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

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Pipers Lane, Thatcham, Berkshire, RG19 4NS, United Kingdom

Addendum I

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

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

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

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

The following example illustrates the changes :-

September 2002

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

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

Epicentral Estimates

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

Observational Data

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

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

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

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

Addendum II

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

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

Addendum III

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

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

ISCJB 01 00:29:36.8±0.5, 40.39N±0.03×34.38E±0.03, h5km±5km, Error ellipse: s-maj=4.4km s-min=3.5km az=180.0
CSEM 01 00:29:36.8±0.1, 40.40N×34.38E, h5km, MD2.5, Error ellipse: s-maj=2.9km s-min=2.5km az=5.0
ISK 01 00:29:36.6, 40.40N×34.37E, h8km, MD2.5
DDA 01 00:29:36.4, 40.34N×34.41E, h7km, Md2.7
ISC 01 00:29:36.9±0.9, 40.40N±0.02×34.36E±0.02, h12km±8km, n33, σ0.47/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CORM	Corum	0.30	137	ePG	Pg	00 29 43.2	0.0
CORM				eSG	Sg	00 29 47.9	+0.6
CORM	Corum	0.30	137	ePg	Pg	00 29 43.2	0.0
CORM				eSg	Sg	00 29 47.9	+0.6
CTAK	Corum_Osmancik	0.41	53	iP	Pg	00 29 44.8	-0.4
CTAK				iS	Sg	00 29 50.5	-0.2
CTAK	Corum_Osmancik	0.41	53	P	Pg	00 29 44.8	-0.4
COAL	Corum-Alaca	0.50	107	iP	Pg	00 29 46.1	-0.6
COAL				iS	Sg	00 29 53.2	-0.2
COAL	Corum-Alaca	0.50	107	P	Pg	00 29 46.1	-0.6
CANT	Cankiri	0.60	290	ePG	Pg	00 29 48.9	+0.2
CANT				eSG	Sb	00 29 58.1	+0.2
TOS	Tosya	0.69	338	ePG	Pg	00 29 49.6	-0.7
TOS	Tosya	0.69	338	ePg	Pg	00 29 49.6	-0.7
ELDT	Eldivan	0.72	277	iP	Pb	00 29 51.4	-0.1
ELDT				iS	Sg	00 30 01.0	+0.6
ELDT	Eldivan	0.72	277	P	Pb	00 29 51.4	-0.1
ELDT				S	Sg	00 30 01.0	+0.6
CDAG	Cicekdag	0.78	179	iP	Pg	00 29 51.6	-0.4
CDAG				iS	Sg	00 30 01.3	-0.8
CDAG	Cicekdag	0.78	179	P	Pg	00 29 51.6	-0.4
CDAG				S	Sg	00 30 01.3	-0.8
YOZ	Yozgat	1.06	136	ePG	Pb	00 29 57.2	0.0
YOZ	Yozgat	1.06	136	ePg	Pb	00 29 57.2	0.0
BYBT	Boyabat	1.11	16	ePN	Pn	00 29 58.3	0.0
BYBT	Boyabat	1.11	16	ePn	Pn	00 29 58.3	0.0
KAMT	Kaman	1.15	206	ePN	Pg	00 29 58.6	-0.4
KAMT	Kaman	1.15	206	ePn	Pg	00 29 58.6	-0.4
HAVZ	Havza	1.23	56	iP	Pn	00 30 00.6	+0.6
HAVZ				iS	Sb	00 30 16.2	+0.2
HAVZ	Havza	1.23	56	P	Pn	00 30 00.6	+0.6
HAVZ				S	Sb	00 30 16.2	+0.2
BBAL	Bala	1.28	228	iP	Pn	00 30 01.0	+0.3
BBAL				iS	Sg	00 30 17.4	-0.8
BBAL	Bala	1.28	228	P	Pn	00 30 01.0	+0.3
BBAL				S	Sg	00 30 17.4	-0.8
LOD	Lodumlu	1.33	248	ePN	Pg	00 30 02.3	-0.2
LOD	Lodumlu	1.33	248	ePn	Pg	00 30 02.3	-0.2
AFSR	Af¯ar-Bala (A	1.38	227	ePN	Pn	00 30 02.6	+0.6
AFSR	Af¯ar-Bala (A	1.38	227	ePn	Pn	00 30 02.6	+0.6
AVNS	Nevsehir-Avano	1.64	167	iP	Pb	00 30 07.3	+0.2
AVNS				iS	Sn	00 30 26.5	-0.1
AVNS	Nevsehir-Avano	1.64	167	P	Pb	00 30 07.3	+0.2
AVNS				S	Sn	00 30 26.5	-0.1
KKUL	Konya-Kulu	1.66	223	iP	Pb	00 30 07.7	+0.3
KKUL				iS	Sg	00 30 29.7	-0.6
KKUL	Konya-Kulu	1.66	223	P	Pb	00 30 07.7	+0.3
KKUL				S	Sg	00 30 29.7	-0.6
CUSAR	Sarkisla-SIVAS	1.75	124	iP	Pn	00 30 08.0	+0.7
CUSAR				iS	Sb	00 30 30.6	-0.4
CUSAR	Sarkisla-SIVAS	1.75	124	P	Pn	00 30 07.9	+0.7
CUSAR				S	Sb	00 30 30.6	-0.4

NIED 01 00:37:00, 38.70N×142.40E, h44km, Mw4.2 Best double couple: $M_0$2.26000×10^{15} NP1:ϕ_s323.00000°, δ35.00000°, λ-1.00000°. NP2:ϕ_s54.00000°, δ89.00000°, λ-125.00000°.
ISCJB 01 00:37:38.9±0.9, 38.73N±0.04×142.40E±0.08, h47km±6km, mb4.1/25, MS3.4/11, Error ellipse: s-maj=11.0km s-min=5.3km az=20.5
JMA 01 00:37:39.3±0.1, 38.74N×142.37E, h39km±2km, M4.3
JMA Felt II J1.
NEIC 01 00:37:40.8±1.0, 38.75N×142.50E, h50km±7km, mb4.2/6, Error ellipse: s-maj=15.1km s-min=8.5km az=121.0
NEIC Recorded [2 JMA] in Iwate and Miyagi.
IDC 01 00:37:40.5±0.5, 38.72N×142.18E, h44km±4km, mb3.8/18, mb1 3.9/21, mb1mx3.8/36, mbtmp4.0/21, MS3.3/16, Ms1 3.3/16, ms1mx3.1/44, Error ellipse: s-maj=18.9km s-min=11.4km az=90.0
ISC 01 00:37:40.6±0.6, 38.74N±0.04×142.38E±0.06, h45km±4km, n59, σ1.77/66, mb4.1/25, MS3.4/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.65	301	P	Pn	00 37 52.2	-1.3
OFUJ				S	Sn	00 38 01.0	-1.8
JIO	Ouri	0.86	251	P	Pn	00 37 54.7	-1.6
JIO				eS	Sn	00 38 05.4	-2.4
JMK	Ichinoseki	0.93	283	P	Pn	00 37 56.1	-1.2
JMK				eS	Sn	00 38 07.8	-1.7
JOM	Ohasama	1.12	311	P	Pn	00 37 59.1	-0.8
JOM				eS	Sn	00 38 13.3	-0.8
JTH	Tanohata	1.26	342	P	Pn	00 38 00.4	-1.4
JTH				eS	Sn	00 38 16.8	-0.8
JOU	Okura	1.40	255	P	Pn	00 38 02.8	-0.9
JOU				eS	Sn	00 38 20.8	-0.2
JRG	Rokugo	1.51	296	P	Pn	00 38 04.6	-0.6
JMM	Marumori	1.53	236	P	Pn	00 38 04.0	-1.4
JMM				eS	Sn	00 38 22.8	-1.3
JYK	Kaneyama	1.59	277	P	Pn	00 38 05.6	-0.7
ERM	Erimo	3.32	10	ePn	Pn	00 38 29.2	-0.8
MJAR	Matsushiro Arr	3.98	238	P	Pn	00 38 39.8	+0.7
	15nm,0.3s,baz=50,slow=9.5,SNR=36						
MAJO	Matsushiro	3.98	238	ePn	Pn	00 38 40.5	+1.4
MAT	Matsushiro	3.98	238	P	Pn	00 38 40.3	+1.2
MAT				eS	Sn	00 39 31.4	+7.0
ASAJ	Asahikawa	5.37	2	P	Pn	00 38 58.7	+0.5
	baz=201,slow=14						
ASAJ				S	Sn	00 40 01.9	+3.2
	2.3nm,0.3s,baz=112,slow=19,SNR=5.3						
JHJ	Hachijo jima 2	6.00	201	P	Pn	00 39 05.4	-1.4
	44nm,0.3s,baz=335,slow=21,SNR=8.7						
JHJ				S	Sn	00 40 09.8	-4.3
	45nm,0.3s,baz=3.2,slow=18,SNR=3.4						
USRK	Ussuriysk Ar.	9.51	308	P	Pn	00 39 56.6	+1.7
	1.1nm,0.3s,baz=108,slow=18,SNR=68						
USRK				LR	LR	00 43 27.2	
	comp=Z,198nm,18.6s,baz=118,slow=37						
JNU	Nakatsue	10.88	242	P	Pn	00 40 17.2	+3.5
	0.7nm,0.3s,baz=53,slow=23,SNR=4.5						
JNU				LR	LR	00 44 35.1	
	comp=Z,50nm,19.5s,baz=300,slow=39						
MDJ	Mudanjiang	11.22	306	ePn	Pn	00 40 21.7	+3.5
	20nm,0.9s						
KSRS	Korea Array	11.47	268	P	Pn	00 40 25.9	+4.1
	0.4nm,0.3s,baz=84,slow=14,SNR=25						
KSRS				LR	LR	00 44 26.2	
	comp=Z,71nm,21.1s,baz=92,slow=36						
KSAR	Wonju Array Be	11.50	268	P	Pn	00 40 25.9	+3.7
KLR	Kul'dur	12.97	327	P	Pn	00 40 41.0	-1.1
	0.2nm,0.3s,baz=137,slow=14,SNR=6.2						
KLR				LR	LR	00 45 39.0	
	comp=Z,150nm,19.7s,baz=126,slow=37						
PETK	Petropavlovsk-	17.83	31	LR	LR	00 49 28.0	
	comp=Z,23nm,18.8s,baz=237,slow=39						
YAK	Yakutsk	24.59	346	LR	LR	00 53 11.1	
	comp=Z,62nm,18.1s,baz=126,slow=38						
SEY	Seymchan	24.97	11	P	P	00 43 00.2	+0.6
	2.3nm,0.2s,baz=0.0,slow=20,SNR=4.3						
GUMO	Guam	25.15	174	LR	LR	00 51 53.8	
	comp=Z,22nm,20.8s,baz=7.0,slow=34						
SONM	Songino Array	27.52	301	P	P	00 43 22.4	-0.5
	1.2nm,0.6s,baz=94,slow=8.8,SNR=7.7						
SONM				LR	LR	00 54 36.9	
	comp=Z,59nm,19.8s,baz=97,slow=37						
ENH	Enshi	28.28	263	eP	P	00 43 30.7	+0.9
	3.2nm,0.4s						
H11N2	WAKE ISLAND Hy	28.43	125	T	T	01 14 01.2	
	baz=317,slow=75,SNR=1821						
H11N1	WAKE ISLAND Hy	28.44	125	T	T	01 14 01.9	
	baz=317,slow=75,SNR=2037						
H11N3	WAKE ISLAND Hy	28.45	125	T	T	01 14 02.5	
	baz=317,slow=75,SNR=2054						
H11S1	WAKE ISLAND Hy	29.20	127	T	T	01 14 52.4	
	baz=319,slow=76,SNR=251						
H11S3	WAKE ISLAND Hy	29.21	127	T	T	01 14 57.1	
	baz=319,slow=76,SNR=221						
H11S2	WAKE ISLAND Hy	29.22	127	T	T	01 15 00.2	
	baz=319,slow=76,SNR=124						
TIXI	Tiksi	33.69	352	LR	LR	00 59 26.5	
	comp=Z,62nm,19.3s,baz=179,slow=39						
ZALV	Zalesovo Beam	41.35	311	P	P	00 45 21.5	-0.4
	4.5nm,0.7s,baz=87,slow=7.6,SNR=27						
ZALV				LR	LR	01 03 17.1	
	comp=Z,68nm,18.1s,baz=70,slow=37						
NRIK	Noril'sk	42.05	334	P	P	00 45 27.1	-0.3
	1.2nm,0.5s,baz=110,slow=12,SNR=3.1						
NRIK				LR	LR	01 03 53.7	
	comp=Z,90nm,20.6s,baz=350,slow=38						
CHTO	Chiang Mai	42.47	255	eP	P	00 45 32.0	+0.5
	3.5nm,0.7s						
CMAR	Chiang Mai Arr	42.68	254	pP	pP	00 45 44.7	-0.8
	1.4nm,0.6s,baz=46,slow=8.3,SNR=3.0						
MKAR	Makanchi Array	43.88	301	P	P	00 45 42.0	-0.6
	1.7nm,0.5s,baz=84,slow=8.7,SNR=14						
MKAR				LR	LR	01 04 25.3	
	comp=Z,28nm,21.9s,baz=10.0,slow=37						
KURK	Kurchatov	45.50	307	eP	P	00 45 54.6	-0.7
	71nm,0.9s						
ILAR	Eielson Array	47.64	33	P	P	00 46 12.8	+0.8
	0.7nm,0.8s,baz=252,slow=6.6,SNR=8.6						
ILAR				pP	pP	00 46 24.7	+0.3
	3.1nm,0.6s,baz=270,slow=6.5,SNR=21						
DIV	Divide	48.46	38	eP	P	00 46 11.8	-6.6
	9.8nm,0.7s						
TKM2	Tokmak 2	49.51	297	eP	P	00 46 26.8	0.0
	1.7nm,0.6s						
AAK	Ala-Archa	50.37	297	LR	LR	01 09 13.5	
	comp=Z,32nm,18.9s,baz=55,slow=38						
AAK	Ala-Archa	50.37	297	eP	P	00 46 34.1	+0.8
	1.2nm,0.8s						
INK	Inuvik	52.52	28	P	P	00 46 49.4	+0.6
	0.6nm,0.8s,baz=304,slow=7.3,SNR=2.8						
INK				pP	pP	00 47 02.7	+1.4
	1.8nm,0.5s,baz=274,slow=6.9,SNR=5.8						
ABKAR	Akbulak array	57.44	310	eP	P	00 47 23.9	-0.7
	1.1nm,0.5s						
WRA	Warramunga Arr	58.86	189	P	P	00 47 33.5	-1.3
	4.9nm,0.8s,baz=7.9,slow=7.2,SNR=30						
WRA				pP	pP	00 47 48.5	+1.0
	2.1nm,0.5s,baz=5.8,slow=7.2,SNR=5.9						
WRA				sP	sP	00 47 53.2	+0.5
	1.2nm,0.5s,baz=6.1,slow=7.2,SNR=3.0						
ASAR	Alice Springs	62.59	189	P	P	00 47 59.2	-0.9
	1.7nm,0.7s,baz=11,slow=6.2,SNR=15						
ASAR				pP	pP	00 48 12.7	-0.2
	0.8nm,0.6s,baz=0.3,slow=4.5,SNR=3.9						
ARCES	ARCESS Array B	62.67	339	P	P	00 48 00.3	+0.1
	2.3nm,0.9s,baz=41,slow=8.4,SNR=2.8						
GEYT	Alibeck	63.69	299	P	P	00 48 06.6	-0.8
	1.3nm,0.7s,baz=102,slow=5.0,SNR=3.9						
FINES	FINESS Array B	67.66	332	P	P	00 48 32.0	-0.6
	1.4nm,0.7s,baz=52,slow=9.9,SNR=6.5						
FINES				pP	pP	00 48 43.9	-1.7
	3.1nm,0.6s,baz=46,slow=11,SNR=8.7						
FINES				LR	LR	01 19 59.4	
	comp=Z,49nm,19.6s,baz=98,slow=38						
KBZ	Khabaz	70.37	311	P	P	00 48 48.8	-1.0
	2.2nm,0.8s,baz=70,slow=6.9,SNR=4.0						
NB2	NORSAR Subarra	72.91	337	P	P	00 49 04.4	-0.3
	comp=Z,0.6nm,0.7s,baz=38,slow=6.2						
NOA	NORSAR Array B	72.91	337	P	P	00 49 04.4	-0.3
	comp=Z,0.8nm,0.6s,baz=41,slow=5.9,SNR=4.2						
NOA				pP	pP	00 49 17.6	-0.2
	comp=Z,0.4nm,0.6s,baz=43,slow=4.5,SNR=1.6						
NOA				LR	LR	01 26 03.5	
	comp=Z,21nm,19.5s,baz=40,slow=40						
AKASG	Malin Array Be	73.42	322	P	P	00 49 06.3	-1.6
	comp=Z,0.6nm,0.4s,baz=44,slow=6.2,SNR=3.5						
AKASG				pP	pP	00 49 20.7	-0.2
	comp=Z,2.0nm,0.6s,baz=45,slow=5.8,SNR=4.7						
BRTR	Keskin Array B	78.29	312	P	P	00 49 35.8	-0.3
	comp=Z,0.4nm,0.5s,baz=165,slow=1.5,SNR=4.0						
BRTR				pP	PcP	00 49 47.2	+1.9
	comp=Z,0.4nm,0.5s,baz=126,slow=3.0,SNR=3.9						
GERES	GERESS Array B	81.66	329	P	P	00 49 53.4	-0.6
	comp=Z,0.2nm,0.3s,baz=25,slow=7.6,SNR=3.1						
GERES				pP	pP	00 50 06.1	-1.2
	comp=Z,0.7nm,0.7s,baz=46,slow=3.9,SNR=4.1						
GERES				LR	LR	01 29 22.1	
	comp=Z,36nm,19.2s,baz=65,slow=38						
TXAR	Lajitas Array	88.48	53	P	P	00 50 29.1	+0.6
	comp=Z,0.3nm,0.8s,baz=240,slow=3.0,SNR=3.3						

ISCJB 01 00:47:05.9±1.1, 37.11N±0.05×42.47E±0.04, h4km±6km, Error ellipse: s-maj=8.6km s-min=5.0km az=6.8
CSEM 01 00:47:05.8±0.2, 37.10N×42.47E, h5km, MD3.2, Error ellipse: s-maj=4.5km s-min=3.0km az=39.0
ISK 01 00:47:05.5, 37.15N×42.46E, h3km, MD2.8
ISN 01 00:47:07.3±0.3, 36.97N×42.58E, h0km, ML3.2
DDA 01 00:47:07.0, 37.19N×42.45E, h7km, Md3.2
ISC 01 00:47:06.2±1.7, 37.12N±0.06×42.46E±0.03, h3km±15km, n19, σ0.46/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIRN	S¯-rnak	0.38	354	iP	Pg	00 47 12.9	-0.5
SIRN				iS	Sg	00 47 18.7	+0.3
SIRN	S¯-rnak	0.38	354	P	Pg	00 47 12.9	-0.5
SIRN				S	Sg	00 47 18.7	+0.3
SIRT	Sirnak	0.38	357	ePg	Pg	00 47 13.1	-0.4
SIRT				eSG	Sg	00 47 18.9	+0.4
SIRT	Sirnak	0.38	357	ePg	Pg	00 47 13.1	-0.4
SIRT				eSg	Sg	00 47 18.9	+0.4
CUKT	Cukurca	0.92	82	ePG	Pg	00 47 24.1	+0.2
CUKT				eSG	Sb	00 47 37.5	-0.2
CUKT	Cukurca	0.92	82	ePg	Pg	00 47 24.1	+0.2
CUKT				eSg	Sb	00 47 37.5	-0.2
HKR	Hakkari	1.12	66	ePN	Pg	00 47 27.5	-0.1
HKR				eSN	Sb	00 47 43.6	+0.3
HKR	Hakkari	1.12	66	ePn	Pg	00 47 27.5	-0.1
HKR				eSn	Sb	00 47 43.6	+0.3
BTMN	Batman	1.22	309	iP	Pg	00 47 29.9	+0.3
BTMN				iS	Sg	00 47 46.0	+0.6
BTMN	Batman	1.22	309	P	Pg	00 47 29.9	+0.3
BTMN				S	Sg	00 47 46.0	+0.6
GEVA	Gevas	1.28	22	iP	Pb	00 47 31.2	+0.2
GEVA				iS	Sg	00 47 46.8	-0.5
GEVA	Gevas	1.28	22	P	Pb	00 47 31.2	+0.2
GEVA				S	Sg	00 47 46.8	-0.5
MARD	Mardin	1.36	279	iP	Pn	00 47 32.0	-0.2
MARD				iS	Sg	00 47 48.4	-1.4
SVAN	Silvan-Diyarba	1.44	316	ePN	Pn	00 47 32.9	-0.3
SVAN				eSN	Sg	00 47 52.9	+0.5
SVAN	Silvan-Diyarba	1.44	316	ePn	Pn	00 47 32.9	-0.3
SVAN				eSn	Sg	00 47 52.9	+0.5
MAZI	Mazidag	1.64	282	ePN	Pn	00 47 36.0	-0.1
MAZI	Mazidag	1.64	282	ePn	Pn	00 47 36.0	-0.1
VANB	Van	1.64	26	ePN	Pn	00 47 36.0	-0.2
VANB	Van	1.64	26	ePn	Pn	00 47 36.0	-0.2

ISCJB 01 00:57:17.8±0.3, 34.62N±0.02×24.02E±0.02, h50km±2km, mb4.4/53, MS2.9/6, Error ellipse: s-maj=4.3km s-min=2.2km az=36.3
MOS 01 00:57:17.9±1.3, 34.68N×24.05E, h33km, mb4.7/31, Error ellipse: s-maj=6.9km s-min=3.6km az=77.8
BJI 01 00:57:19.0, 34.90N×24.10E, h35km, mb4.8/9, mB4.8/4, Ms4.5/3, Ms7 4.3/2
CSEM 01 00:57:19.8±0.1, 34.65N×24.09E, h40km, mb4.5/26, Error ellipse: s-maj=4.8km s-min=2.2km az=35.0
NEIC 01 00:57:21.3, 34.80N×24.09E, h43km, mb4.5/13, After ATH.
THE 01 00:57:21.9, 34.75N×24.05E, h44km±2km, ML4.3/30, Error ellipse: s-maj=2.8km s-min=1.0km az=14.0
ATH 01 00:57:21.3, 34.80N×24.09E, h43km±1km, ML4.1/25, Error ellipse: s-maj=2.2km s-min=1.0km az=201.0
IDC 01 00:57:22.6±1.1, 34.93N×24.14E, h50km±7km, mb4.0/24, mb1 4.1/33, mb1mx4.0/49, mbtmp4.2/33, MS2.9/10, Ms1 2.8/10, ms1mx2.6/45, Error ellipse: s-maj=16.4km s-min=10.2km az=170.0
PDG 01 00:57:22.1±0.2, 35.17N×23.54E, h10km±3km, ML4.7/11, Error ellipse: s-maj=4.1km s-min=2.0km az=90.0
HLW 01 00:57:23.4, 34.80N×24.57E, h35km±19km, Md4.2, Ml4.1
GII 01 00:57:27.8±0.1, 34.54N×24.95E, h32km, MD3.6/4
NIC 01 00:57:29.5±0.1, 34.96N×24.95E, h51km, mb4.9, ML4.5
ISC 01 00:57:18.2±0.7, 34.60N±0.03×24.01E±0.02, h32km±4km, n630, σ1.73/684, mb4.5/53, MS2.9/6, 29C-20D, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	Gavdhos	0.24	14	P	Pn	00 57 28.3	+2.7
GVD				S	Sn	00 57 33.2	+2.9
GVD	Gavdhos	0.24	14	P	Pn	00 57 28.3	+2.7
GVD				S	Sn	00 57 33.2	+2.9
GVD	Gavdhos	0.24	14	P	Pn	00 57 28.3	+2.7
GVD				S	Sn	00 57 33.2	+2.9
GVD	Gavdhos	0.24	14	P	Pn	00 57 28.3	+2.7
GVD				S	Sn	00 57 33.2	+2.9
GVD				AML	AML	00 57 33.6	
GVD				AML	AML	00 57 33.9	
SIVA	Sivas	0.78	57	P	Pn	00 57 34.5	+1.6
SIVA				S	Sn	00 57 44.6	+1.2
SIVA	Sivas	0.78	57	P	Pn	00 57 34.5	+1.6
SIVA				S	Sn	00 57 44.6	+1.2
SIVA	Sivas	0.78	57	P	Pn	00 57 34.5	+1.6
SIVA				S	Sn	00 57 44.6	+1.2
SIVA	Sivas	0.78	57	P	Pn	00 57 34.5	+1.6
SIVA				S	Sn	00 57 43.7	+0.3
SIVA				AML	AML	00 57 47.9	
SIVA				AML	AML	00 57 49.2	
VAM	Vamos	0.82	11	P	Pb	00 57 33.5	-0.5
VAM				S	Sn	00 57 45.2	+0.7
VAM	Vamos	0.82	11	P	Pb	00 57 33.5	-0.5
VAM				S	Sn	00 57 45.2	+0.7
VAM	Vamos	0.82	11	P	Pb	00 57 33.5	-0.5
VAM				S	Sn	00 57 45.2	+0.7
VAM	Vamos	0.82	11	P	Pb	00 57 33.5	-0.5
VAM				S	Sn	00 57 45.2	+0.7
IMMV	Iera Moni Meta	0.86	358	P	Pn	00 57 35.2	+1.2
IMMV				S	Sn	00 57 46.5	+1.0
IMMV	Iera Moni Meta	0.86	358	P	Pn	00 57 35.2	+1.2
IMMV				S	Sn	00 57 46.5	+1.0
IMMV	Iera Moni Meta	0.86	358	P	Pn	00 57 35.3	+1.2
IMMV				S	Sn	00 57 47.2	+1.7
IMMV				AML	AML	00 57 47.5	
IMMV				AML	AML	00 57 49.6	
IDI	Anoyia	0.99	46	P	Pn	00 57 38.1	+2.1
	503nm,0.3s,baz=248,slow=10.0,SNR=3247						
IDI				S	Sb	00 57 48.0	-1.7
	555nm,0.3s,baz=120,slow=20,SNR=31						
IDI				LR	LR	00 58 06.2	
	comp=Z,461nm,18.1s,baz=238,slow=61						
IDI	Anoyia	0.99	46	P	Pn	00 57 37.3	+1.4
IDI				S	Sb	00 57 48.4	-1.3
IDI	Anoyia	0.99	46	P	Pb	00 57 36.1	-0.8
IDI	Anoyia	0.99	46	P	Pb	00 57 36.1	-0.8
IDI				S	Sn	00 57 51.6	+2.7
IDI				AML	AML	00 57 52.5	
	comp=E,27925μm,0.5s						
IDI				AML	AML	00 57 52.8	
	comp=N,20235μm,0.5s						
IACM	Heraklion	1.12	51	P	Pb	00 57 39.4	+0.5
IACM				S	Sn	00 57 54.9	+3.1
IACM	Heraklion	1.12	51	P	Pb	00 57 39.4	+0.5
IACM				S	Sn	00 57 54.9	+3.1
IACM	Heraklion	1.12	51	P	Pb	00 57 41.1	+2.2
IACM				S	Sn	00 57 53.8	+1.9
IACM				AML	AML	00 58 02.5	
IACM				AML	AML	00 58 05.2	
LAST	Lasithi	1.33	65	P	Pb	00 57 43.1	+0.6
LAST				S	Sb	00 57 58.7	-0.5
LAST	Lasithi	1.33	65	P	Pb	00 57 43.1	+0.6
LAST	Lasithi	1.33	65	ePn	Pb	00 57 43.4	+0.9
LAST				S	Sb	00 57 58.7	-0.5
LAST	Lasithi	1.33	65	ePn	Pb	00 57 43.4	+0.9
LAST				S	Sb	00 57 58.7	-0.5
LAST	Lasithi	1.33	65	P	Pb	00 57 44.6	+2.1
ANKY	Antikythira Is	1.39	335	P	Pb	00 57 43.0	-0.6
ANKY				S	Sn	00 57 59.1	+0.5
ANKY	Antikythira Is	1.39	335	P	Pb	00 57 43.0	-0.6
ANKY				S	Sn	00 57 59.1	+0.5
ANKY	Antikythira Is	1.39	335	P	Pb	00 57 43.0	-0.6
ANKY				S	Sn	00 57 59.1	+0.5
ANKY	Antikythira Is	1.39	335	P	Pb	00 57 46.0	+2.4
ANKY				S	Sb	00 58 03.2	+2.2
ANKY				AML	AML	00 58 07.9	
	comp=N,9571μm,0.4s						
ANKY				AML	AML	00 58 14.2	
	comp=E,6711μm,0.9s						
NPS	Neapolis	1.47	63	P	Pb	00 57 45.7	+0.8
NPS				S	Sb	00 58 02.2	-1.0
NPS	Neapolis	1.47	63	P	Pb	00 57 45.7	+0.8
NPS	Neapolis	1.47	63	P	Pb	00 57 45.7	+0.8
NPS				S	Sb	00 58 02.2	-1.0
NPS	Neapolis	1.47	63	P	Pb	00 57 45.7	+0.8
NPS	Neapolis	1.47	63	P	Pb	00 57 46.6	+1.7
NPS				S	Sb	00 58 02.7	-0.5
NPS				AML	AML	00 58 11.5	
	comp=N,8488μm,0.6s						
NPS				AML	AML	00 58 13.2	
	comp=E,9114μm,0.6s						
KYTH	Kithira	1.84	335	P	Pb	00 57 51.3	+0.1
KYTH				S	Sn	00 58 09.8	+0.1
KYTH	Kithira	1.84	335	P	Pb	00 57 51.3	+0.1
KYTH				S	Sn	00 58 09.8	+0.1
KYTH	Kithira	1.84	335	P	Pb	00 57 51.3	+0.1
KYTH	Kithira	1.84	335	P	Pb	00 57 52.5	+1.3
ZKR	Zakros	1.88	74	P	Pb	00 57 51.6	-0.3
ZKR	Zakros	1.88	74	P	Pb	00 57 51.6	-0.3
ZKR				S	Sn	00 58 10.3	-0.4
ZKR	Zakros	1.88	74	P	Pb	00 57 51.6	-0.3
ZKR	Zakros	1.88	74	P	Pb	00 57 52.8	+0.9
ZKR				S	Sn	00 58 10.3	-0.4
ZKR				AML	AML	00 58 35.2	
	comp=N,2753μm,0.6s						
ZKR				AML	AML	00 58 37.5	
	comp=E,5835μm,0.7s						
THR6	Thira Island,	2.08	32	P	Pn	00 57 52.1	+1.3
THR6	Thira Island,	2.08	32	P	Pn	00 57 52.1	+1.3
THR6	Thira Island,	2.08	32	P	Pn	00 57 52.1	+1.3
MHLO	Agia Marina, M	2.11	8	P	Pn	00 57 52.1	+0.9
MHLO	Agia Marina, M	2.11	8	P	Pn	00 57 52.1	+0.9
MHLO				S	Sn	00 58 14.1	-2.2
MHLO	Agia Marina, M	2.11	8	P	Pn	00 57 51.4	+0.2
MHLO				S	Sn	00 58 14.1	-2.2
MHLO				AML	AML	00 58 36.5	
	comp=N,17332μm,0.6s						
MHLO				AML	AML	00 58 37.7	
	comp=E,15365μm,0.6s						
THR5	Thira Island,	2.11	31	P	Pn	00 57 51.9	+0.6
THR5	Thira Island,	2.11	31	P	Pn	00 57 51.9	+0.6
SANT	Santorini	2.12	33	P	Pn	00 57 52.1	+0.7
SANT	Santorini	2.12	33	P	Pn	00 57 52.1	+0.7
SANT	Santorini	2.12	33	ePn	Pn	00 57 52.2	+0.8
SANT	Santorini	2.12	33	P	Pn	00 57 51.2	-0.3
SANT				AML	AML	00 58 29.3	
	comp=E,4582μm,0.4s						
SANT				AML	AML	00 58 32.1	
	comp=N,1603μm,0.4s						
THT1	Athinios (Pele	2.12	33	P	Pn	00 57 52.2	+0.8
THT1	Athinios (Pele	2.12	33	P	Pn	00 57 52.2	+0.8
THR3	Thira Island,	2.13	32	P	Pn	00 57 52.4	+0.9
THR3	Thira Island,	2.13	32	P	Pn	00 57 52.4	+0.9
THR3	Thira Island,	2.13	32	P	Pn	00 57 52.4	+0.9
THR7	Fira-Santorini	2.15	32	P	Pn	00 57 53.2	+1.4
THR7	Fira-Santorini	2.15	32	P	Pn	00 57 53.2	+1.4
THR2	Thira island,	2.18	32	P	Pn	00 57 53.2	+1.1
THR2	Thira island,	2.18	32	P	Pn	00 57 53.2	+1.1
THR2	Thira island,	2.18	32	P	Pn	00 57 53.2	+1.1
CMBO	Columbo, Santo	2.18	31	P	Pn	00 57 53.1	+0.9
CMBO	Columbo, Santo	2.18	31	P	Pn	00 57 52.6	+0.4
CMBO	Columbo, Santo	2.18	31	P	Pn	00 57 52.6	+0.4
VLI	Veliai	2.29	338	P	Pn	00 57 55.8	+2.1
VLI	Veliai	2.29	338	P	Pn	00 57 55.4	+1.7
VLI				S	Sn	00 58 19.7	-1.0
VLI	Veliai	2.29	338	P	Pn	00 57 55.8	+2.1
VLI	Veliai	2.29	338	P	Pn	00 57 55.4	+1.7
VLI				S	Sn	00 58 19.7	-1.0
VLI				AML	AML	00 58 32.9	
	comp=N,1893μm,0.4s						
VLI				AML	AML	00 58 35.1	
	comp=E,1701μm,0.5s						
SERI	Serifos	2.58	8	P	Pn	00 57 57.3	-0.4
SERI	Serifos	2.58	8	P	Pn	00 57 57.3	-0.4
KARP	Karpathos	2.75	69	P	Pn	00 58 02.5	+2.5
KARP	Karpathos	2.75	69	ePn	Pn	00 58 02.7	+2.7
KARP	Karpathos	2.75	69	ePn	Pn	00 58 02.7	+2.7
KARP	Karpathos	2.75	69	P	Pn	00 58 02.5	+2.5
KARP				S	Sn	00 58 34.6	+2.5

KARP	comp=E,2205μm,0.2s		AML	AML	00 58 35.3
KARP	comp=N,2610μm,0.5s		AML	AML	00 58 46.5
APE	**Apeiranthos**	**2.75 26**	P	**Pn**	**00 58 00.2 +0.1**
APE	**Apeiranthos**	**2.75 26**	P	**Pn**	**00 58 00.2 +0.1**
APE	**Apeiranthos**	**2.75 26**	P	**Pn**	**00 58 00.2 +0.1**
APE	**Apeiranthos**	**2.75 26**	P	**Pn**	**00 58 00.2 +0.1**
APE	**Apeiranthos**	**2.75 26**	P	**Pn**	**00 57 58.5 -1.6**
APE			S	**Sn**	**00 58 28.9 -3.4**
APE	comp=E,986μm,0.4s		AML	AML	00 58 34.4
APE	comp=N,1179μm,0.5s		AML	AML	00 58 51.0
PYL	**PYLOS**	**2.94 322**	P	**Pn**	**00 58 04.2 +1.5**
PYL	**PYLOS**	**2.94 322**	P	**Pn**	**00 58 04.2 +1.5**
PYL	**PYLOS**	**2.94 322**	P	**Pn**	**00 58 04.2 +1.5**
PYL	**PYLOS**	**2.94 322**	P	**Pn**	**00 58 02.4 -0.2**
VLX	**Vlachokerasia**	**3.06 335**	P	**Pn**	**00 58 08.0 +3.6**
VLX	**Vlachokerasia**	**3.06 335**	P	**Pn**	**00 58 08.0 +3.6**
VLX	**Vlachokerasia**	**3.06 335**	P	**Pn**	**00 58 08.0 +3.6**
VLX	**Vlachokerasia**	**3.06 335**	P	**Pb**	**00 58 08.8 -3.2**
ITM	**Ithomi**	**3.08 327**	P	**Pn**	**00 58 06.6 +2.0**
ITM	**Ithomi**	**3.08 327**	P	**Pn**	**00 58 06.6 +2.0**
ITM	**Ithomi**	**3.08 327**	P	**Pn**	**00 58 06.6 +2.0**
ITM	**Ithomi**	**3.08 327**	P	**Pn**	**00 58 05.7 +1.1**
NISR	**Nisiros**	**3.23 51**	P	**Pn**	**00 58 07.7 +1.0**
NISR	**Nisiros**	**3.23 51**	P	**Pn**	**00 58 07.7 +1.0**
NISR	**Nisiros**	**3.23 51**	P	**Pn**	**00 58 07.7 +1.0**
NISR	**Nisiros**	**3.23 51**	P	**Pn**	**00 58 06.2 -0.5**
NISR	comp=E,1758μm,0.8s		AML	AML	00 59 05.3
NISR	comp=N,1342μm,0.6s		AML	AML	00 59 08.9
VLY	**Voula,Athens**	**3.25 357**	P	**Pn**	**00 58 08.1 +1.2**
VLY	**Voula,Athens**	**3.25 357**	P	**Pn**	**00 58 08.1 +1.2**
VLY	**Voula,Athens**	**3.25 357**	P	**Pn**	**00 58 08.1 +1.2**
SLUM	**Salum** baz=170	**3.26 162**	P	**Pb**	**00 58 11.9 -3.4**
SLUM	comp=N,270μm,0.3s,logA/T=5.9,baz=170		AMP		00 58 00.0
SLUM	baz=170		S	**Sn**	**00 58 48.3 +3.6**
SLUM	**Salum**	**3.26 162**	P	**Pb**	**00 58 11.9 -3.4**
NIS1	**Nisyros Isl.**	**3.26 51**	P	**Pn**	**00 58 08.5 +1.4**
NIS1	**Nisyros Isl.**	**3.26 51**	P	**Pn**	**00 58 07.6 +0.5**
NIS1	**Nisyros Isl.**	**3.26 51**	P	**Pn**	**00 58 08.5 +1.4**
NIS1	**Nisyros Isl.**	**3.26 51**	P	**Pn**	**00 58 07.6 +0.5**
ATHU	**Athens Univers**	**3.36 357**	P	**Pn**	**00 58 09.3 +0.8**
ATHU	**Athens Univers**	**3.36 357**	P	**Pn**	**00 58 09.3 +0.8**
ATHU	**Athens Univers**	**3.36 357**	P	**Pn**	**00 58 09.3 +0.8**
ATHU	**Athens Univers**	**3.36 357**	P	**Pn**	**00 58 08.0 -0.4**
ATH	**Athens Observa**	**3.37 356**	P	**Pn**	**00 58 08.2 -0.4**
PTL	**Penteli**	**3.44 358**	P	**Pn**	**00 58 10.3 +0.7**
PTL	**Penteli**	**3.44 358**	P	**Pn**	**00 58 10.3 +0.7**
PTL	**Penteli**	**3.44 358**	P	**Pn**	**00 58 10.3 +0.7**
PTL	**Penteli**	**3.44 358**	P	**Pn**	**00 58 09.1 -0.4**
PTL	comp=E,1439μm,0.5s		AML	AML	00 58 47.5
PTL	comp=N,1318μm,0.5s		AML	AML	00 58 47.7
AMT	**Artemida-Makis**	**3.47 328**	P	**Pn**	**00 58 12.3 +2.3**
AMT	**Artemida-Makis**	**3.47 328**	P	**Pn**	**00 58 11.5 +1.5**
AMT	**Artemida-Makis**	**3.47 328**	P	**Pn**	**00 58 11.5 +1.5**
LTK	**Loutraki**	**3.52 346**	P	**Pn**	**00 58 12.1 +1.5**
LTK	**Loutraki**	**3.52 346**	P	**Pn**	**00 58 12.1 +1.5**
LTK	**Loutraki**	**3.52 346**	P	**Pn**	**00 58 12.1 +1.5**
LTK	**Loutraki**	**3.52 346**	P	**Pn**	**00 58 11.2 +0.6**
GUR	**Goura**	**3.59 338**	P	**Pn**	**00 58 13.7 +2.0**
GUR	**Goura**	**3.59 338**	P	**Pn**	**00 58 13.5 +1.8**
GUR	**Goura**	**3.59 338**	P	**Pn**	**00 58 13.7 +2.0**
GUR	**Goura**	**3.59 338**	P	**Pn**	**00 58 13.5 +1.8**
GUR	comp=N,3081μm,0.3s		AML	AML	00 58 54.8
GUR	comp=E,2705μm,0.3s		AML	AML	00 58 56.5
THAL	**Thalero**	**3.60 343**	P	**Pn**	**00 58 13.4 +1.7**
THAL	**Thalero**	**3.60 343**	P	**Pn**	**00 58 12.6 +0.9**
THAL	**Thalero**	**3.60 343**	P	**Pn**	**00 58 12.6 +0.9**
THAL			S	Sn	00 58 49.8 -3.3
THAL	comp=E,3324μm,0.4s		AML	AML	00 59 02.3
THAL	comp=N,2921μm,0.4s		AML	AML	00 59 02.5
VILL	**Villia**	**3.60 351**	P	**Pn**	**00 58 12.7 +0.9**
VILL	**Villia**	**3.60 351**	P	**Pn**	**00 58 12.7 +0.9**
VIL2	**Platees**	**3.65 351**	P	**Pn**	**00 58 11.5 -1.0**
VIL2	comp=E,1866μm,0.3s		AML	AML	00 58 53.8
VIL2	comp=N,2407μm,0.7s		AML	AML	00 58 54.1
ARG	**Arkhangelos**	**3.73 63**	P	**Pn**	**00 58 15.5 +2.1**
ARG	**Arkhangelos**	**3.73 63**	P	**Pn**	**00 58 15.5 +2.1**
ARG	**Arkhangelos**	**3.73 63**	P	**Pn**	**00 58 14.7 +1.3**
ARG	**Arkhangelos**	**3.73 63**	P	**Pn**	**00 58 15.5 +2.1**
KLV	**Kalavryta, Ach**	**3.75 337**	P	**Pn**	**00 58 16.2 +2.4**
KLV	**Kalavryta, Ach**	**3.75 337**	P	**Pn**	**00 58 16.2 +2.4**
KLV	**Kalavryta, Ach**	**3.75 337**	P	**Pn**	**00 58 16.2 +2.4**
KLV	**Kalavryta, Ach**	**3.75 337**	P	**Pn**	**00 58 16.2 +2.4**
KLV	comp=N,578μm,0.4s		AML	AML	00 58 59.4
KLV	comp=E,546μm,0.4s		AML	AML	00 58 59.8
PROD	**Prodromos**	**3.76 347**	P	**Pn**	**00 58 13.5 -0.4**
PROD	**Prodromos**	**3.76 347**	P	**Pn**	**00 58 13.5 -0.4**
EREA	**Eretria**	**3.81 359**	P	**Pn**	**00 58 15.4 +0.8**
EREA	**Eretria**	**3.81 359**	P	**Pn**	**00 58 15.4 +0.8**
EREA	**Eretria**	**3.81 359**	P	**Pn**	**00 58 14.1 -0.6**
DRO	**Drossia**	**3.83 332**	P	**Pn**	**00 58 17.4 +2.5**
DRO	**Drossia**	**3.83 332**	P	**Pn**	**00 58 16.7 +1.8**
DRO	**Drossia**	**3.83 332**	P	**Pn**	**00 58 16.7 +1.8**
SMG	**Samos**	**3.85 36**	P	**Pn**	**00 58 15.5 +0.3**
SMG	**Samos**	**3.85 36**	P	**Pn**	**00 58 15.5 +0.3**
SMG	**Samos**	**3.85 36**	P	**Pn**	**00 58 15.5 +0.3**
SMG	**Samos**	**3.85 36**	P	**Pn**	**00 58 13.7 -1.5**
LAKA	**Lakka**	**3.98 336**	P	**Pn**	**00 58 19.4 +2.4**
LAKA	**Lakka**	**3.98 336**	P	**Pn**	**00 58 18.7 +1.7**
LAKA	**Lakka**	**3.98 336**	P	**Pn**	**00 58 19.4 +2.4**
LAKA	**Lakka**	**3.98 336**	P	**Pn**	**00 58 18.7 +1.7**
DSF	**Desfina**	**3.99 343**	P	**Pn**	**00 58 18.0 +0.9**
DSF	**Desfina**	**3.99 343**	P	**Pn**	**00 58 18.0 +0.9**
DSF	**Desfina**	**3.99 343**	P	**Pn**	**00 58 18.0 +0.9**
DSF	**Desfina**	**3.99 343**	P	**Pn**	**00 58 17.0 0.0**
DSF	comp=N,1033μm,0.2s		AML	AML	00 59 03.8
DSF	comp=E,1346μm,0.3s		AML	AML	00 59 04.0
RLS	**Riolos of Patr**	**4.02 330**	P	**Pn**	**00 58 19.7 +2.3**
RLS	**Riolos of Patr**	**4.02 330**	P	**Pn**	**00 58 19.7 +2.3**
RLS	**Riolos of Patr**	**4.02 330**	P	**Pn**	**00 58 19.7 +2.3**
RLS	**Riolos of Patr**	**4.02 330**	S	**Sn**	**00 59 01.5 -1.8**
RLS	comp=E,653μm,0.4s		AML	AML	00 59 08.9
RLS	comp=N,402μm,0.4s		AML	AML	00 59 12.7
ZKS	**Zakynthos**	**4.05 321**	P	**Pn**	**00 58 18.7 +0.8**
ZKS	**Zakynthos**	**4.05 321**	P	**Pn**	**00 58 18.7 +0.8**
TRIZ	**Trizonia**	**4.07 338**	P	**Pn**	**00 58 19.6 +1.5**
KALE	**Kalithea**	**4.07 339**	P	**Pn**	**00 58 20.4 +2.1**
KALE	**Kalithea**	**4.07 339**	P	**Pn**	**00 58 19.5 +1.3**
KALE	**Kalithea**	**4.07 339**	P	**Pn**	**00 58 20.4 +2.1**
KALE	**Kalithea**	**4.07 339**	P	**Pn**	**00 58 19.6 +1.3**
CHOS	**Chios island**	**4.12 23**	P	**Pn**	**00 58 19.3 +0.4**
CHOS	**Chios island**	**4.12 23**	P	**Pn**	**00 58 19.3 +0.4**
CHOS	**Chios island**	**4.12 23**	P	**Pn**	**00 58 19.3 +0.4**
CHOS	**Chios island**	**4.12 23**	P	**Pn**	**00 58 17.3 -1.6**
LKR	**Lokris**	**4.12 349**	P	**Pn**	**00 58 19.8 +0.9**
LKR	**Lokris**	**4.12 349**	P	**Pn**	**00 58 19.8 +0.9**
LKR	**Lokris**	**4.12 349**	P	**Pn**	**00 58 19.8 +0.9**
LKR	**Lokris**	**4.12 349**	P	**Pn**	**00 58 18.0 -0.9**
ATAL	**Atalanti**	**4.16 349**	P	**Pn**	**00 58 20.4 +1.0**
ATAL	**Atalanti**	**4.16 349**	P	**Pn**	**00 58 20.4 +1.0**
ATAL	**Atalanti**	**4.16 349**	P	**Pn**	**00 58 20.4 +1.0**
ATAL	**Atalanti**	**4.16 349**	P	**Pn**	**00 58 19.2 -0.2**
ATAL			S	**Sn**	**00 59 04.5 -2.4**
ATAL	comp=N,403μm,0.4s		AML	AML	00 59 05.8
ATAL	comp=E,440μm,0.3s		AML	AML	00 59 06.6
AXS	**Araxos**	**4.17 330**	P	**Pn**	**00 58 22.9 +3.4**
AXS	**Araxos**	**4.17 330**	P	**Pn**	**00 58 22.9 +3.4**
EFP	**Efpalio**	**4.18 337**	P	**Pn**	**00 58 21.8 +2.2**
EFP	**Efpalio**	**4.18 337**	P	**Pn**	**00 58 21.6 +1.9**
EFP	**Efpalio**	**4.18 337**	P	**Pn**	**00 58 21.6 +1.9**
EFP	comp=N,1103μm,0.4s		AML	AML	00 59 10.6
EFP	comp=E,1247μm,0.5s		AML	AML	00 59 14.3
SMIA	**Simia**	**4.32 352**	P	**Pn**	**00 58 22.8 +1.2**
SMIA	**Simia**	**4.32 352**	P	**Pn**	**00 58 22.8 +1.2**
SMIA	**Simia**	**4.32 352**	P	**Pn**	**00 58 21.5 -0.1**
SMIA	comp=E,1081μm,0.9s		AML	AML	00 59 12.9
SMIA	comp=N,1143μm,0.6s		AML	AML	00 59 27.0
ANX	**Ano Chora**	**4.33 338**	P	**Pn**	**00 58 23.8 +2.0**
ANX	**Ano Chora**	**4.33 338**	P	**Pn**	**00 58 23.5 +1.7**
KFL	**Anninata**	**4.36 324**	P	**Pn**	**00 58 22.2 0.0**
KFL	**Anninata**	**4.36 324**	P	**Pn**	**00 58 22.2 0.0**
PVO	**Paravola**	**4.48 334**	P	**Pn**	**00 58 26.8 +3.0**
PVO	**Paravola**	**4.48 334**	P	**Pn**	**00 58 26.8 +3.0**
PVO	**Paravola**	**4.48 334**	P	Pn	00 58 29.0 +5.2
VLS	**Valsamata**	**4.51 323**	P	**Pn**	**00 58 25.3 +1.0**
VLS	**Valsamata**	**4.51 323**	P	**Pn**	**00 58 25.3 +1.0**
VLS	**Valsamata**	**4.51 323**	P	**Pn**	**00 58 25.3 +1.0**
VLS	**Valsamata**	**4.51 323**	P	**Pn**	**00 58 25.3 +1.0**
AOS	**Alonnisos**	**4.56 359**	P	**Pn**	**00 58 25.2 +0.3**
AOS	**Alonnisos**	**4.56 359**	P	**Pn**	**00 58 25.2 +0.3**
AOS	**Alonnisos**	**4.56 359**	P	**Pn**	**00 58 25.2 +0.3**
SKIA	**Skiathos**	**4.58 355**	P	**Pn**	**00 58 25.9 +0.7**
SKIA	**Skiathos**	**4.58 355**	P	**Pn**	**00 58 25.9 +0.7**
SKIA	**Skiathos**	**4.58 355**	P	**Pn**	**00 58 24.5 -0.6**
SKIA	comp=E,492μm,0.5s		AML	AML	00 59 15.2
SKIA	comp=N,382μm,0.6s		AML	AML	00 59 15.2
PDO	**Prodromos**	**4.59 331**	P	**Pn**	**00 58 28.4 +3.0**
PDO	**Prodromos**	**4.59 331**	P	**Pn**	**00 58 28.4 +3.0**
PDO	**Prodromos**	**4.59 331**	P	Pn	00 58 31.4 +6.0
AGG	**Agios Georgios**	**4.62 343**	P	**Pn**	**00 58 27.0 +1.4**
AGG	**Agios Georgios**	**4.62 343**	*e*P	**Pn**	**00 58 27.1 +1.4**
AGG	**Agios Georgios**	**4.62 343**	P	**Pn**	**00 58 27.0 +1.4**
AGG	**Agios Georgios**	**4.62 343**	*e*Pn	**Pn**	**00 58 27.1 +1.4**
AGG	**Agios Georgios**	**4.62 343**	P	**Pn**	**00 58 25.8 +0.1**
EVR	**Evrytania**	**4.66 338**	P	**Pn**	**00 58 28.7 +2.4**
EVR	**Evrytania**	**4.66 338**	P	**Pn**	**00 58 28.0 +1.7**
EVR	**Evrytania**	**4.66 338**	P	**Pn**	**00 58 28.7 +2.4**
EVR	**Evrytania**	**4.66 338**	P	**Pn**	**00 58 28.0 +1.7**
NEO	**Neokhori**	**4.74 353**	P	**Pn**	**00 58 28.1 +0.7**
NEO	**Neokhori**	**4.74 353**	P	**Pn**	**00 58 28.1 +0.7**
NEO	**Neokhori**	**4.74 353**	P	**Pn**	**00 58 28.1 +0.7**
NEO	**Neokhori**	**4.74 353**	P	**Pn**	**00 58 26.5 -0.9**
XOR	**Xorichti**	**4.80 352**	P	**Pn**	**00 58 29.1 +0.9**
XOR	**Xorichti**	**4.80 352**	P	**Pn**	**00 58 29.1 +0.9**
XOR	**Xorichti**	**4.80 352**	P	**Pn**	**00 58 29.1 +0.9**
KSL	**Kastellorizon**	**4.80 70**	P	**Pn**	**00 58 29.7 +1.4**
KSL	**Kastellorizon**	**4.80 70**	P	**Pn**	**00 58 29.7 +1.4**
KSL	**Kastellorizon**	**4.80 70**	P	**Pn**	**00 58 29.7 +1.4**
PRK	**Paraskevi**	**4.98 21**	P	**Pn**	**00 58 30.5 -0.1**
PRK	**Paraskevi**	**4.98 21**	P	**Pn**	**00 58 30.5 -0.1**
PRK	**Paraskevi**	**4.98 21**	P	**Pn**	**00 58 30.5 -0.1**
PRK	**Paraskevi**	**4.98 21**	P	**Pn**	**00 58 30.5 -0.1**
DSL	**Palaion Diasel**	**5.09 334**	P	**Pn**	**00 58 34.6 +2.4**
DSL	**Palaion Diasel**	**5.09 334**	P	**Pn**	**00 58 33.4 +1.1**
DSL	**Palaion Diasel**	**5.09 334**	P	**Pn**	**00 58 34.6 +2.4**
DSL	**Palaion Diasel**	**5.09 334**	P	**Pn**	**00 58 33.4 +1.1**
THL	**Klokotos Trika**	**5.21 343**	P	**Pn**	**00 58 35.0 +1.3**
THL	**Klokotos Trika**	**5.21 343**	P	**Pn**	**00 58 35.0 +1.3**
KULA	**Kula-Manisa**	**5.41 42**	P	**Pn**	**00 58 38.7 +2.1**
KULA	**Kula-Manisa**	**5.41 42**	P	**Pn**	**00 58 38.7 +2.1**
KULA	**Kula-Manisa**	**5.41 42**	P	**Pn**	**00 58 38.7 +2.1**
SWA2	baz=171	**5.48 167**	P	Pn	00 58 42.8 +5.3
SWA2	comp=E,500μm,0.4s,logA/T=6.1,baz=171		AMP		00 59 00.0
SWA2	baz=171		S	**Sn**	**00 59 43.5 +4.0**
LIT	**Litokhoron**	**5.62 348**	P	**Pn**	**00 58 40.6 +1.1**
LIT	**Litokhoron**	**5.62 348**	P	**Pn**	**00 58 40.6 +1.1**
LIT	**Litokhoron**	**5.62 348**	P	**Pn**	**00 58 40.6 +1.1**
LIT	**Litokhoron**	**5.62 348**	P	**Pn**	**00 58 40.6 +1.1**
JAN	**Janina**	**5.64 334**	P	**Pn**	**00 58 41.3 +1.5**
JAN	**Janina**	**5.64 334**	P	**Pn**	**00 58 41.3 +1.5**
JAN	**Janina**	**5.64 334**	P	**Pn**	**00 58 41.3 +1.5**
JAN	**Janina**	**5.64 334**	P	**Pn**	**00 58 41.3 +1.5**
KPRO	**Kipourio**	**5.75 339**	P	**Pn**	**00 58 42.3 +1.0**
KPRO	**Kipourio**	**5.75 339**	P	**Pn**	**00 58 42.3 +1.0**
SGD	**Sagiada**	**5.84 330**	P	**Pn**	**00 58 43.0 +0.5**
SGD	**Sagiada**	**5.84 330**	P	**Pn**	**00 58 43.0 +0.5**
KZN	**Kozani**	**5.97 343**	P	**Pn**	**00 58 46.1 +1.8**
KZN	**Kozani**	**5.97 343**	P	**Pn**	**00 58 46.1 +1.8**
KZN	**Kozani**	**5.97 343**	P	**Pn**	**00 58 46.1 +1.8**
KZN	**Kozani**	**5.97 343**	P	**Pn**	**00 58 46.1 +1.8**
PENT	**Pentalofos**	**6.04 339**	P	**Pn**	**00 58 47.0 +1.7**
PENT	**Pentalofos**	**6.04 339**	P	**Pn**	**00 58 47.0 +1.7**
KEK	**Kerkira**	**6.11 328**	P	**Pn**	**00 58 46.5 +0.3**
KEK	**Kerkira**	**6.11 328**	P	**Pn**	**00 58 46.5 +0.3**
KEK	**Kerkira**	**6.11 328**	P	**Pn**	**00 58 46.5 +0.3**
ISP	**Isparta**	**6.17 57**	Pn	**Pn**	**00 58 48.0 +1.0**
ISP	**Isparta**	**6.17 57**	*d i*P	**Pn**	**00 58 48.1 +1.0**
ISP	**Isparta**	**6.17 57**	Pn	**Pn**	**00 58 48.0 +1.0**
NEST	**Nestorio**	**6.26 339**	P	**Pn**	**00 58 49.6 +1.2**
NEST	**Nestorio**	**6.26 339**	P	**Pn**	**00 58 49.6 +1.2**
FNA	**Florina**	**6.52 342**	P	**Pn**	**00 58 52.2 +0.4**
FNA	**Florina**	**6.52 342**	P	**Pn**	**00 58 52.2 +0.4**
FNA	**Florina**	**6.52 342**	P	**Pn**	**00 58 52.2 +0.4**
FNA	**Florina**	**6.52 342**	P	**Pn**	**00 58 52.2 +0.4**
VAY	**Valandovo**	**6.80 351**	*i* Pn	**Pb**	**00 59 16.0 +0.4**
AKMC	**Akamas** baz=271	**6.85 84**	P	**Pn**	**00 58 56.6 +0.2**
AKMC	**Akamas**	**6.85 84**	P	**Pn**	**00 58 56.6 +0.2**
PPCY	**Paphos** baz=272	**6.86 85**	P	**Pn**	**00 58 56.6 +0.1**
PPCY	**Paphos**	**6.86 85**	P	**Pn**	**00 58 56.6 +0.1**
OHR	**Ohrid**	**6.98 340**	*i* Pn	**Pn**	**00 58 59.8 +1.6**
OHR	**Ohrid**	**6.98 340**	*i* Pn	**Pn**	**00 58 59.7 +1.6**
ALFC	**Alefka** baz=270	**7.08 83**	P	**Pn**	**00 58 59.4 -0.1**
ALFC			S	Sn	01 00 10.4 -8.5
ALFC	**Alefka**	**7.08 83**	P	**Pn**	**00 58 59.4 -0.1**
SZAC	**Souni** baz=274	**7.31 86**	P	**Pn**	**00 59 02.8 +0.1**
SZAC	**Souni**	**7.31 86**	P	**Pn**	**00 59 02.8 +0.1**
TIP	**Timpagrande**	**7.39 310**	*e*Pn	**Pn**	**00 59 05.2 +1.3**
TIP	**Timpagrande**	**7.39 310**	*e*Pn	**Pn**	**00 59 05.2 +1.3**
TIR	**Tirane**	**7.49 335**	*i* PG	**Pn**	**00 59 04.9 -0.2**
TIR			*i* SG	Sn	01 00 20.9 -8.0
TIR	**Tirane**	**7.49 335**	*e*P	**Pn**	**00 59 05.5 +0.4**
TIR			*e*		01 00 20.6
TIR	**Tirane**	**7.49 335**	*i* Pg	**Pn**	**00 59 04.9 -0.2**
TIR	**Tirane**	**7.49 335**	*e*Pn	**Pn**	**00 59 05.5 +0.4**
TIR			*e*Sn	Sn	01 00 20.6 -8.3
TIR	**Tirane**	**7.49 335**	*e*Pn	**Pn**	**00 59 05.5 +0.4**
TIR			*e*Sn	Sn	01 00 20.6 -8.3
CEL	**Celeste**	**7.49 302**	*e*Pn	**Pn**	**00 59 08.7 +3.5**
CEL			*e*Sn	**Sn**	**01 00 29.0 -0.1**
CEL	**Celeste**	**7.49 302**	*e*Pn	**Pn**	**00 59 08.7 +3.5**
CEL			*e*Sn	**Sn**	**01 00 29.0 -0.1**
AWBH	baz=149	**7.52 145**	P	**Pn**	**00 59 08.6 +3.0**
AWBH		**7.52 145**	P	**Pn**	**00 59 08.6 +3.0**
CSS	**Mathiatis** baz=272	**7.67 85**	P	**Pn**	**00 59 07.6 -0.1**
CSS			S	**Sn**	**01 00 25.4 -8.1**
CSS	**Mathiatis**	**7.67 85**	Pn	**Pn**	**00 59 07.6 -0.1**
CSS	**Mathiatis**	**7.67 85**	P	**Pn**	**00 59 07.6 -0.1**
CSS	**Mathiatis**	**7.67 85**	*e*Pn	**Pn**	**00 59 08.0 +0.3**
CSS			*e*Sn	**Sn**	**01 00 32.8 -0.7**
CSS	**Mathiatis**	**7.67 85**	*e*Pn	**Pn**	**00 59 08.0 +0.3**
CSS			*e*Sn	**Sn**	**01 00 32.8 -0.7**
TAR1	**Taranto**	**7.97 320**	*e*Pn	**Pn**	**00 59 12.4 +0.7**
VTS	**Vitosha**	**8.00 356**	⇑*i*P	**Pn**	**00 59 14.2 +1.9**
VTS	**Vitosha**	**8.00 356**	⇑P	**Pn**	**00 59 14.2 +1.9**
VTS	**Vitosha**	**8.00 356**	*e*Pn	**Pn**	**00 59 12.0 -0.3**
VTS	**Vitosha**	**8.00 356**	⇑*i*P	**Pn**	**00 59 14.2 +1.9**
VTS	**Vitosha**	**8.00 356**	*e*Pn	**Pn**	**00 59 12.0 -0.3**
KOT	**Kottamia** baz=126	**8.09 123**	P	**Pn**	**00 59 14.4 +1.0**
KOT	**Kottamia**	**8.09 123**	P	**Pn**	**00 59 14.4 +1.0**
GLL	**Jalalah** baz=128	**8.23 125**	P	**Pn**	**00 59 16.9 +1.6**
GLL	**Jalalah**	**8.23 125**	P	**Pn**	**00 59 16.9 +1.6**
ULC	**Ulcinj**	**8.25 334**	⇓*i*Pn	**Pn**	**00 59 14.7 -0.9**
ULC			*e*Sn	Sn	01 00 38.7 -9.0
ULC	**Ulcinj**	**8.25 334**	⇓*i*Pn	**Pn**	**00 59 14.7 -0.9**
HHAG	**Hagoal** baz=125	**8.27 122**	P	**Pn**	**00 59 16.9 +1.0**
HHAG	**Hagoal**	**8.27 122**	P	**Pn**	**00 59 16.9 +1.0**
VAE	**Valguarnera**	**8.29 293**	P	Pn	00 59 21.4 +5.2
VAE	comp=E,2.3nm,0.3s,baz=356,slow=5.9,SNR=5.9		S	**Sn**	**01 00 45.8 -2.9**
	comp=E,3.4nm,0.3s,baz=32,slow=1.5,SNR=3.8				
BARS	**Barje**	**8.38 349**	*e*Pn	**Pn**	**00 59 17.1 -0.3**
CUC	**Castrocucco**	**8.46 312**	*e*Pn	**Pn**	**00 59 19.6 +1.1**
CUC	**Castrocucco**	**8.46 312**	*e*Pn	**Pn**	**00 59 19.6 +1.1**
SG1	**Sgolgore (BA)**	**8.52 319**	*e*Pn	**Pn**	**00 59 21.0 +1.8**
PVY	**Plav**	**8.59 340**	⇓*i*Pn	**Pn**	**00 59 19.7 -0.6**
PVY			*e*Sn	Sn	01 00 47.3 -8.8
PVY	**Plav**	**8.59 340**	⇓*i*Pn	**Pn**	**00 59 19.7 -0.6**
BAI	**Bari**	**8.60 321**	*e*Pn	**Pn**	**00 59 22.7 +2.4**
NBNS	**Bani Suef** baz=135	**8.60 132**	P	**Pn**	**00 59 22.6 +2.1**
NBNS	**Bani Suef**	**8.60 132**	P	**Pn**	**00 59 22.6 +2.1**
PDG	**Podgorica**	**8.66 336**	⇓*i*Pn	**Pn**	**00 59 20.2 -0.9**
TTG	**Podgorica**	**8.66 336**	⇓*i*Pn	**Pn**	**00 59 20.2 -0.9**
TTG			*e*Sn	Sn	01 00 48.6 -9.0
BUM	**Brajici-Budva**	**8.67 334**	⇑*i*Pn	**Pn**	**00 59 20.0 -1.4**
BUM			*e*Sn	Sn	01 00 48.7 -9.4
BR231	**Keskin MP Arra**	**8.73 51**	*e*Pn	**Pn**	**00 59 23.3 +1.1**
BR231	**Keskin MP Arra**	**8.73 51**	*e*Pn	**Pn**	**00 59 23.3 +1.1**
ANTO	**Ankara**	**8.75 51**	*e*P	**Pn**	**00 59 24.2 +1.7**
ANTO	**Ankara**	**8.75 51**	*e*Pn	**Pn**	**00 59 24.2 +1.7**
ANTO	**Ankara**	**8.75 51**	*e*Pn	**Pn**	**00 59 24.2 +1.7**
BEY	**Berane**	**8.86 340**	*e*Pn	**Pn**	**00 59 23.1 -0.9**
IVA	**Berane**	**8.86 340**	*e*Pn	**Pn**	**00 59 23.1 -0.9**
IVA			*e*Sn	Sn	01 00 53.6 -9.2
CEME	**Cevo**	**8.88 335**	⇑*i*Pn	**Pn**	**00 59 22.7 -1.5**
CEME			*e*Sn	Sn	01 00 53.6 -10
CDT	**Castel del Mon**	**8.90 319**	*e*Pn	**Pn**	**00 59 25.2 +0.7**
RSH	baz=113	**8.94 111**	P	**Pn**	**00 59 25.1 0.0**
RSH		**8.94 111**	P	**Pn**	**00 59 25.1 0.0**
HCY	**Herceg Novi**	**8.95 333**	⇓*i*Pn	**Pn**	**00 59 23.8 -1.3**
HCY			*e*Sn	Sn	01 00 55.2 -10
ZAF	**Zafarana** baz=126	**8.98 124**	P	**Pn**	**00 59 27.3 +1.7**
ZAF	**Zafarana**	**8.98 124**	P	**Pn**	**00 59 27.3 +1.7**
NKME	**Niksic**	**9.06 336**	⇑*i*Pn	**Pn**	**00 59 25.6 -1.1**
NKME			*e*Sn	Sn	01 00 58.3 -9.3
NKY	**Niksic**	**9.09 336**	⇑*i*Pn	**Pn**	**00 59 25.8 -1.3**
NKY			*e*Sn	Sn	01 00 58.8 -10
BOVS	**Bovan**	**9.20 349**	*e*Pn	**Pn**	**00 59 30.4 +1.9**
BR131	**Keskin Array S**	**9.23 54**	*e*Pn	**Pn**	**00 59 30.6 +1.5**
BR131	**Keskin Array S**	**9.23 54**	*e*Pn	**Pn**	**00 59 30.6 +1.5**
BRTR	**Keskin Array B**	**9.23 54**	P	**Pn**	**00 59 30.6 +1.5**
BRTR	comp=E,0.8nm,0.3s,baz=226,slow=14,SNR=22		S	**Sn**	**01 01 07.1 -4.7**
	comp=E,0.1nm,0.3s,baz=247,slow=5.5,SNR=3.6				
BRY	**Bratogost**	**9.32 334**	⇑*i*Pn	**Pn**	**00 59 29.8 -0.6**
BRY			*e*Sn	Sn	01 01 04.2 -10
BRY	**Bratogost**	**9.32 334**	⇑*i*Pn	**Pn**	**00 59 29.8 -0.6**
OFRI	**‘Ofer**	**9.36 99**	Pn	**Pn**	**00 59 30.2 -0.7**
OFRI	**‘Ofer**	**9.36 99**	Pn	**Pn**	**00 59 30.2 -0.7**
PLE	**Pljevlja**	**9.43 339**	⇑*i*Pn	**Pn**	**00 59 30.5 -1.3**
PLE			*e*Sn	Sn	01 01 07.2 -10
UPM	**Unac-Piva**	**9.46 337**	⇓*i*Pn	**Pn**	**00 59 31.6 -0.8**
UPM			*e*Sn	Sn	01 01 07.8 -10
UPM	**Unac-Piva**	**9.46 337**	⇓*i*Pn	**Pn**	**00 59 31.6 -0.8**
KZIT	**Kziot**	**9.49 110**	Pn	**Pn**	**00 59 32.3 -0.3**
KZIT	**Kziot**	**9.49 110**	Pn	**Pn**	**00 59 32.3 -0.3**
SLTI	**Sal’it**	**9.51 101**	Pn	**Pn**	**00 59 31.0 -1.9**
SLTI			Sn	Sn	01 01 10.5 -8.2
SLTI	**Sal’it**	**9.51 101**	Pn	**Pn**	**00 59 31.0 -1.9**
MS1	**Monte Sant’Ang**	**9.52 321**	*e*Pn	**Pn**	**00 59 36.8 +3.8**
MMC7	**Mount Meron ar**	**9.60 96**	Pn	**Pn**	**00 59 34.0 -0.1**
MMC7	**Mount Meron ar**	**9.60 96**	Pn	**Pn**	**00 59 34.0 -0.1**
MMA0B	**Mount Meron ar**	**9.61 96**	Pn	**Pn**	**00 59 33.6 -0.7**
MMA0B	**Mount Meron ar**	**9.61 96**	Pn	**Pn**	**00 59 33.6 -0.7**
MMAI	**Mount Meron Ar**	**9.61 96**	P	**Pn**	**00 59 33.5 -0.8**
MMAI	comp=E,6.8nm,0.3s,baz=296,slow=12,SNR=21		S	**Sn**	**01 01 13.5 -7.7**
	comp=E,18nm,0.3s,baz=304,slow=20,SNR=11				
GRUS	**Gruza**	**9.62 346**	*e*Pn	**Pn**	**00 59 33.5 -0.8**
MMLI	**Mount Malkishu**	**9.77 100**	Pn	**Pn**	**00 59 35.3 -1.1**
MMLI			Sn	**Sn**	**01 01 16.8 -8.1**
MMLI	**Mount Malkishu**	**9.77 100**	Pn	**Pn**	**00 59 35.3 -1.1**
KSDI	**Kefar Szold**	**9.78 95**	Pn	**Pn**	**00 59 36.0 -0.6**
KSDI	**Kefar Szold**	**9.78 95**	Pn	**Pn**	**00 59 36.0 -0.6**
GRB	**Gharib** baz=130	**9.79 128**	P	**Pn**	**00 59 38.3 +1.5**
GRB	**Gharib**	**9.79 128**	P	**Pn**	**00 59 38.3 +1.5**
YTIR	**Yattir**	**9.87 106**	Pn	**Pn**	**00 59 38.1 +0.3**
YTIR	**Yattir**	**9.87 106**	Pn	**Pn**	**00 59 38.1 +0.3**
HMDT	**Nahal Hemdat**	**9.90 100**	Pn	**Pn**	**00 59 37.5 -0.7**
HMDT	**Nahal Hemdat**	**9.90 100**	Pn	**Pn**	**00 59 37.5 -0.7**
KSHT	**Keshet**	**9.95 96**	Pn	**Pn**	**00 59 38.5 -0.4**
KSHT	**Keshet**	**9.95 96**	Pn	**Pn**	**00 59 38.5 -0.4**
KUBS	**Kucevo**	**9.96 350**	*e*Pn	**Pn**	**00 59 41.3 +2.3**
DSI	**Dead Sea**	**10.00 104**	Pn	**Pn**	**00 59 39.3 -0.3**
DSI	**Dead Sea**	**10.00 104**	Pn	**Pn**	**00 59 39.3 -0.3**
MZBI	**Masada**	**10.08 106**	Pn	**Pn**	**00 59 40.5 -0.1**
MZBI			Sn	**Sn**	**01 01 24.8 -7.7**
MZBI	**Masada**	**10.08 106**	Pn	**Pn**	**00 59 40.5 -0.1**
BIDA	**Albida**	**10.13 84**	*e*P	**Pn**	**00 59 40.1 -1.3**
BIDA	comp=E,152nm,0.6s		AML	AML	01 01 27.2
BIDA	comp=N,165nm,0.4s		AML	AML	01 01 31.4
PRNI	**Paran**	**10.20 112**	Pn	**Pn**	**00 59 43.0 +0.6**
PRNI			Sn	**Sn**	**01 01 28.5 -7.2**
PRNI	**Paran**	**10.20 112**	Pn	**Pn**	**00 59 43.0 +0.6**
HAWK	**Haweek**	**10.22 87**	*e*P	**Pn**	**00 59 42.2 -0.5**
ZFRI	**Zfri**	**10.24 110**	Pn	**Pn**	**00 59 43.0 +0.1**
ZFRI			Sn	**Sn**	**01 01 28.8 -7.8**
ZFRI	**Zfri**	**10.24 110**	Pn	**Pn**	**00 59 43.0 +0.1**
MARH	**Ras Al Marh**	**10.33 90**	*e*P	**Pn**	**00 59 44.1 -0.3**
MARH			*e*S	Sn	01 01 28.1 -11
MARH	comp=E,62nm,0.5s		AML	AML	01 01 35.6
MARH	comp=N,38nm,0.3s		AML	AML	01 01 35.6
HRFI	**Mount Harif**	**10.38 113**	Pn	**Pn**	**00 59 45.9 +1.1**
HRFI	**Mount Harif**	**10.38 113**	Pn	**Pn**	**00 59 45.9 +1.1**
MBRI	**Mt Berech**	**10.40 114**	Pn	**Pn**	**00 59 45.5 +0.3**
MBRI	**Mt Berech**	**10.40 114**	Pn	**Pn**	**00 59 45.5 +0.3**
EIL	**Elat**	**10.49 115**	P	**Pn**	**00 59 47.1 +0.7**
EIL	comp=N,4.1nm,0.3s,baz=350,slow=4.1,SNR=66		S	Sn	01 01 33.4 -9.4
	comp=N,2.9nm,0.3s,baz=353,slow=17,SNR=3.6				
EIL	**Elat**	**10.49 115**	Pn	**Pn**	**00 59 47.0 +0.7**
DRWC	**Darouich**	**10.50 75**	*e*P	**Pn**	**00 59 46.1 -0.4**
DRWC			*e*S	Sn	01 01 30.7 -12
DRWC	comp=N,29nm,0.5s		AML	AML	01 01 42.4
DRWC	comp=E,11nm,0.3s		AML	AML	01 01 43.0
ARR	**Arges**	**10.76 2**	⇑*i*P	**Pn**	**00 59 51.8 +1.8**
ARR	**Arges**	**10.76 2**	⇑*i*P	**Pn**	**00 59 51.8 +1.8**
LOT	**Lotru**	**10.84 359**	⇓*i*P	**Pn**	**00 59 53.0 +1.9**
LOT	**Lotru**	**10.84 359**	⇓*i*P	**Pn**	**00 59 53.0 +1.9**
VOIR		**10.85 4**	⇑*i*P	**Pn**	**00 59 52.1 +0.8**
VOIR		**10.85 4**	⇑P	**Pn**	**00 59 52.1 +0.8**
VOIR		**10.85 4**	⇑*i*P	**Pn**	**00 59 52.1 +0.8**
MLR	**Muntele Rosu**	**10.98 7**	P	**Pn**	**00 59 52.6 -0.4**
MLR	comp=E,0.1nm,0.3s,baz=179,slow=7.6,SNR=9.3		LR	LR	01 04 26.6
	comp=E,20nm,20.9s,baz=188,slow=40				
MLR	**Muntele Rosu**	**10.98 7**	⇑*i*P	**Pn**	**00 59 53.1 +0.1**
MLR	**Muntele Rosu**	**10.98 7**	⇑P	**Pn**	**00 59 53.1 +0.1**
MLR	**Muntele Rosu**	**10.98 7**	P	**Pn**	**00 59 53.1 +0.1**
MLR	**Muntele Rosu**	**10.98 7**	*e*Pn	**Pn**	**00 59 53.0 0.0**
ROOS	**tl_alroos**	**10.98 88**	*e*P	**Pn**	**00 59 53.2 +0.2**
FGSL	**Fruska Gora**	**11.02 344**	*e*Pn	**Pn**	**00 59 52.7 -0.9**
CFR	**Carcaliu**	**11.03 15**	⇑*i*P	Pn	00 59 45.1 -8.4
CFR	**Carcaliu**	**11.03 15**	⇑P	Pn	00 59 45.1 -8.4
CFR	**Carcaliu**	**11.03 15**	P	Pn	00 59 45.1 -8.4
ASF	**Jabal al Asfar**	**11.04 99**	P	**Pn**	**00 59 53.5 -0.4**
ASF	comp=E,0.9nm,0.3s,baz=22,slow=1.1,SNR=11		S	**Sn**	**01 01 49.9 -6.4**
	comp=E,0.7nm,0.3s,baz=210,slow=18,SNR=3.7				
DOPR	**Dopca**	**11.40 5**	⇓*i*P	**Pn**	**01 00 00.5 +1.8**
DOPR	**Dopca**	**11.40 5**	⇓*i*P	**Pn**	**01 00 00.5 +1.8**
PLOR	**Plostina**	**11.41 9**	⇑*i*P	**Pn**	**01 00 02.6 +3.7**
PLOR	**Plostina**	**11.41 9**	⇑P	**Pn**	**01 00 02.6 +3.7**
PLOR	**Plostina**	**11.41 9**	P	**Pn**	**01 00 02.6 +3.7**

VRI Vrincioaia 11.44 10⇑iP Pn 01 00 03.5 +4.2
VRI Vrincioaia 11.44 10 ⇑P Pn 01 00 03.5 +4.2
VRI Vrincioaia 11.44 10 P Pn 01 00 03.5 +4.2
UDBI Udbina 11.77 330 ePn Pn 01 00 03.6 -0.3
UDBI Sn Sn 01 02 01.4 -13
KEST Kesra 12.06 280 P Pn 01 00 09.5 +1.7
comp=E,0.1nm,0.3s,baz=297,slow=4.8,SNR=3.6
KEST S Sn 01 02 16.7 -4.5
comp=E,0.1nm,0.3s,baz=242,slow=17,SNR=2.8
TESR Tescani 12.06 9⇓iP Pn 01 00 10.8 +3.0
TESR Tescani 12.06 9⇓iP Pn 01 00 10.8 +3.0
NVLJ Novalja 12.19 327 ePn Pn 01 00 08.1 -1.3
NVLJ Sn Sn 01 02 12.5 -12
BURAR Bucovina Array 13.03 4⇑iP Pn 01 00 22.3 +1.2
BURAR Bucovina Array 13.03 4 ⇑P Pn 01 00 22.3 +1.2
BURAR Bucovina Array 13.03 4⇑iP Pn 01 00 22.3 +1.2
BUR08 Bucovina Ar. S 13.06 4 ePn Pn 01 00 21.0 -0.4
BUR08 Bucovina Ar. S 13.06 4 ePn Pn 01 00 21.1 -0.4
GOLS Golise 13.06 333 i Pn Pn 01 00 21.3 -0.1
GOLS i Sn Sn 01 02 33.2 -12
GROS Grobnik 13.49 334 i Pn Pn 01 00 25.9 -1.4
SOKA Soboth 13.85 333 ePn Pn 01 00 30.7 -1.5
comp=E,1.4nm,0.3s
SOKA eSn Sn 01 02 50.4 -14
comp=E,3.3nm,0.5s
OBKA Obir 13.89 332 ePn Pn 01 00 32.1 -0.6
comp=E,0.7nm,0.2s
OBKA eSn Sn 01 02 54.2 -12
comp=E,8.5nm,0.3s
UZH Uzhgorod 14.08 355 eP Pn 01 00 37.4 +2.2
UZH eS Sn 01 03 10.2 0.0
UZH Uzhgorod 14.08 355 eP Pn 01 00 37.4 +2.2
UZH eS Sn 01 03 10.2 0.0
ARSA Arzberg 14.16 336 i Pn Pn 01 00 34.6 -1.8
comp=E,0.9nm,0.3s
ARSA eSn Sn 01 02 58.0 -14
comp=E,1.4nm,0.4s
MYKA Terra Mystica 14.35 330 eSn Sn 01 03 03.1 -14
comp=E,5.5nm,0.7s
KOLS Kolonicke sedl 14.38 355 eP Pn 01 00 40.9 +1.6
KOLS Kolonicke sedl 14.38 355 eP Pn 01 00 40.9 +1.6
VYHS Vyhne 14.41 346 eP Pn 01 00 37.3 -2.4
VYHS Vyhne 14.41 346 eP Pn 01 00 37.3 -2.4
CONA Conrad Observa 14.64 338 i Sn Sn 01 03 11.3 -13
comp=E,1.5nm,0.3s
ABTA Abfaltersbach 14.92 328 ePn Pn 01 00 45.8 -1.0
comp=E,1.4nm,0.3s
ABTA eSn Sn 01 03 16.5 -15
comp=E,6.3nm,0.6s
STHS Stebnicka Huta 14.95 353 eP Pn 01 00 45.4 -1.6
STHS Stebnicka Huta 14.95 353 eP Pn 01 00 45.4 -1.6
MOA Molln 15.11 334 ePn Pn 01 00 49.5 +0.2
comp=E,1.1nm,0.3s
MOA eSn Sn 01 03 24.0 -12
comp=E,5.1nm,0.6s
VRAC Vranov 15.69 342 P Pn 01 00 55.3 -1.4
comp=E,0.1nm,0.3s,baz=167,slow=14,SNR=1.9
VRAC Vranov 15.69 342 ⇓P P 01 01 01.2 +0.8
VRAC Vranov 15.69 342 P P 01 01 01.2 +0.8
WTTA Wattenberg 15.71 327 eSn Sn 01 03 37.4 -13
comp=E,4.9nm,0.4s
WATA Walderalm 15.79 327 i Pn Pn 01 00 59.7 +1.5
comp=E,3.5nm,0.4s
FUORN Ofenpass-Fuorn 15.88 323 ePn Pn 01 00 59.4 -0.1
comp=E,8.3nm,0.6s
FUORN Ofenpass-Fuorn 15.88 323 ePn Pn 01 00 59.4 -0.1
comp=E,8.3nm,0.6s
MORC Moravsky Berou 15.89 345 ⇑P P 01 01 03.7 +0.9
MORC Moravsky Berou 15.89 345 ePn Pn 01 00 58.9 -0.5
comp=E,14nm,0.8s
MORC Moravsky Berou 15.89 345 P P 01 01 03.7 +0.9
MORC Moravsky Berou 15.89 345 ePn Pn 01 00 58.9 -0.5
comp=E,14nm,0.8s
FETA Feichten 15.94 325 eP P 01 01 05.2 +1.8
comp=E,1.7nm,0.4s
FETA i Sn Sn 01 03 48.5 -7.3
comp=E,1.5nm,0.5s
MOTA Moosalm 16.01 327 i Pn Pn 01 01 02.5 +1.6
comp=E,1.8nm,0.4s
MOTA i Sn Sn 01 03 49.2 -8.2
comp=E,2.7nm,0.4s
GEA0 GERESS Array S 16.15 335 ePn Pn 01 01 02.6 -0.1
GEA0 GERESS Array S 16.15 335 ePn Pn 01 01 02.6 -0.1
GEC2 GERESS Array S 16.16 335 eP Pn 01 01 03.8 +1.0
GEC2 pmax pmax
comp=Z,5.0nm,0.7s
GEC2 GERESS Array S 16.16 335 ePn Pn 01 01 03.8 +1.0
comp=Z,4.9nm,0.7s
GEC2 GERESS Array S 16.16 335 ePn Pn 01 01 03.8 +1.0
comp=Z,4.9nm,0.7s
GERES GERESS Array B 16.16 335 P Pn 01 01 03.4 +0.6
comp=Z,0.5nm,0.3s,baz=156,slow=15,SNR=20
GERES S Sn 01 03 49.1 -12
comp=Z,0.4nm,0.3s,baz=154,slow=23,SNR=6.0
GERES LR LR 01 08 11.9
comp=Z,31nm,18.1s,baz=134,slow=41
DAVOX Davos/Dischmat 16.18 323 P P 01 01 08.2 +2.0
comp=Z,0.2nm,0.3s,baz=133,slow=19,SNR=3.0
DAVOX S Sn 01 03 52.7 -9.0
comp=Z,0.3nm,0.3s,baz=330,slow=20,SNR=3.5
RETA Reutte 16.27 326 eP P 01 01 08.8 +1.8
comp=Z,2.4nm,0.5s
RETA eSn Sn 01 03 52.9 -11
comp=Z,1.5nm,0.2s
KHC Kasperske Hory 16.44 335 eP P 01 01 10.4 +1.5
KHC epP sP 01 01 20.2 -1.2
KHC ex x 01 03 56.5
KHC Kasperske Hory 16.44 335 eP P 01 01 10.4 +1.5
KHC Kasperske Hory 16.44 335 ePn Pn 01 01 07.7 +1.3
comp=Z,2.7nm,1.0s
KHC Kasperske Hory 16.44 335 eP P 01 01 10.4 +1.5
KHC Kasperske Hory 16.44 335 ePn Pn 01 01 07.7 +1.3
comp=Z,2.7nm,1.0s
AK11 Malin Array Si 16.50 12 ePn Pn 01 01 07.4 +0.3
AK11 Malin Array Si 16.50 12 ePn Pn 01 01 07.4 +0.3
KIEV Kiev 16.52 12 eP Pn 01 01 07.6 +0.3
KIEV pmax pmax
comp=Z,10.0nm,0.5s
KIEV Kiev 16.52 12 ePn Pn 01 01 07.6 +0.3
comp=Z,9.9nm,0.5s
KIEV Kiev 16.52 12 ePn Pn 01 01 07.6 +0.3
comp=Z,9.9nm,0.5s
AKASG Malin Array Be 16.53 12 P Pn 01 01 07.8 +0.4
comp=Z,8.2nm,0.3s,baz=202,slow=10,SNR=35
DAVA Damuels 16.54 324 ePn Pn 01 01 07.1 -0.6
comp=Z,3.7nm,0.5s
DAVA Sn Sn 01 04 00.1 -10
comp=Z,2.2nm,0.3s
DPC Dobruska-Polom 16.71 343 eP P 01 01 12.4 +0.5
DPC epP sP 01 01 22.4 -2.0
DPC Dobruska-Polom 16.71 343 eP P 01 01 12.4 +0.5
DPC Dobruska-Polom 16.71 343 eP P 01 01 12.4 +0.5
PRU Pruhonice 16.88 339 eP P 01 01 14.5 +0.9
PRU epP sP 01 01 23.0 -3.2
PRU Pruhonice 16.88 339 eP P 01 01 14.5 +0.9
PRU Pruhonice 16.88 339 eP P 01 01 14.5 +0.9
NEY Neytrino 16.90 54c iP P 01 01 13.8 -0.3
NEY Neytrino 16.90 54 i P P 01 01 13.8 -0.3
KIV Kislovodsk 17.18 52d iP P 01 01 18.1 +1.0
KIV pmax pmax
comp=Z,22nm,0.8s
KIV MLR MLR
comp=Z,23nm,16.0s
KIV Kislovodsk 17.18 52 ePn Pn 01 01 16.9 +1.2
comp=Z,21nm,0.7s
KIV Kislovodsk 17.18 52 i P P 01 01 18.1 +1.0
comp=Z,23nm,16.0s
KIV Kislovodsk 17.18 52 ePn Pn 01 01 16.9 +1.2
comp=Z,21nm,0.7s
KVAR Kislovodsk Arr 17.19 52 P Pn 01 01 16.5 +0.6
baz=1.0,slow=2.4,SNR=13
KVAR LR LR 01 08 24.6
comp=Z,33nm,19.1s,baz=194,slow=39
KBZ Khabaz 17.22 52 P P 01 01 17.5 +0.2
comp=Z,0.5nm,0.3s,baz=263,slow=11,SNR=20
KBZ LR LR 01 10 02.0
comp=Z,33nm,19.5s,baz=284,slow=45
GNI Garni 17.37 65 P P 01 01 20.1 +0.8
comp=Z,0.5nm,0.3s,baz=18,slow=6.4,SNR=3.1
GNI LR LR 01 09 29.6
comp=Z,41nm,20.8s,baz=269,slow=42
BRG Berggiesshubel 17.84 339 eP P 01 01 36.3 +12
comp=Z,1.4nm,0.6s
BRG e 01 01 44.1
comp=Z,3.8nm,0.9s
CLL Collm 18.50 338 eP P 01 01 32.0 +0.5
CLL Collm 18.50 338 eP P 01 01 32.0 +0.5
SUW Suwalki 19.42 359 eP P 01 01 39.5 -2.0
SUW Suwalki 19.42 359 eP P 01 01 39.5 -2.0
VSR Storozhevoye 19.91 29 eP P 01 01 44.5 -2.4
VSR pmax pmax
comp=Z,5.0nm,0.5s
VSR Storozhevoye 19.91 29 eP P 01 01 44.5 -2.4
comp=Z,5.0nm,0.5s
VRH Novokhopyorsk 20.97 32 eP P 01 01 58.3 -0.1
VRH pmax pmax
comp=Z,9.0nm,0.6s
VRH Novokhopyorsk 20.97 32 eP P 01 01 58.3 -0.1
comp=Z,9.0nm,0.6s
BSD Bornholm Skovb 21.47 346 i P P 01 02 01.7 -1.9
BSD pmax pmax
comp=Z,39nm,0.9s
BSD Bornholm Skovb 21.47 346 i P P 01 02 01.7 -1.9
comp=Z,39nm,0.9s
OBN Obninsk 22.29 19 P P 01 02 12.0 -0.5
comp=Z,8.6nm,0.3s,baz=321,slow=5.4,SNR=3.8
OBN Obninsk 22.29 19⇓eP P 01 02 12.3 -0.2
OBN PPP PPP 01 02 43.0
OBN pmax pmax
comp=Z,5.0nm,0.5s
OBN MLR MLR
comp=Z,25nm,17.0s
OBN Obninsk 22.29 19 eP P 01 02 12.3 -0.2
comp=Z,5.0nm,0.5s
ESDC Sonseca Array 22.82 291 P P 01 02 20.6 +2.2
comp=Z,0.9nm,0.5s,baz=80,slow=9.7,SNR=14
MDT Midelt 23.85 274 P P 01 02 32.1 +3.4
comp=Z,1.2nm,0.8s,baz=104,slow=4.6,SNR=4.2
MDT LR LR 01 14 02.2
comp=Z,40nm,18.0s,baz=112,slow=42
VSU Vasula 23.94 4 eP P 01 02 27.3 -1.8
VSU pmax pmax
comp=Z,15nm,0.9s
VSU Vasula 23.94 4 eP P 01 02 27.3 -1.8
comp=Z,15nm,0.9s
FINES FINESS Array B 26.89 2 P P 01 02 54.1 -1.7
comp=Z,3.4nm,0.6s,baz=164,slow=11,SNR=21
FINES PcP PcP 01 06 18.5 +1.2
comp=Z,0.6nm,0.5s,baz=153,slow=3.2,SNR=4.9
FINES FINESS Array B 26.89 2 P P 01 02 54.2 -1.7
FINES 01 06 18.5
FINES pmax pmax
comp=Z,4.0nm,0.6s
FINES pmax pmax
comp=Z,1.0nm,0.5s
FIA1 FINESS Array S 26.89 2 eP P 01 02 53.9 -1.9
NAO01 NORSAR Array S 27.59 346 eP P 01 03 02.3 +0.1
NAO01 NORSAR Array S 27.59 346 eP P 01 03 02.3 +0.1
GEYT Alibeck 27.61 73 P P 01 03 02.5 -0.1
comp=Z,0.8nm,0.5s,baz=258,slow=14,SNR=3.0
NB2 NORSAR Subarra 27.71 347 P P 01 03 03.0 -0.3
comp=Z,2.4nm,0.5s,baz=152,slow=11
NB2 NORSAR Subarra 27.71 347 P P 01 03 03.0 -0.3
comp=Z,2.4nm,0.5s,SNR=1.5
NOA NORSAR Array B 27.71 347 P P 01 03 02.8 -0.5
comp=Z,1.6nm,0.5s,baz=150,slow=8.9,SNR=17
NOA LR LR 01 14 51.0
comp=Z,13nm,20.8s,baz=45,slow=38
EKA Eskdalemuir Ar 27.97 326 P P 01 03 07.4 +1.8
comp=Z,0.2nm,0.3s,baz=110,slow=12,SNR=3.3
KLMR Klimovskoe 28.11 16 eP P 01 03 03.5 -3.3
KLMR pmax pmax
comp=Z,7.0nm,0.6s
AKTK Aktyubinsk 29.32 47 P P 01 03 17.1 -0.6
comp=Z,4.0nm,0.5s
AKTO Aktyubinsk 29.32 47 P P 01 03 17.1 -0.6
comp=Z,4.1nm,0.5s,baz=255,slow=9.4,SNR=16
TOA0 Torodi Ar. Sit 29.41 229 eP P 01 03 23.7 +5.0
TORD Torodi Ar. Bea 29.41 229 P P 01 03 23.5 +4.7
comp=Z,1.1nm,0.4s,baz=35,slow=8.4,SNR=36
AB31 Akbulak array 30.15 50 eP P 01 03 24.6 -0.4
AB31 Akbulak array 30.15 50 eP P 01 03 24.6 -0.4
ABKAR Akbulak array 30.15 50 eP P 01 03 24.7 -0.4
ABKAR Akbulak array 30.15 50 eP P 01 03 24.7 -0.4
ARU Arti 32.06 36d iP P 01 03 41.7 -0.1
ARU 01 04 46.8
ARU S S 01 08 54.4 +2.9
ARU SS SnSn 01 10 42.9 +0.4
ARU pmax pmax
comp=Z,6.0nm,0.6s
ARU Arti 32.06 36 i P P 01 03 41.7 -0.1
comp=Z,6.0nm,0.6s
ARU S S 01 08 54.4 +2.9
ARU Arti 32.06 36 eP P 01 03 41.5 -0.3
comp=Z,6.9nm,0.7s
SVE Sverdlovsk 33.26 37 eP P 01 03 51.8 -0.5
SVE pmax pmax
comp=Z,21nm,0.5s
SVE Sverdlovsk 33.26 37 eP P 01 03 51.8 -0.5
comp=Z,21nm,0.5s
ARCES ARCESS Array B 35.00 1 P P 01 04 05.4 -1.8
comp=Z,2.7nm,0.6s,baz=191,slow=11,SNR=24
ZRNK Zerenda 36.58 46 eP P 01 04 21.0 +0.1
ZRNK pmax pmax
comp=Z,15nm,0.5s
ZRNK Zerenda 36.58 46 eP P 01 04 21.0 +0.1
comp=Z,15nm,0.5s
ZRNK Zerenda 36.58 46 eP P 01 04 21.0 +0.1
comp=Z,15nm,0.5s
KK31 Karatay Array 36.80 62 i P P 01 04 23.6 +0.7
KK31 pmax pmax
comp=Z,11nm,0.7s
KK31 Karatay Array 36.80 62 i P P 01 04 23.6 +0.7
comp=Z,11nm,0.7s
KKAR Karatay Array 36.80 62 eP P 01 04 24.1 +1.1
KKAR Karatay Array 36.80 62 eP P 01 04 24.1 +1.1
KKAR Karatay Array 36.80 62 eP P 01 04 24.1 +1.1
BRVK Borovoye 37.36 46 eP P 01 04 28.0 +0.5
BRVK pmax pmax
comp=Z,10.0nm,0.6s
BRVK Borovoye 37.36 46 eP P 01 04 28.0 +0.5
comp=Z,10.0nm,0.6s
CHKZ Chkalovo 37.67 45 P P 01 04 30.1 0.0
CHKZ pmax pmax
comp=Z,11nm,0.5s
CHKZ Chkalovo 37.67 45 P P 01 04 30.1 0.0
comp=Z,11nm,0.5s
VOSK Vostochnaya 37.71 47 P P 01 04 30.2 -0.4
VOSK pmax pmax
comp=Z,10.0nm,0.9s
VOSK Vostochnaya 37.71 47 eP P 01 04 30.4 -0.1
comp=Z,8.9nm,0.8s
VOSK Vostochnaya 37.71 47 eP P 01 04 30.4 -0.1
comp=Z,8.9nm,0.8s
OTUK Ortayu 38.09 54 P P 01 04 34.0 +0.2
OTUK pmax pmax
comp=Z,4.0nm,0.6s
OTUK Ortayu 38.09 54 P P 01 04 34.0 +0.2
comp=Z,4.0nm,0.6s
MNAS Manas 38.30 63 P P 01 04 37.9 +2.1
MNAS pmax pmax
comp=Z,2.0nm,0.8s
MNAS Manas 38.30 63 P P 01 04 37.9 +2.1
comp=Z,2.0nm,0.8s
DBIC Dimbokro 38.48 230 P P 01 04 41.5 +4.1
comp=Z,4.0nm,0.8s,baz=42,slow=8.6,SNR=4.2
EKS2 Erkin-Say 39.22 63 eP P 01 04 44.6 +1.1
EKS2 pmax pmax
comp=Z,11nm,0.6s
EKS2 Erkin-Say 39.22 63 eP P 01 04 44.6 +1.1
comp=Z,11nm,0.6s
EKS2 Erkin-Say 39.22 63 eP P 01 04 44.6 +1.1
comp=Z,11nm,0.6s
AAK Ala-Archa 39.75 63 P P 01 04 49.8 +1.9
comp=Z,4.7nm,0.4s,baz=226,slow=5.0,SNR=7.4
AAK Ala-Archa 39.75 63 eP P 01 04 49.9 +1.9
AAK pmax pmax
comp=Z,7.0nm,0.6s
AAK Ala-Archa 39.75 63 eP P 01 04 49.9 +1.9
comp=Z,7.1nm,0.6s
AAK Ala-Archa 39.75 63 eP P 01 04 49.9 +1.9
comp=Z,7.1nm,0.6s
TKM2 Tokmak 2 40.53 62 P P 01 04 55.3 +0.8
TKM2 pmax pmax
comp=Z,6.0nm,0.7s
TKM2 Tokmak 2 40.53 62 P P 01 04 55.3 +0.8
comp=Z,6.0nm,0.7s
TKM2 Tokmak 2 40.53 62 eP P 01 04 54.1 -0.4
comp=Z,7.4nm,0.8s
KURBB Kurchatov Arra 42.20 51 P P 01 05 08.2 +0.3
comp=Z,13nm,0.4s,baz=272,slow=8.6,SNR=107
KURK Kurchatov 42.26 50 eP P 01 05 08.3 0.0
KURK pmax pmax
comp=Z,37nm,0.7s
KURK Kurchatov 42.26 50 eP P 01 05 08.4 +0.1
KURK Kurchatov 42.26 50 eP P 01 05 08.4 +0.1
PDGK Podgornoye 43.31 61 P P 01 05 17.6 +0.7
PDGK pmax pmax
comp=Z,7.0nm,0.6s
PDGK Podgornoye 43.31 61 P P 01 05 17.6 +0.7
comp=Z,7.0nm,0.6s
MAKZ Makanchi 44.65 56 eP P 01 05 28.5 +0.8
MAKZ pmax pmax
comp=Z,4.0nm,0.7s
MAKZ Makanchi 44.65 56 eP P 01 05 28.5 +0.8
comp=Z,3.6nm,0.7s
MAKZ Makanchi 44.65 56 eP P 01 05 28.5 +0.8
comp=Z,3.6nm,0.7s
MK31 Makanchi Array 44.87 56 eP P 01 05 29.8 +0.4
MK31 pmax pmax
comp=Z,2.0nm,0.3s
MK31 Makanchi Array 44.87 56 eP P 01 05 30.1 +0.7
MK31 Makanchi Array 44.87 56 eP P 01 05 30.1 +0.7
MKAR Makanchi Array 44.87 56 P P 01 05 30.2 +0.8
comp=Z,5.5nm,0.3s,baz=270,slow=8.5,SNR=153
MKAR LR LR 01 27 03.2
comp=Z,17nm,18.2s,baz=320,slow=40
MKAR Makanchi Array 44.87 56 eP P 01 05 30.1 +0.7
MKAR Makanchi Array 44.87 56 eP P 01 05 30.1 +0.7
MK01 Makanchi Array 44.88 56 eP P 01 05 29.9 +0.4
MK01 Makanchi Array 44.88 56 eP P 01 05 29.9 +0.4
NVS Novosibirsk 45.15 45⇑iP P 01 05 32.3 +0.9
NVS pmax pmax
comp=Z,18nm,0.4s
NVS pmax pmax
comp=N,5.0nm,0.5s
NVS pmax pmax
comp=E,11nm,0.7s
NVS Novosibirsk 45.15 45 i P P 01 05 32.3 +0.9
comp=E,5.0nm,0.5s
ZAA0 Zalesovo Array 46.07 46 eP P 01 05 38.4 -0.3
ZAA0 Zalesovo Array 46.07 46 eP P 01 05 38.4 -0.3
ZALV Zalesovo Beam 46.07 46 P P 01 05 38.6 -0.2
comp=E,34nm,0.4s,baz=268,slow=9.1,SNR=192
ZALV LR LR 01 31 05.6
comp=E,14nm,19.8s,baz=50,slow=44
NRIK Noril'sk 48.78 25 P P 01 05 58.9 -0.8
comp=E,2.2nm,0.5s,baz=245,slow=8.5,SNR=3.7
WMQ Urumqi 49.10 59 eP P 01 06 05.5 +3.0
WMQ pP sP 01 06 16.0 0.0
WMQ pmax pmax
comp=E,7.0nm,0.8s
WMQ pmax pmax
comp=E,76nm,3.4s
TLY Talaya 57.67 46 eP P 01 07 05.2 -0.1
TLY pmax pmax
comp=Z,6.0nm,2.5s
TLY Talaya 57.67 46 eP P 01 07 05.2 -0.1
comp=Z,6.0nm,2.5s
ZAK Zakamensk 57.82 48 eP P 01 07 06.0 -0.5
ZAK pmax pmax
comp=Z,3.0nm,1.0s
ZAK Zakamensk 57.82 48 eP P 01 07 06.0 -0.5
comp=Z,3.0nm,1.0s
SONM Songino Array 60.57 50 P P 01 07 26.5 +1.0
comp=Z,3.7nm,0.6s,baz=292,slow=6.9,SNR=15
SONA1 Songino Array 60.57 50 eP P 01 07 26.2 +0.6
SONA1 Songino Array 60.57 50 eP P 01 07 26.2 +0.6
ULN Ulaanbaatar 60.97 50 eP P 01 07 29.1 +0.8
ULN pmax pmax
comp=Z,4.0nm,0.6s
ULN Ulaanbaatar 60.97 50 eP P 01 07 29.1 +0.8
comp=Z,4.4nm,0.6s
ULN Ulaanbaatar 60.97 50 eP P 01 07 29.1 +0.8
comp=Z,4.4nm,0.6s
TIXI Tiksi 62.02 20 eP P 01 07 33.9 -0.9
TIXI pmax pmax
comp=Z,3.0nm,0.9s
TIXI Tiksi 62.02 20 eP P 01 07 33.9 -0.9
comp=Z,3.0nm,0.9s
SCHQ Schefferville 63.00 320 P P 01 07 44.5 +2.8
comp=Z,1.3nm,0.3s,baz=68,slow=19,SNR=2.4
LZH Lanzhou 63.29 63 eP P 01 07 43.1 -1.0
LZH pP sP 01 07 59.9 +2.1
LZH sP pP 01 08 04.9 +11
LZH pmax pmax
comp=Z,13nm,1.0s
HHC Hu-ho-hao-te 66.73 56 eP P 01 08 08.2 +1.9
HHC pmax pmax
comp=Z,13nm,1.1s
HHC pmax pmax
comp=Z,73nm,5.5s
YAK Yakutsk 66.83 30 LR LR 01 41 28.7
comp=Z,15nm,18.2s,baz=225,slow=40
CMAR Chiang Mai Arr 67.57 83 P P 01 08 13.1 +1.3
comp=Z,0.4nm,0.3s,baz=302,slow=5.1,SNR=4.4
BILL Bilibino 73.83 14 eP P 01 08 48.5 -0.6
BILL pmax pmax
comp=Z,1.0nm,1.0s
BILL Bilibino 73.83 14 eP P 01 08 48.5 -0.6
comp=Z,1.0nm,1.0s
SEY Seymchan 74.43 22 P P 01 08 52.5 -0.2
comp=Z,0.5nm,0.3s,baz=8.7,slow=19,SNR=2.7
KLR Kul'dur 74.80 40 eP P 01 08 55.1 0.0
KLR Kul'dur 74.80 40 eP P 01 08 55.1 0.0
YKA Yellowknife Ar 77.69 342 P P 01 09 12.3 +1.1
comp=Z,0.7nm,0.5s,baz=34,slow=5.5,SNR=12
USRK Ussuriysk Ar. 77.90 44 P P 01 09 13.2 +0.4
comp=Z,2.0nm,0.5s,baz=298,slow=5.4,SNR=9.3
KSAR Wonju Array Be 79.35 52 P P 01 09 21.9 +1.0
KSAR Wonju Array Be 79.35 52 P P 01 09 21.9 +1.0
KSAR Wonju Array Be 79.35 52 P P 01 09 21.9 +1.0
KSRS Korea Array 79.37 52 P P 01 09 21.9 +1.0
comp=Z,1.1nm,0.5s,baz=315,slow=4.7,SNR=5.7
ILAR Eielson Array 80.70 356 P P 01 09 27.8 +0.1
comp=Z,0.4nm,0.7s,baz=358,slow=5.3,SNR=5.6
MJAR Matsushiro Arr 86.40 47 P P 01 09 58.6 +1.1
comp=Z,1.3nm,0.7s,baz=298,slow=6.7,SNR=3.5
WRA Warramunga Arr 117.47 96 PKP PKPdf 01 16 02.0 +1.0
comp=Z,0.4nm,0.8s,baz=323,slow=1.9,SNR=4.7
ASAR Alice Springs 118.88 100 PKP PKPdf 01 16 05.2 +1.6
comp=Z,0.3nm,0.6s,baz=338,slow=2.2,SNR=3.0

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*IDC **01** 01:16:44.6±1.8, 0.°83S×123.°74E, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.5/38, mbtmp3.6/4, ML3.6/1, MS3.3/1, Ms1 3.5/1, ms1mx2.3/23, Error ellipse: s-maj=54.0km s-min=28.0km az=63.0*
*DJA **01** 01:16:47.9±1.7, 1°S±4°×12°4E±1°0, h28km±20km, M4.1/4, MLv4.1/4*
*ISCJB **01** 01:16:48.4±0.8, 0.°93S±0.°07×123.°51E±0.°07, h40km, mb3.5/3, MS3.2/1, Error ellipse: s-maj=12.2km s-min=7.3km az=39.9*
ISC 01 01:16:50.0±1.2, **0.°94S**±0.°06×**123.°58E**±0.°09, **h40km, n10,** σ**1§38**/13, **mb3.7**/3, **Minahassa Peninsula, Sulawesi**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
KMSI Cibinong 1.55 15 P Pn 01 17 14.2 -0.9
MRSI Marisa 2.16 311 P Pn 01 17 20.9 -2.6
MRSI S Sn 01 17 51.9 +2.8
MRSI pP 01 17 52.9
PCI Palu 3.75 270 P Pn 01 17 44.7 -0.6
TTSI Tana Toraja 4.30 241 P Pn 01 17 53.6 +0.6
TTSI S Sn 01 18 41.3 -0.7
SPSI Sidrap Palu 4.85 232 P Pn 01 18 00.0 -0.5
SPSI S Sn 01 18 55.2 -0.3
KAPI Kappang 5.57 223 Pn Pn 01 18 10.0 -0.3
1.6nm,0.3s,baz=65,slow=3.1,SNR=3.8
KAPI Sn Sn 01 19 12.2 -1.0
3.9nm,0.3s,baz=349,slow=23,SNR=7.9
WRA Warramunga Arr 21.62 152 P P 01 21 37.1 +0.3
2.7nm,0.9s,baz=334,slow=10,SNR=12
ASAR Alice Springs 24.71 157 P P 01 22 08.3 +0.6
0.7nm,0.8s,baz=338,slow=8.7,SNR=9.0
CMAR Chiang Mai Arr 30.96 310 LR LR 01 36 38.1
comp=Z,51nm,19.9s,baz=118,slow=38
MKAR Makanchi Array 59.71 328 P P 01 26 51.2 +0.5
0.3nm,0.5s,baz=117,slow=9.0,SNR=3.1

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*NIED **01** 01:23:00, 38.°00N×143.°70E, h8km, Mw3.7 Best double couple: M0 4.52000×10^14 NP1:φs55.00000°, δ34.00000°, λ-38.00000°. NP2:φs177.00000°, δ70.00000°, λ-118.00000°.*

*IDC **01** 01:23:17.6±1.0, 37˚.71N×144˚.35E, h0km, mb3.8/7, mb1 3.9/7, mb1mx3.6/36, mbtmp3.8/7, MS2.5/3, Ms1 2.5/3, ms1mx2.3/31, Error ellipse: s-maj=33.0km s-min=20.8km az=95.0*

*ISCJB **01** 01:23:19.6±0.6, 37˚.91N±0˚.04×143˚.72E±0˚.05, h33km, mb4.0/10, Error ellipse: s-maj=6.2km s-min=5.2km az=139.6*

*JMA **01** 01:23:20.1±0.2, 37˚.96N×143˚.68E, h44km, M3.9*

*NEIC **01** 01:23:21.7±0.8, 37˚.94N×143˚.82E, h35km, mb4.3/2, Error ellipse: s-maj=16.9km s-min=10.9km az=141.0*

ISC 01 01:23:21.7±1.0, 37˚.91N±0˚.05×143˚.74E±0˚.08, h35km, n33, σ1§89/38, mb3.8/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.96**	**287**	P		**Pn**		**01 23 51.2**	**-1.2**
JIO					*e*S		**Sn**	**01 24 13.9**	**-1.9**
OFUJ	**Ofunato**	**2.00**	**306**	P		**Pn**		**01 23 51.2**	**-1.8**
JMK	**Ichinoseki**	**2.23**	**298**	P		**Pn**		**01 23 55.0**	**-1.2**
JMK				S			**Sn**	**01 24 20.9**	**-1.7**
JOM	**Ohasama**	**2.47**	**310**	P		**Pn**		**01 23 58.6**	**-0.9**
JOM				S			**Sn**	**01 24 26.8**	**-1.6**
JFT	**Otama**	**2.73**	**263**	P		**Pn**		**01 24 02.8**	**-0.2**
JFT				S			**Sn**	**01 24 33.8**	**-1.0**
JYK	**Kaneyama**	**2.84**	**292**	P		**Pn**		**01 24 04.1**	**-0.4**
JYK				S			**Sn**	**01 24 36.8**	**-0.7**
JANG	**Nango**	**3.01**	**326**	P		**Pn**		**01 24 06.2**	**-0.7**
JANG					*e*S		**Sn**	**01 24 39.2**	**-2.4**
JAG	**Ashikaga**	**3.73**	**248**	P		**Pn**		**01 24 16.1**	**-0.7**
JAG				S			**Sn**	**01 24 57.9**	**-1.6**
BSO1	**Boso 1**	**3.94**	**215**	P		**Pn**		**01 24 17.8**	**-1.4**
ERM	**Erimo**	**4.12**	**354**	*e*Pn		**Pn**		**01 24 21.0**	**-1.2**
JRY	**Ryogami san**	**4.31**	**245**	P		**Pn**		**01 24 24.3**	**-0.5**
JRY					*e*S		**Sn**	**01 25 11.2**	**-2.7**
MJAR	**Matsushiro Arr**	**4.62**	**254**	Pn		**Pn**		**01 24 29.2**	**+0.1**
	3.1nm,0.3s,baz=83,slow=14,SNR=9.9								
MJAR				Sn			**Sn**	**01 25 21.6**	**+0.2**
	1.3nm,0.3s,baz=213,slow=43,SNR=2.8								
MJAR				LR		LR	LR	01 26 45.6	
	comp=Z,48nm,18.7s,baz=70,slow=42								
MAJO	**Matsushiro**	**4.62**	**254**	*e*Pn		**Pn**		**01 24 29.8**	**+0.7**
MAJO					*e*Sn		**Sn**	**01 25 23.9**	**+2.4**
MAT	**Matsushiro**	**4.62**	**254**	P		**Pn**		**01 24 29.8**	**+0.7**
MAT					*e*S		**Sn**	**01 25 21.0**	**-0.5**
JHJ	**Hachijo jima 2**	**5.77**	**215**	Pn		**Pn**		**01 24 41.9**	**-2.9**
	5.2nm,0.3s,baz=60,slow=20,SNR=4.2								
JHJ				Sn			**Sn**	**01 25 44.9**	**-4.8**
	14nm,0.3s,baz=54,slow=19,SNR=5.1								
ASAJ	**Asahikawa**	**6.26**	**352**	Sn			**Sn**	**01 25 57.2**	**-4.6**
	baz=277,slow=0.0								
USRK	**Ussuriysk Ar.**	**10.87**	**309**	Pn			**Pn**	**01 25 58.1**	**+3.5**
	0.2nm,0.3s,baz=123,slow=12,SNR=4.3								
JNU	**Nakatsue**	**11.52**	**249**	LR		LR		01 31 17.0	
	comp=Z,23nm,19.8s,baz=121,slow=40								
KSRS	**Korea Array**	**12.54**	**273**	Pn			**Pn**	**01 26 19.1**	**+1.5**
	0.3nm,0.3s,baz=90,slow=15,SNR=3.6								
KSRS				LR		LR		01 30 46.3	
	comp=Z,26nm,19.2s,baz=28,slow=34								
KSAR	**Wonju Array Be**	**12.57**	**273**	Pn			**Pn**	**01 26 19.1**	**+1.1**
H11N2	**WAKE ISLAND Hy**	**27.08**	**126**	T		T		01 57 27.8	
	baz=317,slow=74,SNR=5.8								
H11N1	**WAKE ISLAND Hy**	**27.09**	**126**	T		T		01 57 23.9	
	baz=317,slow=74,SNR=3.7								
H11N3	**WAKE ISLAND Hy**	**27.09**	**126**	T		T		01 57 21.7	
	baz=317,slow=74,SNR=4.6								
ULN	**Ulaanbaatar**	**28.42**	**302**	*e*P		**P**		**01 29 13.6**	**+0.5**
	1.1nm,0.5s								
ZALV	**Zalesovo Beam**	**42.70**	**312**	P		P		01 31 19.9	+4.9
	0.9nm,0.4s,baz=83,slow=8.7,SNR=3.5								
NRIK	**Noril'sk**	**43.26**	**335**	P		P		01 31 24.4	+5.1
	2.4nm,0.4s,baz=108,slow=5.7,SNR=4.0								
MKAR	**Makanchi Array**	**45.23**	**302**	P		P		01 31 39.7	+4.3
	0.6nm,0.7s,baz=91,slow=7.3,SNR=4.3								
SEW	**Seward**	**46.72**	**39**	*e*P		**P**		**01 31 44.6**	**-2.2**
	9.9nm,0.8s								
KURK	**Kurchatov**	**46.85**	**308**	*e*P		**P**		**01 31 50.0**	**+1.9**
	14nm,0.7s								
ILAR	**Eielson Array**	**47.76**	**33**	P		**P**		**01 31 55.6**	**+0.6**
	0.7nm,0.7s,baz=262,slow=6.4,SNR=9.9								
INK	**Inuvik**	**52.76**	**28**	P		**P**		**01 32 32.6**	**0.0**
	0.9nm,1.1s,baz=282,slow=1.9,SNR=2.8								
WRA	**Warramunga Arr**	**58.22**	**190**	P		**P**		**01 33 11.8**	**-0.7**
	0.7nm,0.7s,baz=11,slow=7.2,SNR=6.7								
ASAR	**Alice Springs**	**61.94**	**190**	P		**P**		**01 33 39.4**	**+1.4**
	0.3nm,0.7s,baz=7.0,slow=8.4,SNR=2.6								

*IDC **01** 01:26:36.3±1.4, 31˚.76S×68˚.73W, h0km, mb4.0/1, mb1 4.1/4, mb1mx3.8/25, mbtmp4.1/4, ML3.6/2, MS2.5/1, Ms1 2.5/1, ms1mx2.3/19, Error ellipse: s-maj=51.7km s-min=39.4km az=104.0*

*ISCJB **01** 01:26:50.5±0.4, 31˚.20S±0˚.02×68˚.77W±0˚.03, h114km±4km, mb3.7/1, Error ellipse: s-maj=4.9km s-min=3.4km az=22.3*

*GUC **01** 01:26:50.3±0.5, 31˚.18S×69˚.06W, h149km±16km, ML3.8*

*SJA **01** 01:26:50.8±1.2, 31˚.21S×68˚.76W, h105km±4km, ML3.7, MW3.6*

ISC 01 01:26:50.4±0.8, 31˚.17S±0˚.04×68˚.74W±0˚.03, h112km±6km, n38, σ1§78/60, 3C-4D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.28**	**125**	*e*P		**Pn**		**01 27 06.5**	**+0.2**
AMOG	**MOGNA**	**0.32**	**43**	*e*P		**Pn**		**01 27 07.3**	**+0.8**
AMOG					*e*S		**Sn**	**01 27 18.3**	**-0.3**
SJA	**San Juan**	**0.39**	**157**	*e*P		**Pn**		**01 27 07.5**	**+0.6**
SJA					*e*S		**Sn**	**01 27 18.4**	**-0.8**
SJA					IAML			01 27 21.5	
	comp=Z,4µm,0.2s								
ACCO	**Cerro Coronel**	**0.65**	**334**	*e*P		**Pn**		**01 27 09.8**	**+0.9**
ACCO					*e*S		**Sn**	**01 27 24.3**	**+1.5**
ACCO					IAML			01 27 25.6	
	comp=Z,3µm,0.4s								
RTCV	**Cerro Valdivia**	**0.71**	**166**	*e*P		**Pn**		**01 27 09.4**	**+0.4**
RTCV					*e*S		**Sn**	**01 27 21.7**	**-1.4**
RTLS	**Leoncito**	**0.79**	**217**	*e*P		**Pn**		**01 27 10.5**	**+0.5**
AROD	**Rodeo**	**1.18**	**328**	*e*P		**Pn**		**01 27 15.4**	**+1.4**
AUSP	**Uspallata**	**1.19**	**208**	*e*P		**Pn**		**01 27 14.7**	**+0.8**
AUSP					⇓*e*S		**Sn**	**01 27 32.2**	**+0.3**
AVFE	**Valle Fertil**	**1.22**	**66**	*e*P		**Pn**		**01 27 15.5**	**+1.4**
AVFE					*e*S		**Sn**	**01 27 33.8**	**+1.7**
ASAL	**Salagasta**	**1.42**	**183**	*e*P		**Pn**		**01 27 17.4**	**+1.0**
ASAL					*e*S		**Sn**	**01 27 36.6**	**+0.5**
ARCO	**CERRO ARCO**	**1.67**	**186**	*e*P		**Pn**		**01 27 20.5**	**+1.0**
ARCO					⇓*e*S		**Sn**	**01 27 42.9**	**+1.1**
ARCO					IAML			01 27 45.2	
	comp=Z,649nm,0.4s								
AGUA	**GUANDACOL**	**1.69**	**7**	*e*P		**Pn**		**01 27 21.9**	**+2.2**
AGUA					*e*S		**Sn**	**01 27 45.1**	**+3.0**
ACAN	**Cantantal**	**1.72**	**130**	*e*P		**Pn**		**01 27 21.5**	**+1.5**
ACAN					*e*S		**Sn**	**01 27 40.8**	**-1.8**
ACHE	**Chepes**	**1.78**	**90**	*e*P		**Pn**		**01 27 22.3**	**+1.5**
AAGR	**Agrelo**	**1.91**	**182**	*e*P		**Pn**		**01 27 23.5**	**+1.1**
TLL	**Tololo Astrono**	**2.04**	**299**	⇑*i*P		**Pn**		**01 27 25.0**	**+0.8**
TLL					*i* S		**Sn**	**01 27 50.6**	**+0.6**
TLL					IAML			01 27 52.6	
	comp=E,1µm,0.3s								
VCA	**Vinchina**	**2.47**	**11**	*e*P		**Pn**		**01 27 32.1**	**+2.4**
VCA					*e*S		**Sn**	**01 28 02.0**	**+2.2**
VCA					IAML			01 28 10.4	
	comp=Z,741nm,0.3s								
FCH	**Farellones**	**2.52**	**211**	*e*P		**Pn**		**01 27 31.2**	**+0.8**
FCH					*e*S		**Sn**	**01 28 02.2**	**+1.1**
FCH					IAML			01 28 11.7	
	comp=E,238nm,0.7s								
PEL	**Peldehue**	**2.57**	**219**	⇓*i*P		**Pn**		**01 27 31.1**	**+0.3**
PEL					*e*S		**Sn**	**01 28 01.4**	**-0.4**
PEL					IAML			01 28 03.3	
	comp=N,183nm,0.3s								
ROCH	**El Roble**	**2.63**	**226**	⇑*i*P		**Pn**		**01 27 31.6**	**-0.2**
ROCH					*i* S		**Sn**	**01 28 03.2**	**-0.4**
ROC1	**El Roble**	**2.64**	**226**	*e*P		**Pn**		**01 27 32.0**	**+0.1**
ROC1					*e*S		**Sn**	**01 28 03.4**	**-0.4**
CLCH	**Cerro Calan**	**2.69**	**214**	*e*P		**Pn**		**01 27 32.7**	**+0.3**
CLCH					*i* S		**Sn**	**01 28 04.6**	**-0.1**
CLCH					IAML			01 28 09.2	
	comp=E,371nm,0.5s								
LCO	**Las Campanas**	**2.74**	**321**	⇓*i*P		**Pn**		**01 27 34.0**	**+0.7**
LCO					*i* S		**Sn**	**01 28 06.6**	**+0.3**
LCO					IAML			01 28 10.5	
	comp=N,322nm,0.4s								
MRA	**San Martin**	**2.86**	**117**	*e*P		**Pn**		**01 27 36.0**	**+1.3**
MRA					*e*S		**Sn**	**01 28 02.0**	**-6.7**
MRA					IAML			01 28 10.8	
	comp=Z,236nm,0.2s								
RCDM	**Rinconada Maip**	**2.90**	**217**	*e*P		**Pn**		**01 27 34.9**	**-0.2**
RCDM					*i* S		**Sn**	**01 28 09.0**	**-0.5**
RCDM					IAML			01 28 11.2	
	comp=E,359nm,0.1s								
TCA	**Tanti**	**3.55**	**94**	*e*P		**Pn**		**01 27 44.8**	**+1.0**
TCA					IAML			01 28 42.6	
	comp=Z,92nm,0.5s								
CYA	**Choya**	**3.73**	**44**	*e*P		**Pn**		**01 27 46.7**	**+0.5**
CYA					*e*S		**Sn**	**01 28 28.2**	**-1.2**
CYA					IAML			01 28 31.2	
	comp=Z,58nm,0.5s								
SUCO	**SUCO**	**3.92**	**125**	*e*P		**Pn**		**01 27 49.6**	**+0.8**
SUCO					IAML			01 27 50.3	
	comp=Z,120nm,0.2s								
CPCH	**Copiapo**	**4.05**	**339**	⇑*i*P		**Pn**		**01 27 50.7**	**+0.2**
CPCH					*i* S		**Sn**	**01 28 36.8**	**-0.3**
FSA	**Cafayete**	**5.59**	**26**	IAML				01 28 13.5	
	comp=Z,13nm,0.3s								
LVC	**Limon Verde**	**8.53**	**359**	Pn		**Pn**		**01 28 50.3**	**-1.1**
	comp=Z,94nm,0.3s,baz=172,slow=9.5,SNR=21								
LVC					Sn		**Sn**	**01 30 21.8**	**-4.3**
	comp=Z,4.0nm,0.3s,baz=256,slow=16,SNR=1.2								
CPUP	**Villa Florida**	**11.11**	**67**	Pn		Pn		01 29 19.6	-6.3
	comp=Z,0.1nm,0.3s,baz=243,slow=18,SNR=1.3								
CPUP					Sn		**Sn**	**01 31 31.8**	**+3.5**
	comp=Z,0.2nm,0.3s,baz=199,slow=18,SNR=1.1								
LPAZ	**La Paz**	**14.83**	**2**	Pn		**P**		**01 30 15.3**	**-2.7**
	comp=Z,0.2nm,0.3s,baz=172,slow=7.9,SNR=12								
NNA	**Nana**	**20.51**	**337**	LR		LR		01 39 39.5	
	comp=Z,12nm,18.0s,baz=336,slow=37								
TORD	**Torodi Ar. Bea**	**80.61**	**68**	P		**P**		**01 38 52.7**	**+1.8**
	comp=Z,0.8nm,0.6s,baz=277,slow=5.4,SNR=15								
WRA	**Warramunga Arr**	**124.56**	**207**	PKP		**PKPdf**		**01 45 37.8**	**+0.6**
	comp=Z,0.5nm,0.7s,baz=175,slow=1.6,SNR=5.5								
ZALV	**Zalesovo Beam**	**150.35**	**32**	PKPbc		**PKPab**		**01 46 30.0**	**-4.8**
	comp=Z,1.4nm,0.5s,baz=295,slow=3.7,SNR=5.6								
MKAR	**Makanchi Array**	**152.81**	**47**	PKPbc		**PKPbc**		**01 46 34.1**	**+0.2**
	comp=Z,0.3nm,0.4s,baz=321,slow=3.1,SNR=4.5								
MKAR				PKPab		**PKPab**		**01 46 47.5**	**+2.1**
	comp=Z,0.3nm,0.4s,baz=318,slow=3.9,SNR=2.2								

*CSEM **01** 02:11:04.8±0.2, 38˚.79N×7˚.98W, h15km, ML0.9, Error ellipse: s-maj=5.8km s-min=2.3km az=122.0*

*MDD **01** 02:11:05.6±0.9, 38˚.78N×7˚.98W, h10km±4km, mbLg0.9/4, Error ellipse: s-maj=9.9km s-min=4.6km az=115.0, PRXIMO*

INMG 01 02:11:05.2±1.1, 38˚.80N×7˚.98W, h13km±7km, ML0.9, Error ellipse: s-maj=4.7km s-min=4.4km az=128.0, Portugal

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
EVO	**Evora**	**0.27**	**185**	*e*Pg		Pg		02 11 10.3	-0.6
EVO					*e*Sg		Sg	02 11 14.2	-0.5
EVO					A		A	02 11 14.5	
	12nm,0.2s								
EVO	**Evora**	**0.27**	**185**	Pg		Pg		02 11 10.3	-0.6
EVO					Lg		Lg	02 11 14.2	
	12nm,0.2s								
EVO	**Evora**	**0.27**	**185**	Pg		Pg		02 11 10.3	-0.6
EVO					*e*Sg		Sg	02 11 14.2	-0.5
	12nm,0.2s								
PESTR	**Estremoz**	**0.32**	**78**	*e*Pg		Pg		02 11 11.1	-0.6
PESTR					*e*Sg		Sg	02 11 15.5	-0.6
PESTR					A		A	02 11 16.4	
	4.8nm,0.6s								
PESTR	**Estremoz**	**0.32**	**78**	*e*Pg		Pg		02 11 11.1	-0.6
PESTR					*e*Sg		Sg	02 11 15.5	-0.6
	4.8nm,0.6s								
EBAD	**Badajoz**	**0.76**	**93**	Pg		Pg		02 11 19.6	-0.3
	0.2nm,0.1s,SNR=7.9								
EBAD					Lg		Lg	02 11 29.5	
	2.5nm,0.8s,SNR=15								
EBAD	**Badajoz**	**0.76**	**93**	Pg		Pg		02 11 19.6	-0.4
	0.2nm,0.1s,SNR=7.9								
EBAD					Lg		Lg	02 11 29.5	
	2.5nm,0.8s,SNR=15								
PMRV	**Marv??o**	**0.78**	**36**	*e*P		Pg		02 11 20.3	0.0
PMRV					*e*S		Sg	02 11 30.2	-0.4
PMRV					A		A	02 11 31.5	
	1.6nm,0.5s								
PMRV	**Marv??o**	**0.78**	**36**	Pg		Pg		02 11 20.3	0.0
PMRV					Lg		Lg	02 11 30.2	
	1.6nm,0.5s								
PMRV	**Marv??o**	**0.78**	**36**	*e*P		Pg		02 11 20.3	0.0
PMRV					*e*S		Sg	02 11 30.2	-0.4
	1.6nm,0.5s								
PNCL	**Nicolau / Gran**	**0.81**	**212**	*e*S		Sg		02 11 31.0	-0.5
PNCL					A		A	02 11 34.2	
	1.9nm,0.7s								
PNCL	**Nicolau / Gran**	**0.81**	**212**	*e*S		Sg		02 11 31.0	-0.5
	1.9nm,0.7s								
PBAR	**Barrancos**	**0.97**	**130**	*e*P		Pb		02 11 23.0	-0.8
PBAR					*e*S		Sb	02 11 36.0	-0.5
PBAR					A		A	02 11 38.1	
	2.3nm,0.2s								
PBAR	**Barrancos**	**0.97**	**130**	Pg		Pb		02 11 23.0	-0.8
PBAR					Lg		Lg	02 11 36.0	
	2.3nm,0.2s								
PBAR	**Barrancos**	**0.97**	**130**	*e*P		Pb		02 11 23.0	-0.8
PBAR					*e*S		Sb	02 11 36.0	-0.5
	2.3nm,0.2s								
MESJ	**Messejana**	**0.98**	**191**	*e*P		Pb		02 11 23.3	-0.6
MESJ					*e*S		Sb	02 11 35.8	-0.9
MESJ	**Messejana**	**0.98**	**191**	Pg		Pb		02 11 23.3	-0.6
MESJ					Lg		Lg	02 11 35.8	
MESJ	**Messejana**	**0.98**	**191**	*e*P		Pb		02 11 23.3	-0.6
MESJ					*e*S		Sb	02 11 35.8	-0.9

*CSEM **01** 02:11:33.8±0.2, 37˚.71N×8˚.34W, h15km, ML0.9/4, Error ellipse: s-maj=3.7km s-min=2.6km az=138.0*

*IGIL **01** 02:11:34.9, 37˚.72N×8˚.36W, h14km, ML0.6*

*INMG **01** 02:11:34.7±0.9, 37˚.73N×8˚.36W, h14km±2km, ML0.9, Error ellipse: s-maj=2.1km s-min=1.5km az=101.0*

MDD 01 02:11:34.5±0.7, 37.72N×8.35W, h16km±7km, mbLg1.0/6, 3C, Error ellipse: s-maj=4.9km s-min=2.7km az=151.0, PRXIMO, Portugal

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MESJ	**Messejana**	**0.16**	**40**	*e*P		Pg		02 11 38.6	-0.2
MESJ					*e*S		Sg	02 11 41.3	-0.3
MESJ					AML		AML	02 11 41.9	
	comp=E,10nm,0.1s								
MESJ	**Messejana**	**0.16**	**40**	⇑*i*Pg		Pg		02 11 38.6	-0.2
MESJ					*e*Sg		Sg	02 11 41.4	-0.2
MESJ					A		A	02 11 41.8	
	comp=E,3.9nm,0.2s								
MESJ	**Messejana**	**0.16**	**40**	Pg		Pg		02 11 38.6	-0.2
MESJ					Lg		Lg	02 11 41.3	
	comp=E,10nm,0.1s								
MESJ	**Messejana**	**0.16**	**40**	Pg		Pg		02 11 38.6	-0.2
MESJ					Lg		Lg	02 11 41.3	
	comp=E,10nm,0.1s								
MESJ					*e*Sg		Sg	02 11 41.4	-0.2
	comp=E,3.9nm,0.2s								
PCVE	**Castro Verde**	**0.26**	**108**	*e*Pg		Pg		02 11 40.0	-0.3
PCVE					*e*Sg		Sg	02 11 43.9	-0.4
PCVE					A		A	02 11 44.3	
	comp=E,7.3nm,0.3s								
PCVE	**Castro Verde**	**0.26**	**108**	Pg		Pg		02 11 40.0	-0.3
PCVE	**Castro Verde**	**0.26**	**108**	Pg		Pg		02 11 40.0	-0.3
PCVE	**Castro Verde**	**0.26**	**108**	*e*Sg		Sg		02 11 43.9	-0.4
	comp=E,7.3nm,0.3s								
PTEO	**Sao Teotonio**	**0.34**	**240**	*e*S		Sg		02 11 46.3	-0.1
PTEO	**Sao Teotonio**	**0.34**	**240**	*e*Pg		Pg		02 11 41.2	-0.4
PTEO					*e*Sg		Sg	02 11 46.3	-0.1
PTEO	**Sao Teotonio**	**0.34**	**240**	Pg		Pg		02 11 41.2	-0.4
PTEO	**Sao Teotonio**	**0.34**	**240**	Pg		Pg		02 11 41.2	-0.4
PTEO					*e*Sg		Sg	02 11 46.3	-0.1
PTEO	**Sao Teotonio**	**0.34**	**240**	*e*S		Sg		02 11 46.3	-0.1
PNCL	**Nicolau / Gran**	**0.42**	**341**	⇑*i*Pg		Pg		02 11 42.1	-1.0
PNCL					*e*Sg		Sg	02 11 47.6	-1.2
PNCL					A		A	02 11 48.3	
	comp=E,2.3nm,0.2s								
PNCL	**Nicolau / Gran**	**0.42**	**341**	⇑*i*Pg		Pg		02 11 42.1	-1.0
PNCL					*e*Sg		Sg	02 11 47.6	-1.2
	comp=E,2.3nm,0.2s								
MORF	**Marmelete**	**0.47**	**210**	*e*P		Pg		02 11 43.6	-0.4
MORF					*e*S		Sg	02 11 49.8	-0.6
MORF					AML		AML	02 11 50.9	
	comp=N,3.9nm,0.1s								
MORF	**Marmelete**	**0.47**	**210**	*e*Pg		Pg		02 11 43.8	-0.2
MORF					*e*Sg		Sg	02 11 50.4	0.0
MORF					A		A	02 11 51.0	
	comp=N,5.1nm,0.5s								
MORF	**Marmelete**	**0.47**	**210**	Pg		Pg		02 11 43.8	-0.2
MORF					Lg		Lg	02 11 50.4	
	comp=N,5.1nm,0.5s								
MORF	**Marmelete**	**0.47**	**210**	Pg		Pg		02 11 43.8	-0.2
MORF					*e*Sg		Sg	02 11 50.4	0.0
	comp=N,5.1nm,0.5s								
PBEJ	**Beja**	**0.49**	**51**	*e*Pg		Pg		02 11 44.1	-0.3
PBEJ					*e*Sg		Sg	02 11 51.0	-0.1
PBEJ	**Beja**	**0.49**	**51**	Pg		Pg		02 11 44.1	-0.3
PBEJ					Lg		Lg	02 11 51.0	
PBEJ	**Beja**	**0.49**	**51**	Pg		Pg		02 11 44.1	-0.3
PBEJ					*e*Sg		Sg	02 11 51.0	-0.1
PBDV	**Barranco-do-Ve**	**0.58**	**144**	*e*Pg		Pg		02 11 45.7	-0.3
PBDV					*e*Sg		Sg	02 11 53.5	-0.2
PBDV					A		A	02 11 56.1	
	comp=N,2.3nm,1.0s								
PBDV	**Barranco-do-Ve**	**0.58**	**144**	Pg		Pg		02 11 45.7	-0.3
PBDV	**Barranco-do-Ve**	**0.58**	**144**	Pg		Pg		02 11 45.7	-0.3
PBDV	**Barranco-do-Ve**	**0.58**	**144**	*e*Sg		Sg		02 11 53.5	-0.2
	comp=N,2.3nm,1.0s								
PVAQ	**Vaqueiros**	**0.59**	**121**	*e*S		Pg		02 11 45.6	-0.7
PVAQ	**Vaqueiros**	**0.59**	**121**	*e*Pg		Pg		02 11 45.4	-0.9
PVAQ					*e*Sg		Sg	02 11 53.9	-0.3
PVAQ					A		A	02 11 54.4	
	comp=N,2.1nm,0.6s								
PVAQ	**Vaqueiros**	**0.59**	**121**	Pg		Pg		02 11 45.4	-0.9
PVAQ					Lg		Lg	02 11 53.9	
	comp=N,2.1nm,0.6s								
PVAQ	**Vaqueiros**	**0.59**	**121**	Pg		Pg		02 11 45.4	-0.9
PVAQ					*e*Sg		Sg	02 11 53.9	-0.3
	comp=N,2.1nm,0.6s								
PVAQ	**Vaqueiros**	**0.59**	**121**	*e*S		Pg		02 11 45.6	-0.7
PFVI	**Vila Bisbo**	**0.69**	**213**	*e*P		Pg		02 11 47.2	-0.9
PFVI					*e*S		Sg	02 11 57.4	+0.1
PFVI	**Vila Bisbo**	**0.69**	**213**	Pg		Pg		02 11 46.7	-1.4
	comp=N,0.5nm,0.1s,SNR=7.9								
PFVI					Lg		Lg	02 11 55.9	
	comp=N,13nm,0.9s,SNR=7.8								
PFVI	**Vila Bisbo**	**0.69**	**213**	Pg		Pg		02 11 46.7	-1.4
	comp=N,0.5nm,0.1s,SNR=7.9								
PFVI	**Vila Bisbo**	**0.69**	**213**	*e*P		Pg		02 11 47.2	-0.9
PFVI					Lg		Lg	02 11 55.9	
	comp=N,13nm,0.9s,SNR=7.8								
PFVI	**Vila Bisbo**	**0.69**	**213**	*e*S		Sg		02 11 57.4	+0.1
EGRO	**El Granado**	**0.71**	**104**	Pg		Pg		02 11 47.1	-1.5
	comp=N,0.3nm,0.1s,SNR=7.9								
EGRO					Lg		Lg	02 11 57.9	
	comp=N,1.2nm,0.3s,SNR=14								
EGRO	**El Granado**	**0.71**	**104**	Pg		Pg		02 11 47.1	-1.4
	comp=N,0.3nm,0.1s,SNR=7.9								
EGRO					Lg		Lg	02 11 57.9	
	comp=N,1.2nm,0.3s,SNR=14								
PBAR	**Barrancos**	**1.14**	**66**	*e*P		Pn		02 11 55.1	-0.6
PBAR					*e*S		Sb	02 12 10.0	-0.3
PBAR					A		A	02 12 10.8	
	comp=N,4.8nm,0.6s								
PBAR	**Barrancos**	**1.14**	**66**	Pg		Pn		02 11 55.1	-0.6
PBAR					Lg		Lg	02 12 10.0	
	comp=N,4.8nm,0.6s								
PBAR	**Barrancos**	**1.14**	**66**	*e*P		Pn		02 11 55.1	-0.6
PBAR					*e*S		Sb	02 12 10.0	-0.3
	comp=N,4.8nm,0.6s								
PESTR	**Estremoz**	**1.30**	**27**	*e*S		Sb		02 12 13.7	-1.3
PESTR					A		A	02 12 15.3	
	comp=N,2.3nm,0.6s								
PESTR	**Estremoz**	**1.30**	**27**	*e*S		Sb		02 12 13.7	-1.3

DLBC	**Dease Lake**	**84.66**	**26**	LR	LR	02 57 26.0	
	comp=Z,24nm,21.9s,baz=238,slow=29						
ULN	**Ulaanbaatar**	**85.86**	**321**	*e*P	**P**	**02 29 31.1**	**+0.7**
	1.9nm,0.4s						
SONA1	**Songino Array**	**86.25**	**321**	*e*P	**P**	**02 29 32.8**	**+0.5**
SONM	**Songino Array**	**86.25**	**321**	P	**P**	**02 29 33.7**	**+1.5**
	1.3nm,0.9s,baz=111,slow=5.3,SNR=8.3						
HVU	**Hansel Valley**	**86.25**	**46**	*e*P	**P**	**02 29 32.6**	**+0.2**
	9.4nm,1.1s						
GTA	**Gaotai**	**87.47**	**311**	*e*P	**P**	**02 29 40.1**	**+1.7**
GTA				pP	pP	02 29 44.2	-0.5
GTA				sP	sP	02 29 47.1	+0.1
GTA				pmax	pmax		
	comp=Z,6.0nm,0.7s						
REDW	**Red Top Meadow**	**88.15**	**45**	*e*P	**P**	**02 29 42.3**	**+0.5**
	8.2nm,1.1s						
PDAR	**Pinedale Array**	**88.84**	**45**	P	**P**	**02 29 44.8**	**-0.2**
	0.6nm,0.5s,baz=190,slow=10,SNR=4.2						
TXAR	**Lajitas Array**	**89.27**	**60**	P	**P**	**02 29 47.5**	**+0.3**
	0.4nm,0.8s,baz=211,slow=8.8,SNR=3.5						
YKA	**Yellowknife Ar**	**93.28**	**26**	P	**P**	**02 30 04.8**	**0.0**
	0.7nm,0.8s,baz=258,slow=4.0,SNR=5.4						
SOKA	**Soboth**	**143.05**	**337**	*i* PKPdf	PKPbc	02 36 21.3	0.0
	4.3nm,1.1s						
ABTA	**Abfaltersbach**	**143.91**	**339**	*i* PKPdf	PKPbc	02 36 23.7	-0.1
	5.4nm,1.2s						
ESDC	**Sonseca Array**	**154.10**	**358**	PKPab	**PKPab**	**02 37 03.0**	**-1.1**
	0.5nm,0.7s,baz=11,slow=3.5,SNR=5.4						
TORD	**Torodi Ar. Bea**	**173.43**	**266**	PKPab	**PKPab**	**02 38 29.3**	**-0.3**
	1.4nm,0.9s,baz=163,slow=4.1,SNR=5.4						

MOS ***01*** *02:38:45.3±1.0,0.°97N×121.°72E,h36km,mb5.3/39,Error ellipse: s-maj=11.6km s-min=5.4km az=118.0*

ISCJB ***01*** *02:38:46.9±0.4,0.°97N±0.°02×121.°78E±0.°02,h48km±4km, mb4.9/120,MS4.1/41,Error ellipse: s-maj=4.3km s-min=3.3km az=144.3*

DJA ***01*** *02:38:46.5±0.3,1.°1N±3.°×12.°2E±.°,h10km,M5.2/12, mb5.4/10,mB5.5/9,MLv5.4/12,Mw(mB)5.0/9,Mwp5.4/1*

BJI ***01*** *02:38:47.0,0.°85N×121.°96E,h60km,mb5.0/62,mB5.1/45, Ms4.3/49,Ms7 4.2/47*

GCMT ***01*** *02:38:49.4±0.2,1.°12N×121.°77E,h27km,MW5.0/86, Moment Tensor Solution. s53,c67; s86,c117; Duration: 0 Moment tensor: Scale 10^16^Nm; Mrr-2.23±.14; Mθθ0.35±.10; Mϕϕ1.88±.13; Mrθ-1.11±.17; Mrϕ-2.71±.07; Mθϕ-2.24±.21; Best double couple: M=4.23000×10^16^ NP1:ϕs357.00000°,δ67.00000°,λ-47.00000°. NP2: ϕs110.00000°,δ48.00000°,λ-148.00000°. Principal axes: T 4.1560, Plg11.0000°, Azm57.0000°; N 0.1480, Plg39.0000°, Azm157.0000°; P -4.3030, Plg49.0000°, Azm314.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***01*** *02:38:49.4±0.5,0.°94N×121.°74E,h60km±5km,mb5.0/39 Error ellipse: s-maj=5.4km s-min=3.6km az=57.0*

NEIC Felt [II] at Gorontalo and Tolitoli. Also felt at Manado.

IDC ***01*** *02:38:49.7±1.4,0.°92N×121.°83E,h64km±12km,mb4.4/31, mb1 4.4/34,mb1mx4.4/47,mbtmp4.7/34,MS4.0/25, Ms1 4.0/25,ms1mx3.9/42,Error ellipse: s-maj=14.0km s-min=6.7km az=77.0*

KLM ***01*** *02:38:49.6,0.°96N×121.°66E,h47km,mb5.1,ML5.0,MS6.2*

ISC 01 02:38:49.4±0.4,0.°93N±0.°03×121.°84E±0.°04,h56km±3km, n286,σ1°73/337,mb5.0/119,MS4.0/42,20C-18D, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MRSI	**Marisa**	**0.46**	**168**	P		**Pn**		**02 38 56.5**	**-4.1**
MRSI				S		**Sn**		**02 39 03.9**	**-4.9**
GTOI	**Gorontalo**	**1.20**	**104**	S		**Sn**		**02 39 22.1**	**-3.2**
KMSI	**Cibinong**	**2.17**	**99**	P		**Pn**		**02 39 24.3**	**+1.3**
KMSI				S		Sn		02 39 59.7	+11
LUWI	**Luwuk**	**2.17**	**155**	P		**Pn**		**02 39 24.0**	**+0.9**
LUWI	**Luwuk**	**2.17**	**155**	*e*Pn		**Pn**		**02 39 24.1**	**+1.1**
LUWI				*e*Sn		**Sn**		**02 39 50.7**	**+1.9**
PCI	**Palu**	**2.71**	**228**	P		**Pn**		**02 39 27.5**	**-3.0**
TTSI	**Tana Toraja**	**4.44**	**207**	P		**Pn**		**02 39 53.7**	**-0.5**
KDI	**Kendari**	**4.92**	**171**	P		**Pn**		**02 40 02.1**	**+1.3**
SANI	**Sanana**	**5.09**	**126**	P		**Pn**		**02 40 03.2**	**0.0**
TSM	**Tawau**	**5.19**	**310**	⇑P		**Pn**		**02 40 01.2**	**-3.3**
SPSI	**Sidrap Palu**	**5.29**	**203**	P		**Pn**		**02 40 06.8**	**+1.0**
MYLDM	**Lahad Datu**	**5.38**	**322**	⇓P		**Pn**		**02 40 06.4**	**-0.7**
MYLDM	**Lahad Datu**	**5.38**	**322**	*e*Pn		**Pn**		**02 40 05.6**	**-1.6**
BKB	**Balikpapan**	**5.40**	**246**	P		**Pn**		**02 40 05.3**	**-2.1**
LBMI	**Labuha**	**5.87**	**105**	P		**Pn**		**02 40 13.8**	**0.0**
	254nm,0.6s,3μm2.8nm								
KAPI	**Kappang**	**6.26**	**199**	P		**Pn**		**02 40 19.0**	**-0.3**
	17nm,0.3s,baz=12,slow=10,SNR=40								
KAPI				S		**Sn**		**02 41 32.6**	**+3.1**
	4.8nm,0.3s,baz=174,slow=19,SNR=2.2								
KAPI				LR		LR		02 43 05.5	
	comp=Z,3μm,19.2s,baz=23,slow=41								
SDKM	**Sandakan**	**6.59**	**315**	⇓P		**Pn**		**02 40 21.6**	**-2.1**
NLAI	**Namlea**	**6.69**	**128**	P		**Pn**		**02 40 28.0**	**+2.9**
DAV	**Davao City (W)**	**7.15**	**31**	P		**Pn**		**02 40 31.4**	**+0.1**
	14nm,0.3s,baz=83,slow=4.3,SNR=5.9								
DAV				S		**Sn**		**02 41 53.1**	**+1.9**
	baz=243,slow=23,SNR=4.6								
DAV				LR		LR		02 43 10.6	
	comp=Z,2μm,20.0s,baz=168,slow=36								
BSSI	**Bau Bau, Buton**	**7.16**	**191**	P		**Pn**		**02 40 33.9**	**+2.4**
MTKI	**Muara Teweh, K**	**7.19**	**255**	P		**Pn**		**02 40 36.5**	**+4.5**
KKM	**Kota Kinabalu**	**7.57**	**312**	⇓P		**Pn**		**02 40 35.4**	**-1.9**
KKM	**Kota Kinabalu**	**7.57**	**312**	*e*Pn		**Pn**		**02 40 35.1**	**-2.1**
KKM				*e*Sn		**Sn**		**02 41 57.3**	**-4.5**
KDM	**Kudat**	**7.77**	**320**	⇓P		**Pn**		**02 40 38.8**	**-1.1**
BBKI	**Banjar Baru**	**8.25**	**238**	P		**Pn**		**02 40 48.1**	**+1.7**
MSAI	**Masohi**	**8.26**	**121**	P		**Pn**		**02 40 49.0**	**+2.4**
SBUM	**Sibu**	**9.74**	**279**	⇑P		**Pn**		**02 41 06.8**	**0.0**
SBUM	**Sibu**	**9.74**	**279**	*e*Pn		**Pn**		**02 41 05.6**	**-1.2**
SOEI	**Soe**	**10.89**	**167**	*e*Pn		**Pn**		**02 41 22.6**	**0.0**
	47nm,0.8s								
FAKI	**Fak Fak**	**11.08**	**110**	*e*Pn		**Pn**		**02 41 26.3**	**+1.1**
KSM	**Kuching**	**11.54**	**273**	⇑P		**Pn**		**02 41 31.5**	**-0.1**
KSM	**Kuching**	**11.54**	**273**	*e*Pn		**Pn**		**02 41 30.5**	**-1.0**
JAGI	**Jajag, Banyuwa**	**12.08**	**219**	P		**P**		**02 41 48.8**	**-1.1**
TGY	**Tagaytay City**	**13.12**	**356**	LR		LR		02 46 21.7	
	comp=Z,735nm,20.7s,baz=46,slow=34								
KPJI	**Karang Pucung**	**15.27**	**237**	P		**P**		**02 42 26.6**	**+1.2**
CBJI	**Citeko**	**16.65**	**244**	P		P		02 42 47.8	+7.1
CGJI	**Cibinong**	**17.77**	**245**	P		**P**		**02 42 58.0**	**+4.9**
MYKOM	**Kota Tinggi**	**18.01**	**273**	⇑P		**P**		**02 42 54.0**	**-1.7**
KASI	**Kota Agung**	**18.47**	**250**	P		**Pn**		**02 43 06.8**	**+5.3**
KGM	**Kluang**	**18.55**	**274**	⇓P		**P**		**02 43 00.9**	**-0.8**
LHSI	**Lahat**	**18.91**	**255**	P		**Pn**		**02 43 11.9**	**+5.2**
JAY	**Jayapura**	**19.16**	**100**	P		**Pn**		**02 43 10.2**	**+0.4**
	0.1nm,0.3s,baz=270,slow=20,SNR=3.4								
KTGM	**Kuala Trenggan**	**19.18**	**284**	⇑P		**P**		**02 43 07.8**	**-0.8**
FITZ	**Fitzroy Crossi**	**19.28**	**169**	P		**P**		**02 43 10.3**	**+0.7**
	2.2nm,0.3s,baz=22,slow=8.4,SNR=44								
FITZ				S		**S**		**02 46 44.7**	**-0.3**
	baz=107,slow=19,SNR=3.6								
FITZ	**Fitzroy Crossi**	**19.28**	**169**	P		**P**		**02 43 10.2**	**+0.7**
	baz=19,SNR=11								
FITZ	**Fitzroy Crossi**	**19.28**	**169**	*e*P		**P**		**02 43 10.2**	**+0.7**
	121nm,1.9s								
FITZ				S		**S**		**02 46 44.7**	**-0.3**
MNAI	**Manna**	**19.59**	**254**	*e*P		**P**		**02 43 12.7**	**-0.3**
KSI	**Kapahiang**	**19.77**	**257**	P		**Pn**		**02 43 16.2**	**-0.9**
FRIM	**Kepong**	**20.33**	**277**	⇑P		**P**		**02 43 19.6**	**-1.5**
SDSI	**Sungai Dareh**	**20.50**	**265**	P		**P**		**02 43 23.8**	**+0.9**
IPM	**Ipoh**	**21.09**	**280**	⇓P		**P**		**02 43 29.4**	**+0.1**
IPM	**Ipoh**	**21.09**	**280**	*e*P		**P**		**02 43 28.4**	**-0.9**
	88nm,1.0s								
PDSI	**Padang**	**21.46**	**265**	P		**P**		**02 43 33.5**	**+0.2**
QIZ	**Qiongzhong**	**21.49**	**328**	P		**P**		**02 43 31.8**	**-1.8**
QIZ				S		**S**		**02 47 30.2**	**+1.1**
QIZ				pmax		pmax			
	comp=Z,150nm,6.3s								
QIZ				LR		LR			
	comp=E,410nm,15.5s								
QIZ				LR		LR			
	comp=Z,420nm,16.3s								
UBPT	**Khong Chiam**	**21.56**	**312**	P		**P**		**02 43 33.5**	**-0.8**
	69nm,1.8s,2μm								
KULM	**Kulim**	**21.59**	**282**	*e*P		**P**		**02 43 32.9**	**-1.8**
	124nm,1.3s								
SKLT	**Songkhla**	**22.05**	**287**	P		**P**		**02 43 42.3**	**+2.7**
	42nm,1.3s								
MBWA	**Marble Bar**	**22.05**	**185**	*e*P		**P**		**02 43 43.1**	**+3.6**
	16nm,1.0s								
MNSI	**Mandailing Nat**	**22.26**	**270**	P		**P**		**02 43 42.1**	**+0.2**
TPUB	**Ta-pu**	**22.27**	**357**	*e*P		**P**		**02 43 42.9**	**+1.0**
	49nm,1.0s								
YULB	**Yu-li**	**22.34**	**359**	*e*P		**P**		**02 43 42.1**	**-0.4**
	70nm,1.9s								
SSLB	**Suanglung**	**22.74**	**358**	*e*P		**P**		**02 43 45.7**	**-1.2**
	18nm,0.9s								
PSI	**Prapat**	**22.98**	**275**	*e*P		**P**		**02 43 47.4**	**-2.2**
PSI				pmax		pmax			
	comp=Z,100nm,1.3s								
PSI	**Prapat**	**22.98**	**275**	*e*P		**P**		**02 43 47.4**	**-2.2**
	comp=Z,100nm,1.3s								
TRTT	**Trang**	**23.11**	**288**	P		**P**		**02 43 50.5**	**-0.3**
	comp=Z,30nm,1.1s								
YOJ	**Yonaguni jima**	**23.42**	**3**	*e*P		**P**		**02 43 54.2**	**+0.6**
YOJ				pmax		pmax			
	comp=Z,51nm,1.0s								
YOJ	**Yonaguni jima**	**23.42**	**3**	*e*P		**P**		**02 43 54.2**	**+0.6**
	comp=Z,51nm,1.0s								
YHNB	**Yeheng**	**23.60**	**359**	*e*P		**P**		**02 43 54.6**	**-0.8**
	comp=Z,45nm,1.4s								
SKNT	**Sakolnakorn**	**23.73**	**313**	P		**P**		**02 43 55.4**	**-1.2**
	comp=Z,80nm,1.2s								
QZH	**Quanzhou**	**24.08**	**353**	⇓*i*P		P		02 43 50.8	-8.8
QZH				sP		pP		02 44 09.3	-4.3
QZH				S		**S**		**02 48 07.8**	**-5.5**
QZH				pmax		pmax			
	comp=Z,120nm,1.0s								
QZH				pmax		pmax			
	comp=Z,870nm,2.6s								
QZH				LR		LR			
	comp=Z,660nm,19.2s								
WB3	**Warramunga Arr**	**24.08**	**150**	P		**P**		**02 43 59.6**	**-0.2**
	baz=24								
WRAB	**Tennant Creek**	**24.09**	**150**	*ce*P		**P**		**02 44 00.9**	**+1.1**
WRAB				pmax		pmax			
	comp=Z,66nm,1.0s								
WRAB	**Tennant Creek**	**24.09**	**150**	*e*P		**P**		**02 44 00.1**	**+0.3**
	comp=Z,60nm,1.0s								
WRA	**Warramunga Arr**	**24.09**	**150**	P		**P**		**02 43 59.4**	**-0.5**
	comp=Z,34nm,1.1s,baz=335,slow=9.0,SNR=71								
WRA				PcP		**PcP**		**02 47 39.4**	**-0.9**
	comp=Z,0.8nm,0.5s,baz=334,slow=2.1,SNR=3.9								
WRA				ScP		**ScP**		**02 51 12.8**	**-1.4**
	comp=Z,3.3nm,1.0s,baz=328,slow=3.0,SNR=8.1								
WRA				LR		LR		02 53 57.7	
	comp=Z,298nm,20.1s,baz=310,slow=38								
WB2	**Warramunga Arr**	**24.10**	**150**	*e*P		**P**		**02 44 00.2**	**+0.3**
	comp=Z,57nm,1.1s								
KHON	**Khomkaen**	**24.20**	**310**	P		**P**		**02 44 00.7**	**-0.2**
	comp=Z,48nm,1.1s								
GSI	**Gunungsitoli**	**24.27**	**271**	P		**P**		**02 43 59.4**	**-2.1**
GSI	**Gunungsitoli**	**24.27**	**271**	*e*P		**P**		**02 43 59.9**	**-1.6**
	comp=Z,93nm,0.6s								
SURT	**Suratani**	**24.29**	**290**	P		**P**		**02 44 01.5**	**-0.2**
	comp=Z,51nm,1.3s,comp=Z,465nm								
PKDT	**Phuket**	**24.42**	**287**	P		**P**		**02 44 03.0**	**+0.1**
	comp=Z,132nm,1.2s,comp=Z,3μm								
TPTI		**24.75**	**276**	P		**P**		**02 44 05.7**	**-0.2**
NONG	**Nongkai**	**25.05**	**314**	P		**P**		**02 44 07.4**	**-1.1**
	comp=Z,63nm,0.7s								
PBKT	**Sadao Pong**	**25.77**	**308**	P		**P**		**02 44 14.6**	**-0.5**
	comp=Z,69nm,1.2s,comp=Z,1μm								
COEN	**Coen**	**25.80**	**126**	*e*P		**P**		**02 44 15.9**	**+0.5**
	comp=Z,8.9nm,0.5s								
LOEI	**Loei**	**26.10**	**310**	P		**P**		**02 44 14.5**	**-3.6**
	comp=Z,62nm,1.0s,comp=Z,849nm								
WRKA	**Warakurna**	**26.56**	**167**	P		**P**		**02 44 22.1**	**-0.1**
	baz=27,SNR=31								
UTTA	**Uttaradit**	**26.78**	**310**	P		**P**		**02 44 24.1**	**-0.1**
	comp=Z,15nm,0.9s,comp=Z,183nm								
AS31	**Alice Springs**	**27.11**	**155**	*e*P		**P**		**02 44 28.3**	**+1.1**
	comp=Z,2.8nm,0.8s								
ASAR	**Alice Springs**	**27.11**	**155**	P		**P**		**02 44 27.1**	**-0.1**
	comp=Z,4.5nm,0.6s,baz=342,slow=13,SNR=49								
ASAR				PcP		**PcP**		**02 47 46.8**	**-0.3**
	comp=Z,1.7nm,0.5s,baz=348,slow=2.1,SNR=8.1								
ASAR				S		**S**		**02 49 01.1**	**-0.6**
	comp=Z,2.3nm,0.9s,baz=338,slow=20,SNR=6.7								
ASAR				ScP		**ScP**		**02 51 23.1**	**+0.2**
	comp=Z,1.3nm,1.0s,baz=330,slow=2.2,SNR=5.5								
ASAR				LR		LR		02 55 53.5	
	comp=Z,606nm,21.3s,baz=334,slow=38								
AS01	**Alice Springs**	**27.13**	**155**	*e*P		**P**		**02 44 28.1**	**+0.7**
AS01				*e*ScP		**ScP**		**02 51 23.5**	**+0.6**
PMG	**Port Moresby**	**27.22**	**113**	*e*P		**P**		**02 44 29.1**	**+0.8**
PMG				pmax		pmax			
	comp=Z,39nm,1.0s								
PMG	**Port Moresby**	**27.22**	**113**	*e*P		**P**		**02 44 29.1**	**+0.8**
	comp=Z,39nm,1.0s								
UMPA	**Umpang Tak**	**27.27**	**305**	P		**P**		**02 44 32.6**	**+3.9**
	comp=Z,6.4nm,0.9s								
QIS	**Mount Isa**	**27.54**	**142**	P		**P**		**02 44 32.0**	**+0.9**
	baz=28,SNR=6.2								
MEEK	**Meekatharra**	**27.58**	**186**	P		**P**		**02 44 30.4**	**-1.0**
	baz=28,SNR=6.7								
LAMP	**Lampang**	**27.94**	**310**	P		**P**		**02 44 35.0**	**+0.3**
	comp=Z,8.5nm,1.1s								
CM01	**Chiang Mai Arr**	**28.40**	**309**	*e*P		**P**		**02 44 38.3**	**-0.4**
CMAR	**Chiang Mai Arr**	**28.44**	**309**	P		**P**		**02 44 39.2**	**+0.2**
	comp=Z,7.1nm,0.9s,baz=144,slow=7.9,SNR=41								
CMAR				PcP		**PcP**		**02 47 50.9**	**+0.6**
	comp=Z,1.2nm,0.3s,baz=108,slow=2.9,SNR=4.3								
CMAR				LR		LR		02 57 13.3	
	comp=Z,346nm,20.1s,baz=122,slow=39								
CMMT	**Chiang Mai**	**28.64**	**310**	P		**P**		**02 44 40.8**	**-0.1**
	comp=Z,49nm,1.2s,comp=Z,576nm								
CHTO	**Chiang Mai**	**28.64**	**310**	P		**P**		**02 44 40.9**	**0.0**
	comp=Z,195nm,1.2s,comp=Z,3μm								
CHTO	**Chiang Mai**	**28.64**	**310**	*e*P		**P**		**02 44 40.9**	**0.0**
CHTO				pmax		pmax			
	comp=Z,68nm,1.3s								
CHTO	**Chiang Mai**	**28.64**	**310**	*e*P		**P**		**02 44 40.9**	**0.0**
	comp=Z,68nm,1.3s								
MTSU	**Mount Surprise**	**29.12**	**132**	P		**P**		**02 44 45.9**	**+0.7**
	baz=29								
GYA	**Guiyang**	**29.28**	**331**	P		**P**		**02 44 48.6**	**+2.0**
GYA				pP		pP		02 45 01.4	+0.6
GYA				PP		**PnPn**		**02 45 45.0**	**+2.7**
GYA				PcP		**PcP**		**02 47 53.2**	**+0.7**
GYA				S		**S**		**02 49 37.8**	**+1.8**
GYA				sS		sS		02 50 00.6	+0.6
GYA				SS		**SnSn**		**02 51 11.2**	**+4.8**
GYA				ScS		**ScS**		**02 55 23.0**	**-1.2**
GYA				pmax		pmax			
	comp=Z,20nm,0.8s								
GYA				pmax		pmax			
	comp=Z,120nm,5.9s								
GYA				LR		LR			
	comp=Z,520nm,17.6s								
GYA				LR		LR			
	comp=Z,500nm,18.0s								
GYA				LR		LR			
	comp=Z,540nm,18.2s								
SSE	**Sheshan**	**30.01**	**359**	P		**P**		**02 44 53.7**	**+0.9**
SSE				pP		**pP**		**02 45 07.1**	**+0.1**
SSE				sP		**sP**		**02 45 13.1**	**-0.5**
SSE				S		**S**		**02 49 50.3**	**+3.4**
SSE				sS		**sS**		**02 50 14.7**	**+3.7**
SSE				pmax		pmax			
	comp=Z,21nm,0.7s								
SSE				pmax		pmax			
	comp=Z,50nm,4.0s								
SSE				LR		LR			
	comp=Z,160nm,23.8s								
SSE				LR		LR			
	comp=Z,160nm,23.8s								
SSE				LR		LR			
	comp=Z,280nm,23.2s								
WHN	**Wuhan**	**30.30**	**347**	P		**P**		**02 44 56.1**	**+0.7**
WHN				S		**S**		**02 49 57.5**	**+6.0**
WHN				LR		LR			
	comp=Z,1μm,19.4s								
WHN				LR		LR			
	comp=Z,500nm,17.9s								
WHN				LR		LR			
	comp=Z,860nm,16.8s								
KMI	**Kunming**	**30.32**	**324**	P		**P**		**02 44 57.8**	**+1.9**
KMI				pP		pP		02 45 10.8	+0.7
KMI				sP		sP		02 45 17.0	+0.3
KMI				S		**S**		**02 49 57.2**	**+4.8**
KMI				pmax		pmax			
	comp=Z,29nm,1.3s								
KMI				LR		LR			
	comp=Z,170nm,24.8s								
KMI				LR		LR			
	comp=Z,170nm,18.2s								
KMI				LR		LR			
	comp=Z,350nm,35.5s								
MORW	**Morawa**	**30.34**	**190**	P		**P**		**02 44 55.9**	**+0.1**
	baz=30,SNR=3.6								
BLDU	**Ballidu**	**31.75**	**188**	P		**P**		**02 45 07.2**	**-1.0**
	baz=32,SNR=6.3								
CBIJ	**Chichi jima**	**32.53**	**35**	*e*P		**P**		**02 45 15.1**	**0.0**
	comp=Z,30nm,0.8s								
NWAO	**Narrogin (SRO)**	**33.96**	**187**	P		**P**		**02 45 25.8**	**-1.6**
	comp=Z,20nm,1.0s,baz=161,slow=13,SNR=3.3								
NWAO				LR		LR		02 59 12.8	
	comp=Z,168nm,21.1s,baz=174,slow=36								
CD2	**Chengdu**	**34.40**	**332**	*e*P		**P**		**02 45 31.6**	**+0.2**
CD2				pP		pP		02 45 45.1	-0.5
CD2				sP		sP		02 45 51.5	-0.8
CD2				S		**S**		**02 50 57.0**	**+1.5**
CD2				sS		sS		02 51 20.3	+0.6
CD2				pmax		pmax			
	comp=Z,10.0nm,0.5s								
CD2				pmax		pmax			
	comp=Z,140nm,5.0s								
CD2				LR		LR			
	comp=Z,230nm,14.9s								
CD2				LR		LR			
	comp=Z,220nm,16.9s								
CD2				LR		LR			
	comp=Z,230nm,17.4s								
QLP	**Quilpie**	**34.85**	**143**	P		**P**		**02 45 36.9**	**+1.7**
	baz=35,SNR=3.9								
XAN	**Xi'an**	**35.09**	**341**	P		P		02 45 26.5	-11
XAN				pmax		pmax			
	comp=Z,5.0nm,1.0s								
XAN				pmax		pmax			
	comp=Z,65nm,5.5s								
TIA	**Tai'an**	**35.38**	**353**	⇑P		**P**		**02 45 40.1**	**+0.4**
TIA				S		**S**		**02 51 18.3**	**+8.0**
TIA				pmax		pmax			
	comp=Z,20nm,0.9s								
TIA				pmax		pmax			
	comp=Z,140nm,3.6s								
TIA				LR		LR			
	comp=Z,150nm,20.2s								
TIA				LR		LR			
	comp=Z,240nm,20.2s								
TIA				LR		LR			
	comp=Z,220nm,7.4s								
KSAR	**Wonju Array Be**	**36.76**	**8**	P		**P**		**02 45 52.4**	**+1.0**
KSAR								02 48 12.3	
KSAR	**Wonju Array Be**	**36.76**	**8**	P		**P**		**02 45 52.4**	**+1.0**
KSAR				PcP		**PcP**		**02 48 12.2**	**-0.6**
KSRS	**Korea Array**	**36.77**	**8**	P		**P**		**02 45 52.4**	**+0.8**
	comp=Z,2.5nm,0.8s,baz=186,slow=9.7,SNR=9.9								
KSRS				PcP		**PcP**		**02 48 12.2**	**-0.7**
	comp=Z,0.4nm,0.4s,baz=194,slow=4.9,SNR=4.2								
KSRS				LR		LR		03 01 04.0	
	comp=Z,188nm,20.7s,baz=192,slow=36								
KS01	**Wonju Array Si**	**36.79**	**8**	*e*P		**P**		**02 45 52.3**	**+0.6**
STKA	**Stephens Creek**	**37.62**	**152**	P		**P**		**02 45 56.3**	**-2.5**
	comp=Z,4.5nm,0.4s,baz=321,slow=11,SNR=11								
STKA				LR		LR		03 04 25.1	
	comp=Z,273nm,18.4s,baz=339,slow=41								
STKA	**Stephens Creek**	**37.62**	**152**	P		**P**		**02 45 59.5**	**+0.7**
	baz=38,SNR=6.2								
STKA	**Stephens Creek**	**37.62**	**152**	*e*P		**P**		**02 45 59.7**	**+0.9**
STKA				pmax		pmax			
	comp=Z,7.0nm,1.2s								
STKA	**Stephens Creek**	**37.62**	**152**	*e*P		**P**		**02 45 59.7**	**+0.9**
	comp=Z,7.2nm,1.2s								
HTT	**Hallett**	**37.77**	**156**	P		**P**		**02 46 01.1**	**+0.9**
	baz=38,SNR=14								
MAJO	**Matsushiro**	**38.54**	**21**	*e*P		**P**		**02 46 05.9**	**-0.7**
MAJO				pmax		pmax			
	comp=Z,6.0nm,0.7s								
MAJO	**Matsushiro**	**38.54**	**21**	*e*P		**P**		**02 46 05.8**	**-0.7**
	comp=Z,5.7nm,0.7s								
MAT	**Matsushiro**	**38.54**	**21**	P		**P**		**02 46 05.0**	**-1.6**
MAT				S		**S**		**02 51 59.0**	**+0.5**
MJAR	**Matsushiro Arr**	**38.54**	**21**	P		**P**		**02 46 04.6**	**-2.0**
	comp=Z,4.3nm,0.9s,baz=196,slow=9.5,SNR=9.1								
MJAR				PcP		**PcP**		**02 48 18.1**	**-0.3**
	comp=Z,0.9nm,0.4s,baz=198,slow=2.2,SNR=4.4								
MJAR				ScP		**ScP**		**02 52 02.0**	**+0.2**
	comp=Z,0.6nm,0.5s,baz=172,slow=3.6,SNR=4.0								
MJAR				LR		LR		03 01 50.2	
	comp=Z,178nm,20.7s,baz=210,slow=36								
LZH	**Lanzhou**	**38.77**	**336**	*e*P		**P**		**

KKN	Kakani	44.03	311	*e*P		P		02 46 51.7	-0.3
MDJ	Mudanjiang	44.04	8	P		P		02 46 52.0	+0.5
MDJ				sP		sP		02 47 12.3	-0.4
MDJ				PP		PcP		02 48 37.8	+1.6
MDJ				S		S		02 53 20.7	+0.9
MDJ				pmax	pmax				
	comp=Z,30nm,1.3s								
MDJ				pmax	pmax				
	comp=Z,61nm,6.4s								
MDJ				LR	LR				
	comp=Z,170nm,20.9s								
MDJ				LR	LR				
	comp=Z,130nm,19.1s								
MDJ				LR	LR				
	comp=Z,210nm,17.7s								
DMN	Daman	44.07	310	*e*P		P		02 46 52.4	0.0
CAN	Canberra	44.09	148	P		P		02 46 54.1	+1.9
	baz=44								
CAN	Canberra	44.09	148	*e*P		P		02 46 54.2	+2.0
CAN				pmax	pmax				
	comp=Z,74nm,1.9s								
CAN	Canberra	44.09	148	*e*P		P		02 46 54.1	+2.0
	comp=Z,74nm,1.9s								
GKN	Gorkha	44.63	310	*e*P		P		02 46 56.3	-0.4
	comp=Z,72nm,0.9s								
ERM	Erimo	45.18	22	*ce*P		P		02 47 00.4	-0.2
ERM				pmax	pmax				
	comp=Z,21nm,1.7s								
KOLN	Koldanda	45.30	310	*e*P		P		02 47 02.3	+0.1
	comp=Z,44nm,0.7s								
HYB	Hyderabad	45.60	294	*i* P		P		02 47 04.5	0.0
PYUN	Piuthan	45.94	310	*e*P		P		02 47 07.2	0.0
	comp=Z,113nm,0.9s								
ULN	Ulaanbaatar	48.48	347	*e*P		P		02 47 27.3	+0.7
ULN				pmax	pmax				
	comp=Z,87nm,1.6s								
ULN	Ulaanbaatar	48.48	347	*e*P		P		02 47 27.3	+0.7
	comp=Z,87nm,1.6s								
SONM	Songino Array	48.61	346	P		P		02 47 27.9	+0.4
	comp=Z,14nm,0.8s,baz=165,slow=8.6,SNR=66								
SONM				PcP		PcP		02 48 51.7	-0.7
	comp=Z,3.7nm,0.9s,baz=170,slow=3.9,SNR=3.0								
SONM				LR	LR			03 08 48.7	
	comp=Z,278nm,20.6s,baz=156,slow=37								
SONA1	Songino Array	48.62	346	*e*P		P		02 47 27.3	-0.3
DZM	Mont Dzumac	49.13	121	LR		LR		03 10 04.0	
	comp=Z,440nm,19.2s,baz=24,slow=38								
YSS	Yuzh-Sakhalins	49.34	19	*e*P		P		02 47 33.1	+0.2
YSS				pmax	pmax				
	comp=Z,3.0nm,0.9s								
ZAK	Zakamensk	51.74	345	*e*P		P		02 47 49.5	-1.6
ZAK				pmax	pmax				
	comp=Z,7.0nm,1.4s								
WMQ	Urumqi	52.41	329	⇑*i*P		P		02 47 57.4	+1.2
WMQ				pP		pP		02 48 07.7	-3.5
WMQ				S		S		02 55 18.3	+0.2
WMQ				ScS		ScS		02 57 38.7	-2.5
WMQ				pmax	pmax				
	comp=Z,41nm,1.1s								
WMQ				pmax	pmax				
	comp=Z,140nm,4.1s								
WMQ				LR	LR				
	comp=Z,650nm,21.5s								
WMQ				LR	LR				
	comp=Z,540nm,16.8s								
WMQ				LR	LR				
	comp=Z,540nm,19.4s								
TLY	Talaya	52.84	346	*e*P		P		02 47 59.9	+0.7
TLY				*e*S		S		02 55 26.7	+3.0
TLY				pmax	pmax				
	comp=Z,22nm,1.8s								
TLY				MLR	MLR				
	comp=Z,140nm,17.0s								
TLY	Talaya	52.84	346	*e*P		P		02 47 59.4	+0.3
	comp=Z,9.2nm,0.8s								
PDGK	Podgornoye	56.62	324	P		P		02 48 27.2	+0.6
PDGK				pmax	pmax				
	comp=Z,76nm,1.3s								
KSH	Kashi	56.72	318	P		P		02 48 28.5	+0.9
KSH				*e*pP		pP		02 48 41.4	-1.4
KSH				*e*sP		sP		02 48 46.9	-2.3
KSH				*e*PcP		PcP		02 49 25.1	+2.0
KSH				*e*PP		PP		02 50 36.1	+1.8
KSH				S		S		02 56 14.3	-2.1
KSH				ScS		ScS		02 58 10.8	-1.5
KSH				pmax	pmax				
	comp=Z,9.0nm,0.9s								
KSH				pmax	pmax				
	comp=Z,110nm,2.6s								
KSH				LR	LR				
	comp=Z,140nm,8.3s								
KSH				LR	LR				
	comp=Z,120nm,6.6s								
KSH				LR	LR				
	comp=Z,130nm,8.5s								
BOD	Bodaibo	57.06	355	*e*P		P		02 48 29.4	-0.1
BOD				pmax	pmax				
	comp=Z,22nm,1.5s								
MK01	Makanchi Array	57.20	329	*e*P		P		02 48 30.3	-0.4
MK31	Makanchi Array	57.22	329	*i* P		P		02 48 30.9	0.0
MK31				pmax	pmax				
	comp=Z,15nm,0.7s								
MK31	Makanchi Array	57.22	329	*e*P		P		02 48 31.4	+0.5
MKAR	Makanchi Array	57.22	329	P		P		02 48 31.3	+0.4
	comp=Z,17nm,0.6s,baz=123,slow=8.8,SNR=133								
MKAR				PcP		PcP		02 49 24.2	-0.7
	comp=Z,1.8nm,0.5s,baz=164,slow=4.4,SNR=2.2								
MKAR				LR	LR			03 14 56.6	
	comp=Z,96nm,18.8s,baz=124,slow=38								
MAKZ	Makanchi	57.39	328	*e*P		P		02 48 32.4	+0.3
MAKZ				pmax	pmax				
	comp=Z,91nm,1.5s								
MAKZ	Makanchi	57.39	328	*e*P		P		02 48 32.4	+0.3
	comp=Z,91nm,1.5s								
TKM2	Tokmak 2	58.74	322	*e*P		P		02 48 42.5	+0.6
TKM2				pmax	pmax				
	comp=Z,60nm,1.4s								
TKM2	Tokmak 2	58.74	322	*e*P		P		02 48 42.5	+0.6
	comp=Z,60nm,1.4s								
AAK	Ala-Archa	59.28	321	*d* iP		P		02 48 46.3	+0.7
AAK				pmax	pmax				
	comp=Z,78nm,1.5s								
AAK	Ala-Archa	59.28	321	*e*P		P		02 48 46.1	+0.5
	comp=Z,52nm,1.6s								
KBL	Kabul	59.46	310	*e*P		P		02 48 46.7	-0.3
KBL				pmax	pmax				
	comp=Z,26nm,0.9s								
KBL	Kabul	59.46	310	*e*P		P		02 48 46.7	-0.3
	comp=Z,26nm,0.9s								
EKS2	Erkin-Say	59.75	321	*e*P		P		02 48 49.5	+0.8
EKS2				pmax	pmax				
	comp=Z,29nm,1.4s								
EKS2	Erkin-Say	59.75	321	*e*P		P		02 48 49.5	+0.8
	comp=Z,29nm,1.4s								
PEA0	Petropavlovsk-	59.91	24	*e*P		P		02 48 49.6	+0.2
PETK	Petropavlovsk-	59.91	24	P		P		02 48 49.2	-0.2
	comp=Z,4.7nm,0.9s,baz=194,slow=5.4,SNR=6.2								
PETK				LR	LR			03 12 37.2	
	comp=Z,97nm,21.7s,baz=233,slow=34								
MNAS	Manas	60.48	320	P		P		02 48 54.2	+0.5
MNAS				pmax	pmax				
	comp=Z,35nm,1.5s								
ZAA0	Zalesovo Array	61.00	336	*e*P		P		02 48 56.1	-0.7
ZALV	Zalesovo Beam	61.00	336	P		P		02 48 55.6	-1.2
	comp=Z,12nm,0.8s,baz=123,slow=5.5,SNR=41								
ZALV				LR		LR		03 16 16.6	
	comp=Z,92nm,20.1s,baz=62,slow=37								
YAK	Yakutsk	61.24	4	*e*P		P		02 48 58.5	+0.2
YAK				pmax	pmax				
	comp=Z,13nm,0.7s								
KURBB	Kurchatov Array	61.59	330	P		P		02 49 00.2	-0.7
	comp=Z,27nm,1.0s,baz=124,slow=6.3,SNR=11								
KURK	Kurchatov	61.60	330	*ce*P		P		02 49 00.7	-0.2
KURK	Kurchatov	61.60	330	*e*P		P		02 49 00.9	0.0
	comp=Z,63nm,1.0s								
KK31	Karatay Array	62.06	320	*i* P		P		02 49 04.2	-0.1
KK31				pmax	pmax				
	comp=Z,7.0nm,1.0s								
KKAR	Karatay Array	62.06	320	*e*P		P		02 49 03.2	-1.1
KKAR				pmax	pmax				
	comp=Z,4.0nm,0.7s								
KKAR	Karatay Array	62.06	320	*e*P		P		02 49 03.2	-1.1
	comp=Z,4.2nm,0.7s								
NVS	Novosibirsk	62.28	336	*i* P		P		02 49 05.1	-0.3
RPZ	Rata Peaks	62.45	142	P		P		02 49 07.6	+0.7
	comp=Z,13nm,0.9s,baz=277,slow=8.1,SNR=3.0								

OTUK	Ortayu	63.51	325	P		P		02 49 13.7	-0.1
OTUK				pmax	pmax				
	comp=Z,30nm,1.1s								
SEY	Seymchan	65.90	15	*ce*P		P		02 49 31.0	+2.0
VOSK	Vostochnaya	66.63	329	*e*P		P		02 49 33.3	-0.6
VOSK				pmax	pmax				
	comp=Z,19nm,0.8s								
VOSK	Vostochnaya	66.63	329	*e*P		P		02 49 33.3	-0.6
	comp=Z,19nm,0.8s								
BVA0	Borovoye Array	67.09	329	*i* P		P		02 49 36.7	-0.2
BVA0				pmax	pmax				
	comp=Z,25nm,1.1s								
BVAR	Borovoye Array	67.09	329	P		P		02 49 36.6	-0.3
	comp=Z,15nm,0.9s,baz=134,slow=8.5,SNR=54								
BRVK	Borovoye	67.17	329	*ce*P		P		02 49 37.3	0.0
BRVK				pmax	pmax				
	comp=Z,137nm,1.7s								
BRVK	Borovoye	67.17	329	*e*P		P		02 49 37.2	-0.1
	comp=Z,40nm,1.1s								
CHKZ	Chkalovo	67.33	330	P		P		02 49 37.4	-0.9
CHKZ				pmax	pmax				
	comp=Z,32nm,1.3s								
ZRNK	Zerenda	67.77	329	*e*P		P		02 49 40.8	-0.3
ZRNK				pmax	pmax				
	comp=Z,39nm,1.0s								
ZRNK	Zerenda	67.77	329	*e*P		P		02 49 40.8	-0.3
	comp=Z,39nm,1.0s								
GEYT	Alibeck	68.91	311	P		P		02 49 48.6	-0.1
	comp=Z,2.4nm,0.3s,baz=150,slow=6.2,SNR=9.3								
TIXI	Tiksi	70.75	2	*e*P		P		02 49 57.2	-2.0
TIXI				pmax	pmax				
	comp=Z,10.0nm,1.7s								
AB31	Akbulak array	71.29	322	*i* P		P		02 50 01.9	-1.0
AB31				pmax	pmax				
	comp=Z,8.0nm,0.8s								
ABKAR	Akbulak array	71.29	322	*e*P		P		02 50 02.1	-0.8
	comp=Z,8.0nm,0.7s								
NRIK	Noril'sk	72.05	348	P		P		02 50 06.6	-0.4
	comp=Z,2.5nm,0.7s,baz=131,slow=5.2,SNR=9.5								
NRIK				LR		LR		03 22 55.1	
	comp=Z,102nm,19.9s,baz=140,slow=37								
AKTO	Aktyubinsk	72.88	323	P		P		02 50 12.0	-0.4
	comp=Z,9.6nm,0.8s,baz=107,slow=6.9,SNR=49								
AKTO	Aktyubinsk	72.88	323	P		P		02 50 11.5	-0.9
AKTO				pmax	pmax				
	comp=Z,17nm,0.9s								
BILL	Bilibino	73.53	16	*e*P		P		02 50 16.5	+0.6
BILL				*e*				02 50 31.5	
BILL				pmax	pmax				
	comp=Z,3.0nm,1.4s								
BILL				MLR	MLR				
	comp=Z,70nm,19.0s								
SVE	Sverdlovsk	73.85	330	⇑*i*P		P		02 50 17.0	-0.9
SVE				pmax	pmax				
	comp=Z,45nm,1.1s								
ARU	Arti	74.74	329	P		P		02 50 22.4	-0.7
	comp=Z,9.9nm,0.6s,baz=100,slow=2.5,SNR=25								
ARU	Arti	74.74	329	*d* iP		P		02 50 21.9	-1.3
ARU								02 53 08.4	
ARU				S		S		02 59 53.9	-1.3
ARU				SS		SS		03 04 40.4	-3.4
ARU				pmax	pmax				
	comp=Z,26nm,1.0s								
ARU	Arti	74.74	329	*e*P		P		02 50 22.3	-0.9
	comp=Z,21nm,0.9s								
GNI	Garni	79.55	311	P		P		02 50 50.4	-0.3
	comp=Z,5.0nm,0.7s,baz=16,slow=20,SNR=5.6								
GNI	Garni	79.55	311	*e*P		P		02 50 50.6	-0.1
GNI				pmax	pmax				
	comp=Z,51nm,0.9s								
GNI	Garni	79.55	311	*e*P		P		02 50 50.6	-0.1
	comp=Z,51nm,0.9s								
ZEI	Tsey	80.52	313	*e*P		P		02 50 54.2	-1.8
VNDA	Vanda	81.32	172	P		P		02 50 58.5	-0.8
	comp=Z,1.1nm,0.7s,baz=303,slow=4.2,SNR=8.0								
VNDA				LR		LR		03 28 09.3	
	comp=Z,126nm,18.4s,baz=329,slow=36								
VNDA	Vanda	81.32	172	*e*P		P		02 51 00.7	+1.4
VNDA				pmax	pmax				
	comp=Z,12nm,1.8s								
VNDA	Vanda	81.32	172	*e*P		P		02 51 00.7	+1.4
	comp=Z,12nm,1.8s								
KBZ	Khabaz	81.37	314	P		P		02 51 00.3	+0.1
	comp=Z,2.8nm,0.8s,baz=99,slow=4.4,SNR=6.3								
KBZ				LR		LR		03 31 52.3	
	comp=Z,49nm,21.7s,baz=60,slow=39								
KVAR	Kislovodsk Arr	81.54	314	P		P		02 51 01.0	-0.2
	comp=Z,2.1nm,0.5s,baz=194,slow=4.2,SNR=3.2								
KIV	Kislovodsk	81.55	314	⇑*e*P		P		02 51 00.6	-0.7
KIV				*e*				02 51 18.2	
KIV				*e*S		S		03 01 13.1	+4.0
KIV				*e*				03 02 17.1	
KIV				SSS		SSS		03 09 55.0	
KIV				pmax	pmax				
	comp=Z,5.0nm,0.9s								
KIV				MLR	MLR				
	comp=Z,42nm,22.0s								
SOC	Sochi	83.65	314	*e*P		P		02 51 08.7	-3.4
SOC				*e*PPP		PPP		02 56 19.8	
SOC				*e*S		S		03 01 23.8	-6.5
SOC				*e*SS		SS		03 06 55.5	-2.4
SOC				pmax	pmax				
	comp=Z,16nm,0.9s								
KMBO	Kilima Mbogo	84.61	269	P		P		02 51 17.7	-0.2
	comp=Z,4.3nm,0.8s,baz=47,slow=8.3,SNR=7.9								
KMBO	Kilima Mbogo	84.61	269	*e*P		P		02 51 17.1	-0.8
KMBO				pmax	pmax				
	comp=Z,9.0nm,1.2s								
KMBO	Kilima Mbogo	84.61	269	*e*P		P		02 51 17.1	-0.8
	comp=Z,9.4nm,1.2s								
VSR	Storozhevoye	84.68	321	*e*P		P		02 51 15.3	-1.8
VSR				pmax	pmax				
	comp=Z,20nm,1.6s								
ANN	Anapa	85.37	315	*e*P		P		02 51 19.1	-1.6
ANN				pmax	pmax				
	comp=Z,68nm,1.2s								
KLMR	Klimovskoe	85.44	331	*e*P		P		02 51 15.2	-5.5
KLMR				pmax	pmax				
	comp=Z,32nm,0.8s								
MOS	Moscow	85.97	326	*e*P		P		02 51 21.2	-2.2
OBN	Obninsk	86.53	325	*e*P		P		02 51 25.6	-0.6
OBN				SS		SS		03 07 40.0	+0.4
OBN				pmax	pmax				
	comp=Z,12nm,0.5s								
OBN				MLR	MLR				
	comp=Z,61nm,20.0s								
BR131	Keskin Array S	88.03	310	*e*P		P		02 51 33.0	-1.0
BRTR	Keskin Array B	88.03	310	P		P		02 51 32.9	-1.1
	comp=Z,3.2nm,0.9s,baz=114,slow=4.5,SNR=17								
BRTR				LR		LR		03 38 09.9	
	comp=Z,23nm,19.4s,baz=90,slow=40								
MLY	Manley	88.07	25	*e*P		P		02 51 33.6	+0.1
SYO	Syowa Base	88.08	201	⇑*e*P		P		02 51 35.8	+2.4
COLD	Coldfoot	88.35	23	*e*P		P		02 51 35.4	+0.6
APA	Apatity	88.55	337	⇑*i*P		P		02 51 33.0	-2.6
APA				*i* S		S		03 02 06.0	-11
APA				pmax	pmax				
	comp=Z,11nm,0.9s								
APA				MLR	MLR				
	comp=Z,400nm,18.0s								
BR231	Keskin MP Arra	88.69	310	*e*P		P		02 51 33.6	-3.5
MCK	McKinley	88.83	26	*e*P		P		02 51 36.9	-0.2
MCK	McKinley	88.83	26	*e*P		P		02 51 36.9	-0.2
PPT2	Papeete2	88.92	108	*e*LR		LR		03 20 03.8	
	comp=Z,110nm,25.5s								
WRH	Wood River Hil	89.20	26	*e*P		P		02 51 38.3	-0.4
AKASG	Malin Array Be	90.95	321	P		P		02 51 45.1	-2.1
	comp=Z,0.3nm,0.3s,baz=75,slow=4.6,SNR=8.4								
AKASG				LR		LR		03 36 07.8	
	comp=Z,94nm,21.8s,baz=75,slow=38								
ARCES	ARCESS Array B	91.36	340	P		P		02 51 46.7	-2.1
	comp=Z,2.6nm,0.8s,baz=93,slow=7.3,SNR=6.9								
ARCES				LR		LR		03 36 42.8	
	comp=Z,60nm,18.5s,baz=84,slow=38								
VSU	Vasula	91.89	328	*de*P		P		02 51 49.4	-2.0
VSU				pmax	pmax				
	comp=Z,44nm,1.6s								
FINES	FINESS Array B	91.96	331	P		P		02 51 49.7	-1.9
	comp=Z,2.4nm,0.6s,baz=90,slow=5.9,SNR=14								
FINES				LR		LR		03 35 39.7	
	comp=Z,57nm,21.3s,baz=74,slow=37								
SPA0	Spitsbergen Ar	92.25	349	*e*P		P		02 51 51.4	-1.4
SPITS	Spitsbergen Ar	92.25	349	P		P		02 51 51.1	-1.7
	comp=Z,16nm,0.9s,baz=107,slow=7.9,SNR=19								
VRI	Vrincioaia	92.91	316	⇓*i*P		P		02 51 56.2	-0.3
VRI	Vrincioaia	92.91	316	⇓P		P		02 51 56.2	-0.3

TESR	Tescani	92.92	316	⇑*i*P		P		02 51 55.2	-1.3
MLR	Muntele Rosu	93.49	315	P		P		02 51 57.9	-1.3
	comp=Z,0.2nm,0.6s,baz=93,slow=7.8,SNR=5.2								
MLR	Muntele Rosu	93.49	315	⇓*i*P		P		02 51 57.9	-1.3
MLR	Muntele Rosu	93.49	315	*e*P		P		02 51 58.0	-1.3
MLR	Muntele Rosu	93.49	315	*e*P		P		02 51 58.0	-1.3
LSZ	Lusaka	93.77	255	*e*P		P		02 51 59.6	-1.5
LSZ				pmax	pmax				
	comp=Z,7.0nm,1.2s								
LSZ	Lusaka	93.77	255	*e*P		P		02 51 59.6	-1.5
	comp=Z,7.4nm,1.2s								
BURAR	Bucovina Array	93.80	318	⇓*i*P		P		02 51 59.5	-1.1
BURAR	Bucovina Array	93.80	318	⇓P		P		02 51 59.5	-1.1
BUR08	Bucovina Ar. S	93.80	318	*e*P		P		02 51 59.8	-0.8
INK	Inuvik	94.53	21	*e*P		P		02 52 02.6	-0.8
INK				pmax	pmax				
	comp=Z,2.0nm,0.9s								
INK	Inuvik	94.53	21	*e*P		P		02 52 02.6	-0.8
	comp=Z,1.7nm,0.9s								
LOT	Lotru	95.01	316	⇑*i*P		P		02 52 14.4	+8.1
DRGR		95.58	317	⇓*i*P		P		02 52 08.2	-0.6
DRGR		95.58	317	⇓P		P		02 52 08.2	-0.6
KOLS	Kolonicke sedl	95.59	319	*e*P		P		02 52 07.6	-1.1
KOLS				pmax	pmax				
	comp=Z,5.0nm,1.5s								
KOLS	Kolonicke sedl	95.59	319	*e*P		P		02 52 07.6	-1.1
UZH	Uzhgorod	95.62	319	*c* iP		P		02 52 08.7	-0.1
UZH				*e*				02 52 23.1	
CRVS	Cervenica-Dubn	96.13	319	*e*P		P		02 52 10.6	-0.5
CRVS	Cervenica-Dubn	96.13	319	*e*P		P		02 52 10.6	-0.5
STHS	Stebnicka Huta	96.19	320	*e*P		P		02 52 11.6	+0.2
STHS				pmax	pmax				
	comp=Z,3.0nm,1.2s								
STHS	Stebnicka Huta	96.19	320	*e*P		P		02 52 11.6	+0.2
BOSA	Boshof	96.23	241	LR		LR		03 30 16.6	
	comp=Z,93nm,20.9s,baz=90,slow=32								
VYHS	Vyhne	97.91	319	*e*P		P		02 52 17.7	-1.5
VYHS	Vyhne	97.91	319	*e*P		P		02 52 17.7	-1.5
NB2	NORSAR Subarra	99.05	333	P		Pdif		02 52 21.3	-2.8
	comp=Z,2.9nm,0.9s,baz=73,slow=4.8								
NOA	NORSAR Array B	99.05	333	P		Pdif		02 52 21.8	-2.3
	comp=Z,1.9nm,0.9s,baz=55,slow=11,SNR=3.6								
NOA				LR		LR		03 40 16.0	
	comp=Z,70nm,21.3s,baz=45,slow=37								
GERES	GERESS Array B	101.16	320	PP		PP		02 56 42.0	-1.0
	comp=Z,0.1nm,0.3s,baz=73,slow=4.5,SNR=4.8								
YKA	Yellowknife Ar	104.02	24	PP		PP		02 57 01.5	-2.1
	comp=Z,0.5nm,0.8s,baz=295,slow=7.4,SNR=3.2								
TORD	Torodi Ar. Bea	119.05	286	PKP		PKPdf		02 57 31.6	-1.3
	comp=Z,0.6nm,0.3s,baz=89,slow=1.6,SNR=43								
TORD				PP		PP		02 58 48.9	-4.2
	comp=Z,1.5nm,1.1s,baz=86,slow=8.8,SNR=4.2								
TXAR	Lajitas Array	127.16	51	PKP		PKPdf		02 57 47.1	-1.2
	comp=Z,0.6nm,0.8s,baz=336,slow=1.1,SNR=5.3								
LCO	Las Campanas	149.62	158	*e*PKPbc		PKPbc		02 58 33.5	-0.2
LPAZ	La Paz	161.85	148	PKP		PKPdf		02 58 43.9	-2.2
	comp=Z,3.3nm,1.1s,baz=283,slow=1.7,SNR=5.8								
SAML	Samuel	170.59	148	*e*PKPdf		PKPdf		02 58 51.8	-0.4
SAML				*e*PKPab		PKPab		03 00 09.3	-0.2

MEX 01 02:44:39.3±0.5, 15°28N×91°99W, h153km±8km, MD4.0, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	Comitan	1.01	352	*i* P		Pn	02 45 03.3	-1.3
CCIG				*e*S		Sn	02 45 22.1	-2.1

*IDC **01** 03:11:07.8±0.9, 0°92N×121°77E, h0km, mb3.8/5, mb1 4.0/6, mb1mx3.7/43, mbtmp3.8/6, ML4.2/1, Error ellipse: s-maj=122.0km s-min=17.9km az=66.0*
*ISCJB **01** 03:11:08.7±0.7, 1°14N±0°06×121°88E±0°06, h10km, mb3.8/5, Error ellipse: s-maj=9.2km s-min=7.5km az=142.0*
*DJA **01** 03:11:12.7±1.3, 1°N±12°×12°2E±°, h10km, M4.1/5, mb4.6/1, MLv3.9/5*

ISC 01 03:11:10.4±0.8, 1°05N±0°06×121°83E±0°05, h10km, n17, σ2s15/22, mb3.9/5, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MRSI	Marisa	0.58	169	P	Pg	03 11 22.6	+1.0
MRSI				S	Sg	03 11 30.4	+1.2
GTOI	Gorontalo	1.25	109	P	Pn	03 11 32.6	-1.4
GTOI				S	Sb	03 11 47.9	-2.4
KMSI	Cibinong	2.20	102	P	Pg	03 11 55.3	+2.6
KMSI				S	Sg	03 12 27.0	+5.7
KMSI	Cibinong	2.20	102	P	Pg	03 11 54.7	+2.0
LUWI	Luwuk	2.28	156	P	Pg	03 11 54.2	+0.1
LUWI				S	Sg	03 12 23.7	0.0
LUWI	Luwuk	2.28	156	P	Pb	03 11 51.1	-0.6
PCI	Palu	2.78	226	P	Pn	03 11 56.1	+1.1
TTSI	Tana Toraja	4.53	206	P	Pb	03 12 31.3	+1.2
TTSI	Tana Toraja	4.53	206	P	Pn	03 12 21.1	+1.9
SPSI	Sidrap Palu	5.38	202	P	Pn	03 12 33.5	+2.6
FITZ	Fitzroy Crossi	19.39	169	P	P	03 15 36.2	-0.5
	0.5nm,0.3s,baz=6.1,slow=10,SNR=12						
WRA	Warramunga Arr	24.20	150	P	P	03 16 25.2	-2.2
	1.4nm,0.7s,baz=324,slow=8.4,SNR=18						
ASAR	Alice Springs	27.23	155	P	P	03 16 53.4	-1.5
	0.4nm,0.4s,baz=341,slow=13,SNR=9.2						
ASAR				PcP	PcP	03 20 12.6	-2.5
	0.5nm,0.5s,baz=329,slow=2.4,SNR=6.3						
SONM

baz=266,slow=74,SNR=6.5
H11N2 WAKE ISLAND Hy 19.94 83 T T 03 40 40.4
baz=266,slow=74,SNR=6.4
H11N3 WAKE ISLAND Hy 19.95 83 T T 03 40 44.7
baz=266,slow=74,SNR=7.2
KSRS Korea Array 24.66 324 P **P** **03 20 12.9 +0.3**
0.4nm,0.3s,baz=144,slow=9.0,SNR=3.0
ASAJ Asahikawa 25.81 355 P **P** **03 20 25.0 +2.0**
1.5nm,0.3s,baz=205,slow=14,SNR=3.6
KLR Kul'dur 32.82 343 P **P** **03 21 25.9 +1.0**
1.6nm,0.5s,baz=165,slow=13,SNR=6.5
PETK Petropavlovsk- 35.87 12 P **P** **03 21 51.3 +0.1**
1.1nm,0.5s,baz=193,slow=5.9,SNR=4.1
WRA Warramunga Arr 39.72 197 P **P** **03 22 23.0 -0.9**
2.4nm,0.4s,baz=18,slow=8.2,SNR=46
WRA PcP **PcP** **03 24 27.0 -0.6**
0.3nm,0.6s,baz=18,slow=3.7,SNR=4.7
FITZ Fitzroy Crossi 41.34 210 P **P** **03 22 37.7 +0.5**
2.1nm,0.3s,baz=8.5,slow=5.3,SNR=59
ASAR Alice Springs 43.38 196 P **P** **03 22 53.1 -0.6**
1.6nm,0.4s,baz=15,slow=8.4,SNR=26
SONM Songino Array 43.48 322 P **P** **03 22 53.9 -0.5**
0.6nm,0.5s,baz=140,slow=9.5,SNR=4.9
SEY Seymchan 44.74 4 P **P** **03 23 05.7 +1.7**
1.4nm,0.2s,baz=0.0,slow=20,SNR=4.1
STKA Stephens Creek 50.13 185 P **P** **03 23 44.7 -1.3**
1.0nm,0.3s,baz=349,slow=10,SNR=5.0
ZALV Zalesovo Beam 58.36 323 P **P** **03 24 43.2 -2.1**
1.7nm,0.3s,baz=108,slow=9.3,SNR=3.7
MKAR Makanchi Array 58.79 314 P **P** **03 24 49.0 +0.5**
0.7nm,0.4s,baz=86,slow=10,SNR=6.9
NRIK Noril'sk 61.96 340 P **P** **03 25 09.7 +0.1**
4.3nm,0.6s,baz=105,slow=8.0,SNR=4.3
ILAR Eielson Array 63.87 26 P **P** **03 25 21.9 -0.4**
1.0nm,0.5s,baz=249,slow=6.2,SNR=21
ILAR PcP **PcP** **03 25 56.1 -0.6**
1.6nm,1.0s,baz=260,slow=4.9,SNR=7.6
INK Inuvik 69.61 23 P **P** **03 25 59.0 +0.5**
2.5nm,0.8s,baz=278,slow=10.0,SNR=8.0
YKA Yellowknife Ar 78.20 28 P **P** **03 26 48.5 -0.1**
1.4nm,0.6s,baz=287,slow=5.6,SNR=8.9
FINES FINESS Array B 87.23 335 P **P** **03 27 32.9 -2.3**
1.5nm,0.5s,baz=58,slow=3.9,SNR=11
TORD Torodi Ar. Bea 132.77 309 PKP **PKPdf** **03 34 03.3 -0.8**
0.2nm,0.6s,baz=44,slow=1.5,SNR=3.3
LPAZ La Paz 147.52 92 PKPbc **PKPdf** **03 34 31.4 +0.1**
1.2nm,0.4s,baz=278,slow=3.7,SNR=9.9

*NIED **01** 03:25:00,37.˚60N×141.˚90E,h11km,Mw3.7 Best double couple: M₀4.07000×10¹⁴ NP1:φ₀87.00000°,δ48.00000°, λ-50.00000°. NP2:φ₀216.00000°,δ55.00000°, λ-126.00000°.*
*IDC **01** 03:25:37.4±0.9,37.˚52N×142.˚08E,h0km,mb3.7/8, mb1 3.8/10,mb1mx3.7/42,mbtmp3.7/10,ML3.5/2,MS2.7/1, Ms1 2.7/1,ms1mx2.2/37,Error ellipse: s-maj=23.3km s-min=20.7km az=117.0*
*ISCJB **01** 03:25:38.4±1.3,37.˚62N±0.˚04×142.˚01E±0.˚07,h17km±8km, mb3.7/8, Error ellipse: s-maj=9.1km s-min=6.6km az=9.1*
*JMA **01** 03:25:39.7±0.1,37.˚62N×141.˚94E,h26km±2km,M3.9*
ISC 01 03:25:37.3±1.9,37.˚54N±0.˚04×141.˚89E±0.˚06,h1km±11km, n31,σ1°31/33,mb3.7/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JFK	**Kawauchi**	**0.83**	**258**	P		**Pn**	**03 25 55.9**	**-0.1**
JMM	**Marumori**	**0.93**	**291**	P		**Pb**	**03 25 56.8**	**+0.7**
JMM				*e*S		**Sb**	**03 26 09.0**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.97**	**243**	P		**Pn**	**03 25 58.2**	**+0.1**
ONAJ				S		**Sn**	**03 26 11.9**	**-0.7**
JIO	**Ouri**	**1.00**	**335**	P		**Pg**	**03 25 57.0**	**+0.5**
JFT	**Otama**	**1.23**	**269**	P		**Pn**	**03 26 02.7**	**+1.1**
JFT				*e*S		**Sn**	**03 26 18.8**	**-0.1**
JOU	**Okura**	**1.27**	**311**	P		**Pg**	**03 26 02.1**	**+0.5**
JOU				*e*S		**Sg**	**03 26 18.2**	**+0.1**
JMK	**Ichinoseki**	**1.50**	**340**	P		**Pn**	**03 26 04.5**	**-0.8**
JMK				S		**Sn**	**03 26 23.1**	**-2.4**
JYS	**Shirataka**	**1.59**	**296**	P		**Pb**	**03 26 07.3**	**-0.2**
JYS				*e*S		**Sn**	**03 26 26.7**	**-1.1**
JFY	**Yanaizu**	**1.74**	**266**	P		**Pg**	**03 26 10.4**	**-0.3**
JFY				*e*S		**Sg**	**03 26 32.8**	**-0.5**
JYK	**Kaneyama**	**1.83**	**319**	P		**Pn**	**03 26 09.8**	**0.0**
MJAR	**Matsushiro Arr**	**3.11**	**252**	Pn		**Pb**	**03 26 30.6**	**-2.7**
	2.1nm,0.3s,baz=78,slow=16,SNR=15							
MJAR						**Sb**	**03 27 11.5**	**-0.2**
	3.1nm,0.3s,baz=218,slow=32,SNR=5.5							
MAT	**Matsushiro**	**3.11**	**252**	P		**Pb**	**03 26 30.3**	**-3.1**
MAT				*e*S		**Sb**	**03 27 12.6**	**+0.8**
JHJ	**Hachijo jima 2**	**4.74**	**202**	Pn		**Pn**	**03 26 51.5**	**+1.7**
	17nm,0.3s,baz=334,slow=22,SNR=12							
JHJ						**Sn**	**03 27 44.0**	**-1.4**
	36nm,0.3s,baz=274,slow=23,SNR=8.2							
ASAJ	**Asahikawa**	**6.59**	**4**	Sn		**Sn**	**03 28 28.5**	**-2.4**
	baz=90,slow=16							
JNU	**Nakatsue**	**10.02**	**247**	LR		LR	03 32 22.7	
	comp=Z,42nm,18.2s,baz=236,slow=40							
KSRS	**Korea Array**	**11.10**	**274**	Pn		Pn	03 28 28.3	+11
	baz=77,slow=14,SNR=3.7							
SONM	**Songino Array**	**27.82**	**303**	P		**P**	**03 31 30.4**	**+2.4**
	0.3nm,0.4s,baz=99,slow=8.9,SNR=2.5							
H11N2	**WAKE ISLAND Hy**	**28.09**	**122**	T		T	04 00 57.0	
	baz=315,slow=75,SNR=577							
H11N1	**WAKE ISLAND Hy**	**28.10**	**122**	T		T	04 00 53.3	
	baz=315,slow=75,SNR=466							
H11N3	**WAKE ISLAND Hy**	**28.11**	**122**	T		T	04 00 54.2	
	baz=315,slow=75,SNR=466							
H11S1	**WAKE ISLAND Hy**	**28.82**	**124**	T		T	04 01 48.1	
	baz=317,slow=76,SNR=393							
H11S3	**WAKE ISLAND Hy**	**28.83**	**124**	T		T	04 01 48.2	
	baz=317,slow=76,SNR=468							
H11S2	**WAKE ISLAND Hy**	**28.84**	**124**	T		T	04 01 46.8	
	baz=317,slow=76,SNR=472							
MKAR	**Makanchi Array**	**44.17**	**302**	P		**P**	**03 33 49.6**	**+2.1**
	0.5nm,0.6s,baz=83,slow=10.0,SNR=4.9							
KURBB	**Kurchatov Arra**	**45.99**	**308**	P		**P**	**03 34 01.7**	**-0.1**
	1.0nm,0.6s,baz=81,slow=8.1,SNR=8.9							
ILAR	**Eielson Array**	**48.86**	**33**	P		**P**	**03 34 24.1**	**+0.1**
	0.5nm,0.9s,baz=262,slow=7.1,SNR=5.0							
WRA	**Warramunga Arr**	**57.62**	**188**	P		**P**	**03 35 29.1**	**+0.1**
	0.5nm,0.7s,baz=6.0,slow=6.9,SNR=5.1							
ASAR	**Alice Springs**	**61.34**	**188**	P		**P**	**03 35 53.6**	**-1.0**
	0.7nm,0.8s,baz=17,slow=5.2,SNR=3.1							
AKASG	**Malin Array Be**	**74.13**	**322**	P		**P**	**03 37 14.8**	**-0.2**
	0.5nm,0.4s,baz=61,slow=6.3,SNR=4.4							
TXAR	**Lajitas Array**	**89.51**	**53**	P		**P**	**03 38 37.0**	**+0.4**
	0.3nm,0.6s,baz=218,slow=2.2,SNR=4.4							
LPAZ	**La Paz**	**146.11**	**60**	PKPbc		**PKPbc**	**03 45 20.2**	**0.0**
	1.2nm,0.6s,baz=98,slow=7.1,SNR=6.5							

*ATH **01** 03:40:00.6,36.˚33N×24.˚39E,h87km±2km,ML2.6/9, Error ellipse: s-maj=2.3km s-min=0.9km az=95.0*
*ISCJB **01** 03:40:01.3±0.5,36.˚34N±0.˚02×24.˚38E±0.˚03,h83km±6km, Error ellipse: s-maj=4.4km s-min=3.5km az=136.0*
*CSEM **01** 03:40:01.9±0.1,36.˚33N×24.˚38E,h80km,ML2.6,Error ellipse: s-maj=2.4km s-min=1.6km az=39.0*
*THE **01** 03:40:02.2,36.˚33N×24.˚38E,h78km±2km,ML2.6/12,Error ellipse: s-maj=2.2km s-min=0.6km az=61.0*
ISC 01 03:40:01.9±1.3,36.˚34N±0.˚02×24.˚39E±0.˚02,h81km±8km, n104,σ0°69/147,Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MHLO	**Agia Marina, M**	**0.35**	**1**	P		**Pn**	**03 40 14.7**	**+0.1**
MHLO				S		**Sn**	**03 40 23.6**	**-0.4**
MHLO	**Agia Marina, M**	**0.35**	**1**	P		**Pn**	**03 40 14.7**	**+0.1**
MHLO				S		**Sn**	**03 40 23.6**	**-0.4**
MHLO	**Agia Marina, M**	**0.35**	**1**	P		**Pn**	**03 40 15.2**	**+0.6**
MHLO				S		**Sn**	**03 40 25.1**	**+1.1**
MHLO				AML	AML		03 40 25.3	
	comp=N,737μm,0.4s							
MHLO				AML	AML		03 40 32.4	
	comp=E,776μm,0.5s							
THR5	**Thira Island,**	**0.78**	**84**	P		**Pn**	**03 40 18.6**	**+0.2**
THR5				S		**Sn**	**03 40 31.0**	**+0.3**
THR5	**Thira Island,**	**0.78**	**84**	P		**Pn**	**03 40 18.6**	**+0.2**
THR5				S		**Sn**	**03 40 31.0**	**+0.3**
SAP1	**Santorini-Akro**	**0.81**	**88**	P		**Pn**	**03 40 18.9**	**+0.1**
SAP1				S		**Sn**	**03 40 32.0**	**+0.6**
SAP1	**Santorini-Akro**	**0.81**	**88**	P		**Pn**	**03 40 18.9**	**+0.1**
SAP1				S		**Sn**	**03 40 32.0**	**+0.6**
SAP1				AML	AML		03 40 32.7	
	comp=Z,1119μm,0.5s							
SAP1				AML	AML		03 40 36.3	
	comp=N,2697μm,0.5s							
THR6	**Thira Island,**	**0.81**	**88**	P		**Pn**	**03 40 19.2**	**+0.4**
THR6	**Thira Island,**	**0.81**	**88**	P		**Pn**	**03 40 19.2**	**+0.4**
THR3	**Thira Island,**	**0.82**	**85**	P		**Pn**	**03 40 19.1**	**+0.3**
THR3	**Thira Island,**	**0.82**	**85**	P		**Pn**	**03 40 19.1**	**+0.3**
SERI	**Serifos**	**0.83**	**5**	P		**Pn**	**03 40 18.8**	**-0.2**
SERI				S		**Sn**	**03 40 30.4**	**-1.4**
SERI	**Serifos**	**0.83**	**5**	P		**Pn**	**03 40 18.8**	**-0.2**
SERI				S		**Sn**	**03 40 30.4**	**-1.4**
SERI				AML	AML		03 40 31.9	
	comp=E,425μm,0.4s							
SERI				AML	AML		03 40 32.0	
	comp=Z,178μm,0.3s							
CMBO	**Columbo, Santo**	**0.83**	**80**	P		**Pn**	**03 40 19.2**	**+0.2**
CMBO				S		**Sn**	**03 40 32.2**	**+0.5**
CMBO	**Columbo, Santo**	**0.83**	**80**	P		**Pn**	**03 40 19.2**	**+0.2**
CMBO				S		**Sn**	**03 40 32.2**	**+0.5**
CMBO	**Columbo, Santo**	**0.83**	**80**	P		**Pn**	**03 40 19.4**	**+0.5**
CMBO				S		**Sn**	**03 40 32.3**	**+0.5**
CMBO				AML	AML		03 40 33.1	
	comp=N,1224μm,0.4s							
CMBO				AML	AML		03 40 33.2	
	comp=E,1620μm,0.4s							
SANT	**Santorini**	**0.86**	**87**	P		**Pn**	**03 40 20.0**	**+0.6**
SANT				S		**Sn**	**03 40 33.5**	**+1.0**
SANT	**Santorini**	**0.86**	**87**	P		**Pn**	**03 40 19.9**	**+0.6**
SANT				S		**Sn**	**03 40 33.5**	**+1.0**
SANT				AML	AML		03 40 33.8	
	comp=N,391μm,0.4s							
SANT				AML	AML		03 40 33.8	
	comp=E,684μm,0.3s							
IMMV	**Iera Moni Meta**	**0.93**	**201**	P		**Pn**	**03 40 20.1**	**-0.1**
IMMV				S		**Sn**	**03 40 33.7**	**-0.2**
IMMV	**Iera Moni Meta**	**0.93**	**201**	P		**Pn**	**03 40 20.1**	**-0.1**
IMMV				S		**Sn**	**03 40 33.7**	**-0.2**
IMMV	**Iera Moni Meta**	**0.93**	**201**	P		**Pn**	**03 40 20.2**	**0.0**
IMMV				S		**Sn**	**03 40 33.0**	**-0.9**
IMMV				AML	AML		03 40 37.5	
	comp=N,534μm,0.5s							
IMMV				AML	AML		03 40 40.0	
	comp=E,460μm,0.3s							
VAM	**Vamos**	**0.94**	**190**	P		**Pn**	**03 40 20.2**	**-0.1**
VAM				S		**Sn**	**03 40 34.0**	**0.0**
VAM	**Vamos**	**0.94**	**190**	P		**Pn**	**03 40 20.2**	**-0.1**
VAM				S		**Sn**	**03 40 34.0**	**0.0**
ANKY	**Antikythira Is**	**1.00**	**242**	P		**Pn**	**03 40 21.4**	**+0.5**
ANKY				S		**Sn**	**03 40 35.1**	**-0.1**
ANKY	**Antikythira Is**	**1.00**	**242**	P		**Pn**	**03 40 21.4**	**+0.5**
ANKY				S		**Sn**	**03 40 35.1**	**-0.1**
KYTH	**Kithira**	**1.09**	**267**	P		**Pn**	**03 40 22.2**	**+0.2**
KYTH				S		**Sn**	**03 40 37.3**	**+0.1**
KYTH	**Kithira**	**1.09**	**267**	P		**Pn**	**03 40 22.2**	**+0.2**
KYTH				S		**Sn**	**03 40 37.3**	**+0.1**
KYTH	**Kithira**	**1.09**	**267**	P		**Pn**	**03 40 22.5**	**+0.4**
IDI	**Anoyia**	**1.12**	**159**	P		**Pn**	**03 40 22.0**	**-0.5**
IDI				S		**Sn**	**03 40 37.2**	**-0.7**
IDI	**Anoyia**	**1.12**	**159**	P		**Pn**	**03 40 22.0**	**-0.5**
IDI				S		**Sn**	**03 40 37.2**	**-0.7**
IDI	**Anoyia**	**1.12**	**159**	P		**Pn**	**03 40 21.7**	**-0.8**
IDI				S		**Sn**	**03 40 35.9**	**-2.0**
IDI				AML	AML		03 40 39.6	
	comp=N,353μm,0.2s							
IDI				AML	AML		03 40 39.8	
	comp=E,481μm,0.3s							
APE	**Apeiranthos**	**1.17**	**51**	P		**Pn**	**03 40 22.9**	**-0.2**
APE				S		**Sn**	**03 40 38.5**	**-0.5**
APE	**Apeiranthos**	**1.17**	**51**	P		**Pn**	**03 40 22.9**	**-0.2**
APE				S		**Sn**	**03 40 38.5**	**-0.5**
APE	**Apeiranthos**	**1.17**	**51**	P		**Pn**	**03 40 22.8**	**-0.3**
VLI	**Veliai**	**1.23**	**289**	P		**Pn**	**03 40 23.5**	**-0.2**
VLI				S		**Sn**	**03 40 39.2**	**-1.1**
VLI	**Veliai**	**1.23**	**289**	P		**Pn**	**03 40 23.6**	**-0.2**
VLI				S		**Sn**	**03 40 39.2**	**-1.1**
VLI	**Veliai**	**1.23**	**289**	P		**Pn**	**03 40 23.6**	**-0.2**
VLI				S		**Sn**	**03 40 38.2**	**-2.0**
VLI				AML	AML		03 40 40.0	
	comp=N,327μm,0.3s							
VLI				AML	AML		03 40 40.0	
	comp=E,179μm,0.1s							
SIVA	**Sivas**	**1.36**	**165**	P		**Pn**	**03 40 25.8**	**+0.4**
SIVA	**Sivas**	**1.36**	**165**	P		**Pn**	**03 40 25.8**	**+0.4**
SIVA				S		**Sn**	**03 40 42.4**	**-0.7**
SIVA	**Sivas**	**1.36**	**165**	P		**Pn**	**03 40 26.0**	**+0.6**
SIVA				S		**Sn**	**03 40 42.4**	**-0.7**
NPS	**Neapolis**	**1.46**	**137**	P		**Pn**	**03 40 26.0**	**-0.7**
NPS				S		**Sn**	**03 40 45.3**	**-0.2**
NPS	**Neapolis**	**1.46**	**137**	P		**Pn**	**03 40 26.0**	**-0.7**
NPS				S		**Sn**	**03 40 45.3**	**-0.2**
NPS	**Neapolis**	**1.46**	**137**	P		**Pn**	**03 40 25.8**	**-0.9**
LAST	**Lasithi**	**1.47**	**143**	P		**Pn**	**03 40 26.7**	**-0.1**
LAST				S		**Sn**	**03 40 45.2**	**-0.5**
LAST	**Lasithi**	**1.47**	**143**	P		**Pn**	**03 40 26.8**	**-0.1**
LAST				S		**Sn**	**03 40 45.2**	**-0.5**
LAST	**Lasithi**	**1.47**	**143**	P		**Pn**	**03 40 26.8**	**-0.1**
DID	**Didima**	**1.49**	**322**	P		**Pn**	**03 40 27.0**	**-0.1**
DID				S		**Sn**	**03 40 46.0**	**-0.2**
DID	**Didima**	**1.49**	**322**	P		**Pn**	**03 40 27.0**	**-0.1**
DID				S		**Sn**	**03 40 46.0**	**-0.2**
DID	**Didima**	**1.49**	**322**	P		**Pn**	**03 40 26.8**	**-0.3**
GVD	**Gavdhos**	**1.51**	**190**	P		**Pn**	**03 40 29.5**	**+2.1**
GVD	**Gavdhos**	**1.51**	**190**	P		**Pn**	**03 40 29.5**	**+2.1**
VLY	**Voula,Athens**	**1.59**	**343**	P		**Pn**	**03 40 28.5**	**+0.1**
VLY	**Voula,Athens**	**1.59**	**343**	P		**Pn**	**03 40 28.5**	**+0.1**
VLY				S		**Sn**	**03 40 49.3**	**+0.9**
VLY	**Voula,Athens**	**1.59**	**343**	P		**Pn**	**03 40 29.0**	**+0.6**
VLY				S		**Sn**	**03 40 49.3**	**+0.9**
PTL	**Penteli**	**1.76**	**346**	P		**Pn**	**03 40 30.9**	**+0.2**
PTL	**Penteli**	**1.76**	**346**	P		**Pn**	**03 40 30.7**	**+0.1**
PTL	**Penteli**	**1.76**	**346**	P		**Pn**	**03 40 30.7**	**+0.1**
PTL				AML	AML		03 40 53.1	
	comp=E,116μm,0.7s							
PTL				AML	AML		03 40 53.4	
	comp=N,79μm,0.5s							
VLX	**Vlachokerasia**	**1.92**	**303**	P		**Pn**	**03 40 32.8**	**0.0**
VLX	**Vlachokerasia**	**1.92**	**303**	P		**Pn**	**03 40 32.8**	**0.0**
VLX	**Vlachokerasia**	**1.92**	**303**	P		**Pn**	**03 40 32.8**	**0.0**
ZKR	**Zakros**	**1.92**	**129**	P		**Pn**	**03 40 33.3**	**+0.6**
ZKR	**Zakros**	**1.92**	**129**	P		**Pn**	**03 40 33.3**	**+0.6**
VILL	**Villia**	**2.02**	**335**	P		**Pn**	**03 40 34.3**	**+0.2**
VILL	**Villia**	**2.02**	**335**	P		**Pn**	**03 40 34.2**	**+0.2**
LTK	**Loutraki**	**2.03**	**326**	P		**Pn**	**03 40 34.4**	**+0.2**
LTK	**Loutraki**	**2.03**	**326**	P		**Pn**	**03 40 34.4**	**+0.2**
LTK	**Loutraki**	**2.03**	**326**	P		**Pn**	**03 40 34.4**	**+0.2**
TRIP	**Tripoli**	**2.08**	**306**	P		**Pn**	**03 40 34.7**	**-0.1**
TRIP	**Tripoli**	**2.08**	**306**	P		**Pn**	**03 40 34.7**	**-0.1**
VIL2	**Platees**	**2.08**	**335**	P		**Pn**	**03 40 34.2**	**-0.6**
ITM	**Ithomi**	**2.15**	**294**	P		**Pn**	**03 40 36.8**	**+1.0**
ITM				S		**Sn**	**03 41 02.5**	**+0.8**
ITM	**Ithomi**	**2.15**	**294**	P		**Pn**	**03 40 36.8**	**+1.0**
ITM				S		**Sn**	**03 41 02.5**	**+0.8**
ITM	**Ithomi**	**2.15**	**294**	P		**Pn**	**03 40 37.6**	**+1.8**
PYL	**PYLOS**	**2.20**	**285**	P		**Pn**	**03 40 36.0**	**-0.5**
PYL	**PYLOS**	**2.20**	**285**	P		**Pn**	**03 40 36.0**	**-0.5**
PYL	**PYLOS**	**2.20**	**285**	P		**Pn**	**03 40 35.3**	**-1.2**
PROD	**Prodromos**	**2.26**	**329**	P		**Pn**	**03 40 37.0**	**-0.3**
PROD	**Prodromos**	**2.26**	**329**	P		**Pn**	**03 40 37.0**	**-0.3**
GUR	**Goura**	**2.29**	**315**	P		**Pn**	**03 40 37.5**	**-0.2**
GUR	**Goura**	**2.29**	**315**	P		**Pn**	**03 40 37.5**	**-0.2**
GUR	**Goura**	**2.29**	**315**	P		**Pn**	**03 40 37.2**	**-0.6**
KARP	**Karpathos**	**2.38**	**108**	P		**Pn**	**03 40 38.6**	**-0.3**
KARP	**Karpathos**	**2.38**	**108**	P		**Pn**	**03 40 38.6**	**-0.3**
CHOS	**Chios island**	**2.44**	**32**	P		**Pn**	**03 40 39.8**	**+0.1**
CHOS	**Chios island**	**2.44**	**32**	P		**Pn**	**03 40 39.8**	**+0.1**
AMT	**Artemida-Makis**	**2.46**	**300**	P		**Pn**	**03 40 40.9**	**+1.0**
AMT	**Artemida-Makis**	**2.46**	**300**	P		**Pn**	**03 40 40.9**	**+1.0**
AMT	**Artemida-Makis**	**2.46**	**300**	P		**Pn**	**03 40 41.8**	**+1.8**
KLV	**Kalavryta, Ach**	**2.47**	**314**	P		**Pn**	**03 40 39.2**	**-0.9**
KLV	**Kalavryta, Ach**	**2.47**	**314**	P		**Pn**	**03 40 39.2**	**-0.9**
DSF	**Desfina**	**2.55**	**325**	P		**Pn**	**03 40 40.5**	**-0.7**
DSF	**Desfina**	**2.55**	**325**	P		**Pn**	**03 40 40.5**	**-0.7**
LKR	**Lokris**	**2.56**	**335**	P		**Pn**	**03 40 41.5**	**+0.2**
LKR	**Lokris**	**2.56**	**335**	P		**Pn**	**03 40 41.5**	**+0.2**
LKR	**Lokris**	**2.56**	**335**	P		**Pn**	**03 40 40.1**	**-1.2**
DRO	**Drossia**	**2.68**	**308**	P		**Pn**	**03 40 43.5**	**+0.6**
DRO	**Drossia**	**2.68**	**308**	P		**Pn**	**03 40 43.5**	**+0.6**
LAKA	**Lakka**	**2.71**	**315**	P		**Pn**	**03 40 42.9**	**-0.4**
LAKA	**Lakka**	**2.71**	**315**	P		**Pn**	**03 40 42.9**	**-0.4**
KALE	**Kalithea**	**2.73**	**320**	P		**Pn**	**03 40 42.6**	**-1.0**
KALE	**Kalithea**	**2.73**	**320**	P		**Pn**	**03 40 42.6**	**-1.0**
RLS	**Riolos of Patr**	**2.90**	**307**	P		**Pn**	**03 40 47.9**	**+2.1**
SKIA	**Skiathos**	**2.92**	**346**	P		**Pn**	**03 40 46.4**	**+0.2**
SKIA	**Skiathos**	**2.92**	**346**	P		**Pn**	**03 40 46.4**	**+0.2**

*IDC **01** 03:41:03.6±1.5,36.˚36N×142.˚82E,h0km,mb3.5/5, mb1 3.6/7,mb1mx3.4/54,mbtmp3.6/7,ML3.2/2,Error ellipse: s-maj=33.8km s-min=26.1km az=88.0*
*ISCJB **01** 03:41:04.6±1.0,36.˚35N±0.˚05×142.˚6E±0.˚1,h15km, mb3.5/5,Error ellipse: s-maj=13.1km s-min=7.3km az=11.6*
*JMA **01** 03:41:08.3±0.2,36.˚40N×142.˚35E,h73km±5km,M2.7*
ISC 01 03:41:06.6±1.1,36.˚38N±0.˚05×142.˚42E±0.˚09,h15km,n19, σ1°53/21,mb3.6/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**1.44**	**242**	P		**Pn**	**03 41 32.5**	**-0.5**
JHO	**Hitachi**	**1.51**	**279**	P		**Pn**	**03 41 32.9**	**-0.2**
JFT	**Otama**	**2.02**	**305**	P		**Pn**	**03 41 39.9**	**-0.2**
JFT				*e*S		**Sn**	**03 42 03.5**	**-1.6**
BSO1	**Boso 1**	**2.09**	**215**	P		**Pn**	**03 41 41.0**	**+0.5**
BSO1				*e*S		**Sn**	**03 42 06.2**	**+0.3**
BSO3	**Boso 3**	**2.21**	**225**	P		**Pn**	**03 41 43.2**	**+0.7**
BSO3				*e*S		**Sn**	**03 42 08.7**	**-0.8**
JAG	**Ashikaga**	**2.39**	**272**	P		**Pn**	**03 41 45.6**	**+0.3**
JRY	**Ryogami san**	**2.87**	**264**	P		**Pn**	**03 41 52.1**	**+0.3**
JYK	**Kaneyama**	**3.02**	**328**	P		**Pn**	**03 41 53.7**	**-0.1**
MJAR	**Matsushiro Arr**	**3.40**	**274**	Pn		**Pn**	**03 42 00.9**	**+1.8**
	0.8nm,0.3s,baz=108,slow=9.0,SNR=11							
MAT	**Matsushiro**	**3.40**	**274**	P		**Pn**	**03 42 00.7**	**+1.6**
MAT				*e*S		**Sb**	**03 42 46.1**	**-1.6**
JHJ	**Hachijo jima 2**	**3.91**	**214**	Pn		**Pn**	**03 42 06.2**	**+0.1**
	11nm,0.3s,baz=314,slow=20,SNR=8.7							
JHJ				Sn		**Sn**	**03 42 48.8**	**-3.0**
	20nm,0.3s,baz=238,slow=21,SNR=6.7							
H11N2	**WAKE ISLAND Hy**	**27.12**	**121**	T		T	04 15 23.5	
	baz=316							
H11N1	**WAKE ISLAND Hy**	**27.13**	**121**	T		T	04 15 13.1	
	baz=316							
H11N3	**WAKE ISLAND Hy**	**27.14**	**121**	T		T	04 15 10.7	
	baz=316							
SONM	**Songino Array**	**28.82**	**305**	P		**P**	**03 47 06.4**	**+2.2**
	0.5nm,0.6s,baz=98,slow=11,SNR=4.1							
MKAR	**Makanchi Array**	**45.15**	**303**	P		**P**	**03 49 25.8**	**+3.3**
	0.2nm,0.3s,baz=82,slow=10,SNR=1.7							
KURBB	**Kurchatov Arra**	**47.04**	**309**	P		**P**	**03 49 37.6**	**+0.3**
	0.3nm,0.6s,baz=82,slow=7.9,SNR=4.4							
INK	**Inuvik**	**54.60**	**27**	P		**P**	**03 50 31.7**	**-2.2**
	0.3nm,0.7s,baz=256,slow=8.3,SNR=1.0							
WRA	**Warramunga Arr**	**56.53**	**189**	P		**P**	**03 50 48.3**	**-0.1**
	0.7nm,1.1s,baz=6.0,slow=7.4,SNR=3.7							

BUC 01 03:43:14.0±1.0,45.˚66N×26.˚59E,h87km±8km,MD2.9/5, 18C-12D,Error ellipse: s-maj=7.9km s-min=6.4km az=119.0,Romania

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PLOR	**Plostina**	**0.19**	**14**	↑P		**Pn**	03 43 26.9	+0.3
PLOR	**Plostina**	**0.19**	**14**	↑P		Pn	03 43 26.9	+0.3
PLOR				*i* S		Sn	03 43 36.5	+0.5
VRI	**Vrincioaia**	**0.23**	**26**	↑P		Pn	03 43 26.9	+0.2
VRI	**Vrincioaia**	**0.23**	**26**	↑P		Pn	03 43 26.9	+0.2
VRI				*i* S		Sn	03 43 36.2	0.0
ODBI	**Odobesti**	**0.34**	**73**	↑P		Pn	03 43 26.6	-0.7
ODBI	**Odobesti**	**0.34**	**73**	↑P		Pn	03 43 26.6	-0.7
ODBI				*i* S		Sn	03 43 37.2	+0.1
GRER		**0.39**	**136**	↑P		Pn	03 43 27.3	-0.3
GRER		**0.39**	**136**	↑P		Pn	03 43 27.3	-

λ-5.00000°. NP2:φ8 167.00000°, δ85.00000°, λ-169.00000°.

ISCJB ***01*** *04:03:45.5±1.3, 37.°37N±0.°03×141.°57E±0.°06, h5km±6km, mb3.4/2, MS2.4/1, Error ellipse: s-maj=8.5km s-min=5.2km az=7.5*

IDC ***01*** *04:03:45.4±2.5, 37.°43N×141.°71E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.4/36, mbtmp3.6/4, ML3.5/2, MS2.5/1, Ms1 2.5/1, ms1mx2.0/35, Error ellipse: s-maj=44.9km s-min=34.4km az=49.0*

JMA ***01*** *04:03:48.1±0.1, 37.°41N×141.°45E, h20km±2km, M3.9*

JMA Felt II J1.

ISC 01 04:03:46.3±1.7, 37.°38N±0.°04×141.°55E±0.°07, h5km±10km, n20, σ1°8°3/24, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.54**	**268**	P	**Pg**	**04 03 57.2**	**+0.6**
JFK				S	**Sg**	**04 04 03.6**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.66**	**245**	P	**Pg**	**04 03 59.5**	**+0.5**
ONAJ				S	**Sg**	**04 04 07.9**	**+0.4**
JMM	**Marumori**	**0.77**	**309**	P	**Pg**	**04 04 01.1**	**+0.1**
JMM				S	**Sg**	**04 04 10.8**	**-0.2**
JFT	**Otama**	**0.97**	**278**	P	**Pg**	**04 04 05.1**	**+0.2**
JFT				S	**Sg**	**04 04 17.1**	**-0.4**
JIO	**Ouri**	**1.08**	**352**	P	**Pg**	**04 04 06.9**	**-0.1**
JIO				S	**Sg**	**04 04 20.7**	**-0.3**
JHO	**Hitachi**	**1.10**	**226**	P	**Pb**	**04 04 06.1**	**-1.6**
JHO				S	**Sb**	**04 04 21.1**	**-1.2**
JOU	**Okura**	**1.20**	**325**	P	**Pb**	**04 04 09.3**	**-0.2**
JOU				S	**Sb**	**04 04 24.8**	**-0.6**
JYS	**Shirataka**	**1.44**	**306**	P	**Pn**	**04 04 13.1**	**+0.1**
JYS				S	**Sn**	**04 04 31.8**	**-0.5**
MJAR	**Matsushiro Arr**	**2.80**	**254**	Pn	**Pn**	**04 04 33.4**	**+1.7**
	4.4nm,0.3s,baz=82,slow=16,SNR=13						
MJAR				Sn	**Sb**	**04 05 09.4**	**-1.9**
	8.7nm,0.3s,baz=82,slow=14,SNR=4.1						
MAT	**Matsushiro**	**2.80**	**254**	P	**Pn**	**04 04 33.8**	**+2.1**
MAT				S	**Sn**	**04 05 06.7**	**+0.8**
JHJ	**Hachijo jima 2**	**4.49**	**199**	Pn	**Pn**	**04 04 56.1**	**+1.2**
	11nm,0.3s,baz=208,slow=17,SNR=2.7						
JHJ				Sn	**Sn**	**04 05 46.1**	**-1.4**
	6.2nm,0.3s,baz=218,slow=19,SNR=1.4						
GUMO	**Guam**	**23.88**	**172**	LR	LR	04 25 52.4	
	comp=Z,11nm,18.1s,baz=70,slow=56						
H11N2	**WAKE ISLAND Hy**	**28.24**	**122**	T	T	04 39 14.5	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**28.25**	**122**	T	T	04 39 22.5	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**28.25**	**122**	T	T	04 39 20.4	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**28.96**	**124**	T	T	04 40 36.6	
	baz=316						
H11S3	**WAKE ISLAND Hy**	**28.96**	**124**	T	T	04 40 43.8	
	baz=316						
H11S2	**WAKE ISLAND Hy**	**28.98**	**124**	T	T	04 40 43.7	
	baz=316						
MKAR	**Makanchi Array**	**44.02**	**302**	P	**P**	**04 11 55.2**	**+0.5**
	0.2nm,0.3s,baz=94,slow=8.7,SNR=1.7						
WRA	**Warramunga Arr**	**57.42**	**188**	P	**P**	**04 13 36.2**	**+0.3**
	0.5nm,1.0s,baz=5.9,slow=7.8,SNR=3.2						

MEX 01 04:08:57.1±0.8, 14.°38N×91.°05W, h183km±64km, MD4.0, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.16**	**331**	*e*P	Pn	04 09 35.4	-0.9
CCIG				*e*S	Sn	04 10 04.4	-2.4

NIED ***01*** *04:19:00, 37.°60N×142.°00E, h11km, Mw4.4 Best double couple: M0=4.62000×10^15 NP1:φ8=315.00000°, δ42.00000°, λ-78.00000°. NP2:φ8=119.00000°, δ49.00000°, λ-101.00000°.*

JMA ***01*** *04:19:48.9±0.1, 37.°60N×142.°01E, h24km±2km, M4.5*

JMA Felt II J1.

ISCJB ***01*** *04:19:49.0±0.8, 37.°57N±0.°03×142.°02E±0.°04, h23km±5km, mb4.3/56, MS3.6/14, Error ellipse: s-maj=6.4km s-min=4.7km az=34.2*

NEIC ***01*** *04:19:50.8±1.0, 37.°64N×141.°83E, h19km±6km, mb4.6/17, Error ellipse: s-maj=11.8km s-min=7.4km az=129.0*

NEIC Recorded [2 JMA] in Fukushima.

IDC ***01*** *04:19:53.8±1.7, 37.°52N×141.°84E, h46km±16km, mb3.8/21, mb1 4.0/26, mb1mx3.9/47, mbtmp4.1/26, ML4.0/3, MS3.4/10, Ms1 3.5/10, ms1mx3.1/40, Error ellipse: s-maj=16.6km s-min=10.8km az=97.0*

MOS ***01*** *04:19:54.1±0.9, 37.°93N×141.°60E, h42km, mb4.6/29, Error ellipse: s-maj=11.3km s-min=7.1km az=99.4*

BJI ***01*** *04:19:58.9, 38.°10N×141.°20E, h35km, mb4.5/23, mB4.6/14, Ms4.1/14, Ms7 3.9/13*

ISC 01 04:19:52.6±0.6, 37.°67N±0.°04×141.°79E±0.°05, h32km±3km, n134, σ2°3°0/133, mb4.4/56, MS3.7/14, 2C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.79**	**248**	P	**Pb**	**04 20 06.1**	**-1.7**
JFK				*e*S	**Sn**	**04 20 17.8**	**-0.3**
JMM	**Marumori**	**0.81**	**284**	P	**Pb**	**04 20 07.2**	**-1.0**
JMM				S	**Sn**	**04 20 20.0**	**+1.3**
JIO	**Ouri**	**0.86**	**336**	P	**Pb**	**04 20 07.1**	**-1.9**
ONAJ	**Iwakimizuishiy**	**0.97**	**235**	P	**Pn**	**04 20 08.3**	**-1.7**
ONAJ				S	**Sb**	**04 20 22.0**	**-1.4**
JOU	**Okura**	**1.13**	**308**	P	**Pb**	**04 20 12.6**	**-0.9**
JOU				S	**Sb**	**04 20 29.1**	**+1.2**
JFT	**Otama**	**1.16**	**263**	P	**Pb**	**04 20 13.0**	**-1.1**
JFT				S	**Sb**	**04 20 29.9**	**+1.1**
JMK	**Ichinoseki**	**1.36**	**341**	P	**Pn**	**04 20 14.8**	**-0.5**
JYS	**Shirataka**	**1.47**	**293**	P	**Pb**	**04 20 17.8**	**-1.5**
JYS				S	**Sb**	**04 20 39.3**	**+1.7**
JFY	**Yanaizu**	**1.68**	**262**	*e*S	**Sb**	**04 20 43.6**	**+0.1**
JYK	**Kaneyama**	**1.68**	**318**	P	**Pn**	**04 20 19.7**	**0.0**
JOM	**Ohasama**	**1.84**	**348**	P	**Pn**	**04 20 21.4**	**-0.6**
MJAR	**Matsushiro Arr**	**3.07**	**250**	P	**Pn**	**04 20 40.3**	**+1.4**
	19nm,0.3s,baz=72,slow=17,SNR=18						
MJAR				S	**Sb**	**04 21 22.3**	**-1.3**
	26nm,0.3s,baz=130,slow=11,SNR=6.2						
MAJO	**Matsushiro**	**3.07**	**250**	*e*P	**Pn**	**04 20 40.4**	**+1.5**
MAJO	**Matsushiro**	**3.07**	**250**	*e*Pn	**Pn**	**04 20 40.4**	**+1.5**
MAT	**Matsushiro**	**3.07**	**250**	P	**Pn**	**04 20 40.8**	**+1.9**
MAT				*e*S	**Sb**	**04 21 21.7**	**-1.9**
MJB9	**Matsu-Tunnel**	**3.08**	**250**	*e*Pn	**Pn**	**04 20 41.4**	**+2.4**
ERM	**Erimo**	**4.47**	**13**	*ce*P	**Pn**	**04 20 57.7**	**-0.3**
ERM				pmax	pmax		
	comp=Z,50nm,1.7s						
ERM	**Erimo**	**4.47**	**13**	*e*Pn	**Pn**	**04 20 57.3**	**-0.7**
INU	**Inuyama**	**4.49**	**240**	*e*Pn	**Pn**	**04 21 01.1**	**+2.8**
JHJ2	**Mitsune**	**4.82**	**200**	*e*Pn	**Pn**	**04 21 01.4**	**-1.5**
JHJ2				*e*Sn	**Sn**	**04 21 55.0**	**-2.7**
JHJ	**Hachijo jima 2**	**4.83**	**200**	P	**Pn**	**04 21 01.5**	**-1.4**
	comp=Z,38nm,0.3s,baz=342,slow=20,SNR=28						
JHJ				S	**Sn**	**04 21 55.2**	**-2.5**
	comp=Z,94nm,0.3s,baz=76,slow=22,SNR=6.9						
ASAJ	**Asahikawa**	**6.47**	**5**	P	**Pn**	**04 21 27.1**	**+1.6**
	comp=Z,2.5nm,0.3s,baz=202,slow=14,SNR=7.0						
ASAJ	**Asahikawa**	**6.47**	**5**	*e*Pn	**Pn**	**04 21 26.6**	**+1.1**
KUR	**Kuril'sk**	**8.83**	**29**	*e*P	**Pn**	**04 21 54.4**	**-3.4**
KUR				S	**Sn**	**04 23 28.6**	**-7.5**
YSS	**Yuzh-Sakhalins**	**9.31**	**4**	*e*P	**Pn**	**04 22 05.6**	**+1.2**
USRK	**Ussuriysk Ar.**	**9.87**	**314**	P	**Pn**	**04 22 16.4**	**+4.3**
	comp=Z,0.5nm,0.3s,baz=134,slow=14,SNR=9.6						
JNU	**Nakatsue**	**9.99**	**246**	P	Pn	04 22 18.7	+4.8
	comp=Z,0.8nm,0.3s,baz=74,slow=7.4,SNR=3.2						
JNU				LR	LR	04 26 00.0	
	comp=Z,251nm,18.5s,baz=302,slow=37						
KSRS	**Korea Array**	**11.01**	**273**	P	Pn	04 22 33.8	+6.1
	comp=Z,0.2nm,0.3s,baz=82,slow=16,SNR=4.5						
KSRS				LR	LR	04 26 24.3	
	comp=Z,130nm,19.8s,baz=68,slow=35						
KSAR	**Wonju Array Be**	**11.04**	**273**	P	Pn	04 22 33.8	+5.6
KSAR	**Wonju Array Be**	**11.04**	**273**	P	Pn	04 22 33.8	+5.6
MDJ	**Mudanjiang**	**11.51**	**311**	Pn	**Pn**	**04 22 30.1**	**-4.5**
	comp=Z,20nm,1.1s						
KLR	**Kul'dur**	**13.65**	**331**	P	**P**	**04 23 10.9**	**-1.3**
	comp=Z,0.3nm,0.3s,baz=155,slow=11,SNR=7.1						
KLR				LR	LR	04 28 21.0	
	comp=Z,206nm,19.2s,baz=134,slow=37						
PEA0	**Petropavlovsk-**	**18.99**	**31**	*e*P	**Pn**	**04 24 13.5**	**+1.4**
PETK	**Petropavlovsk-**	**18.99**	**31**	P	**Pn**	**04 24 12.4**	**+0.3**
	baz=199,slow=13,SNR=4.1						
PETK				LR	LR	04 30 47.9	
	comp=Z,66nm,20.8s,baz=202,slow=34						
BJI	**Beijing**	**20.07**	**285**	P	Pn	04 24 27.2	+2.2
BJI				pmax	pmax		
	comp=Z,8.0nm,1.4s						
BJI				LR	LR		
	comp=Z,110nm,14.1s						
BJI				LR	LR		
	comp=Z,170nm,12.0s						
BJI				LR	LR		
	comp=Z,59nm,20.5s						
YHNB	**Yeheng**	**21.69**	**239**	*e*P	**P**	**04 24 42.1**	**+1.4**
	comp=Z,7.7nm,0.7s						
HHC	**Hu-ho-hao-te**	**23.56**	**287**	*e*P	**P**	**04 24 59.6**	**-0.6**
HHC				sP	sP	04 25 19.0	+5.8
HHC				PP	**PnPn**	**04 25 30.2**	**+2.6**
HHC				S	**S**	**04 29 05.7**	**-6.6**
HHC				pmax	pmax		
	comp=Z,11nm,1.0s						
HHC				pmax	pmax		
	comp=Z,62nm,4.6s						
HHC				LR	LR		
	comp=Z,110nm,9.2s						
HHC				LR	LR		
	comp=Z,170nm,10.6s						
HHC				LR	LR		
	comp=Z,140nm,11.0s						
YAK	**Yakutsk**	**25.52**	**347**	*e*P	**P**	**04 25 22.9**	**+5.1**
YAK				*e**PP	**sP**	**04 25 30.0**	**-0.9**
YAK				pmax	pmax		
	comp=Z,9.0nm,0.6s						
YAK				pmax	pmax		
	comp=N,5.0nm,0.8s						
YAK				pmax	pmax		
	comp=E,4.0nm,0.9s						
YAK				MLR	MLR		
	comp=Z,239nm,16.0s						
YAK				MLR	MLR		
	comp=N,168nm,14.0s						
YAK				MLR	MLR		
	comp=E,104nm,15.0s						
SEY	**Seymchan**	**26.11**	**11**	P	**P**	**04 25 25.3**	**+2.1**
	comp=E,2.1nm,0.7s,baz=193,slow=6.8,SNR=5.8						
XAN	**Xi'an**	**26.81**	**272**	P	**P**	**04 25 35.5**	**+5.6**
XAN				pmax	pmax		
	comp=E,4.0nm,1.1s						
XAN				pmax	pmax		
	comp=E,37nm,6.6s						
BOD	**Bodaibo**	**27.16**	**327**	*e*P	**P**	**04 25 31.8**	**-0.9**
BOD				pmax	pmax		
	comp=Z,9.0nm,1.3s						
SONM	**Songino Array**	**27.68**	**303**	P	**P**	**04 25 38.9**	**+1.2**
	comp=Z,2.5nm,0.9s,baz=103,slow=9.5,SNR=10						
ENH	**Enshi**	**27.69**	**264**	*e*P	**P**	**04 25 37.7**	**0.0**
	comp=Z,22nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**28.23**	**122**	T	T	04 55 06.8	
	baz=315,slow=75,SNR=3597						
H11N1	**WAKE ISLAND Hy**	**28.23**	**122**	T	T	04 55 07.1	
	baz=315,slow=75,SNR=3865						
H11N3	**WAKE ISLAND Hy**	**28.24**	**122**	T	T	04 55 07.7	
	baz=315,slow=75,SNR=3032						
H11S1	**WAKE ISLAND Hy**	**28.96**	**124**	T	T	04 56 00.1	
	baz=317,slow=76,SNR=2668						
H11S3	**WAKE ISLAND Hy**	**28.96**	**124**	T	T	04 56 04.0	
	baz=317,slow=76,SNR=3041						
H11S2	**WAKE ISLAND Hy**	**28.98**	**124**	T	T	04 56 02.0	
	baz=317,slow=76,SNR=3177						
ZAK	**Zakamensk**	**30.11**	**307**	*e*P	**P**	**04 25 58.7**	**-0.5**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.6s						
TLY	**Talaya**	**30.14**	**310**	*e*P	**P**	**04 26 00.7**	**+1.3**
TLY				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TLY				MLR	MLR		
	comp=Z,117nm,13.0s						
LZH	**Lanzhou**	**30.26**	**279**	*e*P	P	04 26 09.6	+8.9
LZH				pP	sP	04 26 13.4	-0.5
LZH				sP	pP	04 26 14.8	+4.8
LZH				pmax	pmax		
	comp=Z,16nm,1.0s						
GTA	**Gaotai**	**32.66**	**286**	*e*P	P	04 26 30.7	+8.9
GTA				pP	sP	04 26 35.3	+0.3
GTA				sP	pP	04 26 38.2	+7.1
GTA				pmax	pmax		
	comp=Z,7.0nm,0.7s						
BILL	**Bilibino**	**33.34**	**16**	*e*P	P	04 26 32.3	+5.1
BILL				*e*		04 27 42.4	
BILL				*e*PPP	PPP	04 27 54.2	
BILL				pmax	pmax		
	comp=Z,6.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,83nm,23.0s						
KMI	**Kunming**	**35.35**	**261**	P	**P**	**04 26 49.5**	**+4.1**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.6s						
WMQ	**Urumqi**	**40.82**	**296**	P	P	04 27 40.3	+9.2
WMQ				pP	sP	04 27 45.4	+1.0
WMQ				sP	pP	04 27 47.7	+7.1
WMQ				pmax	pmax		
	comp=Z,9.0nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,140nm,5.4s						
WMQ				LR	LR		
	comp=Z,140nm,19.4s						
ZALV	**Zalesovo Beam**	**41.71**	**312**	P	**P**	**04 27 38.5**	**+0.4**
	comp=Z,3.7nm,0.7s,baz=90,slow=6.3,SNR=11						
ZALV				PcP	**PcP**	**04 29 34.0**	**-0.2**
	comp=Z,1.5nm,0.6s,baz=122,slow=1.9,SNR=3.2						
ZALV				LR	LR	04 45 18.4	
	comp=Z,44nm,19.4s,baz=70,slow=36						
NVS	**Novosibirsk**	**42.62**	**313**	*i* P	P	04 27 53.5	+8.0
NRIK	**Noril'sk**	**42.82**	**335**	LR	LR	04 47 07.6	
	comp=Z,53nm,20.0s,baz=134,slow=38						
MKAR	**Makanchi Array**	**44.04**	**302**	P	**P**	**04 27 57.9**	**+0.7**
	comp=Z,2.9nm,0.9s,baz=82,slow=8.7,SNR=15						
MKAR				LR	LR	04 47 00.2	
	comp=Z,33nm,19.3s,baz=58,slow=37						
KURK	**Kurchatov**	**45.78**	**308**	*de*P	**P**	**04 28 11.1**	**+0.2**
KURK				pmax	pmax		
	comp=Z,45nm,1.3s						
KURK	**Kurchatov**	**45.78**	**308**	*e*P	**P**	**04 28 11.0**	**+0.1**
	comp=Z,95nm,0.8s						
KURBB	**Kurchatov Arra**	**45.85**	**308**	P	**P**	**04 28 11.7**	**+0.2**
	comp=Z,4.1nm,0.5s,baz=82,slow=8.0,SNR=37						
KDAK	**Kodiak Island**	**46.43**	**42**	*ce*P	P	04 28 22.2	+6.3
RAMN	**Ramite**	**47.26**	**274**	*e*P	**P**	**04 28 23.7**	**+0.6**
	comp=Z,39nm,1.0s						
GUN	**Gumba**	**47.39**	**275**	*e*P	**P**	**04 28 25.4**	**+1.1**
KKN	**Kakani**	**47.92**	**275**	*e*P	**P**	**04 28 29.0**	**+0.8**
GKN	**Gorkha**	**48.33**	**276**	*e*P	**P**	**04 28 32.3**	**+1.0**
ILAR	**Eielson Array**	**48.80**	**33**	P	**P**	**04 28 33.9**	**-0.3**
	comp=Z,0.5nm,0.5s,baz=281,slow=11,SNR=6.0						
KOLN	**Koldanda**	**49.25**	**276**	*e*P	**P**	**04 28 40.1**	**+1.6**
	comp=Z,16nm,0.7s						
PYUN	**Piuthan**	**49.59**	**277**	*e*P	**P**	**04 28 42.1**	**+1.1**
	comp=Z,83nm,1.1s						
DIV	**Divide**	**49.59**	**37**	*e*P	**P**	**04 28 43.8**	**+3.3**
	comp=Z,6.2nm,0.9s						
TKM2	**Tokmak 2**	**49.59**	**298**	*e*P	**P**	**04 28 41.9**	**+1.0**
TKM2				pmax	pmax		
	comp=Z,11nm,0.9s						
TKM2	**Tokmak 2**	**49.59**	**298**	*e*P	**P**	**04 28 41.9**	**+1.0**
	comp=Z,11nm,0.9s						
DOT	**Dot Lake**	**50.11**	**34**	*e*P	**P**	**04 28 48.5**	**+4.2**
	comp=Z,2.8nm,0.6s						
BRVK	**Borovoye**	**50.42**	**312**	*e*P	**P**	**04 28 45.4**	**-1.3**
BRVK	**Borovoye**	**50.42**	**312**	*e*P	**P**	**04 28 45.4**	**-1.3**
AAK	**Ala-Archa**	**50.45**	**298**	*e*P	**P**	**04 28 47.3**	**0.0**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
EKS2	**Erkin-Say**	**50.95**	**298**	*e*P	**P**	**04 28 51.5**	**+0.5**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.8s						
EKS2	**Erkin-Say**	**50.95**	**298**	*e*P	**P**	**04 28 51.5**	**+0.5**
	comp=Z,3.1nm,0.8s						
KKAR	**Karatay Array**	**53.06**	**300**	*e*P	**P**	**04 29 06.8**	**+0.2**
KKAR				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KKAR	**Karatay Array**	**53.06**	**300**	*e*P	**P**	**04 29 06.8**	**+0.2**
	comp=Z,5.6nm,1.0s						
INK	**Inuvik**	**53.69**	**27**	P	**P**	**04 29 12.7**	**+2.0**
	comp=Z,0.5nm,0.5s,baz=279,slow=5.7,SNR=3.4						
SVE	**Sverdlovsk**	**54.87**	**318**	*e*P	**P**	**04 29 19.3**	**-0.3**
SVE				pmax	pmax		
	comp=Z,22nm,1.0s						
ARU	**Arti**	**56.08**	**318**	*d i*P	**P**	**04 29 28.5**	**+0.2**
ARU				S	**S**	**04 37 11.1**	**-3.6**
ARU				SS	**SS**	**04 40 53.7**	**-6.9**
ARU				pmax	pmax		
	comp=Z,14nm,1.2s						
ARU	**Arti**	**56.08**	**318**	*e*P	**P**	**04 29 28.4**	**+0.2**
	comp=Z,11nm,0.8s						
FITZ	**Fitzroy Crossi**	**57.52**	**198**	P	**P**	**04 29 38.6**	**-0.2**
	comp=Z,1.2nm,0.8s,baz=351,slow=13,SNR=2.2						
WRAB	**Tennant Creek**	**57.72**	**188**	*e*P	P	04 29 46.2	+6.0
WRAB				pmax	pmax		
	comp=Z,7.0nm,0.8s						
WRAB	**Tennant Creek**	**57.72**	**188**	*e*P	P	04 29 46.1	+5.9
	comp=Z,7.0nm,0.8s						
WRA	**Warramunga Arr**	**57.73**	**188**	P	**P**	**04 29 38.9**	**-1.4**
	comp=Z,4.5nm,1.0s,baz=4.1,slow=7.0,SNR=13						
ABKAR	**Akbulak array**	**57.76**	**310**	*e*P	**P**	**04 29 40.2**	**-0.1**
	comp=Z,2.8nm,0.6s						
DLBC	**Dease Lake**	**57.94**	**38**	P	**P**	**04 29 42.5**	**+1.0**
	comp=Z,2.9nm,0.9s,baz=316,slow=13,SNR=3.4						
ASAR	**Alice Springs**	**61.46**	**188**	P	**P**	**04 30 05.0**	**-1.0**
	comp=Z,2.9nm,0.8s,baz=11,slow=5.9,SNR=16						
ASAR	**Alice Springs**	**61.46**	**188**	P	**P**	**04 30 05.0**	**-1.0**
ASAR				pmax	pmax		
	comp=Z,3.0nm,0.8s						
YKA	**Yellowknife Ar**	**63.11**	**30**	P	**P**	**04 30 16.3**	**-0.3**
	comp=Z,0.4nm,0.7s,baz=295,slow=6.5,SNR=3.2						
ARCES	**ARCESS Array B**	**63.51**	**339**	P	**P**	**04 30 20.7**	**+1.6**
	comp=Z,1.2nm,0.8s,baz=39,slow=7.4,SNR=2.2						
OBN	**Obninsk**	**67.77**	**323**	*e*P	**P**	**04 30 48.1**	**+1.3**
OBN				*e**PP	**pP**	**04 30 55.7**	**-1.0**
OBN				*e*		04 31 07.0	
OBN				*e*S	**S**	**04 39 37.9**	**-4.3**
OBN				*e*SS	**SS**	**04 44 03.9**	**+1.0**
OBN				pmax	pmax		
	comp=Z,6.0nm,0.8s						
OBN				MLR	MLR		
	comp=Z,44nm,15.0s						
FINES	**FINESS Array B**	**68.39**	**332**	P	**P**	**04 30 50.8**	**+0.2**
	comp=Z,1.4nm,0.6s,baz=49,slow=5.8,SNR=6.3						
STKA	**Stephens Creek**	**69.19**	**180**	pP	pP	04 31 01.2	-4.6
	comp=Z,3.2nm,0.8s,baz=339,slow=4.9,SNR=3.4						
SUMG	**Summit**	**70.05**	**0**	*e*P	**P**	**04 31 01.2**	**-0.1**
SUMG				pmax	pmax		
	comp=Z,5.0nm,1.0s						
SUMG	**Summit**	**70.05**	**0**	*e*P	**P**	**04 31 01.2**	**-0.1**
	comp=Z,4.8nm,1.0s						
KBZ	**Khabaz**	**70.72**	**311**	P	**P**	**04 31 06.2**	**+0.9**
	comp=Z,2.9nm,0.8s,baz=39,slow=6.5,SNR=5.0						
KIV	**Kislovodsk**	**70.72**	**311**	*e*P	**P**	**04 31 06.1**	**+0.7**
KIV				*i* *SP	**sP**	**04 31 18.9**	**-0.3**
KIV				*i*		04 31 26.8	
KIV				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KIV				MLR	MLR		
	comp=Z,51nm,18.0s						
FFC	**Flin Flon**	**73.01**	**33**	*e*P	**P**	**04 31 23.4**	**+4.5**
FFC				pmax	pmax		
	comp=Z,4.0nm,0.9s						
FFC	**Flin Flon**	**73.01**	**33**	*e*P	**P**	**04 31 23.4**	**+4.5**
	comp=Z,4.2nm,0.9s						
NB2	**NORSAR Subarra**	**73.72**	**337**	P	**P**	**04 31 22.9**	**-0.1**
	comp=Z,7.6nm,1.1s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**73.72**	**337**	P	**P**	**04 31 23.3**	**+0.3**
	comp=Z,1.1nm,0.7s,baz=36,slow=6.1,SNR=3.7						
NOA				LR	LR	05 06 19.2	
	comp=Z,30nm,20.1s,baz=55,slow=38						
AKASG	**Malin Array Be**	**73.98**	**322**	P	**P**	**04 31 24.3**	**-0.3**
	comp=Z,1.8nm,0.6s,baz=44,slow=5.4,SNR=7.3						
KIEV	**Kiev**	**73.99**	**322**	*e*P	**P**	**04 31 24.2**	**-0.5**
KIEV				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KIEV	**Kiev**	**73.99**	**322**	*e*P	**P**	**04 31 24.2**	**-0.5**
	comp=Z,8.0nm,1.1s						
PDAR	**Pinedale Array**	**77.01**	**46**	P	**P**	**04 31 42.0**	**-0.5**
	comp=Z,0.5nm,0.5s,baz=237,slow=3.0,SNR=4.6						
KWP	**Kalwaria Pacla**	**77.79**	**324**	*e*P	P	04 31 53.4	+7.0
KWP	**Kalwaria Pacla**	**77.79**	**324**	*e*P	P	04 31 53.4	+7.0
BRTR	**Keskin Array B**	**78.65**	**312**	P	**P**	**04 31 52.3**	**+0.7**
	comp=Z,0.7nm,0.7s,baz=93,slow=4.9,SNR=5.2						
OJC	**Ojcow**	**78.68**	**326**	*e*P	P	04 31 59.4	+8.0
KSP	**Ksiaz**	**79.72**	**328**	*e*P	**P**	**04 31 58.1**	**+1.2**
KSP	**Ksiaz**	**79.72**	**328**	*e*P	**P**	**04 31 58.2**	**+1.2**
PSZ	**Piszkesteto**	**80.31**	**325**	*e*P	**P**	**04 32 00.2**	**-0.2**
PSZ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
PSZ	**Piszkesteto**	**80.31**	**325**	*e*P	**P**	**04 32 00.2**	**-0.2**
	comp=Z,3.7nm,0.8s						
BRG	**Berggiesshubel**	**80.66**	**330**	*e*P	P	04 32 10.3	+8.2
	comp=Z,8.0nm,1.4s						
CLL	**Collm**	**80.69**	**330**	*i* P	**P**	**04 32 02.3**	**+0.1**
	comp=Z,4.0nm,0.9s						
CLL				*i*		04 32 09.4	
	comp=Z,8.0nm,0.9s						
CLL				*e*S	**S**	**04 42 00.0**	**-7.4**
CLL	**Collm**	**80.69**	**330**	*i* P	**P**	**04 32 02.3**	**+0.1**
CLL				*e*S	**S**	**04 42 00.0**	**-7.4**
CLL				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KHC	**Kasperske Hory**	**82.16**	**329**	*e*P	**P**	**04 32 10.0**	**0.0**
KHC				*e*pP	**pP**	**04 32 18.0**	**-2.2**
KHC	**Kasperske Hory**	**82.16**	**329**	*e*P	**P**	**04 32 10.1**	**0.0**
KHC				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KHC	**Kasperske Hory**	**82.16**	**329**	*e*P	**P**	**04 32 10.1**	**0.0**
	comp=Z,2.0nm,0.9s						
GERES	**GERESS Array B**	**82.33**	**328**	P	**P**	**04 32 11.0**	**-0.1**
	comp=

0.3nm,0.8s,baz=4.7,slow=7.2,SNR=2.4

*ISCJB **01** 04:39:07.3±0.5, 12°.45S±0'.04×114°.45E±0'.05, h10km, mb4.3/13, MS3.5/5, Error ellipse: s-maj=7.8km s-min=5.9km az=158.0*

*IDC **01** 04:39:07.5±0.9, 12°.64S×114°.41E, h0km, mb4.0/10, mb1 4.3/12, mb1mx4.1/38, mbtmp4.1/12, ML4.1/2, MS3.4/6, Ms1 3.5/6, ms1mx3.1/36, Error ellipse: s-maj=32.0km s-min=15.4km az=66.0*

*NEIC **01** 04:39:09.4±0.5, 12°.56S×114°.38E, h10km, mb4.6/6, Error ellipse: s-maj=13.2km s-min=9.2km az=56.0*

ISC 01 04:39:08.8±0.6, 12°.48S±0'.06×114°.42E±0'.06, h10km, n44, σ2°66/45, mb4.4/13, MS3.5/5, Northwest of Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAGI	**Jajag, Banyuwa**	**3.99**	**356**	P	**Pn**	**04 40 09.5**	**-0.5**
JAGI				S	**Sn**	**04 40 53.7**	**-3.2**
JAGI	**Jajag, Banyuwa**	**3.99**	**356**	*e*Pn	**Pn**	**04 40 09.5**	**-0.5**
JAGI				*e*Sn	**Sn**	**04 40 53.9**	**-2.9**
GMJI	**Gumukmas**	**4.28**	**347**	P	**Pn**	**04 40 13.3**	**-0.8**
GMJI				S	**Sn**	**04 41 01.3**	**-2.8**
TWSI	**Taliwang, Sumb**	**4.43**	**33**	P	**Pn**	**04 40 16.3**	**+0.1**
TWSI				S	**Sn**	**04 41 05.6**	**-2.3**
ABJI	**Asem Bagus**	**4.65**	**358**	P	**Pn**	**04 40 21.0**	**+1.9**
PLAI	**Plampang**	**4.90**	**43**	P	**Pn**	**04 40 23.8**	**+1.2**
PLAI				S	**Sn**	**04 41 16.0**	**-3.5**
WOJI	**Wonogiri, Jawa**	**5.75**	**323**	P	**Pn**	**04 40 32.6**	**-1.6**
UGM	**Wanagama**	**5.94**	**319**	S	**Sn**	**04 41 38.5**	**-6.5**
BASI	**Baing, Sumba**	**6.45**	**70**	P	**Pn**	**04 40 46.5**	**+2.7**
EDFI	**Ende, Flores**	**8.05**	**63**	P	**Pn**	**04 41 06.6**	**+0.6**
CISI	**Cisompet, Garu** 159nm,0.6s	**8.13**	**306**	*e*Pn	**Pn**	**04 41 05.9**	**-1.1**
CISI				*e*Sn	**Sn**	**04 42 33.5**	**-5.7**
MMRI	**Maumere**	**8.58**	**64**	P	**Pn**	**04 41 13.8**	**+0.6**
MMRI	**Maumere** 100nm,0.6s	**8.58**	**64**	*e*Pn	**Pn**	**04 41 14.1**	**+0.9**
BBKI	**Banjar Baru**	**8.96**	**3**	P	**Pn**	**04 41 22.8**	**+4.4**
KAPI	**Kappang** 0.9nm,0.3s,baz=227,slow=19,SNR=2.8	**9.10**	**36**	Pn	**Pn**	**04 41 22.5**	**+2.3**
KAPI				Sn	**Sn**	**04 42 58.2**	**-4.5**
	0.9nm,0.3s,baz=226,slow=24,SNR=1.4						
KAPI	**Kappang**	**9.10**	**36**	*e*Pn	**Pn**	**04 41 22.2**	**+2.0**
MBWA	**Marble Bar** 191nm,0.5s	**10.02**	**150**	*e*Pn	Pn	04 41 27.1	-5.8
MBWA				*e*Sn	Sn	04 43 08.3	-17
SOEI	**Soe**	**10.04**	**75**	P	Pn	04 41 26.2	-7.1
FITZ	**Fitzroy Crossi** 1.5nm,0.3s,baz=317,slow=9.2,SNR=54	**12.19**	**119**	Pn	Pn	04 41 59.5	-3.1
FITZ				Sn	Sn	04 44 04.8	-14
	1.0nm,0.3s,baz=163,slow=8.5,SNR=4.6						
FITZ				LR	LR	04 46 34.0	
	comp=Z,95nm,21.5s,baz=302,slow=37						
FITZ	**Fitzroy Crossi** 17nm,0.6s	**12.19**	**119**	*e*Pn	**Pn**	**04 41 59.6**	**-2.9**
FITZ				*e*Sn	Sn	04 44 04.5	-14
LUWI	**Luwuk**	**14.06**	**37**	*e*Pn	**Pn**	**04 42 29.4**	**+1.2**
WRA	**Warramunga Arr** 4.8nm,0.7s,baz=290,slow=13,SNR=25	**20.51**	**114**	P	**P**	**04 43 48.0**	**+0.7**
WRA				S	S	04 47 21.1	-16
	1.7nm,0.6s,baz=281,slow=20,SNR=2.2						
WRA				LR	LR	04 51 43.3	
	comp=Z,78nm,21.8s,baz=330,slow=37						
WRAB	**Tennant Creek** 6.5nm,0.6s	**20.52**	**114**	*e*P	**P**	**04 43 49.6**	**+2.3**
NWAO	**Narrogin (SRO)** 17nm,0.8s,baz=331,slow=15,SNR=8.1	**20.52**	**173**	P	**P**	**04 43 47.5**	**+0.2**
NWAO				LR	LR	04 52 33.4	
	comp=Z,171nm,18.6s,baz=278,slow=40						
ASAR	**Alice Springs** 8.8nm,0.8s,baz=297,slow=8.8,SNR=50	**21.58**	**124**	P	**P**	**04 43 58.4**	**-0.5**
ASAR				S	**S**	**04 47 51.4**	**-6.9**
	13nm,1.0s,baz=311,slow=26,SNR=11						
STKA	**Stephens Creek** 5.0nm,1.0s,baz=276,slow=6.6,SNR=4.8	**31.57**	**132**	P	**P**	**04 45 30.6**	**-1.1**
CMAR	**Chiang Mai Arr** 0.9nm,0.4s,baz=167,slow=8.7,SNR=4.9	**34.32**	**333**	P	**P**	**04 45 57.3**	**+1.6**
CMAR				LR	LR	05 00 38.4	
	comp=Z,86nm,19.9s,baz=170,slow=38						
H08S2	**Diego Garcia H** baz=100,slow=75,SNR=17	**41.52**	**273**	T	T	05 30 52.5	
H08S3	**Diego Garcia H** baz=100,slow=75,SNR=12	**41.53**	**273**	T	T	05 30 51.4	
H08S1	**Diego Carcia H** baz=100,slow=75,SNR=18	**41.54**	**273**	T	T	05 30 51.6	
KSAR	**Wonju Array Be**	**51.24**	**14**	P	**P**	**04 48 13.2**	**+0.6**
KSRS	**Korea Array** 2.4nm,0.8s,baz=202,slow=8.4,SNR=6.8	**51.26**	**14**	P	**P**	**04 48 13.2**	**+0.5**
USRK	**Ussuriysk Ar.** 1.2nm,0.6s,baz=143,slow=45,SNR=3.5	**58.63**	**15**	P	**P**	**04 49 08.2**	**+2.2**
ULN	**Ulaanbaatar** 2.4nm,0.5s	**60.42**	**354**	*e*P	**P**	**04 49 19.2**	**+0.6**
SONM	**Songino Array** 0.7nm,0.8s,baz=167,slow=9.1,SNR=3.2	**60.46**	**354**	P	**P**	**04 49 19.8**	**+1.0**
SONM				LR	LR	05 17 00.6	
	comp=Z,40nm,18.3s,baz=64,slow=38						
TKM2	**Tokmak 2** 4.6nm,0.9s	**65.58**	**330**	*e*P	**P**	**04 49 55.0**	**+1.9**
MKAR	**Makanchi Array** 2.2nm,0.7s,baz=134,slow=6.9,SNR=5.9	**65.65**	**336**	P	**P**	**04 49 55.2**	**+2.0**
EKS2	**Erkin-Say** 6.6nm,0.9s	**66.31**	**328**	*e*P	**P**	**04 49 59.1**	**+1.4**
VNDA	**Vanda** 1.0nm,1.0s,baz=290,slow=6.0,SNR=4.5	**69.32**	**170**	P	**P**	**04 50 15.2**	**-0.7**
KURK	**Kurchatov** 20nm,0.8s	**70.25**	**337**	*e*P	**P**	**04 50 24.8**	**+2.8**
ABKAR	**Akbulak array** 5.0nm,0.9s	**77.89**	**327**	*e*P	**P**	**04 51 08.9**	**+2.2**
AKASG	**Malin Array Be** comp=Z,26nm,18.8s,baz=55,slow=39	**96.52**	**320**	LR	LR	05 42 39.7	
TXAR	**Lajitas Array** 0.1nm,0.4s,baz=290,slow=2.7,SNR=2.7	**140.89**	**59**	PKP	**PKPdf**	**04 58 39.0**	**-0.9**
LPAZ	**La Paz** 1.7nm,1.1s,baz=259,slow=5.2,SNR=2.8	**151.31**	**175**	PKPbc	**PKPdf**	**04 59 02.4**	**+3.9**

MEX 01 04:42:14.9±1.1, 14°.04N×92°.18W, h15km±999km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.23**	**1**	*e*P	Pn	04 42 49.1	-2.3
CCIG				*i* S	Sn	04 43 14.1	-4.6

CASC 01 04:50:20.5±3.2, 9°.09N×83°.72W, h35km±320km, MD3.8, 2C-3D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BUS	**Buena Vista**	**0.47**	**355**	⇓*i*P	Pn	04 50 31.6	+0.5
BUS				*e*S	Sn	04 50 39.6	+1.2
QCR	**Quepos**	**0.55**	**307**	⇑*i*P	Pn	04 50 32.0	+0.1
QCR				*e*S	Sn	04 50 40.3	+0.3
ACR	**Cerro Adams**	**0.69**	**128**	⇓*e*P	Pn	04 50 34.2	+0.3
ACR				*e*S	Sn	04 50 45.0	+1.5
URSC	**Urasca**	**0.75**	**355**	⇓*e*P	Pn	04 50 35.0	+0.2
BRU2	**Volcan**	**1.06**	**106**	*e*P	Pn	04 50 39.5	+0.5
BRU2				*e*S	Sn	04 50 49.2	-3.3
TBS2		**1.09**	**105**	*e*P	Pn	04 50 40.3	+0.9
TBS2				*e*S	Sn	04 50 54.3	+1.0
BRU	**Baru**	**1.18**	**104**	*e*P	Pn	04 50 42.9	+2.1
BRU				*e*S	Sn	04 50 58.5	+2.6
CGA2	**Cerro Gallo 2**	**1.18**	**321**	⇑*e*P	Pn	04 50 40.9	+0.2
CGA2				*e*S	Sn	04 50 56.8	+1.2
JCR	**Jicaral**	**1.57**	**299**	*e*P	Pn	04 50 45.9	-0.1
JCR				*e*S	Sn	04 51 03.7	-1.4

*KRSC **01** 04:56:36.5±1.0, 53°.94N×159°.70E, h142km±10km, ML3.6*

*ISCJB **01** 04:56:37.0±0.7, 53°.95N±0'.05×159°.6E±0'.1, h145km±6km, mb4.4/2, Error ellipse: s-maj=12.8km s-min=4.8km az=30.3*

*IDC **01** 04:56:37.3±2.2, 53°.90N×159°.40E, h155km±20km, mb3.2/2, mb1 3.2/2, mb1mx2.7/28, mbtmp3.6/2, Error ellipse: s-maj=41.7km s-min=27.8km az=48.0*

ISC 01 04:56:36.5±1.0, 53°.96N±0'.05×159°.58E±0'.06, h149km±7km, n36, σ1°00/50, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SDLR	**Sedlovina**	**0.80**	**212**	*i* P	**Pn**	**04 57 00.1**	**+0.3**
SDLR				*i* S	**Sn**	**04 57 16.4**	**-1.0**
KRX	**Arik**	**0.82**	**223**	*i* P	**Pn**	**04 57 00.8**	**+0.9**
KRX				*i* S	**Sn**	**04 57 17.8**	**+0.1**
KRER	**Koryakskii**	**0.82**	**218**	*e*P	**Pn**	**04 57 00.8**	**+0.8**
KRER				*i* S	**Sn**	**04 57 18.0**	**+0.1**
SMAR	**Somma**	**0.84**	**214**	P	**Pn**	**04 57 00.7**	**+0.5**
SMAR				S	**Sn**	**04 57 17.9**	**-0.2**
AVH	**Avacha**	**0.86**	**216**	*i* P	**Pn**	**04 57 01.2**	**+1.0**
AVH				*i* S	**Sn**	**04 57 18.9**	**+0.8**
KOK	**Koryaka**	**0.87**	**221**	P	**Pn**	**04 57 01.6**	**+1.3**
KOK				*i* S	**Sn**	**04 57 19.3**	**+0.9**
UGLR	**Uglovaya**	**0.88**	**211**	*i* P	**Pn**	**04 57 00.8**	**+0.5**
UGLR				*i* S	**Sn**	**04 57 18.5**	**+0.1**
GNL	**Ganaly**	**1.01**	**256**	*i* P	**Pn**	**04 57 01.0**	**-0.4**
GNL				*i* S	**Sn**	**04 57 18.7**	**-1.6**
DALK	**Dalny**	**1.05**	**208**	*e*P	**Pn**	**04 57 01.8**	**+0.2**
DALK				*e*S	**Sn**	**04 57 19.7**	**-1.0**
PET	**Petropavlovsk**	**1.09**	**211**	P	**Pn**	**04 57 02.4**	**+0.4**
PET				*e*S	**Sn**	**04 57 21.0**	**-0.3**
TUMR	**Tumrok**	**1.37**	**14**	*i* P	**Pn**	**04 57 05.5**	**+0.7**
TUMR				*i* S	**Sn**	**04 57 26.4**	**0.0**
MKZ	**Mys Kozlova**	**1.40**	**64**	*e*P	**Pn**	**04 57 05.6**	**+0.7**
MKZ				*i* S	**Sn**	**04 57 25.5**	**-1.1**
PETK	**Petropavlovsk-** 8.9nm,0.3s,baz=63,slow=14,SNR=147	**1.41**	**234**	P	**Pn**	**04 57 04.9**	**-0.2**
PETK				S	**Sn**	**04 57 26.4**	**-0.5**
	1.7nm,0.3s,baz=48,slow=37,SNR=7.8						
KRMR	**Karymshinskiy**	**1.43**	**218**	*i* P	**Pn**	**04 57 05.5**	**+0.3**
KRMR				*e*S	**Sn**	**04 57 27.2**	**+0.1**
RUS	**Russkaya**	**1.66**	**203**	*i* P	**Pn**	**04 57 07.9**	**+0.2**
RUS				*e*S	**Sn**	**04 57 30.7**	**-0.8**
KMNR	**Kamenistaya**	**1.84**	**12**	*e*P	**Pn**	**04 57 10.7**	**+0.9**
ASAK	**Asacha**	**1.87**	**213**	*i* P	**Pn**	**04 57 11.2**	**+1.0**
ASAK				S	**Sn**	**04 57 36.5**	**+0.5**
ESO	**Esso**	**2.04**	**346**	*i* P	**Pn**	**04 57 11.8**	**-0.2**
KPT	**Kopyto**	**2.05**	**10**	*e*P	**Pn**	**04 57 12.6**	**+0.4**
BZMR	**Bezymyannaya**	**2.05**	**14**	*e*P	**Pn**	**04 57 13.3**	**+1.0**
KOZ	**Kozyrevsk**	**2.11**	**4**	*e*P	**Pn**	**04 57 13.2**	**+0.3**
ZLN	**Zelenaya**	**2.18**	**18**	*e*P	**Pn**	**04 57 15.7**	**+1.9**
LGNR	**Loginova**	**2.22**	**16**	*e*P	**Pn**	**04 57 15.8**	**+1.3**
CIRR	**Tsirk**	**2.27**	**17**	*e*P	**Pn**	**04 57 16.2**	**+1.4**
KRSR	**Krestovskiy**	**2.33**	**14**	*e*P	**Pn**	**04 57 16.3**	**+0.7**
KLY	**Klyuchi**	**2.44**	**14**	*e*P	**Pn**	**04 57 18.2**	**+1.4**
BDR	**Baidarnaya**	**2.78**	**19**	*e*P	**Pn**	**04 57 23.1**	**+2.0**
SMKR	**Semkarok**	**2.84**	**22**	*e*P	**Pn**	**04 57 23.2**	**+1.3**
SRKR	**Sorokina**	**2.85**	**18**	*e*P	**Pn**	**04 57 23.5**	**+1.5**
SKR	**Severo-Kuril's**	**3.91**	**214**	*e*P	**Pn**	**04 57 36.9**	**+1.4**
BKI	**Bering**	**3.92**	**69**	*i* P	**Pn**	**04 57 36.4**	**+0.8**
BKI				*i* S	**Sn**	**04 58 18.9**	**-2.6**
H11N2	**WAKE ISLAND Hy** baz=352,slow=76,SNR=2.6	**34.62**	**168**	T	T	05 39 36.6	
H11N3	**WAKE ISLAND Hy** baz=352,slow=76,SNR=3.8	**34.64**	**168**	T	T	05 39 38.0	
H11N1	**WAKE ISLAND Hy** baz=352,slow=76,SNR=2.9	**34.64**	**168**	T	T	05 39 37.1	
MKAR	**Makanchi Array** 0.2nm,0.3s,baz=53,slow=5.0,SNR=4.0	**47.51**	**295**	P	**P**	**05 04 55.4**	**-0.9**
FINES	**FINESS Array B** 0.8nm,0.9s,baz=15,slow=7.2,SNR=2.5	**59.20**	**336**	P	**P**	**05 06 21.5**	**+0.2**

*IDC **01** 05:18:02.6±0.9, 8°.63S×157°.52E, h0km, mb4.0/7, mb1 4.2/9, mb1mx3.9/39, mbtmp4.0/9, ML4.2/2, Error ellipse: s-maj=24.3km s-min=20.8km az=155.0*

*ISCJB **01** 05:18:03.8±0.6, 8°.6S±0'.1×157°.40E±0'.06, h16km, mb4.0/10, Error ellipse: s-maj=15.2km s-min=8.6km az=4.2*

*NEIC **01** 05:18:07.9±0.7, 8°.63S×157°.49E, h35km, mb4.5/3, Error ellipse: s-maj=20.1km s-min=14.2km az=150.0*

ISC 01 05:18:05.3±0.7, 8°.6S±0'.1×157°.55E±0'.07, h16km, n13, σ1°44/16, mb4.2/10, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**2.51**	**109**	Pn	**Pn**	**05 18 45.5**	**+0.1**
	111nm,0.3s,baz=222,slow=3.3,SNR=9.4						
HNR				S	**Sn**	**05 19 18.9**	**-1.6**
	145nm,0.3s,baz=261,slow=23,SNR=14						
HNR	**Honiara**	**2.51**	**109**	*e*Pn	**Pn**	**05 18 47.5**	**+2.1**
HNR				*e*Sn	**Sb**	**05 19 21.3**	**+0.7**
CTA	**Charters Tower** 0.3nm,0.3s,baz=53,slow=15,SNR=3.9	**15.80**	**223**	Pn	**Pn**	**05 21 47.4**	**+0.1**
WRAB	**Tennant Creek** 6.4nm,0.9s	**25.11**	**241**	*e*P	**P**	**05 23 28.1**	**-1.5**
WRA	**Warramunga Arr** 5.3nm,0.8s,baz=67,slow=9.7,SNR=19	**25.12**	**241**	P	**P**	**05 23 28.4**	**-1.3**
ASAR	**Alice Springs** 0.7nm,0.8s,baz=62,slow=8.7,SNR=5.1	**27.14**	**234**	P	**P**	**05 23 46.0**	**-2.0**
ASAR				PcP	**PcP**	**05 27 08.6**	**-0.1**
	0.3nm,0.6s,baz=72,slow=3.2,SNR=3.8						
STKA	**Stephens Creek** 3.0nm,0.6s,baz=46,slow=16,SNR=8.2	**27.50**	**210**	P	**P**	**05 23 51.0**	**0.0**
FITZ	**Fitzroy Crossi** 7.4nm,1.2s	**32.40**	**250**	*e*P	**P**	**05 24 36.1**	**+1.4**
CMAR	**Chiang Mai Arr** 0.6nm,0.3s,baz=94,slow=5.4,SNR=5.4	**63.76**	**295**	P	**P**	**05 28 38.3**	**+1.3**
SONM	**Songino Array** 0.4nm,0.5s,baz=134,slow=4.2,SNR=2.8	**72.06**	**327**	P	**P**	**05 29 30.2**	**+1.4**
MCK	**McKinley** 8.4nm,1.2s	**82.62**	**21**	*e*P	**P**	**05 30 26.9**	**-0.6**
ILAR	**Eielson Array** 0.6nm,0.5s,baz=251,slow=5.2,SNR=9.7	**83.95**	**21**	P	**P**	**05 30 33.0**	**-1.4**
MKAR	**Makanchi Array** 0.6nm,0.6s,baz=98,slow=6.2,SNR=3.5	**86.28**	**318**	P	**P**	**05 30 44.6**	**-1.9**

*NIED **01** 05:22:00, 33°.40N×132°.20E, h41km, Mw3.9 Best double couple: M0 9.10000×10^14 NP1:φ=59.00000°, δ=65.00000°, λ=-12.00000°. NP2:φ=154.00000°, δ=79.00000°, λ=-155.00000°.*

*ISCJB **01** 05:22:09.1±0.5, 33°.37N±0'.04×132°.25E±0'.04, h54km±5km, mb3.5/4, Error ellipse: s-maj=6.7km s-min=5.7km az=144.1*

*JMA **01** 05:22:09.8, 33°.39N×132°.23E, h46km, M3.9 Broadband fault plane solution: P waves. NP1:φ=158.00000°, δ=80.00000°, λ=-135.00000°. NP2:φ=58.00000°, δ=45.00000°, λ=-14.00000°. Principal axes: T Plg22.0000°, Azm280.0000°; N Plg44.0000°, Azm167.0000°; P Plg38.0000°, Azm29.0000°;*

JMA Felt II J1.

*IDC **01** 05:22:10.7±1.5, 33°.46N×132°.18E, h55km±15km, mb3.2/4, mb1 3.6/8, mb1mx3.3/56, mbtmp3.6/8, ML3.6/3, MS2.6/2, Ms1 2.6/2, ms1mx2.3/15 Error ellipse: s-maj=15.8km s-min=13.0km az=134.0*

ISC 01 05:22:09.9±0.8, 33°.38N±0'.04×132°.23E±0'.04, h45km±8km, n18, σ0°74/28, mb3.5/4, 4C-3D, Shikoku

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNA	**Nagahama**	**0.27**	**49**	⇑P	**Pn**	**05 22 18.1**	**-0.2**
JNA				S	**Sn**	**05 22 24.1**	**-0.1**
UWA2	**Uwa jima 2**	**0.37**	**116**	⇑P	**Pn**	**05 22 19.1**	**-0.2**
UWA2				S	**Sn**	**05 22 25.9**	**-0.1**
JUS	**Usuki**	**0.51**	**232**	⇓P	**Pn**	**05 22 20.9**	**-0.1**
JUS				S	**Sn**	**05 22 28.8**	**0.0**
JKU	**Kubokawa**	**0.70**	**95**	⇑P	**Pn**	**05 22 23.3**	**-0.2**
JKU				S	**Sn**	**05 22 33.6**	**+0.3**
JTO	**Tosashimizu**	**0.70**	**137**	⇑P	**Pn**	**05 22 23.5**	**0.0**
JTO				S	**Sn**	**05 22 33.4**	**+0.1**
JET	**Tanbara**	**0.79**	**59**	P	**Pn**	**05 22 24.4**	**-0.3**
JET				S	**Sn**	**05 22 35.7**	**+0.3**
JHM	**Kurahashi**	**0.80**	**18**	⇓P	**Pn**	**05 22 24.5**	**-0.3**
JHM				S	**Sn**	**05 22 35.8**	**+0.2**
JNU	**Nakatsue** 532nm,0.3s,baz=84,slow=4.4,SNR=2042	**1.16**	**258**	P	**Pn**	**05 22 30.2**	**+0.5**
JNU				LR	LR	05 22 32.8	
	comp=Z,24nm,18.9s,baz=304,slow=19						
JNU				S	**Sn**	**05 22 45.4**	**+0.9**
	172nm,0.3s,baz=268,slow=18,SNR=8.5						
JHT	**Toyohira**	**1.29**	**7**	⇓P	Pn	**05 22 31.7**	**+0.2**
JHT				S	**Sn**	**05 22 48.0**	**+0.4**
KSRS	**Korea Array** 1.2nm,0.3s,baz=135,slow=14,SNR=13	**5.38**	**320**	P	**Pn**	**05 23 28.3**	**+0.7**
KSRS				S	**Sn**	**05 24 26.6**	**-1.5**
	6.1nm,0.3s,baz=139,slow=24,SNR=27						
MJAR	**Matsushiro Ar** 1.2nm,0.3s,baz=242,slow=12,SNR=7.4	**5.83**	**56**	P	**Pn**	**05 23 35.5**	**+1.6**
MJAR				LR	LR	05 26 07.4	
	comp=Z,33nm,21.4s,baz=265,slow=40						
JHJ	**Hachijo jima 2**	**6.33**	**90**	P	**Pn**	**05 23 40.4**	**-0.3**
	14nm,0.3s,baz=240,slow=20,SNR=4.6						
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=204,slow=14,SNR=7.8	**10.81**	**359**	P	**Pn**	**05 24 43.3**	**+1.4**
KLR	**Kul'dur** 0.3nm,0.3s,baz=172,slow=10,SNR=10.0	**15.84**	**359**	P	**P**	**05 25 52.7**	**-0.1**
KLR				LR	LR	05 32 19.1	
	comp=Z,320nm,18.5s,baz=84,slow=39						
SONM	**Songino Array** 0.5nm,0.6s,baz=122,slow=9.2,SNR=3.2	**24.21**	**314**	P	**P**	**05 27 22.8**	**+0.4**
WRA	**Warramunga Arr** 0.5nm,1.0s,baz=354,slow=8.0,SNR=2.4	**53.06**	**178**	P	**P**	**05 31 23.1**	**+0.5**
ILAR	**Eielson Array** 0.3nm,0.7s,baz=274,slow=6.4,SNR=4.2	**56.52**	**30**	P	**P**	**05 31 47.0**	**-0.2**
FINES	**FINESS Array B** 0.7nm,0.7s,baz=100,slow=7.2,SNR=2.6	**68.39**	**330**	P	**P**	**05 33 04.6**	**-1.9**

*IDC **01** 05:22:33.6±1.0, 32°.37N×60°.03E, h0km, mb3.8/14, mb1 4.0/17, mb1mx3.8/48, mbtmp3.9/17, ML3.8/3, MS3.0/17, Ms1 3.0/17, ms1mx2.9/51, Error ellipse: s-maj=21.7km s-min=17.4km az=173.0*

*CSEM **01** 05:22:36.1±0.3, 32°.55N×60°.01E, h10km, ML4.1, Error ellipse: s-maj=10.3km s-min=6.7km az=141.0*

*THR **01** 05:22:37.0±1.1, 32°.69N×59°.85E, h15km, ML4.1*

*NEIC **01** 05:22:37.0, 32°.69N×59°.85E, h15km, mb4.2/4, ML4.1(THR), MN4.1(TEH), After THR.*

*TEH **01** 05:22:38.2, 32°.68N×59°.82E, h4km, ML4.1*

ISC 01 05:22:35.8±1.8, 32°.58N±0'.05×59°.96E±0'.05, h3km±11km, n95, σ1°32/87, mb3.9/15, MS3.1/10, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IDAH	**Dahanechah**	**0.18**	**335**	*e*Pg	**Pg**	**05 22 39.4**	**+0.1**
IDAH				*e*AMB	AMB	05 22 46.1	
	comp=Z,4μm,0.1s						
IDAH	**Dahanechah**	**0.18**	**335**	*e*Pg	**Pg**	**05 22 39.4**	**+0.1**
IDAH	**Dahanechah**	**0.18**	**335**	Pg	**Pg**	**05 22 39.3**	**0.0**
IKOO	**Kooshah**	**0.82**	**259**	*e*Pg	**Pg**	**05 22 51.4**	**-0.1**
IKOO				*e*AMB	AMB	05 22 56.6	
	comp=Z,45μm,0.1s						
IKOO	**Kooshah**	**0.82**	**259**	*e*Pg	**Pg**	**05 22 51.4**	**-0.1**
IKOO	**Kooshah**	**0.82**	**259**	Pg	**Pg**	**05 22 51.4**	**-0.1**
ITEG	**Tejag**	**1.07**	**288**	*e*Pg	**Pg**	**05 22 54.6**	**-1.7**
ITEG				*e*AMB	AMB	05 22 59.4	
	comp=Z,56μm,0.2s						
ITEG	**Tejag**	**1.07**	**288**	*e*Pg	**Pg**	**05 22 54.6**	**-1.7**
ITEG	**Tejag**	**1.07**	**288**	Pg	**Pg**	**05 22 54.6**	**-1.7**
SHRT	**Shahrakht**	**1.10**	**15**	*e*Pg	**Pg**	**05 22 55.9**	**-1.0**
SHRT				AML	AML	05 23 16.0	
	comp=E,6μm,0.6s						
SHRT				AML	AML	05 23 18.2	
	comp=N,4μm,0.3s						
SHRT	**Shahrakht**	**1.10**	**15**	*e*Pg	**Pg**	**05 22 55.9**	**-1.0**
SHRT	**Shahrakht**	**1.10**	**15**	Pg	**Pg**	**05 22 55.0**	**-1.9**
TABS	**Tabas**	**2.61**	**295**	*e*Pn	**Pn**	**05 23 19.4**	**+0.5**
TABS	**Tabas**	**2.61**	**295**	Pn	**Pn**	**05 23 19.0**	**0.0**
TABS	**Tabas**	**2.61**	**295**	Pn	**Pn**	**05 23 19.0**	**0.0**
ZHSF	**Zahedan**	**3.04**	**166**	*e*Pn	**Pn**	**05 23 28.9**	**+4.0**
ZHSF	**Zahedan**	**3.04**	**166**	Pn	**Pn**	**05 23 28.0**	**+3.1**
ZHSF	**Zahedan**	**3.04**	**166**	Pn	**Pn**	**05 23 28.0**	**+3.1**
IMOG	**Moghan**	**3.56**	**352**	*e*Pn	**Pn**	**05 23 33.0**	**+0.8**
IMOG				*e*AMB	AMB	05 23 49.8	
	comp=Z,3μm,0.2s						
IMOG	**Moghan**	**3.56**	**352**	Pn	**Pn**	**05 23 32.9**	**+0.8**
IMOG	**Moghan**	**3.56**	**352**	Pn	**Pn**	**05 23 32.9**	**+0.8**
ISRO	**Mashad**	**3.74**	**354**	*e*Pn	**Pn**	**05 23 35.4**	**+0.8**
ISRO	**Mashad**	**3.74**	**354**	*e*Pn	**Pn**	**05 23 35.4**	**+0.8**
IMYA	**Miami**	**3.76**	**2**	*e*Pn	**Pn**	**05 23 35.2**	**+0.4**
IMYA				*e*Sg	**Sb**	**05 24 31.8**	**+2.9**
IMYA				*e*AMB	AMB	05 24 56.5	
	comp=Z,13μm,0.7s						
IMYA	**Miami**	**3.76**	**2**	Pn	**Pn**	**05 23 35.1**	**+0.3**
IMYA				*e*Sg	**Sb**	**05 24 31.8**	**+2.9**
IMYA	**Miami**	**3.76**	**2**	Pn	**Pn**	**05 23 35.1**	**+0.3**
IMYA				Sg	**Sb**	**05 24 31.7**	**+2.9**
KRBR	**Kerman**	**3.77**	**227**	*e*Pn	**Pn**	**05 23 36.2**	**+1.2**
KRBR				AML	AML	05 24 36.5	
	comp=E,390nm,0.2s						
KRBR	**Kerman**	**3.77**	**227**	Pn	**Pn**	**05 23 36.0**	**+0.9**
KRBR	**Kerman**	**3.77**	**227**	Pn	**Pn**	**05 23 36.0**	**+0.9**
IBAF	**Bafgh**	**3.85**	**256**	*e*Pn	**Pn**	**05 23 36.3**	**+0.1**
IBAF				*e*AMB	AMB	05 24 43.1	
	comp=Z,8μm,0.6s						
IBAF	**Bafgh**	**3.85**	**256**	*e*Pn	**Pn**	**05 23 36.3**	**+0.1**
IBAF	**Bafgh**	**3.85**	**256**	Pn	**Pn**	**05 23 36.2**	**+0.1**
IPAY	**Payeh**	**3.94**	**349**	*e*Pn	**Pn**	**05 23 39.0**	**+1.5**
IPAY				*e*AMB	AMB	05 23 42.2	
	comp=Z,2μm,0.2s						
IPAY	**Payeh**	**3.94**	**349**	Pn	**Pn**	**05 23 38.9**	**+1.5**
IPAY	**Payeh**	**3.94**	**349**	Pn	**Pn**	**05 23 38.9**	**+1.5**

MKAR				LR	LR	05 37 01.0			
	comp=Z,71nm,18.0s,baz=240,slow=39								
BRTR	**Keskin Array B**	**22.37**	**296**	P	**P**	**05 27 36.2**	**+1.1**		
	comp=Z,1.6nm,0.8s,baz=108,slow=7.9,SNR=8.5								
BRTR				LR	LR	05 38 09.2			
	comp=Z,14nm,19.1s,baz=100,slow=42								
KURBB	**Kurchatov Arra**	**22.65**	**32**	P	**P**	**05 27 37.6**	**-0.3**		
	comp=Z,0.9nm,0.7s,baz=228,slow=9.7,SNR=11								
KURK	**Kurchatov**	**22.75**	**32**	*e*P	**P**	**05 27 41.0**	**+2.0**		
	comp=Z,46nm,1.2s								
KURK	**Kurchatov**	**22.75**	**32**	*e*P	**P**	**05 27 41.0**	**+2.0**		
	comp=Z,46nm,1.2s								
ARU	**Arti**	**23.87**	**358**	P	**P**	**05 27 50.0**	**-0.2**		
	comp=Z,2.1nm,0.3s,baz=169,slow=4.8,SNR=8.5								
ARU	**Arti**	**23.87**	**358**	*e*P	**P**	**05 27 51.3**	**+1.1**		
	comp=Z,14nm,1.1s								
ARU	**Arti**	**23.87**	**358**	*e*P	**P**	**05 27 51.3**	**+1.1**		
	comp=Z,14nm,1.1s								
ZALV	**Zalesovo Beam**	**27.74**	**32**	P	**P**	**05 28 26.1**	**+0.8**		
	comp=Z,0.8nm,0.6s,baz=243,slow=6.3,SNR=3.5								
ZALV				LR	LR	05 39 43.6			
	comp=Z,29nm,19.6s,baz=250,slow=37								
OBN	**Obninsk**	**27.89**	**331**	LR	LR	05 41 09.1			
	comp=Z,47nm,19.4s,baz=92,slow=40								
CRVS	**Cervenica-Dubn**	**33.00**	**311**	*e*P	**P**	**05 29 14.7**	**+2.7**		
FINES	**FINESS Array B**	**36.22**	**333**	P	**P**	**05 29 40.5**	**+1.0**		
	comp=Z,3.0nm,0.6s,baz=120,slow=11,SNR=14								
FINES				LR	LR	05 45 55.3			
	comp=Z,29nm,20.4s,baz=210,slow=38								
GERES	**GERESS Array B**	**38.01**	**309**	P	**P**	**05 29 54.5**	**-0.6**		
	comp=Z,0.5nm,0.2s,baz=79,slow=10,SNR=5.7								
GERES				LR	LR	05 48 09.6			
	comp=Z,11nm,20.2s,baz=88,slow=40								
NB2	**NORSAR Subarra**	**42.34**	**327**	P	**P**	**05 30 30.3**	**-0.5**		
	comp=Z,2.3nm,0.8s,baz=112,slow=7.9								
NB2	**NORSAR Subarra**	**42.34**	**327**	P	**P**	**05 30 30.3**	**-0.5**		
	comp=Z,2.3nm,0.8s,SNR=5.1								
NOA	**NORSAR Array B**	**42.34**	**327**	P	**P**	**05 30 30.4**	**-0.4**		
	comp=Z,1.2nm,0.7s,baz=112,slow=7.9,SNR=4.7								
KLR	**Kul'dur**	**54.72**	**50**	LR	LR	05 56 43.7			
	comp=Z,37nm,19.0s,slow=37								
KSAR	**Wonju Array Be**	**54.76**	**65**	P	**P**	**05 32 05.1**	**-1.6**		
KSAR	**Wonju Array Be**	**54.76**	**65**	P	**P**	**05 32 05.1**	**-1.6**		
KSRS	**Korea Array**	**54.79**	**65**	P	**P**	**05 32 05.1**	**-1.8**		
	comp=Z,0.9nm,0.7s,baz=279,slow=6.7,SNR=4.7								
KSRS				LR	LR	05 57 42.0			
	comp=Z,32nm,18.1s,baz=237,slow=38								
TORD	**Torodi Ar. Bea**	**56.38**	**264**	P	**P**	**05 32 16.9**	**-1.8**		
	comp=Z,2.5nm,0.6s,baz=61,slow=6.7,SNR=21								
JNU	**Nakatsue**	**58.46**	**69**	LR	LR	06 01 39.7			
	comp=Z,16nm,19.7s,baz=114,slow=40								
YKA	**Yellowknife Ar**	**85.16**	**357**	P	**P**	**05 35 11.6**	**-1.4**		
	comp=Z,0.7nm,0.7s,baz=356,slow=5.2,SNR=8.6								
WRA	**Warramunga Arr**	**88.16**	**115**	P	P	05 35 25.9	-2.5		
	comp=Z,0.8nm,0.8s,baz=313,slow=4.2,SNR=3.7								
ASAR	**Alice Springs**	**89.99**	**118**	P	P	05 35 34.9	-2.0		
	comp=Z,0.3nm,0.6s,baz=323,slow=5.2,SNR=4.1								

IDC 01 05:25:31.9±6.2, **49.66S**×**121.63E**, **h0**km, **mb3.6**/2, **mb1 3.9**/2, **mb1mx3.6**/21, **mbtmp3.6**/2, **MS3.7**/4, **Ms1 3.6**/4, **ms1mx3.2**/21, **Error ellipse: s-maj=502.8km s-min=70.6km az=105.0, Western Indian-Antarctic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W1	**Cape Leeuwin H**	**15.75**	**337**	T	T	05 45 41.2	
	baz=159,slow=75,SNR=30						
H01W2	**Cape Leeuwin H**	**15.75**	**337**	T	T	05 45 40.8	
	baz=159,slow=75,SNR=24						
H01W3	**Cape Leeuwin H**	**15.76**	**337**	T	T	05 45 42.0	
	baz=159,slow=75,SNR=27						
ASAR	**Alice Springs**	**27.68**	**25**	P	P	05 31 20.7	-0.8
	1.0nm,0.8s,baz=199,slow=7.9,SNR=5.2						
ASAR				LR	LR	05 41 44.1	
	comp=Z,60nm,19.0s,baz=182,slow=35						
WRA	**Warramunga Arr**	**31.35**	**23**	P	P	05 31 55.0	+0.9
	0.4nm,0.7s,baz=194,slow=7.9,SNR=2.7						
VNDA	**Vanda**	**31.81**	**165**	LR	LR	05 43 30.5	
	comp=Z,95nm,20.5s,baz=322,slow=34						
BOSA	**Boshof**	**72.62**	**246**	LR	LR	06 02 12.2	
	comp=Z,21nm,18.8s,baz=243,slow=30						
USHA	**Ushuaia**	**75.53**	**174**	LR	LR	06 06 39.9	
	comp=Z,326nm,21.0s,baz=92,slow=33						
YKA	**Yellowknife Ar**	**147.24**	**45**	PKPbc	PKPbc	05 45 15.1	-0.7
	0.6nm,0.6s,baz=273,slow=2.5,SNR=8.0						

IDC 01 05:32:42.5±12.0, **19.38S**×**178.24W**, **h595**km±157km, **mb2.6**/4, **mb1 3.0**/4, **mb1mx2.8**/23, **mbtmp3.6**/4, **Error ellipse: s-maj=138.7km s-min=54.0km az=162.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**44.55**	**261**	P	P	05 40 02.9	-0.1
	0.2nm,0.3s,baz=96,slow=6.9,SNR=9.0						
ASAR	**Alice Springs**	**44.57**	**256**	P	P	05 40 02.9	-0.3
	0.9nm,0.8s,baz=89,slow=7.8,SNR=7.7						
TXAR	**Lajitas Array**	**86.64**	**57**	P	P	05 44 24.1	-0.2
	0.2nm,0.6s,baz=234,slow=7.6,SNR=3.5						
ILAR	**Eielson Array**	**87.28**	**13**	P	P	05 44 26.4	+0.1
	0.2nm,0.6s,baz=211,slow=5.1,SNR=2.9						
GERES	**GERESS Array B**	**149.07**	**345**	PKPbc	PKPbc	05 51 24.2	-0.3
	0.9nm,0.8s,baz=48,slow=1.5,SNR=5.3						

*ISCJB **01** 05:36:56.1±0.6, 22.23S±0.04×68.60W±0.09, h114km±8km, mb4.0/2, Error ellipse: s-maj=13.2km s-min=7.1km az=175.4*
*IDC **01** 05:36:56.8±0.8, 22.36S×68.47W, h97km±16km, mb4.0/2, mb1 3.6/5, mb1mx3.4/28, mbtmp3.9/5, Error ellipse: s-maj=39.4km s-min=29.4km az=108.0*
*GUC **01** 05:36:57.3±0.5, 22.20S×68.76W, h116km±4km, ML3.7*
ISC 01 05:36:57.1±0.9, **22.23S**±0.05×**68.62W**±0.08, **h109**km±9km, **n15**, σ1$ **05/24**, **8C, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**0.46**	**215**	P	**Pn**	**05 37 14.4**	**+0.3**
	3μm,0.3s,baz=44,slow=5.4,SNR=3932						
LVC				S	**Sn**	**05 37 26.0**	**-0.8**
	11μm,0.3s,baz=294,slow=19,SNR=28						
PB09	**IPOC Station P**	**0.72**	**307**⇑	*i*P	**Pn**	**05 37 16.4**	**+0.6**
PB09				*i* S	**Sn**	**05 37 30.6**	**+0.9**
PB06	**IPOC Station P**	**1.00**	**242**⇑	*i*P	**Pn**	**05 37 18.7**	**+0.4**
PB06				*i* S	**Sn**	**05 37 34.8**	**+0.4**
PB06				IAML		05 37 35.5	
	comp=N,3μm,0.5s						
PB07	**IPOC Station P**	**1.28**	**293**⇑	*i*P	**Pn**	**05 37 21.6**	**+0.1**
PB07				*i* S	**Sn**	**05 37 39.7**	**-0.2**
PB07				IAML		05 37 41.0	
	comp=N,1μm,0.2s						
PB04	**IPOC Station P**	**1.42**	**266**⇑	*i*P	**Pn**	**05 37 23.0**	**-0.1**
PB04				*i* S	**Sn**	**05 37 42.3**	**-0.5**
PB04				IAML		05 37 43.7	
	comp=N,844nm,0.3s						
PB01	**IPOC Station P**	**1.43**	**326**⇑	*i*P	**Pn**	**05 37 23.1**	**0.0**
PB01				*e*S	**Sn**	**05 37 42.6**	**-0.3**
PB01				IAML		05 37 43.5	
	comp=N,2μm,0.3s						
PB08	**IPOC Station P**	**2.14**	**346**⇑	*i*P	**Pn**	**05 37 33.2**	**+0.9**
PB08				*e*S	**Sn**	**05 38 00.2**	**+1.2**
PB08				IAML		05 38 01.6	
	comp=E,603nm,0.3s						
PB10	**IPOC Station P**	**2.19**	**234**	*e*P	**Pn**	**05 37 32.8**	**+0.3**
HMBC	**Humberstone**	**2.28**	**328**⇑	*i*P	**Pn**	**05 37 33.0**	**-0.8**
HMBC				*i* S	**Sn**	**05 38 01.0**	**-0.8**
MNMC	**Minye Minye**	**3.22**	**343**⇑	*i*P	**Pn**	**05 37 45.7**	**-0.6**
MNMC				*e*S	**Sn**	**05 38 23.6**	**-0.6**
LPAZ	**La Paz**	**5.93**	**5**	P	**Pn**	**05 38 25.8**	**+2.7**
	comp=E,0.4nm,0.3s,baz=211,slow=7.4,SNR=19						
LPAZ				S	Sn	05 39 17.2	-13
	comp=E,0.4nm,0.3s,baz=182,slow=9.2,SNR=4.9						
SIV	**San Ignacio**	**9.46**	**50**	P	**Pn**	**05 39 08.2**	**-2.2**
	comp=E,0.3nm,0.3s,baz=242,slow=10,SNR=7.3						
SIV				S	Sn	05 40 46.2	-8.7
	comp=E,0.3nm,0.3s,baz=132,slow=22,SNR=6.7						
CPUP	**Villa Florida**	**11.08**	**114**	P	**Pn**	**05 39 31.1**	**-1.2**
	comp=E,0.0nm,0.3s,baz=256,slow=17,SNR=2.0						
DBIC	**Dimbokro**	**68.69**	**73**	P	**P**	**05 47 50.7**	**+1.3**
	comp=E,3.1nm,0.8s,baz=188,slow=5.4,SNR=2.8						
TORD	**Torodi Ar. Bea**	**77.35**	**70**	P	**P**	**05 48 40.1**	**-0.3**
	comp=E,1.3nm,0.5s,baz=259,slow=4.7,SNR=24						

IDC 01 05:48:24.4±3.0, **53.63N**×**87.89E**, **h0**km, **mb1 3.0**/2, **mb1mx2.9**/48, **mbtmp3.0**/2, **ML2.6**/2, **Error ellipse: s-maj=27.2km s-min=17.0km az=45.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.85**	**281**	*i*		05 59 50.0	
	baz=98,slow=320,SNR=4.2						
ZALV	**Zalesovo Beam**	**1.85**	**281**	Pg	Pn	05 48 57.6	+0.2
	1.8nm,0.3s,baz=95,slow=16,SNR=19						
ZALV				Lg	Lg	05 49 24.2	
	5.2nm,0.3s,baz=97,slow=24,SNR=16						
KURBB	**Kurchatov Arra**	**6.50**	**246**	Pn	Pn	05 50 01.9	+0.6
	0.1nm,0.3s,baz=62,slow=14,SNR=5.1						
KURBB				Sn	Sn	05 51 14.7	-1.5
	0.0nm,0.3s,baz=323,slow=26,SNR=2.3						
KURBB				Lg	Lg	05 51 49.6	
	0.0nm,0.3s,baz=61,slow=33,SNR=5.2						
MKAR	**Makanchi Array**	**7.73**	**210**	Pn	Pn	05 50 19.5	+1.3
	0.1nm,0.3s,baz=29,slow=11,SNR=3.5						

*ISCJB **01** 05:54:12.4±1.0, 45.49S±0.04×166.50E±0.05, h3km±7km, mb3.6/2, MS3.4/3, Error ellipse: s-maj=7.0km s-min=6.4km az=155.5*
*IDC **01** 05:54:13.8±1.2, 45.45S×166.57E, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.6/29, mbtmp3.6/3, ML4.0/2, MS3.5/4, Ms1 3.5/4, ms1mx3.0/17, Error ellipse: s-maj=45.8km s-min=23.3km az=168.0*
*WEL **01** 05:54:15.2±0.4, 45.60S×166.64E, h5km, ML4.6/25, Mw4.3, Error ellipse: s-maj=3.1km s-min=1.7km az=90.0*
WEL Felt between fiordland and Southland, maximum reported intensity MM 4.
*NEIC **01** 05:54:15.2, 45.60S×166.63E, h5km, ML4.7(WEL), After WEL.*
NEIC Felt at Invercargill, Manapouri, Te Anau and Waverley.
ISC 01 05:54:14.6±1.5, **45.55S**±0.05×**166.58E**±0.05, **h11**km±9km, **n67**, σ1$ **53/70**, **MS3.3/3**, **1C-2D**, **Off west coast of South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.41**	**79**	⇓PG	**Pg**	**05 54 22.8**	**+0.1**
DCZ				SG	**Sg**	**05 54 28.5**	**+0.3**
DCZ				AML	AML	05 54 28.8	
DCZ				AML	AML	05 54 29.4	
DCZ				AML	AML	05 54 29.2	
PYZ	**Puysegur Point**	**0.62**	**174**	PG	**Pb**	**05 54 26.8**	**-0.7**
PYZ				SG	**Sb**	**05 54 34.4**	**-1.9**
PYZ				AML	AML	05 54 38.4	
PYZ				AML	AML	05 54 38.4	
PYZ				AML	AML	05 54 44.9	
WHZ	**Wether Hill Ro**	**1.02**	**110**	*e*Pg	**Pg**	**05 54 33.7**	**-0.5**
WHZ				*e*Sg	**Sb**	**05 54 47.2**	**-0.4**
WHZ	**Wether Hill Ro**	**1.02**	**110**	⇑P*	**Pg**	**05 54 33.7**	**-0.5**
WHZ				S*	**Sb**	**05 54 47.4**	**-0.3**
WHZ				AML	AML	05 54 55.9	
MLZ	**Mavora Lakes**	**1.10**	**81**	P*	**Pb**	**05 54 34.7**	**-0.9**
MLZ				S*	**Sb**	**05 54 49.2**	**-0.7**
MLZ	**Mavora Lakes**	**1.10**	**81**	P*	**Pb**	**05 54 34.7**	**-0.9**
MLZ				S*	**Sb**	**05 54 49.2**	**-0.7**
MLZ				AML	AML	05 54 50.3	
MSZ	**Milford Sound**	**1.29**	**48**	P*	**Pn**	**05 54 36.6**	**-1.9**
MSZ				S*	**Sg**	**05 54 57.9**	**+1.7**
MSZ	**Milford Sound**	**1.29**	**48**	P*	**Pn**	**05 54 36.6**	**-1.9**
MSZ				S*	**Sg**	**05 54 57.8**	**+1.7**
MSZ				AML	AML	05 55 01.8	
MSZ				AML	AML	05 55 02.6	
MSZ				AML	AML	05 55 03.3	
APZ	**The Paps**	**1.62**	**143**	Pn	**Pb**	**05 54 43.1**	**-1.4**
APZ	**The Paps**	**1.62**	**143**	PN	**Pb**	**05 54 43.1**	**-1.4**
APZ				AML	AML	05 55 07.4	
APZ				AML	AML	05 55 09.0	
WKZ	**Wanaka**	**1.87**	**68**	Pn	**Pn**	**05 54 46.9**	**+0.4**
WKZ	**Wanaka**	**1.87**	**68**	PN	**Pn**	**05 54 46.9**	**+0.4**
WKZ				AML	AML	05 55 16.7	
WKZ				AML	AML	05 55 16.7	
WKZ				AML	AML	05 55 23.0	
WKZ				AML	AML	05 55 23.0	
EAZ	**Earnscleugh**	**1.95**	**82**	Pn	**Pn**	**05 54 48.4**	**+0.8**
EAZ	**Earnscleugh**	**1.95**	**82**	PN	**Pn**	**05 54 48.4**	**+0.8**
EAZ				AML	AML	05 55 18.9	
EAZ				AML	AML	05 55 18.9	
EAZ				AML	AML	05 55 19.4	
EAZ				AML	AML	05 55 19.4	
SYZ	**Scrubby Hill**	**2.04**	**120**	Pn	**Pb**	**05 54 50.4**	**-1.2**
SYZ	**Scrubby Hill**	**2.04**	**120**	PN	**Pb**	**05 54 50.4**	**-1.2**
SYZ				AML	AML	05 55 20.3	
SYZ				AML	AML	05 55 20.3	
SYZ				AML	AML	05 55 21.0	
SYZ				AML	AML	05 55 21.0	
JCZ	**Jackson Bay**	**2.15**	**48**	Pn	**Pn**	**05 54 51.2**	**+0.7**
JCZ	**Jackson Bay**	**2.15**	**48**	PN	**Pn**	**05 54 51.2**	**+0.7**
JCZ				AML	AML	05 55 26.7	
JCZ				AML	AML	05 55 27.2	
TUZ	**Tuapeka**	**2.17**	**102**	Pn	**Pb**	**05 54 52.1**	**-1.9**
TUZ	**Tuapeka**	**2.17**	**102**	PN	**Pb**	**05 54 52.1**	**-1.9**
TUZ				AML	AML	05 55 24.6	
TUZ				AML	AML	05 55 24.6	
TUZ				AML	AML	05 55 25.4	
TUZ				AML	AML	05 55 25.5	
LBZ	**Lake Benmore**	**2.81**	**67**	Pn	**Pn**	**05 54 59.2**	**-0.2**
LBZ	**Lake Benmore**	**2.81**	**67**	⇓PN	**Pn**	**05 54 59.2**	**-0.2**
LBZ				AML	AML	05 55 37.6	
LBZ				AML	AML	05 55 37.6	
LBZ				AML	AML	05 55 53.7	
LBZ				AML	AML	05 55 53.7	
HHSZ	**Highcliff Hill**	**2.83**	**98**	Pn	**Pn**	**05 55 01.9**	**+2.1**
HHSZ	**Highcliff Hill**	**2.83**	**98**	PN	**Pn**	**05 55 01.9**	**+2.1**
HHSZ				AML	AML	05 55 39.9	
HHSZ				AML	AML	05 55 54.0	
ODZ	**Otahua Downs**	**2.91**	**82**	*e*Pn	**Pn**	**05 55 00.8**	**-0.1**
ODZ				*e*Sn	**Sb**	**05 55 40.4**	**-1.8**
ODZ	**Otahua Downs**	**2.91**	**82**	PN	**Pn**	**05 55 00.5**	**-0.3**
ODZ				AML	AML	05 55 39.8	
ODZ				AML	AML	05 55 39.8	
ODZ				AML	AML	05 55 51.9	
ODZ				AML	AML	05 55 53.0	
FOZ	**Fox Glacier**	**3.07**	**50**	Pn	**Pn**	**05 55 03.6**	**+0.7**
FOZ	**Fox Glacier**	**3.07**	**50**	PN	**Pn**	**05 55 03.6**	**+0.7**
FOZ				AML	AML	05 55 56.3	
FOZ				AML	AML	05 55 56.3	
FOZ				AML	AML	05 55 56.4	
FOZ				AML	AML	05 55 56.4	
RPZ	**Rata Peaks**	**3.68**	**62**	Pn	**Pn**	**05 55 10.3**	**-1.1**
	37nm,0.3s,baz=224,slow=6.0,SNR=153						
RPZ				Sn	**Sn**	**05 55 57.4**	**+2.5**
	62nm,0.3s,baz=31,slow=19,SNR=2.6						
RPZ				LR	LR	05 56 51.3	
	comp=Z,688nm,20.3s,baz=240,slow=43						
RPZ	**Rata Peaks**	**3.68**	**62**	*e*Pn	**Pn**	**05 55 12.7**	**+1.3**
RPZ				Sn	**Sn**	**05 55 57.4**	**+2.5**
RPZ	**Rata Peaks**	**3.68**	**62**	PN	**Pn**	**05 55 10.3**	**-1.1**
RPZ				SN	**Sn**	**05 55 57.1**	**+2.3**
RPZ				AML	AML	05 56 19.6	
WVZ	**Waitaha Valley**	**3.87**	**52**	Pn	**Pn**	**05 55 14.5**	**+0.4**
WVZ	**Waitaha Valley**	**3.87**	**52**	PN	**Pn**	**05 55 14.5**	**+0.4**
WVZ				AML	AML	05 56 22.7	
WVZ				AML	AML	05 56 31.6	
OXZ	**Oxford**	**4.49**	**62**	Pn	**Pn**	**05 55 22.6**	**0.0**
OXZ	**Oxford**	**4.49**	**62**	PN	**Pn**	**05 55 22.6**	**0.0**
OXZ				SN	**Sn**	**05 56 15.2**	**+0.3**
OXZ				AML	AML	05 56 47.4	
OXZ				AML	AML	05 56 47.4	
OXZ				AML	AML	05 56 52.8	
INZ	**Inchbonnie**	**4.50**	**53**	PN	**Pn**	**05 55 22.4**	**-0.2**
MQZ	**McQueen's Vall**	**4.71**	**69**	PN	**Pn**	**05 55 25.7**	**+0.2**
MQZ				AML	AML	05 56 21.0	
MQZ				AML	AML	05 57 00.3	
LTZ	**Lake Taylor**	**4.94**	**58**	Pn	**Pn**	**05 55 28.0**	**-0.8**
LTZ	**Lake Taylor**	**4.94**	**58**	PN	**Pn**	**05 55 28.0**	**-0.8**
LTZ				AML	AML	05 56 40.9	
DSZ	**Denniston Nort**	**5.37**	**47**	Pn	**Pn**	**05 55 34.4**	**-0.2**
DSZ	**Denniston Nort**	**5.37**	**47**	PN	**Pn**	**05 55 34.4**	**-0.2**
DSZ				SN	**Sn**	**05 56 33.9**	**-2.5**
DSZ				AML	AML	05 56 44.7	
DSZ				AML	AML	05 56 48.3	
DSZ				AML	AML	05 57 11.9	

THZ	**Tophouse**	**5.95**	**53**	PN	**Pn**	**05 55 42.4**	**-0.1**		
THZ				AML	AML	05 57 03.9			
THZ				AML	AML	05 57 04.3			
QRZ	**Quartz Range**	**6.41**	**45**	PN	**Pn**	**05 55 47.9**	**-1.1**		
QRZ				AML	AML	05 57 09.2			
QRZ				AML	AML	05 57 09.2			
QRZ				AML	AML	05 57 09.7			
QRZ				AML	AML	05 57 09.7			
NNZ	**Nelson**	**6.58**	**51**	PN	**Pn**	**05 55 54.5**	**+3.3**		
TUWZ	**Tuamarina**	**6.75**	**55**	PN	**Pn**	**05 55 58.0**	**+4.4**		
TCW	**Tory Channel**	**7.08**	**55**	PN	**Pn**	**05 56 02.5**	**+4.3**		
CAW	**Cannon Point**	**7.61**	**57**	AML	AML	05 57 33.5			
MRZ	**Mangatainoka R**	**8.19**	**57**	PN	**Pn**	**05 56 13.5**	**+0.1**		
MRZ				AML	AML	05 57 51.8			
NEZ	**North Egmont**	**8.38**	**44**	PN	**Pn**	**05 56 17.7**	**+1.7**		
URZ	**Urewera**	**10.70**	**51**	Pn	**Pn**	**05 56 48.3**	**+0.6**		
	0.3nm,0.3s,baz=186,slow=8.5,SNR=2.8								
URZ				Sn	**Sn**	**05 58 43.1**	**-4.3**		
	0.7nm,0.3s,baz=35,slow=14,SNR=2.5								
STKA	**Stephens Creek**	**23.68**	**297**	LR	LR	06 07 23.8			
	comp=Z,115nm,20.1s,baz=189,slow=33								
VNDA	**Vanda**	**32.14**	**182**	LR	LR	06 12 03.7			
	comp=Z,44nm,18.2s,baz=14,slow=33								
ASAR	**Alice Springs**	**34.28**	**298**	P	**P**	**06 01 01.1**	**+0.3**		
	0.9nm,1.1s,baz=125,slow=8.0,SNR=3.5								
ASAR				LR	LR	06 14 16.4			
	comp=Z,98nm,18.7s,baz=128,slow=35								
WRA	**Warramunga Arr**	**36.83**	**303**	P	**P**	**06 01 22.9**	**+0.1**		
	0.8nm,0.9s,baz=137,slow=8.1,SNR=3.5								
H01W1	**Cape Leeuwin H**	**40.77**	**266**	T	T	06 45 11.2			
	baz=121,slow=75,SNR=944								
H01W2	**Cape Leeuwin H**	**40.78**	**266**	T	T	06 45 11.5			
	baz=121,slow=75,SNR=1054								
H01W3	**Cape Leeuwin H**	**40.78**	**266**	T	T	06 45 11.7			
	baz=121,slow=75,SNR=1101								
H08S2	**Diego Garcia H**	**87.46**	**262**	T	T	07 43 23.4			
	baz=136,slow=76,SNR=1845								
H08S1	**Diego Garcia H**	**87.47**	**262**	T	T	07 43 23.3			
	baz=136,slow=76,SNR=1534								
H08S3	**Diego Garcia H**	**87.48**	**262**	T	T	07 43 23.6			
	baz=136,slow=76,SNR=2219								
H08N1	**Diego Garcia H**	**89.41**	**262**	T	T	07 45 59.9			
	baz=126,slow=80,SNR=48								
H08N3	**Diego Garcia H**	**89.42**	**262**	T	T	07 46 00.0			
	baz=126,slow=80,SNR=60								
H08N2	**Diego Garcia H**	**89.43**	**262**	T	T	07 46 00.5			
	baz=126,slow=80,SNR=47								
TORD	**Torodi Ar. Bea**	**145.25**	**206**	PKPbc	**PKPdf**	**06 13 52.5**	**-0.1**		
	1.5nm,0.6s,baz=150,slow=2.3,SNR=15								
BRTR	**Keskin Array B**	**145.30**	**277**	PKPbc	**PKPab**	**06 13 53.2**	**+1.1**		
	0.6nm,0.6s,baz=163,slow=5.4,SNR=3.6								
ARCES	**ARCESS Array B**	**149.12**	**334**	PKPbc	**PKPbc**	**06 14 02.3**	**+0.7**		
	1.4nm,0.8s,baz=111,slow=2.0,SNR=4.4								
AKASG	**Malin Array Be**	**151.38**	**296**	PKPbc	**PKPbc**	**06 14 07.8**	**+0.2**		
	0.3nm,0.4s,baz=74,slow=2.3,SNR=3.0								

*ISCJB **01** 05:57:03.6±0.4, 36.20N±0.02×7.90W±0.03, h77km±8km, Error ellipse: s-maj=4.6km s-min=3.2km az=154.2*
*CSEM **01** 05:57:04.9±0.1, 36.16N×7.94W, h40km, ML3.1/4, Error ellipse: s-maj=3.6km s-min=2.3km az=65.0*
*CNRM **01** 05:57:05.7, 36.05N×8.08W, h30km, MD3.4*
*INMG **01** 05:57:05.8±1.6, 36.24N×7.96W, h14km±6km, ML2.5, Error ellipse: s-maj=5.5km s-min=3.0km az=48.0*
*MDD **01** 05:57:05.3±0.5, 36.13N×8.01W, h45km±34km, mb3.9/2, Error ellipse: s-maj=6.0km s-min=4.4km az=69.0, PRXIMO*
*IGIL **01** 05:57:06.7, 36.24N×7.99W, h23km, ML2.1*
ISC 01 05:57:04.0±1.2, **36.14N**±0.04×**7.95W**±0.04, **h56**km±21km, **n127**, σ1$ **23/230**, **3C-17D**, **Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBDV	**Barranco-do-Ve**	**1.10**	**1**⇓	*e*P	**Pn**	**05 57 23.8**	**+0.6**
PBDV				*e*S	**Sn**	**05 57 37.2**	**-0.3**
PBDV				A	A	05 57 44.2	
	48nm,0.5s						
PBDV	**Barranco-do-Ve**	**1.10**	**1**	P	**Pn**	**05 57 23.8**	**+0.6**
PBDV				S	**Sn**	**05 57 37.2**	**-0.3**
	48nm,0.5s						
PBDV	**Barranco-do-Ve**	**1.10**	**1**⇓	*e*P	**Pn**	**05 57 23.8**	**+0.6**
PBDV				S	**Sn**	**05 57 37.2**	**-0.3**
	48nm,0.5s						
PFVI	**Vila Bisbo**	**1.21**	**325**⇓	*i*P	**Pn**	**05 57 24.9**	**+0.1**
PFVI				*e*S	**Sn**	**05 57 39.3**	**-0.9**
PFVI				A	A	05 57 45.9	
	40nm,0.2s						
PFVI	**Vila Bisbo**	**1.21**	**325**	⇓P	**Pn**	**05 57 24.9**	**+0.1**
	7.8nm,0.1s,SNR=18						
PFVI				S	**Sn**	**05 57 39.3**	**-0.9**
	54nm,0.1s,SNR=7.0						
PFVI	**Vila B

PBEJ	**Beja**	**1.88**	**2**	P	**Pn**	**05 57 34.5**	**+0.7**
PBEJ				S	**Sn**	**05 57 55.4**	**-1.0**
	comp=N,13nm,0.3s						
EMIN	**Mina Concepcio**	**1.92**	**32**	P	**Pn**	**05 57 35.0**	**+0.7**
	comp=N,1.1nm,0.2s,SNR=16						
EMIN				S	**Sn**	**05 57 56.3**	**-1.0**
	comp=N,16nm,0.3s,SNR=14						
EMIN	**Mina Concepcio**	**1.92**	**32**	P	**Pn**	**05 57 35.0**	**+0.7**
	comp=N,1.1nm,0.2s,SNR=16						
EMIN				S	**Sn**	**05 57 56.3**	**-1.0**
	comp=N,16nm,0.3s,SNR=14						
PNCL	**Nicolau / Gran**	**2.02**	**347**	⇓*e*P	**Pn**	**05 57 36.3**	**+0.6**
PNCL				*e*S	**Sn**	**05 58 00.1**	**+0.4**
PNCL				A	A	05 58 13.1	
	comp=N,18nm,0.5s						
PNCL	**Nicolau / Gran**	**2.02**	**347**	⇓*e*P	**Pn**	**05 57 36.3**	**+0.6**
PNCL				*e*S	**Sn**	**05 58 00.1**	**+0.4**
	comp=N,18nm,0.5s						
EJIF	**Jimena Fronter**	**2.03**	**81**	P	**Pn**	**05 57 37.7**	**+1.9**
	comp=N,10nm,0.3s,SNR=18						
EJIF	**Jimena Fronter**	**2.03**	**81**	P	**Pn**	**05 57 37.7**	**+1.9**
	comp=N,10nm,0.3s,SNR=18						
PBAR	**Barrancos**	**2.15**	**19**	*e*Pn	**Pn**	**05 57 38.4**	**+0.9**
PBAR				*e*Sn	**Sn**	**05 58 03.0**	**-0.1**
PBAR				A	A	05 58 19.7	
	comp=N,26nm,0.6s						
PBAR	**Barrancos**	**2.15**	**19**	P	**Pn**	**05 57 38.4**	**+0.9**
PBAR				S	**Sn**	**05 58 03.0**	**-0.1**
	comp=N,26nm,0.6s						
PBAR	**Barrancos**	**2.15**	**19**	P	**Pn**	**05 57 38.4**	**+0.9**
PBAR				S	**Sn**	**05 58 03.0**	**-0.1**
	comp=N,26nm,0.6s						
EVO	**Evora**	**2.38**	**359**	*e*Pn	**Pn**	**05 57 41.6**	**+0.9**
EVO				*e*Sn	**Sn**	**05 58 09.3**	**+0.6**
EVO				A	A	05 58 20.8	
	comp=N,16nm,0.2s						
EVO	**Evora**	**2.38**	**359**	P	**Pn**	**05 57 41.6**	**+0.9**
EVO				S	**Sn**	**05 58 09.3**	**+0.6**
	comp=N,16nm,0.2s						
EVO	**Evora**	**2.38**	**359**	P	**Pn**	**05 57 41.6**	**+0.9**
EVO				S	**Sn**	**05 58 09.3**	**+0.6**
	comp=N,16nm,0.2s						
EMIJ	**Mijas**	**2.60**	**80**	P	**Pn**	**05 57 44.3**	**+0.7**
	comp=N,3.5nm,0.3s,SNR=7.3						
EMIJ				S	**Sn**	**05 58 14.2**	**+0.2**
	comp=N,1.4nm,0.3s,SNR=5.0						
EMIJ	**Mijas**	**2.60**	**80**	P	**Pn**	**05 57 44.3**	**+0.7**
	comp=N,3.5nm,0.3s,SNR=7.3						
EMIJ				S	**Sn**	**05 58 14.2**	**+0.2**
	comp=N,1.4nm,0.3s,SNR=5.0						
EBAD	**Badajoz**	**2.71**	**16**	P	**Pn**	**05 57 46.1**	**+1.0**
	comp=N,0.4nm,0.1s,SNR=12						
EBAD				S	**Sn**	**05 58 16.1**	**-0.6**
	comp=N,8.1nm,0.2s,SNR=5.0						
EBAD	**Badajoz**	**2.71**	**16**	P	**Pn**	**05 57 46.1**	**+1.0**
	comp=N,0.4nm,0.1s,SNR=12						
EBAD				S	**Sn**	**05 58 16.1**	**-0.6**
	comp=N,8.1nm,0.2s,SNR=5.0						
PESTR	**Estremoz**	**2.73**	**6**	*e*Pn	**Pn**	**05 57 46.2**	**+0.7**
PESTR				*e*Sn	**Sn**	**05 58 16.9**	**-0.4**
PESTR				A	A	05 58 37.3	
	comp=N,9.3nm,0.8s						
PESTR	**Estremoz**	**2.73**	**6**	*e*Pn	**Pn**	**05 57 46.2**	**+0.7**
PESTR				*e*Sn	**Sn**	**05 58 16.9**	**-0.4**
	comp=N,9.3nm,0.8s						
ECAB	**El Cabril**	**2.79**	**46**	P	**Pn**	**05 57 47.0**	**+0.7**
	comp=N,0.3nm,0.1s,SNR=17						
ECAB				S	**Sn**	**05 58 17.8**	**-1.0**
	comp=N,9.2nm,0.2s,SNR=11						
ECAB	**El Cabril**	**2.79**	**46**	P	**Pn**	**05 57 47.0**	**+0.7**
	comp=N,0.3nm,0.1s,SNR=17						
ECAB				S	**Sn**	**05 58 17.8**	**-1.0**
	comp=N,9.2nm,0.2s,SNR=11						
PMAFR	**Mafra**	**3.00**	**340**	*e*Pn	**Pn**	**05 57 50.4**	**+1.3**
PMAFR				*e*Sn	**Sn**	**05 58 24.2**	**+0.4**
PMAFR				A	A	05 58 24.8	
	comp=N,28nm,0.3s						
PMAFR	**Mafra**	**3.00**	**340**	P	**Pn**	**05 57 50.3**	**+1.2**
	comp=N,32nm,0.2s,SNR=52						
PMAFR				S	**Sn**	**05 58 24.2**	**+0.4**
	comp=N,23nm,0.3s,SNR=5.9						
PMAFR	**Mafra**	**3.00**	**340**	P	**Pn**	**05 57 50.3**	**+1.2**
	comp=N,32nm,0.2s,SNR=52						
PMAFR				*e*Sn	**Sn**	**05 58 24.2**	**+0.4**
	comp=N,28nm,0.3s						
EGOR	**Sierra Gorda,**	**3.23**	**72**	P	**Pn**	**05 57 54.1**	**+1.6**
	comp=N,0.9nm,0.1s,SNR=7.9						
EGOR				S	**Sn**	**05 58 30.2**	**+0.4**
	comp=N,1.9nm,0.2s,SNR=7.9						
EGOR	**Sierra Gorda,**	**3.23**	**72**	P	**Pn**	**05 57 54.1**	**+1.6**
	comp=N,0.9nm,0.1s,SNR=7.9						
EGOR				S	**Sn**	**05 58 30.2**	**+0.4**
	comp=N,1.9nm,0.2s,SNR=7.9						
PMRV	**Marv??o**	**3.31**	**7**	⇑*e*Pn	**Pn**	**05 57 54.2**	**+0.9**
PMRV				*e*Sn	**Sn**	**05 58 30.1**	**-1.3**
PMRV				A	A	05 58 53.1	
	comp=N,11nm,0.4s						
PMRV	**Marv??o**	**3.31**	**7**	P	**Pn**	**05 57 54.2**	**+0.9**
PMRV				S	**Sn**	**05 58 30.1**	**-1.3**
	comp=N,11nm,0.4s						
PMRV	**Marv??o**	**3.31**	**7**	P	**Pn**	**05 57 54.2**	**+0.9**
PMRV				S	**Sn**	**05 58 30.1**	**-1.3**
	comp=N,11nm,0.4s						
EADA	**Adamuz**	**3.37**	**52**	⇓P	**Pn**	**05 57 55.4**	**+1.2**
	comp=N,1.0nm,0.1s,SNR=18						
EADA				S	**Sn**	**05 58 32.3**	**-0.6**
	comp=N,9.5nm,0.2s,SNR=5.8						
EADA	**Adamuz**	**3.37**	**52**	P	**Pn**	**05 57 55.4**	**+1.2**
	comp=N,1.0nm,0.1s,SNR=18						
EADA				S	**Sn**	**05 58 32.3**	**-0.6**
	comp=N,9.5nm,0.2s,SNR=5.8						
PTOM	**Tomar**	**3.49**	**354**	⇓*i*Pn	**Pn**	**05 57 56.8**	**+1.0**
PTOM	**Tomar**	**3.49**	**354**	P	**Pn**	**05 57 56.8**	**+1.0**
PTOM	**Tomar**	**3.49**	**354**	P	**Pn**	**05 57 56.8**	**+1.0**
TZK	**Tazeka**	**3.70**	**123**	P	**Pn**	**05 58 00.0**	**+1.0**
TZK				S	**Sn**	**05 58 41.0**	**-0.5**
TZK	**Tazeka**	**3.70**	**123**	*i* P	**Pn**	**05 58 00.0**	**+1.0**
TZK				*i* S	**Sn**	**05 58 41.0**	**-0.5**
PCBR	**Castelo Branco**	**3.71**	**6**	⇑*i*Pn	**Pn**	**05 57 59.8**	**+1.0**
PCBR				*e*Sn	**Sn**	**05 58 40.4**	**-0.8**
PCBR				A	A	05 59 16.4	
	comp=N,5.5nm,0.7s						
PCBR	**Castelo Branco**	**3.71**	**6**	P	**Pn**	**05 57 59.8**	**+1.0**
PCBR				S	**Sn**	**05 58 40.4**	**-0.8**
	comp=N,2.8nm,0.7s						
PCBR	**Castelo Branco**	**3.71**	**6**	P	**Pn**	**05 57 59.8**	**+1.0**
PCBR				S	**Sn**	**05 58 40.4**	**-0.8**
	comp=N,2.8nm,0.7s						
EQUE	**Quentar**	**3.77**	**72**	P	**Pn**	**05 58 01.6**	**+1.8**
	comp=N,3.9nm,0.3s,SNR=7.9						
EQUE	**Quentar**	**3.77**	**72**	P	**Pn**	**05 58 01.6**	**+1.8**
	comp=N,3.9nm,0.3s,SNR=7.9						
KIB	**El Ksiba**	**3.89**	**156**	P	**Pn**	**05 58 02.0**	**+0.6**
KIB				S	**Sn**	**05 58 44.0**	**-1.9**
KIB	**El Ksiba**	**3.89**	**156**	*i* P	**Pn**	**05 58 02.0**	**+0.6**
KIB				*i* S	**Sn**	**05 58 44.0**	**-1.9**
CZD	**Col de Zad**	**3.92**	**141**	P	**Pn**	**05 58 03.0**	**+1.0**
CZD				S	**Sn**	**05 58 46.0**	**-0.9**
CZD	**Col de Zad**	**3.92**	**141**	*i* P	**Pn**	**05 58 03.0**	**+1.0**
CZD				*i* S	**Sn**	**05 58 46.0**	**-0.9**
PCAS	**Casmilo, Conde**	**3.93**	**354**	*e*Pn	**Pn**	**05 58 02.8**	**+1.0**
PCAS				*e*Sn	**Sn**	**05 58 46.8**	**+0.2**
PCAS				A	A	05 59 16.7	
	comp=N,7.1nm,0.6s						
PCAS	**Casmilo, Conde**	**3.93**	**354**	*e*Pn	**Pn**	**05 58 02.8**	**+1.0**
PCAS				*e*Sn	**Sn**	**05 58 46.8**	**+0.2**
	comp=N,7.1nm,0.6s						
EBER	**Berja**	**4.14**	**78**	P	**Pn**	**05 58 06.0**	**+1.1**
	comp=N,2.5nm,0.3s,SNR=13						
EBER				S	**Sn**	**05 58 51.6**	**-0.6**
	comp=N,0.9nm,0.2s,SNR=5.0						
EBER	**Berja**	**4.14**	**78**	P	**Pn**	**05 58 06.0**	**+1.1**
	comp=N,2.5nm,0.3s,SNR=13						
EBER				S	**Sn**	**05 58 51.6**	**-0.6**
	comp=N,0.9nm,0.2s,SNR=5.0						
GORA	**Gorafe**	**4.16**	**70**	P	**Pn**	**05 58 06.8**	**+1.8**
	comp=N,5.7nm,0.1s,SNR=7.9						
GORA				S	**Sn**	**05 58 51.8**	**-0.6**
	comp=N,17nm,0.1s,SNR=7.9						
GORA	**Gorafe**	**4.16**	**70**	P	**Pn**	**05 58 06.8**	**+1.8**
	comp=N,5.7nm,0.1s,SNR=7.9						
GORA				S	**Sn**	**05 58 51.8**	**-0.5**
	comp=N,17nm,0.1s,SNR=7.9						
TZC	**Tazercounte**	**4.17**	**163**	P	**Pn**	**05 58 06.0**	**+0.7**
TZC				S	**Sn**	**05 58 50.0**	**-2.7**
TZC	**Tazercounte**	**4.17**	**163**	*i* P	**Pn**	**05 58 06.0**	**+0.7**
TZC				*i* S	**Sn**	**05 58 50.0**	**-2.7**
EPLA	**Plasencia**	**4.18**	**20**	P	**Pn**	**05 58 06.4**	**+1.1**
	comp=N,1.4nm,0.2s,SNR=7.0						
EPLA				S	**Sn**	**05 58 51.4**	**-1.5**
	comp=N,8.6nm,0.2s,SNR=12						
EPLA	**Plasencia**	**4.18**	**20**	P	**Pn**	**05 58 06.4**	**+1.1**
	comp=N,1.4nm,0.2s,SNR=7.0						
EPLA				S	**Sn**	**05 58 51.4**	**-1.5**
	comp=N,8.6nm,0.2s,SNR=12						
EQES	**Quesada**	**4.24**	**66**	P	**Pn**	**05 58 07.3**	**+1.1**
	comp=N,0.3nm,0.1s,SNR=11						
EQES				S	**Sn**	**05 58 54.5**	**0.0**
	comp=N,3.7nm,0.2s,SNR=5.0						
EQES	**Quesada**	**4.24**	**66**	P	**Pn**	**05 58 07.3**	**+1.1**
	comp=N,0.3nm,0.1s,SNR=11						
EQES				S	**Sn**	**05 58 54.5**	**0.0**
	comp=N,3.7nm,0.2s,SNR=5.0						
MTE	**Manteigas**	**4.26**	**4**	*e*Pn	**Pn**	**05 58 07.2**	**+0.8**
MTE	**Manteigas**	**4.26**	**4**	P	**Pn**	**05 58 07.2**	**+0.8**
MTE	**Manteigas**	**4.26**	**4**	P	**Pn**	**05 58 07.2**	**+0.8**
CIA	**Chichaoua**	**4.62**	**189**	P	**Pn**	**05 58 11.0**	**-0.3**
CIA				S	Sn	05 58 59.0	-4.6
CIA	**Chichaoua**	**4.62**	**189**	*e*P	**Pn**	**05 58 11.0**	**-0.3**
ESDC	**Sonseca Array**	**4.73**	**41**	P	**Pn**	**05 58 14.0**	**+1.2**
	comp=N,2.2nm,0.1s,baz=225,slow=14,SNR=11						
ESDC				S	**Sn**	**05 59 04.4**	**-1.9**
	comp=N,1.0nm,0.1s,baz=227,slow=23,SNR=5.6						
ESDC	**Sonseca Array**	**4.73**	**41**	P	**Pn**	**05 58 14.0**	**+1.2**
	comp=N,2.2nm,0.1s,SNR=11						
ESDC				S	**Sn**	**05 59 04.4**	**-1.9**
	comp=N,1.0nm,0.1s,SNR=5.6						
SESP	**Santiago Espad**	**4.75**	**64**	P	**Pn**	**05 58 14.0**	**+0.8**
	comp=N,4.5nm,0.2s,SNR=7.9						
SESP				S	**Sn**	**05 59 05.7**	**-1.3**
	comp=N,5.7nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**4.75**	**64**	P	**Pn**	**05 58 14.0**	**+0.8**
	comp=N,4.5nm,0.2s,SNR=7.9						
SESP				S	**Sn**	**05 59 05.7**	**-1.3**
	comp=N,5.7nm,0.2s,SNR=7.9						
OUK	**Oukaimeden**	**4.92**	**179**	P	**Pn**	**05 58 16.0**	**+0.2**
OUK				S	**Sn**	**05 59 08.0**	**-3.6**
OUK	**Oukaimeden**	**4.92**	**179**	*i* P	**Pn**	**05 58 16.0**	**+0.2**
OUK				*i* S	**Sn**	**05 59 08.0**	**-3.6**
EVIA	**Vianos**	**5.00**	**59**	P	**Pn**	**05 58 16.8**	**+0.2**
	comp=N,0.3nm,0.4s,SNR=7.9						
EVIA				S	**Sn**	**05 59 10.0**	**-3.1**
	comp=N,3.3nm,0.2s,SNR=7.9						
EVIA	**Vianos**	**5.00**	**59**	P	**Pn**	**05 58 16.8**	**+0.2**
	comp=N,0.3nm,0.4s,SNR=7.9						
EVIA				S	**Sn**	**05 59 10.0**	**-3.1**
	comp=N,3.3nm,0.2s,SNR=7.9						
MVO	**Moncorvo**	**5.07**	**8**	*e*Pn	**Pn**	**05 58 18.0**	**+0.6**
MVO				*e*Sn	**Sn**	**05 59 11.7**	**-2.9**
MVO				A	A	05 59 13.3	
	comp=N,4.4nm,0.3s						
MVO	**Moncorvo**	**5.07**	**8**	P	**Pn**	**05 58 18.1**	**+0.6**
	comp=N,1.3nm,0.1s,SNR=7.9						
MVO				S	**Sn**	**05 59 11.3**	**-3.3**
	comp=N,7.8nm,0.2s,SNR=7.9						
MVO	**Moncorvo**	**5.07**	**8**	*e*Pn	**Pn**	**05 58 18.0**	**+0.6**
MVO				S	**Sn**	**05 59 11.3**	**-3.3**
	comp=N,7.8nm,0.2s,SNR=7.9						
ZFT	**Errachidia**	**5.07**	**143**	P	**Pn**	**05 58 19.0**	**+1.3**
ZFT				S	**Sn**	**05 59 13.0**	**-2.0**
ZFT	**Errachidia**	**5.07**	**143**	*e*P	**Pn**	**05 58 19.0**	**+1.3**
ZFT				*e*S	**Sn**	**05 59 13.0**	**-2.0**
PVRL	**Vila Real**	**5.13**	**2**	*e*Pn	**Pn**	**05 58 18.2**	**-0.1**
PVRL				*e*Sn	**Sn**	**05 59 15.1**	**-1.0**
PVRL	**Vila Real**	**5.13**	**2**	P	**Pn**	**05 58 18.2**	**-0.1**
PVRL				S	**Sn**	**05 59 15.1**	**-1.0**
PVRL	**Vila Real**	**5.13**	**2**	P	**Pn**	**05 58 18.2**	**-0.1**
PVRL				S	**Sn**	**05 59 15.1**	**-1.0**
POLO	**Lamas de Olo**	**5.22**	**1**	*e*Pn	**Pn**	**05 58 20.5**	**+0.9**
POLO				*e*Sn	**Sn**	**05 59 17.3**	**-1.3**
POLO	**Lamas de Olo**	**5.22**	**1**	*e*Pn	**Pn**	**05 58 20.5**	**+0.9**
POLO				*e*Sn	**Sn**	**05 59 17.3**	**-1.3**
GUD	**Guadarrama**	**5.39**	**32**	P	**Pn**	**05 58 23.9**	**+1.9**
	comp=N,0.7nm,0.2s,SNR=7.9						
GUD				S	**Sn**	**05 59 20.9**	**-1.8**
	comp=N,3.3nm,0.2s,SNR=7.9						
GUD	**Guadarrama**	**5.39**	**32**	P	**Pn**	**05 58 23.9**	**+1.9**
	comp=N,0.7nm,0.2s,SNR=7.9						
GUD				S	**Sn**	**05 59 20.9**	**-1.8**
	comp=N,3.3nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**5.67**	**62**	⇑P	**Pn**	**05 58 26.1**	**+0.3**
	comp=N,7.5nm,0.3s,SNR=18						
ETOB				S	**Sn**	**05 59 27.6**	**-2.0**
	comp=N,1.1nm,0.1s,SNR=6.4						
ELOB	**Lobios**	**5.72**	**359**	P	**Pn**	**05 58 27.2**	**+0.8**
	comp=N,1.0nm,0.2s,SNR=7.6						
ELOB				S	**Sn**	**05 59 27.4**	**-3.2**
	comp=N,1.6nm,0.4s,SNR=7.9						
ELOB	**Lobios**	**5.72**	**359**	P	**Pn**	**05 58 27.2**	**+0.8**
	comp=N,1.0nm,0.2s,SNR=7.6						
PBRG	**Braganca**	**5.73**	**9**	*e*Sn	**Sn**	**05 59 29.8**	**-1.2**
PBRG	**Braganca**	**5.73**	**9**	S	**Sn**	**05 59 29.8**	**-1.2**
PBRG	**Braganca**	**5.73**	**9**	S	**Sn**	**05 59 29.8**	**-1.2**
PGAV	**Gavieira, Arco**	**5.82**	**358**	*e*Pn	**Pn**	**05 58 29.0**	**+1.2**
PGAV				*e*Sn	**Sn**	**05 59 33.2**	**0.0**
PGAV	**Gavieira, Arco**	**5.82**	**358**	*e*Pn	**Pn**	**05 58 29.0**	**+1.2**
PGAV				*e*Sn	**Sn**	**05 59 33.2**	**0.0**
ECAL	**Calabor**	**5.87**	**9**	P	**Pn**	**05 58 29.2**	**+0.8**
	comp=N,0.4nm,0.3s,SNR=7.9						
ECAL				S	**Sn**	**05 59 32.4**	**-1.9**
	comp=N,3.5nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**5.87**	**9**	P	**Pn**	**05 58 29.2**	**+0.8**
	comp=N,0.4nm,0.3s,SNR=7.9						
ECAL				S	**Sn**	**05 59 32.4**	**-1.9**
	comp=N,3.5nm,0.2s,SNR=7.9						
AFON	**Font Roja**	**6.41**	**65**	P	**Pn**	**05 58 36.7**	**+0.8**
	comp=N,0.8nm,0.5s,SNR=6.4						
AFON	**Font Roja**	**6.41**	**65**	P	**Pn**	**05 58 36.7**	**+0.8**
	comp=N,0.8nm,0.5s,SNR=6.4						
EMOS	**Mosqueruela**	**7.23**	**52**	P	**Pn**	**05 58 49.1**	**+1.8**
	comp=N,0.4nm,0.3s,SNR=7.9						
EMOS				S	**Sn**	**06 00 03.9**	**-4.2**
	comp=N,0.7nm,0.3s,SNR=7.9						
EMOS	**Mosqueruela**	**7.23**	**52**	P	**Pn**	**05 58 49.1**	**+1.8**
	comp=N,0.4nm,0.3s,SNR=7.9						
IELO	**Elcoad**	**8.46**	**36**	P	**Pn**	**05 59 06.2**	**+2.2**
	comp=N,0.4nm,0.1s,SNR=7.9						
IELO	**Elcoad**	**8.46**	**36**	P	**Pn**	**05 59 06.2**	**+2.2**
	comp=N,0.4nm,0.1s,SNR=7.9						
EORO	**Oroz-Betelu**	**8.47**	**35**	P	**Pn**	**05 59 05.8**	**+1.8**
	comp=N,0.5nm,0.1s,SNR=7.9						
EORO	**Oroz-Betelu**	**8.47**	**35**	P	**Pn**	**05 59 05.8**	**+1.8**
	comp=N,0.5nm,0.1s,SNR=7.9						
SIGR	**SIGRI**	**1.85**	**321**	*e*Pn	**Pb**	**05 59 17.9**	**+0.1**

*DDA **01** 05:58:43.8,37.71N×27.12E,h8km,Md2.5*
*ISK **01** 05:58:43.9,37.76N×27.46E,h9km,MD2.4*
*CSEM **01** 05:58:43.9±0.3,37.78N×27.36E,h2km,MD2.5,Error ellipse: s-maj=11.2km s-min=5.2km az=69.0*

ISC 01 05:58:43.5±1.0,**37.78N**±0.03×**27.37E**±0.03,**h6**km±10km, **n16**,σ0**73**/**27**,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.14**	**232**	*i* P	**Pg**	**05 58 46.1**	**-0.1**
GCAM				*i* S	**Sg**	**05 58 48.6**	**+0.5**
GCAM	**G?zelcaml?**	**0.14**	**232**	P	**Pg**	**05 58 46.1**	**-0.1**
GCAM				S	**Sg**	**05 58 48.6**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**0.44**	**68**	*e*PG	**Pg**	**05 58 51.5**	**-0.5**
AYDB				*e*SG	**Sg**	**05 58 58.5**	**+0.6**
DGB	**˜zmir**	**0.47**	**305**	*i* P	**Pg**	**05 58 51.8**	**-0.7**
DGB				*i* S	**Sg**	**05 58 58.1**	**-0.5**
BDRM	**Kayabasi**	**0.72**	**175**	*i* P	**Pg**	**05 58 57.0**	**-0.3**
BDRM				*i* S	**Sb**	**05 59 07.6**	**-1.0**
BDRM	**Kayabasi**	**0.72**	**175**	P	**Pg**	**05 58 57.0**	**-0.3**
BDRM				S	**Sb**	**05 59 07.6**	**-1.0**
BODT	**Bodrum**	**0.72**	**184**	*e*PG	**Pb**	**05 58 57.9**	**-0.6**
BODT				*e*SG	**Sb**	**05 59 08.2**	**-0.4**
BODT	**Bodrum**	**0.72**	**184**	*e*Pg	**Pb**	**05 58 57.9**	**-0.6**
BODT				*e*Sg	**Sb**	**05 59 08.2**	**-0.4**
ZEY	**˜zmir**	**0.82**	**304**	*i* P	**Pg**	**05 58 58.2**	**-1.0**
ZEY				*i* S	**Sg**	**05 59 09.2**	**-0.7**
URLA	**Izmir**	**0.84**	**314**	*i* P	**Pg**	**05 58 59.0**	**-0.6**
URLA				*i* S	**Sg**	**05 59 10.5**	**0.0**
URLA	**Izmir**	**0.84**	**314**	P	**Pg**	**05 58 59.0**	**-0.6**
URLA				S	**Sg**	**05 59 10.5**	**0.0**
YER	**Yerkesik**	**0.97**	**131**	*e*PG	**Pg**	**05 59 01.7**	**-0.5**
CHOS	**Chios island**	**1.20**	**301**	*e*PN	**Pn**	**05 59 08.4**	**+1.5**
CHOS	**Chios island**	**1.20**	**301**	*e*Pn	**Pn**	**05 59 08.4**	**+1.5**
SIGR	**SIGRI**	**1.85**	**321**	*e*PN	**Pb**	**05 59 17.9**	**+0.1**

MAN 01 06:10:42,14.92N×121.48E,h49km,mb4.1,ML2.9,MS2.6, Luzon

MAN 01 06:16:41,13.13N×120.88E,h10km,mb4.0,ML2.8,MS2.5, 3C,Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.38**	**10**	⇑*e*P	**Pg**	**06 16 48.6**	**+0.1**
PGP				*i* S	**Sg**	**06 16 53.9**	**+0.3**
SJMP	**San Jose**	**0.70**	**161**	*e*P	**Pb**	**06 16 55.0**	**-0.3**
SJMP				*e*S	**Sn**	**06 17 06.8**	**-1.1**
TGY	**Tagaytay City**	**0.97**	**3**	⇑*i*P	**Pg**	**06 16 59.6**	**-0.1**
TGY				*i* S	**Sn**	**06 17 14.6**	**-0.1**
LQP	**Lukban**	**1.17**	**33**	⇑*e*P	**Pn**	**06 17 10.3**	**+6.6**
BUSP	**Coron**	**1.30**	**211**	*e*P	**Pn**	**06 17 04.3**	**-1.0**
BUSP				*e*S	**Sg**	**06 17 23.1**	**+0.2**
OTRP	**Odiongan**	**1.35**	**124**	*e*P	**Pn**	**06 17 05.8**	**0.0**
OTRP				*e*S	**Sn**	**06 17 23.9**	**0.0**
POLP	**Polilio Island**	**1.90**	**33**	*e*P	**Pg**	**06 17 16.8**	**-0.6**
POLP				*e*S	**Sg**	**06 17 40.8**	**-1.2**

*NIED **01** 06:18:00,38.20N×144.50E,h8km,Mw3.5 Best double couple: M0 1.69000×10^14 NP1:φs 27.00000°,δ20.00000°, λ-86.00000°. NP2:φs 202.00000°,δ70.00000°, λ-92.00000°.*

JMA 01 06:18:20.4±0.1,**38.24N×144.47E,h23km,M3.5,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.35**	**292**	P	**Pn**	**06 18 58.9**	**+1.4**
OFUJ				*e*S	**Sn**	**06 19 27.4**	**+1.7**
MIYJ	**Miyakonagasawa**	**2.46**	**304**	P	**Pn**	**06 19 00.3**	**+1.2**
MIYJ				*e*S	**Sn**	**06 19 29.8**	**+1.3**
JIO	**Ouri**	**2.46**	**276**	P	**Pn**	**06 19 00.5**	**+1.4**
JIO				*e*S	**Sn**	**06 19 29.8**	**+1.3**
JMK	**Ichinoseki**	**2.64**	**287**	P	**Pn**	**06 19 03.3**	**+1.7**
JMK				*e*S	**Sn**	**06 19 34.8**	**+1.9**
JOM	**Ohasama**	**2.77**	**297**	P	**Pn**	**06 19 05.1**	**+1.7**
JOM				*e*S	**Sn**	**06 19 38.3**	**+2.2**
JOU	**Okura**	**3.00**	**274**	P	**Pn**	**06 19 08.5**	**+2.0**
JOU				*e*S	**Sn**	**06 19 44.2**	**+2.5**
JANG	**Nango**	**3.13**	**314**	P	**Pn**	**06 19 09.6**	**+1.3**
JANG				S	**Sn**	**06 19 46.2**	**+1.2**
JRG	**Rokugo**	**3.21**	**292**	P	**Pn**	**06 19 11.8**	**+2.4**
JRG				*e*S	**Sn**	**06 19 50.5**	**+3.5**
JYK	**Kaneyama**	**3.29**	**283**	P	**Pn**	**06 19 12.8**	**+2.3**
JYK				*e*S	**Sn**	**06 19 51.8**	**+2.8**
JFT	**Otama**	**3.35**	**259**	P	**Pn**	**06 19 13.3**	**+2.0**
JFT				S	**Sn**	**06 19 52.0**	**+1.6**
JAH	**Hinai**	**3.56**	**304**	P	**Pn**	**06 19 16.5**	**+2.3**
JAH				*e*S	**Sn**	**06 19 57.7**	**+2.2**
JTM	**Tenmabayashi**	**3.66**	**315**	P	**Pn**	**06 19 17.5**	**+1.9**
JTM				*e*S	**Sn**	**06 20 00.0**	**+2.0**
JOT	**Ohata**	**4.10**	**321**	P	**Pn**	**06 19 24.3**	**+2.7**
JCH	**Churui**	**4.45**	**349**	P	**Pn**	**06 19 26.6**	**+0.2**
JCH				*e*S	**Sn**	**06 20 15.4**	**-2.1**
JKB	**Kayabe**	**4.50**	**325**	P	**Pn**	**06 19 29.6**	**+2.5**
JRY	**Ryogami san**	**4.97**	**245**	P	**Pn**	**06 19 34.5**	**+0.8**
JRY				*e*S	**Sn**	**06 20 29.2**	**-1.2**
NEM2	**Nemuro 2**	**5.21**	**10**	P	**Pn**	**06 19 34.0**	**-2.9**
NEM2				*e*S	**Sn**	**06 20 29.3**	**-6.9**
JOSM	**Okushiri--Mats**	**5.42**	**317**	P	**Pn**	**06 19 42.0**	**+2.3**
JTKR	**Abashiri--Toko**	**5.74**	**356**	P	**Pn**	**06 19 43.9**	**-0.2**
JTKR				*e*S	**Sn**	**06 20 44.9**	**-4.4**

JMA 01 06:32:16.6±0.8,**

*IDC **01** 07:04:42.4±1.4, 33°.92S×72°.25W, h0km, mb3.8/3, mb1 4.0/5, mb1mx3.8/23, mbtmp3.8/5, ML3.8/2, Error ellipse: s-maj=50.1km s-min=21.9km az=84.0*
*ISCJB **01** 07:04:43.9±1.2, 33°.92S±0°.04×72°.51W±0°.07, h20km±10km, mb3.9/2, Error ellipse: s-maj=9.7km s-min=6.0km az=2.9*
*GUC **01** 07:04:43.9±0.7, 33°.91S×72°.39W, h27km±5km, ML3.9*

ISC 01 07:04:45.0±1.8, 33°.93S±0°.04×72°.32W±0°.08, h15km±11km, n28, σ1§58/39, 4C-5D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.53**	**150**	⇓*i*P	**Pg**	**07 04 55.6**	**+0.1**
CHPI				*i* S	**Sb**	**07 05 04.5**	**+1.0**
CHPI				IAML		07 05 06.8	
	comp=N,8μm,0.4s						
RCDM	**Rinconada Maip**	**1.34**	**71**	⇓*i*P	**Pn**	**07 05 08.6**	**-0.6**
NICH	**Los Niches**	**1.40**	**140**	*e*P	**Pn**	**07 05 10.0**	**0.0**
NICH				*i* S	**Sg**	**07 05 29.9**	**-0.3**
ROC1	**El Roble**	**1.45**	**49**	*e*P	**Pn**	**07 05 10.7**	**-0.2**
ANTU	**Antumapu**	**1.45**	**76**	⇓*i*P	**Pn**	**07 05 11.0**	**+0.3**
ANTU				*i* S	**Sb**	**07 05 31.1**	**+1.0**
ANTU				IAML		07 05 34.5	
	comp=N,4μm,0.7s						
ROCH	**El Roble**	**1.46**	**49**	⇑*i*P	**Pn**	**07 05 10.5**	**-0.5**
ROCH				*e*S	**Sn**	**07 05 30.5**	**+0.6**
ROCH				IAML		07 05 40.7	
	comp=N,3μm,0.5s						
TALC	**Talca**	**1.57**	**159**	⇑*i*P	**Pn**	**07 05 12.3**	**0.0**
TALC				*i* S	**Sb**	**07 05 33.8**	**+0.3**
PEL	**Peldehue**	**1.58**	**61**	⇑*i*P	**Pn**	**07 05 12.8**	**+0.4**
PEL				*i* S	**Sb**	**07 05 34.4**	**+0.7**
PEL				IAML		07 05 46.1	
	comp=N,3μm,0.5s						
CLCH	**Cerro Calan**	**1.58**	**71**	⇑*i*P	**Pn**	**07 05 12.9**	**+0.4**
CLCH				*i* S	**Sb**	**07 05 35.3**	**+1.5**
CLCH				IAML		07 05 48.5	
	comp=E,2μm,0.9s						
AUSP	**Uspallata**	**3.00**	**56**	*e*P	**Pn**	**07 05 34.9**	**+2.7**
AUSP				*e*S	**Sg**	**07 06 21.6**	**+0.3**
ARCO	**CERRO ARCO**	**3.04**	**70**	*e*P	**Pb**	**07 06 20.0**	**+0.1**
ARCO				IAML		07 05 44.9	
	comp=Z,366nm,0.3s						
ASAL	**Salagasta**	**3.21**	**66**	*e*P	**Pn**	**07 05 39.0**	**+3.9**
RTLS	**Leoncito**	**3.32**	**51**	*e*P	**Pn**	**07 05 39.1**	**+2.5**
RTLS				*e*S	**Sg**	**07 06 30.7**	**-0.9**
RTCV	**Cerro Valdivia**	**3.79**	**58**	*e*P	**Pn**	**07 05 45.1**	**+2.1**
RTLL	**Cerro Villicun**	**4.16**	**52**	*e*P	**Pn**	**07 05 49.5**	**+1.6**
ACCO	**Cerro Coronel**	**4.33**	**41**	*e*P	**Pn**	**07 05 52.2**	**+1.7**
ACCO				IAML		07 07 07.5	
	comp=Z,84nm,0.7s						
AROD	**Rodeo**	**4.46**	**34**	⇓*e*P	**Pn**	**07 05 54.5**	**+2.1**
ACAN	**Cantantal**	**4.62**	**70**	*e*P	**Pn**	**07 05 56.0**	**+1.8**
ACDV	**Cuesta del Vie**	**4.63**	**37**	⇓*e*P	**Pn**	**07 05 56.6**	**+2.0**
ACDV				*e*S	**Sg**	**07 06 12.5**	**-1.2**
AGUA	**GUANDACOL**	**5.50**	**37**	*e*P	**Pn**	**07 06 08.0**	**+1.5**
ACHE	**Chepes**	**5.52**	**62**	*e*P	**Pn**	**07 06 07.1**	**+0.3**
ACHE				*e*S	**Sb**	**07 07 22.4**	**-4.8**
PLCA	**Paso Flores**	**6.94**	**169**	Pn	**Pn**	**07 06 26.6**	**+0.5**
	comp=Z,0.4nm,0.3s,baz=19,slow=9.8,SNR=5.7						
PLCA				Lg	Lg	07 08 21.7	
	comp=Z,0.2nm,0.3s,baz=131,slow=22,SNR=2.4						
LPAZ	**La Paz**	**17.97**	**13**	P	**Pn**	**07 08 55.3**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=197,slow=9.5,SNR=14						
SIV	**San Ignacio**	**20.54**	**32**	P	**P**	**07 09 22.0**	**-1.0**
	comp=Z,1.9nm,0.6s,baz=222,slow=10,SNR=7.4						
TXAR	**Lajitas Array**	**69.56**	**331**	P	**P**	**07 15 53.2**	**-0.1**
	comp=Z,0.4nm,0.6s,baz=153,slow=8.0,SNR=5.2						
TORD	**Torodi Ar. Bea**	**84.41**	**70**	P	**P**	**07 17 16.6**	**-0.5**
	comp=Z,1.2nm,0.7s,baz=248,slow=3.9,SNR=8.7						
ZALV	**Zalesovo Beam**	**154.29**	**32**	PKPbc	**PKPbc**	**07 24 43.8**	**-0.1**
	comp=Z,0.8nm,0.4s,baz=274,slow=5.6,SNR=2.0						
MKAR	**Makanchi Array**	**156.90**	**49**	PKPab	**PKPab**	**07 25 08.5**	**-1.0**
	comp=Z,0.6nm,0.7s,baz=308,slow=2.9,SNR=5.3						

SJA 01 07:08:12.7±0.9, 31°.20S×68°.33W, h100km±3km, ML3.1, MW3.9, 21D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RTLL	**Cerro Villicun**	**0.18**	**224**	*e*P	Pn	07 08 27.6	+0.7
RTLL				⇓*e*S	Sn	07 08 38.3	+0.8
AMOG	**MOGNA**	**0.30**	**332**	⇓*e*P	Pn	07 08 28.5	+1.1
AMOG				⇓*e*S	Sn	07 08 39.4	+1.0
SJA	**San Juan**	**0.38**	**211**	*e*P	Pn	07 08 28.9	+1.1
SJA				IAML		07 08 29.1	
	comp=Z,464nm,0.2s						
SJA				*e*S	Sn	07 08 40.0	+1.0
RTCV	**Cerro Valdivia**	**0.68**	**195**	*e*P	Pn	07 08 30.8	+0.7
RTCV				⇓*e*S	Sn	07 08 43.9	+0.8
ACCO	**Cerro Coronel**	**0.88**	**314**	⇓*e*P	Pn	07 08 33.3	+1.0
ACCO				IAML		07 08 50.1	
	comp=Z,226nm,0.2s						
AVFE	**Valle Fertil**	**0.92**	**54**	⇓*e*P	Pn	07 08 33.4	+1.0
AVFE				IAML		07 08 33.8	
	comp=Z,276nm,0.2s						
RTLS	**Leoncito**	**1.02**	**234**	*e*P	Pn	07 08 35.0	+1.3
RTLS				⇓*e*S	Sn	07 08 52.0	+2.6
ACDV	**Cuesta del Vie**	**1.23**	**326**	⇓*e*P	Pn	07 08 37.0	+1.1
ACDV				⇓*e*S	Sn	07 08 55.2	+1.8
AUSP	**Uspallata**	**1.36**	**221**	⇓*e*P	Pn	07 08 39.1	+1.5
AUSP				⇓*e*S	Sn	07 08 57.9	+1.6
AROD	**Rodeo**	**1.43**	**316**	⇓*e*P	Pn	07 08 39.6	+1.2
AROD				*e*S	Sn	07 08 59.4	+1.6
ACHE	**Chepes**	**1.43**	**89**	⇓*e*P	Pn	07 08 39.1	+0.9
ACAN	**Cantantal**	**1.45**	**138**	⇓*e*P	Pn	07 08 39.6	+1.2
ACAN				⇓*e*S	Sn	07 08 58.6	+0.9
ASAL	**Salagasta**	**1.45**	**197**	⇓*e*P	Pn	07 08 39.7	+1.2
ASAL				⇓*e*S	Sn	07 08 60.0	+2.0
AGUA	**GUANDACOL**	**1.71**	**355**	⇓*e*P	Pn	07 08 43.5	+1.7
AGUA				⇓*e*S	Sn	07 09 05.1	+1.3
ARCO	**CERRO ARCO**	**1.71**	**197**	⇓*e*P	Pn	07 08 43.0	+1.2
ARCO				⇓*e*S	Sn	07 09 04.8	+0.9
ARCO				IAML		07 09 08.0	
	comp=Z,355nm,0.7s						

*IDC **01** 07:14:27.9±2.8, 14°.01N×92°.05W, h0km, mb3.9/4, mb1 4.2/6, mb1mx3.8/44, mbtmp3.9/6, ML3.9/2, MS2.7/3, Ms1 2.7/3, ms1mx2.4/33, Error ellipse: s-maj=62.3km s-min=50.2km az=32.0*
*MEX **01** 07:14:33.1±0.7, 13°.96N×92°.26W, h20km±26km, MD4.0*

ISC 01 07:14:34.2±1.7, 14°.0N±0°.1×92°.3W±0°.1, h46km, n11, σ1§22/12, mb4.1/4, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.25**	**3**	*e*P	**Pn**	**07 15 08.2**	**-0.9**
CCIG				*e*S	**Sn**	**07 15 35.2**	**-0.6**
CMIG	**Matias Romero**	**3.97**	**321**	Pn	**Pn**	**07 15 31.0**	**-1.7**
	5.0nm,0.3s,baz=145,slow=14,SNR=86						
CMIG				Sn	**Sn**	**07 16 19.4**	**+1.4**
	19nm,0.3s,baz=88,slow=8.8,SNR=4.3						
CMIG				LR	LR	07 16 29.2	
	comp=Z,25nm,18.3s,baz=155,slow=30						
HUIG	**Huatulco**	**4.12**	**295**	*e*P	**Pn**	**07 15 32.9**	**-1.8**
TXAR	**Lajitas Array**	**18.55**	**327**	P	**Pn**	**07 18 49.5**	**+1.7**
	0.1nm,0.3s,baz=147,slow=12,SNR=10						
LPIG	**La Paz**	**19.78**	**303**	LR	LR	07 25 24.8	
	comp=Z,35nm,18.8s,baz=56,slow=33						
TKL	**Tuckaleechee C**	**22.85**	**18**	P	**P**	**07 19 32.9**	**-0.7**
	1.7nm,0.6s,baz=191,slow=12,SNR=4.7						
SJG	**San Juan**	**25.39**	**77**	LR	LR	07 29 03.3	
	comp=Z,31nm,18.0s,baz=194,slow=35						
YKA	**Yellowknife Ar**	**50.95**	**347**	P	**P**	**07 23 30.6**	**-0.2**
	1.7nm,0.6s,baz=151,slow=7.4,SNR=20						
YKA				PcP	**PcP**	**07 24 46.8**	**+0.3**
	0.4nm,0.8s,baz=147,slow=3.1,SNR=3.7						
INK	**Inuvik**	**60.35**	**344**	P	**P**	**07 24 38.6**	**+0.5**
	1.3nm,0.6s,baz=133,slow=7.0,SNR=10.0						
ILAR	**Eielson Array**	**62.73**	**337**	P	**P**	**07 24 55.0**	**+0.8**
	0.8nm,0.9s,baz=128,slow=6.4,SNR=7.9						
CMAR	**Chiang Mai Arr**	**145.89**	**341**	PKPbc	**PKPab**	**07 34 10.3**	**+0.4**
	1.7nm,0.7s,baz=348,slow=5.0,SNR=7.1						

*ISK **01** 07:30:04.1, 39°.27N×28°.79E, h5km, MD2.4*
*CSEM **01** 07:30:05.2±0.8, 39°.31N×28°.85E, h5km, MD2.7, Error ellipse: s-maj=20.3km s-min=15.0km az=149.0*
*ISCJB **01** 07:30:07.9±0.7, 39°.10N±0°.05×29°.04E±0°.05, h8km, Error ellipse: s-maj=9.0km s-min=3.9km az=146.9*

*DDA **01** 07:30:08.1, 39°.09N×29°.04E, h7km, Md2.7*

ISC 01 07:30:05.7±1.0, 39°.22N±0°.05×28°.96E±0°.04, h8km, n11, σ2§15/20, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**228**	*i* P	**Pg**	**07 30 13.8**	**+2.8**
DEMI				*i* S	**Sg**	**07 30 17.5**	**+3.0**
DEMI	**Demirci**	**0.26**	**228**	P	**Pg**	**07 30 13.8**	**+2.8**
DEMI				S	**Sg**	**07 30 17.5**	**+3.0**
GDZ	**Gediz**	**0.42**	**108**	*i* P	**Pg**	**07 30 15.2**	**+1.2**
GDZ				*i* S	**Sg**	**07 30 20.3**	**+0.7**
GDZ	**Gediz**	**0.42**	**108**	P	**Pg**	**07 30 15.2**	**+1.2**
GDZ				S	**Sg**	**07 30 20.3**	**+0.7**
TVSB	**Tavsanli**	**0.45**	**59**	*e*PG	**Pg**	**07 30 15.2**	**+0.7**
TVSB				*e*SG	**Sb**	**07 30 23.4**	**+0.5**
TVSB	**Tavsanli**	**0.45**	**59**	*e*Pg	**Pg**	**07 30 15.2**	**+0.7**
TVSB				*e*Sg	**Sb**	**07 30 23.4**	**+0.5**
KULA	**Kula-Manisa**	**0.74**	**199**	*e*PG	**Pg**	**07 30 19.4**	**-0.7**
KULA				*e*SG	**Sg**	**07 30 30.0**	**+0.3**
KULA	**Kula-Manisa**	**0.74**	**199**	*e*Pg	**Pg**	**07 30 19.4**	**-0.7**
KULA				*e*Sg	**Sg**	**07 30 30.0**	**+0.3**
GONE	**Gonen-Balikesi**	**1.29**	**310**	*e*PN	**Pb**	**07 30 26.6**	**-3.6**
GONE	**Gonen-Balikesi**	**1.29**	**310**	*e*Pn	**Pb**	**07 30 26.6**	**-3.6**
BORA	**Eskisehir**	**1.33**	**60**	*i* P	**Pg**	**07 30 33.7**	**+2.5**
BORA				*i* S	**Sg**	**07 30 51.1**	**+2.7**

IDC 01 07:31:14.6±3.0, 30°.43S×177°.57W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/23, mbtmp3.7/3, Error ellipse: s-maj=61.2km s-min=23.4km az=104.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.21**	**345**	Pn	Pn	07 31 39.6	+0.8
	186nm,0.3s,baz=93,slow=21,SNR=12						
RAO				Sn	Sn	07 31 56.0	0.0
	273nm,0.3s,baz=93,slow=23,SNR=8.1						
STKA	**Stephens Creek**	**34.83**	**257**	P	P	07 38 08.7	+1.3
	0.8nm,0.4s,baz=80,slow=7.0,SNR=5.0						
ASAR	**Alice Springs**	**43.48**	**267**	P	P	07 39 19.1	-0.7
	0.3nm,0.5s,baz=104,slow=7.2,SNR=6.4						
WRA	**Warramunga Arr**	**44.47**	**272**	P	P	07 39 27.1	-0.7
	1.0nm,0.8s,baz=111,slow=8.0,SNR=16						
FINES	**FINESS Array B**	**145.30**	**340**	PKPbc	PKPbc	07 50 52.3	-1.1
	0.5nm,0.4s,baz=64,slow=3.2,SNR=8.8						

*IDC **01** 07:45:02.5±0.9, 33°.95S×72°.26W, h0km, mb4.3/5, mb1 4.4/7, mb1mx4.1/25, mbtmp4.3/7, ML3.9/2, MS3.7/8, Ms1 3.6/8, ms1mx3.5/19, Error ellipse: s-maj=38.6km s-min=22.6km az=91.0*
*ISCJB **01** 07:45:05.9±0.4, 33°.96S±0°.03×72°.41W±0°.04, h33km, mb4.5/19, MS3.7/6, Error ellipse: s-maj=5.4km s-min=4.5km az=22.7*
*BJI **01** 07:45:06.7, 34°.44S×72°.71W, h34km, mB5.1/2, Ms5.1/2, Ms7 5.1/2*
*NEIC **01** 07:45:07.0, 34°.00S×72°.12W, h37km, mb4.6/18, After GUC.*
*GUC **01** 07:45:07.1±0.5, 34°.00S×72°.12W, h37km±4km, ML4.0*

ISC 01 07:45:04.6±1.6, 33°.93S±0°.04×72°.20W±0°.07, h12km±9km, n74, σ1§69/92, mb4.6/19, MS3.7/6, 4C-14D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.49**	**160**	⇓*i*P	**Pn**	**07 45 15.9**	**-1.5**
CHPI				*i* S	**Sn**	**07 45 22.8**	**+2.1**
CHPI				IAML		07 45 27.1	
	comp=N,12μm,0.2s						
RCDM	**Rinconada Maip**	**1.25**	**70**	⇑*i*P	**Pg**	**07 45 28.9**	**+0.3**
RCDM				*e*S	**Sg**	**07 45 44.1**	**-0.6**
ANTU	**Antumapu**	**1.36**	**75**	*e*P	**Pg**	**07 45 30.9**	**+0.2**
ANTU				*i* S	**Sg**	**07 45 48.6**	**+0.3**
ANTU				IAML		07 45 55.6	
	comp=E,6μm,0.6s						
ROC1	**El Roble**	**1.38**	**47**	*e*P	**Pb**	**07 45 30.8**	**+0.4**
ROC1				*e*S	**Sg**	**07 45 52.8**	**+3.8**
ROC1	**El Roble**	**1.38**	**47**	*e*Pn	**Pb**	**07 45 30.7**	**+0.3**
CLCH	**Cerro Calan**	**1.49**	**69**	⇑*i*P	**Pg**	**07 45 33.3**	**+0.1**
CLCH				*i* S	**Sg**	**07 45 52.6**	**+0.1**
CLCH				IAML		07 46 09.9	
	comp=E,5μm,0.9s						
PEL	**Peldehue**	**1.49**	**59**	⇑*i*P	**Pg**	**07 45 33.3**	**+0.1**
PEL				*i* S	**Sg**	**07 45 53.5**	**+0.9**
PEL				IAML		07 46 04.8	
	comp=E,5μm,1.2s						
TALC	**Talca**	**1.54**	**162**	⇑*i*P	**Pb**	**07 45 32.7**	**-0.2**
TALC				*e*S	**Sg**	**07 45 52.9**	**-1.1**
AUSP	**Uspallata**	**2.91**	**55**	⇓*e*P	**Pb**	**07 45 55.6**	**-1.0**
AUSP				*e*S	**Sg**	**07 46 34.8**	**-3.4**
AAGR	**Agrelo**	**2.94**	**74**	*e*P	**Pg**	**07 45 59.3**	**-1.7**
ARCO	**CERRO ARCO**	**2.94**	**69**	*e*P	**Pb**	**07 45 57.1**	**+0.1**
ARCO				IAML		07 46 04.4	
	comp=Z,481nm,0.5s						
ASAL	**Salagasta**	**3.12**	**66**	*e*P	**Pb**	**07 45 58.8**	**-1.2**
ASAL				*e*S	Sg	07 46 53.6	+8.7
RTLS	**Leoncito**	**3.24**	**50**	⇓*e*P	**Pb**	**07 45 59.3**	**-2.9**
RTLS				*e*S	**Sg**	**07 46 50.9**	**+2.2**
RTCV	**Cerro Valdivia**	**3.71**	**57**	⇓*e*P	**Pb**	**07 46 06.8**	**-3.3**
CANA	**Caviahue**	**4.05**	**167**	⇓*e*P	**Pn**	**07 46 09.0**	**+2.4**
RTLL	**Cerro Villicun**	**4.08**	**52**	⇓*e*P	**Pn**	**07 46 09.7**	**+2.9**
RTLL				*e*S	**Sb**	**07 47 06.4**	**+0.8**
ACCO	**Cerro Coronel**	**4.26**	**39**	*e*P	**Pn**	**07 46 12.6**	**+3.0**
ACCO				*e*S	**Sg**	**07 47 19.8**	**-1.7**
ACCO				IAML		07 47 28.4	
	comp=Z,117nm,0.7s						
AMOG	**MOGNA**	**4.33**	**47**	⇓*e*P	**Pn**	**07 46 13.3**	**+3.0**
AROD	**Rodeo**	**4.41**	**32**	⇓*e*P	**Pn**	**07 46 14.7**	**+3.1**
AROD				⇓*e*S	**Sg**	**07 47 25.2**	**-1.1**
ACAN	**Cantantal**	**4.52**	**70**	*e*P	**Pn**	**07 46 16.2**	**+3.3**
ACAN				⇓*e*S	**Sg**	**07 47 23.9**	**-5.9**
ACDV	**Cuesta del Vie**	**4.57**	**36**	*e*P	**Pn**	**07 46 16.7**	**+3.0**
ACDV				⇓*e*S	**Sg**	**07 47 31.5**	**0.0**
LCO	**Las Campanas**	**5.07**	**15**	*e*Pn	**Pn**	**07 46 19.7**	**-0.9**
AVFE	**Valle Fertil**	**5.18**	**52**	⇓*e*P	**Pn**	**07 46 24.4**	**+2.5**
AVFE				⇓*e*S	**Sb**	**07 47 38.4**	**+1.1**
AVFE				IAML		07 47 45.6	
	comp=Z,93nm,0.7s						
ACHE	**Chepes**	**5.43**	**61**	*e*P	**Pn**	**07 46 27.5**	**+2.0**
ACHE				⇓*e*S	**Sb**	**07 47 42.9**	**-1.8**
AGUA	**GUANDACOL**	**5.44**	**37**	*e*P	**Pn**	**07 46 28.4**	**+2.8**
PLCA	**Paso Flores**	**6.92**	**170**	Pn	**Pn**	**07 46 45.4**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=347,slow=13,SNR=5.1						
PLCA				Lg	Lg	07 48 40.1	
	comp=Z,0.4nm,0.3s,baz=108,slow=2.0,SNR=2.3						
PLCA				LR	LR	07 49 41.4	
	comp=Z,615nm,18.3s,baz=12,slow=40						
PLCA	**Paso Flores**	**6.92**	**170**	*e*Pn	**Pn**	**07 46 47.4**	**+1.7**
PLCA				Lg	Lg	07 48 40.1	
TRQA	**Tornquist**	**9.25**	**119**	*e*Pn	**Pn**	**07 47 19.8**	**+2.0**
LVC	**Limon Verde**	**11.65**	**15**	Pn	**Pn**	**07 47 47.1**	**-3.8**
	comp=Z,14nm,0.3s,baz=217,slow=10,SNR=3.8						
LVC	**Limon Verde**	**11.65**	**15**	*e*Pn	**Pn**	**07 47 47.2**	**-3.7**
PB01	**IPOC Station P**	**13.06**	**11**	*e*Pn	**Pn**	**07 48 09.2**	**-0.8**
CPUP	**Villa Florida**	**14.92**	**63**	Pn	**P**	**07 48 39.7**	**-1.3**
	comp=Z,0.1nm,0.3s,baz=248,slow=12,SNR=3.6						
CPUP				LR	LR	07 55 13.8	
	comp=Z,279nm,19.6s,baz=240,slow=41						
LPAZ	**La Paz**	**17.95**	**13**	P	**Pn**	**07 49 15.2**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=188,slow=6.7,SNR=26						
LPAZ	**La Paz**	**17.95**	**13**	*e*Pn	**Pn**	**07 49 15.3**	**+0.7**
	comp=Z,10nm,0.9s						
SIV	**San Ignacio**	**20.49**	**32**	P	**P**	**07 49 41.9**	**-0.5**
	comp=Z,7.1nm,0.8s,baz=227,slow=11,SNR=14						
SIV				LR	LR	07 59 03.1	
	comp=Z,299nm,18.7s,baz=222,slow=41						
SPB	**Sao Paulo**	**23.98**	**71**	*e*P	**P**	**07 50 19.5**	**+0.5**
	comp=Z,27nm,1.1s						
SAML	**Samuel**	**26.21**	**21**	*e*P	**P**	**07 50 39.5**	**+0.2**
	comp=Z,4.6nm,0.9s						
PTGA	**Pitinga**	**34.96**	**22**	*e*P	**P**	**07 51 56.6**	**0.0**
	comp=Z,6.9nm,1.1s						
SNAA	**Sanae**	**51.70**	**158**	P	**P**	**07 54 11.9**	**+0.8**
SNAA	**Sanae**	**51.70**	**158**	*e*P	**P**	**07 54 11.7**	**+0.6**
	comp=Z,8.8nm,1.0s						
QSPA	**South Pole Qui**	**56.30**	**180**	*e*P	**P**	**07 54 46.0**	**+1.1**
	comp=Z,7.6nm,1.1s						
JCT	**Junction City**	**69.17**	**335**	*e*P	**P**	**07 56 10.6**	**-0.3**
	comp=Z,23nm,1.8s						
TXAR	**Lajitas Array**	**69.61**	**331**	P	**P**	**07 56 13.6**	**-0.1**
	comp=Z,0.8nm,0.6s,baz=154,slow=8.2,SNR=9.7						
TXAR				LR	LR	08 22 03.0	
	comp=Z,47nm,18.3s,baz=0.0,slow=32						
TX31	**Lajitas Ar. Si**	**69.61**	**331**	*e*P	**P**	**07 56 14.0**	**+0.3**
SWET	**Sewanee**	**69.98**	**348**	*e*P	**P**	**07 56 15.6**	**-0.2**
	comp=Z,1.9nm,0.8s						
MIAR	**Mount Ida**	**71.00**	**341**	*e*P	**P**	**07 56 22.2**	**+0.2**
	comp=Z,16nm,1.7s						
WVT	**Waverly**	**71.21**	**347**	*e*P	**P**	**07 56 22.9**	**-0.3**
	comp=Z,13nm,0.9s						
X301	**Greenbrier Sit**	**71.36**	**343**	*e*P	**P**	**07 56 24.1**	**0.0**
	comp=Z,5.2nm,0.9s						
X201	**Greenbrier Sit**	**71.40**	**343**	*e*P	**P**	**07 56 24.7**	**+0.4**
	comp=Z,11nm,1.3s						
MNTX	**Cornudas Mount**	**72.38**	**331**	*e*P	**P**	**07 56 29.6**	**-0.8**
	comp=Z,2.1nm,0.7s						
MAW	**Mawson**	**73.28**	**164**	P	**P**	**07 56 35.6**	**+0.3**
	comp=Z,3.4nm,0.7s,baz=236,slow=7.3,SNR=3.5						
MAW				LR	LR	08 30 46.8	
	comp=Z,73nm,18.4s,baz=242,slow=37						
MAW	**Mawson**	**73.28**	**164**	*e*P	**P**	**07 56 35.8**	**+0.5**
	comp=Z,12nm,2.0s						
DBIC	**Dimbokro**	**75.29**	**71**	P	**P**	**07 56 48.0**	**+0.1**
	comp=Z,6.2nm,0.8s,baz=226,slow=9.3,SNR=4.7						
DBIC				LR	LR	08 27 49.0	
	comp=Z,26nm,19.7s,baz=190,slow=34						
DBIC	**Dimbokro**	**75.29**	**71**	*e*P	**P**	**07 56 48.0**	**+0.1**
	comp=Z,38nm,1.4s						
KNB	**Kanab**	**80.09**	**328**	*e*P	**P**	**07 57 15.1**	**+0.8**
	comp=Z,2.6nm,0.8s						
BOSA	**Boshof**	**80.22**	**118**	LR	LR	08 29 59.8	
	comp=Z,28nm,18.5s,baz=177,slow=34						
ECSD	**EROS Data Center**	**80.44**	**342**	*e*P	**P**	**07 57 15.6**	**-0.2**
	comp=Z,14nm,1.8s						
TOA0	**Torodi Ar. Sit**	**84.32**	**70**	*e*P	**P**	**07 57 37.3**	**+0.5**
	comp=Z,7.1nm,0.9s						
TORD	**Torodi Ar. Bea**	**84.32**	**70**	P	**P**	**07 57 36.5**	**-0.3**
	comp=Z,3.5nm,0.8s,baz=246,slow=3.6,SNR=18						
TORD				LR	LR	08 35 13.3	
	comp=Z,21nm,18.1s,baz=240,slow=36						
WRA	**Warramunga Arr**	**120.75**	**209**	PKP	**PKPdf**	**08 03 55.5**	**-1.6**
	comp=Z,0.5nm,0.8s,baz=164,slow=1.7,SNR=5.9						
ZRNK	**Zerenda**	**146.56**	**43**	*e*PKPbc	**PKPab**	**08 04 46.6**	**+0.2**
BRVK	**Borovoye**	**147.25**	**43**	*e*PKPbc	**PKPbc**	**08 04 48.1**	**+0.8**
BVAR	**Borovoye Array**	**147.32**	**43**	PKPbc	**PKPbc**	**08 04 47.8**	**+0.3**
	comp=Z,2.7nm,0.8s,baz=292,slow=3.6,SNR=12						
VOSK	**Vostochnaya**	**147.77**	**43**	*e*PKPdf	**PKPdf**	**08 04 46.2**	**+0.4**
VOSK				*e*PKPbc	**PKPbc**	**08 04 49.4**	**+0.7**
EKS2	**Erkin-Say**	**152.07**	**62**	*e*PKPbc	**PKPbc**	**08 05 00.6**	**+0.9**
AAK	**Ala-Archa**	**152.59**	**62**	PKPbc	**PKPbc**	**08 05 01.3**	**+0.4**
	comp=Z,3.0nm,0.5s,baz=294,slow=4.1,SNR=3.9						
AAK	**Ala-Archa**	**152.59**	**62**	*e*PKPbc	**PKPbc**	**08 05 01.5**	**+0.5**
KURBB	**Kurchatov Arra**	**152.91**	**43**	PKPbc	**PKPbc**	**08 05 01.2**	**+0.1**
	comp=Z,2.1nm,0.9s,baz=289,slow=2.9,SNR=11						
KURK	**Kurchatov**	**152.92**	**43**	*e*PKPbc	**PKPbc**	**08 05 01.3**	**+0.2**
KSH	**Kashi**	**153.97**	**68**	*e*PKPbc	**PKPdf**	**08 04 56.0**	**0.0**
KSH				PKS	**PKSdf**	**08 08 28.3**	**-2.0**
KSH				*e*PP	**PP**	**08 08 50.5**	**-2.1**
KSH				AMB	AMB		
	comp=Z,76nm,3.9s						
ZALV	**Zalesovo Beam**	**154.24**	**32**	PKPbc	**PKPbc**	**08 05 03.9**	**-0.1**
	comp=Z,1.8nm,0.6s,baz=309,slow=3.3,SNR=7.6						
MKAR	**Makanchi Array**	**156.82**	**49**	PKPab	**PKPab**	**08 05 29.1**	**-0.1**
	comp=Z,0.7nm,0.5s,baz=305,slow=5.1,SNR=4.8						
WMQ	**Urumqi**	**161.54**	**52**	*e*PKP	**PKPdf**	**08 05 05.0**	**-0.1**
HHC	**Hu-ho-hao-te**	**172.47**	**338**	*e*PKP	**PKPdf**	**08 05 15.6**

ONAJ	**Iwakimizuishiy**	**0.86**	**309**	P	**Pg**	**08 28 43.8**	**+0.5**
ONAJ				S	**Sg**	**08 28 53.9**	**-0.6**
JHO	**Hitachi**	**0.86**	**273**	P	**Pg**	**08 28 43.7**	**+0.3**
JHO				S	**Sg**	**08 28 52.8**	**-1.7**
JFK	**Kawauchi**	**1.00**	**323**	P	**Pg**	**08 28 46.1**	**0.0**
JFK				*e*S	**Sg**	**08 28 58.2**	**-0.9**
JYT	**Yasato**	**1.21**	**254**	P	**Pb**	**08 28 49.3**	**-0.9**
JFT	**Otama**	**1.41**	**313**	P	**Pn**	**08 28 52.8**	**-0.2**
JMM	**Marumori**	**1.46**	**333**	P	**Pn**	**08 28 53.0**	**-0.7**
JMM				S	**Sn**	**08 29 10.1**	**-3.1**
MJAR	**Matsushiro Arr**	**2.76**	**270**	Pn	**Pn**	**08 29 11.8**	**+0.2**
	12nm,0.3s,baz=97,slow=9.2,SNR=28						
MJAR				Sn	**Sn**	**08 29 44.5**	**-0.8**
	6.3nm,0.3s,baz=298,slow=23,SNR=6.2						
MJAR				LR	LR	08 30 47.6	
	comp=Z,36nm,20.0s,baz=110,slow=49						
MAT	**Matsushiro**	**2.76**	**270**	P	**Pn**	**08 29 12.2**	**+0.5**
MAT				*e*S	**Sn**	**08 29 46.1**	**+0.8**
JHJ	**Hachijo jima 2**	**3.76**	**204**	Pn	**Pn**	**08 29 26.6**	**+1.2**
	8.0nm,0.3s,baz=83,slow=19,SNR=6.6						
JHJ				Sn	**Sn**	**08 30 06.7**	**-3.3**
	24nm,0.3s,baz=107,slow=19,SNR=4.8						
JNU	**Nakatsue**	**9.48**	**252**	LR	LR	08 34 40.8	
	comp=Z,48nm,20.0s,baz=303,slow=39						
USRK	**Ussuriysk Ar.**	**10.59**	**319**	Pn	**Pn**	**08 31 02.2**	**+3.1**
	0.1nm,0.3s,baz=143,slow=14,SNR=5.0						
USRK				LR	LR	08 35 21.9	
	comp=Z,59nm,19.6s,baz=316,slow=39						
KSRS	**Korea Array**	**11.00**	**279**	LR	LR	08 35 12.2	
	comp=Z,32nm,21.3s,baz=133,slow=36						
KLR	**Kul'dur**	**14.56**	**333**	LR	LR	08 37 32.7	
	comp=Z,25nm,19.1s,baz=114,slow=37						
H11N2	**WAKE ISLAND Hy**	**27.76**	**120**	T	T	09 03 36.1	
	baz=312,slow=75,SNR=44						
H11N1	**WAKE ISLAND Hy**	**27.77**	**120**	T	T	09 03 36.7	
	baz=312,slow=75,SNR=38						
H11N3	**WAKE ISLAND Hy**	**27.78**	**120**	T	T	09 03 37.5	
	baz=312,slow=75,SNR=40						
SONM	**Songino Array**	**28.19**	**305**	P	**P**	**08 34 20.9**	**+0.7**
	0.7nm,0.5s,baz=111,slow=9.4,SNR=2.5						
H11S1	**WAKE ISLAND Hy**	**28.46**	**122**	T	T	09 04 32.7	
	baz=313,slow=75,SNR=30						
H11S3	**WAKE ISLAND Hy**	**28.46**	**123**	T	T	09 04 31.5	
	baz=313,slow=75,SNR=33						
H11S2	**WAKE ISLAND Hy**	**28.48**	**122**	T	T	09 04 32.7	
	baz=313,slow=75,SNR=30						
KURBB	**Kurchatov Arra**	**46.43**	**308**	P	**P**	**08 36 55.0**	**+0.8**
	0.4nm,0.4s,baz=83,slow=7.8,SNR=3.3						
WRA	**Warramunga Arr**	**56.63**	**188**	P	**P**	**08 38 09.3**	**-1.4**
	0.2nm,0.5s,baz=6.4,slow=7.5,SNR=4.1						

MEX 01 08:38:20.1±0.9,**14°.70N**×**92°.79W**,**h8**km±21km,**MD3.7**,**1D**,
Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.70**	**22**	*i* P	Pn	08 38 46.5	-3.7
CCIG				*i* S	Sn	08 39 06.7	-5.6
HUIG	**Huatulco**	**3.38**	**289**	⇓*e*P	Pn	08 39 10.8	-2.4
HUIG				*i* S	Sn	08 39 50.1	-3.3

AZER ***01*** *08:39:33.3*±*0.1,41°.97N*×*42°.89E,h15*km*, Error ellipse: s-maj=38.5km s-min=18.6km az=19.0*
TIF ***01*** *08:39:33.8,42°.55N*×*43°.51E,h16*km
CSEM ***01*** *08:39:34.8*±*0.1,42°.51N*×*43°.47E,h2*km*, ML3.2, Error ellipse: s-maj=3.2km s-min=2.5km az=100.0*
DDA ***01*** *08:39:34.5,42°.41N*×*43°.46E,h4*km*,Md3.6*
MOS ***01*** *08:39:34.5*±*1.7,42°.50N*×*43°.50E,h9*km*,mb4.0/3, Error ellipse: s-maj=7.9km s-min=4.6km az=81.5*

ISC 01 08:39:34.4±1.0,**42°.49N**±0°.01×**43°.47E**±0°.01,**h3**km±8km,
n100,σ0**s89**/176,**10C-20D**,**Western Caucasus**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONI	**Oni**	**0.10**	**353**	P	**Pg**	**08 39 37.1**	**+0.5**
ONI				S	**Sg**	**08 39 39.1**	**+1.1**
ONI	**Oni**	**0.10**	**353**	*e*PG	**Pg**	**08 39 37.0**	**+0.5**
DIGR	**Digorskoe uzhe**	**0.42**	**11**	⇓*i*PG	**Pg**	**08 39 41.9**	**-0.7**
DIGR				*i* S	**Sg**	**08 39 47.6**	**-0.5**
DIGR	**Digorskoe uzhe**	**0.42**	**11**	*i* Pg	**Pg**	**08 39 41.9**	**-0.7**
DIGR				*i* Sg	**Sg**	**08 39 47.6**	**-0.5**
ZEI	**Tsey**	**0.44**	**46**	⇓*i*PG	**Pg**	**08 39 42.2**	**-0.7**
ZEI				*i* S	**Sg**	**08 39 48.6**	**-0.1**
LACR	**Lac**	**0.70**	**61**	*i* PG	**Pg**	**08 39 47.1**	**-0.8**
LACR				*e*S	**Sg**	**08 39 57.0**	**+0.1**
LACR	**Lac**	**0.70**	**61**	*i* Pg	**Pg**	**08 39 47.1**	**-0.8**
LACR				*e*Sg	**Sg**	**08 39 57.0**	**+0.1**
KORR	**Kora**	**0.74**	**36**	⇓*i*PG	**Pg**	**08 39 48.4**	**-0.3**
KORR				*e*S	**Sg**	**08 39 58.7**	**+0.3**
KORR	**Kora**	**0.74**	**36**	*i* Pg	**Pg**	**08 39 48.4**	**-0.3**
KORR				*e*Sg	**Sg**	**08 39 58.7**	**+0.3**
GUDG	**Gudauri**	**0.75**	**91**	P	**Pg**	**08 39 48.3**	**-0.5**
GUDG				S	**Sg**	**08 39 57.8**	**-0.7**
GUDG	**Gudauri**	**0.75**	**91**	P	**Pg**	**08 39 48.3**	**-0.5**
GUDG				S	**Sg**	**08 39 57.8**	**-0.7**
LSNR	**Lesken**	**0.83**	**18**	⇓*i*PG	**Pg**	**08 39 50.1**	**-0.3**
LSNR				*e*S	**Sg**	**08 40 01.1**	**-0.2**
LSNR	**Lesken**	**0.83**	**18**	*i* Pg	**Pg**	**08 39 50.1**	**-0.3**
LSNR				*e*Sg	**Sg**	**08 40 01.1**	**-0.2**
ARNR	**Ardon**	**0.92**	**41**	*e*PG	**Pg**	**08 39 52.0**	**0.0**
ARNR				*e*S	**Sg**	**08 40 04.5**	**+0.6**
ARNR	**Ardon**	**0.92**	**41**	*e*Pg	**Pg**	**08 39 52.0**	**0.0**
ARNR				*e*Sg	**Sg**	**08 40 04.5**	**+0.6**
NEY	**Neytrino**	**0.94**	**324**	⇑*e*PG	**Pg**	**08 39 51.6**	**-0.9**
NEY				*e*S	**Sg**	**08 40 04.3**	**-0.4**
NEY	**Neytrino**	**0.94**	**324**	*e*Pg	**Pg**	**08 39 51.6**	**-0.9**
NEY				*e*Sg	**Sg**	**08 40 04.3**	**-0.4**
STDR	**Stavd-Durt**	**0.98**	**26**	⇓*i*PG	**Pb**	**08 39 54.0**	**-0.2**
STDR				*e*S	**Sb**	**08 40 07.2**	**-0.4**
STDR	**Stavd-Durt**	**0.98**	**26**	*i* Pg	**Pb**	**08 39 54.0**	**-0.2**
STDR				*e*Sg	**Sb**	**08 40 07.2**	**-0.4**
DUS	**Dusheti**	**1.00**	**113**	P	**Pg**	**08 39 53.5**	**0.0**
DUS				S	**Sb**	**08 40 07.7**	**-0.3**
DUS	**Dusheti**	**1.00**	**113**	*e*PG	**Pg**	**08 39 53.5**	**0.0**
DUS				*e*S	**Sb**	**08 40 07.7**	**-0.3**
DUS	**Dusheti**	**1.00**	**113**	P	**Pg**	**08 39 53.5**	**0.0**
DUS				S	**Sb**	**08 40 07.7**	**-0.3**
NCK	**Nalchik**	**1.01**	**5**	⇓*e*PG	**Pg**	**08 39 53.8**	**-0.1**
NCK				*i* S	**Sb**	**08 40 08.4**	**0.0**
NCK	**Nalchik**	**1.01**	**5**	*e*Pg	**Pg**	**08 39 53.8**	**-0.1**
NCK				*i* Sg	**Sb**	**08 40 08.4**	**0.0**
CHVG	**Ch'k'valeri**	**1.05**	**283**	P	**Pg**	**08 39 54.6**	**+0.1**
CHVG				S	**Sb**	**08 40 09.8**	**+0.4**
CHVG	**Ch'k'valeri**	**1.05**	**283**	P	**Pg**	**08 39 54.6**	**+0.1**
CHVG				S	**Sb**	**08 40 09.8**	**+0.4**
VLKR	**Vladikavkaz**	**1.05**	**57**	*e*PG	**Pg**	**08 39 54.5**	**-0.1**
VLKR				*e*S	**Sb**	**08 40 09.2**	**-0.3**
VLKR	**Vladikavkaz**	**1.05**	**57**	*e*Pg	**Pg**	**08 39 54.5**	**-0.1**
VLKR				*e*Sg	**Sb**	**08 40 09.2**	**-0.3**
AKH	**Akhalkalaki**	**1.07**	**179**	P	**Pg**	**08 39 55.3**	**+0.2**
AKH				S	**Sb**	**08 40 11.1**	**+0.7**
AKH	**Akhalkalaki**	**1.07**	**179**	*e*PG	**Pg**	**08 39 55.2**	**+0.2**
AKH				*e*S	**Sb**	**08 40 11.0**	**+0.7**
AKH	**Akhalkalaki**	**1.07**	**179**	P	**Pg**	**08 39 55.3**	**+0.2**
AKH				*e*Sg	**Sb**	**08 40 11.0**	**+0.7**
EPOS	**Posof**	**1.13**	**210**	*i* P	**Pg**	**08 39 56.2**	**+0.1**
EPOS				*i* S	**Sn**	**08 40 12.8**	**-0.6**
EPOS	**Posof**	**1.13**	**210**	P	**Pg**	**08 39 56.2**	**+0.1**
EPOS				S	**Sn**	**08 40 12.8**	**-0.6**
KMGR	**Komgaron**	**1.18**	**60**	⇓*i*PG	**Pg**	**08 39 56.8**	**-0.2**
KMGR				*e*S	**Sb**	**08 40 13.1**	**0.0**
KMGR	**Komgaron**	**1.18**	**60**	*i* Pg	**Pg**	**08 39 56.8**	**-0.2**
KMGR				*e*Sg	**Sb**	**08 40 13.1**	**0.0**
BTKR	**Batakoyurt**	**1.19**	**41**	⇓*i*PG	**Pn**	**08 39 58.4**	**+0.4**
BTKR				*e*S	**Sn**	**08 40 14.5**	**-0.2**
BTKR	**Batakoyurt**	**1.19**	**41**	*i* Pg	**Pn**	**08 39 58.4**	**+0.4**
BTKR				*e*Sg	**Sn**	**08 40 14.5**	**-0.2**
TBLG	**Delisi**	**1.21**	**128**	P	**Pg**	**08 39 57.1**	**-0.6**
TBLG				S	**Sn**	**08 40 14.6**	**-0.7**
TBLG	**Delisi**	**1.21**	**128**	*e*PG	**Pg**	**08 39 57.0**	**-0.5**
TBLG				*e*S	**Sn**	**08 40 14.5**	**-0.7**
TBLG	**Delisi**	**1.21**	**128**	P	**Pg**	**08 39 57.2**	**-0.4**
TBLG				S	**Sg**	**08 40 13.6**	**+0.3**
TBLG				*e*Sg	**Sn**	**08 40 14.5**	**-0.7**
BGD	**Bogdanovka**	**1.22**	**175**	P	**Pg**	**08 39 57.8**	**-0.2**
BGD				S	**Sn**	**08 40 15.5**	**-0.3**
BGD	**Bogdanovka**	**1.22**	**175**	P	**Pg**	**08 39 57.7**	**-0.2**
BGD				S	**Sn**	**08 40 15.5**	**-0.3**
SEAG	**Tbilisi Sea**	**1.23**	**126**	P	**Pg**	**08 39 57.9**	**0.0**
SEAG				S	**Sb**	**08 40 14.9**	**+0.4**
SEAG	**Tbilisi Sea**	**1.23**	**126**	P	**Pg**	**08 39 57.9**	**0.0**
SEAG				S	**Sb**	**08 40 14.9**	**+0.4**
KZR	**Kazreti**	**1.31**	**147**	P	**Pn**	**08 39 58.4**	**-1.4**
KZR				S	**Sg**	**08 40 16.5**	**0.0**
KZR	**Kazreti**	**1.31**	**147**	P	**Pn**	**08 39 58.3**	**-1.4**
KZR				S	**Sg**	**08 40 16.6**	**0.0**
KBTC	**Kuba-Taba**	**1.33**	**358**	⇑*e*PG	**Pn**	**08 39 59.5**	**-0.5**
KBTC				*e*S	**Sn**	**08 40 17.8**	**-0.5**
KBTC	**Kuba-Taba**	**1.33**	**358**	*e*Pg	**Pn**	**08 39 59.5**	**-0.5**
KBTC				*e*Sg	**Sn**	**08 40 17.8**	**-0.5**
SHA1	**Shidzhatmaz**	**1.39**	**335**	⇑*e*PG	**Pn**	**08 40 00.2**	**-0.7**
SHA1				*i* S	**Sg**	**08 40 18.3**	**-0.7**
SHA1	**Shidzhatmaz**	**1.39**	**335**	*e*Pg	**Pn**	**08 40 00.2**	**-0.7**
SHA1				*i* Sg	**Sg**	**08 40 18.3**	**-0.7**
PRTR	**Priterechnaya**	**1.40**	**25**	*e*PG	**Pg**	**08 40 01.6**	**+0.4**
PRTR				*e*S	**Sn**	**08 40 20.0**	**+0.2**
PRTR	**Priterechnaya**	**1.40**	**25**	*e*Pg	**Pg**	**08 40 01.6**	**+0.4**
PRTR				*e*Sg	**Sn**	**08 40 20.0**	**+0.2**
TRKR	**Terskaya**	**1.54**	**36**	*e*PG	**Pg**	**08 40 04.1**	**+0.1**
TRKR				*e*S	**Sg**	**08 40 24.6**	**+0.5**
TRKR	**Terskaya**	**1.54**	**36**	*e*Pg	**Pg**	**08 40 04.1**	**+0.1**
TRKR				*e*Sg	**Sg**	**08 40 24.6**	**+0.5**
KIV	**Kislovodsk**	**1.58**	**339**	⇑*e*PG	**Pb**	**08 40 03.7**	**-0.6**
KIV				*i*		08 40 24.9	
KIV				pmax	pmax		
	comp=Z,63nm,1.2s						
KIV				smax	smax		
	comp=E,198nm,1.4s						
KIV	**Kislovodsk**	**1.58**	**339**	*e*Pg	**Pb**	**08 40 03.7**	**-0.6**
	comp=E,63nm,1.2s						
KIV				*i* Sg	**Sg**	**08 40 24.9**	**-0.2**
ARTV	**Artvin**	**1.74**	**222**	*i* P	**Pb**	**08 40 06.4**	**-0.7**
ARTV				*i* S	**Sb**	**08 40 29.8**	**+0.4**
ARTV	**Artvin**	**1.74**	**222**	P	**Pb**	**08 40 06.4**	**-0.7**
ARTV				S	**Sb**	**08 40 29.8**	**+0.4**
DBOC	**Borcka**	**1.76**	**230**	*i* P	**Pn**	**08 40 06.0**	**+0.1**
DBOC				*i* S	**Sg**	**08 40 30.7**	**-0.4**
DBOC	**Borcka**	**1.76**	**230**	P	**Pn**	**08 40 06.0**	**+0.1**
DBOC				S	**Sg**	**08 40 30.7**	**-0.4**
EAK	**Akyaka**	**1.80**	**177**	*i* P	**Pn**	**08 40 05.6**	**-1.0**
EAK				*i* S	**Sb**	**08 40 31.4**	**+0.2**
EAK	**Akyaka**	**1.80**	**177**	P	**Pn**	**08 40 05.6**	**-1.0**
EAK				S	**Sb**	**08 40 31.4**	**+0.2**
DAGI	**Agillar**	**1.82**	**220**	*i* P	**Pb**	**08 40 08.0**	**-0.5**
DAGI				*i* S	**Sg**	**08 40 33.3**	**+0.2**
GROC	**Groznyy**	**1.85**	**66**	*e*PN	**Pb**	**08 40 08.7**	**-0.3**
GROC				*e*		08 40 35.8	
GROC				pmax	pmax		
	comp=Z,19nm,0.7s						
GROC				smax	smax		
	comp=E,46nm,1.0s						
GROC				smax	smax		
	comp=N,56nm,1.0s						
GROC				smax	smax		
	comp=N,62nm,0.5s						
GROC	**Groznyy**	**1.85**	**66**	*e*Pn	**Pb**	**08 40 08.7**	**-0.3**
	comp=N,19nm,0.7s						
GROC				*e*Sg	**Sg**	**08 40 35.8**	**+1.8**
	comp=N,62nm,0.5s						
DBAD	**Bademkaya**	**1.98**	**223**	*i* P	**Pb**	**08 40 10.3**	**-0.9**
DBAD				*i* S	**Sb**	**08 40 37.0**	**+0.8**
DBAD	**Bademkaya**	**1.98**	**223**	P	**Pb**	**08 40 10.3**	**-0.9**
DBAD				S	**Sb**	**08 40 37.0**	**+0.8**
QZX	**Qazax, Azerbai**	**2.02**	**134**	⇓P	**Pb**	**08 40 10.5**	**-1.2**
	SNR=4.1						
QZX				⇓S	**Sb**	**08 40 38.1**	**+0.8**
QZX	**Qazax, Azerbai**	**2.02**	**134**	P	**Pb**	**08 40 10.5**	**-1.2**
	SNR=4.1						
QZX				S	**Sb**	**08 40 38.1**	**+0.8**
DDEM	**Demirkent**	**2.05**	**220**	*i* P	**Pb**	**08 40 11.5**	**-0.8**
DDEM				*i* S	**Sg**	**08 40 39.8**	**-0.4**
DDEM	**Demirkent**	**2.05**	**220**	P	**Pb**	**08 40 11.5**	**-0.8**
DDEM				S	**Sg**	**08 40 39.8**	**-0.4**
DIGO	**Kars**	**2.07**	**182**	*i* P	**Pb**	**08 40 11.8**	**-1.0**
DIGO				*i* S	**Sg**	**08 40 40.5**	**-0.5**
DIGO	**Kars**	**2.07**	**182**	P	**Pb**	**08 40 11.8**	**-1.0**
DIGO				S	**Sg**	**08 40 40.5**	**-0.5**
GDB	**GEDABAY**	**2.46**	**135**	⇓P	**Pn**	**08 40 16.4**	**+0.8**
	SNR=18						
GDB				⇑S	**Sb**	**08 40 49.5**	**-0.6**
GDB	**GEDABAY**	**2.46**	**135**	P	**Pn**	**08 40 16.4**	**+0.8**
	SNR=18						
GDB				S	**Sb**	**08 40 49.5**	**-0.6**
ZKTA	**Zakatala**	**2.50**	**109**	⇓P	**Pb**	**08 40 19.9**	**-0.1**
	SNR=5.3						
ZKTA				⇓S	**Sg**	**08 40 55.0**	**+0.4**
GNI	**Garni**	**2.52**	**157**	⇓*e*PN	**Pn**	**08 40 17.1**	**+0.6**
GNI	**Garni**	**2.52**	**157**	*e*Pn	**Pn**	**08 40 17.1**	**+0.6**
GANJ	**Ganja**	**2.82**	**130**	⇓P	**Pb**	**08 40 23.6**	**-1.9**
	SNR=4.1						
GANJ				⇑S	**Sb**	**08 40 59.7**	**-0.7**
GANJ	**Ganja**	**2.82**	**130**	P	**Pb**	**08 40 23.6**	**-1.9**
	SNR=4.1						
GANJ				S	**Sb**	**08 40 59.7**	**-0.7**
SOC	**Sochi**	**2.96**	**293**	*e*PN	**Pb**	**08 40 25.3**	**-2.5**
SOC				*e*		08 41 02.8	
SOC				pmax	pmax		
	comp=Z,8.0nm,0.4s						
SOC				smax	smax		
	comp=N,13nm,0.5s						
SOC				smax	smax		
	comp=E,28nm,0.5s						
SOC	**Sochi**	**2.96**	**293**	*e*Pn	**Pb**	**08 40 25.3**	**-2.5**
	comp=E,8.0nm,0.4s						
SOC				*e*Sn	**Sb**	**08 41 02.8**	**-1.6**
	comp=E,13nm,0.5s						
SEKA	**Sheki**	**3.06**	**113**	⇓P	**Pb**	**08 40 27.6**	**-2.0**
SEKA				⇑S	**Sb**	**08 41 07.9**	**+0.4**
SEKA	**Sheki**	**3.06**	**113**	P	**Pb**	**08 40 27.6**	**-2.0**
XNQ	**Khinaliq**	**3.73**	**109**	⇑P	**Pb**	**08 40 37.7**	**-3.4**
	SNR=17						
XNQ	**Khinaliq**	**3.73**	**109**	P	**Pb**	**08 40 37.7**	**-3.4**
	SNR=17						
ANN	**Anapa**	**4.95**	**300**	*e*PN	Pb	08 40 56.7	-5.1
ANN	**Anapa**	**4.95**	**300**	*e*Pn	Pb	08 40 56.7	-5.1
ISP	**Isparta**	**10.95**	**249**	⇓*e*P	**Pn**	**08 42 14.1**	**+2.1**
ISP	**Isparta**	**10.95**	**249**	*e*P	**Pn**	**08 42 14.1**	**+2.1**
KIEV	**Kiev**	**12.77**	**315**	⇓*e*P	**Pn**	**08 42 37.2**	**+0.4**
KIEV				pmax	pmax		
	comp=Z,1.0nm,1.2s						
KIEV	**Kiev**	**12.77**	**315**	*e*P	**Pn**	**08 42 37.2**	**+0.4**
	comp=Z,1.0nm,1.2s						
OBN	**Obninsk**	**13.42**	**343**	⇓*e*P	**Pn**	**08 42 44.8**	**-0.8**
OBN				pmax	pmax		
	comp=Z,5.0nm,0.4s						
OBN	**Obninsk**	**13.42**	**343**	*e*P	**Pn**	**08 42 44.8**	**-0.8**
	comp=Z,5.0nm,0.4s						
BRVK	**Borovoye**	**20.77**	**50**	⇑*e*P	**P**	**08 44 15.9**	**-0.5**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
BRVK	**Borovoye**	**20.77**	**50**	*e*P	**P**	**08 44 15.9**	**-0.5**
	comp=Z,3.0nm,0.9s						
AAK	**Ala-Archa**	**22.79**	**79**	⇑*e*P	**P**	**08 44 41.0**	**+2.7**
AAK				pmax	pmax		
	comp=Z,6.0nm,1.4s						
AAK	**Ala-Archa**	**22.79**	**79**	*e*P	**P**	**08 44 41.0**	**+2.7**
	comp=Z,6.0nm,1.4s						
KURK	**Kurchatov**	**25.32**	**59**	⇓*e*P	**P**	**08 44 59.8**	**-2.3**
KURK				pmax	pmax		
	comp=Z,5.0nm,1.4s						
KURK	**Kurchatov**	**25.32**	**59**	*e*P	**P**	**08 44 59.8**	**-2.3**
	comp=Z,5.0nm,1.4s						

IDC 01 08:39:55.4±1.7,**4°.02N**×**128°.48E**,**h0**km,**mb3.8**/5,
mb1 3.9/5,**mb1mx3.6**/52,**mbtmp3.8**/5,**MS2.9**/1,**Ms1 2.9**/1,
ms1mx2.3/37,**Error ellipse: s-maj=90.1km**
s-min=20.4km az=64.0,**North of Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**4.19**	**316**	LR	LR	08 43 25.5	
	comp=Z,138nm,18.6s,baz=332,slow=50						
WRA	**Warramunga Arr**	**24.50**	**167**	P	P	08 45 16.6	0.0
	0.4nm,0.5s,baz=344,slow=10,SNR=8.9						
ASAR	**Alice Springs**	**28.02**	**169**	P	P	08 45 48.4	0.0
	0.3nm,0.7s,baz=357,slow=7.7,SNR=3.3						
CMAR	**Chiang Mai Arr**	**32.25**	**299**	P	P	08 46 27.2	+1.3
	1.2nm,0.3s,baz=115,slow=8.0,SNR=5.1						
MKAR	**Makanchi Array**	**58.33**	**324**	P	P	08 49 51.8	-0.5
	1.1nm,0.6s,baz=120,slow=8.1,SNR=5.8						
KURBB	**Kurchatov Arra**	**62.45**	**327**	P	P	08 50 20.0	-0.4
	1.1nm,0.7s,baz=126,slow=6.4,SNR=8.9						

ISK ***01*** *08:53:46.4,38°.59N*×*39°.66E,h5*km*,ML3.2*
ISCJB ***01*** *08:53:47.7*±*0.4,38°.58N*±*0°.02*×*39°.66E*±*0°.02,h6*km*±3*km*, Error ellipse: s-maj=3.3km s-min=2.9km az=153.5*
CSEM ***01*** *08:53:47.6*±*0.2,38°.59N*×*39°.67E,h2*km*,ML3.2, Error ellipse: s-maj=4.4km s-min=4.0km az=41.0*
DDA ***01*** *08:53:47.8,38°.62N*×*39°.58E,h7*km*,Ml3.8*
NSSC ***01*** *08:53:48.9*±*1.1,38°.43N*×*39°.75E,h2*km*±*1*6*km*,ML3.0*

ISC 01 08:53:48.1±1.0,**38°.57N**±0°.02×**39°.62E**±0°.02,**h10**km±8km,
n65,σ1**s50**/100,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.31**	**233**	*e*PG	**Pg**	**08 53 54.0**	**-0.3**
SVRC				*e*SG	**Sb**	**08 54 00.7**	**-0.4**
SVRC	**Sivrice-ELAZID**	**0.31**	**233**	*e*Pg	**Pg**	**08 53 54.0**	**-0.3**
SVRC				*e*Sg	**Sb**	**08 54 00.6**	**-0.4**
PTK	**Pertek**	**0.37**	**331**	*e*PG	**Pg**	**08 53 54.6**	**-0.9**
PTK				*e*SG	**Sg**	**08 54 01.2**	**+0.7**
PTK	**Pertek**	**0.37**	**331**	*e*Pg	**Pg**	**08 53 54.7**	**-0.9**
PTK				*e*Sg	**Sg**	**08 54 01.2**	**+0.7**
ELZG	**Elazig**	**0.51**	**263**	*i* P	**Pg**	**08 53 57.1**	**-0.9**
ELZG				*i* S	**Sg**	**08 54 05.8**	**+1.2**
ELZG	**Elazig**	**0.51**	**263**	P	**Pg**	**08 53 57.1**	**-0.9**
ELZG				S	**Sg**	**08 54 05.8**	**+1.2**
DYBB	**Diyarbakir**	**0.73**	**146**	*e*PG	**Pg**	**08 54 02.0**	**-0.2**
DYBB				*e*SG	**Sb**	**08 54 13.2**	**+0.1**
DIYA	**Diyarbakir**	**0.75**	**148**	*i* P	**Pb**	**08 54 03.6**	**+0.3**
DIYA				*i* S	**Sn**	**08 54 15.4**	**-0.9**
DIYA	**Diyarbakir**	**0.75**	**148**	P	**Pb**	**08 54 03.6**	**+0.3**
DIYA				S	**Sn**	**08 54 15.4**	**-0.9**
DIY	**Diyarbakir**	**0.82**	**144**	*e*Pg	**Pg**	**08 54 02.0**	**-1.9**
DIY				*e*Sg	**Sg**	**08 54 13.3**	**-1.3**
BGOL	**Bingol**	**0.92**	**62**	*i* P	**Pg**	**08 54 04.4**	**-1.5**
BGOL				*i* S	**Sn**	**08 54 20.9**	**+0.3**
BGOL	**Bingol**	**0.92**	**62**	P	**Pg**	**08 54 04.4**	**-1.5**
BNGB	**Bing¯ll**	**0.93**	**62**	*e*PG	**Pg**	**08 54 04.5**	**-1.5**
ERZN	**Erzincan**	**1.02**	**4**	*e*PG	**Pg**	**08 54 06.3**	**-1.5**
REFA	**Refahiye_ERZ¯**	**1.06**	**321**	*i* P	Pn	08 54 15.6	+6.4
REFA				*i* S	Sn	08 54 38.9	+15
KEMA	**Kemaliye**	**1.13**	**309**	*i* P	**Pg**	**08 54 07.6**	**-2.2**
KEMA				*i* S	**Sg**	**08 54 23.3**	**-1.1**
KEMA	**Kemaliye**	**1.13**	**309**	P	**Pg**	**08 54 07.6**	**-2.2**
KEMA				S	**Sg**	**08 54 23.3**	**-1.1**
YEDI	**Yedisu-Bingol**	**1.13**	**39**	*e*PN	**Pg**	**08 54 08.3**	**-1.5**
YEDI	**Yedisu-Bingol**	**1.13**	**39**	*e*Pn	**Pg**	**08 54 08.3**	**-1.5**
EUZM	**Uzumlu**	**1.14**	**3**	*i* P	**Pg**	**08 54 08.7**	**-1.3**
EUZM				*i* S	**Sg**	**08 54 23.6**	**-1.3**
EUZM	**Uzumlu**	**1.14**	**3**	P	**Pg**	**08 54 08.7**	**-1.3**
EUZM				S	**Sg**	**08 54 23.6**	**-1.3**
ILIC	**ilic-Erzincan**	**1.21**	**317**	*e*PN	**Pb**	**08 54 10.5**	**-0.6**
ILIC	**ilic-Erzincan**	**1.21**	**317**	*e*Pn	**Pb**	**08 54 10.5**	**-0.6**
BNGL	**BINGOL**	**1.25**	**72**	*i* P	**Pb**	**08 54 11.8**	**-0.2**
BNGL				*i* S	**Sn**	**08 54 33.7**	**+4.7**
MAZI	**Mazidag**	**1.28**	**149**	*e*PN	**Pn**	**08 54 12.1**	**0.0**
MAZI	**Mazidag**	**1.28**	**149**	*e*Pn	**Pn**	**08 54 12.1**	**0.0**
SVAN	**Silvan-Diyarba**	**1.31**	**108**	*e*PN	**Pn**	**08 54 12.2**	**-0.3**
SVAN	**Silvan-Diyarba**	**1.31**	**108**	*e*Pn	**Pn**	**08 54 12.2**	**-0.3**
AKCD	**Akcadag**	**1.36**	**259**	*i* P	**Pn**	**08 54 12.7**	**-0.6**
AKCD				*i*

JOM				S		**Sn**	**08 58 02.7**	**+0.5**
JFT	**Otama**	**3.40**	**266**	P		**Pn**	**08 57 32.4**	**+1.1**
JFT				S		**Sn**	**08 58 10.3**	**-0.1**
JANG	**Nango**	**3.50**	**318**	P		**Pn**	**08 57 33.3**	**+0.7**
JANG				*e*S		**Sn**	**08 58 12.6**	**-0.2**
JYK	**Kaneyama**	**3.51**	**289**	P		**Pn**	**08 57 34.2**	**+1.4**
JYK				S		**Sn**	**08 58 14.1**	**+1.0**
BSO1	**Boso 1**	**4.32**	**224**	P		**Pn**	**08 57 42.2**	**-1.2**
BSO1				*e*S		**Sn**	**08 58 28.5**	**-3.8**
JOT	**Ohata**	**4.48**	**323**	P		**Pn**	**08 57 47.7**	**+1.5**
JOT				*e*S		**Sn**	**08 58 37.0**	**-0.1**
JKB	**Kayabe**	**4.89**	**327**	P		**Pn**	**08 57 53.1**	**+1.3**
JKB				*e*S		**Sn**	**08 58 45.7**	**-1.5**
JRY	**Ryogami san**	**4.91**	**250**	P		**Pn**	**08 57 52.1**	**-0.1**
JRY				S		**Sn**	**08 58 44.7**	**-3.1**
MJAR	**Matsushiro Arr**	**5.26**	**258**	Pn		**Pn**	**08 57 59.1**	**+2.1**
	1.2nm,0.3s,baz=73,slow=8.0,SNR=10							
MJAR				Sn		**Sn**	**08 58 57.3**	**+0.8**
	1.0nm,0.3s,baz=56,slow=23,SNR=5.6							
MAT	**Matsushiro**	**5.26**	**258**	P		**Pn**	**08 58 00.4**	**+3.4**
MAT				*e*S		**Sn**	**08 58 57.2**	**+0.7**
NEM2	**Nemuro 2**	**5.60**	**9**	P		**Pn**	**08 57 59.2**	**-2.3**
NEM2				*e*S		**Sn**	**08 58 59.3**	**-5.2**
JOSM	**Okushiri--Mats**	**5.79**	**319**	P		**Pn**	**08 58 05.3**	**+1.1**
JHJ	**Hachijo jima 2**	**6.13**	**221**	Pn		**Pn**	**08 58 05.8**	**-3.1**
	6.6nm,0.3s,baz=334,slow=22,SNR=11							
JHJ				Sn		**Sn**	**08 59 10.6**	**-7.1**
	13nm,0.3s,baz=245,slow=22,SNR=6.7							
JTKR	**Abashiri--Toko**	**6.16**	**355**	P		**Pn**	**08 58 08.8**	**-0.4**
JTKR				*e*S		**Sn**	**08 59 13.4**	**-4.9**
JHR	**Hokuryu**	**6.30**	**341**	P		**Pn**	**08 58 13.4**	**+2.3**
USRK	**Ussuriysk Ar.**	**11.45**	**308**	Pn		**Pn**	**08 59 24.1**	**+2.3**
	0.2nm,0.3s,baz=121,slow=14,SNR=4.9							
KLR	**Kul'dur**	**14.70**	**325**	LR		LR	09 07 13.7	
	comp=Z,27nm,18.1s,baz=110,slow=42							
H11N2	**WAKE ISLAND Hy**	**26.48**	**127**	T		T	09 29 43.4	
	baz=318,slow=76,SNR=11							
H11N1	**WAKE ISLAND Hy**	**26.49**	**127**	T		T	09 29 37.2	
	baz=318,slow=76,SNR=6.6							
H11N3	**WAKE ISLAND Hy**	**26.50**	**127**	T		T	09 29 35.1	
	baz=318,slow=76,SNR=5.8							
H11S1	**WAKE ISLAND Hy**	**27.27**	**129**	T		T	09 30 44.8	
	baz=326							
H11S3	**WAKE ISLAND Hy**	**27.27**	**129**	T		T	09 30 48.4	
	baz=326,slow=74							
H11S2	**WAKE ISLAND Hy**	**27.28**	**129**	T		T	09 30 40.7	
	baz=326,slow=74							
ILAR	**Eielson Array**	**47.46**	**33**	P		**P**	**09 05 12.3**	**+0.6**
	0.4nm,0.7s,baz=269,slow=6.5,SNR=6.0							
WRA	**Warramunga Arr**	**58.27**	**191**	P		**P**	**09 06 31.2**	**-0.8**
	1.0nm,0.5s,baz=11,slow=7.3,SNR=20							
YKA	**Yellowknife Ar**	**61.83**	**31**	P		**P**	**09 06 56.9**	**+1.0**
	0.2nm,0.6s,baz=296,slow=6.0,SNR=3.4							
ASAR	**Alice Springs**	**61.99**	**191**	P		**P**	**09 06 56.6**	**-0.8**
	0.2nm,0.6s,baz=8.1,slow=7.4,SNR=4.0							
PALK	**Pallekele**	**65.01**	**259**	LR		LR	09 34 24.5	
	comp=Z,11nm,21.9s,baz=297,slow=35							

*NEIC **01** 09:09:32.1,36°.84S×174°.84E,h9km,ML2.9(WEL), After WEL.*
NEIC Felt [V] in the Auckland area.
WEL 01 09:09:32.1±0.1,36°.84S×174°.84E,h9km,ML2.9/5,7C-2D, Error ellipse: s-maj=0.6km s-min=0.5km az=90.0,North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MTAZ	**Motutapu**	**0.08**	**44**	⇑PG	Pg	09 09 34.3	0.0
MTAZ				SG	Sg	09 09 36.0	+0.2
HBAZ	**Herne Bay Bore**	**0.09**	**266**	PG	Pg	09 09 34.4	0.0
HBAZ				SG	Sg	09 09 35.8	-0.2
ETAZ	**East Tamaki Re**	**0.13**	**146**	⇑PG	Pg	09 09 35.2	+0.1
ETAZ				SG	Sg	09 09 37.2	0.0
RVAZ	**Riverhead Bore**	**0.22**	**290**	⇑PG	Pg	09 09 36.8	+0.2
RVAZ				SG	Sg	09 09 40.5	+0.9
WTAZ	**Waiatarua**	**0.23**	**247**	⇓PG	Pg	09 09 37.3	+0.6
ABAZ	**Army Bay**	**0.24**	**359**	⇓PG	Pg	09 09 37.2	+0.2
ABAZ				SG	Sg	09 09 41.0	+0.7
WIAZ	**Waiheke Island**	**0.24**	**78**	⇑PG	Pg	09 09 37.3	+0.2
KBAZ	**Karaka Road Bo**	**0.25**	**170**	PG	Pg	09 09 37.7	+0.5
KBAZ				SG	Sb	09 09 42.3	-1.1
AWAZ	**Awhitu Peninsu**	**0.27**	**215**	⇑PG	Pg	09 09 37.9	+0.4
MKAZ	**Moumakai**	**0.37**	**135**	⇑PG	Pg	09 09 39.5	+0.1
MKAZ				AML	AML	09 09 45.2	
MKAZ				AML	AML	09 09 45.3	
KUZ	**Kuaotunu**	**0.72**	**82**	⇑P*	Pg	09 09 45.9	0.0
KUZ				AML	AML	09 09 57.8	
KUZ				AML	AML	09 09 57.8	
KUZ				AML	AML	09 09 57.8	
KUZ				AML	AML	09 09 58.5	
GRZ	**Great Barrier**	**0.78**	**40**	P*	Pg	09 09 47.1	0.0
GRZ				AML	AML	09 10 00.2	
GRZ				AML	AML	09 10 00.3	
WCZ	**Waipu Caves**	**0.99**	**336**	P*	Pg	09 09 50.2	-0.9
WCZ				AML	AML	09 10 07.1	
WCZ				AML	AML	09 10 07.2	
TOZ	**Tahuroa Road**	**1.03**	**149**	P*	Pg	09 09 51.4	-0.6
TOZ				S*	Sg	09 10 04.3	-1.1
TOZ				AML	AML	09 10 10.7	
HIZ	**Hauiti**	**1.67**	**179**	*e*Pn	Pn	09 10 01.3	-0.3
HIZ				*e*Sn	Sn	09 10 22.0	-1.0
HIZ	**Hauiti**	**1.67**	**179**	PN	Pn	09 10 01.0	-0.6
OUZ	**Omahuta**	**1.91**	**328**	*e*Pn	Pn	09 10 04.7	-0.1
BKZ	**Black Stump Fm**	**2.86**	**151**	*e*Pn	Pg	09 10 22.7	-0.4
MXZ	**Matakaoa Point**	**2.86**	**106**	*e*Pn	Pn	09 10 17.5	-0.5
THZ	**Tophouse**	**5.13**	**196**	*e*Pn	Pn	09 10 44.5	-4.7

*ISCJB **01** 09:21:44.6±0.5,38°.60N±0°.03×39°.64E±0°.04,h3km±6km, Error ellipse: s-maj=6.1km s-min=3.5km az=137.7*
*CSEM **01** 09:21:44.5±0.2,38°.61N×39°.62E,h5km,MD2.6,Error ellipse: s-maj=5.8km s-min=3.6km az=47.0*
*ISK **01** 09:21:44.5,38°.61N×39°.58E,h11km,MD2.6*
*DDA **01** 09:21:44.5,38°.54N×39°.61E,h7km,Md2.9*
ISC 01 09:21:44.9±0.9,38°.59N±0°.02×39°.60E±0°.03,h11km±8km, n25,σ0°.81/42,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.32**	**227**	*e*PG	**Pg**	**09 21 51.3**	**-0.1**
SVRC				*e*SG	**Sg**	**09 21 56.2**	**+0.5**
SVRC	**Sivrice-ELAZID**	**0.32**	**227**	*e*Pg	**Pg**	**09 21 51.3**	**-0.1**
SVRC				*e*Sg	**Sg**	**09 21 56.2**	**+0.5**
PTK	**Pertek**	**0.34**	**331**	*e*PG	**Pg**	**09 21 51.5**	**-0.4**
PTK				*e*SG	**Sg**	**09 21 56.6**	**+0.1**
PTK	**Pertek**	**0.34**	**331**	*e*Pg	**Pg**	**09 21 51.5**	**-0.4**
PTK				*e*Sg	**Sg**	**09 21 56.6**	**+0.1**
ELZG	**Elazig**	**0.49**	**259**	*i*P	**Pg**	**09 21 54.4**	**-0.2**
ELZG				*i*S	**Sb**	**09 22 02.9**	**-0.1**
ELZG	**Elazig**	**0.49**	**259**	P	**Pg**	**09 21 54.4**	**-0.2**
ELZG				S	**Sb**	**09 22 02.9**	**-0.1**
DYBB	**Diyarbakir**	**0.77**	**146**	*e*PG	**Pb**	**09 22 00.3**	**0.0**
DYBB				*e*SG	**Sb**	**09 22 11.4**	**+0.6**
DIYA	**Diyarbakir**	**0.78**	**148**	*i*P	**Pg**	**09 21 59.8**	**-0.3**
DIYA				*i*S	**Sb**	**09 22 11.8**	**+0.5**
DIYA	**Diyarbakir**	**0.78**	**148**	P	**Pg**	**09 21 59.8**	**-0.3**
DIYA				S	**Sb**	**09 22 11.8**	**+0.5**
DIY	**Diyarbakir**	**0.85**	**145**	*e*Pg	**Pg**	**09 22 00.3**	**-1.1**
DIY				*e*Sg	**Sg**	**09 22 11.4**	**-1.1**
BNGB	**Bing˜¶l**	**0.93**	**64**	*e*PG	**Pb**	**09 22 03.0**	**-0.2**
ERZN	**Erzincan**	**1.00**	**5**	*e*PG	**Pb**	**09 22 03.7**	**-0.6**
KEMA	**Kemaliye**	**1.10**	**308**	*i*P	**Pg**	**09 22 04.7**	**-1.3**
KEMA				*i*S	**Sn**	**09 22 22.0**	**+0.4**
KEMA	**Kemaliye**	**1.10**	**308**	P	**Pg**	**09 22 04.7**	**-1.3**
KEMA				S	**Sn**	**09 22 22.0**	**+0.4**
YEDI	**Yedisu-Bingol**	**1.12**	**41**	*e*PN	**Pn**	**09 22 06.4**	**-0.3**
YEDI	**Yedisu-Bingol**	**1.12**	**41**	*e*Pn	**Pn**	**09 22 06.4**	**-0.3**
ILIC	**ilic-Erzincan**	**1.18**	**317**	*e*PN	**Pb**	**09 22 07.1**	**-0.3**
ILIC	**ilic-Erzincan**	**1.18**	**317**	*e*Pn	**Pb**	**09 22 07.1**	**-0.3**
MAZI	**Mazidag**	**1.31**	**149**	*e*PN	**Pb**	**09 22 09.7**	**0.0**
MAZI	**Mazidag**	**1.31**	**149**	*e*Pn	**Pb**	**09 22 09.7**	**0.0**
BTMN	**Batman**	**1.49**	**118**	*i*P	**Pn**	**09 22 11.9**	**+0.2**
BTMN				*i*S	**Sg**	**09 22 33.6**	**+0.7**
BTMN	**Batman**	**1.49**	**118**	P	**Pn**	**09 22 11.9**	**+0.2**
BTMN				S	**Sg**	**09 22 33.6**	**+0.7**
KELT	**Kelkit**	**1.58**	**350**	*i*P	**Pg**	**09 22 14.3**	**-0.9**
KELT				*i*S	**Sg**	**09 22 38.2**	**+2.5**
KELT	**Kelkit**	**1.58**	**350**	P	**Pg**	**09 22 14.3**	**-0.9**
KELT				S	**Sg**	**09 22 38.2**	**+2.5**
MARD	**Mardin**	**1.58**	**144**	*i*P	**Pn**	**09 22 12.6**	**-0.5**
MARD				*i*S	**Sn**	**09 22 33.3**	**-0.2**

*ISK **01** 09:31:49.7,37°.19N×28°.14E,h7km,MD2.6*
*ISCJB **01** 09:31:50.1±0.5,37°.22N±0°.03×28°.18E±0°.03,h0km,Error ellipse: s-maj=4.9km s-min=3.7km az=12.7*
*CSEM **01** 09:31:50.3±0.3,37°.24N×28°.18E,h2km,MD2.6,Error ellipse: s-maj=6.5km s-min=4.7km az=1.0,Suspected Mining explosion.*
*DDA **01** 09:31:50.1,37°.25N×28°.18E,h7km,Md2.8,Suspected Mining explosion.*
ISC 01 09:31:49.5±0.9,37°.24N±0°.03×28°.08E±0°.03,h0km,n17, σ1°.28/30,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.19**	**124**	*e*PG	**Pg**	**09 31 52.5**	**-0.7**
YER				*e*SG	**Sg**	**09 31 55.8**	**+0.1**
YER	**Yerkesik**	**0.19**	**124**	*e*Pg	**Pg**	**09 31 52.5**	**-0.7**
YER				*e*Sg	**Sg**	**09 31 55.8**	**+0.1**
BDRM	**Kayabasi**	**0.54**	**251**	*i*P	**Pb**	**09 32 02.2**	**+0.3**
BDRM				*i*S	**Sb**	**09 32 11.7**	**+1.3**
BDRM	**Kayabasi**	**0.54**	**251**	P	**Pb**	**09 32 02.2**	**+0.3**
BDRM				S	**Sb**	**09 32 11.6**	**+1.3**
TURN	**Turunc**	**0.56**	**132**	*i*P	**Pg**	**09 31 58.6**	**-1.6**
TURN				*i*S	**Sg**	**09 32 05.4**	**-2.0**
BODT	**Bodrum**	**0.64**	**254**	*e*PG	**Pb**	**09 32 03.4**	**-0.3**
BODT				*e*SG	**Sb**	**09 32 13.0**	**-0.2**
BODT	**Bodrum**	**0.64**	**254**	*e*Pg	**Pb**	**09 32 03.4**	**-0.3**
BODT				*e*Sg	**Sb**	**09 32 13.0**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.72**	**348**	*e*PG	**Pb**	**09 32 04.8**	**-0.2**
AYDB				*e*SG	**Sb**	**09 32 16.7**	**+1.2**
AYDB	**Zeytinkoy-Aydi**	**0.72**	**348**	*e*Pg	**Pb**	**09 32 04.8**	**-0.2**
AYDB				*e*Sg	**Sb**	**09 32 16.7**	**+1.2**
DNZL	**Cakiroluk**	**0.89**	**60**	*i*P	**Pg**	**09 32 05.7**	**-0.8**
DNZL				*i*S	**Sg**	**09 32 18.1**	**+0.1**
DNZL	**Cakiroluk**	**0.89**	**60**	P	**Pg**	**09 32 05.7**	**-0.8**
DNZL				S	**Sg**	**09 32 18.1**	**+0.1**
GOLH	**Golhisar**	**1.18**	**90**	*i*P	**Pg**	**09 32 11.0**	**-1.2**
GOLH				*i*S	**Sn**	**09 32 32.0**	**+1.8**
GOLH	**Golhisar**	**1.18**	**90**	P	**Pg**	**09 32 11.0**	**-1.2**
ELL	**Elmali**	**1.54**	**108**	*e*PN	**Pn**	**09 32 17.6**	**-0.8**
ELL	**Elmali**	**1.54**	**108**	*e*Pn	**Pn**	**09 32 17.6**	**-0.8**
AKAS	**Kas**	**1.58**	**129**	*i*P	**Pb**	**09 32 19.9**	**+0.1**
AKAS				*i*S	**Sg**	**09 32 45.0**	**+4.6**
AKAS	**Kas**	**1.58**	**129**	P	**Pb**	**09 32 19.9**	**+0.1**

SJA 01 09:35:57.4±1.0,27°.26S×63°.29W,h628km±17km,ML3.6, MW3.3,7D,Santiago del Estero Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CYA	**Choya**	**2.52**	**241**	*e*P	P	09 37 19.4	+2.9
CYA				IAML		09 37 19.9	
	comp=Z,11nm,0.2s						
FSA	**Cafayete**	**2.66**	**295**	*e*P	P	09 37 19.9	+2.5
FSA				IAML		09 37 20.8	
	comp=Z,1.7nm,0.4s						
TCA	**Tanti**	**4.22**	**195**	⇓*e*P	P	09 37 31.1	+4.7
TCA				IAML		09 37 32.2	
	comp=Z,9.4nm,0.2s						
VCA	**Vinchina**	**4.59**	**250**	*e*P	P	09 37 34.8	+5.6
VCA				*e*S	S	09 38 45.5	+1.4
VCA				IAML		09 38 50.9	
	comp=Z,21nm,0.4s						
AVFE	**Valle Fertil**	**4.98**	**226**	*e*P	P	09 37 36.8	+4.8
AGUA	**GUANDACOL**	**5.09**	**243**	⇓*e*P	P	09 37 38.4	+5.5
AMOG	**MOGNA**	**5.85**	**230**	*e*P	P	09 37 44.8	+6.0
AMOG				*e*S	S	09 39 03.5	+1.7
ACDV	**Cuesta del Vie**	**5.89**	**239**	⇓*e*P	P	09 37 45.7	+6.5
ACCO	**Cerro Coronel**	**6.05**	**235**	⇓*e*P	P	09 37 46.9	+6.0
ACCO				IAML		09 37 47.9	
	comp=Z,23nm,0.3s						
RTLL	**Cerro Villicun**	**6.08**	**227**	*e*P	P	09 37 47.4	+6.7
AROD	**Rodeo**	**6.16**	**240**	*e*P	P	09 37 48.2	+6.6
RTCV	**Cerro Valdivia**	**6.48**	**224**	⇓*e*P	P	09 37 51.0	+6.9
RTLS	**Leoncito**	**6.92**	**228**	*e*P	P	09 37 55.8	+7.6
ASAL	**Salagasta**	**7.17**	**221**	⇓*e*P	P	09 37 56.9	+6.8
AAGR	**Agrelo**	**7.53**	**218**	⇓*e*P	P	09 38 01.3	+7.8

*ISCJB **01** 09:39:08.7±0.4,73°.87N±0°.04×8°.5E±0°.1,h10km,mb3.6/6, MS3.0/16,Error ellipse: s-maj=5.9km s-min=5.4km az=171.6*
*IDC **01** 09:39:10.8±0.8,73°.79N×8°.42E,h0km,mb3.6/6, mb1 3.9/10,mb1mx3.6/56,mbtmp3.7/10,ML3.2/3,MS3.0/21, Ms1 3.0/21,ms1mx2.9/52,Error ellipse: s-maj=19.7km s-min=12.5km az=66.0*
*CSEM **01** 09:39:10.4±0.2,73°.88N×8°.49E,h10km,ML3.8,Error ellipse: s-maj=5.5km s-min=5.0km az=83.0*
*BER **01** 09:39:12.9±3.5,73°.91N×8°.71E,h10km,ML2.2, ML3.8(NAO)*
*NAO **01** 09:39:15.6±1.6,74°.02N×10°.73E,ML3.8*
ISC 01 09:39:11.0±0.6,73°.83N±0°.05×9°.02E±0°.06,h10km,n70, σ2°.10/64,mb3.6/6,MS3.1/16,Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BJO1	**Bjornoya**	**2.82**	**71**	Pn	**Pn**	**09 39 56.2**	**+0.1**
BJO	**Bjornoya**	**2.87**	**72**	*e*P	**Pn**	**09 39 58.1**	**+1.4**
BJO				*e*S	**Sn**	**09 40 27.7**	**-3.5**
BJO				IAML		09 40 29.0	
	comp=Z,22nm,0.4s						
BJO	**Bjornoya**	**2.87**	**72**	Pn	**Pn**	**09 39 56.2**	**-0.5**
BJO	**Bjornoya**	**2.87**	**72**	*e*P	**Pn**	**09 39 58.1**	**+1.4**
	SNR=50						
BJO				*e*S	**Sn**	**09 40 27.7**	**-3.5**
	SNR=50						
HSPB	**Hornsund (broa**	**3.58**	**24**	*e*P	**Pn**	**09 40 06.6**	**0.0**
HSPB	**Hornsund (broa**	**3.58**	**24**	*e*P	**Pn**	**09 40 06.6**	**0.0**
	SNR=50						
HSP	**Hornsund**	**3.59**	**24**	Pn	**Pn**	**09 40 06.6**	**-0.1**
BRBA	**Barentsburg A**	**4.43**	**14**	Pn	**Pn**	**09 40 18.1**	**-0.1**
	SNR=50						
SPA0	**Spitsbergen Ar**	**4.71**	**19**	Pn	**Pn**	**09 40 22.5**	**+0.4**
	baz=190,slow=18						
SPA0	**Spitsbergen Ar**	**4.71**	**19**	Pn	**Pn**	**09 40 22.5**	**+0.4**
	baz=190,slow=18						
SPA0	**Spitsbergen Ar**	**4.71**	**19**	Pn	**Pn**	**09 40 22.5**	**+0.4**
	SNR=50						
SPITS	**Spitsbergen Ar**	**4.71**	**19**	Pn	**Pn**	**09 40 22.5**	**+0.4**
	baz=189,slow=16,SNR=340						
SPITS				Sn	**Sn**	**09 41 15.8**	**-0.9**
	baz=205,slow=27,SNR=1.2						
SPITS				LR	LR	09 42 04.9	
	comp=Z,89nm,18.3s,baz=175,slow=36						
HOPEN	**Hopen**	**4.90**	**49**	Pn	**Pn**	**09 40 24.6**	**0.0**
HOPEN				Sn	**Sn**	**09 41 17.0**	**-4.2**
HOPEN	**Hopen**	**4.90**	**49**	*e*P	**Pn**	**09 40 24.5**	**0.0**
HOPEN				*e*S	**Sn**	**09 41 17.4**	**-3.8**
HOPEN	**Hopen**	**4.90**	**49**	Pn	**Pn**	**09 40 24.6**	**0.0**
KBS	**Kingsbay**	**5.17**	**6**	Pn	**Pn**	**09 40 27.7**	**-0.6**
KBS	**Kingsbay**	**5.17**	**6**	*e*P	**Pn**	**09 40 27.4**	**-0.9**
KBS	**Kingsbay**	**5.17**	**6**	*e*P	**Pn**	**09 40 27.4**	**-0.9**
	SNR=49						
KBS	**Kingsbay**	**5.17**	**6**	Pn	**Pn**	**09 40 27.7**	**-0.6**
TRO	**Tromso**	**5.24**	**139**	*e*P	**Pn**	**09 40 30.8**	**+1.6**
TRO	**Tromso**	**5.24**	**139**	*e*P	**Pn**	**09 40 30.8**	**+1.6**
	SNR=49						
JNE	**Jan Mayen East**	**5.96**	**250**	*e*P	**Pn**	**09 40 37.1**	**-2.0**
JNE	**Jan Mayen East**	**5.96**	**250**	*e*P	**Pn**	**09 40 37.1**	**-2.0**
	SNR=49						
JNW	**Jan Mayen West**	**5.97**	**250**	*e*P	**Pn**	**09 40 36.7**	**-2.6**
JNW	**Jan Mayen West**	**5.97**	**250**	*e*P	**Pn**	**09 40 36.7**	**-2.6**
	SNR=49						
JMIC	**Jan Mayen**	**6.02**	**250**	Pn	**Pn**	**09 40 37.6**	**-2.4**
	comp=Z,3.8nm,0.3s,baz=66,slow=3.5,SNR=9.8						
JMIC				LR	LR	09 42 13.3	
	comp=Z,64nm,19.9s,baz=74,slow=31						
JMIC	**Jan Mayen**	**6.02**	**250**	*e*P	**Pn**	**09 40 37.6**	**-2.4**
KIF	**Kilpisjarvi**	**6.13**	**136**	*e*P	**Pn**	**09 40 43.2**	**+1.8**
KIF	**Kilpisjarvi**	**6.13**	**136**	*e*P	**Pn**	**09 40 43.2**	**+1.8**
	SNR=49						
KTK1	**Kautokeino**	**6.62**	**130**	*e*P	**Pn**	**09 40 51.0**	**+2.7**
KTK1				*e*S	**Sn**	**09 42 00.9**	**-2.7**
KTK1				IAML		09 42 07.4	
	comp=Z,2.6nm,0.5s						
KTK1	**Kautokeino**	**6.62**	**130**	*e*P	**Pn**	**09 40 51.0**	**+2.7**
	SNR=47						
ARA0	**ARCESS Array S**	**6.73**	**122**	Pn	**Pn**	**09 40 51.5**	**+1.7**
	baz=316,slow=12						
ARA0				Sn	**Sn**	**09 42 02.2**	**-4.1**
	baz=317,slow=22						
ARA0	**ARCESS Array S**	**6.73**	**122**	Pn	**Pn**	**09 40 51.5**	**+1.7**
	baz=316,slow=12						
ARA0				Sn	**Sn**	**09 42 02.2**	**-4.1**
	baz=317,slow=22						
ARA0	**ARCESS Array S**	**6.73**	**122**	Pn	**Pn**	**09 40 51.5**	**+1.7**
	SNR=50						
ARCES	**ARCESS Array S**	**6.73**	**122**	Pn	**Pn**	**09 40 51.6**	**+1.8**
	comp=Z,0.9nm,0.3s,baz=323,slow=11,SNR=17						
ARCES				Sn	**Sn**	**09 42 02.0**	**-4.4**
	comp=Z,2.1nm,0.3s,baz=317,slow=21,SNR=11						
ARCES				LR	LR	09 43 57.4	
	comp=Z,115nm,19.5s,baz=314,slow=42						
ARE0	**ARCESS Array S**	**6.73**	**122**	*e*P	**Pn**	**09 40 51.9**	**+2.1**
ARE0				*e*S	**Sn**	**09 42 01.9**	**-4.4**
ARE0				IAML		09 42 07.7	
	comp=Z,4.7nm,0.3s						
ARE0	**ARCESS Array S**	**6.73**	**122**	*e*P	**Pn**	**09 40 51.8**	**+2.1**
	SNR=47						
HEF	**Hetta**	**7.20**	**132**	*e*P	**Pn**	**09 40 57.5**	**+1.3**
HEF	**Hetta**	**7.20**	**132**	*e*P	**Pn**	**09 40 57.5**	**+1.3**
	SNR=47						
DAG	**Danmarks Havn**	**7.57**	**306**	*i*P	**Pn**	**09 40 59.3**	**-1.9**
	comp=Z,6.1nm,0.9s						
SCO	**Scoresbysund**	**9.98**	**266**	*i*P	**Pn**	**09 41 31.0**	**-3.3**
	comp=Z,7.5nm,0.5s						
NOA	**NORSAR Array B**	**12.88**	**175**	LR	LR	09 46 51.0	
	comp=Z,40nm,19.3s,baz=5.0,slow=36						
HFS	**Hagfors**	**13.87**	**170**	Pn	**P**	**09 42 34.9**	**-0.8**
	baz=16,slow=16						
HFS	**Hagfors**	**13.87**	**170**	Pn	**P**	**09 42 34.9**	**-0.8**
	baz=16,slow=16						
FIA0	**FINESS Array S**	**13.94**	**144**	Pn	**Pn**	**09 42 29.0**	**+0.8**
	baz=336,slow=18						
FIA0	**FINESS Array S**	**13.94**	**144**	Pn	**Pn**	**09 42 29.0**	**+0.8**
	baz=336,slow=18						
FIA0	**FINESS Array S**	**13.94**	**144**	Pn	**Pn**	**09 42 29.0**	**+0.8**
	SNR=50						
FINES	**FINESS Array B**	**13.94**	**144**	Pn	**Pn**	**09 42 28.5**	**+0.3**
	comp=Z,0.1nm,0.3s,baz=341,slow=12,SNR=3.1						
FINES				LR	LR	09 47 47.4	
	comp=Z,39nm,22.0s,baz=288,slow=37						
OBN	**Obninsk**	**21.81**	**134**	LR	LR	09 52 45.4	
	comp=Z,58nm,19.5s,baz=81,slow=37						
NRIK	**Noril'sk**	**23.48**	**61**	LR	LR	09 55 07.4	
	comp=Z,14nm,19.7s,baz=20,slow=40						
AKASG	**Malin Array Be**	**24.76**	**148**	P	**P**	**09 44 33.6**	**+1.2**
	comp=Z,0.6nm,0.5s,baz=344,slow=9.6,SNR=2.7						
VRAC	**Vranov**	**24.83**	**168**	LR	LR	09 54 23.3	
	comp=Z,26nm,20.6s,baz=2.0,slow=37						
GERES	**GERESS Array B**	**25.16**	**173**	P	**P**	**09 44 38.3**	**+2.2**
	comp=Z,0.4nm,0.2s,baz=358,slow=8.7,SNR=3.6						
GERES				LR	LR	09 54 17.4	
	comp=Z,32nm,19.8s,baz=3.5,slow=36						
ARU	**Arti**	**25.95**	**105**	LR	LR	09 55 33.4	
	comp=Z,46nm,20.5s,baz=229,slow=38						
MLR	**Muntele Rosu**	**29.44**	**155**	LR	LR	09 57 17.1	
	comp=Z,12nm,21.7s,baz=28,slow=37						
AKTO	**Aktyubinsk**	**31.18**	**111**	LR	LR	09 58 60.0	
	comp=Z,59nm,18.3s,slow=38						
KVAR	**Kislovodsk Ar**	**33.66**	**134**	LR	LR	09 59 43.9	
	comp=Z,34nm,20.3s,baz=287,slow=36						
SCHQ	**Schefferville**	**34.65**	**279**	LR	LR	09 58 31.1	
	comp=Z,47nm,19.0s,baz=13,slow=34						
ZALV	**Zalesovo Beam**	**35.42**	**81**	LR	LR	10 03 50.0	
	comp=Z,39nm,18.2s,baz=256,slow=42						
BRTR	**Keskin Array B**	**36.15**	**147**	LR	LR	10 01 59.5	
	comp=Z,18nm,18.8s,baz=319,slow=38						
GNI	**Garni**	**37.73**	**133**	LR	LR	10 02 58.5	
	comp=Z,32nm,19.1s,baz=341,slow=38						
YKA	**Yellowknife Ar**	**38.91**	**322**	P	**P**	**09 46 36.3**	**+0.2**
	comp=Z,0.4nm,0.7s,baz=37,slow=10,SNR=3.4						
ILAR	**Eielson Array**	**40.74**	**344**	P	**P**	**09 46 52.9**	**+1.6**
	comp=Z,0.5nm,0.7s,baz=0.1,slow=6.7,SNR=8.2						
**M

PETK	**Petropavlovsk-** comp=Z,21nm,20.4s,baz=263,slow=34	**17.59**	**32**	LR	LR	09 53 24.4	
SEY	**Seymchan** 1.7nm,0.7s,baz=196,slow=8.3,SNR=5.0	**24.71**	**11**	P	**P**	**09 48 31.6**	**+2.0**
H11N2	**WAKE ISLAND Hy 28.55** baz=317,slow=75,SNR=98	**125**		T	T	10 19 25.8	
H11N1	**WAKE ISLAND Hy 28.56** baz=317,slow=75,SNR=128	**125**		T	T	10 19 28.4	
H11N3	**WAKE ISLAND Hy 28.57** baz=317,slow=75,SNR=60	**125**		T	T	10 19 26.7	
H11S1	**WAKE ISLAND Hy 29.34** baz=318,slow=76,SNR=6.0	**127**		T	T	10 20 30.3	
H11S3	**WAKE ISLAND Hy 29.34** baz=318,slow=76,SNR=14	**127**		T	T	10 20 31.0	
H11S2	**WAKE ISLAND Hy 29.36** baz=318,slow=76,SNR=11	**127**		T	T	10 20 32.0	
MKAR	**Makanchi Array** 1.1nm,0.7s,baz=89,slow=8.3,SNR=5.7	**43.77**	**301**	P	**P**	**09 51 14.8**	**+0.5**
ILAR	**Eielson Array** 0.9nm,0.7s,baz=266,slow=6.0,SNR=13	**47.41**	**33**	P	**P**	**09 51 43.9**	**+1.1**
INK	**Inuvik** 0.6nm,0.6s,baz=300,slow=8.1,SNR=3.3	**52.28**	**28**	P	**P**	**09 52 21.0**	**+1.4**
WRA	**Warramunga Arr** 0.4nm,0.4s,baz=6.6,slow=7.1,SNR=7.9	**59.12**	**189**	P	**P**	**09 53 09.1**	**-0.2**
ASAR	**Alice Springs** 0.3nm,0.8s,baz=12,slow=5.1,SNR=2.5	**62.85**	**189**	P	**P**	**09 53 32.3**	**-2.3**

*HEL **01** 09:49:58.4±0.4, 67.°63N×34.°30E, h0km, ML2.4, Explosion*
*ISCJB **01** 09:50:00.3±1.2, 67.°52N±0.°04×33.°6E±0.°2, h0km, Error ellipse: s-maj=8.9km s-min=5.3km az=177.7*
*CSEM **01** 09:50:01.2±0.8, 67.°56N×33.°76E, h1km, ML2.4, Error ellipse: s-maj=17.0km s-min=9.0km az=93.0, Mining explosion.*
*NAO **01** 09:50:05.4±1.9, 67.°64N×33.°25E, ML2.7*

ISC 01 09:50:00.5±1.5, **67.°65N**±0.°04×**33.°89E**±0.°08, **h0**km, **n32**, σ1$**39**/53, **Baltic States-Belarus-Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
VRF	**Varrio** baz=84	**1.64**	**275**	PG		**Pn**	**09 50 30.5**	**0.0**
VRF	comp=Z,37nm,0.2s			MSG			09 50 51.8	
VRF				SG		**Sb**	**09 50 52.8**	**+0.2**
VRF	**Varrio**	**1.64**	**275**	Pg		**Pn**	**09 50 30.4**	**0.0**
VRF				Sg		**Sb**	**09 50 52.8**	**+0.2**
KU6	**Riekki** baz=48	**2.27**	**226**	PG		**Pn**	**09 50 40.5**	**+1.3**
KU6	comp=Z,20nm,0.2s			MSG			09 51 08.4	
KU6				SG		**Sb**	**09 51 11.6**	**+0.7**
KU6	**Riekki**	**2.27**	**226**	Pg		**Pn**	**09 50 40.5**	**+1.3**
KU6				Sg		**Sb**	**09 51 11.5**	**+0.7**
MSF	**Maaselka**	**2.60**	**230**	PG		**Pb**	**09 50 47.1**	**-0.7**
MSF				SG		**Sb**	**09 51 21.3**	**+1.1**
MSF	**Maaselka**	**2.60**	**230**	Pg		**Pb**	**09 50 47.1**	**-0.7**
SGF	**Sodankyl** baz=80	**2.83**	**269**	PG		**Pb**	**09 50 51.0**	**-0.9**
SGF				SG		**Sg**	**09 51 30.8**	**-0.6**
SGF	**Sodankyl**	**2.83**	**269**	Pg		**Pb**	**09 50 50.9**	**-0.9**
RNF	**Rovaniemi** baz=64	**3.25**	**255**	PN		**Pn**	**09 50 53.6**	**+1.0**
RNF				SN		**Sn**	**09 51 35.0**	**+3.1**
RNF	**Rovaniemi**	**3.25**	**255**	Pn		**Pn**	**09 50 53.6**	**+1.0**
RNF				Sn		**Sn**	**09 51 35.0**	**+3.1**
ARA0	**ARCESS Array S** baz=121,slow=16	**3.61**	**305**	Pn		**Pn**	**09 50 59.7**	**+2.1**
ARA0	baz=121,slow=28			Sn		**Sn**	**09 51 41.4**	**+0.6**
ARA0	baz=107,slow=28			Lg		Lg	09 51 52.4	
ARA0	**ARCESS Array S** baz=121,slow=16	**3.61**	**305**	Pn		**Pn**	**09 50 59.7**	**+2.1**
ARA0	baz=121,slow=28			Sn		**Sn**	**09 51 41.4**	**+0.6**
ARA0	baz=107,slow=28			Lg		Lg	09 51 52.4	
ARA0	**ARCESS Array S** baz=121,slow=15,SNR=339	**3.61**	**305**	Pn		**Pn**	**09 50 59.7**	**+2.1**
ARA0	baz=121,slow=25,SNR=9.8			Sn		**Sn**	**09 51 41.4**	**+0.6**
ARA0	SNR=2.4			Lg		Lg	09 51 52.4	
ARE0	**ARCESS Array S** baz=123	**3.61**	**305**	PN		**Pn**	**09 50 57.8**	**+0.2**
ARE0				SN		**Sn**	**09 51 41.6**	**+0.8**
ARE0	**ARCESS Array S**	**3.61**	**305**	Pn		**Pn**	**09 50 57.8**	**+0.2**
ARE0				Sn		**Sn**	**09 51 41.6**	**+0.8**
HEF	**Hetta**	**3.92**	**286**	*e*P		**Pn**	**09 51 02.5**	**+0.7**
HEF				*e*S		**Sn**	**09 51 50.0**	**+1.6**
HEF	**Hetta** baz=99	**3.92**	**286**	PN		**Pn**	**09 51 03.5**	**+1.7**
HEF				SN		**Sn**	**09 51 49.4**	**+1.0**
HEF	**Hetta** SNR=49	**3.92**	**286**	*e*P		**Pn**	**09 51 02.5**	**+0.7**
HEF	**Hetta**	**3.92**	**286**	Pn		**Pn**	**09 51 03.5**	**+1.7**
HEF				Sn		**Sn**	**09 51 49.4**	**+1.0**
HEF	SNR=49			*e*S		**Sn**	**09 51 50.0**	**+1.6**
TOF	**Tornio** baz=78	**4.09**	**252**	PN		**Pn**	**09 51 05.8**	**+1.7**
TOF	**Tornio**	**4.09**	**252**	Pn		**Pn**	**09 51 05.8**	**+1.7**
OUL	**Oulu**	**4.12**	**235**	PG		**Pb**	**09 51 12.5**	**-1.2**
KTK1	**Kautokeino**	**4.18**	**294**	*e*P		**Pn**	**09 51 06.8**	**+1.4**
KTK1	**Kautokeino** SNR=49	**4.18**	**294**	*e*P		**Pn**	**09 51 06.8**	**+1.4**
LANU	**Lannavaara**	**4.52**	**281**	PN		**Pn**	**09 51 10.0**	**-0.2**
LANU				SG		**Sg**	**09 52 21.9**	**-3.6**
LANU	**Lannavaara**	**4.52**	**281**	Pn		**Pn**	**09 51 09.9**	**-0.2**
FIA0	**FINESS Array S** baz=19,slow=14	**7.08**	**212**	Pn		**Pn**	**09 51 46.5**	**+1.4**
FIA0	baz=19,slow=28			Sn		**Sn**	**09 53 04.7**	**-1.4**
FIA0	baz=16,slow=28			Lg		Lg	09 53 38.0	
FIA0	**FINESS Array S** baz=19,slow=14	**7.08**	**212**	Pn		**Pn**	**09 51 46.5**	**+1.4**
FIA0	baz=19,slow=28			Sn		**Sn**	**09 53 04.7**	**-1.4**
FIA0	baz=16,slow=28			Lg		Lg	09 53 38.0	
FIA0	**FINESS Array S** baz=19,slow=14,SNR=6.9	**7.08**	**212**	Pn		**Pn**	**09 51 46.5**	**+1.4**
FIA0	baz=19,slow=24,SNR=4.5			Sn		**Sn**	**09 53 04.7**	**-1.4**
SPA0	**Spitsbergen Ar** baz=144,slow=18	**11.67**	**342**	Pn		**Pn**	**09 52 47.5**	**-0.4**
SPA0	**Spitsbergen Ar** baz=144,slow=18	**11.67**	**342**	Pn		**Pn**	**09 52 47.5**	**-0.4**
SPA0	**Spitsbergen Ar** baz=144,slow=16,SNR=4.1	**11.67**	**342**	Pn		**Pn**	**09 52 47.5**	**-0.4**

*ISK **01** 09:51:18.8, 40.°07N×33.°29E, h5km, MD2.7*
*DDA **01** 09:51:24.9, 39.°90N×33.°06E, h7km, Md2.8, Suspected Mining explosion.*
*CSEM **01** 09:51:24.6±0.3, 39.°90N×33.°00E, h1km, MD2.8, Error ellipse: s-maj=7.5km s-min=6.0km az=97.0, Suspected Mining explosion.*
*ISCJB **01** 09:51:25.3±0.5, 39.°89N±0.°02×33.°03E±0.°04, h0km, Error ellipse: s-maj=4.5km s-min=3.5km az=6.6*

ISC 01 09:51:24.6±0.9, **39.°84N**±0.°03×**33.°05E**±0.°03, **h0**km, **n21**, σ0$**82**/33, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LOD	**Lodumlu**	**0.22**	**283**	*e*PG		**Pg**	**09 51 28.9**	**0.0**
LOD				*e*SG		**Sg**	**09 51 34.1**	**+2.3**
LOD	**Lodumlu**	**0.22**	**283**	*e*Pg		**Pg**	**09 51 28.9**	**0.0**
BBAL	**Bala**	**0.30**	**169**	*i* P		**Pb**	**09 51 32.2**	**-0.8**
BBAL				*i* S		**Sb**	**09 51 38.6**	**+0.1**
BBAL	**Bala**	**0.30**	**169**	P		**Pb**	**09 51 32.2**	**-0.8**
BBAL				S		**Sb**	**09 51 38.6**	**+0.1**
AFSR	**Af˙ar-Bala (A**	**0.39**	**177**	*e*PG		**Pg**	**09 51 32.2**	**+0.1**
AFSR				*e*SG		**Sb**	**09 51 40.4**	**-0.7**
AFSR	**Af˙ar-Bala (A**	**0.39**	**177**	*e*Pg		**Pg**	**09 51 32.2**	**+0.1**
KKUL	**Konya-Kulu**	**0.68**	**189**	*i* P		**Pb**	**09 51 39.4**	**+0.1**
KKUL				*i* S		**Sb**	**09 51 49.1**	**-0.1**
KKUL	**Konya-Kulu**	**0.68**	**189**	P		**Pb**	**09 51 39.4**	**+0.1**
KKUL				S		**Sb**	**09 51 49.2**	**-0.1**
ELDT	**Eldivan**	**0.71**	**24**	*i* P		**Pg**	**09 51 37.6**	**-0.6**
ELDT				*i* S		**Sg**	**09 51 47.0**	**-0.5**
ELDT	**Eldivan**	**0.71**	**24**	P		**Pg**	**09 51 37.6**	**-0.6**
ELDT				S		**Sg**	**09 51 47.0**	**-0.5**
CDAG	**Cicekdag**	**1.04**	**102**	*i* P		**Pg**	**09 51 44.3**	**-0.3**
CDAG				*i* S		**Sn**	**09 52 01.8**	**-0.1**
CDAG	**Cicekdag**	**1.04**	**102**	P		**Pg**	**09 51 44.3**	**-0.3**
CDAG				S		**Sn**	**09 52 01.8**	**-0.1**
BCAM	**Yenicaga**	**1.23**	**323**	*i* P		**Pg**	**09 51 47.9**	**-0.3**
BCAM				*i* S		**Sn**	**09 52 06.4**	**-0.1**
BCAM	**Yenicaga**	**1.23**	**323**	P		**Pg**	**09 51 47.9**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.24**	**252**	*e*PN		**Pg**	**09 51 47.4**	**-1.0**
SVRH	**Sivrihisar-ESK**	**1.24**	**252**	*e*Pn		**Pg**	**09 51 47.4**	**-1.0**
CORM	**Corum**	**1.26**	**74**	*e*PG		Pg	09 51 39.6	-9.2
ILGA	**Ilgaz**	**1.31**	**23**	*i* P		**Pg**	**09 51 48.8**	**-1.0**
ILGA				*i* S		**Sn**	**09 52 09.5**	**+0.7**
ILGA	**Ilgaz**	**1.31**	**23**	P		**Pg**	**09 51 48.8**	**-1.0**
COAL	**Corum-Alaca**	**1.54**	**74**	*i* P		**Pg**	**09 51 54.4**	**+0.2**
COAL				*i* S		**Sb**	**09 52 17.0**	**+2.7**
COAL	**Corum-Alaca**	**1.54**	**74**	P		**Pg**	**09 51 54.4**	**+0.2**

*ISCJB **01** 09:52:38.0±0.5, 39.°87N±0.°02×33.°06E±0.°04, h0km, Error ellipse: s-maj=4.5km s-min=3.5km az=3.3*
*DDA **01** 09:52:37.9, 39.°87N×33.°09E, h7km, Md2.7, Suspected Mining explosion.*
*ISK **01** 09:52:37.1, 39.°90N×33.°06E, h7km, MD2.6*
*CSEM **01** 09:52:37.4±0.2, 39.°89N×33.°07E, h1km, MD2.6, Error ellipse: s-maj=4.7km s-min=3.9km az=91.0, Suspected Mining explosion.*

ISC 01 09:52:37.9±0.9, **39.°90N**±0.°02×**33.°07E**±0.°03, **h0**km, **n24**, σ0$**85**/39, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LOD	**Lodumlu**	**0.24**	**268**	*e*PG		**Pg**	**09 52 42.0**	**-0.4**
LOD				*e*SG		**Sg**	**09 52 45.9**	**+0.4**
LOD	**Lodumlu**	**0.24**	**268**	*e*Pg		**Pg**	**09 52 42.0**	**-0.4**
LOD				*e*Sg		**Sg**	**09 52 45.9**	**+0.4**
BBAL	**Bala**	**0.36**	**174**	*i* P		**Pg**	**09 52 44.3**	**-0.4**
BBAL				*i* S		**Sg**	**09 52 50.5**	**+1.2**
BBAL	**Bala**	**0.36**	**174**	P		**Pg**	**09 52 44.3**	**-0.4**
BBAL				S		**Sg**	**09 52 50.5**	**+1.2**
AFSR	**Af˙ar-Bala (A**	**0.45**	**180**	*e*PG		**Pg**	**09 52 46.3**	**-0.2**
AFSR				*e*SG		**Sg**	**09 52 53.2**	**+0.8**
AFSR	**Af˙ar-Bala (A**	**0.45**	**180**	*e*Pg		**Pg**	**09 52 46.3**	**-0.2**
AFSR				*e*Sg		**Sg**	**09 52 53.2**	**+0.8**
ELDT	**Eldivan**	**0.65**	**25**	*i* P		**Pg**	**09 52 50.0**	**-0.4**
ELDT				*i* S		**Sb**	**09 53 01.6**	**-0.3**
ELDT	**Eldivan**	**0.65**	**25**	P		**Pg**	**09 52 50.0**	**-0.4**
ELDT				S		**Sb**	**09 53 01.6**	**-0.3**
KAMT	**Kaman**	**0.72**	**137**	*e*PG		**Pg**	**09 52 51.1**	**-0.6**
KAMT	**Kaman**	**0.72**	**137**	*e*Pg		**Pg**	**09 52 51.1**	**-0.6**
SERE	**Sereflikochisa**	**1.02**	**158**	*e*PG		**Pb**	**09 52 57.7**	**-0.9**
SERE	**Sereflikochisa**	**1.02**	**158**	*e*Pg		**Pb**	**09 52 57.7**	**-0.9**
CDAG	**Cicekdag**	**1.04**	**105**	*i* P		**Pg**	**09 52 56.5**	**-1.3**
CDAG				*i* S		**Sn**	**09 53 16.3**	**+1.2**
CDAG	**Cicekdag**	**1.04**	**105**	P		**Pg**	**09 52 56.5**	**-1.3**
BCAM	**Yenicaga**	**1.20**	**320**	*i* P		**Pg**	**09 53 00.4**	**-0.4**
BCAM				*i* S		**Sn**	**09 53 19.7**	**+0.7**
BCAM	**Yenicaga**	**1.20**	**320**	P		**Pg**	**09 53 00.4**	**-0.4**
BCAM				S		**Sn**	**09 53 19.7**	**+0.7**
CORM	**Corum**	**1.23**	**76**	*e*PN		**Pb**	**09 53 01.4**	**-0.7**
CORM	**Corum**	**1.23**	**76**	*e*Pn		**Pb**	**09 53 01.4**	**-0.7**
ILGA	**Ilgaz**	**1.25**	**23**	*i* P		**Pb**	**09 53 02.2**	**-0.3**
ILGA				*i* S		**Sn**	**09 53 21.1**	**+0.6**
ILGA	**Ilgaz**	**1.25**	**23**	P		**Pb**	**09 53 02.2**	**-0.3**
ILGA				S		**Sn**	**09 53 21.1**	**+0.6**
KIZT	**Kizilcal**	**1.38**	**223**	*e*PN		**Pg**	**09 53 03.2**	**-1.0**
KIZT	**Kizilcal**	**1.38**	**223**	*e*Pn		**Pg**	**09 53 03.2**	**-1.0**
COAL	**Corum-Alaca**	**1.51**	**76**	*i* P		**Pg**	**09 53 06.1**	**-0.7**
COAL				*i* S		**Sn**	**09 53 28.6**	**+1.9**
COAL	**Corum-Alaca**	**1.51**	**76**	P		**Pg**	**09 53 06.1**	**-0.7**
COAL				S		**Sn**	**09 53 28.6**	**+1.9**

*IDC **01** 10:07:00.4±1.8, 14.°28N×89.°78W, h0km, mb3.7/2, mb1 4.0/3, mb1mx3.6/37, mbtmp3.6/3, ML4.2/1, Error ellipse: s-maj=133.4km s-min=45.6km az=66.0*
*ISCJB **01** 10:07:11.6±0.7, 13.°84N±0.°07×91.°54W±0.°05, h61km, mb3.7/2, Error ellipse: s-maj=11.8km s-min=5.3km az=31.2*
*CASC **01** 10:07:12.6±0.8, 14.°25N×91.°44W, h51km±68km, ML4.2*
*MEX **01** 10:07:15.6±0.6, 13.°91N×91.°59W, h82km±38km, MD3.9*

ISC 01 10:07:10.6±0.8, **13.°8N**±0.°1×**91.°49W**±0.°07, **h61**km, **n29**, σ2$**33**/31, **1D, Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CUS1	**Cusmapa**	**1.50**	**85**	*e*P		**Pn**	**10 07 37.4**	**+1.9**
CUS1				*e*S		**Sn**	**10 07 56.1**	**+1.9**
RBDL	**Robledal**	**1.78**	**79**	*e*P		**Pn**	**10 07 40.1**	**+0.8**
MONT	**Ecomontaæa**	**1.79**	**87**	*e*P		**Pn**	**10 07 41.6**	**+2.1**
RTR	**El Retiro**	**1.79**	**86**	*e*P		**Pn**	**10 07 41.5**	**+2.0**
SBLS	**San Blas**	**1.81**	**88**	*e*P		**Pn**	**10 07 41.9**	**+2.1**
SBLS				*e*S		**Sn**	**10 08 04.2**	**+2.2**
BOQS	**Boqueron**	**2.15**	**91**	*e*P		**Pn**	**10 07 46.5**	**+2.2**
SNET	**Serv Nac Est T**	**2.19**	**92**	*e*P		**Pn**	**10 07 47.4**	**+2.5**
SNET				*e*S		**Sn**	**10 08 14.7**	**+3.7**
SNET	comp=Z,2µm,0.2s			AML		AML	10 08 19.2	
LFU	**La Fuente**	**2.31**	**90**	*e*P		**Pn**	**10 07 48.3**	**+2.0**
LFRS	**El Faro**	**2.36**	**93**	*e*P		**Pn**	**10 07 49.7**	**+2.5**
LBRS	**Las Brisas**	**2.38**	**91**	*e*P		**Pn**	**10 07 49.4**	**+2.1**
CCIG	**Comitan**	**2.57**	**346**	*i* P		**Pn**	**10 07 52.1**	**+2.0**
CCIG				*i* S		**Sn**	**10 08 20.8**	**+0.6**
PACA	**Pacayal**	**3.09**	**95**	*e*P		**Pn**	**10 07 60.0**	**+2.8**
HUIG	**Huatulco**	**4.89**	**294**	*e*P		**Pn**	**10 08 23.6**	**+1.9**
JCR	**Jicaral**	**7.36**	**121**	*e*P		Pn	10 09 01.5	+5.9
CGA2	**Cerro Gallo 2**	**7.82**	**118**	*e*P		Pn	10 09 08.7	+6.7
URSC	**Urasca**	**8.50**	**117**	*e*P		Pn	10 09 16.9	+5.5
BUS	**Buena Vista**	**8.65**	**118**	*e*P		Pn	10 09 19.3	+5.6
BUS				*e*S		**Sn**	**10 10 48.1**	**-2.0**
TXAR	**Lajitas Array** comp=Z,0.2nm,0.3s,baz=145,slow=11,SNR=9.2	**19.16**	**326**	P		**Pn**	**10 11 31.9**	**+1.2**
TXAR	comp=Z,0.0nm,0.3s,baz=148,slow=4.1,SNR=4.2			PcP		**PcP**	**10 15 51.3**	**+0.1**
PRAC	**Prado**	**19.20**	**120**	*e*P		**Pn**	**10 11 32.6**	**+1.4**
GRMC	**Gramalote, San**	**19.31**	**106**	*e*P		**P**	**10 11 25.4**	**-5.7**
CHIC	**Chingaza**	**19.73**	**116**	*e*P		**P**	**10 11 33.4**	**-2.5**
RUSC	**La Rusia**	**19.74**	**112**	*e*P		**P**	**10 11 33.5**	**-2.7**
SJAC	**San Juan de Ar**	**20.22**	**119**	*e*P		**P**	**10 11 42.3**	**+1.4**
YKA	**Yellowknife Ar** comp=Z,0.4nm,0.6s,baz=154,slow=7.8,SNR=3.9	**51.36**	**347**	P		**P**	**10 16 05.4**	**-3.3**
DLBC	**Dease Lake** comp=Z,1.4nm,0.8s,baz=135,slow=7.3,SNR=3.5	**53.06**	**336**	P		**P**	**10 16 21.3**	**-0.2**
KSRS	**Korea Array** comp=Z,0.6nm,0.6s,baz=47,slow=1.7,SNR=4.1	**117.01**	**325**	PKP		**PKPdf**	**10 25 48.4**	**-0.7**
WRA	**Warramunga Arr** comp=Z,1.0nm,0.9s,baz=89,slow=2.5,SNR=6.7	**135.82**	**256**	PKP		**PKPdf**	**10 26 26.4**	**+1.0**
ASAR	**Alice Springs** comp=Z,0.2nm,0.8s,baz=86,slow=2.7,SNR=5.4	**136.06**	**250**	PKP		**PKPdf**	**10 26 26.8**	**+1.0**
CMAR	**Chiang Mai Arr** comp=Z,0.8nm,0.5s,baz=354,slow=3.1,SNR=6.7	**146.36**	**342**	PKPbc		**PKPdf**	**10 26 43.2**	**-1.1**

*IDC **01** 10:12:51.7±3.3, 63.°30N×152.°74W, h0km, mb2.9/1, mb1 3.4/4, mb1mx3.2/51, mbtmp3.1/4, ML2.9/3, Error ellipse: s-maj=39.0km s-min=26.0km az=112.0*
*ISCJB **01** 10:12:58.8±0.5, 63.°45N±0.°02×151.°43W±0.°05, h15km±4km, mb3.1/1, Error ellipse: s-maj=4.1km s-min=3.5km az=140.4*
*NEIC **01** 10:12:58.9, 63.°44N×151.°45W, h12km, ML3.0(AEIC), After AEIC.*

ISC 01 10:12:59.0±0.9, **63.°47N**±0.°03×**151.°44W**±0.°02, **h12**km±6km, **n58**, σ1$**03**/70, **Central Alaska**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KTH	**Kantishna Hill**	**0.25**	**69**	P		**Pg**	**10 13 04.5**	**+0.3**
KTH				S		**Sb**	**10 13 08.7**	**+1.0**
CAST	**Castle Rocks**	**0.29**	**261**	P		**Pg**	**10 13 05.0**	**0.0**
CAST				S		**Sg**	**10 13 08.9**	**0.0**
TRF	**Thorofare Moun**	**0.52**	**91**	P		**Pg**	**10 13 09.0**	**-0.2**
TRF				S		**Sg**	**10 13 16.1**	**+0.1**
CHUM	**Lake Minchumin**	**0.57**	**317**	P		**Pb**	**10 13 11.3**	**+0.4**
CHUM				S		**Sb**	**10 13 19.1**	**+0.2**
PPLA	**Purkeypile**	**0.67**	**211**	P		**Pg**	**10 13 10.7**	**-1.2**
BPAW	**Bear Paw Mtn.**	**0.67**	**17**	P		**Pb**	**10 13 12.8**	**+0.2**
BPAW				S		**Sn**	**10 13 22.4**	**-2.3**
HUR	**Hurricane**	**0.95**	**120**	P		**Pb**	**10 13 16.5**	**-0.9**
BWN	**Browne**	**1.12**	**50**	P		**Pg**	**10 13 20.9**	**+0.3**
BWN				S		**Sn**	**10 13 38.5**	**+2.6**
MCK	**McKinley**	**1.15**	**76**	P		**Pb**	**10 13 20.5**	**-0.3**
MCK				S		**Sg**	**10 13 36.5**	**+0.5**
RND	**Reindeer**	**1.16**	**92**	P		**Pb**	**10 13 20.2**	**-0.9**
CUT	**Chulitna**	**1.19**	**153**	P		**Pn**	**10 13 20.5**	**-0.9**
MLY	**Manley**	**1.60**	**11**	P		**Pb**	**10 13 27.5**	**-1.0**
WRH	**Wood River Hil**	**1.79**	**54**	P		**Pn**	**10 13 28.8**	**-0.8**
DHY	**Denali Highway**	**1.88**	**100**	P		**Pn**	**10 13 31.6**	**+0.5**
DHY				S		**Sb**	**10 13 57.6**	**+0.9**
STLK	**Strandline Lak**	**1.98**	**185**	P		**Pn**	**10 13 32.6**	**+0.2**
CCB	**Clear Creek Bu**	**1.99**	**52**	P		**Pn**	**10 13 31.5**	**-0.8**
MDM	**Murphy Dome**	**2.05**	**42**	P		**Pn**	**10 13 32.7**	**-0.6**
GHO	**Glory Hole Cre**	**2.06**	**145**	P		**Pn**	**10 13 33.1**	**-0.3**
COLA	**College**	**2.11**	**46**	P		**Pn**	**10 13 33.4**	**-0.6**
TTA	**Tatalina**	**2.14**	**257**	P		**Pn**	**10 13 34.6**	**+0.1**
TT01	**Tatalina**	**2.15**	**257**	P		**Pn**	**10 13 33.5**	**-1.1**
PMR	**Palmer**	**2.17**	**149**	P		**Pn**	**10 13 34.6**	**-0.2**
HDA	**Harding Lake**	**2.20**	**63**	P		**Pn**	**10 13 35.0**	**-0.3**
SML	**Sawmill**	**2.20**	**138**	P		**Pn**	**10 13 35.0**	**-0.3**
SPWE	**Spurr West**	**2.26**	**194**	P		**Pn**	**10 13 36.6**	**+0.3**
PS08	**TAPS Pump Stn8**	**2.30**	**60**	P		**Pn**	**10 13 36.2**	**-0.5**
CKL	**Chakachamna La**	**2.32**	**191**	P		**Pn**	**10 13 37.0**	**0.0**
ILAR	**Eielson Array** 0.7nm,0.3s,baz=239,slow=14,SNR=28	**2.39**	**55**	Pn		**Pn**	**10 13 37.0**	**-0.8**
ILAR	19nm,0.3s,baz=243,slow=29,SNR=22			Sn		**Sg**	**10 14 13.3**	**-2.3**
ILB	**Eielson Array**	**2.39**	**55**	P		**Pn**	**10 13 37.1**	**-0.8**
KNK	**Knik Glacier**	**2.48**	**145**	P		**Pn**	**10 13 39.9**	**+0.6**
SCM	**Sheep Creek Mo**	**2.51**	**129**	P		**Pn**	**10 13 39.9**	**+0.3**
RC01	**Rabbit Creek A**	**2.52**	**161**	P		**Pn**	**10 13 39.9**	**+0.2**
IM3	**Indian Mountai**	**2.71**	**340**	P		**Pn**	**10 13 43.1**	**+0.8**
PAX	**Paxson**	**2.75**	**98**	P		**Pn**	**10 13 43.6**	**+0.7**
RDJH	**Redoubt Jeurge**	**2.96**	**193**	P		**Pn**	**10 13 46.2**	**+0.4**
SLKM	**Skilak Lake**	**3.03**	**169**	P		**Pn**	**10 13 47.3**	**+0.6**
RDWB	**Redoubt West**	**3.06**	**193**	P		**Pn**	**10 13 47.9**	**+0.6**
SVW2	**Sparrevohn**	**3.07**	**221**	P		**Pn**	**10 13 47.7**	**+0.5**
PS11	**TAPS Pump St11**	**3.08**	**114**	P		**Pn**	**10 13 48.5**	**+1.2**
KLU	**Klutina**	**3.24**	**125**	P		**Pn**	**10 13 50.5**	**+0.9**
DOT	**Dot Lake**	**3.31**	**84**	*e*Pn		**Pn**	**10 13 50.0**	**-0.5**
DOT				*e*Sn		**Sn**	**10 14 28.9**	**-0.8**
VLZ	**Valdez**	**3.34**	**132**	P		**Pn**	**10 13 51.8**	**+0.9**
SEW	**Seward**	**3.51**	**163**	P		**Pn**	**10 13 54.2**	**+1.0**
DIV	**Divide**	**3.54**	**129**	P		**Pn**	**10 13 54.4**	**+0.7**
COLD	**Coldfoot**	**3.81**	**7**	P		**Pn**	**10 13 58.5**	**+1.1**
HIN	**Hinchinbrook I**	**3.86**	**141**	P		**Pn**	**10 13 59.0**	**+0.8**
CNPM	**China Poot**	**3.96**	**179**	P		**Pn**	**10 14 00.2**	**+1.2**
EYAK	**Cordova Ski Ar**	**3.97**	**135**	P		**Pn**	**10 14 00.5**	**+0.9**
BMRM	**Bremner River**	**4.07**	**125**	P		**Pn**	**10 14 01.8**	**+0.8**
VRDI	**Verde Repeater**	**4.35**	**118**	P		**Pn**	**10 14 06.0**	**+1.1**
BCA3	**Beaver Creek A**	**4.38**	**91**	P		**Pn**	**10 14 05.2**	**0.0**
EGAK	**Eagle**	**4.69**	**69**	*e*Pn		**Pn**	**10 14 10.4**	**+0.9**
EGAK				*e*Sg		**Sg**	**10 15 27.2**	**-2.2**
PTPK	**Patty Peak**	**4.77**	**115**	P		**Pn**	**10 14 12.2**	**+1.4**
KIAG	**Kiagna River**	**4.96**	**117**	P		**Pn**	**10 14 13.7**	**+0.4**
DAWY	**Dawson**	**5.38**	**78**	P		**Pn**	**10 14 18.5**	**-0.5**
INK	**Inuvik** 0.2nm,0.3s,baz=243,slow=14,SNR=6.3	**8.77**	**49**	Pn		**Pn**	**10 15 05.5**	**+0.2**
INK	0.1nm,0.3s,baz=79,slow=4.3,SNR=2.4			Sn		**Sn**	**10 16 48.1**	**+4.1**
YKA	**Yellowknife Ar** 0.0nm,0.0s,baz=294,slow=11,SNR=4.5	**16.62**	**77**	P		**Pn**	**10 16 52.0**	**+0.6**
TXAR	**Lajitas Array** 0.1nm,0.4s,baz=353,slow=6.4,SNR=2.5	**45.65**	**115**	P		**P**	**10 21 18.1**	**-1.1**

JMA 01 10:17:13.1±0.1, **27.°70N×129.°10E, h44**km±2km, **M3.5, Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JTK	**Tokunoshima**	**0.16**	**303**	P		Pn	10 17 20.3	-0.2
JTK				S		Sn	10 17 25.9	+0.2
JAMN	**Amaminishikomi**	**0.55**

Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA** baz=92,slow=317,SNR=20	**2.04**	**276**	*i*		10 38 33.1	
ZALV	**Zalesovo Beam** 3.3nm,0.3s,baz=89,slow=14,SNR=37	**2.04**	**276**	Pn	Pn	10 26 45.7	-0.7
ZALV	4.9nm,0.3s,baz=94,slow=22,SNR=21			Sn	Sn	10 27 12.9	+0.3
KURBB	**Kurchatov Arra** 0.1nm,0.3s,baz=60,slow=15,SNR=4.4	**6.76**	**246**	Pn	Pn	10 27 51.4	+0.2
KURBB	0.1nm,0.3s,baz=65,slow=27,SNR=4.3			Sn	Sn	10 29 10.0	+1.2
KURBB	0.0nm,0.3s,baz=59,slow=31,SNR=7.9			Lg	Lg	10 29 42.1	
MKAR	**Makanchi Array** 0.2nm,0.3s,baz=33,slow=14,SNR=5.7	**7.96**	**211**	Pn	Pn	10 28 09.3	+1.6
MKAR	0.1nm,0.3s,baz=24,slow=21,SNR=4.2			Sn	Sn	10 29 37.4	-1.1
MKAR	0.1nm,0.3s,baz=31,slow=28,SNR=2.2			Lg	Lg	10 30 19.9	

*ISCJB **01** 10:39:20.9±0.4,24°.41N±0°.02×121°.98E±0°.02, h9km±3km, Error ellipse: s-maj=3.3km s-min=2.5km az=139.8*
*JMA **01** 10:39:20.9,24°.35N×121°.93E,h19km±3km,M2.1*
*TAP **01** 10:39:21.3,24°.40N×121°.91E,h19km,ML3.1,C*

ISC 01 10:39:20.9±0.9,24°.40N±0°.02×121°.96E±0°.02,h15km±7km, n44,σ0s52/76,5C,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau** baz=279	**0.20**	**277**	⇑*i* P	**Pg**	**10 39 25.7**	**+0.1**
ENA				*i* S	**Sg**	**10 39 28.7**	**-0.1**
TWC	**Suao** baz=351	**0.23**	**334**	⇑*i* P	**Pb**	**10 39 26.6**	**-0.2**
TWC				*i* S	**Sg**	**10 39 30.0**	**+0.5**
ILA	**Ilan** baz=337	**0.41**	**332**	P	**Pb**	**10 39 29.7**	**-0.2**
ILA				*e*S	**Sb**	**10 39 35.8**	**-0.1**
TWE	**Neicheng** baz=326	**0.41**	**320**	*i* P	**Pb**	**10 39 29.7**	**-0.3**
TWE				S	**Sg**	**10 39 34.6**	**-0.3**
ENTT	**Nioudou** baz=308	**0.43**	**303**	⇑*i* P	**Pg**	**10 39 29.9**	**+0.3**
ENTT				*i* S	**Sg**	**10 39 35.3**	**-0.1**
EGS		**0.44**	**357**	*i* P	**Pb**	**10 39 30.6**	**+0.2**
EGS				*i* S	**Sb**	**10 39 36.6**	**-0.3**
TWD	**Chiawan** baz=227	**0.46**	**226**	P	**Pb**	**10 39 30.6**	**-0.2**
TWD				*e*S	**Sb**	**10 39 38.1**	**+0.7**
HWA	**Hwalien** baz=219	**0.54**	**218**	*e*P	**Pb**	**10 39 32.3**	**+0.3**
NNS	**Nan Shan** baz=282	**0.54**	**274**	P	**Pg**	**10 39 31.2**	**-0.4**
NNS				S	**Sg**	**10 39 37.2**	**-1.6**
TWB1	**Santiao Chiao** baz=359	**0.60**	**2**	P	**Pb**	**10 39 33.0**	**-0.2**
TWB1				S	**Sb**	**10 39 41.1**	**-0.4**
NSK	**Sanguang** baz=299	**0.61**	**296**	⇑*i* P	**Pg**	**10 39 33.0**	**0.0**
NSK				*i* S	**Sg**	**10 39 40.6**	**-0.6**
TWA	**Mucha** baz=322	**0.67**	**329**	*e*P	**Pb**	**10 39 34.4**	**0.0**
TWA				*e*S	**Sb**	**10 39 43.1**	**-0.3**
NWF	**Wu-fen Shan** baz=340	**0.69**	**346**	P	**Pb**	**10 39 35.0**	**+0.4**
NWF				S	**Sb**	**10 39 43.8**	**-0.2**
WHF	**Hehuan Shan** baz=255	**0.69**	**248**	⇑P	**Pg**	**10 39 33.8**	**-0.7**
WHF				*e*S	**Sb**	**10 39 44.6**	**+0.3**
TWT	**Tachien** baz=259	**0.73**	**258**	*e*P	**Pg**	**10 39 35.3**	**0.0**
TWT				S	**Sb**	**10 39 45.7**	**+0.3**
ESL	**Shilin** baz=224	**0.76**	**220**	*e*P	**Pg**	**10 39 35.6**	**-0.1**
ESL				*e*S	**Sb**	**10 39 46.7**	**+0.7**
TWS1	**Kuangyinshan** baz=327	**0.85**	**325**	*e*P	**Pn**	**10 39 38.3**	**-0.1**
JYNG	**Yonagunijimaku**	**0.90**	**87**	P	**Pb**	**10 39 38.1**	**-0.1**
JYNG				*e*S	**Sg**	**10 39 50.7**	**+0.6**
NCU	**National Centr** baz=312	**0.90**	**309**	*e*P	**Pb**	**10 39 37.9**	**-0.4**
NSTT	**Nanjuang** baz=287	**0.90**	**285**	*e*P	**Pg**	**10 39 38.5**	**0.0**
NSTT				*e*S	**Sb**	**10 39 50.0**	**-0.2**
TWY	**Chenhua** baz=341	**0.93**	**339**	*e*P	**Pn**	**10 39 39.6**	**+0.2**
TWY				*e*S	**Sg**	**10 39 51.6**	**+0.5**
YOJ	**Yonaguni jima**	**0.96**	**86**	P	**Pb**	**10 39 39.1**	**-0.1**
YOJ				*e*S	**Sg**	**10 39 51.9**	**-0.1**
WDT	**Danda** baz=230	**0.99**	**230**	*e*P	**Pb**	**10 39 39.9**	**-0.2**
WDT				*e*S	**Sn**	**10 39 54.2**	**-0.4**
EHY	**Hungye** baz=213	**1.07**	**213**	*e*P	**Pb**	**10 39 41.0**	**-0.1**
EHY				*e*S	**Sn**	**10 39 56.8**	**+0.8**
TWQ1	**Liyutan** baz=269	**1.08**	**267**	*e*P	**Pg**	**10 39 42.2**	**+0.3**
TWQ1				*e*S	**Sb**	**10 39 55.8**	**+0.3**
NSY	**Sanyi** baz=285	**1.09**	**271**	*e*P	**Pg**	**10 39 43.4**	**+1.3**
SMLT	**Sun Moon Lake** baz=242	**1.10**	**242**	*e*P	**Pn**	**10 39 42.0**	**+0.1**
TYC	**Yuchr** baz=255	**1.12**	**244**	*e*P	**Pn**	**10 39 42.3**	**+0.2**
TYC				*e*S	**Sn**	**10 39 57.8**	**+0.5**
TCU	**Taichung** baz=259	**1.20**	**258**	*e*P	**Pg**	**10 39 44.3**	**+0.2**
TWF1	**Yuli** baz=211	**1.21**	**210**	*e*P	**Pn**	**10 39 42.4**	**-0.9**
TWF1				*e*S	**Sb**	**10 39 58.0**	**-1.0**
YUS	**Yu-Shan** baz=227	**1.30**	**226**	*e*P	**Pn**	**10 39 44.9**	**0.0**
YUS				*e*S	**Sn**	**10 40 02.6**	**+0.3**
ALS	**Alishan** baz=217	**1.38**	**230**	*e*P	**Pb**	**10 39 47.1**	**+0.4**
CHKT	**Chengkung** baz=186	**1.41**	**203**	*e*P	**Pg**	**10 39 47.7**	**-0.3**
CHKT				*e*S	**Sb**	**10 40 05.4**	**+0.7**
CHN5	**Tsauling** baz=238	**1.42**	**236**	*e*P	**Pb**	**10 39 47.4**	**+0.2**
CHN5				*e*S	**Sg**	**10 40 08.4**	**+1.6**
ELDTW	**Lidau** baz=202	**1.49**	**216**	*e*P	**Pb**	**10 39 48.0**	**-0.3**
IRIF	**Iriomote-Funau**	**1.61**	**92**	P	**Pn**	**10 39 48.3**	**-0.6**
IRIF				*e*S	**Sn**	**10 40 08.9**	**-0.5**
CHN4	**Tsaushan** baz=233	**1.63**	**230**	*e*P	**Pb**	**10 39 50.6**	**-0.2**
CHN4				*e*S	**Sg**	**10 40 12.7**	**-0.8**
STYT	**Tauyuan** baz=211	**1.66**	**222**	*e*P	**Pn**	**10 39 49.6**	**0.0**
STYT				*e*S	**Sb**	**10 40 12.0**	**+0.1**
WTP	**Ta-pu** baz=230	**1.69**	**227**	*e*P	**Pb**	**10 39 51.6**	**-0.1**
WTP				*e*S	**Sb**	**10 40 13.3**	**+0.5**
HATJ	**Hateruma jima**	**1.72**	**101**	P	**Pn**	**10 39 51.1**	**+0.8**
SGST	**Jiashian** baz=212	**1.82**	**224**	*e*P	**Pb**	**10 39 53.5**	**-0.5**
SGST				*e*S	**Sb**	**10 40 16.8**	**+0.1**
JKRS	**Kuro-shima** baz=212	**1.88**	**95**	*e*S	**Sn**	**10 40 15.5**	**-0.4**
JIJ	**Ishigaki jima**	**1.99**	**91**	P	**Pn**	**10 39 54.5**	**+0.5**
SSD	**Sandimen** baz=217	**2.05**	**217**	*e*P	**Pb**	**10 39 56.7**	**-1.2**

*ISCJB **01** 10:52:54.7±0.4, 63°.96N±0°.02×28°.14E±0°.07, h0km, Error ellipse: s-maj=4.4km s-min=3.3km az=5.1*
*CSEM **01** 10:52:54.1±0.5, 63°.82N×28°.42E, h1km, ML2.5, Error ellipse: s-maj=13.5km s-min=5.2km az=105.0, Mining explosion.*
*NAO **01** 10:52:56.6±1.4, 63°.86N×28°.50E, ML2.5*
*HEL **01** 10:52:56.0±0.1, 64°.00N×28°.09E, h0km, ML2.5, Explosion*
*IDC **01** 10:52:56.3±1.8, 63°.78N×28°.84E, h0km, mb1 3.5/4, mb1mx3.1/50, mbtmp3.5/4, ML2.9/4, Error ellipse: s-maj=31.7km s-min=7.6km az=106.0*
*KOLA **01** 10:52:58.1, 64°.23N×26°.75E, h0km*
*UPP **01** 10:52:59.0±2.7, 63°.91N×27°.61E, h0km, ML2.3, Suspected explosion*
*BER **01** 10:53:00.4±4.0, 64°.03N×28°.07E, h0km±33km, ML1.8, ML2.5(NAO)*

ISC 01 10:52:55.5±0.7,63°.97N±0°.02×28°.02E±0°.04,h0km,n89, σ1s78/115,Finland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OUL	**Oulu**	**1.45**	**322**	PN	**Pg**	**10 53 23.4**	**+0.2**
OUFX	**Oulainen**	**1.50**	**287**	PN	**Pb**	**10 53 24.3**	**0.0**
OUFX				SN	**Sn**	**10 53 45.7**	**+1.7**
SUF	**Sumiainen**	**1.51**	**215**	PN	**Pg**	**10 53 24.7**	**+0.2**
SUF	comp=Z,32nm,0.2s			MSG		10 53 42.7	
SUF				SN	**Sn**	**10 53 45.0**	**+0.8**
JOF	**Joensuu** baz=308	**1.82**	**124**	PG	**Pb**	**10 53 28.5**	**-1.1**
JOF				SG	**Sb**	**10 53 52.8**	**-0.2**
MSF	**Maaselka** baz=194	**2.00**	**12**	PG	**Pn**	**10 53 30.4**	**-0.1**
MSF				SG	**Sb**	**10 53 58.6**	**+0.5**
KU6	**Riekki**	**2.21**	**20**	PG	**Pb**	**10 53 35.4**	**-0.9**
KU6	comp=Z,14nm,0.2s			MSG		10 54 00.3	
KU6	**Riekki**	**2.21**	**20**	Pg	**Pb**	**10 53 35.4**	**-0.9**
KEF	**Keuruu**	**2.31**	**220**	PG	**Pb**	**10 53 37.8**	**-0.2**
KEF	comp=Z,37nm,0.2s			MSG		10 54 05.7	
KEF				SG	**Sg**	**10 54 08.0**	**-1.6**
KEF	**Keuruu**	**2.31**	**220**	Pg	**Pb**	**10 53 37.8**	**-0.2**
KEF				Sg	**Sg**	**10 54 08.0**	**-1.6**
VAF	**Ylistaro**	**2.57**	**251**	PG	**Pb**	**10 53 42.1**	**-0.4**
VAF	comp=Z,40nm,0.2s			MSG		10 54 13.0	
VAF				SG	**Sb**	**10 54 15.8**	**+1.3**
VAF	**Ylistaro**	**2.57**	**251**	Pg	**Pb**	**10 53 42.0**	**-0.4**
TOF	**Tornio**	**2.63**	**325**	PB	**Pn**	**10 53 41.1**	**+1.9**
TOF	**Tornio**	**2.63**	**325**	Pb	**Pn**	**10 53 41.1**	**+1.9**
FIA0	**FINESS Array S** baz=18,slow=16	**2.69**	**200**	Pn	**Pb**	**10 53 43.7**	**-0.8**
FIA0	baz=30,slow=28			Lg	Lg	10 54 18.7	
FIA0	**FINESS Array S** baz=18,slow=16	**2.69**	**200**	Pn	**Pb**	**10 53 43.7**	**-0.8**
FIA0	baz=30,slow=28			Sn	**Sb**	**10 54 18.7**	**+0.7**
FIA0	**FINESS Array S**	**2.69**	**200**	PG	**Pb**	**10 53 43.3**	**-1.2**
FIA0				SG	**Sb**	**10 54 17.9**	**-0.1**
FIA0	**FINESS Array S**	**2.69**	**200**	Pg	**Pb**	**10 53 43.3**	**-1.2**
FIA0	**FINESS Array S** SNR=50	**2.69**	**200**	Pn	**Pb**	**10 53 43.7**	**-0.8**
FIA0				Sg	**Sb**	**10 54 17.9**	**-0.1**
FIA0	SNR=50			Sn	**Sb**	**10 54 18.7**	**+0.7**
FINES	**FINESS Array B** comp=Z,1.3nm,0.3s,baz=25,slow=17,SNR=107	**2.69**	**200**	Pn	**Pb**	**10 53 43.8**	**-0.8**
FINES	comp=Z,4.3nm,0.3s,baz=27,slow=25,SNR=22			Lg	Lg	10 54 17.9	
SJUU	**Sjulsmark**	**3.15**	**302**	P	**Pn**	**10 53 48.1**	**+1.8**
SJUU	**Sjulsmark**	**3.15**	**302**	P	**Pn**	**10 53 48.1**	**+1.8**
UMAU	**Umeaa**	**3.24**	**272**	P	**Pn**	**10 53 48.6**	**+1.1**
UMAU	**Umeaa** baz=82	**3.24**	**272**	PN	**Pn**	**10 53 48.7**	**+1.1**
UMAU	**Umeaa**	**3.24**	**272**	P	**Pn**	**10 53 48.7**	**+1.1**
VJF	**Virojoki**	**3.45**	**184**	PN	**Pn**	**10 53 52.6**	**+2.1**
VJF				SG	**Sb**	**10 54 41.8**	**+1.9**
VJF	**Virojoki**	**3.45**	**184**	Pn	**Pn**	**10 53 52.6**	**+2.1**
SGF	**Sodankyl**	**3.54**	**351**	PB	**Pb**	**10 53 56.5**	**-2.5**
SGF	**Sodankyl**	**3.54**	**351**	Pb	**Pb**	**10 53 56.4**	**-2.5**
ERTU	**Ertsjaerv**	**3.57**	**319**	P	**Pn**	**10 53 54.5**	**+2.5**
ERTU				S	**Sn**	**10 54 36.6**	**+1.8**
ERTU	**Ertsjaerv**	**3.57**	**319**	P	**Pn**	**10 53 54.5**	**+2.5**
ERTU				S	**Sn**	**10 54 36.6**	**+1.8**
PVF	**Pernaja**	**3.58**	**197**	PB	**Pb**	**10 53 57.3**	**-2.5**
PVF				SB	**Sb**	**10 54 44.3**	**+0.6**
PVF	**Pernaja**	**3.58**	**197**	Pb	**Pb**	**10 53 57.2**	**-2.5**
PAJU	**Pajala**	**3.68**	**329**	P	**Pn**	**10 53 56.0**	**+2.3**
PAJU	**Pajala**	**3.68**	**329**	P	**Pn**	**10 53 56.0**	**+2.3**
HARU	**Harads**	**3.70**	**310**	P	**Pn**	**10 53 55.8**	**+1.9**
HARU	**Harads**	**3.70**	**310**	P	**Pn**	**10 53 55.8**	**+1.9**
LILU	**Lilltraesk**	**3.75**	**294**	P	**Pn**	**10 53 56.2**	**+1.6**
LILU	**Lilltraesk**	**3.75**	**294**	P	**Pn**	**10 53 56.2**	**+1.6**
VRF	**Varrio**	**3.85**	**9**	PB	**Pn**	**10 53 58.9**	**+2.9**
VRF	**Varrio**	**3.85**	**9**	Pb	**Pn**	**10 53 58.8**	**+2.9**
MEF	**Metsahovi** baz=26	**4.13**	**206**	PB	**Pb**	**10 54 07.3**	**-1.7**
RAF	**Rauma**	**4.14**	**227**	PN	**Pn**	**10 54 02.9**	**+2.9**
RAF	**Rauma**	**4.14**	**227**	Pn	**Pn**	**10 54 02.8**	**+2.9**
APA0	**Apatity Array**	**4.18**	**27**	P	**Pn**	**10 54 02.9**	**+2.4**
APA0				S	**Sn**	**10 54 51.8**	**+1.7**
APA	**Apatity**	**4.24**	**29**	P	**Pn**	**10 54 04.2**	**+2.9**
APA				S	**Sn**	**10 54 53.5**	**+2.1**
DUNU	**Dundret**	**4.42**	**319**	P	**Pn**	**10 54 05.8**	**+1.9**
DUNU	**Dundret**	**4.42**	**319**	P	**Pn**	**10 54 05.8**	**+1.9**
HEMU	**Hemsoen**	**4.68**	**258**	PN	**Pn**	**10 54 09.3**	**+1.9**
HEMU	**Hemsoen**	**4.68**	**258**	Pn	**Pn**	**10 54 09.3**	**+1.9**
LANU	**Lannavaara**	**4.78**	**332**	PN	**Pn**	**10 54 10.7**	**+2.0**
LANU	**Lannavaara**	**4.78**	**332**	Pn	**Pn**	**10 54 10.7**	**+2.0**
HEF	**Hetta**	**4.79**	**340**	*e*P	**Pn**	**10 54 10.8**	**+1.9**
HEF	**Hetta** baz=151	**4.79**	**340**	PN	**Pn**	**10 54 10.5**	**+1.7**
HEF	**Hetta**	**4.79**	**340**	Pn	**Pn**	**10 54 10.5**	**+1.7**
HEF	**Hetta** SNR=49	**4.79**	**340**	*e*P	**Pn**	**10 54 10.8**	**+1.9**
KUA	**Kurravaara**	**5.08**	**325**	P	**Pn**	**10 54 15.5**	**+2.7**
KUA	**Kurravaara**	**5.08**	**325**	P	**Pn**	**10 54 15.5**	**+2.7**
SALU	**Saltoluokta**	**5.21**	**315**	P	**Pn**	**10 54 16.4**	**+1.8**
SALU	**Saltoluokta**	**5.21**	**315**	P	**Pn**	**10 54 16.4**	**+1.8**
NIKU	**Nikkaluokta**	**5.37**	**321**	P	**Pn**	**10 54 18.9**	**+2.2**
NIKU	**Nikkaluokta**	**5.37**	**321**	P	**Pn**	**10 54 18.9**	**+2.2**
KTK1	**Kautokeino**	**5.41**	**341**	*e*P	**Pn**	**10 54 19.7**	**+2.3**
KTK1	comp=Z,2.7nm,0.1s			IAML		10 55 26.5	
KTK1	**Kautokeino** SNR=49	**5.41**	**341**	*e*P	**Pn**	**10 54 19.7**	**+2.3**
ARA0	**ARCESS Array S** baz=168,slow=16	**5.67**	**351**	Pn	**Pn**	**10 54 22.6**	**+1.6**
ARA0	baz=168,slow=22			Sn	**Sn**	**10 55 26.0**	**-0.8**
ARA0	**ARCESS Array S** baz=168,slow=16	**5.67**	**351**	Pn	**Pn**	**10 54 22.6**	**+1.6**
ARA0	baz=168,slow=22			Sn	**Sn**	**10 55 26.0**	**-0.8**
ARA0	**ARCESS Array S** SNR=50	**5.67**	**351**	Pn	**Pn**	**10 54 22.6**	**+1.6**
ARA0	SNR=50			Sn	**Sn**	**10 55 26.0**	**-0.8**
ARCES	**ARCESS Array B** comp=Z,0.7nm,0.3s,baz=165,slow=15,SNR=71	**5.67**	**351**	Pn	**Pn**	**10 54 22.6**	**+1.6**
ARCES	comp=Z,0.5nm,0.3s,baz=174,slow=17,SNR=6.1			Pg	**Pb**	**10 54 38.1**	**+2.8**
ARCES	comp=Z,0.8nm,0.3s,baz=166,slow=30,SNR=6.2			Sn	**Sn**	**10 55 26.1**	**-0.7**
ARCES	comp=Z,0.5nm,0.3s,baz=174,slow=31,SNR=4.3			Lg	Lg	10 55 48.1	
KIF	**Kilpisjarvi**	**5.82**	**333**	Pn	**Pn**	**10 54 25.0**	**+2.1**
KIF	**Kilpisjarvi**	**5.82**	**333**	Pn	**Pn**	**10 54 25.0**	**+2.1**
KIF				*e*P	**Pn**	**10 54 25.6**	**+2.7**
KIF	**Kilpisjarvi** SNR=50	**5.82**	**333**	Pn	**Pn**	**10 54 25.0**	**+2.1**
KIF	**Kilpisjarvi** SNR=49	**5.82**	**333**	*e*P	**Pn**	**10 54 25.6**	**+2.7**
STOK	**Stokkvaagen**	**6.75**	**297**	*e*P	**Pn**	**10 54 36.9**	**+1.3**
STOK	**Stokkvaagen** SNR=47	**6.75**	**297**	*e*P	**Pn**	**10 54 36.9**	**+1.3**
KONS	**Konsvik**	**6.75**	**299**	*e*P	**Pn**	**10 54 36.3**	**+0.6**
KONS	**Konsvik** SNR=47	**6.75**	**299**	*e*P	**Pn**	**10 54 36.3**	**+0.6**
NSS	**Namsos**	**7.01**	**282**	*e*P	**Pn**	**10 54 39.8**	**+0.5**
NSS	**Namsos** SNR=47	**7.01**	**282**	*e*P	**Pn**	**10 54 39.8**	**+0.5**
LOF	**Lofoten**	**7.21**	**312**	*e*P	**Pn**	**10 54 42.5**	**+0.5**
LOF	**Lofoten** SNR=47	**7.21**	**312**	*e*P	**Pn**	**10 54 42.5**	**+0.5**
HFS	**Hagfors** baz=43,slow=12	**7.75**	**247**	Pn	**Pn**	**10 54 51.6**	**+2.2**
HFS	baz=35,slow=28			Sn	**Sn**	**10 56 16.6**	**-1.1**
HFS	**Hagfors** baz=43,slow=12	**7.75**	**247**	Pn	**Pn**	**10 54 51.6**	**+2.2**
HFS	baz=35,slow=28			Sn	**Sn**	**10 56 16.6**	**-1.1**
HFS	**Hagfors** SNR=50	**7.75**	**247**	Pn	**Pn**	**10 54 51.6**	**+2.2**
HFS	SNR=50			Sn	**Sn**	**10 56 16.6**	**-1.1**
NB2	**NORSAR Subarra** baz=65,slow=16	**8.30**	**257**	Pn	**Pn**	**10 54 58.2**	**+1.1**
NB2	**NORSAR Subarra** baz=65,slow=16	**8.30**	**257**	P	**Pn**	**10 54 58.2**	**+1.1**
NB2	**NORSAR Subarra** SNR=47	**8.30**	**257**	P	**Pn**	**10 54 58.2**	**+1.1**
NOA	**NORSAR Array B** comp=Z,0.2nm,0.3s,baz=77,slow=7.8,SNR=10.0	**8.30**	**257**	Pn	**Pn**	**10 55 00.2**	**+3.1**
SPA0	**Spitsbergen Ar** baz=150,slow=16	**14.71**	**351**	Pn	**Pn**	**10 56 22.2**	**-2.2**
SPA0	**Spitsbergen Ar** baz=150,slow=16	**14.71**	**351**	P	**Pn**	**10 56 22.2**	**-2.2**
SPITS	**Spitsbergen Ar** baz=161,slow=18,SNR=6.4	**14.71**	**351**	Pn	**Pn**	**10 56 22.1**	**-2.4**

*ISCJB **01** 10:55:55.2±0.6, 31°.29N±0°.05×115°.66W±0°.04, h7km±9km, Error ellipse: s-maj=8.6km s-min=5.9km az=22.9*
*ECX **01** 10:55:56.1±0.6, 31°.26N×115°.66W, h4km, MD2.3, ML2.5*
*MEX **01** 10:55:56.8±0.4, 31°.08N×115°.75W, h7km±20km, MD3.5*

ISC 01 10:55:55.3±1.0,31°.28N±0°.06×115°.67W±0°.04, h11km±12km,n11,σ0s43/21,4C-2D,Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.29**	**143**	*e*P	**Pg**	**10 56 01.6**	**+0.2**
SPIG				*i* S	**Sg**	**10 56 04.9**	**-0.5**
SPIG	**San Pedro Mart**	**0.29**	**143**	*e*P	**Pg**	**10 56 01.5**	**+0.2**
SPIG				*e*S	**Sg**	**10 56 05.2**	**-0.2**
SPX	**San Pedro Mart**	**0.29**	**143**	*e*P	**Pg**	**10 56 01.6**	**+0.2**
SPX				*e*S	**Sg**	**10 56 05.3**	**-0.2**
SPX				⇑*e*		10 56 05.8	
SPX	comp=N,672nm,0.1s			IAML		10 56 05.8	
SPX				⇓*e*		10 56 06.0	
SPX	comp=E,512nm,0.1s			IAML		10 56 06.0	
ECBX	**El Chinero**	**0.56**	**70**	⇑*e*P	**Pg**	**10 56 06.3**	**0.0**
ECBX				*e*S	**Sg**	**10 56 13.5**	**-0.2**
ECBX	comp=E,292nm,0.2s			IAML		10 56 13.9	
ECBX				⇑*e*		10 56 13.9	
ZAX	**El Zacaton**	**0.57**	**295**	*e*P	**Pg**	**10 56 06.2**	**-0.2**
ZAX				*e*S	**Sg**	**10 56 14.6**	**+0.7**
ZAX	comp=E,253nm,0.3s			IAML		10 56 15.8	
ZAX				⇓*e*		10 56 15.8	
ECNX	**Esteban Cantu**	**0.88**	**296**	*e*P	**Pg**	**10 56 12.2**	**-0.1**
ECNX				*e*S	**Sg**	**10 56 23.9**	**+0.1**
PBX	**Punta Banda**	**1.01**	**297**	*e*P	**Pg**	**10 56 14.3**	**-0.5**
PBX				*e*S	**Sg**	**10 56 28.3**	**+0.2**
CBX	**Cerro Bola**	**1.33**	**321**	*e*P	**Pn**	**10 56 19.8**	**-0.3**
CBX				*e*S	**Sb**	**10 56 37.4**	**-0.2**
CBX	**Cerro Bola**	**1.33**	**321**	*e*P	**Pn**	**10 56 19.6**	**-0.5**
CBX				*e*S	**Sb**	**10 56 38.0**	**+0.4**
CBX	comp=N,69nm,0.4s			IAML		10 56 40.3	
CBX				⇑*e*		10 56 40.3	
TJIG	**Tijuana**	**1.44**	**324**	*i* P	**Pn**	**10 56 21.4**	**+0.1**
TJIG				*e*S	**Sn**	**10 56 39.9**	**-0.3**
BAR	**Barrett**	**1.64**	**329**	*e*P	**Pn**	**10 56 25.2**	**+1.1**

*NIED **01** 11:03:00,35°.90N×141°.10E,h11km,Mw4.2 Best double couple: M0 2.46000×10^15 NP1:φs169.00000°,δ44.00000°, λ-107.00000°. NP2:φs12.00000°,δ49.00000°, λ-74.00000°.*
*BJI **01** 11:03:44.6,35°.68N×141°.44E,h7km,mb4.5/33,mB4.7/23, Ms4.3/15,Ms7 4.2/14*
*IDC **01** 11:03:47.8±0.5,35°.75N×140°.94E,h0km,mb4.3/24, mb1 4.4/29,mb1mx4.3/45,mbtmp4.2/29,ML4.0/4,MS3.3/11, Ms1 3.3/11,ms1mx3.0/44,Error ellipse: s-maj=15.4km s-min=12.2km az=88.0*
*ISCJB **01** 11:03:48.7±0.7,35°.88N±0°.03×141°.05E±0°.03,h14km±4km, mb4.4/64,MS3.5/15,Error ellipse: s-maj=4.8km s-min=4.1km az=153.0*
*JMA **01** 11:03:49.8±0.1,35°.83N×141°.01E,h17km±1km,M4.4*
JMA Felt II J1.
*MOS **01** 11:03:53.9±1.0,36°.23N×140°.89E,h37km,mb4.7/40,Error ellipse: s-maj=8.6km s-min=5.5km az=104.6*
*NEIC **01** 11:03:53.1±0.3,35°.80N×140°.99E,h35km,mb4.7/21,Error ellipse: s-maj=6.7km s-min=5.8km az=133.0*
NEIC Felt at Akiruno and Yachimata. Recorded [2 JMA] in Chiba, Ibaraki and Tochigi.

ISC 01 11:03:51.7±0.6,35°.83N±0°.04×141°.07E±0°.05,h24km±3km, n172,σ1s78/191,mb4.5/64,MS3.5/16,9C-7D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.21**	**234**	⇑P	**Pb**	**11 03 54.1**	**-3.3**
CHOJ				S	**Sb**	**11 03 57.2**	**-4.0**
JYT	**Yasato**	**0.82**	**300**	P	**Pb**	**11 04 04.0**	**-3.2**
JYT				S	**Sb**	**11 04 14.0**	**-3.8**
JHO	**Hitachi**	**0.88**	**333**	⇓P	**Pb**	**11 04 05.4**	**-2.9**
JHO				S	**Sb**	**11 04 17.8**	**-1.9**
BSO4	**Boso 4**	**1.03**	**216**	P	**Pn**	**11 04 09.6**	**-0.9**
BSO3	**Boso 3**	**1.12**	**204**	P	**Pn**	**11 04 09.8**	**-1.8**
MJAR	**Matsushiro Arr** 51nm,0.3s,baz=91,slow=8.8,SNR=294	**2.42**	**288**	Pn	**Pn**	**11 04 27.9**	**-1.9**
MJAR	32nm,0.3s,baz=138,slow=14,SNR=8.2			Sn	**Sn**	**11 04 55.5**	**-3.2**
MAJO	**Matsushiro**	**2.42**	**288**	*e*P	**Pn**	**11 04 28.1**	**-1.7**
MAJO				*e*		11 04 57.4	
MAJO	**Matsushiro**	**2.42**	**288**	*e*Pn	**Pn**	**11 04 28.1**	**-1.7**
MAJO				*e*Sn	**Sn**	**11 04 57.4**	**-1.4**
MAT	**Matsushiro**	**2.42**	**288**	P	**Pn**	**11 04 28.0**	**-1.8**
MAT				*e*S	**Sn**	**11 04 58.3**	**-0.5**
MJB9	**Matsu-Tunnel**	**2.43**	**288**	*e*Pn	**Pn**	**11 04 28.2**	**-1.7**
MJB9				*e*Sn	**Sn**	**11 04 57.2**	**-1.7**
JHJ2	**Mitsune**	**2.90**	**201**	*e*Pn	**Pn**	**11 04 36.2**	**-0.1**
JHJ	**Hachijo jima 2** 27nm,0.3s,baz=262,slow=22,SNR=22	**2.90**	**202**	Pn	**Pn**	**11 04 33.6**	**-2.8**
JHJ	70nm,0.3s,baz=252,slow=24,SNR=7.1			Sn	**Sn**	**11 05 09.2**	**-1.4**
INU	**Inuyama**	**3.34**	**263**	*e*Pn	**Pn**	**11 04 43.6**	**+1.2**
ERM	**Erimo**	**6.39**	**14**	*e*P	**Pn**	**11 05 23.0**	**-1.2**
ERM				*e*		11 06 35.0	
ERM	**Erimo**	**6.39**	**14**	*e*Pn	**Pn**	**11 05 23.0**	**-1.2**
ERM				*e*Sn	**Sn**	**11 06 35.0**	**-1.4**
ASAJ	**Asahikawa** 4.5nm,0.3s,baz=209,slow=9.5,SNR=18	**8.36**	**8**	Pn	**Pn**	**11 05 49.5**	**-1.8**
ASAJ	0.4nm,0.3s,baz=348,slow=20,SNR=3.8			Sn	**Sn**	**11 07 23.6**	**-1.3**
ASAJ	**Asahikawa**	**8.36**	**8**	*e*Pn	**Pn**	**11 05 50

KUR	**Kuril'sk**	**10.72**	**27**	*e*P		**Pn**	**11 06 21.8**	**-1.8**
KUR				*e*S		**Sn**	**11 08 14.5**	**-8.3**
KS15	**Wonju Array Si**	**10.72**	**283**	*e*Pn		**Pn**	**11 06 27.2**	**+3.5**
USRK	**Ussuriysk Ar.**	**10.88**	**323**	Pn		**Pn**	**11 06 24.5**	**-1.3**
	0.2nm,0.3s,baz=140,slow=12,SNR=2.9							
TJN	**Taejon**	**11.11**	**277**⇑	*e*P		**Pn**	**11 06 28.8**	**-0.2**
YSS	**Yuzh-Sakhalins**	**11.19**	**6**⇓	*e*P		**Pn**	**11 06 29.6**	**-0.4**
YSS				*e*S		**Sn**	**11 08 31.1**	**-3.2**
YSS				pmax	pmax			
	comp=Z,20nm,0.6s							
YSS				pmax	pmax			
	comp=N,20nm,0.7s							
YSS				MLR	MLR			
	comp=Z,200nm,11.0s							
YSS	**Yuzh-Sakhalins**	**11.19**	**6**	*e*Pn		**Pn**	**11 06 29.9**	**-0.2**
MDJ	**Mudanjiang**	**12.40**	**319**	P		P	11 06 53.2	-5.2
MDJ				S		**Sn**	**11 09 04.7**	**+0.7**
MDJ				pmax	pmax			
	comp=Z,6.0nm,1.0s							
MDJ				pmax	pmax			
	comp=Z,46nm,4.2s							
CN2	**Changchun**	**14.39**	**308**	*e*P		**P**	**11 07 24.8**	**+4.2**
CN2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
KLR	**Kul'dur**	**15.04**	**336**	Pn		**Pn**	**11 07 21.4**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=135,slow=12,SNR=3.6							
KLR				LR	LR		11 12 58.0	
	comp=Z,120nm,18.6s,baz=150,slow=36							
TYV	**Tymovskoe**	**15.07**	**4**	*e*P		**Pn**	**11 07 20.0**	**-3.0**
TYV				pmax	pmax			
	comp=Z,13nm,0.8s							
BJI	**Beijing**	**20.06**	**290**	P		**P**	**11 08 21.9**	**-1.2**
BJI				S		**S**	**11 12 07.5**	**+0.1**
BJI				pmax	pmax			
	comp=Z,7.0nm,1.0s							
BJI				pmax	pmax			
	comp=Z,130nm,5.9s							
BJI				LR	LR			
	comp=Z,140nm,13.0s							
BJI				LR	LR			
	comp=Z,120nm,11.5s							
PEA0	**Petropavlovsk-**	**20.87**	**29**	*e*P		**P**	**11 08 32.9**	**+1.1**
PETK	**Petropavlovsk-**	**20.87**	**29**	P		**P**	**11 08 32.1**	**+0.3**
	comp=Z,2.8nm,0.6s,baz=216,slow=7.3,SNR=6.6							
PETK				LR	LR		11 16 10.4	
	comp=Z,34nm,21.9s,baz=208,slow=35							
PEA1	**Petropavlovsk-**	**20.87**	**29**	*e*P		**P**	**11 08 32.1**	**+0.2**
WHN	**Wuhan**	**22.94**	**264**	P		**P**	**11 08 57.4**	**+3.2**
WHN				S		**S**	**11 12 57.6**	**-5.3**
WHN				LR	LR			
	comp=Z,390nm,10.3s							
HHC	**Hu-ho-hao-te**	**23.62**	**291**	*e*P		**P**	**11 09 01.1**	**+0.1**
HHC				PP		**PnPn**	**11 09 35.6**	**+7.3**
HHC				S		**S**	**11 13 14.5**	**+0.3**
HHC				pmax	pmax			
	comp=Z,21nm,0.8s							
HHC				pmax	pmax			
	comp=Z,90nm,4.2s							
HHC				LR	LR			
	comp=Z,100nm,13.4s							
HHC				LR	LR			
	comp=Z,120nm,12.3s							
HHC				LR	LR			
	comp=Z,54nm,12.0s							
YAK	**Yakutsk**	**27.19**	**348**	LR	LR		11 20 11.8	
	comp=Z,80nm,19.8s,baz=144,slow=36							
YAK	**Yakutsk**	**27.19**	**348**	*e*P		**P**	**11 09 33.8**	**+0.7**
YAK				pmax	pmax			
	comp=Z,13nm,1.0s							
H11N2	**WAKE ISLAND Hy**	**27.79**	**118**	T		T	11 38 35.9	
	baz=311,slow=75,SNR=1725							
H11N1	**WAKE ISLAND Hy**	**27.80**	**118**	T		T	11 38 35.9	
	baz=311,slow=75,SNR=1595							
H11N3	**WAKE ISLAND Hy**	**27.81**	**118**	T		T	11 38 35.9	
	baz=311,slow=75,SNR=1766							
ULN	**Ulaanbaatar**	**27.82**	**306**⇑	*e*P		**P**	**11 09 40.5**	**+1.3**
ULN				pmax	pmax			
	comp=Z,2.0nm,0.8s							
SEY	**Seymchan**	**28.02**	**11**	P		**P**	**11 09 40.4**	**-0.2**
	comp=Z,2.1nm,0.6s,baz=223,slow=8.1,SNR=7.0							
SONA1	**Songino Array**	**28.25**	**306**	*e*P		**P**	**11 09 41.5**	**-1.4**
SONA0	**Songino Array**	**28.25**	**306**	*e*P		**P**	**11 09 41.1**	**-1.9**
	comp=Z,1.9nm,0.7s							
SONM	**Songino Array**	**28.25**	**306**	P		**P**	**11 09 41.1**	**-1.9**
	comp=Z,0.9nm,0.6s,baz=98,slow=7.8,SNR=5.4							
H11S1	**WAKE ISLAND Hy**	**28.46**	**121**	T		T	11 39 26.2	
	baz=313,slow=75,SNR=947							
H11S3	**WAKE ISLAND Hy**	**28.46**	**121**	T		T	11 39 26.2	
	baz=313,slow=75,SNR=718							
H11S2	**WAKE ISLAND Hy**	**28.48**	**121**	T		T	11 39 26.2	
	baz=313,slow=75,SNR=607							
LZH	**Lanzhou**	**30.02**	**282**	*e*P		**P**	**11 09 59.8**	**+1.0**
LZH				pP		pP	11 10 04.5	-1.4
LZH				sP		sP	11 10 07.0	-1.9
LZH				pmax	pmax			
	comp=Z,15nm,1.0s							
GYA	**Guiyang**	**30.76**	**262**	*e*P		**P**	**11 10 07.0**	**+1.6**
GYA				pmax	pmax			
	comp=Z,10.0nm,1.0s							
TLY	**Talaya**	**30.93**	**313**	*e*P		**P**	**11 10 03.9**	**-2.6**
TLY				pmax	pmax			
	comp=Z,2.0nm,1.0s							
TLY				MLR	MLR			
	comp=Z,63nm,13.0s							
CD2	**Chengdu**	**31.42**	**272**	*e*P		**P**	**11 10 09.5**	**-1.6**
CD2				pP		pP	11 10 15.2	-3.0
CD2				sP		sP	11 10 17.8	-3.4
CD2				S		**S**	**11 15 15.7**	**-1.8**
CD2				sS		sS	11 15 25.6	-3.6
CD2				pmax	pmax			
	comp=Z,10.0nm,0.5s							
CD2				pmax	pmax			
	comp=Z,120nm,5.2s							
GTA	**Gaotai**	**32.67**	**289**	*e*P		**P**	**11 10 23.8**	**+1.7**
GTA				pP		pP	11 10 28.0	-1.3
GTA				sP		sP	11 10 31.2	-1.0
GTA				pmax	pmax			
	comp=Z,2.0nm,0.8s							
BILL	**Bilibino**	**35.26**	**16**⇑	*e*P		**P**	**11 10 43.1**	**-1.0**
BILL				*e*			11 12 03.3	
BILL				pmax	pmax			
	comp=Z,7.0nm,1.0s							
TIXI	**Tiksi**	**36.45**	**354**	P		**P**	**11 10 53.9**	**-0.3**
	comp=Z,1.6nm,0.7s,baz=243,slow=6.8,SNR=2.3							
TIXI	**Tiksi**	**36.45**	**354**⇓	*e*P		**P**	**11 10 53.2**	**-1.0**
TIXI				pmax	pmax			
	comp=Z,2.0nm,0.8s							
CMAR	**Chiang Mai Arr**	**40.94**	**256**	LR		LR	11 30 38.4	
	comp=Z,34nm,18.0s,baz=60,slow=40							
WMQ	**Urumqi**	**41.15**	**298**	*e*P		**P**	**11 11 33.9**	**-0.2**
WMQ				pP		pP	11 11 41.4	+0.1
WMQ				pmax	pmax			
	comp=Z,9.0nm,0.9s							
WMQ				pmax	pmax			
	comp=Z,140nm,4.6s							
WMQ				LR	LR			
	comp=Z,140nm,21.6s							
ZAA0	**Zalesovo Array**	**42.53**	**313**	*e*P		**P**	**11 11 45.5**	**+0.4**
ZAA1	**Zalesovo Array**	**42.53**	**313**	*e*P		**P**	**11 11 44.5**	**-0.6**
ZAA1				*e*PcP		**PcP**	**11 13 37.6**	**+0.3**
ZALV	**Zalesovo Beam**	**42.53**	**313**	P		**P**	**11 11 44.5**	**-0.6**
	comp=Z,3.2nm,0.7s,baz=88,slow=5.8,SNR=14							
ZALV				PcP		**PcP**	**11 13 37.6**	**+0.3**
	comp=Z,0.8nm,0.3s,baz=90,slow=1.5,SNR=4.3							
ZALV				LR	LR		11 29 30.7	
	comp=Z,24nm,19.2s,baz=68,slow=36							
NVS	**Novosibirsk**	**43.48**	**315**	*e*P		**P**	**11 11 52.9**	**+0.1**
MK01	**Makanchi Array**	**44.53**	**303**	*e*P		**P**	**11 12 01.0**	**-0.4**
MK31	**Makanchi Array**	**44.53**	**303**	*e*P		**P**	**11 12 01.3**	**-0.1**
MK31	**Makanchi Array**	**44.53**	**303**	*e*P		**P**	**11 12 01.2**	**-0.1**
MK32	**Makanchi Array**	**44.53**	**303**	*e*P		**P**	**11 12 01.3**	**-0.1**
MKAR	**Makanchi Array**	**44.53**	**303**	P		**P**	**11 12 01.3**	**-0.1**
	comp=Z,6.4nm,0.8s,baz=89,slow=10,SNR=44							
MKAR				LR	LR		11 29 38.0	
	comp=Z,28nm,20.0s,baz=90,slow=35							
MAKZ	**Makanchi**	**44.75**	**303**	*e*P		**P**	**11 12 03.1**	**0.0**
MAKZ				pmax	pmax			
	comp=Z,6.0nm,0.8s							
MAKZ	**Makanchi**	**44.75**	**303**	*e*P		**P**	**11 12 03.1**	**0.0**
	comp=Z,6.3nm,0.8s							
KURK	**Kurchatov**	**46.47**	**309**	P		**P**	**11 12 16.1**	**-0.4**
KURK				pmax	pmax			
	comp=Z,7.0nm,0.6s							
KURK	**Kurchatov**	**46.47**	**309**	*e*P		**P**	**11 12 16.2**	**-0.4**
KURBB	**Kurchatov Arra**	**46.53**	**309**	P		**P**	**11 12 16.1**	**-1.0**
	comp=Z,7.3nm,0.6s,baz=84,slow=7.9,SNR=50							
KDAK	**Kodiak Island**	**48.18**	**41**	*e*P		**P**	**11 12 30.7**	**+0.9**
KDAK				pmax	pmax			
	comp=Z,9.0nm,0.8s							
KDAK	**Kodiak Island**	**48.18**	**41**	*e*P		**P**	**11 12 30.7**	**+0.9**
	comp=Z,8.7nm,0.8s							
TKM2	**Tokmak 2**	**49.97**	**299**	*e*P		**P**	**11 12 44.8**	**+0.8**
TKM2				pmax	pmax			
	comp=Z,8.0nm,1.3s							
TKM2	**Tokmak 2**	**49.97**	**299**	*e*P		**P**	**11 12 44.8**	**+0.8**
	comp=Z,8.3nm,1.3s							
MDM	**Murphy Dome**	**50.08**	**32**	*e*P		**P**	**11 12 46.2**	**+1.9**
	comp=Z,6.1nm,0.8s							
COLA	**College**	**50.25**	**32**	*e*P		**P**	**11 12 48.1**	**+2.6**
COLA				pmax	pmax			
	comp=Z,3.0nm,1.3s							
KSH	**Kashi**	**50.65**	**295**	*e*P		**P**	**11 12 53.0**	**+3.9**
KSH				*e*pP		sP	11 12 58.9	-0.5
KSH				*e*PP		**PP**	**11 14 50.1**	**+5.1**
KSH				PcS		**PcS**	**11 18 06.6**	**+2.8**
KSH				S		**S**	**11 20 06.1**	**+3.3**
KSH				pmax	pmax			
	comp=Z,130nm,4.7s							
KSH				LR	LR			
	comp=Z,310nm,11.8s							
KSH				LR	LR			
	comp=Z,140nm,6.6s							
KSH				LR	LR			
	comp=Z,150nm,5.6s							
IL1	**Eielson Array**	**50.66**	**32**	*e*P		**P**	**11 12 49.2**	**+0.6**
ILAR	**Eielson Array**	**50.66**	**32**	P		**P**	**11 12 49.4**	**+0.7**
	comp=Z,1.8nm,0.7s,baz=266,slow=6.2,SNR=31							
ILB	**Eielson Array**	**50.66**	**32**	*e*P		**P**	**11 12 49.4**	**+0.7**
VOSK	**Vostochnaya**	**50.88**	**313**	*e*P		**P**	**11 12 50.1**	**-0.4**
VOSK				pmax	pmax			
	comp=Z,11nm,1.1s							
VOSK	**Vostochnaya**	**50.88**	**313**	*e*P		**P**	**11 12 50.1**	**-0.4**
	comp=Z,11nm,1.1s							
BVAR	**Borovoye Array**	**51.19**	**313**	P		**P**	**11 12 52.8**	**0.0**
	comp=Z,4.9nm,0.8s,baz=91,slow=6.5,SNR=15							
BVAR				PcP		**PcP**	**11 14 08.0**	**+0.1**
	comp=Z,2.2nm,0.7s,baz=72,slow=4.8,SNR=5.3							
BVAR	**Borovoye Array**	**51.19**	**313**	P		**P**	**11 12 52.8**	**0.0**
BVAR							11 14 08.0	
BVAR				pmax	pmax			
	comp=Z,3.0nm,0.6s							
BVAR				pmax	pmax			
	comp=Z,2.0nm,0.7s							
BRVK	**Borovoye**	**51.24**	**313**⇓	*e*P		**P**	**11 12 52.5**	**-0.7**
BRVK				pmax	pmax			
	comp=Z,15nm,0.8s							
BRVK	**Borovoye**	**51.24**	**313**	*e*P		**P**	**11 12 53.2**	**0.0**
	comp=Z,5.4nm,0.8s							
DOT	**Dot Lake**	**51.96**	**33**	*e*P		**P**	**11 12 59.3**	**+0.9**
	comp=Z,7.7nm,0.8s							
ZRNK	**Zerenda**	**52.02**	**313**	*e*P		**P**	**11 12 59.1**	**+0.1**
ZRNK				pmax	pmax			
	comp=Z,10.0nm,0.8s							
ZRNK	**Zerenda**	**52.02**	**313**	*e*P		**P**	**11 12 59.1**	**+0.1**
	comp=Z,9.8nm,0.8s							
KKAR	**Karatay Array**	**53.50**	**301**	*e*P		**P**	**11 13 09.8**	**-0.3**
KKAR	**Karatay Array**	**53.50**	**301**	*e*P		**P**	**11 13 09.8**	**-0.3**
INK	**Inuvik**	**55.59**	**27**	P		**P**	**11 13 25.7**	**+0.9**
	comp=Z,1.6nm,0.6s,baz=318,slow=7.6,SNR=5.9							
INK	**Inuvik**	**55.59**	**27**	*e*P		**P**	**11 13 25.5**	**+0.7**
INK				pmax	pmax			
	comp=Z,2.0nm,0.8s							
INK	**Inuvik**	**55.59**	**27**	*e*P		**P**	**11 13 25.5**	**+0.7**
	comp=Z,2.3nm,0.8s							
WB2	**Warramunga Arr**	**55.83**	**188**	*e*P		**P**	**11 13 26.9**	**-0.2**
	comp=Z,34nm,1.7s							
WR1	**Warramunga Arr**	**55.83**	**188**	*e*P		**P**	**11 13 25.1**	**-2.1**
	comp=Z,13nm,1.4s							
WRA	**Warramunga Arr**	**55.83**	**188**	P		**P**	**11 13 25.1**	**-2.1**
	comp=Z,2.8nm,0.6s,baz=5.5,slow=7.7,SNR=26							
ARU	**Arti**	**57.08**	**319**	P		**P**	**11 13 35.4**	**-0.3**
	comp=Z,10nm,0.5s,baz=85,slow=3.1,SNR=20							
ARU	**Arti**	**57.08**	**319**	*d* P		**P**	**11 13 35.2**	**-0.5**
ARU							11 14 30.3	
ARU							11 15 41.4	
ARU				S		**S**	**11 21 28.3**	**-0.7**
ARU				SS		**SS**	**11 25 10.0**	**-7.3**
ARU				pmax	pmax			
	comp=Z,23nm,1.0s							
ARU	**Arti**	**57.08**	**319**	*e*P		**P**	**11 13 35.3**	**-0.3**
	comp=Z,15nm,0.7s							
ABKAR	**Akbulak array**	**58.51**	**311**	*e*P		**P**	**11 13 45.7**	**-0.2**
AKTO	**Aktyubinsk**	**59.28**	**312**	LR		LR	11 40 56.5	
	comp=Z,29nm,18.1s,slow=38							
ASAR	**Alice Springs**	**59.56**	**188**	P		**P**	**11 13 52.7**	**-0.6**
	comp=Z,1.1nm,0.6s,baz=358,slow=5.7,SNR=23							
COCO	**West Island**	**63.45**	**230**	*i* P		**P**	**11 14 23.1**	**+3.4**
KLMR	**Klimovskoe**	**64.63**	**328**	*e*P		**P**	**11 14 24.8**	**-2.1**
KLMR				pmax	pmax			
	comp=Z,7.0nm,0.9s							
YKA	**Yellowknife Ar**	**64.99**	**30**	P		**P**	**11 14 29.8**	**+0.6**
	comp=Z,0.8nm,0.7s,baz=299,slow=6.7,SNR=5.1							
YKB5	**Yellowknife Ar**	**64.99**	**30**	*e*P		**P**	**11 14 29.8**	**+0.6**
ARA0	**ARCESS Array S**	**65.03**	**340**	*e*P		**P**	**11 14 29.8**	**+0.4**
ARCES	**ARCESS Array B**	**65.03**	**340**	P		**P**	**11 14 29.8**	**+0.4**
	comp=Z,2.2nm,0.8s,baz=72,slow=7.8,SNR=4.9							
STKA	**Stephens Creek**	**67.35**	**180**	P		**P**	**11 14 44.4**	**-0.2**
	comp=Z,0.9nm,0.4s,baz=341,slow=10,SNR=4.0							
STKA	**Stephens Creek**	**67.35**	**180**	*e*P		**P**	**11 14 44.4**	**-0.2**
	comp=Z,7.6nm,1.8s							
VRH	**Novokhopyorsk**	**68.29**	**318**	*e*P		**P**	**11 14 48.5**	**-2.0**
VRH				pmax	pmax			
	comp=Z,10.0nm,0.8s							
OBN	**Obninsk**	**68.90**	**323**	*de*P		**P**	**11 14 53.8**	**-0.4**
OBN				*e**PP		**pP**	**11 15 02.7**	**+0.9**
OBN				*e**SP		**sP**	**11 15 06.7**	**+2.1**
OBN				pmax	pmax			
	comp=Z,11nm,0.5s							
OBN				MLR	MLR			
	comp=Z,32nm,14.0s							
VSR	**Storozhevoye**	**69.66**	**319**	*e*P		**P**	**11 14 58.1**	**-0.9**
VSR				pmax	pmax			
	comp=Z,10.0nm,0.7s							
FIA1	**FINESS Array S**	**69.75**	**332**	*e*P		**P**	**11 14 59.4**	**+0.1**
FIA0	**FINESS Array S**	**69.75**	**332**	*e*P		**P**	**11 14 59.5**	**+0.1**
FIA0	**FINESS Array S**	**69.75**	**332**	*e*P		**P**	**11 14 59.5**	**+0.1**
FINES	**FINESS Array B**	**69.75**	**332**	P		**P**	**11 14 59.5**	**+0.1**
	comp=Z,7.1nm,0.8s,baz=69,slow=6.9,SNR=20							
VSU	**Vasula**	**71.35**	**330**	*de*P		**P**	**11 15 08.9**	**-0.3**
VSU				pmax	pmax			
	comp=Z,24nm,0.8s							
KBZ	**Khabaz**	**71.48**	**311**	P		**P**	**11 15 10.4**	**+0.2**
	comp=Z,4.4nm,0.9s,baz=140,slow=1.6,SNR=7.3							
KIV	**Kislovodsk**	**71.49**	**311**	*ce*P		**P**	**11 15 11.4**	**+1.0**
KIV				*e**SP		**sP**	**11 15 22.9**	**+2.0**
KIV				*e*			11 15 25.8	
KIV				pmax	pmax			
	comp=Z,15nm,1.7s							
KIV				MLR	MLR			
	comp=Z,34nm,18.0s							
NEY	**Neytrino**	**71.84**	**310**⇑	*e*P		**P**	**11 15 13.1**	**+0.4**
NEY				pmax	pmax			
	comp=Z,1.0nm,1.0s							
SUMG	**Summit**	**71.89**	**360**	*e*P		**P**	**11 15 13.9**	**+1.2**
SUMG				pmax	pmax			
	comp=Z,9.0nm,1.0s							
SUMG	**Summit**	**71.89**	**360**	*e*P		**P**	**11 15 13.9**	**+1.2**
	comp=Z,9.1nm,1.0s							
NC405	**NORSAR Array S**	**74.98**	**337**	*e*P		**P**	**11 15 30.9**	**+0.3**
AKASG	**Malin Array Be**	**75.08**	**322**	P		**P**	**11 15 31.1**	**-0.2**
	comp=Z,3.7nm,0.7s,baz=46,slow=6.0,SNR=13							
AKBB	**Malin Array Si**	**75.08**	**322**	*e*P		**P**	**11 15 31.6**	**+0.2**
AKBB				pmax	pmax			
	comp=Z,6.0nm,0.6s							
AKBB	**Malin Array Si**	**75.08**	**322**	*e*P		**P**	**11 15 31.6**	**+0.2**
	comp=Z,6.3nm,0.6s							
KIEV	**Kiev**	**75.09**	**322**	*e*P		**P**	**11 15 31.6**	**+0.2**
KIEV				pmax	pmax			
	comp=Z,7.0nm,0.7s							
KIEV	**Kiev**	**75.09**	**322**	*e*P		**P**	**11 15 31.6**	**+0.2**
	comp=Z,6.6nm,0.7s							
NB2	**NORSAR Subarra**	**75.19**	**337**	P		**P**	**11 15 31.5**	**-0.4**
	comp=Z,6.8nm,0.9s,baz=41,slow=5.9							
NB200	**NORSAR Array S**	**75.19**	**337**	*e*P		**P**	**11 15 32.1**	**+0.2**
NOA	**NORSAR Array B**	**75.19**	**337**	P		**P**	**11 15 32.1**	**+0.2**
	comp=Z,4.4nm,0.9s,baz=39,slow=5.7,SNR=9.3							
NOA				LR	LR		11 51 40.2	
	comp=Z,28nm,19.4s,baz=40,slow=38							
H17A	**Grant Village**	**77.12**	**44**	*e*P		**P**	**11 15 44.0**	**+0.5**
	comp=Z,10nm,1.3s							
PD31	**Pinedale Array**	**78.71**	**45**	*e*P		**P**	**11 15 53.4**	**+1.1**
PDAR	**Pinedale Array**	**78.71**	**45**	P		**P**	**11 15 53.6**	**+1.3**
	comp=Z,0.8nm,0.5s,baz=193,slow=4.6,SNR=3.8							
BR101	**Keskin Array S**	**79.44**	**312**	*e*P		**P**	**11 15 57.0**	**+0.7**
BRTR	**Keskin Array B**	**79.44**	**312**	P		**P**	**11 15 57.0**	**+0.7**
	comp=Z,2.5nm,0.9s,baz=99,slow=3.9,SNR=10							
BRTR	**Keskin Array B**	**79.44**	**312**	P		**P**	**11 15 57.0**	**+0.7**
BRTR				pmax	pmax			
	comp=Z,3.0nm,0.9s							
STHS	**Stebnicka Huta**	**79.78**	**325**	*e*P		**P**	**11 15 58.9**	**+1.1**
STHS				pmax	pmax			
	comp=Z,3.0nm,0.8s							
STHS	**Stebnicka Huta**	**79.78**	**325**	*e*P		**P**	**11 15 58.9**	**+1.1**
BR231	**Keskin MP Arra**	**79.89**	**312**	*e*P		**P**	**11 15 56.4**	**-2.3**
BR231				*e*S		**S**	**11 25 59.6**	**-1.2**
CRVS	**Cervenica-Dubn**	**80.04**	**324**	*e*P		**P**	**11 15 59.7**	**+0.6**
CRVS	**Cervenica-Dubn**	**80.04**	**324**	*e*P		**P**	**11 15 59.7**	**+0.6**
SRU	**San Rafael Swe**	**80.41**	**48**	*e*P		**P**	**11 16 00.4**	**-1.2**
SRU				pmax	pmax			
	comp=Z,3.0nm,0.7s							
SRU	**San Rafael Swe**	**80.41**	**48**	*e*P		**P**	**11 16 00.4**	**-1.2**
	comp=Z,2.7nm,0.7s							
VYHS	**Vyhne**	**81.56**	**325**	*e*P		**P**	**11 16 07.7**	**+0.4**
VYHS				pmax	pmax			
	comp=Z,3.0nm,1.3s							
VYHS	**Vyhne**	**81.56**	**325**	*e*P		**P**	**11 16 07.7**	**+0.4**
PV10	**Paradox Valley**	**81.78**	**48**	*e*P		**P**	**11 16 10.5**	**+1.5**
BRG	**Berggiesshubel**	**81.95**	**329**	*e*P		**P**	**11 16 09.1**	**-0.1**
	comp=Z,4.3nm,0.7s							
BRG				*e*			11 16 13.8	
	comp=Z,4.7nm,1.0s							
BRG	**Berggiesshubel**	**81.95**	**329**	*e*P		**P**	**11 16 09.1**	**-0.1**
BRG				pmax	pmax			
	comp=Z,4.0nm,0.7s							
CLL	**Collm**	**82.00**	**330**⇑	*i* P		**P**	**11 16 09.7**	**+0.2**
	comp=Z,5.0nm,0.9s							
CLL				*e*			11 16 14.0	
CLL	**Collm**	**82.00**	**330**⇑	*i* P		**P**	**11 16 09.7**	**+0.2**
CLL				pmax	pmax			
	comp=Z,5.0nm,0.9s							
KHC	**Kasperske Hory**	**83.42**	**328**	*e*P		**P**	**11 16 17.6**	**+0.6**
KHC				pmax	pmax			
	comp=Z,7.0nm,1.8s							
KHC	**Kasperske Hory**	**83.42**	**328**	*e*P		**P**	**11 16 17.6**	**+0.6**
	comp=Z,6.6nm,1.8s							
GERES	**GERESS Array B**	**83.59**	**328**	P		**P**	**11 16 17.6**	**-0.4**
	comp=Z,1.1nm,0.6s,baz=18,slow=6.2,SNR=9.2							
GEA0	**GERESS Array S**	**83.59**	**328**	*e*P		**P**	**11 16 17.7**	**-0.3**
ANMO	**Albuquerque**	**85.58**	**50**⇑	*e*P		**P**	**11 16 29.4**	**+1.0**
ANMO				pmax	pmax			
	comp=Z,5.0nm,2.5s							
BFO	**Black Forest**	**86.22**	**331**	*e*P		**P**	**11 16 30.9**	**-0.2**
BFO				pmax	pmax			
	comp=Z,6.0nm,0.8s							
BFO	**Black Forest**	**86.22**	**331**	*e*P		**P**	**11 16 30.9**	**-0.2**
	comp=Z,5.8nm,0.8s							
SCHQ	**Schefferville**	**86.57**	**16**	LR		LR	11 57 07.2	
	comp=Z,26nm,19.2s,baz=102,slow=37							
LTX	**Lajitas**	**91.08**	**52**	*e*P		**P**	**11 16 55.2**	**+0.6**
LTX	**Lajitas**	**91.08**	**52**	*e*P		**P**	**11 16 55.2**	**+0.6**
TXAR	**Lajitas Array**	**91.08**	**52**	P		**P**	**11 16 55.2**	**+0.6**
	comp=Z,0.6nm,0.9s,baz=302,slow=2.5,SNR=6.8							
TOA1	**Torodi Ar. Sit**	**117.97**	**314**	*e*PKPdf		**PKPdf**	**11 22 36.1**	**-0.8**
TORD	**Torodi Ar. Bea**	**117.98**	**314**	PKP		**PKPdf**	**11 22 36.1**	**-0.8**
	comp=Z,0.6nm,1.0s,baz=24,slow=2.3,SNR=2.6							
LPAZ	**La Paz**	**147.53**	**61**	PKPbc		**PKPbc**	**11 23 35.4**	**+0.3**
	comp=Z,2.4nm,0.7s,baz=281,slow=3.3,SNR=8.5							

MAN 01 11:07:00, 18°.66N×121°.02E, h29km, mb3.5, ML2.2, MS1.7, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PIP	**Pasuquin**	**0.51**	**229**⇓	*i* P		Pb	11 07 10.8	+0.3
PIP				*e*S		Sn	11 07 18.5	-0.5
APYP	**Conner**	**0.82**	**165**	*e*P		Pn	11 07 14.8	-0.8
APYP				*e*S		Sb	11 07 25.1	-1.3
ABRA	**Dolores**	**1.05**	**196**	*e*P		Pn	11 07 18.5	-0.2
ABRA				*e*S		Sn	11 07 32.1	-0.2

NIED ***01*** *11:11:00.3±0.5, 35°.90N×141°.00E, h14km, Mw3.6 Best double couple: M0 2.92000×10^14 NP1: φs 142.00000°, δ 57.00000°, λ -146.00000°. NP2: φs 31.00000°, δ 62.00000°, λ -38.00000°.*

IDC ***01*** *11:11:15.1±1.2, 35°.81N×140°.98E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.6/40, mbtmp3.6/8, ML3.1/2, Error ellipse: s-maj=28.5km s-min=18.9km az=78.0*

ISCJB ***01*** *11:11:16.5±0.9, 35°.84N±0°.03×141°.04E±0°.07, h23km±5km, mb3.6/6,

GDZ				*i* S	**Sg**	**11 14 04.0**	**-0.3**
GDZ	**Gediz**	**0.38**	**98**	P	**Pg**	**11 13 58.7**	**-0.5**
GDZ				S	**Sg**	**11 14 04.0**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**50**	*e*PG	**Pg**	**11 14 00.7**	**-0.2**
TVSB				*e*SG	**Sg**	**11 14 07.4**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**50**	*e*Pg	**Pg**	**11 14 00.7**	**-0.2**
TVSB				*e*Sg	**Sg**	**11 14 07.4**	**+0.2**
AKS	**Akhisar**	**0.96**	**254**	*e*PG	**Pb**	**11 14 09.5**	**-0.7**
AKS	**Akhisar**	**0.96**	**254**	*e*Pg	**Pb**	**11 14 09.5**	**-0.7**
BALB	**Balikesir**	**0.99**	**300**	*e*PG	**Pb**	**11 14 10.5**	**-0.3**
BALB	**Balikesir**	**0.99**	**300**	*e*Pg	**Pb**	**11 14 10.5**	**-0.3**
IGD	**Bursa**	**1.13**	**8**	*i* P	**Pg**	**11 14 12.6**	**-0.7**
IGD				*i* S	**Sn**	**11 14 29.3**	**+0.3**
CAVI	**Cavuskoy**	**1.25**	**32**	*e*PN	**Pg**	**11 14 15.1**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**32**	*e*Pn	**Pg**	**11 14 15.1**	**-0.3**
IZI	**Iznik**	**1.25**	**17**	*e*PN	**Pg**	**11 14 15.4**	**-0.1**
IZI	**Iznik**	**1.25**	**17**	*e*Pn	**Pg**	**11 14 15.4**	**-0.1**
BORA	**Eskisehir**	**1.35**	**56**	*i* P	**Pg**	**11 14 17.0**	**-0.5**
BORA				*i* S	**Sn**	**11 14 35.4**	**+0.9**
BORA	**Eskisehir**	**1.35**	**56**	P	**Pg**	**11 14 17.0**	**-0.5**
BORA				S	**Sn**	**11 14 35.4**	**+0.9**
ARMT	**Armutlu**	**1.43**	**356**	*e*PN	**Pb**	**11 14 18.3**	**+0.1**
ARMT	**Armutlu**	**1.43**	**356**	*e*Pn	**Pb**	**11 14 18.3**	**+0.1**

IDC 01 11:40:18.5±1.8, 16°97S×178°09W, h0km, mb4.1/5, mb1 4.3/5, mb1mx3.8/35, mbtmp4.1/5, Error ellipse: s-maj=149.0km s-min=29.4km az=157.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**39.36**	**240**	P	P	11 47 50.6	+0.8
	2.0nm,0.7s,baz=86,slow=13,SNR=4.0						
WRA	**Warramunga Arr**	**45.11**	**259**	P	P	11 48 37.2	+0.2
	1.2nm,0.5s,baz=97,slow=7.3,SNR=49						
ASAR	**Alice Springs**	**45.35**	**253**	P	P	11 48 39.0	0.0
	4.5nm,0.5s,baz=87,slow=9.0,SNR=128						
FITZ	**Fitzroy Crossi**	**53.49**	**260**	P	P	11 49 39.8	-1.3
	1.9nm,0.9s,baz=104,slow=8.7,SNR=5.3						
TXAR	**Lajitas Array**	**85.23**	**58**	P	P	11 52 57.6	0.0
	0.4nm,0.7s,baz=210,slow=5.9,SNR=6.1						

*NIED **01** 11:42:00, 39°70N×142°40E, h41km, Mw3.6 Best double couple: M₀2.41000×10¹⁴ NP1:φs194.00000°,δ23.00000°, λ83.00000°. NP2:φs22.00000°,δ67.00000°,λ93.00000°.*

JMA 01 11:42:19.5, 39°75N×142°36E, h40km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.43**	**296**	P	Pn	11 42 29.4	+0.1
JTH				S	Sn	11 42 36.3	+0.2
MIYJ	**Miyakonagasawa**	**0.45**	**248**	P	Pn	11 42 29.5	-0.1
MIYJ				S	Sn	11 42 36.7	0.0
JKZ	**Kuzumaki**	**0.83**	**287**	P	Pn	11 42 34.9	+0.2
JKZ				S	Sn	11 42 46.0	+0.2
OFUJ	**Ofunato**	**0.86**	**219**	P	Pn	11 42 35.1	0.0
OFUJ				S	Sn	11 42 46.0	-0.4
JOM	**Ohasama**	**0.87**	**252**	P	Pn	11 42 35.6	+0.3
JOM				S	Sn	11 42 47.4	+0.7
JANG	**Nango**	**0.90**	**314**	P	Pn	11 42 35.4	-0.3
JANG				*e*S	Sn	11 42 47.1	-0.4
JMK	**Ichinoseki**	**1.19**	**228**	P	Pn	11 42 39.9	+0.3
JMK				S	Sn	11 42 55.0	+0.4
JRG	**Rokugo**	**1.38**	**256**	P	Pn	11 42 43.1	+0.8
JRG				*e*S	Sn	11 43 00.4	+1.1
JAH	**Hinai**	**1.40**	**289**	P	Pn	11 42 43.2	+0.7
JAH				*e*S	Sn	11 43 00.7	+1.0
JTM	**Tenmabayashi**	**1.43**	**317**	P	Pn	11 42 43.7	+0.7
JTM				*e*S	Sn	11 43 01.4	+0.8
JIO	**Ouri**	**1.51**	**212**	P	Pn	11 42 44.5	+0.4
JIO				*e*S	Sn	11 43 02.6	0.0

*ISCJB **01** 11:49:39.4±0.7, 7°56S×0°07×128°1E±0°2, h142km, mb3.7/6, Error ellipse: s-maj=23.4km s-min=8.2km az=169.3*

*IDC **01** 11:49:40.6±4.7, 7°52S×128°13E, h135km±43km, mb3.6/6, mb1 3.7/9, mb1mx3.5/36, mbtmp4.0/9, Error ellipse: s-maj=69.1km s-min=18.7km az=66.0*

ISC 01 11:49:41.0±0.8, 7°64S±0°08×128°2E±0°2, h142km, n11, σ1s97/14, mb3.8/6, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.69**	**193**	P	**Pn**	**11 52 11.7**	**+1.4**
	2.2nm,0.3s,baz=27,slow=10,SNR=77						
FITZ				S	**Sn**	**11 54 07.4**	**-1.0**
	2.0nm,0.3s,baz=136,slow=20,SNR=8.4						
WRA	**Warramunga Arr**	**13.60**	**155**	P	**Pn**	**11 52 48.5**	**+0.2**
	0.4nm,0.3s,baz=330,slow=12,SNR=22						
WRA				S	Sn	11 55 10.6	-8.3
	1.4nm,0.3s,baz=334,slow=23,SNR=14						
ASAR	**Alice Springs**	**16.85**	**162**	P	**Pn**	**11 53 31.4**	**+2.8**
	0.4nm,0.3s,baz=340,slow=11,SNR=42						
ASAR				S	**S**	**11 56 31.7**	**-5.0**
	0.3nm,0.3s,baz=318,slow=15,SNR=4.9						
STKA	**Stephens Creek**	**27.16**	**154**	P	**P**	**11 55 11.8**	**+0.7**
	2.9nm,1.0s,baz=314,slow=9.3,SNR=3.0						
SONM	**Songino Array**	**58.50**	**343**	P	**P**	**11 59 22.3**	**-0.2**
	0.4nm,0.6s,baz=159,slow=4.5,SNR=2.9						
MKAR	**Makanchi Array**	**67.79**	**328**	P	**P**	**12 00 23.3**	**-0.3**
	0.5nm,0.5s,baz=119,slow=7.9,SNR=6.1						
ZALV	**Zalesovo Beam**	**71.38**	**335**	P	**P**	**12 00 44.2**	**-1.2**
	1.0nm,0.3s,baz=162,slow=4.2,SNR=1.9						
VNDA	**Vanda**	**72.03**	**173**	P	**P**	**12 00 50.3**	**+1.3**
	0.4nm,0.7s,baz=330,slow=3.7,SNR=3.1						
BRTR	**Keskin Array B**	**98.32**	**309**	P	**P**	**12 03 01.5**	**-1.5**
	0.5nm,0.7s,baz=70,slow=1.7,SNR=3.5						
TORD	**Torodi Ar. Bea**	**127.16**	**281**	PKP	**PKPdf**	**12 08 29.6**	**0.0**
	0.4nm,0.8s,baz=126,slow=2.0,SNR=2.5						
LPAZ	**La Paz**	**151.26**	**146**	PKPbc	**PKPbc**	**12 09 20.2**	**+0.7**
	0.5nm,0.6s,baz=233,slow=5.1,SNR=2.3						
LPAZ				PKPab	**PKPab**	**12 09 28.5**	**+0.7**
	0.6nm,0.4s,baz=236,slow=3.6,SNR=3.8						

MAN 01 11:49:46.13°77N×120°39E, h63km, mb4.2, ML3.0, MS2.8, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.61**	**115**	*e*P	Pn	11 50 02.1	+2.7
PGP				*e*S	Sn	11 50 12.6	+3.4
SJMP	**San Jose**	**1.48**	**151**	*e*P	Pn	11 50 12.7	+2.2
SJMP				*e*S	Sn	11 50 31.4	+2.5
BUSP	**Coron**	**1.76**	**186**	*e*P	Pn	11 50 15.9	+1.6
BUSP				*e*S	Sn	11 50 38.3	+2.6
OTRP	**Odiongan**	**2.11**	**131**	*e*P	Pn	11 50 21.3	+2.2
OTRP				*e*S	Sn	11 50 45.4	+1.1
BALP	**Baler**	**2.27**	**30**	*e*P	Pn	11 50 22.7	+1.5
BALP				*e*S	Sn	11 50 55.5	+7.2
ENPP	**El Nido**	**2.71**	**200**	*e*P	Pn	11 50 29.0	+1.8
ENPP				*e*S	Sn	11 50 59.6	+0.7

*IDC **01** 12:19:05.4±1.4, 7°93S×129°68E, h0km, mb4.0/2, mb1 3.9/5, mb1mx3.5/43, mbtmp3.8/5, ML3.5/3, Error ellipse: s-maj=40.4km s-min=22.7km az=66.0*

*ISCJB **01** 12:19:08.4±1.4, 7°97S±0°09×129°7E±0°1, h33km, mb4.2/1, Error ellipse: s-maj=17.8km s-min=12.3km az=168.6*

ISC 01 12:19:10.5±1.4, 7°9S±0°1×129°7E±0°1, h35km, n6, σ0s89/9, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.87**	**201**	Pn	**Pn**	**12 21 44.1**	**+0.4**
	0.3nm,0.3s,baz=13,slow=9.2,SNR=22						
FITZ				Sn	**Sn**	**12 23 43.5**	**-0.7**
	0.6nm,0.3s,baz=170,slow=15,SNR=7.9						
WRA	**Warramunga Arr**	**12.76**	**160**	Pn	**Pn**	**12 22 09.7**	**+0.1**
	0.3nm,0.3s,baz=338,slow=13,SNR=23						
WRA				Sn	**Sn**	**12 24 31.9**	**+1.4**
	0.4nm,0.3s,baz=332,slow=24,SNR=7.6						
ASAR	**Alice Springs**	**16.16**	**166**	Pn	**Pn**	**12 22 54.5**	**-0.6**
	0.1nm,0.3s,baz=346,slow=14,SNR=8.7						
ASAR				Sn	**Sn**	**12 25 53.4**	**0.0**
	0.1nm,0.3s,baz=346,slow=27,SNR=3.6						
CTA	**Charters Tower**	**20.07**	**129**	P	**P**	**12 23 40.0**	**-1.0**
	4.3nm,0.9s,baz=302,slow=13,SNR=2.9						
GEYT	**Alibeck**	**80.59**	**310**	P	**P**	**12 31 20.5**	**+0.7**

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	1.3nm,0.4s,baz=94,slow=8.8,SNR=2.3						
TORD	**Torodi Ar. Bea**	**128.71**	**280**	PKP	**PKPdf**	**12 38 14.7**	**-0.5**
	0.5nm,0.8s,baz=47,slow=7.5,SNR=4.8						

*IDC **01** 12:24:23.8±6.3, 50°71N×171°85W, h0km, mb3.7/4, mb1 3.8/5, mb1mx3.4/67, mbtmp3.6/5, ML3.9/1, Error ellipse: s-maj=157.8km s-min=29.2km az=165.0*

*NEIC **01** 12:24:26.0, 50°65N×171°67W, h47km, ML3.1(AEIC), After AEIC.*

ISC 01 12:24:28.5±1.5, 50°8N±0°2×171°76W±0°05, h35km, n21, σ1s60/26, mb3.8/4, South of Aleutian Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOFP	**Korovin Flat P**	**2.07**	**316**	P	**Pn**	**12 24 59.8**	**-1.0**
KOSE	**Korovin Southe**	**2.10**	**318**	P	**Pn**	**12 25 00.6**	**-0.6**
KOKL	**Mount Kliuchef**	**2.15**	**316**	P	**Pn**	**12 25 00.8**	**-1.1**
KOKV	**Korovin Volcan**	**2.16**	**317**	P	**Pn**	**12 25 00.3**	**-1.7**
KOKV				S	**Sn**	**12 25 28.6**	**+0.9**
KONE	**Korovin Northe**	**2.17**	**318**	P	**Pn**	**12 25 01.3**	**-0.7**
NIKH	**Nikolski High**	**2.82**	**39**	P	**Pn**	**12 25 09.2**	**-1.8**
NIKH				S	**Sn**	**12 25 42.2**	**-1.5**
GSMY	**Great Sitkin M**	**2.96**	**296**	P	**Pn**	**12 25 10.8**	**-2.2**
GSCK	**Great Sitkin C**	**3.01**	**295**	P	**Pn**	**12 25 11.3**	**-2.3**
GSTD	**Great Sitkin T**	**3.02**	**296**	P	**Pn**	**12 25 11.6**	**-2.2**
GSTD				S	**Sn**	**12 25 46.9**	**-1.9**
ETKA	**Kagalaska Isla**	**3.10**	**292**	P	**Pn**	**12 25 12.4**	**-2.5**
ADAG	**Mount Adagdak**	**3.25**	**293**	P	**Pn**	**12 25 15.6**	**-1.4**
OKTU	**Okmok Mt. Tuli**	**3.45**	**40**	P	**Pn**	**12 25 18.1**	**-1.6**
OKER	**Okmok East Rim**	**3.50**	**39**	P	**Pn**	**12 25 18.6**	**-1.8**
TAFP	**Tanaga Falls P**	**4.05**	**288**	P	**Pn**	**12 25 26.4**	**-1.6**
TAFP				S	**Sn**	**12 26 13.5**	**-0.7**
UNV	**Unalaska Valle**	**4.43**	**45**	P	**Pn**	**12 25 31.1**	**-2.1**
UNV				S	**Sn**	**12 26 22.8**	**-0.7**
ILAR	**Eielson Array**	**19.08**	**33**	P	**Pn**	**12 28 48.7**	**+0.1**
	0.2nm,0.3s,baz=225,slow=11,SNR=10						
INK	**Inuvik**	**25.47**	**32**	P	**P**	**12 29 54.5**	**+1.8**
	1.5nm,0.5s,baz=259,slow=9.5,SNR=9.0						
YKA	**Yellowknife Ar**	**32.40**	**47**	P	**P**	**12 30 55.6**	**+1.1**
	0.1nm,0.4s,baz=274,slow=8.2,SNR=3.5						
SONM	**Songino Array**	**50.82**	**301**	P	**P**	**12 33 26.3**	**+1.0**
	0.5nm,0.5s,baz=73,slow=5.7,SNR=3.6						
KURK	**Kurchatov**	**62.54**	**318**	P	**P**	**12 34 49.2**	**+0.9**
KURBB	**Kurchatov Arra**	**62.64**	**318**	P	**P**	**12 34 49.2**	**+0.2**
	0.7nm,0.6s,baz=44,slow=7.0,SNR=4.5						

*TEH **01** 12:29:25.4, 30°18N×51°63E, h10km, ML3.5*

*ISCJB **01** 12:29:26.4±1.0, 30°01N±0°04×51°6E±0°1, h15km, Error ellipse: s-maj=14.5km s-min=4.3km az=159.8*

*DSN **01** 12:29:27.3±2.1, 30°34N×51°92E, h10km, Error ellipse: s-maj=23.2km s-min=20.1km az=125.0*

*CSEM **01** 12:29:30.1±0.6, 30°18N×51°79E, h20km, ML3.5, Error ellipse: s-maj=18.2km s-min=8.1km az=73.0*

*THR **01** 12:29:30.2±0.8, 30°13N×51°84E, h46km±15km, ML3.7*

*OMAN **01** 12:29:33.4±99.0, 29°95N×51°84E, h36km±40km, Error ellipse: s-maj=191.5km s-min=11.2km az=352.0*

ISC 01 12:29:28.7±1.1, 30°13N±0°04×51°71E±0°06, h15km, n41, σ1s01/47, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHI	**Shiraz**	**0.85**	**125**	*e*Pg	**Pg**	**12 29 44.6**	**-0.6**
SHI				*e*Sg	**Sn**	**12 29 59.5**	**+0.9**
SHI				*e*AMB	AMB	12 30 03.0	
	comp=E,44μm,0.1s						
SHI	**Shiraz**	**0.85**	**125**	*e*Pg	**Pg**	**12 29 44.6**	**-0.6**
SHI				*e*Sg	**Sn**	**12 29 59.5**	**+0.9**
IPAR	**Pars**	**1.19**	**104**	*e*Pg	**Pg**	**12 29 52.7**	**+0.9**
IPAR				*e*AMB	AMB	12 30 14.1	
	comp=Z,8μm,0.3s						
IPAR	**Pars**	**1.19**	**104**	*e*Pg	**Pg**	**12 29 52.7**	**+0.9**
AHBU	**AHRAM**	**1.32**	**196**	*e*Pg	**Pg**	**12 29 55.0**	**+0.9**
ISRV	**Sarvestan**	**1.43**	**121**	*e*Pg	**Pn**	**12 29 54.4**	**0.0**
ISRV				*e*AMB	AMB	12 30 26.5	
	comp=Z,22μm,0.3s						
ISRV	**Sarvestan**	**1.43**	**121**	*e*Pg	**Pn**	**12 29 54.4**	**0.0**
IRAM	**Ramesheh**	**1.77**	**19**	*e*Pn	**Pn**	**12 29 57.1**	**-1.9**
IRAM				*e*AMB	AMB	12 30 26.5	
	comp=Z,7μm,0.3s						
IRAM	**Ramesheh**	**1.77**	**19**	*e*Pn	**Pn**	**12 29 57.1**	**-1.9**
GHIR	**Ghir-Karzin**	**2.15**	**149**	*e*Pg	**Pb**	**12 30 07.7**	**+0.2**
GHIR				*e*Sg	**Sb**	**12 30 35.3**	**+1.3**
GHIR				AML	AML	12 30 47.5	
	comp=N,386nm,0.5s						
GHIR	**Ghir-Karzin**	**2.15**	**149**	*e*Pg	**Pb**	**12 30 07.7**	**+0.2**
GHIR				*e*Sg	**Sb**	**12 30 35.3**	**+1.3**
IGAR	**Gharneh**	**2.28**	**7**	*e*AMB	AMB	12 30 49.0	
	comp=Z,3μm,0.6s						
IGAR				*e*Pn	**Pn**	**12 30 06.4**	**+0.4**
ISAD	**Sadrabad**	**2.45**	**43**	*e*AMB	AMB	12 30 51.6	
	comp=Z,2μm,0.3s						
ISAD				*e*Pn	**Pn**	**12 30 09.7**	**+1.3**
IPIR	**Pirpir**	**2.64**	**345**	*e*Pn	**Pn**	**12 30 10.5**	**-0.5**
IPIR				*e*AMB	AMB	12 30 56.8	
	comp=Z,2μm,0.3s						
IPIR	**Pirpir**	**2.64**	**345**	*e*Pn	**Pn**	**12 30 10.5**	**-0.5**
IMEH	**Mehriz**	**2.79**	**63**	*e*Pn	**Pn**	**12 30 14.0**	**+0.9**
IMEH				*e*AMB	AMB	12 31 06.8	
	comp=Z,1μm,0.4s						
IMEH	**Mehriz**	**2.79**	**63**	*e*Pn	**Pn**	**12 30 14.0**	**+0.9**
IZEF	**Zefreh**	**2.80**	**11**	*e*Pn	**Pn**	**12 30 12.9**	**-0.4**
IZEF				*e*AMB	AMB	12 30 59.0	
	comp=Z,835nm,0.3s						
IZEF	**Zefreh**	**2.80**	**11**	*e*Pn	**Pn**	**12 30 12.9**	**-0.4**
NASN	**Na'in**	**2.82**	**19**	*e*Pn	**Pn**	**12 30 14.1**	**+0.6**
NASN	**Na'in**	**2.82**	**19**	*e*Pn	**Pn**	**12 30 14.1**	**+0.6**
IKLH	**Kolahrood**	**3.18**	**358**	*e*Pn	**Pn**	**12 30 18.0**	**-0.4**
IKLH				*e*AMB	AMB	12 30 57.5	
	comp=Z,829nm,0.3s						
IKLH	**Kolahrood**	**3.18**	**358**	*e*Pn	**Pn**	**12 30 18.0**	**-0.4**
SHGR	**Shooshtar-Gavs**	**3.18**	**309**	AML	AML	12 31 12.3	
	comp=E,286nm,0.9s						
IBAF	**Bafgh**	**3.62**	**65**	*e*Pn	**Pn**	**12 30 24.6**	**+0.2**
IBAF				*e*AMB	AMB	12 30 34.4	
	comp=Z,348nm,0.2s						
IBAF	**Bafgh**	**3.62**	**65**	*e*Pn	**Pn**	**12 30 24.6**	**+0.2**
KRBR	**Kerman**	**4.38**	**91**	*e*Pn	**Pn**	**12 30 33.6**	**-1.3**
KRBR	**Kerman**	**4.38**	**91**	*e*Pn	**Pn**	**12 30 33.6**	**-1.3**
BNDS	**Bandar-Abbas**	**4.77**	**124**	*e*Pn	**Pn**	**12 30 39.8**	**-0.4**
BNDS	**Bandar-Abbas**	**4.77**	**124**	*e*Pn	**Pn**	**12 30 39.8**	**-0.4**
BANOM	**Banah**	**5.83**	**135**	*i* P	**Pn**	**12 30 54.5**	**-0.2**
	SNR=10						
BANOM	**Banah**	**5.83**	**135**	Pn	**Pn**	**12 30 54.6**	**-0.1**
	SNR=10						
BANOM	**Banah**	**5.83**	**135**	P	**Pn**	**12 30 54.6**	**-0.1**
	SNR=10						
BANOM				S	**Sn**	**12 31 58.7**	**-2.7**
BANOM	**Banah**	**5.83**	**135**	P	**Pn**	**12 30 54.6**	**-0.1**
	SNR=10						
BANOM				S	**Sn**	**12 31 58.7**	**-2.7**
NAZ	**Nazwa, Dubai**	**6.21**	**145**	P	**Pn**	**12 31 00.3**	**+0.5**
UOSS	**Minazif**	**6.53**	**141**	P	**Pn**	**12 31 04.0**	**-0.2**
HATD	**Hatta, Dubai**	**6.58**	**142**	P	**Pn**	**12 31 05.6**	**+0.6**
ASHO	**Ashiyiah**	**6.66**	**144**	*i* P	**Pn**	**12 31 05.9**	**-0.3**
	SNR=5.7						
ASHO	**Ashiyiah**	**6.66**	**144**	Pn	**Pn**	**12 31 05.8**	**-0.3**
	SNR=9.1						
ASHO	**Ashiyiah**	**6.66**	**144**	P	**Pn**	**12 31 05.8**	**-0.3**
	SNR=9.1						
ASHO				S	**Sn**	**12 32 19.4**	**-2.4**
ASHO	**Ashiyiah**	**6.66**	**144**	Pn	**Pn**	**12 31 05.8**	**-0.3**
	SNR=9.1						

*ISCJB **01** 12:32:48.0±0.6, 19°33N±0°07×145°0E±0°2, h400km, mb3.5/16, Error ellipse: s-maj=22.0km s-min=9.5km az=174.8*

*IDC **01** 12:32:50.0±6.0, 19°29N×145°07E, h408km±67km, mb3.2/16, mb1 3.3/16, mb1mx3.1/46, mbtmp3.9/16, Error ellipse: s-maj=24.4km s-min=14.2km az=75.0*

ISC 01 12:32:49.0±0.7, 19°26N±0°09×145°1E±0°2, h400km, n17, σ0s70/17, mb3.5/16, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**5.64**	**182**	S	**S**	**12 35 29.4**	**-0.7**
	4.7nm,0.3s,baz=342,slow=20,SNR=2.9						
KSRS	**Korea Array**	**23.52**	**324**	P	**P**	**12 37 25.4**	**+0.1**
	1.1nm,0.6s,baz=148,slow=8.8,SNR=7.3						
WRA	**Warramunga Arr**	**40.35**	**196**	P	**P**	**12 39 50.6**	**+0.6**
	0.5nm,0.3s,baz=13,slow=8.5,SNR=39						
SONM	**Songino Array**	**42.34**	**321**	P	**P**	**12 40 05.4**	**-0.5**
	1.2nm,0.6s,baz=134,slow=7.0,SNR=4.2						
STKA	**Stephens Creek**	**50.95**	**184**	P	**P**	**12 41 11.8**	**+0.2**
	1.9nm,0.9s,baz=332,slow=15,SNR=3.5						
ZALV	**Zalesovo Beam**	**57.22**	**322**	P	**P**	**12 41 56.1**	**+0.1**
	0.3nm,0.3s,baz=90,slow=5.8,SNR=2.6						
MKAR	**Makanchi Array**	**57.65**	**314**	P	**P**	**12 42 00.0**	**+0.8**
	0.3nm,0.4s,baz=86,slow=7.6,SNR=4.4						
KURBB	**Kurchatov Arra**	**60.51**	**318**	P	**P**	**12 42 19.1**	**+0.6**
	1.0nm,0.4s,baz=96,slow=6.8,SNR=16						
ILAR	**Eielson Array**	**63.41**	**26**	P	**P**	**12 42 37.3**	**+0.1**
	0.3nm,0.6s,baz=248,slow=4.5,SNR=5.9						
BVAR	**Borovoye Array**	**65.67**	**320**	P	**P**	**12 42 52.2**	**+0.2**
	2.3nm,0.6s,baz=96,slow=7.6,SNR=12						
DLBC	**Dease Lake**	**71.16**	**34**	P	**P**	**12 43 25.1**	**-0.3**
	1.3nm,0.4s,baz=215,slow=25,SNR=6.5						
ARU	**Arti**	**72.27**	**324**	P	**P**	**12 43 31.1**	**-0.9**
	1.1nm,0.2s,baz=102,slow=9.3,SNR=3.1						
AKTO	**Aktyubinsk**	**73.56**	**318**	P	**P**	**12 43 39.2**	**-0.4**
	0.5nm,0.5s,baz=72,slow=8.1,SNR=3.1						
YKA	**Yellowknife Ar**	**77.78**	**28**	P	**P**	**12 44 04.3**	**+1.4**
	0.3nm,0.5s,baz=287,slow=5.5,SNR=5.4						
ARCES	**ARCESS Array B**	**81.78**	**342**	P	**P**	**12 44 24.4**	**+0.3**
	0.5nm,0.5s,baz=81,slow=7.9,SNR=6.2						
FINES	**FINESS Array B**	**86.13**	**335**	P	**P**	**12 44 44.8**	**-1.1**
	0.8nm,0.5s,baz=64,slow=4.4,SNR=4.5						
PDAR	**Pinedale Array**	**87.86**	**45**	P	**P**	**12 44 54.2**	**-0.5**
	0.4nm,0.4s,baz=297,slow=8.0,SNR=2.8						

*IDC **01** 12:40:08.0±14.0, 51°48N×173°94W, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.3/40, mbtmp3.3/4, ML3.5/1, MS2.9/1, Ms1 2.9/1, ms1mx2.3/26, Error ellipse: s-maj=291.9km s-min=60.3km az=79.0*

*ISCJB **01** 12:40:21.7±1.0, 51°6N±0°1×171°64W±0°06, h37km, mb3.3/3, MS2.7/1, Error ellipse: s-maj=16.8km s-min=3.9km az=167.6*

*NEIC **01** 12:40:23.5, 51°65N×171°70W, h20km, ML3.4(AEIC), After AEIC.*

ISC 01 12:40:23.7±1.4, 51°7N±0°2×171°71W±0°05, h37km, n20, σ0s92/25, mb3.4/3, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOFP	**Korovin Flat P**	**1.59**	**293**	P	**Pn**	**12 40 48.9**	**-0.5**
KOSE	**Korovin Southe**	**1.59**	**296**	P	**Pn**	**12 40 49.3**	**0.0**
KONE	**Korovin Northe**	**1.65**	**297**	P	**Pn**	**12 40 50.0**	**-0.1**
KOKV	**Korovin Volcan**	**1.66**	**295**	P	**Pn**	**12 40 50.7**	**+0.4**
KOKV				S	**Sn**	**12 41 11.2**	**+0.8**
KOKL	**Mount Kliuchef**	**1.67**	**294**	P	**Pn**	**12 40 50.5**	**+0.2**
NIKH	**Nikolski High**	**2.19**	**52**	P	**Pn**	**12 40 56.4**	**-1.0**
NIKH				S	**Sn**	**12 41 23.9**	**+0.7**
GSMY	**Great Sitkin M**	**2.72**	**280**	P	**Pn**	**12 41 05.3**	**+0.6**
GSTD	**Great Sitkin T**	**2.77**	**280**	P	**Pn**	**12 41 05.3**	**-0.2**
GSTD				S	**Sn**	**12 41 38.7**	**+0.9**
GSCK	**Great Sitkin C**	**2.78**	**279**	P	**Pn**	**12 41 05.3**	**-0.2**
OKAK	**Okmok**	**2.80**	**46**	P	**Pn**	**12 41 05.4**	**-0.4**
OKTU	**Okmok Mt. Tuli**	**2.82**	**51**	P	**Pn**	**12 41 07.1**	**+0.9**
ADAG	**Mount Adagdak**	**3.05**	**278**	P	**Pn**	**12 41 10.3**	**+1.0**
KIKV	**Kanaga Island**	**3.40**	**276**	P	**Pn**	**12 41 14.6**	**+0.6**
MSW	**Makushin Switc**	**3.74**	**51**	P	**Pn**	**12 41 19.6**	**+0.8**
MSW				S	**Sn**	**12 42 02.8**	**+1.3**
UNV	**Unalaska Valle**	**3.84**	**53**	P	**Pn**	**12 41 21.1**	**+0.9**
UNV				S	**Sn**	**12 42 05.8**	**+1.8**
TAFP	**Tanaga Falls P**	**3.90**	**276**	P	**Pn**	**12 41 21.7**	**+0.8**
ILAR	**Eielson Array**	**18.35**	**35**	P	**Pn**	**12 44 35.2**	**+0.3**
	0.1nm,0.3s,baz=232,slow=9.1,SNR=5.1						
INK	**Inuvik**	**24.73**	**33**	P	**P**	**12 45 38.9**	**-2.1**
	0.6nm,0.5s,baz=260,slow=5.8,SNR=3.7						
INK				LR	LR	12 55 20.8	
	comp=Z,26nm,20.1s,baz=160,slow=36						
YKA	**Yellowknife Ar**	**31.79**	**48**	P	**P**	**12 46 43.3**	**-0.8**
	0.4nm,0.8s,baz=275,slow=9.2,SNR=4.0						
TXAR	**Lajitas Array**	**54.22**	**87**	P	**P**	**12 49 45.7**	**0.0**
	0.3nm,0.7s,baz=302,slow

WRA				PcP	**PcP**	**12 51 07.6**	**+0.5**	
	comp=Z,0.4nm,0.6s,baz=2.8,slow=3.3,SNR=4.6							
WRA				LR	LR	13 01 16.2		
	comp=Z,100nm,21.3s,baz=220,slow=35							
FITZ	**Fitzroy Crossi**	**34.23**	**208**	LR	LR	13 03 44.7		
	comp=Z,54nm,19.2s,slow=38							
BJI	**Beijing**	**35.46**	**325**	P	**P**	**12 48 43.9**	**-0.6**	
BJI				S	**S**	**12 54 20.9**	**+3.0**	
BJI				pmax	pmax			
	comp=Z,10.0nm,0.9s							
BJI				pmax	pmax			
	comp=Z,48nm,3.5s							
BJI				LR	LR			
	comp=Z,93nm,20.3s							
BJI				LR	LR			
	comp=Z,100nm,13.3s							
BJI				LR	LR			
	comp=Z,130nm,28.4s							
GYA	**Guiyang**	**35.64**	**298**	P	**P**	**12 48 48.0**	**+1.5**	
GYA				pP	pP	12 48 56.6	+1.6	
GYA				PP	**PP**	**12 50 09.2**	**+1.5**	
GYA				S	**S**	**12 54 22.0**	**+0.6**	
GYA				sS	sS	12 54 37.7	+2.3	
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
GYA				pmax	pmax			
	comp=Z,120nm,5.8s							
GYA				LR	LR			
	comp=Z,480nm,17.8s							
GYA				LR	LR			
	comp=Z,440nm,18.2s							
GYA				LR	LR			
	comp=Z,460nm,18.6s							
ASAR	**Alice Springs**	**36.70**	**192**	P	**P**	**12 48 55.1**	**-0.2**	
	comp=Z,0.8nm,0.5s,baz=21,slow=12,SNR=16							
ASAR				pP	**pP**	**12 49 04.5**	**+0.6**	
	comp=Z,2.4nm,0.6s,baz=20,slow=12,SNR=11							
ASAR				PcP	**PcP**	**12 51 17.8**	**0.0**	
	comp=Z,0.5nm,0.7s,baz=42,slow=3.3,SNR=3.9							
ASAR				LR	LR	13 03 20.4		
	comp=Z,95nm,22.0s,baz=28,slow=35							
KLR	**Kulʾdur**	**37.55**	**349**	*de*P	**P**	**12 49 02.6**	**+0.3**	
TYV	**Tymovskoe**	**38.30**	**1**	*e*P	**P**	**12 49 07.5**	**-1.0**	
HHC	**Hu-ho-hao-te**	**38.64**	**323**	*e*P	**P**	**12 49 12.9**	**+1.1**	
HHC				sP	sP	12 49 26.8	+3.0	
HHC				S	**S**	**12 55 09.7**	**+3.0**	
HHC				pmax	pmax			
	comp=Z,17nm,1.0s							
HHC				pmax	pmax			
	comp=Z,100nm,6.9s							
HHC				LR	LR			
	comp=Z,120nm,17.3s							
HHC				LR	LR			
	comp=Z,110nm,16.3s							
HHC				LR	LR			
	comp=Z,76nm,15.9s							
KMI	**Kunming**	**38.76**	**295**	P	**P**	**12 49 14.9**	**+1.8**	
KMI				pmax	pmax			
	comp=Z,8.0nm,1.0s							
CD2	**Chengdu**	**39.43**	**304**	*e*P	**P**	**12 49 18.6**	**+0.2**	
CD2				pP	pP	12 49 27.8	+0.8	
CD2				PcS	**PcS**	**12 55 15.9**	**-0.4**	
CD2				S	**S**	**12 55 19.4**	**+0.7**	
CD2				sS	sS	12 55 35.1	+2.3	
CD2				SS	**SnSn**	**12 58 15.2**	**+0.1**	
CD2				pmax	pmax			
	comp=Z,20nm,0.5s							
CD2				pmax	pmax			
	comp=Z,160nm,5.2s							
LZH	**Lanzhou**	**41.31**	**311**	*e*P	**P**	**12 49 34.7**	**+0.6**	
LZH				pP	pP	12 49 44.4	+1.7	
LZH				sP	sP	12 49 47.5	+1.3	
LZH				pmax	pmax			
	comp=Z,13nm,1.0s							
CM01	**Chiang Mai Arr**	**41.47**	**284**	*e*P	**P**	**12 49 36.1**	**+0.6**	
CM31	**Chiang Mai Arr**	**41.49**	**284**	*e*P	**P**	**12 49 37.2**	**+1.6**	
CMAR	**Chiang Mai Arr**	**41.49**	**284**	P	**P**	**12 49 37.1**	**+1.6**	
	comp=Z,4.5nm,0.7s,baz=84,slow=6.7,SNR=22							
CMAR				LR	LR	13 06 12.4		
	comp=Z,19nm,19.7s,baz=95,slow=35							
PETK	**Petropavlovsk-**	**42.53**	**14**	P	**P**	**12 49 43.8**	**+0.3**	
	comp=Z,1.6nm,0.8s,baz=193,slow=12,SNR=2.8							
PETK				LR	LR	13 04 43.4		
	comp=Z,53nm,21.6s,baz=200,slow=32							
PEA1	**Petropavlovsk-**	**42.53**	**14**	*e*P	**P**	**12 49 43.9**	**+0.3**	
PSI	**Prapat**	**43.33**	**261**	*e*P	**P**	**12 49 50.7**	**0.0**	
PSI				pmax	pmax			
	comp=Z,9.0nm,0.8s							
PSI	**Prapat**	**43.33**	**261**	*e*P	**P**	**12 49 50.7**	**0.0**	
	comp=Z,9.3nm,0.8s							
STKA	**Stephens Creek**	**44.09**	**180**	P	**P**	**12 49 56.0**	**-0.3**	
	comp=Z,1.0nm,0.3s,baz=2.9,slow=8.7,SNR=7.8							
STKA				LR	LR	13 08 15.4		
	comp=Z,84nm,20.0s,baz=24,slow=36							
STKA	**Stephens Creek**	**44.09**	**180**	*e*P	**P**	**12 49 56.1**	**-0.3**	
STKA				pmax	pmax			
	comp=Z,7.0nm,1.8s							
STKA	**Stephens Creek**	**44.09**	**180**	*e*P	**P**	**12 49 56.1**	**-0.3**	
	comp=Z,6.8nm,1.8s							
ULN	**Ulaanbaatar**	**45.56**	**328**	*de*P	**P**	**12 50 08.6**	**+0.4**	
ULN				pmax	pmax			
	comp=Z,9.0nm,1.2s							
ULN	**Ulaanbaatar**	**45.56**	**328**	*e*P	**P**	**12 50 08.8**	**+0.7**	
	comp=Z,5.1nm,0.8s							
SONA0	**Songino Array**	**45.89**	**327**	*e*P	**P**	**12 50 11.1**	**+0.4**	
	comp=Z,5.6nm,1.1s							
SONA0				*e*PcP	**PcP**	**12 51 47.4**	**-0.1**	
SONM	**Songino Array**	**45.89**	**327**	P	**P**	**12 50 11.1**	**+0.4**	
	comp=Z,2.0nm,0.7s,baz=137,slow=8.2,SNR=12							
SONM				PcP	**PcP**	**12 51 47.4**	**-0.1**	
	comp=Z,0.6nm,0.4s,baz=128,slow=4.6,SNR=3.3							
SONM				LR	LR	13 08 04.2		
	comp=Z,35nm,21.3s,baz=126,slow=34							
SONA1	**Songino Array**	**45.89**	**327**	*e*P	**P**	**12 50 11.3**	**+0.5**	
ZAK	**Zakamensk**	**49.06**	**328**	*e*P	**P**	**12 50 34.0**	**-1.3**	
ZAK				pmax	pmax			
	comp=Z,8.0nm,1.1s							
TLY	**Talaya**	**49.67**	**330**	*e*P	**P**	**12 50 41.3**	**+1.5**	
TLY				pmax	pmax			
	comp=Z,13nm,1.7s							
YAK	**Yakutsk**	**50.23**	**353**	*e*P	**P**	**12 50 43.4**	**-0.5**	
YAK				pmax	pmax			
	comp=Z,28nm,0.9s							
YAK				pmax	pmax			
	comp=E,5.0nm,1.0s							
YAK				pmax	pmax			
	comp=N,12nm,1.2s							
SEY	**Seymchan**	**50.97**	**6**	P	**P**	**12 50 49.8**	**+0.3**	
	comp=N,3.1nm,0.9s,baz=172,slow=6.9,SNR=6.2							
MOY	**Mondy**	**50.99**	**329**	*e*P	**P**	**12 50 49.7**	**-0.2**	
MOY				pmax	pmax			
	comp=Z,14nm,1.8s							
WMQ	**Urumqi**	**55.65**	**315**	P	**P**	**12 51 25.4**	**+1.1**	
WMQ				pP	sP	12 51 36.5	0.0	
WMQ				sP	pP	12 51 40.6	+7.5	
WMQ				S	S	12 59 20.6	+12	
WMQ				pmax	pmax			
	comp=Z,10.0nm,0.7s							
WMQ				pmax	pmax			
	comp=Z,110nm,5.1s							
WMQ				LR	LR			
	comp=Z,150nm,19.1s							
WMQ				LR	LR			
	comp=Z,190nm,25.0s							
WMQ				LR	LR			
	comp=Z,170nm,20.0s							
BILL	**Bilibino**	**57.81**	**11**	*e*P	**P**	**12 51 39.6**	**+0.5**	
BILL				*e*		12 52 29.5		
BILL				pmax	pmax			
	comp=Z,5.0nm,1.0s							
BILL				MLR	MLR			
	comp=Z,142nm,23.0s							
TIXI	**Tiksi**	**59.66**	**355**	*e*P	**P**	**12 51 52.3**	**+0.4**	
TIXI				pmax	pmax			
	comp=Z,4.0nm,1.2s							
MK01	**Makanchi Array**	**60.11**	**317**	*e*P	**P**	**12 51 56.1**	**+0.6**	
MK31	**Makanchi Array**	**60.12**	**317**	*e*P	**P**	**12 51 55.9**	**+0.3**	
MK31	**Makanchi Array**	**60.12**	**317**	*e*P	**P**	**12 51 55.9**	**+0.3**	
MK32	**Makanchi Array**	**60.12**	**317**	*e*P	**P**	**12 51 56.1**	**+0.6**	
MKAR	**Makanchi Array**	**60.12**	**317**	P	**P**	**12 51 56.1**	**+0.6**	
	comp=Z,6.0nm,0.8s,baz=93,slow=8.8,SNR=41							
MKAR	**Makanchi Array**	**60.12**	**317**	*e*P	**P**	**12 51 56.0**	**+0.4**	
MAKZ	**Makanchi**	**60.33**	**317**	*e*P	**P**	**12 51 57.8**	**+0.8**	
MAKZ				pmax	pmax			
	comp=Z,10.0nm,0.8s							
MAKZ	**Makanchi**	**60.33**	**317**	*e*P	**P**	**12 51 57.8**	**+0.8**	
	comp=Z,10.0nm,0.8s							
ZAA0	**Zalesovo Array**	**60.72**	**325**	*e*P	**P**	**12 51 59.4**	**-0.1**	
ZALV	**Zalesovo Beam**	**60.72**	**325**	P	**P**	**12 51 59.2**	**-0.2**	
	comp=Z,1.7nm,0.5s,baz=108,slow=6.1,SNR=10							
ZALV				PcP	**PcP**	**12 52 42.1**	**-1.2**	
	comp=Z,1.7nm,0.6s,baz=126,slow=5.6,SNR=4.3							
ZALV	**Zalesovo Beam**	**60.72**	**325**	P	**P**	**12 51 59.2**	**-0.2**	
ZALV						12 52 42.2		
ZALV				pmax	pmax			
	comp=Z,2.0nm,0.5s							
ZALV				pmax	pmax			
	comp=Z,2.0nm,0.6s							
ZAA1	**Zalesovo Array**	**60.72**	**325**	*e*P	**P**	**12 51 59.2**	**-0.3**	
ZAA1				*e*PcP	**PcP**	**12 52 42.1**	**-1.2**	
NVS	**Novosibirsk**	**61.89**	**326**	*e*P	**P**	**12 52 07.8**	**+0.4**	
NVS				pmax	pmax			
	comp=Z,10.0nm,1.0s							
NVS				pmax	pmax			
	comp=E,5.0nm,1.1s							
KURK	**Kurchatov**	**63.42**	**321**	*d* iP	**P**	**12 52 17.7**	**+0.1**	
KURK	**Kurchatov**	**63.42**	**321**	*e*P	**P**	**12 52 17.8**	**+0.2**	
	comp=E,17nm,0.8s							
SVW2	**Sparrevohn**	**66.15**	**28**	*e*P	**P**	**12 52 35.1**	**-0.2**	
	comp=E,19nm,1.4s							
OHAK	**Old Harbor**	**66.19**	**33**	*e*P	**P**	**12 52 35.4**	**-0.1**	
	comp=E,27nm,1.1s							
KDAK	**Kodiak Island**	**66.69**	**32**	*e*P	**P**	**12 52 39.0**	**+0.2**	
KDAK				pmax	pmax			
	comp=Z,14nm,1.0s							
KDAK	**Kodiak Island**	**66.69**	**32**	*e*P	**P**	**12 52 39.0**	**+0.2**	
	comp=Z,14nm,1.0s							
CNPM	**China Poot**	**67.80**	**30**	*e*P	**P**	**12 52 45.7**	**-0.1**	
	comp=Z,16nm,0.8s							
VOSK	**Vostochnaya**	**68.46**	**322**	*e*P	**P**	**12 52 49.9**	**-0.2**	
VOSK				pmax	pmax			
	comp=Z,3.0nm,0.9s							
VOSK	**Vostochnaya**	**68.46**	**322**	*e*P	**P**	**12 52 49.9**	**-0.2**	
	comp=Z,3.0nm,0.9s							
SEW	**Seward**	**68.80**	**30**	*e*P	**P**	**12 52 52.1**	**+0.1**	
	comp=Z,14nm,0.9s							
BRVK	**Borovoye**	**68.92**	**322**	*ce*P	**P**	**12 52 52.8**	**-0.1**	
BRVK				pmax	pmax			
	comp=Z,28nm,1.0s							
BRVK	**Borovoye**	**68.92**	**322**	*e*P	**P**	**12 52 53.4**	**+0.5**	
	comp=Z,8.6nm,0.8s							
BPAW	**Bear Paw Mtn.**	**69.05**	**26**	*e*P	**P**	**12 52 53.8**	**+0.3**	
	comp=Z,10nm,0.9s							
TRF	**Thorofare Moun**	**69.18**	**26**	*e*P	**P**	**12 52 54.3**	**-0.3**	
	comp=Z,7.1nm,0.8s							
MLY	**Manley**	**69.39**	**25**	*e*P	**P**	**12 52 56.4**	**+0.7**	
	comp=Z,8.8nm,0.9s							
ZRNK	**Zerenda**	**69.68**	**322**	*e*P	**P**	**12 52 57.6**	**0.0**	
ZRNK				pmax	pmax			
	comp=Z,8.0nm,0.8s							
ZRNK	**Zerenda**	**69.68**	**322**	*e*P	**P**	**12 52 57.5**	**0.0**	
	comp=Z,7.9nm,0.8s							
BWN	**Browne**	**69.71**	**26**	*e*P	**P**	**12 52 58.2**	**+0.6**	
	comp=Z,34nm,0.9s							
MCK	**McKinley**	**69.84**	**26**	*e*P	**P**	**12 52 58.1**	**-0.3**	
MCK				pmax	pmax			
	comp=Z,16nm,1.2s							
MCK	**McKinley**	**69.84**	**26**	*e*P	**P**	**12 52 58.1**	**-0.3**	
	comp=Z,16nm,1.2s							
SCM	**Sheep Creek Mo**	**70.17**	**28**	*e*P	**P**	**12 53 00.8**	**+0.3**	
SCM				pmax	pmax			
	comp=Z,21nm,0.9s							
SCM	**Sheep Creek Mo**	**70.17**	**28**	*e*P	**P**	**12 53 00.8**	**+0.3**	
	comp=Z,21nm,0.9s							
COLD	**Coldfoot**	**70.19**	**23**	*e*P	**P**	**12 53 01.4**	**+0.9**	
	comp=Z,5.9nm,1.0s							
WRH	**Wood River Hil**	**70.36**	**26**	*e*P	**P**	**12 53 01.3**	**-0.3**	
	comp=Z,9.4nm,1.0s							
DHY	**Denali Highway**	**70.39**	**27**	*e*P	**P**	**12 53 01.2**	**-0.8**	
	comp=Z,12nm,1.2s							
MDM	**Murphy Dome**	**70.41**	**25**	*e*P	**P**	**12 53 02.1**	**+0.1**	
	comp=Z,6.0nm,0.9s							
CCB	**Clear Creek Bu**	**70.52**	**26**	*e*P	**P**	**12 53 02.0**	**-0.6**	
	comp=Z,8.6nm,1.2s							
ILAR	**Eielson Array**	**70.93**	**25**	P	**P**	**12 53 03.8**	**-1.3**	
	comp=Z,4.2nm,0.7s,baz=252,slow=5.5,SNR=54							
ILB	**Eielson Array**	**70.93**	**25**	*e*P	**P**	**12 53 04.0**	**-1.1**	
IL1	**Eielson Array**	**70.93**	**25**	*e*P	**P**	**12 53 03.3**	**-1.8**	
DOT	**Dot Lake**	**71.95**	**27**	*e*P	**P**	**12 53 11.1**	**-0.2**	
	comp=Z,35nm,0.8s							
EGAK	**Eagle**	**73.36**	**26**	*e*P	**P**	**12 53 19.8**	**+0.2**	
	comp=Z,4.1nm,0.9s							
DAWY	**Dawson**	**74.06**	**27**	*e*P	**P**	**12 53 24.5**	**+0.7**	
	comp=Z,12nm,1.0s							
ABKAR	**Abkulak array**	**75.25**	**318**	*e*P	**P**	**12 53 30.5**	**-0.3**	
ARU	**Arti**	**75.88**	**325**	*d* iP	**P**	**12 53 33.9**	**-0.4**	
ARU						12 56 25.4		
ARU				S	**S**	**13 03 15.8**	**+0.9**	
ARU				pmax	pmax			
	comp=Z,8.0nm,0.7s							
ARU	**Arti**	**75.88**	**325**	*e*P	**P**	**12 53 34.0**	**-0.4**	
	comp=Z,7.3nm,0.7s							
INK	**Inuvik**	**76.61**	**22**	P	**P**	**12 53 37.8**	**-0.4**	
	comp=Z,6.1nm,1.1s,baz=259,slow=5.1,SNR=10							
INK	**Inuvik**	**76.61**	**22**	*e*P	**P**	**12 53 38.1**	**-0.1**	
INK				pmax	pmax			
	comp=Z,7.0nm,1.0s							
INK	**Inuvik**	**76.61**	**22**	*e*P	**P**	**12 53 38.1**	**-0.1**	
	comp=Z,7.1nm,1.0s							
GEYT	**Alibeck**	**77.37**	**306**	P	**P**	**12 53 43.0**	**-0.3**	
	comp=Z,0.6nm,0.3s,baz=87,slow=10,SNR=3.3							
DLBC	**Dease Lake**	**78.63**	**32**	P	**P**	**12 53 50.5**	**+0.6**	
	comp=Z,4.0nm,0.7s,baz=288,slow=8.8,SNR=6.9							
DLBC	**Dease Lake**	**78.63**	**32**	*e*P	**P**	**12 53 50.9**	**+1.0**	
	comp=Z,16nm,1.3s							
KLMR	**Klimovskoe**	**85.02**	**331**	*e*P	**P**	**12 54 20.3**	**-3.0**	
KLMR				pmax	pmax			
	comp=Z,10.0nm,1.5s							
YKW3	**Yellowknife Ar**	**85.27**	**27**	*e*P	**P**	**12 54 24.4**	**-0.1**	
	comp=Z,5.2nm,0.8s							
YKA	**Yellowknife Ar**	**85.30**	**27**	P	**P**	**12 54 24.5**	**-0.1**	
	comp=Z,3.9nm,0.8s,baz=286,slow=5.0,SNR=21							
YKA				pP	**pP**	**12 54 33.7**	**-0.2**	
	comp=Z,3.6nm,0.8s,baz=291,slow=5.4,SNR=11							
YKB5	**Yellowknife Ar**	**85.30**	**27**	*e*P	**P**	**12 54 24.2**	**-0.5**	
ARA0	**ARCESS Array S**	**87.16**	**342**	*e*P	**P**	**12 54 33.5**	**-0.3**	
ARA0				*ep*P	**pP**	**12 54 42.3**	**-0.7**	
ARCES	**ARCESS Array B**	**87.16**	**342**	P	**P**	**12 54 33.5**	**-0.3**	
	comp=Z,2.9nm,0.6s,baz=69,slow=7.9,SNR=34							
ARCES				pP	**pP**	**12 54 42.3**	**-0.7**	
	comp=Z,2.1nm,0.6s,baz=76,slow=7.6,SNR=3.5							
GNI	**Garni**	**87.24**	**310**	LR	LR	13 35 45.1		
	comp=Z,20nm,21.7s,baz=162,slow=37							
KBZ	**Khabaz**	**87.69**	**314**	P	**P**	**12 54 35.2**	**-1.6**	
	comp=Z,1.1nm,0.6s,baz=84,slow=1.4,SNR=2.5							
KVAR	**Kislovodsk Arr**	**87.77**	**314**	LR	LR	13 35 10.1		
	comp=Z,21nm,21.8s,baz=358,slow=36							
KIV	**Kislovodsk**	**87.78**	**314**	*e*P	**P**	**12 54 36.6**	**-0.8**	
KIV				*e**SP	**sP**	**12 54 50.7**	**+0.7**	
KIV				pmax	pmax			
	comp=Z,2.0nm,0.5s							
OBN	**Obninsk**	**88.29**	**326**	LR	LR	13 35 59.0		
	comp=Z,46nm,19.8s,baz=83,slow=37							
OBN	**Obninsk**	**88.29**	**326**	*e*P	**P**	**12 54 38.9**	**-0.5**	
OBN				*SP	**sP**	**12 54 52.0**	**0.0**	
OBN				*i*		13 05 23.2		
OBN				pmax	pmax			
	comp=Z,10.0nm,1.2s							
VNDA	**Vanda**	**90.57**	**176**	pP	pP	12 54 58.1	-0.7	
	comp=Z,0.7nm,0.5s,baz=84,slow=22,SNR=3.7							
FIA1	**FINESS Array S**	**90.82**	**334**	*e*P	**P**	**12 54 49.7**	**-1.4**	
	comp=Z,12nm,0.8s							
FIA0	**FINESS Array S**	**90.82**	**334**	*e*P	**P**	**12 54 49.7**	**-1.4**	
FIA0				*e**PP	**pP**	**12 54 58.9**	**-1.5**	
FIA0	**FINESS Array S**	**90.82**	**334**	*e*P	**P**	**12 54 49.7**	**-1.4**	
FIA0				*ep*P	**pP**	**12 54 58.9**	**-1.5**	
FINES	**FINESS Array B**	**90.82**	**334**	P	**P**	**12 54 49.7**	**-1.4**	
	comp=Z,9.9nm,0.7s,baz=83,slow=6.0,SNR=40							
FINES				pP	**pP**	**12 54 58.9**	**-1.5**	
	comp=Z,4.8nm,0.6s,baz=69,slow=4.8,SNR=7.1							
VSU	**Vasula**	**91.92**	**332**	*ce*P	**P**	**12 54 55.1**	**-1.2**	
EGMT	**Eagleton**	**92.89**	**40**	*e*P	**P**	**12 54 58.7**	**-2.5**	
	comp=Z,122nm,0.8s							
AKASG	**Malin Array Be**	**94.08**	**324**	P	**P**	**12 55 04.0**	**-2.4**	
	comp=Z,0.2nm,0.2s,baz=46,slow=2.7,SNR=2.4							
KIEV	**Kiev**	**94.09**	**324**	*e*P	**P**	**12 55 04.8**	**-1.7**	
KIEV				pmax	pmax			
	comp=Z,2.0nm,0.9s							
BR101	**Keskin Array S**	**95.51**	**313**	*e*P	**P**	**12 55 12.2**	**-1.3**	
BRTR	**Keskin Array B**	**95.51**	**313**	P	**P**	**12 55 12.2**	**-1.3**	
	comp=Z,0.6nm,0.7s,baz=90,slow=2.9,SNR=3.0							
NB200	**NORSAR Array S**	**96.94**	**338**	*e*P	**P**	**12 55 17.9**	**-1.4**	
NOA	**NORSAR Array B**	**96.94**	**338**	P	**P**	**12 55 17.9**	**-1.4**	
	comp=Z,1.0nm,0.8s,baz=53,slow=4.9,SNR=2.7							
KONO	**Kongsberg**	**98.47**	**338**	*e*P	**P**	**12 55 25.3**	**-0.8**	
ULM	**Lac du Bonnet**	**99.93**	**33**	P	**Pdif**	**12 55 32.7**	**-0.2**	
	comp=Z,1.8nm,0.6s,baz=312,slow=14,SNR=2.8							
TOA1	**Torodi Ar. Sit**	**132.81**	**301**	*e*PKPdf	**PKPdf**	**13 01 03.4**	**-0.7**	
TORD	**Torodi Ar. Bea**	**132.81**	**301**	PKP	**PKPdf**	**13 01 03.4**	**-0.7**	
	comp=Z,0.7nm,0.9s,baz=261,slow=1.7,SNR=2.8							
LPAZ	**La Paz**	**150.94**	**101**	PKPbc	**PKPbc**	**13 01 43.0**	**+0.6**	
	comp=Z,7.8nm,0.7s,baz=300,slow=1.8,SNR=30							
LPAZ				pPKPbc	**pPKPbc**	**13 01 52.2**	**+0.2**	
	comp=Z,7.8nm,0.7s,baz=184,slow=3.2,SNR=12							
LPAZ	**La Paz**	**150.94**	**101**	PKIKP	**PKPbc**	**13 01 43.1**	**+0.6**	
LPAZ						13 01 52.2		
LPAZ				pmax	pmax			
	comp=Z,8.0nm,0.7s							
LPAZ				pmax	pmax			
	comp=Z,8.0nm,0.7s							

ISCJB ***01*** *12:47:09.7±0.8, 9.88N±0.04×73.37W±0.04, h107km±11km, Error ellipse: s-maj=6.8km s-min=4.6km az=44.4*
FUNV ***01*** *12:47:12.6, 9.79N×73.30W, h18km, MW2.9*
RSNC ***01*** *12:47:12.3±0.9, 9.81N×73.46W, h102km±14km, ML2.9*
ISC 01 12:47:09.4±1.7, 9.88N±0.05×73.37W±0.05, h11km±22km, n18, σ1s29/19, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
VIRV	**Villa del Rosa**	**1.13**	**57**	*e*P		Pn	12 47 33.9	+1.8
VIRV				*e*S		**Sn**	**12 47 49.2**	**-0.1**
OCAC	**Ocana**	**1.63**	**178**	*e*P		Pn	12 47 39.3	+1.3
OCAC				*e*S		**Sn**	**12 48 00.7**	**+0.9**
OCAC				*i*			12 48 03.4	
	comp=Z,59nm,0.6s							
SJCC	**San Jacinto, C**	**1.78**	**271**	*e*P		Pn	12 47 40.6	+0.8
SJCC				*e*S		**Sn**	**12 48 03.3**	**+0.3**
SJCC				*i*			12 48 05.2	
	comp=Z,53nm,0.5s							
GRMC	**Gramalote, San**	**2.22**	**165**	*e*P		**Pn**	**12 47 44.6**	**-0.8**
GRMC				*e*S		**Sn**	**12 48 09.9**	**-2.9**
GRMC				*i*			12 48 12.4	
	comp=Z,175nm,0.2s							
CBRI	**Barrientos, No**	**2.22**	**165**	*e*P		Pn	12 47 47.1	+1.7
CBRI				*e*S		**Sn**	**12 48 13.7**	**+0.7**
CAPV	**Capacho**	**2.25**	**152**	*e*P		Pn	12 47 47.0	+1.1
CAPV				*e*S		**Sn**	**12 48 13.3**	**-0.6**
MOTC	**Monteria, Cord**	**2.52**	**244**	*e*P		**Pn**	**12 47 49.1**	**0.0**
MOTC				*e*S		**Sn**	**12 48 17.8**	**-1.7**
PAMC	**Pamplona, Colo**	**2.61**	**165**	*e*S		**Sn**	**12 48 23.9**	**+1.5**
BRRC	**Barranca, Sant**	**2.77**	**187**	*i* iP		Pn	12 47 53.7	+1.2
BRRC				*i*			12 47 54.2	
	comp=Z,27nm,0.2s							
BRRC				*e*S		**Sn**	**12 48 26.1**	**+0.5**
GIRC	**Giron, Santand**	**2.79**	**176**	*e*P		Pn	12 47 54.4	+1.6
GIRC				*e*S		**Sn**	**12 48 26.4**	**+0.3**
DABV	**Dabajuro**	**2.88**	**69**	*e*P		Pn	12 47 56.3	+2.4
DABV				*e*S		**Sn**	**12 48 28.8**	**+0.6**
SOCV	**Socops**	**2.94**	**122**	*e*P		Pn	12 47 56.5	+1.8
BARC	**Barichara**	**3.27**	**177**	*e*P		Pn	12 48 00.7	+1.5
BARC				*e*S		**Sn**	**12 48 38.2**	**+0.6**
BARC				*i*			12 48 40.1	
	comp=Z,49nm,0.5s							
CURV	**Curarigua**	**3.36**	**87**	*e*P		Pn	12 48 02.1	+1.9
CURV				*e*S		**Sn**	**12 48 39.8**	**+0.1**
MONV	**Montecano**	**3.92**	**58**	*e*S		**Sn**	**12 48 52.9**	**-0.2**
HELC	**Santa Helena**	**4.24**	**210**	*e*P		Pn	12 48 14.9	+2.6
HELC				*i*			12 48 16.4	
	comp=Z,17nm,0.2s							
NORC	**Norcasia**	**4.54**	**199**	*e*P		**Pn**	**12 48 16.7**	**+0.6**
BAUV	**El Baul**	**5.34**	**100**	*e*P		**Pn**	**12 48 27.7**	**+0.9**
BAUV				*e*S		**Sn**	**12 49 24.6**	**-2.5**

ISK ***01*** *13:18:41.9, 37.87N×37.40E, h5km, MD2.6*
CSEM ***01*** *13:18:42.7±0.3, 37.87N×37.41E, h5km, MD2.6, Error ellipse: s-maj=8.7km s-min=5.5km az=112.0*
DDA ***01*** *13:18:42.5, 37.84N×37.47E, h6km, Md2.4*
ISC 01 13:18:42.8±1.1, 37.85N±0.03×37.46E±0.03, h6km±11km, n18, σ0s72/33, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KMRS	**Kahramanmaras**	**0.56**	**233**	*e*PG		**Pg**	**13 18 52.8**	**-0.8**
KMRS				*e*SG		**Sg**	**13 19 00.6**	**-0.2**
KMRS	**Kahramanmaras**	**0.56**	**233**	*e*Pg		**Pg**	**13 18 52.8**	**-0.8**
KMRS				*e*Sg		**Sg**	**13 19 00.6**	**-0.2**
AKCD	**Akcadag**	**0.58**	**39**	*i* P		**Pg**	**13 18 53.5**	**-0.6**
AKCD				*i* S		**Sg**	**13 19 02.3**	**+0.6**
AKCD

cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.

NEIC ***01*** *13:18:50.2±0.0, 13.12N×146.46E, h39km, Moment Tensor Solution. s23 Moment tensor: Scale 10^{17}Nm; M_{rr}2.59; $M_{\theta\theta}$-0.75; $M_{\phi\phi}$-1.84; $M_{r\theta}$-0.43; $M_{\theta\phi}$1.15; $M_{r\phi}$0.56; Best double couple: $M_0$2.70000×10^{17} NP1:ϕ_s326.00000°, δ53.00000°, λ88.00000°. NP2:ϕ_s149.00000°, δ37.00000°, λ92.00000°. Principal axes: T 2.6900, Plg82.0000°, Azm227.0000°; N -0.0300, Plg1.0000°, Azm327.0000°; P -2.6600, Plg7.0000°, Azm57.0000°;*

DJA ***01*** *13:18:51.1±0.6, 13.1N×146.7E, h41km±6km, M5.8/78, mb5.8/78, mB6.1/47, MLv6.0/1, Mw(mB)5.7/47, Mwp5.9/1*

IDC ***01*** *13:18:54.5±0.5, 13.17N×146.67E, h78km±4km, mb5.2/46, mb1 5.1/47, mb1mx5.1/48, mbtmp5.4/47, MS4.9/34, Ms1 4.9/34, ms1mx4.8/43, Error ellipse: s-maj=11.8km s-min=7.6km az=82.0*

ISC 01 13:18:50.6±0.3, 13.17N±0.03×146.66E±0.03, h47km±1km, h47km:pP-P, n1225, σ1970/1330, mb5.8/357, MS5.1/228, 65C-24D, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**1.79**	**284**	P	**Pn**	**13 19 20.2**	**+1.1**
	13μm,0.3s,baz=121,slow=4.5,SNR=4465						
GUMO				S	**Sn**	**13 19 41.5**	**+0.8**
	16μm,0.3s,baz=352,slow=22,SNR=34						
GUMO	**Guam**	**1.79**	**284**	*e*P	Pn	13 19 12.3	-6.8
GUMO				*e*		13 19 38.9	
GUMO	**Guam**	**1.79**	**284**	*e*Pn	Pn	13 19 12.3	-6.8
GUMO				*e*Sn	**Sn**	**13 19 38.9**	**-1.8**
PATS	**Pohnpei**	**13.09**	**118**	*e*Pn	**Pn**	**13 21 50.1**	**-3.8**
CBIJ	**Chichi jima**	**14.47**	**344**	*e*Pn	**Pn**	**13 22 13.1**	**+0.4**
CBIJ				*e*Sn	**Sn**	**13 24 50.2**	**-1.7**
MANU	**Manus Island**	**15.13**	**177**	*e*Pn	**Pn**	**13 22 22.6**	**+1.1**
	1μm,1.1s						
JAY	**Jayapura**	**16.67**	**201**	P	**P**	**13 22 42.1**	**-0.7**
	0.2nm,0.3s,baz=291,slow=20,SNR=29						
JAY				S	**Sn**	**13 25 41.3**	**-4.1**
	0.1nm,0.3s,baz=90,slow=20,SNR=3.7						
JAY				LR	LR	13 28 21.5	
	comp=Z,212nm,19.0s,baz=0.5,slow=34						
JAY	**Jayapura**	**16.67**	**201**	P	**P**	**13 22 42.4**	**-0.4**
GENI	**Genyem**	**16.93**	**203**	P	**P**	**13 22 46.3**	**+0.5**
RABL	**Rabaul**	**18.09**	**162**	*e*Pn	**P**	**13 22 58.5**	**-0.1**
	888nm,0.8s						
H11S3	**WAKE ISLAND Hy**	**19.98**	**72**	T	T	13 43 20.3	
	baz=254,slow=75,SNR=16						
H11S1	**WAKE ISLAND Hy**	**19.99**	**72**	T	T	13 43 22.1	
	baz=254,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy**	**19.99**	**72**	P	**Pn**	**13 23 21.7**	**+0.5**
	SNR=51						
H11S2				S	S	13 26 47.9	-14
H11S2				T	T	13 43 22.6	
	baz=254,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	**20.46**	**69**	P	Pn	13 23 27.6	+0.9
	baz=247,slow=13,SNR=64						
H11N1				S	S	13 25 16.0	-115
H11N1				T	T	13 44 01.7	
	baz=250,slow=75,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**20.47**	**69**	P	Pn	13 23 27.7	+0.9
	baz=247,slow=13,SNR=61						
H11N2				T	T	13 44 05.8	
	baz=250,slow=75,SNR=3.7						
H11N3	**WAKE ISLAND Hy**	**20.48**	**69**	P	Pn	13 23 27.5	+0.6
	baz=247,slow=13,SNR=37						
H11N3				T	T	13 44 07.0	
	baz=250,slow=75,SNR=3.9						
BESP	**Borongan**	**20.79**	**268**	*e*P	Pn	13 23 31.3	+0.5
JHJ2	**Mitsune**	**20.81**	**344**	PFAKE		13 23 40.0	+9.0
JHJ2				LR	LR		
	comp=Z,4μm,22.0s						
JHJ	**Hachijo jima 2**	**20.83**	**344**	P	**P**	**13 23 27.7**	**-0.5**
	comp=Z,74nm,0.7s,baz=120,slow=20,SNR=3.9						
JHJ				S	**S**	**13 27 19.1**	**+1.0**
	comp=Z,64nm,0.7s,baz=73,slow=20,SNR=3.0						
MATI	**Mati**	**21.01**	**255**	*e*P	**P**	**13 23 31.6**	**+1.2**
PLP	**Palo**	**21.29**	**267**	↑*e*P	**P**	**13 23 35.0**	**+1.6**
FAKI	**Fak Fak**	**21.45**	**223**	P	**P**	**13 23 37.4**	**+2.3**
FAKI	**Fak Fak**	**21.45**	**223**	*e*P	**P**	**13 23 35.4**	**+0.3**
	comp=Z,3μm,1.9s						
DAV	**Davao City (W)**	**21.61**	**256**	P	**P**	**13 23 38.2**	**+1.4**
	comp=Z,316nm,0.6s,baz=80,slow=3.3,SNR=13						
DAV				S	**S**	**13 27 35.1**	**+1.2**
	comp=Z,47nm,0.3s,baz=80,slow=16,SNR=1.9						
DAV	**Davao City (W)**	**21.61**	**256**	↓*i*P	**P**	**13 23 37.7**	**+0.8**
DAV				↓S	**S**	**13 27 37.6**	**+3.7**
DAV	**Davao City (W)**	**21.61**	**256**	P	**P**	**13 23 38.7**	**+1.9**
	comp=Z,1μm,1.1s						
DAV				S	**S**	**13 27 35.1**	**+1.2**
DAV				LR	LR		
	comp=Z,3μm,20.0s						
DMPH	**Davao City--Mi**	**21.67**	**256**	↑*e*P	**P**	**13 23 41.9**	**+4.3**
BUKP	**Musuan**	**21.87**	**258**	*e*P	**P**	**13 23 41.1**	**+1.5**
PVCP	**Virac**	**21.90**	**274**	*e*P	**P**	**13 23 41.0**	**+1.1**
PVCP				*e*S	**S**	**13 27 40.7**	**+1.3**
CGP	**Cagayan de Oro**	**22.07**	**260**	↓*e*P	**P**	**13 23 43.6**	**+1.8**
LLP	**Lapu-Lapu**	**22.39**	**265**	↓*e*P	**P**	**13 23 45.9**	**+0.6**
LLP				*e*S	**S**	**13 27 46.2**	**-2.3**
PMG	**Port Moresby**	**22.43**	**179**	P	**P**	**13 23 46.0**	**+0.3**
	comp=Z,401nm,0.7s,baz=13,slow=6.2,SNR=78						
PMG				S	**S**	**13 27 44.4**	**-4.7**
	comp=Z,16nm,0.9s,baz=231,slow=13,SNR=2.0						
PMG	**Port Moresby**	**22.43**	**179**	*e*P	**P**	**13 23 43.9**	**-1.8**
	comp=Z,581nm,0.8s						
PMG				S	**S**	**13 27 44.4**	**-4.7**
PMG				LR	LR		
	comp=Z,3μm,20.0s						
RCP	**Roxas**	**23.41**	**269**	↓*e*P	**P**	**13 23 56.1**	**+0.5**
LBMI	**Labuha**	**23.43**	**236**	P	**P**	**13 23 55.8**	**-0.1**
PAGZ	**Pagadian**	**23.48**	**259**	*e*P	**P**	**13 23 57.2**	**+0.9**
PAGZ				*e*S	**S**	**13 28 07.2**	**+0.5**
GUIM	**Jordan**	**23.68**	**266**	*e*P	**P**	**13 23 58.5**	**+0.3**
GUIM				*e*S	**S**	**13 28 09.6**	**-0.5**
INU	**Inuyama**	**23.74**	**340**	*e*P	**P**	**13 23 57.4**	**-1.1**
	comp=Z,503nm,1.1s						
POLP	**Polillo Island**	**24.04**	**277**	*e*P	**P**	**13 24 02.8**	**+1.3**
OTRP	**Odiongan**	**24.04**	**271**	*e*P	**P**	**13 24 02.0**	**+0.4**
MSAI	**Masohi**	**24.07**	**228**	P	**P**	**13 24 03.7**	**+2.0**
BNDI	**Bandanaira**	**24.20**	**225**	P	P	13 24 14.0	+11
CAUP	**Cauayan**	**24.27**	**282**	*e*P	**P**	**13 24 05.2**	**+1.6**
IPIL	**Ipil**	**24.27**	**260**	*e*P	**P**	**13 24 04.7**	**+1.0**
MJAR	**Matsushiro Arr**	**24.48**	**343**	P	**P**	**13 24 05.0**	**-0.4**
	comp=Z,22nm,0.9s,baz=165,slow=9.2,SNR=40						
MJAR				S	**S**	**13 28 25.0**	**+2.6**
	comp=Z,1.6nm,0.9s,baz=18,slow=22,SNR=2.4						
MJAR				LR	LR	13 33 53.6	
	comp=Z,5μm,20.3s,baz=165,slow=37						
MAJO	**Matsushiro**	**24.48**	**343**	↓*e*P	**P**	**13 24 04.5**	**-0.8**
MAJO				pmax	pmax		
	comp=Z,62nm,0.9s						
MAJO				MLR	MLR		
	comp=Z,34μm,20.0s						
MAJO	**Matsushiro**	**24.48**	**343**	*e*P	**P**	**13 24 03.0**	**-2.3**
	comp=Z,168nm,1.1s						
MAJO				LR	LR		
	comp=Z,6μm,20.0s						
MAT	**Matsushiro**	**24.48**	**343**	P	**P**	**13 24 03.1**	**-2.2**
MAT				S	**S**	**13 28 29.8**	**+7.3**
MJB9	**Matsu-Tunnel**	**24.48**	**343**	*e*P	**P**	**13 24 03.8**	**-1.6**
	comp=Z,43nm,1.1s						
JNU	**Nakatsue**	**24.53**	**327**	P	**P**	**13 24 06.2**	**+0.3**
	comp=Z,121nm,1.0s,baz=118,slow=4.6,SNR=29						
JNU	**Nakatsue**	**24.53**	**327**	*e*P	**P**	**13 24 05.2**	**-0.8**
	comp=Z,605nm,1.1s						
SJMP	**San Jose**	**24.91**	**271**	*e*P	**P**	**13 24 10.4**	**+0.9**
APYP	**Conner**	**24.92**	**284**	*e*P	**P**	**13 24 09.1**	**-0.4**
YOJ	**Yonaguni jima**	**25.00**	**300**	*e*P	**P**	**13 24 10.0**	**-0.2**
YOJ				pmax	pmax		
	comp=Z,161nm,0.9s						
YOJ	**Yonaguni jima**	**25.00**	**300**	*e*P	**P**	**13 24 09.9**	**-0.2**
	comp=Z,161nm,0.9s						
TGY	**Tagaytay City**	**25.01**	**275**	P	**P**	**13 24 12.0**	**+1.5**
	comp=Z,2μm,1.0s,baz=114,slow=0.5,SNR=39						
NLAI	**Namlea**	**25.35**	**231**	P	**P**	**13 24 17.4**	**+3.9**
ABRA	**Dolores**	**25.40**	**283**	*e*P	**P**	**13 24 13.7**	**-0.1**
SANI	**Sanana**	**25.48**	**235**	P	**P**	**13 24 13.8**	**-0.8**
LUBP	**Lubang**	**25.69**	**274**	*e*P	**P**	**13 24 16.9**	**+0.3**
LUBP				*e*S	**S**	**13 28 41.8**	**-0.4**
KMSI	**Cibinong**	**25.72**	**243**	P	**P**	**13 24 20.0**	**+3.2**
SCZP	**Santa Cruz**	**26.02**	**279**	*e*P	**P**	**13 24 21.4**	**+1.9**
HNR	**Honiara**	**26.05**	**149**	P	**P**	**13 24 19.3**	**-0.4**
	comp=Z,115nm,0.8s,baz=16,slow=3.6,SNR=8.0						
HNR	**Honiara**	**26.05**	**149**	*e*P	**P**	**13 24 15.9**	**-3.8**
	comp=Z,242nm,0.8s						
HNR				LR	LR		
	comp=Z,5μm,20.0s						
YULB	**Yu-li**	**26.10**	**297**	*e*P	**P**	**13 24 20.0**	**-0.2**
	comp=Z,144nm,1.0s						
NACB	**Ninganchiao**	**26.10**	**298**	P	**P**	**13 24 16.0**	**-4.2**
TWG	**Pinlang**	**26.12**	**295**	*e*P	**P**	**13 24 18.1**	**-2.3**
	comp=Z,577nm,0.9s						
YHNB	**Yeheng**	**26.46**	**299**	P	**P**	**13 24 23.5**	**0.0**
	comp=Z,88nm,0.9s						
YHNB				LR	LR		
	comp=Z,5μm,20.0s						
TATO	**Taipei**	**26.48**	**300**	PFAKE		13 24 30.0	+6.5
TATO				LR	LR		
	comp=Z,3μm,20.0s						
SSLB	**Suanglung**	**26.52**	**297**	*e*P	**P**	**13 24 24.2**	**+0.2**
	comp=Z,184nm,0.7s						
TPUB	**Ta-pu**	**26.65**	**296**	*e*P	**P**	**13 24 23.2**	**-2.0**
	comp=Z,133nm,0.8s						
ENPP	**El Nido**	**26.69**	**269**	*e*P	**P**	**13 24 26.9**	**+1.4**
COEN	**Coen**	**27.17**	**187**	*e*P	**P**	**13 24 26.6**	**-3.3**
	comp=Z,147nm,0.9s						
MRSI	**Marisa**	**27.55**	**245**	P	**P**	**13 24 34.7**	**+1.4**
LUWI	**Luwuk**	**27.58**	**241**	P	**P**	**13 24 33.7**	**+0.1**
LUWI	**Luwuk**	**27.58**	**241**	*e*P	**P**	**13 24 33.3**	**-0.3**
	comp=Z,1μm,1.1s						
TARA	**Tarawa**	**28.53**	**112**	PFAKE		13 24 50.0	+7.9
TARA				LR	LR		
	comp=Z,270nm,20.0s						
BATP	**Bataraza**	**28.65**	**264**	*e*P	**P**	**13 24 45.8**	**+2.7**
BATP				*e*S	**S**	**13 29 29.3**	**+0.5**
TJN	**Taejon**	**28.88**	**326**	↓*e*P	**P**	**13 24 44.8**	**-0.1**
MYLDM	**Lahad Datu**	**28.88**	**257**	*e*P	**P**	**13 24 47.3**	**+2.1**
	comp=Z,227nm,1.1s						
ERM	**Erimo**	**28.90**	**355**	↑*e*P	**P**	**13 24 46.0**	**+1.0**
ERM				pmax	pmax		
	comp=Z,34nm,1.6s						
ERM				MLR	MLR		
	comp=Z,3μm,19.0s						
ERM	**Erimo**	**28.90**	**355**	PFAKE		13 25 00.0	+15
ERM				LR	LR		
	comp=Z,3μm,19.0s						
KDI	**Kendari**	**29.32**	**236**	P	**P**	**13 24 50.4**	**+1.4**
KSRS	**Korea Array**	**29.41**	**329**	P	**P**	**13 24 49.1**	**-0.4**
	comp=Z,7.5nm,0.7s,baz=145,slow=9.6,SNR=32						
KSRS				PcP	**PcP**	**13 27 56.0**	**+1.3**
	comp=Z,39nm,1.1s,baz=148,slow=3.0,SNR=16						
KS15	**Wonju Array Si**	**29.42**	**329**	*e*P	**P**	**13 24 49.9**	**+0.2**
KSAR	**Wonju Array Be**	**29.42**	**329**	P	**P**	**13 24 49.1**	**-0.6**
KSAR						13 27 56.0	
KSAR	**Wonju Array Be**	**29.42**	**329**	P	**P**	**13 24 49.1**	**-0.6**
KSAR				PcP	**PcP**	**13 27 56.0**	**+1.2**
KS01	**Wonju Array Si**	**29.44**	**329**	*e*P	**P**	**13 24 48.9**	**-0.9**
SSE	**Sheshan**	**29.46**	**311**	P	**P**	**13 24 50.5**	**+0.4**
SSE				sP	**sP**	**13 25 08.1**	**-0.1**
SSE				S	**S**	**13 29 42.2**	**+0.9**
SSE				sS	**sS**	**13 30 02.4**	**+0.3**
SSE				pmax	pmax		
	comp=Z,26nm,0.7s						
SSE				pmax	pmax		
	comp=Z,52nm,4.2s						
SSE				LR	LR		
	comp=Z,1μm,22.3s						
SSE				LR	LR		
	comp=Z,2μm,22.2s						
SSE				LR	LR		
	comp=Z,2μm,23.9s						
TSM	**Tawau**	**29.76**	**255**	↓P	**P**	**13 24 57.0**	**+4.1**
PCI	**Palu**	**30.05**	**244**	P	P	13 25 02.8	+7.2
MTN	**Manton Dam**	**30.08**	**211**	*e*P	**P**	**13 24 54.9**	**-0.9**
	comp=Z,178nm,0.8s						
INCN	**Inchon**	**30.10**	**327**	PFAKE		13 25 10.0	+14
INCN				LR	LR		
	comp=Z,2μm,20.0s						
YUK	**Yuzh-Kuril'sk**	**30.77**	**359**	*e*P	**P**	**13 25 01.1**	**-0.4**
KKM	**Kota Kinabalu**	**30.82**	**260**	PFAKE		13 25 10.0	+7.6
KKM				LR	LR		
	comp=Z,3μm,22.0s						
ASAJ	**Asahikawa**	**31.04**	**354**	*e*P	**P**	**13 25 02.7**	**-1.1**
	comp=Z,66nm,0.9s						
ASAJ				*e*PcP	**PcP**	**13 28 00.1**	**+1.3**
TTSI	**Tana Toraja**	**31.14**	**241**	P	**P**	**13 25 07.6**	**+2.5**
NJ2	**Nanjing**	**31.66**	**311**	*e*P	**P**	**13 25 11.6**	**+2.1**
NJ2				S	**S**	**13 30 13.3**	**-2.4**
NJ2				pmax	pmax		
	comp=Z,20nm,0.6s						
NJ2				LR	LR		
	comp=Z,2μm,17.9s						
NJ2				LR	LR		
	comp=Z,2μm,25.5s						
NJ2				LR	LR		
	comp=Z,2μm,27.1s						
SPSI	**Sidrap Palu**	**31.67**	**239**	P	**P**	**13 25 09.8**	**0.0**
SOEI	**Soe**	**31.83**	**225**	P	**P**	**13 25 10.5**	**-0.8**
SOEI	**Soe**	**31.83**	**225**	*e*P	**P**	**13 25 09.9**	**-1.4**
	comp=Z,276nm,1.0s						
SOEI				*e*PcP	**PcP**	**13 28 02.1**	**+0.4**
KUR	**Kuril'sk**	**31.97**	**2**	*d*/*i*P	**P**	**13 25 13.6**	**+1.5**
KUR				*e*S	**S**	**13 30 18.0**	**-2.2**
KUR				pmax	pmax		
	comp=Z,144nm,1.3s						
KUR				MLR	MLR		
	comp=N,811nm,20.0s						
KUR				MLR	MLR		
	comp=Z,853nm,20.0s						
KAPI	**Kappang**	**32.26**	**238**	P	**P**	**13 25 15.2**	**+0.3**
	comp=Z,33nm,0.8s,baz=81,slow=2.0,SNR=8.7						
KAPI				PcP	**PcP**	**13 28 02.8**	**+0.1**
	comp=Z,26nm,1.0s,baz=132,slow=1.5,SNR=3.6						
KAPI				LR	LR	13 40 19.9	
	comp=Z,638nm,19.9s,baz=56,slow=40						
KAPI	**Kappang**	**32.26**	**238**	*e*P	**P**	**13 25 14.7**	**-0.3**
	comp=Z,102nm,1.1s						
KAPI				PcP	**PcP**	**13 28 02.8**	**+0.1**
KAPI				*e*PcP	PcP	13 28 03.4	+0.7
BSSI	**Bau Bau, Buton**	**32.31**	**235**	P	P	13 25 28.6	+13
VLA	**Vladivostok**	**32.45**	**340**	*de*P	**P**	**13 25 17.2**	**+0.8**
VLA				pmax	pmax		
	comp=Z,75nm,1.1s						
VLA				MLR	MLR		
	comp=Z,3μm,23.0s						
MMRI	**Maumere**	**32.52**	**230**	P	P	13 25 27.4	+10
MMRI	**Maumere**	**32.52**	**230**	*e*P	**P**	**13 25 19.4**	**+2.1**
	comp=Z,587nm,2.0s						
EDFI	**Ende, Flores**	**33.00**	**230**	P	P	13 25 15.8	-5.8
CTA	**Charters Tower**	**33.05**	**181**	LR	LR	13 37 32.2	
	comp=Z,2μm,20.9s,baz=333,slow=34						
CTA	**Charters Tower**	**33.05**	**181**	P	**P**	**13 25 22.9**	**+1.1**
CTA				pmax	pmax		
	comp=Z,111nm,1.5s						
CTAO	**Charters Tower**	**33.05**	**181**	*e*P	**P**	**13 25 21.6**	**-0.2**
CTAO				*e*		13 28 04.7	
CTAO				pmax	pmax		
	comp=Z,60nm,0.8s						
CTAO				MLR	MLR		
	comp=Z,3μm,21.0s						
CTAO	**Charters Tower**	**33.05**	**181**	*e*P	**P**	**13 25 21.6**	**-0.2**
	comp=Z,60nm,0.8s						
CTAO				*e*PcP	**PcP**	**13 28 04.7**	**0.0**
CTAO				LR	LR		
	comp=Z,3μm,21.0s						
GZH	**Guangzhou**	**33.09**	**292**	*e*P	**P**	**13 25 21.1**	**-1.1**
GZH				S	**S**	**13 30 32.6**	**-5.6**
USRK	**Ussuriysk Ar.**	**33.38**	**341**	P	**P**	**13 25 25.3**	**+0.9**
	comp=Z,10nm,0.7s,baz=154,slow=9.1,SNR=51						
USRK				PcP	**PcP**	**13 28 06.6**	**+1.3**
	comp=Z,9.1nm,0.8s,baz=189,slow=3.0,SNR=5.0						
USRK				LR	LR	13 38 43.2	
	comp=Z,3μm,21.5s,baz=141,slow=36						
YSS	**Yuzh-Sakhalins**	**33.84**	**355**	↑*e*P	**P**	**13 25 27.9**	**-0.5**
YSS				*e**PP	**pP**	**13 25 42.5**	**+1.6**
YSS				*e*		13 26 48.7	
YSS				*i* S	**S**	**13 30 45.2**	**-3.9**
YSS				*e*SS	**SnSn**	**13 32 50.0**	**-7.8**
YSS				*e*SSS	SSS	13 33 20.0	
YSS				pmax	pmax		
	comp=Z,50nm,1.1s						
YSS				pmax	pmax		
	comp=N,30nm,1.2s						
YSS				pmax	pmax		
	comp=E,20nm,1.0s						
YSS				pmax	pmax		
	comp=Z,110nm,3.2s						
YSS				smax	smax		
	comp=N,400nm,12.0s						
YSS				MLR	MLR		
	comp=N,1μm,19.0s						
YSS				MLR	MLR		
	comp=Z,1μm,19.0s						
YSS	**Yuzh-Sakhalins**	**33.84**	**355**	*e*P	**P**	**13 25 23.9**	**-4.5**
	comp=Z,78nm,1.2s						
YSS				LR	LR		
	comp=Z,781nm,21.0s						
DL2	**Dalian**	**33.88**	**324**	↑P	**P**	**13 25 29.1**	**+0.2**
DL2				sP	**sP**	**13 25 50.1**	**+3.1**
DL2				PcP	**PcP**	**13 28 08.1**	**+1.3**
DL2				S	**S**	**13 30 48.4**	**-1.6**
DL2				pmax	pmax		
	comp=Z,180nm,0.7s						
DL2				pmax	pmax		
	comp=Z,330nm,6.8s						
DL2				LR	LR		
	comp=Z,2μm,20.4s						
DL2				LR	LR		
	comp=Z,1μm,20.5s						
DL2				LR	LR		
	comp=Z,2μm,25.7s						
WHN	**Wuhan**	**34.44**	**305**	↑P	**P**	**13 25 36.5**	**+2.7**
WHN				sP	**sP**	**13 25 56.9**	**+4.9**
WHN				PcP	**PcP**	**13 28 09.4**	**+0.8**
WHN				S	**S**	**13 30 58.1**	**-0.8**
WHN				LR	LR		
	comp=Z,2μm,13.6s						
WHN				LR	LR		
	comp=Z,3μm,17.4s						
WHN				LR	LR		
	comp=Z,5μm,15.8s						
MDJ	**Mudanjiang**	**34.57**	**338**	P	**P**	**13 25 35.3**	**+0.6**
MDJ				pP	pP	13 25 46.7	-0.6
MDJ				sP	sP	13 25 51.5	-1.4
MDJ				PP	**PnPn**	**13 26 50.3**	**-1.0**
MDJ				PcP	**PcP**	**13 28 09.6**	**+1.0**
MDJ				S	**S**	**13 31 00.3**	**-0.2**
MDJ				ScP	**ScP**	**13 31 51.0**	**+0.8**
MDJ				PcS	**PcS**	**13 31 55.9**	**+0.9**
MDJ				ScS	**ScS**	**13 35 53.8**	**+0.8**
MDJ				pmax	pmax		
	comp=Z,23nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,200nm,8.8s						
MDJ				LR	LR		
	comp=Z,2μm,20.4s						
MDJ				LR	LR		
	comp=Z,1μm,22.9s						
MDJ				LR	LR		
	comp=Z,3μm,22.3s						
MDJ	**Mudanjiang**	**34.57**	**338**	PFAKE		13 25 50.0	+15
MDJ				LR	LR		
	comp=Z,2μm,20.0s						
BTM	**Bintulu**	**34.63**	**256**	↑P	**P**	**13 25 38.3**	**+2.6**
BASI	**Baing, Sumba**	**34.79**	**229**	P	P	13 25 46.9	+10
SNY	**Shenyang**	**34.90**	**329**	↑P	**P**	**13 25 37.4**	**-0.3**
SNY				S	S	13 30 56.0	-10
SNY				pmax	pmax		
	comp=Z,16nm,0.7s						
SNY				pmax	pmax		
	comp=Z,160nm,3.2s						
SNY				LR	LR		
	comp=Z,2μm,21.0s						
SNY				LR	LR		
	comp=Z,2μm,21.7s						
SNY				LR	LR		
	comp=Z,5μm,21.7s						
WRAB	**Tennant Creek**	**35.05**	**200**	*e*P	**P**	**13 25 38.2**	**-1.0**
WRAB				*e*		13 28 11.3	
WRAB				pmax	pmax		
	comp=Z,330nm,0.8s						
WRAB	**Tennant Creek**	**35.05**	**200**	*e*P	**P**	**13 25 38.2**	**-1.0**
	comp=Z,330nm,0.8s						
WRAB				*e*PcP	**PcP**	**13 28 11.3**	**+0.8**
WRAB				LR	LR		
	comp=Z,4μm,20.0s						
TIA	**Tai'an**	**35.06**	**316**	↓P	**P**	**13 25 40.3**	**+1.1**
TIA				pP	**pP**	**13 25 49.4**	**-2.3**
TIA				pmax	pmax		
	comp=Z,40nm,0.8s						
TIA				pmax	pmax		
	comp=Z,380nm,3.9s						
TIA				LR	LR		
	comp=Z,3μm,19.0s						
TIA				LR	LR		
	comp=Z,1μm,17.8s						
TIA				LR	LR		
	comp=Z,2μm,17.3s						
WB2	**Warramunga Arr**	**35.06**	**200**	*e*P	**P**	**13 25 39.0**	**-0.3**
	comp=Z,355nm,0.8s						
WRA	**Warramunga Arr**	**35.07**	**200**	P	**P**	**13 25 39.2**	**-0.1**
	comp=Z,247nm,0.8s,baz=24,slow=9.5,SNR=212						
WRA				PcP	**PcP**	**13 28 11.5**	**+1.0**
	comp=Z,53nm,1.0s,baz=12,slow=3.4,SNR=12						
WRA				S	**S**	**13 31 05.5**	**-3.2**
	comp=Z,4.4nm,1.1s,baz=28,slow=16,SNR=5.1						
WRA				PKiKP	**PKiKP**	**13 35 31.3**	**-1.3**
	comp=Z,1.0nm,0.8s,baz=321,slow=1.1,SNR=5.4						
WRA				LR	LR	13 40 39.4	
	comp=Z,3μm,20.0s,baz=15,slow=37						
CN2	**Changchun**	**35.55**	**333**	*e*P	**P**	**13 25 43.4**	**+0.2**
CN2				*e*S	**S**	**13 31 15.5**	**-0.1**
CN2				pmax	pmax		
	comp=Z,20nm,0.8s						
CN2				LR	LR		
	comp=Z,1μm,20.0s						
CN2				LR	LR		
	comp=Z,2μm,20.0s						
CN2				LR	LR		
	comp=Z,2μm,21.0s						
BBKI	**Banjar Baru**	**35.65**	**245**	P	P	13 25 53.1	+8.6
SBUM	**Sibu**	**35.69**	**256**	↑P	**P**	**13 25 46.4**	**+1.6**
SBUM	**Sibu**	**35.69**	**256**	*e*P	**P**	**13 25 45.4**	**+0.6**
	comp=Z,60nm,0.9s						
SBUM				*e*S	**S**	**13 31 19.0**	**+0.5**
QIZ	**Qiongzhong**	**35.80**	**284**	P	**P**	**13 25 46.7**	**+1.0**
QIZ				pP	**pP**	**13 25 57.0**	**-1.3**
QIZ				PP	**PP**	**13 27 09.9**	**+2.2**
QIZ				S	**S**	**13 31 21.2**	**+1.1**
QIZ				sS	**sS**	**13 31 37.9**	**-3.3**
QIZ				pmax	pmax		
	comp=Z,89nm,1.3s						
QIZ				LR	LR		
	comp=Z,1μm,20.2s						
QIZ				LR	LR		
	comp=Z,2μm,22.9s						
QIZ	**Qiongzhong**	**35.80**	**284**	PFAKE		13 26 00.0	+14
QIZ				LR	LR		
	comp=Z,2μm,19.0s						
PLAI	**Plampang**	**36.06**	**234**	P	P	13 25 53.3	+

	comp=E,66nm,1.4s								
TYV					smax	smax			
	comp=N,1μm,5.0s								
TYV					MLR	MLR			
	comp=N,2μm,18.0s								
TYV					MLR	MLR			
	comp=Z,2μm,18.0s								
KSM	**Kuching**	**37.81 255**	⇓	P		**P**	**13 26 05.2**	**+2.3**	
KSM	**Kuching**	**37.81 255**		*e*P		**P**	**13 26 02.8**	**-0.1**	
	comp=Z,108nm,1.0s								
KSM				*e*PcP		**PcP**	**13 28 19.8**	**+0.9**	
KSM				LR	LR				
	comp=Z,1μm,21.0s								
BJT	**Baijiatuau**	**37.85 321**		PFAKE			13 26 10.0	+7.1	
BJT				LR	LR				
	comp=Z,3μm,19.0s								
BJI	**Beijing**	**37.86 321**		P		**P**	**13 26 03.8**	**+0.8**	
BJI				sP		**sP**	**13 26 20.3**	**-0.9**	
BJI				PcP		**PcP**	**13 28 19.9**	**+1.3**	
BJI				S		**S**	**13 31 44.9**	**-6.1**	
BJI				sS		**ScP**	**13 32 06.1**	**+3.7**	
BJI				ScS		**ScS**	**13 36 12.4**	**+1.0**	
BJI				pmax	pmax				
	comp=Z,59nm,1.3s								
BJI				pmax	pmax				
	comp=Z,360nm,3.3s								
BJI				LR	LR				
	comp=Z,2μm,18.7s								
BJI				LR	LR				
	comp=Z,1μm,18.2s								
BJI				LR	LR				
	comp=Z,2μm,19.3s								
KLR	**Kul'dur**	**38.00 344**		P		**P**	**13 26 03.5**	**-0.5**	
	comp=Z,24nm,0.8s,baz=147,slow=8.2,SNR=73								
KLR				PcP		**PcP**	**13 28 19.5**	**+0.7**	
	comp=Z,24nm,0.9s,baz=318,slow=3.5,SNR=4.3								
KLR				LR	LR		13 42 20.0		
	comp=Z,2μm,19.0s,baz=160,slow=37								
KLR	**Kul'dur**	**38.00 344**		P		**P**	**13 26 03.5**	**-0.5**	
KLR							13 28 19.5		
KLR				pmax	pmax				
	comp=Z,24nm,0.8s								
KLR				pmax	pmax				
	comp=Z,24nm,0.9s								
KLR				MLR	MLR				
	comp=Z,2μm,19.0s								
PBKI	**Pangkalan Bun**	**38.14 248**		P		**P**	**13 26 08.8**	**+3.2**	
SKR	**Severo-Kuril's**	**38.20 10**		*e*P		**P**	**13 26 04.1**	**-1.5**	
SKR				*e*			13 28 06.8		
SKR				*e*S		**S**	**13 31 52.9**	**-2.8**	
SKR				pmax	pmax				
	comp=Z,92nm,1.0s								
SKR				pmax	pmax				
	comp=Z,300nm,1.2s								
SKR				MLR	MLR				
	comp=Z,600nm,18.0s								
ENH	**Enshi**	**38.28 302**		PFAKE			13 26 20.0	+13	
ENH				LR	LR				
	comp=Z,2μm,20.0s								
ABJI	**Asem Bagus**	**38.35 239**		P		**P**	**13 26 09.3**	**+1.9**	
EIDS	**Eidsvold**	**38.55 174**		*e*P		**P**	**13 26 05.9**	**-3.0**	
	comp=Z,42nm,1.0s								
EIDS				*e*PcP		**PcP**	**13 28 21.9**	**+1.0**	
AS01	**Alice Springs**	**38.66 199**		*e*P		**P**	**13 26 09.1**	**-0.8**	
AS31	**Alice Springs**	**38.68 199**		*e*P		**P**	**13 26 09.7**	**-0.4**	
	comp=Z,27nm,0.6s								
ASAR	**Alice Springs**	**38.68 199**		P		**P**	**13 26 10.2**	**+0.1**	
	comp=Z,62nm,0.7s,baz=24,slow=9.2,SNR=800								
ASAR				PP		**PnPn**	**13 27 44.1**	**+2.3**	
	comp=Z,12nm,0.8s,baz=21,slow=9.7,SNR=4.4								
ASAR				PcP		**PcP**	**13 28 22.0**	**+0.6**	
	comp=Z,11nm,0.9s,baz=25,slow=3.6,SNR=4.1								
ASAR				PKiKP		**PKiKP**	**13 35 34.2**	**-1.3**	
	comp=Z,1.0nm,0.8s,baz=88,slow=0.6,SNR=4.3								
ASAR				LR	LR		13 42 52.1		
	comp=Z,3μm,20.3s,baz=22,slow=37								
JAGI	**Jajag, Banyuwa**	**38.79 238**		P		**P**	**13 26 09.5**	**-1.6**	
JAGI	**Jajag, Banyuwa**	**38.79 238**		*e*P		**P**	**13 26 09.3**	**-1.8**	
	comp=Z,453nm,2.0s								
BLJI	**Banyuglugur**	**38.86 240**		P		**P**	**13 26 13.4**	**+1.7**	
TIY	**Taiyuan**	**39.05 315**		*e*P		**P**	**13 26 15.0**	**+1.9**	
TIY				S		**S**	**13 32 10.1**	**+0.9**	
TIY				pmax	pmax				
	comp=Z,120nm,1.0s								
TIY				LR	LR				
	comp=Z,770nm,15.0s								
TIY				LR	LR				
	comp=Z,1μm,18.5s								
TIY				LR	LR				
	comp=Z,3μm,20.6s								
GMJI	**Gumukmas**	**39.27 239**		P		**P**	**13 26 17.5**	**+2.4**	
GYA	**Guiyang**	**39.71 296**	⇑	*i*P		**P**	**13 26 21.5**	**+2.7**	
GYA				pP		pP	13 26 32.0	+0.5	
GYA				sP		sP	13 26 37.4	+0.3	
GYA				PP		**PnPn**	**13 27 56.2**	**+2.0**	
GYA				PcP		**PcP**	**13 28 26.3**	**+1.4**	
GYA				ScP		**ScP**	**13 32 11.0**	**+1.0**	
GYA				S		**S**	**13 32 19.7**	**+0.2**	
GYA				sS		sS	13 32 41.4	+0.6	
GYA				SS		**SS**	**13 35 15.8**	**-0.7**	
GYA				ScS		**ScS**	**13 36 22.0**	**-1.0**	
GYA				pmax	pmax				
	comp=Z,50nm,1.1s								
GYA				pmax	pmax				
	comp=Z,200nm,8.7s								
GYA				LR	LR				
	comp=Z,1μm,20.2s								
GYA				LR	LR				
	comp=Z,2μm,18.6s								
GYA				LR	LR				
	comp=Z,3μm,19.6s								
XAN	**Xi'an**	**40.02 308**		P		**P**	**13 26 22.4**	**+1.2**	
XAN				pP		pP	13 26 34.4	+0.5	
XAN				sP		sP	13 26 39.6	+0.1	
XAN				PP		**PnPn**	**13 27 57.8**	**+0.2**	
XAN				S		**S**	**13 32 21.3**	**-2.6**	
XAN				sS		sS	13 32 41.4	-3.7	
XAN				pmax	pmax				
	comp=Z,55nm,0.8s								
XAN				pmax	pmax				
	comp=Z,97nm,4.2s								
XAN				LR	LR				
	comp=Z,660nm,17.0s								
XAN				LR	LR				
	comp=Z,1μm,17.2s								
XAN				LR	LR				
	comp=Z,1μm,18.4s								
DZM	**Mont Dzumac**	**40.04 151**		*e*P		**P**	**13 26 20.8**	**-0.7**	
	comp=Z,769nm,1.2s								
DZM	**Mont Dzumac**	**40.04 151**		*e*LR		LR	13 37 22.9		
	comp=Z,3μm,20.9s								
DZM	**Mont Dzumac**	**40.04 151**		LR		LR	13 41 58.1		
	comp=Z,3μm,20.4s,baz=344,slow=35								
DZM	**Mont Dzumac**	**40.04 151**		*e*P		**P**	**13 26 18.7**	**-2.7**	
	comp=Z,450nm,1.2s								
DZM				*e*PcP		**PcP**	**13 28 26.8**	**+1.0**	
NKL	**Nikolayevsk**	**40.16 354**		*e*P		**P**	**13 26 22.0**	**0.0**	
NKL				*e*			13 26 27.4		
NKL				*e*S		**S**	**13 32 22.0**	**-3.2**	
NKL				pmax	pmax				
	comp=N,40nm,1.0s								
NKL				pmax	pmax				
	comp=Z,86nm,1.0s								
NKL				pmax	pmax				
	comp=Z,350nm,4.0s								
NKL				smax	smax				
	comp=E,500nm,6.0s								
NGJI	**Ngawi**	**40.48 242**		P		P	13 26 30.6	+5.5	
	comp=E,190nm,1.1s								
PWJI	**Pagerwojo**	**40.52 241**		P		**P**	**13 26 25.8**	**+0.3**	
	comp=E,539nm,1.1s,comp=E,4μm								
PEA0	**Petropavlovsk-**	**40.80 10**		*e*P		**P**	**13 26 28.0**	**+0.7**	
PEA0B	**Petropavlovsk-**	**40.80 10**		*e*P		**P**	**13 26 28.9**	**+1.6**	
	comp=E,116nm,1.1s								
PETK	**Petropavlovsk-**	**40.80 10**		P		**P**	**13 26 28.0**	**+0.7**	
	comp=E,34nm,1.0s,baz=193,slow=5.8,SNR=20								
PETK				PcP		**PcP**	**13 28 28.2**	**+0.6**	
	comp=E,19nm,0.9s,baz=204,slow=1.4,SNR=3.3								
PETK				S		**S**	**13 32 37.4**	**+2.6**	
	comp=E,0.7nm,0.4s,baz=360,slow=21,SNR=4.9								
PETK				LR		LR	13 41 52.1		
	comp=E,2μm,21.8s,baz=204,slow=34								
PETK	**Petropavlovsk-**	**40.80 10**		P		**P**	**13 26 28.0**	**+0.7**	
PETK							13 28 28.2		
PETK				S		**S**	**13 32 37.4**	**+2.6**	
PETK				pmax	pmax				
	comp=Z,30nm,1.0s								
PETK				pmax	pmax				
	comp=Z,19nm,0.9s								
PETK				smax	smax				
	comp=N,1.0nm,0.4s								
PET	**Petropavlovsk**	**40.89**	**11**	*i*P		**P**	**13 26 29.4**	**+1.4**	
PET				*e**SP		**sP**	**13 26 48.2**	**+1.9**	
PET				*e*S		**S**	**13 32 36.3**	**+0.2**	
PET				pmax	pmax				
	comp=Z,400nm,17.4s								
PET				pmax	pmax				
	comp=Z,200nm,16.0s								
PET				pmax	pmax				
	comp=Z,99nm,1.1s								
PET				MLR	MLR				
	comp=Z,1μm,17.0s								
PET				MLR	MLR				
	comp=Z,900nm,14.0s								
PET	**Petropavlovsk**	**40.89**	**11**	P		**P**	**13 26 28.1**	**+0.1**	
	comp=Z,102nm,1.1s								
PET				LR	LR				
	comp=Z,1μm,22.0s								
WOJI	**Wonogiri, Jawa**	**41.18 242**		P		**P**	**13 26 31.0**	**+0.1**	
HHC	**Hu-ho-hao-te**	**41.23 319**		*e*P		**P**	**13 26 32.6**	**+1.4**	
HHC				pP		pP	13 26 41.7	-2.2	
HHC				sP		sP	13 26 53.0	+3.5	
HHC				S		**S**	**13 32 42.8**	**+1.0**	
HHC				pmax	pmax				
	comp=Z,48nm,1.0s								
HHC				pmax	pmax				
	comp=Z,360nm,7.2s								
HHC				LR	LR				
	comp=Z,860nm,19.0s								
HHC				LR	LR				
	comp=Z,2μm,18.4s								
HHC				LR	LR				
	comp=Z,2μm,19.0s								
SKNT	**Sakolnakorn**	**41.32 281**		P		**P**	**13 26 34.2**	**+2.1**	
	comp=Z,73nm,0.8s								
UGM	**Wanagama**	**41.56 242**		P		**P**	**13 26 35.0**	**+1.0**	
UGM	**Wanagama**	**41.56 242**		*e*P		**P**	**13 26 35.8**	**+1.7**	
	comp=Z,703nm,1.2s								
BTO	**Baotou**	**42.11 317**		*e*P		**P**	**13 26 39.7**	**+1.3**	
HIA	**Hailar**	**42.27 334**		PFAKE			13 26 50.0	+11	
HIA				LR	LR				
	comp=Z,2μm,19.0s								
JOHN	**Johnston Islan**	**42.42 80**		PFAKE			13 26 50.0	+9.0	
JOHN				LR	LR				
	comp=Z,122nm,21.0s								
KHON	**Khomkaen**	**42.45 280**		P		**P**	**13 26 44.1**	**+2.8**	
	comp=Z,24nm,1.0s								
KPJI	**Karang Pucung**	**42.65 244**		P		**P**	**13 26 43.3**	**+0.4**	
KMI	**Kunming**	**42.98 293**		P		**P**	**13 26 48.3**	**+2.5**	
KMI				pP		pP	13 26 58.3	-0.3	
KMI				sP		sP	13 27 02.6	-1.5	
KMI				PcP		**PcP**	**13 28 37.5**	**+1.8**	
KMI				S		**S**	**13 33 07.6**	**-0.6**	
KMI				sS		sS	13 33 26.5	-3.1	
KMI				SS		**SS**	**13 36 17.7**	**-3.7**	
KMI				pmax	pmax				
	comp=Z,55nm,1.0s								
KMI				pmax	pmax				
	comp=Z,130nm,3.1s								
KMI				LR	LR				
	comp=Z,590nm,19.7s								
KMI				LR	LR				
	comp=Z,680nm,18.2s								
KMI				LR	LR				
	comp=Z,960nm,21.3s								
MBWA	**Marble Bar**	**43.17 218**		*e*P		**P**	**13 26 44.6**	**-2.4**	
	comp=Z,48nm,1.0s								
MBWA				LR	LR				
	comp=Z,1μm,22.0s								
CD2	**Chengdu**	**43.20 301**	⇑	P		**P**	**13 26 48.6**	**+1.3**	
CD2				pP		pP	13 27 00.4	+0.3	
CD2				sP		sP	13 27 05.6	0.0	
CD2				PcS		**PcS**	**13 32 29.8**	**+1.0**	
CD2				S		**S**	**13 33 13.2**	**+2.2**	
CD2				sS		sS	13 33 33.4	+1.0	
CD2				pmax	pmax				
	comp=Z,100nm,0.6s								
CD2				pmax	pmax				
	comp=Z,310nm,5.0s								
CD2				LR	LR				
	comp=Z,2μm,16.9s								
CD2				LR	LR				
	comp=Z,3μm,21.9s								
CD2				LR	LR				
	comp=Z,2μm,25.8s								
LEM	**Lembang**	**43.57 245**		P		**P**	**13 26 54.5**	**+3.9**	
ARMA	**Armidale**	**43.60 174**		*e*P		**P**	**13 26 49.0**	**-1.4**	
	comp=Z,94nm,1.1s								
KTGM	**Kuala Trenggan**	**43.60 264**	⇑	P		**P**	**13 26 53.9**	**+3.3**	
MSVF	**Nonsavu**	**43.62 134**		*c*e*i*P		**P**	**13 26 51.6**	**+0.8**	
MSVF				*i* *PP		**pP**	**13 27 05.5**	**+1.9**	
MSVF				pmax	pmax				
	comp=Z,166nm,1.1s								
MSVF	**Nonsavu**	**43.62 134**		P		**P**	**13 26 51.0**	**+0.2**	
	comp=Z,264nm,1.5s								
MSVF				LR	LR				
	comp=Z,2μm,20.0s								
CISI	**Cisompet, Garu**	**43.73 244**		P		**P**	**13 26 50.4**	**-1.4**	
CISI	**Cisompet, Garu**	**43.73 244**		*e*P		**P**	**13 26 50.1**	**-1.6**	
	comp=Z,72nm,0.7s								
MYKOM	**Kota Tinggi**	**43.84 259**	⇑	P		**P**	**13 26 55.5**	**+3.0**	
MYKOM	**Kota Tinggi**	**43.84 259**		*e*P		**P**	**13 26 52.8**	**+0.2**	
	comp=Z,156nm,1.0s								
DSRI	**Dabo**	**43.86 255**		P		**P**	**13 26 53.1**	**+0.4**	
CBJI	**Citeko**	**44.07 246**		P		P	13 27 00.1	+5.7	
TNG	**Tangerang**	**44.15 247**		P		**P**	**13 26 58.7**	**+3.7**	
TNG				P		**P**	**13 26 58.2**	**+3.2**	
PBKT	**Sadao Pong**	**44.22 280**		P		**P**	**13 26 57.7**	**+2.1**	
	comp=Z,86nm,1.3s,comp=Z,1μm								
KGM	**Kluang**	**44.28 259**	⇑	P		**P**	**13 26 57.9**	**+1.7**	
PATY	**Pattaya**	**44.56 275**		P		**P**	**13 27 02.5**	**+4.2**	
	comp=Z,18nm,0.9s								
UTTA	**Uttaradit**	**44.59 282**		P		**P**	**13 27 00.5**	**+2.0**	
	comp=Z,12nm,0.9s								
LZH	**Lanzhou**	**44.64 308**		*e*P		**P**	**13 27 01.3**	**+2.4**	
LZH				pP		pP	13 27 14.2	+2.4	
LZH				sP		sP	13 27 21.3	+4.0	
LZH				PP		**PP**	**13 28 45.3**	**+1.5**	
LZH				S		**S**	**13 33 33.1**	**+1.0**	
LZH				sS		sS	13 33 54.1	+0.5	
LZH				SS		**ScS**	**13 36 47.0**	**-6.0**	
LZH				pmax	pmax				
	comp=Z,160nm,1.1s								
LZH				pmax	pmax				
	comp=Z,400nm,4.0s								
LZH				LR	LR				
	comp=Z,1μm,15.0s								
LZH				LR	LR				
	comp=Z,820nm,15.2s								
LZH				LR	LR				
	comp=Z,2μm,16.0s								
STKA	**Stephens Creek**	**45.05 186**		P		**P**	**13 27 01.5**	**-0.4**	
	comp=Z,68nm,0.7s,baz=350,slow=8.7,SNR=116								
STKA				PcP		**PcP**	**13 28 42.6**	**+0.4**	
	comp=Z,34nm,1.0s,baz=336,slow=7.0,SNR=4.7								
STKA				LR	LR		13 46 00.8		
	comp=Z,2μm,20.0s,baz=359,slow=36								
STKA	**Stephens Creek**	**45.05 186**		*e*P		**P**	**13 26 59.6**	**-2.3**	
	comp=Z,19nm,0.8s								
STKA				PcP		**PcP**	**13 28 42.6**	**+0.4**	
BLSI	**Bandar Lampung**	**45.07 248**		P		P	13 27 07.3	+4.9	
CGJI	**Cibinong**	**45.19 247**		P		**P**	**13 27 04.0**	**+0.7**	
	comp=Z,192nm,1.0s,comp=Z,2μm								
KLI	**Kotabumi**	**45.21 249**		P		**P**	**13 27 07.5**	**+4.0**	
	comp=Z,94nm,1.3s								
LAMP	**Lampang**	**45.45 283**		P		**P**	**13 27 07.7**	**+2.3**	
	comp=Z,18nm,0.9s								
SUKH	**Sukhothai**	**45.47 282**		P		**P**	**13 27 07.8**	**+2.3**	
	comp=Z,12nm,1.2s,comp=Z,127nm								
FRIM	**Kepong**	**45.58 262**	⇓	P		**P**	**13 27 08.6**	**+2.2**	
SKLT	**Songkhla**	**45.65 267**		P		**P**	**13 27 09.8**	**+2.8**	
	comp=Z,68nm,1.0s,comp=Z,793nm								
KASI	**Kota Agung**	**45.81 249**		P		**P**	**13 27 09.8**	**+1.6**	
	comp=Z,123nm,1.1s								
IPM	**Ipoh**	**45.84 263**	⇑	P		**P**	**13 27 10.4**	**+1.8**	
IPM	**Ipoh**	**45.84 263**		*e*P		**P**	**13 27 09.4**	**+0.8**	
IPM				*e*PcP		**PcP**	**13 28 47.0**	**+1.6**	
LWLI	**Liwa**	**46.00 250**		P		**P**	**13 27 10.5**	**+0.6**	
	comp=Z,171nm,0.8s								
KULM	**Kulim**	**46.02 265**	⇑	P		**P**	**13 27 13.2**	**+3.3**	
KULM	**Kulim**	**46.02 265**		*e*P		**P**	**13 27 09.1**	**-0.8**	
	comp=Z,96nm,1.1s								
KULM				*e*PcP		**PcP**	**13 28 47.4**	**+1.4**	
KULM				LR	LR				
	comp=Z,2μm,22.0s								
LHSI	**Lahat**	**46.03 251**		P		**P**	**13 27 10.8**	**+0.8**	
	comp=Z,153nm,1.0s								
CM01	**Chiang Mai Arr**	**46.09 283**		*e*P		**P**	**13 27 11.7**	**+1.2**	
CHTO	**Chiang Mai**	**46.10 283**		P		**P**	**13 27 12.1**	**+1.5**	
	comp=Z,144nm,0.9s,comp=Z,2μm								
CHTO	**Chiang Mai**	**46.10 283**		P		**P**	**13 27 09.2**	**-1.4**	
CHTO				*e*			13 28 48.2		
CHTO				pmax	pmax				
	comp=Z,71nm,1.3s								
CHTO				MLR	MLR				
	comp=Z,792nm,21.0s								
CHTO	**Chiang Mai**	**46.10 283**		P		**P**	**13 27 09.2**	**-1.4**	
	comp=Z,71nm,1.3s								
CHTO				*e*PcP		**PcP**	**13 28 48.2**	**+1.9**	
CHTO				LR	LR				
	comp=Z,792nm,21.0s								
CM31	**Chiang Mai Arr**	**46.11 283**		*e*P		**P**	**13 27 13.1**	**+2.5**	
CMAR	**Chiang Mai Arr**	**46.11 283**		P		**P**	**13 27 12.6**	**+2.0**	
	comp=Z,69nm,0.8s,baz=84,slow=5.8,SNR=253								
CMAR				PcP		**PcP**	**13 28 48.1**	**+1.9**	
	comp=Z,43nm,0.9s,baz=86,slow=2.3,SNR=10								
CMAR				LR	LR		13 45 46.2		
	comp=Z,818nm,20.2s,baz=90,slow=35								
UMPA	**Umpang Tak**	**46.26 280**		P		**P**	**13 27 14.7**	**+2.9**	
	comp=Z,22nm,0.9s,comp=Z,394nm								
TRTT	**Trang**	**46.43 268**		P		**P**	**13 27 17.7**	**+4.5**	
	comp=Z,30nm,1.1s								
CLNS	**Chul'man**	**46.66 344**		*e*P		**P**	**13 27 12.7**	**-1.7**	
CLNS				*e**PP		**pP**	**13 27 22.5**	**-4.8**	
CLNS				*e*			13 28 47.1		
CLNS				*e*			13 28 59.8		
CLNS				*e*PPP		PPP	13 29 44.8		
CLNS				*e*S		**S**	**13 33 59.0**	**-1.3**	
CLNS				*e*			13 36 59.2		
CLNS				pmax	pmax				
	comp=Z,31nm,0.9s								
CLNS				pmax	pmax				
	comp=N,22nm,1.0s								
CLNS				pmax	pmax				
	comp=E,9.0nm,0.9s								
CLNS				pmax	pmax				
	comp=Z,17nm,1.1s								
CLNS				pmax	pmax				
	comp=E,11nm,0.8s								
CLNS				pmax	pmax				
	comp=N,15nm,1.1s								
CLNS				smax	smax				
	comp=E,137nm,15.7s								
CLNS				smax	smax				
	comp=N,273nm,14.3s								
CLNS				MLR	MLR				
	comp=E,859nm,16.0s								
CLNS				MLR	MLR				
	comp=Z,1μm,16.0s								
CLNS				MLR	MLR				
	comp=N,1μm,16.0s								
MNAI	**Manna**	**46.76 251**		P		**P**	**13 27 19.1**	**+3.4**	
	comp=N,417nm,1.1s,comp=N,4μm								
MNAI	**Manna**	**46.76 251**		*e*P		**P**	**13 27 13.4**	**-2.4**	
	comp=N,485nm,1.1s								
BBOO	**Buckleboo**	**46.83 192**		*e*P		**P**	**13 27 15.2**	**-0.7**	
	comp=N,327nm,0.9s								
BBOO				*e*PcP		**PcP**	**13 28 49.1**	**+0.7**	
KSI	**Kapahiang**	**46.83 252**		P		**P**	**13 27 16.9**	**+0.6**	
	comp=N,200nm,0.9s,comp=N,3μm								
CIT	**Chita**	**46.98 333**		*e*P		**P**	**13 27 16.0**	**-1.0**	
CIT				*e*			13 27 23.2		
CIT				*e*			13 28 47.7		
XMIS	**Christmas Isla**	**47.00 242**		*e*P		**P**	**13 27 18.9**	**+1.3**	
	comp=N,251nm,1.3s								
SURT	**Suratani**	**47.11 270**		P		**P**	**13 27 21.7**	**+3.3**	
	comp=N,24nm,1.1s,comp=N,388nm								
FORT	**Forrest**	**47.22 202**		*e*P		**P**	**13 27 18.2**	**-0.8**	
	comp=N,4μm,0.9s								
ULN	**Ulaanbaatar**	**47.72 325**		*e*P		**P**	**13 27 23.8**	**+0.8**	
ULN				*e*			13 28 53.5		
ULN				pmax	pmax				
	comp=Z,59nm,0.9s								
ULN				MLR	MLR				
	comp=Z,3μm,21.0s								
ULN	**Ulaanbaatar**	**47.72 325**		P		**P**	**13 27 24.0**	**+1.0**	
	SNR=53								
ULN				P		**P**	**13 27 24.0**	**+1.0**	
	SNR=53								
ULN	**Ulaanbaatar**	**47.72 325**		*e*P		**P**	**13 27 23.8**	**+0.8**	
	comp=Z,59nm,0.9s								
ULN				*e*PcP		**PcP**	**13 28 53.5**	**+1.9**	
ULN				LR	LR				
	comp=Z,3μm,21.0s								
SONM	**Songino Array**	**48.08 324**		P		**P**	**13 27 27.0**	**+1.3**	
	comp=Z,72nm,1.0s,baz=137,slow=8.7,SNR=118								
SONM				PcP		**PcP**	**13 28 54.1**	**+1.2**	
	comp=Z,40nm,1.1s,baz=126,slow=2.6,SNR=4.7								
SONM				PKPPKP		P'P'df	13 58 29.1	-8.5	
	comp=Z,0.3nm,0.3s,baz=270,slow=1.5,SNR=5.4								
SONM				PKP2ab			13 59 37.3		
	comp=Z,0.6nm,0.3s,baz=305,slow=5.2,SNR=3.5								
SONM	**Songino Array**	**48.08 324**		P		**P**	**13 27 27.0**	**+1.3**	
SONM							13 28 54.1		
SONM				pmax	pmax				
	comp=Z,69nm,1.0s								
SONM				pmax	pmax				
	comp=Z,40nm,1.1s								
SONA1	**Songino Array**	**48.08 324**		*e*P		**P**	**13 27 26.4**	**+0.7**	
MNSI	**Mandailing Nat**	**48.21 259**		P		**P**	**13 27 28.9**	**+1.9**	
	comp=Z,28nm,1.0s								
CAN	**Canberra**	**48.28 177**		P		**P**	**13 27 26.3**	**-0.9**	
CAN				*e*			13 28 53.9		
CAN				pmax	pmax				
	comp=Z,101nm,1.2s								
CAN				MLR	MLR				
	comp=Z,2μm,19.0s								
CAN	**Canberra**	**48.28 177**		P		**P**	**13 27 26.3**	**-0.9**	
	comp=Z,101nm,1.2s								
CAN				*e*PcP		**PcP**	**13 28 53.9**	**+0.3**	
CAN				LR	LR				
	comp=Z,2μm,19.0s								
PSI	**Prapat**	**48.29 262**		*e*P		**P**	**13 27 28.3**	**+0.5**	
PSI				pmax	pmax				
	comp=Z,49nm,1.0s								
PSI	**Prapat**	**48.29 262**		*e*P		**P**	**13 27 28.3**	**+0.5**	
	comp=Z,49nm,1.0s								
GTA	**Gaotai**	**48.75 311**		*e*P		**P**	**13 27 32.4**	**+1.4**	
GTA				pP		pP	13 27 45.0	+1.0	
GTA				sP		sP	13 27 49.4	-0.1	
GTA				PcP		**PcP**	**13 28 56.9**	**+1.4**	
GTA				S		**S**	**13 34 29.6**	**-1.1**	
GTA				sS		sS	13 34 49.6	-2.9	
GTA				ScS		**ScS**	**13 37 20.5**	**+0.8**	
GTA				SS		**SS**	**13 37 56.1**	**-5.5**	
GTA				pmax	pmax				
	comp=Z,52nm,1.1s								
GTA				pmax	pmax				
	comp=Z,270nm,6.7s						

YAK eS **S** 13 34 44.9 -6.3
YAK e*SS sS 13 35 01.9 -11
YAK e 13 37 24.7
YAK pmax pmax
comp=Z,87nm,1.0s
YAK pmax pmax
comp=E,20nm,1.5s
YAK pmax pmax
comp=N,73nm,1.3s
YAK pmax pmax
comp=N,38nm,1.1s
YAK pmax pmax
comp=Z,24nm,0.8s
YAK smax smax
comp=N,39nm,1.6s
YAK smax smax
comp=E,128nm,2.3s
YAK Yakutsk 50.29 350 eP **P** 13 27 41.5 -0.7
comp=E,99nm,0.9s
YAK LR LR
comp=Z,1µm,19.0s
BOD Bodaibo 50.94 338 eP **P** 13 27 46.9 -0.2
BOD pmax pmax
comp=Z,105nm,1.3s
ZAK Zakamensk 51.16 326 eP **P** 13 27 48.7 -0.3
ZAK pmax pmax
comp=Z,73nm,1.2s
IRK Irkutsk 51.62 328 eP **P** 13 27 51.8 -0.5
IRK eS **S** 13 35 11.2 +1.3
IRK pmax pmax
comp=Z,171nm,2.7s
TLY Talaya 51.64 327 P **P** 13 27 53.9 +1.4
comp=Z,62nm,1.0s,baz=146,slow=4.9,SNR=68
TLY Talaya 51.64 327 *c* *i*P **P** 13 27 53.9 +1.4
TLY eS **S** 13 35 12.0 +1.7
TLY pmax pmax
comp=Z,117nm,1.3s
TLY MLR MLR
comp=Z,781nm,18.0s
TLY Talaya 51.64 327 eP **P** 13 27 53.4 +0.9
comp=Z,156nm,1.3s
TLY LR LR
comp=Z,2µm,22.0s
KEKH Kekaha 51.66 72 eP **P** 13 27 49.2 -3.8
comp=Z,223nm,1.0s
CMBY CAMPBELL BAY 52.20 269 eP **P** 13 27 57.1 -0.1
CMBY IAmb IAmb 13 28 01.4
comp=Z,113nm,0.9s
DQPR DIGLIPUR 52.23 277 eP **P** 13 27 57.9 +0.5
SHL Shillong 52.80 292 eP **P** 13 28 02.5 +0.8
SHL IAmb IAmb 13 28 04.0
comp=Z,83nm,0.8s
SHL eS **S** 13 35 27.2 0.0
NIKH Nikolski High 53.09 32 eP **P** 13 28 02.7 -0.5
comp=Z,373nm,1.2s
KIP Kipapa 53.24 73 *de*P **P** 13 28 06.7 +1.9
KIP pmax pmax
comp=Z,417nm,0.8s
KIP Kipapa 53.24 73 eP **P** 13 28 01.9 -2.9
comp=Z,151nm,0.9s
KIP LR LR
comp=Z,2µm,19.0s
LSA Lhasa 53.74 297 P **P** 13 28 11.2 +2.3
LSA pmax pmax
comp=Z,73nm,1.2s
LSA Lhasa 53.74 297 PFAKE 13 28 20.0 +11
LSA LR LR
comp=Z,679nm,22.0s
NWAO Narrogin (SRO) 53.77 211 PFAKE 13 28 20.0 +12
NWAO LR LR
comp=Z,3µm,20.0s
RAO Raoul Island 54.30 141 LR LR 13 47 55.8
comp=Z,1µm,20.4s,baz=313,slow=32
OUZ Omahuta 54.48 153 eP **P** 13 28 12.1 -1.4
comp=Z,122nm,0.9s
UNV Unalaska Vale 54.75 32 eP **P** 13 28 15.8 +0.5
comp=Z,279nm,1.4s
HPAH Hawaii Prepara 55.44 75 eP **P** 13 28 21.4 +0.5
comp=Z,199nm,1.2s
MLOA Mauna Loa Obse 55.58 75 eP **P** 13 28 21.5 -0.9
POHA Pohakuloa 55.61 75 eP **P** 13 28 23.4 +1.1
comp=Z,305nm,1.0s
POHA LR LR
comp=Z,2µm,22.0s
TAU Tasmania Unive 55.81 179 eP **P** 13 28 23.3 +0.4
TAU pmax pmax
comp=Z,82nm,1.0s
TAU MLR MLR
comp=Z,2µm,19.0s
TAU Tasmania Unive 55.81 179 eP **P** 13 28 23.3 +0.4
comp=Z,82nm,1.0s
TAU LR LR
comp=Z,2µm,19.0s
BILL Bilibino 56.30 9 *c* *i*P **P** 13 28 27.1 +0.9
BILL *e* 13 28 44.7
BILL *e* 13 29 27.7
BILL *e* 13 30 34.2
BILL *i*S **S** 13 36 12.2 -0.4
BILL pmax pmax
comp=Z,304nm,1.7s
BILL MLR MLR
comp=Z,823nm,19.0s
BILL Bilibino 56.30 9 eP **P** 13 28 26.6 +0.5
comp=Z,185nm,1.1s
BILL LR LR
comp=Z,963nm,21.0s
XMAS Kiritimati 56.37 96 eP **P** 13 28 25.0 -2.6
comp=Z,190nm,1.0s
RAMN Ramite 57.59 294 eP **P** 13 28 37.7 +1.4
HIZ Hauiti 57.79 154 eP **P** 13 28 37.2 +0.1
comp=Z,198nm,1.1s
BOK Bokaro 58.23 290 eP **P** 13 28 42.1 +1.5
BOK IAmb IAmb 13 28 43.7
comp=Z,75nm,0.7s
GUN Gumba 58.25 295 eP **P** 13 28 42.4 +1.3
comp=Z,474nm,1.1s
GAMB Gambell 58.25 20 eP **P** 13 28 38.6 -1.4
comp=Z,165nm,1.2s
BWNR Bhubaneshwar 58.44 286 eP **P** 13 28 42.0 -0.1
BWNR IAmb IAmb 13 28 44.1
comp=Z,106nm,1.2s
SDPT Sand Point 58.55 32 eP **P** 13 28 43.6 +1.3
MXZ Matakaoa Point 58.57 151 eP **P** 13 28 41.2 -1.4
comp=Z,87nm,0.8s
URZ Urewera 58.57 152 eP **P** 13 28 41.5 -1.1
comp=Z,155nm,1.0s
PKIN Phulchoki 58.67 294 eP **P** 13 28 44.6 +0.7
comp=Z,226nm,1.3s
WMQ Urumqi 58.69 313⇑ *i*P **P** 13 28 45.6 +2.1
WMQ sP sP 13 29 04.0 +1.7
WMQ PP **PP** 13 30 54.5 +0.8
WMQ S **S** 13 36 45.8 +0.9
WMQ ScS **ScS** 13 38 26.3 -3.3
WMQ SS **SS** 13 40 36.8 -1.6
WMQ pmax pmax
comp=Z,190nm,1.2s
WMQ pmax pmax
comp=Z,450nm,4.6s
WMQ LR LR
comp=Z,2µm,19.2s
WMQ LR LR
comp=Z,3µm,22.8s
WMQ LR LR
comp=Z,4µm,23.7s
KKN Kakani 58.78 295 eP **P** 13 28 45.5 +0.9
comp=Z,269nm,1.3s
DMN Daman 58.93 294 eP **P** 13 28 46.9 +1.2
comp=Z,331nm,1.2s
BKZ Black Stump Fm 59.04 153 eP **P** 13 28 45.7 -0.2
comp=Z,124nm,0.8s
GKN Gorkha 59.35 295 eP **P** 13 28 49.6 +1.1
comp=Z,695nm,1.3s
TIXI Tiksi 59.44 354 P **P** 13 28 47.5 -0.7
comp=Z,32nm,0.8s,baz=143,slow=6.7,SNR=43
TIXI LR LR 13 57 49.0
comp=Z,519nm,18.9s,baz=198,slow=39
TIXI PKP2ab 13 58 46.3
comp=Z,1.1nm,0.3s,baz=342,slow=3.0,SNR=5.2
TIXI Tiksi 59.44 354 *c* *i*P **P** 13 28 47.4 -0.7
TIXI pmax pmax
comp=Z,44nm,1.0s
TIXI Tiksi 59.44 354 eP **P** 13 28 47.2 -0.9
comp=Z,37nm,0.9s
TIXI P'P'ab **P'P'ab** 13 58 46.3 +3.3
THZ Tophouse 59.78 157 eP **P** 13 28 50.3 -0.6
comp=Z,66nm,0.9s

CHGN Chignik 60.00 32 eP **P** 13 28 52.8 +0.5
SNZO South Karori 60.09 156 PFAKE 13 29 00.0 +7.1
SNZO LR LR
comp=Z,2µm,20.0s
BFZ Birch Farm 60.19 154 eP **P** 13 28 53.7 -0.1
comp=Z,401nm,1.7s
CHLP Challavanipeta 60.21 284 eP **P** 13 28 56.0 +1.6
CHLP IAmb IAmb 13 28 57.4
comp=Z,427nm,1.8s
CHLP epP **pP** 13 29 05.7 -2.0
CHLP ePP **PP** 13 31 08.2 +0.6
CHLP eS **S** 13 37 05.5 +0.3
CHLP IVMs_BB IVMs_BB 13 51 27.5
comp=Z,230nm,4.4s
KOLN Koldanda 60.27 295 eP **P** 13 28 55.8 +0.9
comp=Z,127nm,0.8s
FOZ Fox Glacier 60.27 161 eP **P** 13 28 54.6 +0.4
comp=Z,152nm,1.2s
LTZ Lake Taylor 60.43 159 eP **P** 13 28 55.4 -0.1
comp=Z,97nm,1.2s
KHZ Kahutara 60.58 157 eP **P** 13 28 55.4 -0.9
comp=Z,78nm,0.9s
PYUN Piuthan 60.81 295 eP **P** 13 28 59.4 +0.8
comp=Z,593nm,1.4s
OXZ Oxford 60.83 159 eP **P** 13 28 57.4 -0.6
comp=Z,83nm,0.9s
RPZ Rata Peaks 60.84 160 eP **P** 13 28 57.7 -0.4
comp=Z,149nm,1.1s
VIS Vishakhapatnam 60.97 283 eP **P** 13 28 57.4 -2.1
LBZ Lake Benmore 61.15 161 eP **P** 13 29 00.1 -0.1
comp=Z,98nm,0.9s
DCZ Deep Cove 61.23 164 eP **P** 13 29 01.0 +0.3
comp=Z,66nm,0.9s
CRLZ Canterbury Las 61.25 159 eP **P** 13 29 01.0 +0.2
comp=Z,190nm,1.1s
MQZ McQueen's Vall 61.38 159 eP **P** 13 29 02.2 +0.5
comp=Z,102nm,1.2s
ZSN Zaisan 61.40 317 *i* P P 13 29 10.7 +8.7
comp=Z,557nm,1.1s
ZSN eS S 13 37 31.3 +12
ZSN LR LR 13 57 04.0
comp=Z,346nm,14.7s
MLZ Mavora Lakes 61.41 163 eP **P** 13 29 01.9 -0.1
comp=Z,102nm,1.1s
WHZ Wether Hill Ro 61.85 163 eP **P** 13 29 01.8 -3.0
comp=Z,51nm,0.9s
PVM Polavaram 62.64 283 eP **P** 13 29 11.9 +1.1
PVM IAmb IAmb 13 29 13.5
comp=Z,285nm,1.8s
PVM epP **pP** 13 29 22.1 -2.0
PVM eS **S** 13 37 36.8 +0.8
PVM IVMs_BB IVMs_BB 13 55 23.0
comp=Z,233nm,4.5s
RAR Rarotonga 62.72 122 eP **P** 13 29 12.6 +1.4
RAR pmax pmax
comp=Z,105nm,1.1s
RAR Rarotonga 62.72 122 eP **P** 13 29 12.6 +1.4
comp=Z,105nm,1.1s
OHAK Old Harbor 62.97 32 eP **P** 13 29 13.2 +0.9
comp=Z,202nm,1.1s
ZAA0 Zalesovo Array 62.98 324 eP **P** 13 29 12.9 +0.5
ZALV Zalesovo Beam 62.98 324 P **P** 13 29 12.8 +0.5
comp=Z,39nm,0.7s,baz=104,slow=6.1,SNR=133
ZALV pP **sP** 13 29 33.6 +2.4
comp=Z,68nm,0.8s,baz=104,slow=5.4,SNR=12
ZALV PcP **PcP** 13 29 50.0 -0.1
comp=Z,30nm,0.8s,baz=106,slow=5.3,SNR=5.7
ZALV PKPPKP P'P'df 13 58 03.2 -12
comp=Z,0.9nm,0.6s,baz=298,slow=3.2,SNR=6.1
ZALV PKP2bc 13 58 16.6
comp=Z,6.5nm,0.9s,baz=298,slow=3.2,SNR=12
ZALV LR LR 13 59 12.4
comp=Z,908nm,18.2s,baz=74,slow=38
MK01 Makanchi Array 62.99 316 eP **P** 13 29 13.2 +0.5
MK31 Makanchi Array 63.00 316 *i* P **P** 13 29 13.9 +1.2
MK31 pmax pmax
comp=Z,145nm,1.0s
MK31 Makanchi Array 63.00 316 eP **P** 13 29 14.3 +1.6
MKAR Makanchi Array 63.00 316 P **P** 13 29 14.2 +1.5
comp=Z,76nm,0.7s,baz=94,slow=8.9,SNR=583
MKAR pP **sP** 13 29 34.5 +2.9
comp=Z,46nm,0.7s,baz=92,slow=9.0,SNR=8.7
MKAR PKPPKP P'P'df 13 58 06.4 -9.2
comp=Z,1.7nm,1.1s,baz=268,slow=3.6,SNR=5.7
MKAR PKP2bc 13 58 17.1
comp=Z,4.4nm,1.0s,baz=306,slow=2.7,SNR=16
MKAR PKP2ab 13 58 26.8
comp=Z,6.4nm,1.1s,baz=284,slow=4.9,SNR=7.4
MKAR Makanchi Array 63.00 316 P **P** 13 29 14.3 +1.5
MKAR pmax pmax
comp=Z,74nm,0.7s
MAKZ Makanchi 63.21 316 eP **P** 13 29 15.7 +1.5
MAKZ pmax pmax
comp=Z,156nm,0.8s
MAKZ Makanchi 63.21 316 eP **P** 13 29 15.7 +1.5
comp=Z,156nm,0.8s
SVW2 Sparrevohn 63.24 27 eP **P** 13 29 15.0 +1.0
comp=Z,103nm,1.2s
KDAK Kodiak Island 63.51 31 eP **P** 13 29 17.4 +1.6
KDAK pmax pmax
comp=Z,131nm,1.0s
KDAK MLR MLR
comp=Z,1µm,20.0s
KDAK Kodiak Island 63.51 31 eP **P** 13 29 17.4 +1.6
comp=Z,131nm,1.0s
KDAK LR LR
comp=Z,1µm,20.0s
TT01 Tatalina 63.76 25 eP **P** 13 29 19.0 +1.5
TTA Tatalina 63.78 25 eP **P** 13 29 19.6 +2.0
TTA pmax pmax
comp=Z,94nm,1.3s
TTA Tatalina 63.78 25 eP **P** 13 29 19.6 +2.0
comp=Z,94nm,1.3s
NVS Novosibirsk 64.10 325⇓ *i*P **P** 13 29 21.1 +1.3
NVS eS **S** 13 37 52.3 -0.8
NVS *e* 13 39 10.6
NVS pmax pmax
comp=Z,288nm,1.5s
NVS pmax pmax
comp=N,66nm,1.6s
NVS pmax pmax
comp=E,167nm,1.4s
NVS smax smax
comp=E,63nm,2.1s
RSO Redoubt South 64.30 29 eP **P** 13 29 21.8 +0.5
ADKI Addanki 64.38 281 eP **P** 13 29 22.9 +0.7
ADKI IAmb IAmb 13 29 25.1
comp=Z,110nm,1.2s
ADKI epP **pP** 13 29 33.3 -2.4
ADKI ePP **PP** 13 31 45.0 +0.7
ADKI eS **S** 13 37 56.4 -1.3
ADKI IVMs_BB IVMs_BB 13 52 16.2
comp=Z,352nm,4.0s
MDRS Chennai 64.49 278 eP **P** 13 29 25.0 +2.0
MDRS *ex* x 13 35 29.8
MDRS *ex* x 13 41 32.8
PDGK Podgornoye 64.49 312 P **P** 13 29 24.0 +1.2
PDGK pmax pmax
comp=Z,95nm,1.2s
SHLS Shalkode 64.50 312 *i* P **P** 13 29 19.8 -3.0
comp=Z,720nm,1.3s
SHLS eS **S** 13 37 55.3 -3.4
SHLS LR LR 13 57 41.2
comp=Z,145nm,19.7s
HOM Homer 64.56 30 eP **P** 13 29 23.9 +1.2
comp=Z,162nm,0.8s
RPR Rampur 64.68 285 eP **P** 13 29 25.7 +1.5
RPR IAmb IAmb 13 29 26.4
comp=Z,77nm,1.2s
RPR epP **pP** 13 29 35.4 -2.2
RPR ePcP **PcP** 13 29 57.8 +0.1
RPR eS **S** 13 38 01.1 -0.2
RPR IVMs_BB IVMs_BB 13 58 01.0
comp=Z,440nm,4.2s
CNPM China Poot 64.72 30 eP **P** 13 29 24.7 +0.9
comp=Z,247nm,1.1s
UZB Uzynbulak 64.82 312 *i* P **P** 13 29 22.7 -2.2
comp=Z,780nm,1.4s
UZB eS **S** 13 38 01.2 -1.5
UZB LR LR 13 57 58.8
comp=Z,106nm,14.7s
SPU Mount Spurr 64.86 28 eP **P** 13 29 25.3 +0.5
SKHT Srikalahasti 64.91 279 eP **P** 13 29 27.2 +1.4
SKHT epP **pP** 13 29 37.4 -1.8
SKHT eS **S** 13 38 03.7 -0.6
NJS Nagarjunasagar 64.92 282 eP **P** 13 29 26.1 +0.3

NJS IAmb IAmb 13 29 28.1
comp=Z,184nm,1.2s
NJS epP **pP** 13 29 37.1 -2.2
NJS ePP **PP** 13 31 49.9 +0.8
NJS eS **S** 13 38 04.9 +0.5
NJS IVMsBB 14 02 12.2
comp=Z,491nm,4.2s
SEM Semipalatinsk 64.95 320 *i* P **P** 13 29 23.0 -2.7
comp=Z,978nm,1.4s
SEM eS **S** 13 38 01.7 -2.5
SEM LR LR 13 58 17.0
comp=Z,671nm,21.7s
BRLK Bradley Lake 64.96 30 eP **P** 13 29 26.0 +0.6
comp=Z,143nm,1.2s
PALK Pallekele 65.03 272 eP **P** 13 29 28.2 +1.6
PALK *e* 13 30 00.4
PALK pmax pmax
comp=Z,49nm,1.0s
PALK Pallekele 65.03 272 eP **P** 13 29 28.2 +1.6
comp=Z,49nm,1.0s
PALK ePcP **PcP** 13 30 00.4 +1.1
DDI Dehra Dun 65.10 297 eP **P** 13 29 28.2 +1.3
DDI IAmb IAmb 13 29 29.9
comp=Z,96nm,0.7s
SATY Saty 65.26 311 *i* P **P** 13 29 27.4 -0.4
comp=Z,2µm,1.3s
SATY eS **S** 13 38 08.4 +0.4
SATY LR LR 13 58 14.2
comp=Z,150nm,15.4s
SRLM Srisailam 65.38 282 eP **P** 13 29 28.9 0.0
SRLM IAmb IAmb 13 29 30.9
comp=Z,216nm,1.2s
SRLM epP **pP** 13 29 39.5 -2.8
SRLM eS **S** 13 38 09.7 -0.3
SRLM IVMs_BB IVMs_BB 13 51 40.5
comp=Z,472nm,4.1s
PPLA Purkeypile 65.39 26 eP **P** 13 29 29.8 +1.5
comp=Z,285nm,1.6s
PPLA ePcP **PcP** 13 30 00.8 +0.8
RCLA Racherla 65.40 281 eP **P** 13 29 29.2 +0.3
RCLA IAmb IAmb 13 29 30.9
comp=Z,76nm,1.2s
RCLA eS **S** 13 38 10.5 +0.2
RCLA IVMs_BB IVMs_BB 13 51 24.2
comp=Z,435nm,4.2s
HYB Hyderabad 65.54 283⇑ *i*P **P** 13 29 31.0 +1.1
comp=Z,75nm,1.0s
HYB epP **pP** 13 29 41.0 -2.3
HYB ePcP **PcP** 13 30 02.0 +0.7
HYB eS **S** 13 38 12.0 0.0
HYB Hyderabad 65.54 283 eP **P** 13 29 30.9 +1.0
HYB IAmb IAmb 13 29 32.2
comp=Z,72nm,0.6s
HYBB Hyderabad (bro 65.54 283 eP **P** 13 29 30.1 +0.2
HYBB IAmb IAmb 13 29 31.8
comp=Z,171nm,1.3s
HYBB epP **pP** 13 29 41.0 -2.4
HYBB ePP **PP** 13 31 49.4 -5.1
HYBB eS **S** 13 38 12.3 +0.2
HYBB IVMs_BB IVMs_BB 13 58 46.8
comp=Z,468nm,4.1s
SUA Susitna One 65.55 28 eP **P** 13 29 30.1 +0.8
comp=Z,58nm,0.9s
SRSP Sriramsagar 65.56 285 eP **P** 13 29 30.2 +0.2
SRSP IAmb IAmb 13 29 31.8
comp=Z,89nm,1.3s
SRSP epP **pP** 13 29 39.7 -3.7
SRSP ePP **PP** 13 31 53.0 -1.7
SRSP eS **S** 13 38 09.8 -2.5
SRSP IVMs_BB IVMs_BB 13 51 58.0
comp=Z,323nm,4.7s
SEW Seward 65.75 30 eP **P** 13 29 31.6 +1.2
comp=Z,182nm,1.2s
SMLA Simla 65.85 298 eP **P** 13 29 32.7 +1.1
SMLA IAmb IAmb 13 29 34.2
comp=Z,71nm,0.9s
NDI New Delhi 65.88 296 eP **P** 13 29 33.5 +1.6
RC01 Rabbit Creek A 65.90 28 eP **P** 13 29 32.2 +0.8
comp=Z,270nm,1.2s
SDNR Sundarnagar 66.01 299 eP **P** 13 29 34.0 +1.3
KURK Kurchatov 66.03 320 eP **P** 13 29 33.2 +0.9
KURK S **S** 13 38 16.7 -0.1
KURK pmax pmax
comp=Z,564nm,1.0s
KURK MLR MLR
comp=Z,5µm,22.0s
KURK Kurchatov 66.03 320 eP **P** 13 29 33.2 +0.9
comp=Z,564nm,1.0s
KURK S **S** 13 38 16.6 -0.1
KURK LR LR
comp=Z,5µm,22.0s
KURBB Kurchatov Arra 66.07 320 P **P** 13 29 33.6 +1.0
comp=Z,230nm,0.9s,baz=100,slow=6.1,SNR=146
KURBB pP **sP** 13 29 53.2 +1.7
comp=Z,368nm,0.9s,baz=100,slow=7.0,SNR=18
KURBB S **S** 13 38 16.6 -0.7
comp=Z,0.9nm,0.2s,baz=96,slow=19,SNR=6.4
KTH Kantishna Hill 66.15 26 eP **P** 13 29 34.0 +1.0
comp=Z,248nm,1.1s
MDOK Medeo 66.26 311 *i* P **P** 13 29 32.6 -1.6
comp=Z,968nm,1.4s
MDOK eS **S** 13 38 20.0 -0.3
MDOK LR LR 13 58 57.3
comp=Z,216nm,19.7s
BPAW Bear Paw Mtn. 66.31 25 eP **P** 13 29 35.1 +1.2
comp=Z,236nm,1.3s
PMR Palmer 66.33 28 eP **P** 13 29 34.7 +0.6
PMR pmax pmax
comp=Z,121nm,1.1s
PMR Palmer 66.33 28 eP **P** 13 29 34.7 +0.6
comp=Z,121nm,1.1s
AAA Alma-Ata 66.36 312 eP **P** 13 29 36.7 +1.9
AAA pmax pmax
comp=Z,700nm,2.8s
AAA Alma-Ata 66.36 312 *i* P **P** 13 29 35.7 +1.0
comp=Z,2µm,1.2s
AAA LR LR 13 58 57.0
comp=Z,228nm,18.7s
TRF Thorofare Moun 66.39 26 eP **P** 13 29 35.0 +0.4
comp=Z,109nm,1.1s
BHK Bhakra 66.49 299 eP **P** 13 29 35.2 -0.5
DHRM DHARAMSHALA 66.57 300 eP **P** 13 29 36.4 -0.1
DHRM IAmb IAmb 13 29 38.3
comp=Z,49nm,0.6s
MLY Manley 66.72 24 eP **P** 13 29 38.1 +1.5
comp=Z,150nm,1.0s
SML Sawmill 66.75 28 eP **P** 13 29 38.0 +1.1
SML pmax pmax
comp=Z,311nm,1.1s
SML Sawmill 66.75 28 eP **P** 13 29 38.0 +1.1
comp=Z,311nm,1.1s
KUU Kurty 66.82 312 *i* P **P** 13 29 35.1 -2.5
comp=Z,2µm,0.9s
KUU eS **S** 13 38 24.9 -2.0
KUU LR LR 13 59 02.5
comp=Z,314nm,16.4s
KSH Kashi 66.88 307⇑ *i*P **P** 13 29 42.2 +4.0
KSH epP pP 13 29 55.1 +3.4
KSH esP sP 13 30 00.6 +3.5
KSH ePcP **PcP** 13 30 09.8 +3.1
KSH PcS 13 34 13.6
KSH S **S** 13 38 30.9 +3.0
KSH ScS **ScS** 13 39 33.2 +1.1
KSH pmax pmax
comp=Z,86nm,1.4s
KSH pmax pmax
comp=Z,290nm,5.1s
KSH LR LR
comp=Z,350nm,12.5s
KSH LR LR
comp=Z,420nm,13.6s
KSH LR LR
comp=Z,1µm,30.7s
BWN Browne 66.96 25 eP **P** 13 29 39.4 +1.3
comp=Z,283nm,1.0s
RND Reindeer 66.98 26 eP **P** 13 29 38.6 +0.2
RND pmax pmax
comp=Z,121nm,1.2s
RND Reindeer 66.98 26 eP **P** 13 29 38.6 +0.2
comp=Z,121nm,1.2s
MCK McKinley 67.05 26 eP **P** 13 29 39.0 +0.3
MCK pmax pmax
comp=Z,438nm,1.9s
MCK McKinley 67.05 26 eP **P** 13 29 39.0 +0.3
comp=Z,438nm,1.9s
NRIK Noril'sk 67.10 341 P **P** 13 29 39.1 +0.2

NRIK comp=Z,90nm,1.0s,baz=113,slow=7.0,SNR=78 S **S** **13 38 26.4 -2.8**
NRIK comp=Z,4.4nm,0.5s,baz=13,slow=22,SNR=6.2 PKPPKP **P'P'df** **13 58 05.3 -2.5**
NRIK comp=Z,2.6nm,0.8s,baz=295,slow=2.2,SNR=8.0 LR LR 14 00 37.4
comp=Z,873nm,18.7s,baz=118,slow=37
SCM **Sheep Creek Mo** **67.22 28** *e*P **P** **13 29 41.3 +1.4**
SCM pmax pmax
comp=Z,357nm,1.1s
SCM **Sheep Creek Mo** **67.22 28** *e*P **P** **13 29 41.3 +1.4**
comp=Z,357nm,1.1s
TKM2 **Tokmak 2** **67.30 311** *e*P **P** **13 29 42.3 +1.3**
TKM2 pmax pmax
comp=Z,48nm,1.0s
TKM2 MLR MLR
comp=Z,891nm,20.0s
TKM2 **Tokmak 2** **67.30 311** *e*P **P** **13 29 42.3 +1.3**
comp=Z,48nm,1.0s
TKM2 LR LR
comp=Z,891nm,20.0s
KLRI **Killari** **67.31 284** *e*P **P** **13 29 41.1 -0.1**
KLRI IAmb IAmb 13 29 42.7
comp=Z,107nm,1.2s
KLRI *e*pP **pP** **13 29 53.2 -1.5**
KLRI *e*PP **PP** **13 32 06.0 -4.0**
KLRI *e*S **S** **13 38 30.1 -3.4**
KLRI IVMs_BB IVMs_BB 13 58 25.9
comp=Z,674nm,4.3s
DHY **Denali Highway** **67.53 27** *e*P **P** **13 29 42.9 +0.9**
comp=Z,105nm,1.2s
WRH **Wood River Hil** **67.62 25** *e*P **P** **13 29 42.5 +0.2**
comp=Z,130nm,1.0s
EYAK **Cordova Ski Ar** **67.65 30** *e*P **P** **13 29 44.1 +1.6**
comp=Z,112nm,1.1s
COLD **Coldfoot** **67.67 22** *e*P **P** **13 29 44.3 +1.7**
comp=Z,128nm,1.1s
MDM **Murphy Dome** **67.71 25** *e*P **P** **13 29 43.2 +0.3**
comp=Z,89nm,1.0s
DIV **Divide** **67.77 29** *e*P **P** **13 29 45.1 +1.7**
comp=Z,164nm,1.2s
KLU **Klutina** **67.79 29** *e*P **P** **13 29 45.1 +1.6**
comp=Z,117nm,1.1s
CCB **Clear Creek Bu** **67.79 25** *e*P **P** **13 29 43.3 0.0**
comp=Z,94nm,1.1s
COLA **College** **67.84 25** *e*P **P** **13 29 43.6 0.0**
COLA pmax pmax
comp=Z,67nm,1.0s
COLA MLR MLR
comp=Z,2µm,21.0s
COLA **College** **67.84 25** *e*P **P** **13 29 43.6 0.0**
comp=Z,67nm,1.0s
COLA LR LR
comp=Z,2µm,21.0s
FRU **Bishkek** **68.02 311** *i*P **P** **13 29 46.0 +0.7**
FRU *e* 13 30 08.0
FRU *e* 13 38 40.0
FRU pmax pmax
comp=Z,160nm,1.6s
AAK **Ala-Archa** **68.10 311** P **P** **13 29 46.7 +0.8**
comp=Z,12nm,0.8s,baz=108,slow=6.0,SNR=26
AAK **Ala-Archa** **68.10 311** *e*P **P** **13 29 47.3 +1.4**
AAK pmax pmax
comp=Z,27nm,0.9s
AAK MLR MLR
comp=Z,800nm,21.0s
AAK **Ala-Archa** **68.10 311** P **P** **13 29 47.2 +1.2**
SNR=15
AAK P **P** **13 29 47.2 +1.2**
SNR=15
AAK **Ala-Archa** **68.10 311** *e*P **P** **13 29 47.3 +1.4**
comp=Z,27nm,0.9s
AAK LR LR
comp=Z,800nm,21.0s
ILAR **Eielson Array** **68.20 25** P **P** **13 29 45.6 -0.3**
comp=Z,54nm,1.0s,baz=257,slow=4.6,SNR=310
ILAR LR LR 13 57 29.1
comp=Z,990nm,21.6s,baz=252,slow=34
ILAR PKPPKP **P'P'df** **13 58 01.6 -4.5**
comp=Z,3.2nm,1.1s,baz=43,slow=1.7,SNR=8.6
ILAR **Eielson Array** **68.20 25** P **P** **13 29 45.7 -0.3**
ILAR pmax pmax
comp=Z,53nm,1.0s
ILB **Eielson Array** **68.20 25** *e*P **P** **13 29 45.7 -0.3**
IL1 **Eielson Array** **68.20 25** *e*P **P** **13 29 44.0 -1.9**
BMRM **Bremner River** **68.29 29** *e*P **P** **13 29 48.0 +1.4**
comp=Z,251nm,1.3s
PAX **Paxson** **68.34 27** *e*P **P** **13 29 48.3 +1.3**
PAX pmax pmax
comp=Z,189nm,1.3s
PAX **Paxson** **68.34 27** *e*P **P** **13 29 48.3 +1.3**
comp=Z,190nm,1.3s
TRD **Trivandrum** **68.44 274** *e*P **P** **13 29 49.5 +1.2**
EKS2 **Erkin-Say** **68.63 311** *e*P **P** **13 29 50.1 +0.9**
EKS2 pmax pmax
comp=Z,85nm,1.5s
EKS2 MLR MLR
comp=Z,936nm,22.0s
EKS2 **Erkin-Say** **68.63 311** *e*P **P** **13 29 50.1 +0.9**
comp=Z,85nm,1.5s
EKS2 LR LR
comp=Z,936nm,22.0s
CRQM **Cirque** **68.95 30** *e*P **P** **13 29 52.5 +1.6**
comp=Z,250nm,1.2s
MENT **Mentasta** **69.12 27** *e*P **P** **13 29 52.9 +1.2**
comp=Z,82nm,1.0s
DOT **Dot Lake** **69.12 27** *e*P **P** **13 29 52.7 +1.0**
comp=Z,370nm,1.0s
FYU **Fort Yukon** **69.34 23** *e*P **P** **13 29 55.1 +2.2**
comp=Z,472nm,1.2s
MNAS **Manas** **69.57 311** P **P** **13 29 56.6 +1.5**
MNAS pmax pmax
comp=Z,29nm,1.5s
BRZS **Berezniki** **69.73 319** *i*P **P** **13 29 54.5 -1.2**
comp=Z,146nm,1.2s
BRZS *e*S **S** **13 39 01.2 0.0**
POO **Poona** **69.84 285** *e*P **P** **13 29 57.3 +0.3**
OTUK **Ortayu** **69.86 317** P **P** **13 29 57.5 +0.9**
OTUK pmax pmax
comp=Z,106nm,1.2s
PPT **Papeete** **69.95 114** P **P** **13 29 59.0 +1.4**
comp=Z,65nm,1.0s,baz=41,slow=10,SNR=6.4
PPT LR LR 13 52 50.7
comp=Z,2µm,21.1s,baz=260,slow=29
PPT **Papeete** **69.95 114** P **P** **13 29 59.0 +1.4**
PPT pmax pmax
comp=Z,65nm,1.0s
PPT2 **Papeete2** **69.96 114** *e*P **P** **13 29 58.4 +0.7**
comp=Z,53nm,1.0s
PPT2 *e*S **S** **13 39 05.5 +0.6**
comp=Z,806nm,28.8s
PPT2 *e*LQ LQ 13 47 51.6
comp=Z,1µm,33.2s
PPT2 *e*LR LR 13 51 06.2
comp=Z,5µm,24.5s,baz=294
PAE **Paea** **69.98 114** *e*P **P** **13 29 58.3 +0.6**
comp=Z,14nm,1.2s
TIAR **Tiarei** **70.15 114** *e*P **P** **13 29 59.4 +0.6**
comp=Z,26nm,1.0s
PCA **Pinnacle** **70.25 31** *e*P **P** **13 30 00.8 +2.0**
comp=Z,213nm,1.3s
TVO **Taravao** **70.32 114** *e*P **P** **13 30 00.4 +0.5**
comp=Z,42nm,1.2s
EGAK **Eagle** **70.59 26** *e*P **P** **13 30 01.8 +1.1**
comp=Z,141nm,1.0s
EGAK LR LR
comp=Z,1µm,21.0s
VAH **Vaihoa** **70.88 111** *e*P **P** **13 30 03.7 +0.5**
comp=Z,160nm,1.3s
VOSK **Vostochnaya** **70.96 321** *e*P **P** **13 30 03.5 +0.4**
VOSK pmax pmax
comp=Z,116nm,1.0s
VOSK **Vostochnaya** **70.96 321** *e*P **P** **13 30 03.5 +0.4**
comp=Z,116nm,1.0s
KK31 **Karatay Array** **71.04 311** *i*P **P** **13 30 04.2 +0.3**
KK31 pmax pmax
comp=Z,42nm,1.0s
KKAR **Karatay Array** **71.04 311** *e*P **P** **13 30 04.8 +0.9**
KKAR *e* 13 30 24.5
KKAR **Karatay Array** **71.04 311** *e*P **P** **13 30 04.8 +0.9**
KKAR *e*PcP **PcP** **13 30 24.5 +0.6**
DAWY **Dawson** **71.23 27** *e*P **P** **13 30 06.4 +1.7**
comp=Z,178nm,1.2s
CHKZ **Chkalovo** **71.23 322** P **P** **13 30 04.7 0.0**
CHKZ pmax pmax
comp=Z,201nm,1.0s
BVA0 **Borovoye Array** **71.33 322** *i*P **P** **13 30 06.0 +0.6**
BVA0 pmax pmax
comp=Z,335nm,1.0s
BVAR **Borovoye Array** **71.33 322** P **P** **13 30 06.2 +0.8**
comp=Z,231nm,0.9s,baz=99,slow=6.8,SNR=531
BVAR S **S** **13 39 16.5 -3.3**
comp=Z,2.7nm,1.1s,baz=100,slow=14,SNR=5.1
BRVK **Borovoye** **71.40 322** *e*P **P** **13 30 06.7 +0.9**
BRVK pmax pmax
comp=Z,259nm,0.9s
BRVK MLR MLR
comp=Z,2µm,21.0s
BRVK **Borovoye** **71.40 322** *e*P **P** **13 30 06.7 +0.9**
comp=Z,259nm,0.9s
BRVK LR LR
comp=Z,2µm,21.0s
IUG **Iuzhnay** **71.40 310** *i*P **P** **13 30 06.0 -0.2**
comp=Z,641nm,1.9s
IUG *e*S **S** **13 39 22.5 +1.3**
IUG LR LR 14 01 53.7
comp=Z,516nm,13.8s
MEH **Mehetia** **71.40 114** *e*P **P** **13 30 06.9 +0.5**
comp=Z,48nm,1.1s
HYT **Haines Junctio** **71.69 30** *e*P **P** **13 30 09.8 +2.2**
ZRNK **Zerenda** **72.17 322** *e*P **P** **13 30 11.0 +0.6**
ZRNK pmax pmax
comp=Z,280nm,1.0s
ZRNK **Zerenda** **72.17 322** *e*P **P** **13 30 10.9 +0.6**
comp=Z,280nm,1.0s
TBI **Tubuai** **72.25 120** *e*S **S** **13 39 31.6 +0.5**
comp=Z,524nm,26.8s
TBI *e*LQ LQ 13 48 34.9
comp=Z,692nm,37.8s
TBI *e*LR LR 13 51 58.1
comp=Z,2µm,30.2s,baz=299
KBL **Kabul** **72.53 302** *e*P **P** **13 30 13.9 +0.7**
KBL pmax pmax
comp=Z,94nm,1.1s
KBL **Kabul** **72.53 302** *e*P **P** **13 30 13.9 +0.7**
comp=Z,94nm,1.1s
SKAG **Skagway** **72.67 32** *e*P **P** **13 30 15.2 +2.0**
comp=Z,167nm,1.4s
INK **Inuvik** **74.09 22** LR LR 13 59 35.7
comp=Z,493nm,21.6s,baz=250,slow=33
INK **Inuvik** **74.09 22** *e*P **P** **13 30 22.2 +0.8**
INK pmax pmax
comp=Z,133nm,1.1s
INK **Inuvik** **74.09 22** *e*P **P** **13 30 22.2 +0.8**
comp=Z,133nm,1.1s
DIB **Dawson Inlet,** **74.11 38** *e*P **P** **13 30 23.5 +1.6**
comp=Z,87nm,1.1s
WRAK **Wrangell Islan** **74.16 35** *e*P **P** **13 30 24.1 +2.0**
comp=Z,145nm,1.2s
WRAK LR LR
comp=Z,1µm,19.0s
DLBC **Dease Lake** **75.39 33** LR LR 13 59 45.0
comp=Z,365nm,20.3s,baz=279,slow=32
DLBC **Dease Lake** **75.39 33** *e*P **P** **13 30 31.3 +2.0**
comp=Z,204nm,1.2s
TAOE **Nuku Hiva Isla** **75.89 103** *e*S **S** **13 40 13.6 +0.9**
comp=Z,319nm,34.1s
TAOE **Nuku Hiva Isla** **75.89 103** *e*LR LR 13 53 38.7
comp=Z,2µm,23.1s,baz=292
SVE **Sverdlovsk** **76.92 326** *d*/*i*P **P** **13 30 38.9 +1.0**
SVE *e*S **S** **13 40 20.8 -1.5**
SVE pmax pmax
comp=Z,236nm,1.3s
SVE MLR MLR
comp=Z,1µm,22.0s
AB31 **Akbulak array** **78.02 318** *i*P **P** **13 30 44.6 +0.4**
AB31 pmax pmax
comp=Z,56nm,0.7s
ABKAR **Akbulak array** **78.02 318** *e*P **P** **13 30 44.6 +0.4**
ARU **Arti** **78.10 325** P **P** **13 30 44.8 +0.3**
comp=Z,73nm,0.8s,baz=93,slow=3.5,SNR=147
ARU S **S** **13 40 33.9 -1.2**
comp=Z,1.3nm,0.3s,baz=265,slow=21,SNR=7.4
ARU **Arti** **78.10 325** *c*/*i*P **P** **13 30 45.0 +0.5**
ARU 13 33 38.4
ARU PPP PPP 13 35 33.3
ARU S **S** **13 40 40.2 +5.1**
ARU SS **SS** **13 45 33.4 -3.6**
ARU pmax pmax
comp=Z,318nm,1.7s
ARU MLR MLR
comp=Z,874nm,18.0s
ARU **Arti** **78.10 325** *e*P **P** **13 30 44.7 +0.2**
comp=Z,173nm,1.0s
ARU S **S** **13 40 33.9 -1.2**
ARU LR LR
comp=Z,902nm,20.0s
SOKR **Solikamsk** **78.69 329** *i*P **P** **13 30 46.6 -1.0**
SOKR S **S** **13 40 37.4 -3.8**
SOKR pmax pmax
comp=Z,151nm,1.1s
SOKR MLR MLR
comp=Z,985nm,22.0s
AKTO **Aktyubinsk** **79.12 319** P **P** **13 30 50.4 +0.1**
comp=Z,21nm,0.6s,baz=85,slow=7.1,SNR=84
AKTO S **S** **13 40 49.0 +2.7**
comp=Z,0.7nm,0.4s,baz=265,slow=20,SNR=3.8
OSR **Olympics--Salm** **80.00 44** P **P** **13 30 57.4 +2.2**
NLWA **Neilton Lookou** **80.08 44** *e*P **P** **13 30 57.8 +2.1**
comp=Z,169nm,1.4s
NLWA LR LR
comp=Z,754nm,20.0s
PGC **Sidney** **80.17 42** *e*P **P** **13 30 57.7 +1.7**
comp=Z,55nm,0.9s
E03A **Lebam** **80.42 44** *e*P **P** **13 30 59.0 +1.7**
comp=Z,154nm,1.1s
MCW **Mount Constitu** **80.57 42** P **P** **13 31 00.1 +1.9**
MCW **Mount Constitu** **80.57 42** P **P** **13 31 00.1 +1.9**
HDW **Hoodsport** **80.59 43** P **P** **13 31 00.6 +2.2**
A04D **Lummi Island** **80.65 42** P **P** **13 31 00.5 +2.0**
baz=279
G03D **McMinnville, O** **80.84 46** P **P** **13 31 01.5 +1.8**
baz=279,SNR=8.8
LLLB **Lillooet** **80.87 40** *e*P **P** **13 31 01.6 +1.8**
comp=Z,78nm,1.3s
F04D **Rainier, OR** **80.87 45** P **P** **13 31 01.4 +1.6**
baz=280
GEYT **Alibeck** **80.90 307** P **P** **13 31 01.3 +1.1**
comp=Z,42nm,1.1s,baz=22,slow=0.8,SNR=24
GEYT LR LR 14 10 26.2
comp=Z,455nm,20.8s,baz=95,slow=38
COR **Corvallis** **80.91 46** *e*P **P** **13 31 02.4 +2.3**
COR pmax pmax
comp=Z,223nm,1.5s
COR **Corvallis** **80.91 46** *e*P **P** **13 31 02.4 +2.3**
comp=Z,223nm,1.5s
I03D **Drain, OR** **81.03 47** P **P** **13 31 02.4 +1.8**
baz=280,SNR=12
CMW **Cultus Mountai** **81.08 42** P **P** **13 31 02.9 +1.9**
L02D **Cave Junction,** **81.10 49** P **P** **13 31 03.2 +2.0**
baz=280,SNR=14
B05A **Bryant** **81.12 43** P **P** **13 31 02.6 +1.5**
baz=280,SNR=12
KHMM **Horse Mountain** **81.22 50** *e*P **P** **13 31 04.8 +2.8**
comp=Z,141nm,1.2s
JCW **Jim Creek** **81.25 43** P **P** **13 31 03.5 +1.7**
F04A **Amboy** **81.30 45** P **P** **13 31 03.5 +1.4**
KMRM **Mail Ridge** **81.35 51** *e*P **P** **13 31 05.4 +2.8**
comp=Z,161nm,1.2s
TDL **Tradedollar La** **81.37 44** P **P** **13 31 04.3 +1.7**
D05A **Enumclaw** **81.38 44** *e*P **P** **13 31 04.5 +2.1**
comp=Z,68nm,1.0s
HUMO **Hull Mountain** **81.50 48** *e*P **P** **13 31 04.9 +1.7**
comp=Z,121nm,1.4s
LON **Longmire** **81.58 44** *e*P **P** **13 31 04.7 +1.1**
LON pmax pmax
comp=Z,43nm,1.3s
LON **Longmire** **81.58 44** *e*P **P** **13 31 04.7 +1.1**
comp=Z,43nm,1.3s
I04A **Tendick Farm,** **81.68 47** P **P** **13 31 05.5 +1.3**
baz=280
M02C **Callahan** **81.78 49** P **P** **13 31 07.0 +2.1**
baz=280,SNR=23
YBH **Yreka Blue Hor** **81.83 49** *e*P **P** **13 31 07.0 +1.9**
YBH pmax pmax
comp=Z,156nm,1.2s
YBH **Yreka Blue Hor** **81.83 49** *e*P **P** **13 31 07.0 +1.9**
comp=Z,156nm,1.2s
N02D **Trinity Center** **81.97 50** P **P** **13 31 07.9 +2.1**
baz=280,SNR=13
C06D **Leavenworth** **81.98 43** P **P** **13 31 07.0 +1.3**
baz=281
WRW **Wenatchee Ridg** **82.00 43** P **P** **13 31 07.2 +1.3**
HOPS **Hopland Field** **82.05 52** *e*P **P** **13 31 08.4 +2.2**
comp=Z,126nm,1.1s
VFP **Flag Point** **82.07 45** P **P** **13 31 07.8 +1.3**
WDC **Whiskeytown Da** **82.16 50** *e*P **P** **13 31 08.5 +1.7**
WDC pmax pmax
comp=Z,103nm,1.4s
WDC **Whiskeytown Da** **82.16 50** *e*P **P** **13 31 08.5 +1.7**
comp=Z,103nm,1.4s
G05D **Wamic, OR** **82.19 45** P **P** **13 31 08.3 +1.4**
baz=281
I05D **Terrebonne, OR** **82.34 46** P **P** **13 31 08.9 +1.2**
baz=281,SNR=15
K04D **Chiloquin, OR** **82.37 48** P **P** **13 31 09.4 +1.5**
baz=281
YKA **Yellowknife Ar** **82.42 28** P **P** **13 31 08.3 +0.7**
comp=Z,29nm,0.7s,baz=286,slow=5.4,SNR=186
YKA pP **sP** **13 31 28.9 +2.1**
comp=Z,14nm,0.7s,baz=286,slow=5.4,SNR=5.7
YKA PKKPbc **PKKPbc** **13 49 33.1 -2.9**
comp=Z,1.6nm,0.7s,baz=102,slow=2.4,SNR=14
YKA PKPPKP **P'P'df** **13 57 40.4 -0.6**
comp=Z,0.6nm,0.9s,baz=104,slow=3.0,SNR=4.0
YKA LR LR 14 05 34.1
comp=Z,93nm,21.8s,baz=0.0,slow=34
M04C **Macdoel** **82.46 49** P **P** **13 31 10.1 +1.6**
baz=281,SNR=49
CROR **Criterion Ridg** **82.47 46** P **P** **13 31 09.6 +1.3**
J05D **Fort Rock, OR** **82.62 47** P **P** **13 31 10.8 +1.5**
baz=281,SNR=58
G06A **Carlson Farm,** **82.66 45** *e*P **P** **13 31 10.4 +1.1**
comp=Z,39nm,1.1s
VTHM **Trough** **82.72 45** P **P** **13 31 10.7 +1.1**
O03D **Paynes Creek** **82.77 50** P **P** **13 31 11.1 +1.0**
baz=281,SNR=19
B08A **Colville Reser** **82.92 42** *e*P **P** **13 31 11.6 +1.0**
comp=Z,80nm,1.2s
E07A **Sunnyside** **82.94 44** *e*P **P** **13 31 12.6 +1.9**
comp=Z,52nm,1.0s
K05A **Summer Lake** **82.97 48** *e*P **P** **13 31 12.8 +1.6**
comp=Z,180nm,1.2s
ORV **Oroville** **83.14 51** *e*P **P** **13 31 13.1 +1.2**
ORV pmax pmax
comp=Z,119nm,1.3s
ORV **Oroville** **83.14 51** *e*P **P** **13 31 13.1 +1.2**
comp=Z,119nm,1.3s
HAWA **Hanford** **83.19 44** *e*P **P** **13 31 13.4 +1.4**
comp=Z,34nm,0.9s
HAWA LR LR
comp=Z,870nm,20.0s
D08A **Wollman Farm,** **83.46 43** *e*P **P** **13 31 14.7 +1.3**
comp=Z,45nm,1.1s
BIDO **Bidbid** **83.53 293** P **P** **13 31 15.4 +1.3**
SNR=17
BIDO P **P** **13 31 15.4 +1.3**
SNR=17
MOD **Modoc Plateau** **83.56 49** *e*P **P** **13 31 15.7 +1.5**
comp=Z,99nm,1.2s
CASY **Casey** **83.61 194** *e*P **P** **13 31 14.2 +0.7**
comp=Z,209nm,1.0s
CASY LR LR
comp=Z,135nm,19.0s
AFDM **Forest Hills D** **83.67 52** *e*P **P** **13 31 16.1 +1.5**
comp=Z,96nm,1.2s
SMDO **Samad** **83.69 292** P **P** **13 31 15.6 +0.5**
SNR=12
C09A **Chrisman Ranch** **83.73 42** *e*P **P** **13 31 15.8 +1.1**
comp=Z,43nm,1.1s
SAO **San Andreas Ge** **83.74 54** *e*P **P** **13 31 16.9 +1.9**
SAO pmax pmax
comp=Z,63nm,1.1s
SAO **San Andreas Ge** **83.74 54** *e*P **P** **13 31 16.9 +1.9**
comp=Z,63nm,1.1s
G08A **Pilot Rock** **83.81 45** *e*P **P** **13 31 16.6 +1.3**
comp=Z,40nm,1.2s
HOPEN **Hopen** **84.25 348** *e*P **P** **13 31 17.8 +0.9**
HOPEN IAmb IAmb 13 31 19.1
comp=Z,204nm,1.1s
CMB **Columbia Colle** **84.30 52** *e*P **P** **13 31 19.3 +1.4**
CMB pmax pmax
comp=Z,131nm,1.4s
CMB **Columbia Colle** **84.30 52** *e*P **P** **13 31 19.3 +1.4**
comp=Z,131nm,1.4s
NEW **Newport** **84.38 42** LR LR 14 08 47.5
comp=Z,406nm,18.1s,baz=298,slow=36
NEW **Newport** **84.38 42** P **P** **13 31 18.9 +0.8**
baz=283,SNR=20
NEW **Newport** **84.38 42** *e*P **P** **13 31 19.3 +1.2**
NEW pmax pmax
comp=Z,38nm,0.9s
NEW **Newport** **84.38 42** *e*P **P** **13 31 19.3 +1.2**
comp=Z,38nm,0.9s
RES **Resolute Bay** **84.55 14** LR LR 14 08 07.1
comp=Z,563nm,22.0s,baz=282,slow=35
RES **Resolute Bay** **84.55 14** *e*P **P** **13 31 19.8 +1.5**
RES **Resolute Bay** **84.55 14** *e*P **P** **13 31 19.8 +1.5**
WVOR **Wild Horse Val** **84.66 48** *e*P **P** **13 31 21.1 +1.3**
WVOR pmax pmax
comp=Z,102nm,1.4s
WVOR MLR MLR
comp=Z,1µm,20.0s
WVOR **Wild Horse Val** **84.66 48** *e*P **P** **13 31 21.1 +1.3**
comp=Z,102nm,1.4s
WVOR LR LR
comp=Z,1µm,20.0s
BANOM **Banah** **84.67 295** *i*P **P** **13 31 21.4 +1.5**
SNR=13
BANOM **Banah** **84.67 295** P **P** **13 31 21.5 +1.5**
SNR=9.3
BANOM P **P** **13 31 21.5 +1.5**
SNR=9.3
RKT **Rikitea** **84.70 115** *e*SS SS 13 47 12.3 -5.0
comp=Z,219nm,31.2s
RKT **Rikitea** **84.70 115** *e*LR LR 13 57 54.9
comp=Z,3µm,28.0s,baz=290
PAHR **Pah Rah Range** **84.71 51** *e*P **P** **13 31 21.3 +1.2**
comp=Z,82nm,1.3s
SPA0 **Spitsbergen Ar** **84.74 351** *e*P **P** **13 31 19.7 +0.3**
SPITS **Spitsbergen Ar** **84.74 351** P **P** **13 31 19.6 +0.3**
comp=Z,9.2nm,0.5s,baz=98,slow=6.0,SNR=42
SPITS pP **sP** **13 31 41.2 +2.7**
comp=Z,20nm,0.9s,baz=120,slow=4.9,SNR=4.2
F10A **Beach Ranch, E** **84.84 44** *e*P **P** **13 31 21.3 +0.8**
comp=Z,27nm,1.1s
KBS **Kingsbay** **84.86 352** *e*P **P** **13 31 20.5 +0.7**
KBS IAmb IAmb 13 31 21.1
comp=Z,44nm,0.7s
KBS **Kingsbay** **84.86 352** *e*P **P** **13 31 20.6 +0.7**
KBS pmax pmax
comp=Z,45nm,0.7s
KBS MLR MLR
comp=Z,548nm,20.0s
KBS **Kingsbay** **84.86 352** *e*P **P** **13 31 20.6 +0.7**
comp=Z,45nm,0.7s
KBS LR LR
comp=Z,548nm,20.0s
WAKR **Walker** **84.93 52** *e*P **P** **13 31 23.2 +1.9**
comp=Z,128nm,1.6s
UOSS **Minazif** **84.95 294** *e*P **P** **13 31 21.9 +0.5**
comp=Z,221nm,1.4s
ARQ **Araqi** **85.01 293** P **P** **13 31 22.9 +1.2**
SNR=42
HATD **Hatta, Dubai** **85.04 294** *i*P **P** **13 31 22.9 +1.1**
SNR=12
HATD **Hatta, Dubai** **85.04 294** P **P** **13 31 23.0 +1.1**
SNR=15
BMO **Blue Mountains** **85.05 45** *e*P **P** **13 31 22.6 +1.0**
BMO pmax pmax
comp=Z,78nm,1.3s
BMO MLR MLR
comp=Z,1µm,22.0s
BMO **Blue Mountains** **85.05 45** *e*P **P** **13 31 22.6 +1.0**
comp=Z,78nm,1.3s
BMO LR LR
comp=Z,1µm,22.0s
ASHO **Ashiyiah** **85.14 294** *i*P **P** **13 31 23.3 +0.9**
SNR=26
ASHO **Ashiyiah** **85.14 294** P **P** **13 31 23.9 +1.5**
SNR=15
SMMC **Simmler** **85.19 55** P **P** **13 31 24.2 +1.8**
baz=283
NAZ **Nazwa, Dubai** **85.43 294** *i*P **P** **13 31 24.4 +0.7**
SNR=16
PKM **Mcpherson Peak** **85.43 55** P **P** **13 31 25.5 +1.7**
baz=283
EDM **Edmonton** **85.45 36** *e*P **P** **13 31 24.3 +0.9**
EDM **Edmonton** **85.45 36** *e*P **P** **13 31 24.2 +0.9**
FAQ **Al Faqa, Dubai** **85.54 294** *i*P **P** **13 31 25.1 +0.8**
SNR=12

RCTC **Rector, Farmer** 85.57 54 P P 13 31 25.2 +1.0
baz=283
MLAC **Mammoth, Mammo** 85.59 53 P P 13 31 26.3 +1.7
baz=283
SBC **Santa Barbara** 85.61 56 P P 13 31 26.1 +1.7
baz=283
HSPB **Hornsund (broa** 85.67 350 eP P 13 31 23.5 -0.4
HSPB IAmb IAmb 13 31 26.3
comp=Z,230nm,1.3s
HSPB eS S 13 41 46.2 -6.1
HSPB **Hornsund (broa** 85.67 350 eP P 13 31 24.6 +0.7
HSPB eS S 13 41 50.0 -2.3
SCZ2 **Santa Cruz Isl** 85.78 56 P P 13 31 26.3 +1.0
baz=283
VES **Vestal, Richgr** 85.80 54 P P 13 31 26.1 +0.8
baz=283,SNR=16
BSMT **Bassoo Peak** 86.00 42 P P 13 31 27.8 +1.4
SNCC **San Nicolas Is** 86.03 57 P P 13 31 27.9 +1.3
baz=283
BMN **Battle Mountai** 86.16 50 eP P 13 31 28.8 +1.5
BMN pmax pmax
comp=Z,38nm,1.1s
BMN **Battle Mountai** 86.16 50 eP P 13 31 28.8 +1.5
comp=Z,38nm,1.1s
ARVC **Arvin** 86.17 55 P P 13 31 28.4 +1.1
baz=283
TIN **Tinemaha, Big** 86.19 53 P P 13 31 29.1 +1.7
baz=284
BLG **Laguna Peak, P** 86.21 56 P P 13 31 28.2 +0.7
baz=283
BLMT **Blacktail Moun** 86.23 42 eP P 13 31 28.8 +1.2
WALA **Waterton Lakes** 86.24 41 eP P 13 31 29.3 +1.8
ISA **Isabella, Lake** 86.32 54 P P 13 31 28.7 +0.6
baz=284,SNR=7.6
ISA **Isabella, Lake** 86.32 54 eP P 13 31 29.3 +1.2
ISA **Isabella, Lake** 86.32 54 eP P 13 31 29.3 +1.2
JTMT **Jette** 86.36 42 eP P 13 31 29.1 +1.0
OSI **Osito Audit: C** 86.37 55 P P 13 31 29.4 +1.0
baz=284
MFID **Camas Ranch** 86.43 46 eP P 13 31 29.8 +1.3
comp=Z,108nm,1.1s
CWC **Cottonwood Cre** 86.45 54 P P 13 31 29.6 +0.8
baz=284
APA **Apatity** 86.47 339⇑ iP P 13 31 26.8 -1.2
APA i S S 13 41 59.0 -1.4
APA i PS PnS 13 43 11.0 +7.3
APA pmax pmax
comp=Z,68nm,0.8s
APA MLR MLR
comp=Z,1μm,19.0s
YBMT **Yellow Bay** 86.50 42 eP P 13 31 29.6 +0.8
SWMT **Swartz Lake** 86.60 42 eP P 13 31 29.7 +0.5
KLMR **Klimovskoe** 86.74 332 eP P 13 31 26.2 -3.2
KLMR pmax pmax
comp=Z,122nm,0.9s
DECC **Green Verdugo** 86.77 56 P P 13 31 31.1 +0.9
baz=284
MSO **Missoula** 86.83 43 P P 13 31 30.7 +0.4
baz=286,SNR=10
MSO **Missoula** 86.83 43 eP P 13 31 30.6 +0.2
comp=Z,26nm,1.3s
DAC **Darwin (Calif)** 86.87 54 eP P 13 31 32.2 +1.3
DAC pmax pmax
comp=Z,68nm,1.1s
DAC **Darwin (Calif)** 86.87 54 eP P 13 31 32.2 +1.3
comp=Z,68nm,1.1s
GRAC **Grapevine Rang** 86.88 53 P P 13 31 32.0 +1.2
baz=284,SNR=7.8
EDW2 **Edwards Air Fo** 86.89 55 P P 13 31 32.2 +1.3
baz=284,SNR=40
SCI2 **San Clemente I** 86.89 57 P P 13 31 31.5 +0.7
baz=284
CIS **Catalina Islan** 86.90 57 P P 13 31 31.8 +0.9
baz=284,SNR=9.3
PASC **Pasadena Art C** 86.91 56 eP P 13 31 31.8 +0.9
comp=Z,198nm,1.6s
FMP **Fort Macarthur** 86.92 56 P P 13 31 31.9 +0.9
baz=284
LRMC **Laurel Mtn Rad** 87.00 54 P P 13 31 32.7 +1.2
baz=284,SNR=36
MWC **Mount Wilson** 87.00 56 eP P 13 31 32.0 +0.4
MWC pmax pmax
comp=Z,149nm,1.3s
MWC **Mount Wilson** 87.00 56 eP P 13 31 32.0 +0.4
comp=Z,149nm,1.3s
MPMC **Manual Prospec** 87.01 54 P P 13 31 32.9 +1.3
baz=284,SNR=77
CHMT **Chamberlain Mo** 87.26 43 eP P 13 31 32.8 +0.2
BFSC **Mount Baldy Ra** 87.31 56 P P 13 31 33.7 +0.7
baz=284,SNR=12
HLID **Hailey** 87.39 46 P P 13 31 34.6 +1.3
baz=286
HLID **Hailey** 87.39 46 eP P 13 31 34.4 +1.1
comp=Z,43nm,1.0s
HLID LR LR
comp=Z,1μm,20.0s
FURC **Furnace Creek,** 87.40 53 P P 13 31 34.7 +1.6
baz=284,SNR=24
ELK **Elko** 87.54 49 eP P 13 31 35.6 +1.4
ELK pmax pmax
comp=Z,98nm,1.1s
ELK **Elko** 87.54 49 eP P 13 31 35.5 +1.4
comp=Z,98nm,1.1s
RRX **Edison Barstow** 87.69 55 P P 13 31 36.0 +1.4
baz=284
GSC **Goldstone, Bar** 87.73 54 P P 13 31 36.1 +1.1
baz=284,SNR=31
GSC **Goldstone, Bar** 87.73 54 eP P 13 31 36.2 +1.3
GSC pmax pmax
comp=Z,125nm,1.5s
GSC **Goldstone, Bar** 87.73 54 eP P 13 31 36.2 +1.3
comp=Z,125nm,1.5s
TPNV **Topopah Spring** 87.75 53 P P 13 31 36.4 +1.2
baz=285,SNR=51
TPNV **Topopah Spring** 87.75 53 eP P 13 31 36.3 +1.2
TPNV pmax pmax
comp=Z,102nm,1.3s
TPNV **Topopah Spring** 87.75 53 eP P 13 31 36.3 +1.2
comp=Z,102nm,1.3s
MURC **Murrieta** 87.84 56 P P 13 31 36.2 +0.8
baz=284,SNR=10
HAMF **Hammerfest** 87.90 344 eP P 13 31 34.8 0.0
BBRC **Big Bear Solar** 87.90 55 P P 13 31 36.7 +0.7
baz=284
R11A **Troy Canyon, C** 87.91 51 P P 13 31 37.2 +1.4
baz=285,SNR=70
R11A **Troy Canyon, C** 87.91 51 eP P 13 31 37.1 +1.2
SHOC **Shoshone, Teco** 88.00 54 P P 13 31 37.2 +1.1
baz=285,SNR=34
ARA0 **ARCESS Array S** 88.01 342 eP P 13 31 35.4 -0.1
ARCES **ARCESS Array B** 88.01 342 P P 13 31 35.3 -0.2
comp=Z,86nm,0.9s,baz=52,slow=6.3,SNR=148
ARCES PKKP **PKKPbc** 13 49 20.0 -3.2
comp=Z,1.7nm,0.8s,baz=239,slow=3.8,SNR=5.6
ARCES LR LR 14 16 01.8
comp=Z,954nm,18.5s,baz=64,slow=39
ARE0 **ARCESS Array S** 88.01 342 eP P 13 31 35.5 0.0
ARE0 **ARCESS Array S** 88.01 342 eP P 13 31 35.4 0.0
109C **Camp Elliot, M** 88.09 57 P P 13 31 37.5 +1.0
baz=284,SNR=10
LRM **Limekiln Ridge** 88.10 43 eP P 13 31 37.6 +0.9
MCMT **McKenzie Canyo** 88.12 44 eP P 13 31 37.9 +1.1
DLMT **Dillon** 88.14 44 eP P 13 31 37.6 +0.9
comp=Z,40nm,1.3s
HEC **Hector,Ludlow** 88.22 55 P P 13 31 38.4 +1.1
baz=285,SNR=8.9
TUQ **Turquoise Moun** 88.40 54 P P 13 31 39.4 +1.3
baz=285,SNR=32
PFO **Pinyon Flats O** 88.43 56 P P 13 31 39.4 +1.1
baz=285,SNR=34
PFO **Pinyon Flats O** 88.43 56 eP P 13 31 39.5 +1.1
PFO pmax pmax
comp=Z,93nm,1.3s
PFO MLR MLR
comp=Z,1μm,22.0s
PFO **Pinyon Flats O** 88.43 56 eP P 13 31 39.5 +1.1
comp=Z,93nm,1.3s
PFO LR LR
comp=Z,1μm,22.0s
TPFO **Pinon Flats** 88.44 56 P P 13 31 39.2 +0.8
baz=285,SNR=31
BAR **Barrett** 88.50 57 eP P 13 31 39.5 +1.0
comp=Z,125nm,1.4s
MONP2 **Monument Peak** 88.64 57 P P 13 31 40.5 +1.0
baz=285,SNR=38
MIR **Mirnyy** 88.65 199 i P P 13 31 39.0 +0.7
MIR pmax pmax
comp=Z,12nm,1.5s
BOZ **Bozeman (W)** 88.70 43 P P 13 31 40.6 +1.2
baz=288,SNR=25
BOZ **Bozeman (W)** 88.70 43 eP P 13 31 40.6 +1.2
BOZ pmax pmax
comp=Z,64nm,1.4s
BOZ MLR MLR
comp=Z,587nm,20.0s
BOZ **Bozeman (W)** 88.70 43 eP P 13 31 40.6 +1.2
comp=Z,64nm,1.4s
BOZ LR LR
comp=Z,587nm,20.0s
BELC **Belle Mtn. Jos** 88.70 56 P P 13 31 40.5 +0.9
baz=285,SNR=26
SHPR **Sheep Range** 88.72 53 eP P 13 31 41.4 +1.7
comp=Z,76nm,1.2s
GMRC **Granite Mounta** 88.77 55 P P 13 31 41.2 +1.3
baz=285,SNR=36
MSF **Maaselka** 88.79 339 P P 13 31 38.6 -0.6
MSF pmax pmax
comp=Z,49nm,1.4s
SGF **Sodankyl** 88.84 341 P P 13 31 41.4 +2.0
SGF pmax pmax
comp=Z,150nm,1.2s
IKP **In-Ko-Pah, Jac** 88.96 57 P P 13 31 41.9 +1.1
baz=285,SNR=20
VRH **Novokhopyorsk** 88.97 323 eP P 13 31 38.9 -1.4
VRH pmax pmax
comp=Z,90nm,0.8s
KTK1 **Kautokeino** 88.97 342 eP P 13 31 39.6 -0.4
KTK1 IAmb IAmb 13 31 41.1
comp=Z,63nm,1.0s
HVU **Hansel Valley** 89.04 47 eP P 13 31 42.6 +1.5
HVU pmax pmax
comp=Z,153nm,1.5s
HVU **Hansel Valley** 89.04 47 eP P 13 31 42.6 +1.5
comp=Z,153nm,1.5s
QLMT **Earthquake Lak** 89.08 44 eP P 13 31 43.2 +1.9
BGU **Big Grassy Mou** 89.11 48 eP P 13 31 43.0 +1.6
comp=Z,26nm,1.1s
LDFC **Landfair** 89.13 54 eP P 13 31 43.1 +1.5
comp=Z,145nm,1.1s
SWSC **Sam W. Stewart** 89.14 56 P P 13 31 42.4 +0.9
baz=285,SNR=11
PSUT **Pine Spring** 89.17 51 eP P 13 31 43.8 +2.0
comp=Z,36nm,0.9s
EGMT **Eagleton** 89.19 41 P P 13 31 42.3 +0.8
baz=289
EGMT **Eagleton** 89.19 41 PFAKE 13 31 50.0 +8.5
EGMT LR LR
comp=Z,3μm,22.0s
HEF **Hetta** 89.20 342 eP P 13 31 40.4 -0.6
BC3 **Big Chuckawall** 89.23 56 P P 13 31 43.3 +1.1
baz=285,SNR=48
YHB **Horse Butte** 89.27 44 eP P 13 31 44.2 +2.1
ABTO **Aybut** 89.28 288 P P 13 31 42.9 +0.3
SNR=5.3
IRM **Iron Mountain** 89.35 55 P P 13 31 43.8 +1.2
baz=286,SNR=38
JOF **Joensuu** 89.40 336 P P 13 31 41.8 -0.3
JOF pmax pmax
comp=Z,139nm,1.0s
DUG **Dugway, Tooele** 89.47 49 P P 13 31 44.5 +1.4
baz=287
DUG **Dugway, Tooele** 89.47 49 eP P 13 31 44.6 +1.4
DUG pmax pmax
comp=Z,132nm,1.4s
DUG MLR MLR
comp=Z,678nm,20.0s
DUG **Dugway, Tooele** 89.47 49 eP P 13 31 44.6 +1.4
comp=Z,132nm,1.4s
DUG LR LR
comp=Z,678nm,20.0s
YHH **Holmes Hill** 89.49 44 eP P 13 31 45.7 +2.4
comp=Z,74nm,1.4s
MOS **Moscow** 89.59 328 eP P 13 31 41.7 -1.4
MOS e 13 31 51.0
MOS e 13 35 14.3
MOS pmax pmax
comp=Z,200nm,1.5s
MOS pmax pmax
comp=Z,169nm,1.5s
MOS MLR MLR
comp=Z,1μm,21.0s
YFT **Old Faithful** 89.60 44 eP P 13 31 47.4 +3.6
NEE2 **Needles Airpor** 89.60 54 P P 13 31 45.1 +1.4
baz=286
DGRG **David-gareji** 89.66 313 P P 13 31 43.3 -0.6
DGRG **David-gareji** 89.66 313 eP P 13 31 43.2 -0.6
YPP **Pitchstone Pla** 89.68 45 eP P 13 31 46.5 +2.3
comp=Z,21nm,1.2s
KIF **Kilpisjarvi** 89.68 343 eP P 13 31 42.9 -0.4
IMW **Indian Meadow** 89.70 45 eP P 13 31 46.0 +1.7
H17A **Grant Village** 89.80 44 P P 13 31 47.5 +2.8
baz=288,SNR=13
H17A **Grant Village** 89.80 44 eP P 13 31 47.8 +3.1
TRO **Tromso** 89.81 344 eP P 13 31 43.4 -0.5
TRO IAmb IAmb 13 31 44.8
comp=Z,64nm,1.1s
TRO IAMs_20 IAMs_20 14 19 05.5
comp=Z,1μm,21.7s
DAG **Danmarks Havn** 89.81 357⇑ iP P 13 31 42.8 -1.0
comp=Z,53nm,1.4s
DAG i 13 31 52.4
DAG **Danmarks Havn** 89.81 357⇑ iP P 13 31 42.8 -1.0
DAG i 13 31 52.4
DAG pmax pmax
comp=Z,120nm,1.4s
FLWY **Flagg Ranch** 89.81 45 eP P 13 31 46.7 +2.0
CCUT **Cedar City** 89.81 52 eP P 13 31 45.8 +0.9
TPAW **Teton Pass** 89.82 45 eP P 13 31 46.4 +1.5
LKWY **Lake** 89.86 44 eP P 13 31 48.8 +3.8
LKWY MLR MLR
comp=Z,1μm,20.0s
LKWY **Lake** 89.86 44 eP P 13 31 48.8 +3.8
LKWY LR LR
comp=Z,1μm,20.0s
MOOW **Moose Ponds** 89.88 45 eP P 13 31 46.4 +1.3
GLA **Glamis** 89.90 56 P P 13 31 46.5 +1.3
baz=286,SNR=29
GLA **Glamis** 89.90 56 eP P 13 31 46.7 +1.6
GLA **Glamis** 89.90 56 eP P 13 31 46.7 +1.6
REDW **Red Top Meadow** 89.93 45 eP P 13 31 46.6 +1.3
AHID **Auburn Hatcher** 89.94 46 eP P 13 31 46.6 +1.3
AHID LR LR
comp=Z,1μm,21.0s
Y12C **Blythe** 89.95 55 P P 13 31 46.7 +1.4
baz=286,SNR=11
Y12C **Blythe** 89.95 55 eP P 13 31 46.9 +1.6
HWUT **Hardware Ranch** 89.96 47 eP P 13 31 46.5 +1.0
HWUT LR LR
comp=Z,1μm,22.0s
GCMT **Greycliff** 89.96 43 eP P 13 31 46.8 +1.5
SNOW **Snow King Moun** 89.96 45 eP P 13 31 47.5 +2.0
LOHW **Long Hollow** 90.02 45 eP P 13 31 47.1 +1.4
TBLG **Delisi** 90.03 313 P P 13 31 45.2 -0.4
TBLG **Delisi** 90.03 313 eP P 13 31 45.1 -0.4
LCMT **Little Creek M** 90.06 52 eP P 13 31 47.7 +1.8
CTU **Camp Tracy** 90.10 48 eP P 13 31 47.7 +1.6
PDMCI **Parker Dam,Lak** 90.11 55 P P 13 31 47.4 +1.4
baz=286,SNR=28
GOF **Gofitskoye** 90.16 316⇑ eP P 13 31 45.3 -0.7
GOF pmax pmax
comp=Z,33nm,1.1s
BHU **Blowhard Mount** 90.19 51 eP P 13 31 48.8 +2.0
TCUT **Toone Canyon** 90.22 48 eP P 13 31 48.2 +1.5
NCK **Nalchik** 90.28 315⇑ eP P 13 31 46.2 -0.5
NCK pmax pmax
comp=Z,50nm,1.4s
ZEI **Tsey** 90.29 314 eP P 13 31 45.2 -1.8
ZEI pmax pmax
comp=Z,75nm,0.9s
JLU **Jordanelle** 90.35 48 eP P 13 31 48.6 +1.3
KNB **Kanab** 90.38 52 eP P 13 31 49.5 +2.0
KNB **Kanab** 90.38 52 eP P 13 31 49.5 +2.0
OBN **Obninsk** 90.40 327 P P 13 31 45.7 -1.1
comp=Z,31nm,0.7s,baz=41,slow=3.1,SNR=27
OBN **Obninsk** 90.40 327 c iP P 13 31 46.0 -0.9
OBN e*PP pP 13 31 57.1 -3.8
OBN eS SKSac 13 42 13.8 -0.5
OBN e 13 42 46.0
OBN eSS SS 13 48 47.3 +9.2
OBN eSSS SSS 13 52 09.4
OBN pmax pmax
comp=Z,134nm,1.3s
OBN MLR MLR
comp=Z,1μm,23.0s
OBN **Obninsk** 90.40 327 eP P 13 31 46.5 -0.4
OBN LR LR
comp=Z,1μm,21.0s
MSU **Marysvale** 90.43 50 eP P 13 31 49.4 +1.6
MSU **Marysvale** 90.43 50 eP P 13 31 49.4 +1.6
RLMT **Red Lodge** 90.45 43 P P 13 31 49.6 +1.9
baz=289,SNR=12
RLMT **Red Lodge** 90.45 43 eP P 13 31 49.5 +1.9
RLMT LR LR
comp=Z,837nm,22.0s
VSR **Storozhevoye** 90.47 323 eP P 13 31 45.8 -1.5
VSR pmax pmax
comp=Z,100nm,0.7s
GNI **Garni** 90.50 311 P P 13 31 47.5 -0.5
comp=Z,11nm,0.7s,baz=231,slow=4.3,SNR=6.8
GNI **Garni** 90.50 311 ceP P 13 31 48.0 0.0
GNI pmax pmax
comp=Z,108nm,1.3s
GNI **Garni** 90.50 311 eP P 13 31 50.0 +2.1
GNI LR LR
comp=Z,792nm,22.0s
MTPU **Mount Pierson** 90.57 51 eP P 13 31 50.4 +1.9
PKCU **Pink Cliffs** 90.64 51 eP P 13 31 51.5 +2.6
ONI **Oni** 90.67 314 P P 13 31 48.6 +0.1
ONI **Oni** 90.67 314 eP P 13 31 48.6 +0.1
KBZ **Khabaz** 90.69 315 P P 13 31 48.0 -0.5
comp=Z,20nm,1.0s,baz=56,slow=3.8,SNR=26
KBZ LR LR 14 18 01.4
comp=Z,555nm,18.9s,baz=60,slow=39
KVAR **Kislovodsk Arr** 90.75 315 P P 13 31 48.1 -0.8
comp=Z,27nm,0.9s,baz=243,slow=1.2,SNR=17
KIV **Kislovodsk** 90.76 316 i P P 13 31 49.2 +0.2
SNR=7.3
KIV **Kislovodsk** 90.76 316 c iP P 13 31 48.4 -0.5
KIV e*PP pP 13 32 00.2 -2.8
KIV i S SKSac 13 42 17.7 +0.5
KIV e 13 42 38.7
KIV i PS PS 13 43 50.1 -5.1
KIV eSS SS 13 48 56.5 +12
KIV pmax pmax
comp=Z,50nm,1.1s
KIV MLR MLR
comp=Z,1μm,21.0s
KIV **Kislovodsk** 90.76 316 P P 13 31 48.5 -0.5
SNR=11
KIV P P 13 31 48.5 -0.5
SNR=11
KIV **Kislovodsk** 90.76 316 eP P 13 31 48.7 -0.3
KIV LR LR
comp=Z,1μm,22.0s
BTU **Barney Top** 90.89 51 eP P 13 31 52.2 +2.2
TMUT **Trail Mountain** 90.92 49 eP P 13 31 51.5 +1.4
VNDA **Vanda** 90.95 177 P P 13 31 49.5 +0.6
comp=Z,37nm,1.1s,baz=326,slow=5.7,SNR=93
VNDA LR LR 14 11 01.0
comp=Z,335nm,19.8s,baz=344,slow=34
NEY **Neytrino** 90.97 315⇓ eP P 13 31 49.8 -0.3
NEY pmax pmax
comp=Z,8.0nm,1.1s
BGD **Bogdanovka** 90.98 313 P P 13 31 50.7 +0.4
AKH **Akhalkalaki** 91.01 313 i P P 13 31 50.5 +0.1
AKH **Akhalkalaki** 91.01 313 P P 13 31 50.5 +0.1
AKH **Akhalkalaki** 91.01 313 eP P 13 31 50.4 +0.1
BW06 **Boulder Array** 91.02 46 P P 13 31 50.8 +0.4
baz=289,SNR=6.2
BW06 **Boulder Array** 91.02 46 eP P 13 31 49.5 -0.9
BW06 LR LR
comp=Z,826nm,20.0s
PD31 **Pinedale Array** 91.02 46 eP P 13 31 51.4 +1.0
PDAR **Pinedale Array** 91.02 46 P P 13 31 50.2 -0.2
comp=Z,4.0nm,0.7s,baz=259,slow=3.0,SNR=19
PDAR LR LR 14 06 41.6
comp=Z,684nm,20.6s,baz=303,slow=32
Y14A **Wickenburg** 91.12 55 eP P 13 31 52.2 +1.4
KULLO **Kullorsuaq** 91.15 6⇑ iP P 13 31 50.2 +0.2
comp=Z,88nm,1.1s
KULLO i 13 32 11.4
KULLO **Kullorsuaq** 91.15 6⇑ iP P 13 31 50.2 +0.2
KULLO pmax pmax
comp=Z,88nm,1.1s
FFC **Flin Flon** 91.23 33 eP P 13 31 51.3 +0.5
FFC MLR MLR
comp=Z,919nm,22.0s
FFC **Flin Flon** 91.23 33 eP P 13 31 51.3 +0.5
FFC LR LR
comp=Z,919nm,22.0s
SRU **San Rafael Swe** 91.48 49 eP P 13 31 53.7 +1.1
SRU **San Rafael Swe** 91.48 49 eP P 13 31 53.7 +1.1
P18A **Preston Nutter** 91.53 49 eP P 13 31 54.2 +1.3
SBA **Scott Base** 91.58 176 eP P 13 31 53.5 +1.7
SBA MLR MLR
comp=Z,670nm,22.0s
SBA **Scott Base** 91.58 176 eP P 13 31 53.5 +1.7
SBA LR LR
comp=Z,670nm,22.0s
214A **Organ Pipe Nat** 91.84 57 P P 13 31 55.8 +1.6
baz=287
LAO **LASA Array** 91.90 41 P P 13 31 55.4 +1.2
baz=291
LAO **LASA Array** 91.90 41 eP P 13 31 55.5 +1.4
LAO LR LR
comp=Z,564nm,20.0s
WUAZ **Wupatki** 91.94 53 P P 13 31 56.7 +2.0
baz=288
WUAZ **Wupatki** 91.94 53 eP P 13 31 56.7 +2.0
WUAZ LR LR
comp=Z,678nm,19.0s
STEI **Steigen** 91.94 344 eP P 13 31 53.7 -0.1
STEI IAmb IAmb 13 31 55.1
comp=Z,103nm,1.0s
LOF **Lofoten** 92.26 344 eP P 13 31 54.1 -1.1
LOF IAmb IAmb 13 31 55.4
comp=Z,83nm,1.4s
FIA1 **FINESS Array S** 92.27 336 eP P 13 31 54.5 -0.9
FINES **FINESS Array B** 92.27 336 P P 13 31 54.4 -1.0
comp=Z,54nm,0.7s,baz=72,slow=6.2,SNR=180
FINES LR LR 14 16 17.5
comp=Z,567nm,19.8s,baz=60,slow=37
DGMT **Dagmar** 92.50 39 P P 13 31 57.3 +0.5
baz=293
DGMT **Dagmar** 92.50 39 PFAKE 13 32 10.0 +13
DGMT LR LR
comp=Z,1μm,22.0s
VAF **Ylistaro** 92.67 338 P P 13 31 56.4 -0.9
VAF pmax pmax
comp=Z,128nm,1.1s
PV09 **Paradox Valley** 92.71 50 eP P 13 31 59.6 +1.2
PV10 **Paradox Valley** 92.82 50 eP P 13 31 59.9 +1.1
O20A **White River Ci** 92.82 48 P P 13 31 59.4 +0.7
baz=290,SNR=14
O20A **White River Ci** 92.82 48 eP P 13 31 59.5 +0.7
PV05 **Paradox Valley** 92.87 50 eP P 13 32 00.3 +1.2
SOC **Sochi** 92.91 316 eP P 13 31 56.3 -2.5
SOC ePPP PPP 13 37 49.8
SOC eS SKSac 13 42 25.8 -3.2
SOC eSS SS 13 49 08.4 -6.6
SOC MLR MLR
comp=Z,908nm,16.0s
A25A **Svangstu Ranch** 92.97 38 P P 13 31 59.5 +0.5
baz=294
K22A **Casper** 93.16 45 P P 13 32 01.0 +0.8
baz=291,SNR=9.1
K22A **Casper** 93.16 45 eP P 13 32 01.0 +0.8
B25A **Knox Farm, Ray** 93.21 39 P P 13 32 00.8 +0.7
baz=294
PV01 **Paradox Valley** 93.25 50 eP P 13 32 01.5 +0.7
W18A **Petrified Fore** 93.34 53 P P 13 32 03.0 +1.8
baz=289
W18A **Petrified Fore** 93.34 53 eP P 13 32 02.8 +1.6
X18A **Snowflake** 93.35 54 eP P 13 32 03.1 +1.8
TUC **Tucson** 93.38 56 P P 13 32 03.1 +1.7
baz=288
TUC **Tucson** 93.38 56 eP P 13 32 02.9 +1.6
TUC MLR MLR
comp=Z,1μm,20.0s
TUC **Tucson** 93.38 56 eP P 13 32 02.9 +1.6
TUC LR LR
comp=Z,1μm,20.0s
C25A **Freed Ranch, W** 93.38 39 P P 13 32 01.6 +0.7
baz=294
VSU **Vasula** 93.60 333 c iP P 13 32 00.6 -1.0
VSU pmax pmax
comp=Z,260nm,0.9s

MVCO **Mesa Verde** 93.61 51 P P 13 32 03.7 +1.2
baz=290
MVCO **Mesa Verde** 93.61 51 *e*P P 13 32 03.7 +1.2
MVCO LR LR
comp=Z,941nm,20.0s
A26A Wade Farm, Ken 93.64 38 P P 13 32 02.6 +0.5
baz=295
B26A Jensen Ranch, 93.73 39 P P 13 32 02.4 -0.2
baz=294
ANN Anapa 93.98 318 *e*P P 13 32 01.5 -2.2
ANN *e* 13 35 52.4
ANN *e*SP SP 13 44 20.3 -3.9
ANN *e*SS SS 13 49 44.0 +14
ANN pmax pmax
comp=Z,48nm,1.4s
ANN MLR MLR
comp=N,829nm,19.0s
ANN MLR MLR
comp=Z,838nm,19.0s
ANN MLR MLR
comp=E,523nm,19.0s
SMCO **Snowmass** 94.07 48 *e*P P 13 32 05.2 +0.4
A27A Ledoux Ranch, 94.09 38 P P 13 32 04.6 +0.5
baz=295
D26A Manning 94.16 40 P P 13 32 05.2 +0.6
baz=294
N23A Red Feather La 94.19 46 P P 13 32 06.6 +1.5
baz=291,SNR=18
N23A Red Feather La 94.19 46 *e*P P 13 32 06.7 +1.5
HSIG 94.23 59 *e*P P 13 32 06.7 +1.5
RSSD Black Hills 94.29 43 P P 13 32 05.9 +0.4
baz=293
RSSD Black Hills 94.29 43 *e*P P 13 32 05.8 +0.4
RSSD Black Hills 94.29 43 *e*P P 13 32 05.8 +0.3
SUMG Summit 94.38 2⇑*i*P P 13 32 05.6 +0.1
comp=E,17nm,1.0s
SUMG **Summit** 94.38 2 *e*P P 13 32 05.6 +0.1
SUMG pmax pmax
comp=Z,17nm,1.0s
SUMG **Summit** 94.38 2 *e*P P 13 32 04.9 -0.6
H25A Fruitdale 94.39 42 P P 13 32 06.4 +0.7
baz=293
PHWY Pilot Hill 94.39 46 *e*P P 13 32 06.9 +0.9
S22A 4UR Ranch, Cre 94.67 50 P P 13 32 08.6 +1.2
baz=291,SNR=29
S22A 4UR Ranch, Cre 94.67 50 *e*P P 13 32 08.7 +1.3
A28A Rude Farm, Bot 94.69 38 P P 13 32 07.2 +0.3
baz=296
ISCO Idaho Springs 94.83 47 P P 13 32 09.2 +1.1
baz=292,SNR=7.6
ISCO Idaho Springs 94.83 47 *e*P P 13 32 09.3 +1.1
ISCO MLR MLR
comp=Z,1µm,20.0s
ISCO Idaho Springs 94.83 47 *e*P P 13 32 09.3 +1.2
ISCO LR LR
comp=Z,1µm,20.0s
B28A Dugan Ranch, T 94.83 38 P P 13 32 08.1 +0.5
baz=296
MICGM **Minsk** 95.14 329 *e* P 13 32 07.0 -1.8
MICGM *e*LR LR 14 12 18.0
MNK Minsk 95.14 329 *e*P P 13 32 07.0 -1.8
A29A Manning Farm, 95.29 37 P P 13 32 10.1 +0.4
baz=297
B29A Wagenman Farm, 95.43 38 P P 13 32 10.5 +0.2
baz=297
Q24A Divide 95.47 48 P P 13 32 12.0 +0.9
baz=292
Q24A Divide 95.47 48 *e*P P 13 32 12.5 +1.4
MDND Maddock 95.55 38 P P 13 32 11.2 +0.3
baz=296
LAZ Ladron 95.59 53 *e*P P 13 32 13.2 +1.6
SDCO Great Sand Dun 95.66 49 P P 13 32 12.8 +0.9
baz=291,SNR=14
SDCO Great Sand Dun 95.66 49 *e*P P 13 32 12.7 +0.8
SDCO LR LR
comp=Z,620nm,21.0s
121A Cookes Peak, D 95.71 55 P P 13 32 14.1 +2.0
baz=290,SNR=14
A30A Hoffart Farm, 95.83 37 P P 13 32 12.6 +0.4
baz=298
Y22D IRIS PASSCAL I 95.87 53 P P 13 32 14.8 +2.0
baz=290
ANMO Albuquerque 95.93 52 P P 13 32 14.4 +1.3
baz=290
ANMO Albuquerque 95.93 52*c* *i*P P 13 32 14.0 +0.9
ANMO pmax pmax
comp=Z,18nm,1.3s
ANMO Albuquerque 95.93 52 *e*P P 13 32 14.5 +1.3
ANMO LR LR
comp=Z,781nm,21.0s
LPM Los Pinos Moun 96.01 53 *e*P P 13 32 14.9 +1.4
B30A Myrvik Farm, E 96.04 37 P P 13 32 13.3 +0.2
baz=298
SIM Simferopol' 96.07 319 P P 13 32 24.2 +11
SIM *e*PS PS 13 44 45.0 -8.5
SIM pmax pmax
comp=Z,70nm,13.7s
BNM Barren Site 96.07 53 *e*P P 13 32 15.2 +1.4
SCO Scoresbysund 96.18 356⇑*i*P P 13 32 12.7 -0.5
comp=Z,17nm,1.3s
SCO Scoresbysund 96.18 356⇑*i*P P 13 32 12.7 -0.5
SCO pmax pmax
comp=Z,17nm,1.3s
C30A Mose, Pekin 96.30 38 P P 13 32 14.2 0.0
baz=297
F29A Eureka 96.31 40 P P 13 32 14.5 +0.1
baz=296
AKASG **Malin Array Be** 96.35 325 P P 13 32 13.1 -1.3
comp=Z,5.5nm,0.8s,baz=48,slow=4.9,SNR=29
AKASG PP PP 13 36 13.7 +5.8
comp=Z,0.3nm,0.3s,baz=49,slow=9.4,SNR=4.9
AKASG PKKP PKKPdf 13 49 02.4 +0.9
comp=Z,0.6nm,0.3s,baz=262,slow=1.9,SNR=6.1
AKASG LR LR 14 19 12.4
comp=Z,976nm,19.1s,baz=45,slow=38
AKASG **Malin Array Be** 96.35 325 P P 13 32 13.1 -1.3
AKASG 13 36 13.7
AKASG pmax pmax
comp=Z,2.0nm,0.5s
AKASG pmax pmax
comp=Z,1.0nm,0.3s
AKASG MLR MLR
comp=Z,976nm,19.1s
KIEV Kiev 96.36 325*c* *i*P P 13 32 12.8 -1.6
KIEV pmax pmax
comp=Z,14nm,1.0s
KIEV Kiev 96.36 325 *e*P P 13 32 12.5 -2.0
KIEV LR LR
comp=Z,2µm,20.0s
B31A Greenbush Farm 96.45 37 P P 13 32 15.0 0.0
baz=298
G29A Hoven 96.53 41 P P 13 32 15.1 -0.3
baz=296
ULM Lac du Bonnet 96.59 35 P P 13 32 15.2 -0.3
comp=Z,8.8nm,1.0s,baz=312,slow=5.2,SNR=9.2
ULM PP PP 13 36 16.6 +6.8
comp=Z,4.9nm,1.0s,baz=317,slow=7.3,SNR=5.2
ULM LR LR 14 12 29.4
comp=Z,916nm,20.2s,baz=298,slow=33
T25A Trinidad 96.69 50 P P 13 32 17.7 +1.1
baz=292,SNR=8.3
T25A Trinidad 96.69 50 *e*P P 13 32 17.7 +1.1
C31A Landman Farms, 96.70 38 P P 13 32 16.2 +0.1
baz=298
F30A Leola 96.81 40 P P 13 32 16.2 -0.4
baz=297
A32A Rocking H Ranc 96.89 36 P P 13 32 16.9 0.0
baz=299
OGNE Ogallala 96.91 45 P P 13 32 17.4 +0.1
baz=294
OGNE Ogallala 96.91 45 PFAKE 13 32 30.0 +13
OGNE LR LR
comp=Z,1µm,20.0s
G30A Faulkton 97.05 41 P P 13 32 17.5 -0.3
baz=297
D31A Mcclaflin, Tow 97.05 38 P P 13 32 17.2 -0.5
baz=298
B32A Ashes, Strandq 97.12 37 P P 13 32 17.4 -0.6
baz=299
E31A Nome 97.18 39 P P 13 32 17.7 -0.6
baz=298
KSCO Kaye Shedlock' 97.27 47 P Pdif 13 32 19.5 +0.5
baz=293
KSCO Kaye Shedlock' 97.27 47 *e*P Pdif 13 32 20.3 +1.2
F31A Hecla 97.28 40 P P 13 32 18.5 -0.2
baz=297

C32A Crookston 97.40 37 P P 13 32 19.2 0.0
baz=299
SUSD Miller 97.47 41 P P 13 32 19.2 -0.5
baz=297
A33A Warroad 97.52 36 P P 13 32 19.7 0.0
baz=300
AGMN Agassiz Nation 97.56 37 P P 13 32 19.9 0.0
baz=300
AGMN Agassiz Nation 97.56 37 *e*P Pdif 13 32 20.1 +0.1
AGMN LR LR
comp=Z,2µm,20.0s
G31A Conde 97.59 40 P P 13 32 19.8 -0.4
baz=297
J30A Dallas 97.62 42 P P 13 32 20.1 -0.3
baz=296
SUW Suwalki 97.72 330 *e*P P 13 32 19.4 -1.1
SUW Suwalki 97.72 330 *e*P P 13 32 19.4 -1.1
B33A Robert and Kas 97.73 37 P P 13 32 20.4 -0.4
baz=300
H31A Wolsey 97.76 41 P P 13 32 20.7 -0.3
baz=297
C33A Trail 97.88 37 P P 13 32 21.1 -0.3
baz=300
MNTX Cornudas Mount 97.91 55 P Pdif 13 32 23.2 +1.3
baz=291,SNR=38
MNTX Cornudas Mount 97.91 55 *e*P Pdif 13 32 23.2 +1.2
MNTX LR LR
comp=Z,902nm,22.0s
I31A Royce, Wessing 97.93 41 P P 13 32 21.4 -0.3
baz=297
G32A Webster 98.03 40 P P 13 32 21.8 -0.4
baz=298
NB2 NORSAR Subarra 98.05 340 P P 13 32 20.4 -1.5
comp=Z,12nm,0.9s,baz=54,slow=5.1
NB2 NORSAR Subarra 98.05 340 P P 13 32 20.4 -1.5
baz=54,slow=5.1
NOA NORSAR Array B 98.05 340 P P 13 32 20.7 -1.2
comp=Z,8.1nm,0.9s,baz=46,slow=4.5,SNR=12
NOA PP PP 13 36 28.4 +7.8
comp=Z,3.5nm,1.0s,baz=48,slow=7.3,SNR=3.4
NOA PKKPbc PKKPbc 13 48 54.9 -2.0
comp=Z,1.5nm,0.9s,baz=218,slow=2.9,SNR=3.5
NOA LR LR 14 19 06.1
comp=Z,407nm,21.2s,baz=45,slow=37
SORM Soroca 98.12 323⇑*i*P P 13 32 21.1 -1.3
SORM Soroca 98.12 323⇑P P 13 32 21.1 -1.3
J31A Geddes 98.13 42 P P 13 32 22.0 -0.7
baz=297
B34A Aery, Baudette 98.17 36 P P 13 32 22.5 -0.2
baz=300
E33A Westby DABS, E 98.35 38 P P 13 32 23.4 -0.2
baz=299
KIS Kishinev 98.41 322 *e*P P 13 32 22.0 -1.8
KIS Kishinev 98.41 322 *e*PS PS 13 45 05.0 -14
KIS LRM MLR 14 17 50.0
comp=Z,700nm,20.0s
KIS Kishinev 98.41 322 *e*P P 13 32 22.0 -1.8
KIS *e* 13 38 40.0
KIS *e* 13 43 39.0
KIS MLR MLR
comp=Z,700nm,20.0s
KIS MLR MLR
comp=Z,700nm,18.0s
H32A Carlson Farm, 98.42 41 P P 13 32 23.3 -0.6
baz=298
K31A O'Neill 98.42 43 P P 13 32 23.5 -0.4
baz=297
C34A RK Ranch, Bem 98.44 37 P P 13 32 23.5 -0.4
baz=300
F33A 5 Mile Ranch, 98.50 39 Pdif P 13 32 23.8 -0.4
baz=299
BR131 Keskin Array S 98.61 314 *e*P P 13 32 24.4 -0.6
BRTR Keskin Array B 98.61 314 P P 13 32 23.9 -1.1
comp=Z,8.2nm,1.0s,baz=80,slow=3.0,SNR=38
BRTR PKKPbc PKKPbc 13 48 54.4 -0.4
comp=Z,1.9nm,0.7s,baz=194,slow=4.7,SNR=8.6
BRTR LR LR 14 22 21.8
comp=Z,216nm,19.6s,baz=49,slow=39
BRTR Keskin Array B 98.61 314 P P 13 32 24.0 -1.1
BRTR pmax pmax
comp=Z,8.0nm,1.0s
G33A Ortonville 98.72 40 Pdif P 13 32 24.5 -0.7
baz=299
B35A Bob, Littlefor 98.76 36 Pdif P 13 32 25.2 -0.2
baz=301
H33A Prehn Over Nor 98.77 40 Pdif P 13 32 25.0 -0.5
baz=298
C35A Jirik Farms, M 98.96 37 Pdif P 13 32 25.3 -1.0
baz=301
SFJD Kangerlussuaq 99.05 7 PFAKE 13 32 40.0 +14
SFJD LR LR
comp=Z,537nm,21.0s
MSTX Muleshoe 99.12 52 Pdif Pdif 13 32 26.4 -1.0
baz=293
ANTO Ankara 99.13 315 P Pdif 13 32 26.7 -0.6
SNR=5.3
ANTO P Pdif 13 32 26.7 -0.6
SNR=5.3
ANTO Ankara 99.13 315 PFAKE 13 32 40.0 +13
ANTO LR LR
comp=Z,537nm,20.0s
BR231 Keskin MP Arra 99.16 315 *e*P Pdif 13 32 24.5 -2.9
ASF Jabal al Asfar 99.17 306 P Pdif 13 32 27.3 -0.3
comp=Z,5.5nm,1.1s,baz=294,slow=1.5,SNR=8.5
ASF PP PP 13 36 37.3 +7.0
comp=Z,1.9nm,0.7s,baz=35,slow=4.9,SNR=3.6
G34A Benson 99.19 39 Pdiff Pdif 13 32 26.5 -0.9
baz=299
D35A Remer 99.23 37 Pdiff Pdif 13 32 26.6 -0.9
baz=301
J33A Davis 99.27 41 Pdiff Pdif 13 32 27.1 -0.7
baz=298
E35A Pequot Lakes 99.29 38 Pdiff Pdif 13 32 27.0 -0.7
baz=300
ECSD EROS Data Cent 99.30 41 Pdiff Pdif 13 32 27.3 -0.5
baz=298
ECSD EROS Data Cent 99.30 41 *e*P Pdif 13 32 27.9 0.0
ECSD LR LR
comp=Z,571nm,20.0s
H34A Spellman Lake, 99.38 40 Pdiff Pdif 13 32 27.6 -0.6
baz=299
CBKS Cedar Bluff 99.40 47 Pdiff Pdif 13 32 27.5 -1.0
baz=295
CBKS Cedar Bluff 99.40 47 PFAKE 13 32 40.0 +12
CBKS LR LR
comp=Z,801nm,20.0s
C36A Pine Crest Far 99.58 36 Pdiff Pdif 13 32 29.5 +0.5
baz=302
AMTX Amarillo 99.59 51 Pdiff Pdif 13 32 28.4 -1.1
baz=294
KONO Kongsberg 99.62 339 PFAKE 13 32 40.0 +11
KONO LR LR
comp=Z,493nm,19.0s
I34A Hadley 99.63 40 Pdiff Pdif 13 32 28.8 -0.5
baz=299
LVV L'vov 99.65 326 *e*P Pdif 13 32 28.1 -1.2
MAW Mawson 99.71 203 P Pdif 13 32 29.8 +0.9
comp=Z,14nm,0.8s,baz=77,slow=6.5,SNR=15
MAW PP PP 13 36 33.7 -0.1
comp=Z,12nm,1.0s,baz=65,slow=12,SNR=6.6
MAW LR LR 14 15 24.8
comp=Z,646nm,21.3s,baz=67,slow=34
CFR Carcaliu 99.72 321⇓*i*P Pdif 13 32 28.8 -0.9
CFR Carcaliu 99.72 321⇓P Pdif 13 32 28.8 -0.9
O32A Brockman Farm, 99.79 45 Pdiff Pdif 13 32 29.4 -0.7
baz=297
G35A Watkins 99.91 39 Pdiff Pdif 13 32 30.1 -0.4
baz=300
TESR Tescani 99.95 323⇑*i*P Pdif 13 32 30.1 -0.6
H35A Sunnyside Ranc 99.95 40 Pdiff Pdif 13 32 30.0 -0.8
baz=300
C37A Embarrass 99.97 36 Pdiff Pdif 13 32 30.4 -0.4
baz=302
E36A McGregor 99.99 37 Pdiff Pdif 13 32 30.5 -0.4
baz=301
MMAI Mount Meron Ar 100.02 307 P Pdif 13 32 30.6 -0.7
comp=Z,6.1nm,0.8s,baz=48,slow=6.8,SNR=8.3
TLB Topalu 100.08 320⇑*i*P Pdif 13 32 30.1 -1.1
TLB Topalu 100.08 320⇑P Pdif 13 32 30.1 -1.1
TXAR Lajitas Array 100.14 57 P Pdif 13 32 31.2 -0.8
comp=Z,1.8nm,0.9s,baz=284,slow=5.0,SNR=17
TXAR PP PP 13 36 27.6 -10
comp=Z,0.2nm,0.5s,baz=282,slow=6.3,SNR=3.5
TXAR PKiKP PKiKP 13 37 00.3 +0.7
comp=Z,1.3nm,0.9s,baz=273,slow=6.2,SNR=3.3
TXAR PKKPbc PKKPbc 13 48 49.1 -1.1
comp=Z,1.8nm,0.8s,baz=120,slow=4.9,SNR=12

TXAR PKPPKP P'P'df 13 57 14.6 +5.7
comp=Z,0.5nm,0.9s,baz=106,slow=4.4,SNR=3.7
Q32A Meitler Ranch, 100.16 46 Pdiff Pdif 13 32 31.7 -0.1
baz=296
F36A Milaca 100.17 38 Pdiff Pdif 13 32 30.9 -0.8
baz=301
BURAR **Bucovina Array** 100.20 324⇑*i*P Pdif 13 32 31.6 -0.3
BURAR **Bucovina Array** 100.20 324⇑P Pdif 13 32 31.6 -0.3
VRI Vrincioaia 100.23 322⇑*i*P Pdif 13 32 31.8 -0.2
VRI Vrincioaia 100.23 322⇑P Pdif 13 32 31.8 -0.2
EYMN Ely 100.25 35 Pdiff Pdif 13 32 32.0 0.0
baz=303
EYMN **Ely** 100.25 35 PFAKE 13 32 40.0 +8.0
EYMN LR LR
comp=Z,1µm,20.0s
I35A Creekview Farm 100.28 40 Pdiff Pdif 13 32 31.7 -0.6
baz=300
PLOR Plostina 100.29 322⇑*i*P Pdif 13 32 32.0 -0.2
PLOR Plostina 100.29 322⇑P Pdif 13 32 32.0 -0.2
KWP Kalwaria Pacla 100.47 327 *e*P Pdif 13 32 32.9 0.0
KWP Kalwaria Pacla 100.47 327 *e*P Pdif 13 32 32.9 0.0
C38A Sawbill Land. 100.50 36 Pdiff Pdif 13 32 32.6 -0.5
baz=303
Q33A Connelly Farm, 100.66 46 Pdiff Pdif 13 32 33.5 -0.5
baz=297
T32A Huddler Ranch, 100.68 48 Pdiff Pdif 13 32 33.8 -0.4
baz=296
ISR Istrita 100.73 321⇑*i*P Pdif 13 32 34.5 +0.3
ISR Istrita 100.73 321⇑P Pdif 13 32 34.5 +0.3
L35A Bielow Farm, R 100.76 42 Pdiff Pdif 13 32 33.7 -0.7
baz=299
CSS Mathiatis 100.81 310 PFAKE 13 32 50.0 +15
CSS LR LR
comp=Z,263nm,21.0s
R33A Olander Ranch, 100.86 46 Pdiff Pdif 13 32 34.6 -0.4
baz=296
MLR Muntele Rosu 100.89 322⇑*i*P Pdif 13 32 34.3 -0.8
MLR Muntele Rosu 100.89 322⇑P Pdif 13 32 34.3 -0.8
O34A Beatrice 100.91 44 Pdiff Pdif 13 32 34.0 -1.1
baz=298
SPMN Marine on St. 100.93 38 Pdiff Pdif 13 32 34.4 -0.7
baz=301
J36A Seneca 1, Swea 100.94 41 Pdiff Pdif 13 32 34.6 -0.6
baz=300
DOPR Dopca 100.98 323⇑*i*P Pdif 13 32 35.5 +0.2
KOLS Kolonicke sedl 101.10 326 *e*P Pdif 13 32 36.2 +0.4
KOLS MLR MLR
comp=Z,700nm,23.9s
KOLS Kolonicke sedl 101.10 326 *e*PDIFF Pdif 13 32 36.2 +0.4
KOLS *e* 13 35 27.8
P34A Walnut Farm, R 101.11 45 Pdiff Pdif 13 32 34.9 -1.1
baz=298
I37A Lemond, Waseca 101.19 40 Pdiff Pdif 13 32 35.6 -0.7
baz=301
V32A Arapaho 101.22 49 Pdiff Pdif 13 32 36.3 -0.3
baz=295
UZH Uzhgorod 101.26 326*d* *i*P Pdif 13 32 35.5 -0.9
W32A Sentinel 101.32 50 Pdiff Pdif 13 32 36.6 -0.4
baz=295
R34A Isabella, Hill 101.38 46 Pdiff Pdif 13 32 37.4 +0.1
baz=297
J37A Redenius Farm, 101.45 40 Pdiff Pdif 13 32 37.2 -0.2
baz=300
KSU1 Kansas State U 101.46 45 PFAKE 13 32 50.0 +12
KSU1 LR LR
comp=Z,873nm,22.0s
X32A Elmer 101.59 50 Pdiff Pdif 13 32 38.1 -0.2
baz=295
ISP Isparta 101.63 313 PFAKE 13 32 50.0 +12
ISP LR LR
comp=Z,370nm,21.0s
OJC Ojcow 101.64 328 *e*P Pdif 13 32 37.2 -0.9
OJC Ojcow 101.64 328 *e*P Pdif 13 32 37.3 -0.9
EIL Elat 101.66 304 P Pdif 13 32 38.1 -0.5
comp=Z,14nm,1.1s,baz=238,slow=1.8,SNR=6.8
K37A Belmond 101.67 41 Pdiff Pdif 13 32 38.6 +0.2
baz=300
P35A Duane Minner, 101.67 45 Pdiff Pdif 13 32 38.4 -0.1
baz=298
ARR Arges 101.74 322⇓*i*P Pdif 13 32 39.0 +0.2
WMOK Wichita Mounta 101.83 50 Pdiff Pdif 13 32 38.5 -0.8
baz=295
WMOK Wichita Mounta 101.83 50 *e*P Pdif 13 32 40.1 +0.8
WMOK MLR MLR
comp=Z,1µm,22.0s
WMOK Wichita Mounta 101.83 50 *e*Pdif Pdif 13 32 40.1 +0.8
WMOK LR LR
comp=Z,1µm,22.0s
W33A Caddo, Fort Co 101.89 49 Pdiff Pdif 13 32 39.5 -0.1
baz=296
Q35A Mercer Eighty, 101.97 45 Pdiff Pdif 13 32 39.8 0.0
baz=298
T34A McClaskey Farm 102.00 47 Pdiff Pdif 13 32 39.9 -0.2
baz=297
U34A Anderson Ranch 102.01 48 Pdiff Pdif 13 32 39.9 -0.2
baz=296
ABTX Abilene, Hawle 102.06 52 Pdiff Pdif 13 32 40.1 -0.3
baz=294
DRGR 102.08 324⇑*i*P Pdif 13 32 40.0 -0.2
DRGR 102.08 324⇑P Pdif 13 32 40.0 -0.2
M37A Trindle Farm, 102.08 42 Pdiff Pdif 13 32 40.0 -0.2
baz=300
J38A Wedel Dairy, R 102.12 40 Pdiff Pdif 13 32 39.6 -0.8
baz=301
Y33A Hilltop Ranch, 102.25 51 Pdiff Pdif 13 32 40.5 -0.7
baz=295
K38A Parkersburg 102.28 41 Pdiff Pdif 13 32 40.5 -0.6
baz=301
V34A Guthrie 102.29 48 Pdiff Pdif 13 32 40.0 -1.3
baz=296
S35A Otter Creek Ra 102.32 46 Pdiff Pdif 13 32 40.8 -0.6
baz=298
KECS Kecovo 102.33 327 *e*P Pdif 13 32 41.1 -0.1
KECS *e* 13 36 53.0
KECS Kecovo 102.33 327 *e*PDIFF Pdif 13 32 41.1 -0.1
KECS *e*PP PP 13 36 53.0 -0.4
SCIA State Center 102.37 41 PFAKE 13 32 50.0 +8.4
SCIA LR LR
comp=Z,688nm,20.0s
L38A Oak Wood Farm, 102.42 41 Pdiff Pdif 13 32 41.3 -0.5
baz=301
Z33A Whitaker Ranch 102.45 51 Pdiff Pdif 13 32 41.3 -0.8
baz=295
T35A Sooner Cattle 102.53 47 Pdiff Pdif 13 32 42.0 -0.4
baz=297
COWI Conover 102.61 36 PFAKE 13 32 50.0 +7.4
COWI LR LR
comp=Z,1µm,20.0s
U35A Pawnee 102.62 48 Pdiff Pdif 13 32 42.4 -0.4
baz=297
133A Hamilton Ranch 102.62 52 Pdiff Pdif 13 32 42.3 -0.6
baz=295
OKC Ostrava-Krasne 102.72 329 *e*SKS SKSac 13 43 18.1 -0.8
OKC *e*SP SP 13 45 55.7 -2.5
OKC AMS AMS 14 26 00.0
comp=Z,700nm,18.9s
JCT Junction City 102.80 54 Pdiff Pdif 13 32 43.4 -0.4
baz=294
JCT Junction City 102.80 54 *e*P Pdif 13 32 45.2 +1.4
JCT MLR MLR
comp=Z,707nm,22.0s
JCT Junction City 102.80 54 *e*Pdif Pdif 13 32 45.2 +1.4
JCT LR LR
comp=Z,707nm,22.0s
V35A Meyer Ranch, C 102.81 48 Pdiff Pdif 13 32 43.4 -0.3
baz=297
Y34A Reagan Ranch, 102.93 50 Pdiff Pdif 13 32 44.3 +0.1
baz=296
PSZ Piszkesteto 102.98 326 *e*P Pdif 13 32 44.6 +0.3
PSZ MLR MLR
comp=Z,1µm,20.0s
PSZ Piszkesteto 102.98 326 *e*Pdif Pdif 13 32 44.6 +0.3
PSZ LR LR
comp=Z,1µm,20.0s
PSZ Piszkesteto 102.98 326⇓*e*Pdif Pdif 13 32 44.5 +0.3
KSP Ksiaz 103.00 330 *e*P Pdif 13 32 43.6 -0.5
KSP Ksiaz 103.00 330 *e*P Pdif 13 32 43.6 -0.5
QSPA South Pole Qui 103.01 180 PFAKE 13 32 50.0 +6.1
QSPA LR LR
comp=Z,911nm,22.0s
333A Richland Sprin 103.10 53 Pdiff Pdif 13 32 44.8 -0.2
baz=294
VYHS Vyhne 103.19 327 *e*P Pdif 13 32 45.1 0.0
VYHS Vyhne 103.19 327 *e*PDIFF Pdif 13 32 45.1 0.0
VYHS *e* 13 35 54.6
433A Art 103.25 54 Pdiff Pdif 13 32 45.6 -0.1

	baz=294								
134A	**White-Moore Ra**	**103.28**	**52**	Pdiff		**Pdif**	**13 32 45.6**	**-0.2**	
	baz=295								
DPC	**Dobruska-Polom**	**103.30**	**330**	*e*PDIFF		**Pdif**	**13 32 45.6**	**0.0**	
DPC				*e*SP		SP	13 46 03.0	-1.4	
DPC				AMS		AMS	14 19 20.0		
	comp=Z,900nm,23.1s								
DPC	**Dobruska-Polom**	**103.30**	**330**	*e*P		**Pdif**	**13 32 45.6**	**0.0**	
DPC				*e*SP		SP	13 46 03.0	-1.4	
DPC				*e*SP		**SP**	**13 46 03.4**	**-1.0**	
DPC				MLR		MLR			
	comp=Z,900nm,23.1s								
UPC	**Upice**	**103.35**	**330**	*e*SKS		**SKSac**	**13 43 20.3**	**-1.5**	
UPC				*e*SP		**SP**	**13 46 03.3**	**-1.5**	
UPC				AMS		AMS	14 19 20.0		
	comp=Z,1μm,21.5s								
832A	**Faith Ranch, C**	**103.53**	**56**	Pdiff		**Pdif**	**13 32 46.8**	**-0.2**	
	baz=293								
533A	**Kerrville**	**103.57**	**54**	Pdiff		**Pdif**	**13 32 46.8**	**-0.4**	
	baz=294								
334A	**Lometa**	**103.68**	**53**	Pdiff		**Pdif**	**13 32 47.5**	**-0.1**	
	baz=295								
633A	**Saathoff Ranch**	**103.71**	**55**	Pdiff		**Pdif**	**13 32 47.5**	**-0.2**	
	baz=294								
JFWS	**Jewell Farm**	**103.72**	**39**	PFAKE			13 33 00.0	+12	
JFWS				LR		LR			
	comp=Z,924nm,21.0s								
MDVR	**Moldovita**	**103.79**	**323**⇓	*i*P		**Pdif**	**13 32 47.5**	**-0.4**	
PVCC	**Panska Ves**	**104.03**	**331**	AMS		AMS	14 19 20.0		
	comp=Z,800nm,22.4s								
534A	**Blanco**	**104.03**	**54**	Pdiff		**Pdif**	**13 32 49.1**	**-0.1**	
	baz=294								
BRG	**Berggiesshubel**	**104.09**	**331**	*e*PDIFF		**Pdif**	**13 32 48.7**	**-0.3**	
	comp=Z,13nm,1.4s								
BRG	**Berggiesshubel**	**104.09**	**331**	*e*PKP		**PKiKP**	**13 37 01.7**	**-4.2**	
	comp=Z,16nm,1.5s								
BRG				*e*			13 37 08.0		
BRG				SKS		**SKSac**	**13 43 25.0**	**-0.2**	
BRG				PS		**PS**	**13 46 09.0**	**-10**	
BRG				*e*PKKP		**PKKPab**	**13 48 58.1**	**-1.0**	
	comp=Z,26nm,1.9s								
	comp=N,546nm,21.5s								
	comp=E,496nm,19.3s								
	comp=Z,895nm,18.0s								
BRG	**Berggiesshubel**	**104.09**	**331**	*e*P		**Pdif**	**13 32 48.7**	**-0.3**	
BRG				pmax		pmax			
	comp=Z,13nm,1.4s								
CLL	**Collm**	**104.23**	**332**	*i* Pdif		**Pdif**	**13 32 49.0**	**-0.6**	
	comp=Z,16nm,1.4s								
CLL				*e*			13 33 10.0		
CLL				*e*			13 36 53.0		
CLL				*e*PP		**PP**	**13 37 09.0**	**+1.6**	
CLL				*e*SKSac		**SKSac**	**13 43 24.0**	**-1.8**	
CLL				*e*SP		**SP**	**13 46 14.0**	**+0.1**	
CLL				*e*PPS		PPS	13 47 30.0		
CLL				*e*PKKPbc		**PKKPbc**	**13 48 37.0**	**-1.8**	
CLL				*e*			13 48 49.0		
CLL				*i*			13 48 57.6		
	comp=Z,17nm,1.5s								
CLL				*e*SS		**SS**	**13 51 54.0**	**+1.2**	
CLL				LmV			14 24 00.0		
	comp=Z,900nm,21.6s								
CLL	**Collm**	**104.23**	**332**	*i* P		**Pdif**	**13 32 49.0**	**-0.6**	
CLL				*e*			13 43 24.0		
CLL				pmax		pmax			
	comp=Z,16nm,1.4s								
CLL				MLR		MLR			
	comp=Z,900nm,21.6s								
U38A	**Gravette**	**104.26**	**47**	Pdiff		**Pdif**	**13 32 49.6**	**-0.5**	
	baz=299								
GOPC	**GO Pecny, Ondr**	**104.33**	**330**	*e*SKS		**SKSac**	**13 43 26.0**	**-0.4**	
GOPC				*e*SP		**SP**	**13 46 11.2**	**-4.0**	
GOPC				AMS		AMS	14 19 20.0		
	comp=Z,1μm,24.0s								
TREC	**Trest**	**104.40**	**329**	AMS		AMS	14 21 50.0		
	comp=Z,1μm,22.4s								
PRU	**Pruhonice**	**104.40**	**330**	*e*SKS		**SKSac**	**13 43 22.8**	**-3.8**	
PRU				*e*SP		**SP**	**13 46 12.3**	**-3.5**	
PRU				AMS		AMS	14 19 20.0		
	comp=Z,1μm,23.9s								
R40A	**Maddies Statio**	**104.83**	**44**	Pdiff		**Pdif**	**13 32 51.9**	**-0.7**	
	baz=300								
NKC	**Novy Kostel**	**105.23**	**332**	*e*PDIFF		**Pdif**	**13 32 53.9**	**-0.2**	
NKC	**Novy Kostel**	**105.23**	**332**	*e*P		**Pdif**	**13 32 53.9**	**-0.2**	
KHC	**Kasperske Hory**	**105.44**	**330**	*e*PDIFF		**Pdif**	**13 32 54.1**	**-1.0**	
KHC				*ex*		x	13 36 11.0		
KHC				*e*SKS		**SKSac**	**13 43 28.4**	**-3.1**	
KHC				*e*SP		**SP**	**13 46 24.4**	**-2.4**	
KHC				*e*PKKP		**PKKPbc**	**13 48 34.0**	**-1.2**	
KHC				*ex*		x	13 48 50.0		
KHC				AMS		AMS	14 20 40.0		
	comp=Z,1μm,21.0s								
KHC	**Kasperske Hory**	**105.44**	**330**	*e*P		**Pdif**	**13 32 54.1**	**-1.0**	
KHC				*e*			13 43 28.4		
KHC				*e*SP		SP	13 46 24.4	-2.4	
KHC				MLR		MLR			
	comp=Z,1μm,21.0s								
KVTX	**Kingsville**	**105.51**	**56**	PFAKE			13 37 20.0		
KVTX				LR		LR			
	comp=Z,1μm,20.0s								
GERES	**GERESS Array B**	**105.58**	**330**	Pdiff		**Pdif**	**13 32 54.9**	**-0.9**	
	comp=Z,0.9nm,0.6s,baz=48,slow=4.0,SNR=10								
GERES				PKiKP		**PKiKP**	**13 37 09.3**	**+0.4**	
	comp=Z,1.0nm,0.7s,baz=42,slow=2.2,SNR=3.7								
GERES				PP		**PP**	**13 37 16.5**	**-1.0**	
	comp=Z,1.7nm,0.8s,baz=57,slow=8.1,SNR=4.1								
GERES				PKKPbc		**PKKPbc**	**13 48 33.2**	**-1.6**	
	comp=Z,2.4nm,0.9s,baz=205,slow=2.1,SNR=11								
GERES				PKKPab		**PKKPab**	**13 48 51.1**	**-1.5**	
	comp=Z,1.3nm,0.8s,baz=210,slow=5.7,SNR=6.0								
HDIL	**Hopedale**	**105.60**	**41**	PFAKE			13 37 20.0		
HDIL				LR		LR			
	comp=Z,830nm,20.0s								
MIAR	**Mount Ida**	**105.75**	**48**	PFAKE			13 37 20.0		
MIAR				LR		LR			
	comp=Z,1μm,20.0s								
SANT	**Santorini**	**105.88**	**314**	PFAKE			13 37 20.0		
SANT				LR		LR			
	comp=Z,279nm,21.0s								
NATX	**Nacogdoches**	**106.24**	**51**	PFAKE			13 37 20.0		
NATX				LR		LR			
	comp=Z,739nm,20.0s								
SCHQ	**Schefferville**	**106.58**	**19**	PKKP		**PKKPab**	**13 48 46.2**	**-1.9**	
	comp=Z,3.6nm,0.5s,baz=174,slow=6.4,SNR=3.9								
PDG	**Podgorica**	**106.61**	**322**⇓	*i*P		**Pdif**	**13 33 00.6**	**+0.2**	
TIR	**Tirane**	**106.87**	**321**	PFAKE			13 37 20.0		
TIR				LR		LR			
	comp=Z,732nm,20.0s								
ESK	**Eskdalemuir**	**107.20**	**343**	PFAKE			13 37 20.0		
ESK				LR		LR			
	comp=Z,615nm,20.0s								
S45A	**Carrier Mills**	**107.63**	**43**	PKiKP		**PKiKP**	**13 37 12.3**	**-0.6**	
	baz=303								
AAM	**Ann Arbor**	**108.04**	**37**	PFAKE			13 37 20.0		
AAM				LR		LR			
	comp=Z,2μm,21.0s								
SYO	**Syowa Base**	**108.31**	**201**⇑	*e*PKiKP		**PKiKP**	**13 37 11.4**	**-1.7**	
WLF	**Walferdange**	**108.44**	**334**	PFAKE			13 37 20.0		
WLF				LR		LR			
	comp=Z,805nm,19.0s								
BFO	**Black Forest**	**108.48**	**332**	PFAKE			13 37 20.0		
BFO				LR		LR			
	comp=Z,556nm,20.0s								
KMBO	**Kilima Mbogo**	**109.15**	**273**	PFAKE			13 37 30.0		
KMBO				LR		LR			
	comp=Z,439nm,22.0s								
ACSO	**Alum Creek Sta**	**109.71**	**38**	PFAKE			13 37 30.0		
ACSO				LR		LR			
	comp=Z,1μm,22.0s								
AQU	**L'Aquila**	**110.05**	**325**	PFAKE			13 37 30.0		
AQU				LR		LR			
	comp=Z,2μm,21.0s								
TIP	**Timpagrande**	**110.07**	**321**	PFAKE			13 37 30.0		
TIP				LR		LR			
	comp=Z,734nm,21.0s								
CUC	**Castrocucco**	**110.15**	**322**	PFAKE			13 37 30.0		
CUC				LR		LR			
	comp=Z,356nm,20.0s								
Y47A	**UCPARC, Winfie**	**110.16**	**46**	PKiKP		**PKiKP**	**13 37 16.9**	**-0.8**	
	baz=302								
VLC	**Villacollemand**	**110.45**	**328**	PFAKE			13 37 30.0		
VLC				LR		LR			
	comp=Z,354nm,20.0s								
147A	**Livingston**	**110.51**	**47**	PKiKP		**PKiKP**	**13 37 18.3**	**-0.1**	
	baz=302								
Z48A	**Northport**	**110.65**	**47**	PKiKP		**PKiKP**	**13 37 18.3**	**-0.3**	
	baz=302								
M54A	**Oil Creek Stat**	**110.84**	**36**	PKiKP		**PKiKP**	**13 37 18.5**	**-0.4**	
	baz=311								
N54A	**Moraine State**	**111.01**	**36**	PKiKP		**PKiKP**	**13 37 19.7**	**+0.5**	
	baz=311								
CEL	**Celeste**	**111.17**	**320**	PFAKE			13 37 30.0		
CEL				LR		LR			
	comp=Z,514nm,22.0s								
LONY	**Lake Ozonia**	**111.38**	**30**	PFAKE			13 37 30.0		
LONY				LR		LR			
	comp=Z,926nm,20.0s								
BNI	**Bardonecchia**	**111.66**	**331**	PFAKE			13 37 30.0		
BNI				LR		LR			
	comp=Z,1μm,20.0s								
BRAL	**Brewton**	**112.18**	**48**	PFAKE			13 37 30.0		
BRAL				LR		LR			
	comp=Z,1μm,22.0s								
O56A	**Blue Knob Stat**	**112.28**	**36**	PKiKP		**PKiKP**	**13 37 21.4**	**-0.3**	
	baz=312								
BINY	**Binghamton**	**112.39**	**33**	PFAKE			13 37 30.0		
BINY				LR		LR			
	comp=Z,1μm,21.0s								
SSB	**Saint Sauveur**	**112.48**	**332**	PFAKE			13 37 30.0		
SSB				LR		LR			
	comp=Z,707nm,20.0s								
BLA	**Blacksburg**	**113.16**	**39**	PFAKE			13 37 30.0		
BLA				LR		LR			
	comp=Z,845nm,20.0s								
CLTB	**Caltabellotta**	**113.24**	**321**	PFAKE			13 37 30.0		
CLTB				LR		LR			
	comp=Z,320nm,20.0s								
PKME	**Peaks-Kenny Pk**	**113.36**	**27**	PFAKE			13 37 30.0		
PKME				LR		LR			
	comp=Z,675nm,21.0s								
GOGA	**Godfrey**	**113.47**	**44**	PFAKE			13 37 30.0		
GOGA				LR		LR			
	comp=Z,875nm,22.0s								
WDD	**Wied Dalam**	**113.52**	**319**	PFAKE			13 37 30.0		
WDD				LR		LR			
	comp=Z,432nm,20.0s								
KMSC	**Kings Mountain**	**113.86**	**42**	PKiKP		**PKiKP**	**13 37 24.5**	**-0.2**	
	baz=308								
VSL	**Villasalto**	**114.22**	**325**	PFAKE			13 37 40.0	+15	
VSL				LR		LR			
	comp=Z,532nm,20.0s								
CBN	**Corbin Frederi**	**114.35**	**37**	PFAKE			13 37 40.0	+14	
CBN				LR		LR			
	comp=Z,1μm,20.0s								
NHSC	**New Hope**	**115.86**	**43**	PFAKE			13 37 40.0	+11	
NHSC				LR		LR			
	comp=Z,567nm,20.0s								
CNNC	**Cliffs of the**	**115.99**	**40**	PFAKE			13 37 40.0	+11	
CNNC				LR		LR			
	comp=Z,820nm,20.0s								
TEIG	**Tepich**	**116.60**	**59**	PFAKE			13 37 40.0	+10	
TEIG				LR		LR			
	comp=Z,10.0nm,22.0s								
KEST	**Kesra**	**116.80**	**322**	PKP		**PKPdf**	**13 37 30.4**	**-0.1**	
	comp=Z,15nm,1.2s,baz=353,slow=4.3,SNR=4.3								
KEST				PKKPbc		**PKKPbc**	**13 47 57.9**	**+0.3**	
	comp=Z,5.5nm,0.9s,baz=307,slow=3.5,SNR=5.0								
CTEI	**Djebel Teioual**	**118.30**	**324**	P		**PKPdf**	**13 37 34.4**	**+0.9**	
SNAA	**Sanae**	**118.70**	**191**	P		**PKPdf**	**13 37 32.6**	**-0.4**	
SNAA	**Sanae**	**118.70**	**191**	*c i*PKIKP		**PKPdf**	**13 37 32.5**	**-0.5**	
ATAF	**Djebel Tarf**	**119.64**	**325**	P		**PKPdf**	**13 37 37.1**	**+1.1**	
ADJB	**Djebel Djouab**	**119.89**	**326**	P		**PKPdf**	**13 37 38.5**	**+2.0**	
PGAV	**Gavieira, Arco**	**120.47**	**338**	*e*PKPdf		**PKPdf**	**13 37 32.5**	**-4.9**	
PGAV	**Gavieira, Arco**	**120.47**	**338**	*e*PP		PP	13 39 11.8	+8.5	
PGAV	**Gavieira, Arco**	**120.47**	**338**	*e*LR		LR	14 18 12.4		
	comp=Z,340nm,22.0s								
LSZ	**Lusaka**	**120.49**	**260**	PFAKE			13 37 50.0	+12	
LSZ				LR		LR			
	comp=Z,390nm,20.0s								
VNA1	**Neumayer--Stat**	**120.50**	**189**	P		**PKPdf**	**13 37 36.5**	**+0.2**	
MVO	**Moncorvo**	**120.71**	**337**	*e*PKPdf		**PKPdf**	**13 37 38.6**	**+0.7**	
MVO	**Moncorvo**	**120.71**	**337**	*e*LQ		LQ	14 11 45.0		
MVO				*e*LR		LR	14 17 28.4		
	comp=Z,406nm,22.0s								
ESDC	**Sonseca Array**	**120.74**	**334**	PKP		**PKPdf**	**13 37 37.9**	**-0.1**	
	comp=Z,0.4nm,0.3s,baz=14,slow=2.6,SNR=7.6								
ESDC				PP		**PP**	**13 39 06.9**	**+1.7**	
	comp=Z,7.2nm,0.9s,baz=24,slow=7.6,SNR=11								
ESDC				PKKPab		**PKKPbc**	**13 47 43.8**	**+0.2**	
	comp=Z,5.3nm,1.0s,baz=216,slow=4.9,SNR=11								
ESDC				SKKP			13 51 41.9		
	comp=Z,0.2nm,0.3s,baz=233,slow=4.9,SNR=4.5								
POLO	**Lamas de Olo**	**120.82**	**338**	*e*PKPdf		**PKPdf**	**13 37 38.7**	**+0.6**	
POLO	**Lamas de Olo**	**120.82**	**338**	*e*PP		PP	13 39 00.1	-5.6	
PAB	**San Pablo**	**121.01**	**334**	PFAKE			13 37 50.0	+11	
PAB				LR		LR			
	comp=Z,637nm,22.0s								
MTE	**Manteigas**	**121.57**	**337**	*e*PKPdf		**PKPdf**	**13 37 40.3**	**+0.8**	
MTE	**Manteigas**	**121.57**	**337**	*e*PP		PP	13 38 56.7	-14	
MTE	**Manteigas**	**121.57**	**337**	*e*LQ		LQ	14 10 34.5		
MTE				*e*LR		LR	14 17 47.1		
	comp=Z,345nm,20.0s								
MTE	**Manteigas**	**121.57**	**337**	PFAKE			13 37 50.0	+10	
MTE				LR		LR			
	comp=Z,480nm,20.0s								
PCBR	**Castelo Branco**	**122.03**	**337**	*e*PKPdf		**PKPdf**	**13 37 40.1**	**-0.2**	
PAYG	**Puerto Ayora**	**122.27**	**82**	PFAKE			13 37 50.0	+8.5	
PAYG				LR		LR			
	comp=Z,401nm,19.0s								
PMRV	**Marv??o**	**122.35**	**336**	*e*PKPdf		**PKPdf**	**13 37 41.7**	**+0.7**	
PMRV	**Marv??o**	**122.35**	**336**	*e*PP		PP	13 39 18.3	+2.2	
PMRV	**Marv??o**	**122.35**	**336**	*e*LQ		LQ	14 14 37.3		
PMRV				*e*LR		LR	14 19 10.0		
	comp=Z,507nm,20.0s								
PBAR	**Barrancos**	**123.29**	**335**	*e*PKPdf		**PKPdf**	**13 37 43.5**	**+0.7**	
EVO	**Evora**	**123.37**	**336**	*e*PKPdf		PKPpre	13 37 30.9		
BOSA	**Boshof**	**123.65**	**244**	PKP		**PKPdf**	**13 37 44.2**	**+0.3**	
	comp=Z,17nm,0.9s,baz=88,slow=1.2,SNR=8.5								
PBEJ	**Beja**	**123.75**	**336**	*e*PKPdf		**PKPdf**	**13 37 44.6**	**+0.9**	
PNCL	**Nicolau / Gran**	**123.94**	**336**	*e*PKPdf		**PKPdf**	**13 37 44.8**	**+0.8**	
MESJ	**Messejana**	**124.05**	**336**	*e*P		**PKPdf**	**13 37 44.6**	**+0.3**	
MESJ				*e*PP		**PP**	**13 39 29.2**	**+1.7**	
MESJ				AMS		AMS	14 34 00.9		
	comp=Z,522nm,24.5s								
MESJ	**Messejana**	**124.05**	**336**	*e*PKPdf		**PKPdf**	**13 37 45.3**	**+1.0**	
MESJ	**Messejana**	**124.05**	**336**	*e*PP		PP	13 39 24.2	-3.3	
MESJ	**Messejana**	**124.05**	**336**	*e*PKIKP		**PKPdf**	**13 37 44.6**	**+0.3**	
MESJ				*e*			13 39 29.2		
PCVE	**Castro Verde**	**124.16**	**336**	*e*PKPdf		**PKPdf**	**13 37 45.5**	**+1.0**	
PVAQ	**Vaqueiros**	**124.22**	**335**	*e*LR		LR	14 19 37.5		
	comp=Z,563nm,20.0s								
PBDV	**Barranco-do-Ve**	**124.45**	**335**	*e*PKPdf		**PKPdf**	**13 37 46.7**	**+1.6**	
PTEO	**Sao Teotonio**	**124.50**	**336**	*e*PKPdf		**PKPdf**	**13 37 44.8**	**-0.3**	
BBSR	**BB Station**	**125.68**	**33**	PFAKE			13 38 00.0	+12	
BBSR				LR		LR			
	comp=Z,617nm,19.0s								
MTDJ	**Mount Denham**	**126.40**	**55**	PFAKE			13 38 00.0	+11	
MTDJ				LR		LR			
	comp=Z,405nm,20.0s								
RTC	**Rabat Centre**	**126.75**	**332**	PFAKE			13 38 00.0	+10	
RTC				LR		LR			
	comp=Z,2μm,22.0s								
TAM	**Tamanrasset**	**127.78**	**313**	PFAKE			13 38 00.0	+8.0	
TAM				LR		LR			
	comp=Z,284nm,22.0s								
GRTK	**Grand Turk**	**129.36**	**48**	PFAKE			13 38 10.0	+15	
GRTK				LR		LR			
	comp=Z,802nm,20.0s								
SDDR	**Presa de Saban**	**130.82**	**50**	PFAKE			13 38 10.0	+12	
SDDR				LR		LR			
	comp=Z,643nm,21.0s								
TSUM	**Tsumeb**	**130.86**	**256**	PFAKE			13 38 10.0	+12	
TSUM				LR		LR			
	comp=Z,313nm,20.0s								
PMOZ	**Porto Moniz, M**	**131.73**	**342**	*e*PKPdf		**PKPdf**	**13 37 53.5**	**-5.7**	
SOLC	**Bahia Solano**	**132.18**	**69**	*e*P		**PKPdf**	**13 37 60.0**	**-0.4**	
SJCC	**San Jacinto, C**	**132.56**	**63**	*e*P		**PKPdf**	**13 38 01.6**	**+0.5**	
MOTC	**Monteria, Cord**	**132.65**	**65**	*e*P		**PKPdf**	**13 38 01.1**	**-0.2**	
OTAV	**Otavalo**	**133.35**	**77**	*e*P		**PKPdf**	**13 38 04.5**	**+1.3**	
OTAV	**Otavalo**	**133.35**	**77**	PFAKE			13 38 10.0	+6.8	
OTAV				LR		LR			
	comp=Z,369nm,21.0s								
CMBC	**Cumbal**	**133.72**	**76**	*e*P		**PKPdf**	**13 38 03.9**	**0.0**	
HELC	**Santa Helena**	**133.89**	**68**	*e*P		**PKPdf**	**13 37 60.0**	**-4.1**	
POPC	**Popayan, Colom**	**134.25**	**73**	*e*P		**PKPdf**	**13 38 03.9**	**-0.7**	
CRUC	**La Cruz**	**134.33**	**75**	*e*P		**PKPdf**	**13 38 03.4**	**-1.6**	
TOLC	**Tolima**	**134.74**	**70**	*e*P		**PKPdf**	**13 38 06.2**	**+0.6**	
OCAC	**Ocana**	**134.96**	**64**	*e*P		**PKPdf**	**13 38 06.7**	**+1.0**	
BRRC	**Barranca, Sant**	**135.12**	**66**	*e*P		**PKPdf**	**13 38 04.5**	**-1.4**	
SJG	**San Juan**	**135.12**	**47**	PFAKE			13 38 20.0	+14	
SJG				LR		LR			
	comp=Z,495nm,20.0s								
PRAC	**Prado**	**135.47**	**71**	*e*P		**PKPdf**	**13 38 04.5**	**-2.2**	
ROSC	**El Rosal**	**135.54**	**69**	PKP		**PKPdf**	**13 38 08.2**	**+1.1**	
	comp=Z,9.2nm,0.5s,baz=202,slow=20,SNR=5.1								
GRMC	**Gramalote, San**	**135.65**	**64**	*e*P		**PKPdf**	**13 38 06.7**	**-0.3**	
CBRI	**Barrientos, No**	**135.66**	**64**	*e*P		**PKPdf**	**13 38 07.3**	**+0.2**	
BARC	**Barichara**	**135.82**	**66**	*e*P		**PKPdf**	**13 38 07.9**	**+0.4**	
CHIC	**Chingaza**	**136.16**	**69**	*e*P		**PKPdf**	**13 38 06.7**	**-1.6**	
RUSC	**La Rusia**	**136.22**	**67**	*e*P		PKPpre	13 37 54.9		
VILC	**Villavicencio,**	**136.41**	**69**	*e*P		**PKPdf**	**13 38 07.3**	**-1.2**	
TORD	**Torodi Ar. Bea**	**136.53**	**306**	PKhKP		PKPpre	13 37 55.7		
	comp=Z,3.0nm,0.9s,baz=24,slow=3.8,SNR=13								
TORD				PKP		**PKPdf**	**13 38 08.9**	**+0.4**	
	comp=Z,20nm,0.9s,baz=46,slow=2.5,SNR=18								
TORD				PP		**PP**	**13 40 55.9**	**+6.1**	
	comp=Z,9.1nm,1.3s,baz=68,slow=4.3,SNR=4.5								
TORD				SKKPbc		SKKPbc	13 50 16.6	-15	
	comp=Z,4.4nm,1.1s,baz=211,slow=3.3,SNR=5.2								
EFI	**East Falkland**	**136.72**	**158**⇑	*i*PKIKP		**PKPdf**	**13 38 09.3**	**+1.6**	
SDV	**Santo Domingo**	**136.97**	**61**	*e*P		**PKPdf**	**13 38 06.2**	**-3.4**	
SDV	**Santo Domingo**	**136.97**	**61**	PFAKE			13 38 20.0	+10	
SDV				LR		LR			
	comp=Z,382nm,22.0s								
PLCA	**Paso Flores**	**137.45**	**137**	PKhKP		PKPpre	13 37 58.1		
	comp=Z,2.1nm,0.8s,baz=233,slow=2.8,SNR=2.9								
PLCA				PKP		**PKPdf**	**13 38 10.4**	**+0.9**	
	comp=Z,23nm,0.9s,baz=227,slow=2.9,SNR=19								
PLCA				PP		**PP**	**13 40 54.4**	**-0.9**	
	comp=Z,9.5nm,1.2s,baz=272,slow=9.5,SNR=3.2								
PLCA				SKKPbc		SKKPbc	13 50 23.2	-6.7	
	comp=Z,4.0nm,1.0s,baz=16,slow=9.2,SNR=3.1								
NNA	**Nana**	**137.56**	**93**	*i* PKIKP		**PKPdf**	**13 38 14.2**	**+3.8**	
NNA	**Nana**	**137.56**	**93**	PFAKE			13 38 20.0	+10	
NNA				LR		LR			
	comp=Z,358nm,21.0s								
GUVC	**San Jose del G**	**138.00**	**71**	*e*P		**PKPdf**	**13 38 10.7**	**-0.6**	
ANWB	**Willy Bob**	**138.44**	**43**	PFAKE			13 38 20.0	+8.1	
ANWB				LR		LR			
	comp=Z,931nm,22.0s								
FDF	**Fort de France**	**140.93**	**46**	PFAKE			13 38 30.0	+13	
FDF				LR		LR			
	comp=Z,780nm,22.0s								
LCO	**Las Campanas**	**141.94**	**120**	PFAKE			13 38 30.0	+12	
LCO				LR		LR			
	comp=Z,1μm,19.0s								
AUSP	**Uspallata**	**141.97**	**126**	*i* P		PKPpre	13 38 12.9		
AAGR	**Agrelo**	**142.08**	**128**	*i* P		PKPpre	13 38 09.5		
ASAL	**Salagasta**	**142.26**	**127**	*i* P		PKPpre	13 38 13.5		
GRGR	**Grenville**	**142.31**	**49**	PFAKE			13 38 30.0	+11	
GRGR				LR		LR			
	comp=Z,882nm,22.0s								
RTCV	**Cerro Valdivia**	**142.77**	**126**	*i* P		PKPpre	13 38 15.3		
ACCO	**Cerro Coronel**	**142.80**	**124**	*i* P		PKPpre	13 38 16.2		
ACDV	**Cuesta del Vie**	**142.90**	**123**	*i* P		PKPpre	13 38 15.9		
BBGH	**Gun Hill**	**143.14**	**46**	PFAKE			13 38 30.0	+10	
BBGH				LR		LR			
	comp=Z,1μm,19.0s								
AMOG	**MOGNA**	**143.14**	**124**	*i* P		PKPab	13 38 15.3	-0.4	
AGUA	**GUANDACOL**	**143.63**	**122**	*i* P		PKPbc	13 38 19.3	+0.7	
ACAN	**Cantantal**	**143.67**	**127**	*i* P		PKPbc	13 38 18.4	-0.1	
AVFE	**Valle Fertil**	**144.07**	**125**	*i* P		PKPbc	13 38 19.9	+0.1	
VCA	**Vinchina**	**144.11**	**121**	*i* P		PKPbc	13 38 20.6	+0.4	
ACHE	**Chepes**	**144.52**	**126**	*i* P		PKPbc	13 38 21.5	+0.1	
LVC	**Limon Verde**	**144.95**	**111**	PFAKE			13 38 30.0	+6.1	
LVC				LR		LR			
	comp=Z,812nm,20.0s								
SUCO	**SUCO**	**144.96**	**130**	*i* P		**PKPab**	**13 38 22.4**	**-0.1**	
DBIC	**Dimbokro**	**145.51**	**303**	PKPbc		**PKPab**	**13 38 25.4**	**+0.4**	
	comp=Z,220nm,0.9s,baz=40,slow=3.2,SNR=76								
KIC	**Kosan Boka**	**145.60**	**303**	*e*PKP1		**PKPdf**	**13 38 24.7**	**-0.1**	
	comp=Z,806nm,1.2s								
TIC	**

0.9nm,0.9s,baz=165,slow=12,SNR=4.4
KURBB Kurchatov Arra 52.20 9 P P 14 06 42.2 -0.2
0.3nm,0.3s,baz=207,slow=7.2,SNR=4.5
ZALV Zalesovo Beam 56.51 12 P P 14 07 12.3 -1.5
0.4nm,0.5s,baz=190,slow=7.3,SNR=2.5
SONM Songino Array 59.04 29 P P 14 07 32.2 +0.3
1.1nm,0.9s,baz=225,slow=5.9,SNR=4.9

*IDC **01** 14:04:39.5±1.1, 11°.61S×34°.89E, h0km, mb3.3/4, mb1 3.8/10, mb1mx3.6/47, mbtmp3.8/10, ML4.2/4, Error ellipse: s-maj=39.6km s-min=16.2km az=121.0*
ISC 01 14:04:39.3±1.0, 11°.83S±0°.09×35°.0E±0°.1, h10km, n16, σ3.33/22, mb3.3/4, Malawi

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
LSZ	**Lusaka**	**7.45**	**242**	*i* P		**Pn**	**Pn**	**14 06 31.4**	**+3.1**
LSZ	**Lusaka**	**7.45**	**242**	Pn		**Pn**	**Pn**	**14 06 31.4**	**+3.1**
	4.8nm,0.3s,baz=57,slow=11,SNR=22								
LSZ					Sn		**Sn**	**14 07 49.9**	**-3.1**
	14nm,0.3s,baz=342,slow=18,SNR=11								
LSZ					Lg		Lg	14 08 30.8	
	15nm,0.3s,baz=327,slow=11,SNR=4.1								
MATP	**Matopo**	**10.58**	**215**	*i* P		**Pn**	**Pn**	**14 07 10.3**	**-1.0**
MATP	**Matopo**	**10.58**	**215**	*i* P		**Pn**	**Pn**	**14 07 14.4**	**+3.2**
MATP				*i*				14 07 14.7	
	baz=35,slow=16								
MATP				*i* S			**Sn**	**14 09 05.7**	**-4.2**
MATP	**Matopo**	**10.58**	**215**	Pn		**Pn**	**Pn**	**14 07 14.3**	**+3.0**
	3.0nm,0.3s,baz=36,slow=13,SNR=46								
MATP					Sn		**Sn**	**14 09 05.4**	**-4.5**
	2.0nm,0.3s,baz=331,slow=4.3,SNR=6.2								
MATP					Lg		Lg	14 10 11.4	
	6.0nm,0.3s,baz=104,slow=19,SNR=7.2								
KMBO	**Kilima Mbogo**	**10.87**	**12**	Pn		**Pn**	**Pn**	**14 07 12.3**	**-3.0**
	0.7nm,0.3s,baz=194,slow=17,SNR=6.0								
KMBO					Sn		**Sn**	**14 09 14.8**	**-2.4**
	1.2nm,0.3s,baz=248,slow=20,SNR=6.4								
KMBO					Lg		Lg	14 10 07.7	
	1.6nm,0.3s,baz=121,slow=21,SNR=11								
LBTB	**Lobatse**	**15.85**	**213**	*i* P		**Pn**	**Pn**	**14 08 23.5**	**+0.8**
LBTB	**Lobatse**	**15.85**	**213**	Pn		**Pn**	**Pn**	**14 08 24.1**	**+1.3**
	0.9nm,0.3s,baz=33,slow=17,SNR=10								
LBTB					Sn		**Sn**	**14 11 12.3**	**-6.3**
	1.9nm,0.3s,baz=313,slow=10,SNR=6.7								
LBTB					Lg		Lg	14 12 54.0	
	1.2nm,0.3s,baz=285,slow=9.6,SNR=6.0								
TSUM	**Tsumeb**	**18.30**	**244**	P		**P**	**P**	**14 08 55.9**	**+2.1**
	0.5nm,0.3s,baz=59,slow=11,SNR=3.7								
BOSA	**Boshof**	**19.02**	**207**	*i* P		**P**	**P**	**14 09 02.4**	**+0.8**
BOSA	**Boshof**	**19.02**	**207**	*i* P		**Pn**	**Pn**	**14 09 04.0**	**+1.6**
BOSA				*i*				14 09 04.3	
	baz=34,slow=7.4								
BOSA				*i* S			**Sn**	**14 12 29.1**	**-6.4**
BOSA	**Boshof**	**19.02**	**207**	P		**P**	**P**	**14 09 03.8**	**+2.2**
	0.7nm,0.3s,baz=19,slow=12,SNR=8.4								
SUR	**Sutherland**	**24.26**	**210**	P		**P**	**P**	**14 10 00.0**	**+3.1**
	0.6nm,0.9s,baz=22,slow=9.3,SNR=7.5								
TORD	**Torodi Ar. Bea**	**41.32**	**306**	P		**P**	**P**	**14 12 25.3**	**-0.3**
	0.2nm,0.3s,baz=116,slow=7.3,SNR=2.3								
MKAR	**Makanchi Array**	**72.05**	**32**	P		**P**	**P**	**14 16 04.9**	**+1.2**
	0.2nm,0.7s,baz=229,slow=7.4,SNR=2.8								
KURBB	**Kurchatov Arra**	**72.84**	**27**	P		**P**	**P**	**14 16 09.6**	**+1.4**
	0.3nm,0.7s,baz=231,slow=6.6,SNR=3.0								

IDC 01 14:05:28.1±3.0, 6°.42S×147°.40E, h0km, mb3.5/2, mb1 3.5/4, mb1mx3.3/38, mbtmp3.4/4, ML3.1/1, Error ellipse: s-maj=64.7km s-min=32.7km az=90.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.97**	**185**		Pn		Pn	14 06 16.2	-0.4
	2.4nm,0.3s,baz=36,slow=8.3,SNR=8.3								
PMG					Sn		Sn	14 06 54.0	+1.0
	5.1nm,0.3s,baz=16,slow=14,SNR=6.2								
WRA	**Warramunga Arr**	**18.48**	**222**	P			Pn	14 09 46.6	+0.7
	0.1nm,0.3s,baz=44,slow=12,SNR=6.2								
ASAR	**Alice Springs**	**21.50**	**216**	P			P	14 10 17.8	-1.0
	0.6nm,0.7s,baz=51,slow=9.0,SNR=12								
FITZ	**Fitzroy Crossi**	**24.19**	**239**	P			P	14 10 46.8	+0.3
	1.8nm,0.6s,baz=64,slow=8.9,SNR=6.8								
TORD	**Torodi Ar. Bea**	**145.58**	**284**	PKPbc		PKPdf		14 25 09.0	-0.5
	0.4nm,0.7s,baz=84,slow=3.6,SNR=3.3								

MEX 01 14:14:19.7±0.8, 14°.97N×94°.38W, h16km±999km, MD3.6, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.85**	**296**	*i* P			Pn	14 14 47.7	-3.1
HUIG				*e*S			Sn	14 15 09.0	-4.8

*CSEM **01** 14:16:36.4, 42°.42N×21°.43E, h3km, ML1.2*
BEO 01 14:16:36.4±0.4, 42°.42N×21°.43E, h3km±3km, M1.2/7, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SKO	**Skopje**	**0.45**	**179**	*e*Pg			Pg	14 16 44.7	-0.3
SKO	**Skopje**	**0.45**	**179**	*e*Pg			Pg	14 16 44.7	-0.3
BARS	**Barje**	**0.49**	**36**	*e*Pg			Pg	14 16 43.9	-1.9
BARS				*e*Sg			Sg	14 16 50.4	-1.7
BARS	**Barje**	**0.49**	**36**	*e*Pg			Pg	14 16 43.9	-1.9
BARS				*e*Sg			Sg	14 16 50.4	-1.7
SELS	**Selova**	**0.83**	**344**	*e*Pg			Pg	14 16 50.5	-1.8
SELS				*e*Sg			Sg	14 17 02.9	-0.2
ZAPS	**Zavoj**	**1.23**	**46**	*e*Pg			Pg	14 17 00.1	+0.1
ZAPS				*e*Sg			Sg	14 17 15.8	-0.1
BOVS	**Bovan**	**1.23**	**9**	*e*Pg			Pg	14 16 58.7	-1.3
BOVS				*e*Sg			Sb	14 17 16.3	-0.3
BOVS	**Bovan**	**1.23**	**9**	*e*Pg			Pg	14 16 58.7	-1.3
BOVS				*e*Sg			Sb	14 17 16.3	-0.3
VTS	**Vitosha**	**1.33**	**82**	*e*Pg			Pg	14 17 01.3	-0.5
VTS				*e*Sg			Sg	14 17 18.8	-0.2
VTS	**Vitosha**	**1.33**	**82**	*e*Pg			Pg	14 17 01.3	-0.5
VTS				*e*Sg			Sg	14 17 18.8	-0.2
GRUS	**Gruza**	**1.56**	**341**	*e*Pn			Pn	14 17 04.8	-0.2
GRUS				*e*Sg			Sg	14 17 27.6	+1.1
GRUS	**Gruza**	**1.56**	**341**	*e*Pn			Pn	14 17 04.8	-0.2
GRUS				*e*Sg			Sg	14 17 27.6	+1.1
KUBS	**Kucevo**	**2.00**	**5**	*e*Pn			Pn	14 17 08.2	-2.9
KUBS	**Kucevo**	**2.00**	**5**	*e*Pn			Pn	14 17 08.2	-2.9

*MOS **01** 14:33:15.2±0.8, 8°.12S×108°.82E, h33km, mb4.7/33, Error ellipse: s-maj=11.7km s-min=7.6km az=104.4*
*ISCJB **01** 14:33:22.0±0.3, 8°.40S±0°.05×108°.69E±0°.03, h100km, mb4.5/53, Error ellipse: s-maj=6.9km s-min=3.9km az=24.7*
*NEIC **01** 14:33:22.8±0.6, 8°.31S×108°.73E, h93km±5km, mb4.6/20, Error ellipse: s-maj=8.1km s-min=5.4km az=217.0*
*BJI **01** 14:33:22.5, 8°.30S×108°.70E, h92km, mb4.5/11, mB4.9/7*
*DJA **01** 14:33:23.5±0.4, 9°S±5°×10°9E±°, h86km±6km, M5.2/17, mb5.2/11, mB5.6/7, MLv5.2/17, Mw(mB)5.1/7, Mwp9.1/1*
*IDC **01** 14:33:23.3±4.0, 8°.17S×108°.79E, h90km±35km, mb4.1/26, mb1 4.1/28, mb1mx4.1/46, mbtmp4.4/28, MS3.4/4, Ms1 3.5/4, ms1mx3.1/27, Error ellipse: s-maj=18.9km s-min=11.3km az=61.0*
ISC 01 14:33:21.2±0.7, 8°.45S±0°.05×108°.67E±0°.04, h78km±5km, n299, σ1963/276, mb4.5/53, 8C-8D, Jawa

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**0.70**	**342**	P			**Sn**	**14 33 51.9**	**+3.7**
KPJI	**Karang Pucung**	**1.14**	**13**	P			**Pn**	**14 33 46.0**	**+4.1**
CISI	**Cisompet, Garu**	**1.23**	**316**	P			**Pn**	**14 33 46.7**	**+3.7**
CISI	**Cisompet, Garu**	**1.23**	**316**	*e*Pn			**Pn**	**14 33 46.3**	**+3.3**
CISI				*e*Sn			**Sn**	**14 33 59.2**	**-0.1**
CNJI	**Cibinong**	**1.90**	**307**	P			**Pn**	**14 33 54.9**	**+3.2**
UGM	**Wanagama**	**1.91**	**74**	P			**Pn**	**14 33 54.0**	**+2.0**
UGM	**Wanagama**	**1.91**	**74**	*e*Pn			**Pn**	**14 33 53.2**	**+1.2**
LEM	**Lembang**	**1.92**	**327**	P			Pn	14 34 02.0	+10
SKJI	**Sukabumi**	**2.54**	**304**	P			**Pn**	**14 34 04.7**	**+4.4**
DBJI	**Dramaga**	**2.68**	**315**	P			**Pn**	**14 34 06.5**	**+4.3**
NGJI	**Ngawi**	**2.97**	**69**	P			**Pn**	**14 34 10.4**	**+4.3**
PWJI	**Pagerwojo**	**3.13**	**82**	P			**Pn**	**14 34 10.4**	**+2.0**
XMIS	**Christmas Isla**	**3.59**	**236**	*e*Pn			**Pn**	**14 34 15.5**	**+0.9**
XMIS				*e*Sn			**Sn**	**14 34 53.1**	**-2.9**
GRJI	**Gresik**	**4.08**	**68**	P			**Pn**	**14 34 24.0**	**+2.8**
BLJI	**Banyuglugur**	**4.93**	**82**	P			**Pn**	**14 34 36.6**	**+3.8**
KASI	**Kota Agung**	**5.06**	**305**	P			**Pn**	**14 34 38.6**	**+4.0**
	146nm,0.8s,4μm1.0nm								
JAGI	**Jajag, Banyuwa**	**5.43**	**91**	P			**Pn**	**14 34 41.5**	**+1.9**
	346nm,0.8s,12μm3.7nm								
JAGI	**Jajag, Banyuwa**	**5.43**	**91**	*e*Pn			**Pn**	**14 34 40.6**	**+1.0**
JAGI				*e*Sn			**Sn**	**14 35 37.1**	**-3.7**
ABJI	**Asem Bagus**	**5.55**	**84**	P			**Pn**	**14 34 45.0**	**+3.7**
LWLI	**Liwa**	**5.71**	**306**	P			**Pn**	**14 34 47.9**	**+4.3**
	264nm,0.7s,5μm2.0nm								
PBKI	**Pangkalan Bun**	**6.44**	**28**	P			**Pn**	**14 34 57.1**	**+3.6**
PPBI	**Pangkal Pinang**	**6.74**	**338**	P			**Pn**	**14 35 01.1**	**+3.6**
	145nm,0.8s,1μm0.9nm								
MNAI	**Manna**	**6.98**	**305**	P			**Pn**	**14 35 03.6**	**+2.7**
	480nm,0.7s,10μm1.6nm								
MNAI	**Manna**	**6.98**	**305**	*e*Pn			**Pn**	**14 35 02.6**	**+1.7**
MNAI				*e*Sn			**Sn**	**14 36 15.1**	**-3.8**
KSI	**Kapahiang**	**7.69**	**308**	P			**Pn**	**14 35 13.5**	**+2.8**
	538nm,0.7s								
DSRI	**Dabo**	**8.90**	**333**	P			**Pn**	**14 35 30.0**	**+2.8**
	151nm,0.8s								
PLAI	**Plampang**	**9.02**	**93**	P			**Pn**	**14 35 30.0**	**+1.3**
	121nm,0.8s								
KSM	**Kuching**	**9.99**	**10**	*e*Pn			**Pn**	**14 35 41.8**	**-0.3**
MYKOM	**Kota Tinggi**	**11.25**	**335**	*e*Pn			Pn	14 36 06.6	+7.5
SBUM	**Sibu**	**11.39**	**18**	*e*Pn			**Pn**	**14 36 05.1**	**+3.9**
KAPI	**Kappang**	**11.53**	**73**	P			**Pn**	**14 36 02.9**	**0.0**
	0.8nm,0.3s,baz=278,slow=11,SNR=5.4								
KAPI	**Kappang**	**11.53**	**73**	*e*Pn			**Pn**	**14 36 02.9**	**0.0**
	23nm,1.1s								
MMRI	**Maumere**	**13.42**	**92**	*e*Pn			**Pn**	**14 36 25.4**	**-3.2**
MMRI				*e*Sn			Sn	14 38 44.8	-11
GSI	**Gunungsitoli**	**14.70**	**311**	*e*Pn			**Pn**	**14 36 41.1**	**-4.1**
SOEI	**Soe**	**15.46**	**96**	*e*Pn			**Pn**	**14 36 51.4**	**-3.6**
	81nm,0.8s								
LUWI	**Luwuk**	**15.86**	**63**	Pn			**Pn**	**14 37 00.5**	**+0.6**
	105nm,1.1s								
MRSI	**Marisa**	**15.93**	**57**	P			**P**	**14 37 03.8**	**+0.9**
	177nm,1.0s,7μm								
MBWA	**Marble Bar**	**16.54**	**141**	*e*Pn			**Pn**	**14 37 07.1**	**-1.3**
	23nm,0.6s								
MBWA				*e*Sn			Sn	14 39 55.8	-16
MYLDM	**Lahad Datu**	**16.72**	**36**	*e*Pn			**P**	**14 37 14.9**	**+3.2**
	39nm,1.1s								
GTOI	**Gorontalo**	**16.91**	**58**	P			**P**	**14 37 14.6**	**+0.8**
	484nm,1.2s								
FITZ	**Fitzroy Crossi**	**19.09**	**122**	P			**Pn**	**14 37 40.0**	**+0.7**
	1.7nm,0.3s,baz=311,slow=9.0,SNR=24								
FITZ					S		S	14 40 59.1	-11
	1.0nm,0.3s,baz=165,slow=16,SNR=5.1								
FITZ	**Fitzroy Crossi**	**19.09**	**122**	Pn			**Pn**	**14 37 40.0**	**+0.7**
	12nm,0.8s								
FITZ					S		S	14 40 59.1	-11
LBMI	**Labuha**	**20.30**	**68**	P			Pn	14 37 53.1	-0.6
MTN	**Manton Dam**	**22.50**	**103**	*e*P			**P**	**14 38 14.8**	**+0.2**
	24nm,0.6s								
MTN					*e*S		**S**	**14 42 19.9**	**+3.7**
WRA	**Warramunga Arr**	**27.34**	**117**	P			**P**	**14 38 59.8**	**+0.7**
	5.0nm,0.7s,baz=291,slow=11,SNR=42								
WRA					LR		LR	14 51 45.3	
	comp=Z,43nm,19.4s,baz=90,slow=40								
WRAB	**Tennant Creek**	**27.34**	**117**	*ce*P			**P**	**14 39 00.3**	**+1.2**
WRAB					pmax		pmax		
	comp=Z,52nm,1.2s								
WRAB	**Tennant Creek**	**27.34**	**117**	*e*P			**P**	**14 38 57.9**	**-1.2**
	comp=Z,13nm,0.8s								
WB2	**Warramunga Arr**	**27.35**	**117**	*e*P			**P**	**14 39 00.8**	**+1.7**
	comp=Z,12nm,0.8s								
CM01	**Chiang Mai Arr**	**28.37**	**340**	*e*P			**P**	**14 39 07.2**	**-1.0**
CMAR	**Chiang Mai Arr**	**28.41**	**340**	P			**P**	**14 39 07.9**	**-0.7**
	comp=Z,2.3nm,0.7s,baz=178,slow=8.7,SNR=18								
CMAR					LR		LR	14 50 42.9	
	comp=Z,112nm,18.8s,baz=165,slow=37								
ASAR	**Alice Springs**	**28.51**	**125**	P			**P**	**14 39 10.3**	**+0.8**
	comp=Z,2.8nm,0.6s,baz=302,slow=8.7,SNR=22								
ASAR					PcP		**PcP**	**14 42 20.2**	**+0.5**
	comp=Z,2.8nm,0.8s,baz=338,slow=1.8,SNR=8.7								
ASAR					LR		LR	14 51 31.3	
	comp=Z,60nm,19.2s,baz=292,slow=38								
ASAR	**Alice Springs**	**28.51**	**125**	P			**P**	**14 39 10.3**	**+0.8**
ASAR								14 42 20.2	
ASAR					pmax		pmax		
	comp=Z,3.0nm,0.6s								
ASAR					pmax		pmax		
	comp=Z,3.0nm,0.8s								
ASAR					MLR		MLR		
	comp=Z,60nm,19.2s								
AS31	**Alice Springs**	**28.51**	**125**	*e*P			P	14 39 15.0	+5.5
	comp=Z,2.3nm,0.8s								
AS01	**Alice Springs**	**28.55**	**125**	*e*P			**P**	**14 39 10.6**	**+0.8**
AS01					*e*PcP		**PcP**	**14 42 20.2**	**+0.4**
CHTO	**Chiang Mai**	**28.74**	**341**	*e*P			**P**	**14 39 09.6**	**-1.9**
CHTO					pmax		pmax		
	comp=Z,5.0nm,1.0s								
CHTO	**Chiang Mai**	**28.74**	**341**	*e*P			**P**	**14 39 09.6**	**-1.9**
	comp=Z,5.4nm,1.0s								
JAY	**Jayapura**	**32.42**	**81**	P			**P**	**14 39 42.7**	**-1.4**
	comp=Z,1.3nm,0.8s,baz=76,slow=23,SNR=5.4								
COEN	**Coen**	**34.27**	**102**	*e*P			**P**	**14 39 59.9**	**-0.3**
	comp=Z,35nm,1.1s								
H08S2	**Diego Garcia H**	**35.82**	**269**	T			T	15 18 51.0	
	baz=94,slow=76,SNR=69								
H08S3	**Diego Garcia H**	**35.83**	**269**	T			T	15 18 49.7	
	baz=94,slow=76,SNR=69								
H08S1	**Diego Garcia H**	**35.84**	**269**	T			T	15 18 54.8	
	baz=94,slow=76,SNR=79								
PMG	**Port Moresby**	**38.03**	**94**	*e*P			**P**	**14 40 32.6**	**+0.3**
STKA	**Stephens Creek**	**38.45**	**132**	P			**P**	**14 40 37.3**	**+1.7**
	comp=Z,11nm,0.6s,baz=310,slow=9.1,SNR=54								
STKA	**Stephens Creek**	**38.45**	**132**	*e*P			**P**	**14 40 37.3**	**+1.7**
	comp=Z,2.6nm,0.6s								
KSAR	**Wonju Array Be**	**49.07**	**20**	P			**P**	**14 41 59.3**	**-1.3**
KSAR								14 43 23.4	
KSAR	**Wonju Array Be**	**49.07**	**20**	P			**P**	**14 41 59.2**	**-1.3**
KSAR					PcP		**PcP**	**14 43 23.4**	**+0.1**
KSRS	**Korea Array**	**49.09**	**20**	P			**P**	**14 41 59.2**	**-1.5**
	comp=Z,1.4nm,0.9s,baz=198,slow=9.0,SNR=7.9								
KSRS					PcP		**PcP**	**14 43 23.4**	**+0.1**
	comp=Z,1.0nm,0.7s,baz=195,slow=3.5,SNR=7.7								
HHC	**Hu-ho-hao-te**	**49.13**	**3**	*e*P			P	14 42 06.3	+5.2
HHC					PP		**PP**	**14 44 01.3**	**+5.7**
HHC					S		**S**	**14 49 04.7**	**+4.1**
HHC					pmax		pmax		
	comp=Z,16nm,0.9s								
HHC					pmax		pmax		
	comp=Z,93nm,5.6s								
HHC					LR		LR		
	comp=Z,92nm,14.8s								
HHC					LR		LR		
	comp=Z,81nm,14.8s								
HHC					LR		LR		
	comp=Z,110nm,14.8s								
HNR	**Honiara**	**50.63**	**95**	P			**P**	**14 42 12.5**	**-0.4**
	comp=Z,71nm,0.9s,baz=174,slow=2.0,SNR=3.9								
HNR	**Honiara**	**50.63**	**95**	P			**P**	**14 42 12.5**	**-0.4**
HNR					pmax		pmax		
	comp=Z,46nm,0.8s								
MAJO	**Matsushiro**	**52.66**	**30**	*ce*P			**P**	**14 42 25.2**	**-2.4**
MAJO					pmax		pmax		
	comp=Z,23nm,1.0s								
MJAR	**Matsushiro Arr**	**52.66**	**30**	P			**P**	**14 42 25.1**	**-2.5**
	comp=Z,2.5nm,0.9s,baz=206,slow=8.9,SNR=8.8								
MJAR					PcP		**PcP**	**14 43 37.4**	**+0.8**
	comp=Z,2.5nm,0.8s,baz=201,slow=4.3,SNR=5.4								
MJAR	**Matsushiro Arr**	**52.66**	**30**	P			**P**	**14 42 25.1**	**-2.5**
MJAR								14 43 37.4	
MJAR					pmax		pmax		
	comp=Z,3.0nm,0.9s								
MJAR					pmax		pmax		
	comp=Z,3.0nm,0.8s								
SONM	**Songino Array**	**56.08**	**358**	P			**P**	**14 42 52.3**	**0.0**
	comp=Z,3.7nm,0.6s,baz=176,slow=8.0,SNR=25								
SONM					PcP		**PcP**	**14 43 49.8**	**+0.2**
	comp=Z,2.7nm,0.8s,baz=183,slow=4.1,SNR=6.8								
SONM					LR		LR	15 09 17.9	
	comp=Z,53nm,18.5s,baz=198,slow=39								
SONA1	**Songino Array**	**56.09**	**358**	*e*P			**P**	**14 42 52.4**	**0.0**
ULN	**Ulaanbaatar**	**56.09**	**359**	*de*P			**P**	**14 42 52.4**	**0.0**
ULN					pmax		pmax		
	comp=Z,6.0nm,1.0s								
ULN	**Ulaanbaatar**	**56.09**	**359**	*e*P			**P**	**14 42 51.0**	**-1.4**
	comp=Z,5.8nm,0.9s								
USRK	**Ussuriysk Ar.**	**56.50**	**20**	P			**P**	**14 42 53.7**	**-1.5**
	comp=Z,1.3nm,0.7s,baz=231,slow=8.8,SNR=4.7								
DZM	**Mont Dzumac**	**57.05**	**111**	P			**P**	**14 43 01.7**	**+2.0**
	comp=Z,6.9nm,0.8s,baz=65,slow=16,SNR=3.8								
ERM	**Erimo**	**59.32**	**29**	*ce*P			**P**	**14 43 12.6**	**-2.4**
ERM					pmax		pmax		
	comp=Z,17nm,1.1s								
TKM2	**Tokmak 2**	**59.34**	**332**	*e*P			**P**	**14 43 14.0**	**-1.5**
TKM2					pmax		pmax		
	comp=Z,48nm,1.1s								
TKM2	**Tokmak 2**	**59.34**	**332**	*e*P			**P**	**14 43 14.0**	**-1.5**
	comp=Z,48nm,1.1s								
AAK	**Ala-Archa**	**59.64**	**331**	*e*P			**P**	**14 43 19.4**	**+2.0**
AAK					pmax		pmax		
	comp=Z,4.0nm,0.9s								
MK01	**Makanchi Array**	**59.79**	**339**	*e*P			**P**	**14 43 17.0**	**-1.2**
MK31	**Makanchi Array**	**59.81**	**339**	*e*P			**P**	**14 43 17.8**	**-0.6**
MK31	**Makanchi Array**	**59.81**	**339**	*e*P			**P**	**14 43 17.8**	**-0.6**
MKAR	**Makanchi Array**	**59.81**	**339**	P			**P**	**14 43 17.4**	**-1.0**
	comp=Z,2.0nm,0.6s,baz=144,slow=7.5,SNR=21								
MKAR	**Makanchi Array**	**59.81**	**339**	*e*P			**P**	**14 43 17.8**	**-0.6**
ASAJ	**Asahikawa**	**60.66**	**27**	P			**P**	**14 43 22.9**	**-1.3**
	comp=Z,6.0nm,0.7s,baz=241,slow=8.4,SNR=14								
ASAJ	**Asahikawa**	**60.66**	**27**	*e*P			**P**	**14 43 20.1**	**-4.1**
	comp=Z,6.0nm,0.8s								
KLR	**Kul'dur**	**60.90**	**17**	P			**P**	**14 43 24.0**	**-1.7**
	comp=Z,3.7nm,0.9s,baz=248,slow=3.7,SNR=11								
YSS	**Yuzh-Sakhalins**	**62.94**	**26**	*e*P			**P**	**14 43 38.1**	**-1.3**
YSS					pmax		pmax		
	comp=Z,20nm,0.9s								
YSS	**Yuzh-Sakhalins**	**62.94**	**26**	*e*P			**P**	**14 43 36.7**	**-2.7**
	comp=Z,18nm,0.9s								
KURK	**Kurchatov**	**64.42**	**339**	*e*P			**P**	**14 43 49.0**	**-0.1**
KURK					pmax		pmax		
	comp=Z,34nm,2.5s								
KURK	**Kurchatov**	**64.42**	**339**	*e*P			**P**	**14 43 49.2**	**+0.2**
	comp=Z,8.0nm,1.3s								
ZALV	**Zalesovo Beam**	**65.35**	**345**	P			**P**	**14 43 53.8**	**-1.3**
	comp=Z,1.8nm,0.4s,baz=152,slow=6.1,SNR=7.6								
GEYT	**Alibeck**	**65.94**	**318**	P			**P**	**14 43 59.2**	**-0.1**
	comp=Z,2.8nm,0.7s,baz=132,slow=8.8,SNR=6.6								
MAW	**Mawson**	**66.47**	**197**	P			**P**	**14 44 04.7**	**+2.6**
	comp=Z,4.0nm,0.7s,baz=48,slow=2.7,SNR=4.1								
VOSK	**Vostochnaya**	**68.88**	**337**	*e*P			**P**	**14 44 17.5**	**0.0**
VOSK					pmax		pmax		
	comp=Z,15nm,1.8s								
VOSK	**Vostochnaya**	**68.88**	**337**	*e*P			**P**	**14 44 17.5**	**0.0**
	comp=Z,15nm,1.8s								
BRVK	**Borovoye**	**69.41**	**336**	*de*P			**P**	**14 44 20.4**	**-0.3**
BRVK					pmax		pmax		
	comp=Z,23nm,2.5s								
ZRNK	**Zerenda**	**69.84**	**336**	*e*P			**P**	**14 44 23.1**	**-0.3**
ZRNK					pmax		pmax		
	comp=Z,6.0nm,1.1s								
ZRNK	**Zerenda**	**69.84**	**336**	*e*P			**P**	**14 44 23.1**	**-0.3**
	comp=Z,6.1nm,1.1s								
ABKAR	**Akbulak array**	**71.50**	**329**	*e*P			**P**	**14 44 32.6**	**-0.9**
YAK	**Yakutsk**	**72.14**	**10**	P			**P**	**14 44 35.9**	**-1.1**
	comp=Z,21nm,0.8s,baz=31,slow=2.4,SNR=9.1								
YAK	**Yakutsk**	**72.14**	**10**	*e*P			**P**	**14 44 35.6**	**-1.5**
YAK					pmax		pmax		
	comp=Z,25nm,0.9s								
YAK					pmax		pmax		
	comp=N,8.0nm,1.0s								
YAK	**Yakutsk**	**72.14**	**10**	*e*P			**P**	**14 44 35.8**	**-1.3**
	comp=N,24nm,0.9s								
PEA0	**Petropavlovsk-**	**74.06**	**28**	*e*P			**P**	**14 44 47.6**	**-1.0**
PETK	**Petropavlovsk-**	**74.06**	**28**	P			**P**	**14 44 47.7**	**-1.0**
	comp=N,6.8nm,0.7s,baz=156,slow=1.5,SNR=28								
VNDA	**Vanda**	**74.25**	**170**	*e*P		

	baz=327							
Q35A	**Mercer Eighty,** baz=317	**142.46**	**32**	P	**PKPdf**	**14 52 41.5**	**-3.9**
O39A	**Kirksville** baz=324	**143.11**	**27**	P	PKPbc	14 52 43.7	+0.1
T34A	**McClaskey Farm** baz=314	**143.13**	**36**	P	PKPbc	14 52 43.4	-0.4
R36A	**Gordon, Harris** baz=318	**143.14**	**32**	P	PKPbc	14 52 43.4	-0.4
P38A	**Dawn** baz=322	**143.15**	**29**	P	PKPbc	14 52 44.2	+0.5
W32A	**Sentinel** baz=310	**143.15**	**40**	P	PKPbc	14 52 44.7	+0.8
S35A	**Otter Creek Ra** baz=316	**143.16**	**34**	P	PKPbc	14 52 43.4	-0.5
TXAR	**Lajitas Array** comp=Z,1.2nm,0.8s,baz=234,slow=2.2,SNR=8.6	**143.23**	**51**	PKP	PKPbc	14 52 44.3	-0.1
R37A	**Teagarden Farm** baz=319	**143.50**	**32**	P	PKPab	14 52 43.5	-0.2
O40A	**La Belle** baz=324	**143.52**	**27**	P	PKPab	14 52 43.6	-0.1
X32A	**Elmer** baz=309	**143.57**	**41**	P	PKPbc	14 52 44.8	-0.3
T35A	**Sooner Cattle** baz=315	**143.60**	**35**	P	PKPab	14 52 44.5	+0.3
Q38A	**Cooks Store, C** baz=321	**143.62**	**30**	P	PKPab	14 52 44.4	+0.3
W33A	**Caddo, Fort Co** baz=311	**143.62**	**39**	P	PKPbc	14 52 45.6	+0.4
P39B	**Salisbury** baz=323	**143.62**	**28**	P	PKPbc	14 52 44.7	-0.3
WMOK	**Wichita Mounta** baz=310,SNR=13	**143.69**	**40**	P	PKPbc	14 52 45.3	-0.1
WMOK	**Wichita Mounta**	**143.69**	**40**	*e*PKIKP	PKPbc	14 52 45.6	+0.2
WMOK	**Wichita Mounta**	**143.69**	**40**	*e*PKPdf	PKPbc	14 52 45.5	+0.1
V34A	**Guthrie** baz=313	**143.75**	**37**	P	PKPbc	14 52 45.6	0.0
T36A	**Boggs Farm, Ca** baz=316	**143.85**	**34**	P	PKPbc	14 52 46.0	+0.2
U35A	**Pawnee** baz=314	**143.85**	**36**	P	PKPbc	14 52 46.3	+0.5
Q39A	**Willow Grove F** baz=322	**143.87**	**29**	P	PKPbc	14 52 45.5	-0.3
S37A	**Fort Scott** baz=318	**143.91**	**32**	P	PKPab	14 52 45.4	+0.1
P40A	**Paris** baz=324,SNR=10	**143.92**	**28**	P	PKPab	14 52 45.6	+0.3
O41A	**Passleys Farm,** baz=326,SNR=6.4	**143.96**	**26**	P	PKPab	14 52 45.4	0.0
R38A	**Fenwick Farm,** baz=320	**144.07**	**31**	P	**PKPab**	**14 52 45.9**	**0.0**
V35A	**Meyer Ranch, C** baz=313	**144.21**	**37**	P	**PKPab**	**14 52 46.6**	**0.0**
P41A	**Barry, Barry** baz=325,SNR=6.4	**144.25**	**26**	P	**PKPab**	**14 52 46.4**	**-0.1**
HDIL	**Hopedale** baz=329	**144.25**	**24**	P	**PKPab**	**14 52 46.4**	**-0.1**
Y33A	**Hilltop Ranch,** baz=309	**144.25**	**41**	P	PKPbc	14 52 47.0	-0.1
T37A	**Cheneyville 18** baz=317,SNR=7.0	**144.33**	**33**	P	**PKPab**	**14 52 46.8**	**-0.1**
Q40A	**Laux Farm, Aux** baz=323,SNR=12	**144.34**	**28**	P	**PKPab**	**14 52 47.0**	**+0.1**
X34A	**Smith Ranch, M** baz=311	**144.38**	**39**	P	PKPbc	14 52 47.6	+0.1
U36A	**Oologah** baz=316	**144.41**	**35**	P	PKPbc	14 52 47.4	-0.1
R39A	**Chumby, Stover** baz=321,SNR=18	**144.41**	**30**	P	**PKPab**	**14 52 46.8**	**-0.4**
ABTX	**Abilene, Hawle** baz=306	**144.42**	**43**	P	PKPbc	14 52 48.3	+0.6
S38A	**Stockton** baz=319,SNR=14	**144.49**	**32**	P	**PKPab**	**14 52 46.8**	**-0.7**
W35A	**Tecumseh** baz=313	**144.60**	**38**	P	**PKPab**	**14 52 48.1**	**+0.1**
Z33A	**Whitaker Ranch** baz=308	**144.61**	**42**	P	PKPbc	14 52 48.4	+0.1
P42A	**Winchester** baz=326,SNR=12	**144.63**	**26**	P	**PKPab**	**14 52 47.7**	**-0.2**
TUL1	**Leonard** baz=315	**144.72**	**36**	P	**PKPab**	**14 52 48.4**	**0.0**
TUL1	**Leonard**	**144.72**	**36**	*e*PKPdf	PKPbc	14 52 48.5	0.0
V36A	**Jenks** baz=315	**144.72**	**36**	P	PKPbc	14 52 48.6	+0.1
T38A	**Diamond** baz=318,SNR=24	**144.73**	**33**	P	**PKPab**	**14 52 48.3**	**-0.2**
U37A	**Salina** baz=316,SNR=10	**144.75**	**34**	P	**PKPab**	**14 52 48.5**	**0.0**
S39A	**Bolivar** baz=320,SNR=13	**144.75**	**31**	P	**PKPab**	**14 52 47.9**	**-0.6**
R40A	**Maddies Statio** baz=322,SNR=57	**144.80**	**29**	P	**PKPab**	**14 52 48.5**	**-0.2**
Y34A	**Reagan Ranch,** baz=310,SNR=13	**144.84**	**40**	P	**PKPdf**	**14 52 49.5**	**-0.3**
133A	**Hamilton Ranch** baz=307,SNR=13	**144.92**	**43**	P	**PKPdf**	**14 52 50.2**	**+0.2**
W36A	**Wetumka** baz=314,SNR=5.4	**145.00**	**37**	P	**PKPab**	**14 52 49.4**	**0.0**
X35A	**Drake** baz=312,SNR=13	**145.04**	**39**	P	**PKPbc**	**14 52 49.6**	**0.0**
Q42A	**Golden Eagle** baz=326,SNR=8.1	**145.11**	**27**	P	**PKPbc**	**14 52 49.4**	**-0.2**
V37A	**Hulbert** baz=316,SNR=22	**145.11**	**35**	P	**PKPbc**	**14 52 49.7**	**-0.1**
Z34A	**Collier Ranch,** baz=310,SNR=5.6	**145.11**	**41**	P	**PKPdf**	**14 52 50.4**	**+0.1**
U38A	**Gravette** baz=318,SNR=12	**145.12**	**34**	P	**PKPbc**	**14 52 49.4**	**-0.4**
T39A	**Clever** baz=320,SNR=25	**145.23**	**32**	P	**PKPbc**	**14 52 49.8**	**-0.3**
S40A	**Lebanon** baz=321,SNR=43	**145.23**	**30**	P	**PKPbc**	**14 52 49.7**	**-0.4**
SFIN	**Lafayette** baz=332,SNR=12	**145.24**	**21**	P	**PKPab**	**14 52 50.1**	**0.0**
SFIN	**Lafayette**	**145.24**	**21**	*e*PKPdf	**PKPbc**	**14 52 48.8**	**-1.2**
233A	**Rising Star** baz=307,SNR=18	**145.29**	**44**	P	**PKPab**	**14 52 51.4**	**+0.7**
X36A	**Centrahoma** baz=313,SNR=8.1	**145.31**	**38**	P	**PKPab**	**14 52 50.8**	**+0.1**
Y35A	**Marietta** baz=311,SNR=5.6	**145.33**	**39**	P	**PKPab**	**14 52 50.7**	**0.0**
Q43A	**New Douglas** baz=327	**145.45**	**26**	P	**PKPdf**	**14 52 50.4**	**-0.2**
W37B	**Quinton** baz=315,SNR=18	**145.47**	**36**	P	**PKPab**	**14 52 51.1**	**-0.1**
134A	**White-Moore Ra** baz=308	**145.50**	**42**	P	**PKPab**	**14 52 51.7**	**+0.3**
V38A	**Canehill** baz=317,SNR=14	**145.53**	**34**	P	**PKPdf**	**14 52 50.7**	**-0.2**
JCT	**Junction City** baz=304	**145.53**	**47**	P	**PKPab**	**14 52 52.1**	**+0.5**
JCT	**Junction City**	**145.53**	**47**	*e*PKIKP	**PKPab**	**14 52 51.9**	**+0.2**
JCT	**Junction City**	**145.53**	**47**	*e*PKPdf	**PKPab**	**14 52 51.9**	**+0.2**
Z35A	**Perchaven, San** baz=310,SNR=6.9	**145.56**	**40**	P	**PKPab**	**14 52 51.8**	**+0.1**
T40A	**Mansfield** baz=321,SNR=19	**145.57**	**31**	P	**PKPdf**	**14 52 50.7**	**-0.2**
S41A	**Jillco Farms,** baz=322,SNR=31	**145.61**	**29**	P	**PKPdf**	**14 52 51.1**	**+0.1**
333A	**Richland Sprin** baz=306,SNR=28	**145.63**	**45**	P	**PKPab**	**14 52 52.3**	**+0.3**
U39A	**Green Forest** baz=319,SNR=15	**145.66**	**33**	P	**PKPdf**	**14 52 51.0**	**-0.1**
Q44A	**Meyer Farm, Va** baz=328	**145.77**	**25**	P	**PKPbc**	**14 52 51.6**	**-0.2**
Y36A	**Durant** baz=312,SNR=12	**145.80**	**39**	P	**PKPbc**	**14 52 52.2**	**+0.2**
234A	**Clairette** baz=308	**145.81**	**43**	P	**PKPab**	**14 52 52.7**	**+0.1**
X37A	**Clayton** baz=314,SNR=7.1	**145.88**	**37**	P	**PKPbc**	**14 52 52.4**	**+0.2**
433A	**Art** baz=305	**145.89**	**46**	P	**PKPab**	**14 52 52.9**	**-0.1**
135A	**Vickery Place,** baz=309	**145.96**	**42**	P	**PKPab**	**14 52 53.6**	**+0.4**
V39A	**Pettigrew** baz=318,SNR=14	**145.97**	**33**	P	**PKPdf**	**14 52 52.1**	**+0.3**
U40A	**Yellville** baz=320,SNR=14	**146.01**	**32**	P	**PKPbc**	**14 52 52.3**	**-0.3**
T41A	**Mountain View** baz=322,SNR=14	**146.03**	**30**	P	**PKPbc**	**14 52 52.3**	**-0.3**
W38A	**Poteau** baz=316	**146.04**	**35**	P	**PKPbc**	**14 52 52.4**	**-0.3**
Z36A	**Blue Ridge** baz=311	**146.12**	**40**	P	**PKPbc**	**14 52 52.9**	**-0.1**
334A	**Lometa** baz=307	**146.15**	**44**	P	**PKPbc**	**14 52 53.4**	**+0.2**
X38A	**Whitesboro**	**146.15**	**36**	P	**PKPab**	**14 52 53.4**	**-0.3**
	baz=315,SNR=10						
Y37A	**Hugo** baz=313	**146.15**	**38**	P	**PKPbc**	**14 52 53.3**	**+0.2**
M54A	**Oil Creek Stat** baz=345	**146.26**	**11**	P	**PKPbc**	**14 52 53.1**	**-0.1**
WHTX	**Lake Whitney,** baz=308	**146.28**	**42**	P	**PKPbc**	**14 52 53.5**	**0.0**
WHTX	**Lake Whitney,**	**146.28**	**42**	*e*PKPdf	**PKPdf**	**14 52 50.5**	**-1.7**
R44A	**Waltonville** baz=327,SNR=8.6	**146.29**	**26**	P	**PKPbc**	**14 52 53.1**	**-0.2**
533A	**Kerrville** baz=304	**146.31**	**47**	P	**PKPbc**	**14 52 54.1**	**+0.4**
W39A	**Magazine** baz=317,SNR=7.5	**146.37**	**34**	P	**PKPbc**	**14 52 53.4**	**-0.3**
S43A	**Fulton Ridge,** baz=325	**146.41**	**27**	P	**PKPdf**	**14 52 52.8**	**+0.5**
434A	**Burnet** baz=306	**146.43**	**45**	P	**PKPbc**	**14 52 53.8**	**-0.3**
V40A	**Witts Springs** baz=319,SNR=7.5	**146.44**	**33**	P	**PKPbc**	**14 52 53.4**	**-0.5**
U41A	**Viola** baz=321	**146.50**	**31**	P	**PKPbc**	**14 52 54.2**	**+0.2**
633A	**Saathoff Ranch** baz=303	**146.55**	**48**	P	**PKPab**	**14 52 55.2**	**-0.3**
832A	**Faith Ranch, C** baz=301	**146.57**	**50**	P	**PKPab**	**14 52 55.1**	**-0.5**
136A	**Ennis** baz=310	**146.58**	**41**	P	**PKPbc**	**14 52 54.8**	**+0.5**
X39A	**Fountain Ranch** baz=316,SNR=16	**146.68**	**36**	P	**PKPbc**	**14 52 54.9**	**+0.3**
S44A	**Carbondale** baz=326,SNR=5.1	**146.68**	**26**	P	**PKPbc**	**14 52 54.3**	**-0.2**
Z37A	**Pogue Cattle C** baz=312	**146.68**	**39**	P	**PKPbc**	**14 52 55.0**	**+0.4**
N54A	**Moraine State** baz=344	**146.72**	**12**	P	**PKPbc**	**14 52 54.8**	**+0.2**
Y38A	**Idabel** baz=314	**146.72**	**37**	P	**PKPbc**	**14 52 55.1**	**+0.4**
335A	**Moody** baz=308	**146.73**	**43**	P	**PKPbc**	**14 52 55.2**	**+0.4**
534A	**Blanco** baz=305	**146.74**	**46**	P	**PKPbc**	**14 52 55.3**	**+0.4**
W40A	**Ferguson Farm,** baz=318	**146.76**	**34**	P	**PKPbc**	**14 52 54.7**	**-0.1**
V41A	**Mountainview** baz=320,SNR=15	**146.81**	**32**	P	**PKPbc**	**14 52 55.2**	**+0.3**
U42A	**Revenden** baz=322,SNR=14	**146.84**	**30**	P	**PKPbc**	**14 52 54.8**	**-0.1**
733A	**Divot King Ran** baz=302	**146.86**	**49**	P	**PKPbc**	**14 52 55.7**	**+0.4**
236A	**Katherine and** baz=310	**146.88**	**41**	P	**PKPab**	**14 52 56.2**	**-0.5**
435B	**Jarrell** baz=307	**146.92**	**44**	P	**PKPbc**	**14 52 55.4**	**0.0**
MIAR	**Mount Ida** baz=317,SNR=18	**146.96**	**35**	P	**PKPbc**	**14 52 55.7**	**+0.3**
MIAR	**Mount Ida**	**146.96**	**35**	*e*PKP2	**PKPbc**	**14 52 55.7**	**+0.3**
MIAR	**Mount Ida**	**146.96**	**35**	*e*PKPab	**PKPbc**	**14 52 55.7**	**+0.3**
S45A	**Carrier Mills** baz=328	**146.98**	**26**	P	**PKPbc**	**14 52 55.2**	**-0.1**
833A	**Chaparral WMA,** baz=302	**146.99**	**50**	P	**PKPbc**	**14 52 55.8**	**+0.2**
336A	**Riesel** baz=309	**147.06**	**43**	P	**PKPbc**	**14 52 56.3**	**+0.6**
Y39A	**Lockesburg** baz=315	**147.09**	**36**	P	**PKPbc**	**14 52 56.5**	**+0.7**
V42A	**Cord** baz=321,SNR=8.9	**147.19**	**31**	P	**PKPbc**	**14 52 55.1**	**-0.8**
W41A	**Tony Mavity, V** baz=319	**147.22**	**33**	P	**PKPbc**	**14 52 55.9**	**-0.2**
W41B	**Gary Mavity, V** baz=311	**147.22**	**33**	P	**PKPbc**	**14 52 55.7**	**-0.4**
237A	**Washetta, Mont** baz=346	**147.35**	**41**	P	**PKPab**	**14 52 57.7**	**-0.9**
X40A	**Basin Creek Fa** baz=318	**147.42**	**34**	P	**PKPbc**	**14 52 56.9**	**+0.2**
SSPA	**Standing Stone**	**147.42**	**9**	*e*PKPbc	**PKPbc**	**14 52 56.7**	**+0.3**
N59A	**State Game Lan** baz=352	**147.43**	**6**	P	**PKPbc**	**14 52 57.0**	**+0.5**
933A	**Laredo** baz=301	**147.44**	**51**	P	**PKPbc**	**14 52 57.7**	**+0.7**
O56A	**Blue Knob Stat** baz=346	**147.67**	**10**	P	**PKPbc**	**14 52 57.0**	**-0.2**
834A	**Tilden** baz=302	**147.72**	**49**	P	**PKPab**	**14 52 59.1**	**-1.0**
Z40A	**Long Farm, Mag** baz=316	**147.98**	**36**	P	**PKPbc**	**14 52 59.4**	**+1.2**
Y41A	**Eaglette Beard** baz=318	**147.99**	**35**	P	**PKPbc**	**14 52 57.6**	**-0.6**
934A	**Benavides** baz=302	**148.02**	**50**	P	**PKPab**	**14 52 60.0**	**-1.4**
636A	**Smothers Creek** baz=306	**148.06**	**46**	P	**PKPab**	**14 53 00.4**	**-1.1**
034A	**Hebbronville** baz=301	**148.17**	**51**	P	**PKPab**	**14 53 01.1**	**-0.9**
835A	**Beeville** baz=303	**148.17**	**48**	P	**PKPab**	**14 53 01.1**	**-0.8**
035A	**Encino** baz=301	**148.68**	**51**	P	**PKPbc**	**14 52 59.1**	**-1.2**
OXF	**Oxford**	**149.20**	**30**	*e*PKP2	**PKPbc**	**14 53 01.3**	**0.0**
OXF	**Oxford**	**149.20**	**30**	*e*PKPbc	**PKPbc**	**14 53 01.3**	**0.0**
Y45A	**Yeager Farm, C** baz=322	**149.65**	**31**	P	**PKPbc**	**14 53 03.2**	**+0.8**
TZTN	**Tazewell**	**149.91**	**20**	*e*PKPbc	**PKPbc**	**14 53 03.0**	**0.0**
Y46A	**Houston** baz=324	**149.98**	**30**	P	**PKPbc**	**14 53 03.0**	**-0.3**
Y47A	**UCPARC, Winfie** baz=325	**150.45**	**29**	P	**PKPbc**	**14 53 03.6**	**-0.8**
344A	**Westbrook Farm** baz=318	**150.84**	**36**	P	**PKPbc**	**14 53 05.3**	**0.0**
Z48A	**Northport** baz=325	**151.02**	**29**	P	**PKPbc**	**14 53 04.9**	**-0.9**
147A	**Livingston** baz=323	**151.24**	**31**	P	**PKPbc**	**14 53 05.3**	**-0.9**

MEX 01 14:38:46.9±0.6, 16°24N×98°19W, h5km±4km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.16**	**23**	*i* P	Pg	14 38 49.6	-0.5
PNIG				*i* S	Sg	14 38 52.3	0.0
TLIG	**Tlapa**	**1.36**	**345**	*e*P	Pn	14 39 09.3	-3.5
TLIG				*e*S	Sg	14 39 25.7	-5.0
VHO	**Vista Hermosa**	**1.62**	**59**	*e*P	Pn	14 39 12.8	-3.6
VHO				*e*S	Sn	14 39 33.1	-4.8
HUIG	**Huatulco**	**2.06**	**103**	*i* P	Pn	14 39 18.8	-3.4
HUIG				*i* S	Sn	14 39 43.3	-5.0

MAN 01 14:42:35, 17°91N×120°74E, h8km, mb4.1, ML2.9, MS2.6, 2D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABRA	**Dolores**	**0.26**	**186**	*e*P	Pg	14 42 40.8	+0.5
ABRA				*e*S	Sg	14 42 44.7	+0.8
PIP	**Pasuquin**	**0.43**	**344**	⇓*i*P	Pb	14 42 44.8	-0.1
PIP				*e*S	Sb	14 42 53.8	+2.4
APYP	**Conner**	**0.48**	**96**	*e*P	Pb	14 42 45.4	-0.3
APYP				*e*S	Sb	14 42 53.1	+0.2
CVP	**Callao Caves**	**1.05**	**101**	⇓*i*P	Pg	14 42 55.0	-0.2
CVP				*i* S	Sn	14 43 10.7	-0.1
SGCP	**Mt. Cagua**	**1.28**	**75**	*e*P	Pn	14 42 58.9	-0.3
SGCP				*e*S	Sn	14 43 16.9	+0.3
CAUP	**Cauayan**	**1.41**	**133**	*e*P	Pg	14 43 02.1	0.0
CAUP				*e*S	Sg	14 43 25.4	+5.0

IDC 01 14:44:59.2±3.2, 21°90S×170°15E, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.5/22, mbtmp3.6/3, ML3.8/1, Error ellipse: s-maj=154.1km s-min=37.8km az=164.0, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.45**	**266**	Pn	Pn	14 45 55.8	+1.5
	8.5nm,0.3s,baz=124,slow=16,SNR=111						
DZM				Sn	Sn	14 46 36.2	+0.3
	11nm,0.3s,baz=339,slow=22,SNR=6.5						
ASAR	**Alice Springs**	**33.41**	**260**	P	P	14 51 39.6	-0.2
	0.9nm,0.9s,baz=83,slow=9.4,SNR=3.8						
WRA	**Warramunga Arr**	**33.46**	**267**	P	P	14 51 39.6	-0.7
	0.6nm,0.8s,baz=99,slow=8.4,SNR=4.6						
GERES	**GERESS Array B**	**147.22**	**331**	PKPbc	PKPbc	15 04 44.1	-0.5
	0.2nm,0.4s,baz=17,slow=3.6,SNR=2.5						

BUC 01 14:48:16.3±0.6, 45°08N×28°24E, h3km, MD2.1/3, 6C-2D, Error ellipse: s-maj=7.6km s-min=3.2km az=72.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CFR	**Carcaliu**	**0.13**	**323**	⇑*i*P	Pg	14 48 18.9	+0.1
CFR				S	Sg	14 48 21.0	+0.5
CFR	**Carcaliu**	**0.13**	**323**	⇑*i*P	Pg	14 48 18.9	+0.1
CFR				*i* S	Sg	14 48 21.0	+0.5
TLCR		**0.42**	**75**	⇓*i*P	Pg	14 48 24.5	+0.2
TLCR		**0.42**	**75**	S	Sg	14 48 31.1	+1.3
TLCR		**0.42**	**75**	⇓*i*P	Pg	14 48 24.5	+0.2
TLCR				*i* S	Sg	14 48 31.1	+1.3
TLB	**Topalu**	**0.51**	**196**	⇑*i*P	Pg	14 48 26.5	+0.4
TLB	**Topalu**	**0.51**	**196**	⇑*i*P	Pg	14 48 26.5	+0.4
TLB				*i* S	Sg	14 48 33.3	+0.6
TIRR	**Tirgusor**	**0.63**	**169**	⇑*i*P	Pg	14 48 28.5	+0.1
TIRR	**Tirgusor**	**0.63**	**169**	⇑*i*P	Pg	14 48 28.5	+0.1
TIRR				*i* S	Sg	14 48 36.5	0.0

IDC 01 14:51:15.7±3.4, 30°19S×177°83W, h0km, mb3.3/2, mb1 3.6/2, mb1mx3.4/18, mbtmp3.3/2, Error ellipse: s-maj=73.4km s-min=22.1km az=109.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.94**	**355**	Pn	Pn	14 51 35.6	-0.5
	88nm,0.3s,baz=128,slow=20,SNR=5.8						
RAO				Sn	Sn	14 51 49.4	-0.8
	275nm,0.3s,baz=59,slow=21,SNR=9.9						
ASAR	**Alice Springs**	**43.27**	**267**	P	P	14 59 18.4	-0.9
	0.2nm,0.7s,baz=105,slow=7.1,SNR=4.4						
WRA	**Warramunga Arr**	**44.24**	**272**	P	P	14 59 26.8	-0.2
	0.3nm,0.3s,baz=110,slow=8.1,SNR=16						
FINES	**FINESS Array B**	**145.00**	**340**	PKPbc	PKPdf	15 10 54.2	+0.1
	0.8nm,0.8s,baz=64,slow=4.4,SNR=4.8						

*CSEM **01** 15:04:05.4, 34°25N×36°42E, h0km, ML3.0*
*NSSC **01** 15:04:05.0±3.2, 34°04N×35°65E, h21km±18km, ML1.9*
*GRAL **01** 15:04:05.4±0.3, 34°25N×36°42E, h0km±3km, MD3.0*

ISC 01 15:04:04.7±1.0, 34°24N±0°03×36°41E±0°04, h4km±7km, n15, σ0°53/24, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FKH	**Fakeheh**	**0.01**	**18**	*e*P	**Pg**	**15 04 05.5**	**-0.1**
FKH	**Fakeheh**	**0.01**	**18**	*e*P	**Pg**	**15 04 05.4**	**-0.1**
HWQ	**Hawqa**	**0.38**	**276**	*e*P	**Pg**	**15 04 12.3**	**+0.2**
HWQ				*e*S	**Sg**	**15 04 17.6**	**+0.4**
HWQ	**Hawqa**	**0.38**	**276**	*e*P	**Pg**	**15 04 12.3**	**+0.2**
HWQ				*e*S	**Sg**	**15 04 17.6**	**+0.4**
RABH	**Abou Rabah**	**0.69**	**73**	*e*P	Pn	15 04 30.5	+9.1
RABH				*e*S	Sn	15 04 46.6	+14
RABH	comp=E,60nm,0.3s			AML	AML	15 04 49.6	
RABH	comp=N,55nm,0.6s			AML	AML	15 04 51.8	
BHL	**Bhannes**	**0.71**	**242**	*e*P	**Pg**	**15 04 18.3**	**0.0**
BHL	**Bhannes**	**0.71**	**242**	*e*P	**Pg**	**15 04 18.3**	**0.0**
TOTH	**TOTAH**	**0.87**	**179**	*e*P	**Pb**	**15 04 22.7**	**+0.1**
TOTH				*e*S	**Sb**	**15 04 33.9**	**-0.7**
TOTH	comp=N,28nm,0.3s			AML	AML	15 04 39.8	
TOTH	comp=E,24nm,0.4s			AML	AML	15 04 45.9	
DQRL	**Deir Qamar**	**0.88**	**233**	*e*P	**Pg**	**15 04 21.4**	**0.0**
DQRL				*e*S	**Sg**	**15 04 33.1**	**+0.2**
DQRL	**Deir Qamar**	**0.88**	**233**	*e*P	**Pg**	**15 04 21.5**	**0.0**
DQRL				*e*S	**Sg**	**15 04 33.1**	**+0.2**
RCY	**Rachaya**	**0.88**	**213**	*e*P	**Pg**	**15 04 21.6**	**0.0**
RCY				*e*S	**Sg**	**15 04 33.4**	**+0.5**
ZALF	**Zalf**	**1.52**	**149**	*e*P	**Pg**	**15 04 33.9**	**0.0**
ZALF				*e*S	**Sg**	**15 04 54.7**	**+1.1**
ZALF	comp=N,34nm,0.4s			AML	AML	15 04 56.7	
ZALF	comp=E,20nm,0.4s			AML	AML	15 05 01.5	
SALA	**Sala**	**1.55**	**170**	*e*P	**Pb**	**15 04 34.0**	**-0.1**
SALA				*e*S	**Sg**	**15 04 54.5**	**+0.1**
SALA	comp=N,51nm,0.4s			AML	AML	15 05 01.6	
SALA	comp=E,2.8nm,0.4s			AML	AML	15 05 02.8	
ARNB	**Al Arnab**	**1.66**	**348**	*e*P	**Pb**	**15 04 35.6**	**-0.4**
ARNB				*e*S	**Sg**	**15 04 58.8**	**+0.7**
ARNB	comp=N,18nm,0.3s			AML	AML	15 05 03.3	
ARNB	comp=E,43nm,0.3s			AML	AML	15 05 03.6	
BTCH	**Batrach**	**1.80**	**1**	*e*P	**Pb**	**15 04 37.5**	**-0.8**
BTCH				*e*S	**Sg**	**15 05 03.8**	**+1.3**

MAN 01 15:04:41, 6°28N×123°84E, h40km, mb4.1, ML3.0, MS2.7, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTBH	**Cotabato--PC H**	**1.02**	**23**	⇑*i*P	Pn	15 04 59.6	+0.8
PAGZ	**Pagadian**	**1.63**	**344**	*e*P	Pn	15 05 08.6	+1.4
PAGZ				*e*S	Sn	15 05 28.4	+1.5
IPIL	**Ipil**	**1.96**	**320**	*e*P	Pn	15 05 13.2	+1.4
IPIL				*e*S	Sn	15 05 37.0	+1.7

*IDC **01** 15:06:03.4±2.4, 52°03N×172°02W, h0km, mb3.5/2, mb1 3.5/3, mb1mx3.2/35, mbtmp3.3/3, ML3.4/1, Error ellipse: s-maj=75.9km s-min=41.9km az=126.0*
*ISCJB **01** 15:06:08.2±1.0, 51°9N±0°1×171°53W±0°07, h50km, mb3.6/2, Error ellipse: s-maj=21.2km s-min=4.0km az=166.2*
*NEIC **01** 15:06:10.0, 51°84N×171°52W, h48km, ML3.3(AEIC), After AEIC.*

ISC 01 15:06:09.4±1.4, 51°9N±0°2×171°56W±0°06, h50km, n26, σ0°65/24, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOSE	**Korovin Southe**	**1.60**	**287**	P	**Pn**	**15 06 35.9**	**+0.6**
KOFP	**Korovin Flat P**	**1.61**	**284**	P	**Pn**	**15 06 35.0**	**-0.4**
KOKV	**Korovin Volcan**	**1.67**	**287**	P	**Pn**	**15 06 37.0**	**+0.7**
KOKV				S	**Sn**	**15 06 57.6**	**+1.0**
KOKL	**Mount Kliuchef**	**1.68**	**286**	P	**Pn**	**15 06 36.9**	**+0.5**
KOWE	**Korovin West**	**1.72**	**287**	P	**Pn**	**15 06 37.1**	**+0.1**
NIKH	**Nikolski High**	**1.98**	**56**	P	**Pn**	**15 06 40.4**	**+0.1**
NIKH				S	**Sn**	**15 07 04.3**	**+0.4**
OKWR	**Okmok West Rim**	**2.56**	**52**	P	**Pn**	**15 06 48.8**	**+0.4**
OKTU	**Okmok Mt. Tuli**	**2.61**	**54**	P	**Pn**	**15 06 49.7**	**+0.6**
GSMY	**Great Sitkin M**	**2.78**	**275**	P	**Pn**	**15 06 51.2**	**-0.3**
GSTR	**Great Sitkin T**	**2.79**	**276**	P	**Pn**	**15 06 51.3**	**-0.2**
GSTD	**Great Sitkin T**	**2.84**	**275**	P	**Pn**	**15 06 52.3**	**+0.1**
GSTD				S	**Sn**	**15 07 25.2**	**0.0**
GSCK	**Great Sitkin C**	**2.85**	**274**	P	**Pn**	**15 06 52.5**	**+0.2**
ETKA	**Kagalaska Isla**	**3.00**	**271**	P	**Pn**	**15 06 54.5**	**+0.1**
MSOM	**Makushin Julie**	**3.39**	**54**	P	**Pn**	**15 07 00.2**	**+0.5**
KIKV	**Kanaga Island**	**3.48**	**272**	P	**Pn**	**15 07 01.5**	**+0.5**
MTBL	**Makushin Table**	**3.61**	**53**	P	**Pn**	**15 07 03.7**	**+0.9**
UNV	**Unalaska Valle**	**3.63**	**56**	P	**Pn**	**15 07 03.9**	**+0.9**
UNV				S	**Sn**	**15 07 43.1**	**-1.4**
ILAR	**Eielson Array**	**18.11**	**35**	P	**P**	**15 10 16.5**	**-0.3**
	0

IDC ***01*** *15:07:46.2±1.1,8.°84S×157.°61E,h0km,mb3.7/6, mb1 3.9/7,mb1mx3.7/25,mbtmp3.7/7,ML3.4/1,MS3.4/1, Ms1 3.3/1,ms1mx2.7/20,Error ellipse: s-maj=31.2km s-min=23.6km az=148.0*

ISCJB ***01*** *15:07:47.4±0.8,8.°9S±0.°2×157.°6E±0.°1,h17km,mb3.6/6, MS3.2/1,Error ellipse: s-maj=24.6km s-min=15.6km az=172.6*

ISC 01 15:07:48.9±0.9,8.°9S±0.°2×157.°6E±0.°1,h17km,n7,σ0s39/7, mb3.7/6,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**2.37**	**104**	Pn	**Pn**	**15 08 27.1**	**+0.1**
	9.1nm,0.3s,baz=29,slow=19,SNR=3.9						
WRA	**Warramunga Arr**	**25.05**	**241**	P	**P**	**15 13 13.1**	**+0.6**
	3.3nm,0.7s,baz=67,slow=9.5,SNR=22						
ASAR	**Alice Springs**	**27.04**	**234**	P	**P**	**15 13 30.2**	**-0.3**
	0.6nm,0.8s,baz=65,slow=9.7,SNR=4.6						
STKA	**Stephens Creek**	**27.30**	**211**	P	**P**	**15 13 32.5**	**-0.3**
	2.5nm,0.7s,baz=40,slow=16,SNR=5.9						
STKA				LR	LR	15 24 47.9	
	comp=Z,65nm,18.2s,baz=20,slow=37						
CMAR	**Chiang Mai Arr**	**63.93**	**295**	P	**P**	**15 18 21.6**	**+0.1**
	0.4nm,0.7s,baz=128,slow=5.8,SNR=3.6						
ILAR	**Eielson Array**	**84.18**	**21**	P	**P**	**15 20 18.6**	**-0.2**
	0.3nm,0.5s,baz=259,slow=4.2,SNR=4.1						
MKAR	**Makanchi Array**	**86.52**	**318**	P	**P**	**15 20 31.1**	**+0.1**
	0.3nm,0.7s,baz=113,slow=5.3,SNR=3.1						

IDC ***01*** *15:08:23.9±0.9,8.°66S×157.°63E,h0km,mb3.9/7, mb1 4.1/8,mb1mx3.9/25,mbtmp4.0/8,ML4.4/1,Error ellipse: s-maj=25.1km s-min=21.5km az=171.0*

ISCJB ***01*** *15:08:25.0±0.7,8.°7S±0.°1×157.°55E±0.°07,h16km,mb3.8/7, Error ellipse: s-maj=20.6km s-min=9.4km az=12.2*

ISC 01 15:08:26.3±0.8,8.°7S±0.°2×157.°70E±0.°09,h16km,n8, σ0s83/9,mb4.1/7,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**2.34**	**109**	Pn	**Pn**	**15 09 04.3**	**+0.1**
	94nm,0.3s,baz=267,slow=22,SNR=11						
HNR				Sn	**Sb**	**15 09 36.6**	**-0.3**
	109nm,0.3s,baz=288,slow=14,SNR=4.3						
WRA	**Warramunga Arr**	**25.21**	**241**	P	**P**	**15 13 50.5**	**-1.0**
	3.7nm,0.7s,baz=68,slow=9.9,SNR=8.4						
ASAR	**Alice Springs**	**27.21**	**234**	P	**P**	**15 14 08.7**	**-0.9**
	0.7nm,0.8s,baz=67,slow=9.4,SNR=3.8						
STKA	**Stephens Creek**	**27.50**	**211**	P	**P**	**15 14 13.4**	**+1.3**
	2.7nm,0.6s,baz=58,slow=15,SNR=5.1						
CMAR	**Chiang Mai Arr**	**63.92**	**295**	P	**P**	**15 18 59.1**	**+0.1**
	0.6nm,0.4s,baz=109,slow=4.3,SNR=7.2						
SONM	**Songino Array**	**72.21**	**326**	P	**P**	**15 19 51.3**	**+0.5**
	0.3nm,0.5s,baz=116,slow=5.2,SNR=2.3						
ILAR	**Eielson Array**	**83.98**	**21**	P	**P**	**15 20 55.5**	**0.0**
	1.6nm,1.1s,baz=246,slow=4.5,SNR=6.2						
MKAR	**Makanchi Array**	**86.44**	**318**	P	**P**	**15 21 07.9**	**-0.4**
	0.5nm,0.7s,baz=90,slow=7.2,SNR=3.6						

ECX ***01*** *15:18:29.9±0.5,31.°26N×115.°66W,h5km,MD1.8,ML2.0*

MEX 01 15:18:31.1±0.8,31.°15N×115.°70W,h8km±39km,MD3.3, 1C-1D,Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**0.23**	**117**	*e*P	Pg	15 18 35.3	-0.5
SPIG				*e*S	Sg	15 18 39.0	0.0
SPIG	**San Pedro Mart**	**0.23**	**117**	*e*P	Pg	15 18 35.0	-0.8
SPIG				*e*S	Sg	15 18 38.9	0.0
SPX	**San Pedro Mart**	**0.23**	**117**	*e*P	Pg	15 18 35.3	-0.5
SPX				*e*S	Sg	15 18 39.1	0.0
SPX				*e*		15 18 39.9	
SPX				IAML		15 18 39.9	
	comp=N,172nm,0.2s						
ECBX	**El Chinero**	**0.64**	**60**	*e*P	Pg	15 18 40.1	-3.4
ECBX				*e*S	Sg	15 18 47.7	-4.3
ECBX				IAML		15 18 48.5	
	comp=E,87nm,0.3s						
CBX	**Cerro Bola**	**1.42**	**325**	*e*P	Pn	15 18 54.3	-3.1
CBX				*e*S	Sb	15 19 10.4	-5.9
CBX	**Cerro Bola**	**1.42**	**325**	*e*P	Pn	15 18 53.8	-3.5
CBX				*e*S	Sb	15 19 11.8	-4.5
CBX				IAML		15 19 14.9	
	comp=E,21nm,0.3s						
CBX				*e*		15 19 14.9	
TJIG	**Tijuana**	**1.53**	**327**	*i* P	Pn	15 18 55.9	-2.8
TJIG				*e*S	Sn	15 19 14.4	-4.3

MAN 01 15:28:32.6±0.9N×123.°55E,h11km,mb4.5,ML3.4,MS3.3, 1C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTBH	**Cotabato--PC H**	**1.32**	**32**	*i* P	Pn	15 28 53.6	-2.8
CTBH				*i* S	Sb	15 29 07.5	-6.3
PAGZ	**Pagadian**	**1.75**	**355**	*e*P	Pn	15 29 02.5	+0.1
PAGZ				*e*S	Sn	15 29 22.3	-2.4
IPIL	**Ipil**	**1.94**	**330**	*e*P	Pb	15 29 06.8	-0.7
IPIL				*e*S	Sb	15 29 31.2	-0.5
BUKP	**Musuan**	**2.33**	**40**	*e*P	Pn	15 29 10.4	+0.1
BUKP				*e*S	Sb	15 29 41.1	-1.7
CGP	**Cagayan de Oro**	**2.61**	**26**	*e*P	Pb	15 29 17.1	-1.7
CGP				*e*S	Sb	15 29 49.1	-1.9

IDC ***01*** *15:38:19.7±2.1,9.°14S×123.°06E,h0km,mb3.9/1, mb1 3.8/3,mb1mx3.4/35,mbtmp3.6/3,ML3.7/2,Error ellipse: s-maj=274.1km s-min=30.2km az=55.0*

ISCJB ***01*** *15:38:29.1±1.2,8.°8S±0.°1×123.°88E±0.°08,h100km, mb3.7/1,Error ellipse: s-maj=22.8km s-min=7.6km az=23.9*

DJA ***01*** *15:38:32.2±1.2,9.°S±14.°×12.°4E±.°,h112km±10km,M3.8/6, mb3.9/2,MLv3.7/6*

ISC 01 15:38:30.8±1.3,8.°9S±0.°2×123.°8E±0.°1,h100km,n10, σ1s48/12,Flores region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SOEI	**Soe**	**1.01**	**153**	P	**Pn**	**15 38 53.1**	**+1.5**
BATI	**Baumata**	**1.35**	**186**	P	**Pn**	**15 38 55.3**	**-0.1**
MMRI	**Maumere**	**1.56**	**278**	P	**Pn**	**15 38 58.5**	**+0.7**
MMRI				S	**Sn**	**15 39 19.1**	**+0.8**
EDFI	**Ende, Flores**	**2.08**	**273**	P	**Pn**	**15 39 04.9**	**+0.3**
EDFI				S	**Sn**	**15 39 29.5**	**-1.0**
WSI	**Waingapu**	**3.55**	**256**	P	**Pn**	**15 39 27.0**	**+3.0**
PLAI	**Plampang**	**5.95**	**270**	P	**Pn**	**15 39 56.2**	**-0.3**
TWSI	**Taliwang, Sumb**	**6.84**	**270**	P	**Pn**	**15 40 07.2**	**-1.4**
WRA	**Warramunga Arr**	**15.02**	**138**	Pn	**Pn**	**15 41 56.0**	**-1.9**
	0.5nm,0.3s,baz=308,slow=13,SNR=12						
WRA				Sn	Sn	15 44 29.9	-14
	0.8nm,0.3s,baz=315,slow=24,SNR=10						
ASAR	**Alice Springs**	**17.62**	**148**	P	**P**	**15 42 29.6**	**-0.2**
	0.2nm,0.3s,baz=328,slow=12,SNR=18						
ASAR				S	Sn	15 45 33.7	-13
	0.2nm,0.3s,baz=310,slow=22,SNR=7.7						
MKAR	**Makanchi Array**	**66.58**	**330**	P	**P**	**15 49 11.1**	**+0.7**
	0.6nm,0.5s,baz=126,slow=7.4,SNR=13						

ISCJB ***01*** *15:48:45.6±1.1,52.°4S×0.°2×13.°4E±0.°3,h10km,mb4.1/4, MS3.5/4,Error ellipse: s-maj=30.2km s-min=22.7km az=173.7*

IDC ***01*** *15:48:45.7±1.1,52.°30S×13.°48E,h0km,mb4.1/3, mb1 4.3/3,mb1mx3.7/34,mbtmp4.1/3,MS3.5/4,Ms1 3.5/4, ms1mx3.0/30,Error ellipse: s-maj=52.3km s-min=38.6km az=33.0*

NEIC ***01*** *15:48:47.2±0.7,52.°39S×13.°42E,h10km,mb4.0/1,Error ellipse: s-maj=25.0km s-min=16.6km az=91.0*

ISC 01 15:48:47.2±1.0,52.°4S±0.°2×13.°4E±0.°2,h10km,n13, σ0s72/9,mb4.1/4,MS3.4/4,Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNAA	**Sanae**	**20.67**	**195**	*e*P	**P**	**15 53 25.5**	**-1.3**
BOSA	**Boshof**	**25.31**	**25**	LR	LR	16 02 20.3	
	comp=Z,115nm,21.5s,baz=181,slow=32						
MAW	**Mawson**	**28.06**	**142**	LR	LR	16 03 48.7	
	comp=Z,101nm,20.4s,baz=242,slow=32						
HOPE	**Hope Point**	**29.38**	**246**	P	**P**	**15 54 50.3**	**+0.2**
QSPA	**South Pole Qui**	**37.86**	**180**	*e*P	**P**	**15 56 04.5**	**+0.6**
	1.5nm,0.5s						
VNDA	**Vanda**	**48.89**	**171**	LR	LR	16 17 00.3	
	comp=Z,110nm,20.7s,baz=194,slow=35						
DBIC	**Dimbokro**	**60.85**	**339**	LR	LR	16 21 10.6	
	comp=Z,24nm,18.5s,baz=146,slow=32						
TORD	**Torodi Ar. Bea**	**66.03**	**347**	P	**P**	**15 59 33.4**	**-0.5**
	0.4nm,0.6s,baz=155,slow=5.4,SNR=2.1						
LPAZ	**La Paz**	**72.14**	**266**	P	**P**	**16 00 13.1**	**+0.4**
	5.2nm,0.8s,baz=125,slow=5.3,SNR=20						
ASAR	**Alice Springs**	**88.27**	**128**	P	**P**	**16 01 39.0**	**+0.2**
	1.1nm,0.8s,baz=205,slow=4.4,SNR=14						
YKA	**Yellowknife Ar**	**151.06**	**311**	PKPbc	**PKPbc**	**16 08 38.6**	**-0.4**
	1.1nm,0.6s,baz=92,slow=2.0,SNR=12						
INK	**Inuvik**	**157.58**	**328**	PKP	**PKPdf**	**16 08 42.7**	**+0.7**
	0.5nm,0.5s,baz=254,slow=2.8,SNR=3.5						
ILAR	**Eielson Array**	**163.98**	**328**	PKPab	**PKPab**	**16 09 42.2**	**-0.1**
	0.5nm,0.7s,baz=42,slow=2.9,SNR=5.7						

IDC ***01*** *15:53:22.6±1.0,25.°58N×126.°82E,h0km,mb3.7/8, mb1 3.7/8,mb1mx3.5/50,mbtmp3.7/8,Error ellipse: s-maj=51.4km s-min=19.0km az=71.0*

JMA ***01*** *15:53:25.5±0.2,25.°64N×127.°01E,h10km±3km,M3.5*

ISC 01 15:53:25.5±0.8,25.°61N±0.°06×127.°05E±0.°05,h21km±4km, n28,σ1s06/33,mb3.6/8,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JKE	**Kume jima 2**	**0.75**	**341**	P	**Pb**	**15 53 39.1**	**-0.8**
JKE				S	**Sn**	**15 53 49.4**	**-2.3**
JJT2	**Tamagusuku 2**	**0.82**	**50**	P	**Pb**	**15 53 41.6**	**+0.6**
JAGN	**Aguni-jima**	**0.99**	**10**	P	**Pn**	**15 53 43.8**	**-0.4**
JAGN				S	**Sn**	**15 53 57.1**	**-0.4**
JNTH	**Nagotoyohara**	**1.25**	**44**	P	**Pb**	**15 53 48.5**	**0.0**
JNTH				S	**Sb**	**15 54 04.6**	**+0.4**
JIH	**Iheya**	**1.64**	**30**	P	**Pb**	**15 53 54.8**	**-0.2**
JIH				*e*S	**Sb**	**15 54 15.8**	**+0.6**
JOW	**Kunigami**	**1.64**	**42**	P	**Pb**	**15 53 54.9**	**-0.1**
JOW				S	**Sb**	**15 54 15.0**	**-0.2**
JOGS	**Gusukube**	**1.72**	**241**	P	**Pn**	**15 53 55.5**	**+1.3**
JIKM	**Ikemajima**	**1.77**	**248**	P	**Pn**	**15 53 55.5**	**+0.5**
JMJ	**Miyako jima 2**	**1.78**	**244**	P	**Pb**	**15 53 57.1**	**-0.4**
JIRB	**Irabujima**	**1.87**	**246**	P	**Pn**	**15 53 56.9**	**+0.5**
JOKE	**Okinoerabujima**	**2.21**	**38**	P	**Pb**	**15 54 03.9**	**-0.9**
JTJ	**Tarama**	**2.34**	**246**	P	**Pn**	**15 54 03.1**	**+0.3**
JISG	**Ishigakijimahi**	**2.69**	**248**	P	**Pn**	**15 54 07.3**	**-0.3**
JTK	**Tokunoshima**	**2.75**	**38**	P	**Pn**	**15 54 10.0**	**+1.6**
JIJ	**Ishigaki jima**	**2.92**	**245**	P	**Pn**	**15 54 10.5**	**-0.3**
JKRS	**Kuro-shima**	**3.08**	**244**	P	**Pn**	**15 54 14.1**	**+1.1**
JAMN	**Amaminishikomi**	**3.23**	**35**	P	**Pn**	**15 54 17.2**	**+2.1**
IRIF	**Iriomote-Funau**	**3.27**	**248**	P	**Pn**	**15 54 17.4**	**+1.8**
JAM	**Amami Oshima**	**3.60**	**39**	P	**Pn**	**15 54 21.3**	**+1.2**
JMZ	**Minamidaito 2**	**3.76**	**86**	P	**Pn**	**15 54 20.0**	**-2.4**
SEY	**Seymchan**	**40.92**	**17**	P	**P**	**16 01 07.2**	**+1.0**
	0.6nm,0.5s,baz=164,slow=23,SNR=4.0						
MKAR	**Makanchi Array**	**41.16**	**313**	P	**P**	**16 01 07.7**	**-0.7**
	0.4nm,0.4s,baz=99,slow=9.9,SNR=10						
ZALV	**Zalesovo Beam**	**42.10**	**324**	P	**P**	**16 01 15.0**	**-1.0**
	0.9nm,0.5s,baz=109,slow=7.4,SNR=4.8						
KURBB	**Kurchatov Arra**	**44.58**	**317**	P	**P**	**16 01 35.3**	**-0.7**
	0.3nm,0.4s,baz=107,slow=9.2,SNR=5.8						
WRA	**Warramunga Arr**	**45.83**	**170**	P	**P**	**16 01 45.9**	**-0.3**
	0.8nm,1.0s,baz=350,slow=9.0,SNR=3.5						
ASAR	**Alice Springs**	**49.44**	**172**	P	**P**	**16 02 15.0**	**+0.8**
	0.3nm,0.9s,baz=351,slow=6.7,SNR=3.6						
ARCES	**ARCESS Array B**	**70.19**	**339**	P	**P**	**16 04 36.7**	**+0.3**
	2.0nm,1.1s,baz=61,slow=7.7,SNR=3.9						
FINES	**FINESS Array B**	**72.88**	**330**	P	**P**	**16 04 52.6**	**-0.1**
	0.3nm,0.4s,baz=35,slow=4.7,SNR=5.9						

IDC ***01*** *15:54:44.8±1.1,25.°39N×142.°17E,h0km,mb3.6/6, mb1 3.8/6,mb1mx3.4/51,mbtmp3.6/6,Error ellipse: s-maj=29.1km s-min=17.8km az=84.0*

ISCJB ***01*** *15:54:48.5±1.1,25.°32N±0.°09×141.°9E±0.°3,h33km, mb3.7/6,Error ellipse: s-maj=39.6km s-min=10.3km az=10.1*

ISC 01 15:54:50.0±1.6,25.°4N±0.°1×142.°1E±0.°4,h35km,n7, σ0s98/8,mb3.9/6,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.73**	**2**	Pn	**Pn**	**15 55 16.7**	**-0.9**
	4.4nm,0.3s,baz=178,slow=24,SNR=5.9						
JCJ				Sn	**Sn**	**15 55 40.0**	**+1.5**
	4.2nm,0.3s,baz=181,slow=24,SNR=6.3						
WRA	**Warramunga Arr**	**45.66**	**190**	P	**P**	**16 03 08.1**	**+0.7**
	0.5nm,0.3s,baz=10,slow=8.7,SNR=14						
ASAR	**Alice Springs**	**49.38**	**190**	P	**P**	**16 03 36.5**	**+0.2**
	0.4nm,1.0s,baz=10,slow=5.7,SNR=4.3						
MKAR	**Makanchi Array**	**51.54**	**311**	P	**P**	**16 03 53.1**	**+0.7**
	0.2nm,0.5s,baz=90,slow=9.2,SNR=3.6						
KURBB	**Kurchatov Arra**	**54.22**	**315**	P	**P**	**16 04 12.2**	**+0.1**
	0.6nm,0.5s,baz=91,slow=8.2,SNR=7.4						
BVAR	**Borovoye Array**	**59.28**	**318**	P	**P**	**16 04 47.5**	**-0.5**
	0.8nm,0.5s,baz=79,slow=7.6,SNR=6.1						
FINES	**FINESS Array B**	**79.47**	**334**	P	**P**	**16 06 52.1**	**-0.5**
	1.6nm,0.8s,baz=38,slow=7.0,SNR=6.2						

IDC ***01*** *15:58:07.7±1.1,25.°45N×142.°23E,h0km,mb3.8/8, mb1 4.0/8,mb1mx3.6/55,mbtmp3.8/8,Error ellipse: s-maj=35.6km s-min=15.5km az=87.0*

ISC 01 15:58:10.2±0.2,25.°5N±0.°2×143.°2E±0.°5,h35km,n9, σ1s16/10,mb4.1/8,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.82**	**330**	Pn	**Pn**	**15 58 38.5**	**-0.4**
	baz=180,slow=20						
JCJ				Sn	**Sn**	**15 59 02.3**	**+1.6**
	baz=180,slow=20						
WRA	**Warramunga Arr**	**46.01**	**192**	P	**P**	**16 06 30.9**	**+0.5**
	1.4nm,0.4s,baz=11,slow=8.7,SNR=18						
FITZ	**Fitzroy Crossi**	**46.62**	**203**	P	**P**	**16 06 35.6**	**+0.5**
	1.8nm,0.9s,baz=19,slow=9.6,SNR=4.9						
ASAR	**Alice Springs**	**49.73**	**191**	P	**P**	**16 06 59.5**	**+0.4**
	0.4nm,0.8s,baz=15,slow=6.7,SNR=4.9						
MKAR	**Makanchi Array**	**52.19**	**311**	P	**P**	**16 07 16.0**	**-1.5**
	0.2nm,0.5s,baz=94,slow=8.4,SNR=4.8						
KURBB	**Kurchatov Arra**	**54.80**	**315**	P	**P**	**16 07 34.9**	**-1.6**
	1.1nm,0.5s,baz=92,slow=8.2,SNR=12						
BVAR	**Borovoye Array**	**59.82**	**318**	P	**P**	**16 08 11.2**	**-0.7**
	1.3nm,0.5s,baz=95,slow=7.6,SNR=11						
FINES	**FINESS Array B**	**79.76**	**334**	P	**P**	**16 10 15.2**	**+0.9**
	0.9nm,0.4s,baz=63,slow=6.3,SNR=8.0						
NOA	**NORSAR Array B**	**85.40**	**339**	P	**P**	**16 10 44.3**	**+0.5**
	0.5nm,0.7s,baz=43,slow=4.8,SNR=2.9						

SKHL ***01*** *15:59:48.6±0.4,47.°45N×154.°50E,h165km±5km,mb4.1/1, msh4.7/4*

MOS ***01*** *15:59:49.4±1.4,47.°51N×154.°30E,h177km,mb4.1/1,Error ellipse: s-maj=22.0km s-min=7.3km az=70.7*

IDC ***01*** *15:59:51.1±4.7,47.°58N×154.°33E,h182km±35km,mb2.8/3, mb1 2.8/6,mb1mx2.7/59,mbtmp3.4/6,Error ellipse: s-maj=87.1km s-min=26.4km az=127.0*

ISC 01 15:59:48.5±2.0,47.°4N±0.°2×154.°5E±0.°2,h150km,n34, σ2s30/39,mb3.1/3,1C,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**3.41**	**18**	PN	**Pn**	**16 00 43.1**	**+2.1**
SKR				S	**Sn**	**16 01 20.4**	**-1.4**
SKR	**Severo-Kuril's**	**3.41**	**18**	*e*P	**Pn**	**16 00 43.1**	**+2.1**
SKR				*e*S	**Sn**	**16 01 20.4**	**-1.4**
SKR				A	A	16 01 27.9	
	80nm,0.9s						
PAU	**Pauzhetka**	**4.30**	**20**	PN	**Pn**	**16 00 54.6**	**+2.1**
PAU				S	**Sn**	**16 01 40.5**	**-2.0**
PAU	**Pauzhetka**	**4.30**	**20**	*e*P	**Pn**	**16 00 54.3**	**+1.8**
PAU				*e*S	**Sn**	**16 01 42.5**	**0.0**
KUR	**Kuril'sk**	**5.10**	**247**	*e*PN	**Pn**	**16 01 04.1**	**+1.0**
KUR				*e*S	**Sn**	**16 02 05.6**	**+4.3**
KUR				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KUR				smax	smax		
	comp=N,13nm,0.6s						
KUR				smax	smax		
	comp=E,13nm,0.3s						
KUR	**Kuril'sk**	**5.10**	**247**	*e*P	**Pn**	**16 01 05.1**	**+2.0**
KUR				AMB	AMB	16 01 06.4	
	comp=E,10.0nm,0.6s						
KUR				*e*S	**Sn**	**16 02 04.5**	**+3.2**
KUR				A	A	16 02 16.2	
	comp=E,10.0nm,0.3s						
ASAK	**Asacha**	**5.41**	**23**	PN	**Pn**	**16 01 10.6**	**+3.3**
RUS	**Russkaya**	**5.63**	**26**	PN	**Pn**	**16 01 11.1**	**+1.1**
RUS				S	**Sn**	**16 02 10.0**	**-3.8**
RUS	**Russkaya**	**5.63**	**26**	*e*P	**Pn**	**16 01 11.1**	**+1.1**
PETK	**Petropavlovsk-**	**6.03**	**19**	P	**Pn**	**16 01 17.1**	**+1.7**
	comp=E,0.3nm,0.3s,baz=198,slow=12,SNR=11						
PETK				S	**Sn**	**16 02 25.7**	**+2.2**
	baz=193,slow=18,SNR=2.6						
PET	**Petropavlovsk**	**6.19**	**24**	*e*PN	**Pn**	**16 01 16.1**	**-1.4**
PET				*e*S	**Sn**	**16 02 26.9**	**-0.4**
PET	**Petropavlovsk**	**6.19**	**24**	*e*S	**Sn**	**16 02 27.9**	**+0.6**
PET				A	A	16 02 46.7	
	comp=E,10.0nm,0.7s						
UGLR	**Uglovaya**	**6.40**	**24**	PN	**Pn**	**16 01 23.3**	**+2.8**
AVH	**Avacha**	**6.43**	**23**	PN	**Pn**	**16 01 23.9**	**+3.1**
SHO	**Shikotan**	**6.45**	**239**	*c* PN	**Pn**	**16 01 21.0**	**-0.1**
SHO				*i* S	**Sn**	**16 02 28.1**	**-5.6**
SHO				smax	smax		
	comp=N,13nm,0.3s						
SHO				smax	smax		
	comp=E,21nm,0.4s						
SHO	**Shikotan**	**6.45**	**239**	*e*P	**Pn**	**16 01 22.2**	**+1.1**
SHO				*i* S	**Sn**	**16 02 35.5**	**+1.8**
SHO				A	A	16 02 47.4	
	comp=E,50nm,0.9s						
SHO				A	A	16 02 47.4	
	comp=E,40nm,0.9s						
KRER	**Koryakskii**	**6.47**	**23**	PN	**Pn**	**16 01 25.1**	**+3.7**
SDLR	**Sedlovina**	**6.48**	**24**	PN	**Pn**	**16 01 24.0**	**+2.5**
GNL	**Ganaly**	**6.63**	**18**	PN	**Pn**	**16 01 25.3**	**+1.7**
MKZ	**Mys Kozlova**	**8.45**	**30**	PN	**Pn**	**16 01 49.2**	**+1.5**
MKZ	**Mys Kozlova**	**8.45**	**30**	*e*P	**Pn**	**16 01 49.2**	**+1.4**
KLR	**Kul'dur**	**15.23**	**285**	P	**Pn**	**16 03 14.9**	**-0.6**
	comp=E,0.2nm,0.3s,baz=72,slow=9.6,SNR=4.3						
USRK	**Ussuriysk Ar.**	**16.01**	**267**	P	**Pn**	**16 03 24.3**	**-0.9**
	comp=E,0.2nm,0.3s,baz=65,slow=11,SNR=4.6						
KSRS	**Korea Array**	**21.91**	**253**	P	**P**	**16 04 29.7**	**+0.1**
	comp=E,0.5nm,0.6s,baz=49,slow=12,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**29.43**	**156**	T	T	16 38 08.1	
	baz=341,slow=74						
H11N1	**WAKE ISLAND Hy**	**29.44**	**156**	T	T	16 38 03.5	
	baz=341,slow=74						
H11N3	**WAKE ISLAND Hy**	**29.45**	**156**	T	T	16 38 06.0	
	baz=341						
H11S1	**WAKE ISLAND Hy**	**30.54**	**157**	T	T	16 39 30.5	
	baz=343,slow=76,SNR=5.0						
H11S3	**WAKE ISLAND Hy**	**30.55**	**157**	T	T	16 39 31.5	
	baz=343,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**30.56**	**157**	T	T	16 39 34.5	
	baz=343,slow=76,SNR=13						
MKAR	**Makanchi Array**	**47.46**	**297**	P	**P**	**16 08 06.1**	**-1.7**
	comp=E,0.2nm,0.4s,baz=59,slow=7.6,SNR=3.2						
KURK	**Kurchatov**	**47.77**	**304**	P	**P**	**16 08 08.6**	**-1.5**
KURK	**Kurchatov**	**47.77**	**304**	*e*P	**P**	**16 08 08.6**	**-1.5**
KURBB	**Kurchatov Arra**	**47.86**	**304**	P	**P**	**16 08 08.6**	**-2.2**
	comp=E,0.2nm,0.3s,baz=68,slow=8.3,SNR=2.5						

ISCJB ***01*** *16:07:17.7±0.8,53.°4S±0.°1×3.°7W±0.°3,h10km,mb4.1/6, MS3.4/3,Error ellipse: s-maj=26.1km s-min=14.7km az=14.0*

IDC ***01*** *16:07:17.7±0.8,53.°45S×3.°63W,h0km,mb4.1/5,mb1 4.3/5, mb1mx3.9/26,mbtmp4.1/5,MS3.4/3,Ms1 3.4/3, ms1mx3.1/24,Error ellipse: s-maj=30.7km s-min=25.7km az=124.0*

NEIC ***01*** *16:07:19.2±0.5,53.°40S×3.°67W,h10km,mb4.0/1,Error ellipse: s-maj=21.6km s-min=13.5km az=100.0*

ISC 01 16:07:19.5±0.7,53.°4S±0.°1×3.°6W±0.°2,h10km,n16, σ0s85/12,mb4.1/6,MS3.5/3,Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNAA	**Sanae**	**18.34**	**179**	*e*P	**Pn**	**16 11 32.5**	**-1.2**
SUR	**Sutherland**	**27.36**	**50**	LR	LR	16 21 15.3	
	comp=Z,13nm,20.0s,baz=208,slow=31						
BOSA	**Boshof**	**32.59**	**52**	LR	LR	16 24 08.5	
	comp=Z,109nm,21.7s,baz=206,slow=31						
LBTB	**Lobatse**	**35.81**	**49**	P	**P**	**16 14 19.2**	**+0.1**
	4.5nm,1.0s,baz=204,slow=8.8,SNR=3.6						
QSPA	**South Pole Qui**	**36.84**	**180**	*e*P	**P**	**16 14 29.4**	**+1.9**
	1.4nm,0.5s						
MATP	**Matopo**	**41.11**	**49**	P	**P**	**16 15 04.0**	**+0.3**
	2.0nm,0.7s,baz=207,slow=11,SNR=3.6						
CPUP	**Villa Florida**	**47.82**	**283**	P	**P**	**16 15 57.0**	**0.0**
	4.8nm,1.0s,baz=167,slow=7.1,SNR=5.4						
VNDA	**Vanda**	**49.03**	**176**	P	**P**	**16 16 05.2**	**-0.6**
	2.3nm,0.8s,baz=215,slow=5.5,SNR=11						
TORD	**Torodi Ar. Bea**	**66.44**	**6**	P	**P**	**16 18 08.6**	**-0.2**
	0.7nm,0.8s,baz=186,slow=7.5,SNR=3.2						
VAE	**Valguarnera**	**91.85**	**14**	LR	LR

BJI ***01*** *16:25:43.8, 6˙.42S× 148˙.20E, h14km, mb5.0/71, mB5.2/55, Ms5.5/83, Ms7 5.3/77*

NEIC ***01*** *16:25:45.0±0.0, 6˙.89S× 147˙.63E, h30km, Moment Tensor Solution. s19 Moment tensor: Scale 10^{17}Nm; Mrr-1.59; Mθθ0.30; Mφφ1.29; Mrθ-1.50; Mrφ1.81; Mθφ-0.45; Best double couple: M0 2.80000×10^{17} NP1:φs 64.00000°, δ67.00000°, λ-57.00000°. NP2:φs 186.00000°, δ39.00000°, λ-142.00000°. Principal axes: T 3.0400, Plg15.0000°, Azm131.0000°; N -0.5400, Plg29.0000°, Azm230.0000°; P -2.4900, Plg55.0000°, Azm16.0000°;*

MOS ***01*** *16:25:46.9±1.4, 6˙.54S× 147˙.81E, h33km, mb5.2/62, MS5.3/33 Error ellipse: s-maj=9.0km s-min=5.5km az=101.8*

ISCJB ***01*** *16:25:47.5±0.6, 6˙.69S±0˙.02× 147˙.93E±0˙.03, h43km±5km, mb5.1/142, MS5.3/68, Error ellipse: s-maj=4.4km s-min=4.0km az=178.8*

NEIC ***01*** *16:25:48.6±0.2, 6˙.63S× 147˙.85E, h35km, mb5.2/73, MW5.6, MW5.4, Error ellipse: s-maj=6.3km s-min=5.0km az=108.0, Moment Tensor Solution. s26 Moment tensor: Scale 10^{17}Nm; Mrr-1.26; Mθθ1.23; Mφφ0.03; Mrθ0.02; Mθφ0.80; Mrφ1.00; Best double couple: M0 1.80000×10^{17} NP1:φs 215.00000°, δ61.00000°, λ-124.00000°. NP2: φs 90.00000°, δ43.00000°, λ-44.00000°. Principal axes: T 1.7100, Plg10.0000°, Azm329.0000°; N 0.1400, Plg29.0000°, Azm233.0000°; P -1.8500, Plg59.0000°, Azm76.0000°;*

GCMT ***01*** *16:25:50.3±0.1, 6˙.71S× 147˙.79E, h13km, MW5.6/113, Moment Tensor Solution. s104,c195; s113,c264; Duration: 1s5 Moment tensor: Scale 10^{17}Nm; Mrr-1.63±.03; Mθθ0.25±.02; Mφφ1.38±.03; Mrθ-1.34±.08; Mθφ1.62±.02; Mφφ0.83±.07; Best double couple: M0 2.70800×10^{17} NP1:φs 67.00000°, δ58.00000°, λ-43.00000°. NP2:φs 184.00000°, δ55.00000°, λ-139.00000°. Principal axes: T 2.5320, Plg2.0000°, Azm126.0000°; N 0.3490, Plg38.0000°, Azm217.0000°; P -2.8850, Plg52.0000°, Azm34.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

DJA ***01*** *16:25:52.6±0.5, 7˙.5S±4˙× 14˙.8E±˚, h58km±5km, M5.4/27, mb5.3/27, mB5.8/23, MLv5.5/1, Mw(mB)5.3/23, Mwp5.7/4*

ISC 01 16:25:47.7±0.4, **6˙.64S**±0˙.03× **148˙.00E**±0˙.04, **h28**km±2km, **h28km:pP-P, n474,** σ2**9**/548, **mb5.2**/140, **MS5.4**/69, **29C-21D, Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.87**	**197**	Pn	**Pn**	**16 26 31.6**	**0.0**
	46nm,0.3s,baz=72,slow=5.6,SNR=112						
PMG				Sn	**Sn**	**16 27 08.4**	**+3.1**
	103nm,0.3s,baz=329,slow=10,SNR=4.2						
PMG				LR	LR	16 27 20.5	
	comp=Z,12μm,20.6s,baz=26,slow=33						
PMG	**Port Moresby**	**2.87**	**197**	*e*Pn	**Pn**	**16 26 32.8**	**+1.2**
PMG				*e*		16 27 09.3	
PMG	**Port Moresby**	**2.87**	**197**	*e*Pn	**Pn**	**16 26 32.8**	**+1.2**
PMG				*e*Sn	**Sn**	**16 27 09.3**	**+4.0**
MANU	**Manus Island**	**4.61**	**352**	*e*Pn	**Pn**	**16 26 58.7**	**+3.2**
MANU				*e*Sn	**Sn**	**16 27 44.1**	**-4.0**
RABL	**Rabaul**	**4.81**	**60**	*e*Pn	**Pn**	**16 27 02.4**	**+4.2**
RABL				*e*Sn	**Sn**	**16 27 58.5**	**+5.4**
JAY	**Jayapura**	**8.34**	**299**	Pn	**Pn**	**16 27 48.7**	**+1.9**
	0.3nm,0.3s,baz=94,slow=22,SNR=15						
JAY				Sn	**Sn**	**16 29 16.0**	**-4.2**
	baz=90,slow=20,SNR=1.3						
JAY				LR	LR	16 31 17.7	
	comp=Z,1μm,18.3s,baz=50,slow=41						
JAY	**Jayapura**	**8.34**	**299**	P	**Pn**	**16 27 49.2**	**+2.3**
COEN	**Coen**	**8.68**	**213**	P	**Pn**	**16 27 52.2**	**+0.7**
	baz=8.5,SNR=14						
COEN	**Coen**	**8.68**	**213**	*e*Pn	**Pn**	**16 27 52.1**	**+0.6**
COEN				*e*Sn	**Sn**	**16 29 28.3**	**-0.2**
GENI	**Genyem**	**8.78**	**297**	P	**Pn**	**16 27 55.6**	**+2.8**
MTSU	**Mount Surprise**	**11.98**	**197**	P	**Pn**	**16 28 37.1**	**+0.4**
	baz=12,SNR=20						
HNR	**Honiara**	**12.15**	**104**	Pn	**Pn**	**16 28 42.3**	**+3.3**
	4.6nm,0.3s,baz=230,slow=7.6,SNR=21						
HNR	**Honiara**	**12.15**	**104**	*e*P	**Pn**	**16 28 42.5**	**+3.4**
HNR	**Honiara**	**12.15**	**104**	*e*Pn	**Pn**	**16 28 42.5**	**+3.4**
CTA	**Charters Tower**	**13.48**	**187**	Pn	**Pn**	**16 28 58.6**	**+1.5**
	2.1nm,0.3s,baz=5.3,slow=14,SNR=26						
CTA				LR	LR	16 34 18.2	
	comp=Z,16μm,18.4s,baz=7.5,slow=38						
CTAO	**Charters Tower**	**13.48**	**187**	*e*P	**Pn**	**16 28 57.4**	**+0.2**
CTAO	**Charters Tower**	**13.48**	**187**	*e*Pn	**Pn**	**16 28 57.4**	**+0.2**
QIS	**Mount Isa**	**16.05**	**210**	P	**Pn**	**16 29 31.8**	**+0.2**
	baz=16,SNR=35						
FAKI	**Fak Fak**	**16.12**	**283**	P	**P**	**16 29 36.1**	**+0.6**
FAKI	**Fak Fak**	**16.12**	**283**	*e*Pn	**Pn**	**16 29 32.2**	**-0.3**
	408nm,1.3s						
KDU	**Kakadu**	**16.44**	**247**	P	**Pn**	**16 29 35.7**	**-0.7**
	baz=16,SNR=7.8						
SAUI	**Saumlaki**	**16.61**	**264**	*e*Pn	**Pn**	**16 29 36.6**	**-2.2**
	1μm,1.3s						
PATS	**Pohnpei**	**16.89**	**38**	P	**P**	**16 29 48.9**	**+4.9**
	baz=17,SNR=4.1						
PATS	**Pohnpei**	**16.89**	**38**	*e*Pn	**Pn**	**16 29 41.1**	**-1.0**
	294nm,1.3s						
MTN	**Manton Dam**	**17.72**	**248**	P	**Pn**	**16 29 51.9**	**-0.7**
	baz=18,SNR=32						
MTN	**Manton Dam**	**17.72**	**248**	*e*P	**Pn**	**16 29 52.6**	**0.0**
	124nm,1.3s						
WRAB	**Tennant Creek**	**18.71**	**224**	*e*P	**P**	**16 30 04.0**	**-0.2**
WRAB				pmax	pmax		
	comp=Z,125nm,1.1s						
WRAB	**Tennant Creek**	**18.71**	**224**	*e*P	**P**	**16 30 04.0**	**-0.2**
	comp=Z,125nm,1.1s						
WC3	**Warramunga Arr**	**18.72**	**224**	*e*P	**Pn**	**16 30 05.1**	**+0.3**
	comp=Z,157nm,1.3s						
WB2	**Warramunga Arr**	**18.72**	**224**	*e*P	**P**	**16 30 03.4**	**-0.8**
	comp=Z,536nm,2.0s						
WRA	**Warramunga Arr**	**18.73**	**224**	P	**P**	**16 30 01.9**	**-2.5**
	comp=Z,3.4nm,0.3s,baz=50,slow=11,SNR=83						
WRA				LR	LR	16 38 24.4	
	comp=Z,25μm,19.2s,baz=50,slow=41						
EIDS	**Eidsvold**	**18.86**	**171**	P	**P**	**16 30 04.9**	**-0.8**
	baz=19,SNR=10						
EIDS	**Eidsvold**	**18.86**	**171**	*e*P	**P**	**16 30 05.9**	**+0.1**
	comp=Z,250nm,1.8s						
MSAI	**Masohi**	**19.27**	**279**	P	**P**	**16 30 09.4**	**-1.0**
PALU	**Palau**	**19.36**	**316**	P	**Pn**	**16 30 14.1**	**+1.6**
	baz=20,SNR=6.1						
RMQ	**Roma**	**19.75**	**178**	P	**P**	**16 30 15.9**	**+0.4**
	baz=20,SNR=35						
QLP	**Quilpie**	**20.16**	**190**	P	**P**	**16 30 19.5**	**-0.4**
	baz=20,SNR=64						
GUMO	**Guam**	**20.33**	**351**	P	**P**	**16 30 21.6**	**-0.2**
	comp=Z,122nm,0.8s,baz=186,slow=10,SNR=7.6						
GUMO				LR	LR	16 36 30.3	
	comp=Z,10μm,21.2s,baz=171,slow=32						
GUMO	**Guam**	**20.33**	**351**	*e*P	**P**	**16 30 22.5**	**+0.6**
	comp=Z,195nm,0.9s						
LBMI	**Labuha**	**21.30**	**285**	P	**P**	**16 30 35.0**	**+2.7**
AS31	**Alice Springs**	**21.68**	**217**	*e*P	**P**	**16 30 35.5**	**-1.0**
	comp=Z,29nm,0.8s						
ASAR	**Alice Springs**	**21.68**	**217**	P	**P**	**16 30 35.3**	**-1.2**
	comp=Z,29nm,0.6s,baz=53,slow=8.5,SNR=342						
ASAR				LR	LR	16 39 46.3	
	comp=Z,15μm,19.1s,baz=42,slow=39						
ASAR	**Alice Springs**	**21.68**	**217**	P	**P**	**16 30 35.3**	**-1.2**
ASAR				pmax	pmax		
	comp=Z,28nm,0.7s						
ASAR				MLR	MLR		
	comp=Z,15μm,19.1s						
SANI	**Sanana**	**22.41**	**281**	P	**P**	**16 30 47.5**	**+3.2**
DZM	**Mont Dzumac**	**23.51**	**133**	*e*P	**P**	**16 30 55.1**	**-0.5**
	comp=Z,188nm,1.4s						
DZM				*e*LR	LR	16 36 36.3	
	comp=Z,33μm,27.6s						
DZM	**Mont Dzumac**	**23.51**	**133**	P	**P**	**16 30 55.4**	**-0.2**
	comp=Z,42nm,1.0s,baz=355,slow=9.5,SNR=13						
DZM				LR	LR	16 37 36.5	
	comp=Z,11μm,20.7s,baz=322,slow=30						
DZM	**Mont Dzumac**	**23.51**	**133**	*e*P	**P**	**16 30 55.2**	**-0.4**
	comp=Z,121nm,1.4s						
SOEI	**Soe**	**23.69**	**261**	P	**P**	**16 30 58.3**	**+0.8**
SOEI	**Soe**	**23.69**	**261**	*e*P	**P**	**16 30 55.7**	**-1.7**
	comp=Z,235nm,1.1s						
ARMA	**Armidale**	**23.90**	**172**	P	**P**	**16 30 59.9**	**+0.6**
	baz=24,SNR=28						
ARMA	**Armidale**	**23.90**	**172**	P	**P**	**16 30 57.9**	**-1.4**
	comp=Z,55nm,0.8s						
BATI	**Baumata**	**24.33**	**260**	P	**P**	**16 31 04.9**	**+1.6**
FITZ	**Fitzroy Crossi**	**24.60**	**240**	P	**P**	**16 31 04.4**	**-1.3**
	comp=Z,81nm,0.5s,baz=55,slow=8.0,SNR=301						
FITZ				LR	LR	16 42 11.4	
	comp=Z,9μm,18.4s,baz=62,slow=40						
FITZ	**Fitzroy Crossi**	**24.60**	**240**	P	**P**	**16 31 03.2**	**-2.5**
	baz=24,SNR=462						
FITZ	**Fitzroy Crossi**	**24.60**	**240**	*e*P	**P**	**16 31 04.2**	**-1.5**
	comp=Z,649nm,1.4s						
CMSA	**Cobar Meteorol**	**24.87**	**185**	P	**P**	**16 31 07.1**	**-0.9**
	baz=25,SNR=27						
KMSI	**Cibinong**	**25.01**	**286**	P	**P**	**16 31 11.4**	**+1.9**
KDI	**Kendari**	**25.41**	**275**	P	**P**	**16 31 15.1**	**+2.0**
MMRI	**Maumere**	**25.61**	**264**	P	**P**	**16 31 13.6**	**-1.3**
MMRI	**Maumere**	**25.61**	**264**	*e*P	**P**	**16 31 12.6**	**-2.4**
	comp=Z,145nm,0.8s						
MMRI				*e*PcP	**PcP**	**16 34 43.2**	**-2.4**
LUWI	**Luwuk**	**25.77**	**281**	P	**P**	**16 31 16.5**	**+0.2**
LUWI	**Luwuk**	**25.77**	**281**	*e*P	**P**	**16 31 14.8**	**-1.5**
	comp=Z,928nm,1.3s						
LUWI				*e*PcP	**PcP**	**16 34 43.5**	**-2.5**
STKA	**Stephens Creek**	**25.81**	**193**	P	**P**	**16 31 15.3**	**-1.3**
	comp=Z,22nm,0.7s,baz=360,slow=8.5,SNR=23						
STKA				LR	LR	16 42 10.5	
	comp=Z,11μm,19.1s,baz=8.2,slow=38						
STKA	**Stephens Creek**	**25.81**	**193**	P	**P**	**16 31 15.7**	**-0.9**
	baz=26,SNR=28						
STKA	**Stephens Creek**	**25.81**	**193**	*e*P	**P**	**16 31 14.4**	**-2.2**
	comp=Z,15nm,1.0s						
EDFI	**Ende, Flores**	**26.15**	**264**	P	**P**	**16 31 17.7**	**-2.3**
DAV	**Davao City (W)**	**26.18**	**301**	LR	LR	16 41 13.7	
	comp=Z,3μm,21.1s,baz=110,slow=36						
WRKA	**Warakurna**	**26.27**	**224**	P	**P**	**16 31 18.6**	**-2.3**
	baz=26,SNR=136						
MGCD	**Mangrove Creek**	**26.60**	**174**	P	**P**	**16 31 24.7**	**+1.0**
	baz=27,SNR=8.6						
MRSI	**Marisa**	**26.95**	**284**	P	**P**	**16 31 27.5**	**+0.5**
BSSI	**Bau Bau, Buton**	**27.34**	**269**	P	**P**	**16 31 34.3**	**+3.7**
BASI	**Baing, Sumba**	**27.35**	**261**	P	**P**	**16 31 31.2**	**+0.5**
YNG	**Yong**	**27.53**	**179**	P	**P**	**16 31 32.0**	**-0.1**
	baz=28,SNR=18						
WSI	**Waingapu**	**27.58**	**262**	P	**P**	**16 31 31.9**	**-0.8**
HTT	**Hallett**	**27.96**	**196**	P	**P**	**16 31 36.1**	**+0.1**
	baz=28,SNR=18						
KAPI	**Kappang**	**28.14**	**272**	P	**P**	**16 31 37.8**	**0.0**
	comp=Z,31nm,0.9s,baz=90,slow=6.9,SNR=9.5						
KAPI				LR	LR	16 45 14.4	
	comp=Z,6μm,21.1s,baz=112,slow=42						
KAPI	**Kappang**	**28.14**	**272**	P	**P**	**16 31 38.0**	**+0.2**
	comp=Z,98nm,1.3s						
SPSI	**Sidrap Palu**	**28.23**	**274**	P	**P**	**16 31 38.7**	**+0.2**
TTSI	**Tana Toraja**	**28.30**	**276**	P	**P**	**16 31 41.7**	**+2.6**
	comp=Z,65nm,1.3s,comp=Z,927nm						
BBOO	**Buckleboo**	**28.31**	**202**	P	**P**	**16 31 39.1**	**0.0**
	baz=28,SNR=7.0						
CAN	**Canberra**	**28.56**	**178**	*e*P	**P**	**16 31 39.4**	**-1.9**
CAN				pmax	pmax		
	comp=Z,37nm,1.1s						
CAN	**Canberra**	**28.56**	**178**	*e*P	**P**	**16 31 39.4**	**-1.9**
	comp=Z,37nm,1.1s						
CNB	**Canberra Magne**	**28.57**	**178**	P	**P**	**16 31 42.7**	**+1.3**
	baz=28,SNR=5.8						
PCI	**Palu**	**28.66**	**280**	P	**P**	**16 31 44.2**	**+1.8**
	comp=Z,137nm,1.2s,comp=Z,2μm						
PLP	**Palo**	**28.94**	**308**	*e*P	**P**	**16 31 48.4**	**+3.6**
PLAI	**Plampang**	**30.02**	**264**	P	**P**	**16 31 52.0**	**-2.4**
FORT	**Forrest**	**30.44**	**215**	P	**P**	**16 31 57.9**	**0.0**
	baz=30,SNR=10.0						
FORT	**Forrest**	**30.44**	**215**	*e*P	**P**	**16 31 56.2**	**-1.7**
	comp=Z,532nm,0.8s						
TOO	**Toolangi**	**30.88**	**184**	P	**P**	**16 32 03.6**	**+1.9**
	baz=31,SNR=4.6						
TWSI	**Taliwang, Sumb**	**30.90**	**264**	P	**P**	**16 31 59.4**	**-2.8**
MBWA	**Marble Bar**	**30.92**	**239**	*e*P	**P**	**16 31 59.8**	**-2.5**
	comp=Z,437nm,1.9s						
MSVF	**Nonsavu**	**31.32**	**113**	*e*P	**P**	**16 32 04.0**	**-2.0**
MSVF				pmax	pmax		
	comp=Z,9.0nm,1.0s						
MYLDM	**Lahad Datu**	**31.70**	**291**	*e*P	**P**	**16 32 09.0**	**-0.2**
	comp=Z,56nm,1.0s						
JAGI	**Jajag, Banyuwa**	**33.59**	**265**	*e*P	**P**	**16 32 22.5**	**-3.4**
	comp=Z,71nm,0.8s						
TGY	**Tagaytay City**	**33.85**	**308**	LR	LR	16 46 23.6	
	comp=Z,3μm,18.7s,baz=134,slow=37						
MEEK	**Meekatharra**	**34.31**	**231**	P	**P**	**16 32 30.9**	**-1.1**
	baz=34,SNR=58						
KMBL	**Kambalda**	**34.67**	**221**	P	**P**	**16 32 34.7**	**-0.3**
	baz=34,SNR=14						
BTM	**Bintulu**	**36.20**	**285**	P	**P**	**16 32 49.5**	**+1.1**
GIRL	**Giralia**	**36.21**	**240**	P	**P**	**16 32 47.5**	**-0.8**
	baz=36,SNR=4.9						
SBUM	**Sibu**	**36.84**	**283**	P	**P**	**16 32 53.9**	**+0.1**
SBUM	**Sibu**	**36.84**	**283**	*e*P	**P**	**16 32 52.7**	**-1.1**
	comp=Z,31nm,1.0s						
MORW	**Morawa**	**37.50**	**230**	P	**P**	**16 32 58.6**	**-0.6**
	baz=37,SNR=14						
KLBR	**Kellerberrin**	**37.61**	**225**	P	**P**	**16 32 58.5**	**-1.7**
	baz=38,SNR=37						
BLDU	**Ballidu**	**37.81**	**227**	P	**P**	**16 33 00.9**	**-1.0**
	baz=38,SNR=12						
KSM	**Kuching**	**38.47**	**281**	P	**P**	**16 33 06.9**	**-0.8**
KSM	**Kuching**	**38.47**	**281**	*e*P	**P**	**16 33 06.7**	**-1.0**
	comp=Z,57nm,1.1s						
NWAO	**Narrogin (SRO)**	**38.74**	**223**	P	**P**	**16 33 08.5**	**-1.1**
	baz=39,SNR=11						
NWAO				P	**P**	**16 33 08.5**	**-1.1**
	baz=39,SNR=11						
NWAO	**Narrogin (SRO)**	**38.74**	**223**	*e*P	**P**	**16 33 08.7**	**-1.0**
NWAO				pmax	pmax		
	comp=Z,259nm,1.4s						
NWAO	**Narrogin (SRO)**	**38.74**	**223**	*e*P	**P**	**16 33 08.7**	**-1.0**
	comp=Z,259nm,1.4s						
YULB	**Yu-li**	**39.64**	**320**	*e*P	**P**	**16 33 18.1**	**+0.8**
	comp=Z,11nm,1.0s						
CISI	**Cisompet, Garu**	**39.87**	**266**	*e*P	**P**	**16 33 18.1**	**-1.3**
	comp=Z,1μm,1.9s						
TPUB	**Ta-pu**	**40.01**	**319**	*e*P	**P**	**16 33 18.8**	**-1.6**
	comp=Z,58nm,1.6s						
NACB	**Ninganchiao**	**40.01**	**321**	*e*P	**P**	**16 33 19.8**	**-0.6**
	comp=Z,131nm,1.7s						
AFI	**Afiamalu**	**40.19**	**104**	LR	LR	16 47 29.7	
	comp=Z,5μm,21.5s,baz=267,slow=32						
YHNB	**Yeheng**	**40.51**	**321**	*e*P	**P**	**16 33 21.6**	**-2.9**
	comp=Z,57nm,1.1s						
TATO	**Taipei**	**40.66**	**322**	*e*P	**P**	**16 33 25.6**	**-0.1**
	comp=Z,92nm,1.0s						
URZ	**Urewera**	**41.06**	**144**	P	**P**	**16 33 30.0**	**+1.1**
	comp=Z,10nm,0.9s,baz=260,slow=6.1,SNR=3.0						
URZ				LR	LR	16 49 37.8	
	comp=Z,12μm,18.7s,baz=314,slow=35						
RPZ	**Rata Peaks**	**42.11**	**155**	P	**P**	**16 33 37.7**	**+0.3**
	comp=Z,26nm,0.8s,baz=260,slow=0.7,SNR=6.5						
RPZ				LR	LR	16 51 10.6	
	comp=Z,7μm,18.2s,baz=326,slow=36						
JNU	**Nakatsue**	**42.76**	**339**	P	**P**	**16 33 41.3**	**-1.5**
	comp=Z,5.8nm,0.7s,baz=113,slow=4.2,SNR=6.8						
JNU				LR	LR	16 50 10.7	
	comp=Z,4μm,20.0s,baz=141,slow=34						
JNU	**Nakatsue**	**42.76**	**339**	*e*P	**P**	**16 33 40.8**	**-2.0**
	comp=Z,155nm,2.0s						
MJAR	**Matsushiro Arr**	**43.92**	**349**	P	**P**	**16 33 49.6**	**-2.5**
	comp=Z,23nm,1.1s,baz=172,slow=8.3,SNR=42						
MJAR				LR	LR	16 49 55.8	
	comp=Z,3μm,20.5s,baz=210,slow=33						
MAJO	**Matsushiro**	**43.92**	**349**	*e*P	**P**	**16 33 50.3**	**-1.8**
MAJO				pmax	pmax		
	comp=Z,104nm,1.4s						
MAJO	**Matsushiro**	**43.92**	**349**	*e*P	**P**	**16 33 50.3**	**-1.8**
	comp=Z,104nm,1.4s						
MAT	**Matsushiro**	**43.92**	**349**	P	**P**	**16 33 49.5**	**-2.6**
MAT				S	**S**	**16 40 22.0**	**0.0**
MJB9	**Matsu-Tunnel**	**43.93**	**349**	*e*P	**P**	**16 33 50.8**	**-1.3**
	comp=Z,29nm,1.4s						
MYKOM	**Kota Tinggi**	**44.85**	**279**	P	**P**	**16 33 59.5**	**-0.5**
GZH	**Guangzhou**	**44.95**	**312**	P	**P**	**16 34 03.6**	**+3.1**
GZH				S	**S**	**16 40 45.9**	**+8.6**
GZH				ScS	**ScS**	**16 43 54.0**	**-2.4**
GZH				pmax	pmax		
	comp=Z,710nm,8.2s						
KGM	**Kluang**	**45.42**	**279**	P	**P**	**16 34 03.9**	**-0.5**
QIZ	**Qiongzhong**	**45.43**	**305**	P	**P**	**16 34 05.3**	**+0.9**
QIZ				sP	**pP**	**16 34 09.8**	**-3.1**
QIZ				PP	**PP**	**16 35 51.4**	**+0.3**
QIZ				S	**S**	**16 40 45.5**	**+1.1**
QIZ				pmax	pmax		
	comp=Z,30nm,2.0s						
QIZ				LR	LR		
	comp=Z,2μm,16.7s						
QIZ				LR	LR		
	comp=Z,3μm,25.1s						
SSE	**Sheshan**	**45.45**	**327**	P	**P**	**16 34 05.3**	**+0.9**
SSE				pP	**pP**	**16 34 12.0**	**-0.8**
SSE				S	**S**	**16 40 44.1**	**-0.1**
SSE				sS	**sS**	**16 40 55.2**	**-3.0**
SSE				pmax	pmax		
	comp=Z,49nm,0.8s						
SSE				pmax	pmax		
	comp=Z,150nm,5.4s						
SSE				LR	LR		
	comp=Z,25μm,22.3s						
SSE				LR	LR		
	comp=Z,4μm,22.3s						
SSE				LR	LR		
	comp=Z,4μm,19.6s						
KTGM	**Kuala Trenggan**	**46.33**	**284**	P	**P**	**16 34 11.6**	**0.0**
TJN	**Taejon**	**46.96**	**337**	*e*P	**P**	**16 34 14.8**	**-1.4**
FRIM	**Kepong**	**47.32**	**281**	P	**P**	**16 34 18.1**	**-1.3**
NJ2	**Nanjing**	**47.46**	**326**	*e*P	**P**	**16 34 21.4**	**+1.3**
NJ2				S	**S**	**16 41 09.6**	**-3.4**
NJ2				pmax	pmax		
	comp=Z,30nm,0.8s						
NJ2				LR	LR		
	comp=Z,5μm,19.0s						
NJ2				LR	LR		
	comp=Z,2μm,17.1s						
NJ2				LR	LR		
	comp=Z,4μm,17.1s						
KSRS	**Korea Array**	**47.70**	**338**	P	**P**	**16 34 19.5**	**-2.4**
	comp=Z,12nm,1.0s,baz=151,slow=7.5,SNR=44						
KSRS				LR	LR	16 53 00.3	
	comp=Z,4μm,19.5s,baz=154,slow=34						
KS15	**Wonju Array Si**	**47.70**	**338**	*e*P	**P**	**16 34 22.2**	**+0.3**
KSAR	**Wonju Array Be**	**47.70**	**338**	P	**P**	**16 34 19.6**	**-2.4**
KSAR	**Wonju Array Be**	**47.70**	**338**	P	**P**	**16 34 19.6**	**-2.4**
KS01	**Wonju Array Si**	**47.73**	**338**	*e*P	**P**	**16 34 20.8**	**-1.3**
IPM	**Ipoh**	**48.17**	**282**	P	**P**	**16 34 25.8**	**-0.2**
IPM	**Ipoh**	**48.17**	**282**	*e*P	**P**	**16 34 25.7**	**-0.3**
	comp=Z,96nm,1.0s						
KULM	**Kulim**	**48.72**	**283**	P	**P**	**16 34 30.6**	**+0.4**
KULM	**Kulim**	**48.72**	**283**	*e*P	**P**	**16 34 28.9**	**-1.3**
	comp=Z,46nm,0.7s						
WHN	**Wuhan**	**49.05**	**321**	P	**P**	**16 34 33.6**	**+1.1**
WHN				pP	**pP**	**16 34 38.9**	**-2.1**
WHN				sP	**sP**	**16 34 43.2**	**-1.1**
WHN				S	**S**	**16 41 37.3**	**+1.7**
WHN				LR	LR		
	comp=Z,5μm,17.4s						
WHN				LR	LR		
	comp=Z,1μm,14.4s						
WHN				LR	LR		
	comp=Z,5μm,18.2s						
SKLT	**Songkhla**	**49.21**	**285**	P	**P**	**16 34 36.3**	**+2.3**
	comp=Z,52nm,1.5s,comp=Z,898nm						
PSI	**Prapat**	**49.88**	**279**	*e*P	**P**	**16 34 38.2**	**-1.0**
PSI				pmax	pmax		
	comp=Z,57nm,1.1s						
PSI	**Prapat**	**49.88**	**279**	*e*P	**P**	**16 34 38.2**	**-1.0**
	comp=Z,57nm,1.1s						
TRTT	**Trang**	**50.27**	**286**	P	**P**	**16 34 45.0**	**+2.9**
	comp=Z,43nm,0.7s,comp=Z,872nm						
GSI	**Gunungsitoli**	**50.94**	**277**	*e*P	**P**	**16 34 45.2**	**-1.9**
	comp=Z,57nm,0.9s						
DL2	**Dalian**	**51.49**	**334**	P	**P**	**16 34 52.8**	**+2.0**
DL2				S	**S**	**16 42 12.2**	**+2.9**
DL2				pmax	pmax		
	comp=Z,47nm,0.9s						
DL2				pmax	pmax		
	comp=Z,290nm,6.6s						
DL2				LR	LR		
	comp=Z,3μm,20.0s						
DL2				LR	LR		
	comp=Z,3μm,18.2s						
DL2				LR	LR		
	comp=Z,4μm,20.1s						
TIA	**Tai'an**	**51.54**	**328**	P	**P**	**16 34 51.5**	**+0.3**
TIA				S	**S**	**16 42 11.4**	**+1.3**
TIA				pmax	pmax		
	comp=Z,30nm,1.1s						
TIA				pmax	pmax		
	comp=Z,320nm,8.3s						
TIA				LR	LR		
	comp=Z,4μm,17.3s						
TIA				LR	LR		
	comp=Z,2μm,14.3s						
TIA				LR	LR		
	comp=Z,5μm,19.6s						
KUR	**Kuril'sk**	**51.63**	**360**	*e*P	P	16 34 43.6	-8.1
KUR				*e*S	**S**	**16 42 04.9**	**-6.1**
KUR				pmax	pmax		
	comp=N,27nm,1.8s						
KUR				pmax	pmax		
	comp=E,3.0nm,1.8s						
KUR				pmax	pmax		
	comp=Z,64nm,1.8s						
KUR				pmax	pmax		
	comp=Z,159nm,3.8s						
KUR				MLR	MLR		
	comp=E,611nm,19.0s						
KUR				MLR	MLR		
	comp=Z,1μm,19.0s						
GYA	**Guiyang**	**51.84**	**311**	P	**P**	**16 34 56.0**	**+2.2**
GYA				PP	**PP**	**16 36 55.4**	**+3.4**
GYA				ScP	**ScP**	**16 40 03.0**	**+1.3**
GYA				S	**S**	**16 42 17.5**	**+2.6**
GYA				pmax	pmax		
	comp=Z,30nm,1.0s						
GYA				pmax	pmax		
	comp=Z,150nm,6.4s						
GYA				LR	LR		
	comp=Z,2μm,20.0s						
GYA				LR	LR		
	comp=Z

MDJ				LR	LR				
	comp=N,2μm,29.5s								
MDJ				LR	LR				
	comp=N,4μm,34.2s								
MDJ				LR	LR				
	comp=N,2μm,27.6s								
UMPA	**Umpang Tak**	**53.66**	**296**	P	P	16 35 14.0	+6.7		
LAMP	**Lampang**	**53.84**	**299**	P	**P**	**16 35 10.9**	**+2.3**		
	comp=N,8.6nm,0.9s								
KMI	**Kunming**	**54.17**	**307**	P	P	**16 35 11.7**	**+0.6**		
KMI				sP	pP	16 35 18.7	-1.0		
KMI				PP	**PP**	**16 37 11.7**	**-1.4**		
KMI				S	**S**	**16 42 50.9**	**+4.1**		
KMI				ScS	**ScS**	**16 45 00.7**	**+1.5**		
KMI				pmax	pmax				
	comp=N,150nm,8.9s								
KMI				LR	LR				
	comp=N,960nm,16.3s								
KMI				LR	LR				
	comp=N,1μm,19.3s								
KMI				LR	LR				
	comp=N,1μm,19.3s								
CN2	**Changchun**	**54.19**	**340**	*e*P	**P**	**16 35 14.4**	**+3.8**		
CN2				*e*S	**S**	**16 42 46.2**	**+0.2**		
CN2				pmax	pmax				
	comp=N,10.0nm,0.6s								
CN2				pmax	pmax				
	comp=N,200nm,5.0s								
CN2				LR	LR				
	comp=N,3μm,19.0s								
CN2				LR	LR				
	comp=N,2μm,19.0s								
CN2				LR	LR				
	comp=N,3μm,21.0s								
CM01	**Chiang Mai Arr**	**54.39**	**298**	*e*P	**P**	**16 35 13.1**	**+0.5**		
CM31	**Chiang Mai Arr**	**54.42**	**298**	*e*P	**P**	**16 35 14.2**	**+1.4**		
CMAR	**Chiang Mai Arr**	**54.42**	**298**	P	**P**	**16 35 12.8**	**-0.1**		
	comp=N,7.5nm,0.9s,baz=123,slow=5.7,SNR=24								
CMAR				LR	LR	16 58 21.5			
	comp=N,853nm,20.7s,baz=110,slow=36								
CMAR				PKPPKP	**P'P'df**	**17 05 22.8**	**-4.3**		
	comp=N,0.5nm,0.8s,baz=291,slow=2.9,SNR=4.2								
CMAR	**Chiang Mai Arr**	**54.42**	**298**	P	**P**	**16 35 12.8**	**-0.1**		
CMAR				pmax	pmax				
	comp=Z,6.0nm,0.7s								
CMAR				MLR	MLR				
	comp=Z,853nm,20.7s								
CHTO	**Chiang Mai**	**54.56**	**299**	P	**P**	**16 35 15.7**	**+1.9**		
	comp=Z,71nm,1.1s,comp=Z,2μm								
CHTO	**Chiang Mai**	**54.56**	**299**	*e*P	**P**	**16 35 14.9**	**+1.1**		
CHTO				pmax	pmax				
	comp=Z,12nm,0.9s								
CHTO	**Chiang Mai**	**54.56**	**299**	*e*P	**P**	**16 35 14.9**	**+1.1**		
	comp=Z,12nm,0.9s								
XAN	**Xi'an**	**54.80**	**320**	P	**P**	**16 35 14.1**	**-1.3**		
XAN				pP	pP	16 35 18.1	-5.9		
XAN				sP	sP	16 35 20.6	-6.7		
XAN				PP	**PP**	**16 37 17.1**	**-1.3**		
XAN				S	**S**	**16 42 52.3**	**-2.4**		
XAN				SS	**SS**	**16 46 33.1**	**-5.3**		
XAN				pmax	pmax				
	comp=Z,22nm,1.4s								
XAN				pmax	pmax				
	comp=Z,140nm,6.1s								
XAN				LR	LR				
	comp=Z,1μm,16.0s								
XAN				LR	LR				
	comp=Z,1μm,17.2s								
XAN				LR	LR				
	comp=Z,1μm,17.2s								
BJI	**Beijing**	**54.94**	**330**	P	**P**	**16 35 15.8**	**-0.3**		
BJI				PP	**PP**	**16 37 20.6**	**+1.1**		
BJI				S	**S**	**16 42 55.3**	**-0.9**		
BJI				sS	**sS**	**16 43 07.5**	**-2.9**		
BJI				pmax	pmax				
	comp=Z,26nm,1.4s								
BJI				pmax	pmax				
	comp=Z,270nm,9.2s								
BJI				LR	LR				
	comp=Z,4μm,19.9s								
BJI				LR	LR				
	comp=Z,3μm,19.0s								
BJI				LR	LR				
	comp=Z,5μm,21.4s								
TIY	**Taiyuan**	**55.18**	**326**	*e*P	**P**	**16 35 20.8**	**+2.7**		
TIY				S	**S**	**16 43 02.1**	**+2.3**		
TIY				pmax	pmax				
	comp=Z,170nm,6.5s								
TIY				LR	LR				
	comp=Z,2μm,17.6s								
TIY				LR	LR				
	comp=Z,810nm,14.9s								
TIY				LR	LR				
	comp=Z,3μm,19.2s								
HABR	**Khabarovsk**	**56.04**	**350**	*de*P	**P**	**16 35 21.5**	**-2.4**		
HABR				*e**PP	**pP**	**16 35 31.6**	**-1.0**		
HABR				*e**SP	**sP**	**16 35 35.7**	**-0.2**		
HABR				*e*		16 36 19.3			
HABR				*e*		16 37 26.6			
HABR				*e*PPP	PPP	16 38 40.7			
HABR				*e*S	**S**	**16 43 08.2**	**-2.4**		
HABR				*e**SS	**sS**	**16 43 25.1**	**+0.2**		
HABR				*e*		16 45 07.9			
HABR				*e*SS	**SS**	**16 46 55.9**	**-1.5**		
HABR				pmax	pmax				
	comp=E,9.0nm,0.8s								
HABR				pmax	pmax				
	comp=Z,90nm,1.5s								
HABR				pmax	pmax				
	comp=N,28nm,1.5s								
HABR				MLR	MLR				
	comp=Z,2μm,17.0s								
CD2	**Chengdu**	**56.43**	**314**	P	**P**	**16 35 26.4**	**-0.7**		
CD2				pP	pP	16 35 32.3	-3.4		
CD2				PP	**PP**	**16 37 32.7**	**-0.3**		
CD2				PcS	**PcS**	**16 40 23.9**	**-0.8**		
CD2				S	**S**	**16 43 18.3**	**+1.8**		
CD2				sS	sS	16 43 27.7	-3.1		
CD2				SS	**SS**	**16 47 07.2**	**+3.0**		
CD2				pmax	pmax				
	comp=Z,30nm,0.5s								
CD2				pmax	pmax				
	comp=Z,240nm,7.9s								
CD2				LR	LR				
	comp=Z,2μm,18.4s								
CD2				LR	LR				
	comp=Z,2μm,18.4s								
CD2				LR	LR				
	comp=Z,3μm,15.9s								
KLR	**Kul'dur**	**57.42**	**347**	P	**P**	**16 35 33.0**	**-0.7**		
	comp=Z,9.6nm,0.9s,baz=173,slow=5.5,SNR=1.9								
TYV	**Tymovskoe**	**57.45**	**356**	*e*P	**P**	**16 35 33.5**	**-0.4**		
TYV				pmax	pmax				
	comp=Z,48nm,1.2s								
HHC	**Hu-ho-hao-te**	**57.89**	**328**	*e*P	**P**	**16 35 38.4**	**+1.0**		
HHC				sP	pP	16 35 46.8	+0.8		
HHC				S	**S**	**16 43 35.4**	**-0.2**		
HHC				sS	sS	16 43 42.0	-7.9		
HHC				pmax	pmax				
	comp=Z,25nm,1.0s								
HHC				pmax	pmax				
	comp=Z,150nm,5.2s								
HHC				LR	LR				
	comp=Z,2μm,18.4s								
HHC				LR	LR				
	comp=Z,2μm,17.5s								
HHC				LR	LR				
	comp=Z,3μm,20.0s								
LZH	**Lanzhou**	**59.34**	**319**	*e*P	**P**	**16 35 49.6**	**+2.0**		
LZH				pP	pP	16 35 53.1	-3.2		
LZH				sP	sP	16 35 55.0	-4.6		
LZH				PP	**PP**	**16 38 04.3**	**+5.3**		
LZH				*e*S	**S**	**16 43 55.0**	**+0.3**		
LZH				sS	sS	16 44 04.0	-5.0		
LZH				SS	**SS**	**16 47 52.2**	**+2.2**		
LZH				pmax	pmax				
	comp=Z,37nm,1.1s								
LZH				pmax	pmax				
	comp=Z,230nm,6.6s								
LZH				LR	LR				
	comp=Z,2μm,15.0s								
LZH				LR	LR				
	comp=Z,920nm,13.1s								
LZH				LR	LR				
	comp=Z,2μm,16.2s								

NKL	**Nikolayevsk**	**59.88**	**355**	*e*P	**P**	**16 35 51.0**	**+0.3**		
NKL				*e*		16 43 56.0			
NKL				*e*		16 48 00.5			
NKL				pmax	pmax				
	comp=Z,450nm,14.0s								
NKL				MLR	MLR				
	comp=Z,1μm,18.0s								
PEA0	**Petropavlovsk-**	**60.08**	**7**	*e*P	**P**	**16 35 51.5**	**-0.7**		
PEA0B	**Petropavlovsk-**	**60.08**	**7**	*e*P	**P**	**16 35 51.5**	**-0.7**		
	comp=Z,90nm,1.4s								
PETK	**Petropavlovsk-**	**60.08**	**7**	P	**P**	**16 35 51.6**	**-0.5**		
	comp=Z,10nm,0.9s,baz=154,slow=5.6,SNR=16								
PETK				LR	LR	16 59 33.6			
	comp=Z,2μm,20.3s,baz=191,slow=34								
PET	**Petropavlovsk**	**60.12**	**7**	*e*P	P	16 35 47.2	-5.2		
PET				*e*S	**S**	**16 43 58.8**	**-4.9**		
PET				pmax	pmax				
	comp=Z,26nm,1.3s								
PET				pmax	pmax				
	comp=Z,300nm,16.5s								
PET				pmax	pmax				
	comp=Z,300nm,11.5s								
PET				MLR	MLR				
	comp=Z,1μm,20.0s								
PET				MLR	MLR				
	comp=Z,900nm,15.0s								
PAE	**Paea**	**61.77**	**106**	*e*P	**P**	**16 36 04.3**	**0.0**		
	comp=Z,7.4nm,1.0s								
PPT	**Papeete**	**61.77**	**106**	P	**P**	**16 36 07.0**	**+2.7**		
	comp=Z,15nm,0.7s,baz=229,slow=19,SNR=2.4								
PPT				LR	LR	16 57 58.6			
	comp=Z,1μm,21.1s,baz=264,slow=31								
PPT2	**Papeete2**	**61.77**	**106**	*e*P	**P**	**16 36 03.8**	**-0.6**		
	comp=Z,39nm,1.3s								
PPT2				*e*S	**S**	**16 44 22.0**	**-4.2**		
	comp=Z,3μm,30.8s								
PPT2				*e*LQ	LQ	16 51 46.0			
	comp=Z,3μm,29.2s								
PPT2				*e*LR	LR	16 54 26.4			
	comp=Z,2μm,22.0s								
TIAR	**Tiarei**	**61.98**	**106**	*e*P	**P**	**16 36 06.3**	**+0.5**		
	comp=Z,22nm,1.0s								
TVO	**Taravao**	**62.08**	**107**	*e*P	**P**	**16 36 07.0**	**+0.5**		
	comp=Z,11nm,0.9s								
TBI	**Tubuai**	**62.21**	**113**	*e*P	**P**	**16 36 07.3**	**+0.1**		
	comp=Z,360nm,1.3s								
TBI				*e*S	**S**	**16 44 29.6**	**-2.0**		
	comp=Z,2μm,34.2s								
TBI				*e*LQ	LQ	16 51 59.2			
	comp=Z,2μm,28.0s								
TBI				*e*LR	LR	16 54 32.2			
	comp=Z,2μm,36.0s								
SHL	**Shillong**	**63.19**	**303**	*e*P	**P**	**16 36 17.0**	**+3.1**		
SHL				*e*S	**S**	**16 44 48.0**	**+3.8**		
MEH	**Mehetia**	**63.21**	**107**	*e*P	**P**	**16 36 14.0**	**0.0**		
	comp=Z,20nm,0.9s								
VAH	**Vaihoa**	**63.60**	**104**	*e*P	**P**	**16 36 15.7**	**-0.8**		
	comp=Z,67nm,1.2s								
GTA	**Gaotai**	**63.86**	**320**	*e*P	**P**	**16 36 18.8**	**+0.8**		
GTA				pP	pP	16 36 23.0	-3.8		
GTA				sP	sP	16 36 26.2	-3.9		
GTA				S	**S**	**16 44 52.8**	**+0.9**		
GTA				sS	sS	16 44 59.9	-6.5		
GTA				SS	**SS**	**16 49 02.9**	**+2.1**		
GTA				pmax	pmax				
	comp=Z,8.0nm,1.5s								
GTA				pmax	pmax				
	comp=Z,120nm,6.2s								
GTA				LR	LR				
	comp=Z,2μm,19.0s								
GTA				LR	LR				
	comp=Z,810nm,21.1s								
GTA				LR	LR				
	comp=Z,1μm,17.8s								
CASY	**Casey**	**64.91**	**196**	*e*P	**P**	**16 36 22.5**	**-1.8**		
	comp=Z,64nm,1.8s								
ULN	**Ulaanbaatar**	**65.14**	**331**	*ce*P	**P**	**16 36 26.0**	**-0.3**		
ULN				pmax	pmax				
	comp=Z,30nm,1.7s								
ULN	**Ulaanbaatar**	**65.14**	**331**	*e*P	**P**	**16 36 25.4**	**-0.9**		
	comp=Z,17nm,1.1s								
LSA	**Lhasa**	**65.41**	**307**	P	**P**	**16 36 28.5**	**-0.3**		
LSA				pmax	pmax				
	comp=Z,7.0nm,1.4s								
CIT	**Chita**	**65.42**	**337**	*e*P	**P**	**16 36 28.2**	**+0.4**		
CIT				*e*		16 36 47.2			
CIT				*e*		16 36 53.9			
CIT				pmax	pmax				
	comp=Z,72nm,2.0s								
SONM	**Songino Array**	**65.44**	**331**	P	**P**	**16 36 26.1**	**-2.1**		
	comp=Z,10.0nm,1.1s,baz=158,slow=6.3,SNR=42								
SONM				LR	LR	17 04 26.1			
	comp=Z,4μm,20.0s,baz=134,slow=36								
SONM				PKP2ab		17 05 15.8			
	comp=Z,2.0nm,1.0s,baz=298,slow=2.5,SNR=5.4								
SONA1	**Songino Array**	**65.44**	**331**	*e*P	**P**	**16 36 26.6**	**-1.6**		
CLNS	**Chul'man**	**66.03**	**346**	*e*P	**P**	**16 36 31.2**	**-0.5**		
CLNS				pmax	pmax				
	comp=Z,17nm,1.2s								
CLNS				pmax	pmax				
	comp=N,12nm,1.2s								
CLNS				pmax	pmax				
	comp=E,6.0nm,0.9s								
RAMN	**Ramite**	**68.11**	**302**	*e*P	**P**	**16 36 47.8**	**+2.0**		
ZAK	**Zakamensk**	**68.67**	**331**	*e*P	**P**	**16 36 46.8**	**-1.8**		
ZAK				pmax	pmax				
	comp=Z,77nm,1.5s								
ZAK				pmax	pmax				
	comp=Z,25nm,1.0s								
GUN	**Gumba**	**69.04**	**303**	*e*P	**P**	**16 36 52.1**	**+0.4**		
PKIN	**Phulchoki**	**69.33**	**303**	*e*P	**P**	**16 36 54.5**	**+1.1**		
	comp=Z,47nm,1.2s								
TLY	**Talaya**	**69.37**	**332**	LR	LR	17 04 56.9			
	comp=Z,2μm,21.9s,baz=124,slow=34								
TLY	**Talaya**	**69.37**	**332**	*e*P	**P**	**16 36 52.6**	**-0.2**		
TLY				*e*		16 39 29.7			
TLY				*e*S	**S**	**16 45 59.2**	**+1.3**		
TLY				pmax	pmax				
	comp=Z,25nm,1.8s								
TLY				MLR	MLR				
	comp=Z,1μm,18.0s								
SEY	**Seynchan**	**69.45**	**2**	P	**P**	**16 36 52.5**	**-0.6**		
	comp=Z,5.7nm,0.9s,baz=182,slow=5.9,SNR=11								
IRK	**Irkutsk**	**69.46**	**333**	*e*P	**P**	**16 36 51.8**	**-1.5**		
IRK				pmax	pmax				
	comp=Z,32nm,2.3s								
KKN	**Kakani**	**69.50**	**303**	*e*P	**P**	**16 36 54.4**	**0.0**		
	comp=Z,57nm,1.1s								
DMN	**Daman**	**69.59**	**303**	*e*P	**P**	**16 36 55.2**	**+0.2**		
	comp=Z,110nm,1.1s								
BOD	**Bodaibo**	**69.89**	**341**	*e*P	**P**	**16 36 54.8**	**-1.0**		
BOD				pmax	pmax				
	comp=Z,18nm,1.9s								
YAK	**Yakutsk**	**69.92**	**351**	P	**P**	**16 36 55.9**	**+0.1**		
	comp=Z,5.1nm,0.5s,baz=160,slow=5.0,SNR=12								
YAK				LR	LR	17 06 17.8			
	comp=Z,945nm,20.5s,baz=160,slow=35								
YAK	**Yakutsk**	**69.92**	**351**	*c iP*	**P**	**16 36 55.3**	**-0.6**		
YAK				*e**PP	**sP**	**16 37 12.9**	**+4.9**		
YAK				*e*		16 37 23.2			
YAK				*e*		16 39 28.6			
YAK				*e*S	**S**	**16 45 55.6**	**-8.3**		
YAK				*e**SS	**sS**	**16 46 22.7**	**+4.3**		
YAK				*e*SSS	SSS	16 53 40.1			
YAK				pmax	pmax				
	comp=Z,24nm,1.2s								
YAK				pmax	pmax				
	comp=N,17nm,1.4s								
YAK				pmax	pmax				
	comp=E,6.0nm,1.0s								
YAK				pmax	pmax				
	comp=Z,8.0nm,0.8s								
YAK				pmax	pmax				
	comp=N,62nm,1.9s								
YAK				smax	smax				
	comp=E,237nm,4.1s								
YAK				smax	smax				
	comp=N,126nm,3.2s								
YAK				MLR	MLR				
	comp=E,884nm,18.0s								
YAK				MLR	MLR				
	comp=N,988nm,20.0s								
YAK				MLR	MLR				
	comp=Z,2μm,21.0s								
YAK	**Yakutsk**	**69.92**	**351**	*e*P	**P**	**16 36 57.0**	**+1.1**		
	comp=Z,97nm,1.6s								

GKN	**Gorkha**	**70.11**	**303**	*e*P	**P**	**16 36 58.0**	**0.0**		
MIR	**Mirnyy**	**70.53**	**200**	*e*P	**P**	**16 37 01.0**	**+1.4**		
MIR				pmax	pmax				
	comp=Z,6.0nm,1.2s								
MOY	**Mondy**	**70.61**	**331**	*e*P	**P**	**16 37 01.3**	**+0.8**		
MOY				pmax	pmax				
	comp=Z,45nm,2.0s								
KOLN	**Koldanda**	**70.90**	**302**	*e*P	**P**	**16 37 02.7**	**-0.3**		
TAOE	**Nuku Hiva Isla**	**71.14**	**97**	*e*S	**S**	**16 46 14.7**	**-5.5**		
	comp=Z,539nm,25.1s								
TAOE				*e*LQ	LQ	16 55 46.7			
	comp=Z,2μm,24.7s								
TAOE				*e*LR	LR	16 58 41.7			
	comp=Z,2μm,21.0s								
VNDA	**Vanda**	**71.22**	**177**	P	**P**	**16 37 03.5**	**-0.2**		
	comp=Z,15nm,0.8s,baz=334,slow=6.6,SNR=28								
VNDA				LR	LR	17 07 46.7			
	comp=Z,2μm,18.0s,baz=348,slow=35								
VNDA	**Vanda**	**71.22**	**177**	*e*P	**P**	**16 37 04.5**	**+0.7**		
VNDA				pmax	pmax				
	comp=Z,28nm,1.0s								
VNDA	**Vanda**	**71.22**	**177**	*e*P	**P**	**16 37 04.5**	**+0.7**		
	comp=Z,28nm,1.0s								
PYUN	**Piuthan**	**71.52**	**302**	*e*P	**P**	**16 37 06.1**	**-0.6**		
	comp=Z,66nm,1.0s								
SBA	**Scott Base**	**71.85**	**176**	*e*P	**P**	**16 37 09.5**	**+2.0**		
SBA				pmax	pmax				
	comp=Z,87nm,0.8s								
SBA	**Scott Base**	**71.85**	**176**	*e*P	**P**	**16 37 09.5**	**+2.0**		
	comp=Z,87nm,0.8s								
HYB	**Hyderabad**	**72.61**	**290**	*i* P	**P**	**16 37 13.0**	**-0.2**		
WMQ	**Urumqi**	**73.92**	**319**	P	**P**	**16 37 21.0**	**+0.6**		
WMQ				pP	pP	16 37 26.0	-3.3		
WMQ				PcP	**PcP**	**16 37 37.0**	**+1.2**		
WMQ				S	**S**	**16 46 49.2**	**-1.6**		
WMQ				pmax	pmax				
	comp=Z,11nm,1.4s								
WMQ				pmax	pmax				
	comp=Z,220nm,5.4s								
WMQ				LR	LR				
	comp=Z,2μm,19.0s								
WMQ				LR	LR				
	comp=Z,2μm,17.7s								
WMQ				LR	LR				
	comp=Z,2μm,20.0s								
RKT	**Rikitea**	**75.52**	**112**	*e*S	**S**	**16 47 06.9**	**-2.4**		
	comp=Z,2μm,31.2s								
RKT				*e*SS	**SS**	**16 52 00.0**	**-0.5**		
	comp=Z,625nm,34.5s								
RKT				*e*LR	LR	17 00 53.6			
	comp=Z,4μm,32.0s								
BILL	**Bilibino**	**75.62**	**7**	*e*P	**P**	**16 37 29.7**	**0.0**		
BILL				*e*		16 37 37.4			
BILL				pmax	pmax				
	comp=Z,22nm,2.4s								
POO	**Poona**	**77.22**	**291**	*e*P	**P**	**16 37 40.0**	**+0.2**		
MK01	**Makanchi Array**	**78.60**	**320**	*e*P	**P**	**16 37 44.8**	**-2.1**		
MK31	**Makanchi Array**	**78.62**	**320**	*i* P	**P**	**16 37 45.4**	**-1.6**		
MK31				pmax	pmax				
	comp=Z,33nm,1.5s								
MK31	**Makanchi Array**	**78.62**	**320**	*e*P	**P**	**16 37 46.4**	**-0.6**		
MKAR	**Makanchi Array**	**78.62**	**320**	P	**P**	**16 37 44.6**	**-2.4**		
	comp=Z,4.3nm,0.8s,baz=96,slow=5.9,SNR=24								
MKAR				LR	LR	17 11 55.9			
	comp=Z,645nm,21.4s,baz=102,slow=35								
MKAR	**Makanchi Array**	**78.62**	**320**	*e*P	**P**	**16 37 46.4**	**-0.6**		
THN	**Thein Dam**	**78.79**	**305**	*e*P	**P**	**16 37 44.2**	**-4.0**		
MAKZ	**Makanchi**	**78.82**	**320**	*e*P	**P**	**16 37 47.3**	**-0.9**		
MAKZ				pmax	pmax				
	comp=Z,40nm,1.4s								
MAKZ	**Makanchi**	**78.82**	**320**	*e*P	**P**	**16 37 47.3**	**-0.9**		
	comp=Z,40nm,1.4s								
TIXI	**Tiksi**	**79.14**	**354**	P	**P**	**16 37 47.5**	**-1.8**		
	comp=Z,6.5nm,1.0s,baz=129,slow=7.3,SNR=7.5								
TIXI				LR	LR	17 12 52.0			
	comp=Z,982nm,20.7s,baz=166,slow=36								
TIXI	**Tiksi**	**79.14**	**354**	*je*P	**P**	**16 37 48.5**	**-0.8**		
TIXI				pmax	pmax				
	comp=Z,13nm,1.7s								
TIXI	**Tiksi**	**79.14**	**354**	*e*P	**P**	**16 37 48.7**	**-0.6**		
	comp=Z,8.0nm,1.1s								
PDGK	**Podgornoye**	**79.22**	**316**	P	**P**	**16 37 48.7**	**-1.6**		
PDGK				pmax	pmax				
	comp=Z,14nm,1.2s								
ZAA0	**Zalesovo Array**	**80.08**	**328**	*e*P	**P**	**16 37 52.0**	**-2.7**		
ZALV	**Zalesovo Beam**	**80.08**	**328**	P	**P**	**16 37 51.7**	**-3.1**		
	comp=Z,5.7nm,0.8s,baz=106,slow=5.2,SNR=17								
ZALV				LR	LR	17 12 59.0			
	comp=Z,3μm,20.5s,baz=110,slow=36								
KSH	**Kashi**	**80.54**	**312**	*e*P	**P**	**16 37 59.5**	**+1.7**		
KSH				*es*P	pP	16 38 06.2	-0.5		
KSH				*e*PP	**PP**	**16 41 04.8**	**+3.3**		
KSH				S	**S**	**16 48 04.4**	**+1.3**		
KSH				SKS	**SKSac**	**16 48 12.4**	**-2.0**		
KSH				SS	**SS**	**16 53 20.1**	**+4.1**		
KSH				pmax	pmax				
	comp=Z,210nm,5.4s								
KSH				LR	LR				
	comp=Z,570nm,14.3s								
KSH				LR	LR				
	comp=Z,830nm,16.8s								
KSH				LR	LR				
	comp=Z,1μm,20.1s								
TT01	**Tatalina**	**81.23**	**23**	*e*P	**P**	**16 38 01.6**	**+0.8**		
NVS	**Novosibirsk**	**81.30**	**328**	*e*P	**P**	**16 38 01.8**	**+0.6**		
NVS				*e*S	**S**	**16 48 10.8**	**+0.8**		
NVS				pmax	pmax				
	comp=Z,32nm,1.6s								
NVS				pmax	pmax				
	comp=N,8.0nm,1.5s								
NVS				pmax	pmax				
	comp=E,15nm,1.3s								
NVS				smax	smax				
	comp=E,63nm,2.6s								
CNPM	**China Poot**	**81.46**	**27**	*e*P	**P**	**16 38 02.7**	**+0.6**		
	comp=E,18nm,0.8s								
MAW	**Mawson**	**82.05**	**203**	P	**P**	**16 38 04.8**	**-0.2**		
	comp=E,13nm,1.1s,baz=92,slow=5.2,SNR=7.9								
MAW	**Mawson**	**82.05**	**203**	*e*P	**P**	**16 38 05.2**	**+0.2**		
	comp=E,3.7nm,1.1s								
FRU	**Bishkek**	**82.46**	**315**	*e*P	**P**	**16 38 08.0**	**+0.3**		
FRU				pmax	pmax				
	comp=Z,60nm,2.0s								
AAK	**Ala-Archa**	**82.49**	**314**	*de*P	**P**	**16 38 08.3**	**+0.2**		
AAK				pmax	pmax				
	comp=Z,57nm,1.9s								
AAK	**Ala-Archa**	**82.49**	**314**	*e*P	**P**	**16 38 09.2**	**+1.1**		
	comp=Z,11nm,1.0s								
SEW	**Seward**	**82.53**	**27**	*e*P	**P**	**16 38 08.7**	**+1.1**		
	comp=Z,34nm,1.4s								
PPLA	**Purkeypile**	**82.72**	**24**	*e*P	**P**	**16 38 10.2**	**+1.4**		
	comp=Z,52nm,1.8s								
SML	**Sawmill**	**83.79**	**25**	*e*P	**P**	**16 38 14.5**	**+0.3**		
SML				pmax	pmax				
	comp=Z,26nm,1.2s								
SML	**Sawmill**	**83.79**	**25**	*e*P	**P**	**16 38 14.5**	**+0.3**		
	comp=Z,26nm,1.2s								
MNAS	**Manas**	**83.87**	**314**	P	**P**	**16 38 13.3**	**-1.9**		
MNAS				pmax	pmax				
	comp=Z,48nm,1.3s								
RND	**Reindeer**	**84.30**	**24**	*e*P	**P**	**16 38 15.6**	**-1.2**		
RND				pmax	pmax				
	comp=Z,10.0nm,0.9s								
RND	**Reindeer**	**84.30**	**24**	*e*P	**P**	**16 38 15.6**	**-1.2**		
	comp=Z,10nm,0.9s								
MLY	**Manley**	**84.33**	**22**	*e*P	**P**	**16 38 18.1**	**+1.2**		
	comp=Z,33nm,1.7s		

KK31 pmax pmax
comp=Z,38nm,1.3s
KKAR Karatay Array 85.44 314 *e*P **P** **16 38 23.0 +0.1**
KKAR Karatay Array 85.44 314 *e*P **P** **16 38 23.0 +0.1**
OTUK Ortayu 85.47 319 P **P** **16 38 20.7 -2.2**
OTUK pmax pmax
comp=Z,93nm,1.4s
HDA Harding Lake 85.50 23 *e*P **P** **16 38 23.4 +0.7**
comp=Z,4.9nm,0.8s
COLD Coldfoot 85.59 20 *e*P **P** **16 38 23.7 +0.6**
comp=Z,22nm,1.6s
IL1 Eielson Array 85.68 23 *e*P **P** **16 38 21.1 -2.5**
ILAR Eielson Array 85.68 23 P **P** **16 38 20.8 -2.8**
comp=Z,2.5nm,0.6s,baz=250,slow=4.6,SNR=21
ILAR LR LR 17 10 58.4
comp=Z,547nm,21.9s,baz=261,slow=32
ILB Eielson Array 85.68 23 *e*P **P** **16 38 21.7 -1.9**
BALM Baldy 86.11 27 *e*P **P** **16 38 28.5 +2.5**
BALM pmax pmax
comp=Z,17nm,1.2s
BALM Baldy 86.11 27 *e*P **P** **16 38 28.5 +2.5**
comp=Z,17nm,1.2s
NRIK Noril'sk 86.18 342 P **P** **16 38 24.6 -1.4**
comp=Z,7.2nm,0.8s,baz=130,slow=3.7,SNR=16
NRIK LR LR 17 18 01.7
comp=Z,1μm,19.3s,baz=124,slow=36
MENT Mentasta 86.22 25 *e*P **P** **16 38 28.7 +2.4**
comp=Z,4.9nm,0.8s
DOT Dot Lake 86.35 24 *e*P **P** **16 38 26.4 -0.6**
comp=Z,36nm,1.2s
VOSK Vostochnaya 87.44 324 *e*P **P** **16 38 31.4 -1.1**
VOSK pmax pmax
comp=Z,9.0nm,1.1s
VOSK Vostochnaya 87.44 324 *e*P **P** **16 38 31.4 -1.1**
comp=Z,9.4nm,1.1s
BVA0 Borovoye Array 87.86 324 *i* P **P** **16 38 32.3 -2.2**
BVA0 pmax pmax
comp=Z,19nm,1.2s
BVAR Borovoye Array 87.86 324 P **P** **16 38 31.6 -3.0**
comp=Z,7.7nm,0.9s,baz=113,slow=5.3,SNR=23
BRVK Borovoye 87.93 324⇑ *e*P **P** **16 38 32.8 -2.0**
BRVK pmax pmax
comp=Z,46nm,1.2s
BRVK Borovoye 87.93 324 *e*P **P** **16 38 33.0 -1.8**
comp=Z,16nm,1.1s
EGAK Eagle 87.94 24 *e*P **P** **16 38 35.7 +1.1**
comp=Z,9.3nm,1.0s
DAWY Dawson 88.43 25 *e*P **P** **16 38 39.0 +1.9**
comp=Z,39nm,1.6s
ZRNK Zerenda 88.66 324 *e*P **P** **16 38 37.7 -0.6**
ZRNK pmax pmax
comp=Z,10.0nm,1.1s
ZRNK Zerenda 88.66 324 *e*P **P** **16 38 37.7 -0.6**
comp=Z,10nm,1.1s
SYO Syowa Base 90.34 200⇓ *e*P **P** **16 38 44.0 -1.8**
SYO Syowa Base 90.34 200⇑ *e*PcP **PcP** **16 38 47.0 0.0**
INK Inuvik 91.88 21 P **P** **16 38 51.1 -1.8**
comp=Z,1.7nm,0.9s,baz=260,slow=6.4,SNR=3.9
INK Inuvik 91.88 21 *e*P **P** **16 38 53.6 +0.7**
INK pmax pmax
comp=Z,8.0nm,1.3s
INK Inuvik 91.88 21 *e*P **P** **16 38 53.6 +0.7**
comp=Z,7.6nm,1.3s
AB31 Akbulak array 93.71 319 *i* P **P** **16 38 59.3 -2.5**
AB31 pmax pmax
comp=Z,12nm,1.1s
ABKAR Akbulak array 93.71 319 *e*P **P** **16 38 59.3 -2.5**
GEYT Alibeck 93.94 308 P **P** **16 39 01.2 -2.0**
comp=Z,4.8nm,1.0s,baz=53,slow=4.1,SNR=11
SVE Sverdlovsk 94.06 327 *e*P **P** **16 39 02.1 -1.2**
SVE *e*S **SKSac** **16 49 35.2 -1.0**
SVE pmax pmax
comp=Z,21nm,1.6s
SVE MLR MLR
comp=Z,2μm,20.0s
SVE MLR MLR
comp=E,2μm,21.0s
AKTO Aktyubinsk 95.05 320 P **P** **16 39 05.5 -2.4**
comp=E,1.6nm,0.7s,baz=82,slow=7.5,SNR=9.9
ARU Arti 95.17 326 P **P** **16 39 04.4 -4.0**
comp=E,0.9nm,0.3s,baz=111,slow=2.9,SNR=9.6
ARU Arti 95.17 326*d* *i*P **P** **16 39 06.7 -1.6**
ARU 16 42 56.8
ARU PPP PPP 16 44 56.6
ARU S **SKSac** **16 49 39.6 -2.5**
ARU SP **SP** **16 51 40.1 +1.9**
ARU SS **SS** **16 56 49.4 +1.3**
ARU SSS SSS 17 00 34.4
ARU pmax pmax
comp=Z,21nm,1.7s
ARU MLR MLR
comp=Z,2μm,22.0s
ARU Arti 95.17 326 *e*P **P** **16 39 07.4 -0.9**
comp=Z,17nm,1.3s
YKA Yellowknife Ar 99.27 28 P **Pdif** **16 39 25.7 -1.0**
comp=Z,0.5nm,0.8s,baz=286,slow=4.7,SNR=4.1
YKA PKiKP **PKiKP** **16 43 57.1 +0.6**
comp=Z,0.5nm,0.8s,baz=270,slow=1.2,SNR=3.5
YKA PKKPbc **PKKPbc** **16 55 53.0 -0.6**
comp=Z,0.5nm,0.7s,baz=78,slow=3.5,SNR=5.0
SNAA Sanae 99.53 189 *e*P **Pdif** **16 39 26.4 -1.5**
SNAA pmax pmax
comp=Z,16nm,1.2s
SNAA Sanae 99.53 189 *e*P **Pdif** **16 39 26.4 -1.5**
comp=Z,16nm,1.2s
KLMR Klimovskoe 104.73 331 *e*P **Pdif** **16 39 48.3 -2.7**
KLMR *e* 16 44 07.4
KLMR pmax pmax
comp=Z,15nm,1.3s
APA Apatity 105.35 339⇑ *i*P **Pdif** **16 39 57.5 +3.8**
APA *i* SS SS 16 59 20.0 +11
APA pmax pmax
comp=Z,6.0nm,1.0s
APA MLR MLR
comp=Z,2μm,19.0s
TXAR Lajitas Array 109.20 61 PKiKP **PKiKP** **16 44 15.7 -0.1**
comp=Z,0.8nm,0.8s,baz=235,slow=3.2,SNR=5.0
TXAR PKKP **PKKPdf** **16 55 37.3 -1.1**
comp=Z,0.8nm,0.8s,baz=116,slow=5.8,SNR=5.8
FINES FINESS Array B 110.67 334 Pdiff **Pdif** **16 40 16.6 -0.9**
comp=Z,0.4nm,0.5s,baz=56,slow=3.5,SNR=3.9
FINES PKiKP **PKiKP** **16 44 17.1 -0.4**
comp=Z,1.9nm,0.8s,baz=64,slow=4.4,SNR=5.2
BRTR Keskin Array B 112.90 310 PKiKP **PKiKP** **16 44 21.8 -0.8**
comp=Z,0.9nm,0.8s,baz=108,slow=2.7,SNR=6.4
433A Art 113.04 60 P **PKiKP** **16 44 24.8 +1.8**
baz=276
333A Richland Sprin 113.07 59 P **PKiKP** **16 44 24.2 +1.2**
baz=276
AKASG Malin Array Be 113.12 323 PKiKP **PKiKP** **16 44 23.1 +0.7**
comp=Z,0.8nm,0.5s,baz=55,slow=2.6,SNR=4.9
AKASG PP **PP** **16 45 11.3 -0.7**
comp=Z,0.3nm,0.4s,baz=61,slow=7.6,SNR=4.1
KIEV Kiev 113.13 323⇑ *i*PKiKP **PKiKP** **16 44 21.0 -1.5**
F36A Milaca 114.40 42 P PKPdf 16 44 25.7 +0.6
baz=287
G36A St. Michael 114.43 43 P PKPdf 16 44 27.2 +2.0
baz=286
Y36A Durant 114.98 56 P PKPdf 16 44 27.6 +1.1
baz=279
W37B Quinton 115.47 54 P **PKPdf** **16 44 28.4 +0.9**
baz=280
U37A Salina 115.48 53 P **PKPdf** **16 44 29.7 +2.2**
baz=281
CFR Carcaliu 115.53 317⇑ *i*P **PKPdf** **16 44 29.4 +2.1**
CFR Carcaliu 115.53 317 ⇑PKiKP **PKPdf** **16 44 29.4 +2.1**
X37A Clayton 115.61 55 P **PKPdf** **16 44 29.3 +1.5**
baz=280
T38A Diamond 116.01 52 P **PKPdf** **16 44 29.9 +1.5**
baz=282
P38A Dawn 116.02 49 P **PKPdf** **16 44 29.1 +0.7**
baz=284
X38A Whitesboro 116.04 55 P **PKPdf** **16 44 30.4 +1.9**
baz=281
U38A Gravette 116.06 53 P **PKPdf** **16 44 29.1 +0.5**
baz=282
S39A Bolivar 116.62 51 P **PKPdf** **16 44 30.3 +0.7**
baz=283
P39B Salisbury 116.64 49 P **PKPdf** **16 44 30.7 +1.1**
baz=284
BURAR Bucovina Array 116.64 320⇓ *i*P **PKPdf** **16 44 30.8 +1.3**
BURAR Bucovina Array 116.64 320⇓ PKiKP **PKPdf** **16 44 30.8 +1.3**
X39A Fountain Ranch 116.65 55 P **PKPdf** **16 44 30.9 +1.1**
baz=281
R39A Chumby, Stover 116.70 50 P **PKPdf** **16 44 30.3 +0.5**
baz=284

T39A Clever 116.73 52 P **PKPdf** **16 44 31.0 +1.1**
baz=283
V39A Pettigrew 116.76 53 P **PKPdf** **16 44 31.8 +1.8**
baz=282
U39A Green Forest 116.78 53 P **PKPdf** **16 44 30.5 +0.5**
baz=282
W39A Magazine 116.78 54 P **PKPdf** **16 44 31.1 +1.1**
baz=282
MLR Muntele Rosu 116.90 318 PKP **PKPdf** **16 44 30.7 +0.6**
comp=Z,0.4nm,0.3s,baz=137,slow=0.6,SNR=6.1
MLR Muntele Rosu 116.90 318⇑ *i*P **PKPdf** **16 44 31.8 +1.7**
MLR Muntele Rosu 116.90 318 ⇑PKiKP **PKPdf** **16 44 31.8 +1.7**
NOA NORSAR Array B 116.91 338 PKP **PKPdf** **16 44 29.6 +0.1**
comp=Z,1.2nm,0.8s,baz=52,slow=2.1,SNR=3.6
NOA NORSAR Array B 116.91 338 PKiKP **PKPdf** **16 44 29.6 +0.1**
NOA pmax pmax
comp=Z,2.0nm,0.9s
O40A La Belle 117.13 48 P **PKPdf** **16 44 32.7 +2.1**
baz=285
P40A Paris 117.16 49 P **PKPdf** **16 44 32.4 +1.8**
baz=285
Q40A Laux Farm, Aux 117.27 49 P **PKPdf** **16 44 31.8 +1.0**
baz=285
S40A Lebanon 117.28 51 P **PKPdf** **16 44 32.2 +1.3**
baz=284
U40A Yellville 117.28 52 P **PKPdf** **16 44 31.4 +0.5**
baz=283
R40A Maddies Statio 117.30 50 P **PKPdf** **16 44 32.0 +1.1**
baz=284
T40A Mansfield 117.37 52 P **PKPdf** **16 44 31.7 +0.6**
baz=283
V40A Witts Springs 117.42 53 P **PKPdf** **16 44 31.8 +0.5**
baz=282
VOIR 117.51 318⇑ *i*P **PKPdf** **16 44 32.7 +1.5**
VOIR 117.51 318 ⇑PKiKP **PKPdf** **16 44 32.7 +1.5**
K41A Shullsburg 117.57 45 P **PKPdf** **16 44 32.4 +1.1**
baz=288
KOLS Kolonicke sedl 117.96 323 *e*PKiKP **PKPdf** **16 44 34.4 +2.5**
KOLS Kolonicke sedl 117.96 323 *e*PKP **PKPdf** **16 44 34.3 +2.4**
V41A Mountainview 117.96 53 P **PKPdf** **16 44 33.3 +1.0**
baz=283
T41A Mountain View 117.98 52 P **PKPdf** **16 44 32.2 -0.1**
baz=284
W41B Gary Mavity, V 118.02 54 P **PKPdf** **16 44 32.9 +0.6**
baz=282
UZH Uzhgorod 118.07 322*c* *i*PKiKP **PKPdf** **16 44 32.7 +0.7**
UZH *e* 16 44 43.9
UZH *e* 16 45 43.7
UZH *e* 16 51 39.9
UZH MLR MLR
comp=N,330nm,20.0s
UZH MLR MLR
comp=E,360nm,20.0s
UZH MLR MLR
comp=Z,240nm,20.0s
P42A Winchester 118.41 48 P **PKPdf** **16 44 33.7 +0.7**
baz=286
CRVS Cervenica-Dubn 118.46 323 *e*PKiKP **PKPdf** **16 44 34.9 +2.1**
CRVS Cervenica-Dubn 118.46 323 *e*PKP **PKPdf** **16 44 34.9 +2.1**
DRGR 118.53 320⇑ *i*P **PKPdf** **16 44 35.9 +2.8**
DRGR 118.53 320 ⇑PKiKP **PKPdf** **16 44 35.9 +2.8**
U42A Revenden 118.55 52 P **PKPdf** **16 44 34.2 +0.8**
baz=284
V42A Cord 118.56 53 P **PKPdf** **16 44 34.7 +1.3**
baz=283
GZR Gura Zlata 119.02 319⇑ *i*P **PKPdf** **16 44 36.8 +2.7**
GZR Gura Zlata 119.02 319 ⇑PKiKP **PKPdf** **16 44 36.8 +2.7**
LANS Liptovska Anna 119.53 324 *e*PKiKP **PKPdf** **16 44 37.3 +2.4**
LANS Liptovska Anna 119.53 324 *e*PKP **PKPdf** **16 44 37.3 +2.4**
BZS Buzias 119.69 319⇑ *i*P **PKPdf** **16 44 34.6 -0.7**
BZS Buzias 119.69 319 ⇑PKiKP **PKPdf** **16 44 34.6 -0.7**
VTS Vitosha 119.73 316⇓ *i*P **PKPdf** **16 44 36.8 +1.1**
VTS Vitosha 119.73 316 ⇓PKiKP **PKPdf** **16 44 36.8 +1.1**
PSZ Piszkesteto 119.82 322⇑ *i*P **PKPdf** **16 44 35.7 +0.1**
PSZ Piszkesteto 119.82 322 ⇑PKiKP **PKPdf** **16 44 35.7 +0.1**
OKC Ostrava-Krasne 119.98 325 *e*SP SP 16 55 38.8 -7.0
OKC AMS AMS 17 39 00.0
comp=Z,1μm,17.7s
VYHS Vyhne 120.20 323 *e*PKiKP **PKPdf** **16 44 38.6 +2.4**
VYHS Vyhne 120.20 323 *e*PKP **PKPdf** **16 44 38.6 +2.4**
MORC Moravsky Berou 120.35 325⇑ *i*P **PKPdf** **16 44 39.1 +2.6**
MORC Moravsky Berou 120.35 325 ⇑PKiKP **PKPdf** **16 44 39.1 +2.6**
KRLC Kraliky 120.63 326 *e*PKPdf **PKPdf** **16 44 39.8 +2.8**
KRLC Kraliky 120.63 326 *e*PKiKP **PKPdf** **16 44 39.8 +2.8**
DPC Dobruska-Polom 120.75 326 *e*PKPdf **PKPdf** **16 44 40.1 +2.9**
DPC AMS AMS 17 39 20.0
comp=Z,1μm,20.4s
DPC Dobruska-Polom 120.75 326 *e*PKiKP **PKPdf** **16 44 40.1 +2.9**
DPC MLR MLR
comp=Z,1μm,20.4s
UPC Upice 120.84 326 *e*PKPdf **PKPdf** **16 44 40.2 +2.8**
UPC *e*PKPPKP **P'P'df** **17 03 24.0 -1.6**
UPC AMS AMS 17 38 40.0
comp=Z,2μm,20.9s
UPC Upice 120.84 326 *e*PKiKP **PKPdf** **16 44 40.2 +2.8**
UPC MLR MLR
comp=Z,2μm,20.9s
PLCA Paso Flores 121.05 146 PKP **PKPdf** **16 44 40.8 +2.6**
comp=Z,3.0nm,0.7s,baz=305,slow=6.4,SNR=5.0
PVCC Panska Ves 121.62 327 *e*PKPdf **PKPdf** **16 44 41.3 +2.5**
PVCC AMS AMS 17 42 50.0
comp=Z,1μm,16.7s
PVCC Panska Ves 121.62 327 *e*PKiKP **PKPdf** **16 44 41.3 +2.5**
PVCC MLR MLR
comp=Z,1μm,16.7s
BRG Berggiesshubel 121.77 328 *e*PKP **PKPdf** **16 44 40.2 +1.1**
comp=Z,15nm,1.1s
comp=N,1μm,17.7s
comp=E,1μm,17.8s
comp=Z,2μm,17.6s
BRG Berggiesshubel 121.77 328 *e*PKiKP **PKPdf** **16 44 40.2 +1.1**
BRG pmax pmax
comp=Z,15nm,1.1s
BRG MLR MLR
comp=N,1μm,17.7s
BRG MLR MLR
comp=E,1μm,17.8s
BRG MLR MLR
comp=Z,2μm,17.6s
GOPC GO Pecny, Ondr 121.82 326 *e*PKPdf **PKPdf** **16 44 42.0 +2.7**
GOPC AMS AMS 17 39 20.0
comp=Z,1μm,20.2s
GOPC GO Pecny, Ondr 121.82 326 *e*PKiKP **PKPdf** **16 44 42.0 +2.7**
GOPC MLR MLR
comp=Z,1μm,20.2s
PRU Pruhonice 121.92 326 *e*PKPdf **PKPdf** **16 44 40.1 +0.7**
PRU *e*SP SP 16 55 58.6 -4.4
PRU *e*SS **SS** **17 02 57.7 +9.0**
PRU AMS AMS 17 39 30.0
comp=Z,1μm,20.2s
PRU Pruhonice 121.92 326 *e*PKiKP **PKPdf** **16 44 40.1 +0.7**
PRU *e*SP SP 16 55 58.6 -4.4
PRU *e*SS **SS** **17 02 57.7 +9.0**
PRU MLR MLR
comp=Z,1μm,20.2s
CLL Collm 122.02 328 *e*PKPdf **PKPdf** **16 44 40.0 +0.4**
comp=Z,4.0nm,0.6s
CLL *i* 16 44 41.8
comp=Z,12nm,0.8s
CLL *e*PP **PP** **16 46 18.0 +4.4**
CLL *e*Sdif Sdif 16 54 06.0 -0.9
CLL *e*PS **PS** **16 56 00.0 -8.3**
CLL *e* 16 57 42.0
CLL *e*SS **SS** **17 02 54.0 +4.2**
CLL *e*SSS SSS 17 07 24.0
CLL *e* 17 08 54.0
CLL LmV 17 39 00.0
comp=N,1μm,19.4s
CLL LmV 17 39 00.0
comp=E,1μm,21.0s
CLL LmV 17 39 00.0
comp=Z,2μm,20.0s
CLL Collm 122.02 328 *e*PKiKP **PKPdf** **16 44 40.0 +0.4**
CLL pmax pmax
comp=Z,4.0nm,0.6s
CLL MLR MLR
comp=Z,2μm,20.0s
CONA Conrad Observa 122.22 324 *i* PKiKP **PKiKP** **16 44 41.3 +0.9**
comp=Z,8.1nm,1.0s,SNR=6.0
ARSA Arzberg 122.75 323 *i* PKiKP **PKiKP** **16 44 42.2 +0.8**
comp=Z,3.5nm,0.7s
KHC Kasperske Hory 122.91 326 *e*PKPdf **PKPdf** **16 44 41.7 +0.3**
KHC *ex* x 16 45 39.0
KHC *e*PP **PP** **16 46 21.5 +1.7**
KHC *e*SP SP 16 56 15.0 +3.2
KHC *e*SS **SS** **17 03 09.8 +8.4**
KHC AMS AMS 17 39 50.0
comp=Z,1μm,20.0s
KHC Kasperske Hory 122.91 326 *e*PKiKP **PKPdf** **16 44 41.7 +0.3**
KHC *e* 16 46 21.5
KHC *e*SP SP 16 56 15.0 +3.2
KHC *e*SS **SS** **17 03 09.8 +8.4**
KHC MLR MLR
comp=Z,1μm,20.0s
NKC Novy Kostel 122.92 328 *e*PKPdf **PKPdf** **16 44 41.3 -0.1**
NKC *ex* x 16 44 44.1
NKC AMS AMS 17 41 10.0
comp=Z,2μm,18.5s
NKC Novy Kostel 122.92 328 *e*PKiKP **PKPdf** **16 44 41.3 -0.1**
NKC MLR MLR
comp=Z,2μm,18.5s
GERES GERESS Array B 122.99 326 PKP **PKPdf** **16 44 41.1 -0.6**
comp=Z,4.1nm,0.7s,baz=48,slow=2.0,SNR=19
SOKA Soboth 123.33 323 *e*PKiKP **PKiKP** **16 44 43.1 +0.5**
comp=Z,13nm,1.0s,SNR=6.9
GCIS Gornji Cirnik 123.36 322 *i* PKPdf **PKPdf** **16 44 44.7 +2.3**
BOJS Bojanci 123.77 322 *i* PKPdf **PKPdf** **16 44 45.3 +2.2**
LJU Ljubljana 123.94 322 *e*PKPdf **PKPdf** **16 44 45.6 +2.1**
KBA Koelnbreinsper 124.12 324 *e*PKiKP **PKiKP** **16 44 44.3 0.0**
comp=Z,9.3nm,0.9s
MYKA Terra Mystica 124.18 323 *i* PKiKP **PKiKP** **16 44 44.5 +0.2**
comp=Z,6.8nm,0.9s
ABTA Abfaltersbach 124.78 324 *i* PKiKP **PKiKP** **16 44 47.2 +1.7**
comp=Z,15nm,1.0s,SNR=5.4
WTTA Wattenberg 125.01 325 *e*PKiKP **PKiKP** **16 44 46.4 +0.3**
comp=Z,21nm,1.0s,SNR=7.7
MOTA Moosalm 125.27 325 *i* PKiKP **PKPdf** **16 44 45.6 -0.6**
comp=Z,13nm,0.8s
RETA Reutte 125.38 326 *e*PKiKP **PKiKP** **16 44 46.8 +0.1**
comp=Z,8.3nm,1.1s
FETA Feichten 125.66 325 *i* PKiKP **PKiKP** **16 44 47.9 +0.6**
comp=Z,20nm,1.0s,SNR=7.4
MEM Membach 125.96 331 PKP **PKPdf** **16 44 50.1 +2.9**
DAVA Damuels 125.99 326 *e*PKiKP **PKiKP** **16 44 48.8 +0.8**
comp=Z,17nm,0.8s,SNR=7.8
LANF Langenberg 126.09 329 PKP **PKPdf** **16 44 50.1 +2.6**
BFO Black Forest 126.22 328 *i* PKiKP **PKPdf** **16 44 50.5 +2.7**
EKA Eskdalemuir Ar 126.26 340 PKP **PKPdf** **16 44 47.1 -0.5**
comp=Z,3.8nm,0.8s,baz=40,slow=4.0,SNR=9.6
DAVOX Davos/Dischmat 126.28 325 PKP **PKPdf** **16 44 47.8 -0.3**
comp=Z,11nm,0.9s,baz=78,slow=4.5,SNR=15
BCLA Clavier 126.42 331 PKP **PKPdf** **16 44 50.9 +2.8**
WLF Walferdange 126.50 330 PKP **PKPdf** **16 44 51.3 +3.1**
ECH Echery 126.91 328 PKP **PKPdf** **16 44 50.7 +1.6**
DOU Dourbes 126.97 331 PKP **PKPdf** **16 44 52.1 +3.0**
MOF Molkenrain 127.14 328 PKP **PKPdf** **16 44 51.3 +1.6**
LOMF Lomont 127.62 327 PKP **PKPdf** **16 44 52.5 +1.9**
PLDF La Plantade 130.20 328 PKP **PKPdf** **16 44 55.0 -0.5**
AGO Saint Agoulin 130.40 328 PKP **PKPdf** **16 44 54.3 -1.5**
LBL Lubilhac 130.88 327 PKP **PKPdf** **16 44 57.8 +1.0**
LPAZ La Paz 137.61 123 PKhKP **PKPpre** 16 45 03.5
comp=Z,1.3nm,0.7s,baz=190,slow=4.7,SNR=5.3
LPAZ PKP **PKPdf** **16 45 08.8 -2.1**
comp=Z,5.5nm,1.0s,baz=206,slow=3.2,SNR=7.9
LPAZ La Paz 137.61 123 PKiKP **PKPdf** **16 45 08.8 -2.1**
LPAZ pmax pmax
comp=Z,4.0nm,0.9s
ROSC El Rosal 137.87 90 PKP **PKPdf** **16 45 14.1 +2.9**
comp=Z,13nm,0.7s,baz=327,slow=22,SNR=4.9
ESDC Sonseca Array 138.56 327 PKP **PKPdf** **16 45 11.9 +0.6**
comp=Z,0.4nm,0.5s,baz=24,slow=4.0,SNR=6.5
PGAV Gavieira, Arco 139.00 333 *e*PKPdf PKPpre 16 45 04.1
PGAV Gavieira, Arco 139.00 333 *e*LR LR 17 33 46.9
comp=Z,1μm,20.0s
CPUP Villa Florida 139.04 144 PKhKP PKPpre 16 45 07.4
comp=Z,6.6nm,1.2s,baz=177,slow=8.7,SNR=3.2
MVO Moncorvo 139.04 331 *e*PKPdf **PKPdf** **16 45 10.7 -1.5**
MVO Moncorvo 139.04 331 *e*LQ LQ 17 35 05.6
MVO *e*LR LR 17 38 00.7
comp=Z,2μm,20.0s
POLO Lamas de Olo 139.24 332 *e*PKPdf **PKPdf** **16 45 14.0 +1.4**
MTE Manteigas 139.88 331 *e*PKPdf **PKPdf** **16 45 11.8 -1.9**
MTE Manteigas 139.88 331 *e*LQ LQ 17 35 22.6
MTE *e*LR LR 17 38 22.1
comp=Z,2μm,20.0s
PMRV Marv??o 140.54 329 *e*LQ LQ 17 32 01.5
PMRV *e*LR LR 17 39 40.4
comp=Z,1μm,20.0s
PESTR Estremoz 141.07 329 *e*PKPdf PKPpre 16 45 07.4
PBAR Barrancos 141.30 328 *e*PKPdf PKPpre 16 45 10.6
PMAFR Mafra 141.84 331 *e*PKPdf **PKPdf** **16 45 15.7 -1.5**
MESJ Messejana 142.17 329 *e*P **PKPdf** **16 45 16.6 -1.2**
MESJ *e*PP **PP** **16 48 23.4 +0.3**
MESJ AMS AMS 17 52 41.0
comp=Z,1μm,20.5s
MESJ Messejana 142.17 329 *e*PKPdf PKPdf 16 45 26.3 +8.5
MESJ Messejana 142.17 329 *e*PKiKP **PKPdf** **16 45 16.6 -1.2**
MESJ *e* 16 48 23.4
PCVE Castro Verde 142.23 328 *e*PKPdf PKPpre 16 45 13.0
PVAQ Vaqueiros 142.23 328 *e*PKPdf PKPpre 16 45 09.5
PVAQ Vaqueiros 142.23 328 *e*LQ LQ 17 33 01.1
PVAQ *e*LR LR 17 35 11.9
comp=Z,814nm,18.0s
PBDV Barranco-do-Ve 142.47 328 *e*PKPdf **PKPdf** **16 45 18.0 -0.4**
MORF Marmelete 142.80 328 *e*P **PKPdf** **16 45 17.9 -1.2**
MORF AMS AMS 17 53 31.7
comp=Z,1μm,18.8s
MORF Marmelete 142.80 328 *e*PKPdf **PKPdf** **16 45 20.4 +1.4**
MORF Marmelete 142.80 328 *e*PKiKP **PKPdf** **16 45 17.9 -1.2**
PFVI Vila Bisbo 143.02 328 *e*PKPdf **PKPdf** **16 45 18.3 -1.1**
SHEL Horse Pasture 145.65 229 *i* PKP2 **PKPab** **16 45 29.0 +3.9**
TORD Torodi Ar. Bea 146.21 284 PKPbc **PKPdf** **16 45 25.5 0.0**
comp=Z,21nm,0.6s,baz=66,slow=3.4,SNR=46
ROSA Rosais 147.88 354 *e*PKP **PKPab** **16 45 35.1 +2.0**
PSET Sete Cidades 148.44 350 *e*PKP **PKPab** **16 45 36.2 +0.9**
PSMN Pico do Norte, 149.12 349 *e*PKP **PKPab** **16 45 37.3 -0.8**
PMAR Madeira 150.49 334 *e*PKPdf **PKPdf** **16 45 25.1 -7.2**
PMOZ Porto Moniz, M 150.53 334 *e*LR LR 17 45 34.3
comp=Z,848nm,18.0s
KIC Kosan Boka 152.91 271 *e*PKP2 **PKPbc** **16 45 42.6 -0.8**
comp=Z,144nm,1.5s
DBIC Dimbokro 153.04 272 PKPbc **PKPbc** **16 45 43.8 +0.1**
comp=Z,9.6nm,0.7s,baz=115,slow=3.8,SNR=6.2
LIC Lamto 153.19 271 *e*PKP2 **PKPbc** **16 45 41.4 -2.7**
comp=Z,162nm,2.2s
TIC Toumodi 153.20 272 *e*PKP2 **PKPbc** **16 45 42.6 -1.5**

IDC ***01*** *16:29:11.3±0.6, 6.°40S×147.°79E, h0km, mb4.4/18, mb1 4.5/21, mb1mx4.4/46, mbtmp4.5/21, ML4.4/2, MS5.0/1, Ms1 5.0/1, ms1mx3.5/41, Error ellipse: s-maj=22.2km s-min=13.0km az=90.0*
ISCJB ***01*** *16:29:15.8±0.4, 6.°44S±0.°05×147.°82E±0.°09, h51km, mb4.4/22, MS5.0/1, Error ellipse: s-maj=12.3km s-min=6.4km az=5.8*
NEIC ***01*** *16:29:16.2±0.3, 6.°40S×147.°76E, h35km, mb4.8/4, Error ellipse: s-maj=10.5km s-min=7.7km az=89.0*

ISC 01 16:29:17.7±0.5, 6.°45S±0.°07×147.°78E±0.°10, h51km, n35, σ0998/35, mb4.4/22, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
PMG	**Port Moresby**	**3.00**	**192**	Pn	**Pn**	**16 30 01.7**	**-1.1**
	62nm,0.3s,baz=0.9,slow=12,SNR=7.1						
PMG				Sn	**Sn**	**16 30 38.3**	**+0.8**
	28nm,0.3s,baz=57,slow=17,SNR=2.7						
HNR	**Honiara**	**12.41**	**105**	Pn	**Pn**	**16 32 10.8**	**-0.9**
	2.6nm,0.3s,baz=204,slow=6.1,SNR=5.9						
WRA	**Warramunga Arr**	**18.71**	**223**	P	**Pn**	**16 33 32.7**	**-0.4**
	1.0nm,0.3s,baz=51,slow=10,SNR=4.7						
ASAR	**Alice Springs**	**21.70**	**216**	P	**P**	**16 34 04.5**	**0.0**
	8.1nm,0.5s,baz=52,slow=9.0,SNR=5.0						
DZM	**Mont Dzumac**	**23.79**	**133**	P	**P**	**16 34 27.6**	**+1.6**
	6.8nm,0.8s,baz=330,slow=20,SNR=4.9						
FITZ	**Fitzroy Crossi**	**24.50**	**240**	P	**P**	**16 34 32.7**	**+0.3**
	14nm,0.4s,baz=50,slow=8.8,SNR=16						
STKA	**Stephens Creek**	**25.95**	**192**	P	**P**	**16 34 46.0**	**+0.6**
	10.0nm,0.9s,baz=5.0,slow=12,SNR=4.2						
KSM	**Kuching**	**38.23**	**281**	*e*P	**P**	**16 36 32.8**	**-0.3**
YHNB	**Yeheng**	**40.23**	**321**	*e*P	**P**	**16 36 49.5**	**-0.3**
	22nm,1.0s						
MJAR	**Matsushiro Arr**	**43.70**	**349**	P	**P**	**16 37 18.2**	**+0.4**
	11nm,1.0s,baz=172,slow=8.3,SNR=9.7						
MAJO	**Matsushiro**	**43.70**	**349**	*e*P	**P**	**16 37 16.9**	**-0.9**
MAT	**Matsushiro**	**43.70**	**349**	P	**P**	**16 37 17.6**	**-0.2**
KSRS	**Korea Array**	**47.45**	**338**	P	**P**	**16 37 48.6**	**+1.3**
	10.0nm,1.2s,baz=157,slow=8.9,SNR=6.3						
KSAR	**Wonju Array Be**	**47.45**	**338**	P	**P**	**16 37 48.6**	**+1.2**
IPM	**Ipoh**	**47.92**	**282**	*e*P	**P**	**16 37 49.2**	**-2.3**

14nm,0.9s
USRK **Ussuriysk Ar.** **52.40 346** P **P** **16 38 24.8 0.0**
3.3nm,0.9s,baz=165,slow=7.9,SNR=4.9
YSS **Yuzh-Sakhalins** **53.36 356** P **P** **16 38 30.9 -0.9**
11nm,1.1s
CMAR **Chiang Mai Arr** **54.15 298** P **P** **16 38 39.1 +0.9**
2.3nm,0.9s,baz=124,slow=5.9,SNR=4.9
KLR **Kul'dur** **57.19 348** LR LR 16 59 25.7
comp=Z,1μm,22.0s,baz=192,slow=32
PETK **Petropavlovsk-** **59.93 7** P **P** **16 39 19.7 +1.3**
7.0nm,0.9s,baz=183,slow=5.9,SNR=6.5
SONM **Songino Array** **65.17 331** P **P** **16 39 54.9 +1.2**
3.8nm,1.0s,baz=134,slow=4.3,SNR=5.5
YAK **Yakutsk** **69.70 351** P **P** **16 40 22.7 +0.9**
2.1nm,0.3s,baz=210,slow=3.5,SNR=3.6
VNDA **Vanda** **71.42 177** P **P** **16 40 32.2 +0.1**
0.8nm,0.5s,baz=333,slow=2.3,SNR=3.3
MKAR **Makanchi Array** **78.34 320** P **P** **16 41 13.4 +0.8**
1.2nm,0.6s,baz=97,slow=8.0,SNR=9.4
TIXI **Tiksi** **78.94 354** P **P** **16 41 14.7 -0.6**
2.1nm,0.8s,baz=202,slow=2.4,SNR=3.3
ZALV **Zalesovo Beam** **79.81 328** P **P** **16 41 20.0 -0.4**
1.8nm,0.8s,baz=96,slow=6.0,SNR=4.6
KURK **Kurchatov** **82.03 323** *eP* **P** **16 41 32.5 +0.1**
KURBB **Kurchatov Arra** **82.06 323** P **P** **16 41 32.9 +0.4**
0.6nm,0.5s,baz=117,slow=4.8,SNR=4.4
ILAR **Eielson Array** **85.59 23** P **P** **16 41 49.2 -1.0**
2.0nm,1.0s,baz=250,slow=5.0,SNR=8.3
DOT **Dot Lake** **86.27 25** P **P** **16 41 52.2 -1.5**
BVAR **Borovoye Array** **87.59 324** P **P** **16 41 59.9 -0.4**
4.5nm,1.0s,baz=122,slow=5.6,SNR=6.5
ABKAR **Akbulak array** **93.43 319** *eP* **P** **16 42 26.4 -1.2**
1.9nm,0.8s
GERES **GERESS Array B** **122.72 326** PKP **PKPdf** **16 48 09.0 +0.9**
0.8nm,0.6s,baz=90,slow=2.7,SNR=6.3
TORD **Torodi Ar. Bea** **145.95 284** PKPbc **PKPab** **16 48 54.0 +0.7**
8.7nm,1.0s,baz=63,slow=3.4,SNR=29
DBIC **Dimbokro** **152.82 272** PKPbc **PKPbc** **16 49 11.7 +1.5**
4.6nm,0.7s,baz=75,slow=4.0,SNR=4.1

IDC 01 16:31:44.8±3.2, 6.49S×147.85E, h0km, mb4.1/2, mb1 4.2/4, mb1mx3.6/42, mbtmp4.0/4, ML3.9/1, Error ellipse: s-maj=78.9km s-min=39.3km az=103.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.98**	**193**	Pn	Pn	16 32 34.8	+1.5
	11nm,0.3s,baz=71,slow=9.6,SNR=6.1						
PMG				Sn	Sn	16 33 12.0	+2.3
	6.5nm,0.3s,baz=61,slow=19,SNR=2.9						
WRA	**Warramunga Arr**	**18.74**	**223**	P	Pn	16 36 05.5	-0.1
	0.4nm,0.3s,baz=50,slow=11,SNR=4.8						
ASAR	**Alice Springs**	**21.71**	**217**	P	P	16 36 37.0	-0.8
	2.7nm,0.7s,baz=52,slow=9.1,SNR=5.8						
FITZ	**Fitzroy Crossi**	**24.54**	**240**	P	P	16 37 05.2	-1.2
	5.8nm,0.5s,baz=51,slow=8.9,SNR=6.5						
TORD	**Torodi Ar. Bea**	**146.03**	**284**	PKPbc	PKPbc	16 51 27.7	0.0
	0.4nm,0.4s,baz=71,slow=3.4,SNR=5.9						

*IDC **01** 16:33:37.0±2.7, 6.53S×147.79E, h0km, mb3.9/3, mb1 4.1/5, mb1mx3.6/38, mbtmp3.9/5, ML3.7/1, Error ellipse: s-maj=60.6km s-min=36.9km az=96.0*

ISC 01 16:33:41.3±2.9, 6.4S±0.2×148.0E±0.5, h51km, n6, σ1♀45/7, mb3.7/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.07**	**195**	Pn	**Pn**	**16 34 26.8**	**-0.6**
	15nm,0.3s,baz=351,slow=12,SNR=5.0						
PMG				Sn	**Sn**	**16 35 04.6**	**+1.7**
	2.7nm,0.3s,baz=61,slow=19,SNR=2.5						
WRA	**Warramunga Arr**	**18.87**	**223**	P	**Pn**	**16 37 57.6**	**-0.9**
	0.2nm,0.3s,baz=48,slow=11,SNR=3.4						
ASAR	**Alice Springs**	**21.84**	**217**	P	**P**	**16 38 29.0**	**-0.7**
	0.8nm,0.4s,baz=48,slow=9.5,SNR=4.6						
FITZ	**Fitzroy Crossi**	**24.69**	**240**	P	**P**	**16 38 57.9**	**+0.1**
	4.6nm,0.5s,baz=58,slow=9.9,SNR=7.2						
STKA	**Stephens Creek**	**26.02**	**192**	P	**P**	**16 39 08.8**	**-0.8**
	2.0nm,0.7s,baz=9.0,slow=10.0,SNR=3.0						
TORD	**Torodi Ar. Bea**	**146.14**	**284**	PKPbc	**PKPab**	**16 53 19.4**	**+1.8**
	0.2nm,0.4s,baz=62,slow=3.5,SNR=3.8						

*IDC **01** 16:36:51.7±0.9, 10.90S×165.68E, h0km, mb4.1/14, mb1 4.3/16, mb1mx4.2/38, mbtmp4.1/16, ML4.5/2, Error ellipse: s-maj=27.5km s-min=18.5km az=126.0*
*ISCJB **01** 16:36:54.4±0.6, 10.95S±0.08×165.56E±0.07, h30km, mb4.1/14, Error ellipse: s-maj=12.1km s-min=10.2km az=8.4*
*NEIC **01** 16:36:57.3±1.8, 10.91S×165.63E, h39km±16km, mb4.1/1, Error ellipse: s-maj=15.3km s-min=14.3km az=65.0*

ISC 01 16:36:56.1±0.6, 10.97S±0.08×165.62E±0.10, h30km, n28, σ1♀05/25, mb4.1/14, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**5.79**	**285**	Pn	**Pn**	**16 38 20.4**	**+0.4**
	31nm,0.3s,baz=142,slow=4.0,SNR=15						
HNR				Sn	**Sn**	**16 39 24.4**	**-1.0**
	baz=164,slow=20,SNR=3.0						
DZM	**Mont Dzumac**	**11.06**	**176**	Pn	**Pn**	**16 39 34.0**	**+1.5**
	1.4nm,0.3s,baz=278,slow=10,SNR=30						
DZM				Sn	**Sn**	**16 41 33.4**	**-2.0**
	0.1nm,0.3s,baz=323,slow=20,SNR=2.5						
CTA	**Charters Tower**	**20.72**	**242**	P	Pn	16 41 36.9	0.0
	7.6nm,0.9s,baz=55,slow=7.6,SNR=4.8						
H11S2	**WAKE ISLAND Hy**	**29.30**	**2**	T	T	17 13 24.1	
	baz=182,slow=76,SNR=34						
H11S3	**WAKE ISLAND Hy**	**29.30**	**2**	T	T	17 13 35.9	
	baz=182,slow=76,SNR=38						
H11S1	**WAKE ISLAND Hy**	**29.31**	**2**	T	T	17 13 27.7	
	baz=182,slow=76,SNR=18						
H11N1	**WAKE ISLAND Hy**	**30.52**	**2**	T	T	17 15 00.3	
	baz=182,slow=76,SNR=29						
H11N3	**WAKE ISLAND Hy**	**30.52**	**2**	T	T	17 15 04.9	
	baz=182,slow=76,SNR=6.2						
H11N2	**WAKE ISLAND Hy**	**30.54**	**2**	T	T	17 15 01.7	
	baz=182,slow=76,SNR=7.7						
WRAB	**Tennant Creek**	**31.38**	**250**	*eP*	**P**	**16 43 14.7**	**+0.1**
	1.5nm,0.5s						
WRA	**Warramunga Arr**	**31.39**	**250**	P	**P**	**16 43 13.8**	**-0.9**
	2.0nm,0.7s,baz=82,slow=8.8,SNR=20						
WRA				PcP	**PcP**	**16 46 09.2**	**+1.1**
	2.2nm,1.0s,baz=75,slow=2.7,SNR=6.3						
ASAR	**Alice Springs**	**32.71**	**243**	P	**P**	**16 43 26.0**	**-0.3**
	3.4nm,0.7s,baz=64,slow=10.0,SNR=30						
ASAR				PcP	**PcP**	**16 46 12.6**	**+0.9**
	1.2nm,0.7s,baz=87,slow=2.9,SNR=5.8						
KAPI	**Kappang**	**45.76**	**274**	P	**P**	**16 45 15.3**	**0.0**
MJAR	**Matsushiro Arr**	**53.85**	**333**	P	**P**	**16 46 15.4**	**-1.0**
	1.3nm,0.7s,baz=167,slow=8.3,SNR=5.3						
KSRS	**Korea Array**	**59.75**	**326**	P	**P**	**16 46 58.3**	**0.0**
	0.4nm,0.6s,baz=121,slow=5.8,SNR=3.3						
KSAR	**Wonju Array Be**	**59.76**	**326**	P	**P**	**16 46 58.2**	**-0.1**
USRK	**Ussuriysk Ar.**	**62.83**	**333**	P	**P**	**16 47 19.9**	**+0.9**
	1.8nm,0.9s,baz=137,slow=6.5,SNR=5.7						
PETK	**Petropavlovsk-**	**64.19**	**355**	P	**P**	**16 47 28.7**	**+0.9**
	0.8nm,0.5s,baz=147,slow=5.3,SNR=5.0						
CMAR	**Chiang Mai Arr**	**71.97**	**294**	P	**P**	**16 48 18.1**	**+0.6**
	1.0nm,0.7s,baz=130,slow=4.7,SNR=7.6						
SONM	**Songino Array**	**78.53**	**324**	P	**P**	**16 48 55.5**	**+0.8**
	0.8nm,0.9s,baz=140,slow=4.6,SNR=5.5						
ILAR	**Eielson Array**	**83.48**	**19**	P	**P**	**16 49 20.9**	**+0.3**
	2.9nm,0.7s,baz=239,slow=5.1,SNR=32						
MKAR	**Makanchi Array**	**93.38**	**317**	P	**P**	**16 50 07.9**	**-0.6**
	1.1nm,0.9s,baz=90,slow=6.7,SNR=6.1						
ZALV	**Zalesovo Beam**	**93.42**	**324**	P	**P**	**16 50 07.5**	**-1.1**
	0.9nm,0.7s,baz=159,slow=1.3,SNR=5.3						
PDAR	**Pinedale Array**	**93.63**	**47**	P	**P**	**16 50 09.7**	**-0.2**
	0.4nm,0.4s,baz=262,slow=6.2,SNR=3.4						
YKA	**Yellowknife Ar**	**94.97**	**27**	P	**P**	**16 50 13.2**	**-2.2**
	0.5nm,0.6s,baz=259,slow=4.3,SNR=5.4						
ARCES	**ARCESS Array B**	**116.23**	**345**	PKP	**PKPdf**	**16 55 34.5**	**-1.5**
	1.7nm,1.0s,baz=27,slow=1.4,SNR=6.9						
BOSA	**Boshof**	**125.08**	**223**	PKP	**PKPdf**	**16 55 55.6**	**+1.1**
	5.4nm,1.1s,baz=146,slow=3.0,SNR=3.8						
ESDC	**Sonseca Array**	**149.95**	**344**	PKPab	**PKPab**	**16 56 50.3**	**+0.7**
	0.2nm,0.3s,baz=31,slow=3.0,SNR=3.2						

*IDC **01** 16:38:56.0±2.8, 6.46S×147.92E, h0km, mb4.1/3, mb1 4.3/5, mb1mx3.7/37, mbtmp4.1/5, ML4.0/1, Error ellipse: s-maj=63.1km s-min=37.9km az=95.0*

ISC 01 16:39:01.9±3.0, 6.4S±0.2×147.8E±0.4, h51km, n6, σ1♀42/7, mb3.8/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.05**	**193**	Pn	**Pn**	**16 39 46.2**	**-1.5**
	9.8nm,0.3s,baz=56,slow=9.6,SNR=11						
PMG				Sn	**Sn**	**16 40 24.8**	**+1.8**
	5.3nm,0.3s,baz=17,slow=20,SNR=4.3						
WRA	**Warramunga Arr**	**18.79**	**223**	P	**Pn**	**16 43 17.4**	**-0.8**
	0.4nm,0.3s,baz=50,slow=11,SNR=18						
ASAR	**Alice Springs**	**21.77**	**217**	P	**P**	**16 43 49.0**	**-0.5**
	1.9nm,0.8s,baz=52,slow=8.9,SNR=19						
FITZ	**Fitzroy Crossi**	**24.57**	**240**	P	**P**	**16 44 17.8**	**+0.5**
	11nm,0.5s,baz=58,slow=9.4,SNR=58						
STKA	**Stephens Creek**	**26.00**	**192**	P	**P**	**16 44 30.8**	**+0.6**
	2.1nm,0.8s,baz=11,slow=10,SNR=3.3						
TORD	**Torodi Ar. Bea**	**146.00**	**284**	PKPbc	**PKPab**	**16 58 38.8**	**+1.0**
	0.7nm,0.5s,baz=67,slow=3.8,SNR=7.4						

IDC 01 16:39:43.2±3.5, 6.53S×148.19E, h0km, mb3.9/2, mb1 4.1/3, mb1mx3.5/37, mbtmp3.8/3, ML3.5/1, Error ellipse: s-maj=112.4km s-min=44.9km az=118.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**18.94**	**224**	P	P	16 44 06.0	0.0
	0.2nm,0.3s,baz=51,slow=11,SNR=2.8						
ASAR	**Alice Springs**	**21.88**	**217**	P	P	16 44 38.1	+0.2
	1.2nm,0.7s,baz=47,slow=9.5,SNR=2.6						
FITZ	**Fitzroy Crossi**	**24.81**	**240**	P	P	16 45 06.8	-0.5
	3.8nm,0.4s,baz=49,slow=8.7,SNR=7.6						
TORD	**Torodi Ar. Bea**	**146.36**	**284**	PKPbc	PKPbc	16 59 26.6	-0.5
	0.3nm,0.5s,baz=63,slow=3.2,SNR=2.6						

IDC 01 16:41:54.8±3.0, 6.42S×147.64E, h0km, mb4.0/2, mb1 4.0/4, mb1mx3.5/38, mbtmp3.8/4, ML3.8/1, MS4.0/2, Ms1 4.0/2, ms1mx3.3/37, Error ellipse: s-maj=67.1km s-min=39.0km az=100.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.01**	**189**	Pn	Pn	16 42 44.4	+0.6
	3.8nm,0.3s,baz=345,slow=10,SNR=4.8						
PMG				Sn	Sn	16 43 22.6	+2.0
	3.5nm,0.3s,baz=16,slow=18,SNR=2.0						
WRA	**Warramunga Arr**	**18.64**	**223**	P	P	16 46 14.4	+0.1
	0.3nm,0.3s,baz=48,slow=11,SNR=9.5						
ASAR	**Alice Springs**	**21.65**	**216**	P	P	16 46 46.2	-0.8
	0.7nm,0.5s,baz=51,slow=9.0,SNR=6.9						
FITZ	**Fitzroy Crossi**	**24.40**	**240**	P	P	16 47 15.3	+0.2
	6.2nm,0.4s,baz=54,slow=8.4,SNR=23						
RAO	**Raoul Island**	**39.63**	**129**	LR	LR	17 01 42.7	
	comp=Z,89nm,19.1s,baz=146,slow=30						
AFI	**Afiamalu**	**40.59**	**104**	LR	LR	17 04 21.9	
	comp=Z,452nm,18.9s,baz=294,slow=33						
TORD	**Torodi Ar. Bea**	**145.81**	**284**	PKPbc	PKPdf	17 01 36.2	-0.4
	0.3nm,0.4s,baz=69,slow=3.4,SNR=4.9						

*BJI **01** 17:00:10.3, 6.65S×149.62E, h21km, mb4.7/9, mB5.2/6, Ms5.0/2, Ms7 4.8/2*
*ISCJB **01** 17:00:16.5±0.6, 6.22S±0.07×149.37E±0.09, h49km, mb4.5/21, MS4.8/1, Error ellipse: s-maj=14.6km s-min=7.6km az=31.5*
*NEIC **01** 17:00:17.6±1.0, 6.20S×149.40E, h46km±12km, mb4.5/12, Error ellipse: s-maj=15.5km s-min=7.8km az=127.0*
*IDC **01** 17:00:33.2±3.1, 6.63S×147.89E, h57km±27km, mb3.5/8, mb1 3.7/12, mb1mx3.6/40, mbtmp3.8/12, ML3.8/2, Error ellipse: s-maj=34.0km s-min=16.1km az=87.0*

ISC 01 17:00:18.2±0.6, 6.23S±0.07×149.45E±0.09, h49km, n39, σ2♀49/36, mb4.6/21, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RABL	**Rabaul**	**3.38**	**53**	*e*Pn	**Pn**	**17 01 07.8**	**-0.8**
RABL				*e*Sn	**Sn**	**17 01 43.9**	**-3.5**
PMG	**Port Moresby**	**3.88**	**216**	P	**Pn**	**17 01 16.5**	**+1.1**
	21nm,0.3s,baz=13,slow=9.6,SNR=23						
PMG				S	**Sn**	**17 01 54.0**	**-5.8**
	11nm,0.3s,baz=164,slow=18,SNR=3.8						
PMG	**Port Moresby**	**3.88**	**216**	*e*Pn	**Pn**	**17 01 15.6**	**+0.2**
PMG				S	**Sn**	**17 01 54.0**	**-5.8**
JAY	**Jayapura**	**9.47**	**293**	P	**Pn**	**17 02 32.0**	**0.0**
	0.0nm,0.3s,baz=90,slow=20,SNR=2.3						
COEN	**Coen**	**9.85**	**218**	*e*Pn	**Pn**	**17 02 35.4**	**-1.9**
COEN				*e*Sn	Sn	17 04 06.9	-20
CTA	**Charters Tower**	**14.12**	**192**	P	**P**	**17 03 42.0**	**0.0**
	0.2nm,0.3s,baz=12,slow=13,SNR=3.7						
MTN	**Manton Dam**	**19.21**	**249**	*e*P	**P**	**17 04 35.0**	**-3.3**
	18nm,1.3s						
WRAB	**Tennant Creek**	**20.02**	**226**	*e*P	**P**	**17 04 46.9**	**-0.2**
	31nm,1.6s						
WB2	**Warramunga Arr**	**20.02**	**226**	*e*P	**P**	**17 04 46.3**	**-0.8**
	46nm,1.8s						
WR1	**Warramunga Arr**	**20.03**	**226**	*e*P	**P**	**17 04 45.6**	**-1.6**
	5.9nm,0.8s						
WRA	**Warramunga Arr**	**20.03**	**226**	P	**P**	**17 04 45.6**	**-1.6**
	0.5nm,0.3s,baz=48,slow=11,SNR=37						
AS01	**Alice Springs**	**22.86**	**219**	*e*P	**P**	**17 05 18.0**	**+0.4**
AS31	**Alice Springs**	**22.89**	**219**	*e*P	**P**	**17 05 18.7**	**+0.8**
	2.0nm,0.6s						
ASAR	**Alice Springs**	**22.89**	**219**	P	**P**	**17 05 18.6**	**+0.6**
	3.7nm,0.6s,baz=52,slow=9.3,SNR=80						
KWAJ	**Kwajalein Atol**	**23.47**	**51**	*e*P	**P**	**17 05 24.1**	**+0.4**
	354nm,1.1s						
FITZ	**Fitzroy Crossi**	**26.05**	**241**	P	**P**	**17 05 47.5**	**+0.3**
	19nm,0.5s,baz=53,slow=8.1,SNR=211						
FITZ	**Fitzroy Crossi**	**26.05**	**241**	*e*P	**P**	**17 05 47.0**	**-0.2**
	18nm,0.6s						
STKA	**Stephens Creek**	**26.55**	**195**	P	**P**	**17 05 58.0**	**+6.5**
	2.5nm,0.5s,baz=357,slow=8.4,SNR=11						
STKA	**Stephens Creek**	**26.55**	**195**	*e*P	**P**	**17 05 57.9**	**+6.3**
	14nm,1.9s						
MMRI	**Maumere**	**27.08**	**263**	*e*P	**P**	**17 05 56.0**	**-0.6**
	35nm,0.5s						
KAPI	**Kappang**	**29.58**	**271**	*e*P	**P**	**17 06 18.4**	**-0.4**
	14nm,1.1s						
FORT	**Forrest**	**31.61**	**217**	*e*P	**P**	**17 06 36.5**	**-0.1**
	276nm,1.1s						
MBWA	**Marble Bar**	**32.37**	**240**	*e*P	**P**	**17 06 43.6**	**+0.3**
	7.7nm,0.6s						
MAJO	**Matsushiro**	**43.84**	**347**	*e*P	**P**	**17 08 18.7**	**-0.8**
	17nm,0.6s						
MJB9	**Matsu-Tunnel**	**43.84**	**347**	*e*P	**P**	**17 08 18.6**	**-1.0**
	4.2nm,0.6s						
KSRS	**Korea Array**	**47.88**	**337**	P	P	17 09 02.2	+11
	0.5nm,0.7s,baz=156,slow=9.3,SNR=4.5						
WHN	**Wuhan**	**49.67**	**319**	P	P	17 09 11.1	+5.8
GYA	**Guiyang**	**52.68**	**310**	P	**P**	**17 09 30.0**	**+1.9**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CMAR	**Chiang Mai Arr**	**55.51**	**297**	P	P	17 09 55.4	+6.6
	1.0nm,0.8s,baz=127,slow=5.2,SNR=5.6						
CD2	**Chengdu**	**57.20**	**313**	*e*P	**P**	**17 09 59.8**	**-0.8**
HHC	**Hu-ho-hao-te**	**58.33**	**327**	*e*P	**P**	**17 10 10.8**	**+2.3**
HHC				pmax	pmax		
	comp=Z,13nm,0.9s						
HHC				pmax	pmax		
	comp=Z,200nm,7.8s						
PETK	**Petropavlovsk-**	**59.53**	**6**	P	P	17 10 34.7	+18
	1.2nm,0.9s,baz=168,slow=8.5,SNR=2.6						
LZH	**Lanzhou**	**59.99**	**318**	*e*P	**P**	**17 10 18.6**	**-1.5**
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
SONM	**Songino Array**	**65.81**	**330**	P	P	17 11 09.6	+11
	0.2nm,0.4s,baz=149,slow=5.9,SNR=3.0						
VNDA	**Vanda**	**71.55**	**177**	P	P	17 11 47.0	+13
	0.5nm,0.6s,baz=328,slow=9.5,SNR=4.1						
WMQ	**Urumqi**	**74.56**	**319**	*e*P	**P**	**17 11 52.0**	**-0.1**
WMQ				pP	pP	17 11 56.6	-10
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.7s						
MKAR	**Makanchi Array**	**79.23**	**320**	P	P	17 12 27.6	+9.3
	0.5nm,0.8s,baz=88,slow=6.0,SNR=2.4						
KSH	**Kashi**	**81.35**	**311**	*e*P	**P**	**17 12 31.1**	**+1.1**
KSH				*e*pP	PcP	17 12 37.4	+1.4
KSH				S	**S**	**17 22 38.7**	**+1.2**
KSH				SKS	**SKSac**	**17 22 44.1**	**-1.6**
KSH				pmax	pmax		
	comp=Z,190nm,6.0s						
KSH				LR	LR		
	comp=N,170nm,9.8s						
KSH				LR	LR		
	comp=E,180nm,13.4s						
KSH				LR	LR		
	comp=Z,320nm,14.3s						
TORD	**Torodi Ar. Bea**	**147.50**	**285**	PKPbc	PKPab	17 20 08.5	+8.4
	1.4nm,0.6s,baz=63,slow=3.3,SNR=10						

*ISCJB **01** 17:02:12.0±0.4, 67.07N±0.03×21.0E±0.1, h0km, Error ellipse: s-maj=5.7km s-min=3.6km az=2.3*
*CSEM **01** 17:02:13.6±0.2, 67.06N×20.97E, h1km, ML2.3, Error ellipse: s-maj=6.2km s-min=5.2km az=99.0, Mining explosion.*
*NAO **01** 17:02:13.7±0.9, 67.10N×21.12E, ML2.6*
*IDC **01** 17:02:13.8±1.1, 67.08N×21.16E, h0km, mb1 2.9/3, mb1mx2.8/53, mbtmp2.8/3, ML2.4/3, Error ellipse: s-maj=16.9km s-min=8.5km az=108.0*
*HEL **01** 17:02:13.4±0.1, 67.11N×20.91E, h0km, ML2.3, Explosion*
*BER **01** 17:02:16.0±3.3, 67.10N×20.89E, h0km, ML1.8, ML2.6(NAO), Suspected explosion*

ISC 01 17:02:12.8±0.8, 67.07N±0.03×20.89E±0.04, h0km, n45, σ0♀94/62, Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LANU	**Lannavaara**	**1.07**	**23**	*e*PB	**Pg**	**17 02 32.3**	**-1.0**
TOF	**Tornio**	**1.70**	**124**	*e*P	**Pn**	**17 02 43.6**	**0.0**
TOF				*e*SG	**Sn**	**17 03 06.2**	**+0.2**
TOF	**Tornio**	**1.70**	**124**	P	**Pn**	**17 02 43.6**	**0.0**
TOF				Sg	**Sn**	**17 03 06.1**	**+0.2**
HEF	**Hetta**	**1.71**	**37**	*e*P	**Pn**	**17 02 43.6**	**-0.2**
HEF	**Hetta**	**1.71**	**37**	*e*PG	**Pn**	**17 02 43.4**	**-0.4**
HEF				MSG		17 03 04.3	
	comp=Z,27nm,0.2s						
HEF				*e*SN	**Sg**	**17 03 08.7**	**+1.1**
HEF	**Hetta**	**1.71**	**37**	*e*P	**Pn**	**17 02 43.6**	**-0.2**
	SNR=50						
KIF	**Kilpisjarvi**	**1.94**	**359**	Pn	**Pb**	**17 02 48.6**	**-0.4**
KIF				Lg	Lg	17 03 15.5	
KIF	**Kilpisjarvi**	**1.94**	**359**	Pn	**Pb**	**17 02 48.6**	**-0.4**
KIF				Lg	Lg	17 03 15.5	
KIF	**Kilpisjarvi**	**1.94**	**359**	*e*PG	**Pb**	**17 02 48.4**	**-0.5**
KIF				MSG		17 03 11.8	
	comp=Z,26nm,0.2s						
KIF				*e*SG	**Sg**	**17 03 16.5**	**+1.4**
KIF	**Kilpisjarvi**	**1.94**	**359**	Pn	**Pb**	**17 02 48.6**	**-0.4**
	SNR=50						
KIF				Lg	Lg	17 03 15.5	
KTK1	**Kautokeino**	**2.14**	**23**	*e*P	**Pn**	**17 02 50.7**	**+1.0**
KTK1				IAML		17 03 24.7	
	comp=Z,13nm,0.1s						
KTK1	**Kautokeino**	**2.14**	**23**	*e*P	**Pn**	**17 02 50.7**	**+1.0**
	SNR=50						
STEI	**Steigen**	**2.34**	**294**	*e*P	**Pb**	**17 02 55.4**	**-0.3**
STEI	**Steigen**	**2.34**	**294**	*e*P	**Pb**	**17 02 55.4**	**-0.3**
	SNR=50						
LOF	**Lofoten**	**3.01**	**294**	*e*P	**Pn**	**17 03 02.0**	**+0.4**
LOF	**Lofoten**	**3.01**	**294**	*e*P	**Pn**	**17 03 02.0**	**+0.4**
	SNR=50						
ARA0	**ARCESS Array S**	**3.01**	**33**	Pn	**Pn**	**17 03 01.8**	**+0.1**
	baz=211,slow=14						
ARA0				Sn	**Sn**	**17 03 38.1**	**-0.2**
	baz=221,slow=28						
ARA0	**ARCESS Array S**	**3.01**	**33**	Pn	**Pn**	**17 03 01.8**	**+0.1**
	baz=211,slow=14						
ARA0				Sn	**Sn**	**17 03 38.1**	**-0.2**
	baz=221,slow=28						
ARA0	**ARCESS Array S**	**3.01**	**33**	Pn	**Pn**	**17 03 01.8**	**+0.1**
	SNR=50						
ARA0				Sn	**Sn**	**17 03 38.2**	**-0.2**
	SNR=50						
ARCES	**ARCESS Array B**	**3.01**	**33**	Pn	**Pn**	**17 03 02.1**	**+0.4**
	comp=Z,0.6nm,0.3s,baz=211,slow=13,SNR=60						
ARCES				Sn	**Sn**	**17 03 38.2**	**-0.2**
	comp=Z,0.9nm,0.3s,baz=214,slow=20,SNR=9.0						
ARE0	**ARCESS Array S**	**3.01**	**33**	*e*P	**Pn**	**17 03 01.8**	**+0.1**
ARE0				*e*SB	**Sn**	**17 03 41.0**	**+2.6**
ARE0	**ARCESS Array S**	**3.01**	**33**	P	**Pn**	**17 03 01.8**	**+0.1**
KONS	**Konsvik**	**3.13**	**263**	*e*P	**Pn**	**17 03 04.9**	**+1.6**
KONS	**Konsvik**	**3.13**	**263**	*e*P	**Pn**	**17 03 04.9**	**+1.6**
	SNR=50						
OUFX	**Oulainen**	**3.14**	**148**	*e*P	**Pn**	**17 03 04.8**	**+1.4**
OUFX	**Oulainen**	**3.14**	**148**	P	**Pn**	**17 03 04.8**	**+1.4**
UMAU	**Umeaa**	**3.20**	**182**	*e*P	**Pn**	**17 03 05.1**	**+0.8**
UMAU	**Umeaa**	**3.20**	**182**	P	**Pn**	**17 03 05.1**	**+0.8**
VRF	**Varrio**	**3.44**	**75**	*e*P	**Pn**	**17 03 07.7**	**+0.2**
VRF	**Varrio**	**3.44**	**75**	P	**Pn**	**17 03 07.6**	**+0.2**
KU6	**Riekki**	**3.75**	**102**	*e*P	**Pn**	**17 03 13.5**	**+1.6**
KU6	**Riekki**	**3.75**	**102**	P	**Pn**	**17 03 13.4**	**+1.6**
VAF	**Ylistaro**	**4.12**	**169**	*e*P	**Pn**	**17 03 18.1**	**+1.2**
VAF	**Ylistaro**	**4.12**	**169**	P	**Pn**	**17 03 18.0**	**+1.2**
FIA0	**FINESS Array S**	**6.08**	**156**	Pn	**Pn**	**17 03 44.8**	**+1.0**
	baz=347,slow=16						
FIA0				Sn	**Sn**	**17 04 54.1**	**+0.1**
	baz=

USRK	Ussuriysk Ar.	9.98	303	P	Pn	17 05 39.1	+2.1
	0.2nm,0.3s,baz=96,slow=16,SNR=5.0						
KSRS	Korea Array	12.50	266	P	Pn	17 06 13.8	+2.5
	baz=78,slow=13,SNR=2.6						
SEY	Seymchan	24.21	10	P	P	17 08 30.5	+0.5
	1.0nm,0.7s,baz=212,slow=5.2,SNR=4.7						
H11N2	WAKE ISLAND Hy	27.97	128	T	T	17 38 38.3	
	baz=322						
H11N1	WAKE ISLAND Hy	27.98	128	T	T	17 38 37.2	
	baz=322						
H11N3	WAKE ISLAND Hy	27.99	128	T	T	17 38 36.6	
	baz=322						
SONM	Songino Array	28.08	300	P	P	17 09 05.3	+0.1
	0.3nm,0.4s,baz=92,slow=8.1,SNR=2.3						
ZALV	Zalesovo Beam	41.73	311	P	P	17 11 02.6	+0.2
	0.9nm,0.5s,baz=102,slow=7.2,SNR=4.2						
MKAR	Makanchi Array	44.44	301	P	P	17 11 24.6	+0.1
	0.5nm,0.7s,baz=88,slow=12,SNR=6.0						
ILAR	Eielson Array	46.60	34	P	P	17 11 42.6	+1.3
	0.4nm,0.6s,baz=236,slow=4.8,SNR=4.3						
WRA	Warramunga Arr	59.61	190	P	P	17 13 18.0	+0.5
	0.2nm,0.6s,baz=8.7,slow=7.0,SNR=5.7						

*ISCJB **01** 17:06:58.5±0.8, 39°.39N±0°.04×143°.71E±0°.07, h11km, mb3.3/4, Error ellipse: s-maj=8.7km s-min=5.3km az=28.2*
*IDC **01** 17:06:58.4±2.3, 39°.37N×143°.82E, h0km, mb3.5/4, mb1 3.7/6, mb1mx3.4/48, mbtmp3.7/6, ML3.3/2, Error ellipse: s-maj=53.7km s-min=22.6km az=82.0*
*JMA **01** 17:06:59.4±0.2, 39°.38N×143°.71E, h22km±5km, M3.6*
ISC 01 17:06:59.3±1.2, 39°.38N±0°.06×143°.75E±0°.09, h11km, n18, σ2s09/23, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	Miyakonagasawa	1.50	278	P	Pn	17 07 25.0	-1.2
MIYJ				eS	Sn	17 07 43.4	-2.4
JTH	Tanohata	1.56	292	P	Pn	17 07 26.0	-1.0
JTH				eS	Sn	17 07 45.2	-2.0
OFUJ	Ofunato	1.64	260	P	Pn	17 07 27.1	-1.0
JOM	Ohasama	1.90	274	P	Pn	17 07 31.1	-0.6
JANG	Nango	1.98	301	P	Pn	17 07 31.6	-1.3
JIO	Ouri	2.08	245	P	Pn	17 07 33.7	-0.5
JYK	Kaneyama	2.67	261	P	Pn	17 07 42.4	+0.1
JNBK	Urakawa-nobuka	3.00	346	eS	Sn	17 08 22.3	-0.4
JCH	Churui	3.25	355	P	Pn	17 07 51.3	+1.1
JAK	Akkeshi	3.69	11	eS	Sn	17 08 39.6	-0.1
ASAJ	Asahikawa	4.81	350	Pn	Pn	17 08 12.6	+0.8
	baz=180,slow=7.6						
MJAR	Matsushiro Arr	5.21	239	Pn	Pn	17 08 18.9	+1.7
	0.6nm,0.3s,baz=44,slow=11,SNR=15						
MJAR				Sn	Sn	17 09 16.9	-0.4
	baz=71,slow=30,SNR=2.4						
MAT	Matsushiro	5.21	239	P	Pn	17 08 18.3	+1.1
MAT				eS	Sn	17 09 20.2	+2.9
JHJ	Hachijo jima 2	7.01	208	Pn	Pn	17 08 42.1	+0.1
	3.1nm,0.3s,baz=81,slow=18,SNR=2.1						
JHJ				Sn	Sn	17 09 54.4	-7.3
	3.9nm,0.3s,baz=65,slow=19,SNR=2.2						
SONM	Songino Array	28.11	300	P	P	17 12 52.2	+0.9
	0.3nm,0.4s,baz=99,slow=8.9,SNR=3.3						
ZALV	Zalesovo Beam	41.74	311	P	P	17 14 49.5	+1.3
	0.5nm,0.4s,baz=96,slow=7.6,SNR=3.6						
MKAR	Makanchi Array	44.47	301	P	P	17 15 11.3	+0.8
	0.5nm,0.8s,baz=82,slow=12,SNR=3.4						
WRA	Warramunga Arr	59.66	190	P	P	17 17 04.4	+0.8
	0.2nm,0.7s,baz=4.9,slow=7.2,SNR=3.1						

*IDC **01** 17:15:46.1±1.3, 37°.68N×142°.26E, h0km, mb3.4/3, mb1 3.6/7, mb1mx3.4/48, mbtmp3.5/7, ML3.0/4, Error ellipse: s-maj=29.6km s-min=20.5km az=112.0*
*ISCJB **01** 17:15:50.9±1.0, 37°.82N±0°.04×141°.89E±0°.09, h46km±12km, mb3.4/3, Error ellipse: s-maj=11.9km s-min=5.4km az=19.2*
*JMA **01** 17:15:52.8, 37°.87N×141°.72E, h55km±1km, M3.5*
ISC 01 17:15:50.4±1.7, 37°.79N±0°.04×141°.90E±0°.08, h27km±12km, n20, σ1s41/33, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	0.79	327	P	Pb	17 16 06.2	+0.6
JIO				eS	Sb	17 16 15.7	-0.2
JMM	Marumori	0.88	275	P	Pb	17 16 07.2	+0.2
JMM				eS	Sb	17 16 17.6	-0.8
JFK	Kawauchi	0.92	243	P	Pb	17 16 08.5	+0.8
JFK				eS	Sb	17 16 20.0	+0.5
JOU	Okura	1.13	301	P	Pn	17 16 10.4	0.0
JOU				eS	Sn	17 16 23.6	-1.5
JFT	Otama	1.27	258	P	Pb	17 16 13.2	-0.4
JFT				eS	Sn	17 16 28.4	-0.1
JMK	Ichinoseki	1.28	335	P	Pb	17 16 13.0	-0.8
JMK				eS	Sn	17 16 27.7	-0.9
JYS	Shirataka	1.51	287	P	Pn	17 16 15.9	+0.3
JYK	Kaneyama	1.66	313	P	Pn	17 16 17.8	+0.2
JYK				eS	Sn	17 16 36.6	-1.4
JOM	Ohasama	1.75	344	P	Pn	17 16 19.6	+0.7
JOM				eS	Sn	17 16 39.7	-0.5
JFY	Yanaizu	1.79	258	P	Pn	17 16 20.2	+0.8
JFY				eS	Sn	17 16 40.8	-0.4
JRG	Rokugo	1.89	329	P	Pn	17 16 21.7	+0.9
JRG				eS	Sn	17 16 43.4	-0.3
JYA	Atsumi	1.90	296	P	Pn	17 16 20.9	-0.1
MJAR	Matsushiro Arr	3.20	248	Pn	Pn	17 16 40.8	+1.9
	1.7nm,0.3s,baz=52,slow=11,SNR=14						
MJAR				Sn	Sb	17 17 21.4	-3.7
	2.2nm,0.3s,baz=76,slow=26,SNR=4.6						
MAT	Matsushiro	3.20	248	P	Pn	17 16 40.5	+1.6
MAT				S	Sn	17 17 18.5	+2.3
JHJ	Hachijo jima 2	4.97	201	Pn	Pn	17 17 04.2	+1.1
	3.8nm,0.3s,baz=288,slow=20,SNR=3.7						
JHJ				Sn	Sn	17 17 57.7	-2.0
	11nm,0.3s,baz=262,slow=18,SNR=7.2						
ASAJ	Asahikawa	6.34	5	Pn	Pn	17 17 21.9	-0.1
	0.6nm,0.3s,baz=210,slow=14,SNR=10.0						
USRK	Ussuriysk Ar.	9.85	314	Pn	Pn	17 18 13.5	+3.4
	0.2nm,0.3s,baz=122,slow=14,SNR=7.7						
ZALV	Zalesovo Beam	41.70	312	P	P	17 23 38.4	+1.9
	0.3nm,0.4s,baz=72,slow=9.3,SNR=2.8						
ILAR	Eielson Array	48.65	33	P	P	17 24 31.1	-0.4
	0.2nm,0.6s,baz=260,slow=5.1,SNR=3.6						
WRA	Warramunga Arr	57.86	188	P	P	17 25 38.5	-1.2
	0.7nm,1.0s,baz=5.8,slow=6.8,SNR=7.3						

KRSC 01 17:26:29.9±1.4, 49°.64N×157°.03E, h15km±7km, ML3.7, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	Severo-Kuril's	1.20	331	eP	Pn	17 26 51.4	-0.7
SKR				eS	Sb	17 27 06.1	-1.5
PAU	Pauzhetka	1.84	356	P	Pb	17 27 02.6	-0.5
PAU				eS	Sb	17 27 26.5	+0.6
ASAK	Asacha	2.80	11	P	Pb	17 27 17.4	-2.2
RUS	Russkaya	2.95	18	eP	Pn	17 27 18.4	+2.3
RUS				S	Sn	17 27 54.3	+3.1
AVH	Avacha	3.79	16	eP	Pn	17 27 30.5	+2.8

*IDC **01** 17:26:36.1±2.8, 6°.43S×147°.72E, h0km, mb3.9/2, mb1 4.0/4, mb1mx3.5/34, mbtmp3.8/4, ML3.4/1, Error ellipse: s-maj=58.4km s-min=32.4km az=96.0*
*ISCJB **01** 17:26:43.9±0.7, 6°.66S±0°.08×147°.6E±0°.1, h63km, mb4.6/6, Error ellipse: s-maj=15.4km s-min=9.5km az=28.9*
*NEIC **01** 17:26:44.6±1.4, 6°.70S×147°.57E, h45km±19km, mb4.6/7, Error ellipse: s-maj=20.7km s-min=10.1km az=119.0*
ISC 01 17:26:46.2±0.9, 6°.67S±0°.08×147°.6E±0°.1, h63km, n18, σ1s52/20, mb4.6/6, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	Port Moresby	2.75	188	Pn	Pn	17 27 25.4	-2.5
	7.5nm,0.3s,baz=80,slow=6.0,SNR=20						
PMG				Sn	Sn	17 28 02.5	+2.6
	7.6nm,0.3s,baz=6.3,slow=21,SNR=3.9						
PMG	Port Moresby	2.75	188	ePn	Pn	17 27 24.9	-3.0
PMG				eSn	Sn	17 28 01.8	+1.9
RABL	Rabaul	5.20	62	ePn	Pn	17 28 00.2	-1.3
WRAB	Tennant Creek	18.39	223	eP	P	17 30 56.8	+0.6
	38nm,1.9s						
WB2	Warramunga Arr	18.40	223	eP	P	17 30 56.7	+0.4
	18nm,1.4s						
WR1	Warramunga Arr	18.41	223	eP	P	17 30 56.4	0.0
	28nm,1.8s						
WRA	Warramunga Arr	18.41	223	P	P	17 30 56.4	0.0
	0.1nm,0.3s,baz=49,slow=11,SNR=7.2						
GUMO	Guam	20.31	352	eP	P	17 31 17.9	+0.7
	107nm,1.1s						
AS01	Alice Springs	21.37	216	eP	P	17 31 27.2	-1.3
AS31	Alice Springs	21.39	216	eP	P	17 31 28.1	-0.7
	2.5nm,1.4s						
ASAR	Alice Springs	21.40	216	P	P	17 31 28.1	-0.8
	1.8nm,0.8s,baz=50,slow=9.6,SNR=23						
FITZ	Fitzroy Crossi	24.20	240	P	P	17 31 56.9	-0.1
	2.9nm,0.4s,baz=51,slow=8.3,SNR=31						
FITZ	Fitzroy Crossi	24.20	240	eP	P	17 31 56.9	-0.1
	27nm,1.8s						
LUWI	Luwuk	25.35	282	eP	P	17 32 07.4	-0.2
	142nm,0.5s						
MBWA	Marble Bar	30.53	239	eP	P	17 32 53.1	-0.7
	54nm,1.9s						
NWAO	Narrogin (SRO)	38.41	223	eP	P	17 34 04.3	+2.6
WHZ	Wether Hill Ro	42.87	159	eP	P	17 34 38.6	+0.4
	217nm,2.0s						
TORD	Torodi Ar. Bea	145.79	284	PKPbc	PKPdf	17 46 17.9	-0.8
	0.4nm,0.4s,baz=68,slow=4.8,SNR=5.3						

*IDC **01** 17:37:01.2±2.4, 43°.33N×105°.19W, h0km, mb3.7/1, mb1 3.7/4, mb1mx3.4/51, mbtmp3.5/4, ML3.4/3, Error ellipse: s-maj=53.7km s-min=9.4km az=156.0*
*ISCJB **01** 17:37:03.4±0.3, 43°.71N±0°.03×105°.31W±0°.04, h0km, mb3.9/1, Error ellipse: s-maj=4.7km s-min=3.4km az=142.6*
*NEIC **01** 17:37:04.2±0.5, 43°.72N×105°.23W, h0km, ML3.0, Error ellipse: s-maj=8.2km s-min=5.7km az=154.0, Suspected Mining explosion.*
NEIC 67 km [42 miles] SSE of Gillette.
ISC 01 17:37:02.9±0.7, 43°.57N±0°.04×105°.24W±0°.04, h0km, n42, σ1s80/49, Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RSSD	Black Hills	1.03	57	P	Pb	17 37 23.3	-0.4
	baz=246						
RSSD	Black Hills	1.03	57	ePg	Pb	17 37 23.2	-0.5
K22A	Casper	1.31	226	P	Pg	17 37 28.8	+0.8
	baz=41,SNR=82						
K22A				S	Sb	17 37 47.3	+1.4
	baz=41						
H25A	Fruitdale	1.58	48	P	Pb	17 37 33.0	-0.1
	baz=233,SNR=43						
H25A				S	Sb	17 37 54.8	+1.1
	baz=233						
N23A	Red Feather La	2.72	191	P	Pb	17 37 51.1	-1.5
	baz=10,SNR=25						
LAO	LASA Array	3.19	348	P	Pn	17 37 53.6	-0.8
	baz=166						
BW06	Boulder Array	3.26	257	P	Pn	17 37 55.5	0.0
	baz=72						
BW06				Sb	Sb	17 38 41.5	-0.5
	baz=72						
BW06	Boulder Array	3.26	257	ePn	Pn	17 37 56.7	+1.3
PDAR	Pinedale Array	3.26	257	Pn	Pn	17 37 56.6	+1.2
	4.8nm,0.3s,baz=86,slow=13,SNR=30						
PDAR				Lg	Lg	17 38 43.0	
	14nm,0.3s,baz=78,slow=32,SNR=17						
RLMT	Red Lodge	3.28	300	P	Pn	17 37 55.5	-0.2
	baz=114						
RLMT	Red Lodge	3.28	300	ePn	Pn	17 37 55.6	-0.1
OGNE	Ogallala	3.54	137	P	Pb	17 38 02.8	-3.7
	baz=321						
OGNE				Sb	Sg	17 38 57.7	+1.0
	baz=321						
ISCO	Idaho Springs	3.78	184	P	Pn	17 38 06.0	+3.4
	baz=4.0						
ISCO				Sb	Sg	17 39 03.0	-1.3
	baz=4.0						
LOHW	Long Hollow	3.90	272	ePn	Pn	17 38 05.2	+1.1
H17A	Grant Village	3.94	284	ePn	Pn	17 38 06.6	+1.8
FLWY	Flagg Ranch	3.98	279	ePn	Pn	17 38 06.5	+1.1
D26A	Manning	3.99	29	P	Pn	17 38 06.3	+1.0
	baz=212						
D26A				Sb	Sb	17 39 05.3	+2.5
	baz=212						
MOOW	Moose Ponds	4.00	274	ePn	Pn	17 38 07.5	+1.9
SNOW	Snow King Moun	4.01	270	ePn	Pn	17 38 10.9	+5.1
REDW	Red Top Meadow	4.09	269	ePn	Pn	17 38 07.3	+0.4
O20A	White River Ci	4.10	214	P	Pn	17 38 09.3	+2.4
	baz=31						
O20A	White River Ci	4.10	214	ePn	Pn	17 38 09.6	+2.7
IMW	Indian Meadow	4.14	276	ePn	Pn	17 38 09.4	+1.7
G29A	Hoven	4.14	65	P	Pn	17 38 08.8	+1.4
	baz=251						
G29A				Sb	Sg	17 39 12.1	-3.9
	baz=251						
TPAW	Teton Pass	4.15	271	ePn	Pn	17 38 10.6	+2.9
AHID	Auburn Hatcher	4.36	261	ePn	Pn	17 38 07.0	-3.6
SMCO	Snowmass	4.58	197	ePn	Pb	17 38 23.3	-1.0
B25A	Knox Farm, Ray	4.92	16	P	Pn	17 38 18.8	+0.7
	baz=198						
DGMT	Dagmar	4.96	8	P	Pn	17 38 18.5	-0.1
	baz=189						
BOZ	Bozeman (W)	5.01	297	P	Pn	17 38 18.9	-0.6
	baz=111						
BOZ				Sb	Sb	17 39 32.6	+0.3
	baz=111						
BOZ	Bozeman (W)	5.01	297	ePn	Pn	17 38 18.8	-0.6
HWUT	Hardware Ranch	5.06	249	ePn	Pn	17 38 21.6	+1.4
	4.6nm,0.4s						
DLMT	Dillon	5.56	291	ePn	Pn	17 38 28.4	+1.4
	2.3nm,0.5s						
A25A	Svangstu Ranch	5.57	15	P	Pn	17 38 27.6	+0.6
	baz=196						
SDCO	Great Sand Dun	5.82	182	ePn	Pn	17 38 34.8	+4.1
	1.4nm,0.6s						
PV04	Paradox Valley	5.87	209	ePn	Pn	17 38 34.5	+3.3
ECSD	EROS Data Cent	6.26	86	P	Pn	17 38 37.8	+1.3
	baz=273						
DUG	Dugway, Tooele	6.58	242	P	Pn	17 38 41.9	+0.9
	baz=56						
A29A	Manning Farm,	6.78	36	P	Pn	17 38 44.0	+0.4
	baz=221						
ULM	Lac du Bonnet	9.26	41	Pn	Pn	17 39 16.1	-1.5
	1.8nm,0.3s,baz=229,slow=15,SNR=8.6						
ULM				Lg	Lg	17 41 45.2	
	0.4nm,0.3s,baz=52,slow=18,SNR=2.0						
YKA	Yellowknife Ar	19.73	347	P	P	17 41 34.6	+0.8
	0.1nm,0.3s,baz=155,slow=11,SNR=3.0						
ARCES	ARCESS Array B	61.57	18	P	P	17 47 20.4	-1.0
	0.5nm,0.6s,baz=317,slow=7.4,SNR=5.5						

*BJI **01** 17:48:34.9, 7°.05S×149°.18E, h18km, mb4.6/10, mB5.1/6, Ms5.0/3, Ms7.4/2*
*IDC **01** 17:48:44.9±0.9, 6°.60S×147°.58E, h0km, mb4.0/9, mb1 4.2/12, mb1mx3.9/36, mbtmp4.1/12, ML4.0/1, MS3.7/9, Ms1 3.7/9, ms1mx3.4/36, Error ellipse: s-maj=23.5km s-min=10.7km az=116.0*
*ISCJB **01** 17:48:48.7±0.4, 6°.65S±0°.05×147°.93E±0°.07, h51km, mb4.5/24, MS3.6/9, Error ellipse: s-maj=9.8km s-min=5.9km az=20.5*
*NEIC **01** 17:48:48.8±0.5, 6°.67S×147°.97E, h35km, mb4.7/17, Error ellipse: s-maj=13.5km s-min=7.4km az=101.0*
ISC 01 17:48:51.2±0.5, 6°.60S±0°.05×147°.80E±0°.08, h51km, n52, σ1s98/52, mb4.6/24, MS3.6/9, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	Port Moresby	2.86	193	Pn	Pn	17 49 33.2	-1.2
	14nm,0.3s,baz=2.0,slow=4.9,SNR=25						
PMG				Sn	Sn	17 50 13.1	+5.5
	19nm,0.3s,baz=5.4,slow=22,SNR=12						
PMG	Port Moresby	2.86	193	ePn	Pn	17 49 33.5	-0.9
PMG				eSn	Sn	17 50 13.1	+5.5
JAY	Jayapura	8.15	300	Pn	Pn	17 50 49.8	+2.8
	0.1nm,0.3s,baz=93,slow=23,SNR=3.6						
COEN	Coen	8.61	212	ePn	Pn	17 50 52.6	-0.7
COEN				eSn	Sn	17 52 24.4	-4.7
HNR	Honiara	12.35	104	Pn	Pn	17 51 44.8	+0.4
	2.6nm,0.3s,baz=14,slow=24,SNR=4.6						
WRAB	Tennant Creek	18.61	223	eP	P	17 53 04.0	-0.5
	20nm,1.4s						
WB2	Warramunga Arr	18.62	223	eP	P	17 53 03.0	-1.6
	24nm,1.6s						
WR1	Warramunga Arr	18.62	223	eP	P	17 53 02.4	-2.3
	25nm,1.4s						
WR1				eSn	Sn	17 56 30.3	-2.7
WRA	Warramunga Arr	18.62	223	P	P	17 53 02.4	-2.3
	0.5nm,0.3s,baz=50,slow=10,SNR=16						
WRA				S	Sn	17 56 30.3	-2.7
	baz=40,slow=21,SNR=3.4						
GUMO	Guam	20.27	352	LR	LR	18 01 06.8	
	comp=Z,148nm,18.4s,baz=175,slow=37						
AS01	Alice Springs	21.57	217	eP	P	17 53 34.3	-2.3
AS31	Alice Springs	21.60	217	eP	P	17 53 34.5	-2.4
	2.9nm,0.7s						
ASAR	Alice Springs	21.60	217	P	P	17 53 34.5	-2.5
	2.5nm,0.7s,baz=54,slow=8.5,SNR=45						
ASAR				S	S	17 57 35.5	+1.9
	1.7nm,0.9s,baz=32,slow=24,SNR=5.0						
ASAR				LR	LR	18 03 13.8	
	comp=Z,270nm,20.8s,baz=48,slow=40						
SOEI	Soe	23.50	261	eP	P	17 53 56.9	0.0
	54nm,1.2s						
DZM	Mont Dzumac	23.68	132	LR	LR	18 01 45.7	
	comp=Z,362nm,18.7s,baz=0.5,slow=33						
FITZ	Fitzroy Crossi	24.45	240	P	P	17 54 03.2	-2.2
	14nm,0.6s,baz=53,slow=7.2,SNR=58						
FITZ	Fitzroy Crossi	24.45	240	eP	P	17 54 05.9	+0.5
	88nm,1.6s						
LUWI	Luwuk	25.57	281	eP	P	17 54 16.5	+0.8
	133nm,1.2s						
STKA	Stephens Creek	25.81	192	P	P	17 54 17.4	-0.2
	2.5nm,0.7s,baz=12,slow=9.3,SNR=2.5						
STKA				LR	LR	18 05 27.0	
	comp=Z,179nm,18.6s,baz=8.2,slow=39						
STKA	Stephens Creek	25.81	192	eP	P	17 54 16.7	-0.9
	3.7nm,1.4s						
DAV	Davao City (W)	26.00	301	LR	LR	18 06 43.0	
	comp=Z,99nm,18.1s,baz=332,slow=42						
BBOO	Buckleboo	28.28	201	eP	P	17 54 40.9	+1.0
	76nm,1.7s						
CAN	Canberra	28.61	178	eP	P	17 54 41.4	-1.4
	18nm,1.3s						
MBWA	Marble Bar	30.78	239	eP	P	17 55 02.1	0.0
	45nm,1.8s						
SBUM	Sibu	36.64	283	eP	P	17 55 54.4	+1.2
	9.3nm,1.2s						
AFI	Afiamalu	40.39	104	LR	LR	18 10 41.1	
	comp=Z,139nm,19.7s,baz=5.0,slow=32						
KSRS	Korea Array	47.59	339	P	P	17 57 22.5	+0.6
	0.4nm,0.5s,baz=154,slow=8.1,SNR=3.0						
KSRS				LR	LR	18 15 59.1	
	comp=Z,79nm,19.5s,baz=202,slow=34						
KSAR	Wonju Array Be	47.60	338	P	P	17 57 22.5	+0.6
IPM	Ipoh	47.97	282	eP	P	17 57 26.5	+1.1
	11nm,1.0s						
KULM	Kulim	48.52	283	eP	P	17 57 30.6	+1.0
	14nm,1.2s						
WHN	Wuhan	48.90	321	P	P	17 57 33.7	+1.6
GSI	Gunungsitoli	50.74	277	eP	P	17 57 46.4	-0.1
	12nm,0.8s						
CM01	Chiang Mai Arr	54.20	298	eP	P	17 58 13.8	+1.7
CMAR	Chiang Mai Arr	54.23	298	P	P	17 58 13.2	+1.0
	0.4nm,0.3s,baz=112,slow=5.9,SNR=4.6						
HHC	Hu-ho-hao-te	57.76	328	eP	P	17 58 34.2	-3.0
HHC				pmax	pmax		
	comp=Z,10.0nm,1.1s						
HHC				pmax	pmax		
	comp=Z,130nm,6.3s						
PEA0	Petropavlovsk-	60.07	7	eP	P	17 58 50.7	-2.1
PETK	Petropavlovsk-	60.07	7	P	P	17 58 52.5	-0.4
	2.1nm,0.8s,baz=198,slow=9.1,SNR=3.5						
PEA1	Petropavlovsk-	60.07	7	eP	P	17 58 52.5	-0.4
TLY	Talaya	69.24	332	LR	LR	18 28 46.6	
	comp=Z,42nm,21.8s,baz=3.0,slow=35						
NIKH	Nikolski High	69.75	26	eP	P	17 59 54.3	-1.5
	181nm,1.8s						
YAK	Yakutsk	69.85	351	LR	LR	18 29 48.1	
	comp=Z,49nm,19.2s,baz=37,slow=35						
VNDA	Vanda	71.27	177	P	P	18 00 05.8	+1.0
	2.4nm,0.8s,baz=330,slow=6.7,SNR=14						
VNDA	Vanda	71.27	177	eP	P	18 00 05.9	+1.2
	2.7nm,0.9s						
WMQ	Urumqi	73.76	319	eP	P	18 00 17.0	-3.2
WMQ				pP	pP	18 00 23.9	-11
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.7s						
WMQ				pmax	pmax		
	comp=Z,140nm,5.8s						
MK01	Makanchi Array	78.45	320	eP	P	18 00 47.5	+0.8
MK32	Makanchi Array	78.46	320	eP	P	18 00 46.6	-0.2
MKAR	Makanchi Array	78.46	320	P	P	18 00 46.6	-0.2
	0.5nm,0.7s,baz=104,slow=6.1,SNR=3.4						
ZALV	Zalesovo Beam	79.94	328	P	P	18 00 54.3	-0.3
	0.2nm,0.4s,baz=120,slow=6.5,SNR=3.5						
ZAA1	Zalesovo Array	79.94	328	eP	P	18 00 54.3	-0.4
QSPA	South Pole Qui	83.38	180	eP	P	18 01 13.2	+0.5
	6.0nm,0.8s						
ILAR	Eielson Array	85.71	23	P	P	18 01 23.2	-1.2
	0.9nm,0.8s,baz=230,slow=6.0,SNR=7.4						
TORD	Torodi Ar. Bea	146.01	284	PKPbc	PKPab	18 08 27.4	+0.4
	1.4nm,0.8s,baz=70,slow=2.4,SNR=7.4						

IDC 01 18:00:41.6±5.0, 20°.40N×146°.47E, h355km±52km, mb3.1/9, mb1 3.2/10, mb1mx2.9/41, mbtmp3.7/10, Error ellipse: s-maj=36.0km s-min=13.4km az=84.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	Matsushiro Arr	17.64	338	P	P	18 04 24.1	-0.3
	0.4nm,0.3s,baz=156,slow=6.4,SNR=5.7						
KSRS	Korea Array	23.43	320	P	P	18 05 20.6	+0.3
	0.9nm,0.4s,baz=144,slow=8.6,SNR=9.6						
WRA	Warramunga Arr	41.81	197	P	P	18 07 57.9	-0.1
	0.7nm,0.3s,baz=16,slow=9.0,SNR=34						
SONM	Songino Array	42.30	320	P	P	18 08 02.2	+0.4
	0.4nm,0.6s,baz=128,slow=7.6,SNR=3.7						
ASAR	Alice Springs	45.48	196	P	P	18 08 26.7	-0.2
	0.3nm,0.3s,baz=12,slow=8.4,SNR=7.7						
ZALV	Zalesovo Beam	57.13	322	P	P	18 09 52.2	+0.1
	0.3nm,0.3s,baz=101,slow=7.5,SNR=3.4						
MKAR	Makanchi Array	57.83	313	P	P	18 09 55.9	-1.3
	0.5nm,0.5s,baz=93,slow=8.6,SNR=8.9	

SVV			*e*S		**Sn**	18 31 19.9	**-1.7**
PCRV	**Puerto La Cruz**	**2.54**	**252**	*e*P	**Pn**	18 30 51.0	**-0.2**
RIOV	**Rio Grande**	**2.90**	**173**	*e*P	**Pn**	18 30 57.3	**+1.3**
MCLT	**Moule a Chique**	**2.98**	**24**	*e*P	**Pn**	18 30 58.2	**+1.3**
MCLT				*e*S	**Sn**	18 31 31.4	**-1.0**
CUPV	**Cœpira**	**3.66**	**256**	*e*P	**Pn**	18 31 07.2	**+1.1**
LUEV	**Luepa**	**5.14**	**172**	*e*P	**Pn**	18 31 26.0	**0.0**
BAUV	**El Baul**	**6.11**	**251**	*e*P	Pn	18 31 38.6	-0.4

WEL 01 18:36:01.2±0.5, 37.77S×176.54E, h166km±4km, ML3.6/21, 2C, Error ellipse: s-maj=6.3km s-min=3.9km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RTZ	**Ruatahuna**	**0.91**	**158**	PN	Pn	18 36 26.7	-0.1
RTZ				SN	Sn	18 36 46.6	-0.1
TKGZ	**Te Karaka**	**1.23**	**123**	PN	Pn	18 36 29.5	+0.1
TKGZ				SN	Sn	18 36 49.6	-1.5
TKGZ				AML	AML	18 36 59.6	
NMHZ	**Naumai**	**1.34**	**171**	PN	Pn	18 36 31.5	+1.0
ARHZ	**Aropaoanui**	**1.53**	**167**	PN	Pn	18 36 33.6	+1.4
KWHZ	**Kaweka Forest**	**1.65**	**183**	PN	Pn	18 36 34.0	+0.4
KWHZ				SN	Sn	18 36 58.7	0.0
KWHZ				AML	AML	18 36 58.9	
KWHZ				AML	AML	18 36 59.0	
MCHZ	**McNeill Hill**	**1.67**	**176**	*e*PN	Pn	18 36 34.3	+0.6
BHHZ	**Black Hill Sta**	**1.75**	**192**	⇑PN	Pn	18 36 34.7	0.0
KRHZ	**Kereru**	**1.87**	**184**	PN	Pn	18 36 35.8	0.0
KAHZ	**Kahuranaki**	**2.04**	**173**	PN	Pn	18 36 38.1	+0.4
KAHZ				SN	Sn	18 37 05.7	-0.3
PNHZ	**Pukenui**	**2.15**	**187**	PN	Pn	18 36 38.7	-0.3
PNHZ				SN	Sn	18 37 07.4	-1.1
PXZ	**Pawanui**	**2.27**	**174**	PN	Pn	18 36 40.2	-0.1
PXZ				SN	Sn	18 37 08.8	-1.9
WPHZ	**Waipukurau**	**2.29**	**182**	PN	Pn	18 36 40.3	-0.3
TSZ	**Takapari Road**	**2.33**	**191**	PN	Pn	18 36 40.6	-0.4
PRHZ	**Porangahau**	**2.49**	**178**	⇑PN	Pn	18 36 43.0	+0.1
DVHZ	**Dannevirke**	**2.54**	**186**	PN	Pn	18 36 42.8	-0.7
POWZ	**Post Office Ro**	**2.68**	**193**	PN	Pn	18 36 44.6	-0.6
ANWZ	**Angora Road**	**2.68**	**181**	PN	Pn	18 36 44.9	-0.3
ANWZ				SN	Sn	18 37 16.9	-2.6
ANWZ				AML	AML	18 37 18.6	
PRWZ	**Pori Road**	**2.81**	**189**	PN	Pn	18 36 46.4	-0.4
BFZ	**Birch Farm**	**2.91**	**184**	PN	Pn	18 36 47.2	-0.8
TIWZ	**Tintock**	**3.04**	**189**	PN	Pn	18 36 48.8	-0.9
HOWZ	**Holdsworth Sta**	**3.22**	**194**	PN	Pn	18 36 50.4	-1.5
OGWZ	**Otaki Gorge**	**3.22**	**199**	PN	Pn	18 36 50.6	-1.2
OGWZ				AML	AML	18 37 31.3	
KIW	**Kapiti Island**	**3.33**	**202**	PN	Pn	18 36 51.6	-1.7
MTW	**Mount Morrison**	**3.47**	**193**	PN	Pn	18 36 53.2	-1.9
CAW	**Cannon Point**	**3.52**	**198**	PN	Pn	18 36 54.0	-1.6
MSWZ	**Moikau Station**	**3.77**	**195**	PN	Pn	18 36 56.7	-2.2
PLWZ	**Palliser**	**3.92**	**194**	PN	Pn	18 36 58.4	-2.3
TUWZ	**Tuamarina**	**4.16**	**208**	PN	Pn	18 37 02.3	-1.6

IDC 01 18:36:43.3±9.9, 30.65S×179.19W, h337km±109km, mb2.6/2, mb1 3.0/3, mb1mx2.8/20, mbtmp3.5/3, Error ellipse: s-maj=107.3km s-min=42.0km az=3.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**8.18**	**201**	P	Pn	18 38 39.8	+0.6
	1.8nm,0.3s,baz=16,slow=20,SNR=7.4						
URZ				S	S	18 40 13.3	-0.5
	1.4nm,0.3s,baz=37,slow=23,SNR=8.8						
ASAR	**Alice Springs**	**42.07**	**268**	P	P	18 44 03.5	+0.3
	0.2nm,0.8s,baz=101,slow=7.8,SNR=3.0						
WRA	**Warramunga Arr**	**43.08**	**273**	P	P	18 44 11.1	-0.3
	0.2nm,0.3s,baz=110,slow=8.1,SNR=14						
FINES	**FINESS Array B**	**145.02**	**339**	PKPbc	PKPdf	18 55 39.1	-0.8
	1.0nm,0.5s,baz=64,slow=3.2,SNR=13						

IDC 01 19:00:59.5±8.0, 19.58S×178.53W, h0km, mb3.5/3, mb1 3.8/3, mb1mx3.5/33, mbtmp3.5/3, MS3.6/1, Ms1 3.5/1, ms1mx2.7/23, Error ellipse: s-maj=350.7km s-min=37.6km az=145.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**37.75**	**243**	LR	LR	19 21 19.2	
	comp=Z,89nm,20.9s,baz=204,slow=32						
WRA	**Warramunga Arr**	**44.24**	**261**	P	P	19 09 11.2	+0.2
	0.3nm,0.5s,baz=96,slow=8.4,SNR=7.9						
ASAR	**Alice Springs**	**44.25**	**256**	P	P	19 09 10.5	-0.5
	0.9nm,1.0s,baz=90,slow=8.5,SNR=4.9						
ILAR	**Eielson Array**	**87.54**	**13**	P	P	19 13 48.7	0.0
	0.2nm,0.7s,baz=226,slow=3.3,SNR=3.1						

DJA ***01*** *19:05:43.1±0.4, 1°S±3°×12°4E±°, h10km, M4.4/8, mb4.5/1, MLv4.4/8*

ISCJB ***01*** *19:05:44.3±0.5, 1°37S±0°.05×123°.66E±0°.04, h49km, mb3.5/4, Error ellipse: s-maj=7.7km s-min=5.8km az=5.8*

IDC ***01*** *19:05:50.2±2.7, 1°.25S×123°.94E, h96km±30km, mb3.1/4, mb1 3.4/6, mb1mx3.2/38, mbtmp3.6/6, Error ellipse: s-maj=21.7km s-min=19.7km az=37.0*

ISC 01 19:05:45.8±0.9, 1°39S±0°.06×123°.61E±0°.06, h49km, n17, σ1°06/18, mb3.5/4, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LUWI	**Luwuk**	**0.91**	**292**	P	**Pn**	**19 06 01.0**	**-1.3**
LUWI				S	**Sn**	**19 06 14.2**	**-0.2**
KMSI	**Cibinong**	**1.99**	**11**	P	**Pn**	**19 06 16.7**	**-0.3**
KMSI				S	**Sn**	**19 06 42.5**	**+1.8**
MRSI	**Marisa**	**2.50**	**318**	P	**Pn**	**19 06 23.7**	**-0.3**
KDI	**Kendari**	**2.73**	**201**	P	**Pn**	**19 06 27.0**	**-0.3**
PCI	**Palu**	**3.81**	**277**	P	**Pn**	**19 06 43.0**	**+1.0**
LBMI	**Labuha**	**3.96**	**79**	P	**Pn**	**19 06 42.3**	**-1.8**
TTSI	**Tana Toraja**	**4.13**	**247**	P	**Pn**	**19 06 47.1**	**+0.7**
SPSI	**Sidrap Palu**	**4.61**	**236**	P	**Pn**	**19 06 54.7**	**+1.7**
KAPI	**Kappang**	**5.27**	**227**	P	Pn	19 07 11.9	+10
	8.6nm,0.3s,baz=115,slow=4.1,SNR=12						
KAPI				S	Sn	19 08 15.0	+13
	0.5nm,0.3s,baz=57,slow=22,SNR=3.0						
EDFI	**Ende, Flores**	**7.55**	**195**	P	**Pn**	**19 07 33.9**	**+0.4**
SIJI	**Sorong**	**7.67**	**86**	P	**Pn**	**19 07 34.6**	**-0.5**
	14nm,0.3s,baz=180,slow=22,SNR=1.8						
SIJI				S	**Sn**	**19 09 02.1**	**+1.5**
	21nm,0.3s,baz=357,slow=2.4,SNR=2.7						
SOEI	**Soe**	**8.33**	**176**	P	Pn	19 07 53.7	+9.5
FITZ	**Fitzroy Crossi**	**16.73**	**173**	P	**P**	**19 09 39.1**	**+0.6**
	0.1nm,0.3s,baz=359,slow=14,SNR=5.3						
WRA	**Warramunga Arr**	**21.21**	**151**	P	**P**	**19 10 27.6**	**-0.1**
	2.0nm,0.8s,baz=326,slow=11,SNR=8.4						
ASAR	**Alice Springs**	**24.29**	**157**	P	**P**	**19 10 59.5**	**+0.7**
	0.5nm,0.6s,baz=329,slow=9.0,SNR=18						
SONM	**Songino Array**	**51.28**	**345**	P	**P**	**19 14 44.2**	**-0.8**
	0.7nm,0.7s,baz=160,slow=8.7,SNR=6.0						
MKAR	**Makanchi Array**	**60.11**	**328**	P	**P**	**19 15 47.7**	**-0.5**
	0.3nm,0.6s,baz=125,slow=8.7,SNR=4.0						

IDC 01 19:21:32.3±8.3, 6.09S×151.35E, h52km±63km, mb3.2/3, mb1 3.6/4, mb1mx3.2/24, mbtmp3.6/4, ML1.2/1, Error ellipse: s-maj=72.2km s-min=49.0km az=154.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**5.30**	**231**	P	Pn	19 22 49.9	+1.0
	0.6nm,0.3s,baz=78,slow=19,SNR=5.2						
PMG				S	Sn	19 23 49.5	+0.7
	1.3nm,0.3s,baz=78,slow=20,SNR=4.5						
WRA	**Warramunga Arr**	**21.51**	**229**	P	P	19 26 16.5	-0.6
	0.4nm,0.4s,baz=54,slow=10,SNR=8.2						
ASAR	**Alice Springs**	**24.23**	**222**	P	P	19 26 44.9	+0.4
	0.8nm,0.7s,baz=57,slow=9.0,SNR=11						
FITZ	**Fitzroy Crossi**	**27.78**	**242**	P	P	19 27 16.3	-0.3
	0.9nm,0.7s,baz=74,slow=9.7,SNR=3.8						
TORD	**Torodi Ar. Bea**	**149.29**	**285**	PKPbc	PKPbc	19 41 16.1	-0.3
	0.3nm,0.5s,baz=100,slow=2.3,SNR=4.1						
BDFB	**Brasilia**	**151.12**	**139**	PKPbc	PKPbc	19 41 20.5	-0.4
	4μm,0.3s,baz=299,slow=0.0,SNR=2.9						

ISCJB ***01*** *19:34:11.5±0.5, 34°.41N±0°.02×9°.55W±0°.05, h10km, Error ellipse: s-maj=6.4km s-min=3.0km az=178.5*

CNRM ***01*** *19:34:13.1, 34°.55N×9°.64W, h30km, MD3.2*

CSEM ***01*** *19:34:14.2±0.2, 34°.32N×9°.74W, h30km, mb4.4, Error ellipse: s-maj=5.9km s-min=4.1km az=94.0*

MDD ***01*** *19:34:15.1±0.9, 34°.29N×9°.75W, h36km±27km, mb4.4/12, Error ellipse: s-maj=7.8km s-min=5.4km az=86.0, PRXIMO*

IGIL ***01*** *19:34:16.0, 34°.33N×9°.78W, h29km, ML2.8*

INMG ***01*** *19:34:16.6±1.1, 34°.33N×9°.76W, h31km, ML2.7, Error ellipse: s-maj=4.7km s-min=3.2km az=121.0*

ISC 01 19:34:09.8±1.1, 34.37N±0°.05×9.73W±0°.05, h10km, n135, σ2°72/239, 2C-1D, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PFVI	**Vila Bisbo**	**2.85**	**15**	⇑*e*Pn	**Pb**	**19 34 58.9**	**-2.0**
PFVI				*e*Sn	**Sn**	**19 35 30.2**	**+0.4**
PFVI				A	A	19 35 33.1	
	7.5nm,0.2s						
PFVI	**Vila Bisbo**	**2.85**	**15**	P	**Pb**	**19 34 58.8**	**-2.0**
	7.2nm,0.1s,SNR=16						
PFVI				S	**Sn**	**19 35 30.3**	**+0.4**
	14nm,0.1s,SNR=7.9						
PFVI	**Vila Bisbo**	**2.85**	**15**	P	**Pb**	**19 34 58.8**	**-2.0**
	7.2nm,0.1s,SNR=16						
PFVI				S	**Sn**	**19 35 30.3**	**+0.4**
	14nm,0.1s,SNR=7.9						
CIA	**Chichaoua**	**2.91**	**164**	P	**Pn**	**19 34 58.0**	**+1.8**
CIA				S	**Sn**	**19 35 32.0**	**+0.8**
CIA	**Chichaoua**	**2.91**	**164**	P	**Pn**	**19 34 58.0**	**+1.8**
CIA				S	**Sn**	**19 35 32.0**	**+0.8**
MORF	**Marmelete**	**3.06**	**16**	*e*P	**Pn**	**19 35 01.7**	**+3.4**
MORF				*e*S	**Sn**	**19 35 35.0**	**+0.1**
MORF				AML	AML	19 35 35.9	
	comp=E,28nm,0.3s						
MORF	**Marmelete**	**3.06**	**16**	⇑*e*Pn	**Pn**	**19 35 01.7**	**+3.4**
MORF				*e*Sn	**Sn**	**19 35 35.1**	**+0.1**
MORF				A	A	19 35 42.6	
	comp=E,14nm,0.4s						
MORF	**Marmelete**	**3.06**	**16**	P	**Pn**	**19 35 01.7**	**+3.4**
MORF				S	**Sn**	**19 35 35.0**	**+0.1**
	comp=E,28nm,0.3s						
MORF	**Marmelete**	**3.06**	**16**	P	**Pn**	**19 35 01.7**	**+3.4**
MORF				S	**Sn**	**19 35 35.0**	**+0.1**
	comp=E,28nm,0.3s						
PBDV	**Barranco-do-Ve**	**3.22**	**26**	*e*Pn	**Pn**	**19 35 04.0**	**+3.5**
PBDV				*e*Sn	**Sn**	**19 35 39.4**	**+0.5**
PBDV				A	A	19 35 48.1	
	comp=E,7.2nm,0.4s						
PBDV	**Barranco-do-Ve**	**3.22**	**26**	P	**Pn**	**19 35 04.0**	**+3.5**
PBDV				S	**Sn**	**19 35 39.4**	**+0.5**
	comp=E,7.2nm,0.4s						
PBDV	**Barranco-do-Ve**	**3.22**	**26**	P	**Pn**	**19 35 04.0**	**+3.5**
PBDV				S	**Sn**	**19 35 39.4**	**+0.5**
	comp=E,7.2nm,0.4s						
PTEO	**Sao Teotonio**	**3.27**	**14**	*e*Pn	**Pn**	**19 35 04.9**	**+3.7**
PTEO				*e*Sn	**Sn**	**19 35 40.5**	**+0.3**
PTEO				A	A	19 35 43.4	
	comp=E,14nm,0.2s						
PTEO	**Sao Teotonio**	**3.27**	**14**	P	**Pn**	**19 35 04.9**	**+3.7**
PTEO				S	**Sn**	**19 35 40.5**	**+0.3**
	comp=E,7.1nm,0.2s						
PTEO	**Sao Teotonio**	**3.27**	**14**	P	**Pn**	**19 35 04.9**	**+3.7**
PTEO				S	**Sn**	**19 35 40.5**	**+0.3**
	comp=E,7.1nm,0.2s						
PVAQ	**Vaqueiros**	**3.44**	**28**	*e*Pn	**Pn**	**19 35 07.3**	**+3.8**
PVAQ				*e*Sn	**Sn**	**19 35 44.7**	**+0.4**
PVAQ				A	A	19 35 52.2	
	comp=E,7.2nm,0.4s						
PVAQ	**Vaqueiros**	**3.44**	**28**	P	**Pn**	**19 35 07.3**	**+3.8**
PVAQ				S	**Sn**	**19 35 44.7**	**+0.4**
	comp=E,7.2nm,0.4s						
PVAQ	**Vaqueiros**	**3.44**	**28**	P	**Pn**	**19 35 07.3**	**+3.8**
PVAQ				S	**Sn**	**19 35 44.7**	**+0.4**
	comp=E,7.2nm,0.4s						
TZC	**Tazercounte**	**3.50**	**128**	P	**Pn**	**19 35 06.0**	**+1.6**
TZC				S	**Sn**	**19 35 44.0**	**-2.0**
TZC	**Tazercounte**	**3.50**	**128**	P	**Pn**	**19 35 06.0**	**+1.6**
TZC				S	**Sn**	**19 35 44.0**	**-2.0**
OUK	**Oukaimeden**	**3.52**	**153**	P	**Pn**	**19 35 07.0**	**+2.2**
OUK				S	**Sn**	**19 35 47.0**	**+0.4**
OUK	**Oukaimeden**	**3.52**	**153**	P	**Pn**	**19 35 07.0**	**+2.2**
OUK				S	**Sn**	**19 35 47.0**	**+0.4**
PCVE	**Castro Verde**	**3.53**	**22**	*e*Pn	**Pn**	**19 35 08.5**	**+3.8**
PCVE				*e*Sn	**Sn**	**19 35 46.9**	**+0.3**
PCVE				A	A	19 35 51.1	
	comp=E,9.2nm,0.4s						
PCVE	**Castro Verde**	**3.53**	**22**	P	**Pn**	**19 35 08.5**	**+3.8**
PCVE				S	**Sn**	**19 35 46.9**	**+0.3**
	comp=E,9.2nm,0.4s						
PCVE	**Castro Verde**	**3.53**	**22**	P	**Pn**	**19 35 08.5**	**+3.8**
PCVE				S	**Sn**	**19 35 46.9**	**+0.3**
	comp=E,9.2nm,0.4s						
KIB	**El Ksiba**	**3.56**	**119**	P	**Pn**	**19 35 06.0**	**+0.8**
KIB				S	**Sn**	**19 35 45.0**	**-2.4**
KIB	**El Ksiba**	**3.56**	**119**	P	**Pn**	**19 35 06.0**	**+0.8**
KIB				S	**Sn**	**19 35 45.0**	**-2.4**
EGRO	**El Granado**	**3.65**	**29**	P	**Pn**	**19 35 09.9**	**+3.6**
	comp=E,2.7nm,0.1s,SNR=28						
EGRO				S	**Sn**	**19 35 49.7**	**+0.3**
	comp=E,6.2nm,0.1s						
EGRO	**El Granado**	**3.65**	**29**	P	**Pn**	**19 35 09.9**	**+3.6**
	comp=E,2.7nm,0.1s,SNR=28						
EGRO				S	**Sn**	**19 35 49.7**	**+0.3**
	comp=E,6.2nm,0.1s						
MESJ	**Messejana**	**3.67**	**19**	*e*P	**Pn**	**19 35 10.3**	**+3.7**
MESJ				*e*S	**Sn**	**19 35 50.0**	**0.0**
MESJ				AML	AML	19 35 52.9	
	comp=N,26nm,0.2s						
MESJ	**Messejana**	**3.67**	**19**	*e*Pn	**Pn**	**19 35 08.9**	**+2.2**
MESJ				*e*Sn	**Sn**	**19 35 50.2**	**+0.2**
MESJ				A	A	19 35 52.7	
	comp=N,7.3nm,0.5s						
MESJ	**Messejana**	**3.67**	**19**	P	**Pn**	**19 35 10.3**	**+3.7**
MESJ				S	**Sn**	**19 35 50.2**	**+0.2**
	comp=N,7.3nm,0.5s						
MESJ	**Messejana**	**3.67**	**19**	*e*Pn	**Pn**	**19 35 08.9**	**+2.2**
MESJ	**Messejana**	**3.67**	**19**	P	**Pn**	**19 35 10.3**	**+3.7**
MESJ				S	**Sn**	**19 35 50.2**	**+0.2**
	comp=N,7.3nm,0.5s						
PNCL	**Nicolau / Gran**	**3.86**	**14**	*e*Pn	**Pn**	**19 35 12.0**	**+2.8**
PNCL				*e*Sn	**Sn**	**19 35 54.5**	**-0.1**
PNCL				A	A	19 35 59.8	
	comp=N,8.9nm,0.2s						
PNCL	**Nicolau / Gran**	**3.86**	**14**	*e*Pn	**Pn**	**19 35 12.0**	**+2.8**
PNCL				*e*Sn	**Sn**	**19 35 54.5**	**-0.1**
	comp=N,8.9nm,0.2s						
PBEJ	**Beja**	**3.95**	**22**	*e*Pn	**Pn**	**19 35 14.1**	**+3.6**
PBEJ				*e*Sn	**Sn**	**19 35 56.9**	**+0.1**
PBEJ				A	A	19 36 00.6	
	comp=N,6.4nm,0.4s						
PBEJ	**Beja**	**3.95**	**22**	P	**Pn**	**19 35 14.1**	**+3.6**
PBEJ				S	**Sn**	**19 35 56.9**	**+0.1**
	comp=N,3.2nm,0.4s						
PBEJ	**Beja**	**3.95**	**22**	P	**Pn**	**19 35 14.1**	**+3.6**
PBEJ				S	**Sn**	**19 35 56.9**	**+0.1**
	comp=N,3.2nm,0.4s						
ESPR	**Espera**	**4.02**	**51**	P	**Pn**	**19 35 14.7**	**+3.3**
	comp=N,5.2nm,0.3s,SNR=9.0						
ESPR				S	**Sn**	**19 35 58.3**	**-0.3**
	comp=N,5.0nm,0.3s,SNR=5.7						
ESPR	**Espera**	**4.02**	**51**	P	**Pn**	**19 35 14.7**	**+3.3**
	comp=N,5.2nm,0.3s,SNR=9.0						
ESPR				S	**Sn**	**19 35 58.3**	**-0.3**
	comp=N,5.0nm,0.3s,SNR=5.7						
EJIF	**Jimena Fronter**	**4.05**	**58**	P	**Pn**	**19 35 16.0**	**+4.1**
	comp=N,1.5nm,0.2s,SNR=7.9						
EJIF				S	**Sn**	**19 35 59.8**	**+0.4**
	comp=N,2.4nm,0.3s,SNR=7.9						
EJIF	**Jimena Fronter**	**4.05**	**58**	P	**Pn**	**19 35 16.0**	**+4.1**
	comp=N,1.5nm,0.2s,SNR=7.9						
EJIF				S	**Sn**	**19 35 59.8**	**+0.4**
	comp=N,2.4nm,0.3s,SNR=7.9						
CZD	**Col de Zad**	**4.12**	**108**	P	**Pn**	**19 35 13.0**	**-0.1**
CZD				S	**Sn**	**19 35 57.0**	**-4.5**
CZD	**Col de Zad**	**4.12**	**108**	P	**Pn**	**19 35 13.0**	**-0.1**
CZD				S	**Sn**	**19 35 57.0**	**-4.5**
EMIN	**Mina Concepcio**	**4.20**	**35**	P	**Pn**	**19 35 17.0**	**+3.1**
	comp=N,1.4nm,0.1s,SNR=20						
EMIN				S	**Sn**	**19 36 01.0**	**-2.0**
	comp=N,3.5nm,0.2s,SNR=8.3						
EMIN	**Mina Concepcio**	**4.20**	**35**	P	**Pn**	**19 35 17.0**	**+3.1**
	comp=N,1.4nm,0.1s,SNR=20						
EMIN				S	**Sn**	**19 36 01.0**	**-2.0**
	comp=N,3.5nm,0.2s,SNR=8.3						
PBAR	**Barrancos**	**4.38**	**29**	*e*Pn	**Pn**	**19 35 19.8**	**+3.5**
PBAR				*e*Sn	**Sn**	**19 36 07.3**	**-0.1**
	comp=N,4.7nm,0.3s						
PBAR	**Barrancos**	**4.38**	**29**	P	**Pn**	**19 35 19.8**	**+3.5**
PBAR				S	**Sn**	**19 36 07.3**	**-0.1**
	comp=N,4.7nm,0.3s						
PBAR	**Barrancos**	**4.38**	**29**	P	**Pn**	**19 35 19.8**	**+3.5**
PBAR				S	**Sn**	**19 36 07.3**	**-0.1**
	comp=N,4.7nm,0.3s						
EVO	**Evora**	**4.38**	**18**	*e*Pn	**Pn**	**19 35 19.9**	**+3.5**
EVO				*e*Sn	**Sn**	**19 36 07.2**	**-0.3**
EVO				A	A	19 36 10.3	
	comp=N,9.6nm,0.1s						
EVO	**Evora**	**4.38**	**18**	P	**Pn**	**19 35 19.9**	**+3.5**
EVO				S	**Sn**	**19 36 07.2**	**-0.3**
	comp=N,9.6nm,0.1s						
EVO	**Evora**	**4.38**	**18**	P	**Pn**	**19 35 19.9**	**+3.5**
EVO				S	**Sn**	**19 36 07.2**	**-0.3**
	comp=N,9.6nm,0.1s						
PMAFR	**Mafra**	**4.59**	**4**	*e*Pn	**Pn**	**19 35 22.4**	**+3.1**
PMAFR				*e*Sn	**Sn**	**19 36 11.6**	**-1.1**
PMAFR				A	A	19 36 15.3	
	comp=N,24nm,0.5s						
PMAFR	**Mafra**	**4.59**	**4**	P	**Pn**	**19 35 22.6**	**+3.3**
	comp=N,5.3nm,0.1s,SNR=11						
PMAFR				S	**Sn**	**19 36 12.4**	**-0.3**
	comp=N,20nm,0.2s,SNR=6.2						
PMAFR	**Mafra**	**4.59**	**4**	P	**Pn**	**19 35 22.6**	**+3.3**
	comp=N,5.3nm,0.1s,SNR=11						
PMAFR				*e*Sn	**Sn**	**19 36 11.6**	**-1.1**
	comp=N,24nm,0.5s						
PMAFR				S	**Sn**	**19 36 12.4**	**-0.3**
	comp=N,20nm,0.2s,SNR=6.2						
EMIJ	**Mijas**	**4.60**	**60**	P	**Pn**	**19 35 22.5**	**+3.1**
	comp=N,0.3nm,0.1s,SNR=64						
EMIJ	**Mijas**	**4.60**	**60**	P	**Pn**	**19 35 22.5**	**+3.1**
	comp=N,0.3nm,0.1s,SNR=64						
PESTR	**Estremoz**	**4.81**	**20**	*e*Pn	**Pn**	**19 35 25.6**	**+3.3**
PESTR				*e*Sn	**Sn**	**19 36 17.1**	**-1.0**
PESTR				A	A	19 36 18.6	
	comp=N,1.9nm,0.4s						
PESTR	**Estremoz**	**4.81**	**20**	*e*Pn	**Pn**	**19 35 25.6**	**+3.3**
PESTR				*e*Sn	**Sn**	**19 36 17.1**	**-1.0**
	comp=N,1.9nm,0.4s						
EBAD	**Badajoz**	**4.89**	**26**	P	**Pn**	**19 35 26.8**	**+3.4**
	comp=N,1.9nm,0.1s,SNR=25						
EBAD				S	**Sn**	**19 36 20.1**	**0.0**
	comp=N,6.0nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**4.89**	**26**	P	**Pn**	**19 35 26.8**	**+3.4**
	comp=N,1.9nm,0.1s,SNR=25						
EBAD				S	**Sn**	**19 36 20.1**	**0.0**
	comp=N,6.0nm,0.2s,SNR=7.9						
ECAB	**El Cabril**	**5.08**	**42**	P	**Pn**	**19 35 29.4**	**+3.4**
	comp=N,1.2nm,0.2s,SNR=14						
ECAB				S	**Sn**	**19 36 22.3**	**-2.5**
	comp=N,2.4nm,0.2s						
ECAB	**El Cabril**	**5.08**	**42**	P	**Pn**	**19 35 29.4**	**+3.4**
	comp=N,1.2nm,0.2s,SNR=14						
ECAB				S	**Sn**	**19 36 22.3**	**-2.5**
	comp=N,2.4nm,0.2s						
EGOR	**Sierra Gorda,**	**5.33**	**57**	P	**Pn**	**19 35 33.2**	**+3.7**
	comp=N,0.4nm,0.1s,SNR=7.9						
EGOR				S	**Sn**	**19 36 29.7**	**-1.3**
	comp=N,3.0nm,0.3s,SNR=7.9						
EGOR	**Sierra Gorda,**	**5.33**	**57**	P	**Pn**	**19 35 33.2**	**+3.7**
	comp=N,0.4nm,0.1s,SNR=7.9						
EGOR				S	**Sn**	**19 36 29.7**	**-1.3**
	comp=N,3.0nm,0.3s,SNR=7.9						
PTOM	**Tomar**	**5.35**	**11**	*e*Pn	**Pn**	**19 35 33.7**	**+4.1**
PTOM				*e*Sn	**Sn**	**19 36 30.8**	**-0.5**
PTOM				A	A	19 36 32.3	
	comp=N,8.5nm,0.5s						
PTOM	**Tomar**	**5.35**	**11**	P	**Pn**	**19 35 33.7**	**+4.1**
PTOM				S	**Sn**	**19 36 30.8**	**-0.5**
	comp=N,4.2nm,0.5s						
PTOM	**Tomar**	**5.35**	**11**	P	**Pn**	**19 35 33.7**	**+4.1**
PTOM				S	**Sn**	**19 36 30.8**	**-0.5**
	comp=N,4.2nm,0.5s						
PMRV	**Marv??o**	**5.39**	**20**	⇓*i*Pn	**Pn**	**19 35 33.5**	**+3.3**
PMRV				*e*Sn	**Sn**	**19 36 31.1**	**-1.2**
PMRV				A	A	19 36 32.5	
	comp=N,5.9nm,0.6s						
PMRV	**Marv??o**	**5.39**	**20**	P	**Pn**	**19 35 33.5**	**+3.3**
PMRV				S	**Sn**	**19 36 31.1**	**-1.2**
	comp=N,5.9nm,0.6s						
PMRV	**Marv??o**	**5.39**	**20**	P	**Pn**	**19 35 33.5**	**+3.3**
PMRV				S	**Sn**	**19 36 31.1**	**-1.2**
	comp=N,5.9nm,0.6s						
EADA	**Adamuz**	**5.63**	**46**	P	**Pn**	**19 35 36.5**	**+3.0**
	comp=N,4.5nm,0.2s,SNR=28						
EADA				S	**Sn**	**19

comp=N,0.8nm,0.2s,SNR=3.6
PVRL Vila Real 7.08 12 *e*Pn **Pn 19 35 56.0 +2.5**
PVRL *e*Sn **Sn 19 37 11.2 -2.8**
PVRL Vila Real 7.08 12 P **Pn 19 35 56.0 +2.5**
PVRL S **Sn 19 37 11.2 -2.8**
PVRL Vila Real 7.08 12 P **Pn 19 35 56.0 +2.5**
PVRL S **Sn 19 37 11.2 -2.8**
MVO Moncorvo 7.11 17 *e*Pn **Pn 19 35 57.3 +3.3**
MVO *e*Sn **Sn 19 37 12.9 -2.0**
MVO A A 19 37 16.2
comp=N,2.5nm,0.6s
MVO Moncorvo 7.11 17 P **Pn 19 35 57.7 +3.7**
comp=N,1.3nm,0.1s,SNR=6.5
MVO S **Sn 19 37 11.9 -3.0**
SNR=7.9
MVO Moncorvo 7.11 17 *e*Pn **Pn 19 35 57.3 +3.3**
MVO Moncorvo 7.11 17 P **Pn 19 35 57.7 +3.7**
comp=N,1.3nm,0.1s,SNR=6.5
MVO S **Sn 19 37 11.9 -3.0**
SNR=7.9
POLO Lamas de Olo 7.16 12 *e*Pn **Pn 19 35 58.2 +3.6**
POLO *e*Sn **Sn 19 37 13.2 -2.9**
POLO A A 19 37 15.9
comp=N,1.3nm,0.5s
POLO Lamas de Olo 7.16 12 *e*Pn **Pn 19 35 58.2 +3.6**
EVIA Vianos 7.21 52 P **Pn 19 35 58.0 +2.7**
comp=N,0.9nm,0.1s,SNR=7.9
EVIA S **Sn 19 37 14.1 -3.3**
comp=N,1.9nm,0.2s,SNR=7.9
EVIA Vianos 7.21 52 P **Pn 19 35 58.0 +2.7**
comp=N,0.9nm,0.1s,SNR=7.9
EVIA S **Sn 19 37 14.1 -3.3**
comp=N,1.9nm,0.2s,SNR=7.9
PCAB Cabril 7.45 10 *e*Pn **Pn 19 36 02.4 +3.8**
PCAB Cabril 7.45 10 P **Pn 19 36 02.4 +3.8**
PCAB Cabril 7.45 10 P **Pn 19 36 02.4 +3.8**
ELOB Lobios 7.60 9 P **Pn 19 36 04.0 +3.3**
comp=N,0.4nm,0.1s,SNR=8.7
ELOB S **Sn 19 37 23.0 -3.9**
comp=N,1.6nm,0.2s,SNR=4.9
ELOB Lobios 7.60 9 P **Pn 19 36 04.0 +3.3**
comp=N,0.4nm,0.1s,SNR=8.7
ELOB S **Sn 19 37 23.0 -3.9**
comp=N,1.6nm,0.2s,SNR=4.9
GUD Guadarrama 7.67 34 P **Pn 19 36 04.8 +3.1**
comp=N,0.3nm,0.1s,SNR=7.9
GUD S **Sn 19 37 25.7 -3.0**
comp=N,1.1nm,0.4s,SNR=7.9
GUD Guadarrama 7.67 34 P **Pn 19 36 04.8 +3.1**
comp=N,0.3nm,0.1s,SNR=7.9
GUD S **Sn 19 37 25.7 -3.0**
comp=N,1.1nm,0.4s,SNR=7.9
PGAV Gavieira, Arco 7.67 8 *e*Pn **Pn 19 36 04.8 +3.1**
PGAV Gavieira, Arco 7.67 8 *e*Pn **Pn 19 36 04.8 +3.1**
PBRG Braganca 7.79 17 *e*Pn **Pn 19 36 06.4 +3.2**
PBRG Braganca 7.79 17 P **Pn 19 36 06.4 +3.2**
PBRG Braganca 7.79 17 P **Pn 19 36 06.4 +3.2**
ETOB Tobarra 7.85 55 P **Pn 19 36 06.1 +2.1**
comp=N,0.3nm,0.1s,SNR=8.4
ETOB S **Sn 19 37 29.6 -3.4**
comp=N,1.0nm,0.1s,SNR=7.2
ETOB Tobarra 7.85 55 P **Pn 19 36 06.1 +2.1**
comp=N,0.3nm,0.1s,SNR=8.4
ETOB S **Sn 19 37 29.6 -3.4**
comp=N,1.0nm,0.1s,SNR=7.2
ECAL Calabor 7.92 16 P **Pn 19 36 07.7 +2.6**
comp=N,0.6nm,0.2s,SNR=7.9
ECAL S **Sn 19 37 31.4 -3.4**
SNR=7.9
ECAL Calabor 7.92 16 P **Pn 19 36 07.7 +2.6**
comp=N,0.6nm,0.2s,SNR=7.9
ECAL S **Sn 19 37 31.4 -3.4**
SNR=7.9
EAGO Agolada(Pontev 8.52 8 P **Pn 19 36 15.7 +2.5**
comp=N,1.0nm,0.1s,SNR=7.9
EAGO S **Sn 19 37 45.2 -4.2**
comp=N,0.5nm,0.1s,SNR=7.9
EAGO Agolada(Pontev 8.52 8 P **Pn 19 36 15.7 +2.5**
comp=N,1.0nm,0.1s,SNR=7.9
EAGO S **Sn 19 37 45.2 -4.2**
comp=N,0.5nm,0.1s,SNR=7.9
IELO Elcoad 10.75 36 P **Pn 19 36 48.4 +4.5**
comp=N,0.2nm,0.1s,SNR=7.9
IELO Elcoad 10.75 36 P **Pn 19 36 48.4 +4.5**
comp=N,0.2nm,0.1s,SNR=7.9

*IDC **01** 19:39:39.2±4.4,44°.80N×155°.43E,h0km,mb3.9/2, mb1 3.7/7,mb1mx3.4/44,mbtmp3.6/7,ML2.9/4, Error ellipse: s-maj=87.7km s-min=30.2km az=147.0*
*ISCJB **01** 19:39:40.1±1.9,44°.9N±0°.2×155°.3E±0°.2,h10km,mb3.8/2, Error ellipse: s-maj=31.5km s-min=11.8km az=149.5*
ISC 01 19:39:40.5±2.4,44°.8N±0°.2×155°.4E±0°.2,h10km,n7, σ1s37/8,North Pacific Ocean

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PETK	**Petropavlovsk-**	**8.50**	**9**	Pn	**Pn**	**19 41 44.5**	**+0.9**
	0.1nm,0.3s,baz=170,slow=12,SNR=3.2						
ASAJ	**Asahikawa**	**9.21**	**271**	Pn	**Pn**	**19 41 54.2**	**+0.8**
	0.3nm,0.3s,baz=84,slow=18,SNR=5.2						
ASAJ				Sn	**Sn**	**19 43 38.2**	**+1.1**
	0.2nm,0.3s,baz=59,slow=34,SNR=2.8						
MJAR	**Matsushiro Arr**	**15.41**	**244**	Pn	**Pn**	**19 43 18.9**	**+0.9**
	1.0nm,0.3s,baz=62,slow=13,SNR=6.3						
USRK	**Uesurisyk Ar.**	**16.74**	**276**	Pn	**P**	**19 43 35.8**	**-1.4**
	0.2nm,0.3s,baz=68,slow=11,SNR=4.1						
KLR	**Kul'dur**	**16.75**	**294**	Pn	**Pn**	**19 43 33.2**	**-1.9**
	0.1nm,0.3s,baz=61,slow=10,SNR=2.5						
FINES	**FINESS Array B**	**66.54**	**336**	P	**P**	**19 50 29.6**	**-0.5**
	0.4nm,0.4s,baz=45,slow=8.4,SNR=6.6						
AKASG	**Malin Array Be**	**74.11**	**328**	P	**P**	**19 51 16.9**	**+0.2**
	0.5nm,0.4s,baz=34,slow=5.6,SNR=2.5						

MAN 01 19:51:47,17°.82N×120°.69E,h35km,mb4.0,ML2.8,MS2.5, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ABRA	**Dolores**	**0.17**	**172**	*e*P	Pn	19 51 55.4	+1.8
ABRA				*e*S	Sn	19 51 59.5	+1.4
APYP	**Conner**	**0.53**	**86**	*e*P	Pn	19 52 00.1	+2.0
APYP				*e*S	Sn	19 52 07.9	+2.1

*ISCJB **01** 19:57:32.7±0.5,24°.76N±0°.05×122°.50E±0°.02,h15km±8km, Error ellipse: s-maj=8.5km s-min=3.2km az=13.8*
*JMA **01** 19:57:32.8±0.1,24°.69N×122°.48E,h11km±4km,M2.0*
*TAP **01** 19:57:33.1,24°.75N×122°.48E,h8km±2km,ML2.6,D*
ISC 01 19:57:31.9±1.2,24°.73N±0°.05×122°.49E±0°.02,h18km±4km, n20,σ0s42/33,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.50**	**123**	P	**Pb**	**19 57 42.4**	**+0.3**
JYNG				*e*S	**Sb**	**19 57 49.3**	**+0.3**
EGS		**0.52**	**283**	P	**Pb**	**19 57 42.8**	**+0.4**
	baz=280						
EGS				*e*S	**Sb**	**19 57 49.9**	**+0.4**
	baz=280						
TWB1	**Santiao Chiao**	**0.53**	**302**	P	**Pb**	**19 57 42.7**	**+0.1**
	baz=300						
TWB1				S	**Sb**	**19 57 49.9**	**-0.1**
	baz=300						
YOJ	**Yonaguni jima**	**0.55**	**119**	P	**Pb**	**19 57 43.1**	**+0.3**
YOJ				*e*S	**Sb**	**19 57 50.5**	**+0.2**
TWC	**Suao**	**0.59**	**259**	P	**Pb**	**19 57 44.1**	**+0.5**
	baz=255						
TWC				*e*S	**Sb**	**19 57 51.9**	**+0.2**
	baz=255						
NWF	**Wu-fen Shan**	**0.73**	**298**	P	**Pg**	**19 57 46.3**	**+0.1**
	baz=296						
NWF				*e*S	**Sg**	**19 57 56.1**	**+0.2**
	baz=296						
ENA	**Nanau**	**0.74**	**246**	P	**Pn**	**19 57 46.8**	**-0.6**
	baz=243						
ENA				*e*S	**Sn**	**19 57 57.3**	**-0.9**
	baz=243						
TWE	**Neicheng**	**0.75**	**270**	P	**Pn**	**19 57 47.2**	**-0.3**
	baz=267						
TWE				S	**Sg**	**19 57 57.0**	**+0.5**
	baz=267						
ENTT	**Nioudou**	**0.84**	**264**	P	**Pn**	**19 57 49.0**	**+0.1**
	baz=262						
ENTT				*e*S	**Sn**	**19 58 00.2**	**-0.5**
	baz=262						
TWY	**Chenhua**	**0.97**	**304**	*e*P	**Pg**	**19 57 50.6**	**-0.2**
	baz=303						
PCYT	**Pengchaiyu**	**0.97**	**337**	*e*P	**Pg**	**19 57 51.0**	**+0.2**
	baz=337						
NSK	**Sanguang**	**1.03**	**267**	*e*P	**Pg**	**19 57 51.7**	**-0.2**
	baz=265						
NSK				*e*S	**Sb**	**19 58 04.6**	**+0.2**
	baz=265						
NNS	**Nan Shan**	**1.05**	**254**	*e*P	**Pg**	**19 57 52.6**	**+0.2**
	baz=252						
NNS				*e*S	**Sn**	**19 58 06.5**	**+0.4**
	baz=252						
IRIF	**Iriomote-Funau**	**1.20**	**109**	P	**Pg**	**19 57 55.3**	**+0.3**
IRIF				S	**Sg**	**19 58 10.3**	**-0.4**
WHF	**Hehuan Shan**	**1.26**	**243**	*e*P	**Pg**	**19 57 55.8**	**-0.4**
	baz=241						
TWT	**Tachien**	**1.28**	**249**	*e*P	**Pg**	**19 57 57.6**	**+0.8**
	baz=247						
NSTT	**Nanjuang**	**1.36**	**266**	*e*P	**Pg**	**19 57 57.2**	**-0.9**
	baz=264						
HATJ	**Hateruma jima**	**1.37**	**119**	P	**Pg**	**19 57 58.5**	**+0.1**
JKRS	**Kuro-shima**	**1.47**	**109**	P	**Pb**	**19 57 58.3**	**-0.3**
JIJ	**Ishigaki jima**	**1.55**	**103**	P	**Pn**	**19 57 58.6**	**+0.1**
JIJ				*e*S	**Sb**	**19 58 19.5**	**+0.2**

*IDC **01** 20:00:29.7±1.6,29°.93S×177°.68W,h84km±9km,mb4.0/7, mb1 4.1/8,mb1mx3.9/26,mbtmp4.3/8,MS3.7/2,Ms1 3.7/2, ms1mx2.8/26,Error ellipse: s-maj=32.8km s-min=21.2km az=122.0*
*ISCJB **01** 20:00:32.2±0.6,29°.77S±0°.06×178°.2W±0°.1,h100km, mb4.6/22, Error ellipse: s-maj=14.6km s-min=7.4km az=20.1*
*NEIC **01** 20:00:32.1±0.7,29°.70S×178°.11W,h89km±6km,mb4.8/18, Error ellipse: s-maj=16.4km s-min=10.3km az=114.0*
ISC 01 20:00:33.2±0.6,29°.76S±0°.07×178°.1W±0°.1,h100km,n53, σ1s80/49,mb4.6/22,1D,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.53**	**18**	P	**Pn**	**20 00 47.8**	**-1.4**
	3μm,0.3s,baz=114,slow=6.6,SNR=65						
RAO				S	**Sn**	**20 00 59.2**	**-1.9**
	2μm,0.3s,baz=90,slow=20,SNR=56						
OUZ	**Omahuta**	**8.88**	**230**	*e*Pn	**Pn**	**20 02 36.1**	**-2.5**
URZ	**Urewera**	**9.37**	**204**	P	**Pn**	**20 02 42.0**	**-3.1**
	0.2nm,0.3s,baz=45,slow=19,SNR=4.2						
URZ				S	**Sn**	**20 04 27.1**	**-1.5**
	3.0nm,0.3s,baz=16,slow=19,SNR=14						
URZ	**Urewera**	**9.37**	**204**	*e*Pn	**Pn**	**20 02 42.0**	**-3.1**
URZ				*e*Sn	Sn	20 04 11.6	-17
BKZ	**Black Stump Fm**	**10.39**	**204**	*e*Pn	**Pn**	**20 02 59.1**	**-0.1**
BKZ				*e*Sn	Sn	20 04 37.7	-16
THZ	**Tophouse**	**14.02**	**209**	*e*Pn	**P**	**20 03 49.6**	**-2.3**
THZ				*e*Sn	Sn	20 06 11.3	-10
KHZ	**Kahutara**	**14.32**	**206**	*e*Pn	**Pn**	**20 03 49.7**	**-1.3**
OXZ	**Oxford**	**15.67**	**208**	*e*Pn	**Pn**	**20 04 04.5**	**-3.7**
	144nm,1.8s						
DZM	**Mont Dzumac**	**15.86**	**295**	*e*LR	LR	20 07 23.1	
	149nm,29.6s						
DZM	**Mont Dzumac**	**15.86**	**295**	P	**P**	**20 04 16.0**	**+3.4**
	0.5nm,0.3s,baz=161,slow=9.1,SNR=5.9						
DZM	**Mont Dzumac**	**15.86**	**295**	*e*Pn	**Pn**	**20 04 09.9**	**-1.0**
	16nm,0.7s						
AFI	**Afiamalu**	**16.82**	**22**	LR	LR	20 09 29.1	
	comp=Z,552nm,21.8s,baz=190,slow=32						
ARMA	**Armidale**	**26.17**	**261**	*e*P	**P**	**20 06 02.2**	**+3.8**
	80nm,1.8s						
TBI	**Tubuai**	**26.36**	**83**	*e*LR	LR	20 12 11.0	
	77nm,35.5s						
CAN	**Canberra**	**28.20**	**250**	*e*P	**P**	**20 06 20.1**	**+3.6**
	20nm,1.4s						
PPT2	**Papeete2**	**28.71**	**71**	*e*LR	LR	20 13 13.4	
	91nm,32.8s						
STKA	**Stephens Creek**	**34.54**	**256**	P	**P**	**20 07 14.3**	**+2.2**
	5.8nm,0.8s,baz=101,slow=11,SNR=9.4						
STKA	**Stephens Creek**	**34.54**	**256**	*e*P	**P**	**20 07 13.8**	**+1.7**
	1.2nm,0.8s						
BBOO	**Buckleboo**	**39.06**	**253**	*e*P	**P**	**20 07 51.9**	**+1.4**
	92nm,1.8s						
AS01	**Alice Springs**	**43.02**	**266**	*e*P	**P**	**20 08 23.2**	**+0.2**
AS31	**Alice Springs**	**43.06**	**266**	*e*P	**P**	**20 08 23.6**	**+0.2**
	4.4nm,1.6s						
ASAR	**Alice Springs**	**43.06**	**266**	P	**P**	**20 08 23.6**	**+0.2**
	1.5nm,0.5s,baz=104,slow=6.7,SNR=45						
ASAR				PcP	**PcP**	**20 10 11.3**	**-0.5**
	0.7nm,0.5s,baz=118,slow=4.0,SNR=9.8						
WRAB	**Tennant Creek**	**43.98**	**272**	*e*P	**P**	**20 08 30.7**	**-0.1**
	38nm,1.9s						
WR1	**Warramunga Arr**	**43.99**	**272**	*e*P	**P**	**20 08 30.6**	**-0.2**
	6.6nm,0.6s						
WR1				*e*PP	**PP**	**20 10 14.1**	**-1.0**
WRA	**Warramunga Arr**	**43.99**	**272**	P	**P**	**20 08 30.6**	**-0.2**
	4.0nm,0.4s,baz=110,slow=7.5,SNR=103						
WRA				PcP	**PP**	**20 10 14.1**	**-1.0**
	1.0nm,0.8s,baz=107,slow=3.3,SNR=4.1						
SBA	**Scott Base**	**48.67**	**184**	*e*P	P	20 09 12.8	+6.1
	23nm,1.8s						
VNDA	**Vanda**	**48.73**	**186**	*e*P	P	20 09 12.0	+4.9
	9.9nm,1.9s						
FITZ	**Fitzroy Crossi**	**52.27**	**269**	*e*P	**P**	**20 09 35.3**	**+0.7**
	29nm,1.8s						
CASY	**Casey**	**55.67**	**208**	*e*P	**P**	**20 09 59.7**	**+1.2**
	27nm,0.6s						
MMRI	**Maumere**	**59.47**	**278**	*e*P	**P**	**20 10 27.1**	**+1.0**
	34nm,1.1s						
QSPA	**South Pole Qui**	**60.35**	**180**	*e*P	**P**	**20 10 34.8**	**+3.4**
	14nm,1.7s						
KAPI	**Kappang**	**63.41**	**280**	*e*P	**P**	**20 10 52.7**	**+0.2**
	12nm,1.1s						
MJAR	**Matsushiro Arr**	**77.66**	**325**	P	**P**	**20 12 17.8**	**-0.8**
	2.0nm,0.6s,baz=159,slow=5.0,SNR=9.1						
SYO	**Syowa Base**	**77.72**	**193**	⇓*e*P	**P**	**20 12 19.5**	**+1.0**
SNAA	**Sanae**	**78.80**	**178**	*e*P	**P**	**20 12 26.6**	**+2.0**
	14nm,1.7s						
KSRS	**Korea Array**	**83.80**	**320**	P	**P**	**20 12 52.4**	**+1.1**
	1.3nm,0.8s,baz=137,slow=5.7,SNR=6.2						
KSAR	**Wonju Array Be**	**83.81**	**320**	P	**P**	**20 12 52.4**	**+1.0**
PETK	**Petropavlovsk-**	**85.17**	**346**	P	**P**	**20 12 56.8**	**-1.1**
	3.5nm,1.0s,baz=138,slow=9.1,SNR=3.6						
PEA1	**Petropavlovsk-**	**85.17**	**346**	*e*P	**P**	**20 12 56.8**	**-1.1**
USRK	**Ussuriysk Ar.**	**86.58**	**327**	P	**P**	**20 13 04.7**	**-0.3**
	1.3nm,0.7s,baz=93,slow=8.7,SNR=4.9						
W18A	**Petrified Fore**	**91.14**	**50**	*e*pP	pP	20 13 51.9	-1.5
B06A	**Marblemount**	**92.91**	**34**	*e*P	**P**	**20 13 37.2**	**+2.7**
	7.4nm,0.7s						
DLBC	**Dease Lake**	**96.57**	**23**	LR	LR	20 48 06.3	
	comp=Z,20nm,20.9s,baz=333,slow=30						
N23A	**Red Feather La**	**96.89**	**47**	*e*pP	pP	20 14 16.2	-3.6
MKAR	**Makanchi Array**	**117.29**	**310**	PKP	**PKPdf**	**20 19 05.1**	**-1.5**
	0.2nm,0.6s,baz=73,slow=2.0,SNR=4.5						
ARCES	**ARCESS Array B**	**137.94**	**348**	PKhKP	PKPpre	20 19 38.6	
	0.4nm,0.6s,baz=42,slow=1.5,SNR=3.0						
FINES	**FINESS Array B**	**144.51**	**340**	PKP	**PKPab**	**20 19 54.4**	**-1.4**
	3.6nm,0.4s,baz=61,slow=3.8,SNR=51						
KBZ	**Khabaz**	**144.68**	**305**	PKPbc	**PKPdf**	**20 19 57.4**	**-0.6**
	3.2nm,1.1s,baz=153,slow=2.0,SNR=2.7						
NB2	**NORSAR Subarra**	**148.10**	**351**	PKP	**PKPbc**	**20 20 05.0**	**-1.6**
	comp=Z,1.3nm,0.8s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**148.10**	**351**	PKPbc	**PKPbc**	**20 20 05.3**	**-1.3**
	comp=Z,1.7nm,0.7s,baz=16,slow=4.4,SNR=4.2						
AKASG	**Malin Array Be**	**150.74**	**323**	PKPbc	**PKPbc**	**20 20 12.5**	**-0.8**
	comp=Z,3.1nm,0.4s,baz=48,slow=3.0,SNR=12						
BRTR	**Keskin Array B**	**152.21**	**300**	PKPbc	**PKPbc**	**20 20 16.6**	**-0.7**
	comp=Z,0.6nm,0.7s,baz=141,slow=5.2,SNR=5.5						
BRTR				PKPab	**PKPab**	**20 20 27.9**	**+0.4**
	comp=Z,0.7nm,0.7s,baz=84,slow=2.9,SNR=3.5						
TORD	**Torodi Ar. Bea**	**163.47**	**179**	PKPab	**PKPab**	**20 21 15.5**	**-0.7**
	comp=Z,1.3nm,0.6s,baz=176,slow=4.1,SNR=4.9						

IDC 01 20:17:43.8±3.3,6°.42S×147°.89E,h0km,mb3.6/2, mb1 3.8/4,mb1mx3.4/33,mbtmp3.6/4,ML3.5/1,Error ellipse: s-maj=73.0km s-min=34.1km az=97.0,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.05**	**194**	Pn	Pn	20 18 34.2	+0.9
	3.7nm,0.3s,baz=4.8,slow=12,SNR=12						
PMG				Sn	Sn	20 19 12.7	+2.1
	4.0nm,0.3s,baz=0.0,slow=20,SNR=4.7						
WRA	**Warramunga Arr**	**18.81**	**223**	P	P	20 22 04.8	-0.4
	0.2nm,0.3s,baz=50,slow=11,SNR=7.9						
ASAR	**Alice Springs**	**21.79**	**217**	P	P	20 22 36.8	-0.8
	0.6nm,0.4s,baz=50,slow=9.1,SNR=19						
FITZ	**Fitzroy Crossi**	**24.61**	**240**	P	P	20 23 05.9	-0.1
	2.0nm,0.5s,baz=53,slow=8.4,SNR=24						
TORD	**Torodi Ar. Bea**	**146.05**	**284**	PKPbc	PKPbc	20 37 26.4	-0.4
	0.1nm,0.4s,baz=86,slow=4.3,SNR=4.0						

*ISCJB **01** 20:19:13.9±0.4,56°.07S±0°.08×26°.8W±0°.2,h63km, mb4.6/14, Error ellipse: s-maj=13.0km s-min=10.1km az=145.5*
*NEIC **01** 20:19:18.9±1.4,56°.11S×27°.01W,h98km±13km,mb4.8/7, Error ellipse: s-maj=11.7km s-min=7.9km az=59.0*
*IDC **01** 20:19:20.4±0.8,56°.15S×26°.95W,h107km±7km,mb3.9/8, mb1 4.0/8,mb1mx3.8/22,mbtmp4.2/8,MS3.1/5,Ms1 3.2/5, ms1mx3.0/19,Error ellipse: s-maj=22.1km s-min=16.4km az=66.0*
ISC 01 20:19:15.8±0.5,56°.08S±0°.09×26°.80W±0°.10,h63km,n38, σ1s34/32,mb4.6/13,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HOPE	**Hope Point**	**5.84**	**284**	*e*Pn	**Pn**	**20 20 41.4**	**+1.9**
VNA1	**Neumayer--Stat**	**16.69**	**158**	P	**P**	**20 23 09.1**	**+2.7**
SNAA	**Sanae**	**18.63**	**156**	P	**P**	**20 23 27.6**	**-0.3**
SNAA	**Sanae**	**18.63**	**156**	*e*P	**P**	**20 23 27.8**	**-0.1**
	18nm,0.9s						
PMSA	**Palmer Station**	**20.05**	**229**	LR	LR	20 29 36.5	
	comp=Z,91nm,19.8s,baz=254,slow=31						
PLCA	**Paso Flores**	**32.22**	**280**	LR	LR	20 37 58.0	
	comp=Z,21nm,18.5s,baz=196,slow=35						
QSPA	**South Pole Qui**	**34.17**	**180**	*e*P	**P**	**20 25 53.9**	**-0.7**
CPUP	**Villa Florida**	**36.99**	**311**	P	**P**	**20 26 18.4**	**-0.5**
	1.6nm,0.8s,baz=138,slow=6.2,SNR=3.3						
MAW	**Mawson**	**40.00**	**143**	P	**P**	**20 26 43.6**	**0.0**
	1.7nm,0.5s,baz=200,slow=5.1,SNR=6.7						
SBA	**Scott Base**	**46.07**	**184**	*e*P	**P**	**20 27 33.4**	**+0.9**
	14nm,1.9s						
VNDA	**Vanda**	**46.56**	**183**	P	**P**	**20 27 35.7**	**-0.7**
	1.7nm,0.7s,baz=188,slow=6.1,SNR=7.7						
VNDA				pP	**sP**	**20 28 00.6**	**+0.9**
	2.3nm,0.8s,baz=149,slow=3.9,SNR=4.8						
VNDA				LR	LR	20 46 59.4	
	comp=Z,36nm,18.8s,baz=12,slow=36						
H10S2	**ASCENSION HYDR**	**47.96**	**16**	T	T	21 20 56.2	
	baz=189,slow=74,SNR=61						
H10S3	**ASCENSION HYDR**	**47.97**	**16**	T	T	21 20 53.9	
	baz=189,slow=74,SNR=52						
H10S1	**ASCENSION HYDR**	**47.98**	**16**	T	T	21 20 54.9	
	baz=189,slow=74,SNR=51						
PB11	**IPOC Station P**	**48.29**	**301**	*e*P	**P**	**20 27 49.6**	**-1.0**
	30nm,1.4s						
LBTB	**Lobatse**	**48.80**	**73**	P	**P**	**20 27 55.4**	**+0.9**
	3.0nm,0.7s,baz=256,slow=11,SNR=3.8						
H10N1	**ASCENSION HYDR**	**49.08**	**16**	T	T	21 22 17.9	
	baz=188,slow=75,SNR=16						
H10N3	**ASCENSION HYDR**	**49.08**	**16**	T	T	21 22 11.9	
	baz=188,slow=75,SNR=29						
H10N2	**ASCENSION HYDR**	**49.10**	**16**	T	T	21 22 18.9	
	baz=188,slow=75,SNR=31						
TSUM	**Tsumeb**	**49.50**	**60**	*e*P	**P**	**20 27 59.3**	**-0.6**
	17nm,1.5s						
LPAZ	**La Paz**	**50.57**	**305**	P	**P**	**20 28 08.7**	**+0.1**
	1.9nm,0.3s,baz=99,slow=4.0,SNR=13						
LPAZ				pP	**sP**	**20 28 34.1**	**+2.1**
	1.5nm,0.7s,baz=166,slow=8.3,SNR=2.7						
LPAZ				LR	LR	20 51 21.1	
	comp=Z,11nm,19.2s,baz=350,slow=38						
LPAZ	**La Paz**	**50.57**	**305**	*e*P	**P**	**20 28 07.6**	**-1.0**
LSZ	**Lusaka**	**58.18**	**68**	*e*P	**P**	**20 29 03.6**	**+0.3**
	6.3nm,1.0s						
DBIC	**Dimbokro**	**65.10**	**24**	P	**P**	**20 29 50.2**	**+0.7**
	7.7nm,1.0s,baz=185,slow=11,SNR=3.1						
DBIC				LR	LR	20 50 42.9	
	comp=Z,19nm,21.2s,baz=125,slow=29						
DBIC	**Dimbokro**	**65.10**	**24**	*e*P	**P**	**20 29 50.5**	**+0.9**
	39nm,1.4s						
TOA0	**Torodi Ar. Sit**	**72.97**	**29**	*e*P	**P**	**20 30 38.7**	**+0.3**
TORD	**Torodi Ar. Bea**	**72.97**	**29**	P	**P**	**20 30 39.0**	**+0.6**
	3.1nm,0.8s,baz=201,slow=6.7,SNR=19						
TORD				pP	**sP**	**20 31 05.5**	**+3.1**
	1.4nm,0.8s,baz=197,slow=6.6,SNR=3.5						
TOA1	**Torodi Ar. Sit**	**72.97**	**29**	*e*P	**P**	**20 30 39.0**	**+0.6**
GRGR	**Grenville**	**73.92**	**324**	*e*P	**P**	**20 30 43.9**	**0.0**
	167nm,1.0s						
BBGH	**Gun Hill**	**74.20**	**327**	*e*P	**P**	**20 30 43.5**	**-2.1**
ANWB	**Willy Bob**	**79.16**	**326**	*e*P	**P**	**20 31 11.9**	**-1.5**
	98nm,0.8s						
ASAR	**Alice Springs**	**98.90**	**162**	P	Pdif	20 32 49.8	+0.8
	0.4nm,0.7s,baz=197,slow=2.8,SNR=4.1						
FINES	**FINESS Array B**	**124.30**	**28**	PKP	**PKPdf**	**20 38 04.2**	**-1.6**
	1.0nm,0.7s,baz=132,slow=2.8,SNR=5.8						
ARCES	**ARCESS Array B**	**130.88**	**22**	PKP	**PKPdf**	**20 38 16.9**	**-1.3**
	0.7nm,0.8s,baz=134,slow=2.6,SNR=3.5						
YKA	**Yellowknife Ar**	**136.34**	**318**	PKP	**PKPdf**	**20 38 26.5**	**-2.0**
	0.4nm,0.7s,baz=134,slow=2.0,SNR=4.8						
INK	**Inuvik**	**145.96**	**320**	PKPbc	**PKPdf**	**20 38 44.9**	**-0.7**
	4.0nm,0.9s,baz=89,slow=5.7,SNR=7.0						
ILAR	**Eielson Array**	**150.30**	**312**	PKPbc	**PKPbc**	**20 38 56.8**	**-1.4**
	2.5nm,0.8s,baz=134,slow=1.8,SNR=21						
SONM	**Songino Array**	**150.51**	**86**	PKPbc	**PKPbc**	**20 38 58.1**	**-1.3**
	1.4nm,0.5s,baz=220,slow=4.2,SNR=12						

*IDC **01** 20:49:06.7±1.1,23°.70N×122°.82E,h0km,mb3.4/6, mb1 3.6/6,mb1mx3.4/40,mbtmp3.4/6,Error ellipse: s-maj=66.8km s-min=20.0km az=67.0*
*JMA **01** 20:49:07.0±0.1,23°.80N×121°.60E,h20km±3km,M3.0*
*ISCJB **01** 20:49:08.2±0.2,23°.80N±0°.01×121°.65E±0°.02,h22km±2km, mb3.3/6,Error ellipse: s-maj=3.0km s-min=1.8km az=40.3*
*TAP **01** 20:49:08.1,23°.83N×121°.57E,h22km,ML3.9,B*
**ISC 01 20:49:08.3±0.8,23°.81N±

baz=282
CHKT Chengkung 0.74 198 P **Pb 20 49 22.6 +0.1**
baz=205
CHKT *e*S **Sn 20 49 33.9 +0.1**
baz=205
ALS Alishan 0.79 248 ⇓P **Pb 20 49 23.5 -0.1**
baz=246
ALS S **Sb 20 49 33.5 -0.6**
baz=246
ELDTW Lidau 0.82 222 *e*P **Pb 20 49 22.6 -1.4**
baz=216
TWC Suao 0.83 15 *e*P **Pb 20 49 23.6 -0.4**
baz=13
TWC *e*S **Sb 20 49 34.6 -0.2**
baz=13
ENTT Nioudou 0.83 357 P **Pb 20 49 23.3 -0.8**
baz=1.0
ENTT S **Sb 20 49 34.5 -0.5**
baz=1.0
WNT Mingjian 0.85 275 ⇓*i*P **Pb 20 49 24.8 +0.4**
baz=273
WNT S **Sb 20 49 36.5 +1.0**
baz=273
CHN5 Tsauling 0.88 256 ⇓*i*P **Pb 20 49 25.2 +0.3**
baz=244
CHN5 *i* S **Sn 20 49 37.4 -0.1**
baz=244
NSK Sanguang 0.90 345 ⇑P **Pb 20 49 24.4 -0.9**
baz=348
NSK S **Sb 20 49 35.7 -1.1**
baz=348
TWE Neicheng 0.91 3 *e*P **Pn 20 49 24.9 -0.8**
baz=1.0
TWE *e*S **Sb 20 49 36.5 -0.7**
baz=1.0
TCU Taichung 0.92 292 *e*P **Pb 20 49 26.6 +1.0**
baz=292
TCU *e*S **Sn 20 49 38.8 +0.4**
baz=292
TWQ1 Liyutan 0.94 305 *e*P **Pb 20 49 26.5 +0.6**
baz=305
TWQ1 *e*S **Sb 20 49 38.1 +0.2**
baz=305
ILA Ilan 0.96 7 *e*P **Pb 20 49 27.1 +0.8**
WGK Gukeng 0.97 263 *e*P **Pn 20 49 26.4 -0.1**
baz=260
NSY Sanyi 0.98 308 P **Pb 20 49 27.6 +0.8**
baz=316
NSY S **Sb 20 49 40.1 +0.8**
baz=316
NSTT Nanjuang 0.99 326 P **Pn 20 49 26.6 -0.2**
baz=319
NSTT *e*S **Sb 20 49 37.9 -1.6**
baz=319
STYT Tauyuan 1.01 231 ⇓*i*P **Pn 20 49 26.8 -0.3**
baz=218
STYT S **Sn 20 49 41.1 +0.5**
baz=218
CHN4 Tsaushan 1.04 244 ⇓*i*P **Pb 20 49 28.0 +0.4**
baz=233
CHN4 *e*S **Sn 20 49 43.2 +2.0**
baz=233
WTP Ta-pu 1.07 239 ⇓*i*P **Pb 20 49 28.3 +0.1**
baz=236
WTP *i* S **Sb 20 49 42.7 +0.9**
baz=236
EGS 1.07 16 *e*P **Pb 20 49 29.1 +0.8**
baz=3.0
EGS *e*S **Sb 20 49 45.0 +3.2**
baz=3.0
CHN2 Minshiung 1.08 256 *e*P **Pb 20 49 28.6 +0.3**
baz=254
CHN2 *e*S **Sb 20 49 43.4 +1.6**
baz=254
TWG Pinlang 1.10 207 *e*P **Pn 20 49 26.1 -2.2**
baz=187
CHY Chiayi 1.13 254 *e*P **Pn 20 49 28.9 +0.2**
baz=252
CHY *e*S **Sb 20 49 44.4 +1.0**
baz=252
TTN Taitung 1.13 202 *e*P **Pn 20 49 26.8 -1.9**
baz=198
HSN Hsinchu 1.15 330 *e*P **Pn 20 49 29.4 +0.4**
baz=316
HSN *e*S **Sb 20 49 46.4 +2.3**
baz=316
TWK Hsinying 1.16 243 *e*P **Pn 20 49 28.7 -0.5**
baz=240
TWK S **Sb 20 49 45.5 +1.1**
baz=240
TWA Mucha 1.17 359 *e*P **Pn 20 49 29.5 +0.2**
baz=1.0
TWA *e*S **Sn 20 49 43.1 -1.5**
baz=1.0
SGST Jiashian 1.19 233 ⇑*i*P **Pb 20 49 30.5 +0.4**
baz=230
SGST S **Sb 20 49 46.6 +1.5**
baz=230
WTCT Ta-ch'eng 1.22 273 *e*P **Pn 20 49 30.4 +0.5**
baz=271
WTCT *e*S **Sb 20 49 48.6 +2.6**
baz=271
NCU National Centr 1.22 342 *e*P **Pb 20 49 30.7 -0.1**
baz=356
NCU S **Sb 20 49 47.0 +0.9**
baz=356
TAP1 Taipei 1.23 356 *e*P **Pb 20 49 31.8 +0.9**
baz=358
TAP1 *e*S **Sn 20 49 45.2 -0.8**
baz=358
TAP Taipei 1.23 356 *e*P **Pb 20 49 31.6 +0.7**
baz=358
TAP *e*S **Sn 20 49 45.7 -0.3**
baz=358
TWB1 Santiao Chiao 1.25 16 *e*P **Pb 20 49 32.5 +1.3**
baz=5.0
TWB1 *e*S **Sb 20 49 49.1 +2.3**
baz=5.0
NWF Wu-fen Shan 1.27 7 *e*P **Pn 20 49 30.9 +0.2**
baz=9.0
NWF *e*S **Sb 20 49 48.4 +0.9**
baz=9.0
WSF Szhu 1.28 263 *e*P **Pb 20 49 31.7 0.0**
baz=261
WSF *e*S **Sb 20 49 49.2 +1.4**
baz=261
TWS1 Kuangyinshan 1.30 352 *e*P **Pn 20 49 31.1 0.0**
baz=7.0
TWS1 *e*S **Sb 20 49 48.6 +0.2**
baz=7.0
ECL Taimali 1.35 207 *e*P **Pn 20 49 29.6 -2.1**
baz=191
CHN8 Yiju 1.36 251 *e*P **Pn 20 49 32.4 +0.5**
baz=249
CHN8 *e*S **Sb 20 49 52.0 +1.8**
baz=249
JYNG Yonagunijimaku 1.38 62 P **Pn 20 49 32.4 +0.3**
SSD Sandimen 1.39 221 *e*P **Pn 20 49 32.4 +0.2**
baz=218
SSD *e*S **Sb 20 49 51.6 +0.8**
baz=218
YOJ Yonaguni jima 1.44 63 P **Pn 20 49 33.1 +0.2**
YOJ *e*S **Sn 20 49 51.4 +0.3**
YOJ Yonaguni jima 1.44 63 *i* P **Pn 20 49 33.3 +0.4**
baz=66
SCLT Jiali 1.44 244 *e*P **Pb 20 49 34.2 -0.3**
baz=242
SCLT *e*S **Sb 20 49 54.2 +1.7**
baz=242
TWY Chenhua 1.46 360 *e*P **Pb 20 49 34.8 0.0**
baz=2.0
TWM1 Shoushan 1.47 228 ⇑P **Pb 20 49 35.5 +0.6**
baz=239
TAI1 Yung-k'ang 1.48 239 *e*P **Pb 20 49 34.9 -0.3**
baz=236
EAST Anshuo 1.58 206 *e*P **Pn 20 49 33.5 -1.5**
baz=193
TAW Tawu 1.58 205 *e*P **Pn 20 49 34.8 -0.1**
baz=189
SCZT Fangliau 1.69 213 *e*P **Pn 20 49 36.7 +0.2**
baz=195
LAY Lan-yu 1.76 182 *e*P **Pn 20 49 35.3 -2.1**
baz=170
TWP Hsiaoliuchiu 1.85 219 *e*P **Pn 20 49 40.0 +1.3**
baz=216
PCYT Pengchaiyu 1.86 13 *e*P **Pb 20 49 40.6 -1.1**
baz=358
WDGT Dungji 1.87 253 *e*P **Pn 20 49 38.9 0.0**
baz=252
WDGT *e*S **Sb 20 50 03.9 -0.9**
baz=252
PNG Penghu 1.90 263 *i* P **Pn 20 49 39.5 +0.2**
baz=261
PNG S **Sn 20 50 03.1 +0.6**
baz=261
HEN Hengchun 1.96 204 *e*P **Pb 20 49 43.4 0.0**
baz=192
TWK1 Hengchun 2.00 202 *e*P **Pn 20 49 41.6 +1.0**
baz=188
TSEB Hengchuen, Pin 2.01 199 *e*P **Pn 20 49 41.9 +1.1**
baz=187
IRIF Iriomote-Funau 2.01 74 P **Pn 20 49 41.2 +0.4**
IRIF S **Sn 20 50 06.2 +1.0**
HATJ Hateruma jima 2.02 82 P **Pn 20 49 41.2 +0.2**
HATJ S **Sn 20 50 06.6 +1.0**
JKRS Kuro-shima 2.24 78 P **Pn 20 49 44.4 +0.5**
JKRS S **Sn 20 50 12.1 +1.3**
JIJ Ishigaki jima 2.38 76 P **Pn 20 49 45.9 0.0**
JIJ S **Sn 20 50 14.1 -0.3**
JISG Ishigakijimahi 2.59 72 P **Pn 20 49 48.4 -0.3**
JISG S **Sn 20 50 19.1 -0.4**
JTJ Tarama 2.94 73 P **Pn 20 49 53.8 +0.1**
JTJ S **Sn 20 50 28.3 0.0**
KNM Kinmen 2.96 282 *e*P **Pn 20 49 55.0 +1.1**
baz=281
JIRB Irabujima 3.41 72 P **Pn 20 50 00.6 +0.6**
JIRB S **Sn 20 50 39.7 0.0**
SONM Songino Array 26.87 337 P P 20 54 55.3 +7.9
0.2nm,0.5s,baz=142,slow=7.3,SNR=2.5
MKAR Makanchi Array 38.88 316 P P 20 56 40.5 +8.6
0.4nm,0.7s,baz=104,slow=8.6,SNR=3.0
ZALV Zalesovo Beam 40.77 327 P P 20 56 54.6 +7.1
0.2nm,0.3s,baz=108,slow=9.4,SNR=3.3
H11N1 WAKE ISLAND Hy 42.12 86 T T 21 42 05.5
baz=283,slow=75,SNR=6.0
H11N2 WAKE ISLAND Hy 42.12 86 T T 21 42 01.6
baz=283,slow=75,SNR=7.0
H11N3 WAKE ISLAND Hy 42.14 86 T T 21 42 02.9
baz=283,slow=75,SNR=6.6
H11S3 WAKE ISLAND Hy 42.24 88 T T 21 42 06.2
baz=284,slow=74,SNR=18
H11S1 WAKE ISLAND Hy 42.25 88 T T 21 42 10.5
baz=284,slow=74,SNR=12
H11S2 WAKE ISLAND Hy 42.26 88 T T 21 42 06.5
baz=284,slow=74,SNR=8.1
WRA Warramunga Arr 45.22 163 P **P 20 57 22.4 -1.5**
0.5nm,0.7s,baz=344,slow=8.7,SNR=5.4
ASAR Alice Springs 48.68 165 P **P 20 57 50.1 -0.8**
0.2nm,0.3s,baz=341,slow=7.1,SNR=5.5
YKA Yellowknife Ar 83.17 23 P **P 21 01 32.3 +0.1**
0.4nm,0.7s,baz=310,slow=5.4,SNR=4.9

*DDA **01** 21:10:38.3,38°.53N×31°.16E,h7km,Md2.2*
*ISCJB **01** 21:10:39.7±0.7,38°.60N±0°.04×31°.22E±0°.04,h9km±5km, Error ellipse: s-maj=7.7km s-min=4.2km az=36.0*
*CSEM **01** 21:10:40.0±0.4,38°.60N×31°.22E,h10km,MD2.2, Error ellipse: s-maj=8.9km s-min=5.3km az=45.0*
*ISK **01** 21:10:41.8,38°.65N×31°.36E,h24km,MD2.7*
ISC 01 21:10:39.8±1.1,38°.62N±0°.03×31°.22E±0°.03,h5km±12km, n22,σ0°76/36,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOLV	**Bolvadin**	**0.23**	**295**	*i* P	**Pg**	**21 10 43.9**	**-0.5**
BOLV				*i* S	**Sg**	**21 10 47.4**	**-0.1**
BOLV	**Bolvadin**	**0.23**	**295**	P	**Pg**	**21 10 43.9**	**-0.5**
BOLV				S	**Sg**	**21 10 47.4**	**-0.1**
KIZT	**Kizilcal**	**0.58**	**63**	*e*PG	**Pg**	**21 10 51.8**	**+0.9**
KIZT				*e*SG	**Sg**	**21 10 59.3**	**+0.8**
KIZT	**Kizilcal**	**0.58**	**63**	*e*Pg	**Pg**	**21 10 51.8**	**+0.9**
KIZT				*e*Sg	**Sg**	**21 10 59.3**	**+0.8**
KDHN	**Kadinhani**	**0.71**	**98**	*i* P	**Pg**	**21 10 52.7**	**-0.7**
KDHN				*i* S	**Sg**	**21 11 03.1**	**+0.4**
KDHN	**Kadinhani**	**0.71**	**98**	P	**Pg**	**21 10 52.7**	**-0.7**
KDHN				S	**Sg**	**21 11 03.1**	**+0.4**
SVRH	**Sivrihisar-ESK**	**0.86**	**16**	*e*PG	**Pn**	**21 10 58.1**	**-0.5**
SVRH				*e*SG	**Sb**	**21 11 10.0**	**+0.9**
SVRH	**Sivrihisar-ESK**	**0.86**	**16**	*e*Pg	**Pn**	**21 10 58.1**	**-0.5**
SVRH				*e*Sg	**Sb**	**21 11 10.0**	**+0.9**
ESKT	**Eskisehir**	**0.94**	**342**	*e*PG	**Pn**	**21 10 59.9**	**+0.1**
ESKT	**Eskisehir**	**0.94**	**342**	*i* P	**Pg**	**21 10 58.6**	**+0.7**
ESKT				*i* S	**Sg**	**21 11 09.1**	**-1.1**
ESKT	**Eskisehir**	**0.94**	**342**	*e*Pg	**Pn**	**21 10 59.9**	**+0.1**
SEYT	**Eskypehyr**	**0.94**	**342**	P	**Pg**	**21 10 58.6**	**+0.7**
SEYT				S	**Sg**	**21 11 09.1**	**-1.1**
LADK	**Ladik-KONYA**	**0.99**	**115**	*e*PG	**Pb**	**21 10 59.4**	**-0.1**
LADK				*e*SG	**Sb**	**21 11 12.4**	**-0.5**
LADK	**Ladik-KONYA**	**0.99**	**115**	*e*Pg	**Pb**	**21 10 59.4**	**-0.1**
LADK				*e*Sg	**Sb**	**21 11 12.4**	**-0.5**
KONT	**Konya--Tatoy**	**1.12**	**127**	*e*PG	**Pn**	**21 11 01.8**	**-0.4**
KONT	**Konya--Tatoy**	**1.12**	**127**	*e*Pg	**Pn**	**21 11 01.8**	**-0.4**
SUTC	**Sutluce-Ispart**	**1.15**	**189**	*e*PN	**Pn**	**21 11 04.0**	**+1.3**
SUTC	**Sutluce-Ispart**	**1.15**	**189**	*e*Pn	**Pn**	**21 11 04.0**	**+1.3**
CHBY	**Cihanbeyli**	**1.31**	**91**	*e*PN	**Pn**	**21 11 03.6**	**-1.2**
CHBY	**Cihanbeyli**	**1.31**	**91**	*e*Pn	**Pn**	**21 11 03.6**	**-1.2**
BORA	**Eskisehir**	**1.39**	**335**	*i* P	**Pn**	**21 11 05.4**	**-0.6**
BORA				*i* S	**Sg**	**21 11 24.9**	**+0.3**
BORA	**Eskisehir**	**1.39**	**335**	P	**Pn**	**21 11 05.4**	**-0.6**
BORA				S	**Sg**	**21 11 24.9**	**+0.3**

*ISCJB **01** 21:13:47.1±0.4,9°.59S±0°.05×28°.97E±0°.09,h10km, mb3.9/13,MS3.3/10,Error ellipse: s-maj=13.4km s-min=5.1km az=19.6*
*IDC **01** 21:13:48.0±0.7,9°.53S×28°.93E,h0km,mb4.0/10, mb1 4.3/16,mb1mx4.0/44,mbtmp4.2/16,ML4.5/4,MS3.3/16, Ms1 3.3/16,ms1mx3.1/35,Error ellipse: s-maj=29.0km s-min=13.3km az=97.0*
*NEIC **01** 21:13:49.3±0.3,9°.57S×28°.96E,h10km,mb4.0/2,Error ellipse: s-maj=13.8km s-min=6.0km az=105.0*
*LSZ **01** 21:13:57.1±0.3,11°.05S×29°.91E,h10km*
ISC 01 21:13:49.2±0.5,9°.61S±0°.05×29°.02E±0°.09,h10km,n32, σ2s02/34,mb4.1/13,MS3.4/10,Lake Tanganyika region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KMZ	**Kasempa**	**4.94**	**219**	*i* P	**Pn**	**21 15 07.5**	**+3.8**
KMZ				*i*		21 15 08.8	
	baz=59,slow=5.9						
KMZ				*i* S	**Sn**	**21 15 58.9**	**-2.1**
LSZ	**Lusaka**	**5.69**	**188**	Pn	**Pn**	**21 15 16.0**	**+2.0**
	11nm,0.3s,baz=350,slow=13,SNR=146						
LSZ				Sn	**Sn**	**21 16 19.6**	**0.0**
	21nm,0.3s,baz=112,slow=18,SNR=4.1						
LSZ				Lg	Lg	21 16 52.3	
	77nm,0.3s,baz=107,slow=23,SNR=12						
LSZ				LR	LR	21 17 48.2	
	comp=Z,204nm,21.7s,baz=354,slow=42						
LSZ	**Lusaka**	**5.69**	**188**	*e*Pn	**Pn**	**21 15 15.3**	**+1.2**
	40nm,0.5s						
LSZ				*e*Sn	**Sn**	**21 16 20.2**	**+0.7**
MATP	**Matopo**	**10.77**	**183**	*i* P	**Pn**	**21 16 25.2**	**+1.5**
MATP				*i*		21 16 25.4	
	baz=12,slow=16						
MATP				*i* S	**Sn**	**21 18 24.1**	**-0.4**
MATP	**Matopo**	**10.77**	**183**	Pn	**Pn**	**21 16 24.5**	**+0.8**
	8.9nm,0.3s,baz=10,slow=14,SNR=162						
MATP				Sn	**Sn**	**21 18 20.6**	**-3.9**
	4.4nm,0.3s,baz=252,slow=20,SNR=3.0						
MATP				Lg	Lg	21 19 33.6	
	0.4nm,0.3s,baz=279,slow=19,SNR=2.9						
MATP				LR	LR	21 20 43.7	
	comp=Z,191nm,19.1s,baz=21,slow=38						
KMBO	**Kilima Mbogo**	**11.75**	**45**	Pn	**Pn**	**21 16 35.7**	**-1.6**
	0.6nm,0.3s,baz=215,slow=16,SNR=5.6						
KMBO				Sn	Sn	21 18 38.6	-10
	1.7nm,0.3s,baz=329,slow=18,SNR=5.0						
KMBO				Lg	Lg	21 19 55.0	
	1.5nm,0.3s,baz=323,slow=23,SNR=3.5						
KMBO				LR	LR	21 20 55.6	
	comp=Z,70nm,20.7s,baz=228,slow=36						
KMBO	**Kilima Mbogo**	**11.75**	**45**	*e*Pn	**Pn**	**21 16 36.9**	**-0.4**
KMBO				Sn	**Sn**	**21 18 49.0**	**+0.3**
TSUM	**Tsumeb**	**14.61**	**228**	Pn	**Pn**	**21 17 15.4**	**-0.9**
	1.9nm,0.3s,baz=36,slow=13,SNR=43						
TSUM				Sn	Sn	21 19 46.5	-12
	4.9nm,0.3s,baz=313,slow=18,SNR=7.4						
TSUM				Lg	Lg	21 21 27.5	
	1.6nm,0.3s,baz=127,slow=20,SNR=1.9						
TSUM				LR	LR	21 23 29.2	
	comp=Z,216nm,20.1s,baz=44,slow=40						
TSUM	**Tsumeb**	**14.61**	**228**	*e*Pn	**Pn**	**21 17 16.3**	**0.0**
TSUM				Sn	Sn	21 19 46.5	-12
LBTB	**Lobatse**	**15.66**	**192**	Pn	**Pn**	**21 17 29.5**	**-0.8**
	2.3nm,0.3s,baz=20,slow=13,SNR=29						
LBTB				Sn	**Sn**	**21 20 16.4**	**-7.6**
	1.1nm,0.3s,baz=308,slow=19,SNR=2.8						
LBTB				Lg	Lg	21 21 60.0	
	0.5nm,0.3s,baz=126,slow=19,SNR=2.6						
LBTB				LR	LR	21 23 45.8	
	comp=Z,131nm,18.9s,baz=50,slow=38						
BOSA	**Boshof**	**19.23**	**190**	*i* P	**P**	**21 18 14.6**	**+0.7**
BOSA				*i*		21 18 15.4	
	baz=12,slow=14						
BOSA				*i* S	**S**	**21 21 55.1**	**+3.2**
BOSA	**Boshof**	**19.23**	**190**	P	**P**	**21 18 13.1**	**-0.8**
	1.5nm,0.3s,baz=12,slow=11,SNR=30						
BOSA				S	Sn	21 21 39.8	-11
	0.4nm,0.3s,baz=150,slow=20,SNR=2.2						
BOSA				Lg	Lg	21 23 55.2	
	0.6nm,0.3s,baz=298,slow=19,SNR=2.5						
BOSA				LR	LR	21 25 43.8	
	comp=Z,118nm,18.1s,baz=9.0,slow=37						
SUR	**Sutherland**	**23.90**	**197**	P	**P**	**21 19 03.5**	**0.0**
	0.5nm,0.8s,baz=42,slow=12,SNR=3.3						
SUR				LR	LR	21 28 35.9	
	comp=Z,9.8nm,18.2s,baz=346,slow=37						
ATD	**Arta Tunnel**	**25.10**	**34**	LR	LR	21 28 51.9	
	comp=Z,56nm,19.2s,baz=0.5,slow=36						
TORD	**Torodi Ar. Bea**	**35.32**	**309**	P	**P**	**21 20 44.9**	**-0.1**
	3.3nm,0.6s,baz=120,slow=8.5,SNR=38						
TORD				LR	LR	21 35 40.3	
	comp=Z,80nm,19.2s,baz=60,slow=37						
DBIC	**Dimbokro**	**37.43**	**294**	LR	LR	21 35 46.5	
	comp=Z,51nm,20.5s,baz=101,slow=35						
KEST	**Kesra**	**48.77**	**339**	LR	LR	21 44 14.1	
	comp=Z,40nm,18.7s,baz=309,slow=38						
BRTR	**Keskin Array B**	**49.27**	**5**	P	**P**	**21 22 38.3**	**-0.1**
	1.5nm,0.7s,baz=181,slow=8.8,SNR=10						
GEYT	**Alibeck**	**54.56**	**28**	LR	LR	21 46 31.7	
	comp=Z,31nm,21.2s,baz=15,slow=36						
ESDC	**Sonseca Array**	**57.79**	**330**	P	**P**	**21 23 39.7**	**-1.2**
	0.2nm,0.6s,baz=134,slow=6.4,SNR=4.1						
GERES	**GERESS Array B**	**59.75**	**348**	P	**P**	**21 23 54.8**	**+0.4**
	0.2nm,0.3s,baz=161,slow=7.0,SNR=2.5						
AKASG	**Malin Array Be**	**60.06**	**0**	P	**P**	**21 23 55.7**	**-0.6**
	0.6nm,0.5s,baz=186,slow=6.8,SNR=5.9						
MAW	**Mawson**	**62.16**	**166**	P	**P**	**21 24 13.0**	**+2.7**
	1.9nm,0.6s,baz=332,slow=8.1,SNR=6.1						
MAW				LR	LR	21 48 52.5	
	comp=Z,32nm,18.3s,baz=29,slow=34						
TKM2	**Tokmak 2**	**67.33**	**35**	*e*P	**P**	**21 24 44.9**	**+0.1**
	0.7nm,0.4s						
FINES	**FINESS Array B**	**70.86**	**359**	P	**P**	**21 25 05.6**	**-0.4**
	1.0nm,0.6s,baz=168,slow=9.8,SNR=8.2						
FINES				LR	LR	21 56 52.1	
	comp=Z,13nm,20.6s,baz=92,slow=36						
MKAR	**Makanchi Array**	**73.46**	**35**	P	**P**	**21 25 22.4**	**+0.4**
	2.0nm,0.8s,baz=224,slow=5.1,SNR=11						
KURBB	**Kurchatov Arra**	**73.74**	**30**	P	**P**	**21 25 23.6**	**+0.2**
	1.1nm,0.7s,baz=237,slow=6.7,SNR=9.9						
KURK	**Kurchatov**	**73.84**	**30**	P	**P**	**21 25 23.6**	**-0.4**
CHTO	**Chiang Mai**	**74.48**	**67**	*e*P	**P**	**21 25 28.8**	**+0.3**
	0.5nm,0.4s						
ZALV	**Zalesovo Beam**	**78.82**	**30**	LR	LR	22 05 21.0	
	comp=Z,21nm,18.4s,baz=254,slow=39						
ARCES	**ARCESS Array B**	**78.99**	**359**	P	**P**	**21 25 53.0**	**0.0**
	1.6nm,0.6s,baz=167,slow=6.1,SNR=16						
PLCA	**Paso Flores**	**90.97**	**229**	LR	LR	22 03 10.2	
	comp=Z,40nm,21.9s,baz=159,slow=33						

*IDC **01** 21:15:11.5±1.4,32°.79N×96°.23E,h0km,mb3.4/4, mb1 3.6/6,mb1mx3.3/56,mbtmp3.4/6,ML3.2/2,MS3.0/3, Ms1 3.0/3,ms1mx2.5/34,Error ellipse: s-maj=78.1km s-min=20.4km az=62.0*
*ISCJB **01** 21:15:14.0±1.0,32°.8N±0°.1×96°.5E±0°.2,h33km,mb3.4/4, MS3.0/3,Error ellipse: s-maj=27.8km s-min=12.0km az=139.7*
*BJI **01** 21:15:14.9,33°.12N×96°.69E,h10km,ML3.5/3,Ms3.4/2, Ms7 3.2/1*
ISC 01 21:15:16.5±1.4,33°.0N±0°.2×96°.6E±0°.2,h35km,n11, σ1s57/8,mb3.5/4,MS2.8/3,Qinghai

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CD2	**Chengdu**	**6.41**	**107**	*e*Pn	**Pn**	**21 16 47.6**	**-0.8**
WMQ	**Urumqi**	**12.89**	**330**	*e*P	**Pn**	**21 18 17.6**	**+0.5**
SONM	**Songino Array**	**16.59**	**24**	Pn	**P**	**21 19 08.9**	**+0.3**
	0.2nm,0.3s,baz=210,slow=12,SNR=2.7						
MKAR	**Makanchi Array**	**17.61**	**326**	P	**Pn**	**21 19 16.1**	**-2.9**
	0.0nm,0.3s,baz=137,slow=14,SNR=3.8						
KURBB	**Kurchatov Arra**	**22.10**	**328**	P	**P**	**21 20 08.2**	**-0.3**
	0.6nm,0.9s,baz=136,slow=11,SNR=5.6						
ZALV	**Zalesovo Beam**	**22.59**	**342**	P	**P**	**21 20 15.0**	**+1.3**
	1.0nm,0.7s,baz=160,slow=9.0,SNR=5.6						
JNU	**Naltsue**	**28.65**	**80**	LR	LR	21 33 12.4	
	comp=Z,19nm,19.2s,baz=303,slow=37						
GNI	**Garni**	**41.79**	**295**	LR	LR	21 43 56.4	
	comp=Z,15nm,21.3s,baz=180,slow=42						
KAPI	**Kappang**	**43.69**	**145**	LR	LR	21 42 57.2	
	comp=Z,39nm,18.4s,baz=56,slow=38						
WRA	**Warramunga Arr**	**63.78**	**140**	P	**P**	**21 25 45.5**	**+0.4**
	0.6nm,1.0s,baz=336,slow=6.7,SNR=5.4						
ASAR	**Alice Springs**	**66.61**	**143**	P	**P**	**21 26 04.5**	**+1.0**
	0.3nm,0.5s,baz=327,slow=7.1,SNR=7.3						

*IDC **01** 21:20:27.4±2.5,37°.63N×143°.48E,h0km,mb3.6/4, mb1 3.6/7,mb1mx3.3/55,mbtmp3.5/7,ML3.4/2,Error ellipse: s-maj=57.1km s-min=24.5km az=72.0*
*JMA **01** 21:20:30.8±0.2,37°.73N×143°.17E,h43km,M3.4*
*ISCJB **01** 21:20:31.1±1.0,37°.68N±0°.05×143°.17E±0°.09,h33km, mb3.5/4,Error ellipse: s-maj=9.7km s-min=7.7km az=173.8*
ISC 01 21:20:32.8±1.4,37°.67N±0°.06×143°.2E±0°.1,h35km,n23, σ1s82/24,mb3.6/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.65**	**299**	P	**Pn**	**21 20 57.6**	**-1.6**
JIO				*e*S	**Sn**	**21 21 17.2**	**-2.0**
OFUJ	**Ofunato**	**1.85**	**320**	P	**Pn**	**21 21 00.0**	**-2.0**
OFUJ				S	**Sn**	**21 21 20.9**	**-3.2**
JFK	**Kawauchi**	**1.86**	**261**	P	**Pn**	**21 21 00.7**	**-1.5**
JMK	**Ichinoseki**	**2.01**	**310**	P	**Pn**	**21 21 02.4**	**-1.8**
JOU	**Okura**	**2.11**	**290**	P	**Pn**	**21 21 04.9**	**-0.7**
JOU				*e*S	**Sn**	**21 21 29.9**	**-0.8**
JFT	**Otama**	**2.27**	**267**	P	**Pn**	**21 21 07.4**	**-0.4**
JFT				*e*S	**Sn**	**21 21 34.4**	**-0.2**
JYK	**Kaneyama**	**2.55**	**300**	P	**Pn**	**21 21 10.9**	**-0.7**
JAG	**Ashikaga**	**3.24**	**249**	P	**Pn**	**21 21 20.7**	**-0.4**
JAG				*e*S	**Sn**	**21 21 58.3**	**-0.1**
JRY	**Ryogami san**	**3.81**	**246**	P	**Pn**	**21 21 28.8**	**-0.2**
MJAR	**Matsushiro Arr**	**4.14**	**256**	Pn	**Pn**	**21 21 34.6**	**+1.1**
	1.0nm,0.3s,baz=67,slow=13,SNR=6.7						
MAT	**Matsushiro**	**4.14**	**256**	P	**Pn**	**21 21 34.4**	**+0.9**
MAT				*e*S	**Sn**	**21 22 18.0**	**-2.7**
JHJ	**Hachijo jima 2**	**5.32**	**213**	Pn	**Pn**	**21 21 48.7**	**-1.1**
	6.8nm,0.3s,baz=105,slow=20,SNR=3.2						
JHJ				Sn	**Sn**	**21 22 45.9**	**-3.9**
	3.9nm,0.3s,baz=73,slow=19,SNR=2.4						
USRK	**Ussuriysk Ar.**	**10.69**	**311**	Pn	**Pn**	**21 23 05.8**	**+2.6**
	0.1nm,0.3s,baz=121,slow=12,SNR=2.6						
H11N2	**WAKE ISLAND Hy 27.30**	**124**		T	T	21 54 46.6	
	baz=317,slow=75,SNR=9.0						
H11N1	**WAKE ISLAND Hy 27.30**	**124**		T	T	21 55 01.9	
	baz=317,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy 27.31**	**124**		T	T	21 55 08.0	
	baz=317,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy 28.06**	**126**		T	T	21 55 51.4	
	baz=318,slow=76,SNR=6.5						
H11S3	**WAKE ISLAND Hy 28.06**	**126**		T	T	21 55 54.2	
	baz=318,slow=76,SNR=6.1						
H11S2	**WAKE ISLAND Hy 28.07**	**126**		T	T	21 55 56.8	
	baz=318,slow=76,SNR=6.6						
SONM	**Songino Array**	**28.62**	**303**	P	**P**	**21 26 26.6**	**+0.7**
	0.3nm,0.3s,baz=100,slow=8.6,SNR=3.5						
MKAR	**Makanchi Array**	**44.98**	**302**	P	**P**	**21 28 47.4**	**+2.9**
	0.4nm,0.8s,baz=85,slow=7.7,SNR=2.5						
KURBB	**Kurchatov Arra**	**46.73**	**308**	P	**P**	**21 28 58.7**	**+0.5**
	0.4nm,0.4s,baz=81,slow=8.0,SNR=7.2						
WRA	**Warramunga Arr**	**57.91**	**190**	P	**P**	**21 30 21.4**	**0.0**
	0.8nm,1.0s,baz=8.2,slow=7.4,SNR=3.8						

*IDC **01** 21:22:46.9±1.7, 6°51'S×147°07'E, h0km, mb3.8/5, mb1 4.0/7, mb1mx3.6/44, mbtmp3.8/7, ML3.9/1, Error ellipse: s-maj=49.2km s-min=24.6km az=91.0*
*NEIC **01** 21:22:52.3±0.5, 6°57'S×147°10'E, h35km, mb4.4/3, Error ellipse: s-maj=15.1km s-min=9.1km az=87.0*
*ISCJB **01** 21:22:53.3±0.8, 6°54'S±0°07'×147°17'E±0°2, h63km, mb4.2/9, Error ellipse: s-maj=21.5km s-min=10.1km az=1.2*

ISC 01 21:22:55.1±0.9, 6°60'S±0°09'×147°7'E±0°2, h63km, n12, σ1°19/13, mb4.1/9, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.84**	**190**	Pn	**Pn**	**21 23 35.7**	**-2.4**
	12nm,0.3s,baz=50,slow=7.3,SNR=17						
PMG				Sn	**Sn**	**21 24 13.4**	**+2.3**
	3.3nm,0.3s,baz=62,slow=18,SNR=2.8						
WRA	**Warramunga Arr**	**18.54**	**223**	P	**P**	**21 27 05.7**	**-1.1**
	0.4nm,0.3s,baz=52,slow=11,SNR=15						
ASAR	**Alice Springs**	**21.52**	**216**	P	**P**	**21 27 39.2**	**+0.1**
	1.1nm,0.4s,baz=53,slow=9.0,SNR=63						
FITZ	**Fitzroy Crossi**	**24.34**	**240**	P	**P**	**21 28 08.0**	**+0.8**
	3.2nm,0.4s,baz=53,slow=8.0,SNR=42						
STKA	**Stephens Creek**	**25.79**	**192**	P	**P**	**21 28 20.2**	**0.0**
	1.2nm,0.6s,baz=354,slow=9.2,SNR=3.1						
RAO	**Raoul Island**	**39.49**	**129**	*e*P	**P**	**21 30 19.6**	**-0.1**
	265nm,0.7s						
YHNB	**Yeheng**	**40.27**	**321**	*e*P	**P**	**21 30 26.0**	**-0.3**
	2.3nm,0.5s						
HIA	**Hailar**	**60.74**	**339**	P	**P**	**21 33 00.2**	**+0.1**
	1.3nm,0.4s						
VNDA	**Vanda**	**71.28**	**177**	P	**P**	**21 34 08.0**	**+0.6**
	1.0nm,0.8s,baz=346,slow=7.6,SNR=4.5						
MKAR	**Makanchi Array**	**78.38**	**320**	P	**P**	**21 34 48.9**	**0.0**
	0.6nm,0.9s,baz=108,slow=6.4,SNR=2.8						
QSPA	**South Pole Qui**	**83.38**	**180**	*e*P	**P**	**21 35 15.6**	**+0.3**
	2.0nm,0.5s						
TORD	**Torodi Ar. Bea**	**145.88**	**284**	PKPbc	**PKPab**	**21 42 30.0**	**+1.0**
	0.3nm,0.4s,baz=70,slow=3.4,SNR=8.2						

*MDD **01** 21:29:29.8±2.7, 43°49N×16°01W, h0km, mb4.2/6, Error ellipse: s-maj=26.6km s-min=20.8km az=103.0, PRXIMO*
*INMG **01** 21:29:31.9±1.8, 43°62N×16°44W, h10km, ML2.8, Error ellipse: s-maj=9.9km s-min=6.4km az=91.0*
*CSEM **01** 21:29:35.8±0.4, 43°30N×15°45W, h10km, mb4.2, Error ellipse: s-maj=8.4km s-min=5.9km az=97.0*

ISC 01 21:29:35.1±3.8, 43°28N±0°09×15°5W±0°2, h10km, n82, σ0°97/114, North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMAZ	**Mazaricos**	**4.79**	**92**	P	**Pn**	**21 30 47.4**	**0.0**
	2.4nm,0.1s,SNR=7.9						
EMAZ				S	**Sn**	**21 31 44.4**	**+1.4**
	0.3nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**4.79**	**92**	P	**Pn**	**21 30 47.4**	**0.0**
	2.4nm,0.1s,SNR=7.9						
EMAZ				S	**Sn**	**21 31 44.4**	**+1.4**
	0.3nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**5.46**	**93**	P	**Pn**	**21 30 56.5**	**0.0**
	1.0nm,0.0s,SNR=7.9						
EAGO				S	**Sn**	**21 32 00.0**	**+0.6**
	0.2nm,0.0s,SNR=7.9						
EAGO	**Agolada(Pontev**	**5.46**	**93**	P	**Pn**	**21 30 56.5**	**0.0**
	1.0nm,0.0s,SNR=7.9						
EAGO				S	**Sn**	**21 32 00.0**	**+0.6**
	0.2nm,0.0s,SNR=7.9						
PGAV	**Gavieira, Arco**	**5.50**	**101**	*e*Pn	**Pn**	**21 30 58.4**	**+1.2**
PGAV				*e*Sn	**Sn**	**21 32 02.9**	**+2.4**
PGAV				A	A	21 32 12.7	
	2.2nm,0.9s						
PGAV	**Gavieira, Arco**	**5.50**	**101**	*e*Pn	**Pn**	**21 30 58.4**	**+1.2**
ELOB	**Lobios**	**5.68**	**102**	P	**Pn**	**21 31 00.6**	**+1.0**
	1.1nm,0.1s,SNR=5.6						
ELOB				S	**Sn**	**21 32 06.2**	**+1.3**
	0.0nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**5.68**	**102**	P	**Pn**	**21 31 00.6**	**+1.0**
	1.1nm,0.1s,SNR=5.6						
ELOB				S	**Sn**	**21 32 06.2**	**+1.3**
	SNR=7.9						
PCAB	**Cabril**	**5.75**	**103**	*e*Pn	**Pn**	**21 31 01.0**	**+0.4**
PCAB	**Cabril**	**5.75**	**103**	P	**Pn**	**21 31 01.0**	**+0.4**
PCAB	**Cabril**	**5.75**	**103**	P	**Pn**	**21 31 01.0**	**+0.4**
POLO	**Lamas de Olo**	**6.03**	**106**	*e*Pn	**Pn**	**21 31 05.6**	**+1.2**
POLO				*e*Sn	**Sn**	**21 32 16.3**	**+2.8**
POLO	**Lamas de Olo**	**6.03**	**106**	*e*Pn	**Pn**	**21 31 05.6**	**+1.2**
EPON	**Pontenova**	**6.10**	**87**	P	**Pn**	**21 31 04.5**	**-0.8**
	0.5nm,0.1s,SNR=7.9						
EPON				S	**Sn**	**21 32 14.8**	**-0.4**
	0.4nm,0.1s,SNR=7.9						
EPON	**Pontenova**	**6.10**	**87**	P	**Pn**	**21 31 04.5**	**-0.8**
	0.5nm,0.1s,SNR=7.9						
EPON				S	**Sn**	**21 32 14.8**	**-0.4**
	0.4nm,0.1s,SNR=7.9						
PCAS	**Casmilo, Conde**	**6.16**	**119**	*e*Pn	**Pn**	**21 31 06.7**	**+0.5**
PCAS	**Casmilo, Conde**	**6.16**	**119**	*e*Pn	**Pn**	**21 31 06.7**	**+0.5**
PVIS	**Viseu**	**6.23**	**112**	*e*Pn	**Pn**	**21 31 07.3**	**+0.2**
PVIS	**Viseu**	**6.23**	**112**	P	**Pn**	**21 31 07.3**	**+0.2**
PVIS	**Viseu**	**6.23**	**112**	P	**Pn**	**21 31 07.3**	**+0.2**
PMAFR	**Mafra**	**6.39**	**131**	*e*Pn	**Pn**	**21 31 09.7**	**+0.4**
PMAFR				*e*Sn	**Sn**	**21 32 23.0**	**+0.8**
PMAFR				A	A	21 32 26.7	
	17nm,0.6s						
PMAFR	**Mafra**	**6.39**	**131**	P	**Pn**	**21 31 08.8**	**-0.5**
	2.0nm,0.1s,SNR=7.9						
PMAFR				S	**Sn**	**21 32 22.5**	**+0.3**
	0.4nm,0.1s,SNR=7.9						
PMAFR	**Mafra**	**6.39**	**131**	P	**Pn**	**21 31 08.8**	**-0.5**
	2.0nm,0.1s,SNR=7.9						
PMAFR	**Mafra**	**6.39**	**131**	*e*Pn	**Pn**	**21 31 09.7**	**+0.4**
PMAFR				S	**Sn**	**21 32 22.5**	**+0.3**
	0.4nm,0.1s,SNR=7.9						
PMAFR				*e*Sn	**Sn**	**21 32 23.0**	**+0.8**
	17nm,0.6s						
PTOM	**Tomar**	**6.47**	**122**	*e*Pn	**Pn**	**21 31 10.9**	**+0.5**
PTOM	**Tomar**	**6.47**	**122**	P	**Pn**	**21 31 10.9**	**+0.5**
PTOM	**Tomar**	**6.47**	**122**	P	**Pn**	**21 31 10.9**	**+0.5**
MTE	**Manteigas**	**6.61**	**113**	*e*Pn	**Pn**	**21 31 12.3**	**-0.1**
MTE	**Manteigas**	**6.61**	**113**	P	**Pn**	**21 31 12.3**	**-0.1**
MTE	**Manteigas**	**6.61**	**113**	P	**Pn**	**21 31 12.3**	**-0.1**
ECAL	**Calabor**	**6.61**	**99**	P	**Pn**	**21 31 12.7**	**+0.3**
	0.2nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**6.61**	**99**	P	**Pn**	**21 31 12.7**	**+0.3**
	0.2nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**6.64**	**106**	*e*Pn	**Pn**	**21 31 13.5**	**+0.7**
MVO	**Moncorvo**	**6.64**	**106**	P	**Pn**	**21 31 13.3**	**+0.5**
	0.8nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**6.64**	**106**	P	**Pn**	**21 31 13.3**	**+0.5**
	0.8nm,0.1s,SNR=7.9						
PCBR	**Castelo Branco**	**6.94**	**117**	*e*Sn	**Sn**	**21 32 31.4**	**-4.3**
PCBR	**Castelo Branco**	**6.94**	**117**	S	**Sn**	**21 32 31.4**	**-4.3**
PMRV	**Marv??o**	**7.22**	**119**	*e*Pn	**Pn**	**21 31 21.2**	**+0.5**
PMRV	**Marv??o**	**7.22**	**119**	P	**Pn**	**21 31 21.2**	**+0.5**
PMRV	**Marv??o**	**7.22**	**119**	P	**Pn**	**21 31 21.2**	**+0.5**
PNCL	**Nicolau / Gran**	**7.40**	**132**	*e*Pn	**Pn**	**21 31 23.7**	**+0.5**
PNCL				*e*Sn	**Sn**	**21 32 47.2**	**0.0**
PNCL	**Nicolau / Gran**	**7.40**	**132**	*e*Pn	**Pn**	**21 31 23.7**	**+0.5**
PNCL				*e*Sn	**Sn**	**21 32 47.2**	**0.0**
PESTR	**Estremoz**	**7.43**	**124**	*e*Pn	**Pn**	**21 31 23.5**	**-0.1**
PESTR	**Estremoz**	**7.43**	**124**	*e*Pn	**Pn**	**21 31 23.5**	**-0.1**
EARI	**Arriondas**	**7.52**	**86**	P	**Pn**	**21 31 24.8**	**0.0**
	0.4nm,0.2s,SNR=8.2						
EARI	**Arriondas**	**7.52**	**86**	P	**Pn**	**21 31 24.8**	**0.0**
	0.4nm,0.2s,SNR=8.2						
EPLA	**Plasencia**	**7.76**	**111**	P	**Pn**	**21 31 28.2**	**+0.1**
	0.2nm,0.1s,SNR=5.8						
EPLA				S	**Sn**	**21 32 54.9**	**-1.1**
	0.6nm,0.2s,SNR=7.9						
EPLA	**Plasencia**	**7.76**	**111**	P	**Pn**	**21 31 28.2**	**+0.1**
	0.2nm,0.1s,SNR=5.8						
EPLA				S	**Sn**	**21 32 54.9**	**-1.1**
	0.6nm,0.2s,SNR=7.9						
MESJ	**Messejana**	**7.77**	**132**	*e*Pn	**Pn**	**21 31 29.0**	**+0.8**
MESJ	**Messejana**	**7.77**	**132**	P	**Pn**	**21 31 29.0**	**+0.8**
MESJ	**Messejana**	**7.77**	**132**	P	**Pn**	**21 31 29.0**	**+0.8**
EBAD	**Badajoz**	**7.85**	**122**	P	**Pn**	**21 31 29.5**	**+0.1**
	0.6nm,0.1s,SNR=6.0						
EBAD				S	**Sn**	**21 32 57.8**	**-0.5**
	0.2nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**7.85**	**122**	P	**Pn**	**21 31 29.5**	**+0.1**
	0.6nm,0.1s,SNR=6.0						
EBAD				S	**Sn**	**21 32 57.8**	**-0.5**
	0.2nm,0.1s,SNR=7.9						
MORF	**Marmelete**	**7.94**	**136**	*e*Sn	**Sn**	**21 33 00.3**	**-0.3**
MORF	**Marmelete**	**7.94**	**136**	S	**Sn**	**21 33 00.3**	**-0.3**
MORF	**Marmelete**	**7.94**	**136**	S	**Sn**	**21 33 00.3**	**-0.3**
PCVE	**Castro Verde**	**8.02**	**132**	*e*Pn	**Pn**	**21 31 32.3**	**+0.7**
PCVE				*e*Sn	**Sn**	**21 33 01.2**	**-1.1**
PCVE	**Castro Verde**	**8.02**	**132**	P	**Pn**	**21 31 32.3**	**+0.7**
PCVE				S	**Sn**	**21 33 01.2**	**-1.1**
PCVE	**Castro Verde**	**8.02**	**132**	P	**Pn**	**21 31 32.3**	**+0.7**
PCVE				S	**Sn**	**21 33 01.2**	**-1.1**
PBAR	**Barrancos**	**8.21**	**126**	*e*Pn	**Pn**	**21 31 34.7**	**+0.5**
PBAR				*e*Sn	**Sn**	**21 33 05.5**	**-1.5**
PBAR	**Barrancos**	**8.21**	**126**	P	**Pn**	**21 31 34.7**	**+0.5**
PBAR				S	**Sn**	**21 33 05.5**	**-1.5**
PBAR	**Barrancos**	**8.21**	**126**	P	**Pn**	**21 31 34.7**	**+0.5**
PBAR				S	**Sn**	**21 33 05.5**	**-1.5**
PVAQ	**Vaqueiros**	**8.36**	**132**	*e*Pn	**Pn**	**21 31 36.8**	**+0.5**
PVAQ				*e*Sn	**Sn**	**21 33 10.9**	**+0.2**
PVAQ	**Vaqueiros**	**8.36**	**132**	P	**Pn**	**21 31 36.8**	**+0.5**
PVAQ				S	**Sn**	**21 33 10.9**	**+0.2**
PVAQ	**Vaqueiros**	**8.36**	**132**	P	**Pn**	**21 31 36.8**	**+0.5**
PVAQ				S	**Sn**	**21 33 10.9**	**+0.2**
PBDV	**Barranco-do-Ve**	**8.36**	**134**	*e*Pn	**Pn**	**21 31 37.6**	**+1.2**
PBDV				*e*Sn	**Sn**	**21 33 10.1**	**-0.8**
PBDV	**Barranco-do-Ve**	**8.36**	**134**	P	**Pn**	**21 31 37.6**	**+1.2**
PBDV				S	**Sn**	**21 33 10.1**	**-0.8**
PBDV	**Barranco-do-Ve**	**8.36**	**134**	P	**Pn**	**21 31 37.6**	**+1.2**
PBDV				S	**Sn**	**21 33 10.1**	**-0.8**
EGRO	**El Granado**	**8.39**	**130**	P	**Pn**	**21 31 37.4**	**+0.6**
	0.1nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**8.39**	**130**	P	**Pn**	**21 31 37.4**	**+0.6**
	0.1nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**8.69**	**126**	P	**Pn**	**21 31 41.4**	**+0.5**
	0.6nm,0.1s,SNR=13						
EMIN	**Mina Concepcio**	**8.69**	**126**	P	**Pn**	**21 31 41.4**	**+0.5**
	0.6nm,0.1s,SNR=13						
ELAN	**Lanestosa**	**8.81**	**86**	P	**Pn**	**21 31 41.2**	**-1.4**
	0.1nm,0.1s,SNR=7.9						
ELAN	**Lanestosa**	**8.81**	**86**	P	**Pn**	**21 31 41.2**	**-1.4**
	0.1nm,0.1s,SNR=7.9						
GUD	**Guadarrama**	**8.86**	**103**	P	**Pn**	**21 31 43.9**	**+0.5**
	1.1nm,0.2s,SNR=7.8						
GUD	**Guadarrama**	**8.86**	**103**	P	**Pn**	**21 31 43.9**	**+0.5**
	1.1nm,0.2s,SNR=7.8						
ECAB	**El Cabril**	**9.26**	**121**	P	**Pn**	**21 31 48.7**	**-0.1**
	0.5nm,0.1s,SNR=7.2						
ECAB	**El Cabril**	**9.26**	**121**	P	**Pn**	**21 31 48.7**	**-0.1**
	0.5nm,0.1s,SNR=7.2						
ESDC	**Sonseca Array**	**9.38**	**109**	P	**Pn**	**21 31 50.5**	**+0.1**
	1.5nm,0.1s,baz=294,slow=13,SNR=9.8						
ESDC	**Sonseca Array**	**9.38**	**109**	P	**Pn**	**21 31 50.5**	**+0.1**
	1.5nm,0.1s,baz=294,SNR=9.8						
EADA	**Adamuz**	**9.74**	**118**	P	**Pn**	**21 31 55.3**	**0.0**
	0.5nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**9.74**	**118**	P	**Pn**	**21 31 55.3**	**0.0**
	0.5nm,0.1s,SNR=7.9						

JMA 01 21:47:31.9, 39°29N×141°49E, h73km±1km, M1.2, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOM	**Ohasama**	**0.24**	**320**	P	Pn	21 47 42.9	-0.2
JOM				S	Sn	21 47 51.3	+0.1
OFUJ	**Ofunato**	**0.25**	**146**	P	Pn	21 47 43.1	0.0
OFUJ				S	Sn	21 47 51.6	+0.3
JMK	**Ichinoseki**	**0.40**	**212**	P	Pn	21 47 43.9	-0.2
JMK				S	Sn	21 47 53.1	+0.1
JRG	**Rokugo**	**0.67**	**279**	P	Pn	21 47 46.9	+0.2
JRG				S	Sn	21 47 58.3	+0.6
JIO	**Ouri**	**0.84**	**188**	P	Pn	21 47 48.5	-0.1
JIO				S	Sn	21 48 00.6	-0.4
JYK	**Kaneyama**	**0.95**	**247**	*e*S	Sn	21 48 04.3	+0.8
JANG	**Nango**	**1.08**	**1**	P	Pn	21 47 51.5	-0.1
JANG				S	Sn	21 48 06.2	-0.1
JOU	**Okura**	**1.13**	**215**	P	Pn	21 47 52.8	+0.6
JOU				S	Sn	21 48 08.1	+0.8
JMM	**Marumori**	**1.52**	**201**	P	Pn	21 47 57.3	0.0
JMM				S	Sn	21 48 16.2	-0.2

*IDC **01** 22:08:18.7±2.7, 9°46S×113°67E, h0km, mb3.2/3, mb1 3.5/4, mb1mx3.3/35, mbtmp3.3/4, ML3.0/1, Error ellipse: s-maj=153.8km s-min=23.7km az=47.0*
*ISCJB **01** 22:08:25.7±1.2, 9°5S±0°1×113°90E±0°06, h60km±17km, mb3.1/3, Error ellipse: s-maj=19.2km s-min=7.7km az=22.2*
*DJA **01** 22:08:27.9±1.2, 9°S±5°×117°4E±°, h19km±10km, M3.6/7, MLv3.6/7*

ISC 01 22:08:26.1±1.4, 9°50S±0°10×113°91E±0°06, h49km±20km, n12, σ1°52/17, mb3.3/3, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAGI	**Jajag, Banyuwa**	**1.05**	**13**	P	**Pn**	**22 08 43.5**	**-1.0**
JAGI				S	**Sn**	**22 08 55.4**	**-2.7**
GMJI	**Gumukmas**	**1.31**	**339**	P	**Pn**	**22 08 48.3**	**+0.3**
GMJI				S	**Sn**	**22 09 04.2**	**-0.1**
DNP	**Denpasar**	**1.52**	**57**	P	**Pn**	**22 08 52.8**	**+1.9**
DNP				S	**Sn**	**22 09 10.0**	**+0.5**
ABJI	**Asem Bagus**	**1.73**	**11**	P	**Pn**	**22 08 55.5**	**+1.8**
BLJI	**Banyuglugur**	**1.77**	**350**	P	**Pn**	**22 08 56.3**	**+1.9**
BLJI				S	**Sn**	**22 09 17.5**	**+1.8**
PWJI	**Pagerwojo**	**2.55**	**305**	P	**Pn**	**22 09 06.0**	**+1.0**
PWJI				S	**Sn**	**22 09 35.1**	**+0.3**
TWSI	**Taliwang, Sumb**	**3.03**	**76**	P	**Pn**	**22 09 12.1**	**+0.5**
PLAI	**Plampang**	**3.87**	**80**	P	**Pn**	**22 09 24.4**	**+1.2**
FITZ	**Fitzroy Crossi**	**14.23**	**128**	Pn	**Pn**	**22 11 43.7**	**-1.3**
	0.1nm,0.3s,baz=311,slow=9.3,SNR=2.7						
FITZ				Sn	Sn	22 14 08.2	-13
	0.0nm,0.3s,baz=241,slow=18,SNR=4.1						
WRA	**Warramunga Arr**	**22.29**	**120**	P	**P**	**22 13 20.4**	**+0.9**
	0.2nm,0.4s,baz=296,slow=11,SNR=5.8						
ASAR	**Alice Springs**	**23.73**	**129**	P	**P**	**22 13 34.6**	**+0.7**
	0.6nm,0.5s,baz=304,slow=8.9,SNR=13						
MKAR	**Makanchi Array**	**62.74**	**336**	P	**P**	**22 18 45.0**	**-1.2**
	0.1nm,0.4s,baz=153,slow=7.4,SNR=3.1						

*ISCJB **01** 22:08:45.5±0.3, 60°28N±0°03×153°62W±0°07, h187km±3km, mb3.6/4, Error ellipse: s-maj=6.3km s-min=3.6km az=34.9*
*NEIC **01** 22:08:46.9, 60°26N×153°62W, h185km, MG3.6(AEIC), After AEIC.*
*IDC **01** 22:08:50.7±4.8, 60°90N×154°17W, h180km±40km, mb3.2/4, mb1 3.3/8, mb1mx3.0/45, mbtmp3.7/8, Error ellipse: s-maj=44.6km s-min=29.1km az=24.0*

ISC 01 22:08:46.9±0.8, 60°29N±0°04×153°64W±0°05, h182km±6km, n92, σ0°89/107, mb3.7/4, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILW	**Iliamna West**	**0.34**	**133**	P	**Pn**	**22 09 11.0**	**-0.5**
ILW				S	**Sn**	**22 09 29.1**	**-1.3**
ILIM	**Iliamna**	**0.40**	**122**	P	**Pn**	**22 09 11.2**	**-0.4**
ILS	**Iliamna Low So**	**0.44**	**139**	P	**Pn**	**22 09 11.6**	**-0.1**
RDWB	**Redoubt West**	**0.44**	**63**	P	**Pn**	**22 09 11.5**	**-0.2**
RDWB				S	**Sn**	**22 09 30.0**	**-1.0**
NCT	**North Crescent**	**0.44**	**52**	P	**Pn**	**22 09 11.5**	**-0.2**
RDJH	**Redoubt Jeurge**	**0.51**	**53**	P	**Pn**	**22 09 12.0**	**0.0**
RDJH				S	**Sn**	**22 09 30.9**	**-0.6**
BGRM	**Barrier Glacie**	**0.76**	**52**	P	**Pn**	**22 09 13.2**	**0.0**
AUL	**Augustine Lava**	**0.92**	**174**	P	**Pn**	**22 09 13.9**	**-0.2**
AUE	**Augustine Isla**	**0.94**	**172**	P	**Pn**	**22 09 14.0**	**-0.3**
AUSE	**Augustine SEas**	**0.96**	**173**	P	**Pn**	**22 09 14.1**	**-0.3**
AUI	**Augustine Isla**	**0.96**	**174**	P	**Pn**	**22 09 14.2**	**-0.3**
AUI				S	**Sn**	**22 09 35.1**	**-0.6**
CKL	**Chakachamna La**	**1.11**	**34**	P	**Pn**	**22 09 16.0**	**+0.3**
SPWE	**Spurr West**	**1.12**	**28**	P	**Pn**	**22 09 16.0**	**+0.3**
SPCR	**Spurr Chakacha**	**1.15**	**37**	P	**Pn**	**22 09 16.1**	**+0.2**
SPCR				S	**Sn**	**22 09 38.2**	**-0.3**
SPBG	**Spurr Blockage**	**1.15**	**32**	P	**Pn**	**22 09 16.5**	**+0.5**
SPBG				S	**Sn**	**22 09 39.1**	**+0.5**
MCNL	**McNeil River**	**1.16**	**198**	P	**Pn**	**22 09 15.3**	**-0.7**
HOM	**Homer**	**1.19**	**121**	P	**Pn**	**22 09 16.1**	**0.0**
HOM				S	**Sn**	**22 09 38.6**	**-0.1**
SVW2	**Sparrevohn**	**1.25**	**311**	P	**Pn**	**22 09 15.9**	**-0.8**
CDD	**Cape Douglas**	**1.36**	**180**	P	**Pn**	**22 09 17.1**	**-0.6**
CNPM	**China Poot**	**1.43**	**121**	P	**Pn**	**22 09 17.8**	**-0.5**
CNPM				S	**Sn**	**22 09 41.5**	**-1.1**
FOSS	**Fourpeaked Sta**	**1.50**	**181**	P	**Pn**	**22 09 18.2**	**-0.7**
STLK	**Strandline Lak**	**1.50**	**35**	P	**Pn**	**22 09 19.0**	**+0.1**
FOPK	**Fourpeaked Vol**	**1.54**	**177**	P	**Pn**	**22 09 18.4**	**-1.0**
SLKM	**Skilak Lake**	**1.71**	**81**	P	**Pn**	**22 09 19.9**	**-1.1**
KAPH	**Katmai Pasha**	**1.74**	**192**	P	**Pn**	**22 09 20.9**	**-0.5**
KAPH				S	**Sn**	**22 09 47.1**	**-0.9**
KAHC	**Katmai Hardscr**	**1.79**	**204**	P	**Pn**	**22 09 21.2**	**-0.7**
SUA	**Susitna One**	**1.84**	**49**	P	**Pn**	**22 09 21.8**	**-0.6**
SUA				S	**Sn**	**22 09 50.1**	**0.0**
FIB	**Fire Island**	**1.91**	**61**	P	**Pn**	**22 09 23.2**	**+0.2**
KAWH	**Katmai**	**2.00**	**198**	P	**Pn**	**22 09 23.2**	**-0.9**
RC01	**Rabbit Creek A**	**2.08**	**66**	P	**Pn**	**22 09 23.9**	**-0.9**
RC01				S	**Sn**	**22 09 53.4**	**-1.0**
KVTA	**Katmai Vly 10**	**2.10**	**205**	P	**Pn**	**22 09 24.6**	**-0.5**
SEW	**Seward**	**2.10**	**93**	P	**Pn**	**22 09 24.3**	**-0.7**
KAKN	**Katmai Knife C**	**2.13**	**201**	P	**Pn**	**22 09 24.7**	**-0.9**
KAKN				S	**Sn**	**22 09 54.0**	**-1.5**
KABU	**Katmai Buttres**	**2.19**	**203**	P	**Pn**	**22 09 25.8**	**-0.4**
PMR	**Palmer**	**2.56**	**57**	P	**Pn**	**22 09 29.1**	**-1.1**
CUT	**Chulitna**	**2.67**	**36**	P	**Pn**	**22 09 31.4**	**-0.1**
PPLA	**Purkeypile**	**2.71**	**14**	P	**Pn**	**22 09 32.6**	**+0.6**
GHO	**Glory Hole Cre**	**2.73**	**55**	P	**Pn**	**22 09 30.9**	**-1.4**
KNK	**Knik Glacier**	**2.77**	**64**	P	**Pn**	**22 09 31.5**	**-1.3**
TT01	**Tatalina**	**2.86**	**338**	P	**Pn**	**22 09 33.0**	**-0.7**
TTA	**Tatalina**	**2.88**	**338**	P	**Pn**	**22 09 33.7**	**-0.5**
PLK2	**Peulik 2**	**2.89**	**210**	P	**Pn**	**22 09 33.9**	**-0.3**
PLK1	**Peulik 1**	**2.93**	**213**	P	**Pn**	**22 09 34.6**	**0.0**
PLK3	**Peulik 3**	**2.94**	**209**	P	**Pn**	**22 09 34.4**	**-0.5**
SML	**Sawmill**	**3.00**	**57**	P	**Pn**	**22 09 34.4**	**-1.1**
PLK4	**Peulik 4**	**3.02**	**209**	P	**Pn**	**22 09 35.2**	**-0.6**
OHAK	**Old Harbor**	**3.08**	**176**	P	**Pn**	**22 09 34.3**	**-2.2**
CAST	**Castle Rocks**	**3.23**	**13**	P	**Pn**	**22 09 38.2**	**0.0**
HUR	**Hurricane**	**3.30**	**34**	P	**Pn**	**22 09 38.6**	**-0.6**
SCM	**Sheep Creek Mo**	**3.44**	**60**	P	**Pn**	**22 09 39.7**	**-1.2**
KTH	**Kantishna Hill**	**3.52**	**20**	P	**Pn**	**22 09 41.2**	**-0.6**
TRF	**Thorofare Moun**	**3.55**	**25**	P	**Pn**	**22 09 41.8**	**-0.5**
HIN	**Hinchinbrook I**	**3.55**	**85**	P	**Pn**	**22 09 41.9**	**-0.3**
VLZ	**Valdez**	**3.69**	**74**	P	**Pn**	**22 09 44.2**	**+0.3**
RND	**Reindeer**	**3.86**	**34**	P	**Pn**	**22 09 45.5**	**-0.7**
EYAK	**Cordova Ski Ar**	**3.92**	**83**	P	**Pn**	**22 09 46.7**	**-0.2**
DIV	**Divide**	**3.96**	**74**	P	**Pn**	**22 09 46.4**	**-1.0**
KLU	**Klutina**	**3.96**	**69**	P	**Pn**	**22 09 46.5**	**-1.0**
BPAW	**Bear Paw Mtn.**	**4.02**	**17**	P	**Pn**	**22 09 47.0**	**-1.2**
MCK	**McKinley**	**4.10**	**31**	P	**Pn**	**22 09 48.6**	**-0.6**
BWN	**Browne**	**4.36**	**25**	P	**Pn**	**22 09 52.1**	**-0.3**
BMRM	**Bremner River**	**4.50**	**77**	P	**Pn**	**22 09 54.1**	**-0.3**
PAX	**Paxson**	**4.73**	**52**	P	**Pn**	**22 09 57.3**	**0.0**
NICHA	**Nichawak Mount**	**4.82**	**86**	P	**Pn**	**22 09 58.0**	**-0.4**
WRH	**Wood River Hil**	**4.92**	**29**	P	**Pn**	**22 09 58.5**	**-1.2**
MLY	**Manley**	**4.94**	**14**	P	**Pn**	**22 09 59.5**	**-0.5**
VRDI	**Verde Repeater**	**5.08**	**75**	P	**Pn**	**22 10 02.1**	**+0.1**
CCB	**Clear Creek Bu**	**5.14**	**29**	P	**Pn**	**22 10 01.5**	**-1.0**
KHIT	**Khitrov Hills**	**5.16**	**84**	P	**Pn**	**22 10 02.3**	**-0.6**
MCARA	**McCarthy VSAT**	**5.31**	**73**	P	**Pn**	**22 10 04.5**	**-0.2**
MDM	**Murphy Dome**	**5.31**	**26**	P	**Pn**	**22 10 03.7**	**-1.0**
PS08	**TAPS Pump Stn8**	**5.31**	**34**	P	**Pn**	**22 10 04.2**	**-0.6**
COLA	**College**	**5.32**	**28**	P	**Pn**	**22 10 04.0**	**-0.8**
**IL

WRA	**Warramunga Arr**	**28.05**	**163**	P		**P**	**22 34 08.5**	**-0.9**
	1.4nm,0.5s,baz=333,slow=11,SNR=27								
WRA				PcP		PcP	22 37 23.5	+0.6	
	0.6nm,1.0s,baz=338,slow=2.2,SNR=4.7								
CMAR	**Chiang Mai Arr**	**28.69**	**296**	P		**P**	**22 34 16.1**	**+0.9**
	0.4nm,0.3s,baz=93,slow=7.2,SNR=3.6								
CMAR				LR		LR	22 45 55.1		
	comp=Z,30nm,18.2s,baz=125,slow=37								
KSAR	**Wonju Array Be**	**30.30**	**3**	PcP		**PcP**	**22 37 29.0**	**+0.8**
KSRS	**Korea Array**	**30.31**	**3**	PcP		**PcP**	**22 37 29.0**	**+0.8**
	1.3nm,0.5s,baz=202,slow=2.4,SNR=5.7								
KSRS				LR		LR	22 48 01.0		
	comp=Z,15nm,18.7s,baz=200,slow=39								
MJAR	**Matsushiro Arr**	**31.40**	**19**	LR		LR	22 45 25.0		
	comp=Z,11nm,21.4s,baz=155,slow=33								
ASAR	**Alice Springs**	**31.49**	**166**	P		**P**	**22 34 39.9**	**0.0**
	2.4nm,0.5s,baz=342,slow=7.3,SNR=28								
ASAR				PcP		PcP	22 37 32.2	+0.5	
	0.7nm,0.5s,baz=348,slow=2.4,SNR=6.1								
ASAR				S		S	22 39 41.1	-2.4	
	1.0nm,0.9s,baz=356,slow=21,SNR=4.4								
USRK	**Ussuriysk Ar.**	**37.37**	**7**	P		**P**	**22 35 29.9**	**-0.5**
	0.5nm,0.4s,baz=174,slow=2.9,SNR=2.9								
NWAO	**Narrogin (SRO)**	**40.63**	**191**	P		**P**	**22 35 57.9**	**+0.2**
	12nm,0.8s,baz=306,slow=3.8,SNR=9.6								
STKA	**Stephens Creek**	**41.47**	**160**	P		**P**	**22 36 05.3**	**+0.7**
	2.1nm,0.4s,baz=335,slow=9.7,SNR=5.9								
H11N1	**WAKE ISLAND Hy**	**41.59**	**68**	T		T	23 20 33.0		
	baz=264,slow=74,SNR=11								
H11N2	**WAKE ISLAND Hy**	**41.59**	**68**	T		T	23 20 42.7		
	baz=264,slow=74,SNR=6.4								
H11N3	**WAKE ISLAND Hy**	**41.60**	**68**	T		T	23 20 27.8		
	baz=264,slow=74,SNR=15								
KLR	**Kul'dur**	**42.31**	**6**	LR		LR	22 56 10.2		
	comp=Z,11nm,18.1s,baz=171,slow=39								
SONM	**Songino Array**	**43.95**	**341**	P		**P**	**22 36 25.2**	**+0.5**
	1.1nm,0.6s,baz=154,slow=10.0,SNR=9.7								
SONM				PcP		PcP	22 38 10.0	+0.4	
	1.9nm,0.8s,baz=156,slow=3.8,SNR=8.8								
TLY	**Talaya**	**48.17**	**341**	LR		LR	22 57 29.6		
	comp=Z,29nm,19.2s,baz=140,slow=36								
MKAR	**Makanchi Array**	**54.45**	**324**	P		**P**	**22 37 45.5**	**+0.6**
	2.2nm,0.5s,baz=116,slow=7.0,SNR=33								
MKAR				PcP		PcP	22 38 47.0	-0.7	
	1.5nm,0.7s,baz=118,slow=4.8,SNR=3.7								
MKAR				LR		LR	23 02 14.9		
	comp=Z,35nm,19.7s,baz=47,slow=37								
YAK	**Yakutsk**	**54.93**	**2**	LR		LR	23 02 13.5		
	comp=Z,14nm,18.9s,baz=230,slow=37								
ZALV	**Zalesovo Beam**	**57.33**	**332**	P		**P**	**22 38 04.9**	**-0.3**
	1.1nm,0.4s,baz=126,slow=6.1,SNR=6.4								
ZALV				LR		LR	23 04 03.1		
	comp=Z,42nm,18.1s,baz=52,slow=37								
KURK	**Kurchatov**	**58.58**	**327**	*e*P		**P**	**22 38 13.7**	**-0.3**
	37nm,0.8s								
KURK				*e*			22 38 30.0		
NRIK	**Noril'sk**	**67.06**	**346**	P		**P**	**22 39 10.1**	**+0.1**
	3.7nm,0.5s,baz=117,slow=6.2,SNR=6.2								
AKTO	**Aktyubinsk**	**70.64**	**321**	LR		LR	23 12 09.0		
	comp=Z,32nm,19.8s,baz=85,slow=37								
ILAR	**Eielson Array**	**82.43**	**26**	P		**P**	**22 40 38.1**	**-0.9**
	0.6nm,0.6s,baz=235,slow=5.1,SNR=7.6								
EGAK	**Eagle**	**84.88**	**25**	*e*P		**P**	**22 40 51.8**	**+0.3**
	4.6nm,1.2s								
DAWY	**Dawson**	**85.72**	**26**	*e*P		**P**	**22 40 57.0**	**+1.2**
	2.2nm,1.0s								
MAW	**Mawson**	**86.61**	**200**	P		**P**	**22 40 59.6**	**-0.2**
	1.9nm,0.9s,baz=27,slow=4.5,SNR=3.8								
VNDA	**Vanda**	**86.79**	**173**	P		**P**	**22 41 00.3**	**-0.3**
	0.7nm,0.5s,baz=310,slow=7.4,SNR=9.0								
ARCES	**ARCESS Array B**	**87.11**	**340**	P		**P**	**22 41 01.7**	**-0.7**
	1.5nm,0.6s,baz=78,slow=6.3,SNR=14								
FINES	**FINESS Array B**	**88.59**	**332**	P		**P**	**22 41 08.4**	**-1.1**
	2.5nm,0.7s,baz=100,slow=8.5,SNR=10								
MLR	**Muntele Rosu**	**92.03**	**316**	LR		LR	23 26 53.1		
	comp=Z,6.2nm,21.7s,baz=102,slow=38								
NOA	**NORSAR Array B**	**95.52**	**334**	P		**P**	**22 41 40.6**	**-1.1**
	1.1nm,0.8s,baz=56,slow=5.9,SNR=3.2								
NOA				LR		LR	23 27 54.0		
	comp=Z,29nm,18.5s,baz=95,slow=37								
YKA	**Yellowknife Ar**	**96.78**	**24**	P		**P**	**22 41 47.0**	**-0.4**
	0.9nm,0.8s,baz=300,slow=5.1,SNR=6.8								
YKA	**Yellowknife Ar**	**96.78**	**24**	P		**P**	**22 41 47.0**	**-0.4**
TXAR	**Lajitas Array**	**120.08**	**50**	PKP		**PKPdf**	**22 47 06.9**	**-1.3**
	0.2nm,0.6s,baz=355,slow=2.6,SNR=5.5								
TORD	**Torodi Ar. Bea**	**121.17**	**290**	PKP		**PKPdf**	**22 47 09.2**	**-1.3**
	0.3nm,0.5s,baz=68,slow=1.7,SNR=5.6								

NIED ***01*** *22:28:00,36˚.20N×138˚.00E,h5km,Mw3.8 Best double couple: M₀5.19000×10¹⁴ NP1:φs12.00000°,δ73.00000°, λ-3.00000°. NP2:φs103.00000°,δ87.00000°, λ-163.00000°.*

IDC ***01*** *22:28:43.0±1.2,36˚.21N×137˚.96E,h0km,mb3.4/2, mb1 3.8/4,mb1mx3.4/46,mbtmp3.7/4,ML3.2/2,MS2.8/3, Ms1 2.8/3,ms1mx2.6/22,Error ellipse: s-maj=8.9km s-min=7.1km az=45.0*

ISCJB ***01*** *22:28:43.0±0.7,36˚.23N±0˚.05×137˚.98E±0˚.06,h13km±7km, mb3.5/2,MS2.8/1,Error ellipse: s-maj=8.5km s-min=6.9km az=35.2*

JMA ***01*** *22:28:43.1,36˚.20N×137˚.97E,h4km±1km,M3.9 Broadband fault plane solution: P waves. NP1: φs192.00000°,δ75.00000°,λ29.00000°. NP2:φs94.00000°, δ62.00000°,λ163.00000°. Principal axes: T Plg31.0000°, Azm56.0000°; N Plg58.0000°, Azm218.0000°; P Plg8.0000°, Azm321.0000°;*

JMA Felt III J1.

ISC 01 22:28:43.6±1.2,36˚.20N±0˚.03×137˚.99E±0˚.04,h4km±11km, n16,σ0s99/19,2C-3D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JNG	**Nsakai**	**0.22**	**23**	⇑P		**Pg**	**22 28 47.7**	**-0.2**
JNG				S		**Sg**	**22 28 51.4**	**+0.6**
JNT	**Takato**	**0.35**	**160**	⇓P		**Pg**	**22 28 50.0**	**-0.3**
MJAR	**Matsushiro Arr**	**0.38**	**27**	Pg		**Pg**	**22 28 50.4**	**-0.5**
	435nm,0.3s,baz=217,slow=18,SNR=2054							
MJAR				Lg		Lg	22 28 56.0	
	828nm,0.3s,baz=216,slow=29,SNR=112							
MAT	**Matsushiro**	**0.38**	**27**	P		**Pg**	**22 28 50.5**	**-0.4**
MAT				S		**Sg**	**22 28 55.7**	**-0.2**
MAT	**Matsushiro**	**0.38**	**27**	P		**Pg**	**22 28 50.5**	**-0.4**
MAT				S		**Sg**	**22 28 56.1**	**+0.2**
JGN	**Niukaw**	**0.55**	**272**	⇓P		**Pg**	**22 28 53.2**	**-0.9**
JTT	**Ttatey**	**0.67**	**307**	P		**Pg**	**22 28 56.0**	**-0.4**
JRY	**Ryogami san**	**0.76**	**104**	⇑P		**Pg**	**22 28 57.3**	**-0.8**
JRY				S		**Sg**	**22 29 07.8**	**-0.2**
JYN	**Shimob**	**0.83**	**147**	⇓P		**Pg**	**22 28 59.2**	**-0.4**
JYN				S		**Sg**	**22 29 11.2**	**+0.8**
JHJ	**Hachijo jima 2**	**3.41**	**154**	Pn		**Pn**	**22 29 39.7**	**+2.2**
	6.3nm,0.3s,baz=73,slow=20,SNR=2.9							
JHJ				Sn		**Sb**	**22 30 24.6**	**-1.8**
	6.5nm,0.3s,baz=84,slow=19,SNR=2.4							
JNU	**Nakatsue**	**6.62**	**244**	Pn		**Pn**	**22 30 23.2**	**+1.5**
	0.4nm,0.3s,baz=112,slow=5.9,SNR=4.8							
KSRS	**Korea Array**	**8.17**	**282**	LR		LR	22 33 32.7	
	comp=Z,41nm,18.3s,baz=117,slow=35							
USRK	**Ussuriysk Ar.**	**9.21**	**332**	LR		LR	22 34 19.0	
	comp=Z,58nm,21.4s,baz=51,slow=37							
PETK	**Petropavlovsk-**	**21.84**	**33**	LR		LR	22 42 44.9	
	comp=Z,37nm,18.4s,baz=236,slow=38							
ILAR	**Eielson Array**	**51.66**	**32**	P		**P**	**22 37 50.8**	**-0.3**
	0.4nm,0.7s,baz=275,slow=5.0,SNR=5.0							
WRA	**Warramunga Arr**	**55.95**	**184**	P		**P**	**22 38 22.1**	**-0.8**
	0.3nm,0.6s,baz=0.3,slow=7.5,SNR=3.3							

NIED ***01*** *22:31:00,36˚.90N×143˚.60E,h5km,Mw3.5 Best double couple: M₀2.18000×10¹⁴ NP1:φs351.00000°,δ24.00000°, λ-78.00000°. NP2:φs158.00000°,δ67.00000°, λ-95.00000°.*

JMA 01 22:31:39.3±0.3,36˚.86N×143˚.62E,h39km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.25**	**284**	P		Pn	22 32 15.4	+1.3
JFK				*e*S		Sn	22 32 42.1	+1.5
ONAJ	**Iwakimizuishiy**	**2.27**	**277**	P		Pn	22 32 16.0	+1.7
ONAJ				S		Sn	22 32 42.6	+1.5
JIO	**Ouri**	**2.40**	**312**	P		Pn	22 32 17.4	+1.3
JIO				*e*S		Sn	22 32 45.7	+1.4
JFT	**Otama**	**2.70**	**285**	P		Pn	22 32 22.6	+2.4
JFT				*e*S		Sn	22 32 54.0	+2.3
JOU	**Okura**	**2.79**	**304**	P		Pn	22 32 24.3	+2.9
JOU				*e*S		Sn	22 32 56.3	+2.5
JMK	**Ichinoseki**	**2.82**	**318**	P		Pn	22 32 24.1	+2.3
BSO1	**Boso 1**	**3.08**	**225**	P		Pn	22 32 25.0	+0.2
BSO1				*e*S		Sn	22 33 01.7	+1.6
JOM	**Ohasama**	**3.19**	**326**	P		Pn	22 32 28.5	+1.6
JOM				*e*S		Sn	22 33 04.4	+0.7
JAG	**Ashikaga**	**3.38**	**264**	P		Pn	22 32 31.1	+1.6
JRG	**Rokugo**	**3.46**	**318**	P		Pn	22 32 34.1	+3.5
JOD2	**Odawara 2**	**4.00**	**248**	P		Pn	22 32 39.6	+1.5
JOD2				*e*S		Sn	22 33 23.9	+0.1

PGC 01 22:48:06.8±2.5,58˚.50N×136˚.91W,h1km,ML2.3/4, 118km Wsw of Haines, Ak Southeastern Alaska, Southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PLBC	**Pleasant Camp**	**1.00**	**16**	P		Pg	22 48 24.9	-1.1
PLBC				S		Sg	22 48 38.4	-0.6
YUK7	**Dusty Glacier**	**2.14**	**343**	Sg		Sb	22 49 12.7	-0.7
PCA	**Pinnacle**	**2.35**	**314**	Pn		Pn	22 48 46.0	-0.6
PCA				Sg		Sb	22 49 19.5	0.0
HYT	**Haines Junctio**	**2.36**	**353**	Pg		Pb	22 48 48.4	-1.6
HYT				Sg		Sb	22 49 19.4	-0.3
YUK6	**Outpost Mounta**	**2.56**	**344**	Pn		Pn	22 48 49.6	0.0
YUK6				Sg		Sb	22 49 26.3	+0.6
DLBC	**Dease Lake**	**3.62**	**88**	Pn		Pn	22 49 02.2	-1.7
DLBC				Sg		Sb	22 49 58.5	+2.7

ISCJB ***01*** *23:10:03.0±0.9,29˚.67S±0˚.03×71˚.75W±0˚.07,h43km, Error ellipse: s-maj=9.6km s-min=4.0km az=17.3*

GUC ***01*** *23:10:02.7±0.5,29˚.76S×71˚.45W,h29km±3km,ML3.5*

ISC 01 23:10:05.5±1.6,29˚.69S±0˚.04×71˚.63W±0˚.08,h43km,n25, σ1s56/39,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
TLL	**Tololo Astrono**	**0.86**	**124**	*i* P		**Pn**	**23 10 17.4**	**-4.2**
TLL				*i* S		**Sn**	**23 10 28.1**	**-5.0**
TLL				IAML			23 10 28.8	
	comp=N,4μm,0.4s							
LCO	**Las Campanas**	**1.06**	**51**	*i* P		**Pn**	**23 10 21.1**	**-3.0**
LCO				*i* S		**Sn**	**23 10 35.8**	**-2.0**
AROD	**Rodeo**	**1.93**	**105**	*i* P		**Pn**	**23 10 35.8**	**-0.4**
ACDV	**Cuesta del Vie**	**2.23**	**103**	*i* P		**Pn**	**23 10 39.7**	**-0.5**
ACCO	**Cerro Coronel**	**2.40**	**113**	*i* P		**Pn**	**23 10 42.7**	**+0.1**
ACCO				*i* S		**Sn**	**23 11 12.6**	**+1.7**
CPCH	**Copiapo**	**2.58**	**26**	*e*P		**Pn**	**23 10 45.1**	**+0.2**
CPCH				*i* S		**Sn**	**23 11 17.6**	**+2.7**
AGUA	**GUANDACOL**	**2.74**	**87**	*i* P		**Pn**	**23 10 46.8**	**-0.4**
RTLS	**Leoncito**	**2.91**	**137**	*i* P		**Pn**	**23 10 50.0**	**+0.4**
AMOG	**MOGNA**	**2.99**	**115**	*i* P		**Pn**	**23 10 50.2**	**-0.3**
VCA	**Vinchina**	**3.14**	**73**	*i* P		**Pn**	**23 10 52.5**	**-0.2**
VCA				*i* S		**Sn**	**23 11 29.9**	**+0.9**
AUSP	**Uspallata**	**3.18**	**143**	*i* P		**Pn**	**23 10 53.9**	**+0.6**
AUSP				*i* S		**Sn**	**23 11 32.5**	**+2.3**
ROCH	**El Roble**	**3.32**	**171**	*i* P		**Pn**	**23 10 54.1**	**-1.1**
ROCH				*i* S		**Sn**	**23 11 34.5**	**+1.1**
RTCV	**Cerro Valdivia**	**3.43**	**130**	*i* P		**Pn**	**23 10 56.7**	**+0.1**
PEL	**Peldehue**	**3.54**	**167**	*i* P		**Pn**	**23 10 57.2**	**-0.9**
PEL				*i* S		**Sn**	**23 11 38.4**	**-0.3**
AVFE	**Valle Fertil**	**3.74**	**106**	*i* P		**Pn**	**23 11 00.9**	**0.0**
AVFE				IAML			23 11 53.3	
	comp=Z,203nm,0.4s							
ASAL	**Salagasta**	**3.76**	**141**	*i* P		**Pn**	**23 11 01.1**	**+0.1**
FCH	**Farellones**	**3.81**	**163**	*i* P		**Pn**	**23 11 01.8**	**-0.1**
FCH				*i* S		**Sn**	**23 11 46.4**	**+0.8**
CLCH	**Cerro Calan**	**3.81**	**166**	*i* P		**Pn**	**23 11 01.1**	**-0.7**
CLCH				*i* S		**Sn**	**23 11 45.6**	**+0.1**
RCDM	**Rinconada Maip**	**3.85**	**170**	*i* P		**Pn**	**23 11 01.4**	**-0.9**
RCDM				*i* S		**Sn**	**23 11 46.3**	**-0.1**
ARCO	**CERRO ARCO**	**3.90**	**144**	*i* P		**Pn**	**23 11 03.7**	**+0.6**
ARCO				IAML			23 12 00.8	
	comp=Z,171nm,0.3s							
ANTU	**Antumapu**	**3.96**	**168**	*i* P		**Pn**	**23 11 03.0**	**-0.9**
ANTU				*i* S		**Sn**	**23 11 49.0**	**0.0**
AAGR	**Agrelo**	**4.15**	**145**	*i* P		**Pn**	**23 11 07.2**	**+0.7**
AAGR				*i* S		**Sn**	**23 11 56.1**	**+2.3**
ACAN	**Cantantal**	**4.61**	**125**	*i* P		**Pn**	**23 11 13.3**	**+0.6**
ACAN				*i* S		**Sn**	**23 12 06.3**	**+1.4**
CYA	**Choya**	**5.25**	**78**	*i* P		**Pn**	**23 11 22.1**	**+0.6**
TCA	**Tanti**	**6.29**	**107**	*i* P		**Pn**	**23 11 36.3**	**+0.4**

MAN 01 23:18:07,12˚.41N×124˚.48E,h32km,mb4.8,ML3.7,MS3.7, 1C,Samar

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PVCP	**Virac**	**1.22**	**345**	*e*P		Pn	23 18 28.5	+0.6
PVCP				*e*S		Sb	23 18 48.9	+3.8
BESP	**Borongan**	**1.24**	**130**	*e*P		Pn	23 18 28.9	+0.8
BESP				*e*S		Sn	23 18 44.5	+0.8
PLP	**Palo**	**1.33**	**158⇑**	*e*P		Pb	23 18 30.4	-1.0
PLP				*e*S		Sn	23 18 46.5	+0.6

MAN 01 23:22:04,12˚.04N×125˚.32E,h48km,mb4.0,ML2.8,MS2.5, 1D,Samar

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BESP	**Borongan**	**0.45**	**165**	*e*P		Pn	23 22 17.5	+3.0
BESP				*e*S		Sn	23 22 25.9	+3.9
PLP	**Palo**	**0.93**	**201⇓**	*e*P		Pn	23 22 22.5	+1.7
PLP				*e*S		Sn	23 22 35.5	+2.4
PVCP	**Virac**	**1.92**	**324**	*e*P		Pn	23 22 35.5	+1.2
PVCP				*e*S		Sn	23 22 59.5	+2.3

ISN ***01*** *23:26:32.6±0.5,27˚.81N×51˚.93E,h0km±154km,ML3.9*

IDC ***01*** *23:26:45.9±0.8,28˚.56N×51˚.54E,h0km,mb4.0/20, mb1 4.1/27,mb1mx4.0/55,mbtmp4.0/27,ML3.6/7,MS2.7/6, Ms1 2.7/6,ms1mx2.4/50,Error ellipse: s-maj=19.2km s-min=13.9km az=169.0*

ISCJB ***01*** *23:26:47.6±0.3,28˚.50N±0˚.03×51˚.40E±0˚.03,h24km, mb4.0/24,MS2.6/2,Error ellipse: s-maj=5.0km s-min=3.2km az=36.7*

THR ***01*** *23:26:48.2±0.3,28˚.61N×51˚.43E,h29km±1km,ML4.1*

NEIC ***01*** *23:26:48.2,28˚.61N×51˚.43E,h29km,mb4.2/3, ML4.1(THR),After THR.*

CSEM ***01*** *23:26:49.4±0.2,28˚.57N×51˚.47E,h20km,mb4.0/4,Error ellipse: s-maj=6.4km s-min=3.9km az=40.0*

TEH ***01*** *23:26:49.1,28˚.51N×51˚.49E,h11km,ML3.9*

DSN ***01*** *23:26:50.0±0.0,28˚.50N×51˚.49E,h15km,ML4.2,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

OMAN ***01*** *23:26:53.7±0.1,28˚.69N×52˚.10E,h11km,Error ellipse: s-maj=21.5km s-min=7.3km az=42.0*

ISC 01 23:26:49.5±0.5,28˚.58N±0˚.04×51˚.48E±0˚.04,h24km,n102, σ1s59/118,mb4.0/24,Southern Iran

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
AHBU	**AHRAM**	**0.33**	**330**	*e*Pg		**Pb**	**23 26 55.2**	**-1.7**
GHIR	**Ghir-Karzin**	**1.36**	**102**	*e*Pn		**Pb**	**23 27 14.1**	**-0.3**
GHIR				*e*Sg		**Sb**	**23 27 32.8**	**+1.4**
GHIR				AML		AML	23 27 38.5	
	comp=E,4μm,0.6s							
GHIR				AML		AML	23 27 44.6	
	comp=N,3μm,0.5s							
GHIR	**Ghir-Karzin**	**1.36**	**102**	*e*Pn		**Pb**	**23 27 14.1**	**-0.3**
GHIR				*e*Sg		**Sb**	**23 27 32.8**	**+1.4**
GHIR	**Ghir-Karzin**	**1.36**	**102**	*e*Pn		**Pb**	**23 27 14.1**	**-0.3**
GHIR				*e*Sg		**Sb**	**23 27 32.8**	**+1.4**
SHI	**Shiraz**	**1.39**	**40**	*e*Pg		**Pb**	**23 27 15.4**	**+0.4**
SHI				*e*Sg		**Sb**	**23 27 34.7**	**+2.3**
SHI				*e*AMB	AMB		23 27 35.4	
	comp=Z,43μm,0.3s							
ISRV	**Sarvestan**	**1.64**	**60**	*e*Pn		**Pn**	**23 27 18.3**	**+1.1**
ISRV				*e*Sg		**Sb**	**23 27 40.2**	**+0.5**
ISRV				*e*AMB	AMB		23 27 48.3	
	comp=Z,21μm,0.2s							
ISRV	**Sarvestan**	**1.64**	**60**	*e*Pn		**Pn**	**23 27 18.3**	**+1.1**
ISRV				*e*Sg		**Sb**	**23 27 40.2**	**+0.5**
BQGSS		**3.29**	**215**	P		**Pn**	**23 27 42.9**	**+3.4**
IRAM	**Ramesheh**	**3.31**	**13**	*e*Pn		**Pn**	**23 27 41.2**	**+1.1**
IRAM				*e*AMB	AMB		23 28 36.9	
	comp=Z,2μm,0.3s							
IRAM	**Ramesheh**	**3.31**	**13**	*e*Pn		**Pn**	**23 27 41.2**	**+1.1**
ISAD	**Sadrabad**	**3.83**	**29**	*e*Pn		**Pn**	**23 27 48.9**	**+1.6**
ISAD				*e*AMB	AMB		23 29 00.1	
	comp=Z,1μm,0.4s							
ISAD	**Sadrabad**	**3.83**	**29**	*e*Pn		**Pn**	**23 27 48.9**	**+1.6**
SLWS		**3.84**	**191**	S		Sn	23 28 04.8	-27
SLWS				P		**Pn**	**23 27 49.9**	**+2.8**
IGAR	**Gharneh**	**3.84**	**7**	*e*Pn		**Pn**	**23 27 48.6**	**+1.2**
IGAR				*e*AMB	AMB		23 28 36.4	
	comp=Z,1μm,0.2s							
IMEH	**Mehriz**	**3.90**	**43**	*e*Pn		**Pn**	**23 27 50.0**	**+1.8**
IMEH				*e*AMB	AMB		23 28 38.0	
	comp=Z,1μm,0.1s							
IMEH	**Mehriz**	**3.90**	**43**	*e*Pn		**Pn**	**23 27 50.0**	**+1.8**
IPIR	**Pirpir**	**4.12**	**353**	*e*Pn		**Pn**	**23 27 52.5**	**+1.2**
IPIR				*e*AMB	AMB		23 28 42.3	
	comp=Z,2μm,0.2s							
IPIR	**Pirpir**	**4.12**	**353**	*e*Pn		**Pn**	**23 27 52.5**	**+1.2**
NASN	**Na'in**	**4.36**	**15**	*e*Pn		**Pn**	**23 27 54.9**	**+0.3**
NASN				AML		AML	23 28 45.7	
	comp=N,153nm,0.4s							
NASN				AML		AML	23 28 46.0	
	comp=E,229nm,0.6s							
NASN	**Na'in**	**4.36**	**15**	*e*Pn		**Pn**	**23 27 54.9**	**+0.3**
IZEF	**Zefreh**	**4.36**	**9**	*e*Pn		**Pn**	**23 27 55.6**	**+1.0**
IZEF				*e*AMB	AMB		23 28 48.2	
	comp=Z,677nm,0.2s							
IZEF	**Zefreh**	**4.36**	**9**	*e*Pn		**Pn**	**23 27 55.6**	**+1.0**
ICHK	**Chekchek**	**4.44**	**34**	*e*Pn		**Pn**	**23 27 56.8**	**+1.2**
ICHK				*e*AMB	AMB		23 28 50.7	
	comp=Z,2μm,0.2s							
ICHK	**Chekchek**	**4.44**	**34**	*e*Pn		**Pn**	**23 27 56.8**	**+1.2**
BTHS		**4.55**	**187**	S		**Sn**	**23 28 52.7**	**+3.6**
BTHS				P		**Pn**	**23 27 59.5**	**+2.6**
IBAF	**Bafgh**	**4.64**	**49**	*e*Pn		**Pn**	**23 27 59.5**	**+1.2**
IBAF				*e*AMB	AMB		23 28 54.7	
	comp=Z,537nm,0.1s							
IBAF	**Bafgh**	**4.64**	**49**	*e*Pn		**Pn**	**23 27 59.5**	**+1.2**
IKLH	**Kolahrood**	**4.72**	**1**	*e*Pn		**Pn**	**23 28 00.5**	**+0.9**
IKLH				*e*AMB	AMB		23 29 01.9	
	comp=Z,1μm,0.4s							
IKLH	**Kolahrood**	**4.72**	**1**	*e*Pn		**Pn**	**23 28 00.5**	**+0.9**
KRBR	**Kerman**	**4.82**	**72**	*e*Pn		**Pn**	**23 28 01.9**	**+1.0**
KRBR	**Kerman**	**4.82**	**72**	*e*Pn		**Pn**	**23 28 01.9**	**+1.0**
BANOM	**Banah**	**5.04**	**121**	*i* P		**Pn**	**23 28 03.7**	**0.0**
	SNR=25							
BANOM	**Banah**	**5.04**	**121**	P		**Pn**	**23 28 03.7**	**0.0**
	SNR=25							
BANOM				S		**Sn**	**23 28 58.6**	**-2.6**
BANOM	**Banah**	**5.04**	**121**	P		**Pn**	**23 28 03.7**	**0.0**
	SNR=25							
BANOM				S		**Sn**	**23 28 58.6**	**-2.6**
NAZ	**Nazwa, Dubai**	**5.17**	**133**	*i* P		**Pn**	**23 28 07.0**	**+1.5**
	SNR=21							
NAZ				S		**Sn**	**23 29 04.2**	**-0.3**
NAZ	**Nazwa, Dubai**	**5.17**	**133**	P		**Pn**	**23 28 07.0**	**+1.5**
	SNR=21							
NAZ	**Nazwa, Dubai**	**5.17**	**133**	P		**Pn**	**23 28 07.0**	**+1.5**
	SNR=21							
NAZ				S		**Sn**	**23 29 04.2**	**-0.3**
NSR	**Nassriya**	**5.24**	**299**	*e*Pn		**Pn**	**23 28 02.5**	**-3.8**
	SNR=3.0							
NSR				*e*Sn		**Sn**	**23 29 06.0**	**+0.1**
	SNR=3.0							
FAQ	**Al Faqa, Dubai**	**5.30**	**135**	*i* P		**Pn**	**23 28 08.6**	**+1.3**
	SNR=11							
FAQ	**Al Faqa, Dubai**	**5.30**	**135**	P		**Pn**	**23 28 09.0**	**+1.8**
	SNR=11							
FAQ	**Al Faqa, Dubai**	**5.30**	**135**	P		**Pn**	**23 28 08.6**	**+1.3**
	SNR=11							
UOSS	**Minazif**	**5.56**	**130**	P		**Pn**	**23 28 11.2**	**+0.4**
	SNR=24							
HATD	**Hatta, Dubai**	**5.59**	**131**	*i* P		**Pn**	**23 28 12.5**	**+1.2**
	SNR=8.3							
HATD	**Hatta, Dubai**	**5.59**	**131**	P		**Pn**	**23 28 12.5**	**+1.2**
	SNR=8.3							
HATD				S		**Sn**	**23 29 14.3**	**-0.5**
ASHO	**Ashiyiah**	**5.64**	**132**	*i* P		**Pn**	**23 28 12.7**	**+0.7**
	SNR=19							
ASHO	**Ashiyiah**	**5.64**	**132**	P		**Pn**	**23 28 12.7**	**+

TAM	**Tamanrasset**	**41.62**	**273**	*e*P	**P**	**23 34 36.7**	**+0.5**
	comp=Z,12nm,1.7s							
NB2	**NORSAR Subarra**	**42.07**	**332**	P	**P**	**23 34 37.4**	**-1.8**
	comp=Z,1.5nm,0.7s,baz=124,slow=9.3							
NB2	**NORSAR Subarra**	**42.07**	**332**	P	**P**	**23 34 37.4**	**-1.8**
	comp=Z,1.5nm,0.7s,SNR=4.9							
NOA	**NORSAR Array B**	**42.07**	**332**	P	**P**	**23 34 38.6**	**-0.6**
	comp=Z,1.5nm,0.7s,baz=123,slow=8.4,SNR=4.7							
ARCES	**ARCESS Array B**	**43.65**	**347**	P	**P**	**23 34 52.2**	**+0.3**
	comp=Z,1.2nm,0.5s,baz=153,slow=8.2,SNR=19							
NRIK	**Noril'sk**	**45.80**	**17**	P	**P**	**23 35 09.4**	**+0.5**
	comp=Z,1.2nm,0.3s,baz=268,slow=6.4,SNR=3.0							
SONM	**Songino Array**	**46.19**	**50**	P	**P**	**23 35 11.9**	**-0.6**
	comp=Z,0.4nm,0.6s,baz=258,slow=6.6,SNR=3.5							
ESDC	**Sonseca Array**	**46.56**	**299**	P	**P**	**23 35 14.9**	**-0.5**
	comp=Z,0.1nm,0.4s,baz=60,slow=7.7,SNR=3.8							
TORD	**Torodi Ar. Bea**	**48.65**	**262**	P	**P**	**23 35 32.1**	**+0.2**
	comp=Z,2.0nm,0.7s,baz=57,slow=7.6,SNR=16							
DBIC	**Dimbokro**	**57.37**	**259**	P	**P**	**23 36 37.1**	**+0.8**
	comp=Z,5.9nm,0.7s,baz=50,slow=8.4,SNR=7.9							
SCHQ	**Schefferville**	**81.56**	**329**	P	**P**	**23 39 05.2**	**+0.1**
	comp=Z,2.1nm,0.5s,baz=18,slow=6.7,SNR=3.5							
ILAR	**Eielson Array**	**85.86**	**8**	P	**P**	**23 39 26.4**	**-0.5**
	comp=Z,0.4nm,0.7s,baz=352,slow=3.8,SNR=4.6							
YKA	**Yellowknife Ar**	**88.56**	**354**	P	**P**	**23 39 40.5**	**+0.5**
	comp=Z,0.7nm,0.6s,baz=18,slow=5.7,SNR=4.6							
WRA	**Warramunga Arr**	**93.35**	**111**	P	**P**	**23 40 02.7**	**-0.3**
	comp=Z,0.7nm,1.0s,baz=310,slow=4.3,SNR=3.6							
ASAR	**Alice Springs**	**94.80**	**114**	P	**P**	**23 40 08.8**	**-0.8**
	comp=Z,0.2nm,0.4s,baz=308,slow=4.9,SNR=5.1							

NIED ***01*** *23:33:00,36.80N×141.90E,h20km,Mw3.7 Best double couple: M₀3.39000×10¹⁴ NP1:φs15.00000°,δ37.00000°, λ-67.00000°. NP2:φs168.00000°,δ56.00000°, λ-106.00000°.*

IDC ***01*** *23:33:24.6±0.9,36.81N×142.15E,h0km,mb3.5/6, mb1 3.8/9,mb1mx3.6/39,mbtmp3.6/9,ML3.8/3,MS2.6/4, Ms1 2.7/4,ms1mx2.4/42,Error ellipse: s-maj=26.3km s-min=19.5km az=103.0*

ISCJB ***01*** *23:33:25.3±0.6,36.76N±0.05×142.18E±0.05,h19km, mb3.8/10,MS2.7/1,Error ellipse: s-maj=7.2km s-min=5.3km az=151.1*

NEIC ***01*** *23:33:26.3±4.7,36.82N×142.14E,h12km±29km,mb4.2/4, Error ellipse: s-maj=15.9km s-min=8.7km az=132.0*

JMA ***01*** *23:33:29.2±0.4,36.84N×141.93E,h47km,M3.5*

ISC 01 23:33:27.2±0.9,36.77N±0.06×142.08E±0.07,h19km,n35, σ1s23/32,mb3.8/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.08**	**288**	P	**Pn**	**23 33 46.2**	**-1.1**
JFK	**Kawauchi**	**1.13**	**302**	P	**Pn**	**23 33 46.9**	**-1.1**
JHO	**Hitachi**	**1.22**	**263**	P	**Pn**	**23 33 48.6**	**-0.7**
JMM	**Marumori**	**1.50**	**317**	P	**Pn**	**23 33 52.1**	**-0.9**
JFT	**Otama**	**1.58**	**299**	P	**Pn**	**23 33 54.3**	**+0.1**
JIO	**Ouri**	**1.77**	**341**	P	**Pn**	**23 33 57.2**	**+0.3**
JOU	**Okura**	**1.95**	**325**	P	**Pn**	**23 34 00.0**	**+0.8**
JOU				*e*S	**Sn**	**23 34 22.5**	**-0.7**
JAG	**Ashikaga**	**2.14**	**261**	P	**Pn**	**23 34 02.1**	**+0.2**
JMK	**Ichinoseki**	**2.28**	**343**	P	**Pn**	**23 34 04.4**	**+0.6**
MJAR	**Matsushiro Arr**	**3.12**	**267**	Pn	**Pn**	**23 34 16.7**	**+1.3**
	10nm,0.3s,baz=92,slow=9.4,SNR=52						
MJAR				Sn	**Sn**	**23 34 54.8**	**+2.6**
	3.6nm,0.3s,baz=83,slow=20,SNR=5.7						
MJAR				LR	LR	23 35 56.8	
	comp=Z,96nm,18.4s,baz=75,slow=48						
MAJO	**Matsushiro**	**3.12**	**267**	*e*Pn	**Pn**	**23 34 15.8**	**+0.4**
MAJO				*e*Pb	**Pb**	**23 34 19.1**	**-3.0**
MAJO				*e*Sn	**Sn**	**23 34 53.3**	**+1.1**
MAJO				*e*Sb	**Sb**	**23 34 59.8**	**+0.1**
MAT	**Matsushiro**	**3.12**	**267**	P	**Pn**	**23 34 17.0**	**+1.6**
MAT				S	**Sn**	**23 34 54.1**	**+2.0**
JHJ	**Hachijo jima 2**	**4.10**	**208**	Pn	**Pn**	**23 34 29.6**	**+0.7**
	8.4nm,0.3s,baz=318,slow=23,SNR=8.3						
JHJ				Sn	**Sn**	**23 35 14.2**	**-2.2**
	8.0nm,0.3s,baz=3.3,slow=17,SNR=2.9						
ERM	**Erimo**	**5.30**	**9**	*e*Pn	**Pn**	**23 34 44.9**	**-0.4**
ASAJ	**Asahikawa**	**7.35**	**3**	Pn	**Pn**	**23 35 12.4**	**-1.0**
	1.9nm,0.3s,baz=239,slow=9.6,SNR=7.0						
JNU	**Nakatsue**	**9.29**	**252**	LR	LR	23 40 03.2	
	comp=Z,44nm,19.3s,baz=296,slow=40						
KSRS	**Korea Array**	**11.32**	**278**	Pn	Pn	23 36 14.4	+6.5
	0.2nm,0.3s,baz=92,slow=15,SNR=6.4						
KSRS				LR	LR	23 40 29.4	
	comp=Z,24nm,20.4s,baz=69,slow=37						
KSAR	**Wonju Array Be**	**11.36**	**278**	Pn	Pn	23 36 14.4	+6.1
YAK	**Yakutsk**	**26.44**	**347**	*e*P	**P**	**23 39 01.8**	**-0.8**
	11nm,0.4s						
H11N2	**WAKE ISLAND Hy**	**27.56**	**121**	T	T	00 08 25.3	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**27.57**	**121**	T	T	00 08 32.0	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**27.57**	**121**	T	T	00 08 33.1	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**28.27**	**123**	T	T	00 09 24.7	
	baz=316,slow=74						
H11S3	**WAKE ISLAND Hy**	**28.27**	**123**	T	T	00 09 25.2	
	baz=316,slow=74						
H11S2	**WAKE ISLAND Hy**	**28.29**	**123**	T	T	00 09 37.8	
	baz=316						
SONM	**Songino Array**	**28.37**	**304**	P	**P**	**23 39 21.7**	**+1.5**
	0.6nm,0.6s,baz=105,slow=7.9,SNR=4.4						
CMAR	**Chiang Mai Arr**	**41.95**	**256**	LR	LR	00 01 30.7	
	comp=Z,9.6nm,19.5s,baz=260,slow=40						
MKAR	**Makanchi Array**	**44.71**	**302**	P	**P**	**23 41 38.1**	**-0.9**
	0.2nm,0.6s,baz=88,slow=9.7,SNR=2.5						
KURK	**Kurchatov**	**46.51**	**308**	*e*P	**P**	**23 41 54.2**	**+1.1**
	1.8nm,0.5s						
COLA	**College**	**49.02**	**32**	*e*P	**P**	**23 42 12.0**	**-0.3**
	1.3nm,0.6s						
ILAR	**Eielson Array**	**49.43**	**32**	P	**P**	**23 42 15.2**	**-0.4**
	0.7nm,0.7s,baz=267,slow=6.3,SNR=9.1						
EKS2	**Erkin-Say**	**51.58**	**299**	*e*P	**P**	**23 42 32.5**	**+0.2**
	0.5nm,0.4s						
WRA	**Warramunga Arr**	**56.88**	**189**	P	**P**	**23 43 10.9**	**+0.1**
	0.9nm,0.8s,baz=7.1,slow=7.0,SNR=8.1						
ASAR	**Alice Springs**	**60.61**	**189**	P	**P**	**23 43 37.5**	**+0.8**
	0.4nm,0.8s,baz=14,slow=7.8,SNR=3.2						
TXAR	**Lajitas Array**	**89.86**	**53**	P	**P**	**23 46 26.1**	**+0.9**
	0.3nm,0.8s,baz=299,slow=1.9,SNR=3.3						

IDC 01 23:42:02.9±3.7,6.86S×148.47E,h0km,mb2.7/1, mb1 3.1/2,mb1mx3.1/20,mbtmp2.9/2,ML2.9/1,Error ellipse: s-maj=143.8km s-min=46.4km az=117.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**18.90**	**225**	P	P	23 46 24.7	-0.6
	0.0nm,0.3s,baz=50,slow=11,SNR=2.8						
ASAR	**Alice Springs**	**21.80**	**218**	P	P	23 46 56.7	-0.1
	0.1nm,0.3s,baz=53,slow=9.5,SNR=4.3						
TORD	**Torodi Ar. Bea**	**146.72**	**283**	PKPbc	PKPbc	00 01 47.4	-0.5
	0.2nm,0.7s,baz=64,slow=2.9,SNR=3.4						

IDC 01 23:58:36.4±3.1,6.45S×148.08E,h0km,mb3.4/2, mb1 3.6/4,mb1mx3.3/38,mbtmp3.4/4,ML3.2/1,Error ellipse: s-maj=78.1km s-min=39.2km az=106.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.08**	**197**	Pn	Pn	23 59 27.5	+1.2
	3.8nm,0.3s,baz=15,slow=9.4,SNR=6.3						
PMG				Sn	Sn	00 00 03.2	-0.6
	1.2nm,0.3s,baz=317,slow=20,SNR=2.1						
WRA	**Warramunga Arr**	**18.92**	**224**	P	P	00 02 58.5	-0.5
	0.1nm,0.3s,baz=50,slow=10,SNR=4.3						
ASAR	**Alice Springs**	**21.88**	**217**	P	P	00 03 30.3	-0.9
	0.4nm,0.6s,baz=52,slow=9.3,SNR=5.5						
FITZ	**Fitzroy Crossi**	**24.76**	**240**	P	P	00 03 59.4	-0.6
	1.1nm,0.4s,baz=61,slow=8.1,SNR=12						
TORD	**Torodi Ar. Bea**	**146.24**	**284**	PKPbc	PKPbc	00 18 20.0	0.0
	0.4nm,0.8s,baz=77,slow=2.0,SNR=2.6						

ISCJB ***02*** *00:03:36.9±0.2,14.46S±0.04×75.90W±0.05,h29km, mb4.8/119,MS3.9/16,Error ellipse: s-maj=7.4km s-min=3.8km az=147.2*

NEIC ***02*** *00:03:40.2±0.5,14.43S×75.82W,h37km±4km,mb4.8/100, Error ellipse: s-maj=7.1km s-min=3.6km az=56.0*

NEIC Felt [IV] at Ica. Also felt at Lima.

IDC ***02*** *00:03:40.3±2.5,14.42S×76.00W,h40km±21km,mb4.3/16, mb1 4.5/18,mb1mx4.4/23,mbtmp4.5/18,ML3.7/2,MS3.9/19, Ms1 3.9/19,ms1mx3.8/24,Error ellipse: s-maj=21.9km s-min=12.8km az=67.0*

BJI ***02*** *00:03:41.8,14.40S×76.00W,h35km,mB5.2/10,Ms5.4/6, Ms7 5.2/7*

ISC 02 00:03:39.1±0.4,14.50S±0.05×76.01W±0.07,h29km,n395, σ1s08/396,mb4.8/119,MS4.0/16,1C,Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NNA	**Nana**	**2.63**	**342**	Pn	**Pn**	**00 04 18.0**	**-1.7**
	32nm,0.3s,baz=163,slow=14,SNR=29						
NNA				Sn	**Sn**	**00 04 49.4**	**-1.3**
	209nm,0.3s,baz=187,slow=14,SNR=9.5						
NNA				Lg	Lg	00 04 57.7	
	302nm,0.3s,baz=229,slow=12,SNR=7.3						
NNA				LR	LR	00 05 05.9	
	comp=Z,521nm,19.1s,baz=191,slow=34						
NNA	**Nana**	**2.63**	**342**	*e*Pn	**Pn**	**00 04 18.5**	**-1.2**
NNA				Sn	**Sn**	**00 04 49.4**	**-1.3**
ATAH	**Atahualpa**	**7.69**	**342**	Pn	**Pn**	**00 05 30.5**	**+0.9**
	0.8nm,0.3s,baz=90,slow=16,SNR=3.9						
ATAH				Sn	**Sn**	**00 06 57.0**	**+1.0**
	5.4nm,0.3s,baz=333,slow=3.1,SNR=2.2						
ATAH				LR	LR	00 08 57.5	
	comp=Z,519nm,20.6s,baz=190,slow=42						
LPAZ	**La Paz**	**7.80**	**104**	Pn	**Pn**	**00 05 35.8**	**+4.5**
	8.1nm,0.3s,baz=284,slow=7.1,SNR=250						
LPAZ	**La Paz**	**7.80**	**104**	*e*Pn	**Pn**	**00 05 33.4**	**+2.1**
PB11	**IPOC Station P**	**8.01**	**132**	*e*Pn	**Pn**	**00 05 32.5**	**-1.2**
PB01	**IPOC Station P**	**8.99**	**137**	*e*Pn	**Pn**	**00 05 46.3**	**-0.8**
PB04	**IPOC Station P**	**9.57**	**145**	*e*Pn	**Pn**	**00 05 54.5**	**-0.7**
LVC	**Limon Verde**	**10.50**	**141**	Pn	**Pn**	**00 06 09.0**	**+0.9**
	208nm,0.3s,baz=314,slow=9.6,SNR=54						
LVC				Sn	**Sn**	**00 08 02.9**	**-2.1**
	58nm,0.3s,baz=136,slow=9.0,SNR=3.3						
LVC				LR	LR	00 09 49.2	
	comp=Z,2μm,21.9s,baz=310,slow=35						
LVC	**Limon Verde**	**10.50**	**141**	*e*Pn	**Pn**	**00 06 07.8**	**-0.3**
LVC				*e*Sn	**Sn**	**00 08 03.1**	**-1.8**
SAML	**Samuel**	**13.71**	**68**	*e*Pn	**Pn**	**00 06 49.6**	**-2.1**
SIV	**San Ignacio**	**14.49**	**98**	Pn	**Pn**	**00 06 59.3**	**-3.0**
	0.5nm,0.3s,baz=279,slow=16,SNR=19						
SIV				Lg	Lg	00 11 20.3	
	0.3nm,0.3s,baz=274,slow=19,SNR=2.1						
SIV				LR	LR	00 13 24.7	
	comp=Z,2μm,21.3s,baz=292,slow=40						
OTAV	**Otavalo**	**14.85**	**350**	*e*P	**P**	**00 07 14.1**	**+1.0**
OTAV	**Otavalo**	**14.85**	**350**	Pn	**Pn**	**00 07 07.5**	**-0.1**
CMBC	**Cumbal**	**15.45**	**353**	*e*P	**P**	**00 07 20.9**	**+1.1**
SJAC	**San Juan de Ar**	**17.78**	**7**	*e*P	**P**	**00 07 45.8**	**+0.5**
PRAC	**Prado**	**18.13**	**4**	*e*Pn	**P**	**00 07 51.0**	**+1.8**
	29nm,0.9s						
VILC	**Villavicencio,**	**18.64**	**7**	*e*P	**Pn**	**00 07 57.6**	**+2.4**
CHIC	**Chingaza**	**19.14**	**7**	*e*P	**Pn**	**00 08 05.1**	**+3.5**
NORC	**Norcasia**	**19.97**	**3**	*e*P	**Pn**	**00 08 11.3**	**+0.2**
YOPC	**Yopal, Colombi**	**20.05**	**10**	*e*P	Pn	00 08 11.3	-0.8
RUSC	**La Rusia**	**20.47**	**8**	*e*P	Pn	00 08 16.9	-0.5
HELC	**Santa Helena**	**20.57**	**1**	*e*P	**P**	**00 08 16.9**	**+0.9**
HELC	**Santa Helena**	**20.57**	**1**	*e*P	Pn	00 08 19.5	+1.0
	40nm,0.7s						
PTGA	**Pitinga**	**20.95**	**51**	P	**P**	**00 08 18.9**	**-1.0**
	13nm,0.6s,baz=214,slow=12,SNR=17						
PTGA				LR	LR	00 17 15.0	
	comp=Z,479nm,18.0s,baz=227,slow=39						
PTGA	**Pitinga**	**20.95**	**51**	*e*P	**P**	**00 08 19.6**	**-0.2**
	64nm,1.0s						
CPUP	**Villa Florida**	**21.06**	**127**	P	**P**	**00 08 21.4**	**+0.4**
	21nm,1.1s,baz=310,slow=11,SNR=18						
CPUP				LR	LR	00 18 07.8	
	comp=Z,370nm,18.8s,baz=307,slow=41						
CPUP	**Villa Florida**	**21.06**	**127**	*e*P	**P**	**00 08 19.4**	**-1.6**
BARC	**Barichara**	**21.14**	**8**	*e*P	**P**	**00 08 24.3**	**+2.1**
DBBC	**Dabeiba**	**21.38**	**359**	*e*P	**P**	**00 08 26.6**	**+2.0**
PAMC	**Pamplona, Colo**	**21.95**	**9**	*e*P	**P**	**00 08 32.0**	**+0.9**
CBRI	**Barrientos, No**	**22.30**	**8**	*e*P	**P**	**00 08 35.1**	**+0.5**
GRMC	**Gramalote, San**	**22.30**	**8**	*e*P	**P**	**00 08 36.2**	**+1.6**
OCAC	**Ocana**	**22.75**	**7**	*e*P	**P**	**00 08 36.8**	**-2.6**
MOTC	**Monteria, Cord**	**23.13**	**1**	*e*P	**P**	**00 08 44.1**	**+1.0**
SDV	**Santo Domingo**	**23.84**	**13**	P	**P**	**00 08 49.7**	**-0.6**
	24nm,0.6s,baz=201,slow=7.5,SNR=14						
SDV				LR	LR	00 19 16.2	
	comp=Z,519nm,18.2s,baz=172,slow=39						
SDV	**Santo Domingo**	**23.84**	**13**	*e*P	**P**	**00 08 50.4**	**+0.2**
	32nm,0.7s						
SJCC	**San Jacinto, C**	**24.25**	**2**	*e*P	**P**	**00 08 52.6**	**-1.3**
PLCA	**Paso Flores**	**26.56**	**171**	P	**P**	**00 09 14.8**	**+0.1**
	4.3nm,0.8s,baz=204,slow=0.8,SNR=4.0						
PLCA				LR	LR	00 17 55.6	
	comp=Z,160nm,19.2s,baz=20,slow=32						
PCRV	**Puerto La Cruz**	**26.99**	**25**	P	**P**	**00 09 18.7**	**0.0**
	12nm,0.6s,baz=245,slow=1.5,SNR=8.9						
CELP	**Cerrillos**	**33.68**	**16**	*e*P	**P**	**00 10 17.0**	**-0.8**
CELP				*e*PP	**PnPn**	**00 11 31.9**	**+1.6**
CELP				*e*PcP	**PcP**	**00 13 00.2**	**+2.8**
CELP				*e*S	**S**	**00 15 35.8**	**-3.4**
CELP				*e*ScP	**ScP**	**00 16 44.9**	**+4.7**
CCIG	**Comitan**	**34.49**	**332**	*e*pP	pP	00 10 36.5	+2.9
347A	**Saraland**	**47.20**	**345**	P	**P**	**00 12 09.8**	**+0.5**
	baz=163						
933A	**Laredo**	**47.56**	**332**	P	**P**	**00 12 13.0**	**+0.7**
	baz=149						
GOGA	**Godfrey**	**48.17**	**352**	*e*P	**P**	**00 12 14.9**	**-2.0**
	3.8nm,0.8s						
636A	**Smothers Creek**	**48.22**	**335**	P	**P**	**00 12 18.2**	**+0.9**
	baz=152						
833A	**Chaparral WMA,**	**48.22**	**332**	P	**P**	**00 12 18.2**	**+0.8**
	baz=149						
LRAL	**Lakeview Retre**	**48.42**	**348**	*e*P	**P**	**00 12 17.9**	**-0.9**
	13nm,1.0s						
537A	**Green Hill Far**	**48.45**	**336**	P	**P**	**00 12 20.2**	**+1.1**
	baz=153						
832A	**Faith Ranch, C**	**48.45**	**331**	P	**P**	**00 12 19.9**	**+0.7**
	baz=148						
733A	**Divot King Ran**	**48.52**	**332**	P	**P**	**00 12 20.5**	**+0.9**
	baz=149						
Z48A	**Northport**	**48.87**	**347**	P	**P**	**00 12 21.9**	**-0.4**
	baz=165,SNR=6.7						
633A	**Saathoff Ranch**	**49.10**	**333**	P	**P**	**00 12 25.0**	**+0.9**
	baz=150,SNR=5.6						
Y47A	**UCPARC, Winfie**	**49.44**	**347**	P	**P**	**00 12 25.9**	**-0.7**
	baz=165,SNR=6.3						
533A	**Kerrville**	**49.56**	**334**	P	**P**	**00 12 28.1**	**+0.5**
	baz=150						
KMSC	**Kings Mountain**	**49.63**	**354**	P	**P**	**00 12 27.7**	**-0.3**
	baz=173						
KMSC	**Kings Mountain**	**49.63**	**354**	*e*P	**P**	**00 12 27.6**	**-0.4**
	13nm,0.9s						
Y46A	**Houston**	**49.65**	**346**	P	**P**	**00 12 28.9**	**+0.7**
	baz=163						
Y45A	**Yeager Farm, C**	**49.80**	**345**	P	**P**	**00 12 29.5**	**+0.2**
	baz=163						
434A	**Burnet**	**49.89**	**335**	P	**P**	**00 12 30.3**	**+0.2**
	baz=151						
139A	**Bunkhouse Ranc**	**50.10**	**340**	P	**P**	**00 12 32.2**	**+0.6**
	baz=156						
433A	**Art**	**50.18**	**334**	P	**P**	**00 12 32.7**	**+0.3**
	baz=150						
JCT	**Junction City**	**50.25**	**333**	P	**P**	**00 12 33.7**	**+0.7**
	baz=149						
HPIG		**50.27**	**325**	*e*P	**P**	**00 12 32.9**	**-0.3**
	12nm,1.1s						
SWET	**Sewanee**	**50.34**	**349**	*e*P	**P**	**00 12 32.3**	**-1.2**
	3.1nm,0.8s						
TKL	**Tuckaleechee C**	**50.43**	**352**	*e*P	**P**	**00 12 33.0**	**-1.1**
	11nm,1.2s						
TKL				*e*		00 12 40.0	
137A	**Heron Place, G**	**50.50**	**338**	P	**P**	**00 12 35.8**	**+1.1**
	baz=155						
WHTX	**Lake Whitney,**	**50.60**	**336**	P	**P**	**00 12 35.7**	**+0.3**
	baz=153						
WLAR	**White Oak Lake**	**50.62**	**342**	*e*P	**P**	**00 12 35.6**	**+0.1**
	60nm,1.1s						
333A	**Richland Sprin**	**50.63**	**334**	P	**P**	**00 12 35.8**	**+0.1**
	baz=151						
234A	**Clairette**	**50.88**	**336**	P	**P**	**00 12 38.0**	**+0.4**
	baz=152						
TXAR	**Lajitas Array**	**51.12**	**329**	P	**P**	**00 12 39.8**	**+0.3**
	5.1nm,0.9s,baz=147,slow=9.1,SNR=42						
TXAR				LR	LR	00 33 07.5	
	comp=Z,117nm,18.2s,baz=0.0,slow=35						
TX31	**Lajitas Ar. Si**	**51.12**	**329**	*e*P	**P**	**00 12 39.9**	**+0.4**
233A	**Rising Star**	**51.20**	**335**	P	**P**	**00 12 40.4**	**+0.4**
	baz=151						
TZTN	**Tazewell**	**51.27**	**352**	*e*P	**P**	**00 12 39.4**	**-1.1**
	6.3nm,0.8s						
134A	**White-Moore Ra**	**51.35**	**336**	P	**P**	**00 12 41.6**	**+0.4**
	baz=152						
UALR	**University of**	**51.41**	**343**	*e*P	**P**	**00 12 40.4**	**-1.1**
	10nm,0.8s						
MIAR	**Mount Ida**	**51.56**	**341**	P	**P**	**00 12 42.5**	**-0.1**
	baz=158,SNR=5.3						
MIAR	**Mount Ida**	**51.56**	**341**	*e*P	**P**	**00 12 42.2**	**-0.4**
	5.9nm,0.8s						
WVT	**Waverly**	**51.58**	**348**	*e*P	**P**	**00 12 40.9**	**-1.9**
WVT				*e*pP	**pP**	**00 12 48.0**	**-3.6**
X39A	**Fountain Ranch**	**51.70**	**341**	P	**P**	**00 12 43.9**	**+0.3**
	baz=157						
Y37A	**Hugo**	**51.71**	**339**	P	**P**	**00 12 44.5**	**+0.8**
	baz=155						
Z35A	**Perchaven, San**	**51.71**	**337**	P	**P**	**00 12 44.6**	**+0.8**
	baz=153						
133A	**Hamilton Ranch**	**51.72**	**335**	P	**P**	**00 12 43.7**	**-0.2**
	baz=151						
W41B	**Gary Mavity, V**	**51.75**	**343**	P	**P**	**00 12 43.8**	**-0.2**
	baz=160						
X301	**Greenbrier Sit**	**51.86**	**343**	*e*P	**P**	**00 12 44.7**	**-0.1**
	12nm,1.1s						
WHAR	**Wooly Hollow**	**51.87**	**343**	*e*P	**P**	**00 12 44.6**	**-0.3**
	18nm,1.1s						
X201	**Greenbrier Sit**	**51.90**	**343**	*e*P	**P**	**00 12 44.8**	**-0.3**
	17nm,1.2s						
W40A	**Ferguson Farm,**	**52.01**	**342**	P	**P**	**00 12 46.3**	**+0.3**
	baz=159						
ABTX	**Abilene, Hawle**	**52.03**	**335**	P	**P**	**00 12 46.8**	**+0.6**
	baz=150						
ABTX	**Abilene, Hawle**	**52.03**	**335**	*e*P	**P**	**00 12 46.5**	**+0.3**
	40nm,1.5s						
X38A	**Whitesboro**	**52.07**	**340**	P	**P**	**00 12 46.9**	**+0.5**
	baz=156						
Y35A	**Marietta**	**52.14**	**338**	P	**P**	**00 12 47.7**	**+0.7**
	baz=154						
X37A	**Clayton**	**52.18**	**340**	P	**P**	**00 12 47.6**	**+0.4**
	baz=156,SNR=9.0						
W39A	**Magazine**	**52.23**	**342**	P	**P**	**00 12 47.9**	**+0.3**
	baz=158						
Z33A	**Whitaker Ranch**	**52.25**	**336**	P	**P**	**00 12 48.1**	**+0.2**
	baz=152						
PVMO	**Portageville**	**52.27**	**346**	*e*P	**P**	**00 12 47.8**	**0.0**
	447nm,0.8s						
V41A	**Mountainview**	**52.30**	**343**	P	**P**	**00 12 47.2**	**-0.9**
	baz=160						
W38A	**Poteau**	**52.34**	**341**	P	**P**	**00 12 48.8**	**+0.4**
	baz=157						
Y34A	**Reagan Ranch,**	**52.46**	**337**	P	**P**	**00 12 49.7**	**+0.4**
	baz=153						
X36A	**Centrahoma**	**52.50**	**339**	P	**P**	**00 12 49.2**	**-0.4**
	baz=155						
V40A	**Witts Springs**	**52.51**	**343**	P	**P**	**00 12 49.7**	**0.0**
	baz=159						
X35A	**Drake**	**52.56**	**338**	P	**P**	**00 12 49.9**	**-0.3**
	baz=154						
W37B	**Quinton**	**52.70**	**340**	P	**P**	**00 12 50.9**	**-0.2**
	baz=156						
U41A	**Viola**	**52.76**	**344**	P	**P**	**00 12 51.2**	**-0.4**
	baz=160						
V39A	**Pettigrew**	**52.78**	**342**	P	**P**	**00 12 51.6**	**-0.2**
	baz=158						
PBMO	**Poplar Bluff**	**52.79**	**345**	*e*P	**P**	**00 12 50.7**	**-1.0**
	7.1nm,0.8s						
W36A	**Wetumka**	**52.97**	**339**	P	**P**	**00 12 53.0**	**0.0**
	baz=155						
U40A	**Yellville**	**53.03**	**343**	P	**P**	**00 12 53.1**	**-0.5**
	baz=159,SNR=7.5						
V38A	**Canehill**	**53.03**	**341**	P	**P**	**00 12 53.5**	**-0.1**
	baz=157						
X34A	**Smith Ranch, M**	**53.06**	**337**	P	**P**	**00 12 53.7**	**-0.1**
	baz=153						
W35A	**Tecumseh**	**53.20**	**339**	P	**P**	**00 12 54.2**	**-0.6**
	baz=154						
U39A	**Green Forest**	**53.23**	**342**	P	**P**	**00 12 54.5**	**-0.5**
	baz=159						
HHAR	**Hobbs**	**53.28**	**342**	*e*P	**P**	**00 12 55.0**	**-0.3**
	21nm,1.8s						
V37A	**Hulbert**	**53.28**	**341**	P	**P**	**00 12 55.0**	**-0.4**
	baz=156						
WCI	**Wyandotte Cave**	**53.33**	**350**	*e*P	**P**	**00 12 54.4**	**-1.3**
	19nm,0.8s						
T41A	**Mountain View**	**53.38**	**344**	P	**P**	**00 12 55.2**	**-0.9**
	baz=161						
S44A	**Carbondale**	**53.39**	**347**	P	**P**	**00 12 55.3**	**-0.8**
	baz=164						

P42A	Winchester	55.45	347	P		P	00 13 09.8	+1.2	
	baz=163								
Q39A	Willow Grove F	55.58	344	P		P	00 13 11.8	-0.3	
	baz=160								
S34A	Willow Spring	55.59	340	P		P	00 13 12.0	-0.2	
	baz=155								
R36A	Gordon, Harris	55.64	341	P		P	00 13 12.2	-0.3	
	baz=157								
Q38A	Cooks Store, C	55.68	343	P		P	00 13 12.3	-0.4	
	baz=159,SNR=6.9								
319A	Douglas	55.69	325	eP		P	00 13 14.3	+1.1	
	15nm,0.9s								
P41A	Barry, Barry	55.70	346	P		P	00 13 11.8	-1.1	
	baz=162								
121A	Cookes Peak, D	55.79	327	P		P	00 13 14.4	+0.6	
	baz=142								
P40A	Paris	55.80	345	P		P	00 13 12.7	-0.9	
	baz=161								
M54A	Oil Creek Stat	55.83	357	P		P	00 13 13.1	-0.7	
	baz=176								
P39B	Salisbury	55.94	344	P		P	00 13 13.8	-0.8	
	baz=160								
RKT	Rikitea	56.16	252	eT		T	01 13 38.3		
	11nm,0.3s								
R34A	Isabella, Hill	56.17	340	P		P	00 13 16.1	-0.2	
	baz=155								
P36A	Good Intent, A	56.74	342	P		P	00 13 19.4	-0.9	
	baz=158								
P35A	Duane Minner,	56.90	342	P		P	00 13 20.7	-0.8	
	baz=156								
LAZ	Ladron	56.94	329	eP		P	00 13 21.5	-0.6	
TRY	Troy	56.99	2	eP		P	00 13 20.9	-1.1	
	16nm,0.9s								
ANMO	Albuquerque	57.05	330	P		P	00 13 23.2	+0.3	
	baz=144								
ANMO	Albuquerque	57.05	330	eP		P	00 13 22.9	+0.1	
	5.3nm,0.9s								
P34A	Walnut Farm, R	57.17	341	P		P	00 13 23.2	-0.2	
	baz=156								
N39A	Derby Farms, D	57.18	345	P		P	00 13 22.4	-1.0	
	baz=161								
TUC	Tucson	57.23	325	P		P	00 13 24.4	+0.3	
	baz=139								
TUC	Tucson	57.23	325	eP		P	00 13 24.2	+0.2	
	7.4nm,1.0s								
ACCN	Adirondack Com	57.64	2	eP		P	00 13 26.1	-0.5	
	16nm,1.3s								
O34A	Beatrice	57.71	341	P		P	00 13 26.6	-0.5	
	baz=156								
N36A	Muff Farm, Cla	57.78	343	P		P	00 13 26.8	-0.8	
	baz=158								
T25A	Trinidad	57.91	333	P		P	00 13 29.2	+0.3	
	baz=147								
T25A	Trinidad	57.91	333	eP		P	00 13 29.2	+0.3	
	4.5nm,0.8s								
M37A	Trindle Farm,	58.08	344	P		P	00 13 29.4	-0.4	
	baz=159								
214A	Organ Pipe Nat	58.12	323	P		P	00 13 31.0	+0.8	
	baz=137,SNR=6.3								
214A	Organ Pipe Nat	58.12	323	eP		P	00 13 30.9	+0.6	
	44nm,1.0s								
NCB	Newcomb	58.21	2	eP		P	00 13 30.6	0.0	
	0.1nm,1.3s								
MDV	Middlebury	58.27	2	eP		P	00 13 30.2	-0.8	
L38A	Oak Wood Farm,	58.49	345	P		P	00 13 30.8	-1.8	
	baz=160								
K39A	Oelwein	58.77	346	P		P	00 13 32.3	-2.2	
	baz=162								
L36A	Harm Buss Farm	58.89	344	P		P	00 13 34.9	-0.5	
	baz=159								
SDCO	Great Sand Dun	58.90	333	P		P	00 13 36.1	+0.3	
	baz=146,SNR=14								
SDCO	Great Sand Dun	58.90	333	eP		P	00 13 36.2	+0.3	
	6.3nm,0.8s								
SADO	Sadowa	59.06	357	eP		P	00 13 35.0	-1.4	
	5.5nm,0.8s								
FRNY	Flat Rock	59.09	2	eP		P	00 13 36.2	-0.5	
	11nm,0.9s								
X16A	Lo Mia Camp, P	59.18	326	eP		P	00 13 38.6	+0.8	
	6.7nm,1.0s								
113A	Mohawk Valley,	59.27	323	eP		P	00 13 39.0	+0.8	
	4.7nm,0.8s								
113A				epP		pP	00 13 46.7	-0.5	
K36A	Gilmore City	59.34	344	P		P	00 13 37.9	-0.5	
	baz=159								
S22A	4UR Ranch, Cre	59.49	332	P		P	00 13 40.4	+0.4	
	baz=145,SNR=6.9								
S22A	4UR Ranch, Cre	59.49	332	eP		P	00 13 40.4	+0.4	
	3.9nm,0.9s								
Y14A	Wickenburg	59.68	325	eP		P	00 13 42.0	+0.9	
	22nm,0.8s								
Q24A	Divide	59.76	334	P		P	00 13 42.0	+0.1	
	baz=147								
MVCO	Mesa Verde	59.84	330	eP		P	00 13 40.6	-1.8	
	4.7nm,0.8s								
J36A	Seneca 1, Swea	59.95	345	P		P	00 13 41.8	-0.9	
	baz=159								
WUAZ	Wupatki	59.98	327	P		P	00 13 44.3	+1.1	
	baz=140,SNR=6.4								
WUAZ	Wupatki	59.98	327	eP		P	00 13 43.5	+0.3	
	11nm,1.1s								
WUAZ				epP		pP	00 13 53.2	+1.0	
I38A	Scanlan Farm,	60.14	346	P		P	00 13 42.9	-1.0	
	baz=162								
Y12C	Blythe	60.41	323	P		P	00 13 46.5	+0.5	
	baz=136								
PV01	Paradox Valley	60.62	331	eP		P	00 13 48.0	+0.3	
ISCO	Idaho Springs	60.66	334	P		P	00 13 47.6	-0.3	
	baz=147								
ISCO	Idaho Springs	60.66	334	eP		P	00 13 48.2	+0.2	
	7.9nm,1.6s								
BC3	Big Chuckawall	60.89	323	P		P	00 13 49.8	+0.4	
	baz=135								
K30A	Basset	60.89	340	P		P	00 13 49.7	+0.5	
	baz=154								
ECSD	EROS Data Cent	60.94	343	P		P	00 13 48.7	-0.8	
	baz=157,SNR=6.3								
ECSD	EROS Data Cent	60.94	343	eP		P	00 13 48.6	-0.8	
	5.5nm,0.8s								
W13A	Hualapai Mount	61.03	325	eP		P	00 13 51.6	+1.1	
	8.1nm,1.4s								
PV10	Paradox Valley	61.03	331	eP		P	00 13 50.4	-0.1	
IRM	Iron Mountain	61.06	323	P		P	00 13 51.3	+0.8	
	baz=136,SNR=11								
U15A	North Rim	61.15	327	eP		P	00 13 52.5	+1.1	
	4.8nm,1.0s								
H35A	Sunnyside Ranc	61.36	345	P		P	00 13 51.2	-1.1	
	baz=159								
SPMN	Marine on St.	61.37	347	P		P	00 13 51.4	-0.8	
	baz=161								
SPMN	Marine on St.	61.37	347	eP		P	00 13 51.4	-0.8	
	20nm,0.9s								
TPFO	Pinon Flats	61.44	322	P		P	00 13 53.4	+0.2	
	baz=134								
BELC	Belle Mtn. Jos	61.45	323	P		P	00 13 53.7	+0.5	
	baz=135								
PFO	Pinyon Flats O	61.45	322	P		P	00 13 53.5	+0.2	
	baz=134								
PFO	Pinyon Flats O	61.45	322	eP		P	00 13 52.0	-1.3	
	9.0nm,1.0s								
H34A	Spellman Lake,	61.57	344	P		P	00 13 53.4	-0.3	
	baz=158								
N23A	Red Feather La	61.71	335	P		P	00 13 54.9	-0.2	
	baz=147								
GMRC	Granite Mounta	61.81	323	P		P	00 13 56.3	+0.6	
	baz=135								
H33A	Prehn Over Nor	61.85	343	P		P	00 13 54.5	-1.1	
	baz=157								
KNB	Kanab	61.87	327	eP		P	00 13 56.5	+0.4	
	8.7nm,1.0s								
H32A	Carlson Farm,	61.88	343	P		P	00 13 55.6	-0.2	
	baz=156								
O20A	White River Ci	62.08	332	P		P	00 13 57.8	+0.4	
	baz=144								
O20A	White River Ci	62.08	332	eP		P	00 13 57.9	+0.4	
	7.3nm,0.8s								
LCMT	Little Creek M	62.09	327	eP		P	00 13 58.6	+1.0	
	4.8nm,1.0s								
F36A	Milaca	62.13	346	P		P	00 13 56.9	-0.6	
	baz=161,SNR=7.6								
HEC	Hector,Ludlow	62.23	323	P		P	00 13 59.0	+0.6	
	baz=135								
MTPU	Mount Pierson	62.32	328	eP		P	00 14 00.0	+0.7	
	3.2nm,1.0s								
SRU	San Rafael Swe	62.32	330	eP		P	00 13 59.5	+0.4	
	7.0nm,0.8s								
VLDQ	Val d'Or	62.34	359	eP		P	00 13 58.3	-0.5	
	5.0nm,0.8s								
TUQ	Turquoise Moun	62.42	324	P		P	00 14 00.8	+1.0	
	baz=135								
Q16A	Castle Valley	62.49	330	eP		P	00 14 01.0	+0.8	
	4.9nm,0.8s								
CCUT	Cedar City	62.56	327	eP		P	00 14 01.3	+0.5	
	6.3nm,1.0s								
P18A	Preston Nutter	62.59	331	eP		P	00 14 02.1	+1.0	
	9.8nm,1.1s								
MSU	Marysvale	62.67	329	eP		P	00 14 02.5	+0.9	
P17A	Butcher Ranch,	62.71	330	eP		P	00 14 02.1	+0.5	
	9.0nm,0.8s								
SHPR	Sheep Range	62.76	325	eP		P	00 14 03.1	+1.1	
	4.6nm,0.9s								
F33A	5 Mile Ranch,	62.80	344	P		P	00 14 01.5	-0.4	
	baz=158								
TMUT	Trail Mountain	62.80	330	eP		P	00 14 03.0	+0.6	
	3.7nm,0.7s								
GSC	Goldstone, Bar	62.84	323	P		P	00 14 02.6	+0.1	
	baz=135								
TAOE	Nuku Hiva Isla	62.90	267	eLR		LR	00 32 46.7		
	254nm,23.8s								
SHOC	Shoshone, Teco	62.95	324	P		P	00 14 02.8	-0.3	
	baz=135								
G30A	Faulkton	62.95	342	P		P	00 14 02.9	-0.1	
	baz=155								
E35A	Pequot Lakes	62.99	346	P		P	00 14 02.8	-0.4	
	baz=160								
D37A	Cotton	63.12	348	P		P	00 14 03.2	-0.8	
	baz=162,SNR=5.1								
C39A	Grand Marais	63.31	349	P		P	00 14 04.2	-1.1	
	baz=164,SNR=5.4								
K22A	Casper	63.41	335	P		P	00 14 06.5	+0.2	
	baz=146								
C37A	Embarrass	63.62	348	P		P	00 14 06.4	-0.8	
	baz=162								
D34A	Park Rapids	63.68	345	P		P	00 14 06.9	-0.8	
	baz=159								
TPNV	Topopah Spring	63.69	325	P		P	00 14 08.5	+0.3	
	baz=136,SNR=6.1								
TPNV	Topopah Spring	63.69	325	eP		P	00 14 09.6	+1.4	
	6.6nm,0.9s								
FURC	Furnace Creek,	63.69	324	P		P	00 14 08.6	+0.6	
	baz=135,SNR=5.5								
MPMC	Manual Prospec	63.76	323	P		P	00 14 09.1	+0.4	
	baz=134								
C36A	Pine Crest Far	63.78	347	P		P	00 14 07.7	-0.7	
	baz=162,SNR=8.2								
D33A	AnnSam, Waubun	63.89	345	P		P	00 14 08.9	-0.3	
	baz=158								
E31A	Nome	63.89	343	P		P	00 14 08.7	-0.4	
	baz=156								
JLU	Jordanelle	63.93	331	eP		P	00 14 10.8	+0.9	
	12nm,1.0s								
H25A	Fruitdale	63.97	338	P		P	00 14 09.7	-0.1	
	baz=150								
DUG	Dugway, Tooele	64.28	329	P		P	00 14 12.8	+0.8	
	baz=140,SNR=21								
DUG	Dugway, Tooele	64.28	329	eP		P	00 14 12.8	+0.8	
	13nm,0.8s								
TCUT	Toone Canyon	64.31	331	eP		P	00 14 13.1	+0.7	
	12nm,0.8s								
R11A	Troy Canyon, C	64.33	326	P		P	00 14 13.3	+0.9	
	baz=137,SNR=9.0								
R11A	Troy Canyon, C	64.33	326	eP		P	00 14 13.3	+0.9	
	3.7nm,0.8s								
CWC	Cottonwood Cre	64.37	323	P		P	00 14 13.4	+0.7	
	baz=134								
B35A	Bob, Littlefor	64.54	347	P		P	00 14 12.4	-0.9	
	baz=161								
HWUT	Hardware Ranch	64.77	331	eP		P	00 14 15.3	+0.1	
	9.9nm,0.9s								
BW06	Boulder Array	64.78	333	P		P	00 14 14.1	-1.2	
	baz=144								
BW06	Boulder Array	64.78	333	eP		P	00 14 14.4	-1.0	
PDAR	Pinedale Array	64.78	333	P		P	00 14 14.2	-1.2	
	1.5nm,0.8s,baz=139,slow=7.9,SNR=9.4								
PDAR					LR	LR	00 43 04.9		
	comp=Z,22nm,19.7s,baz=127,slow=36								
B34A	Aery, Baudette	64.86	346	P		P	00 14 14.9	-0.6	
	baz=160,SNR=6.4								
BGU	Big Grassy Mou	64.94	330	eP		P	00 14 16.7	+0.4	
	4.4nm,0.9s								
SPUT	Scott Promonto	64.96	330	eP		P	00 14 16.8	+0.4	
	10nm,1.2s								
AGMN	Agassiz Nation	64.97	346	P		P	00 14 15.6	-0.5	
	baz=159,SNR=7.4								
AGMN	Agassiz Nation	64.97	346	eP		P	00 14 15.4	-0.7	
	12nm,0.8s								
C31A	Landman Farms,	64.98	344	P		P	00 14 16.0	-0.2	
	baz=156								
HVU	Hansel Valley	65.47	331	eP		P	00 14 19.9	+0.2	
	8.9nm,0.9s								
B30A	Myrvik Farm, E	65.75	344	P		P	00 14 21.0	-0.1	
	baz=156								
REDW	Red Top Meadow	65.83	333	eP		P	00 14 22.4	+0.2	
	11nm,1.4s								
ELK	Elko	65.91	328	eP		P	00 14 23.2	+0.5	
IMW	Indian Meadow	66.29	333	eP		P	00 14 25.5	+0.4	
	5.5nm,0.9s								
FLWY	Flagg Ranch	66.34	333	eP		P	00 14 26.1	+0.7	
	15nm,0.9s								
A29A	Manning Farm,	66.42	344	P		P	00 14 25.2	-0.3	
	baz=155,SNR=6.5								
RLMT	Red Lodge	66.57	335	P		P	00 14 27.2	+0.4	
	baz=144								
RLMT	Red Lodge	66.57	335	eP		P	00 14 27.1	+0.3	
	14nm,1.4s								
LAO	LASA Array	66.69	338	P		P	00 14 27.3	-0.1	
	baz=148								
ULM	Lac du Bonnet	66.80	346	P		P	00 14 26.7	-1.2	
	6.8nm,0.6s,baz=175,slow=5.0,SNR=11								
ULM					LR	LR	00 44 44.3		
	comp=Z,15nm,20.4s,baz=114,slow=37								
ULM	Lac du Bonnet	66.80	346	eP		P	00 14 26.6	-1.2	
	9.3nm,0.8s								
YHH	Holmes Hill	66.97	334	eP		P	00 14 30.8	+1.4	
	6.1nm,0.8s								
GCMT	Greycliff	67.28	335	eP		P	00 14 31.5	+0.2	
PAHR	Pah Rah Range	67.38	325	eP		P	00 14 33.4	+1.4	
	9.2nm,0.9s								
HLID	Hailey	67.62	331	P		P	00 14 33.8	+0.3	
	baz=139,SNR=9.2								
HLID	Hailey	67.62	331	eP		P	00 14 34.1	+0.7	
	3.3nm,0.6s								
MCMT	McKenzie Canyo	67.87	333	eP		P	00 14 35.9	+0.8	
BOZ	Bozeman (W)	67.98	334	P		P	00 14 35.7	+0.1	
	baz=142,SNR=6.8								
BOZ	Bozeman (W)	67.98	334	eP		P	00 14 35.8	+0.1	
	5.0nm,0.9s								
DLMT	Dillon	68.18	333	eP		P	00 14 37.4	+0.5	
	6.3nm,1.0s								
MFID	Camas Ranch	68.18	330	eP		P	00 14 37.5	+0.6	
	14nm,0.9s								
ORV	Oroville	68.47	324	eP		P	00 14 40.0	+1.4	
	17nm,1.0s								
O03D	Paynes Creek	69.13	324	P		P	00 14 42.9	0.0	
	baz=132								
MOD	Modoc Plateau	69.40	326	eP		P	00 14 45.4	+0.9	
	9.2nm,1.1s								
TBI	Tubuai	69.42	250	eS		S	00 23 52.1	+1.4	
	63nm,28.0s								
TBI	Tubuai	69.42	250	eLR		LR	00 35 50.6		
	130nm,24.2s								
TBI	Tubuai	69.42	250	eT		T	01 30 12.3		
	9.4nm,0.3s								
SCHQ	Schefferville	69.50	6	P		P	00 14 43.8	-0.9	
	1.8nm,0.6s,baz=212,slow=9.5,SNR=2.6								
SCHQ					LR	LR	00 47 40.1		
	comp=Z,33nm,19.5s,baz=213,slow=38								
MSO	Missoula	69.91	333	P		P	00 14 48.4	+0.8	
	baz=140,SNR=5.9								
MSO	Missoula	69.91	333	eP		P	00 14 48.5	+1.0	
	7.4nm,1.0s								
BMO	Blue Mountains	69.96	330	eP		P	00 14 48.0	0.0	
	2.8nm,0.8s								
K05A	Summer Lake	70.28	326	eP		P	00 14 51.2	+1.1	
	59nm,2.0s								
PPT2	Papeete2	70.37	256	eS		S	00 24 00.0	-2.1	
	49nm,23.5s								
PPT2	Papeete2	70.37	256	eLR		LR	00 36 19.2		
	73nm,27.0s								
J05D	Fort Rock, OR	70.85	327	P		P	00 14 53.9	+0.4	
	baz=133								
SNAA	Sanae	71.05	161	eP		P	00 14 54.5	+0.3	
	13nm,0.9s								
BSMT	Bassoo Peak	71.06	334	eP		P	00 14 55.7	+1.1	
G08A	Pilot Rock	71.09	329	eP		P	00 14 55.6	+0.8	
	4.9nm,0.8s								
WALA	Waterton Lakes	71.62	335	eP		P	00 14 57.8	-0.2	
WALA				epP		pP	00 15 06.4	-0.7	
NEW	Newport	72.40	333	P		P	00 15 02.7	+0.2	
	baz=138								
DBIC	Dimbokro	73.61	78	P		P	00 15 10.0	-0.4	
	8.9nm,0.8s,baz=223,slow=5.4,SNR=7.6								
DBIC					LR	LR	00 45 43.5		
	comp=Z,239nm,20.3s,baz=226,slow=34								
EDM	Edmonton	74.68	338	eP		P	00 15 15.4	-0.5	
	22nm,1.0s								
B05A	Bryant	74.71	330	P		P	00 15 15.6	-0.4	
	baz=134								
QSPA	South Pole Qui	75.64	180	eP		P	00 15 22.3	+0.8	
	39nm,1.1s								
SBA	Scott Base	81.41	191	eP		P	00 15 54.8	+2.0	
	12nm,1.4s								
TOA0	Torodi Ar. Sit	81.68	74	eP		P	00 15 55.5	+0.1	
TORD	Torodi Ar. Bea	81.68	74	P		P	00 15 55.4	0.0	
	24nm,0.7s,baz=265,slow=3.6,SNR=132								
TORD					LR	LR	00 51 25.4		
	comp=Z,94nm,19.7s,baz=245,slow=35								
PNCL	Nicolau / Gran	81.97	47	eP		P	00 15 58.0	+1.6	
	19nm,1.5s								
MESJ	Messejana	82.07	48	eP		P	00 15 59.6	+2.6	
	19nm,1.7s								
PCVE	Castro Verde	82.12	48	eP		P	00 15 59.0	+1.8	
	26nm,1.7s								
PVAQ	Vaqueiros	82.25	48	eLR		LR	00 46 50.3		
	56nm,16.0s								
YKA	Yellowknife Ar	82.47	343	P		P	00 15 57.8	-0.6	
	1.4nm,0.8s,baz=135,slow=5.1,SNR=12								
VNDA	Vanda	82.48	191	P		P	00 15 59.8	+1.3	
	3.4nm,0.9s,baz=123,slow=4.6,SNR=14								
VNDA					LR	LR	00 45 25.2		
	comp=Z,65nm,21.8s,baz=120,slow=30								
VNDA	Vanda	82.48	191	eP		P	00 16 00.3	+1.8	
	3.4nm,0.9s								
EVO	Evora	82.52	47	eP		P	00 16 01.2	+1.9	
	15nm,1.5s								
PTOM	Tomar	82.70	46	eP		P	00 16 01.6	+1.4	
	22nm,1.1s								
PCAS	Casmilo, Conde	82.82	46	eP		P	00 16 02.5	+1.6	
	41nm,1.7s								
PBAR	Barrancos	83.06	48	eP		P	00 16 03.6	+1.5	
	26nm,1.6s								
PMRV	Marv??o	83.33	47	eLR		LR	00 46 41.4		
	108nm,20.0s								
PVIS	Viseu	83.53	45	eP		P	00 16 06.1	+1.6	
	24nm,1.4s								
MTE	Manteigas	83.63	46	eLR		LR	00 47 26.5		
	133nm,20.0s								
MVO	Moncorvo	84.31	45	eLR		LR	00 47 35.4		
	98nm,20.0s								
SYO	Syowa Base	85.33	161	⇑eX		P	00 16 07.7	-5.4	
ESDC	Sonseca Array	85.86	47	P		P	00 16 15.3	-1.0	
	0.8nm,0.7s,baz=253,slow=5.3,SNR=5.6								
ESDC					LR	LR	00 52 01.2		
	comp=Z,78nm,19.5s,baz=245,slow=34								
ES19	SONSECA Array	85.91	47	eP		P	00 16 16.0	-0.6	
TAM	Tamanrasset	87.95	66	eP		P	00 16 26.6	-0.4	
	7.5nm,1.2s								
TAM				ePcP		PcP	00 16 28.4	-0.4	
TAM				epP		pP	00 16 37.5	+1.1	
SUMG	Summit	90.34	11	iP		P	00 16 37.8	+0.4	
	9.5nm,0.8s								
SUMG	Summit	90.34	11	eP		P	00 16 36.6	-0.8	
	10nm,0.8s								
DAWY	Dawson	91.88	337	eP		P	00 16 43.6	-0.7	
	2.9nm,0.8s								
SCO	Scoresbysund	92.48	16	iP		P	00 16 47.2	+0.3	
	7.4nm,0.9s								
BOSA	Boshof	92.73	120	LR		LR	00 55 19.1		
	comp=Z,85nm,21.4s,baz=208,slow=33								
MAW	Mawson	92.85	165	P		P	00 16 48.6	-0.2	
	4.8nm,0.7s,baz=219,slow=5.5,SNR=8.1								
MAW					LR	LR	00 55 53.8		
	comp=Z,92nm,21.2s,baz=240,slow=34								
MAW	Mawson	92.85	165	eP		P	00 16 49.6	+0.8	
	1.9nm,0.9s								
DOT	Dot Lake	93.51	335	eP		P	00 16 50.5	-1.3	
	23nm,0.7s								
ILAR	Eielson Array	95.10	336	P		P	00 16 57.6	-1.5	
	0.6nm,0.8s,baz=143,slow=3.6,SNR=7.9								
ILAR					LR	LR	01 01 53.9		
	comp=Z,25nm,20.8s,baz=149,slow=37								
MDM	Murphy Dome	95.70	336	eP		P	00 17 01.3	-0.5	
	6.5nm,1.2s								
GERES	GERESS Array B	100.58	42	P		Pdif	00 17 23.8	-0.5	
	0.9nm,0.8s,baz=262,slow=2.7,SNR=9.7								
H11N3	WAKE ISLAND Hyl	19.93	285	T		T	02 33 34.9		
	baz=96,slow=74,SNR=146								
H11N2	WAKE ISLAND Hyl	19.94	285	T		T	02 33 22.6		
	baz=96,slow=74,SNR=161								
H11N1	WAKE ISLAND Hyl	19.94	285	T		T	02 33 22.9		
	baz=96,slow=74,SNR=75								
H11S2	WAKE ISLAND Hyl	19.99	283	T		T	02 33 39.5		
	baz=96,slow=75,SNR=19								
H11S1	WAKE ISLAND Hyl	20.00	283	T		T	02 33 32.5		
	baz=96,slow=75,SNR=20								
H11S3	WAKE ISLAND Hyl	20.01	283	T		T	02 33 32.8		
	baz=96,slow=75,SNR=18								
ABKAR	Akbulak array	130.10	37	ePKPdf		PKPdf	00 22 47.3	+1.0	
AS01	Alice Springs	132.07	218	ePKPdf		PKPdf	00 22 50.3	-0.6	
ASAR	Alice Springs	132.10	218	PKP		PKPdf	00 22 50.9	-0.1	
	1.5nm,0.8s,baz=134,slow=2.7,SNR=10								
ZRNK	Zerenda	132.71	28	ePKPdf		PKPdf	00 22 52.1	+1.0	
BVAR	Borovoye Array	133.28	27	PKP		PKPdf	00 22 52.0	-0.2	
	0.5nm,0.6s,baz=332,slow=5.0,SNR=4.5								
WRA	Warramunga Arr	134.59	222	PKP		PKPdf	00 22 55.4	-0.3	
	2.7nm,0.7s,baz=141,slow=1.8,SNR=28								
ZAA0	Zalesovo Array	137.86	17	ePKPdf		PKPdf	00 23 00.7	+0.1	
ZAA0				ePKPdf		PKiKP	00 23 01.2	-1.5	
ZALV	Zalesovo Beam	137.86	17	PKP		PKPdf	00 23 00.0	-0.6	
	6.4nm,0.9s,baz=300,slow=2.9,SNR=16								
MAKZ	Makanchi	142.90	25	ePKPdf		PKPdf	00 23 09.1	-1.0	
MK31	Makanchi Array	143.04	25	ePKPdf		PKPdf	00 23 09.5	-0.9	
MKAR	Makanchi Array

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.27**	**111**	*e*PG	**Pg**	**00 06 49.2**	**-0.2**
GEDZ				*e*SG	**Sg**	**00 06 53.4**	**+0.1**
GEDZ	**Gediz**	**0.27**	**111**	*e*Pg	**Pg**	**00 06 49.2**	**-0.2**
GEDZ				*e*Sg	**Sg**	**00 06 53.4**	**+0.1**
GDZ	**Gediz**	**0.31**	**99**	*i* P	**Pg**	**00 06 50.3**	**+0.2**
GDZ				*i* S	**Sg**	**00 06 54.9**	**+0.4**
GDZ	**Gediz**	**0.31**	**99**	P	**Pg**	**00 06 50.3**	**+0.2**
GDZ				S	**Sg**	**00 06 54.9**	**+0.4**
DEMI	**Demirci**	**0.31**	**252**	⇓*i* P	**Pg**	**00 06 50.1**	**0.0**
DEMI				*i* S	**Sg**	**00 06 54.4**	**-0.1**
DEMI	**Demirci**	**0.31**	**252**	P	**Pg**	**00 06 50.2**	**0.0**
DEMI				S	**Sg**	**00 06 54.4**	**-0.1**
TVSB	**Tavsanli**	**0.42**	**43**	*e*PG	**Pg**	**00 06 51.9**	**-0.3**
TVSB				*e*SG	**Sg**	**00 06 57.4**	**-0.6**
TVSB	**Tavsanli**	**0.42**	**43**	*e*Pg	**Pb**	**00 06 51.9**	**-0.3**
TVSB				*e*Sg	**Sg**	**00 06 57.4**	**-0.6**
KULA	**Kula-Manisa**	**0.71**	**209**	*e*PG	**Pg**	**00 06 57.5**	**-0.1**
KULA				*e*SG	**Sg**	**00 07 07.7**	**+0.8**
KULA	**Kula-Manisa**	**0.71**	**209**	*e*Pg	**Pg**	**00 06 57.5**	**-0.1**
KULA				*e*Sg	**Sg**	**00 07 07.7**	**+0.8**
BALB	**Balikesir**	**1.06**	**298**	*e*PG	**Pb**	**00 07 04.5**	**+0.6**
BALB				*e*SG	**Sg**	**00 07 19.2**	**+1.1**
BALB	**Balikesir**	**1.06**	**298**	*e*Pg	**Pb**	**00 07 04.5**	**+0.6**
BALB				*e*Sg	**Sg**	**00 07 19.2**	**+1.1**
IGD	**Bursa**	**1.13**	**4**	*i* P	**Pb**	**00 07 03.8**	**-1.1**
IGD				*i* S	**Sg**	**00 07 20.4**	**+0.2**
IZI	**Iznik**	**1.23**	**14**	*e*PN	**Pn**	**00 07 07.3**	**+0.7**
IZI	**Iznik**	**1.23**	**14**	*e*Pn	**Pn**	**00 07 07.3**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*e*PN	**Pn**	**00 07 07.3**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*e*Pn	**Pn**	**00 07 07.3**	**+0.7**
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*PN	**Pg**	**00 07 08.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*Pn	**Pg**	**00 07 08.2**	**+0.2**
BORA	**Eskisehir**	**1.29**	**54**	*i* P	**Pn**	**00 07 07.3**	**0.0**
BORA				*i* S	**Sg**	**00 07 25.7**	**+0.4**
BORA	**Eskisehir**	**1.29**	**54**	P	**Pn**	**00 07 07.3**	**0.0**
BORA				S	**Sg**	**00 07 25.7**	**+0.4**
BALY	**Balya**	**1.29**	**298**	*i* P	**Pn**	**00 07 06.0**	**-1.2**
BALY				*i* S	**Sb**	**00 07 22.8**	**-1.4**
BALY	**Balya**	**1.29**	**298**	P	**Pn**	**00 07 06.1**	**-1.2**
BALY				S	**Sb**	**00 07 22.8**	**-1.4**
ADVT	**Abdulvahap**	**1.39**	**21**	*e*PN	**Pn**	**00 07 09.6**	**+1.0**
ADVT	**Abdulvahap**	**1.39**	**21**	*e*Pn	**Pn**	**00 07 09.6**	**+1.0**
ARMT	**Armutlu**	**1.44**	**353**	*e*PN	**Pb**	**00 07 11.0**	**+0.8**
ARMT	**Armutlu**	**1.44**	**353**	*e*Pn	**Pb**	**00 07 11.0**	**+0.8**

*ISCJB **02** 00:12:30.2±0.5, 35°.48N±0°.04×71°.13E±0°.07, h90km, mb3.6/11, Error ellipse: s-maj=8.0km s-min=5.8km az=155.6*
*IDC **02** 00:12:31.4±3.4, 35°.53N×70°.92E, h73km±28km, mb3.5/12, mb1 3.7/17, mb1mx3.5/43, mbtmp3.9/17, MS2.2/1, Ms1 2.2/1, ms1mx2.0/36, Error ellipse: s-maj=25.3km s-min=14.5km az=163.0*
*NNC **02** 00:12:37.9±2.5, 36°.06N×70°.40E, h58km±44km, mb4.0, mpv4.2, Error ellipse: s-maj=20.2km s-min=17.6km az=76.0*

ISC 02 00:12:31.4±0.6, 35°.43N±0°.06×71°.06E±0°.06, h90km, n34, σ2s27/43, mb3.8/11, 13C-1D, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THN	**Thein Dam**	**4.89**	**126**	*e*P	**Pn**	**00 13 43.0**	**+0.5**
THN				*e*S	Sn	00 14 09.2	-29
MNAS	**Manas**	**7.13**	**9**	⇑P	**Pn**	**00 14 13.1**	**0.0**
MNAS	16nm,0.8s			⇑S	**Sn**	**00 15 28.6**	**-4.1**
KK31	42nm,0.4s **Karatay Array**	**7.67**	**357**	P	**Pn**	**00 14 19.7**	**-0.6**
KK31	6.7nm,0.3s,baz=187,slow=14,SNR=133			⇑S	**Sn**	**00 15 38.4**	**-7.2**
AAK	5.5nm,0.3s,baz=185,slow=24,SNR=7.6 **Ala-Archa**	**7.67**	**19**	P	**Pn**	**00 14 21.0**	**+0.5**
AAK	5.5nm,0.3s,baz=194,slow=8.0,SNR=15			S	**Sn**	**00 15 43.5**	**-2.4**
AAK	1.9nm,0.3s,baz=326,slow=23,SNR=6.0			LR	LR	00 17 09.0	
AAK	comp=Z,18nm,18.7s,baz=190,slow=36 **Ala-Archa**	**7.67**	**19**	P	**Pn**	**00 14 21.2**	**+0.7**
AAK	8.7nm,0.5s			⇑S	**Sn**	**00 15 43.6**	**-2.2**
TKM2	16nm,0.7s **Tokmak 2**	**8.26**	**24**	⇓P	**Pn**	**00 14 29.3**	**+0.7**
TKM2	6.7nm,0.5s			⇑S	**Sn**	**00 15 59.5**	**-0.9**
GEYT	4.8nm,1.0s **Alibeck**	**10.69**	**287**	P	**Pn**	**00 15 00.2**	**-1.3**
GEYT	0.5nm,0.3s,baz=116,slow=11,SNR=6.7			S	**Sn**	**00 16 55.1**	**-4.2**
KOLN	0.6nm,0.3s,baz=112,slow=14,SNR=4.9 **Koldanda**	**13.13**	**122**	*e*P	**Pn**	**00 15 33.0**	**-1.5**
KOLN	4.5nm,0.4s			*e*S	**Sn**	**00 17 54.2**	**-4.7**
GKN	**Gorkha**	**13.72**	**119**	*e*P	**Pn**	**00 15 40.4**	**-1.8**
GKN	4.7nm,0.3s			*e*S	**Sn**	**00 18 07.9**	**-5.2**
MK31	**Makanchi Array**	**14.14**	**33**	⇑P	**P**	**00 15 52.8**	**+0.6**
MKAR	0.6nm,0.4s,baz=207,slow=10,SNR=29 **Makanchi Array**	**14.14**	**33**	P	**Pn**	**00 15 46.2**	**-1.2**
MKAR	0.1nm,0.3s,baz=214,slow=11,SNR=5.8			S	**Sn**	**00 18 25.6**	**+2.7**
KKN	0.2nm,0.3s,baz=183,slow=23,SNR=5.7 **Kakani**	**14.30**	**118**	*e*P	**Pn**	**00 15 48.8**	**-1.0**
PKIN	8.0nm,0.4s **Phulchoki**	**14.51**	**119**	*e*P	**Pn**	**00 15 51.4**	**-1.2**
AB31	6.4nm,0.5s **Akbulak array**	**16.05**	**333**	⇑P	**Pn**	**00 16 09.9**	**-1.6**
AB31	2.0nm,0.3s			⇑S	Sn	00 18 55.5	-13
KURBB	1.2nm,0.6s **Kurchatov Arra**	**16.12**	**17**	P	**Pn**	**00 16 10.2**	**-2.3**
VOSK	0.1nm,0.3s,baz=204,slow=11,SNR=18 **Vostochnaya**	**17.29**	**360**	⇑P	**Pn**	**00 16 25.9**	**-0.9**
ZRNK	2.7nm,0.9s **Zerenda**	**17.57**	**356**	⇑P	**Pn**	**00 16 30.7**	**+0.4**
BVA0	1.6nm,0.6s **Borovoye Array**	**17.59**	**359**	⇑P	**Pn**	**00 16 32.7**	**+2.2**
BVAR	1.9nm,0.6s,baz=160,slow=12,SNR=11 **Borovoye Array**	**17.59**	**359**	P	**P**	**00 16 29.5**	**-0.8**
AKTO	0.3nm,0.3s,baz=355,slow=31,SNR=7.0 **Aktyubinsk**	**17.73**	**332**	P	**Pn**	**00 16 31.9**	**-0.4**
AKTO	0.6nm,0.3s,baz=149,slow=12,SNR=28 **Aktyubinsk**	**17.73**	**332**	⇑P	**Pn**	**00 16 32.1**	**-0.2**
AKTO	5.6nm,0.7s			⇑S	Sn	00 19 36.9	-13
ZALV	1.9nm,0.7s **Zalesovo Beam**	**20.87**	**23**	P	**P**	**00 17 06.3**	**+0.4**
SONM	3.7nm,0.4s,baz=230,slow=11,SNR=20 **Songino Array**	**28.91**	**54**	P	**P**	**00 18 24.7**	**+2.9**
BRTR	0.5nm,0.5s,baz=255,slow=9.6,SNR=3.2 **Keskin Array B**	**29.82**	**290**	P	**P**	**00 18 31.6**	**+1.6**
NRIK	0.6nm,0.7s,baz=86,slow=8.2,SNR=4.6 **Noril'sk**	**35.16**	**10**	P	**P**	**00 19 17.7**	**+1.6**
FINES	1.6nm,0.6s,baz=75,slow=9.2,SNR=3.8 **FINESS Array B**	**38.40**	**327**	P	**P**	**00 19 44.1**	**+0.5**
ARCES	1.0nm,0.8s,baz=103,slow=7.5,SNR=6.4 **ARCESS Array B**	**42.15**	**338**	P	**P**	**00 20 15.4**	**+0.9**
NB2	0.4nm,0.4s,baz=105,slow=7.8,SNR=15 **NORSAR Subarra**	**45.26**	**324**	P	**P**	**00 20 39.7**	**+0.2**
NOA	comp=Z,0.8nm,0.5s,baz=98,slow=7.9 **NORSAR Array B**	**45.26**	**324**	P	**P**	**00 20 39.8**	**+0.2**
ESDC	comp=Z,0.9nm,0.5s,baz=97,slow=7.8,SNR=5.3 **Sonseca Array**	**58.00**	**298**	P	**P**	**00 22 15.3**	**+0.5**
TORD	comp=Z,0.1nm,0.3s,baz=57,slow=7.2,SNR=4.2 **Torodi Ar. Bea**	**65.75**	**269**	P	**P**	**00 23 07.7**	**+0.7**
INK	comp=Z,1.1nm,0.7s,baz=49,slow=5.7,SNR=14 **Inuvik**	**74.95**	**9**	P	**P**	**00 24 03.5**	**+1.4**
WRA	comp=Z,0.9nm,0.4s,baz=332,slow=5.1,SNR=7.5 **Warramunga Arr**	**81.39**	**122**	P	**P**	**00 24 40.9**	**+2.4**
YKA	comp=Z,0.5nm,0.9s,baz=327,slow=5.1,SNR=4.4 **Yellowknife Ar**	**82.31**	**3**	P	**P**	**00 24 43.5**	**+0.9**
	comp=Z,0.7nm,0.4s,baz=350,slow=5.4,SNR=10						

*IDC **02** 00:41:50.1±3.0, 37°.06N×141°.42E, h0km, mb3.9/4, mb1 3.9/5, mb1mx3.6/37, mbtmp4.0/5, ML3.1/2, MS2.6/1, Ms1 2.6/1, ms1mx2.0/44, Error ellipse: s-maj=60.4km s-min=27.2km az=98.0*
*ISCJB **02** 00:41:52.2±0.8, 37°.08N±0°.06×141°.6E±0°.1, h33km, mb4.0/7, Error ellipse: s-maj=12.9km s-min=7.6km az=20.1*

*NEIC **02** 00:41:54.6±0.8, 37°.03N×141°.39E, h35km, mb4.4/5, Error ellipse: s-maj=14.9km s-min=9.6km az=133.0*

ISC 02 00:41:54.3±0.8, 37°.09N±0°.08×141°.34E±0°.07, h33km, n21, σ1s33/16, mb4.1/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.57**	**259**	Pn	**Pn**	**00 42 33.3**	**-0.3**
MAJO	0.7nm,0.3s,baz=85,slow=15,SNR=3.4 **Matsushiro**	**2.57**	**259**	Pn	**Pn**	**00 42 34.0**	**+0.4**
MAT	**Matsushiro**	**2.57**	**259**	P	**Pb**	**00 42 37.5**	**-2.3**
MAT				*e*S	**Sb**	**00 43 09.8**	**-1.1**
JHJ	**Hachijo jima 2**	**4.16**	**198**	Pn	**Pn**	**00 42 54.5**	**-1.0**
JHJ	13nm,0.3s,baz=86,slow=22,SNR=7.2			Sn	**Sn**	**00 43 45.8**	**+2.8**
ERM	11nm,0.3s,baz=233,slow=20,SNR=3.9 **Erimo**	**5.12**	**15**	*e*Pn	**Pn**	**00 43 07.9**	**-0.7**
KLR	**Kul'dur**	**13.99**	**333**	LR	LR	00 50 13.1	
HIA	comp=Z,25nm,18.9s,baz=88,slow=36 **Hailar**	**19.82**	**315**	*e*P	**P**	**00 46 22.5**	**+0.4**
TATO	4.0nm,0.5s **Taipei**	**20.81**	**240**	*e*P	**P**	**00 46 32.7**	**-0.3**
SONM	8.7nm,0.5s **Songino Array**	**27.70**	**304**	P	**P**	**00 47 40.0**	**+0.4**
H11N2	0.4nm,0.5s,baz=91,slow=10,SNR=3.2 **WAKE ISLAND Hy**	**28.23**	**121**	T	T	01 16 32.9	
H11N1	baz=315,slow=75,SNR=64 **WAKE ISLAND Hy**	**28.23**	**121**	T	T	01 16 34.1	
H11N3	baz=315,slow=75,SNR=37 **WAKE ISLAND Hy**	**28.25**	**121**	T	T	01 16 48.3	
H11S1	baz=315,slow=75,SNR=40 **WAKE ISLAND Hy**	**28.94**	**123**	T	T	01 17 23.9	
H11S3	baz=316,slow=76,SNR=34 **WAKE ISLAND Hy**	**28.94**	**123**	T	T	01 17 19.2	
H11S2	baz=316,slow=76,SNR=31 **WAKE ISLAND Hy**	**28.95**	**123**	T	T	01 17 23.5	
ZALV	baz=316,slow=76,SNR=27 **Zalesovo Beam**	**41.83**	**312**	P	**P**	**00 49 42.3**	**+1.5**
MKAR	1.2nm,0.5s,baz=76,slow=7.7,SNR=2.1 **Makanchi Array**	**44.04**	**302**	P	**P**	**00 50 00.3**	**+1.5**
KURK	1.1nm,0.8s,baz=80,slow=6.5,SNR=4.6 **Kurchatov**	**45.85**	**308**	P	**P**	**00 50 13.6**	**+0.5**
PMG	4.1nm,0.6s **Port Moresby**	**46.57**	**172**	*e*P	**P**	**00 50 18.4**	**-0.6**
COLA	3.9nm,0.6s **College**	**49.07**	**32**	*e*P	**P**	**00 50 38.4**	**+0.5**
FINES	1.7nm,0.6s **FINESS Array B**	**68.74**	**332**	P	**P**	**00 52 55.5**	**+1.0**
	1.7nm,0.8s,baz=49,slow=5.8,SNR=4.7						

*ISCJB **02** 00:42:55.5±0.8, 47°.92N±0°.03×4°.04W±0°.06, h10km, Error ellipse: s-maj=6.2km s-min=4.0km az=179.1*
*CSEM **02** 00:42:56.1±0.5, 48°.10N×4°.21W, h15km, ML2.9/9, Error ellipse: s-maj=8.6km s-min=7.0km az=64.0*
*BGS **02** 00:42:56.4±0.5, 48°.19N×4°.43W, h5km, ML2.0*
*LDG **02** 00:42:56.9±0.5, 48°.28N×4°.25W, h19km, Md2.8/5, Ml2.8/15, Error ellipse: s-maj=7.5km s-min=6.1km az=117.0*

ISC 02 00:42:55.0±1.4, 48°.04N±0°.03×4°.31W±0°.06, h10km, n64, σ2s08/101, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSF	**Rostrenen**	**0.76**	**66**	*e*Pn	**Pg**	**00 43 09.0**	**-0.6**
ROSF	**Rostrenen**	**0.76**	**66**	*e*Pg	**Pg**	**00 43 09.4**	**-0.2**
ROSF				*e*Sg	**Sg**	**00 43 20.2**	**+0.8**
QUIF	34nm,0.2s,SNR=1.0 **Quistinic**	**0.78**	**99**	*e*Pn	**Pg**	**00 43 09.0**	**-0.6**
QUIF	**Quistinic**	**0.78**	**99**	*e*Pg	**Pb**	**00 43 12.3**	**+1.7**
QUIF				*e*Sg	**Sb**	**00 43 24.1**	**+2.8**
QUIF	78nm,0.2s,SNR=1.0 **Quistinic**	**0.78**	**99**	*e*Pn	**Pg**	**00 43 11.7**	**+1.7**
QUIF	**Quistinic**	**0.78**	**99**	*e*Pg	**Pb**	**00 43 12.3**	**+1.7**
SGMF	**Saint Gilles**	**1.20**	**79**	*e*Pn	**Pb**	**00 43 16.3**	**-1.4**
SGMF	**Saint Gilles**	**1.20**	**79**	*e*Pg	**Pb**	**00 43 18.0**	**+0.3**
SGMF				*e*Sg	**Sb**	**00 43 34.6**	**+1.4**
SGMF	26nm,0.2s,SNR=1.0 **Saint Gilles**	**1.20**	**79**	*e*Pn	**Pb**	**00 43 16.3**	**-1.4**
SGMF	**Saint Gilles**	**1.20**	**79**	*e*Pg	**Pb**	**00 43 18.0**	**+0.3**
SGMF				*e*Sg	**Sb**	**00 43 34.6**	**+1.4**
JSA	13nm,0.2s,SNR=1.0 **Saint Aubin**	**1.83**	**50**	*e*P	**Pn**	**00 43 26.6**	**+0.2**
JSA				*e*S	**Sn**	**00 43 48.9**	**-0.7**
JSA				AML	AML	00 43 53.7	
JSA	comp=N,16nm,0.3s			AML	AML	00 43 56.5	
JSA	comp=E,19nm,0.3s **Saint Aubin**	**1.83**	**50**	*e*P	**Pn**	**00 43 26.6**	**+0.2**
JSA				*e*S	**Sn**	**00 43 48.9**	**-0.7**
JSA				AML	AML	00 43 53.7	
JSA	comp=N,16nm,0.3s			AML	AML	00 43 56.5	
JSA	comp=E,19nm,0.3s **Saint Aubin**	**1.83**	**50**	*e*P	**Pn**	**00 43 26.6**	**+0.2**
JSA				*e*S	**Sn**	**00 43 48.9**	**-0.7**
JRS	comp=E,19nm,0.3s **Jersey**	**1.87**	**51**	*e*P	**Pn**	**00 43 27.8**	**+0.7**
JRS				*e*S	**Sn**	**00 43 50.4**	**-0.3**
JRS	**Jersey**	**1.87**	**51**	*e*P	**Pn**	**00 43 27.8**	**+0.7**
JRS				*e*S	**Sn**	**00 43 50.4**	**-0.3**
JRS	**Jersey**	**1.87**	**51**	*e*P	**Pn**	**00 43 27.8**	**+0.7**
JRS				*e*S	**Sn**	**00 43 50.4**	**-0.3**
JDC	**Jersey Dam (Cr**	**1.89**	**52**	*e*P	**Pn**	**00 43 28.3**	**+1.0**
JDC				*e*S	**Sn**	**00 43 51.2**	**+0.1**
JDC	**Jersey Dam (Cr**	**1.89**	**52**	*e*P	**Pn**	**00 43 28.3**	**+1.0**
JDC				*e*S	**Sn**	**00 43 51.2**	**+0.1**
JDC	**Jersey Dam (Cr**	**1.89**	**52**	*e*P	**Pn**	**00 43 28.3**	**+1.0**
JDC				*e*S	**Sn**	**00 43 51.2**	**+0.1**
JDG	**Jersey Dam (Ga**	**1.90**	**52**	*e*S	**Sn**	**00 43 51.1**	**-0.2**
JDG	**Jersey Dam (Ga**	**1.90**	**52**	*e*S	**Sn**	**00 43 51.1**	**-0.2**
JDG	**Jersey Dam (Ga**	**1.90**	**52**	*e*S	**Sn**	**00 43 51.1**	**-0.2**
JQE	**Queens East**	**1.91**	**52**	*e*P	**Pn**	**00 43 27.9**	**+0.4**
JQE	**Queens East**	**1.91**	**52**	*e*P	**Pn**	**00 43 27.9**	**+0.4**
JQE	**Queens East**	**1.91**	**52**	*e*P	**Pn**	**00 43 27.9**	**+0.4**
CCA1	**Carnmenellis**	**2.23**	**345**	*e*P	**Pn**	**00 43 30.8**	**-1.2**
CCA1	comp=E,7.5nm,0.4s			AML	AML	00 44 01.8	
CCA1	comp=N,4.8nm,0.3s			AML	AML	00 44 03.5	
CCA1	**Carnmenellis**	**2.23**	**345**	*e*P	**Pn**	**00 43 30.8**	**-1.2**
CCA1				AML	AML	00 44 01.8	
CCA1	comp=E,7.5nm,0.4s			AML	AML	00 44 03.5	
CCA1	comp=N,4.8nm,0.3s **Carnmenellis**	**2.23**	**345**	*e*P	**Pn**	**00 43 30.8**	**-1.2**
GRR	comp=N,4.8nm,0.3s **Gorron**	**2.34**	**80**	*e*Pn	**Pn**	**00 43 32.1**	**-1.3**
GRR	**Gorron**	**2.34**	**80**	*e*Pg	**Pb**	**00 43 38.7**	**+1.6**
GRR	SNR=1.0			*e*Sn	**Sn**	**00 43 55.2**	**-7.0**
GRR	SNR=1.0			*e*Sg	**Sb**	**00 44 08.0**	**+2.0**
GRR	comp=N,19nm,0.3s,SNR=1.0 **Gorron**	**2.34**	**80**	*e*Pn	**Pn**	**00 43 32.1**	**-1.3**
GRR	**Gorron**	**2.34**	**80**	*e*Pg	**Pb**	**00 43 38.7**	**+1.6**
GRR	SNR=1.0			*e*Sg	**Sb**	**00 44 08.0**	**+2.0**
FLN	comp=N,9.7nm,0.3s,SNR=1.0 **La Foliniere**	**2.65**	**73**	*e*Pn	**Pn**	**00 43 36.2**	**-1.6**
FLN	baz=272 **La Foliniere**	**2.65**	**73**	*e*Pg	**Pb**	**00 43 42.9**	**+0.4**
FLN	baz=262,SNR=1.0			*e*Sn	**Sn**	**00 44 05.8**	**-4.2**
FLN	baz=266,SNR=1.0			*e*Sg	**Sb**	**00 44 17.3**	**+2.1**
FLN	comp=N,20nm,0.3s,baz=273,SNR=1.0 **La Foliniere**	**2.65**	**73**	*e*Pn	**Pn**	**00 43 36.2**	**-1.6**
FLN	baz=272 **La Foliniere**	**2.65**	**73**	*e*Pg	**Pb**	**00 43 42.9**	**+0.4**
FLN	baz=262,SNR=1.0			*e*Sn	**Sn**	**00 44 05.8**	**-4.2**
FLN	baz=266,SNR=1.0			*e*Sg	**Sb**	**00 44 17.3**	**+2.1**
LDF	comp=N,10nm,0.3s,baz=273,SNR=1.0 **La Druitiere**	**2.85**	**77**	*e*Pn	**Pn**	**00 43 39.4**	**-1.1**
LDF	**La Druitiere**	**2.85**	**77**	*e*Pg	**Pb**	**00 43 48.3**	**+2.4**
LDF				*e*Sg	**Sg**	**00 44 25.7**	**-0.8**
LDF	comp=N,10nm,0.3s,SNR=1.0 **La Druitiere**	**2.85**	**77**	*e*Pn	**Pn**	**00 43 39.4**	**-1.1**
LDF	**La Druitiere**	**2.85**	**77**	*e*Pg	**Pb**	**00 43 48.3**	**+2.4**
LDF				*e*Sg	**Sg**	**00 44 25.7**	**-0.8**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MFF	comp=N,5.1nm,0.3s,SNR=1.0 **Saint Martin d**	**3.18**	**115**	*e*Pn	**Pn**	**00 43 45.9**	**+0.9**
MFF	SNR=1.0			*e*Sn	**Sn**	**00 44 21.8**	**-1.1**
MFF				*e*Sg	**Sg**	**00 44 38.1**	**+1.1**
MFF	comp=N,3.6nm,0.3s,SNR=1.0 **Saint Martin d**	**3.18**	**115**	*e*Pn	**Pn**	**00 43 45.9**	**+0.9**
MFF	SNR=1.0			*e*Sn	**Sn**	**00 44 21.8**	**-1.1**
MFF				*e*Sg	**Sg**	**00 44 38.1**	**+1.1**
LFF	comp=N,1.8nm,0.3s,SNR=1.0 **La Frestale**	**4.67**	**130**	*e*Pn	**Pn**	**00 44 06.8**	**+1.4**
LFF	SNR=1.0 **La Frestale**	**4.67**	**130**	*e*Pn	**Pn**	**00 44 06.8**	**+1.4**
TCF	SNR=1.0 **Toulx Ste Croi**	**4.78**	**109**	*e*Sn	**Sn**	**00 45 00.5**	**-2.0**
TCF	SNR=1.0			*e*Sg	**Sg**	**00 45 26.6**	**-1.8**
TCF	comp=N,3.3nm,0.4s,SNR=1.0 **Toulx Ste Croi**	**4.78**	**109**	*e*Sn	**Sn**	**00 45 00.5**	**-2.0**
TCF	SNR=1.0			*e*Sg	**Sg**	**00 45 26.6**	**-1.8**
RJF	comp=N,1.6nm,0.4s,SNR=1.0 **Les Rejaudoux**	**4.86**	**122**	*e*Pn	**Pn**	**00 44 08.5**	**+0.4**
RJF	SNR=1.0			*e*Sn	**Sn**	**00 45 01.3**	**-3.0**
RJF				*e*Sg	**Sg**	**00 45 32.7**	**+1.9**
RJF	comp=N,1.9nm,0.2s,SNR=1.0 **Les Rejaudoux**	**4.86**	**122**	*e*Pn	**Pn**	**00 44 08.5**	**+0.4**
RJF	SNR=1.0			*e*Sn	**Sn**	**00 45 01.3**	**-3.0**
RJF				*e*Sg	**Sg**	**00 45 32.7**	**+1.9**
BGF	comp=N,0.9nm,0.2s,SNR=1.0 **Bois d'Agland**	**5.09**	**104**	*e*Sn	**Sn**	**00 45 07.0**	**-3.1**
BGF	SNR=1.0			*e*Sg	**Sg**	**00 45 38.6**	**+0.3**
BGF	comp=N,5.1nm,0.4s,SNR=1.0 **Bois d'Agland**	**5.09**	**104**	*e*Sn	**Sn**	**00 45 07.0**	**-3.1**
BGF	SNR=1.0			*e*Sg	**Sg**	**00 45 38.6**	**+0.3**
AVF	comp=N,2.5nm,0.4s,SNR=1.0 **Avril sur Loir**	**5.35**	**101**	*e*Pn	**Pn**	**00 44 14.2**	**-0.6**
AVF	SNR=1.0 **Avril sur Loir**	**5.35**	**101**	*e*Pn	**Pn**	**00 44 14.2**	**-0.6**
SJPF	SNR=1.0 **Ste Jean**	**5.38**	**155**	*e*Sn	**Sn**	**00 45 14.5**	**-2.8**
CAF	comp=N,5.1nm,0.7s,SNR=1.0 **Calviac**	**5.39**	**123**	*e*Pn	**Pn**	**00 44 15.3**	**-0.2**
CAF	SNR=1.0			*e*Sn	**Sn**	**00 45 11.4**	**-6.2**
CAF	comp=N,1.1nm,0.2s **Calviac**	**5.39**	**123**	*e*Pn	**Pn**	**00 44 15.3**	**-0.2**
LOR	SNR=1.0 **Lormes**	**5.58**	**95**	*e*Pn	**Pn**	**00 44 16.3**	**-1.7**
LOR	SNR=1.0			*e*Sn	**Sn**	**00 45 15.0**	**-7.1**
LOR	comp=N,1.4nm,0.4s,SNR=1.0 **Lormes**	**5.58**	**95**	*e*Pn	**Pn**	**00 44 16.3**	**-1.7**
SMF	SNR=1.0 **Signal de Mont**	**5.71**	**101**	*e*Sn	**Sn**	**00 45 20.1**	**-5.4**
EPF	comp=N,0.7nm,0.2s,SNR=1.0 **Esparros**	**5.98**	**145**	*e*Pn	Pn	00 44 19.8	-3.7
EPF				*e*Sn	**Sn**	**00 45 27.6**	**-4.5**
MTLF	comp=N,0.4nm,0.2s **Montolieu**	**6.55**	**133**	*e*Pn	**Pn**	**00 44 32.9**	**+1.5**
MTLF	SNR=1.0			*e*Sn	**Sn**	**00 45 41.1**	**-5.1**
MTLF	comp=N,2.2nm,0.8s,SNR=1.0 **Montolieu**	**6.55**	**133**	*e*Pn	**Pn**	**00 44 32.9**	**+1.5**
CDF	SNR=1.0 **Champ du Feu**	**7.75**	**83**	*e*Sn	Sn	00 46 05.2	-10
	comp=N,1.3nm,0.5s,SNR=1.0						

IDC 02 00:48:01.9±1.9, 18°.37S×123°.96E, h0km, mb3.6/2, mb1 4.0/4, mb1mx3.6/32, mbtmp3.8/4, ML4.0/2, Error ellipse: s-maj=34.5km s-min=16.5km az=3.0, Western Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**1.62**	**81**	Pg	Pn	00 48 30.7	-1.0
FITZ	16nm,0.3s,baz=278,slow=9.7,SNR=528			Lg	Lg	00 48 54.2	
FITZ	14nm,0.3s,baz=299,slow=9.7,SNR=17			LR	LR	00 48 56.3	
WRA	comp=Z,66nm,19.4s,baz=120,slow=34 **Warramunga Arr**	**9.94**	**101**	Pn	Pn	00 50 24.2	-1.9
WRA	1.2nm,0.3s,baz=281,slow=14,SNR=44			Sn	Sn	00 52 11.3	-7.2
WRA	2.3nm,0.3s,baz=289,slow=25,SNR=10			Lg	Lg	00 53 17.6	
ASAR	baz=280,slow=31,SNR=2.5 **Alice Springs**	**10.68**	**121**	Pn	Pn	00 50 37.6	+1.3
ASAR	1.2nm,0.3s,baz=302,slow=12,SNR=35			Sn	Sn	00 52 36.6	-0.1
STKA	1.4nm,0.3s,baz=293,slow=21,SNR=9.7 **Stephens Creek**	**20.84**	**134**	P	P	00 52 45.4	+0.1
MKAR	1.5nm,0.4s,baz=312,slow=9.8,SNR=3.5 **Makanchi Array**	**74.94**	**332**	P	P	00 59 45.0	+0.3
	0.3nm,0.6s,baz=132,slow=7.4,SNR=3.5						

*ISK **02** 01:09:50.0, 39°.37N×33°.25E, h5km, ML3.2*
*DDA **02** 01:09:50.3, 39°.38N×33°.21E, h13km, Ml3.6*
*CSEM **02** 01:09:51.9±0.1, 39°.37N×33°.22E, h10km, ML3.2, Error ellipse: s-maj=4.1km s-min=3.7km az=8.0*

ISC 02 01:09:50.4±0.9, 39°.36N±0°.01×33°.22E±0°.01, h9km±7km, n118, σ1s23/167, Turkey

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

AVNS	Nevsehir-Avano	1.38	113	*i* P		Pg	01 10 17.1	+0.2
AVNS				*i* S		Sg	01 10 37.2	+2.3
AVNS	Nevsehir-Avano	1.38	113	P		Pg	01 10 17.1	+0.2
AVNS				S		Sg	01 10 37.2	+2.3
KONT	Konya--Tatoy	1.57	206	*e*PN		Pg	01 10 20.4	-0.1
KONT	Konya--Tatoy	1.57	206	*e*Pn		Pg	01 10 20.4	-0.1
COAL	Corum-Alaca	1.63	56	*i* P		Pb	01 10 20.1	-0.6
COAL				*i* S		Sg	01 10 42.3	-0.4
COAL	Corum-Alaca	1.63	56	P		Pb	01 10 20.0	-0.6
COAL				S		Sg	01 10 42.3	-0.4
YOZ	Yozgat	1.65	80	*e*PN		Pb	01 10 20.9	-0.2
YOZ	Yozgat	1.65	80	*e*Pn		Pb	01 10 20.9	-0.2
NIG	Nigde	1.66	139	*e*PN		Pg	01 10 22.2	0.0
NIG	Nigde	1.66	139	*e*Pn		Pg	01 10 22.2	0.0
BCAM	Yenicaga	1.70	329	*i* P		Pb	01 10 21.1	-0.8
BCAM				*i* S		Sg	01 10 47.2	+2.1
BCAM	Yenicaga	1.70	329	P		Pb	01 10 21.1	-0.8
BCAM				S		Sg	01 10 47.2	+2.1
ILGA	Ilgaz	1.73	13	*i* P		Pb	01 10 22.1	-0.4
ILGA				*i* S		Sg	01 10 45.0	-1.0
ILGA	Ilgaz	1.73	13	P		Pb	01 10 22.1	-0.4
ILGA				S		Sg	01 10 45.0	-1.0
CTAK	Corum_Osmancik	1.76	43	*i* P		Pb	01 10 22.6	-0.4
CTAK				*i* S		Sg	01 10 47.6	+0.5
CTAK	Corum_Osmancik	1.76	43	P		Pb	01 10 22.6	-0.4
CTAK				S		Sg	01 10 47.6	+0.5
TOS	Tosya	1.78	20	*e*PN		Pb	01 10 22.5	-0.8
TOS	Tosya	1.78	20	*e*Pn		Pb	01 10 22.5	-0.8
ESKT	Eskisehir	1.84	276	*e*PN		Pg	01 10 25.0	-0.8
ESKT	Eskisehir	1.84	276	*i* P		Pg	01 10 24.9	-0.8
ESKT				*i* S		Sg	01 10 49.6	0.0
ESKT	Eskisehir	1.84	276	*e*Pn		Pg	01 10 25.0	-0.8
SEYT	Eskypehyr	1.84	276	P		Pg	01 10 24.9	-0.8
SEYT				S		Sg	01 10 49.6	0.0
BOLV	Bolvadin	1.88	251	*i* P		Pb	01 10 24.7	-0.3
BOLV				*i* S		Sb	01 10 49.5	+0.8
BOLV	Bolvadin	1.88	251	P		Pb	01 10 24.7	-0.3
BOLV				S		Sb	01 10 49.5	+0.8
MDUB	Mudurnu	1.91	306	*e*PN		Pb	01 10 25.6	+0.1
MDUB	Mudurnu	1.91	306	*e*Pn		Pb	01 10 25.6	+0.1
SAFT	Safranbolu	1.92	348	*e*PN		Pb	01 10 25.1	-0.5
SAFT	Safranbolu	1.92	348	*e*Pn		Pb	01 10 25.1	-0.5
KERG	Konya-Eregli	2.07	160	*i* P		Pg	01 10 29.9	-0.2
KERG	Konya-Eregli	2.07	160	P		Pg	01 10 29.9	-0.2
BTAS	Taskesti	2.09	306	*i* P		Pb	01 10 28.1	-0.5
BTAS				*i* S		Sg	01 11 00.8	+3.2
BTAS	Taskesti	2.09	306	P		Pb	01 10 28.1	-0.5
YAHY	KAYSERI_Yahyal	2.10	126	*i* P		Pb	01 10 27.5	-1.3
YAHY				*i* S		Sg	01 11 59.7	+1.7
YAHY	KAYSERI_Yahyal	2.10	126	P		Pb	01 10 27.5	-1.3
BNN	Bunyan	2.11	103	*e*PN		Pb	01 10 28.1	-0.8
BNN	Bunyan	2.11	103	*e*Pn		Pb	01 10 28.1	-0.8
KAST	KASTAMONU	2.19	14	*i* P		Pg	01 10 31.3	-1.1
KAST				*i* S		Sg	01 10 59.5	-1.3
KAST	KASTAMONU	2.19	14	P		Pg	01 10 31.3	-1.1
KAST				S		Sg	01 10 59.5	-1.3
BORA	Eskisehir	2.20	284	*i* P		Pn	01 10 27.8	+0.6
BORA				*i* S		Sb	01 10 58.8	+1.0
BORA	Eskisehir	2.20	284	P		Pn	01 10 27.8	+0.6
BORA				S		Sb	01 10 58.8	+1.0
GULT	Gulveren	2.34	298	*e*PN		Pb	01 10 31.8	-1.0
GULT	Gulveren	2.34	298	*e*Pn		Pb	01 10 31.8	-1.0
CUSAR	Sarkisla-SIVAS	2.34	88	*i* P		Pb	01 10 32.0	-1.0
CUSAR				*i* S		Sg	01 11 05.5	-0.2
CUSAR	Sarkisla-SIVAS	2.34	88	P		Pb	01 10 32.0	-1.0
SAHE	Sakarya_HENDEK	2.35	310	*i* P		Pb	01 10 30.8	-2.1
SAHE				*i* S		Sg	01 10 59.9	+1.1
SAHE	Sakarya_HENDEK	2.35	310	P		Pb	01 10 30.8	-2.1
BTIN	Bart¯–n	2.39	342	*i* P		Pg	01 10 35.0	-1.2
BTIN				*i* S		Sg	01 11 08.4	+1.3
BTIN	Bart¯–n	2.39	342	P		Pg	01 10 35.0	-1.2
GULE	Gulek	2.41	149	*i* P		Pg	01 10 37.3	+0.7
GULE				*i* S		Sg	01 11 08.1	+0.2
BYBT	Boyabat	2.41	29	*e*PN		Pb	01 10 32.0	-2.0
BYBT	Boyabat	2.41	29	*e*Pn		Pb	01 10 32.0	-2.0
BOYT	Boyabat	2.42	31	*i* S		Sg	01 11 09.7	+1.4
KARA	Karaisali	2.55	145	*e*PN		Pb	01 10 34.1	-2.2
KARA	Karaisali	2.55	145	*e*Pn		Pb	01 10 34.1	-2.2
HAVZ	Havza	2.56	47	*i* P		Pb	01 10 35.2	-1.4
HAVZ				*i* S		Sg	01 11 13.8	+1.0
HAVZ	Havza	2.56	47	P		Pb	01 10 35.2	-1.4
PINB	Pinarbasi	2.57	104	*i* P		Pb	01 10 35.5	-1.4
PINB				*i* S		Sb	01 11 09.0	+0.3
PINB	Pinarbasi	2.57	104	P		Pb	01 10 35.5	-1.4
PINB				S		Sb	01 11 09.0	+0.3
AKO	Adana	2.58	137	*i* P		Pb	01 10 36.7	-2.2
AKO				*i* S		Sg	01 11 14.7	+1.4
BZK	Bozkurt	2.66	13	*e*PN		Pb	01 10 36.2	-2.0
BZK	Bozkurt	2.66	13	*e*Pn		Pb	01 10 36.2	-2.0
SARI	SarD1z-Kayseri	2.67	110	*e*PN		Pb	01 10 36.2	-2.3
TOKA	Tokat	2.69	68	*i* P		Pn	01 10 35.9	+2.0
TOKA	Tokat	2.69	68	P		Pn	01 10 35.9	+2.0
ERMK	Ermenek	2.73	185	*i* P		Pb	01 10 37.0	-2.5
ERMK	Ermenek	2.73	185	P		Pb	01 10 37.0	-2.5
CUALT	Altinyayla-SIV	2.75	91	*i* P		Pb	01 10 37.8	-2.0
CUALT				*i* S		Sg	01 11 19.1	+0.5
CUALT	Altinyayla-SIV	2.75	91	P		Pb	01 10 37.8	-2.0
KVT	Kavak	2.76	51	*e*PN		Pn	01 10 36.5	+1.5
KVT	Kavak	2.76	51	*e*Pn		Pn	01 10 36.5	+1.5
KOZT	Kozan	2.78	132	*e*PN		Pb	01 10 37.7	-2.6
KOZT	Kozan	2.78	132	*e*Pn		Pb	01 10 37.7	-2.6
ADVT	Abdulvahap	2.88	293	*e*PN		Pb	01 10 39.1	-2.9
ADVT	Abdulvahap	2.88	293	*e*Pn		Pb	01 10 39.1	-2.9
TVSB	Tavsanli	2.91	273	*e*PN		Pb	01 10 39.7	-2.9
TVSB	Tavsanli	2.91	273	*e*Pn		Pb	01 10 39.7	-2.9
GDZ	Gediz	2.92	266	*i* P		Pn	01 10 39.2	+2.1
GDZ	Gediz	2.92	266	P		Pn	01 10 39.2	+2.1
ERBA	Erbaa	3.02	63	*i* P		Pn	01 10 40.3	+1.8
ERBA				*i* S		Sg	01 11 26.5	-0.8
ERBA	Erbaa	3.02	63	P		Pn	01 10 40.3	+1.8
SAMS	Samsun-Alacam	3.02	48	*i* P		Pb	01 10 45.0	+0.7
SAMS				*i* S		Sn	01 11 15.7	+0.9
CUKAN	kangal_SIVAS	3.29	89	*i* P		Pn	01 10 43.8	+1.4
CUKAN				*i* S		Sg	01 11 38.0	+1.9
CUKAN	kangal_SIVAS	3.29	89	P		Pn	01 10 43.8	+1.4

ISN **02** *01:10:25.1±0.3,27.°73N×51.°79E, h0km±104km, ML3.7*
IDC **02** *01:10:37.6±0.9,28.°53N×51.°57E, h0km, mb3.9/15, mb1 4.1/21,mb1mx3.9/49,mbtmp3.9/21,ML3.6/5,MS3.0/2, Ms1 3.1/2,ms1mx2.3/42,Error ellipse: s-maj=19.4km s-min=15.9km az=172.0*
CSEM **02** *01:10:38.9±0.3,28.°53N×51.°39E, h5km, ML3.8, Error ellipse: s-maj=9.6km s-min=4.9km az=39.0*
ISCJB **02** *01:10:39.4±0.4,28.°53N±0.°04×51.°38E±0.°04, h24km, mb3.9/15,MS3.0/2, Error ellipse: s-maj=6.9km s-min=3.9km az=36.7*
DSN **02** *01:10:39.5±0.0,28.°68N×51.°46E, h15km, ML3.9, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
TEH **02** *01:10:40.3,28.°52N×51.°41E, h10km, ML3.7*
THR **02** *01:10:40.2±0.3,28.°68N×51.°46E, h30km±3km, ML3.8*
ISC 02 01:10:41.2±0.6,**28.°52N**±0.°06×**51.°44E**±0.°05,**h24km**,**n63,** σ1§**21**/68,**mb3.9**/15,**Southern Iran**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
AHBU	**AHRAM**	**0.36**	**339**	*e*Pg	**Pb**	**01 10 46.8**		**-2.3**
GHIR	**Ghir-Karzin**	**1.38**	**100**	*e*Pg	**Pb**	**01 11 05.8**		**-0.6**
GHIR				*e*Sg	**Sb**	**01 11 24.5**		**+0.9**
GHIR				AML	AML	01 11 28.3		
	comp=E,1μm,0.6s							
GHIR				AML	AML	01 11 32.6		
	comp=N,1μm,0.5s							
GHIR	**Ghir-Karzin**	**1.38**	**100**	*e*Pg	**Pb**	**01 11 05.8**		**-0.6**
GHIR				*e*Sg	**Sb**	**01 11 24.5**		**+0.9**
ISRV	**Sarvestan**	**1.69**	**59**	*e*Pn	**Pn**	**01 11 10.0**		**+0.4**
ISRV				*e*Sg	**Sb**	**01 11 34.1**		**+1.2**
ISRV				*e*AMB	AMB	01 11 52.2		
	comp=Z,11μm,0.4s							
ISRV	**Sarvestan**	**1.69**	**59**	*e*Pn	**Pn**	**01 11 10.0**		**+0.4**
ISRV				*e*Sg	**Sb**	**01 11 34.1**		**+1.2**
IRAM	**Ramesheh**	**3.37**	**14**	*e*Pn	**Pn**	**01 11 32.5**		**-0.1**
IRAM				*e*AMB	AMB	01 12 28.5		
	comp=Z,1μm,0.4s							
IRAM	**Ramesheh**	**3.37**	**14**	*e*Pn	**Pn**	**01 11 32.5**		**-0.1**
ISAD	**Sadrabad**	**3.90**	**29**	*e*Pn	**Pn**	**01 11 40.3**		**+0.5**
ISAD				*e*AMB	AMB	01 12 51.6		
	comp=Z,738nm,0.4s							
ISAD	**Sadrabad**	**3.90**	**29**	*e*Pn	**Pn**	**01 11 40.3**		**+0.5**

IMEH	**Mehriz**	**3.96**	**43**	*e*Pn	**Pn**	**01 11 41.6**		**+0.9**
IMEH	**Mehriz**	**3.96**	**43**	*e*Pn	**Pn**	**01 11 41.6**		**+0.9**
IPIR	**Pirpir**	**4.17**	**354**	*e*Pn	**Pn**	**01 11 43.9**		**+0.3**
IPIR				*e*AMB	AMB	01 12 33.8		
	comp=Z,1μm,0.3s							
IPIR	**Pirpir**	**4.17**	**354**	*e*Pn	**Pn**	**01 11 43.9**		**+0.3**
NASN	**Na'in**	**4.42**	**15**	*e*Pn	**Pn**	**01 11 45.9**		**-1.2**
NASN	**Na'in**	**4.42**	**15**	*e*Pn	**Pn**	**01 11 45.9**		**-1.2**
IZEF	**Zefreh**	**4.42**	**10**	*e*Pn	**Pn**	**01 11 47.1**		**+0.1**
IZEF	**Zefreh**	**4.42**	**10**	*e*Pn	**Pn**	**01 11 47.1**		**+0.1**
ICHK	**Chekchek**	**4.51**	**34**	*e*Pn	**Pn**	**01 11 48.4**		**+0.3**
ICHK				*e*AMB	AMB	01 12 04.6		
	comp=Z,582nm,0.3s							
ICHK	**Chekchek**	**4.51**	**34**	*e*Pn	**Pn**	**01 11 48.4**		**+0.3**
IKLH	**Kolahrood**	**4.78**	**1**	*e*Pn	**Pn**	**01 11 51.9**		**0.0**
IKLH				*e*AMB	AMB	01 13 08.1		
	comp=Z,471nm,0.3s							
IKLH	**Kolahrood**	**4.78**	**1**	*e*Pn	**Pn**	**01 11 51.9**		**0.0**
KRBR	**Kerman**	**4.87**	**71**	*e*Pn	**Pn**	**01 11 53.4**		**+0.1**
KRBR	**Kerman**	**4.87**	**71**	*e*Pn	**Pn**	**01 11 53.3**		**+0.1**
BANOM	**Banah**	**5.04**	**120**	*i* P	**Pn**	**01 11 55.1**		**-0.2**
	SNR=27							
BANOM	**Banah**	**5.04**	**120**	P	**Pn**	**01 11 55.1**		**-0.2**
	SNR=27							
NAZ	**Nazwa, Dubai**	**5.16**	**132**	*i* P	**Pn**	**01 11 58.6**		**+1.7**
	SNR=7.0							
NAZ	**Nazwa, Dubai**	**5.16**	**132**	P	**Pn**	**01 11 58.6**		**+1.7**
	SNR=7.0							
NSR	**Nassriya**	**5.23**	**300**	*e*Pn	**Pn**	**01 11 54.5**		**-3.4**
	SNR=3.0							
NSR				*e*Sn	**Sn**	**01 12 57.0**		**-0.5**
	SNR=3.0							
FAQ	**Al Faqa, Dubai**	**5.29**	**134**	P	**Pn**	**01 12 00.2**		**+1.5**
FAQ	**Al Faqa, Dubai**	**5.29**	**134**	P	**Pn**	**01 12 00.2**		**+1.5**
UOSS	**Minazif**	**5.55**	**129**	P	**Pn**	**01 12 02.3**		**0.0**
	SNR=11							
HATD	**Hatta, Dubai**	**5.58**	**130**	P	**Pn**	**01 12 03.3**		**+0.5**
HATD	**Hatta, Dubai**	**5.58**	**130**	P	**Pn**	**01 12 03.3**		**+0.5**
ASHO	**Ashiyiah**	**5.63**	**132**	*i* P	**Pn**	**01 12 04.2**		**+0.8**
	SNR=10							
ASHO	**Ashiyiah**	**5.63**	**132**	P	**Pn**	**01 12 04.2**		**+0.8**
	SNR=10							
DAMV	**Damavand**	**7.10**	**3**	*e*Pn	**Pn**	**01 12 22.5**		**-1.3**
DAMV	**Damavand**	**7.10**	**3**	*e*Pn	**Pn**	**01 12 22.5**		**-1.3**
SNGE	**Sanandaj**	**7.42**	**333**	*e*Pn	**Pn**	**01 12 27.4**		**-0.7**
SNGE	**Sanandaj**	**7.42**	**333**	*e*Pn	**Pn**	**01 12 27.4**		**-0.7**
BHD	**Baghdad**	**7.69**	**310**	*e*Pn	**Pn**	**01 12 31.0**		**-0.7**
	SNR=39							
BHD				*e*Sn	**Sn**	**01 13 59.0**		**+0.9**
	SNR=3.0							
WSAR	**Wadi Sarin**	**8.34**	**127**	Pn	**Pn**	**01 12 39.9**		**-0.8**
	comp=Z,2.4nm,0.3s,baz=318,slow=11,SNR=33							
WSAR				Sn	**Sn**	**01 14 08.9**		**-5.2**
	comp=Z,0.6nm,0.3s,baz=243,slow=18,SNR=3.2							
GEYT	**Alibeck**	**10.91**	**29**	Pn	**Pn**	**01 13 16.1**		**+0.2**
	comp=Z,0.1nm,0.3s,baz=208,slow=12,SNR=3.2							
MMAI	**Mount Meron Ar**	**14.50**	**292**	Pn	**Pn**	**01 14 06.0**		**+1.1**
	comp=Z,0.2nm,0.3s,baz=113,slow=14,SNR=3.2							
KBZ	**Khabaz**	**16.65**	**338**	Pn	**Pn**	**01 14 33.8**		**+1.0**
	comp=Z,0.2nm,0.3s,baz=155,slow=6.6,SNR=7.5							
KVAR	**Kislovodsk Arr**	**16.92**	**338**	Pn	**P**	**01 14 37.3**		**-1.0**
	baz=248,slow=11,SNR=4.8							
BRTR	**Keskin Array B**	**18.46**	**312**	P	**Pn**	**01 14 56.2**		**+0.8**
	baz=133,slow=13,SNR=5.1							
AKTO	**Aktyubinsk**	**22.44**	**11**	P	**P**	**01 15 38.6**		**+0.4**
	comp=Z,2.2nm,0.7s,baz=170,slow=15,SNR=4.8							
IDI	**Anoyia**	**23.49**	**293**	P	**P**	**01 15 51.6**		**+2.4**
	comp=Z,5.0nm,0.7s,baz=94,slow=12,SNR=5.1							
MLR	**Muntele Rosu**	**26.32**	**317**	P	**P**	**01 16 17.1**		**+1.9**
	comp=Z,0.2nm,0.5s,baz=107,slow=14,SNR=2.5							
BVAR	**Borovoye Array**	**28.20**	**25**	P	**P**	**01 16 31.9**		**+0.1**
	comp=Z,1.4nm,0.5s,baz=220,slow=8.1,SNR=9.0							
KURBB	**Kurchatov Arra**	**30.09**	**35**	P	**P**	**01 16 48.6**		**0.0**
	comp=Z,1.0nm,0.7s,baz=236,slow=9.1,SNR=14							
MKAR	**Makanchi Array**	**30.20**	**44**	P	**P**	**01 16 48.2**		**-1.5**
	comp=Z,0.3nm,0.5s,baz=247,slow=5.6,SNR=3.4							
ZALV	**Zalesovo Beam**	**35.16**	**34**	P	**P**	**01 17 31.4**		**-1.5**
	comp=Z,1.7nm,0.5s,baz=246,slow=9.3,SNR=8.8							
FINES	**FINESS Array B**	**37.00**	**340**	P	**P**	**01 17 48.2**		**-0.3**
	comp=Z,4.4nm,0.5s,baz=145,slow=9.8,SNR=49							
NOA	**NORSAR Array B**	**42.10**	**332**	LR	LR	01 38 12.3		
	comp=Z,10nm,20.0s,baz=0.0,slow=39							
ARCES	**ARCESS Array B**	**43.70**	**347**	P	**P**	**01 18 43.9**		**+0.1**
	comp=Z,0.8nm,0.5s,baz=153,slow=8.2,SNR=14							
CMAR	**Chiang Mai Arr**	**44.46**	**92**	LR	LR	01 40 24.6		
	comp=Z,31nm,19.0s,baz=235,slow=40							
TORD	**Torodi Ar. Bea**	**48.61**	**262**	P	**P**	**01 19 24.5**		**+1.3**
	comp=Z,1.1nm,0.6s,baz=59,slow=8.1,SNR=11							
DBIC	**Dimbokro**	**57.33**	**259**	P	**P**	**01 20 27.1**		**-0.5**
	comp=Z,4.5nm,0.8s,baz=46,slow=11,SNR=6.0							
ILAR	**Eielson Array**	**85.92**	**8**	P	**P**	**01 23 18.2**		**-0.7**
	comp=Z,0.3nm,0.7s,baz=328,slow=3.2,SNR=3.3							
YKA	**Yellowknife Ar**	**88.61**	**354**	P	**P**	**01 23 31.6**		**-0.2**
	comp=Z,0.6nm,0.6s,baz=12,slow=5.7,SNR=4.6							
WRA	**Warramunga Arr**	**93.36**	**111**	P	**P**	**01 23 56.2**		**+1.5**
	comp=Z,0.3nm,0.8s,baz=312,slow=4.2,SNR=4.0							
ASAR	**Alice Springs**	**94.81**	**114**	P	**P**	**01 24 00.6**		**-0.7**
	comp=Z,0.3nm,0.6s,baz=305,slow=5.3,SNR=4.0							

MEX 02 01:36:30.7±0.8,**14.°17N**×**91.°94W**,**h10km**±143km,**MD3.7, Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
PCIG		**1.96**	**321**	*e*P	Pn	01 37 01.1		-2.9
PCIG				*e*S	Sn	01 37 23.8		-4.9
CCIG	**Comitan**	**2.10**	**355**	*e*P	Pn	01 37 03.3		-2.9
CCIG				*e*S	Sn	01 37 27.9		-4.7
TGIG		**2.83**	**336**	*e*P	Pn	01 37 13.9		-2.2
TGIG				*e*S	Sn	01 37 46.8		-3.5

IDC **02** *01:50:02.4±0.7,33.°98S×72.°33W, h0km, mb4.5/6, mb1 4.5/9,mb1mx4.2/23,mbtmp4.4/9,ML4.1/3,MS3.7/7, Ms1 3.6/7,ms1mx3.3/27,Error ellipse: s-maj=31.3km s-min=17.3km az=86.0*
ISCJB **02** *01:50:04.5±1.0,33.°92S±0.°03×72.°48W±0.°04, h19km±7km, mb4.4/33,MS3.9/5,Error ellipse: s-maj=5.7km s-min=4.9km az=27.1*
NEIC **02** *01:50:04.0,33.°88S×72.°38W, h18km, mb4.4/31, ML4.4(GUC),After GUC.*
NEIC Felt [III] at Litueche, Navidad and Pichilemu; [II] at Longavi, Parral, Rancagua, San Antonio and San Fernando.
GUC **02** *01:50:04.0±0.6,33.°88S×72.°38W, h18km±5km, ML4.4*
ISC 02 01:50:06.4±1.4,**34.°00S**±0.°03×**72.°46W**±0.°07,**h26**km±9km, **n98,**σ1§**49**/119,**mb4.4**/33,**MS3.8**/5,**5C-1D, Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
CHPI	**Pichilemu**	**0.54**	**137**	*e*P	**Pb**	**01 50 16.1**		**-1.3**
CHPI				*i* S	**Sb**	**01 50 25.1**		**+0.3**
NICH	**Los Niches**	**1.43**	**135**	⇑*i*P	**Pn**	**01 50 30.9**		**+0.3**
NICH				*i* S	**Sb**	**01 50 51.0**		**+0.9**
RCDM	**Rinconada Maip**	**1.46**	**70**	⇓*i*P	**Pn**	**01 50 29.2**		**-2.0**
RCDM				*i* S	**Sn**	**01 50 48.1**		**-1.4**
RCDM				IAML		01 50 51.7		
	comp=N,7μm,0.3s							
TALC	**Talca**	**1.55**	**154**	⇑*i*P	**Pb**	**01 50 33.5**		**-1.0**
TALC				*i* S	**Sb**	**01 50 54.2**		**+0.5**
ANTU	**Antumapu**	**1.58**	**75**	*e*P	**Pn**	**01 50 31.4**		**-1.3**
ANTU				*i* S	**Sn**	**01 50 52.0**		**-0.3**
ANTU				IAML		01 50 56.8		
	comp=E,12μm,0.5s							
ROC1	**El Roble**	**1.58**	**50**	*e*Pn	**Pn**	**01 50 30.4**		**-2.6**
ROCH	**El Roble**	**1.58**	**50**	⇑*i*P	**Pn**	**01 50 31.0**		**-2.0**
ROCH				*i* S	**Sn**	**01 50 51.6**		**-1.1**
ROCH				IAML		01 51 01.6		
	comp=N,10μm,0.5s							
PEL	**Peldehue**	**1.71**	**61**	⇑*i*P	**Pn**	**01 50 33.5**		**-1.1**
PEL				*i* S	**Sn**	**01 50 55.2**		**-0.3**
PEL				IAML		01 51 06.9		
	comp=N,11μm,0.7s							
CLCH	**Cerro Calan**	**1.71**	**70**	⇑*i*P	**Pn**	**01 50 33.4**		**-1.2**
CLCH				*i* S	**Sn**	**01 50 55.7**		**+0.1**
CLCH				IAML		01 51 09.5		
	comp=N,8μm,0.7s							
FCH	**Farellones**	**1.92**	**70**	*e*P	**Pn**	**01 50 36.9**		**-0.9**
FCH				*i* S	**Sn**	**01 51 00.7**		**-0.7**
FCH				IAML		01 51 10.8		
	comp=N,5μm,0.6s							
AUSP	**Uspallata**	**3.12**	**56**	*i* P	**Pn**	**01 50 55.2**		**+0.9**

AAGR	**Agrelo**	**3.16**	**74**	*i* P	**Pn**	**01 50 54.6**		**0.0**
ARCO	**CERRO ARCO**	**3.16**	**70**	*i* P	**Pn**	**01 50 55.0**		**+0.3**
ARCO				*i* S	**Sb**	**01 51 46.1**		**+5.9**
ARCO				IAML		01 51 50.9		
	comp=Z,998nm,0.5s							
AVIZ	**Vizcacheras**	**3.32**	**82**	*i* P	**Pn**	**01 50 56.0**		**-0.8**
ASAL	**Salagasta**	**3.34**	**66**	*i* P	**Pn**	**01 50 57.6**		**+0.6**
RTLS	**Leoncito**	**3.44**	**51**	*i* P	**Pn**	**01 50 59.8**		**+1.1**
RTCV	**Cerro Valdivia**	**3.92**	**58**	*i* P	**Pn**	**01 51 06.0**		**+1.0**
RTLL	**Cerro Villicun**	**4.28**	**53**	*i* P	**Pn**	**01 51 10.9**		**+0.9**
ACCO	**Cerro Coronel**	**4.45**	**41**	*i* P	**Pn**	**01 51 13.5**		**+0.9**
AMOG	**MOGNA**	**4.53**	**49**	*i* P	**Pn**	**01 51 13.9**		**+0.6**
AMOG				*i* S	**Sb**	**01 52 19.6**		**+0.2**
AROD	**Rodeo**	**4.58**	**34**	*i* P	**Pn**	**01 51 15.0**		**+0.7**
ACAN	**Cantantal**	**4.74**	**70**	*i* P	**Pn**	**01 51 16.5**		**+0.2**
ACDV	**Cuesta del Vie**	**4.75**	**37**	*i* P	**Pn**	**01 51 16.8**		**+0.3**
ACDV				*i* S	**Sb**	**01 52 24.6**		**-1.2**
LCO	**Las Campanas**	**5.19**	**17**	*e*Pn	**Pn**	**01 51 19.9**		**-2.7**
LCO				*e*Pg	**Pb**	**01 51 39.2**		**+2.5**
LCO				*e*Sn	**Sn**	**01 52 17.8**		**-4.0**
LCO				*e*Sg	**Sb**	**01 52 42.2**		**+3.6**
AVFE	**Valle Fertil**	**5.38**	**53**	*i* P	**Pn**	**01 51 25.9**		**+0.7**
AVFE				IAML		01 52 48.1		
	comp=Z,197nm,0.7s							
AGUA	**GUANDACOL**	**5.62**	**38**	*i* P	**Pn**	**01 51 28.4**		**-0.1**
AGUA				*i* S	**Sb**	**01 52 44.6**		**-6.3**
MRA	**San Martin**	**5.86**	**76**	*i* P	**Pn**	**01 51 31.5**		**-0.3**
VCA	**Vinchina**	**6.38**	**36**	*i* P	**Pn**	**01 51 38.6**		**-0.3**
VCA				IAML		01 53 22.5		
	comp=Z,204nm,0.7s							
PLCA	**Paso Flores**	**6.89**	**168**	Pn	**Pn**	**01 51 45.9**		**0.0**
	comp=Z,0.7nm,0.3s,baz=358,slow=11,SNR=12							
PLCA				Lg	Lg	01 53 40.4		
	comp=Z,0.3nm,0.3s,baz=300,slow=20,SNR=1.7							
PLCA				LR	LR	01 54 00.9		
	comp=Z,114nm,19.4s,baz=12,slow=35							
PLCA	**Paso Flores**	**6.89**	**168**	*e*Pn	**Pn**	**01 51 47.5**		**+1.7**
PLCA				Lg	Lg	01 53 40.4		
TCA	**Tanti**	**7.14**	**70**	*i* P	**Pn**	**01 51 49.1**		**-0.2**
TCA				IAML		01 53 39.2		
	comp=Z,81nm,0.6s							
TRQA	**Tornquist**	**9.40**	**119**	*e*Pn	**Pn**	**01 52 21.3**		**+1.1**
TRQA				*e*Lg	Lg	01 55 00.8		
AHML	**Horco Molle**	**9.46**	**42**	*i* P	**Pn**	**01 52 20.3**		**-0.7**
LVC	**Limon Verde**	**11.77**	**16**	Pn	Pn	01 52 46.7		-6.2
	comp=Z,17nm,0.3s,baz=174,slow=11,SNR=2.9							
LVC	**Limon Verde**	**

KURK					PKPab	**PKPab**	**02 10 10.0**	**-2.9**
KSH	**Kashi**	**154.19**	**68**	*e*PKPbc	**PKPdf**	**02 09 56.4**	**+0.5**
KSH				*e*PP	**PP**	**02 13 54.6**	**+1.1**
KSH				AMB	AMB		
	comp=Z,62nm,3.3s						
ZALV	**Zalesovo Beam**	**154.41**	**32**	PKP	**PKPdf**	**02 09 55.7**	**+0.1**
	comp=Z,0.4nm,0.6s,baz=297,slow=6.3,SNR=3.6						
ZALV				PKPbc	**PKiKP**	**02 10 04.3**	**+0.3**
	comp=Z,2.5nm,0.5s,baz=300,slow=3.4,SNR=13						
ZALV				PKPab	**PKPab**	**02 10 17.9**	**-0.3**
	comp=Z,3.0nm,0.7s,baz=308,slow=4.0,SNR=5.9						
MKAR	**Makanchi Array**	**157.02**	**49**	PKP	**PKPdf**	**02 09 56.4**	**-2.9**
	comp=Z,0.4nm,0.9s,baz=309,slow=3.4,SNR=2.0						
MKAR				PKPab	**PKPab**	**02 10 29.5**	**-0.3**
	comp=Z,1.5nm,0.6s,baz=306,slow=3.4,SNR=7.7						
WMQ	**Urumqi**	**161.74**	**52**	*e*PKP	**PKPdf**	**02 10 01.1**	**-3.9**
SONM	**Songino Array**	**166.15**	**3**	PKPab	**PKPab**	**02 11 09.9**	**+0.3**
	comp=Z,0.7nm,0.7s,baz=300,slow=2.8,SNR=3.5						
HHC	**Hu-ho-hao-te**	**172.45**	**336**	*e*PKP	**PKPdf**	**02 10 15.5**	**+2.5**

ISK ***02*** *01:53:51.9, 39°.09N×29°.00E, h8km, MD2.8*
DDA ***02*** *01:53:51.4, 39°.11N×28°.99E, h7km, Md3.2*
CSEM ***02*** *01:53:52.1±0.1, 39°.12N×29°.01E, h2km, MD3.2, Error ellipse: s-maj=2.2km s-min=2.1km az=14.0*

ISC 02 01:53:52.1±1.0, 39°.12N±0°.02×29°.00E±0°.02, h7km±9km, n59, σ0s58/79, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.23**	**250**	*i* P	**Pg**	**01 53 56.9**	**+0.1**
DEMI				*i* S	**Sg**	**01 54 00.3**	**+0.4**
DEMI	**Demirci**	**0.23**	**250**	P	**Pg**	**01 53 56.9**	**+0.1**
DEMI				S	**Sg**	**01 54 00.3**	**+0.4**
GEDZ	**Gediz**	**0.33**	**104**	*e*PG	**Pg**	**01 53 58.9**	**+0.3**
GEDZ				*e*SG	**Sg**	**01 54 03.6**	**+0.6**
GEDZ	**Gediz**	**0.33**	**104**	*e*Pg	**Pg**	**01 53 58.9**	**+0.3**
GEDZ				*e*Sg	**Sg**	**01 54 03.6**	**+0.6**
GDZ	**Gediz**	**0.38**	**95**	*i* P	**Pg**	**01 53 59.0**	**-0.5**
GDZ				*i* S	**Sg**	**01 54 04.2**	**-0.3**
GDZ	**Gediz**	**0.38**	**95**	P	**Pg**	**01 53 59.0**	**-0.5**
GDZ				S	**Sg**	**01 54 04.2**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**48**	*e*PG	**Pg**	**01 54 01.1**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**48**	*e*Pg	**Pg**	**01 54 01.1**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG	**Pg**	**01 54 04.7**	**-0.2**
KULA				*e*SG	**Sg**	**01 54 13.6**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*Pg	**Pg**	**01 54 04.7**	**-0.2**
KULA				*e*Sg	**Sg**	**01 54 13.6**	**+0.1**
KHL	**Karahalli**	**0.90**	**153**	*e*PG	**Pg**	**01 54 09.2**	**-0.2**
KHL				*e*SG	**Sb**	**01 54 21.6**	**-0.6**
KHL	**Karahalli**	**0.90**	**153**	*e*Pg	**Pg**	**01 54 09.2**	**-0.2**
KHL				*e*Sg	**Sb**	**01 54 21.6**	**-0.6**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pb**	**01 54 10.6**	**-0.4**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pb**	**01 54 10.6**	**-0.4**
BALB	**Balikesir**	**1.01**	**301**	*e*PG	**Pn**	**01 54 12.4**	**-0.3**
BALB	**Balikesir**	**1.01**	**301**	*e*Pg	**Pn**	**01 54 12.4**	**-0.3**
IGD	**Bursa**	**1.15**	**8**	*i* P	**Pg**	**01 54 13.0**	**-1.2**
IGD				*i* S	**Sb**	**01 54 30.0**	**+0.6**
BALY	**Balya**	**1.23**	**300**	*i* P	**Pb**	**01 54 15.3**	**-0.5**
BALY				*i* S	**Sg**	**01 54 31.4**	**-0.4**
BALY	**Balya**	**1.23**	**300**	P	**Pb**	**01 54 15.3**	**-0.5**
BALY				S	**Sg**	**01 54 31.4**	**-0.4**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pg**	**01 54 16.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pg**	**01 54 16.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**01 54 15.7**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**01 54 15.7**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pg**	**01 54 16.8**	**+0.5**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pg**	**01 54 16.8**	**+0.5**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pg**	**01 54 17.3**	**+0.9**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pg**	**01 54 17.3**	**+0.9**
BORA	**Eskisehir**	**1.36**	**56**	*i* P	**Pn**	**01 54 16.9**	**-0.6**
BORA				*i* S	**Sn**	**01 54 36.1**	**+0.3**
BORA	**Eskisehir**	**1.36**	**56**	P	**Pn**	**01 54 16.9**	**-0.6**
BORA				S	**Sn**	**01 54 36.1**	**+0.3**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN	**Pg**	**01 54 18.5**	**+0.1**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn	**Pg**	**01 54 18.5**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pg**	**01 54 19.4**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pg**	**01 54 19.4**	**-0.1**
DNZL	**Cakiroluk**	**1.43**	**178**	*i* P	**Pb**	**01 54 18.9**	**-0.3**
DNZL				*i* S	**Sg**	**01 54 38.8**	**+0.7**
DNZL	**Cakiroluk**	**1.43**	**178**	P	**Pb**	**01 54 18.9**	**-0.3**
DNZL				S	**Sg**	**01 54 38.8**	**+0.7**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pg**	**01 54 19.6**	**-0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pg**	**01 54 19.7**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e*PN	**Pn**	**01 54 18.8**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e*Pn	**Pn**	**01 54 18.8**	**-0.2**
EDC	**Edincik**	**1.50**	**325**	*e*PN	**Pb**	**01 54 20.6**	**+0.2**
EDC	**Edincik**	**1.50**	**325**	*e*Pn	**Pb**	**01 54 20.6**	**+0.2**
KNL	**Bal¯kesir**	**1.61**	**316**	*i* P	**Pn**	**01 54 20.5**	**-0.5**
KNL				*i* S	**Sg**	**01 54 44.3**	**+0.3**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**01 54 23.8**	**+0.8**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**01 54 23.8**	**+0.8**
AYVA	**Ayvalik**	**1.80**	**277**	*i* P	**Pg**	**01 54 26.4**	**-0.3**
AYVA				*i* S	**Sg**	**01 54 50.8**	**+0.7**
AYVA	**Ayvalik**	**1.80**	**277**	P	**Pg**	**01 54 26.4**	**-0.3**
KRBG	**Karabiga-Canak**	**1.82**	**315**	*e*PN	**Pb**	**01 54 24.9**	**-0.9**
KRBG	**Karabiga-Canak**	**1.82**	**315**	*e*Pn	**Pb**	**01 54 24.9**	**-0.9**
MRMT	**Marmara Adasi**	**1.83**	**324**	*e*PN	**Pn**	**01 54 24.3**	**+0.3**
MRMT	**Marmara Adasi**	**1.83**	**324**	*e*Pn	**Pn**	**01 54 24.3**	**+0.3**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN	**Pn**	**01 54 26.7**	**+1.2**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*Pn	**Pn**	**01 54 26.7**	**+1.2**
DGB	**¯zmir**	**1.97**	**238**	*i* P	**Pb**	**01 54 28.7**	**+0.4**
DGB				*i* S	**Sg**	**01 54 57.0**	**+1.5**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN	**Pn**	**01 54 26.7**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn	**Pn**	**01 54 26.7**	**+0.5**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*PN	**Pb**	**01 54 29.9**	**-1.4**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*Pn	**Pb**	**01 54 29.9**	**-1.4**
MDUB	**Mudurnu**	**2.16**	**51**	*e*PN	**Pn**	**01 54 29.4**	**+0.7**
MDUB	**Mudurnu**	**2.16**	**51**	*e*Pn	**Pn**	**01 54 29.4**	**+0.7**

IDC ***02*** *01:58:56.8±1.3, 7°.93S×129°.86E, h0km, mb3.9/3, mb1 3.8/6, mb1mx3.5/43, mbtmp3.7/6, ML3.6/3, MS3.0/1, Ms1 3.0/1, ms1mx2.3/39, Error ellipse: s-maj=54.2km s-min=24.5km az=85.0*

ISC 02 01:59:00.0±1.0, 8°.10S±0°.07×129°.9E±0°.2, h22km, n7, σ2s01/10, mb4.2/4, Timor Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.79**	**202**	Pn	**Pn**	**02 01 35.3**	**+2.1**
	0.5nm,0.3s,baz=32,slow=10,SNR=13						
FITZ				Sn	**Sn**	**02 03 30.0**	**-3.3**
	1.0nm,0.3s,baz=87,slow=16,SNR=4.0						
FITZ				LR	LR	02 07 16.6	
	comp=Z,70nm,18.1s,baz=50,slow=46						
WRA	**Warramunga Arr**	**12.52**	**161**	Pn	**Pn**	**02 01 58.0**	**+0.9**
	0.4nm,0.3s,baz=337,slow=13,SNR=15						
WRA				Sn	**Sn**	**02 04 15.0**	**-1.0**
	0.9nm,0.3s,baz=332,slow=22,SNR=6.8						
ASAR	**Alice Springs**	**15.94**	**167**	P	**Pn**	**02 02 45.1**	**+2.0**
	0.2nm,0.3s,baz=345,slow=10.0,SNR=5.8						
ASAR				Sn	**Sn**	**02 05 38.5**	**-0.9**
	0.2nm,0.3s,baz=347,slow=26,SNR=4.3						
SONM	**Songino Array**	**59.46**	**342**	P	**P**	**02 09 00.3**	**-1.0**
	0.3nm,0.4s,baz=146,slow=5.8,SNR=3.4						
PETK	**Petropavlovsk-**	**65.38**	**18**	P	**P**	**02 09 39.5**	**-1.2**
	1.5nm,0.7s,baz=169,slow=3.0,SNR=3.6						
KSH	**Kashi**	**68.78**	**318**	*e*P	**P**	**02 10 04.6**	**+1.8**
KSH				pmax	pmax		
	comp=Z,5.0nm,0.9s						
MKAR	**Makanchi Array**	**69.10**	**327**	P	**P**	**02 10 04.1**	**-0.4**
	comp=Z,0.6nm,0.5s,baz=132,slow=6.0,SNR=6.1						

SCB ***02*** *02:00:35.5±0.1, 19°.39S×66°.40W, h250km, Ml3.5/2, Error ellipse: s-maj=5.4km s-min=2.7km az=54.0*
ISCJB ***02*** *02:00:37.2±0.5, 19°.68S±0°.05×66°.51W±0°.07, h250km, mb3.9/5, Error ellipse: s-maj=9.4km s-min=6.2km az=171.1*
IDC ***02*** *02:00:37.5±0.8, 19°.62S×66°.62W, h244km±12km, mb3.8/5, mb1 3.7/9, mb1mx3.4/31, mbtmp4.2/9, Error ellipse: s-maj=23.5km s-min=10.3km az=102.0*
NEIC ***02*** *02:00:38.1±0.7, 19°.69S×66°.49W, h246km±8km, mb4.1/2, Error ellipse: s-maj=18.6km s-min=9.7km az=113.0*

ISC 02 02:00:38.0±0.7, 19°.62S±0°.05×66°.68W±0°.08, h250km, n23, σ1s35/30, mb4.1/5, 1C, Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MOCB	**Mochara**	**1.89**	**149**	*e*Pn	**Pn**	**02 01 22.3**	**+2.3**
MOCB				*e*Sn	**S**	**02 01 55.1**	**+2.0**
	100nm,0.5s						
BBOJ	**La Paz, Jacaqu**	**3.00**	**331**	*e*Pn	**Pn**	**02 01 32.4**	**+1.3**
BBOE	**La Paz, Chanca**	**3.06**	**336**	*e*Pn	**Pn**	**02 01 33.6**	**+1.9**
BBOD	**La Paz, Gloria**	**3.49**	**328**	*e*Pn	**Pn**	**02 01 38.2**	**+1.7**
BBOD				*e*Sn	**S**	**02 02 23.1**	**+0.4**
LPAZ	**La Paz**	**3.59**	**337**	P	**Pn**	**02 01 39.1**	**+1.3**
	2.5nm,0.3s,baz=135,slow=6.9,SNR=88						
LPAZ				S	**S**	**02 02 24.4**	**-0.7**
	1.3nm,0.3s,baz=320,slow=14,SNR=7.9						
LPAZ	**La Paz**	**3.59**	**337**	P	**Pn**	**02 01 39.1**	**+1.3**
LPAZ				*e*Sn	**S**	**02 02 24.4**	**-0.7**
LVC	**Limon Verde**	**3.63**	**215**	P	**Pn**	**02 01 39.1**	**+1.3**
	191nm,0.3s,baz=43,slow=8.4,SNR=19						
LVC				S	**S**	**02 02 24.2**	**-1.1**
	489nm,0.3s,baz=113,slow=22,SNR=17						
LVC	**Limon Verde**	**3.63**	**215**	*e*Pn	**Pn**	**02 01 38.2**	**+0.4**
LVC				*e*Sn	**S**	**02 02 23.0**	**-2.3**
BBOB	**La Paz, Bander**	**3.73**	**338**	*e*Pn	**Pn**	**02 01 40.4**	**+1.2**
BBOB				*e*Sn	**S**	**02 02 26.8**	**-0.9**
	71nm,0.7s						
SIV	**San Ignacio**	**6.45**	**57**	P	**Pn**	**02 02 11.6**	**-0.2**
	5.3nm,0.3s,baz=264,slow=11,SNR=57						
SIV	**San Ignacio**	**6.45**	**57**	*e*Pn	**Pn**	**02 02 11.2**	**-0.6**
LCO	**Las Campanas**	**10.04**	**201**	*e*Pn	**Pn**	**02 02 57.6**	**+0.4**
LCO				*e*S	S	02 04 42.5	-7.7
TRQA	**Tornquist**	**18.82**	**168**	*e*P	**P**	**02 04 37.2**	**-2.1**
	4.7nm,0.9s						
PTGA	**Pitinga**	**19.90**	**20**	P	**P**	**02 04 49.9**	**-1.1**
	0.4nm,0.3s,baz=188,slow=18,SNR=5.2						
RCBR	**Riachuelo**	**32.92**	**70**	P	**P**	**02 06 49.6**	**+0.2**
	6.8nm,0.6s,baz=342,slow=9.7,SNR=6.1						
RCBR	**Riachuelo**	**32.92**	**70**	*e*P	**P**	**02 06 48.2**	**-1.2**
	2.5nm,0.5s						
DBIC	**Dimbokro**	**66.20**	**73**	P	**P**	**02 10 58.8**	**-0.8**
	2.7nm,0.7s,baz=232,slow=2.6,SNR=7.6						
TORD	**Torodi Ar. Bea**	**74.76**	**70**	P	**P**	**02 11 50.2**	**-0.9**
	2.9nm,0.4s,baz=252,slow=5.2,SNR=121						
BOSA	**Boshof**	**82.47**	**118**	P	**P**	**02 12 34.0**	**+0.8**
	1.7nm,0.5s,baz=258,slow=2.3,SNR=9.1						
ESDC	**Sonseca Array**	**83.04**	**44**	P	**P**	**02 12 35.5**	**-0.1**
	0.4nm,0.7s,baz=238,slow=6.0,SNR=3.7						
WRA	**Warramunga Arr**	**135.61**	**209**	PKP	**PKPdf**	**02 19 31.3**	**+1.9**
	0.4nm,0.8s,baz=163,slow=1.8,SNR=3.0						
ZALV	**Zalesovo Beam**	**139.37**	**26**	PKP	**PKPdf**	**02 19 36.5**	**+1.4**
	0.4nm,0.3s,baz=262,slow=1.4,SNR=3.9						
SONM	**Songino Array**	**151.30**	**10**	PKPbc	**PKPbc**	**02 20 02.4**	**+0.4**
	1.1nm,0.5s,baz=299,slow=1.6,SNR=8.1						

ISCJB ***02*** *02:04:50.2±0.9, 67°.53N±0°.04×33°.5E±0°.1, h0km, Error ellipse: s-maj=7.2km s-min=5.3km az=7.1*
KOLA ***02*** *02:04:50.1, 67°.63N×34°.02E, h0km*
HEL ***02*** *02:04:50.1±0.4, 67°.61N×34°.03E, h0km, ML2.4, Explosion*
CSEM ***02*** *02:04:51.6±0.5, 67°.54N×33°.57E, h2km, ML2.4, Error ellipse: s-maj=8.4km s-min=5.7km az=89.0, Mining explosion.*
UPP ***02*** *02:04:51.2±2.7, 67°.61N×33°.80E, h0km, ML1.9, Suspected explosion*
NAO ***02*** *02:04:54.1±1.7, 67°.60N×33°.29E, ML2.9*

ISC 02 02:04:50.9±1.5, 67°.71N±0°.04×33°.60E±0°.07, h0km, n50, σ1s37/77, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
APA	**Apatity**	**0.16**	**208**	P	**Pg**	**02 04 54.3**	**+0.4**
APA				S	**Sg**	**02 04 57.7**	**+1.8**
APA0	**Apatity Array**	**0.25**	**247**	P	**Pb**	**02 04 57.3**	**-1.0**
APA0				S	**Sb**	**02 05 02.3**	**-1.0**
VRF	**Varrio**	**1.52**	**273**	PG	**Pg**	**02 05 20.5**	**+0.5**
VRF				MSG		02 05 40.6	
	comp=Z,54nm,0.3s						
VRF				SG	**Sg**	**02 05 41.5**	**+1.8**
VRF	**Varrio**	**1.52**	**273**	Pg	**Pg**	**02 05 20.5**	**+0.5**
VRF				Sg	**Sg**	**02 05 41.5**	**+1.8**
KU6	**Riekki**	**2.24**	**223**	PG	**Pb**	**02 05 30.7**	**-1.5**
KU6				MSG		02 05 57.7	
	comp=Z,14nm,0.2s						
KU6				SG	**Sb**	**02 06 00.6**	**+0.3**
KU6	**Riekki**	**2.24**	**223**	Pg	**Pb**	**02 05 30.6**	**-1.5**
KU6				Sg	**Sb**	**02 06 00.6**	**+0.3**
MSF	**Maaselka**	**2.55**	**227**	SG	**Sb**	**02 06 10.2**	**+0.8**
MSF	**Maaselka**	**2.55**	**227**	Sg	**Sb**	**02 06 10.1**	**+0.8**
SGF	**Sodankyl**	**2.73**	**268**	PB	**Pb**	**02 05 39.8**	**-0.6**
SGF				SG	**Sg**	**02 06 18.6**	**+0.3**
ARA0	**ARCESS Array S**	**3.49**	**305**	Pn	**Pn**	**02 05 48.5**	**+2.2**
	baz=122,slow=16						
ARA0				Pg	**Pg**	**02 05 56.4**	**-1.3**
	baz=115,slow=16						
ARA0				Sn	**Sn**	**02 06 30.1**	**+1.9**
	baz=124,slow=28						
ARA0				Lg	Lg	02 06 41.7	
	baz=115,slow=37						
ARA0	**ARCESS Array S**	**3.49**	**305**	Pn	**Pn**	**02 05 48.5**	**+2.2**
	baz=122,slow=16						
ARA0				Pg	**Pg**	**02 05 56.4**	**-1.3**
	baz=115,slow=16						
ARA0				Sn	**Sn**	**02 06 30.1**	**+1.9**
	baz=124,slow=28						
ARA0				Lg	Lg	02 06 41.7	
	baz=115,slow=37						
ARA0	**ARCESS Array S**	**3.49**	**305**	Pn	**Pn**	**02 05 48.5**	**+2.2**
	SNR=465						
ARA0	**ARCESS Array S**	**3.49**	**305**	Pg	**Pg**	**02 05 56.3**	**-1.3**
	baz=115,slow=16,SNR=0.7						
ARA0				Sn	**Sn**	**02 06 30.1**	**+1.9**
	SNR=0.5						
ARA0				Lg	Lg	02 06 41.7	
	SNR=8.7						
ARE0	**ARCESS Array S**	**3.49**	**305**	PN	**Pn**	**02 05 48.0**	**+1.7**
ARE0				SN	**Sn**	**02 06 30.2**	**+2.0**
ARE0	**ARCESS Array S**	**3.49**	**305**	Pn	**Pn**	**02 05 48.0**	**+1.7**
ARE0				Sn	**Sn**	**02 06 30.2**	**+2.0**
HEF	**Hetta**	**3.80**	**285**	PN	**Pn**	**02 05 52.0**	**+1.4**
HEF				SN	**Sn**	**02 06 38.0**	**+2.1**
HEF	**Hetta**	**3.80**	**285**	Pn	**Pn**	**02 05 51.9**	**+1.4**
HEF				Sn	**Sn**	**02 06 38.0**	**+2.1**
TOF	**Tornio**	**4.00**	**250**	PN	**Pn**	**02 05 54.3**	**+0.9**
TOF				SG	**Sg**	**02 06 58.2**	**-1.1**
TOF	**Tornio**	**4.00**	**250**	Pn	**Pn**	**02 05 54.3**	**+0.9**
TOF				Sg	**Sg**	**02 06 58.2**	**-1.1**
KTK1	**Kautokeino**	**4.05**	**294**	*e*P	**Pn**	**02 05 55.5**	**+1.4**
KTK1				IAML		02 07 02.1	
	comp=Z,19nm,0.8s						
KTK1	**Kautokeino**	**4.05**	**294**	*e*P	**Pn**	**02 05 55.5**	**+1.4**
	SNR=49						
OUL	**Oulu**	**4.07**	**233**	PB	**Pn**	**02 05 57.4**	**+3.1**
LANU	**Lannavaara**	**4.41**	**280**	P	**Pn**	**02 05 59.5**	**+0.6**
LANU				S	**Sn**	**02 06 50.9**	**0.0**
LANU	**Lannavaara**	**4.41**	**280**	PN	**Pn**	**02 05 59.5**	**+0.6**
LANU				SG	**Sg**	**02 07 09.6**	**-2.6**
LANU	**Lannavaara**	**4.41**	**280**	P	**Pn**	**02 05 59.5**	**+0.6**
LANU				S	**Sn**	**02 06 50.9**	**0.0**
ERTU	**Ertsjaerv**	**4.60**	**261**	P	**Pn**	**02 06 02.5**	**+0.9**
ERTU				S	**Sn**	**02 06 56.8**	**+1.1**
ERTU	**Ertsjaerv**	**4.60**	**261**	P	**Pn**	**02 06 02.5**	**+0.9**
ERTU				S	**Sn**	**02 06 56.8**	**+1.1**
KUA	**Kurravaara**	**5.03**	**279**	P	**Pn**	**02 06 08.4**	**+0.9**
KUA				S	**Sn**	**02 07 06.2**	**0.0**
KUA	**Kurravaara**	**5.03**	**279**	P	**Pn**	**02 06 08.4**	**+0.9**
KUA				S	**Sn**	**02 07 06.2**	**0.0**
HARU	**Harads**	**5.20**	**259**	P	**Pn**	**02 06 09.3**	**-0.5**
HARU				S	**Sn**	**02 07 10.6**	**+0.2**
HARU	**Harads**	**5.20**	**259**	P	**Pn**	**02 06 09.3**	**-0.5**
HARU				S	**Sn**	**02 07 10.6**	**+0.2**
SJUU	**Sjulsmark**	**5.26**	**251**	P	**Pn**	**02 06 10.4**	**-0.2**
SJUU	**Sjulsmark**	**5.26**	**251**	P	**Pn**	**02 06 10.4**	**-0.2**
NIKU	**Nikkaluokta**	**5.53**	**278**	P	**Pn**	**02 06 15.0**	**+0.7**
NIKU	**Nikkaluokta**	**5.53**	**278**	P	**Pn**	**02 06 15.0**	**+0.7**
TRO	**Tromso**	**5.69**	**297**	*e*P	**Pn**	**02 06 18.6**	**+2.1**
TRO	**Tromso**	**5.69**	**297**	*e*P	**Pn**	**02 06 18.6**	**+2.1**
	SNR=49						
SALU	**Saltoluokta**	**5.79**	**274**	P	**Pn**	**02 06 17.8**	**-0.2**
SALU	**Saltoluokta**	**5.79**	**274**	P	**Pn**	**02 06 17.8**	**-0.2**
FIA0	**FINESS Array S**	**7.07**	**211**	Pn	**Pn**	**02 06 35.2**	**-0.2**
	baz=25,slow=14						
FIA0				Lg	Lg	02 08 25.1	
	baz=18,slow=28						
FIA0	**FINESS Array S**	**7.07**	**211**	Pn	**Pn**	**02 06 35.2**	**-0.2**
	baz=25,slow=14						
FIA0				Lg	Lg	02 08 25.1	
	baz=18,slow=28						
FIA0	**FINESS Array S**	**7.07**	**211**	Pn	**Pn**	**02 06 35.2**	**-0.2**
	SNR=2.8						
FIA0				Lg	Lg	02 08 25.1	
	SNR=4.7						
HFS	**Hagfors**	**11.54**	**238**	Pn	**Pn**	**02 07 34.4**	**-2.2**
	baz=24,slow=11						
HFS				Lg	Lg	02 10 48.0	
	baz=51,slow=28						
HFS	**Hagfors**	**11.54**	**238**	Pn	**Pn**	**02 07 34.4**	**-2.2**
	baz=24,slow=11						
HFS				Lg	Lg	02 10 48.0	
	baz=51,slow=28						
HFS	**Hagfors**	**11.54**	**238**	Pn	**Pn**	**02 07 34.4**	**-2.2**
	SNR=6.1						
SPA0	**Spitsbergen Ar**	**11.58**	**342**	Pn	**Pn**	**02 07 36.0**	**-1.2**
	baz=153,slow=16						
SPA0	**Spitsbergen Ar**	**11.58**	**342**	Pn	**Pn**	**02 07 36.0**	**-1.2**
	baz=153,slow=16						
NB2	**NORSAR Subarra**	**11.71**	**246**	Pn	**Pn**	**02 07 38.0**	**-1.0**
NB2	**NORSAR Subarra**	**11.71**	**246**	Pn	**Pn**	**02 07 38.0**	**-1.0**
NB2	**NORSAR Subarra**	**11.71**	**246**	Pn	**Pn**	**02 07 38.0**	**-1.0**

IDC ***02*** *02:10:13.6±2.5, 40°.13N×143°.03E, h0km, mb3.8/4, mb1 3.8/5, mb1mx3.4/46, mbtmp3.7/5, ML3.5/1, Error ellipse: s-maj=70.4km s-min=26.6km az=66.0*
ISCJB ***02*** *02:10:21.7±1.2, 39°.84N±0°.05×142°.3E±0°.1, h52km±7km, mb3.6/4, Error ellipse: s-maj=18.2km s-min=7.6km az=178.0*
JMA ***02*** *02:10:22.8±0.1, 39°.82N×142°.27E, h43km±1km, M3.2*

ISC 02 02:10:22.0±2.1, 39°.86N±0°.05×142°.4E±0°.2, h41km±14km, n21, σ0s95/22, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.39**	**282**	P	**Pn**	**02 10 31.9**	**+0.6**
JTH				S	**Sn**	**02 10 38.0**	**+0.1**
MIYJ	**Miyakonagasawa**	**0.50**	**236**	P	**Pn**	**02 10 32.7**	**0.0**
MIYJ				S	**Sn**	**02 10 39.6**	**-0.7**
JKZ	**Kuzumaki**	**0.80**	**280**	P	**Pn**	**02 10 37.2**	**+0.4**
JKZ				S	**Sn**	**02 10 47.2**	**-0.4**
JANG	**Nango**	**0.82**	**309**	P	**Pn**	**02 10 37.3**	**+0.2**
JANG				S	**Sn**	**02 10 47.6**	**-0.6**
JOM	**Ohasama**	**0.91**	**245**	P	**Pn**	**02 10 38.2**	**0.0**
JOM				*e*S	**Sn**	**02 10 49.3**	**-0.8**
OFUJ	**Ofunato**	**0.94**	**215**	P	**Pn**	**02 10 38.7**	**0.0**
OFUJ				S	**Sn**	**02 10 49.9**	**-1.0**
JMK	**Ichinoseki**	**1.26**	**225**	P	**Pn**	**02 10 43.4**	**+0.3**
JMK				S	**Sn**	**02 10 58.3**	**-0.5**
JTM	**Tenmabayashi**	**1.35**	**314**	P	**Pn**	**02 10 45.2**	**+0.8**
JAH	**Hinai**	**1.36**	**285**	P	**Pn**	**02 10 45.2**	**+0.7**
JRG	**Rokugo**	**1.41**	**251**	P	**Pn**	**02 10 45.9**	**+0.8**
MJAR	**Matsushiro Arr**	**4.65**	**226**	Pn	**Pn**	**02 11 32.7**	**+3.0**
	1.6nm,0.3s,baz=30,slow=14,SNR=9.5						
H11N2	**WAKE ISLAND Hy**	**29.09**	**126**	T	T	02 46 53.7	
	baz=318,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy**	**29.10**	**126**	T	T	02 46 56.4	
	baz=318,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy**	**29.11**	**126**	T	T	02 46 54.5	
	baz=318,slow=75,SNR=28						
H11S1	**WAKE ISLAND Hy**	**29.90**	**128**	T	T	02 47 57.1	
	baz=319,slow=74						
**H11S3

MKAR	**Makanchi Array**	**44.81**	**303**	P		**P**	**02 34 38.8**	**-1.9**
	0.6nm,0.6s,baz=79,slow=8.3,SNR=4.0							
KURBB	**Kurchatov Arra**	**46.69**	**308**	P		**P**	**02 34 55.3**	**-0.1**
	0.6nm,0.6s,baz=84,slow=8.4,SNR=5.8							
ILAR	**Eielson Array**	**49.52**	**32**	P		**P**	**02 35 18.2**	**+1.2**
	0.3nm,0.8s,baz=259,slow=6.5,SNR=3.0							
WRA	**Warramunga Arr**	**56.76**	**189**	P		**P**	**02 36 10.8**	**0.0**
	0.5nm,0.9s,baz=7.7,slow=7.7,SNR=2.6							

SKO ***02*** *02:35:10.9,41.°03N×20.°01E,h6km*
PDG ***02*** *02:35:10.3±0.6,41.°09N×20.°04E,h11km±1km, ML3.1/12, Error ellipse: s-maj=0.6km s-min=1.0km az=0.0*
ATH ***02*** *02:35:10.1,41.°06N×20.°08E,h20km±1km, ML2.7/4, Error ellipse: s-maj=2.4km s-min=1.1km az=292.0*
CSEM ***02*** *02:35:10.8±0.1,41.°06N±0.°05E,h10km, ML2.1, Error ellipse: s-maj=4.4km s-min=2.3km az=58.0*
THE ***02*** *02:35:11.4,41.°06N×20.°10E,h7km±1km, ML2.7/9, Error ellipse: s-maj=1.7km s-min=0.9km az=118.0*
ISCJB ***02*** *02:35:11.1±0.5,41.°03N±0.°02×20.°05E±0.°03,h15km±5km, Error ellipse: s-maj=4.5km s-min=2.4km az=145.7*

ISC 02 02:35:10.5±1.0, 41.°05N±0.°02×20.°04E±0.°02, h9km±9km, n116, σ0.86/174, 12C-12D, Albania

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TIR	**Tirane**	**0.33**	**337**	P	**Pg**	**02 35 16.9**	**-0.1**
TIR				S	**Sb**	**02 35 23.9**	**-0.1**
TIR	**Tirane**	**0.33**	**337**	P	**Pg**	**02 35 16.9**	**-0.1**
TIR				S	**Sb**	**02 35 23.9**	**-0.1**
OHR	**Ohrid**	**0.58**	**83**	*i*Pg	**Pg**	**02 35 21.9**	**+0.1**
OHR				*i*Sg	**Sb**	**02 35 30.7**	**-0.6**
OHR	**Ohrid**	**0.58**	**83**	*i*Pg	**Pg**	**02 35 21.8**	**+0.1**
OHR				*i*Sg	**Sb**	**02 35 30.6**	**-0.6**
NEST	**Nestorio**	**0.99**	**129**	P	**Pg**	**02 35 28.2**	**-1.5**
NEST				S	**Sb**	**02 35 43.8**	**+0.5**
NEST	**Nestorio**	**0.99**	**129**	P	**Pg**	**02 35 28.2**	**-1.5**
NEST				S	**Sb**	**02 35 43.8**	**+0.5**
NEST	**Nestorio**	**0.99**	**129**	P	**Pg**	**02 35 28.0**	**-1.7**
FNA	**Florina**	**1.05**	**104**	P	**Pg**	**02 35 29.8**	**-0.9**
FNA				S	**Sb**	**02 35 45.4**	**+0.6**
FNA	**Florina**	**1.05**	**104**	P	**Pg**	**02 35 29.8**	**-0.9**
FNA				S	**Sb**	**02 35 45.3**	**+0.5**
FNA	**Florina**	**1.05**	**104**	P	**Pg**	**02 35 29.1**	**-1.6**
FNA				S	**Sb**	**02 35 45.3**	**+0.5**
FNA				AML	AML	02 35 51.0	
	comp=E,928μm,0.4s						
FNA				AML	AML	02 35 51.9	
	comp=N,886μm,0.7s						
ULC	**Ulcinj**	**1.09**	**327**	*i*Pg	**Pg**	**02 35 30.3**	**-1.2**
ULC				*e*Sg	**Sb**	**02 35 46.6**	**+0.6**
ULC	**Ulcinj**	**1.09**	**327**	*i*Pg	**Pg**	**02 35 30.3**	**-1.2**
ULC	**Ulcinj**	**1.09**	**327**	P	**Pg**	**02 35 31.3**	**-0.2**
ULC				*e*Sg	**Sb**	**02 35 46.6**	**+0.6**
PENT	**Pentalofos**	**1.19**	**135**	P	**Pb**	**02 35 32.2**	**-1.2**
PENT	**Pentalofos**	**1.19**	**135**	P	**Pb**	**02 35 32.2**	**-1.2**
PENT	**Pentalofos**	**1.19**	**135**	P	**Pb**	**02 35 31.5**	**-1.9**
KEK	**Kerkira**	**1.35**	**188**	P	**Pn**	**02 35 35.2**	**-0.3**
KEK				S	**Sg**	**02 35 55.8**	**+2.0**
KEK	**Kerkira**	**1.35**	**188**	P	**Pn**	**02 35 35.2**	**-0.3**
KEK				S	**Sg**	**02 35 55.8**	**+2.0**
SKO	**Skopje**	**1.40**	**48**	P	**Pn**	**02 35 36.5**	**+0.2**
SKO				S	**Sg**	**02 35 56.6**	**+1.0**
SKO	**Skopje**	**1.40**	**48**	*i*Pg	**Pn**	**02 35 36.3**	**-0.1**
SKO				*i*Sg	**Sg**	**02 35 55.7**	**0.0**
SKO	**Skopje**	**1.40**	**48**	*i*Pg	**Pn**	**02 35 36.2**	**-0.1**
SKO	**Skopje**	**1.40**	**48**	P	**Pn**	**02 35 36.5**	**+0.2**
SKO				*i*Sg	**Sg**	**02 35 55.6**	**0.0**
SKO				S	**Sg**	**02 35 56.6**	**+1.0**
SGD	**Sagiada**	**1.44**	**174**	P	**Pn**	**02 35 37.3**	**+0.5**
SGD	**Sagiada**	**1.44**	**174**	P	**Pn**	**02 35 37.0**	**+0.2**
SGD	**Sagiada**	**1.44**	**174**	P	**Pn**	**02 35 37.0**	**+0.2**
ZATK	**Zatriq**	**1.47**	**17**	P	**Pb**	**02 35 37.8**	**-0.3**
KPRO	**Kipourio**	**1.49**	**137**	P	**Pn**	**02 35 37.3**	**-0.2**
KPRO	**Kipourio**	**1.49**	**137**	P	**Pn**	**02 35 37.3**	**-0.2**
KPRO	**Kipourio**	**1.49**	**137**	P	**Pb**	**02 35 38.8**	**+0.4**
PDG	**Podgorica**	**1.50**	**337**	P	**Pn**	**02 35 37.7**	**+0.1**
PDG				S	**Sg**	**02 35 58.8**	**0.0**
PDG	**Podgorica**	**1.50**	**337**	P	**Pn**	**02 35 37.7**	**+0.1**
PDG				S	**Sg**	**02 35 58.8**	**0.0**
PDG				*e*Sg	**Sg**	**02 35 59.6**	**+0.8**
TTG	**Podgorica**	**1.50**	**337**	*i*Pg	**Pn**	**02 35 37.7**	**+0.1**
TTG				*e*Sg	**Sg**	**02 35 59.6**	**+0.8**
KZN	**Kozani**	**1.51**	**119**	P	**Pn**	**02 35 37.9**	**0.0**
KZN	**Kozani**	**1.51**	**119**	P	**Pn**	**02 35 37.9**	**0.0**
BUM	**Brajici-Budva**	**1.52**	**326**	*i*Pg	**Pn**	**02 35 37.7**	**-0.3**
BUM				*e*Sg	**Sg**	**02 36 00.4**	**+1.1**
BUM	**Brajici-Budva**	**1.52**	**326**	*i*Pg	**Pn**	**02 35 37.7**	**-0.3**
BUM				*e*Sg	**Sg**	**02 36 00.4**	**+1.1**
JAN	**Janina**	**1.52**	**156**	P	**Pb**	**02 35 38.9**	**-0.1**
JAN				S	**Sb**	**02 35 58.7**	**+0.3**
JAN	**Janina**	**1.52**	**156**	P	**Pb**	**02 35 38.9**	**-0.1**
JAN				S	**Sb**	**02 35 58.7**	**+0.3**
JAN	**Janina**	**1.52**	**156**	S	**Sg**	**02 35 59.4**	**-0.1**
JAN				AML	AML	02 36 10.4	
	comp=E,412μm,0.6s						
PVY	**Plav**	**1.55**	**358**	*i*Pg	**Pn**	**02 35 38.1**	**-0.3**
PVY				*e*Sg	**Sg**	**02 36 00.6**	**+0.3**
PVY	**Plav**	**1.55**	**358**	*i*Pg	**Pn**	**02 35 38.1**	**-0.3**
PVY				*e*Sg	**Sg**	**02 36 00.6**	**+0.3**
PEJK	**Peje**	**1.60**	**6**	P	**Pb**	**02 35 40.9**	**+0.5**
PEJK				S	**Sg**	**02 36 04.7**	**+2.6**
CEME	**Cevo**	**1.72**	**331**	*i*Pn	**Pn**	**02 35 40.5**	**-0.2**
CEME				*e*Sn	**Sb**	**02 36 04.8**	**+0.8**
CEME	**Cevo**	**1.72**	**331**	*i*Pn	**Pn**	**02 35 40.5**	**-0.2**
CEME				*e*Sn	**Sb**	**02 36 04.8**	**+0.8**
GRG	**Griva**	**1.79**	**92**	P	**Pn**	**02 35 41.0**	**-0.7**
GRG				S	**Sn**	**02 36 05.0**	**+0.4**
GRG	**Griva**	**1.79**	**92**	P	**Pn**	**02 35 41.0**	**-0.7**
GRG				S	**Sn**	**02 36 05.0**	**+0.4**
GRG	**Griva**	**1.79**	**92**	P	**Pn**	**02 35 40.5**	**-1.2**
GRG				S	**Sb**	**02 36 06.5**	**+0.3**
GRG				AML	AML	02 36 08.2	
	comp=E,383μm,0.6s						
GRG				AML	AML	02 36 11.7	
	comp=N,119μm,0.4s						
HCY	**Herceg Novi**	**1.81**	**321**	*i*Pn	**Pn**	**02 35 41.4**	**-0.6**
HCY				*e*Sn	**Sb**	**02 36 07.3**	**+0.5**
HCY	**Herceg Novi**	**1.81**	**321**	*i*Pn	**Pn**	**02 35 41.4**	**-0.6**
HCY				*e*Sn	**Sb**	**02 36 07.3**	**+0.5**
BEY	**Berane**	**1.83**	**357**	*i*Pn	**Pn**	**02 35 42.7**	**+0.5**
BEY	**Berane**	**1.83**	**357**	P	**Pb**	**02 35 44.0**	**-0.2**
BEY				*e*Sn	**Sb**	**02 36 07.4**	**+0.2**
IVA	**Berane**	**1.83**	**357**	*i*Pn	**Pn**	**02 35 42.7**	**+0.5**
IVA				*e*Sn	**Sb**	**02 36 07.4**	**+0.2**
NKME	**Niksic**	**1.90**	**335**	*e*Pn	**Pn**	**02 35 43.4**	**+0.2**
NKME				*e*Sn	**Sb**	**02 36 09.0**	**-0.3**
NKME	**Niksic**	**1.90**	**335**	*e*Pn	**Pn**	**02 35 43.4**	**+0.2**
NKME				*e*Sn	**Sb**	**02 36 09.0**	**-0.3**
NKY	**Niksic**	**1.93**	**337**	*i*Pn	**Pn**	**02 35 43.9**	**+0.3**
NKY				*e*Sn	**Sb**	**02 36 09.9**	**-0.3**
NKY	**Niksic**	**1.93**	**337**	*i*Pn	**Pn**	**02 35 43.9**	**+0.3**
NKY				*e*Sn	**Sb**	**02 36 09.9**	**-0.3**
DSL	**Palaion Diasel**	**2.08**	**157**	P	**Pn**	**02 35 46.4**	**+0.8**
DSL	**Palaion Diasel**	**2.08**	**157**	P	**Pn**	**02 35 46.4**	**+0.8**
DSL	**Palaion Diasel**	**2.08**	**157**	P	**Pn**	**02 35 46.6**	**+1.0**
TREB	**Trebinje**	**2.09**	**323**	*e*Pn	**Pb**	**02 35 47.8**	**-0.8**
LIT	**Litokhoron**	**2.09**	**116**	P	**Pn**	**02 35 46.2**	**+0.4**
LIT	**Litokhoron**	**2.09**	**116**	P	**Pn**	**02 35 46.2**	**+0.4**
LIT	**Litokhoron**	**2.09**	**116**	P	**Pn**	**02 35 45.6**	**-0.2**
THL	**Klokotos Trika**	**2.12**	**134**	P	**Pn**	**02 35 46.9**	**+0.8**
THL	**Klokotos Trika**	**2.12**	**134**	P	**Pn**	**02 35 46.9**	**+0.8**
BRY	**Bratogost**	**2.16**	**329**	*i*Pn	**Pn**	**02 35 47.1**	**+0.2**
BRY				*e*Sn	**Sb**	**02 36 15.6**	**-1.4**
BRY	**Bratogost**	**2.16**	**329**	*i*Pn	**Pn**	**02 35 47.1**	**+0.2**
BRY				*e*Sn	**Sb**	**02 36 15.6**	**-1.4**
KNT	**Kendrikon**	**2.17**	**86**	P	**Pn**	**02 35 46.8**	**0.0**
KNT				S	**Sn**	**02 36 13.4**	**-0.4**
KNT	**Kendrikon**	**2.17**	**86**	P	**Pn**	**02 35 46.8**	**0.0**
KNT				S	**Sn**	**02 36 13.4**	**-0.4**
KNT	**Kendrikon**	**2.17**	**86**	P	**Pn**	**02 35 46.7**	**0.0**
LKD2	**Lefkada island**	**2.31**	**168**	P	**Pn**	**02 35 48.5**	**-0.2**
LKD2				S	**Sn**	**02 36 18.2**	**+0.9**
LKD2	**Lefkada island**	**2.31**	**168**	P	**Pn**	**02 35 48.5**	**-0.2**
LKD2				S	**Sn**	**02 36 18.2**	**+0.9**
LKD2	**Lefkada island**	**2.31**	**168**	P	**Pn**	**02 35 47.9**	**-0.8**
LKD2				S	**Sn**	**02 36 16.4**	**-0.8**
LKD2				AML	AML	02 36 32.4	
	comp=E,123μm,0.6s						
LKD2				AML	AML	02 36 42.4	
	comp=N,142μm,0.8s						
UPM	**Unac-Piva**	**2.31**	**339**	*i*Pn	**Pn**	**02 35 49.6**	**+0.6**
UPM				*e*Sn	**Sn**	**02 36 19.2**	**+1.5**
UPM	**Unac-Piva**	**2.31**	**339**	*i*Pn	**Pn**	**02 35 49.6**	**+0.6**
UPM				*e*Sn	**Sn**	**02 36 19.2**	**+1.5**
PLE	**Pljevlja**	**2.33**	**348**	*e*Pn	**Pn**	**02 35 49.5**	**+0.3**
PLE				*e*Sn	**Sn**	**02 36 19.5**	**+1.5**
PLE	**Pljevlja**	**2.33**	**348**	*e*Pn	**Pn**	**02 35 49.5**	**+0.3**
PLE				*e*Sn	**Sn**	**02 36 19.5**	**+1.5**
KKB	**Krupnik**	**2.43**	**69**	*i*P	**Pn**	**02 35 51.0**	**+0.5**
IVAS	**Ivanjica**	**2.53**	**2**	*e*Pn	**Pn**	**02 35 52.2**	**+0.3**
PDO	**Prodromos**	**2.60**	**160**	P	**Pn**	**02 35 52.8**	**0.0**
PDO				S	**Sn**	**02 36 25.1**	**+0.6**
PDO	**Prodromos**	**2.60**	**160**	P	**Pn**	**02 35 52.8**	**0.0**
PDO				S	**Sn**	**02 36 25.1**	**+0.6**
PDO	**Prodromos**	**2.60**	**160**	P	**Pn**	**02 35 52.0**	**-0.8**
AGG	**Agios Georgios**	**2.68**	**138**	P	**Pn**	**02 35 55.0**	**+1.1**
AGG	**Agios Georgios**	**2.68**	**138**	P	**Pn**	**02 35 55.0**	**+1.1**
AGG	**Agios Georgios**	**2.68**	**138**	P	**Pn**	**02 35 55.6**	**+1.7**
PVO	**Paravola**	**2.69**	**154**	P	**Pn**	**02 35 54.6**	**+0.6**
PVO	**Paravola**	**2.69**	**154**	P	**Pn**	**02 35 54.5**	**+0.6**
PVO	**Paravola**	**2.69**	**154**	P	**Pn**	**02 35 54.5**	**+0.6**
VTS	**Vitosha**	**2.83**	**56**	P	**Pn**	**02 35 56.2**	**+0.2**
VTS				S	**Sn**	**02 36 30.5**	**+0.2**
VTS	**Vitosha**	**2.83**	**56**	*i*P	**Pn**	**02 35 56.0**	**0.0**
VTS	**Vitosha**	**2.83**	**56**	P	**Pn**	**02 35 56.2**	**+0.2**
VTS				S	**Sn**	**02 36 30.5**	**+0.2**
MMB	**Musomiste**	**2.83**	**78**	*i*P	**Pn**	**02 35 56.9**	**+0.9**
ANX	**Ano Chora**	**2.85**	**149**	P	**Pn**	**02 35 57.9**	**+1.6**
ANX	**Ano Chora**	**2.85**	**149**	P	**Pn**	**02 35 57.9**	**+1.6**
BBLS	**Lazići**	**2.85**	**351**	*e*Pn	**Pn**	**02 35 56.6**	**+0.2**
GRUS	**Gruza**	**2.88**	**10**	*e*Pn	**Pn**	**02 35 57.0**	**+0.3**
NVR	**Nevrokopi**	**2.90**	**83**	P	**Pn**	**02 35 57.4**	**+0.4**
NVR				S	**Sn**	**02 36 31.9**	**-0.1**
NVR	**Nevrokopi**	**2.90**	**83**	P	**Pn**	**02 35 57.4**	**+0.4**
NVR				S	**Sn**	**02 36 31.9**	**-0.1**
XOR	**Xorichti**	**2.94**	**124**	P	**Pn**	**02 35 57.5**	**0.0**
XOR	**Xorichti**	**2.94**	**124**	P	**Pn**	**02 35 57.5**	**0.0**
ZAPS	**Zavoj**	**2.94**	**40**	*i*Pn	**Pn**	**02 35 58.6**	**+1.0**
DIVS	**Divibare**	**3.05**	**359**	*e*Pn	**Pn**	**02 35 59.5**	**+0.5**
OUR	**Ouranopolis**	**3.08**	**102**	P	**Pn**	**02 35 59.9**	**+0.5**
OUR	**Ouranopolis**	**3.08**	**102**	P	**Pn**	**02 35 59.9**	**+0.5**
BOLS	**Boljevac**	**3.12**	**26**	*i*Pn	**Pn**	**02 35 58.5**	**-1.4**
TRUS	**Trudelj**	**3.19**	**5**	*i*Pn	**Pn**	**02 36 00.9**	**+0.1**
LKR	**Lokris**	**3.31**	**135**	P	**Pn**	**02 36 03.6**	**+1.1**
LKR	**Lokris**	**3.31**	**135**	P	**Pn**	**02 36 03.6**	**+1.1**
TEKS	**Tekeris**	**3.52**	**354**	*e*Pn	**Pn**	**02 36 02.3**	**-3.1**
RZN	**Rozhen**	**3.58**	**78**	*i*P	**Pn**	**02 36 07.7**	**+1.3**
MPEP	**Malo Peshtene**	**3.59**	**49**	*i*P	**Pn**	**02 36 06.3**	**-0.1**
FGSL	**Fruska Gora**	**4.11**	**358**	*e*Pn	**Pn**	**02 36 12.8**	**-0.8**
BLY	**Banja Luka**	**4.25**	**331**	*e*Pn	**Pn**	**02 36 11.5**	**-4.0**
AQU	**L'Aquila**	**5.14**	**287**	*e*Pn	**Pn**	**02 36 27.1**	**-0.6**
CRES	**Cresnjev**	**5.82**	**327**	*e*Pn	**Pn**	**02 36 35.9**	**-1.2**
CEY	**Cerknica**	**6.22**	**321**	*e*Pn	**Pn**	**02 36 41.5**	**-1.0**

DDA ***02*** *02:37:17.7,39.°12N×28.°96E,h7km, Ml2.9*
ISCJB ***02*** *02:37:18.3±0.5,39.°13N±0.°04×28.°97E±0.°03,h3km±7km, Error ellipse: s-maj=7.3km s-min=3.9km az=168.1*
CSEM ***02*** *02:37:18.6±0.1,39.°11N×28.°98E,h5km, ML2.9, Error ellipse: s-maj=1.6km s-min=1.3km az=169.0*
ISK ***02*** *02:37:18.2,39.°12N×28.°99E,h7km, MD2.6*

ISC 02 02:37:18.6±0.9, 39.°12N±0.°03×28.°97E±0.°02, h10km±10km, n40, σ0.46/52, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.21**	**249**	*i*P	**Pg**	**02 37 23.1**	**0.0**
DEMI				*i*S	**Sg**	**02 37 26.1**	**0.0**
DEMI	**Demirci**	**0.21**	**249**	P	**Pg**	**02 37 23.1**	**0.0**
DEMI				S	**Sg**	**02 37 26.1**	**0.0**
GEDZ	**Gediz**	**0.35**	**102**	*e*PG	**Pg**	**02 37 25.6**	**0.0**
GEDZ				*e*SG	**Sg**	**02 37 30.6**	**+0.4**
GEDZ	**Gediz**	**0.35**	**102**	*e*Pg	**Pg**	**02 37 25.6**	**0.0**
GEDZ				*e*Sg	**Sg**	**02 37 30.6**	**+0.4**
GDZ	**Gediz**	**0.40**	**94**	*i*P	**Pg**	**02 37 26.0**	**-0.4**
GDZ				*i*S	**Sg**	**02 37 31.9**	**+0.2**
GDZ	**Gediz**	**0.40**	**94**	P	**Pg**	**02 37 26.0**	**-0.4**
GDZ				S	**Sg**	**02 37 31.9**	**+0.2**
TVSB	**Tavsanli**	**0.50**	**49**	*e*PG	**Pg**	**02 37 28.1**	**-0.2**
TVSB				*e*SG	**Sg**	**02 37 35.0**	**0.0**
TVSB	**Tavsanli**	**0.50**	**49**	*e*Pg	**Pg**	**02 37 28.2**	**-0.2**
TVSB				*e*Sg	**Sg**	**02 37 35.0**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**202**	*e*PG	**Pg**	**02 37 31.0**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**202**	*e*Pg	**Pg**	**02 37 31.0**	**-0.2**
KHL	**Karahalli**	**0.91**	**151**	*e*PG	**Pb**	**02 37 36.1**	**-0.4**
KHL	**Karahalli**	**0.91**	**151**	*e*Pg	**Pb**	**02 37 36.1**	**-0.4**
AKS	**Akhisar**	**0.94**	**255**	*e*PG	**Pb**	**02 37 36.8**	**-0.1**
AKS	**Akhisar**	**0.94**	**255**	*e*Pg	**Pb**	**02 37 36.8**	**-0.1**
BALB	**Balikesir**	**0.99**	**302**	*e*PG	**Pb**	**02 37 38.0**	**+0.1**
BALB	**Balikesir**	**0.99**	**302**	*e*Pg	**Pb**	**02 37 38.0**	**+0.1**
IGD	**Bursa**	**1.16**	**9**	*i*P	**Pg**	**02 37 38.6**	**-2.2**
IGD				*i*S	**Sg**	**02 37 55.0**	**-0.8**
KCTX	**Karacabey (Bur**	**1.24**	**338**	*e*PN	**Pg**	**02 37 42.6**	**+0.2**
KCTX	**Karacabey (Bur**	**1.24**	**338**	*e*Pn	**Pg**	**02 37 42.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*PN	**Pg**	**02 37 42.8**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*Pn	**Pg**	**02 37 42.8**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**32**	*e*PN	**Pg**	**02 37 43.3**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**32**	*e*Pn	**Pg**	**02 37 43.3**	**+0.3**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pg**	**02 37 43.3**	**+0.2**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pg**	**02 37 43.3**	**+0.2**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*PN	**Pg**	**02 37 44.3**	**-0.4**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*Pn	**Pg**	**02 37 44.3**	**-0.4**
BORA	**Eskisehir**	**1.37**	**56**	*i*P	**Pg**	**02 37 44.8**	**-0.2**
BORA				*i*S	**Sg**	**02 38 02.7**	**-0.1**
BORA	**Eskisehir**	**1.37**	**56**	P	**Pg**	**02 37 44.8**	**-0.2**
BORA				S	**Sg**	**02 38 02.7**	**-0.1**
ARMT	**Armutlu**	**1.45**	**357**	*e*PN	**Pb**	**02 37 45.6**	**0.0**
ARMT	**Armutlu**	**1.45**	**357**	*e*Pn	**Pb**	**02 37 45.6**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**216**	*e*PN	**Pb**	**02 37 45.2**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**216**	*e*Pn	**Pb**	**02 37 45.2**	**-0.5**
EDC	**Edincik**	**1.49**	**325**	*e*PN	**Pg**	**02 37 46.7**	**-0.6**
EDC	**Edincik**	**1.49**	**325**	*e*Pn	**Pg**	**02 37 46.7**	**-0.6**
KNL	**Bal¨–kesir**	**1.60**	**316**	*i*P	**Pb**	**02 37 47.7**	**-0.6**
KNL				*i*S	**Sb**	**02 38 08.5**	**0.0**
GULT	**Gulveren**	**1.77**	**42**	*e*PN	**Pn**	**02 37 49.6**	**+0.2**
GULT	**Gulveren**	**1.77**	**42**	*e*Pn	**Pn**	**02 37 49.6**	**+0.2**
MRMT	**Marmara Adasi**	**1.82**	**325**	*e*PN	**Pn**	**02 37 50.8**	**+0.7**
MRMT	**Marmara Adasi**	**1.82**	**325**	*e*Pn	**Pn**	**02 37 50.8**	**+0.7**

IDC 02 03:03:48.6±4.1, 5.°76S×150.°65E, h0km, mb3.2/2, mb1 3.6/2, mb1mx3.3/24, mbtmp3.3/2, Error ellipse: s-maj=175.8km s-min=49.8km az=117.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**21.22**	**227**	P	P	03 08 36.7	+0.5
	0.8nm,0.8s,baz=53,slow=11,SNR=5.1						
ASAR	**Alice Springs**	**24.02**	**220**	P	P	03 09 05.2	-0.3
	0.3nm,0.5s,baz=50,slow=10,SNR=5.3						
TORD	**Torodi Ar. Bea**	**148.53**	**286**	PKPbc	PKPbc	03 23 37.8	-0.7
	0.4nm,1.0s,baz=67,slow=3.3,SNR=2.4						

NIED ***02*** *03:12:00,36.°20N×140.°90E,h8km,Mw3.5 Best double couple: M0 2.25000×10^14 NP1:φ=150.00000°,δ=4.00000°, λ=30.00000°. NP2:φ=29.00000°,δ=88.00000°,λ=94.00000°.*

JMA 02 03:12:36.0±0.1, 36.°22N×140.°90E, h46km±1km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.47**	**326**	P	Pn	03 12 46.5	-0.2
JHO				S	Sn	03 12 53.8	-0.5
CHOJ	**Chosi**	**0.52**	**184**	P	Pn	03 12 47.1	-0.1
CHOJ				S	Sn	03 12 54.8	-0.4
JYT	**Yasato**	**0.57**	**271**	P	Pn	03 12 48.1	+0.2
JYT				S	Sn	03 12 56.3	-0.1
ONAJ	**Iwakimizuishiy**	**0.88**	**355**	P	Pn	03 12 51.8	-0.3
ONAJ				S	Sn	03 13 02.7	-1.2
MAT	**Matsushiro**	**2.20**	**279**	P	Pn	03 13 11.8	+1.8
MAT				S	Sn	03 13 35.6	-0.4

ISCJB ***02*** *03:40:36.7±0.3,57.°61N±0.°05×156.°18W±0.°08, h106km±3km, mb3.5/6, Error ellipse: s-maj=9.9km s-min=4.0km az=135.2*

NEIC ***02*** *03:40:39.7,57.°57N×156.°12W,h78km, MG3.3(AEIC), After AEIC.*
IDC ***02*** *03:40:39.0±8.4,57.°92N×156.°21W,h96km±58km, mb3.2/6, mb1 3.6/8, mb1mx3.3/33, mbtmp3.7/8, ML4.2/2, Error ellipse: s-maj=66.8km s-min=27.4km az=55.0*

ISC 02 03:40:37.6±0.8, 57.°61N±0.°06×156.°22W±0.°06, h95km±6km, n85, σ1.9/10/94, mb3.4/6, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLK4	**Peulik 4**	**0.08**	**287**	P	**Pn**	**03 40 51.0**	**0.0**
PLK3	**Peulik 3**	**0.09**	**341**	P	**Pn**	**03 40 51.1**	**+0.1**
PLK3				S	**Sn**	**03 41 00.8**	**-0.2**
PLK1	**Peulik 1**	**0.29**	**313**	P	**Pn**	**03 40 51.5**	**0.0**
PLWL	**Peulik Whale M**	**0.44**	**351**	P	**Pn**	**03 40 52.3**	**-0.1**
ACHA	**Angle Creek He**	**0.77**	**38**	P	**Pn**	**03 40 55.7**	**+0.4**
ACHA				S	**Sn**	**03 41 09.5**	**+1.0**
KABU	**Katmai Buttres**	**0.83**	**36**	P	**Pn**	**03 40 56.3**	**+0.3**
KABU				S	**Sn**	**03 41 10.6**	**+0.9**
KABR	**Katmai Barrier**	**0.85**	**51**	P	**Pn**	**03 40 56.0**	**-0.1**
KELA	**Mount Kelaz**	**0.87**	**17**	P	**Pn**	**03 40 56.3**	**-0.1**
KVTA	**Katmai Vly 10**	**0.92**	**32**	P	**Pn**	**03 40 57.0**	**+0.2**
KAKN	**Katmai Knife C**	**0.93**	**41**	P	**Pn**	**03 40 57.0**	**+0.1**
KAKN				S	**Sn**	**03 41 11.7**	**+0.3**
KAWH	**Katmai**	**1.08**	**44**	P	**Pn**	**03 40 58.7**	**+0.1**
KAHC	**Katmai Hardscr**	**1.23**	**31**	P	**Pn**	**03 41 00.5**	**+0.2**
ANNW	**Aniakchak Nort**	**1.26**	**240**	P	**Pn**	**03 41 01.3**	**+0.6**
ANPB	**Aniakchak Plen**	**1.39**	**235**	P	**Pn**	**03 41 03.2**	**+1.1**
OHHK	**Old Harbor**	**1.63**	**103**	P	**Pn**	**03 41 04.7**	**-0.5**
CHGN	**Chignik**	**1.78**	**224**	P	**Pn**	**03 41 06.9**	**-0.1**
FOSS	**Fourpeaked Sta**	**1.79**	**47**	P	**Pn**	**03 41 07.8**	**+0.6**
FOPK	**Fourpeaked Vol**	**1.85**	**50**	P	**Pn**	**03 41 08.3**	**+0.3**
MCNL	**McNeil River**	**1.86**	**31**	P	**Pn**	**03 41 08.8**	**+0.7**
CDD	**Cape Douglas**	**1.90**	**45**	P	**Pn**	**03 41 09.4**	**+0.8**
VNHG	**Veniaminof 1**	**2.13**	**231**	P	**Pn**	**03 41 13.1**	**+1.4**
VNSG	**Veniaminof 6**	**2.17**	**228**	P	**Pn**	**03 41 13.0**	**+0.9**
AUI	**Augustine Isla**	**2.27**	**39**	P	**Pn**	**03 41 14.7**	**+1.3**
AUI				S	**Sn**	**03 41 41.9**	**+1.1**
AUSE	**Augustine SEas**	**2.28**	**39**	P	**Pn**	**03 41 14.9**	**+1.3**
AUE	**Augustine Isla**	**2.30**	**39**	P	**Pn**	**03 41 15.3**	**+1.4**
VNKR	**Veniaminof 5**	**2.35**	**229**	P	**Pn**	**03 41 15.2**	**+0.7**
OPT	**Oil Point**	**2.58**	**36**	P	**Pn**	**03 41 18.9**	**+1.4**
ILW	**Iliamna West**	**2.93**	**32**	P	**Pn**	**03 41 23.5**	**+1.

DRO				S	Sn	04 01 40.7	-0.8	
DRO				AML	AML	04 01 44.2		
	comp=E,176μm,0.2s							
DRO				AML	AML	04 01 44.4		
	comp=N,154μm,0.3s							
PDO	**Prodromos**	**0.69**	**19**	P	Pg	04 01 31.7	+0.5	
PDO				S	Sn	04 01 43.8	+1.2	
PDO	**Prodromos**	**0.69**	**19**	P	Pg	04 01 31.7	+0.5	
PDO				S	Sn	04 01 43.8	+1.2	
PDO				AML	AML	04 01 44.2		
	comp=N,209μm,0.4s							
PDO				AML	AML	04 01 44.2		
	comp=E,126μm,0.3s							
PVO	**Paravola**	**0.83**	**36**	P	Pb	04 01 32.5	-1.0	
PVO				S	Sn	04 01 45.6	-0.5	
PVO	**Paravola**	**0.83**	**36**	P	Pb	04 01 32.5	-1.0	
PVO				S	Sn	04 01 45.6	-0.5	
ANX	**Ano Chora**	**1.03**	**51**	P	Pb	04 01 36.9	-0.1	
ANX	**Ano Chora**	**1.03**	**51**	P	Pb	04 01 36.9	-0.1	

CSEM ***02*** *04:01:33.4, 40°.17N × 20°.75E, h23km, ML1.9/4*
THE 02 04:01:33.4, 40°.17N × 20°.75E, h23km ± 2km, ML1.9/4, Error ellipse: s-maj=3.5km s-min=0.7km az=110.0, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PENT	**Pentalofos**	**0.30**	**84**	P	Pb	04 01 39.8	-0.5
PENT	**Pentalofos**	**0.30**	**84**	P	Pb	04 01 39.8	-0.5
NEST	**Nestorio**	**0.33**	**42**	P	Pb	04 01 40.0	-0.9
NEST				S	Sb	04 01 47.1	+1.1
NEST	**Nestorio**	**0.33**	**42**	P	Pb	04 01 40.0	-0.9
NEST				S	Sb	04 01 47.1	+1.1
KPRO	**Kipourio**	**0.51**	**114**	P	Pb	04 01 43.7	-0.1
KPRO	**Kipourio**	**0.51**	**114**	P	Pb	04 01 43.7	-0.1
JAN	**Janina**	**0.52**	**172**	P	Pb	04 01 43.7	-0.1
JAN				S	Sb	04 01 51.4	+0.5
JAN	**Janina**	**0.52**	**172**	P	Pb	04 01 43.7	-0.1
JAN				S	Sb	04 01 51.4	+0.5
SGD	**Sagiada**	**0.68**	**216**	P	Pb	04 01 46.3	-0.3
SGD	**Sagiada**	**0.68**	**216**	P	Pb	04 01 46.3	-0.3
SGD				S	Sb	04 01 56.5	+0.8
SGD	**Sagiada**	**0.68**	**216**	P	Pb	04 01 46.3	-0.3
SGD				S	Sb	04 01 56.5	+0.8
SGD	**Sagiada**	**0.68**	**216**	P	Pb	04 01 46.3	-0.3
FNA	**Florina**	**0.78**	**37**	P	Pb	04 01 47.9	-0.4
FNA				S	Sn	04 01 59.3	-0.7
FNA	**Florina**	**0.78**	**37**	P	Pb	04 01 47.9	-0.4
FNA				S	Sn	04 01 59.3	-0.7
KEK	**Kerkira**	**0.86**	**239**	P	Pb	04 01 48.8	-0.9
KEK				S	Sn	04 02 02.4	+0.4
KEK	**Kerkira**	**0.86**	**239**	P	Pb	04 01 48.8	-0.9
KEK				S	Sn	04 02 02.4	+0.4

CSEM ***02*** *04:05:05.1, 34°.95N × 32°.42E, h15km, ML2.4*
NIC 02 04:05:05.1 ± 0.2, 34°.95N × 32°.42E, h15km, ML2.4, Cyprus region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPCY	**Paphos**	**0.09**	**225**	P	Pg	04 05 08.5	+0.2
	baz=44						
PPCY	**Paphos**	**0.09**	**225**	P	Pg	04 05 08.5	+0.2
AKMC	**Akamas**	**0.11**	**317**	P	Pg	04 05 08.3	-0.3
	baz=137						
AKMC	**Akamas**	**0.11**	**317**	P	Pg	04 05 08.3	-0.3
ALFC	**Alefka**	**0.26**	**35**	P	Pg	04 05 10.8	+0.1
	baz=215						
ALFC				S	Sb	04 05 15.5	-0.2
ALFC	**Alefka**	**0.26**	**35**	P	Pg	04 05 10.8	+0.1
ALFC				S	Sb	04 05 15.5	-0.2
SZAC	**Souni**	**0.43**	**117**	P	Pg	04 05 14.0	+0.3
	baz=296						
SZAC				S	Sb	04 05 20.5	-0.1
SZAC	**Souni**	**0.43**	**117**	P	Pg	04 05 14.0	+0.3
SZAC				S	Sb	04 05 20.5	-0.1

PRU ***02*** *04:05:44.0, 40°.66N × 19°.98E, h0km*
IDC ***02*** *04:05:45.4 ± 0.9, 41°.14N × 19°.98E, h0km, mb3.6/10, mb1 3.7/16, mb1mx3.6/52, mbtmp3.6/16, ML3.8/5, MS3.0/5, Ms1 3.0/5, ms1mx2.6/39, Error ellipse: s-maj=13.0km s-min=10.7km az=38.0*
TIR ***02*** *04:05:45.7, 40°.95N × 19°.92E, h25km, ML4.1*
THE ***02*** *04:05:47.7, 41°.06N × 20°.06E, h2km ± 1km, ML3.8/14, Error ellipse: s-maj=1.4km s-min=0.8km az=164.0*
CSEM ***02*** *04:05:47.8 ± 0.1, 41°.04N × 19°.97E, h10km, ML4.1/4, Error ellipse: s-maj=1.6km s-min=1.3km az=46.0*
ROM ***02*** *04:05:47.0 ± 0.5, 40°.96N × 19°.99E, h10km, Ml3.8/37, Error ellipse: s-maj=8.7km s-min=1.9km az=99.0*
PDG ***02*** *04:05:47.5 ± 0.6, 41°.05N × 19°.98E, h14km ± 1km, MD3.8/7, ML3.8/11, Error ellipse: s-maj=0.4km s-min=0.5km az=0.0*
ATH ***02*** *04:05:47.7, 41°.06N × 20°.08E, h22km ± 1km, ML3.5/9, Error ellipse: s-maj=1.8km s-min=1.0km az=5.0*
LDG ***02*** *04:05:47.1 ± 0.1, 41°.01N × 19°.96E, h10km, Ml3.9/5, Error ellipse: s-maj=2.4km s-min=1.7km az=17.0*
ISCJB ***02*** *04:05:48.4 ± 0.4, 41°.08N ± 0°.01 × 19°.94E ± 0°.01, h29km ± 4km, mb3.6/7, MS3.1/2, Error ellipse: s-maj=2.2km s-min=1.6km az=40.0*
SKO ***02*** *04:05:48.2, 41°.01N × 20°.03E, h9km*
ISC 02 04:05:47.7 ± 0.9, 41°.03N ± 0°.02 × 20°.03E ± 0°.02, h26km ± 7km, n409, σ2.11/517, mb3.5/7, 40C-29D, Albania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIR	**Tirane**	**0.34**	**339**	*i* PG	**Pb**	**04 05 54.7**	**-0.7**
TIR				*i* SG	**Sb**	**04 06 00.7**	**0.0**
TIR	**Tirane**	**0.34**	**339**	⇓ *i* P	**Pn**	**04 06 01.4**	**+4.4**
TIR	**Tirane**	**0.34**	**339**	P	**Pb**	**04 05 54.8**	**-0.7**
TIR				*i* Sg	**Sb**	**04 06 00.7**	**0.0**
TIR	**Tirane**	**0.34**	**339**	P	**Pb**	**04 05 54.8**	**-0.7**
TIR				S	**Sb**	**04 06 01.8**	**+1.1**
OHR	**Ohrid**	**0.59**	**82**	⇑ *i* Pg	**Pb**	**04 05 59.1**	**-0.4**
OHR				*i* Sg	**Sb**	**04 06 08.4**	**+0.8**
OHR	**Ohrid**	**0.59**	**82**	⇑ *i* Pg	**Pb**	**04 05 59.1**	**-0.4**
OHR				*i* Sg	**Sb**	**04 06 08.3**	**+0.8**
NEST	**Nestorio**	**0.99**	**128**	P	**Pn**	**04 06 05.9**	**-0.1**
NEST				S	**Sn**	**04 06 20.2**	**+1.0**
NEST	**Nestorio**	**0.99**	**128**	P	**Pn**	**04 06 05.9**	**-0.1**
NEST				S	**Sn**	**04 06 20.2**	**+1.0**
NEST	**Nestorio**	**0.99**	**128**	P	**Pn**	**04 06 05.4**	**-0.7**
NEST				AML	AML	04 06 28.1	
	comp=E,3829μm,0.4s						
NEST				AML	AML	04 06 30.9	
	comp=N,4558μm,0.8s						
FNA	**Florina**	**1.05**	**103**	P	**Pn**	**04 06 06.9**	**+0.1**
FNA				S	**Sn**	**04 06 22.8**	**+2.1**
FNA	**Florina**	**1.05**	**103**	P	**Pb**	**04 06 07.1**	**-0.2**
FNA				S	**Sn**	**04 06 22.8**	**+2.1**
FNA	**Florina**	**1.05**	**103**	P	**Pb**	**04 06 07.1**	**-0.2**
FNA				S	**Sn**	**04 06 23.3**	**+2.6**
FNA				AML	AML	04 06 28.8	
	comp=E,15708μm,0.4s						
FNA				AML	AML	04 06 29.3	
	comp=N,10412μm,0.5s						
ULC	**Ulcinj**	**1.10**	**328**	⇑ *i* Pg	**Pn**	**04 06 07.6**	**+0.1**
ULC				*e*Sg	**Sb**	**04 06 23.9**	**+1.8**
ULC	**Ulcinj**	**1.10**	**328**	⇑ *i* Pg	**Pn**	**04 06 07.6**	**+0.1**
ULC				*e*Sg	**Sb**	**04 06 23.9**	**+1.8**
PENT	**Pentalofos**	**1.19**	**134**	P	**Pb**	**04 06 09.7**	**+0.1**
PENT	**Pentalofos**	**1.19**	**134**	P	**Pb**	**04 06 09.7**	**+0.1**
PENT	**Pentalofos**	**1.19**	**134**	P	**Pn**	**04 06 09.0**	**+0.3**
PENT				AML	AML	04 06 36.1	
	comp=N,3606μm,0.8s						
PENT				AML	AML	04 06 36.4	
	comp=E,2893μm,0.9s						
KEK	**Kerkira**	**1.32**	**188**	P	**Pb**	**04 06 12.8**	**+0.9**
KEK				S	**Sb**	**04 06 32.2**	**+3.7**
KEK	**Kerkira**	**1.32**	**188**	P	**Pb**	**04 06 12.7**	**+0.9**
KEK				S	**Sb**	**04 06 32.2**	**+3.7**
SKO	**Skopje**	**1.42**	**48**	P	**Pb**	**04 06 13.7**	**+0.2**
SKO				S	**Sb**	**04 06 33.5**	**+2.3**
SKO	**Skopje**	**1.42**	**48**	⇓ *i* Pg	**Pb**	**04 06 13.8**	**+0.2**
SKO				*i* Sg	**Sb**	**04 06 33.5**	**+2.3**
SKO	**Skopje**	**1.42**	**48**	P	**Pb**	**04 06 13.7**	**+0.2**
SKO				S	**Sb**	**04 06 33.5**	**+2.3**
SGD	**Sagiada**	**1.42**	**174**	P	**Pb**	**04 06 14.8**	**+1.2**
SGD				S	**Sb**	**04 06 34.9**	**+3.7**
SGD	**Sagiada**	**1.42**	**174**	P	**Pb**	**04 06 15.2**	**+1.6**
KPRO	**Kipourio**	**1.48**	**136**	P	**Pb**	**04 06 14.9**	**+0.3**
KPRO	**Kipourio**	**1.48**	**136**	P	**Pb**	**04 06 15.1**	**+0.5**
KPRO	**Kipourio**	**1.48**	**136**	P	**Pb**	**04 06 15.1**	**+0.5**
JAN	**Janina**	**1.51**	**155**	P	**Pb**	**04 06 15.4**	**+0.4**
JAN				S	**Sb**	**04 06 36.4**	**+2.7**
JAN	**Janina**	**1.51**	**155**	P	**Pb**	**04 06 15.4**	**+0.4**
JAN				S	**Sb**	**04 06 36.4**	**+2.7**
JAN	**Janina**	**1.51**	**155**	S	**Sb**	**04 06 37.0**	**+3.2**
JAN				AML	AML	04 06 48.5	
	comp=E,4999μm,0.5s						
KZN	**Kozani**	**1.51**	**118**	P	**Pb**	**04 06 14.9**	**-0.2**
KZN				S	**Sb**	**04 06 36.5**	**+2.7**
KZN	**Kozani**	**1.51**	**118**	P	**Pb**	**04 06 15.7**	**+0.6**
KZN				S	**Sb**	**04 06 36.5**	**+2.7**
PDG	**Podgorica**	**1.52**	**338**	P	**Pb**	**04 06 15.3**	**+0.2**
PDG				S	**Sb**	**04 06 35.9**	**+2.0**
PDG	**Podgorica**	**1.52**	**338**	⇑ *i*P	**Pb**	**04 06 15.4**	**+0.3**
PDG	**Podgorica**	**1.52**	**338**	Pn	**Pb**	**04 06 15.4**	**+0.3**
PDG				Sn	**Sb**	**04 06 36.3**	**+2.4**
	comp=E,1μm,0.8s						
PDG	**Podgorica**	**1.52**	**338**	P	**Pb**	**04 06 15.3**	**+0.2**
PDG				*e*Sg	**Sb**	**04 06 35.8**	**+1.9**
PDG				Sn	**Sb**	**04 06 36.3**	**+2.4**
	comp=E,1μm,0.8s						
TTG	**Podgorica**	**1.52**	**338**	⇑ *i* Pg	**Pb**	**04 06 15.1**	**0.0**
TTG				*e*Sg	**Sb**	**04 06 36.8**	**+2.9**
BUM	**Brajici-Budva**	**1.53**	**327**	⇓ *i* Pg	**Pb**	**04 06 15.2**	**-0.2**
BUM				*e*Sg	**Sb**	**04 06 36.6**	**+2.2**
BUM	**Brajici-Budva**	**1.53**	**327**	⇓ *i* Pg	**Pb**	**04 06 15.2**	**-0.2**
BUM				*e*Sg	**Sb**	**04 06 36.6**	**+2.2**
PVY	**Plav**	**1.57**	**358**	⇑ *i* Pg	**Pb**	**04 06 16.0**	**-0.1**
PVY				*e*Sg	**Sb**	**04 06 38.1**	**+2.6**
PVY	**Plav**	**1.57**	**358**	⇑ *i* Pg	**Pb**	**04 06 16.0**	**-0.1**
PVY				*e*Sg	**Sb**	**04 06 38.1**	**+2.6**
CEME	**Cevo**	**1.73**	**332**	*e*Pn	**Pb**	**04 06 17.8**	**-1.0**
CEME				*e*Sn	**Sb**	**04 06 41.6**	**+1.5**
CEME	**Cevo**	**1.73**	**332**	*e*Pn	**Pb**	**04 06 17.8**	**-1.0**
CEME				*e*Sn	**Sb**	**04 06 41.6**	**+1.5**
GRG	**Griva**	**1.80**	**92**	P	**Pb**	**04 06 18.6**	**-1.4**
GRG				S	**Sb**	**04 06 43.5**	**+1.4**
GRG	**Griva**	**1.80**	**92**	P	**Pb**	**04 06 18.6**	**-1.4**
GRG				S	**Sb**	**04 06 43.5**	**+1.4**
GRG	**Griva**	**1.80**	**92**	P	**Pb**	**04 06 18.6**	**-1.4**
HCY	**Herceg Novi**	**1.82**	**322**	⇑ *i* Pn	**Pn**	**04 06 18.8**	**+1.4**
HCY				*e*Sn	**Sb**	**04 06 43.9**	**+1.1**
HCY	**Herceg Novi**	**1.82**	**322**	⇑ *i* Pn	**Pn**	**04 06 18.8**	**+1.4**
HCY				*e*Sn	**Sb**	**04 06 42.0**	**-0.8**
BEY	**Berane**	**1.84**	**357**	⇓ *i* Pn	**Pb**	**04 06 20.5**	**-0.3**
BEY				*e*Sn	**Sb**	**04 06 44.5**	**+1.0**
IVA	**Berane**	**1.84**	**357**	⇓ *i* Pn	**Pb**	**04 06 20.5**	**-0.3**
IVA				*e*Sn	**Sb**	**04 06 44.5**	**+1.0**
NKME	**Niksic**	**1.91**	**336**	⇓ *i* Pn	**Pb**	**04 06 20.8**	**-1.1**
NKME				*e*Sn	**Sb**	**04 06 45.6**	**+0.2**
NKME	**Niksic**	**1.91**	**336**	⇓ *i* Pn	**Pb**	**04 06 20.8**	**-1.1**
NKME				*e*Sn	**Sb**	**04 06 45.6**	**+0.2**
VAY	**Valandovo**	**1.94**	**81**	P	**Pb**	**04 06 21.1**	**-1.3**
VAY				S	**Sb**	**04 06 45.9**	**-0.3**
VAY	**Valandovo**	**1.94**	**81**	*e*Pn	**Pb**	**04 06 21.0**	**-1.3**
VAY				*i* Pg	**Pb**	**04 06 21.0**	**+0.6**
VAY				*e*Sn	**Sb**	**04 06 45.5**	**-0.7**
NKY	**Niksic**	**1.94**	**337**	⇑ *i* Pn	**Pb**	**04 06 21.0**	**-1.5**
NKY				*e*Sn	**Sb**	**04 06 46.7**	**+0.4**
NKY	**Niksic**	**1.94**	**337**	⇑ *i* Pn	**Pb**	**04 06 21.0**	**-1.5**
NKY				*e*Sn	**Sb**	**04 06 46.7**	**+0.4**
DSL	**Palaion Diasel**	**2.06**	**156**	P	**Pb**	**04 06 24.1**	**-0.4**
DSL	**Palaion Diasel**	**2.06**	**156**	P	**Pb**	**04 06 24.1**	**-0.4**
LIT	**Litokhoron**	**2.09**	**115**	P	**Pb**	**04 06 23.2**	**-1.8**
LIT				S	**Sb**	**04 06 50.7**	**+0.2**
LIT	**Litokhoron**	**2.09**	**115**	P	**Pb**	**04 06 23.4**	**-1.6**
LIT				S	**Sb**	**04 06 50.7**	**+0.2**
LIT	**Litokhoron**	**2.09**	**115**	P	**Pb**	**04 06 23.4**	**-1.6**
TREB	**Trebinje**	**2.10**	**324**	⇓ *i* Pn	**Pn**	**04 06 22.3**	**+1.1**
TREB				*e*Sn	**Sb**	**04 06 48.8**	**-2.0**
THL	**Klokotos Trika**	**2.11**	**133**	P	**Pb**	**04 06 24.4**	**-0.8**
THL	**Klokotos Trika**	**2.11**	**133**	P	**Pb**	**04 06 24.4**	**-0.8**
TAR1	**Taranto**	**2.14**	**257**	*e*Pn	**Pn**	**04 06 22.4**	**+0.7**
KNT	**Kendrikon**	**2.17**	**86**	P	**Pn**	**04 06 23.7**	**+1.5**
KNT	**Kendrikon**	**2.17**	**86**	P	**Pn**	**04 06 23.7**	**+1.5**
KNT				S	**Sb**	**04 06 51.9**	**-1.0**
KNT	**Kendrikon**	**2.17**	**86**	P	**Pn**	**04 06 23.4**	**+1.2**
KNT				S	**Sb**	**04 06 51.9**	**-1.0**
KNT				AML	AML	04 06 53.1	
	comp=E,1177μm,0.5s						
KNT				AML	AML	04 06 53.1	
	comp=N,982μm,0.6s						
BRY	**Bratogost**	**2.18**	**330**	⇓ *i* Pn	**Pn**	**04 06 24.3**	**+1.9**
BRY				*e*Sn	**Sb**	**04 06 52.2**	**-0.9**
BRY	**Bratogost**	**2.18**	**330**	*e*Pn	**Pn**	**04 06 23.8**	**+1.4**
BRY				*e*Sn	**Sb**	**04 06 51.0**	**-2.1**
BARS	**Barje**	**2.23**	**36**	⇓ *i* Pn	**Pn**	**04 06 24.5**	**+1.5**
NOCI	**Noci**	**2.26**	**265**	Pn	**Pn**	**04 06 24.0**	**+0.6**
	comp=N,813nm,0.6s						
NOCI	**Noci**	**2.26**	**265**	Pn	**Pn**	**04 06 24.0**	**+0.6**
	comp=N,813nm,0.6s						
THE	**Thessaloniki**	**2.26**	**99**	P	**Pn**	**04 06 25.2**	**+1.8**
THE				S	**Sb**	**04 06 55.3**	**-0.1**
THE	**Thessaloniki**	**2.26**	**99**	P	**Pn**	**04 06 25.2**	**+1.8**
THE				S	**Sb**	**04 06 55.3**	**-0.1**
THE	**Thessaloniki**	**2.26**	**99**	P	**Pn**	**04 06 24.8**	**+1.3**
THE				S	**Sb**	**04 06 54.5**	**-1.0**
THE				AML	AML	04 06 56.5	
	comp=N,916μm,0.6s						
THE				AML	AML	04 06 56.5	
	comp=E,495μm,0.6s						
LKD2	**Lefkada island**	**2.29**	**168**	P	**Pb**	**04 06 26.1**	**-2.2**
LKD2				S	**Sb**	**04 06 55.8**	**-0.4**
LKD2	**Lefkada island**	**2.29**	**168**	P	**Pb**	**04 06 26.1**	**-2.2**
LKD2				S	**Sb**	**04 06 55.8**	**-0.4**
LKD2	**Lefkada island**	**2.29**	**168**	P	**Pn**	**04 06 25.8**	**+2.0**
UPM	**Unac-Piva**	**2.33**	**339**	⇑ *i* Pn	**Pn**	**04 06 26.6**	**+2.1**
UPM				*e*Sn	**Sb**	**04 06 55.9**	**-1.6**
UPM	**Unac-Piva**	**2.33**	**339**	⇑ *i* Pn	**Pn**	**04 06 26.6**	**+2.1**
UPM				*e*Sn	**Sn**	**04 06 54.4**	**+2.0**
PLE	**Pljevlja**	**2.35**	**349**	⇑ *i* Pn	**Pb**	**04 06 27.3**	**-2.1**
PLE				*e*Sn	**Sb**	**04 06 56.1**	**-1.7**
PLE	**Pljevlja**	**2.35**	**349**	⇑ *i* Pn	**Pb**	**04 06 27.3**	**-2.1**
PLE				*e*Sn	**Sb**	**04 06 56.3**	**-1.7**
HORT	**Hortiatis**	**2.37**	**99**	P	**Pn**	**04 06 26.1**	**+1.1**
HORT	**Hortiatis**	**2.37**	**99**	P	**Pn**	**04 06 26.2**	**+1.2**
HORT	**Hortiatis**	**2.37**	**99**	P	**Pn**	**04 06 26.2**	**+1.2**
BAI	**Bari**	**2.38**	**273**	*e*Pn	**Pn**	**04 06 25.8**	**+0.8**
BAI				Sn	**Sn**	**04 06 52.9**	**-0.5**
LTRZ	**Laterza**	**2.47**	**261**	Pn	**Pn**	**04 06 26.8**	**+0.5**
	comp=E,582nm,0.7s						
LTRZ	**Laterza**	**2.47**	**261**	Pn	**Pn**	**04 06 26.8**	**+0.5**
	comp=E,582nm,0.7s						
EVR	**Evrytania**	**2.52**	**146**	P	**Pb**	**04 06 31.2**	**-1.0**
EVR	**Evrytania**	**2.52**	**146**	P	**Pb**	**04 06 31.2**	**-1.0**
EVR	**Evrytania**	**2.52**	**146**	P	**Pb**	**04 06 32.0**	**-0.2**
SOH	**Sokhos**	**2.53**	**94**	P	**Pn**	**04 06 29.2**	**+2.1**
SOH				S	**Sb**	**04 07 01.7**	**-1.4**
SOH	**Sokhos**	**2.53**	**94**	P	**Pn**	**04 06 29.2**	**+2.1**
SOH				S	**Sb**	**04 07 01.7**	**-1.4**
SOH	**Sokhos**	**2.53**	**94**	P	**Pn**	**04 06 28.9**	**+1.8**
SOH				AML	AML	04 07 03.9	
	comp=N,859μm,1.0s						
SOH				AML	AML	04 07 09.9	
	comp=E,708μm,0.5s						
SG1	**Sgolgore (BA)**	**2.54**	**267**	*e*Pn	**Pn**	**04 06 29.4**	**+2.1**
IVAS	**Ivanjica**	**2.55**	**2**	*e*Pn	**Pn**	**04 06 29.3**	**+1.9**
MATE	**Matera**	**2.55**	**263**	Pn	**Pn**	**04 06 28.3**	**+1.0**
MATE	**Matera**	**2.55**	**263**	Pn	**Pn**	**04 06 28.3**	**+1.0**
PDO	**Prodromos**	**2.58**	**159**	P	**Pn**	**04 06 30.4**	**+2.5**
PDO				S	**Sb**	**04 07 03.0**	**-1.7**
PDO	**Prodromos**	**2.58**	**159**	P	**Pn**	**04 06 30.3**	**+2.4**
PDO				S	**Sb**	**04 07 03.0**	**-1.7**
PDO	**Prodromos**	**2.58**	**159**	P	**Pn**	**04 06 30.3**	**+2.4**
AMUR	**Altamura**	**2.59**	**268**	Pn	**Pn**	**04 06 28.7**	**+0.7**
	comp=E,305nm,0.6s						
AMUR	**Altamura**	**2.59**	**268**	Pn	**Pn**	**04 06 28.7**	**+0.7**
	comp=E,305nm,0.6s						
PVO	**Paravola**	**2.67**	**154**	P	**Pb**	**04 06 32.4**	**-2.4**
PVO	**Paravola**	**2.67**	**154**	P	**Pb**	**04 06 32.4**	**-2.4**
PVO	**Paravola**	**2.67**	**154**	P	**Pb**	**04 06 32.9**	**-1.9**
AGG	**Agios Georgios**	**2.67**	**138**	P	**Pb**	**04 06 32.3**	**-2.6**
AGG	**Agios Georgios**	**2.67**	**138**	P	**Pb**	**04 06 32.3**	**-2.6**
PLG	**Polygyros**	**2.68**	**103**	P	**Pn**	**04 06 30.7**	**+1.5**
PLG				S	**Sb**	**04 07 05.5**	**-1.9**
PLG	**Polygyros**	**2.68**	**103**	P	**Pn**	**04 06 30.7**	**+1.5**
PLG				S	**Sb**	**04 07 05.5**	**-1.9**
PLG	**Polygyros**	**2.68**	**103**	P	**Pn**	**04 06 30.5**	**+1.3**
PLG				AML	AML	04 07 08.4	
	comp=E,424μm,0.4s						
PLG				AML	AML	04 07 08.7	
	comp=N,632μm,0.5s						
SRS	**Serrai**	**2.70**	**87**	P	**Pn**	**04 06 31.4**	**+2.0**
SRS	**Serrai**	**2.70**	**87**	P	**Pn**	**04 06 31.4**	**+2.0**
SRS	**Serrai**	**2.70**	**87**	P	**Pn**	**04 06 30.4**	**+1.0**
SRS				AML	AML	04 07 06.3	
	comp=E,390μm,0.6s						
SRS				AML	AML	04 07 09.3	
	comp=N,498μm,0.6s						
FYTO	**Fytoko, Volos**	**2.75**	**125**	P	**Pn**	**04 06 33.1**	**+2.9**
FYTO	**Fytoko, Volos**	**2.75**	**125**	P	**Pn**	**04 06 33.1**	**+2.9**
ANX	**Ano Chora**	**2.84**	**148**	P	**Pb**	**04 06 35.2**	**-2.5**
ANX	**Ano Chora**	**2.84**	**148**	P	**Pb**	**04 06 35.2**	**-2.5**
CDT	**Castel del Mon**	**2.84**	**272**	*e*Pn	**Pn**	**04 06 32.2**	**+0.8**
VTS	**Vitosha**	**2.84**	**56**	P	**Pn**	**04 06 33.7**	**+2.1**
VTS				S	**Sn**	**04 07 08.0**	**+2.9**
VTS	**Vitosha**	**2.84**	**56**	⇑ *i* P	**Pn**	**04 06 34.2**	**+2.6**
VTS	**Vitosha**	**2.84**	**56**	P	**Pn**	**04 06 33.7**	**+2.1**
VTS				S	**Sn**	**04 07 08.0**	**+2.9**
BBLS	**Lazići**	**2.87**	**351**	⇓ *i* Pn	**Pn**	**04 06 33.9**	**+2.0**
BBLS				*e*Sn	**Sn**	**04 07 08.6**	**+3.0**
VLS	**Valsamata**	**2.88**	**171**	P	**Pn**	**04 06 33.2**	**+1.3**
VLS	**Valsamata**	**2.88**	**171**	P	**Pn**	**04 06 33.2**	**+1.3**
MRVN	**Minervino Murg**	**2.90**	**272**	Pn	**Pn**	**04 06 33.1**	**+0.9**
	comp=N,242nm,0.8s						
MRVN	**Minervino Murg**	**2.90**	**272**	Pn	**Pn**	**04 06 33.1**	**+0.9**
	comp=N,242nm,0.8s						
PIPA	**Pietrapaola**	**2.90**	**239**	Pn	**Pn**	**04 06 33.2**	**+1.0**
	comp=N,198nm,0.5s						
PIPA	**Pietrapaola**	**2.90**	**239**	Pn	**Pn**	**04 06 33.2**	**+1.0**
	comp=N,198nm,0.5s						
GRUS	**Gruza**	**2.90**	**10**	⇓ *i* Pn	**Pn**	**04 06 34.6**	**+2.4**
NVR	**Nevrokopi**	**2.91**	**82**	P	**Pb**	**04 06 36.2**	**-2.7**
XOR	**Xorichti**	**2.94**	**123**	P	**Pn**	**04 06 35.4**	**+2.7**
XOR	**Xorichti**	**2.94**	**123**	P	**Pn**	**04 06 35.4**	**+2.7**
XOR	**Xorichti**	**2.94**	**123**	P	**Pn**	**04 06 34.0**	**+1.3**
KFL	**Anninata**	**2.97**	**168**	P	**Pn**	**04 06 34.8**	**+1.6**
KFL	**Anninata**	**2.97**	**168**	P	**Pn**	**04 06 34.8**	**+1.6**
NEO	**Neokhori**	**2.99**	**124**	P	**Pn**	**04 06 35.6**	**+2.1**
NEO				S	**Sb**	**04 07 13.6**	**-2.8**
NEO	**Neokhori**	**2.99**	**124**	P	**Pn**	**04 06 35.6**	**+2.1**
NEO				S	**Sb**	**04 07 13.6**	**-2.8**
NEO	**Neokhori**	**2.99**	**124**	P	**Pn**	**04 06 35.6**	**+2.1**
AXS	**Araxos**	**3.02**	**159**	P	**Pn**	**04 06 36.2**	**+2.5**
AXS	**Araxos**	**3.02**	**159**	P	**Pn**	**04 06 35.8**	**+2.0**
AXS	**Araxos**	**3.02**	**159**	P	**Pn**	**04 06 35.8**	**+2.0**
SALB	**San Lorenzo Be**	**3.04**	**249**	Pn	**Pn**	**04 06 34.7**	**+0.5**
	comp=N,198nm,0.6s						
SALB	**San Lorenzo Be**	**3.04**	**249**	Pn	**Pn**	**04 06 34.7**	**+0.5**
	comp=N,198nm,0.6s						
DIVS	**Divibare**	**3.07**	**360**	⇓ *i* Pn	**Pn**	**04 06 36.3**	**+1.7**
DIVS				*e*Sn	**Sn**	**04 07 12.8**	**+2.3**
TRIZ	**Trizonia**	**3.09**	**149**	P	**Pb**	**04 06 38.7**	**-3.3**
KALE	**Kalithea**	**3.10**	**148**	P	**Pn**	**04 06 38.1**	**+3.1**
KALE	**Kalithea**	**3.10**	**148**	P	**Pn**	**04 06 38.1**	**+3.1**
KALE	**Kalithea**	**3.10**	**148**	P	**Pn**	**04 06 38.4**	**+3.5**
ACER	**Acerenza**	**3.10**	**267**	Pn	**Pn**	**04 06 36.5**	**+1.5**
	comp=N,669nm,0.5s						
ACER	**Acerenza**	**3.10**	**267**	Pn	**Pn**	**04 06 36.5**	**+1.5**
	comp=N,669nm,0.5s						
TIP	**Timpagrande**	**3.11**	**235**	P	**Pn**	**04 06 36.0**	**+0.8**
TIP	**Timpagrande**	**3.11**	**235**	Pn	**Pn**	**04 06 35.8

comp=N,220nm,0.6s
MRB1 Monte Rocchett 3.82 273 Pn **Pn** 04 06 46.3 +1.4
comp=N,220nm,0.6s
VILL Villia 3.82 137 P **Pn** 04 06 47.3 +2.4
VILL Villia 3.82 137 P **Pn** 04 06 47.3 +2.4
PSB1 Pescosannita 3.94 275 Pn **Pn** 04 06 48.1 +1.5
comp=N,120nm,0.8s
PSB1 Pescosannita 3.94 275 Pn **Pn** 04 06 48.1 +1.5
comp=N,120nm,0.8s
MDVR Moldovita 3.95 18 ǁ*j*P **Pn** 04 06 48.5 +1.8
MDVR Moldovita 3.95 18 ǁ*j*P **Pn** 04 06 48.5 +1.8
EREA Eretria 3.98 130 P **Pn** 04 06 50.0 +2.9
EREA Eretria 3.98 130 P **Pn** 04 06 50.0 +2.9
EREA Eretria 3.98 130 P **Pn** 04 06 50.7 +3.6
SACR S. Croce Del S 4.03 277 Pn **Pn** 04 06 49.4 +1.6
comp=N,150nm,0.9s
SACR S. Croce Del S 4.03 277 Pn **Pn** 04 06 49.4 +1.6
comp=N,150nm,0.9s
ITM Ithomi 4.12 158 P **Pn** 04 06 51.1 +2.1
ITM Ithomi 4.12 158 P **Pn** 04 06 51.1 +2.1
ITM Ithomi 4.12 158 P **Pn** 04 06 50.4 +1.4
BSSO Busso 4.13 279 Pn **Pn** 04 06 50.7 +1.6
comp=N,86nm,0.6s
BSSO Busso 4.13 279 Pn **Pn** 04 06 50.7 +1.6
comp=N,86nm,0.6s
FGSL Fruska Gora 4.13 358⇑*j*Pn **Pn** 04 06 50.6 +1.5
FRES Fresagrandinar 4.13 285 Pn **Pn** 04 06 50.4 +1.3
comp=N,209nm,0.8s
FRES Fresagrandinar 4.13 285 Pn **Pn** 04 06 50.4 +1.3
comp=N,209nm,0.8s
PTRJ Pietraroja 4.16 276 Pn **Pn** 04 06 51.2 +1.6
comp=N,252nm,0.5s
PTRJ Pietraroja 4.16 276 Pn **Pn** 04 06 51.2 +1.6
comp=N,252nm,0.5s
TRIV Trivento 4.18 282 Pn **Pn** 04 06 51.3 +1.4
comp=N,322nm,1.4s
TRIV Trivento 4.18 282 Pn **Pn** 04 06 51.3 +1.4
comp=N,322nm,1.4s
BLY Banja Luka 4.26 332 *e*Pn **Pn** 04 06 51.7 +0.8
BLY *e*Sn **Sn** 04 07 40.9 +1.1
VLY Voula,Athens 4.31 136 P **Pn** 04 06 53.9 +2.3
VLY Voula,Athens 4.31 136 P **Pn** 04 06 53.9 +2.3
DID Didima 4.31 144 P **Pn** 04 06 53.7 +2.1
DID Didima 4.31 144 P **Pn** 04 06 53.7 +2.1
SRE Strehaia 4.32 32⇑*j*P **Pn** 04 06 54.1 +2.4
SRE Strehaia 4.32 32⇑*j*P **Pn** 04 06 54.1 +2.4
PYL PYLOS 4.34 162 P **Pn** 04 06 53.4 +1.4
PYL PYLOS 4.34 162 P **Pn** 04 06 53.4 +1.4
VAGA Valle Agricola 4.39 277 Pn **Pn** 04 06 54.5 +1.8
comp=N,111nm,0.4s
VAGA Valle Agricola 4.39 277 Pn **Pn** 04 06 54.5 +1.8
comp=N,111nm,0.4s
MIDA Miranda 4.39 280 Pn **Pn** 04 06 54.1 +1.4
comp=N,86nm,0.6s
MIDA Miranda 4.39 280 Pn **Pn** 04 06 54.1 +1.4
comp=N,86nm,0.6s
ALN Alexandroupoli 4.56 90 P **Pn** 04 06 57.3 +2.3
ALN Alexandroupoli 4.56 90 P **Pn** 04 06 57.3 +2.3
CERA Filignano 4.56 279 Pn **Pn** 04 06 57.4 +2.3
comp=N,182nm,0.7s
CERA Filignano 4.56 279 Pn **Pn** 04 06 57.4 +2.3
comp=N,182nm,0.7s
INTR Introdacqua 4.70 284 Pn **Pn** 04 06 58.3 +1.3
comp=N,92nm,0.6s
INTR Introdacqua 4.70 284 Pn **Pn** 04 06 58.3 +1.3
comp=N,92nm,0.6s
BZS Buzias 4.73 14 ǁ*j*P **Pn** 04 06 59.2 +1.9
BZS Buzias 4.73 14 ǁ*j*P **Pn** 04 06 59.2 +1.9
POFI Posta Fibreno 4.80 280 Pn **Pn** 04 07 00.2 +1.8
comp=N,37nm,0.5s
POFI Posta Fibreno 4.80 280 Pn **Pn** 04 07 00.2 +1.8
comp=N,37nm,0.5s
GZR Gura Zlata 4.80 24⇑*j*P **Pn** 04 07 00.7 +2.3
GZR Gura Zlata 4.80 24⇑*j*P **Pn** 04 07 00.7 +2.3
GZR S **Sn** 04 07 54.3 +1.1
VLI Veliai 4.87 151 P **Pn** 04 07 00.7 +1.5
VLI Veliai 4.87 151 P **Pn** 04 07 00.7 +1.5
VVLD Villa Vallelon 4.89 282 Pn **Pn** 04 07 01.3 +1.7
comp=N,60nm,0.7s
VVLD Villa Vallelon 4.89 282 Pn **Pn** 04 07 01.3 +1.7
comp=N,60nm,0.7s
KESN Edirne-Kesan 5.04 90 *j*P **Pn** 04 07 03.8 +1.8
KESN *j*S **Sn** 04 07 56.9 -2.7
KESN Edirne-Kesan 5.04 90 P **Pn** 04 07 03.8 +1.8
AQU L'Aquila 5.13 287 *e*Pn **Pn** 04 07 03.6 +0.7
LOT Lotru 5.20 31 ǁ*j*P **Pn** 04 07 05.9 +2.1
LOT Lotru 5.20 31 ǁ*j*P **Pn** 04 07 05.9 +2.1
CHOS Chios island 5.34 118 P **Pn** 04 07 09.4 +3.5
CHOS Chios island 5.34 118 P **Pn** 04 07 09.4 +3.5
SIRR Siria 5.37 12⇑*j*P **Pn** 04 07 08.4 +2.3
SIRR Siria 5.37 12⇑*j*P **Pn** 04 07 08.4 +2.3
SIRR S **Sn** 04 08 07.8 +0.7
SART Tekirdag 5.43 91 *j*P **Pn** 04 07 09.8 +2.7
SART Tekirdag 5.43 91 P **Pn** 04 07 09.8 +2.7
ARR Arges 5.49 36⇑*j*P **Pn** 04 07 10.1 +2.3
ARR Arges 5.49 36⇑*j*P **Pn** 04 07 10.1 +2.3
FDMO Fiordimonte 5.54 294 Pn **Pn** 04 07 09.3 +0.8
comp=N,33nm,0.6s
FDMO Fiordimonte 5.54 294 Pn **Pn** 04 07 09.3 +0.8
comp=N,33nm,0.6s
BOJS Bojanci 5.67 324 *j*Pn **Pn** 04 07 11.4 +1.2
BOJS *j*Sn **Sn** 04 08 13.7 -0.8
BOJS Bojanci 5.67 324 *j*Pn **Pn** 04 07 11.4 +1.2
VOIR 5.73 38 ǁ*j*P **Pn** 04 07 13.8 +2.6
VOIR 5.73 38 ǁ*j*P **Pn** 04 07 13.8 +2.6
KNL Bal¯–kesir 5.75 95 *j*P **Pn** 04 07 14.0 +2.6
ANKY Antikythira Is 5.76 152 P **Pn** 04 07 12.4 +0.9
ANKY Antikythira Is 5.76 152 P **Pn** 04 07 12.4 +0.9
CRES Cresnjev 5.84 327 *e*Pn **Pn** 04 07 13.4 +0.9
SSFR Montelago di S 5.89 296 Pn **Pn** 04 07 13.7 +0.4
comp=N,53nm,0.3s
SSFR Montelago di S 5.89 296 Pn **Pn** 04 07 13.7 +0.4
comp=N,53nm,0.3s
BEHE Becsehely 5.93 338 *e*Pn **Pn** 04 07 14.9 +1.1
BEHE Becsehely 5.93 338ǁ*ex* **Pn** 04 07 15.6 +1.8
DRGR 6.08 18 ǁ*j*P **Pn** 04 07 17.7 +1.8
DRGR 6.08 18 ǁ*j*P **Pn** 04 07 17.7 +1.8
VISS Visnje 6.09 323 *j*Pn **Pn** 04 07 17.5 +1.6
VISS *j*Sn **Sn** 04 08 24.4 -0.3
VISS Visnje 6.09 323 *j*Pn **Pn** 04 07 17.5 +1.6
ATTE AVT- Monte Tez 6.10 293 Pn **Pn** 04 07 17.4 +1.1
comp=N,62nm,1.2s
ATTE AVT- Monte Tez 6.10 293 Pn **Pn** 04 07 17.4 +1.1
comp=N,62nm,1.2s
MLR Muntele Rosu 6.21 42 Pn **Pn** 04 07 20.5 +2.7
baz=205,slow=14
MLR Sn **Sn** 04 08 28.4 +0.4
comp=N,0.1nm,0.3s,baz=8.4,slow=9.3,SNR=3.8
MLR Muntele Rosu 6.21 42 ǁ*j*P **Pn** 04 07 20.8 +3.0
MLR Muntele Rosu 6.21 42 ǁ*j*P **Pn** 04 07 20.8 +3.0
CEY Cerknica 6.23 321 *e*Pn **Pn** 04 07 19.4 +1.5
ISR Istrita 6.28 47⇑*j*P **Pn** 04 07 22.0 +3.3
ISR Istrita 6.28 47⇑*j*P **Pn** 04 07 22.0 +3.3
DOPR Dopca 6.29 37⇑*j*P **Pn** 04 07 21.1 +2.3
DOPR Dopca 6.29 37⇑*j*P **Pn** 04 07 21.1 +2.3
CSKK Cs´‡kako 6.46 349 *ex* Pn 04 07 28.8 +7.7
CSKK *ex* Sn 04 08 46.8 +13
JAVS Javornik 6.51 320 *j*Pn **Pn** 04 07 22.8 +0.9
JAVS *j*Sn **Sn** 04 08 33.3 -2.1
JAVS Javornik 6.51 320 *j*Pn **Pn** 04 07 22.8 +0.9
PERS Pernice 6.63 329 *j*Pn **Pn** 04 07 24.5 +1.0
PERS *j*Sn **Sn** 04 08 36.0 -2.3
PERS Pernice 6.63 329 *j*Pn **Pn** 04 07 24.5 +1.0
SOKA Soboth 6.70 329 *j*Pn **Pn** 04 07 25.9 +1.4
comp=N,3.5nm,0.3s,SNR=12
SOKA Soboth 6.70 329 Pn **Pn** 04 07 25.9 +1.4
comp=N,3.5nm,0.3s,SNR=12
OBKA Obir 6.76 326 *j*Pn **Pn** 04 07 27.1 +1.8
comp=N,4.4nm,0.3s
OBKA *e*Sn **Sn** 04 08 43.0 +1.5
comp=N,29nm,0.6s
OBKA Obir 6.76 326 Pn **Pn** 04 07 27.1 +1.8
comp=N,4.4nm,0.3s
OBKA Sn **Sn** 04 08 43.0 +1.5
comp=N,29nm,0.6s
PLOR Plostina 6.82 43 ǁ*j*P **Pn** 04 07 29.3 +3.3
PLOR Plostina 6.82 43 ǁ*j*P **Pn** 04 07 29.3 +3.3
VRI Vrincioaia 6.87 43⇑*j*P **Pn** 04 07 29.1 +2.4
VRI Vrincioaia 6.87 43⇑*j*P **Pn** 04 07 29.1 +2.4
TLB Topalu 6.88 56 ǁ*j*P **Pn** 04 07 29.5 +2.6
TLB Topalu 6.88 56 ǁ*j*P **Pn** 04 07 29.5 +2.6
PSZ Piszkesteto 6.89 359⇑*j*P **Pn** 04 07 30.8 +3.8
PSZ Piszkesteto 6.89 359 *e*Pn **Pn** 04 07 28.9 +1.9
PSZ Piszkesteto 6.89 359⇑*j*P **Pn** 04 07 30.8 +3.8
PSZ *e*Sn **Sn** 04 08 45.8 +1.2
PSZ Piszkesteto 6.89 359 *ex* **Pn** 04 07 28.9 +1.9
PSZ *ex* **Sn** 04 08 45.8 +1.2
IDI Anoyia 6.89 145 Pn **Pn** 04 07 26.5 -0.6
comp=N,1.7nm,0.3s,baz=311,slow=17,SNR=15
IDI Sn **Sn** 04 08 45.1 +0.3
comp=N,1.9nm,0.3s,baz=270,slow=20,SNR=3.2
ARSA Arzberg 7.01 334 *j*Pn **Pn** 04 07 30.3 +1.6
comp=N,1.5nm,0.3s
ARSA Arzberg 7.01 334 Pn **Pn** 04 07 30.3 +1.6
comp=N,1.5nm,0.3s
MYKA Terra Mystica 7.25 323 *j*Pn **Pn** 04 07 33.4 +1.3
comp=N,1.3nm,0.2s
MYKA *j*Sn **Sn** 04 08 53.0 -0.6
comp=N,4.9nm,0.5s
MYKA Terra Mystica 7.25 323 Pn **Pn** 04 07 33.4 +1.3
comp=N,1.3nm,0.2s
KECS Kecovo 7.46 2 *e*Pn **Pn** 04 07 37.3 +2.5
KECS Kecovo 7.46 2 *e*PN **Pn** 04 07 37.3 +2.5
KECS *e*SN **Sn** 04 08 56.2 -2.3
CONA Conrad Observa 7.51 338 *j*Pn **Pn** 04 07 38.2 +2.6
comp=N,0.2nm,0.2s
CONA Conrad Observa 7.51 338 Pn **Pn** 04 07 38.2 +2.6
comp=N,0.2nm,0.2s
VYHS Vyhne 7.51 354 *e*PN Pn 04 07 41.5 +6.0
VYHS *e*SN **Sn** 04 08 58.1 -1.7
BURAR Bucovina Array 7.56 28⇑*j*P **Pn** 04 07 39.7 +3.4
BURAR Bucovina Array 7.56 28⇑*j*P **Pn** 04 07 39.7 +3.4
TLCR 7.66 54⇑*j*P **Pn** 04 07 41.0 +3.6
TLCR 7.66 54⇑*j*P **Pn** 04 07 41.0 +3.6
ABTA Abfaltersbach 7.88 319 *j*Pn **Pn** 04 07 41.8 +1.1
comp=N,1.8nm,0.2s,SNR=7.7
ABTA *j*Sn **Sn** 04 09 08.0 -1.0
comp=N,16nm,0.7s
ABTA Abfaltersbach 7.88 319 Pn **Pn** 04 07 41.8 +1.1
comp=N,1.8nm,0.2s,SNR=7.7
CRVS Cervenica-Dubn 7.94 7 *e*Pn **Pn** 04 07 44.5 +3.1
CRVS Cervenica-Dubn 7.94 7 *e*PN **Pn** 04 07 44.5 +3.1
MOA Molln 7.97 331 *j*Pn **Pn** 04 07 44.5 +2.7
comp=N,2.9nm,0.2s,SNR=11
MOA *e*Sn **Sn** 04 09 14.0 +3.0
comp=N,4.6nm,0.5s
MOA Molln 7.97 331 Pn **Pn** 04 07 44.5 +2.7
comp=N,2.9nm,0.2s,SNR=11
MOA Sn **Sn** 04 09 14.0 +3.0
comp=N,4.6nm,0.5s
KOLS Kolonicke sedl 8.06 11 *e*Pn **Pn** 04 07 45.8 +2.7
KOLS Kolonicke sedl 8.06 11 *e*PN **Pn** 04 07 45.8 +2.7
PGF Pioggiola 8.38 284 *e*Pn **Pn** 04 07 45.5 -2.0
PGF Pioggiola 8.38 284 *e*Pn **Pn** 04 07 45.5 -2.0
STHS Stebnicka Huta 8.43 5 *e*Sn **Sn** 04 09 26.0 +3.6
STHS Stebnicka Huta 8.43 5 *e*SN **Sn** 04 09 26.0 +3.6
VRAC Vranov 8.63 345 LR LR 04 11 55.1
comp=N,83nm,20.9s,baz=174,slow=44
WTTA Wattenberg 8.67 319 *j*Pn **Pn** 04 07 54.2 +2.6
comp=N,4.3nm,0.3s,SNR=5.5
WTTA *e*Sn **Sn** 04 09 28.3 -0.2
comp=N,5.7nm,0.3s
WTTA Wattenberg 8.67 319 *e*PN **Pn** 04 07 53.2 +1.6
WTTA Wattenberg 8.67 319 Pn **Pn** 04 07 54.2 +2.6
comp=N,4.3nm,0.3s,SNR=5.5
WATA Walderalm 8.75 319 *j*Pn **Pn** 04 07 54.6 +2.0
comp=N,15nm,0.5s,SNR=12
WATA Walderalm 8.75 319 Pn **Pn** 04 07 54.6 +2.0
comp=N,15nm,0.5s,SNR=12
MOTA Moosalm 8.99 318 *j*Pn **Pn** 04 07 58.0 +2.0
comp=N,3.6nm,0.4s,SNR=7.4
MOTA Moosalm 8.99 318 Pn **Pn** 04 07 58.0 +2.0
comp=N,3.6nm,0.4s,SNR=7.4
GERES GERESS Array B 9.01 332 Pn **Pn** 04 07 56.2 +0.1
comp=N,0.5nm,0.3s,baz=154,slow=13,SNR=9.8
GERES Sn **Sn** 04 09 36.2 -0.5
comp=N,0.3nm,0.3s,baz=149,slow=23,SNR=2.9
GERES LR LR 04 11 55.9
comp=N,78nm,18.5s,baz=118,slow=42
RETA Reutte 9.26 317 *j*Pn **Pn** 04 08 01.6 +2.0
comp=N,0.4nm,0.2s
RETA *e*Sn **Sn** 04 09 43.0 +0.1
comp=N,7.9nm,0.6s
RETA Reutte 9.26 317 Pn **Pn** 04 08 01.6 +2.0
comp=N,0.4nm,0.2s
RETA Sn **Sn** 04 09 43.0 +0.1
comp=N,7.9nm,0.6s
KHC Kasperske Hory 9.29 333 *e*PN **Pn** 04 08 01.9 +1.9
KHC *e*SN **Sn** 04 09 46.7 +3.1
KHC *ex* x 04 10 05.5
KHC Kasperske Hory 9.29 333 Pn **Pn** 04 08 01.9 +1.9
KHC Sn **Sn** 04 09 46.7 +3.1
DAVOX Davos/Dischmat 9.31 312 Pn **Pn** 04 08 00.9 +0.6
comp=N,1.4nm,0.3s,baz=124,slow=9.1,SNR=15
DAVOX Sn **Sn** 04 09 44.3 +0.1
comp=N,0.3nm,0.3s,baz=323,slow=20,SNR=3.1
DAVOX LR LR 04 12 48.3
comp=N,68nm,18.4s,baz=90,slow=46
DAVA Damuels 9.60 314 *j*Pn **Pn** 04 08 07.1 +2.8
comp=N,2.1nm,0.3s
DAVA *e*Sn **Sn** 04 09 51.0 -0.4
comp=N,4.8nm,0.5s
DAVA Damuels 9.60 314 Pn **Pn** 04 08 07.1 +2.8
comp=N,2.1nm,0.3s
SBF Sospel 9.73 291 *e*Pn **Pn** 04 08 03.7 -2.3
SBF Sospel 9.73 291 *e*Pn **Pn** 04 08 03.7 -2.3
BRTR Keskin Array B 10.47 93 Pn **Pn** 04 08 19.6 +3.3
comp=N,0.3nm,0.3s,baz=268,slow=12,SNR=13
LPG La Plagne 10.66 299 *e*Pn **Pn** 04 08 16.9 -2.0
LPG *e*Sn **Sn** 04 10 10.1 -7.4
comp=N,9.6nm,0.7s
LPG La Plagne 10.66 299 *e*Pn **Pn** 04 08 16.9 -2.0
LPG *e*Sn **Sn** 04 10 10.1 -7.4
comp=N,4.8nm,0.7s
LPL La Plagne 10.68 299 *e*Pn **Pn** 04 08 16.5 -2.6
LPL *e*Sn **Sn** 04 10 09.8 -8.1
comp=N,3.8nm,0.4s
LPL La Plagne 10.68 299 *e*Pn **Pn** 04 08 16.5 -2.6
LPL *e*Sn **Sn** 04 10 09.8 -8.1
comp=N,1.9nm,0.4s
CABF La Chapelle 11.51 304 *e*Pn **Pn** 04 08 28.8 -1.5
CABF La Chapelle 11.51 304 *e*Pn **Pn** 04 08 28.8 -1.5
AKASG Malin Array Be 11.60 30 Pn **Pn** 04 08 28.0 -3.4
comp=N,0.5nm,0.3s,baz=222,slow=12,SNR=5.9
HINF Hinteralfeld 11.60 310 *e*Pn **Pn** 04 08 30.1 -1.5
HINF *e*Sn **Sn** 04 10 32.0 -8.2
comp=N,3.2nm,0.4s
HINF Hinteralfeld 11.60 310 *e*Pn **Pn** 04 08 30.1 -1.5
HAU Haudompre 11.99 310 *e*Pn **Pn** 04 08 34.7 -2.1
HAU *e*Sn **Sn** 04 10 41.7 -8.0
comp=N,4.4nm,0.4s
HAU Haudompre 11.99 310 *e*Pn **Pn** 04 08 34.7 -2.1
HAU *e*Sn **Sn** 04 10 41.7 -8.0
comp=N,2.2nm,0.4s
SMF Signal de Mont 12.96 301 *e*Pn **Pn** 04 08 47.0 -3.0
SMF Signal de Mont 12.96 301 *e*Pn **Pn** 04 08 47.0 -3.0
LOR Lormes 13.17 304 *e*Pn **Pn** 04 08 51.2 -1.8
LOR *e*Sn **Sn** 04 11 09.3 -9.2
comp=N,3.2nm,0.4s
LOR Lormes 13.17 304 *e*Pn **Pn** 04 08 51.2 -1.8
LOR *e*Sn **Sn** 04 11 09.3 -9.2
comp=N,1.6nm,0.4s
MMAI Mount Meron Ar 14.64 118 Pn **Pn** 04 09 13.7 +0.5
comp=N,0.8nm,0.3s,baz=307,slow=12,SNR=3.9
ETSF Etsaut 15.43 284 *e*P **P** 04 09 26.1 -1.8
NB2 NORSAR Subarra 20.75 348 P **P** 04 10 26.7 +0.4
comp=Z,1.2nm,0.8s,baz=161,slow=11
NB2 NORSAR Subarra 20.75 348 P **P** 04 10 26.7 +0.4
comp=Z,1.2nm,0.8s,SNR=5.0
NOA NORSAR Array B 20.75 348 P **P** 04 10 25.9 -0.4
comp=Z,0.9nm,0.6s,baz=146,slow=10,SNR=4.6
FINES FINESS Array B 20.77 8 P **P** 04 10 25.8 -0.6
comp=Z,2.0nm,0.5s,baz=167,slow=13,SNR=16
EKA Eskdalemuir Ar 20.93 321 P Pn 04 10 29.6 -1.2
comp=Z,0.5nm,0.5s,baz=105,slow=9.1,SNR=6.2
AKTO Aktyubinsk 27.87 57 LR LR 04 24 24.9
comp=Z,17nm,20.0s,baz=301,slow=40
ARCES ARCESS Array B 28.72 4 P **P** 04 11 41.4 -1.0
comp=Z,0.5nm,0.7s,baz=194,slow=11,SNR=4.9
TORD Torodi Ar. Bea 32.07 215 P **P** 04 12 14.6 +2.1
comp=Z,0.3nm,0.7s,baz=34,slow=9.8,SNR=4.7
KURBB Kurchatov Arra 40.90 56 P **P** 04 13 30.1 +2.6
comp=Z,0.4nm,0.5s,baz=281,slow=9.4,SNR=4.2
ZALV Zalesovo Beam 44.12 50 P **P** 04 13 54.0 +0.4
comp=Z,1.2nm,0.4s,baz=282,slow=8.7,SNR=7.0
MKAR Makanchi Array 44.19 61 P **P** 04 13 54.7 +0.4
comp=Z,0.3nm,0.5s,baz=276,slow=5.7,SNR=3.4
SONM Songino Array 58.97 52 P **P** 04 15 47.1 +2.2
comp=Z,0.5nm,0.7s,baz=309,slow=9.1,SNR=3.4
BOSA Boshof 69.46 175 P **P** 04 16 55.3 +1.7
comp=Z,1.5nm,0.6s,baz=0.8,slow=4.7,SNR=5.5
PDAR Pinedale Array 84.99 325 LR LR 05 00 27.6
comp=Z,22nm,18.5s,baz=77,slow=39

IDC ***02*** *04:09:56.1±1.2,26.10N×96.36E,h0km,mb3.6/10, mb1 3.7/10,mb1mx3.5/54,mbtmp3.6/10, Error ellipse: s-maj=43.4km s-min=24.5km az=63.0*
ISC 02 04:10:06.8±1.5**,27.0N**±0.2×**96.4E**±0.1**,h35**km**,n18,**
σ2936/23,mb3.7/10,Myanmar

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHL	**Shillong**	**4.27**	**252**	*e*PN	**Pn**	**04 11 12.0**	**+2.5**
SHL				*e*SN	**Sn**	**04 11 59.5**	**+1.3**
RAMN	**Ramite**	**8.72**	**272**	*e*Pn	**Pn**	**04 12 14.1**	**+3.3**
RAMN				*e*Sn	**Sn**	**04 13 48.3**	**+0.3**
	55nm,0.6s						
GUN	**Gumba**	**9.37**	**278**	*e*Pn	**Pn**	**04 12 21.7**	**+1.9**
PKIN	**Phulchoki**	**9.79**	**276**	*e*Pn	**Pn**	**04 12 28.1**	**+2.7**
PKIN				*e*Sn	**Sn**	**04 14 13.8**	**-0.4**
KKN	**Kakani**	**9.90**	**277**	*e*Pn	**Pn**	**04 12 29.1**	**+2.3**
KKN				*e*Sn	**Sn**	**04 14 16.2**	**-0.6**
GKN	**Gorkha**	**10.47**	**278**	*e*Pn	**Pn**	**04 12 37.0**	**+2.3**
GKN				*e*Sn	**Sn**	**04 14 28.9**	**-2.0**
	34nm,0.4s						
KOLN	**Koldanda**	**11.38**	**277**	*e*Pn	**Pn**	**04 12 49.0**	**+1.8**
KOLN				*e*Sn	**Sn**	**04 14 51.8**	**-1.5**
PYUN	**Piuthan**	**11.93**	**278**	*e*Sn	**Sn**	**04 15 03.0**	**-3.7**
	29nm,0.7s						
SONM	**Songino Array**	**22.27**	**18**	P	**P**	**04 15 03.0**	**+2.2**
	0.3nm,0.5s,baz=205,slow=8.8,SNR=2.2						
MKAR	**Makanchi Array**	**22.71**	**334**	P	**P**	**04 15 09.1**	**+3.6**
	2.4nm,0.7s,baz=138,slow=10,SNR=18						
KURBB	**Kurchatov Arra**	**27.27**	**335**	P	**P**	**04 15 49.2**	**+1.4**
	0.5nm,0.7s,baz=143,slow=9.2,SNR=4.1						
ZALV	**Zalesovo Beam**	**28.28**	**346**	P	**P**	**04 15 58.0**	**+1.4**
	0.9nm,0.5s,baz=177,slow=8.9,SNR=3.8						
FINES	**FINESS Array B**	**57.31**	**327**	P	**P**	**04 19 50.2**	**-0.7**
	0.6nm,0.7s,baz=120,slow=8.3,SNR=2.7						
ARCES	**ARCESS Array B**	**58.33**	**337**	P	**P**	**04 19 58.2**	**+0.2**
	0.5nm,0.8s,baz=96,slow=6.4,SNR=3.6						
WRA	**Warramunga Arr**	**59.40**	**138**	P	P	04 19 56.6	-9.4
	0.6nm,0.9s,baz=324,slow=7.3,SNR=4.6						
NOA	**NORSAR Array B**	**64.49**	**327**	P	**P**	**04 20 38.7**	**-1.1**
	0.5nm,0.7s,baz=62,slow=5.0,SNR=3.0						
GERES	**GERESS Array B**	**65.56**	**314**	P	**P**	**04 20 45.3**	**-1.7**
	0.4nm,0.4s,baz=93,slow=5.9,SNR=4.0						
TORD	**Torodi Ar. Bea**	**88.22**	**284**	P	**P**	**04 22 50.5**	**-4.5**
	0.1nm,0.6s,baz=70,slow=3.2,SNR=2.9						

ATH ***02*** *04:19:37.1,41.07Nx20.10E,h22km±7km,ML1.9/1, Error ellipse: s-maj=9.0km s-min=1.1km az=22.0*
CSEM ***02*** *04:19:37.1±0.5,41.26Nx20.09E,h30km,ML1.9, Error ellipse: s-maj=16.1km s-min=11.1km az=15.0*
SKO ***02*** *04:19:37.4,41.02Nx20.06E,h16km*
ISCJB ***02*** *04:19:38.0±0.7,41.07N±0.04×20.10E±0.06,h9km, Error ellipse: s-maj=7.3km s-min=5.6km az=141.1*
TIR ***02*** *04:19:41.1,40.71Nx22.51E,h7km,ML3.9*
ISC 02 04:19:36.5±0.9**,41.11N**±0.05×**20.12E**±0.05**,h9**km**,n13,**
σ0978/18,2D,Albania

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TIR	**Tirane**	**0.31**	**322**	P	**Pb**	**04 19 43.7**	**-0.5**
TIR				S	**Sb**	**04 19 50.5**	**+1.1**
TIR	**Tirane**	**0.31**	**322**	P	**Pb**	**04 19 43.7**	**-0.5**
TIR				S	**Sb**	**04 19 50.5**	**+1.1**
OHR	**Ohrid**	**0.51**	**89**ǁ	*j*Pg	**Pb**	**04 19 48.1**	**+0.5**
OHR				*j* Sg	**Sn**	**04 19 57.6**	**-1.4**
OHR	**Ohrid**	**0.51**	**89**ǁ	*j*Pg	**Pb**	**04 19 48.1**	**+0.5**
OHR				*j* Sg	**Sn**	**04 19 57.5**	**-1.4**
NEST	**Nestorio**	**0.99**	**134**	P	**Pn**	**04 19 56.2**	**-0.4**
NEST	**Nestorio**	**0.99**	**134**	P	**Pn**	**04 19 56.2**	**-0.4**
FNA	**Florina**	**1.00**	**108**	P	**Pn**	**04 19 56.5**	**-0.3**
FNA	**Florina**	**1.00**	**108**	P	**Pn**	**04 19 56.5**	**-0.3**
FNA				AML	AML	04 20 15.6	
	comp=E,109µm,0.5s						
FNA				AML	AML	04 20 16.1	
	comp=N,126µm,0.5s						
PENT	**Pentalofos**	**1.19**	**139**	P	**Pb**	**04 19 59.1**	**-0.2**
PENT	**Pentalofos**	**1.19**	**139**	P	**Pb**	**04 19 59.1**	**-0.2**
KEK	**Kerkira**	**1.41**	**190**	P	**Pb**	**04 20 02.6**	**-0.4**
KEK				S	**Sg**	**04 20 22.7**	**+0.8**
KPRO	**Kipourio**	**1.49**	**140**	P	**Pg**	**04 20 05.4**	**+0.4**
KPRO	**Kipourio**	**1.49**	**140**	P	**Pg**	**04 20 05.4**	**+0.4**

CSEM ***02*** *04:20:45.2±0.2,40.98Nx19.99E,h2km,ML2.0, Error ellipse: s-maj=6.9km s-min=3.1km az=51.0*
ATH ***02*** *04:20:46.3,41.06Nx20.08E,h19km±4km,ML2.0/2, Error ellipse: s-maj=7.3km s-min=1.4km az=38.0*
PDG ***02*** *04:20:46.4±0.3,41.07Nx20.03E,h12km,ML2.6/9, Error ellipse: s-maj=1.4km s-min=1.1km az=90.0*
SKO ***02*** *04:20:46.4,41.00Nx20.00E,h7km*
ISC 02 04:20:46.0±1.1**,41.03N**±0.03×**20.04E**±0.04**,h11**km±10km**,**
n37,σ0993/65,10C-12D,Albania

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TIR	**Tirane**	**0.34**	**337**	P	**Pg**	**04 20 53.0**	**+0.2**
TIR				S	**Sb**	**04 20 59.6**	**+0.1**
TIR	**Tirane**	**0.34**	**337**	P	**Pg**	**04 20 52.7**	**-0.1**
TIR				S	**Sb**	**04 20 59.6**	**+0.1**
OHR	**Ohrid**	**0.58**	**82**ǁ	*j*Pg	**Pg**	**04 20 57.2**	**0.0**
OHR				*j* Sg	**Sb**	**04 21 06.7**	**+0.3**
OHR	**Ohrid**	**0.58**	**82**ǁ	*j*Pg	**Pg**	**04 20 57.2**	**0.0**
OHR				*j* Sg	**Sb**	**04 21 06.7**	**+0.3**
NEST	**Nestorio**	**0.99**	**129**	P	**Pg**	**04 21 04.5**	**-0.4**
NEST	**Nestorio**	**0.99**	**129**	P	**Pg**	**04 21 04.5**	**-0.4**
NEST				S	**Sn**	**04 21 21.2**	**+1.3**
NEST				AML	AML	04 21 26.9	
	comp=N,185µm,0.4s						
NEST				AML	AML	04 21 28.1	
	comp=E,143µm,0.3s						
FNA	**Florina**	**1.04**	**103**	P	**Pb**	**04 21 05.1**	**-1.0**
FNA	**Florina**	**1.04**	**103**	P	**Pb**	**04 21 05.1**	**-1.0**
ULC	**Ulcinj**	**1.10**	**328**⇑*j*Pg		**Pb**	**04 21 06.4**	**-0.7**
ULC				*e*Sg	**Sn**	**04 21 23.0**	**+0.3**
ULC	**Ulcinj**	**1.10**	**328**⇑*j*Pg		**Pb**	**04 21 06.4**	**-0.7**
ULC	**Ulcinj**	**1.10**	**328**	P	**Pn**	**04 21 07.5**	**+0.1**
ULC				*e*Sg	**Sn**	**04 21 23.0**	**+0.3**
PENT	**Pentalofos**	**1.18**	**135**	P	**Pn**	**04 21 08.2**	**-0.4**
PENT	**Pentalofos**	**1.18**	**135**	P	**Pn**	**04 21 08.2**	**-0.4**
PENT				AML	AML	04 21 32.1	
	comp=N,164µm,0.9s						
PENT				AML	AML	04 21 33.0	
	comp=E,107µm,0.4s						
KEK	**Kerkira**	**1.33**	**188**	P	**Pn**	**04 21 09.6**	**-0.9**
SGD	**Sagiada**	**1.43**	**174**	P	**Pg**	**04 21 14.8**	**+1.4**
KPRO	**Kipourio**	**1.48**	**136**	P	**Pg**	**04 21 15.4**	**+1.1**
PDG	**Podgorica**	**1.51**	**337**ǁ	*j*Pg	**Pb**	**04 21 13.6**	**-0.4**
PDG				*e*Sg	**Sg**	**04 21 35.9**	**+1.3**

NKME				*e*Sn		**Sb**	**04 21 45.0**	**+0.2**
NKY	**Niksic**	**1.94**	**337**	*i*Pn		**Pn**	**04 21 20.0**	**+1.0**
NKY				*e*Sn		**Sb**	**04 21 46.1**	**+0.4**
NKY	**Niksic**	**1.94**	**337**	*i*Pn		**Pn**	**04 21 20.0**	**+1.0**
NKY				*e*Sn		**Sb**	**04 21 46.1**	**+0.4**
BRY	**Bratogost**	**2.18**	**330**	*i*Pn		**Pn**	**04 21 22.9**	**+0.6**
BRY				*e*Sn		**Sb**	**04 21 51.9**	**-0.6**
BRY	**Bratogost**	**2.18**	**330**	*i*Pn		**Pn**	**04 21 22.9**	**+0.6**
BRY				*e*Sn		**Sb**	**04 21 51.9**	**-0.6**
UPM	**Unac-Piva**	**2.33**	**339**	*i*Pn		**Pn**	**04 21 24.7**	**+0.3**
UPM				*e*Sn		**Sb**	**04 21 54.7**	**-2.1**
UPM	**Unac-Piva**	**2.33**	**339**	*i*Pn		**Pn**	**04 21 24.7**	**+0.3**
UPM				*e*Sn		**Sb**	**04 21 54.7**	**-2.1**

JMA ***02*** *04:23:05.2±0.1, 24°.25N×121°.86E, h0km, M2.9*
TAP ***02*** *04:23:05.8, 24°.31N×121°.83E, h6km±1km, ML3.4, D*
ISC 02 04:23:04.6±1.1, 24°.29N±0°.02×121°.99E±0°.02, h3km±10km, n48, σ0°.88/88, 6D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.27**	**301**	*i*P	**Pg**	**04 23 10.1**	**+0.4**
	baz=328						
TWC	**Suao**	**0.34**	**337**	*i*P	**Pb**	**04 23 12.8**	**-0.6**
	baz=5.0						
TWC				S	**Sg**	**04 23 17.1**	**+1.4**
	baz=5.0						
TWD	**Chiawan**	**0.42**	**240**	P	**Pg**	**04 23 12.3**	**-0.4**
	baz=222						
TWD				S	**Sg**	**04 23 16.9**	**-1.3**
	baz=222						
HWA	**Hwalien**	**0.47**	**229**	*e*P	**Pb**	**04 23 16.0**	**+0.4**
	baz=211						
HWA				*e*S	**Sg**	**04 23 21.4**	**+1.5**
	baz=211						
TWE	**Neicheng**	**0.52**	**325**	*i*P	**Pb**	**04 23 15.7**	**-0.7**
	baz=342						
TWE				*e*S	**Sg**	**04 23 22.2**	**+0.8**
	baz=342						
ENTT	**Nioudou**	**0.52**	**312**	*i*P	**Pg**	**04 23 15.3**	**+0.7**
	baz=324						
ENTT				*e*S	**Sg**	**04 23 21.5**	**+0.1**
	baz=324						
ILA	**Ilan**	**0.52**	**335**	*e*S	**Sb**	**04 23 23.6**	**-0.8**
	baz=351						
EGS		**0.55**	**354**	*e*P	**Pn**	**04 23 18.6**	**-0.9**
	baz=11						
EGS				*e*S	**Sb**	**04 23 25.1**	**-0.3**
	baz=11						
NNS	**Nan Shan**	**0.59**	**285**	P	**Pg**	**04 23 15.6**	**-0.3**
	baz=287						
NNS				*e*S	**Sg**	**04 23 22.0**	**-1.5**
	baz=287						
WHF	**Hehuan Shan**	**0.68**	**258**	P	**Pg**	**04 23 17.0**	**-0.7**
	baz=252						
NSK	**Sanguang**	**0.69**	**304**	*i*P	**Pg**	**04 23 18.3**	**+0.3**
	baz=311						
NSK				*e*S	**Sg**	**04 23 26.2**	**-0.7**
	baz=311						
ESL	**Shilin**	**0.70**	**227**	*e*P	**Pg**	**04 23 18.1**	**+0.1**
	baz=215						
TWB1	**Santiao Chiao**	**0.71**	**360**	*e*P	**Pn**	**04 23 20.6**	**-1.1**
	baz=12						
TWB1				S	**Sb**	**04 23 30.2**	**+0.2**
	baz=12						
TWT	**Tachien**	**0.75**	**267**	*e*P	**Pg**	**04 23 18.9**	**-0.1**
	baz=264						
TWT				*e*S	**Sg**	**04 23 27.5**	**-1.2**
	baz=264						
TWA	**Mucha**	**0.78**	**332**	*e*P	**Pb**	**04 23 21.1**	**+0.3**
	baz=342						
TWA				*e*S	**Sg**	**04 23 31.0**	**+1.2**
	baz=342						
NWF	**Wu-fen Shan**	**0.80**	**346**	P	**Pn**	**04 23 22.2**	**-0.7**
	baz=356						
NWF				*e*S	**Sb**	**04 23 32.2**	**-0.3**
	baz=356						
TAP1	**Taipei**	**0.86**	**330**	*e*P	**Pb**	**04 23 22.5**	**+0.3**
	baz=338						
TAP1				*e*S	**Sg**	**04 23 33.1**	**+0.8**
	baz=338						
TAP	**Taipei**	**0.87**	**329**	*e*P	**Pn**	**04 23 22.8**	**-0.9**
	baz=338						
TAP				*e*S	**Sg**	**04 23 33.4**	**+0.9**
	baz=338						
JYNG	**Yonagunijimaku**	**0.88**	**79**	P	**Pn**	**04 23 25.2**	**+1.3**
JYNG				S	**Sn**	**04 23 38.6**	**+1.3**
YOJ	**Yonaguni jima**	**0.94**	**79**	P	**Pn**	**04 23 26.2**	**+1.4**
YOJ				S	**Sn**	**04 23 40.3**	**+1.5**
WDT	**Danda**	**0.95**	**236**	*e*P	**Pg**	**04 23 22.2**	**-0.6**
	baz=228						
WDT				*e*S	**Sg**	**04 23 34.6**	**-0.6**
	baz=228						
TWS1	**Kuangyinshan**	**0.96**	**327**	*e*P	**Pn**	**04 23 25.0**	**-0.1**
	baz=335						
TWS1				*e*S	**Sn**	**04 23 38.6**	**-0.7**
	baz=335						
NSTT	**Nanjuang**	**0.97**	**291**	*i*P	**Pg**	**04 23 23.4**	**+0.3**
	baz=293						
NSTT				S	**Sg**	**04 23 34.7**	**-1.0**
	baz=293						
EHY	**Hungye**	**0.99**	**218**	*e*P	**Pg**	**04 23 23.9**	**+0.2**
	baz=209						
EHY				*e*S	**Sg**	**04 23 37.1**	**+0.6**
	baz=209						
TWY	**Chenhua**	**1.04**	**340**	*e*P	**Pn**	**04 23 26.5**	**+0.3**
	baz=348						
TWY				*e*S	**Sn**	**04 23 41.8**	**+0.5**
	baz=348						
SMLT	**Sun Moon Lake**	**1.08**	**248**	*e*P	**Pg**	**04 23 25.0**	**-0.3**
	baz=243						
SMLT				*e*S	**Sg**	**04 23 38.8**	**-0.5**
	baz=243						
TYC	**Yuchr**	**1.11**	**250**	*e*P	**Pg**	**04 23 25.6**	**-0.2**
	baz=245						
TYC				*e*S	**Sg**	**04 23 39.1**	**-1.1**
	baz=245						
TWQ1	**Liyutan**	**1.11**	**273**	*e*P	**Pg**	**04 23 26.4**	**+0.4**
	baz=272						
TWQ1				*e*S	**Sg**	**04 23 39.7**	**-0.8**
	baz=272						
NSY	**Sanyi**	**1.13**	**277**	*e*P	**Pg**	**04 23 26.9**	**+0.6**
	baz=276						
NSY				*e*S	**Sg**	**04 23 41.6**	**+0.6**
	baz=276						
TWF1	**Yuli**	**1.13**	**214**	*e*P	**Pg**	**04 23 25.7**	**-0.6**
	baz=206						
TWF1				*e*S	**Sn**	**04 23 43.1**	**-0.4**
	baz=206						
TCU	**Taichung**	**1.21**	**263**	*e*P	**Pg**	**04 23 29.4**	**+1.5**
	baz=261						
TCU				*e*S	**Sb**	**04 23 43.9**	**-0.3**
	baz=261						
YUS	**Yu-Shan**	**1.24**	**230**	*e*P	**Pg**	**04 23 28.7**	**+0.2**
	baz=224						
YUS				*e*S	**Sb**	**04 23 46.1**	**+0.4**
	baz=224						
WNT	**Mingjian**	**1.27**	**251**	*e*P	**Pg**	**04 23 30.1**	**+1.2**
	baz=247						
WNT				*e*S	**Sn**	**04 23 47.7**	**+0.9**
	baz=247						
CHKT	**Chengkung**	**1.32**	**206**	*e*P	**Pb**	**04 23 29.8**	**-0.3**
	baz=199						
CHKT				*e*S	**Sn**	**04 23 49.2**	**+1.1**
	baz=199						
ALS	**Alishan**	**1.34**	**235**	*e*P	**Pn**	**04 23 30.0**	**-0.5**
	baz=229						
ALS				*e*S	**Sb**	**04 23 48.3**	**+0.1**
	baz=229						
CHN5	**Tsauling**	**1.39**	**240**	*e*P	**Pb**	**04 23 31.5**	**+0.2**
	baz=236						
CHN5				*e*S	**Sb**	**04 23 49.6**	**+0.2**
	baz=236						
ELDTW	**Lidau**	**1.42**	**219**	*e*P	**Pn**	**04 23 30.5**	**-0.9**
	baz=213						
ELDTW				*e*S	**Sn**	**04 23 49.2**	**-1.4**
	baz=213						
IRIF	**Iriomote-Funau**	**1.58**	**88**	P	**Pg**	**04 23 35.4**	**+0.4**
IRIF				S	**Sg**	**04 23 56.8**	**+1.3**
CHN4	**Tsaushan**	**1.59**	**234**	*e*P	**Pb**	**04 23 35.0**	**+0.4**
	baz=230						
CHN4				*e*S	**Sg**	**04 23 56.7**	**+1.1**
	baz=230						
STYT	**Tauyuan**	**1.60**	**226**	*e*P	**Pb**	**04 23 34.1**	**-0.7**
	baz=220						
STYT				*e*S	**Sb**	**04 23 56.1**	**+0.7**
	baz=220						
WTP	**Ta-pu**	**1.64**	**231**	*e*P	**Pb**	**04 23 35.8**	**+0.3**
	baz=226						
WTP				*e*S	**Sg**	**04 23 58.0**	**+0.7**
	baz=226						
CHY	**Chiayi**	**1.64**	**242**	*e*S	**Sg**	**04 23 58.4**	**+1.0**
	baz=237						
TWK	**Hsinying**	**1.72**	**234**	*e*S	**Sb**	**04 23 59.8**	**+0.9**
	baz=229						
SGST	**Jiashian**	**1.77**	**227**	*e*P	**Pb**	**04 23 37.8**	**+0.1**
	baz=222						
SGST				*e*S	**Sg**	**04 24 02.4**	**+1.0**
	baz=222						
JKRS	**Kuro-shima**	**1.84**	**91**	P	**Pg**	**04 23 39.6**	**-0.3**
JKRS				S	**Sg**	**04 24 04.2**	**+0.5**
JIJ	**Ishigaki jima**	**1.96**	**87**	P	**Pg**	**04 23 41.2**	**-1.0**
JIJ				*e*S	**Sg**	**04 24 06.0**	**-1.7**
JISG	**Ishigakijimahi**	**2.13**	**82**	S	**Sg**	**04 24 10.5**	**-2.6**
JTJ	**Tarama**	**2.49**	**81**	S	**Sb**	**04 24 19.5**	**-1.6**

DDA ***02*** *04:48:05.8, 40°.83N×28°.78E, h7km, Md2.7*
ISCJB ***02*** *04:48:06.3±0.3, 40°.83N±0°.02×28°.80E±0°.02, h5km±4km, Error ellipse: s-maj=3.7km s-min=3.0km az=9.9*
CSEM ***02*** *04:48:06.6±0.1, 40°.84N×28°.81E, h5km, MD2.7, Error ellipse: s-maj=1.4km s-min=1.2km az=177.0*
ISK ***02*** *04:48:06.2, 40°.84N×28°.81E, h5km, MD2.7*
ISC 02 04:48:06.7±0.9, 40°.84N±0°.02×28°.80E±0°.02, h12km±7km, n64, σ0°.68/86, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BUY	**Buyukada**	**0.25**	**86**	*i*P	**Pg**	**04 48 11.7**	**-0.2**
BUY				*i*S	**Sg**	**04 48 15.1**	**-0.2**
BUY	**Buyukada**	**0.25**	**86**	P	**Pg**	**04 48 11.7**	**-0.2**
BUY				S	**Sg**	**04 48 15.1**	**-0.2**
ARMT	**Armutlu**	**0.27**	**169**	*e*PG	**Pg**	**04 48 12.2**	**-0.2**
ARMT				*e*SG	**Sg**	**04 48 16.4**	**+0.2**
ARMT	**Armutlu**	**0.27**	**169**	*e*Pg	**Pg**	**04 48 12.2**	**-0.2**
ARMT				*e*Sg	**Sg**	**04 48 16.4**	**+0.2**
ISK	**Istanbul-Kandi**	**0.30**	**41**	*e*PG	**Pg**	**04 48 12.5**	**-0.4**
ISK				*e*SG	**Sg**	**04 48 16.8**	**-0.3**
ISK	**Istanbul-Kandi**	**0.30**	**41**	*e*Pg	**Pg**	**04 48 12.5**	**-0.4**
ISK				*e*Sg	**Sg**	**04 48 16.8**	**-0.3**
BGKT	**Bogazkoy**	**0.34**	**357**	*e*PG	**Pg**	**04 48 13.5**	**-0.2**
BGKT				*e*SG	**Sg**	**04 48 18.4**	**0.0**
BGKT	**Bogazkoy**	**0.34**	**357**	*e*Pg	**Pg**	**04 48 13.5**	**-0.2**
BGKT				*e*Sg	**Sg**	**04 48 18.4**	**0.0**
ELBA	**Catalca**	**0.42**	**319**	*i*P	**Pg**	**04 48 14.8**	**-0.2**
ELBA				*i*S	**Sg**	**04 48 20.2**	**-0.3**
ELBA	**Catalca**	**0.42**	**319**	P	**Pg**	**04 48 14.8**	**-0.2**
ELBA				S	**Sg**	**04 48 20.2**	**-0.3**
CTKS	**Kestanelik-??a**	**0.46**	**332**	*e*PG	**Pg**	**04 48 15.4**	**-0.3**
CTKS	**Kestanelik-??a**	**0.46**	**332**	*e*Pg	**Pg**	**04 48 15.4**	**-0.3**
KLYT	**Kilyos**	**0.46**	**24**	*e*PG	**Pg**	**04 48 15.7**	**-0.1**
KLYT	**Kilyos**	**0.46**	**24**	*e*Pg	**Pg**	**04 48 15.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**0.47**	**172**	*e*PG	**Pg**	**04 48 15.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**0.47**	**172**	*e*Pg	**Pg**	**04 48 15.8**	**-0.2**
IGD	**Bursa**	**0.65**	**151**	*i*P	**Pg**	**04 48 18.1**	**-1.2**
IGD				*i*S	**Sg**	**04 48 27.0**	**-0.8**
KCTX	**Karacabey (Bur**	**0.66**	**211**	*e*PG	**Pg**	**04 48 19.6**	**0.0**
KCTX	**Karacabey (Bur**	**0.66**	**211**	*e*Pg	**Pg**	**04 48 19.6**	**0.0**
HRT	**Hereke**	**0.66**	**91**	*e*PG	**Pg**	**04 48 19.0**	**-0.6**
HRT	**Hereke**	**0.66**	**91**	*e*Pg	**Pg**	**04 48 19.0**	**-0.6**
SILT	**Sile**	**0.72**	**63**	*e*PG	**Pg**	**04 48 20.1**	**-0.5**
SILT	**Sile**	**0.72**	**63**	*e*Pg	**Pg**	**04 48 20.1**	**-0.5**
IZI	**Iznik**	**0.72**	**134**	*e*PG	**Pg**	**04 48 20.3**	**-0.3**
IZI	**Iznik**	**0.72**	**134**	*e*Pg	**Pg**	**04 48 20.3**	**-0.3**
CTYL	**Yalikoy Yolu**	**0.74**	**329**	*e*PG	**Pg**	**04 48 20.8**	**-0.4**
CTYL	**Yalikoy Yolu**	**0.74**	**329**	*e*Pg	**Pg**	**04 48 20.8**	**-0.4**
ADVT	**Abdulvahap**	**0.82**	**119**	*e*PG	**Pg**	**04 48 22.2**	**-0.4**
ADVT	**Abdulvahap**	**0.82**	**119**	*e*Pg	**Pg**	**04 48 22.2**	**-0.4**
EDC	**Edincik**	**0.86**	**236**	*e*PG	**Pb**	**04 48 23.5**	**-0.1**
EDC	**Edincik**	**0.86**	**236**	*e*Pg	**Pb**	**04 48 23.5**	**-0.1**
MRMT	**Marmara Adasi**	**0.94**	**256**	*e*PG	**Pb**	**04 48 24.9**	**-0.1**
MRMT	**Marmara Adasi**	**0.94**	**256**	*e*Pg	**Pb**	**04 48 24.9**	**-0.1**
KAND	**Kocaeli-Kandir**	**1.09**	**76**	*i*P	**Pg**	**04 48 26.5**	**-1.2**
KAND				*i*S	**Sg**	**04 48 40.6**	**-1.3**
KAND	**Kocaeli-Kandir**	**1.09**	**76**	P	**Pg**	**04 48 26.5**	**-1.2**
KAND				S	**Sg**	**04 48 40.6**	**-1.3**
KNL	**Bal¯–kesir**	**1.12**	**240**	*i*P	**Pg**	**04 48 26.1**	**-2.1**
KNL				*i*S	**Sg**	**04 48 42.1**	**-0.7**
GONE	**Gonen-Balikesi**	**1.16**	**227**	*e*PN	**Pb**	**04 48 28.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.16**	**227**	*e*Pn	**Pb**	**04 48 28.9**	**+0.2**
KRBG	**Karabiga-Canak**	**1.22**	**249**	*e*PN	**Pn**	**04 48 30.3**	**+0.7**
KRBG	**Karabiga-Canak**	**1.22**	**249**	*e*Pn	**Pn**	**04 48 30.3**	**+0.7**
SART	**Tekirdag**	**1.23**	**264**	*i*P	**Pg**	**04 48 28.6**	**-2.0**
SART				*i*S	**Sg**	**04 48 46.3**	**-0.3**
SART	**Tekirdag**	**1.23**	**264**	P	**Pg**	**04 48 28.5**	**-2.0**
SART				S	**Sg**	**04 48 46.3**	**-0.3**
RKY	**Sarkoy-Tekirda**	**1.24**	**264**	*e*PN	**Pn**	**04 48 30.5**	**+0.6**
RKY	**Sarkoy-Tekirda**	**1.24**	**264**	*e*Pn	**Pn**	**04 48 30.5**	**+0.6**
GULT	**Gulveren**	**1.37**	**107**	*e*PN	**Pg**	**04 48 32.3**	**-0.8**
GULT	**Gulveren**	**1.37**	**107**	*e*Pn	**Pg**	**04 48 32.3**	**-0.8**
BALB	**Balikesir**	**1.38**	**211**	*e*PN	**Pg**	**04 48 33.0**	**-0.3**
BALB	**Balikesir**	**1.38**	**211**	*e*Pn	**Pg**	**04 48 33.0**	**-0.3**
TVSB	**Tavsanli**	**1.48**	**160**	*e*PN	**Pb**	**04 48 34.2**	**0.0**
TVSB	**Tavsanli**	**1.48**	**160**	*e*Pn	**Pb**	**04 48 34.2**	**0.0**
SAHE	**Sakarya_HENDEK**	**1.56**	**89**	*i*P	**Pn**	**04 48 34.8**	**+0.5**
SAHE				*i*S	**Sb**	**04 48 55.3**	**0.0**
SAHE	**Sakarya_HENDEK**	**1.56**	**89**	P	**Pn**	**04 48 34.8**	**+0.5**
SAHE				S	**Sb**	**04 48 55.3**	**0.0**
BORA	**Eskisehir**	**1.59**	**126**	*i*P	**Pn**	**04 48 35.2**	**+0.5**
BORA				*i*S	**Sb**	**04 48 56.4**	**+0.3**
BORA	**Eskisehir**	**1.59**	**126**	P	**Pn**	**04 48 35.2**	**+0.5**
BORA				S	**Sb**	**04 48 56.4**	**+0.3**
KESN	**Edirne-Kesan**	**1.60**	**270**	*i*P	**Pn**	**04 48 35.3**	**0.0**
KESN				*i*S	**Sn**	**04 48 56.7**	**+0.6**
KESN	**Edirne-Kesan**	**1.60**	**270**	P	**Pn**	**04 48 35.3**	**+0.6**
KESN				S	**Sn**	**04 48 56.7**	**+0.6**
LPK	**Lapseki**	**1.62**	**254**	*e*PN	**Pb**	**04 48 36.2**	**-0.3**
LPK	**Lapseki**	**1.62**	**254**	*e*Pn	**Pb**	**04 48 36.2**	**-0.3**
GELI	**Tayfur-Gelibol**	**1.82**	**257**	*e*PN	**Pn**	**04 48 39.1**	**+1.3**
GELI	**Tayfur-Gelibol**	**1.82**	**257**	*e*Pn	**Pn**	**04 48 39.2**	**+1.3**
MDUB	**Mudurnu**	**1.86**	**100**	*e*PN	**Pn**	**04 48 39.4**	**+0.8**
MDUB	**Mudurnu**	**1.86**	**100**	*e*Pn	**Pn**	**04 48 39.4**	**+0.8**
ALN	**Alexandroupoli**	**2.09**	**273**	*e*PN	**Pn**	**04 48 42.9**	**+1.4**
ALN	**Alexandroupoli**	**2.09**	**273**	*e*Pn	**Pn**	**04 48 42.9**	**+1.4**

NIED ***02*** *04:55:00, 38°.20N×142°.00E, h56km, Mw3.5 Best double couple: M₀2.02000×10¹⁴ NP1:φs92.00000°, δ65.00000°, λ163.00000°. NP2:φs189.00000°, δ74.00000°, λ26.00000°.*
JMA 02 04:55:29.3±0.1, 38°.23N×141°.95E, h48km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.52**	**296**	P	**Pn**	**04 55 40.8**	**+0.1**
JIO				S	**Sn**	**04 55 48.9**	**0.0**
OFUJ	**Ofunato**	**0.88**	**346**	P	**Pn**	**04 55 45.4**	**+0.1**
JMK	**Ichinoseki**	**0.92**	**322**	P	**Pn**	**04 55 46.4**	**+0.5**
JMK				S	**Sn**	**04 55 58.7**	**+0.6**
JMM	**Marumori**	**0.98**	**249**	P	**Pn**	**04 55 46.5**	**-0.2**
JMM				S	**Sn**	**04 55 59.2**	**-0.3**
JOU	**Okura**	**1.02**	**278**	P	**Pn**	**04 55 47.8**	**+0.5**
JOU				S	**Sn**	**04 56 01.2**	**+0.7**
JFK	**Kawauchi**	**1.21**	**225**	P	**Pn**	**04 55 49.5**	**-0.4**
JFK				S	**Sn**	**04 56 04.4**	**-0.8**
JOM	**Ohasama**	**1.34**	**338**	P	**Pn**	**04 55 52.3**	**+0.7**
JOM				*e*S	**Sn**	**04 56 09.2**	**+0.9**
JYK	**Kaneyama**	**1.42**	**299**	P	**Pn**	**04 55 53.5**	**+0.8**
JYK				S	**Sn**	**04 56 11.9**	**+1.6**
JFT	**Otama**	**1.46**	**241**	P	**Pn**	**04 55 54.1**	**+0.8**
JFT				S	**Sn**	**04 56 12.2**	**+1.0**
JYS	**Shirataka**	**1.48**	**270**	P	**Pn**	**04 55 54.5**	**+0.9**
JYS				*e*S	**Sn**	**04 56 13.0**	**+1.2**

ISK ***02*** *04:56:02.8, 39°.16N×29°.10E, h5km, MD2.5*
DDA ***02*** *04:56:02.9, 39°.11N×29°.10E, h7km, Md2.3*
ISCJB ***02*** *04:56:03.1±0.6, 39°.15N±0°.05×29°.08E±0°.04, h4km±10km, Error ellipse: s-maj=9.1km s-min=4.9km az=165.4*
CSEM ***02*** *04:56:03.1±0.1, 39°.15N×29°.09E, h5km, MD2.5, Error ellipse: s-maj=2.6km s-min=2.2km az=130.0*
ISC 02 04:56:03.3±0.9, 39°.14N±0°.03×29°.09E±0°.03, h11km±10km, n20, σ0°.43/30, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GEDZ	**Gediz**	**0.27**	**111**	*e*PG	**Pg**	**04 56 08.6**	**-0.2**
GEDZ				*e*SG	**Sg**	**04 56 13.1**	**+0.6**
GEDZ	**Gediz**	**0.27**	**111**	*e*Pg	**Pg**	**04 56 08.6**	**-0.2**
GEDZ				*e*Sg	**Sg**	**04 56 13.1**	**+0.6**
GDZ	**Gediz**	**0.31**	**100**	*i*P	**Pg**	**04 56 09.4**	**-0.2**
GDZ				*i*S	**Sg**	**04 56 13.8**	**0.0**
GDZ	**Gediz**	**0.31**	**100**	P	**Pg**	**04 56 09.4**	**-0.2**
GDZ				S	**Sg**	**04 56 13.8**	**0.0**
DEMI	**Demirci**	**0.31**	**251**	*i*P	**Pg**	**04 56 09.4**	**-0.2**
DEMI				*i*S	**Sg**	**04 56 13.8**	**0.0**
DEMI	**Demirci**	**0.31**	**251**	P	**Pg**	**04 56 09.4**	**-0.2**
DEMI				S	**Sg**	**04 56 13.8**	**0.0**
TVSB	**Tavsanli**	**0.42**	**43**	*e*PG	**Pg**	**04 56 11.3**	**-0.3**
TVSB				*e*SG	**Sg**	**04 56 16.8**	**-0.4**
TVSB	**Tavsanli**	**0.42**	**43**	*e*Pg	**Pg**	**04 56 11.3**	**-0.3**
TVSB				*e*Sg	**Sg**	**04 56 16.8**	**-0.4**
KULA	**Kula-Manisa**	**0.71**	**208**	*e*PG	**Pg**	**04 56 16.5**	**-0.6**
KULA	**Kula-Manisa**	**0.71**	**208**	*e*Pg	**Pg**	**04 56 16.5**	**-0.6**
KHL	**Karahalli**	**0.89**	**157**	*e*PG	**Pb**	**04 56 20.4**	**-0.3**
KHL	**Karahalli**	**0.89**	**157**	*e*Pg	**Pb**	**04 56 20.4**	**-0.3**
IZI	**Iznik**	**1.23**	**14**	*e*PN	**Pb**	**04 56 26.7**	**+0.2**
IZI	**Iznik**	**1.23**	**14**	*e*Pn	**Pb**	**04 56 26.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*e*PN	**Pn**	**04 56 26.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*e*Pn	**Pn**	**04 56 26.8**	**+0.3**
BORA	**Eskisehir**	**1.28**	**55**	*i*P	**Pg**	**04 56 27.1**	**-0.9**
BORA				*i*S	**Sb**	**04 56 44.5**	**+0.5**
BORA	**Eskisehir**	**1.28**	**55**	P	**Pg**	**04 56 27.1**	**-0.9**
BORA				S	**Sb**	**04 56 44.5**	**+0.5**
ARMT	**Armutlu**	**1.43**	**353**	*e*PN	**Pg**	**04 56 30.4**	**-0.4**
ARMT	**Armutlu**	**1.43**	**353**	*e*Pn	**Pg**	**04 56 30.4**	**-0.4**

ISCJB ***02*** *05:33:46.9±0.6, 7°.87S±0°.08×117°.61E±0°.09, h250km, mb3.7/6, Error ellipse: s-maj=13.1km s-min=10.1km az=137.3*
IDC ***02*** *05:33:48.6±4.3, 7°.95S×117°.57E, h255km±37km, mb3.4/7, mb1 3.5/8, mb1mx3.1/50, mbtmp4.0/8, Error ellipse: s-maj=69.2km s-min=12.5km az=63.0*
DJA ***02*** *05:33:49.0±1.3, 8°S±29°×11°8E±1°0, h224km±18km, M4.1/6, mb3.9/2, mB4.7/1, MLv4.2/6, Mw(mB)4.0/1*
ISC 02 05:33:48.4±0.8, 7°.96S±0°.08×117°.64E±0°.09, h250km, n15, σ1s15/18, mb3.7/6, Bali Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLAI	**Plampang**	**0.87**	**171**	P	**Pn**	**05 34 22.2**	**-0.6**
PLAI				S	**S**	**05 34 48.0**	**-1.9**
TWSI	**Taliwang, Sumb**	**1.07**	**224**	P	**Pn**	**05 34 23.9**	**0.0**
TWSI				S	**S**	**05 34 50.6**	**-1.2**
KAPI	**Kappang**	**3.60**	**36**	P	**Pn**	**05 34 48.8**	**+1.1**
	1.5nm,0.3s,baz=236,slow=17,SNR=4.9						
BASI	**Baing, Sumba**	**3.67**	**128**	P	**Pn**	**05 34 47.8**	**-0.6**
EDFI	**Ende, Flores**	**4.09**	**101**	P	**Pn**	**05 34 51.5**	**-1.9**
BATI	**Baunta**	**6.36**	**111**	P	**Pn**	**05 35 21.1**	**0.0**
	18nm,0.9s						
SOEI	**Soe**	**6.79**	**106**	P	**Pn**	**05 35 25.4**	**-1.3**
FITZ	**Fitzroy Crossi**	**12.74**	**143**	P	**P**	**05 36 44.9**	**+1.6**
	1.0nm,0.3s,baz=329,slow=8.6,SNR=39						
FITZ				S	**S**	**05 39 04.1**	**+1.1**
	0.9nm,0.3s,baz=202,slow=15,SNR=6.3						
WRA	**Warramunga Arr**	**20.09**	**128**	P	**P**	**05 38 03.2**	**-0.4**
	1.2nm,0.3s,baz=302,slow=12,SNR=68						
ASAR	**Alice Springs**	**22.07**	**137**	P	**P**	**05 38 24.1**	**+0.8**
	2.6nm,0.4s,baz=310,slow=9.0,SNR=62						
STKA	**Stephens Creek**	**32.61**	**140**	P	**P**	**05 39 58.0**	**+1.1**
	1.4nm,0.5s,baz=22,slow=3.3,SNR=3.5						
USRK	**Ussuriysk Ar.**	**53.52**	**13**	P	**P**	**05 42 43.1**	**-0.2**
	2.0nm,0.6s,baz=210,slow=4.6,SNR=6.4						
SONM	**Songino Array**	**56.44**	**351**	P	**P**	**05 43 04.3**	**-0.1**
	1.4nm,0.6s,baz=167,slow=9.2,SNR=6.8						
MKAR	**Makanchi Array**	**62.93**	**333**	P	**P**	**05 43 47.7**	**-0.7**
	0.4nm,0.5s,baz=142,slow=6.2,SNR=6.8						
ZALV	**Zalesovo Beam**	**67.60**	**340**	P	**P**	**05 44 17.0**	**-1.1**
	0.6nm,0.4s,baz=134,slow=4.2,SNR=3.2						

IDC ***02*** *05:39:35.3±1.9, 40°.98S×85°.56E, h0km, mb4.4/11, mb1 4.5/11, mb1mx4.1/39, mbtmp4.3/11, MS4.3/21, Ms1 4.3/21, ms1mx4.3/28, Error ellipse: s-maj=65.6km s-min=25.7km az=13.0*
GCMT ***02*** *05:39:36.0±0.2, 41°.68S×84°.84E, h14km±1km, MW5.2/105, Moment Tensor Solution. s73,c103; s105,c190; Duration: 1s0 Moment tensor: Scale 10¹⁷Nm; Mrr-0.05±.01; M

1.4nm,0.9s,baz=142,slow=6.3,SNR=5.3
BRTR LR LR 06 29 43.0
comp=Z,94nm,21.1s,baz=137,slow=32
TORD Torodi Ar. Bea 93.70 284 P **P 05 52 55.8 -0.1**
0.5nm,0.7s,baz=98,slow=4.6,SNR=4.1
TORD LR LR 06 31 57.8
comp=Z,247nm,20.4s,baz=115,slow=33
ZALV Zalesovo Beam 94.09 360 LR LR 06 33 21.1
comp=Z,211nm,21.8s,baz=252,slow=34
USRK Ussuriysk Ar. 94.18 32 LR LR 06 34 21.4
comp=Z,117nm,20.0s,baz=204,slow=35
DBIC Dimbokro 94.46 275 LR LR 06 30 48.5
comp=Z,230nm,19.8s,baz=119,slow=32
PLCA Paso Flores 96.22 198 LR LR 06 35 45.1
comp=Z,238nm,19.6s,baz=230,slow=35
PPT2 Papeete2 102.90 127 eLR LR 06 26 57.0
248nm,28.2s

*CSEM **02** 06:05:57.9, 11°.92N×44°.14E, h13km, ML3.8*
*DHMR **02** 06:05:57.9±1.3, 11°.92N×44°.14E, h14km±11km, ML3.8*
*ARO **02** 06:06:01.6, 12°.N±4°.4'.4E±°, h15km±11km, ML3.6*
ISC 02 06:05:58.3±1.5, 12°.04N±0°.05×44°.05E±0°.05, h3km±15km, n17, σ1°18/28, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OBO	**Obock**	**0.74**	**266**	*eP*	**Pb**	**06 06 14.4**	**+0.5**
ATA	**Atar**	**1.01**	**235**	*eP*	**Pb**	**06 06 18.5**	**-0.1**
TDD	**Tadjoura Ara**	**1.15**	**258**	*eP*	**Pg**	**06 06 20.7**	**+0.4**
ADEN	**Aden**	**1.17**	**51**	*i* P	**Pg**	**06 06 20.2**	**-0.5**
ADEN				*i* S	**Sb**	**06 06 36.4**	**-0.3**
ADEN				AML	AML	06 06 41.4	
	comp=Z,1μm,0.5s						
ADEN	**Aden**	**1.17**	**51**	*i* P	**Pg**	**06 06 20.2**	**-0.5**
ADEN				*i* S	**Sb**	**06 06 36.4**	**-0.3**
ATD	**Arta Tunnel**	**1.28**	**247**	*eP*	**Pn**	**06 06 22.8**	**-0.4**
ATD				*eS*	**Sg**	**06 06 40.2**	**+0.5**
SGH	**Sud-Ghoubbet**	**1.52**	**247**	*eP*	**Pn**	**06 06 26.6**	**+0.1**
LDLD	**Lac de Lave**	**1.59**	**253**	*eP*	**Pn**	**06 06 27.4**	**0.0**
GBR	**Grand-Bara**	**1.79**	**240**	*eP*	**Pb**	**06 06 31.0**	**-0.8**
UDYN	**Al 'Udayn**	**1.91**	**358**	*i* P	**Pn**	**06 06 33.3**	**+1.3**
UDYN				*i* S	**Sg**	**06 07 00.8**	**+0.9**
UDYN				AML	AML	06 07 05.4	
	comp=E,938nm,0.6s						
UDYN	**Al 'Udayn**	**1.91**	**358**	*i* P	**Pn**	**06 06 33.3**	**+1.3**
UDYN				*i* S	**Sg**	**06 07 00.8**	**+0.9**
BDHA	**Al Bayda'**	**2.42**	**37**	*i* P	**Pn**	**06 06 40.3**	**+1.2**
BDHA				*i* S	**Sb**	**06 07 13.3**	**+0.2**
BDHA				AML	AML	06 07 18.9	
	comp=N,1μm,0.6s						
BDHA	**Al Bayda'**	**2.42**	**37**	*i* P	**Pn**	**06 06 40.3**	**+1.2**
BDHA				*i* S	**Sb**	**06 07 13.3**	**+0.2**
DHBB	**Dhamar BB**	**2.53**	**7**	*i* P	**Pb**	**06 06 43.5**	**-1.2**
DHBB				*i* S	**Sg**	**06 07 19.5**	**-0.3**
DHBB	**Dhamar BB**	**2.53**	**7**	*i* P	**Pb**	**06 06 43.5**	**-1.2**
DHBB				*i* S	**Sg**	**06 07 19.5**	**-0.3**
HAJJ	**Hajjah**	**3.66**	**353**	*i* P	**Pn**	**06 06 58.3**	**+2.2**
HAJJ				*i* S	**Sb**	**06 07 46.4**	**-2.3**
HAJJ				AML	AML	06 08 05.2	
	comp=Z,397nm,0.6s						
HAJJ	**Hajjah**	**3.66**	**353**	*i* P	**Pn**	**06 06 58.3**	**+2.2**
HAJJ				*i* S	**Sb**	**06 07 46.4**	**-2.3**

*ISCJB **02** 06:06:58.0±0.4, 24°.27N±0°.02×121°.91E±0°.02, h3km±3km,*
Error ellipse: s-maj=3.4km s-min=2.4km az=139.2
*JMA **02** 06:06:57.4±0.1, 24°.26N×121°.86E, h0km, M2.9*
*TAP **02** 06:06:58.0, 24°.28N×121°.86E, h13km, ML3.4, B*
ISC 02 06:06:58.3±0.9, 24°.28N±0°.02×121°.87E±0°.02, h12km±6km, n48, σ0°.72/80, 2C-6D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.12**	**283**	P	**Pg**	**06 07 01.9**	**+0.4**
	baz=285						
EHP				S	**Sg**	**06 07 04.4**	**+0.6**
	baz=285						
ENA	**Nanau**	**0.19**	**320**	⇓*i* P	**Pg**	**06 07 02.4**	**-0.2**
	baz=325						
ENA				*i* S	**Sg**	**06 07 05.0**	**-0.5**
	baz=325						
TWD	**Chiawan**	**0.32**	**232**	⇑*i* P	**Pg**	**06 07 04.6**	**-0.3**
	baz=235						
TWD				S	**Sg**	**06 07 09.1**	**-0.2**
	baz=235						
TWC	**Suao**	**0.33**	**356**	*i* P	**Pg**	**06 07 05.0**	**0.0**
	baz=359						
TWC				*i* S	**Sg**	**06 07 09.3**	**-0.2**
	baz=359						
HWA	**Hwalien**	**0.39**	**219**	*eP*	**Pb**	**06 07 07.4**	**+0.2**
	baz=229						
ENTT	**Nioudou**	**0.46**	**322**	⇓*i* P	**Pb**	**06 07 07.6**	**-0.8**
	baz=323						
ENTT				S	**Sb**	**06 07 13.9**	**-1.2**
	baz=323						
TWE	**Neicheng**	**0.48**	**337**	⇓*i* P	**Pb**	**06 07 07.9**	**-0.8**
	baz=333						
TWE				*eS*	**Sg**	**06 07 14.3**	**+0.2**
	baz=333						
NNS	**Nan Shan**	**0.48**	**289**	P	**Pb**	**06 07 07.8**	**-1.1**
	baz=290						
NNS				*i* S	**Sg**	**06 07 14.2**	**-0.1**
	baz=290						
ILA	**Ilan**	**0.50**	**347**	*eP*	**Pb**	**06 07 08.7**	**-0.3**
	baz=342						
ILA				*eS*	**Sb**	**06 07 16.9**	**+0.7**
	baz=342						
EGS		**0.56**	**5**	*eP*	**Pn**	**06 07 11.9**	**-0.3**
	baz=7.0						
EGS				*eS*	**Sg**	**06 07 17.4**	**+0.5**
	baz=7.0						
WHF	**Hehuan Shan**	**0.57**	**256**	⇑*i* P	**Pb**	**06 07 09.4**	**-1.2**
	baz=258						
NSK	**Sanguang**	**0.61**	**310**	⇓*i* P	**Pb**	**06 07 10.5**	**-0.6**
	baz=311						
NSK				*i* S	**Sg**	**06 07 18.1**	**-0.4**
	baz=311						
ESL	**Shilin**	**0.62**	**221**	*eP*	**Pb**	**06 07 10.8**	**-0.2**
	baz=229						
TWT	**Tachien**	**0.64**	**268**	⇓*i* P	**Pb**	**06 07 11.3**	**-0.3**
	baz=268						
TWT				*i* S	**Sb**	**06 07 19.6**	**-0.9**
	baz=268						
TWB1	**Santiao Chiao**	**0.73**	**8**	*eP*	**Pb**	**06 07 12.7**	**-0.4**
	baz=9.0						
TWB1				*eS*	**Sg**	**06 07 21.7**	**-0.5**
	baz=9.0						
TWA	**Mucha**	**0.74**	**339**	*eP*	**Pg**	**06 07 12.6**	**-0.1**
	baz=340						
TWA				S	**Sb**	**06 07 23.2**	**-0.2**
	baz=340						
NWF	**Wu-fen Shan**	**0.79**	**354**	*eP*	**Pb**	**06 07 14.1**	**0.0**
	baz=346						
NWF				S	**Sb**	**06 07 24.8**	**0.0**
	baz=346						
TAP1	**Taipei**	**0.82**	**337**	*eP*	**Pb**	**06 07 14.9**	**+0.4**
	baz=337						
TAP1				*eS*	**Sb**	**06 07 25.6**	**+0.1**
	baz=337						
TAP	**Taipei**	**0.83**	**336**	*eP*	**Pb**	**06 07 14.8**	**+0.1**
	baz=336						
WDT	**Danda**	**0.86**	**233**	*eP*	**Pg**	**06 07 14.2**	**-0.8**
	baz=240						
WDT				*eS*	**Sb**	**06 07 26.2**	**-0.7**
	baz=240						
NSTT	**Nanjuang**	**0.87**	**294**	P	**Pb**	**06 07 15.5**	**+0.2**
	baz=295						
NSTT				*i* S	**Sb**	**06 07 26.8**	**-0.2**
	baz=295						
TWS1	**Kuangyinshan**	**0.92**	**333**	P	**Pn**	**06 07 17.0**	**0.0**
	baz=333						
TWS1				*eS*	**Sn**	**06 07 30.8**	**+0.6**
	baz=333						
EHY	**Hungye**	**0.92**	**213**	*eP*	**Pb**	**06 07 16.0**	**-0.3**
	baz=215						
SMLT	**Sun Moon Lake**	**0.97**	**246**	P	**Pb**	**06 07 17.1**	**-0.2**
	baz=247						
SMLT				*eS*	**Sg**	**06 07 29.0**	**-0.9**
	baz=247						
JYNG	**Yonagunijimaku**	**0.99**	**80**	P	**Pb**	**06 07 17.3**	**-0.1**
JYNG				S	**Sb**	**06 07 30.8**	**+0.3**
TYC	**Yuchr**	**1.00**	**248**	*eP*	**Pb**	**06 07 17.1**	**-0.5**
	baz=257						
TWQ1	**Liyutan**	**1.01**	**274**	P	**Pn**	**06 07 18.3**	**0.0**
	baz=275						
TWQ1				S	**Sb**	**06 07 31.5**	**+0.5**
	baz=275						
TWY	**Chenhua**	**1.02**	**346**	*eP*	**Pg**	**06 07 17.6**	**-0.4**
	baz=346						
TWY				*eS*	**Sn**	**06 07 32.8**	**0.0**
	baz=346						
NSY	**Sanyi**	**1.02**	**278**	*eP*	**Pn**	**06 07 18.5**	**0.0**
	baz=279						
YOJ	**Yonaguni jima**	**1.05**	**80**	P	**Pg**	**06 07 18.2**	**-0.4**
YOJ				*eS*	**Sb**	**06 07 32.8**	**+0.6**
YOJ	**Yonaguni jima**	**1.05**	**80**	*i* P	**Pg**	**06 07 18.0**	**-0.6**
	baz=68						
YOJ				S	**Sb**	**06 07 33.2**	**+1.0**
	baz=68						
TWF1	**Yuli**	**1.06**	**210**	*eP*	**Pg**	**06 07 17.9**	**-1.0**
	baz=227						
TCU	**Taichung**	**1.10**	**263**	*eP*	**Pn**	**06 07 22.2**	**+2.6**
	baz=265						
TCU				*eS*	**Sn**	**06 07 35.5**	**+0.8**
	baz=265						
YUS	**Yu-Shan**	**1.16**	**227**	*eP*	**Pb**	**06 07 20.1**	**-0.4**
	baz=228						
YUS				*eS*	**Sn**	**06 07 37.6**	**+0.9**
	baz=228						
ALS	**Alishan**	**1.24**	**232**	*eP*	**Pn**	**06 07 22.0**	**+0.2**
	baz=242						
CHN5	**Tsauling**	**1.29**	**238**	*eP*	**Pg**	**06 07 23.0**	**-0.1**
	baz=241						
CHN5				*eS*	**Sn**	**06 07 41.2**	**+1.7**
	baz=241						
ELDTW	**Lidau**	**1.34**	**216**	*eP*	**Pn**	**06 07 22.7**	**-0.3**
	baz=205						
PCYT	**Pengchaiyu**	**1.35**	**8**	*eP*	**Pb**	**06 07 23.6**	**0.0**
	baz=5.0						
CHN4	**Tsaushan**	**1.50**	**232**	⇓*eP*	**Pg**	**06 07 26.7**	**-0.3**
	baz=235						
CHN4				*eS*	**Sg**	**06 07 48.5**	**+2.0**
	baz=235						
STYT	**Tauyuan**	**1.51**	**223**	*eP*	**Pn**	**06 07 25.0**	**-0.3**
	baz=211						
WTP	**Ta-pu**	**1.55**	**229**	*eP*	**Pb**	**06 07 26.5**	**-0.4**
	baz=230						
WTP				*eS*	**Sg**	**06 07 50.0**	**+1.9**
	baz=230						
TWK	**Hsinying**	**1.62**	**232**	*eP*	**Pg**	**06 07 28.5**	**-1.0**
	baz=236						
SGST	**Jiashian**	**1.68**	**225**	*eP*	**Pg**	**06 07 29.7**	**-0.9**
	baz=214						
IRIF	**Iriomote-Funau**	**1.69**	**88**	P	**Pn**	**06 07 27.7**	**0.0**
IRIF				*eS*	**Sn**	**06 07 49.4**	**+0.1**
JKRS	**Kuro-shima**	**1.95**	**91**	P	**Pn**	**06 07 31.7**	**+0.5**
JKRS				S	**Sn**	**06 07 56.4**	**+0.8**
JIJ	**Ishigaki jima**	**2.07**	**87**	P	**Pn**	**06 07 33.2**	**+0.3**
JIJ				*eS*	**Sn**	**06 07 58.0**	**-0.7**
EAST	**Anshuo**	**2.11**	**207**	*eP*	**Pb**	**06 07 35.4**	**-1.2**
	baz=199						
JISG	**Ishigakijimahi**	**2.24**	**82**	P	**Pn**	**06 07 35.0**	**-0.3**

IDC 02 06:20:52.0±1.4, 16°.33S×177°.94E, h0km, mb4.1/8, mb1 4.4/8, mb1mx4.1/27, mbtmp4.1/8, MS3.5/14, Ms1 3.5/14, ms1mx3.4/29, Error ellipse: s-maj=54.7km s-min=21.0km az=142.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**12.27**	**240**	*e*LR	LR	06 26 13.5	
	473nm,24.4s						
DZM	**Mont Dzumac**	**12.27**	**240**	LR	LR	06 27 46.0	
	comp=Z,375nm,20.6s,baz=36,slow=34						
HNR	**Honiara**	**18.82**	**289**	LR	LR	06 31 48.3	
	comp=Z,93nm,19.0s,baz=130,slow=35						
RAR	**Rarotonga**	**21.65**	**106**	LR	LR	06 31 31.1	
	comp=Z,348nm,21.5s,baz=272,slow=30						
URZ	**Urewera**	**21.86**	**182**	LR	LR	06 33 46.7	
	comp=Z,175nm,19.1s,baz=237,slow=35						
PMG	**Port Moresby**	**30.75**	**279**	LR	LR	06 39 12.0	
	comp=Z,91nm,18.2s,baz=34,slow=36						
PPT2	**Papeete2**	**31.08**	**97**	*e*LQ	LQ	06 33 58.9	
	362nm,28.5s						
PPT2				*e*LR	LR	06 35 19.7	
	338nm,28.5s						
PPT	**Papeete**	**31.08**	**97**	LR	LR	06 36 38.1	
	comp=Z,46nm,19.5s,baz=268,slow=30						
TBI	**Tubuai**	**31.40**	**108**	*e*LR	LR	06 35 31.3	
	361nm,30.0s						
H11S2	**WAKE ISLAND Hy**	**36.32**	**342**	T	T	07 06 21.3	
	baz=163						
H11S3	**WAKE ISLAND Hy**	**36.33**	**342**	T	T	07 06 20.3	
	baz=163,slow=74,SNR=8.3						
H11S1	**WAKE ISLAND Hy**	**36.34**	**342**	T	T	07 06 20.2	
	baz=163,slow=74,SNR=11						
STKA	**Stephens Creek**	**36.41**	**238**	P	P	06 27 58.5	0.0
	4.0nm,0.9s,baz=40,slow=7.9,SNR=2.7						
STKA				LR	LR	06 40 58.3	
	comp=Z,80nm,20.3s,baz=32,slow=33						
WRA	**Warramunga Arr**	**41.51**	**258**	P	P	06 28 40.6	-0.8
	3.0nm,1.0s,baz=87,slow=8.3,SNR=8.2						
TAOE	**Nuku Hiva Isla**	**41.51**	**85**	*e*LR	LR	06 40 05.0	
	140nm,26.1s						
ASAR	**Alice Springs**	**41.89**	**253**	P	P	06 28 44.5	0.0
	7.2nm,1.0s,baz=82,slow=8.4,SNR=27						
ASAR				LR	LR	06 44 45.5	
	comp=Z,87nm,19.3s,baz=91,slow=34						
GUMO	**Guam**	**44.18**	**310**	LR	LR	06 45 01.9	
	comp=Z,35nm,19.3s,baz=146,slow=33						
RKT	**Rikitea**	**44.69**	**107**	*e*LR	LR	06 41 29.2	
	240nm,32.8s						
MJAR	**Matsushiro Arr**	**64.59**	**325**	LR	LR	06 54 08.8	
	comp=Z,22nm,21.6s,baz=250,slow=31						
KSRS	**Korea Array**	**71.22**	**320**	LR	LR	06 57 25.0	
	comp=Z,34nm,21.5s,baz=128,slow=31						
PETK	**Petropavlovsk-**	**71.32**	**347**	P	P	06 32 13.5	+0.1
	2.9nm,0.9s,baz=184,slow=7.1,SNR=3.3						
USRK	**Ussuriysk Ar.**	**73.38**	**327**	P	P	06 32 26.7	+0.9
	1.4nm,0.8s,baz=95,slow=6.3,SNR=6.0						
CMAR	**Chiang Mai Arr**	**85.06**	**291**	LR	LR	07 10 24.7	
	comp=Z,12nm,19.6s,baz=155,slow=35						
ILAR	**Eielson Array**	**85.18**	**14**	P	P	06 33 28.5	-1.3
	2.2nm,1.0s,baz=235,slow=6.3,SNR=16						
ILAR				LR	LR	07 05 56.1	
	comp=Z,102nm,22.0s,baz=326,slow=32						
TXAR	**Lajitas Array**	**88.14**	**59**	P	P	06 33 46.1	+0.9
	0.5nm,0.9s,baz=213,slow=11,SNR=4.2						
PDAR	**Pinedale Array**	**88.65**	**45**	P	P	06 33 47.3	-0.2
	0.7nm,0.9s,baz=195,slow=4.6,SNR=4.3						
PLCA	**Paso Flores**	**94.93**	**135**	LR	LR	07 13 19.8	
	comp=Z,17nm,18.6s,baz=300,slow=33						
GERES	**GERESS Array B**	**145.10**	**342**	PKPbc	PKPbc	06 40 30.8	-0.3
	1.8nm,1.0s,baz=5.5,slow=4.2,SNR=7.3						

DJA 02 06:40:11.5±1.0, 9°.S±8°.×10°.8E±°, h39km±16km, M3.6/6, MLv3.6/6, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMJI	**Cimerak**	**0.71**	**5**	P	Pn	06 40 26.1	+1.0
CMJI				S	Sn	06 40 36.7	+1.8
CISI	**Cisompet, Garu**	**1.09**	**329**	P	Pn	06 40 30.6	+0.2
CISI				S	Sn	06 40 44.8	+0.5
KPJI	**Karang Pucung**	**1.28**	**25**	P	Pn	06 40 33.0	+0.1
CNJI	**Cibinong**	**1.71**	**314**	P	Pn	06 40 39.4	+0.6
UGM	**Wanagama**	**2.20**	**75**	P	Pn	06 40 45.6	0.0
CGJI	**Cibinong**	**3.26**	**305**	P	Pn	06 40 59.5	-0.6

*CSEM **02** 07:06:29.1, 11°.91N×44°.13E, h12km, ML3.5*
DHMR 02 07:06:29.1±1.7, 11°.91N×44°.13E, h13km±18km, ML3.5, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ADEN	**Aden**	**1.20**	**44**	*i* P	Pn	07 06 51.6	0.0
ADEN				*i* S	Sg	07 07 08.0	+0.1
ADEN				AML	AML	07 07 18.4	
	comp=E,991nm,0.4s						
ADEN	**Aden**	**1.20**	**44**	*i* P	Pn	07 06 51.6	0.0
ADEN				*i* S	Sg	07 07 08.0	+0.2
UDYN	**Al 'Udayn**	**2.05**	**356**	*i* P	Pn	07 07 04.7	+1.2
UDYN				*i* S	Sb	07 07 32.1	+0.3
UDYN				AML	AML	07 07 37.6	
	comp=Z,392nm,0.5s						
UDYN	**Al 'Udayn**	**2.05**	**356**	*i* P	Pn	07 07 04.7	+1.2
UDYN				*i* S	Sb	07 07 32.2	+0.3
BDHA	**Al Bayda'**	**2.49**	**34**	*i* P	Pn	07 07 11.5	+2.0
BDHA				*i* S	Sb	07 07 45.1	+0.6
DHBB	**Dhamar BB**	**2.66**	**5**	*i* S	Sb	07 07 51.6	+2.1
DHBB	**Dhamar BB**	**2.66**	**5**	*i* S	Sb	07 07 51.6	+2.1

IDC 02 07:06:41.6±1.8, 6°.81S×147°.46E, h0km, mb3.6/3, mb1 3.6/5, mb1mx3.4/27, mbtmp3.5/5, ML3.0/1, Error ellipse: s-maj=51.3km s-min=17.1km az=101.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.60**	**187**	P	Pn	07 07 26.8	+1.8
	4.2nm,0.3s,baz=342,slow=7.8,SNR=8.5						
PMG				Lg	Lg	07 08 04.5	
	2.4nm,0.3s,baz=140,slow=19,SNR=3.5						
WRA	**Warramunga Arr**	**18.24**	**223**	P	Pn	07 10 55.6	-0.9
	0.1nm,0.3s,baz=54,slow=10.0,SNR=3.0						
ASAR	**Alice Springs**	**21.23**	**216**	P	P	07 11 29.8	+0.4
	0.2nm,0.4s,baz=51,slow=8.7,SNR=4.1						
FITZ	**Fitzroy Crossi**	**24.05**	**240**	P	P	07 11 56.9	-1.8
	1.1nm,0.5s,baz=57,slow=8.7,SNR=9.3						
PETK	**Petropavlovsk-**	**60.31**	**7**	P	P	07 16 52.7	+0.7
	1.9nm,0.5s,baz=151,slow=3.4,SNR=6.4						

*JMA **02** 07:22:14.1±0.1, 36°.38N×141°.00E, h40km±1km, M3.4*
JMA Felt I J1.
*IDC **02** 07:22:14.4±3.0, 35°.83N×140°.67E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.3/56, mbtmp3.3/3, ML3.1/1, Error ellipse: s-maj=79.2km s-min=26.8km az=48.0*
ISC 02 07:22:11.9±2.4, 36°.39N±0°.07×141°.03E±0°.09, h4km±14km, n13, σ1°46/18, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.44**	**301**	P	**Pn**	**07 22 23.5**	**-1.5**
JHO				S	**Sb**	**07 22 30.2**	**+1.1**
JYT	**Yasato**	**0.70**	**257**	P	**Pb**	**07 22 27.0**	**+0.4**
JYT				S	**Sb**	**07 22 36.1**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.74**	**345**	P	**Pb**	**07 22 27.7**	**+0.3**
ONAJ				S	**Sb**	**07 22 37.3**	**-0.6**
JFK	**Kawauchi**	**0.99**	**353**	P	**Pb**	**07 22 31.2**	**-0.4**
JFK				S	**Sg**	**07 22 43.0**	**-0.7**
JFT	**Otama**	**1.26**	**334**	P	**Pg**	**07 22 36.6**	**+0.5**
JFT				S	**Sb**	**07 22 52.4**	**-0.5**
JAG	**Ashikaga**	**1.27**	**272**	P	**Pn**	**07 22 35.5**	**-1.0**
JAG				S	**Sb**	**07 22 51.1**	**-2.2**
MJAR	**Matsushiro Arr**	**2.28**	**275**	Pn	**Pn**	**07 22 50.3**	**-0.1**
	6.2nm,0.3s,baz=106,slow=8.6,SNR=29						
MJAR				Sn	**Sn**	**07 23 18.5**	**-0.5**
	5.4nm,0.3s,baz=74,slow=16,SNR=6.0						
MAT	**Matsushiro**	**2.28**	**275**	P	**Pn**	**07 22 51.1**	**+0.7**
MAT				S	**Sn**	**07 23 18.6**	**-0.4**
SONM	**Songino Array**	**27.90**	**305**	P	**P**	**07 28 07.1**	**+4.1**
	0.3nm,0.5s,baz=111,slow=11,SNR=2.6						
H11S1	**WAKE ISLAND Hy**	**28.77**	**121**	T	T	07 58 15.4	
	baz=314,slow=76,SNR=50						
H11S3	**WAKE ISLAND Hy**	**28.77**	**121**	T	T	07 58 12.5	
	baz=314,slow=76,SNR=29						
H11S2	**WAKE ISLAND Hy**	**28.79**	**121**	T	T	07 58 21.2	
	baz=314,slow=76,SNR=20						
WRA	**Warramunga Arr**	**56.38**	**188**	P	**P**	**07 31 53.2**	**-1.2**
	0.3nm,0.4s,baz=5.8,slow=7.4,SNR=5.4						

*BJI **02** 07:22:46.9, 24°.03N×121°.45E, h6km, ML3.9/3*
*JMA **02** 07:22:49.5±0.1, 23°.97N×121°.57E, h20km±2km, M3.6*
*TAP **02** 07:22:49.9, 23°.99N×121°.47E, h23km, ML4.2, B*
*ISCJB **02** 07:22:50.0±0.2, 23°.98N±0°.01×121°.55E±0°.02, h25km±2km, mb3.7/8, MS2.9/4, Error ellipse: s-maj=2.8km s-min=1.7km az=42.4*
*IDC **02** 07:22:59.8±7.0, 23°.84N×121°.62E, h124km±71km, mb3.4/8, mb1 3.6/9, mb1mx3.3/55, mbtmp3.8/9, MS3.0/4, Ms1 3.1/4, ms1mx2.7/21, Error ellipse: s-maj=35.2km s-min=14.6km az=66.0*
ISC 02 07:22:50.2±0.7, 23°.98N±0°.02×121°.55E±0°.02, h26km±4km, n95, σ1°05/138, mb3.8/8, MS3.0/4, 9C-13D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HWA	**Hwalien**	**0.05**	**88**	⇑*i* P	**Pb**	**07 22 54.7**	**0.0**
	baz=104						
ESF	**Shoufeng Towns**	**0.11**	**199**	*eP*	**Pb**	**07 22 55.0**	**0.0**
	baz=165						
ESF				S	**Sb**	**07 22 58.5**	**+0.2**
	baz=165						
TWD	**Chiawan**	**0.11**	**23**	⇑*i* P	**Pb**	**07 22 54.7**	**-0.4**
	baz=45						
TWD				S	**Sb**	**07 22 58.2**	**-0.2**
	baz=45						
ESL	**Shilin**	**0.19**	**213**	⇑*i* P	**Pb**	**07 22 54.9**	**-0.9**
	baz=189						
ESL				S	**Sb**	**07 22 58.0**	**-1.7**
	baz=189						
TEGC	**Jichi Village**	**0.27**	**181**	*eP*	**Pb**	**07 22 57.0**	**+0.2**
	baz=166						
EHP	**Heping Village**	**0.38**	**28**	*eP*	**Pn**	**07 22 58.8**	**-1.2**
	baz=39						
EHP				*eS*	**Sn**	**07 23 05.1**	**-1.5**
	baz=39						
WDT	**Danda**	**0.44**	**240**	⇓*i* P	**Pb**	**07 22 58.6**	**-1.1**
	baz=232						
WDT				*i* S	**Sb**	**07 23 04.4**	**-1.6**
	baz=232						
TWT	**Tachien**	**0.44**	**309**	⇓*i* P	**Pb**	**07 22 58.7**	**-0.9**
	baz=309						
TWT				S	**Sb**	**07 23 04.3**	**-1.7**
	baz=309						
ENA	**Nanau**	**0.48**	**21**	⇑P	**Pb**	**07 22 59.6**	**-0.7**
	baz=36						
ENA				*eS*	**Sb**	**07 23 06.2**	**-0.9**
	baz=36						
NNS	**Nan Shan**	**0.49**	**341**	⇓*i* P	**Pb**	**07 22 59.6**	**-0.8**
	baz=356						
NNS				S	**Sb**	**07 23 05.8**	**-1.5**
	baz=356						
EHY	**Hungye**	**0.51**	**204**	*eP*	**Pb**	**07 22 59.5**	**-1.1**
	baz=190						
EHY				*eS*	**Sb**	**07 23 07.7**	**0.0**
	baz=190						
SMLT	**Sun Moon Lake**	**0.60**	**261**	⇓*i* P	**Pb**	**07 23 01.0**	**-1.2**
	baz=258						
SMLT				*i* S	**Sb**	**07 23 08.9**	**-1.4**
	baz=258						
TYC	**Yuchr**	**0.64**	**264**	⇓*i* P	**Pb**	**07 23 01.3**	**-1.4**
	baz=261						
TYC				S	**Sb**	**07 23 09.3**	**-1.9**
	baz=261						
TWF1	**Yuli**	**0.66**	**200**	⇓*eP*	**Pb**	**07 23 00.9**	**-2.2**
	baz=193						
TWF1				*eS*	**Sb**	**07 23 12.1**	**+0.2**
	baz=193						
ENTT	**Nioudou**	**0.66**	**2**	*eP*	**Pb**	**07 23 02.5**	**-0.7**
	baz=15		

	baz=282							
TCU				S		Sb	07 23 16.5	+0.1
	baz=282							
NSTT	**Nanjuang**	**0.82**	**323**	P		**Pb**	07 23 05.2	-0.6
	baz=319							
NSTT				*e*S		**Sn**	07 23 17.0	-0.4
	baz=319							
ALS	**Alishan**	**0.82**	**236**	⇓P		**Pb**	07 23 05.4	-0.7
	baz=220							
ALS				S		**Sb**	07 23 16.1	-0.7
	baz=220							
NSY	**Sanyi**	**0.84**	**302**	⇑*i*P		**Pn**	07 23 06.3	-0.1
	baz=311							
NSY				S		**Sb**	07 23 17.0	-0.1
	baz=311							
CHN5	**Tsauling**	**0.88**	**245**	⇑*i*P		**Pb**	07 23 06.7	-0.2
	baz=241							
CHN5				*e*S		**Sb**	07 23 19.1	+0.8
	baz=241							
CHKT	**Chengkung**	**0.89**	**191**	*e*P		**Pb**	07 23 03.4	-3.6
	baz=185							
ELDTW	**Lidau**	**0.92**	**212**	*e*P		**Pb**	07 23 06.2	-1.4
	baz=207							
ELDTW				*e*S		**Sb**	07 23 18.5	-1.0
	baz=207							
EGS		**0.94**	**22**	P		**Pn**	07 23 08.0	+0.3
	baz=27							
WGK	**Gukeng**	**0.95**	**253**	*e*P		**Pb**	07 23 07.1	-0.9
	baz=247							
HSN	**Hsinchu**	**0.98**	**328**	⇑P		**Pn**	07 23 09.3	+1.0
	baz=341							
HSN				*e*S		**Sn**	07 23 23.6	+2.3
	baz=341							
TWA	**Mucha**	**1.00**	**2**	*e*P		**Pn**	07 23 09.3	+0.7
	baz=2.0							
TWA				S		**Sn**	07 23 21.8	-0.2
	baz=2.0							
NCU	**National Centr**	**1.04**	**342**	*e*P		**Pb**	07 23 09.9	+0.2
	baz=346							
NCU				S		**Sn**	07 23 24.9	+2.0
	baz=346							
TAP1	**Taipei**	**1.06**	**359**	*e*P		**Pb**	07 23 09.4	-0.5
	baz=13							
TAP1				*e*S		**Sb**	07 23 22.4	-0.9
	baz=13							
CHN4	**Tsaushan**	**1.07**	**235**	*e*P		**Pn**	07 23 09.8	+0.2
	baz=230							
CHN4				*e*S		**Sn**	07 23 25.0	+1.3
	baz=230							
CHN2	**Minshiung**	**1.08**	**246**	*e*P		**Pn**	07 23 09.4	-0.2
	baz=252							
CHN2				*e*S		**Sn**	07 23 24.3	+0.6
	baz=252							
STYT	**Tauyuan**	**1.09**	**222**	⇓P		**Pn**	07 23 09.5	-0.3
	baz=210							
STYT				S		**Sb**	07 23 23.9	-0.3
	baz=210							
NWF	**Wu-fen Shan**	**1.11**	**11**	*e*P		**Pb**	07 23 10.3	-0.6
	baz=22							
NWF				*e*S		**Sn**	07 23 25.4	+0.6
	baz=22							
WTP	**Ta-pu**	**1.12**	**230**	⇓P		**Pn**	07 23 10.3	0.0
	baz=225							
WTP				*e*S		**Sn**	07 23 26.2	+1.3
	baz=225							
TWS1	**Kuangyinshan**	**1.13**	**354**	*e*P		**Pb**	07 23 11.0	0.0
	baz=9.0							
TWS1				*e*S		**Sn**	07 23 26.7	+1.7
	baz=9.0							
CHY	**Chiayi**	**1.13**	**245**	*e*P		**Pn**	07 23 10.5	+0.1
	baz=252							
CHY				*e*S		**Sb**	07 23 25.0	-0.4
	baz=252							
WTCT	**Ta-ch'eng**	**1.16**	**265**	*e*P		**Pn**	07 23 09.9	-0.9
	baz=262							
WTCT				S		**Sn**	07 23 26.1	+0.2
	baz=262							
TWK	**Hsinying**	**1.20**	**234**	*e*P		**Pb**	07 23 12.1	-0.3
	baz=229							
TWK				*e*S		**Sb**	07 23 28.7	+1.3
	baz=229							
TWG	**Pinlang**	**1.23**	**201**	*e*P		**Pn**	07 23 09.1	-2.6
	baz=183							
SGST	**Jiashian**	**1.25**	**225**	⇓P		**Pn**	07 23 12.8	+0.7
	baz=214							
SGST				S		**Sb**	07 23 29.7	+0.8
	baz=214							
WSF	**Szhu**	**1.26**	**255**	*e*P		**Pn**	07 23 12.0	-0.2
	baz=251							
WSF				*e*S		**Sn**	07 23 29.0	+0.8
	baz=251							
TTN	**Taitung**	**1.27**	**197**	*e*P		**Pb**	07 23 14.2	+0.7
	baz=178							
TWY	**Chenhua**	**1.30**	**2**	*e*P		**Pn**	07 23 12.1	-0.6
	baz=24							
JYNG	**Yonagunijimaku**	**1.36**	**69**	P		**Pn**	07 23 13.6	0.0
JYNG				S		**Sb**	07 23 31.3	-0.7
CHN8	**Yiju**	**1.38**	**243**	*e*P		**Pn**	07 23 14.5	+0.7
	baz=235							
YOJ	**Yonaguni jima**	**1.42**	**70**	P		**Pn**	07 23 14.4	0.0
YOJ				S		**Sb**	07 23 33.2	-0.6
YOJ	**Yonaguni jima**	**1.42**	**70**	*e*P		**Pn**	07 23 14.3	0.0
	baz=71							
YOJ				*e*S		**Sb**	07 23 32.7	-1.1
	baz=71							
SCLT	**Jiali**	**1.48**	**238**	*e*P		**Pn**	07 23 15.5	+0.4
	baz=229							
TAI1	**Yung-k'ang**	**1.53**	**233**	*e*P		**Pn**	07 23 16.3	+0.5
	baz=224							
TWM1	**Shoushan**	**1.54**	**222**	*e*P		**Pb**	07 23 18.0	-0.1
	baz=216							
EAST	**Anshuo**	**1.71**	**202**	*e*P		**Pn**	07 23 19.6	+1.2
	baz=189							
PCYT	**Pengchaiyu**	**1.71**	**16**	*e*P		**Pn**	07 23 18.8	+0.4
	baz=20							
TAW	**Tawu**	**1.72**	**201**	*e*P		**Pb**	07 23 19.9	-1.2
	baz=187							
SCZT	**Fangliau**	**1.81**	**208**	*e*P		**Pn**	07 23 20.9	+1.2
	baz=205							
SCZT				*e*S		**Sb**	07 23 44.6	-0.3
	baz=205							
PNG	**Penghu**	**1.87**	**258**	*e*P		**Pn**	07 23 19.4	-1.1
	baz=253							
PNG				*e*S		**Sn**	07 23 42.9	-0.4
	baz=253							
WDGT	**Dungji**	**1.87**	**248**	*e*P		**Pn**	07 23 20.2	-0.3
	baz=226							
WDGT				*e*S		**Sn**	07 23 44.7	+1.3
	baz=226							
LAY	**Lan-yu**	**1.93**	**180**	*e*P		**Pn**	07 23 22.4	+1.0
	baz=167							
TWP	**Hsiaoliuchiu**	**1.95**	**214**	*e*P		**Pn**	07 23 21.7	0.0
	baz=220							
IRIF	**Iriomote-Funau**	**2.03**	**79**	P		**Pn**	07 23 23.3	+0.6
IRIF				S		**Sn**	07 23 47.8	+0.6
HATJ	**Hateruma jima**	**2.07**	**87**	P		**Pn**	07 23 23.8	+0.5
HATJ				S		**Sn**	07 23 48.9	+0.7
HEN	**Hengchun**	**2.10**	**201**	*e*P		**Pb**	07 23 26.2	-1.3
	baz=183							
TWK1	**Hengchun**	**2.13**	**199**	*e*P		**Pn**	07 23 24.6	+0.4
	baz=183							
TSEB	**Hengchuen, Pin**	**2.15**	**196**	*e*P		**Pn**	07 23 26.2	+1.8
	baz=182							
JKRS	**Kuro-shima**	**2.27**	**83**	P		**Pn**	07 23 27.0	+1.0
JKRS				S		**Sn**	07 23 53.9	+0.8
JIJ	**Ishigaki jima**	**2.40**	**80**	P		**Pn**	07 23 28.0	+0.1
JIJ				S		**Sn**	07 23 56.3	-0.2
JISG	**Ishigakijimahi**	**2.59**	**76**	P		**Pn**	07 23 30.5	0.0
JISG				S		**Sn**	07 24 01.3	+0.1
QZH	**Quanzhou**	**2.86**	**290**	Pn		Pn	07 23 24.7	-9.5
QZH				Sn		Sn	07 23 54.9	-13
QZH				smax		smax		
	comp=N,710nm,0.8s							
QZH				smax		smax		
	comp=E,440nm,0.8s							
KNM	**Kinmen**	**2.88**	**279**	*e*P		**Pn**	07 23 34.7	+0.3
	baz=274							
JTJ	**Tarama**	**2.95**	**76**	P		**Pn**	07 23 37.0	+1.5
JTJ				S		**Sn**	07 24 12.5	+2.4
JIRB	**Irabujima**	**3.41**	**75**	P		**Pn**	07 23 44.0	+2.2
JIRB				*e*S		**Sn**	07 24 22.1	+0.7
GZH	**Guangzhou**	**7.58**	**265**	*e*P		Pn	07 24 34.2	-4.9
KSRS	**Korea Array**	**14.51**	**21**	P		**P**	07 26 20.0	-0.1
	comp=E,0.2nm,0.3s,baz=202,slow=11,SNR=7.6							
CD2	**Chengdu**	**17.23**	**298**	*e*P		**Pn**	07 26 48.8	-0.3
CMAR	**Chiang Mai Arr**	**21.76**	**260**	P		**P**	07 27 42.3	+2.2
	comp=E,2.6nm,0.3s,baz=72,slow=8.6,SNR=5.2							
CMAR				LR		LR	07 35 56.7	
	comp=E,22nm,18.8s,baz=325,slow=36							
GUMO	**Guam**	**24.34**	**111**	LR		LR	07 36 48.3	
	comp=E,23nm,19.0s,baz=134,slow=34							
SONM	**Songino Array**	**26.69**	**337**	P		**P**	**07 28 29.0**	**+1.7**
	comp=E,1.0nm,0.7s,baz=162,slow=8.4,SNR=6.4							
SONM				LR		LR	07 40 11.5	
	comp=E,74nm,18.2s,baz=98,slow=38							
MKAR	**Makanchi Array**	**38.72**	**316**	P		**P**	**07 30 12.1**	**-0.1**
	comp=E,1.6nm,0.8s,baz=117,slow=9.0,SNR=8.5							
ZALV	**Zalesovo Beam**	**40.60**	**327**	P		**P**	**07 30 28.2**	**+0.6**
	comp=E,0.4nm,0.3s,baz=140,slow=11,SNR=2.6							
H11N1	**WAKE ISLAND Hy**	**42.17**	**87**	T		T	08 15 54.1	
	baz=280							
H11N2	**WAKE ISLAND Hy**	**42.17**	**87**	T		T	08 15 55.7	
	baz=280							
H11N3	**WAKE ISLAND Hy**	**42.18**	**87**	T		T	08 15 52.1	
	baz=280							
H11S3	**WAKE ISLAND Hy**	**42.29**	**88**	T		T	08 15 53.4	
	baz=287,slow=75,SNR=10.0							
H11S1	**WAKE ISLAND Hy**	**42.30**	**88**	T		T	08 15 54.0	
	baz=287,slow=75,SNR=7.9							
H11S2	**WAKE ISLAND Hy**	**42.31**	**88**	T		T	08 15 51.9	
	baz=287,slow=75							
KURBB	**Kurchatov Arra**	**42.48**	**320**	P		**P**	**07 30 43.7**	**+0.6**
	comp=E,0.2nm,0.4s,baz=108,slow=9.5,SNR=4.8							
WRA	**Warramunga Arr**	**45.40**	**163**	P		**P**	**07 31 04.6**	**-2.2**
	comp=E,1.5nm,0.6s,baz=345,slow=8.7,SNR=18							
BVAR	**Borovoye Array**	**48.04**	**321**	P		**P**	**07 31 27.7**	**+0.5**
	comp=E,0.5nm,0.5s,baz=113,slow=9.6,SNR=3.5							
ASAR	**Alice Springs**	**48.85**	**165**	P		**P**	**07 31 31.8**	**-2.0**
	comp=E,0.7nm,0.6s,baz=340,slow=6.5,SNR=8.1							
NOA	**NORSAR Array B**	**78.56**	**332**	LR		LR	08 13 26.2	
	comp=E,11nm,18.0s,baz=75,slow=38							

MEX 02 07:48:15.9±0.7, 17°42N×101°62W, h5km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.24**	**37**	*i*	P	Pg		07 48 20.3	-0.3
ZIIG				*i*	S	Sg		07 48 23.5	-0.2
CAIG	**El Cayaco**	**1.34**	**106**	*e*	P	Pn		07 48 37.1	-4.2
CAIG				*e*	S	Sb		07 48 54.3	-4.7
ARIG	**Puente Sto Nin**	**1.48**	**54**	*e*	P	Pn		07 48 39.9	-3.4
ARIG				*e*	S	Sn		07 48 58.0	-5.1
MEIG	**Mezcala**	**1.97**	**75**	*e*	P	Pn		07 48 47.4	-2.7
MEIG				*e*	S	Sn		07 49 11.6	-3.6

*ISCJB **02** 07:52:55.3±1.0, 11°.97N±0°.09×44°.08E±0°.07, h4km, Error ellipse: s-maj=15.5km s-min=4.4km az=142.5*
*DHMR **02** 07:52:56.7±1.2, 12°.12N×44°.08E, h5km±12km, ML3.3*
*ARO **02** 07:52:58.5, 12°.N±3°×4°.4E±°, h18km±99km, ML3.1*
ISC 02 07:52:54.4±1.1, 12°.07N±0°.08×44°.09E±0°.07, h4km, n10, σ0s59/14, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.79**	**264**	*e*	P	**Pb**		**07 53 11.2**	**+0.6**
MCAD	**Moucha**	**0.92**	**248**	*e*	P	**Pb**		**07 53 13.1**	**+0.1**
ATA	**Atar**	**1.06**	**235**	*e*	P	**Pb**		**07 53 15.8**	**+0.4**
ADEN	**Aden**	**1.12**	**51**	*i*	P	**Pn**		**07 53 17.3**	**+0.4**
ADEN				*i*	S	**Sn**		**07 53 32.6**	**-0.1**
ADEN					AML	AML		07 53 38.3	
	comp=E,612nm,0.4s								
TDD	**Tadjoura Ara**	**1.19**	**257**	*e*	P	**Pg**		**07 53 17.4**	**+0.2**
ATD	**Arta Tunnel**	**1.33**	**246**	*e*	P	**Pn**		**07 53 19.4**	**-0.5**
ATD				*e*	S	**Sg**		**07 53 36.5**	**-0.7**
SGH	**Sud-Ghoubbet**	**1.56**	**246**	*e*	P	**Pn**		**07 53 22.8**	**-0.2**
MAOD	**Malaho**	**1.82**	**271**	*e*	P	**Pn**		**07 53 26.6**	**+0.1**
UDYN	**Al 'Udayn**	**1.89**	**356**	*i*	P	**Pb**		**07 53 28.9**	**-0.6**
UDYN				*i*	S	**Sg**		**07 53 55.9**	**+0.8**
BDHA	**Al Bayda'**	**2.38**	**37**	*i*	P	**Pb**		**07 53 38.3**	**+0.4**
BDHA				*i*	S	**Sg**		**07 54 09.8**	**-1.1**

*ISCJB **02** 08:12:42.1±1.1, 11°.91N±0°.09×44°.12E±0°.08, h4km, Error ellipse: s-maj=16.4km s-min=4.6km az=142.4*
*DHMR **02** 08:12:42.9±1.0, 12°.04N×44°.10E, h6km±18km, ML3.2*
*ARO **02** 08:12:44.7, 12°.N±87°×4°.4E±2°.8, h15km±99km, ML3.3*
ISC 02 08:12:42.2±1.5, 11°.9N±0°.1×44°.13E±0°.08, h4km, n8, σ0s80/12, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.82**	**274**	*e*	P	**Pg**		**08 12 58.2**	**+0.3**
MCAD	**Moucha**	**0.92**	**257**	*e*	P	**Pg**		**08 12 59.9**	**+0.1**
ATA	**Atar**	**1.02**	**242**	*e*	P	**Pg**		**08 13 01.9**	**+0.1**
ADEN	**Aden**	**1.19**	**45**	*i*	P	**Pg**		**08 13 04.3**	**-0.6**
ADEN				*i*	S	**Sg**		**08 13 19.9**	**-0.4**
ADEN					AML	AML		08 13 26.9	
	comp=E,483nm,0.3s								
ATD	**Arta Tunnel**	**1.31**	**252**	*e*	P	**Pg**		**08 13 06.6**	**-0.8**
ATD				*e*	S	**Sg**		**08 13 24.1**	**-0.3**
SGH	**Sud-Ghoubbet**	**1.54**	**252**	*e*	P	**Pn**		**08 13 10.4**	**-0.1**
UDYN	**Al 'Udayn**	**2.03**	**356**	*i*	P	**Pn**		**08 13 16.6**	**-0.7**
UDYN				*i*	S	**Sn**		**08 13 44.2**	**+1.0**
BDHA	**Al Bayda'**	**2.47**	**35**	*i*	P	**Pn**		**08 13 25.0**	**+1.6**
BDHA				*i*	S	**Sb**		**08 13 57.6**	**-0.6**

*DDA **02** 08:14:57.8, 39°.14N×28°.96E, h7km, Ml2.6*
*ISK **02** 08:14:57.6, 39°.09N×29°.01E, h9km, MD2.6*
*ISCJB **02** 08:14:58.2±0.5, 39°.10N±0°.04×28°.98E±0°.04, h7km±7km, Error ellipse: s-maj=7.5km s-min=4.8km az=155.3*
*CSEM **02** 08:14:58.3±0.1, 39°.10N×28°.98E, h8km, ML2.6, Error ellipse: s-maj=4.0km s-min=3.1km az=130.0*
ISC 02 08:14:58.2±0.9, 39°.11N±0°.03×28°.98E±0°.03, h13km±9km, n25, σ0s43/36, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**253**	*i*	P	**Pg**		**08 15 03.0**	**+0.1**
DEMI				*i*	S	**Sg**		**08 15 06.1**	**0.0**
DEMI	**Demirci**	**0.21**	**253**	P		**Pg**		**08 15 03.0**	**+0.1**
DEMI				S		**Sg**		**08 15 06.1**	**0.0**
GDZ	**Gediz**	**0.39**	**92**	*i*	P	**Pb**		**08 15 06.4**	**-0.7**
GDZ				*i*	S	**Sg**		**08 15 11.7**	**+0.4**
GDZ	**Gediz**	**0.39**	**92**	P		**Pb**		**08 15 06.4**	**-0.7**
GDZ				S		**Sg**		**08 15 11.7**	**+0.4**
TVSB	**Tavsanli**	**0.51**	**47**	*e*PG		**Pg**		**08 15 08.2**	**0.0**
TVSB				*e*SG		**Sg**		**08 15 14.7**	**-0.2**
TVSB	**Tavsanli**	**0.51**	**47**	*e*Pg		**Pg**		**08 15 08.2**	**0.0**
TVSB				*e*Sg		**Sg**		**08 15 14.7**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**203**	*e*PG		**Pb**		**08 15 10.9**	**-0.4**
KULA				*e*SG		**Sg**		**08 15 18.9**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**203**	*e*Pg		**Pb**		**08 15 10.9**	**-0.4**
KULA				*e*Sg		**Sg**		**08 15 19.0**	**-0.2**
KHL	**Karahalli**	**0.89**	**151**	*e*PG		**Pb**		**08 15 15.2**	**-0.3**
KHL	**Karahalli**	**0.89**	**151**	*e*Pg		**Pb**		**08 15 15.2**	**-0.3**
BALB	**Balikesir**	**1.00**	**302**	*e*PG		**Pn**		**08 15 18.7**	**+0.7**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg		**Pn**		**08 15 18.7**	**+0.7**
IGD	**Bursa**	**1.17**	**8**	*i*	P	**Pb**		**08 15 19.9**	**-0.3**
IGD				*i*	S	**Sg**		**08 15 35.3**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.26**	**357**	*e*PN		**Pn**		**08 15 21.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**357**	*e*Pn		**Pn**		**08 15 21.4**	**-0.2**
CAVI	**Cavuskoy**	**1.28**	**31**	*e*PN		**Pg**		**08 15 22.4**	**-0.4**
CAVI	**Cavuskoy**	**1.28**	**31**	*e*Pn		**Pg**		**08 15 22.4**	**-0.4**
IZI	**Iznik**	**1.29**	**17**	*e*PN		**Pn**		**08 15 22.3**	**+0.3**
IZI	**Iznik**	**1.29**	**17**	*e*Pn		**Pn**		**08 15 22.3**	**+0.3**
BORA	**Eskisehir**	**1.38**	**55**	*i*	P	**Pg**		**08 15 24.7**	**0.0**
BORA				*i*	S	**Sg**		**08 15 43.1**	**+0.6**
BORA	**Eskisehir**	**1.38**	**55**	P		**Pg**		**08 15 24.7**	**0.0**
BORA				S		**Sg**		**08 15 43.2**	**+0.6**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN		**Pb**		**08 15 25.2**	**0.0**
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn		**Pb**		**08 15 25.2**	**0.0**
GULT	**Gulveren**	**1.77**	**41**	*e*PN		**Pn**		**08 15 29.4**	**+0.7**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn		**Pn**		**08 15 29.4**	**+0.7**

*CSEM **02** 08:20:02.4, 12°.12N×44°.12E, h13km, ML3.9*
*DHMR **02** 08:20:02.4±1.4, 12°.12N×44°.12E, h14km±13km, ML3.9*
*ARO **02** 08:20:03.7, 12°.N±10°×4°.4E±°, h10km±23km, ML3.5*
ISC 02 08:20:01.1±1.4, 12°.17N±0°.04×43°.96E±0°.05, h19km±3km, n16, σ1s31/26, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.68**	**254**	*e*	P	**Pb**		**08 20 14.8**	**+0.5**
MCAD	**Moucha**	**0.85**	**239**	*e*	P	**Pg**		**08 20 17.6**	**-0.2**
ATA	**Atar**	**1.03**	**226**	*e*	P	**Pg**		**08 20 20.2**	**-0.9**
TDD	**Tadjoura Ara**	**1.09**	**250**	*e*	P	**Pg**		**08 20 21.7**	**-0.7**
ADEN	**Aden**	**1.17**	**59**	*i*	P	**Pb**		**08 20 21.6**	**-1.0**
ADEN				*i*	S	**Sb**		**08 20 37.1**	**-0.3**
ADEN					AML	AML		08 20 47.5	
	comp=E,3μm,0.5s								
ADEN	**Aden**	**1.17**	**59**	*i*	P	**Pb**		**08 20 21.6**	**-1.0**
ADEN				*i*	S	**Sb**		**08 20 37.1**	**-0.3**
	comp=E,1μm,0.5s								
ATD	**Arta Tunnel**	**1.26**	**240**	*e*P		**Pn**		**08 20 23.4**	**-0.4**
ATD				*e*S		**Sb**		**08 20 40.5**	**+0.2**
SGH	**Sud-Ghoubbet**	**1.49**	**241**	*e*P		**Pn**		**08 20 27.1**	**+0.1**
UDYN	**Al 'Udayn**	**1.78**	**0**	*i*	P	**Pg**		**08 20 35.4**	**-0.1**
UDYN				*i*	S	**Sg**		**08 21 00.9**	**+2.2**
UDYN	**Al 'Udayn**	**1.78**	**0**	*i*	P	**Pg**		**08 20 35.4**	**-0.1**
UDYN				*i*	S	**Sg**		**08 21 00.9**	**+2.2**
GBR	**Grand-Bara**	**1.78**	**235**	*e*P		**Pn**		**08 20 32.1**	**+1.2**
BDHA	**Al Bayda'**	**2.38**	**41**	*i*	P	**Pb**		**08 20 43.4**	**-0.1**
BDHA				*i*	S	**Sb**		**08 21 14.2**	**+1.6**
BDHA					AML	AML		08 21 20.2	
	comp=N,1μm,0.6s								
BDHA	**Al Bayda'**	**2.38**	**41**	*i*	P	**Pb**		**08 20 43.4**	**-0.1**
BDHA				*i*	S	**Sb**		**08 21 14.2**	**+1.6**
	comp=N,569nm,0.6s								
DHBB	**Dhamar BB**	**2.42**	**10**	*i*	P	**Pb**		**08 20 44.4**	**+0.2**
DHBB				*i*	S	**Sg**		**08 21 17.4**	**-1.7**
HAJJ	**Hajjah**	**3.52**	**354**	*i*	P	**Pb**		**08 21 00.3**	**-2.7**
HAJJ				*i*	S	**Sb**		**08 21 45.5**	**+0.1**
HAJJ	**Hajjah**	**3.52**	**354**	*i*	P	**Pb**		**08 21 00.3**	**-2.7**
HAJJ				*i*	S	**Sb**		**08 21 45.5**	**+0.1**

*CSEM **02** 08:23:30.5, 12°.07N×44°.07E, h3km, ML3.6*
DHMR 02 08:23:30.5±1.5, 12°.07N×44°.07E, h3km±15km, ML3.6, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.13**	**52**	*i*	P	Pg		08 23 52.4	+0.1
ADEN				*i*	S	Sg		08 24 07.4	+0.4
ADEN					AML	AML		08 24 15.5	
	comp=E,1μm,0.3s								
ADEN	**Aden**	**1.13**	**52**	*i*	P	Pg		08 23 52.4	+0.1
ADEN				*i*	S	Sg		08 24 07.4	+0.4
	comp=E,690nm,0.3s								
UDYN	**Al 'Udayn**	**1.89**	**357**	*i*	P	Pn		08 24 04.1	+0.2
UDYN				*i*	S	Sg		08 24 30.8	-0.5
UDYN	**Al 'Udayn**	**1.89**	**357**	*i*	P	Pn		08 24 04.1	+0.3
UDYN				*i*	S	Sg		08 24 30.8	-0.5
BDHA	**Al Bayda'**	**2.39**	**37**	*i*	P	Pn		08 24 12.4	+1.6
BDHA				*i*	S	Sb		08 24 45.6	+1.2
BDHA	**Al Bayda'**	**2.39**	**37**	*i*	P	Pn		08 24 12.4	+1.6
BDHA				*i*	S	Sb		08 24 45.6	+1.2
DHBB	**Dhamar BB**	**2.51**	**7**	*i*	S	Sg		08 24 49.8	-1.4
DHBB	**Dhamar BB**	**2.51**	**7**	*i*	S	Sg		08 24 49.8	-1.3

*ISCJB **02** 08:25:30.6±0.6, 6°.80N±0°.04×73°.08W±0°.05, h159km±6km, Error ellipse: s-maj=8.9km s-min=4.3km az=39.1*
*FUNV **02** 08:25:31.6, 6°.76N×73°.15W, h159km, MW2.5*
*RSNC **02** 08:25:32.8±0.7, 6°.76N×73°.11W, h147km±4km, ML2.4*
ISC 02 08:25:30.5±1.4, 6°.79N±0°.04×73°.08W±0°.05, h161km±8km, n25, σ1s02/39, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.22**	**207**	*e*P		**Pn**		**08 25 52.6**	**+0.1**
BARC				*i*				08 25 53.0	
	comp=Z,48nm,0.1s								
BARC				*e*S		**Sn**		**08 26 07.5**	**-1.7**
BTLC	**Betulia, Santa**	**0.23**	**304**	*e*P		**Pn**		**08 25 52.8**	**+0.3**
GIRC	**Giron, Santand**	**0.31**	**338**	*e*P		**Pn**		**08 25 52.8**	**+0.2**
PAMC	**Pamplona, Colo**	**0.66**	**35**	*e*P		**Pn**		**08 25 54.9**	**+0.3**
PAMC				*e*S		**Sn**		**08 26 12.4**	**-0.5**
BRRC	**Barranca, Sant**	**0.70**	**297**	*e*P		**Pn**		**08 25 54.5**	**+0.3**
BRRC				*e*S		**Sn**		**08 26 11.8**	**-0.5**
BRRC				*i*				08 26 14.3	
	comp=Z,63nm,0.1s								
RUSC	**La Rusia**	**0.89**	**180**	*e*P		**Pn**		**08 25 56.4**	**+0.3**
RUSC				*e*S		**Sn**		**08 26 14.2**	**-1.5**
RUSC				*i*				08 26 16.7	
	comp=Z,23nm,0.3s								
GRMC	**Gramalote, San**	**0.96**	**17**	*e*P		**Pn**		**08 25 58.3**	**+2.1**
GRMC				*e*S		**Sn**		**08 26 17.8**	**+1.7**
GRMC				*i*				08 26 19.1	
	comp=Z,34nm,0.3s								
CBRI	**Barrientos, No**	**0.96**	**17**	*e*P		**Pn**		**08 25 57.2**	**+0.9**
CAPV	**Capacho**	**1.31**	**35**	*e*P		**Pn**		**08 26 00.1**	**+0.8**
CAPV				*e*S		**Sn**		**08 26 21.0**	**-0.4**
OCAC	**Ocana**	**1.46**	**351**	*e*P		**Pn**		**08 26 01.6**	**+1

BALY	**Balya**	**1.23**	**300**	P		**Pn**	**08 40 28.4**	**0.0**
BALY				S		**Sn**	**08 40 45.8**	**+0.5**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN		**Pn**	**08 40 28.9**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*PN		**Pg**	**08 40 28.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*Pn		**Pg**	**08 40 28.4**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn		**Pb**	**08 40 29.1**	**+0.6**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn		**Pb**	**08 40 29.1**	**+0.6**
IZI	**Iznik**	**1.26**	**17**	*e*Pn		**Pb**	**08 40 29.0**	**+0.3**
IZI	**Iznik**	**1.26**	**17**	*e*Pn		**Pb**	**08 40 29.0**	**+0.3**
GEMT	**Gemlik**	**1.31**	**6**	*e*Pn		**Pg**	**08 40 30.0**	**+0.4**
GEMT	**Gemlik**	**1.31**	**6**	*e*Pn		**Pg**	**08 40 30.0**	**+0.4**
BORA	**Eskisehir**	**1.35**	**56**	*i* P		**Pn**	**08 40 29.4**	**-0.6**
BORA				*i* S		**Sn**	**08 40 48.2**	**-0.1**
BORA	**Eskisehir**	**1.35**	**56**	P		**Pn**	**08 40 29.4**	**-0.6**
BORA				S		**Sn**	**08 40 48.2**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*PN		**Pb**	**08 40 31.6**	**+0.2**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*Pn		**Pb**	**08 40 31.6**	**+0.2**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN		**Pb**	**08 40 31.9**	**+0.2**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn		**Pb**	**08 40 31.9**	**+0.2**
DNZL	**Cakiroluk**	**1.44**	**179**	*i* P		**Pg**	**08 40 34.3**	**+2.3**
DNZL				*i* S		**Sn**	**08 40 52.6**	**+2.0**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*PN		**Pb**	**08 40 31.4**	**-0.8**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*Pn		**Pb**	**08 40 31.5**	**-0.8**
ESKT	**Eskisehir**	**1.48**	**74**	*e*PN		**Pg**	**08 40 32.9**	**0.0**
ESKT	**Eskisehir**	**1.48**	**74**	*i* P		**Pg**	**08 40 32.9**	**0.0**
ESKT				*i* S		**Sg**	**08 40 52.3**	**+0.1**
ESKT	**Eskisehir**	**1.48**	**74**	*e*Pn		**Pg**	**08 40 32.9**	**0.0**
SEYT	**Eskypehyr**	**1.48**	**74**	P		**Pg**	**08 40 32.9**	**0.0**
SEYT				S		**Sg**	**08 40 52.3**	**+0.1**
EDC	**Edincik**	**1.50**	**324**	*e*PN		**Pb**	**08 40 32.9**	**+0.1**
EDC	**Edincik**	**1.50**	**324**	*e*Pn		**Pb**	**08 40 32.9**	**+0.1**
GPA	**Golpazari**	**1.54**	**41**	*e*PN		**Pb**	**08 40 33.2**	**-0.2**
GPA	**Golpazari**	**1.54**	**41**	*e*Pn		**Pb**	**08 40 33.2**	**-0.2**
BOLV	**Bolvadin**	**1.57**	**105**	*i* P		**Pb**	**08 40 33.6**	**-0.4**
BOLV				*i* S		**Sg**	**08 40 56.1**	**+1.1**
BOLV	**Bolvadin**	**1.57**	**105**	P		**Pb**	**08 40 33.7**	**-0.4**
BOLV				S		**Sg**	**08 40 56.1**	**+1.1**
KNL	**Bal˙–kesir**	**1.61**	**315**	*i* P		**Pb**	**08 40 34.2**	**-0.4**
KNL				*i* S		**Sg**	**08 40 56.0**	**-0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*PN		**Pb**	**08 40 36.5**	**-0.5**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn		**Pb**	**08 40 36.5**	**-0.5**
HRT	**Hereke**	**1.77**	**17**	*e*PN		**Pb**	**08 40 36.6**	**-0.7**
HRT	**Hereke**	**1.77**	**17**	*e*Pn		**Pb**	**08 40 36.6**	**-0.7**
KRBG	**Karabiga-Canak**	**1.82**	**314**	*e*PN		**Pb**	**08 40 37.9**	**-0.3**
KRBG	**Karabiga-Canak**	**1.82**	**314**	*e*Pn		**Pb**	**08 40 37.9**	**-0.3**
MRMT	**Marmara Adasi**	**1.83**	**324**	*e*PN		**Pb**	**08 40 37.9**	**-0.5**
MRMT	**Marmara Adasi**	**1.83**	**324**	*e*Pn		**Pb**	**08 40 37.9**	**-0.5**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*PN		**Pb**	**08 40 39.3**	**-0.8**
SART	**Tekirdag**	**2.10**	**319**	*i* P		**Pg**	**08 40 44.4**	**-0.2**
KLYT	**Kilyos**	**2.12**	**1**	*e*PN		**Pb**	**08 40 42.0**	**-1.3**
KLYT	**Kilyos**	**2.12**	**1**	*e*Pn		**Pb**	**08 40 42.0**	**-1.3**
MDUB	**Mudurnu**	**2.16**	**51**	*e*PN		**Pn**	**08 40 42.2**	**+1.1**
MDUB	**Mudurnu**	**2.16**	**51**	*e*Pn		**Pn**	**08 40 42.2**	**+1.1**
KAND	**Kocaeli-Kandir**	**2.16**	**25**	*e*P		**Pb**	**08 40 44.1**	**0.0**
KAND				*i* S		**Sg**	**08 41 13.5**	**-0.4**
KAND	**Kocaeli-Kandir**	**2.16**	**25**	P		**Pb**	**08 40 44.1**	**0.0**
SAHE	**Sakarya_HENDEK**	**2.23**	**39**	*i* P		**Pg**	**08 40 46.3**	**-0.9**
KIZT	**Kizilcal**	**2.26**	**95**	*e*PN		**Pn**	**08 40 42.6**	**+0.1**
KIZT	**Kizilcal**	**2.26**	**95**	*e*Pn		**Pn**	**08 40 42.6**	**+0.1**

SJA 02 08:44:07.8±0.4, 28.72S×67.43W, h137km±2km, ML2.8, MW4.0, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VCA	**Vinchina**	**0.68**	**268**	*i* P	Pn	08 44 29.6	+0.6
VCA				*i* S	Sn	08 44 45.7	+0.6
VCA				IAML		08 44 47.1	
	comp=Z,346nm,0.4s						
AGUA	**GUANDACOL**	**1.21**	**230**	*i* P	Pn	08 44 34.2	+0.8
AGUA				*i* S	Sn	08 44 53.6	+0.7
CYA	**Choya**	**1.46**	**80**	*i* P	Pn	08 44 36.8	+0.8
CYA				*i* S	Sn	08 44 58.0	+0.5
AVFE	**Valle Fertil**	**1.94**	**181**	*i* P	Pn	08 44 42.4	+0.9
AVFE				*i* S	Sn	08 45 08.0	+0.7
AVFE				IAML		08 45 10.5	
	comp=Z,37nm,0.6s						
ACDV	**Cuesta del Vie**	**2.07**	**225**	*i* P	Pn	08 44 44.3	+1.1
ACDV				*i* S	Sn	08 45 11.0	+0.7
AROD	**Rodeo**	**2.29**	**230**	*i* P	Pn	08 44 47.6	+1.5
AROD				*i* S	Sn	08 45 17.1	+1.6
ACCO	**Cerro Coronel**	**2.35**	**217**	*i* P	Pn	08 44 47.9	+1.2
ACCO				IAML		08 45 18.9	
	comp=Z,54nm,0.2s						
AMOG	**MOGNA**	**2.40**	**202**	*i* P	Pn	08 44 48.2	+1.1
RTLL	**Cerro Villicun**	**2.76**	**199**	*i* P	Pn	08 44 52.8	+1.2
RTCV	**Cerro Valdivia**	**3.28**	**197**	*i* P	Pn	08 44 59.6	+1.3
RTLS	**Leoncito**	**3.47**	**207**	*i* P	Pn	08 45 02.5	+1.4
TCA	**Tanti**	**3.59**	**137**	*i* P	Pn	08 45 03.4	+1.0
TCA				IAML		08 46 00.7	
	comp=Z,5.6nm,0.4s						
AUSP	**Uspallata**	**3.88**	**205**	*i* P	Pn	08 45 07.6	+1.1
ASAL	**Salagasta**	**4.05**	**197**	*i* P	Pn	08 45 09.6	+1.2

IDC 02 08:53:02.4±3.8, 8.03S×129.85E, h0km, mb3.9/3, mb1 3.9/4, mb1mx3.5/41, mbtmp3.9/4, ML3.8/1, Error ellipse: s-maj=412.0km s-min=43.9km az=71.0, Timor Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**16.03**	**166**	Pn	Pn	08 56 49.4	0.0
	0.3nm,0.3s,baz=350,slow=10,SNR=5.4						
MKAR	**Makanchi Array**	**69.00**	**327**	P	P	09 04 09.1	-0.6
	0.8nm,0.6s,baz=124,slow=8.0,SNR=6.7						
ZALV	**Zalesovo Beam**	**72.43**	**334**	P	P	09 04 30.8	+0.3
	0.3nm,0.3s,baz=128,slow=9.3,SNR=2.1						
KURBB	**Kurchatov Arra**	**73.30**	**329**	P	P	09 04 36.1	+0.5
	1.0nm,0.7s,baz=125,slow=6.0,SNR=4.3						

*ISCJB **02** 08:55:56.7±0.7, 38.22N±0.05×30.92W±0.05, h10km, mb3.9/10, MS3.3/14, Error ellipse: s-maj=7.9km s-min=4.1km az=38.5*

*IDC **02** 08:55:56.6±1.1, 38.18N×31.21W, h0km, mb3.9/11, mb1 4.1/11, mb1mx3.7/58, mbtmp3.9/11, MS3.3/14, Ms1 3.3/14, ms1mx3.0/39, Error ellipse: s-maj=24.9km s-min=18.6km az=15.0*

ISC 02 08:55:58.6±0.9, 38.30N±0.07×30.78W±0.05, h10km, n36, σ1§61/35, mb4.0/10, MS3.4/14, 1C, Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H07S1	**FLORES T-PHASE**	**1.13**	**343**	Pn	**Pb**	**08 56 19.2**	**-1.0**
H07S1				Sn	**Sg**	**08 56 33.7**	**-1.3**
	SNR=3722						
H07S1	**FLORES T-PHASE**	**1.13**	**343**	*i* P	**Pb**	**08 56 19.1**	**-1.1**
H07S1				*e*S	**Sg**	**08 56 33.8**	**-1.1**
H07N1	**FLORES T-PHASE**	**1.41**	**349**	Pn	**Pb**	**08 56 24.4**	**-0.7**
H07N1				Sn	**Sb**	**08 56 42.7**	**-0.5**
	SNR=693						
H07N1	**FLORES T-PHASE**	**1.41**	**349**	*e*P	**Pn**	**08 56 23.8**	**-0.6**
H07N1				*e*S	**Sn**	**08 56 42.2**	**-0.9**
CALA	**Caldeira**	**1.65**	**80**	*e*S	**Sg**	**08 56 50.9**	**-0.9**
PCED	**Cedros**	**1.66**	**78**	*e*P	**Pg**	**08 56 29.2**	**-1.3**
PCED				*e*S	**Sg**	**08 56 50.4**	**-1.7**
PCED				A	A	08 56 53.7	
	51nm,0.3s						
PCAN	**Candelaria**	**1.81**	**84**	*e*P	**Pb**	**08 56 30.8**	**-1.0**
PCAN				*e*S	**Sb**	**08 56 54.2**	**-0.4**
PCAN				A	A	08 56 58.7	
	65nm,0.6s						
PICO	**Pico**	**1.86**	**83**	*e*S	**Sb**	**08 56 55.8**	**-0.2**
PICO				A	A	08 57 02.1	
	97nm,0.4s						
ROSA	**Rosais**	**2.03**	**77**	*e*S	**Sb**	**08 56 59.8**	**-1.2**
ROSA				A	A	08 57 09.8	
	44nm,0.3s						
GRON	**Grota Negra**	**4.17**	**96**	*e*P	**Pn**	**08 57 04.0**	**+1.6**
CMLA	**Cha da Macela**	**4.18**	**96**	*e*P	**Pn**	**08 57 02.4**	**-0.1**
CMLA				*e*S	**Sn**	**08 57 50.5**	**-0.9**
BART	**Pico Bartolome**	**4.46**	**95**	*e*P	**Pn**	**08 57 06.8**	**+0.5**
BART				*e*S	**Sn**	**08 57 57.3**	**-1.0**
BART				A	A	08 58 02.0	
	33nm,0.5s						
PSMA	**Santa Maria**	**4.67**	**104**	*e*P	**Pn**	**08 57 08.2**	**-0.9**
PSMA				*e*S	**Sn**	**08 58 00.8**	**-2.6**
PSMA				A	A	08 58 10.7	
	18nm,0.2s						
PSMN	**Pico do Norte,**	**4.71**	**104**	*e*P	**Pn**	**08 57 08.3**	**-1.5**
PSMN				*e*S	**Sn**	**08 58 02.1**	**-2.4**
PSMN				A	A	08 58 05.7	
	16nm,0.5s						
ESDC	**Sonseca Array**	**20.87**	**78**	P	Pn	09 00 44.6	+1.4
	0.4nm,0.5s,baz=279,slow=9.5,SNR=7.3						
MDT	**Midelt**	**21.94**	**96**	LR	LR	09 07 30.6	
	comp=Z,80nm,20.3s,baz=294,slow=31						
EKA	**Eskdalemuir Ar**	**25.19**	**38**	P	**P**	**09 01 26.6**	**+2.5**
	2.4nm,0.8s,baz=226,slow=9.1,SNR=6.7						
SCHQ	**Schefferville**	**29.37**	**316**	LR	LR	09 12 05.3	
	comp=Z,103nm,21.2s,baz=94,slow=33						
SFJD	**Kangerlussuaq**	**30.86**	**345**	LR	LR	09 12 07.0	
	comp=Z,79nm,18.1s,baz=164,slow=31						
NOA	**NORSAR Array B**	**34.53**	**35**	LR	LR	09 14 29.6	
	comp=Z,14nm,19.9s,baz=260,slow=32						
JMIC	**Jan Mayen**	**34.74**	**13**	LR	LR	09 13 14.0	
	comp=Z,25nm,19.6s,baz=156,slow=30						
VYHS	**Vyhne**	**36.87**	**58**	*e*P	**P**	**09 03 09.0**	**+1.9**
TORD	**Torodi Ar. Bea**	**38.18**	**122**	P	**P**	**09 03 18.0**	**-0.4**
	0.5nm,0.6s,baz=326,slow=7.2,SNR=4.0						
TORD				LR	LR	09 18 30.9	
	comp=Z,54nm,18.5s,baz=70,slow=35						
DBIC	**Dimbokro**	**39.27**	**137**	LR	LR	09 18 04.4	
	comp=Z,49nm,21.3s,baz=302,slow=34						
ARCES	**ARCESS Array B**	**43.00**	**25**	LR	LR	09 19 20.2	
	comp=Z,13nm,19.9s,baz=306,slow=32						
AKASG	**Malin Array Be**	**43.41**	**53**	P	**P**	**09 04 02.5**	**+1.3**
	1.5nm,0.5s,baz=275,slow=8.1,SNR=4.6						
IDI	**Anoyia**	**44.11**	**76**	P	**P**	**09 04 10.2**	**+3.0**
	3.4nm,0.7s,baz=33,slow=18,SNR=3.7						
ULM	**Lac du Bonnet**	**46.69**	**307**	LR	LR	09 23 13.1	
	comp=Z,63nm,18.6s,baz=315,slow=35						
PDAR	**Pinedale Array**	**57.97**	**302**	P	**P**	**09 05 48.6**	**-2.9**
	2.3nm,1.0s,baz=63,slow=6.8,SNR=7.4						
PDAR				LR	LR	09 30 09.1	
	comp=Z,58nm,18.8s,baz=84,slow=36						
ARU	**Arti**	**58.78**	**41**	P	**P**	**09 05 59.5**	**+2.8**
	4.4nm,0.3s,baz=126,slow=4.3,SNR=5.7						
TXAR	**Lajitas Array**	**59.80**	**285**	P	**P**	**09 06 02.2**	**-2.0**
	0.6nm,0.8s,baz=74,slow=7.4,SNR=7.7						
TXAR				LR	LR	09 30 23.0	
	comp=Z,22nm,19.8s,baz=0.0,slow=35						
BBB	**Bella Bella**	**64.88**	**318**	LR	LR	09 34 32.3	
	comp=Z,47nm,18.8s,baz=68,slow=36						
ILAR	**Eielson Array**	**65.84**	**335**	P	**P**	**09 06 44.2**	**+0.4**
	0.2nm,0.8s,baz=46,slow=6.4,SNR=4.9						
ILAR				LR	LR	09 33 04.0	
	comp=Z,37nm,18.9s,baz=210,slow=34						
KURBB	**Kurchatov Arra**	**71.94**	**39**	P	**P**	**09 07 23.9**	**+1.9**
	1.2nm,0.9s,baz=315,slow=6.2,SNR=9.6						
MKAR	**Makanchi Array**	**76.31**	**41**	P	**P**	**09 07 49.1**	**+1.4**
	1.2nm,0.8s,baz=301,slow=5.4,SNR=7.2						
TLY	**Talaya**	**81.94**	**27**	LR	LR	09 46 04.0	
	comp=Z,16nm,18.6s,baz=19,slow=37						

*MOS **02** 09:07:24.4±1.0, 6.15N×126.69E, h40km, mb4.8/33, Error ellipse: s-maj=19.1km s-min=7.3km az=113.5*

*ISCJB **02** 09:07:33.9±0.6, 6.07N±0.04×126.74E±0.07, h127km±4km, mb4.5/59, Error ellipse: s-maj=11.2km s-min=5.5km az=166.3*

*IDC **02** 09:07:34.4±1.2, 6.09N×126.80E, h117km±9km, mb4.0/25, mb1 4.1/25, mb1mx4.0/40, mbtmp4.4/25, Error ellipse: s-maj=19.7km s-min=9.8km az=73.0*

*NEIC **02** 09:07:34.6±0.8, 6.03N×126.73E, h120km±7km, mb4.3/11, Error ellipse: s-maj=10.1km s-min=5.8km az=79.0*

*DJA **02** 09:07:35.7±1.4, 6˚N±8˝×12˚7E±1˚3, h66km±23km, M4.9/6, mB5.6/2, mb4.8/6, MLv5.0/4, Mw(mB)5.1/2*

*BJI **02** 09:07:38.2, 6.32N×126.16E, h123km, mb4.7/20, mB4.7/13*

ISC 02 09:07:34.4±0.9, 6.11N±0.06×126.84E±0.08, h116km±7km, n108, σ1§09/122, mb4.5/59, 3C-4D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DAV	**Davao City (W)**	**1.58**	**307**	P	**Pn**	**09 08 00.3**	**-2.2**
	219nm,0.3s,baz=56,slow=4.5,SNR=12						
DAV				S	**Sn**	**09 08 23.9**	**-0.1**
	306nm,0.3s,baz=70,slow=20,SNR=8.9						
DAV				LR	LR	09 08 38.6	
	comp=Z,346nm,18.8s,baz=146,slow=41						
DAV	**Davao City (W)**	**1.58**	**307**	*e*Pn	**Pn**	**09 08 02.8**	**+0.2**
DAV				*e*Sn	**Sn**	**09 08 23.6**	**-0.3**
DMPH	**Davao City--Mi**	**1.64**	**306**	*e*P	**Pn**	**09 08 05.0**	**+1.7**
DMPH				*e*S	**Sn**	**09 08 27.7**	**+2.4**
KCP	**Kidapawan**	**1.96**	**297**	*i* P	**Pn**	**09 08 06.4**	**-0.9**
KCP				*i* S	**Sn**	**09 08 30.8**	**-1.5**
BIPH	**Bislig**	**2.12**	**347**	*i* P	**Pn**	**09 08 09.6**	**+0.4**
BIPH				*i* S	**Sn**	**09 08 32.1**	**-3.8**
SGSI	**Sangihe**	**2.74**	**209**	P	**Pn**	**09 08 17.7**	**+0.5**
CGP	**Cagayan de Oro**	**3.16**	**318**	*e*P	**Pn**	**09 08 22.4**	**-0.4**
CGP				*e*S	**Sn**	**09 08 59.9**	**-0.1**
LBMI	**Labuha**	**6.73**	**174**	P	**Pn**	**09 09 10.7**	**-0.1**
RCP	**Roxas**	**6.76**	**324**	*e*P	**Pn**	**09 09 11.7**	**+0.4**
MRSI	**Marisa**	**7.43**	**221**	P	**Pn**	**09 09 20.7**	**+0.5**
	263nm,0.7s,3µm						
SANI	**Sanana**	**8.14**	**186**	P	**Pn**	**09 09 28.6**	**-1.3**
LUWI	**Luwuk**	**8.18**	**210**	P	**Pn**	**09 09 30.0**	**-0.4**
LUWI	**Luwuk**	**8.18**	**210**	*e*Pn	**Pn**	**09 09 27.6**	**-2.9**
TTSI	**Tana Toraja**	**11.48**	**218**	P	**Pn**	**09 10 14.7**	**-0.2**
	27nm,0.8s						
SBUM	**Sibu**	**15.02**	**257**	*e*Pn	**P**	**09 11 04.4**	**+1.0**
FITZ	**Fitzroy Crossi**	**24.08**	**183**	P	**P**	**09 12 39.9**	**+0.6**
	1.9nm,0.5s,baz=17,slow=9.5,SNR=11						
WRAB	**Tennant Creek**	**26.91**	**164**	*e*P	**P**	**09 13 06.6**	**+1.7**
WRA	**Warramunga Arr**	**26.91**	**164**	P	**P**	**09 13 03.5**	**-1.4**
	0.6nm,0.5s,baz=349,slow=9.8,SNR=21						
WRA				ScP	**ScP**	**09 19 54.0**	**-0.1**
	1.5nm,0.8s,baz=349,slow=3.1,SNR=10						
GYA	**Guiyang**	**27.93**	**319**	*e*P	**P**	**09 13 15.4**	**+1.4**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CMAR	**Chiang Mai Arr**	**29.84**	**297**	P	**P**	**09 13 30.6**	**-0.3**
	0.8nm,0.3s,baz=104,slow=7.0,SNR=5.1						
ASAR	**Alice Springs**	**30.38**	**167**	P	**P**	**09 13 35.8**	**+0.1**
	0.6nm,0.4s,baz=344,slow=7.2,SNR=24						
ASAR				PcP	**PcP**	**09 16 33.6**	**+0.7**
	0.5nm,0.5s,baz=351,slow=2.7,SNR=3.8						
ASAR				ScP	**ScP**	**09 20 04.8**	**-0.2**
	0.9nm,0.7s,baz=339,slow=3.0,SNR=6.7						
MJAR	**Matsushiro Arr**	**32.03**	**17**	P	**P**	**09 13 49.7**	**-0.4**
	1.1nm,0.5s,baz=192,slow=9.4,SNR=5.2						
XAN	**Xi'an**	**32.38**	**332**	P	**P**	**09 13 52.9**	**-0.2**
XAN				pmax	pmax		
	comp=Z,25nm,0.8s						
XAN				pmax	pmax		
	comp=Z,31nm,4.2s						
BJT	**Baijiatuan**	**35.10**	**346**	*e*P	**P**	**09 14 18.4**	**+1.8**
BJT				*e*		09 16 45.4	
BJT				pmax	pmax		
	comp=Z,23nm,1.0s						
BJT	**Baijiatuan**	**35.10**	**346**	*e*P	**P**	**09 14 18.4**	**+1.8**
	comp=Z,23nm,1.0s						
BJT				*e*PcP	**PcP**	**09 16 45.4**	**-0.3**
BJI	**Beijing**	**35.12**	**346**	P	**P**	**09 14 18.8**	**+2.1**
BJI				pmax	pmax		
	comp=Z,19nm,1.0s						
BJI				pmax	pmax		
	comp=Z,110nm,5.6s						
LZH	**Lanzhou**	**36.54**	**328**	*e*P	**P**	**09 14 30.4**	**+1.2**
LZH				pmax	pmax		
	comp=Z,28nm,1.0s						
HHC	**Hu-ho-hao-te**	**37.20**	**341**	*e*P	**P**	**09 14 36.3**	**+1.7**
HHC				pP	pP	09 15 04.4	+3.8
HHC				sP	sP	09 15 19.0	+5.1
HHC				S	**S**	**09 20 14.6**	**+1.6**
HHC				pmax	pmax		
	comp=Z,19nm,0.7s						
HHC				pmax	pmax		
	comp=Z,66nm,5.9s						
USRK	**Ussuriysk Ar.**	**38.21**	**6**	P	**P**	**09 14 43.9**	**+1.0**
	comp=Z,3nm,0.4s,baz=178,slow=7.5,SNR=23						
ASAJ	**Asahikawa**	**40.31**	**18**	*e*P	**P**	**09 15 01.3**	**+0.9**
	comp=Z,3.3nm,0.5s						
STKA	**Stephens Creek**	**40.31**	**160**	P	**P**	**09 15 00.9**	**+0.4**
	comp=Z,3.5nm,0.8s,baz=345,slow=11,SNR=5.2						
GTA	**Gaotai**	**41.15**	**328**	*e*P	**P**	**09 15 07.9**	**+0.4**
GTA				pmax	pmax		
	comp=Z,14nm,0.9s						
YSS	**Yuzh-Sakhalins**	**42.94**	**16**	*e*P	**P**	**09 15 23.1**	**+1.4**
YSS				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KLR	**Kul'dur**	**43.18**	**5**	P	**P**	**09 15 24.0**	**+0.4**
	comp=Z,2.5nm,0.3s,baz=204,slow=7.1,SNR=14						
KLR	**Kul'dur**	**43.18**	**5**	P	**P**	**09 15 24.0**	**+0.4**
KLR				pmax	pmax		
	comp=Z,3.0nm,0.3s						
RAMN	**Ramite**	**43.52**	**303**	*e*P	**P**	**09 15 26.8**	**-0.2**
	comp=Z,18nm,0.6s						
GUN	**Gumba**	**44.46**	**304**	*e*P	**P**	**09 15 33.3**	**-1.4**
	comp=Z,25nm,0.7s						
KKN	**Kakani**	**44.91**	**304**	*e*P	**P**	**09 15 36.7**	**-1.4**
	comp=Z,9.2nm,0.5s						
SONM	**Songino Array**	**45.10**	**341**	P	**P**	**09 15 39.4**	**+0.2**
	comp=Z,2.2nm,0.6s,baz=156,slow=7.3,SNR=12						
SONA1	**Songino Array**	**45.11**	**341**	*e*P	**P**	**09 15 39.4**	**+0.1**
KOLN	**Koldanda**	**46.30**	**303**	*e*P	**P**	**09 15 48.7**	**-0.3**
	comp=Z,18nm,0.5s						
PYUN	**Piuthan**	**46.92**	**303**	*e*P	**P**	**09 15 53.5**	**-0.4**
	comp=Z,14nm,0.5s						
TLY	**Talaya**	**49.33**	**341**	P	**P**	**09 16 12.7**	**+0.9**
	comp=Z,5.2nm,0.8s,baz=287,slow=2.9,SNR=3.6						
WMQ	**Urumqi**	**50.87**	**324**	*e*P	**P**	**09 16 24.6**	**+1.0**
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.6s						
PETK	**Petropavlovsk-**	**53.21**	**23**	P	**P**	**09 16 41.0**	**+0.3**
	comp=Z,2.6nm,0.6s,baz=195,slow=5.2,SNR=8.8						
MK01	**Makanchi Array**	**55.67**	**324**	*e*P	**P**	**09 16 58.4**	**-0.3**
MK31	**Makanchi Array**	**55.69**	**324**	*e*P	**P**	**09 16 58.5**	**-0.3**
MK31				pmax	pmax		
	comp=Z,3.0nm,0.4s						
MK31	**Makanchi Array**	**55.69**	**324**	*e*P	**P**	**09 16 58.8**	**0.0**
MKAR	**Makanchi Array**	**55.69**	**324**	P	**P**	**09 16 58.6**	**-0.2**
	comp=Z,7.5nm,0.5s,baz=118,slow=7.3,SNR=93						
MKAR	**Makanchi Array**	**55.69**	**324**	*e*P	**P**	**09 16 58.8**	**0.0**
YAK	**Yakutsk**	**55.85**	**2**	*i* P	**P**	**09 16 58.7**	**-0.8**
YAK				pmax	pmax		
	comp=Z,14nm,0.7s						
MAKZ	**Makanchi**	**55.88**	**324**	*e*P	**P**	**09 16 59.9**	**-0.2**
MAKZ				pmax	pmax		
	comp=Z,8.0nm,0.6s						
MAKZ	**Makanchi**	**55.88**	**324**	*e*P	**P**	**09 16 59.9**	**-0.2**
	comp=Z,7.7nm,0.6s						
KSH	**Kashi**	**56.47**	**314**	*e*P	**P**	**09 17 06.4**	**+1.8**
KSH				*es*P	sP	09 17 49.4	+4.1
KSH				S	**S**	**09 24 44.3**	**-2.7**
KSH				pmax	pmax		
	comp=Z,84nm,4.7s						
ZAA0	**Zalesovo Array**	**58.54**	**332**	*e*P	**P**	**09 17 18.1**	**-0.6**
ZALV	**Zalesovo Beam**	**58.54**	**332**	P	**P**	**09 17 18.0**	**-0.7**
	comp=Z,2.7nm,0.4s,baz=130,slow=6.9,SNR=11						
KURK	**Kurchatov**	**59.82**	**327**	*e*P	**P**	**09 17 27.1**	**-0.4**
KURK	**Kurchatov**	**59.82**	**327**	*e*P	**P**	**09 17 27.1**	**-0.4**
	comp=Z,124nm,0.6s						
KURBB	**Kurchatov Arra**	**59.82**	**327**	P	**P**	**09 17 27.4**	**-0.1**
	comp=Z,14nm,0.7s,baz=126,slow=6.1,SNR=120						
NVS	**Novosibirsk**	**59.82**	**333**	*e*P	**P**	**09 17 27.2**	**-0.3**
KK31	**Karatay Array**	**61.59**	**316**	P	**P**	**09 17 38.8**	**-1.0**
KK31				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KKAR	**Karatay Array**	**61.59**	**316**	*e*P	**P**	**09 17 39.0**	**-0.8**
KKAR	**Karatay Array**	**61.59**	**316**	*e*P	**P**	**09 17 39.0**	**-0.8**
BVA0	**Borovoye Array**	**65.41**	**326**	*i* P	**P**	**09 18 03.8**	**-0.8**
BVA0				pmax	pmax		
	comp=Z,9.0nm,0.7s						
BVAR	**Borovoye Array**	**65.41**	**326**	P	**P**	**09 18 04.7**	**0.0**
	comp=Z,6.9nm,0.5s,baz=124,slow=7.9,SNR=36						
BRVK	**Borovoye**	**65.48**	**326**	P	**P**	**09 18 04.3**	**-0.8**
BRVK				pmax	pmax		
	comp=Z,19nm,1.0s						
BRVK	**Borovoye**	**65.48**	**326**	*e*P	**P**	**09 18 05.0**	**-0.1**
	comp=Z,16nm,0.9s						

ellipse: s-maj=72.6km s-min=32.9km az=93.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.03**	**188**	Pn	Pn	09 10 22.4	-1.0
	10nm,0.3s,baz=3.4,slow=3.2,SNR=19						
PMG				Sn	Sn	09 11 03.1	+2.6
	1.9nm,0.3s,baz=198,slow=20,SNR=4.3						
WRA	**Warramunga Arr**	**18.64**	**222**	P	Pn	09 13 54.9	+1.1
	0.4nm,0.3s,baz=44,slow=12,SNR=4.5						
ASAR	**Alice Springs**	**21.64**	**216**	P	P	09 14 25.6	-0.8
	1.2nm,0.5s,baz=53,slow=8.9,SNR=9.4						
FITZ	**Fitzroy Crossi**	**24.38**	**239**	P	P	09 14 54.8	+0.4
	4.4nm,0.5s,baz=48,slow=11,SNR=9.9						

CSEM ***02*** *09:11:06.8, 12.04N×43.93E, h9km, ML3.7*
DHMR ***02*** **09:11:06.8±1.0, 12.04N×43.93E, h9km±20km, ML3.7, Western Arabian Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.26**	**55**	*i* P	Pn	09 11 30.4	-0.3
ADEN				*i* S	Sn	09 11 47.9	+0.1
ADEN				AML	AML	09 11 56.0	
	comp=E,1μm,0.2s						
ADEN	**Aden**	**1.26**	**55**	*i* P	Pn	09 11 30.4	-0.2
ADEN				*i* S	Sn	09 11 47.9	+0.2
	comp=E,586nm,0.2s						
UDYN	**Al 'Udayn**	**1.91**	**1**	*i* P	Pb	09 11 41.2	-0.8
UDYN				*i* S	Sb	09 12 07.2	+1.1
UDYN	**Al 'Udayn**	**1.91**	**1**	*i* P	Pb	09 11 41.2	-0.8
UDYN				*i* S	Sb	09 12 07.2	+1.1
BDHA	**Al Bayda'**	**2.50**	**40**	*i* P	Pn	09 11 49.6	+1.7
BDHA				*i* S	Sb	09 12 24.3	+1.3
BDHA				AML	AML	09 12 31.5	
	comp=N,878nm,0.7s						
BDHA	**Al Bayda'**	**2.50**	**40**	*i* P	Pn	09 11 49.6	+1.7
BDHA				*i* S	Sb	09 12 24.3	+1.3
	comp=N,439nm,0.7s						
DHBB	**Dhamar BB**	**2.55**	**10**	*i* P	Pb	09 11 50.9	-2.1
DHBB				*i* S	Sb	09 12 25.7	+1.0

IDC ***02*** *09:23:19.5±1.4, 7.03S×150.26E, h0km, mb4.1/7, mb1 4.3/8, mb1mx3.9/45, mbtmp4.1/8, ML2.1/1, MS2.8/2, Ms1 2.8/2, ms1mx2.5/21, Error ellipse: s-maj=51.7km s-min=18.9km az=121.0*
ISCJB ***02*** *09:23:20.8±1.0, 7.2S±0.2×150.5E±0.2, h26km, mb3.9/6, MS2.7/2, Error ellipse: s-maj=31.9km s-min=11.2km az=43.0*
NEIC ***02*** *09:23:24.4±1.0, 7.12S×150.33E, h35km, mb4.4/1, Error ellipse: s-maj=35.5km s-min=11.9km az=121.0*
ISC 02 09:23:22.3±1.3, 7.3S±0.2×150.5E±0.2, h26km, n14, σ2s72/14, mb4.0/6, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.92**	**238**	Pn	**Pn**	**09 24 22.3**	**+1.4**
	10nm,0.3s,baz=39,slow=9.1,SNR=20						
PMG				Sn	**Sn**	**09 25 07.9**	**+1.8**
	22nm,0.3s,baz=335,slow=7.6,SNR=9.6						
PMG	**Port Moresby**	**3.92**	**238**	Pn	**Pn**	**09 24 22.3**	**+1.4**
PMG				Sn	**Sn**	**09 25 07.9**	**+1.8**
PMG				eSn	Sb	09 25 08.8	-9.0
COEN	**Coen**	**9.78**	**227**	ePn	**Pn**	**09 25 42.9**	**+1.4**
COEN				eSn	**Sn**	**09 27 23.6**	**-7.0**
WRAB	**Tennant Creek**	**20.08**	**230**	eP	**P**	**09 27 54.9**	**+0.8**
	12nm,0.6s						
WRA	**Warramunga Arr**	**20.09**	**230**	P	Pn	09 27 55.2	-0.9
	10nm,0.6s,baz=53,slow=11,SNR=64						
GUMO	**Guam**	**21.50**	**345**	LR	LR	09 35 32.2	
	comp=Z,16nm,21.5s,baz=134,slow=35						
ASAR	**Alice Springs**	**22.78**	**223**	P	**P**	**09 28 24.2**	**+1.1**
	3.3nm,0.8s,baz=56,slow=8.5,SNR=31						
STKA	**Stephens Creek**	**25.82**	**198**	P	**P**	**09 28 52.9**	**+1.2**
	3.2nm,0.7s,baz=7.3,slow=9.9,SNR=3.7						
FITZ	**Fitzroy Crossi**	**26.49**	**244**	P	**P**	**09 28 57.5**	**-0.3**
	2.6nm,0.6s,baz=58,slow=9.5,SNR=11						
PETK	**Petropavlovsk-**	**60.49**	**5**	LR	LR	09 59 28.4	
	comp=Z,12nm,18.1s,baz=122,slow=36						
MKAR	**Makanchi Array**	**80.73**	**320**	P	**P**	**09 35 33.3**	**-0.1**
	0.3nm,0.5s,baz=99,slow=9.3,SNR=3.4						
ZALV	**Zalesovo Beam**	**81.98**	**327**	P	**P**	**09 35 37.4**	**-2.4**
	0.5nm,0.3s,baz=126,slow=7.3,SNR=2.3						
ILAR	**Eielson Array**	**85.32**	**22**	P	**P**	**09 35 58.2**	**+1.4**
	1.3nm,0.6s,baz=250,slow=4.9,SNR=20						
TORD	**Torodi Ar. Bea**	**148.78**	**283**	PKPbc	**PKPab**	**09 43 09.4**	**-3.0**
	1.3nm,0.4s,baz=53,slow=2.9,SNR=21						

CSEM ***02*** *09:26:58.2, 12.03N×44.07E, h3km, ML3.6*
DHMR ***02*** *09:26:58.2±1.4, 12.03N×44.07E, h4km±12km, ML3.6*
ARO ***02*** *09:27:03.4, 12°N±8°×4°E±°, h10km±15km, ML3.8*
ISC 02 09:26:58.0±1.8, 11.95N±0.06×44.15E±0.05, h2km±15km, n17, σ1s44/27, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.84**	**272**	eP	**Pn**	**09 27 15.8**	**-1.1**
MCAD	**Moucha**	**0.95**	**257**	eP	**Pn**	**09 27 18.5**	**+0.2**
ATA	**Atar**	**1.05**	**242**	eP	**Pn**	**09 27 19.7**	**0.0**
ADEN	**Aden**	**1.15**	**45**	*i* P	**Pb**	**09 27 19.6**	**-1.0**
ADEN				*i* S	**Sn**	**09 27 36.3**	**-1.2**
ADEN				AML	AML	09 27 44.6	
	comp=N,2μm,0.3s						
ADEN	**Aden**	**1.15**	**45**	*i* P	**Pb**	**09 27 19.6**	**-1.0**
ADEN				*i* S	**Sn**	**09 27 36.3**	**-1.2**
	comp=N,1μm,0.3s						
TDD	**Tadjoura Ara**	**1.23**	**263**	eP	**Pg**	**09 27 22.5**	**+1.0**
ATD	**Arta Tunnel**	**1.34**	**252**	eP	**Pg**	**09 27 24.2**	**+0.4**
ATD				eS	**Sn**	**09 27 41.3**	**-1.1**
SGH	**Sud-Ghoubbet**	**1.58**	**251**	eP	**Pb**	**09 27 28.1**	**+0.2**
GBR	**Grand-Bara**	**1.84**	**244**	eP	**Pb**	**09 27 31.9**	**-0.5**
MAOD	**Malaho**	**1.89**	**274**	eP	**Pb**	**09 27 32.4**	**-0.9**
UDYN	**Al 'Udayn**	**2.01**	**355**	*i* P	**Pn**	**09 27 33.3**	**+0.2**
UDYN				*i* S	**Sb**	**09 27 59.0**	**-1.9**
UDYN	**Al 'Udayn**	**2.01**	**355**	*i* P	**Pn**	**09 27 33.3**	**+0.2**
UDYN				*i* S	**Sb**	**09 27 59.0**	**-1.9**
BDHA	**Al Bayda'**	**2.44**	**34**	*i* P	**Pn**	**09 27 40.0**	**+0.9**
BDHA				*i* S	**Sb**	**09 28 14.4**	**+1.1**
BDHA				AML	AML	09 28 21.1	
	comp=Z,284nm,0.5s						
BDHA	**Al Bayda'**	**2.44**	**34**	*i* P	**Pn**	**09 27 40.0**	**+0.9**
BDHA				*i* S	**Sb**	**09 28 14.4**	**+1.1**
	comp=Z,142nm,0.5s						
DHBB	**Dhamar BB**	**2.61**	**5**	*i* P	**Pb**	**09 27 43.3**	**-2.5**
DHBB				*i* S	**Sb**	**09 28 18.0**	**-0.4**
HAJJ	**Hajjah**	**3.76**	**352**	*i* P	**Pn**	**09 27 58.3**	**+1.1**
HAJJ				*i* S	**Sn**	**09 28 45.2**	**+3.0**
HAJJ	**Hajjah**	**3.76**	**352**	*i* P	**Pn**	**09 27 58.3**	**+1.1**
HAJJ				*i* S	**Sn**	**09 28 45.2**	**+3.0**

CSEM ***02*** *09:47:56.1, 12.10N×44.08E, h10km, ML3.9*
DHMR ***02*** *09:47:56.1±2.2, 12.10N×44.08E, h11km±45km, ML3.9*
ARO ***02*** *09:47:57.9, 12°N±3°×4°E±°, h15km±7km, ML3.8*
ISC 02 09:47:55.9±1.9, 12.06N±0.06×44.06E±0.05, h14km±17km, n13, σ0s72/21, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.76**	**265**	eP	**Pg**	**09 48 11.0**	**+0.3**
ATA	**Atar**	**1.03**	**235**	eP	**Pb**	**09 48 15.4**	**-0.1**
ADEN	**Aden**	**1.15**	**51**	*i* P	**Pb**	**09 48 17.0**	**-0.5**
ADEN				*i* S	**Sb**	**09 48 31.6**	**-0.7**
ADEN				AML	AML	09 48 41.4	
	comp=E,3μm,0.3s						
ADEN	**Aden**	**1.15**	**51**	*i* P	**Pb**	**09 48 17.0**	**-0.5**
ADEN				*i* S	**Sb**	**09 48 31.6**	**-0.7**
	comp=E,2μm,0.3s						
TDD	**Tadjoura Ara**	**1.16**	**258**	eP	**Pb**	**09 48 17.1**	**-0.6**
ATD	**Arta Tunnel**	**1.30**	**246**	eP	**Pn**	**09 48 19.7**	**0.0**
ATD				eS	**Sb**	**09 48 37.1**	**+0.3**
SGH	**Sud-Ghoubbet**	**1.53**	**246**	eP	**Pn**	**09 48 23.1**	**+0.2**
GBR	**Grand-Bara**	**1.81**	**240**	eP	**Pn**	**09 48 26.4**	**-0.2**
UDYN	**Al 'Udayn**	**1.90**	**357**	*i* P	**Pn**	**09 48 28.9**	**+0.9**
UDYN				*i* S	**Sb**	**09 48 53.7**	**-0.5**
UDYN	**Al 'Udayn**	**1.90**	**357**	*i* P	**Pn**	**09 48 29.0**	**+0.9**
UDYN				*i* S	**Sb**	**09 48 53.7**	**-0.5**
BDHA	**Al Bayda'**	**2.41**	**37**	*i* P	**Pn**	**09 48 35.6**	**+0.5**
BDHA				*i* S	**Sb**	**09 49 09.6**	**+0.9**
BDHA				AML	AML	09 49 16.8	
	comp=N,1μm,0.5s						
BDHA	**Al Bayda'**	**2.41**	**37**	*i* P	**Pn**	**09 48 35.6**	**+0.5**
BDHA				*i* S	**Sb**	**09 49 09.6**	**+0.9**
	comp=N,540nm,0.5s						
DHBB	**Dhamar BB**	**2.52**	**7**	*i* P	**Pb**	**09 48 39.7**	**-1.5**
DHBB				*i* S	**Sb**	**09 49 12.9**	**+0.7**

IDC 02 10:01:38.3±3.2, 6.59S×148.20E, h0km, mb3.7/2, mb1 3.8/4, mb1mx3.5/31, mbtmp3.6/4, ML3.6/1, MS3.2/3, Ms1 3.2/3, ms1mx2.7/30, Error ellipse: s-maj=79.0km s-min=33.7km az=104.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.98**	**200**	Pn	Pn	10 02 29.1	+2.2
	6.8nm,0.3s,baz=40,slow=8.5,SNR=14						
PMG				Sn	Sn	10 03 04.5	+1.2
	6.5nm,0.3s,baz=66,slow=20,SNR=2.9						
PMG				LR	LR	10 03 52.1	
	comp=Z,286nm,19.1s,baz=316,slow=45						
WRA	**Warramunga Arr**	**18.90**	**224**	P	P	10 06 00.6	-0.1
	0.2nm,0.3s,baz=52,slow=11,SNR=7.7						
ASAR	**Alice Springs**	**21.84**	**217**	P	P	10 06 32.4	-0.2
	0.4nm,0.4s,baz=53,slow=8.9,SNR=12						
FITZ	**Fitzroy Crossi**	**24.79**	**240**	P	P	10 07 01.2	-1.0
	2.2nm,0.4s,baz=44,slow=9.0,SNR=23						
STKA	**Stephens Creek**	**25.90**	**193**	LR	LR	10 17 30.0	
	comp=Z,51nm,18.9s,baz=25,slow=37						
ILAR	**Eielson Array**	**85.56**	**23**	LR	LR	10 48 12.4	
	comp=Z,17nm,20.2s,baz=269,slow=33						
TORD	**Torodi Ar. Bea**	**146.39**	**284**	PKPbc	PKPbc	10 21 21.9	-0.4
	1.1nm,1.0s,baz=76,slow=3.0,SNR=4.9						

NIED ***02*** *10:04:00, 21.80N×121.50E, h5km, Mw4.6 Best double couple: M0 1.03000×10^16 NP1:φs78.00000°, δ10.00000°, λ-96.00000°. NP2:φs264.00000°, δ80.00000°, λ-89.00000°.*
JMA ***02*** *10:04:04.9±0.4, 21.82N×121.50E, h50km, M4.6*
IDC ***02*** *10:04:05.5±0.5, 21.82N×121.49E, h0km, mb4.3/21, mb1 4.4/22, mb1mx4.3/36, mbtmp4.3/22, ML3.9/1, MS3.7/18, Ms1 3.7/18, ms1mx3.4/42, Error ellipse: s-maj=20.9km s-min=11.1km az=77.0*
BJI ***02*** *10:04:05.8, 21.96N×121.56E, h7km, mb4.3/29, mB4.5/23, ML4.1/2, Ms4.0/32, Ms7 3.8/31*
ISCJB ***02*** *10:04:05.5±0.4, 21.93N±0.01×121.66E±0.02, h15km±3km, mb4.4/49, MS3.7/22, Error ellipse: s-maj=2.7km s-min=2.4km az=30.3*
NEIC ***02*** *10:04:06.8±0.3, 21.99N×121.64E, h10km, mb4.6/19, Error ellipse: s-maj=7.9km s-min=4.7km az=87.0*
NEIC Recorded [4 TAP] in Taitung.
TAP ***02*** *10:04:07.5, 21.99N×121.49E, h14km, ML4.5, C*
MOS ***02*** *10:04:07.8±1.6, 21.88N×121.61E, h27km, mb4.6/29, Error ellipse: s-maj=11.6km s-min=6.8km az=106.4*
ISC 02 10:04:07.3±0.9, 22.03N±0.03×121.60E±0.02, h10km±5km, n217, σ1s53/292, mb4.5/49, MS3.7/22, 2C-5D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.04**	**285**	⇓*i* P	**Pg**	**10 04 10.7**	**+1.3**
	baz=53						
TSEB	**Hengchuen, Pin**	**0.66**	**259**	P	**Pg**	**10 04 20.0**	**-0.1**
	baz=262						
TSEB				S	**Sg**	**10 04 29.2**	**+0.5**
	baz=262						
TAW	**Tawu**	**0.73**	**297**	P	**Pg**	**10 04 20.4**	**-1.0**
	baz=306						
TAW				S	**Sg**	**10 04 29.7**	**-1.3**
	baz=306						
TWK1	**Hengchun**	**0.74**	**264**	P	**Pg**	**10 04 20.4**	**-1.2**
	baz=266						
EAST	**Anshuo**	**0.78**	**297**	⇓*i* P	**Pg**	**10 04 21.3**	**-1.0**
	baz=306						
EAST				eS	**Sg**	**10 04 31.0**	**-1.6**
	baz=306						
HEN	**Hengchun**	**0.80**	**269**	P	**Pg**	**10 04 21.6**	**-1.1**
	baz=287						
HEN				eS	**Sg**	**10 04 31.7**	**-1.4**
	baz=287						
ECL	**Taimali**	**0.82**	**314**	eP	**Pg**	**10 04 22.1**	**-1.1**
	baz=323						
ECL				eS	**Sg**	**10 04 30.0**	**-3.9**
	baz=323						
TTN	**Taitung**	**0.83**	**330**	P	**Pg**	**10 04 23.5**	**+0.1**
	baz=353						
TTN				eS	**Sb**	**10 04 35.0**	**-0.1**
	baz=353						
TWG	**Pinlang**	**0.93**	**328**	⇓P	**Pg**	**10 04 24.1**	**-1.0**
	baz=322						
TWG				eS	**Sb**	**10 04 37.8**	**-0.1**
	baz=322						
TWG	**Pinlang**	**0.93**	**328**	ePg	**Pg**	**10 04 24.1**	**-1.1**
TWG				eSg	**Sg**	**10 04 35.6**	**-1.7**
SCZT	**Fangliau**	**0.97**	**291**	eP	**Pg**	**10 04 24.5**	**-1.4**
	baz=310						
SCZT				eS	**Sg**	**10 04 37.2**	**-1.4**
	baz=310						
CHKT	**Chengkung**	**1.09**	**349**	P	**Pb**	**10 04 26.9**	**-1.3**
	baz=8.0						
CHKT				eS	**Sg**	**10 04 41.1**	**-1.3**
	baz=8.0						
TWP	**Hsiaoliuchiu**	**1.19**	**286**	eP	**Pg**	**10 04 30.1**	**0.0**
	baz=304						
TWP				eS	**Sb**	**10 04 44.6**	**-0.7**
	baz=304						
ELDTW	**Lidau**	**1.27**	**335**	eP	**Pn**	**10 04 29.4**	**-1.8**
	baz=342						
KAU	**Kaohsiung**	**1.31**	**295**	eP	**Pn**	**10 04 31.5**	**-0.1**
	baz=301						
KAU				eS	**Sn**	**10 04 49.1**	**0.0**
	baz=301						
TWM1	**Shoushan**	**1.35**	**306**	eP	**Pb**	**10 04 32.6**	**0.0**
	baz=312						
TWF1	**Yuli**	**1.35**	**348**	eP	**Pn**	**10 04 30.9**	**-1.3**
	baz=342						
TWF1				eS	**Sb**	**10 04 47.2**	**-2.8**
	baz=342						
STYT	**Tauyuan**	**1.37**	**326**	eP	**Pn**	**10 04 31.6**	**-0.9**
	baz=333						
STYT				eS	**Sb**	**10 04 50.2**	**-0.5**
	baz=333						
YULB	**Yu-li**	**1.39**	**349**	ePn	**Pn**	**10 04 32.0**	**-0.7**
YULB				eSn	**Sb**	**10 04 48.0**	**-3.1**
SGST	**Jiashian**	**1.41**	**318**	eP	**Pn**	**10 04 33.1**	**+0.1**
	baz=326						
SGST				eS	**Sb**	**10 04 51.8**	**+0.1**
	baz=326						
EHY	**Hungye**	**1.49**	**350**	eP	**Pn**	**10 04 32.7**	**-1.4**
	baz=345						
EHY				eS	**Sn**	**10 04 53.6**	**-0.1**
	baz=345						
WTP	**Ta-pu**	**1.52**	**323**	⇓P	**Pn**	**10 04 34.7**	**+0.2**
	baz=344						
WTP				eS	**Sb**	**10 04 54.9**	**0.0**
	baz=344						
TPUB	**Ta-pu**	**1.55**	**325**	ePn	**Pn**	**10 04 35.0**	**0.0**
YUS	**Yu-Shan**	**1.57**	**338**	⇑*i* P	**Pn**	**10 04 35.5**	**-0.2**
	baz=344						
TWK	**Hsinying**	**1.60**	**320**	eP	**Pn**	**10 04 36.3**	**+0.6**
	baz=328						
TWK				eS	**Sb**	**10 04 57.1**	**-0.2**
	baz=328						
CHN4	**Tsaushan**	**1.61**	**325**	eP	**Pb**	**10 04 36.5**	**-0.7**
	baz=345						
CHN4				eS	**Sb**	**10 04 57.5**	**-0.1**
	baz=345						
TAI1	**Yung-k'ang**	**1.62**	**309**	eP	**Pn**	**10 04 35.5**	**-0.3**
	baz=314						
ALS	**Alishan**	**1.65**	**334**	eP	**Pn**	**10 04 36.3**	**-0.3**
	baz=341						
ALS				eS	**Sb**	**10 04 59.0**	**+0.2**
	baz=341						
SCLT	**Jiali**	**1.73**	**312**	eP	**Pn**	**10 04 36.7**	**-0.6**
	baz=318						
SCLT				eS	**Sn**	**10 04 59.3**	**-0.2**
	baz=318						
WDT	**Danda**	**1.77**	**346**	eP	**Pn**	**10 04 37.9**	**-0.4**
	baz=353						
WDT				eS	**Sb**	**10 05 02.2**	**-0.3**
	baz=353						
CHN5	**Tsauling**	**1.78**	**332**	eP	**Pn**	**10 04 38.8**	**+0.6**
	baz=339						
CHN5				eS	**Sg**	**10 05 03.6**	**-1.0**
	baz=339						
ESL	**Shilin**	**1.79**	**355**	eP	**Pn**	**10 04 37.3**	**-0.9**
	baz=10.0						
ESL				eS	**Sn**	**10 05 00.9**	**0.0**
	baz=10.0						
CHY	**Chiayi**	**1.82**	**324**	eP	**Pn**	**10 04 38.8**	**+0.1**
	baz=331						
CHY				eS	**Sn**	**10 05 02.0**	**+0.3**
	baz=331						
CHN2	**Minshiung**	**1.82**	**326**	eP	**Pn**	**10 04 39.4**	**+0.7**
	baz=332						
CHN2				eS	**Sb**	**10 05 02.8**	**-0.8**
	baz=332						
CHN8	**Yiju**	**1.83**	**316**	eP	**Pn**	**10 04 39.7**	**+0.9**
	baz=323						
CHN8				eS	**Sn**	**10 05 02.5**	**+0.4**
	baz=323						
SSLB	**Suanglung**	**1.85**	**341**	ePn	**Pn**	**10 04 39.6**	**+0.5**
WGK	**Gukeng**	**1.91**	**330**	eP	**Pn**	**10 04 40.9**	**+1.0**
	baz=337						
WGK				eS	**Sb**	**10 05 05.6**	**-0.4**
	baz=337						
HWA	**Hwalien**	**1.94**	**0**	eP	**Pn**	**10 04 40.9**	**+0.6**
	baz=16						
HWA				eS	**Sb**	**10 05 07.5**	**+0.5**
	baz=16						
SMLT	**Sun Moon Lake**	**1.96**	**341**	eP	**Pb**	**10 04 41.8**	**-1.2**
	baz=358						
SMLT				eS	**Sb**	**10 05 06.8**	**-0.8**
	baz=358						
TYC	**Yuchr**	**1.99**	**340**	⇓P	**Pb**	**10 04 42.4**	**-1.2**
	baz=347						
TYC				eS	**Sb**	**10 05 07.9**	**-0.5**
	baz=347						
WNT	**Mingjian**	**2.03**	**336**	eP	**Pn**	**10 04 42.7**	**+1.3**
	baz=342						
WNT				eS	**Sb**	**10 05 09.0**	**-0.4**
	baz=342						
TWD	**Chiawan**	**2.04**	**360**	eP	**Pn**	**10 04 40.8**	**-0.9**
	baz=15						
WSF	**Szhu**	**2.04**	**322**	eP	**Pn**	**10 04 42.0**	**+0.3**
	baz=329						
WSF				eS	**Sb**	**10 05 09.0**	**-0.9**
	baz=329						
NACB	**Ninganchiao**	**2.14**	**360**	ePn	**Pn**	**10 04 42.1**	**-0.9**
NACB				eSn	**Sn**	**10 05 07.4**	**-2.2**
WDGT	**Dungji**	**2.17**	**305**	eP	**Pn**	**10 04 41.9**	**-1.5**
	baz=311						
WDGT				eS	**Sn**	**10 05 06.8**	**-3.5**
	baz=311						
WTCT	**Ta-ch'eng**	**2.19**	**327**	eP	**Pn**	**10 04 44.4**	**+0.7**
	baz=333						
WTCT				eS	**Sn**	**10 05 11.8**	**+0.8**
	baz=333						
TWT	**Tachien**	**2.25**	**350**	P	**Pn**	**10 04 45.5**	**+0.8**
	baz=356						
TWT				eS	**Sn**	**10 05 13.6**	**+1.0**
	baz=356						
TCU	**Taichung**	**2.27**	**338**	eP	**Pn**	**10 04 45.7**	**+0.8**
	baz=329						
TCU				eS	**Sn**	**10 05 14.6**	**+1.6**
	baz=329						
ENA	**Nanau**	**2.39**	**3**	eP	**Pn**	**10 04 46.3**	**-0.2**
	baz=18						
ENA				eS	**Sn**	**10 05 17.8**	**+1.9**
	baz=18						
NNS	**Nan Shan**	**2.41**	**355**	eP	**Pn**	**10 04 46.6**	**-0.3**
	baz=1.0						
NNS				eS	**Sb**	**10 05 18.5**	**-2.2**
	baz=1.0						
PNG	**Penghu**	**2.43**	**310**	eP	**Pn**	**10 04 45.8**	**-1.3**
	baz=315						
PNG				S	**Sn**	**10 05 13.9**	**-2.8**
	baz=315						
TWQ1	**Liyutan**	**2.43**	**342**	eP	**Pn**	**10 04 48.9**	**+1.8**
	baz=331						
TWQ1				eS	**Sb**	**10 05 19.8**	**-1.4**
	baz=331						
NSY	**Sanyi**	**2.50**	**342**	eP	**Pn**	**10 04 49.4**	**+1.4**
	baz=333						
NSY				eS	**Sb**	**10 05 22.0**	**-1.1**
	baz=333						
TWC	**Suao**	**2.58**	**5**	P	**Pn**	**10 04 50.0**	**+0.9**
	baz=20						
TWC				eS	**Sn**	**10 05 20.3**	**-0.2**
	baz=20						
ENTT	**Nioudou**	**2.60**	**359**	eP	**Pn**	**10 04 49.9**	**+0.5**
	baz=5.0						
ENTT				eS	**Sn**	**10 05 23.1**	**+2.0**
	baz=5.0						
YHNB	**Yeheng**	**2.64**	**356**	ePn	**Pn**	**10 04 50.6**	**+0.6**
NSK	**Sanguang**	**2.65**	**355**	⇑P	**Pn**	**10 04 51.2**	**+1.2**
	baz=11						
NSK				eS	**Sn**	**10 05 23.5**	**+1.3**
	baz=11						
NSTT	**Nanjuang**	**2.65**	**348**	eP	**Pn**	**10 04 51.9**	**+1.9**
	baz=338						
NSTT				eS	**Sn**	**10 05 23.3**	**+1.1**
	baz=338						
TWE	**Neicheng**	**2.68**	**1**	eP	**Pn**	**10 04 52.8**	**+2.3**
	baz=356						
TWE				eS	**Sn**	**10 05 24.8**	**+1.8**
	baz=356						
JYNG	**Yonagunijimaku**	**2.71**	**27**	P	**Pn**	**10 04 51.3**	**+0.4**
JYNG				eS	**Sn**	**10 05 24.1**	**+0.3**
ILA	**Ilan**	**2.73**	**3**	eP	**Pn**	**10 04 52.7**	**+1.5**
	baz=357						
ILA				eS	**Sn**	**10 05 25.2**	**+1.1**
	baz=357						
YOJ	**Yonaguni jima**	**2.75**	**28**	P	**Pn**	**10 04 51.9**	**+0.5**
YOJ				S	**Sn**	**10 05 23.7**	**-1.0**
YOJ	**Yonaguni jima**	**2.75**	**28**	eP	**Pn**	**10 04 51.6**	**+0.1**
	baz=31						
YOJ				eS	**Sn**	**10 05 23.7**	**-1.0**
	baz=31						
YOJ	**Yonaguni jima**	**2.75**	**28**	eP	**Pn**	**10 04 51.8**	**+0.4**
YOJ	**Yonaguni jima**	**2.75**	**28**	ePn	**Pn**	**10 04 51.8**	**+0.4**
EGS		**2.82**	**6**	eP	**Pn**	**10 04 53.8**	**+1.4**
	baz=20						
EGS				eS	**Sn**	**10 05 28.3**	**+1.8**
	baz=20						
HATJ	**Hateruma jima**	**2.87**	**45**	P	**Pn**	**10 04 53.1**	**+0.1**
HATJ				S	**Sn**	**10 05 26.8**	**-0.7**
TATO	**Taipei**	**2.94**	**358**	ePn	**Pn**	**10 04 51.3**	**-2.7**
TWA	**Mucha**	**2.94**	**360**	eP	**Pn**	**10 04 55.8**	**+1.7**
	baz=5.0						
TWA				eS	**Sn**	**10 05 30.6**	**+1.2**
	baz=5.0						
NCU	**National Centr**	**2.95**	**353**	eP	**Pn**	**10 04 55.8**	**+1.6**
	baz=340						
NCU				eS	**Sn**	**10 05 32.7**	**+2.9**
	baz=340						
TWB1	**Santiao Chiao**	**2.99**	**7**	eP	**Pn**	**10 04 56.0**	**+1.3**
	baz=21						
TWB1				eS	**Sn**	**10 05 31.7**	**+1.1**
	baz=21						
IRIF	**Iriomote-Funau**	**3.02**	**40**	P	**Pn**	**10 04 55.4**	**+0.3**
IRIF				S	**Sn**	**10 05 30.0**	**-1.4**
NWF	**Wu-fen Shan**	**3.04**	**3**	eP	**Pn**	**10 04 56.4**	**+1.0**
	baz=358						
NWF				eS	**Sn**	**10

comp=N,280nm,0.9s
QZH smax smax
comp=E,260nm,0.9s
JIRB Irabujima 4.31 49 P **Pn** **10 05 12.8 0.0**
JIRB S **Sn** **10 06 01.7 -1.4**
JMJ Miyako jima 2 4.38 50 P **Pn** **10 05 13.9 0.0**
JMJ eS **Sn** **10 06 03.2 -1.8**
JIKM Ikemajima 4.42 49 P **Pn** **10 05 13.6 -0.8**
JIKM S **Sn** **10 06 05.4 -0.5**
JOGS Gusukube 4.43 51 P **Pn** **10 05 14.9 +0.4**
JOGS S **Sn** **10 06 05.8 -0.4**
JKE Kume jima 2 6.38 47 P **Pn** **10 05 40.3 -1.1**
JKE eS **Sn** **10 06 50.6 -3.7**
JAGN Aguni-jima 6.87 47 P **Pn** **10 05 48.1 +0.1**
JAGN eS **Sn** **10 07 03.0 -3.2**
GZH Guangzhou 7.70 279 Pn **Pn** **10 05 57.2 -2.3**
TGY Tagaytay City 7.91 185 LR LR 10 09 52.1
comp=E,403nm,18.4s,baz=351,slow=45
QIZ Qiongzhong 11.41 257 P **Pn** **10 06 50.6 +0.2**
QIZ S **Sn** **10 08 58.9 +0.9**
QIZ LR LR
comp=E,400nm,16.1s
QIZ LR LR
comp=E,530nm,17.3s
JNU Nakatsue 13.77 35 LR LR 10 12 38.4
comp=E,218nm,21.8s,baz=302,slow=37
GYA Guiyang 14.32 291 *e*P **Pn** **10 07 30.0 -0.2**
GYA PP **PnPn** **10 07 42.0 +3.8**
GYA S **Sn** **10 10 09.2 0.0**
GYA SS **S** **10 10 26.4 -3.2**
GYA pmax pmax
comp=E,10.0nm,0.7s
GYA pmax pmax
comp=E,90nm,4.8s
GYA LR LR
comp=E,410nm,13.0s
GYA LR LR
comp=E,380nm,13.8s
INCN Inchon 16.01 15 *e*Pn **Pn** **10 07 51.3 -1.3**
comp=E,18nm,0.4s
KS15 Wonju Array Si 16.30 18 *e*Pn **Pn** **10 07 55.8 -0.4**
KSAR Wonju Array Be 16.30 18 P **P** **10 07 58.1 -1.1**
KSAR Wonju Array Be 16.30 18 Pn **P** **10 07 58.0 -1.1**
KSRS Korea Array 16.32 18 Pn **P** **10 07 58.0 -1.4**
comp=E,0.4nm,0.3s,baz=202,slow=12,SNR=16
KSRS LR LR 10 15 02.3
comp=E,202nm,18.1s,baz=188,slow=40
KS01 Wonju Array Si 16.33 18 *e*Pn **Pn** **10 07 56.4 -0.2**
KMI Kunming 17.56 284 P **Pn** **10 08 08.8 -3.6**
KMI pmax pmax
comp=E,9.0nm,0.9s
KMI LR LR
comp=E,190nm,11.8s
KMI LR LR
comp=E,310nm,11.3s
KMI LR LR
comp=E,380nm,12.0s
CD2 Chengdu 18.24 303 *e*P **Pn** **10 08 20.0 -0.6**
CD2 Chengdu 18.24 303 *e*P **Pn** **10 08 19.4 -1.2**
CD2 pP sP 10 08 25.4 +0.3
CD2 sP pP 10 08 28.2 +4.4
CD2 S **Sn** **10 11 42.6 -1.8**
CD2 pmax pmax
comp=E,20nm,0.5s
CD2 pmax pmax
comp=E,160nm,5.0s
CD2 LR LR
comp=E,400nm,7.2s
CD2 LR LR
comp=E,340nm,8.7s
CD2 LR LR
comp=E,310nm,8.5s
BJI Beijing 18.54 347 P **Pn** **10 08 29.0 +4.9**
BJI S **Sn** **10 11 52.6 +1.2**
BJI pmax pmax
comp=E,12nm,0.8s
BJI pmax pmax
comp=E,110nm,3.6s
BJI LR LR
comp=E,280nm,16.6s
BJI LR LR
comp=E,180nm,15.4s
BJI LR LR
comp=E,220nm,22.4s
INU Inuyama 18.92 42 *e*P **Pn** **10 08 28.6 -0.2**
comp=E,30nm,1.1s
JHJ Hachijo jima 2 19.51 52 LR LR 10 15 57.7
comp=E,118nm,19.5s,baz=130,slow=36
MAJO Matsushiro 20.43 41 *e*P **P** **10 08 44.6 -0.1**
MAJO pmax pmax
comp=E,22nm,0.8s
MAJO Matsushiro 20.43 41 *e*P **P** **10 08 44.6 -0.1**
comp=E,22nm,0.8s
MJAR Matsushiro Arr 20.43 41 LR LR 10 16 50.2
comp=E,93nm,21.4s,baz=205,slow=37
MJB9 Matsu-Tunnel 20.43 41 *e*P **P** **10 08 44.7 0.0**
comp=E,5.8nm,0.8s
HHC Hu-ho-hao-te 20.60 338 *e*P Pn 10 08 48.5 -0.3
HHC pP sP 10 08 53.8 +2.9
HHC sP pP 10 08 57.2 +7.6
HHC S **S** **10 12 33.1 -3.8**
HHC pmax pmax
comp=E,16nm,0.6s
HHC pmax pmax
comp=E,65nm,6.0s
HHC LR LR
comp=E,300nm,14.5s
HHC LR LR
comp=E,400nm,14.7s
MRSI Marisa 21.42 179 P **P** **10 09 01.5 +6.0**
comp=E,35nm,0.9s,comp=Z,2µm
SBUM Sibu 21.49 206 *e*P **P** **10 08 56.7 +0.5**
comp=E,8.5nm,0.7s
CM01 Chiang Mai Arr 21.54 264 *e*P **P** **10 08 56.6 -0.2**
CMAR Chiang Mai Arr 21.55 265 P **P** **10 08 56.5 -0.4**
comp=E,4.9nm,1.0s,baz=69,slow=9.0,SNR=9.3
CMAR LR LR 10 18 25.2
comp=E,170nm,18.2s,baz=84,slow=40
CN2 Changchun 21.95 7 *e*P **P** **10 09 04.8 +3.8**
CN2 pmax pmax
comp=E,10.0nm,0.6s
CN2 LR LR
comp=E,300nm,14.0s
CN2 LR LR
comp=E,200nm,14.0s
CN2 LR LR
comp=E,300nm,16.0s
KSM Kuching 23.20 210 *e*P **P** **10 09 14.2 -0.2**
comp=E,13nm,0.8s
USRK Ussuriysk Ar. 23.73 19 P **P** **10 09 20.9 +1.5**
comp=E,2.6nm,0.7s,baz=197,slow=6.8,SNR=8.4
USRK LR LR 10 19 32.2
comp=E,147nm,18.4s,baz=186,slow=39
MTKI Muara Teweh, K 23.75 197 P **P** **10 09 22.5 +2.6**
TTSI Tana Toraja 24.98 184 P **P** **10 09 31.9 +0.7**
comp=E,33nm,0.7s
GTA Gaotai 25.41 318 *e*P **P** **10 09 37.2 +2.1**
GTA pP sP 10 09 42.6 +3.0
GTA sP pP 10 09 45.8 +7.6
GTA S **S** **10 14 04.4 +2.5**
GTA sS sS 10 14 12.5 +5.4
GTA pmax pmax
comp=E,9.0nm,0.8s
GTA pmax pmax
comp=E,81nm,5.7s
GTA LR LR
comp=E,110nm,9.5s
GTA LR LR
comp=E,170nm,12.6s
GTA LR LR
comp=E,150nm,12.1s
BBKI Banjar Baru 26.18 195 P **P** **10 09 44.3 +2.2**
KAPI Kappang 26.93 184 P **P** **10 09 46.6 -2.3**
comp=E,12nm,0.7s,baz=309,slow=5.3,SNR=7.5
KAPI Kappang 26.93 184 *e*P **P** **10 09 49.3 +0.4**
comp=E,19nm,0.8s
ASAJ Asahikawa 28.04 33 P **P** **10 10 01.3 +2.7**
comp=E,6.5nm,0.7s,baz=222,slow=11,SNR=8.9
ASAJ Asahikawa 28.04 33 *e*P **P** **10 09 58.4 -0.2**
comp=E,21nm,1.1s
KLR Kul'dur 28.32 14 P **P** **10 10 03.5 +2.5**
comp=E,0.9nm,0.6s,baz=257,slow=10,SNR=3.8
KLR PcP **PcP** **10 13 13.7 -0.1**
comp=E,0.8nm,0.5s,baz=304,slow=3.1,SNR=4.2
KLR LR LR 10 22 09.7
comp=E,193nm,19.7s,baz=188,slow=38

SONM Songino Array 28.50 338 P **P** **10 10 04.1 +1.3**
comp=Z,2.2nm,0.9s,baz=153,slow=9.8,SNR=9.4
SONM LR LR 10 22 35.5
comp=Z,520nm,18.1s,baz=131,slow=39
SONA1 Songino Array 28.51 338 *e*P **P** **10 10 01.3 -1.6**
YSS Yuzh-Sakhalins 30.18 29 *e*P **P** **10 10 21.9 +4.3**
YSS pmax pmax
comp=Z,20nm,0.9s
YSS MLR MLR
comp=Z,100nm,15.0s
YSS Yuzh-Sakhalins 30.18 29 *e*P **P** **10 10 16.4 -1.2**
comp=Z,17nm,1.0s
MMRI Maumere 30.48 179 *e*P **P** **10 10 20.6 +0.1**
comp=Z,53nm,0.8s
WMQ Urumqi 35.44 316 *e*P **P** **10 11 04.0 +0.3**
WMQ pP sP 10 11 08.2 0.0
WMQ pmax pmax
comp=Z,9.0nm,0.7s
WMQ pmax pmax
comp=Z,79nm,3.7s
WMQ LR LR
comp=Z,150nm,18.4s
MTN Manton Dam 35.89 164 *e*P **P** **10 11 04.9 -2.8**
comp=Z,12nm,0.6s
FITZ Fitzroy Crossi 40.08 174 P **P** **10 11 41.3 -1.6**
comp=Z,10nm,0.7s,baz=2.7,slow=7.5,SNR=40
FITZ Fitzroy Crossi 40.08 174 *e*P **P** **10 11 40.8 -2.2**
comp=Z,17nm,1.1s
MK01 Makanchi Array 40.15 318 *e*P **P** **10 11 43.0 -0.4**
MK31 Makanchi Array 40.16 318 *e*P **P** **10 11 43.0 -0.6**
MK31 Makanchi Array 40.16 318 *e*P **P** **10 11 43.0 -0.6**
MKAR Makanchi Array 40.16 318 P **P** **10 11 44.6 +1.1**
comp=Z,4.3nm,0.7s,baz=114,slow=11,SNR=31
MKAR PcP **PcP** **10 13 46.2 -1.5**
comp=Z,0.9nm,0.7s,baz=90,slow=8.5,SNR=4.1
MKAR LR LR 10 29 34.6
comp=Z,56nm,19.1s,baz=66,slow=38
MKAR Makanchi Array 40.16 318 *e*P **P** **10 11 45.5 +2.0**
MKAR PcP **PcP** **10 13 46.2 -1.5**
PETK Petropavlovsk- 41.45 32 LR LR 10 30 11.5
comp=Z,46nm,20.1s,baz=228,slow=38
ZAA0 Zalesovo Array 42.26 328 *e*P **P** **10 12 01.4 +0.8**
ZALV Zalesovo Beam 42.26 328 P **P** **10 12 01.0 +0.4**
comp=Z,5.0nm,0.9s,baz=116,slow=6.8,SNR=16
ZALV LR LR 10 31 13.6
comp=Z,122nm,18.4s,baz=68,slow=38
ZALV Zalesovo Beam 42.26 328 P **P** **10 12 01.0 +0.4**
ZALV pmax pmax
comp=Z,2.0nm,0.5s
ZALV MLR MLR
comp=Z,123nm,18.4s
H11N1 WAKE ISLAND Hy 42.27 85 T T 10 57 07.9
baz=282,slow=74,SNR=74
H11N2 WAKE ISLAND Hy 42.27 85 T T 10 57 08.1
baz=282,slow=74,SNR=96
H11N3 WAKE ISLAND Hy 42.29 85 T T 10 57 09.3
baz=282,slow=74,SNR=100
KSH Kashi 42.42 305 *e*P **P** **10 12 05.5 +3.2**
KSH *e*pP sP 10 12 11.4 +4.6
KSH PcS **PcS** **10 17 48.7 +1.3**
KSH S **S** **10 18 27.7 +3.7**
KSH pmax pmax
comp=Z,120nm,5.7s
KSH LR LR
comp=Z,170nm,6.5s
KSH LR LR
comp=Z,110nm,6.6s
KSH LR LR
comp=Z,160nm,6.7s
WRAB Tennant Creek 43.53 162 *e*P **P** **10 12 08.3 -2.9**
WRAB pmax pmax
comp=Z,9.0nm,0.6s
WRAB Tennant Creek 43.53 162 *e*P **P** **10 12 08.3 -2.9**
comp=Z,9.1nm,0.6s
NVS Novosibirsk 43.53 329 *e*P **P** **10 12 09.3 -1.6**
WRA Warramunga Arr 43.53 162 P **P** **10 12 09.5 -1.8**
comp=Z,8.7nm,0.7s,baz=343,slow=8.9,SNR=65
WRA PcP **PcP** **10 13 56.8 -2.4**
comp=Z,1.5nm,0.8s,baz=343,slow=3.4,SNR=5.2
WB2 Warramunga Arr 43.53 162 *e*P **P** **10 12 09.3 -1.9**
comp=Z,10nm,0.6s
KURK Kurchatov 44.00 321 *e*P **P** **10 12 15.4 +0.7**
KURK pmax pmax
comp=Z,34nm,0.8s
KURK Kurchatov 44.00 321 *e*P **P** **10 12 15.4 +0.7**
comp=Z,34nm,0.8s
MNAS Manas 45.54 308 P **P** **10 12 30.5 +3.1**
MNAS pmax pmax
comp=Z,3.0nm,1.1s
AS31 Alice Springs 46.97 164 *e*P **P** **10 12 37.7 -0.9**
comp=Z,1.5nm,0.7s
ASAR Alice Springs 46.97 164 P **P** **10 12 37.5 -1.1**
comp=Z,2.6nm,0.5s,baz=348,slow=7.9,SNR=38
ASAR PcP **PcP** **10 14 09.1 -1.9**
comp=Z,1.7nm,0.8s,baz=351,slow=4.0,SNR=6.2
AS01 Alice Springs 46.98 164 *e*P **P** **10 12 37.7 -1.0**
OTUK Ortayu 46.99 316 P **P** **10 12 41.1 +2.6**
OTUK pmax pmax
comp=Z,5.0nm,1.2s
KKAR Karatay Array 47.10 309 *e*P **P** **10 12 38.1 -1.4**
KKAR Karatay Array 47.10 309 *e*P **P** **10 12 38.1 -1.4**
BRVK Borovoye 49.66 322 *e*P **P** **10 12 58.8 -0.2**
BRVK pmax pmax
comp=Z,10.0nm,1.1s
BRVK Borovoye 49.66 322 *e*P **P** **10 12 58.6 -0.4**
comp=Z,4.8nm,0.6s
ZRNK Zerenda 50.36 321 *e*P **P** **10 13 03.5 -0.9**
ZRNK pmax pmax
comp=Z,8.0nm,1.3s
ZRNK Zerenda 50.36 321 *e*P **P** **10 13 03.5 -0.9**
comp=Z,8.3nm,1.3s
NRIK Noril'sk 51.58 345 P **P** **10 13 12.9 -0.3**
comp=Z,6.7nm,0.8s,baz=137,slow=8.5,SNR=6.4
NRIK LR LR 10 37 52.2
comp=Z,84nm,18.1s,baz=128,slow=39
BILL Bilibino 53.58 19 *e*P **P** **10 13 28.7 +0.6**
BILL *e* 10 14 35.2
BILL *e* 10 15 33.0
BILL pmax pmax
comp=Z,2.0nm,1.1s
BILL MLR MLR
comp=Z,90nm,17.0s
ABKAR Akbulak array 55.23 315 *e*P **P** **10 13 39.4 -1.0**
GEYT Alibeck 56.23 302 LR LR 10 41 31.3
comp=Z,66nm,21.6s,baz=240,slow=40
BBOO Buckleboo 56.25 165 *e*P **P** **10 13 47.4 -0.4**
comp=Z,72nm,1.5s
STKA Stephens Creek 56.92 160 P **P** **10 13 51.1 -1.4**
comp=Z,7.7nm,0.7s,baz=336,slow=7.6,SNR=19
STKA Stephens Creek 56.92 160 *e*P **P** **10 13 52.4 -0.1**
comp=Z,4.7nm,1.4s
VRH Novokhopyorsk 66.89 318 *e*P **P** **10 15 00.9 +1.4**
VRH pmax pmax
comp=Z,10.0nm,0.9s
KBZ Khabaz 67.13 310 P **P** **10 15 01.6 +0.4**
comp=Z,3.5nm,0.9s,baz=142,slow=5.8,SNR=5.5
KBZ Khabaz 67.13 310 P **P** **10 15 01.6 +0.4**
KBZ pmax pmax
comp=Z,2.0nm,0.9s
KLMR Klimovskoe 67.19 328 *e*P **P** **10 14 59.9 -1.3**
KLMR *e* 10 15 26.3
KLMR pmax pmax
comp=Z,12nm,1.3s
KIV Kislovodsk 67.25 310 *e*P **P** **10 15 02.0 -0.1**
KIV pmax pmax
comp=Z,4.0nm,1.0s
KIV MLR MLR
comp=Z,34nm,20.0s
VSR Storozhevoye 68.48 318 *e*P **P** **10 15 10.3 +0.7**
VSR pmax pmax
comp=Z,10.0nm,1.4s
OBN Obninsk 69.43 322 *e*P **P** **10 15 15.7 +0.3**
OBN *e* 10 15 37.9
OBN *e* 10 17 48.5
OBN pmax pmax
comp=Z,5.0nm,0.9s
OBN MLR MLR
comp=Z,55nm,23.0s
ANN Anapa 70.79 311 *e*P **P** **10 15 24.2 +0.3**
ANN pmax pmax
comp=Z,16nm,1.0s
ILAR Eielson Array 70.95 27 P **P** **10 15 27.4 +2.8**
comp=Z,0.5nm,0.7s,baz=296,slow=5.0,SNR=6.7
ARCES ARCESS Array B 71.67 338 LR LR 10 50 25.6
comp=Z,41nm,18.6s,baz=73,slow=39
FINES FINESS Array B 73.49 330 P **P** **10 15 40.8 +1.0**
comp=Z,1.6nm,0.5s,baz=34,slow=10,SNR=10
FINES LR LR 10 48 50.0
comp=Z,62nm,20.1s,baz=42,slow=36
AKASG Malin Array Be 74.73 319 P **P** **10 15 47.0 -0.3**
comp=Z,0.9nm,0.5s,baz=64,slow=5.7,SNR=7.8
AKASG Malin Array Be 74.73 319 P **P** **10 15 47.0 -0.3**
AKASG pmax pmax
comp=Z,1.0nm,0.5s
KIEV Kiev 74.74 319 *e*P **P** **10 15 46.2 -1.1**
KIEV pmax pmax
comp=Z,3.0nm,1.0s
BRTR Keskin Array B 74.76 307 P **P** **10 15 48.2 +0.3**
comp=Z,0.6nm,0.4s,baz=59,slow=3.2,SNR=5.5
BRTR LR LR 10 51 33.9
comp=Z,11nm,21.9s,baz=82,slow=38
BR231 Keskin MP Arra 75.37 307 *e*P **P** **10 15 49.7 -1.6**
BUR08 Bucovina Ar. S 78.18 317 *e*P **P** **10 16 08.3 +1.3**
CRVS Cervenica-Dubn 80.07 319 *e*P **P** **10 16 19.1 +1.8**
CRVS Cervenica-Dubn 80.07 319 *e*P **P** **10 16 19.1 +1.8**
NB2 NORSAR Subarra 80.30 332 P **P** **10 16 17.9 -0.4**
comp=Z,1.2nm,0.6s,baz=61,slow=5.6
NOA NORSAR Array B 80.30 332 P **P** **10 16 17.5 -0.8**
comp=Z,1.3nm,0.6s,baz=61,slow=5.5,SNR=6.4
NOA LR LR 10 55 22.4
comp=Z,145nm,18.3s,baz=55,slow=38
OJC Ojcow 80.57 320 *e*P **P** **10 16 21.5 +1.6**
OJC Ojcow 80.57 320 *e*P **P** **10 16 21.5 +1.6**
VTS Vitosha 81.29 312 *e*P **P** **10 16 25.3 +1.2**
VTS Vitosha 81.29 312 *e*P **P** **10 16 25.3 +1.2**
VYHS Vyhne 81.83 319 *e*P **P** **10 16 27.6 +0.9**
VYHS pmax pmax
comp=Z,3.0nm,1.1s
VYHS Vyhne 81.83 319 *e*P **P** **10 16 27.6 +0.9**
DPC Dobruska-Polom 82.55 321 *e*P **P** **10 16 32.9 +2.5**
DPC Dobruska-Polom 82.55 321 *e*P **P** **10 16 32.9 +2.5**
PRU Pruhonice 83.73 322 *e*P **P** **10 16 38.2 +1.7**
PRU Pruhonice 83.73 322 *e*P **P** **10 16 38.2 +1.7**
KHC Kasperske Hory 84.69 321 *e*P **P** **10 16 43.5 +2.1**
KHC Kasperske Hory 84.69 321 *e*P **P** **10 16 43.5 +2.1**
GERES GERESS Array B 84.75 321 P **P** **10 16 43.0 +1.2**
comp=Z,1.9nm,0.9s,baz=72,slow=4.3,SNR=7.8
KMBO Kilima Mbogo 85.17 267 P **P** **10 16 45.0 +0.2**
comp=Z,1.0nm,0.4s,baz=52,slow=11,SNR=4.7
KMBO pmax pmax
comp=Z,14nm,1.5s
KMBO Kilima Mbogo 85.17 267 *e*P **P** **10 16 45.7 +0.9**
comp=Z,14nm,1.5s
KMBO Kilima Mbogo 85.17 267 *e*P **P** **10 16 45.7 +0.9**
comp=Z,14nm,1.5s
MOTC Monteria, Cord 145.01 31 *e*P **PKPab** **10 23 43.4 -1.6**
OCAC Ocana 146.55 28 *e*P **PKPab** **10 23 50.8 -0.1**
GRMC Gramalote, San 147.24 27 *e*P **PKPdf** **10 23 49.8 +0.1**
RUSC La Rusia 148.75 29 *e*P **PKPdf** **10 23 53.3 +0.6**
VILC Villavicencio, 150.02 32 *e*P **PKPbc** **10 23 58.7 -0.4**
CRUC La Cruz 150.37 40 *e*P **PKPbc** **10 23 59.7 -0.6**
SJAC San Juan de Ar 150.61 33 *e*P **PKPdf** **10 23 55.8 +0.6**

JMA 02 10:08:10.8,37°.81N×140°.01E,h9km±1km,M2.9,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JFT	**Otama**	**0.39**	**138**	P		Pg	10 08 18.5	0.0
JFT				S		Sg	10 08 23.8	+0.2
JYS	**Shirataka**	**0.41**	**6**	P		Pg	10 08 19.1	+0.2
JYS				S		Sg	10 08 25.2	+0.8
JFY	**Yanaizu**	**0.47**	**211**	P		Pg	10 08 20.0	+0.1
JFY				S		Sg	10 08 25.9	-0.2
JNS	**Sasagawa**	**0.55**	**271**	P		Pg	10 08 21.4	0.0
JNS				S		Sg	10 08 28.4	-0.2
JMM	**Marumori**	**0.62**	**85**	P		Pg	10 08 22.7	-0.1
JMM				S		Sg	10 08 30.6	-0.4
JOU	**Okura**	**0.76**	**43**	P		Pg	10 08 25.5	+0.1
JOU				S		Sg	10 08 35.4	+0.1
JYA	**Atsumi**	**0.82**	**343**	P		Pg	10 08 26.5	0.0
JYA				S		Sg	10 08 37.5	+0.3
JFK	**Kawauchi**	**0.82**	**123**	P		Pg	10 08 26.6	+0.1
JAW	**Awa shima**	**0.88**	**317**	P		Pg	10 08 28.0	+0.2
JAW				S		Sb	10 08 40.2	+0.1
JHK	**Hiroka**	**0.97**	**235**	S		Sg	10 08 40.7	-1.3
JIZZ	**Izumozaki**	**1.07**	**255**	S		Sg	10 08 45.3	+0.1
MAT	**Matsushiro**	**1.92**	**229**	P		Pn	10 08 44.3	+0.7
MAT	**Matsushiro**	**1.92**	**229**	S		Sn	10 09 08.8	+0.9

*IDC **02** 10:19:12.1±1.4,3°.91S×151°.27E,h0km,mb3.9/8, mb1 4.1/8,mb1mx3.8/34,mbtmp3.9/8,MS3.3/6,Ms1 3.3/6, ms1mx3.1/25,Error ellipse: s-maj=53.7km s-min=19.4km az=117.0*
*ISCJB **02** 10:19:14.1±1.3,3°.9S±0°.2×151°.2E±0°.3,h21km,mb3.7/8, MS3.6/4,Error ellipse: s-maj=47.8km s-min=16.3km az=27.2*

ISC 02 10:19:15.2±1.5,4°.0S±0°.2×151°.3E±0°.3,h21km,n14, σ1§18/9,mb3.8/8,MS3.6/4,New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**10.64**	**277**	LR		LR	10 24 54.9	
	comp=Z,24nm,20.6s,baz=181,slow=32							
GUMO	**Guam**	**18.56**	**340**	LR		LR	10 31 09.0	
	comp=Z,30nm,18.6s,baz=158,slow=39							
WRA	**Warramunga Arr**	**22.90**	**225**	P		P	**10 24 18.5**	**+0.7**
	2.6nm,0.8s,baz=50,slow=10,SNR=10							
DZM	**Mont Dzumac**	**23.25**	**142**	LR		LR	10 32 41.4	
	comp=Z,236nm,19.4s,baz=272,slow=35							
ASAR	**Alice Springs**	**25.78**	**219**	P		P	**10 24 46.8**	**+2.0**
	1.7nm,0.6s,baz=54,slow=8.3,SNR=17							
FITZ	**Fitzroy Crossi**	**28.74**	**239**	P		P	**10 25 10.1**	**-1.4**
	0.9nm,0.8s,baz=63,slow=6.8,SNR=2.9							
FITZ				LR		LR	10 37 27.1	
	comp=Z,155nm,20.3s,baz=66,slow=38							
STKA	**Stephens Creek**	**29.21**	**197**	LR		LR	10 38 08.0	
	comp=Z,93nm,18.2s,baz=19,slow=39							
USRK	**Ussuriysk Ar.**	**50.98**	**342**	P		P	**10 28 16.3**	**+0.9**
	0.5nm,0.6s,baz=182,slow=8.4,SNR=3.1							
SONM	**Songino Array**	**64.81**	**328**	P		P	**10 29 53.2**	**+0.6**
	0.4nm,0.6s,baz=116,slow=3.4,SNR=3.3							
MKAR	**Makanchi Array**	**78.70**	**319**	P		P	**10 31 15.2**	**-0.8**
	0.6nm,0.6s,baz=102,slow=8.6,SNR=3.1							
ILAR	**Eielson Array**	**81.98**	**22**	P		P	**10 31 33.2**	**-0.1**
	0.7nm,0.8s,baz=254,slow=5.6,SNR=8.5							
YKA	**Yellowknife Ar**	**95.41**	**28**	P		P	**10 32 37.3**	**-0.6**
	0.8nm,0.6s,baz=284,slow=4.7,SNR=3.1							
PDAR	**Pinedale Array**	**99.42**	**47**	LR		LR	11 11 59.9	
	comp=Z,26nm,19.5s,baz=286,slow=32							
TORD	**Torodi Ar. Bea**	**148.59**	**289**	PKPbc		**PKPbc**	**10 39 01.6**	**-0.1**
	0.9nm,0.8s,baz=52,slow=1.9,SNR=3.9							

IDC 02 10:22:48.8±2.3,15°.58S×178°.60W,h0km,mb3.7/3, mb1 4.0/3,mb1mx3.5/41,mbtmp3.7/3,Error ellipse: s-maj=274.2km s-min=31.8km az=158.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**44.91**	**257**	P		P	10 31 06.0	+0.3
	0.2nm,0.2s,baz=90,slow=7.8,SNR=12							
ASAR	**Alice Springs**	**45.28**	**252**	P		P	10 31 08.2	-0.5
	0.8nm,0.4s,baz=89,slow=8.1,SNR=18							
TXAR	**Lajitas Array**	**84.92**	**58**	P		P	10 35 26.2	0.0
	0.3nm,0.7s,baz=217,slow=4.3,SNR=5.5							

IDC 02 10:28:32.7±2.0,4°.01S×151°.66E,h0km,mb3.7/4, mb1 4.0/4,mb1mx3.6/42,mbtmp3.7/4,MS3.4/2,Ms1 3.4/2, ms1mx2.7/26,Error ellipse: s-maj=120.6km s-min=27.9km az=126.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**22.98**	**143**	LR		LR	10 41 24.8	
	comp=Z,67nm,21.0s,baz=64,slow=34							
WRA	**Warramunga Arr**	**23.15**	**225**	P		P	10 33 40.1	-0.8
	2.5nm,1.1s,baz=51,slow=9.7,SNR=6.2							
ASAR	**Alice Springs**	**26.00**	**220**	P		P	10 34 08.8	+1.2
	0.8nm,0.8s,baz=59,slow=8.5,SNR=6.7							
FITZ	**Fitzroy Crossi**	**29.07**	**239**	P		P	10 34 35.5	+0.4
	1.5nm,0.8s,baz=47,slow=19,SNR=3.1							
FITZ				LR		LR	10 46 58.2	
	comp=Z,118nm,20.7s,baz=48,slow=38							
ILAR	**Eielson Array**	**81.86**	**22**	P		P	10 40 54.6	+1.0
	0.4nm,0.8s,baz=249,slow=4.6,SNR=4.0							
TORD	**Torodi Ar. Bea**	**148.98**	**289**	PKPbc		PKPdf	10 48 21.6	+1.8
	0.4nm,0.8s,baz=81,slow=4.9,SNR=2.6							

NIED ***02*** *10:33:00.3, 35.60N×141.00E, h32km, Mw4.2 Best double couple: M₀2.51000×10¹⁵ NP1:φ=178.00000°, δ=12.00000°, λ=72.00000°. NP2:φ=16.00000°, δ=78.00000°, λ=94.00000°.*
NEIC ***02*** *10:33:53.6±2.1, 35.53N×141.13E, h29km±14km, mb4.6/4, Error ellipse: s-maj=9.9km s-min=6.7km az=108.0*
NEIC Recorded [1 JMA] in Chiba and Ibaraki.
JMA ***02*** *10:33:54.5±0.1, 35.57N×141.02E, h37km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φs=341.00000°, δ=77.00000°, λ=77.00000°. NP2: φs=207.00000°, δ=18.00000°, λ=134.00000°. Principal axes: T Plg56.0000°, Azm235.0000°; N Plg13.0000°, Azm344.0000°; P Plg31.0000°, Azm82.0000°;*
JMA Felt I J1.
IDC ***02*** *10:33:56.6±2.2, 35.48N×140.91E, h52km±19km, mb3.8/19, mb1 4.0/25, mb1mx3.9/47, mbtmp4.1/25, ML3.7/5, MS3.5/15, Ms1 3.5/15, ms1mx3.3/35 Error ellipse: s-maj=20.2km s-min=12.3km az=86.0*

ISC 02 10:33:52.0±2.5, 35.54N±0.04×141.13E±0.07, h15km±15km, n52, σ1s10/53, mb4.1/24, MS3.6/9, 6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.27**	**306**	⇓P	**Pn**	**10 34 01.4**	**0.0**
CHOJ				S	**Sb**	**10 34 06.0**	**+3.0**
JCN	**Nagara**	**0.77**	**261**	⇓P	**Pn**	**10 34 08.0**	**-0.2**
KTR	**Katsuura**	**0.78**	**240**	⇓P	**Pn**	**10 34 08.1**	**-0.2**
KTR				*e*S	**Sb**	**10 34 17.7**	**+0.3**
BSO2	**Boso 2**	**0.85**	**202**	P	**Pn**	**10 34 09.8**	**+0.8**
BSO4	**Boso 4**	**0.85**	**230**	⇓P	**Pn**	**10 34 09.4**	**+0.1**
BSO1	**Boso 1**	**0.90**	**188**	P	**Pn**	**10 34 10.1**	**+0.6**
BSO1				*e*S	**Sn**	**10 34 22.5**	**+0.7**
BSO3	**Boso 3**	**0.90**	**215**	⇓P	**Pn**	**10 34 09.9**	**+0.2**
BSO3				X		10 34 22.7	
JYT	**Yasato**	**1.02**	**312**	⇓P	**Pb**	**10 34 11.4**	**0.0**
JYT				*e*S	**Sg**	**10 34 23.7**	**-1.5**
MJAR	**Matsushiro Arr**	**2.57**	**294**	P	**Pn**	**10 34 34.2**	**+1.2**
	34nm,0.3s,baz=100,slow=7.5,SNR=407						
MJAR				LR	LR	10 35 40.4	
	comp=Z,729nm,19.9s,baz=115,slow=43						
MAJO	**Matsushiro**	**2.57**	**294**	*e*Pn	**Pn**	**10 34 34.0**	**+0.9**
MAT	**Matsushiro**	**2.57**	**294**	P	**Pn**	**10 34 34.5**	**+1.4**
MAT				*e*S	**Sn**	**10 35 04.5**	**+0.4**
JHJ2	**Mitsune**	**2.66**	**205**	Pn	**Pn**	**10 34 33.5**	**-0.7**
JHJ	**Hachijo jima 2**	**2.66**	**205**	P	**Pn**	**10 34 33.6**	**-0.7**
	48nm,0.3s,baz=67,slow=22,SNR=21						
JHJ				S	**Sn**	**10 35 05.9**	**-0.3**
	116nm,0.3s,baz=59,slow=23,SNR=11						
JHJ				LR	LR	10 35 50.7	
	comp=Z,276nm,20.1s,baz=354,slow=45						
ERM	**Erimo**	**6.65**	**13**	*e*Pn	**Pn**	**10 35 28.5**	**-0.6**
	14nm,0.4s						
JCJ	**Chichijima**	**8.47**	**174**	S	Sn	10 37 19.9	-9.4
	8.8nm,0.3s,baz=0,slow=20,SNR=2.6						
ASAJ	**Asahikawa**	**8.64**	**7**	P	**Pn**	**10 35 55.5**	**-0.8**
	baz=270,slow=20						
ASAJ				S	**Sn**	**10 37 31.2**	**-2.2**
	0.7nm,0.3s,baz=296,slow=25,SNR=3.8						
JNU	**Nakatsue**	**8.82**	**257**	P	**Pn**	**10 35 59.6**	**+0.8**
	0.6nm,0.3s,baz=99,slow=1.5,SNR=5.5						
JNU				LR	LR	10 39 43.7	
	comp=Z,398nm,21.3s,baz=120,slow=40						
KSRS	**Korea Array**	**10.80**	**284**	P	**Pn**	**10 36 28.6**	**+2.6**
	0.4nm,0.3s,baz=100,slow=14,SNR=11						
KSRS				LR	LR	10 40 37.5	
	comp=Z,340nm,20.9s,baz=108,slow=38						
KSAR	**Wonju Array Be**	**10.83**	**284**	P	**Pn**	**10 36 28.6**	**+2.2**
USRK	**Ussuriysk Ar.**	**11.13**	**324**	P	**Pn**	**10 36 32.7**	**+2.2**
	0.3nm,0.3s,baz=135,slow=13,SNR=11						
USRK				LR	LR	10 40 28.9	
	comp=Z,216nm,19.8s,baz=136,slow=35						
KLR	**Kul'dur**	**15.32**	**336**	P	**Pn**	**10 37 27.8**	**+0.3**
	0.4nm,0.3s,baz=142,slow=8.8,SNR=9.4						
KLR				LR	LR	10 43 21.7	
	comp=Z,151nm,18.6s,baz=144,slow=37						
H11N2	**WAKE ISLAND Hy**	**27.62**	**118**	T	T	11 08 48.0	
	baz=310,slow=75,SNR=84						
H11N1	**WAKE ISLAND Hy**	**27.62**	**118**	T	T	11 08 48.5	
	baz=310,slow=75,SNR=68						
H11N3	**WAKE ISLAND Hy**	**27.63**	**118**	T	T	11 08 49.3	
	baz=310,slow=75,SNR=96						
H11S1	**WAKE ISLAND Hy**	**28.27**	**120**	T	T	11 09 33.7	
	baz=15,slow=74,SNR=397						
H11S2	**WAKE ISLAND Hy**	**28.29**	**120**	T	T	11 09 32.4	
	baz=315,slow=74,SNR=292						
SEY	**Seymchan**	**28.30**	**11**	P	**P**	**10 39 44.8**	**+0.3**
	2.9nm,0.7s,baz=355,slow=6.4,SNR=3.9						
SONM	**Songino Array**	**28.46**	**306**	P	**P**	**10 39 45.4**	**-0.9**
	1.9nm,0.6s,baz=103,slow=9.4,SNR=8.2						
SONM				LR	LR	10 51 20.4	
	comp=Z,68nm,19.2s,baz=98,slow=37						
TIXI	**Tiksi**	**36.74**	**354**	P	**P**	**10 40 58.0**	**-0.2**
	1.8nm,0.5s,baz=195,slow=3.4,SNR=3.9						
CMAR	**Chiang Mai Arr**	**40.92**	**257**	P	**P**	**10 41 33.2**	**-0.6**
	0.9nm,0.3s,baz=42,slow=8.4,SNR=5.7						
CMAR				LR	LR	11 00 24.3	
	comp=Z,70nm,18.0s,baz=100,slow=39						
ZALV	**Zalesovo Beam**	**42.76**	**314**	P	**P**	**10 41 48.2**	**-0.3**
	3.8nm,0.5s,baz=91,slow=7.6,SNR=13						
ZALV				LR	LR	10 59 32.3	
	comp=Z,27nm,18.3s,baz=66,slow=36						
MKAR	**Makanchi Array**	**44.73**	**303**	P	**P**	**10 42 04.0**	**-0.5**
	1.8nm,0.5s,baz=85,slow=9.4,SNR=18						
MKAR				LR	LR	11 01 27.1	
	comp=Z,52nm,21.2s,baz=36,slow=37						
KURK	**Kurchatov**	**46.68**	**309**	*e*P	**P**	**10 42 18.6**	**-1.2**
	61nm,0.5s						
TKM2	**Tokmak 2**	**50.15**	**299**	*e*P	**P**	**10 42 47.2**	**+0.3**
	4.1nm,0.5s						
ILAR	**Eielson Array**	**50.88**	**32**	P	**P**	**10 42 53.4**	**+1.6**
	0.6nm,0.6s,baz=270,slow=6.4,SNR=7.6						
KKAR	**Karatay Array**	**53.69**	**301**	*e*P	**P**	**10 43 12.7**	**-0.3**
	0.7nm,0.4s						
FITZ	**Fitzroy Crossi**	**55.34**	**198**	P	**P**	**10 43 24.3**	**-0.8**
	1.2nm,0.5s,baz=24,slow=5.8,SNR=8.5						
WRAB	**Tennant Creek**	**55.54**	**188**	*e*P	**P**	**10 43 26.1**	**-0.5**
WRA	**Warramunga Arr**	**55.55**	**188**	P	**P**	**10 43 26.1**	**-0.6**
	2.1nm,0.7s,baz=6.5,slow=8.3,SNR=24						
ARU	**Arti**	**57.33**	**319**	*e*P	**P**	**10 43 38.5**	**-0.5**
	8.6nm,0.9s						
ABKAR	**Akbulak array**	**58.73**	**311**	*e*P	**P**	**10 43 48.2**	**-0.7**
	2.1nm,0.5s						
ASAR	**Alice Springs**	**59.28**	**188**	P	**P**	**10 43 52.0**	**-1.0**
	0.4nm,0.5s,baz=6.3,slow=8.1,SNR=11						
ASAR				LR	LR	11 09 04.5	
	comp=Z,78nm,18.0s,baz=316,slow=36						
ARCES	**ARCESS Array B**	**65.31**	**340**	P	**P**	**10 44 32.3**	**-0.6**
	0.7nm,0.5s,baz=60,slow=7.4,SNR=9.1						
ARCES				LR	LR	11 16 12.4	
	comp=Z,62nm,19.6s,baz=76,slow=39						
FINES	**FINESS Array B**	**70.03**	**332**	P	**P**	**10 45 01.9**	**-0.8**
	1.7nm,0.4s,baz=57,slow=5.7,SNR=25						
FINES				LR	LR	11 16 54.1	
	comp=Z,39nm,21.1s,baz=64,slow=37						
KBZ	**Khabaz**	**71.70**	**311**	P	**P**	**10 45 12.8**	**-0.3**
	2.9nm,0.8s,baz=44,slow=1.6,SNR=7.4						
AKASG	**Malin Array Be**	**75.34**	**322**	P	**P**	**10 45 33.3**	**-1.2**
	0.9nm,0.5s,baz=49,slow=9.0,SNR=5.1						
AKASG				LR	LR	11 20 46.2	
	comp=Z,49nm,20.7s,baz=45,slow=37						
NB2	**NORSAR Subarra**	**75.47**	**337**	P	**P**	**10 45 35.0**	**-0.1**
	comp=Z,1.8nm,0.6s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**75.47**	**337**	P	**P**	**10 45 35.0**	**-0.1**
	comp=Z,2.8nm,0.7s,baz=40,slow=5.7,SNR=10						
NOA				LR	LR	11 21 54.8	
	comp=Z,34nm,19.4s,baz=60,slow=38						
PDAR	**Pinedale Array**	**78.88**	**45**	P	**P**	**10 45 56.6**	**+1.8**
	comp=Z,0.4nm,0.5s,baz=261,slow=4.2,SNR=3.6						
BRTR	**Keskin Array B**	**79.67**	**312**	P	**P**	**10 45 58.2**	**-0.9**
	comp=Z,1.3nm,0.8s,baz=101,slow=2.5,SNR=5.3						
GERES	**GERESS Array B**	**83.86**	**328**	P	**P**	**10 46 20.4**	**-0.5**
	comp=Z,0.6nm,0.6s,baz=298,slow=2.9,SNR=3.8						
TXAR	**Lajitas Array**	**91.21**	**52**	P	**P**	**10 46 58.5**	**+1.6**
	comp=Z,0.2nm,0.6s,baz=300,slow=4.0,SNR=3.4						

JMA ***02*** *10:35:07.0±0.1, 24.38N×122.97E, h49km±1km, M2.2*
TAP ***02*** *10:35:08.5, 24.29N×122.78E, h26km±1km, ML2.9, D*

ISC 02 10:35:03.5±1.2, 24.15N±0.04×122.94E±0.02, h14km±10km, n32, σ1s04/56, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.30**	**2**	P	**Pn**	**10 35 14.5**	**+1.0**
JYNG				S	**Sn**	**10 35 19.7**	**-0.1**
YOJ	**Yonaguni jima**	**0.32**	**12**	P	**Pn**	**10 35 14.6**	**+0.8**
YOJ				S	**Sn**	**10 35 20.0**	**-0.2**
IRIF	**Iriomote-Funau**	**0.75**	**75**	P	**Pn**	**10 35 20.4**	**+0.8**
IRIF				S	**Sn**	**10 35 30.5**	**-0.3**
HATJ	**Hateruma jima**	**0.80**	**96**	P	**Pn**	**10 35 22.5**	**+2.2**
HATJ				*e*S	**Sn**	**10 35 33.7**	**+1.7**
JKRS	**Kuro-shima**	**0.98**	**85**	P	**Pn**	**10 35 24.6**	**+1.7**
JKRS				S	**Sn**	**10 35 37.2**	**+0.6**
TWC	**Suao**	**1.09**	**295**	P	**Pg**	**10 35 24.9**	**+0.3**
	baz=307						
TWC				S	**Sb**	**10 35 37.5**	**-0.7**
	baz=307						
JIJ	**Ishigaki jima**	**1.12**	**79**	P	**Pg**	**10 35 25.5**	**+0.3**
JIJ				S	**Sb**	**10 35 38.9**	**-0.3**
ENA	**Nanau**	**1.12**	**285**	*e*P	**Pg**	**10 35 26.9**	**+1.6**
	baz=279						
TWB1	**Santiao Chiao**	**1.22**	**315**	*e*P	**Pg**	**10 35 28.0**	**+1.0**
	baz=325						
TWB1				*e*S	**Sb**	**10 35 39.5**	**-2.4**
	baz=325						
TWD	**Chiawan**	**1.23**	**267**	*e*P	**Pg**	**10 35 29.6**	**+2.5**
	baz=260						
TWE	**Neicheng**	**1.29**	**297**	*e*P	**Pb**	**10 35 28.1**	**+0.5**
	baz=308						
JISG	**Ishigakijimahi**	**1.33**	**71**	P	**Pn**	**10 35 27.9**	**+0.3**
JISG				S	**Sb**	**10 35 43.5**	**-1.6**
ENTT	**Nioudou**	**1.34**	**292**	*e*P	**Pg**	**10 35 29.9**	**+0.5**
	baz=299						
ENTT				*e*S	**Sn**	**10 35 44.9**	**-0.6**
	baz=299						
NWF	**Wu-fen Shan**	**1.40**	**311**	*e*P	**Pg**	**10 35 30.5**	**+0.1**
	baz=311						
ESL	**Shilin**	**1.41**	**257**	*e*P	**Pg**	**10 35 31.4**	**+0.7**
	baz=237						
NSK	**Sanguang**	**1.53**	**290**	*e*P	**Pb**	**10 35 31.8**	**+0.1**
	baz=299						
NSK				*e*S	**Sn**	**10 35 50.0**	**-0.2**
	baz=299						
EHY	**Hungye**	**1.61**	**247**	*e*P	**Pb**	**10 35 32.8**	**-0.2**
	baz=228						
EHY				*e*S	**Sg**	**10 35 53.8**	**-1.7**
	baz=228						
TWT	**Tachien**	**1.61**	**274**	*e*P	**Pg**	**10 35 34.3**	**-0.2**
	baz=259						
TWT				*e*S	**Sb**	**10 35 53.9**	**+0.5**
	baz=259						
JTJ	**Tarama**	**1.68**	**73**	P	**Pb**	**10 35 33.5**	**-0.8**
JTJ				*e*S	**Sn**	**10 35 52.7**	**-1.2**
WDT	**Danda**	**1.69**	**257**	*e*P	**Pg**	**10 35 35.5**	**-0.6**
	baz=252						
WDT				*e*S	**Sb**	**10 35 55.4**	**-0.6**
	baz=252						
TWF1	**Yuli**	**1.70**	**243**	*e*P	**Pg**	**10 35 35.5**	**-0.6**
	baz=224						
TWF1				*e*S	**Sb**	**10 35 55.7**	**-0.1**
	baz=224						
CHKT	**Chengkung**	**1.78**	**234**	*e*P	**Pg**	**10 35 37.9**	**+0.2**
	baz=217						
CHKT				*e*S	**Sb**	**10 35 57.6**	**-0.5**
	baz=217						
SMLT	**Sun Moon Lake**	**1.88**	**262**	*e*P	**Pb**	**10 35 37.9**	**+0.2**
	baz=258						
TYC	**Yuchr**	**1.92**	**263**	*e*P	**Pb**	**10 35 38.8**	**+0.5**
	baz=259						
TYC				*e*S	**Sn**	**10 36 00.1**	**+0.5**
	baz=259						
YUS	**Yu-Shan**	**1.93**	**251**	*e*P	**Pb**	**10 35 38.7**	**-0.1**
	baz=246						
YUS				*e*S	**Sb**	**10 36 01.5**	**-1.5**
	baz=246						
ALS	**Alishan**	**2.05**	**252**	*e*P	**Pb**	**10 35 41.1**	**+0.4**
	baz=248						
ALS				*e*S	**Sb**	**10 36 04.8**	**-1.4**
	baz=248						
CHN5	**Tsauling**	**2.14**	**256**	*e*P	**Pb**	**10 35 41.0**	**-1.1**
	baz=240						
CHN5				*e*S	**Sn**	**10 36 06.0**	**+0.7**
	baz=240						
JIRB	**Irabujima**	**2.15**	**71**	P	**Pn**	**10 35 40.3**	**+1.4**
JIRB				*e*S	**Sn**	**10 36 04.6**	**-0.7**
STYT	**Tauyuan**	**2.23**	**244**	*e*P	**Pb**	**10 35 43.2**	**-0.4**
	baz=229						
STYT				*e*S	**Sb**	**10 36 09.1**	**-1.9**
	baz=229						
CHN4	**Tsaushan**	**2.29**	**250**	*e*P	**Pb**	**10 35 44.5**	**-0.1**
	baz=246						
CHN4				*e*S	**Sn**	**10 36 10.1**	**+1.2**
	baz=246						
WTP	**Ta-pu**	**2.31**	**248**	*e*P	**Pb**	**10 35 45.5**	**+0.5**
	baz=243						
SGST	**Jiashian**	**2.41**	**244**	*e*P	**Pg**	**10 35 48.3**	**-1.3**
	baz=229						

DHMR ***02*** *10:38:02.5±1.8, 11.88N×44.28E, h12km±21km, ML4.2*
ARO ***02*** *10:38:04.4, 12.7N±73.4'4.2"E±2.5, h15km±99km, ML4.1*

ISC 02 10:38:01.8±1.2, 11.99N±0.09×44.11E±0.08, h4km, n10, σ0s75/14, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.80**	**270**	*e*P	**Pg**	**10 38 18.1**	**+0.8**
MCAD	**Moucha**	**0.92**	**254**	*e*P	**Pg**	**10 38 19.9**	**+0.5**
ATA	**Atar**	**1.03**	**239**	*e*P	**Pg**	**10 38 21.8**	**+0.1**
ADEN	**Aden**	**1.16**	**47**	*i* P	**Pb**	**10 38 24.1**	**-0.4**
ADEN				*i* S	**Sb**	**10 38 38.4**	**-1.4**
TDD	**Tadjoura Ara**	**1.19**	**261**	*e*P	**Pg**	**10 38 24.7**	**0.0**
ATD	**Arta Tunnel**	**1.32**	**250**	*e*P	**Pn**	**10 38 26.7**	**-0.4**
ATD				*e*S	**Sb**	**10 38 44.7**	**+0.1**
SGH	**Sud-Ghoubbet**	**1.55**	**250**	*e*P	**Pn**	**10 38 30.2**	**-0.2**
GBR	**Grand-Bara**	**1.82**	**243**	*e*P	**Pn**	**10 38 34.6**	**+0.7**
BDHA	**Al Bayda'**	**2.43**	**36**	*i* P	**Pn**	**10 38 43.7**	**+1.1**
BDHA				*i* S	**Sb**	**10 39 17.6**	**+0.8**
BDHA				AML	AML	10 39 25.5	
	comp=E,1μm,0.5s						
DHBB	**Dhamar BB**	**2.58**	**6**	*i* P	**Pb**	**10 38 48.2**	**-0.7**
DHBB				*i* S	**Sg**	**10 39 24.5**	**-0.5**
DHBB				AML	AML	10 39 28.9	
	comp=N,3μm,0.7s						

DHMR 02 10:50:08.3±0.3, 12.02N×44.17E, h15km±3km, ML3.6, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.09**	**46**	*i* P	Pb	10 50 28.4	-0.5
ADEN				*i* S	Sn	10 50 43.9	-0.1
ADEN				AML	AML	10 50 51.3	
	comp=E,1μm,0.3s						
UDYN	**Al 'Udayn**	**1.94**	**354**	*i* P	Pn	10 50 42.2	+1.2
UDYN				*i* S	Sb	10 51 08.8	+1.1
BDHA	**Al Bayda'**	**2.37**	**35**	*i* P	Pb	10 50 49.2	-1.7
BDHA				*i* S	Sb	10 51 21.1	+1.0

BJI ***02*** *11:45:04.2, 63.43N×151.27W, h114km, mb4.8/27, mB4.7/16*
ISCJB ***02*** *11:45:05.4±0.1, 63.17N±0.02×150.98W±0.03, h128km±1km, mb4.5/130, Error ellipse: s-maj=2.6km s-min=2.3km az=36.4*
MOS ***02*** *11:45:05.1±0.9, 63.23N×151.02W, h125km, mb4.6/60, Error ellipse: s-maj=11.6km s-min=5.3km az=106.1*
NEIC ***02*** *11:45:06.9, 63.12N×150.85W, h123km, mb4.5/79, MW4.3(SLM), After AEIC.*
NEIC Felt at Anchorage and Trapper Creek.
IDC ***02*** *11:45:06.8±1.4, 63.26N×150.88W, h124km±12km, mb4.0/22, mb1 4.1/27, mb1mx4.0/50, mbtmp4.4/27, MS2.8/2, Ms1 2.8/2, ms1mx2.4/33, Error ellipse: s-maj=14.6km s-min=9.8km az=19.0*

ISC 02 11:45:06.9±0.5, 63.13N±0.03×150.93W±0.03, h128km±3km, n602, σ0s98/635, mb4.5/131, 6C-4D, Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTH	**Kantishna Hill**	**0.42**	**0**	P	**Pn**	**11 45 25.0**	**-0.4**
KTH				S	**Sn**	**11 45 38.7**	**-0.8**
TRF	**Thorofare Moun**	**0.43**	**42**	P	**Pn**	**11 45 25.4**	**-0.2**
TRF				S	**Sn**	**11 45 39.5**	**-0.3**
CAST	**Castle Rocks**	**0.59**	**299**	P	**Pn**	**11 45 26.0**	**-0.3**
CAST				S	**Sn**	**11 45 40.1**	**-0.9**
HUR	**Hurricane**	**0.61**	**104**	P	**Pn**	**11 45 25.6**	**-0.9**
PPLA	**Purkeypile**	**0.62**	**248**	P	**Pn**	**11 45 26.5**	**-0.2**
PPLA				S	**Sn**	**11 45 41.3**	**-0.3**
CUT	**Chulitna**	**0.79**	**157**	P	**Pn**	**11 45 27.0**	**-0.7**
BPAW	**Bear Paw Mtn.**	**0.97**	**359**	P	**Pn**	**11 45 28.8**	**-0.6**
BPAW				S	**Sn**	**11 45 45.6**	**-0.9**
CHUM	**Lake Minchumin**	**0.98**	**321**	P	**Pn**	**11 45 29.5**	**+0.2**
CHUM				S	**Sn**	**11 45 45.9**	**-0.5**
RND	**Reindeer**	**0.98**	**73**	P	**Pn**	**11 45 28.8**	**-0.7**
RND				S	**Sn**	**11 45 46.1**	**-0.5**
RND	**Reindeer**	**0.98**	**73**	P	**Pn**	**11 45 28.8**	**-0.7**
RND				S	**Sn**	**11 45 46.1**	**-0.5**
MCK	**McKinley**	**1.08**	**55**	P	**Pn**	**11 45 30.0**	**-0.4**
MCK				S	**Sn**	**11 45 47.0**	**-1.3**
MCK	**McKinley**	**1.08**	**55**	P	**Pn**	**11 45 30.0**	**-0.4**
MCK				S	**Sn**	**11 45 47.0**	**-1.3**
BWN	**Browne**	**1.23**	**31**	P	**Pn**	**11 45 32.2**	**+0.3**
BWN				S	**Sn**	**11 45 50.7**	**-0.2**
DHY	**Denali Highway**	**1.62**	**90**	P	**Pn**	**11 45 35.8**	**-0.6**
DHY				S	**Sn**	**11 45 58.0**	**-0.8**
NEA	**Nenana**	**1.67**	**29**	P	**Pn**	**11 45 36.1**	**-0.6**
SUA	**Susitna One**	**1.68**	**177**	P	**Pn**	**11 45 36.3**	**-0.7**
STLK	**Strandline Lak**	**1.69**	**195**	P	**Pn**	**11 45 36.4**	**-0.8**
PMR	**Palmer**	**1.76**	**151**	P	**Pn**	**11 45 36.6**	**-1.2**
PMR	**Palmer**	**1.76**	**151**	P	**Pn**	**11 45 36.6**	**-1.2**
SML	**Sawmill**	**1.80**	**137**	P	**Pn**	**11 45 37.1**	**-1.2**
SML				S	**Sn**	**11 46 01.0**	**-1.3**
SML	**Sawmill**	**1.80**	**137**	P	**Pn**	**11 45 37.1**	**-1.2**
SML				S	**Sn**	**11 46 01.0**	**-1.3**
WRH	**Wood River Hil**	**1.84**	**42**	P	**Pn**	**11 45 38.3**	**-0.5**
MLY	**Manley**	**1.91**	**2**	P	**Pn**	**11 45 39.1**	**-0.5**
MLY				S	**Sn**	**11 46 03.2**	**-1.5**
FIB	**Fire Island**	**2.01**	**170**	P	**Pn**	**11 45 41.0**	**+0.2**
FIB	**Fire Island**	**2.01**	**170**	P	**Pn**	**11 45 41.0**	**+0.2**
SPWE	**Spurr West**	**2.02**	**203**	P	**Pn**	**11 45 40.8**	**-0.3**
SPU	**Mount Spurr**	**2.03**	**196**	*e*Pn	**Pn**	**11 45 40.4**	**-0.8**
SPU				*e*S	**Sn**	**11 46 05.8**	**-1.6**
SPCR	**Spurr Chakacha**	**2.03**	**198**	P	**Pn**	**11 45 41.0**	**-0.2**
CCB	**Clear Creek Bu**	**2.05**	**41**	P	**Pn**	**11 45 40.8**	**-0.6**
CKL	**Chakachamna La**	**2.05**	**199**	P	**Pn**	**11 45 41.1**	**-0.4**
SCM	**Sheep Creek Mo**	**2.12**	**126**	P	**Pn**	**11 45 40.8**	**-1.5**
SCM	**Sheep Creek Mo**	**2.12**	**126**	P	**Pn**	**11 45 40.8**	**-1.5**
RC01	**Rabbit Creek A**	**2.13**	**164**	P	**Pn**	**11 45 40.9**	**-1.4**
HDA	**Harding Lake**	**2.18**	**52**	P	**Pn**	**11 45 42.3**	**-0.7**
MDM	**Murphy Dome**	**2.18**	**32**	P	**Pn**	**11 45 42.5**	**-0.5**
COLA	**College**	**2.21**	**36**	P	**Pn**	**11 45 42.8**	**-0.5**
COLA	**College**	**2.21**	**36**	P	**Pn**	**11 45 42.8**	**-0.5**
PS08	**TAPS Pump Stn8**	**2.31**	**50**	P	**Pn**	**11 45 43.9**	**-0.6**
TTA	**Tatalina**	**2.33**	**267**	P	**Pn**	**11 45 44.8**	**0.0**
TTA	**Tatalina**	**2.33**	**267**	P	**Pn**	**11 45 44.8**	**0.0**
TT01	**Tatalina**	**2.33**	**267**	P	**Pn**	**11 45 44.0**	**-0.9**
PS10	**TAPS Pump St10**	**2.35**	**81**	P	**Pn**	**11 45 44.8**	**-0.3**
IL1	**Eielson Array**	**2.43**	**46**	*e*Pn	**Pn**	**11 45 45.3**	**-0.7**
IL1				*e*Sn	**Sn**	**11 46 15.7**	**-0.4**
ILAR	**Eielson Array**	**2.43**	**46**	P	**Pn**	**11 45 45.3**	**-0.7**
	81nm,0.3s,baz=226,slow=12,SNR=1206						
ILAR				S	**Sn**	**11 46 13.8**	**-2.2**
	51nm,0.3s,baz=225,slow=17,SNR=18						
ILB	**Eielson Array**	**2.43**	**46**	P	**Pn**	**11 45 45.2**	**-0.7**
PAX	**Paxson**	**2.49**	**91**	P	**Pn**	**11 45 46.5**	**-0.5**
PAX	**Paxson**	**2.49**	**91**	P	**Pn**	**11 45 46.5**	**-0.5**
SLKM	**Skilak Lake**	**2.66**	**172**	P	**Pn**	**11 45 48.2**	**-0.8**
SLKM	**Skilak Lake**	**2.66**	**172**	P	**Pn**	**11 45 48.2**	**-0.8**
RDJH	**Redoubt Jeurge**	**2.70**	**200**	P	**Pn**	**11 45 50.0**	**+0.3**
PS11	**TAPS Pump St11**	**2.74**	**110**	P	**Pn**	**11 45 49.7**	**-0.3**
NCT	**North Crescent**	**2.75**	**201**	P	**Pn**	**11 45 50.0**	**-0.3**
PS06	**TAPS Pump Stn6**	**2.78**	**10**	P	**Pn**	**11 45 50.6**	**0.0**
RDWB	**Redoubt West**	**2.81**	**200**	P	**Pn**	**11 45 50.5**	**-0.5**
RSO	**Redoubt South**	**2.82**	**199**	*e*Pn	**Pn**	**11 45 50.9**	**-0.4**
KLU	**Klutina**	**2.86**	**123**	P	**Pn**	**11 45 50.2**	**-1.4**
VLZ	**Valdez**	**2.95**	**131**	P	**Pn**	**11 45 50.8**	**-1.9**
SVW2	**Sparrevohn**	**2.99**	**229**	P	**Pn**	**11 45 52.7**	**-0.6**
IM3	**Indian Mountai**	**3.11**	**338**	P	**Pn**	**11 45 54.4**	**-0.4**
SEW	**Seward**	**3.12**	**166**	P	**Pn**	**11 45 53.9**	**-1.1**
DOT	**Dot Lake**	**3.13**	**77**	P	**Pn**	**11 45 54.2**	**-1.0**
DIV	**Divide**	**3.15**	**127**	P	**Pn**	**11 45 53.5**	**-2.0**
MENT	**Mentasta**	**3.29**	**90**	P	**Pn**	**11 45 56.6**	**-0.6**
BRLK	**Bradley Lake**	**3.38**	**180**	P	**Pn**	**11 45 57.6**	**-0.8**
HIN	**Hinchinbrook I**	**3.46**	**141**	P	**Pn**	**11 45 57.8**	**-1.7**
HOM	**Homer**	**3.50**	**186**	*e*Pn	**Pn**	**11 45 59.9**	**-0.1**
EYAK	**Cordova Ski Ar**	**3.57**	**134**	P	**Pn**	**11 45 59.6**	**-1.3**
CNPM	**China Poot**	**3.62**	**182**	P	**Pn**	**11 46 00.7**	**-0.9**
OPT	**Oil Point**	**3.66**	**199**	P	**Pn**	**11 46 02.1**	**0.0**
**BM

EDM	Edmonton	21.83	100	eP		P	11 49 49.1	+0.3
	comp=Z,73nm,0.7s							
D05A	Enumclaw	22.68	121	eP		P	11 49 58.7	+1.4
	comp=Z,22nm,0.8s							
B08A	Colville Reser	22.80	116	eP		P	11 49 58.5	+0.1
	comp=Z,15nm,1.3s							
FMW	Mount Fremont	23.02	121	P		P	11 50 01.9	+1.1
WTV	Waterville	23.07	117	P		P	11 50 01.6	+0.5
LON	Longmire	23.11	122	eP		P	11 50 03.2	+1.7
LON					pmax	pmax		
	comp=Z,8.0nm,1.3s							
LON	Longmire	23.11	122	eP		P	11 50 03.2	+1.7
	comp=Z,8.1nm,1.3s							
TBM	Table Mountain	23.25	119	P		P	11 50 03.5	+0.8
TDL	Tradedollar La	23.29	123	P		P	11 50 04.3	+1.1
NAC	Naches	23.51	120	P		P	11 50 06.3	+1.2
NEW	Newport	23.79	113	P		P	11 50 08.2	+0.7
	comp=Z,7.1nm,0.9s,baz=288,slow=6.9,SNR=6.6							
NEW	Newport	23.79	113	P		P	11 50 08.3	+0.7
	baz=321							
NEW	Newport	23.79	113	eP		P	11 50 07.4	-0.2
NEW					pmax	pmax		
	comp=Z,15nm,1.3s							
NEW	Newport	23.79	113	eP		P	11 50 07.4	-0.2
	comp=Z,16nm,1.3s							
G03D	McMinnville, O	23.86	126	P		P	11 50 09.3	+1.2
	baz=329							
D08A	Wollman Farm,	24.01	117	eP		P	11 50 09.5	0.0
	comp=Z,17nm,0.7s							
WALA	Waterton Lakes	24.55	108	eP		P	11 50 15.3	+0.8
	comp=Z,33nm,1.3s							
SEY	Seymchan	25.00	295	P		P	11 50 18.9	+0.5
	comp=Z,6.5nm,0.7s,baz=67,slow=6.2,SNR=19							
BSMT	Bassoo Peak	25.10	111	eP		P	11 50 20.4	+0.8
I03D	Drain, OR	25.13	128	P		P	11 50 21.2	+1.5
	baz=330							
BLMT	Blacktail Moun	25.16	110	eP		P	11 50 20.8	+0.6
I05D	Terrebonne, OR	25.32	124	P		P	11 50 22.6	+1.2
	baz=328							
JTMT	Jette	25.39	110	eP		P	11 50 23.3	+1.0
YBMT	Yellow Bay	25.42	110	eP		P	11 50 23.2	+0.8
SWMT	Swartz Lake	25.70	110	eP		P	11 50 25.8	+0.8
FFC	Flin Flon	26.01	86	i P		P	11 50 32.1	+4.6
MSO	Missoula	26.26	111	P		P	11 50 30.5	+0.6
	baz=322,SNR=8.2							
MSO	Missoula	26.26	111	eP		P	11 50 29.9	0.0
	comp=Z,5.5nm,0.5s							
J05D	Fort Rock, OR	26.26	125	P		P	11 50 31.8	+1.7
	baz=330							
J05D				S		S	11 54 53.5	+0.6
	baz=330							
BMO	Blue Mountains	26.46	118	eP		P	11 50 32.1	+0.3
	comp=Z,3.2nm,0.9s							
CHMT	Chamberlain Mo	26.48	110	eP		P	11 50 32.6	+0.5
K04D	Chiloquin, OR	26.64	127	P		P	11 50 34.1	+0.6
	baz=330							
EGMT	Eagleton	27.15	104	P		P	11 50 38.3	+0.4
	baz=319							
EGMT	Eagleton	27.15	104	eP		P	11 50 38.5	+0.6
	comp=Z,19nm,1.0s							
N02D	Trinity Center	27.75	130	P		P	11 50 44.9	+1.6
	baz=333							
MOD	Modoc Plateau	27.80	125	eP		P	11 50 44.5	+0.7
	comp=Z,16nm,1.5s							
WVOR	Wild Horse Val	27.97	123	eP		P	11 50 46.6	+1.3
WVOR					pmax	pmax		
	comp=Z,6.0nm,0.8s							
WVOR	Wild Horse Val	27.97	123	eP		P	11 50 46.6	+1.3
	comp=Z,5.6nm,0.8s							
DLMT	Dillon	27.99	111	eP		P	11 50 46.7	+1.2
	comp=Z,4.3nm,1.0s							
PETK	Petropavlovsk-	28.15	273	P		P	11 50 45.9	-0.8
	comp=Z,1.3nm,0.5s,baz=69,slow=16,SNR=5.3							
WDC	Whiskeytown Da	28.16	130	eP		P	11 50 47.2	+0.4
WDC					pmax	pmax		
	comp=Z,8.0nm,0.8s							
WDC	Whiskeytown Da	28.16	130	eP		P	11 50 47.2	+0.4
	comp=Z,7.6nm,0.8s							
BOZ	Bozeman (W)	28.17	110	P		P	11 50 47.7	+0.6
	baz=322,SNR=5.6							
BOZ	Bozeman (W)	28.17	110	eP		P	11 50 48.6	+1.5
BOZ					pmax	pmax		
	comp=Z,5.0nm,1.1s							
BOZ	Bozeman (W)	28.17	110	eP		P	11 50 48.6	+1.5
	comp=Z,5.2nm,1.1s							
MFID	Camas Ranch	28.24	118	eP		P	11 50 48.4	+0.6
	comp=Z,12nm,1.1s							
MCMT	McKenzie Canyo	28.31	112	eP		P	11 50 48.7	+0.2
O03D	Paynes Creek	28.67	129	P		P	11 50 52.6	+1.2
	baz=333,SNR=5.1							
HLID	Hailey	28.70	116	P		P	11 50 52.3	+0.5
	baz=326,SNR=6.4							
HLID	Hailey	28.70	116	eP		P	11 50 52.7	+0.9
	comp=Z,2.2nm,0.8s							
YHB	Horse Butte	29.07	110	eP		P	11 50 57.0	+1.8
	comp=Z,21nm,1.5s							
YHH	Holmes Hill	29.19	110	eP		P	11 50 58.6	+2.3
	comp=Z,10nm,0.9s							
ORV	Oroville	29.43	129	eP		P	11 50 58.8	+0.7
ORV					pmax	pmax		
	comp=Z,4.0nm,0.8s							
ORV	Oroville	29.43	129	eP		P	11 50 58.8	+0.7
	comp=Z,3.8nm,0.8s							
A25A	Svangstu Ranch	29.43	96	P		P	11 50 59.0	+0.9
	baz=317							
TIXI	Tiksi	29.61	321	ceP		P	11 50 57.6	-1.7
TIXI					pmax	pmax		
	comp=Z,3.0nm,1.0s							
RLMT	Red Lodge	29.61	108	P		P	11 51 01.1	+1.2
	baz=322,SNR=6.4							
RLMT	Red Lodge	29.61	108	eP		P	11 51 01.8	+1.9
	comp=Z,13nm,1.0s							
LAO	LASA Array	29.72	102	P		P	11 51 01.2	+0.5
	baz=320							
LAO	LASA Array	29.72	102	eP		P	11 51 02.2	+1.4
	comp=Z,11nm,0.9s							
FLWY	Flagg Ranch	29.82	111	eP		P	11 51 04.4	+2.6
	comp=Z,7.5nm,0.8s							
IMW	Indian Meadow	29.87	111	eP		P	11 51 04.3	+2.0
	comp=Z,7.1nm,0.8s							
A26A	Wade Farm, Ken	29.95	95	P		P	11 51 03.0	+0.4
	baz=317							
PAHR	Pah Rah Range	30.05	126	eP		P	11 51 05.1	+1.3
	comp=Z,7.6nm,1.3s							
TPAW	Teton Pass	30.20	112	eP		P	11 51 07.3	+2.1
	comp=Z,23nm,1.5s							
BMN	Battle Mountai	30.23	123	eP		P	11 51 06.9	+1.5
BMN					pmax	pmax		
	comp=Z,9.0nm,1.5s							
BMN	Battle Mountai	30.23	123	eP		P	11 51 06.9	+1.5
	comp=Z,8.8nm,1.5s							
SNOW	Snow King Moun	30.30	111	eP		P	11 51 08.4	+2.3
	comp=Z,18nm,1.5s							
REDW	Red Top Meadow	30.34	112	eP		P	11 51 08.4	+2.0
	comp=Z,16nm,1.5s							
REDW				ePP		PP	11 52 21.1	+3.9
ELK	Elko	30.73	120	eP		P	11 51 11.7	+1.8
ELK					pmax	pmax		
	comp=Z,6.0nm,0.8s							
ELK	Elko	30.73	120	eP		P	11 51 11.7	+1.8
	comp=Z,6.0nm,0.8s							
A29A	Manning Farm,	31.20	93	P		P	11 51 14.3	+0.6
	baz=317							
BW06	Boulder Array	31.38	111	P		P	11 51 16.6	+1.1
	baz=325,SNR=9.4							
BW06	Boulder Array	31.38	111	eP		P	11 51 15.7	+0.2
PD31	Pinedale Array	31.38	111	eP		P	11 51 16.9	+1.4
PDAR	Pinedale Array	31.38	111	P		P	11 51 15.9	+0.4
	comp=Z,7.7nm,1.0s,baz=317,slow=6.1,SNR=27							
B29A	Wagenman Farm,	31.48	93	P		P	11 51 16.8	+0.6
	baz=317							
HWUT	Hardware Ranch	31.49	114	eP		P	11 51 17.8	+1.3
	comp=Z,6.1nm,1.3s							
ULM	Lac du Bonnet	31.78	88	P		P	11 51 17.2	-1.4
	comp=Z,3.3nm,0.7s,baz=315,slow=10.0,SNR=3.9							
B30A	Myrvik Farm, E	31.96	92	P		P	11 51 21.2	+0.9
	baz=317							
DUG	Dugway, Tooele	32.17	117	P		P	11 51 23.3	+0.9
	baz=328,SNR=10							
DUG	Dugway, Tooele	32.17	117	eP		P	11 51 23.5	+1.1
DUG					pmax	pmax		
	comp=Z,6.0nm,0.8s							
DUG	Dugway, Tooele	32.17	117	eP		P	11 51 23.4	+1.1
	comp=Z,6.4nm,0.8s							
CTU	Camp Tracy	32.18	116	eP		P	11 51 24.1	+1.6
	comp=Z,21nm,0.8s							
B31A	Greenbush Farm	32.29	92	P		P	11 51 23.8	+0.7
	baz=317							
H25A	Fruitdale	32.49	102	P		P	11 51 25.6	+0.6
	baz=322							
R11A	Troy Canyon, C	32.67	123	P		P	11 51 27.7	+0.9
	baz=331,SNR=15							
R11A	Troy Canyon, C	32.67	123	eP		P	11 51 27.7	+0.9
	comp=Z,6.0nm,0.8s							
RSSD	Black Hills	32.69	103	P		P	11 51 27.8	+0.9
	baz=322							
RSSD	Black Hills	32.69	103	eP		P	11 51 27.9	+0.9
RSSD					pmax	pmax		
	comp=Z,15nm,0.6s							
RSSD	Black Hills	32.69	103	eP		P	11 51 27.9	+0.9
	comp=Z,15nm,0.6s							
C31A	Landman Farms,	32.71	93	P		P	11 51 27.7	+0.8
	baz=318							
K22A	Casper	32.77	108	P		P	11 51 28.3	+0.7
	baz=324,SNR=5.7							
K22A	Casper	32.77	108	eP		P	11 51 28.6	+1.0
	comp=Z,26nm,1.5s							
RCTC	Rector, Farmer	33.13	129	P		P	11 51 31.8	+1.2
	baz=334							
GRAC	Grapevine Rang	33.19	126	P		P	11 51 32.8	+1.6
	baz=333							
AGMN	Agassiz Nation	33.19	90	P		P	11 51 31.4	+0.3
	baz=317							
CWC	Cottonwood Cre	33.42	127	P		P	11 51 34.2	+0.8
	baz=334							
B34A	Aery, Baudette	33.60	89	P		P	11 51 34.9	+0.3
	baz=317							
TPNV	Topopah Spring	33.65	125	P		P	11 51 36.2	+1.0
	baz=332,SNR=5.7							
TPNV	Topopah Spring	33.65	125	eP		P	11 51 36.1	+0.9
TPNV					pmax	pmax		
	comp=Z,4.0nm,0.6s							
TPNV	Topopah Spring	33.65	125	eP		P	11 51 36.1	+0.9
	comp=Z,4.2nm,0.6s							
G29A	Hoven	33.69	98	P		P	11 51 35.8	+0.4
	baz=320							
DAC	Darwin (Calif)	33.74	127	eP		P	11 51 37.7	+1.6
DAC					pmax	pmax		
	comp=Z,5.0nm,0.6s							
DAC	Darwin (Calif)	33.74	127	eP		P	11 51 37.7	+1.6
	comp=Z,4.9nm,0.6s							
FURC	Furnace Creek,	33.84	126	P		P	11 51 38.1	+1.4
	baz=333,SNR=7.9							
MSU	Marysvale	33.86	118	eP		P	11 51 38.9	+1.7
MSU	Marysvale	33.86	118	eP		P	11 51 38.9	+1.7
F31A	Hecla	33.93	95	P		P	11 51 38.0	+0.5
	baz=320							
MPMC	Manual Prospec	33.98	127	P		P	11 51 39.6	+1.4
	baz=334,SNR=5.2							
SRU	San Rafael Swe	34.02	116	eP		P	11 51 40.2	+1.7
SRU					pmax	pmax		
	comp=Z,16nm,0.9s							
SRU	San Rafael Swe	34.02	116	eP		P	11 51 40.2	+1.7
	comp=Z,16nm,0.9s							
D33A	AnnSam, Waubun	34.06	92	P		P	11 51 38.9	+0.4
	baz=318							
G30A	Faulkton	34.09	97	P		P	11 51 39.5	+0.7
	baz=320							
O20A	White River Ci	34.11	112	P		P	11 51 40.2	+0.9
	baz=327							
O20A	White River Ci	34.11	112	eP		P	11 51 40.3	+1.1
	comp=Z,8.3nm,1.1s							
CCUT	Cedar City	34.22	121	eP		P	11 51 41.0	+0.7
	comp=Z,12nm,0.7s							
MTPU	Mount Pierson	34.26	119	eP		P	11 51 42.6	+1.8
	comp=Z,9.8nm,1.2s							
YAK	Yakutsk	34.41	305	eP		P	11 51 39.9	-1.4
YAK					pmax	pmax		
	comp=Z,9.0nm,1.0s							
LRMC	Laurel Mtn Rad	34.43	128	P		P	11 51 43.4	+1.4
	baz=334,SNR=11							
SHPR	Sheep Range	34.45	124	eP		P	11 51 43.4	+1.2
	comp=Z,4.1nm,0.8s							
N23A	Red Feather La	34.45	109	P		P	11 51 43.2	+0.9
	baz=326							
N23A	Red Feather La	34.45	109	eP		P	11 51 43.9	+1.5
	comp=Z,4.2nm,0.8s							
C35A	Jirik Farms, M	34.49	89	P		P	11 51 41.9	-0.3
	baz=318							
SHOC	Shoshone, Teco	34.56	126	P		P	11 51 44.2	+1.2
	baz=333							
LCMT	Little Creek M	34.74	121	eP		P	11 51 46.2	+1.5
	comp=Z,12nm,0.8s							
KNB	Kanab	34.90	120	eP		P	11 51 47.8	+1.7
KNB					pmax	pmax		
	comp=Z,14nm,0.8s							
KNB	Kanab	34.90	120	eP		P	11 51 47.8	+1.7
	comp=Z,14nm,0.8s							
GSC	Goldstone, Bar	34.90	127	P		P	11 51 47.0	+1.0
	baz=334,SNR=8.4							
GSC	Goldstone, Bar	34.90	127	eP		P	11 51 47.6	+1.6
GSC					pmax	pmax		
	comp=Z,8.0nm,0.8s							
GSC	Goldstone, Bar	34.90	127	eP		P	11 51 47.6	+1.6
	comp=Z,8.0nm,0.8s							
D35A	Remer	34.91	90	P		P	11 51 46.4	+0.5
	baz=318							
TUQ	Turquoise Moun	35.11	125	P		P	11 51 48.8	+0.9
	baz=333,SNR=8.5							
PV09	Paradox Valley	35.11	115	eP		P	11 51 49.3	+1.2
E35A	Pequot Lakes	35.15	91	P		P	11 51 48.7	+0.8
	baz=319							
I31A	Royce, Wessing	35.22	98	P		P	11 51 49.0	+0.5
	baz=322							
D36A	Goodland	35.25	89	P		P	11 51 49.1	+0.4
	baz=318							
PV10	Paradox Valley	35.26	115	eP		P	11 51 50.9	+1.7
H32A	Carlson Farm,	35.34	96	P		P	11 51 50.0	+0.4
	baz=321							
EYMN	Ely	35.43	87	P		P	11 51 50.8	+0.5
	baz=318,SNR=6.4							
EYMN	Ely	35.43	87	eP		P	11 51 51.1	+0.7
	comp=Z,12nm,0.8s							
PV05	Paradox Valley	35.48	115	eP		P	11 51 52.0	+0.8
ISCO	Idaho Springs	35.50	109	eP		P	11 51 52.9	+1.5
ISCO					pmax	pmax		
	comp=Z,7.0nm,1.4s							
ISCO	Idaho Springs	35.50	109	eP		P	11 51 52.9	+1.5
	comp=Z,7.2nm,1.4s							
D37A	Cotton	35.60	89	P		P	11 51 52.4	+0.6
	baz=318							
PV01	Paradox Valley	35.65	114	eP		P	11 51 53.5	+0.9
E36A	McGregor	35.70	90	P		P	11 51 52.9	+0.3
	baz=319							
I32A	Karley and Nic	35.70	97	P		P	11 51 53.0	+0.3
	baz=321							
C38A	Sawbill Land.	35.70	87	P		P	11 51 52.7	0.0
	baz=318							
NKL	Nikolayevsk	35.72	286	eP		P	11 51 52.3	-0.3
LDFC	Landfair	35.73	125	eP		P	11 51 54.5	+1.4
	comp=Z,16nm,0.8s							
GMRC	Granite Mounta	35.78	126	P		P	11 51 54.9	+1.3
	baz=334,SNR=8.2							
BBRC	Big Bear Solar	35.79	128	P		P	11 51 54.9	+1.1
	baz=334							
H34A	Spellman Lake,	35.97	94	P		P	11 51 55.4	+0.5
	baz=321							
F36A	Milaca	36.07	91	P		P	11 51 56.1	+0.3
	baz=320							
OGNE	Ogallala	36.12	104	P		P	11 51 56.9	+0.5
	baz=325							
OGNE	Ogallala	36.12	104	eP		P	11 51 57.3	+1.0
	comp=Z,48nm,1.6s							
ECSD	EROS Data Cent	36.31	96	P		P	11 51 58.0	+0.1
	baz=322,SNR=8.3							
ECSD	EROS Data Cent	36.31	96	eP		P	11 51 58.1	+0.1
	comp=Z,4.9nm,0.7s							
BELC	Belle Mtn. Jos	36.36	127	P		P	11 51 59.9	+1.4
	baz=334,SNR=5.7							
SCI2	San Clemente I	36.38	131	P		P	11 51 59.8	+1.3
	baz=336							
Q24A	Divide	36.40	110	P		P	11 51 59.7	+0.7
	baz=327							
Q24A	Divide	36.40	110	eP		P	11 52 00.5	+1.5
	comp=Z,5.7nm,0.9s							
MVCO	Mesa Verde	36.47	115	P		P	11 51 60.0	+0.4
	baz=329							
MVCO	Mesa Verde	36.47	115	eP		P	11 51 59.7	+0.2
	comp=Z,4.4nm,0.8s							
IRM	Iron Mountain	36.53	125	P		P	11 52 01.2	+1.4
	baz=334,SNR=9.3							
PFO	Pinyon Flats O	36.54	128	P		P	11 52 01.0	+0.9
	baz=334							
PFO	Pinyon Flats O	36.54	128	eP		P	11 52 00.8	+0.8
PFO					pmax	pmax		
	comp=Z,7.0nm,1.1s							
PFO	Pinyon Flats O	36.54	128	eP		P	11 52 00.8	+0.8
	comp=Z,7.4nm,1.1s							
S22A	4UR Ranch, Cre	36.71	113	P		P	11 52 02.4	+0.8
	baz=328,SNR=9.6							
S22A	4UR Ranch, Cre	36.71	113	eP		P	11 52 03.0	+1.4
	comp=Z,5.1nm,0.9s							
WUAZ	Wupatki	36.78	120	P		P	11 52 03.6	+1.5
	baz=331,SNR=19							
WUAZ	Wupatki	36.78	120	eP		P	11 52 03.6	+1.5
	comp=Z,22nm,0.9s							
PDMCI	Parker Dam,Lak	36.78	124	P		P	11 52 02.0	+0.2
	baz=333							
BC3	Big Chuckawall	36.87	126	P		P	11 52 03.8	+1.0
	baz=334							
H36A	Jessenland, He	36.88	93	P		P	11 52 03.4	+0.8
	baz=321							
SPMN	Marine on St.	36.89	91	P		P	11 52 03.5	+0.8
	baz=320							
SPMN	Marine on St.	36.89	91	eP		P	11 52 03.6	+0.9
	comp=Z,7.9nm,0.9s							
Y12C	Blythe	37.13	125	P		P	11 52 06.0	+1.2
	baz=334							
Y12C	Blythe	37.13	125	eP		P	11 52 06.2	+1.3
	comp=Z,12nm,0.8s							
M31A	Lambtecht Ranc	37.15	101	P		P	11 52 05.2	+0.2
	baz=324							
MONP2	Monument Peak	37.20	128	P		P	11 52 07.1	+1.3
	baz=335,SNR=8.2							
SDCO	Great Sand Dun	37.27	111	P		P	11 52 07.2	+0.8
	baz=328,SNR=11							
SDCO	Great Sand Dun	37.27	111	eP		P	11 52 07.3	+0.9
	comp=Z,9.0nm,1.3s							
K34A	Le Mars	37.37	97	P		P	11 52 07.1	+0.3
	baz=322							
SWSC	Sam W. Stewart	37.38	127	P		P	11 52 08.0	+1.0
	baz=335							
IKP	In-Ko-Pah, Jac	37.53	128	P		P	11 52 09.8	+1.4
	baz=335							
I37A	Lemond, Waseca	37.55	93	P		P	11 52 09.2	+0.9
	baz=321							
GLA	Glamis	37.64	126	P		P	11 52 10.3	+1.1
	baz=334							
K35A	Storm Lake	37.73	96	P		P	11 52 09.9	0.0
	baz=322							
W18A	Petrified Fore	37.77	118	P		P	11 52 11.1	+0.6
	baz=331							
W18A	Petrified Fore	37.77	118	eP		P	11 52 12.3	+1.8
	comp=Z,18nm,1.2s							
KBS	Kingsbay	37.81	5	eP		P	11 52 11.3	+1.2
KBS					pmax	pmax		
	comp=Z,6.0nm,0.8s							
KBS	Kingsbay	37.81	5	eP		P	11 52 11.3	+1.2
	comp=Z,5.8nm,0.8s							
L34A	Svendsen Farm,	37.82	98	P		P	11 52 10.6	0.0
	baz=323							
COWI	Conover	37.88	87	eP		P	11 52 10.6	-0.5
	comp=Z,29nm,1.5s							
N32A	Stulken Farm,	37.92	101	P		P	11 52 11.4	-0.1
	baz=324							
I38A	Scanlan Farm,	38.02	92	P		P	11 52 12.7	+0.5
	baz=321							
K36A	Gilmore City	38.15	95	P		P	11 52 13.7	+0.3
	baz=322							
K37A	Belmond	38.42	94	P		P	11 52 16.0	+0.4
	baz=322,SNR=6.1							
J38A	Wedel Dairy, R	38.51	93	P		P	11 52 17.0	+0.7
	baz=322							
N34A	Lincoln	38.66	99	P		P	11 52 17.9	+0.2
	baz=324							
P32A	Huiting Farm,	38.71	102	P		P	11 52 18.3	+0.2
	baz=325,SNR=5.1							
O33A	Hebron	38.80	101	P		P	11 52 18.4	-0.4
	baz=324							
CBKS	Cedar Bluff	38.87	104	P		P	11 52 19.9	+0.4
	baz=326							
L37A	Phoenix Point,	38.87	95	P		P	11 52 19.5	+0.1
	baz=323							
K38A	Parkersburg	38.91	94	P		P	11 52 20.3	+0.6
	baz=322							
N35A	Tabor	39.03	98	P		P	11 52 21.3	+0.5
	baz=324,SNR=5.8							
O34A	Beatrice	39.11	100	P		P	11 52 21.1	-0.3
	baz=324,SNR=7.8							
L38A	Oak Wood Farm,	39.22	94	P		P	11 52 22.5	+0.2
	baz=323,SNR=9.6							
J40A	Soldiers Grove	39.24	91	P		P	11 52 22.6	+0.1
	baz=322							
ANMO	Albuquerque	39.26	115	P		P	11 52 23.9	+1.0
	baz=330							
ANMO	Albuquerque	39.26	115	i P		P	11 52 23.3	+0.4
ANMO					pmax	pmax		
	comp=Z,6.0nm,1.2s							
ANMO	Albuquerque	39.26	115	eP		P	11 52 24.1	+1.2
	comp=Z,4.4nm,1.0s							
K39A	Oelwein	39.26	93	P		P	11 52 22.4	-0.2
	baz=322							
YSS	Yuzh-Sakhalins	39.28	278	eP		P	11 52 22.6	-0.1
YSS					pmax	pmax		
	comp=Z,10.0nm,0.7s							
214A	Organ Pipe Nat	39.37	124	P		P	11 52 25.0	+1.3
	baz=334,SNR=9.4							
214A	Organ Pipe Nat	39.37	124	eP		P	11 52 24.4	+0.7
	comp=Z,40nm,1.1s							
LAZ	Ladron	39.45	116	eP		P	11 52 26.2	+1.7
P34A	Walnut Farm, R	39.56	100	P		P	11 52 24.9	-0.3
	baz=325							
Q33A	Connelly Farm,	39.56	102	P		P	11 52 25.5	+0.3
	baz=325							
J41A	Loganville	39.59	90	P		P	11 52 25.8	+0.4
	baz=322							
K40A	Colesburg	39.61	92	P		P	11 52 25.9	+0.5
	baz=322							
R32A	Long Quarter,	39.65	103	P		P	11 52 26.6	+0.7
	baz=326,SNR=7.2							
L39A	Vinton	39.67	93	P		P	11 52 26.1	+0.1
	baz=322							
M38A	Pleasantville	39.69	95	P		P	11 52 26.1	0.0
	baz=323							
TUC	Tucson	39.83	122	P		P	11 52 29.0	+1.5
	baz=333							
BNM	Barren Site	39.88	115	eP		P	11 52 29.8	+1.7
P35A	Duane Minner,	39.94	100	P		P	11 52 28.5	+0.2
	baz=325,SNR=6.0							
Q34A	Chapman	40.02	101	P		P	11 52 29.2	+0.2
	baz=325							
KSU1	Kansas State U	40.03	101	P		P	11 52 29.3	+0.3
	baz=325,SNR=12							
KSU1	Kansas State U	40.03	101	eP		P	11 52 29.2	+0.2
	comp=Z,32nm,0.7s							
K41A	Shullsburg	40.06	91	P		P	11 52 29.3	+0.1
	baz=322							
R33A	Olander Ranch,	40.06	103	P		P	11 52 29.6	+0.2
	baz=326							
L40A	Anamosa	40.07	93	P		P	11 52 29.4	0.0
	baz=322,SNR=5.7							
P36A	Good Intent, A	40

Q38A	**Cooks Store, C**	**41.48**	**98**	P		**P**	**11 52 40.5**	**-0.4**
	baz=325								
T34A	**McClaskey Farm**	**41.48**	**103**	P		**P**	**11 52 41.1**	**+0.1**
	baz=326								
NRIK	**Noril'sk**	**41.53**	**333**	P		**P**	**11 52 40.5**	**-0.5**
	comp=Z,5.6nm,0.4s,baz=47,slow=5.6,SNR=9.3								
NRIK				LR		LR	12 12 55.2		
	comp=Z,25nm,19.6s,baz=122,slow=40								
HABR	**Khabarovsk**	**41.57**	**285**	*e*P		**P**	**11 52 39.3**	**-2.2**
HABR				*e**PP		**pP**	**11 53 08.5**	**-1.6**
HABR				*e*			11 54 18.0		
HABR				*e*			11 54 34.1		
HABR				*e*S		**S**	**11 58 45.8**	**-1.7**
HABR				*e**SS		**sS**	**11 59 37.2**	**0.0**
HABR				*e*SS		**SS**	**12 01 57.2**	**+0.4**
HABR				*e*			12 02 28.7		
HABR				pmax		pmax			
	comp=Z,30nm,1.8s								
HABR				pmax		pmax			
	comp=E,22nm,1.8s								
HABR				pmax		pmax			
	comp=N,17nm,1.8s								
HABR				MLR		MLR			
	comp=Z,35nm,20.0s								
S36A	**Lake Cedric, C**	**41.61**	**101**	P		**P**	**11 52 41.9**	**-0.1**
	baz=326								
MSTX	**Muleshoe**	**41.64**	**111**	P		**P**	**11 52 43.1**	**+0.8**
	baz=330,SNR=7.0								
MSTX	**Muleshoe**	**41.64**	**111**	*e*P		**P**	**11 52 43.2**	**+0.8**
Q39A	**Willow Grove F**	**41.70**	**97**	P		**P**	**11 52 42.8**	**+0.1**
	baz=325,SNR=6.1								
P40A	**Paris**	**41.73**	**96**	P		**P**	**11 52 42.8**	**-0.1**
	baz=324,SNR=7.3								
O41A	**Passleys Farm,**	**41.78**	**94**	P		**P**	**11 52 43.0**	**-0.3**
	baz=324								
U34A	**Anderson Ranch**	**41.82**	**104**	P		**P**	**11 52 43.7**	**0.0**
	baz=327,SNR=13								
U34A	**Anderson Ranch**	**41.82**	**104**	*e*P		**P**	**11 52 43.2**	**-0.4**
T35A	**Sooner Cattle**	**41.87**	**102**	P		**P**	**11 52 44.2**	**+0.1**
	baz=326								
S37A	**Fort Scott**	**41.92**	**100**	P		**P**	**11 52 43.9**	**-0.6**
	baz=326,SNR=5.2								
R38A	**Fenwick Farm,**	**41.98**	**99**	P		**P**	**11 52 44.4**	**-0.6**
	baz=325,SNR=8.1								
V33A	**Lossen Ranch,**	**42.00**	**105**	P		**P**	**11 52 45.7**	**+0.5**
	baz=327								
T36A	**Boggs Farm, Ca**	**42.03**	**102**	P		**P**	**11 52 45.5**	**+0.1**
	baz=326								
P41A	**Barry, Barry**	**42.06**	**95**	P		**P**	**11 52 45.5**	**-0.1**
	baz=324								
HDIL	**Hopedale**	**42.15**	**92**	P		**P**	**11 52 46.1**	**-0.2**
	baz=324								
HDIL	**Hopedale**	**42.15**	**92**	*e*P		**P**	**11 52 46.5**	**+0.2**
	comp=Z,13nm,0.6s								
Q40A	**Laux Farm, Aux**	**42.15**	**96**	P		**P**	**11 52 46.0**	**-0.4**
	baz=325								
U35A	**Pawnee**	**42.23**	**103**	P		**P**	**11 52 47.0**	**0.0**
	baz=327								
R39A	**Chumby, Stover**	**42.27**	**98**	P		**P**	**11 52 47.0**	**-0.4**
	baz=325								
V34A	**Guthrie**	**42.33**	**104**	P		**P**	**11 52 48.0**	**+0.2**
	baz=327,SNR=8.4								
V34A	**Guthrie**	**42.33**	**104**	*e*P		**P**	**11 52 48.1**	**+0.2**
T37A	**Cheneyville 18**	**42.41**	**101**	P		**P**	**11 52 48.0**	**-0.5**
	baz=326,SNR=7.6								
KLR	**Kul'dur**	**42.43**	**289**	⇓ *i*P		**P**	**11 52 47.4**	**-1.1**
S38A	**Stockton**	**42.44**	**99**	P		**P**	**11 52 47.8**	**-1.0**
	baz=326,SNR=15								
P42A	**Winchester**	**42.45**	**94**	P		**P**	**11 52 48.7**	**0.0**
	baz=324								
MNTX	**Cornudas Mount**	**42.52**	**116**	P		**P**	**11 52 50.6**	**+1.1**
	baz=331,SNR=6.9								
MNTX	**Cornudas Mount**	**42.52**	**116**	*e*P		**P**	**11 52 50.9**	**+1.4**
	comp=Z,4.9nm,1.0s								
R40A	**Maddies Statio**	**42.64**	**97**	P		**P**	**11 52 49.7**	**-0.6**
	baz=325,SNR=8.6								
U36A	**Oologah**	**42.65**	**102**	P		**P**	**11 52 50.2**	**-0.3**
	baz=327								
S39A	**Bolivar**	**42.65**	**99**	P		**P**	**11 52 49.6**	**-0.9**
	baz=326,SNR=8.3								
V35A	**Meyer Ranch, C**	**42.69**	**104**	P		**P**	**11 52 50.2**	**-0.6**
	baz=327								
WMOK	**Wichita Mounta**	**42.70**	**106**	P		**P**	**11 52 51.3**	**+0.4**
	baz=328,SNR=15								
WMOK	**Wichita Mounta**	**42.70**	**106**	*e*P		**P**	**11 52 51.3**	**+0.4**
WMOK				pmax		pmax			
	comp=Z,9.0nm,0.8s								
WMOK	**Wichita Mounta**	**42.70**	**106**	*e*P		**P**	**11 52 51.3**	**+0.4**
	comp=Z,8.6nm,0.8s								
W34A	**Bridge Creek,**	**42.72**	**105**	P		**P**	**11 52 51.5**	**+0.5**
	baz=328								
W34A	**Bridge Creek,**	**42.72**	**105**	*e*P		**P**	**11 52 51.6**	**+0.6**
X32A	**Elmer**	**42.75**	**107**	P		**P**	**11 52 51.9**	**+0.7**
	baz=328								
T38A	**Diamond**	**42.76**	**100**	P		**P**	**11 52 50.5**	**-0.8**
	baz=326,SNR=7.2								
Q42A	**Golden Eagle**	**42.91**	**95**	P		**P**	**11 52 52.7**	**+0.2**
	baz=325								
U37A	**Salina**	**42.92**	**101**	P		**P**	**11 52 52.5**	**-0.1**
	baz=327,SNR=7.4								
X33A	**Lawton**	**42.99**	**106**	P		**P**	**11 52 53.5**	**+0.3**
	baz=328								
BOD	**Bodaibo**	**43.02**	**309**	*e*P		**P**	**11 52 51.0**	**-2.2**
BOD				pmax		pmax			
	comp=Z,8.0nm,1.1s								
V36A	**Jenks**	**43.07**	**103**	P		**P**	**11 52 53.6**	**-0.1**
	baz=327								
S40A	**Lebanon**	**43.10**	**98**	P		**P**	**11 52 53.4**	**-0.6**
	baz=326,SNR=8.4								
T39A	**Clever**	**43.18**	**99**	P		**P**	**11 52 53.8**	**-0.9**
	baz=326,SNR=11								
W35A	**Tecumseh**	**43.19**	**104**	P		**P**	**11 52 54.6**	**-0.1**
	baz=328,SNR=5.8								
U38A	**Gravette**	**43.21**	**101**	P		**P**	**11 52 54.5**	**-0.5**
	baz=326,SNR=16								
X34A	**Smith Ranch, M**	**43.23**	**106**	P		**P**	**11 52 55.5**	**+0.3**
	baz=328								
Q43A	**New Douglas**	**43.27**	**94**	P		**P**	**11 52 55.5**	**+0.2**
	baz=325								
V37A	**Hulbert**	**43.34**	**102**	P		**P**	**11 52 55.7**	**-0.3**
	baz=327,SNR=7.1								
Y33A	**Hilltop Ranch,**	**43.39**	**107**	P		**P**	**11 52 56.7**	**+0.4**
	baz=329								
S41A	**Jillco Farms,**	**43.45**	**97**	P		**P**	**11 52 56.2**	**-0.6**
	baz=326,SNR=13								
T40A	**Mansfield**	**43.46**	**98**	P		**P**	**11 52 56.2**	**-0.7**
	baz=326,SNR=7.5								
W36A	**Wetumka**	**43.48**	**104**	P		**P**	**11 52 56.4**	**-0.8**
	baz=328								
HHAR	**Hobbs**	**43.54**	**100**	*e*P		**P**	**11 52 56.5**	**-1.1**
Q44A	**Meyer Farm, Va**	**43.61**	**94**	P		**P**	**11 52 57.8**	**-0.3**
	baz=325								
U39A	**Green Forest**	**43.66**	**100**	P		**P**	**11 52 57.6**	**-1.0**
	baz=326,SNR=6.2								
V38A	**Canehill**	**43.68**	**101**	P		**P**	**11 52 58.3**	**-0.4**
	baz=327,SNR=12								
X35A	**Drake**	**43.78**	**105**	P		**P**	**11 52 59.6**	**+0.1**
	baz=328								
W37B	**Quinton**	**43.83**	**103**	P		**P**	**11 53 00.2**	**+0.3**
	baz=327,SNR=8.8								
T41A	**Mountain View**	**43.89**	**98**	P		**P**	**11 52 59.6**	**-0.8**
	baz=326,SNR=14								
X36A	**Centrahoma**	**43.91**	**104**	P		**P**	**11 53 00.5**	**0.0**
	baz=328								
U40A	**Yellville**	**43.97**	**99**	P		**P**	**11 53 00.4**	**-0.6**
	baz=326,SNR=6.1								
V39A	**Pettigrew**	**44.04**	**100**	P		**P**	**11 53 01.0**	**-0.7**
	baz=327								
R44A	**Waltonville**	**44.11**	**94**	P		**P**	**11 53 02.2**	**+0.1**
	baz=325								
ABTX	**Abilene, Hawle**	**44.13**	**109**	P		**P**	**11 53 02.3**	**-0.1**
	baz=330								
OLIL	**Olney**	**44.16**	**93**	*e*P		**P**	**11 53 02.7**	**+0.2**
S43A	**Fulton Ridge,**	**44.22**	**96**	P		**P**	**11 53 02.6**	**-0.3**
	baz=325,SNR=7.0								
W38A	**Poteau**	**44.30**	**102**	P		**P**	**11 53 03.2**	**-0.4**
	baz=327								
X37A	**Clayton**	**44.32**	**103**	P		**P**	**11 53 03.8**	**0.0**
	baz=328,SNR=7.5								
U41A	**Viola**	**44.40**	**98**	P		**P**	**11 53 03.6**	**-0.8**
	baz=326,SNR=7.3								
V40A	**Witts Springs**	**44.44**	**100**	P		**P**	**11 53 04.0**	**-0.8**
	baz=327								
133A	**Hamilton Ranch**	**44.46**	**108**	P		**P**	**11 53 05.1**	**+0.2**
	baz=329								
S44A	**Carbondale**	**44.49**	**95**	P		**P**	**11 53 04.8**	**-0.3**
	baz=325,SNR=6.9								
SIUC	**Southern Illin**	**44.49**	**95**	*e*P		**P**	**11 53 05.3**	**+0.2**
X38A	**Whitesboro**	**44.50**	**103**	P		**P**	**11 53 05.3**	**+0.1**
	baz=328,SNR=6.3								
Y36A	**Durant**	**44.50**	**105**	P		**P**	**11 53 05.8**	**+0.5**
	baz=328								
W39A	**Magazine**	**44.52**	**101**	P		**P**	**11 53 04.7**	**-0.6**
	baz=327,SNR=6.7								
U42A	**Revenden**	**44.70**	**98**	P		**P**	**11 53 05.3**	**-1.4**
	baz=326								
PBMO	**Poplar Bluff**	**44.71**	**97**	*e*P		**P**	**11 53 06.3**	**-0.5**
Y37A	**Hugo**	**44.73**	**104**	P		**P**	**11 53 07.8**	**+0.7**
	baz=328								
V41A	**Mountainview**	**44.76**	**99**	P		**P**	**11 53 06.1**	**-1.2**
	baz=327,SNR=14								
S45A	**Carrier Mills**	**44.81**	**94**	P		**P**	**11 53 07.9**	**+0.2**
	baz=325,SNR=5.5								
W40A	**Ferguson Farm,**	**44.84**	**100**	P		**P**	**11 53 07.5**	**-0.4**
	baz=327								
134A	**White-Moore Ra**	**44.85**	**107**	P		**P**	**11 53 07.8**	**-0.2**
	baz=329								
X39A	**Fountain Ranch**	**44.95**	**102**	P		**P**	**11 53 08.7**	**-0.1**
	baz=328,SNR=6.6								
233A	**Rising Star**	**44.97**	**109**	P		**P**	**11 53 08.9**	**-0.1**
	baz=330,SNR=5.3								
Z36A	**Blue Ridge**	**44.97**	**105**	P		**P**	**11 53 09.1**	**+0.1**
	baz=329								
X201	**Greenbrier Sit**	**45.07**	**100**	*e*P		**P**	**11 53 09.1**	**-0.7**
V42A	**Cord**	**45.08**	**98**	P		**P**	**11 53 08.7**	**-1.1**
	baz=326								
MIAR	**Mount Ida**	**45.16**	**101**	P		**P**	**11 53 10.1**	**-0.3**
	baz=328,SNR=11								
MIAR	**Mount Ida**	**45.16**	**101**	*e*P		**P**	**11 53 10.4**	**0.0**
MIAR	**Mount Ida**	**45.16**	**101**	*e*P		**P**	**11 53 10.4**	**0.0**
W41B	**Gary Mavity, V**	**45.22**	**100**	P		**P**	**11 53 10.0**	**-1.0**
	baz=327								
TX31	**Lajitas Ar. Si**	**45.30**	**116**	*e*P		**P**	**11 53 12.7**	**+0.9**
TXAR	**Lajitas Array**	**45.30**	**116**	P		**P**	**11 53 12.8**	**+1.0**
	comp=Z,3.9nm,0.7s,baz=328,slow=6.3,SNR=53								
TXAR				ScP		**ScP**	**11 58 30.2**	**+0.7**
	comp=Z,0.2nm,0.7s,baz=270,slow=3.8,SNR=3.4								
Y39A	**Lockesburg**	**45.44**	**102**	P		**P**	**11 53 12.6**	**0.0**
	baz=328								
333A	**Richland Sprin**	**45.53**	**109**	P		**P**	**11 53 13.8**	**+0.3**
	baz=330,SNR=5.9								
X40A	**Basin Creek Fa**	**45.54**	**101**	P		**P**	**11 53 12.8**	**-0.6**
	baz=327,SNR=5.3								
M54A	**Oil Creek Stat**	**45.75**	**83**	P		**P**	**11 53 14.9**	**-0.2**
	baz=323								
334A	**Lometa**	**45.84**	**108**	P		**P**	**11 53 16.1**	**+0.2**
	baz=330								
JCT	**Junction City**	**45.91**	**111**	P		**P**	**11 53 16.8**	**+0.3**
	baz=331,SNR=7.2								
JCT	**Junction City**	**45.91**	**111**	*e*P		**P**	**11 53 16.3**	**-0.2**
JCT	**Junction City**	**45.91**	**111**	*e*P		**P**	**11 53 16.3**	**-0.2**
433A	**Art**	**45.98**	**110**	P		**P**	**11 53 17.0**	**+0.1**
	baz=330								
WLAR	**White Oak Lake**	**46.09**	**102**	*e*P		**P**	**11 53 18.8**	**+1.1**
USRK	**Ussuriysk Ar.**	**46.21**	**284**	P		**P**	**11 53 17.1**	**-1.5**
	comp=Z,1.5nm,0.6s,baz=55,slow=10.0,SNR=5.5								
USRK				PcP		**PcP**	**11 54 52.9**	**+0.8**
	comp=Z,0.7nm,0.5s,baz=352,slow=3.8,SNR=4.2								
434A	**Burnet**	**46.28**	**109**	P		**P**	**11 53 19.4**	**+0.1**
	baz=330,SNR=8.3								
X43A	**Marvell**	**46.38**	**99**	P		**P**	**11 53 19.9**	**-0.2**
	baz=327								
WVT	**Waverly**	**46.42**	**95**	*e*P		**P**	**11 53 20.7**	**+0.4**
WVT	**Waverly**	**46.42**	**95**	*e*P		**P**	**11 53 20.7**	**+0.4**
533A	**Kerrville**	**46.59**	**110**	P		**P**	**11 53 22.6**	**+0.8**
	baz=331								
W45A	**Hickory Valley**	**46.62**	**97**	P		**P**	**11 53 22.8**	**+0.9**
	baz=327								
534A	**Blanco**	**46.87**	**110**	P		**P**	**11 53 24.0**	**0.0**
	baz=331								
OXF	**Oxford**	**47.05**	**97**	*e*P		**P**	**11 53 25.7**	**+0.4**
OXF	**Oxford**	**47.05**	**97**	*e*P		**P**	**11 53 25.7**	**+0.4**
141A	**Papa Simpson,**	**47.09**	**102**	P		**P**	**11 53 26.3**	**+0.8**
	baz=328								
O56A	**Blue Knob Stat**	**47.24**	**83**	P		**P**	**11 53 26.6**	**-0.1**
	baz=324								
Y45A	**Yeager Farm, C**	**47.53**	**98**	P		**P**	**11 53 29.8**	**+0.8**
	baz=327,SNR=7.4								
438A	**Sam Houston St**	**47.55**	**106**	P		**P**	**11 53 30.1**	**+1.0**
	baz=330								
ARCES	**ARCESS Array B**	**47.59**	**2**	P		**P**	**11 53 28.1**	**-0.8**
	comp=Z,2.8nm,0.6s,baz=3.3,slow=7.7,SNR=35								
ARCES				PcP		**PcP**	**11 54 56.1**	**-0.4**
	comp=Z,0.7nm,0.5s,baz=350,slow=3.7,SNR=6.2								
ARE0	**ARCESS Array S**	**47.59**	**2**	*e*P		**P**	**11 53 27.9**	**-1.1**
Z44A	**Pea Ridge, Bel**	**47.63**	**99**	P		**P**	**11 53 30.0**	**+0.3**
	baz=328								
733A	**Divot King Ran**	**47.66**	**111**	P		**P**	**11 53 31.0**	**+0.9**
	baz=331								
340A	**Bronson**	**47.67**	**104**	P		**P**	**11 53 30.5**	**+0.4**
	baz=329								
143A	**Socs Landing,**	**47.68**	**101**	P		**P**	**11 53 31.2**	**+1.1**
	baz=328								
832A	**Faith Ranch, C**	**47.75**	**112**	P		**P**	**11 53 31.5**	**+0.7**
	baz=332								
Y46A	**Houston**	**47.83**	**97**	P		**P**	**11 53 32.0**	**+0.8**
	baz=327,SNR=30								
242A	**Grayson**	**47.89**	**102**	P		**P**	**11 53 33.3**	**+1.5**
	baz=328								
636A	**Smothers Creek**	**47.95**	**108**	P		**P**	**11 53 34.0**	**+1.7**
	baz=330								
KIF	**Kilpisjarvi**	**48.02**	**4**	*e*P		**P**	**11 53 31.4**	**-0.8**
TZTN	**Tazewell**	**48.02**	**91**	*e*P		**P**	**11 53 33.1**	**+0.3**
SWET	**Sewanee**	**48.04**	**94**	*e*P		**P**	**11 53 32.8**	**-0.1**
341A	**Kurthwood**	**48.06**	**103**	P		**P**	**11 53 33.8**	**+0.8**
	baz=329								
KTK1	**Kautokeino**	**48.07**	**3**	*e*P		**P**	**11 53 31.6**	**-1.1**
KTK1				IAmb		IAmb	11 53 32.9		
	comp=Z,6.7nm,0.9s								
440A	**Kirbyville**	**48.21**	**105**	P		**P**	**11 53 35.3**	**+1.1**
	baz=329								
Y47A	**UCPARC, Winfie**	**48.27**	**96**	P		**P**	**11 53 34.7**	**+0.1**
	baz=327,SNR=10								
CPCT	**Cooper Cave**	**48.48**	**92**	*e*P		**P**	**11 53 36.7**	**+0.4**
LOF	**Lofoten**	**48.55**	**8**	*e*P		**P**	**11 53 36.3**	**-0.1**
244A	**Avery, Jackson**	**48.56**	**100**	P		**P**	**11 53 37.8**	**+0.9**
	baz=328								
TKL	**Tuckaleechee C**	**48.65**	**91**	*e*P		**P**	**11 53 37.5**	**-0.1**
TKL	**Tuckaleechee C**	**48.65**	**91**	*e*P		**P**	**11 53 37.5**	**-0.1**
HEF	**Hetta**	**48.69**	**3**	*e*P		**P**	**11 53 36.5**	**-1.0**
146A	**Union**	**48.79**	**98**	P		**P**	**11 53 39.3**	**+0.6**
	baz=328,SNR=5.0								
Z48A	**Northport**	**48.84**	**97**	P		**P**	**11 53 38.4**	**-0.6**
	baz=328,SNR=5.9								
STEI	**Steigen**	**48.85**	**7**	*e*P		**P**	**11 53 38.2**	**-0.4**
147A	**Livingston**	**49.11**	**98**	P		**P**	**11 53 40.8**	**-0.3**
	baz=328								
LRAL	**Lakeview Retre**	**49.38**	**96**	*e*P		**P**	**11 53 42.4**	**-0.8**
CN2	**Changchun**	**49.38**	**289**	*e*P		**P**	**11 53 42.7**	**-0.3**
CN2				pmax		pmax			
	comp=Z,30nm,0.6s								
MAJO	**Matsushiro**	**49.60**	**273**	*e*P		**P**	**11 53 45.3**	**+0.5**
MAJO	**Matsushiro**	**49.60**	**273**	*e*P		**P**	**11 53 45.3**	**+0.5**
MAT	**Matsushiro**	**49.60**	**273**	P		**P**	**11 53 44.9**	**+0.1**
MJAR	**Matsushiro Arr**	**49.60**	**273**	P		**P**	**11 53 45.0**	**+0.2**
	comp=Z,2.1nm,0.7s,baz=5.2,slow=8.7,SNR=9.7								
KSRS	**Korea Array**	**53.48**	**282**	P		**P**	**11 54 14.2**	**+0.7**
	comp=Z,5.8nm,0.6s,baz=27,slow=7.0,SNR=39								
KSAR	**Wonju Array Be**	**53.51**	**282**	P		**P**	**11 54 14.3**	**+0.5**
KSAR	**Wonju Array Be**	**53.51**	**282**	P		**P**	**11 54 14.2**	**+0.5**
SONM	**Songino Array**	**53.76**	**305**	P		**P**	**11 54 16.7**	**+1.0**
	comp=Z,5.0nm,0.7s,baz=26,slow=6.6,SNR=26								
JOF	**Joensuu**	**54.25**	**359**	P		**P**	**11 54 19.4**	**+0.6**
JOF				pmax		pmax			
	comp=Z,9.0nm,0.9s								
TJN	**Taejon**	**54.62**	**282**	*e*P		**P**	**11 54 22.2**	**+0.3**
NVS	**Novosibirsk**	**55.05**	**325**	*e*P		**P**	**11 54 23.0**	**-1.7**
NB2	**NORSAR Subarra**	**55.41**	**10**	P		**P**	**11 54 25.9**	**-1.3**
	comp=Z,0.9nm,0.6s,baz=351,slow=7.4								
NB2	**NORSAR Subarra**	**55.41**	**10**	P		**P**	**11 54 25.9**	**-1.3**
	baz=351,slow=7.4								
NOA	**NORSAR Array B**	**55.41**	**10**	P		**P**	**11 54 26.3**	**-1.0**
	comp=Z,1.3nm,0.6s,baz=350,slow=7.2,SNR=6.8								
ZALV	**Zalesovo Beam**	**55.43**	**324**	P		**P**	**11 54 26.9**	**-0.5**
	comp=Z,9.1nm,0.6s,baz=24,slow=6.5,SNR=27								
FINES	**FINESS Array B**	**55.72**	**2**	P		**P**	**11 54 28.6**	**-0.8**
	comp=Z,3.3nm,0.7s,baz=23,slow=10,SNR=15								
SOKR	**Solikamsk**	**55.78**	**343**	*e*P		**P**	**11 54 27.7**	**-2.1**
SOKR				pmax		pmax			
	comp=Z,26nm,1.4s								
HHC	**Hu-ho-hao-te**	**57.63**	**297**	*e*P		**P**	**11 54 45.3**	**+2.0**
HHC				pP		pP	11 55 15.2	+1.5	
HHC				sP		sP	11 55 29.4	+1.7	
HHC				S		**S**	**12 02 30.9**	**-0.4**
HHC				pmax		pmax			
	comp=Z,19nm,0.8s								
HHC				pmax		pmax			
	comp=Z,54nm,6.8s								
SVE	**Sverdlovsk**	**57.90**	**340**	*e*P		**P**	**11 54 44.9**	**0.0**
SVE				pmax		pmax			
	comp=Z,25nm,1.0s								
ARU	**Arti**	**58.60**	**341**	*i* P		**P**	**11 54 49.2**	**-0.5**
ARU				pmax		pmax			
	comp=Z,21nm,1.0s								
ARU	**Arti**	**58.60**	**341**	*e*P		**P**	**11 54 49.1**	**-0.5**
	comp=Z,8.5nm,0.6s								
BRVK	**Borovoye**	**59.74**	**333**	⇓ *i*P		**P**	**11 54 56.5**	**-1.1**
BRVK				pmax		pmax			
	comp=Z,46nm,1.7s								
BRVK	**Borovoye**	**59.74**	**333**	*e*P		**P**	**11 54 56.8**	**-0.8**
	comp=Z,19nm,0.8s								
BVA0	**Borovoye Array**	**59.75**	**333**	*i* P		**P**	**11 54 56.1**	**-1.6**
BVA0				pmax		pmax			
	comp=Z,6.0nm,0.5s								
VOSK	**Vostochnaya**	**59.90**	**332**	P		**P**	**11 54 56.9**	**-1.9**
VOSK				pmax		pmax			
	comp=Z,4.0nm,0.6s								
KURK	**Kurchatov**	**59.98**	**326**	*e*P		**P**	**11 54 58.5**	**-0.8**
KURK				pmax		pmax			
	comp=Z,59nm,0.9s								
KURK	**Kurchatov**	**59.98**	**326**	*e*P		**P**	**11 54 58.5**	**-0.8**
	comp=Z,59nm,0.9s								
ZRNK	**Zerenda**	**60.10**	**333**	P		**P**	**11 54 58.5**	**-1.6**
ZRNK				pmax		pmax			
	comp=Z,7.0nm,0.5s								
OBN	**Obninsk**	**61.94**	**355**	*c i*P		**P**	**11 55 12.1**	**-0.3**
OBN				*e**PP		**pP**	**11 55 45.7**	**+2.6**
OBN				*e*			11 55 50.2		
OBN				*e*			11 57 30.8		
OBN				pmax		pmax			
	comp=Z,35nm,1.7s								
MK31	**Makanchi Array**	**62.59**	**322**	*i* P		**P**	**11 55 15.7**	**-1.2**
MK31				pmax		pmax			
	comp=Z,3.0nm,0.5s								
MKAR	**Makanchi Array**	**62.59**	**322**	P		**P**	**11 55 16.0**	**-0.9**
	comp=Z,6.7nm,0.5s,baz=40,slow=6.6,SNR=77								
GTA	**Gaotai**	**63.44**	**305**	*e*P		**P**	**11 55 23.0**	**+0.2**
GTA				pmax		pmax			
	comp=Z,13nm,0.8s								
WMQ	**Urumqi**	**63.68**	**316**	*e*P		**P**	**11 55 26.9**	**+2.7**
WMQ				pmax		pmax			
	comp=Z,10.0nm,0.7s								
WMQ				pmax		pmax			
	comp=Z,140nm,6.0s								
OTUK	**Ortayu**	**63.80**	**329**	P		**P**	**11 55 23.4**	**-1.5**
OTUK				pmax		pmax			
	comp=Z,9.0nm,0.5s								
AKTO	**Aktyubinsk**	**64.49**	**340**	P		**P**	**11 55 28.3**	**-1.0**
AKTO				pmax		pmax			
	comp=Z,18nm,1.1s								
LZH	**Lanzhou**	**64.80**	**300**	*e*P		**P**	**11 55 32.3**	**+0.5**
LZH				pmax		pmax			
	comp=Z,27nm,1.0s								
LZH				pmax		pmax			
	comp=Z,130nm,4.2s								
AB31	**Akbulak array**	**65.32**	**338**	*i* P		**P**	**11 55 33.9**	**-0.8**
AB31				pmax		pmax			
	comp=Z,6.0nm,0.6s								
ABKAR	**Akbulak array**	**65.32**	**338**	*e*P		**P**	**11 55 34.2**	**-0.6**
	comp=Z,14nm,0.8s								
VSR	**Storozhevoye**	**65.72**	**353**	*e*P		**P**	**11 55 36.1**	**-1.1**
VSR				pmax		pmax			
	comp=Z,20nm,0.9s								
AKASG	**Malin Array Be**	**66.51**	**360**	P		**P**	**11 55 41.2**	**-1.0**
	comp=Z,5.2nm,0.5s,baz=2.3,slow=6.4,SNR=29								
KIEV	**Kiev**	**66.52**	**360**	*i* P		**P**	**11 55 41.2**	**-1.1**
KIEV				pmax		pmax			
	comp=Z,19nm,1.5s								
PDGK	**Podgornoye**	**66.56**	**322**	P		**P**	**11 55 42.0**	**-0.7**
PDGK				pmax		pmax			
	comp=Z,8.0nm,0.6s								
ENH	**Enshi**	**67.58**	**293**	*e*P		**P**	**11 55 49.1**	**-0.3**
	comp=Z,7.9nm,0.6s								
STHS	**Stebnicka Huta**	**67.62**	**6**	*e*P		**P**	**11 55 50.1**	**+0.7**
STHS				pmax		pmax			
	comp=Z,3.0nm,0.7s								
STHS	**Stebnicka Huta**	**67.62**	**6**	*e*P		**P**	**11 55 50.1**	**+0.7**
AAK	**Ala-Archa**	**68.54**	**326**	*e*P		**P**	**11 55 55.4**	**0.0**
AAK				*e*			11 56 20.3		
AAK				pmax		pmax

TWK1	**Hengchun**	**0.71**	**268**	*e*P		**Pg**	**11 53 35.5**	**-0.8**
	baz=260								
TWK1				*e*S		**Sg**	**11 53 44.4**	**-1.5**
	baz=260								
TAW	**Tawu**	**0.74**	**302**	*e*P		**Pb**	**11 53 35.5**	**-1.0**
	baz=300								
TAW				*e*S		**Sb**	**11 53 45.0**	**-1.2**
	baz=300								
HEN	**Hengchun**	**0.78**	**273**	*e*S		**Sb**	**11 53 46.5**	**-0.8**
	baz=266								
EAST	**Anshuo**	**0.79**	**302**	P		**Pb**	**11 53 36.4**	**-1.1**
	baz=300								
EAST				S		**Sb**	**11 53 46.5**	**-1.2**
	baz=300								
ECL	**Taimali**	**0.85**	**317**	P		**Pb**	**11 53 37.1**	**-1.3**
	baz=318								
ECL				*e*S		**Sb**	**11 53 47.8**	**-1.7**
	baz=318								
TTN	**Taitung**	**0.87**	**333**	*e*S		**Sb**	**11 53 51.0**	**+0.8**
	baz=336								
TWG	**Pinlang**	**0.96**	**331**	*e*P		**Pb**	**11 53 39.8**	**-0.6**
	baz=333								
TWG				*e*S		**Sb**	**11 53 53.8**	**+0.9**
	baz=333								
SCZT	**Fangliau**	**0.97**	**294**	*e*P		**Pb**	**11 53 39.8**	**-0.7**
	baz=292								
CHKT	**Chengkung**	**1.14**	**350**	*e*P		**Pn**	**11 53 42.5**	**-0.8**
	baz=354								
CHKT				S		**Sb**	**11 53 56.7**	**-1.1**
	baz=354								
ELDTW	**Lidau**	**1.32**	**337**	*e*P		**Pn**	**11 53 45.9**	**+0.1**
	baz=339								
TWF1	**Yuli**	**1.40**	**350**	*e*P		**Pn**	**11 53 46.3**	**-0.6**
	baz=352								
TWF1				*e*S		**Sn**	**11 54 04.4**	**-0.4**
	baz=352								
STYT	**Tauyuan**	**1.41**	**328**	*e*P		**Pn**	**11 53 46.6**	**-0.3**
	baz=329								
STYT				*e*S		**Sn**	**11 54 04.8**	**-0.3**
	baz=329								
SGST	**Jiashian**	**1.44**	**321**	*e*P		**Pn**	**11 53 48.5**	**+1.1**
	baz=321								
SGST				*e*S		**Sn**	**11 54 05.8**	**0.0**
	baz=321								
YUS	**Yu-Shan**	**1.62**	**339**	*e*P		**Pn**	**11 53 51.3**	**+1.0**
	baz=341								
YUS				*e*S		**Sn**	**11 54 10.8**	**-0.1**
	baz=341								
TWK	**Hsinying**	**1.63**	**322**	*e*S		**Sn**	**11 54 10.8**	**+0.1**
	baz=323								
CHN4	**Tsaushan**	**1.65**	**327**	*e*P		**Pn**	**11 53 51.9**	**+1.7**
	baz=327								
CHN4				*e*S		**Sn**	**11 54 12.1**	**+1.2**
	baz=327								
ALS	**Alishan**	**1.69**	**335**	*e*P		**Pb**	**11 53 53.0**	**0.0**
	baz=336								
ALS				*e*S		**Sn**	**11 54 13.1**	**+0.7**
	baz=336								
WDT	**Danda**	**1.82**	**347**	*e*P		**Pn**	**11 53 53.5**	**+0.6**
	baz=349								
WDT				*e*S		**Sn**	**11 54 15.7**	**0.0**
	baz=349								
ESL	**Shilin**	**1.84**	**356**	*e*S		**Sn**	**11 54 15.3**	**-0.4**
	baz=358								
SMLT	**Sun Moon Lake**	**2.00**	**342**	*e*P		**Pn**	**11 53 57.5**	**+2.2**
	baz=343								
SMLT				*e*S		**Sn**	**11 54 20.9**	**+1.1**
	baz=343								
TYC	**Yuchr**	**2.03**	**341**	*e*P		**Pn**	**11 53 57.1**	**+1.6**
	baz=342								
TYC				*e*S		**Sn**	**11 54 20.5**	**0.0**
	baz=342								
WHF	**Hehuan Shan**	**2.18**	**353**	*e*P		**Pn**	**11 53 59.5**	**+1.4**
	baz=354								
TWT	**Tachien**	**2.30**	**351**	*e*P		**Pn**	**11 54 00.7**	**+1.3**
	baz=352								
TWT				*e*S		**Sn**	**11 54 28.3**	**+0.9**
	baz=352								
ENA	**Nanau**	**2.45**	**4**	*e*S		**Sn**	**11 54 31.1**	**+0.3**
	baz=5.0								
NNS	**Nan Shan**	**2.46**	**356**	*e*S		**Sn**	**11 54 32.4**	**+1.1**
	baz=357								
ENTT	**Nioudou**	**2.66**	**360**	*e*P		**Pn**	**11 54 06.2**	**+2.1**
	baz=1.0								
ENTT				*e*S		**Sn**	**11 54 36.9**	**+1.0**
	baz=1.0								
NSK	**Sanguang**	**2.70**	**356**	*e*P		**Pn**	**11 54 07.6**	**+2.8**
	baz=357								
NSK				*e*S		**Sn**	**11 54 38.2**	**+1.2**
	baz=357								
JYNG	**Yonagunijimaku**	**2.77**	**27**	P		**Pn**	**11 54 07.4**	**+1.7**
JYNG				*e*S		**Sn**	**11 54 38.6**	**-0.1**
YOJ	**Yonaguni jima**	**2.81**	**28**	P		**Pn**	**11 54 07.5**	**+1.3**
YOJ				*e*S		**Sn**	**11 54 40.2**	**+0.6**
IRIF	**Iriomote-Funau**	**3.08**	**40**	P		**Pn**	**11 54 10.8**	**+0.9**
IRIF				*e*S		**Sn**	**11 54 45.6**	**-0.6**
JKRS	**Kuro-shima**	**3.18**	**44**	P		**Pn**	**11 54 11.5**	**+0.2**
JKRS				*e*S		**Sn**	**11 54 48.2**	**-0.6**
JIJ	**Ishigaki jima**	**3.36**	**44**	P		**Pn**	**11 54 14.5**	**+0.7**
JIJ				S		**Sn**	**11 54 51.2**	**-1.9**
JISG	**Ishigakijimahi**	**3.62**	**44**	P		**Pn**	**11 54 18.6**	**+1.2**
JISG				S		**Sn**	**11 54 58.3**	**-1.3**
JTJ	**Tarama**	**3.92**	**47**	P		**Pn**	**11 54 22.8**	**+1.4**
JTJ				*e*S		**Sn**	**11 55 06.7**	**-0.2**

IDC 02 11:54:15.4±462.0, **47°28N**×**46°05E**, **h0**km, **Error ellipse: s-maj=196.8km s-min=144.2km az=177.0, Ukraine-Moldova-Southwestern Russia region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**8.50**	**64**	*i*		12 49 15.0	
	baz=252,slow=301,SNR=3.4						
I43RU	**DUBNA INFRASON**	**0.90**	**333**	*i*		13 03 10.0	
	baz=145,slow=310,SNR=1.1						
I26DE	**FREYUNG INFRAS**	**21.58**	**286**	*i*		14 05 10.0	
	baz=80,slow=300,SNR=0.4						

*ISCJB **02** 12:37:34.0±0.4, 6.84N±0.03×73.07W±0.04, h166km±4km, mb3.1/1, Error ellipse: s-maj=6.9km s-min=3.4km az=36.6*
*IDC **02** 12:37:35.6±0.8, 6.82N×73.01W, h166km, 13km, mb2.9/1, mb1 3.4/3, mb1mx3.0/26, mbtmp3.6/3, Error ellipse: s-maj=44.0km s-min=8.0km az=132.0*
*RSNC **02** 12:37:36.7±1.0, 6.79N×73.12W, h151km±4km, ML3.4*
*FUNV **02** 12:37:36.0, 6.85N×73.04W, h177km, MW3.5*

ISC 02 12:37:34.4±1.0, **6.84N**±0.03×**73.06W**±0.04, **h168**km±6km, **n41**, σ1**°47/67**, **2D**, **Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.22**	**291**	*i* P	**Pn**	**12 37 57.0**	**-0.2**
BTLC				*e*S	**Sn**	**12 38 12.9**	**-1.6**
GIRC	**Giron, Santand**	**0.27**	**331**	*i* P	**Pn**	**12 37 56.9**	**-0.3**
BARC	**Barichara**	**0.28**	**206**	*i* P	**Pn**	**12 37 56.8**	**-0.5**
BARC				*e*S	**Sn**	**12 38 12.1**	**-2.8**
BARC				*i*		12 38 13.3	
	comp=Z,508nm,0.7s						
PAMC	**Pamplona, Colo**	**0.61**	**36**	*e*P	**Pn**	**12 37 59.6**	**+0.7**
PAMC				*e*S	**Sn**	**12 38 17.0**	**-0.7**
BRRC	**Barranca, Sant**	**0.70**	**292**	⇓*i*P	**Pn**	**12 37 58.8**	**-0.1**
BRRC				*i*		12 37 59.1	
	comp=Z,704nm,0.2s						
BRRC				*e*S	**Sn**	**12 38 16.3**	**-1.3**
GRMC	**Gramalote, San**	**0.91**	**16**	*i* P	**Pn**	**12 38 02.7**	**+2.2**
GRMC				*e*S	**Sn**	**12 38 22.1**	**+1.6**
GRMC				*i*		12 38 24.3	
	comp=Z,301nm,0.3s						
CBRI	**Barrientos, No**	**0.91**	**17**	*i* P	**Pn**	**12 38 01.4**	**+1.0**
CBRI				*e*S	**Sn**	**12 38 20.3**	**-0.2**
RUSC	**La Rusia**	**0.94**	**181**	⇓*i*P	**Pn**	**12 38 00.7**	**-0.4**
RUSC				*e*S	**Sn**	**12 38 19.5**	**-2.0**
RUSC				*i*		12 38 21.4	
	comp=Z,271nm,0.8s						
CAPV	**Capacho**	**1.26**	**36**	*e*P	**Pn**	**12 38 04.3**	**+1.0**
CAPV				*e*S	**Sn**	**12 38 25.9**	**+0.2**
OCAC	**Ocana**	**1.41**	**350**	*e*P	**Pn**	**12 38 05.4**	**+0.7**
OCAC				*e*S	**Sn**	**12 38 28.0**	**-0.1**
OCAC				*i*		12 38 33.2	
	comp=Z,335nm,0.3s						
YOPC	**Yopal, Colombi**	**1.61**	**157**	*i* P	**Pn**	**12 38 07.3**	**+0.7**
YOPC				*e*S	**Sn**	**12 38 31.2**	**-0.3**
YOPC				*i*		12 38 35.1	
	comp=Z,108nm,0.5s						

NORC	**Norcasia**	**2.20**	**235**	*e*P		**Pn**	**12 38 12.6**	**-0.4**
NORC				*e*S		**Sn**	**12 38 39.7**	**-3.2**
CHIC	**Chingaza**	**2.30**	**197**	*e*P		**Pn**	**12 38 14.8**	**+0.3**
CHIC				*e*S		**Sn**	**12 38 44.1**	**-1.4**
CHIC				*i*		12 38 50.0		
	comp=Z,111nm,0.4s							
ROSC	**El Rosal**	**2.35**	**212**	P		**Pn**	**12 38 16.6**	**+1.6**
	comp=Z,18nm,0.3s,baz=109,slow=22,SNR=25							
ROSC				*e*S		**Sn**	**12 38 47.9**	**+1.3**
	comp=Z,66nm,0.3s,baz=175,slow=19,SNR=16							
ROSC	**El Rosal**	**2.35**	**212**	*e*P		**Pn**	**12 38 16.4**	**+1.3**
ROSC				*e*S		**Sn**	**12 38 45.7**	**-0.8**
ROSC				*i*		12 38 50.2		
	comp=Z,258nm,0.5s							
HELC	**Santa Helena**	**2.54**	**255**	*e*P		**Pn**	**12 38 16.7**	**-0.6**
HELC				*e*S		**Sn**	**12 38 49.2**	**-1.1**
HELC				*i*		12 38 55.9		
	comp=Z,132nm,0.4s							
VIGV	**El Vigia**	**2.60**	**40**	*e*P		**Pn**	**12 38 19.2**	**+1.5**
VIGV				*e*S		**Sn**	**12 38 50.3**	**-1.0**
SOCV	**Socops**	**2.61**	**57**	*e*P		**Pn**	**12 38 18.9**	**+1.1**
SOCV				*e*S		**Sn**	**12 38 50.4**	**-1.1**
VILC	**Villavicencio,**	**2.78**	**193**	*e*P		**Pn**	**12 38 19.8**	**-0.2**
VILC				*e*S		**Sn**	**12 38 53.4**	**-2.0**
VILC				*i*		12 39 01.9		
	comp=Z,59nm,0.3s							
GUYC	**Guyana, Colomb**	**2.82**	**235**	*e*P		**Pn**	**12 38 21.2**	**+0.4**
GUYC				*e*S		**Sn**	**12 38 55.2**	**-1.5**
GUYC				*i*		12 39 02.0		
	comp=Z,184nm,0.5s							
DBBC	**Dabeiba**	**3.13**	**273**	*e*P		**Pn**	**12 38 24.8**	**+0.5**
SDV	**Santo Domingo**	**3.15**	**50**	P		**Pn**	**12 38 26.3**	**+1.7**
	comp=Z,13nm,0.3s,baz=242,slow=2.9,SNR=53							
SDV				*e*S		**Sn**	**12 39 04.1**	**+0.5**
	comp=Z,23nm,0.3s,baz=64,slow=21,SNR=36							
SDV	**Santo Domingo**	**3.15**	**50**	*e*P		**Pn**	**12 38 25.9**	**+1.4**
SDV				*i*		12 39 05.4		
	comp=Z,52nm,0.3s							
SDV	**Santo Domingo**	**3.15**	**50**	*e*P		**Pn**	**12 38 25.6**	**+1.0**
SDV				*e*S		**Sn**	**12 39 02.0**	**-1.5**
TOLC	**Tolima**	**3.17**	**225**	*e*P		**Pn**	**12 38 25.6**	**+0.6**
ELOV	**Elorza**	**3.55**	**87**	*e*P		**Pn**	**12 38 30.4**	**+0.9**
ELOV				*e*S		**Sn**	**12 39 09.0**	**-3.4**
PRAC	**Prado**	**3.60**	**210**	*e*P		**Pn**	**12 38 30.2**	**+0.1**
PRAC				*e*S		**Sn**	**12 39 12.4**	**-1.1**
SJAC	**San Juan de Ar**	**3.65**	**194**	*e*P		**Pn**	**12 38 31.4**	**+0.5**
SJAC				*i*		12 39 25.5		
	comp=Z,118nm,0.3s							
SJCC	**San Jacinto, C**	**3.69**	**326**	*e*P		**Pn**	**12 38 30.6**	**-0.7**
SJCC				*i*		12 39 16.4		
	comp=Z,53nm,0.4s							
VIRV	**Villa del Rosa**	**3.70**	**10**	*e*P		**Pn**	**12 38 31.4**	**+0.1**
VIRV				*e*S		**Sn**	**12 39 13.2**	**-2.5**
QARV	**Quebrada Arrib**	**4.18**	**37**	*e*P		**Pn**	**12 38 37.2**	**-0.3**
QARV				*e*S		**Sn**	**12 39 22.8**	**-4.1**
CURV	**Curarigua**	**4.40**	**44**	*e*P		**Pn**	**12 38 40.8**	**+0.4**
DABV	**Dabajuro**	**4.71**	**30**	*e*P		**Pn**	**12 38 44.1**	**-0.3**
TEPV	**Terepaima**	**4.93**	**51**	*e*P		**Pn**	**12 38 47.8**	**+0.5**
SIQV	**Siquisique**	**4.96**	**40**	*e*P		**Pn**	**12 38 47.5**	**-0.3**
SIQV				*e*S		**Sn**	**12 39 40.6**	**-4.6**
BAUV	**El Baul**	**5.39**	**67**	*e*P		**Pn**	**12 38 52.6**	**-0.8**
MAPV	**Macapo**	**5.44**	**57**	*e*P		**Pn**	**12 38 54.0**	**+0.1**
MONV	**Montecano**	**5.92**	**31**	*e*P		**Pn**	**12 38 59.0**	**-0.7**
TURV	**Turiamo**	**6.28**	**55**	*e*P		**Pn**	**12 39 04.2**	**-0.9**
TXAR	**Lajitas Array**	**36.49**	**312**	P		**P**	**12 44 25.5**	**+1.7**
	comp=Z,0.3nm,0.6s,baz=125,slow=9.1,SNR=5.8							
WRA	**Warramunga Arr**	**150.40**	**241**	PKPbc		**PKPbc**	**12 57 08.1**	**+1.0**
	comp=Z,0.2nm,0.4s,baz=107,slow=2.7,SNR=10							

*DDA **02** 13:03:41.9, 39.06N×26.93E, h7km, Ml3.1*
*IASPEI **02** 13:03:41.8±0.8, 39.06N±0.02×26.90E±0.02, h9km±4km, Error ellipse: s-maj=3.3km s-min=2.8km az=82.5, GT5 selection from ISC bulletin GT5 identified by Bond¨ jr and McLaughlin (2009) selection criteria Bond¨ jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*THE **02** 13:03:42.3, 39.06N×26.90E, h6km±1km, ML2.7/5, Error ellipse: s-maj=2.2km s-min=0.8km az=254.0*
*ISCJB **02** 13:03:42.3±0.3, 39.08N±0.02×26.90E±0.02, h7km±3km, Error ellipse: s-maj=3.3km s-min=3.0km az=149.8*
*ISK **02** 13:03:42.0, 39.11N×26.89E, h5km, ML2.7*
*CSEM **02** 13:03:42.5±0.1, 39.07N×26.88E, h8km, ML2.7, Error ellipse: s-maj=3.0km s-min=2.9km az=60.0*

ISC 02 13:03:41.9±0.8, **39°05N**±0.02×**26°90E**±0.02, **h8**km±4km, **n84**, σ0**°63**/112, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	**Dikili**	**0.02**	**15**	PG	**Pg**	**13 03 43.4**	**-0.1**
DKL				SG	**Sg**	**13 03 44.7**	**+0.1**
DKL	**Dikili**	**0.02**	**15**	*i* Pg	**Pg**	**13 03 43.4**	**-0.1**
DKL				*i* Sg	**Sg**	**13 03 44.7**	**+0.1**
AYA	**Ayvalik**	**0.30**	**328**	*i* P	**Pg**	**13 03 48.2**	**+0.3**
AYVA	**Ayvalik**	**0.30**	**328**	P	**Pg**	**13 03 48.3**	**+0.3**
PRK	**Paraskevi**	**0.53**	**292**	P	**Pg**	**13 03 52.4**	**+0.3**
PRK				S	**Sb**	**13 04 00.5**	**-0.6**
PRK	**Paraskevi**	**0.53**	**292**	P	**Pg**	**13 03 52.4**	**+0.3**
PRK				S	**Sb**	**13 04 00.5**	**-0.6**
IZM	**Izmir**	**0.71**	**156**	*e*PG	**Pb**	**13 03 56.4**	**-0.2**
IZM				*e*SG	**Sn**	**13 04 08.7**	**-0.7**
IZM	**Izmir**	**0.71**	**156**	*e*Pg	**Pb**	**13 03 56.4**	**-0.2**
IZM				*e*Sg	**Sn**	**13 04 08.7**	**-0.7**
URLA	**Izmir**	**0.73**	**199**	*i* P	**Pb**	**13 03 56.5**	**-0.4**
URLA	**Izmir**	**0.73**	**199**	P	**Pb**	**13 03 56.5**	**-0.4**
AKS	**Akhisar**	**0.73**	**103**	*e*PG	**Pb**	**13 03 56.8**	**-0.2**
AKS	**Akhisar**	**0.73**	**103**	*e*Pg	**Pb**	**13 03 56.8**	**-0.2**
SIGR	**SIGRI**	**0.83**	**282**	*e*PG	**Pb**	**13 03 58.4**	**-0.1**
SIGR				*e*SG	**Sb**	**13 04 10.1**	**+0.3**
SIGR	**SIGRI**	**0.83**	**282**	P	**Pg**	**13 03 57.5**	**-0.4**
SIGR				S	**Sb**	**13 04 10.9**	**+1.1**
SIGR	**SIGRI**	**0.83**	**282**	P	**Pg**	**13 03 57.5**	**-0.4**
SIGR	**SIGRI**	**0.83**	**282**	*e*Pg	**Pb**	**13 03 58.4**	**-0.1**
SIGR				*e*Sg	**Sb**	**13 04 10.1**	**+0.3**
ZEY	**¨zmir**	**0.87**	**201**	*i* P	**Pb**	**13 03 58.9**	**-0.3**
BALY	**Balya**	**0.89**	**39**	*i* P	**Pg**	**13 03 58.8**	**-0.2**
BALY	**Balya**	**0.89**	**39**	P	**Pg**	**13 03 58.8**	**-0.2**
EZN	**Ezine**	**0.89**	**330**	*e*PG	**Pg**	**13 03 58.7**	**-0.4**
EZN				*e*SG	**Sg**	**13 04 10.7**	**-0.1**
EZN	**Ezine**	**0.89**	**330**	P	**Pb**	**13 03 59.4**	**-0.2**
EZN				S	**Sg**	**13 04 10.9**	**+0.2**
EZN	**Ezine**	**0.89**	**330**	*e*Pg	**Pg**	**13 03 58.7**	**-0.4**
EZN	**Ezine**	**0.89**	**330**	P	**Pb**	**13 03 59.4**	**-0.2**
EZN				*e*Sg	**Sg**	**13 04 10.7**	**-0.1**
CHOS	**Chios island**	**0.94**	**225**	*e*PG	**Pn**	**13 04 01.3**	**-0.1**
CHOS				*e*SG	**Sn**	**13 04 15.0**	**0.0**
CHOS	**Chios island**	**0.94**	**225**	P	**Pb**	**13 04 00.1**	**-0.3**
CHOS				S	**Sb**	**13 04 13.5**	**+0.5**
CHOS	**Chios island**	**0.94**	**225**	P	**Pb**	**13 04 00.1**	**-0.3**
CHOS	**Chios island**	**0.94**	**225**	*e*Pg	**Pn**	**13 04 01.3**	**-0.1**
CHOS				S	**Sb**	**13 04 13.5**	**+0.5**
CHOS				*e*Sg	**Sn**	**13 04 15.0**	**0.0**
BALB	**Balikesir**	**0.96**	**52**	*e*PG	**Pb**	**13 04 01.1**	**+0.3**
BALB				*e*SG	**Sb**	**13 04 14.0**	**+0.3**
BALB	**Balikesir**	**0.96**	**52**	*e*Pg	**Pb**	**13 04 01.1**	**+0.3**
BALB				*e*Sg	**Sb**	**13 04 14.0**	**+0.3**
DGB	**¨zmir**	**1.00**	**181**	*i* P	**Pg**	**13 04 01.0**	**-0.1**
BOZC	**Bozcaada**	**1.03**	**321**	*i* P	**Pb**	**13 04 01.9**	**-0.1**
GONE	**Gonen-Balikesi**	**1.17**	**31**	*e*PN	**Pg**	**13 04 03.3**	**-1.0**
GONE	**Gonen-Balikesi**	**1.17**	**31**	*e*Pn	**Pg**	**13 04 03.3**	**-1.0**
KNL	**Bal¨–kesir**	**1.31**	**21**	*i* P	**Pn**	**13 04 05.6**	**-0.9**
LPK	**Lapseki**	**1.32**	**355**	*e*PN	**Pn**	**13 04 06.5**	**-0.2**
LPK	**Lapseki**	**1.32**	**355**	*e*Pn	**Pn**	**13 04 06.5**	**-0.2**
SMG	**Samos**	**1.34**	**182**	P	**Pn**	**13 04 05.9**	**-1.0**
SMG				S	**Sn**	**13 04 25.6**	**+0.7**
SMG	**Samos**	**1.34**	**182**	P	**Pn**	**13 04 05.9**	**-1.0**
SMG				S	**Sn**	**13 04 25.6**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.35**	**144**	*e*PN	**Pg**	**13 04 08.8**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**1.35**	**144**	*e*Pn	**Pg**	**13 04 08.8**	**+0.9**
GADA	**Gvkgeada**	**1.38**	**326**	*e*PN	**Pn**	**13 04 07.3**	**-0.1**
GADA	**Gvkgeada**	**1.38**	**326**	P	**Pn**	**13 04 06.8**	**-0.6**
GADA				S	**Sb**	**13 04 25.1**	**-0.5**
GADA	**Gvkgeada**	**1.38**	**326**	P	**Pn**	**13 04 06.8**	**-0.6**
GADA	**Gvkgeada**	**1.38**	**326**	*e*Pn	**Pn**	**13 04 07.3**	**-0.1**
GADA				S	**Sb**	**13 04 25.1**	**-0.5**
KRBG	**Karabiga-Canak**	**1.38**	**13**	*e*PN	**Pb**	**13 04 07.9**	**0.0**
KRBG	**Karabiga-Canak**	**1.38**	**13**	*e*Pn	**Pb**	**13 04 07.9**	**0.0**
GELI	**Tayfur-Gelibol**	**1.39**	**346**	*e*PN	**Pn**	**13 04 07.4**	**-0.1**
GELI	**Tayfur-Gelibol**	**1.39**	**346**	*e*Pn	**Pn**	**13 04 07.4**	**-0.1**
KULA	**Kula-Manisa**	**1.48**	**111**	*e*PN	**Pg**	**13 04 10.0**	**-0.3**
KULA	**Kula-Manisa**	**1.48**	**111**	P	**Pn**	**13 04 08.8**	**-0.1**
KULA				S	**Sn**	**13 04 28.3**	**-0.1**
KULA	**Kula-Manisa**	**1.48**	**111**	P	**Pn**	**13 04 08.8**	**-0.1**
KULA	**Kula-Manisa**	**1.48**	**111**	*e*Pn	**Pg**	**13 04 10.0**	**-0.3**
KULA				S	**Sn**	**13 04 28.3**	**-0.1**
EDC	**Edincik**	**1.49**	**30**	*e*PN	**Pb**	**13 04 09.5**	**-0.4**
EDC	**Edincik**	**1.49**	**30**	*e*Pn	**Pb**	**13 04 09.5**	**-0.4**
LIA	**Limnos Island**	**1.57**	**303**	P	**Pn**	**13 04 09.8**	**-0.3**
LIA				S	**Sn**	**13 04 30.9**	**+0.3**
LIA	**Limnos Island**	**1.57**	**303**	P	**Pn**	**13 04 09.8**	**-0.3**
LIA				S	**Sn**	**13 04 30.9**	**+0.3**
MRMT	**Marmara Adasi**	**1.64**	**19**	*e*PN	**Pn**	**13 04 10.7**	**-0.4**
MRMT	**Marmara Adasi**	**1.64**	**19**	*e*Pn	**Pn**	**13 04 10.7**	**-0.4**
ERIK	**Erikli-Kesan**	**1.65**	**350**	*e*PN	**Pn**	**13 04 11.3**	**+0.2**
ERIK	**Erikli-Kesan**	**1.65**	**350**	*e*Pn	**Pn**	**13 04 11.3**	**+0.2**
RKY	**Sarkoy-Tekirda**	**1.65**	**7**	*e*PN	**Pn**	**13 04 11.6**	**+0.4**
RKY	**Sarkoy-Tekirda**	**1.65**	**7**	*e*Pn	**Pn**	**13 04 11.6**	**+0.4**
SART	**Tekirdag**	**1.65**	**7**	*i* P	**Pb**	**13 04 12.5**	**-0.1**
SART	**Tekirdag**	**1.65**	**7**	P	**Pb**	**13 04 12.5**	**-0.1**
KCTX	**Karacabey (Bur**	**1.66**	**42**	*e*PN	**Pb**	**13 04 11.9**	**-0.8**
KCTX	**Karacabey (Bur**	**1.66**	**42**	*e*Pn	**Pb**	**13 04 11.9**	**-0.8**
ENEZ	**Enez**	**1.78**	**341**	*e*PN	**Pn**	**13 04 13.4**	**+0.5**
ENEZ	**Enez**	**1.78**	**341**	P	**Pn**	**13 04 13.1**	**+0.2**
ENEZ				S	**Sn**	**13 04 36.2**	**+0.5**
ENEZ	**Enez**	**1.78**	**341**	P	**Pn**	**13 04 13.1**	**+0.2**
ENEZ	**Enez**	**1.78**	**341**	*e*Pn	**Pn**	**13 04 13.4**	**+0.5**
ENEZ				S	**Sn**	**13 04 36.2**	**+0.5**
KESN	**Edirne-Kesan**	**1.78**	**355**	*i* P	**Pb**	**13 04 14.7**	**-0.3**
KESN	**Edirne-Kesan**	**1.78**	**355**	P	**Pb**	**13 04 14.7**	**-0.3**
ALN	**Alexandroupoli**	**1.96**	**341**	*e*PN	**Pn**	**13 04 16.5**	**+1.1**
ALN	**Alexandroupoli**	**1.96**	**341**	*e*Pn	**Pn**	**13 04 16.5**	**+1.1**
MDNY	**Mudanya-Bursa**	**2.02**	**49**	*e*PN	**Pb**	**13 04 18.1**	**-0.8**
MDNY	**Mudanya-Bursa**	**2.02**	**49**	*e*Pn	**Pb**	**13 04 18.1**	**-0.8**
TVSB	**Tavsanli**	**2.03**	**78**	*e*PN	**Pb**	**13 04 18.6**	**-0.5**
TVSB	**Tavsanli**	**2.03**	**78**	*e*Pn	**Pb**	**13 04 18.6**	**-0.5**
ARMT	**Armutlu**	**2.14**	**44**	*e*PN	**Pb**	**13 04 19.7**	**-1.2**
ARMT	**Armutlu**	**2.14**	**44**	*e*Pn	**Pb**	**13 04 19.7**	**-1.2**
CTKS	**Kestanelik-??a**	**2.51**	**29**	*e*PN	**Pn**	**13 04 24.9**	**+1.9**
CTKS	**Kestanelik-??a**	**2.51**	**29**	*e*Pn	**Pn**	**13 04 24.9**	**+1.9**
ISK	**Istanbul-Kandi**	**2.61**	**39**	*e*PN	**Pn**	**13 04 26.4**	**+2.1**
ISK	**Istanbul-Kandi**	**2.61**	**39**	*e*Pn	**Pn**	**13 04 26.4**	**+2.1**

JMA 02 13:14:55.4±0.3, **37.08N**×**144.46E**, **h50**km, **M3.5**, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.88**	**277**	P	**Pn**	13 15 40.0	+1.2
JFK				S	**Sn**	13 16 13.2	+1.0
ONAJ	**Iwakimizuishiy**	**2.93**	**272**	P	**Pn**	13 15 40.8	+1.3
ONAJ				S	**Sn**	13 16 14.7	+1.2
JHO	**Hitachi**	**3.16**	**263**	P	**Pn**	13 15 43.9	+1.3
JMK	**Ichinoseki**	**3.17**	**307**	P	**Pn**	13 15 44.3	+1.6
JMK				S	**Sn**	13 16 21.0	+1.7
JFT	**Otama**	**3.32**	**279**	P	**Pn**	13 15 46.9	+2.1
JFT				S	**Sn**	13 16 24.5	+1.5
JRY	**Ryogami san**	**4.60**	**258**	P	**Pn**	13 16 03.6	+1.2
JRY				S	**Sn**	13 16 54.9	+0.3
JOT	**Ohata**	**5.05**	**329**	P	**Pn**	13 16 09.9	+1.4
JKB	**Kayabe**	**5.48**	**332**	P	**Pn**	13 16 15.7	+1.2
JCH	**Churui**	**5.59**	**352**	P	**Pn**	13 16 14.8	-1.1
JCH				S	**Sn**	13 17 14.9	-3.9
JTKR	**Abashiri--Toko**	**6.90**	**357**	P	**Pn**	13 16 32.3	-1.5

*DHMR **02** 13:15:24.

baz=317,slow=75,SNR=293
H11N3 WAKE ISLAND Hy 28.48 124 T T 13 55 29.2
baz=317,slow=75,SNR=215
H11S1 WAKE ISLAND Hy 29.23 126 T T 13 56 05.8
baz=318,slow=76,SNR=68
H11S3 WAKE ISLAND Hy 29.23 126 T T 13 56 25.8
baz=318,slow=76,SNR=79
H11S2 WAKE ISLAND Hy 29.24 126 T T 13 56 25.5
baz=318,slow=76,SNR=59
ZALV Zalesovo Beam 41.37 311 P **P** **13 26 40.5 -0.1**
0.4nm,0.4s,baz=76,slow=6.1,SNR=2.6
ILAR Eielson Array 48.07 33 P **P** **13 27 34.2 +0.3**
0.3nm,0.6s,baz=268,slow=6.2,SNR=4.3
WRA Warramunga Arr 58.49 189 P **P** **13 28 49.6 -1.1**
0.3nm,0.5s,baz=6.2,slow=7.2,SNR=12
WRA pP **pP** **13 29 05.2 +0.2**
0.6nm,0.8s,baz=5.8,slow=6.8,SNR=2.0
ASAR Alice Springs 62.22 188 P **P** **13 29 15.8 -0.4**
0.3nm,0.8s,baz=14,slow=9.5,SNR=3.1
PDAR Pinedale Array 76.35 46 P **P** **13 30 43.7 -0.1**
0.4nm,0.6s,baz=320,slow=4.1,SNR=3.3
PDAR pP **pP** **13 30 59.8 +1.3**
0.3nm,0.5s,baz=303,slow=5.3,SNR=1.9
TXAR Lajitas Array 88.89 53 P **P** **13 31 48.5 -0.4**
0.1nm,0.6s,baz=292,slow=2.4,SNR=2.7

*ISCJB **02** 13:21:33.8±1.0,36°.82N±0°.04×143°.18E±0°.08, h29km, mb3.6/4, MS3.3/1, Error ellipse: s-maj=9.8km s-min=5.6km az=7.7*
*JMA **02** 13:21:34.6±0.2,36°.86N×143°.21E, h47km, M3.4*
*IDC **02** 13:21:45.8±4.0,36°.24N×142°.48E, h80km±37km, mb3.2/4, mb1 3.4/6, mb1mx3.2/41, mbtmp3.5/6, MS3.3/1, Ms1 3.3/1, ms1mx2.2/20, Error ellipse: s-maj=44.7km s-min=23.1km az=93.0*
ISC 02 13:21:35.9±1.4, 36°.82N±0°.05×143°.2E±0°.1, h29km, n21, σ1♀52/25, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.93**	**287**	P	**Pn**	**13 22 06.0**	**-0.8**
JFK				*e*S	**Sn**	**13 22 28.7**	**-1.3**
ONAJ	**Iwakimizuishiy**	**1.93**	**279**	P	**Pn**	**13 22 05.8**	**-1.0**
JHO	**Hitachi**	**2.11**	**265**	P	**Pn**	**13 22 08.6**	**-0.7**
JFT	**Otama**	**2.38**	**288**	P	**Pn**	**13 22 13.1**	**+0.1**
JOU	**Okura**	**2.53**	**308**	P	**Pn**	**13 22 14.9**	**-0.1**
JMK	**Ichinoseki**	**2.64**	**325**	P	**Pn**	**13 22 15.4**	**-1.1**
JMK				*e*S	**Sn**	**13 22 45.6**	**-1.9**
BSO1	**Boso 1**	**2.81**	**220**	*e*S	**Sn**	**13 22 51.9**	**+1.0**
JAG	**Ashikaga**	**3.02**	**264**	P	**Pn**	**13 22 21.9**	**+0.1**
JOM	**Ohasama**	**3.04**	**331**	P	**Pn**	**13 22 20.8**	**-1.3**
JOM				*e*S	**Sn**	**13 22 55.9**	**-1.6**
JYK	**Kaneyama**	**3.07**	**314**	P	**Pn**	**13 22 22.0**	**-0.4**
JRG	**Rokugo**	**3.27**	**323**	P	**Pn**	**13 22 24.9**	**-0.3**
JRY	**Ryogami san**	**3.54**	**258**	P	**Pn**	**13 22 28.8**	**-0.2**
JRY				*e*S	**Sn**	**13 23 08.6**	**-1.3**
JOD2	**Odawara 2**	**3.66**	**246**	P	**Pn**	**13 22 30.3**	**-0.3**
JOD2				*e*S	**Sn**	**13 23 11.0**	**-1.8**
JANG	**Nango**	**3.79**	**340**	P	**Pn**	**13 22 31.5**	**-0.8**
MJAR	**Matsushiro Arr**	**4.01**	**268**	P	**Pn**	**13 22 36.2**	**+0.8**
	1.5nm,0.3s,baz=99,slow=12,SNR=10.0						
JHJ	**Hachijo jima 2**	**4.62**	**218**	P	**Pn**	**13 22 42.9**	**-0.9**
	5.1nm,0.3s,baz=28,slow=22,SNR=6.5						
JHJ				S	**Sn**	**13 23 32.8**	**-3.7**
	23nm,0.3s,baz=82,slow=21,SNR=5.9						
SONM	**Songino Array**	**29.08**	**304**	P	**P**	**13 27 37.7**	**+3.8**
	0.4nm,0.4s,baz=112,slow=11,SNR=1.8						
ZALV	**Zalesovo Beam**	**43.11**	**313**	LR	LR	13 50 28.2	
	comp=Z,38nm,18.4s,baz=250,slow=40						
ILAR	**Eielson Array**	**48.92**	**32**	P	P	13 30 29.3	+10
	0.3nm,0.8s,baz=257,slow=5.8,SNR=5.2						
WRA	**Warramunga Arr**	**57.06**	**190**	P	**P**	**13 31 18.8**	**-0.6**
	0.7nm,0.8s,baz=8.1,slow=7.0,SNR=6.3						
ASAR	**Alice Springs**	**60.79**	**190**	P	**P**	**13 31 44.8**	**-0.4**
	0.8nm,1.1s,baz=14,slow=7.8,SNR=4.7						

*ISCJB **02** 13:26:51.9±1.3,41°.56N±0°.05×36°.59E±0°.05, h5km±7km, Error ellipse: s-maj=9.1km s-min=5.1km az=20.5*
*CSEM **02** 13:26:51.7±0.3,41°.57N×36°.60E, h2km, MD2.9, Error ellipse: s-maj=6.6km s-min=3.9km az=13.0*
*ISK **02** 13:26:51.6,41°.53N×36°.56E, h5km, ML2.8*
*DDA **02** 13:26:52.7,41°.46N×36°.60E, h7km, Md2.9*
ISC 02 13:26:51.7±1.3, 41°.55N±0°.04×36°.64E±0°.03, h3km±13km, n26, σ0♀34/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.39**	**241**	*i* P	**Pg**	**13 26 59.7**	**+0.6**
SAMS				*i* S	**Sg**	**13 27 04.5**	**+0.4**
SAMS	**Samsun-Alacam**	**0.39**	**241**	P	**Pg**	**13 26 59.7**	**+0.6**
SAMS				S	**Sg**	**13 27 04.5**	**+0.4**
KVT	**Kavak**	**0.65**	**224**	*e*PG	**Pg**	**13 27 03.9**	**-0.1**
KVT				*e*SG	**Sg**	**13 27 12.1**	**-0.3**
KVT	**Kavak**	**0.65**	**224**	*e*Pg	**Pg**	**13 27 03.9**	**-0.1**
KVT				*e*Sg	**Sg**	**13 27 12.1**	**-0.3**
HAVZ	**Havza**	**0.84**	**236**	*i* P	**Pb**	**13 27 08.4**	**-0.5**
HAVZ				*i* S	**Sg**	**13 27 18.8**	**+0.2**
HAVZ	**Havza**	**0.84**	**236**	P	**Pb**	**13 27 08.4**	**-0.5**
HAVZ				S	**Sg**	**13 27 18.8**	**+0.2**
ERBA	**Erbaa**	**0.87**	**174**	*i* P	**Pg**	**13 27 08.3**	**-0.1**
ERBA				*i* S	**Sg**	**13 27 19.6**	**-0.1**
ERBA	**Erbaa**	**0.87**	**174**	P	**Pg**	**13 27 08.3**	**-0.1**
ERBA				S	**Sg**	**13 27 19.6**	**-0.1**
ORDU	**Ordu-Boztepe**	**1.08**	**121**	*i* P	**Pb**	**13 27 13.0**	**+0.1**
ORDU				*i* S	**Sb**	**13 27 28.0**	**+0.6**
ORDU	**Ordu-Boztepe**	**1.08**	**121**	P	**Pb**	**13 27 13.0**	**+0.1**
ORDU				S	**Sb**	**13 27 28.0**	**+0.6**
SNOP	**Sinop**	**1.17**	**294**	*e*PN	**Pg**	**13 27 13.8**	**-0.2**
SNOP				*e*SN	**Sg**	**13 27 29.0**	**-0.1**
SNOP	**Sinop**	**1.17**	**294**	*e*Pn	**Pg**	**13 27 13.8**	**-0.2**
SNOP				*e*Sn	**Sg**	**13 27 29.0**	**-0.1**
TOKT	**Tokat**	**1.23**	**183**	*e*PN	**Pg**	**13 27 14.5**	**-0.7**
TOKT	**Tokat**	**1.23**	**183**	*e*Pn	**Pg**	**13 27 14.5**	**-0.7**
BYBT	**Boyabat**	**1.41**	**267**	*e*PN	**Pn**	**13 27 18.1**	**-0.1**
BYBT	**Boyabat**	**1.41**	**267**	*e*Pn	**Pn**	**13 27 18.1**	**-0.1**
CTAK	**Corum_Osmancik**	**1.66**	**238**	*i* P	**Pn**	**13 27 22.1**	**+0.3**
CTAK				*i* S	**Sb**	**13 27 44.5**	**+0.2**
CTAK	**Corum_Osmancik**	**1.66**	**238**	P	**Pn**	**13 27 22.1**	**+0.3**
CTAK				S	**Sb**	**13 27 44.5**	**+0.2**
ESPY	**Espiye-Giresun**	**1.70**	**111**	*e*PN	**Pb**	**13 27 23.2**	**-0.3**
ESPY	**Espiye-Giresun**	**1.70**	**111**	*e*Pn	**Pb**	**13 27 23.2**	**-0.3**
SUSE	**Susehri**	**1.79**	**138**	*i* P	**Pb**	**13 27 25.1**	**-0.1**
SUSE				*i* S	**Sg**	**13 27 39.1**	**-0.1**
SUSE	**Susehri**	**1.79**	**138**	P	**Pb**	**13 27 25.1**	**-0.1**
SUSE				S	**Sg**	**13 27 49.1**	**-0.1**
BZK	**Bozkurt**	**2.01**	**283**	*e*PN	**Pn**	**13 27 26.5**	**0.0**
BZK	**Bozkurt**	**2.01**	**283**	*e*Pn	**Pn**	**13 27 26.5**	**0.0**
CORM	**Corum**	**2.05**	**229**	*e*PN	**Pn**	**13 27 27.4**	**+0.3**
CORM	**Corum**	**2.05**	**229**	*e*Pn	**Pn**	**13 27 27.4**	**+0.3**

*ARO **02** 13:27:33.9, 12°.76×4°.4E±1°.6, h15km±99km, ML3.9*
*CSEM **02** 13:27:34.9, 12°.11N×44°.25E, h16km, ML4.1*
*DHMR **02** 13:27:34.9±1.1, 12°.11N×44°.25E, h16km±9km, ML4.1*
ISC 02 13:27:30.1±3.4, 11°.84N±0°.08×44°.27E±0°.07, h0km±27km, n18, σ1♀31/29, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.97**	**279**	*e*P	**Pb**	**13 27 49.2**	**-0.4**
MCAD	**Moucha**	**1.04**	**264**	*e*P	**Pb**	**13 27 50.9**	**0.0**
ATA	**Atar**	**1.11**	**250**	*e*P	**Pb**	**13 27 52.4**	**+0.3**
ADEN	**Aden**	**1.17**	**37**	*i* P	**Pn**	**13 27 52.5**	**-1.1**
ADEN				*i* S	**Sb**	**13 28 06.9**	**-1.9**
ADEN				AML	AML	13 28 16.3	
	comp=N,4μm,0.5s						
ADEN	**Aden**	**1.17**	**37**	*i* P	**Pn**	**13 27 52.5**	**-1.1**
ADEN				*i* S	**Sb**	**13 28 06.9**	**-1.9**
	comp=N,2μm,0.5s						
TDD	**Tadjoura Ara**	**1.33**	**269**	*e*P	**Pn**	**13 27 55.5**	**-0.4**
ATD	**Arta Tunnel**	**1.42**	**258**	*e*P	**Pn**	**13 27 57.5**	**+0.3**
ATD				*e*S	**Sn**	**13 28 16.2**	**-0.5**
SGH	**Sud-Ghoubbet**	**1.65**	**256**	*e*P	**Pn**	**13 28 01.0**	**+0.6**
GBR	**Grand-Bara**	**1.90**	**249**	*e*P	**Pn**	**13 28 05.1**	**+1.4**
MAOD	**Malaho**	**2.01**	**277**	*e*P	**Pn**	**13 28 05.9**	**+0.6**
UDYN	**Al 'Udayn**	**2.14**	**352**	*i* P	**Pn**	**13 28 08.0**	**+0.8**
UDYN				*i* S	**Sn**	**13 28 32.7**	**-1.8**
UDYN	**Al 'Udayn**	**2.14**	**352**	*i* P	**Pn**	**13 28 08.0**	**+0.8**
UDYN				*i* S	**Sn**	**13 28 32.7**	**-1.8**
BDHA	**Al Bayda'**	**2.47**	**31**	*i* P	**Pn**	**13 28 13.9**	**+2.1**
BDHA				*i* S	**Sn**	**13 28 44.1**	**+1.1**
BDHA	**Al Bayda'**	**2.47**	**31**	*i* P	**Pn**	**13 28 13.9**	**+2.1**
BDHA				*i* S	**Sn**	**13 28 44.1**	**+1.1**
DHBB	**Dhamar BB**	**2.72**	**3**	*i* P	**Pn**	**13 28 17.2**	**+1.9**
DHBB				*i* S	**Sn**	**13 28 49.4**	**+0.3**
DHBB				AML	AML	13 28 58.9	
	comp=N,3μm,0.7s						
DHBB	**Dhamar BB**	**2.72**	**3**	*i* P	**Pn**	**13 28 17.2**	**+1.9**
DHBB				*i* S	**Sn**	**13 28 49.4**	**+0.3**
	comp=N,1μm,0.7s						
HAJJ	**Hajjah**	**3.89**	**350**	*i* P	**Pn**	**13 28 32.4**	**+1.0**
HAJJ				*i* S	**Sn**	**13 29 18.9**	**+1.0**
HAJJ	**Hajjah**	**3.89**	**350**	*i* P	**Pn**	**13 28 32.4**	**+1.0**
HAJJ				*i* S	**Sn**	**13 29 18.9**	**+1.0**

*NNC **02** 13:41:04.1±3.9, 39°.56N×73°.66E, h0km, mb3.1, mpv2.8, Error ellipse: s-maj=26.1km s-min=20.0km az=165.0*
*KRNET **02** 13:41:05.8±0.1, 39°.59N×73°.55E, mb2.8*
*SOME **02** 13:41:15.1, 39°.90N×73°.23E, h20km*
ISC 02 13:41:05.8±1.9, 39°.53N±0°.09×73°.62E±0°.06, h1km±14km, n19, σ1♀67/31, 18C-3D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRK	**Karamyk**	**1.41**	**269**	⇑*i* P	**Pn**	**13 41 31.9**	**-1.0**
DRK	baz=266			⇑*i* S	**Sg**	**13 41 51.3**	**+0.3**
	baz=266						
ARSB	**Arslanbob**	**1.86**	**345**	⇑*i* P	**Pb**	**13 41 39.7**	**-1.0**
ARSB	baz=346			⇑*i* S	**Sb**	**13 42 04.0**	**-0.5**
	baz=346						
BTK	**Batken**	**2.22**	**285**	⇑*i* P	**Pb**	**13 41 45.2**	**-1.6**
BTK	baz=284			⇑*i* S	**Sb**	**13 42 13.6**	**-1.2**
	baz=284						
ARLS	**Aral**	**2.39**	**13**	⇑*i* P	**Pb**	**13 41 48.5**	**-1.3**
ARLS	baz=14			⇑*i* S	**Sb**	**13 42 19.0**	**-0.9**
	baz=14						
ARK	**Arkit**	**2.59**	**332**	⇑*e*P	**Pn**	**13 41 50.2**	**+1.2**
ARK	baz=332			⇑*i* S	**Sb**	**13 42 22.1**	**-3.5**
	baz=332						
UCH	**Uchtor**	**2.78**	**14**	⇑*e*P	**Pb**	**13 41 55.9**	**-0.7**
UCH	baz=15			⇑*i* S	**Sb**	**13 42 31.2**	**-0.2**
	baz=15						
MNAS	**Manas**	**3.08**	**344**	⇑*i* P	**Pb**	**13 42 00.7**	**-0.7**
MNAS	baz=345			⇑*i* S	**Sb**	**13 42 37.1**	**-2.4**
	baz=345						
MNAS	**Manas**	**3.08**	**344**	⇓Pg	**Pb**	**13 42 00.8**	**-0.6**
MNAS	3.2nm,0.8s			⇑Lg	Lg	13 42 40.5	
	5.0nm,0.4s						
AAK	**Ala-Archa**	**3.18**	**12**	⇑Pg	**Pb**	**13 42 00.3**	**-2.8**
AAK	2.5nm,0.5s			⇑Lg	Lg	13 42 45.0	
	6.4nm,0.6s						
MRKS	**Merke**	**3.23**	**355**	*e*P	**Pg**	**13 42 07.7**	**-0.1**
MRKS	5.2nm,0.2s			*e*S	**Sb**	**13 42 45.2**	**+1.3**
	7.5nm,0.4s						
TKM2	**Tokmak 2**	**3.71**	**23**	⇓Lg	Lg	13 43 01.4	
	3.8nm,0.6s						
IUG	**Iuzhnay**	**3.77**	**315**	*e*P	**Pb**	**13 42 11.8**	**-1.5**
IUG	21nm,0.5s			*e*S	**Sn**	**13 42 52.9**	**+2.5**
	13nm,0.4s						
KST	**Kastek**	**3.93**	**26**	*e*P	**Pg**	**13 42 22.0**	**+0.8**
KST	1.7nm,0.7s			*e*S	**Sg**	**13 43 09.8**	**-2.4**
	7.3nm,0.8s						
DGS	**Degeres**	**4.05**	**23**	*e*P	**Pg**	**13 42 25.6**	**+2.2**
DGS	3.4nm,0.6s			*e*S	**Sg**	**13 43 15.4**	**-0.6**
	11nm,1.0s						
KK31	**Karatay Array**	**4.27**	**328**	⇓Pg	**Pb**	**13 42 22.5**	**+0.8**
KK31	0.5nm,0.3s,baz=151,slow=29,SNR=5.1			⇑Lg	Lg	13 43 18.1	
	1.5nm,0.4s,baz=142,slow=30,SNR=3.6						
BRLS	**Borolday**	**4.41**	**319**	*e*P	**Pb**	**13 42 26.5**	**+2.4**
BRLS	1.8nm,0.6s			*e*S	**Sb**	**13 43 17.4**	**-0.3**
	6.7nm,0.8s						
MDOK	**Medeo**	**4.46**	**34**	*e*P	**Pg**	**13 42 33.7**	**+2.5**
MDOK	2.0nm,0.3s			*e*S	**Sg**	**13 43 29.4**	**+0.4**
	9.4nm,1.1s						
CHKK	**Chushkaly**	**5.02**	**29**	*e*P	**Pg**	**13 42 43.2**	**+1.2**
CHKK	1.2nm,1.1s			*e*S	**Sg**	**13 43 45.8**	**-1.4**
	5.0nm,0.9s						
UZB	**Uzynbulak**	**5.44**	**47**	*e*P	Pg	13 42 59.9	+10
UZB	5.9nm,0.9s			*e*S	Sg	13 44 15.0	+14
	7.6nm,0.9s						

JMA 02 13:56:54.8±0.1, 37°.19N×141°.38E, h48km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.44**	**294**	P	Pn	13 57 05.2	-0.1
JFK				S	Sn	13 57 12.3	-0.4
ONAJ	**Iwakimizuishiy**	**0.47**	**259**	P	Pn	13 57 05.7	0.0
ONAJ				S	Sn	13 57 13.1	-0.3
JMM	**Marumori**	**0.82**	**326**	P	Pn	13 57 10.0	-0.1
JMM				S	Sn	13 57 21.0	-0.2
JHO	**Hitachi**	**0.87**	**229**	P	Pn	13 57 10.3	-0.4
JHO				S	Sn	13 57 21.6	-0.8
JFT	**Otama**	**0.89**	**292**	P	Pn	13 57 12.0	+0.9
JFT				S	Sn	13 57 24.1	+1.1
JIO	**Ouri**	**1.26**	**359**	P	Pn	13 57 15.9	-0.1
JIO				S	Sn	13 57 30.6	-1.2
MAT	**Matsushiro**	**2.62**	**257**	P	Pn	13 57 36.7	+2.0
MAT				*e*S	Sn	13 58 08.5	+3.1

*ISCJB **02** 13:58:43.6±1.1, 1°.47S±0°.09×14°.6W±0°.2, h11km, mb3.9/4, MS3.3/6, Error ellipse: s-maj=28.0km s-min=6.6km az=23.1*
*IDC **02** 13:58:43.2±2.0, 1°.35S×15°.02W, h0km, mb3.9/4, mb1 4.0/5, mb1mx3.6/39, mbtmp4.0/5, ML3.6/1, MS3.3/7, Ms1 3.3/7, ms1mx3.0/26, Error ellipse: s-maj=71.4km s-min=23.9km az=103.0*
ISC 02 13:58:45.5±1.3, 1°.4S±0°.1×14°.8W±0°.2, h11km, n16, σ0♀96/12, mb4.0/4, MS3.3/6, North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10N2	**ASCENSION HYDR**	**6.39**	**178**	Pn	**Pn**	**14 00 19.6**	**+0.2**
H10N2	baz=354,slow=12,SNR=18			T	T	14 06 45.8	
	baz=355,slow=72,SNR=21						
H10N3	**ASCENSION HYDR**	**6.40**	**178**	Pn	**Pn**	**14 00 19.8**	**+0.3**
H10N3	baz=354,slow=12,SNR=20			T	T	14 06 44.7	
	baz=355,slow=72,SNR=50						
H10N1	**ASCENSION HYDR**	**6.41**	**178**	Pn	**Pn**	**14 00 19.8**	**+0.2**
H10N1	baz=354,slow=12,SNR=28			T	T	14 07 07.2	
	baz=355,slow=72,SNR=20						
H10S1	**ASCENSION HYDR**	**7.49**	**179**	Pn	**Pn**	**14 00 33.8**	**-0.7**
H10S1				T	T	14 07 59.2	
	baz=356,slow=74,SNR=12						
H10S3	**ASCENSION HYDR**	**7.50**	**179**	Pn	**Pn**	**14 00 34.0**	**-0.7**
H10S3				T	T	14 08 05.8	
	baz=356,slow=74,SNR=13						
H10S2	**ASCENSION HYDR**	**7.51**	**179**	Pn	**Pn**	**14 00 34.1**	**-0.7**
H10S2				T	T	14 08 13.9	
	baz=356,slow=74,SNR=11						
DBIC	**Dimbokro**	**12.73**	**51**	Pn	**Pn**	**14 01 46.6**	**0.0**
	0.3nm,0.3s,baz=224,slow=15,SNR=4.7						
DBIC				Sn	**Sn**	**14 04 07.5**	**-0.9**
	0.5nm,0.3s,baz=144,slow=18,SNR=3.1						
DBIC				LR	LR	14 05 52.5	
	comp=Z,130nm,20.1s,baz=202,slow=33						
TORD	**Torodi Ar. Bea**	**21.81**	**48**	P	**P**	**14 03 38.6**	**+0.8**
	11nm,1.0s,baz=236,slow=11,SNR=16						
TORD				LR	LR	14 11 26.6	
	comp=Z,124nm,18.6s,baz=205,slow=35						
KEST	**Kesra**	**43.26**	**29**	LR	LR	14 24 30.2	
	comp=Z,51nm,20.5s,baz=286,slow=36						
CPUP	**Villa Florida**	**47.82**	**235**	LR	LR	14 26 27.1	
	comp=Z,19nm,18.5s,baz=102,slow=35						
GERES	**GERESS Array B**	**55.78**	**22**	P	**P**	**14 08 21.3**	**-1.4**
	0.4nm,0.6s,baz=224,slow=2.7,SNR=2.8						
BRTR	**Keskin Array B**	**60.24**	**42**	P	**P**	**14 08 56.0**	**+1.9**
	1.3nm,0.9s,baz=255,slow=4.7,SNR=4.7						
PLCA	**Paso Flores**	**63.71**	**225**	LR	LR	14 32 43.9	
	comp=Z,23nm,21.4s,baz=168,slow=32						
AKASG	**Malin Array Be**	**63.98**	**29**	LR	LR	14 39 31.1	
	comp=Z,30nm,18.1s,baz=80,slow=38						
NOA	**NORSAR Array B**	**65.41**	**14**	LR	LR	14 38 25.3	
	comp=Z,10nm,20.4s,baz=25,slow=36						
FINES	**FINESS Array B**	**70.00**	**20**	P	**P**	**14 09 56.6**	**-0.2**
	0.6nm,0.5s,baz=212,slow=4.9,SNR=6.3						

IDC 02 14:03:27.2±1.3, 15°.40N×146°.14E, h0km, mb3.6/6, mb1 3.8/6, mb1mx3.5/34, mbtmp3.6/6, Error ellipse: s-maj=48.4km s-min=21.4km az=92.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H11S3	**WAKE ISLAND Hy**	**19.90**	**78**	T	T	14 29 23.0	
	baz=251,slow=74						
H11S1	**WAKE ISLAND Hy**	**19.91**	**78**	T	T	14 29 35.1	
	baz=251						
H11S2	**WAKE ISLAND Hy**	**19.91**	**78**	T	T	14 29 08.7	
	baz=251,slow=74						
H11N1	**WAKE ISLAND Hy**	**20.24**	**75**	T	T	14 29 32.6	
	baz=263,slow=75,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**20.25**	**75**	T	T	14 29 32.6	
	baz=263,slow=75,SNR=4.4						
H11N3	**WAKE ISLAND Hy**	**20.26**	**75**	T	T	14 29 33.3	
	baz=263,slow=75,SNR=5.3						
WRA	**Warramunga Arr**	**36.98**	**199**	P	P	14 10 38.3	-0.3
	0.7nm,1.1s,baz=13,slow=8.8,SNR=4.2						
ASAR	**Alice Springs**	**40.62**	**197**	P	P	14 11 09.2	+0.1
	0.2nm,0.9s,baz=17,slow=7.2,SNR=3.2						
SONM	**Songino Array**	**46.00**	**323**	P	P	14 11 53.3	+0.9
	0.4nm,0.5s,baz=138,slow=6.9,SNR=3.2						
ZALV	**Zalesovo Beam**	**60.89**	**324**	P	P	14 13 40.9	-0.8
	0.7nm,0.4s,baz=101,slow=7.5,SNR=3.1						
MKAR	**Makanchi Array**	**61.06**	**315**	P	P	14 13 42.8	-0.2
	1.0nm,0.4s,baz=92,slow=8.4,SNR=21						
ILAR	**Eielson Array**	**66.42**	**25**	P	P	14 14 18.0	0.0
	0.3nm,0.4s,baz=241,slow=6.0,SNR=7.3						

*ISCJB **02** 14:15:05.5±1.2, 11°.86N±0°.09×44°.23E±0°.08, h4km, Error ellipse: s-maj=16.6km s-min=4.7km az=140.6*
*DHMR **02** 14:15:08.9±0.8, 12°.06N×44°.27E, h13km±8km, ML3.2*
*ARO **02** 14:15:08.3, 12°.N×33°×4°.4E±1°.0, h15km±99km, ML3.1*
ISC 02 14:15:03.5±1.6, 11°.8N±0°.1×44°.30E±0°.10, h4km, n8, σ0♀52/12, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**1.00**	**280**	*e*P	**Pb**	**14 15 22.9**	**-0.5**
ATA	**Atar**	**1.13**	**252**	*e*P	**Pn**	**14 15 26.8**	**+0.7**
ADEN	**Aden**	**1.17**	**35**	*i* P	**Pn**	**14 15 27.1**	**+0.4**
ADEN				*i* S	**Sg**	**14 15 41.6**	**+0.3**
ADEN				AML	AML	14 15 48.0	
	comp=N,669nm,0.7s						
ATD	**Arta Tunnel**	**1.45**	**259**	*e*P	**Pg**	**14 15 31.3**	**-0.1**
ATD				*e*S	**Sn**	**14 15 49.8**	**-0.3**
SGH	**Sud-Ghoubbet**	**1.68**	**258**	*e*P	**Pb**	**14 15 34.4**	**-0.6**
GBR	**Grand-Bara**	**1.91**	**250**	*e*P	**Pb**	**14 15 38.8**	**-0.3**
UDYN	**Al 'Udayn**	**2.17**	**351**	*i* P	**Pb**	**14 15 43.1**	**-0.5**
UDYN				*i* S	**Sn**	**14 16 08.7**	**+0.5**
UDYN				AML	AML	14 16 15.1	
	comp=E,243nm,0.5s						
BDHA	**Al Bayda'**	**2.48**	**30**	*i* P	**Pb**	**14 15 48.3**	**-0.7**
BDHA				*i* S	**Sb**	**14 16 19.8**	**-0.2**

*LDG **02** 14:43:04.3±0.2, 41°.81N×7°.51E, h10km, Md3.7/4, Ml3.9/24, Error ellipse: s-maj=5.1km s-min=3.7km az=179.0*
*IDC **02** 14:43:05.1±0.8, 41°.97N×7°.65E, h0km, mb3.9/8, mb1 3.9/16, mb1mx3.7/49, mbtmp3.8/16, ML3.9/8, MS2.6/5, Ms1 2.6/5, ms1mx2.4/53, Error ellipse: s-maj=23.0km s-min=14.6km az=111.0*
*CSEM **02** 14:43:05.3±0.2, 42°.00N×7°.66E, h10km, ML3.9/15, Error ellipse: s-maj=4.8km s-min=3.0km az=11.0*
*GEN **02** 14:43:06.9, 42°.10N×7°.66E, h3km, ML3.8*
*ROM **02** 14:43:07.2±0.1, 42°.03N×7°.64E, h40km, Ml3.6/30, Error ellipse: s-maj=3.5km s-min=1.1km az=135.0*
ISC 02 14:43:05.9±2.9, 42°.00N±0°.04×7°.62E±0°.03, h11km±19km, n200, σ2♀04/253, mb3.8/8, Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGF	**Pioggiola**	**1.16**	**62**	*e*Pn	**Pb**	**14 43 26.8**	**-1.2**
PGF				*e*Sn	**Sb**	**14 43 41.3**	**-1.8**
PGF	**Pioggiola**	**1.16**	**62**	*e*Pn	**Pb**	**14 43 26.8**	**-1.2**
PGF				*e*Sn	**Sb**	**14 43 41.3**	**-1.8**
LMR	**La Mourre**	**1.56**	**329**	*e*Pn	**Pn**	**14 43 32.4**	**-1.2**
	SNR=1.0						
LMR				*e*Sn	**Sn**	**14 43 50.0**	**-3.8**
LMR	**La Mourre**	**1.56**	**329**	*e*Pn	**Pn**	**14 43 32.4**	**-1.2**
	SNR=1.0						
FRF	**La Foret Royal**	**1.71**	**336**	*e*Pn	**Pn**	**14 43 34.5**	**-1.2**
FRF				*e*Sn	**Sn**	**14 43 54.1**	**-3.4**
FRF	**La Foret Royal**	**1.71**	**336**	*e*Pn	**Pn**	**14 43 34.5**	**-1.2**
FRF				*e*Sn	**Sn**	**14 43 54.1**	**-3.4**
NEGI	**Seborga**	**1.84**	**2**	Pn	**Pn**	**14 43 35.8**	**-1.7**
NEGI				Sn	**Sn**	**14 43 56.1**	**-4.8**
	660nm,0.3s						
NEGI	**Seborga**	**1.84**	**2**	P	**Pn**	**14 43 36.0**	**-1.5**
SBF	**S

PLMA	**Palmaria, Port**	**2.62**	**38**	Pn		**Pn**	**14 43 48.2**	**+0.1**
PLMA	**Palmaria, Port**	**2.62**	**38**	Pn		**Pn**	**14 43 48.2**	**+0.1**
PCP	**Piancastagn**	**2.62**	**15**	Pn		**Pn**	**14 43 47.0**	**-1.3**
	191nm,0.3s							
PCP	**Piancastagn**	**2.62**	**15**	Pn		**Pn**	**14 43 47.0**	**-1.3**
	191nm,0.3s							
TRIF	**Trifonti**	**2.67**	**64**	Pn		**Pn**	**14 43 48.1**	**-0.7**
	236nm,0.4s							
TRIF	**Trifonti**	**2.67**	**64**	Pn		**Pn**	**14 43 48.1**	**-0.7**
	236nm,0.4s							
MSSA	**Maissana**	**2.70**	**30**	Pn		**Pn**	**14 43 48.5**	**-0.8**
MSSA	**Maissana**	**2.70**	**30**	Pn		**Pn**	**14 43 48.5**	**-0.8**
MBDF	**Montbardon**	**2.79**	**348**	*e*Pn		**Pn**	**14 43 51.3**	**+0.7**
	SNR=1.0							
MBDF					*e*Sn	**Sn**	**14 44 23.5**	**-0.9**
	250nm,0.5s,SNR=1.0							
MBDF	**Montbardon**	**2.79**	**348**	*e*Pn		**Pn**	**14 43 51.3**	**+0.7**
	SNR=1.0							
MBDF					*e*Sn	**Sn**	**14 44 23.5**	**-0.9**
	125nm,0.5s,SNR=1.0							
VSL	**Villasalto**	**2.84**	**151**	Pn		**Pn**	**14 43 50.0**	**-1.2**
VSL				Sn		**Sn**	**14 44 20.9**	**-4.5**
	324nm,0.3s							
VSL	**Villasalto**	**2.84**	**151**	Pn		**Pn**	**14 43 50.0**	**-1.2**
VSL				Sn		**Sn**	**14 44 20.9**	**-4.5**
	324nm,0.3s							
MAIM	**Mastiano**	**2.84**	**47**	Pn		**Pn**	**14 43 50.6**	**-0.6**
	85nm,0.6s							
MAIM	**Mastiano**	**2.84**	**47**	P		**Pn**	**14 43 50.6**	**-0.6**
BHB	**Bricherasio**	**2.85**	**355**	Pn		**Pn**	**14 43 50.3**	**-1.0**
	121nm,0.2s							
BHB	**Bricherasio**	**2.85**	**355**	P		**Pn**	**14 43 50.4**	**-0.9**
FROS	**Frosini**	**2.88**	**64**	Pn		**Pn**	**14 43 51.0**	**-0.7**
	221nm,0.6s							
FROS	**Frosini**	**2.88**	**64**	Pn		**Pn**	**14 43 51.0**	**-0.7**
	221nm,0.6s							
CODM	**Codolo**	**2.89**	**34**	P		**Pn**	**14 43 51.1**	**-0.8**
ROTM	**Rocchetta Tana**	**2.89**	**10**	P		**Pn**	**14 43 52.3**	**+0.4**
CGL	**Cagliari Serpe**	**2.93**	**154**	Pn		**Pn**	**14 43 51.5**	**-1.0**
	172nm,0.2s							
CGL	**Cagliari Serpe**	**2.93**	**154**	Pn		**Pn**	**14 43 51.5**	**-1.0**
	172nm,0.2s							
ARCI	**Arcidosso**	**2.98**	**72**	Pn		**Pn**	**14 43 52.1**	**-1.1**
	106nm,0.3s							
ARCI	**Arcidosso**	**2.98**	**72**	Pn		**Pn**	**14 43 52.1**	**-1.1**
	106nm,0.3s							
SARO	**Sassorosso**	**2.98**	**42**	P		**Pn**	**14 43 52.9**	**-0.3**
BDI	**Bagni Di Lucca**	**3.00**	**46**	Pn		**Pn**	**14 43 52.8**	**-0.6**
	60nm,0.5s							
BDI	**Bagni Di Lucca**	**3.00**	**46**	Pn		**Pn**	**14 43 52.8**	**-0.6**
	60nm,0.5s							
GRAM	**Graiana**	**3.06**	**35**	P		**Pn**	**14 43 54.4**	**+0.1**
BOB	**Bobbio (Coli)**	**3.07**	**25**	Pn		**Pn**	**14 43 54.9**	**+0.6**
BOB	**Bobbio (Coli)**	**3.07**	**25**	Pn		**Pn**	**14 43 54.9**	**+0.6**
POPM	**Popiglio**	**3.08**	**47**	P		**Pn**	**14 43 54.3**	**-0.1**
MCIV	**Monte Civitell**	**3.10**	**74**	Pn		**Pn**	**14 43 54.1**	**-0.8**
	69nm,0.3s							
MCIV	**Monte Civitell**	**3.10**	**74**	Pn		**Pn**	**14 43 54.1**	**-0.8**
	69nm,0.3s							
RSP	**Reno Superiore**	**3.15**	**355**	Pn		**Pn**	**14 43 54.9**	**-0.7**
	138nm,0.5s							
RSP	**Reno Superiore**	**3.15**	**355**	P		**Pn**	**14 43 54.9**	**-0.7**
ORIF	**Oris-en-Rattie**	**3.18**	**337**	*e*Pn		**Pn**	**14 43 56.4**	**+0.5**
	SNR=1.0							
ORIF					*e*Sn	**Sn**	**14 44 30.6**	**-3.2**
	112nm,0.4s,SNR=1.0							
ORIF	**Oris-en-Rattie**	**3.18**	**337**	*e*Pn		**Pn**	**14 43 56.4**	**+0.5**
	SNR=1.0							
ORIF					*e*Sn	**Sn**	**14 44 30.6**	**-3.2**
	56nm,0.4s,SNR=1.0							
PTF	**Prato**	**3.20**	**51**	Pn		**Pn**	**14 43 55.5**	**-0.6**
PTF	**Prato**	**3.20**	**51**	Pn		**Pn**	**14 43 55.5**	**-0.6**
LASF	**Ste Croix**	**3.45**	**308**	*e*Pn		**Pn**	**14 43 58.4**	**-1.1**
	SNR=1.0							
LASF					*e*Sn	**Sn**	**14 44 35.5**	**-4.9**
	123nm,0.3s,SNR=1.0							
LASF	**Ste Croix**	**3.45**	**308**	*e*Pn		**Pn**	**14 43 58.4**	**-1.1**
	SNR=1.0							
MGAB	**Montegabbione**	**3.45**	**73**	Pn		**Pn**	**14 43 58.8**	**-0.7**
	73nm,0.5s							
MGAB	**Montegabbione**	**3.45**	**73**	Pn		**Pn**	**14 43 58.8**	**-0.7**
	73nm,0.3s							
LSD	**Lago del Serru**	**3.47**	**354**	P		**Pn**	**14 44 00.2**	**+0.1**
LSD				S		**Sn**	**14 44 38.0**	**-3.3**
LPG	**La Plagne**	**3.55**	**350**	*e*Pn		**Pn**	**14 44 03.5**	**+2.3**
	SNR=1.0							
LPG					*e*Sn	**Sn**	**14 44 43.8**	**+0.6**
	104nm,0.5s,SNR=1.0							
LPG	**La Plagne**	**3.55**	**350**	*e*Pn		**Pn**	**14 44 03.5**	**+2.3**
	SNR=1.0							
LPG					*e*Sn	**Sn**	**14 44 43.8**	**+0.6**
	52nm,0.5s,SNR=1.0							
VIVF	**Saint-Julien-l**	**3.57**	**324**	*e*Pn		**Pn**	**14 44 00.5**	**-0.7**
	SNR=1.0							
VIVF					*e*Sn	**Sn**	**14 44 40.6**	**-2.7**
	51nm,0.3s,SNR=1.0							
VIVF	**Saint-Julien-l**	**3.57**	**324**	*e*Pn		**Pn**	**14 44 00.5**	**-0.7**
	SNR=1.0							
VIVF					*e*Sn	**Sn**	**14 44 40.6**	**-2.7**
	26nm,0.3s,SNR=1.0							
LPL	**La Plagne**	**3.57**	**350**	*e*Pn		**Pn**	**14 44 03.4**	**+2.0**
	SNR=1.0							
LPL					*e*Sn	**Sn**	**14 44 43.7**	**0.0**
	98nm,0.4s,SNR=1.0							
LPL	**La Plagne**	**3.57**	**350**	*e*Pn		**Pn**	**14 44 03.4**	**+2.0**
	SNR=1.0							
LPL					*e*Sn	**Sn**	**14 44 43.7**	**0.0**
	49nm,0.4s,SNR=1.0							
MRGE	**Morge**	**3.79**	**354**	Pn		**Pn**	**14 44 05.2**	**+0.9**
	180nm,0.7s							
MRGE	**Morge**	**3.79**	**354**	Pn		**Pn**	**14 44 05.2**	**+0.9**
	180nm,0.7s							
MDI	**Monti di Nese**	**4.06**	**21**	Pn		**Pn**	**14 44 08.6**	**+0.5**
MDI	**Monti di Nese**	**4.06**	**21**	Pn		**Pn**	**14 44 08.6**	**+0.5**
DIX	**Grande Dixence**	**4.08**	**358**	Pn		**Pn**	**14 44 08.8**	**+0.4**
	75nm,0.4s							
DIX	**Grande Dixence**	**4.08**	**358**	Pn		**Pn**	**14 44 08.8**	**+0.4**
	75nm,0.4s							
SALO	**Salr**	**4.18**	**29**	Pn		**Pn**	**14 44 11.0**	**+1.4**
	124nm,0.6s							
SALO	**Salr**	**4.18**	**29**	Pn		**Pn**	**14 44 11.0**	**+1.4**
	124nm,0.6s							
MTLF	**Montolieu**	**4.20**	**290**	*e*Pn		**Pn**	**14 44 07.0**	**-2.8**
	SNR=1.0							
MTLF					*e*Sn	**Sn**	**14 44 55.0**	**-3.9**
	177nm,0.4s							
MAGA	**Magasa**	**4.35**	**29**	Pn		**Pn**	**14 44 12.5**	**+0.4**
	210nm,0.7s							
MAGA	**Magasa**	**4.35**	**29**	Pn		**Pn**	**14 44 12.5**	**+0.4**
	210nm,0.7s							
VVLD	**Villa Vallelon**	**4.48**	**90**	Pn		**Pn**	**14 44 13.6**	**-0.2**
	51nm,0.8s							
VVLD	**Villa Vallelon**	**4.48**	**90**	Pn		**Pn**	**14 44 13.6**	**-0.2**
	51nm,0.8s							
MABI	**Malga Bissina**	**4.56**	**26**	Pn		**Pn**	**14 44 15.5**	**+0.6**
	24nm,0.3s							
MABI	**Malga Bissina**	**4.56**	**26**	Pn		**Pn**	**14 44 15.5**	**+0.6**
	24nm,0.3s							
POFI	**Posta Fibreno**	**4.56**	**92**	Pn		**Pn**	**14 44 13.5**	**-1.4**
	30nm,0.9s							
POFI	**Posta Fibreno**	**4.56**	**92**	Pn		**Pn**	**14 44 13.5**	**-1.4**
	30nm,0.9s							
GIMEL	**St. Georges /**	**4.63**	**348**	Pn		**Pn**	**14 44 15.8**	**-0.1**
	44nm,0.9s							
GIMEL	**St. Georges /**	**4.63**	**348**	Pn		**Pn**	**14 44 15.8**	**-0.1**
	44nm,0.9s							
CABF	**La Chapelle**	**4.74**	**347**	*e*Pn		**Pn**	**14 44 17.1**	**-0.2**
	SNR=1.0							
CABF					*e*Sn	**Sn**	**14 45 07.8**	**-4.4**
	28nm,0.4s							
CABF	**La Chapelle**	**4.74**	**347**	*e*Pn		**Pn**	**14 44 17.1**	**-0.2**
	SNR=1.0							
CERA	**Filignano**	**4.80**	**93**	Pn		**Pn**	**14 44 17.1**	**-1.1**
	38nm,0.5s							
CERA	**Filignano**	**4.80**	**93**	Pn		**Pn**	**14 44 17.1**	**-1.1**
	38nm,0.5s							
CAF	**Calviac**	**4.99**	**308**	*e*Pn		**Pn**	**14 44 20.5**	**-0.2**
	SNR=1.0							
CAF					*e*Sn	**Sn**	**14 45 13.2**	**-5.1**
	73nm,0.4s,SNR=1.0							
CAF	**Calviac**	**4.99**	**308**	*e*Pn		**Pn**	**14 44 20.5**	**-0.2**
	SNR=1.0							
DAVOX	**Davos/Dischmat**	**5.04**	**18**	Pn		**Pn**	**14 44 23.3**	**+1.7**
	3.2nm,0.3s,baz=198,slow=3.9,SNR=21							
DAVOX					Sn	**Sn**	**14 45 18.2**	**-1.7**
	4.8nm,0.3s,baz=337,slow=18,SNR=6.6							
SMF	**Signal de Mont**	**5.37**	**331**	*e*Pn		**Pn**	**14 44 25.5**	**-0.5**
	SNR=1.0							
SMF					*e*Sn	**Sn**	**14 45 22.6**	**-5.2**
	18nm,0.2s,SNR=1.0							
SMF	**Signal de Mont**	**5.37**	**331**	*e*Pn		**Pn**	**14 44 25.5**	**-0.5**
	SNR=1.0							
EPF	**Esparros**	**5.47**	**283**	*e*Pn		**Pn**	**14 44 26.5**	**-0.9**
	SNR=1.0							
EPF					*e*Sn	**Sn**	**14 45 26.1**	**-4.3**
	90nm,0.4s,SNR=1.0							
EPF	**Esparros**	**5.47**	**283**	*e*Pn		**Pn**	**14 44 26.5**	**-0.9**
	SNR=1.0							
FETA	**Feichten**	**5.49**	**23**	*i* Pn		**Pn**	**14 44 31.5**	**+3.8**
	4.1nm,0.3s,SNR=14							
FETA					*i* Sn	**Sn**	**14 45 30.0**	**-0.9**
	4.3nm,0.3s							
FETA	**Feichten**	**5.49**	**23**	Sn		**Sn**	**14 45 30.0**	**-0.9**
	4.3nm,0.3s							
RJF	**Les Rejaudoux**	**5.52**	**309**	*e*Pn		**Pn**	**14 44 28.0**	**0.0**
	SNR=1.0							
RJF					*e*Sn	Sn	14 45 23.2	-8.2
	17nm,0.5s,SNR=1.0							
RJF	**Les Rejaudoux**	**5.52**	**309**	*e*Pn		**Pn**	**14 44 28.0**	**0.0**
	SNR=1.0							
DAVA	**Damuels**	**5.52**	**16**	*i* Pn		**Pn**	**14 44 30.3**	**+2.1**
	3.3nm,0.3s							
DAVA					*i* Sn	**Sn**	**14 45 29.8**	**-1.9**
	37nm,0.5s							
AVF	**Avril sur Loir**	**5.68**	**329**	*e*Pn		**Pn**	**14 44 30.1**	**0.0**
	SNR=1.0							
AVF					*e*Sn	**Sn**	**14 45 30.4**	**-4.8**
	31nm,0.6s							
AVF	**Avril sur Loir**	**5.68**	**329**	*e*Pn		**Pn**	**14 44 30.1**	**0.0**
	SNR=1.0							
BGF	**Bois d'Agland**	**5.70**	**325**	*e*Pn		**Pn**	**14 44 30.6**	**+0.2**
	SNR=1.0							
BGF	**Bois d'Agland**	**5.70**	**325**	*e*Pn		**Pn**	**14 44 30.6**	**+0.2**
	SNR=1.0							
TCF	**Toulx Ste Croi**	**5.79**	**320**	*e*Pn		**Pn**	**14 44 31.3**	**-0.3**
	SNR=1.0							
TCF	**Toulx Ste Croi**	**5.79**	**320**	*e*Pn		**Pn**	**14 44 31.3**	**-0.3**
	SNR=1.0							
LFF	**La Frestale**	**5.80**	**303**	*e*Pn		**Pn**	**14 44 32.6**	**+0.8**
	SNR=1.0							
LFF					*e*Sn	**Sn**	**14 45 32.8**	**-5.5**
	18nm,0.3s,SNR=1.0							
LFF	**La Frestale**	**5.80**	**303**	*e*Pn		**Pn**	**14 44 32.6**	**+0.8**
	SNR=1.0							
HINF	**Hinteralfeld**	**5.84**	**355**	*e*Pn		**Pn**	**14 44 32.1**	**-0.3**
	SNR=1.0							
HINF					*e*Sn	**Sn**	**14 45 34.6**	**-4.7**
	13nm,0.3s,SNR=1.0							
HINF	**Hinteralfeld**	**5.84**	**355**	*e*Pn		**Pn**	**14 44 32.1**	**-0.3**
	SNR=1.0							
SSF	**Saint Saulge**	**5.85**	**331**	*e*Pn		**Pn**	**14 44 32.0**	**-0.5**
	SNR=1.0							
SSF					*e*Sn	**Sn**	**14 45 35.5**	**-4.0**
	12nm,0.4s,SNR=1.0							
SSF	**Saint Saulge**	**5.85**	**331**	*e*Pn		**Pn**	**14 44 32.0**	**-0.5**
	SNR=1.0							
MOTA	**Moosalm**	**5.89**	**24**	*i* Pn		**Pn**	**14 44 36.2**	**+3.0**
	6.6nm,0.3s,SNR=12							
MOTA					*i* Sn	**Sn**	**14 45 40.4**	**-0.3**
	11nm,0.4s							
ABTA	**Abfaltersbach**	**5.90**	**35**	*e*Pg		**Pn**	**14 44 36.9**	**+3.6**
	5.6nm,0.3s							
ABTA					*e*Sn	**Sn**	**14 45 38.4**	**-2.4**
	20nm,0.5s							
LOR	**Lormes**	**5.91**	**334**	*e*Pn		**Pn**	**14 44 33.0**	**-0.3**
	baz=158,SNR=1.0							
LOR					*e*Sn	**Sn**	**14 45 35.3**	**-5.7**
	16nm,0.3s,SNR=1.0							
LOR	**Lormes**	**5.91**	**334**	*e*Pn		**Pn**	**14 44 33.0**	**-0.3**
	SNR=1.0							
RETA	**Reutte**	**5.92**	**21**	*i* Sn		**Sn**	**14 45 39.3**	**-2.1**
	9.0nm,0.3s							
RETA	**Reutte**	**5.92**	**21**	Sn		**Sn**	**14 45 39.3**	**-2.1**
	9.0nm,0.3s							
WTTA	**Wattenberg**	**5.99**	**27**	*i* Pn		**Pn**	**14 44 38.1**	**+3.5**
	1.8nm,0.2s							
WTTA					*e*Sn	**Sn**	**14 45 40.1**	**-3.2**
	12nm,0.3s							
WATA	**Walderalm**	**6.03**	**27**	*i* Pn		**Pn**	**14 44 38.0**	**+2.9**
	3.4nm,0.3s,SNR=5.7							
HAU	**Haudompre**	**6.07**	**352**	*e*Pn		**Pn**	**14 44 34.7**	**-0.8**
	SNR=1.0							
HAU					*e*Sn	**Sn**	**14 45 40.2**	**-4.8**
	42nm,0.3s,SNR=1.0							
HAU	**Haudompre**	**6.07**	**352**	*e*Pn		**Pn**	**14 44 34.7**	**-0.8**
	SNR=1.0							
ETSF	**Etsaut**	**6.12**	**281**	*e*Pn		**Pn**	**14 44 36.6**	**+0.4**
	SNR=1.0							
ETSF					*e*Sn	**Sn**	**14 45 45.3**	**-0.9**
	62nm,0.4s							
ETSF	**Etsaut**	**6.12**	**281**	*e*Pn		**Pn**	**14 44 36.6**	**+0.4**
	SNR=1.0							
ETSF					*e*Sn	**Sn**	**14 45 45.3**	**-0.9**
	31nm,0.4s							
MYKA	**Terra Mystica**	**6.33**	**41**	*i* Pn		**Pn**	**14 44 42.5**	**+3.4**
	0.4nm,0.1s							
MYKA					*e*Sn	**Sn**	**14 45 48.7**	**-2.7**
	4.2nm,0.5s							
KEST	**Kesra**	**6.41**	**167**	Pn		**Pn**	**14 44 40.9**	**+0.7**
	0.9nm,0.3s,baz=284,slow=22,SNR=16							
KEST					Sn	**Sn**	**14 45 49.1**	**-4.3**
	1.4nm,0.3s,baz=142,slow=21,SNR=6.2							
CDF	**Champ du Feu**	**6.41**	**358**	*e*Pn		**Pn**	**14 44 40.0**	**-0.3**
	SNR=1.0							
CDF					*e*Sn	**Sn**	**14 45 50.4**	**-3.1**
	8.6nm,0.3s,SNR=1.0							
CDF	**Champ du Feu**	**6.41**	**358**	*e*Pn		**Pn**	**14 44 40.0**	**-0.3**
	SNR=1.0							
CDF					*e*Sn	**Sn**	**14 45 50.4**	**-3.1**
	4.3nm,0.3s,SNR=1.0							
SFTF	**Sexfontaines**	**6.46**	**344**	*e*Pn		**Pn**	**14 44 40.5**	**-0.4**
	baz=146							
SFTF	**Sexfontaines**	**6.46**	**344**	*e*Pn		**Pn**	**14 44 40.5**	**-0.4**
SJPF	**Ste Jean**	**6.62**	**283**	*e*Pn		**Pn**	**14 44 42.6**	**-0.5**
	SNR=1.0							
SJPF					*e*Sn	**Sn**	**14 45 55.0**	**-3.6**
	31nm,0.4s							
SJPF	**Ste Jean**	**6.62**	**283**	*e*Pn		**Pn**	**14 44 42.6**	**-0.5**
	SNR=1.0							
PAGF	**Fort de Pagny**	**6.69**	**349**	*e*Pn		**Pn**	**14 44 43.7**	**-0.3**
	baz=162							
PAGF	**Fort de Pagny**	**6.69**	**349**	*e*Pn		**Pn**	**14 44 43.7**	**-0.3**
MEZF	**Maizieres J'vi**	**6.75**	**345**	*e*Pn		**Pn**	**14 44 45.6**	**+0.8**
	baz=153,SNR=1.0							
MEZF					*e*Sn	**Sn**	**14 45 55.8**	**-5.7**
	16nm,0.3s,SNR=1.0							
MEZF	**Maizieres J'vi**	**6.75**	**345**	*e*Pn		**Pn**	**14 44 45.6**	**+0.8**
	SNR=1.0							
VAE	**Valguarnera**	**6.92**	**129**	Pn		**Pn**	**14 44 47.2**	**0.0**
	1.3nm,0.3s,baz=193,slow=6.3,SNR=3.1							
SOKA	**Soboth**	**7.08**	**46**	*i* Pn		**Pn**	**14 44 51.6**	**+2.2**
	1.3nm,0.5s							
MFF	**Saint Martin d**	**7.22**	**312**	*e*Pn		**Pn**	**14 44 51.6**	**+0.3**
	SNR=1.0							
MFF	**Saint Martin d**	**7.22**	**312**	*e*Pn		**Pn**	**14 44 51.6**	**+0.3**
	SNR=1.0							
MOA	**Molln**	**7.51**	**37**	*i* Sn		**Sn**	**14 46 16.9**	**-3.5**
	4.5nm,0.5s							
MOA	**Molln**	**7.51**	**37**	Sn		**Sn**	**14 46 16.9**	**-3.5**
	4.5nm,0.5s							
ARSA	**Arzberg**	**7.70**	**44**	*i* Pn		**Pn**	**14 45 00.2**	**+2.3**
	1.1nm,0.3s							
GERES	**GERESS Array B**	**8.07**	**30**	Pn		**Pn**	**14 45 02.9**	**-0.2**
	1.3nm,0.3s,baz=208,slow=13,SNR=17							
GERES					Sn	Sn	14 46 25.9	-8.3
	1.5nm,0.3s,baz=220,slow=23,SNR=7.7							
GERES					LR	LR	14 48 39.9	
	comp=Z,53nm,18.7s,baz=292,slow=41							
KHC	**Kasperske Hory**	**8.26**	**28**	*e*PN		**Pn**	**14 45 06.0**	**+0.4**
KHC					*e*SN	**Sn**	**14 46 32.4**	**-6.5**
KHC	**Kasperske Hory**	**8.26**	**28**	Pn		**Pn**	**14 45 06.0**	**+0.4**
CONA	**Conrad Observa**	**8.32**	**42**	*i* Pn		**Pn**	**14 45 07.9**	**+1.4**
	0.6nm,0.3s							
CONA					*i* Sn	**Sn**	**14 46 36.5**	**-3.9**
CONA	**Conrad Observa**	**8.32**	**42**	Pn		**Pn**	**14 45 07.9**	**+1.4**
	0.6nm,0.3s							
CONA					Sn	**Sn**	**14 46 36.5**	**-3.9**
GIVF	**Givet**	**8.33**	**347**	*e*Pn		**Pn**	**14 45 06.7**	**+0.2**
	SNR=1.0							
GIVF	**Givet**	**8.33**	**347**	*e*Pn		**Pn**	**14 45 06.7**	**+0.2**
	SNR=1.0							
BAIF	**Baives**	**8.40**	**345**	*e*Pn		**Pn**	**14 45 07.4**	**0.0**
	SNR=1.0							
BAIF	**Baives**	**8.40**	**345**	*e*Pn		**Pn**	**14 45 07.4**	**0.0**
	SNR=1.0							
LDF	**La Druitiere**	**8.55**	**323**	*e*Pn		**Pn**	**14 45 10.3**	**+0.8**
	SNR=1.0							
LDF	**La Druitiere**	**8.55**	**323**	*e*Pn		**Pn**	**14 45 10.3**	**+0.8**
	SNR=1.0							
GRR	**Gorron**	**8.75**	**320**	*e*Pn		**Pn**	**14 45 13.2**	**+1.0**
	SNR=1.0							
GRR	**Gorron**	**8.75**	**320**	*e*Pn		**Pn**	**14 45 13.2**	**+1.0**
	SNR=1.0							
FLN	**La Foliniere**	**8.84**	**323**	*e*Pn		**Pn**	**14 45 14.4**	**+0.9**
	baz=143,SNR=1.0							
FLN	**La Foliniere**	**8.84**	**323**	*e*Pn		**Pn**	**14 45 14.4**	**+0.9**
	SNR=1.0							
ESDC	**Sonseca Array**	**9.08**	**259**	Pn		**Pn**	**14 45 15.5**	**-1.4**
	0.6nm,0.3s,baz=70,slow=13,SNR=16							
ESDC					Sn	Sn	14 46 49.5	-10
	0.7nm,0.3s,baz=74,slow=24,SNR=3.0							
SGMF	**Saint Gilles**	**9.52**	**314**	*e*Pn		**Pn**	**14 45 22.2**	**-0.6**
	SNR=1.0							
SGMF	**Saint Gilles**	**9.52**	**314**	*e*Pn		**Pn**	**14 45 22.2**	**-0.6**
	SNR=1.0							
VRAC	**Vranov**	**9.63**	**38**	LR		LR	14 49 37.2	
	comp=Z,29nm,20.6s,baz=151,slow=41							
QUIF	**Quistinic**	**9.66**	**311**	*e*Pn		**Pn**	**14 45 24.3**	**-0.4**
	SNR=1.0							
QUIF	**Quistinic**	**9.66**	**311**	*e*Pn		**Pn**	**14 45 24.3**	**-0.4**
	SNR=1.0							
ROSF	**Rostrenen**	**9.96**	**313**	*e*Pn		**Pn**	**14 45 28.7**	**-0.1**
	SNR=1.0							
ROSF	**Rostrenen**	**9.96**	**313**	*e*Pn		**Pn**	**14 45 28.7**	**-0.1**
	SNR=1.0							
MLR	**Muntele Rosu**	**13.70**	**69**	LR		LR	14 53 03.8	
	comp=Z,13nm,19.7s,baz=274,slow=44							
EKA	**Eskdalemuir Ar**	**15.09**	**336**	Pn		**Pn**	**14 46 37.9**	**-1.0**
	baz=160,slow=14,SNR=9.2							
AKASG	**Malin Array Be**	**17.22**	**52**	P		**Pn**	**14 47 07.9**	**+1.7**
	0.4nm,0.3s,baz=246,slow=12,SNR=3.6							
NOA	**NORSAR Array B**	**19.19**	**5**	P		**Pn**	**14 47 32.0**	**+1.7**
	0.1nm,0.3s,baz=190,slow=9.5,SNR=3.6							
NOA					LR	LR	14 55 43.7	
	comp=Z,16nm,18.7s,baz=130,slow=40							
BRTR	**Keskin Array B**	**19.79**	**88**	LR		LR	14 56 40.7	
	comp=Z,31nm,19.1s,baz=277,slow=41							
FINES	**FINESS Array B**	**22.42**	**24**	P		**P**	**14 48 05.1**	**+0.8**
	1.6nm,0.6s,baz=214,slow=10,SNR=10							
TORD	**Torodi Ar. Bea**	**29.21**	**192**	P		**P**	**14 49 07.5**	**-0.1**
	0.6nm,0.9s,baz=354,slow=9.3,SNR=3.5							
MKAR	**Makanchi Array**	**51.70**	**58**	P		**P**	**14 52 14.0**	**+1.1**
	3.2nm,0.7s,baz=288,slow=5.9,SNR=25							
SONM	**Songino Array**	**65.42**	**47**	P		**P**	**14 53 50.5**	**+1.9**
	1.6nm,0.9s,baz=313,slow=8.4,SNR=6.7							
YAK	**Yakutsk**	**66.33**	**26**	P		**P**	**14 53 54.8**	**+0.8**
	8.4nm,0.8s,baz=52,slow=3.6,SNR=5.0							
ILAR	**Eielson Array**	**71.70**	**349**	P		**P**	**14 54 29.7**	**+2.4**
	0.5nm,0.3s,baz=12,slow=5.0,SNR=4.7							
CMAR	**Chiang Mai Arr**	**78.85**	**75**	P		**P**	**14 55 09.5**	**+0.2**
	0.6nm,0.9s,baz=288,slow=6.4,SNR=4.9							
TEIG	**Tepich**	**80.95**	**289**	LR		LR	15 24 25.2	
	comp=Z,750nm,20.8s,baz=0.0,slow=31							
TXAR	**Lajitas Array**	**84.91**	**305**	P		**P**	**14 55 43.2**	**+2.1**
	0.5nm,0.6s,baz=54,slow=5.9,SNR=9.3							
WRA	**Warramunga Arr**	**130.19**	**81**	PKP		**PKPdf**	**15 02 16.8**	**+0.5**
	0.3nm,0.8s,baz=290,slow=1.7,SNR=2.7							
ASAR	**Alice Springs**	**132.11**	**85**	PKP		**PKPdf**	**15 02 20.0**	**+0.1**
	0.5nm,0.9s,baz=306,slow=1.3,SNR=4.4							

NIED ***02*** *14:50:00,39˚.30N×143˚.70E,h11km,Mw3.9 Best double couple: M0 7.80000×10^14 NP1:φs 192.00000°,δ34.00000°, λ91.00000°. NP2:φs 12.00000°,δ56.00000°,λ90.00000°.*
ISCJB ***02*** *14:50:45.7±0.8,39˚.36N±0˚.04×143˚.71E±0˚.07

NIED ***02*** *15:22:00.35˚50N×141˚10E.h44km.Mw4.6 Best double couple: M₀9.51000×10¹⁵ NP1:φ₀211.00000°,δ24.00000°,λ108.00000°. NP2:φ₀11.00000°,δ67.00000°,λ82.00000°.*

ISCJB ***02*** *15:22:35.0±0.4,35˚49N±0˚03×141˚30E±0˚05,h33km, mb3.9/25,MS3.8/23,Error ellipse: s-maj=6.4km s-min=4.4km az=6.7*

JMA ***02*** *15:22:37.5±0.1,35˚56N×141˚04E,h39km±1km,M3.8*

JMA Felt I J1.

NEIC ***02*** *15:22:38.8±1.1,35˚40N×141˚08E,h47km±10km,mb4.4/3, Error ellipse: s-maj=13.2km s-min=9.5km az=94.0*

NEIC Recorded [1 JMA] in Chiba and Ibaraki.

IDC ***02*** *15:22:39.6±1.7,35˚41N×140˚90E,h49km±16km,mb3.7/22, mb1 3.8/26,mb1mx3.8/42,mbtmp3.9/26,ML3.7/3,MS3.8/27, Ms1 3.8/27,ms1mx3.7/41,Error ellipse: s-maj=17.7km s-min=12.1km az=90.0*

ISC 02 15:22:37.0±0.5,35˚44N±0˚04×141˚15E±0˚06,h33km,n60, σ1ᵍ85/53,mb4.0/25,MS3.8/23,6D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.35**	**318**	⇓P	**Pb**	**15 22 44.7**	**-0.8**
CHOJ				S	**Sb**	**15 22 49.4**	**-1.8**
KTR	**Katsuura**	**0.74**	**247**	P	**Pb**	**15 22 51.1**	**-0.4**
JCN	**Nagara**	**0.78**	**269**	⇓P	**Pb**	**15 22 51.7**	**-0.4**
BSO1	**Boso 1**	**0.80**	**190**	⇓P	**Pb**	**15 22 53.1**	**+1.0**
BSO4	**Boso 4**	**0.80**	**236**	⇓P	**Pb**	**15 22 52.5**	**0.0**
BSO3	**Boso 3**	**0.82**	**220**	⇓P	**Pb**	**15 22 53.1**	**+0.4**
JYT	**Yasato**	**1.11**	**316**	⇓P	**Pn**	**15 22 54.7**	**-1.5**
JHJ2	**Mitsune**	**2.57**	**206**	*e*Pn	**Pn**	**15 23 17.6**	**+1.3**
JHJ2				*e*Sn	**Sn**	**15 23 46.6**	**+0.2**
JHJ	**Hachijo jima 2**	**2.58**	**206**	P	**Pn**	**15 23 17.1**	**+0.7**
	71nm,0.3s,baz=345,slow=4.2,SNR=50						
MJAR	**Matsushiro Arr**	**2.63**	**296**	P	**Pn**	**15 23 17.9**	**+0.8**
	17nm,0.3s,baz=98,slow=8.3,SNR=272						
MJAR				LR	LR	15 24 23.2	
	comp=Z,2μm,19.7s,baz=120,slow=43						
MAJO	**Matsushiro**	**2.63**	**296**	*e*Pn	**Pn**	**15 23 18.0**	**+0.8**
MAJO				*e*Sn	**Sn**	**15 23 49.1**	**+1.2**
ERM	**Erimo**	**6.75**	**13**	*e*Pn	**Pn**	**15 24 12.5**	**-1.2**
	16nm,0.6s						
ERM				*e*Sn	**Sn**	**15 25 27.6**	**-1.8**
CBIJ	**Chichi jima**	**8.36**	**174**	*e*Pn	**Pn**	**15 24 35.3**	**-0.6**
	16nm,0.3s						
CBIJ				S	**Sn**	**15 26 03.8**	**-5.4**
JCJ	**Chichijima**	**8.36**	**174**	P	**Pn**	**15 24 36.7**	**+0.8**
	baz=244,slow=0.0						
JCJ				S	**Sn**	**15 26 03.8**	**-5.4**
	baz=90,slow=20						
ASAJ	**Asahikawa**	**8.74**	**7**	P	**Pn**	**15 24 39.3**	**-1.7**
	1.8nm,0.3s,baz=228,slow=8.6,SNR=26						
JNU	**Nakatsue**	**8.81**	**258**	P	**Pn**	**15 24 45.0**	**+3.0**
	0.5nm,0.3s,baz=155,slow=6.1,SNR=3.6						
JNU				LR	LR	15 28 27.4	
	comp=Z,1μm,20.3s,baz=120,slow=40						
KSRS	**Korea Array**	**10.84**	**285**	P	**Pn**	**15 25 13.4**	**+3.6**
	0.2nm,0.3s,baz=99,slow=13,SNR=10						
KSRS				LR	LR	15 29 20.4	
	comp=Z,779nm,20.8s,baz=104,slow=38						
KSAR	**Wonju Array Be**	**10.87**	**284**	P	**Pn**	**15 25 13.4**	**+3.2**
USRK	**Ussuriysk Ar.**	**11.22**	**324**	P	**Pn**	**15 25 16.1**	**+1.0**
	0.1nm,0.3s,baz=148,slow=11,SNR=5.6						
USRK				LR	LR	15 29 20.8	
	comp=Z,510nm,18.7s,baz=132,slow=36						
KLR	**Kul'dur**	**15.42**	**336**	P	**P**	**15 26 14.4**	**-1.7**
	0.2nm,0.3s,baz=153,slow=11,SNR=4.4						
PETK	**Petropavlovsk-**	**21.18**	**28**	P	**P**	**15 27 22.4**	**+3.0**
	1.5nm,0.8s,baz=206,slow=9.6,SNR=2.9						
PETK				LR	LR	15 35 43.6	
	comp=Z,86nm,21.0s,baz=224,slow=37						
ENH	**Enshi**	**27.02**	**268**	*e*P	**P**	**15 28 13.6**	**-2.6**
H11N2	**WAKE ISLAND Hy**	**27.55**	**118**	T	T	15 57 27.0	
	baz=310,slow=75,SNR=89						
H11N1	**WAKE ISLAND Hy**	**27.56**	**118**	T	T	15 57 39.4	
	baz=310,slow=75,SNR=84						
H11N3	**WAKE ISLAND Hy**	**27.57**	**118**	T	T	15 57 33.4	
	baz=310,slow=75,SNR=126						
YAK	**Yakutsk**	**27.58**	**348**	P	**P**	**15 28 21.0**	**+0.3**
	5.0nm,0.5s,baz=42,slow=22,SNR=4.1						
H11S1	**WAKE ISLAND Hy**	**28.21**	**120**	T	T	15 58 13.0	
	baz=312,slow=75,SNR=512						
H11S3	**WAKE ISLAND Hy**	**28.21**	**120**	T	T	15 58 15.9	
	baz=312,slow=75,SNR=436						
H11S2	**WAKE ISLAND Hy**	**28.23**	**120**	T	T	15 58 14.1	
	baz=312,slow=75,SNR=334						
SEY	**Seymchan**	**28.39**	**11**	P	**P**	**15 28 30.5**	**+2.5**
	2.6nm,0.8s,baz=214,slow=10.0,SNR=4.2						
SONM	**Songino Array**	**28.53**	**306**	P	**P**	**15 28 29.9**	**+0.3**
	0.6nm,0.4s,baz=90,slow=8.8,SNR=2.3						
SONM				LR	LR	15 40 04.5	
	comp=Z,160nm,19.4s,baz=104,slow=37						
TIXI	**Tiksi**	**36.85**	**354**	P	**P**	**15 29 41.9**	**+0.2**
	1.7nm,0.8s,baz=116,slow=4.9,SNR=3.3						
CMAR	**Chiang Mai Arr**	**40.91**	**257**	P	**P**	**15 30 14.6**	**-1.8**
	0.4nm,0.7s,baz=50,slow=7.1,SNR=3.5						
CMAR				LR	LR	15 49 08.2	
	comp=Z,141nm,18.4s,baz=55,slow=39						
ZALV	**Zalesovo Beam**	**42.84**	**314**	P	**P**	**15 30 31.2**	**-0.5**
	1.8nm,0.5s,baz=102,slow=8.3,SNR=10.0						
ZALV				LR	LR	15 49 14.3	
	comp=Z,60nm,18.1s,baz=70,slow=37						
NRIK	**Noril'sk**	**44.63**	**336**	P	**P**	**15 30 44.7**	**-1.1**
	1.2nm,0.5s,baz=122,slow=12,SNR=3.0						
NRIK				LR	LR	15 50 20.4	
	comp=Z,110nm,18.5s,baz=58,slow=37						
MKAR	**Makanchi Array**	**44.80**	**303**	P	**P**	**15 30 47.2**	**-0.4**
	1.3nm,0.6s,baz=87,slow=9.7,SNR=12						
MKAR				LR	LR	15 49 59.0	
	comp=Z,94nm,20.7s,baz=90,slow=37						
KURK	**Kurchatov**	**46.76**	**309**	*e*P	**P**	**15 31 00.3**	**-2.6**
ILAR	**Eielson Array**	**50.96**	**32**	P	**P**	**15 31 36.8**	**+1.9**
	0.9nm,0.6s,baz=266,slow=5.7,SNR=17						
ILAR				LR	LR	15 54 09.9	
	comp=Z,29nm,20.7s,baz=218,slow=37						
AAK	**Ala-Archa**	**51.07**	**299**	LR	LR	15 53 57.7	
	comp=Z,176nm,21.4s,baz=54,slow=37						
WRAB	**Tennant Creek**	**55.44**	**188**	*e*P	**P**	**15 32 07.9**	**-0.5**
	1.1nm,0.5s						
WRA	**Warramunga Arr**	**55.45**	**188**	P	**P**	**15 32 08.8**	**+0.4**
	1.3nm,0.3s,baz=6.6,slow=8.0,SNR=48						
INK	**Inuvik**	**55.90**	**27**	P	**P**	**15 32 12.2**	**+1.1**
	1.1nm,0.9s,baz=158,slow=5.4,SNR=1.9						
ARU	**Arti**	**57.42**	**319**	*e*P	**P**	**15 32 21.3**	**-0.8**
	6.1nm,0.9s						
ABKAR	**Akbulak array**	**58.81**	**311**	*e*P	**P**	**15 32 29.6**	**-2.4**
	1.6nm,0.6s						
ASAR	**Alice Springs**	**59.18**	**188**	P	**P**	**15 32 35.6**	**+0.8**
	0.5nm,0.5s,baz=12,slow=8.8,SNR=24						
ASAR				LR	LR	15 57 01.4	
	comp=Z,84nm,20.3s,baz=2.5,slow=35						
AKTO	**Aktyubinsk**	**59.59**	**313**	LR	LR	15 59 24.0	
	comp=Z,48nm,18.2s,baz=59,slow=37						
BBB	**Bella Bella**	**63.36**	**44**	LR	LR	15 58 55.5	
	comp=Z,116nm,19.0s,baz=144,slow=34						
GEYT	**Alibeck**	**64.43**	**300**	P	**P**	**15 33 10.6**	**+0.6**
	1.7nm,0.9s,baz=78,slow=9.0,SNR=3.0						
GEYT				LR	LR	16 03 59.3	
	comp=Z,62nm,19.2s,baz=35,slow=39						
ARCES	**ARCESS Array B**	**65.41**	**340**	P	**P**	**15 33 15.8**	**-0.1**
	0.3nm,0.3s,baz=51,slow=7.1,SNR=7.8						
ARCES				LR	LR	16 05 05.7	
	comp=Z,94nm,20.3s,baz=66,slow=39						
FINES	**FINESS Array B**	**70.12**	**332**	P	**P**	**15 33 45.7**	**0.0**
	0.8nm,0.3s,baz=56,slow=6.7,SNR=18						
FINES				LR	LR	16 05 47.9	
	comp=Z,60nm,21.3s,baz=30,slow=37						
KBZ	**Khabaz**	**71.78**	**311**	P	**P**	**15 33 56.6**	**+0.6**
	4.0nm,1.0s,baz=333,slow=2.3,SNR=6.0						
KBZ				LR	LR	16 07 52.0	
	comp=Z,29nm,21.2s,baz=76,slow=38						
AKASG	**Malin Array Be**	**75.43**	**322**	P	**P**	**15 34 16.9**	**-0.4**
	0.9nm,0.4s,baz=47,slow=5.5,SNR=5.6						
AKASG				LR	LR	16 10 29.5	
	comp=Z,127nm,18.4s,baz=55,slow=38						
NOA	**NORSAR Array B**	**75.57**	**337**	P	**P**	**15 34 18.4**	**+0.3**
	0.8nm,0.7s,baz=40,slow=5.7,SNR=3.6						
NOA				LR	LR	16 10 36.9	
	comp=Z,85nm,19.6s,baz=25,slow=38						
BRTR	**Keskin Array B**	**79.75**	**312**	P	**P**	**15 34 42.9**	**+1.0**
	1.3nm,0.9s,baz=90,slow=4.9,SNR=4.9						
BRTR				LR	LR	16 14 28.1	
	comp=Z,23nm,18.8s,baz=60,slow=39						
GERES	**GERESS Array B**	**83.95**	**328**	P	**P**	**15 35 04.2**	**+0.4**
	0.2nm,0.4s,baz=57,slow=7.4,SNR=3.7						
GERES				LR	LR	16 14 42.9	
	comp=Z,39nm,21.3s,baz=6.5,slow=37						
SCHQ	**Schefferville**	**86.93**	**16**	LR	LR	16 17 52.1	
	comp=Z,30nm,18.1s,baz=17,slow=38						
TXAR	**Lajitas Array**	**91.26**	**52**	P	**P**	**15 35 42.0**	**+2.6**
	0.1nm,0.6s,baz=328,slow=3.2,SNR=3.1						
TXAR				LR	LR	16 11 59.2	
	comp=Z,36nm,20.6s,baz=0.0,slow=32						
H06E1	**SOCORRO T-PHAS**	**93.06**	**65**	T	T	17 19 27.2	
	SNR=26						
KEST	**Kesra**	**96.16**	**322**	LR	LR	16 23 35.0	
	comp=Z,47nm,18.6s,baz=270,slow=38						
ESDC	**Sonseca Array**	**98.62**	**333**	LR	LR	16 24 39.2	
	comp=Z,51nm,19.0s,baz=260,slow=38						

MEX 02 15:42:00.1±0.5,16˚53N×98˚99W,h30km±11km,MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.84**	**99**	*e*P	Pn	15 42 13.2	-2.7
PNIG				*e*S	Sb	15 42 24.5	-2.8
ACX	**Acapulco**	**0.89**	**292**	*e*P	Pn	15 42 09.3	-7.3
ACX				*e*S	Sn	15 42 20.4	-8.2
TLIG	**Tlapa**	**1.10**	**22**	*e*P	Pn	15 42 17.3	-2.4
TLIG				*e*S	Sn	15 42 30.8	-3.2
CAIG	**El Cayaco**	**1.32**	**293**	*e*P	Pn	15 42 20.5	-2.0
CAIG				*e*S	Sn	15 42 37.1	-2.1
MEIG	**Mezcala**	**1.51**	**337**	*e*P	Pn	15 42 23.1	-2.1
MEIG				*e*S	Sn	15 42 41.5	-2.4

IDC 02 15:45:26.4±426.0,47˚38N×47˚73E,h0km,Error ellipse: s-maj=179.4km s-min=143.6km az=3.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I31KZ	**AKTYUBINSK INF**	**7.44**	**62**	*i*		16 33 05.0	
	baz=249,slow=315,SNR=3.1						
I43RU	**DUBNA INFRASON**	**11.37**	**329**	*i*		16 56 10.0	
	baz=140,slow=314,SNR=1.6						
I26DE	**FREYUNG INFRAS**	**22.66**	**286**	*i*		18 03 50.0	
	baz=81,slow=319,SNR=0.9						

MOS ***02*** *15:58:42.2±1.4,45˚29N×149˚03E,h128km,mb3.9/6,Error ellipse: s-maj=12.4km s-min=9.5km az=71.8*

IDC ***02*** *15:58:42.3±3.2,45˚28N×149˚13E,h115km±30km,mb3.4/9, mb1 3.5/12,mb1mx3.3/35,mbtmp3.7/12,Error ellipse: s-maj=33.2km s-min=18.2km az=97.0*

ISCJB ***02*** *15:58:43.8±0.7,45˚14N±0˚05×148˚89E±0˚09, h140km±5km,mb3.6/11,Error ellipse: s-maj=10.8km s-min=7.0km az=27.2*

SKHL ***02*** *15:58:43.7±0.8,45˚12N×149˚05E,h131km±9km,mb4.4/4, msh5.3/3*

JMA ***02*** *15:58:44.9±0.4,44˚76N×149˚13E,h132km,M3.6*

ISC 02 15:58:44.0±1.0,45˚17N±0˚05×149˚01E±0˚08,h133km±7km, n71,σ1ᵍ72/82,mb3.5/11,1C-3D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**0.81**	**275**	*c*ePN	**Pn**	**15 59 05.3**	**-0.1**
KUR				*i* S	**Sn**	**15 59 22.8**	**+1.2**
KUR				pmax	pmax		
	comp=Z,34nm,0.6s						
KUR				smax	smax		
	comp=N,175nm,0.5s						
KUR				smax	smax		
	comp=E,116nm,0.5s						
KUR	**Kuril'sk**	**0.81**	**275**	*i* P	**Pn**	**15 59 05.3**	**-0.1**
KUR				AMB	AMB	15 59 05.9	
	comp=E,120nm,0.2s						
KUR				*i* S	**Sn**	**15 59 21.1**	**-0.5**
KUR				A	A	15 59 21.8	
	comp=E,350nm,0.2s						
KUR				A	A	15 59 21.8	
	comp=E,210nm,0.2s						
SHO	**Shikotan**	**2.03**	**231**	*d i* PN	**Pn**	**15 59 16.7**	**-1.6**
SHO				*i* S	**Sn**	**15 59 41.9**	**-2.8**
SHO				pmax	pmax		
	comp=N,27nm,0.5s						
SHO				pmax	pmax		
	comp=E,46nm,0.5s						
SHO				pmax	pmax		
	comp=Z,79nm,0.5s						
SHO				smax	smax		
	comp=N,306nm,0.5s						
SHO				smax	smax		
	comp=E,584nm,0.3s						
SHO	**Shikotan**	**2.03**	**231**	*i* P	**Pn**	**15 59 16.8**	**-1.6**
SHO				AMB	AMB	15 59 17.3	
	comp=E,60nm,0.3s						
SHO				*i* S	**Sn**	**15 59 42.3**	**-2.4**
SHO				A	A	15 59 43.1	
	comp=E,140nm,0.3s						
SHO				A	A	15 59 43.1	
	comp=E,490nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**2.52**	**244**	*d i* PN	**Pn**	**15 59 25.2**	**+0.8**
YUK				*i* S	**Sn**	**15 59 56.2**	**+0.7**
YUK				pmax	pmax		
	comp=Z,107nm,0.3s						
YUK				pmax	pmax		
	comp=E,50nm,0.1s						
YUK				pmax	pmax		
	comp=N,58nm,0.2s						
YUK				smax	smax		
	comp=N,280nm,0.6s						
YUK				smax	smax		
	comp=E,158nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**2.52**	**244**	*i* P	**Pn**	**15 59 25.3**	**+0.8**
YUK				AMB	AMB	15 59 25.9	
	comp=E,30nm,0.3s						
YUK				*i* S	**Sn**	**15 59 56.3**	**+0.7**
YUK				A	A	16 00 02.4	
	comp=E,280nm,0.6s						
YUK				A	A	16 00 02.4	
	comp=E,160nm,0.6s						
NEM2	**Nemuro 2**	**2.96**	**234**	P	**Pn**	**15 59 29.4**	**-0.7**
NEM2				*e*S	**Sn**	**16 00 03.9**	**-1.7**
JRA	**Rausu**	**3.04**	**248**	P	**Pn**	**15 59 32.2**	**+1.1**
JRA				*e*S	**Sn**	**16 00 09.1**	**+1.6**
JNK	**Nakash**	**3.46**	**244**	P	**Pn**	**15 59 37.6**	**+1.0**
JAK	**Akkeshi**	**3.79**	**237**	P	**Pn**	**15 59 40.5**	**-0.4**
JAK				*e*S	**Sn**	**16 00 23.6**	**-1.5**
JTKR	**Abashiri--Toko**	**3.84**	**254**	P	**Pn**	**15 59 42.8**	**+1.3**
JMP	**Maruseppu**	**4.20**	**256**	P	**Pn**	**15 59 47.9**	**+1.5**
JAR	**Ashorobuto**	**4.20**	**245**	P	**Pn**	**15 59 47.5**	**+1.1**
JOB	**Onbets**	**4.36**	**241**	P	**Pn**	**15 59 48.9**	**+0.4**
JOB				*e*S	**Sn**	**16 00 38.4**	**-0.3**
JKK2	**Kamakawa 2**	**4.66**	**256**	P	**Pn**	**15 59 54.2**	**+1.7**
JKK2				*e*S	**Sn**	**16 00 48.2**	**+2.4**
JKA	**Kamikawa-asahi**	**4.69**	**259**	*e*P	**Pn**	**15 59 54.8**	**+1.9**
ASAJ	**Asahikawa**	**4.70**	**259**	P	**Pn**	**15 59 54.8**	**+1.9**
	comp=E,1.6nm,0.3s,baz=76,slow=13,SNR=28						
ASAJ	**Asahikawa**	**4.70**	**259**	P	**Pn**	**15 59 55.0**	**+2.1**
YSS	**Yuzh-Sakhalins**	**4.71**	**295**	⇓*e*PN	**Pn**	**15 59 53.9**	**+0.9**
YSS				*e*S	**Sn**	**16 00 42.1**	**-4.7**
YSS				pmax	pmax		
	comp=Z,10.0nm,1.0s						
YSS				smax	smax		
	comp=N,10.0nm,1.1s						
YSS	**Yuzh-Sakhalins**	**4.71**	**295**	*e*P	**Pn**	**15 59 54.1**	**+1.1**
YSS				AMB	AMB	15 59 55.3	
	comp=N,20nm,0.8s						
YSS				*e*S	**Sn**	**16 00 44.3**	**-2.5**
YSS				A	A	16 00 54.4	
	comp=N,30nm,0.7s						
JCH	**Churui**	**4.81**	**240**	P	**Pn**	**15 59 54.3**	**-0.2**
JCH				*e*S	**Sn**	**16 00 47.6**	**-1.8**
JEM	**Erimo**	**5.29**	**236**	P	**Pn**	**16 00 00.6**	**-0.3**
JEM				*e*S	**Sn**	**16 00 58.8**	**-2.0**
ERM	**Erimo**	**5.29**	**236**	*e*PN	**Pn**	**16 00 01.2**	**+0.3**
ERM	**Erimo**	**5.29**	**236**	*e*P	**Pn**	**16 00 01.2**	**+0.3**
JBT2	**Biratori 2**	**5.36**	**246**	P	**Pn**	**16 00 02.0**	**+0.2**
JNBK	**Urakawa-nobuka**	**5.37**	**240**	*e*S	**Sn**	**16 01 01.1**	**-1.8**
UGL	**Uglegorsk**	**6.14**	**312**	*e*PN	**Pn**	**16 00 08.5**	**-3.8**
UGL				*e*S	**Sn**	**16 01 17.1**	**-4.2**
UGL	**Uglegorsk**	**6.14**	**312**	*e*P	**Pn**	**16 00 14.6**	**+2.3**
JNB	**Noboribetsu**	**6.37**	**248**	P	**Pn**	**16 00 15.2**	**-0.1**
JKB	**Kayabe**	**6.66**	**243**	P	**Pn**	**16 00 18.5**	**-0.8**
JKB				*e*S	**Sn**	**16 01 30.6**	**-3.2**
JSH	**Shimam**	**6.95**	**252**	P	**Pn**	**16 00 25.3**	**+2.1**
JYM2	**Yakumo 2**	**6.97**	**247**	P	**Pn**	**16 00 23.2**	**-0.2**
JSR	**Shiriuchi**	**7.24**	**243**	P	**Pn**	**16 00 27.1**	**0.0**
JTM	**Tenmabayashi**	**7.28**	**236**	P	**Pn**	**16 00 26.5**	**-1.2**
JTM				*e*S	Sn	16 01 42.3	-6.6
JANG	**Nango**	**7.30**	**232**	P	**Pn**	**16 00 25.6**	**-2.4**
JANG				*e*S	Sn	16 01 43.3	-6.1
JTH	**Tanohata**	**7.42**	**228**	*e*S	Sn	16 01 46.2	-6.1
JOSM	**Okushiri--Mats**	**7.57**	**249**	P	**Pn**	**16 00 31.3**	**-0.3**
OFUJ	**Ofunato**	**8.17**	**224**	P	**Pn**	**16 00 38.0**	**-1.6**
JRG	**Rokugo**	**8.47**	**230**	*e*S	**Sn**	**16 02 13.4**	**-4.2**
PETK	**Petropavlovsk-**	**9.77**	**32**	P	**Pn**	**16 00 58.7**	**-2.3**
	comp=N,0.5nm,0.3s,baz=207,slow=11,SNR=18						
HABR	**Khabarovsk**	**10.12**	**294**	*e*PN	**Pn**	**16 01 03.4**	**-2.3**
HABR				*e*S	**Sn**	**16 02 55.5**	**-1.9**
HABR				pmax	pmax		
	comp=N,2.0nm,0.6s						
HABR				pmax	pmax		
	comp=E,7.0nm,0.6s						
HABR				pmax	pmax		
	comp=E,5.0nm,0.6s						
HABR				MLR	MLR		
	comp=E,5.0nm,11.0s						
HABR	**Khabarovsk**	**10.12**	**294**	*e*P	**Pn**	**16 01 03.4**	**-2.3**
MJA0	**Matsu Arr-Jizo**	**11.85**	**227**	*e*PN	**Pn**	**16 01 28.3**	**-0.5**
MJAR	**Matsushiro Arr**	**11.87**	**227**	P	**Pn**	**16 01 28.0**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=30,slow=13,SNR=5.1						
SEY	**Seymchan**	**17.91**	**5**	P	**P**	**16 02 42.0**	**-1.1**
	comp=Z,0.2nm,0.3s,baz=169,slow=9.4,SNR=2.6						
SEY	**Seymchan**	**17.91**	**5**	P	**P**	**16 02 42.0**	**-1.1**
SEY	**Seymchan**	**17.91**	**5**	*e*P	**P**	**16 02 42.0**	**-1.1**
BILL	**Bilibino**	**24.63**	**16**	*e*P	**P**	**16 03 51.8**	**+0.1**
BILL	**Bilibino**	**24.63**	**16**	*e*P	**P**	**16 03 51.8**	**+0.1**
SONM	**Songino Array**	**29.18**	**291**	P	**P**	**16 04 34.0**	**+1.2**
	comp=Z,0.3nm,0.4s,baz=76,slow=7.7,SNR=1.8						
H11N2	**WAKE ISLAND Hy**	**29.38**	**144**	T	T	16 35 47.2	
	baz=335,slow=75,SNR=44						
H11N1	**WAKE ISLAND Hy**	**29.39**	**144**	T	T	16 35 48.3	
	baz=335,slow=75,SNR=36						
H11N3	**WAKE ISLAND Hy**	**29.40**	**144**	T	T	16 35 48.6	
	baz=335,slow=75,SNR=34						
H11S1	**WAKE ISLAND Hy**	**30.39**	**145**	T	T	16 36 58.7	
	baz=336,slow=76,SNR=39						
H11S3	**WAKE ISLAND Hy**	**30.40**	**145**	T	T	16 37 00.3	
	baz=336,slow=76,SNR=33						
H11S2	**WAKE ISLAND Hy**	**30.41**	**145**	T	T	16 36 59.3	
	baz=336,slow=76,SNR=25						
MKAR	**Makanchi Array**	**45.12**	**297**	P	**P**	**16 06 46.9**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=61,slow=6.0,SNR=4.7						
FINES	**FINESS Array B**	**64.21**	**333**	P	**P**	**16 09 02.5**	**-1.5**
	comp=Z,0.9nm,0.6s,baz=30,slow=8.3,SNR=5.3						
OBN	**Obninsk**	**64.95**	**324**	*e*P	**P**	**16 09 10.1**	**+1.1**
OBN				pmax	pmax		
	comp=Z,3.0nm,0.9s						
WRA	**Warramunga Arr**	**66.16**	**195**	P	**P**	**16 09 18.1**	**+1.0**
	comp=Z,0.2nm,0.4s,baz=13,slow=6.7,SNR=5.1						
WRA	**Warramunga Arr**	**66.16**	**195**	*e*P	**P**	**16 09 18.5**	**+1.4**
NB2	**NORSAR Subarra**	**68.75**	**339**	P	**P**	**16 09 32.0**	**-1.0**
	comp=Z,0.4nm,0.6s,baz=30,slow=6.2						
NOA	**NORSAR Array B**	**68.75**	**339**	P	**P**	**16 09 32.0**	**-1.0**
	comp=Z,0.5nm,0.4s,baz=32,slow=6.6,SNR=7.2						
KIV	**Kislovodsk**	**69.80**	**312**	*e*P	**P**	**16 09 40.1**	**+0.2**
KIV				pmax	pmax		
	comp=Z,3.0nm,1.0s						
KBZ	**Khabaz**	**69.85**	**312**	P	**P**	**16 09 42.0**	**+2.0**
	comp=Z,1.4nm,0.6s,baz=44,slow=4.6,SNR=4.4						
KBZ	**Khabaz**	**69.85**	**312**	P	**P**	**16 09 42.0**	**+2.0**
KBZ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ASAR	**Alice Springs**	**69.87**	**195**	P	**P**	**16 09 41.9**	**+1.6**
	comp=Z,0.3nm,0.7s,baz=9.1,slow=6.1,SNR=4.2						
ASAR	**Alice Springs**	**69.87**	**195**	*e*P	**P**	**16 09 42.5**	**+2.2**
BRTR	**Keskin Array B**	**77.52**	**314**	P	**P**	**16 10 25.9**	**+0.9**
	comp=Z,0.6nm,0.6s,baz=69,slow=3.4,SNR=4.3						
GERES	**GERESS Array B**	**78.56**	**332**	P	**P**	**16 10 30.6**	**+0.1**
	comp=Z,0.6nm,0.4s,baz=38,slow=6.8,SNR=7.0						
GERES	**GERESS Array B**	**78.56**	**332**	*e*P	**P**	**16 10 31.0**	**+0.4**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.4s						

NIED ***02*** *16:10:00.37˚50N×141˚90E,h32km,Mw3.5 Best double couple: M₀1.79000×10¹⁴ NP1:φ₀45.00000°,δ41.00000°,λ35.00000°. NP2:φ₀288.00000°,δ68.00000°,λ125.00000°.*

IDC ***02*** *16:10:56.6±6.2,37˚12N×142˚17E,h0km,mb3.5/2, mb1 3.6/3,mb1mx3.3/32,mbtmp3.4/3,ML3.1/1,MS2.5/1, Ms1 2.5/1,ms1mx2.1/32,Error ellipse: s-maj=126.8km s-min=35.7km az=16.0*

JMA ***02*** *16:10:58.6±0.1,37˚54N×141˚85E,h28km±3km,M3.8*

ISC 02 16:10:54.5±2.1,37˚52N±0˚06×141˚96E±0˚08,h8km±11km, n19,σ1ᵍ01/19,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.88**	**260**	P	Pn	**16 11 13.6**	**+0.4**
JFK				S	**Sg**	**16 11 23.7**	**+1.0**
**JM

Ms1 2.6/1, ms1mx2.3/32, Error ellipse: s-maj=198.6km s-min=33.7km az=50.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**9.01**	**166**	Pn	Pn	16 46 39.2	-0.2
	0.5nm,0.3s,baz=282,slow=22,SNR=17						
DZM				Sn	Sn	16 48 23.5	+1.8
	0.1nm,0.3s,baz=311,slow=19,SNR=1.5						
STKA	**Stephens Creek**	**27.78**	**225**	P	P	16 50 18.3	-0.4
	1.4nm,0.7s,baz=168,slow=22,SNR=3.3						
WRA	**Warramunga Arr**	**29.32**	**253**	P	P	16 50 33.2	+0.6
	0.5nm,0.8s,baz=84,slow=9.3,SNR=5.7						
ASAR	**Alice Springs**	**30.46**	**246**	P	P	16 50 42.8	+0.2
	0.5nm,0.7s,baz=68,slow=9.6,SNR=10						
FITZ	**Fitzroy Crossi**	**37.37**	**258**	P	P	16 51 42.1	-0.5
	1.9nm,0.9s,baz=90,slow=12,SNR=3.1						
MJAR	**Matsushiro Arr**	**55.27**	**335**	LR	LR	17 18 45.8	
	comp=Z,4.9nm,19.3s,baz=95,slow=37						

KRSC ***02*** *16:46:47.8±0.8, 54°.86N×162°.36E, h48km±12km, ML4.4*
MOS ***02*** *16:46:49.8±0.7, 54°.91N×162°.27E, h50km, mb4.0/10, Error ellipse: s-maj=8.0km s-min=4.6km az=85.4*
IDC ***02*** *16:46:52.9±3.0, 55°.05N×161°.92E, h58km±28km, mb3.4/17, mb1 3.6/20, mb1mx3.5/54, mbtmp3.7/20, ML3.3/4, MS3.1/8, Ms1 3.1/8, ms1mx2.9/32, Error ellipse: s-maj=18.2km s-min=13.9km az=143.0*
ISC 02 16:46:49.6±1.0, 54°.90N±0°.02×162°.30E±0°.03, h32km±7km, n105, σ1§41/158, mb3.7/17, MS3.1/7, 1C, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MKZ	**Mys Kozlova**	**0.48**	**224**	PN	**Pb**	**16 46 59.2**	**-0.6**
MKZ				S	**Sb**	**16 47 06.5**	**-0.2**
MKZ	**Mys Kozlova**	**0.48**	**224**	*eP*	**Pb**	**16 46 59.2**	**-0.6**
MKZ				*eS*	**Sb**	**16 47 06.5**	**-0.2**
KZV	**Kizimen**	**1.17**	**281**	PN	**Pn**	**16 47 09.8**	**-0.1**
KZV				S	**Sn**	**16 47 24.4**	**-0.5**
KZV	**Kizimen**	**1.17**	**281**	*eP*	**Pn**	**16 47 09.8**	**-0.1**
KZV				*eS*	**Sn**	**16 47 24.4**	**-0.5**
TUMR	**Tumrok**	**1.29**	**288**	PN	**Pn**	**16 47 11.8**	**+0.2**
TUMR				S	**Sn**	**16 47 28.7**	**+0.9**
TUMR	**Tumrok**	**1.29**	**288**	*eP*	**Pn**	**16 47 11.8**	**+0.2**
TUMR				*eS*	**Sn**	**16 47 28.7**	**+0.9**
KBG	**Krutoberegovo**	**1.38**	**9**	PN	**Pn**	**16 47 13.3**	**+0.7**
KBG				S	**Sb**	**16 47 32.6**	**+0.6**
KBG	**Krutoberegovo**	**1.38**	**9**	*i* P	**Pn**	**16 47 13.3**	**+0.7**
KBG				*i* S	**Sb**	**16 47 32.6**	**+0.6**
ZLN	**Zelenaya**	**1.41**	**323**	PN	**Pn**	**16 47 13.8**	**+0.7**
ZLN				S	**Sn**	**16 47 32.0**	**+1.4**
ZLN	**Zelenaya**	**1.41**	**323**	*eP*	**Pn**	**16 47 13.8**	**+0.7**
ZLN				*eS*	**Sn**	**16 47 32.0**	**+1.4**
KMNR	**Kamenistaya**	**1.46**	**307**	PN	**Pn**	**16 47 14.2**	**+0.4**
KMNR				S	**Sn**	**16 47 33.4**	**+1.6**
KMNR	**Kamenistaya**	**1.46**	**307**	*eP*	**Pn**	**16 47 14.2**	**+0.4**
KMNR				*eS*	**Sn**	**16 47 33.4**	**+1.6**
BZMR	**Bezymyannaya**	**1.46**	**316**	PN	**Pn**	**16 47 14.4**	**+0.5**
BZMR	**Bezymyannaya**	**1.46**	**316**	*eP*	**Pn**	**16 47 14.4**	**+0.5**
LGNR	**Loginova**	**1.50**	**323**	PN	**Pn**	**16 47 15.4**	**+0.9**
LGNR				S	**Sn**	**16 47 34.9**	**+1.8**
LGNR	**Loginova**	**1.50**	**323**	*eP*	**Pn**	**16 47 15.4**	**+0.9**
LGNR				*eS*	**Sn**	**16 47 34.9**	**+1.8**
CIRR	**Tsirk**	**1.50**	**325**	PN	**Pn**	**16 47 15.2**	**+0.7**
CIRR				S	**Sb**	**16 47 35.3**	**-0.4**
CIRR	**Tsirk**	**1.50**	**325**	*eP*	**Pn**	**16 47 15.2**	**+0.7**
CIRR				*eS*	**Sb**	**16 47 35.3**	**-0.4**
KIRR	**Kirishev**	**1.54**	**314**	PN	**Pn**	**16 47 16.0**	**+1.1**
KIRR				S	**Sb**	**16 47 36.8**	**+0.2**
KIRR	**Kirishev**	**1.54**	**314**	*eP*	**Pn**	**16 47 16.0**	**+1.1**
KIRR				*eS*	**Sb**	**16 47 36.8**	**+0.2**
KPT	**Kopyto**	**1.59**	**313**	PN	**Pn**	**16 47 16.3**	**+0.6**
KPT	**Kopyto**	**1.59**	**313**	*eP*	**Pn**	**16 47 16.3**	**+0.6**
KRSR	**Krestovskiy**	**1.65**	**324**	PN	**Pn**	**16 47 16.5**	**+0.1**
KRSR				S	**Sn**	**16 47 36.8**	**+0.3**
KRSR	**Krestovskiy**	**1.65**	**324**	*eP*	**Pn**	**16 47 16.5**	**+0.1**
KRSR				*eS*	**Sn**	**16 47 36.8**	**+0.3**
KLY	**Klyuchi**	**1.70**	**327**	PN	**Pn**	**16 47 16.7**	**-0.3**
KLY				S	**Sn**	**16 47 37.5**	**0.0**
KLY	**Klyuchi**	**1.70**	**327**	*eP*	**Pn**	**16 47 16.7**	**-0.3**
KLY				*eS*	**Sn**	**16 47 37.5**	**0.0**
SMKR	**Semkarok**	**1.75**	**345**	PN	**Pn**	**16 47 18.7**	**+0.9**
SMKR				S	**Sn**	**16 47 40.7**	**+1.7**
SMKR	**Semkarok**	**1.75**	**345**	*i* P	**Pn**	**16 47 18.7**	**+0.9**
SMKR				*i* S	**Sn**	**16 47 40.7**	**+1.7**
BDR	**Baidarnaya**	**1.78**	**340**	PN	**Pn**	**16 47 19.1**	**+0.9**
BDR	**Baidarnaya**	**1.78**	**340**	*i* P	**Pn**	**16 47 19.1**	**+0.9**
KOZ	**Kozyrevsk**	**1.80**	**311**	PN	**Pn**	**16 47 19.4**	**+0.9**
KOZ				S	**Sn**	**16 47 42.1**	**+1.9**
KOZ	**Kozyrevsk**	**1.80**	**311**	*eP*	**Pn**	**16 47 19.4**	**+0.9**
KOZ				*eS*	**Sn**	**16 47 42.1**	**+1.9**
SRKR	**Sorokina**	**1.87**	**340**	PN	**Pn**	**16 47 20.3**	**+0.9**
SRKR				S	**Sn**	**16 47 43.4**	**+1.4**
SRKR	**Sorokina**	**1.87**	**340**	*i* P	**Pn**	**16 47 20.3**	**+0.9**
SRKR				*i* S	**Sn**	**16 47 43.4**	**+1.4**
BKI	**Bering**	**2.13**	**80**	PN	**Pn**	**16 47 23.3**	**+0.3**
BKI				S	**Sn**	**16 47 48.4**	**+0.1**
BKI	**Bering**	**2.13**	**80**	*i* P	**Pn**	**16 47 23.3**	**+0.3**
BKI				*i* S	**Sn**	**16 47 48.4**	**+0.1**
SPN	**Mys Shipunski**	**2.25**	**218**	PN	**Pn**	**16 47 23.6**	**-1.0**
SPN				S	**Sn**	**16 47 49.6**	**-1.6**
SPN	**Mys Shipunski**	**2.25**	**218**	*eP*	**Pn**	**16 47 23.6**	**-1.0**
SPN				*eS*	**Sn**	**16 47 49.6**	**-1.6**
ESO	**Esso**	**2.29**	**298**	PN	**Pn**	**16 47 25.3**	**+0.1**
ESO				S	**Sn**	**16 47 52.3**	**0.0**
ESO	**Esso**	**2.29**	**298**	*eP*	**Pn**	**16 47 25.3**	**+0.1**
ESO				*eS*	**Sn**	**16 47 52.3**	**0.0**
NLC	**Nalytchevo**	**2.46**	**226**	PN	**Pn**	**16 47 28.8**	**+1.4**
NLC				S	**Sn**	**16 47 57.6**	**+1.3**
NLC	**Nalytchevo**	**2.46**	**226**	*eP*	**Pn**	**16 47 28.8**	**+1.4**
NLC				*eS*	**Sn**	**16 47 57.6**	**+1.3**
SDLR	**Sedlovina**	**2.59**	**232**	PN	**Pn**	**16 47 30.5**	**+1.2**
SDLR				S	**Sn**	**16 48 01.0**	**+1.3**
SDLR	**Sedlovina**	**2.59**	**232**	*eP*	**Pn**	**16 47 30.5**	**+1.2**
SDLR				*eS*	**Sn**	**16 48 01.0**	**+1.3**
KRER	**Koryakskii**	**2.63**	**234**	PN	**Pn**	**16 47 31.8**	**+1.8**
KRER				S	**Sn**	**16 48 03.0**	**+2.1**
KRER	**Koryakskii**	**2.63**	**234**	*eP*	**Pn**	**16 47 31.8**	**+1.8**
KRER				*eS*	**Sn**	**16 48 03.0**	**+2.1**
SMAR	**Somma**	**2.63**	**233**	PN	**Pn**	**16 47 30.7**	**+0.6**
SMAR				S	**Sn**	**16 48 01.9**	**+0.9**
SMAR	**Somma**	**2.63**	**233**	*eP*	**Pn**	**16 47 30.7**	**+0.6**
SMAR				*eS*	**Sn**	**16 48 01.9**	**+0.9**
KRX	**Arik**	**2.65**	**236**	PN	**Pn**	**16 47 31.2**	**+1.0**
KRX				S	**Sn**	**16 48 02.2**	**+1.0**
KRX	**Arik**	**2.65**	**236**	*eP*	**Pn**	**16 47 31.2**	**+1.0**
KRX				*eS*	**Sn**	**16 48 02.2**	**+1.0**
UGLR	**Uglovaya**	**2.66**	**232**	PN	**Pn**	**16 47 32.1**	**+1.8**
UGLR				S	**Sn**	**16 48 03.8**	**+2.3**
UGLR	**Uglovaya**	**2.66**	**232**	*eP*	**Pn**	**16 47 32.1**	**+1.8**
UGLR				*eS*	**Sn**	**16 48 03.8**	**+2.3**
AVH	**Avacha**	**2.66**	**233**	PN	**Pn**	**16 47 32.3**	**+2.0**
AVH				S	**Sn**	**16 48 04.6**	**+3.1**
AVH	**Avacha**	**2.66**	**233**	*eP*	**Pn**	**16 47 32.3**	**+2.0**
AVH				*eS*	**Sn**	**16 48 04.6**	**+3.1**
GNL	**Ganaly**	**2.82**	**246**	PN	**Pn**	**16 47 33.8**	**+1.2**
GNL				S	**Sn**	**16 48 06.9**	**+1.4**
GNL	**Ganaly**	**2.82**	**246**	*eP*	**Pn**	**16 47 33.8**	**+1.2**
GNL				*eS*	**Sn**	**16 48 06.9**	**+1.4**
PET	**Petropavlovsk**	**2.86**	**230**	*i* PN	**Pn**	**16 47 33.9**	**+1.0**
PET				*eS*	**Sn**	**16 48 06.9**	**+0.7**
PET				pmax	pmax		
	comp=Z,258nm,0.5s						
PET				pmax	pmax		
	comp=Z,200nm,1.2s						
PET				smax	smax		
	comp=E,100nm,3.9s						
PET				smax	smax		
	comp=N,500nm,1.3s						
PET				smax	smax		
	comp=N,551nm,0.7s						
PET				smax	smax		
	comp=E,520nm,0.8s						
PET				MLR	MLR		
	comp=Z,300nm,18.0s						
PET	**Petropavlovsk**	**2.86**	**230**	*eP*	**Pn**	**16 47 34.2**	**+1.3**
PET				*eS*	**Sn**	**16 48 06.5**	**+0.3**
KRMR	**Karymshinskiy**	**3.22**	**232**	PN	**Pn**	**16 47 39.7**	**+1.8**
KRMR				S	**Sn**	**16 48 17.4**	**+2.2**
KRMR	**Karymshinskiy**	**3.22**	**232**	*eP*	**Pn**	**16 47 39.7**	**+1.8**
KRMR				*eS*	**Sn**	**16 48 17.4**	**+2.2**
PETK	**Petropavlovsk-**	**3.25**	**238**	P	**Pn**	**16 47 39.7**	**+1.3**
	comp=Z,3.9nm,0.3s,baz=68,slow=18,SNR=48						
PETK				S	**Sn**	**16 48 20.5**	**+4.5**
	comp=Z,4.7nm,0.3s,baz=76,slow=18,SNR=8.2						
PETK				LR	LR	16 49 09.8	
	comp=Z,240nm,18.7s,baz=78,slow=43						
RUS	**Russkaya**	**3.34**	**224**	PN	**Pn**	**16 47 40.8**	**+1.2**
RUS				S	**Sn**	**16 48 19.6**	**+1.4**
RUS	**Russkaya**	**3.34**	**224**	*eP*	**Pn**	**16 47 40.8**	**+1.2**
RUS				*eS*	**Sn**	**16 48 19.6**	**+1.4**
ASAK	**Asacha**	**3.63**	**228**	PN	**Pn**	**16 47 46.4**	**+2.7**
ASAK				S	**Sn**	**16 48 27.3**	**+1.8**
ASAK	**Asacha**	**3.63**	**228**	*eP*	**Pn**	**16 47 46.4**	**+2.7**
ASAK				*eS*	**Sn**	**16 48 27.3**	**+1.8**
OSSR	**Ossora**	**4.38**	**5**	PN	**Pn**	**16 47 54.8**	**+1.0**
OSSR				S	**Sn**	**16 48 45.4**	**+1.7**
OSSR	**Ossora**	**4.38**	**5**	*eP*	**Pn**	**16 47 54.8**	**+1.0**
OSSR				*eS*	**Sn**	**16 48 45.4**	**+1.7**
PALN	**Palana**	**4.39**	**344**	PN	**Pn**	**16 47 57.4**	**+3.5**
PALN	**Palana**	**4.39**	**344**	P	**Pn**	**16 47 57.4**	**+3.5**
PAU	**Pauzhetka**	**4.77**	**226**	PN	**Pn**	**16 48 00.9**	**+1.8**
PAU	**Pauzhetka**	**4.77**	**226**	*eP*	**Pn**	**16 48 00.9**	**+1.8**
SKR	**Severo-Kuril's**	**5.65**	**224**	PN	**Pn**	**16 48 13.5**	**+2.3**
SKR	**Severo-Kuril's**	**5.65**	**224**	*eP*	**Pn**	**16 48 13.5**	**+2.3**
SKR				*eS*	**Sn**	**16 49 16.6**	**+1.7**
ASAJ	**Asahikawa**	**16.68**	**238**	P	**Pn**	**16 50 41.4**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=335,slow=3.8,SNR=4.9						
YAK	**Yakutsk**	**18.33**	**306**	P	**P**	**16 51 00.4**	**-0.4**
	comp=Z,0.0nm,0.3s,baz=51,slow=1.2,SNR=4.1						
KLR	**Kul'dur**	**19.52**	**266**	P	**P**	**16 51 14.6**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=64,slow=10,SNR=8.5						
TIXI	**Tiksi**	**22.03**	**332**	P	**P**	**16 51 40.1**	**-0.8**
	comp=Z,2.5nm,0.8s,baz=124,slow=8.3,SNR=3.7						
USRK	**Ussuriysk Ar.**	**22.21**	**254**	LR	LR	17 01 20.6	
	comp=Z,58nm,18.7s,baz=101,slow=39						
MJA0	**Matsu Arr-Jizo**	**24.67**	**232**	*eP*	P	16 52 22.0	+15
MJA0					pmax	pmax	
	comp=Z,1.0nm,0.9s						
MJAR	**Matsushiro Arr**	**24.69**	**232**	P	**P**	**16 52 07.7**	**+0.2**
	comp=Z,1.2nm,0.6s,baz=24,slow=7.9,SNR=12						
MJAR				LR	LR	17 01 44.6	
	comp=Z,33nm,19.7s,baz=90,slow=36						
ILAR	**Eielson Array**	**26.62**	**48**	P	**P**	**16 52 24.9**	**+0.2**
	comp=Z,0.6nm,0.8s,baz=262,slow=8.3,SNR=8.1						
ILAR	**Eielson Array**	**26.62**	**48**	P	**P**	**16 52 25.0**	**+0.2**
ILAR					pmax	pmax	
	comp=Z,1.0nm,0.8s						
KSRS	**Korea Array**	**29.11**	**247**	LR	LR	17 04 02.4	
	comp=Z,25nm,18.5s,baz=87,slow=36						
SONM	**Songino Array**	**34.78**	**282**	LR	LR	17 08 04.7	
	comp=Z,33nm,20.3s,baz=71,slow=37						
NRIK	**Noril'sk**	**35.20**	**324**	LR	LR	17 09 07.5	
	comp=Z,39nm,19.5s,baz=60,slow=38						
H11N2	**WAKE ISLAND Hy**	**35.28**	**172**	T	T	17 31 23.7	
	baz=356,slow=76,SNR=42						
H11N3	**WAKE ISLAND Hy**	**35.30**	**172**	T	T	17 31 24.2	
	baz=356,slow=76,SNR=46						
H11N1	**WAKE ISLAND Hy**	**35.30**	**172**	T	T	17 31 25.3	
	baz=356,slow=76,SNR=56						
YKA	**Yellowknife Ar**	**40.95**	**45**	P	**P**	**16 54 29.7**	**+1.0**
	comp=Z,0.9nm,0.7s,baz=298,slow=7.8,SNR=3.0						
ZALV	**Zalesovo Beam**	**42.91**	**302**	LR	LR	17 14 23.8	
	comp=Z,40nm,18.7s,baz=70,slow=39						
KURK	**Kurchatov**	**47.89**	**302**	P	**P**	**16 55 22.2**	**-2.0**
KURBB	**Kurchatov Arra**	**47.99**	**302**	P	**P**	**16 55 22.2**	**-2.8**
	comp=Z,0.3nm,0.4s,baz=56,slow=7.8,SNR=5.5						
MKAR	**Makanchi Array**	**48.55**	**295**	P	**P**	**16 55 27.2**	**-2.3**
	comp=Z,0.2nm,0.3s,baz=52,slow=9.3,SNR=2.8						
MKAR				LR	LR	17 16 51.8	
	comp=Z,30nm,19.8s,baz=16,slow=37						
BVAR	**Borovoye Array**	**50.29**	**308**	P	**P**	**16 55 40.3**	**-2.3**
	comp=Z,0.3nm,0.5s,baz=57,slow=10,SNR=2.6						
PDAR	**Pinedale Array**	**55.52**	**63**	P	**P**	**16 56 23.4**	**+1.8**
	comp=Z,0.5nm,0.5s,baz=321,slow=4.0,SNR=5.1						
FINES	**FINESS Array B**	**58.97**	**337**	P	**P**	**16 56 44.2**	**-1.1**
	comp=Z,1.0nm,0.6s,baz=18,slow=8.8,SNR=8.8						
CMAR	**Chiang Mai Arr**	**59.82**	**259**	P	**P**	**16 56 50.7**	**-1.1**
	comp=Z,0.4nm,0.6s,baz=25,slow=7.0,SNR=4.2						
AKASG	**Malin Array Be**	**67.72**	**330**	P	**P**	**16 57 42.0**	**-1.4**
	comp=Z,0.3nm,0.3s,baz=28,slow=6.4,SNR=4.5						
AKASG	**Malin Array Be**	**67.72**	**330**	P	**P**	**16 57 42.0**	**-1.4**
AKASG					pmax	pmax	
	comp=Z,1.0nm,0.3s						
TXAR	**Lajitas Array**	**68.75**	**69**	P	**P**	**16 57 51.7**	**+1.4**
	comp=Z,0.7nm,0.7s,baz=301,slow=3.9,SNR=8.8						
GERES	**GERESS Array B**	**73.31**	**339**	P	**P**	**16 58 17.1**	**-0.6**
	comp=Z,0.6nm,0.8s,baz=59,slow=5.1,SNR=3.9						
BRTR	**Keskin Array B**	**76.03**	**322**	P	**P**	**16 58 33.1**	**-0.6**
	comp=Z,0.5nm,0.6s,baz=5.0,slow=4.3,SNR=3.2						
WRA	**Warramunga Arr**	**78.28**	**207**	P	**P**	**16 58 46.4**	**+0.3**
	comp=Z,0.9nm,1.0s,baz=18,slow=5.8,SNR=3.7						
ASAR	**Alice Springs**	**81.35**	**206**	P	**P**	**16 59 06.7**	**+0.8**
	comp=Z,0.2nm,0.6s,baz=13,slow=6.0,SNR=3.9						
ESDC	**Sonseca Array**	**85.06**	**349**	P	**P**	**16 59 21.6**	**-0.3**
	comp=Z,0.8nm,0.8s,baz=5.2,slow=4.8,SNR=4.8						

IDC 02 16:54:37.6±999.0, 26°.18N×17°.85E, h0km, Error ellipse: s-maj=452.6km s-min=127.6km az=130.0, Libya

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I48TN	**KESRA INFRASON**	**12.06**	**325**	*i*		18 04 30.0	
	baz=136,slow=320,SNR=1.2						
I26DE	**FREYUNG INFRAS**	**22.86**	**353**	*i*		19 14 00.0	
	baz=175,slow=331,SNR=0.4						
I42PT	**GRACIOSA ISLAN**	**40.30**	**300**	*i*		21 05 10.0	
	baz=95,slow=317,SNR=0.9						

IDC ***02*** *16:59:31.4±1.1, 4°.31S×138°.65E, h0km, mb3.8/6, mb1 4.1/9, mb1mx3.8/34, mbtmp3.9/9, ML3.7/4, Error ellipse: s-maj=28.5km s-min=19.7km az=114.0*
ISCJB ***02*** *16:59:32.9±0.6, 4°.52S±0°.06×138°.75E±0°.09, h33km, mb3.8/6, Error ellipse: s-maj=13.7km s-min=6.6km az=23.0*
NEIC ***02*** *16:59:32.5±0.6, 4°.34S×138°.71E, h10km, mb4.2/1, Error ellipse: s-maj=17.1km s-min=10.5km az=93.0*
ISC 02 16:59:35.3±0.7, 4°.50S±0°.07×138°.8E±0°.1, h35km, n14, σ1§87/16, mb3.9/6, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**2.77**	**45**	Pn	**Pn**	**17 00 14.6**	**-2.7**
	1.6nm,0.3s,baz=92,slow=23,SNR=38						
JAY				Sn	**Sn**	**17 00 50.1**	**+0.6**
	1.0nm,0.3s,baz=275,slow=23,SNR=9.4						
COEN	**Coen**	**10.35**	**155**	*eP*	**Pn**	**17 02 02.5**	**+1.0**
WRAB	**Tennant Creek**	**15.93**	**195**	*eP*	**Pn**	**17 03 18.8**	**+1.8**
	18nm,0.9s						
WRA	**Warramunga Arr**	**15.94**	**195**	Pn	**Pn**	**17 03 14.8**	**-2.3**
	0.4nm,0.3s,baz=20,slow=12,SNR=18						
WRA				Sn	**Sn**	**17 06 09.7**	**-3.1**
	0.3nm,0.3s,baz=14,slow=22,SNR=4.1						
CTA	**Charters Tower**	**17.12**	**155**	P	**P**	**17 03 35.4**	**+1.9**
	0.2nm,0.3s,baz=344,slow=8.2,SNR=3.0						
CTAO	**Charters Tower**	**17.12**	**155**	Pn	**Pn**	**17 03 30.1**	**-2.0**
FITZ	**Fitzroy Crossi**	**18.64**	**222**	P	**P**	**17 03 50.4**	**+0.2**
	0.1nm,0.3s,baz=33,slow=14,SNR=3.7						
ASAR	**Alice Springs**	**19.62**	**193**	P	**Pn**	**17 04 03.5**	**+1.0**
	1.1nm,0.3s,baz=19,slow=10.0,SNR=128						
CMAR	**Chiang Mai Arr**	**45.39**	**301**	P	**P**	**17 07 51.0**	**+0.2**
	1.2nm,0.8s,baz=124,slow=6.6,SNR=9.2						
USRK	**Ussuriysk Ar.**	**48.86**	**354**	P	**P**	**17 08 17.3**	**-0.2**
	0.8nm,0.5s,baz=167,slow=9.9,SNR=3.1						
KLR	**Kul'dur**	**53.86**	**354**	P	**P**	**17 08 54.9**	**0.0**
	0.9nm,0.7s,baz=194,slow=4.6,SNR=4.5						
MKAR	**Makanchi Array**	**71.23**	**323**	P	**P**	**17 10 50.7**	**-0.4**
	0.4nm,0.6s,baz=108,slow=7.7,SNR=4.0						
ZALV	**Zalesovo Beam**	**73.50**	**330**	P	**P**	**17 11 03.4**	**-0.9**
	0.8nm,0.7s,baz=106,slow=4.9,SNR=4.0						
ILAR	**Eielson Array**	**87.43**	**24**	P	**P**	**17 12 21.8**	**+2.9**
	0.9nm,1.1s,baz=242,slow=4.8,SNR=5.2						

ISCJB ***02*** *17:01:32.9±0.6, 40°.12N±0°.04×29°.43E±0°.04, h1km±8km, Error ellipse: s-maj=6.6km s-min=5.0km az=21.0*
CSEM ***02*** *17:01:33.4±0.1, 40°.13N×29°.47E, h8km, MD2.7, Error ellipse: s-maj=2.4km s-min=2.3km az=9.0*
ISK ***02*** *17:01:33.0, 40°.13N×29°.45E, h8km, MD2.7*
DDA ***02*** *17:01:33.1, 40°.14N×29°.42E, h7km, Md2.4*
ISC 02 17:01:33.2±1.1, 40°.14N±0°.03×29°.45E±0°.02, h5km±10km, n37, σ0§82/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
IZI	**Iznik**	**0.20**	**5**	*e*PG	**Pg**	**17 01 37.5**	**+0.3**
IZI				*e*SG	**Sg**	**17 01 41.2**	**+1.3**
IZI	**Iznik**	**0.20**	**5**	*e*Pg	**Pg**	**17 01 37.5**	**+0.3**
IZI				*e*Sg	**Sg**	**17 01 41.2**	**+1.3**
IGD	**Bursa**	**0.23**	**304**	*i* P	**Pg**	**17 01 36.3**	**-1.3**
IGD				*i* S	**Sg**	**17 01 40.4**	**-0.3**
CAVI	**Cavuskoy**	**0.31**	**78**	*e*PG	**Pg**	**17 01 39.1**	**-0.1**
CAVI				*e*SG	**Sb**	**17 01 44.7**	**-1.9**
CAVI	**Cavuskoy**	**0.31**	**78**	*e*Pg	**Pg**	**17 01 39.1**	**-0.1**
CAVI				*e*Sg	**Sb**	**17 01 44.7**	**-1.9**
ADVT	**Abdulvahap**	**0.37**	**37**	*e*PG	**Pg**	**17 01 40.8**	**+0.4**
ADVT	**Abdulvahap**	**0.37**	**37**	*e*Pg	**Pg**	**17 01 40.8**	**+0.4**
ARMT	**Armutlu**	**0.62**	**314**	*e*PG	**Pg**	**17 01 44.9**	**-0.2**
ARMT	**Armutlu**	**0.62**	**314**	*e*Pg	**Pg**	**17 01 44.9**	**-0.2**
TVSB	**Tavsanli**	**0.69**	**179**	*e*PG	**Pg**	**17 01 46.6**	**+0.3**
TVSB	**Tavsanli**	**0.69**	**179**	*e*Pg	**Pg**	**17 01 46.6**	**+0.3**
HRT	**Hereke**	**0.70**	**14**	*e*PG	**Pg**	**17 01 47.2**	**+0.4**
HRT	**Hereke**	**0.70**	**14**	*e*Pg	**Pg**	**17 01 47.2**	**+0.4**
BORA	**Eskisehir**	**0.81**	**108**	*i* P	**Pg**	**17 01 48.4**	**-0.4**
BORA				*i* S	**Sn**	**17 02 05.4**	**+1.5**
BORA	**Eskisehir**	**0.81**	**108**	P	**Pg**	**17 01 48.4**	**-0.4**
KCTX	**Karacabey (Bur**	**0.85**	**279**	*e*PG	**Pb**	**17 01 50.6**	**+0.2**
KCTX	**Karacabey (Bur**	**0.85**	**279**	*e*Pg	**Pb**	**17 01 50.6**	**+0.2**
GULT	**Gulveren**	**0.87**	**70**	*e*PG	**Pg**	**17 01 49.8**	**-0.1**
GULT	**Gulveren**	**0.87**	**70**	*e*Pg	**Pg**	**17 01 49.8**	**-0.1**
ISK	**Istanbul-Kandi**	**0.97**	**342**	*e*PG	**Pb**	**17 01 52.4**	**-0.2**
ISK	**Istanbul-Kandi**	**0.97**	**342**	*e*Pg	**Pb**	**17 01 52.4**	**-0.2**
SILT	**Sile**	**1.03**	**8**	*e*PG	**Pb**	**17 01 53.2**	**-0.3**
SILT	**Sile**	**1.03**	**8**	*e*Pg	**Pb**	**17 01 53.2**	**-0.3**
GDZ	**Gediz**	**1.05**	**179**	*i* P	**Pn**	**17 01 53.9**	**-0.7**
GDZ				*i* S	**Sn**	**17 02 11.8**	**+2.1**
GDZ	**Gediz**	**1.05**	**179**	P	**Pn**	**17 01 53.9**	**-0.7**
GDZ				S	**Sn**	**17 02 11.8**	**+2.1**
KLYT	**Kilyos**	**1.16**	**345**	*e*PN	**Pn**	**17 01 55.6**	**-0.4**
KLYT	**Kilyos**	**1.16**	**345**	*e*Pn	**Pn**	**17 01 55.6**	**-0.4**
EDC	**Edincik**	**1.23**	**280**	*e*PN	**Pg**	**17 01 57.0**	**+0.2**
EDC	**Edincik**	**1.23**	**280**	*e*Pn	**Pg**	**17 01 57.0**	**+0.2**
BALB	**Balikesir**	**1.30**	**248**	*e*PN	**Pg**	**17 01 58.1**	**-0.1**
BALB	**Balikesir**	**1.30**	**248**	*e*Pn	**Pg**	**17 01 58.1**	**-0.1**
CTKS	**Kestanelik-??a**	**1.31**	**327**	*e*PN	**Pg**	**17 01 58.2**	**-0.1**
CTKS	**Kestanelik-??a**	**1.31**	**327**	*e*Pn	**Pg**	**17 01 58.2**	**-0.1**
MDUB	**Mudurnu**	**1.38**	**75**	*e*PN	**Pg**	**17 01 59.4**	**-0.3**
MDUB	**Mudurnu**	**1.38**	**75**	*e*Pn	**Pg**	**17 01 59.4**	**-0.3**
MRMT	**Marmara Adasi**	**1.49**	**289**	*e*PN	**Pb**	**17 02 01.4**	**0.0**
MRMT	**Marmara Adasi**	**1.49**	**289**	*e*Pn	**Pb**	**17 02 01.4**	**0.0**

IDC ***02*** *17:02:47.8±0.8, 15°.17S×173°.41W, h0km, mb4.3/8, mb1 4.5/9, mb1mx4.0/37, mbtmp4.4/9, ML4.9/1, MS3.2/1

JMA 02 17:11:00.6, 37.68N×139.93E, h9km±1km, M3.8, 3C-7D Broadband fault plane solution: P waves. NP1: ϕ_s224.00000°, δ55.00000°, λ125.00000°. **NP2:** ϕ_s354.00000°, δ48.00000°, λ51.00000°. **Principal axes:** T Plg62.0000°, Azm193.0000°; N Plg28.0000°, Azm22.0000°; P Plg4.0000°, Azm290.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.33**	**213**	⇑P	Pg	17 11 07.0	-0.1
JFY				eS	Sg	17 11 11.5	+0.1
JFT	**Otama**	**0.36**	**116**	⇓P	Pg	17 11 07.8	+0.1
JNS	**Sasagawa**	**0.51**	**286**	⇓P	Pg	17 11 10.5	+0.1
JYS	**Shirataka**	**0.55**	**11**	⇑P	Pg	17 11 11.4	+0.1
JYS				S	Sg	17 11 19.2	+0.7
JMM	**Marumori**	**0.71**	**75**	⇓P	Pg	17 11 14.2	-0.1
JMM				S	Sg	17 11 23.8	+0.3
JFK	**Kawauchi**	**0.81**	**112**	⇓P	Pg	17 11 15.8	-0.5
JHK	**Hiroka**	**0.84**	**240**	⇓P	Pg	17 11 16.5	-0.4
JHK				S	Sg	17 11 27.3	-0.5
JOU	**Okura**	**0.90**	**40**	⇑P	Pg	17 11 17.8	-0.1
JOU				S	Sg	17 11 29.6	+0.1
JYA	**Atsumi**	**0.93**	**349**	⇓P	Pg	17 11 18.3	-0.1
JYA				S	Sg	17 11 30.7	+0.2
JAW	**Awa shima**	**0.94**	**325**	⇓P	Pg	17 11 18.7	0.0
JAW				S	Sb	17 11 31.8	+0.1
MAT	**Matsushiro**	**1.79**	**231**	P	Pn	17 11 32.1	+0.5
MAT				S	Sb	17 11 56.1	+0.1

*ISCJB **02** 17:11:00.3±0.6, 37.68N±0.05×139.99E±0.09, h15km, mb3.6/9 Error ellipse: s-maj=10.6km s-min=6.5km az=17.5*
*IDC **02** 17:11:06.1±1.5, 37.62N×139.81E, h49km±17km, mb3.5/9, mb1 3.6/14, mb1mx3.5/44, mbtmp3.7/14, ML3.3/3, MS2.6/2, Ms1 2.6/2, ms1mx2.3/30, Error ellipse: s-maj=20.0km s-min=11.6km az=88.0*
*JMA **02** 17:11:10.5, 37.68N×139.93E, h9km±1km, M3.9*
JMA Felt IV J1.

ISC 02 17:11:02.2±0.8, 37.64N±0.06×140.06E±0.09, h15km, n24, σ1°98/20, mb3.7/9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.36**	**230**	P	**Pn**	**17 11 17.1**	**+4.1**
JFY				S	**Sn**	**17 11 21.5**	**+1.6**
JNS	**Sasagawa**	**0.61**	**287**	P	**Pn**	**17 11 20.5**	**+4.1**
MJAR	**Matsushiro Arr**	**1.84**	**234**	P	**Pn**	**17 11 32.0**	**-1.3**
MJAR	35nm,0.3s,baz=46,slow=12,SNR=219			S	**Sn**	**17 11 56.2**	**-0.1**
JHJ	**Hachijo jima 2**	**4.52**	**183**	P	**Pn**	**17 12 10.6**	**+0.5**
JHJ	38nm,0.3s,baz=29,slow=30,SNR=9.1 17nm,0.3s,baz=68,slow=7.0,SNR=11			S	**Sn**	**17 13 04.2**	**+1.9**
ASAJ	**Asahikawa**	**6.75**	**16**	P	**Pn**	**17 12 43.5**	**+2.8**
JNU	**Nakatsue**	**8.74**	**242**	P	**Pn**	**17 13 07.8**	**-0.4**
JNU	0.1nm,0.3s,baz=29,slow=14,SNR=2.1 comp=Z,33nm,21.0s,baz=302,slow=39			LR	LR	17 16 41.0	
USRK	**Ussuriysk Ar.**	**8.95**	**320**	P	**Pn**	**17 13 10.9**	**-0.1**
KSRS	0.1nm,0.3s,baz=142,slow=37,SNR=2.9 **Korea Array**	**9.64**	**273**	P	**Pn**	**17 13 21.2**	**+0.9**
KLR	0.8nm,0.3s,baz=88,slow=14,SNR=10 **Kul'dur**	**13.05**	**335**	LR	LR	17 18 09.2	
SEY	comp=Z,26nm,18.8s,baz=126,slow=33 **Seymchan**	**26.42**	**13**	P	**P**	**17 16 36.8**	**-1.2**
SONM	1.3nm,0.8s,baz=185,slow=12,SNR=2.8 **Songino Array**	**26.55**	**303**	P	**P**	**17 16 38.7**	**-0.8**
H11N2	0.7nm,0.8s,baz=134,slow=11,SNR=4.4 **WAKE ISLAND Hy**	**29.39**	**120**	T	T	17 47 23.2	
H11N1	baz=312,slow=75,SNR=45 **WAKE ISLAND Hy**	**29.39**	**120**	T	T	17 47 23.8	
H11N3	baz=312,slow=75,SNR=30 **WAKE ISLAND Hy**	**29.41**	**120**	T	T	17 47 24.5	
H11S1	baz=312,slow=75,SNR=33 **WAKE ISLAND Hy**	**30.10**	**122**	T	T	17 48 16.1	
H11S3	baz=314,slow=75,SNR=84 **WAKE ISLAND Hy**	**30.10**	**122**	T	T	17 48 15.7	
H11S2	baz=314,slow=75,SNR=46 **WAKE ISLAND Hy**	**30.11**	**122**	T	T	17 48 17.3	
ZALV	baz=314,slow=75,SNR=54 **Zalesovo Beam**	**40.71**	**312**	P	**P**	**17 18 40.0**	**-2.0**
MKAR	0.5nm,0.5s,baz=69,slow=4.9,SNR=3.6 **Makanchi Array**	**42.88**	**301**	P	**P**	**17 18 58.2**	**-1.7**
ILAR	0.3nm,0.4s,baz=91,slow=7.2,SNR=4.1 **Eielson Array**	**49.56**	**33**	P	**P**	**17 19 52.1**	**-0.1**
INK	0.4nm,0.8s,baz=269,slow=6.8,SNR=6.9 **Inuvik**	**54.34**	**27**	P	**P**	**17 20 29.4**	**+1.8**
WRA	0.9nm,0.6s,baz=14,slow=7.7,SNR=2.6 **Warramunga Arr**	**57.53**	**186**	P	**P**	**17 20 49.5**	**-1.5**
ASAR	1.3nm,0.5s,baz=1.8,slow=7.5,SNR=30 **Alice Springs**	**61.25**	**186**	P	**P**	**17 21 15.9**	**-0.8**
PDAR	1.0nm,0.8s,baz=19,slow=5.4,SNR=7.7 **Pinedale Array**	**78.01**	**45**	P	**P**	**17 23 00.9**	**+0.6**
	0.5nm,0.7s,baz=266,slow=6.1,SNR=3.1						

IDC 02 17:12:00.6±999.0, 26.56N×17.60E, h0km, Error ellipse: s-maj=518.0km s-min=160.8km az=137.0, Libya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I48TN	**KESRA INFRASON**	**11.62**	**324**	*i*		18 20 00.0	
I26DE	baz=136,slow=323,SNR=2.2 **FREYUNG INFRAS**	**22.46**	**353**	*i*		19 29 20.0	
I42PT	baz=174,slow=327,SNR=0.5 **GRACIOSA ISLAN**	**39.92**	**300**	*i*		21 19 00.0	
	baz=95,slow=319,SNR=0.8						

*BJI **02** 17:22:55.0, 5.85S×148.30E, h32km, mb4.6/32, mB4.9/25, Ms4.5/16, Ms7 4.2/16*
*ISCJB **02** 17:22:57.5±0.2, 6.21S±0.02×147.95E±0.04, h60km, mb4.8/67, MS3.9/25, Error ellipse: s-maj=6.0km s-min=3.5km az=5.9*
*IDC **02** 17:22:59.8±1.9, 6.22S×147.97E, h66km±17km, mb4.3/17, mb1 4.5/22, mb1mx4.4/31, mbtmp4.6/22, MS3.9/25, Ms1 3.9/25, ms1mx3.8/32, Error ellipse: s-maj=16.5km s-min=10.3km az=81.0*
*NEIC **02** 17:22:60.0±0.6, 6.24S×147.95E, h70km±5km, mb4.8/51, Error ellipse: s-maj=5.3km s-min=3.7km az=98.0*
*DJA **02** 17:23:03.4±1.2, 7.3S±8.6×14.8E±1.1, h44km±8km, M5.0/12, mb5.0/12, mB5.3/3, MLv5.0/1, Mw(mB)4.8/3*

ISC 02 17:22:59.3±0.3, 6.24S±0.04×148.02E±0.05, h60km, n155, σ1°59/163, mb4.8/67, MS4.0/26, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.26**	**195**	P	**Pn**	**17 23 47.8**	**-0.2**
PMG	72nm,0.3s,baz=21,slow=5.1,SNR=113 46nm,0.3s,baz=70,slow=8.4,SNR=11			S	**Sn**	**17 24 26.9**	**+1.3**
PMG	comp=Z,5μm,20.4s,baz=10.0,slow=46			LR	LR	17 25 28.7	
MANU	**Manus Island**	**4.22**	**351**	*e*Pn	**Pn**	**17 24 03.3**	**+2.0**
RABL	**Rabaul**	**4.60**	**64**	*e*Pn	**Pn**	**17 24 07.4**	**+0.9**
JAY	**Jayapura**	**8.18**	**297**	P	**Pn**	**17 24 55.9**	**+0.5**
JAY	0.2nm,0.3s,baz=91,slow=21,SNR=12 comp=Z,50nm,18.9s,baz=4.5,slow=39			LR	LR	17 28 15.0	
JAY	**Jayapura**	**8.18**	**297**	P	Pn	17 25 00.5	+5.0
GENI	**Genyem**	**8.62**	**295**	P	**Pn**	**17 25 03.8**	**+2.2**
COEN	**Coen**	**9.03**	**211**	P	**Pn**	**17 25 06.7**	**-0.3**
COEN	baz=9.0,SNR=11 **Coen**	**9.03**	**211**	*e*Pn	**Pn**	**17 25 06.0**	**-1.1**
COEN				*e*Sn	Sn	17 26 31.9	-15
HNR	**Honiara**	**12.23**	**106**	P	**Pn**	**17 25 51.0**	**+0.1**
HNR	1.3nm,0.3s,baz=246,slow=3.9,SNR=8.4 comp=Z,631nm,21.8s,baz=279,slow=34			LR	LR	17 29 57.9	
HNR	**Honiara**	**12.23**	**106**	P	**Pn**	**17 25 53.0**	**+2.1**
HNR	**Honiara**	**12.23**	**106**	*e*Pn	Pn	17 25 45.4	-5.5
MTSU	**Mount Surprise**	**12.36**	**197**	P	**Pn**	**17 25 53.0**	**+0.3**
CTA	baz=12,SNR=12 **Charters Tower**	**13.87**	**187**	P	**Pn**	**17 26 14.3**	**+1.2**
CTA	0.4nm,0.3s,baz=6.6,slow=15,SNR=3.9 comp=Z,1μm,19.1s,baz=17,slow=37			LR	LR	17 31 39.4	
QIS	**Mount Isa**	**16.41**	**209**	P	**Pn**	**17 26 44.6**	**-1.2**
	baz=16,SNR=34						
KDU	**Kakadu**	**16.61**	**246**	P	**Pn**	**17 26 46.7**	**-1.7**
	baz=17,SNR=6.0						
SIJI	**Sorong**	**17.55**	**287**	P	**P**	**17 26 59.9**	**-0.4**
	9.5nm,0.3s,baz=90,slow=21,SNR=3.3						
MTN	**Manton Dam**	**17.89**	**247**	P	**P**	**17 27 03.5**	**-0.6**
	baz=18,SNR=4.7						
MTN	**Manton Dam**	**17.89**	**247**	*e*P	**P**	**17 27 03.2**	**-0.9**
	56nm,1.3s						
WRAB	**Tennant Creek**	**19.02**	**223**	*e*P	**P**	**17 27 14.9**	**-1.6**
	43nm,0.8s						
WB2	**Warramunga Arr**	**19.02**	**223**	*e*P	**P**	**17 27 15.3**	**-1.3**
	34nm,0.7s						
WR1	**Warramunga Arr**	**19.03**	**223**	*e*P	**P**	**17 27 15.6**	**-1.0**
	34nm,0.7s						
WR1				*e*ScP	**ScP**	**17 35 14.5**	**+3.8**
WRA	**Warramunga Arr**	**19.03**	**223**	P	**P**	**17 27 15.6**	**-1.0**
	3.2nm,0.3s,baz=50,slow=11,SNR=105						
WRA				ScP	**ScP**	**17 35 14.5**	**+3.8**
	0.1nm,0.3s,baz=31,slow=2.2,SNR=7.9						
WRA				LR	LR	17 35 20.6	
	comp=Z,705nm,18.6s,baz=45,slow=39						
EIDS	**Eidsvold**	**19.24**	**172**	P	**Pn**	**17 27 20.1**	**-0.3**
	baz=19,SNR=7.2						
EIDS	**Eidsvold**	**19.24**	**172**	*e*P	**P**	**17 27 19.6**	**+0.7**
	30nm,0.9s						
GUMO	**Guam**	**19.95**	**351**	LR	LR	17 35 07.6	
	comp=Z,228nm,18.1s,baz=167,slow=36						
RMQ	**Roma**	**20.14**	**178**	P	Pn	17 27 30.3	-0.8
	baz=20,SNR=32						
QLP	**Quilpie**	**20.55**	**190**	P	**P**	**17 27 33.8**	**+0.8**
	baz=21,SNR=67						
LBMI	**Labuha**	**21.22**	**284**	P	P	17 27 47.1	+6.7
AS01	**Alice Springs**	**21.98**	**217**	*e*P	**P**	**17 27 47.5**	**-1.0**
AS01				*e*ScP	**ScP**	**17 35 21.0**	**+3.2**
AS31	**Alice Springs**	**22.01**	**217**	*e*P	**P**	**17 27 48.2**	**-0.6**
	47nm,1.6s						
ASAR	**Alice Springs**	**22.01**	**217**	P	**P**	**17 27 48.4**	**-0.5**
	37nm,0.8s,baz=52,slow=9.1,SNR=490						
ASAR				ScP	**ScP**	**17 35 21.9**	**+4.0**
	2.4nm,0.8s,baz=46,slow=3.6,SNR=7.4						
ASAR				LR	LR	17 37 21.8	
	comp=Z,644nm,20.5s,baz=52,slow=39						
DZM	**Mont Dzumac**	**23.76**	**133**	P	**P**	**17 28 07.3**	**+0.7**
	39nm,1.0s,baz=267,slow=22,SNR=11						
DZM				LR	LR	17 36 34.1	
	comp=Z,580nm,18.9s,baz=318,slow=34						
DZM	**Mont Dzumac**	**23.76**	**133**	*e*P	**P**	**17 28 05.5**	**-1.1**
	62nm,1.1s						
SOEI	**Soe**	**23.77**	**260**	P	**P**	**17 28 12.5**	**+5.7**
SOEI	**Soe**	**23.77**	**260**	*e*P	**P**	**17 28 07.3**	**+0.5**
	90nm,0.9s						
ARMA	**Armidale**	**24.29**	**172**	P	**P**	**17 28 12.1**	**+0.8**
	baz=24,SNR=13						
ARMA	**Armidale**	**24.29**	**172**	*e*P	**P**	**17 28 11.7**	**+0.4**
	31nm,0.8s						
BATI	**Baumata**	**24.42**	**259**	P	**P**	**17 28 16.7**	**+4.1**
FITZ	**Fitzroy Crossi**	**24.81**	**240**	P	**P**	**17 28 15.8**	**-0.2**
	66nm,0.6s,baz=55,slow=7.3,SNR=153						
FITZ				LR	LR	17 39 16.3	
	comp=Z,777nm,19.9s,baz=63,slow=39						
FITZ	**Fitzroy Crossi**	**24.81**	**240**	P	**P**	**17 28 15.9**	**-0.2**
	baz=25,SNR=92						
FITZ	**Fitzroy Crossi**	**24.81**	**240**	*e*P	**P**	**17 28 16.0**	**0.0**
	83nm,0.8s						
CMSA	**Cobar Meteorol**	**25.26**	**185**	P	**P**	**17 28 20.6**	**+0.6**
	baz=25,SNR=23						
MMRI	**Maumere**	**25.67**	**263**	P	**P**	**17 28 27.4**	**+3.5**
MMRI	**Maumere**	**25.67**	**263**	*e*P	**P**	**17 28 23.3**	**-0.7**
	68nm,0.7s						
LUWI	**Luwuk**	**25.71**	**281**	P	**P**	**17 28 30.3**	**+6.0**
	140nm,1.0s						
LUWI	**Luwuk**	**25.71**	**281**	*e*P	**P**	**17 28 23.3**	**-1.0**
	129nm,1.0s						
STKA	**Stephens Creek**	**26.20**	**192**	P	**P**	**17 28 28.8**	**+0.2**
	26nm,0.9s,baz=6.4,slow=11,SNR=14						
STKA				LR	LR	17 39 57.9	
	comp=Z,645nm,18.0s,baz=18,slow=39						
STKA	**Stephens Creek**	**26.20**	**192**	P	**P**	**17 28 28.5**	**0.0**
	baz=26,SNR=9.9						
STKA	**Stephens Creek**	**26.20**	**192**	*e*P	**P**	**17 28 28.0**	**-0.5**
	5.5nm,0.9s						
WRKA	**Warakurna**	**26.57**	**223**	P	**P**	**17 28 31.7**	**-0.3**
	baz=27,SNR=114						
YNG	**Young**	**27.92**	**179**	P	**P**	**17 28 45.0**	**+1.0**
	baz=28,SNR=6.0						
KAPI	**Kappang**	**28.16**	**271**	P	**P**	**17 28 45.3**	**-0.9**
	9.7nm,0.8s,baz=126,slow=2.0,SNR=4.4						
KAPI				LR	LR	17 42 51.3	
	comp=Z,224nm,18.6s,baz=104,slow=42						
KAPI	**Kappang**	**28.16**	**271**	*e*P	**P**	**17 28 44.8**	**-1.5**
	44nm,1.4s						
HTT	**Hallett**	**28.34**	**196**	P	**P**	**17 28 49.3**	**+1.5**
	baz=28,SNR=7.8						
CAN	**Canberra**	**28.95**	**178**	*e*P	**P**	**17 28 53.6**	**+0.4**
	18nm,1.4s						
CNB	**Canberra Magne**	**28.96**	**178**	P	**P**	**17 28 54.4**	**+1.1**
	baz=29,SNR=5.9						
MBWA	**Marble Bar**	**31.14**	**239**	*e*P	**P**	**17 29 12.4**	**-0.3**
	26nm,0.8s						
CBIJ	**Chichi jima**	**33.62**	**351**	*e*P	**P**	**17 29 33.3**	**-0.9**
	49nm,0.9s						
MEEK	**Meekatharra**	**34.58**	**231**	P	**P**	**17 29 43.0**	**+0.4**
	baz=35,SNR=20						
KMBL	**Kambalda**	**34.98**	**221**	P	**P**	**17 29 46.8**	**+0.8**
	baz=35,SNR=7.3						
SBUM	**Sibu**	**36.77**	**283**	*e*P	**P**	**17 30 01.8**	**+0.3**
	7.3nm,1.2s						
MORW	**Morawa**	**37.77**	**229**	P	**P**	**17 30 10.2**	**+0.4**
	baz=38,SNR=6.5						
KLBR	**Kellerberrin**	**37.90**	**224**	P	**P**	**17 30 10.7**	**-0.2**
	baz=38,SNR=9.5						
YULB	**Yu-li**	**39.36**	**319**	*e*P	**P**	**17 30 20.5**	**-2.7**
	15nm,1.2s						
TPUB	**Ta-pu**	**39.73**	**319**	*e*P	**P**	**17 30 25.7**	**-0.6**
	16nm,1.1s						
SSLB	**Suanglung**	**39.86**	**319**	*e*P	**P**	**17 30 26.1**	**-1.2**
	6.6nm,0.8s						
CISI	**Cisompet, Garu**	**39.92**	**266**	*e*P	**P**	**17 30 26.5**	**-1.6**
	86nm,0.9s						
YHNB	**Yeheng**	**40.22**	**321**	*e*P	**P**	**17 30 30.8**	**+0.3**
	65nm,1.3s						
JNU	**Nakatsue**	**42.40**	**338**	*e*P	**P**	**17 30 47.6**	**-0.5**
	18nm,0.9s						
RPZ	**Rata Peaks**	**42.46**	**155**	P	**P**	**17 30 49.4**	**+0.9**
	6.5nm,0.7s,baz=229,slow=3.8,SNR=3.7						
KHZ	**Kahutara**	**42.53**	**152**	*e*P	**P**	**17 30 48.1**	**-0.9**
	27nm,0.8s						
INU	**Inuyama**	**42.65**	**347**	*e*P	**P**	**17 30 47.9**	**-2.2**
	18nm,1.2s						
MJAR	**Matsushiro Arr**	**43.54**	**349**	P	**P**	**17 30 57.1**	**-0.2**
	12nm,0.9s,baz=173,slow=8.1,SNR=46						
MJAR				LR	LR	17 49 13.9	
	comp=Z,74nm,18.1s,baz=180,slow=36						
MAJO	**Matsushiro**	**43.54**	**349**	*e*P	**P**	**17 30 56.9**	**-0.4**
	54nm,1.1s						
MAT	**Matsushiro**	**43.54**	**349**	P	**P**	**17 30 56.9**	**-0.4**
MAT				S	**S**	**17 37 21.2**	**-0.9**
MJB9	**Matsu-Tunnel**	**43.55**	**349**	*e*P	**P**	**17 30 57.2**	**-0.1**
	14nm,1.1s						
QIZ	**Qiongzhong**	**45.22**	**305**	P	**P**	**17 31 11.6**	**+0.6**
QIZ				S	**S**	**17 37 45.8**	**-1.2**
QIZ				LR	LR		
	comp=N,160nm,13.1s						
QIZ				LR	LR		
	comp=Z,170nm,24.5s						
KSRS	**Korea Array**	**47.34**	**338**	P	**P**	**17 31 27.1**	**-0.2**
	6.0nm,1.1s,baz=158,slow=9.2,SNR=18						
KSRS				LR	LR	17 51 16.8	
	comp=Z,91nm,18.4s,baz=152,slow=36						
KS15	**Wonju Array Si**	**47.35**	**338**	*e*P	**P**	**17 31 26.9**	**-0.4**
KSAR	**Wonju Array Be**	**47.35**	**338**	P	**P**	**17 31 27.1**	**-0.3**
KS01	**Wonju Array Si**	**47.38**	**338**	*e*P	**P**	**17 31 27.1**	**-0.5**
GSI	**Gunungsitoli**	**50.91**	**277**	*e*P	**P**	**17 31 54.3**	**-0.7**
	13nm,0.9s						
GYA	**Guiyang**	**51.60**	**311**	P	**P**	**17 32 02.0**	**+1.9**
GYA				pP	pP	17 32 13.2	-2.7
GYA				PP	**PP**	**17 34 01.0**	**+2.8**
GYA				S	**S**	**17 39 18.9**	**+1.9**
GYA				sS	sS	17 39 38.0	-5.6
GYA				SS	**SS**	**17 42 54.3**	**+0.1**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,110nm,5.9s						
GYA				LR	LR		
	comp=N,460nm,19.8s						
GYA				LR	LR		
	comp=E,410nm,20.0s						
GYA				LR	LR		
	comp=Z,420nm,20.3s						
ENH	**Enshi**	**51.78**	**317**	*e*P	**P**	**17 32 00.0**	**-1.3**
	5.3nm,0.8s						
USRK	**Ussuriysk Ar.**	**52.25**	**345**	P	**P**	**17 32 04.9**	**+0.5**
	2.2nm,0.5s,baz=170,slow=8.1,SNR=9.5						
USRK				LR	LR	17 52 53.6	
	comp=Z,40nm,20.4s,baz=143,slow=34						
YSS	**Yuzh-Sakhalins**	**53.17**	**355**	*e*P	**P**	**17 32 11.1**	**0.0**
	21nm,1.3s						
CN2	**Changchun**	**53.83**	**340**	*e*P	P	17 32 24.9	+8.8
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CM01	**Chiang Mai Arr**	**54.23**	**298**	*e*P	**P**	**17 32 19.1**	**-0.4**
CMAR	**Chiang Mai Arr**	**54.26**	**298**	P	**P**	**17 32 18.8**	**-0.9**
	comp=Z,0.6nm,0.7s,baz=125,slow=5.8,SNR=4.3						
CMAR				LR	LR	17 56 04.5	
	comp=Z,57nm,21.0s,baz=144,slow=37						
XAN	**Xi'an**	**54.51**	**320**	P	**P**	**17 32 19.9**	**-1.4**
XAN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
XAN				pmax	pmax		
	comp=Z,18nm,6.0s						
BJI	**Beijing**	**54.61**	**330**	P	**P**	**17 32 22.6**	**+0.8**
BJI				PP	**PP**	**17 34 24.5**	**-0.4**
BJI				S	**S**	**17 40 03.5**	**+6.3**
BJI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,84nm,5.5s						
BJI				LR	LR		
	comp=Z,120nm,17.3s						
BJI				LR	LR		
	comp=Z,73nm,24.0s						
BJI				LR	LR		
	comp=Z,170nm,22.3s						
CD2	**Chengdu**	**56.17**	**314**	*e*P	**P**	**17 32 32.6**	**-0.7**
CD2				pP	pP	17 32 44.1	-5.1
CD2				sP	sP	17 32 49.0	-7.0
CD2				PcS	**PcS**	**17 37 30.2**	**-1.0**
CD2				S	**S**	**17 40 20.3**	**+1.8**
CD2				sS	sS	17 40 40.0	-5.4
CD2				SS	**SS**	**17 44 08.8**	**+2.8**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.0s						
HHC	**Hu-ho-hao-te**	**57.57**	**328**	*e*P	**P**	**17 32 44.3**	**+1.2**
HHC				pP	pP	17 32 57.0	-2.1
HHC				sP	sP	17 33 02.3	-3.6
HHC				S	**S**	**17 40 37.8**	**+1.0**
HHC				pmax	pmax		
	comp=Z,14nm,0.6s						
HHC				pmax	pmax		
	comp=Z,78nm,7.2s						
HHC				LR	LR		
	comp=Z,110nm,12.8s						
HHC				LR	LR		
	comp=Z,94nm,15.8s						
HHC				LR	LR		
	comp=Z,100nm,15.2s						
LZH	**Lanzhou**	**59.05**	**319**	*e*P	**P**	**17 32 55.0**	**+1.4**
LZH				pP	pP	17 33 05.7	-4.0
LZH				sP	sP	17 33 09.8	-6.7
LZH				pmax	pmax		
	comp=Z,13nm,1.0s						
LZH				pmax	pmax		
	comp=Z,56nm,4.3s						
LZH				LR	LR		
	comp=Z,240nm,20.1s						
PEA0	**Petropavlovsk-**	**59.69**	**7**	*e*P	**P**	**17 32 57.6**	**+0.1**
PEA0B	**Petropavlovsk-**	**59.69**	**7**	*e*P	**P**	**17 32 58.0**	**+0.5**
	comp=Z,23nm,1.2s						
PETK	**Petropavlovsk-**	**59.69**	**7**	P	**P**	**17 32 57.7**	**+0.2**
	comp=Z,10nm,0.8s,baz=159,slow=5.7,SNR=23						
PETK				LR	LR	17 55 01.4	
	comp=Z,125nm,21.8s,baz=198,slow=32						
PEA1	**Petropavlovsk-**	**59.70**	**7**	*e*P	**P**	**17 32 57.7**	**+0.2**
OPA	**Opana**	**59.73**	**61**	*e*P	**P**	**17 32 57.3**	**-1.0**
	comp=Z,416nm,2.0s						
PET	**Petropavlovsk**	**59.73**	**7**	*e*P	**P**	**17 32 58.0**	**+0.3**
	comp=Z,13nm,1.1s						
HIA	**Hailar**	**60.53**	**339**	*e*P	**P**	**17 33 01.8**	**-1.6**
	comp=Z,21nm,1.3s						
GTA	**Gaotai**	**63.58**	**320**	*e*P	**P**	**17 33 24.4**	**+0.3**
GTA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SONA0	**Songino Array**	**65.11**	**330**	*e*P	**P**	**17 33 33.4**	**-0.6**
	comp=Z,11nm,1.5s						
SONM	**Songino Array**	**65.11**	**330**	P	**P**	**17 33 33.4**	**-0.6**
	comp=Z,1.9nm,0.9s,baz=145,slow=6.3,SNR=9.8						
SONM				LR	LR	18 01 29.2	
	comp=Z,129nm,20.7s,baz=113,slow=36						
SONA1	**Songino Array**	**65.11**	**330**	*e*P	**P**	**17 33 33.1**	**-0.9**
CASY	**Casey**	**65.30**	**196**	*e*P	**P**	**17 33 34.5**	**-0.2**
	comp=Z,17nm,0.5s						
TLY	**Talaya**	**69.03**	**332**	LR	LR	18 02 34.8	
	comp=Z,48nm,21.5s,baz=130,slow=34						
YAK	**Yakutsk**	**69.53**	**351**	LR	LR	18 03 36.9	
	comp=Z,37nm,18.6s,baz=166,slow=35						
YAK	**Yakutsk**	**69.53**	**351**	*e*P	**P**	**17 33 59.9**	**-1.5**
	comp=Z,16nm,1.3s						
VNDA	**Vanda**	**71.61**	**177**	P	**P**	**17 34 14.6**	**+0.7**
	comp=Z,3.9nm,0.8s,baz=335,slow=6.9,SNR=18						
VNDA				LR	LR	18 01 19.5	
	comp=Z,90nm,21.8s,baz=352,slow=32						
VNDA	**Vanda**	**71.61**	**177**	*e*P	**P**	**17 34 14.7**	**+0.7**
	comp=Z,12nm,1.4s						
WMQ	**Urumqi**	**73.64**	**319**	*e*P	**P**	**17 34 26.4**	**-0.2**
WMQ				pP	PcP	17 34 41.5	-0.7
WMQ				pmax	pmax		
	comp=Z,11nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,120nm,5.1s						
WMQ				LR	LR		
	comp=Z,200nm,20.4s						
WMQ				LR	LR		
	comp=Z,140nm,19.5s						
WMQ				LR	LR		
	comp=Z,160nm,26.8s						
MK01	**Makanchi Array**	**78.31**	**320**	*e*P	**P**	**17 34 51.5**	**-1.6**
MK31	**Makanchi Array**	**78.33**	**320**	*e*P	**P**	**17 34 52.6**	**-0.7**
MK32	**Makanchi Array**	**78.33**	**320**	*e*P	**P**	**17 34 52.6**	**-0.7**
MKAR	**Makanchi Array**	**78.33**	**320**	P	**P**	**17 34 52.6**	**-0.7**
	comp=Z,1.3nm,0.5s,baz=100,slow=8.8,SNR=16				

KLU	**Klutina**	**84.33**	**26**	*e*P		**P**	**17 35 25.8**	**+1.0**
	comp=Z,11nm,1.2s								
DHY	**Denali Highway**	**84.38**	**24**	*e*P		**P**	**17 35 24.3**	**-0.8**
	comp=Z,3.8nm,0.8s								
WRH	**Wood River Hil**	**84.71**	**23**	*e*P		**P**	**17 35 26.3**	**-0.2**
	comp=Z,6.0nm,1.2s								
CCB	**Clear Creek Bu**	**84.90**	**23**	*e*P		**P**	**17 35 26.7**	**-0.7**
	comp=Z,5.5nm,1.1s								
COLD	**Coldfoot**	**85.21**	**20**	*e*P		**P**	**17 35 29.9**	**+0.9**
	comp=Z,2.7nm,1.0s								
IL1	**Eielson Array**	**85.31**	**23**	*e*P		**P**	**17 35 27.2**	**-2.3**
ILAR	**Eielson Array**	**85.31**	**23**	P		**P**	**17 35 27.3**	**-2.2**
	comp=Z,1.7nm,0.6s,baz=254,slow=5.1,SNR=17								
ILAR				LR		LR	18 07 48.4		
	comp=Z,34nm,21.4s,baz=261,slow=32								
ILB	**Eielson Array**	**85.31**	**23**	*e*P		**P**	**17 35 27.4**	**-2.0**
NRIK	**Noril'sk**	**85.82**	**342**	LR		LR	18 13 52.4		
	comp=Z,25nm,21.0s,baz=89,slow=36								
DAWY	**Dawson**	**88.06**	**25**	*e*P		**P**	**17 35 42.5**	**-0.5**
	comp=Z,14nm,1.5s								
YKA	**Yellowknife Ar**	**98.91**	**28**	LR		LR	18 18 27.1		
	comp=Z,6.4nm,20.2s,baz=0.0,slow=34								
PLCA	**Paso Flores**	**121.36**	**146**	PKP		**PKPdf**	**17 41 44.5**	**-1.8**
	comp=Z,2.5nm,0.6s,baz=265,slow=3.1,SNR=11								
PLCA	**Paso Flores**	**121.36**	**146**	*e*PKPdf		**PKPdf**	**17 41 44.2**	**-2.1**
GERES	**GERESS Array B**	**122.68**	**326**	PKP		**PKPdf**	**17 41 47.6**	**-1.0**
	comp=Z,0.5nm,0.5s,baz=101,slow=1.4,SNR=7.1								
HELC	**Santa Helena**	**136.72**	**88**	*e*PKPdf		**PKPdf**	**17 42 12.6**	**-3.9**
PRAC	**Prado**	**137.19**	**91**	*e*PKPdf		**PKPdf**	**17 42 17.4**	**+0.3**
RUSC	**La Rusia**	**139.13**	**88**	*e*PKPdf		**PKPdf**	**17 42 16.8**	**-4.3**
CPUP	**Villa Florida**	**139.34**	**144**	PKP		**PKPdf**	**17 42 20.8**	**+0.2**
	comp=Z,4.5nm,0.9s,baz=248,slow=3.3,SNR=5.9								
CPUP	**Villa Florida**	**139.34**	**144**	*e*PKPdf		**PKPdf**	**17 42 20.4**	**-0.2**
SAML	**Samuel**	**145.43**	**116**	*e*PKPdf		**PKPbc**	**17 42 32.0**	**+0.2**
STVI	**Saint Thomas**	**145.68**	**66**	*e*PKPdf		**PKPdf**	**17 42 32.1**	**+0.2**
TORD	**Torodi Ar. Bea**	**146.13**	**284**	PKPbc		**PKPdf**	**17 42 33.0**	**+0.1**
	comp=Z,5.2nm,0.7s,baz=68,slow=3.6,SNR=31								
TOA1	**Torodi Ar. Sit**	**146.13**	**284**	*e*PKPdf		**PKPdf**	**17 42 33.0**	**+0.1**
PTGA	**Pitinga**	**151.22**	**103**	*e*PKPdf		**PKPdf**	**17 42 42.1**	**+0.9**
PTGA				*e*PKPbc		**PKiKP**	**17 42 48.1**	**+0.4**
DBIC	**Dimbokro**	**153.04**	**272**	PKPbc		**PKPbc**	**17 42 50.6**	**-0.6**
	comp=Z,4.0nm,0.8s,baz=107,slow=4.9,SNR=4.6								

ISCJB ***02*** *17:58:37.4±0.6, 6˚.20S±0˚.03×146˚.67E±0˚.04, h113km±6km, mb4.7/77, Error ellipse: s-maj=6.0km s-min=4.5km az=170.7*
BJI ***02*** *17:58:37.8, 6˚.20S×146˚.70E, h106km, mb4.7/19, mB4.9/18*
IDC ***02*** *17:58:39.1±0.5, 6˚.24S×146˚.81E, h118km±4km, mb4.0/21, mb1 4.1/23, mb1mx4.0/41, mbtmp4.4/23, MS3.4/7, Ms1 3.4/7, ms1mx3.0/29, Error ellipse: s-maj=17.1km s-min=7.3km az=86.0*
DJA ***02*** *17:58:40.5±0.9, 6˚.5±7˚×14˚.7E±˚, h104km±6km, M5.1/13, mb5.0/13, mB5.3/4, MLv5.2/3, Mw(mB)4.7/4*
NEIC ***02*** *17:58:40.0±0.2, 6˚.20S×146˚.67E, mb4.9/52, Error ellipse: s-maj=5.5km s-min=4.3km az=83.0*
NEIC Felt at Kainantu.

ISC 02 17:58:39.6±0.4, 6˚30S±0˚.04×146˚.65E±0˚.05, h116km±3km, h116km:pP-P, n160, σ1.950/183, mb4.6/77, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**3.12**	**171**	P		**Pn**	**17 59 27.2**	**-0.3**
	78nm,0.3s,baz=354,slow=6.2,SNR=290							
PMG				S		**Sn**	**18 00 03.7**	**-0.6**
	90nm,0.3s,baz=16,slow=15,SNR=26							
PMG	**Port Moresby**	**3.12**	**171**	*e*Pn		**Pn**	**17 59 27.1**	**-0.3**
PMG				*e*Sn		Sn	17 59 54.5	-10
PMG				S		**Sn**	**18 00 03.7**	**-0.6**
MANU	**Manus Island**	**4.29**	**10**	*e*Pn		**Pn**	**17 59 41.6**	**-1.4**
RABL	**Rabaul**	**5.88**	**69**	*e*Pn		**Pn**	**18 00 03.3**	**-1.2**
JAY	**Jayapura**	**7.02**	**302**	P		**Pn**	**18 00 18.1**	**-1.8**
	1.9nm,0.3s,baz=101,slow=21,SNR=91							
JAY	**Jayapura**	**7.02**	**302**	P		**Pn**	**18 00 18.7**	**-1.2**
GENI	**Genyem**	**7.44**	**299**	P		**Pn**	**18 00 24.3**	**-1.3**
COEN	**Coen**	**8.34**	**204**	P		**Pn**	**18 00 38.6**	**+0.9**
	baz=8.4,SNR=127							
COEN	**Coen**	**8.34**	**204**	*e*Pn		**Pn**	**18 00 38.8**	**+1.0**
COEN				*e*Sn		**Sn**	**18 02 05.2**	**-5.1**
MTSU	**Mount Surprise**	**11.98**	**191**	P		**Pn**	**18 01 27.7**	**+1.0**
	baz=12,SNR=50							
HNR	**Honiara**	**13.53**	**104**	P		**Pn**	**18 01 48.1**	**+1.1**
	2.3nm,0.3s,baz=203,slow=15,SNR=3.0							
HNR	**Honiara**	**13.53**	**104**	P		**P**	**18 01 52.0**	**0.0**
HNR	**Honiara**	**13.53**	**104**	*e*Pn		**Pn**	**18 01 47.4**	**+0.4**
CTA	**Charters Tower**	**13.71**	**182**	P		**P**	**18 01 53.1**	**-0.9**
	5.5nm,0.3s,baz=360,slow=14,SNR=62							
CTAO	**Charters Tower**	**13.71**	**182**	*e*Pn		**P**	**18 01 53.6**	**-0.4**
FAKI	**Fak Fak**	**14.74**	**283**	P		**Pn**	**18 02 02.5**	**0.0**
FAKI	**Fak Fak**	**14.74**	**283**	*e*Pn		**Pn**	**18 02 01.6**	**-0.9**
KDU	**Kakadu**	**15.35**	**245**	P		**Pn**	**18 02 10.2**	**+0.1**
	baz=15,SNR=22							
QIS	**Mount Isa**	**15.73**	**205**	P		**P**	**18 02 16.9**	**+0.4**
	baz=16,SNR=55							
SIJI	**Sorong**	**16.27**	**289**	P		**Pn**	**18 02 20.8**	**-0.7**
	13nm,0.3s,baz=247,slow=22,SNR=2.6							
MTN	**Manton Dam**	**16.62**	**246**	P		**Pn**	**18 02 25.6**	**-0.2**
	baz=17,SNR=47							
MTN	**Manton Dam**	**16.62**	**246**	*e*Pn		**Pn**	**18 02 25.0**	**-0.8**
	87nm,0.6s							
MTN				*e*Sn		**Sn**	**18 05 23.5**	**-7.1**
WRAB	**Tennant Creek**	**18.07**	**220**	*e*P		**P**	**18 02 42.1**	**-0.1**
	65nm,0.8s							
WB2	**Warramunga Arr**	**18.07**	**220**	*e*P		**P**	**18 02 40.9**	**-1.3**
WR1	**Warramunga Arr**	**18.08**	**220**	*e*P		**P**	**18 02 42.2**	**-0.1**
WR1				*e*ScP		**ScP**	**18 10 41.5**	**+5.1**
WRA	**Warramunga Arr**	**18.08**	**220**	P		**P**	**18 02 42.2**	**-0.1**
	2.5nm,0.3s,baz=39,slow=11,SNR=149							
WRA				LR		LR	18 10 41.5	
	comp=Z,332nm,19.1s,baz=195,slow=40							
PALU	**Palau**	**18.20**	**318**	P		**P**	**18 02 42.5**	**-1.2**
	baz=18,SNR=4.8							
EIDS	**Eidsvold**	**19.43**	**168**	P		**Pn**	**18 02 58.5**	**-0.8**
	baz=20,SNR=6.5							
EIDS	**Eidsvold**	**19.43**	**168**	*e*P		**P**	**18 02 57.6**	**+0.7**
	50nm,1.4s							
LBMI	**Labuha**	**19.92**	**286**	P		**P**	**18 03 03.6**	**+1.2**
RMQ	**Roma**	**20.17**	**175**	P		Pn	18 03 07.4	-0.6
	baz=20,SNR=39							
QLP	**Quilpie**	**20.30**	**186**	P		**P**	**18 03 07.5**	**+1.1**
	baz=20,SNR=12							
AS01	**Alice Springs**	**21.15**	**214**	*e*P		**P**	**18 03 15.9**	**+0.3**
AS31	**Alice Springs**	**21.17**	**214**	*e*P		**P**	**18 03 16.5**	**+0.6**
	13nm,0.9s							
ASAR	**Alice Springs**	**21.17**	**214**	P		**P**	**18 03 16.5**	**+0.7**
	20nm,0.7s,baz=52,slow=8.9,SNR=482							
ASAR				LR		LR	18 12 51.1	
	comp=Z,229nm,19.1s,baz=74,slow=40							
SOEI	**Soe**	**22.42**	**260**	*e*P		**P**	**18 03 27.1**	**-2.0**
	49nm,0.9s							
FITZ	**Fitzroy Crossi**	**23.61**	**238**	P		**P**	**18 03 40.1**	**-0.2**
	81nm,0.6s,baz=56,slow=12,SNR=236							
FITZ				LR		LR	18 14 54.1	
	comp=Z,74nm,18.4s,baz=72,slow=41							
FITZ	**Fitzroy Crossi**	**23.61**	**238**	P		**P**	**18 03 40.0**	**-0.2**
	baz=24,SNR=217							
FITZ	**Fitzroy Crossi**	**23.61**	**238**	*e*P		**P**	**18 03 40.0**	**-0.3**
	88nm,0.7s							
MMRI	**Maumere**	**24.31**	**263**	*e*P		**P**	**18 03 47.3**	**+0.6**
	29nm,0.6s							
LUWI	**Luwuk**	**24.39**	**281**	P		**P**	**18 03 49.1**	**+1.8**
LUWI	**Luwuk**	**24.39**	**281**	*e*P		**P**	**18 03 49.2**	**+1.9**
	92nm,0.9s							
ARMA	**Armidale**	**24.44**	**170**	P		**P**	**18 03 49.2**	**+1.4**
	baz=25,SNR=16							
ARMA	**Armidale**	**24.44**	**170**	*e*P		**P**	**18 03 48.5**	**+0.8**
	18nm,1.0s							
DZM	**Mont Dzumac**	**24.73**	**131**	P		**P**	**18 03 48.9**	**-1.5**
	27nm,1.1s,baz=344,slow=9.5,SNR=6.8							
DZM	**Mont Dzumac**	**24.73**	**131**	*e*P		**P**	**18 03 47.8**	**-2.6**
	26nm,1.0s							
EDFI	**Ende, Flores**	**24.86**	**263**	P		**P**	**18 03 50.5**	**-1.3**
CMSA	**Cobar Meteorol**	**25.12**	**182**	P		**P**	**18 03 54.9**	**+1.1**
	baz=25,SNR=9.4							
WRKA	**Warakurna**	**25.61**	**221**	P		**P**	**18 03 58.7**	**+0.3**
	baz=26,SNR=62							
STKA	**Stephens Creek**	**25.88**	**190**	P		**P**	**18 04 00.7**	**0.0**
	9.6nm,0.8s,baz=357,slow=8.0,SNR=9.3							
STKA				LR		LR	18 14 07.9	
	comp=Z,114nm,18.8s,baz=25,slow=36							
STKA	**Stephens Creek**	**25.88**	**190**	P		**P**	**18 04 00.7**	**0.0**
	baz=26,SNR=8.6							
STKA	**Stephens Creek**	**25.88**	**190**	*e*P		**P**	**18 04 00.7**	**0.0**
	16nm,1.8s							
LHI	**Lord Howe Isla**	**27.65**	**157**	*e*P		**P**	**18 04 14.1**	**-2.4**
	212nm,1.2s							
YNG	**Young**	**27.90**	**177**	P		**P**	**18 04 20.1**	**+1.3**
	baz=28,SNR=7.0							
HTT	**Hallett**	**27.93**	**194**	P		**P**	**18 04 19.6**	**+0.5**
	baz=28,SNR=11							
BBOO	**Buckleboo**	**28.16**	**199**	P		**P**	**18 04 21.7**	**+0.7**
	baz=28,SNR=5.5							
MBWA	**Marble Bar**	**29.95**	**238**	*e*P		**P**	**18 04 37.1**	**0.0**
	18nm,1.0s							
FORT	**Forrest**	**29.95**	**213**	*e*P		**P**	**18 04 37.3**	**+0.3**
	519nm,1.1s							
MYLDM	**Lahad Datu**	**30.33**	**291**	*e*P		**P**	**18 04 41.3**	**+0.8**
	40nm,1.4s							
H11S3	**WAKE ISLAND Hy**	**31.59**	**38**	T		T	18 37 50.9	
	baz=220,slow=76,SNR=8.4							
H11S2	**WAKE ISLAND Hy**	**31.60**	**38**	T		T	18 37 52.8	
	baz=220,slow=76,SNR=3.3							
H11S1	**WAKE ISLAND Hy**	**31.61**	**38**	T		T	18 38 03.6	
	baz=220,slow=76,SNR=3.6							
H11N1	**WAKE ISLAND Hy**	**32.64**	**37**	T		T	18 39 17.5	
	baz=217							
H11N3	**WAKE ISLAND Hy**	**32.66**	**37**	T		T	18 39 22.2	
	baz=217							
H11N2	**WAKE ISLAND Hy**	**32.66**	**37**	T		T	18 39 14.6	
	baz=217							
MSVF	**Nonsavu**	**32.69**	**113**	*e*P		**P**	**18 04 59.9**	**-1.4**
	116nm,2.0s							
KKM	**Kota Kinabalu**	**32.76**	**291**	*e*P		**P**	**18 05 01.2**	**-0.7**
	9.5nm,0.8s							
CBIJ	**Chichi jima**	**33.48**	**353**	*e*P		**P**	**18 05 06.2**	**-1.7**
	48nm,1.1s							
MEEK	**Meekatharra**	**33.49**	**230**	P		**P**	**18 05 09.0**	**+0.8**
	baz=34,SNR=26							
KMBL	**Kambalda**	**34.05**	**220**	P		**P**	**18 05 13.8**	**+1.0**
	baz=34,SNR=8.6							
SBUM	**Sibu**	**35.46**	**283**	*e*P		**P**	**18 05 24.8**	**-0.4**
	5.5nm,1.0s							
MORW	**Morawa**	**36.71**	**228**	P		**P**	**18 05 35.7**	**0.0**
	baz=37,SNR=3.7							
KLBR	**Kellerberrin**	**36.91**	**223**	P		**P**	**18 05 37.9**	**+0.5**
	baz=37,SNR=9.2							
BLDU	**Ballidu**	**37.07**	**226**	P		**P**	**18 05 39.6**	**+0.8**
	baz=37,SNR=14							
KSM	**Kuching**	**37.09**	**281**	*e*P		**P**	**18 05 39.5**	**+0.3**
	7.4nm,1.0s							
NWAO	**Narrogin (SRO)**	**38.07**	**222**	P		**P**	**18 05 48.1**	**+1.0**
	32nm,1.1s,baz=335,slow=14,SNR=3.4							
YULB	**Yu-li**	**38.53**	**321**	*e*P		**P**	**18 05 50.0**	**-1.0**
	7.9nm,0.9s							
CISI	**Cisompet, Garu**	**38.56**	**266**	*e*P		**P**	**18 05 51.6**	**+0.1**
	66nm,1.3s							
TPUB	**Ta-pu**	**38.89**	**320**	*e*P		**P**	**18 05 52.5**	**-1.5**
	39nm,1.7s							
NACB	**Ninganchiao**	**38.92**	**322**	*e*P		**P**	**18 05 53.7**	**-0.5**
	16nm,0.8s							
SSLB	**Suanglung**	**39.03**	**321**	*e*P		**P**	**18 05 54.3**	**-1.0**
	23nm,1.6s							
YHNB	**Yeheng**	**39.42**	**322**	*e*P		**P**	**18 05 58.3**	**-0.2**
	57nm,1.5s							
TATO	**Taipei**	**39.58**	**323**	*e*P		**P**	**18 05 59.8**	**0.0**
	192nm,1.6s							
JHJ2	**Mitsune**	**39.73**	**351**	*e*P		**P**	**18 05 57.6**	**-3.3**
	404nm,1.5s							
XMIS	**Christmas Isla**	**40.75**	**261**	*e*P		**P**	**18 06 09.9**	**+0.3**
	87nm,1.0s							
HIZ	**Hauiti**	**40.99**	**146**	*e*P		**P**	**18 06 13.9**	**+2.7**
	218nm,1.9s							
JNU	**Nakatsue**	**41.97**	**340**	P		**P**	**18 06 17.9**	**-1.4**
	4.8nm,0.7s,baz=168,slow=5.7,SNR=4.7							
MXZ	**Matakaoa Point**	**42.39**	**142**	*e*P		**P**	**18 06 19.6**	**-3.1**
	90nm,1.1s							
RPZ	**Rata Peaks**	**42.99**	**154**	P		**P**	**18 06 28.9**	**+1.5**
	11nm,0.6s,baz=289,slow=3.7,SNR=14							
OXZ	**Oxford**	**43.12**	**153**	*e*P		**P**	**18 06 29.1**	**+0.7**
	103nm,1.8s							
MLZ	**Mavora Lakes**	**43.16**	**158**	*e*P		**P**	**18 06 30.6**	**+1.8**
	104nm,1.7s							
LBZ	**Lake Benmore**	**43.16**	**155**	*e*P		**P**	**18 06 29.9**	**+1.2**
	137nm,2.0s							
BFZ	**Birch Farm**	**43.27**	**147**	*e*P		**P**	**18 06 25.7**	**-4.0**
	83nm,1.4s							
MJAR	**Matsushiro Arr**	**43.35**	**350**	P		**P**	**18 06 28.1**	**-2.3**
	1.2nm,0.8s,baz=182,slow=9.4,SNR=7.1							
MJAR					pP	**pP**	**18 06 56.2**	**-0.8**
	0.8nm,0.7s,baz=172,slow=9.3,SNR=3.2							
MAJO	**Matsushiro**	**43.35**	**350**	*e*P		**P**	**18 06 28.5**	**-1.8**
	3.9nm,0.6s							
WHZ	**Wether Hill Ro**	**43.54**	**158**	*e*P		**P**	**18 06 31.0**	**-0.7**
	137nm,1.7s							
CRLZ	**Canterbury Las**	**43.58**	**153**	*e*P		**P**	**18 06 33.0**	**+0.9**
	134nm,1.6s							
KSRS	**Korea Array**	**46.91**	**340**	P		**P**	**18 06 57.5**	**-0.9**
	5.4nm,0.7s,baz=157,slow=8.7,SNR=18							
KSRS					pP	**pP**	**18 07 25.2**	**-0.2**
	1.3nm,1.1s,baz=212,slow=14,SNR=1.3							
KSAR	**Wonju Array Be**	**46.91**	**339**	P		**P**	**18 06 57.5**	**-1.0**
KSAR					pP	**pP**	**18 07 25.2**	**-0.3**
KULM	**Kulim**	**47.34**	**283**	*e*P		**P**	**18 07 02.4**	**+0.2**
	34nm,1.5s							
PSI	**Prapat**	**48.50**	**279**	*e*P		**P**	**18 07 11.7**	**+0.4**
	12nm,1.2s							
MCQ	**Macquarie Isla**	**49.07**	**171**	*e*P		**P**	**18 07 17.3**	**+2.4**
	642nm,1.7s							
GSI	**Gunungsitoli**	**49.57**	**277**	*e*P		**P**	**18 07 18.7**	**-0.7**
	32nm,1.4s							
ASAJ	**Asahikawa**	**50.32**	**356**	*e*P		**P**	**18 07 23.7**	**-0.7**
	22nm,1.7s							
GYA	**Guiyang**	**50.62**	**312**	P		**P**	**18 07 29.0**	**+1.8**
GYA					pP	pP	18 07 54.2	-0.4
GYA					sP	sP	18 08 06.9	-0.6
GYA					PP	**PP**	**18 09 28.0**	**+3.6**
GYA					S	**S**	**18 14 33.6**	**+0.2**
GYA					sS	sS	18 15 19.2	-1.4
GYA					pmax	pmax		
	comp=Z,20nm,1.0s							
GYA					pmax	pmax		
	comp=Z,110nm,6.0s							
USRK	**Ussuriysk Ar.**	**51.98**	**347**	P		**P**	**18 07 36.0**	**-0.8**
	2.4nm,0.6s,baz=164,slow=7.7,SNR=12							
CM01	**Chiang Mai Arr**	**53.06**	**299**	*e*P		**P**	**18 07 46.1**	**+0.8**
CM31	**Chiang Mai Arr**	**53.09**	**299**	*e*P		**P**	**18 07 45.8**	**+0.3**
CMAR	**Chiang Mai Arr**	**53.09**	**299**	P		**P**	**18 07 46.6**	**+1.1**
	1.9nm,0.5s,baz=123,slow=5.9,SNR=22							
CMAR					pP	**pP**	**18 08 14.5**	**+1.4**
	1.1nm,0.6s,baz=120,slow=5.8,SNR=3.1							
CMAR				LR		LR	18 31 40.2	
	comp=Z,8.7nm,20.3s,baz=140,slow=37							
CD2	**Chengdu**	**55.24**	**315**	*e*P		**P**	**18 08 01.2**	**+0.2**
CD2					pP	pP	18 08 26.8	-1.9
CD2					sP	sP	18 08 38.8	-2.8
CD2					S	**S**	**18 15 37.9**	**+2.1**
CD2					sS	sS	18 16 22.4	-1.2
CD2					SS	**SS**	**18 19 25.3**	**+3.3**
CD2					pmax	pmax		
	comp=Z,10.0nm,0.5s							
CD2					pmax	pmax		
	comp=Z,120nm,5.2s							
KLR	**Kul'dur**	**56.81**	**348**	P		**P**	**18 08 11.3**	**-0.4**
	0.6nm,0.4s,baz=293,slow=2.1,SNR=5.0							
HHC	**Hu-ho-hao-te**	**56.91**	**329**	*e*P		**P**	**18 08 14.4**	**+1.7**
HHC					pP	pP	18 08 41.0	+0.3
HHC					sP	sP	18 08 54.2	+0.7
HHC					S	**S**	**18 15 58.3**	**+0.6**
HHC					pmax	pmax		
	comp=Z,18nm,0.5s							
HHC					pmax	pmax		
	comp=Z,75nm,8.1s							
LZH	**Lanzhou**	**58.21**	**320**	*e*P		P	18 08 16.5	-5.6
LZH					pP	pP	18 08 43.8	-6.3
LZH					sP	sP	18 08 54.0	-8.9
LZH					pmax	pmax		
	comp=Z,12nm,1.1s							
PEA0	**Petropavlovsk-**	**59.92**	**8**	*e*P		**P**	**18 08 32.5**	**-0.8**
PEA0					epP	**pP**	**18 09 03.2**	**+1.8**
PEA0B	**Petropavlovsk-**	**59.92**	**8**	*e*P		**P**	**18 08 32.6**	**-0.7**
	comp=Z,27nm,1.4s							
PETK	**Petropavlovsk-**	**59.92**	**8**	P		**P**	**18 08 32.6**	**-0.7**
	comp=Z,2.1nm,0.7s,baz=153,slow=5.5,SNR=6.4							
PETK					pP	**pP**	**18 09 04.1**	**+2.7**
	comp=Z,4.6nm,0.9s,baz=174,slow=10.0,SNR=4.9							
PETK					LR	LR	18 29 29.8	
	comp=Z,20nm,21.7s,baz=177,slow=31							
PEA1	**Petropavlovsk-**	**59.93**	**8**	*e*P		**P**	**18 08 32.6**	**-0.7**
PEA1					epP	**pP**	**18 09 04.1**	**+2.6**
GTA	**Gaotai**	**62.75**	**321**	*e*P		**P**	**18 08 52.6**	**-0.2**
GTA					pmax	pmax		
	comp=Z,1.0nm,1.0s							
SONA0	**Songino Array**	**64.50**	**331**	*e*P		**P**	**18 09 03.3**	**-0.9**
	comp=Z,3.7nm,1.2s							
SONA0				*e*pP		**pP**	**18 09 32.7**	**+0.1**
SONM	**Songino Array**	**64.50**	**331**	P		**P**	**18 09 03.3**	**-0.9**
	comp=Z,1.0nm,0.8s,baz=134,slow=6.4,SNR=5.6							
SONM				pP		**pP**	**18 09 32.7**	**+0.1**
	comp=Z,1.3nm,0.8s,baz=129,slow=4.7,SNR=3.8							
SONM				LR		LR	18 36 02.3	
	comp=Z,18nm,21.6s,baz=104,slow=35							
SONA1	**Songino Array**	**64.50**	**331**	*e*P		**P**	**18 09 03.2**	**-1.0**
CASY	**Casey**	**64.87**	**195**	*e*P		**P**	**18 09 06.7**	**+0.6**
	comp=Z,3.7nm,0.7s							
RAMN	**Ramite**	**66.81**	**303**	*e*P		**P**	**18 09 21.6**	**+2.1**
	comp=Z,5.7nm,0.6s							
PALK	**Pallekele**	**67.16**	**281**	*e*P		**P**	**18 09 23.4**	**+1.6**
	comp=Z,32nm,1.3s							
KKN	**Kakani**	**68.20**	**303**	*e*P		**P**	**18 09 28.4**	**+0.2**
DMN	**Daman**	**68.28**	**303**	*e*P		**P**	**18 09 29.0**	**+0.2**
GKN	**Gorkha**	**68.81**	**303**	*e*P		**P**	**18 09 31.3**	**-0.6**
	comp=Z,9.1nm,0.6s							
SEY	**Seymchan**	**69.18**	**3**	P		**P**	**18 09 32.3**	**-1.0**
	comp=Z,2.5nm,1.0s,baz=360,slow=20,SNR=3.1							
KOLN	**Koldanda**	**69.59**	**303**	*e*P		**P**	**18 09 36.5**	**-0.4**
	comp=Z,9.4nm,0.7s							
PYUN	**Piuthan**	**70.21**	**303**	*e*P		**P**	**18 09 40.1**	**-0.6**
VNDA	**Vanda**	**71.63**	**177**	P		**P**	**18 09 48.9**	**+0.9**
	comp=Z,2.2nm,0.8s,baz=320,slow=6.3,SNR=8.4							
VNDA				pP		**pP**	**18 10 18.9**	**+1.8**
	comp=Z,1.5nm,0.9s,baz=321,slow=6.6,SNR=2.9							
VNDA	**Vanda**	**71.63**	**177**	*e*P		**P**	**18 09 49.6**	**+1.5**
	comp=Z,3.1nm,1.0s							
VNDA				*e*pP		**pP**	**18 10 18.9**	**+1.8**
WMQ	**Urumqi**	**72.79**	**320**	*e*P		**P**	**18 09 56.4**	**+0.7**
WMQ				pmax		pmax		
	comp=Z,7.0nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,120nm,4.2s							
MK01	**Makanchi Array**	**77.49**	**321**	*e*pP		pP	18 10 52.6	+0.7
MK32	**Makanchi Array**	**77.51**	**321**	*e*P		**P**	**18 10 21.2**	**-1.4**
MK32				*e*pP		**pP**	**18 10 52.6**	**+0.6**
MKAR	**Makanchi Array**	**77.51**	**321**	P		**P**	**18 10 21.2**	**-1.4**
	comp=Z,0.6nm,0.5s,baz=95,slow=9.3,SNR=9.0							
MKAR				pP		**pP**	**18 10 52.6**	**+0.6**
	comp=Z,1.9nm,0.9s,baz=101,slow=6.4,SNR=3.3							
ZAA0	**Zalesovo Array**	**79.08**	**328**	*e*P		**P**	**18 10 28.6**	**-2.4**
ZAA0				*e*pP		**pP**	**18 11 01.8**	**+1.3**
ZALV	**Zalesovo Beam**	**79.08**	**328**	P		**P**	**18 10 28.8**	**-2.2**
	comp=Z,1.4nm,0.5s,baz=109,slow=4.7,SNR=8.1							
ZALV				pP		**pP**	**18 11 01.3**	**+0.8**
	comp=Z,1.9nm,0.8s,baz=109,slow=4.5,SNR=4.7							
ZAA1	**Zalesovo Array**	**79.08**	**328**	*e*P		**P**	**18 10 28.8**	**-2.2**
ZAA1				*e*pP		**pP**	**18 11 01.3**	**+0.8**
KSH	**Kashi**	**79.32**	**312**	*e*P		**P**	**18 10 33.0**	**+0.2**
KSH				*e*sP		sP	18 11 13.6	-1.2
KSH				*e*PP		**PP**	**18 13 36.5**	**+2.1**
KSH				S		**S**	**18 20 22.3**	**-1.9**
KSH				ScS		**SKKSac**	**18 20 42.7**	**+2.4**
KSH				pmax		pmax		
	comp=Z,130nm,6.0s							
KSH				LR		LR		
	comp=Z,79nm,7.6s							
KSH				LR		LR		
	comp=Z,100nm,5.0s							
KSH				LR		LR		
	comp=Z,79nm,6.9s							
KURK	**Kurchatov**	**81.24**	**323**	*e*P		**P**	**18 10 41.6**	**-1.1**
KURBB	**Kurchatov Arra**	**81.26**	**323**	P		**P**	**18 10 41.6**	**-1.2**
	comp=Z,1.1nm,0.3s,baz=104,slow=4.3,SNR=4.9							
KURBB				pP		**pP**	**18 11 15.4**	**+3.0**
	comp=Z,0.4nm,0.3s,baz=116,slow=4.0,SNR=2.7							
MAW	**Mawson**	**81.83**	**203**	P		**P**	**18 10 46.1**	**+0.6**
	comp=Z,1.5nm,0.6

*BEO **02** 18:16:44.7±0.8,43.90N×18.85E,h6km±3km,M2.7/1*
*CSEM **02** 18:16:45.2±0.1,43.96N×18.99E,h2km,ML2.9,Error ellipse: s-maj=3.4km s-min=2.5km az=77.0*
*PDG **02** 18:16:46.3±0.2,43.90N×18.97E,h2km±1km,ML2.6/11, Error ellipse: s-maj=0.4km s-min=0.8km az=0.0*
*VIE **02** 18:16:50.3±1.7,44.22N×18.75E,h6km,mb2.3/3,ML2.5/4, Error ellipse: s-maj=25.9km s-min=12.6km az=67.0*

ISC 02 18:16:45.4±1.0,43.96N±0.01×18.99E±0.02,h8km±9km, n88,σ1§16/136,25C-21D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BBLS	**Lazići**	**0.32**	**107**	⇑*i*	P	**Pg**	**18 16 51.9**	**+0.2**
BBLS				*e*	S	**Sb**	**18 16 57.4**	**-1.4**
BBLS	**Lazići**	**0.32**	**107**	⇑*i*	P	**Pg**	**18 16 51.9**	**+0.2**
BBLS				*e*	S	**Sb**	**18 16 57.4**	**-1.4**
PLE	**Pljevlja**	**0.70**	**155**	⇑*i*	P	**Pg**	**18 16 58.6**	**-0.2**
PLE				*e*	S	**Sg**	**18 17 07.8**	**-0.1**
PLE	**Pljevlja**	**0.70**	**155**	⇑*i*	P	**Pg**	**18 16 58.6**	**-0.2**
PLE				*e*	S	**Sg**	**18 17 07.8**	**-0.1**
TEKS	**Tekeris**	**0.71**	**33**	*e*	P	**Pb**	**18 16 59.8**	**-0.2**
TEKS				*e*	S	**Sb**	**18 17 10.1**	**+0.2**
TEKS	**Tekeris**	**0.71**	**33**	⇑*i*	P	**Pb**	**18 16 59.8**	**-0.2**
TEKS				*e*	S	**Sb**	**18 17 09.8**	**-0.1**
DIVS	**Divibare**	**0.74**	**79**	*e*	P	**Pb**	**18 17 00.3**	**-0.3**
DIVS				*e*	S	**Sb**	**18 17 10.3**	**-0.7**
DIVS	**Divibare**	**0.74**	**79**	*e*	P	**Pb**	**18 17 00.3**	**-0.3**
DIVS				*e*	S	**Sb**	**18 17 10.2**	**-0.7**
UPM	**Unac-Piva**	**0.76**	**184**	⇓*i*	P	**Pg**	**18 16 59.3**	**-0.8**
UPM				*e*	S	**Sg**	**18 17 10.1**	**+0.2**
BLJ	**Bijeljina**	**0.85**	**14**	*e*	P	**Pg**	**18 17 00.9**	**-0.8**
BLJ				*e*	S	**Sg**	**18 17 12.2**	**-0.5**
IVAS	**Ivanjica**	**0.93**	**114**	*e*	P	**Pg**	**18 17 01.7**	**-1.6**
IVAS				*e*	S	**Sb**	**18 17 16.8**	**+0.5**
IVAS	**Ivanjica**	**0.93**	**114**	*e*	P	**Pg**	**18 17 01.7**	**-1.6**
IVAS				*e*	S	**Sb**	**18 17 16.8**	**+0.5**
DOB	**Doboj**	**1.00**	**321**	*e*	P	**Pg**	**18 17 03.6**	**-1.0**
DOB				*e*	S	**Sg**	**18 17 17.6**	**0.0**
TRUS	**Trudelj**	**1.06**	**75**	*e*	P	**Pg**	**18 17 05.6**	**-0.1**
TRUS	**Trudelj**	**1.06**	**75**	*e*	P	**Pg**	**18 17 05.6**	**-0.1**
BRY	**Bratogost**	**1.11**	**197**	⇑*i*	P	**Pb**	**18 17 05.0**	**-1.9**
BRY				*e*	S	**Sb**	**18 17 22.0**	**+0.5**
BRY	**Bratogost**	**1.11**	**197**	⇑*i*	P	**Pb**	**18 17 05.0**	**-1.9**
BRY				*e*	S	**Sb**	**18 17 22.0**	**+0.5**
NKY	**Niksic**	**1.15**	**180**	⇓*i*	P	**Pb**	**18 17 06.3**	**-1.3**
NKY				*e*	S	**Sn**	**18 17 23.4**	**-0.4**
NKY	**Niksic**	**1.15**	**180**	⇓*i*	P	**Pb**	**18 17 06.3**	**-1.3**
NKY				*e*	S	**Sn**	**18 17 23.4**	**-0.4**
NKME	**Niksic**	**1.19**	**181**	⇑*i*	P	**Pb**	**18 17 07.1**	**-1.2**
NKME				*e*	S	**Sn**	**18 17 24.9**	**0.0**
NKME	**Niksic**	**1.19**	**181**	⇑*i*	P	**Pb**	**18 17 07.1**	**-1.2**
NKME				*e*	S	**Sn**	**18 17 24.9**	**0.0**
GRUS	**Gruza**	**1.25**	**93**	*e*	P	**Pg**	**18 17 09.7**	**+0.3**
GRUS				*e*	S	**Sn**	**18 17 28.7**	**+2.4**
GRUS	**Gruza**	**1.25**	**93**	*e*	P	**Pg**	**18 17 09.7**	**+0.3**
GRUS				*e*	S	**Sn**	**18 17 28.7**	**+2.4**
BEY	**Berane**	**1.27**	**148**	P		**Pn**	**18 17 08.4**	**-1.2**
BEY				*e*	S	**Sn**	**18 17 28.2**	**+1.3**
IVA	**Berane**	**1.27**	**148**	⇓*i*	P	**Pn**	**18 17 08.5**	**-1.2**
IVA				*e*	S	**Sn**	**18 17 28.2**	**+1.3**
TREB	**Trebinje**	**1.33**	**201**	*e*	P	**Pn**	**18 17 09.1**	**-1.2**
TREB				*e*	S	**Sb**	**18 17 27.8**	**+0.1**
FGSL	**Fruska Gora**	**1.33**	**26**	*e*	P	**Pn**	**18 17 10.0**	**-0.4**
FGSL				*e*	S	**Sg**	**18 17 30.4**	**+2.1**
FRGS	**Fruska Gora**	**1.33**	**26**	*e*	P	**Pn**	**18 17 10.0**	**-0.4**
FRGS				*e*	S	**Sg**	**18 17 30.4**	**+2.1**
CEME	**Cevo**	**1.41**	**182**	⇓*i*	P	**Pn**	**18 17 10.4**	**-1.1**
CEME				*e*	S	**Sg**	**18 17 32.3**	**+1.4**
CEME	**Cevo**	**1.41**	**182**	⇓*i*	P	**Pg**	**18 17 10.4**	**-1.1**
CEME				*e*	S	**Sg**	**18 17 32.3**	**+1.4**
BLY	**Banja Luka**	**1.51**	**302**	⇓*i*	Pn	**Pn**	**18 17 13.2**	**+0.4**
BLY				*e*	Sn	**Sb**	**18 17 33.7**	**+0.6**
PVY	**Plav**	**1.54**	**152**	⇑*i*	P	**Pb**	**18 17 13.9**	**-0.4**
PVY				*e*	S	**Sg**	**18 17 36.9**	**+2.0**
PVY	**Plav**	**1.54**	**152**	⇑*i*	P	**Pb**	**18 17 13.9**	**-0.4**
PVY				*e*	S	**Sg**	**18 17 36.9**	**+2.0**
PDG	**Podgorica**	**1.54**	**173**	⇑*i*	P	**Pn**	**18 17 12.9**	**-0.3**
PDG	**Podgorica**	**1.54**	**173**	S		**Sg**	**18 17 36.3**	**+1.3**
PDG	**Podgorica**	**1.54**	**173**	⇑*i*	P	**Pn**	**18 17 12.9**	**-0.3**
PDG	**Podgorica**	**1.54**	**173**	⇑*i*	Pn	**Pn**	**18 17 13.2**	**0.0**
PDG	**Podgorica**	**1.54**	**173**	⇓*i*	Pg	**Pn**	**18 17 13.5**	**+0.3**
PDG				*e*	Sn	**Sb**	**18 17 34.1**	**+0.2**
PDG				*e*	Sg	**Sg**	**18 17 36.7**	**+1.7**
TTG	**Podgorica**	**1.54**	**173**	⇓*i*	Pg	**Pn**	**18 17 13.5**	**+0.3**
TTG				*e*	Sg	**Sg**	**18 17 36.7**	**+1.7**
HCY	**Herceg Novi**	**1.56**	**194**	⇓*i*	Pg	**Pn**	**18 17 14.0**	**-0.4**
HCY				*e*	Sg	**Sg**	**18 17 37.6**	**+2.2**
HCY	**Herceg Novi**	**1.56**	**194**	*e*	Pn	**Pb**	**18 17 14.1**	**-0.4**
HCY				*e*	Sn	**Sb**	**18 17 34.3**	**0.0**
HCY				*e*	Sg	**Sg**	**18 17 37.6**	**+2.2**
PEJK	**Peje**	**1.62**	**144**	P		**Pb**	**18 17 15.2**	**-0.4**
BUM	**Brajici-Budva**	**1.66**	**182**	⇑*i*	Pn	**Pb**	**18 17 16.0**	**-0.3**
BUM				*e*	Sn	**Sg**	**18 17 41.2**	**+2.4**
BUM	**Brajici-Budva**	**1.66**	**182**	⇑*i*	Pn	**Pb**	**18 17 16.0**	**-0.3**
SELS	**Selova**	**1.72**	**115**	*e*	Pg	**Pn**	**18 17 15.8**	**+0.1**
SELS				*e*	Sg	**Sg**	**18 17 42.8**	**+2.2**
SELS	**Selova**	**1.72**	**115**	*e*	Pg	**Pn**	**18 17 15.8**	**+0.1**
KUBS	**Kucevo**	**1.99**	**76**	*e*	Pg	**Pg**	**18 17 23.1**	**-0.4**
KUBS				*e*	Sg	**Sg**	**18 17 51.7**	**+2.4**
KUBS	**Kucevo**	**1.99**	**76**	*e*	Pg	**Pg**	**18 17 23.1**	**-0.4**
ULC	**Ulcinj**	**2.00**	**174**	⇓*i*	Pn	**Pb**	**18 17 21.8**	**-0.3**
ULC				*e*	Sn	**Sg**	**18 17 49.2**	**-0.6**
ULC	**Ulcinj**	**2.00**	**174**	⇓*i*	Pn	**Pb**	**18 17 21.8**	**-0.3**
ULC	**Ulcinj**	**2.00**	**174**	P		**Pb**	**18 17 22.2**	**+0.1**
ULC				*e*	Sn	**Sg**	**18 17 49.2**	**-0.6**
BANR	**Banloc**	**2.09**	**46**	⇓*i*	P	**Pn**	**18 17 21.4**	**+0.6**
BANR	**Banloc**	**2.09**	**46**	⇓*i*	P	**Pn**	**18 17 21.4**	**+0.6**
MDVR	**Moldovita**	**2.12**	**66**	⇓*i*	P	**Pg**	**18 17 26.0**	**-0.1**
BARS	**Barje**	**2.36**	**118**	*e*	Pn	**Pn**	**18 17 24.9**	**+0.4**
BARS	**Barje**	**2.36**	**118**	*e*	Pn	**Pn**	**18 17 24.9**	**+0.4**
UDBI	**Udbina**	**2.38**	**285**	*e*	Pn	**Pn**	**18 17 26.3**	**+1.5**
UDBI	**Udbina**	**2.38**	**285**	*e*	Pn	**Pn**	**18 17 26.3**	**+1.5**
BZS	**Buzias**	**2.50**	**48**	⇑*i*	P	**Pn**	**18 17 27.0**	**+0.6**
BZS	**Buzias**	**2.50**	**48**	S		**Sg**	**18 18 05.5**	**-0.2**
BZS	**Buzias**	**2.50**	**48**	⇑*i*	P	**Pn**	**18 17 27.0**	**+0.6**
ZAPS	**Zavoj**	**2.74**	**103**	*e*	Pn	**Pn**	**18 17 30.7**	**+1.0**
ZAPS				*e*	Sn	**Sn**	**18 18 02.8**	**-0.2**
BEHE	**Becsehely**	**2.96**	**329**	⇑*e*PKPdf		**Pn**	**18 17 33.3**	**+0.6**
SIRR	**Siria**	**2.98**	**38**	⇑*i*	P	**Pn**	**18 17 32.3**	**-0.8**
SIRR	**Siria**	**2.98**	**38**	⇑*i*	P	**Pn**	**18 17 32.3**	**-0.8**
GZR	**Gura Zlata**	**3.06**	**61**	⇑*i*	P	**Pg**	**18 17 41.7**	**-1.4**
CRES	**Cresnjev**	**3.12**	**308**	*e*	Pn	**Pn**	**18 17 35.5**	**+0.5**
CRES				*e*	Sn	**Sn**	**18 18 13.5**	**+1.0**
GOLS	**Golise**	**3.14**	**312**	*i*	Pn	**Pn**	**18 17 36.1**	**+0.8**
GOLS	**Golise**	**3.14**	**312**	*i*	Pn	**Pn**	**18 17 36.1**	**+0.8**
VTS	**Vitosha**	**3.37**	**112**	⇑*i*	P	**Pb**	**18 17 42.6**	**-3.0**
VTS	**Vitosha**	**3.37**	**112**	⇑*i*	P	**Pb**	**18 17 42.6**	**-3.0**
VISS	**Visnje**	**3.48**	**303**	*i*	Pn	**Pn**	**18 17 40.8**	**+1.0**
VISS	**Visnje**	**3.48**	**303**	*i*	Pn	**Pn**	**18 17 40.8**	**+1.0**
CEY	**Cerknica**	**3.70**	**300**	⇓*i*	Pn	**Pn**	**18 17 43.5**	**+0.6**
DRGR		**3.86**	**42**	⇓*i*	P	**Pb**	**18 17 51.5**	**-2.3**
SOKA	**Soboth** 0.8nm,0.2s	**3.89**	**316**	Pn		**Pn**	**18 17 45.9**	**+0.3**
SOKA	2.0nm,0.2s			Sn		**Sn**	**18 18 31.3**	**-0.2**
PSZ	**Piszkesteto**	**4.01**	**9**	⇓*i*	P	**Pn**	**18 17 46.5**	**-0.7**
PSZ	**Piszkesteto**	**4.01**	**9**	⇓*e*Pn		**Pn**	**18 17 46.7**	**-0.5**
PSZ	**Piszkesteto**	**4.01**	**9**	⇓*e*PKPdf		**Pn**	**18 17 46.7**	**-0.5**
OBKA	**Obir** 0.9nm,0.2s	**4.04**	**311**	Pn		**Pn**	**18 17 48.8**	**+1.2**
ARSA	**Arzberg** 2.0nm,0.2s	**4.09**	**325**	Pn		**Pn**	**18 17 48.7**	**+0.4**
ARSA	5.6nm,0.3s			Sn		**Sn**	**18 18 35.3**	**-1.0**
ARR	**Arges**	**4.27**	**69**	⇓*i*	P	**Pn**	**18 17 53.7**	**+2.9**
CONA	**Conrad Observa** 4.3nm,0.4s	**4.53**	**332**	Sn		**Sn**	**18 18 47.6**	**+0.4**
VYHS	**Vyhne**	**4.54**	**359**	*e*	Pg	**Pn**	**18 17 54.4**	**0.0**
VYHS				*e*	Sg	**Sn**	**18 18 47.1**	**-0.2**
VYHS	**Vyhne**	**4.54**	**359**	*e*	PG	**Pn**	**18 17 54.3**	**-0.1**
VYHS				*e*	SG	**Sn**	**18 18 47.1**	**-0.2**
VOIR		**4.57**	**69**	⇑*i*	P	**Pn**	**18 17 57.1**	**+2.2**
WATA	**Walderalm** 2.4nm,0.3s	**6.19**	**306**	Pn		**Pn**	**18 18 19.8**	**+2.5**
MOTA	**Moosalm** 1.1nm,0.2s	**6.48**	**304**	Pn		**Pn**	**18 18 23.8**	**+2.6**

MEX 02 18:20:15.7±0.4,13.90N×93.14W,h15km,MD3.6,Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CCIG	**Comitan**	**2.56**	**22**	*e*	P	Pn	18 20 54.2	-2.6
CCIG				*i*	S	Sn	18 21 23.4	-4.4
TGIG		**2.86**	**0**	*i*	P	Pn	18 20 58.5	-2.4
TGIG				*e*	S	Sn	18 21 31.2	-3.9

*ISCJB **02** 18:31:26.5±0.5,5.41N±0.07×94.45E±0.08,h46km, mb4.4/24, Error ellipse: s-maj=13.8km s-min=5.6km az=138.7*
*NEIC **02** 18:31:30.2±1.3,5.34N×94.42E,h68km±10km,mb4.6/15, Error ellipse: s-maj=16.9km s-min=5.6km az=63.0*
*IDC **02** 18:31:34.3±13.0,5.47N×94.44E,h100km±115km,mb3.4/7, mb1 3.5/8,mb1mx3.2/48,mbtmp3.7/8,ML4.2/1, Error ellipse: s-maj=105.4km s-min=16.6km az=59.0*

ISC 02 18:31:28.1±0.7,5.41N±0.08×94.48E±0.08,h46km,n45, σ1§42/45,mb4.3/24,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LHMI	**Lhok Sumawe**	**2.46**	**94**	*e*	Pn	**Pn**	**18 32 08.3**	**+2.5**
GSI	**Gunungsitoli**	**5.11**	**143**	*e*	Pn	**Pn**	**18 32 44.0**	**+1.7**
GSI				*e*	Sn	**Sn**	**18 33 38.5**	**-1.6**
PSI	**Prapat**	**5.13**	**120**	*e*	Pn	**Pn**	**18 32 43.6**	**+1.0**
KULM	**Kulim**	**6.15**	**91**	*e*	Pn	**Pn**	**18 32 58.7**	**+2.3**
KULM				*e*	Sn	**Sn**	**18 34 02.1**	**-3.3**
IPM	**Ipoh**	**6.59**	**98**	*e*	Pn	**Pn**	**18 33 04.3**	**+1.8**
IPM				*e*	Sn	**Sn**	**18 34 15.8**	**-0.5**
CM01	**Chiang Mai Arr**	**13.65**	**18**	*e*	Pn	**P**	**18 34 44.1**	**-2.9**
CM31	**Chiang Mai Arr**	**13.69**	**18**	*e*	Pn	**Pn**	**18 34 43.1**	**+3.4**
CMAR	**Chiang Mai Arr** 0.3nm,0.3s,baz=208,slow=14,SNR=12	**13.69**	**18**	P		**P**	**18 34 44.0**	**-3.3**
CHTO	**Chiang Mai**	**14.02**	**18**	*e*	Pn	**P**	**18 34 48.5**	**-2.5**
LSA	**Lhasa** 9.7nm,1.8s	**24.37**	**353**	*e*	P	**P**	**18 36 42.3**	**-0.2**
H08S3	**Diego Garcia H** baz=59,slow=76,SNR=38	**25.48**	**240**	T		T	19 02 47.4	
H08S2	**Diego Garcia H** baz=59,slow=76,SNR=37	**25.48**	**240**	T		T	19 02 48.4	
H08S1	**Diego Garcia H** baz=59,slow=76,SNR=28	**25.50**	**240**	T		T	19 02 48.6	
ENH	**Enshi** 3.0nm,0.5s	**28.49**	**28**	*e*	P	**P**	**18 37 18.9**	**-0.3**
TWG	**Pinlang** 73nm,1.3s	**30.96**	**53**	*e*	P	**P**	**18 37 41.9**	**+0.7**
FITZ	**Fitzroy Crossi** 18nm,1.7s	**38.61**	**128**	*e*	P	**P**	**18 38 46.6**	**-0.6**
FAKI	**Fak Fak** 114nm,1.4s	**38.62**	**101**	*e*	P	**P**	**18 38 46.6**	**-0.8**
MTN	**Manton Dam** 45nm,1.7s	**40.68**	**117**	*e*	P	**P**	**18 39 03.8**	**-0.7**
MK01	**Makanchi Array**	**42.53**	**348**	*e*	P	**P**	**18 39 19.4**	**+0.2**
MK31	**Makanchi Array**	**42.55**	**348**	*e*	P	**P**	**18 39 19.2**	**-0.2**
MK32	**Makanchi Array**	**42.55**	**348**	*e*	P	**P**	**18 39 19.4**	**0.0**
MKAR	**Makanchi Array** 1.4nm,0.6s,baz=166,slow=7.8,SNR=12	**42.55**	**348**	P		**P**	**18 39 19.4**	**0.0**
MKAR	**Makanchi Array**	**42.55**	**348**	*e*	P	**P**	**18 39 19.2**	**-0.2**
MAKZ	**Makanchi** 3.9nm,1.2s	**42.64**	**347**	*e*	P	**P**	**18 39 20.0**	**0.0**
SONA0	**Songino Array** 4.9nm,1.8s	**43.49**	**12**	*e*	P	**P**	**18 39 27.0**	**-0.1**
SONM	**Songino Array** 0.3nm,0.4s,baz=198,slow=8.4,SNR=2.8	**43.49**	**12**	P		**P**	**18 39 27.0**	**-0.1**
SONA1	**Songino Array**	**43.50**	**12**	*e*	P	**P**	**18 39 27.2**	**0.0**
WR1	**Warramunga Arr** 37nm,2.0s	**46.59**	**124**	*e*	P	**P**	**18 39 53.0**	**+1.1**
WRA	**Warramunga Arr** 0.4nm,0.4s,baz=305,slow=9.9,SNR=16	**46.59**	**124**	P		**P**	**18 39 53.0**	**+1.1**
WRAB	**Tennant Creek** 28nm,1.6s	**46.59**	**124**	*e*	P	**P**	**18 39 53.1**	**+1.1**
WB2	**Warramunga Arr**	**46.60**	**124**	*e*	P	**P**	**18 39 52.6**	**+0.5**
AS31	**Alice Springs** 5.4nm,1.8s	**48.10**	**129**	*e*	P	**P**	**18 40 05.0**	**+1.2**
ASAR	**Alice Springs** 0.3nm,0.5s,baz=301,slow=7.6,SNR=15	**48.10**	**129**	P		**P**	**18 40 04.7**	**+1.0**
AS01	**Alice Springs**	**48.14**	**128**	*e*	P	**P**	**18 40 06.0**	**+1.9**
ZAA0	**Zalesovo Array**	**49.03**	**352**	*e*	P	**P**	**18 40 09.8**	**-0.6**
ZALV	**Zalesovo Beam** 0.7nm,0.3s,baz=183,slow=7.4,SNR=5.4	**49.03**	**352**	P		**P**	**18 40 10.3**	**0.0**
ZAA1	**Zalesovo Array**	**49.03**	**352**	*e*	P	**P**	**18 40 10.3**	**0.0**
VOSK	**Vostochnaya** 1.8nm,0.4s	**50.98**	**342**	*e*	P	**P**	**18 40 25.1**	**-0.1**
ZRNK	**Zerenda** 5.8nm,1.8s	**51.80**	**341**	*e*	P	**P**	**18 40 31.2**	**-0.1**
MANU	**Manus Island** 410nm,1.9s	**53.34**	**97**	*e*	P	**P**	**18 40 43.1**	**-0.3**
RABL	**Rabaul** 104nm,0.8s	**58.40**	**98**	*e*	P	**P**	**18 41 18.9**	**-0.7**
TIXI	**Tiksi** 9.2nm,1.7s	**69.57**	**11**	*e*	P	**P**	**18 42 31.0**	**-0.9**
IDI	**Anoyia** 29nm,2.0s	**70.25**	**305**	*e*	P	**P**	**18 42 37.5**	**+0.6**
FINES	**FINESS Array B** 1.0nm,0.9s,baz=102,slow=17,SNR=3.6	**75.04**	**332**	P		**P**	**18 43 03.8**	**-1.0**
ARCES	**ARCESS Array B** 1.4nm,1.0s,baz=98,slow=6.2,SNR=3.6	**77.69**	**340**	P		**P**	**18 43 20.2**	**+0.6**

*IDC **02** 18:38:27.5±1.9,25.06N×122.59E,h0km,mb3.5/5, mb1 3.7/5,mb1mx3.3/41,mbtmp3.5/5,MS2.5/2,Ms1 2.5/2, ms1mx2.3/38,Error ellipse: s-maj=153.5km s-min=20.2km az=65.0*
*JMA **02** 18:38:28.6,24.80N×121.97E,h34km,M2.9*
*TAP **02** 18:38:28.4,24.81N×122.02E,h9km,ML3.6,B*

ISC 02 18:38:28.4±1.0,24.81N±0.02×122.05E±0.02,h7km±7km, n68,σ0§98/103,mb3.5/5,3C-8D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
EGS		**0.11**	**291**	⇓*i*	P	**Pg**	**18 38 31.1**	**+0.2**
TWB1	**Santiao Chiao** baz=353	**0.21**	**345**	⇓*i*	P	**Pg**	**18 38 33.0**	**+0.4**
TWB1				*i*	S	**Sg**	**18 38 35.8**	**+0.3**
TWC	**Suao** baz=226	**0.27**	**223**	⇓*i*	P	**Pg**	**18 38 33.8**	**+0.2**
TWC				*i*	S	**Sg**	**18 38 36.9**	**-0.3**
ILA	**Ilan** baz=259	**0.27**	**262**	*e*	P	**Pg**	**18 38 33.8**	**0.0**
TWE	**Neicheng** baz=253	**0.35**	**256**	⇑*i*	P	**Pg**	**18 38 35.4**	**0.0**
NWF	**Wu-fen Shan** baz=311	**0.36**	**318**	⇓*i*	P	**Pb**	**18 38 36.0**	**-1.1**
NWF				*i*	S	**Sb**	**18 38 41.7**	**-1.3**
TWA	**Mucha** baz=283	**0.46**	**293**	*i*	P	**Pb**	**18 38 37.5**	**-1.3**
TWA				S		**Sg**	**18 38 43.4**	**+0.1**
ENTT	**Nioudou** baz=247	**0.47**	**249**	*e*	P	**Pg**	**18 38 37.4**	**-0.1**
ENA	**Nanau** baz=220	**0.47**	**217**	*e*	P	**Pg**	**18 38 37.5**	**0.0**
ENA				*e*	S	**Sg**	**18 38 43.2**	**-0.4**
TAP1	**Taipei** baz=287	**0.53**	**296**	P		**Pb**	**18 38 38.8**	**-1.2**
TAP1				S		**Sb**	**18 38 45.9**	**-1.9**
TAP	**Taipei** baz=287	**0.54**	**295**	*e*	P	**Pb**	**18 38 39.4**	**-0.9**
TWY	**Chenhua** baz=312	**0.62**	**319**	⇓*i*	P	**Pb**	**18 38 40.9**	**-0.6**
NSK	**Sanguang** baz=257	**0.64**	**258**	⇑*i*	P	**Pg**	**18 38 40.3**	**-0.5**
NSK				*e*	S	**Sg**	**18 38 48.2**	**-0.9**
TWS1	**Kuangyinshan** baz=297	**0.64**	**297**	⇓*i*	P	**Pb**	**18 38 41.8**	**-0.1**
NNS	**Nan Shan** baz=238	**0.71**	**239**	*e*	P	**Pg**	**18 38 42.1**	**0.0**
NCU	**National Centr** baz=281	**0.80**	**282**	*e*	P	**Pn**	**18 38 45.1**	**-0.9**
NCU				*e*	S	**Sn**	**18 38 56.8**	**-1.4**
PCYT	**Pengchaiyu** baz=2.0	**0.82**	**2**	P		**Pb**	**18 38 45.4**	**+0.4**
TWD	**Chiawan** baz=202	**0.83**	**210**	*e*	P	**Pg**	**18 38 44.2**	**-0.2**
TWD	baz=202			*e*	S	**Sg**	**18 38 55.0**	**-0.2**
JYNG	**Yonagunijimaku**	**0.89**	**113**	P		**Pg**	**18 38 46.0**	**+0.5**
JYNG				S		**Sg**	**18 38 58.0**	**+0.9**
HWA	**Hwalien** baz=212	**0.92**	**206**	*e*	P	**Pn**	**18 38 47.3**	**-0.4**
YOJ	**Yonaguni jima**	**0.94**	**111**	P		**Pg**	**18 38 46.6**	**+0.1**
YOJ				S		**Sg**	**18 38 59.8**	**+1.0**
YOJ	**Yonaguni jima** baz=112	**0.94**	**111**	⇑*i*	P	**Pg**	**18 38 46.6**	**+0.1**
YOJ	baz=112			*e*	S	**Sg**	**18 38 59.5**	**+0.8**
TWT	**Tachien** baz=231	**0.96**	**235**	*e*	P	**Pb**	**18 38 47.1**	**-0.5**
TWT	baz=231			*e*	S	**Sn**	**18 39 00.8**	**-1.7**
NSTT	**Nanjuang** baz=259	**0.97**	**260**	P		**Pn**	**18 38 47.4**	**-1.0**
NSTT	baz=259			*e*	S	**Sn**	**18 39 01.1**	**-1.2**
WHF	**Hehuan Shan** baz=227	**0.97**	**227**	⇓*i*	P	**Pg**	**18 38 47.0**	**-0.1**
WHF	baz=227			*e*	S	**Sg**	**18 38 59.2**	**-0.5**
HSN	**Hsinchu** baz=287	**0.98**	**270**	*e*	P	**Pb**	**18 38 47.0**	**-0.6**
HSN	baz=287			*e*	S	**Sn**	**18 39 00.8**	**-1.8**
ESL	**Shilin** baz=210	**1.14**	**210**	*e*	P	**Pb**	**18 38 49.2**	**-1.2**
NSY	**Sanyi** baz=252	**1.23**	**252**	*e*	P	**Pg**	**18 38 53.1**	**+1.0**
NSY	baz=252			*e*	S	**Sn**	**18 39 10.0**	**+1.1**
TWQ1	**Liyutan** baz=249	**1.25**	**249**	*e*	P	**Pg**	**18 38 52.6**	**+0.3**
TWQ1	baz=249			*e*	S	**Sn**	**18 39 10.3**	**+1.1**
SMLT	**Sun Moon Lake** baz=230	**1.39**	**229**	*e*	P	**Pb**	**18 38 54.5**	**-0.3**
SMLT	baz=230			*e*	S	**Sg**	**18 39 12.7**	**-0.5**
TYC	**Yuchr** baz=231	**1.41**	**231**	*e*	P	**Pg**	**18 38 54.9**	**-0.6**
TYC	baz=231			*e*	S	**Sg**	**18 39 14.1**	**+0.4**
TCU	**Taichung** baz=243	**1.41**	**243**	*e*	P	**Pg**	**18 38 56.2**	**+0.7**
TCU	baz=243			*e*	S	**Sg**	**18 39 15.8**	**+2.0**
EHY	**Hungye** baz=219	**1.45**	**207**	*e*	P	**Pb**	**18 38 55.3**	**-0.5**
WNT	**Mingjian** baz=224	**1.55**	**234**	*e*	P	**Pg**	**18 38 58.4**	**+0.3**
WNT	baz=224			*e*	S	**Sg**	**18 39 19.4**	**+1.1**
TWF1	**Yuli** baz=218	**1.60**	**205**	*e*	P	**Pn**	**18 38 57.2**	**+0.1**
TWF1	baz=218			*e*	S	**Sg**	**18 39 19.9**	**+0.1**
IRIF	**Iriomote-Funau**	**1.60**	**107**	P		**Pn**	**18 38 56.0**	**-1.1**
IRIF				S		**Sn**	**18 39 16.1**	**-1.9**
YUS	**Yu-Shan** baz=228	**1.65**	**218**	*e*	P	**Pg**	**18 38 59.5**	**-0.5**
ALS	**Alishan** baz=211	**1.72**	**222**	*e*	P	**Pg**	**18 39 01.5**	**+0.2**
ALS	baz=211			*e*	S	**Sg**	**18 39 24.5**	**+0.8**
CHN5	**Tsauling** baz=230	**1.73**	**226**	⇓*e*	P	**Pg**	**18 39 01.6**	**0.0**
CHN5	baz=230			*e*	S	**Sg**	**18 39 25.4**	**+1.2**
WGK	**Gukeng** baz=249	**1.75**	**231**	*e*	P	**Pb**	**18 39 01.0**	**+0.1**
WGK	baz=249			*e*	S	**Sg**	**18 39 26.1**	**+1.3**
HATJ	**Hateruma jima**	**1.77**	**115**	P		**Pn**	**18 38 58.3**	**-1.1**
HATJ				S		**Sn**	**18 39 20.5**	**-1.6**
CHKT	**Chengkung** baz=185	**1.81**	**200**	*e*	P	**Pg**	**18 39 03.2**	**+0.1**
ELDTW	**Lidau** baz=200	**1.86**	**211**	*e*	P	**Pn**	**18 39 01.1**	**+0.3**
JKRS	**Kuro-shima**	**1.88**	**107**	P		**Pn**	**18 39 00.2**	**-0.6**
CHN2	**Minshiung** baz=250	**1.92**	**229**	*e*	P	**Pg**	**18 39 05.3**	**+0.1**
CHN2	baz=250			*e*	S	**Sg**	**18 39 30.4**	**+0.4**
JIJ	**Ishigaki jima**	**1.96**	**103**	P		**Pn**	**18 39 00.9**	**-1.1**
JIJ				S		**Sn**	**18 39 25.1**	**-1.7**
CHN4	**Tsaushan** baz=227	**1.96**	**223**	*e*	P	**Pg**	**18 39 05.2**	**-0.9**
CHN4	baz=227			*e*	S	**Sg**	**18 39 32.1**	**+0.5**
CHY	**Chiayi** baz=250	**1.97**	**229**	*e*	P	**Pg**	**18 39 05.9**	**-0.4**
CHY	baz=250			*e*	S	**Sg**	**18 39 31.5**	**-0.3**
STYT	**Tauyuan** baz=210	**2.02**	**216**	*e*	P	**Pb**	**18 39 04.5**	**-0.9**
STYT	baz=210			*e*	S	**Sg**	**18 39 33.0**	**-0.3**
WTP	**Ta-pu** baz=212	**2.03**	**220**	*e*	P	**Pb**

KHZ				AML	AML	18 43 10.3	
KHZ				AML	AML	18 43 11.1	
KHZ				AML	AML	18 43 11.1	
INZ	**Inchbonnie**	**1.38**	**311**	PN	Pn	18 42 44.3	+0.2
WVZ	**Waitaha Valley**	**1.64**	**290**	⇑PN	Pn	18 42 47.1	-0.6
WVZ				AML	AML	18 43 09.7	
WVZ				AML	AML	18 43 23.8	
THZ	**Tophouse**	**1.88**	**1**	⇑PN	Pn	18 42 49.9	-1.2
THZ				AML	AML	18 43 18.8	
THZ				AML	AML	18 43 25.3	
DSZ	**Denniston Nort**	**2.05**	**338**	PN	Pn	18 42 53.6	+0.3
DSZ				AML	AML	18 43 30.1	
DSZ				AML	AML	18 43 30.1	
DSZ				AML	AML	18 43 31.0	
DSZ				AML	AML	18 43 31.0	
LBZ	**Lake Benmore**	**2.06**	**248**	PN	Pn	18 42 52.6	-0.8
LBZ				AML	AML	18 43 31.1	
LBZ				AML	AML	18 43 31.8	
BSWZ	**Blackbirch Sta**	**2.07**	**22**	PN	Pn	18 42 52.9	-0.7
ODZ	**Otahua Downs**	**2.11**	**228**	PN	Pn	18 42 53.1	-1.1
ODZ				AML	AML	18 43 34.9	
ODZ				AML	AML	18 43 38.3	
ODZ				AML	AML	18 43 38.3	
ODZ				AML	AML	18 43 38.8	
FOZ	**Fox Glacier**	**2.21**	**272**	PN	Pn	18 42 56.2	+0.7
FOZ				AML	AML	18 43 39.5	
NNZ	**Nelson**	**2.46**	**9**	PN	Pn	18 42 58.6	-0.3
QRZ	**Quartz Range**	**2.83**	**355**	PN	Pn	18 43 03.2	-0.8
QRZ				AML	AML	18 43 53.2	
JCZ	**Jackson Bay**	**2.97**	**260**	PN	Pn	18 43 06.1	0.0
JCZ				AML	AML	18 44 04.7	
EAZ	**Earnscleugh**	**2.99**	**237**	PN	Pn	18 43 05.2	-1.0
EAZ				AML	AML	18 44 01.0	
EAZ				AML	AML	18 44 01.0	
WKZ	**Wanaka**	**3.00**	**245**	PN	Pn	18 43 06.7	+0.3
WKZ				AML	AML	18 44 05.1	
CAW	**Cannon Point**	**3.02**	**34**	PN	Pn	18 43 05.0	-1.6
MTW	**Mount Morrison**	**3.17**	**39**	PN	Pn	18 43 06.5	-2.1
TUZ	**Tuapeka**	**3.25**	**224**	PN	Pn	18 43 08.9	-0.9
TUZ				AML	AML	18 44 12.0	
TUZ				AML	AML	18 44 14.6	
SYZ	**Scrubby Hill**	**3.91**	**221**	PN	Pn	18 43 18.4	-0.5

*ISCJB **02** 18:43:27.1±0.7, 6.86N±0.04×73.09W±0.05, h159km±6km, Error ellipse: s-maj=10.1km s-min=4.4km az=35.6*
*FUNV **02** 18:43:28.8, 6.82N×73.05W, h166km, MW2.6*
*RSNC **02** 18:43:29.4±1.2, 6.79N×73.10W, h145km±8km, ML2.4*

ISC 02 18:43:26.9±1.4, 6.84N±0.05×73.09W±0.05, h161km±8km, n22, σ1§15/36, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BTLC	**Betulia, Santa**	**0.20**	**294**	*e*P	**Pn**	**18 43 50.2**	**+1.4**
GIRC	**Giron, Santand**	**0.26**	**336**	*e*P	**Pn**	**18 43 49.0**	**+0.1**
BARC	**Barichara**	**0.26**	**201**	*e*P	**Pn**	**18 43 48.7**	**-0.3**
BARC				*e*S	**Sn**	**18 44 03.8**	**-2.1**
BARC				*i*		18 44 05.0	
	comp=Z,88nm,0.3s						
PAMC	**Pamplona, Colo**	**0.63**	**38**	*i* P	**Pn**	**18 43 51.6**	**+0.9**
PAMC				*e*S	**Sn**	**18 44 08.7**	**-0.4**
BRRC	**Barranca, Sant**	**0.67**	**293**	⇑*i* P	**Pn**	**18 43 50.6**	**+0.1**
BRRC				*e*S	**Sn**	**18 44 07.7**	**-0.8**
BRRC				*i*		18 44 11.8	
	comp=Z,49nm,0.5s						
CBRI	**Barrientos, No**	**0.92**	**18**	*e*P	**Pn**	**18 43 53.3**	**+1.0**
CBRI				*e*S	**Sn**	**18 44 12.2**	**+0.3**
GRMC	**Gramalote, San**	**0.92**	**18**	*i* P	**Pn**	**18 43 54.6**	**+2.3**
GRMC				*i*		18 43 55.9	
	comp=Z,38nm,0.3s						
GRMC				*e*S	**Sn**	**18 44 13.6**	**+1.7**
RUSC	**La Rusia**	**0.94**	**180**	*e*P	**Pn**	**18 43 52.7**	**-0.2**
RUSC				*e*S	**Sn**	**18 44 10.9**	**-1.9**
CAPV	**Capacho**	**1.28**	**37**	*e*P	**Pn**	**18 43 56.7**	**+1.3**
CAPV				*e*S	**Sn**	**18 44 18.1**	**+0.8**
OCAC	**Ocana**	**1.41**	**351**	*e*P	**Pn**	**18 43 57.2**	**+0.6**
OCAC				*e*S	**Sn**	**18 44 18.6**	**-0.9**
OCAC				*i*		18 44 23.7	
	comp=Z,39nm,0.3s						
NORC	**Norcasia**	**2.18**	**235**	*e*P	**Pn**	**18 44 05.1**	**+0.3**
NORC				*e*S	**Sn**	**18 44 33.4**	**-0.7**
CHIC	**Chingaza**	**2.29**	**196**	*e*P	**Pn**	**18 44 07.0**	**+0.5**
CHIC				*e*S	**Sn**	**18 44 37.0**	**-0.1**
CHIC				*i*		18 44 38.4	
	comp=Z,9.9nm,0.3s						
ROSC	**El Rosal**	**2.33**	**212**	*e*S	**Sn**	**18 44 37.9**	**-0.1**
ROSC				*i*		18 44 48.3	
	comp=Z,21nm,0.5s						
HELC	**Santa Helena**	**2.51**	**255**	*e*P	**Pn**	**18 44 10.9**	**+1.8**
HELC				*i*		18 44 47.7	
	comp=Z,9.8nm,0.3s						
VIGV	**El Vigia**	**2.62**	**41**	*e*P	**Pn**	**18 44 10.3**	**+0.2**
VIGV				*e*S	**Sn**	**18 44 41.9**	**-1.6**
SOCV	**Socops**	**2.64**	**57**	*e*P	**Pn**	**18 44 11.1**	**+0.8**
SOCV				*e*S	**Sn**	**18 44 42.2**	**-1.7**
GUYC	**Guyana, Colomb**	**2.80**	**235**	*e*P	**Pn**	**18 44 13.8**	**+1.2**
GUYC				*e*S	**Sn**	**18 44 47.9**	**-0.1**
GUYC				*i*		18 44 55.4	
	comp=Z,19nm,0.4s						
MOTC	**Monteria, Cord**	**3.20**	**307**	*e*P	**Pn**	**18 44 16.2**	**-1.0**
PRAC	**Prado**	**3.58**	**210**	*e*P	**Pn**	**18 44 23.1**	**+0.9**
VIRV	**Villa del Rosa**	**3.70**	**10**	*e*P	**Pn**	**18 44 24.1**	**+0.4**
VIRV				*e*S	**Sn**	**18 45 06.1**	**-1.7**
CURV	**Curarigua**	**4.42**	**44**	*e*P	**Pn**	**18 44 33.8**	**+0.9**
BAUV	**El Baul**	**5.42**	**67**	*e*P	**Pn**	**18 44 46.5**	**+0.5**

*ISCJB **02** 18:54:17.9±0.5, 34.40N±0.03×139.96E±0.06, h50km±8km, mb3.7/2, Error ellipse: s-maj=9.1km s-min=5.0km az=166.4*
*JMA **02** 18:54:18.6±0.1, 34.43N×139.96E, h34km±1km, M3.4*
JMA Felt I J1.
*IDC **02** 18:54:21.4±1.2, 34.13N×139.10E, h49km±38km, mb3.4/2, mb1 3.7/3, mb1mx3.1/36, mbtmp3.6/3, ML3.3/1, MS2.1/1, Ms1 2.1/1, ms1mx1.8/23, Error ellipse: s-maj=113.8km s-min=5.7km az=67.0*

ISC 02 18:54:18.9±1.4, 34.40N±0.04×139.9E±0.1, h41km±16km, n22, σ1§04/20, 4C-5D, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JMY	**Miyakejima3**	**0.46**	**225**	S	**Sn**	**18 54 37.3**	**+1.0**
JIM2	**Oshima 3**	**0.50**	**310**	⇑P	**Pn**	**18 54 29.2**	**-0.6**
JIM2				S	**Sn**	**18 54 36.5**	**-0.9**
TATJ	**Tateyama 2**	**0.64**	**359**	⇓P	**Pn**	**18 54 31.3**	**-0.2**
BSO3	**Boso 3**	**0.65**	**51**	⇓P	Pn	18 54 30.3	-1.1
JKO	**Kozu shima**	**0.67**	**252**	⇓P	**Pn**	**18 54 32.3**	**+0.4**
BSO4	**Boso 4**	**0.69**	**31**	⇓P	Pn	18 54 31.6	-0.6
KTJJ	**Kamata 2**	**0.87**	**308**	⇑P	**Pn**	**18 54 34.4**	**-0.3**
KTJJ				S	**Sn**	**18 54 45.7**	**-0.5**
JIZS	**Izushimoda**	**0.90**	**291**	⇑P	**Pn**	**18 54 35.3**	**+0.2**
BSO1	**Boso 1**	**0.93**	**74**	⇓P	Pn	18 54 33.1	-1.9
BSO1				X		18 54 44.5	
JOD2	**Odawara 2**	**1.09**	**323**	⇑P	**Pn**	**18 54 37.4**	**-0.4**
JOD2				S	**Sn**	**18 54 50.7**	**-1.0**
JHJ	**Hachijo jima 2**	**1.28**	**184**	P	**Pn**	**18 54 40.7**	**+0.4**
	233nm,0.3s,baz=37,slow=23,SNR=219						
JHJ				S	**Sn**	**18 54 56.5**	**+0.3**
	111nm,0.3s,baz=109,slow=22,SNR=19						
JHJ				LR	LR	18 55 16.2	
	comp=Z,128nm,19.0s,baz=34,slow=47						
JHJ2	**Mitsune**	**1.28**	**183**	P	**Pn**	**18 54 40.5**	**+0.2**
JHJ2				S	**Sn**	**18 54 56.5**	**+0.2**
MJAR	**Matsushiro Arr**	**2.55**	**328**	P	**Pn**	**18 54 59.3**	**+1.5**
	6.9nm,0.3s,baz=161,slow=13,SNR=65						
MJAR				S	**Sn**	**18 55 29.4**	**+1.8**
	8.6nm,0.3s,baz=261,slow=30,SNR=9.1						
MJAR				LR	LR	18 56 07.8	
	comp=Z,36nm,19.7s,baz=95,slow=43						
MAT	**Matsushiro**	**2.55**	**328**	P	**Pn**	**18 54 59.7**	**+1.9**
MAT				S	**Sn**	**18 55 29.1**	**+1.5**
H11N2	**WAKE ISLAND Hy**	**28.02**	**114**	T	T	19 29 49.6	
	baz=308,slow=75,SNR=86						
H11N1	**WAKE ISLAND Hy**	**28.02**	**114**	T	T	19 29 50.1	
	baz=308,slow=75,SNR=73						
H11N3	**WAKE ISLAND Hy**	**28.04**	**114**	T	T	19 29 47.1	
	baz=308,slow=75,SNR=73						
H11S3	**WAKE ISLAND Hy**	**28.62**	**117**	T	T	19 30 35.4	
	baz=310,slow=75,SNR=35						
H11S1	**WAKE ISLAND Hy**	**28.62**	**117**	T	T	19 30 41.7	
	baz=310,slow=75,SNR=30						
H11S2	**WAKE ISLAND Hy**	**28.63**	**117**	T	T	19 30 38.4	
	baz=310,slow=75,SNR=25						
WRA	**Warramunga Arr**	**54.30**	**186**	P	**P**	**19 03 40.1**	**-1.1**
	0.6nm,0.4s,baz=2.8,slow=7.6,SNR=24						
ASAR	**Alice Springs**	**58.02**	**186**	P	**P**	**19 04 07.1**	**-0.6**
	0.4nm,0.8s,baz=23,slow=11,SNR=16						

IDC 02 18:55:49.8±8.8, 5.37S×150.93E, h83km±63km, mb3.1/3, mb1 3.3/4, mb1mx3.0/28, mbtmp3.5/4, ML1.5/1, MS2.9/1, Ms1 2.9/1, ms1mx2.4/14, Error ellipse: s-maj=97.9km s-min=58.2km az=125.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**5.48**	**223**	P	Pn	18 57 08.4	-0.5
	1.0nm,0.3s,baz=31,slow=21,SNR=1.6						
PMG				S	Sn	18 58 11.3	+0.6
	1.0nm,0.3s,baz=176,slow=12,SNR=2.4						
HNR	**Honiara**	**9.81**	**115**	LR	LR	19 02 24.4	
	comp=Z,62nm,18.2s,baz=16,slow=40						
WRA	**Warramunga Arr**	**21.68**	**227**	P	P	19 00 35.1	+1.1
	0.6nm,0.6s,baz=53,slow=10.0,SNR=8.0						
ASAR	**Alice Springs**	**24.49**	**220**	P	P	19 01 00.8	-0.6
	0.3nm,0.8s,baz=56,slow=8.9,SNR=4.8						
FITZ	**Fitzroy Crossi**	**27.75**	**241**	P	P	19 01 31.0	+0.1
	0.6nm,0.3s,baz=63,slow=15,SNR=7.5						
TORD	**Torodi Ar. Bea**	**148.69**	**286**	PKPbc	PKPbc	19 15 27.8	-0.8
	0.3nm,0.4s,baz=80,slow=2.2,SNR=6.5						

*NIED **02** 19:40:00, 35.70N×140.70E, h47km, Mw4.3 Best double couple: M0 3.57000×10^15 NP1:ϕs176.00000°, δ26.00000°, λ76.00000°. NP2:ϕs12.00000°, δ65.00000°, λ97.00000°.*
*BJI **02** 19:40:53.1, 35.63N×140.61E, h50km, mb4.5/16, mB4.8/10, Ms4.4/9, Ms7 4.2/9*
*ISCJB **02** 19:40:54.4±0.3, 35.71N±0.03×140.71E±0.05, h57km±3km, mb4.3/41, MS3.3/16, Error ellipse: s-maj=6.3km s-min=4.8km az=3.9*
*NEIC **02** 19:40:54.6±0.8, 35.63N×140.62E, h43km±7km, mb4.5/19, Error ellipse: s-maj=8.6km s-min=6.6km az=115.0*
NEIC Recorded [1 JMA] in Chiba.
*JMA **02** 19:40:54.7±0.1, 35.75N×140.70E, h51km±1km, M3.6 Broadband fault plane solution: P waves. NP1: ϕs14.00000°, δ76.00000°, λ92.00000°. NP2:ϕs186.00000°, δ14.00000°, λ83.00000°. Principal axes: T Plg59.0000°, Azm286.0000°; N Plg2.0000°, Azm193.0000°; P Plg31.0000°, Azm102.0000°;*
JMA Felt I J1.
*IDC **02** 19:40:56.9±1.7, 35.66N×140.60E, h60km±16km, mb3.7/18, mb1 3.8/21, mb1mx3.7/34, mbtmp3.9/21, MS3.3/20, Ms1 3.3/20, ms1mx3.1/41 Error ellipse: s-maj=18.7km s-min=9.7km az=85.0*

ISC 02 19:40:55.0±0.7, 35.68N±0.04×140.73E±0.05, h50km±6km, n94, σ1§79/98, mb4.3/41, MS3.4/16, 1C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.11**	**77**	⇑P	**Pn**	**19 41 02.6**	**-0.2**
CHOJ				*e*S	**Sn**	**19 41 09.2**	**+0.9**
JCN	**Nagara**	**0.50**	**239**	⇓P	**Pn**	**19 41 07.0**	**+0.8**
JCN				*e*S	**Sn**	**19 41 16.4**	**+2.1**
JYT	**Yasato**	**0.70**	**322**	⇓P	**Pn**	**19 41 07.8**	**-0.9**
JYT				*e*S	**Sn**	**19 41 17.2**	**-1.4**
BSO4	**Boso 4**	**0.76**	**205**	P	**Pn**	**19 41 10.3**	**+0.9**
BSO3	**Boso 3**	**0.89**	**192**	P	**Pn**	**19 41 12.0**	**+1.0**
JHO	**Hitachi**	**0.94**	**352**	⇓P	**Pn**	**19 41 11.4**	**-0.5**
BSO1	**Boso 1**	**1.04**	**169**	P	**Pn**	**19 41 14.2**	**+1.4**
MJAR	**Matsushiro Arr**	**2.22**	**294**	P	**Pn**	**19 41 29.8**	**+0.5**
	22nm,0.3s,baz=97,slow=14,SNR=152						
MJAR				S	**Sn**	**19 42 02.2**	**+6.7**
	28nm,0.3s,baz=149,slow=19,SNR=9.0						
MJAR				LR	LR	19 42 29.6	
	comp=Z,679nm,20.3s,baz=115,slow=44						
MAJO	**Matsushiro**	**2.22**	**294**	*e*Pn	**Pn**	**19 41 30.1**	**+0.8**
MJB9	**Matsu-Tunnel**	**2.22**	**294**	*e*Pn	**Pn**	**19 41 30.1**	**+0.7**
JHJ2	**Mitsune**	**2.67**	**197**	*e*Pn	**Pn**	**19 41 35.6**	**+0.1**
JHJ	**Hachijo jima 2**	**2.67**	**197**	P	**Pn**	**19 41 35.4**	**-0.2**
	35nm,0.3s,baz=66,slow=22,SNR=20						
JHJ				S	**Sn**	**19 42 08.6**	**+2.0**
	78nm,0.3s,baz=63,slow=22,SNR=8.8						
JHJ				LR	LR	19 42 52.8	
	comp=Z,250nm,21.8s,baz=330,slow=44						
INU	**Inuyama**	**3.05**	**265**	*e*Pn	**Pn**	**19 41 41.5**	**+0.9**
ERM	**Erimo**	**6.60**	**16**	*e*Pn	**Pn**	**19 42 29.5**	**+0.1**
ERM				*e*Sn	**Sn**	**19 43 40.6**	**-2.7**
JNU	**Nakatsue**	**8.53**	**255**	P	**Pn**	**19 43 00.1**	**+4.2**
	0.3nm,0.3s,baz=184,slow=5.0,SNR=4.2						
JNU				LR	LR	19 46 35.3	
	comp=Z,437nm,19.2s,baz=123,slow=40						
ASAJ	**Asahikawa**	**8.55**	**9**	P	**Pn**	**19 42 54.9**	**-1.2**
	1.0nm,0.3s,baz=230,slow=11,SNR=10						
ASAJ				S	**Sn**	**19 44 27.9**	**-3.2**
	0.4nm,0.3s,baz=137,slow=23,SNR=2.4						
ASAJ	**Asahikawa**	**8.55**	**9**	*e*Pn	**Pn**	**19 42 55.2**	**-0.9**
CBIJ	**Chichi jima**	**8.65**	**171**	*e*Pn	**Pn**	**19 42 54.9**	**-2.6**
CBIJ				*e*Sn	Sn	19 44 20.4	-13
KSRS	**Korea Array**	**10.45**	**284**	P	**Pn**	**19 43 25.8**	**+3.7**
	0.1nm,0.3s,baz=98,slow=14,SNR=6.8						
KSRS				LR	LR	19 47 28.2	
	comp=Z,172nm,20.4s,baz=98,slow=38						
KS15	**Wonju Array Si**	**10.48**	**283**	*e*Pn	**Pn**	**19 43 18.7**	**-3.9**
KS15				*e*Sn	Sn	19 44 57.8	-21
USRK	**Ussuriysk Ar.**	**10.83**	**324**	P	**Pn**	**19 43 28.9**	**+1.7**
	0.1nm,0.3s,baz=132,slow=12,SNR=4.6						
USRK				LR	LR	19 47 20.1	
	comp=Z,127nm,19.1s,baz=156,slow=36						
YSS	**Yuzh-Sakhalins**	**11.37**	**7**	*e*Pn	**Pn**	**19 43 35.0**	**+0.4**
JOW	**Kunigami**	**13.82**	**234**	*e*Pn	**Pn**	**19 44 04.5**	**-3.7**
CN2	**Changchun**	**14.27**	**309**	*e*P	**Pn**	**19 44 13.2**	**-0.9**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
KLR	**Kul'dur**	**15.06**	**337**	P	**Pn**	**19 44 23.6**	**-0.9**
	0.2nm,0.3s,baz=318,slow=23,SNR=2.6						
KLR				LR	LR	19 50 05.2	
	comp=Z,75nm,19.7s,baz=154,slow=36						
BJI	**Beijing**	**19.85**	**290**	P	**P**	**19 45 20.6**	**-1.1**
BJI				S	**S**	**19 49 00.4**	**-2.1**
BJT	**Baijiatuan**	**19.85**	**290**	*e*P	**P**	**19 45 20.6**	**-1.2**
	7.1nm,0.5s						
PEA0	**Petropavlovsk-**	**21.14**	**29**	*e*P	**P**	**19 45 36.4**	**+0.9**
PETK	**Petropavlovsk-**	**21.14**	**29**	P	**P**	**19 45 36.7**	**+1.2**
	2.9nm,0.8s,baz=235,slow=5.1,SNR=2.7						
PETK				LR	LR	19 54 06.0	
	comp=Z,9.9nm,20.4s,baz=204,slow=37						
PET	**Petropavlovsk**	**21.46**	**31**	*e*P	**P**	**19 45 39.4**	**+0.4**
	17nm,1.2s						
HHC	**Hu-ho-hao-te**	**23.42**	**292**	*e*P	**P**	**19 45 58.9**	**-0.8**
HHC				S	**S**	**19 50 03.8**	**-5.5**
HHC				SS	**SnSn**	**19 50 52.1**	**+3.9**
HHC				pmax	pmax		
	comp=Z,19nm,0.9s						
HHC				pmax	pmax		
	comp=Z,95nm,5.3s						
HHC				LR	LR		
	comp=N,72nm,10.3s						
HHC				LR	LR		
	comp=E,82nm,10.3s						
HHC				LR	LR		
	comp=Z,54nm,12.3s						
ENH	**Enshi**	**26.69**	**267**	*e*P	**P**	**19 46 28.6**	**-0.9**
	11nm,0.6s						
YAK	**Yakutsk**	**27.28**	**349**	P	**P**	**19 46 35.0**	**+0.6**
	4.0nm,0.5s,baz=42,slow=1.1,SNR=4.6						
YAK				LR	LR	19 56 34.2	
	comp=Z,44nm,21.9s,baz=260,slow=34						
YAK	**Yakutsk**	**27.28**	**349**	*e*P	**P**	**19 46 34.8**	**+0.5**
	6.8nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**27.97**	**118**	T	T	20 16 02.0	
	baz=310,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**27.98**	**118**	T	T	20 15 56.4	
	baz=310,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**27.99**	**118**	T	T	20 16 03.3	
	baz=310,slow=75,SNR=24						
SONA1	**Songino Array**	**28.11**	**306**	*e*P	**P**	**19 46 41.0**	**-1.2**
SONM	**Songino Array**	**28.11**	**306**	P	**P**	**19 46 41.5**	**-0.6**
	0.7nm,0.6s,baz=99,slow=9.1,SNR=6.7						
SONM				LR	LR	19 57 50.3	
	comp=Z,60nm,20.6s,baz=86,slow=36						
H11S1	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	20 16 42.7	
	baz=312,slow=75,SNR=41						
H11S3	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	20 16 41.4	
	baz=312,slow=75,SNR=33						
H11S2	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	20 16 46.6	
	baz=312,slow=75,SNR=26						
LZH	**Lanzhou**	**29.78**	**282**	*e*P	P	19 47 03.8	+6.7
LZH				pP	sP	19 47 20.9	+5.0
LZH				pmax	pmax		
	comp=Z,8.0nm,1.0s						
QIZ	**Qiongzhong**	**31.88**	**247**	P	**P**	**19 47 12.5**	**-3.1**
QIZ				S	**S**	**19 52 21.9**	**-1.1**
QIZ				LR	LR		
	comp=Z,90nm,16.0s						
QIZ				LR	LR		
	comp=Z,100nm,18.3s						
TIXI	**Tiksi**	**36.57**	**354**	*e*P	**P**	**19 47 56.0**	**+0.4**
	comp=Z,4.7nm,1.2s						
LUWI	**Luwuk**	**40.19**	**209**	*e*P	**P**	**19 48 25.7**	**-0.9**
	comp=Z,35nm,1.1s						
CMAR	**Chiang Mai Arr**	**40.63**	**256**	P	**P**	**19 48 30.1**	**-0.2**
	comp=Z,0.3nm,0.5s,baz=49,slow=7.5,SNR=8.3						
CMAR				LR	LR	20 06 40.4	
	comp=Z,38nm,18.6s,baz=75,slow=38						
WMQ	**Urumqi**	**40.97**	**298**	*e*P	**P**	**19 48 34.4**	**+1.4**
WMQ				pP	pP	19 48 47.4	+1.3
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,78nm,4.5s						
LSA	**Lhasa**	**41.80**	**276**	*e*P	**P**	**19 48 38.8**	**-1.5**
	comp=Z,2.7nm,0.8s						
ZAA0	**Zalesovo Array**	**42.43**	**313**	*e*P	**P**	**19 48 44.3**	**-0.3**
ZALV	**Zalesovo Beam**	**42.43**	**313**	P	**P**	**19 48 44.9**	**+0.3**
	comp=Z,1.2nm,0.6s,baz=86,slow=6.4,SNR=9.8						
ZALV				LR	LR	20 07 12.5	
	comp=Z,19nm,18.2s,baz=70,slow=37						
NRIK	**Noril'sk**	**44.27**	**336**	LR	LR	20 07 48.1	
	comp=Z,43nm,20.5s,baz=78,slow=36						
MK01	**Makanchi Array**	**44.38**	**303**	*e*P	**P**	**19 49 00.3**	**-0.2**
MK31	**Makanchi Array**	**44.38**	**303**	*e*P	**P**	**19 49 00.6**	**+0.1**
MKAR	**Makanchi Array**	**44.38**	**303**	P	**P**	**19 49 01.0**	**+0.5**
	comp=Z,1.4nm,0.6s,baz=82,slow=10.0,SNR=17						
MKAR				LR	LR	20 08 05.9	
	comp=Z,43nm,18.6s,baz=93,slow=37						
MKAR	**Makanchi Array**	**44.38**	**303**	*e*P	**P**	**19 49 00.7**	**+0.2**
MAKZ	**Makanchi**	**44.59**	**303**	*e*P	**P**	**19 49 02.4**	**+0.2**
	comp=Z,5.0nm,1.1s						
KAPI	**Kappang**	**45.02**	**210**	*e*P	**P**	**19 49 04.9**	**-0.9**
	comp=Z,20nm,1.4s						
KURK	**Kurchatov**	**46.34**	**309**	*e*P	**P**	**19 49 16.1**	**+0.2**
MTN	**Manton Dam**	**49.10**	**192**	*e*P	**P**	**19 49 37.4**	**-0.2**
	comp=Z,27nm,1.4s						
TKM2	**Tokmak 2**	**49.80**	**299**	*e*P	**P**	**19 49 43.6**	**+0.6**
	comp=Z,27nm,1.8s						
MDM	**Murphy Dome**	**50.36**	**32**	*e*P	**P**	**19 49 48.5**	**+1.9**
	comp=Z,15nm,1.8s						
KSH	**Kashi**	**50.46**	**295**	*e*P	**P**	**19 49 50.9**	**+2.9**
KSH				*ep*P	pP	19 50 03.4	+1.9
KSH				PcS	**PcS**	**19 55 03.5**	**+0.6**
KSH				S	**S**	**19 57 00.6**	**+2.4**
KSH				ScS	**ScS**	**19 59 34.9**	**+0.2**
KSH				pmax	pmax		
	comp=Z,79nm,4.9s						
VOSK	**Vostochnaya**	**50.78**	**313**	*e*P	**P**	**19 49 49.6**	**-0.4**
	comp=Z,3.0nm,0.9s						
ILAR	**Eielson Array**	**50.93**	**32**	P	**P**	**19 49 52.4**	**+1.4**
	comp=Z,1.0nm,0.8s,baz=272,slow=6.6,SNR=13						
ILB	**Eielson Array**	**50.93**	**32**	*e*P	**P**	**19 49 51.9**	**+1.0**
IL1	**Eielson Array**	**50.93**	**32**	*e*P	**P**	**19 49 51.8**	**+0.9**
MID	**Middleton Isla**	**51.59**	**39**	*e*P	**P**	**19 49 58.3**	**+2.4**
	comp=Z,108nm,1.1s						
PAX	**Paxson**	**51.66**	**34**	*e*P	**P**	**19 49 59.7**	**+3.1**
	comp=Z,4.1nm,1.4s						
DIV	**Divide**	**51.69**	**36**	*e*P	**P**	**19 49 59.4**	**+2.6**
	comp=Z,11nm,1.4s						
ZRNK	**Zerenda**	**51.92**	**313**	*e*P	**P**	**19 49 58.1**	**-0.4**
	comp=Z,3.9nm,0.9s						
WRA	**Warramunga Arr**	**55.65**	**187**	P	**P**	**19 50 26.1**	**+0.1**
	comp=Z,1.3nm,0.4s,baz=1.5,slow=7.5,SNR=30						
INK	**Inuvik**	**55.84**	**27**	P	**P**	**19 50 28.5**	**+1.6**
	comp=Z,1.4nm,0.7s,baz=268,slow=4.6,SNR=2.8						
ARU	**Arti**	**57.01**	**319**	*e*P	**P**	**19 50 35.5**	**+0.1**
	comp=Z,6.5nm,1.0s						
HPO	**Honuapo**	**58.02**	**89**	*e*P	**P**	**19 50 45.5**	**+2.6**
ABKAR	**Akbulak array**	**58.40**	**311**	*e*P	**P**	**19 50 45.3**	**+0.1**
AS01	**Alice Springs**	**59.37**	**187**	*e*P	**P**	**19 50 53.0**	**+0.8**
AS31	**Alice Springs**	**59.37**	**187**	*e*P	**P**	**19 50 53.0**	**+0.8**
	comp=Z,2.3nm,1.3s						
ASAR	**Alice Springs**	**59.37**	**187**	P	**P**	**19 50 52.8**	**+0.6**
	comp=Z,0.7nm,0.5s,baz=18,slow=11,SNR=33						
MBWA	**Marble Bar**	**59.93**	**203**	*e*P	**P**	**19 50 56.2**	**+0.2**
	comp=Z,101nm,2.0s						
ARCES	**ARCESS Array B**	**65.07**	**339**	P	**P**	**19 51 30.8**	**+1.0**
	comp=Z,1.2nm,0.8s,baz=66,slow=6.0,SNR=4.6						

JRY	**Ryogami san**	**4.36 249**	P	**Pn**	**19 57 30.2**	**-0.4**
JOD2	**Odawara 2**	**4.58 240**	P	**Pn**	**19 57 33.0**	**-0.7**
MJAR	**Matsushiro Arr**	**4.71 258**	Pn	**Pn**	**19 57 36.9**	**+1.4**
	1.4nm,0.3s,baz=91,slow=16,SNR=15					
MJAR			Sn	**Sn**	**19 58 30.7**	**+1.1**
	0.6nm,0.3s,baz=88,slow=27,SNR=4.4					
MAT	**Matsushiro**	**4.71 258**	P	**Pn**	**19 57 36.9**	**+1.4**
MAT			*e*S	**Sn**	**19 58 29.0**	**-0.6**
JCH	**Churui**	**4.96 355**	P	**Pn**	**19 57 38.5**	**-0.3**
JCH			S	**Sn**	**19 58 31.4**	**-4.2**
JHJ	**Hachijo jima 2**	**5.66 218**	Pn	**Pn**	**19 57 48.4**	**-0.1**
	2.1nm,0.3s,baz=323,slow=22,SNR=6.0					
JHJ			Sn	**Sn**	**19 58 48.7**	**-4.3**
	5.2nm,0.3s,baz=83,slow=23,SNR=5.6					
MKAR	**Makanchi Array**	**45.49 302**	P	**P**	**20 04 45.1**	**+1.8**
	0.6nm,0.7s,baz=72,slow=12,SNR=4.9					
ILAR	**Eielson Array**	**47.88 33**	P	**P**	**20 05 03.1**	**+1.4**
	0.5nm,0.8s,baz=253,slow=6.5,SNR=6.8					
WRA	**Warramunga Arr**	**58.01 191**	P	**P**	**20 06 17.0**	**+0.1**
	0.3nm,0.5s,baz=10,slow=7.3,SNR=3.7					

MOS ***02*** *20:01:14.3±0.9,56°.21N×113°.86E,h11km,mb4.2/1, Error ellipse: s-maj=37.3km s-min=20.3km az=53.0*

BYKL 02 20:01:13.2±0.2,56°.17N×114°.14E,h14km±4km, 1C-1D, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SVKR	**Severomuysk**	**0.33**	**261**	*i*Pg	Pg	20 01 19.7	-0.3
SVKR				*e*Sg	Sg	20 01 24.3	-0.3
SVKR				Pmax			
	1μm,0.2s						
SVKR				Smax			
	8μm,0.3s						
SVKR	**Severomuysk**	**0.33**	**261**	*e*PG	Pg	20 01 19.7	-0.3
SVKR				*e*		20 01 24.3	
SVKR				pmax	pmax		
	comp=Z,1μm,0.2s						
SVKR				smax	smax		
	comp=N,8μm,0.5s						
YOA	**Uoyan**	**1.35**	**269**	*e*Pg	Pn	20 01 37.4	-0.3
YOA				*e*Sg	Sg	20 01 56.3	-0.5
YOA				Pmax			
	comp=N,117nm,0.2s						
YOA				Smax			
	comp=N,2μm,0.6s						
YOA	**Uoyan**	**1.35**	**269**	*i*PG	Pn	20 01 37.1	-0.6
YOA				*i*		20 01 56.7	
YOA				pmax	pmax		
	comp=Z,132nm,0.2s						
YOA				smax	smax		
	comp=E,2μm,0.5s						
BOD	**Bodaibo**	**1.66**	**357**	*e*Pg	Pb	20 01 43.1	-0.3
BOD				*e*Sg	Sb	20 02 05.0	+0.9
BOD				Pmax			
	comp=E,29nm,0.2s						
BOD				Smax			
	comp=E,355nm,0.3s						
BOD	**Bodaibo**	**1.66**	**357**	*e*PN	Pb	20 01 42.7	-0.7
BOD				*e*		20 02 04.9	
BOD				pmax	pmax		
	comp=Z,29nm,0.2s						
BOD				smax	smax		
	comp=E,356nm,0.4s						
KMO	**Kumora**	**1.67**	**261**	*e*Pg	Pn	20 01 42.8	+0.7
KMO				*e*		20 01 48.0	
KMO				*e*Sg	Sb	20 02 05.5	+0.8
KMO				max			
	comp=E,46nm,0.4s						
KMO				Smax			
	comp=E,240nm,0.6s						
KMO	**Kumora**	**1.67**	**261**	*e*PG	Pn	20 01 42.7	+0.6
KMO				*e*		20 02 05.1	
KMO				pmax	pmax		
	comp=Z,23nm,0.2s						
KMO				smax	smax		
	comp=N,237nm,0.6s						
YLYR	**Ulyunkhan**	**2.13**	**234**	*e*Pn	Pn	20 01 49.0	+0.6
YLYR				*e*Pg	Pb	20 01 51.3	-0.3
YLYR				*e*Sn	Sn	20 02 15.3	+0.6
YLYR				*e*Sg	Sb	20 02 19.6	+1.7
YLYR				Pmax			
	comp=N,18nm,0.1s						
YLYR				Smax			
	comp=N,106nm,0.2s						
YLYR	**Ulyunkhan**	**2.13**	**234**	*e*PN	Pn	20 01 48.9	+0.5
YLYR				*e*		20 01 51.1	
YLYR				*e*		20 02 19.6	
YLYR				pmax	pmax		
	comp=Z,13nm,0.3s						
YLYR				smax	smax		
	comp=E,97nm,0.2s						
CRS	**Chara**	**2.40**	**71**	*e*Pg	Pb	20 01 55.9	-0.3
CRS				*e*Sg	Sb	20 02 27.3	+1.7
CRS				Pmax			
	comp=E,13nm,0.3s						
CRS				Smax			
	comp=E,66nm,0.5s						
CRS	**Chara**	**2.40**	**71**	*e*PN	Pb	20 01 57.5	+1.3
CRS				*e*		20 02 28.4	
CRS				pmax	pmax		
	comp=Z,56nm,0.8s						
CRS				smax	smax		
	comp=E,93nm,1.0s						
NIZ	**Nizh Angarsk**	**2.62**	**263**	*e*Pn	Pn	20 01 55.6	+0.6
NIZ				*e*Pg	Pb	20 01 59.7	-0.1
NIZ				*e*Sn	Sn	20 02 27.3	+0.8
NIZ				*e*Sg	Sg	20 02 34.7	-2.4
NIZ				Pmax			
	comp=E,6.0nm,0.2s						
NIZ				Smax			
	comp=E,68nm,0.2s						
SYVR	**Suvo**	**3.47**	**225**	*e*Pn	Pn	20 02 07.0	+0.2
SYVR				*e*Pg	Pb	20 02 16.2	+1.8
SYVR				*e*		20 02 19.7	
SYVR				*e*Sn	Sn	20 02 47.5	-0.1
SYVR				*e*Sg	Sg	20 03 01.3	-3.3
SYVR				max			
	comp=E,7.0nm,0.4s						
SYVR				Smax			
	comp=E,29nm,0.5s						
TUP	**Tupik**	**3.75**	**115**	*e*Pn	Pn	20 02 10.8	+0.1
TUP				*e*Pg	Pb	20 02 20.6	+1.4
TUP				*e*Sn	Sn	20 02 54.6	-0.1
TUP				*e*Sg	Sg	20 03 09.9	-3.8
TUP				Pmax			
	comp=E,6.0nm,0.2s						
TUP				Smax			
	comp=E,33nm,0.4s						
MXMB	**Maximikha**	**4.27**	**229**	*e*Sg	Sg	20 03 25.7	-4.6
OGRR	**Ongureny**	**4.55**	**239**	*e*Pn	Pn	20 02 21.7	+0.2
OGRR				*e*Sn	Sn	20 03 13.3	-0.8
OGRR				*e*Sg	Sg	20 03 33.2	-5.8
OGRR				Smax			
	comp=E,18nm,0.5s						
KELR	**Kotokel**	**4.92**	**228**	*e*Sg	Sg	20 03 45.3	-5.6
TRG	**Tyrgan**	**5.68**	**236**	*e*Sg	Sg	20 04 07.9	-7.6
TRG				Smax			
	comp=E,11nm,0.3s						
KPC	**Khapcheranga**	**6.56**	**190**	*e*Pn	Pn	20 02 51.6	+2.3
KPC				*e*Pg	Pb	20 03 11.5	+4.4
KPC				*e*Sg	Sg	20 04 36.4	-7.3
KPC				Pmax			
	comp=E,1.0nm,0.2s						
KPC				Smax			
	comp=E,16nm,1.3s						
IVK	**Ivanovka**	**7.21**	**237**	*e*Sg	Sg	20 04 56.2	-8.2
IVK				Smax			
	comp=E,6.0nm,0.5s						
ARS	**Arshan**	**8.10**	**243**	*e*Sn	Sn	20 04 39.1	-2.6
ARS				*e*Sg	Sg	20 05 24.7	-8.2
ARS				Smax			
	comp=E,27nm,0.9s						

IDC ***02*** *20:04:06.6±9.1,4°.27N×125°.51E,h83km±90km, mb3.7/9, mb1 3.9/9,mb1mx3.5/44,mbtmp4.0/9, Error ellipse: s-maj=60.3km s-min=13.9km az=82.0*

ISCJB ***02*** *20:04:07.1±0.6,4°.34N±0°.06×126°.0E±0°.2,h100km, mb3.9/9, Error ellipse: s-maj=30.0km s-min=6.7km az=171.2*

ISC 02 20:04:08.7±0.8,4°.30N±0°.07×126°.0E±0°.2,h100km,n13,σ2s01/16,mb3.9/9,1C-1D,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MATI	**Mati**	**2.64**	**5**	*e*P	**Pn**	**20 04 48.5**	**-1.2**
MATI				*e*S	**Sn**	**20 05 18.6**	**-2.5**
DAV	**Davao City (W)**	**2.79**	**351**	S	**Sn**	**20 05 27.9**	**+3.2**
	34nm,0.3s,baz=69,slow=23,SNR=7.3						
DMPH	**Davao City--Mi**	**2.81**	**349**	*i*eP	**Pn**	**20 04 55.5**	**+3.5**
DMPH				*e*S	**Sn**	**20 05 28.5**	**+3.1**
KCP	**Kidapawan**	**2.85**	**341**	*i*eP	**Pn**	**20 04 50.8**	**-1.8**
KCP				*i* S	**Sn**	**20 05 25.4**	**-0.8**
FITZ	**Fitzroy Crossi**	**22.26**	**181**	P	**P**	**20 08 57.0**	**-0.7**
	4.9nm,0.4s,baz=15,slow=8.5,SNR=55						
WRA	**Warramunga Arr**	**25.44**	**162**	P	**P**	**20 09 27.5**	**+0.1**
	4.8nm,0.6s,baz=337,slow=10,SNR=45						
ASAR	**Alice Springs**	**28.84**	**165**	P	**P**	**20 09 58.2**	**+0.4**
	1.4nm,0.6s,baz=344,slow=7.4,SNR=26						
KSRS	**Korea Array**	**33.04**	**3**	P	**P**	**20 10 34.5**	**0.0**
	0.9nm,0.6s,baz=183,slow=9.7,SNR=7.6						
STKA	**Stephens Creek**	**38.91**	**159**	P	**P**	**20 11 25.9**	**+1.2**
	2.8nm,0.7s,baz=341,slow=8.5,SNR=11						
USRK	**Ussuriysk Ar.**	**40.08**	**7**	P	**P**	**20 11 34.8**	**+0.5**
	1.2nm,0.7s,baz=214,slow=6.3,SNR=5.5						
KLR	**Kul'dur**	**45.03**	**5**	P	**P**	**20 12 14.2**	**-0.1**
	0.7nm,0.5s,baz=159,slow=8.6,SNR=3.7						
MKAR	**Makanchi Array**	**56.69**	**325**	P	**P**	**20 13 39.4**	**-2.5**
	0.2nm,0.4s,baz=120,slow=8.2,SNR=5.1						
VNDA	**Vanda**	**84.08**	**173**	P	**P**	**20 16 28.0**	**+0.2**
	1.6nm,0.9s,baz=314,slow=7.7,SNR=6.0						

ISCJB ***02*** *20:06:03.9±0.4,3°.01S±0°.04×129°.89E±0°.05,h25km, mb4.6/10, Error ellipse: s-maj=6.9km s-min=5.7km az=11.2*

NEIC ***02*** *20:06:07.6±1.2,2°.98S×129°.91E,h37km±14km,mb4.1/10, Error ellipse: s-maj=11.0km s-min=8.5km az=53.0*

IDC ***02*** *20:06:11.2±4.1,2°.95S×130°.37E,h75km±53km,mb3.5/2, mb1 3.8/5,mb1mx3.3/40,mbtmp3.9/5,ML3.8/3, Error ellipse: s-maj=88.3km s-min=17.3km az=91.0*

ISC 02 20:06:05.7±0.6,3°.04S±0°.05×129°.95E±0°.07,h25km,n27,σ1s40/31,mb4.2/10,Seram

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FAKI	**Fak Fak**	**2.30**	**87**	*e*Pn	**Pn**	**20 06 43.0**	**+0.8**
FAKI				*e*Sn	**Sn**	**20 07 09.0**	**-0.7**
SIJI	**Sorong**	**2.53**	**31**	P	**Pn**	**20 06 47.2**	**+1.9**
	12nm,0.3s,baz=90,slow=23,SNR=5.9						
SIJI				S	**Sn**	**20 07 13.7**	**-1.7**
	baz=91,slow=24,SNR=7.1						
LUWI	**Luwuk**	**7.44**	**285**	*e*Pn	**Pn**	**20 07 55.0**	**+2.2**
SOEI	**Soe**	**8.73**	**220**	*e*Pn	**Pn**	**20 08 10.1**	**-0.6**
MMRI	**Maumere**	**9.47**	**234**	*e*Pn	**Pn**	**20 08 19.1**	**-1.6**
MTN	**Manton Dam**	**9.81**	**173**	*e*Pn	**Pn**	**20 08 27.1**	**+1.8**
MTN				*e*Sn	**Sn**	**20 10 14.5**	**-0.2**
FITZ	**Fitzroy Crossi**	**15.55**	**195**	P	**P**	**20 09 47.7**	**+0.1**
	0.3nm,0.3s,baz=23,slow=13,SNR=3.5						
FITZ	**Fitzroy Crossi**	**15.55**	**195**	*e*Pn	**P**	**20 09 47.3**	**-0.3**
	11nm,1.4s						
COEN	**Coen**	**16.98**	**130**	*e*P	**P**	**20 10 04.7**	**+1.2**
	34nm,1.4s						
WR1	**Warramunga Arr**	**17.34**	**166**	*e*Pn	**Pn**	**20 10 07.8**	**+1.6**
	13nm,1.3s						
WR1				*e*Sn	Sn	20 13 07.4	-11
WRA	**Warramunga Arr**	**17.34**	**166**	P	**Pn**	**20 10 07.8**	**+1.6**
	0.4nm,0.3s,baz=350,slow=11,SNR=6.5						
WRA				S	Sn	20 13 07.4	-11
	0.1nm,0.3s,baz=338,slow=27,SNR=3.5						
AS31	**Alice Springs**	**20.86**	**170**	*e*P	**P**	**20 10 47.6**	**+1.6**
	2.9nm,0.4s						
ASAR	**Alice Springs**	**20.86**	**170**	P	**P**	**20 10 47.6**	**+1.6**
	4.1nm,0.5s,baz=345,slow=11,SNR=22						
ASAR				S	**S**	**20 14 34.1**	**-3.5**
	1.1nm,0.8s,baz=352,slow=24,SNR=5.5						
AS01	**Alice Springs**	**20.86**	**170**	*e*P	**P**	**20 10 47.5**	**+1.4**
STKA	**Stephens Creek**	**30.71**	**160**	*e*P	**P**	**20 12 19.6**	**+0.9**
	6.9nm,1.8s						
LHMI	**Lhok Sumawe**	**33.97**	**284**	*e*P	**P**	**20 12 46.7**	**-1.0**
	56nm,1.0s						
ENH	**Enshi**	**38.47**	**331**	*e*P	**P**	**20 13 25.6**	**-0.2**
	7.1nm,1.3s						
KWAJ	**Kwajalein Atol**	**39.35**	**72**	*e*P	**P**	**20 13 32.1**	**-1.4**
	234nm,0.8s						
MAJO	**Matsushiro**	**40.13**	**10**	*e*P	**P**	**20 13 40.3**	**+0.6**
	6.6nm,1.4s						
MJB9	**Matsu-Tunnel**	**40.13**	**10**	*e*P	**P**	**20 13 40.6**	**+1.0**
	1.8nm,1.4s						
ASAJ	**Asahikawa**	**48.30**	**12**	*e*P	**P**	**20 14 44.2**	**-0.7**
	29nm,1.7s						
FUNA	**Funafuti**	**49.27**	**99**	*e*P	**P**	**20 14 51.9**	**-1.0**
	91nm,0.9s						
SONA0	**Songino Array**	**54.70**	**341**	*e*P	**P**	**20 15 33.5**	**+0.5**
	1.6nm,1.0s						
SONM	**Songino Array**	**54.70**	**341**	P	**P**	**20 15 33.5**	**+0.5**
	0.6nm,0.8s,baz=165,slow=6.0,SNR=4.6						
MK01	**Makanchi Array**	**64.90**	**326**	*e*P	**P**	**20 16 42.5**	**-0.6**
MK31	**Makanchi Array**	**64.92**	**326**	*e*P	**P**	**20 16 41.5**	**-1.8**
ZAA0	**Zalesovo Array**	**68.04**	**333**	*e*P	**P**	**20 17 03.2**	**+0.2**

MEX 02 20:09:57.0±0.4,15°.55N×96°.54W,h5km,MD3.6,Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PANG	**Puerto Angel**	**0.14**	**30**	*e*P	Pg	20 09 59.5	-0.3
PANG				*i* S	Sg	20 10 01.3	-0.3
HUIG	**Huatulco**	**0.47**	**63**	*i* P	Pg	20 10 05.6	-0.5
HUIG				*i* S	Sg	20 10 13.1	+0.7
VHO	**Vista Hermosa**	**1.52**	**353**	*e*P	Pn	20 10 21.9	-3.3
VHO				*e*S	Sn	20 10 40.1	-5.3
PNIG	**Pinotepa**	**1.74**	**299**	*e*P	Pn	20 10 24.5	-3.4
PNIG				*e*S	Sn	20 10 46.6	-3.9
TPIG	**Tehuac#an**	**2.96**	**345**	*i* P	Pn	20 10 41.5	-3.3
TPIG				*i* S	Sn	20 11 17.0	-3.8

ISCJB ***02*** *20:10:03.6±0.4,12°.55N±0°.06×87°.91W±0°.04,h72km±6km, mb3.8/5, Error ellipse: s-maj=11.9km s-min=3.9km az=32.4*

CASC ***02*** *20:10:04.2±2.1,12°.52N×87°.93W,h52km±44km,MD4.5, ML4.2*

IDC ***02*** *20:10:07.5±6.1,12°.54N×88°.02W,h97km±56km,mb3.6/5, mb1 3.9/6,mb1mx3.5/31,mbtmp3.9/6,MS2.9/1,Ms1 2.9/1, ms1mx2.4/27,Error ellipse: s-maj=56.8km s-min=26.0km az=74.0*

ISC 02 20:10:04.4±1.1,12°.57N±0°.08×87°.90W±0°.06,h65km±11km,n34,σ0s97/42,mb3.8/5,3C-2D,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CNCH	**Conchagua**	**0.71**	**5**	*i*P	**Pn**	**20 10 19.6**	**+0.4**
CNCH				*e*S	**Sn**	**20 10 30.3**	**+0.3**
VSM	**San Miguel**	**0.93**	**337**	*e*P	**Pn**	**20 10 22.0**	**-0.1**
LCY	**Lacayo**	**0.94**	**336**	*e*P	**Pn**	**20 10 22.1**	**+0.1**
LCY				*e*S	**Sn**	**20 10 34.8**	**-0.2**
PACA	**Pacayal**	**0.99**	**335**	*e*P	**Pn**	**20 10 22.8**	**+0.1**
CNGN	**Cerro Negro**	**1.17**	**93**	*e*P	**Pn**	**20 10 24.3**	**-0.7**
CNGN				*e*S	**Sn**	**20 10 39.3**	**-1.0**
CNGN				AML	AML	20 10 43.9	
	comp=N,5μm,0.2s						
CAHU	**Cacacuatique**	**1.23**	**346**	*i*eP	**Pn**	**20 10 26.6**	**+0.6**
CAHU				*e*S	**Sn**	**20 10 44.1**	**+2.2**
COPN	**Copaltepe**	**1.33**	**107**	*e*P	**Pn**	**20 10 25.9**	**-1.1**
MOMN	**Momotombo**	**1.34**	**97**	*e*P	**Pn**	**20 10 26.3**	**-0.9**
SNVI	**San Vicente**	**1.39**	**319**	*e*P	**Pn**	**20 10 28.2**	**+0.3**
SNVI				*e*S	**Sn**	**20 10 44.8**	**-0.7**
LFRS	**El Faro**	**1.54**	**313**	*i*eP	**Pn**	**20 10 29.9**	**-0.1**
ESTN	**Estel**	**1.58**	**70**	*e*P	**Pn**	**20 10 30.6**	**+0.2**
ESTN				*e*S	**Sn**	**20 10 50.5**	**+0.4**
XAVN	**Gruta Xavier**	**1.59**	**105**	*e*P	**Pn**	**20 10 29.6**	**-0.9**
LBRS	**Las Brisas**	**1.61**	**316**	*e*P	**Pn**	**20 10 30.3**	**-0.6**
LFU	**La Fuente**	**1.67**	**315**	*e*P	**Pn**	**20 10 31.9**	**+0.3**
SNET	**Serv Nac Est T**	**1.71**	**311**	*e*P	**Pn**	**20 10 32.0**	**-0.2**
SNET				*e*S	**Sn**	**20 10 51.6**	**-1.5**
SNET				AML	AML	20 10 55.5	
	comp=Z,2μm,0.2s						
BOQS	**Boqueron**	**1.78**	**311**	*e*P	**Pn**	**20 10 33.1**	**-0.1**
BOQS				*e*S	**Sn**	**20 10 54.7**	**-0.3**
SBLS	**San Blas**	**2.10**	**307**	*e*P	**Pn**	**20 10 38.1**	**+0.5**
MONT	**Ecomontaæa**	**2.13**	**307**	*e*P	**Pn**	**20 10 38.2**	**+0.1**
RBDL	**Robledal**	**2.32**	**312**	*e*P	**Pn**	**20 10 41.2**	**+0.7**

CUS1	**Cusmapa**	**2.40**	**304**	*e*P	**Pn**	**20 10 41.7**	**+0.2**
CONN	**Concepcion**	**2.44**	**114**	*e*P	**Pn**	**20 10 41.7**	**-0.3**
JCR	**Jicaral**	**3.84**	**134**	*e*P	**Pn**	**20 11 01.6**	**+0.4**
CGA2	**Cerro Gallo 2**	**4.21**	**127**	*e*P	**Pn**	**20 11 07.7**	**+1.3**
QCR	**Quepos**	**4.81**	**130**	*i*P	**Pn**	**20 11 15.5**	**+1.1**
URSC	**Urasca**	**4.87**	**123**	*e*P	**Pn**	**20 11 18.4**	**+3.0**
BUS	**Buena Vista**	**5.05**	**126**	*e*P	**Pn**	**20 11 19.9**	**+1.9**
CMIG	**Matias Romero**	**8.11**	**305**	P	**Pn**	**20 12 01.6**	**+2.0**
	baz=137,slow=13,SNR=1.1						
CMIG				S	**Sn**	**20 13 30.5**	**+0.6**
	comp=Z,0.5nm,0.3s,baz=300,slow=20,SNR=2.3						
TXAR	**Lajitas Array**	**22.21**	**321**	P	**P**	**20 14 56.2**	**+0.5**
	comp=Z,3.1nm,0.8s,baz=145,slow=11,SNR=33						
TKL	**Tuckaleechee C**	**23.29**	**9**	P	**P**	**20 15 06.9**	**+0.2**
	comp=Z,3.1nm,0.8s,baz=192,slow=17,SNR=5.2						
PTGA	**Pitinga**	**30.71**	**113**	LR	LR	20 32 25.6	
	comp=Z,20nm,19.2s,baz=106,slow=43						
PDAR	**Pinedale Array**	**35.46**	**332**	P	**P**	**20 16 54.7**	**-0.2**
	comp=Z,0.6nm,0.5s,baz=123,slow=11,SNR=5.8						
YKA	**Yellowknife Ar**	**53.39**	**345**	P	**P**	**20 19 16.7**	**-0.4**
	comp=Z,0.9nm,0.8s,baz=146,slow=6.7,SNR=3.0						
PLCA	**Paso Flores**	**55.41**	**164**	P	**P**	**20 19 31.8**	**-0.5**
	comp=Z,2.5nm,1.0s,baz=328,slow=9.5,SNR=3.0						
KSRS	**Korea Array**	**119.94**	**327**	PKP	**PKPdf**	**20 28 47.0**	**-1.0**
	comp=Z,0.6nm,0.8s,baz=14,slow=2.2,SNR=3.1						

IDC ***02*** *20:11:06.6±0.6,10°.86S×165°.75E,h0km,mb4.4/20, mb1 4.5/22,mb1mx4.4/47,mbtmp4.4/22,ML4.8/2,MS4.0/15, Ms1 3.9/15,ms1mx3.8/26,Error ellipse: s-maj=20.1km s-min=14.5km az=104.0*

ISCJB ***02*** *20:11:10.6±0.2,10°.88S±0°.04×165°.51E±0°.03,h33km, mb5.0/135,MS4.0/23,Error ellipse: s-maj=5.3km s-min=4.2km az=163.3*

MOS ***02*** *20:11:12.6±1.0,10°.74S×165°.43E,h46km,mb4.9/43,Error ellipse: s-maj=9.5km s-min=8.6km az=59.9*

NEIC ***02*** *20:11:13.2±0.8,10°.87S×165°.54E,h44km±7km,mb5.0/105, Error ellipse: s-maj=4.7km s-min=3.8km az=125.0*

GCMT ***02*** *20:11:13.2±0.3,10°.94S×165°.39E,h22km±1km,MW5.0/55, Moment Tensor Solution. s38,c47; s55,c77; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.41±.17; $M_{\theta\theta}$0.38±.11; $M_{\phi\phi}$-2.79±.11; $M_{r\theta}$1.77±.25; $M_{\theta\phi}$0.02±.09; $M_{\phi r}$-1.16±.17; Best double couple: M_o3.34000×10^{16} NP1:ϕ_s152.00000°,δ64.00000°,λ61.00000°. NP2: ϕ_s23.00000°,δ38.00000°,λ135.00000°. Principal axes: T 3.5920, Plg60.0000°, Azm18.0000°; N -0.5060, Plg26.0000°, Azm165.0000°; P -3.0870, Plg14.0000°, Azm262.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI ***02*** *20:11:13.8,10°.68S×165°.25E,h47km,mb4.7/38,mB4.9/28, Ms4.7/21,Ms7 4.4/20*

ISC 02 20:11:13.2±0.6,10°.87S±0°.05×165°.52E±0°.05,h42km±4km, n294,σ1s22/308,mb5.0/135,MS4.0/24,2C-1D,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**5.67**	**284**	Pn	**Pn**	**20 12 35.6**	**+0.6**
	53nm,0.3s,baz=230,slow=1.5,SNR=15						
HNR				Sn	**Sn**	**20 13 41.3**	**+2.4**
	7.6nm,0.3s,baz=343,slow=19,SNR=3.9						
HNR				LR	LR	20 14 46.4	
	comp=Z,1μm,19.1s,baz=130,slow=37						
HNR	**Honiara**	**5.67**	**284**	*e*P	**Pn**	**20 12 34.0**	**-1.0**
HNR				*e*S	**Sn**	**20 13 41.0**	**+2.2**
HNR	**Honiara**	**5.67**	**284**	*e*P	**Pn**	**20 12 35.3**	**+0.3**
HNR				*e*		20 13 33.8	
HNR	**Honiara**	**5.67**	**284**	*e*Pn	**Pn**	**20 12 35.2**	**+0.3**
HNR				*e*Sn	**Sn**	**20 13 33.8**	**-5.1**
DZM	**Mont Dzumac**	**11.18**	**176**	*e*Pn	**Pn**	**20 13 47.4**	**-3.2**
	11nm,0.3s						
DZM				*e*Sn	Sn	20 15 42.1	-12
	2.6nm,0.3s						
DZM				*e*LR	LR	20 16 29.9	
	600nm,22.5s						
DZM	**Mont Dzumac**	**11.18**	**176**	Pn	**Pn**	**20 13 49.0**	**-1.6**
	3.2nm,0.3s,baz=353,slow=4.8,SNR=38						
DZM	**Mont Dzumac**	**11.18**	**176**	*e*Pn	**Pn**	**20 13 48.2**	**-2.4**
MSVF	**Nonsavu**	**13.93**	**121**	*e*P	**Pn**	**20 14 32.1**	**+3.9**
MSVF	**Nonsavu**	**13.93**	**121**	*e*Pn	Pn	20 14 23.2	-5.0
TARA	**Tarawa**	**14.20**	**32**	*e*Pn	**Pn**	**20 14 31.6**	**-0.2**
PMG	**Port Moresby**	**18.13**	**273**	LR	LR	20 21 07.0	
	comp=Z,472nm,19.0s,baz=118,slow=33						
EIDS	**Eidsvold**	**19.88**	**222**	*e*P	**Pn**	**20 15 42.8**	**-0.2**
	18nm,1.0s						
MANU	**Manus Island**	**20.04**	**295**	*e*P	**Pn**	**20 15 43.6**	**-1.4**
	191nm,1.1s						
CTA	**Charters Tower**	**20.69**	**241**	P	Pn	20 15 51.2	-1.3
	20nm,1.0s,baz=81,slow=12,SNR=4.7						
CTAO	**Charters Tower**	**20.69**	**241**	*e*P	Pn	20 15 51.6	-0.9
CTAO				pmax	pmax		
	comp=Z,53nm,1.3s						
CTAO	**Charters Tower**	**20.69**	**241**	*e*P	Pn	20 15 51.6	-0.9
	comp=Z,53nm,1.3s						
COEN	**Coen**	**22.03**	**260**	*e*P	**P**	**20 16 05.8**	**+1.4**
	comp=Z,101nm,1.8s						
ARMA	**Armidale**	**23.35**	**212**	*e*P	**P**	**20 16 17.9**	**-0.2**
	comp=Z,26nm,1.2s						
JAY	**Jayapura**	**25.98**	**287**	LR	LR	20 26 19.3	
	comp=Z,8.7nm,20.0s,baz=185,slow=35						
URZ	**Urewera**	**29.19**	**161**	P	**P**	**20 17 09.2**	**-1.5**
	comp=Z,5.2nm,0.5s,baz=324,slow=8.7,SNR=5.0						
BKZ	**Black Stump Fm**	**29.83**	**163**	*e*P	**P**	**20 17 15.9**	**-0.7**
	comp=Z,48nm,1.4s						
STKA	**Stephens Creek**	**30.42**	**223**	P	**P**	**20 17 22.3**	**+0.5**
	comp=Z,5.1nm,0.9s,baz=53,slow=7.7,SNR=4.0						
STKA				LR	LR	20 29 00.9	
	comp=Z,468nm,18.8s,baz=35,slow=35						
STKA	**Stephens Creek**	**30.42**	**223**	*e*P	**P**	**20 17 22.6**	**+0.8**
	comp=Z,5.6nm,1.6s						
WC3	**Warramunga Arr**	**31.31**	**249**	*e*P	**P**	**20

PPT2 Papeete2 43.96 104 *e*LR LR 20 31 29.9
comp=Z,194nm,20.8s
TBI Tubuai 44.60 112 *e*LR LR 20 31 53.1
comp=Z,246nm,33.2s
MJAR Matsushiro Arr 53.71 333 LR LR 20 40 53.9
comp=Z,56nm,21.0s,baz=200,slow=33
JNU Nakatsue 54.81 324 P **P** **20 20 39.0 -0.2**
comp=Z,8.3nm,0.8s,baz=146,slow=6.0,SNR=5.7
RKT Rikitea 57.86 110 *e*LR LR 20 38 09.1
comp=Z,359nm,23.5s
KUR Kuril'sk 58.07 345 *i* P **P** **20 21 01.9 -0.2**
ASAJ Asahikawa 58.55 341 *e*P **P** **20 21 06.6 +1.0**
comp=Z,26nm,1.1s
SSE Sheshan 59.57 316 P **P** **20 21 13.1 +0.2**
SSE pmax pmax
comp=Z,19nm,0.6s
SSE pmax pmax
comp=Z,34nm,3.3s
SSE LR LR
comp=Z,62nm,24.7s
SSE LR LR
comp=Z,48nm,25.9s
KSRS Korea Array 59.60 326 P **P** **20 21 13.3 +0.3**
comp=Z,1.6nm,1.0s,baz=130,slow=6.5,SNR=7.2
KSRS Korea Array 59.60 326 P **P** **20 21 13.3 +0.3**
KSRS pmax pmax
comp=Z,1.0nm,0.8s
KS15 Wonju Array Si 59.62 326 *e*P **P** **20 21 12.4 -0.7**
KSAR Wonju Array Be 59.62 326 P **P** **20 21 13.3 +0.2**
KSAR Wonju Array Be 59.62 326 P **P** **20 21 13.3 +0.2**
KS01 Wonju Array Si 59.64 326 *e*P **P** **20 21 13.4 +0.2**
YSS Yuzh-Sakhalins 61.05 342⇑ *e*P **P** **20 21 23.5 +0.8**
YSS pmax pmax
comp=Z,20nm,1.4s
YSS Yuzh-Sakhalins 61.05 342 *e*P **P** **20 21 23.4 +0.8**
comp=Z,35nm,1.3s
PTCN Pitcairn Islan 62.35 113 *e*P **P** **20 21 32.4 +0.4**
comp=Z,325nm,1.0s
QIZ Qiongzhong 62.40 298 P **P** **20 21 31.4 -0.9**
QIZ S **S** **20 29 57.4 +0.8**
QIZ LR LR
comp=Z,110nm,20.3s
USRK Ussuriysk Ar. 62.69 333 P **P** **20 21 34.6 +0.8**
comp=Z,2.5nm,0.7s,baz=134,slow=5.5,SNR=15
PET Petropavlovsk 63.91 355 *e*P P 20 21 46.7 +5.1
PET *e*S **S** **20 30 18.2 +4.1**
PEA0 Petropavlovsk- 64.07 355 *e*P **P** **20 21 43.0 +0.3**
PEA0B Petropavlovsk- 64.07 355 *e*P **P** **20 21 42.9 +0.1**
comp=Z,19nm,1.3s
PETK Petropavlovsk- 64.07 355 P **P** **20 21 42.7 0.0**
comp=Z,2.6nm,0.8s,baz=158,slow=4.2,SNR=5.4
PETK LR LR 20 44 22.4
comp=Z,117nm,21.3s,baz=154,slow=31
PEA1 Petropavlovsk- 64.07 355 *e*P **P** **20 21 42.7 0.0**
MDJ Mudanjiang 64.09 332 P **P** **20 21 43.9 +0.9**
MDJ pP pP 20 21 55.8 +0.6
MDJ sP sP 20 22 00.5 +0.5
MDJ PcP **PcP** **20 22 18.0 +0.1**
MDJ PP **PP** **20 24 05.2 +0.7**
MDJ S **S** **20 30 18.1 +1.3**
MDJ ScS **ScS** **20 31 33.7 +0.1**
MDJ pmax pmax
comp=Z,7.0nm,1.0s
MDJ pmax pmax
comp=Z,54nm,5.1s
MDJ LR LR
comp=Z,32nm,5.4s
MDJ LR LR
comp=Z,110nm,13.0s
MDJ LR LR
comp=Z,94nm,6.1s
MDJ Mudanjiang 64.09 332 *e*P **P** **20 21 43.0 0.0**
comp=Z,14nm,1.3s
HABR Khabarovsk 64.94 338 *e*P **P** **20 21 46.3 -2.1**
HABR *e**PP **pP** **20 22 00.4 -0.2**
HABR *e**SP **sP** **20 22 06.3 +0.9**
HABR *e* 20 22 19.6
HABR *e* 20 24 08.8
HABR *e*PPP PPP 20 25 40.7
HABR *e*S **S** **20 30 22.9 -4.2**
HABR *e**SS **sS** **20 30 47.7 +0.4**
HABR *e* 20 31 36.9
HABR *e*SS **SS** **20 34 36.0 -3.7**
HABR pmax pmax
comp=E,11nm,1.4s
HABR pmax pmax
comp=N,3.0nm,0.7s
HABR pmax pmax
comp=Z,18nm,1.4s
HABR MLR MLR
comp=Z,54nm,18.0s
CN2 Changchun 65.47 329 *e*P **P** **20 21 55.5 +3.4**
CN2 *e*S **S** **20 30 35.3 +1.4**
CN2 pmax pmax
comp=Z,10.0nm,0.5s
CN2 LR LR
comp=Z,200nm,15.0s
CN2 LR LR
comp=Z,100nm,15.0s
CN2 LR LR
comp=Z,200nm,16.0s
CASY Casey 66.46 201 *e*P **P** **20 21 58.1 0.0**
comp=Z,27nm,1.8s
KULM Kulim 66.53 281 *e*P **P** **20 21 58.5 -1.0**
comp=Z,38nm,1.5s
VNDA Vanda 66.67 181 P **P** **20 21 59.4 +0.2**
comp=Z,0.9nm,0.9s,baz=346,slow=7.8,SNR=3.7
VNDA Vanda 66.67 181 *e*P **P** **20 22 00.0 +0.7**
VNDA pmax pmax
comp=Z,6.0nm,1.3s
VNDA Vanda 66.67 181 *e*P **P** **20 21 60.0 +0.7**
comp=Z,6.2nm,1.3s
KLR Kul'dur 66.81 337 P **P** **20 22 01.3 +0.8**
comp=Z,3.1nm,0.6s,baz=218,slow=5.1,SNR=9.8
SBA Scott Base 66.98 180 *e*P **P** **20 22 01.9 +0.7**
SBA pmax pmax
comp=Z,31nm,1.9s
SBA Scott Base 66.98 180 *e*P **P** **20 22 01.9 +0.7**
comp=Z,31nm,1.9s
NIKH Nikolski High 67.27 16 *e*P **P** **20 22 03.0 -0.4**
comp=Z,46nm,1.0s
ENH Enshi 67.61 309 *e*P **P** **20 22 05.6 -0.5**
comp=Z,9.2nm,0.4s
PSI Prapat 67.63 278 *e*P **P** **20 22 04.3 -2.3**
PSI pmax pmax
comp=Z,24nm,1.3s
PSI Prapat 67.63 278 *e*P **P** **20 22 04.3 -2.3**
comp=Z,24nm,1.3s
GYA Guiyang 68.13 304 P **P** **20 22 11.2 +1.7**
GYA pP pP 20 22 23.0 +1.2
GYA PP **PP** **20 24 42.8 +2.4**
GYA S **S** **20 31 06.2 -0.8**
GYA sS sS 20 31 27.6 +0.2
GYA SKS **SKiKP** **20 32 02.0 +0.1**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.9s
GYA LR LR
comp=Z,520nm,19.8s
GYA LR LR
comp=Z,480nm,20.0s
GYA LR LR
comp=Z,500nm,20.3s
BJI Beijing 68.20 321 P **P** **20 22 10.1 +0.6**
BJI PP **PP** **20 24 40.1 -0.5**
BJI S **S** **20 31 06.9 -0.1**
BJI pmax pmax
comp=Z,7.0nm,0.8s
BJI pmax pmax
comp=Z,51nm,5.2s
BJI LR LR
comp=Z,120nm,15.6s
BJI LR LR
comp=Z,83nm,18.5s
BJI LR LR
comp=Z,93nm,22.4s
UNV Unalaska Valle 68.71 17 *e*P **P** **20 22 11.6 -0.7**
comp=Z,91nm,1.8s
KMI Kunming 70.84 301 P **P** **20 22 23.3 -3.1**
KMI pP pP 20 22 37.9 -0.8
KMI sP PcP 20 22 45.1 -1.8
KMI pmax pmax
comp=Z,12nm,1.4s
HHC Hu-ho-hao-te 71.55 320 *e*P **P** **20 22 32.0 +1.7**
HHC pP sP 20 22 45.2 -2.1

HHC sP PcP 20 22 50.5 +1.1
HHC S **S** **20 31 47.2 +0.7**
HHC pmax pmax
comp=Z,11nm,0.6s
HHC pmax pmax
comp=Z,61nm,7.5s
HHC LR LR
comp=Z,120nm,14.9s
HHC LR LR
comp=Z,100nm,13.1s
HHC LR LR
comp=Z,90nm,15.0s
CM01 Chiang Mai Arr 71.81 294 *e*P **P** **20 22 32.4 +0.2**
CM31 Chiang Mai Arr 71.84 294 *e*P **P** **20 22 31.2 -1.1**
CMAR Chiang Mai Arr 71.84 294 P **P** **20 22 33.3 +1.0**
comp=Z,1.4nm,0.7s,baz=120,slow=5.3,SNR=11
HIA Hailar 72.11 330 *i* P **P** **20 22 33.5 +0.2**
HIA pmax pmax
comp=Z,7.0nm,1.1s
CD2 Chengdu 72.32 307 *e*P **P** **20 22 35.0 0.0**
CD2 pP pP 20 22 47.6 +0.3
CD2 sP PcP 20 22 52.7 -0.2
CD2 PP **PP** **20 25 16.1 -0.2**
CD2 S **S** **20 31 56.1 +0.5**
CD2 sS sS 20 32 17.6 +1.5
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.0s
CHGN Chignik 73.32 20 *e*P **P** **20 22 37.5 -2.7**
LZH Lanzhou 74.47 312 *e*P **P** **20 22 50.0 +2.3**
LZH pP pP 20 23 00.3 +0.2
LZH sP sP 20 23 03.9 -1.0
LZH pmax pmax
comp=Z,12nm,1.0s
YAK Yakutsk 77.86 344 P **P** **20 23 05.8 -0.4**
comp=Z,3.7nm,0.4s,baz=107,slow=2.7,SNR=4.5
YAK Yakutsk 77.86 344 *e*P **P** **20 23 05.7 -0.4**
YAK pmax pmax
comp=Z,10.0nm,1.1s
YAK Yakutsk 77.86 344 *e*P **P** **20 23 05.5 -0.7**
comp=Z,34nm,1.6s
SVW2 Sparrevohn 78.01 18 *e*P **P** **20 23 07.2 +0.2**
comp=Z,40nm,1.4s
CNPM China Poot 78.25 21 *e*P **P** **20 23 08.7 +0.2**
comp=Z,40nm,1.4s
SONA0 Songino Array 78.39 324 *e*P **P** **20 23 10.4 +0.8**
comp=Z,4.3nm,1.0s
SONM Songino Array 78.39 324 P **P** **20 23 10.4 +0.8**
comp=Z,2.4nm,0.9s,baz=130,slow=6.5,SNR=13
SONM Songino Array 78.39 324 P **P** **20 23 10.4 +0.8**
SONM pmax pmax
comp=Z,3.0nm,0.9s
SONA1 Songino Array 78.39 324 *e*P **P** **20 23 09.8 +0.1**
RSO Redoubt South 78.43 20 *e*P **P** **20 23 09.1 -0.5**
BRLK Bradley Lake 78.55 21 *e*P **P** **20 23 09.6 -0.5**
comp=Z,18nm,0.9s
BILL Bilibino 78.70 0*c i*P **P** **20 23 11.0 +0.3**
BILL pmax pmax
comp=Z,17nm,1.2s
BILL Bilibino 78.70 0 *e*P **P** **20 23 10.7 0.0**
comp=Z,22nm,1.1s
GTA Gaotai 78.77 314 *e*P **P** **20 23 13.4 +1.5**
GTA pP pP 20 23 26.6 +2.2
GTA sP sP 20 23 31.8 +2.7
GTA S **S** **20 33 12.0 +5.1**
GTA pmax pmax
comp=Z,6.0nm,1.2s
GTA pmax pmax
comp=Z,53nm,6.4s
GTA LR LR
comp=Z,94nm,18.1s
GTA LR LR
comp=Z,67nm,14.5s
GTA LR LR
comp=Z,100nm,18.1s
QSPA South Pole Qui 79.14 180 *e*P **P** **20 23 13.0 -0.5**
comp=Z,19nm,1.4s
SEW Seward 79.30 21 *e*P **P** **20 23 14.4 +0.3**
comp=Z,13nm,0.8s
TT01 Tatalina 79.30 17 *e*P **P** **20 23 14.6 +0.5**
TTA Tatalina 79.32 17 *e*P **P** **20 23 15.2 +0.9**
TTA pmax pmax
comp=Z,15nm,1.1s
TTA Tatalina 79.32 17 *e*P **P** **20 23 15.2 +0.9**
comp=Z,15nm,1.1s
SUA Susitna One 79.83 20 *e*P **P** **20 23 15.7 -1.5**
comp=Z,13nm,1.0s
PMR Palmer 80.47 20 *e*P **P** **20 23 20.2 -0.2**
PMR pmax pmax
comp=Z,10.0nm,1.0s
PMR Palmer 80.47 20 *e*P **P** **20 23 20.2 -0.2**
comp=Z,9.9nm,1.0s
CAST Castle Rocks 80.85 18 *e*P **P** **20 23 21.5 -1.0**
comp=Z,10nm,0.8s
SML Sawmill 80.89 20 *e*P **P** **20 23 22.4 -0.4**
SML pmax pmax
comp=Z,18nm,1.1s
SML Sawmill 80.89 20 *e*P **P** **20 23 22.4 -0.4**
comp=Z,18nm,1.1s
SCM Sheep Creek Mo 81.25 21 *e*P **P** **20 23 24.6 -0.2**
SCM pmax pmax
comp=Z,19nm,1.0s
SCM Sheep Creek Mo 81.25 21 *e*P **P** **20 23 24.6 -0.2**
comp=Z,19nm,1.0s
KTH Kantishna Hill 81.30 18 *e*P **P** **20 23 21.9 -3.1**
comp=Z,7.2nm,0.8s
DIV Divide 81.33 22 *e*P **P** **20 23 25.2 +0.1**
comp=Z,21nm,0.9s
ZAK Zakamensk 81.43 325 *e*P **P** **20 23 24.7 -1.3**
ZAK pmax pmax
comp=Z,3.0nm,1.2s
KLU Klutina 81.52 21 *e*P **P** **20 23 25.9 -0.2**
comp=Z,15nm,1.0s
BMRM Brenner River 81.65 22 *e*P **P** **20 23 26.9 +0.1**
comp=Z,27nm,1.1s
BPAW Bear Paw Mtn. 81.68 18 *e*P **P** **20 23 25.4 -1.5**
comp=Z,17nm,1.8s
RND Reindeer 81.84 19 *e*P **P** **20 23 27.4 -0.4**
RND pmax pmax
comp=Z,15nm,1.0s
RND Reindeer 81.84 19 *e*P **P** **20 23 27.4 -0.4**
comp=Z,15nm,1.0s
TLY Talaya 81.85 326 *e*P **P** **20 23 28.3 +0.2**
TLY pmax pmax
comp=Z,5.0nm,0.9s
MCK McKinley 82.05 19 *e*P **P** **20 23 28.2 -0.6**
MCK pmax pmax
comp=Z,17nm,1.2s
MCK McKinley 82.05 19 *e*P **P** **20 23 28.2 -0.6**
comp=Z,17nm,1.2s
CRQM Cirque 82.06 23 *e*P **P** **20 23 28.9 -0.3**
comp=Z,41nm,1.2s
DHY Denali Highway 82.09 20 *e*P **P** **20 23 29.1 -0.2**
comp=Z,13nm,1.3s
BWN Browne 82.19 18 *e*P **P** **20 23 28.8 -0.8**
comp=Z,24nm,0.8s
MLY Manley 82.44 17 *e*P **P** **20 23 30.3 -0.6**
comp=Z,14nm,1.4s
BALM Baldy 82.54 23 *e*P **P** **20 23 31.6 0.0**
BALM pmax pmax
comp=Z,16nm,0.6s
BALM Baldy 82.54 23 *e*P **P** **20 23 31.6 0.0**
comp=Z,16nm,0.6s
PAX Paxson 82.66 20 *e*P **P** **20 23 31.6 -0.5**
PAX pmax pmax
comp=Z,5.0nm,1.0s
PAX Paxson 82.66 20 *e*P **P** **20 23 31.6 -0.5**
comp=Z,4.7nm,1.0s
PCA Pinnacle 82.78 24 *e*P **P** **20 23 32.6 -0.2**
comp=Z,48nm,0.9s
WRH Wood River Hil 82.83 18 *e*P **P** **20 23 31.7 -1.2**
comp=Z,9.9nm,0.8s
CCB Clear Creek Bu 83.04 18 *e*P **P** **20 23 32.4 -1.6**
comp=Z,6.6nm,0.6s
MDM Murphy Dome 83.13 18 *e*P **P** **20 23 33.4 -1.1**
comp=Z,13nm,0.9s
HDA Harding Lake 83.15 19 *e*P **P** **20 23 33.9 -0.6**
comp=Z,31nm,0.8s
COLA College 83.19 18 *e*P **P** **20 23 34.2 -0.5**
COLA pmax pmax
comp=Z,20nm,0.8s
COLA College 83.19 18 *e*P **P** **20 23 34.2 -0.5**
comp=Z,20nm,0.8s
MENT Mentasta 83.24 21 *e*P **P** **20 23 35.1 0.0**
comp=Z,8.7nm,0.7s

IL1 Eielson Array 83.42 19 *e*P **P** **20 23 34.4 -1.5**
ILAR Eielson Array 83.42 19 P **P** **20 23 35.0 -0.9**
comp=Z,7.5nm,0.7s,baz=240,slow=5.1,SNR=100
ILAR Eielson Array 83.42 19 P **P** **20 23 35.0 -0.9**
ILAR pmax pmax
comp=Z,8.0nm,0.7s
ILB Eielson Array 83.42 19 *e*P **P** **20 23 35.0 -0.9**
DOT Dot Lake 83.59 20 *e*P **P** **20 23 36.4 -0.5**
comp=Z,7.1nm,1.2s
N02D Trinity Center 83.67 46 P **P** **20 23 38.5 +0.6**
baz=250
M02C Callahan 83.71 46 P **P** **20 23 38.7 +0.6**
baz=250
YBH Yreka Blue Hor 83.93 46 *e*P **P** **20 23 39.2 +0.1**
YBH pmax pmax
comp=Z,17nm,0.9s
YBH Yreka Blue Hor 83.93 46 *e*P **P** **20 23 39.2 +0.1**
comp=Z,17nm,0.9s
HUMO Hull Mountain 84.06 45 *e*P **P** **20 23 40.0 +0.2**
comp=Z,15nm,1.0s
ORV Oroville 84.06 48 *e*P **P** **20 23 39.3 -0.5**
ORV pmax pmax
comp=Z,7.0nm,0.9s
ORV Oroville 84.06 48 *e*P **P** **20 23 39.3 -0.5**
comp=Z,7.4nm,0.9s
AFDM Forest Hills D 84.25 49 *e*P **P** **20 23 40.1 -0.6**
comp=Z,13nm,1.0s
HYT Haines Junctio 84.32 24 *e*P **P** **20 23 40.9 +0.1**
CMB Columbia Colle 84.40 50 *e*P **P** **20 23 41.0 -0.6**
CMB pmax pmax
comp=Z,7.0nm,0.9s
CMB Columbia Colle 84.40 50 *e*P **P** **20 23 41.0 -0.6**
comp=Z,6.5nm,0.9s
SKAG Skagway 84.48 26 *e*P **P** **20 23 41.9 +0.5**
comp=Z,22nm,1.3s
M04C Macdoel 84.56 46 P **P** **20 23 42.7 +0.3**
baz=250
G03D McMinnville, O 84.77 42 P **P** **20 23 44.2 +1.0**
baz=249
MAW Mawson 84.80 202 LR LR 20 59 50.4
comp=Z,62nm,18.3s,baz=58,slow=34
MAW Mawson 84.80 202 *e*P **P** **20 23 43.7 +0.7**
MAW pmax pmax
comp=Z,5.0nm,1.6s
MAW Mawson 84.80 202 *e*P **P** **20 23 43.6 +0.7**
comp=Z,4.6nm,1.6s
I04A Tendick Farm, 84.85 44 P **P** **20 23 44.0 +0.3**
baz=250
E03A Lebam 85.06 41 *e*P **P** **20 23 44.4 -0.2**
comp=Z,21nm,0.9s
WAKR Walker 85.25 50 *e*P **P** **20 23 45.5 -0.6**
comp=Z,18nm,1.2s
EGAK Eagle 85.29 20 *e*P **P** **20 23 45.9 +0.5**
comp=Z,29nm,0.8s
EDW2 Edwards Air Fo 85.29 53 P **P** **20 23 45.8 -0.3**
baz=253
BFSC Mount Baldy Ra 85.38 54 P **P** **20 23 46.5 -0.2**
baz=254
DAWY Dawson 85.47 21 *e*P **P** **20 23 46.6 +0.2**
comp=Z,11nm,0.8s
J05D Fort Rock, OR 85.48 45 P **P** **20 23 47.7 +0.7**
baz=251
K05A Summer Lake 85.53 45 *e*P **P** **20 23 47.5 +0.2**
comp=Z,19nm,1.0s
PAHR Pah Rah Range 85.66 48 *e*P **P** **20 23 48.0 0.0**
comp=Z,14nm,1.2s
CWC Cottonwood Cre 85.67 52 P **P** **20 23 48.2 0.0**
baz=253
MOD Modoc Plateau 85.68 46 *e*P **P** **20 23 47.6 -0.5**
comp=Z,5.7nm,0.8s
LRMC Laurel Mtn Rad 85.71 53 P **P** **20 23 48.5 +0.2**
baz=254
TIXI Tiksi 85.87 349 *i* P **P** **20 23 47.6 -0.5**
TIXI pmax pmax
comp=Z,6.0nm,1.2s
MONP2 Monument Peak 86.00 56 P **P** **20 23 49.8 -0.2**
baz=254
MPMC Manual Prospec 86.02 52 P **P** **20 23 49.7 -0.2**
baz=254
PFO Pinyon Flats O 86.16 55 P **P** **20 23 50.2 -0.4**
baz=254
GSC Goldstone, Bar 86.34 53 *e*P **P** **20 23 50.6 -0.8**
GSC pmax pmax
comp=Z,6.0nm,1.1s
GSC Goldstone, Bar 86.34 53 *e*P **P** **20 23 50.6 -0.8**
comp=Z,6.3nm,1.1s
A04D Lummi Island 86.38 39 P **P** **20 23 51.6 +0.5**
baz=249
HEC Hector,Ludlow 86.59 54 P **P** **20 23 52.1 -0.5**
baz=254
B05A Bryant 86.60 40 P **P** **20 23 52.2 0.0**
baz=250
FURC Furnace Creek, 86.62 52 P **P** **20 23 52.7 +0.1**
baz=254
BELC Belle Mtn. Jos 86.64 55 P **P** **20 23 52.7 -0.2**
baz=254
WVOR Wild Horse Val 87.02 46 *e*P **P** **20 23 54.5 -0.1**
WVOR pmax pmax
comp=Z,12nm,1.2s
WVOR Wild Horse Val 87.02 46 *e*P **P** **20 23 54.5 -0.1**
comp=Z,12nm,1.2s
GMRC Granite Mounta 87.11 54 P **P** **20 23 55.0 -0.2**
baz=255
TPNV Topopah Spring 87.23 52 P **P** **20 23 55.6 -0.2**
baz=254
IRM Iron Mountain 87.36 55 P **P** **20 23 56.3 0.0**
baz=255
LDFC Landfair 87.62 54 *e*P **P** **20 23 57.7 0.0**
comp=Z,20nm,0.4s
G08A Pilot Rock 87.67 43 *e*P **P** **20 23 57.2 -0.4**
comp=Z,11nm,1.0s
Y12C Blythe 87.76 55 P **P** **20 23 58.5 +0.3**
baz=255
SHPR Sheep Range 87.95 52 *e*P **P** **20 23 59.2 0.0**
comp=Z,7.6nm,1.3s
R11A Troy Canyon, C 88.11 51 P **P** **20 23 59.9 -0.1**
baz=255
R11A Troy Canyon, C 88.11 51 *e*P **P** **20 23 59.7 -0.3**
comp=Z,7.7nm,0.8s
W13A Hualapai Mount 88.60 54 *e*P **P** **20 24 02.6 +0.2**
comp=Z,12nm,1.4s
BMO Blue Mountains 88.66 44 *e*P **P** **20 24 02.0 -0.3**
BMO pmax pmax
comp=Z,10.0nm,1.6s
BMO Blue Mountains 88.66 44 *e*P **P** **20 24 02.0 -0.3**
comp=Z,10nm,1.6s
214A Organ Pipe Nat 88.72 57 P **P** **20 24 03.2 +0.3**
baz=256
WMQ Urumqi 88.81 315 *e*P **P** **20 24 03.9 +0.9**
WMQ pmax pmax
comp=Z,8.0nm,0.5s
WMQ pmax pmax
comp=Z,93nm,3.9s
WMQ LR LR
comp=Z,230nm,27.2s
WMQ LR LR
comp=Z,290nm,30.6s
WMQ LR LR
comp=Z,200nm,19.6s
Y14A Wickenburg 89.03 55 *e*P **P** **20 24 04.0 -0.3**
comp=Z,31nm,1.4s
F10A Beach Ranch, E 89.03 43 *e*P **P** **20 24 03.5 -0.6**
comp=Z,5.2nm,0.8s
MFID Camas Ranch 89.28 46 *e*P **P** **20 24 04.9 -0.4**
comp=Z,4.3nm,0.9s
LCMT Little Creek M 89.57 52 *e*P **P** **20 24 07.0 +0.2**
comp=Z,13nm,0.8s
CCUT Cedar City 89.61 52 *e*P **P** **20 24 06.4 -0.7**
comp=Z,11nm,0.5s
SZCU Shurtz Canyon 89.83 52 *e*P **P** **20 24 08.4 +0.3**
comp=Z,17nm,0.4s
KNB Kanab 89.90 52 *e*P **P** **20 24 08.7 +0.3**
KNB pmax pmax
comp=Z,16nm,0.5s
KNB Kanab 89.90 52 *e*P **P** **20 24 08.7 +0.3**
comp=Z,16nm,0.5s
U15A North Rim 90.18 53 *e*P **P** **20 24 09.8 -0.1**
comp=Z,10nm,1.0s
HLID Hailey 90.31 46 P **P** **20 24 10.4 +0.2**
baz=255
HLID Hailey 90.31 46 *e*P **P** **20 24 10.2 0.0**
comp=Z,6.7nm,1.1s

X16A	**Lo Mia Camp, P**	**90.40**	**55**	*e*P		**P**	**20 24 10.7**	**-0.2**
	comp=Z,4.7nm,0.9s								
TUC	**Tucson**	**90.48**	**57**	P	P	**P**	**20 24 11.6**	**+0.5**
	baz=258								
MTPU	**Mount Pierson**	**90.63**	**51**	*e*P		**P**	**20 24 12.8**	**+0.8**
	comp=Z,45nm,0.6s								
DUG	**Dugway, Tooele**	**90.65**	**49**	*e*P		**P**	**20 24 11.7**	**-0.1**
DUG	**Dugway, Tooele**	**90.65**	**49**	*e*P		**P**	**20 24 11.7**	**-0.1**
	comp=Z,70nm,0.5s								
BGU	**Big Grassy Mou**	**90.66**	**49**	*e*P		**P**	**20 24 11.9**	**0.0**
	comp=Z,42nm,0.6s								
WUAZ	**Wupatki**	**90.70**	**54**	P	P	**P**	**20 24 12.6**	**+0.4**
	baz=257								
WUAZ	**Wupatki**	**90.70**	**54**	*e*P		**P**	**20 24 12.4**	**+0.3**
	comp=Z,7.0nm,0.5s								
MSU	**Marysvale**	**90.74**	**51**	*e*P		**P**	**20 24 13.3**	**+0.9**
MSU	**Marysvale**	**90.74**	**51**	*e*P		**P**	**20 24 13.3**	**+0.9**
HVU	**Hansel Valley**	**91.05**	**48**	*e*P		**P**	**20 24 13.7**	**0.0**
HVU					pmax	pmax			
	comp=Z,15nm,0.5s								
HVU	**Hansel Valley**	**91.05**	**48**	*e*P		**P**	**20 24 13.7**	**0.0**
	comp=Z,15nm,0.5s								
NLU	**North Lily Min**	**91.15**	**50**	*e*P		**P**	**20 24 14.9**	**+0.6**
	comp=Z,575nm,0.6s								
BSMT	**Bassoo Peak**	**91.15**	**42**	*e*P		**P**	**20 24 13.2**	**-0.8**
TMUT	**Trail Mountain**	**91.65**	**50**	*e*P		**P**	**20 24 17.6**	**+0.8**
	comp=Z,132nm,0.5s								
MCMT	**McKenzie Canyo**	**91.71**	**45**	*e*P		**P**	**20 24 16.6**	**-0.1**
SYO	**Syowa Base**	**91.89**	**197**‖	*e*P		**P**	**20 24 16.0**	**-0.8**
CHMT	**Chamberlain Mo**	**91.93**	**43**	*e*P		**P**	**20 24 17.1**	**-0.6**
DLMT	**Dillon**	**92.01**	**44**	*e*P		**P**	**20 24 17.9**	**-0.2**
	comp=Z,11nm,0.9s								
LRM	**Limekiln Ridge**	**92.22**	**44**	*e*P		**P**	**20 24 18.8**	**-0.3**
BOZ	**Bozeman (W)**	**92.74**	**44**	P	P	**P**	**20 24 21.3**	**0.0**
	baz=257								
BOZ	**Bozeman (W)**	**92.74**	**44**	*e*P		**P**	**20 24 21.5**	**+0.1**
BOZ					pmax	pmax			
	comp=Z,6.0nm,1.0s								
BOZ	**Bozeman (W)**	**92.74**	**44**	*e*P		**P**	**20 24 21.5**	**+0.1**
	comp=Z,5.6nm,1.0s								
MK01	**Makanchi Array**	**93.23**	**317**	*e*P		**P**	**20 24 22.8**	**-0.7**
MK31	**Makanchi Array**	**93.24**	**317**	*e*P		**P**	**20 24 23.1**	**-0.4**
MK31	**Makanchi Array**	**93.24**	**317**	*e*P		**P**	**20 24 23.1**	**-0.4**
MK32	**Makanchi Array**	**93.24**	**317**	*e*P		**P**	**20 24 23.4**	**-0.1**
MKAR	**Makanchi Array**	**93.24**	**317**	P	P	**P**	**20 24 23.4**	**-0.1**
	comp=Z,1.8nm,0.7s,baz=88,slow=7.1,SNR=11								
MKAR					LR	LR	21 05 14.7		
	comp=Z,40nm,21.6s,baz=84,slow=35								
MKAR	**Makanchi Array**	**93.24**	**317**	*e*P		**P**	**20 24 22.9**	**-0.6**
ZAA0	**Zalesovo Array**	**93.28**	**324**	*e*P		**P**	**20 24 21.7**	**-1.8**
ZALV	**Zalesovo Beam**	**93.28**	**324**	P	P	**P**	**20 24 21.8**	**-1.7**
	comp=Z,0.9nm,0.5s,baz=125,slow=4.2,SNR=10								
ZAA1	**Zalesovo Array**	**93.28**	**324**	*e*P		**P**	**20 24 21.8**	**-1.7**
MAKZ	**Makanchi**	**93.45**	**317**	*e*P		**P**	**20 24 24.5**	**0.0**
MAKZ					pmax	pmax			
	comp=Z,15nm,1.5s								
MAKZ	**Makanchi**	**93.45**	**317**	*e*P		**P**	**20 24 24.4**	**0.0**
	comp=Z,14nm,1.5s								
BW06	**Boulder Array**	**93.59**	**47**	*e*P		**P**	**20 24 24.3**	**-1.2**
PD31	**Pinedale Array**	**93.59**	**47**	*e*P		**P**	**20 24 24.4**	**-1.1**
PDAR	**Pinedale Array**	**93.59**	**47**	P	P	**P**	**20 24 24.3**	**-1.2**
	comp=Z,1.8nm,0.9s,baz=267,slow=3.0,SNR=9.4								
PDAR					LR	LR	21 05 01.1		
	comp=Z,39nm,18.1s,baz=262,slow=35								
ANMO	**Albuquerque**	**94.53**	**55**	*i* P		**P**	**20 24 28.4**	**-1.5**
ANMO					pmax	pmax			
	comp=Z,1.0nm,1.0s								
YKA	**Yellowknife Ar**	**94.92**	**27**	P		**P**	**20 24 28.8**	**-1.9**
	comp=Z,1.2nm,0.5s,baz=257,slow=4.6,SNR=5.9								
YKA					LR	LR	21 01 31.5		
	comp=Z,14nm,19.7s,baz=180,slow=32								
YKB5	**Yellowknife Ar**	**94.92**	**27**	*e*P		**P**	**20 24 29.4**	**-1.3**
NRIK	**Noril'sk**	**95.88**	**340**	LR		LR	21 07 12.3		
	comp=Z,101nm,20.5s,baz=110,slow=35								
TXAR	**Lajitas Array**	**95.94**	**61**	LR		LR	21 04 09.0		
	comp=Z,138nm,18.0s,baz=0.0,slow=33								
KSH	**Kashi**	**96.47**	**309**	*e*P		**P**	**20 24 41.1**	**+2.5**
KSH				*e*pP		sP	20 24 54.0	-1.9	
KSH				*e*sP		pP	20 24 59.6	+8.3	
KSH				S		**S**	**20 35 56.4**	**0.0**	
KSH				LR	LR				
	comp=Z,94nm,4.5s								
KSH				LR	LR				
	comp=Z,91nm,5.3s								
KSH				LR	LR				
	comp=Z,130nm,6.0s								
SNAA	**Sanae**	**97.28**	**184**	*e*P		Pdif	20 24 45.4	+3.8	
ARA0	**ARCESS Array S**	**116.11**	**345**	*e*PKPdf		**PKPdf**	**20 29 50.2**	**-1.1**	
ARCES	**ARCESS Array B**	**116.11**	**345**	PKP		**PKPdf**	**20 29 50.2**	**-1.1**	
	comp=Z,0.8nm,0.5s,baz=48,slow=1.8,SNR=11								
OBN	**Obninsk**	**120.54**	**329**	*e*PKIKP		**PKPdf**	**20 30 00.1**	**-0.1**	
OBN					pmax	pmax			
	comp=Z,2.0nm,0.8s								
KIV	**Kislovodsk**	**120.94**	**315**	*e*PKIKP		**PKPdf**	**20 30 02.3**	**+0.8**	
KIV				*e*			20 31 31.5		
KIV					pmax	pmax			
	comp=Z,2.0nm,0.9s								
FIA0	**FINESS Array S**	**121.52**	**338**	*e*PKIKP		**PKPdf**	**20 30 00.8**	**-1.1**	
FIA0	**FINESS Array S**	**121.52**	**338**	*e*PKPdf		**PKPdf**	**20 30 00.8**	**-1.1**	
FINES	**FINESS Array B**	**121.52**	**338**	PKP		**PKPdf**	**20 30 00.8**	**-1.1**	
	comp=Z,1.9nm,0.9s,baz=122,slow=1.8,SNR=4.1								
BOSA	**Boshof**	**125.09**	**223**	PKP		**PKPdf**	**20 30 10.3**	**+0.2**	
	comp=Z,3.7nm,0.7s,baz=166,slow=3.0,SNR=7.2								
BR101	**Keskin Array S**	**128.68**	**313**	*e*PKPdf		**PKPdf**	**20 30 16.2**	**-0.4**	
BRTR	**Keskin Array B**	**128.68**	**313**	PKP		**PKPdf**	**20 30 16.2**	**-0.4**	
	comp=Z,0.7nm,0.9s,baz=90,slow=2.9,SNR=4.0								
KOLS	**Kolonicke sedl**	**131.28**	**326**	*e*PKIKP		**PKPdf**	**20 30 22.7**	**+1.7**	
KOLS	**Kolonicke sedl**	**131.28**	**328**	*e*PKP		**PKPdf**	**20 30 22.7**	**+1.7**	
VYHS	**Vyhne**	**133.30**	**330**	*e*PKIKP		**PKPdf**	**20 30 24.8**	**0.0**	
VYHS	**Vyhne**	**133.30**	**330**	*e*PKP		**PKPdf**	**20 30 24.8**	**0.0**	
CLL	**Collm**	**133.85**	**336**	*e*PKPdf		**PKPdf**	**20 30 21.0**	**-4.7**	
CLL	**Collm**	**133.85**	**336**	*e*PKIKP		**PKPdf**	**20 30 21.0**	**-4.7**	
GERES	**GERESS Array B**	**135.45**	**334**	PKP		**PKPdf**	**20 30 29.5**	**+0.5**	
	comp=Z,0.2nm,0.3s,baz=90,slow=1.0,SNR=5.1								
GERES	**GERESS Array B**	**135.45**	**334**	PKIKP		**PKPdf**	**20 30 29.5**	**+0.5**	
GERES					pmax	pmax			
	comp=Z,1.0nm,0.8s								
GEA0	**GERESS Array S**	**135.45**	**334**	*e*PKPdf		**PKPdf**	**20 30 26.1**	**-2.8**	
KEST	**Kesra**	**147.14**	**323**	PKPbc		**PKPbc**	**20 30 51.9**	**-0.5**	
	comp=Z,5.2nm,0.8s,baz=313,slow=4.2,SNR=6.6								
KEST	**Kesra**	**147.14**	**323**	*e*PKPbc		**PKPbc**	**20 30 51.5**	**-0.9**	
ES19	**SONSECA Array**	**149.78**	**344**	*e*PKPbc		**PKPbc**	**20 30 58.4**	**-0.8**	
ESDC	**Sonseca Array**	**149.82**	**344**	PKPbc		**PKPbc**	**20 30 59.2**	**0.0**	
	comp=Z,1.4nm,0.9s,baz=39,slow=2.3,SNR=9.3								
TOA0	**Torodi Ar. Sit**	**164.01**	**280**	*e*PKPdf		**PKPdf**	**20 31 12.6**	**-0.5**	
TOA0				*e*PKPab		**PKPab**	**20 32 05.6**	**-0.7**	
TORD	**Torodi Ar. Bea**	**164.01**	**280**	PKP		**PKPdf**	**20 31 13.0**	**-0.1**	
TORD	comp=Z,1.4nm,1.1s,baz=0.0,slow=1.4,SNR=5.6			PKPab		**PKPab**	**20 32 06.7**	**+0.3**	
	comp=Z,1.5nm,1.0s,baz=92,slow=2.3,SNR=4.2								
TOA1	**Torodi Ar. Sit**	**164.02**	**280**	*e*PKPdf		**PKPdf**	**20 31 13.0**	**-0.1**	
TOA1				*e*PKPab		**PKPab**	**20 32 06.7**	**+0.3**	

*IDC **02** 20:12:28.9±1.2,2°.97S×129°.68E, h0km, mb3.7/3, mb1 4.0/6, mb1mx3.6/42, mbtmp3.8/6, ML3.9/3, MS2.9/1, Ms1 2.9/1, ms1mx2.5/35, Error ellipse: s-maj=38.5km s-min=16.2km az=75.0*

*ISCJB **02** 20:12:30.5±0.5,2°.98S±0°.04×129°.72E±0°.05, h28km, mb3.4/2, Error ellipse: s-maj=7.3km s-min=6.1km az=163.3*

*NEIC **02** 20:12:33.9±0.8,3°.00S×129°.74E, h45km, mb4.0/6, Error ellipse: s-maj=17.3km s-min=9.5km az=56.0*

ISC 02 20:12:31.8±0.7, 3°.07S±0°.06×129°.79E±0°.07, h28km, n20, σ2s32/24, Seram

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FAKI	**Fak Fak**	**2.46**	**87**	*e*Pn		**Pn**	**20 13 10.8**	**+0.6**
SIJI	**Sorong**	**2.63**	**34**	Pn		**Pn**	**20 13 12.3**	**-0.3**
	24nm,0.3s,baz=270,slow=20,SNR=3.8							
SIJI				Sn		**Sn**	**20 13 41.8**	**-1.8**
	14nm,0.3s,baz=285,slow=20,SNR=4.2							
LUWI	**Luwuk**	**7.30**	**286**	*e*Pn		**Pn**	**20 14 14.6**	**-2.1**
LUWI				*e*Sn		**Sn**	**20 15 38.5**	**-0.1**
MTN	**Manton Dam**	**9.80**	**172**	*e*Pn		**Pn**	**20 14 54.7**	**+3.6**
KAPI	**Kappang**	**10.20**	**259**	LR		LR	20 19 44.5	
	comp=Z,72nm,19.5s,baz=104,slow=43							
KAPI	**Kappang**	**10.20**	**259**	*e*Pn		Pn	20 15 02.6	+6.1
FITZ	**Fitzroy Crossi**	**15.49**	**195**	Pn		**Pn**	**20 16 10.4**	**+1.9**
	0.3nm,0.3s,baz=24,slow=11,SNR=13							
FITZ	**Fitzroy Crossi**	**15.49**	**195**	*e*Pn		**Pn**	**20 16 10.6**	**+2.1**
	24nm,1.8s							
WRAB	**Tennant Creek**	**17.34**	**165**	*e*Pn		**Pn**	**20 16 32.2**	**+0.2**
	29nm,1.6s							
WR1	**Warramunga Arr**	**17.35**	**166**	*e*Pn		**Pn**	**20 16 33.0**	**+0.9**
	29nm,1.7s							
WR1				*e*S		**S**	**20 19 50.6**	**-2.0**
WRA	**Warramunga Arr**	**17.35**	**166**	P		**Pn**	**20 16 33.0**	**+0.9**
	0.3nm,0.3s,baz=350,slow=11,SNR=13							
WRA				S		**S**	**20 19 50.6**	**-2.0**
	0.0nm,0.3s,baz=336,slow=20,SNR=4.6							
WB2	**Warramunga Arr**	**17.35**	**165**	*e*Pn		**Pn**	**20 16 33.4**	**+1.2**
	24nm,1.5s							
WB2				*e*Sn		**Sn**	**20 19 37.4**	**-7.2**
SBUM	**Sibu**	**18.40**	**287**	*e*P		**Pn**	**20 16 44.7**	**-0.4**
	3.5nm,1.1s							
AS31	**Alice Springs**	**20.86**	**169**	*e*P		**P**	**20 17 13.9**	**+2.2**
	3.5nm,0.7s							
ASAR	**Alice Springs**	**20.86**	**169**	P		**P**	**20 17 13.9**	**+2.1**
	9.7nm,0.9s,baz=349,slow=9.6,SNR=41							
ASAR				S		**S**	**20 21 02.6**	**-0.5**
	1.5nm,0.9s,baz=347,slow=15,SNR=4.2							
AS01	**Alice Springs**	**20.87**	**169**	*e*P		**P**	**20 17 13.8**	**+1.9**
CMAR	**Chiang Mai Arr**	**37.15**	**306**	P		**P**	**20 19 39.4**	**-1.2**
	0.4nm,0.9s,baz=127,slow=5.8,SNR=2.7							
ZAA0	**Zalesovo Array**	**67.99**	**333**	*e*P		**P**	**20 23 29.5**	**+1.2**
KURBB	**Kurchatov Arra**	**69.08**	**328**	P		**P**	**20 23 36.8**	**+1.6**
	0.5nm,0.6s,baz=127,slow=5.9,SNR=10							
KURK	**Kurchatov**	**69.08**	**328**	*e*P		**P**	**20 23 36.8**	**+1.6**

*IDC **02** 20:18:16.3±2.1,35°.76N×141°.11E, h0km, mb3.5/3, mb1 3.5/5, mb1mx3.3/57, mbtmp3.4/5, ML3.3/2, MS2.3/1, Ms1 2.3/1, ms1mx2.0/37, Error ellipse: s-maj=46.0km s-min=21.3km az=67.0*

*ISCJB **02** 20:18:22.9±0.8, 35°.72N±0°.05×140°.86E±0°.09, h60km±6km, mb3.5/3, Error ellipse: s-maj=13.3km s-min=6.8km az=163.2*

*JMA **02** 20:18:23.7±0.1, 35°.75N×140°.71E, h51km±1km, M2.8*

ISC 02 20:18:24.1±1.1, 35°.73N±0°.05×140°.81E±0°.08, h51km±8km, n13, σ0s98/18, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**0.05**	**119**	P		**Pn**	**20 18 31.6**	**-0.3**
CHOJ				S		**Sn**	**20 18 37.8**	**+0.3**
JCN	**Nagara**	**0.58**	**238**	P		**Pn**	**20 18 36.1**	**-0.3**
JYT	**Yasato**	**0.70**	**315**	P		**Pn**	**20 18 36.8**	**-1.2**
BSO4	**Boso 4**	**0.83**	**208**	P		**Pn**	**20 18 39.4**	**-0.1**
JHO	**Hitachi**	**0.90**	**348**	P		**Pn**	**20 18 40.4**	**-0.2**
JHO				S		**Sn**	**20 18 53.7**	**+1.0**
BSO3	**Boso 3**	**0.95**	**195**	P		**Pn**	**20 18 41.0**	**0.0**
BSO1	**Boso 1**	**1.08**	**172**	P		**Pn**	**20 18 43.7**	**+1.3**
MJAR	**Matsushiro Arr**	**2.25**	**292**	Pn		**Pn**	**20 18 58.8**	**-0.1**
	5.6nm,0.3s,baz=98,slow=14,SNR=54							
MJAR				Sn		**Sn**	**20 19 28.0**	**+2.4**
	3.1nm,0.3s,baz=153,slow=18,SNR=6.6							
MJAR				LR		LR	20 19 58.1	
	comp=Z,69nm,20.6s,baz=115,slow=42							
MAT	**Matsushiro**	**2.26**	**292**	P		**Pn**	**20 18 59.4**	**+0.4**
MAT				*e*S		**Sn**	**20 19 25.5**	**-0.1**
JHJ	**Hachijo jima 2**	**2.73**	**198**	Pn		**Pn**	**20 19 04.0**	**-1.5**
	12nm,0.3s,baz=250,slow=23,SNR=7.7							
JHJ				Sn		**Sn**	**20 19 38.0**	**+0.6**
	18nm,0.3s,baz=241,slow=22,SNR=6.1							
MKAR	**Makanchi Array**	**44.41**	**303**	P		**P**	**20 26 30.0**	**+0.3**
	0.2nm,0.3s,baz=86,slow=9.6,SNR=2.4							
KURBB	**Kurchatov Arra**	**46.43**	**309**	P		**P**	**20 26 45.5**	**0.0**
	0.3nm,0.4s,baz=80,slow=7.5,SNR=7.1							
WRA	**Warramunga Arr**	**55.70**	**187**	P		**P**	**20 27 54.6**	**-0.8**
	0.2nm,0.4s,baz=1.8,slow=7.6,SNR=12							

*NEIC **02** 20:24:17.5±0.2,2°.05N×127°.65E, h35km, mb4.4/26, Error ellipse: s-maj=7.0km s-min=4.1km az=74.0*

*BJI **02** 20:24:19.0,2°.00N×127°.70E, h64km, mb4.4/11, mB4.8/9, Ms4.4/6, Ms7 4.3/5*

*IDC **02** 20:24:20.3±5.2,1°.92N×127°.47E, h57km±51km, mb3.9/8, mb1 4.1/10, mb1mx3.6/41, mbtmp4.2/10, ML4.2/2, MS4.0/2, Ms1 4.0/2, ms1mx2.9/33, Error ellipse: s-maj=32.5km s-min=15.8km az=66.0*

*ISCJB **02** 20:24:23.6±0.3, 1°.84N±0°.03×127°.33E±0°.06, h112km, mb4.3/33, Error ellipse: s-maj=8.6km s-min=4.6km az=168.9*

ISC 02 20:24:25.0±0.5, 1°.77N±0°.04×127°.31E±0°.07, h112km, n61, σ2s16/64, mb4.3/33, 1C-1D, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LUWI	**Luwuk**	**5.33**	**238**	*e*Pn		**Pn**	**20 25 41.6**	**-0.8**
LUWI				*e*Sn		**Sn**	**20 26 38.9**	**-3.8**
DMPH	**Davao City--Mi**	**5.57**	**341**‖	*e*P		**Pn**	**20 25 45.2**	**-0.5**
DMPH				*e*S		**Sn**	**20 26 48.4**	**-0.1**
KCP	**Kidapawan**	**5.65**	**337**‖	*e*P		**Pn**	**20 25 44.1**	**-2.7**
MYLDM	**Lahad Datu**	**9.43**	**291**	*e*Pn		**Pn**	**20 26 34.2**	**-3.6**
KAPI	**Kappang**	**10.13**	**228**	P		**Pn**	**20 26 47.3**	**0.0**
	2.2nm,0.3s,baz=173,slow=4.7,SNR=8.7							
KAPI				S		**Sn**	**20 28 39.2**	**+0.2**
	1.0nm,0.3s,baz=198,slow=17,SNR=2.2							
KAPI	**Kappang**	**10.13**	**228**	*e*Pn		**Pn**	**20 26 44.7**	**-2.6**
KAPI				S		**Sn**	**20 28 39.2**	**+0.2**
KKM	**Kota Kinabalu**	**11.86**	**291**	*e*Pn		Pn	20 27 05.8	-4.9
MTN	**Manton Dam**	**15.01**	**165**	*e*Pn		**Pn**	**20 27 49.8**	**-1.6**
	60nm,1.9s							
SBUM	**Sibu**	**15.10**	**273**	*e*Pn		**Pn**	**20 27 52.9**	**+0.3**
	9.3nm,0.7s							
JAGI	**Jajag, Banyuwa**	**16.61**	**232**	*e*Pn		**P**	**20 28 14.9**	**+3.1**
	42nm,1.4s							
KSM	**Kuching**	**17.00**	**269**	*e*Pn		P	20 28 24.4	+8.2
	5.9nm,0.9s							
FITZ	**Fitzroy Crossi**	**19.82**	**185**	P		**P**	**20 28 47.9**	**+0.9**
	0.6nm,0.3s,baz=22,slow=11,SNR=22							
FITZ	**Fitzroy Crossi**	**19.82**	**185**	*e*P		**P**	**20 28 48.3**	**+1.4**
	5.9nm,0.8s							
TWG	**Pinlang**	**21.78**	**344**	*e*P		**P**	**20 29 04.3**	**-3.6**
	52nm,0.4s							
YULB	**Yu-li**	**22.27**	**345**	*e*P		**P**	**20 29 08.1**	**-4.9**
	18nm,1.3s							
TPUB	**Ta-pu**	**22.36**	**344**	*e*P		**P**	**20 29 11.1**	**-2.9**
	18nm,0.9s							
WRAB	**Tennant Creek**	**22.65**	**163**	*e*P		**P**	**20 29 18.1**	**+1.1**
	10nm,0.9s							
WR1	**Warramunga Arr**	**22.66**	**163**	*e*P		**P**	**20 29 17.8**	**+0.8**
	10nm,0.8s							
WRA	**Warramunga Arr**	**22.66**	**163**	P		**P**	**20 29 17.7**	**+0.7**
	6.3nm,0.3s,baz=345,slow=11,SNR=116							
WB2	**Warramunga Arr**	**22.66**	**163**	*e*P		**P**	**20 29 18.0**	**+1.0**
	12nm,0.8s							
PMG	**Port Moresby**	**22.68**	**120**	*e*P		**P**	**20 29 15.0**	**-2.2**
	27nm,0.9s							
SSLB	**Suanglung**	**22.73**	**345**	*e*P		**P**	**20 29 15.0**	**-2.8**
	9.8nm,0.9s							
YHNB	**Yeheng**	**23.48**	**346**	*e*P		**P**	**20 29 23.4**	**-1.4**
	128nm,2.0s							
AS31	**Alice Springs**	**26.09**	**166**	*e*P		**P**	**20 29 49.1**	**+0.7**
	1.4nm,0.5s							
ASAR	**Alice Springs**	**26.09**	**166**	P		**P**	**20 29 49.7**	**+1.3**
	1.5nm,0.5s,baz=349,slow=7.8,SNR=45							
AS01	**Alice Springs**	**26.10**	**166**	*e*P		**P**	**20 29 49.6**	**+1.1**
CM01	**Chiang Mai Arr**	**32.35**	**303**	*e*P		**P**	**20 30 45.1**	**+1.1**
ENH	**Enshi**	**33.01**	**331**	*e*P		**P**	**20 30 48.7**	**-0.9**
	3.4nm,0.6s							
INU	**Inuyama**	**34.60**	**14**	*e*P		**P**	**20 30 59.7**	**-3.6**
	11nm,1.4s							
BBOO	**Buckleboo**	**35.38**	**167**	*e*P		**P**	**20 31 11.3**	**+1.4**
	126nm,1.7s							
KS01	**Wonju Array Si**	**35.53**	**1**	*e*P		**P**	**20 31 07.8**	**-3.4**
MAJO	**Matsushiro**	**36.03**	**15**	*e*P		**P**	**20 31 12.4**	**-3.1**
	4.5nm,0.8s							
MJAR	**Matsushiro Arr**	**36.03**	**15**	P		**P**	**20 31 14.0**	**-1.6**
	0.8nm,0.5s,baz=191,slow=8.7,SNR=10							
MJB9	**Matsu-Tunnel**	**36.04**	**15**	*e*P		**P**	**20 31 12.5**	**-3.1**
	1.2nm,0.8s							
STKA	**Stephens Creek**	**36.10**	**159**	P		**P**	**20 31 17.9**	**+1.7**
	2.3nm,0.4s,baz=344,slow=8.2,SNR=17							
STKA	**Stephens Creek**	**36.10**	**159**	*e*P		**P**	**20 31 17.9**	**+1.7**
	6.6nm,1.8s							
BJI	**Beijing**	**39.41**	**346**	P		**P**	**20 31 44.0**	**+0.1**
BJI				sP		**pP**	**20 32 06.4**	**-2.9**
BJI				S		**S**	**20 37 42.2**	**+4.9**
BJI				sS		sS	20 38 07.8	-14
BJI				pmax	pmax			
	comp=Z,7.0nm,0.6s							
BJI				pmax	pmax			
	comp=Z,53nm,4.8s							

HHC	**Hu-ho-hao-te**	**41.43**	**342**	*e*P		**P**	**20 32 02.8**	**+2.1**	
HHC				pP		pP	20 32 18.3	-8.0	
HHC				sP		sP	20 32 25.3	-14	
HHC				S		**S**	**20 38 14.2**	**+6.7**	
HHC				pmax	pmax				
	comp=Z,14nm,0.7s								
HHC				pmax	pmax				
	comp=Z,75nm,8.4s								
HHC				LR	LR				
	comp=N,100nm,13.7s								
HHC				LR	LR				
	comp=E,100nm,13.5s								
HHC				LR	LR				
	comp=Z,92nm,15.6s								
LSA	**Lhasa**	**44.17**	**313**	*e*P		**P**	**20 32 24.1**	**+0.7**	
	3.0nm,0.6s								
SONA0	**Songino Array**	**49.33**	**342**	*e*P		**P**	**20 33 03.8**	**+0.9**	
	8.7nm,2.0s								
SONM	**Songino Array**	**49.33**	**342**	P		**P**	**20 33 03.8**	**+0.9**	
	0.9nm,0.6s,baz=156,slow=7.6,SNR=6.7								
SONA1	**Songino Array**	**49.33**	**342**	*e*P		**P**	**20 33 03.9**	**+1.0**	
TLY	**Talaya**	**53.56**	**342**	LR		LR	20 57 20.6		
	comp=Z,68nm,18.7s,baz=134,slow=37								
WMQ	**Urumqi**	**54.65**	**326**	*e*P		**P**	**20 33 44.0**	**+1.6**	
WMQ					pmax	pmax			
	comp=Z,6.0nm,1.1s								
MK01	**Makanchi Array**	**59.47**	**326**	*e*P		**P**	**20 34 17.7**	**+1.4**	
MK31	**Makanchi Array**	**59.49**	**326**	*e*P		**P**	**20 34 17.4**	**+1.0**	
MK32	**Makanchi Array**	**59.49**	**326**	*e*P		**P**	**20 34 17.6**	**+1.2**	
MKAR	**Makanchi Array**	**59.49**	**326**	P		**P**	**20 34 17.6**	**+1.2**	
	1.6nm,0.4s,baz=119,slow=8.1,SNR=39								
MKAR	**Makanchi Array**	**59.49**	**326**	*e*P		**P**	**20 34 17.3**	**+0.9**	
MAKZ	**Makanchi**	**59.67**	**326**	*e*P		**P**	**20 34 18.6**	**+1.0**	
	1.9nm,0.6s								
BFZ	**Birch Farm**	**61.35**	**139**	*e*P		**P**	**20 34 27.9**	**-1.2**	
	173nm,1.7s								
ZAA0	**Zalesovo Array**	**62.59**	**333**	*e*P		**P**	**20 34 36.3**	**-0.8**	
KBL	**Kabul**	**63.17**	**308**	*e*P		**P**	**20 34 42.4**	**+0.7**	
	4.2nm,0.8s								
KURK	**Kurchatov**	**63.69**	**328**	*e*P		**P**	**20 34 45.5**	**+1.0**	
KKAR	**Karatay Array**	**65.06**	**317**	*e*P		**P**	**20 34 54.0**	**+0.5**	
VOSK	**Vostochnaya**	**68.81**	**327**	*e*P		**P**	**20 35 17.6**	**+0.5**	
	1.3nm,0.8s								
BVAR	**Borovoye Array**	**69.27**	**327**	P		**P**	**20 35 20.4**	**+0.4**	
	1.5nm,0.8s,baz=111,slow=7.9,SNR=6.6								
ZRNK	**Zerenda**	**69.99**	**327**	*e*P		**P**	**20 35 25.1**	**+0.7**	
	1.6nm,0.7s								
GEYT	**Alibeck**	**72.57**	**309**	P		**P**	**20 35 42.2**	**+1.9**	
	0.8nm,0.5s,baz=134,slow=4.2,SNR=4.9								
ABKAR	**Akbulak array**	**74.03**	**321**	*e*P		**P**	**20 35 48.8**	**+0.3**	
FINES	**FINESS Array B**	**93.82**	**332**	LR		LR	21 25 27.8		
	comp=Z,113nm,18.6s,baz=28,slow=39								

*CSEM **02** 20:31:29.7±0.2, 40°.50N×42°.37E, h8km, MD2.4, Error ellipse: s-maj=5.2km s-min=4.1km az=69.0*

*ISK **02** 20:31:29.6, 40°.52N×42°.38E, h9km, MD2.4*

*DDA **02** 20:31

ISK **02** *21:02:00.7,36.91N×33.96E,h5km,MD2.7*
DDA **02** *21:02:00.9,36.94N×34.00E,h7km,Md2.8*
ISCJB **02** *21:02:01.1±0.9,36.93N±0.03×33.97E±0.05,h4km±8km, Error ellipse: s-maj=7.7km s-min=5.0km az=158.0*
CSEM **02** *21:02:01.5±0.3,36.94N×33.98E,h8km,MD2.7,Error ellipse: s-maj=7.8km s-min=4.2km az=71.0*
ISC 02 21:02:00.9±1.3,**36.91N**±0.03×**33.98E**±0.05,**h10km**±10km, **n18**,σ**0.45/30,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MERS	Mersin	0.44	96	ePG	Pg	21 02 09.9	+0.4
MERS				eSG	Sb	21 02 16.9	-0.5
MERS	Mersin	0.44	96	ePg	Pg	21 02 09.9	+0.4
MERS				eSg	Sb	21 02 16.9	-0.5
KIZK	Mersin	0.45	163	iP	Pb	21 02 10.8	-0.1
KIZK				iS	Sb	21 02 17.4	-0.3
KIZK	Mersin	0.45	163	P	Pb	21 02 10.8	-0.1
KIZK				S	Sb	21 02 17.4	-0.3
KERG	Konya-Eregli	0.52	13	iP	Pg	21 02 10.4	-0.6
KERG				iS	Sg	21 02 17.9	0.0
KERG	Konya-Eregli	0.52	13	P	Pg	21 02 10.4	-0.6
KERG				S	Sg	21 02 17.9	0.0
DED	Mersin	0.66	85	iP	Pg	21 02 13.4	-0.3
DED				iS	Sb	21 02 23.3	-0.4
YESY	Yesilyurt	0.89	348	ePG	Pb	21 02 18.3	-0.2
YESY				eSG	Sb	21 02 31.0	+0.5
YESY	Yesilyurt	0.89	348	ePg	Pb	21 02 18.3	-0.2
YESY				eSg	Sb	21 02 31.0	+0.5
KARA	Karaisali	0.93	68	ePG	Pg	21 02 18.4	-0.4
KARA				eSG	Sn	21 02 32.8	-0.6
KARA	Karaisali	0.93	68	ePg	Pg	21 02 18.4	-0.4
KARA				eSg	Sn	21 02 32.8	-0.6
KRTS	Karatas	1.17	106	ePN	Pn	21 02 24.0	+0.7
KRTS	Karatas	1.17	106	ePn	Pn	21 02 24.0	+0.7
AKO	Adana	1.29	64	iP	Pn	21 02 24.6	-0.4
AKO				iS	Sn	21 02 43.0	+0.6
NIG	Nigde	1.30	23	ePN	Pg	21 02 26.2	+0.4
NIG	Nigde	1.30	23	ePn	Pg	21 02 26.3	+0.4
KOZT	Kozan	1.58	68	ePN	Pb	21 02 30.5	+0.3
KOZT	Kozan	1.58	68	ePn	Pb	21 02 30.5	+0.3

BJI **02** *21:30:40.8,36.51N×26.13E,h139km,mb4.6/35,mB4.8/27*
ISCJB **02** *21:30:43.9±0.1,36.51N±0.01×26.62E±0.01,h144km, mb4.6/102,Error ellipse: s-maj=1.9km s-min=1.4km az=11.4*
PDG **02** *21:30:44.0±0.4,36.32N×26.17E,h142km±12km,ML4.8/11, Error ellipse: s-maj=2.9km s-min=3.3km az=0.0*
ATH **02** *21:30:44.8,36.51N×26.61E,h138km±1km,ML4.8/34, Error ellipse: s-maj=1.7km s-min=0.7km az=152.0*
NEIC **02** *21:30:44.7,36.51N×26.61E,h138km,mb4.8/38,After ATH.*
NEIC Felt [II] at Iraklion. Felt at Fethiye, Turkey.
CSEM **02** *21:30:44.6±0.1,36.49N×26.66E,h148km,mb4.6/57,Error ellipse: s-maj=2.1km s-min=1.5km az=14.0*
DDA **02** *21:30:45.8,36.41N×26.42E,h65km,Ml4.9*
MOS **02** *21:30:45.1±1.0,36.60N×26.61E,h152km,mb4.6/33,Error ellipse: s-maj=5.0km s-min=2.8km az=101.5*
IDC **02** *21:30:46.4±0.9,36.76N×26.52E,h148km±7km,mb4.2/29, mb1 4.3/35,mb1mx4.2/47,mbtmp4.7/35,MS3.2/6, Ms1 3.2/6,ms1mx2.8/39,Error ellipse: s-maj=9.3km s-min=7.3km az=133.0*
ISK **02** *21:30:47.0,36.65N×26.65E,h107km,ML4.4*
THE **02** *21:30:47.6,36.50N×26.62E,h142km±2km,ML4.9/23, Error ellipse: s-maj=2.1km s-min=0.6km az=138.0*
NIC **02** *21:30:48.1±0.1,36.57N×27.06E,h125km,mb4.9,ML4.6*
GII **02** *21:30:48.8±0.0,36.01N×27.18E,h5km,mb4.6/3,MD4.6/3*
HLW **02** *21:30:53.0,35.89N×27.16E,h31km±18km,Md4.9,Ml4.9*
ISC 02 21:30:44.7±0.4,**36.54N**±0.03×**26.62E**±0.03,**h141km**±3km, **h140km:pP-P,n1514,**σ**1.44/1757,mb4.6/101,136C-40D, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NISR	Nisiros	0.42	80	P	Pn	21 31 04.6	+0.1
NISR				S	Sn	21 31 18.9	-0.6
NISR	Nisiros	0.42	80	P	Pn	21 31 04.8	+0.3
NISR				S	Sn	21 31 18.9	-0.6
NISR	Nisiros	0.42	80	P	Pn	21 31 04.6	+0.1
NISR				S	Sn	21 31 18.9	-0.6
NISR	Nisiros	0.42	80	P	Pn	21 31 04.8	+0.3
NISR				AML	AML	21 31 19.6	
	comp=E,24405µm,0.6s						
NISR				AML	AML	21 31 19.9	
	comp=N,44616µm,0.7s						
NIS1	Nisyros Isl.	0.46	82	ePG	Pn	21 31 04.2	-0.6
NIS1	Nisyros Isl.	0.46	82	P	Pn	21 31 04.9	+0.2
NIS1				S	Sn	21 31 19.6	-0.4
NIS1	Nisyros Isl.	0.46	82	ePg	Pn	21 31 04.2	-0.6
NIS1	Nisyros Isl.	0.46	82	P	Pn	21 31 04.9	+0.2
NIS1				S	Sn	21 31 19.6	-0.4
NIS1	Nisyros Isl.	0.46	82	P	Pn	21 31 04.9	+0.2
NIS1				S	Sn	21 31 19.6	-0.4
NIS1	Nisyros Isl.	0.46	82	P	Pn	21 31 05.4	+0.6
NIS1				AML	AML	21 31 20.8	
	comp=N,45794µm,1.2s						
NIS1				AML	AML	21 31 29.4	
	comp=E,49644µm,0.7s						
BODT	Bodrum	0.76	47	ePG	Pn	21 31 04.8	-1.8
BODT	Bodrum	0.76	47	P	Pn	21 31 06.8	+0.2
BODT				S	Sn	21 31 22.6	-0.7
BODT	Bodrum	0.76	47	ePg	Pn	21 31 04.8	-1.8
BODT	Bodrum	0.76	47	P	Pn	21 31 06.8	+0.2
BODT				S	Sn	21 31 22.6	-0.7
BODT	Bodrum	0.76	47	P	Pn	21 31 06.8	+0.2
BODT				S	Sn	21 31 22.6	-0.7
BDRM	Kayabasi	0.85	52	iP	Pn	21 31 07.6	+0.4
BDRM				iS	Pn	21 31 07.7	+0.4
BDRM				iS	Sn	21 31 24.2	-0.3
BDRM	Kayabasi	0.85	52	P	Pn	21 31 07.6	+0.4
BDRM				S	Sn	21 31 24.2	-0.3
SANT	Santorini	0.95	260	P	Pn	21 31 08.7	+0.6
SANT	Santorini	0.95	260	ePn	Pn	21 31 08.8	+0.6
SANT	Santorini	0.95	260	P	Pn	21 31 09.1	+1.0
SANT				eSn	Sn	21 31 26.3	+0.3
SANT	Santorini	0.95	260	ePn	Pn	21 31 08.8	+0.6
SANT				eSn	Sn	21 31 26.3	+0.3
SANT	Santorini	0.95	260	P	Pn	21 31 09.1	+1.0
SANT				AML	AML	21 31 25.8	
	comp=N,16919µm,0.6s						
SANT				AML	AML	21 31 26.9	
	comp=E,9058µm,0.5s						
THR2	Thira island,	0.95	265	P	Pn	21 31 09.0	+0.9
THR2	Thira island,	0.95	265	P	Pn	21 31 09.0	+0.9
THR2	Thira island,	0.95	265	P	Pn	21 31 09.0	+0.9
THR7	Fira-Santorini	0.96	263	P	Pn	21 31 08.9	+0.7
THR7	Fira-Santorini	0.96	263	P	Pn	21 31 08.9	+0.7
THT1	Athinios (Pele	0.97	261	P	Pn	21 31 08.7	+0.5
THT1	Athinios (Pele	0.97	261	P	Pn	21 31 08.7	+0.5
CMBO	Columbo, Santo	0.98	266	P	Pn	21 31 09.2	+0.9
CMBO				S	Sn	21 31 25.6	-0.7
CMBO	Columbo, Santo	0.98	266	P	Pn	21 31 09.6	+1.3
CMBO				S	Sn	21 31 25.6	-0.7
CMBO	Columbo, Santo	0.98	266	P	Pn	21 31 09.6	+1.3
CMBO				S	Sn	21 31 26.4	+0.1
CMBO				AML	AML	21 31 26.9	
	comp=N,38516µm,0.5s						
CMBO				AML	AML	21 31 27.5	
	comp=E,31319µm,0.5s						
THR3	Thira Island,	0.99	263	P	Pn	21 31 09.2	+0.8
THR3	Thira Island,	0.99	263	P	Pn	21 31 09.2	+0.8
THR3	Thira Island,	0.99	263	P	Pn	21 31 09.2	+0.8
THR6	Thira Island,	1.00	260	P	Pn	21 31 09.2	+0.7
THR6	Thira Island,	1.00	260	P	Pn	21 31 09.2	+0.7
THR6	Thira Island,	1.00	260	P	Pn	21 31 09.2	+0.7
SAP1	Santorini-Akro	1.00	260	P	Pn	21 31 10.5	+2.0
SAP1				S	Sn	21 31 27.1	+0.5
SAP1	Santorini-Akro	1.00	260	P	Pn	21 31 10.5	+2.0
SAP1				S	Sn	21 31 27.1	+0.5
SAP1				AML	AML	21 31 27.1	
	comp=N,98927µm,0.6s						
SAP1				AML	AML	21 31 27.7	
	comp=E,81819µm,0.7s						
SAP4	Santorini-Oia	1.00	267	P	Pn	21 31 10.1	+1.5
SAP4	Santorini-Oia	1.00	267	P	Pn	21 31 10.1	+1.5
SAP4				AML	AML	21 31 28.6	
	comp=E,29764µm,0.7s						
SAP4				AML	AML	21 31 30.0	
	comp=N,36785µm,1.2s						
APE	Apeiranthos	1.02	302	ePG	Pn	21 31 08.6	-0.2
APE	Apeiranthos	1.02	302	P	Pn	21 31 09.3	+0.6
APE				S	Sn	21 31 26.1	-1.0
APE	Apeiranthos	1.02	302	P	Pn	21 31 09.3	+0.6
APE				S	Sn	21 31 26.1	-1.0
APE	Apeiranthos	1.02	302	ePg	Pn	21 31 08.6	-0.2
APE	Apeiranthos	1.02	302	P	Pn	21 31 09.7	+0.9
APE				S	Sn	21 31 26.1	-1.0
APE	Apeiranthos	1.02	302	P	Pn	21 31 09.3	+0.6
APE				S	Sn	21 31 26.1	-1.0
APE	Apeiranthos	1.02	302	P	Pn	21 31 09.7	+0.9
APE				S	Sn	21 31 26.6	-0.5
APE				AML	AML	21 31 27.6	
	comp=N,11908µm,0.9s						
APE				AML	AML	21 31 28.0	
	comp=E,16212µm,0.7s						
SAP3	Santorini-Thir	1.03	265	P	Pn	21 31 08.1	-0.7
SAP3	Santorini-Thir	1.03	265	P	Pn	21 31 08.1	-0.7
SAP3				AML	AML	21 31 28.8	
	comp=N,39666µm,0.8s						
SAP3				AML	AML	21 31 39.3	
	comp=E,35361µm,1.1s						
THR5	Thira Island,	1.03	263	ePG	Pn	21 31 09.5	+0.7
THR5	Thira Island,	1.03	263	P	Pn	21 31 09.3	+0.5
THR5	Thira Island,	1.03	263	ePg	Pn	21 31 09.5	+0.7
KARP	Karpathos	1.09	156	ePN	Pn	21 31 10.5	+1.1
KARP				eSN	Sn	21 31 27.6	-0.6
KARP	Karpathos	1.09	156	P	Pn	21 31 09.5	+0.1
KARP				S	Sn	21 31 27.2	-1.0
KARP	Karpathos	1.09	156	P	Pn	21 31 09.5	+0.1
KARP	Karpathos	1.09	156	ePn	Pn	21 31 10.5	+1.1
KARP				S	Sn	21 31 27.2	-1.0
KARP	Karpathos	1.09	156	ePn	Pn	21 31 09.5	+0.1
KARP				eSn	Sn	21 31 29.4	+1.2
KARP	Karpathos	1.09	156	P	Pn	21 31 09.8	+0.4
KARP				S	Sn	21 31 26.7	-1.5
KARP				AML	AML	21 31 30.8	
KARP				AML	AML	21 31 31.0	
SMG	Samos	1.18	9	P	Pn	21 31 10.5	+0.3
SMG	Samos	1.18	9	P	Pn	21 31 10.5	+0.3
SMG	Samos	1.18	9	P	Pn	21 31 10.5	+0.3
SMG	Samos	1.18	9	P	Pn	21 31 10.2	-0.1
GCAM	G?zelcaml?	1.26	23	iP	Pn	21 31 11.6	+0.6
GCAM				iS	Sn	21 31 31.0	-0.1
GCAM	G?zelcaml?	1.26	23	P	Pn	21 31 11.6	+0.6
GCAM				S	Sn	21 31 31.0	-0.1
ARG	Arkhangelos	1.26	104	P	Pn	21 31 11.6	+0.6
ARG				S	Sn	21 31 30.3	-0.8
ARG	Arkhangelos	1.26	104	P	Pn	21 31 11.6	+0.6
ARG				S	Sn	21 31 30.3	-0.8
ARG	Arkhangelos	1.26	104	P	Pn	21 31 11.6	+0.6
ARG				S	Sn	21 31 30.4	-0.7
ARG	Arkhangelos	1.26	104	P	Pn	21 31 11.6	+0.6
ARG				S	Sn	21 31 30.3	-0.8
ZKR	Zakros	1.46	193	P	Pn	21 31 13.9	+0.8
ZKR				S	Sn	21 31 34.3	-0.5
ZKR	Zakros	1.46	193	P	Pn	21 31 13.9	+0.8
ZKR				S	Sn	21 31 35.0	+0.2
ZKR	Zakros	1.46	193	P	Pn	21 31 13.9	+0.8
ZKR				S	Sn	21 31 34.3	-0.5
ZKR	Zakros	1.46	193	P	Pn	21 31 14.4	+1.2
ZKR				S	Sn	21 31 35.0	+0.2
ZKR				AML	AML	21 31 38.9	
	comp=E,58943µm,0.6s						
ZKR				AML	AML	21 31 41.4	
	comp=N,36295µm,0.5s						
YER	Yerkesik	1.46	66	ePN	Pn	21 31 14.2	+1.1
YER				eSN	Sn	21 31 32.4	-2.6
YER	Yerkesik	1.46	66	P	Pn	21 31 14.3	+1.1
YER				S	Sn	21 31 34.8	-0.1
YER	Yerkesik	1.46	66	P	Pn	21 31 14.3	+1.1
YER				S	Sn	21 31 34.8	-0.1
YER	Yerkesik	1.46	66	ePn	Pn	21 31 14.2	+1.1
YER				eSn	Sn	21 31 32.4	-2.6
YER				S	Sn	21 31 34.8	-0.1
YER	Yerkesik	1.46	66	P	Pn	21 31 14.3	+1.1
YER				S	Sn	21 31 34.8	-0.1
NPS	Neapolis	1.51	213	P	Pn	21 31 13.9	+0.2
NPS				S	Sn	21 31 34.9	-0.9
NPS	Neapolis	1.51	213	P	Pn	21 31 13.9	+0.2
NPS				S	Sn	21 31 34.9	-0.9
NPS	Neapolis	1.51	213	P	Pn	21 31 13.9	+0.2
NPS				S	Sn	21 31 34.9	-0.9
NPS	Neapolis	1.51	213	P	Pn	21 31 13.9	+0.2
NPS				S	Sn	21 31 34.9	-0.9
DGB	˜zmir	1.52	8	iP	Pn	21 31 14.3	+0.6
TURN	Turunc	1.63	78	iP	Pn	21 31 12.1	-2.8
TURN				iS	Sn	21 31 31.7	-6.4
LAST	Lasithi	1.66	214	P	Pn	21 31 15.6	+0.2
LAST				S	Sn	21 31 37.4	-1.4
LAST	Lasithi	1.66	214	P	Pn	21 31 15.6	+0.2
LAST	Lasithi	1.66	214	ePn	Pn	21 31 16.0	+0.6
LAST				S	Sn	21 31 37.4	-1.4
LAST	Lasithi	1.66	214	ePn	Pn	21 31 16.0	+0.6
LAST				S	Sn	21 31 37.4	-1.4
LAST	Lasithi	1.66	214	P	Pn	21 31 15.9	+0.5
DALY	Dalyan (Mu˜la	1.66	80	ePN	Pn	21 31 16.8	+1.5
DALY				eSN	Sn	21 31 37.3	-1.4
DALY	Dalyan (Mu˜la	1.66	80	ePn	Pn	21 31 16.8	+1.5
DALY				eSn	Sn	21 31 37.3	-1.4
ZEY	˜zmir	1.70	357	iP	Pn	21 31 15.9	+0.2
AYDB	Zeytinkoy-Aydi	1.73	36	ePN	Pn	21 31 16.8	+0.6
AYDB	Zeytinkoy-Aydi	1.73	36	ePn	Pn	21 31 16.8	+0.6
IACM	Heraklion	1.76	226	P	Pn	21 31 17.0	+0.6
IACM				S	Sn	21 31 40.1	-0.5
IACM	Heraklion	1.76	226	P	Pn	21 31 17.0	+0.6
IACM				S	Sn	21 31 40.1	-0.5
IACM	Heraklion	1.76	226	P	Pn	21 31 17.3	+0.9
IACM				S	Sn	21 31 39.1	-1.6
IACM				AML	AML	21 31 42.1	
IACM				AML	AML	21 31 46.0	
MHLO	Agia Marina, M	1.79	275	P	Pn	21 31 18.2	+1.5
MHLO				S	Sn	21 31 42.2	+1.0
MHLO	Agia Marina, M	1.79	275	P	Pn	21 31 18.2	+1.5
MHLO				S	Sn	21 31 42.8	+1.6
MHLO	Agia Marina, M	1.79	275	P	Pn	21 31 19.2	+2.5
MHLO				S	Sn	21 31 42.8	+1.6
MHLO				AML	AML	21 31 48.9	
	comp=E,19383µm,1.0s						
MHLO				AML	AML	21 31 54.3	
	comp=N,23906µm,0.8s						
URLA	Izmir	1.82	360	iP	Pn	21 31 17.4	+0.3
URLA	Izmir	1.82	360	P	Pn	21 31 17.4	+0.3
SERI	Serifos	1.82	291	P	Pn	21 31 18.1	+1.0
SERI	Serifos	1.82	291	P	Pn	21 31 18.1	+1.0
SERI				S	Sn	21 31 40.9	-1.0
SERI				AML	AML	21 31 42.0	
	comp=E,4597µm,0.7s						
SERI				AML	AML	21 31 42.9	
	comp=N,8749µm,0.9s						
IDI	Anoyia	1.88	229	P	Pn	21 31 18.2	+0.3
	comp=N,703nm,0.3s,baz=15,slow=4.8,SNR=7580						
IDI				S	Sn	21 31 41.3	-1.9
	comp=N,418nm,0.3s,baz=1.9,slow=9.0,SNR=5.3						
IDI				LR	LR	21 32 01.3	
	comp=N,439nm,18.9s,baz=150,slow=38						
IDI	Anoyia	1.88	229	P	Pn	21 31 18.0	+0.1
IDI				S	Sn	21 31 41.8	-1.4
IDI	Anoyia	1.88	229	P	Pn	21 31 18.0	+0.1
IDI				S	Sn	21 31 41.8	-1.4
IDI				eSn	Sn	21 31 43.8	+0.6
IDI	Anoyia	1.88	229	P	Pn	21 31 18.0	+0.1
IDI				eSn	Sn	21 31 43.8	+0.5
IDI	Anoyia	1.88	229	P	Pn	21 31 17.9	0.0
IDI				S	Sn	21 31 40.7	-2.6
IDI				AML	AML	21 31 42.9	
	comp=N,31072µm,0.6s						
IDI				AML	AML	21 31 47.3	
	comp=E,25364µm,0.5s						
CHOS	Chios island	1.90	347	ePN	Pn	21 31 18.6	+0.6
CHOS	Chios island	1.90	347	P	Pn	21 31 18.6	+0.6
CHOS	Chios island	1.90	347	P	Pn	21 31 18.6	+0.6
CHOS	Chios island	1.90	347	P	Pn	21 31 18.6	+0.6
CHOS	Chios island	1.90	347	P	Pn	21 31 18.3	+0.3
CHOS				AML	AML	21 31 43.6	
	comp=E,6158µm,1.0s						
CHOS				AML	AML	21 31 44.8	
	comp=N,5726µm,0.8s						
IZM	Izmir	1.92	15	ePN	Pn	21 31 18.9	+0.6
IZM	Izmir	1.92	15	ePn	Pn	21 31 18.9	+0.6
SIVA	Sivas	2.11	225	P	Pn	21 31 21.5	+0.9
SIVA	Sivas	2.11	225	P	Pn	21 31 21.5	+0.9
SIVA	Sivas	2.11	225	P	Pn	21 31 21.5	+0.9
SIVA	Sivas	2.11	225	P	Pn	21 31 22.2	+1.6
SIVA				S	Sn	21 31 45.1	-3.0
SIVA				AML	AML	21 31 50.0	
	comp=N,32480µm,0.5s						
SIVA				AML	AML	21 31 53.5	
	comp=E,46226µm,0.7s						
DNZL	Cakiroluk	2.26	59	iP	Pn	21 31 23.6	+1.1
DNZL				iS	Sn	21 31 51.7	+0.2
DNZL	Cakiroluk	2.26	59	P	Pn	21 31 23.6	+1.1
DNZL				S	Sn	21 31 51.7	+0.2
VAM	Vamos	2.26	241	P	Pn	21 31 22.6	+0.2
VAM				S	Sn	21 31 50.5	-0.9
VAM	Vamos	2.26	241	P	Pn	21 31 22.6	+0.2
VAM				S	Sn	21 31 50.5	-0.9
VAM	Vamos	2.26	241	P	Pn	21 31 22.6	+0.2
VAM				S	Sn	21 31 50.5	-0.9
VAM	Vamos	2.26	241	P	Pn	21 31 22.6	+0.2
VAM				S	Sn	21 31 50.5	-0.9
DENT	Denizli	2.28	57	ePN	Pn	21 31 24.1	+1.5
DENT	Denizli	2.28	57	ePn	Pn	21 31 24.1	+1.5
GLHS	Glhisar (BURDU	2.39	74	ePN	Pn	21 31 25.2	+1.2
GLHS	Glhisar (BURDU	2.39	74	ePn	Pn	21 31 25.3	+1.2
IMMV	Iera Moni Meta	2.39	244	P	Pn	21 31 24.6	+0.6
IMMV				S	Sn	21 31 53.3	-0.9
IMMV	Iera Moni Meta	2.39	244	P	Pn	21 31 24.6	+0.6
IMMV				S	Sn	21 31 53.3	-0.9
IMMV	Iera Moni Meta	2.39	244	P	Pn	21 31 24.8	+0.8
IMMV				S	Sn	21 31 52.5	-1.8
IMMV				AML	AML	21 31 55.5	
	comp=N,37133µm,0.5s						
IMMV				AML	AML	21 31 56.1	
	comp=E,33693µm,0.5s						
AKAS	Kas	2.43	96	iP	Pn	21 31 25.6	+1.0
AKAS				iS	Sn	21 31 55.9	+0.6
AKAS	Kas	2.43	96	P	Pn	21 31 25.6	+1.0
AKAS				S	Sn	21 31 55.9	+0.6
GOLH	Golhisar	2.46	73	iP	Pn	21 31 26.2	+1.3
GOLH				iS	Sn	21 31 56.5	+0.6
GOLH	Golhisar	2.46	73	P	Pn	21 31 26.2	+1.3
GOLH				S	Sn	21 31 56.5	+0.6
MANT	Manisa	2.48	38	iP	Pn	21 31 25.3	0.0
MANT				iS	Sn	21 31 56.8	+0.2
MANT	Manisa	2.48	38	P	Pn	21 31 25.3	0.0
MANT				S	Sn	21 31 56.8	+0.2
AKS	Akhisar	2.52	22	ePN	Pn	21 31 26.2	+0.7
AKS	Akhisar	2.52	22	ePn	Pn	21 31 26.2	+0.7
DKL	Dikili	2.54	5	ePN	Pn	21 31 26.9	+1.2
DKL	Dikili	2.54	5	ePn	Pn	21 31 26.9	+1.2
KULA	Kula-Manisa	2.55	39	ePN	Pn	21 31 27.2	+1.1
KULA	Kula-Manisa	2.55	39	P	Pn	21 31 26.9	+0.8
KULA	Kula-Manisa	2.55	39	P	Pn	21 31 26.9	+0.8
KULA	Kula-Manisa	2.55	39	ePn	Pn	21 31 27.2	+1.1
KULA	Kula-Manisa	2.55	39	P	Pn	21 31 27.1	+1.1
VLY	Voula,Athens	2.60	301	P	Pn	21 31 28.0	+1.4
VLY	Voula,Athens	2.60	301	P	Pn	21 31 28.4	+1.8
VLY	Voula,Athens	2.60	301	P	Pn	21 31 28.0	+1.4
VLY	Voula,Athens	2.60	301	P	Pn	21 31 28.4	+1.8
VLY				AML	AML	21 32 01.7	
	comp=N,4819µm,0.9s						
VLY				AML	AML	21 32 02.1	
	comp=E,6762µm,0.8s						
ELL	Elmali	2.66	85	ePN	Pn	21 31 28.4	+1.0
ELL	Elmali	2.66	85	ePn	Pn	21 31 28.4	+1.0
PTL	Penteli	2.66	305	P	Pn	21 31 28.8	+1.5
PTL	Penteli	2.66	305	P	Pn	21 31 29.2	+1.9
PTL	Penteli	2.66	305	P	Pn	21 31 28.8	+1.5
PTL	Penteli	2.66	305	P	Pn	21 31 29.2	+1.9
GVD	Gavdhos	2.67	231	P	Pn	21 31 28.4	+1.0
GVD				S	Sn	21 32 00.6	+0.2
GVD	Gavdhos	2.67	231	P	Pn	21 31 28.4	+1.0
GVD				S	Sn	21 32 01.1	+0.7
GVD	Gavdhos	2.67	231	P	Pn	21 31 28.4	+1.0
GVD	Gavdhos	2.67	231	P	Pn	21 31 29.4	+1.9
GVD				S	Sn	21 32 01.1	+0.7
GVD				AML	AML	21 32 03.5	
	comp=E,34956µm,0.4s						
GVD				AML	AML	21 32 04.5	
	comp=N,28330µm,0.6s						
ATHU	Athens Univers	2.67	303	P	Pn	21 31 28.8	+1.4
ATHU	Athens Univers	2.67	303	P	Pn	21 31 29.2	+1.8
ATHU	Athens Univers	2.67	303	P	Pn	21 31 28.8	+1.4
ATHU	Athens Univers	2.67	303	P	Pn	21 31 29.2	+1.8
PRK	Paraskevi	2.71	354	P	Pn	21 31 28.6	+0.6
PRK	Paraskevi	2.71	354	P	Pn	21 31 28.5	+0.6
PRK	Paraskevi	2.71	354	P	Pn	21 31 28.6	+0.6
PRK	Paraskevi	2.71	354	P	Pn	21 31 28.5	+0.6
PRK	Paraskevi	2.71	354	P	Pn	21 31 27.7	-0.2
PRK				AML	AML	21 32 02.8	
	comp=N,4783µm,1.0s						
PRK				AML	AML	21 32 03.2	
	comp=E,7086µm,1.3s						
ATH	Athens Observa	2.72	303	P	Pn	21 31 29.6	+1.6
ATH				S	Sn	21 32 02.1	+0.6
ATH	Athens Observa	2.72	303	P	Pn	21 31 29.6	+1.6
ATH	Athens Observa	2.72	303	P	Pn	21 31 29.6	+1.6
ATH				S	Sn	21 32 02.1	+0.6
ATH	Athens Observa	2.72	303	P	Pn	21 31 29.6	+1.6
SIGR	SIGRI	2.73	348	ePN	Pn	21 31 29.8	+1.6
SIGR	SIGRI	2.73	348	P	Pn	21 31 28.7	+0.5
SIGR	SIGRI	2.73	348	P	Pn	21 31 28.7	+0.5
SIGR	SIGRI	2.73	348	ePn	Pn	21 31 29.8	+1.6
SIGR	SIGRI	2.73	348	P	Pn	21 31 28.6	+0.4
SIGR	SIGRI	2.73	348	P	Pn	21 31 27.9	-0.3
SIGR				AML	AML	21 32 03.1	
	comp=E,4989µm,0.8s						
SIGR				AML	AML	21 32 03.3	
	comp=N,3570µm,1.4s						
ANKY	Antikythira Is	2.76	257	P	Pn	21 31 29.0	+0.4
ANKY				S	Sn	21 32 01.7	-0.8
ANKY	Antikythira Is	2.76	257	P	Pn	21 31 29.0	+0.4
ANKY				S	Sn	21 32 01.7	-0.8
ANKY	Antikythira Is	2.76	257	P	Pn	21 31 29.0	+0.4
ANKY	Antikythira Is	2.76	257	P	Pn	21 31 29.0	+0.4
ANKY				S	Sn	21 32 01.4	-1.1
ANKY				AML	AML	21 32 02.0	
	comp=E,17482µm,0.5s						
ANKY				AML	AML	21 32 05.4	
	comp=N,20030µm,0.5s						
AYVA	Ayvalik	2.76	1	iP	Pn	21 31 29.1	+0.5
AYVA	Ayvalik	2.76	1	P	Pn	21 31 29.1	+0.5
EREA	Eretria	2.84	312	P	Pn	21 31 31.2	+1.6
EREA				S	Sn	21 32 04.5	+0.1
EREA	Eretria	2.84	312	P	Pn	21 31 31.6	+2.0
EREA				S	Sn	21 32 04.5	+0.1
EREA	Eretria	2.84	312	P	Pn	21 31 31.6	+2.0
EREA				AML	AML	21 32 05.7	
	comp=E,3460µm,1.2s						
EREA				AML	AML	21 32 06.4	
	comp=N,3087µm,1.2s						
DID	Didima	2.87	291	P	Pn	21 31 31.1	+1.1
DID	Didima	2.87	291	P	Pn	21 31 31.1	+1.1
DID	Didima	2.87	291	P	Pn	21 31 31.1	+1.1
DID	Didima	2.87	291	P	Pn	21 31 31.1	+1.1
KYTH	Kithira	2.89	266	P	Pn	21 31 31.0	+0.7
KYTH	Kithira	2.89	266	P	Pn	21 31 31.4	+1.1
KYTH	Kithira	2.89	266	P	Pn	21 31 31.0	+0.7
KYTH	Kithira	2.89	266	P	Pn	21 31 31.4	+1.1
KRND	KRANIDI	2.90	288	P	Pn	21 31 31.8	+1.5
KRND				S	Sn	21 32 06.8	+1.2
KRND	KRANIDI	2.90	288	P	Pn	21 31 31.8	+1.5
KRND				S	Sn	21 32 06.8	+1.2
KRND	KRANIDI	2.90	288	P	Pn	21 31 32.1	+1.7
KRND				AML	AML	21 32 08.2	
	comp=N,19787µm,1.0s						
KRND				AML	AML	21 32 08.3	
	comp=E,21966µm,0.8s						
KHL	Karahalli	2.92	52	ePN	Pn	21 31 32.4	+1.7
KHL	Karahalli	2.92	52	ePn	Pn	21 31 32.4	+1.7
VLI	Veliai	2.96	275	P	Pn	21 31 31.6	+0.4
VLI				S	Sn	21 32 04.9	-2.2
VLI	Veliai	2.96	275	P	Pn	21 31 31.9	+0.7
VLI				S	Sn	21 32 04.9	-2.2
VLI	Veliai	2.96	275	P	Pn	21 31 31.6	+0.4
VLI	Veliai	2.96	275	P	Pn	21 31 31.9	+0.7
VLI				AML	AML	21 32 05.8	
	comp=N,7895µm,0.5s						

VLI					AML	AML	21 32 09.1		
	comp=E,7840µm,0.4s								
DEMI	**Demirci**	**3.00**	**33**	*i* P	**Pn**		**21 31 32.5 +0.8**		
DEMI	**Demirci**	**3.00**	**33**	P	**Pn**		**21 31 32.5 +0.8**		
KORT	**Korkueli**	**3.03**	**80**	*i* P	**Pn**		**21 31 33.5 +1.3**		
KORT				*i* S	**Sn**		**21 32 10.9 +2.0**		
KORT	**Korkueli**	**3.03**	**80**	P	**Pn**		**21 31 33.5 +1.3**		
KORT				S	**Sn**		**21 32 10.9 +2.0**		
VILL	**Villia**	**3.09**	**303**	P	**Pn**		**21 31 34.4 +1.6**		
VILL				S	**Sn**		**21 32 10.5 +0.4**		
VILL	**Villia**	**3.09**	**303**	P	**Pn**		**21 31 34.4 +1.6**		
VILL				S	**Sn**		**21 32 10.5 +0.4**		
VIL2	**Platees**	**3.15**	**303**	P	**Pn**		**21 31 34.8 +1.3**		
VIL2				AML	AML		21 32 16.1		
	comp=N,5029µm,1.2s								
VIL2				AML	AML		21 32 18.0		
	comp=E,2998µm,0.9s								
BALB	**Balikesir**	**3.25**	**17**	*e*PN	**Pn**		**21 31 35.7 +0.9**		
BALB	**Balikesir**	**3.25**	**17**	*e*Pn	**Pn**		**21 31 35.7 +0.9**		
ANTB	**Antalya**	**3.26**	**83**	*e*PN	**Pn**		**21 31 37.2 +2.2**		
ANTB	**Antalya**	**3.26**	**83**	*e*Pn	**Pn**		**21 31 37.2 +2.2**		
LTK	**Loutraki**	**3.26**	**298**	P	**Pn**		**21 31 36.6 +1.6**		
LTK	**Loutraki**	**3.26**	**298**	P	**Pn**		**21 31 36.6 +1.6**		
LTK	**Loutraki**	**3.26**	**298**	P	**Pn**		**21 31 36.6 +1.6**		
LTK	**Loutraki**	**3.26**	**298**	P	**Pn**		**21 31 36.8 +1.8**		
EZN	**Ezine**	**3.29**	**356**	*e*PN	**Pn**		**21 31 36.0 +0.7**		
EZN	**Ezine**	**3.29**	**356**	P	**Pn**		**21 31 35.9 +0.6**		
EZN				S	**Sn**		**21 32 14.9 +0.4**		
EZN	**Ezine**	**3.29**	**356**	P	**Pn**		**21 31 35.9 +0.6**		
EZN				S	**Sn**		**21 32 14.9 +0.4**		
EZN	**Ezine**	**3.29**	**356**	*e*Pn	**Pn**		**21 31 36.0 +0.7**		
EZN				S	**Sn**		**21 32 14.9 +0.4**		
EZN	**Ezine**	**3.29**	**356**	P	**Pn**		**21 31 35.9 +0.6**		
EZN				S	**Sn**		**21 32 14.9 +0.4**		
BALY	**Balya**	**3.29**	**14**	*i* P	**Pn**		**21 31 36.3 +0.9**		
BALY	**Balya**	**3.29**	**14**	P	**Pn**		**21 31 36.3 +0.9**		
GEDZ	**Gediz**	**3.34**	**41**	*e*PN	**Pn**		**21 31 37.2 +1.1**		
GEDZ	**Gediz**	**3.34**	**41**	*e*Pn	**Pn**		**21 31 37.2 +1.1**		
AOS	**Alonnisos**	**3.40**	**321**	*e*PN	**Pn**		**21 31 38.7 +1.9**		
AOS	**Alonnisos**	**3.40**	**321**	P	**Pn**		**21 31 37.9 +1.1**		
AOS	**Alonnisos**	**3.40**	**321**	P	**Pn**		**21 31 38.1 +1.3**		
AOS	**Alonnisos**	**3.40**	**321**	*e*Pn	**Pn**		**21 31 38.7 +1.9**		
AOS	**Alonnisos**	**3.40**	**321**	P	**Pn**		**21 31 37.9 +1.1**		
AOS	**Alonnisos**	**3.40**	**321**	P	**Pn**		**21 31 38.1 +1.3**		
GDZ	**Gediz**	**3.41**	**41**	*i* P	**Pn**		**21 31 38.2 +1.2**		
GDZ	**Gediz**	**3.41**	**41**	P	**Pn**		**21 31 38.2 +1.2**		
PROD	**Prodromos**	**3.42**	**301**	P	**Pn**		**21 31 38.8 +1.8**		
PROD	**Prodromos**	**3.42**	**301**	P	**Pn**		**21 31 38.8 +1.8**		
DST	**Dursunbey**	**3.44**	**27**	*e*PN	**Pn**		**21 31 38.1 +0.8**		
DST	**Dursunbey**	**3.44**	**27**	*e*Pn	**Pn**		**21 31 38.2 +0.8**		
THAL	**Thalero**	**3.49**	**297**	P	**Pn**		**21 31 39.4 +1.5**		
THAL	**Thalero**	**3.49**	**297**	P	**Pn**		**21 31 39.4 +1.5**		
THAL	**Thalero**	**3.49**	**297**	P	**Pn**		**21 31 39.8 +1.9**		
VLX	**Vlachokerasia**	**3.49**	**285**	P	**Pn**		**21 31 38.9 +0.8**		
VLX				S	**Sn**		**21 32 17.6 -1.9**		
VLX	**Vlachokerasia**	**3.49**	**285**	P	**Pn**		**21 31 38.9 +0.8**		
VLX				S	**Sn**		**21 32 20.5 +1.0**		
VLX	**Vlachokerasia**	**3.49**	**285**	P	**Pn**		**21 31 38.9 +0.8**		
VLX				S	**Sn**		**21 32 17.6 -1.9**		
VLX	**Vlachokerasia**	**3.49**	**285**	P	**Pn**		**21 31 38.9 +0.8**		
VLX				S	**Sn**		**21 32 20.5 +1.0**		
VLX				AML	AML		21 32 20.7		
	comp=N,6099µm,0.5s								
VLX				AML	AML		21 32 21.1		
	comp=E,10619µm,0.7s								
LIA	**Limnos Island**	**3.54**	**342**	P	**Pn**		**21 31 39.5 +1.0**		
LIA				S	**Sn**		**21 32 20.4 +0.1**		
LIA	**Limnos Island**	**3.54**	**342**	P	**Pn**		**21 31 39.5 +1.0**		
LIA				S	**Sn**		**21 32 20.4 +0.1**		
LIA	**Limnos Island**	**3.54**	**342**	P	**Pn**		**21 31 39.5 +1.0**		
LIA				S	**Sn**		**21 32 20.4 +0.1**		
LKR	**Lokris**	**3.56**	**307**	P	**Pn**		**21 31 40.4 +1.5**		
LKR				S	**Sn**		**21 32 21.8 +0.9**		
LKR	**Lokris**	**3.56**	**307**	P	**Pn**		**21 31 40.4 +1.5**		
LKR				S	**Sn**		**21 32 21.8 +0.9**		
LKR	**Lokris**	**3.56**	**307**	P	**Pn**		**21 31 40.4 +1.5**		
LKR				S	**Sn**		**21 32 21.8 +0.9**		
LKR	**Lokris**	**3.56**	**307**	P	**Pn**		**21 31 40.4 +1.5**		
SMIA	**Simia**	**3.57**	**312**	P	**Pn**		**21 31 41.1 +2.1**		
SMIA	**Simia**	**3.57**	**312**	P	**Pn**		**21 31 41.1 +2.1**		
ATAL	**Atalanti**	**3.57**	**308**	P	**Pn**		**21 31 40.6 +1.6**		
ATAL	**Atalanti**	**3.57**	**308**	P	**Pn**		**21 31 40.6 +1.6**		
ATAL	**Atalanti**	**3.57**	**308**	P	**Pn**		**21 31 40.6 +1.6**		
ATAL	**Atalanti**	**3.57**	**308**	P	**Pn**		**21 31 40.7 +1.7**		
SKIA	**Skiathos**	**3.62**	**317**	P	**Pn**		**21 31 41.2 +1.6**		
SKIA				S	**Sn**		**21 32 22.2 0.0**		
SKIA	**Skiathos**	**3.62**	**317**	P	**Pn**		**21 31 41.2 +1.6**		
SKIA				S	**Sn**		**21 32 22.2 0.0**		
SKIA	**Skiathos**	**3.62**	**317**	P	**Pn**		**21 31 41.2 +1.6**		
SUTC	**Sutluce-Ispart**	**3.63**	**74**	*e*PN	**Pn**		**21 31 41.7 +1.8**		
SUTC	**Sutluce-Ispart**	**3.63**	**74**	*e*Pn	**Pn**		**21 31 41.7 +1.8**		
TVSB	**Tavsanli**	**3.67**	**37**	*e*PN	**Pn**		**21 31 41.8 +1.4**		
TVSB	**Tavsanli**	**3.67**	**37**	*e*Pn	**Pn**		**21 31 41.8 +1.4**		
GUR	**Goura**	**3.68**	**293**	P	**Pn**		**21 31 41.1 +1.2**		
GUR	**Goura**	**3.68**	**293**	P	**Pn**		**21 31 42.0 +1.4**		
GUR				S	**Sn**		**21 32 25.8 +1.9**		
GUR	**Goura**	**3.68**	**293**	P	**Pn**		**21 31 41.8 +1.2**		
GUR	**Goura**	**3.68**	**293**	P	**Pn**		**21 31 42.0 +1.4**		
GUR				S	**Sn**		**21 32 25.8 +1.9**		
GUR				AML	AML		21 32 28.4		
	comp=N,9341µm,0.6s								
GUR				AML	AML		21 32 32.2		
	comp=E,7211µm,0.6s								
GADA	**Gvkgeada**	**3.69**	**351**	*e*PN	**Pn**		**21 31 41.4 +0.9**		
GADA	**Gvkgeada**	**3.69**	**351**	P	**Pn**		**21 31 41.1 +0.6**		
GADA				S	**Sn**		**21 32 23.4 -0.5**		
GADA	**Gvkgeada**	**3.69**	**351**	P	**Pn**		**21 31 41.1 +0.6**		
GADA	**Gvkgeada**	**3.69**	**351**	*e*Pn	**Pn**		**21 31 41.4 +0.9**		
GADA				S	**Sn**		**21 32 23.4 -0.5**		
GADA	**Gvkgeada**	**3.69**	**351**	P	**Pn**		**21 31 41.1 +0.6**		
GADA				S	**Sn**		**21 32 23.4 -0.5**		
DSF	**Desfina**	**3.75**	**301**	P	**Pn**		**21 31 42.9 +1.5**		
DSF	**Desfina**	**3.75**	**301**	P	**Pn**		**21 31 42.9 +1.5**		
DSF	**Desfina**	**3.75**	**301**	P	**Pn**		**21 31 42.9 +1.5**		
DSF	**Desfina**	**3.75**	**301**	P	**Pn**		**21 31 42.9 +1.5**		
ITM	**Ithomi**	**3.81**	**281**	P	**Pn**		**21 31 43.5 +1.3**		
ITM				S	**Sn**		**21 32 26.6 -0.2**		
ITM	**Ithomi**	**3.81**	**281**	P	**Pn**		**21 31 43.5 +1.3**		
ITM				S	**Sn**		**21 32 26.6 -0.2**		
ITM	**Ithomi**	**3.81**	**281**	P	**Pn**		**21 31 43.5 +1.3**		
ITM				S	**Sn**		**21 32 26.6 -0.2**		
ITM	**Ithomi**	**3.81**	**281**	P	**Pn**		**21 31 44.1 +1.9**		
ITM				S	**Sn**		**21 32 26.6 -0.2**		
ITM				AML	AML		21 32 29.7		
	comp=N,4818µm,0.2s								
ITM				AML	AML		21 32 32.1		
	comp=E,4956µm,0.4s								
LPK	**Lapseki**	**3.83**	**2**	*e*PN	**Pn**		**21 31 43.7 +1.3**		
LPK	**Lapseki**	**3.83**	**2**	*e*Pn	**Pn**		**21 31 43.7 +1.3**		
NEO	**Neokhori**	**3.85**	**317**	P	**Pn**		**21 31 44.2 +1.6**		
NEO	**Neokhori**	**3.85**	**317**	P	**Pn**		**21 31 44.3 +1.6**		
NEO	**Neokhori**	**3.85**	**317**	P	**Pn**		**21 31 44.2 +1.6**		
NEO	**Neokhori**	**3.85**	**317**	P	**Pn**		**21 31 44.3 +1.6**		
GELI	**Tayfur-Gelibol**	**3.85**	**358**	*e*PN	**Pn**		**21 31 44.0 +1.3**		
GELI	**Tayfur-Gelibol**	**3.85**	**358**	*e*Pn	**Pn**		**21 31 44.0 +1.3**		
KLV	**Kalavryta, Ach**	**3.86**	**294**	P	**Pn**		**21 31 43.9 +1.0**		
KLV	**Kalavryta, Ach**	**3.86**	**294**	P	**Pn**		**21 31 44.7 +1.8**		
KLV				S	**Sn**		**21 32 28.8 +0.7**		
KLV	**Kalavryta, Ach**	**3.86**	**294**	P	**Pn**		**21 31 43.9 +1.0**		
KLV	**Kalavryta, Ach**	**3.86**	**294**	P	**Pn**		**21 31 44.7 +1.8**		
KLV				S	**Sn**		**21 32 28.8 +0.7**		
KLV				AML	AML		21 32 30.9		
	comp=N,2088µm,1.0s								
KLV				AML	AML		21 32 34.6		
	comp=E,2183µm,0.7s								
KRBG	**Karabiga-Canak**	**3.88**	**8**	*e*PN	**Pn**		**21 31 43.3 +0.3**		
KRBG	**Karabiga-Canak**	**3.88**	**8**	*e*Pn	**Pn**		**21 31 43.3 +0.3**		
XOR	**Xorichti**	**3.91**	**317**	P	**Pn**		**21 31 44.8 +1.3**		
XOR	**Xorichti**	**3.91**	**317**	P	**Pn**		**21 31 44.8 +1.3**		
XOR	**Xorichti**	**3.91**	**317**	P	**Pn**		**21 31 44.8 +1.3**		
XOR	**Xorichti**	**3.91**	**317**	P	**Pn**		**21 31 44.7 +1.3**		
EDC	**Edincik**	**3.92**	**14**	*e*PN	**Pn**		**21 31 44.6 +1.0**		
EDC	**Edincik**	**3.92**	**14**	*e*Pn	**Pn**		**21 31 44.6 +1.0**		
PYL	**PYLOS**	**3.93**	**277**	P	**Pn**		**21 31 43.9 +0.2**		
PYL	**PYLOS**	**3.93**	**277**	P	**Pn**		**21 31 43.9 +0.2**		
PYL	**PYLOS**	**3.93**	**277**	P	**Pn**		**21 31 43.9 +0.2**		
PYL	**PYLOS**	**3.93**	**277**	P	**Pn**		**21 31 42.6 -1.1**		
PYL				S	**Sn**		**21 32 27.7 -1.8**		
PYL				AML	AML		21 32 35.4		
	comp=N,4285µm,0.6s								
PYL				AML	AML		21 32 37.1		
	comp=E,5183µm,0.4s								
KCTX	**Karacabey (Bur**	**3.96**	**20**	*e*PN	**Pn**		**21 31 44.4 +0.3**		
KCTX	**Karacabey (Bur**	**3.96**	**20**	*e*Pn	**Pn**		**21 31 44.4 +0.3**		
KALE	**Kalithea**	**4.01**	**299**	P	**Pn**		**21 31 46.4 +1.6**		
KALE	**Kalithea**	**4.01**	**299**	P	**Pn**		**21 31 46.4 +1.6**		
KALE	**Kalithea**	**4.01**	**299**	P	**Pn**		**21 31 46.4 +1.6**		
KALE	**Kalithea**	**4.01**	**299**	P	**Pn**		**21 31 46.7 +1.9**		
KALE				S	**Sn**		**21 32 31.6 0.0**		
SMTH	**Samothraki Isl**	**4.01**	**348**	P	**Pn**		**21 31 45.2 +0.4**		
SMTH				S	**Sn**		**21 32 31.2 -0.4**		
SMTH	**Samothraki Isl**	**4.01**	**348**	P	**Pn**		**21 31 45.2 +0.4**		
SMTH				S	**Sn**		**21 32 31.2 -0.4**		
SMTH	**Samothraki Isl**	**4.01**	**348**	P	**Pn**		**21 31 45.2 +0.4**		
SMTH				S	**Sn**		**21 32 31.2 -0.4**		
SMTH	**Samothraki Isl**	**4.01**	**348**	P	**Pn**		**21 31 44.1 -0.7**		
TRIZ	**Trizonia**	**4.05**	**298**	P	**Pn**		**21 31 47.6 +2.4**		
AMT	**Artemida-Makis**	**4.05**	**286**	P	**Pn**		**21 31 46.8 +1.5**		
AMT				S	**Sn**		**21 32 32.5 +0.1**		
AMT	**Artemida-Makis**	**4.05**	**286**	P	**Pn**		**21 31 46.8 +1.5**		
AMT				S	**Sn**		**21 32 32.5 +0.1**		
AMT	**Artemida-Makis**	**4.05**	**286**	P	**Pn**		**21 31 47.2 +1.9**		
AMT				S	**Sn**		**21 32 32.5 +0.1**		
AMT				AML	AML		21 32 36.5		
	comp=N,10808µm,0.5s								
AMT				AML	AML		21 32 44.7		
	comp=E,7129µm,0.6s								
LAKA	**Lakka**	**4.06**	**296**	P	**Pn**		**21 31 46.8 +1.3**		
LAKA	**Lakka**	**4.06**	**296**	P	**Pn**		**21 31 46.8 +1.3**		
LAKA	**Lakka**	**4.06**	**296**	P	**Pn**		**21 31 46.8 +1.3**		
FYTO	**Fytoko, Volos**	**4.08**	**316**	P	**Pn**		**21 31 47.5 +1.9**		
FYTO	**Fytoko, Volos**	**4.08**	**316**	P	**Pn**		**21 31 47.5 +1.9**		
FYTO	**Fytoko, Volos**	**4.08**	**316**	P	**Pn**		**21 31 47.5 +1.9**		
PAIG	**Paliouri**	**4.09**	**327**	P	**Pn**		**21 31 47.1 +1.2**		
PAIG	**Paliouri**	**4.09**	**327**	P	**Pn**		**21 31 47.1 +1.2**		
PAIG	**Paliouri**	**4.09**	**327**	P	**Pn**		**21 31 47.1 +1.2**		
PAIG	**Paliouri**	**4.09**	**327**	P	**Pn**		**21 31 47.1 +1.2**		
PAIG	**Paliouri**	**4.09**	**327**	P	**Pn**		**21 31 46.9 +1.0**		
ERIK	**Erikli-Kesan**	**4.12**	**359**	*e*PN	**Pn**		**21 31 47.1 +0.9**		
ERIK	**Erikli-Kesan**	**4.12**	**359**	*e*Pn	**Pn**		**21 31 47.1 +0.9**		
MRMT	**Marmara Adasi**	**4.13**	**10**	*e*PN	**Pn**		**21 31 47.4 +1.0**		
MRMT	**Marmara Adasi**	**4.13**	**10**	*e*Pn	**Pn**		**21 31 47.4 +1.0**		
DRO	**Drossia**	**4.16**	**291**	P	**Pn**		**21 31 48.9 +2.1**		
DRO	**Drossia**	**4.16**	**291**	P	**Pn**		**21 31 48.4 +1.6**		
DRO	**Drossia**	**4.16**	**291**	P	**Pn**		**21 31 48.4 +1.6**		
DRO				AML	AML		21 32 42.1		
	comp=E,9087µm,0.6s								
DRO				AML	AML		21 32 44.5		
	comp=N,8072µm,0.6s								
RKY	**Sarkoy-Tekirda**	**4.16**	**6**	*e*PN	**Pn**		**21 31 47.9 +1.1**		
RKY	**Sarkoy-Tekirda**	**4.16**	**6**	*e*Pn	**Pn**		**21 31 47.9 +1.1**		
EFP	**Efpalio**	**4.19**	**298**	P	**Pn**		**21 31 48.9 +1.8**		
EFP	**Efpalio**	**4.19**	**298**	P	**Pn**		**21 31 48.9 +1.8**		
EFP	**Efpalio**	**4.19**	**298**	P	**Pn**		**21 31 48.0 +0.8**		
AGG	**Agios Georgios**	**4.20**	**307**	*e*PN	**Pn**		**21 31 50.0 +2.6**		
AGG	**Agios Georgios**	**4.20**	**307**	P	**Pn**		**21 31 49.5 +2.1**		
AGG	**Agios Georgios**	**4.20**	**307**	*e*P	**Pn**		**21 31 49.4 +2.1**		
AGG	**Agios Georgios**	**4.20**	**307**	*e*Pn	**Pn**		**21 31 49.4 +2.1**		
AGG	**Agios Georgios**	**4.20**	**307**	*e*Pn	**Pn**		**21 31 49.4 +2.1**		
AGG	**Agios Georgios**	**4.20**	**307**	P	**Pn**		**21 31 50.1 +2.8**		
ENEZ	**Enez**	**4.20**	**355**	*e*PN	**Pn**		**21 31 48.2 +0.9**		
ENEZ	**Enez**	**4.20**	**355**	P	**Pn**		**21 31 48.2 +0.9**		
ENEZ				S	**Sn**		**21 32 36.5 +0.5**		
ENEZ	**Enez**	**4.20**	**355**	P	**Pn**		**21 31 48.2 +0.9**		
ENEZ				S	**Sn**		**21 32 36.5 +0.5**		
MDNY	**Mudanya-Bursa**	**4.22**	**24**	*e*PN	**Pn**		**21 31 48.0 +0.5**		
MDNY	**Mudanya-Bursa**	**4.22**	**24**	*e*Pn	**Pn**		**21 31 48.0 +0.5**		
UPR	**University Cam**	**4.22**	**296**	P	**Pn**		**21 31 52.1 +4.5**		
OUR	**Ouranopolis**	**4.32**	**332**	*e*PN	**Pn**		**21 31 49.7 +1.0**		
OUR	**Ouranopolis**	**4.32**	**332**	P	**Pn**		**21 31 50.2 +1.4**		
OUR	**Ouranopolis**	**4.32**	**332**	P	**Pn**		**21 31 50.2 +1.4**		
OUR	**Ouranopolis**	**4.32**	**332**	*e*Pn	**Pn**		**21 31 49.7 +1.0**		
OUR	**Ouranopolis**	**4.32**	**332**	P	**Pn**		**21 31 50.2 +1.4**		
OUR	**Ouranopolis**	**4.32**	**332**	P	**Pn**		**21 31 50.2 +1.4**		
OUR	**Ouranopolis**	**4.32**	**332**	P	**Pn**		**21 31 50.2 +1.4**		
ALN	**Alexandroupoli**	**4.37**	**354**	*e*PN	**Pn**		**21 31 51.1 +1.6**		
ALN	**Alexandroupoli**	**4.37**	**354**	P	**Pn**		**21 31 50.1 +0.6**		
ALN	**Alexandroupoli**	**4.37**	**354**	P	**Pn**		**21 31 50.1 +0.6**		
ALN	**Alexandroupoli**	**4.37**	**354**	P	**Pn**		**21 31 50.1 +0.6**		
ALN	**Alexandroupoli**	**4.37**	**354**	*e*Pn	**Pn**		**21 31 51.1 +1.6**		
ALN	**Alexandroupoli**	**4.37**	**354**	P	**Pn**		**21 31 50.1 +0.6**		
ALN	**Alexandroupoli**	**4.37**	**354**	P	**Pn**		**21 31 48.8 -0.7**		
RLS	**Riolos of Patr**	**4.38**	**292**	P	**Pn**		**21 31 51.7 +2.1**		
RLS	**Riolos of Patr**	**4.38**	**292**	P	**Pn**		**21 31 51.7 +2.1**		
RLS	**Riolos of Patr**	**4.38**	**292**	P	**Pn**		**21 31 52.1 +2.5**		
RLS	**Riolos of Patr**	**4.38**	**292**	S	**Sn**		**21 32 40.0 0.0**		
RLS				AML	AML		21 32 45.5		
	comp=N,3297µm,0.7s								
RLS				AML	AML		21 32 47.1		
	comp=E,3359µm,0.7s								
GEMT	**Gemlik**	**4.38**	**27**	*e*PN	**Pn**		**21 31 50.3 +0.7**		
GEMT	**Gemlik**	**4.38**	**27**	*e*Pn	**Pn**		**21 31 50.3 +0.7**		
ARMT	**Armutlu**	**4.39**	**23**	*e*PN	**Pn**		**21 31 50.4 +0.6**		
ARMT	**Armutlu**	**4.39**	**23**	*e*Pn	**Pn**		**21 31 50.4 +0.6**		
IZI	**Iznik**	**4.40**	**30**	*e*PN	**Pn**		**21 31 51.0 +1.0**		
IZI	**Iznik**	**4.40**	**30**	*e*Pn	**Pn**		**21 31 51.0 +1.0**		
CAVI	**Cavuskoy**	**4.45**	**34**	*e*PN	**Pn**		**21 31 51.6 +1.0**		
CAVI	**Cavuskoy**	**4.45**	**34**	*e*Pn	**Pn**		**21 31 51.6 +1.0**		
ESKT	**Eskisehir**	**4.47**	**47**	*e*PN	**Pn**		**21 31 52.8 +1.8**		
ESKT	**Eskisehir**	**4.47**	**47**	*e*Pn	**Pn**		**21 31 52.8 +1.8**		
AXS	**Araxos**	**4.49**	**293**	P	**Pn**		**21 31 53.5 +2.4**		
AXS	**Araxos**	**4.49**	**293**	P	**Pn**		**21 31 53.5 +2.4**		
AXS	**Araxos**	**4.49**	**293**	P	**Pn**		**21 31 54.0 +3.0**		
EVR	**Evrytania**	**4.49**	**303**	P	**Pn**		**21 31 52.8 +1.6**		
EVR	**Evrytania**	**4.49**	**303**	P	**Pn**		**21 31 52.8 +1.6**		
EVR				S	**Sn**		**21 32 43.8 +0.9**		
EVR	**Evrytania**	**4.49**	**303**	P	**Pn**		**21 31 52.8 +1.6**		
EVR	**Evrytania**	**4.49**	**303**	P	**Pn**		**21 31 54.1 +3.0**		
EVR				S	**Sn**		**21 32 43.8 +0.9**		
PVO	**Paravola**	**4.54**	**299**	P	**Pn**		**21 31 54.1 +2.3**		
PVO	**Paravola**	**4.54**	**299**	P	**Pn**		**21 31 54.1 +2.3**		
PVO	**Paravola**	**4.54**	**299**	P	**Pn**		**21 31 55.6 +3.9**		
VTN	**Vitineika**	**4.54**	**289**	P	**Pn**		**21 31 54.5 +2.7**		
VTN	**Vitineika**	**4.54**	**289**	P	**Pn**		**21 31 54.5 +2.7**		
VTN				S	**Sn**		**21 32 41.8 -2.3**		
PLG	**Polygyros**	**4.56**	**328**	P	**Pn**		**21 31 53.1 +1.0**		
PLG	**Polygyros**	**4.56**	**328**	P	**Pn**		**21 31 53.1 +1.0**		
PLG	**Polygyros**	**4.56**	**328**	P	**Pn**		**21 31 53.1 +1.0**		
PLG	**Polygyros**	**4.56**	**328**	P	**Pn**		**21 31 53.1 +1.0**		
PLG	**Polygyros**	**4.56**	**328**	P	**Pn**		**21 31 52.9 +0.7**		
ADVT	**Abdulvahap**	**4.59**	**31**	*e*PN	**Pn**		**21 31 53.9 +1.5**		
ADVT	**Abdulvahap**	**4.59**	**31**	*e*Pn	**Pn**		**21 31 53.9 +1.5**		
GAZI	**Gazipasa**	**4.61**	**92**	*i* P	**Pn**		**21 31 51.8 -0.9**		
GAZI	**Gazipasa**	**4.61**	**92**	P	**Pn**		**21 31 51.8 -0.9**		
THL	**Klokotos Trika**	**4.72**	**311**	P	**Pn**		**21 31 56.0 +1.9**		
THL	**Klokotos Trika**	**4.72**	**311**	P	**Pn**		**21 31 56.0 +1.9**		
KAVA	**Kavala**	**4.74**	**340**	P	**Pn**		**21 31 55.9 +1.5**		
KAVA	**Kavala**	**4.74**	**340**	P	**Pn**		**21 31 55.9 +1.5**		
KAVA	**Kavala**	**4.74**	**340**	P	**Pn**		**21 31 55.9 +1.5**		
KAVA	**Kavala**	**4.74**	**340**	P	**Pn**		**21 31 55.2 +0.8**		
PDO	**Prodromos**	**4.78**	**297**	P	**Pn**		**21 31 56.6 +1.7**		
PDO	**Prodromos**	**4.78**	**297**	P	**Pn**		**21 31 56.6 +1.7**		
PDO	**Prodromos**	**4.78**	**297**	P	**Pn**		**21 31 57.0 +2.1**		
KIZT	**Kizilcal**	**4.78**	**59**	*e*PN	**Pn**		**21 31 57.7 +2.6**		
KIZT	**Kizilcal**	**4.78**	**59**	*e*Pn	**Pn**		**21 31 57.7 +2.6**		
KONT	**Konya--Tatoy**	**4.79**	**71**	*e*PN	**Pn**		**21 31 56.6 +1.4**		
KONT	**Konya--Tatoy**	**4.79**	**71**	*e*Pn	**Pn**		**21 31 56.6 +1.4**		
ZKS	**Zakynthos**	**4.80**	**286**	P	**Pn**		**21 31 54.2 -1.0**		
ZKS	**Zakynthos**	**4.80**	**286**	P	**Pn**		**21 31 54.2 -1.0**		
ZKS	**Zakynthos**	**4.80**	**286**	P	**Pn**		**21 31 52.8 -2.4**		
LIT	**Litokhoron**	**4.81**	**319**	P	**Pn**		**21 31 57.0 +1.6**		
LIT	**Litokhoron**	**4.81**	**319**	P	**Pn**		**21 31 57.0 +1.6**		
LIT	**Litokhoron**	**4.81**	**319**	P	**Pn**		**21 31 57.0 +1.6**		
LIT	**Litokhoron**	**4.81**	**319**	P	**Pn**		**21 31 57.0 +1.6**		
LIT	**Litokhoron**	**4.81**	**319**	P	**Pn**		**21 31 57.1 +1.7**		
SVRH	**Sivrihisar-ESK**	**4.84**	**52**	*e*PN	**Pn**		**21 31 57.8 +1.9**		
SVRH	**Sivrihisar-ESK**	**4.84**	**52**	*e*Pn	**Pn**		**21 31 57.8 +1.9**		
LADK	**Ladik-KONYA**	**4.87**	**68**	*e*PN	**Pn**		**21 31 57.4 +1.1**		
LADK	**Ladik-KONYA**	**4.87**	**68**	*e*Pn	**Pn**		**21 31 57.4 +1.1**		
AKMC	**Akamas**	**4.88**	**106**	P	**Pn**		**21 31 55.3 -1.1**		
	baz=291								
AKMC	**Akamas**	**4.88**	**106**	P	**Pn**		**21 31 55.3 -1.1**		
HRT	**Hereke**	**4.90**	**28**	*e*PN	**Pn**		**21 31 57.3 +0.8**		
HRT	**Hereke**	**4.90**	**28**	*e*Pn	**Pn**		**21 31 57.3 +0.8**		
HORT	**Hortiatis**	**4.90**	**327**	P	**Pn**		**21 31 58.4 +1.8**		
HORT	**Hortiatis**	**4.90**	**327**	P	**Pn**		**21 31 58.4 +1.8**		
HORT	**Hortiatis**	**4.90**	**327**	P	**Pn**		**21 31 58.4 +1.8**		
HORT	**Hortiatis**	**4.90**	**327**	P	**Pn**		**21 31 58.5 +1.8**		
KFL	**Anninata**	**4.90**	**290**	P	**Pn**		**21 31 57.4 +0.8**		
KFL	**Anninata**	**4.90**	**290**	P	**Pn**		**21 31 57.4 +0.8**		
KFL	**Anninata**	**4.90**	**290**	P	**Pn**		**21 31 56.5 -0.1**		
ISK	**Istanbul-Kandi**	**4.90**	**22**	*e*PN	**Pn**		**21 31 57.3 +0.7**		
ISK	**Istanbul-Kandi**	**4.90**	**22**	P	**Pn**		**21 31 56.5 -0.1**		
ISK	**Istanbul-Kandi**	**4.90**	**22**	P	**Pn**		**21 31 56.5 -0.1**		
ISK	**Istanbul-Kandi**	**4.90**	**22**	P	**Pn**		**21 31 56.5 -0.1**		
ISK	**Istanbul-Kandi**	**4.90**	**22**	*e*Pn	**Pn**		**21 31 57.3 +0.7**		
ISK	**Istanbul-Kandi**	**4.90**	**22**	P	**Pn**		**21 31 56.5 -0.1**	

BLGI Bet Lehem HaGe 8.02 116 Pn **Pn** 21 32 36.3 -2.1
BLGI Bet Lehem HaGe 8.02 116 Pn **Pn** 21 32 36.3 -2.1
TIRR Tirgusor 8.03 9 ⇓*iP* **Pn** 21 32 37.7 -0.6
TIRR Tirgusor 8.03 9 *eP* **Pn** 21 32 38.0 -0.3
TIRR Tirgusor 8.03 9 ⇓*iP* **Pn** 21 32 37.7 -0.6
TIRR Tirgusor 8.03 9 *ePn* **Pn** 21 32 38.0 -0.3
TIRR Tirgusor 8.03 9 *ePn* **Pn** 21 32 38.0 -0.3
MMA0B Mount Meron ar 8.04 113 Pn **Pn** 21 32 36.6 -2.1
MMA0B Sn **Sn** 21 34 02.6 -5.5
MMA0B Mount Meron ar 8.04 113 Pn **Pn** 21 32 36.6 -2.1
MMAI Mount Meron Ar 8.04 113 P **Pn** 21 32 36.5 -2.2
comp=Z,160nm,0.3s,baz=298,slow=12,SNR=585
MMAI S **Sn** **21 34 04.0 -4.1**
comp=Z,118nm,0.3s,baz=324,slow=28,SNR=13
MMAI ScP **ScP** **21 42 20.7 +1.3**
comp=Z,0.5nm,0.3s,baz=341,slow=3.1,SNR=4.7
HUMR Humele 8.07 352 ⇓*iP* **Pn** 21 32 40.3 +1.3
HUMR Humele 8.07 352 ⇓*iP* **Pn** 21 32 40.3 +1.3
TLB Topalu 8.11 7 ⇑*iP* **Pn** 21 32 39.0 -0.4
TLB Topalu 8.11 7 ⇑*iP* **Pn** 21 32 39.0 -0.4
SULR 8.13 358 ⇑*iP* **Pn** 21 32 40.1 +0.4
SULR 8.13 358 ⇑*iP* **Pn** 21 32 40.1 +0.4
KSDI Kefar Szold 8.15 112 Pn **Pn** 21 32 38.5 -1.6
KSDI Kefar Szold 8.15 112 Pn **Pn** 21 32 38.5 -1.6
RCY Rachaya 8.15 109 *eP* **Pn** 21 32 38.7 -1.5
BEY Berane 8.17 323 ⇓*iPn* **Pn** 21 32 41.7 +1.3
IVA Berane 8.17 323 ⇓*iPn* **Pn** 21 32 41.7 +1.3
IVA *eSn* **Sn** 21 34 08.9 -2.3
SLTI Sal'it 8.18 119 Pn **Pn** 21 32 37.9 -2.6
SLTI Sn **Sn** 21 34 05.5 -5.9
SLTI Sal'it 8.18 119 Pn **Pn** 21 32 37.9 -2.6
PDG Podgorica 8.18 318 ⇑*iP* **Pn** 21 32 40.5 +0.1
PDG Podgorica 8.18 318 ⇑*iP* **Pn** 21 32 40.5 +0.1
TTG Podgorica 8.18 318 ⇑*iPn* **Pn** 21 32 40.3 -0.1
TTG *eSn* **Sn** 21 34 07.8 -3.5
HARR Harsova 8.20 7 ⇑*iP* **Pn** 21 32 39.8 -0.9
HARR Harsova 8.20 7 ⇑*iP* **Pn** 21 32 39.8 -0.9
TIP Timpagrande 8.23 292 *ePn* **Pn** 21 32 39.6 -1.5
TIP Timpagrande 8.23 292 *ePn* **Pn** 21 32 39.6 -1.5
BUM Brajici-Budva 8.29 316 ⇑*iPn* **Pn** 21 32 42.0 0.0
BUM *eSn* **Sn** 21 34 10.3 -3.8
BUM Brajici-Budva 8.29 316 ⇑*iPn* **Pn** 21 32 42.0 0.0
TAR1 Taranto 8.32 301 *iPn* **Pn** 21 32 41.1 -1.2
MMLI Mount Malkishu 8.34 117 Pn **Pn** 21 32 40.9 -1.8
MMLI Sn **Sn** 21 34 09.6 -5.8
MMLI Mount Malkishu 8.34 117 Pn **Pn** 21 32 40.9 -1.8
KSHT Keshet 8.36 112 Pn **Pn** 21 32 42.3 -0.6
KSHT Keshet 8.36 112 Pn **Pn** 21 32 42.3 -0.6
PGOR Pogoanele 8.36 2 ⇓*iP* **Pn** 21 32 43.6 +0.8
PGOR Pogoanele 8.36 2 ⇓*iP* **Pn** 21 32 43.6 +0.8
CEME Cevo 8.44 318 ⇓*iPn* **Pn** 21 32 44.2 +0.2
CEME *eSn* **Sn** 21 34 14.1 -3.6
CEME Cevo 8.44 318 ⇓*iPn* **Pn** 21 32 44.2 +0.2
HMDT Nahal Hemdat 8.51 118 Pn **Pn** 21 32 43.1 -1.9
HMDT Sn **Sn** 21 34 14.0 -5.5
HMDT Nahal Hemdat 8.51 118 Pn **Pn** 21 32 43.1 -1.9
ISR Istrita 8.57 360 ⇑*iP* **Pn** 21 32 44.2 -1.5
ISR Istrita 8.57 360 ⇑*iP* **Pn** 21 32 44.2 -1.5
NKME Niksic 8.57 319 ⇓*iPn* **Pn** 21 32 45.9 +0.2
NKME *eSn* **Sn** 21 34 17.5 -3.4
NKME Niksic 8.57 319 ⇓*iPn* **Pn** 21 32 45.9 +0.2
KZIT Kziot 8.58 129 Pn **Pn** 21 32 44.4 -1.4
KZIT Kziot 8.58 129 Pn **Pn** 21 32 44.4 -1.4
NKY Niksic 8.59 319 ⇑*iPn* **Pn** 21 32 45.9 0.0
NKY *eSn* **Sn** 21 34 18.0 -3.3
NKY Niksic 8.59 319 ⇑*iPn* **Pn** 21 32 45.9 0.0
IVAS Ivanjica 8.60 327 *iPn* **Pn** 21 32 47.0 +1.0
HCY Herceg Novi 8.61 316 ⇑*iPn* **Pn** 21 32 45.6 -0.6
HCY *eSn* **Sn** 21 34 16.9 -4.8
HCY Herceg Novi 8.61 316 ⇑*iPn* **Pn** 21 32 45.6 -0.6
GRUS Gruza 8.61 330 ⇑*iPn* **Pn** 21 32 47.3 +1.1
CEL Celeste 8.70 285 *ePn* **Pn** 21 32 45.1 -2.4
CFR Carcaliu 8.71 7 ⇓*iP* **Pn** 21 32 46.3 -1.1
CFR Carcaliu 8.71 7 P **Pn** 21 32 46.8 -0.6
CFR pmax pmax
comp=Z,21nm,0.9s
CFR Carcaliu 8.71 7 P **Pn** **21 32 46.8 -0.6**
comp=Z,21nm,0.9s
KUBS Kucevo 8.71 336 *i* Pn **Pn** 21 32 47.4 -0.2
YTIR Yattir 8.75 124 Pn **Pn** 21 32 47.2 -1.0
YTIR Yattir 8.75 124 Pn **Pn** 21 32 47.2 -1.0
PLE Pljevlja 8.76 323 ⇓*iPn* **Pn** 21 32 49.5 +1.2
PLE *eSn* **Sn** 21 34 22.8 -2.6
PLE Pljevlja 8.76 323 ⇓*iPn* **Pn** 21 32 49.5 +1.2
TLCR 8.79 10 ⇓*iP* **Pn** 21 32 48.4 -0.2
TLCR 8.79 10 ⇓*iP* **Pn** 21 32 48.4 -0.2
DSI Dead Sea 8.80 122 Pn **Pn** 21 32 47.3 -1.5
DSI Dead Sea 8.80 122 Pn **Pn** 21 32 47.3 -1.5
NBNS Bani Suef 8.83 152 P **Pn** **21 32 47.0 -2.2**
baz=153
NBNS AMP 21 34 00.0
comp=E,530µm,0.6s,logA/T=6.0,baz=153
NBNS Bani Suef 8.83 152 P **Pn** **21 32 47.0 -2.2**
GRER 8.84 2 ⇓*iP* Pn 21 32 59.2 +10
BAI Bari 8.86 304 *iPn* **Pn** 21 32 48.0 -1.5
TREB Trebinje 8.87 317 *ePn* **Pn** 21 32 48.9 -0.7
SG1 Sgolgore (BA) 8.87 302 *iPn* **Pn** 21 32 48.4 -1.3
BRY Bratogost 8.89 318 ⇓*iPn* **Pn** 21 32 49.8 -0.2
BRY *eSn* **Sn** 21 34 25.3 -3.3
BRY Bratogost 8.89 318 ⇓*iPn* **Pn** 21 32 49.8 -0.2
UPM Unac-Piva 8.91 321 ⇓*iPn* **Pn** 21 32 50.6 +0.3
UPM *eSn* **Sn** 21 34 26.0 -3.1
UPM Unac-Piva 8.91 321 ⇓*iPn* **Pn** 21 32 50.6 +0.3
MZBI Masada 8.94 123 Pn **Pn** 21 32 49.6 -1.0
MZBI Sn **Sn** 21 34 24.1 -5.6
MZBI Masada 8.94 123 Pn **Pn** 21 32 49.6 -1.0
MLR Muntele Rosu 8.96 357 P **Pn** **21 32 52.1 +1.2**
comp=E,0.1nm,0.3s,baz=152,slow=15,SNR=34
MLR Muntele Rosu 8.96 357 ⇑*iP* **Pn** **21 32 52.1 +1.2**
MLR Muntele Rosu 8.96 357 *eP* **Pn** 21 32 52.2 +1.3
VOIR 8.97 353 ⇑*iP* **Pn** 21 32 50.4 -0.6
VOIR 8.97 353 P **Pn** **21 32 52.1 +1.1**
VOIR pmax pmax
comp=Z,17nm,0.9s
VOIR 8.97 353 P **Pn** **21 32 52.1 +1.1**
comp=Z,17nm,0.9s
TRUS Trudelj 9.02 330 ⇑*iPn* **Pn** 21 32 52.6 +1.0
RMNI Mount Ramon 9.02 129 Pn **Pn** 21 32 50.3 -1.5
RMNI Mount Ramon 9.02 129 Pn **Pn** 21 32 50.3 -1.5
HNKL Nakhl 9.03 135 P **Pn** **21 32 49.7 -2.2**
baz=134
HNKL AMP 21 34 00.0
comp=E,880µm,0.6s,logA/T=6.2,baz=134
HNKL Nakhl 9.03 135 P **Pn** **21 32 49.7 -2.2**
MDVR Moldovita 9.03 337 ⇑*iP* **Pn** 21 32 53.0 +1.1
MDVR Moldovita 9.03 337 ⇑*iP* **Pn** 21 32 53.0 +1.1
DIVS Divibare 9.08 328 ⇑*iPn* **Pn** 21 32 53.1 +0.5
LOT Lotru 9.15 347 ⇑*iP* **Pn** 21 32 53.7 +0.2
LOT Lotru 9.15 347 ⇑*iP* **Pn** 21 32 53.7 +0.2
BBLS Lazići 9.16 325 ⇑*iPn* **Pn** 21 32 54.0 +0.4
CUC Castrocucco 9.16 295 *ePn* **Pn** 21 32 52.0 -1.7
CUC Castrocucco 9.16 295 *ePn* **Pn** 21 32 52.0 -1.7
CDT Castel del Mon 9.26 302 *iPn* **Pn** 21 32 53.4 -1.4
PLOR Plostina 9.30 0 ⇑*iP* **Pn** 21 32 55.9 +0.5
PLOR Plostina 9.30 0 ⇑*iP* **Pn** 21 32 55.9 +0.5
GZR Gura Zlata 9.31 343 ⇓*iP* **Pn** 21 32 55.4 -0.1
GZR Gura Zlata 9.31 343 ⇓*iP* **Pn** 21 32 55.4 -0.1
ZFRI Zfri 9.31 127 Pn **Pn** 21 32 53.5 -2.1
ZFRI Zfri 9.31 127 Pn **Pn** 21 32 53.5 -2.1
VRI Vrincioaia 9.32 0 ⇓*iP* **Pn** 21 32 55.3 -0.3
VRI Vrincioaia 9.32 0 ⇓*iP* **Pn** 21 32 55.3 -0.3
KRMI Paran Flat 9.33 131 Pn **Pn** 21 32 53.8 -2.1
KRMI Paran Flat 9.33 131 Pn **Pn** 21 32 53.8 -2.1
PRNI Paran 9.34 129 Pn **Pn** 21 32 54.1 -1.9
PRNI Sn **Sn** 21 34 32.4 -7.0
PRNI Paran 9.34 129 Pn **Pn** 21 32 54.1 -1.9
DOPR Dopca 9.46 355 ⇑*iP* **Pn** 21 32 58.3 +0.7
DOPR Dopca 9.46 355 ⇑*iP* **Pn** 21 32 58.3 +0.7
HFRF Wahat Farafira 9.47 171 P **Pn** **21 32 56.5 -1.3**
baz=173
HFRF AMP 21 34 00.0
comp=N,860µm,0.5s,logA/T=6.3,baz=173
HFRF Wahat Farafira 9.47 171 P **Pn** **21 32 56.6 -1.3**
ASF Jabal al Asfar 9.55 114 P **Pn** **21 32 58.1 -0.8**
comp=N,13nm,0.3s,baz=262,slow=4.5,SNR=77
ASF S **Sn** **21 34 40.0 -4.7**
comp=N,3.7nm,0.3s,baz=240,slow=20,SNR=2.2
HRFI Mount Harif 9.58 130 Pn **Pn** 21 32 57.2 -2.0
HRFI Sn **Sn** 21 34 37.8 -7.4
HRFI Mount Harif 9.58 130 Pn **Pn** 21 32 57.2 -2.0
TEKS Tekeris 9.64 328 *ePn* **Pn** 21 33 00.5 +0.5

MBRI Mt Berech 9.67 132 Pn **Pn** 21 32 58.7 -1.9
MBRI Mt Berech 9.67 132 Pn **Pn** 21 32 58.7 -1.9
EIL Elat 9.79 132 P **Pn** 21 32 60.0 -2.0
comp=N,27nm,0.3s,baz=324,slow=7.7,SNR=120
EIL S **Sn** **21 34 42.6 -7.7**
comp=N,98nm,0.3s,baz=319,slow=16,SNR=14
EIL Elat 9.79 132 Pn **Pn** 21 33 00.1 -1.9
EIL Sn **Sn** 21 34 43.5 -6.7
EIL Elat 9.79 132 Pn **Pn** 21 33 00.1 -1.9
WDD Wied Dalam 9.80 269 *ePn* **Pn** 21 32 59.2 -2.9
WDD *eSn* Sn 21 34 36.4 -14
VAE Valguarnera 9.81 279 P **Pn** **21 33 02.3 +0.1**
comp=N,4.5nm,0.3s,baz=171,slow=2.3,SNR=45
VAE S **Sn** **21 34 42.5 -8.2**
comp=N,41nm,0.3s,baz=79,slow=16,SNR=9.6
BZS Buzias 9.82 339 ⇑*iP* **Pn** 21 33 02.5 +0.2
BZS Buzias 9.82 339 ⇑*iP* **Pn** 21 33 02.5 +0.2
TESR Tescani 9.96 0 ⇓*iP* **Pn** 21 33 02.7 -1.5
TESR Tescani 9.96 0 ⇓*iP* **Pn** 21 33 02.7 -1.5
LEOM Leova 10.00 7 ⇑*iP* **Pn** 21 33 05.4 +0.8
LEOM Leova 10.00 7 ⇑*iP* **Pn** 21 33 05.4 +0.8
FGSL Fruska Gora 10.03 331 ⇑*iPn* **Pn** 21 33 05.4 +0.3
HQLS 10.12 133 S **Sn** 21 34 50.9 -7.5
HQLS P **Pn** 21 33 05.2 -1.3
SIM Simferopol' 10.14 32 *eP* **Pn** 21 33 07.4 +0.8
SIM S **Sn** 21 35 02.0 +3.4
SIM pmax pmax
comp=Z,19nm,0.9s
SIM MLR MLR
comp=Z,200nm,22.0s
SIM Simferopol' 10.14 32 *eP* **Pn** **21 33 07.4 +0.8**
comp=Z,19nm,0.9s
SIM S **Sn** **21 35 02.0 +3.4**
comp=Z,200nm,22.0s
HAQS Haql 10.22 135 P **Pn** 21 33 06.9 -1.0
SIRR Siria 10.40 341 ⇑*iP* **Pn** 21 33 08.7 -1.4
SIRR Siria 10.40 341 ⇑*iP* **Pn** 21 33 08.7 -1.4
DOB Doboj 10.43 324 ⇑*iPn* **Pn** 21 33 09.3 -1.1
KIS Kishinev 10.58 8 *eP* **Pn** 21 33 12.0 -0.3
KIS Kishinev 10.58 8 *eP* **Pn** 21 33 12.0 -0.3
KIS *e* 21 35 15.0
KIS Kishinev 10.58 8 *eP* **Pn** 21 33 12.0 -0.3
KIS *eS* **Sn** 21 35 15.0 +6.0
DRGR 10.65 345 ⇓*iP* **Pn** 21 33 13.9 +0.5
DRGR 10.65 345 ⇓*iP* **Pn** 21 33 13.9 +0.5
RSHS 10.73 138 P **Pn** 21 33 13.6 -1.0
CLTB Caltabellotta 10.76 280 *ePn* **Pn** 21 33 14.6 -0.3
CLTB Caltabellotta 10.76 280 *ePn* **Pn** 21 33 14.6 -0.3
JLOS 10.79 134 P **Pn** 21 33 14.1 -1.4
BDAS Al Bad' 10.80 136 P **Pn** 21 33 14.0 -1.5
BLY Banja Luka 10.88 322 ⇑*iPn* **Pn** 21 33 15.4 -1.0
BURAR Bucovina Array 11.11 355 ⇓*iP* **Pn** 21 33 18.3 -1.3
BURAR Bucovina Array 11.11 355 P **Pn** 21 33 18.3 -1.3
BURAR Bucovina Array 11.11 355 ⇓*iP* **Pn** 21 33 18.3 -1.3
BUR08 Bucovina Ar. S 11.14 355 *ePn* **Pn** 21 33 21.4 +1.4
BUR08 Bucovina Ar. S 11.14 355 *ePn* **Pn** 21 33 21.4 +1.4
UDBI Udbina 11.47 317 *ePn* **Pn** 21 33 23.7 -0.6
UDBI Sn **Sn** 21 35 26.0 -4.8
UDBI Udbina 11.47 317 *ePn* **Pn** 21 33 23.7 -0.6
ANN Anapa 11.63 42 *eP* **Pn** 21 33 24.9 -1.4
ANN *eS* **Sn** 21 35 29.2 -5.3
ANN pmax pmax
comp=Z,40nm,1.4s
ANN Anapa 11.63 42 *eP* **Pn** **21 33 24.9 -1.4**
comp=Z,40nm,1.4s
ANN *eS* **Sn** 21 35 29.2 -5.3
SORM Soroca 11.66 6 ⇑*iP* **Pn** 21 33 23.9 -2.7
AQU L'Aquila 11.74 304 *eP* **Pn** 21 33 28.5 +0.6
AQU L'Aquila 11.74 304 *ePn* **Pn** 21 33 28.5 +0.6
AQU L'Aquila 11.74 304 *ePn* **Pn** 21 33 28.4 +0.6
TBKS Tabuk 11.79 132 P **Pn** 21 33 28.3 -0.3
TRPA Tarpa 11.96 347 ⇓*iP* **Pn** 21 33 30.8 +0.2
TRPA *ePn* **P** 21 33 38.2 +0.6
NVLJ Novalja 11.99 316 *ePn* **Pn** 21 33 30.1 -0.8
NVLJ Sn **Sn** 21 35 36.4 -6.8
NVLJ Novalja 11.99 316 *ePn* **Pn** 21 33 30.1 -0.8
ZAG Zagreb 12.24 323 *ePn* **Pn** 21 33 33.8 -0.4
SOC Sochi 12.25 51 *eP* **Pn** 21 33 35.3 +1.0
SOC *e* 21 35 52.4
SOC pmax pmax
comp=Z,9.0nm,0.6s
SOC Sochi 12.25 51 *eP* **Pn** **21 33 35.3 +1.0**
comp=Z,9.0nm,0.6s
SOC *eS* **Sn** 21 35 52.4 +3.0
BEHE Becsehely 12.35 326 *ePn* **Pn** 21 33 34.5 -1.1
BEHE Becsehely 12.35 326 ⇑*ePn* **Pn** 21 33 35.1 -0.5
BOJS Bojanci 12.39 320 *iPn* **Pn** 21 33 34.7 -1.4
BOJS *iSn* **Sn** 21 35 48.5 -4.3
BOJS Bojanci 12.39 320 *iPn* **Pn** 21 33 34.7 -1.4
PSZ Piszkesteto 12.40 339 ⇑*iP* **Pn** 21 33 35.8 -0.6
PSZ Piszkesteto 12.40 339 *eP* **Pn** 21 33 37.0 +0.6
PSZ Piszkesteto 12.40 339 *ePn* **Pn** 21 33 37.0 +0.6
PSZ Piszkesteto 12.40 339 *ePn* **Pn** 21 33 37.0 +0.6
PSZ Piszkesteto 12.40 339 ⇑*ePn* **Pn** 21 33 36.3 -0.1
PSZ *ePn* **P** 21 33 43.9 +1.3
CSKK Cs^‡kako 12.46 333 ⇓*eP* **Pn** 21 33 37.5 +0.4
CSKK Cs^‡kako 12.46 333 ⇓*ePn* **Pn** 21 33 37.5 +0.4
CSKK *ePn* **P** 21 33 43.2 +0.4
UZH Uzhgorod 12.49 347 *eP* **Pn** 21 33 38.2 +0.8
UZH Uzhgorod 12.49 347 *eP* **Pn** 21 33 38.2 +0.8
CRES Cresnjev 12.51 321 ⇑*iPn* **Pn** 21 33 36.1 -1.6
KECS Kecovo 12.76 341 *eP* **Pn** 21 33 40.8 -0.1
KECS Kecovo 12.76 341 *ePn* **Pn** 21 33 40.8 -0.1
KECS Kecovo 12.76 341 *ePN* **Pn** 21 33 40.8 -0.1
KECS *e* 21 33 48.2
KOLS Kolonicke sedl 12.79 347 *eP* **Pn** 21 33 42.1 +0.8
KOLS Kolonicke sedl 12.79 347 *ePn* **Pn** 21 33 42.1 +0.8
KOLS Kolonicke sedl 12.79 347 *ePN* **Pn** 21 33 42.1 +0.8
KOLS *e* 21 33 49.1
VISS Visnje 12.80 320 *iPn* **Pn** 21 33 40.3 -1.3
VISS Visnje 12.80 320 *iPn* **Pn** 21 33 40.3 -1.3
CRVS Cervenica-Dubn 12.92 345 *eP* **Pn** 21 33 44.2 +1.2
CRVS Cervenica-Dubn 12.92 345 *ePn* **Pn** 21 33 44.2 +1.2
CRVS Cervenica-Dubn 12.92 345 *ePN* **Pn** 21 33 44.2 +1.2
CRVS *e* 21 33 50.0
CEY Cerknica 12.98 319 ⇑*iPn* **Pn** 21 33 42.3 -1.5
BIDS Bi'r al Bayda' 13.05 135 P **Pn** 21 33 45.7 +0.8
LJU Ljubljana 13.13 320 *ePn* **Pn** 21 33 45.0 -0.7
LJU *e* 21 33 51.4
VYHS Vyhne 13.24 337 *eP* **Pn** 21 33 47.2 +0.1
VYHS Vyhne 13.24 337 *ePn* **Pn** 21 33 47.2 +0.1
VYHS Vyhne 13.24 337 *ePN* **Pn** 21 33 47.2 +0.1
VYHS *e* 21 33 52.8
PERS Pernice 13.24 323 *iPn* **Pn** 21 33 48.5 +1.3
PERS Pernice 13.24 323 *iPn* **Pn** 21 33 48.5 +1.3
JAVS Javornik 13.27 319 *iPn* **Pn** 21 33 48.1 +0.5
JAVS *iSn* **Sn** 21 36 07.6 -6.7
JAVS Javornik 13.27 319 *iPn* **Pn** 21 33 48.2 +0.5
SOKA Soboth 13.31 323 *ePn* **Pn** **21 33 48.2 0.0**
comp=Z,90nm,0.6s,SNR=47
SOKA Soboth 13.31 323 Pn **Pn** **21 33 48.2 0.0**
comp=Z,90nm,0.6s,SNR=47
TRI Trieste 13.32 317 *eP* **Pn** 21 33 46.8 -1.3
TRI Trieste 13.32 317 *ePn* **Pn** 21 33 46.8 -1.3
TRI Trieste 13.32 317 *ePn* **Pn** 21 33 46.8 -1.3
KWP Kalwaria Pacla 13.39 349 *ePn* **P** 21 33 55.9 +2.4
KWP Kalwaria Pacla 13.39 349 *eP* **P** 21 33 55.8 +2.4
KWP Kalwaria Pacla 13.39 349 *eP* **P** 21 33 55.8 +2.4
LVV L'vov 13.40 353 *eP* **P** 21 33 55.3 +1.7
LVV *eS* **Sn** 21 36 20.9 +3.7
LVV MLR MLR
comp=N,60nm,10.0s
LVV MLR MLR
comp=E,100nm,10.0s
LVV L'vov 13.40 353 *eP* **P** **21 33 55.3 +1.7**
LVV *eS* **Sn** **21 36 20.9 +3.7**
OBKA Obir 13.43 322 *iPn* **Pn** 21 33 51.6 +1.9
comp=E,73nm,0.7s,SNR=34
OBKA Obir 13.43 322 Pn **Pn** **21 33 51.6 +1.9**
comp=E,73nm,0.7s,SNR=34
STHS Stebnicka Huta 13.45 345 *eP* **P** 21 33 56.9 +2.7
STHS Stebnicka Huta 13.45 345 *eP* **P** 21 33 56.9 +2.7
STHS Stebnicka Huta 13.45 345 *e* **P** 21 33 56.9 +2.7
ARSA Arzberg 13.50 326 *iPn* **Pn** 21 33 51.7 +1.2
comp=E,48nm,0.7s,SNR=36
ARSA Arzberg 13.50 326 Pn **Pn** **21 33 51.7 +1.2**
comp=E,48nm,0.7s,SNR=36
LANS Liptovska Anna 13.64 340 *eP* **P** 21 33 57.9 +1.6
LANS Liptovska Anna 13.64 340 *eP* **P** 21 33 57.9 +1.6
LANS Liptovska Anna 13.64 340 *e* **P** 21 33 57.9 +1.6
NIE Niedzica 13.67 342 *eP* **P** 21 33 58.6 +2.0

NIE *eS* **S** **21 36 37.0 +1.2**
NIE Niedzica 13.67 342 *eP* **P** 21 33 58.6 +2.0
NIE Niedzica 13.67 342 *eP* **P** 21 33 58.6 +2.0
CONA Conrad Observa 13.87 328 *ePn* **Pn** **21 33 56.1 +0.8**
comp=E,51nm,1.6s,SNR=23
CONA Conrad Observa 13.87 328 Pn **Pn** **21 33 56.1 +0.8**
comp=E,51nm,1.6s,SNR=23
VSL Villasalto 13.91 287 *ePn* **Pn** 21 33 56.3 +0.6
VSL Villasalto 13.91 287 *ePn* **Pn** 21 33 56.3 +0.6
MYKA Terra Mystica 13.98 320 *iPn* **Pn** **21 33 57.4 +0.8**
comp=E,109nm,0.8s,SNR=86
MYKA Terra Mystica 13.98 320 Pn **Pn** **21 33 57.4 +0.8**
comp=E,109nm,0.8s,SNR=86
KEST Kesra 13.98 272 P **Pn** **21 33 57.8 +1.0**
comp=E,1.3nm,0.3s,baz=114,slow=0.9,SNR=39
KEST S **Sn** **21 36 23.9 -7.6**
comp=E,3.8nm,0.3s,baz=24,slow=22,SNR=11
KEST LR LR 21 40 05.3
comp=E,83nm,19.5s,baz=282,slow=40
NEY Neytrino 14.05 57 *eP* **P** 21 33 59.8 -1.3
NEY Neytrino 14.05 57 *eP* **P** 21 33 59.8 -1.3
KIEV Kiev 14.27 7 *eP* **Pn** 21 34 00.5 +0.3
KIEV Kiev 14.27 7 *ePn* **Pn** 21 34 00.5 +0.3
KIEV Kiev 14.27 7 *ePn* **Pn** 21 34 00.5 +0.3
KIEV *eSn* **S** 21 36 45.1 -3.0
AKASG Malin Array Be 14.28 7 P **P** **21 34 03.5 +0.2**
comp=E,7.0nm,0.3s,baz=196,slow=11,SNR=24
AKASG S **S** **21 36 43.8 -4.6**
baz=189,slow=22,SNR=9.2
AKASG ScP **ScP** **21 42 26.7 -0.8**
comp=E,1.5nm,0.3s,baz=194,slow=1.2,SNR=9.5
AKBB Malin Array Si 14.28 7 *eP* **P** 21 34 03.6 +0.3
AKBB Malin Array Si 14.28 7 *eP* **P** 21 34 03.6 +0.3
AKBB Malin Array Si 14.28 7 *eP* **P** 21 34 03.6 +0.3
ONI Oni 14.31 60 P **P** 21 34 02.9 -1.1
ONI Oni 14.31 60 *eP* **P** 21 34 02.8 -1.1
ONI Oni 14.31 60 *eP* **P** 21 34 02.8 -1.1
KIV Kislovodsk 14.32 54 *eP* **Pn** **21 34 02.3 +1.3**
KIV pmax pmax
comp=Z,50nm,0.6s
KIV Kislovodsk 14.32 54 *eP* **Pn** **21 34 02.3 +1.3**
comp=Z,50nm,0.6s
KIV Kislovodsk 14.32 54 *ePn* **Pn** **21 34 02.5 +1.5**
KVAR Kislovodsk Arr 14.33 54 P **P** **21 34 03.3 -0.7**
baz=322,slow=1.2,SNR=82
KBZ Khabaz 14.36 55 P **P** **21 34 04.3 +0.1**
comp=Z,2.1nm,0.3s,baz=244,slow=8.5,SNR=80
KBZ ScP **ScP** **21 42 28.4 +0.7**
comp=Z,0.1nm,0.3s,baz=252,slow=3.2,SNR=5.3
KBA Koelnbreinsper 14.43 321 *i* Pn **Pn** **21 34 02.7 +0.3**
comp=Z,215nm,0.7s,SNR=223
KBA Koelnbreinsper 14.43 321 Pn **Pn** **21 34 02.7 +0.3**
comp=Z,215nm,0.7s,SNR=223
VLC Villacollemand 14.51 307 *ePn* **Pn** 21 34 02.9 -0.4
VLC Villacollemand 14.51 307 *ePn* **Pn** 21 34 02.9 -0.4
MOA Molln 14.52 325 *iPn* **Pn** **21 34 04.7 +1.3**
comp=E,58nm,1.0s,SNR=36
MOA Molln 14.52 325 P **Pn** **21 34 04.7 +1.3**
comp=E,58nm,1.0s,SNR=36
OJC Ojcow 14.53 342 *eP* **P** 21 34 07.7 +1.5
OJC *eS* **Sn** 21 36 46.0 +1.6
OJC Ojcow 14.53 342 *eP* **P** 21 34 07.7 +1.5
OJC *eS* **Sn** 21 36 46.0 +1.6
OJC Ojcow 14.53 342 *eP* **P** 21 34 05.9 -0.3
OJC *eS* **Sn** 21 36 46.0 +1.6
OJC Ojcow 14.53 342 *eP* **P** 21 34 05.9 -0.3
OKC Ostrava-Krasne 14.64 336 ⇑*eP* **Pn** 21 34 06.1 +1.3
OKC Ostrava-Krasne 14.64 338 *eP* **Pn** 21 34 06.1 +1.3
OKC Ostrava-Krasne 14.64 338 P **Pn** 21 34 06.1 +1.3
ABTA Abfaltersbach 14.64 318 *iPn* **Pn** **21 34 05.7 +0.7**
comp=Z,233nm,0.7s,SNR=184
ABTA Abfaltersbach 14.64 318 P **Pn** **21 34 05.7 +0.7**
comp=Z,233nm,0.7s,SNR=184
GNI Garni 14.67 70 P **Pn** **21 34 06.8 +1.3**
comp=Z,0.5nm,0.3s,baz=332,slow=3.5,SNR=7.1
VRAC Vranov 14.70 333 P **P** **21 34 07.4 -0.7**
comp=Z,13nm,0.3s,baz=141,slow=11,SNR=155
VRAC Vranov 14.70 333 *ePn* **Pn** 21 34 05.1 -0.5
NCK Nalchik 14.73 57 *eP* **P** **21 34 08.3 -0.2**
NCK pmax pmax
comp=E,46nm,1.0s
NCK Nalchik 14.73 57 *eP* **P** **21 34 08.3 -0.2**
comp=E,46nm,1.0s
MORC Moravsky Berou 14.78 336 ⇑*iP* **Pn** 21 34 06.8 +0.2
MORC Moravsky Berou 14.78 336 *eP* **Pn** 21 34 07.8 +1.2
MORC Moravsky Berou 14.78 336 *ePn* **Pn** 21 34 07.7 +1.2
MORC Moravsky Berou 14.78 336 *ePn* **Pn** 21 34 07.8 +1.2
TBLG Delisi 14.98 64 P **P** 21 34 13.5 +2.2
TBLG Delisi 14.98 64 *eP* **P** 21 34 13.4 +2.2
TBLG Delisi 14.98 64 *eP* **P** 21 34 13.4 +2.2
GUDG Gudauri 14.99 61 P **P** 21 34 12.5 +0.9
GOF Gofitskoye 15.05 51 ⇑*eP* **P** **21 34 11.4 -0.5**
GOF pmax pmax
comp=Z,92nm,0.8s
GOF Gofitskoye 15.05 51 *eP* **P** **21 34 11.4 -0.5**
comp=Z,92nm,0.8s
TREC Trest 15.11 331 ⇑*eP* **Pn** 21 34 11.6 +0.9
TREC Trest 15.11 331 *eP* **Pn** 21 34 11.6 +0.9
TREC Trest 15.11 331 P **Pn** 21 34 11.6 +0.9
KRLC Kraliky 15.28 335 ⇑*eP* **P** 21 34 16.5 +2.0
KRLC Kraliky 15.28 335 *eP* **P** 21 34 16.5 +2.0
KRLC Kraliky 15.28 335 P **P** 21 34 16.5 +2.0
DGRG David-gareji 15.38 66 P **P** 21 34 18.9 +3.2
DGRG David-gareji 15.38 66 *eP* **P** 21 34 18.9 +3.2
DGRG David-gareji 15.38 66 *eP* **P** 21 34 18.9 +3.2
ABSA Djebel Ababsia 15.42 275 P **P** 21 34 16.3 +0.1
ABSA Djebel Ababsia 15.42 275 P **P** 21 34 16.3 +0.1
CMAH Djebel Manchou 15.43 276 P **P** 21 34 16.1 -0.1
CMAH Djebel Manchou 15.43 276 P **P** 21 34 16.1 -0.1
WTTA Wattenberg 15.44 319 *iP* **P** **21 34 18.0 +1.6**
comp=Z,142nm,0.8s,SNR=48
WTTA Wattenberg 15.44 319 P **P** **21 34 18.0 +1.6**
comp=Z,142nm,0.8s,SNR=48
GEA0 GERESS Array S 15.50 326 *ePn* **Pn** 21 34 16.0 +0.4
GEA0 GERESS Array S 15.50 326 *ePn* **Pn** 21 34 16.0 +0.4
GEC2 GERESS Array S 15.51 326 *eP* **P** **21 34 17.0 -0.1**
GEC2 pmax pmax
comp=Z,86nm,0.8s
GEC2 GERESS Array S 15.51 326 *ePn* **P** **21 34 17.0 -0.1**
comp=Z,86nm,0.8s
GEC2 GERESS Array S 15.51 326 *eP* **P** **21 34 16.9 -0.1**
comp=Z,86nm,0.8s
GERES GERESS Array B 15.51 326 P **Pn** **21 34 16.6 +0.9**
comp=Z,3.5nm,0.3s,baz=139,slow=12,SNR=311
GERES ScP **ScP** **21 42 29.2 -0.7**
comp=Z,0.3nm,0.3s,baz=152,slow=1.5,SNR=9.7
WATA Walderalm 15.51 319 *iP* **P** **21 34 18.0 +0.8**
comp=Z,176nm,0.8s,SNR=180
WATA Walderalm 15.51 319 P **P** **21 34 18.0 +0.8**
comp=Z,176nm,0.8s,SNR=180
DPC Dobruska-Polom 15.67 335 *eP* **P** **21 34 18.6 -0.2**
DPC AMS AMS 21 37 30.0
comp=Z,200nm,12.4s
DPC Dobruska-Polom 15.67 335 *eP* **P** **21 34 18.6 -0.2**
DPC MLR MLR
comp=Z,200nm,12.4s
DPC Dobruska-Polom 15.67 335 P **P** **21 34 18.6 -0.2**
MOTA Moosalm 15.77 318 *iP* **P** **21 34 20.8 +0.7**
comp=Z,64nm,0.6s,SNR=94
MOTA Moosalm 15.77 318 P **P** **21 34

UPC Upice 15.91 335⇑ *e*P **P 21 34 22.0 +0.6**
UPC Upice 15.91 335 *e*P **P 21 34 22.0 +0.6**
UPC Upice 15.91 335 P **P 21 34 22.0 +0.6**
CKFL Kef-Lekhel 16.01 275 P **P 21 34 23.5 +0.7**
CKFL Kef-Lekhel 16.01 275 P **P 21 34 23.5 +0.7**
PRU Pruhonice 16.03 331⇑ *i*P **Pn 21 34 22.6 +0.5**
PRU Pruhonice 16.03 331⇑ *i*P **Pn 21 34 22.6 +0.5**
PRU Pruhonice 16.03 331 P **Pn 21 34 22.6 +0.5**
RETA Reutte 16.04 318 *i* P **P 21 34 23.0 0.0**
comp=Z,38nm,0.6s,SNR=40
RETA Reutte 16.04 318 P **P 21 34 23.0 0.0**
comp=Z,38nm,0.6s,SNR=40
KSP Ksiaz 16.10 336 *e*P **P 21 34 24.4 +0.8**
KSP Ksiaz 16.10 336 *e*P **P 21 34 24.3 +0.8**
KSP Ksiaz 16.10 336 *e*P **P 21 34 24.3 +0.8**
DAVOX Davos/Dischmat 16.12 315 P **P 21 34 25.4 +1.4**
comp=Z,5.0nm,0.3s,baz=126,slow=11,SNR=87
CASM Ain Smara 16.21 275 P **P 21 34 25.6 +0.7**
CASM Ain Smara 16.21 275 P **P 21 34 25.6 +0.7**
CTEI Djebel Teioual 16.30 274 P **P 21 34 27.0 +1.0**
CTEI Djebel Teioual 16.30 274 P **P 21 34 27.0 +1.0**
REVF Revere 16.36 302⇑ *e*P **Pn 21 34 26.1 -0.1**
REVF Revere 16.36 302⇑ *e*P **Pn 21 34 26.1 -0.1**
DAVA Damuels 16.41 316 *i* P **P 21 34 27.9 +0.8**
comp=Z,92nm,0.5s,SNR=62
DAVA Damuels 16.41 316 P **P 21 34 27.9 +0.8**
comp=Z,92nm,0.5s,SNR=62
LUCF Luceram 16.43 302 *e*P **Pn 21 34 27.0 -0.1**
LUCF Luceram 16.43 302 *e*P **Pn 21 34 27.0 -0.1**
PVCC Panska Ves 16.45 332⇑ *e*P **P 21 34 28.2 +0.8**
PVCC Panska Ves 16.45 332 *e*P **P 21 34 28.2 +0.8**
PVCC Panska Ves 16.45 332 P **P 21 34 28.2 +0.8**
MVIF Mont Vial 16.56 302⇑ *e*P **P 21 34 29.2 +0.4**
MVIF Mont Vial 16.56 302⇑ *e*P **P 21 34 29.2 +0.4**
DFRA Djebel Bou Aff 16.67 276 P **Pn 21 34 32.0 +1.9**
DFRA Djebel Bou Aff 16.67 276 P **Pn 21 34 32.0 +1.9**
BRG Berggiesshubel 16.97 332 *e*P **Pn 21 34 33.5 +0.1**
comp=Z,53nm,1.4s
BRG Berggiesshubel 16.97 332 *e*P **Pn 21 34 33.5 +0.1**
BRG pmax pmax
comp=Z,53nm,1.4s
BRG Berggiesshubel 16.97 332 *e*P **Pn 21 34 33.5 +0.1**
comp=Z,53nm,1.4s
CKHR Kef el Ahmar 17.03 275 P **Pn 21 34 36.5 +2.1**
OG22 Abries 17.03 305 *e*P **P 21 34 32.6 -1.4**
OG22 Abries 17.03 305 *e*P **P 21 34 32.6 -1.4**
NKC Novy Kostel 17.08 328⇑ *e*P **P 21 34 34.7 +0.3**
NKC Novy Kostel 17.08 328 *e*P **P 21 34 34.7 +0.3**
NKC Novy Kostel 17.08 328 P **P 21 34 34.7 +0.3**
SET Setif 17.09 275 P **Pn 21 34 38.0 +2.8**
VSR Storozhevoye 17.20 28 *e*P **Pn 21 34 36.7 +0.5**
VSR pmax pmax
comp=Z,20nm,1.0s
VSR Storozhevoye 17.20 28 *e*P **Pn 21 34 36.7 +0.5**
comp=Z,20nm,1.0s
GRFO Grafenberg 17.25 324 *e*P **P 21 34 36.7 +0.6**
GRFO pmax pmax
comp=Z,74nm,1.0s
GRFO Grafenberg 17.25 324 *e*P **P 21 34 36.7 +0.6**
comp=Z,74nm,1.0s
GRFO Grafenberg 17.25 324 *e*P **P 21 34 36.7 +0.6**
comp=Z,74nm,1.0s
SENIN Lac Senin/Sane 17.45 310 *e*P **Pn 21 34 39.4 -0.1**
comp=Z,152nm,0.6s
SENIN Lac Senin/Sane 17.45 310 *e*P **Pn 21 34 39.4 -0.1**
comp=Z,152nm,0.6s
SPAK Spaichingen-Ko 17.48 317 *e*P **P 21 34 39.5 +0.7**
RSL Roselend 17.58 307 *e*P **P 21 34 40.7 +0.7**
RSL Roselend 17.58 307 *e*P **P 21 34 40.7 +0.7**
SUW Suwalki 17.63 353 *e*P **P 21 34 41.0 +0.7**
SUW *e*S **S 21 37 54.8 -1.4**
SUW Suwalki 17.63 353 *e*P **P 21 34 41.0 +0.7**
SUW *e*S **S 21 37 54.8 -1.4**
SUW Suwalki 17.63 353 *e*P **P 21 34 41.0 +0.7**
SUW *e*S **S 21 37 54.8 -1.4**
STU Stuttgart 17.66 319 *e*P **P 21 34 41.3 +0.6**
STU pmax pmax
comp=Z,88nm,1.0s
STU Stuttgart 17.66 319 *e*P **P 21 34 41.3 +0.6**
comp=Z,88nm,1.0s
STU Stuttgart 17.66 319 *e*P **P 21 34 41.3 +0.6**
comp=Z,88nm,1.0s
CLL Collm 17.68 331⇑ *i*P **P 21 34 41.1 +0.3**
comp=Z,44nm,0.7s
CLL ⇓*i* 21 34 43.5
comp=Z,63nm,0.9s
CLL *i* 21 34 53.4
CLL *e* 21 38 32.0
CLL *e*ScP **ScP 21 42 34.0 0.0**
CLL *e*ScS **ScS 21 46 14.0 -0.1**
CLL Collm 17.68 331⇑ *i*P **P 21 34 41.1 +0.3**
CLL pmax pmax
comp=Z,44nm,0.7s
CLL Collm 17.68 331 *i* P **P 21 34 41.1 +0.3**
comp=Z,44nm,0.7s
CLL Collm 17.68 331 *e*P **P 21 34 41.0 +0.3**
comp=Z,45nm,0.8s
GDM Grand'Maison 17.72 306 *e*P **P 21 34 41.8 +0.3**
GDM Grand'Maison 17.72 306 *e*P **P 21 34 41.8 +0.3**
FELD Feldberg im Sc 17.79 315⇑ *e*P **P 21 34 42.2 -0.1**
BFO Black Forest 17.86 317 *e*P **P 21 34 43.3 +0.4**
BFO pmax pmax
comp=Z,152nm,0.9s
BFO Black Forest 17.86 317 *e*P **P 21 34 43.3 +0.4**
comp=Z,152nm,0.9s
BFO Black Forest 17.86 317 *e*P **P 21 34 43.3 +0.4**
comp=Z,152nm,0.9s
GKP Gorka Klasztor 17.97 342 *e*P **Pn 21 34 45.2 -0.2**
GKP Gorka Klasztor 17.97 342 *e*P **Pn 21 34 45.2 -0.2**
GKP Gorka Klasztor 17.97 342 *e*P **Pn 21 34 45.2 -0.2**
GRN Grenoble 17.98 305 *e*P **P 21 34 44.7 +0.4**
GRN Grenoble 17.98 305 *e*P **P 21 34 44.7 +0.4**
VRH Novokhopyorsk 18.20 32 *e*P **Pn 21 34 48.0 -0.2**
VRH pmax pmax
comp=Z,50nm,0.8s
VRH Novokhopyorsk 18.20 32 *e*P **Pn 21 34 48.0 -0.2**
comp=Z,50nm,0.8s
LOMF Lomont 18.20 313⇑ *e*P **P 21 34 47.2 +0.4**
LOMF Lomont 18.20 313⇑ *e*P **P 21 34 47.2 +0.4**
MOF Molkenrain 18.28 314⇑ *e*P **P 21 34 47.7 +0.1**
MOF Molkenrain 18.28 314⇑ *e*P **P 21 34 47.7 +0.1**
NACGM Naroch 18.37 0 *e*P **Pn 21 34 50.0 0.0**
NACGM *e*S **S 21 38 08.0 -2.7**
NACGM Naroch 18.37 0 *e*P **Pn 21 34 50.0 0.0**
TOD Tromm 18.37 321⇑ *e*P **P 21 34 48.9 +0.4**
ECH Echery 18.45 315⇑ *e*P **P 21 34 50.0 +0.6**
ECH Echery 18.45 315⇑ *e*P **P 21 34 50.0 +0.6**
LANF Langenberg 18.52 318⇑ *e*P **P 21 34 51.0 +0.9**
LANF Langenberg 18.52 318 P **Pn 21 34 51.4 -0.6**
LANF Langenberg 18.52 318⇑ *e*P **P 21 34 51.0 +0.9**
KTD Kalmit 18.57 319⇑ *e*P **P 21 34 51.6 +0.9**
KLNR Kaliningrad 18.60 348 *e*P **P 21 34 50.8 0.0**
KLNR pmax pmax
comp=Z,566nm,0.9s
KLNR Kaliningrad 18.60 348 *e*P **P 21 34 50.8 0.0**
comp=Z,566nm,0.9s
SSB Saint Sauveur 18.78 305 *e*P **P 21 34 53.0 -0.1**
SSB Saint Sauveur 18.78 305 *e*P **P 21 34 52.8 -0.2**
SSB pmax pmax
comp=Z,18nm,0.5s
SSB Saint Sauveur 18.78 305 *e*P **P 21 34 53.0 -0.1**
SSB Saint Sauveur 18.78 305 *e*P **P 21 34 52.8 -0.2**
comp=Z,18nm,0.5s
EMHD Djebel Mahouad 19.05 276 P **P 21 34 56.7 +0.6**
EMHD Djebel Mahouad 19.05 276 P **P 21 34 56.7 +0.6**
THEF They Montfort 19.13 314⇑ *e*P **P 21 34 57.5 +0.7**
THEF They Montfort 19.13 314⇑ *e*P **P 21 34 57.5 +0.7**
ABH Alteburg 19.19 320⇑ *e*P **P 21 34 57.9 +0.5**
SJAF Saint Jean de 19.22 295⇑ *e*P **P 21 34 57.3 -0.5**
SJAF Saint Jean de 19.22 295⇑ *e*P **P 21 34 57.3 -0.5**
RUP Ruppelstein 19.34 319⇑ *e*P **P 21 34 59.8 +0.8**
FILF Fillols 19.47 295⇑ *e*P **P 21 35 01.2 +0.7**
FILF Fillols 19.47 295⇑ *e*P **P 21 35 01.2 +0.7**
LRDF Laroque-de-Fa 19.55 296⇑ *e*P **P 21 35 01.1 -0.3**
LRDF Laroque-de-Fa 19.55 296⇑ *e*P **P 21 35 01.1 -0.3**
PLDF La Plantade 19.63 306 *e*P **P 21 35 02.0 -0.2**
PLDF La Plantade 19.63 306 *e*P **P 21 35 02.0 -0.2**
LBL Lubilhac 19.63 303 *e*P **P 21 35 03.3 +1.0**
LBL Lubilhac 19.63 303 *e*P **P 21 35 03.3 +1.0**
OBN Obninsk 19.79 17 P **P 21 35 03.6 -0.2**
comp=Z,7.2nm,0.3s,baz=207,slow=9.0,SNR=12
OBN Obninsk 19.79 17 *e*P **P 21 35 03.1 -0.6**
OBN pmax pmax
comp=Z,35nm,0.8s
OBN Obninsk 19.79 17 *e*P **P 21 35 03.5 -0.2**
comp=Z,31nm,0.7s
OBN Obninsk 19.79 17 *e*P **P 21 35 03.5 -0.3**
comp=Z,31nm,0.7s
WLF Walferdange 19.80 318 P **P 21 35 04.6 +0.7**
comp=Z,54nm,1.1s
WLF Walferdange 19.80 318 *e*P **P 21 35 04.6 +0.7**
WLF pmax pmax
comp=Z,79nm,0.7s
WLF Walferdange 19.80 318 *e*P **P 21 35 04.6 +0.7**
comp=Z,79nm,0.7s
WLF Walferdange 19.80 318 *e*P **P 21 35 04.6 +0.7**
comp=Z,79nm,0.7s
CARF Carcanieres 19.82 296⇑ *e*P **P 21 35 03.8 -0.6**
CARF Carcanieres 19.82 296⇑ *e*P **P 21 35 03.8 -0.6**
VALF Valcebollere 19.84 295⇑ *e*P **P 21 35 05.0 +0.4**
VALF Valcebollere 19.84 295⇑ *e*P **P 21 35 05.0 +0.4**
PYM Petit Puy Mans 19.96 305 *e*P **P 21 35 06.1 +0.3**
PYM Petit Puy Mans 19.96 305 *e*P **P 21 35 06.1 +0.3**
AGO Saint Agoulin 19.98 306 *e*P **P 21 35 06.1 +0.2**
AGO Saint Agoulin 19.98 306 *e*P **P 21 35 06.1 +0.2**
FRNF Fournols 20.14 303 *e*P **P 21 35 09.2 +1.5**
FRNF Fournols 20.14 303 *e*P **P 21 35 09.2 +1.5**
BSD Bornholm Skovb 20.23 340 *i* P **P 21 35 06.6 -1.9**
BSD Bornholm Skovb 20.23 340 *e*P **P 21 35 06.6 -1.9**
BSD Bornholm Skovb 20.23 340 *e*P **P 21 35 06.6 -1.9**
ECHA Ech Chlef 20.33 276 P **P 21 35 10.0 +0.3**
ECHA Ech Chlef 20.33 276 P **P 21 35 10.0 +0.3**
MEM Membach 20.41 320 P **P 21 35 11.6 +1.1**
comp=Z,104nm,1.0s
MEM Membach 20.41 320 P **P 21 35 11.6 +1.1**
comp=Z,104nm,1.0s
SALF Salau 20.50 295⇑ *e*P **P 21 35 12.0 +0.4**
SALF Salau 20.50 295⇑ *e*P **P 21 35 12.0 +0.4**
ETRT Tiaret 20.51 274 P **P 21 35 12.0 +0.2**
ETRT Tiaret 20.51 274 P **P 21 35 12.0 +0.2**
HGN Heimansgroeve 20.54 320 *e*P **P 21 35 12.2 +0.3**
comp=Z,79nm,1.2s
HGN *e*pP **pP 21 35 39.1 +2.1**
EANR 'Ain N'Sour 20.57 276 P **P 21 35 13.0 +0.5**
EANR 'Ain N'Sour 20.57 276 P **P 21 35 13.0 +0.5**
MOS Moscow 20.61 18 *e*P **P 21 35 14.0 +1.5**
MOS *e* 21 35 39.5
MOS *e*S **S 21 38 51.8 -3.3**
MOS *e* 21 39 11.5
MOS pmax pmax
comp=Z,28nm,0.8s
MOS smax smax
comp=N,200nm,1.3s
MOS smax smax
comp=E,100nm,0.9s
MOS Moscow 20.61 18 *e*P **P 21 35 14.0 +1.5**
comp=E,28nm,0.8s
MOS *e*S **S 21 38 51.8 -3.3**
comp=E,200nm,1.3s
MOS Moscow 20.61 18 *e*PcP **PcP 21 39 11.5 -5.6**
BCLA Clavier 20.68 319 P **P 21 35 14.1 +0.7**
comp=Z,67nm,1.3s
BCLA Clavier 20.68 319 P **P 21 35 14.0 +0.7**
comp=Z,67nm,1.3s
BEBN Eben Emael 20.69 320 P **P 21 35 14.0 +0.5**
BEBN Eben Emael 20.69 320 P **P 21 35 14.0 +0.5**
MELF Melles 20.83 296⇑ *e*P **P 21 35 15.7 +0.6**
MELF Melles 20.83 296⇑ *e*P **P 21 35 15.7 +0.6**
WTSB Winterswijk 20.85 324 *e*P **P 21 35 15.6 +0.4**
comp=Z,10nm,0.5s
WTSB *e*pP **pP 21 35 40.5 +0.1**
WTSB Winterswijk 20.85 324 *e*P **P 21 35 15.6 +0.4**
comp=Z,10nm,0.5s
DOU Dourbes 20.88 317 P **P 21 35 15.4 -0.1**
DOU Dourbes 20.88 317 P **P 21 35 15.4 -0.1**
RESF Ens 21.12 295⇑ *e*P **P 21 35 18.4 0.0**
RESF Ens 21.12 295⇑ *e*P **P 21 35 18.4 0.0**
LLD Lille Linde 21.22 337 *i* P **P 21 35 20.1 +1.1**
LLD Lille Linde 21.22 337 *i* P **P 21 35 20.1 +1.1**
LLD Lille Linde 21.22 337 *i* P **P 21 35 20.1 +1.1**
SNF Seneffe 21.27 318 P **P 21 35 19.9 +0.2**
SNF Seneffe 21.27 318 P **P 21 35 19.9 +0.2**
LABF Labassere 21.35 296⇑ *e*P **P 21 35 20.1 -0.6**
LABF Labassere 21.35 296⇑ *e*P **P 21 35 20.1 -0.6**
VIEF Viey 21.36 295⇑ *e*P **P 21 35 20.6 -0.3**
VIEF Viey 21.36 295⇑ *e*P **P 21 35 20.6 -0.3**
COP Copenhagen 21.45 338 *i* P **P 21 35 19.8 -1.7**
COP Copenhagen 21.45 338 *i* P **P 21 35 19.8 -1.7**
COP Copenhagen 21.45 338 *i* P **P 21 35 19.8 -1.7**
ODJA Bouhanifia 21.69 275 P **P 21 35 26.0 +1.7**
ODJA Bouhanifia 21.69 275 P **P 21 35 26.0 +1.7**
ATE Arette 21.92 296⇑ *e*P **P 21 35 26.0 -0.7**
ATE Arette 21.92 296⇑ *e*P **P 21 35 26.0 -0.7**
VSU Vasula 21.93 0*c i*P **P 21 35 26.1 -0.5**
VSU pmax pmax
comp=Z,111nm,0.8s
VSU Vasula 21.93 0 *i* P **P 21 35 26.1 -0.5**
comp=Z,111nm,0.8s
LARF Larrau 22.12 296⇑ *e*P **P 21 35 29.6 +0.8**
LARF Larrau 22.12 296⇑ *e*P **P 21 35 29.6 +0.8**
OSSF Osses 22.35 296⇑ *e*P **P 21 35 29.6 -1.4**
OSSF Osses 22.35 296⇑ *e*P **P 21 35 29.6 -1.4**
TAM Tamanrasset 22.82 239 *e*P **P 21 35 37.9 +2.1**
TAM pmax pmax
comp=Z,8.0nm,1.0s
TAM Tamanrasset 22.82 239 *e*P **P 21 35 37.9 +2.1**
comp=Z,8.0nm,1.0s
TAM Tamanrasset 22.82 239 *e*P **P 21 35 37.9 +2.1**
comp=Z,7.7nm,1.0s
MUD Monsted U'grnd 23.13 335 *i* P **P 21 35 37.8 -0.3**
MUD Monsted U'grnd 23.13 335 *i* P **P 21 35 37.8 -0.3**
MUD Monsted U'grnd 23.13 335 *i* P **P 21 35 37.8 -0.3**
ES19 SONSECA Array 24.16 287 *e*P **P 21 35 48.5 +0.8**
ES19 SONSECA Array 24.16 287 *e*P **P 21 35 48.5 +0.8**
ESDC Sonseca Array 24.21 287 P **P 21 35 49.0 +0.8**
comp=Z,11nm,0.6s,baz=82,slow=9.3,SNR=177
ESDC ScP **ScP 21 42 51.0 +0.7**
comp=Z,2.6nm,0.9s,baz=59,slow=2.4,SNR=11
ESLA Sonseca Array 24.21 287 *e*P **P 21 35 49.2 +1.0**
comp=Z,38nm,1.3s
ESLA Sonseca Array 24.21 287 *e*P **P 21 35 49.2 +1.0**
comp=Z,38nm,1.3s
JSA Saint Aubin 24.43 310 *e*P **P 21 35 48.9 -1.1**
JSA AMB AMB 21 35 52.6
comp=Z,46nm,1.4s
JSA Saint Aubin 24.43 310 *e*P **P 21 35 48.9 -1.1**
PAB San Pablo 24.51 286 *e*P **P 21 35 51.8 +0.8**
PAB pmax pmax
comp=Z,27nm,0.8s
PAB San Pablo 24.51 286 *e*P **P 21 35 51.8 +0.8**
comp=Z,26nm,0.8s
PAB San Pablo 24.51 286 *e*P **P 21 35 51.8 +0.8**
comp=Z,26nm,0.8s
SKP1 Kophill 24.66 317⇑ *e*P **P 21 35 50.8 -1.3**
SKP1 Kophill 24.66 317⇑ *e*P **P 21 35 50.8 -1.3**
WOL Wolverton 24.70 315⇑ *e*P **P 21 35 51.7 -0.8**
WOL AMB AMB 21 35 55.2
comp=Z,46nm,1.2s
WOL Wolverton 24.70 315⇑ *e*P **P 21 35 51.7 -0.8**
FINES FINESS Array B 24.93 359 P **P 21 35 53.7 -0.7**
comp=Z,23nm,0.7s,baz=170,slow=12,SNR=59
FINES S **S 21 40 04.2 -2.9**
comp=Z,3.5nm,0.8s,baz=157,slow=18,SNR=4.0
FINES ScP **ScP 21 42 50.7 -1.1**
comp=Z,5.0nm,0.7s,baz=151,slow=3.2,SNR=12
FIA1 FINESS Array S 24.93 359 *e*P **P 21 35 53.8 -0.6**
FIA1 FINESS Array S 24.93 359 *e*P **P 21 35 53.9 -0.6**
GEYT Alibeck 25.06 77 P **P 21 35 57.1 +1.1**
comp=Z,12nm,0.6s,baz=266,slow=9.3,SNR=36
SWN1 Swindon 25.12 316 *e*P **P 21 35 55.5 -0.8**
SWN1 AMB AMB 21 35 58.6
comp=Z,107nm,1.4s
SWN1 Swindon 25.12 316 *e*P **P 21 35 55.5 -0.8**
SSW Stow on the Wo 25.34 316 *e*P **P 21 35 57.6 -0.7**
SSW Stow on the Wo 25.34 316 *e*P **P 21 35 57.6 -0.7**
CWF Charnwood Fore 25.40 318⇑ *e*P **P 21 35 57.2 -1.6**
CWF Charnwood Fore 25.40 318 *e*P **P 21 35 57.8 -1.0**
comp=Z,46nm,1.4s
CWF Charnwood Fore 25.40 318 *e*P **P 21 35 57.8 -1.0**
comp=Z,46nm,1.4s
KLMR Klimovskoe 25.68 15 *e*P **P 21 35 59.2 -2.0**
KLMR *e*S **S 21 40 15.3 -3.8**
KLMR pmax pmax
comp=Z,6.0nm,0.7s
KLMR Klimovskoe 25.68 15 *e*P **P 21 35 59.2 -2.0**
comp=Z,6.0nm,0.7s
MONM Monmouth 25.82 316⇑ *e*P **P 21 36 01.4 -1.2**
MONM AMB AMB 21 36 09.2
comp=Z,32nm,1.1s
MONM Monmouth 25.82 316⇑ *e*P **P 21 36 01.4 -1.2**
MDT Midelt 25.89 271 P **P 21 36 05.0 +1.4**
comp=Z,11nm,0.8s,baz=89,slow=12,SNR=10
MDT LR LR 21 47 10.7
comp=Z,57nm,19.8s,baz=128,slow=38
MDT Midelt 25.89 271 P **P 21 36 05.0 +1.4**
TGT Taghat 25.91 274 *i* P **P 21 36 05.0 +1.3**
DYA Yadsworthy 25.93 312⇑ *e*P **P 21 36 03.0 -0.7**
DYA Yadsworthy 25.93 312 *e*P **P 21 36 04.6 +0.9**
comp=Z,18nm,0.9s
DYA Yadsworthy 25.93 312 *e*P **P 21 36 04.6 +0.9**
comp=Z,18nm,0.9s
MCH1 Michaelchurch 26.00 316⇑ *e*P **P 21 36 02.3 -1.9**
MCH1 AMB AMB 21 36 07.9
comp=Z,29nm,2.2s
MCH1 Michaelchurch 26.00 316⇑ *e*P **P 21 36 02.3 -1.9**
STNC Stoke 26.05 319 *e*P **P 21 36 04.2 -0.5**
STNC Stoke 26.05 319 *e*P **P 21 36 04.2 -0.5**
NC602 NORSAR Array S 26.05 343 *e*P **P 21 36 03.6 -1.0**
NC602 NORSAR Array S 26.05 343 *e*P **P 21 36 03.6 -1.0**
HLM1 Long Mynd 26.16 317⇑ *e*P **P 21 36 04.0 -1.6**
HLM1 Long Mynd 26.16 317⇑ *e*P **P 21 36 04.0 -1.6**
MIF Mishlifen 26.22 273 *e*P **P 21 36 08.0 +1.3**
PBRG Braganca 26.28 292 *e*P **P 21 36 07.5 +0.5**
comp=Z,40nm,1.4s
PBRG Braganca 26.28 292 *e*P **P 21 36 07.5 +0.5**
comp=Z,40nm,1.4s
NAO01 NORSAR Array S 26.30 343 *e*P **P 21 36 06.1 -0.8**
NAO01 NORSAR Array S 26.30 343 *e*P **P 21 36 06.1 -0.8**
NC405 NORSAR Array S 26.34 344 *e*P **P 21 36 06.3 -0.9**
NC405 NORSAR Array S 26.34 344 *e*P **P 21 36 06.3 -0.9**
NB201 NORSAR Array S 26.39 343 *e*P **P 21 36 07.1 -0.6**
NB201 NORSAR Array S 26.39 343 *e*P **P 21 36 07.0 -0.6**
NB2 NORSAR Subarra 26.39 343 P **P 21 36 06.2 -1.5**
comp=Z,5.5nm,0.6s,baz=151,slow=9.3
NB2 NORSAR Subarra 26.39 343 P **P 21 36 06.2 -1.5**
comp=Z,5.5nm,0.6s,SNR=5.3
NOA NORSAR Array B 26.39 343 P **P 21 36 06.3 -1.5**
comp=Z,5.6nm,0.5s,baz=157,slow=10,SNR=31
NOA ScP **ScP 21 42 54.6 -1.5**
comp=Z,2.6nm,0.8s,baz=134,slow=3.3,SNR=4.9
AKTK Aktyubinsk 26.45 48 P **P 21 36 07.8 -0.5**
comp=Z,3.0nm,0.4s
AKTO Aktyubinsk 26.45 48 P **P 21 36 07.8 -0.5**
comp=Z,3.2nm,0.4s,baz=313,slow=3.1,SNR=9.0
HTL Hartland 26.46 313 *e*P **P 21 36 07.9 -0.5**
HTL Hartland 26.46 313 *e*P **P 21 36 07.9 -0.5**
NBO02 NORSAR Array S 26.49 343 *e*P **P 21 36 07.6 -0.9**
NBO02 NORSAR Array S 26.49 343 *e*P **P 21 36 07.6 -0.9**
NBO00 NORSAR Array S 26.49 343 *e*P **P 21 36 07.9 -0.7**
NBO00 NORSAR Array S 26.49 343 *e*P **P 21 36 07.9 -0.7**
FOEL Foel Wylfa 26.50 318⇑ *e*P **P 21 36 08.1 -0.6**
FOEL AMB AMB 21 36 09.1
comp=Z,30nm,2.4s
FOEL Foel Wylfa 26.50 318⇑ *e*P **P 21 36 08.1 -0.6**
MVO Moncorvo 26.50 290 *e*P **P 21 36 09.7 +0.7**
comp=Z,50nm,1.0s
MVO Moncorvo 26.50 290 *e*P **P 21 36 09.7 +0.7**
comp=Z,50nm,1.0s
NC303 NORSAR Array S 26.52 343 *e*P **P 21 36 07.9 -0.9**
NC303 NORSAR Array S 26.52 343 *e*P **P 21 36 08.0 -0.9**
LPW Lampeter 26.65 315 *e*P **P 21 36 09.8 -0.2**
LPW AMB AMB 21 36 14.7
comp=Z,13nm,2.0s
LPW Lampeter 26.65 315 *e*P **P 21 36 09.8 -0.2**
NC204 NORSAR Array S 26.71 343 *e*P **P 21 36 10.3 -0.3**
NC204 NORSAR Array S 26.71 343 *e*P **P 21 36 10.3 -0.3**
PBAR Barrancos 26.72 284 *e*P **P 21 36 11.5 +0.6**
comp=Z,52nm,1.9s
PBAR Barrancos 26.72 284 *e*P **P 21 36 11.5 +0.6**
comp=Z,52nm,1.9s
PMRV Marv??o 26.87 287 *e*P **P 21 36 12.6 +0.4**
comp=Z,25nm,1.8s
PMRV Marv??o 26.87 287 *e*P **P 21 36 12.6 +0.4**
comp=Z,25nm,1.8s
PCBR Castelo Branco 26.90 287 *e*P **P 21 36 13.5 +1.0**
comp=Z,30nm,1.1s
PCBR Castelo Branco 26.90 287 *e*P **P 21 36 13.5 +1.0**
comp=Z,30nm,1.1s
PVRL Vila Real 27.02 291 *e*P **P 21 36 14.5 +0.9**
comp=Z,20nm,1.7s
PVRL Vila Real 27.02 291 *e*P **P 21 36 14.5 +0.9**
comp=Z,20nm,1.7s
WPM1 Penmaenmawr 27.04 318⇑ *e*P **P 21 36 12.7 -0.8**
WPM1 Penmaenmawr 27.04 318⇑ *e*P **P 21 36 12.7 -0.8**
POLO Lamas de Olo 27.08 291 *e*P **P 21 36 14.9 +0.8**
comp=Z,12nm,1.3s
POLO Lamas de Olo 27.08 291 *e*P **P 21 36 14.9 +0.8**
comp=Z,12nm,1.3s
PVIS Viseu 27.17 289 *e*P **P 21 36 15.5 +0.6**
comp=Z,19nm,1.3s
PVIS Viseu 27.17 289 *e*P **P 21 36 15.5 +0.6**
comp=Z,19nm,1.3s
ABKAR Akbulak array 27.29 52 *e*P **P 21 36 16.4 +0.6**
ABKAR Akbulak array 27.29 52 *e*P **P 21 36 16.4 +0.6**
WLF1 Llynfaes 27.32 318 *e*P **P 21 36 14.5 -1.5**
WLF1 Llynfaes 27.32 318 *e*P **P 21 36 14.5 -1.5**
PVAQ Vaqueiros 27.36 282 *e*P **P 21 36 17.1 +0.5**
comp=Z,3nm,1.1s
PVAQ Vaqueiros 27.36 282 *e*P **P 21 36 17.1 +0.5**
comp=Z,43nm,1.1s
PBEJ Beja 27.39 284 *e*P **P 21 36 17.6 +0.8**
comp=Z,38nm,1.5s
PBEJ Beja 27.39 284 *e*P **P 21 36 17.6 +0.8**
comp=Z,38nm,1.5s
ECK Cauldkaine Hil 27.54 322⇑ *e*P **P 21 36 16.7 -1.3**
ECK Cauldkaine Hil 27.54 322⇑ *e*P **P 21 36 16.7 -1.3**
PBDV Barranco-do-Ve 27.55 282 *e*P **P 21 36 19.3 +1.0**
comp=Z,72nm,1.7s
PBDV Barranco-do-Ve 27.55 282 *e*P **P 21 36 19.3 +1.0**
comp=Z,72nm,1.7s
PCVE Castro Verde 27.58 283 *e*P **P 21 36 19.2 +0.7**
comp=Z,38nm,1.7s
PCVE Castro Verde 27.58 283 *e*P **P 21 36 19.2 +0.7**
comp=Z,38nm,1.7s
COI Coimbra 27.59 288 *e*P **P 21 36 20.0 +1.4**
comp=Z,32nm,1.0s
TZC Tazercounte 27.60 271 *e*P **P 21 36 20.0 +1.0**
EKA Eskdalemuir Ar 27.63 322 P **P 21 36 17.8 -1.0**
comp=Z,2.4nm,0.3s,baz=118,slow=9.4,SNR=18
PTOM Tomar 27.64 287 *e*P **P 21 36 19.9 +0.9**
comp=Z,27nm,1.3s
PTOM Tomar 27.64 287 *e*P **P 21 36 19.9 +0.9**
comp=Z,27nm,1.3s
ESK Eskdalemuir 27.65 322⇑ *e*P **P 21 36 18.3 -0.7**
ESK Eskdalemuir 27.65 322 *e*P **P 21 36 19.7 +0.8**
ESK pmax pmax
comp=Z,87nm,1.9s
ESK Eskdalemuir 27.65 322 *e*P **P 21 36 19.7 +0.8**
comp=Z,87nm,1.9s
ESK Eskdalemuir 27.65 322 *e*P **P 21 36 19.7 +0.8**
comp=Z,87nm,1.9s
PCAS Casmilo, Conde 27.67 288 *e*P **P 21 36 20.2 +0.9**
comp=Z,26nm,1.3s
PCAS Casmilo, Conde 27.67 288 *e*P **P 21 36 20.2 +0.9**
comp=Z,26nm,1.3s
MESJ Messejana 27.69 283 *e*P **P 21 36 20.3 +0.8**
MESJ AMb AMB 21 36 24.8
comp=Z,34nm,1.9s
MESJ Messejana 27.69 283 *e*P **P 21 36 20.4 +0.9**
comp=Z,32nm,1.5s
MESJ Messejana 27.69 283 *e*P **P 21 36 20.3 +0.8**
MESJ Messejana 27.69 283 *e*P **P 21 36 20.3 +0.8**
PTO Porto 27.69 290 *e*P **P 21 36 21.0 +1.5**
PTO Porto 27.69 290 *e*P **P 21 36 21.0 +1.5**
EDI Edinburgh 27.95 323 *e*P **P 21 36 20.2 -1.4**
EDI AMB AMB 21 36 26.6
comp=Z,54nm,2.5s
EDI Edinburgh 27.95 323 *e*P **P 21 36 20.2 -1.4**
PTEO Sao Teotonio 28.13 283 *e*P **P 21 36 23.3 -0.1**
comp=Z,74nm,1.4s
PTEO Sao Teotonio 28.13 283 *e*P **P 21 36 23.3 -0.1**
comp=Z,74nm,1.4s
GAL1 Galloway 28.19 320 *e*P **P 21 36 22.4 -1.2**
GAL1 AMB AMB 21 36 23.1
comp=Z,8.0nm,1.7s
GAL1 Galloway 28.19 320 *e*P **P 21 36 22.5 -1.2**
EAB Aberfoyle 28.64 323⇑ *e*P **P 21 36 26.4 -1.4**
EAB Aberfoyle 28.64 323⇑ *e*P **P 21 36 26.4 -1.4**
ARU Arti 29.24 37 P **P 21 36 32.7 -0.4**
comp=Z,1.5nm,0.3s,baz=272,slow=12,SNR=6.3
ARU Arti 29.24 37*d i*P **P 21 36 32.3 -0.7**
ARU *PP **pP 21 37 00.8 -2.2**

ARU 21 37 33.2
ARU 21 39 33.3
ARU S **S** **21 41 16.5 +1.3**
ARU pmax pmax
comp=Z,13nm,2.5s
ARU Arti 29.24 37 *i* P **P** **21 36 32.3 -0.7**
comp=Z,13nm,2.5s
ARU Arti 29.24 37 PcP **PcP** **21 39 33.3 -3.1**
ARU S **S** **21 41 16.5 +1.3**
ARU Arti 29.24 37 *e*P **P** **21 36 33.4 +0.3**
comp=Z,4.9nm,0.8s
SVE Sverdlovsk 30.44 37 *e*P **P** **21 36 43.8 +0.2**
SVE pmax pmax
comp=Z,9.0nm,1.2s
SVE Sverdlovsk 30.44 37 *e*P **P** **21 36 43.8 +0.2**
comp=Z,9.0nm,1.2s
APA Apatity 31.32 5 *i*P **P** **21 36 50.2 -1.0**
APA *i* 21 37 43.0
APA *i* S **S** **21 41 42.0 -5.4**
APA pmax pmax
comp=Z,10.0nm,0.8s
APA Apatity 31.32 5 *i* P **P** **21 36 50.2 -1.0**
comp=Z,10.0nm,0.8s
TORD Torodi Ar. Bea 32.28 230 P **P** **21 37 01.4 +1.2**
comp=Z,32nm,0.6s,baz=35,slow=8.9,SNR=286
ARCES ARCESS Array B 33.06 359 P **P** **21 37 05.4 -1.0**
comp=Z,4.8nm,0.7s,baz=173,slow=9.6,SNR=31
ARCES ScP **ScP** **21 43 16.0 -1.4**
comp=Z,5.6nm,1.0s,baz=193,slow=3.7,SNR=7.1
ARCES LR LR 21 51 16.7
comp=Z,37nm,19.6s,baz=186,slow=38
ZRNK Zerenda 33.71 47 *e*P **P** **21 37 13.4 +1.2**
ZRNK pmax pmax
comp=Z,9.0nm,0.9s
ZRNK Zerenda 33.71 47 *e*P **P** **21 37 13.4 +1.2**
comp=Z,9.4nm,0.9s
ZRNK Zerenda 33.71 47 *e*P **P** **21 37 13.4 +1.2**
comp=Z,9.4nm,0.9s
BRVK Borovoye 34.49 47 *i* P **P** **21 37 19.5 +0.6**
BRVK pmax pmax
comp=Z,5.0nm,1.0s
BRVK Borovoye 34.49 47 *i* P **P** **21 37 19.5 +0.6**
comp=Z,5.0nm,1.0s
BVAR Borovoye Array 34.54 47 P **P** **21 37 20.5 +1.1**
comp=Z,0.6nm,0.3s,baz=297,slow=4.8,SNR=7.8
BVAR ScP **ScP** **21 43 22.9 -0.1**
comp=Z,1.6nm,0.6s,baz=270,slow=5.2,SNR=9.2
VOSK Vostochnaya 34.84 48 *e*P **P** **21 37 22.7 +0.7**
VOSK pmax pmax
comp=Z,6.0nm,0.8s
VOSK Vostochnaya 34.84 48 *e*P **P** **21 37 22.7 +0.7**
comp=Z,5.8nm,0.8s
VOSK Vostochnaya 34.84 48 *e*P **P** **21 37 22.7 +0.7**
comp=Z,5.8nm,0.8s
AAK Ala-Archa 37.00 65 *e*P **P** **21 37 40.9 +0.2**
AAK pmax pmax
comp=Z,7.0nm,0.8s
AAK Ala-Archa 37.00 65 *e*P **P** **21 37 40.9 +0.2**
comp=Z,7.0nm,0.8s
AAK Ala-Archa 37.00 65 *e*P **P** **21 37 42.6 +1.9**
KSH Kashi 38.61 70 *e*P **P** **21 37 54.2 0.0**
KSH *e*pP pP 21 38 25.3 +0.3
KSH *e*sP sP 21 38 41.5 +0.5
KSH S **S** **21 43 36.3 -3.7**
KSH *e*ScP **ScP** **21 43 39.6 +1.1**
KSH PcS **PcS** **21 43 54.6 +1.4**
KSH sS sS 21 44 30.2 -3.6
KSH pmax pmax
comp=Z,71nm,5.1s
KSH LR LR
comp=Z,150nm,8.0s
KSH LR LR
comp=Z,80nm,9.7s
KSH LR LR
comp=Z,110nm,6.1s
KMBO Kilima Mbogo 38.76 163 P **P** **21 37 59.3 +3.6**
comp=Z,5.0nm,0.7s,baz=0.8,slow=9.1,SNR=15
KMBO LR LR 21 54 27.4
comp=Z,33nm,18.6s,baz=60,slow=36
KMBO Kilima Mbogo 38.76 163 *e*P **P** **21 37 59.4 +3.7**
comp=Z,4.6nm,0.6s
KURK Kurchatov 39.40 52 *e*P **P** **21 38 01.6 +1.1**
KURK pmax pmax
comp=Z,56nm,0.9s
KURK Kurchatov 39.40 52 *e*P **P** **21 38 01.5 +1.1**
comp=Z,56nm,0.9s
KURK Kurchatov 39.40 52 *e*P **P** **21 38 01.6 +1.1**
comp=Z,56nm,0.9s
DBIC Dimbokro 41.35 232 P **P** **21 38 18.0 +1.1**
comp=Z,7.1nm,0.5s,baz=18,slow=8.6,SNR=21
TIC Toumodi 41.47 232 *e*P **P** **21 38 18.9 +1.0**
KIC Kosan Boka 41.52 231 *e*P **P** **21 38 19.3 +1.1**
comp=Z,22nm,0.7s
LIC Lamto 41.80 231 *e*P **P** **21 38 21.5 +1.0**
comp=Z,48nm,1.4s
MAKZ Makanchi 41.82 58 *e*P **P** **21 38 21.5 +1.1**
MAKZ pmax pmax
comp=Z,4.0nm,0.7s
MAKZ Makanchi 41.82 58 *e*P **P** **21 38 21.5 +1.1**
comp=Z,3.8nm,0.7s
MAKZ Makanchi 41.82 58 *e*P **P** **21 38 21.5 +1.1**
comp=Z,3.8nm,0.7s
SPA0 Spitsbergen Ar 41.97 357 *e*P **P** **21 38 21.5 +0.3**
SPA0 Spitsbergen Ar 41.97 357 *e*P **P** **21 38 21.5 +0.3**
MK31 Makanchi Array 42.03 58 *e*P **P** **21 38 23.3 +1.1**
MK31 Makanchi Array 42.03 58 *e*P **P** **21 38 23.3 +1.1**
MK31 Makanchi Array 42.03 58 *e*P **P** **21 38 23.3 +1.1**
MKAR Makanchi Array 42.03 58 P **P** **21 38 23.0 +0.9**
comp=Z,6.1nm,0.5s,baz=269,slow=8.5,SNR=79
MKAR ScP **ScP** **21 43 51.5 -0.1**
comp=Z,5.1nm,0.7s,baz=275,slow=3.7,SNR=22
MK01 Makanchi Array 42.04 58 *e*P **P** **21 38 23.1 +0.9**
MK01 Makanchi Array 42.04 58 *e*P **P** **21 38 23.1 +0.9**
NVS Novosibirsk 42.28 46 *e*P **P** **21 38 25.3 +1.3**
NVS *e**PP **pP** **21 38 55.1 -0.1**
NVS eS **S** **21 44 32.3 -1.5**
NVS pmax pmax
comp=Z,14nm,0.9s
NVS pmax pmax
comp=N,4.0nm,0.8s
NVS pmax pmax
comp=E,6.0nm,0.9s
NVS smax smax
comp=E,22nm,2.0s
NVS Novosibirsk 42.28 46 *e*P **P** **21 38 25.3 +1.3**
comp=E,4.0nm,0.8s
NVS eS **S** **21 44 32.3 -1.5**
KBS Kingsbay 42.92 356 *e*P **P** **21 38 29.0 +0.1**
KBS pmax pmax
comp=Z,19nm,0.8s
KBS Kingsbay 42.92 356 *e*P **P** **21 38 29.0 +0.1**
comp=Z,18nm,0.8s
KBS Kingsbay 42.92 356 *e*P **P** **21 38 29.0 +0.1**
comp=Z,18nm,0.8s
ZALV Zalesovo Beam 43.20 47 P **P** **21 38 31.6 +0.3**
comp=Z,4.3nm,0.3s,baz=269,slow=9.3,SNR=28
ZALV ScP **ScP** **21 43 55.5 -0.7**
comp=Z,0.9nm,0.6s,baz=242,slow=4.3,SNR=4.1
WMQ Urumqi 46.30 61 P **P** **21 38 58.2 +2.0**
WMQ pP pP 21 39 30.1 +2.1
WMQ S **S** **21 45 36.3 +3.8**
WMQ sS sS 21 46 30.7 +3.2
WMQ pmax pmax
comp=Z,10.0nm,0.9s
WMQ pmax pmax
comp=Z,110nm,4.4s
PYUN Piuthan 47.80 83 *e*P **P** **21 39 09.7 +1.5**
comp=Z,59nm,0.6s
SUMG Summit 48.12 338 *i* P **P** **21 39 09.7 -0.6**
SUMG Summit 48.12 338 *e*P **P** **21 39 10.2 -0.1**
SUMG Summit 48.12 338 *e*P **P** **21 39 10.2 -0.1**
SUMG Summit 48.12 338 *e*P **P** **21 39 10.2 -0.1**
KOLN Koldanda 48.43 83 *e*P **P** **21 39 14.2 +1.2**
comp=Z,27nm,0.6s
GKN Gorkha 49.16 83 *e*P **P** **21 39 19.6 +1.1**
comp=Z,38nm,0.4s
DMN Daman 49.70 83 *e*P **P** **21 39 24.1 +1.3**
comp=Z,54nm,0.7s
KKN Kakani 49.76 82 *e*P **P** **21 39 24.1 +0.9**
comp=Z,22nm,0.4s
PKIN Phulchoki 49.95 83 *e*P **P** **21 39 25.7 +1.0**
comp=Z,12nm,0.5s
GUN Gumba 50.19 82 *e*P **P** **21 39 27.6 +1.0**
RAMN Ramite 51.18 83 *e*P **P** **21 39 34.5 +0.6**
comp=Z,45nm,0.7s
LSZ Lusaka 51.56 178 P **P** **21 39 39.0 +2.5**
comp=Z,8.4nm,0.7s,baz=7.5,slow=7.5,SNR=21
LSZ PcP **PcP** **21 40 51.5 +3.0**
comp=Z,4.9nm,0.7s,baz=140,slow=2.2,SNR=4.9
LSA Lhasa 53.59 77 *e*P **P** **21 39 52.9 +1.0**
LSA pmax pmax
comp=Z,7.0nm,0.7s
LSA Lhasa 53.59 77 *e*P **P** **21 39 52.9 +1.0**
comp=Z,7.0nm,0.7s
LSA Lhasa 53.59 77 *e*P **P** **21 39 52.9 +1.0**
comp=Z,6.6nm,0.7s
ZAK Zakamensk 54.95 50 *e*P **P** **21 40 02.2 +1.2**
ZAK *e* 21 40 34.6
ZAK pmax pmax
comp=Z,2.0nm,1.0s
ZAK pmax pmax
comp=Z,4.0nm,1.1s
ZAK Zakamensk 54.95 50 *e*P **P** **21 40 02.2 +1.2**
comp=Z,2.0nm,1.0s
TSUM Tsumeb 56.09 190 P **P** **21 40 10.9 +1.5**
comp=Z,5.8nm,0.8s,baz=338,slow=5.9,SNR=6.5
GTA Gaotai 56.28 63 *e*P **P** **21 40 11.7 +1.0**
GTA pmax pmax
comp=Z,4.0nm,0.9s
MATP Matopo 56.69 178 P **P** **21 40 16.2 +2.6**
comp=Z,28nm,0.5s,baz=357,slow=7.0,SNR=152
SONM Songino Array 57.70 52 P **P** **21 40 21.5 +1.0**
comp=Z,1.6nm,0.5s,baz=290,slow=8.3,SNR=11
SONM ScP **ScP** **21 44 59.0 +0.4**
comp=Z,1.7nm,0.8s,baz=282,slow=4.6,SNR=6.9
BOD Bodaibo 58.64 39 *e*P **P** **21 40 23.0 -3.7**
BOD pmax pmax
comp=Z,4.0nm,2.0s
TIXI Tiksi 59.46 21 LR LR 22 08 09.3
comp=Z,25nm,18.6s,baz=348,slow=38
LZH Lanzhou 60.54 65 *e*P **P** **21 40 42.0 +1.7**
LZH pP pP 21 41 14.8 +1.1
LZH sP PcP 21 41 26.3 +2.8
LZH pmax pmax
comp=Z,16nm,1.0s
LZH pmax pmax
comp=Z,89nm,4.7s
CD2 Chengdu 62.80 70 *e*P **P** **21 40 55.5 +0.1**
CD2 pP pP 21 41 27.8 -1.2
CD2 sP sP 21 41 42.8 -1.5
CD2 PcS **PcS** **21 45 33.4 -2.9**
CD2 S **S** **21 49 13.8 +0.2**
CD2 sS sS 21 50 10.2 -1.3
CD2 SS **SS** **21 53 21.9 +1.3**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.6s
SCHQ Schefferville 62.90 320 P **P** **21 40 55.3 -0.3**
comp=Z,11nm,0.5s,baz=79,slow=4.2,SNR=5.9
SCHQ LR LR 22 07 33.9
comp=Z,22nm,19.1s,baz=93,slow=35
HHC Hu-ho-hao-te 63.89 57 *e*P **P** **21 41 03.7 +1.2**
HHC pP pP 21 41 36.8 +0.6
HHC sP sP 21 41 53.1 +1.6
HHC S **S** **21 49 25.2 -1.8**
HHC pmax pmax
comp=Z,19nm,0.8s
HHC pmax pmax
comp=Z,70nm,6.1s
BOSA Boshof 64.82 181 P **P** **21 41 10.9 +2.4**
comp=Z,9.1nm,0.5s,baz=356,slow=6.8,SNR=34
CHTO Chiang Mai 65.06 84 *e*P **P** **21 41 10.4 +0.1**
CHTO pmax pmax
comp=Z,7.0nm,1.1s
CHTO Chiang Mai 65.06 84 *e*P **P** **21 41 10.4 +0.1**
comp=Z,6.8nm,1.1s
CHTO Chiang Mai 65.06 84 *e*P **P** **21 41 10.4 +0.1**
comp=Z,6.8nm,1.1s
CMAR Chiang Mai Arr 65.25 85 P **P** **21 41 12.4 +0.9**
comp=Z,5.8nm,0.8s,baz=300,slow=8.0,SNR=26
GYA Guiyang 67.20 73 P **P** **21 41 26.2 +2.2**
GYA pP pP 21 42 00.8 +2.8
GYA sP sP 21 42 15.0 +1.8
GYA PP **PP** **21 43 57.3 +3.7**
GYA S **S** **21 50 08.2 +0.6**
GYA sS sS 21 51 05.6 -0.7
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,110nm,6.2s
BJI Beijing 67.38 56 P **P** **21 41 25.5 +0.8**
BJI pmax pmax
comp=Z,4.0nm,0.7s
BJI LR LR
comp=Z,17nm,15.2s
CN2 Changchun 71.38 49 *e*P **P** **21 41 52.3 +3.1**
BILL Bilibino 71.43 15 *e*P **P** **21 41 48.0 -1.2**
BILL *e* 21 42 07.5
BILL pmax pmax
comp=Z,3.0nm,1.2s
BILL Bilibino 71.43 15 *e*P **P** **21 41 48.0 -1.2**
comp=Z,3.0nm,1.2s
BILL Bilibino 71.43 15 *e*PcP **PcP** **21 42 07.5 -0.4**
MDJ Mudanjiang 73.39 47 P **P** **21 42 02.1 +0.9**
MDJ pmax pmax
comp=Z,3.0nm,0.8s
MDJ pmax pmax
comp=Z,31nm,4.8s
USRK Ussuriysk Ar. 75.03 46 P **P** **21 42 10.7 0.0**
comp=Z,2.0nm,0.4s,baz=308,slow=5.3,SNR=17
USRK pP **pP** **21 42 44.9 -0.4**
comp=Z,1.8nm,0.8s,baz=303,slow=5.7,SNR=2.5
N59A State Game Lan 75.17 310 P **P** **21 42 12.7 +1.1**
baz=54
KSAR Wonju Array Be 76.49 53 P **P** **21 42 19.5 +0.4**
KSAR *PP **pP** **21 42 56.0 +2.2**
KSAR Wonju Array Be 76.49 53 P **P** **21 42 19.5 +0.4**
KSAR pP **pP** **21 42 56.0 +2.2**
KSAR Wonju Array Be 76.49 53 P **P** **21 42 19.5 +0.4**
KSAR pP **pP** **21 42 56.0 +2.2**
YKA Yellowknife Ar 76.49 343 P **P** **21 42 17.5 -1.1**
comp=Z,0.6nm,0.4s,baz=34,slow=5.2,SNR=7.0
KSRS Korea Array 76.51 53 P **P** **21 42 19.5 +0.3**
comp=Z,2.7nm,0.7s,baz=304,slow=4.5,SNR=12
KSRS pP **pP** **21 42 56.0 +2.1**
comp=Z,1.5nm,0.8s,baz=309,slow=5.3,SNR=3.1
M54A Oil Creek Stat 77.18 312 P **P** **21 42 23.5 +0.5**
baz=52
O56A Blue Knob Stat 77.27 311 P **P** **21 42 24.3 +0.7**
baz=53
N54A Moraine State 77.71 312 P **P** **21 42 26.3 +0.4**
baz=52
C39A Grand Marais 78.83 322 P **P** **21 42 31.7 -0.2**
baz=47
ILAR Eielson Array 78.89 357 P **P** **21 42 31.4 -0.5**
comp=Z,0.4nm,0.6s,baz=347,slow=3.7,SNR=5.0
EYMN Ely 79.41 323 P **P** **21 42 34.9 -0.2**
baz=46
C38A Sawbill Land. 79.46 323 P **P** **21 42 35.2 -0.2**
baz=46
ULM Lac du Bonnet 79.82 327 P **P** **21 42 37.1 -0.1**
comp=Z,11nm,0.5s,baz=65,slow=5.1,SNR=14
C37A Embarrass 79.90 323 P **P** **21 42 37.8 +0.1**
baz=46
B35A Bob, Littlefor 80.19 324 P **P** **21 42 39.4 +0.2**
baz=45
C36A Pine Crest Far 80.19 323 P **P** **21 42 39.1 -0.2**
baz=45
D37A Cotton 80.41 323 P **P** **21 42 40.2 -0.3**
baz=46
B34A Aery, Baudette 80.53 325 P **P** **21 42 41.0 0.0**
baz=44,SNR=8.9
A33A Warroad 80.55 325 P **P** **21 42 40.9 -0.2**
baz=44,SNR=6.9
D36A Goodland 80.76 323 P **P** **21 42 42.1 -0.2**
baz=45
C35A Jirik Farms, M 80.78 324 P **P** **21 42 42.4 0.0**
baz=44
PPLA Purkeypile 80.90 359 *e*P **P** **21 42 42.8 -0.1**
comp=Z,2.4nm,0.5s
PPLA Purkeypile 80.90 359 *e*P **P** **21 42 42.8 -0.1**
comp=Z,2.4nm,0.5s
A32A Rocking H Ranc 81.06 326 P **P** **21 42 43.9 0.0**
baz=43
AGMN Agassiz Nation 81.23 325 P **P** **21 42 44.6 -0.1**
baz=43
D35A Remer 81.25 324 P **P** **21 42 45.1 +0.1**
baz=44
E36A McGregor 81.27 323 P **P** **21 42 45.3 +0.3**
baz=45,SNR=5.4
E35A Pequot Lakes 81.80 323 P **P** **21 42 47.8 0.0**
baz=44,SNR=5.5
J41A Loganville 81.81 319 P **P** **21 42 48.1 +0.1**
baz=47
F36A Milaca 81.87 322 P **P** **21 42 48.0 -0.2**
baz=45,SNR=14
B31A Greenbush Farm 81.94 326 P **P** **21 42 48.5 0.0**
baz=42
SPMN Marine on St. 81.96 322 P **P** **21 42 48.7 0.0**
baz=45
SPMN Marine on St. 81.96 322 *e*P **P** **21 42 49.0 +0.3**
comp=Z,5.7nm,0.4s
SPMN Marine on St. 81.96 322 *e*P **P** **21 42 49.0 +0.3**
comp=Z,5.7nm,0.4s
KMSC Kings Mountain 82.17 308 P **P** **21 42 50.5 +0.6**
baz=51
J40A Soldiers Grove 82.18 319 P **P** **21 42 49.9 0.0**
baz=46
E34A Wadena 82.20 324 P **P** **21 42 49.8 -0.1**
baz=44
SFIN Lafayette 82.23 315 P **P** **21 42 50.5 +0.3**
baz=48
A29A Manning Farm, 82.27 327 P **P** **21 42 50.5 +0.2**
baz=41
K41A Shullsburg 82.49 318 P **P** **21 42 51.4 -0.1**
baz=46
I38A Scanlan Farm, 82.56 320 P **P** **21 42 52.0 +0.2**
baz=45
B29A Wagenman Farm, 82.67 327 P **P** **21 42 52.4 +0.1**
baz=41
J39A Decorah 82.73 320 P **P** **21 42 52.6 -0.1**
baz=46,SNR=10.0
C30A Mose, Pekin 82.85 326 P **P** **21 42 53.3 0.0**
baz=42
K40A Colesburg 82.87 319 P **P** **21 42 53.4 0.0**
baz=46
L41A Preston 82.96 318 P **P** **21 42 54.3 +0.4**
baz=46,SNR=5.2
H36A Jessenland, He 82.98 322 P **P** **21 42 54.5 +0.5**
baz=44,SNR=5.8
B28A Dugan Ranch, T 83.12 328 P **P** **21 42 55.3 +0.6**
baz=40
I37A Lemond, Waseca 83.12 321 P **P** **21 42 55.3 +0.6**
baz=44,SNR=6.0
J38A Wedel Dairy, R 83.14 320 P **P** **21 42 54.9 +0.1**
baz=45,SNR=5.6
F33A 5 Mile Ranch, 83.22 324 P **P** **21 42 55.3 +0.1**
baz=43
MDND Maddock 83.24 327 P **P** **21 42 55.6 +0.4**
baz=41
K39A Oelwein 83.26 319 P **P** **21 42 55.4 0.0**
baz=45,SNR=6.3
H35A Sunnyside Ranc 83.34 322 P **P** **21 42 56.3 +0.5**
baz=44,SNR=12
L40A Anamosa 83.36 318 P **P** **21 42 56.1 +0.1**
baz=46
I36A Fitzsimmons Fa 83.42 321 P **P** **21 42 56.7 +0.5**
baz=44
E31A Nome 83.44 325 P **P** **21 42 56.8 +0.5**
baz=42
A26A Wade Farm, Ken 83.48 329 P **P** **21 42 57.2 +0.7**
baz=39
MJAR Matsushiro Arr 83.53 49 P **P** **21 42 57.5 +0.5**
comp=Z,1.5nm,0.9s,baz=310,slow=4.3,SNR=6.5
F32A Veblen 83.59 324 P **P** **21 42 57.5 +0.4**
baz=42
J37A Redenius Farm, 83.70 321 P **P** **21 42 57.9 +0.2**
baz=44,SNR=16
L39A Vinton 83.73 319 P **P** **21 42 57.6 -0.2**
baz=45,SNR=11
G33A Ortonville 83.76 323 P **P** **21 42 58.3 +0.3**
baz=43
H34A Spellman Lake, 83.83 323 P **P** **21 42 58.9 +0.6**
baz=43
J36A Seneca 1, Swea 84.08 321 P **P** **21 43 00.2 +0.6**
baz=44,SNR=13
K37A Belmond 84.13 320 P **P** **21 43 00.3 +0.4**
baz=44,SNR=5.8
L38A Oak Wood Farm, 84.22 319 P **P** **21 42 60.0 -0.4**
baz=45,SNR=11
G32A Webster 84.22 324 P **P** **21 43 00.6 +0.2**
baz=42,SNR=11
M39A Webster 84.28 319 P **P** **21 43 00.8 +0.1**
baz=45
Q44A Meyer Farm, Va 84.32 315 P **P** **21 43 01.1 +0.2**
baz=47
B25A Knox Farm, Ray 84.44 329 P **P** **21 43 01.9 +0.5**
baz=38
F30A Leola 84.50 325 P **P** **21 43 02.1 +0.3**
baz=41
O41A Passleys Farm, 84.53 317 P **P** **21 43 02.0 +0.1**
baz=46
P42A Winchester 84.60 316 P **P** **21 43 02.5 +0.2**
baz=46
K36A Gilmore City 84.64 321 P **P** **21 43 03.1 +0.6**
baz=44
L37A Phoenix Point, 84.65 320 P **P** **21 43 02.3 -0.2**
baz=44,SNR=11
H32A Carlson Farm, 84.75 323 P **P** **21 43 03.0 0.0**
baz=42
M38A Pleasantville 84.86 319 P **P** **21 43 03.8 +0.3**
baz=44,SNR=6.6
F29A Eureka 84.87 326 P **P** **21 43 03.6 0.0**
baz=40
N39A Derby Farms, D 84.88 318 P **P** **21 43 04.0 +0.3**
baz=45
ECSD EROS Data Cent 84.92 323 P **P** **21 43 04.2 +0.3**
baz=42,SNR=21
ECSD EROS Data Cent 84.92 323 *e*P **P** **21 43 04.2 +0.3**
comp=Z,11nm,0.4s
ECSD EROS Data Cent 84.92 323 *e*P **P** **21 43 04.2 +0.3**
comp=Z,11nm,0.4s
J34A George 84.93 322 P **P** **21 43 04.3 +0.4**
baz=43
P41A Barry, Barry 84.94 317 P **P** **21 43 04.3 +0.3**
baz=46
O40A La Belle 85.07 317 P **P** **21 43 04.8 +0.2**
baz=45,SNR=7.5
D26A Manning 85.10 328 P **P** **21 43 04.9 +0.2**
baz=39
I32A Karley and Nic 85.12 323 P **P** **21 43 05.1 +0.2**
baz=42
Q42A Golden Eagle 85.17 316 P **P** **21 43 06.0 +0.9**
baz=46
S44A Carbondale 85.28 314 P **P** **21 43 06.5 +0.7**
baz=46
M37A Trindle Farm, 85.32 320 P **P** **21 43 06.4 +0.5**
baz=44,SNR=5.7
N38A Joes South For 85.33 319 P **P** **21 43 06.3 +0.4**
baz=44
L35A Bielow Farm, R 85.58 321 P **P** **21 43 07.1 0.0**
baz=43
P40A Paris 85.58 317 P **P** **21 43 07.5 +0.3**
baz=45,SNR=5.0
M36A Felix, Anita 85.67 320 P **P** **21 43 07.7 0.0**
baz=44
J32A Parkston 85.79 323 P **P** **21 43 08.6 +0.4**
baz=42
S43A Fulton Ridge, 85.84 315 P **P** **21 43 09.4 +0.9**
baz=46,SNR=9.8
Q40A Laux Farm, Aux 85.97 317 P **P** **21 43 09.9 +0.7**
baz=45,SNR=7.5
P39B Salisbury 86.00 317 P **P** **21 43 10.0 +0.8**
baz=45,SNR=10
L34A Svendsen Farm, 86.11 321 P **P** **21 43 10.0 +0.2**
baz=42
M35A Neola 86.13 320 P **P** **21 43 10.0 +0.2**
baz=43
O37A Wolven Farm, M 86.26 319 P **P** **21 43 10.7 +0.1**
baz=44
J31A Geddes 86.28 323 P **P** **21 43 10.7 +0.1**
baz=41
K32A Verdigre 86.39 323 P **P** **21 43 11.5 +0.4**
baz=42
Q39A Willow Grove F 86.43 317 P **P** **21 43 12.1 +0.7**
baz=44,SNR=5.9
R40A Maddies Statio 86.58 316 P **P** **21 43 12.9 +0.8**
baz=45,SNR=14
J30A Dallas 86.62 324 P **P** **21 43 13.1 +0.9**
baz=41
S41A Jillco Farms, 86.78 316 P **P** **21 43 13.9 +0.7**
baz=45,SNR=18
P37A Lathrop 86.78 318 P **P** **21 43 13.1 0.0**
baz=44
Q38A Cooks Store, C 86.84 318 P **P** **21 43 13.9 +0.6**
baz=44,SNR=7.9
LAO LASA Array 86.96 330 P **P** **21 43 14.5 +0.6**
baz=36
LAO LASA Array 86.96 330 *e*P **P** **21 43 14.8 +0.9**
comp=Z,16nm,0.8s

LAO	LASA Array	86.96 330	*e*P	P	21 43 14.8	+0.9
	comp=Z,16nm,0.8s					
R39A	Chumby, Stover	86.99 317	P	P	21 43 14.5	+0.4
	baz=44					
Y47A	UCPARC, Winfie	87.03 311	P	P	21 43 14.2	-0.2
	baz=47					
LRAL	Lakeview Retre	87.09 310	*e*P	P	21 43 15.2	+0.5
	comp=Z,4.5nm,0.5s					
LRAL	Lakeview Retre	87.09 310	*e*P	P	21 43 15.2	+0.5
	comp=Z,4.5nm,0.5s					
K30A	Basset	87.17 323	P	P	21 43 15.6	+0.7
	baz=40					
T41A	Mountain View	87.17 315	P	P	21 43 16.1	+1.0
	baz=45,SNR=15					
L31A	Butterfield Fa	87.17 323	P	P	21 43 15.8	+0.8
	baz=41					
S40A	Lebanon	87.20 316	P	P	21 43 15.9	+0.7
	baz=45,SNR=6.0					
Z48A	Northport	87.21 310	P	P	21 43 15.3	+0.1
	baz=47					
P36A	Good Intent, A	87.22 319	P	P	21 43 15.6	+0.4
	baz=43					
EGMT	Eagleton	87.24 332	P	P	21 43 16.1	+0.8
	baz=34					
U42A	Revenden	87.36 314	P	P	21 43 16.9	+1.0
	baz=45,SNR=8.2					
BGNE	Belgrade	87.41 322	P	P	21 43 16.7	+0.6
	baz=41					
BGNE	Belgrade	87.41 322	*e*P	P	21 43 16.3	+0.2
	comp=Z,18nm,0.4s					
BGNE	Belgrade	87.41 322	*e*P	P	21 43 16.3	+0.2
	comp=Z,18nm,0.4s					
H25A	Fruitdale	87.50 327	P	P	21 43 16.9	+0.4
	baz=38					
T40A	Mansfield	87.52 316	P	P	21 43 17.3	+0.6
	baz=45,SNR=7.3					
R38A	Fenwick Farm,	87.55 317	P	P	21 43 17.2	+0.4
	baz=44,SNR=5.8					
N33A	J Bar K, Exete	87.56 321	P	P	21 43 16.9	+0.1
	baz=42					
O34A	Beatrice	87.58 320	P	P	21 43 17.4	+0.5
	baz=42,SNR=9.6					
S39A	Bolivar	87.59 317	P	P	21 43 17.2	+0.2
	baz=44					
Y46A	Houston	87.66 311	P	P	21 43 17.4	0.0
	baz=47,SNR=6.0					
P35A	Duane Minner,	87.71 319	P	P	21 43 18.0	+0.4
	baz=43					
V42A	Cord	87.83 314	P	P	21 43 18.9	+0.8
	baz=45					
S38A	Stockton	87.95 317	P	P	21 43 19.1	+0.3
	baz=44,SNR=6.5					
N32A	Stulken Farm,	87.97 321	P	P	21 43 19.0	+0.3
	baz=41					
RSSD	Black Hills	88.08 327	P	P	21 43 19.7	+0.2
	baz=38					
T39A	Clever	88.09 316	P	P	21 43 19.7	+0.3
	baz=44					
P34A	Walnut Farm, R	88.12 320	P	P	21 43 20.2	+0.7
	baz=42,SNR=6.1					
U40A	Yellville	88.28 315	P	P	21 43 20.9	+0.6
	baz=44					
V41A	Mountainview	88.28 315	P	P	21 43 20.7	+0.4
	baz=45					
O32A	Brockman Farm,	88.33 321	P	P	21 43 20.9	+0.4
	baz=41					
S37A	Fort Scott	88.36 317	P	P	21 43 20.8	+0.2
	baz=43					
T38A	Diamond	88.60 317	P	P	21 43 22.3	+0.5
	baz=44					
U39A	Green Forest	88.61 316	P	P	21 43 22.3	+0.4
	baz=42					
S36A	Lake Cedric, C	88.81 318	P	P	21 43 22.7	0.0
	baz=43					
T37A	Cheneyville 18	88.88 317	P	P	21 43 23.5	+0.4
	baz=43,SNR=14					
U38A	Gravette	89.08 316	P	P	21 43 24.3	+0.3
	baz=44,SNR=5.6					
S35A	Otter Creek Ra	89.23 318	P	P	21 43 24.9	+0.1
	baz=42					
R34A	Isabella, Hill	89.26 319	P	P	21 43 24.8	-0.1
	baz=42					
T36A	Boggs Farm, Ca	89.45 318	P	P	21 43 25.9	+0.2
	baz=43					
V38A	Canehill	89.51 316	P	P	21 43 26.3	+0.2
	baz=44					
U37A	Salina	89.51 317	P	P	21 43 26.3	+0.3
	baz=43,SNR=6.1					
W39A	Magazine	89.63 315	P	P	21 43 27.2	+0.5
	baz=44					
MSO	Missoula	89.77 334	P	P	21 43 27.4	+0.2
	baz=31					
U36A	Oologah	89.86 317	P	P	21 43 28.0	+0.4
	baz=43					
T35A	Sooner Cattle	89.90 318	P	P	21 43 27.6	-0.2
	baz=42					
V37A	Hulbert	89.90 316	P	P	21 43 27.8	-0.1
	baz=43					
BOZ	Bozeman (W)	89.94 332	P	P	21 43 28.7	+0.6
	baz=32					
BOZ	Bozeman (W)	89.94 332	*e*P	P	21 43 28.5	+0.4
BOZ			pmax	pmax		
	comp=Z,3.0nm,0.7s					
BOZ	Bozeman (W)	89.94 332	*e*P	P	21 43 28.5	+0.4
	comp=Z,3.4nm,0.7s					
BOZ	Bozeman (W)	89.94 332	*e*P	P	21 43 28.5	+0.4
	comp=Z,3.4nm,0.7s					
MIAR	Mount Ida	89.98 314	P	P	21 43 29.1	+0.8
	baz=44					
W38A	Poteau	90.14 315	P	P	21 43 29.3	+0.3
	baz=44					
Y40A	Okolona	90.19 314	P	P	21 43 29.9	+0.6
	baz=44					
TUL1	Leonard	90.24 317	P	P	21 43 29.6	0.0
	baz=43					
TUL1	Leonard	90.24 317	*e*P	P	21 43 29.5	0.0
	comp=Z,5.6nm,0.6s					
TUL1	Leonard	90.24 317	*e*P	P	21 43 29.5	0.0
	comp=Z,5.6nm,0.6s					
X39A	Fountain Ranch	90.31 315	P	P	21 43 31.0	+1.1
	baz=44,SNR=7.1					
K22A	Casper	90.35 327	P	P	21 43 29.7	-0.4
	baz=36					
V36A	Jenks	90.42 317	P	P	21 43 30.4	+0.1
	baz=43					
U35A	Pawnee	90.42 318	P	P	21 43 30.9	+0.6
	baz=42					
X38A	Whitesboro	90.61 315	P	P	21 43 32.3	+1.1
	baz=43,SNR=8.3					
PHWY	Pilot Hill	90.96 326	*e*P	P	21 43 33.1	0.0
	comp=Z,15nm,0.9s					
PHWY	Pilot Hill	90.96 326	*e*P	P	21 43 33.1	0.0
	comp=Z,15nm,0.9s					
X37A	Clayton	90.97 316	P	P	21 43 33.5	+0.6
	baz=43,SNR=6.0					
342A	Flagon Creek P	91.50 312	P	P	21 43 35.9	+0.5
	baz=45					
N23A	Red Feather La	91.51 326	P	P	21 43 36.2	+0.6
	baz=36					
PDAR	Pinedale Array	91.53 329	P	P	21 43 34.5	-1.1
	comp=Z,0.7nm,0.6s,baz=46,slow=5.2,SNR=5.3					
X36A	Centrahoma	91.53 316	P	P	21 43 36.5	+1.0
	baz=42					
ISCO	Idaho Springs	92.24 325	P	P	21 43 39.4	+0.3
	baz=36					
ISCO	Idaho Springs	92.24 325	*e*P	P	21 43 39.2	+0.1
ISCO			pmax	pmax		
	comp=Z,3.0nm,0.7s					
ISCO	Idaho Springs	92.24 325	*e*P	P	21 43 39.2	+0.1
	comp=Z,2.8nm,0.7s					
ISCO	Idaho Springs	92.24 325	*e*P	P	21 43 39.2	+0.1
	comp=Z,2.8nm,0.7s					
WMOK	Wichita Mounta	92.75 318	P	P	21 43 41.6	+0.5
	baz=41					
MFID	Camas Ranch	93.40 334	*e*P	P	21 43 44.5	+0.4
	comp=Z,6.4nm,1.3s					
MFID	Camas Ranch	93.40 334	*e*P	P	21 43 44.5	+0.4
	comp=Z,6.4nm,1.3s					
SDCO	Great Sand Dun	93.83 324	P	P	21 43 46.3	-0.1
	baz=37					
S22A	4UR Ranch, Cre	94.45 325	P	P	21 43 49.5	+0.2
	baz=36					
DUG	Dugway, Tooele	95.02 330	P	P	21 43 51.9	+0.3
	baz=32					
MSTX	Muleshoe	95.45 320	*e*P	P	21 43 54.6	+0.9
	comp=Z,2.0nm,0.4s					
MSTX	Muleshoe	95.45 320	*e*P	P	21 43 54.6	+0.9
	comp=Z,2.0nm,0.4s					
433A	Art	95.91 315	P	P	21 43 56.0	+0.4
	baz=41					
MNTX	Cornudas Mount	98.59 320	P	P	21 44 06.8	-0.9
	baz=37					
TXAR	Lajitas Array	99.54 318	P	Pdif	21 44 12.8	+0.7
	comp=Z,0.4nm,0.7s,baz=48,slow=5.4,SNR=4.8					
WRA	Warramunga Arr	115.57 97	PKP	PKPdf	21 49 10.5	+0.1
	comp=Z,0.3nm,0.6s,baz=321,slow=1.9,SNR=6.3					
WRA			SKP		21 52 32.1	
	comp=Z,0.4nm,0.5s,baz=326,slow=2.1,SNR=4.6					
ASAR	Alice Springs	117.13 100	PKP	PKPdf	21 49 13.6	+0.2
	comp=Z,0.4nm,0.4s,baz=293,slow=1.4,SNR=8.0					
ASAR			SKP		21 52 35.5	
	comp=Z,0.6nm,0.6s,baz=324,slow=1.7,SNR=6.2					
ASAR	Alice Springs	117.13 100	PKIKP	PKPdf	21 49 13.6	+0.2
ASAR			pmax	pmax		
	comp=Z,1.0nm,0.7s					
ASAR			pmax	pmax		
	comp=N,1.0nm,0.6s					

IDC ***02*** *21:44:14.4±0.9, 1°.37N× 121°.11E, h0km, mb3.9/7, mb1 4.1/9, mb1mx3.8/40, mbtmp4.0/9, ML3.8/2, MS3.0/4, Ms1 3.1/4, ms1mx2.6/39, Error ellipse: s-maj=65.5km s-min=15.8km az=68.0*

ISCJB ***02*** *21:44:18.8±0.7, 1°.36N±0°.05× 120°.61E±0°.05, h35km, mb3.9/7, MS2.7/2, Error ellipse: s-maj=7.9km s-min=7.3km az=12.6*

DJA ***02*** *21:44:19.2±0.4, 1°N±3°× 12°1E±°, h10km, M4.6/10, mB4.8/2, mb4.6/5, MLv4.6/10, Mw(mB)4.0/2*

ISC 02 21:44:20.4±0.8, 1°.33N±0°.07× 120°.65E±0°.06, h35km, n19, σ2s56/21, mb3.9/7, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MRSI	Marisa	1.54	123	P	Pn	21 44 43.3	-2.0
MRSI				S	Sn	21 45 05.4	+1.3
PCI	Palu	2.36	200	P	Pn	21 44 56.5	-0.2
PCI				S	Sn	21 45 24.1	-0.3
LUWI	Luwuk	3.17	138	P	Pn	21 45 09.0	+1.3
KMSI	Cibinong	3.41	103	P	Pn	21 45 15.1	+4.0
KMSI				S	Sn	21 45 53.2	+2.9
TTSI	Tana Toraja	4.42	191	P	Pn	21 45 27.1	+2.1
SPSI	Sidrap Palu	5.33	190	P	Pn	21 45 39.9	+2.4
KDI	Kendari	5.60	159	P	Pn	21 45 40.7	-0.5
	43nm,0.7s,0.2nm						
KAPI	Kappang	6.36	188	Pn	Pn	21 45 53.0	+1.4
	2.7nm,0.3s,baz=300,slow=8.8,SNR=10						
KAPI				Sn	Sn	21 47 09.7	+6.6
	baz=204,slow=20,SNR=2.3						
KAPI				LR	LR	21 48 32.0	
	comp=Z,328nm,19.2s,baz=12,slow=40						
LBMI	Labuha	7.12	106	P	Pn	21 46 03.0	+0.9
FITZ	Fitzroy Crossi	19.92	166	P	P	21 48 47.1	-2.1
	0.1nm,0.3s,baz=343,slow=11,SNR=6.3						
FITZ				LR	LR	21 56 07.8	
	comp=Z,46nm,20.1s,baz=344,slow=36						
WRA	Warramunga Arr	25.04	148	P	P	21 49 38.0	-3.4
	3.2nm,0.9s,baz=327,slow=10,SNR=16						
CMAR	Chiang Mai Arr	27.27	310	LR	LR	22 01 07.7	
	comp=Z,22nm,22.0s,baz=210,slow=37						
ASAR	Alice Springs	27.98	153	P	P	21 50 06.3	-1.7
	0.8nm,0.7s,baz=343,slow=14,SNR=9.1						
STKA	Stephens Creek	38.53	151	P	P	21 51 37.0	-2.7
	3.3nm,0.9s,baz=321,slow=6.5,SNR=3.3						
MJAR	Matsushiro Arr	38.63	23	LR	LR	22 04 40.7	
	comp=Z,14nm,21.9s,baz=125,slow=32						
SONM	Songino Array	47.95	347	P	P	21 52 56.5	+0.9
	1.2nm,0.9s,baz=165,slow=6.0,SNR=5.7						
MKAR	Makanchi Array	56.27	329	P	P	21 53 58.7	+1.2
	0.5nm,0.6s,baz=134,slow=6.2,SNR=5.4						
ZALV	Zalesovo Beam	60.16	336	P	P	21 54 24.4	0.0
	2.2nm,0.9s,baz=158,slow=4.7,SNR=7.7						
BRTR	Keskin Array B	86.86	310	P	P	21 57 01.1	-0.8
	1.0nm,0.9s,baz=116,slow=2.9,SNR=3.8						

IDC ***02*** *21:47:38.5±6.3, 18°.07S× 178°.03W, h434km±69km, mb3.6/13, mb1 3.8/13, mb1mx3.5/43, mbtmp4.4/13, Error ellipse: s-maj=27.9km s-min=19.3km az=46.0*

ISCJB ***02*** *21:47:39.0±0.8, 18°.1S±0°.1× 178°.1W±0°.2, h450km, mb3.9/12, Error ellipse: s-maj=21.1km s-min=15.6km az=25.8*

ISC 02 21:47:40.0±0.8, 18°.1S±0°.1× 178°.1W±0°.2, h450km, n15, σ0s92/15, mb4.0/12, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	Urewera	20.55	191	P	P	21 51 44.7	-1.6
	8.0nm,0.3s,baz=278,slow=3.2,SNR=24						
CTA	Charters Tower	33.72	261	P	P	21 53 42.5	-0.1
	3.2nm,0.4s,baz=93,slow=12,SNR=7.0						
STKA	Stephens Creek	38.82	241	P	P	21 54 25.7	+0.8
	6.5nm,0.6s,baz=90,slow=8.9,SNR=21						
JAY	Jayapura	43.24	286	P	P	21 55 01.5	+1.0
	0.5nm,0.4s,baz=89,slow=2.4,SNR=5.6						
WRA	Warramunga Arr	44.90	260	P	P	21 55 12.8	-0.5
	2.1nm,0.3s,baz=95,slow=7.0,SNR=18						
ASAR	Alice Springs	45.04	254	P	P	21 55 14.2	-0.3
	30nm,0.6s,baz=88,slow=8.4,SNR=182						
VNDA	Vanda	60.32	185	P	P	21 57 04.2	+0.8
	0.5nm,0.5s,baz=346,slow=6.3,SNR=3.7						
MJAR	Matsushiro Arr	68.21	323	P	P	21 57 54.2	-0.3
	1.4nm,0.6s,baz=154,slow=5.2,SNR=6.9						
PETK	Petropavlovsk-	73.91	345	P	P	21 58 27.7	-0.1
	3.1nm,0.7s,baz=127,slow=6.0,SNR=4.5						
SEY	Seymchan	83.99	347	P	P	21 59 21.2	-0.2
	2.7nm,0.6s,baz=184,slow=6.2,SNR=8.2						
TXAR	Lajitas Array	85.83	57	P	P	21 59 32.7	+1.3
	0.4nm,0.6s,baz=215,slow=7.6,SNR=5.9						
ILAR	Eielson Array	85.97	13	P	P	21 59 30.5	-0.6
	1.5nm,0.4s,baz=220,slow=5.1,SNR=5.1						
CMAR	Chiang Mai Arr	89.22	290	P	P	21 59 47.9	+0.5
	0.7nm,0.8s,baz=94,slow=3.6,SNR=5.0						
BRTR	Keskin Array B	145.10	315	PKPbc	PKPbc	22 06 25.0	-1.3
	0.7nm,0.5s,baz=86,slow=2.2,SNR=6.5						
GERES	GERESS Array B	147.84	345	PKPbc	PKPbc	22 06 32.6	-0.9
	0.7nm,0.5s,baz=36,slow=3.9,SNR=8.9						

IDC 02 21:50:37.6±2.2, 5°.90S× 130°.18E, h0km, mb3.9/1, mb1 4.2/4, mb1mx3.6/33, mbtmp4.0/4, ML4.1/3, MS3.8/1, Ms1 3.8/1, ms1mx2.6/24, Error ellipse: s-maj=95.9km s-min=27.1km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	Fitzroy Crossi	12.91	200	Pn	Pn	21 53 43.2	+0.7
	0.6nm,0.3s,baz=25,slow=12,SNR=22						
FITZ				Sn	Sn	21 55 56.5	-11
	0.6nm,0.3s,baz=207,slow=18,SNR=5.2						
WRA	Warramunga Arr	14.54	164	Pn	Pn	21 54 03.2	-1.6
	0.9nm,0.3s,baz=346,slow=13,SNR=32						
WRA				Sn	Sn	21 56 33.4	-13
	0.5nm,0.3s,baz=342,slow=21,SNR=5.3						
ASAR	Alice Springs	18.03	169	P	P	21 54 50.1	-0.2
	0.6nm,0.3s,baz=351,slow=11,SNR=21						
ASAR				S	Sn	21 57 56.8	-15
	0.1nm,0.3s,baz=347,slow=24,SNR=3.2						
CTA	Charters Tower	21.05	134	LR	LR	22 04 55.8	
	comp=Z,233nm,18.3s,baz=26,slow=41						
MKAR	Makanchi Array	67.41	326	P	P	22 01 35.0	0.0
	0.7nm,0.5s,baz=134,slow=7.3,SNR=11						

NEIC ***02*** *21:53:03.0, 66°.31N× 134°.83W, h20km, ML4.2(OTT), ML4.0(AEIC), After OTT.*

PGC ***02*** *21:53:03.5, 66°.31N× 134°.83W, h20km, ML4.2/7, 127km Ssw of Fort McPherson, Nt Northern Yukon Territory, Canada*

IDC ***02*** *21:53:05.4±1.6, 66°.41N× 134°.77W, h31km±16km, mb3.8/2, mb1 3.9/6, mb1mx3.4/50, mbtmp3.8/6, ML3.7/4, MS2.8/6, Ms1 2.8/6, ms1mx2.6/43, Error ellipse: s-maj=12.1km s-min=9.8km az=114.0*

ISC 02 21:53:00.1±0.6, 66°.31N±0°.03× 134°.47W±0°.03, h10km, n58, σ2s92/105, MS2.9/3, Northern Yukon Territory

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
INK	Inuvik	2.04	10	Pn	Pb	21 53 36.6	-0.6
	60nm,0.3s,baz=196,slow=14,SNR=393						
INK				Sn	Sg	21 54 03.1	-2.4
	228nm,0.3s,baz=101,slow=25,SNR=15						
INK				Lg	Lg	21 54 06.4	
	334nm,0.3s,baz=90,slow=17,SNR=19						
INK				LR	LR	21 54 30.0	
	comp=Z,302nm,19.6s,baz=76,slow=43						
INK	Inuvik	2.04	10	Pn	Pb	21 53 36.4	-0.8
INK				Pg	Pg	21 53 41.3	+2.1
INK				Sn	Sb	21 54 02.6	+0.1
INK				Sg	Sg	21 54 06.7	+1.1
DAWY	Dawson	3.06	225	Pn	Pn	21 53 49.3	+0.8
DAWY				Pg	Pb	21 53 54.8	+0.2
DAWY				Sn	Sn	21 54 23.6	-1.5
DAWY	Dawson	3.06	225	P	Pn	21 53 49.1	+0.6
DAWY				S	Sn	21 54 24.7	-0.5
EGAK	Eagle	3.18	244	P	Pn	21 53 49.0	-1.0
EGAK				S	Sn	21 54 27.8	-0.2
CLVN	Colville Lake	3.42	74	Pn	Pn	21 53 57.0	+3.6
CLVN				Pg	Pg	21 54 06.9	+1.4
SMPN	Simpson Lake	3.59	54	Pn	Pn	21 53 58.3	+2.7
SMPN				Sn	Sn	21 54 39.6	+1.6
SMPN				Sg	Sg	21 54 58.0	+2.9
FYU	Fort Yukon	4.33	278	P	Pn	21 54 05.3	-0.5
BCA3	Beaver Creek A	4.52	227	P	Pn	21 54 08.0	-0.5
DOT	Dot Lake	4.87	241	Pn	Pn	21 54 13.2	-0.1
DOT				Pg	Pb	21 54 28.4	+3.0
DOT				Sg	Sb	21 55 28.8	+4.9
DOT	Dot Lake	4.87	241	P	Pn	21 54 13.0	-0.3
YUK1	Sand Pete Hill	4.94	215	Pn	Pn	21 54 14.2	-0.2
YUK1				Sn	Sn	21 55 08.2	-3.3
YUK1				Sg	Sg	21 55 32.9	+6.9
YUK3	Moose Creek	5.25	213	Pn	Pn	21 54 18.4	-0.3
YUK3				Sn	Sn	21 55 17.0	-2.5
YUK3				Sg	Sg	21 55 44.2	-4.4
YUK2	White River	5.33	215	Pn	Pn	21 54 19.4	-0.3
YUK2				Sn	Sn	21 55 17.1	-4.1
YUK2				Sg	Sg	21 55 46.8	-4.2
ILAR	Eielson Array	5.38	259	Pn	Pn	21 54 20.1	-0.3
	0.7nm,0.3s,baz=67,slow=12,SNR=33						
ILAR				Pg	Pb	21 54 35.8	+1.7
	1.3nm,0.3s,baz=63,slow=14,SNR=19						
ILAR				Lg	Lg	21 55 46.5	
	3.6nm,0.3s,baz=66,slow=28,SNR=6.3						
ILAR				LR	LR	21 56 42.8	
	comp=Z,168nm,20.0s,baz=6.0,slow=41						
HYT	Haines Junctio	5.67	195	Pn	Pn	21 54 25.9	+1.4
HYT				Pg	Pb	21 54 44.2	+5.1
HYT				Sg	Sg	21 55 59.5	-2.4
COLA	College	5.73	262	*e*Pn	Pn	21 54 24.7	-0.4
	8.9nm,0.8s						
COLA				*e*Sg	Sg	21 55 57.4	-6.4
PAX	Paxson	5.79	240	Pn	Pn	21 54 25.2	-0.8
PAX				Pg	Pb	21 54 44.3	+3.2
PAX				Sn	Sn	21 55 27.2	-5.2
PAX				Sg	Sb	21 55 57.8	+7.4
PAX	Paxson	5.79	240	*e*Pn	Pn	21 54 25.8	-0.2
	14nm,0.8s						
PAX				*e*Sn	Sn	21 55 32.0	-0.4
PAX				*e*Sb	Sb	21 55 49.6	-0.8
WRH	Wood River Hil	5.98	258	P	Pn	21 54 27.7	-0.8
DHRN	Dharma Camp	5.99	76	Sn	Sn	21 55 37.1	-0.1
YUK7	Dusty Glacier	6.03	198	Pn	Pn	21 54 29.6	+0.2
YUK7				Sg	Sg	21 56 10.1	-3.3
COLD	Coldfoot	6.29	286	Pn	Pn	21 54 31.5	-1.3
COLD				Sn	Sn	21 55 39.7	-4.9
COLD	Coldfoot	6.29	286	P	Pn	21 54 31.5	-1.3
DHY	Denali Highway	6.41	246	P	Pn	21 54 33.9	-0.6
BPAW	Bear Paw Mtn.	7.28	260	*e*Pn	Pn	21 54 45.6	-0.8
	2.4nm,0.9s						
KUKN	Kugluktuk,NWT	7.71	70	Sn	Sn	21 56 18.6	-1.0
KUKN				Sg	Sg	21 57 08.2	+0.9
IM3	Indian Mountai	7.81	276	P	Pn	21 54 52.5	-1.2
DLBC	Dease Lake	8.16	163	Pn	Pn	21 55 02.3	+3.7
	0.4nm,0.3s,baz=0.0,slow=13,SNR=3.0						
DLBC				Lg	Lg	21 57 19.1	
	1.0nm,0.3s,baz=99,slow=19,SNR=8.2						
DLBC				LR	LR	21 58 32.0	
	comp=Z,86nm,20.4s,baz=337,slow=39						
YKR1	Yellowknife Ar	9.26	105	Pn	Pn	21 55 15.4	+2.0
YKR1				Sn	Sn	21 56 52.9	-4.6
YKR1	Yellowknife Ar	9.26	105	P	Pn	21 55 16.2	+2.7
YKR2	Yellowknife Ar	9.28	105	Pn	Pn	21 55 15.9	+2.2
YKR2				Sn	Sn	21 56 56.0	-2.0
YKW3	Yellowknife Ar	9.30	105	Pn	Pn	21 55 16.1	+2.2
YKR3				Sn	Sn	21 56 54.7	-3.8
YKR4	Yellowknife Ar	9.32	105	Pn	Pn	21 55 16.6	+2.4
YKR4				Sn	Sn	21 56 54.8	-4.1
YKB0	Yellowknife Ar	9.33	104	Pn	Pn	21 55 16.9	+2.4
YKB0				Sn	Sn	21 56 54.7	-4.5
YKR5	Yellowknife Ar	9.34	105	Pn	Pn	21 55 16.9	+2.4
YKR5				Sn	Sn	21 56 55.5	-3.9
YKB9	Yellowknife Ar	9.34	104	Pn	Pn	21 55 17.0	+2.4
YKW3	Yellowknife Ar	9.35	104	Pn	Pn	21 55 16.9	+2.2
YKW3				Sn	Sn	21 56 56.5	-3.2
YKR6	Yellowknife Ar	9.35	105	Pn	Pn	21 55 17.2	+2.4
YKB8	Yellowknife Ar	9.36	104	Pn	Pn	21 55 17.1	+2.3
YKB8				Sn	Sn	21 56 56.5	-3.3
YKB7	Yellowknife Ar	9.37	105	Pn	Pn	21 55 17.3	+2.4
YKB7				Sn	Sn	21 56 57.9	-2.3
YKR7	Yellowknife Ar	9.37	105	Pn	Pn	21 55 17.3	+2.3
YKR7				Sn	Sn	21 56 57.3	-3.0
YKB6	Yellowknife Ar	9.38	105	Pn	Pn	21 55 17.6	+2.5
YKB6				Sn	Sn	21 56 57.5	-3.0
YKA	Yellowknife Ar	9.39	105	Pn	Pn	21 55 17.4	+2.1
	1.9nm,0.3s,baz=301,slow=12,SNR=52						
YKA				Sn	Sn	21 56 59.6	-1.2
	3.2nm,0.3s,baz=301,slow=23,SNR=8.7						
YKA				LR	LR	21 59 23.5	
	comp=Z,8.4nm,18.4s,baz=0.0,slow=40						
YKR8	Yellowknife Ar	9.39	105	Pn	Pn	21 55 17.6	+2.3
YKR8				Sn	Sn	21 56 57.6	-3.1
YKB4	Yellowknife Ar	9.40	105	Pn	Pn	21 55 17.8	+2.4
YKB4				Sn	Sn	21 56 58.4	-2.7
YKR9	Yellowknife Ar	9.41	105	Pn	Pn	21 55 17.9	+2.3
YKR9				Sn	Sn	21 56 56.3	-4.9
YKB3	Yellowknife Ar	9.42	105	Pn	Pn	21 55 18.1	+2.5
YKB3				Sn	Sn	21 56 57.1	-4.3
YKB1	Yellowknife Ar	9.44	105	Pn	Pn	21 55 18.1	+2.1
YKB1				Sn	Sn	21 56 57.5	-4.4
COKN	Cook Lake	11.34	94	Pn	Pn	21 55 44.1	+2.2
COKN				Sn	Sn	21 57 41.8	-6.6
SNLN	Sandy Lake, NW	12.01	94	Pn	Pn	21 55 53.5	+2.6
SNLN				Sn	Sn	21 57 59.5	-5.2
WHFN	White Fish Lak	12.35	95	Pn	Pn	21 55 57.9	+2.2
WHFN				Sn	Sn	21 58 06.9	-6.3
RES	Resolute Bay	15.29	40	Pn	Pn	21 56 36.5	+0.9
	0.3nm,0.3s,baz=263,slow=8.1,SN

DIYA	**Diyarbakir**	**0.79**	**151**	*i* P	**Pg**	**22 01 15.1**	**+0.1**
DIYA				*i* S	**Sg**	**22 01 26.3**	**+1.0**
DIYA	**Diyarbakir**	**0.79**	**151**	P	**Pg**	**22 01 15.1**	**+0.1**
DIYA				S	**Sg**	**22 01 26.3**	**+1.0**
DIY	**Diyarbakir**	**0.85**	**147**	*e*Pg	**Pg**	**22 01 15.0**	**-1.3**
DIY				*e*Sg	**Sg**	**22 01 25.8**	**-1.6**
BGOL	**Bingol**	**0.89**	**65**	*i* P	**Pg**	**22 01 16.8**	**-0.2**
BGOL				*i* S	**Sn**	**22 01 31.5**	**-0.1**
BGOL	**Bingol**	**0.89**	**65**	P	**Pg**	**22 01 16.8**	**-0.2**
BGOL				S	**Sn**	**22 01 31.5**	**-0.1**
BNGB	**Bing˜¶l**	**0.90**	**65**	*e*PG	**Pg**	**22 01 16.8**	**-0.3**
BNGB				*e*SG	**Sn**	**22 01 30.6**	**-1.2**
ERZN	**Erzincan**	**0.97**	**4**	*e*PG	**Pg**	**22 01 17.4**	**-1.2**
REFA	**Refahiye_ERZ˜**	**1.03**	**319**	*i* P	Pn	22 01 27.6	+7.0
REFA				*i* S	Sn	22 01 46.0	+11
YEDI	**Yedisu-Bingol**	**1.08**	**40**	*e*PN	**Pg**	**22 01 19.4**	**-1.2**
EUZM	**Uzumlu**	**1.09**	**2**	*i* P	**Pg**	**22 01 20.3**	**-0.6**
EUZM				*i* S	**Sn**	**22 01 36.9**	**+0.3**
EUZM	**Uzumlu**	**1.09**	**2**	P	**Pg**	**22 01 20.3**	**-0.6**
EUZM				S	**Sn**	**22 01 36.9**	**+0.3**
KEMA	**Kemaliye**	**1.10**	**307**	*i* P	**Pb**	**22 01 20.0**	**-1.1**
KEMA				*i* S	**Sn**	**22 01 36.6**	**-0.3**
KEMA	**Kemaliye**	**1.10**	**307**	P	**Pb**	**22 01 20.0**	**-1.1**
KEMA				S	**Sn**	**22 01 36.6**	**-0.3**
BNGL	**BINGOL**	**1.23**	**74**	*i* P	**Pg**	**22 01 24.9**	**+1.4**
SVAN	**Silvan-Diyarba**	**1.31**	**110**	*e*PN	**Pn**	**22 01 23.6**	**-0.7**
SVAN	**Silvan-Diyarba**	**1.31**	**110**	*e*Pn	**Pn**	**22 01 23.6**	**-0.7**
MAZI	**Mazidag**	**1.32**	**151**	*e*PN	**Pn**	**22 01 23.6**	**-0.9**
MAZI	**Mazidag**	**1.32**	**151**	*e*Pn	**Pn**	**22 01 23.6**	**-0.9**
AKCD	**Akcadag**	**1.38**	**257**	*i* P	**Pn**	**22 01 24.9**	**-0.5**
AKCD				*i* S	**Sb**	**22 01 43.8**	**+0.1**
AKCD	**Akcadag**	**1.38**	**257**	P	**Pn**	**22 01 24.9**	**-0.5**
AKCD				S	**Sb**	**22 01 43.8**	**+0.3**
BTMN	**Batman**	**1.48**	**119**	*i* P	**Pn**	**22 01 26.5**	**-0.1**
BTMN				*i* S	**Sg**	**22 01 48.3**	**+1.0**
BTMN	**Batman**	**1.48**	**119**	P	**Pn**	**22 01 26.5**	**-0.1**
BTMN				S	**Sg**	**22 01 48.3**	**+1.0**
KOPT	**Kop Dagi**	**1.55**	**25**	*i* P	**Pg**	**22 01 29.0**	**-0.6**
KOPT				*i* S	**Sg**	**22 01 55.5**	**+5.7**
KOPT	**Kop Dagi**	**1.55**	**25**	P	**Pg**	**22 01 29.0**	**-0.6**
ATAB	**Bozova**	**1.56**	**223**	*i* P	**Pn**	**22 01 27.4**	**-0.3**
ATAB				*i* S	**Sb**	**22 01 48.9**	**+0.3**
ATAB	**Bozova**	**1.56**	**223**	P	**Pn**	**22 01 27.4**	**-0.3**
ATAB				S	**Sb**	**22 01 48.9**	**+0.3**
KELT	**Kelkit**	**1.56**	**349**	*i* P	**Pg**	**22 01 28.9**	**-0.9**
KELT				*i* S	**Sg**	**22 01 49.8**	**-0.3**
KELT	**Kelkit**	**1.56**	**349**	P	**Pg**	**22 01 28.9**	**-0.9**
KELT				S	**Sg**	**22 01 49.8**	**-0.3**
MARD	**Mardin**	**1.58**	**145**	*i* P	**Pn**	**22 01 27.7**	**-0.4**
MARD				*i* S	**Sn**	**22 01 48.1**	**-0.6**
DARE	**Darende-Malaty**	**1.69**	**269**	*e*PN	**Pb**	**22 01 30.7**	**-0.4**
DARE	**Darende-Malaty**	**1.69**	**269**	*e*Pn	**Pb**	**22 01 30.7**	**-0.4**
CUKAN	**kangal_SIVAS**	**1.83**	**293**	*i* P	**Pb**	**22 01 33.3**	**-0.2**
CUKAN				*i* S	**Sg**	**22 02 00.5**	**+1.7**
CUKAN	**kangal_SIVAS**	**1.83**	**293**	P	**Pb**	**22 01 33.3**	**-0.2**
CUKAN				S	**Sg**	**22 02 00.4**	**+1.7**
GUMT	**Gumushane**	**1.85**	**356**	*e*PN	**Pb**	**22 01 33.1**	**-0.7**
GUMT	**Gumushane**	**1.85**	**356**	*e*Pn	**Pb**	**22 01 33.1**	**-0.7**
EZM	**Erzurum**	**1.86**	**46**	*e*PN	**Pb**	**22 01 32.9**	**-1.2**
ERZM	**Erzurum**	**1.86**	**46**	*i* P	**Pg**	**22 01 35.9**	**+0.4**
ERZM	**Erzurum**	**1.86**	**46**	P	**Pg**	**22 01 35.9**	**+0.4**
SUSE	**Susehri**	**1.94**	**326**	*i* P	**Pg**	**22 01 36.5**	**-0.6**
SUSE	**Susehri**	**1.94**	**326**	P	**Pg**	**22 01 36.5**	**-0.6**
CUALT	**Altinyayla-SIV**	**2.34**	**287**	*i* P	**Pb**	**22 01 42.7**	**+0.5**
CUALT				*i* S	**Sg**	**22 02 15.0**	**0.0**
CUALT	**Altinyayla-SIV**	**2.34**	**287**	P	**Pb**	**22 01 42.7**	**+0.5**
GAZ	**Gaziantep**	**2.40**	**234**	*e*PN	**Pn**	**22 01 40.7**	**+1.2**
GAZ	**Gaziantep**	**2.40**	**234**	*e*Pn	**Pn**	**22 01 40.5**	**+1.2**
ESPY	**Espiye-Giresun**	**2.40**	**343**	*e*PN	**Pb**	**22 01 40.9**	**-2.3**
ESPY	**Espiye-Giresun**	**2.40**	**343**	*e*Pn	**Pb**	**22 01 40.9**	**-2.3**
KMRS	**Kahramanmaras**	**2.43**	**244**	*e*PN	**Pn**	**22 01 41.4**	**+1.7**
KMRS	**Kahramanmaras**	**2.43**	**244**	*e*Pn	**Pn**	**22 01 41.4**	**+1.7**
SIRN	**S˜¨rnak**	**2.46**	**116**	*i* P	**Pn**	**22 01 39.8**	**-0.3**
SIRN				*i* S	**Sb**	**22 02 14.9**	**+0.3**
SIRN	**S˜¨rnak**	**2.46**	**116**	P	**Pn**	**22 01 39.8**	**-0.3**
SIRN				S	**Sb**	**22 02 14.9**	**+0.3**
SIRT	**Sirnak**	**2.48**	**116**	*e*PN	**Pn**	**22 01 41.8**	**+1.4**
SIRT	**Sirnak**	**2.48**	**116**	*e*Pn	**Pn**	**22 01 41.8**	**+1.4**
SARI	**SarD1z-Kayseri**	**2.53**	**266**	*e*PN	**Pn**	**22 01 42.4**	**+1.2**
TUTA	**Tutak**	**2.60**	**71**	*i* P	**Pb**	**22 01 44.7**	**-1.9**
TUTA				*i* S	**Sg**	**22 02 22.6**	**-0.7**
TUTA	**Tutak**	**2.60**	**71**	P	**Pb**	**22 01 44.7**	**-1.9**
GEVA	**Gevas**	**2.70**	**95**	*i* P	**Pb**	**22 01 47.0**	**-1.4**
GEVA				*i* S	**Sb**	**22 02 23.5**	**+1.8**
GEVA	**Gevas**	**2.70**	**95**	P	**Pb**	**22 01 47.0**	**-1.4**
AGRB	**Hanur-Agry**	**2.78**	**69**	*e*PN	**Pn**	**22 01 46.0**	**+1.4**
AGRB	**Hanur-Agry**	**2.78**	**69**	*e*Pn	**Pn**	**22 01 46.0**	**+1.4**
CUKT	**Cukurca**	**3.42**	**112**	*e*PN	**Pn**	**22 01 55.5**	**+2.1**
CUKT	**Cukurca**	**3.42**	**112**	*e*Pn	**Pn**	**22 01 55.5**	**+2.1**
TAHT	**Tahtakopru-Hat**	**3.54**	**232**	*e*PN	**Pn**	**22 01 56.7**	**+1.8**
TAHT	**Tahtakopru-Hat**	**3.54**	**232**	*e*Pn	**Pn**	**22 01 56.7**	**+1.8**

IDC 02 22:09:02.9±19.0, 18°89S×175°79W, h211km±164km, mb3.6/6, mb1 3.8/6, mb1mx3.4/22, mbtmp4.1/6, Error ellipse: s-maj=92.6km s-min=31.4km az=115.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**46.91**	**260**	P	P	22 17 12.4	-0.3
	2.6nm,0.4s,baz=98,slow=6.9,SNR=110						
WRA				PcP	PcP	22 18 41.4	-0.4
	0.3nm,0.4s,baz=98,slow=3.4,SNR=3.5						
ASAR	**Alice Springs**	**46.93**	**255**	P	P	22 17 12.8	0.0
	5.2nm,0.6s,baz=86,slow=8.7,SNR=77						
MJAR	**Matsushiro Arr**	**70.19**	**322**	P	P	22 19 52.6	-0.3
	1.6nm,0.7s,baz=161,slow=6.1,SNR=11						
PETK	**Petropavlovsk-**	**75.28**	**344**	P	P	22 20 22.5	+0.1
	1.8nm,0.7s,baz=108,slow=9.5,SNR=3.5						
KSRS	**Korea Array**	**77.10**	**317**	P	P	22 20 33.4	+0.4
	0.6nm,0.6s,baz=126,slow=6.1,SNR=4.0						
ILAR	**Eielson Array**	**86.30**	**12**	P	P	22 21 20.5	0.0
	0.2nm,0.5s,baz=235,slow=6.0,SNR=5.0						
BRTR	**Keskin Array B**	**147.23**	**316**	PKPbc	PKPbc	22 28 21.2	-0.6
	0.6nm,0.5s,baz=132,slow=5.3,SNR=4.6						
GERES	**GERESS Array B**	**149.15**	**348**	PKPbc	PKPbc	22 28 25.7	-0.7
	0.4nm,0.5s,baz=46,slow=2.8,SNR=4.1						

SJA 02 22:10:26.7±0.4, 31°36S×68°29W, h135km±2km, ML4.0, MW4.1
ISCJB 02 22:10:28.2±0.5, 31°34S±0°05×68°29W±0°06, h123km±6km, mb3.5/1, Error ellipse: s-maj=10.2km s-min=5.6km az=40.0
IDC 02 22:10:28.9±2.6, 31°26S×68°39W, h93km±22km, mb3.3/1, mb1 3.6/4, mb1mx3.4/20, mbtmp3.6/4, Error ellipse: s-maj=38.5km s-min=24.4km az=100.0
ISC 02 22:10:29.5±0.8, 31°28S±0°05×68°33W±0°05, h110km±7km, n25, σ1°§63/34, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RTLL	**Cerro Villicun**	**0.14**	**249**	*i* P	**Pn**	**22 10 46.0**	**+1.1**
SJA	**San Juan**	**0.32**	**219**	*i* P	**Pn**	**22 10 46.1**	**+0.7**
RTCV	**Cerro Valdivia**	**0.61**	**197**	*i* P	**Pn**	**22 10 47.0**	**-0.2**
AVFE	**Valle Fertil**	**0.97**	**51**	*i* P	**Pn**	**22 10 50.8**	**+0.3**
AVFE				*i* S	**Sn**	**22 11 08.5**	**+2.1**
AVFE				IAML		22 11 08.9	
	comp=Z,4μm,0.5s						
RTLS	**Leoncito**	**0.98**	**238**	*i* P	**Pn**	**22 10 51.2**	**+0.4**
AUSP	**Uspallata**	**1.30**	**224**	*i* P	**Pn**	**22 10 54.0**	**-0.3**
AUSP				*i* S	**Sn**	**22 11 14.3**	**+1.2**
ASAL	**Salagasta**	**1.38**	**198**	*i* P	**Pn**	**22 10 54.0**	**-1.0**
ASAL				*i* S	**Sn**	**22 11 14.2**	**-0.1**
ACAN	**Cantantal**	**1.39**	**136**	*i* P	**Pn**	**22 10 53.9**	**-1.2**
ACAN				*i* S	**Sn**	**22 11 14.1**	**-0.3**
ACHE	**Chepes**	**1.43**	**86**	*i* P	**Pn**	**22 10 55.4**	**-0.2**
ARCO	**CERRO ARCO**	**1.64**	**198**	*i* P	**Pn**	**22 10 56.8**	**-1.4**
ARCO				*i* S	**Sn**	**22 11 19.3**	**-0.7**
ARCO				IAML		22 11 26.0	
	comp=Z,998nm,0.3s						
AAGR	**Agrelo**	**1.85**	**193**	*i* P	**Pn**	**22 10 59.4**	**-1.4**
AAGR				*i* S	**Sn**	**22 11 23.4**	**-1.1**
MRA	**San Martin**	**2.49**	**118**	*i* P	**Pn**	**22 11 07.3**	**-1.7**
MRA				IAML		22 11 44.8	
	comp=Z,444nm,0.3s						
VCA	**Vinchina**	**2.54**	**2**	*i* P	**Pn**	**22 11 09.9**	**+0.2**
VCA				IAML		22 11 47.4	
	comp=Z,438nm,0.3s						
ROC1	**El Roble**	**2.84**	**233**	*i* P	**Pn**	**22 11 12.4**	**-1.2**
ROC1				*i* S	**Sn**	**22 11 46.2**	**-1.4**
CYA	**Choya**	**3.58**	**38**	*i* P	**Pn**	**22 11 22.8**	**-0.5**
AHML	**Horco Molle**	**5.19**	**31**	*i* P	**Pn**	**22 11 44.2**	**-0.8**
LVC	**Limon Verde**	**8.65**	**356**	P	**Pn**	**22 12 30.5**	**-1.7**
	comp=Z,202nm,0.3s,baz=181,slow=11,SNR=41						
LVC				S	**Sn**	**22 14 01.8**	**-6.5**
	comp=Z,22nm,0.3s,baz=278,slow=18,SNR=2.4						
PLCA	**Paso Flores**	**9.60**	**190**	P	**Pn**	**22 12 45.5**	**+0.8**
	comp=Z,0.1nm,0.3s,baz=20,slow=15,SNR=3.4						
CPUP	**Villa Florida**	**10.83**	**66**	P	**Pn**	**22 13 00.8**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=231,slow=13,SNR=3.4						
SIV	**San Ignacio**	**16.60**	**25**	P	**Pn**	**22 14 16.9**	**+1.1**
	comp=Z,0.3nm,0.3s,baz=211,slow=12,SNR=6.2						
TXAR	**Lajitas Array**	**69.02**	**327**	P	**P**	**22 21 24.6**	**+1.2**
	comp=Z,0.5nm,0.6s,baz=154,slow=7.8,SNR=6.5						
ASAR	**Alice Springs**	**121.36**	**204**	PKP	**PKPdf**	**22 29 10.7**	**+0.3**
	comp=Z,0.5nm,0.9s,baz=174,slow=0.9,SNR=3.5						
WRA	**Warramunga Arr**	**124.62**	**206**	PKP	**PKPdf**	**22 29 17.6**	**+0.9**
	comp=Z,0.3nm,0.4s,baz=160,slow=1.7,SNR=11						
ZALV	**Zalesovo Beam**	**150.26**	**33**	PKPbc	**PKPbc**	**22 30 08.8**	**+1.7**
	comp=Z,1.6nm,0.4s,baz=307,slow=3.0,SNR=10						
MKAR	**Makanchi Array**	**152.62**	**47**	PKPbc	**PKPbc**	**22 30 14.4**	**+1.4**
	comp=Z,0.6nm,0.7s,baz=286,slow=2.7,SNR=4.7						
MKAR				PKPab	**PKPab**	**22 30 25.6**	**+1.6**
	comp=Z,0.6nm,0.6s,baz=296,slow=4.4,SNR=5.7						

ISCJB 02 22:25:16.1±0.7, 32°10N±0°02×115°03W±0°03, h6km±6km, Error ellipse: s-maj=4.2km s-min=3.5km az=145.1
NEIC 02 22:25:19.2, 32°09N×115°14W, h8km, ML3.4(ECX), ML3.4(PAS), After ECX.
ECX 02 22:25:19.2±0.5, 32°09N×115°14W, h8km, MD3.2, ML3.4
ISC 02 22:25:17.1±1.2, 32°06N±0°03×115°15W±0°02, h11km±10km, n30, σ1°§17/47, 3C-2D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ECBX	**El Chinero**	**0.59**	**172**	⇓*e*P	**Pb**	**22 25 29.7**	**+0.3**
ECBX				*e*S	**Sb**	**22 25 38.0**	**+0.2**
EMSC	**East Mesa**	**0.69**	**12**	⇑*i*P	**Pb**	**22 25 31.2**	**+0.1**
YMD	**Yuma Desert**	**0.71**	**46**	⇑*i*P	**Pg**	**22 25 30.9**	**+0.1**
COA	**Coachella**	**0.80**	**2**	⇓*i*P	**Pb**	**22 25 32.8**	**-0.2**
YUH	**Yuha Desert**	**0.88**	**312**	*i* P	**Pg**	**22 25 34.4**	**+0.4**
RMX	**La Rumorosa**	**0.95**	**305**	*e*P	**Pb**	**22 25 35.6**	**-0.2**
RMX				⇑*e*		22 25 50.5	
RMX				IAML		22 25 50.5	
	comp=E,739nm,0.2s						
IKP	**In-Ko-Pah, Jac**	**1.00**	**306**	P	**Pg**	**22 25 36.6**	**+0.2**
	baz=124,SNR=80						
IKP				S	**Sn**	**22 25 50.7**	**-0.6**
	baz=124						
GLA	**Glamis**	**1.02**	**15**	P	**Pb**	**22 25 35.7**	**-1.2**
	baz=195,SNR=432						
GLA				S	**Sb**	**22 25 48.8**	**-1.5**
	baz=195						
SWSC	**Sam W. Stewart**	**1.04**	**328**	Pn	**Pg**	**22 25 37.4**	**+0.3**
	baz=147,SNR=33						
SPIG	**San Pedro Mart**	**1.05**	**195**	P	**Pn**	**22 25 38.0**	**0.0**
SPIG				S	**Sn**	**22 25 52.8**	**+0.1**
ZAX	**El Zacaton**	**1.10**	**241**	*e*P	**Pn**	**22 25 38.6**	**0.0**
ZAX				*e*S	**Sn**	**22 25 54.0**	**+0.2**
ECNX	**Esteban Cantu**	**1.30**	**252**	*e*P	**Pb**	**22 25 41.8**	**+0.2**
CBX	**Cerro Bola**	**1.31**	**281**	*e*P	**Pg**	**22 25 42.2**	**-0.1**
CBX				IAML		22 26 01.9	
	comp=N,1μm,0.3s						
CBX				*e*		22 26 01.9	
MONP2	**Monument Peak**	**1.36**	**308**	P	**Pn**	**22 25 41.8**	**-0.4**
	baz=126,SNR=55						
MONP2				S	**Sb**	**22 26 00.4**	**+0.2**
	baz=126						
PBX	**Punta Banda**	**1.38**	**257**	*e*P	**Pb**	**22 25 42.8**	**0.0**
BC3	**Big Chuckawall**	**1.61**	**351**	P	**Pn**	**22 25 44.8**	**-0.8**
	baz=170,SNR=32						
BC3				S	**Sn**	**22 26 04.1**	**-2.3**
	baz=170						
Y12C	**Blythe**	**1.77**	**17**	P	**Pn**	**22 25 46.0**	**-1.5**
	baz=197,SNR=57						
109C	**Camp Elliot, M**	**1.85**	**297**	Pb	**Pb**	**22 25 51.2**	**+0.3**
	baz=115,SNR=22						
109C				Sb	**Sg**	**22 26 16.1**	**-0.4**
	baz=115						
TPFO	**Pinon Flats**	**1.89**	**325**	P	**Pn**	**22 25 48.8**	**-0.7**
	baz=144						
PFO	**Pinyon Flats O**	**1.90**	**325**	P	**Pn**	**22 25 48.8**	**-0.7**
	baz=144						
PFO	**Pinyon Flats O**	**1.90**	**325**	*e*Pn	**Pn**	**22 25 49.0**	**-0.5**
214A	**Organ Pipe Nat**	**1.99**	**92**	P	**Pn**	**22 25 49.1**	**-1.6**
	baz=274,SNR=38						
214A	**Organ Pipe Nat**	**1.99**	**92**	*e*Pn	**Pn**	**22 25 49.1**	**-1.6**
214A				*e*Sg	**Sb**	**22 26 19.2**	**+1.1**
TUC	**Tucson**	**3.71**	**85**	*e*Pn	**Pn**	**22 26 12.9**	**-1.5**
TUC				*e*Pg	**Pg**	**22 26 27.2**	**-0.9**
TUC				Sg	**Sb**	**22 27 11.9**	**+4.2**
WUAZ	**Wupatki**	**4.67**	**41**	*e*Pn	**Pn**	**22 26 28.8**	**+1.2**
WUAZ				*e*Pg	**Pg**	**22 26 47.2**	**+0.7**
WUAZ				*e*Sn	**Sn**	**22 27 23.1**	**+1.3**
WUAZ				*e*Sg	**Sg**	**22 27 47.3**	**+0.4**
121A	**Cookes Peak, D**	**6.25**	**84**	*e*Pn	**Pn**	**22 26 49.0**	**-0.4**
	comp=N,10.0nm,0.6s						
121A				*e*Sn	**Sn**	**22 27 59.3**	**-1.6**
121A				*e*Sg	**Sg**	**22 28 36.1**	**-1.8**
R11A	**Troy Canyon, C**	**6.28**	**357**	*e*Pn	**Pn**	**22 26 51.5**	**+1.6**
	comp=N,2.5nm,0.8s						
R11A				*e*Pg	**Pg**	**22 27 18.7**	**+1.3**
PV01	**Paradox Valley**	**8.11**	**40**	*e*Pn	**Pn**	**22 27 16.6**	**+1.6**
	comp=N,147nm,0.4s						
PV04	**Paradox Valley**	**8.12**	**37**	*e*Pn	**Pn**	**22 27 15.9**	**+0.9**
MNTX	**Cornudas Mount**	**8.31**	**90**	*e*Pn	**Pn**	**22 27 17.9**	**+0.3**

ISCJB 02 22:28:13.9±0.6, 21°70N±0°06×143°2E±0°2, h311km, mb3.6/15, Error ellipse: s-maj=21.3km s-min=7.6km az=173.9
IDC 02 22:28:14.4±1.4, 21°67N×143°19E, h300km±13km, mb3.4/16, mb1 3.6/21, mb1mx3.4/47, mbtmp4.2/21, Error ellipse: s-maj=19.5km s-min=8.7km az=86.0
ISC 02 22:28:15.4±0.7, 21°72N±0°07×143°2E±0°2, h311km, n24, σ0°§75/28, mb3.7/15, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**5.43**	**350**	P	**Pn**	**22 29 38.0**	**-0.3**
	9.0nm,0.3s,baz=180,slow=20,SNR=3.8						
JCJ				S	**S**	**22 30 43.1**	**-2.0**
	6.8nm,0.3s,baz=359,slow=23,SNR=15						
GUMO	**Guam**	**8.24**	**169**	P	**Pn**	**22 30 12.3**	**+0.2**
	7.1nm,0.3s,baz=352,slow=14,SNR=5.8						
JHJ	**Hachijo jima 2**	**11.76**	**346**	P	**Pn**	**22 30 54.1**	**-0.6**
	12nm,0.3s,baz=80,slow=23,SNR=15						
MJAR	**Matsushiro Arr**	**15.40**	**345**	P	**P**	**22 31 36.3**	**+0.1**
	2.5nm,0.3s,baz=169,slow=11,SNR=26						
MAT	**Matsushiro**	**15.40**	**345**	P	**P**	**22 31 36.5**	**+0.3**
JNU	**Nakatsue**	**15.76**	**319**	P	**P**	**22 31 41.4**	**+1.1**
	0.8nm,0.3s,baz=153,slow=11,SNR=6.4						
KSRS	**Korea Array**	**20.52**	**323**	P	**P**	**22 32 30.5**	**-0.2**
	1.8nm,0.6s,baz=148,slow=9.3,SNR=8.1						
USRK	**Ussuriysk Ar.**	**24.27**	**340**	P	**P**	**22 33 05.7**	**+0.7**
	1.1nm,0.7s,baz=164,slow=10,SNR=5.0						
KLR	**Kul'dur**	**28.33**	**344**	P	**P**	**22 33 47.1**	**+0.7**
	5.5nm,0.6s,baz=155,slow=7.2,SNR=31						
SONM	**Songino Array**	**39.34**	**320**	P	**P**	**22 35 16.0**	**+0.6**
	0.3nm,0.4s,baz=130,slow=8.6,SNR=3.9						
CMAR	**Chiang Mai Arr**	**41.61**	**274**	P	**P**	**22 35 34.2**	**+0.2**
	0.6nm,0.5s,baz=72,slow=5.8,SNR=4.4						
WRA	**Warramunga Arr**	**42.31**	**192**	P	**P**	**22 35 38.5**	**-1.0**
	4.8nm,0.6s,baz=16,slow=8.3,SNR=71						
WRA				PcP	**PcP**	**22 37 26.9**	**+0.1**
	0.4nm,0.7s,baz=7.3,slow=3.4,SNR=3.3						
FITZ	**Fitzroy Crossi**	**43.16**	**205**	P	**P**	**22 35 45.3**	**-1.0**
	3.4nm,0.6s,baz=16,slow=9.5,SNR=16						
ASAR	**Alice Springs**	**46.02**	**192**	P	**P**	**22 36 07.9**	**-0.8**
	1.1nm,0.7s,baz=15,slow=8.4,SNR=23						
ZALV	**Zalesovo Beam**	**54.21**	**322**	P	**P**	**22 37 09.6**	**+0.2**
	1.0nm,0.6s,baz=76,slow=6.3,SNR=6.2						
ZALV				PcP	**PcP**	**22 38 09.1**	**-0.3**
	1.6nm,0.4s,baz=125,slow=3.6,SNR=9.0						
MKAR	**Makanchi Array**	**54.71**	**313**	P	**P**	**22 37 13.3**	**+0.2**
	0.5nm,0.5s,baz=92,slow=8.0,SNR=7.0						
MKAR				PcP	**PcP**	**22 38 11.5**	**-0.1**
	0.7nm,0.4s,baz=82,slow=5.0,SNR=6.8						
KURBB	**Kurchatov Arra**	**57.53**	**317**	ScP	**ScP**	**22 41 52.8**	**+0.8**
	0.3nm,0.3s,baz=100,slow=4.0,SNR=4.3						
ILAR	**Eielson Array**	**62.00**	**27**	P	**P**	**22 38 02.8**	**-0.1**
	0.6nm,0.7s,baz=251,slow=5.6,SNR=9.3						
YKA	**Yellowknife Ar**	**76.42**	**28**	P	**P**	**22 39 31.4**	**+0.7**
	1.3nm,0.5s,baz=291,slow=6.0,SNR=7.5						
ARCES	**ARCESS Array B**	**78.91**	**342**	P	**P**	**22 39 45.0**	**+0.6**
	2.5nm,0.6s,baz=77,slow=8.0,SNR=21						
KBZ	**Khabaz**	**82.38**	**314**	P	**P**	**22 40 03.9**	**+0.8**
	3.4nm,0.8s,baz=111,slow=5.5,SNR=6.6						
FINES	**FINESS Array B**	**83.17**	**334**	P	**P**	**22 40 06.2**	**-0.5**
	1.7nm,0.4s,baz=70,slow=5.1,SNR=39						
AKASG	**Malin Array Be**	**87.51**	**324**	P	**P**	**22 40 27.2**	**-1.0**
	0.3nm,0.3s,baz=47,slow=5.5,SNR=2.9						
PLCA	**Paso Flores**	**145.75**	**131**	PKPbc	**PKPbc**	**22 47 18.8**	**+0.5**
	7.1nm,0.9s,baz=238,slow=4.3,SNR=7.6						

IDC 02 22:32:34.5±3.0, 29°91N×138°06E, h410km±62km, mb3.0/4, mb1 3.0/6, mb1mx2.6/43, mbtmp3.6/6, Error ellipse: s-maj=225.8km s-min=19.0km az=83.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**3.52**	**24**	P	P	22 33 43.1	+0.5
	5.1nm,0.3s,baz=21,slow=8.6,SNR=5.3						
JHJ				S	S	22 34 31.2	-6.9
	5.8nm,0.3s,baz=252,slow=20,SNR=2.2						
MJAR	**Matsushiro Arr**	**6.61**	**1**	P	P	22 34 13.5	-0.9
	0.2nm,0.3s,baz=177,slow=11,SNR=3.4						
WRA	**Warramunga Arr**	**49.70**	**185**	P	P	22 40 46.8	-0.4
	0.3nm,0.6s,baz=3.4,slow=7.7,SNR=4.8						
ASAR	**Alice Springs**	**53.42**	**185**	P	P	22 41 14.5	+0.2
	0.1nm,0.4s,baz=0.8,slow=6.5,SNR=4.3						
ARCES	**ARCESS Array B**	**69.68**	**340**	P	P	22 43 00.9	0.0
	1.3nm,0.9s,baz=59,slow=8.8,SNR=4.0						
FINES	**FINESS Array B**	**73.80**	**332**	P	P	22 43 25.3	+0.1
	0.4nm,0.3s,baz=59,slow=5.4,SNR=5.3						

GUC 02 22:34:29.1±0.6, 33°95S×72°18W, h12km±4km, ML3.5
ISC 02 22:34:29.1±1.9, 33°92S±0°05×72°2W±0°1, h15km±10km, n20, σ2°§62/30, 4C-3D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.48**	**166**	⇑*i*P	**Pg**	**22 34 38.6**	**0.0**
CHPI				*i* S	**Sg**	**22 34 45.3**	**+0.1**
ANTU	**Antumapu**	**1.31**	**75**	⇑*i*P	**Pb**	**22 34 53.7**	**+0.3**
ANTU				*i* S	**Sn**	**22 35 11.8**	**+1.7**
ANTU				IAML		22 35 15.8	
	comp=E,2μm,0.4s						
ROCH	**El Roble**	**1.34**	**45**	⇑*i*P	**Pb**	**22 34 54.0**	**0.0**
ROCH				*i* S	**Sg**	**22 35 13.7**	**+1.3**
ROCH				IAML		22 35 21.1	
	comp=E,1μm,0.7s						
CLCH	**Cerro Calan**	**1.44**	**69**	⇓*i*P	**Pb**	**22 34 55.7**	**+0.1**
CLCH				*i* S	**Sg**	**22 35 15.8**	**+0.3**
CLCH				IAML		22 35 32.7	
	comp=E,926nm,0.8s						
PEL	**Peldehue**

	4.7nm,0.6s							
ANMO	**Albuquerque**	**27.38**	**325**	*e*P	P	22 59 46.1	-0.3	
	0.4nm,0.7s							
HWUT	**Hardware Ranch**	**34.99**	**328**	*e*P	P	23 00 52.8	-0.6	
	1.1nm,0.4s							
LCO	**Las Campanas**	**45.17**	**159**	*e*P	P	23 02 18.4	+0.3	
	6.7nm,0.6s							

ISCJB ***02*** *23:12:22.6±0.4, 23°.94N±0°.02×122°.39E±0°.02, h16km±4km, Error ellipse: s-maj=4.2km s-min=2.4km az=157.9*
JMA ***02*** *23:12:22.7±0.2, 23°.94N×122°.37E, h21km±4km, M2.5*
TAP ***02*** *23:12:23.7, 24°.00N×122°.36E, h25km, ML3.1, D*

ISC 02 23:12:22.6±1.4**, 23°.94N**±0°.03×**122°.37E**±0°.02**, h20**km±4km**, n43,** σ0**61/78, 4C-1D, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.72**	**281**	*e*P	**Pb**	**23 12 36.2**	**-0.3**
	baz=276						
TWD				S	**Sg**	**23 12 46.8**	**+0.2**
	baz=276						
JYNG	**Yonagunijimaku**	**0.73**	**46**	P	**Pb**	**23 12 36.5**	**-0.1**
JYNG				S	**Sb**	**23 12 45.4**	**-0.8**
ENA	**Nanau**	**0.75**	**310**	P	**Pb**	**23 12 37.0**	**0.0**
	baz=315						
ENA				*i* S	**Sg**	**23 12 47.5**	**0.0**
	baz=315						
YOJ	**Yonaguni jima**	**0.78**	**48**	P	**Pb**	**23 12 37.6**	**+0.1**
YOJ				S	**Sb**	**23 12 46.7**	**-1.0**
TWC	**Suao**	**0.82**	**324**	⇓P	**Pb**	**23 12 37.4**	**-0.8**
	baz=322						
TWC				S	**Sb**	**23 12 48.1**	**-0.7**
	baz=322						
ESL	**Shilin**	**0.87**	**262**	*e*P	**Pb**	**23 12 38.9**	**-0.1**
	baz=249						
ESL				*e*S	**Sb**	**23 12 50.3**	**0.0**
	baz=249						
EGS		**0.99**	**336**	⇑ *i* P	**Pb**	**23 12 41.3**	**+0.3**
	baz=325						
EGS				S	**Sn**	**23 12 54.5**	**-0.2**
	baz=325						
TWE	**Neicheng**	**1.01**	**320**	P	**Pn**	**23 12 41.9**	**+0.2**
	baz=326						
TWE				*e*S	**Sn**	**23 12 55.5**	**+0.2**
	baz=326						
ENTT	**Nioudou**	**1.01**	**314**	P	**Pb**	**23 12 41.5**	**+0.1**
	baz=322						
ENTT				S	**Sn**	**23 12 55.4**	**-0.1**
	baz=322						
WHF	**Hehuan Shan**	**1.03**	**282**	⇑ *i* P	**Pb**	**23 12 42.1**	**+0.1**
	baz=264						
EHY	**Hungye**	**1.06**	**246**	*e*P	**Pb**	**23 12 42.0**	**-0.2**
	baz=231						
EHY				*e*S	**Sb**	**23 12 55.8**	**+0.2**
	baz=231						
TWB1	**Santiao Chiao**	**1.12**	**342**	P	**Pb**	**23 12 43.6**	**+0.3**
	baz=325						
TWB1				*e*S	**Sb**	**23 12 56.1**	**-1.4**
	baz=325						
TWT	**Tachien**	**1.14**	**286**	*e*P	**Pb**	**23 12 44.1**	**+0.4**
	baz=272						
TWT				S	**Sn**	**23 12 58.9**	**+0.2**
	baz=272						
TWF1	**Yuli**	**1.15**	**240**	P	**Pb**	**23 12 43.9**	**+0.1**
	baz=236						
TWF1				*e*S	**Sn**	**23 12 58.7**	**0.0**
	baz=236						
NSK	**Sanguang**	**1.18**	**309**	P	**Pn**	**23 12 44.0**	**-0.1**
	baz=305						
NSK				*e*S	**Sb**	**23 12 59.0**	**-0.2**
	baz=305						
CHKT	**Chengkung**	**1.25**	**228**	*e*P	**Pg**	**23 12 46.4**	**-0.3**
	baz=226						
CHKT				*e*S	**Sb**	**23 12 59.8**	**-1.3**
	baz=226						
NWF	**Wu-fen Shan**	**1.25**	**335**	P	**Pn**	**23 12 44.7**	**-0.3**
	baz=331						
NWF				S	**Sb**	**23 13 01.5**	**+0.2**
	baz=331						
TWA	**Mucha**	**1.26**	**325**	*e*P	**Pn**	**23 12 45.2**	**+0.1**
	baz=322						
TWA				*e*S	**Sb**	**23 13 01.4**	**-0.2**
	baz=322						
IRIF	**Iriomote-Funau**	**1.30**	**72**	P	**Pb**	**23 12 47.0**	**+0.6**
HATJ	**Hateruma jima**	**1.31**	**85**	P	**Pb**	**23 12 46.5**	**-0.1**
HATJ				*e*S	**Sb**	**23 13 03.3**	**+0.2**
SMLT	**Sun Moon Lake**	**1.35**	**268**	*e*P	**Pb**	**23 12 47.1**	**-0.1**
	baz=255						
SMLT				*e*S	**Sn**	**23 13 02.8**	**-1.1**
	baz=255						
YUS	**Yu-Shan**	**1.38**	**251**	*e*P	**Pn**	**23 12 47.5**	**+0.3**
	baz=248						
YUS				*e*S	**Sn**	**23 13 04.1**	**-1.0**
	baz=248						
TYC	**Yuchr**	**1.39**	**269**	*e*P	**Pn**	**23 12 47.2**	**+0.4**
	baz=266						
NSTT	**Nanjuang**	**1.43**	**299**	⇑ *e*P	**Pb**	**23 12 48.7**	**+0.1**
	baz=283						
NSTT				*e*S	**Sn**	**23 13 06.0**	**+0.4**
	baz=283						
TWS1	**Kuangyinshan**	**1.45**	**323**	*e*P	**Pn**	**23 12 47.8**	**+0.1**
	baz=321						
ALS	**Alishan**	**1.50**	**254**	*e*P	**Pb**	**23 12 49.9**	**-0.1**
	baz=251						
ALS				*e*S	**Sn**	**23 13 08.3**	**+0.5**
	baz=251						
TWY	**Chenhua**	**1.50**	**332**	*e*P	**Pn**	**23 12 48.8**	**+0.3**
	baz=330						
TWQ1	**Liyutan**	**1.52**	**286**	⇑ *e*P	**Pb**	**23 12 49.8**	**-0.3**
	baz=282						
TWQ1				*e*S	**Sb**	**23 13 08.9**	**0.0**
	baz=282						
JKRS	**Kuro-shima**	**1.52**	**79**	P	**Pb**	**23 12 50.0**	**-0.2**
JKRS				S	**Sb**	**23 13 09.9**	**+0.8**
NSY	**Sanyi**	**1.55**	**288**	*e*P	**Pn**	**23 12 49.7**	**+0.6**
	baz=285						
TCU	**Taichung**	**1.56**	**278**	*e*P	**Pb**	**23 12 51.0**	**+0.1**
	baz=274						
TCU				*e*S	**Sb**	**23 13 11.3**	**+1.1**
	baz=274						
CHN5	**Tsauling**	**1.59**	**258**	*e*P	**Pn**	**23 12 50.2**	**+0.4**
	baz=244						
CHN5				*e*S	**Sb**	**23 13 11.9**	**+0.8**
	baz=244						
TWG	**Pinlang**	**1.64**	**227**	*e*P	**Pn**	**23 12 50.1**	**-0.2**
	baz=238						
TWG				*e*S	**Sn**	**23 13 10.3**	**-0.4**
	baz=238						
JIJ	**Ishigaki jima**	**1.67**	**75**	P	**Pn**	**23 12 51.0**	**+0.3**
JIJ				*e*S	**Sn**	**23 13 11.1**	**-0.5**
STYT	**Tauyuan**	**1.67**	**243**	*e*P	**Pn**	**23 12 51.5**	**+0.7**
	baz=231						
STYT				*e*S	**Sn**	**23 13 12.6**	**+0.8**
	baz=231						
CHN4	**Tsaushan**	**1.73**	**251**	*e*P	**Pb**	**23 12 53.0**	**-0.8**
	baz=248						
CHN4				*e*S	**Sb**	**23 13 14.6**	**-0.6**
	baz=248						
WTP	**Ta-pu**	**1.76**	**247**	*e*P	**Pb**	**23 12 53.4**	**-0.8**
	baz=245						
WTP				*e*S	**Sb**	**23 13 15.9**	**+0.1**
	baz=245						
SGST	**Jiashian**	**1.85**	**243**	*e*P	**Pb**	**23 12 54.7**	**-1.1**
	baz=232						
SGST				*e*S	**Sn**	**23 13 16.8**	**+0.6**
	baz=232						
TWK	**Hsinying**	**1.85**	**249**	*e*P	**Pn**	**23 12 54.0**	**+0.6**
	baz=247						
TWK				*e*S	**Sb**	**23 13 19.0**	**+0.3**
	baz=247						
JISG	**Ishigakijimahi**	**1.88**	**70**	P	**Pn**	**23 12 54.2**	**+0.6**
JISG				S	**Sn**	**23 13 15.7**	**-1.1**
JTJ	**Tarama**	**2.24**	**71**	S	**Sn**	**23 13 26.4**	**+0.8**
SCZT	**Fangliau**	**2.25**	**226**	*e*P	**Pb**	**23 13 01.1**	**-1.4**
	baz=219						
SCZT				*e*S	**Sn**	**23 13 27.8**	**+1.9**
	baz=219						
PNG	**Penghu**	**2.61**	**262**	*e*P	**Pn**	**23 13 04.4**	**+0.7**
	baz=261						

ISCJB ***02*** *23:15:21.8±0.5, 11°.04S±0°.06×165°.56E±0°.07, h30km, mb4.2/14, MS3.6/3, Error ellipse: s-maj=10.9km s-min=7.6km az=147.8*
IDC ***02*** *23:15:24.9±4.3, 10°.93S×165°.57E, h39km±35km, mb4.0/10, mb1 4.2/12, mb1mx3.9/40, mbtmp4.2/12, ML4.6/2, MS3.6/4, Ms1 3.6/4, ms1mx3.0/29, Error ellipse: s-maj=25.8km s-min=21.8km az=65.0*
NEIC ***02*** *23:15:25.3±1.3, 10°.95S×165°.55E, h45km±11km, mb4.3/4, Error ellipse: s-maj=12.6km s-min=9.0km az=54.0*

ISC 02 23:15:23.5±0.6**, 10°.94S**±0°.08×**165°.63E**±0°.09**, h30**km**, n25,** σ0**63/27, mb4.1/14, MS3.7/3, Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.79**	**285**	Pn	**Pn**	**23 16 47.8**	**+0.4**
	24nm,0.3s,baz=137,slow=9.4,SNR=5.4						
HNR				Sn	**Sn**	**23 17 52.7**	**-0.1**
	4.9nm,0.3s,baz=357,slow=17,SNR=3.3						
HNR	**Honiara**	**5.79**	**285**	P	**Pn**	**23 16 47.0**	**-0.4**
HNR				S	**Sn**	**23 17 54.0**	**+1.2**
HNR	**Honiara**	**5.79**	**285**	*e*Pn	**Pn**	**23 16 47.6**	**+0.2**
	106nm,0.6s						
HNR				Sn	**Sn**	**23 17 52.7**	**-0.1**
DZM	**Mont Dzumac**	**11.09**	**176**	Pn	**Pn**	**23 18 01.4**	**+1.1**
	2.7nm,0.3s,baz=303,slow=10,SNR=61						
DZM				Sn	**Sn**	**23 20 02.3**	**-1.1**
	0.3nm,0.3s,baz=77,slow=19,SNR=2.6						
DZM				LR	LR	23 21 39.6	
	comp=Z,131nm,18.5s,baz=33,slow=34						
CTA	**Charters Tower**	**20.74**	**242**	P	Pn	23 20 06.0	+1.6
	9.8nm,0.8s,baz=78,slow=12,SNR=6.7						
URZ	**Urewera**	**29.08**	**161**	P	**P**	**23 21 22.1**	**+0.7**
	4.8nm,0.5s,baz=257,slow=7,6,SNR=4.6						
H11S2	**WAKE ISLAND Hy**	**29.27**	**2**	T	T	23 51 58.2	
	baz=182,slow=76,SNR=78						
H11S3	**WAKE ISLAND Hy**	**29.27**	**2**	T	T	23 51 58.5	
	baz=182,slow=76,SNR=55						
H11S1	**WAKE ISLAND Hy**	**29.28**	**2**	T	T	23 52 03.6	
	baz=182,slow=76,SNR=55						
WRA	**Warramunga Arr**	**31.41**	**250**	P	**P**	**23 21 41.6**	**-0.6**
	2.5nm,0.7s,baz=82,slow=9.1,SNR=23						
WRA				PcP	**PcP**	**23 24 35.5**	**-0.1**
	1.3nm,0.9s,baz=76,slow=3.6,SNR=6.7						
WRA				LR	LR	23 34 23.4	
	comp=Z,158nm,18.2s,baz=195,slow=36						
ASAR	**Alice Springs**	**32.73**	**243**	P	**P**	**23 21 53.1**	**-0.8**
	4.7nm,0.8s,baz=63,slow=10,SNR=50						
ASAR				PcP	**PcP**	**23 24 39.5**	**+0.4**
	1.2nm,0.8s,baz=71,slow=2.3,SNR=7.2						
ASAR				LR	LR	23 34 06.9	
	comp=Z,133nm,18.5s,baz=86,slow=34						
FITZ	**Fitzroy Crossi**	**39.29**	**255**	P	**P**	**23 22 50.5**	**+0.5**
	1.8nm,0.8s,baz=104,slow=6.9,SNR=5.9						
USRK	**Ussuriysk Ar.**	**62.80**	**333**	P	**P**	**23 25 46.4**	**+0.1**
	0.5nm,0.4s,baz=134,slow=8.2,SNR=4.3						
PETK	**Petropavlovsk-**	**64.16**	**355**	LR	LR	23 48 41.3	
	comp=Z,28nm,20.6s,baz=149,slow=31						
CMAR	**Chiang Mai Arr**	**71.96**	**294**	P	**P**	**23 26 45.3**	**+0.6**
	0.4nm,0.3s,baz=119,slow=4.8,SNR=5.0						
SONM	**Songino Array**	**78.51**	**324**	P	**P**	**23 27 21.9**	**-0.2**
	0.8nm,0.7s,baz=130,slow=5.8,SNR=5.4						
QSPA	**South Pole Qui**	**79.06**	**180**	*e*P	**P**	**23 27 24.3**	**-0.5**
	3.4nm,0.8s						
ILAR	**Eielson Array**	**83.45**	**19**	P	**P**	**23 27 47.9**	**+0.1**
	2.2nm,0.5s,baz=242,slow=4.9,SNR=33						
EGAK	**Eagle**	**85.32**	**20**	*e*P	**P**	**23 27 58.0**	**+0.7**
	1.4nm,0.6s						
DAWY	**Dawson**	**85.50**	**21**	*e*P	**P**	**23 27 58.3**	**-0.1**
	0.6nm,0.6s						
MKAR	**Makanchi Array**	**93.37**	**317**	P	**P**	**23 28 34.8**	**-1.1**
	0.4nm,0.6s,baz=89,slow=5.2,SNR=4.4						
ZALV	**Zelesovo Beam**	**93.40**	**324**	P	**P**	**23 28 35.0**	**-0.8**
	0.5nm,0.7s,baz=95,slow=3.6,SNR=3.9						
EGMT	**Eagleton**	**94.47**	**42**	P	**P**	**23 28 41.3**	**+0.3**
	10nm,0.9s						
ARCES	**ARCESS Array B**	**116.21**	**345**	PKP	**PKPdf**	**23 34 02.7**	**-0.7**
	0.5nm,0.4s,baz=100,slow=1.4,SNR=6.6						
ESDC	**Sonseca Array**	**149.93**	**344**	PKPbc	**PKPbc**	**23 35 11.3**	**-0.1**
	0.1nm,0.4s,baz=305,slow=4.5,SNR=3.0						
ESDC				PKPab	**PKPab**	**23 35 16.8**	**-0.1**
	0.2nm,0.3s,baz=20,slow=4.7,SNR=5.9						

NIED ***02*** *23:23:00, 37°.20N×141°.40E, h29km, Mw3.4 Best double couple: M₀1.19000×10¹⁴ NP1:φ₀s21.00000°, δ17.00000°, λ74.00000°. NP2:φ₀s217.00000°, δ73.00000°, λ95.00000°.*
ISCJB ***02*** *23:23:36.8±1.3, 37°.16N±0°.04×141°.56E±0°.08, h28km±6km, mb3.5/2, Error ellipse: s-maj=11.1km s-min=6.2km az=3.8*
JMA ***02*** *23:23:38.8±0.1, 37°.20N×141°.43E, h47km±1km, M3.5*
JMA Felt I J1.
IDC ***02*** *23:23:40.7±5.6, 37°.01N×141°.59E, h47km±46km, mb3.4/2, mb1 3.5/4, mb1mx3.1/33, mbtmp3.6/4, ML3.2/2, MS1.8/1, Ms1 1.8/1, ms1mx1.7/22, Error ellipse: s-maj=48.8km s-min=15.9km az=58.0*

ISC 02 23:23:35.7±1.7**, 37°.21N**±0°.04×**141°.59E**±0°.07**, h16**km±10km**, n14,** σ1**22/24, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.59**	**286**	P	**Pn**	**23 23 49.3**	**-0.1**
JFK				S	**Sn**	**23 23 56.7**	**-2.0**
ONAJ	**Iwakimizuishiy**	**0.64**	**261**	P	**Pn**	**23 23 49.9**	**-0.2**
ONAJ				S	**Sg**	**23 23 57.6**	**+0.8**
JMM	**Marumori**	**0.91**	**316**	P	**Pn**	**23 23 54.1**	**+0.3**
JMM				S	**Sb**	**23 24 04.6**	**-0.3**
JHO	**Hitachi**	**1.01**	**234**	P	**Pg**	**23 23 54.7**	**-0.6**
JHO				S	**Sb**	**23 24 06.3**	**-1.5**
JFT	**Otama**	**1.04**	**288**	P	**Pg**	**23 23 56.2**	**+0.3**
JFT				S	**Sb**	**23 24 08.3**	**-0.4**
JIO	**Ouri**	**1.26**	**351**	P	**Pg**	**23 23 59.7**	**-0.3**
JOU	**Okura**	**1.37**	**328**	P	**Pg**	**23 24 01.3**	**-0.7**
JOU				S	**Sb**	**23 24 18.1**	**0.0**
JFY	**Yanaizu**	**1.51**	**278**	P	**Pb**	**23 24 02.7**	**-0.7**
JYS	**Shirataka**	**1.57**	**310**	P	**Pb**	**23 24 03.7**	**-0.7**
JYS				S	**Sn**	**23 24 22.2**	**-0.7**
MJAR	**Matsushiro Arr**	**2.79**	**257**	P	**Pn**	**23 24 21.1**	**+1.5**
	2.1nm,0.3s,baz=78,slow=17,SNR=20						
MJAR				S	**Sn**	**23 24 54.4**	**+1.5**
	3.2nm,0.3s,baz=62,slow=21,SNR=6.9						
MJAR				LR	LR	23 25 21.7	
	comp=Z,18nm,21.6s,baz=70,slow=37						
MAT	**Matsushiro**	**2.79**	**257**	P	**Pn**	**23 24 21.3**	**+1.6**
MAT				S	**Sn**	**23 24 52.8**	**-0.2**
JHJ	**Hachijo jima 2**	**4.34**	**200**	P	**Pn**	**23 24 42.2**	**+1.3**
	7.0nm,0.3s,baz=162,slow=23,SNR=6.1						
JHJ				S	**Sn**	**23 25 29.6**	**-1.6**
	26nm,0.3s,baz=138,slow=22,SNR=8.8						
SONM	**Songino Array**	**27.80**	**304**	P	**P**	**23 29 26.9**	**+2.8**
	0.5nm,0.5s,baz=101,slow=7.5,SNR=3.6						
WRA	**Warramunga Arr**	**57.25**	**188**	P	**P**	**23 33 21.5**	**-0.8**
	0.5nm,0.8s,baz=6.1,slow=7.1,SNR=7.6						

IDC ***02*** *23:30:59.9±3.0, 39°.37N×143°.09E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.3/36, mbtmp3.4/3, ML3.1/1, MS2.2/2, Ms1 2.2/2, ms1mx2.1/29, Error ellipse: s-maj=70.7km s-min=38.8km az=65.0*
NIED ***02*** *23:31:00, 39°.20N×142°.40E, h32km, Mw3.4 Best double couple: M₀1.57000×10¹⁴ NP1:φ₀s304.00000°, δ17.00000°, λ-155.00000°. NP2:φ₀s189.00000°, δ83.00000°, λ-74.00000°.*
ISCJB ***02*** *23:31:04.9±1.5, 39°.19N±0°.04×142°.48E±0°.10, h21km±7km, mb3.4/2, Error ellipse: s-maj=12.5km s-min=6.3km az=7.6*
JMA ***02*** *23:31:06.3±0.1, 39°.20N×142°.39E, h30km±1km, M3.5*

ISC 02 23:31:06.1±2.4**, 39°.23N**±0°.05×**142°.4E**±0°.1**, h23**km±14km**, n20,** σ1**60/22, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.58**	**307**	P	**Pb**	**23 31 17.8**	**+0.1**
MIYJ				S	**Sb**	**23 31 25.6**	**+0.1**
OFUJ	**Ofunato**	**0.60**	**256**	P	**Pb**	**23 31 17.8**	**-0.2**
JTH	**Tanohata**	**0.83**	**329**	P	**Pb**	**23 31 21.7**	**-0.2**
JTH				S	**Sn**	**23 31 33.8**	**-0.1**
JOM	**Ohasama**	**0.91**	**286**	P	**Pn**	**23 31 22.9**	**-0.5**
JOM				S	**Sb**	**23 31 35.0**	**+0.1**
JMK	**Ichinoseki**	**0.98**	**254**	P	**Pn**	**23 31 23.4**	**-0.9**
JMK				S	**Sb**	**23 31 35.6**	**-1.1**
JKZ	**Kuzumaki**	**1.13**	**312**	P	**Pn**	**23 31 26.8**	**+0.2**
JKZ				S	**Sn**	**23 31 41.2**	**-0.2**
JIO	**Ouri**	**1.14**	**228**	P	**Pn**	**23 31 25.1**	**-1.5**
JIO				S	**Sn**	**23 31 38.2**	**-3.2**
JANG	**Nango**	**1.34**	**329**	P	**Pn**	**23 31 29.5**	**+0.1**
JANG				S	**Sn**	**23 31 46.5**	**0.0**
JRG	**Rokugo**	**1.40**	**277**	P	**Pn**	**23 31 30.5**	**+0.4**
JRG				S	**Sb**	**23 31 48.8**	**-0.1**
MAT	**Matsushiro**	**4.28**	**233**	P	**Pn**	**23 32 13.0**	**+3.2**
MAT				*e*S	**Sn**	**23 33 01.9**	**+2.9**
MJAR	**Matsushiro Arr**	**4.28**	**232**	Pn	**Pn**	**23 32 13.0**	**+3.3**
	0.8nm,0.3s,baz=43,slow=11,SNR=25						
MJAR				LR	LR	23 34 10.5	
	comp=Z,28nm,19.6s,baz=85,slow=40						
KSRS	**Korea Array**	**11.53**	**266**	LR	LR	23 37 54.9	
	comp=Z,9.1nm,19.6s,baz=10.0,slow=34						
H11N2	**WAKE ISLAND Hy**	**28.68**	**126**	T	T	00 07 22.8	
	baz=318,slow=75,SNR=88						
H11N1	**WAKE ISLAND Hy**	**28.69**	**126**	T	T	00 07 25.5	
	baz=318,slow=75,SNR=57						
H11N3	**WAKE ISLAND Hy**	**28.70**	**126**	T	T	00 07 26.1	
	baz=318,slow=75,SNR=38						
H11S1	**WAKE ISLAND Hy**	**29.47**	**128**	T	T	00 08 32.3	
	baz=319,slow=76,SNR=4.9						
H11S3	**WAKE ISLAND Hy**	**29.47**	**128**	T	T	00 08 33.6	
	baz=319,slow=76,SNR=7.8						
H11S2	**WAKE ISLAND Hy**	**29.49**	**128**	T	T	00 08 33.2	
	baz=319,slow=76,SNR=5.1						
MKAR	**Makanchi Array**	**43.66**	**300**	P	**P**	**23 39 09.2**	**+0.3**
	0.3nm,0.6s,baz=76,slow=7.6,SNR=4.7						
WRA	**Warramunga Arr**	**59.34**	**189**	P	**P**	**23 41 05.2**	**-1.0**
	0.4nm,0.7s,baz=6.3,slow=6.8,SNR=3.8						

IDC ***02*** *23:34:04.1±1.5, 26°.95N×143°.46E, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.6/36, mbtmp3.8/5, ML3.7/1, Error ellipse: s-maj=33.0km s-min=21.1km az=53.0*
NEIC ***02*** *23:34:05.2±0.5, 27°.01N×143°.53E, h10km, mb4.3/4, Error ellipse: s-maj=14.4km s-min=10.0km az=77.0*
ISCJB ***02*** *23:34:07.0±0.7, 27°.0N±0°.1×143°.52E±0°.07, h33km, mb4.0/8, Error ellipse: s-maj=16.9km s-min=8.6km az=9.5*

ISC 02 23:34:08.9±1.0**, 27°.0N**±0°.1×**143°.46E**±0°.09**, h35**km**, n11,** σ0**62/13, mb3.9/8, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.14**	**273**	*e*Pn	**Pn**	**23 34 28.1**	**-0.3**
CBIJ				Sn	**Sn**	**23 34 42.8**	**+0.1**
JCJ	**Chichijima**	**1.14**	**273**	Pn	**Pn**	**23 34 28.4**	**+0.1**
JCJ				Sn	**Sn**	**23 34 42.8**	**+0.1**
MJAR	**Matsushiro Arr**	**10.47**	**336**	Pn	**Pn**	**23 36 35.5**	**-1.0**
	0.5nm,0.3s,baz=151,slow=10,SNR=6.4						
WRAB	**Tennant Creek**	**47.52**	**192**	*e*P	**P**	**23 42 40.7**	**-0.2**
	2.6nm,0.5s						
WRA	**Warramunga Arr**	**47.53**	**192**	P	**P**	**23 42 40.8**	**-0.2**
	2.5nm,0.5s,baz=12,slow=8.5,SNR=34						
ASAR	**Alice Springs**	**51.25**	**191**	P	**P**	**23 43 08.6**	**-0.8**
	0.4nm,0.6s,baz=9.6,slow=5.2,SNR=6.7						
MKAR	**Makanchi Array**	**51.38**	**310**	P	**P**	**23 43 11.2**	**+0.9**
	0.2nm,0.3s,baz=82,slow=9.9,SNR=3.2						
KURK	**Kurchatov**	**53.83**	**315**	*e*P	**P**	**23 43 28.2**	**0.0**
	6.6nm,0.5s						
FINES	**FINESS Array B**	**78.49**	**334**	P	**P**	**23 46 07.2**	**+1.1**
	0.0nm,0.8s,baz=76,slow=7.3,SNR=3.2						
FFC	**Flin Flon**	**81.19**	**32**	*e*P	**P**	**23 46 20.8**	**-0.1**
	1.0nm,0.6s						
SDCO	**Great Sand Dun**	**88.75**	**48**	*e*P	**P**	**23 46 59.7**	**+0.1**
	0.2nm,0.4s						

ISCJB ***02*** *23:45:35.4±0.5, 40°.93N±0°.03×42°.36E±0°.03, h2km±6km, Error ellipse: s-maj=4.4km s-min=3.7km az=172.1*
CSEM ***02*** *23:45:35.5±0.2, 40°.91N×42°.34E, h5km, MD2.5, Error ellipse: s-maj=3.5km s-min=2.9km az=32.0*
ISK ***02*** *23:45:35.7, 40°.87N×42°.37E, h4km, MD2.5*
DDA ***02*** *23:45:36.1, 40°.94N×42°.28E, h7km, Md2.6*

ISC 02 23:45:35.7±1.0**, 40°.92N**±0°.03×**42°.35E**±0°.02**, h5**km±10km**, n22,** σ0**52/42, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SENK	**Senkaya-Erzuru**	**0.36**	**179**	*e*PG	**Pg**	**23 45 42.4**	**-0.3**
SENK				*e*SG	**Sg**	**23 45 47.6**	**+0.2**
SENK	**Senkaya-Erzuru**	**0.36**	**179**	*e*Pg	**Pg**	**23 45 42.4**	**-0.3**
SENK				*e*Sg	**Sg**	**23 45 47.6**	**+0.2**
DAGI	**Agillar**	**0.36**	**296**	*i* P	**Pg**	**23 45 42.7**	**-0.1**
DAGI				*i* S	**Sg**	**23 45 47.4**	**-0.1**
ARTV	**Artvin**	**0.41**	**310**	*i* P	**Pg**	**23 45 43.8**	**+0.1**
ARTV				*i* S	**Sg**	**23 45 50.1**	**+0.9**
ARTV	**Artvin**	**0.41**	**310**	P	**Pg**	**23 45 43.8**	**+0.1**
ARTV				S	**Sg**	**23 45 50.1**	**+0.9**
DDEM	**Demirkent**	**0.45**	**267**	*i* P	**Pg**	**23 45 44.0**	**-0.4**
DDEM				*i* S	**Sg**	**23 45 50.1**	**-0.2**
DDEM	**Demirkent**	**0.45**	**267**	P	**Pg**	**23 45 44.0**	**-0.4**
DDEM				S	**Sg**	**23 45 50.1**	**-0.2**
KARS	**Kars**	**0.63**	**117**	*e*PG	**Pg**	**23 45 48.2**	**+0.4**
KARS				*e*SG	**Sg**	**23 45 57.1**	**+1.1**
KARS	**Kars**	**0.63**	**117**	*e*Pg	**Pg**	**23 45 48.2**	**+0.4**
KARS				*e*Sg	**Sg**	**23 45 57.1**	**+1.1**
EPOS	**Posof**	**0.65**	**26**	*i* P	**Pg**	**23 45 48.6**	**+0.4**
EPOS				*i* S	**Sb**	**23 45 58.6**	**-0.4**
EPOS	**Posof**	**0.65**	**26**	P	**Pg**	**23 45 48.6**	**+0.4**
EPOS				S	**Sb**	**23 45 58.7**	**-0.4**
DBOC	**Borcka**	**0.67**	**310**	*i* P	**Pg**	**23 45 48.1**	**-0.4**
DBOC				*i* S	**Sg**	**23 45 57.0**	**-0.2**
DBOC	**Borcka**	**0.67**	**310**	P	**Pg**	**23 45 48.1**	**-0.4**
DBOC				S	**Sg**	**23 45 57.0**	**-0.2**
EAK	**Akyaka**	**0.99**	**103**	*i* P	**Pg**	**23 45 53.5**	**-1.1**
EAK				*i* S	**Sg**	**23 46 07.0**	**-0.3**
EAK	**Akyaka**	**0.99**	**103**	P	**Pg**	**23 45 53.5**	**-1.1**
EAK				S	**Sg**	**23 46 07.1**	**-0.3**
AKH	**Akhalkalaki**	**0.99**	**60**	P	**Pg**	**23 45 54.1**	**-0.7**
AKH				S	**Sg**	**23 46 07.7**	**-0.1**
BGD	**Bogdanovka**	**1.01**

NIED ***03*** *00:01:00,36˚.10N×139˚.80E,h86km,Mw3.7 Best double couple: M₀4.40000×10¹⁴ NP1:φs185.00000°,δ31.00000°, λ89.00000°. NP2:φs6.00000°,δ59.00000°,λ91.00000°.*

ISCJB ***03*** *00:01:02.5±0.4,35˚.99N±0˚.03×139˚.80E±0˚.06,h92km±3km, mb3.7/8, Error ellipse: s-maj=7.9km s-min=5.3km az=177.5*

IDC ***03*** *00:01:03.8±1.3,35˚.97N×139˚.75E,h89km±11km,mb3.5/8, mb1 3.5/12,mb1mx3.4/42,mbtmp3.8/12, Error ellipse: s-maj=22.1km s-min=7.8km az=67.0*

JMA ***03*** *00:01:04.4±0.1,36˚.03N×139˚.79E,h77km±1km,M3.5 Broadband fault plane solution: P waves. NP1: φs2.00000°,δ56.00000°,λ102.00000°. NP2:φs162.00000°, δ36.00000°,λ73.00000°. Principal axes: T Plg76.0000°, Azm309.0000°; N Plg10.0000°, Azm176.0000°; P Plg10.0000°, Azm84.0000°;*

JMA Felt I J1.

ISC 03 00:01:03.8±0.8,36˚.00N±0˚.04×139˚.79E±0˚.06,h86km±7km, n27,σ0s82/34,mb3.7/8,3C-3D,Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.40**	**55**	⇑P		**Pn**	**00 01 17.0**	**-0.3**
JYT					S	**Sn**	**00 01 26.5**	**-0.9**
JAG	**Ashikaga**	**0.51**	**328**	⇑P		**Pn**	**00 01 17.9**	**-0.3**
JAG					S	**Sn**	**00 01 27.9**	**-0.9**
JRY	**Ryogami san**	**0.72**	**272**	⇓P		**Pn**	**00 01 20.4**	**+0.3**
JRY					S	**Sn**	**00 01 32.3**	**0.0**
JKT	**Katashina**	**0.88**	**331**	P		**Pn**	**00 01 21.8**	**-0.2**
JKT					S	**Sn**	**00 01 35.1**	**-0.4**
JOD2	**Odawara 2**	**0.93**	**218**	⇓P		**Pn**	**00 01 22.2**	**-0.2**
JOD2					S	**Sn**	**00 01 35.4**	**-0.9**
JYN	**Shimob**	**1.12**	**244**	⇓P		**Pn**	**00 01 25.1**	**+0.4**
JYN					S	**Sn**	**00 01 40.4**	**-0.1**
JIM2	**Oshima 3**	**1.31**	**193**	P		**Pn**	**00 01 26.6**	**-0.4**
JIM2					S	**Sn**	**00 01 43.4**	**-1.0**
BSO3	**Boso 3**	**1.33**	**153**	⇑P		**Pn**	**00 01 27.2**	**+0.3**
MJAR	**Matsushiro Arr** 39nm,0.3s,baz=112,slow=9.8,SNR=414	**1.39**	**294**	P		**Pn**	**00 01 27.6**	**-0.3**
MJAR					S	**Sn**	**00 01 45.2**	**-0.9**
	23nm,0.3s,baz=242,slow=18,SNR=9.3							
MAT	**Matsushiro**	**1.39**	**294**	P		**Pn**	**00 01 28.1**	**+0.2**
MAT					S	**Sn**	**00 01 45.7**	**-0.4**
JFY	**Yanaizu**	**1.41**	**357**	S		**Sn**	**00 01 46.9**	**+0.3**
JHJ	**Hachijo jima 2** 65nm,0.3s,baz=329,slow=21,SNR=37	**2.87**	**180**	P		**Pn**	**00 01 48.2**	**+0.8**
JHJ					S	**Sn**	**00 02 20.8**	**-0.4**
	71nm,0.3s,baz=214,slow=7.0,SNR=7.4							
JNU	**Nakatsue** 0.5nm,0.3s,baz=107,slow=4.9,SNR=4.4	**7.89**	**251**	P		**Pn**	**00 02 54.5**	**-1.2**
ASAJ	**Asahikawa** 0.4nm,0.3s,baz=219,slow=13,SNR=3.7	**8.39**	**14**	P		**Pn**	**00 03 02.5**	**-0.1**
KSRS	**Korea Array** baz=97,slow=14,SNR=5.2	**9.63**	**282**	P		**Pn**	**00 03 21.6**	**+2.1**
USRK	**Ussuriysk Ar.** 0.1nm,0.3s,baz=141,slow=14,SNR=3.0	**10.13**	**326**	P		**Pn**	**00 03 28.8**	**+2.5**
H11N2	**WAKE ISLAND Hy** baz=309,slow=74	**28.80**	**117**	T		T	00 37 08.4	
H11N1	**WAKE ISLAND Hy** baz=309,slow=74	**28.80**	**117**	T		T	00 37 08.8	
H11N3	**WAKE ISLAND Hy** baz=309	**28.82**	**117**	T		T	00 37 27.7	
ZALV	**Zalesovo Beam** 1.4nm,0.5s,baz=103,slow=7.7,SNR=8.0	**41.66**	**313**	P		**P**	**00 08 43.2**	**-0.2**
MKAR	**Makanchi Array** 0.4nm,0.5s,baz=84,slow=10,SNR=4.0	**43.57**	**303**	P		**P**	**00 08 58.3**	**-0.8**
ILAR	**Eielson Array** 0.2nm,0.5s,baz=277,slow=7.9,SNR=2.8	**51.07**	**32**	P		**P**	**00 09 57.3**	**+0.3**
WRA	**Warramunga Arr** 1.0nm,0.5s,baz=2.3,slow=7.5,SNR=30	**55.87**	**186**	P		**P**	**00 10 32.2**	**-0.4**
ASAR	**Alice Springs** 0.3nm,0.6s,baz=350,slow=5.2,SNR=4.2	**59.60**	**186**	P		**P**	**00 10 58.7**	**0.0**
ARCES	**ARCESS Array B** 0.4nm,0.3s,baz=62,slow=6.9,SNR=5.3	**64.50**	**339**	P		**P**	**00 11 30.4**	**-0.5**
FINES	**FINESS Array B** 3.3nm,1.1s,baz=33,slow=3.3,SNR=3.4	**69.11**	**332**	P		**P**	**00 11 59.6**	**-0.7**
NOA	**NORSAR Array B** 0.5nm,0.8s,baz=43,slow=8.4,SNR=3.1	**74.63**	**337**	P		**P**	**00 12 32.9**	**-0.5**

ISCJB ***03*** *00:39:01.0±0.7,35˚.98N±0˚.04×139˚.81E±0˚.06,h89km±6km, mb3.6/2,Error ellipse: s-maj=8.6km s-min=6.0km az=171.4*

JMA ***03*** *00:39:02.7±0.1,36˚.02N×139˚.80E,h76km±1km,M3.0*

JMA Felt I J1.

IDC ***03*** *00:39:02.2±3.8,35˚.94N×139˚.81E,h91km±24km,mb3.2/2, mb1 3.4/3,mb1mx2.9/31,mbtmp3.6/3,Error ellipse: s-maj=65.0km s-min=8.5km az=63.0*

ISC 03 00:39:01.7±1.0,35˚.99N±0˚.04×139˚.80E±0˚.06,h84km±8km, n15,σ0s55/25,Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.40**	**53**	P		**Pn**	**00 39 15.2**	**+0.2**
JYT					S	**Sn**	**00 39 24.8**	**-0.1**
JAG	**Ashikaga**	**0.52**	**327**	P		**Pn**	**00 39 16.1**	**+0.1**
JAG					S	**Sn**	**00 39 25.9**	**-0.7**
JRY	**Ryogami san**	**0.73**	**273**	P		**Pn**	**00 39 18.7**	**+0.7**
JRY					S	**Sn**	**00 39 30.8**	**+0.6**
JKT	**Katashina**	**0.90**	**330**	P		**Pn**	**00 39 20.1**	**+0.2**
JKT					S	**Sn**	**00 39 33.3**	**-0.2**
JOD2	**Odawara 2**	**0.93**	**219**	P		**Pn**	**00 39 20.4**	**+0.2**
JOD2					S	**Sn**	**00 39 33.6**	**-0.4**
JYN	**Shimob**	**1.13**	**245**	P		**Pn**	**00 39 23.3**	**+0.6**
JYN					S	**Sn**	**00 39 38.6**	**+0.2**
JIM2	**Oshima 3**	**1.30**	**194**	P		**Pn**	**00 39 24.8**	**+0.1**
JIM2					S	**Sn**	**00 39 41.4**	**-0.6**
BSO3	**Boso 3**	**1.32**	**154**	P		**Pn**	**00 39 25.4**	**+0.8**
MJAR	**Matsushiro Arr** 10nm,0.3s,baz=116,slow=9.5,SNR=88	**1.40**	**294**	P		**Pn**	**00 39 25.8**	**-0.1**
MJAR					S	**Sn**	**00 39 45.3**	**+1.1**
	6.1nm,0.3s,baz=54,slow=28,SNR=9.1							
MAT	**Matsushiro**	**1.40**	**294**	P		**Pn**	**00 39 26.4**	**+0.4**
MAT					S	**Sn**	**00 39 43.5**	**-0.8**
MAT	**Matsushiro**	**1.40**	**294**	P		**Pn**	**00 39 26.4**	**+0.4**
JFT	**Otama**	**1.59**	**16**	P		**Pn**	**00 39 29.2**	**+0.9**
JHJ	**Hachijo jima 2** 12nm,0.3s,baz=255,slow=20,SNR=3.3	**2.86**	**180**	P		**Pn**	**00 39 45.8**	**+0.5**
JHJ					S	**Sn**	**00 40 18.8**	**+0.1**
	14nm,0.3s,baz=252,slow=20,SNR=3.0							
ZALV	**Zalesovo Beam** 0.3nm,0.3s,baz=84,slow=4.5,SNR=2.5	**41.67**	**313**	P		**P**	**00 46 41.4**	**-0.3**
WRA	**Warramunga Arr** 0.3nm,0.5s,baz=1.3,slow=7.6,SNR=7.2	**55.87**	**186**	P		**P**	**00 48 30.4**	**-0.3**

IDC ***03*** *00:44:11.3±1.6,32˚.54N×135˚.71E,h0km,mb3.4/2, mb1 3.5/4,mb1mx3.3/33,mbtmp3.3/4,ML3.1/2,Error ellipse: s-maj=53.0km s-min=28.3km az=89.0*

ISCJB ***03*** *00:44:27.5±0.8,35˚.2N±0˚.2×136˚.0E±0˚.1,h347km±9km, mb2.9/2,Error ellipse: s-maj=27.1km s-min=18.1km az=161.1*

JMA ***03*** *00:44:29.2±0.1,35˚.33N×135˚.96E,h336km±1km,M2.7*

ISC 03 00:44:28.4±1.2,35˚.2N±0˚.1×136˚.0E±0˚.1,h340km±10km, n10,σ0s70/12,Western Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JFM	**Mihama**	**0.29**	**352**	P		**Pn**	**00 45 11.8**	**+0.7**
JWT	**Wachi**	**0.52**	**275**	P		**Pn**	**00 45 11.9**	**+0.4**
JWT					S	**S**	**00 45 45.1**	**-1.0**
JIE	**Ise**	**1.01**	**147**	P		**Pn**	**00 45 14.1**	**+0.9**
JKG	**Kaga**	**1.06**	**13**	P		**Pn**	**00 45 13.5**	**+0.3**
MAT	**Matsushiro**	**2.19**	**53**	P		**Pn**	**00 45 20.6**	**+0.4**
MAT					eS	**S**	**00 46 01.4**	**-0.3**
MJAR	**Matsushiro Arr** 1.0nm,0.3s,baz=215,slow=10.0,SNR=13	**2.19**	**53**	Pn		**Pn**	**00 45 20.6**	**+0.5**
JSZ	**Suzu**	**2.45**	**26**	P		**Pn**	**00 45 22.6**	**+0.5**
KSRS	**Korea Array** 0.2nm,0.3s,baz=108,slow=13,SNR=4.2	**6.91**	**291**	Pn		**Pn**	**00 46 09.9**	**+0.6**
WRA	**Warramunga Arr** 0.3nm,0.3s,baz=0.1,slow=7.6,SNR=11	**54.90**	**182**	P		**P**	**00 53 24.4**	**-0.5**
ASAR	**Alice Springs** 0.2nm,0.6s,baz=4.8,slow=7.3,SNR=3.5	**58.62**	**182**	P		**P**	**00 53 50.6**	**-0.1**

ISCJB ***03*** *01:03:13.2±0.7,36˚.97N±0˚.03×140˚.78E±0˚.06,h17km±6km, mb3.7/2,MS4.2/2,Error ellipse: s-maj=8.0km s-min=4.7km az=17.6*

JMA ***03*** *01:03:13.9,36˚.99N×140˚.67E,h11km±1km,M3.5 Broadband fault plane solution: P waves. NP1: φs313.00000°,δ52.00000°,λ-75.00000°. NP2: φs110.00000°,δ40.00000°,λ-108.00000°. Principal axes: T Plg6.0000°, Azm33.0000°; N Plg12.0000°, Azm124.0000°; P Plg77.0000°, Azm277.0000°;*

JMA Felt I J1.

IDC ***03*** *01:03:13.1±4.0,36˚.77N×140˚.73E,h0km,mb3.6/2, mb1 3.8/3,mb1mx3.3/34,mbtmp3.5/3,ML3.2/1,MS4.1/2, Ms1 4.1/2,ms1mx2.7/45 Error ellipse: s-maj=79.3km s-min=29.8km az=21.0*

ISC 03 01:03:12.9±1.0,36˚.98N±0˚.03×140˚.64E±0˚.05,h12km±9km, n14,σ0s72/22,7C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**46**	⇑P		**Pg**	**01 03 17.4**	**+0.4**
ONAJ					S	**Sg**	**01 03 19.8**	**0.0**
JHO	**Hitachi**	**0.37**	**188**	⇑P		**Pb**	**01 03 21.5**	**0.0**
JHO					S	**Sb**	**01 03 27.1**	**-0.1**
JFK	**Kawauchi**	**0.43**	**26**	⇑P		**Pb**	**01 03 21.8**	**-0.8**
JFK					S	**Sg**	**01 03 27.5**	**+0.2**
JSB	**Shiboa**	**0.57**	**269**	⇑P		**Pn**	**01 03 26.3**	**-0.7**
JSB					S	**Sb**	**01 03 34.9**	**+1.8**
JFT	**Otama**	**0.59**	**336**	⇑P		**Pb**	**01 03 25.4**	**+0.1**
JFT					S	**Sb**	**01 03 33.5**	**-0.1**
JYT	**Yasato**	**0.83**	**206**	⇑P		**Pn**	**01 03 29.7**	**-0.7**
JYT					S	**Sb**	**01 03 40.8**	**+0.4**
JFY	**Yanaizu**	**0.86**	**300**	P		**Pn**	**01 03 30.5**	**-0.4**
JFY					S	**Sb**	**01 03 42.0**	**+0.7**
JMM	**Marumori**	**0.90**	**8**	⇑P		**Pg**	**01 03 30.0**	**-0.3**
JMM					S	**Sg**	**01 03 41.9**	**-0.1**
MJAR	**Matsushiro Arr** 9.2nm,0.3s,baz=81,slow=16,SNR=62	**2.00**	**258**	Pn		**Pb**	**01 03 48.8**	**-0.4**
MJAR					Sn	**Sb**	**01 04 14.8**	**+0.7**
	14nm,0.3s,baz=32,slow=4.3,SNR=12							
MAT	**Matsushiro**	**2.00**	**258**	P		**Pb**	**01 03 49.1**	**-0.2**
MAT					S	**Sg**	**01 04 15.9**	**-1.3**
INK	**Inuvik** comp=Z,487nm,19.8s,baz=134,slow=38	**54.72**	**27**	LR	LR	LR	01 37 31.1	
WRA	**Warramunga Arr** 0.7nm,0.6s,baz=1.2,slow=7.3,SNR=10	**56.92**	**187**	P		**P**	**01 12 58.4**	**+0.3**
ASAR	**Alice Springs** 0.3nm,0.7s,baz=14,slow=7.8,SNR=3.3	**60.65**	**187**	P		**P**	**01 13 24.8**	**+0.9**
PFO	**Pinyon Flats O** comp=Z,38nm,20.5s,baz=128,slow=30	**79.59**	**56**	LR	LR	LR	01 42 40.6	

IDC 03 01:18:01.9±6.0,5˚.90S×149˚.62E,h48km±55km,mb3.5/4, mb1 3.9/5,mb1mx3.4/39,mbtmp3.9/5,ML2.1/1,MS3.3/2, Ms1 3.3/2,ms1mx2.6/27,Error ellipse: s-maj=104.1km s-min=40.3km az=114.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby** 8.0nm,0.3s,baz=24,slow=7.1,SNR=14	**4.26**	**215**	P		Pn	01 19 04.6	+0.4
PMG					S	Sn	01 19 43.0	-10
	8.1nm,0.3s,baz=341,slow=18,SNR=5.3							
PMG					LR	LR	01 20 28.5	
	comp=Z,251nm,21.0s,baz=18,slow=34							
WRA	**Warramunga Arr** 0.5nm,0.4s,baz=51,slow=11,SNR=14	**20.39**	**225**	P		P	01 22 32.9	-2.0
ASAR	**Alice Springs** 1.1nm,0.4s,baz=54,slow=8.7,SNR=17	**23.26**	**219**	P		P	01 23 05.8	+0.4
FITZ	**Fitzroy Crossi** 3.6nm,0.4s,baz=50,slow=8.5,SNR=48	**26.37**	**241**	P		P	01 23 34.4	+0.6
STKA	**Stephens Creek** comp=Z,93nm,18.5s,baz=28,slow=37	**26.92**	**195**	LR	LR	01 34 48.3		
ZALV	**Zalesovo Beam** 0.2nm,0.3s,baz=116,slow=9.8,SNR=2.5	**80.33**	**327**	P		P	01 30 07.9	+0.1

ISCJB ***03*** *01:20:24.4±0.7,49˚.04N±0˚.08×155˚.5E±0˚.1,h51km, mb3.6/7,MS3.0/7,Error ellipse: s-maj=16.2km s-min=5.1km az=39.1*

KRSC ***03*** *01:20:24.1±1.5,49˚.06N×156˚.85E,h6km±29km,ML4.5*

MOS ***03*** *01:20:24.3±0.8,48˚.97N×155˚.62E,h56km,mb4.0/4,Error ellipse: s-maj=34.0km s-min=6.0km az=74.8*

SKHL ***03*** *01:20:25.3±0.6,48˚.99N×155˚.50E,h57km±7km,mb4.2/3*

IDC ***03*** *01:20:27.4±4.5,49˚.01N×155˚.62E,h65km±40km,mb3.3/7, mb1 3.6/8,mb1mx3.3/50,mbtmp3.6/8,ML2.8/1,MS3.0/9, Ms1 3.0/9,ms1mx2.8/24,Error ellipse: s-maj=31.7km s-min=22.7km az=148.0*

ISC 03 01:20:25.6±0.9,48˚.99N±0˚.10×155˚.6E±0˚.1,h51km,n56, σ1s09/57,mb3.5/7,MS3.0/7,1C,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.72**	**10**	eP	N	**Pn**	**01 20 52.5**	**-0.6**
SKR					eS	**Sn**	**01 21 13.3**	**-0.6**
SKR					pmax	pmax		
	comp=Z,112nm,0.3s							
SKR					smax	smax		
	comp=N,2μm,0.6s							
SKR					smax	smax		
	comp=E,1μm,0.7s							
SKR	**Severo-Kuril's**	**1.72**	**10**	eP		**Pn**	**01 20 52.6**	**-0.6**
SKR					eS	**Sn**	**01 21 14.9**	**+1.0**
SKR	**Severo-Kuril's**	**1.72**	**10**	eP		**Pn**	**01 20 52.5**	**-0.6**
SKR					AMB	AMB	01 20 54.7	
	comp=E,110nm,0.3s							
SKR					eS	**Sn**	**01 21 13.3**	**-0.6**
SKR					A	A	01 21 16.0	
	comp=E,2μm,0.7s							
SKR					A	A	01 21 16.0	
	comp=E,1μm,0.7s							
ASAK	**Asacha**	**3.69**	**22**	PN		**Pn**	**01 21 20.0**	**-0.1**
ASAK	**Asacha**	**3.69**	**22**	eP		**Pn**	**01 21 20.0**	**-0.1**
RUS	**Russkaya**	**3.90**	**27**	PN		**Pn**	**01 21 22.9**	**0.0**
RUS					S	**Sn**	**01 22 05.8**	**-1.6**
RUS	**Russkaya**	**3.90**	**27**	eP		**Pn**	**01 21 22.9**	**0.0**
RUS					eS	**Sn**	**01 22 05.8**	**-1.6**
RUS	**Russkaya**	**3.90**	**27**	eP		**Pn**	**01 21 22.9**	**0.0**
PETK	**Petropavlovsk-** comp=E,2.8nm,0.3s,baz=171,slow=11,SNR=23	**4.32**	**17**	P		**Pn**	**01 21 30.6**	**+1.8**
PETK					S	Sn	01 22 26.1	+8.3
	comp=E,1.1nm,0.3s,baz=160,slow=17,SNR=2.8							
PETK					LR	LR	01 23 31.1	
	comp=E,104nm,20.0s,baz=187,slow=43							
PET	**Petropavlovsk**	**4.46**	**24**	PN		**Pn**	**01 21 30.6**	**-0.1**
PET					S	**Sn**	**01 22 21.4**	**+0.1**
PET	**Petropavlovsk**	**4.46**	**24**	eP		**Pn**	**01 21 32.0**	**+1.3**
PET					AMB	AMB	01 21 32.5	
	comp=E,10.0nm,0.5s							
PET					eS	**Sn**	**01 22 21.6**	**+0.3**
PET					A	A	01 22 33.1	
	comp=E,200nm,0.6s							
DALK	**Dalny**	**4.50**	**25**	PN		**Pn**	**01 21 32.3**	**+1.2**
DALK					S	**Sn**	**01 22 21.8**	**-0.3**
DALK	**Dalny**	**4.50**	**25**	eP		**Pn**	**01 21 32.3**	**+1.2**
DALK					eS	**Sn**	**01 22 21.8**	**-0.3**
UGLR	**Uglovaya**	**4.68**	**24**	PN		**Pn**	**01 21 35.7**	**+2.0**
UGLR					S	**Sn**	**01 22 26.8**	**+0.1**
UGLR	**Uglovaya**	**4.68**	**24**	eP		**Pn**	**01 21 35.7**	**+2.0**
UGLR					eS	**Sn**	**01 22 26.8**	**+0.1**
AVH	**Avacha**	**4.70**	**23**	PN		**Pn**	**01 21 34.7**	**+0.7**
AVH	**Avacha**	**4.70**	**23**	eP		**Pn**	**01 21 34.7**	**+0.7**
AVH	**Avacha**	**4.70**	**23**	eP		**Pn**	**01 21 34.7**	**+0.7**
SMAR	**Somma**	**4.72**	**24**	PN		**Pn**	**01 21 36.1**	**+1.7**
SMAR	**Somma**	**4.72**	**24**	eP		**Pn**	**01 21 36.1**	**+1.7**
KRER	**Koryakskii**	**4.74**	**23**	PN		**Pn**	**01 21 36.0**	**+1.3**
KRER	**Koryakskii**	**4.74**	**23**	eP		**Pn**	**01 21 36.0**	**+1.3**
SDLR	**Sedlovina**	**4.75**	**24**	PN		**Pn**	**01 21 36.1**	**+1.3**
SDLR					S	**Sn**	**01 22 28.8**	**+0.2**
SDLR	**Sedlovina**	**4.75**	**24**	eP		**Pn**	**01 21 36.1**	**+1.3**
SDLR					eS	**Sn**	**01 22 28.8**	**+0.2**
KRX	**Arik**	**4.77**	**22**	PN		**Pn**	**01 21 35.9**	**+0.9**
KRX	**Arik**	**4.77**	**22**	eP		**Pn**	**01 21 35.9**	**+0.9**
NLC	**Nalytchevo**	**4.79**	**28**	PN		**Pn**	**01 21 35.7**	**+0.5**
NLC					S	**Sn**	**01 22 28.7**	**-0.6**
NLC	**Nalytchevo**	**4.79**	**28**	eP		**Pn**	**01 21 35.7**	**+0.5**
NLC					eS	**Sn**	**01 22 28.7**	**-0.6**
GNL	**Ganaly**	**4.93**	**16**	PN		**Pn**	**01 21 39.5**	**+2.4**
GNL	**Ganaly**	**4.93**	**16**	eP		**Pn**	**01 21 39.5**	**+2.4**
MKZ	**Mys Kozlova**	**6.73**	**32**	PN		**Pn**	**01 22 01.0**	**-0.7**
MKZ	**Mys Kozlova**	**6.73**	**32**	eP		**Pn**	**01 22 01.0**	**-0.7**
YSS	**Yuzh-Sakhalins**	**8.88**	**262**	eP		**Pn**	**01 22 30.1**	**-1.0**
EKMR	**Ekimchan**	**14.82**	**295**	eP		**Pn**	**01 23 50.5**	**-1.4**
EKMR					AMB	AMB	01 24 01.6	
	comp=E,4.0nm,0.5s							

KLR	**Kul'dur** comp=E,59nm,19.7s,baz=94,slow=37	**15.63**	**280**	LR		LR	01 30 01.1	
VLA	**Vladivostok**	**17.46**	**259**	⇑P		P	01 24 34.8	+8.9
VLA				pmax		pmax		
	comp=Z,11nm,0.6s							
JNU	**Nakatsue** comp=Z,11nm,19.0s,baz=124,slow=38	**24.33**	**239**	LR		LR	01 35 57.3	
H11N2	**WAKE ISLAND Hy** baz=18,slow=76,SNR=43	**30.57**	**159**	T		T	01 58 59.3	
H11N1	**WAKE ISLAND Hy** baz=18,slow=76,SNR=44	**30.59**	**159**	T		T	01 58 59.3	
H11N3	**WAKE ISLAND Hy** baz=18,slow=76,SNR=38	**30.59**	**159**	T		T	01 58 59.3	
H11S1	**WAKE ISLAND Hy** baz=346,slow=76,SNR=96	**31.70**	**160**	T		T	02 00 24.2	
H11S3	**WAKE ISLAND Hy** baz=346,slow=76,SNR=240	**31.71**	**160**	T		T	02 00 18.9	
H11S2	**WAKE ISLAND Hy** baz=346,slow=76,SNR=175	**31.72**	**160**	T		T	02 00 22.7	
SONM	**Songino Array** comp=Z,30nm,18.3s,baz=256,slow=37	**32.24**	**287**	LR		LR	01 40 06.7	
ILAR	**Eielson Array** comp=Z,0.2nm,0.8s,baz=275,slow=9.9,SNR=3.6	**33.74**	**41**	P		**P**	**01 27 00.8**	**-0.9**
NRIK	**Noril'sk** comp=Z,21nm,19.4s,baz=105,slow=38	**37.74**	**327**	LR		LR	01 44 39.0	
ZALV	**Zalesovo Beam** comp=Z,19nm,19.9s,baz=68,slow=35	**42.70**	**305**	LR		LR	01 45 36.3	
MKAR	**Makanchi Array** comp=Z,0.6nm,0.8s,baz=63,slow=8.3,SNR=4.0	**47.43**	**297**	P		**P**	**01 28 55.3**	**+0.5**
MKAR					LR	LR	01 50 01.7	
	comp=Z,38nm,18.2s,baz=35,slow=37							
CMAR	**Chiang Mai Arr** comp=Z,1.0nm,0.3s,baz=45,slow=9.1,SNR=3.4	**54.54**	**257**	P		**P**	**01 29 49.5**	**+1.0**
ARCES	**ARCESS Array B** comp=Z,22nm,19.6s,baz=60,slow=40	**56.28**	**341**	LR		LR	01 57 58.8	
FINES	**FINESS Array B** comp=Z,1.2nm,0.9s,baz=5.7,slow=4.2,SNR=3.1	**62.72**	**335**	P		**P**	**01 30 45.4**	**+0.7**
NOA	**NORSAR Array B** comp=Z,9.5nm,19.8s,baz=45,slow=40	**66.63**	**342**	LR		LR	02 04 39.6	
WRA	**Warramunga Arr** comp=Z,0.5nm,1.0s,baz=17,slow=6.6,SNR=5.9	**71.20**	**201**	P		**P**	**01 31 38.7**	**-0.3**
TXAR	**Lajitas Array** comp=Z,0.4nm,0.6s,baz=289,slow=4.8,SNR=5.4	**74.94**	**63**	P		**P**	**01 32 03.0**	**+1.7**
BRTR	**Keskin Array B** comp=Z,0.5nm,1.0s,baz=42,slow=6.7,SNR=3.2	**77.88**	**318**	P		**P**	**01 32 17.0**	**-0.9**
BRTR	**Keskin Array B**	**77.88**	**318**	P		**P**	**01 32 17.0**	**-0.9**
BRTR					pmax	pmax		
	comp=Z,1.0nm,1.0s							

MAN 03 01:48:21,13˚.56N×120˚.71E,h121km,mb4.6,ML3.5, MS3.5,2C-1D,Mindoro

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.24**	**104**	⇑eP		Pn	01 48 39.4	+1.5
PGP					*i* S	Sn	01 48 53.4	+2.8
LUBP	**Lubang**	**0.49**	**291**	eP		Pn	01 48 41.3	+2.4
LUBP					eS	Sn	01 48 55.7	+3.2
TGY	**Tagaytay City**	**0.58**	**22**	⇑iP		Pn	01 48 42.3	+2.6
BOAC	**Boac**	**1.10**	**95**	eP		Pn	01 48 44.9	+0.7
BOAC					eS	Sn	01 49 04.4	+2.7
SJMP	**San Jose**	**1.16**	**160**	eP		Pn	01 48 46.4	+1.6
SJMP					eS	Sn	01 49 04.6	+1.8
BUSP	**Coron**	**1.63**	**198**	eP		Pn	01 48 51.7	+1.7
BUSP					eS	Sn	01 49 14.0	+1.9
GQP	**Guinayangan**	**1.72**	**78**	⇓eP		Pn	01 48 52.5	+1.5
OTRP	**Odiongan**	**1.74**	**133**	eP		Pn	01 48 51.6	+0.2
OTRP					eS	Sn	01 49 17.1	+2.5
SCZP	**Santa Cruz**	**2.34**	**341**	eP		Pn	01 49 00.3	+1.6
SCZP					eS	Sn	01 49 29.5	+1.8
ENPP	**El Nido**	**2.66**	**208**	eP		Pn	01 49 05.2	+2.3

ISK ***03*** *02:15:26.7,36˚.90N×28˚.96E,h2km,MD3.0*

ATH ***03*** *02:15:27.6,36˚.89N×28˚.95E,h18km±2km,ML2.4/1,Error ellipse: s-maj=8.6km s-min=2.9km az=275.0*

ISCJB ***03*** *02:15:28.0±0.5,36˚.92N±0˚.03×28˚.94E±0˚.03,h4km±4km, Error ellipse: s-maj=4.4km s-min=3.2km az=158.0*

CSEM ***03*** *02:15:27.7±0.2,36˚.91N×28˚.96E,h2km,MD3.0,Error ellipse: s-maj=4.4km s-min=2.9km az=159.0*

DDA ***03*** *02:15:27.6,36˚.92N×28˚.90E,h25km,Md3.3*

THE ***03*** *02:15:28.5,36˚.93N×28˚.99E,h2km±2km,ML2.6/1,Error ellipse: s-maj=3.0km s-min=1.8km az=108.0*

ISC 03 02:15:27.5±1.2,36˚.90N±0˚.02×28˚.98E±0˚.02,h3km±10km, n82,σ0s97/112,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DALY	**Dalyan (Mu¨la**	**0.28**	**253**	ePG		**Pg**	**02 15 32.8**	**0.0**
DALY					eSG	**Sg**	**02 15 36.8**	**+0.4**
DALY	**Dalyan (Mu¨la**	**0.28**	**253**	ePg		**Pg**	**02 15 32.8**	**0.0**
DALY					eSg	**Sg**	**02 15 36.8**	**+0.4**
TURN	**Turunc**	**0.31**	**266**	*i* P		**Pn**	**02 15 38.5**	**-0.4**
TURN					*i* S	**Sb**	**02 15 46.6**	**+5.7**
GLHS	**Glhisar (BURDU**	**0.49**	**58**	ePG		**Pg**	**02 15 37.3**	**+0.5**
GLHS					eSG	**Sb**	**02 15 45.3**	**-1.0**
GLHS	**Glhisar (BURDU**	**0.49**	**58**	ePg		**Pg**	**02 15 37.3**	**+0.5**
GLHS					eSg	**Sb**	**02 15 45.3**	**-1.0**
GOLH

SMG	**Samos**	**1.89 296**	P		**Pn**	**02 16 00.0**	**-0.7**
SMG	**Samos**	**1.89 296**	P		**Pn**	**02 16 00.0**	**-0.7**
SMG	**Samos**	**1.89 296**	P		**Pn**	**02 15 59.1**	**-1.6**
KARP	**Karpathos**	**2.00 228**	*e*PN		**Pn**	**02 16 02.5**	**+0.4**
KARP	**Karpathos**	**2.00 228**	P		**Pn**	**02 16 02.5**	**+0.4**
KARP			S		**Sn**	**02 16 27.5**	**-0.1**
KARP	**Karpathos**	**2.00 228**	P		**Pn**	**02 16 02.5**	**+0.4**
KARP			S		**Sn**	**02 16 27.5**	**-0.1**
KARP	**Karpathos**	**2.00 228**	P		**Pn**	**02 16 03.0**	**+0.9**
KARP			S		**Sn**	**02 16 27.2**	**-0.4**
KARP			AML	AML		02 16 38.0	
	comp=E,236μm,0.5s						
KARP			AML	AML		02 16 42.5	
	comp=N,158μm,0.6s						
IZM	**Izmir**	**2.03 318**	*e*PN		**Pn**	**02 16 02.8**	**+0.2**
IZM	**Izmir**	**2.03 318**	*e*Pn		**Pn**	**02 16 02.8**	**+0.2**
DEMI	**Demirci**	**2.15 354**	*i* P		**Pn**	**02 16 04.0**	**-0.3**
DEMI			*i* S		**Sn**	**02 16 31.0**	**-0.6**
DEMI	**Demirci**	**2.15 354**	P		**Pn**	**02 16 04.0**	**-0.3**
DEMI			S		**Sn**	**02 16 31.0**	**-0.6**
BOLV	**Bolvadin**	**2.39 40**	*i* P		**Pn**	**02 16 08.9**	**+1.2**
BOLV	**Bolvadin**	**2.39 40**	P		**Pn**	**02 16 08.9**	**+1.2**
CHOS	**Chios island**	**2.76 303**	*e*PN		**Pn**	**02 16 13.4**	**+0.8**
CHOS	**Chios island**	**2.76 303**	P		**Pn**	**02 16 11.2**	**-1.4**
CHOS	**Chios island**	**2.76 303**	*e*Pn		**Pn**	**02 16 13.4**	**+0.8**
CHOS	**Chios island**	**2.76 303**	P		**Pn**	**02 16 11.2**	**-1.4**
APE	**Apeiranthos**	**2.77 275**	*e*PN		**Pn**	**02 16 13.8**	**+1.0**
APE	**Apeiranthos**	**2.77 275**	P		**Pn**	**02 16 12.7**	**-0.1**
APE	**Apeiranthos**	**2.77 275**	*e*Pn		**Pn**	**02 16 13.8**	**+1.0**
APE	**Apeiranthos**	**2.77 275**	P		**Pn**	**02 16 12.7**	**-0.1**
ZKR	**Zakros**	**2.86 232**	P		**Pb**	**02 16 16.8**	**-2.4**
ZKR	**Zakros**	**2.86 232**	P		**Pb**	**02 16 16.8**	**-2.4**
ERMK	**Ermenek**	**3.17 93**	*i* P		**Pb**	**02 16 22.4**	**-2.1**
ERMK			*i* S		**Sb**	**02 17 02.6**	**-0.9**
ERMK	**Ermenek**	**3.17 93**	P		**Pb**	**02 16 22.4**	**-2.1**
ERMK			S		**Sb**	**02 17 02.6**	**-0.9**
NPS	**Neapolis**	**3.18 240**	P		**Pn**	**02 16 18.7**	**+0.3**
NPS	**Neapolis**	**3.18 240**	P		**Pn**	**02 16 18.7**	**+0.3**
LAST	**Lasithi**	**3.33 240**	P		**Pn**	**02 16 21.1**	**+0.6**
LAST	**Lasithi**	**3.33 240**	P		**Pn**	**02 16 20.7**	**+0.3**
LAST	**Lasithi**	**3.33 240**	P		**Pn**	**02 16 20.7**	**+0.3**
IDI	**Anoyia**	**3.68 245**	P		**Pn**	**02 16 25.4**	**+0.1**
IDI	**Anoyia**	**3.68 245**	P		**Pn**	**02 16 25.4**	**+0.1**

*DDA **03** 02:17:19.9, 40°.51N×42°.44E, h7km, Md3.0*
*CSEM **03** 02:17:19.9±0.2, 40°.51N×42°.44E, h10km, MD2.4, Error ellipse: s-maj=5.8km s-min=3.6km az=25.0*
*ISK **03** 02:17:19.4, 40°.62N×42°.44E, h12km, MD2.4*
*ISCJB **03** 02:17:20.5±0.6, 40°.54N±0°.04×42°.45E±0°.04, h7km±5km, Error ellipse: s-maj=7.3km s-min=3.8km az=22.2*

ISC 03 02:17:20.5±1.0, 40°.59N±0°.03×42°.49E±0°.02, h6km±8km, n22, σ1s25/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SENK	**Senkaya-Erzuru**	**0.11**	**257**	PG	**Pg**	**02 17 22.5**	**-0.5**
SENK				*e*SG	**Sg**	**02 17 24.5**	**-0.1**
SENK	**Senkaya-Erzuru**	**0.11**	**257**	*i* Pg	**Pg**	**02 17 22.5**	**-0.5**
SENK				*e*Sg	**Sg**	**02 17 24.5**	**-0.1**
KARS	**Kars**	**0.45**	**85**	*e*PG	**Pg**	**02 17 29.6**	**+0.4**
KARS				*e*SG	**Sg**	**02 17 37.1**	**+2.0**
KARS	**Kars**	**0.45**	**85**	*e*Pg	**Pg**	**02 17 29.6**	**+0.4**
KARS				*e*Sg	**Sg**	**02 17 37.1**	**+2.0**
DDEM	**Demirkent**	**0.64**	**299**	*i* P	**Pg**	**02 17 32.9**	**0.0**
DDEM				*i* S	**Sb**	**02 17 42.9**	**-0.6**
DDEM	**Demirkent**	**0.64**	**299**	P	**Pg**	**02 17 32.8**	**0.0**
DDEM				S	**Sb**	**02 17 42.9**	**-0.6**
DAGI	**Agillar**	**0.66**	**318**	*i* P	**Pg**	**02 17 33.2**	**0.0**
DAGI				*i* S	**Sb**	**02 17 43.2**	**-0.8**
DIGO	**Kars**	**0.69**	**104**	*i* P	**Pg**	**02 17 33.1**	**-0.8**
DIGO				*i* S	**Sb**	**02 17 45.2**	**0.0**
DIGO	**Kars**	**0.69**	**104**	P	**Pg**	**02 17 33.1**	**-0.8**
DIGO				S	**Sb**	**02 17 45.2**	**0.0**
ARTV	**Artvin**	**0.73**	**325**	*i* P	**Pg**	**02 17 34.8**	**+0.1**
ARTV				*i* S	**Sb**	**02 17 45.9**	**-0.4**
ARTV	**Artvin**	**0.73**	**325**	P	**Pg**	**02 17 34.8**	**+0.1**
ARTV				S	**Sb**	**02 17 45.9**	**-0.4**
EAK	**Akyaka**	**0.85**	**83**	*i* P	**Pg**	**02 17 34.6**	**-2.3**
EAK				*i* S	**Sb**	**02 17 50.6**	**+0.9**
EAK	**Akyaka**	**0.85**	**83**	P	**Pg**	**02 17 34.6**	**-2.3**
EAK				S	**Sb**	**02 17 50.6**	**+0.9**
EPOS	**Posof**	**0.93**	**11**	*i* P	**Pg**	**02 17 39.2**	**+0.8**
EPOS				*i* S	**Sn**	**02 17 54.3**	**+0.1**
EPOS	**Posof**	**0.93**	**11**	P	**Pg**	**02 17 39.2**	**+0.8**
EPOS				S	**Sn**	**02 17 54.3**	**+0.1**
DBOC	**Borcka**	**0.98**	**321**	*i* P	**Pg**	**02 17 38.9**	**-0.5**
DBOC				*i* S	**Sg**	**02 17 52.2**	**+0.1**
DBOC	**Borcka**	**0.98**	**321**	P	**Pg**	**02 17 38.9**	**-0.5**
DBOC				S	**Sg**	**02 17 52.2**	**+0.1**
AGRB	**Hanur-Agry**	**1.08**	**159**	*e*PN	**Pn**	**02 17 41.6**	**-0.8**
AGRB	**Hanur-Agry**	**1.08**	**159**	*e*Pn	**Pn**	**02 17 41.6**	**-0.8**
EZM	**Erzurum**	**1.10**	**232**	*e*PN	**Pn**	**02 17 41.5**	**-1.3**
KOPT	**Kop Dagi**	**1.63**	**250**	*i* P	**Pg**	**02 17 52.1**	**+0.4**
KOPT				*i* S	**Sg**	**02 18 18.0**	**+5.2**
KOPT	**Kop Dagi**	**1.63**	**250**	P	**Pg**	**02 17 52.1**	**+0.4**

GUC 03 02:19:53.7±0.8, 20°.24S×69°.35W, h111km±4km, ML4.1, 7C-3D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.21**	**62**	⇓*i* P	Pn	02 20 10.1	+0.4
PB08				*i* S	Sn	02 20 22.5	+0.8
PB08				IAML		02 20 22.9	
	comp=E,10μm,0.3s						
HMBC	**Humberstone**	**0.50**	**266**	⇑*i* P	Pn	02 20 11.4	+0.6
HMBC				*e*S	Sn	02 20 24.6	+1.0
HMBC				IAML		02 20 26.0	
	comp=N,7μm,0.1s						
PB01	**IPOC Station P**	**0.81**	**189**	⇑*i* P	Pn	02 20 13.9	+0.7
PB01				*i* S	Sn	02 20 28.8	+0.9
PB01				IAML		02 20 29.3	
	comp=N,11μm,0.2s						
PSGC	**Pisagua**	**0.97**	**311**	⇑*i* P	Pn	02 20 15.1	+0.3
PSGC				*i* S	Sn	02 20 31.4	+0.8
MNMC	**Minye Minye**	**1.13**	**348**	⇑*i* P	Pn	02 20 17.2	+0.6
MNMC				*i* S	Sn	02 20 34.6	+0.7
PB09	**IPOC Station P**	**1.55**	**176**	⇓*i* P	Pn	02 20 22.2	+0.8
PB09				*i* S	Sn	02 20 43.9	+1.5
PB09				IAML		02 20 46.3	
	comp=E,4μm,0.6s						
PB07	**IPOC Station P**	**1.56**	**198**	⇑*i* P	Pn	02 20 22.1	+0.6
PB07				*i* S	Sn	02 20 43.4	+0.9
PB07				IAML		02 20 45.8	
	comp=E,1μm,0.4s						
PB12	**IPOC Station P**	**1.86**	**330**	⇑*i* P	Pn	02 20 24.9	-0.2
PB12				*i* S	Sn	02 20 48.9	-0.1
PB12				IAML		02 20 51.0	
	comp=N,4μm,0.1s						
PB04	**IPOC Station P**	**2.21**	**199**	⇓*i* P	Pn	02 20 30.2	+0.6
PB04				IAML		02 20 57.0	
	comp=N,758nm,0.2s						
PB06	**IPOC Station P**	**2.46**	**185**	⇑*i* P	Pn	02 20 33.2	+0.4

SCB 03 02:24:40.6±0.2, 17°.43S×64°.22W, h55km, MI4.0/3, 2C, Error ellipse: s-maj=6.6km s-min=3.5km az=174.0, Central Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIV	**San Ignacio**	**3.33**	**65**	⇑*i* Pn	Pn	02 25 35.0	+4.7
SIV				*e*Sn	Sn	02 26 13.2	+4.4
	30nm,0.4s						
BBOE	**La Paz, Chanca**	**3.65**	**279**	*e*Pn	Pn	02 25 39.4	+4.3
BBOJ	**La Paz, Jacaqu**	**3.82**	**276**	*e*Pn	Pn	02 25 42.3	+4.8
BBOB	**La Paz, Bander**	**3.96**	**288**	*e*Pn	Pn	02 25 42.8	+3.5
BBOB				*e*Sn	Sn	02 26 29.5	+4.7
	331nm,0.5s						
MOCB	**Mochara**	**4.03**	**199**	⇑*i* Pn	Pn	02 25 44.8	+4.5
BBOD	**La Paz, Gloria**	**4.26**	**280**	*e*Pn	Pn	02 25 48.4	+4.9
BBOD				*e*Sn	Sn	02 26 36.7	+4.4
	143nm,0.6s						

*ISCJB **03** 02:31:27.0±0.6, 49°.82N±0°.04×18°.50E±0°.04, h0km, Error ellipse: s-maj=5.8km s-min=2.9km az=21.0*
*CSEM **03** 02:31:27.9±0.3, 49°.83N×18°.52E, h1km, ML2.3/4, Error ellipse: s-maj=6.8km s-min=3.5km az=24.0*

*IPEC **03** 02:31:28.2±0.2, 49°.85N×18°.58E, h0km±4km, ML1.3/3, Error ellipse: s-maj=2.2km s-min=1.1km az=161.0*

ISC 03 02:31:28.7±0.9, 49°.77N±0°.04×18°.52E±0°.02, h0km, n25, σ0s97/41, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.25**	**285**	*e*Pg	**Pg**	**02 31 33.9**	**+0.5**
OKC				*e*SG	**Sg**	**02 31 38.2**	**+1.6**
	comp=Z,20nm,0.7s						
OKC	**Ostrava-Krasne**	**0.25**	**285**	Pg	**Pg**	**02 31 33.9**	**+0.5**
OKC				Sg	**Sg**	**02 31 38.2**	**+1.6**
	20nm,0.7s						
MORC	**Moravsky Berou**	**0.63**	**271**	*e*Pg	**Pg**	**02 31 41.3**	**+0.6**
	baz=84						
MORC				*e*Sg	**Sg**	**02 31 49.4**	**+0.5**
	4.2nm,0.2s,baz=84						
LANS	**Liptovska Anna**	**0.88**	**135**	*e*PG	**Pg**	**02 31 45.5**	**0.0**
LANS	**Liptovska Anna**	**0.88**	**135**	*e*Pg	**Pg**	**02 31 45.6**	**0.0**
LANS				*e*SG	**Sb**	**02 31 58.4**	**-0.7**
VYHS	**Vyhne**	**1.30**	**171**	*e*Pg	**Pg**	**02 31 53.2**	**-0.3**
VYHS				*e*Sg	**Sb**	**02 32 12.2**	**+1.1**
VYHS	**Vyhne**	**1.30**	**171**	*e*PG	**Pg**	**02 31 53.2**	**-0.3**
VYHS				*e*SG	**Sb**	**02 32 12.2**	**+1.1**
VYHS				eLG	Lg	02 32 13.4	
VYHS	**Vyhne**	**1.30**	**171**	*e*PG	**Pg**	**02 31 53.4**	**-0.1**
VYHS				*e*SG	**Sb**	**02 32 12.4**	**+1.3**
VYHS				eLG	Lg	02 32 13.4	
VRAC	**Vranov**	**1.33**	**250**	*e*Pg	**Pg**	**02 31 54.0**	**-0.2**
	baz=67						
VRAC				*e*Sg	**Sg**	**02 32 12.2**	**+0.7**
	4.3nm,0.2s,baz=67						
SMOL	**Smolenice**	**1.45**	**210**	*e*Sg	**Sg**	**02 32 15.1**	**0.0**
SMOL	**Smolenice**	**1.45**	**210**	*e*SG	**Sg**	**02 32 15.1**	**0.0**
DPC	**Dobruska-Polom**	**1.53**	**293**	*e*PG	**Pn**	**02 31 56.3**	**-0.9**
DPC				*e*SG	**Sg**	**02 32 16.2**	**-1.5**
	comp=Z,3.2nm,0.4s						
DPC	**Dobruska-Polom**	**1.53**	**293**	Pg	**Pn**	**02 31 56.3**	**-0.9**
DPC				Sg	**Sg**	**02 32 16.2**	**-1.5**
	3.2nm,0.4s						
KRUC	**Moravsky**	**1.56**	**244**	*e*Pg	**Pn**	**02 31 57.6**	**0.0**
	baz=60						
KRUC				*e*Sg	**Sn**	**02 32 19.1**	**+0.6**
	2.4nm,0.2s,baz=60						
UPC	**Upice**	**1.77**	**295**	*e*PG	**Pn**	**02 32 00.3**	**-0.2**
UPC				*e*SG	**Sg**	**02 32 24.6**	**-0.9**
UPC	**Upice**	**1.77**	**295**	Pg	**Pn**	**02 32 00.3**	**-0.2**
UPC				Sg	**Sg**	**02 32 24.6**	**-0.9**
STHS	**Stebnicka Huta**	**1.81**	**100**	*e*Pg	**Pg**	**02 32 03.1**	**-0.2**
STHS	**Stebnicka Huta**	**1.81**	**100**	*e*PG	**Pg**	**02 32 03.1**	**-0.2**
STHS				*e*SN	**Sg**	**02 32 27.8**	**+1.0**
STHS				eLG	Lg	02 32 35.0	
STHS	**Stebnicka Huta**	**1.81**	**100**	*e*PG	**Pg**	**02 32 03.7**	**+0.4**
STHS				*e*SG	**Sg**	**02 32 27.7**	**+0.9**
STHS				eLG	Lg	02 32 35.1	
KECS	**Kecovo**	**1.83**	**134**	*e*Sn	**Sn**	**02 32 24.9**	**-0.3**
KECS	**Kecovo**	**1.83**	**134**	*e*SN	**Sn**	**02 32 24.9**	**-0.3**
KECS				*e*SG	**Sn**	**02 32 24.5**	**-0.7**
PRU	**Pruhonice**	**2.58**	**276**	*e*SG	**Sb**	**02 32 49.0**	**+1.0**
PRU	**Pruhonice**	**2.58**	**276**	Sg	**Sb**	**02 32 49.0**	**+1.0**
KHC	**Kasperske Hory**	**3.28**	**261**	*e*SG	**Sg**	**02 33 11.8**	**-2.3**
KHC	**Kasperske Hory**	**3.28**	**261**	Sg	**Sg**	**02 33 11.8**	**-2.3**

*NIED **03** 02:34:00, 39°.30N×143°.20E, h17km, Mw3.4 Best double couple: M₀1.45000×10¹⁴ NP1:φ₀54.00000°, δ31.00000°, λ-61.00000°. NP2:φ₀201.00000°, δ63.00000°, λ-106.00000°.*
*IDC **03** 02:34:22.5±1.4, 39°.21N×143°.64E, h0km, mb3.5/4, mb1 3.5/7, mb1mx3.4/35, mbtmp3.4/7, ML2.8/3, MS2.8/2, Ms1 2.8/2, ms1mx2.3/34, Error ellipse: s-maj=32.3km s-min=24.8km az=101.0*
*ISCJB **03** 02:34:24.7±1.8, 39°.32N±0°.05×143°.19E±0°.09, h22km±12km, mb3.5/4, MS3.1/1, Error ellipse: s-maj=11.4km s-min=8.6km az=20.7*
*JMA **03** 02:34:24.4±0.2, 39°.32N×143°.16E, h16km±3km, M3.8*

ISC 03 02:34:23.5±2.3, 39°.25N±0°.07×143°.12E±0°.08, h3km±13km, n25, σ1s79/26, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.06**	**288**	P	**Pg**	**02 34 43.9**	**+0.1**
MIYJ				S	**Sg**	**02 34 57.7**	**+0.1**
OFUJ	**Ofunato**	**1.14**	**262**	P	**Pb**	**02 34 45.8**	**-0.1**
JTH	**Tanohata**	**1.19**	**306**	P	**Pb**	**02 34 45.8**	**-0.5**
JTH				eS	**Sg**	**02 35 01.7**	**-0.1**
JOM	**Ohasama**	**1.44**	**279**	P	**Pb**	**02 34 50.4**	**-0.5**
JOM				S	**Sb**	**02 34 52.8**	**-0.8**
JMK	**Ichinoseki**	**1.51**	**259**	P	**Pb**	**02 34 51.8**	**-0.4**
JIO	**Ouri**	**1.60**	**241**	P	**Pb**	**02 34 53.0**	**-0.6**
JIO				eS	**Sn**	**02 35 13.4**	**-0.3**
JANG	**Nango**	**1.67**	**313**	P	**Pn**	**02 34 52.6**	**-1.0**
JANG				S	**Sn**	**02 35 13.8**	**-1.7**
JRG	**Rokugo**	**1.94**	**275**	P	**Pb**	**02 34 58.6**	**-0.8**
JOU	**Okura**	**2.12**	**246**	P	**Pb**	**02 35 01.5**	**-1.0**
JAH	**Hinai**	**2.13**	**297**	P	**Pn**	**02 35 00.9**	**+0.9**
JTM	**Tenmabayashi**	**2.20**	**315**	P	**Pn**	**02 35 00.7**	**-0.2**
JOT	**Ohata**	**2.65**	**324**	P	**Pn**	**02 35 08.0**	**+0.9**
MJAR	**Matsushiro Arr**	**4.74**	**237**	Pn	**Pn**	**02 35 38.9**	**+3.1**
	1.2nm,0.3s,baz=38,slow=12,SNR=29						
MAT	**Matsushiro**	**4.74**	**237**	P	**Pn**	**02 35 39.3**	**+3.5**
MAT				eS	**Sn**	**02 36 28.8**	**-2.4**
ASAJ	**Asahikawa**	**4.88**	**356**	Pn	**Pn**	**02 35 37.2**	**-0.5**
	0.5nm,0.3s,baz=170,slow=6.1,SNR=3.8						
USRK	**Ussuriysk Ar.**	**9.68**	**304**	Pn	**Pn**	**02 36 47.3**	**+3.7**
	0.1nm,0.3s,baz=113,slow=17,SNR=2.4						
PETK	**Petropavlovsk-**	**17.09**	**31**	LR	LR	02 45 52.1	
	comp=Z,17nm,18.5s,baz=86,slow=41						
H11N2	**WAKE ISLAND Hy**	**28.26**	**127**	T	T	03 09 52.2	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**28.27**	**127**	T	T	03 09 56.2	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**28.27**	**127**	T	T	03 09 55.6	
	baz=314						
NRIK	**Noril'sk**	**41.84**	**334**	LR	LR	03 00 12.2	
	comp=Z,23nm,19.7s,baz=342,slow=37						
MKAR	**Makanchi Array**	**44.12**	**300**	P	**P**	**02 42 36.5**	**+3.5**
	0.1nm,0.3s,baz=96,slow=8.9,SNR=2.1						
KURBB	**Kurchatov Arra**	**45.73**	**307**	P	**P**	**02 42 47.5**	**+1.8**
	0.5nm,0.4s,baz=81,slow=8.3,SNR=4.3						
ILAR	**Eielson Array**	**46.90**	**33**	P	**P**	**02 42 52.8**	**-2.0**
	0.3nm,0.6s,baz=267,slow=6.8,SNR=6.0						
WRA	**Warraminga Arr**	**59.46**	**190**	P	**P**	**02 44 27.1**	**-0.6**
	0.3nm,0.5s,baz=7.6,slow=6.9,SNR=7.2						

*NIED **03** 02:40:00, 36°.20N×140°.90E, h35km, Mw3.7 Best double couple: M₀4.44000×10¹⁴ NP1:φ₀159.00000°, δ12.00000°, λ63.00000°. NP2:φ₀7.00000°, δ79.00000°, λ96.00000°.*
*ISCJB **03** 02:40:02.7±0.7, 36°.24N±0°.03×140°.94E±0°.06, h35km±9km, mb3.6/4, Error ellipse: s-maj=8.1km s-min=5.0km az=6.3*
*JMA **03** 02:40:03.4, 36°.18N×140°.84E, h38km±1km, M3.7*
JMA Felt II J1.
*IDC **03** 02:40:05.2±3.2, 36°.24N×140°.95E, h38km±28km, mb3.4/4, mb1 3.5/7, mb1mx3.3/39, mbtmp3.6/7, ML3.4/3, MS2.7/2, Ms1 2.7/2, ms1mx2.3/24, Error ellipse: s-maj=32.9km s-min=17.9km az=80.0*

ISC 03 02:40:03.1±1.3, 36°.23N±0°.04×140°.92E±0°.06, h24km±10km, n22, σ1s14/24, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.47**	**323**	P	**Pb**	**02 40 13.4**	**+0.6**
JHO				S	**Sb**	**02 40 20.1**	**+0.8**
CHOJ	**Chosi**	**0.53**	**185**	P	**Pb**	**02 40 13.6**	**-0.2**
CHOJ				S	**Sb**	**02 40 20.3**	**-0.8**
JYT	**Yasato**	**0.58**	**270**	P	**Pb**	**02 40 14.4**	**-1.5**
JYT				S	**Sb**	**02 40 21.8**	**-0.8**
ONAJ	**Iwakimizuishiy**	**0.87**	**354**	P	**Pn**	**02 40 19.3**	**-0.6**
ONAJ				eS	**Sn**	**02 40 30.9**	**-1.0**
JFK	**Kawauchi**	**1.13**	**358**	P	**Pn**	**02 40 22.9**	**-0.6**
JFK				S	**Sn**	**02 40 36.7**	**-1.6**
JAG	**Ashikaga**	**1.20**	**280**	P	**Pn**	**02 40 23.4**	**-0.9**
JAG				S	**Sn**	**02 40 37.4**	**-2.4**
MJAR	**Matsushiro Arr**	**2.21**	**279**	Pn	**Pn**	**02 40 38.2**	**-0.1**
	13nm,0.3s,baz=86,slow=9.6,SNR=150						
MJAR				Sn	**Sn**	**02 41 05.8**	**+1.0**
	17nm,0.3s,baz=3.0,slow=16,SNR=9.1						
MAT	**Matsushiro**	**2.21**	**279**	P	**Pn**	**02 40 38.4**	**+0.1**
MAT				S	**Sn**	**02 41 04.9**	**+0.1**
JHJ	**Hachijo jima 2**	**3.25**	**197**	Pn	**Pn**	**02 40 54.8**	**+2.2**
	12nm,0.3s,baz=53,slow=20,SNR=3.9						
JHJ				Sn	**Sn**	**02 41 31.7**	**+1.3**
	13nm,0.3s,baz=270,slow=20,SNR=3.5						
ASAJ	**Asahikawa**	**7.98**	**9**	Pn	**Pn**	**02 41 58.7**	**+1.2**
	0.5nm,0.3s,baz=203,slow=18,SNR=3.4						
ASAJ				Sn	**Sn**	**02 43 26.9**	**0.0**
	baz=210,slow=20						
JNU	**Nakatsue**	**8.83**	**252**	LR	LR	02 45 51.6	
	comp=Z,66nm,19.1s,baz=294,slow=39						
KLR	**Kul'dur**	**14.61**	**336**	LR	LR	02 48 49.4	
	comp=Z,17nm,19.8s,baz=40,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.10**	**119**	T	T	03 15 10.7	
	baz=311,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	**28.11**	**119**	T	T	03 15 10.8	
	baz=311,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy**	**28.12**	**119**	T	T	03 15 11.6	
	baz=311,slow=75,SNR=14						
H11S1	**WAKE ISLAND Hy**	**28.78**	**121**	T	T	03 16 03.0	
	baz=314,slow=76,SNR=66						
H11S3	**WAKE ISLAND Hy**	**28.78**	**121**	T	T	03 16 03.9	
	baz=314,slow=76,SNR=41						
H11S2	**WAKE ISLAND Hy**	**28.79**	**121**	T	T	03 16 03.9	
	baz=314,slow=76,SNR=44						
ZALV	**Zalesovo Beam**	**42.16**	**313**	P	**P**	**02 47 53.6**	**+0.1**
	0.6nm,0.5s,baz=96,slow=7.6,SNR=4.0						
MKAR	**Makanchi Array**	**44.21**	**303**	P	**P**	**02 48 11.0**	**+0.8**
	0.8nm,0.6s,baz=93,slow=9.2,SNR=6.5						
WRA	**Warramunga Arr**	**56.22**	**187**	P	**P**	**02 49 40.6**	**-0.7**
	0.2nm,0.4s,baz=5.5,slow=7.6,SNR=9.1						
ASAR	**Alice Springs**	**59.94**	**187**	P	**P**	**02 50 07.9**	**+0.6**
	0.9nm,1.1s,baz=22,slow=12,SNR=3.0						

MAN 03 02:44:55, 18°.11N×120°.74E, h62km, mb3.9, ML2.6, MS2.2, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.24**	**331**	⇓*i* P	Pn	02 45 07.0	+2.1
PIP				*e*S	Sn	02 45 15.5	+3.3
ABRA	**Dolores**	**0.46**	**184**	*e*P	Pn	02 45 08.8	+2.0
ABRA				*e*S	Sn	02 45 19.1	+3.9
APYP	**Conner**	**0.54**	**118**	*e*P	Pn	02 45 09.9	+2.4
APYP				*e*S	Sn	02 45 20.5	+3.9

*NIED **03** 03:15:00, 38°.30N×142°.20E, h32km, Mw3.5 Best double couple: M₀1.82000×10¹⁴ NP1:φ₀29.00000°, δ46.00000°, λ159.00000°. NP2:φ₀134.00000°, δ75.00000°, λ46.00000°.*
*IDC **03** 03:15:07.4±2.7, 38°.29N×143°.03E, h0km, mb3.6/2, mb1 3.7/5, mb1mx3.4/42, mbtmp3.6/5, ML3.5/2, MS3.4/1, Ms1 3.4/1, ms1mx2.3/38, Error ellipse: s-maj=47.9km s-min=34.8km az=37.0*
*ISCJB **03** 03:15:13.2±1.2, 38°.30N±0°.05×142°.2E±0°.1, h46km±14km, mb3.7/2, MS3.5/1, Error ellipse: s-maj=15.0km s-min=7.4km az=12.2*
*JMA **03** 03:15:14.5±0.1, 38°.35N×142°.13E, h45km±1km, M3.9*
JMA Felt II J1.

ISC 03 03:15:12.8±2.9, 38°.31N±0°.05×142°.34E±0°.10, h31km±19km, n14, σ2s23/25, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.79**	**281**	P	**Pn**	**03 15 27.2**	**-0.6**
JIO				S	**Sb**	**03 15 35.9**	**-2.6**
OFUJ	**Ofunato**	**0.93**	**326**	P	**Pn**	**03 15 29.7**	**-0.1**
OFUJ				S	**Sn**	**03 15 40.6**	**-1.4**
JMK	**Ichinoseki**	**1.08**	**306**	P	**Pn**	**03 15 31.5**	**-0.4**
JMK				S	**Sn**	**03 15 43.8**	**-2.0**
JMM	**Marumori**	**1.30**	**250**	P	**Pn**	**03 15 34.2**	**-0.6**
JMM				S	**Sn**	**03 15 49.1**	**-2.0**
JOU	**Okura**	**1.32**	**273**	P	**Pn**	**03 15 34.8**	**-0.3**
JOU				S	**Sn**	**03 15 49.9**	**-1.7**
JOM	**Ohasama**	**1.42**	**325**	P	**Pn**	**03 15 36.8**	**+0.3**
JOM				S	**Sn**	**03 15 53.7**	**-0.4**
JFK	**Kawauchi**	**1.49**	**231**	P	**Pn**	**03 15 37.2**	**-0.3**
JFK				S	**Sn**	**03 15 53.8**	**-2.2**
JYK	**Kaneyama**	**1.66**	**292**	P	**Pn**	**03 15 39.6**	**-0.3**
JYK				eS	**Sn**	**03 15 59.1**	**-1.1**
MJAR	**Matsushiro Arr**	**3.73**	**243**	Pn	**Pn**	**03 16 11.4**	**+3.1**
	1.1nm,0.3s,baz=57,slow=11,SNR=9.0						
MJAR				Sn	**Sb**	**03 17 05.2**	**+2.4**
	1.1nm,0.3s,baz=309,slow=32,SNR=4.5						
MAT	**Matsushiro**	**3.73**	**243**	P	**Pn**	**03 16 10.8**	**+2.5**
MAT				S	**Sn**	**03 16 55.1**	**+3.9**
**JHJ

MKAR	**Makanchi Array**	**14.84**	**18**	Pn		**Pn**	**03 55 08.7**	**-2.1**
	comp=E,0.4nm,0.3s,baz=195,slow=12,SNR=9.8							
MKAR				Sn		Sn	03 57 43.2	-12
	comp=E,0.1nm,0.3s,baz=204,slow=17,SNR=3.8							
KURBB	**Kurchatov Arra**	**17.88**	**6**	P		**Pn**	**03 55 47.1**	**-2.5**
	comp=E,0.1nm,0.3s,baz=194,slow=11,SNR=4.6							
BVAR	**Borovoye Array**	**20.48**	**351**	P		**P**	**03 56 19.0**	**+0.4**
	comp=E,2.9nm,0.5s,baz=163,slow=10,SNR=18							
AKTO	**Aktyubinsk**	**21.78**	**329**	P		**P**	**03 56 35.5**	**+2.7**
	comp=E,0.9nm,0.4s,baz=126,slow=8.7,SNR=3.3							
ZALV	**Zalesovo Beam**	**22.09**	**15**	P		**P**	**03 56 33.6**	**-2.3**
	comp=E,1.1nm,0.5s,baz=208,slow=9.6,SNR=5.8							
BRTR	**Keskin Array B**	**34.19**	**294**	P		P	03 58 33.1	+6.6
	comp=E,0.5nm,0.8s,baz=97,slow=8.8,SNR=3.5							
FINES	**FINESS Array B**	**42.55**	**327**	P		**P**	**03 59 36.9**	**+0.6**
	comp=E,1.0nm,0.9s,baz=119,slow=8.1,SNR=3.9							

NIED ***03*** *04:38:00,38˚.90N×142˚.50E,h38km,Mw4.2 Best double couple: M₀2.11000×10¹⁵ NP1:φ=284.00000˚,δ25.00000˚, λ175.00000˚. NP2:φ=18.00000˚,δ88.00000˚,λ65.00000˚.*

ISCJB ***03*** *04:38:36.7±0.8,38˚.84N±0˚.03×142˚.51E±0˚.06,h41km±6km, mb4.1/21,MS3.4/8,Error ellipse: s-maj=8.6km s-min=4.5km az=20.2*

JMA ***03*** *04:38:37.2±0.1,38˚.87N×142˚.44E,h35km±2km,M4.1*

JMA Felt II J1.

IDC ***03*** *04:38:38.1±0.8,38˚.78N×142˚.35E,h35km±5km,mb3.8/13, mb1 3.9/15,mb1mx3.7/38,mbtmp4.0/15,ML3.6/2,MS3.3/14, Ms1 3.3/14,ms1mx3.2/40,Error ellipse: s-maj=25.4km s-min=12.9km az=88.0*

NEIC ***03*** *04:38:38.5±0.4,38˚.81N×142˚.43E,h40km±4km,mb4.4/8, Error ellipse: s-maj=9.2km s-min=5.6km az=95.0*

NEIC Recorded [2 JMA] in Iwate.

ISC 03 04:38:38.4±0.7,38˚.87N±0˚.04×142˚.41E±0˚.07,h39km±5km, n60,σ1s64/64,mb4.1/21,MS3.4/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.61**	**290**	P	**Pn**	**04 38 49.8**	**-0.9**
OFUJ				S	**Sn**	**04 38 58.5**	**-0.9**
MIYJ	**Miyakonagasawa**	**0.84**	**327**	P	**Pn**	**04 38 52.6**	**-1.2**
MIYJ				S	**Sn**	**04 39 03.3**	**-1.6**
JIO	**Ouri**	**0.93**	**244**	P	**Pn**	**04 38 53.7**	**-1.2**
JIO				S	**Sn**	**04 39 05.8**	**-1.2**
JMK	**Ichinoseki**	**0.93**	**275**	P	**Pn**	**04 38 54.5**	**-0.5**
JMK				S	**Sn**	**04 39 06.8**	**-0.3**
JOM	**Ohasama**	**1.06**	**305**	P	**Pn**	**04 38 56.5**	**-0.2**
JOM				S	**Sn**	**04 39 10.2**	**0.0**
JTH	**Tanohata**	**1.15**	**339**	P	**Pn**	**04 38 56.9**	**-1.0**
JOU	**Okura**	**1.46**	**250**	P	**Pn**	**04 39 02.4**	**+0.2**
JRG	**Rokugo**	**1.48**	**291**	P	**Pn**	**04 39 03.1**	**+0.6**
JRG				eS	**Sn**	**04 39 21.7**	**+1.1**
JYK	**Kaneyama**	**1.60**	**272**	P	**Pn**	**04 39 04.9**	**+0.7**
JMM	**Marumori**	**1.62**	**232**	P	**Pn**	**04 39 03.8**	**-0.6**
JMM				eS	**Sn**	**04 39 23.8**	**-0.2**
JANG	**Nango**	**1.65**	**336**	P	**Pn**	**04 39 04.6**	**-0.3**
JANG				eS	**Sn**	**04 39 26.3**	**+1.4**
ERM	**Erimo**	**3.19**	**10**	ePn	**Pn**	**04 39 26.6**	**+0.6**
ERM				eSn	**Sn**	**04 40 03.7**	**+1.0**
MAJO	**Matsushiro**	**4.06**	**236**	ePn	**Pn**	**04 39 40.0**	**+1.9**
MAT	**Matsushiro**	**4.06**	**236**	P	**Pn**	**04 39 40.2**	**+2.2**
MAT				S	**Sn**	**04 40 28.2**	**+3.8**
MJAR	**Matsushiro Arr**	**4.06**	**236**		**Pn**	**04 39 40.3**	**+2.3**
	11nm,0.3s,baz=32,slow=14,SNR=69						
MJAR				Sn	**Sn**	**04 40 28.2**	**+3.9**
	baz=47,slow=12,SNR=3.1						
MJAR				LR	LR	04 41 35.3	
	comp=Z,417nm,18.4s,baz=65,slow=45						
ASAJ	**Asahikawa**	**5.24**	**1**	Pn	**Pn**	**04 39 55.2**	**+1.0**
	1.3nm,0.3s,baz=224,slow=16,SNR=14						
ASAJ				Sn	**Sn**	**04 40 57.6**	**+4.3**
	2.3nm,0.3s,baz=236,slow=29,SNR=3.6						
ASAJ	**Asahikawa**	**5.24**	**1**	ePn	**Pn**	**04 39 55.0**	**+0.8**
	28nm,1.1s						
ASAJ				eSn	**Sn**	**04 40 53.0**	**-0.3**
JHJ	**Hachijo jima 2**	**6.12**	**201**	Pn	**Pn**	**04 40 04.6**	**-1.7**
	7.8nm,0.3s,baz=36,slow=14,SNR=3.1						
JHJ				Sn	**Sn**	**04 41 11.7**	**-3.4**
	11nm,0.3s,baz=240,slow=20,SNR=2.9						
USRK	**Ussuriysk Ar.**	**9.45**	**308**	Pn	**Pn**	**04 40 55.0**	**+3.1**
	0.6nm,0.3s,baz=116,slow=14,SNR=10						
USRK				LR	LR	04 44 23.4	
	comp=Z,190nm,18.7s,baz=145,slow=36						
JNU	**Nakatsue**	**10.96**	**242**	LR	LR	04 45 46.6	
	comp=Z,231nm,20.2s,baz=104,slow=39						
KSRS	**Korea Array**	**11.49**	**267**	Pn	**Pn**	**04 41 24.3**	**+4.4**
	0.3nm,0.3s,baz=81,slow=14,SNR=8.1						
KSRS				LR	LR	04 45 25.0	
	comp=Z,122nm,19.6s,baz=68,slow=36						
KSAR	**Wonju Array Be**	**11.53**	**267**	Pn	**Pn**	**04 41 24.3**	**+4.0**
CBIJ	**Chichi jima**	**11.74**	**181**	ePn	**Pn**	**04 41 22.7**	**-0.7**
KLR	**Kul'dur**	**12.87**	**327**	Pn	**P**	**04 41 45.6**	**-3.1**
	0.3nm,0.3s,baz=150,slow=12,SNR=6.6						
KLR				LR	LR	04 46 43.5	
	comp=Z,119nm,18.3s,baz=120,slow=38						
PETK	**Petropavlovsk-**	**17.71**	**32**	LR	LR	04 48 42.4	
	comp=Z,57nm,21.8s,baz=200,slow=34						
YHNB	**Yeheng**	**22.74**	**238**	eP	**P**	**04 43 37.5**	**+0.3**
	12nm,0.6s						
SEY	**Seymchan**	**24.84**	**11**	P	**P**	**04 43 58.5**	**+1.7**
	0.8nm,0.5s,baz=181,slow=16,SNR=2.7						
SONM	**Songino Array**	**27.47**	**301**	P	**P**	**04 44 21.5**	**+0.7**
	0.9nm,0.4s,baz=95,slow=8.7,SNR=3.0						
SONM				LR	LR	04 55 53.8	
	comp=Z,58nm,21.0s,baz=122,slow=38						
ENH	**Enshi**	**28.32**	**262**	eP	**P**	**04 44 28.6**	**+0.1**
	10nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**28.48**	**125**	T	T	05 14 58.3	
	baz=322,SNR=123						
H11N1	**WAKE ISLAND Hy**	**28.49**	**125**	T	T	05 14 58.1	
	baz=322,SNR=153						
H11N3	**WAKE ISLAND Hy**	**28.50**	**125**	T	T	05 14 58.8	
	baz=322,SNR=194						
H11S1	**WAKE ISLAND Hy**	**29.26**	**127**	T	T	05 15 54.2	
	baz=318,slow=76,SNR=34						
H11S3	**WAKE ISLAND Hy**	**29.27**	**127**	T	T	05 15 54.9	
	baz=318,slow=76,SNR=48						
H11S2	**WAKE ISLAND Hy**	**29.28**	**127**	T	T	05 15 56.0	
	baz=318,slow=76,SNR=34						
ZALV	**Zalesovo Beam**	**41.29**	**311**	P	**P**	**04 46 20.1**	**+0.3**
	2.4nm,0.5s,baz=82,slow=7.4,SNR=12						
ZALV				LR	LR	05 04 13.4	
	comp=Z,79nm,18.4s,baz=70,slow=37						
CMAR	**Chiang Mai Arr**	**42.74**	**254**	LR	LR	05 05 39.8	
	comp=Z,23nm,18.0s,baz=255,slow=38						
MKAR	**Makanchi Array**	**43.84**	**301**	P	**P**	**04 46 40.9**	**+0.3**
	1.9nm,0.7s,baz=89,slow=9.8,SNR=15						
MKAR				LR	LR	05 05 42.6	
	comp=Z,40nm,18.6s,baz=58,slow=37						
KURK	**Kurchatov**	**45.44**	**307**	P	**P**	**04 46 53.9**	**+0.6**
KURBB	**Kurchatov Arra**	**45.52**	**307**	P	**P**	**04 46 53.9**	**0.0**
	5.7nm,0.5s,baz=80,slow=8.3,SNR=36						
ILAR	**Eielson Array**	**47.53**	**33**	P	**P**	**04 47 10.2**	**+0.8**
	0.5nm,0.6s,baz=266,slow=5.8,SNR=7.2						
TKM2	**Tokmak 2**	**49.47**	**297**	eP	**P**	**04 47 24.8**	**-0.2**
	1.8nm,0.5s						
BVAR	**Borovoye Array**	**49.94**	**311**	P	**P**	**04 47 28.5**	**+0.3**
	0.8nm,0.4s,baz=58,slow=11,SNR=4.4						
EKS2	**Erkin-Say**	**50.82**	**298**	eP	**P**	**04 47 36.7**	**+1.6**
	1.0nm,0.5s						
ARU	**Arti**	**55.52**	**318**	eP	**P**	**04 48 09.5**	**+0.3**
	4.9nm,0.8s						
ABKAR	**Akbulak array**	**57.37**	**310**	eP	**P**	**04 48 22.3**	**-0.2**
	1.8nm,0.6s						
SPITS	**Spitsbergen Ar**	**58.88**	**349**	LR	LR	05 15 36.9	
	comp=Z,26nm,18.7s,baz=45,slow=38						
WRAB	**Tennant Creek**	**58.98**	**189**	eP	**P**	**04 48 33.3**	**-0.7**
	1.2nm,0.5s						
WRA	**Warramunga Arr**	**58.99**	**189**	P	**P**	**04 48 33.1**	**-1.0**
	1.1nm,0.4s,baz=6.9,slow=7.0,SNR=37						
WRA				pP	**pP**	**04 48 45.0**	**-0.6**
	1.4nm,0.8s,baz=9.8,slow=7.5,SNR=5.8						
ARCES	**ARCESS Array B**	**62.56**	**339**	pP	pP	04 49 09.3	0.0
	1.0nm,0.7s,baz=38,slow=8.1,SNR=1.6						
ASAR	**Alice Springs**	**62.72**	**189**	P	**P**	**04 48 59.0**	**-0.5**
	0.5nm,0.6s,baz=18,slow=9.8,SNR=10.0						
ASAR				sP	**sP**	**04 49 16.1**	**+0.7**
	0.4nm,0.5s,baz=11,slow=7.1,SNR=2.4						
GEYT	**Alibeck**	**63.64**	**299**	pP	pP	04 49 17.2	+0.1
	1.9nm,0.7s,baz=48,slow=2.1,SNR=1.9						
FINES	**FINESS Array B**	**67.56**	**332**	P	**P**	**04 49 30.5**	**+0.2**
	1.5nm,0.7s,baz=46,slow=11,SNR=3.9						
FINES				pP	**pP**	**04 49 41.3**	**-0.7**
	2.6nm,0.7s,baz=35,slow=8.5,SNR=4.5						
FINES				LR	LR	05 20 52.2	
	comp=Z,38nm,18.4s,baz=46,slow=38						
NOA	**NORSAR Array B**	**72.80**	**337**	P	**P**	**04 50 02.7**	**+0.2**
	0.4nm,0.6s,baz=26,slow=6.9,SNR=3.0						
NOA				pP	**pP**	**04 50 13.8**	**-0.4**
	1.1nm,0.7s,baz=38,slow=6.2,SNR=3.5						
NOA				LR	LR	05 26 57.5	
	comp=Z,18nm,18.8s,baz=45,slow=40						
AKASG	**Malin Array Be**	**73.33**	**322**	P	**P**	**04 50 05.5**	**-0.3**
	0.8nm,0.4s,baz=43,slow=5.9,SNR=2.4						
R11A	**Troy Canyon, C**	**75.02**	**53**	eP	**P**	**04 50 16.0**	**-0.1**
	0.6nm,0.6s						
BRTR	**Keskin Array B**	**78.22**	**312**	LR	LR	05 29 43.7	
	comp=Z,10nm,18.8s,baz=60,slow=39						
KHC	**Kasperske Hory**	**81.39**	**329**	ePP	pP	04 51 03.2	+0.3
GERES	**GERESS Array B**	**81.56**	**329**	P	**P**	**04 50 52.1**	**+0.1**
	0.3nm,0.4s,baz=24,slow=9.7,SNR=3.8						
GERES				pP	**pP**	**04 51 03.0**	**-0.8**
	0.9nm,0.8s,baz=19,slow=9.5,SNR=2.7						
TXAR	**Lajitas Array**	**88.38**	**53**	pP	pP	04 51 39.7	+1.1
	0.4nm,0.7s,baz=270,slow=2.5,SNR=4.4						

JMA 03 05:11:47.2±0.3,24˚.93N×140˚.90E,h108km,M4.2, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHHJ	**Haha-jima-NKT**	**2.05**	**34**	P	Pn	05 12 21.2	+0.5
JHHJ				S	Sn	05 12 46.8	+0.5
CBIJ	**Chichi jima**	**2.45**	**28**	P	Pn	05 12 26.5	+0.6
CBIJ				S	Sn	05 12 56.6	+1.1
BSO1	**Boso 1**	**9.69**	**0**	P	Pn	05 14 01.9	-1.2
BSO3	**Boso 3**	**9.84**	**358**	P	Pn	05 14 03.7	-1.7
BSO4	**Boso 4**	**10.04**	**357**	P	Pn	05 14 07.5	-0.7
JOD2	**Odawara 2**	**10.42**	**352**	P	Pn	05 14 13.5	0.0

IDC 03 05:19:03.1±9.8,17˚.20S×178˚.34W,h555km±114km, mb2.8/4,mb1 3.2/4,mb1mx2.9/20,mbtmp3.8/4,Error ellipse: s-maj=108.5km s-min=39.7km az=156.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**44.83**	**259**	P	P	05 26 28.4	-0.1
	0.4nm,0.4s,baz=96,slow=7.8,SNR=15						
ASAR	**Alice Springs**	**45.05**	**254**	P	P	05 26 29.9	-0.3
	0.5nm,0.4s,baz=90,slow=7.8,SNR=8.6						
ILAR	**Eielson Array**	**85.19**	**13**	P	P	05 30 40.7	-0.1
	0.3nm,0.4s,baz=216,slow=5.0,SNR=9.6						
TXAR	**Lajitas Array**	**85.57**	**58**	P	P	05 30 43.5	0.0
	0.6nm,0.7s,baz=216,slow=5.8,SNR=7.1						
BRTR	**Keskin Array B**	**144.33**	**316**	PKP	PKPbc	05 37 36.3	-0.4
	0.3nm,0.4s,baz=127,slow=2.2,SNR=2.5						
GERES	**GERESS Array B**	**146.95**	**345**	PKPbc	PKPbc	05 37 43.1	-0.8
	0.6nm,0.5s,baz=12,slow=5.0,SNR=2.4						

IDC ***03*** *05:58:12.8±0.7,35˚.35N×81˚.49E,h0km,mb3.9/17, mb1 4.0/23,mb1mx3.8/52,mbtmp3.9/23,ML3.6/4,MS3.0/8, Ms1 3.0/8,ms1mx2.8/39,Error ellipse: s-maj=17.8km s-min=13.4km az=46.0*

ISCJB ***03*** *05:58:13.6±0.3,35˚.45N±0˚.03×81˚.50E±0˚.05,h15km, mb3.8/18,MS2.9/7,Error ellipse: s-maj=6.3km s-min=4.2km az=161.1*

BJI ***03*** *05:58:13.6,35˚.35N×81˚.58E,h7km,mb4.0/4,ML4.0/4, Ms3.9/2,Ms7 3.7/2*

NEIC ***03*** *05:58:14.2±0.4,35˚.36N×81˚.57E,h10km,mb4.3/4,Error ellipse: s-maj=10.3km s-min=6.9km az=49.0*

ISC 03 05:58:15.2±0.5,35˚.41N±0˚.06×81˚.57E±0˚.06,h15km,n42, σ1s53/45,mb3.8/19,MS3.1/7,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THN	**Thein Dam**	**5.70**	**240**	eP	**Pn**	**05 59 37.6**	**-1.7**
PYUN	**Piuthan**	**7.38**	**170**	eP	**Pn**	**06 00 05.3**	**+2.7**
	16nm,0.5s						
KOLN	**Koldanda**	**7.81**	**167**	eP	**Pn**	**06 00 08.9**	**+0.5**
	15nm,0.4s						
GKN	**Gorkha**	**7.83**	**160**	eP	**Pn**	**06 00 12.1**	**+3.4**
	19nm,0.4s						
KKN	**Kakani**	**8.22**	**156**	eP	**Pn**	**06 00 17.0**	**+2.8**
	18nm,0.5s						
GUN	**Gumba**	**8.32**	**153**	eP	**Pn**	**06 00 18.8**	**+3.1**
	43nm,0.7s						
PKIN	**Phulchoki**	**8.46**	**156**	eP	**Pn**	**06 00 20.2**	**+2.8**
	15nm,0.5s						
TKM2	**Tokmak 2**	**8.82**	**330**	ePn	**Pn**	**06 00 22.2**	**-0.1**
	5.6nm,0.7s						
AAK	**Ala-Archa**	**9.08**	**325**	Pn	**Pn**	**06 00 27.2**	**+1.5**
	0.1nm,0.3s,baz=136,slow=14,SNR=4.8						
AAK				Pg		06 00 57.8	
	0.8nm,0.3s,baz=132,slow=15,SNR=3.1						
AAK				Lg	Lg	06 02 57.6	
	0.7nm,0.3s,baz=16,slow=21,SNR=5.7						
EKS2	**Erkin-Say**	**9.44**	**322**	ePn	**Pn**	**06 00 33.3**	**+2.5**
	5.7nm,0.8s						
RAMN	**Ramite**	**9.46**	**152**	eP	**Pn**	**06 00 32.4**	**+1.2**
	41nm,0.7s						
WMQ	**Urumqi**	**9.64**	**27**	eP	**Pn**	**06 00 34.8**	**+1.4**
WMQ				S	**Sn**	**06 02 22.6**	**+1.2**
WMQ				smax	smax		
	comp=N,44nm,1.0s						
WMQ				smax	smax		
	comp=E,48nm,0.8s						
LSA	**Lhasa**	**9.88**	**122**	ePn	**Pn**	**06 00 36.2**	**-0.9**
MKAR	**Makanchi Array**	**11.39**	**3**	Pn	**Pn**	**06 00 58.1**	**+0.8**
	0.4nm,0.3s,baz=180,slow=12,SNR=26						
MKAR				Sn	**Sn**	**06 03 06.6**	**+2.3**
	0.2nm,0.3s,baz=183,slow=23,SNR=3.4						
MKAR				LR	LR	06 06 19.8	
	comp=Z,54nm,19.1s,baz=200,slow=42						
KURBB	**Kurchatov Arra**	**15.37**	**353**	Pn	**Pn**	**06 01 49.4**	**-2.0**
	0.0nm,0.3s,baz=172,slow=12,SNR=16						
KURK	**Kurchatov**	**15.45**	**353**	ePn	**Pn**	**06 01 50.3**	**-2.2**
	44nm,1.2s						
ZALV	**Zalesovo Beam**	**18.68**	**6**	P	**P**	**06 02 31.8**	**-0.7**
	baz=191,slow=12,SNR=7.5						
GEYT	**Alibeck**	**18.98**	**285**	P	**P**	**06 02 34.0**	**-2.0**
	0.4nm,0.3s,baz=99,slow=9.2,SNR=7.7						
CD2	**Chengdu**	**19.10**	**97**	eP	**P**	**06 02 36.0**	**-1.4**
CD2				S	**Sn**	**06 06 10.6**	**-1.4**
CD2				sS	sS	06 06 17.5	-2.9
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				LR	LR		
	comp=N,150nm,9.4s						
CD2				LR	LR		
	comp=E,330nm,10.4s						
CD2				LR	LR		
	comp=Z,200nm,10.4s						
BVAR	**Borovoye Array**	**19.31**	**339**	P	**Pn**	**06 02 40.1**	**-0.5**
	0.4nm,0.3s,baz=145,slow=11,SNR=14						
BRVK	**Borovoye**	**19.37**	**339**	eP	**P**	**06 02 40.5**	**+0.3**
	8.2nm,0.6s						
ABKAR	**Akbulak array**	**21.05**	**318**	eP	**P**	**06 02 58.1**	**-0.3**
	2.8nm,0.8s						
SONM	**Songino Array**	**22.22**	**48**	P	**P**	**06 03 10.6**	**-0.6**
	1.8nm,0.5s,baz=237,slow=19,SNR=3.3						
AKTO	**Aktyubinsk**	**22.73**	**319**	P	**P**	**06 03 16.6**	**0.0**
	2.3nm,0.8s,baz=112,slow=8.0,SNR=8.7						
AKTO				LR	LR	06 11 55.4	
	comp=Z,16nm,18.3s,baz=126,slow=36						
CMAR	**Chiang Mai Arr**	**22.85**	**133**	P	**P**	**06 03 17.9**	**0.0**
	0.5nm,0.4s,baz=322,slow=11,SNR=4.4						
CMAR				LR	LR	06 12 37.0	
	comp=Z,5.8nm,18.2s,baz=205,slow=38						
WSAR	**Wadi Sarin**	**23.33**	**245**	P	**P**	**06 03 23.0**	**+0.2**
	12nm,1.2s,baz=67,slow=7.7,SNR=3.1						
ARU	**Arti**	**26.20**	**331**	P	**P**	**06 03 49.5**	**+0.5**
	0.9nm,0.3s,baz=110,slow=8.0,SNR=3.2						
ARU				LR	LR	06 14 23.2	
	comp=Z,33nm,19.2s,baz=147,slow=37						
KVAR	**Kislovodsk Arr**	**30.88**	**298**	LR	LR	06 19 54.8	
	comp=Z,41nm,18.5s,baz=349,slow=42						
HIA	**Hailar**	**31.07**	**52**	eP	**P**	**06 04 32.6**	**0.0**
	6.6nm,1.0s						
BRTR	**Keskin Array B**	**37.88**	**291**	P	**P**	**06 05 31.5**	**-0.3**
	0.5nm,0.6s,baz=88,slow=3.6,SNR=3.4						
BRTR				PP	**PnPn**	**06 07 00.0**	**+0.6**
	0.7nm,0.8s,baz=70,slow=11,SNR=4.1						
EIL	**Elat**	**39.43**	**275**	P	**P**	**06 05 43.2**	**-1.5**
	3.0nm,0.7s,baz=31,slow=12,SNR=2.3						
AKASG	**Malin Array Be**	**40.32**	**309**	P	**P**	**06 05 50.1**	**-1.6**
	0.2nm,0.3s,baz=83,slow=6.5,SNR=4.9						
FINES	**FINESS Array B**	**43.27**	**325**	P	**P**	**06 06 16.8**	**+1.0**
	2.8nm,0.7s,baz=79,slow=4.1,SNR=6.1						
FINES				LR	LR	06 24 48.2	
	comp=Z,34nm,18.9s,baz=200,slow=37						
ARCES	**ARCESS Array B**	**45.55**	**336**	P	**P**	**06 06 34.9**	**+1.0**
	1.6nm,0.8s,baz=108,slow=8.0,SNR=3.0						
ARCES				LR	LR	06 27 13.5	
	comp=Z,38nm,18.3s,baz=86,slow=38						
NB2	**NORSAR Subarra**	**50.39**	**323**	P	**P**	**06 07 12.1**	**+0.5**
	comp=Z,0.8nm,0.6s,baz=86,slow=7.4						
NOA	**NORSAR Array B**	**50.39**	**323**	P	**P**	**06 07 11.7**	**+0.1**
	comp=Z,1.5nm,0.8s,baz=88,slow=7.4,SNR=5.0						
NOA				LR	LR	06 28 58.8	
	comp=Z,20nm,18.4s,baz=285,slow=37						
GERES	**GERESS Array B**	**50.48**	**308**	P	**P**	**06 07 13.0**	**+0.5**
	comp=Z,0.9nm,0.7s,baz=62,slow=6.8,SNR=2.4						
KEST	**Kesra**	**57.44**	**293**	P	**P**	**06 08 01.7**	**-1.8**
	comp=Z,2.1nm,0.8s,baz=96,slow=5.1,SNR=2.7						
ILAR	**Eielson Array**	**73.20**	**20**	P	**P**	**06 09 45.7**	**+0.6**
	comp=Z,0.3nm,0.5s,baz=324,slow=5.8,SNR=4.9						
WRA	**Warramunga Arr**	**74.37**	**129**	P	**P**	**06 09 52.4**	**-0.1**
	comp=Z,0.7nm,0.9s,baz=329,slow=5.7,SNR=2.9						
ASAR	**Alice Springs**	**76.85**	**132**	P	**P**	**06 10 07.4**	**+0.7**
	comp=Z,0.4nm,0.8s,baz=324,slow=5.8,SNR=3.8						
BOSA	**Boshof**	**82.90**	**227**	P	**P**	**06 10 38.7**	**-0.8**
	comp=Z,4.4nm,1.0s,baz=30,slow=5.7,SNR=4.1						

ISCJB ***03*** *06:13:23.8±0.9,23˚.01N±0˚.05×122˚.54E±0˚.03,h16km±7km, Error ellipse: s-maj=9.3km s-min=3.3km az=161.8*

JMA ***03*** *06:13:24.9±0.2,22˚.96N×122˚.53E,h41km*

TAP ***03*** *06:13:27.0,22˚.97N×122˚.25E,h9km±1km,ML3.0,D*

ISC 03 06:13:22.3±1.7,22˚.95N±0˚.06×122˚.53E±0˚.04,h16km±12km, n21,σ0s71/41,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**1.08**	**278**	*i* P	**Pg**	**06 13 43.6**	**+0.3**
	baz=278						
CHKT				*e*S	**Sb**	**06 13 55.7**	**-1.0**
	baz=278						
TWF1	**Yuli**	**1.20**	**290**	P	**Pg**	**06 13 45.8**	**+0.3**
	baz=293						
TWF1				*e*S	**Sb**	**06 13 59.2**	**-1.0**
	baz=293						
TWG	**Pinlang**	**1.35**	**265**	*e*P	**Pg**	**06 13 48.4**	**0.0**
	baz=262						
TWG				*e*S	**Sb**	**06 14 04.5**	**+0.1**
	baz=262						
WDT	**Danda**	**1.51**	**302**	*e*P	**Pg**	**06 13 51.4**	**-0.1**
	baz=307						
WDT				*e*S	**Sb**	**06 14 08.9**	**-0.5**
	baz=307						
JYNG	**Yonagunijimaku**	**1.54**	**14**	P	**Pb**	**06 13 51.2**	**+0.7**
JYNG				S	**Sb**	**06 14 09.5**	**-0.3**
YUS	**Yu-Shan**	**1.55**	**291**	*e*P	**Pg**	**06 13 51.8**	**-0.4**
	baz=293						
YUS				*e*S	**Sb**	**06 14 11.0**	**+0.5**
	baz=293						
YOJ	**Yonaguni jima**	**1.57**	**16**	P	**Pb**	**06 13 51.6**	**+0.6**
YOJ				S	**Sb**	**06 14 10.3**	**-0.3**
HATJ	**Hateruma jima**	**1.60**	**47**	P	**Pb**	**06 13 51.4**	**-0.2**
HATJ				S	**Sn**	**06 14 10.1**	**-0.4**
STYT	**Tauyuan**	**1.65**	**278**	*e*P	**Pg**	**06 13 53.5**	**-0.5**
	baz=277						
STYT				*e*S	**Sn**	**06 14 11.6**	**0.0**
	baz=277						
EAST	**Anshuo**	**1.66**	**250**	*i* P	**Pb**	**06 13 53.1**	**+0.6**
	baz=245						
EAST				*e*S	**Sn**	**06 14 10.9**	**-0.9**
	baz=245						
WHF	**Hehuan Shan**	**1.66**	**316**	*e*P	**Pg**	**06 13 54.2**	**-0.2**
	baz=322						
WHF				*e*S	**Sb**	**06 14 12.8**	**-0.9**
	baz=322						
ALS	**Alishan**	**1.68**	**290**	*e*P	**Pg**	**06 13 53.9**	**-0.9**
	baz=292						
ALS				*e*S	**Sb**	**06 14 13.2**	**-1.0**
	baz=292						
IRIF	**Iriomote-Funau**	**1.76**	**38**	P	**Pb**	**06 13 53.7**	**-0.6**
IRIF				S	**Sn**	**06 14 15.0**	**+0.6**
WTP	**Ta-pu**	**1.79**	**280**	*e*P	**Pg**	**06 13 55.9**	**-0.9**
	baz=280						
WTP				*e*S	**Sb**	**06 14 16.5**	**-0.6**
	baz=280						
TWT	**Tachien**	**1.79**	**316**	*e*P	**Pb**	**06 13 55.5**	**+0.5**
	baz=321						
TWT				*e*S	**Sb**	**06 14 16.9**	**-0.4**
	baz=321						
CHN5	**Tsauling**	**1.82**	**291**	*e*P	**Pb**	**06 13 55.8**	**+0.4**
	baz=293	

	comp=N,1μm,0.3s							
ROCH	**El Roble**	**1.75**	**40**	⇓ *i* P		**Pn**	**06 19 37.8**	**-1.1**
ROCH				*i* S		**Sn**	**06 20 00.6**	**-0.9**
ROCH				IAML			06 20 12.2	
	comp=N,812nm,1.2s							
CLCH	**Cerro Calan**	**1.76**	**59**	⇑ *i* P		**Pn**	**06 19 38.4**	**-0.7**
CLCH				*i* S		**Sn**	**06 20 01.0**	**-0.8**
CLCH				IAML			06 20 09.9	
	comp=E,999nm,0.3s							
PEL	**Peldehue**	**1.81**	**50**	⇑ *i* P		**Pn**	**06 19 39.0**	**-0.7**
PEL				*i* S		**Sn**	**06 20 02.3**	**-0.7**
PEL				IAML			06 20 10.9	
	comp=E,1μm,0.2s							
FCH	**Farellones**	**1.98**	**60**	*e*P		**Pn**	**06 19 41.7**	**-0.6**
FCH				*i* S		**Sn**	**06 20 07.5**	**+0.1**
FCH				IAML			06 20 14.1	
	comp=E,971nm,0.3s							
ARCO	**CERRO ARCO**	**3.21**	**64**	*e*P		**Pn**	**06 20 01.9**	**+2.8**
ARCO				IAML			06 20 12.4	
	comp=Z,77nm,0.5s							
ARCO				*e*S		**Sg**	**06 20 49.1**	**-2.1**
RTLL	**Cerro Villicun**	**4.42**	**49**	*e*P		**Pn**	**06 20 15.7**	**+0.2**
RTLL				*e*S		**Sb**	**06 21 18.2**	**-1.3**
ACCO	**Cerro Coronel**	**4.64**	**38**	*e*P		**Pn**	**06 20 19.7**	**+0.8**
ACCO				*e*S		**Sb**	**06 21 25.2**	**-1.0**
ACCO				IAML			06 21 36.1	
	comp=Z,33nm,0.4s							
AMOG	**MOGNA**	**4.68**	**45**	*e*P		**Pn**	**06 20 19.4**	**+0.2**
AMOG				*e*S		**Sb**	**06 21 26.9**	**-0.3**
ACAN	**Cantantal**	**4.78**	**66**	*e*P		**Pn**	**06 20 21.4**	**+1.0**
ACAN				*e*S		**Sb**	**06 21 29.6**	**-0.2**
AROD	**Rodeo**	**4.80**	**31**	*e*P		**Pn**	**06 20 22.5**	**+1.4**
AROD				*e*S		**Sb**	**06 21 30.2**	**-0.7**
ACDV	**Cuesta del Vie**	**4.96**	**34**	*e*P		**Pn**	**06 20 23.9**	**+0.8**
ACDV				*e*S		**Sb**	**06 21 35.3**	**+0.2**
ACHE	**Chepes**	**5.73**	**58**	*e*P		**Pn**	**06 20 33.2**	**-0.5**
ACHE				*e*S		**Sn**	**06 21 47.5**	**+7.8**
AGHA	**GUANDACOL**	**5.83**	**35**	*e*P		**Pn**	**06 20 35.3**	**+0.3**
VCA	**Vinchina**	**6.59**	**34**	*e*P		**Pn**	**06 20 45.5**	**-0.1**
VCA				IAML			06 20 56.7	
	comp=Z,25nm,0.3s							
VCA				*e*S		Sn	06 22 11.1	+10

ISK ***03*** *06:22:51.7, 39.°09N×29.°17E, h6km, MD2.0, ML1.9*
ISCJB ***03*** *06:22:52.6±0.5, 39.°09N±0.°04×29.°10E±0.°04, h5km±7km, Error ellipse: s-maj=8.1km s-min=4.2km az=144.0*
CSEM ***03*** *06:22:52.7±0.1, 39.°08N×29.°11E, h8km, MD2.5, Error ellipse: s-maj=3.6km s-min=2.1km az=128.0*
DDA ***03*** *06:22:52.7, 39.°10N×29.°11E, h7km, Md2.5*

ISC 03 06:22:52.9±1.0, 39.09N±0.03×29.11E±0.03, h12km±8km, n18, σ0.68/30, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
GDZ	**Gediz**	**0.29**	**90**	*i* P		**Pg**	**06 22 59.1**	**+0.1**
GDZ				*i* S		**Sg**	**06 23 03.7**	**+0.7**
GDZ	**Gediz**	**0.29**	**90**	P		**Pg**	**06 22 59.1**	**+0.1**
GDZ				S		**Sg**	**06 23 03.7**	**+0.7**
DEMI	**Demirci**	**0.31**	**261**	*i* P		**Pg**	**06 22 59.3**	**+0.1**
DEMI				*i* S		**Sg**	**06 23 03.7**	**+0.3**
DEMI	**Demirci**	**0.31**	**261**	P		**Pg**	**06 22 59.3**	**+0.1**
DEMI				S		**Sg**	**06 23 03.7**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**37**	*e*PG		**Pg**	**06 23 01.4**	**-0.5**
TVSB				*e*SG		**Sg**	**06 23 06.3**	**-1.7**
TVSB	**Tavsanli**	**0.45**	**37**	*e*Pg		**Pg**	**06 23 01.4**	**-0.5**
TVSB				*e*Sg		**Sg**	**06 23 06.3**	**-1.7**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*PG		**Pg**	**06 23 05.3**	**-0.7**
KULA				*e*SG		**Sb**	**06 23 15.4**	**-0.5**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*Pg		**Pg**	**06 23 05.3**	**-0.7**
KULA				*e*Sg		**Sb**	**06 23 15.4**	**-0.5**
MANT	**Manisa**	**0.74**	**216**	*i* P		**Pg**	**06 23 06.9**	**-0.3**
MANT				*i* S		**Sg**	**06 23 16.5**	**-0.4**
MANT	**Manisa**	**0.74**	**216**	P		**Pg**	**06 23 06.9**	**-0.3**
MANT				S		**Sg**	**06 23 16.5**	**-0.4**
KHL	**Karahalli**	**0.83**	**157**	*e*PG		**Pg**	**06 23 08.5**	**-0.5**
KHL	**Karahalli**	**0.83**	**157**	*e*Pg		**Pg**	**06 23 08.5**	**-0.5**
BORA	**Eskisehir**	**1.31**	**52**	*i* P		**Pn**	**06 23 17.5**	**+0.4**
BORA				*i* S		**Sn**	**06 23 35.2**	**+0.7**
BORA	**Eskisehir**	**1.31**	**52**	P		**Pn**	**06 23 17.5**	**+0.4**
BORA				S		**Sn**	**06 23 35.2**	**+0.7**
KCTX	**Karacabey (Bur**	**1.31**	**334**	*e*PN		**Pn**	**06 23 17.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.31**	**334**	*e*Pn		**Pn**	**06 23 17.4**	**+0.4**
ARMT	**Armutlu**	**1.49**	**353**	*e*PN		**Pn**	**06 23 20.1**	**+0.6**
ARMT	**Armutlu**	**1.49**	**353**	*e*Pn		**Pn**	**06 23 20.1**	**+0.6**

KRSC 03 06:26:27.8±1.5, 52.14N×160.65E, h61km±20km, ML3.7, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
NLC	**Nalytchevo**	**1.30**	**323**	*e*P		Pn	06 26 51.9	+2.2
NLC				*e*S		Sn	06 27 08.9	+2.7
RUS	**Russkaya**	**1.35**	**283**	*e*P		Pn	06 26 51.7	+1.4
RUS				*e*S		Sn	06 27 07.9	+0.6
DALK	**Dalny**	**1.46**	**308**	*e*P		Pn	06 26 53.6	+1.7
DALK				*e*S		Sn	06 27 11.8	+1.8
UGLR	**Uglovaya**	**1.54**	**314**	*e*P		Pn	06 26 55.2	+2.1
UGLR				*e*S		Sn	06 27 14.5	+2.3
SDLR	**Sedlovina**	**1.56**	**317**	*e*P		Pn	06 26 55.7	+2.3
AVH	**Avacha**	**1.62**	**315**	*e*P		Pn	06 26 56.0	+1.9
KRER	**Koryakskii**	**1.64**	**316**	*e*P		Pn	06 26 56.5	+2.0
KOK	**Koryaka**	**1.68**	**314**	*e*P		Pn	06 26 56.2	+1.2
KRMR	**Karymshinskiy**	**1.69**	**295**	*e*P		Pn	06 26 57.1	+2.1
KRMR				*e*S		Sn	06 27 17.4	+1.9
ASAK	**Asacha**	**1.71**	**279**	*e*P		Pn	06 26 57.1	+1.8
KRX	**Arik**	**1.72**	**316**	*e*P		Pn	06 26 58.4	+2.8
GNL	**Ganaly**	**2.26**	**314**	*e*P		Pn	06 27 06.5	+3.7
GNL				*e*S		Sn	06 27 33.2	+3.6
MKZ	**Mys Kozlova**	**2.50**	**15**	*e*P		Pn	06 27 08.9	+2.9
MKZ				*e*S		Sn	06 27 38.1	+2.8
BKI	**Bering**	**4.40**	**44**	*e*S		Sn	06 28 23.3	+1.4

NEIC ***03*** *06:34:36.9±0.2, 12.°33N×87.°62W, h36km, mb5.5/271, ME5.1, MW5.7, MW5.8, MW5.7, MD5.5(SNET), Error ellipse: s-maj=4.6km s-min=3.2km az=211.0, Moment Tensor Solution. s38 Moment tensor: Scale 10¹⁷Nm; Mrr5.02; Mθθ-2.85; Mϕϕ-2.16; Mrθ-0.03; Mθϕ3.28; Mϕr-0.10; Best double couple: M₀5.50000×10¹⁷ NP1:ϕs133.00000°, δ45.00000°, λ92.00000°. NP2:ϕs311.00000°, δ45.00000°, λ88.00000°. Principal axes: T 5.0200, Plg89.0000°, Azm123.0000°; N 0.7900, Plg1.0000°, Azm312.0000°; P -5.8100, Plg0.0000°, Azm222.0000°; Broadband fault plane solution: P waves. NP1:ϕs120.00000°, δ55.00000°, λ90.00000°. NP2:ϕs300.00000°, δ35.00000°, λ90.00000°. Principal axes: T Plg80.0000°, Azm30.0000°; N Plg0.0000°, Azm0.0000°; P Plg10.0000°, Azm210.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt [IV] at Leon and [III] at Managua. Also felt at Chinandega, Ciudad Sandino, Corinto, El Crucero, Nagarote, Nindiri and Ocotal. Felt [III] at San Salvador, El Salvador. Also felt at Conchagua, San Marcos, San Miguel and Usulutan. Felt at Quepos, Costa Rica and at El Progreso, San Pedro Sula and Santa Ana de Yusguare, Honduras.
ISCJB ***03*** *06:34:38.4±0.1, 12.°48N±0.°02×87.°59W±0.°02, h61km, mb5.3/332 Error ellipse: s-maj=3.2km s-min=1.7km az=43.3*
BJI ***03*** *06:34:38.9, 12.°40N×87.°60W, h59km, mB5.4/31, Ms5.6/40, Ms7 5.4/40*
GCMT ***03*** *06:34:39.6±0.1, 12.°23N×87.°98W, h49km, MW5.7/124, Moment Tensor Solution. s121,c236; s124,c324; Duration: 1s7 Moment tensor: Scale 10¹⁷Nm; Mrr4.23±.05; Mθθ-3.37±.04; Mϕϕ-0.86±.04; Mrθ0.37±.04; Mθϕ2.16±.03; Mϕr-0.40±.04; Best double couple: M₀4.45600×10¹⁷ NP1:ϕs122.00000°, δ48.00000°, λ93.00000°. NP2:ϕs298.00000°, δ42.00000°, λ86.00000°. Principal axes: T 4.2680, Plg86.0000°, Azm65.0000°; N 0.3750, Plg2.0000°, Azm300.0000°; P -4.6440, Plg3.0000°, Azm210.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
NEIC ***03*** *06:34:40.0±0.0, 12.°48N×87.°59W, h50km, Moment Tensor Solution. s95 Moment tensor: Scale 10¹⁷Nm; Mrr3.93; Mθθ-3.09; Mϕϕ-0.84; Mrθ1.60; Mθϕ2.15; Mϕr-1.46; Best double couple: M₀4.70000×10¹⁷ NP1:ϕs127.00000°, δ59.00000°, λ96.00000°. NP2:ϕs295.00000°, δ32.00000°, λ80.00000°. Principal axes: T 4.4900, Plg75.0000°, Azm54.0000°; N 0.4100, Plg5.0000°, Azm303.0000°; P -4.9000, Plg13.0000°, Azm212.0000°;*
MOS ***03*** *06:34:40.3±1.3, 12.°64N×87.°37W, h78km, mb5.4/71, MS5.2/16 Error ellipse: s-maj=8.0km s-min=4.3km az=107.7*
CASC ***03*** *06:34:40.5±2.6, 12.°46N×87.°56W, h31km±21km, MD4.1, ML5.0, mb5.5(NEIC)*
IDC ***03*** *06:34:40.0±0.6, 12.°67N×87.°39W, h65km±4km, mb4.7/20, mb1 4.9/22, mb1mx4.8/26, mbtmp5.0/22, MS5.0/19, Ms1 5.0/19, ms1mx5.0/19, Error ellipse: s-maj=17.2km s-min=10.4km az=58.0*
NEIC ***03*** *06:35:00.0±0.0, 12.°57N×87.°83W, h50km, Moment Tensor Solution. s57 Moment tensor: Scale 10¹⁷Nm; Mrr5.20; Mθθ-2.57; Mϕϕ-2.64; Mrθ0.88; Mθϕ1.44; Mϕr-0.73; Best double couple: M₀4.80000×10¹⁷ NP1:ϕs135.00000°, δ52.00000°, λ89.00000°. NP2:ϕs317.00000°, δ38.00000°, λ92.00000°. Principal axes: T 5.3400, Plg83.0000°, Azm37.0000°; N -1.1600, Plg1.0000°, Azm135.0000°; P -4.1800, Plg7.0000°, Azm225.0000°;*

ISC 03 06:34:40.2±0.3, 12.54N±0.03×87.52W±0.03, h64km±2km, h64km:pP-P,n1240,σ1s67/1361,mb5.4/333,10C-2D,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CNGN	**Cerro Negro**	**0.80**	**93**	*e*P		**Pn**	**06 34 56.2**	**+0.1**
CNGN				*e*S		**Sn**	**06 35 08.9**	**+1.2**
CNGN				AML		AML	06 35 14.3	
	comp=N,52μm,0.4s							
MOMN	**Momotombo**	**0.97**	**98**	*e*P		**Pn**	**06 34 57.9**	**-0.2**
XAVN	**Gruta Xavier**	**1.23**	**108**	*e*P		**Pn**	**06 35 00.9**	**-0.6**
MGAN	**Managua**	**1.30**	**107**	*e*P		**Pn**	**06 35 02.5**	**+0.1**
MASN	**Masaya**	**1.45**	**112**	*e*P		**Pn**	**06 35 03.6**	**-0.8**
TGUH	**Tegucigalpa,Un**	**1.52**	**9**	*e*Pn		**Pn**	**06 35 07.5**	**+2.1**
TGUH	**Tegucigalpa,Un**	**1.52**	**9**	*e*P		**Pn**	**06 35 07.4**	**+2.1**
CONN	**Concepcion**	**2.09**	**118**	*e*P		**Pn**	**06 35 11.7**	**-1.4**
JCR	**Jicaral**	**3.57**	**138**	*e*P		**Pn**	**06 35 32.7**	**-0.6**
CGA2	**Cerro Gallo 2**	**3.91**	**130**	*e*P		**Pn**	**06 35 39.5**	**+1.5**
HDC	**Heredia**	**4.19**	**127**	*e*Pn		**Pn**	**06 35 42.6**	**+0.8**
HDC				*e*Sn		**Sn**	**06 36 33.4**	**+3.8**
HDC	**Heredia**	**4.19**	**127**	*e*P		**Pn**	**06 35 42.7**	**+0.8**
QCR	**Quepos**	**4.52**	**133**	⇑ *e*P		**Pn**	**06 35 47.6**	**+1.4**
URSC	**Urasca**	**4.55**	**126**	*e*P		**Pn**	**06 35 48.0**	**+1.2**
BUS	**Buena Vista**	**4.74**	**128**	*e*P		**Pn**	**06 35 51.6**	**+2.0**
CCIG	**Comitan**	**5.81**	**310**	*e*Pn		**Pn**	**06 36 04.7**	**+0.6**
TBS2		**6.06**	**127**	*e*P		**Pn**	**06 36 09.7**	**+2.2**
TBS2				*e*S		**Sn**	**06 37 16.7**	**+1.1**
BRU	**Baru**	**6.13**	**127**	*e*P		**Pn**	**06 36 11.3**	**+2.7**
TEIG	**Tepich**	**7.67**	**355**	LR		LR	06 39 53.4	
	comp=N,375nm,19.7s,baz=183,slow=42							
ZANG	**Zanguenga, Cho**	**8.32**	**115**	*e*P		**Pn**	**06 36 42.4**	**+4.1**
CMIG	**Matias Romero**	**8.43**	**303**	P		**Pn**	**06 36 38.7**	**-1.1**
	comp=N,8.7nm,0.3s,baz=142,slow=8.3,SNR=60							
CMIG				S		**Sn**	**06 38 10.4**	**-3.1**
	comp=N,8.6nm,0.3s,baz=104,slow=19,SNR=1.4							
MCJ	**Malvern**	**10.89**	**59**	⇑ *i*P		Pn	06 37 18.7	+5.3
MTDJ	**Mount Denham**	**11.16**	**58**	*e*Pn		**Pn**	**06 37 21.2**	**+4.0**
	comp=N,318nm,0.9s							
MTDJ				*e*Sn		Sn	06 39 36.6	+16
PCJ	**Portland Cotta**	**11.26**	**61**	⇑ *i*P		Pn	06 37 23.4	+5.0
STH	**Stony Hill**	**11.70**	**61**	⇑ *i*P		Pn	06 37 29.9	+5.4
HOJ	**Hope**	**11.72**	**61**	*i* P		Pn	06 37 29.8	+5.1
GWJ	**Greenwich**	**11.77**	**61**	⇑ *i*P		Pn	06 37 31.0	+5.5
TLIG	**Tlapa**	**11.78**	**296**	*e*Pn		**Pn**	**06 37 26.2**	**+0.6**
MOTC	**Monteria, Cord**	**12.24**	**107**	*e*P		**Pn**	**06 37 31.5**	**-0.3**
SJCC	**San Jacinto, C**	**12.39**	**101**	*e*P		**Pn**	**06 37 34.0**	**+0.1**
UNM	**Universidad Na**	**13.08**	**303**	*e*P		**Pn**	**06 37 44.6**	**+1.1**
UNM	**Universidad Na**	**13.08**	**303**	*e*Pn		**Pn**	**06 37 44.6**	**+1.1**
MALC	**Bahia Malaga**	**13.16**	**129**	*e*P		**P**	**06 37 53.8**	**+1.6**
HELC	**Santa Helena**	**13.41**	**117**	*e*P		**P**	**06 37 52.1**	**-3.2**
HELC	**Santa Helena**	**13.41**	**117**	*e*Pn		**Pn**	**06 37 49.9**	**+1.9**
PAYG	**Puerto Ayora**	**13.41**	**192**	*e*Pn		**Pn**	**06 37 47.4**	**-0.4**
PAYG				*e*Sn		**Sn**	**06 40 23.6**	**+8.3**
GTBY	**Guantanamo Bay**	**13.99**	**57**	*e*Pn		**Pn**	**06 37 57.7**	**+2.3**
	comp=N,161nm,0.8s							
GTBY				*e*S		**Sn**	**06 40 33.7**	**+4.5**
NORC	**Norcasia**	**14.28**	**118**	*e*P		**Pn**	**06 38 01.2**	**+1.8**
TOLC	**Tolima**	**14.42**	**122**	*e*P		**P**	**06 38 06.8**	**+0.3**
OCAC	**Ocana**	**14.61**	**106**	*e*P		**Pn**	**06 38 04.0**	**+0.3**
POPC	**Popayan, Colom**	**14.63**	**132**	*e*P		**Pn**	**06 38 05.6**	**+1.5**
BRRC	**Barranca, Sant**	**14.63**	**110**	*e*P		**P**	**06 38 07.4**	**-1.2**
MOIG	**Morelia**	**14.92**	**300**	*e*Pn		**Pn**	**06 38 09.0**	**+1.2**
CMBC	**Cumbal**	**15.01**	**139**	*e*P		**P**	**06 38 16.5**	**+3.2**
BTLC	**Betulia, Santa**	**15.11**	**110**	*e*P		**Pn**	**06 38 12.1**	**+1.7**
CRUC	**La Cruz**	**15.12**	**135**	*e*P		**P**	**06 38 14.8**	**+0.4**
ROSC	**El Rosal**	**15.12**	**119**	P		**P**	**06 38 14.0**	**-0.5**
	comp=N,0.4nm,0.3s,baz=276,slow=14,SNR=13							
ROSC				PcP		**PcP**	**06 43 16.4**	**+1.8**
	comp=N,0.3nm,0.3s,baz=110,slow=15,SNR=5.2							
ROSC				LR		LR	06 44 30.2	
	comp=N,5μm,21.5s,baz=326,slow=39							
ROSC	**El Rosal**	**15.12**	**119**	*e*Pn		**P**	**06 38 13.9**	**-0.5**
	comp=N,94nm,0.9s							
ROSC				PcP		**PcP**	**06 43 16.4**	**+1.8**
GIRC	**Giron, Santand**	**15.12**	**110**	*e*P		**Pn**	**06 38 10.8**	**+0.4**
OTAV	**Otavalo**	**15.18**	**143**	*e*P		**P**	**06 38 17.0**	**+1.9**
OTAV	**Otavalo**	**15.18**	**143**	*e*Pn		**Pn**	**06 38 11.4**	**0.0**
	comp=N,141nm,1.3s							
OTAV				*e*Sn		**S**	**06 41 06.7**	**-5.8**
GRMC	**Gramalote, San**	**15.26**	**107**	*e*P		**Pn**	**06 38 13.6**	**+1.5**
CBRI	**Barrientos, No**	**15.26**	**107**	*e*P		**Pn**	**06 38 13.6**	**+1.4**
PRAC	**Prado**	**15.27**	**124**	*e*P		**P**	**06 38 14.2**	**-1.5**
PRAC	**Prado**	**15.27**	**124**	*e*Pn		**P**	**06 38 14.6**	**-1.2**
	comp=N,138nm,0.8s							
BARC	**Barichara**	**15.32**	**111**	*e*P		**P**	**06 38 17.0**	**+0.5**
LGNH	**LÖogne**	**15.54**	**66**	*e*P		**P**	**06 38 22.1**	**+3.4**
	comp=N,948nm,1.4s							
RUSC	**La Rusia**	**15.70**	**114**	*e*P		**Pn**	**06 38 19.3**	**+1.2**
CHIC	**Chingaza**	**15.73**	**119**	*e*P		**P**	**06 38 21.6**	**+0.3**
VILC	**Villavicencio,**	**16.03**	**120**	*e*P		**P**	**06 38 23.8**	**-0.5**
SJAC	**San Juan de Ar**	**16.28**	**123**	*e*P		**Pn**	**06 38 26.1**	**+1.0**
DWPF	**Disney Wildern**	**16.50**	**19**	*e*Pn		**P**	**06 38 29.5**	**+0.3**
	comp=N,593nm,1.4s							
DWPF				*e*S		**S**	**06 41 43.9**	**+5.3**
YOPC	**Yopal, Colombi**	**16.53**	**114**	*e*P		**Pn**	**06 38 27.2**	**-1.0**
SDDR	**Presa de Saban**	**16.88**	**66**	*e*P		**P**	**06 38 35.7**	**+2.1**
	comp=N,107nm,1.0s							
SDDR				*e*S		**S**	**06 41 54.9**	**+8.4**
SDV	**Santo Domingo**	**16.98**	**101**	P		**Pn**	**06 38 34.2**	**+0.3**
	comp=N,2.1nm,0.3s,baz=284,slow=7.1,SNR=11							
SDV				PcP		**PcP**	**06 43 17.9**	**+0.8**
	comp=N,2.5nm,0.3s,baz=106,slow=0.8,SNR=4.2							
SDV	**Santo Domingo**	**16.98**	**101**	*e*Pn		**Pn**	**06 38 34.4**	**+0.5**
	comp=N,349nm,1.4s							
SDV				*e*PcP		**PcP**	**06 43 18.5**	**+1.4**
035Z	**Hargill**	**17.03**	**326**	P		**P**	**06 38 36.3**	**+1.2**
	baz=143,SNR=12							
035Z				S		**Sn**	**06 41 44.0**	**+1.1**
	baz=143							
645A	**Chauvin**	**17.07**	**351**	P		**P**	**06 38 37.8**	**+2.3**
	baz=170							
646A	**Port Sulphur**	**17.09**	**353**	P		**P**	**06 38 39.0**	**+3.2**
	baz=173							
035A	**Encino**	**17.43**	**327**	P		**P**	**06 38 41.2**	**+1.7**
	baz=144,SNR=23							
ZAIG	**Zacatecas**	**17.56**	**307**	*e*Pn		**P**	**06 38 43.1**	**+1.8**
	comp=N,81nm,1.0s							
546A	**Slidell**	**17.72**	**354**	P		**P**	**06 38 47.2**	**+4.5**
	baz=173							
544A	**White Castle**	**17.80**	**350**	P		**Pn**	**06 38 47.5**	**+3.9**
	baz=169							
KVTX	**Kingsville**	**17.81**	**328**	*e*P		**Pn**	**06 38 45.6**	**+1.9**
	comp=N,1μm,1.9s							
034A	**Hebbronville**	**17.84**	**326**	P		**Pn**	**06 38 46.0**	**+1.9**
	baz=142,SNR=69							
543A	**St. Martinvill**	**17.91**	**348**	P		**Pn**	**06 38 49.6**	**+4.6**
	baz=166							
GRTK	**Grand Turk**	**18.02**	**58**	*e*P		**Pn**	**06 38 47.5**	**+1.2**
	comp=N,171nm,0.8s							
542A	**Morse**	**18.11**	**346**	P		**Pn**	**06 38 50.1**	**+2.8**
	baz=164							
737A	**Port Lavaca**	**18.16**	**334**	P		**Pn**	**06 38 52.4**	**+4.4**
	baz=151,SNR=11							
934A	**Benavides**	**18.18**	**327**	P		**Pn**	**06 38 48.6**	**+0.3**
	baz=144,SNR=49							
447A	**Lucedale**	**18.19**	**357**	P		**Pn**	**06 38 52.0**	**+3.6**
	baz=177							
541A	**Lake Charles**	**18.21**	**344**	P		**Pn**	**06 38 52.6**	**+4.1**
	baz=162							
446A	**Poplarville**	**18.24**	**355**	P		**Pn**	**06 38 52.3**	**+3.3**
	baz=174,SNR=17							
445A	**Amite**	**18.29**	**352**	P		**Pn**	**06 38 52.7**	**+3.2**
	baz=172							
448A	**Bay Minette**	**18.30**	**359**	P		**Pn**	**06 38 52.5**	**+2.8**
	baz=179,SNR=17							
444A	**Pine Grove**	**18.33**	**351**	P		**Pn**	**06 38 53.5**	**+3.4**
	baz=170							
638A	**Rosharon**	**18.34**	**338**	P		**Pn**	**06 38 53.1**	**+2.9**
	baz=155,SNR=12							
835A	**Beeville**	**18.39**	**330**	P		**Pn**	**06 38 51.5**	**+0.8**
	baz=147,SNR=45							
BRAL	**Brewton**	**18.54**	**1**	*e*P		**Pn**	**06 38 55.4**	**+2.8**
	comp=N,2μm,2.0s							
BRAL				*e*S		**S**	**06 42 24.0**	**+4.4**
443A	**Delano Plantat**	**18.56**	**348**	P		**Pn**	**06 38 55.9**	**+3.1**
	baz=167							
540A	**Vidor**	**18.57**	**342**	P		**Pn**	**06 38 55.4**	**+2.5**
	baz=160							
736A	**Circle Diamond**	**18.59**	**333**	P		**Pn**	**06 38 56.0**	**+2.8**
	baz=150,SNR=36							
933A	**Laredo**	**18.60**	**325**	P		**Pn**	**06 38 53.4**	**0.0**
	baz=142,SNR=94							
834A	**Tilden**	**18.62**	**328**	P		**Pn**	**06 38 53.6**	**0.0**
	baz=145,SNR=117							
442A	**Mamou**	**18.64**	**347**	P		**Pn**	**06 38 56.0**	**+2.2**
	baz=165							
637A	**Eagle Lake**	**18.70**	**335**	P		**Pn**	**06 38 55.7**	**+1.1**
	baz=153							
539A	**Cross D Ranch,**	**18.71**	**340**	P		**Pn**	**06 38 57.1**	**+2.5**
	baz=158							
348A	**Jackson**	**18.78**	**359**	P		**Pn**	**06 38 57.1**	**+1.6**
	baz=179,SNR=5.2							
347A	**Saraland**	**18.79**	**357**	P		**Pn**	**06 38 57.6**	**+2.0**
	baz=177,SNR=25							
345A	**Thompson Farm,**	**18.82**	**353**	P		**Pn**	**06 38 58.1**	**+2.2**
	baz=173							
346A	**Big Creek Wild**	**18.84**	**355**	P		**Pn**	**06 38 58.0**	**+1.8**
	baz=174,SNR=20							
735A	**Kenedy**	**18.85**	**331**	P		**Pn**	**06 38 56.1**	**-0.2**
	baz=148,SNR=9.9							
441A	**DeRidder**	**18.86**	**345**	P		**Pn**	**06 38 59.3**	**+2.9**
	baz=163,SNR=28							
343A	**Vidalia**	**19.03**	**349**	P		**Pn**	**06 39 00.2**	**+1.7**
	baz=168							
636A	**Smothers Creek**	**19.04**	**334**	P		**Pn**	**06 38 58.3**	**-0.3**
	baz=151,SNR=66							
344A	**Westbrook Farm**	**19.05**	**352**	P		**Pn**	**06 39 00.6**	**+2.0**
	baz=171,SNR=64							
440A	**Kirbyville**	**19.07**	**343**	P		**Pn**	**06 38 60.0**	**+1.1**
	baz=161,SNR=22							
538A	**Harpers Horsep**	**19.08**	**338**	P		**Pn**	**06 39 00.4**	**+1.4**
	baz=156							
TIGA	**Tifton**	**19.15**	**10**	P		**Pn**	**06 39 01.9**	**+2.1**
	baz=192,SNR=40							
TIGA	**Tifton**	**19.15**	**10**	*e*P		**Pn**	**06 39 02.4**	**+2.5**
	comp=N,2μm,1.6s							
TIGA				*e*S		**Sn**	**06 42 42.6**	**+8.7**
734A	**La Parita Cree**	**19.21**	**329**	P		**P**	**06 38 59.4**	**+0.4**
	baz=146,SNR=58							
833A	**Chaparral WMA,**	**19.22**	**327**	P		**Pn**	**06 38 59.9**	**-0.8**
	baz=143,SNR=60							
342A	**Flagon Creek P**	**19.26**	**347**	P		**Pn**	**06 39 02.9**	**+1.7**
	baz=166,SNR=26							
537A	**Green Hill Far**	**19.26**	**336**	P		**Pn**	**06 39 01.7**	**+0.5**
	baz=154,SNR=88							
635A	**Leesville**	**19.28**	**332**	P		**P**	**06 39 00.3**	**+0.5**
	baz=149,SNR=12							
439A	**Center Grove,**	**19.36**	**341**	P		**Pn**	**06 39 03.6**	**+1.2**
	baz=159,SNR=42							
341A	**Kurthwood**	**19.41**	**345**	P		**Pn**	**06 39 03.7**	**+0.7**
	baz=164,SNR=126							
246A	**Jackson Lee, B**	**19.44**	**356**	P		**Pn**	**06 39 04.1**	**+0.8**
	baz=176							
247A	**Quitman**	**19.44**	**357**	P		**Pn**	**06 39 04.6**	**+1.3**
	baz=177,SNR=17							
248A	**Dixon Mills**	**19.46**	**359**	P		**Pn**	**06 39 04.8**	**+1.2**
	baz=180,SNR=33							
733A

baz=172,SNR=32
237A Washetta, Mont 20.81 340 P **P** 06 39 17.8 +1.4
baz=157,SNR=28
Z45A Winona 20.83 355 P Pn 06 39 18.4 -1.2
baz=174,SNR=13
Z43A Armstrong Fami 20.85 351 P Pn 06 39 18.5 -1.4
baz=170,SNR=9.7
CELP Cerrillos 20.93 72 eP **P** 06 39 17.9 +0.1
CELP epP **sP** 06 39 37.5 -2.1
CELP esP pP 06 39 48.8 +17
139A Bunkhouse Ranc 21.01 344 P **P** 06 39 20.9 +2.3
baz=161
Z42A Norrel Spur, H 21.03 350 P **P** 06 39 21.3 +2.5
baz=168
433A Art 21.04 331 P **P** 06 39 19.2 +0.2
baz=147,SNR=76
236A Katherine and 21.06 338 P **P** 06 39 21.7 +2.6
baz=155
GOGA Godfrey 21.10 9 eP **P** 06 39 22.6 +3.1
GOGA pmax pmax
comp=Z,248nm,0.8s
GOGA Godfrey 21.10 9 eP **P** 06 39 22.6 +3.1
comp=Z,248nm,0.8s
GOGA eS **S** 06 43 14.7 +3.9
334A Lometa 21.15 334 P **P** 06 39 20.3 +0.2
baz=150,SNR=118
JCT Junction City 21.16 329 P **P** 06 39 21.0 +0.7
baz=145,SNR=161
JCT Junction City 21.16 329 eP **P** 06 39 20.7 +0.4
JCT pmax pmax
comp=Z,260nm,0.8s
JCT Junction City 21.16 329 eP **P** 06 39 20.7 +0.4
comp=Z,260nm,0.8s
JCT eScP **ScP** 06 47 00.1 +4.6
Z41A Richland Creek 21.18 348 P **P** 06 39 22.0 +1.6
baz=166,SNR=36
138A Matatall Enter 21.19 342 P **P** 06 39 22.6 +2.1
baz=160,SNR=31
Y47A UCPARC, Winfie 21.27 359 P **P** 06 39 23.7 +2.4
baz=179,SNR=66
Y46A Houston 21.28 357 P **P** 06 39 23.3 +1.9
baz=177,SNR=65
Y45A Yeager Farm, C 21.31 355 P **P** 06 39 23.7 +2.0
baz=175,SNR=11
Z40A Long Farm, Mag 21.31 346 P **P** 06 39 23.3 +1.6
baz=164,SNR=12
SJG San Juan 21.33 72 P **P** 06 39 24.3 +2.2
comp=Z,24nm,0.5s,baz=270,slow=6.3,SNR=11
SJG PcP **PcP** 06 43 24.3 -0.2
comp=Z,23nm,0.7s,baz=13,slow=6.2,SNR=6.3
SJG San Juan 21.33 72 eP **P** 06 39 24.4 +2.2
SJG eS Sn 06 43 24.3 -2.3
SJG pmax pmax
comp=Z,238nm,1.3s
SJG San Juan 21.33 72 eP **P** 06 39 24.4 +2.2
comp=Z,238nm,1.3s
SJG eS Sn 06 43 24.3 -2.3
137A Heron Place, G 21.34 341 P **P** 06 39 23.6 +1.5
baz=158,SNR=25
RGRS Roger Stewart 21.35 17 eP **P** 06 39 28.6 +6.4
comp=Z,6µm,1.8s
WHTX Lake Whitney, 21.40 336 P **P** 06 39 23.4 +0.6
baz=153,SNR=26
WHTX Lake Whitney, 21.40 336 eP **P** 06 39 24.1 +1.3
comp=Z,370nm,0.8s
Y44A Strider, Charl 21.46 354 P **P** 06 39 25.2 +1.8
baz=173,SNR=10
333A Richland Sprin 21.47 332 P **P** 06 39 23.4 -0.2
baz=148,SNR=110
Z39A Irene McRaven, 21.48 345 P **P** 06 39 25.0 +1.4
baz=162,SNR=16
136A Ennis 21.49 339 P **P** 06 39 24.8 +1.1
baz=156,SNR=45
Y43A Makayla and Ka 21.50 352 P **P** 06 39 25.4 +1.7
baz=171,SNR=7.9
NHSC New Hope 21.54 17 eP **P** 06 39 27.5 +3.3
comp=Z,790nm,1.3s
Y42A Garnett, Star 21.55 350 P **P** 06 39 25.8 +1.5
baz=169,SNR=12
ATAH Atahualpa 21.55 155 P **P** 06 39 26.1 +1.1
comp=Z,36nm,0.7s,baz=342,slow=6.9,SNR=17
ATAH PcP **PcP** 06 43 26.7 +1.2
comp=Z,10nm,0.7s,baz=248,slow=1.5,SNR=4.6
CCAR Cane Creek 21.63 350 eP **P** 06 39 28.5 +3.4
comp=Z,479nm,1.1s
WLAR White Oak Lake 21.66 347 eP **P** 06 39 28.4 +2.9
comp=Z,453nm,1.0s
234A Clairette 21.69 335 P **P** 06 39 26.1 +0.3
baz=151,SNR=50
Z38A Mt. Pleasant 21.71 343 P **P** 06 39 27.7 +1.6
baz=160,SNR=12
Y41A Eaglette Beard 21.74 349 P **P** 06 39 28.0 +1.6
baz=167
X45A UM Field Stati 21.85 356 P **P** 06 39 28.6 +1.1
baz=175,SNR=50
Z37A Pogue Cattle C 21.86 341 P **P** 06 39 28.8 +1.2
baz=159,SNR=24
135A Vickery Place, 21.89 337 P **P** 06 39 28.5 +0.5
baz=154,SNR=21
OXF Oxford 21.94 356 eP **P** 06 39 29.7 +1.3
OXF pmax pmax
comp=Z,418nm,1.2s
OXF Oxford 21.94 356 eP **P** 06 39 29.7 +1.3
comp=Z,418nm,1.2s
X44A Crenshaw 21.99 354 P **P** 06 39 29.9 +0.9
baz=173,SNR=6.8
Y40A Okolona 22.01 347 P **P** 06 39 30.7 +1.5
baz=165,SNR=33
233A Rising Star 22.03 333 P **P** 06 39 29.5 0.0
baz=150,SNR=130
X43A Marvell 22.09 353 P **P** 06 39 30.5 +0.5
baz=172
Y39A Locksburg 22.12 345 P **P** 06 39 32.1 +1.6
baz=163,SNR=142
134A White-Moore Ra 22.16 336 P **P** 06 39 31.2 +0.2
baz=152,SNR=61
Z36A Blue Ridge 22.18 340 P **P** 06 39 31.6 +0.5
baz=157,SNR=47
HPIG 22.24 313 eP **P** 06 39 33.1 +1.0
comp=Z,73nm,0.8s
HPIG ePcP **PcP** 06 43 27.3 +0.8
Y38A Idabel 22.28 344 P **P** 06 39 33.4 +1.2
baz=162,SNR=15
X41A Kaden, Bauxite 22.32 349 P **P** 06 39 34.1 +1.5
baz=167,SNR=80
X40A Basin Creek Fa 22.37 348 P **P** 06 39 34.5 +1.3
baz=167,SNR=21
JSC Jenkinsville 22.38 14 eP **P** 06 39 36.0 +2.8
JSC pmax pmax
comp=Z,142nm,0.8s
JSC Jenkinsville 22.38 14 eP **P** 06 39 36.0 +2.8
comp=Z,142nm,0.8s
TX31 Lajitas Ar. Si 22.46 321 eP **P** 06 39 34.6 +0.3
TX31 eScP **ScP** 06 47 01.9 +3.1
TXAR Lajitas Array 22.46 321 P **P** 06 39 34.4 +0.1
comp=Z,124nm,0.7s,baz=134,slow=9.6,SNR=356
TXAR PcP **PcP** 06 43 27.5 +0.8
comp=Z,14nm,0.7s,baz=161,slow=3.9,SNR=6.3
TXAR ScP **ScP** 06 47 01.6 +2.7
comp=Z,4.8nm,0.9s,baz=159,slow=6.1,SNR=6.3
TXAR PKiKP **PKiKP** 06 51 11.1 -1.1
comp=Z,0.6nm,0.8s,baz=132,slow=1.9,SNR=4.7
TXAR P3KPbc 07 13 12.6
comp=Z,1.2nm,0.9s,baz=262,slow=2.7,SNR=6.7
STVI Saint Thomas 22.49 72 eP **P** 06 39 35.9 +1.2
comp=Z,654nm,1.6s
Z35A Perchaven, San 22.52 338 P **P** 06 39 35.6 +0.8
baz=155,SNR=41
133A Hamilton Ranch 22.54 334 P **P** 06 39 35.3 +0.3
baz=150,SNR=74
PCRV Puerto La Cruz 22.56 94 P **P** 06 39 36.2 +0.8
comp=Z,84nm,0.7s,baz=203,slow=4.7,SNR=30
UALR University of 22.56 350 eP **P** 06 39 36.1 +0.9
comp=Z,205nm,0.9s
W45A Hickory Valley 22.56 356 P **P** 06 39 36.1 +0.9
baz=176,SNR=14
Y37A Hugo 22.58 342 P **P** 06 39 36.8 +1.4
baz=159
MIAR Mount Ida 22.59 347 P **P** 06 39 36.5 +1.0
baz=165,SNR=231
MIAR Mount Ida 22.59 347 eP **P** 06 39 36.4 +1.0
MIAR pmax pmax
comp=Z,425nm,1.3s
MIAR Mount Ida 22.59 347 eP **P** 06 39 36.4 +1.0
comp=Z,425nm,1.3s
W44A Shelby Farms P 22.59 355 P **P** 06 39 35.8 +0.3
baz=174
SWET Sewanee 22.62 3 eP **P** 06 39 37.2 +1.4
comp=Z,134nm,1.5s
X39A Fountain Ranch 22.68 346 P **P** 06 39 37.7 +1.2
baz=163,SNR=95
Y36A Durant 22.71 341 P **P** 06 39 38.1 +1.3
baz=158,SNR=40
Z34A Collier Ranch, 22.80 337 P **P** 06 39 38.5 +0.7
baz=153,SNR=36
ABTX Abilene, Hawle 22.87 333 P **P** 06 39 38.6 +0.2
baz=149,SNR=100
ABTX Abilene, Hawle 22.87 333 eP **P** 06 39 39.8 +1.3
comp=Z,218nm,1.0s
W41A Tony Mavity, V 22.93 350 P **P** 06 39 39.5 +0.5
baz=168
W41B Gary Mavity, V 22.93 350 P **P** 06 39 39.9 +0.9
baz=168,SNR=38
CPCT Cooper Cave 22.97 6 eP **P** 06 39 41.1 +1.8
comp=Z,147nm,1.1s
Y35A Marietta 22.97 339 P **P** 06 39 40.3 +0.9
baz=156,SNR=156
X38A Whitesboro 23.01 344 P **P** 06 39 41.3 +1.5
baz=162,SNR=79
X301 Greenbrier Sit 23.02 350 eP **P** 06 39 40.4 +0.5
comp=Z,277nm,1.4s
WHAR Wooly Hollow 23.05 350 eP **P** 06 39 40.8 +0.5
comp=Z,207nm,1.1s
Z33A Whitaker Ranch 23.07 335 P **P** 06 39 41.1 +0.7
baz=151,SNR=50
X201 Greenbrier Sit 23.07 350 eP **P** 06 39 41.0 +0.5
comp=Z,286nm,1.2s
X37A Clayton 23.08 343 P **P** 06 39 41.9 +1.4
baz=160,SNR=120
HBAR Harrisburg 23.09 353 eP **P** 06 39 41.7 +1.1
W40A Ferguson Farm, 23.10 348 P **P** 06 39 42.2 +1.4
baz=166,SNR=96
V45A Humboldt 23.13 357 P **P** 06 39 41.4 +0.4
baz=177,SNR=7.9
ABVI Anegada Island 23.15 72 eP **P** 06 39 42.1 +0.8
comp=Z,367nm,0.8s
KMSC Kings Mountain 23.19 13 P **P** 06 39 43.4 +1.8
baz=196,SNR=195
KMSC Kings Mountain 23.19 13 eP **P** 06 39 43.8 +2.3
comp=Z,200nm,0.6s
W39A Magazine 23.26 347 P **P** 06 39 43.3 +1.1
baz=165,SNR=111
TKL Tuckaleechee C 23.26 8 P **P** 06 39 43.9 +1.6
comp=Z,156nm,0.8s,baz=179,slow=11,SNR=143
TKL Tuckaleechee C 23.26 8 eP **P** 06 39 44.1 +1.8
TKL pmax pmax
comp=Z,553nm,1.3s
TKL Tuckaleechee C 23.26 8 eP **P** 06 39 44.1 +1.8
comp=Z,553nm,1.3s
Y34A Reagan Ranch, 23.27 338 P **P** 06 39 42.7 +0.3
baz=154,SNR=38
V44A Blytheville 23.28 355 P **P** 06 39 42.9 +0.5
baz=174
W38A Poteau 23.31 345 P **P** 06 39 43.6 +0.9
baz=163,SNR=129
X36A Centrahoma 23.35 341 P **P** 06 39 43.8 +0.7
baz=158,SNR=116
H06E1 SOCORRO T-PHAS 23.36 288 T T 07 03 51.3
SNR=26
H06S1 SOCORRO T 23.38 288 T T 07 03 54.8
SNR=4.9
X35A Drake 23.39 340 P **P** 06 39 43.8 +0.3
baz=156,SNR=126
V42A Cord 23.42 352 P **P** 06 39 43.5 -0.2
baz=171,SNR=38
GNAR Gosnell 23.43 355 eP **P** 06 39 44.7 +0.9
WVT Waverly 23.49 359 eP **P** 06 39 44.9 +0.6
WVT pmax pmax
comp=Z,240nm,1.7s
WVT Waverly 23.49 359 eP **P** 06 39 44.9 +0.6
comp=Z,240nm,1.7s
V41A Mountainview 23.52 351 P **P** 06 39 44.8 +0.2
baz=169,SNR=126
W37B Quinton 23.61 344 P **P** 06 39 46.1 +0.6
baz=161,SNR=110
Y33A Hilltop Ranch, 23.64 336 P **P** 06 39 46.2 +0.4
baz=152,SNR=68
V40A Witts Springs 23.65 349 P **P** 06 39 46.3 +0.4
baz=167,SNR=109
UTMT University of 23.73 357 eP **P** 06 39 48.6 +2.1
comp=Z,615nm,1.4s
W36A Wetumka 23.84 342 P **P** 06 39 47.3 -0.2
baz=159,SNR=67
V39A Pettigrew 23.84 348 P **P** 06 39 48.3 +0.6
baz=165
X34A Smith Ranch, M 23.87 339 P **P** 06 39 49.0 +1.1
baz=155,SNR=214
U42A Revenden 23.94 353 P **P** 06 39 48.4 0.0
baz=171,SNR=59
SLBS Sierra La Lagu 23.98 301 eP **P** 06 39 48.8 -0.3
comp=Z,312nm,1.6s
SLBS ePcP **PcP** 06 43 32.4 +2.4
U41A Viola 24.03 351 P **P** 06 39 49.1 -0.1
baz=170,SNR=41
V38A Canehill 24.04 346 P **P** 06 39 49.4 0.0
baz=164,SNR=110
W35A Tecumseh 24.05 341 P **P** 06 39 49.2 -0.3
baz=157,SNR=39
X33A Lawton 24.07 337 P **P** 06 39 50.2 +0.5
baz=153,SNR=243
PARMO Parma 24.10 356 eP **P** 06 39 50.3 +0.5
TZTN Tazewell 24.16 8 eP **P** 06 39 52.2 +1.7
comp=Z,135nm,0.9s
U40A Yellville 24.19 349 P **P** 06 39 51.2 +0.4
baz=168,SNR=93
CNNC Cliffs of the 24.22 19 eP **P** 06 39 53.0 +2.0
comp=Z,130nm,0.7s
V37A Hulbert 24.23 345 P **P** 06 39 51.3 +0.2
baz=162,SNR=51
X32A Elmer 24.27 336 P **P** 06 39 52.1 +0.7
baz=151,SNR=161
PBMO Poplar Bluff 24.27 354 eP **P** 06 39 51.6 +0.2
comp=Z,109nm,0.8s
HHAR Hobbs 24.33 347 eP **P** 06 39 52.3 +0.3
comp=Z,107nm,0.9s
U39A Green Forest 24.34 348 P **P** 06 39 52.5 +0.4
baz=166,SNR=73
WMOK Wichita Mounta 24.35 337 P **P** 06 39 52.2 0.0
baz=153,SNR=176
WMOK Wichita Mounta 24.35 337 eP **P** 06 39 52.0 -0.2
WMOK pmax pmax
comp=Z,145nm,0.9s
WMOK Wichita Mounta 24.35 337 eP **P** 06 39 52.0 -0.2
comp=Z,145nm,0.9s
V36A Jenks 24.36 343 P **P** 06 39 53.2 +1.0
baz=160,SNR=80
W34A Bridge Creek, 24.43 339 P **P** 06 39 53.1 +0.1
baz=156,SNR=72
W34A Bridge Creek, 24.43 339 eP **P** 06 39 53.3 +0.4
comp=Z,506nm,1.0s
TUL1 Leonard 24.43 344 P **P** 06 39 52.8 -0.1
baz=160,SNR=75
TUL1 Leonard 24.43 344 eP **P** 06 39 52.9 -0.1
comp=Z,676nm,1.7s
LPIG La Paz 24.45 301 P **P** 06 39 56.0 +2.8
comp=Z,60nm,0.8s,baz=29,slow=4.1,SNR=9.5
U38A Gravette 24.58 347 P **P** 06 39 54.4 +0.1
baz=164,SNR=44
W33A Caddo, Fort Co 24.60 338 P **P** 06 39 54.7 +0.2
baz=154,SNR=106
V35A Meyer Ranch, C 24.60 342 P **P** 06 39 53.9 -0.6
baz=158,SNR=71
T41A Mountain View 24.69 352 P **P** 06 39 55.5 +0.2
baz=170,SNR=99
CLNB Carlsbad 24.71 325 eP **P** 06 39 56.5 +0.8
U37A Salina 24.73 345 P **P** 06 39 55.9 +0.3
baz=162,SNR=97
W32A Sentinel 24.86 337 P **P** 06 39 57.1 +0.2
baz=152,SNR=220
U36A Oologah 24.87 344 P **P** 06 39 57.1 +0.1
baz=161,SNR=89
V34A Guthrie 24.89 340 P **P** 06 39 56.7 -0.3
baz=157,SNR=37
V34A Guthrie 24.89 340 eP **P** 06 39 56.8 -0.3
T40A Mansfield 24.91 350 P **P** 06 39 57.5 +0.2
baz=169,SNR=84
T39A Clever 24.94 349 P **P** 06 39 57.7 +0.2
baz=167,SNR=76
S43A Fulton Ridge, 25.03 355 P **P** 06 39 57.9 -0.5
baz=174,SNR=35
S45A Carrier Mills 25.05 358 P **P** 06 39 58.4 -0.1
baz=178,SNR=13
S44A Carbondale 25.09 357 P **P** 06 39 59.4 +0.5
baz=176,SNR=29
SIUC Southern Illin 25.11 357 eP **P** 06 39 59.6 +0.5
comp=Z,159nm,1.0s
V33A Lossen Ranch, 25.13 339 P **P** 06 39 59.3 -0.1
baz=155,SNR=84
U35A Pawnee 25.13 342 P **P** 06 39 58.9 -0.5
baz=159,SNR=126
T38A Diamond 25.14 347 P **P** 06 39 59.5 +0.2
baz=164,SNR=31
MNTX Cornudas Mount 25.17 322 P **P** 06 39 59.4 -0.4
baz=158,SNR=113
MNTX Cornudas Mount 25.17 322 eP **P** 06 39 59.4 -0.4
comp=Z,197nm,1.4s
S41A Jillco Farms, 25.23 352 P **P** 06 40 00.2 0.0
baz=170,SNR=81
V32A Arapaho 25.32 338 P **P** 06 40 01.5 +0.5
baz=153,SNR=24
USIN University of 25.32 360 eP **P** 06 40 01.6 +0.7
comp=Z,356nm,1.5s
S40A Lebanon 25.35 351 P **P** 06 40 01.3 0.0
baz=169,SNR=50
T37A Cheneyville 18 25.36 346 P **P** 06 40 01.7 +0.4
baz=163,SNR=128
BLA Blacksburg 25.38 13 eP **P** 06 40 03.5 +2.0
BLA pmax pmax
comp=Z,152nm,1.0s
BLA Blacksburg 25.38 13 eP **P** 06 40 03.5 +2.0
comp=Z,152nm,1.0s
U34A Anderson Ranch 25.44 341 P **P** 06 40 01.6 -0.5
baz=157,SNR=67
U34A Anderson Ranch 25.44 341 eP **P** 06 40 01.6 -0.5
comp=Z,246nm,0.9s
MSTX Muleshoe 25.45 329 P **P** 06 40 02.2 -0.2
baz=144,SNR=287
MSTX Muleshoe 25.45 329 eP **P** 06 40 02.3 -0.1
comp=Z,437nm,1.0s
T36A Boggs Farm, Ca 25.54 344 P **P** 06 40 02.9 0.0
baz=161,SNR=99
S39A Bolivar 25.57 349 P **P** 06 40 03.3 0.0
baz=167,SNR=157
T35A Sooner Cattle 25.58 343 P **P** 06 40 03.3 -0.1
baz=160,SNR=33
WCI Wyandotte Cave 25.60 2 eP **P** 06 40 03.8 +0.2
WCI pmax pmax
comp=Z,118nm,0.7s
WCI Wyandotte Cave 25.60 2 eP **P** 06 40 03.8 +0.2
comp=Z,118nm,0.7s
WCI eScP **ScP** 06 47 08.0 +0.8
SVB Belmont 25.61 85 eP **P** 06 40 04.4 +0.5
comp=Z,121nm,0.6s
U33A Lingo Farm, Me 25.63 340 P **P** 06 40 03.2 -0.6
baz=156,SNR=87
S38A Stockton 25.63 348 P **P** 06 40 03.9 +0.1
baz=166,SNR=63
R44A Waltonville 25.64 357 P **P** 06 40 04.2 +0.4
baz=177,SNR=27
AMTX Amarillo 25.68 332 P **P** 06 40 04.5 0.0
baz=147
AMTX Amarillo 25.68 332 eP **P** 06 40 05.0 +0.6
comp=Z,197nm,0.8s
T34A McClaskey Farm 25.87 342 P **P** 06 40 05.6 -0.5
baz=158,SNR=34
U32A Winter Ranch, 25.89 338 P **P** 06 40 06.1 -0.1
baz=154,SNR=34
S37A Fort Scott 25.95 347 P **P** 06 40 06.9 +0.2
baz=164,SNR=101
R40A Maddies Statio 25.99 351 P **P** 06 40 06.8 -0.3
baz=170,SNR=102
OLIL Olney 26.09 359 eP **P** 06 40 08.4 +0.5
comp=Z,65nm,0.8s
S36A Lake Cedric, C 26.09 345 P **P** 06 40 08.0 0.0
baz=162,SNR=167
SLM Saint Louis 26.10 355 eP **P** 06 40 08.3 +0.3
SLM pmax pmax
comp=Z,72nm,0.9s
SLM Saint Louis 26.10 355 eP **P** 06 40 08.3 +0.3
comp=Z,72nm,0.9s
R39A Chumby, Stover 26.13 350 P **P** 06 40 08.2 -0.1
baz=168,SNR=118
R38A Fenwick Farm, 26.16 349 P **P** 06 40 08.6 -0.1
baz=166,SNR=83
S35A Otter Creek Ra 26.24 344 P **P** 06 40 09.2 -0.2
baz=161,SNR=113
T33A Patterson Ranc 26.26 340 P **P** 06 40 09.1 -0.4
baz=156
Q44A Meyer Farm, Va 26.29 357 P **P** 06 40 09.6 -0.1
baz=177,SNR=6.9
Q43A New Douglas 26.36 356 P **P** 06 40 10.1 -0.3
baz=175,SNR=13
Q42A Golden Eagle 26.40 355 P **P** 06 40 10.8 +0.1
baz=174,SNR=6.1
R37A Teagarden Farm 26.48 347 P **P** 06 40 11.5 0.0
baz=164,SNR=28
S34A Willow Spring 26.48 343 P **P** 06 40 11.0 -0.5
baz=159
BLO Bloomington 26.54 2 eP **P** 06 40 12.2 +0.2
BLO pmax pmax
comp=Z,68nm,0.8s
BLO Bloomington 26.54 2 eP **P** 06 40 12.2 +0.2
comp=Z,68nm,0.8s
NNA Nana 26.57 156 P **P** 06 40 13.8 +1.3
comp=Z,13nm,0.8s,baz=12,slow=9.2,SNR=3.7
NNA Nana 26.57 156 P **P** 06 40 10.5 -2.1
NNA ePcP **PcP** 06 43 35.7 -0.1
T32A Huddler Ranch, 26.58 339 P **P** 06 40 12.8 +0.4
baz=155,SNR=26
R36A Gordon, Harris 26.64 346 P **P** 06 40 12.8 -0.1
baz=163,SNR=42
S33A Kaszmaul Farm, 26.65 341 P **P** 06 40 12.6 -0.4
baz=157,SNR=8.2
Q40A Laux Farm, Aux 26.65 352 P **P** 06 40 12.6 -0.5
baz=170,SNR=43
R35A Emporia Munici 26.81 345 P **P** 06 40 14.5 0.0
baz=161,SNR=15
Q39A Willow Grove F 26.84 351 P **P** 06 40 14.3 -0.4
baz=168,SNR=61
Q38A Cooks Store, C 26.86 349 P **P** 06 40 14.9 0.0
baz=167,SNR=78
Q37A Longview Farm, 26.94 348 P **P** 06 40 15.4 -0.2
baz=165,SNR=8.6
P42A Winchester 27.05 355 P **P** 06 40 16.1 -0.5
baz=174,SNR=13
S32A Newby Ranch, P 27.05 340 P **P** 06 40 16.5 -0.2
baz=155,SNR=16
R34A Isabella, Hill 27.08 343 P **P** 06 40 16.7 -0.2
baz=159,SNR=8.2
CBN Corbin Frederi 27.11 18 eP **P** 06 40 19.5 +2.4
comp=Z,141nm,0.6s
P40A Paris 27.18 352 P **P** 06 40 18.0 +0.3
baz=170,SNR=44
121A Cookes Peak, D 27.22 320 P **P** 06 40 18.5 +0.1
baz=133,SNR=57
121A Cookes Peak, D 27.22 320 eP **P** 06 40 19.4 +0.9
comp=Z,78nm,0.9s
P39B Salisbury 27.23 351 P **P** 06 40 18.4 +0.1
baz=169,SNR=24
Q36A Arnold C. Orve 27.24 346 P **P** 06 40 18.1 -0.2
baz=163,SNR=9.3
Q35A Mercer Eighty, 27.28 345 P **P** 06 40 18.6 -0.1
baz=162,SNR=15
R33A Olander Ranch, 27.30 342 P **P** 06 40 18.9 +0.1
baz=158,SNR=18
319A Douglas 27.45 317 eP **P** 06 40 21.6 +1.2
comp=Z,442nm,1.9s
P38A Dawn 27.49 350 P **P** 06 40 20.2 -0.3
baz=167,SNR=31
Q34A Chapman 27.57 344 P **P** 06 40 21.2 -0.1
baz=160,SNR=8.0
P37A Lathrop 27.61 349 P **P** 06 40 21.2 -0.4
baz=166,SNR=27
O41A Passleys Farm, 27.62 354 P **P** 06 40 21.1 -0.6
baz=173,SNR=20
R32A Long Quarter, 27.63 341 P **P** 06 40 21.7 -0.2
baz=156,SNR=19
O42A Bath 27.64 356 P **P** 06 40 22.3 +0.5
baz=175
KSU1 Kansas State U 27.65 345 P **P** 06 40 21.8 -0.2
baz=161,SNR=25
KSU1 Kansas State U 27.65 345 eP **P** 06 40 22.0 0.0
comp=Z,94nm,0.8s
BNM Barren Site 27.66 324 eP **P** 06 40 23.3 +0.9
SFIN Lafayette 27.73 1 P **P** 06 40 22.4 -0.2
baz=181,SNR=30
SFIN Lafayette 27.73 1 eP **P** 06 40 22.4 -0.2
comp=Z,332nm,1.7s
O40A La Belle 27.74 353 P **P** 06 40 22.5 -0.2
baz=171,SNR=13
Y22D IRIS PASSCAL I 27.77 324 P **P** 06 40 23.0 -0.3
baz=136
Y22D IRIS PASSCAL I 27.77 324 eP **P** 06 40 26.0 +2.7
comp=Z,198nm,0.8s

LPM Los Pinos Moun 27.78 324 eP P 06 40 24.4 +1.0
P36A Good Intent, A 27.81 347 P P 06 40 23.2 -0.2
baz=164,SNR=15
ACSO Alum Creek Sta 27.87 7 eP P 06 40 25.0 +1.1
comp=Z,86nm,0.6s
Q33A Connelly Farm, 27.89 343 P P 06 40 24.2 0.0
baz=158,SNR=22
P35A Duane Minner, 27.91 346 P P 06 40 24.2 -0.2
baz=162,SNR=24
HDIL Hopedale 27.95 357 P P 06 40 24.5 -0.1
baz=176,SNR=21
HDIL Hopedale 27.95 357 eP P 06 40 24.4 -0.2
comp=Z,564nm,1.9s
O39A Kirksville 27.96 352 P P 06 40 24.5 -0.2
baz=170,SNR=7.0
O38A Galt 27.97 350 P P 06 40 24.2 -0.6
baz=168,SNR=13
Q32A Meitler Ranch, 28.11 342 P P 06 40 26.0 0.0
baz=157,SNR=55
O37A Wolven Farm, M 28.13 349 P P 06 40 25.6 -0.6
baz=166
P34A Walnut Farm, R 28.13 345 P P 06 40 26.5 +0.3
baz=161,SNR=77
LAZ Ladron 28.13 324 eP P 06 40 27.6 +1.0
ANMO Albuquerque 28.14 326 P P 06 40 27.0 +0.4
baz=138
ANMO Albuquerque 28.14 326 c iP P 06 40 27.2 +0.5
ANMO pmax pmax
comp=Z,52nm,2.3s
ANMO Albuquerque 28.14 326 eP P 06 40 27.4 +0.7
ANMO epP pP 06 40 42.1 -0.1
O36A Bolckow 28.25 348 P P 06 40 26.9 -0.4
baz=165,SNR=17
P33A Williams Farm, 28.26 343 P P 06 40 27.5 0.0
baz=159
CBKS Cedar Bluff 28.33 340 P P 06 40 28.7 +0.6
baz=154
CBKS Cedar Bluff 28.33 340 eP P 06 40 29.2 +1.1
CBKS pmax pmax
comp=Z,69nm,0.8s
CBKS Cedar Bluff 28.33 340 eP P 06 40 29.2 +1.1
comp=Z,68nm,0.8s
SDMD Soldier's Deli 28.38 18 eP P 06 40 30.5 +2.0
comp=Z,37nm,0.7s
SDMD epP pP 06 40 45.6 +1.6
N39A Derby Farms, D 28.56 352 P P 06 40 30.1 0.0
baz=170,SNR=29
N38A Joes South For 28.59 351 P P 06 40 30.1 -0.2
baz=168,SNR=21
O35A Humboldt 28.59 347 P P 06 40 29.9 -0.4
baz=163,SNR=6.5
O34A Beatrice 28.70 345 P P 06 40 31.5 +0.2
baz=161,SNR=95
P32A Huiting Farm, 28.70 342 P P 06 40 31.4 +0.1
baz=157
N37A Lee Faris, Mou 28.71 349 P P 06 40 31.3 -0.1
baz=166
O56A Blue Knob Stat 28.72 14 P P 06 40 33.3 +1.7
baz=198,SNR=15
BBSR BB Station 28.77 43 eP P 06 40 34.7 +2.7
comp=Z,103nm,0.8s
T25A Trinidad 28.79 331 P P 06 40 33.9 +1.5
baz=144,SNR=50
T25A Trinidad 28.79 331 eP P 06 40 34.1 +1.7
comp=Z,504nm,1.9s
O33A Hebron 28.82 344 P P 06 40 32.8 +0.3
baz=160,SNR=61
N36A Muff Farm, Cla 28.91 348 P P 06 40 33.5 +0.3
baz=165,SNR=5.4
TUC Tucson 29.03 316 P P 06 40 34.7 +0.2
baz=128
TUC Tucson 29.03 316 eP P 06 40 35.3 +0.9
TUC e*PP pP 06 40 49.3 -0.7
TUC Tucson 29.03 316 eP P 06 40 35.3 +0.9
TUC epP pP 06 40 49.3 -0.7
MVL Millersville 29.07 18 eP P 06 40 36.7 +2.2
comp=Z,42nm,0.7s
MVL eScP ScP 06 47 18.4 +0.8
N54A Moraine State 29.07 12 P P 06 40 35.7 +1.1
baz=195,SNR=50
N35A Tabor 29.10 347 P P 06 40 35.0 +0.2
baz=164,SNR=26
M39A Webster 29.11 353 P P 06 40 34.6 -0.3
baz=171,SNR=27
M38A Pleasantville 29.19 351 P P 06 40 35.3 -0.4
baz=169,SNR=20
O32A Brockman Farm, 29.19 343 P P 06 40 35.8 +0.1
baz=158
SSPA Standing Stone 29.24 15 eP P 06 40 37.7 +1.7
comp=Z,82nm,0.7s
SSPA epP pP 06 40 52.9 +1.3
N34A Lincoln 29.27 346 P P 06 40 36.2 -0.1
baz=162,SNR=66
M37A Trindle Farm, 29.31 350 P P 06 40 36.6 -0.1
baz=167,SNR=24
O31A Woolen Ranch, 29.41 341 P P 06 40 38.0 +0.3
baz=156
N33A J Bar K, Exete 29.41 345 P P 06 40 38.1 +0.4
baz=160
M36A Felix, Anita 29.50 349 P P 06 40 38.2 -0.2
baz=166,SNR=34
L41A Preston 29.54 356 P P 06 40 38.1 -0.5
baz=174,SNR=28
KSCO Kaye Shedlock' 29.57 336 P P 06 40 39.6 +0.4
baz=149,SNR=35
KSCO Kaye Shedlock' 29.57 336 eP P 06 40 39.9 +0.6
comp=Z,77nm,0.6s
KSCO epP pP 06 40 54.2 -0.6
L40A Anamosa 29.59 354 P P 06 40 38.8 -0.3
baz=173,SNR=26
M54A Oil Creek Stat 29.66 12 P P 06 40 40.9 +1.0
baz=196,SNR=68
SCIA State Center 29.67 351 eP P 06 40 40.1 +0.2
comp=Z,149nm,1.5s
M35A Neola 29.69 348 P P 06 40 40.2 +0.2
baz=164,SNR=80
ALLY Alegheny Colle 29.70 11 eP P 06 40 42.0 +1.8
comp=Z,97nm,0.7s
L39A Vinton 29.73 353 P P 06 40 39.9 -0.5
baz=171,SNR=11
SDCO Great Sand Dun 29.80 330 P P 06 40 42.4 +1.0
baz=143,SNR=96
SDCO Great Sand Dun 29.80 330 eP P 06 40 42.5 +1.0
comp=Z,40nm,0.7s
AAM Ann Arbor 29.84 6 eP P 06 40 41.8 +0.5
AAM pmax pmax
comp=Z,67nm,0.6s
AAM Ann Arbor 29.84 6 eP P 06 40 41.8 +0.5
comp=Z,67nm,0.6s
L38A Oak Wood Farm, 29.87 352 P P 06 40 41.4 -0.2
baz=170,SNR=86
X18A Snowflake 29.90 321 eP P 06 40 43.1 +0.9
comp=Z,40nm,1.1s
LUPA Lehigh Univers 29.92 19 eP P 06 40 44.4 +2.3
comp=Z,82nm,0.6s
M34A Aspy Farms, Fr 29.92 346 P P 06 40 41.8 -0.3
baz=162,SNR=9.1
L37A Phoenix Point, 29.97 351 P P 06 40 42.1 -0.4
baz=168
K41A Shullsburg 30.05 356 P P 06 40 42.7 -0.6
baz=175,SNR=19
N59A State Game Lan 30.09 18 P P 06 40 45.7 +2.1
baz=203,SNR=116
L36A Harm Buss Farm 30.10 349 P P 06 40 43.3 -0.4
baz=166,SNR=16
M33A Taylor Creek F 30.13 345 P P 06 40 44.0 0.0
baz=161,SNR=14
W18A Petrified Fore 30.16 322 P P 06 40 45.0 +0.4
baz=133
W18A Petrified Fore 30.16 322 eP P 06 40 47.1 +2.5
comp=Z,52nm,0.9s
ERPA Erie 30.19 11 eP P 06 40 45.8 +1.4
comp=Z,161nm,0.6s
K40A Colesburg 30.21 355 P P 06 40 44.1 -0.6
baz=173,SNR=27
214A Organ Pipe Nat 30.22 314 P P 06 40 45.5 +0.6
baz=124,SNR=6.1
214A Organ Pipe Nat 30.22 314 eP P 06 40 45.8 +0.9
comp=Z,71nm,0.8s
214A ePcP PcP 06 43 45.6 +1.0
BGNE Belgrade 30.22 344 P P 06 40 45.0 +0.2
baz=159,SNR=15
BGNE Belgrade 30.22 344 eP P 06 40 45.2 +0.4
comp=Z,127nm,0.6s
BRNJ Basking Ridge 30.25 20 eP P 06 40 47.2 +2.2
comp=Z,134nm,0.7s
BRNJ epP pP 06 41 03.3 +2.7

L35A Bielow Farm, R 30.28 348 P P 06 40 44.9 -0.4
baz=164,SNR=38
K39A Oelwein 30.29 354 P P 06 40 44.7 -0.7
baz=172,SNR=69
L34A Svendsen Farm, 30.31 347 P P 06 40 45.2 -0.4
baz=163,SNR=20
K38A Parkersburg 30.34 352 P P 06 40 45.6 -0.2
baz=170,SNR=43
JFWS Jewell Farm 30.35 356 eP P 06 40 45.8 -0.1
JFWS pmax pmax
comp=Z,35nm,0.7s
JFWS Jewell Farm 30.35 356 eP P 06 40 45.8 -0.1
comp=Z,35nm,0.7s
PTGA Pitinga 30.36 114 eP P 06 40 46.6 +0.3
comp=Z,15nm,0.9s
M31A Lambtecht Ranc 30.39 343 P P 06 40 46.9 +0.5
baz=158,SNR=11
S22A 4UR Ranch, Cre 30.45 329 P P 06 40 48.3 +1.1
baz=141,SNR=190
S22A 4UR Ranch, Cre 30.45 329 eP P 06 40 48.4 +1.1
comp=Z,68nm,0.6s
CPNY Central Park 30.55 20 eP P 06 40 48.9 +1.2
comp=Z,32nm,0.6s
K37A Belmond 30.58 351 P P 06 40 47.5 -0.4
baz=168,SNR=166
K36A Gilmore City 30.58 350 P P 06 40 47.7 -0.2
baz=167,SNR=14
ODNJ Ogdensburg 30.60 19 eP P 06 40 49.9 +1.8
comp=Z,25nm,0.6s
Q24A Divide 30.61 332 P P 06 40 49.4 +0.7
baz=145
Q24A Divide 30.61 332 eP P 06 40 49.6 +0.9
comp=Z,139nm,1.8s
L33A Hoskins 30.71 346 P P 06 40 49.1 0.0
baz=161,SNR=36
X16A Lo Mia Camp, P 30.76 319 eP P 06 40 50.7 +0.8
comp=Z,46nm,0.6s
PAL Palisades 30.76 20 eP P 06 40 51.6 +2.0
PAL pmax pmax
comp=Z,71nm,0.7s
PAL Palisades 30.76 20 eP P 06 40 51.6 +2.0
comp=Z,71nm,0.7s
J41A Loganville 30.79 356 P P 06 40 49.4 -0.4
baz=175,SNR=36
K35A Storm Lake 30.80 349 P P 06 40 49.4 -0.6
baz=165,SNR=24
J40A Soldiers Grove 30.87 355 P P 06 40 49.5 -0.9
baz=174,SNR=33
J39A Decorah 30.89 354 P P 06 40 49.6 -1.1
baz=172,SNR=42
MVCO Mesa Verde 30.93 326 P P 06 40 51.6 +0.3
baz=138,SNR=86
MVCO Mesa Verde 30.93 326 eP P 06 40 52.2 +0.8
comp=Z,66nm,0.7s
K34A Le Mars 30.94 348 P P 06 40 50.4 -0.7
baz=164,SNR=53
J38A Wedel Dairy, R 30.96 353 P P 06 40 50.8 -0.5
baz=171,SNR=41
OGNE Ogallala 31.03 338 P P 06 40 51.5 -0.5
baz=152,SNR=5.6
OGNE Ogallala 31.03 338 eP P 06 40 54.0 +2.0
comp=Z,79nm,1.0s
K33A Hardington 31.06 346 P P 06 40 52.2 0.0
baz=162,SNR=18
J37A Redenius Farm, 31.10 351 P P 06 40 52.5 0.0
baz=169,SNR=70
L31A Butterfield Fa 31.12 344 P P 06 40 53.4 +0.6
baz=158,SNR=14
BUF Buffalo 31.19 12 eP P 06 40 54.7 +1.4
BINY Binghamton 31.21 17 eP P 06 40 55.1 +1.6
comp=Z,94nm,0.7s
MMNY Mt. Morris Dam 31.21 14 eP P 06 40 54.5 +1.0
J36A Seneca 1, Swea 31.24 350 P P 06 40 53.1 -0.6
baz=167,SNR=42
113A Mohawk Valley, 31.34 314 eP P 06 40 55.5 +0.8
comp=Z,18nm,1.1s
K32A Verdigre 31.35 345 P P 06 40 54.4 -0.3
baz=160,SNR=69
YLE Yale 31.38 21 eP P 06 40 58.1 +3.2
comp=Z,45nm,0.7s
J35A Milford 31.42 349 P P 06 40 54.3 -1.0
baz=166,SNR=18
WUAZ Wupatki 31.43 321 P P 06 40 56.7 +1.1
baz=131,SNR=27
WUAZ Wupatki 31.43 321 eP P 06 40 56.8 +1.1
comp=Z,25nm,0.8s
J34A George 31.49 348 P P 06 40 55.3 -0.6
baz=164,SNR=12
ISCO Idaho Springs 31.50 333 P P 06 40 57.1 +0.6
baz=145,SNR=22
ISCO Idaho Springs 31.50 333 eP P 06 40 57.2 +0.7
ISCO pmax pmax
comp=Z,121nm,1.6s
ISCO Idaho Springs 31.50 333 eP P 06 40 57.2 +0.7
comp=Z,121nm,1.6s
K31A O'Neill 31.52 344 P P 06 40 56.7 +0.5
baz=159,SNR=19
SMCO Snowmass 31.64 330 eP P 06 40 58.8 +1.0
comp=Z,59nm,0.6s
PV01 Paradox Valley 31.65 327 eP P 06 40 58.7 +1.0
I38A Scanlan Farm, 31.66 353 P P 06 40 56.6 -0.8
baz=171,SNR=29
J33A Davis 31.73 347 P P 06 40 57.8 -0.3
baz=162,SNR=22
I37A Lemond, Waseca 31.77 352 P P 06 40 57.8 -0.5
baz=169,SNR=19
K30A Basset 31.80 343 P P 06 40 59.5 +0.8
baz=157,SNR=31
I35A Creekview Farm 31.86 350 P P 06 40 58.9 -0.3
baz=166,SNR=48
I36A Fitzsimmons Fa 31.86 351 P P 06 40 58.6 -0.5
baz=168,SNR=18
PV05 Paradox Valley 31.89 327 eP P 06 41 00.5 +0.7
J32A Parkston 31.99 346 P P 06 40 59.8 -0.5
baz=161,SNR=20
PV04 Paradox Valley 32.01 327 eP P 06 41 01.7 +0.9
PV04 ePcP PcP 06 43 50.7 +1.3
ECSD EROS Data Cent 32.05 348 P P 06 41 00.1 -0.7
baz=163,SNR=127
ECSD EROS Data Cent 32.05 348 eP P 06 41 00.2 -0.7
comp=Z,100nm,1.0s
PV10 Paradox Valley 32.07 327 eP P 06 41 01.7 +0.2
PV10 ePcP PcP 06 43 50.7 +1.0
J31A Geddes 32.14 345 P P 06 41 01.4 -0.2
baz=159,SNR=12
I34A Hadley 32.20 349 P P 06 41 01.8 -0.3
baz=165,SNR=31
PV09 Paradox Valley 32.21 327 eP P 06 41 03.5 +0.8
GLA Glamis 32.24 314 P P 06 41 03.3 +0.6
baz=123,SNR=13
GLA Glamis 32.24 314 eP P 06 41 03.8 +1.1
GLA e 06 43 51.2
GLA pmax pmax
comp=Z,23nm,0.8s
GLA Glamis 32.24 314 eP P 06 41 03.8 +1.1
comp=Z,23nm,0.8s
GLA ePcP PcP 06 43 51.2 +1.2
SAML Samuel 32.26 130 eP P 06 41 01.6 -1.4
comp=Z,64nm,0.9s
H37A Dierke Farm, C 32.26 353 P P 06 41 02.2 -0.5
baz=170,SNR=10
J30A Dallas 32.37 344 P P 06 41 03.6 -0.1
baz=158,SNR=19
TRY Troy 32.39 19 eP P 06 41 05.7 +1.9
comp=Z,115nm,0.7s
H36A Jessenland, He 32.39 351 P P 06 41 03.7 -0.1
baz=168,SNR=127
I33A Coleman 32.39 347 P P 06 41 03.5 -0.3
baz=163,SNR=47
BRYW Bryant College 32.41 23 eP P 06 41 05.8 +1.7
comp=Z,138nm,0.6s
Y12C Blythe 32.41 315 P P 06 41 04.7 +0.5
baz=125,SNR=8.3
Y12C Blythe 32.41 315 eP P 06 41 05.3 +1.1
Y12C comp=Z,22nm,0.9s ePcP PcP 06 43 51.6 +1.2
QUA2 Belchertown 32.43 21 eP P 06 41 06.1 +1.9
comp=Z,45nm,0.9s
PDMCI Parker Dam,Lak 32.47 316 P P 06 41 06.0 +1.4
baz=126,SNR=44
I32A Karley and Nic 32.52 347 P P 06 41 04.1 -0.8
baz=162,SNR=14
N23A Red Feather La 32.54 334 P P 06 41 06.2 +0.7
baz=145,SNR=22
N23A Red Feather La 32.54 334 eP P 06 41 06.9 +1.4
comp=Z,35nm,0.7s
U15A North Rim 32.58 321 eP P 06 41 07.0 +1.1
comp=Z,14nm,0.6s

H35A Sunnyside Ranc 32.65 350 P P 06 41 05.7 -0.4
baz=167,SNR=136
PHWY Pilot Hill 32.67 335 eP P 06 41 06.2 -0.5
comp=Z,26nm,0.6s
PHWY epP pP 06 41 20.8 -1.5
W13A Hualapai Mount 32.77 318 eP P 06 41 08.5 +1.0
comp=Z,26nm,0.6s
W13A ePcP PcP 06 43 53.0 +1.4
H34A Spellman Lake, 32.78 349 P P 06 41 06.7 -0.5
baz=165,SNR=27
SWSC Sam W. Stewart 32.88 313 P P 06 41 08.3 +0.1
baz=122
SPMN Marine on St. 32.88 353 P P 06 41 07.2 -0.8
baz=171,SNR=46
SPMN Marine on St. 32.88 353 eP P 06 41 07.3 -0.8
comp=Z,80nm,0.6s
WES Weston 32.90 22 eP P 06 41 10.2 +1.9
WES pmax pmax
comp=Z,55nm,1.0s
WES Weston 32.90 22 eP P 06 41 10.2 +1.9
comp=Z,55nm,1.0s
I30A Oacoma 32.90 344 P P 06 41 08.2 -0.1
baz=158,SNR=30
SADO Sadowa 32.91 11 eP P 06 41 08.8 +0.4
comp=Z,179nm,0.6s
SADO epP pP 06 41 23.4 -0.7
BCX Boston College 32.91 23 eP P 06 41 10.3 +2.0
comp=Z,92nm,0.6s
HRV Adam Dziewonsk 32.92 22 eP P 06 41 09.7 +1.3
HRV e*PP pP 06 41 25.2 +1.1
HRV pmax pmax
comp=Z,52nm,1.3s
HRV Adam Dziewonsk 32.92 22 eP P 06 41 09.7 +1.3
comp=Z,52nm,1.3s
HRV epP pP 06 41 25.2 +1.1
IKP In-Ko-Pah, Jac 32.95 312 P P 06 41 10.7 +1.7
baz=121
H32A Carlson Farm, 32.97 347 P P 06 41 08.1 -0.8
baz=162,SNR=70
ACCN Adirondack Com 32.98 19 eP P 06 41 10.6 +1.6
comp=Z,23nm,0.8s
H33A Prehn Over Nor 32.99 348 P P 06 41 08.2 -0.9
baz=164,SNR=51
O20A White River Ci 32.99 330 P P 06 41 10.5 +1.0
baz=141,SNR=189
O20A White River Ci 32.99 330 eP P 06 41 10.7 +1.3
comp=Z,168nm,0.6s
O20A epP pP 06 41 24.2 -0.9
O20A ePcP PcP 06 43 52.3 +0.2
BC3 Big Chuckawall 33.01 314 P P 06 41 10.3 +0.8
baz=123,SNR=36
G36A St. Michael 33.01 352 P P 06 41 08.7 -0.5
baz=169,SNR=23
NEE2 Needles Airpor 33.06 317 P P 06 41 10.9 +1.1
baz=126,SNR=8.9
IRM Iron Mountain 33.07 315 P P 06 41 09.9 0.0
baz=124,SNR=9.3
G35A Watkins 33.10 351 P P 06 41 09.0 -1.0
baz=168
EKU East Kanab 33.13 322 eP P 06 41 11.9 +1.3
MMU Miners Mountai 33.18 325 eP P 06 41 12.1 +0.9
H31A Wolsey 33.18 346 P P 06 41 09.9 -0.9
baz=160,SNR=22
BTU Barney Top 33.21 323 eP P 06 41 12.9 +1.3
PKCU Pink Cliffs 33.26 323 eP P 06 41 13.9 +2.0
comp=Z,44nm,0.7s
SUSD Miller 33.27 345 P P 06 41 10.9 -0.6
baz=160,SNR=20
KNB Kanab 33.29 321 eP P 06 41 10.4 -1.6
KNB pmax pmax
comp=Z,110nm,1.7s
KNB Kanab 33.29 321 eP P 06 41 10.4 -1.6
comp=Z,110nm,1.7s
MONP2 Monument Peak 33.30 312 P P 06 41 12.4 +0.2
baz=121
G34A Benson 33.32 350 P P 06 41 11.1 -0.8
baz=166,SNR=8.3
NCB Newcomb 33.34 18 eP P 06 41 13.3 +1.2
comp=Z,0.3nm,0.8s
SRU San Rafael Swe 33.40 326 eP P 06 41 13.8 +0.8
SRU pmax pmax
comp=Z,115nm,0.6s
SRU San Rafael Swe 33.40 326 eP P 06 41 13.8 +0.8
comp=Z,115nm,0.6s
G33A Ortonville 33.42 349 P P 06 41 12.1 -0.7
baz=164,SNR=166
COWI Conover 33.47 358 eP P 06 41 12.4 -0.8
comp=Z,39nm,0.7s
COWI epP pP 06 41 26.4 -2.6
LCMT Little Creek M 33.54 321 eP P 06 41 15.2 +1.1
comp=Z,16nm,0.8s
LDFC Landfair 33.57 317 eP P 06 41 16.1 +1.7
comp=Z,42nm,0.7s
LDFC ePcP PcP 06 43 55.6 +1.8
BELC Belle Mtn. Jos 33.58 314 P P 06 41 15.3 +0.8
baz=123
MTPU Mount Pierson 33.59 323 eP P 06 41 15.9 +1.1
comp=Z,54nm,0.7s
F36A Milaca 33.60 352 P P 06 41 13.7 -0.6
baz=170,SNR=50
P18A Preston Nutter 33.63 327 eP P 06 41 15.9 +0.8
comp=Z,71nm,0.7s
OWUT Old Woman Plat 33.66 325 eP P 06 41 17.1 +1.7
MDV Middlebury 33.69 19 eP P 06 41 16.2 +1.1
G32A Webster 33.70 347 P P 06 41 14.5 -0.7
baz=162,SNR=34
PFO Pinyon Flats O 33.70 313 eP P 06 41 17.4 +1.9
PFO e 06 43 55.4
PFO pmax pmax
comp=Z,24nm,1.2s
PFO Pinyon Flats O 33.70 313 eP P 06 41 17.4 +1.9
comp=Z,24nm,1.2s
PFO ePcP PcP 06 43 55.4 +1.3
HNH Hanover 33.71 20 eP P 06 41 16.9 +1.5
comp=Z,36nm,0.6s
ROA Roan Cliffs 33.72 327 eP P 06 41 16.7 +0.8
FFD Franklin Falls 33.72 21 eP P 06 41 17.6 +2.1
comp=Z,60nm,0.6s
F35A Swanville 33.74 351 P P 06 41 14.8 -0.7
baz=168,SNR=32
GMRC Granite Mounta 33.77 316 P P 06 41 16.8 +0.6
baz=124,SNR=15
P17A Butcher Ranch, 33.78 327 eP P 06 41 17.1 +0.9
comp=Z,211nm,0.7s
F34A Alexandria 33.79 350 P P 06 41 15.2 -0.8
baz=166,SNR=12
G31A Conde 33.82 346 P P 06 41 15.1 -1.2
baz=161,SNR=13
LONY Lake Ozonia 33.83 17 eP P 06 41 17.2 +0.8
comp=Z,64nm,0.7s
MSU Marysvale 33.90 324 eP P 06 41 18.4 +1.0
MSU Marysvale 33.90 324 eP P 06 41 18.4 +1.0
TMUT Trail Mountain 33.91 326 eP P 06 41 18.3 +0.8
comp=Z,45nm,0.7s
G30A Faulkton 33.96 345 P P 06 41 16.8 -0.7
baz=160
CCUT Cedar City 33.96 322 eP P 06 41 18.3 +0.4
comp=Z,13nm,0.8s
F33A 5 Mile Ranch, 34.01 349 P P 06 41 17.1 -0.8
baz=165,SNR=389
SGU Sterling 34.06 325 eP P 06 41 20.2 +1.4
E37A Wrenshall 34.16 354 P P 06 41 20.1 +0.8
baz=172
WCU Willow Creek 34.16 325 eP P 06 41 21.0 +1.3
F32A Veblen 34.20 348 P P 06 41 18.4 -1.2
baz=163,SNR=26
E36A McGregor 34.21 353 P P 06 41 18.6 -1.0
baz=170,SNR=50
G29A Hoven 34.22 344 P P 06 41 18.9 -0.9
baz=158,SNR=21
K22A Casper 34.23 335 P P 06 41 20.7 +0.6
baz=146,SNR=26
K22A Casper 34.23 335 eP P 06 41 21.1 +1.0
comp=Z,271nm,1.7s
FRNY Flat Rock 34.32 18 eP P 06 41 21.4 +0.9
comp=Z,38nm,1.1s
TUQ Turquoise Moun 34.32 316 P P 06 41 21.8 +0.9
baz=125,SNR=6.6
LEVU Levan 34.39 326 eP P 06 41 22.7 +1.1
F31A Hecla 34.43 347 P P 06 41 20.1 -1.5
baz=162,SNR=27
SHPR Sheep Range 34.44 319 eP P 06 41 23.2 +1.2
comp=Z,18nm,1.2s
SHPR eScP ScP 06 47 42.2 +6.1
E34A Wadena 34.47 351 P P 06 41 21.4 -0.5
baz=167,SNR=13
FLU Fool Peak 34.49 325 eP P 06 41 23.6 +1.2

RSSD **Black Hills** 34.52 339 P P 06 41 23.6 +0.9
baz=151
RSSD **Black Hills** 34.52 339 *e*P P 06 41 23.5 +0.9
RSSD pmax pmax
comp=Z,35nm,0.6s
RSSD **Black Hills** 34.52 339 *e*P P 06 41 23.5 +0.9
comp=Z,35nm,0.6s
F30A **Leola** 34.59 346 P P 06 41 21.8 -1.2
baz=160,SNR=6.7
E33A **Westby DABS, E** 34.60 350 P P 06 41 21.9 -1.2
baz=166,SNR=35
D37A **Cotton** 34.75 354 P P 06 41 23.5 -0.8
baz=172,SNR=61
F29A **Eureka** 34.79 345 P P 06 41 23.8 -0.8
baz=159,SNR=54
H25A **Fruitdale** 34.81 340 P P 06 41 25.7 +0.8
baz=152,SNR=23
GSC **Goldstone, Bar** 34.84 316 P P 06 41 26.6 +1.2
baz=124,SNR=9.2
GSC **Goldstone, Bar** 34.84 316 *e*P P 06 41 26.5 +1.1
GSC *e* 06 43 58.6
GSC pmax pmax
comp=Z,11nm,0.8s
GSC **Goldstone, Bar** 34.84 316 *e*P P 06 41 26.5 +1.1
comp=Z,11nm,0.8s
GSC *e*PcP PcP 06 43 58.6 +1.3
GSC *e*ScP ScP 06 47 42.8 +5.4
D36A **Goodland** 34.85 353 P P 06 41 24.0 -1.1
baz=170,SNR=46
D35A **Remer** 34.86 352 P P 06 41 24.1 -1.2
baz=169,SNR=28
BFSC **Mount Baldy Ra** 34.87 313 P P 06 41 27.1 +1.4
baz=121
E32A **Braaten, Kindr** 34.88 348 P P 06 41 24.5 -0.9
baz=164,SNR=12
PSUT **Pine Spring** 34.90 323 *e*P P 06 41 28.2 +2.2
comp=Z,28nm,0.8s
HTU **Hoyt Peak** 34.90 328 *e*P P 06 41 29.9 +3.8
HLJ **Hailstone** 34.95 327 *e*P P 06 41 27.4 +1.0
KLJ **Keetly** 34.97 327 *e*P P 06 41 27.3 +0.8
JLU **Jordanelle** 34.97 327 *e*P P 06 41 26.7 +0.1
comp=Z,60nm,0.7s
RCJ **Ross Creek** 35.01 327 *e*P P 06 41 26.9 +0.1
E31A **Nome** 35.02 348 P P 06 41 25.7 -0.9
baz=162,SNR=71
D34A **Park Rapids** 35.03 351 P P 06 41 25.9 -0.9
baz=167,SNR=21
MWC **Mount Wilson** 35.15 313 *e*P P 06 41 30.1 +1.9
MWC *e* 06 43 59.8
MWC pmax pmax
comp=Z,25nm,1.1s
MWC **Mount Wilson** 35.15 313 *e*P P 06 41 30.1 +1.9
comp=Z,25nm,1.1s
MWC *e*PcP PcP 06 43 59.8 +1.4
D33A **AnnSam, Waubun** 35.19 350 P P 06 41 27.3 -0.8
baz=166,SNR=31
CTU **Camp Tracy** 35.19 327 *e*P P 06 41 29.4 +1.0
comp=Z,248nm,0.7s
C38A **Sawbill Land,** 35.20 356 P P 06 41 26.9 -1.4
baz=174,SNR=32
CWU **Camp Williams** 35.20 327 *e*P P 06 41 29.7 +1.1
PASC **Pasadena Art C** 35.21 313 *e*P P 06 41 30.5 +2.0
comp=Z,16nm,1.0s
PASC *e*PcP PcP 06 43 59.4 +1.1
RBU **Red Butte Cany** 35.29 327 *e*P P 06 41 30.2 +1.0
C37A **Embarrass** 35.29 355 P P 06 41 28.6 -0.4
baz=172,SNR=13
TRQ **Mont Tremblant** 35.32 16 *e*P P 06 41 30.1 +0.9
TCUT **Toone Canyon** 35.32 328 *e*P P 06 41 31.6 +2.0
comp=Z,176nm,0.6s
HRU **Hogsback Ridge** 35.33 327 *e*P P 06 41 30.7 +1.1
NOQ **North Oquirrh** 35.36 327 *e*P P 06 41 30.8 +0.9
C36A **Pine Crest Far** 35.39 354 P P 06 41 28.8 -1.0
baz=171,SNR=30
WVL **Waterville** 35.39 22 *e*P P 06 41 31.9 +2.1
comp=Z,59nm,0.9s
D32A **Dogwood Acres,** 35.40 349 P P 06 41 29.0 -0.9
baz=164,SNR=13
TPNV **Topopah Spring** 35.40 318 P P 06 41 31.5 +1.3
baz=126,SNR=26
TPNV **Topopah Spring** 35.40 318 *e*P P 06 41 31.6 +1.3
TPNV pmax pmax
comp=Z,20nm,0.8s
TPNV **Topopah Spring** 35.40 318 *e*P P 06 41 31.6 +1.3
comp=Z,20nm,0.8s
TPNV *e*ScP ScP 06 47 45.0 +5.5
FSU **Fish Springs** 35.42 324 *e*P P 06 41 31.9 +1.5
DUG **Dugway, Tooele** 35.42 326 P P 06 41 31.1 +0.8
baz=134,SNR=77
DUG **Dugway, Tooele** 35.42 326 *e*P P 06 41 31.3 +1.0
DUG pmax pmax
comp=Z,40nm,0.6s
DUG **Dugway, Tooele** 35.42 326 *e*P P 06 41 31.3 +1.0
comp=Z,40nm,0.6s
EDW2 **Edwards Air Fo** 35.44 314 P P 06 41 31.5 +0.9
baz=122
EYMN **Ely** 35.45 355 P P 06 41 29.4 -0.9
baz=173,SNR=28
EYMN **Ely** 35.45 355 *e*P P 06 41 29.1 -1.2
comp=Z,36nm,0.8s
EYMN *e*pP pP 06 41 43.2 -2.9
D31A **Mcclaflin, Tow** 35.45 348 P P 06 41 29.5 -0.8
baz=163,SNR=48
C35A **Jirik Farms, M** 35.46 352 P P 06 41 29.5 -1.0
baz=169,SNR=81
SAIU **Southern Antel** 35.54 327 *e*P P 06 41 31.8 +0.4
C34A **RKJ Ranch, Bem** 35.54 351 P P 06 41 30.3 -0.8
baz=168,SNR=31
BW06 **Boulder Array** 35.66 332 P P 06 41 32.6 +0.1
baz=141,SNR=68
BW06 **Boulder Array** 35.66 332 *e*P P 06 41 32.6 +0.1
PD31 **Pinedale Array** 35.66 332 *e*P P 06 41 32.6 +0.2
PDAR **Pinedale Array** 35.66 332 P P 06 41 32.5 0.0
comp=Z,40nm,0.6s,baz=122,slow=10,SNR=210
PDAR PcP PcP 06 43 59.0 -0.8
comp=Z,6.9nm,0.7s,baz=144,slow=3.7,SNR=3.5
PDAR PKiKP PKiKP 06 51 19.1 -1.2
comp=Z,0.3nm,0.4s,baz=105,slow=3.5,SNR=4.4
PDAR LR LR 07 00 38.7
comp=Z,1μm,19.2s,baz=142,slow=44
NAIU **Northern Antel** 35.68 327 *e*P P 06 41 33.4 +0.8
RSUT **Red Spur Mount** 35.71 329 *e*P P 06 41 38.5 +5.5
MPMC **Manual Prospec** 35.72 316 P P 06 41 33.7 +0.7
baz=124,SNR=19
SNUT **Stansbury Nort** 35.73 327 *e*P P 06 41 33.9 +0.8
HWUT **Hardware Ranch** 35.76 328 *e*P P 06 41 33.8 +0.5
comp=Z,210nm,0.7s
HWUT *e*ScP ScP 06 47 44.6 +3.9
C33A **Trail** 35.78 350 P P 06 41 32.3 -0.8
baz=166,SNR=11
OSI **Osito Audit: C** 35.82 313 *e*P P 06 41 35.6 +1.9
comp=Z,82nm,1.5s
OSI *e*PcP PcP 06 44 01.2 +1.0
R11A **Troy Canyon, C** 35.83 321 P P 06 41 35.2 +1.3
baz=129,SNR=20
R11A **Troy Canyon, C** 35.83 321 *e*P P 06 41 34.9 +1.0
comp=Z,87nm,1.9s
GZU **Grizzly Peak** 35.84 328 *e*P P 06 41 34.1 0.0
BMUT **Black Mountain** 35.85 329 *e*P P 06 41 34.5 +0.4
DAC **Darwin (Calif)** 35.91 316 *e*P P 06 41 35.2 +0.5
DAC *e* 06 44 01.9
DAC pmax pmax
comp=Z,13nm,1.0s
DAC **Darwin (Calif)** 35.91 316 *e*P P 06 41 35.1 +0.5
comp=Z,13nm,1.0s
DAC *e*PcP PcP 06 44 01.9 +1.3
HONU **Honeyville** 35.94 328 *e*P P 06 41 36.9 +2.1
WVUT **Wellsville** 35.97 328 *e*P P 06 41 36.8 +1.8
SPUT **South Promonto** 36.00 327 *e*P P 06 41 36.2 +0.8
comp=Z,105nm,0.7s
HDU **Hyde Park** 36.01 329 *e*P P 06 41 39.9 +4.5
BGU **Big Grassy Mou** 36.04 326 *e*P P 06 41 36.5 +0.7
comp=Z,197nm,1.8s
B35A **Bob, Littlefor** 36.08 353 P P 06 41 36.4 +0.7
baz=170,SNR=32
LTU **Little Mountai** 36.10 328 *e*P P 06 41 36.8 +0.6
PKME **Peaks-Kenny Pk** 36.12 22 *e*P P 06 41 37.8 +1.7
comp=Z,94nm,0.8s
C31A **Landman Farms,** 36.16 348 P P 06 41 35.6 -0.8
baz=163,SNR=180
C30A **Mose, Pekin** 36.23 347 P P 06 41 36.6 -0.4
baz=162,SNR=50
BEI **Bear River Ran** 36.24 329 *e*P P 06 41 37.9 +0.5
B33A **Robert and Kas** 36.25 351 P P 06 41 36.1 -1.0
baz=167,SNR=15
MTUT **Morton Thiokol** 36.29 328 *e*P P 06 41 39.0 +1.3

AGMN **Agassiz Nation** 36.32 351 P P 06 41 37.0 -0.8
baz=166,SNR=69
AGMN **Agassiz Nation** 36.32 351 *e*P P 06 41 37.0 -0.8
comp=Z,159nm,1.0s
B34A **Aery, Baudette** 36.32 352 P P 06 41 36.9 -0.8
baz=168,SNR=74
EMMW **East Machias** 36.36 24 *e*P P 06 41 39.8 +1.7
comp=Z,62nm,0.8s
AHID **Auburn Hatcher** 36.39 330 *e*P P 06 41 39.1 +0.4
comp=Z,279nm,0.6s
AHID *e*pP pP 06 41 53.8 -0.7
AHID *e*PcP PcP 06 44 01.8 -0.2
VLDQ **Val d'Or** 36.44 11 *e*P P 06 41 39.0 +0.2
comp=Z,33nm,0.6s
SBC **Santa Barbara** 36.45 312 P P 06 41 36.4 -2.6
baz=119
HVU **Hansel Valley** 36.51 328 *e*P P 06 41 41.3 +1.6
HVU pmax pmax
comp=Z,75nm,0.6s
HVU **Hansel Valley** 36.51 328 *e*P P 06 41 41.3 +1.6
comp=Z,74nm,0.6s
B32A **Ashes, Strandq** 36.52 350 P P 06 41 39.1 -0.4
baz=165,SNR=213
D26A **Manning** 36.60 343 P P 06 41 40.1 -0.1
baz=155,SNR=18
MDND **Maddock** 36.62 346 P P 06 41 40.2 -0.1
baz=160,SNR=58
MDND **Maddock** 36.62 346 *e*P P 06 41 40.3 -0.1
comp=Z,522nm,1.0s
VES **Vestal, Richgr** 36.70 315 P P 06 41 41.8 +0.7
baz=122,SNR=11
REDW **Red Top Meadow** 36.72 331 *e*P P 06 41 42.5 +1.0
comp=Z,461nm,0.6s
REDW *e*pP pP 06 41 56.6 -0.8
PKM **Mcpherson Peak** 36.73 313 P P 06 41 43.4 +1.6
baz=120
B31A **Greenbush Farm** 36.75 349 P P 06 41 40.7 -0.7
baz=164,SNR=129
SNOW **Snow King Moun** 36.75 331 *e*P P 06 41 42.6 +0.8
comp=Z,508nm,0.6s
LOHW **Long Hollow** 36.80 332 *e*P P 06 41 42.8 +0.6
comp=Z,89nm,0.7s
TPAW **Teton Pass** 36.87 331 *e*P P 06 41 43.6 +0.8
comp=Z,261nm,0.6s
A33A **Warroad** 36.87 351 P P 06 41 41.8 -0.6
baz=167,SNR=155
B30A **Myrvik Farm, E** 36.91 348 P P 06 41 42.3 -0.5
baz=162,SNR=125
GGN **Saint George** 36.95 25 *e*P P 06 41 45.2 +2.1
comp=Z,65nm,0.8s
MOOW **Moose Ponds** 36.97 332 *e*P P 06 41 44.0 +0.4
comp=Z,94nm,0.7s
A32A **Rocking H Ranc** 37.02 350 P P 06 41 42.8 -0.9
baz=166,SNR=11
B29A **Wagenman Farm,** 37.14 347 P P 06 41 44.8 +0.1
baz=161,SNR=40
ELK **Elko** 37.15 324 *e*P P 06 41 46.1 +0.9
ELK pmax pmax
comp=Z,33nm,0.8s
ELK **Elko** 37.15 324 *e*P P 06 41 46.1 +0.9
comp=Z,33nm,0.8s
ELK *e*ScP ScP 06 47 50.2 +4.2
A31A **Linda, St. Vin** 37.16 349 P P 06 41 43.8 -1.0
baz=164,SNR=13
IMW **Indian Meadow** 37.17 332 *e*P P 06 41 45.9 +0.5
comp=Z,104nm,0.6s
FLWY **Flagg Ranch** 37.20 332 *e*P P 06 41 46.6 +1.0
comp=Z,138nm,0.9s
B28A **Dugan Ranch, T** 37.36 346 P P 06 41 46.6 0.0
baz=159,SNR=41
A30A **Hoffart Farm,** 37.37 348 P P 06 41 46.2 -0.5
baz=163,SNR=87
H17A **Grant Village** 37.39 332 P P 06 41 48.1 +0.9
baz=141,SNR=30
H17A **Grant Village** 37.39 332 *e*P P 06 41 48.1 +0.9
comp=Z,61nm,0.8s
RLMT **Red Lodge** 37.39 334 P P 06 41 47.5 +0.4
baz=144,SNR=39
RLMT **Red Lodge** 37.39 334 *e*P P 06 41 47.6 +0.4
comp=Z,180nm,1.4s
YPP **Pitchstone Pla** 37.40 332 *e*P P 06 41 48.7 +1.4
comp=Z,58nm,0.7s
YLT **Little Thumb C** 37.43 332 *e*P P 06 41 49.7 +2.2
LKWY **Lake** 37.44 333 *e*P P 06 41 49.7 +2.0
LKWY pmax pmax
comp=Z,67nm,0.8s
LKWY **Lake** 37.44 333 *e*P P 06 41 49.7 +2.0
comp=Z,67nm,0.8s
C25A **Freed Ranch, W** 37.45 342 P P 06 41 47.6 +0.2
baz=154,SNR=32
MCID **Moose Creek** 37.51 332 *e*P P 06 41 48.9 +0.7
LAO **LASA Array** 37.51 339 P P 06 41 48.0 0.0
baz=149,SNR=14
LAO **LASA Array** 37.51 339 *e*P P 06 41 48.0 0.0
comp=Z,57nm,0.9s
A29A **Manning Farm,** 37.55 347 P P 06 41 47.9 -0.3
baz=161,SNR=166
YFT **Old Faithful** 37.55 332 *e*P P 06 41 50.8 +2.2
comp=Z,134nm,0.9s
YNR **Norris Junctio** 37.69 333 *e*P P 06 41 52.5 +2.8
comp=Z,63nm,0.7s
YPM **Purple Mountai** 37.73 332 *e*P P 06 41 50.0 0.0
LMQ **La Malbaie** 37.75 19 *e*P P 06 41 50.9 +1.0
A28A **Rude Farm, Bot** 37.77 346 P P 06 41 49.6 -0.4
baz=160,SNR=14
B26A **Jensen Ranch,** 37.77 344 P P 06 41 50.0 -0.1
baz=156,SNR=8.2
YMR **Madison River** 37.78 332 *e*P P 06 41 51.8 +1.3
comp=Z,130nm,0.8s
PB01 **IPOC Station P** 37.79 152 *e*P P 06 41 51.3 +0.7
comp=Z,25nm,0.7s
PB01 *e*PcP PcP 06 44 07.1 +0.8
YMC **Maple Creek** 37.87 332 *e*P P 06 41 52.1 +0.9
YMV **Mammoth Vault** 37.89 333 *e*P P 06 41 53.0 +1.6
B25A **Knox Farm, Ray** 37.93 343 P P 06 41 52.0 +0.5
baz=155,SNR=12
YHB **Horse Butte** 37.95 332 *e*P P 06 41 53.4 +1.5
CRMT **Chrome Mountai** 38.03 334 *e*P P 06 41 53.0 +0.3
A27A **Ledoux Ranch,** 38.04 345 P P 06 41 52.4 0.0
baz=158
GCMT **Greycliff** 38.10 335 *e*P P 06 41 53.2 +0.2
BMN **Battle Mountai** 38.11 322 *e*P P 06 41 54.0 +0.8
BMN pmax pmax
comp=Z,207nm,1.9s
BMN **Battle Mountai** 38.11 322 *e*P P 06 41 54.0 +0.8
comp=Z,207nm,1.9s
QLMT **Earthquake Lak** 38.11 332 *e*P P 06 41 54.8 +1.5
TPMT **Tepee Creek** 38.15 332 *e*P P 06 41 57.1 +3.5
A26A **Wade Farm, Ken** 38.19 344 P P 06 41 53.6 0.0
baz=157,SNR=15
ULM **Lac du Bonnet** 38.22 351 P P 06 41 52.5 -1.3
comp=Z,63nm,0.6s,baz=165,slow=8.8,SNR=106
ULM ScP ScP 06 47 50.1 +0.6
comp=Z,8.6nm,0.8s,baz=190,slow=6.5,SNR=3.6
ULM LR LR 06 59 33.8
comp=Z,1μm,21.4s,baz=157,slow=39
ULM **Lac du Bonnet** 38.22 351 *e*P P 06 41 52.3 -1.5
ULM 06 47 50.1
ULM pmax pmax
comp=Z,106nm,0.8s
ULM **Lac du Bonnet** 38.22 351 *e*P P 06 41 52.3 -1.5
comp=Z,106nm,0.8s
ULM ScP ScP 06 47 50.1 +0.6
WAKR **Walker** 38.37 318 *e*P P 06 41 57.2 +1.7
comp=Z,111nm,1.9s
LMN **Caledonia Moun** 38.38 26 *e*P P 06 41 56.3 +1.0
comp=Z,143nm,0.7s
DGMT **Dagmar** 38.41 342 P P 06 41 56.0 +0.5
baz=153,SNR=58
DGMT **Dagmar** 38.41 342 *e*P P 06 41 56.0 +0.5
comp=Z,193nm,0.6s
A25A **Svangstu Ranch** 38.52 343 P P 06 41 56.6 +0.2
baz=155,SNR=12
HLID **Hailey** 38.63 328 P P 06 41 57.9 +0.3
baz=135,SNR=160
HLID **Hailey** 38.63 328 *e*P P 06 41 58.1 +0.5
comp=Z,50nm,0.7s
BGMT **Barton Gulch** 38.70 332 *e*P P 06 41 59.5 +1.3
CMB **Columbia Colle** 38.74 317 *e*P P 06 42 00.1 +1.7
CMB *e* 06 44 09.8
CMB pmax pmax
comp=Z,10.0nm,0.8s
CMB **Columbia Colle** 38.74 317 *e*P P 06 42 00.1 +1.7
comp=Z,9.9nm,0.8s
CMB *e*PcP PcP 06 44 09.8 +0.7
MCMT **McKenzie Canyo** 38.77 331 *e*P P 06 41 59.9 +1.1
BOZ **Bozeman (W)** 38.83 333 P P 06 41 59.7 +0.5
baz=141,SNR=232
BOZ **Bozeman (W)** 38.83 333 *e*P P 06 41 59.7 +0.5
BOZ pmax pmax
comp=Z,94nm,0.6s
BOZ **Bozeman (W)** 38.83 333 *e*P P 06 41 59.7 +0.5
comp=Z,94nm,0.6s
PAHR **Pah Rah Range** 39.01 320 *e*P P 06 42 01.9 +1.1
comp=Z,25nm,0.7s
PAHR *e* 06 47 58.2
DLMT **Dillon** 39.05 332 *e*P P 06 42 02.0 +0.9
comp=Z,90nm,0.7s
MFID **Camas Ranch** 39.27 327 *e*P P 06 42 03.1 +0.3
comp=Z,42nm,0.8s
LRM **Limekiln Ridge** 39.34 332 *e*P P 06 42 04.1 +0.6
LVC **Limon Verde** 39.41 152 *e*P P 06 42 04.6 +0.1
comp=Z,90nm,1.6s
AFDM **Forest Hills D** 39.61 318 *e*P P 06 42 07.3 +1.6
comp=Z,47nm,1.9s
AFDM *e*PcP PcP 06 44 12.8 +1.1
AFDM *e*S S 06 48 00.4 -3.8
HRY **Holter Researc** 39.74 334 *e*P P 06 42 07.7 +1.0
EGMT **Eagleton** 39.94 337 P P 06 42 09.0 +0.6
baz=145,SNR=28
EGMT **Eagleton** 39.94 337 *e*P P 06 42 08.7 +0.3
comp=Z,180nm,1.2s
WVOR **Wild Horse Val** 40.19 324 *e*P P 06 42 10.7 +0.2
WVOR pmax pmax
comp=Z,62nm,0.7s
WVOR **Wild Horse Val** 40.19 324 *e*P P 06 42 10.7 +0.2
comp=Z,62nm,0.7s
ORV **Oroville** 40.28 318 *e*P P 06 42 12.5 +1.3
ORV pmax pmax
comp=Z,20nm,0.7s
ORV **Oroville** 40.28 318 *e*P P 06 42 12.5 +1.3
comp=Z,20nm,0.7s
CHMT **Chamberlain Mo** 40.53 333 *e*P P 06 42 13.3 -0.1
MSO **Missoula** 40.77 332 P P 06 42 15.6 +0.3
baz=139,SNR=38
MSO **Missoula** 40.77 332 *e*P P 06 42 15.4 +0.1
comp=Z,158nm,1.1s
MOD **Modoc Plateau** 40.85 322 *e*P P 06 42 15.7 -0.3
comp=Z,26nm,0.9s
MOD *e*PcP PcP 06 44 17.4 +1.5
O03D **Paynes Creek** 40.88 319 P P 06 42 16.3 +0.1
baz=123,SNR=17
BMO **Blue Mountains** 41.02 327 *e*P P 06 42 16.4 -0.9
comp=Z,45nm,0.7s
SWMT **Swartz Lake** 41.31 333 *e*P P 06 42 19.8 +0.1
WDC **Whiskeytown Da** 41.51 319 *e*P P 06 42 19.8 -1.4
WDC pmax pmax
comp=Z,13nm,0.7s
WDC **Whiskeytown Da** 41.51 319 *e*P P 06 42 19.8 -1.4
comp=Z,13nm,0.7s
YBMT **Yellow Bay** 41.58 333 *e*P P 06 42 22.1 +0.2
JTMT **Jette** 41.62 333 *e*P P 06 42 22.6 +0.4
K05A **Summer Lake** 41.69 322 *e*P P 06 42 23.1 +0.1
comp=Z,76nm,1.6s
K05A *e* 06 48 09.0
M04C **Macdoel** 41.72 321 P P 06 42 22.9 -0.3
baz=124,SNR=16
N02D **Trinity Center** 41.82 319 P P 06 42 23.0 -0.9
baz=123,SNR=11
BLMT **Blacktail Moun** 41.85 333 *e*P P 06 42 24.2 0.0
BSMT **Bassoo Peak** 41.92 332 *e*P P 06 42 24.9 +0.1
KMRM **Mail Ridge** 42.08 318 *e*P P 06 42 27.8 +1.8
comp=Z,58nm,1.1s
M02C **Callahan** 42.14 320 P P 06 42 25.3 -1.2
baz=123,SNR=6.4
K04D **Chiloquin, OR** 42.15 322 P P 06 42 26.1 -0.5
baz=125
G08A **Pilot Rock** 42.19 327 *e*P P 06 42 26.8 -0.1
comp=Z,21nm,0.7s
G08A *e*PcP PcP 06 44 21.6 +1.4
J05D **Fort Rock, OR** 42.22 323 P P 06 42 27.2 0.0
baz=126,SNR=11
YBH **Yreka Blue Hor** 42.24 320 *e*P P 06 42 25.8 -1.5
YBH *e* 06 44 21.6
YBH pmax pmax
comp=Z,14nm,0.6s
YBH **Yreka Blue Hor** 42.24 320 *e*P P 06 42 25.8 -1.5
comp=Z,14nm,0.6s
YBH *e*PcP PcP 06 44 21.6 +1.2
BUOR **Burton Butte** 42.25 321 P P 06 42 27.3 -0.3
KHMM **Horse Mountain** 42.43 318 *e*P P 06 42 29.6 +0.6
comp=Z,81nm,0.7s
WALA **Waterton Lakes** 42.45 334 *e*P P 06 42 29.3 +0.3
comp=Z,289nm,1.8s
E09A **Wood Farm, Sta** 42.58 329 *e*P P 06 42 30.0 +0.1
comp=Z,272nm,1.8s
JCC **Jacoby Creek,** 42.59 318 *e*P P 06 42 32.8 +2.8
comp=Z,55nm,0.8s
HUMO **Hull Mountain** 42.87 321 *e*P P 06 42 31.9 -0.4
comp=Z,8.1nm,0.8s
I05D **Terrebonne, OR** 42.91 324 P P 06 42 34.0 +1.3
baz=127,SNR=25
L02D **Cave Junction,** 43.03 320 P P 06 42 34.2 +0.6
baz=123
G06A **Carlson Farm,** 43.07 326 *e*P P 06 42 33.4 -0.5
comp=Z,196nm,2.0s
HAWA **Hanford** 43.21 328 *e*P P 06 42 34.8 -0.3
comp=Z,81nm,0.6s
I04A **Tendick Farm,** 43.21 323 P P 06 42 34.8 -0.3
baz=126,SNR=36
NEW **Newport** 43.30 331 P P 06 42 35.2 -0.5
baz=136,SNR=38
NEW **Newport** 43.30 331 *e*P P 06 42 35.2 -0.5
NEW pmax pmax
comp=Z,39nm,0.6s
NEW **Newport** 43.30 331 *e*P P 06 42 35.2 -0.5
comp=Z,40nm,0.6s
GBL **Gable Mountain** 43.31 328 P P 06 42 35.8 0.0
GBL **Gable Mountain** 43.31 328 *e*P P 06 42 35.8 0.0
D08A **Wollman Farm,** 43.34 329 *e*P P 06 42 36.0 0.0
comp=Z,158nm,0.7s
G05D **Wamic, OR** 43.45 325 P P 06 42 37.7 +0.7
baz=128,SNR=17
E07A **Sunnyside** 43.49 328 *e*P P 06 42 37.7 +0.4
comp=Z,200nm,0.8s
C09A **Chrisman Ranch** 43.52 330 *e*P P 06 42 37.5 -0.1
comp=Z,132nm,0.6s
FFC **Flin Flon** 43.59 348 *e*P P 06 42 37.8 -0.1
FFC pmax pmax
comp=Z,54nm,0.6s
FFC **Flin Flon** 43.59 348 *e*P P 06 42 37.8 -0.1
comp=Z,54nm,0.6s
TRW **Toppenish Ridg** 43.68 327 P P 06 42 39.4 +0.5
I03D **Drain, OR** 43.72 322 P P 06 42 39.2 +0.1
baz=124,SNR=10
SAW **Saint Andrews** 44.01 329 P P 06 42 41.5 0.0
COR **Corvallis** 44.19 323 *e*P P 06 42 43.7 +0.8
COR pmax pmax
comp=Z,46nm,0.8s
COR **Corvallis** 44.19 323 *e*P P 06 42 43.7 +0.8
comp=Z,46nm,0.8s
DRLN **Deer Lake** 44.19 28 *e*P P 06 42 43.2 +0.4
comp=Z,66nm,0.9s
TBM **Table Mountain** 44.27 328 P P 06 42 44.2 +0.6
WTV **Waterville** 44.29 329 P P 06 42 44.2 +0.5
LCO **Las Campanas** 44.39 159 *e*P P 06 42 44.6 -0.4
comp=Z,40nm,1.1s
B08A **Colville Reser** 44.42 330 *e*P P 06 42 44.3 -0.5
comp=Z,45nm,0.6s
G03D **McMinnville, O** 44.53 324 P P 06 42 45.4 -0.2
baz=126,SNR=27
LON **Longmire** 44.65 327 *e*P P 06 42 46.4 -0.2
LON pmax pmax
comp=Z,40nm,0.8s
LON **Longmire** 44.65 327 *e*P P 06 42 46.4 -0.2
comp=Z,40nm,0.8s
F04D **Rainier, OR** 44.90 325 P P 06 42 48.7 +0.2
baz=127,SNR=16
C06D **Leavenworth** 44.92 328 P P 06 42 48.7 0.0
baz=131
D05A **Enumclaw** 45.02 327 *e*P P 06 42 49.3 -0.2
comp=Z,69nm,0.8s
F03A **Seaside** 45.12 325 *e*P P 06 42 52.0 +1.7
comp=Z,74nm,0.8s
SCHQ **Schefferville** 45.21 17 P P 06 42 50.2 -0.6
comp=Z,198nm,0.6s,baz=223,slow=7.0,SNR=180
SCHQ LR LR 07 03 36.3
comp=Z,4μm,18.4s,baz=207,slow=38
SCHQ **Schefferville** 45.21 17 *e*P P 06 42 50.6 -0.2
comp=Z,214nm,0.6s
PNT **Penticton** 45.21 331 *e*P P 06 42 51.4 +0.4
PNT **Penticton** 45.21 331 *e*P P 06 42 51.4 +0.4
E03A **Lebam** 45.49 325 *e*P P 06 42 53.1 0.0
comp=Z,91nm,0.8s

EDM	**Edmonton**	**45.50**	**338**	*e*P		**P**		**06 42 52.6**	**-0.6**
EDM					pmax	pmax			
	comp=Z,112nm,0.6s								
EDM	**Edmonton**	**45.50**	**338**	*e*P		**P**		**06 42 52.6**	**-0.6**
	comp=Z,112nm,0.6s								
B05A	**Bryant**	**45.75**	**328**	P		**P**		**06 42 54.0**	**-1.2**
	baz=130,SNR=22								
B05A	**Bryant**	**45.75**	**328**	P		**P**		**06 42 54.0**	**-1.2**
CYA	**Choya**	**45.84**	**153**	*e*P		**P**		**06 42 56.3**	**+0.1**
AROD	**Rodeo**	**45.88**	**158**	*e*P		**P**		**06 42 58.0**	**+1.2**
ACDV	**Cuesta del Vie**	**46.02**	**158**	*e*P		**P**		**06 42 58.5**	**+0.8**
NLWA	**Neilton Lookou**	**46.16**	**326**	*e*P		**P**		**06 42 58.7**	**+0.2**
	comp=Z,78nm,1.1s								
A04D	**Lummi Island**	**46.36**	**328**	P		**P**		**06 43 00.1**	**+0.2**
	baz=129,SNR=13								
FCC	**Fort Churchill**	**46.39**	**355**	*e*P		**P**		**06 42 59.5**	**-0.5**
FCC					pmax	pmax			
	comp=Z,69nm,0.9s								
FCC	**Fort Churchill**	**46.39**	**355**	*e*P		**P**		**06 42 59.5**	**-0.5**
	comp=Z,69nm,0.9s								
MCW	**Mount Constitu**	**46.40**	**328**	P		**P**		**06 42 59.9**	**-0.4**
MCW	**Mount Constitu**	**46.40**	**328**	P		**P**		**06 42 59.9**	**-0.4**
ACCO	**Cerro Coronel**	**46.41**	**158**	*e*P		**P**		**06 42 58.6**	**-2.4**
PGC	**Sidney**	**46.70**	**328**	*e*P		**P**		**06 43 03.8**	**+1.2**
	comp=Z,312nm,1.9s								
AMOG	**MOGNA**	**46.94**	**157**	*e*P		**P**		**06 43 04.8**	**0.0**
AVFE	**Valle Fertil**	**47.09**	**156**	*e*P		**P**		**06 43 05.7**	**-0.2**
LLLB	**Lillooet**	**47.16**	**331**	*e*P		**P**		**06 43 06.5**	**+0.1**
	comp=Z,142nm,1.0s								
RTLL	**Cerro Villicun**	**47.30**	**158**	*e*P		**P**		**06 43 07.5**	**-0.1**
RTLS	**Leoncito**	**47.42**	**159**	*e*P		**P**		**06 43 09.7**	**+0.9**
RTCV	**Cerro Valdivia**	**47.75**	**158**	*e*P		**P**		**06 43 10.5**	**-0.6**
AUSP	**Uspallata**	**47.78**	**159**	*e*P		**P**		**06 43 12.2**	**+0.6**
ACHE	**Chepes**	**47.85**	**156**	*e*P		**P**		**06 43 11.6**	**-0.3**
ROC1	**El Roble**	**47.93**	**161**	*e*P		**P**		**06 43 12.2**	**-0.4**
ROC1	**El Roble**	**47.93**	**161**	*e*P		**P**		**06 43 12.1**	**-0.6**
	comp=Z,41nm,0.8s								
ASAL	**Salagasta**	**48.31**	**159**	*e*P		**P**		**06 43 16.0**	**+0.6**
ARCO	**CERRO ARCO**	**48.50**	**159**	*e*P		**P**		**06 43 16.8**	**-0.2**
CPUP	**Villa Florida**	**48.53**	**143**	P		**P**		**06 43 15.6**	**-1.5**
	comp=Z,18nm,0.7s,baz=330,slow=7.9,SNR=45								
CPUP					LR	LR		07 05 18.5	
	comp=Z,1μm,19.9s,baz=320,slow=38								
CPUP	**Villa Florida**	**48.53**	**143**	*e*P		**P**		**06 43 15.8**	**-1.2**
AAGR	**Agrelo**	**48.76**	**159**	*e*P		**P**		**06 43 19.2**	**+0.4**
TCA	**Tanti**	**48.87**	**154**	*e*P		**P**		**06 43 19.1**	**-0.7**
MRA	**San Martin**	**49.34**	**156**	*e*P		**P**		**06 43 23.0**	**-0.3**
SPB	**Sao Paulo**	**53.17**	**132**	*e*P		**P**		**06 43 50.9**	**-1.1**
	comp=Z,110nm,2.0s								
YKA	**Yellowknife Ar**	**53.50**	**345**	P		**P**		**06 43 52.7**	**-1.2**
	comp=Z,22nm,0.7s,baz=135,slow=8.2,SNR=114								
YKA					pP		**pP**	**06 44 08.2**	**-2.4**
	comp=Z,12nm,0.7s,baz=151,slow=6.9,SNR=7.7								
YKA					PcP		**PcP**	**06 44 59.0**	**-1.0**
	comp=Z,13nm,0.6s,baz=147,slow=3.9,SNR=14								
YKA					ScP		**ScP**	**06 48 53.7**	**+1.3**
	comp=Z,1.4nm,0.5s,baz=147,slow=4.5,SNR=6.1								
YKA					LR	LR		07 09 40.4	
	comp=Z,122nm,20.1s,baz=180,slow=39								
RCBR	**Riachuelo**	**54.45**	**107**	*e*P		**P**		**06 44 03.7**	**+2.0**
	comp=Z,21nm,0.9s								
PLCA	**Paso Flores**	**55.29**	**164**	P		**P**		**06 44 06.8**	**-0.4**
	comp=Z,29nm,1.0s,baz=8.1,slow=8.2,SNR=21								
PLCA					LR	LR		07 02 11.7	
	comp=Z,727nm,20.1s,baz=28,slow=30								
PLCA	**Paso Flores**	**55.29**	**164**	*e*P		**P**		**06 44 07.0**	**-0.2**
	comp=Z,60nm,1.1s								
CRAG	**Craig**	**55.50**	**330**	*e*P		**P**		**06 44 09.4**	**+0.9**
	comp=Z,47nm,1.1s								
WRAK	**Wrangell Islan**	**55.65**	**332**	*e*P		**P**		**06 44 10.3**	**+0.8**
	comp=Z,16nm,0.6s								
WRAK				*e*PcP		**PcP**		**06 45 08.7**	**+0.3**
TRQA	**Tornquist**	**55.73**	**156**	*e*P		**P**		**06 44 10.0**	**-0.5**
	comp=Z,137nm,1.5s								
DLBC	**Dease Lake**	**55.80**	**335**	*e*P		**P**		**06 44 11.2**	**+0.5**
	comp=Z,65nm,0.7s								
TAOE	**Nuku Hiva Isla**	**56.45**	**250**	*e*S		**S**		**06 52 07.4**	**+4.6**
	comp=Z,1μm,26.8s								
TAOE				*e*LR		LR		07 00 32.8	
	comp=Z,6μm,25.6s,baz=71								
TAOE	**Nuku Hiva Isla**	**56.45**	**250**	*e*T		T		07 44 03.4	
	comp=Z,34nm,0.2s								
RKT	**Rikitea**	**58.42**	**233**	*e*S		**S**		**06 52 33.4**	**+5.1**
	comp=Z,3μm,28.5s								
RKT				*e*SS		**SS**		**06 56 26.0**	**+4.3**
	comp=Z,763nm,29.9s								
RKT				*e*LR		LR		07 01 50.1	
	comp=Z,3μm,28.0s,baz=54								
RKT	**Rikitea**	**58.42**	**233**	*e*T		T		07 46 58.4	
	comp=Z,14nm,0.3s								
SKAG	**Skagway**	**58.64**	**334**	*e*P		**P**		**06 44 32.6**	**+2.0**
	comp=Z,22nm,1.2s								
SFJD	**Kangerlussuaq**	**59.65**	**16**	*i* P		**P**		**06 44 36.2**	**-1.2**
	comp=Z,13nm,0.7s								
	comp=Z,2μm,18.0s								
SFJD	**Kangerlussuaq**	**59.65**	**16**	*e*P		**P**		**06 44 36.5**	**-0.9**
SFJD				*e*pP		**pP**		**06 44 53.3**	**-1.0**
HYT	**Haines Junctio**	**60.28**	**334**	*e*P		**P**		**06 44 42.4**	**+0.3**
CHRN	**Cochrane**	**61.00**	**168**	*e*P		**P**		**06 44 47.9**	**+1.0**
	comp=Z,29nm,1.1s								
PCA	**Pinnacle**	**61.12**	**333**	*e*P		**P**		**06 44 48.7**	**+0.9**
	comp=Z,33nm,0.7s								
RES	**Resolute Bay**	**62.27**	**358**	*e*P		**P**		**06 44 54.0**	**-1.1**
RES					pmax	pmax			
	comp=Z,28nm,0.8s								
RES	**Resolute Bay**	**62.27**	**358**	*e*P		**P**		**06 44 54.0**	**-1.1**
	comp=Z,28nm,0.8s								
DAWY	**Dawson**	**62.68**	**337**	*e*P		**P**		**06 44 57.0**	**-1.1**
	comp=Z,18nm,1.1s								
CRQM	**Cirque**	**62.70**	**333**	*e*P		**P**		**06 44 58.0**	**-0.5**
	comp=Z,30nm,1.0s								
INK	**Inuvik**	**63.10**	**343**	*e*P		**P**		**06 45 00.4**	**-0.3**
INK					pmax	pmax			
	comp=Z,32nm,1.0s								
INK	**Inuvik**	**63.10**	**343**	*e*P		**P**		**06 45 00.4**	**-0.3**
	comp=Z,32nm,1.0s								
BMRM	**Bremner River**	**63.44**	**333**	*e*P		**P**		**06 45 03.3**	**+0.1**
	comp=Z,30nm,0.6s								
EGAK	**Eagle**	**63.70**	**337**	*e*P		**P**		**06 45 03.4**	**-1.4**
	comp=Z,18nm,1.0s								
EYAK	**Cordova Ski Ar**	**63.79**	**332**	*e*P		**P**		**06 45 05.5**	**0.0**
	comp=Z,41nm,0.7s								
MENT	**Mentasta**	**63.87**	**335**	*e*P		**P**		**06 45 05.7**	**-0.3**
	comp=Z,14nm,0.6s								
DIV	**Divide**	**64.02**	**333**	*e*P		**P**		**06 45 06.8**	**-0.2**
	comp=Z,24nm,0.8s								
KLU	**Klutina**	**64.23**	**333**	*e*P		**P**		**06 45 08.0**	**-0.4**
DOT	**Dot Lake**	**64.32**	**336**	*e*P		**P**		**06 45 08.0**	**-1.0**
	comp=Z,74nm,0.6s								
DOT				*e*pP		**pP**		**06 45 22.6**	**-3.4**
PAX	**Paxson**	**64.62**	**335**	*e*P		**P**		**06 45 10.0**	**-0.9**
PAX					pmax	pmax			
	comp=Z,13nm,0.7s								
PAX	**Paxson**	**64.62**	**335**	*e*P		**P**		**06 45 10.0**	**-0.9**
	comp=Z,13nm,0.7s								
SEW	**Seward**	**65.36**	**331**	*e*P		**P**		**06 45 14.8**	**-0.9**
	comp=Z,18nm,0.8s								
POHA	**Pohakuloa**	**65.36**	**286**	*e*P		**P**		**06 45 17.4**	**+0.7**
	comp=Z,106nm,0.6s								
HPAH	**Hawaii Prepara**	**65.50**	**286**	*e*P		**P**		**06 45 18.3**	**+0.9**
	comp=Z,119nm,0.7s								
PMR	**Palmer**	**65.70**	**333**	*e*P		**P**		**06 45 16.7**	**-1.1**
PMR					pmax	pmax			
	comp=Z,17nm,0.6s								
PMR	**Palmer**	**65.70**	**333**	*e*P		**P**		**06 45 16.7**	**-1.1**
	comp=Z,17nm,0.6s								
HDA	**Harding Lake**	**65.79**	**336**	*e*P		**P**		**06 45 17.3**	**-1.1**
	comp=Z,30nm,0.6s								
RC01	**Rabbit Creek A**	**65.81**	**332**	*e*P		**P**		**06 45 17.7**	**-0.9**
	comp=Z,46nm,0.7s								
IL1	**Eielson Array**	**65.91**	**336**	*e*P		**P**		**06 45 17.2**	**-2.0**
ILAR	**Eielson Array**	**65.91**	**336**	P		**P**		**06 45 17.8**	**-1.4**
	comp=Z,16nm,0.7s,baz=142,slow=4.2,SNR=178								
ILAR					pP		**pP**	**06 45 36.8**	**+0.5**
	comp=Z,14nm,0.8s,baz=137,slow=3.9,SNR=6.9								
ILAR					PP		**PP**	**06 47 45.9**	**+1.2**
	comp=Z,4.7nm,1.0s,baz=120,slow=7.2,SNR=5.5								
ILAR					PKPPKP	P'P'df		07 13 49.2	-7.8
	comp=Z,0.4nm,0.8s,baz=303,slow=4.0,SNR=4.7								
ILAR					LR	LR		07 20 59.9	
	comp=Z,911nm,18.0s,baz=111,slow=42								
ILB	**Eielson Array**	**65.91**	**336**	*e*P		**P**		**06 45 17.9**	**-1.2**
BRLK	**Bradley Lake**	**65.94**	**330**	*e*P		**P**		**06 45 18.4**	**-1.1**
	comp=Z,35nm,0.9s								
FYU	**Fort Yukon**	**66.02**	**338**	*e*P		**P**		**06 45 21.0**	**+1.2**
CNPM	**China Poot**	**66.04**	**330**	*e*P		**P**		**06 45 20.0**	**-0.2**
RND	**Reindeer**	**66.20**	**334**	*e*P		**P**		**06 45 20.5**	**-0.7**
RND	**Reindeer**	**66.20**	**334**	*e*P		**P**		**06 45 20.5**	**-0.7**
CCB	**Clear Creek Bu**	**66.22**	**336**	*e*P		**P**		**06 45 19.9**	**-1.3**
	comp=Z,14nm,0.6s								
WRH	**Wood River Hil**	**66.27**	**336**	*e*P		**P**		**06 45 19.9**	**-1.6**
	comp=Z,13nm,0.8s								
COLA	**College**	**66.33**	**336**	*e*P		**P**		**06 45 20.9**	**-0.9**
COLA					pmax	pmax			
	comp=Z,29nm,0.6s								
COLA	**College**	**66.33**	**336**	*e*P		**P**		**06 45 20.9**	**-0.9**
	comp=Z,29nm,0.6s								
MCK	**McKinley**	**66.35**	**335**	*e*P		**P**		**06 45 21.4**	**-0.6**
MCK	**McKinley**	**66.35**	**335**	*e*P		**P**		**06 45 21.4**	**-0.6**
SUA	**Susitna One**	**66.39**	**332**	*e*P		**P**		**06 45 21.9**	**-0.5**
	comp=Z,23nm,0.6s								
OHAK	**Old Harbor**	**66.48**	**327**	*e*P		**P**		**06 45 22.4**	**-0.4**
	comp=Z,60nm,1.5s								
MDM	**Murphy Dome**	**66.51**	**336**	*e*P		**P**		**06 45 22.0**	**-1.0**
	comp=Z,87nm,2.0s								
SUMG	**Summit**	**66.52**	**14**	*i* P		**P**		**06 45 22.3**	**-1.1**
	comp=Z,118nm,1.7s								
	comp=Z,2μm,19.0s								
SUMG	**Summit**	**66.52**	**14**	*i* P		**P**		**06 45 22.3**	**-1.1**
SUMG					pmax	pmax			
	comp=Z,120nm,1.7s								
SUMG					MLR	MLR			
	comp=Z,2μm,19.0s								
SUMG	**Summit**	**66.52**	**14**	*e*P		**P**		**06 45 22.0**	**-1.4**
	comp=Z,103nm,1.6s								
BWN	**Browne**	**66.72**	**335**	*e*P		**P**		**06 45 24.0**	**-0.4**
TRF	**Thorofare Moun**	**66.82**	**334**	*e*P		**P**		**06 45 24.1**	**-1.1**
PMOZ	**Porto Moniz, M**	**66.84**	**60**	*e*LR		LR		07 06 11.7	
	comp=Z,480nm,20.0s								
SPU	**Mount Spurr**	**66.91**	**332**	*e*P		**P**		**06 45 24.9**	**-0.7**
KTH	**Kantishna Hill**	**67.13**	**334**	*e*P		**P**		**06 45 25.6**	**-1.4**
BPAW	**Bear Paw Mtn.**	**67.33**	**335**	*e*P		**P**		**06 45 26.9**	**-1.3**
	comp=Z,29nm,0.7s								
PPLA	**Purkeypile**	**67.47**	**333**	*e*P		**P**		**06 45 28.2**	**-1.1**
	comp=Z,24nm,0.9s								
KIP	**Kipapa**	**67.53**	**288**	*e*P		**P**		**06 45 30.8**	**+0.5**
KIP					pmax	pmax			
	comp=Z,350nm,1.8s								
KIP	**Kipapa**	**67.53**	**288**	*e*P		**P**		**06 45 30.8**	**+0.5**
	comp=Z,350nm,1.8s								
MLY	**Manley**	**67.53**	**336**	*e*P		**P**		**06 45 28.5**	**-1.1**
	comp=Z,43nm,0.7s								
CAST	**Castle Rocks**	**67.58**	**334**	*e*P		**P**		**06 45 28.1**	**-1.7**
COLD	**Coldfoot**	**68.09**	**338**	*e*P		**P**		**06 45 33.0**	**+0.1**
	comp=Z,25nm,0.8s								
PPT	**Papeete**	**68.18**	**245**	LR		LR		07 07 09.7	
	comp=Z,2μm,20.6s,baz=81,slow=28								
PPT2	**Papeete2**	**68.18**	**245**	*e*S		**S**		**06 54 34.1**	**+3.8**
	comp=Z,2μm,29.5s								
PPT2				*e*SS		**SS**		**06 59 01.2**	**+6.7**
	comp=Z,928nm,28.0s								
PPT2				*e*LR		LR		07 06 04.8	
	comp=Z,6μm,25.8s,baz=61								
CHGN	**Chignik**	**69.06**	**326**	*e*P		**P**		**06 45 38.2**	**-0.9**
TT01	**Tatalina**	**69.16**	**333**	*e*P		**P**		**06 45 37.6**	**-2.1**
TTA	**Tatalina**	**69.17**	**333**	*e*P		**P**		**06 45 39.2**	**-0.6**
TTA					pmax	pmax			
	comp=Z,12nm,0.9s								
TTA	**Tatalina**	**69.17**	**333**	*e*P		**P**		**06 45 39.2**	**-0.6**
	comp=Z,12nm,0.9s								
TBI	**Tubuai**	**70.30**	**239**	*e*S		**S**		**06 54 59.3**	**+4.4**
	comp=Z,1μm,28.5s								
TBI	**Tubuai**	**70.30**	**239**	*e*LR		LR		07 07 16.6	
	comp=Z,4μm,26.2s,baz=60								
TBI	**Tubuai**	**70.30**	**239**	*e*T		T		08 01 47.3	
	comp=Z,34nm,0.3s								
VAL	**Valentia**	**72.39**	**39**	*e*P		**P**		**06 45 57.4**	**-2.0**
DAG	**Danmarks Havn**	**73.08**	**13**	*i* P		**P**		**06 46 01.3**	**-1.8**
	comp=Z,7.3nm,0.6s								
DAG				*i*				06 46 17.8	
	comp=Z,3μm,20.0s								
DAG	**Danmarks Havn**	**73.08**	**13**	*e*P		**P**		**06 46 01.3**	**-1.8**
DAG				*i*				06 46 17.8	
DAG					pmax	pmax			
	comp=Z,5.0nm,0.6s								
DAG					MLR	MLR			
	comp=Z,3μm,20.0s								
PMAFR	**Mafra**	**73.12**	**53**	*e*P		**P**		**06 46 04.4**	**+0.3**
	comp=Z,87nm,1.1s								
PMAFR				*e*S		S		06 55 17.1	-10
LIS	**Lisbon**	**73.24**	**53**	*e*P		**P**		**06 46 05.8**	**+1.0**
LIS					AMS	AMS		07 15 53.2	
	comp=E,1μm,20.8s								
LIS	**Lisbon**	**73.24**	**53**	*e*P		**P**		**06 46 05.8**	**+1.0**
UNV	**Unalaska Valle**	**73.48**	**323**	*e*P		**P**		**06 46 06.0**	**+0.2**
PFVI	**Vila Bisbo**	**73.58**	**55**	*e*P		**P**		**06 46 08.1**	**+1.3**
	comp=E,58nm,1.3s								
PCAS	**Casmilo, Conde**	**73.68**	**52**	*e*P		**P**		**06 46 08.8**	**+1.4**
	comp=E,44nm,1.6s								
PCAS				*e*S		**SKiKP**		**06 55 32.1**	**+0.6**
MORF	**Marmelete**	**73.71**	**55**	*e*P		**P**		**06 46 08.4**	**+0.8**
MORF				*e*S		**S**		**06 55 35.2**	**+1.3**
MORF					AMS	AMS		07 13 37.0	
	comp=Z,2μm,20.8s								
MORF	**Marmelete**	**73.71**	**55**	*e*P		**P**		**06 46 10.7**	**+3.0**
	comp=Z,35nm,1.8s								
MORF				*e*S		**S**		**06 55 38.3**	**+4.5**
MORF	**Marmelete**	**73.71**	**55**	*e*P		**P**		**06 46 08.4**	**+0.8**
MORF				*e*S		**S**		**06 55 35.2**	**+1.3**
PNCL	**Nicolau / Gran**	**73.76**	**54**	*e*P		**P**		**06 46 09.3**	**+1.5**
	comp=Z,23nm,1.4s								
PNCL				*e*S		**SKiKP**		**06 55 30.0**	**-1.7**
PGAV	**Gavieira, Arco**	**73.77**	**50**	*e*P		**P**		**06 46 09.3**	**+1.3**
	comp=Z,20nm,1.4s								
PGAV				*e*S		SKiKP		06 55 04.9	-27
PGAV	**Gavieira, Arco**	**73.77**	**50**	*e*LR		LR		07 09 29.2	
	comp=Z,1μm,20.0s								
MESJ	**Messejana**	**74.02**	**54**	*e*P		**P**		**06 46 09.9**	**+0.5**
MESJ				*e*S		**S**		**06 55 38.6**	**+1.4**
MESJ					AMS	AMS		07 17 16.7	
	comp=Z,943nm,22.3s								
MESJ	**Messejana**	**74.02**	**54**	*e*P		**P**		**06 46 09.9**	**+0.5**
	comp=Z,19nm,1.9s								
MESJ	**Messejana**	**74.02**	**54**	*e*P		**P**		**06 46 09.9**	**+0.5**
MESJ				*e*S		**S**		**06 55 38.6**	**+1.4**
EVO	**Evora**	**74.14**	**53**	*e*P		**P**		**06 46 11.1**	**+1.0**
	comp=Z,14nm,1.2s								
POLO	**Lagas de Olo**	**74.15**	**50**	*e*P		**P**		**06 46 10.7**	**+0.5**
	comp=Z,10nm,1.7s								
POLO				*e*S		**S**		**06 55 40.4**	**+1.7**
PCVE	**Castro Verde**	**74.17**	**54**	*e*P		**P**		**06 46 10.8**	**+0.5**
	comp=Z,21nm,1.1s								
PCVE				*e*S		**S**		**06 55 40.2**	**+1.2**
PBEJ	**Beja**	**74.28**	**54**	*e*P		**P**		**06 46 10.5**	**-0.4**
	comp=Z,26nm,1.8s								
PBDV	**Barranco-do-Ve**	**74.28**	**55**	*e*P		**P**		**06 46 11.6**	**+0.6**
	comp=Z,70nm,1.7s								
PVAQ	**Vaqueiros**	**74.44**	**54**	*e*P		P		06 46 06.3	-5.6
	comp=Z,45nm,1.6s								
PVAQ				*e*S		**S**		**06 55 37.9**	**-4.1**
PVAQ	**Vaqueiros**	**74.44**	**54**	*e*LR		LR		07 09 24.5	
	comp=Z,1μm,22.0s								
PMRV	**Marv??o**	**74.56**	**52**	*e*P		**P**		**06 46 13.8**	**+1.2**
	comp=Z,10nm,1.1s								
PMRV				*e*S		**S**		**06 55 44.1**	**+0.8**
PMRV	**Marv??o**	**74.56**	**52**	*e*LR		LR		07 09 27.3	
	comp=Z,1μm,22.0s								
MVO	**Moncorvo**	**74.73**	**51**	*e*P		**P**		**06 46 14.5**	**+0.9**
	comp=Z,17nm,1.7s								
MVO				*e*S		**S**		**06 55 45.2**	**-0.1**
MVO	**Moncorvo**	**74.73**	**51**	*e*LR		LR		07 09 48.5	
	comp=Z,892nm,20.0s								
PBRG	**Braganca**	**74.91**	**50**	*e*P		**P**		**06 46 16.3**	**+1.7**
	comp=Z,12nm,1.3s								
PBAR	**Barrancos**	**74.92**	**54**	*e*P		**P**		**06 46 16.2**	**+1.6**
	comp=Z,39nm,1.6s								
PBAR				*e*S		**S**		**06 55 46.9**	**-0.4**
PAB	**San Pablo**	**76.90**	**52**	*e*P		**P**		**06 46 27.0**	**+1.0**
PAB				*e*				06 46 36.9	
PAB					pmax	pmax			
	comp=Z,18nm,1.3s								
PAB	**San Pablo**	**76.90**	**52**	*e*P		**P**		**06 46 27.0**	**+1.0**
	comp=Z,18nm,1.3s								
PAB				*e*PcP		**PcP**		**06 46 36.9**	**0.0**
ESDC	**Sonseca Array**	**77.19**	**52**	P		**P**		**06 46 25.4**	**-2.2**
	comp=Z,3.0nm,0.6s,baz=286,slow=5.6,SNR=23								
ESDC					pP		**pP**	**06 46 45.0**	**-0.2**
	comp=Z,5.3nm,0.8s,baz=289,slow=5.9,SNR=5.7								
ESDC					LR	LR		07 16 39.1	
	comp=Z,906nm,19.8s,baz=280,slow=33								
ESLA	**Sonseca Array**	**77.19**	**52**	*e*P		**P**		**06 46 26.0**	**-1.6**
ES19	**SONSECA Array**	**77.23**	**52**	*e*P		**P**		**06 46 25.6**	**-2.2**
GRR	**Gorron**	**78.54**	**43**	*e*P		**P**		**06 46 31.9**	**-2.9**
GRR					pmax	pmax			
	comp=Z,9.0nm,0.7s								
FLN	**La Foliniere**	**78.75**	**42**	*e*P		**P**		**06 46 33.8**	**-2.1**
FLN					pmax	pmax			
	comp=Z,14nm,1.0s								
LDF	**La Druitiere**	**79.00**	**43**	*e*P		**P**		**06 46 35.8**	**-1.5**
LDF					pmax	pmax			
	comp=Z,6.0nm,0.8s								
KBS	**Kingsbay**	**79.59**	**11**	*e*P		**P**		**06 46 40.3**	**+0.3**
KBS	**Kingsbay**	**79.59**	**11**	*e*P		**P**		**06 46 40.3**	**+0.3**
EPF	**Esparros**	**80.01**	**48**	*e*P		**P**		**06 46 42.6**	**-0.4**
EPF					pmax	pmax			
	comp=Z,5.0nm,0.8s								
LFF	**La Frestale**	**80.04**	**46**	*e*P		**P**		**06 46 40.2**	**-2.9**
LFF					pmax	pmax			
	comp=Z,15nm,1.2s								
SPA0	**Spitsbergen Ar**	**80.63**	**12**	*e*P		**P**		**06 46 45.2**	**-0.4**
HSPB	**Hornsund (broa**	**80.78**	**13**	*e*P		**P**		**06 46 47.0**	**+0.6**
CAF	**Calviac**	**80.97**	**46**	*e*P		**P**		**06 46 49.6**	**+1.5**
CAF					pmax	pmax			
	comp=Z,4.0nm,0.7s								
BGF	**Bois d'Agland**	**81.27**	**44**	*e*P		**P**		**06 46 47.0**	**-2.6**
BGF					pmax	pmax			
	comp=Z,7.0nm,0.8s								
MTLF	**Montolieu**	**81.32**	**48**	*e*P		**P**		**06 46 50.0**	**0.0**
MTLF					pmax	pmax			
	comp=Z,15nm,1.5s								
DBIC	**Dimbokro**	**81.45**	**85**	P		**P**		**06 46 49.4**	**-1.8**
	comp=Z,7.3nm,1.1s,baz=216,slow=6.7,SNR=3.2								
DBIC					LR	LR		07 19 41.0	
	comp=Z,1μm,21.4s,baz=264,slow=33								
AVF	**Avril sur Loir**	**81.57**	**44**	*e*P		**P**		**06 46 50.9**	**-0.3**
AVF					pmax	pmax			
	comp=Z,3.0nm,0.8s								
LOR	**Lormes**	**81.84**	**43**	*e*P		**P**		**06 46 50.7**	**-1.9**
LOR					pmax	pmax			
	comp=Z,4.0nm,0.9s								
SMF	**Signal de Mont**	**81.93**	**44**	*e*P		**P**		**06 46 52.2**	**-0.9**
SMF					pmax	pmax			
	comp=Z,3.0nm,0.6s								
VIVF	**Saint-Julien-l**	**82.81**	**46**	*e*P		**P**		**06 46 55.3**	**-2.5**
VIVF					pmax	pmax			
	comp=Z,6.0nm,0.8s								
THEF	**They Montfort**	**83.08**	**42**	*e*P		P		06 46 51.5	-7.6
NB2	**NORSAR Subarra**	**83.32**	**29**	P		**P**		**06 46 58.0**	**-2.0**
	comp=Z,5.5nm,0.8s,baz=284,slow=5.1								
NB2	**NORSAR Subarra**	**83.32**	**29**	*e*P		**P**		**06 46 57.4**	**-2.7**
NB2					pmax	pmax			
	comp=Z,5.0nm,0.8s								
NOA	**NORSAR Array B**	**83.32**	**29**	P		**P**		**06 46 58.1**	**-2.0**
	comp=Z,4.2nm,0.7s,baz=286,slow=4.9,SNR=21								
NOA					LR	LR		07 22 35.6	
	comp=Z,639nm,20.4s,baz=285,slow=35								
LOMF	**Lomont**	**83.81**	**43**	*e*P		P		06 46 54.6	-8.3
ECH	**Echery**	**83.85**	**42**	*e*P		P		06 46 55.2	-7.8
CDF	**Champ du Feu**	**83.89**	**42**	*e*P		**P**		**06 47 00.7**	**-2.6**
CDF					pmax	pmax			
	comp=Z,4.0nm,0.8s								
MOF	**Molkenrain**	**83.91**	**42**	*e*P		P		06 46 55.2	-8.2
LANF	**Langenberg**	**84

ABTA Abfaltersbach 87.72 43 *i* P **P 06 47 20.4 -1.9**
comp=Z,5.2nm,0.9s
KHC Kasperske Hory 87.75 40 *e*P **P 06 47 19.0 -3.3**
KHC *e*pP **pP 06 47 40.0 -0.2**
KHC *e*SKS **SKSac 06 57 45.3 +0.2**
KHC *e*x x 06 58 59.3
KHC AMS AMS 07 20 50.0
comp=Z,2µm,23.5s
KHC Kasperske Hory 87.75 40 *e*P **P 06 47 19.0 -3.3**
KHC *e**PP **pP 06 47 40.0 -0.2**
KHC *e* 06 57 45.3
KHC *e* 06 58 59.3
KHC MLR MLR
comp=Z,2µm,23.5s
KHC Kasperske Hory 87.75 40 *e*P **P 06 47 20.3 -2.0**
KHC *e*pP **pP 06 47 39.1 -1.1**
GERES GERESS Array B 87.91 40 P **P 06 47 20.9 -2.3**
comp=Z,2.7nm,0.7s,baz=305,slow=4.7,SNR=6.0
GERES pP **pP 06 47 40.4 -0.7**
comp=Z,1.7nm,0.7s,baz=298,slow=2.1,SNR=3.4
GERES LR LR 07 22 06.2
comp=Z,1µm,21.7s,baz=286,slow=32
PVCC Panska Ves 87.96 39 *e*P **P 06 47 19.6 -3.6**
PVCC AMS AMS 07 26 40.0
comp=Z,700nm,19.2s
PVCC Panska Ves 87.96 39 *e*P **P 06 47 19.6 -3.6**
PVCC MLR MLR
comp=Z,700nm,19.2s
PRU Pruhonice 88.10 39 *e*P **P 06 47 23.0 -0.9**
PRU *e*SKS **SKSac 06 57 46.2 -0.9**
PRU AMS AMS 07 21 00.0
comp=Z,2µm,22.1s
PRU Pruhonice 88.10 39 *e*P **P 06 47 23.0 -0.9**
PRU *e* 06 57 46.2
PRU MLR MLR
comp=Z,2µm,22.1s
KBA Koelnbreinsper 88.18 42 *i* P **P 06 47 24.0 -0.6**
comp=Z,4.5nm,0.7s
KEST Kesra 88.25 54 P **P 06 47 24.1 -0.9**
comp=Z,3.3nm,0.7s,baz=261,slow=9.2,SNR=6.4
KEST LR LR 07 21 54.8
comp=Z,438nm,21.6s,baz=236,slow=32
KEST Kesra 88.25 54 *e*P **P 06 47 28.1 +3.0**
GOPC GO Pecny, Ondr 88.28 39 *e*P **P 06 47 23.3 -1.5**
GOPC AMS AMS 07 21 00.0
comp=Z,2µm,23.6s
GOPC GO Pecny, Ondr 88.28 39 *e*P **P 06 47 23.3 -1.5**
GOPC MLR MLR
comp=Z,2µm,23.6s
MYKA Terra Mystica 88.50 43 *i* P **P 06 47 24.3 -1.7**
comp=Z,5.1nm,0.9s
MOA Molln 88.56 41 *i* P **P 06 47 23.9 -2.2**
comp=Z,4.2nm,0.8s
UPC Upice 88.84 38 *e*P **P 06 47 25.4 -2.0**
UPC AMS AMS 07 23 00.0
comp=Z,900nm,23.1s
UPC Upice 88.84 38 *e*P **P 06 47 25.4 -2.0**
UPC MLR MLR
comp=Z,900nm,23.1s
TREC Trest 88.90 40 *e*P **P 06 47 25.2 -2.5**
TREC AMS AMS 07 21 40.0
comp=Z,2µm,22.6s
TREC Trest 88.90 40 *e*P **P 06 47 25.2 -2.5**
TREC MLR MLR
comp=Z,2µm,22.6s
DPC Dobruska-Polom 89.08 38 *e*P **P 06 47 26.5 -2.1**
DPC AMS AMS 07 25 00.0
comp=Z,900nm,21.7s
DPC Dobruska-Polom 89.08 38 *e*P **P 06 47 26.5 -2.1**
DPC MLR MLR
comp=Z,900nm,21.7s
SOKA Soboth 89.41 42 *i* PcP **P 06 47 30.6 +0.3**
comp=Z,4.1nm,1.1s
ARSA Arzberg 89.55 42 *i* PcP **PcP 06 47 32.1 0.0**
comp=Z,1.7nm,0.8s
CONA Conrad Observa 89.56 41 *e*P **P 06 47 28.6 -2.4**
comp=Z,3.1nm,0.8s
APA Apatity 89.62 19⇑ *i*P **P 06 47 31.0 +0.3**
APA *i* S **S 06 58 14.0 -2.5**
APA *i* PS PS 06 59 46.0 +16
APA *i* SS **SS 07 04 07.0 -5.9**
APA pmax pmax
comp=Z,7.0nm,0.9s
APA MLR MLR
comp=Z,1µm,20.0s
FINES FINESS Array B 89.92 26 P **P 06 47 30.5 -1.7**
comp=Z,2.7nm,0.7s,baz=357,slow=4.0,SNR=7.8
FINES PP **PP 06 51 03.1 -2.0**
comp=Z,2.7nm,0.7s,baz=338,slow=4.1,SNR=4.7
FINES LR LR 07 25 38.7
comp=Z,665nm,21.4s,baz=296,slow=34
FINES FINESS Array B 89.92 26 P **P 06 47 30.5 -1.7**
FINES 06 51 03.1
FINES pmax pmax
comp=Z,3.0nm,0.7s
FINES pmax pmax
comp=Z,3.0nm,0.7s
OKC Ostrava-Krasne 90.36 39 AMS AMS 07 26 00.0
comp=Z,1µm,20.2s
VYHS Vyhne 91.25 40 *e*P P 06 47 44.8 +6.1
VYHS Vyhne 91.25 40 *e*P P 06 47 44.8 +6.1
SEY Seymchan 91.84 337 P **P 06 47 40.4 -0.7**
comp=Z,9.8nm,0.7s,baz=102,slow=5.3,SNR=27
SEY PP **PP 06 51 21.3 +1.0**
comp=Z,2.0nm,0.9s,baz=68,slow=12,SNR=3.4
TIXI Tiksi 92.54 349 P **P 06 47 42.3 -1.9**
comp=Z,7.9nm,0.7s,baz=26,slow=5.1,SNR=19
TIXI PP **PP 06 51 26.3 +0.8**
comp=Z,2.1nm,0.8s,baz=58,slow=6.2,SNR=3.6
TIXI Tiksi 92.54 349⇓ *i*P **P 06 47 42.4 -1.7**
TIXI pmax pmax
comp=Z,9.0nm,0.7s
TIXI Tiksi 92.54 349 *e*P **P 06 47 42.3 -1.9**
TIXI *e*pP **pP 06 47 57.2 -4.9**
TIXI PP **PP 06 51 26.3 +0.8**
KOLS Kolonicke sedl 93.20 38 *e*P P 06 47 56.9 +9.2
KOLS Kolonicke sedl 93.20 38 *e*P P 06 47 56.9 +9.2
PET Petropavlovsk 93.80 326 *e*P **P 06 47 47.2 -3.1**
PET *e* 06 51 35.3
PET *e* 06 58 20.8
PET *e*S S 06 58 45.5 -9.2
PET *e*SS SS 07 05 26.3 +13
PET pmax pmax
comp=Z,200nm,16.2s
PET pmax pmax
comp=Z,200nm,15.6s
PET pmax pmax
comp=Z,100nm,16.8s
PETK Petropavlovsk- 94.28 327 P **P 06 47 51.9 -0.6**
comp=Z,3.6nm,0.6s,baz=56,slow=12,SNR=11
PETK LR LR 07 31 43.5
comp=Z,246nm,20.9s,baz=49,slow=36
KLMR Klimovskoe 95.72 23 *e*P **P 06 47 56.5 -2.5**
KLMR *e* 06 51 47.2
KLMR pmax pmax
comp=Z,4.0nm,0.8s
AKASG Malin Array Be 96.48 35 PP PP 06 51 51.6 -5.2
comp=Z,1.1nm,0.6s,baz=294,slow=6.6,SNR=4.0
AKASG LR LR 07 30 59.8
comp=Z,994nm,19.4s,baz=295,slow=35
NRIK Noril'sk 98.25 2 LR LR 07 35 21.0
comp=Z,847nm,20.4s,baz=360,slow=37
QSPA South Pole Qui 102.51 180 *e*Pdif **Pdif 06 48 29.3 0.0**
comp=Z,10nm,0.6s
ANN Anapa 104.28 37 *e*P **Pdif 06 48 34.6 -3.0**
ANN *i* 06 52 51.0
ANN *e*SSS SSS 07 11 31.2
ANN pmax pmax
comp=Z,37nm,1.1s
ANN pmax pmax
comp=Z,23nm,1.1s
BRTR Keskin Array B 104.61 43 PKKPbc PKKPbc 07 04 24.1 -1.0
comp=Z,0.8nm,0.7s,baz=151,slow=5.3,SNR=4.3
ARU Arti 105.71 19 PKiKP **PKiKP 06 52 57.2 +0.9**
comp=Z,1.6nm,0.3s,baz=314,slow=4.8,SNR=4.6
ARU Arti 105.71 19 *e*PKPdf **PKiKP 06 52 56.7 +0.4**
KIV Kislovodsk 107.82 35 *e*P **Pdif 06 48 49.9 -3.6**
KIV *e* 06 53 18.7
KIV *e*PS **PS 07 02 42.9 -3.4**
KIV *e*SS SS 07 08 27.2 -1.6
KIV pmax pmax
comp=Z,7.0nm,1.0s
KIV MLR MLR
comp=Z,406nm,20.0s
KBZ Khabaz 108.08 35 PKiKP **PKiKP 06 53 01.1 0.0**
comp=Z,0.5nm,0.5s,baz=351,slow=9.6,SNR=3.6
DZM Mont Dzumac 109.32 251 *e*PP PP 06 53 39.3 +4.9
comp=Z,141nm,28.9s
DZM *e*SP SP 07 02 53.6 -1.3
comp=Z,364nm,29.9s
DZM *e*SS **SS 07 08 58.2 +6.7**
comp=Z,404nm,24.6s
DZM Mont Dzumac 109.32 251 *e*LR LR 07 25 15.3
comp=Z,1µm,22.8s
KLR Kul'dur 109.43 334 PKiKP **PKiKP 06 53 02.8 -0.6**
comp=Z,1.1nm,0.6s,baz=125,slow=7.6,SNR=4.2
AKTO Aktyubinsk 110.42 23 PP PP 06 53 39.6 -0.8
comp=Z,2.7nm,0.7s,baz=308,slow=4.5,SNR=7.6
AKTO PKKPab **PKKPab 07 04 14.7 -3.8**
comp=Z,1.2nm,0.6s,baz=137,slow=4.1,SNR=3.9
EIL Elat 110.48 52 PKKP **PKKPdf 07 04 23.6 +0.6**
comp=Z,4.5nm,0.7s,baz=37,slow=10,SNR=3.6
BVAR Borovoye Array 112.00 14 PKiKP **PKiKP 06 53 06.8 -1.4**
comp=Z,0.9nm,0.6s,baz=232,slow=1.7,SNR=5.8
BVAR PP **PP 06 53 43.9 -7.6**
comp=Z,2.0nm,0.7s,baz=319,slow=5.9,SNR=5.5
USRK Ussuriysk Ar. 113.07 330 PKiKP **PKiKP 06 53 10.6 0.0**
comp=Z,2.0nm,0.7s,baz=274,slow=0.9,SNR=5.5
ZALV Zalesovo Beam 113.45 5 PKiKP **PKiKP 06 53 08.9 -2.0**
comp=Z,3.2nm,0.5s,baz=306,slow=1.7,SNR=18
ZALV PP **PP 06 54 00.2 -1.5**
comp=Z,6.7nm,0.7s,baz=350,slow=7.1,SNR=13
ZALV PKKPab **PKKPbc 07 04 00.2 +2.9**
comp=Z,1.1nm,0.6s,baz=188,slow=2.5,SNR=4.2
SYO Syowa Base 114.43 162‖ *e*X **PP 06 54 12.4 +3.2**
MJAR Matsushiro Arr 114.90 321 PKP PKPdf 06 53 13.4 -0.8
comp=Z,3.0nm,0.6s,baz=104,slow=0.9,SNR=14
MAJO Matsushiro 114.90 321*c i*PKiKP PKPdf 06 53 14.7 +0.4
MAT Matsushiro 114.90 321 PKP PKPdf 06 53 13.5 -0.8
BOSA Boshof 115.80 116 PKP **PKPdf 06 53 15.8 -0.5**
comp=Z,15nm,0.8s,baz=262,slow=1.5,SNR=18
BOSA PKKPbc **PKKPbc 07 03 49.0 +0.5**
comp=Z,4.5nm,0.8s,baz=135,slow=3.1,SNR=5.8
KURK Kurchatov 115.86 10 PKiKP **PKPdf 06 53 14.2 -1.5**
KURK 07 03 50.0
KURK pmax pmax
comp=Z,2.0nm,0.6s
KURK pmax pmax
comp=Z,1.0nm,0.6s
KURK Kurchatov 115.86 10 PKP **PKPdf 06 53 14.2 -1.5**
KURK PP PP 06 54 07.0 -12
KURK PKKPbc **PKKPbc 07 03 50.0 +1.0**
KURK PKKP **PKKPdf 07 04 09.2 -3.8**
KURBB Kurchatov Arra 115.93 10 PKP **PKPdf 06 53 14.2 -1.7**
comp=Z,2.2nm,0.6s,baz=337,slow=1.9,SNR=20
KURBB PP PP 06 54 07.0 -12
comp=Z,1.3nm,0.7s,baz=349,slow=5.9,SNR=6.7
KURBB PKKPbc **PKKPbc 07 03 50.0 +1.2**
comp=Z,0.7nm,0.6s,baz=163,slow=3.5,SNR=5.3
KURBB PKKP **PKKPdf 07 04 09.2 -3.7**
comp=Z,1.0nm,0.9s,baz=179,slow=3.1,SNR=4.4
CN2 Changchun 116.38 334 *e*PKP **PKPdf 06 53 14.9 -2.0**
CN2 PP **PP 06 54 25.9 +3.1**
CN2 AMB AMB
comp=Z,100nm,6.0s
CN2 LR LR
comp=Z,300nm,25.0s
CN2 LR LR
comp=Z,400nm,25.0s
CN2 LR LR
comp=Z,300nm,25.0s
SONM Songino Array 118.63 349 PKP **PKPdf 06 53 19.9 -1.4**
comp=Z,1.2nm,0.5s,baz=349,slow=2.9,SNR=4.2
SONM PKKPbc **PKKPbc 07 03 34.9 -4.5**
comp=Z,2.0nm,1.0s,baz=209,slow=2.6,SNR=3.6
KSRS Korea Array 120.16 328 PKP **PKPdf 06 53 23.7 -0.6**
comp=Z,18nm,0.6s,baz=9.0,slow=1.8,SNR=54
KSAR Wonju Array Be 120.19 328 PKiKP **PKPdf 06 53 23.7 -0.7**
KSAR Wonju Array Be 120.19 328 PKP **PKPdf 06 53 23.7 -0.7**
MKAR Makanchi Array 120.23 8 PKP **PKPdf 06 53 21.6 -2.7**
comp=Z,1.6nm,0.7s,baz=346,slow=2.1,SNR=12
MKAR PP PP 06 54 31.4 -18
comp=Z,1.3nm,0.6s,baz=8.5,slow=2.9,SNR=3.7
MKAR PKKPbc **PKKPbc 07 03 29.5 -3.8**
comp=Z,0.4nm,0.7s,baz=175,slow=4.0,SNR=4.6
GEYT Alibeck 120.35 31 PKP **PKPdf 06 53 23.0 -1.8**
comp=Z,6.1nm,0.6s,baz=278,slow=4.2,SNR=11
MAW Mawson 121.64 167 PKP **PKPdf 06 53 25.7 -0.5**
comp=Z,6.3nm,0.7s,baz=242,slow=7.2,SNR=6.8
JNU Nakatsue 121.66 322 PKP **PKPdf 06 53 26.7 -0.7**
comp=Z,7.1nm,0.7s,baz=311,slow=13,SNR=4.1
AAK Ala-Archa 122.66 16 PKP **PKPdf 06 53 29.1 -0.2**
comp=Z,2.6nm,0.5s,baz=147,slow=1.6,SNR=4.0
TKM2 Tokmak 2 122.68 15 *e*PKiKP **PKPdf 06 53 29.4 0.0**
TKM2 Tokmak 2 122.68 15 *e*PKPdf **PKPdf 06 53 29.4 0.0**
BJI Beijing 123.24 338 PKP **PKPdf 06 53 27.0 -3.2**
BJI sPKP 06 53 52.8
BJI PP **PP 06 55 10.2 +0.4**
BJI LR LR
comp=Z,790nm,29.5s
BJI LR LR
comp=Z,430nm,23.3s
BJI LR LR
comp=Z,2µm,29.5s
BJT Baijiatuao 123.26 338 *e*PKiKP **PKPdf 06 53 27.7 -2.6**
BJT Baijiatuao 123.26 338 *e*PKPdf **PKPdf 06 53 27.6 -2.6**
WMQ Urumqi 123.74 4 *e*PKP **PKPdf 06 53 27.4 -3.8**
WMQ PP **PP 06 55 15.2 +2.2**
WMQ SS SS 07 12 03.0 +7.3
WMQ AMB AMB
comp=Z,260nm,5.7s
WMQ LR LR
comp=Z,970nm,17.0s
WMQ LR LR
comp=Z,630nm,17.7s
WMQ LR LR
comp=Z,1µm,21.6s
HHC Hu-ho-hao-te 124.02 343 *e*PKP **PKPdf 06 53 27.0 -4.8**
HHC PP **PP 06 55 16.2 +1.1**
HHC AMB AMB
comp=Z,120nm,11.1s
HHC LR LR
comp=Z,470nm,24.7s
HHC LR LR
comp=Z,510nm,20.4s
HHC LR LR
comp=Z,420nm,21.0s
KMBO Kilima Mbogo 124.12 83 PKP **PKPdf 06 53 33.2 +0.3**
comp=Z,0.5nm,0.3s,baz=72,slow=9.6,SNR=4.6
KSH Kashi 125.97 16 *e*PKP **PKPdf 06 53 35.9 +0.2**
KSH SKS **SKSdf 07 00 36.4 -5.9**
KSH SKKS **SKKSac 07 02 21.4 -0.6**
KSH AMB AMB
comp=Z,96nm,5.7s
KSH LR LR
comp=Z,580nm,16.2s
KSH LR LR
comp=Z,520nm,15.7s
KSH LR LR
comp=Z,1µm,23.2s
TIA Tai'an 126.22 335 *e*PKP **PKPdf 06 53 35.0 -1.0**
GTA Gaotai 127.87 353 *e*PKP **PKPdf 06 53 39.8 +0.5**
GTA PP **PP 06 55 47.0 +6.5**
GTA PKS **PKSdf 06 57 14.9 -1.1**
GTA SKS **SKSdf 07 00 41.5 -4.3**
GTA SKKS **SKKSac 07 02 27.2 -6.7**
GTA SS **SS 07 12 46.5 -1.1**
GTA AMB AMB
comp=Z,83nm,7.1s
GTA LR LR
comp=Z,420nm,30.2s
GTA LR LR
comp=Z,310nm,23.8s
GTA LR LR
comp=Z,890nm,27.6s
CTA Charters Tower 128.03 254 PKP **PKPdf 06 53 40.4 +0.6**
comp=Z,5.5nm,0.7s,baz=124,slow=3.4,SNR=7.5
CTA SKPbc **SKiKP 06 57 00.6 -10**
comp=Z,4.4nm,0.8s,baz=90,slow=3.0,SNR=3.4
CTAO Charters Tower 128.03 254 *e*PKiKP **PKPdf 06 53 40.5 +0.6**
CTAO Charters Tower 128.03 254 *e*PKPdf **PKPdf 06 53 40.5 +0.7**
SSE Sheshan 128.59 328 PKP **PKPdf 06 53 38.6 -2.1**
SSE PP **PP 06 55 50.9 +5.2**
SSE SS SS 07 12 58.6 +1.2
SSE AMB AMB
comp=Z,56nm,12.0s
SSE LR LR
comp=Z,350nm,25.9s
SSE LR LR
comp=Z,320nm,25.4s
SSE LR LR
comp=Z,520nm,24.1s
LZH Lanzhou 130.46 348 *e*PKP **PKPdf 06 53 44.6 +0.3**
LZH sPKP 06 54 12.2
LZH PP **PP 06 56 01.4 +3.9**
LZH *e*SKKS 07 02 46.0
LZH AMB AMB
comp=Z,120nm,4.5s
LZH LR LR
comp=Z,770nm,19.5s
LZH LR LR
comp=Z,540nm,18.5s
LZH LR LR
comp=Z,1µm,20.9s
STKA Stephens Creek 131.08 239 PKP **PKPdf 06 53 45.5 +0.1**
comp=Z,4.7nm,0.6s,baz=83,slow=2.4,SNR=8.4
XAN Xi'an 131.10 342 PKP **PKPdf 06 53 45.7 +0.2**
XAN PKS **PKSdf 06 57 20.8 -1.3**
XAN SKS **SKSdf 07 00 52.1 +0.3**
XAN AMB AMB
comp=Z,120nm,12.2s
XAN LR LR
comp=Z,700nm,22.6s
XAN LR LR
comp=Z,830nm,23.5s
XAN LR LR
comp=Z,900nm,23.6s
WSAR Wadi Sarin 131.40 43 SKPbc **SKPbc 06 57 04.7 -1.3**
comp=Z,8.7nm,0.8s,baz=302,slow=2.9,SNR=6.7
WHN Wuhan 132.27 334 PKP **PKPdf 06 53 48.4 +0.7**
WHN PP **PP 06 56 10.0 +0.6**
WHN LR LR
comp=Z,1µm,18.7s
WHN LR LR
comp=Z,2µm,27.3s
WHN LR LR
comp=Z,2µm,26.5s
ENH Enshi 134.39 339 *e*PKPdf **PKPdf 06 53 51.2 -0.6**
SSLB Suanglung 134.40 322 *e*PKPdf **PKPdf 06 53 51.6 -0.3**
QZH Quanzhou 134.87 326 PKP **PKPdf 06 53 46.2 -6.5**
QZH LR LR
comp=Z,870nm,19.0s
QZH LR LR
comp=Z,2µm,28.1s
QZH LR LR
comp=Z,1µm,21.6s
CD2 Chengdu 135.46 346 PKP **PKPdf 06 53 52.0 -1.8**
CD2 sPKP 06 54 17.9
CD2 PP **PP 06 56 28.8 -0.6**
CD2 SKS **SKSdf 07 00 57.1 -2.5**
CD2 SKKS **SKKSac 07 03 16.7 -3.9**
CD2 SS **SS 07 14 20.5 +0.3**
CD2 AMB AMB
comp=Z,240nm,7.5s
CD2 LR LR
comp=Z,1µm,18.9s
CD2 LR LR
comp=Z,810nm,20.5s
CD2 LR LR
comp=Z,1µm,23.6s
ABPO Ambohimpanom 136.07 104 *i* PKiKP **PKPdf 06 53 59.5 +4.2**
LSA Lhasa 137.98 2 PKP **PKPdf 06 54 00.4 +1.4**
LSA Lhasa 137.98 2 *e*PKiKP **PKPdf 06 54 00.2 +1.2**
LSA Lhasa 137.98 2 *e*PKPdf **PKPdf 06 54 00.2 +1.2**
PYUN Piuhan 138.56 13 *e*P PKPpre 06 53 53.6
comp=Z,12nm,0.6s
GYA Guiyang 138.85 340 Pdif **Pdif 06 51 10.2 -1.7**
GYA PKP **PKPdf 06 53 59.8 -0.4**
GYA sPKP 06 54 25.0
GYA PP **PP 06 56 55.5 +4.7**
GYA SKKS 07 03 38.4
GYA SS **SS 07 15 01.2 +0.3**
GYA AMB AMB
comp=Z,180nm,7.8s
GYA LR LR
comp=Z,220nm,20.8s
GYA LR LR
comp=Z,180nm,21.0s
GYA LR LR
comp=Z,200nm,21.3s
GKN Gorkha 138.98 11 *e*P PKPpre 06 53 53.2
comp=Z,17nm,0.6s
KOLN Koldanda 139.01 12 *e*P PKPpre 06 53 54.3
comp=Z,7.8nm,0.5s
WRAB Tennant Creek 139.22 254*c e*PKiKP **PKPdf 06 54 00.4 -0.5**
WRAB Tennant Creek 139.22 254 *e*PKPdf **PKPdf 06 54 01.3 +0.4**
WRA Warramunga Arr 139.23 254 PKiKP PKPpre 06 53 52.3
comp=Z,3.1nm,0.7s,baz=100,slow=3.2,SNR=37
WRA PKP **PKPdf 06 54 01.1 +0.2**
comp=Z,23nm,0.7s,baz=93,slow=2.2,SNR=61
WRA pPKP pPKPdf 06 54 17.7 -1.8
comp=Z,14nm,0.7s,baz=88,slow=1.9,SNR=5.3
WRA SKPab **SKPab 06 57 38.7 -2.2**
comp=Z,2.4nm,0.9s,baz=90,slow=3.3,SNR=6.1
ASAR Alice Springs 139.24 248 PKhKP PKPpre 06 53 51.3
comp=Z,3.0nm,0.6s,baz=102,slow=3.0,SNR=23
ASAR PKP **PKPdf 06 54 01.5 +0.7**
comp=Z,14nm,0.7s,baz=94,slow=1.6,SNR=36
ASAR SKPbc **SKiKP 06 57 35.3 +1.4**
comp=Z,2.6nm,0.8s,baz=103,slow=2.7,SNR=6.5
GUN Gumba 139.28 9 *e*P PKPpre 06 53 54.6
comp=Z,30nm,0.6s
KKN Kakani 139.30 10 *e*P PKPpre 06 53 53.9
comp=Z,12nm,0.6s
PKIN Phulchoki 139.53 10 *e*P PKPpre 06 53 53.4
comp=Z,7.4nm,0.7s
RAMN Ramite 140.33 8 *e*P PKPpre 06 53 54.0
comp=Z,7.9nm,0.5s
KMI Kunming 141.25 345 PKP **PKPdf 06 54 03.5 -1.2**
KMI sPKP 06 54 29.8
KMI PP **PP 06 57 06.9 +1.3**
KMI SKKS 07 03 51.8
KMI SS **SS 07 15 30.0 +1.0**
KMI AMB AMB
comp=Z,140nm,5.4s
KMI LR LR
comp=Z,520nm,26.3s
KMI LR LR
comp=Z,490nm,23.0s
KMI LR LR
comp=Z,860nm,26.6s
QIZ Qiongzhong 144.26 331 PKP **PKPab 06 54 07.5 -0.3**
QIZ PP **PP 06 57 24.3 +0.4**
QIZ SS SS 07 16 04.0 -0.2
QIZ LR LR
comp=Z,310nm,22.9s
QIZ LR LR
comp=Z,550nm,26.9s
QIZ Qiongzhong 144.26 331 *e*PKPdf **PKPdf 06 54 09.5 -0.4**
MRIV Mauritius Mete 145.62 108 *e*PKPbc **PKPab 06 54 13.1 +0.2**
SRSP Sriramsagar 145.76 24 *e*PKPdf **PKPdf 06 54 10.1 -2.4**
SRSP *e*PKiKP **PKiKP 06 54 15.6 -1.0**
KLRI Killari 145.78 28 *e*PKPdf **PKPdf 06 54 10.2 -2.4**
RPR Rampur 146.20 23 *e*PKPdf **PKPdf 06 54 11.5 -1.7**
HYBB Hyderabad (bro 147.20 25 *e*PKPdf **PKPdf 06 54 14.4 -0.6**
HYBB *e*PKPbc **PKPbc 06 54 15.4 -1.9**
HYB Hyderabad 147.21 25 *i* PKP **PKPdf 06 54 15.0 0.0**
HYB *e* 06 54 41.5
HYB *e* 06 54 54.0
FITZ Fitzroy Crossi 147.58 256 PKPbc **PKPdf 06 54 16.0 +0.5**
comp=Z,32nm,0.8s,baz=140,slow=3.5,SNR=9.4
FITZ Fitzroy Crossi 147.58 256 *e*PKPdf **PKPdf 06 54 15.7 +0.2**
CHLP Challavanipeta 148.05 15 *e*PKPdf **PKPdf 06 54 15.6 -0.7**
CHLP *e*PKPbc **PKPbc 06 54 18.5 -1.0**
CHLP *e*PKiKP **PKiKP 06 54 20.7 -0.6**
CHTO Chiang Mai 148.20 348 P **PKPbc 06 54 19.1 -0.8**
comp=Z,147nm,0.7s,comp=Z,3µmcomp=Z,0.6nm
CHTO Chiang Mai 148.20 348 *e*PKiKP **PKPdf 06 54 16.4 -0.2**
CHTO *e* 06 54 19.2
CHTO Chiang Mai 148.20 348 *e*PKPdf **PKPdf 06 54 16.4 -0.2**
CHTO *e*PKPbc **PKPbc 06 54 19.2 -0.7**
CMMT Chiang Mai 148.20 348 P **PKPbc 06 54 19.0 -0.9**
comp=Z,55nm,0.8s,comp=Z,652nmcomp=Z,0.2nm
NJS Nagarjunasagar 148.29 25 *e*PKPdf **PKPdf 06 54 15.8 -1.0**
NJS *e*PKPbc **PKPbc 06 54 19.2 -0.9**
LAMP Lampang 148.34 347 P **PKPbc 06 54 18.8 -1.5**
comp=Z,19nm,0.7s,comp=Z,0.1nm
PVM Polavaram 148.51 20 *e*PKPdf **PKPdf 06 54 15.6 -1.5**
PVM *e*PKPbc **PKPbc 06 54 19.0 -1.7**
SRLM Srisailam 148.53 26 *e*PKPdf **PKPdf 06 54 16.3 -1.0**
SRLM *e*PKPbc **PKPbc 06 54 19.0 -1.9**
SRLM *e*PKPab **PKiKP 06 54 23.0 +0.6**
CMAR Chiang Mai Arr 148.54 348 PKP **PKPdf 06 54 16.8 -0.4**
comp=Z,32nm,0.7s,baz=344,slow=3.2,SNR=52
CMAR PKPbc **PKPbc 06 54 20.9 +0.1**
comp=Z,34nm,0.7s,baz=347,slow=3.9,SNR=71

SOEI	**Soe**	**148.70**	**272**	*e*PKPbc	**PKPbc**	06 54 20.9	-0.6
UTTA	**Uttaradit**	**148.87**	**345**	P	**PKPbc**	06 54 20.8	-0.8
	comp=Z,16nm,0.8s,comp=Z,112nmcomp=Z,0.0nm						
RCLA	**Racherla**	**149.13**	**26**	*e*PKPdf	**PKPdf**	06 54 18.0	-0.2
RCLA				*e*PKPbc	**PKPbc**	06 54 20.9	-1.4
RCLA				*e*PKPab	**PKPab**	06 54 26.3	-0.3
ADKI	**Addanki**	**149.20**	**24**	*e*PKPdf	**PKPdf**	06 54 17.3	-0.9
ADKI				*e*PKPbc	**PKPbc**	06 54 21.1	-1.4
ADKI				*e*PKiKP	**PKiKP**	06 54 22.4	-1.3
PBKT	**Sadao Pong**	**149.88**	**344**	P	**PKPbc**	06 54 23.1	-1.0
	comp=Z,66nm,0.9s,comp=Z,980nmcomp=Z,0.2nm						
KKM	**Kota Kinabalu**	**150.04**	**307**	*e*PKPdf	**PKPdf**	06 54 20.1	+0.3
KKM				*e*PKPbc	**PKiKP**	06 54 25.4	-0.3
SKHT	**Srikalahasti**	**150.98**	**26**	*e*PKPdf	**PKPdf**	06 54 20.3	-0.8
SKHT				*e*PKPbc	**PKPbc**	06 54 25.3	-1.5
SKHT				*e*PKPab	**PKPab**	06 54 33.3	-1.0
KAPI	**Kappang**	**152.05**	**283**	PKPbc	**PKPbc**	06 54 29.4	+0.1
	comp=Z,17nm,0.7s,baz=146,slow=1.0,SNR=9.0						
KAPI	**Kappang**	**152.05**	**283**	*e*PKPbc	**PKPbc**	06 54 29.3	0.0
KAPI				*e*PKPab	**PKPab**	06 54 38.7	-0.3
MBWA	**Marble Bar**	**152.58**	**248**	*e*PKPdf	**PKPdf**	06 54 23.5	+0.2
MBWA				*e*PKPbc	**PKPbc**	06 54 30.2	-0.2
CHBT	**CHBT**	**153.04**	**338**	P	**PKPbc**	06 54 30.9	-0.6
KSM	**Kuching**	**157.48**	**307**	*e*PKPdf	**PKPdf**	06 54 29.9	-0.3
KSM				*e*PKPab	**PKPab**	06 55 02.4	+0.4

*ISCJB **03** 06:37:37.8±0.6, 45.8N±0.1×150.7E±0.1, h150km, mb3.1/3, Error ellipse: s-maj=18.2km s-min=5.0km az=141.1*
*SKHL **03** 06:37:38.6±0.9, 45.58N×151.03E, h147km±9km, mb4.4/3, msh5.6/3*
*MOS **03** 06:37:38.6±1.6, 45.90N×150.79E, h155km, mb4.4/1, Error ellipse: s-maj=40.8km s-min=14.0km az=135.1*
*IDC **03** 06:37:40.8±3.2, 46.24N×150.26E, h168km±36km, mb3.0/3, mb1 3.3/7, mb1mx3.0/36, mbtmp3.6/7, Error ellipse: s-maj=59.6km s-min=17.0km az=137.0*
*JMA **03** 06:37:44.5±0.7, 45.63N×150.10E, h206km, M4.0*

ISC 03 06:37:38.6±0.9, 45.8N±0.1×150.89E±0.10, h150km, n51, σ2.913/54, mb3.2/3, 3C, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**2.19**	**257**	*c i*PN	**Pn**	**06 38 19.0**	**+3.1**
KUR				*e*S	**Sn**	**06 38 50.6**	**+6.0**
KUR				pmax	pmax		
	comp=N,36nm,0.3s						
KUR				pmax	pmax		
	comp=Z,102nm,0.3s						
KUR				smax	smax		
	comp=E,103nm,0.5s						
KUR				smax	smax		
	comp=N,98nm,0.6s						
KUR	**Kuril'sk**	**2.19**	**257**	*i* P	**Pn**	**06 38 16.8**	**+0.9**
KUR				AMB	AMB	06 38 17.5	
	comp=N,20nm,0.4s						
KUR				*e*S	**Sn**	**06 38 46.1**	**+1.5**
KUR				A	A	06 38 50.6	
	comp=N,220nm,0.5s						
KUR				A	A	06 38 50.6	
	comp=N,240nm,0.5s						
SHO	**Shikotan**	**3.45**	**238**	*c i*PN	**Pn**	**06 38 32.9**	**+1.2**
SHO				*i* S	**Sn**	**06 39 11.5**	**-1.3**
SHO				pmax	pmax		
	comp=Z,239nm,0.5s						
SHO				pmax	pmax		
	comp=E,140nm,0.4s						
SHO				pmax	pmax		
	comp=N,92nm,0.8s						
SHO				smax	smax		
	comp=N,224nm,0.2s						
SHO				smax	smax		
	comp=E,352nm,0.3s						
SHO	**Shikotan**	**3.45**	**238**	*i* P	**Pn**	**06 38 32.9**	**+1.2**
SHO				AMB	AMB	06 38 33.3	
	comp=E,20nm,0.3s						
SHO				*i* S	**Sn**	**06 39 11.5**	**-1.3**
SHO				A	A	06 39 14.3	
	comp=E,200nm,0.3s						
SHO				A	A	06 39 14.3	
	comp=E,290nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**3.97**	**246**	*c i*PN	**Pn**	**06 38 40.3**	**+2.0**
YUK				*i* S	**Sn**	**06 39 25.9**	**+1.2**
YUK				pmax	pmax		
	comp=N,212nm,0.4s						
YUK				pmax	pmax		
	comp=E,322nm,0.4s						
YUK				pmax	pmax		
	comp=Z,460nm,0.4s						
YUK				smax	smax		
	comp=N,181nm,0.3s						
YUK				smax	smax		
	comp=E,263nm,0.1s						
YUK	**Yuzh-Kuril'sk**	**3.97**	**246**	*i* P	**Pn**	**06 38 40.3**	**+2.0**
YUK				AMB	AMB	06 38 41.8	
	comp=E,20nm,0.4s						
YUK				AMB	AMB	06 38 41.8	
	comp=E,30nm,0.4s						
YUK				AMB	AMB	06 38 41.8	
	comp=E,60nm,0.4s						
YUK				*i* S	**Sn**	**06 39 25.9**	**+1.2**
YUK				A	A	06 39 30.0	
	comp=E,180nm,0.3s						
YUK				A	A	06 39 30.0	
	comp=E,260nm,0.3s						
NEM2	**Nemuro 2**	**4.39**	**239**	P	**Pn**	**06 38 44.5**	**+0.6**
NEM2				*e*S	**Sn**	**06 39 31.7**	**-2.9**
JRA	**Rausu**	**4.49**	**248**	P	**Pn**	**06 38 46.3**	**+1.1**
JNK	**Nakash**	**4.91**	**246**	P	**Pn**	**06 38 51.7**	**+1.0**
JAK	**Akkeshi**	**5.23**	**240**	P	**Pn**	**06 38 54.9**	**-0.1**
JAK				*e*S	**Sn**	**06 39 50.7**	**-3.8**
JTKR	**Abashiri--Toko**	**5.27**	**253**	P	**Pn**	**06 38 55.5**	**-0.1**
JMP	**Maruseppu**	**5.63**	**255**	P	**Pn**	**06 38 59.8**	**-0.5**
JAR	**Ashorobuto**	**5.65**	**247**	P	**Pn**	**06 39 01.1**	**+0.5**
YSS	**Yuzh-Sakhalins**	**5.75**	**285**	*e*P	Pn	06 39 05.8	+3.9
JOB	**Onbets**	**5.81**	**243**	P	**Pn**	**06 39 02.8**	**+0.1**
JOB				*e*S	**Sn**	**06 40 04.2**	**-4.2**
HRK	**Horoka**	**5.99**	**250**	*e*P	**Pn**	**06 39 05.3**	**+0.1**
SKR	**Severo-Kuril's**	**6.04**	**33**	*e*P	**Pn**	**06 39 06.7**	**+1.0**
SKR				*e*S	**Sn**	**06 40 12.2**	**-1.6**
JKK2	**Kamakawa 2**	**6.09**	**255**	P	**Pn**	**06 39 06.0**	**-0.4**
JKA	**Kamikawa-asahi**	**6.11**	**257**	*e*P	**Pn**	**06 39 06.4**	**-0.3**
ASAJ	**Asahikawa**	**6.11**	**257**	P	**Pn**	**06 39 06.4**	**-0.2**
	baz=90,slow=9.4						
ASAJ	**Asahikawa**	**6.11**	**257**	P	**Pn**	**06 39 06.5**	**-0.2**
JCH	**Churui**	**6.26**	**242**	P	**Pn**	**06 39 07.8**	**-0.9**
JCH				*e*S	**Sn**	**06 40 13.3**	**-5.8**
MYR	**Moyori**	**6.48**	**240**	*e*P	**Pn**	**06 39 10.7**	**-1.0**
JSS	**Shosan**	**6.54**	**261**	P	**Pn**	**06 39 12.6**	**+0.2**
JEM	**Erimo**	**6.72**	**239**	P	**Pn**	**06 39 14.0**	**-0.1**
JBT2	**Biratori 2**	**6.80**	**247**	P	**Pn**	**06 39 14.7**	**-1.3**
JNBK	**Urakawa-nobuka**	**6.82**	**242**	P	**Pn**	**06 39 14.4**	**-1.7**
JNB	**Noboribetsu**	**7.81**	**249**	P	**Pn**	**06 39 26.9**	**-2.5**
JKB	**Kayabe**	**8.11**	**245**	P	**Pn**	**06 39 30.3**	**-3.0**
JKB				*e*S	Sn	06 40 53.3	-10
JYM2	**Yakumo 2**	**8.42**	**248**	P	**Pn**	**06 39 34.9**	**-2.6**
PETK	**Petropavlovsk-**	**8.59**	**29**	P	**Pn**	**06 39 39.2**	**-0.5**
	comp=E,0.8nm,0.3s,baz=192,slow=7.6,SNR=10						
JSR	**Shiriuchi**	**8.69**	**245**	P	**Pn**	**06 39 38.3**	**-2.8**
JTM	**Tenmabayashi**	**8.72**	**239**	P	**Pn**	**06 39 38.5**	**-3.0**
JTM				*e*S	Sn	06 41 07.6	-11
JANG	**Nango**	**8.72**	**235**	P	**Pn**	**06 39 39.1**	**-2.4**
JOSM	**Okushiri--Mats**	**9.02**	**250**	P	**Pn**	**06 39 42.2**	**-3.3**
OFUJ	**Ofunato**	**9.54**	**229**	P	**Pn**	**06 39 51.4**	**-1.0**
JRG	**Rokugo**	**9.88**	**234**	P	**Pn**	**06 39 55.7**	**-1.2**
MJAR	**Matsushiro Arr**	**13.25**	**230**	P	Pn	**06 40 40.7**	**-0.3**
	comp=E,0.2nm,0.3s,baz=28,slow=14,SNR=5.3						
MAT	**Matsushiro**	**13.26**	**230**	P	**P**	**06 40 47.3**	**+1.9**
USRK	**Ussuriysk Ar.**	**13.47**	**270**	P	Pn	06 40 38.3	-5.4
	comp=E,0.4nm,0.3s,baz=66,slow=13,SNR=4.8						
KSRS	**Korea Array**	**19.02**	**252**	P	**P**	**06 41 48.0**	**-0.9**
	comp=E,0.3nm,0.3s,baz=55,slow=11,SNR=7.3						
KSRS	**Korea Array**	**19.02**	**252**	P	**P**	**06 41 48.0**	**-0.9**
H11N2	**WAKE ISLAND Hy 29.13**	**148**		T	T	07 15 06.3	
	baz=334,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy 29.14**	**148**		T	T	07 15 07.3	
	baz=334,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy 29.15**	**148**		T	T	07 15 05.2	
	baz=334,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy 30.18**	**149**		T	T	07 16 22.1	
	baz=336,slow=76,SNR=32						
H11S3	**WAKE ISLAND Hy 30.19**	**149**		T	T	07 16 19.8	
	baz=336,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy 30.20**	**149**		T	T	07 16 21.6	
	baz=336,slow=76,SNR=14						
WRA	**Warramunga Arr**	**67.09**	**197**	P	**P**	**06 48 17.8**	**+2.0**
	comp=E,0.2nm,0.5s,baz=16,slow=6.8,SNR=3.9						
ASAR	**Alice Springs**	**70.80**	**196**	P	**P**	**06 48 41.5**	**+2.9**
	comp=E,0.4nm,0.8s,baz=8.5,slow=5.9,SNR=4.5						
TXAR	**Lajitas Array**	**79.33**	**59**	P	**P**	**06 49 28.6**	**+0.9**
	comp=E,0.2nm,0.5s,baz=0.0,slow=3.6,SNR=2.7						

*IDC **03** 06:54:45.8±0.7, 7.54S×147.31E, h0km, mb4.4/15, mb1 4.5/17, mb1mx4.3/38, mbtmp4.4/17, ML4.1/2, MS5.1/1, Ms1 4.9/1, ms1mx3.3/22, Error ellipse: s-maj=28.6km s-min=13.9km az=87.0*
*NEIC **03** 06:54:47.1±0.3, 7.57S×147.18E, h10km, mb4.6/10, Error ellipse: s-maj=11.3km s-min=6.7km az=99.0*
*ISCJB **03** 06:54:48.7±0.4, 7.64S±0.05×147.08E±0.09, h32km, mb4.5/26, MS5.2/1, Error ellipse: s-maj=13.0km s-min=6.3km az=14.6*

ISC 03 06:54:50.6±0.6, 7.62S±0.06×147.1E±0.1, h32km, n36, σ0.996/36, mb4.6/26, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**1.78**	**178**	Pn	**Pn**	**06 55 19.4**	**+0.2**
	111nm,0.3s,baz=0.9,slow=7.6,SNR=88						
PMG				Sn	**Sb**	**06 55 45.6**	**+1.0**
	187nm,0.3s,baz=6.3,slow=20,SNR=11						
PMG				LR	LR	06 56 23.9	
	comp=Z,1µm,21.0s,baz=332,slow=53						
COEN	**Coen**	**7.39**	**211**	*e*Pn	**Pn**	**06 56 35.5**	**-0.8**
COEN				*e*Sn	**Sn**	**06 57 58.7**	**-0.4**
CTA	**Charters Tower**	**12.43**	**184**	Pn	**Pn**	**06 57 45.5**	**+0.1**
	0.6nm,0.3s,baz=349,slow=13,SNR=3.5						
WRA	**Warramunga Arr**	**17.41**	**224**	P	**Pn**	**06 58 51.0**	**-0.2**
	0.8nm,0.3s,baz=46,slow=11,SNR=27						
ASAR	**Alice Springs**	**20.37**	**217**	P	Pn	06 59 26.1	-0.9
	16nm,0.6s,baz=52,slow=9.6,SNR=72						
FITZ	**Fitzroy Crossi**	**23.35**	**241**	P	**P**	**06 59 55.2**	**-1.2**
	4.2nm,0.8s,baz=77,slow=10,SNR=4.4						
DZM	**Mont Dzumac**	**23.54**	**130**	P	**P**	**06 59 57.1**	**-1.3**
	3.2nm,0.9s,baz=257,slow=18,SNR=3.8						
LUWI	**Luwuk**	**25.11**	**284**	P	**P**	**07 00 12.8**	**0.0**
	241nm,0.6s						
JNU	**Nakatsue**	**43.35**	**340**	P	**P**	**07 02 50.2**	**+0.2**
	7.2nm,0.9s,baz=188,slow=7.1,SNR=3.7						
MJAR	**Matsushiro Arr**	**44.71**	**350**	P	**P**	**07 02 59.8**	**-1.0**
	1.7nm,0.8s,baz=179,slow=9.6,SNR=6.9						
KSRS	**Korea Array**	**48.29**	**340**	P	**P**	**07 03 28.3**	**-0.5**
	5.9nm,0.9s,baz=159,slow=8.8,SNR=5.7						
KSAR	**Wonju Array Be**	**48.29**	**339**	P	**P**	**07 03 28.3**	**-0.6**
USRK	**Ussuriysk Ar.**	**53.35**	**346**	P	**P**	**07 04 07.8**	**+0.9**
	4.6nm,0.8s,baz=186,slow=6.8,SNR=8.7						
CMAR	**Chiang Mai Arr**	**54.11**	**299**	P	**P**	**07 04 14.9**	**+2.0**
	2.6nm,0.3s,baz=119,slow=4.9,SNR=5.5						
KLR	**Kul'dur**	**58.18**	**348**	P	**P**	**07 04 41.9**	**+0.5**
	0.7nm,0.3s,baz=188,slow=6.5,SNR=3.6						
SONM	**Songino Array**	**65.86**	**321**	P	**P**	**07 05 33.7**	**+0.5**
	0.6nm,0.6s,baz=159,slow=4.3,SNR=3.6						
MKAR	**Makanchi Array**	**78.80**	**321**	P	**P**	**07 06 51.0**	**+0.7**
	5.4nm,0.7s,baz=104,slow=6.8,SNR=35						
ZALV	**Zalesovo Beam**	**80.42**	**328**	P	**P**	**07 06 58.5**	**-0.5**
	1.9nm,0.6s,baz=124,slow=4.7,SNR=9.2						
MAW	**Mawson**	**80.81**	**203**	LR	LR	07 39 41.6	
	comp=Z,1µm,21.9s,baz=226,slow=33						
TKM2	**Tokmak 2**	**81.85**	**315**	*e*P	**P**	**07 07 05.3**	**-1.8**
	3.3nm,0.8s						
QSPA	**South Pole Qui**	**82.36**	**180**	*e*P	**P**	**07 07 08.9**	**-0.3**
	11nm,0.6s						
AAK	**Ala-Archa**	**82.54**	**315**	P	**P**	**07 07 11.7**	**+1.0**
	3.0nm,0.5s,baz=121,slow=4.5,SNR=3.2						
SEW	**Seward**	**83.80**	**27**	*e*P	**P**	**07 07 15.2**	**-1.3**
	18nm,1.2s						
PMR	**Palmer**	**84.61**	**26**	*e*P	**P**	**07 07 20.5**	**-0.1**
	7.2nm,1.0s						
KKAR	**Karatay Array**	**85.48**	**314**	*e*P	**P**	**07 07 25.8**	**+0.4**
	1.4nm,0.6s						
COLA	**College**	**86.59**	**23**	*e*P	**P**	**07 07 28.1**	**-2.2**
	4.3nm,0.8s						
PAX	**Paxson**	**86.75**	**25**	*e*P	**P**	**07 07 30.0**	**-1.4**
	2.2nm,0.8s						
COLD	**Coldfoot**	**86.81**	**20**	P	**P**	**07 07 32.6**	**+1.2**
	3.8nm,0.9s						
NRIK	**Noril'sk**	**86.83**	**342**	P	**P**	**07 07 31.8**	**+0.3**
	3.7nm,0.7s,baz=148,slow=4.3,SNR=3.9						
ILAR	**Eielson Array**	**86.92**	**23**	P	**P**	**07 07 31.1**	**-0.9**
	2.9nm,0.6s,baz=249,slow=4.8,SNR=42						
BVAR	**Borovoye Array**	**88.12**	**324**	P	**P**	**07 07 37.8**	**-0.3**
	1.7nm,0.8s,baz=90,slow=4.3,SNR=6.3						
EGAK	**Eagle**	**89.19**	**24**	*e*P	**P**	**07 07 43.3**	**+0.4**
	2.9nm,0.8s						
ABKAR	**Akbulak array**	**93.85**	**319**	*e*P	**P**	**07 08 03.8**	**-1.0**
	2.6nm,0.7s						
TORD	**Torodi Ar. Bea**	**145.55**	**282**	PKPbc	**PKPab**	**07 14 27.3**	**+0.2**
	15nm,0.7s,baz=82,slow=3.7,SNR=30						
SAML	**Samuel**	**145.63**	**118**	*e*PKPbc	**PKPab**	**07 14 27.4**	**-0.1**
DBIC	**Dimbokro**	**152.16**	**270**	PKPbc	**PKPbc**	**07 14 44.8**	**+0.8**
	4.1nm,0.7s,baz=99,slow=2.8,SNR=7.1						

*ISCJB **03** 06:57:27.1±1.4, 34.7N±0.1×29.16E±0.05, h33km, Error ellipse: s-maj=21.6km s-min=5.2km az=170.2*
*ATH **03** 06:57:27.6, 34.72N×28.83E, h10km±4km, ML2.8/4, Error ellipse: s-maj=6.4km s-min=1.5km az=29.0*
*CSEM **03** 06:57:27.6, 34.72N×28.83E, h10km, ML2.8/5*

ISC 03 06:57:28.3±1.8, 34.7N±0.1×29.16E±0.05, h35km, n16, σ1.900/28, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AKAS	**Kas**	**1.59**	**13**	*i* P	**Pn**	**06 57 53.3**	**-0.8**
ARG	**Arkhangelos**	**1.75**	**331**	P	**Pn**	**06 57 57.6**	**+1.5**
KARP	**Karpathos**	**1.85**	**298**	P	**Pn**	**06 57 57.9**	**+0.3**
KARP				S	**Sn**	**06 58 19.3**	**-0.5**
KARP	**Karpathos**	**1.85**	**298**	P	**Pn**	**06 57 57.9**	**+0.3**
KARP				S	**Sn**	**06 58 19.3**	**-0.5**
ZKR	**Zakros**	**2.46**	**281**	P	**Pn**	**06 58 05.7**	**-0.2**
ZKR				S	**Sn**	**06 58 34.4**	**-0.3**
ZKR	**Zakros**	**2.46**	**281**	P	**Pn**	**06 58 05.7**	**-0.2**
ZKR				S	**Sn**	**06 58 34.4**	**-0.3**
ZKR				AML	AML	06 58 34.7	
	comp=E,146µm,0.9s						
ZKR				AML	AML	06 58 36.0	
	comp=N,206µm,0.7s						
NPS	**Neapolis**	**2.97**	**282**	P	**Pn**	**06 58 14.1**	**+1.2**
NPS				S	**Sn**	**06 58 46.8**	**-0.6**
NPS	**Neapolis**	**2.97**	**282**	P	**Pn**	**06 58 14.1**	**+1.2**
NPS				S	**Sn**	**06 58 46.8**	**-0.6**
NPS				AML	AML	06 58 49.3	
	comp=N,90µm,0.4s						
NPS				AML	AML	06 58 51.4	
	comp=E,118µm,0.4s						
GAZI	**Gazipasa**	**3.00**	**58**	*i* P	**Pn**	**06 58 12.9**	**-0.4**
GAZI				*i* S	**Sn**	**06 58 46.6**	**-1.5**
LAST	**Lasithi**	**3.07**	**280**	P	**Pn**	**06 58 15.4**	**+1.1**
LAST				S	**Sn**	**06 58 49.4**	**-0.4**
LAST	**Lasithi**	**3.07**	**280**	P	**Pn**	**06 58 15.4**	**+1.1**
IDI	**Anoyia**	**3.56**	**281**	P	**Pn**	**06 58 21.1**	**0.0**
IDI				S	**Sn**	**06 59 01.4**	**-0.5**
IDI	**Anoyia**	**3.56**	**281**	P	**Pn**	**06 58 21.1**	**0.0**
IDI				S	**Sn**	**06 59 01.4**	**-0.5**
IDI				AML	AML	06 59 02.9	
	comp=E,99µm,0.5s						
IDI				AML	AML	06 59 03.7	
	comp=N,104µm,0.5s						
ERMK	**Ermenek**	**3.62**	**56**	*i* P	**Sn**	**06 59 06.2**	**+2.5**
IMMV	**Iera Moni Meta**	**4.32**	**282**	P	**Pn**	**06 58 32.5**	**+1.1**
IMMV				S	**Sn**	**06 59 19.2**	**-1.4**
IMMV	**Iera Moni Meta**	**4.32**	**282**	P	**Pn**	**06 58 32.5**	**+1.1**
IMMV				S	**Sn**	**06 59 19.2**	**-1.4**
IMMV				AML	AML	06 59 25.6	
	comp=N,139µm,0.7s						
IMMV				AML	AML	06 59 26.7	
	comp=E,143µm,0.5s						

*GUC **03** 06:58:27.3±0.7, 34.32S×72.26W, h28km±2km, ML3.2*

ISC 03 06:58:28.8±1.8, 34.30S±0.04×72.2W±0.1, h25km±10km, n23, σ2.887/40, 5C-11D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.21**	**115**	*i*P	**Pb**	**06 58 34.0**	**-0.6**
CHPI				*i* S	**Sb**	**06 58 38.5**	**0.0**
CHPI				IAML		06 58 38.9	

	comp=N,5µm,0.1s						
NICH	**Los Niches**	**1.08**	**130**	*e*P	**Pb**	**06 58 47.8**	**-1.0**
NICH				*i* S	**Sb**	**06 59 03.1**	**+0.5**
TALC	**Talca**	**1.20**	**156**	⇑*i*P	**Pb**	**06 58 49.3**	**-1.5**
TALC				*i* S	**Sb**	**06 59 05.6**	**-0.3**
RCDM	**Rinconada Maip**	**1.44**	**56**	⇑*i*P	**Pn**	**06 58 52.8**	**-0.4**
RCDM				*i* S	**Sb**	**06 59 12.5**	**-0.3**
ANTU	**Antumapu**	**1.52**	**62**	⇓*i*P	**Pb**	**06 58 54.7**	**-1.5**
ANTU				*i* S	**Sb**	**06 59 15.6**	**+0.5**
ANTU				IAML		06 59 21.7	
	comp=E,518nm,0.3s						
ROCH	**El Roble**	**1.67**	**38**	⇓*i*P	**Pn**	**06 58 56.5**	**-0.2**
ROCH				*i* S	**Sb**	**06 59 21.1**	**+1.3**
ROCH				IAML		06 59 29.8	
	comp=N,355nm,0.9s						
CLCH	**Cerro Calan**	**1.68**	**58**	⇑*i*P	**Pb**	**06 58 56.9**	**-2.1**
CLCH				*i* S	**Sb**	**06 59 20.4**	**+0.6**
CLCH				IAML		06 59 28.5	
	comp=E,340nm,0.5s						
PEL	**Peldehue**	**1.73**	**49**	⇑*i*P	**Pb**	**06 58 57.8**	**-2.1**
PEL				*i* S	**Sb**	**06 59 21.9**	**+0.6**
PEL				IAML		06 59 29.0	
	comp=N,392nm,0.3s						
ARCO	**CERRO ARCO**	**3.12**	**63**	*e*P	**Pb**	**06 59 20.2**	**-3.4**
ARCO				IAML		06 59 30.2	
	comp=Z,25nm,0.7s						
ARCO				⇓*e*S	**Sb**	**07 00 07.1**	**+5.8**
AUSP	**Uspallata**	**3.16**	**50**	*e*P	**Pb**	**06 59 19.8**	**-4.6**
AUSP				⇓*e*S	**Sb**	**07 00 09.5**	**+6.9**
ASAL	**Salagasta**	**3.31**	**60**	*e*P	**Pb**	**06 59 23.5**	**-3.4**
ASAL				*e*S	**Sb**	**07 00 13.2**	**+6.4**
RTLS	**Leoncito**	**3.51**	**45**	⇓*e*P	Pb	06 59 25.1	-5.2
RTLS				*e*S	**Sb**	**07 00 16.1**	**+3.5**
RTCV	**Cerro Valdivia**	**3.94**	**53**	*e*P	**Pn**	**06 59 29.9**	**+2.3**
RTLL	**Cerro Villicun**	**4.34**	**48**	*e*P	**Pn**	**06 59 34.8**	**+1.7**
RTLL				*e*S	**Sb**	**07 00 37.1**	**+0.9**
ACCO	**Cerro Coronel**	**4.57**	**37**	*e*P	**Pn**	**06 59 38.2**	**+1.6**
ACCO				IAML		06 59 40.0	
	comp=Z,18nm,0.2s						
ACCO				*e*S	**Sb**	**07 00 43.7**	**+0.5**
AMOG	**MOGNA**	**4.61**	**44**	⇓*e*P	**Pn**	**06 59 38.2**	**+1.4**
AMOG				⇓*e*S	**Sb**	**07 00 46.4**	**+2.4**
AROD	**Rodeo**	**4.74**	**30**	*e*P	**Pn**	**06 59 40.9**	**+2.0**
AROD				⇓*e*S	**Sb**	**07 00 51.2**	**+3.1**
ACDV	**Cuesta del Vie**	**4.89**	**33**	*e*P	**Pn**	**06 59 42.7**	**+1.8**
AVFE	**Valle Fertil**	**5.43**	**49**	*e*P	**Pn**	**06 59 49.0**	**+0.8**
AVFE				⇓*e*S	**Sb**	**07 01 03.9**	**-3.8**
AVFE				IAML		07 01 07.6	
	comp=Z,13nm,0.5s						
ACHE	**Chepes**	**5.64**	**58**	*e*P	**Pn**	**06 59 51.8**	**+0.6**
ACHE				⇓*e*S	**Sb**	**07 01 07.7**	**-6.1**
AGUA	**GUANDACOL**	**5.76**	**35**	⇓*e*P	**Pn**	**06 59 54.1**	**+1.4**
MRA	**San Martin**	**5.77**	**73**	*e*P	**Pn**	**06 59 55.3**	**+2.5**
MRA				IAML		07 00 20.1	
	comp=Z,5.5nm,0.4s						
VCA	**Vinchina**	**6.53**	**33**	*e*P	**Pn**	**07 00 04.4**	**+1.1**
VCA				IAML		07 00 07.9	
	comp=Z,21nm,0.2s						
VCA				*e*S	Sb	07 01 28.8	-10

IDC 03 06:58:35.8±2.2, 0.96N×126.60E, h0km, mb3.7/3, mb1 4.0/3, mb1mx3.6/34, mbtmp3.7/3, Error ellipse: s-maj=195.6km s-min=25.6km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.12**	**160**	P	P	07 03 32.8	-0.4
	2.9nm,0.5s,baz=340,slow=10.0,SNR=18						
ASAR	**Alice Springs**	**25.49**	**164**	P	P	07 04 06.2	+0.2
	0.9nm,0.7s,baz=338,slow=6.7,SNR=7.8						
MKAR	**Makanchi Array**	**59.75**	**326**	P	P	07 08 42.6	0.0
	0.3nm,0.3s,baz=118,slow=8.0,SNR=5.8						

MEX 03 07:02:27.9±0.7, 13.64N×92.40W, h16km±999km, MD3.7, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.64**	**5**	*e*P	Pn	07 03 07.7	-2.3
CCIG				*e*S	Sn	07 03 38.7	-3.1

*CSEM **03** 07:18:51.6, 11.88N×44.11E, h14km, ML3.9*
*DHMR **03** 07:18:51.6±1.5, 11.88N×44.11E, h14km±13km, ML3.9*
*ARO **03** 07:18:56.9, 12.1N±5.4°4E±°, h12km±8km, ML4.0*

ISC 03 07:18:53.7±1.5, 11.95N±0.07×44.15E±0.06, h9km±14km, n17, σ0.959/26, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OBO	**Obock**	**0.84**	**273**	*e*P	**Pg**	**07 19 09.9**	**+0.1**

IDC ***03*** *07:46:17.6±0.5,43.00N×131.07E,h543km±5km,mb2.9/12, mb1 3.1/16,mb1mx2.9/44,mbtmp3.8/16,Error ellipse: s-maj=13.9km s-min=11.7km az=62.0*

ISC 03 07:46:17.8±0.7,43°0'N±0.1'×131°20'E±0.1',h549km,n32, σ0°91/32,mb3.4/12,Priamurye-Northeastern China border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
USRK	**Ussuriysk Ar.**	**1.34**	**25**	P	**P**	**07 47 24.4**	**-0.3**
	5.6nm,0.3s,baz=226,slow=1.6,SNR=123						
USRK				S	**S**	**07 48 18.6**	**-0.9**
	baz=232,slow=11,SNR=3.2						
KSRS	**Korea Array**	**6.07**	**205**	P	**P**	**07 47 57.8**	**+0.7**
	0.4nm,0.3s,baz=20,slow=8.8,SNR=8.6						
JOSM	**Okushiri--Mats**	**6.18**	**96**	P	**P**	**07 47 57.5**	**-0.4**
KLR	**Kul'dur**	**6.25**	**3**	P	**P**	**07 47 59.0**	**+0.5**
	1.1nm,0.3s,baz=197,slow=7.7,SNR=17						
JKB	**Kayabe**	**7.36**	**95**	P	**P**	**07 48 07.8**	**-1.3**
JOT	**Ohata**	**7.49**	**99**	P	**P**	**07 48 08.9**	**-1.5**
JTM	**Tenmabayashi**	**7.69**	**103**	P	**P**	**07 48 11.1**	**-1.2**
ASAJ	**Asahikawa**	**8.36**	**78**	P	**P**	**07 48 18.5**	**-0.4**
	baz=267,slow=7.7						
JWT	**Wachi**	**8.36**	**156**	P	**P**	**07 48 20.6**	**+1.5**
MAT	**Matsushiro**	**8.40**	**138**	P	**P**	**07 48 18.8**	**-0.7**
MJAR	**Matsushiro Arr**	**8.40**	**138**	P	**P**	**07 48 19.1**	**-0.4**
	0.5nm,0.3s,baz=318,slow=10,SNR=14						
JMK	**Ichinoseki**	**8.59**	**115**	P	**P**	**07 48 19.3**	**-2.0**
JEM	**Erimo**	**8.89**	**92**	P	**P**	**07 48 23.3**	**-1.0**
JMP	**Maruseppu**	**8.90**	**79**	P	**P**	**07 48 23.8**	**-0.6**
JCH	**Churui**	**8.95**	**88**	P	**P**	**07 48 24.1**	**-0.8**
JTKR	**Abashiri--Toko**	**9.30**	**80**	P	**P**	**07 48 27.9**	**-0.4**
JYT	**Yasato**	**9.68**	**131**	P	**P**	**07 48 26.2**	**-6.2**
NEM2	**Nemuro 2**	**10.63**	**83**	P	**P**	**07 48 41.1**	**-1.0**
BSO1	**Boso 1**	**11.28**	**134**	P	**P**	**07 48 47.3**	**-1.0**
SONM	**Songino Array**	**18.04**	**294**	P	**P**	**07 49 55.9**	**-0.2**
	baz=110,slow=8.1,SNR=1.9						
ZALV	**Zalesovo Beam**	**32.09**	**306**	P	**P**	**07 51 59.4**	**-0.4**
	0.6nm,0.4s,baz=108,slow=7.9,SNR=3.6						
MKAR	**Makanchi Array**	**34.41**	**294**	P	**P**	**07 52 19.1**	**-0.4**
	1.1nm,0.9s,baz=85,slow=9.0,SNR=6.9						
KURBB	**Kurchatov Arra**	**36.18**	**301**	P	**P**	**07 52 33.3**	**-0.8**
	2.2nm,0.9s,baz=82,slow=8.5,SNR=14						
ILAR	**Eielson Array**	**48.85**	**34**	P	**P**	**07 54 13.8**	**+0.9**
	0.8nm,0.5s,baz=285,slow=7.8,SNR=24						
GEYT	**Alibeck**	**54.22**	**291**	P	**P**	**07 54 52.0**	**-0.2**
	1.6nm,0.4s,baz=15,slow=6.0,SNR=2.6						
ARCES	**ARCESS Array B**	**55.52**	**336**	P	**P**	**07 55 00.1**	**-0.5**
	1.0nm,0.7s,baz=67,slow=8.0,SNR=8.4						
FINES	**FINESS Array B**	**59.74**	**328**	P	**P**	**07 55 28.7**	**-0.7**
	1.1nm,0.4s,baz=79,slow=6.1,SNR=16						
YKA	**Yellowknife Ar**	**62.48**	**29**	P	**P**	**07 55 48.3**	**+0.9**
	0.4nm,0.4s,baz=312,slow=6.2,SNR=7.3						
WRA	**Warramunga Array**	**62.68**	**177**	P	**P**	**07 55 49.2**	**0.0**
	0.5nm,0.5s,baz=354,slow=7.0,SNR=10						
NOA	**NORSAR Array B**	**65.48**	**332**	P	**P**	**07 56 05.9**	**-0.6**
	0.4nm,0.5s,baz=41,slow=6.2,SNR=3.3						
ASAR	**Alice Springs**	**66.37**	**177**	P	**P**	**07 56 13.2**	**+0.8**
	0.5nm,0.8s,baz=0.1,slow=8.0,SNR=7.5						
PDAR	**Pinedale Array**	**78.72**	**41**	P	**P**	**07 57 24.9**	**+1.1**
	0.5nm,0.6s,baz=336,slow=2.6,SNR=3.7						

NIED ***03*** *07:48:00,39.10N×142.50E,h29km,Mw4.5 Best double couple: M₀5.90000×10¹⁵ NP1:φ=332.00000°,δ=28.00000°, λ=123.00000°. NP2:φ=188.00000°,δ=67.00000°, λ=74.00000°.*

MOS ***03*** *07:48:46.8±1.4,39.13N×142.45E,h28km,mb4.5/33,Error ellipse: s-maj=8.4km s-min=6.2km az=90.0*

BJI ***03*** *07:48:47.2,38.92N×142.43E,h38km,mb4.6/38,mB4.9/20, Ms4.3/16,Ms7 4.1/14*

ISCJB ***03*** *07:48:47.8±0.7,39.12N±0.03×142.43E±0.03,h33km±5km, mb4.4/65,MS3.9/13,Error ellipse: s-maj=4.8km s-min=3.8km az=41.3*

JMA ***03*** *07:48:48.1±0.1,39.17N×142.42E,h33km±1km,M4.4*

JMA Felt II J1.

NEIC ***03*** *07:48:49.8±0.2,39.12N×142.42E,h35km,mb4.6/29,Error ellipse: s-maj=5.9km s-min=3.8km az=138.0*

NEIC Recorded [2 JMA] in Miyagi.

IDC ***03*** *07:48:52.3±2.0,39.05N×142.38E,h65km±18km,mb3.9/19, mb1 4.1/24,mb1mx3.9/47,mbtmp4.2/24,MS3.7/13, Ms1 3.8/13,ms1mx3.5/45,Error ellipse: s-maj=17.1km s-min=13.3km az=99.0*

ISC 03 07:48:48.8±0.5,39°09'N±0°04'×142°51'E±0°05,h32km±3km, h32km:pP-P,n166,σ1s89/194,mb4.5/65,MS4.0/13,1C-8D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.66**	**269**	P	**Pn**	**07 48 59.8**	**-2.1**
OFUJ				S	**Sb**	**07 49 08.1**	**-2.8**
MIYJ	**Miyakonagasawa**	**0.72**	**312**	P	**Pn**	**07 49 00.2**	**-2.6**
MIYJ				S	**Sn**	**07 49 08.4**	**-4.4**
JTH	**Tanohata**	**0.98**	**329**	P	**Pn**	**07 49 04.0**	**-2.4**
JTH				*e*S	**Sn**	**07 49 15.8**	**-3.4**
JMK	**Ichinoseki**	**1.02**	**262**	P	**Pn**	**07 49 05.4**	**-1.4**
JMK				S	**Sn**	**07 49 18.1**	**-1.9**
JOM	**Ohasama**	**1.02**	**292**	P	**Pn**	**07 49 05.2**	**-1.7**
JOM				S	**Sn**	**07 49 17.4**	**-2.7**
JIO	**Ouri**	**1.11**	**235**	P	**Pn**	**07 49 06.7**	**-1.4**
JIO				S	**Sn**	**07 49 19.9**	**-2.4**
JKZ	**Kuzumaki**	**1.28**	**315**	P	**Pn**	**07 49 08.9**	**-1.6**
JKZ				S	**Sn**	**07 49 24.4**	**-2.1**
JRG	**Rokugo**	**1.49**	**282**	P	**Pn**	**07 49 12.3**	**-1.1**
JRG				S	**Sn**	**07 49 31.7**	**0.0**
JANG	**Nango**	**1.49**	**329**	P	**Pn**	**07 49 11.9**	**-1.5**
JANG				S	**Sn**	**07 49 29.6**	**-2.2**
ERM	**Erimo**	**2.96**	**9**	*e*P	**Pn**	**07 49 33.9**	**+0.4**
ERM	**Erimo**	**2.96**	**9**	*e*Pn	**Pn**	**07 49 33.9**	**+0.4**
MJAR	**Matsushiro Arr**	**4.25**	**235**	P	**Pn**	**07 49 53.0**	**+1.6**
	11nm,0.3s,baz=40,slow=11,SNR=279						
MJAR				S	**Sn**	**07 50 42.0**	**+2.1**
	5.9nm,0.3s,baz=77,slow=16,SNR=5.1						
MJAR				LR	LR	07 51 35.3	
	comp=Z,921nm,21.1s,baz=50,slow=40						
MAJO	**Matsushiro**	**4.26**	**235**	*de*P	**Pn**	**07 49 53.1**	**+1.7**
MAJO	**Matsushiro**	**4.26**	**235**	*e*Pn	**Pn**	**07 49 52.7**	**+1.3**
MAT	**Matsushiro**	**4.26**	**235**	P	**Pn**	**07 49 52.4**	**+1.0**
MAT				S	**Sn**	**07 50 42.8**	**+2.8**
MJB9	**Matsu-Tunnel**	**4.26**	**235**	*e*Pn	**Pn**	**07 49 52.6**	**+1.2**
ASAJ	**Asahikawa**	**5.02**	**1**	*e*Pn	**Pn**	**07 50 02.9**	**+1.0**
YUK	**Yuzh-Kuril'sk**	**5.54**	**26**	*e*P	**Pn**	**07 50 07.6**	**-1.3**
INU	**Inuyama**	**5.76**	**231**	*e*Pn	**Pn**	**07 50 14.3**	**+2.2**
JHJ2	**Mitsune**	**6.36**	**201**	*e*Pn	**Pn**	**07 50 20.5**	**+0.3**
JHJ2				*e*Sn	**Sn**	**07 51 30.7**	**-0.9**
JHJ	**Hachijo jima 2**	**6.36**	**201**	P	**Pn**	**07 50 20.4**	**+0.2**
	26nm,0.3s,baz=248,slow=20,SNR=11						
JHJ				S	**Sn**	**07 51 28.3**	**-3.4**
	41nm,0.3s,baz=45,slow=22,SNR=8.7						
JHJ				LR	LR	07 53 13.0	
	comp=Z,356nm,21.7s,baz=3.5,slow=42						
KUR	**Kuril'sk**	**7.31**	**31**	*e*P	**Pn**	**07 50 31.5**	**-1.7**
KUR				*e*S	**Sn**	**07 51 49.7**	**-5.3**
KUR				pmax	pmax		
	comp=Z,16nm,0.8s						
KUR				smax	smax		
	comp=N,32nm,0.6s						
KUR				smax	smax		
	comp=E,11nm,0.3s						
YSS	**Yuzh-Sakhalins**	**7.86**	**1**	*e*P	**Pn**	**07 50 42.7**	**+1.9**
YSS				*e*		07 52 18.0	
YSS				MLR	MLR		
	comp=Z,400nm,16.0s						
YSS	**Yuzh-Sakhalins**	**7.86**	**1**	*e*Pn	**Pn**	**07 50 43.2**	**+2.4**
YSS				*e*Sn	**Sn**	**07 52 04.1**	**-4.5**
VLA	**Vladivostok**	**8.97**	**300**	*i*P	**Pn**	**07 50 58.6**	**+2.5**
VLA				*i* S	**Sn**	**07 52 40.6**	**+4.6**
VLA				pmax	pmax		
	comp=Z,54nm,1.2s						
USRK	**Ussuriysk Ar.**	**9.38**	**306**	P	**Pn**	**07 51 04.5**	**+2.8**
	comp=Z,0.4nm,0.3s,baz=112,slow=15,SNR=20						
USRK				LR	LR	07 54 32.1	
	comp=Z,955nm,18.7s,baz=99,slow=36						
MDJ	**Mudanjiang**	**11.10**	**304**	P	**Pn**	**07 51 28.8**	**+3.6**
MDJ				pmax	pmax		
	comp=Z,16nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,130nm,6.2s						
MDJ	**Mudanjiang**	**11.10**	**304**	*e*Pn	**Pn**	**07 51 28.4**	**+3.2**
	comp=Z,20nm,1.1s						
JNU	**Nakatsue**	**11.13**	**241**	P	**Pn**	**07 51 28.0**	**+2.2**
	comp=Z,0.5nm,0.3s,baz=14,slow=4.2,SNR=2.7						
KSRS	**Korea Array**	**11.59**	**266**	P	**Pn**	**07 51 33.8**	**+1.9**
	comp=Z,0.3nm,0.3s,baz=78,slow=14,SNR=5.0						
KSRS				LR	LR	07 55 38.9	
	comp=Z,298nm,19.1s,baz=35,slow=35						
KSAR	**Wonju Array Be**	**11.62**	**266**	P	**Pn**	**07 51 33.8**	**+1.4**
KSAR	**Wonju Array Be**	**11.62**	**266**	P	**Pn**	**07 51 33.8**	**+1.4**
KLR	**Kul'dur**	**12.73**	**326**	P	**Pn**	**07 51 47.7**	**+0.2**
	comp=Z,0.0nm,0.3s,baz=132,slow=17,SNR=2.7						
KLR				LR	LR	07 56 41.6	
	comp=Z,364nm,19.9s,baz=107,slow=37						
PETK	**Petropavlovsk-**	**17.48**	**32**	LR	LR	08 00 36.4	
	comp=Z,175nm,18.2s,baz=202,slow=40						
TIA	**Tai'an**	**20.29**	**270**	*e*P	**P**	**07 53 18.9**	**-2.9**
TIA				pmax	pmax		
	comp=Z,20nm,1.8s						
BJI	**Beijing**	**20.31**	**281**	P	**P**	**07 53 21.2**	**-0.7**
BJI				pmax	pmax		
	comp=Z,15nm,1.0s						
HHC	**Hu-ho-hao-te**	**23.73**	**284**	*e*P	**P**	**07 53 56.7**	**-1.4**
HHC				pmax	pmax		
	comp=Z,36nm,1.0s						
HHC				pmax	pmax		
	comp=Z,370nm,8.6s						
YAK	**Yakutsk**	**24.28**	**345**	P	**P**	**07 54 02.0**	**-0.8**
	comp=Z,9.2nm,0.5s,baz=156,slow=4.0,SNR=3.7						
YAK				LR	LR	08 05 28.5	
	comp=Z,71nm,18.8s,baz=288,slow=41						
YAK	**Yakutsk**	**24.28**	**345**	*e*P	P	07 54 10.0	+7.2
YAK				*e**PP	sP	07 54 21.3	+5.3
YAK				*e*		07 54 42.6	
YAK				*e*S	**S**	**07 58 25.3**	**+6.0**
YAK				*e*SS	**SnSn**	**07 59 14.3**	**+11**
YAK				*e*		08 05 09.7	
YAK				pmax	pmax		
	comp=Z,11nm,0.8s						
YAK				pmax	pmax		
	comp=Z,87nm,4.2s						
YAK				pmax	pmax		
	comp=N,40nm,2.5s						
YAK				pmax	pmax		
	comp=E,30nm,3.5s						
YAK				smax	smax		
	comp=N,40nm,2.5s						
YAK				smax	smax		
	comp=E,32nm,2.8s						
YAK	**Yakutsk**	**24.28**	**345**	P	**P**	**07 54 02.0**	**-0.8**
WHN	**Wuhan**	**24.57**	**258**	P	**P**	**07 54 07.8**	**+2.0**
SEY	**Seymchan**	**24.61**	**11**	P	**P**	**07 54 07.2**	**+1.4**
	comp=E,5.1nm,0.6s,baz=188,slow=7.8,SNR=16						
GUMO	**Guam**	**25.49**	**175**	LR	LR	08 02 49.1	
	comp=E,86nm,20.8s,baz=347,slow=33						
BOD	**Bodaibo**	**26.30**	**325**	*e*P	**P**	**07 54 19.4**	**-1.8**
BOD				pmax	pmax		
	comp=Z,7.0nm,1.5s						
SONM	**Songino Array**	**27.42**	**300**	P	**P**	**07 54 31.2**	**-0.4**
	comp=Z,0.6nm,0.5s,baz=79,slow=7.6,SNR=4.3						
ENH	**Enshi**	**28.43**	**262**	*e*P	**P**	**07 54 39.6**	**-1.0**
	comp=Z,10nm,1.3s						
H11N2	**WAKE ISLAND Hy**	**28.55**	**126**	T	T	08 25 07.9	
	baz=318,slow=75,SNR=1159						
H11N1	**WAKE ISLAND Hy**	**28.55**	**126**	T	T	08 25 09.0	
	baz=318,slow=75,SNR=1108						
H11N3	**WAKE ISLAND Hy**	**28.56**	**126**	T	T	08 25 10.4	
	baz=318,slow=75,SNR=1385						
H11S1	**WAKE ISLAND Hy**	**29.33**	**127**	T	T	08 26 10.2	
	baz=319,slow=76,SNR=213						
H11S3	**WAKE ISLAND Hy**	**29.34**	**128**	T	T	08 26 10.2	
	baz=319,slow=76,SNR=331						
H11S2	**WAKE ISLAND Hy**	**29.35**	**127**	T	T	08 26 11.0	
	baz=319,slow=76,SNR=219						
ZAK	**Zakamensk**	**29.73**	**305**	*e*P	**P**	**07 54 48.0**	**-4.1**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.2s						
BILL	**Bilibino**	**31.81**	**17**	*e*P	**P**	**07 55 13.4**	**+3.4**
BILL				*e*		07 56 13.0	
BILL				pmax	pmax		
	comp=Z,11nm,1.8s						
BILL				MLR	MLR		
	comp=Z,120nm,19.0s						
CD2	**Chengdu**	**32.59**	**268**	*e*P	**P**	**07 55 15.0**	**-2.3**
KMI	**Kunming**	**36.16**	**259**	P	**P**	**07 55 48.7**	**+0.1**
KMI				pmax	pmax		
	comp=Z,24nm,0.8s						
KMI				pmax	pmax		
	comp=Z,130nm,4.3s						
KMI				LR	LR		
	comp=Z,590nm,20.1s						
KMI				LR	LR		
	comp=Z,330nm,18.7s						
KMI				LR	LR		
	comp=Z,890nm,21.7s						
WMQ	**Urumqi**	**40.72**	**295**	P	**P**	**07 56 27.1**	**+0.6**
WMQ				pP	pP	07 56 37.3	+1.3
WMQ				sP	sP	07 56 41.7	+1.8
WMQ				pmax	pmax		
	comp=Z,23nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,150nm,7.7s						
WMQ				LR	LR		
	comp=Z,250nm,24.0s						
ZAA0	**Zalesovo Array**	**41.20**	**311**	*e*P	**P**	**07 56 30.1**	**-0.1**
ZALV	**Zalesovo Beam**	**41.20**	**311**	P	**P**	**07 56 29.8**	**-0.4**
	comp=Z,2.4nm,0.5s,baz=87,slow=7.6,SNR=10						
NVS	**Novosibirsk**	**42.08**	**312**	*e*P	P	07 56 47.0	+10
CMAR	**Chiang Mai Arr**	**42.88**	**254**	P	**P**	**07 56 44.3**	**0.0**
	comp=Z,0.9nm,0.4s,baz=40,slow=5.9,SNR=4.5						
MK01	**Makanchi Array**	**43.79**	**300**	*e*P	**P**	**07 56 50.7**	**-0.7**
MK31	**Makanchi Array**	**43.79**	**300**	*i* P	**P**	**07 56 50.8**	**-0.6**
MK31				pmax	pmax		
	comp=Z,9.0nm,1.1s						
MK31	**Makanchi Array**	**43.79**	**300**	*e*P	**P**	**07 56 51.3**	**-0.2**
MKAR	**Makanchi Array**	**43.79**	**300**	P	**P**	**07 56 50.8**	**-0.7**
	comp=Z,5.1nm,0.9s,baz=85,slow=9.1,SNR=22						
MKAR				ScP	**ScP**	**08 02 21.3**	**-5.5**
	comp=Z,0.2nm,0.6s,baz=202,slow=5.9,SNR=2.4						
MKAR				LR	LR	08 15 42.9	
	comp=Z,169nm,21.8s,baz=70,slow=37						
KURK	**Kurchatov**	**45.37**	**307**	*e*P	**P**	**07 57 03.1**	**-0.8**
KURK	**Kurchatov**	**45.37**	**307**	*e*P	**P**	**07 57 03.1**	**-0.8**
	comp=Z,54nm,0.8s						
KURBB	**Kurchatov Arra**	**45.45**	**307**	P	**P**	**07 57 03.6**	**-0.9**
	comp=Z,4.9nm,0.6s,baz=81,slow=8.3,SNR=44						
BPAW	**Bear Paw Mtn.**	**45.53**	**34**	*e*P	**P**	**07 57 06.9**	**+1.9**
BPAW				*e*pP	**sP**	**07 57 17.8**	**-0.7**
KTH	**Kantishna Hill**	**45.56**	**35**	*e*P	**P**	**07 57 06.9**	**+1.6**
	comp=Z,28nm,1.8s						
MLY	**Manley**	**45.65**	**33**	*e*P	**P**	**07 57 07.5**	**+1.5**
	comp=Z,6.0nm,1.2s						
RND	**Reindeer**	**46.49**	**35**	*e*P	**P**	**07 57 13.3**	**+0.6**
RND				*e**PP	**pP**	**07 57 23.2**	**+0.9**
RND	**Reindeer**	**46.49**	**35**	*e*P	**P**	**07 57 13.3**	**+0.6**
RND				*e*pP	**pP**	**07 57 23.2**	**+0.9**
MDM	**Murphy Dome**	**46.72**	**33**	*e*P	**P**	**07 57 15.5**	**+1.2**
	comp=Z,15nm,1.4s						
SML	**Sawmill**	**46.83**	**37**	*e*P	**P**	**07 57 16.5**	**+1.2**
SML				pmax	pmax		
	comp=Z,20nm,1.3s						
SML	**Sawmill**	**46.83**	**37**	*e*P	**P**	**07 57 16.5**	**+1.2**
	comp=Z,20nm,1.3s						
COLA	**College**	**46.88**	**33**	*e*P	**P**	**07 57 17.1**	**+1.6**
COLA				pmax	pmax		
	comp=Z,5.0nm,1.6s						
HDA	**Harding Lake**	**47.29**	**34**	*e*P	**P**	**07 57 19.6**	**+0.8**
	comp=Z,6.8nm,1.2s						
ILAR	**Eielson Array**	**47.30**	**33**	P	**P**	**07 57 19.4**	**+0.6**
	comp=Z,2.4nm,0.8s,baz=268,slow=6.2,SNR=41						
KLU	**Klutina**	**48.00**	**38**	*e*P	**P**	**07 57 25.6**	**+1.2**
	comp=Z,11nm,1.2s						
DIV	**Divide**	**48.12**	**38**	*e*P	**P**	**07 57 27.0**	**+1.7**
	comp=Z,17nm,1.3s						
TKM2	**Tokmak 2**	**49.44**	**297**	*e*P	**P**	**07 57 35.9**	**0.0**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.7s						
TKM2	**Tokmak 2**	**49.44**	**297**	*e*P	**P**	**07 57 35.9**	**0.0**
	comp=Z,4.4nm,0.7s						
VOSK	**Vostochnaya**	**49.58**	**311**	P	**P**	**07 57 35.4**	**-1.2**
VOSK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
VOSK	**Vostochnaya**	**49.58**	**311**	*e*P	**P**	**07 57 35.5**	**-1.2**
	comp=Z,3.7nm,0.9s						
OTUK	**Ortayu**	**49.95**	**305**	P	**P**	**07 57 38.3**	**-1.2**
OTUK				pmax	pmax		
	comp=Z,3.0nm,1.2s						
AAK	**Ala-Archa**	**50.30**	**297**	*i*P	**P**	**07 57 42.4**	**0.0**
AAK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
ZRNK	**Zerenda**	**50.68**	**311**	*e*P	**P**	**07 57 44.4**	**-0.5**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ZRNK	**Zerenda**	**50.68**	**311**	*e*P	**P**	**07 57 44.4**	**-0.5**
	comp=Z,3.3nm,0.8s						
EKS2	**Erkin-Say**	**50.79**	**297**	*e*P	**P**	**07 57 45.9**	**-0.1**
EKS2				pmax	pmax		
	comp=Z,2.0nm,0.9s						
EKS2	**Erkin-Say**	**50.79**	**297**	*e*P	**P**	**07 57 45.9**	**-0.1**
	comp=Z,2.2nm,0.9s						
HNR	**Honiara**	**50.93**	**158**	LR	LR	08 17 14.0	
	comp=Z,143nm,21.0s,baz=351,slow=33						
MNAS	**Manas**	**51.73**	**298**	P	**P**	**07 57 51.6**	**-1.5**
MNAS				pmax	pmax		
	comp=Z,6.0nm,0.8s						
HYT	**Haines Junctio**	**52.13**	**38**	*e*P	**P**	**07 57 58.5**	**+2.6**
INK	**Inuvik**	**52.16**	**28**	P	**P**	**07 57 56.9**	**+1.1**
	comp=Z,3.4nm,0.9s,baz=272,slow=6.2,SNR=3.1						
COEN	**Coen**	**52.78**	**179**	*e*P	**P**	**07 58 01.9**	**+1.1**
	comp=Z,24nm,1.1s						
KKAR	**Karatay Array**	**52.86**	**299**	*e*P	**P**	**07 58 00.3**	**-1.1**
KKAR	**Karatay Array**	**52.86**	**299**	*e*P	**P**	**07 58 00.2**	**-1.1**
SVE	**Sverdlovsk**	**54.19**	**318**	*e*P	**P**	**07 58 11.1**	**+0.2**
ARU	**Arti**	**55.41**	**318**	*d i*P	**P**	**07 58 19.4**	**-0.3**
ARU						08 00 22.6	
ARU				S	**S**	**08 06 03.6**	**+1.7**
ARU				SS	**SS**	**08 09 44.4**	**-1.7**
ARU				pmax	pmax		
	comp=Z,12nm,1.7s						
ARU				MLR	MLR		
	comp=Z,290nm,19.0s						
ARU	**Arti**	**55.41**	**318**	*e*P	**P**	**07 58 18.5**	**-1.2**
	comp=Z,12nm,1.3s						
AB31	**Akbulak array**	**57.29**	**309**	*i* P	**P**	**07 58 32.2**	**-1.0**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ABKAR	**Akbulak array**	**57.29**	**309**	*e*P	**P**	**07 58 32.3**	**-0.9**
FITZ	**Fitzroy Crossi**	**59.05**	**199**	*e*P	**P**	**07 58 46.2**	**+0.5**
	comp=Z,26nm,1.4s						
WRAB	**Tennant Creek**	**59.21**	**189**	*e*P	**P**	**07 58 46.3**	**-0.5**
WRAB				pmax	pmax		
	comp=Z,32nm,0.9s						
WRAB	**Tennant Creek**	**59.21**	**189**	*e*P	**P**	**07 58 46.3**	**-0.5**
	comp=Z,11nm,0.9s						
WB2	**Warramunga Arr**	**59.22**	**189**	*e*P	**P**	**07 58 46.3**	**-0.6**
	comp=Z,13nm,0.9s						
WRA	**Warramunga Arr**	**59.22**	**189**	P	**P**	**07 58 46.1**	**-0.8**
	comp=Z,10.0nm,0.7s,baz=6.8,slow=7.0,SNR=87						
YKA	**Yellowknife Ar**	**61.59**	**31**	P	**P**	**07 59 00.6**	**-2.1**
	comp=Z,0.9nm,1.0s,baz=298,slow=6.2,SNR=4.5						
ARCES	**ARCESS Array B**	**62.38**	**339**	LR	LR	08 30 51.1	
	comp=Z,95nm,18.9s,baz=93,slow=40						
KLMR	**Klimovskoe**	**62.49**	**327**	*e*P	**P**	**07 59 06.2**	**-2.5**
KLMR				pmax	pmax		
	comp=Z,5.0nm,1.1s						
AS01	**Alice Springs**	**62.94**	**189**	*e*P	**P**	**07 59 11.9**	**-0.2**
ASAR	**Alice Springs**	**62.95**	**189**	P	**P**	**07 59 11.8**	**-0.4**
	comp=Z,4.5nm,0.7s,baz=10,slow=5.5,SNR=40						
OBN	**Obninsk**	**66.97**	**323**	*e*P	**P**	**07 59 41.0**	**+3.0**
OBN				*e*		08 00 05.4	
OBN				*e*		08 02 03.5	
OBN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
OBN				MLR	MLR		
	comp=Z,162nm,16.0s						
EDM	**Edmonton**	**67.20**	**39**	*e*P	**P**	**07 59 40.1**	**+0.6**
EDM				*e**PP	**pP**	**07 59 51.0**	**+1.4**
EDM	**Edmonton**	**67.20**	**39**	*e*P	**P**	**07 59 40.1**	**+0.6**
EDM				*e*pP	**pP**	**07 59 51.0**	**+1.4**
FINES	**FINESS Array B**	**67.40**	**332**	P	**P**	**07 59 40.0**	**-0.6**
	comp=Z,2.1nm,0.9s,baz=80,slow=10,SNR=4.0						
FINES	**FINESS Array B**	**67.40**	**332**	P	**P**	**07 59 40.0**	**-0.6**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
K05A	**Summer Lake**	**68.98**	**52**	*e*P	**P**	**07 59 52.5**	**+1.4**
	comp=Z,15nm,1.3s						
KIV	**Kislovodsk**	**70.22**	**311**	*e*P	**P**	**08 00 01.3**	**+2.7**
KIV				pmax	pmax		
	comp=Z,14nm,1.0s						
KIV				MLR	MLR		
	comp=Z,66nm,17.0s						
KBZ	**Khabaz**	**70.22**	**311**	P	**P**	**07 59 58.9**	**+0.4**
	comp=Z,1.8nm,0.7s,baz=31,slow=5.9,SNR=2.9						
FFC	**Flin Flon**	**71.51**	**34**	*e*P	**P**	**08 00 05.7**	**-0.4**
FFC				pmax	pmax		
	comp=Z,8.0nm,1.1s						
FFC	**Flin Flon**	**71.51**	**34**	*e*P	**P**	**08 00 05.7**	**-0.4**
	comp=Z,7.9nm,1.1s						
MFID	**Camas Ranch**	**71.61**	**49**	*e*P	**P**	**08 00 08.1**	**+1.0**
MFID				*e*pP	**sP**	**08 00 19.4**	**-1.5**
LRM	**Limekiln Ridge**	**72.07**	**45**	*e*P	**P**	**08 00 11.3**	**+1.2**
DLMT	**Dillon**	**72.28**	**46**	*e*P	**P**	**08 00 12.2**	**+1.1**
	comp=Z,4.2nm,1.0s						
NOA	**NORSAR Array B**	**72.62**	**337**	P	**P**	**08 00 12.4**	**-0.3**
	comp=Z,1.5nm,1.0s,baz=37,slow=

SDCO	**Great Sand Dun**	**81.26**	**48**	*eP*	**P**	**08 01 03.6**	**+1.5**
SDCO				*epP*	**sP**	**08 01 15.0**	**-1.0**
GERES	**GERESS Array B**	**81.41**	**329**	LR	LR	08 40 03.1	
	comp=Z,122nm,19.2s,baz=90,slow=38						
ANMO	**Albuquerque**	**82.60**	**51**	⇑*eP*	**P**	**08 01 10.8**	**+1.7**
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.1s						
ANMO	**Albuquerque**	**82.60**	**51**	*eP*	**P**	**08 01 08.7**	**-0.4**
ANMO				epP	**pP**	**08 01 20.3**	**+1.0**
TXAR	**Lajitas Array**	**88.18**	**53**	P	**P**	**08 01 37.4**	**+0.5**
	comp=Z,0.3nm,0.7s,baz=290,slow=2.7,SNR=4.5						

DHMR 03 07:53:35.6±1.8, 11°97N×44°03E, h14km±263km, ML3.9, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ADEN	**Aden**	**1.23**	**49**	*i* P	Pg	07 53 59.2	-0.1
ADEN				*i* S	Sg	07 54 15.2	-0.2
ADEN				AML	AML	07 54 25.8	
	comp=E,2μm,0.6s						
BDHA	**Al Bayda'**	**2.50**	**37**	*i* P	Pn	07 54 17.9	+1.9
BDHA				*i* S	Sb	07 54 52.1	+1.1
BDHA				AML	AML	07 55 06.0	
	comp=N,1μm,0.7s						
DHBB	**Dhamar BB**	**2.61**	**8**	*i* P	Pn	07 54 20.0	+2.3
DHBB				*i* S	Sb	07 54 55.8	+1.3

*IDC **03** 08:02:06.3±3.2, 40.°64S×176.°46E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.5/30, mbtmp3.4/5, ML3.4/2, Error ellipse: s-maj=74.9km s-min=28.8km az=132.0*
*WEL **03** 08:02:09.1±0.1, 40.°77S×176.°70E, h33km, ML4.0/81, Error ellipse: s-maj=1.8km s-min=0.9km az=90.0*
ISC 03 08:02:03.6±1.6, 40°90S±0°.04×176°95E±0°.05, h10km±10km, n108, σ1°10/111, mb3.3/3, 22C-3D, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CPWZ	**Castlepoint**	**0.56**	**269**	⇑P*	**Pn**	**08 02 19.2**	**+1.5**
CPWZ				S*	**Sn**	**08 02 27.7**	**+0.6**
CPWZ				AML	AML	08 02 32.0	
ANWZ	**Angora Road**	**0.57**	**321**	P*	**Pb**	**08 02 16.5**	**+0.8**
ANWZ				S*	**Sg**	**08 02 22.6**	**+0.5**
ANWZ				AML	AML	08 02 23.1	
BFZ	**Birch Farm**	**0.57**	**292**	P*	**Pn**	**08 02 16.9**	**-1.0**
BFZ				S*	**Sb**	**08 02 23.8**	**-0.2**
BFZ				AML	AML	08 02 24.4	
BFZ				AML	AML	08 02 31.2	
PRHZ	**Porangahau**	**0.68**	**340**	⇑P*	**Pn**	**08 02 19.0**	**-0.3**
PRHZ				S*	**Sb**	**08 02 27.1**	**+0.1**
PRHZ				AML	AML	08 02 27.8	
TIWZ	**Tintock**	**0.81**	**279**	⇑P*	**Pn**	**08 02 21.7**	**+0.5**
TIWZ				AML	AML	08 02 38.3	
TIWZ				AML	AML	08 02 38.3	
PRWZ	**Pori Road**	**0.82**	**295**	⇑P*	**Pn**	**08 02 21.3**	**+0.1**
PRWZ				AML	AML	08 02 34.3	
PRWZ				AML	AML	08 02 35.0	
TMWZ	**Te Maipa**	**0.82**	**255**	⇑P*	**Pn**	**08 02 22.7**	**+1.3**
TMWZ				AML	AML	08 02 42.8	
TMWZ				AML	AML	08 02 46.6	
DVHZ	**Dannevirke**	**0.84**	**315**	⇑P*	**Pb**	**08 02 21.0**	**+0.6**
DVHZ				S*	**Sg**	**08 02 29.9**	**-1.0**
DVHZ				AML	AML	08 02 30.8	
PXZ	**Pawanui**	**0.87**	**356**	⇑P*	**Pn**	**08 02 22.6**	**+0.7**
PXZ				AML	AML	08 02 36.9	
PXZ				AML	AML	08 02 36.5	
PXZ				AML	AML	08 02 45.2	
PXZ				AML	AML	08 02 45.2	
WPHZ	**Waipukurau**	**0.92**	**335**	⇑P*	**Pn**	**08 02 22.6**	**0.0**
WPHZ				AML	AML	08 02 37.1	
WPHZ				AML	AML	08 02 38.2	
POWZ	**Post Office Ro**	**1.03**	**299**	⇑P*	**Pn**	**08 02 24.1**	**0.0**
POWZ				AML	AML	08 02 41.2	
POWZ				AML	AML	08 02 42.6	
MRZ	**Mangatainoka R**	**1.06**	**283**	P*	**Pn**	**08 02 24.9**	**+0.2**
MRZ				AML	AML	08 02 41.9	
MRZ				AML	AML	08 02 49.5	
TRWZ	**Traveller**	**1.07**	**242**	⇑P*	**Pn**	**08 02 26.4**	**+1.7**
TRWZ				AML	AML	08 03 02.6	
TRWZ				AML	AML	08 03 06.8	
HOWZ	**Holdsworth Sta**	**1.08**	**270**	⇑P*	**Pn**	**08 02 25.5**	**+0.6**
HOWZ				AML	AML	08 02 44.9	
HOWZ				AML	AML	08 03 06.7	
KAHZ	**Kahuranaki**	**1.11**	**357**	⇑PN	**Pn**	**08 02 26.0**	**+0.7**
KAHZ				AML	AML	08 02 50.0	
KAHZ				AML	AML	08 02 54.0	
MTW	**Mount Morrison**	**1.12**	**256**	P*	**Pn**	**08 02 26.3**	**+0.9**
MTW				AML	AML	08 02 50.1	
MTW				AML	AML	08 03 00.4	
TSZ	**Takapari Road**	**1.13**	**318**	P*	**Pb**	**08 02 25.0**	**-0.3**
TSZ				AML	AML	08 02 38.5	
TSZ				AML	AML	08 02 41.7	
PNHZ	**Pukenui**	**1.14**	**330**	⇑P*	**Pb**	**08 02 25.7**	**+0.3**
PNHZ				AML	AML	08 02 39.2	
PNHZ				AML	AML	08 02 39.2	
PAWZ	**Paruwai Farm**	**1.24**	**247**	P*	**Pg**	**08 02 28.4**	**+0.9**
PAWZ				AML	AML	08 03 07.5	
PAWZ				AML	AML	08 03 08.6	
CKHZ	**Cape Kidnapper**	**1.25**	**5**	AML	AML	08 03 01.0	
CKHZ				AML	AML	08 03 06.7	
KRHZ	**Kereru**	**1.33**	**341**	PN	**Pn**	**08 02 28.4**	**+0.1**
KRHZ				AML	AML	08 02 56.9	
KRHZ				AML	AML	08 02 57.6	
OGWZ	**Otaki Gorge**	**1.35**	**273**	⇑P*	**Pg**	**08 02 29.3**	**-0.2**
OGWZ				AML	AML	08 02 52.5	
OGWZ				AML	AML	08 02 57.9	
MSWZ	**Moikau Station**	**1.38**	**248**	P*	**Pg**	**08 02 30.0**	**-0.1**
MSWZ				AML	AML	08 03 00.3	
MSWZ				AML	AML	08 03 00.4	
OHWZ	**Ohakea**	**1.42**	**299**	P*	**Pg**	**08 02 30.9**	**-0.1**
CAW	**Cannon Point**	**1.44**	**261**	⇑PN	**Pg**	**08 02 30.6**	**-0.5**
CAW				AML	AML	08 02 40.6	
CAW				AML	AML	08 03 02.4	
PLWZ	**Palliser**	**1.44**	**242**	PN	**Pg**	**08 02 30.8**	**-0.4**
PLWZ				AML	AML	08 03 11.8	
PLWZ				AML	AML	08 03 17.6	
MCHZ	**McNeill Hill**	**1.47**	**352**	⇑PN	**Pb**	**08 02 31.2**	**+0.2**
MCHZ				AML	AML	08 02 49.8	
MCHZ				AML	AML	08 03 02.4	
KWHZ	**Kaweka Forest**	**1.53**	**345**	⇓PN	**Pn**	**08 02 31.6**	**+0.5**
KWHZ				AML	AML	08 03 00.3	
KWHZ				AML	AML	08 03 10.6	
KIW	**Kapiti Island**	**1.54**	**271**	⇑PN	**Pb**	**08 02 32.1**	**-0.2**
KIW				AML	AML	08 02 50.5	
KIW				AML	AML	08 02 59.3	
BHHZ	**Black Hill Sta**	**1.56**	**334**	⇑PN	**Pn**	**08 02 31.9**	**+0.3**
BHHZ				AML	AML	08 02 49.0	
BHHZ				AML	AML	08 03 04.0	
ARHZ	**Aropaoanui**	**1.64**	**1**	PN	**Pn**	**08 02 33.4**	**+0.9**
ARHZ				AML	AML	08 02 53.6	
ARHZ				AML	AML	08 02 53.9	
BHW	**Baring Head**	**1.65**	**251**	AML	AML	08 03 09.4	
BHW				AML	AML	08 03 21.6	
MOVZ	**Moawhango**	**1.75**	**328**	PN	**Pn**	**08 02 34.9**	**+0.7**
MOVZ				AML	AML	08 03 04.9	
MOVZ				AML	AML	08 03 05.0	
BKZ	**Black Stump Fm**	**1.77**	**349**	⇑PN	**Pn**	**08 02 34.9**	**+0.6**
BKZ				AML	AML	08 02 54.2	
BKZ				AML	AML	08 02 55.3	
NMHZ	**Naumai**	**1.81**	**357**	PN	**Pn**	**08 02 35.9**	**+1.0**
NMHZ				AML	AML	08 02 56.9	
NMHZ				AML	AML	08 02 57.6	
WHHZ	**Waihua**	**1.84**	**7**	AML	AML	08 03 02.2	
WHHZ				AML	AML	08 03 03.5	
WNVZ	**Wahianoa**	**1.88**	**326**	⇑PN	**Pn**	**08 02 37.1**	**+1.1**
WAZ	**Wanganui**	**1.89**	**307**	⇑PN	**Pb**	**08 02 37.5**	**-0.6**
WAZ				AML	AML	08 03 05.9	
WAZ				AML	AML	08 03 13.6	
MTVZ	**Mangateitei**	**1.89**	**323**	PN	**Pb**	**08 02 37.4**	**-0.8**
MTVZ				AML	AML	08 03 08.2	
MTVZ				AML	AML	08 03 09.4	
MHGZ	**Mahia Peninsul**	**1.90**	**23**	PN	**Pn**	**08 02 36.9**	**+0.8**
MHGZ				AML	AML	08 03 05.0	
TUVZ	**Tukino**	**1.91**	**328**	PN	**Pn**	**08 02 37.7**	**+1.3**
TUVZ				AML	AML	08 02 58.8	
TUVZ				AML	AML	08 02 59.0	
WHVZ	**Whangaehu Hut**	**1.92**	**327**	PN	**Pn**	**08 02 37.8**	**+1.2**
WHVZ				AML	AML	08 02 58.7	
WHVZ				AML	AML	08 03 12.5	
TRVZ	**Turoa**	**1.93**	**326**	AML	AML	08 03 10.3	
TRVZ				AML	AML	08 03 10.7	
KNZ	**Kokohu**	**1.96**	**17**	PN	**Pn**	**08 02 37.5**	**+0.6**
FWVZ	**Far West T-bar**	**1.96**	**327**	PN	**Pn**	**08 02 38.4**	**+1.2**
FWVZ				AML	AML	08 03 11.3	
FWVZ				AML	AML	08 03 15.2	
RAHZ	**Arahi**	**1.99**	**3**	⇓PN	**Pn**	**08 02 38.3**	**+0.9**
RAHZ				SN	**Sn**	**08 03 01.0**	**-1.3**
RAHZ				AML	AML	08 03 02.7	
OTVZ	**Oturere**	**2.00**	**330**	PN	**Pn**	**08 02 39.0**	**+1.4**
OTVZ				AML	AML	08 03 15.2	
OTVZ				AML	AML	08 03 22.9	
NGZ	**Ngauruhoe**	**2.01**	**329**	PN	**Pn**	**08 02 39.5**	**+1.6**
NGZ				AML	AML	08 03 14.3	
NGZ				AML	AML	08 03 17.4	
PKVZ	**Pokaka**	**2.02**	**322**	PN	**Pb**	**08 02 39.6**	**-1.0**
PKVZ				AML	AML	08 03 15.1	
PKVZ				AML	AML	08 03 19.6	
TCW	**Tory Channel**	**2.04**	**260**	PN	**Pn**	**08 02 38.8**	**+0.7**
TCW				AML	AML	08 03 03.1	
TCW				AML	AML	08 03 03.4	
KRVZ	**Karewarewa**	**2.06**	**331**	PN	**Pn**	**08 02 40.1**	**+1.6**
KRVZ				AML	AML	08 03 14.3	
KRVZ				AML	AML	08 03 15.4	
WTVZ	**West Tongariro**	**2.07**	**329**	PN	**Pn**	**08 02 40.1**	**+1.6**
WTVZ				AML	AML	08 03 17.2	
WTVZ				AML	AML	08 03 18.8	
RITZ	**Rihia Road**	**2.10**	**336**	PN	**Pn**	**08 02 40.5**	**+1.6**
RITZ				AML	AML	08 03 21.0	
RITZ				AML	AML	08 03 22.8	
PRGZ	**Paritu Road**	**2.10**	**20**	PN	**Pn**	**08 02 39.6**	**+0.7**
PRGZ				AML	AML	08 03 06.1	
PRGZ				AML	AML	08 03 14.5	
MRHZ	**Matea Rd**	**2.11**	**349**	PN	**Pn**	**08 02 39.9**	**+0.9**
MRHZ				AML	AML	08 03 03.9	
MRHZ				AML	AML	08 03 03.9	
SNGZ	**Shannon Statio**	**2.14**	**8**	PN	**Pn**	**08 02 40.2**	**+0.7**
SNGZ				AML	AML	08 03 06.4	
SNGZ				AML	AML	08 03 07.3	
KATZ	**Kakaramea**	**2.15**	**333**	PN	**Pn**	**08 02 41.2**	**+1.5**
KATZ				AML	AML	08 03 28.6	
TWVZ	**Taurewa**	**2.17**	**327**	PN	**Pn**	**08 02 41.3**	**+1.4**
TWVZ				AML	AML	08 03 16.8	
TWVZ				AML	AML	08 03 20.9	
RATZ	**Rangitukua**	**2.23**	**336**	PN	**Pn**	**08 02 42.2**	**+1.5**
RATZ				AML	AML	08 03 27.9	
RATZ				AML	AML	08 03 37.1	
RIGZ	**Rimuhau**	**2.28**	**16**	PN	**Pn**	**08 02 42.0**	**+0.6**
RIGZ				AML	AML	08 03 09.4	
RIGZ				AML	AML	08 03 20.9	
RTZ	**Ruatahuna**	**2.28**	**1**	PN	**Pn**	**08 02 42.2**	**+0.7**
TUWZ	**Tuamarina**	**2.33**	**256**	PN	**Pn**	**08 02 41.9**	**0.0**
TUWZ				AML	AML	08 03 09.8	
TUWZ				AML	AML	08 03 28.2	
ALRZ	**Allen Road**	**2.38**	**349**	PN	**Pn**	**08 02 43.2**	**+0.4**
ALRZ				AML	AML	08 03 12.7	
ALRZ				AML	AML	08 03 13.8	
LREZ	**Lake Rotokare**	**2.42**	**306**	PN	**Pb**	**08 02 45.7**	**-1.6**
LREZ				AML	AML	08 03 32.0	
LREZ				AML	AML	08 03 41.2	
MUGZ	**Murupara**	**2.43**	**357**	PN	**Pn**	**08 02 44.1**	**+0.7**
RAGZ	**Rawiri**	**2.43**	**9**	PN	**Pn**	**08 02 43.9**	**+0.4**
RAGZ				AML	AML	08 03 14.0	
RAGZ				AML	AML	08 03 15.5	
PRRZ	**Plateau Road**	**2.44**	**350**	PN	**Pn**	**08 02 44.3**	**+0.7**
PRRZ				AML	AML	08 03 18.5	
PRRZ				AML	AML	08 03 39.5	
VRZ	**Vera Road**	**2.44**	**316**	PN	**Pn**	**08 02 44.8**	**+1.2**
VRZ				AML	AML	08 03 26.3	
VRZ				AML	AML	08 03 39.2	
BSWZ	**Blackbirch Sta**	**2.45**	**250**	PN	**Pn**	**08 02 44.4**	**+0.7**
BSWZ				AML	AML	08 03 36.1	
BSWZ				AML	AML	08 03 37.2	
WPRZ	**Whakapapatarin**	**2.46**	**346**	PN	**Pn**	**08 02 44.2**	**+0.4**
WPRZ				AML	AML	08 03 13.2	
WPRZ				AML	AML	08 03 20.1	
TKGZ	**Te Karaka**	**2.56**	**16**	PN	**Pn**	**08 02 45.5**	**+0.4**
TKGZ				AML	AML	08 03 18.6	
TKGZ				AML	AML	08 03 20.5	
HRRZ	**Handcock Road**	**2.56**	**348**	⇓PN	**Pn**	**08 02 46.3**	**+1.1**
HRRZ				AML	AML	08 03 44.9	
RRRZ	**Republican Roa**	**2.58**	**352**	PN	**Pn**	**08 02 46.0**	**+0.5**
RRRZ				AML	AML	08 03 15.2	
PRRZ				AML	AML	08 03 22.8	
MWZ	**Matawai**	**2.60**	**10**	PN	**Pn**	**08 02 46.0**	**+0.1**
MWZ				AML	AML	08 03 16.4	
MWZ				AML	AML	08 03 16.4	
MWZ				AML	AML	08 03 22.6	
CNGZ	**Carnagh Statio**	**2.60**	**22**	PN	**Pn**	**08 02 46.6**	**+0.8**
URZ	**Urewera**	**2.64**	**3**	Pn	**Pn**	**08 02 46.3**	**0.0**
	9.4nm,0.3s,baz=230,slow=6.4,SNR=60						
URZ				Sn	**Sn**	**08 03 15.1**	**-3.3**
	12nm,0.3s,baz=301,slow=17,SNR=14						
URZ	**Urewera**	**2.64**	**3**	⇑PN	**Pn**	**08 02 46.8**	**+0.5**
URZ				AML	AML	08 03 22.2	
URZ				AML	AML	08 03 28.5	
PREZ	**Palmer Road**	**2.64**	**305**	PN	**Pb**	**08 02 48.9**	**-2.2**
PREZ				AML	AML	08 03 38.2	
PREZ				AML	AML	08 03 42.8	
TARZ	**Mount Tarawera**	**2.69**	**353**	PN	**Pn**	**08 02 47.7**	**+0.7**
TARZ				AML	AML	08 03 18.1	
TARZ				AML	AML	08 03 23.5	
DREZ	**Durham Road**	**2.71**	**308**	PN	**Pn**	**08 02 49.3**	**+2.0**
NNZ	**Nelson**	**2.71**	**262**	PN	**Pn**	**08 02 48.3**	**+1.0**
NNZ				AML	AML	08 03 40.4	
NNZ				AML	AML	08 03 42.8	
NEZ	**North Egmont**	**2.73**	**306**	PN	**Pn**	**08 02 49.9**	**+2.3**
TLZ	**Tolley Road**	**2.79**	**337**	PN	**Pn**	**08 02 48.6**	**+0.2**
TLZ				AML	AML	08 03 18.0	
TLZ				AML	AML	08 03 20.9	
TWGZ	**Tauwhareparae**	**2.84**	**17**	PN	**Pn**	**08 02 49.4**	**+0.3**
TWGZ				AML	AML	08 03 26.5	
TWGZ				AML	AML	08 03 29.3	
PKE	**Pukeiti**	**2.84**	**306**	PN	**Pn**	**08 02 51.8**	**+2.7**
PKE				AML	AML	08 04 44.5	
NWEZ	**Newall Road**	**2.87**	**304**	PN	**Pn**	**08 02 51.9**	**+2.5**
HIZ	**Hauiti**	**2.88**	**325**	PN	**Pn**	**08 02 50.6**	**+1.1**
HIZ				AML	AML	08 03 38.4	
HIZ				AML	AML	08 03 41.1	
KHZ	**Kahutara**	**2.97**	**238**	PN	**Pn**	**08 02 51.4**	**+0.7**
PUZ	**Puketiti**	**3.00**	**20**	PN	**Pn**	**08 02 51.0**	**-0.3**
THZ	**Tophouse**	**3.16**	**253**	PN	**Pn**	**08 02 53.8**	**+0.3**
THZ				AML	AML	08 03 32.1	
THZ				AML	AML	08 04 00.6	
HAZ	**Te Kaha**	**3.21**	**12**	PN	**Pn**	**08 02 54.6**	**+0.5**
HAZ				AML	AML	08 03 36.6	
HAZ				AML	AML	08 03 41.1	
WMGZ	**Waiomatatini S**	**3.28**	**21**	PN	**Pn**	**08 02 55.1**	**0.0**
WMGZ				AML	AML	08 03 35.3	
WMGZ				AML	AML	08 03 35.5	
QRZ	**Quartz Range**	**3.35**	**270**	PN	**Pn**	**08 02 56.1**	**0.0**
QRZ				AML	AML	08 03 59.4	
QRZ				AML	AML	08 03 59.4	
QRZ				AML	AML	08 04 03.2	
QRZ				AML	AML	08 04 03.2	
TOZ	**Tahuroa Road**	**3.36**	**340**	PN	**Pn**	**08 02 57.0**	**+0.9**
DSZ	**Denniston Nort**	**3.96**	**256**	PN	**Pn**	**08 03 04.8**	**+0.3**
LTZ	**Lake Taylor**	**3.96**	**240**	PN	**Pn**	**08 03 03.9**	**-0.6**
MQZ	**McQueen's Vall**	**4.24**	**227**	PN	**Pn**	**08 03 08.4**	**+0.2**
INZ	**Inchbonnie**	**4.50**	**244**	PN	**Pn**	**08 02 12.3**	**+0.5**
WVZ	**Waitaha Valley**	**5.11**	**243**	PN	**Pn**	**08 03 21.0**	**+0.8**
RPZ	**Rata Peaks**	**5.19**	**235**	Pn	**Pn**	**08 03 21.8**	**+0.4**
	1.1nm,0.3s,baz=318,slow=2.8,SNR=12						
RPZ				Sn	**Sn**	**08 04 16.8**	**-4.5**
	4.6nm,0.3s,baz=41,slow=18,SNR=16						
RPZ	**Rata Peaks**	**5.19**	**235**	PN	**Pn**	**08 03 21.8**	**+0.4**
CTZ	**Chatham Island**	**5.55**	**123**	PN	**Pn**	**08 03 32.5**	**+6.3**
ODZ	**Otahua Downs**	**6.20**	**226**	PN	**Pn**	**08 03 35.9**	**+0.7**
JCZ	**Jackson Bay**	**6.81**	**240**	PN	**Pn**	**08 03 43.7**	**0.0**
ASAR	**Alice Springs**	**39.80**	**282**	P	**P**	**08 09 38.0**	**+1.0**
	0.2nm,0.3s,baz=123,slow=6.4,SNR=6.6						
WRA	**Warramunga Arr**	**41.75**	**287**	P	**P**	**08 09 53.6**	**+0.4**
	0.3nm,0.4s,baz=125,slow=8.2,SNR=8.2						
FITZ	**Fitzroy Crossi**	**49.30**	**282**	P	**P**	**08 10 54.0**	**+1.1**
	0.7nm,0.7s,baz=114,slow=7.4,SNR=3.2						
ARCES	**ARCESS Array B**	**147.64**	**342**	PKPbc	**PKPab**	**08 21 50.3**	**+0.9**
	1.5nm,1.0s,baz=63,slow=2.2,SNR=3.7						

*NNC **03** 08:03:45.1±2.9, 41.°89N×81.°82E, h0km, mb3.7, mpv3.2, Error ellipse: s-maj=22.4km s-min=14.2km az=146.0*
*SOME **03** 08:03:45.3, 41.°92N×81.°75E, h10km*
ISC 03 08:03:50.3±2.3, 42°06N±0°.09×81°52E±0°.07, h10km, n18, σ1°56/29, 7C-9D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHLS	**Shalkode**	**1.63**	**313**	*eP*	**Pb**	**08 04 19.5**	**-1.0**
	74nm,0.1s						
SHLS				*eS*	**Sg**	**08 04 44.4**	**+1.7**
	309nm,0.3s						
PDGK	**Podgornoye**	**1.96**	**311**	⇓Pn	**Pb**	**08 04 24.0**	**-2.0**
	35nm,0.3s						
PDGK				⇑Sn	**Sg**	**08 04 54.6**	**+1.3**
	49nm,0.4s						
UZB	**Uzynbulak**	**2.14**	**301**	*eP*	**Pb**	**08 04 28.2**	**-0.9**
	24nm,0.2s						
UZB				*eS*	**Sg**	**08 04 59.2**	**+0.2**
	125nm,0.3s						
SATY	**Saty**	**2.50**	**294**	*eP*	**Pb**	**08 04 35.1**	**-0.3**
	60nm,0.1s						
SATY				*eS*	**Sg**	**08 05 10.9**	**+0.1**
	186nm,0.1s						
ZHN	**Zhinishke**	**2.53**	**297**	*eP*	**Pb**	**08 04 35.0**	**-0.8**
	22nm,0.2s						
ZHN				*eS*	**Sg**	**08 05 11.3**	**-0.2**
	310nm,0.2s						
DJR	**Jarkent**	**2.59**	**331**	*eP*	**Pb**	**08 04 36.1**	**-0.8**
	20nm,0.3s						
DJR				*eS*	**Sg**	**08 05 12.5**	**-1.1**
	44nm,0.2s						
ARXS	**Arharly**	**3.45**	**310**	*eP*	**Pb**	**08 04 51.6**	**+0.1**
	12nm,0.4s						
ARXS				*eS*	**Sg**	**08 05 39.7**	**-1.4**
	20nm,0.4s						
MDOK	**Medeo**	**3.48**	**290**	*eP*	**Pb**	**08 04 50.2**	**-1.8**
	13nm,0.3s						
MDOK				*eS*	**Sb**	**08 05 36.4**	**+2.0**
	18nm,0.4s						
KAPS	**Kapalarasan**	**3.58**	**335**	*eP*	**Pb**	**08 04 53.2**	**-0.5**
	14nm,0.4s						
KAPS				*eS*	**Sg**	**08 05 42.4**	**-2.9**
	23nm,0.3s						
IZV	**Izvestkoviy**	**3.75**	**287**	*eP*	**Pb**	**08 04 54.8**	**-2.0**
	23nm,0.4s						
IZV				*eS*	**Sb**	**08 05 45.1**	**+2.9**
	40nm,0.6s						
DGS	**Degeres**	**4.40**	**287**	*eP*	**Pb**	**08 05 08.7**	**+1.0**
	8.7nm,0.5s						
DGS				*eS*	**Sg**	**08 06 08.6**	**-2.9**
	23nm,0.3s						
TKM2	**Tokmak 2**	**4.46**	**283**	⇑Pn	**Pn**	**08 04 57.2**	**-1.0**
	4.5nm,0.5s						
TKM2				⇓Lg	Lg	08 06 10.8	
	11nm,0.5s						
MK31	**Makanchi Array**	**4.76**	**6**	⇓Pn	**Pn**	**08 05 01.3**	**-0.8**
	0.2nm,0.2s,baz=196,slow=14,SNR=34						
MK31				⇓Pg	**Pb**	**08 05 14.5**	**+0.7**
	0.2nm,0.2s,baz=194,slow=15,SNR=4.9						
MK31				⇑Sn	**Sn**	**08 05 59.2**	**+1.9**
	1.0nm,0.3s,baz=181,slow=25,SNR=5.8						
MK31				⇑Lg	Lg	08 06 18.5	
	3.7nm,0.5s,baz=183,slow=25,SNR=4.6						
AAK	**Ala-Archa**	**5.24**	**279**	⇓Pg	**Pb**	**08 05 23.0**	**+1.0**
	2.5nm,0.5s						
AAK				⇓Lg	Lg	08 06 33.9	
	8.7nm,0.7s						
MNAS	**Manas**	**6.70**	**277**	⇓Lg	Lg	08 07 20.1	
	2.3nm,0.7s						
KURBB	**Kurchatov Arra**	**8.80**	**347**	⇓Sn	**Sn**	**08 07 38.3**	**+1.5**
	1.9nm,0.5s						
KURBB				⇑Lg	Lg	08 08 28.9	
	7.1nm,0.7s						
KURK	**Kurchatov**	**8.88**	**348**	⇑Sn	**Sn**	**08 07 37.7**	**-0.9**
	1.3nm,0.6s						
KURK				⇑Lg	Lg	08 08 28.8	
	4.9nm,0.9s						
OTUK	**Ortayu**	**8.95**	**317**	⇓Lg	Lg	08 08 40.1	
	0.9nm,0.4s						

*ISCJB **03** 08:07:00.3±1.0, 39.°91N±0°.04×142.°46E±0°.10, h46km±8km, mb3.6/7, Error ellipse: s-maj=12.8km s-min=6.8km az=178.1*
*NIED **03** 08:07:00, 39.°90N×142.°40E, h47km, Mw3.8 Best double couple: M0 6.64000×10^14 NP1: φs 170.00000°, δ28.00000°, λ 59.00000°. NP2: φs 25.00000°, δ 66.00000°, λ 106.00000°.*
*JMA **03** 08:07:00.9±0.1, 39.°92N×142.°40E, h39km±1km, M3.7*
*IDC **03** 08:07:04.8±3.2, 39.°86N×142.°36E, h75km±29km, mb3.4/7, mb1 3.6/10, mb1mx3.4/40, mbtmp3.8/10, Error ellipse: s-maj=31.9km s-min=20.1km az=73.0*
ISC 03 08:06:59.6±1.9, 39°96N±0°.05×142°45E±0°.09, h26km±12km, n27, σ1°36/31, mb3.8/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.45**	**267**	P	**Pn**	**08 07 10.6**	**+0.2**
JTH				S	**Sn**	**08 07 17.3**	**-0.4**
MIYJ	**Miyakonagasawa**	**0.62**	**232**	P	**Pb**	**08 07 12.4**	**+0.5**
MIYJ				S	**Sb**	**08 07 20.3**	**+0.1**
JANG	**Nango**	**0.83**	**300**	P	**Pn**	**08 07 15.6**	**0.0**
JKZ	**Kuzumaki**	**0.86**	**272**	P	**Pn**	**08 07 16.6**	**+0.5**
JKZ				S	**Sn**	**08 07 27.5**	**-0.4**
JOM	**Ohasama**	**1.02**	**242**	P	**Pn**	**08 07 18.3**	**+0.1**
JOM				S	**Sb**	**08 07 29.8**	**-1.7**
OFUJ	**Ofunato**	**1.07**	**215**	P	**Pn**	**08 07 18.8**	**-0.1**
OFUJ				S	**Sn**	**08 07 31.6**	**-1.3**
JTM	**Tenmabayashi**	**1.34**	**308**	P	**Pb**	**08 07 23.1**	**-0.5**
JTM				S	**Sb**	**08 07 40.7**	**-0.1**
JMK	**Ich

ONAJ	**Iwakimizuishiy**	**1.18**	**257**	P	**Pb**	**08 22 15.1**	**-0.7**
ONAJ				*e*S	**Sb**	**08 22 31.0**	**-0.4**
JMM	**Marumori**	**1.25**	**293**	P	**Pn**	**08 22 16.3**	**-0.6**
JMM				*e*S	**Sg**	**08 22 33.4**	**+0.5**
JFT	**Otama**	**1.52**	**276**	P	**Pb**	**08 22 21.1**	**-0.4**
JFT				*e*S	**Sb**	**08 22 41.2**	**+0.1**
JOU	**Okura**	**1.59**	**309**	P	**Pb**	**08 22 21.9**	**-0.8**
JOU				S	**Sb**	**08 22 42.8**	**-0.2**
JMK	**Ichinoseki**	**1.76**	**333**	P	**Pb**	**08 22 25.7**	**+0.1**
JYS	**Shirataka**	**1.92**	**297**	P	**Pb**	**08 22 27.3**	**-0.9**
JFY	**Yanaizu**	**2.02**	**271**	P	**Pn**	**08 22 28.1**	**+0.5**
JFY				*e*S	**Sb**	**08 22 54.4**	**-1.1**
JYK	**Kaneyama**	**2.13**	**317**	P	**Pb**	**08 22 30.1**	**-1.9**
MJAR	**Matsushiro Arr**	**3.33**	**257**	Pn	**Pn**	**08 22 46.7**	**+1.1**
	0.7nm,0.3s,baz=84,slow=16,SNR=13						
MJAR				Sn	**Sb**	**08 23 30.8**	**-2.5**
	1.2nm,0.3s,baz=82,slow=23,SNR=5.6						
MAT	**Matsushiro**	**3.34**	**257**	P	**Pn**	**08 22 47.8**	**+2.1**
MAT				S	**Sn**	**08 23 26.2**	**+0.5**
USRK	**Ussuriysk Ar.**	**10.33**	**314**	Pn	Pn	08 24 27.8	+6.2
	0.1nm,0.3s,baz=128,slow=12,SNR=3.2						
PETK	**Petropavlovsk-**	**19.06**	**29**	LR	LR	08 32 35.5	
	comp=Z,36nm,21.6s,baz=292,slow=34						
H11N2	**WAKE ISLAND Hy**	**27.77**	**122**	T	T	08 56 33.3	
	baz=315,slow=75,SNR=102						
H11N1	**WAKE ISLAND Hy**	**27.78**	**123**	T	T	08 56 33.9	
	baz=315,slow=75,SNR=94						
H11N3	**WAKE ISLAND Hy**	**27.79**	**122**	T	T	08 56 33.8	
	baz=315,slow=75,SNR=71						
SONM	**Songino Array**	**28.14**	**303**	P	**P**	**08 27 47.4**	**+1.5**
	0.5nm,0.5s,baz=95,slow=11,SNR=3.2						
H11S1	**WAKE ISLAND Hy**	**28.50**	**125**	T	T	08 57 26.7	
	baz=317,slow=76,SNR=97						
H11S3	**WAKE ISLAND Hy**	**28.50**	**125**	T	T	08 57 27.9	
	baz=317,slow=76,SNR=111						
H11S2	**WAKE ISLAND Hy**	**28.52**	**125**	T	T	08 57 29.1	
	baz=317,slow=76,SNR=92						
ZALV	**Zalesovo Beam**	**42.17**	**312**	P	**P**	**08 29 46.7**	**+0.5**
	0.5nm,0.4s,baz=87,slow=8.4,SNR=2.8						
MKAR	**Makanchi Array**	**44.49**	**302**	P	**P**	**08 30 05.5**	**+0.4**
	0.4nm,0.6s,baz=90,slow=10.0,SNR=3.7						
WRA	**Warramunga Arr**	**57.50**	**189**	P	**P**	**08 31 41.4**	**-1.6**
	0.4nm,0.7s,baz=6.2,slow=7.3,SNR=6.0						
FINES	**FINESS Array B**	**68.81**	**332**	P	**P**	**08 32 57.7**	**0.0**
	1.7nm,0.9s,baz=52,slow=7.5,SNR=4.0						

MEX 03 08:27:28.1±0.3, 13°.77N×93°.29W, h20km, MD3.7, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.74**	**24**	*e*P	Pn	08 28 09.2	-1.9
CCIG				*e*S	Sn	08 28 40.3	-3.5

*ISCJB **03** 08:29:59.8±1.6, 36°.2N±0°.1×71°.1E±0°.1, h188km, mb3.4/2, Error ellipse: s-maj=18.0km s-min=14.0km az=142.1*
*IDC **03** 08:30:00.1±17.0, 36°.26N×70°.90E, h170km±198km, mb3.1/3,mb1 3.0/4,mb1mx2.8/38,mbtmp3.5/4, ML3.1/1, Error ellipse: s-maj=110.9km s-min=65.0km az=98.0*
*NNC **03** 08:30:11.8±5.2, 37°.02N×71°.39E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=43.4km s-min=20.8km az=169.0*
ISC 03 08:30:02.6±1.8, 36°.3N±0°.1×71°.1E±0°.1, h188km, n7, σ2^{5}74/10, 2C-4D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.05**	**324**	⇑P	**Pn**	**08 30 56.3**	**+3.9**
	9.0nm,0.3s						
DZET				⇓S	**Sn**	**08 31 31.7**	**+0.4**
	52nm,0.5s						
KK31	**Karatay Array**	**6.77**	**356**	⇓P	**Pn**	**08 31 41.8**	**+2.1**
	0.5nm,0.3s,baz=175,slow=12,SNR=7.7						
KK31				⇓S	**Sn**	**08 32 52.7**	**-3.7**
	2.3nm,0.3s,baz=182,slow=20,SNR=12						
AAK	**Ala-Archa**	**6.80**	**22**	⇑P	**Pn**	**08 31 44.0**	**+3.7**
	0.5nm,0.3s						
AAK				⇓S	**Sn**	**08 32 56.9**	**-0.7**
	8.5nm,0.8s						
MKAR	**Makanchi Array**	**13.37**	**35**	P	**Pn**	**08 33 05.4**	**+0.4**
	0.1nm,0.3s,baz=222,slow=14,SNR=6.0						
ZALV	**Zalesovo Beam**	**20.02**	**24**	P	**P**	**08 34 21.1**	**+0.3**
	0.6nm,0.3s,baz=220,slow=11,SNR=5.7						
FINES	**FINESS Array B**	**37.66**	**326**	P	**P**	**08 36 58.1**	**-1.1**
	0.4nm,0.4s,baz=123,slow=10,SNR=4.5						
TORD	**Torodi Ar. Bea**	**65.80**	**269**	P	**P**	**08 40 26.3**	**-1.7**
	0.3nm,0.4s,baz=55,slow=5.3,SNR=4.8						

*SJA **03** 08:37:55.9±0.4, 21°.51S×68°.63W, h270km±160km, ML4.1, MW3.0*
*ISCJB **03** 08:37:59.5±0.4, 21°.90S±0°.03×68°.49W±0°.08, h126km±6km, mb3.7/4, Error ellipse: s-maj=12.0km s-min=4.4km az=177.4*
*IDC **03** 08:38:01.3±1.2, 21°.72S×68°.36W, h113km±14km, mb3.5/4, mb1 3.6/7, mb1mx3.5/27, mbtmp3.8/7, Error ellipse: s-maj=24.9km s-min=21.4km az=133.0*
*GUC **03** 08:38:02.0±0.6, 21°.79S×68°.73W, h123km±4km, ML4.0*
ISC 03 08:38:00.1±0.7, 21°.86S±0°.05×68°.43W±0°.07, h118km±8km, n33, σ1^{9}66/44, mb3.8/4, 8C-1D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB09	**IPOC Station P**	**0.75**	**275**	⇑*i*P	**Pn**	**08 38 20.9**	**+1.1**
PB09				*i* S	**Sn**	**08 38 34.8**	**0.0**
PB09				IAML		08 38 36.9	
	comp=E,10μm,0.3s						
LVC	**Limon Verde**	**0.86**	**211**	P	**Pn**	**08 38 23.2**	**+2.1**
	comp=E,8μm,0.3s,baz=28,slow=7.0,SNR=2103						
LVC				S	**Sn**	**08 38 39.3**	**+2.5**
	comp=E,8μm,0.3s,baz=121,slow=22,SNR=83						
PB01	**IPOC Station P**	**1.28**	**310**	⇑*i*P	**Pn**	**08 38 24.9**	**0.0**
PB01				*i* S	**Sn**	**08 38 42.7**	**-1.0**
PB01				IAML		08 38 43.6	
	comp=E,2μm,0.1s						
PB06	**IPOC Station P**	**1.35**	**231**	⇑*i*P	**Pn**	**08 38 27.2**	**+1.4**
PB06				*i* S	**Sn**	**08 38 45.9**	**+0.6**
PB06				IAML		08 38 47.1	
	comp=E,3μm,0.2s						
PB07	**IPOC Station P**	**1.36**	**275**	⇑*i*P	**Pn**	**08 38 26.1**	**+0.1**
PB07				*i* S	**Sn**	**08 38 44.1**	**-1.4**
PB07				IAML		08 38 44.8	
	comp=E,5μm,0.4s						
PB04	**IPOC Station P**	**1.66**	**253**	⇑*i*P	**Pn**	**08 38 29.6**	**+0.2**
PB04				*i* S	**Sn**	**08 38 50.3**	**-1.5**
PB04				IAML		08 38 53.3	
	comp=N,2μm,0.3s						
PB08	**IPOC Station P**	**1.84**	**338**	⇑*i*P	**Pn**	**08 38 33.1**	**+1.2**
PB08				*i* S	**Sn**	**08 38 56.8**	**+0.8**
PB08				IAML		08 38 57.2	
	comp=E,1μm,0.3s						
HMBC	**Humberstone**	**2.08**	**319**	⇑*i*P	**Pn**	**08 38 33.8**	**-0.8**
HMBC				*i* S	**Sn**	**08 38 57.9**	**-3.1**
MNMC	**Minye Minye**	**2.93**	**338**	⇑*i*P	**Pn**	**08 38 45.6**	**-0.1**
MNMC				*i* S	**Sn**	**08 39 20.4**	**-0.3**
AGUA	**GUANDACOL**	**7.59**	**180**	*e*P	**Pn**	**08 39 49.4**	**+1.3**
AGUA				*e*S	**Sn**	**08 41 10.6**	**-2.1**
ACDV	**Cuesta del Vie**	**8.30**	**184**	*e*P	**Pn**	**08 39 58.5**	**+0.8**
ACDV				*e*S	**Sn**	**08 41 30.1**	**+0.2**
AROD	**Rodeo**	**8.32**	**186**	*e*P	**Pn**	**08 39 59.0**	**+0.8**
AROD				*e*S	**Sn**	**08 41 30.0**	**-0.6**
ACCO	**Cerro Coronel**	**8.71**	**184**	*e*P	**Pn**	**08 40 03.5**	**+0.1**
ACCO				IAML		08 41 44.4	
	comp=Z,13nm,0.4s						
AVFE	**Valle Fertil**	**8.80**	**174**	*e*P	**Pn**	**08 40 04.5**	**0.0**
AVFE				*e*S	**Sn**	**08 41 39.4**	**-2.6**
AVFE				IAML		08 41 42.5	
	comp=Z,4.1nm,0.5s						
AMOG	**MOGNA**	**9.04**	**180**	*e*P	**Pn**	**08 40 06.7**	**-0.9**
AMOG				*e*S	**Sn**	**08 41 43.5**	**-4.2**
SIV	**San Ignacio**	**9.09**	**51**	P	**Pn**	**08 40 08.1**	**-0.3**
	comp=Z,1.1nm,0.3s,baz=252,slow=11,SNR=11						
SIV				S	**Sn**	**08 41 45.7**	**-3.3**
	comp=Z,0.1nm,0.3s,baz=162,slow=20,SNR=2.0						
ACHE	**Chepes**	**9.39**	**171**	⇓*e*P	**Pn**	**08 40 13.0**	**+0.5**
RTLL	**Cerro Villicun**	**9.43**	**180**	*e*P	**Pn**	**08 40 12.0**	**-0.9**
RTLL				*e*S	**Sn**	**08 41 53.8**	**-3.3**
RTLS	**Leoncito**	**9.93**	**184**	*e*P	**Pn**	**08 40 19.1**	**-0.8**
RTLS				*e*S	**Sn**	**08 42 06.3**	**-3.3**
TCA	**Tanti**	**10.04**	**161**	*e*P	**Pn**	**08 40 21.1**	**-0.1**
TCA				IAML		08 40 25.1	
	comp=Z,2.1nm,0.6s						
MRA	**San Martin**	**10.79**	**168**	*e*P	**Pn**	**08 40 29.8**	**-1.5**
MRA				IAML		08 40 32.9	
	comp=Z,3.4nm,0.3s						
CPUP	**Villa Florida**	**11.07**	**116**	P	**Pn**	**08 40 36.3**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=285,slow=10,SNR=5.6						
PLCA	**Paso Flores**	**18.90**	**185**	P	**Pn**	**08 42 14.9**	**+1.6**
	comp=Z,0.1nm,0.3s,baz=26,slow=13,SNR=4.2						
PTGA	**Pitinga**	**22.57**	**23**	P	**P**	**08 42 50.0**	**-0.7**
	comp=Z,2.1nm,0.2s,baz=204,slow=19,SNR=8.6						
TXAR	**Lajitas Array**	**61.18**	**325**	P	**P**	**08 48 03.8**	**+1.2**
	comp=Z,0.1nm,0.5s,baz=148,slow=8.6,SNR=2.9						
TORD	**Torodi Ar. Bea**	**77.06**	**70**	P	**P**	**08 49 41.9**	**+1.1**
	comp=Z,0.4nm,0.5s,baz=253,slow=4.6,SNR=6.6						
YKA	**Yellowknife Ar**	**91.67**	**340**	P	**P**	**08 50 54.8**	**+1.3**
	comp=Z,0.8nm,0.6s,baz=133,slow=4.5,SNR=8.1						
H11S2	**WAKE ISLAND Hy**	**28.36**	**277**	T	T	11 17 17.3	
	baz=103,slow=75						
H11S1	**WAKE ISLAND Hy**	**28.37**	**277**	T	T	11 17 17.7	
	baz=103,slow=75						
H11S3	**WAKE ISLAND Hy**	**28.38**	**277**	T	T	11 17 20.7	
	baz=103,slow=75						
H11N3	**WAKE ISLAND Hy**	**28.45**	**278**	T	T	11 17 24.0	
	baz=103,slow=74,SNR=5.3						
H11N2	**WAKE ISLAND Hy**	**28.47**	**278**	T	T	11 17 25.0	
	baz=103,slow=74,SNR=3.6						
H11N1	**WAKE ISLAND Hy**	**28.47**	**278**	T	T	11 17 25.2	
	baz=103,slow=74,SNR=4.9						

*BJI **03** 08:49:11.8, 36°.40N×22°.80E, h10km, mb4.6/4*
*IDC **03** 08:49:12.3±0.7, 36°.59N×23°.07E, h0km, mb3.9/15, mb1 4.0/22,mb1mx3.9/49,mbtmp3.9/22, ML3.5/8, MS2.9/6, Ms1 2.9/6, ms1mx2.7/43, Error ellipse: s-maj=15.3km s-min=12.1km az=7.0*
*ATH **03** 08:49:13.8, 36°.61N×22°.91E, h24km±1km, ML4.0/10, Error ellipse: s-maj=1.3km s-min=0.8km az=240.0*
*CSEM **03** 08:49:14.7±0.1, 36°.61N×22°.94E, h10km, ML4.0, Error ellipse: s-maj=3.7km s-min=2.4km az=34.0*
*NEIC **03** 08:49:14.8, 36°.62N×22°.95E, h8km, mb4.1/3, ML4.0(THE), After THE.*
*THE **03** 08:49:14.8, 36°.62N×22°.95E, h8km±1km, ML4.0/16, Error ellipse: s-maj=1.2km s-min=0.7km az=350.0*
*ISK **03** 08:49:15.2, 36°.80N×23°.16E, h3km, ML3.5*
*MOS **03** 08:49:15.8±1.9, 36°.44N×23°.02E, h33km, mb4.3/10, Error ellipse: s-maj=8.1km s-min=4.8km az=89.7*
ISC 03 08:49:13.6±0.6, 36°.60N±0°.02×22°.93E±0°.02, h7km±4km, n335, σ1^{9}60/399, mb4.0/23, MS3.2/3, 5C-3D, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLI	**Veliai**	**0.12**	**5**	P	**Pg**	**08 49 17.5**	**+1.2**
VLI				S	**Sg**	**08 49 19.6**	**+1.4**
VLI	**Veliai**	**0.12**	**5**	P	**Pg**	**08 49 17.5**	**+1.2**
VLI				S	**Sg**	**08 49 19.6**	**+1.4**
VLI	**Veliai**	**0.12**	**5**	P	**Pg**	**08 49 17.5**	**+1.2**
VLI				S	**Sg**	**08 49 19.6**	**+1.4**
VLI	**Veliai**	**0.12**	**5**	P	**Pg**	**08 49 16.9**	**+0.5**
VLI				AML	AML	08 49 19.9	
VLI				AML	AML	08 49 20.2	
ANKY	**Antikythira Is**	**0.79**	**157**	P	**Pg**	**08 49 30.3**	**+1.5**
ANKY				S	**Sb**	**08 49 41.0**	**+0.5**
ANKY	**Antikythira Is**	**0.79**	**157**	P	**Pg**	**08 49 30.3**	**+1.5**
ANKY				S	**Sb**	**08 49 41.0**	**+0.5**
ANKY	**Antikythira Is**	**0.79**	**157**	P	**Pg**	**08 49 30.3**	**+1.5**
ANKY				S	**Sb**	**08 49 41.0**	**+0.5**
ANKY	**Antikythira Is**	**0.79**	**157**	P	**Pb**	**08 49 30.9**	**+1.2**
ANKY				S	**Sb**	**08 49 41.8**	**+1.3**
ANKY				AML	AML	08 49 46.5	
	comp=N,15982μm,0.5s						
ANKY				AML	AML	08 49 55.7	
	comp=E,8352μm,0.9s						
KRND	**KRANIDI**	**0.81**	**13**	P	**Pg**	**08 49 29.5**	**+0.3**
KRND				S	**Sg**	**08 49 39.8**	**+0.1**
KRND	**KRANIDI**	**0.81**	**13**	P	**Pg**	**08 49 29.5**	**+0.3**
KRND				S	**Sg**	**08 49 39.8**	**+0.1**
KRND	**KRANIDI**	**0.81**	**13**	P	**Pg**	**08 49 30.1**	**+0.9**
KRND				S	**Sb**	**08 49 40.9**	**-0.1**
VLX	**Vlachokerasia**	**0.89**	**331**	P	**Pg**	**08 49 30.5**	**-0.2**
VLX				S	**Sg**	**08 49 43.3**	**+1.0**
VLX	**Vlachokerasia**	**0.89**	**331**	P	**Pg**	**08 49 30.6**	**-0.2**
VLX				S	**Sg**	**08 49 43.3**	**+1.0**
VLX	**Vlachokerasia**	**0.89**	**331**	P	**Pg**	**08 49 30.5**	**-0.2**
VLX				S	**Sg**	**08 49 43.3**	**+1.0**
VLX	**Vlachokerasia**	**0.89**	**331**	P	**Pg**	**08 49 30.6**	**-0.2**
VLX				S	**Sg**	**08 49 41.8**	**-0.5**
VLX				AML	AML	08 49 48.0	
	comp=N,21581μm,0.7s						
VLX				AML	AML	08 49 50.5	
	comp=E,16937μm,0.6s						
DID	**Didima**	**0.94**	**15**	P	**Pg**	**08 49 31.9**	**+0.1**
DID				S	**Sb**	**08 49 45.9**	**+0.9**
DID	**Didima**	**0.94**	**15**	P	**Pg**	**08 49 31.9**	**+0.1**
DID				S	**Sb**	**08 49 45.7**	**+0.7**
DID	**Didima**	**0.94**	**15**	P	**Pg**	**08 49 31.9**	**+0.1**
DID				S	**Sb**	**08 49 45.9**	**+0.9**
DID	**Didima**	**0.94**	**15**	P	**Pb**	**08 49 33.3**	**+1.0**
DID				S	**Sb**	**08 49 45.7**	**+0.7**
DID				AML	AML	08 49 49.3	
	comp=E,22192μm,0.4s						
DID				AML	AML	08 49 53.0	
	comp=N,10577μm,0.7s						
ITM	**Ithomi**	**0.99**	**306**	P	**Pg**	**08 49 32.1**	**-0.6**
ITM	**Ithomi**	**0.99**	**306**	P	**Pg**	**08 49 32.1**	**-0.6**
ITM	**Ithomi**	**0.99**	**306**	P	**Pg**	**08 49 32.1**	**-0.6**
ITM	**Ithomi**	**0.99**	**306**	P	**Pg**	**08 49 31.9**	**-0.8**
PYL	**PYLOS**	**1.00**	**288**	P	**Pg**	**08 49 32.6**	**-0.2**
PYL				S	**Sn**	**08 49 48.6**	**+0.3**
PYL	**PYLOS**	**1.00**	**288**	P	**Pg**	**08 49 32.6**	**-0.2**
PYL				S	**Sn**	**08 49 48.6**	**+0.3**
PYL	**PYLOS**	**1.00**	**288**	P	**Pg**	**08 49 32.6**	**-0.2**
PYL				S	**Sn**	**08 49 48.6**	**+0.3**
PYL	**PYLOS**	**1.00**	**288**	P	**Pg**	**08 49 31.8**	**-1.0**
PYL				AML	AML	08 49 54.2	
	comp=E,5964μm,0.5s						
PYL				AML	AML	08 50 01.4	
	comp=N,5978μm,0.6s						
MHLO	**Agia Marina, M**	**1.19**	**85**	P	**Pb**	**08 49 36.7**	**+0.3**
MHLO	**Agia Marina, M**	**1.19**	**85**	P	**Pb**	**08 49 36.8**	**+0.3**
MHLO	**Agia Marina, M**	**1.19**	**85**	P	**Pb**	**08 49 36.8**	**+0.3**
MHLO				AML	AML	08 49 57.5	
	comp=N,32627μm,0.5s						
MHLO				AML	AML	08 49 59.1	
	comp=E,35018μm,0.4s						
AMT	**Artemida-Makis**	**1.35**	**314**	P	**Pn**	**08 49 38.9**	**+0.1**
AMT				S	**Sg**	**08 49 58.6**	**+1.6**
AMT	**Artemida-Makis**	**1.35**	**314**	P	**Pn**	**08 49 39.0**	**+0.1**
AMT				S	**Sb**	**08 49 56.0**	**-0.7**
AMT	**Artemida-Makis**	**1.35**	**314**	P	**Pn**	**08 49 39.0**	**+0.1**
AMT				S	**Sb**	**08 49 56.0**	**-0.7**
SERI	**Serifos**	**1.37**	**65**	P	**Pn**	**08 49 37.9**	**-1.3**
SERI	**Serifos**	**1.37**	**65**	P	**Pn**	**08 49 37.9**	**-1.3**
GUR	**Goura**	**1.42**	**341**	P	**Pn**	**08 49 39.6**	**-0.3**
GUR				S	**Sn**	**08 49 58.6**	**-0.2**
GUR	**Goura**	**1.42**	**341**	P	**Pn**	**08 49 40.1**	**+0.2**
GUR				S	**Sn**	**08 49 58.6**	**-0.2**
GUR	**Goura**	**1.42**	**341**	P	**Pn**	**08 49 39.6**	**-0.3**
GUR				S	**Sn**	**08 49 58.6**	**-0.2**
GUR	**Goura**	**1.42**	**341**	P	**Pn**	**08 49 40.1**	**+0.2**
IMMV	**Iera Moni Meta**	**1.42**	**143**	P	**Pn**	**08 49 40.2**	**+0.4**
IMMV	**Iera Moni Meta**	**1.42**	**143**	P	**Pn**	**08 49 40.2**	**+0.4**
IMMV				S	**Sb**	**08 49 59.5**	**+0.8**
IMMV	**Iera Moni Meta**	**1.42**	**143**	P	**Pn**	**08 49 40.2**	**+0.4**
IMMV				S	**Sb**	**08 49 59.5**	**+0.8**
LTK	**Loutraki**	**1.43**	**1**	P	**Pn**	**08 49 40.3**	**+0.4**
LTK				S	**Sn**	**08 49 58.3**	**-0.6**
LTK	**Loutraki**	**1.43**	**1**	P	**Pn**	**08 49 40.3**	**+0.4**
LTK				S	**Sn**	**08 49 58.3**	**-0.6**
LTK	**Loutraki**	**1.43**	**1**	P	**Pn**	**08 49 40.3**	**+0.4**
LTK				S	**Sn**	**08 49 58.3**	**-0.6**
LTK	**Loutraki**	**1.43**	**1**	P	**Pn**	**08 49 40.5**	**+0.5**
LTK				AML	AML	08 50 02.5	
	comp=E,10243μm,0.8s						
LTK				AML	AML	08 50 04.0	
	comp=N,9979μm,0.6s						
VLY	**Voula,Athens**	**1.43**	**29**	P	**Pn**	**08 49 39.8**	**-0.2**
VLY				S	**Sb**	**08 49 59.5**	**+0.4**
VLY	**Voula,Athens**	**1.43**	**29**	P	**Pn**	**08 49 39.8**	**-0.2**
VLY				S	**Sb**	**08 49 59.5**	**+0.4**
VLY	**Voula,Athens**	**1.43**	**29**	P	**Pn**	**08 49 39.8**	**-0.2**
VLY				S	**Sb**	**08 49 59.5**	**+0.4**
VLY	**Voula,Athens**	**1.43**	**29**	P	**Pn**	**08 49 39.2**	**-0.8**
THAL	**Thalero**	**1.45**	**352**	P	**Pn**	**08 49 40.8**	**+0.5**
THAL	**Thalero**	**1.45**	**352**	P	**Pn**	**08 49 40.8**	**+0.5**
THAL	**Thalero**	**1.45**	**352**	P	**Pn**	**08 49 41.1**	**+0.8**
ATH	**Athens Observa**	**1.51**	**24**	P	**Pn**	**08 49 41.9**	**+0.8**
ATH	**Athens Observa**	**1.51**	**24**	P	**Pn**	**08 49 41.9**	**+0.8**
ATH				S	**Sn**	**08 50 00.3**	**-0.7**
ATHU	**Athens Univers**	**1.53**	**26**	P	**Pn**	**08 49 41.1**	**-0.3**
ATHU	**Athens Univers**	**1.53**	**26**	P	**Pn**	**08 49 41.1**	**-0.3**
ATHU	**Athens Univers**	**1.53**	**26**	P	**Pn**	**08 49 41.1**	**-0.3**
ATHU	**Athens Univers**	**1.53**	**26**	P	**Pn**	**08 49 40.6**	**-0.8**
KLV	**Kalavryta, Ach**	**1.57**	**337**	P	**Pn**	**08 49 42.1**	**+0.1**
KLV				S	**Sn**	**08 50 02.4**	**-0.2**
KLV	**Kalavryta, Ach**	**1.57**	**337**	P	**Pn**	**08 49 42.1**	**+0.1**
KLV				S	**Sn**	**08 50 02.4**	**-0.2**
KLV	**Kalavryta, Ach**	**1.57**	**337**	P	**Pn**	**08 49 42.1**	**+0.1**
KLV	**Kalavryta, Ach**	**1.57**	**337**	P	**Pn**	**08 49 43.3**	**+1.3**
VAM	**Vamos**	**1.57**	**139**	P	**Pn**	**08 49 42.1**	**+0.2**
VAM	**Vamos**	**1.57**	**139**	P	**Pn**	**08 49 42.2**	**+0.3**
VAM				S	**Sn**	**08 50 02.4**	**-0.1**
VILL	**Villia**	**1.60**	**11**	P	**Pn**	**08 49 42.4**	**+0.1**
VILL				S	**Sn**	**08 50 03.7**	**+0.5**
VILL	**Villia**	**1.60**	**11**	P	**Pn**	**08 49 42.4**	**+0.1**
VILL				S	**Sn**	**08 50 03.7**	**+0.5**
PTL	**Penteli**	**1.63**	**27**	P	**Pn**	**08 49 42.7**	**-0.1**
PTL				S	**Sn**	**08 50 03.4**	**-0.7**
PTL	**Penteli**	**1.63**	**27**	P	**Pn**	**08 49 42.7**	**-0.1**
PTL				S	**Sn**	**08 50 03.4**	**-0.7**
PTL	**Penteli**	**1.63**	**27**	P	**Pn**	**08 49 42.7**	**-0.1**
PTL	**Penteli**	**1.63**	**27**	P	**Pn**	**08 49 42.3**	**-0.5**
VIL2	**Platees**	**1.64**	**10**	P	**Pn**	**08 49 42.1**	**-0.8**
VIL2				AML	AML	08 50 10.2	
	comp=N,9254μm,0.5s						
VIL2				AML	AML	08 50 12.6	
	comp=E,5989μm,0.7s						
PROD	**Prodromos**	**1.66**	**359**	P	**Pn**	**08 49 43.6**	**+0.4**
PROD	**Prodromos**	**1.66**	**359**	P	**Pn**	**08 49 43.6**	**+0.4**
DRO	**Drossia**	**1.67**	**325**	P	**Pn**	**08 49 44.4**	**+1.2**
DRO	**Drossia**	**1.67**	**325**	P	**Pn**	**08 49 44.4**	**+1.2**
DRO	**Drossia**	**1.67**	**325**	P	**Pb**	**08 49 45.3**	**+0.7**
DRO				AML	AML	08 50 18.7	
	comp=N,10078μm,0.7s						
DRO				AML	AML	08 50 19.6	
	comp=E,10999μm,0.8s						
LAKA	**Lakka**	**1.81**	**336**	P	**Pn**	**08 49 46.3**	**+1.1**
LAKA				S	**Sn**	**08 50 09.4**	**+1.1**
LAKA	**Lakka**	**1.81**	**336**	P	**Pn**	**08 49 46.3**	**+1.1**
LAKA				S	**Sn**	**08 50 09.4**	**+1.1**
LAKA	**Lakka**	**1.81**	**336**	P	**Pn**	**08 49 46.3**	**+1.1**
DSF	**Desfina**	**1.84**	**350**	P	**Pn**	**08 49 46.2**	**+0.5**
DSF	**Desfina**	**1.84**	**350**	P	**Pn**	**08 49 46.2**	**+0.5**
DSF	**Desfina**	**1.84**	**350**	P	**Pn**	**08 49 46.2**	**+0.5**
DSF	**Desfina**	**1.84**	**350**	P	**Pn**	**08 49 46.4**	**+0.7**
DSF				AML	AML	08 50 13.8	
	comp=E,3361μm,0.3s						
DSF				AML	AML	08 50 14.3	
	comp=N,3419μm,0.4s						
TRIZ	**Trizonia**	**1.89**	**339**	P	**Pn**	**08 49 48.1**	**+1.8**
KALE	**Kalithea**	**1.90**	**341**	P	**Pn**	**08 49 47.5**	**+1.0**
KALE	**Kalithea**	**1.90**	**341**	P	**Pn**	**08 49 47.5**	**+1.0**
THR5	**Thira Island,**	**1.96**	**94**	*e*PN	**Pn**	**08 49 47.8**	**+0.5**
THR5				*e*SN	**Sn**	**08 50 12.0**	**-0.1**
THR5	**Thira Island,**	**1.96**	**94**	*e*Pn	**Pn**	**08 49 47.8**	**+0.5**
THR5				*e*Sn	**Sn**	**08 50 12.0**	**-0.1**
EREA	**Eretria**	**1.99**	**23**	P	**Pn**	**08 49 48.0**	**+0.3**
EREA				S	**Sn**	**08 50 12.3**	**-0.6**
EREA	**Eretria**	**1.99**	**23**	P	**Pn**	**08 49 48.0**	**+0.3**
EREA				S	**Sn**	**08 50 12.3**	**-0.6**
EREA	**Eretria**	**1.99**	**23**	P	**Pn**	**08 49 48.0**	**+0.3**
EREA				S	**Sn**	**08 50 12.1**	**-0.7**
ZKS	**Zakynthos**	**2.03**	**303**	P	**Pn**	**08 49 49.8**	**+1.5**
ZKS	**Zakynthos**	**2.03**	**303**	P	**Pn**	**08 49 49.8**	**+1.5**
LKR	**Lokris**	**2.05**	**2**	P	**Pn**	**08 49 48.6**	**+0.1**
LKR	**Lokris**	**2.05**	**2**	P	**Pn**	**08 49 48.6**	**+0.1**
LKR	**Lokris**	**2.05**	**2**	P	**Pn**	**08 49 48.6**	**+0.1**
LKR	**Lokris**	**2.05**	**2**	P	**Pn**	**08 49 48.5**	**0.0**
SANT	**Santorini**	**2.06**	**96**	*e*Pn	**Pn**	**08 49 49.0**

AYDB	**Zeytinkoy-Aydi**	**4.18**	**70**	*e*Pn		**Pn**	**08 50 18.5**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**4.18**	**70**	*e*Pn		**Pn**	**08 50 18.5**	**+0.6**
EZN	**Ezine**	**4.19**	**39**	*e*Pn		**Pn**	**08 50 17.9**	**0.0**
EZN	**Ezine**	**4.19**	**39**	*e*Pn		**Pn**	**08 50 17.9**	**0.0**
ARG	**Arkhangelos**	**4.21**	**94**	P		**Pn**	**08 50 20.6**	**+2.4**
ARG	**Arkhangelos**	**4.21**	**94**	P		**Pn**	**08 50 20.6**	**+2.4**
GADA	**Gvkgeada**	**4.28**	**32**	*e*Pn		**Pn**	**08 50 20.0**	**+0.8**
GADA	**Gvkgeada**	**4.28**	**32**	*e*Pn		**Pn**	**08 50 20.0**	**+0.8**
YER	**Yerkesik**	**4.33**	**81**	*e*PN		**Pn**	**08 50 21.1**	**+1.2**
YER	**Yerkesik**	**4.33**	**81**	*e*Pn		**Pn**	**08 50 21.1**	**+1.2**
FNA	**Florina**	**4.35**	**344**	P		Pn	08 50 25.2	+5.0
FNA	**Florina**	**4.35**	**344**	P		Pn	08 50 25.2	+5.0
GRG	**Griva**	**4.37**	**355**	P		**Pn**	**08 50 24.7**	**+4.2**
GRG	**Griva**	**4.37**	**355**	P		**Pn**	**08 50 24.7**	**+4.2**
TURN	**Turunc**	**4.57**	**85**	*i* P		**Pn**	**08 50 24.2**	**+1.1**
DALY	**Dalyan (Mu¨la**	**4.61**	**86**	*e*PN		**Pn**	**08 50 25.8**	**+2.2**
DALY	**Dalyan (Mu¨la**	**4.61**	**86**	*e*Pn		**Pn**	**08 50 25.8**	**+2.2**
VAY	**Valandovo**	**4.73**	**357**	*e*Pn		**Pn**	**08 50 22.2**	**-3.1**
VAY	**Valandovo**	**4.73**	**357**	*e*Pn		**Pn**	**08 50 22.2**	**-3.1**
OHR	**Ohrid**	**4.80**	**340**	*e*Pn		**Pb**	**08 50 39.5**	**+1.3**
LPK	**Lapseki**	**4.82**	**37**	*e*PN		**Pn**	**08 50 27.2**	**+0.6**
LPK	**Lapseki**	**4.82**	**37**	*e*Pn		**Pn**	**08 50 27.2**	**+0.6**
BALY	**Balya**	**4.85**	**48**	*i* P		**Pn**	**08 50 22.9**	**-4.2**
BALY	**Balya**	**4.85**	**48**	P		**Pn**	**08 50 22.9**	**-4.2**
ALN	**Alexandroupoli**	**4.94**	**29**	*e*PN		**Pn**	**08 50 29.1**	**+0.9**
ALN	**Alexandroupoli**	**4.94**	**29**	*e*Pn		**Pn**	**08 50 29.1**	**+0.9**
ERIK	**Erikli-Kesan**	**4.94**	**34**	*e*PN		**Pn**	**08 50 28.8**	**+0.5**
ERIK	**Erikli-Kesan**	**4.94**	**34**	*e*Pn		**Pn**	**08 50 28.8**	**+0.5**
KULA	**Kula-Manisa**	**4.94**	**65**	*e*PN		**Pn**	**08 50 28.5**	**+0.1**
KULA	**Kula-Manisa**	**4.94**	**65**	*e*Pn		**Pn**	**08 50 28.5**	**+0.1**
KRBG	**Karabiga-Canak**	**5.11**	**41**	*e*PN		**Pn**	**08 50 31.4**	**+0.8**
KRBG	**Karabiga-Canak**	**5.11**	**41**	*e*Pn		**Pn**	**08 50 31.4**	**+0.8**
RKY	**Sarkoy-Tekirda**	**5.27**	**38**	*e*PN		**Pn**	**08 50 33.5**	**+0.7**
RKY	**Sarkoy-Tekirda**	**5.27**	**38**	*e*Pn		**Pn**	**08 50 33.5**	**+0.7**
GLHS	**Glhisar (BURDU**	**5.30**	**82**	*e*PN		**Pn**	**08 50 35.4**	**+2.1**
GLHS	**Glhisar (BURDU**	**5.30**	**82**	*e*Pn		**Pn**	**08 50 35.4**	**+2.1**
TIR	**Tirane**	**5.31**	**334**	*e*Pg		**Pg**	**08 50 56.9**	**+1.5**
TIR	**Tirane**	**5.31**	**334**	*e*Pg		**Pg**	**08 50 56.9**	**+1.5**
EDC	**Edincik**	**5.39**	**44**	*e*PN		**Pn**	**08 50 34.4**	**0.0**
EDC	**Edincik**	**5.39**	**44**	P		**Pn**	**08 50 34.6**	**+0.2**
EDC	**Edincik**	**5.39**	**44**	P		**Pn**	**08 50 34.6**	**+0.2**
AKAS	**Kas**	**5.40**	**92**	*i* P		**Pn**	**08 50 37.9**	**+3.2**
AKAS	**Kas**	**5.40**	**92**	P		**Pn**	**08 50 37.9**	**+3.2**
MRMT	**Marmara Adasi**	**5.42**	**41**	*e*PN		**Pn**	**08 50 35.4**	**+0.5**
MRMT	**Marmara Adasi**	**5.42**	**41**	*e*Pn		**Pn**	**08 50 35.4**	**+0.5**
TIP	**Timpagrande**	**5.52**	**300**	*e*Pn		**Pn**	**08 50 37.1**	**+0.9**
TIP				*e*Sn		**Sn**	**08 51 40.8**	**+0.9**
TIP	**Timpagrande**	**5.52**	**300**	*e*Pn		**Pn**	**08 50 37.1**	**+0.9**
TIP				*e*Sn		**Sn**	**08 51 40.8**	**+0.9**
ELL	**Elmali**	**5.62**	**86**	*e*PN		**Pn**	**08 50 40.2**	**+2.6**
ELL	**Elmali**	**5.62**	**86**	*e*Pn		**Pn**	**08 50 40.2**	**+2.6**
CEL	**Celeste**	**5.84**	**289**	*e*Pn		**Pn**	**08 50 40.8**	**+0.2**
CEL				*e*Sn		**Sn**	**08 51 46.3**	**-1.5**
CEL	**Celeste**	**5.84**	**289**	*e*Pn		**Pn**	**08 50 40.8**	**+0.2**
CEL				*e*Sn		**Sn**	**08 51 46.3**	**-1.5**
TAR1	**Taranto**	**5.91**	**313**	*e*PN		**Pn**	**08 50 42.5**	**+1.0**
VTS	**Vitosha**	**5.99**	**2**	*e*P		**Pn**	**08 50 46.5**	**+3.7**
VTS	**Vitosha**	**5.99**	**2**	*e*P		**Pn**	**08 50 46.5**	**+3.7**
VTS	**Vitosha**	**5.99**	**2**	*e*Pn		**Pn**	**08 50 46.5**	**+3.7**
ARMT	**Armutlu**	**6.11**	**48**	*e*PN		**Pn**	**08 50 45.5**	**+1.2**
ARMT	**Armutlu**	**6.11**	**48**	*e*Pn		**Pn**	**08 50 45.5**	**+1.2**
BARS	**Barje**	**6.27**	**353**	*e*Pn		**Pn**	**08 50 48.1**	**+1.6**
SG1	**Sgolgore (BA)**	**6.46**	**313**	*e*Pn		**Pn**	**08 50 50.3**	**+1.1**
CUC	**Castrocucco**	**6.54**	**303**	*e*Pn		**Pn**	**08 50 52.1**	**+1.9**
CUC				*e*Sn		**Sn**	**08 52 05.4**	**+0.4**
CUC	**Castrocucco**	**6.54**	**303**	*e*Pn		**Pn**	**08 50 52.1**	**+1.9**
CUC				*e*Sn		**Sn**	**08 52 05.4**	**+0.4**
CDT	**Castel del Mon**	**6.86**	**313**	*e*Pn		**Pn**	**08 50 55.9**	**+1.3**
VAE	**Valguarnera**	**6.87**	**280**	Pn		**Pn**	**08 50 57.2**	**+2.5**
	comp=N,1.6nm,0.3s,baz=40,slow=10,SNR=2.5							
VAE				Sn		**Sn**	**08 52 13.8**	**+0.7**
	comp=N,2.3nm,0.3s,baz=21,slow=18,SNR=3.0							
IVAS	**Ivanjica**	**7.29**	**344**	*e*Pn		**Pn**	**08 51 02.6**	**+2.1**
GRUS	**Gruza**	**7.48**	**348**	*e*Pn		**Pn**	**08 51 04.1**	**+1.0**
BBLS	**Lazić**	**7.74**	**341**	*e*Pn		**Pn**	**08 51 07.6**	**+0.8**
DIVS	**Divibare**	**7.82**	**344**	*e*Pn		**Pn**	**08 51 09.3**	**+1.4**
BR131	**Keskin Array S**	**9.00**	**66**	*e*Pn		Pn	08 51 29.4	+5.4
BRTR	**Keskin Array B**	**9.00**	**66**	Pn		**Pn**	**08 51 24.6**	**+0.5**
	comp=N,0.1nm,0.3s,baz=240,slow=12,SNR=2.2							
BRTR				LR		LR	08 55 42.9	
	comp=N,55nm,19.7s,baz=318,slow=44							
MLR	**Muntele Rosu**	**9.17**	**13**	Pn		**Pn**	**08 51 28.2**	**+1.8**
	comp=N,0.0nm,0.3s,baz=187,slow=8.1,SNR=4.0							
MLR				LR		LR	08 55 16.2	
	comp=N,40nm,19.2s,baz=142,slow=40							
MLR	**Muntele Rosu**	**9.17**	**13**	*e*P		Pn	08 51 31.8	+5.4
MLR	**Muntele Rosu**	**9.17**	**13**	*e*P		Pn	08 51 31.8	+5.4
MLR	**Muntele Rosu**	**9.17**	**13**	*e*Pn		Pn	08 51 31.8	+5.4
AQU	**L'Aquila**	**9.34**	**311**	*e*P		**Pn**	**08 51 29.8**	**+1.2**
AQU				*e*			08 53 19.3	
AQU	**L'Aquila**	**9.34**	**311**	*e*Pn		**Pn**	**08 51 29.8**	**+1.2**
AQU				*e*S		**Sn**	**08 53 19.3**	**+5.4**
AQU	**L'Aquila**	**9.34**	**311**	*e*Pn		**Pn**	**08 51 29.8**	**+1.2**
AQU				*e*Sn		**Sn**	**08 53 19.3**	**+5.4**
UDBI	**Udbina**	**9.61**	**328**	*e*Pn		**Pn**	**08 51 34.1**	**+1.7**
UDBI				Sn		**Sn**	**08 53 16.9**	**-3.7**
UDBI	**Udbina**	**9.61**	**328**	*e*Pn		**Pn**	**08 51 34.0**	**+1.7**
MMAI	**Mount Meron Ar**	**10.86**	**106**	Pn		**Pn**	**08 51 47.0**	**-2.6**
	comp=N,2.6nm,0.3s,baz=292,slow=12,SNR=5.1							
MMAI				Sn		**Sn**	**08 53 43.2**	**-8.2**
	comp=N,1.0nm,0.3s,baz=299,slow=18,SNR=3.0							
MMAI				LR		LR	08 57 16.8	
	comp=N,57nm,18.7s,baz=305,slow=45							
ARSA	**Arzberg**	**11.98**	**335**	*e*P		**Pn**	**08 52 08.1**	**+3.4**
	comp=N,0.4nm,0.2s							
EIL	**Elat**	**12.21**	**121**	Pn		**Pn**	**08 52 06.2**	**-1.8**
	comp=N,0.7nm,0.3s,baz=292,slow=16,SNR=4.8							
EIL				Sn		Sn	08 54 15.2	-9.2
	comp=N,0.5nm,0.3s,baz=333,slow=18,SNR=2.8							
VYHS	**Vyhne**	**12.26**	**347**	*e*P		Pn	08 52 01.7	-6.9
VYHS	**Vyhne**	**12.26**	**347**	*e*P		Pn	08 52 01.7	-6.9
VYHS	**Vyhne**	**12.26**	**347**	*e*PN		Pn	08 52 01.7	-6.9
ASF	**Jabal al Asfar**	**12.36**	**107**	Pn		**Pn**	**08 52 07.9**	**-2.1**
	comp=N,0.4nm,0.3s,baz=258,slow=7.5,SNR=3.6							
ANN	**Anapa**	**13.71**	**49**	*e*P		**Pn**	**08 52 26.9**	**-1.4**
ANN				*e*S		**Sn**	**08 55 01.0**	**+0.3**
ANN				pmax		pmax		
	comp=Z,28nm,1.0s							
ANN	**Anapa**	**13.71**	**49**	*e*P		**Pn**	**08 52 26.9**	**-1.4**
	comp=Z,28nm,1.0s							
ANN				*e*S		**Sn**	**08 55 01.0**	**+0.3**
FETA	**Feichten**	**13.81**	**323**	*e*P		**P**	**08 52 40.3**	**+1.9**
	comp=Z,12nm,1.5s							
GEC2	**GERESS Array S**	**13.98**	**334**	*e*P		**Pn**	**08 52 35.6**	**+3.5**
GEC2	**GERESS Array S**	**13.98**	**334**	*e*P		**Pn**	**08 52 35.6**	**+3.5**
GEC2	**GERESS Array S**	**13.98**	**334**	*e*Pn		**Pn**	**08 52 35.6**	**+3.5**
GERES	**GERESS Array B**	**13.98**	**334**	Pn		**Pn**	**08 52 33.6**	**+1.5**
	comp=Z,0.2nm,0.3s,baz=148,slow=12,SNR=2.5							
GERES				LR		LR	08 58 51.0	
	comp=Z,36nm,20.8s,baz=248,slow=41							
DAVOX	**Davos/Dischmat**	**14.07**	**320**	Pn		**Pn**	**08 52 35.4**	**+1.9**
	comp=Z,0.2nm,0.3s,baz=137,slow=19,SNR=2.3							
KHC	**Kasperske Hory**	**14.26**	**334**	*e*P		**P**	**08 52 45.3**	**+2.0**
KHC				AMS		AMS	08 59 10.0	
	comp=Z,200nm,12.1s							
KHC	**Kasperske Hory**	**14.26**	**334**	*e*P		**P**	**08 52 45.3**	**+2.0**
KHC				MLR		MLR		
	comp=Z,200nm,12.1s							
KHC	**Kasperske Hory**	**14.26**	**334**	*e*P		**P**	**08 52 45.3**	**+2.0**
	comp=Z,200nm,12.1s							
KHC	**Kasperske Hory**	**14.26**	**334**	*e*Pn		**Pn**	**08 52 40.0**	**+4.0**
DPC	**Dobruska-Polom**	**14.55**	**343**	*e*P		**P**	**08 52 48.1**	**+1.6**
DPC	**Dobruska-Polom**	**14.55**	**343**	*e*P		**P**	**08 52 48.1**	**+1.6**
DPC	**Dobruska-Polom**	**14.55**	**343**	P		**P**	**08 52 48.1**	**+1.6**
PRU	**Pruhonice**	**14.70**	**338**	*e*P		**P**	**08 52 49.4**	**+1.3**
PRU				*ex*		x	08 52 56.3	
PRU				AMS		AMS	08 59 40.0	
PRU	**Pruhonice**	**14.70**	**338**	*e*P		**P**	**08 52 49.4**	**+1.3**
PRU	**Pruhonice**	**14.70**	**338**	P		**P**	**08 52 49.4**	**+1.3**
KIEV	**Kiev**	**14.80**	**16**	*e*P		**P**	**08 52 49.0**	**-0.2**
KIEV				pmax		pmax		
	comp=Z,2.0nm,0.5s							
KIEV	**Kiev**	**14.80**	**16**	*e*P		**P**	**08 52 49.0**	**-0.2**
	comp=Z,2.0nm,0.5s							
NKC	**Novy Kostel**	**15.59**	**334**	P		**P**	**08 53 03.5**	**+5.5**
NKC				pmax		pmax		
	comp=Z,4.0nm,0.5s							
NKC	**Novy Kostel**	**15.59**	**334**	P		**P**	**08 53 03.5**	**+5.5**
	comp=Z,4.0nm,0.5s							
GRFO	**Grafenberg**	**15.60**	**331**	*e*P		**P**	**08 52 59.9**	**+1.7**
GRFO				pmax		pmax		
	comp=Z,24nm,0.9s							
GRFO	**Grafenberg**	**15.60**	**331**	*e*P		**P**	**08 52 59.9**	**+1.7**
	comp=Z,24nm,0.9s							
GRFO				*e*Sn		Sn	08 55 35.0	-12
BRG	**Berggiesshubel**	**15.66**	**339**	*e*P		**P**	**08 53 01.3**	**+2.5**
	comp=Z,3.4nm,0.9s							
BRG	**Berggiesshubel**	**15.66**	**339**	*e*P		**P**	**08 53 01.3**	**+2.5**
BRG				pmax		pmax		
	comp=Z,3.0nm,0.9s							
BRG	**Berggiesshubel**	**15.66**	**339**	*e*P		**P**	**08 53 01.3**	**+2.5**
	comp=Z,3.0nm,0.9s							
BFO	**Black Forest**	**15.89**	**322**	*e*P		**P**	**08 53 00.5**	**-0.9**
BFO				pmax		pmax		
	comp=Z,2.0nm,0.7s							
BFO	**Black Forest**	**15.89**	**322**	*e*Pn		**P**	**08 53 00.5**	**-0.9**
	comp=Z,1.9nm,0.7s							
BFO	**Black Forest**	**15.89**	**322**	*e*Pn		**P**	**08 53 00.5**	**-0.9**
	comp=Z,1.9nm,0.7s							
CLL	**Collm**	**16.33**	**337**	*i*(P)		**P**	**08 53 08.0**	**+1.9**
	comp=Z,15nm,1.1s							
CLL				*e*			08 53 15.0	
CLL	**Collm**	**16.33**	**337**	*i*P		**P**	**08 53 08.0**	**+1.9**
CLL	**Collm**	**16.33**	**337**	*i* P		**P**	**08 53 08.0**	**+1.9**
CLL	**Collm**	**16.33**	**337**	*e*Pn		**P**	**08 53 08.0**	**+1.9**
	comp=Z,11nm,1.0s							
KIV	**Kislovodsk**	**16.75**	**58**	*e*P		**P**	**08 53 14.2**	**+3.1**
KIV				pmax		pmax		
	comp=Z,7.0nm,1.1s							
KIV				MLR		MLR		
	comp=Z,30nm,14.0s							
KIV	**Kislovodsk**	**16.75**	**58**	*e*P		**P**	**08 53 14.2**	**+3.1**
	comp=Z,30nm,14.0s							
KBZ	**Khabaz**	**16.83**	**59**	Pn		**P**	**08 53 12.7**	**+1.0**
	comp=Z,0.2nm,0.3s,baz=267,slow=8.1,SNR=14							
TNS	**Taunus Mts**	**17.16**	**327**	P		**P**	**08 53 21.9**	**+6.4**
TNS				pmax		pmax		
	comp=Z,15nm,1.2s							
TNS	**Taunus Mts**	**17.16**	**327**	P		**P**	**08 53 21.9**	**+6.4**
	comp=Z,15nm,1.2s							
KLNR	**Kaliningrad**	**18.11**	**355**	*i*P		**P**	**08 53 30.6**	**+4.8**
KLNR				pmax		pmax		
	comp=Z,243nm,1.5s							
KLNR	**Kaliningrad**	**18.11**	**355**	*e*P		**P**	**08 53 30.6**	**+4.8**
	comp=Z,243nm,1.5s							
OBN	**Obninsk**	**20.75**	**22**	*e*P		Pn	08 53 59.1	+2.1
OBN				*e*			08 54 18.1	
OBN				*e*S		Sn	08 57 58.0	+6.9
OBN				pmax		pmax		
	comp=Z,14nm,0.5s							
OBN				MLR		MLR		
	comp=Z,38nm,17.0s							
OBN	**Obninsk**	**20.75**	**22**	*e*P		Pn	08 53 59.7	+2.7
	comp=Z,31nm,0.4s							
ES19	**SONSECA Array**	**21.29**	**287**	*e*P		**P**	**08 54 01.3**	**+0.5**
ES19	**SONSECA Array**	**21.29**	**287**	*e*P		**P**	**08 54 01.3**	**+0.5**
ESDC	**Sonseca Array**	**21.34**	**286**	P		**P**	**08 54 01.6**	**+0.2**
	comp=Z,2.6nm,0.7s,baz=80,slow=9.3,SNR=12							
MDT	**Midelt**	**22.92**	**269**	P		**P**	**08 54 18.9**	**+0.6**
	comp=Z,1.4nm,0.7s,baz=89,slow=13,SNR=2.9							
FINES	**FINESS Array B**	**24.95**	**4**	P		**P**	**08 54 36.2**	**-1.1**
	comp=Z,1.7nm,0.7s,baz=168,slow=9.8,SNR=4.4							
FINES				PcP		**PcP**	**08 58 12.3**	**0.0**
	comp=Z,0.7nm,0.8s,baz=197,slow=1.5,SNR=3.7							
NB2	**NORSAR Subarra**	**25.57**	**347**	P		**P**	**08 54 42.2**	**-0.8**
	comp=Z,2.2nm,0.8s,baz=159,slow=9.3							
NB2	**NORSAR Subarra**	**25.57**	**347**	P		**P**	**08 54 42.2**	**-0.8**
	comp=Z,2.2nm,0.8s,SNR=4.3							
NOA	**NORSAR Array B**	**25.57**	**347**	P		**P**	**08 54 42.8**	**-0.2**
	comp=Z,1.4nm,0.8s,baz=159,slow=10.0,SNR=7.8							
EKA	**Eskdalemuir Ar**	**25.82**	**325**	P		**P**	**08 54 45.4**	**+0.1**
	comp=Z,10.0nm,0.5s,baz=124,slow=8.8,SNR=90							
ESK	**Eskdalemuir**	**25.84**	**325**	*e*P		**P**	**08 54 46.6**	**+1.2**
ESK				pmax		pmax		
	comp=Z,38nm,1.1s							
ESK	**Eskdalemuir**	**25.84**	**325**	*e*P		**P**	**08 54 46.6**	**+1.2**
	comp=Z,38nm,1.1s							
ESK	**Eskdalemuir**	**25.84**	**325**	*e*P		**P**	**08 54 46.6**	**+1.2**
	comp=Z,38nm,1.1s							
KLMR	**Klimovskoe**	**26.47**	**18**	*e*P		**P**	**08 54 52.1**	**+1.0**
KLMR				pmax		pmax		
	comp=Z,6.0nm,1.0s							
KLMR	**Klimovskoe**	**26.47**	**18**	*e*P		**P**	**08 54 52.1**	**+1.0**
	comp=Z,6.0nm,1.0s							
GEYT	**Alibeck**	**27.94**	**77**	P		**P**	**08 55 03.3**	**-1.4**
	comp=Z,1.3nm,0.4s,baz=262,slow=10.0,SNR=2.8							
TORD	**Torodi Ar. Bea**	**30.13**	**225**	P		**P**	**08 55 24.0**	**-0.1**
	comp=Z,1.0nm,0.6s,baz=33,slow=8.5,SNR=6.3							
ARU	**Arti**	**31.03**	**39**	*c i*P		P	08 55 36.7	+5.0
ARU				*e*			08 56 38.8	
ARU				pmax		pmax		
	comp=Z,3.0nm,1.2s							
ARCES	**ARCESS Array B**	**33.03**	**2**	P		**P**	**08 55 48.7**	**-0.4**
	comp=Z,0.7nm,0.7s,baz=195,slow=6.5,SNR=3.9							
ARCES				PcP		**PcP**	**08 58 35.5**	**+2.9**
	comp=Z,2.3nm,0.9s,baz=157,slow=5.3,SNR=4.2							
WSAR	**Wadi Sarin**	**33.49**	**103**	LR		LR	09 12 44.7	
	comp=Z,46nm,19.9s,slow=42							
ZRNK	**Zerenda**	**35.87**	**48**	*e*P		**P**	**08 56 15.4**	**+1.5**
ZRNK	**Zerenda**	**35.87**	**48**	*e*P		**P**	**08 56 15.4**	**+1.5**
	comp=Z,1.8nm,0.7s							
ZRNK	**Zerenda**	**35.87**	**48**	*e*P		**P**	**08 56 15.4**	**+1.5**
	comp=Z,1.8nm,0.7s							
DBIC	**Dimbokro**	**39.13**	**227**	P		**P**	**08 56 42.0**	**+0.2**
	comp=Z,3.1nm,0.7s,baz=23,slow=8.6,SNR=3.0							
AAK	**Ala-Archa**	**39.67**	**65**	LR		LR	09 15 25.4	
	comp=Z,38nm,19.4s,baz=51,slow=40							
AAK	**Ala-Archa**	**39.67**	**65**	*e*P		**P**	**08 56 49.3**	**+2.9**
AAK				pmax		pmax		
	comp=Z,10.0nm,1.6s							
AAK	**Ala-Archa**	**39.67**	**65**	*e*P		**P**	**08 56 49.3**	**+2.9**
	comp=Z,10.0nm,1.6s							
KURBB	**Kurchatov Arra**	**41.66**	**52**	P		**P**	**08 57 00.2**	**-2.2**
	comp=Z,1.1nm,0.8s,baz=280,slow=8.7,SNR=10							
KURK	**Kurchatov**	**41.71**	**52**	P		**P**	**08 57 00.3**	**-2.6**
KURK				pmax		pmax		
	comp=Z,2.0nm,0.9s							
KURK	**Kurchatov**	**41.71**	**52**	P		**P**	**08 57 00.2**	**-2.6**
MK31	**Makanchi Array**	**44.52**	**57**	*e*P		**P**	**08 57 24.8**	**-0.9**
MK31	**Makanchi Array**	**44.52**	**57**	*e*P		**P**	**08 57 24.8**	**-0.9**
MK31	**Makanchi Array**	**44.52**	**57**	*e*P		**P**	**08 57 24.8**	**-0.9**
MKAR	**Makanchi Array**	**44.52**	**57**	P		**P**	**08 57 24.4**	**-1.3**
	comp=Z,2.2nm,0.8s,baz=282,slow=6.1,SNR=13							
MKAR				PcP		**PcP**	**08 59 09.1**	**+0.2**
	comp=Z,0.3nm,0.5s,baz=278,slow=4.2,SNR=2.4							
MK01	**Makanchi Array**	**44.53**	**58**	*e*P		**P**	**08 57 24.5**	**-1.3**
MK01	**Makanchi Array**	**44.53**	**58**	*e*P		**P**	**08 57 24.4**	**-1.3**
ZAA0	**Zalesovo Array**	**45.34**	**47**	*e*P		**P**	**08 57 33.8**	**+1.7**
ZAA0	**Zalesovo Array**	**45.34**	**47**	*e*P		**P**	**08 57 33.8**	**+1.7**
ZALV	**Zalesovo Beam**	**45.34**	**47**	P		**P**	**08 57 30.3**	**-1.8**
	comp=Z,1.2nm,0.3s,baz=272,slow=7.9,SNR=9.5							
WMQ	**Urumqi**	**48.86**	**60**	*e*P		**P**	**08 58 01.4**	**+1.5**
WMQ				pmax		pmax		
	comp=Z,6.0nm,0.8s							
SCHQ	**Schefferville**	**60.91**	**319**	P		**P**	**08 59 27.5**	**+0.6**
	comp=Z,4.1nm,0.6s,baz=90,slow=6.1,SNR=5.9							
YKA	**Yellowknife Ar**	**75.52**	**341**	P		**P**	**09 00 58.5**	**+0.3**
	comp=Z,0.4nm,0.6s,baz=33,slow=5.3,SNR=4.3							
ULM	**Lac du Bonnet**	**78.10**	**325**	P		**P**	**09 01 13.4**	**+0.3**
	comp=Z,3.1nm,0.7s,baz=352,slow=5.5,SNR=3.8							
ILAR	**Eielson Array**	**78.65**	**356**	P		**P**	**09 01 16.6**	**+0.8**
	comp=Z,0.7nm,1.0s,baz=360,slow=3.3,SNR=6.5							

*ISCJB **03** 08:51:34.4±1.0, 26.08N±0.04×128.73E±0.04, h29km±6km, mb3.6/7, Error ellipse: s-maj=7.4km s-min=6.0km az=165.3*
*IDC **03** 08:51:34.1±3.5, 25.84N×127.91E, h0km, mb3.7/7, mb1 3.8/7, mb1mx3.5/36, mbtmp3.7/7, Error ellipse: s-maj=216.1km s-min=19.8km az=66.0*
*JMA **03** 08:51:35.0±0.3, 26.09N×128.70E, h36km±5km, M3.2*

ISC 03 08:51:34.3±1.5, 26.08N±0.05×128.71E±0.04, h16km±9km, n18, σ1°08/27, mb3.8/7, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JNTH	**Nagotoyohara**	**0.75**	**305**	P		**Pg**	**08 51 48.7**		**-0.3**
JNTH				*e*S		**Sg**	**08 51 59.5**		**+0.5**
JOW	**Kunigami**	**0.84**	**333**	P		**Pb**	**08 51 50.5**		**-0.1**
JOW				*e*S		**Sg**	**08 52 01.9**		**+0.1**
JJT2	**Tamagusuku 2**	**0.86**	**274**	P		**Pg**	**08 51 51.1**		**-0.1**
JJT2				S		**Sg**	**08 52 02.3**		**-0.3**
JIH	**Iheya**	**1.16**	**325**	P		**Pn**	**08 51 55.4**		**-0.4**
JOKE	**Okinoerabujima**	**1.28**	**355**	P		**Pn**	**08 51 57.3**		**-0.3**
JOKE				*e*S		**Sn**	**08 52 13.9**		**-0.5**
JAGN	**Aguni-jima**	**1.41**	**291**	P		**Pn**	**08 51 59.0**		**-0.3**
JAGN				*e*S		**Sn**	**08 52 16.6**		**-0.9**
JTK	**Tokunoshima**	**1.71**	**7**	P		**Pn**	**08 52 03.3**		**-0.2**
JTK				S		**Sn**	**08 52 22.6**		**-2.4**
JKE	**Kume jima 2**	**1.74**	**278**	P		**Pn**	**08 52 02.8**		**-1.1**
JKE				S		**Sn**	**08 52 24.0**		**-1.8**
JAMN	**Amaminishikomi**	**2.19**	**11**	P		**Pn**	**08 52 10.1**		**0.0**
JMZ	**Minamidaito 2**	**2.28**	**96**	P		**Pn**	**08 52 10.9**		**-0.4**
JMZ				S		**Sn**	**08 52 36.5**		**-2.5**
JAM	**Amami Oshima**	**2.45**	**19**	P		**Pn**	**08 52 13.3**		**-0.4**
JAM				*e*S		**Sn**	**08 52 42.7**		**-0.6**
SONM	**Songino Array**	**27.91**	**327**	P		**P**	**08 57 25.6**		**+1.9**
	1.2nm,0.7s,baz=146,slow=10,SNR=4.3								
MKAR	**Makanchi Array**	**41.95**	**312**	P		**P**	**08 59 23.4**		**-0.9**
	0.5nm,0.5s,baz=102,slow=9.8,SNR=4.2								
KURBB	**Kurchatov Arra**	**45.25**	**316**	P		**P**	**08 59 50.2**		**-0.7**
	0.3nm,0.4s,baz=107,slow=8.2,SNR=4.3								
WRA	**Warramunga Arr**	**46.08**	**173**	P		**P**	**08 59 58.5**		**+0.8**
	0.8nm,0.6s,baz=353,slow=8.3,SNR=7.7								
ASAR	**Alice Springs**	**49.71**	**174**	P		**P**	**09 00 27.2**		**+1.4**
	0.5nm,0.8s,baz=4.7,slow=12,SNR=7.2								
AKASG	**Malin Array Be**	**75.92**	**320**	P		**P**	**09 03 20.0**		**-0.2**
	0.6nm,0.5s,baz=56,slow=6.0,SNR=3.6								
BRTR	**Keskin Array B**	**77.46**	**308**	P		**P**	**09 03 30.1**		**+0.8**
	0.7nm,0.7s,baz=64,slow=3.4,SNR=4.5								

NSSC 03 08:57:19.0±1.6, 34.14N×38.21E, h20km±9km, ML1.3, Jordan-Syria region

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

2.2nm,0.4s,baz=149,slow=8.7,SNR=31
KURK Kurchatov 62.60 340 *e*P **P 09 11 31.8 -2.0**
13nm,0.7s
ZALV Zalesovo Beam 63.67 346 P **P 09 11 37.8 -3.0**
0.7nm,0.3s,baz=165,slow=8.3,SNR=3.0
GEYT Alibeck 63.70 319 P **P 09 11 40.4 -1.1**
1.9nm,0.4s,baz=167,slow=7.0,SNR=4.9
GEYT LR LR 09 41 01.8
comp=Z,28nm,19.5s,baz=5.0,slow=38
ABKAR Akbulak array 69.43 329 *e*P **P 09 12 16.2 -1.3**
5.2nm,0.5s
ARU Arti 74.68 335 *e*P **P 09 12 48.0 -0.7**
3.3nm,0.8s
VNDA Vanda 75.81 169 P **P 09 12 57.5 +2.6**
1.9nm,0.7s,baz=348,slow=6.0,SNR=7.6
KBZ Khabaz 76.59 318 P **P 09 13 00.8 +0.9**
1.9nm,0.8s,baz=163,slow=9.1,SNR=4.5
BRTR Keskin Array B 81.72 312 P **P 09 13 28.1 0.0**
1.2nm,0.6s,baz=147,slow=7.4,SNR=7.3
QSPA South Pole Qui 82.76 180 *e*P **P 09 13 35.4 +2.4**
12nm,0.9s
AKASG Malin Array Be 87.66 322 P **P 09 13 57.3 -0.1**
0.7nm,0.4s,baz=84,slow=5.3,SNR=3.9
SNAA Sanae 89.20 197 *e*P **P 09 14 07.9 +3.4**
94nm,0.7s
FINES FINESS Array B 91.81 332 P **P 09 14 16.2 -0.3**
0.7nm,0.7s,baz=127,slow=6.0,SNR=4.0
ARCES ARCESS Array B 93.63 340 P **P 09 14 24.1 -0.8**
1.0nm,0.8s,baz=93,slow=4.9,SNR=5.7
TXAR Lajitas Array 143.98 49 PKP **PKPdf 09 20 44.1 -0.6**
0.3nm,0.5s,baz=332,slow=1.3,SNR=7.1
JCT Junction City 146.09 44 *e*PKPdf **PKPab 09 20 50.1 0.0**
MIAR Mount Ida 147.04 32 *e*PKPbc **PKPbc 09 20 52.0 +0.2**
TKL Tuckaleechee C 150.13 17 PKPbc **PKPbc 09 20 60.0 +0.2**
2.8nm,0.5s,baz=304,slow=3.6,SNR=14

ISK ***03*** *09:04:58.7, 37°.22N×28°.18E, h7km, MD2.4*
ISCJB ***03*** *09:04:59.2±0.5, 37°.24N±0°.04×28°.17E±0°.04, h0km, Error ellipse: s-maj=5.6km s-min=4.1km az=32.6*
CSEM ***03*** *09:04:59.3±0.2, 37°.26N×28°.22E, h2km, MD2.4, Error ellipse: s-maj=5.3km s-min=4.1km az=48.0, Suspected Mining explosion.*
DDA ***03*** *09:05:00.3, 37°.29N×28°.28E, h7km, Md2.8, Suspected Mining explosion.*

ISC 03 09:04:59.1±0.8, 37°.29N±0°.03×28°.21E±0°.03, h0km, n20, σ0s73/33, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.17**	**158**	PG	**Pg**	**09 05 01.6**	**-0.7**
YER				*e*SG	**Sg**	**09 05 03.9**	**-0.5**
YER	**Yerkesik**	**0.17**	**158**	*i* Pg	**Pg**	**09 05 01.6**	**-0.7**
YER				*e*Sg	**Sg**	**09 05 03.9**	**-0.5**
DALY	**Dalyan (Mu¨la**	**0.59**	**143**	*e*PG	**Pg**	**09 05 09.8**	**-0.6**
DALY				*e*SG	**Sg**	**09 05 18.0**	**-0.1**
DALY	**Dalyan (Mu¨la**	**0.59**	**143**	*e*Pg	**Pg**	**09 05 09.8**	**-0.6**
DALY				*e*Sg	**Sg**	**09 05 18.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.70**	**339**	*e*PG	**Pg**	**09 05 13.9**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.70**	**339**	*e*PG	**Pb**	**09 05 13.9**	**-0.4**
BODT	**Bodrum**	**0.75**	**253**	*e*PG	**Pg**	**09 05 12.9**	**-0.6**
BODT				*e*SG	**Sg**	**09 05 23.3**	**+0.1**
BODT	**Bodrum**	**0.75**	**253**	*e*Pg	**Pg**	**09 05 12.9**	**-0.6**
BODT				*e*Sg	**Sg**	**09 05 23.3**	**+0.1**
DNZL	**Cakiroluk**	**0.78**	**59**	*i* P	**Pb**	**09 05 15.3**	**-0.4**
DNZL				*i* S	**Sn**	**09 05 29.6**	**-0.4**
DNZL	**Cakiroluk**	**0.78**	**59**	P	**Pb**	**09 05 15.3**	**-0.4**
DNZL				S	**Sn**	**09 05 29.6**	**-0.4**
GCAM	**G?zelcaml?**	**0.88**	**298**	*i* P	**Pb**	**09 05 17.4**	**+0.3**
GCAM				*i* S	**Sn**	**09 05 32.2**	**+0.1**
GCAM	**G?zelcaml?**	**0.88**	**298**	P	**Pb**	**09 05 17.5**	**+0.3**
GCAM				S	**Sn**	**09 05 32.2**	**+0.1**
GOLH	**Golhisar**	**1.08**	**92**	*i* P	**Pg**	**09 05 19.5**	**-0.3**
GOLH				*i* S	**Sn**	**09 05 39.5**	**+2.1**
GOLH	**Golhisar**	**1.08**	**92**	P	**Pg**	**09 05 19.5**	**-0.3**
MANT	**Manisa**	**1.23**	**13**	*i* P	**Pg**	**09 05 22.6**	**-0.2**
MANT	**Manisa**	**1.23**	**13**	P	**Pg**	**09 05 22.6**	**-0.2**
KULA	**Kula-Manisa**	**1.27**	**16**	*e*PN	**Pn**	**09 05 24.5**	**+0.2**
KULA	**Kula-Manisa**	**1.27**	**16**	*e*Pn	**Pn**	**09 05 24.5**	**+0.2**
AKAS	**Kas**	**1.54**	**133**	*i* P	**Pb**	**09 05 28.3**	**-0.3**
AKAS				*i* S	**Sn**	**09 05 50.6**	**+1.9**
AKAS	**Kas**	**1.54**	**133**	P	**Pb**	**09 05 28.3**	**-0.3**
AKAS				S	**Sn**	**09 05 50.6**	**+1.9**

IDC 03 09:17:51.0±3.3, 33°.21S×178°.68W, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.6/26, mbtmp3.6/3, ML3.7/1, Error ellipse: s-maj=74.9km s-min=47.1km az=118.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.09**	**213**	Pn	Pn	09 19 21.9	-0.4
	1.7nm,0.3s,baz=91,slow=11,SNR=12						
URZ				Sn	Sn	09 20 28.9	-3.9
	1.5nm,0.3s,baz=110,slow=19,SNR=7.5						
ASAR	**Alice Springs**	**42.47**	**270**	P	P	09 25 47.8	-0.3
	0.6nm,0.8s,baz=115,slow=7.8,SNR=6.9						
WRA	**Warramunga Arr**	**43.71**	**275**	P	P	09 25 58.1	+0.1
	0.3nm,0.7s,baz=115,slow=7.8,SNR=7.5						
FINES	**FINESS Array B**	**147.55**	**338**	PKPbc	PKPbc	09 37 35.6	-0.8
	1.1nm,0.8s,baz=30,slow=6.6,SNR=3.8						

NIED ***03*** *09:19:00, 37°.40N×141°.30E, h20km, Mw3.7 Best double couple: M0 3.40000×10^14 NP1:φs132.00000°, δ36.00000°, λ-42.00000°. NP2:φs258.00000°, δ67.00000°, λ-118.00000°.*
IDC ***03*** *09:19:15.2±1.0, 37°.38N×141°.61E, h0km, mb3.5/5, mb1 3.7/8, mb1mx3.5/57, mbtmp3.5/8, ML2.8/3, MS2.8/1, Ms1 2.8/1, ms1mx2.3/26, Error ellipse: s-maj=27.9km s-min=21.5km az=109.0*
ISCJB ***03*** *09:19:17.2±0.9, 37°.38N±0°.03×141°.49E±0°.06, h23km±5km, mb3.5/5, MS2.7/1, Error ellipse: s-maj=8.0km s-min=4.9km az=14.4*
JMA ***03*** *09:19:20.5±0.1, 37°.43N×141°.27E, h29km±1km, M3.7*
JMA Felt III J1.

ISC 03 09:19:17.3±1.5, 37°.39N±0°.04×141°.47E±0°.06, h14km±9km, n25, σ1s20/30, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.47**	**268**	P	**Pb**	**09 19 28.0**	**+0.6**
JFK				S	**Sg**	**09 19 33.0**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.60**	**242**	P	**Pb**	**09 19 30.5**	**+0.9**
ONAJ				S	**Sg**	**09 19 37.3**	**+0.1**
JMM	**Marumori**	**0.72**	**312**	P	**Pb**	**09 19 31.6**	**+0.1**
JMM				S	**Sg**	**09 19 39.4**	**-1.3**
JFT	**Otama**	**0.91**	**279**	P	**Pg**	**09 19 35.1**	**+0.2**
JFT				S	**Sb**	**09 19 45.1**	**-1.7**
JHO	**Hitachi**	**1.06**	**223**	P	**Pb**	**09 19 37.0**	**-0.3**
JHO				S	**Sb**	**09 19 50.3**	**-0.7**
JIO	**Ouri**	**1.07**	**355**	P	**Pg**	**09 19 38.1**	**+0.2**
JIO				S	**Sb**	**09 19 51.3**	**-0.1**
JOU	**Okura**	**1.17**	**327**	P	**Pn**	**09 19 39.5**	**+0.3**
JOU				S	**Sb**	**09 19 53.5**	**-0.7**
JYS	**Shirataka**	**1.39**	**307**	P	**Pb**	**09 19 42.7**	**-0.3**
JYS				S	**Sn**	**09 19 58.5**	**-1.8**
JFY	**Yanaizu**	**1.40**	**271**	P	**Pn**	**09 19 43.0**	**+0.6**
JFY				S	**Sn**	**09 20 00.0**	**-0.7**
MJAR	**Matsushiro Arr**	**2.74**	**253**	Pn	**Pn**	**09 20 02.4**	**+1.5**
	3.0nm,0.3s,baz=82,slow=16,SNR=19						
MJAR				Sn	**Sn**	**09 20 35.4**	**+1.6**
	5.6nm,0.3s,baz=60,slow=29,SNR=6.5						
MAT	**Matsushiro**	**2.74**	**253**	P	**Pn**	**09 20 02.8**	**+2.0**
MAT				S	**Sb**	**09 20 37.0**	**-2.6**
JHJ	**Hachijo jima 2**	**4.47**	**198**	Pn	**Pn**	**09 20 23.9**	**-0.7**
	4.2nm,0.3s,baz=76,slow=19,SNR=3.3						
JHJ				Sn	**Sn**	**09 21 15.8**	**-0.7**
	10.0nm,0.3s,baz=90,slow=19,SNR=4.9						
USRK	**Ussuriysk Ar.**	**9.89**	**316**	Pn	**Pn**	**09 21 40.9**	**+2.0**
	0.1nm,0.3s,baz=128,slow=12,SNR=3.3						
YAK	**Yakutsk**	**25.74**	**347**	LR	LR	09 34 51.6	
	comp=Z,25nm,21.2s,baz=186,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.29**	**121**	T	T	09 55 20.2	
	baz=314,slow=75,SNR=172						
H11N1	**WAKE ISLAND Hy**	**28.30**	**121**	T	T	09 55 20.5	
	baz=314,slow=75,SNR=261						
H11N3	**WAKE ISLAND Hy**	**28.31**	**121**	T	T	09 55 21.8	
	baz=314,slow=75,SNR=250						
H11S1	**WAKE ISLAND Hy**	**29.02**	**123**	T	T	09 56 12.7	
	baz=316,slow=76,SNR=105						
H11S3	**WAKE ISLAND Hy**	**29.02**	**124**	T	T	09 56 06.6	
	baz=316,slow=76,SNR=118						
H11S2	**WAKE ISLAND Hy**	**29.03**	**124**	T	T	09 56 14.0	
	baz=316,slow=76,SNR=71						
MKAR	**Makanchi Array**	**43.97**	**302**	P	**P**	**09 27 24.1**	**+0.2**
	0.1nm,0.3s,baz=86,slow=8.3,SNR=2.3						
ILAR	**Eielson Array**	**49.17**	**33**	P	**P**	**09 28 02.7**	**-1.7**
	0.3nm,0.7s,baz=271,slow=8.1,SNR=2.7						
WRA	**Warramunga Arr**	**57.41**	**188**	P	**P**	**09 29 04.7**	**-0.7**
	0.8nm,1.0s,baz=12,slow=6.9,SNR=4.8						
ASAR	**Alice Springs**	**61.14**	**188**	P	**P**	**09 29 32.1**	**+1.0**
	0.4nm,0.8s,baz=11,slow=11,SNR=4.6						
TXAR	**Lajitas Array**	**89.87**	**52**	P	**P**	**09 32 17.5**	**+1.4**
	0.4nm,1.0s,baz=278,slow=2.6,SNR=3.7						

JMA 03 09:19:35.8±0.1, 35°.89N×140°.78E, h11km±1km, M3.5, 1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.20**	**161**	⇓P	Pg	09 19 39.9	-0.1
CHOJ				S	Sg	09 19 42.9	0.0
JYT	**Yasato**	**0.58**	**306**	S	Sg	09 19 54.9	+0.1
BSO3	**Boso 3**	**1.11**	**192**	P	Pb	09 19 56.8	0.0

ISCJB ***03*** *09:50:31.9±0.4, 37°.90N±0°.02×27°.31E±0°.03, h10km±4km, Error ellipse: s-maj=4.3km s-min=3.7km az=164.4*
ISK ***03*** *09:50:31.8, 37°.90N×27°.32E, h10km, MD2.5*
CSEM ***03*** *09:50:32.0±0.1, 37°.90N×27°.31E, h10km, ML2.7, Error ellipse: s-maj=2.7km s-min=2.1km az=85.0*
DDA ***03*** *09:50:32.1, 37°.90N×27°.27E, h7km, Ml2.7*

ISC 03 09:50:32.1±0.9, 37°.90N±0°.02×27°.31E±0°.02, h11km±8km, n24, σ0s53/44, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GCAM	**G?zelcaml?**	**0.21**	**198**	*i* P	**Pg**	**09 50 36.3**	**-0.2**
GCAM				*i* S	**Sg**	**09 50 39.5**	**+0.1**
GCAM	**G?zelcaml?**	**0.21**	**198**	P	**Pg**	**09 50 36.3**	**-0.2**
GCAM				S	**Sg**	**09 50 39.5**	**+0.1**
DGB	**¨zmir**	**0.37**	**295**	*i* P	**Pg**	**09 50 39.6**	**0.0**
DGB				*i* S	**Sg**	**09 50 43.9**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**0.46**	**84**	*e*PG	**Pg**	**09 50 41.2**	**0.0**
AYDB				*e*SG	**Sg**	**09 50 48.1**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**0.46**	**84**	*e*Pg	**Pg**	**09 50 41.2**	**0.0**
AYDB				*e*Sg	**Sg**	**09 50 48.1**	**+0.8**
IZM	**Izmir**	**0.50**	**355**	*e*PG	**Pg**	**09 50 42.0**	**+0.1**
IZM				*e*SG	**Sg**	**09 50 49.2**	**+0.6**
IZM	**Izmir**	**0.50**	**355**	*e*Pg	**Pg**	**09 50 42.0**	**+0.1**
IZM				*e*Sg	**Sg**	**09 50 49.2**	**+0.6**
ZEY	**¨zmir**	**0.72**	**298**	*i* P	**Pg**	**09 50 45.8**	**-0.3**
ZEY				*i* S	**Sg**	**09 50 55.9**	**+0.3**
URLA	**Izmir**	**0.73**	**309**	*i* P	**Pg**	**09 50 46.0**	**-0.3**
URLA				*i* S	**Sg**	**09 50 55.7**	**-0.1**
URLA	**Izmir**	**0.73**	**309**	P	**Pg**	**09 50 46.0**	**-0.3**
URLA				S	**Sg**	**09 50 55.7**	**-0.1**
BODT	**Bodrum**	**0.83**	**180**	*e*PG	**Pb**	**09 50 48.3**	**-0.3**
BODT				*e*SG	**Sb**	**09 51 00.3**	**+0.5**
BODT	**Bodrum**	**0.83**	**180**	*e*Pg	**Pb**	**09 50 48.3**	**-0.3**
BODT				*e*Sg	**Sb**	**09 51 00.3**	**+0.5**
BDRM	**Kayabasi**	**0.84**	**173**	*i* P	**Pb**	**09 50 48.5**	**-0.2**
BDRM				*i* S	**Sg**	**09 50 59.1**	**-0.1**
BDRM	**Kayabasi**	**0.84**	**173**	P	**Pb**	**09 50 48.5**	**-0.2**
BDRM				S	**Sg**	**09 50 59.1**	**-0.1**
AKS	**Akhisar**	**1.06**	**22**	*e*PG	**Pb**	**09 50 52.5**	**+0.1**
AKS				*e*SG	**Sn**	**09 51 07.4**	**-0.2**
AKS	**Akhisar**	**1.06**	**22**	*e*Pg	**Pb**	**09 50 52.5**	**+0.1**
AKS				*e*Sg	**Sn**	**09 51 07.4**	**-0.2**
YER	**Yerkesik**	**1.08**	**134**	*e*PN	**Pb**	**09 50 53.1**	**+0.2**
YER	**Yerkesik**	**1.08**	**134**	*e*Pn	**Pb**	**09 50 53.1**	**+0.2**
CHOS	**Chios island**	**1.11**	**297**	*e*PN	**Pn**	**09 50 53.5**	**-0.1**
CHOS				*e*SN	**Sn**	**09 51 09.3**	**+0.4**
CHOS	**Chios island**	**1.11**	**297**	*e*Pn	**Pn**	**09 50 53.5**	**-0.1**
CHOS				*e*Sn	**Sn**	**09 51 09.3**	**+0.4**
MANT	**Manisa**	**1.15**	**58**	*i* P	**Pn**	**09 50 54.3**	**0.0**
MANT				*i* S	**Sg**	**09 51 07.2**	**-1.9**
MANT	**Manisa**	**1.15**	**58**	P	**Pn**	**09 50 54.3**	**0.0**
MANT				S	**Sg**	**09 51 07.2**	**-1.9**
KULA	**Kula-Manisa**	**1.23**	**59**	*e*PN	**Pb**	**09 50 55.4**	**0.0**
KULA	**Kula-Manisa**	**1.23**	**59**	*e*Pn	**Pb**	**09 50 55.4**	**0.0**

NIED ***03*** *10:05:00, 39°.50N×143°.50E, h17km, Mw3.5 Best double couple: M0 2.17000×10^14 NP1:φs193.00000°, δ20.00000°, λ73.00000°. NP2:φs31.00000°, δ71.00000°, λ96.00000°.*
JMA ***03*** *10:05:39.8±0.2, 39°.47N×143°.50E, h23km±4km, M3.5*
IDC ***03*** *10:05:43.3±3.1, 39°.84N×142°.75E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.3/53, mbtmp3.4/3, ML3.2/1, Error ellipse: s-maj=73.3km s-min=39.0km az=67.0*

ISC 03 10:05:41.0±1.8, 39°.51N±0°.06×143°.4E±0°.1, h11km, n22, σ0s61/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.19**	**274**	P	**Pn**	**10 06 02.9**	**-0.7**
MIYJ				S	**Sg**	**10 06 19.7**	**+0.3**
JTH	**Tanohata**	**1.23**	**291**	P	**Pn**	**10 06 03.4**	**-0.8**
JTH				S	**Sn**	**10 06 21.2**	**+0.4**
OFUJ	**Ofunato**	**1.38**	**253**	P	**Pn**	**10 06 05.4**	**-0.8**
JOM	**Ohasama**	**1.60**	**269**	P	**Pn**	**10 06 09.1**	**-0.1**
JANG	**Nango**	**1.66**	**302**	P	**Pn**	**10 06 09.4**	**-0.7**
JMK	**Ichinoseki**	**1.75**	**252**	P	**Pn**	**10 06 10.9**	**-0.4**
JIO	**Ouri**	**1.89**	**237**	P	**Pn**	**10 06 12.2**	**-0.9**
JRG	**Rokugo**	**2.11**	**268**	P	**Pn**	**10 06 16.6**	**+0.3**
JTM	**Tenmabayashi**	**2.17**	**307**	P	**Pn**	**10 06 17.2**	**+0.1**
JAH	**Hinai**	**2.21**	**289**	P	**Pn**	**10 06 17.9**	**+0.4**
JOU	**Okura**	**2.39**	**242**	P	**Pn**	**10 06 20.0**	**-0.1**
JYK	**Kaneyama**	**2.40**	**257**	P	**Pn**	**10 06 20.4**	**+0.1**
JOT	**Ohata**	**2.57**	**317**	P	**Pn**	**10 06 22.8**	**+0.2**
JNBK	**Urakawa-nobuka**	**2.81**	**351**	P	**Pn**	**10 06 26.2**	**+0.4**
JNBK				S	**Sn**	**10 06 59.7**	**0.0**
JFT	**Otama**	**3.09**	**231**	P	**Pn**	**10 06 29.5**	**-0.3**
MAT	**Matsushiro**	**5.03**	**236**	P	**Pn**	**10 06 57.4**	**+1.0**
MAT				*e*S	**Sn**	**10 07 55.1**	**+0.6**
MJAR	**Matsushiro Arr**	**5.03**	**236**	Pn	**Pn**	**10 06 57.6**	**+1.2**
	0.9nm,0.3s,baz=41,slow=12,SNR=25						
H11N2	**WAKE ISLAND Hy**	**28.26**	**127**	T	T	10 42 23.3	
	baz=318,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**28.27**	**127**	T	T	10 42 27.3	
	baz=318,slow=75,SNR=5.6						
H11N3	**WAKE ISLAND Hy**	**28.28**	**127**	T	T	10 42 28.2	
	baz=318,slow=75,SNR=8.7						
MKAR	**Makanchi Array**	**44.15**	**300**	P	**P**	**10 13 48.9**	**-0.6**
	0.3nm,0.3s,baz=83,slow=9.9,SNR=3.7						
WRA	**Warramunga Arr**	**59.74**	**190**	P	P	10 15 51.5	+5.7
	0.5nm,1.1s,baz=7.9,slow=7.0,SNR=2.6						

ISCJB ***03*** *10:11:22.3±0.9, 4°.97N±0°.07×125°.1E±0°.2, h100km, mb3.3/5, Error ellipse: s-maj=34.3km s-min=8.1km az=7.9*
IDC ***03*** *10:11:25.7±1.4, 5°.21N×125°.74E, h122km±14km, mb3.1/5, mb1 3.3/5, mb1mx3.1/37, mbtmp3.5/5, Error ellipse: s-maj=57.3km s-min=14.9km az=80.0*

ISC 03 10:11:23.9±1.0, 4°.95N±0°.08×125°.4E±0°.3, h100km, n8, σ2s21/12, mb3.3/5, 2C, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DAV	**Davao City (W)**	**2.11**	**6**	P	**Pn**	**10 11 57.6**	**-0.4**
	28nm,0.3s,baz=236,slow=7.3,SNR=3.0						
DAV				S	**Sn**	**10 12 22.2**	**-1.8**
	78nm,0.3s,baz=281,slow=23,SNR=7.6						
DMPH	**Davao City--Mi**	**2.12**	**4**	⇑*e*P	**Pn**	**10 12 00.5**	**+2.5**
DMPH				*e*S	**Sn**	**10 12 27.5**	**+3.4**
BIPH	**Bislig**	**3.36**	**17**	⇑*i*P	**Pn**	**10 12 15.4**	**+0.9**
BIPH				*i* S	**Sn**	**10 12 54.4**	**+0.8**
FITZ	**Fitzroy Crossi**	**22.91**	**179**	P	**P**	**10 16 21.7**	**+2.2**
	0.8nm,0.5s,baz=353,slow=5.2,SNR=7.7						
WRA	**Warramunga Arr**	**26.27**	**161**	P	**P**	**10 16 50.5**	**+0.4**
	0.4nm,0.7s,baz=342,slow=10.0,SNR=11						
ASAR	**Alice Springs**	**29.64**	**164**	P	**P**	**10 17 21.2**	**+1.1**
	0.6nm,0.6s,baz=342,slow=6.9,SNR=18						
ASAR				ScP	**ScP**	**10 23 52.9**	**-2.6**
	0.4nm,0.9s,baz=347,slow=3.3,SNR=4.5						
MKAR	**Makanchi Array**	**55.77**	**325**	P	**P**	**10 20 49.8**	**-0.8**
	0.2nm,0.3s,baz=111,slow=6.0,SNR=5.2						
ILAR	**Eielson Array**	**84.59**	**25**	P	**P**	**10 23 43.1**	**-2.8**
	0.1nm,0.5s,baz=248,slow=4.8,SNR=2.8						

IDC 03 10:34:43.6±2.1, 6°.68S×129°.48E, h0km, mb3.6/1, mb1 4.1/4, mb1mx3.6/33, mbtmp3.9/4, ML4.1/3, Error ellipse: s-maj=88.2km s-min=27.4km az=76.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.95**	**198**	Pn	Pn	10 37 35.8	+0.4
	0.8nm,0.3s,baz=14,slow=13,SNR=20						
FITZ				Sn	Sn	10 39 32.6	-17
	0.6nm,0.3s,baz=87,slow=19,SNR=5.1						
WRA	**Warramunga Arr**	**14.00**	**161**	Pn	Pn	10 38 03.2	-0.1
	1.4nm,0.3s,baz=342,slow=14,SNR=62						
WRA				Sn	Sn	10 40 25.6	-14
	0.7nm,0.3s,baz=331,slow=22,SNR=6.3						
ASAR	**Alice Springs**	**17.41**	**166**	P	Pn	10 38 47.8	-0.3
	0.5nm,0.3s,baz=346,slow=12,SNR=38						
ASAR				S	Sn	10 41 49.0	-14
	0.1nm,0.3s,baz=357,slow=28,SNR=4.1						
MKAR	**Makanchi Array**	**67.68**	**327**	P	P	10 45 42.7	0.0
	0.2nm,0.3s,baz=125,slow=7.4,SNR=3.5						

ISCJB ***03*** *10:48:07.5±1.3, 37°.27N±0°.04×141°.27E±0°.06, h6km±6km, mb3.6/6, MS3.4/1, Error ellipse: s-maj=9.0km s-min=6.0km az=25.2*
IDC ***03*** *10:48:08.0±1.0, 37°.28N×141°.29E, h0km, mb3.6/6, mb1 3.8/8, mb1mx3.6/40, mbtmp3.6/8, ML3.1/2, MS2.8/2, Ms1 2.8/2, ms1mx2.2/43, Error ellipse: s-maj=25.3km s-min=22.4km az=111.0*
JMA ***03*** *10:48:09.1±0.1, 37°.30N×141°.17E, h14km±1km, M3.3*
JMA Felt I J1.

ISC 03 10:48:08.7±1.9, 37°.27N±0°.04×141°.24E±0°.08, h2km±11km, n23, σ1s15/24, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.31**	**288**	P	**Pg**	**10 48 14.2**	**-0.4**
JFK				S	**Sg**	**10 48 18.3**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.39**	**245**	P	**Pg**	**10 48 16.0**	**-0.2**
ONAJ				S	**Sg**	**10 48 21.4**	**+0.1**
JMM	**Marumori**	**0.69**	**329**	P	**Pg**	**10 48 21.2**	**-0.8**
JMM				S	**Sg**	**10 48 30.6**	**-0.4**
JFT	**Otama**	**0.76**	**289**	P	**Pg**	**10 48 22.7**	**-0.6**
JFT				S	**Sg**	**10 48 32.5**	**-0.7**
JHO	**Hitachi**	**0.85**	**220**	P	**Pg**	**10 48 24.4**	**-0.6**
JHO				S	**Sg**	**10 48 35.8**	**-0.2**
JSB	**Shiboa**	**1.10**	**255**	P	**Pg**	**10 48 29.3**	**-0.4**
JSB				S	**Sg**	**10 48 43.7**	**-0.3**
MJAR	**Matsushiro Arr**	**2.54**	**254**	Pn	**Pn**	**10 48 50.8**	**-0.1**
	3.6nm,0.3s,baz=83,slow=15,SNR=21						
MJAR				Sn	**Sn**	**10 49 22.1**	**-0.4**
	5.4nm,0.3s,baz=87,slow=29,SNR=10.0						
MJAR				LR	LR	10 50 08.8	
	comp=Z,42nm,19.3s,baz=125,slow=47						
JHJ	**Hachijo jima 2**	**4.31**	**197**	Pn	**Pn**	**10 49 16.9**	**+1.7**
	3.6nm,0.3s,baz=72,slow=19,SNR=2.5						
JHJ				Sn	**Sn**	**10 50 05.0**	**-1.1**
	2.4nm,0.3s,baz=90,slow=20,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.86**	**317**	Pn	**Pn**	**10 50 34.8**	**+3.5**
	0.1nm,0.3s,baz=129,slow=15,SNR=5.0						
KSRS	**Korea Array**	**10.61**	**275**	Pn	Pn	10 50 46.1	+4.5
	0.1nm,0.3s,baz=86,slow=14,SNR=4.6						
SONM	**Songino Array**	**27.54**	**304**	P	**P**	**10 53 58.2**	**+1.4**
	0.4nm,0.5s,baz=91,slow=6.1,SNR=3.2						
H11N2	**WAKE ISLAND Hy**	**28.39**	**121**	T	T	11 23 46.7	
	baz=313,slow=75,SNR=485						
H11N1	**WAKE ISLAND Hy**	**28.39**	**121**	T	T	11 23 44.5	
	baz=313,slow=75,SNR=975						
H11N3	**WAKE ISLAND Hy**	**28.40**	**121**	T	T	11 23 45.2	
	baz=313,slow=75,SNR=732						
H11S1	**WAKE ISLAND Hy**	**29.10**	**123**	T	T	11 24 37.1	
	baz=316,slow=75,SNR=199						
H11S3	**WAKE ISLAND Hy**	**29.10**	**123**	T	T	11 24 40.2	
	baz=316,slow=75,SNR=96						
H11S2	**WAKE ISLAND Hy**	**29.12**	**123**	T	T	11 24 39.3	
	baz=316,slow=75,SNR=73						
ZALV	**Zalesovo Beam**	**41.66**	**312**	P	**P**	**10 55 56.9**	**-1.3**
	0.4nm,0.3s,baz=104,slow=6.1,SNR=3.3						
ZALV				PcP	**PcP**	**10 57 55.3**	**+0.3**
	0.3nm,0.3s,baz=113,slow=2.6,SNR=2.4						
MKAR	**Makanchi Array**	**43.88**	**302**	P	**P**	**10 56 15.1**	**-1.3**
	0.7nm,0.6s,baz=87,slow=8.9,SNR=4.2						
ILAR	**Eielson Array**	**49.37**	**32**	P	**P**	**10 56 58.6**	**-0.6**
	0.7nm,0.8s,baz=274,slow=5.9,SNR=10						
WRA	**Warramunga Arr**	**57.28**	**188**	P	**P**	**10 57 56.6**	**-1.1**
	0.6nm,0.7s,baz=4.7,slow=7.3,SNR=9.2						
SPITS	**

YSS	**Yuzh-Sakhalins**	**4.94 316**	*e*P	**Pn**	**11 05 19.2 +2.3**
YSS			AMB	AMB	11 05 20.0
	10.0nm,0.2s				

*ISCJB **03** 11:12:27.0±0.5,37.88N±0.03×1.70W±0.03,h14km±3km, Error ellipse: s-maj=5.8km s-min=4.5km az=2.6*
*INMG **03** 11:12:27.0±1.4,37.89N×1.45W,h18km±5km,ML2.3,Error ellipse: s-maj=11.7km s-min=3.5km az=84.0*
*CSEM **03** 11:12:27.5±0.2,37.90N×1.67W,h10km,ML2.4,Error ellipse: s-maj=3.3km s-min=3.0km az=7.0*
*MDD **03** 11:12:28.5±0.3,37.88N×1.63W,h6km±4km,mb4.5/1, mbLg2.4/14,Error ellipse: s-maj=2.9km s-min=2.7km az=152.0,PRXIMO*
MDD EMS: II INTENSIDAD MAXIMA.
*SFS **03** 11:12:28.0,37.88N×1.62W,h0km,ML2.1*

ISC 03 11:12:27.4±1.1,37.88N±0.03×1.70W±0.03,h5km±10km, n58,σ0°97/85,Spain

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
EMUR	**La Murta**	**0.37**	**95**	Pg		**Pg**		**11 12 34.5**	**0.0**
	23nm,0.1s,SNR=7.9								
EMUR				Lg		Lg		11 12 38.8	
	237nm,0.3s,SNR=7.9								
EMUR	**La Murta**	**0.37**	**95**	Pg		**Pg**		**11 12 34.5**	**0.0**
	23nm,0.1s,SNR=7.9								
EMUR				Lg		Lg		11 12 38.8	
	237nm,0.3s,SNR=7.9								
VELZ	**Velez Rubio**	**0.37**	**218**	Pg		**Pg**		**11 12 35.4**	**+0.8**
VELZ				Lg		Lg		11 12 42.3	
VELZ	**Velez Rubio**	**0.37**	**218**	Pg		**Pg**		**11 12 35.3**	**+0.8**
VELZ				Lg		Lg		11 12 42.3	
CART	**Cartagena**	**0.63**	**117**	Pg		**Pg**		**11 12 39.4**	**-0.1**
CART				Lg		Lg		11 12 46.0	
CART	**Cartagena**	**0.63**	**117**	*e*P		**Pg**		**11 12 39.3**	**-0.1**
CART				*e*S		**Sg**		**11 12 46.0**	**-1.6**
SESP	**Santiago Espad**	**0.71**	**290**	Pg		**Pb**		**11 12 43.3**	**+1.1**
	9.2nm,0.1s,SNR=7.9								
SESP				Lg		Lg		11 12 53.2	
	29nm,0.1s,SNR=7.9								
SESP				Sn		**Sn**		**11 12 56.8**	**+1.3**
	34nm,0.1s,SNR=7.9								
SESP	**Santiago Espad**	**0.71**	**290**	Pg		**Pb**		**11 12 43.3**	**+1.1**
	9.2nm,0.1s,SNR=7.9								
SESP				Lg		Lg		11 12 53.2	
	29nm,0.1s,SNR=7.9								
ETOB	**Tobarra**	**0.78**	**9**	Pg		**Pg**		**11 12 42.7**	**+0.4**
	11nm,0.1s,SNR=7.9								
ETOB				Pn		**Pb**		**11 12 44.9**	**+1.5**
	83nm,0.1s,SNR=7.9								
ETOB				Lg		Lg		11 12 53.3	
	43nm,0.1s,SNR=7.9								
ETOB				Sn		**Sb**		**11 12 56.8**	**+2.6**
	59nm,0.2s,SNR=7.9								
ETOB	**Tobarra**	**0.78**	**9**	Pg		**Pg**		**11 12 42.7**	**+0.4**
	11nm,0.1s,SNR=7.9								
ACLR	**Calar Alto**	**0.98**	**226**	Pg		**Pg**		**11 12 46.0**	**-0.2**
ACLR				Lg		Lg		11 13 01.5	
ACLR	**Calar Alto**	**0.98**	**226**	Pg		**Pg**		**11 12 46.0**	**-0.2**
ACLR				Lg		Lg		11 13 01.5	
EVIA	**Vianos**	**0.99**	**321**	Pg		**Pg**		**11 12 47.0**	**+0.7**
	9.4nm,0.1s,SNR=7.9								
EVIA				Lg		Lg		11 13 02.1	
	19nm,0.2s,SNR=7.9								
EVIA	**Vianos**	**0.99**	**321**	Pg		**Pg**		**11 12 47.0**	**+0.7**
	9.4nm,0.1s,SNR=7.9								
EVIA				Lg		Lg		11 13 02.1	
	19nm,0.2s,SNR=7.9								
ENIJ	**Nijar**	**0.99**	**204**	Pg		**Pg**		**11 12 46.9**	**+0.5**
	12nm,0.3s,SNR=7.9								
ENIJ				Lg		Lg		11 13 01.6	
	53nm,0.3s,SNR=7.9								
ENIJ	**Nijar**	**0.99**	**204**	Pg		**Pg**		**11 12 46.9**	**+0.5**
	12nm,0.3s,SNR=7.9								
ENIJ				Lg		Lg		11 13 01.6	
	53nm,0.3s,SNR=7.9								
EQES	**Quesada**	**1.09**	**266**	Pg		**Pn**		**11 12 50.2**	**+0.9**
	22nm,0.3s,SNR=9.8								
EQES				Lg		Lg		11 13 06.0	
	96nm,0.2s,SNR=7.9								
EQES	**Quesada**	**1.09**	**266**	Pg		**Pn**		**11 12 50.2**	**+0.9**
	22nm,0.3s,SNR=9.8								
EQES				Lg		Lg		11 13 06.0	
	96nm,0.2s,SNR=7.9								
EBER	**Berja**	**1.36**	**224**	Pn		**Pb**		**11 12 54.0**	**+0.6**
	1.2nm,0.2s,SNR=7.9								
EBER				Sn		**Sn**		**11 13 13.0**	**+1.4**
	4.9nm,0.2s,SNR=7.9								
EBER	**Berja**	**1.36**	**224**	Pn		**Pb**		**11 12 54.0**	**+0.6**
	1.2nm,0.2s,SNR=7.9								
EBER				Sn		**Sn**		**11 13 13.0**	**+1.4**
	4.9nm,0.2s,SNR=7.9								
EQUE	**Quentar**	**1.54**	**245**	Pg		**Pg**		**11 12 58.1**	**+1.3**
	5.8nm,0.3s,SNR=4.9								
EQUE				Lg		Lg		11 13 19.7	
	5.7nm,0.2s,SNR=7.9								
EQUE	**Quentar**	**1.54**	**245**	Pg		**Pg**		**11 12 58.1**	**+1.3**
	5.8nm,0.3s,SNR=4.9								
EQUE				Lg		Lg		11 13 19.7	
	5.7nm,0.2s,SNR=7.9								
EBAN	**Banos Encina**	**1.67**	**281**	Sn		**Sg**		**11 13 20.3**	**-0.7**
	18nm,0.2s,SNR=7.9								
EBAN				Lg		Lg		11 13 22.8	
	85nm,0.3s,SNR=7.9								
EBAN	**Banos Encina**	**1.67**	**281**	Sn		**Sg**		**11 13 20.3**	**-0.7**
	18nm,0.2s,SNR=7.9								
EBAN				Lg		Lg		11 13 22.8	
	85nm,0.3s,SNR=7.9								
SELV	**Sierra Elvira**	**1.73**	**249**	Pg		**Pg**		**11 13 01.4**	**+0.9**
	3.1nm,0.2s,SNR=7.9								
SELV				Lg		Lg		11 13 25.2	
	2.9nm,0.2s,SNR=7.9								
SELV	**Sierra Elvira**	**1.73**	**249**	Pg		**Pg**		**11 13 01.4**	**+0.9**
	3.1nm,0.2s,SNR=7.9								
SELV				Lg		Lg		11 13 25.2	
	2.9nm,0.2s,SNR=7.9								
EGOR	**Sierra Gorda,**	**2.06**	**249**	Pn		**Pb**		**11 13 04.7**	**-0.6**
	1.5nm,0.2s,SNR=7.9								
EGOR				Pg		**Pg**		**11 13 07.8**	**+0.9**
	1.0nm,0.3s,SNR=7.9								
EGOR				Sn		**Sb**		**11 13 30.0**	**-1.3**
	1.0nm,0.2s,SNR=4.0								
EGOR				Lg		Lg		11 13 36.4	
	3.7nm,0.3s,SNR=4.0								
EGOR	**Sierra Gorda,**	**2.06**	**249**	Pn		**Pb**		**11 13 04.7**	**-0.6**
	1.5nm,0.2s,SNR=7.9								
EADA	**Adamuz**	**2.29**	**278**	Pn		**Pn**		**11 13 05.6**	**-0.1**
	0.5nm,0.1s,SNR=7.9								
EADA				Sn		**Sn**		**11 13 34.5**	**+0.2**
	2.1nm,0.1s,SNR=7.9								
EADA				Lg		Lg		11 13 43.3	
	6.7nm,0.2s,SNR=7.9								
EADA	**Adamuz**	**2.29**	**278**	Pn		**Pn**		**11 13 05.6**	**-0.1**
	0.5nm,0.1s,SNR=7.9								
EADA				Sn		**Sn**		**11 13 34.5**	**+0.2**
	2.1nm,0.1s,SNR=7.9								
EADA				Lg		Lg		11 13 43.3	
	6.7nm,0.2s,SNR=7.9								
ESDC	**Sonseca Array**	**2.52**	**316**	Pg		**Pg**		**11 13 15.2**	**-0.4**
	1.0nm,0.2s,baz=132,slow=16,SNR=10								
ESDC				Lg		Lg		11 13 49.2	
	3.9nm,0.1s,baz=132,slow=30,SNR=7.9								
ESDC	**Sonseca Array**	**2.52**	**316**	Pg		**Pg**		**11 13 15.2**	**-0.4**
	1.0nm,0.2s,SNR=10								
ESDC				Lg		Lg		11 13 49.2	
	3.9nm,0.1s,SNR=7.9								
ECAB	**El Cabril**	**2.94**	**275**	Pn		**Pn**		**11 13 15.0**	**+0.3**
	1.7nm,0.3s,SNR=6.7								
ECAB				Sn		**Sn**		**11 13 50.6**	**+0.1**
	3.7nm,0.3s,SNR=9.1								
ECAB				Lg		Lg		11 14 03.5	
	9.5nm,0.5s,SNR=7.9								
ECAB	**El Cabril**	**2.94**	**275**	Pn		**Pn**		**11 13 15.0**	**+0.3**
	1.7nm,0.3s,SNR=6.7								
ECAB				Sn		**Sn**		**11 13 50.6**	**+0.1**
	3.7nm,0.3s,SNR=9.1								
ECAB				Lg		Lg		11 14 03.5	
	9.5nm,0.5s,SNR=7.9								
GUD	**Guadarrama**	**3.35**	**326**	Pg		**Pg**		**11 13 30.5**	**-1.1**
	0.9nm,0.1s,SNR=7.9								
GUD	**Guadarrama**	**3.35**	**326**	Pg		**Pg**		**11 13 30.5**	**-1.1**
	0.9nm,0.1s,SNR=7.9								
EMIN	**Mina Concepcio**	**3.94**	**270**	Pn		**Pn**		**11 13 25.6**	**-2.8**
	0.4nm,0.3s,SNR=7.9								
EMIN				Sn		**Sn**		**11 14 13.3**	**-1.6**
	0.4nm,0.2s,SNR=7.9								
EMIN				Lg		Lg		11 14 33.1	
	4.0nm,0.5s,SNR=7.9								
EPLA	**Plasencia**	**4.05**	**304**	Pn		**Pn**		**11 13 29.9**	**-0.1**
	0.3nm,0.1s,SNR=7.9								
EPLA				Sn		**Sn**		**11 14 16.5**	**-1.3**
	0.6nm,0.1s,SNR=7.9								
EPLA				Lg		Lg		11 14 37.6	
	2.3nm,0.3s,SNR=7.9								
EPLA	**Plasencia**	**4.05**	**304**	Pn		**Pn**		**11 13 29.9**	**-0.1**
	0.3nm,0.1s,SNR=7.9								
EPLA				Sn		**Sn**		**11 14 16.5**	**-1.3**
	0.6nm,0.1s,SNR=7.9								
EPLA				Lg		Lg		11 14 37.6	
	2.3nm,0.3s,SNR=7.9								
PBAR	**Barrancos**	**4.22**	**276**	*e*Pn		**Pn**		**11 13 32.1**	**-0.2**
PBAR				*e*Sn		**Sn**		**11 14 21.7**	**-0.3**
PBAR				A		A		11 14 47.6	
	7.3nm,0.6s								
PBAR	**Barrancos**	**4.22**	**276**	Pn		**Pn**		**11 13 32.1**	**-0.2**
PBAR				Sn		**Sn**		**11 14 21.7**	**-0.3**
	7.3nm,0.6s								
PBAR	**Barrancos**	**4.22**	**276**	Pn		**Pn**		**11 13 32.1**	**-0.2**
PBAR				*e*Sn		**Sn**		**11 14 21.7**	**-0.3**
	7.3nm,0.6s								
EBAD	**Badajoz**	**4.27**	**283**	Sn		**Sn**		**11 14 21.7**	**-1.4**
	0.8nm,0.1s,SNR=7.9								
EBAD				Lg		Lg		11 14 43.5	
	3.2nm,0.2s,SNR=7.9								
EBAD	**Badajoz**	**4.27**	**283**	Sn		**Sn**		**11 14 21.7**	**-1.4**
	0.8nm,0.1s,SNR=7.9								
EBAD				Lg		Lg		11 14 43.5	
	3.2nm,0.2s,SNR=7.9								
PMRV	**Marv??o**	**4.71**	**291**	*e*Sn		**Sn**		**11 14 33.1**	**-1.0**
PMRV				A		A		11 15 12.8	
	3.9nm,0.6s								
PMRV	**Marv??o**	**4.71**	**291**	Sn		**Sn**		**11 14 33.1**	**-1.0**
	3.9nm,0.6s								
PMRV	**Marv??o**	**4.71**	**291**	*e*Sn		**Sn**		**11 14 33.1**	**-1.0**
	3.9nm,0.6s								
PVAQ	**Vaqueiros**	**4.80**	**266**	*e*Pn		**Pn**		**11 13 39.8**	**-0.4**
PVAQ				*e*Sn		**Sn**		**11 14 35.2**	**-0.9**
PVAQ				A		A		11 14 53.3	
	2.4nm,0.7s								
PVAQ	**Vaqueiros**	**4.80**	**266**	Pn		**Pn**		**11 13 39.8**	**-0.4**
PVAQ				Sn		**Sn**		**11 14 35.2**	**-0.9**
	2.4nm,0.7s								
PVAQ	**Vaqueiros**	**4.80**	**266**	Pn		**Pn**		**11 13 39.8**	**-0.4**
PVAQ				*e*Sn		**Sn**		**11 14 35.2**	**-0.9**
	2.4nm,0.7s								
PBDV	**Barranco-do-Ve**	**4.99**	**265**	*e*Pn		**Pn**		**11 13 42.4**	**-0.5**
PBDV				*e*Sn		**Sn**		**11 14 41.2**	**+0.3**
PBDV	**Barranco-do-Ve**	**4.99**	**265**	Pn		**Pn**		**11 13 42.4**	**-0.5**
PBDV				Sn		**Sn**		**11 14 41.2**	**+0.3**
PBDV	**Barranco-do-Ve**	**4.99**	**265**	Pn		**Pn**		**11 13 42.4**	**-0.5**
PBDV				Sn		**Sn**		**11 14 41.2**	**+0.3**
PCVE	**Castro Verde**	**5.03**	**269**	*e*Pn		**Pn**		**11 13 43.5**	**+0.1**
PCVE				*e*Sn		**Sn**		**11 14 39.8**	**-2.0**
PCVE	**Castro Verde**	**5.03**	**269**	Pn		**Pn**		**11 13 43.5**	**+0.1**
PCVE				Sn		**Sn**		**11 14 39.8**	**-2.0**
PCVE	**Castro Verde**	**5.03**	**269**	Pn		**Pn**		**11 13 43.5**	**+0.1**
PCVE				Sn		**Sn**		**11 14 39.8**	**-2.0**
PNCL	**Nicolau / Gran**	**5.40**	**275**	*e*Pn		**Pn**		**11 13 49.4**	**+1.0**
PNCL	**Nicolau / Gran**	**5.40**	**275**	*e*Pn		**Pn**		**11 13 49.4**	**+1.0**

*NIED **03** 11:15:00,37.20N×141.50E,h41km,Mw3.6 Best double couple: Mo2.62000×10^14 NP1:φs237.00000°,δ19.00000°, λ146.00000°. NP2:φs359.00000°,δ79.00000°,λ74.00000°.*
*IDC **03** 11:15:05.5±2.3,37.32N×141.92E,h0km,mb3.7/5, mb1 3.8/7,mb1mx3.5/44,mbtmp3.7/7,ML3.5/2,MS2.5/2, Ms1 2.5/2,ms1mx2.2/34,Error ellipse: s-maj=56.3km s-min=23.4km az=74.0*
*ISCJB **03** 11:15:11.4±1.0,37.16N±0.04×141.53E±0.09,h46km±8km, mb3.6/5,Error ellipse: s-maj=11.7km s-min=6.0km az=10.8*
*JMA **03** 11:15:13.1±0.1,37.20N×141.40E,h49km±1km,M3.5*
JMA Felt I J1.

ISC 03 11:15:11.1±1.7,37.19N±0.04×141.49E±0.07,h26km±12km, n24,σ1°09/28,mb3.7/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.52**	**290**	P		**Pn**		**11 15 23.5**	**+0.6**
JFK				S		**Sn**		**11 15 30.4**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.56**	**262**	P		**Pn**		**11 15 24.1**	**+0.7**
ONAJ				S		**Sn**		**11 15 31.5**	**-0.4**
JMM	**Marumori**	**0.88**	**321**	P		**Pb**		**11 15 28.3**	**+0.6**
JMM				S		**Sn**		**11 15 39.2**	**-0.4**
JHO	**Hitachi**	**0.94**	**232**	P		**Pb**		**11 15 28.8**	**+0.1**
JHO				S		**Sb**		**11 15 39.9**	**-0.8**
JFT	**Otama**	**0.98**	**290**	P		**Pb**		**11 15 30.3**	**+0.9**
JFT				S		**Sb**		**11 15 42.1**	**+0.2**
JIO	**Ouri**	**1.27**	**355**	P		**Pn**		**11 15 34.1**	**+0.9**
JIO				S		**Sn**		**11 15 48.7**	**-0.7**
JOU	**Okura**	**1.35**	**331**	P		**Pb**		**11 15 35.6**	**-0.1**
JOU				S		**Sb**		**11 15 52.7**	**+0.1**
JFY	**Yanaizu**	**1.44**	**279**	P		**Pb**		**11 15 36.6**	**-0.7**
JYS	**Shirataka**	**1.53**	**313**	P		**Pb**		**11 15 38.1**	**-0.8**
JYS				S		**Sb**		**11 15 56.7**	**-1.1**
MJAR	**Matsushiro Arr**	**2.71**	**257**	Pn		**Pn**		**11 15 54.7**	**+1.8**
	5.3nm,0.3s,baz=78,slow=16,SNR=42								
MJAR				Sn		**Sb**		**11 16 29.3**	**-2.4**
	4.4nm,0.3s,baz=78,slow=17,SNR=6.4								
MJAR				LR		LR		11 17 15.9	
	comp=Z,64nm,19.6s,baz=90,slow=43								
MAT	**Matsushiro**	**2.71**	**257**	P		**Pn**		**11 15 55.0**	**+2.0**
MAT				S		**Sn**		**11 16 26.7**	**+1.8**
JHJ	**Hachijo jima 2**	**4.29**	**200**	Pn		**Pn**		**11 16 16.2**	**+1.5**
	8.1nm,0.3s,baz=337,slow=24,SNR=8.8								
JHJ				Sn		**Sn**		**11 17 02.3**	**-1.6**
	17nm,0.3s,baz=49,slow=24,SNR=7.0								
KSRS	**Korea Array**	**10.81**	**276**	LR		LR		11 21 17.1	
	comp=Z,27nm,20.6s,baz=92,slow=33								
SONM	**Songino Array**	**27.75**	**304**	P		**P**		**11 20 58.0**	**+0.4**
	0.5nm,0.5s,baz=101,slow=8.5,SNR=3.0								
H11N2	**WAKE ISLAND Hy**	**28.17**	**121**	T		T		11 50 50.2	
	baz=314,slow=75,SNR=35								
H11N1	**WAKE ISLAND Hy**	**28.18**	**121**	T		T		11 50 48.9	
	baz=314,slow=75,SNR=44								
H11N3	**WAKE ISLAND Hy**	**28.19**	**121**	T		T		11 50 51.4	
	baz=314,slow=75,SNR=35								
H11S1	**WAKE ISLAND Hy**	**28.89**	**123**	T		T		11 51 44.9	
	baz=316,slow=75,SNR=19								
H11S3	**WAKE ISLAND Hy**	**28.89**	**123**	T		T		11 51 42.1	
	baz=316,slow=75,SNR=9.6								
H11S2	**WAKE ISLAND Hy**	**28.91**	**123**	T		T		11 51 43.0	
	baz=316,slow=75,SNR=15								
ZALV	**Zalesovo Beam**	**41.86**	**312**	P		**P**		**11 22 58.8**	**+0.1**
	0.7nm,0.5s,baz=101,slow=7.8,SNR=4.3								
MKAR	**Makanchi Array**	**44.09**	**302**	P		**P**		**11 23 16.6**	**-0.4**
	0.2nm,0.2s,baz=84,slow=9.2,SNR=3.3								
KURBB	**Kurchatov Arra**	**45.96**	**308**	P		**P**		**11 23 31.1**	**-0.6**
	1.0nm,0.4s,baz=84,slow=8.2,SNR=12								
WRA	**Warramunga Arr**	**57.22**	**188**	P		**P**		**11 24 55.7**	**-0.4**
	0.6nm,0.8s,baz=6.5,slow=7.0,SNR=7.2								

*TAP **03** 11:31:40.1,24.81N×122.02E,h8km,ML2.9,D*
*JMA **03** 11:31:40.1±0.1,24.77N×122.00E,h0km,M2.5*

ISC 03 11:31:40.2±1.1,24.81N±0.02×122.07E±0.02,h4km±9km, n37,σ0°66/72,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
EGS		**0.13**	**285**	*i* P		**Pg**		**11 31 42.7**	**-0.2**
	baz=298								
EGS				*e*S		**Sg**		**11 31 44.7**	**0.0**
	baz=298								
TWB1	**Santiao Chiao**	**0.21**	**339**	*i* P		**Pg**		**11 31 44.9**	**+0.5**
	baz=354								
TWB1				*i* S		**Sg**		**11 31 47.9**	**+0.7**
	baz=354								
TWC	**Suao**	**0.28**	**225**	*i* P		**Pg**		**11 31 45.4**	**-0.3**
	baz=217								
TWC				*i* S		**Sg**		**11 31 48.5**	**-1.0**
	baz=217								
ILA	**Ilan**	**0.30**	**261**	*e*P		**Pg**		**11 31 46.0**	**+0.1**
	baz=260								
ILA				*e*S		**Sg**		**11 31 50.9**	**+1.0**
	baz=260								
NWF	**Wu-fen Shan**	**0.37**	**315**	*i* P		**Pg**		**11 31 47.9**	**+0.5**
	baz=312								
NWF				*i* S		**Sg**		**11 31 52.9**	**+0.6**
	baz=312								
TWE	**Neicheng**	**0.38**	**257**	P		**Pg**		**11 31 46.9**	**-0.6**
	baz=254								
TWE				S		**Sg**		**11 31 52.2**	**-0.3**
	baz=254								
TWA	**Mucha**	**0.47**	**291**	*e*P		**Pb**		**11 31 50.6**	**-0.5**
	baz=284								
TWA				*e*S		**Sg**		**11 31 55.5**	**-0.1**
	baz=284								
ENA	**Nanau**	**0.48**	**218**	*e*P		**Pg**		**11 31 49.9**	**+0.4**
	baz=220								
ENA				*e*S		**Sg**		**11 31 55.5**	**-0.3**
	baz=220								
ENTT	**Nioudou**	**0.49**	**250**	P		**Pg**		**11 31 49.4**	**-0.2**
	baz=248								
ENTT				*e*S		**Sg**		**11 31 57.3**	**+1.3**
	baz=248								
TAP1	**Taipei**	**0.55**	**295**	*e*P		**Pn**		**11 31 54.2**	**-0.5**
	baz=288								
TWY	**Chenhua**	**0.63**	**317**	*e*P		**Pg**		**11 31 52.7**	**+0.4**
	baz=310								
TWY				*e*S		**Sb**		**11 32 02.0**	**-0.9**
	baz=310								
TWS1	**Kuangyinshan**	**0.66**	**296**	P		**Pb**		**11 31 53.6**	**-0.7**
	baz=298								
TWS1				S		**Sb**		**11 32 04.6**	**+0.8**
	baz=298								
NSK	**Sanguang**	**0.66**	**259**	*i* P		**Pg**		**11 31 52.0**	**-0.9**
	baz=250								
NSK				*e*S		**Sg**		**11 32 00.5**	**-1.1**
	baz=250								
NNS	**Nan Shan**	**0.73**	**240**	*e*P		**Pg**		**11 31 54.3**	**0.0**
	baz=238								
NNS				*e*S		**Sg**		**11 32 02.8**	**-1.1**
	baz=238								
NCU	**National Centr**	**0.82**	**281**	*e*P		**Pg**		**11 31 55.3**	**-0.6**
	baz=282								
NCU				*e*S		**Sn**		**11 32 10.2**	**-0.9**
	baz=282								
TWD	**Chiawan**	**0.85**	**211**	P		**Pg**		**11 31 56.2**	**-0.2**
	baz=202								
JYNG	**Yonagunijimaku**	**0.87**	**114**	P		**Pn**		**11 31 58.2**	**-1.0**
JYNG				*e*S		**Sb**		**11 32 10.1**	**+0.3**
YOJ	**Yonaguni jima**	**0.92**	**112**	P		**Pn**		**11 31 59.0**	**-0.9**
YOJ				S		**Sb**		**11 32 11.7**	**+0.4**
TWT	**Tachien**	**0.99**	**236**	P		**Pg**		**11 31 59.2**	**0.0**
	baz=229								
TWT				S		**Sb**		**11 32 13.7**	**+0.4**
	baz=229								
WHF	**Hehuan Shan**	**0.99**	**228**	P		**Pg**		**11 31 59.6**	**+0.4**
	baz=227								
WHF				*e*S		**Sg**		**11 32 12.1**	**0.0**
	baz=227								
NSTT	**Nanjuang**	**0.99**	**260**	P		**Pb**		**11 31 59.7**	**-0.2**
	baz=259								
NSTT				S		**Sb**		**11 32 14.0**	**+0.7**
	baz=259								
HSN	**Hsinchu**	**1.00**	**270**	*e*P		**Pg**		**11 31 59.1**	**-0.3**
	baz=271								
HSN				*e*S		**Sb**		**11 32 13.8**	**+0.2**
	baz=271								
ESL	**Shilin**	**1.15**	**211**	P		**Pg**		**11 32 02.1**	**-0.1**
	baz=210								
ESL				*e*S		**Sg**		**11 32 16.5**	**-0.7**
	baz=210								
NSY	**Sanyi**	**1.26**	**252**	*e*P		**Pb**		**11 32 04.5**	**+0.1**
	baz=257								
NSY				*e*S		**Sn**		**11 32 22.9**	**+1.1**
	baz=257								
TWQ1	**Liyutan**	**1.27**	**249**	*e*P		**Pg**		**11 32 05.2**	**+0.7**
	baz=240								
TWQ1				*e*S		**Sn**		**11 32 22.6**	**+0.4**
	baz=240								
WDT	**Danda**	**1.35**	**219**	P		**Pn**		**11 32 05.8**	**-0.3**
	baz=230								
WDT				*e*S		**Sg**		**11 32 22.6**	**-1.2**
	baz=230								
SMLT	**Sun Moon Lake**	**1.41**	**229**	*e*P		**Pg**		**11 32 07.9**	**+0.6**
	baz=229								
SMLT				*e*S		**Sb**		**11 32 25.2**	**-0.3**
	baz=229								
TYC	**Yuchr**	**1.43**	**231**	*e*P		**Pb**		**11 32 07.0**	**-0.3**
	baz=231								
TYC				*e*S		**Sg**		**11 32 26.9**	**+0.8**
	baz=231								
EHY	**Hungye**	**1.47**	**208**	*e*P		**Pn**		**11 32 07.2**	**-0.2**
	baz=219								
EHY				*e*S		**Sg**		**11 32 27.8**	**+0.4**
	baz=219								
IRIF	**Iriomote-Funau**	**1.58**	**107**	P		**Pg**		**11 32 10.7**	**+0.2**
IRIF				*e*S		**Sg**		**11 32 31.5**	**+0.4**
TWF1	**Yuli**	**1.61**	**206**	*e*P		**Pb**		**11 32 09.9**	**-0.7**
	baz=218								
TWF1				*e*S		**Sg**		**11 32 32.3**	**+0.2**
	baz=218								
YUS	**Yu-Shan**	**1.67**	**218**	*e*P		**Pb**		**11 32 11.4**	**-0.3**
	baz=228								
YUS				*e*S		**Sg**		**11 32 35.1**	**+1.3**
	baz=228								
ALS	**Alishan**	**1.74**	**222**	*i* P		**Pb**		**11 32 12.7**	**-0.1**
	baz=224								
ALS				*e*S		**Sg**		**11 32 36.0**	**-0.1**
	baz=224								
CHN5	**Tsauling**	**1.75**	**227

TWB1	**Santiao Chiao**	**0.23**	**335**	⇓*i*	P	**Pg**	**11 33 15.2**	**+0.8**
	baz=354							
TWB1				*e*	S	**Sg**	**11 33 18.0**	**+0.6**
	baz=354							
TWC	**Suao**	**0.29**	**230**	⇓*i*	P	**Pg**	**11 33 15.8**	**+0.3**
	baz=217							
TWC					S	**Sg**	**11 33 18.8**	**-0.6**
	baz=217							
ILA	**Ilan**	**0.32**	**264**	*e*	P	**Pg**	**11 33 16.5**	**+0.5**
	baz=260							
ILA				*e*	S	**Sg**	**11 33 20.1**	**0.0**
	baz=260							
NWF	**Wu-fen Shan**	**0.39**	**314**		P	**Pg**	**11 33 18.1**	**+0.6**
	baz=308							
NWF				*e*	S	**Sg**	**11 33 22.9**	**+0.3**
	baz=308							
TWE	**Neicheng**	**0.40**	**259**	*i*	P	**Pg**	**11 33 17.2**	**-0.3**
	baz=254							
TWE				*i*	S	**Sg**	**11 33 22.4**	**-0.3**
	baz=254							
ENA	**Nanau**	**0.49**	**221**	*e*	P	**Pg**	**11 33 19.7**	**+0.5**
	baz=220							
ENA				*e*	S	**Sg**	**11 33 24.9**	**-0.8**
	baz=220							
TWA	**Mucha**	**0.50**	**291**	*e*	P	**Pb**	**11 33 20.1**	**-0.8**
	baz=293							
TWA				*e*	S	**Sg**	**11 33 25.4**	**-0.5**
	baz=293							
ENTT	**Nioudou**	**0.51**	**252**	*i*	P	**Pg**	**11 33 19.6**	**0.0**
	baz=248							
ENTT				*e*	S	**Sb**	**11 33 27.9**	**-0.8**
	baz=248							
TAP1	**Taipei**	**0.57**	**295**	*e*	P	**Pg**	**11 33 21.1**	**+0.4**
	baz=287							
TAP1				*e*	S	**Sg**	**11 33 28.0**	**-0.2**
	baz=287							
TWY	**Chenhua**	**0.65**	**317**	*e*	P	**Pb**	**11 33 22.9**	**-0.7**
	baz=321							
NSK	**Sanguang**	**0.68**	**260**	*e*	P	**Pg**	**11 33 22.4**	**-0.5**
	baz=250							
NSK				*e*	S	**Sg**	**11 33 30.8**	**-0.9**
	baz=250							
TWS1	**Kuangyinshan**	**0.68**	**296**		P	**Pb**	**11 33 23.7**	**-0.4**
	baz=298							
TWS1				*e*	S	**Sn**	**11 33 35.0**	**-1.9**
	baz=298							
NNS	**Nan Shan**	**0.75**	**241**	*e*	P	**Pg**	**11 33 24.3**	**+0.1**
	baz=238							
NNS				*e*	S	**Sg**	**11 33 33.2**	**-0.7**
	baz=238							
TWD	**Chiawan**	**0.85**	**212**	*e*	P	**Pg**	**11 33 26.0**	**-0.1**
	baz=201							
TWD				*e*	S	**Sg**	**11 33 36.5**	**-0.7**
	baz=201							
JYNG	**Yonagunijimaku**	**0.85**	**114**		P	**Pn**	**11 33 28.4**	**+0.1**
JYNG					eS	**Sn**	**11 33 41.1**	**+0.1**
YOJ	**Yonaguni jima**	**0.90**	**112**		P	**Pn**	**11 33 29.4**	**+0.4**
YOJ					S	**Sn**	**11 33 42.1**	**-0.2**
TWT	**Tachien**	**1.00**	**237**		P	**Pn**	**11 33 29.9**	**-0.6**
	baz=227							
TWT				*e*	S	**Sn**	**11 33 44.1**	**-0.8**
	baz=227							
WHF	**Hehuan Shan**	**1.00**	**229**		P	**Pb**	**11 33 29.5**	**-0.2**
	baz=227							
WHF				*e*	S	**Sg**	**11 33 41.5**	**-0.5**
	baz=227							
NSTT	**Nanjuang**	**1.01**	**261**	*e*	P	**Pn**	**11 33 30.5**	**0.0**
	baz=259							
NSTT				*e*	S	**Sb**	**11 33 43.5**	**+0.3**
	baz=259							
HSN	**Hsinchu**	**1.02**	**270**	*e*	S	**Sb**	**11 33 43.9**	**+0.4**
	baz=271							
ESL	**Shilin**	**1.15**	**212**	*e*	P	**Pn**	**11 33 32.1**	**-0.4**
	baz=210							
ESL				*e*	S	**Sg**	**11 33 46.4**	**-0.5**
	baz=210							
NSY	**Sanyi**	**1.27**	**253**	*e*	P	**Pg**	**11 33 35.4**	**+1.1**
	baz=251							
NSY				*e*	S	**Sn**	**11 33 53.0**	**+1.5**
	baz=251							
TWQ1	**Liyutan**	**1.28**	**250**	*e*	P	**Pg**	**11 33 35.0**	**+0.5**
	baz=240							
TWQ1				*e*	S	**Sn**	**11 33 53.2**	**+1.4**
	baz=240							
WDT	**Danda**	**1.36**	**220**	*i*	P	**Pb**	**11 33 35.7**	**-0.1**
	baz=229							
WDT				*e*	S	**Sb**	**11 33 53.4**	**-0.2**
	baz=229							
SMLT	**Sun Moon Lake**	**1.42**	**230**	*e*	P	**Pg**	**11 33 37.9**	**+0.8**
	baz=229							
SMLT				*e*	S	**Sg**	**11 33 56.8**	**+1.3**
	baz=229							
TYC	**Yuchr**	**1.44**	**232**	*e*	P	**Pg**	**11 33 38.0**	**+0.6**
	baz=231							
TYC				*e*	S	**Sg**	**11 33 56.7**	**+0.7**
	baz=231							
TCU	**Taichung**	**1.45**	**244**	*e*	P	**Pg**	**11 33 38.5**	**+1.0**
	baz=243							
TCU				*e*	S	**Sg**	**11 33 58.3**	**+2.0**
	baz=243							
EHY	**Hungye**	**1.47**	**209**	*e*	P	**Pg**	**11 33 39.1**	**+1.2**
	baz=213							
EHY				*e*	S	**Sg**	**11 33 57.5**	**+0.5**
	baz=213							
IRIF	**Iriomote-Funau**	**1.56**	**107**		P	**Pb**	**11 33 38.7**	**-0.4**
IRIF					eS	**Sb**	**11 33 58.9**	**-0.2**
TWF1	**Yuli**	**1.61**	**207**	*e*	P	**Pb**	**11 33 40.1**	**0.0**
	baz=218							
TWF1				*e*	S	**Sg**	**11 34 01.4**	**-0.3**
	baz=218							
YUS	**Yu-Shan**	**1.67**	**219**	*e*	P	**Pg**	**11 33 42.1**	**+0.2**
	baz=228							
YUS				*e*	S	**Sg**	**11 34 03.2**	**-0.4**
	baz=228							
ALS	**Alishan**	**1.74**	**223**	*e*	P	**Pg**	**11 33 44.6**	**+1.4**
	baz=223							
ALS				*e*	S	**Sg**	**11 34 08.1**	**+2.3**
	baz=223							
CHN5	**Tsauling**	**1.76**	**227**	*e*	P	**Pg**	**11 33 44.0**	**+0.4**
	baz=229							
CHN5				*e*	S	**Sg**	**11 34 07.9**	**+1.4**
	baz=229							
CHKT	**Chengkung**	**1.82**	**202**	*e*	S	**Sg**	**11 34 07.4**	**-0.9**
	baz=182							
JKRS	**Kuro-shima**	**1.83**	**107**		P	**Pb**	**11 33 42.7**	**-1.0**
JKRS					eS	**Sb**	**11 34 06.7**	**-0.2**
JIJ	**Ishigaki jima**	**1.92**	**103**		P	**Pb**	**11 33 43.9**	**-1.2**
JIJ					eS	**Sn**	**11 34 07.5**	**+0.1**
CHN4	**Tsaushan**	**1.99**	**224**	*e*	P	**Pg**	**11 33 47.7**	**-0.3**
	baz=226							
CHN4				*e*	S	**Sg**	**11 34 14.3**	**+0.5**
	baz=226							
JISG	**Ishigakijimahi**	**2.03**	**96**		P	**Pn**	**11 33 45.3**	**+0.8**
STYT	**Tauyuan**	**2.04**	**217**	*e*	P	**Pg**	**11 33 49.1**	**+0.2**
	baz=208							
STYT				*e*	S	**Sg**	**11 34 15.2**	**-0.1**
	baz=208							
WTP	**Ta-pu**	**2.06**	**221**	*e*	P	**Pg**	**11 33 49.6**	**+0.4**
	baz=210							
WTP				*e*	S	**Sg**	**11 34 16.5**	**+0.6**
	baz=210							

*TAP **03** 12:03:15.9, 24˚.44N × 122˚.73E, h65km ± 2km, ML3.6, D*
*JMA **03** 12:03:15.7 ± 0.2, 24˚.43N × 122˚.62E, h87km ± 2km, M2.3*
*ISCJB **03** 12:03:16.2 ± 0.4, 24˚.44N ± 0˚.03 × 122˚.67E ± 0˚.02, h79km ± 5km, Error ellipse: s-maj=4.7km s-min=2.4km az=173.0*

ISC 03 12:03:16.5 ± 1.3, 24˚.44N ± 0˚.04 × 122˚.67E ± 0˚.02, h81km ± 9km, n56, σ 0.985/110, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.25**	**88**	P		**Pn**	**12 03 29.0**	**+0.4**
JYNG				S		**Sn**	**12 03 37.6**	**+0.1**
YOJ	**Yonaguni jima**	**0.31**	**86**	P		**Pn**	**12 03 29.3**	**+0.4**
YOJ				S		**Sn**	**12 03 39.0**	**+0.9**
TWC	**Suao**	**0.77**	**283**	*i*	P	**Pn**	**12 03 32.5**	**-0.4**
	baz=281							
TWC				*i*	S	**Sn**	**12 03 44.6**	**-0.5**
	baz=281							
EGS		**0.78**	**301**	*e*	P	**Pn**	**12 03 33.2**	**+0.1**
	baz=299							
EGS					S	**Sn**	**12 03 44.5**	**-0.9**
	baz=299							
TWB1	**Santiao Chiao**	**0.84**	**312**	*e*	P	**Pn**	**12 03 32.8**	**-1.0**
	baz=310							
TWB1					S	**Sn**	**12 03 45.7**	**-0.9**
	baz=310							
ENA	**Nanau**	**0.85**	**269**		P	**Pn**	**12 03 33.9**	**0.0**
	baz=269							
ENA				*e*	S	**Sn**	**12 03 46.8**	**0.0**
	baz=269							
ILA	**Ilan**	**0.90**	**291**	*e*	P	**Pn**	**12 03 34.5**	**+0.1**
	baz=290							
ILA					S	**Sn**	**12 03 47.7**	**-0.1**
	baz=290							
TWE	**Neicheng**	**0.96**	**287**		P	**Pn**	**12 03 34.9**	**-0.2**
	baz=286							
TWE					S	**Sn**	**12 03 48.5**	**-0.4**
	baz=286							
IRIF	**Iriomote-Funau**	**0.97**	**96**		P	**Pn**	**12 03 35.5**	**+0.3**
IRIF					S	**Sn**	**12 03 49.4**	**+0.2**
NWF	**Wu-fen Shan**	**1.02**	**308**		P	**Pn**	**12 03 35.8**	**-0.2**
	baz=306							
NWF				*i*	S	**Sn**	**12 03 49.7**	**-0.8**
	baz=306							
ENTT	**Nioudou**	**1.03**	**281**		P	**Pn**	**12 03 36.2**	**+0.3**
	baz=280							
ENTT					S	**Sn**	**12 03 50.7**	**+0.2**
	baz=280							
TWD	**Chiawan**	**1.04**	**250**	*i*	P	**Pn**	**12 03 35.8**	**-0.3**
	baz=250							
TWD					S	**Sn**	**12 03 50.7**	**-0.1**
	baz=250							
HWA	**Hwalien**	**1.08**	**245**	*e*	P	**Pn**	**12 03 36.6**	**+0.1**
	baz=245							
HWA				*e*	S	**Sn**	**12 03 51.5**	**0.0**
	baz=245							
HATJ	**Hateruma jima**	**1.10**	**110**		P	**Pn**	**12 03 37.0**	**+0.2**
HATJ					S	**Sn**	**12 03 53.1**	**+1.0**
TWA	**Mucha**	**1.13**	**299**	*e*	P	**Pn**	**12 03 36.2**	**-1.0**
	baz=297							
TWA				*e*	S	**Sn**	**12 03 51.8**	**-0.9**
	baz=297							
NNS	**Nan Shan**	**1.18**	**270**		P	**Pn**	**12 03 37.9**	**-0.1**
	baz=269							
NNS					S	**Sn**	**12 03 54.3**	**+0.3**
	baz=269							
NSK	**Sanguang**	**1.22**	**281**		P	**Pn**	**12 03 38.2**	**-0.2**
	baz=280							
NSK				*i*	S	**Sn**	**12 03 54.2**	**-0.6**
	baz=280							
JKRS	**Kuro-shima**	**1.24**	**99**		P	**Pn**	**12 03 39.2**	**+0.7**
JKRS					S	**Sn**	**12 03 55.8**	**+0.8**
TWY	**Chenhua**	**1.28**	**311**	*e*	P	**Pn**	**12 03 38.9**	**-0.2**
	baz=309							
TWY				*e*	S	**Sn**	**12 03 56.3**	**+0.3**
	baz=309							
ESL	**Shilin**	**1.29**	**241**	*i*	P	**Pn**	**12 03 38.8**	**-0.5**
	baz=241							
ESL					S	**Sn**	**12 03 55.9**	**-0.4**
	baz=241							
TWS1	**Kuangyinshan**	**1.32**	**300**		P	**Pn**	**12 03 39.1**	**-0.4**
	baz=299							
TWS1				*e*	S	**Sn**	**12 03 56.3**	**-0.5**
	baz=299							
WHF	**Hehuan Shan**	**1.32**	**257**		P	**Pn**	**12 03 39.8**	**-0.2**
	baz=257							
WHF				*e*	S	**Sn**	**12 03 56.4**	**-1.1**
	baz=257							
JIJ	**Ishigaki jima**	**1.34**	**93**		P	**Pn**	**12 03 39.7**	**-0.1**
JIJ					S	**Sn**	**12 03 57.0**	**-0.4**
TWT	**Tachien**	**1.38**	**263**	*i*	P	**Pn**	**12 03 40.9**	**+0.5**
	baz=262							
TWT				*i*	S	**Sn**	**12 03 58.9**	**+0.4**
	baz=262							
JISG	**Ishigakijimahi**	**1.50**	**84**		P	**Pn**	**12 03 41.7**	**-0.1**
JISG					S	**Sn**	**12 04 00.3**	**-0.7**
NSTT	**Nanjuang**	**1.53**	**277**		P	**Pn**	**12 03 42.0**	**-0.3**
	baz=276							
NSTT					S	**Sn**	**12 04 02.1**	**+0.3**
	baz=276							
EHY	**Hungye**	**1.55**	**233**	*i*	P	**Pn**	**12 03 42.0**	**-0.5**
	baz=233							
EHY					S	**Sn**	**12 04 02.5**	**+0.4**
	baz=233							
WDT	**Danda**	**1.56**	**244**		P	**Pn**	**12 03 42.9**	**-0.1**
	baz=244							
WDT					S	**Sn**	**12 04 02.8**	**-0.2**
	baz=244							
TWF1	**Yuli**	**1.66**	**230**		P	**Pn**	**12 03 43.6**	**-0.4**
	baz=230							
TWF1					S	**Sn**	**12 04 04.4**	**-0.4**
	baz=230							
SMLT	**Sun Moon Lake**	**1.71**	**251**	*e*	P	**Pn**	**12 03 45.2**	**+0.5**
	baz=251							
SMLT				*e*	S	**Sn**	**12 04 06.8**	**+0.7**
	baz=251							
TWQ1	**Liyutan**	**1.73**	**267**	*e*	P	**Pn**	**12 03 45.5**	**+0.6**
	baz=267							
TWQ1				*e*	S	**Sn**	**12 04 07.9**	**+1.4**
	baz=267							
TYC	**Yuchr**	**1.74**	**253**	*e*	P	**Pn**	**12 03 45.7**	**+0.7**
	baz=252							
TYC				*e*	S	**Sn**	**12 04 07.6**	**+1.0**
	baz=252							
NSY	**Sanyi**	**1.74**	**270**	*e*	P	**Pn**	**12 03 45.9**	**+0.9**
	baz=269							
NSY				*e*	S	**Sn**	**12 04 07.5**	**+0.9**
	baz=269							
CHKT	**Chengkung**	**1.79**	**222**	*e*	P	**Pn**	**12 03 45.2**	**-0.5**
	baz=222							
CHKT				*e*	S	**Sn**	**12 04 06.8**	**-1.0**
	baz=222							
YUS	**Yu-Shan**	**1.84**	**239**	*i*	P	**Pn**	**12 03 47.2**	**+0.4**
	baz=239							
YUS					S	**Sn**	**12 04 08.6**	**-1.0**
	baz=239							
JTJ	**Tarama**	**1.86**	**83**		P	**Pn**	**12 03 46.7**	**+0.2**
JTJ					S	**Sn**	**12 04 09.8**	**+0.4**
WNT	**Mingjian**	**1.90**	**253**	*e*	P	**Pn**	**12 03 48.0**	**+0.9**
	baz=253							
WNT				*e*	S	**Sn**	**12 04 10.7**	**+0.3**
	baz=253							
ALS	**Alishan**	**1.94**	**242**		P	**Pn**	**12 03 49.0**	**+1.0**
	baz=242							
ALS				*e*	S	**Sn**	**12 04 11.7**	**-0.2**
	baz=242							
ELDTW	**Lidau**	**1.96**	**231**		P	**Pn**	**12 03 47.8**	**-0.3**
	baz=231							
ELDTW					S	**Sn**	**12 04 11.2**	**-0.8**
	baz=231							
CHN5	**Tsauling**	**2.01**	**246**	*e*	P	**Pn**	**12 03 49.8**	**+1.2**
	baz=245							
CHN5				*e*	S	**Sn**	**12 04 13.9**	**+0.9**
	baz=245							
WGK	**Gukeng**	**2.07**	**249**	*e*	P	**Pn**	**12 03 51.3**	**+1.9**
	baz=249							
WGK				*e*	S	**Sn**	**12 04 17.0**	**+2.6**
	baz=249							
STYT	**Tauyuan**	**2.17**	**234**	*e*	P	**Pn**	**12 03 51.4**	**+0.7**
	baz=234							
STYT					S	**Sn**	**12 04 17.2**	**+0.4**
	baz=234							
TWG	**Pinlang**	**2.18**	**223**	*e*	P	**Pn**	**12 03 50.3**	**-0.5**
	baz=223							
TWG				*e*	S	**Sn**	**12 04 16.4**	**-0.6**
	baz=223							
CHN4	**Tsaushan**	**2.19**	**241**		P	**Pn**	**12 03 52.4**	**+1.4**
	baz=240							
CHN4				*e*	S	**Sn**	**12 04 18.5**	**+1.2**
	baz=240							
CHN2	**Minshiung**	**2.20**	**246**		P	**Pn**	**12 03 52.2**	**+1.1**
	baz=246							
CHN2				*e*	S	**Sn**	**12 04 18.3**	**+0.7**
	baz=246							
WTP	**Ta-pu**	**2.23**	**238**	*e*	P	**Pn**	**12 03 52.1**	**+0.5**
	baz=238							
WTP				*e*	S	**Sn**	**12 04 18.9**	**+0.6**
	baz=238							
CHY	**Chiayi**	**2.26**	**246**	*e*	P	**Pn**	**12 03 52.9**	**+1.0**
	baz=245							
CHY				*e*	S	**Sn**	**12 04 18.8**	**-0.2**
	baz=245							
JIRB	**Irabujima**	**2.31**	**80**	S		**Sn**	**12 04 19.0**	**-1.1**
TWK	**Hsinying**	**2.32**	**240**	*e*	P	**Pn**	**12 03 53.6**	**+0.9**
	baz=240							
TWK				*e*	S	**Sn**	**12 04 19.7**	**-0.7**
	baz=240							
SGST	**Jiashian**	**2.34**	**235**	*e*	P	**Pn**	**12 03 53.9**	**+0.8**
	baz=235							
SGST				*e*	S	**Sn**	**12 04 20.5**	**-0.5**
	baz=235							
JIKM	**Ikemajima**	**2.39**	**78**	*e*	S	**Sn**	**12 04 21.3**	**-0.8**
ECL	**Taimali**	**2.42**	**221**	*e*	P	**Pn**	**12 03 53.3**	**-0.7**
	baz=221							
ECL				*e*	S	**Sn**	**12 04 21.5**	**-1.3**
	baz=221							
LAY	**Lan-yu**	**2.60**	**204**	*e*	P	**Pn**	**12 03 57.1**	**+0.5**
	baz=204							
LAY				*e*	S	**Sn**	**12 04 24.9**	**-2.3**
	baz=204							
TWM1	**Shoushan**	**2.62**	**232**	*e*	P	**Pn**	**12 03 58.1**	**+1.4**
	baz=232							
TWM1				*e*	S	**Sn**	**12 04 26.3**	**-1.3**
	baz=232							
EAST	**Anshuo**	**2.65**	**220**	*e*	P	**Pn**	**12 03 56.6**	**-0.5**
	baz=219							
EAST				*e*	S	**Sn**	**12 04 28.1**	**-0.3**
	baz=219							
SCZT	**Fangliau**	**2.79**	**223**	*e*	P	**Pn**	**12 04 00.6**	**+1.5**
	baz=223							
SCZT				*e*	S	**Sn**	**12 04 28.4**	**-3.4**
	baz=223							

*ISCJB **03** 12:19:37.7 ± 1.4, 39˚.20N ± 0˚.04 × 142˚.61E ± 0˚.09, h29km ± 7km, mb3.4/4, Error ellipse: s-maj=11.2km s-min=7.4km az=2.3*
*JMA **03** 12:19:39.7 ± 0.1, 39˚.24N × 142˚.49E, h34km ± 1km, M3.2*
*IDC **03** 12:19:46.6 ± 10.0, 39˚.09N × 142˚.27E, h92km ± 64km, mb3.1/4, mb1 3.2/6, mb1mx3.0/49, mbtmp3.3/6, ML2.0/2, MS2.0/1, Ms1 2.0/1, ms1mx1.8/13, Error ellipse: s-maj=134.5km s-min=20.9km az=68.0*

ISC 03 12:19:38.6 ± 2.2, 39˚.23N ± 0˚.05 × 142˚.5E ± 0˚.1, h25km ± 13km, n20, σ 1.913/21, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.65**	**303**	P		**Pn**	**12 19 51.8**	**-0.4**
MIYJ				S		**Sb**	**12 20 00.3**	**+0.3**
OFUJ	**Ofunato**	**0.69**	**258**	P		**Pn**	**12 19 52.4**	**-0.3**
OFUJ				S		**Sn**	**12 20 01.5**	**-1.1**
JTH	**Tanohata**	**0.88**	**324**	P		**Pn**	**12 19 55.2**	**-0.1**
JTH				*e*S		**Sb**	**12 20 06.3**	**-0.1**
JOM	**Ohasama**	**0.99**	**285**	P		**Pb**	**12 19 57.1**	**+0.1**
JOM				S		**Sn**	**12 20 10.0**	**-0.1**
JMK	**Ichinoseki**	**1.06**	**255**	P		**Pb**	**12 19 58.1**	**0.0**
JMK				S		**Sn**	**12 20 11.7**	**0.0**
JKZ	**Kuzumaki**	**1.20**	**310**	P		**Pb**	**12 20 00.5**	**-0.1**
JKZ				S		**Sb**	**12 20 15.9**	**+0.3**
JIO	**Ouri**	**1.20**	**230**	P		**Pb**	**12 20 00.0**	**-0.6**
JIO				S		**Sb**	**12 20 14.2**	**-1.6**
JANG	**Nango**	**1.39**	**326**	P		**Pn**	**12 20 02.8**	**+0.5**
JANG				S		**Sn**	**12 20 20.4**	**+0.5**
MJAR	**Matsushiro Arr**	**4.34**	**233**	P		**Pn**	**12 20 46.8**	**+3.7**
	0.3nm,0.3s,baz=35,slow=12,SNR=11							
MJAR				LR		LR	12 22 30.5	
	comp=Z,19nm,19.2s,baz=350,slow=40							
USRK	**Ussuriysk Ar.**	**9.31**	**306**	P		Pn	12 21 56.8	+5.6
	0.1nm,0.3s,baz=110,slow=15,SNR=4.4							
SONM	**Songino Array**	**27.37**	**300**	P		**P**	**12 25 23.0**	**+1.1**
	0.3nm,0.3s,baz=78,slow=8.1,SNR=4.4							
H11N2	**WAKE ISLAND Hy 28.61**	**126**		T		T	12 56 02.0	
	baz=318,slow=75,SNR=44							
H11N1	**WAKE ISLAND Hy 28.62**	**126**		T		T	12 56 07.9	
	baz=318,slow=75,SNR=36							
H11N3	**WAKE ISLAND Hy 28.63**	**126**		T		T	12 56 02.7	
	baz=318,slow=75,SNR=44							
H11S1	**WAKE ISLAND Hy 29.41**	**128**		T		T	12 57 07.2	
	baz=320,slow=76,SNR=4.1							
H11S3	**WAKE ISLAND Hy 29.41**	**128**		T		T	12 57 06.9	
	baz=320,slow=76,SNR=6.5							
H11S2	**WAKE ISLAND Hy 29.42**	**128**		T		T	12 57 07.4	
	baz=320,slow=76,SNR=4.6							
KURBB	**Kurchatov Arra**	**45.38**	**306**	P		**P**	**12 27 54.3**	**-0.4**
	0.2nm,0.4s,baz=83,slow=8.3,SNR=2.7							
WRA	**Warramunga Arr**	**59.36**	**189**	P		**P**	**12 29 37.7**	**-1.0**
	0.5nm,1.0s,baz=6.6,slow=7.1,SNR=4.9							
ASAR	**Alice Springs**	**63.08**	**189**	P		**P**	**12 30 03.2**	**-0.7**
	0.2nm,0.7s,baz=0.0,slow=7.5,SNR=3.5							

*IDC **03** 12:22:58.9 ± 2.4, 2˚.44N × 83˚.61W, h0km, mb3.8/6, mb1 4.0/7, mb1mx3.7/34, mbtmp3.8/7, ML2.6/1, MS3.2/13, Ms1 3.2/13, ms1mx3.0/34, Error ellipse: s-maj=69.3km s-min=25.5km az=31.0*

ISC 03 12:23:05.5 ± 1.3, 2˚.7N ± 0˚.2 × 83˚.3W ± 0˚.1, h35km, n28, σ 2.939/15, mb3.8/6, MS3.3/8, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CRUC	**La Cruz**	**6.42**	**100**	*e*P		**Pn**	**12 24 36.4**	**-1.6**
PRAC	**Prado**	**8.43**	**83**	*e*P		**Pn**	**12 25 09.7**	**+4.4**
HELC	**Santa Helena**	**8.45**	**66**	*e*P		**Pn**	**12 25 02.2**	**-3.7**
NORC	**Norcasia**	**8.84**	**71**	*e*P		**Pn**	**12 25 10.5**	**-0.4**
ROSC	**El Rosal**	**9.18**	**77**	Pn		**Pn**	**12 25 17.8**	**+2.0**
	1.1nm,0.3s,baz=244,slow=5.6,SNR=5.5							
ROSC				LR		LR	12 28 30.7	
	comp=Z,49nm,19.1s,baz=229,slow=35							
SJAC	**San Juan de Ar**	**9.32**	**86**	*e*P		**Pn**	**12 25 13.6**	**-4.0**
VILC	**Villavicencio,**	**9.66**	**82**	*e*P		Pn	12 25 29.6	+7.3
CHIC	**Chingaza**	**9.71**	**79**	*e*P		**Pn**	**12 25 21.6**	**-1.5**
BARC	**Barichara**	**10.76**	**69**	*e*P		Pn	12 25 32.5	-4.9
ATAH	**Atahualpa**	**10.95**	**154**	LR		LR	12 30 00.8	
	comp=Z,336nm,19.5s,baz=332,slow=39							
CBRI	**Barrientos, No**	**11.54**	**64**	*e*P		**Pn**	**12 25 46.8**	**-1.3**
SDV	**Santo Domingo**	**13.98**	**64**	LR		LR	12 32 23.0	
	comp=Z,30nm,18.4s,baz=31,slow=39							
NNA	**Nana**	**15.96**	**157**	LR		LR	12 32 16.6	
	comp=Z,19nm,20.3s,baz=321,slow=35							
CMIG	**Matias Romero**	**16.27**	**322**	LR		LR	12 32 42.6	
	comp=Z,107nm,20.4s,baz=144,slow=32							
PTGA	**Pitinga**	**23.55**	**98**	P		**P**	**12 28 14.4**	**+1.4**
	0.6nm,0.3s,baz=278,slow=15,SNR=2.3							
PTGA				LR		LR	12 37 30.9	
	comp=Z,46nm,18.5s,baz=332,slow=37							
SIV	**San Ignacio**	**28.77**	**131**	LR		LR	12 41 41.5	
	comp=Z,86nm,19.6s,baz=6.5,slow=39							
TKL	**Tuckaleechee C**	**32.76**	**359**	P		**P**	**12 29 37.0**	**+1.7**
	2.0nm,0.7s,baz=188,slow=11,SNR=3.7							
TXAR	**Lajitas Array**	**32.79**	**326**	LR		LR	12 42 11.5	
	comp=Z,26nm,18.3s,baz=0.0,slow=35							
CPUP	**Villa Florida**	**38.26**	**141**	LR		LR	12 49 11.4	
	comp=Z,34nm,18.0s,baz=346,slow=41							
PDAR	**Pinedale Array**	**46.25**	**333**	LR		LR	12 51 50.3	
	comp=Z,40nm,18.8s,baz=189,slow=37							
ULM	**Lac du Bonnet**	**48.54**	**349**	P		**P**	**12 31 44.5**	**-0.6**
	1.9nm,0.7s,baz=140,slow=10,SNR=3.9							
NEW	**Newport**	**53.88**	**333**	LR		LR	12 56 06.5	
	comp=Z,55nm,19.0s,baz=174,slow=37							
**

s-min=11.1km az=70.0

ISC 03 12:30:44.2±0.5,**24°68N**±0°03×**121°92E**±0°02,**h77**km±4km, **n237**,σ1**832**/311,**mb4.4/68**,**19C-32D**,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.10**	**223**	*i*P	**Pn**	**12 30 54.7**	**-0.5**
	baz=207						
EGS		**0.16**	**3**	⇓*i*P	**Pn**	**12 30 54.8**	**-0.6**
	baz=25						
EGS				S	**Sn**	**12 31 02.4**	**-1.2**
	baz=25						
ILA	**Ilan**	**0.18**	**298**	⇓*i*P	**Pn**	**12 30 55.2**	**-0.2**
	baz=317						
ILA				*i* S	**Sn**	**12 31 03.1**	**-0.6**
	baz=317						
TWE	**Neicheng**	**0.23**	**280**	⇓*i*P	**Pn**	**12 30 55.5**	**-0.2**
	baz=290						
TWE				S	**Sn**	**12 31 03.6**	**-0.6**
	baz=290						
ENA	**Nanau**	**0.30**	**213**	⇓*i*P	**Pn**	**12 30 55.6**	**-0.5**
	baz=209						
ENTT	**Nioudou**	**0.33**	**263**	⇓*i*P	**Pn**	**12 30 56.0**	**-0.3**
	baz=268						
TWB1	**Santiao Chiao**	**0.33**	**11**	⇑*i*P	**Pn**	**12 30 55.5**	**-0.8**
	baz=23						
TWB1				*i* S	**Sn**	**12 31 02.9**	**-2.3**
	baz=23						
EHP	**Heping Village**	**0.41**	**204**	*e*P	**Pn**	**12 30 56.4**	**-0.4**
	baz=191						
NWF	**Wu-fen Shan**	**0.41**	**342**	⇓*i*P	**Pn**	**12 30 56.3**	**-0.7**
	baz=352						
NWF				*i* S	**Sn**	**12 31 04.6**	**-1.7**
	baz=352						
TWA	**Mucha**	**0.43**	**314**	⇓*i*P	**Pn**	**12 30 56.5**	**-0.6**
	baz=324						
TWA				*i* S	**Sn**	**12 31 05.3**	**-1.2**
	baz=324						
TATO	**Taipei**	**0.49**	**307**	*e*Pn	**Pn**	**12 30 56.8**	**-0.7**
TATO				*e*Sn	**Sn**	**12 31 06.2**	**-1.1**
YHNB	**Yeheng**	**0.50**	**269**	*e*Pn	**Pn**	**12 30 56.8**	**-0.9**
YHNB				*e*Sn	**Sn**	**12 31 07.5**	**-0.2**
TAP1	**Taipei**	**0.51**	**315**	⇓*i*P	**Pn**	**12 30 57.1**	**-0.5**
	baz=317						
TAP1				*i* S	**Sn**	**12 31 06.4**	**-1.2**
	baz=317						
NSK	**Sanguang**	**0.51**	**269**	⇓*i*P	**Pn**	**12 30 57.3**	**-0.5**
	baz=270						
NSK				S	**Sn**	**12 31 06.3**	**-1.5**
	baz=270						
TAP	**Taipei**	**0.52**	**313**	⇓*i*P	**Pn**	**12 30 57.1**	**-0.6**
	baz=317						
TAP				*i* S	**Sn**	**12 31 06.4**	**-1.4**
	baz=317						
NNS	**Nan Shan**	**0.55**	**244**	⇓*i*P	**Pn**	**12 30 58.0**	**-0.2**
	baz=251						
NNS				S	**Sn**	**12 31 07.7**	**-0.9**
	baz=251						
NACB	**Ninganchiao**	**0.59**	**211**	*e*Pn	**Pn**	**12 30 57.4**	**-1.0**
NACB				*e*Sn	**Sn**	**12 31 08.1**	**-0.9**
TWS1	**Kuangyinshan**	**0.62**	**312**	⇓*i*P	**Pn**	**12 30 58.6**	**-0.2**
	baz=324						
TWS1				*i* S	**Sn**	**12 31 09.0**	**-0.5**
	baz=324						
TWY	**Chenhua**	**0.66**	**334**	⇓*i*P	**Pn**	**12 30 58.7**	**-0.5**
	baz=345						
TWY				*e*S	**Sn**	**12 31 08.8**	**-1.5**
	baz=345						
TWD	**Chiawan**	**0.67**	**206**	⇓*i*P	**Pn**	**12 30 58.3**	**-1.0**
	baz=214						
TWD				*e*S	**Sn**	**12 31 08.5**	**-1.9**
	baz=214						
NCU	**National Centr**	**0.73**	**293**	⇓*i*P	**Pn**	**12 30 59.6**	**-0.3**
	baz=287						
NCU				*i* S	**Sn**	**12 31 11.2**	**-0.3**
	baz=287						
HWA	**Hwalien**	**0.76**	**202**	P	**Pn**	**12 30 59.5**	**-0.7**
	baz=211						
TWT	**Tachien**	**0.80**	**238**	⇓*i*P	**Pn**	**12 31 01.4**	**+0.5**
	baz=230						
TWT				*i* S	**Sn**	**12 31 13.3**	**0.0**
	baz=230						
WHF	**Hehuan Shan**	**0.80**	**228**	⇓*i*P	**Pn**	**12 31 00.8**	**-0.3**
	baz=221						
NSTT	**Nanjuang**	**0.84**	**267**	⇑*i*P	**Pn**	**12 31 00.8**	**-0.3**
	baz=267						
NSTT				S	**Sn**	**12 31 12.8**	**-1.0**
	baz=267						
HSN	**Hsinchu**	**0.87**	**278**	P	**Pn**	**12 31 00.9**	**-0.6**
	baz=281						
HSN				S	**Sn**	**12 31 13.0**	**-1.4**
	baz=281						
ESF	**Shoufeng Towns**	**0.89**	**205**	*e*P	**Pn**	**12 31 01.1**	**-0.7**
	baz=211						
PCYT	**Pengchaiyu**	**0.95**	**8**	⇑*i*P	**Pn**	**12 31 02.3**	**-0.2**
	baz=11						
PCYT				*i* S	**Sn**	**12 31 16.3**	**+0.1**
	baz=11						
JYNG	**Yonaguni jima**	**0.96**	**104**	P	**Pn**	**12 31 01.6**	**-0.9**
JYNG				S	**Sn**	**12 31 14.8**	**-1.4**
ESL	**Shilin**	**0.97**	**207**	⇓*i*P	**Pn**	**12 31 01.2**	**-1.6**
	baz=204						
YOJ	**Yonaguni jima**	**1.02**	**102**	P	**Pn**	**12 31 02.4**	**-0.8**
YOJ				*e*S	**Sn**	**12 31 16.0**	**-1.4**
YOJ	**Yonaguni jima**	**1.02**	**102**	⇓*i*P	**Pn**	**12 31 02.4**	**-0.8**
	baz=101						
YOJ				*e*S	**Sn**	**12 31 15.4**	**-2.0**
	baz=101						
YOJ	**Yonaguni jima**	**1.02**	**102**	*e*P	**Pn**	**12 31 02.6**	**-0.6**
YOJ				*e*		12 31 19.1	
YOJ	**Yonaguni jima**	**1.02**	**102**	*e*Pn	**Pn**	**12 31 02.5**	**-0.6**
YOJ				*e*Sn	**Sn**	**12 31 19.1**	**+1.6**
TEGC	**Jichi Village**	**1.03**	**200**	*e*P	**Pn**	**12 31 03.4**	**0.0**
	baz=187						
NSY	**Sanyi**	**1.09**	**256**	⇑*i*P	**Pn**	**12 31 04.5**	**+0.4**
	baz=255						
NSY				*e*S	**Sn**	**12 31 18.3**	**-0.8**
	baz=255						
TWQ1	**Liyutan**	**1.10**	**253**	⇑*i*P	**Pn**	**12 31 04.3**	**+0.1**
	baz=251						
TWQ1				S	**Sn**	**12 31 18.6**	**-0.7**
	baz=251						
WDT	**Danda**	**1.17**	**218**	⇓*i*P	**Pn**	**12 31 05.1**	**-0.3**
	baz=207						
WDT				*e*S	**Sn**	**12 31 20.3**	**-1.1**
	baz=207						
SMLT	**Sun Moon Lake**	**1.23**	**230**	⇓P	**Pn**	**12 31 06.6**	**+0.7**
	baz=222						
SMLT				S	**Sn**	**12 31 23.8**	**+1.5**
	baz=222						
TYC	**Yuchr**	**1.24**	**232**	⇑*i*P	**Pn**	**12 31 06.5**	**+0.5**
	baz=230						
TYC				S	**Sn**	**12 31 23.1**	**+0.7**
	baz=230						
SSLB	**Suanglung**	**1.25**	**225**	*e*Pn	**Pn**	**12 31 06.4**	**+0.1**
SSLB				*e*Sn	**Sn**	**12 31 24.1**	**+1.3**
TCU	**Taichung**	**1.25**	**245**	⇑*i*P	**Pn**	**12 31 06.3**	**+0.1**
	baz=243						
EHY	**Hungye**	**1.29**	**205**	⇓*i*P	**Pn**	**12 31 04.8**	**-2.0**
	baz=201						
WNT	**Mingjian**	**1.38**	**235**	⇑P	**Pn**	**12 31 08.3**	**+0.4**
	baz=244						
WNT				*e*S	**Sn**	**12 31 26.0**	**+0.3**
	baz=244						
YULB	**Yu-li**	**1.41**	**204**	*e*Pn	**Pn**	**12 31 07.8**	**-0.4**
TWF1	**Yuli**	**1.44**	**203**	⇓*i*P	**Pn**	**12 31 06.8**	**-1.8**
	baz=206						
YUS	**Yu-Shan**	**1.48**	**217**	⇓*i*P	**Pn**	**12 31 09.9**	**+0.3**
	baz=205						
YUS				*e*S	**Sn**	**12 31 29.4**	**+0.7**
	baz=205						
ALS	**Alishan**	**1.55**	**221**	*e*P	**Pn**	**12 31 11.0**	**+0.7**
	baz=229						
ALS				*e*S	**Sn**	**12 31 31.6**	**+1.6**
	baz=229						
CHN5	**Tsauling**	**1.57**	**227**	⇑P	**Pn**	**12 31 10.8**	**+0.5**
	baz=235						
CHN5				*e*S	**Sn**	**12 31 30.4**	**+0.3**
	baz=235						
WGK	**Gukeng**	**1.59**	**232**	P	**Pn**	**12 31 11.0**	**+0.5**
	baz=241						
WGK				*e*S	**Sn**	**12 31 30.9**	**+0.4**
	baz=241						
CHKT	**Chengkung**	**1.66**	**198**	*e*P	**Pn**	**12 31 10.1**	**-1.3**
	baz=183						
CHKT				*e*S	**Sn**	**12 31 28.8**	**-3.3**
	baz=183						
IRIF	**Iriomote-Funau**	**1.68**	**101**	P	**Pn**	**12 31 11.0**	**-0.8**
IRIF				*e*S	**Sn**	**12 31 31.6**	**-1.1**
ELDTW	**Lidau**	**1.70**	**209**	*e*P	**Pn**	**12 31 11.1**	**-1.0**
	baz=199						
WTCT	**Ta-ch'eng**	**1.70**	**242**	⇑P	**Pn**	**12 31 11.8**	**-0.2**
	baz=239						
WTCT				*e*S	**Sn**	**12 31 32.6**	**-0.5**
	baz=239						
CHN2	**Minshiung**	**1.75**	**229**	P	**Pn**	**12 31 13.0**	**+0.3**
	baz=238						
CHN2				*e*S	**Sn**	**12 31 35.3**	**+1.1**
	baz=238						
CHN4	**Tsaushan**	**1.80**	**223**	⇑*e*P	**Pn**	**12 31 13.9**	**+0.6**
	baz=220						
CHN4				*e*S	**Sn**	**12 31 38.2**	**+2.8**
	baz=220						
CHY	**Chiayi**	**1.81**	**230**	P	**Pn**	**12 31 13.9**	**+0.5**
	baz=237						
CHY				S	**Sn**	**12 31 35.9**	**+0.3**
	baz=237						
TPUB	**Ta-pu**	**1.81**	**221**	*e*Pn	**Pn**	**12 31 14.2**	**+0.6**
TPUB				*e*Sn	**Sn**	**12 31 38.7**	**+2.9**
HATJ	**Hateruma jima**	**1.83**	**110**	P	**Pn**	**12 31 13.1**	**-0.6**
HATJ				S	**Sn**	**12 31 36.4**	**+0.3**
STYT	**Tauyuan**	**1.85**	**215**	⇓*e*P	**Pn**	**12 31 14.6**	**+0.5**
	baz=202						
STYT				*e*S	**Sn**	**12 31 39.0**	**+2.3**
	baz=202						
WTP	**Ta-pu**	**1.86**	**220**	⇑P	**Pn**	**12 31 14.6**	**+0.3**
	baz=228						
WTP				*e*S	**Sn**	**12 31 39.6**	**+2.5**
	baz=228						
WSF	**Szhu**	**1.87**	**237**	P	**Pn**	**12 31 14.2**	**0.0**
	baz=234						
WSF				S	**Sn**	**12 31 36.9**	**-0.1**
	baz=234						
TWK	**Hsinying**	**1.92**	**223**	*e*P	**Pn**	**12 31 16.2**	**+1.2**
	baz=220						
JKRS	**Kuro-shima**	**1.95**	**103**	P	**Pn**	**12 31 15.1**	**-0.2**
JKRS				S	**Sn**	**12 31 38.7**	**-0.4**
SGST	**Jiashian**	**2.01**	**218**	*e*P	**Pn**	**12 31 16.5**	**+0.3**
	baz=226						
TWG	**Pinlang**	**2.01**	**203**	*e*P	**Pn**	**12 31 14.3**	**-1.9**
	baz=190						
TWG	**Pinlang**	**2.01**	**203**	*e*Pn	**Pn**	**12 31 14.2**	**-1.9**
TTN	**Taitung**	**2.05**	**200**	*e*P	**Pn**	**12 31 15.4**	**-1.2**
	baz=190						
JIJ	**Ishigaki jima**	**2.05**	**98**	P	**Pn**	**12 31 15.8**	**-0.8**
JIJ				S	**Sn**	**12 31 39.7**	**-1.7**
CHN8	**Yiju**	**2.05**	**230**	*e*P	**Pn**	**12 31 16.9**	**+0.2**
	baz=227						
CHN8				*e*S	**Sn**	**12 31 41.6**	**+0.1**
	baz=227						
JISG	**Ishigakijimahi**	**2.18**	**92**	P	**Pn**	**12 31 17.8**	**-0.5**
JISG				*e*S	**Sn**	**12 31 43.6**	**-0.8**
SCLT	**Jiali**	**2.18**	**227**	*e*P	**Pn**	**12 31 18.3**	**-0.1**
	baz=224						
SCLT				*e*S	**Sn**	**12 31 45.0**	**+0.4**
	baz=224						
TAI1	**Yung-k'ang**	**2.25**	**224**	*e*P	**Pn**	**12 31 19.0**	**-0.3**
	baz=231						
ECL	**Taimali**	**2.26**	**203**	*e*P	**Pn**	**12 31 17.9**	**-1.6**
	baz=193						
TWM1	**Shoushan**	**2.30**	**217**	*e*P	**Pn**	**12 31 20.3**	**+0.2**
	baz=224						
PNG	**Penghu**	**2.43**	**243**	⇑P	**Pn**	**12 31 20.7**	**-1.1**
	baz=240						
PNG				*e*S	**Sn**	**12 31 46.8**	**-3.8**
	baz=240						
EAST	**Anshuo**	**2.49**	**204**	*e*P	**Pn**	**12 31 22.0**	**-0.6**
	baz=192						
TAW	**Tawu**	**2.50**	**202**	*e*P	**Pn**	**12 31 24.4**	**+1.8**
	baz=192						
WDGT	**Dungji**	**2.51**	**236**	⇑P	**Pn**	**12 31 21.9**	**-0.9**
	baz=233						
WDGT				*e*S	**Sn**	**12 31 49.8**	**-2.6**
	baz=233						
JTJ	**Tarama**	**2.53**	**90**	P	**Pn**	**12 31 22.7**	**-0.4**
JTJ				S	**Sn**	**12 31 52.6**	**-0.4**
SCZT	**Fangliau**	**2.59**	**208**	*e*P	**Pn**	**12 31 25.2**	**+1.2**
	baz=203						
LAY	**Lan-yu**	**2.65**	**187**	*e*P	**Pn**	**12 31 23.0**	**-1.9**
	baz=176						
LAY				*e*S	**Sn**	**12 31 51.6**	**-4.4**
	baz=176						
TWP	**Hsiaoliuchiu**	**2.73**	**212**	*e*P	**Pn**	**12 31 27.1**	**+1.3**
	baz=220						
HEN	**Hengchun**	**2.88**	**202**	*e*P	**Pn**	**12 31 29.0**	**+1.2**
	baz=198						
TWK1	**Hengchun**	**2.91**	**201**	*e*P	**Pn**	**12 31 27.6**	**-0.7**
	baz=191						
TSEB	**Hengchuen, Pin**	**2.92**	**199**	*e*P	**Pn**	**12 31 29.5**	**+1.0**
	baz=190						
JIRB	**Irabujima**	**2.96**	**86**	P	**Pn**	**12 31 29.5**	**+0.6**
JIRB				S	**Sn**	**12 32 03.5**	**+0.1**
JIKM	**Ikemajima**	**3.03**	**85**	P	**Pn**	**12 31 31.1**	**+1.2**
JIKM				*e*S	**Sn**	**12 32 05.3**	**+0.1**
QZH	**Quanzhou**	**3.04**	**276**	⇓*i*Pn	Pn	12 31 20.7	-9.3
QZH				Sn	Sn	12 31 53.1	-12
QZH				smax	smax		
	comp=N,1μm,0.6s						
QZH				smax	smax		
	comp=E,880nm,0.4s						
JMJ	**Miyako jima 2**	**3.07**	**87**	P	**Pn**	**12 31 30.8**	**+0.4**
JMJ				*e*S	**Sn**	**12 32 06.4**	**+0.4**
JMJ	**Miyako jima 2**	**3.07**	**87**	*e*P	**Pn**	**12 31 34.5**	**+4.1**
	baz=89						
JOGS	**Gusukube**	**3.17**	**88**	P	**Pn**	**12 31 32.4**	**+0.6**
JOGS				S	**Sn**	**12 32 08.6**	**+0.1**
KNM	**Kinmen**	**3.19**	**266**	⇑*e*P	**Pn**	**12 31 32.7**	**+0.7**
	baz=262						
JKE	**Kume jima 2**	**4.69**	**69**	P	**Pn**	**12 31 54.1**	**+1.6**
JKE				*e*S	**Sn**	**12 32 46.5**	**+0.9**
JAGN	**Aguni-jima**	**5.16**	**67**	P	**Pn**	**12 32 00.1**	**+1.2**
JAGN				S	**Sn**	**12 32 56.5**	**-0.7**
JJT2	**Tamagusuku 2**	**5.46**	**73**	*e*S	**Sn**	**12 33 06.2**	**+1.6**
JNTH	**Nagotoyohara**	**5.80**	**70**	P	**Pn**	**12 32 07.7**	**0.0**
JNTH				S	**Sn**	**12 33 11.9**	**-1.0**
JIH	**Iheya**	**5.93**	**65**	P	**Pn**	**12 32 09.8**	**+0.4**
JIH				*e*S	**Sn**	**12 33 15.2**	**-0.7**
JOW	**Kunigami**	**6.12**	**68**	P	**Pn**	**12 32 11.7**	**-0.3**
JOW				*e*S	**Sn**	**12 33 18.2**	**-2.3**
JOKE	**Okinoerabujima**	**6.55**	**65**	P	**Pn**	**12 32 17.5**	**-0.4**
JTK	**Tokunoshima**	**7.03**	**62**	P	**Pn**	**12 32 23.6**	**-0.8**
JTK				S	**Sn**	**12 33 41.4**	**-1.4**
JAMN	**Amaminishikomi**	**7.40**	**60**	P	**Pn**	**12 32 28.4**	**-1.1**
JAM	**Amami Oshima**	**7.82**	**60**	P	**Pn**	**12 32 34.1**	**-1.1**
NJ2	**Nanjing**	**7.82**	**340**	*e*P	**Pn**	**12 32 31.4**	**-3.9**
NJ2				S	**Sn**	**12 33 57.9**	**-4.3**
NJ2				smax	smax		
	comp=E,140nm,1.1s						
NJ2				smax	smax		
	comp=E,48nm,0.7s						
GZH	**Guangzhou**	**8.01**	**260**	P	Pn	12 32 32.1	-5.7
GZH				S	Sn	12 33 52.9	-14
GZH				pmax	pmax		
	comp=Z,34nm,0.4s						
WHN	**Wuhan**	**8.90**	**313**	P	**Pn**	**12 32 49.3**	**-0.6**
WHN				S	**Sn**	**12 34 22.0**	**-6.5**
WHN				LR	LR		
	comp=Z,440nm,2.2s						
ENH	**Enshi**	**12.36**	**300**	*e*Pn	**Pn**	**12 33 38.5**	**+1.3**
	comp=Z,5.1nm,0.5s						
QIZ	**Qiongzhong**	**12.54**	**246**	P	**Pn**	**12 33 39.1**	**-0.6**
QIZ				S	**Sn**	**12 35 57.4**	**-0.2**
QIZ				pmax	pmax		
	comp=Z,7.0nm,1.5s						
KS15	**Wonju Array Si**	**13.70**	**20**	*e*Pn	**P**	**12 34 02.8**	**+1.6**
KSAR	**Wonju Array Be**	**13.70**	**20**	P	**Pn**	**12 33 57.6**	**+2.5**
KSAR	**Wonju Array Be**	**13.70**	**20**	P	**Pn**	**12 33 57.5**	**+2.5**
KSRS	**Korea Array**	**13.73**	**21**	P	**Pn**	**12 33 57.5**	**+2.2**
	comp=Z,0.1nm,0.3s,baz=203,slow=13,SNR=6.1						
KSRS				LR	LR	12 39 37.3	
	comp=Z,38nm,19.0s,baz=198,slow=39						
KS01	**Wonju Array Si**	**13.74**	**20**	*e*Pn	**P**	**12 34 02.3**	**+0.8**
GYA	**Guiyang**	**13.88**	**281**	P	**Pn**	**12 33 58.4**	**+0.8**
GYA				pP	P	12 34 07.8	+4.4
GYA				S	**Sn**	**12 36 30.0**	**-0.3**
GYA				sS	S	12 36 47.4	-0.3
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GYA				pmax	pmax		
	comp=Z,90nm,4.6s						
XAN	**Xi'an**	**14.66**	**312**	P	Pn	12 33 59.7	-8.0
XAN				pmax	pmax		
	comp=Z,8.0nm,0.4s						
XAN				pmax	pmax		
	comp=Z,27nm,4.8s						
CD2	**Chengdu**	**17.22**	**295**	*e*P	**Pn**	**12 34 38.5**	**-1.3**
CD2				pP	pP	12 34 53.6	-1.9
CD2				sP	sP	12 35 03.1	-2.1
CD2				S	**Sn**	**12 37 49.4**	**-1.5**
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.2s						
KMI	**Kunming**	**17.41**	**275**	P	**P**	**12 34 42.6**	**0.0**
KMI				pP	pP	12 34 55.0	-2.9
KMI				PP	sP	12 34 58.5	-9.1
KMI				sP	sP	12 35 05.7	-1.9
KMI				S	**Sn**	**12 37 51.3**	**-4.5**
KMI				sS	S	12 38 11.5	+12
KMI				SS	**SnSn**	**12 38 15.4**	**+5.0**
KMI				pmax	pmax		
	comp=Z,13nm,1.0s						
KMI				pmax	pmax		
	comp=Z,87nm,4.6s						
KMI				LR	LR		
	comp=Z,110nm,6.7s						
KMI				LR	LR		
	comp=Z,140nm,6.8s						
KMI				LR	LR		
	comp=Z,130nm,7.4s						
JHJ	**Hachijo jima 2**	**17.74**	**58**	P	**Pn**	**12 34 48.5**	**+2.4**
	comp=Z,7.8nm,0.3s,baz=221,slow=20,SNR=5.8						
JHJ2	**Mitsune**	**17.76**	**58**	*e*P	**Pn**	**12 34 49.0**	**+2.6**
	comp=Z,413nm,1.4s						
HHC	**Hu-ho-hao-te**	**18.30**	**334**	*e*P	**Pn**	**12 34 53.6**	**+0.7**
HHC				pmax	pmax		
	comp=Z,24nm,0.7s						
HHC				pmax	pmax		
	comp=Z,100nm,7.4s						
MJAR	**Matsushiro Arr**	**18.31**	**46**	P	**P**	**12 34 50.5**	**-1.6**
	comp=Z,0.1nm,0.3s,baz=231,slow=9.7,SNR=4.4						
MJAR				LR	LR	12 42 41.5	
	comp=Z,35nm,19.3s,baz=140,slow=39						
LZH	**Lanzhou**	**19.26**	**310**	*e*P	**Pn**	**12 35 05.8**	**+1.3**
LZH				pP	pP	12 35 16.0	-2.2
LZH				sP	sP	12 35 20.4	-7.5
LZH				pmax	pmax		
	comp=Z,51nm,1.6s						
LZH				pmax	pmax		
	comp=Z,120nm,4.0s						
CN2	**Changchun**	**19.29**	**8**	*e*P	**P**	**12 35 01.8**	**-1.0**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
VLA	**Vladivostok**	**20.14**	**22**	⇓*e*P	**P**	**12 35 11.0**	**-1.0**
VLA				*e*S	**S**	**12 38 54.1**	**+0.3**
VLA				*i*		12 39 22.1	
VLA				pmax	pmax		
	comp=Z,18nm,1.2s						
USRK	**Ussuriysk Ar.**	**21.14**	**20**	P	**P**	**12 35 23.4**	**+0.7**
	comp=Z,0.8nm,0.5s,baz=204,slow=8.6,SNR=6.1						
CMAR	**Chiang Mai Arr**	**22.23**	**258**	P	**P**	**12 35 35.8**	**+1.0**
	comp=Z,0.7nm,0.4s,baz=71,slow=7.7,SNR=6.4						
CMAR				LR	LR	12 44 38.1	
	comp=Z,18nm,18.9s,baz=50,slow=37						
GTA	**Gaotai**	**23.72**	**314**	*e*P	**P**	**12 35 53.8**	**+4.4**
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GUMO	**Guam**	**24.29**	**113**	LR	LR	12 43 56.3	
	comp=Z,24nm,21.3s,baz=140,slow=33						
HIA	**Hailar**	**24.60**	**357**	⇑*e*P	**P**	**12 35 58.2**	**+1.1**
HIA				pmax	pmax		
	comp=Z,5.0nm,0.5s						
ERM	**Erimo**	**24.66**	**40**	⇓*i*P	**P**	**12 35 55.6**	**-2.1**
ERM				pmax	pmax		
	comp=Z,13nm,1.3s						
KLR	**Kul'dur**	**25.69**	**15**	P	**P**	**12 36 06.4**	**-0.5**
	comp=Z,3.4nm,0.6s,baz=208,slow=8.6,SNR=15						
KLR				PcP	**PcP**	**12 39 34.5**	**-0.9**
	comp=Z,1.2nm,0.5s,baz=204,slow=3.2,SNR=5.7						
ASAJ	**Asahikawa**	**25.70**	**36**	*e*P	**P**	**12 36 05.6**	**-1.5**
	comp=Z,10nm,1.4s						
SONM	**Songino Array**	**26.18**	**336**	P	**P**	**12 36 11.5**	**-0.1**
	comp=Z,3.4nm,0.7s,baz=154,slow=9.1,SNR=21						
SONM				pP	**pP**	**12 36 32.6**	**+3.2**
	comp=Z,5.1nm,0.8s,baz=151,slow=8.5,SNR=8.5						
SONA1	**Songino Array**	**26.19**	**336**	*e*P	**P**	**12 36 11.7**	**+0.1**
YSS	**Yuzh-Sakhalins**	**27.75**	**32**	*e*P	**P**	**12 36 28.3**	**+2.8**
YSS				pmax	pmax		
	comp=Z,11nm,1.3s						
WMQ	**Urumqi**	**33.80**	**313**	*e*P	**P**	**12 37 21.0**	**+2.0**
WMQ				pP	pP	12 37 37.6	+0.5
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.5s						
WMQ				LR	LR		
	comp=Z,120nm,20.9s						
MTN	**Manton Dam**	**38.37**	**165**	*e*P	**P**	**12 37 57.3**	**-0.7**
	comp=Z,0.0nm,1.5s						
MK01	**Makanchi Array**	**38.44**	**315**	*e*P	**P**	**12 37 58.4**	**0.0**
MK31	**Makanchi Array**	**38.45**	**315**	*e*P	**P**	**12 37 59.0**	**+0.5**
MK31	**Makanchi Array**	**38.45**	**315**	*e*P	**P**	**12 37 59.0**	**+0.5**
MKAR	**Makanchi Array**	**38.45**	**315**	P	**P**	**12 37 58.6**	**+0.1**
	comp=Z,1.6nm,0.6s,baz=104,slow=10,SNR=16						
MKAR				PcP	**PcP**	**12 40 08.6**	**-1.6**
	comp=Z,0.6nm,0.8s,baz=102,slow=3.9,SNR=3.5						
MKAR	**Makanchi Array**	**38.45**	**315**	*e*P	**P**	**12 37 59.0**	**+0.5**
MKAR				PcP	**PcP**	**12 40 08.6**	**-1.6**
MAKZ	**Makanchi**	**38.66**	**315**	*e*P	**P**	**12 38 00.4**	**+0.1**
MAKZ				pmax	pmax		
	comp=Z,3.0nm,0.9s						
MAKZ	**Makanchi**	**38.66**	**315**	*e*P	**P**	**12 38 00.4**	**+0.1**
	comp=Z,3.3nm,0.9s						
ZAA0	**Zalesovo Array**	**40.20**	**326**	*e*P	**P**	**12 38 12.3**	**-0.6**
ZALV	**Zalesovo Beam**	**40.20**	**326**	P	**P**	**12 38 12.2**	**-0.7**
	comp=Z,2.5nm,0.4s,baz=117,slow=8.0,SNR=15						
H11N1	**WAKE ISLAND Hy**	**41.79**	**88**	T	T	13 24 09.4	
	baz=285						
H11N2	**WAKE ISLAND Hy**	**41.79**	**88**	T	T	13 24 20.3	
	baz=285						
H11N3	**WAKE ISLAND Hy**	**41.81**	**88**	T	T	13 24 20.3	
	baz=285						
H11S3	**WAKE ISLAND Hy**	**41.94**	**89**	T	T	13 24 17.0	
	baz=284,slow=75,SNR=7.0						
H11S1	**WAKE ISLAND Hy**	**41.95**	**89**	T	T	13 24 14.6	
	baz=284,slow=75,SNR=4.8						
H11S2	**WAKE ISLAND Hy**	**41.96**	**89**	T	T	13 24 21.8	
	baz=284,slow=75,SNR=7.4						
FITZ	**Fitzroy Crossi**	**42.68**	**175**	PcP	**PcP**	**12 40 23.3**	**-0.9

CTA	**Charters Tower**	**50.41**	**150**	P	**P**	**12 39 34.6**	**+0.6**
CTA				pmax	pmax		
	comp=Z,5.0nm,0.7s						
CTAO	**Charters Tower**	**50.41**	**150**	*e*P	**P**	**12 39 35.0**	**+1.0**
CTAO				pmax	pmax		
	comp=Z,24nm,1.3s						
CTAO	**Charters Tower**	**50.41**	**150**	*e*P	**P**	**12 39 35.0**	**+1.0**
	comp=Z,24nm,1.3s						
ABKAR	**Akbulak array**	**53.58**	**314**	*e*P	**P**	**12 39 57.8**	**+0.6**
ARU	**Arti**	**55.12**	**323** *c*	*i*P	**P**	**12 40 07.6**	**-0.7**
ARU						12 41 02.8	
ARU						12 42 09.5	
ARU				S	**S**	**12 47 47.3**	**+2.1**
ARU				SS	**SS**	**12 51 29.2**	**-0.6**
ARU				pmax	pmax		
	comp=Z,11nm,1.7s						
ARU	**Arti**	**55.12**	**323**	*e*P	**P**	**12 40 07.9**	**-0.4**
	comp=Z,4.9nm,0.7s						
GEYT	**Alibeck**	**55.13**	**300**	P	**P**	**12 40 09.1**	**+0.3**
	comp=Z,1.8nm,0.5s,baz=72,slow=4.7,SNR=5.1						
EIDS	**Eidsvold**	**57.20**	**148**	*e*P	**P**	**12 40 23.5**	**0.0**
	comp=Z,36nm,1.8s						
STKA	**Stephens Creek**	**59.30**	**161**	P	**P**	**12 40 37.3**	**-0.7**
	comp=Z,2.3nm,0.8s,baz=318,slow=8.5,SNR=3.3						
TT01	**Tatalina**	**64.74**	**30**	*e*P	**P**	**12 41 14.3**	**+0.2**
TTA	**Tatalina**	**64.74**	**30**	*e*P	**P**	**12 41 15.3**	**+1.1**
TTA				pmax	pmax		
	comp=Z,14nm,1.7s						
TTA	**Tatalina**	**64.74**	**30**	*e*P	**P**	**12 41 15.3**	**+1.1**
	comp=Z,14nm,1.7s						
SVW2	**Sparrevohn**	**65.12**	**32**	*e*P	**P**	**12 41 17.7**	**+1.0**
	comp=Z,6.3nm,1.3s						
KBZ	**Khabaz**	**65.69**	**309**	P	**P**	**12 41 20.8**	**+0.2**
	comp=Z,1.7nm,0.8s,baz=92,slow=1.6,SNR=3.7						
CAST	**Castle Rocks**	**66.46**	**29**	*e*P	**P**	**12 41 26.1**	**+0.9**
	comp=Z,3.3nm,0.8s						
PPLA	**Purkeypile**	**66.48**	**30**	*e*P	**P**	**12 41 25.6**	**0.0**
	comp=Z,8.9nm,1.0s						
MLY	**Manley**	**66.80**	**27**	*e*P	**P**	**12 41 27.9**	**+0.5**
	comp=Z,8.2nm,1.5s						
OHAK	**Old Harbor**	**66.83**	**36**	*e*P	**P**	**12 41 26.9**	**-0.8**
	comp=Z,55nm,1.8s						
BPAW	**Bear Paw Mtn.**	**66.84**	**28**	*e*P	**P**	**12 41 27.8**	**+0.2**
	comp=Z,13nm,1.9s						
KTH	**Kantishna Hill**	**66.95**	**29**	*e*P	**P**	**12 41 27.9**	**-0.6**
	comp=Z,24nm,2.0s						
TRF	**Thorofare Moun**	**67.25**	**29**	*e*P	**P**	**12 41 30.6**	**+0.2**
	comp=Z,13nm,1.6s						
CNPM	**China Poot**	**67.49**	**33**	*e*P	**P**	**12 41 32.0**	**+0.1**
	comp=Z,47nm,2.0s						
OBN	**Obninsk**	**67.53**	**322**⇑	*e*P	**P**	**12 41 31.0**	**-1.1**
OBN				*e*		12 41 59.4	
OBN				*e*PPP	PPP	12 45 40.9	
OBN				pmax	pmax		
	comp=Z,7.0nm,0.7s						
MDM	**Murphy Dome**	**67.86**	**27**	*e*P	**P**	**12 41 34.3**	**+0.2**
	comp=Z,3.4nm,0.8s						
RND	**Reindeer**	**67.89**	**29**	*e*P	**P**	**12 41 34.1**	**-0.3**
RND				pmax	pmax		
	comp=Z,7.0nm,0.9s						
RND	**Reindeer**	**67.89**	**29**	*e*P	**P**	**12 41 34.1**	**-0.3**
	comp=Z,6.5nm,0.9s						
RC01	**Rabbit Creek A**	**67.93**	**32**	*e*P	**P**	**12 41 34.0**	**-0.6**
	comp=Z,5.7nm,0.8s						
WRH	**Wood River Hil**	**68.02**	**28**	*e*P	**P**	**12 41 35.4**	**+0.4**
	comp=Z,17nm,2.0s						
COLA	**College**	**68.04**	**27**	*e*P	**P**	**12 41 35.7**	**+0.6**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
PMR	**Palmer**	**68.12**	**31**	*e*P	**P**	**12 41 35.3**	**-0.4**
PMR				pmax	pmax		
	comp=Z,18nm,2.0s						
PMR	**Palmer**	**68.12**	**31**	*e*P	**P**	**12 41 35.3**	**-0.4**
	comp=Z,18nm,2.0s						
SML	**Sawmill**	**68.45**	**31**	*e*P	**P**	**12 41 37.1**	**-0.7**
SML				pmax	pmax		
	comp=Z,13nm,1.5s						
SML	**Sawmill**	**68.45**	**31**	*e*P	**P**	**12 41 37.1**	**-0.7**
	comp=Z,13nm,1.5s						
IL1	**Eielson Array**	**68.46**	**27**	*e*P	**P**	**12 41 37.0**	**-0.9**
ILAR	**Eielson Array**	**68.46**	**27**	P	**P**	**12 41 36.2**	**-1.6**
	comp=Z,0.6nm,0.5s,baz=264,slow=5.5,SNR=16						
ILAR				pP	**PcP**	**12 42 00.8**	**-1.8**
	comp=Z,0.3nm,0.6s,baz=281,slow=3.8,SNR=2.8						
ILB	**Eielson Array**	**68.46**	**27**	*e*P	**P**	**12 41 37.1**	**-0.8**
SCM	**Sheep Creek Mo**	**68.91**	**31**	*e*P	**P**	**12 41 40.8**	**+0.1**
SCM				pmax	pmax		
	comp=Z,7.0nm,0.8s						
SCM	**Sheep Creek Mo**	**68.91**	**31**	*e*P	**P**	**12 41 40.8**	**+0.1**
	comp=Z,6.6nm,0.8s						
SPA0	**Spitsbergen Ar**	**69.14**	**348**	*e*P	**P**	**12 41 41.0**	**-0.8**
ARA0	**ARCESS Array S**	**69.33**	**338**	*e*P	**P**	**12 41 43.0**	**-0.2**
ARCES	**ARCESS Array B**	**69.33**	**338**	P	**P**	**12 41 41.9**	**-1.2**
	comp=Z,1.4nm,0.8s,baz=64,slow=8.2,SNR=5.5						
PAX	**Paxson**	**69.48**	**29**	*e*P	**P**	**12 41 44.8**	**+0.5**
PAX				pmax	pmax		
	comp=Z,4.0nm,0.8s						
PAX	**Paxson**	**69.48**	**29**	*e*P	**P**	**12 41 44.8**	**+0.5**
	comp=Z,3.6nm,0.8s						
KLU	**Klutina**	**69.64**	**31**	*e*P	**P**	**12 41 44.9**	**-0.3**
	comp=Z,5.7nm,1.2s						
DOT	**Dot Lake**	**69.93**	**28**	*e*P	**P**	**12 41 47.3**	**+0.4**
	comp=Z,3.9nm,0.7s						
EGAK	**Eagle**	**70.84**	**27**	*e*P	**P**	**12 41 52.3**	**-0.1**
	comp=Z,2.8nm,0.7s						
FIA1	**FINESS Array S**	**71.36**	**330**	*e*P	**P**	**12 41 54.5**	**-1.0**
	comp=Z,60nm,1.9s						
FINES	**FINESS Array B**	**71.36**	**330**	P	**P**	**12 41 54.8**	**-0.8**
	comp=Z,1.5nm,0.5s,baz=62,slow=5.7,SNR=20						
DAWY	**Dawson**	**71.79**	**27**	*e*P	**P**	**12 41 57.8**	**-0.4**
	comp=Z,3.3nm,0.8s						
INK	**Inuvik**	**72.51**	**22**	P	**P**	**12 42 01.1**	**-1.2**
	comp=Z,1.8nm,0.4s,baz=313,slow=2.2,SNR=8.1						
INK	**Inuvik**	**72.51**	**22**	*e*P	**P**	**12 42 02.0**	**-0.3**
INK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
INK	**Inuvik**	**72.51**	**22**	*e*P	**P**	**12 42 02.0**	**-0.3**
	comp=Z,3.9nm,1.0s						
AKASG	**Malin Array Be**	**72.95**	**318**	P	**P**	**12 42 03.7**	**-1.5**
	comp=Z,1.4nm,0.6s,baz=59,slow=5.9,SNR=4.6						
KIEV	**Kiev**	**72.96**	**318**⇑	*e*P	**P**	**12 42 05.0**	**-0.3**
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.5s						
BRTR	**Keskin Array B**	**73.42**	**306**	P	**P**	**12 42 08.7**	**+0.2**
	comp=Z,2.1nm,0.8s,baz=110,slow=5.8,SNR=12						
BR231	**Keskin MP Arra**	**74.01**	**307**	*e*P	**P**	**12 42 09.5**	**-2.4**
NOA	**NORSAR Array B**	**78.10**	**332**	P	**P**	**12 42 33.9**	**-0.8**
	comp=Z,0.6nm,0.6s,baz=53,slow=5.6,SNR=3.8						
NOA				LR	LR	13 19 40.4	
	comp=Z,10nm,19.4s,baz=45,slow=38						
DLBC	**Dease Lake**	**78.18**	**31**	P	**P**	**12 42 35.1**	**0.0**
	comp=Z,2.0nm,0.7s,baz=307,slow=12,SNR=3.9						
DLBC	**Dease Lake**	**78.18**	**31**	*e*P	**P**	**12 42 36.5**	**+1.3**
	comp=Z,16nm,1.7s						
YKA	**Yellowknife Ar**	**82.25**	**23**	P	**P**	**12 42 55.5**	**-1.3**
	comp=Z,1.6nm,0.5s,baz=308,slow=5.0,SNR=24						
YKA				pP	**pP**	**12 43 20.3**	**+2.9**
	comp=Z,0.7nm,0.8s,baz=316,slow=5.5,SNR=2.5						
LTY	**Liberty**	**88.92**	**37**	*e*P	**P**	**12 43 29.9**	**-0.4**
	comp=Z,3.6nm,0.9s						
B08A	**Colville Reser**	**88.99**	**36**	*e*P	**P**	**12 43 30.6**	**0.0**
	comp=Z,6.5nm,0.7s						
HUMO	**Hull Mountain**	**90.29**	**42**	*e*P	**P**	**12 43 37.4**	**+0.6**
	comp=Z,11nm,1.5s						
K05A	**Summer Lake**	**91.46**	**41**	*e*P	**P**	**12 43 43.4**	**+0.9**
	comp=Z,37nm,2.0s						
FFC	**Flin Flon**	**92.41**	**24**	*i*P	**P**	**12 43 46.4**	**+0.1**
SDV	**Santo Domingo**	**144.46**	**22**	*e*PKPdf	**PKPab**	**12 50 10.5**	**-0.7**
PRAC	**Prado**	**147.39**	**32**	*e*PKPdf	**PKPbc**	**12 50 19.0**	**-1.1**
OTAV	**Otavalo**	**148.33**	**42**	*e*PKPdf	**PKPdf**	**12 50 17.5**	**-2.2**

MEX 03 12:40:50.0±0.6, 13.73N×92.83W, h15km, MD3.7, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.63**	**15**	*e*P	Pn	12 41 30.1	-1.9
CCIG				*e*S	Sn	12 41 59.9	-3.9

*ISCJB **03** 12:44:39.8±0.4, 39.07N±0.03×29.04E±0.04, h11km±5km, Error ellipse: s-maj=5.5km s-min=4.0km az=143.3*
*CSEM **03** 12:44:39.9±0.1, 39.08N×29.06E, h10km, MD2.6, Error ellipse: s-maj=2.2km s-min=1.7km az=134.0*
*ISK **03** 12:44:39.4, 39.09N×29.07E, h10km, MD2.6*

*DDA **03** 12:44:39.9, 39.09N×29.05E, h7km, Ml2.8*
ISC 03 12:44:40.0±0.9, 39.08N±0.02×29.05E±0.02, h14km±8km, n37, σ0877/52, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.27**	**262**	*i*P	**Pg**	**12 44 45.9**	**+0.2**
DEMI				*i*S	**Sg**	**12 44 49.8**	**+0.2**
DEMI	**Demirci**	**0.27**	**262**	P	**Pg**	**12 44 45.9**	**+0.2**
DEMI				S	**Sg**	**12 44 49.8**	**+0.2**
GEDZ	**Gediz**	**0.28**	**97**	*e*PG	**Pg**	**12 44 45.3**	**-0.6**
GEDZ	**Gediz**	**0.28**	**97**	*e*Pg	**Pg**	**12 44 45.3**	**-0.6**
GDZ	**Gediz**	**0.33**	**88**	*i*P	**Pg**	**12 44 46.9**	**+0.1**
GDZ				*i*S	**Sg**	**12 44 51.6**	**+0.1**
GDZ	**Gediz**	**0.33**	**88**	P	**Pg**	**12 44 46.9**	**+0.1**
GDZ				S	**Sg**	**12 44 51.7**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**40**	*e*PG	**Pg**	**12 44 49.4**	**-0.3**
TVSB				*e*SG	**Sg**	**12 44 56.0**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**40**	*e*Pg	**Pg**	**12 44 49.4**	**-0.3**
TVSB				*e*Sg	**Sg**	**12 44 56.0**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*PG	**Pg**	**12 44 52.9**	**+0.4**
KULA				*e*SG	**Sg**	**12 45 01.6**	**+0.5**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*Pg	**Pg**	**12 44 52.9**	**+0.4**
KULA				*e*Sg	**Sg**	**12 45 01.6**	**+0.5**
MANT	**Manisa**	**0.70**	**214**	*i*P	**Pg**	**12 44 53.3**	**-0.4**
MANT				*i*S	**Sg**	**12 44 59.8**	**-3.3**
MANT	**Manisa**	**0.70**	**214**	P	**Pg**	**12 44 53.3**	**-0.4**
MANT				S	**Sg**	**12 44 59.8**	**-3.3**
KHL	**Karahalli**	**0.84**	**154**	*e*PG	**Pg**	**12 44 56.1**	**-0.1**
KHL				*e*SG	**Sb**	**12 45 08.2**	**+0.7**
KHL	**Karahalli**	**0.84**	**154**	*e*Pg	**Pg**	**12 44 56.1**	**-0.1**
KHL				*e*Sg	**Sb**	**12 45 08.2**	**+0.7**
AKS	**Akhisar**	**0.99**	**259**	*e*PG	**Pb**	**12 44 59.4**	**+0.6**
AKS	**Akhisar**	**0.99**	**259**	*e*Pg	**Pb**	**12 44 59.4**	**+0.6**
BALB	**Balikesir**	**1.07**	**302**	*e*PG	**Pg**	**12 45 00.3**	**-0.3**
BALB	**Balikesir**	**1.07**	**302**	*e*Pg	**Pg**	**12 45 00.3**	**-0.3**
IGD	**Bursa**	**1.19**	**5**	*i*P	**Pb**	**12 45 02.1**	**-0.2**
IGD				*i*S	**Sb**	**12 45 16.6**	**-0.9**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*PN	**Pn**	**12 45 03.6**	**+0.2**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*Pn	**Pn**	**12 45 03.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pb**	**12 45 04.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pb**	**12 45 04.1**	**0.0**
IZI	**Iznik**	**1.30**	**14**	*e*PN	**Pb**	**12 45 04.3**	**+0.1**
IZI	**Iznik**	**1.30**	**14**	*e*Pn	**Pb**	**12 45 04.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pb**	**12 45 04.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pb**	**12 45 04.3**	**+0.1**
BORA	**Eskisehir**	**1.35**	**53**	*i*P	**Pg**	**12 45 05.5**	**-0.4**
BORA				*i*S	**Sg**	**12 45 23.9**	**+0.5**
BORA	**Eskisehir**	**1.35**	**53**	P	**Pg**	**12 45 05.5**	**-0.4**
BORA				S	**Sg**	**12 45 23.9**	**+0.5**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	**Pn**	**12 45 05.9**	**+0.4**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn	**Pn**	**12 45 05.9**	**+0.4**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*PN	**Pn**	**12 45 05.9**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*Pn	**Pn**	**12 45 05.9**	**+0.1**
GULT	**Gulveren**	**1.76**	**39**	*e*PN	**Pn**	**12 45 10.1**	**0.0**
GULT	**Gulveren**	**1.76**	**39**	*e*Pn	**Pn**	**12 45 10.1**	**0.0**
HRT	**Hereke**	**1.80**	**15**	*e*PN	**Pn**	**12 45 11.1**	**+0.5**
HRT	**Hereke**	**1.80**	**15**	*e*Pn	**Pn**	**12 45 11.1**	**+0.5**

*ISCJB **03** 12:45:21.0±0.6, 6.16S±0.05×127.7E±0.1, h400km, mb3.6/8, Error ellipse: s-maj=15.4km s-min=7.3km az=177.0*
*IDC **03** 12:45:22.8±2.1, 6.14S×127.69E, h400km±27km, mb3.3/8, mb1 3.5/12, mb1mx3.3/31, mbtmp4.2/12, Error ellipse: s-maj=30.2km s-min=12.9km az=81.0*
ISC 03 12:45:22.5±0.7, 6.13S±0.07×127.8E±0.1, h400km, n12, σ1910/16, mb3.5/8, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**6.25**	**33**	P	**Pn**	**12 46 59.1**	**+1.1**
	24nm,0.3s,baz=191,slow=16,SNR=2.9						
SIJI				S	**S**	**12 48 13.9**	**-1.9**
	19nm,0.3s,baz=169,slow=16,SNR=4.0						
FITZ	**Fitzroy Crossi**	**12.09**	**190**	P	**P**	**12 48 03.0**	**-0.2**
	0.6nm,0.3s,baz=20,slow=9.8,SNR=30						
WRA	**Warramunga Arr**	**15.11**	**156**	P	**P**	**12 48 36.9**	**+0.6**
	1.6nm,0.3s,baz=337,slow=12,SNR=132						
WRA				S	**S**	**12 51 14.3**	**-2.4**
	0.3nm,0.3s,baz=327,slow=20,SNR=5.8						
ASAR	**Alice Springs**	**18.39**	**162**	P	**P**	**12 49 11.8**	**+0.6**
	1.2nm,0.3s,baz=348,slow=11,SNR=114						
ASAR				S	**S**	**12 52 19.6**	**-0.3**
	0.2nm,0.3s,baz=343,slow=18,SNR=7.5						
STKA	**Stephens Creek**	**28.66**	**155**	P	**P**	**12 50 45.5**	**+1.0**
	2.6nm,0.9s,baz=340,slow=7.1,SNR=7.4						
CMAR	**Chiang Mai Arr**	**37.53**	**311**	P	**P**	**12 51 59.8**	**-0.8**
	0.4nm,0.5s,baz=138,slow=6.9,SNR=3.9						
KSRS	**Korea Array**	**43.36**	**0**	P	**P**	**12 52 48.1**	**+0.8**
	1.1nm,0.6s,baz=183,slow=8.6,SNR=3.9						
MJAR	**Matsushiro Arr**	**43.55**	**12**	P	**P**	**12 52 48.1**	**-0.8**
	1.3nm,0.6s,baz=191,slow=9.5,SNR=6.8						
USRK	**Ussuriysk Ar.**	**50.24**	**4**	P	**P**	**12 53 40.4**	**+0.7**
	2.5nm,0.7s,baz=176,slow=7.4,SNR=7.7						
SONM	**Songino Array**	**56.96**	**343**	P	**P**	**12 54 28.5**	**+0.5**
	1.2nm,0.6s,baz=163,slow=7.9,SNR=8.0						
MKAR	**Makanchi Array**	**66.33**	**328**	P	**P**	**12 55 29.7**	**0.0**
	2.3nm,0.4s,baz=116,slow=8.4,SNR=42						
MKAR				PcP	**PcP**	**12 55 55.7**	**-0.4**
	0.8nm,0.6s,baz=136,slow=3.6,SNR=5.5						
ZALV	**Zalesovo Beam**	**69.87**	**335**	P	**P**	**12 55 50.5**	**-0.7**
	3.3nm,0.6s,baz=131,slow=5.0,SNR=15						

*DDA **03** 12:51:44.7, 35.93N×28.32E, h7km, Ml2.5*
*ATH **03** 12:51:44.6, 35.75N×28.29E, h27km±2km, ML2.4/1, Error ellipse: s-maj=5.2km s-min=1.3km az=311.0*
*ISCJB **03** 12:51:45.2±0.8, 35.78N±0.05×28.31E±0.05, h19km±8km, Error ellipse: s-maj=9.4km s-min=5.3km az=148.0*
*CSEM **03** 12:51:45.5±0.3, 35.77N×28.32E, h20km, ML2.4, Error ellipse: s-maj=9.2km s-min=5.0km az=146.0*
ISC 03 12:51:44.3±1.3, 35.78N±0.06×28.34E±0.04, h16km±11km, n20, σ0878/30, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARG	**Arkhangelos**	**0.47**	**338**	P	**Pb**	**12 51 55.3**	**+1.1**
ARG				S	**Sb**	**12 52 01.7**	**+0.9**
KARP	**Karpathos**	**0.99**	**257**	P	**Pb**	**12 52 02.7**	**-0.4**
KARP				S	**Sg**	**12 52 16.3**	**-0.2**
KARP	**Karpathos**	**0.99**	**257**	P	**Pb**	**12 52 02.7**	**-0.4**
KARP				S	**Sg**	**12 52 16.3**	**-0.2**
KARP				AML	AML	12 52 18.6	
	comp=N,617μm,0.3s						
KARP				AML	AML	12 52 18.9	
	comp=E,559μm,0.2s						
TURN	**Turunc**	**1.11**	**11**	*i*P	**Pn**	**12 52 04.0**	**-1.2**
TURN				*i*S	**Sb**	**12 52 16.9**	**-2.4**
AKAS	**Kas**	**1.12**	**66**	*i*P	**Pn**	**12 52 05.5**	**0.0**
AKAS				*i*S	**Sg**	**12 52 21.3**	**+0.6**
AKAS	**Kas**	**1.12**	**66**	P	**Pn**	**12 52 05.5**	**0.0**
AKAS				S	**Sg**	**12 52 21.3**	**+0.6**
NIS1	**Nisyros Isl.**	**1.25**	**311**	P	**Pg**	**12 52 08.4**	**0.0**
NIS1	**Nisyros Isl.**	**1.25**	**311**	P	**Pg**	**12 52 08.4**	**0.0**
BDRM	**Kayabasi**	**1.47**	**331**	*i*P	**Pn**	**12 52 09.8**	**-0.4**
BDRM				*i*S	**Sn**	**12 52 29.4**	**+0.3**
BDRM	**Kayabasi**	**1.47**	**331**	P	**Pn**	**12 52 09.8**	**-0.4**
BDRM				S	**Sn**	**12 52 29.4**	**+0.3**
GOLH	**Golhisar**	**1.75**	**34**	*i*P	**Pb**	**12 52 15.7**	**-0.5**
GOLH				*i*S	**Sb**	**12 52 38.7**	**+0.7**
GOLH	**Golhisar**	**1.75**	**34**	P	**Pb**	**12 52 15.7**	**-0.5**
GOLH				S	**Sb**	**12 52 38.7**	**+0.7**
ZKR	**Zakros**	**1.86**	**250**	P	**Pb**	**12 52 17.1**	**-0.8**
ZKR	**Zakros**	**1.86**	**250**	P	**Pb**	**12 52 17.1**	**-0.8**
NPS	**Neapolis**	**2.28**	**258**	P	**Pn**	**12 52 22.1**	**+0.7**
NPS	**Neapolis**	**2.28**	**258**	P	**Pn**	**12 52 22.1**	**+0.7**
LAST	**Lasithi**	**2.42**	**256**	P	**Pn**	**12 52 24.0**	**+0.8**
LAST	**Lasithi**	**2.42**	**256**	P	**Pn**	**12 52 24.0**	**+0.8**
IDI	**Anoyia**	**2.86**	**261**	P	**Pn**	**12 52 29.3**	**0.0**
IDI	**Anoyia**	**2.86**	**261**	P	**Pn**	**12 52 29.3**	**0.0**

*ISCJB **03** 13:08:10.7±1.1, 24.84N±0.05×122.69E±0.03, h13km±10km, Error ellipse: s-maj=9.5km s-min=3.6km az=21.7*
*TAP **03** 13:08:11.2, 24.78N×122.55E, h4km, ML3.0, D*
*JMA **03** 13:08:11.0±0.1, 24.80N×122.68E, h29km±2km, M2.1*
ISC 03 13:08:10.2±1.2, 24.76N±0.05×122.68E±0.03, h4km±10km, n26, σ0864/52, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.39**	**142**	P	**Pb**	**13 08 19.9**	**+0.2**
JYNG				S	**Sb**	**13 08 26.3**	**+0.2**
YOJ	**Yonaguni jima**	**0.42**	**135**	P	**Pb**	**13 08 20.4**	**+0.1**
YOJ				*e*S	**Sb**	**13 08 27.0**	**0.0**
TWB1	**Santiao Chiao**	**0.67**	**291**	*e*P	**Pg**	**13 08 23.0**	**-0.2**
	baz=294						
TWB1				*e*S	**Sg**	**13 08 32.2**	**+0.2**
	baz=294						
EGS		**0.69**	**277**	*e*P	**Pg**	**13 08 22.8**	**-0.6**
	baz=276						
EGS				*e*S	**Sg**	**13 08 31.9**	**-0.3**
	baz=276						
TWC	**Suao**	**0.77**	**259**	P	**Pg**	**13 08 25.3**	**+0.2**
	baz=254						
TWC				S	**Sg**	**13 08 35.3**	**+0.3**
	baz=254						
NWF	**Wu-fen Shan**	**0.87**	**291**	*e*P	**Pg**	**13 08 27.0**	**0.0**
	baz=292						
NWF				*e*S	**Sg**	**13 08 39.0**	**+0.6**
	baz=292						
ENA	**Nanau**	**0.92**	**249**	P	**Pg**	**13 08 28.1**	**+0.2**
	baz=244						
ENA				S	**Sg**	**13 08 40.2**	**+0.4**
	baz=244						
TWE	**Neicheng**	**0.92**	**268**	*e*P	**Pg**	**13 08 27.5**	**-0.4**
	baz=265						
TWE				S	**Sg**	**13 08 40.0**	**+0.1**
	baz=265						
ENTT	**Nioudou**	**1.02**	**263**	*e*P	**Pg**	**13 08 29.4**	**-0.4**
	baz=261						
ENTT				S	**Sb**	**13 08 43.9**	**-0.3**
	baz=261						
IRIF	**Iriomote-Funau**	**1.05**	**114**	P	**Pg**	**13 08 29.9**	**-0.4**
IRIF				*e*S	**Sg**	**13 08 43.6**	**-0.3**
TWD	**Chiawan**	**1.20**	**236**	*e*P	**Pg**	**13 08 33.2**	**0.0**
	baz=231						
TWD				*e*S	**Sb**	**13 08 49.6**	**+0.2**
	baz=231						
NSK	**Sanguang**	**1.21**	**266**	*e*P	**Pb**	**13 08 34.0**	**+0.4**
	baz=264						
NSK				S	**Sg**	**13 08 48.3**	**-0.7**
	baz=264						
NNS	**Nan Shan**	**1.23**	**255**	*e*P	**Pg**	**13 08 34.1**	**+0.2**
	baz=252						
NNS				*e*S	**Sg**	**13 08 50.2**	**+0.3**
	baz=252						
WHF	**Hehuan Shan**	**1.43**	**245**	P	**Pn**	**13 08 37.4**	**+0.1**
	baz=241						
WHF				S	**Sg**	**13 08 55.6**	**-0.6**
	baz=241						
TWT	**Tachien**	**1.46**	**250**	*e*P	**Pg**	**13 08 38.8**	**+0.5**
	baz=247						
TWT				*e*S	**Sg**	**13 08 57.2**	**0.0**
	baz=247						
ESL	**Shilin**	**1.48**	**231**	*e*P	**Pn**	**13 08 37.7**	**+0.1**
	baz=226						
ESL				*e*S	**Sb**	**13 08 57.2**	**-0.2**
	baz=226						
NSTT	**Nanjuang**	**1.53**	**265**	*e*P	**Pn**	**13 08 37.9**	**-0.5**
	baz=263						
NSTT				*e*S	**Sn**	**13 08 58.6**	**-0.1**
	baz=263						
EHY	**Hungye**	**1.76**	**225**	*e*P	**Pb**	**13 08 42.7**	**-0.4**
	baz=221						
EHY				*e*S	**Sn**	**13 09 05.3**	**+1.0**
	baz=221						
TWQ1	**Liyutan**	**1.79**	**257**	*e*P	**Pn**	**13 08 42.7**	**+0.9**
	baz=255						
TWQ1				*e*S	**Sn**	**13 09 05.0**	**0.0**
	baz=255						
TYC	**Yuchr**	**1.87**	**243**	*e*P	**Pn**	**13 08 43.7**	**+0.7**
	baz=240						
TYC				*e*S	**Sn**	**13 09 06.3**	**-0.7**
	baz=240						
TWF1	**Yuli**	**1.89**	**222**	*e*P	**Pn**	**13 08 43.1**	**-0.2**
	baz=218						
TWF1				*e*S	**Sn**	**13 09 07.5**	**-0.1**
	baz=218						
YUS	**Yu-Shan**	**2.02**	**232**	*e*P	**Pn**	**13 08 47.0**	**+1.4**
	baz=228						
YUS				*e*S	**Sn**	**13 09 10.0**	**-1.6**
	baz=228						
ALS	**Alishan**	**2.12**	**234**	*e*P	**Pn**	**13 08 46.4**	**-0.3**
	baz=231						
ALS				*e*S	**Sn**	**13 09 12.9**	**-0.7**
	baz=231						
CHN5	**Tsauling**	**2.17**	**238**	*e*P	**Pn**	**13 08 47.9**	**+0.8**
	baz=235						
CHN5				*e*S	**Sn**	**13 09 15.0**	**+0.5**
	baz=235						
CHN4	**Tsaushan**	**2.37**	**234**	*e*P	**P

n13,σ1926/22, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.18**	**320**	*e*P	**Pg**	**13 22 54.6**	**-0.2**
BHL	**Bhannes**	**0.18**	**320**	*e*P	**Pg**	**13 22 54.6**	**-0.2**
DQRL	**Deir Qamar**	**0.19**	**252**	*e*P	**Pg**	**13 22 55.4**	**+0.4**
DQRL				*e*S	**Sg**	**13 22 58.0**	**+0.3**
DQRL	**Deir Qamar**	**0.19**	**252**	*e*P	**Pg**	**13 22 55.4**	**+0.4**
DQRL				*e*S	**Sg**	**13 22 58.0**	**+0.3**
RCY	**Rachaya**	**0.27**	**172**	*e*P	**Pg**	**13 22 57.0**	**+0.5**
RCY				*e*S	**Sg**	**13 23 01.3**	**+1.1**
BRBR	**Barbar**	**0.38**	**159**	*e*P	**Pg**	**13 22 59.1**	**+0.5**
BRBR				*e*S	**Sb**	**13 23 06.3**	**-0.2**
BRBR				AML	AML	13 23 08.5	
	comp=E,14nm,0.2s						
BRBR				AML	AML	13 23 09.5	
	comp=N,39nm,0.3s						
HWQ	**Hawqa**	**0.53**	**14**	*e*P	**Pg**	**13 23 00.7**	**-0.6**
HWQ	**Hawqa**	**0.53**	**14**	*e*P	**Pg**	**13 23 00.7**	**-0.6**
MARH	**Ras Al Marh**	**0.63**	**66**	*e*P	**Pg**	**13 23 04.3**	**+1.1**
MARH				*e*S	**Sb**	**13 23 14.0**	**+0.2**
MARH				AML	AML	13 23 18.9	
	comp=E,18nm,0.6s						
MARH				AML	AML	13 23 19.4	
	comp=N,12nm,0.3s						
TCHB	**Talchebab**	**1.10**	**172**	*e*P	**Pg**	**13 23 11.6**	**-0.7**
TCHB				*e*S	**Sg**	**13 23 22.4**	**-4.3**
TCHB				AML	AML	13 23 25.7	
	comp=N,79nm,0.6s						
TCHB				AML	AML	13 23 26.8	
	comp=E,98nm,0.3s						
SALA	**Sala**	**1.32**	**143**	*e*P	**Pn**	**13 23 16.0**	**-0.1**
SALA				*e*S	**Sb**	**13 23 34.7**	**+1.2**
SALA				AML	AML	13 23 41.1	
	comp=N,8.2nm,0.3s						
SALA				AML	AML	13 23 44.3	
	comp=E,0.6nm,0.3s						
BIDA	**Albida**	**1.32**	**19**	*e*P	**Pn**	**13 23 15.4**	**-0.7**
BIDA				*e*S	**Sn**	**13 23 35.7**	**+1.8**
BIDA				AML	AML	13 23 38.8	
	comp=E,35nm,0.4s						
BIDA				AML	AML	13 23 41.0	
	comp=N,19nm,0.3s						
ZALF	**Zalf**	**1.54**	**123**	*e*P	**Pn**	**13 23 18.6**	**-0.4**
ZALF				*e*S	**Sn**	**13 23 39.9**	**+0.5**
ZALF				AML	AML	13 23 47.0	
	comp=E,3.9nm,0.4s						
ZALF				AML	AML	13 23 47.1	
	comp=N,4.5nm,0.3s						

BJI ***03*** *14:12:56.4, 6˚.29S×130˚.88E, h139km, mb5.4/72, mB4.9/44*

MOS ***03*** *14:12:58.5±0.9, 5˚.96S×130˚.48E, h125km, mb5.0/48, Error ellipse: s-maj=10.1km s-min=5.5km az=107.7*

GCMT ***03*** *14:13:01.6±0.2, 6˚.00S×130˚.52E, h147km±2km, MW5.1/95, Moment Tensor Solution. s53,c64; s95,c161; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.92±.12; $M_{\theta\theta}$-2.18±.13; $M_{\phi\phi}$1.27±.14; $M_{r\theta}$4.40±.10; $M_{\theta\phi}$2.65±.13; $M_{\phi r}$0.09±.10; Best double couple: M_o5.39400×10^{16} NP1:ϕ_s83.00000°, δ84.00000°, λ57.00000°. NP2: ϕ_s344.00000°, δ33.00000°, λ168.00000°. Principal axes: T 4.8510, Plg42.0000°, Azm322.0000°; N 1.0930, Plg32.0000°, Azm87.0000°; P -5.9380, Plg31.0000°, Azm200.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***03*** *14:13:01.6±0.4, 5˚.96S×130˚.54E, h141km±3km, mb5.1/74 Error ellipse: s-maj=4.3km s-min=3.3km az=56.0*

NEIC Felt [II] at Darwin, Australia. Felt at Ambon and Tual, Indonesia.

ISCJB ***03*** *14:13:01.0±0.3, 6˚.00S±0˚.02×130˚.62E±0˚.02, h151km±3km, mb5.0/141, Error ellipse: s-maj=3.8km s-min=3.0km az=151.8*

IDC ***03*** *14:13:02.9±1.2, 5˚.99S×130˚.60E, h150km±9km, mb4.7/24, mb1 4.8/28, mb1mx4.7/36, mbtmp5.2/28, MS3.6/15, Ms1 3.6/15, ms1mx3.4/40, Error ellipse: s-maj=12.7km s-min=6.4km az=66.0*

DJA ***03*** *14:13:02.2±0.2, 6˚.5±2˚×13˚1E±˚, h137km±2km, M5.3/52, mb5.3/52, mB5.7/25, MLv5.8/10, Mw(mB)5.2/25, Mwp5.3/1*

ISC 03 14:13:00.4±0.3, 5˚.96S±0˚.03×130˚.62E±0˚.04, h133km±2km, h133km:pP-P, n433, σ1959/482, mb5.2/140, 16C-13D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**1.59**	**333**	P	**Pn**	**14 13 33.0**	**+3.2**
SAUI	**Saumlaki**	**2.12**	**161**	P	**Pn**	**14 13 38.2**	**+2.2**
SAUI	**Saumlaki**	**2.12**	**161**	*e*Pn	**Pn**	**14 13 38.1**	**+2.0**
MSAI	**Masohi**	**3.09**	**327**	P	**Pn**	**14 13 50.5**	**+2.1**
FAKI	**Fak Fak**	**3.43**	**28**	P	**Pn**	**14 13 54.0**	**+1.3**
FAKI	**Fak Fak**	**3.43**	**28**	*e*Pn	**Pn**	**14 13 53.8**	**+1.1**
NLAI	**Namlea**	**4.43**	**307**	P	**Pn**	**14 14 09.2**	**+3.3**
SIJI	**Sorong**	**5.09**	**7**	P	**Pn**	**14 14 16.1**	**+1.2**
	7.4nm,0.3s,baz=90,slow=24,SNR=68						
SIJI				S	**Sn**	**14 15 10.3**	**-2.6**
	14nm,0.3s,baz=90,slow=24,SNR=28						
SWI	**Sorong**	**5.10**	**7**	P	**Pn**	**14 14 15.8**	**+0.9**
RKPI	**Ransiki, Papua**	**5.67**	**39**	P	**Pn**	**14 14 24.8**	**+2.3**
SANI	**Sanana**	**6.03**	**310**	P	**Pn**	**14 14 29.5**	**+2.1**
	444nm,0.5s,9μm2.5nm						
LBMI	**Labuha**	**6.13**	**329**	P	**Pn**	**14 14 30.3**	**+1.5**
	2μm,0.8s,15μm8.5nm						
MTN	**Manton Dam**	**6.86**	**176**	*e*Pn	**Pn**	**14 14 38.1**	**-0.5**
SOEI	**Soe**	**7.34**	**239**	P	**Pn**	**14 14 46.0**	**+0.9**
	434nm,0.4s,16μm7.0nm						
SOEI	**Soe**	**7.34**	**239**	*e*Pn	**Pn**	**14 14 45.7**	**+0.6**
BATI	**Baumata**	**8.08**	**238**	P	**Pn**	**14 14 56.0**	**+1.0**
	178nm,0.6s,4μm						
KDI	**Kendari**	**8.21**	**284**	P	Pn	14 15 02.1	+5.3
	543nm,1.4s,7μm1.8nm						
MMRI	**Maumere**	**8.73**	**252**	P	**Pn**	**14 15 08.0**	**+4.3**
	222nm,0.5s,6μm						
MMRI	**Maumere**	**8.73**	**252**	*e*Pn	**Pn**	**14 15 06.4**	**+2.7**
LUWI	**Luwuk**	**9.23**	**302**	P	**Pn**	**14 15 12.4**	**+2.0**
LUWI	**Luwuk**	**9.23**	**302**	*e*Pn	**Pn**	**14 15 12.3**	**+2.0**
KMSI	**Cibinong**	**9.28**	**314**	P	**Pn**	**14 15 12.1**	**+1.1**
	550nm,0.7s,5μm						
EDFI	**Ende, Flores**	**9.28**	**252**	P	**Pn**	**14 15 13.9**	**+2.7**
	256nm,0.8s,4μm						
BSSI	**Bau Bau, Buton**	**10.07**	**268**	P	**Pn**	**14 15 23.5**	**+1.7**
GENI	**Genyem**	**10.09**	**71**	P	**Pn**	**14 15 24.0**	**+2.0**
JAY	**Jayapura**	**10.62**	**72**	P	**Pn**	**14 15 30.9**	**+1.9**
	0.3nm,0.3s,baz=78,slow=24,SNR=13						
JAY				S	**Sn**	**14 17 23.4**	**-3.0**
	0.1nm,0.3s,baz=270,slow=20,SNR=3.0						
JAY	**Jayapura**	**10.62**	**72**	P	**Pn**	**14 15 31.0**	**+1.9**
MRSI	**Marisa**	**10.77**	**306**	P	**Pn**	**14 15 32.8**	**+1.8**
KAPI	**Kappang**	**10.86**	**274**	P	Pn	14 15 40.6	+8.4
	5.1nm,0.3s,baz=148,slow=7.7,SNR=25						
KAPI				S	**Sn**	**14 17 29.6**	**-2.5**
	1.0nm,0.3s,baz=174,slow=20,SNR=1.4						
KAPI	**Kappang**	**10.86**	**274**	*e*Pn	**Pn**	**14 15 33.7**	**+1.5**
KAPI				S	**Sn**	**14 17 29.6**	**-2.5**
WSI	**Waingapu**	**10.87**	**250**	P	**Pn**	**14 15 33.6**	**+1.2**
	1μm,0.4s,26μm						
SPSI	**Sidrap Palu**	**10.99**	**280**	P	**Pn**	**14 15 36.1**	**+2.1**
TTSI	**Tana Toraja**	**11.15**	**285**	P	**Pn**	**14 15 38.1**	**+2.0**
PCI	**Palu**	**11.87**	**295**	P	**Pn**	**14 15 47.8**	**+2.2**
	92nm,0.7s,2μm						
FITZ	**Fitzroy Crossi**	**13.01**	**202**	P	**Pn**	**14 15 56.4**	**-4.1**
	30nm,0.3s,baz=24,slow=9.9,SNR=227						
FITZ				S	Sn	14 18 10.5	-14
	72nm,0.3s,baz=77,slow=14,SNR=7.6						
FITZ				LR	LR	14 22 27.5	
	comp=Z,215nm,21.8s,baz=20,slow=44						
PLAI	**Plampang**	**13.05**	**257**	P	**Pn**	**14 16 01.0**	**0.0**
MATI	**Mati**	**13.54**	**341**	*e*P	**P**	**14 16 10.2**	**-1.4**
DAV	**Davao City (W)**	**13.88**	**339**	P	**P**	**14 16 15.6**	**+0.1**
	135nm,0.3s,baz=266,slow=1.2,SNR=9.9						
DAV				S	**Sn**	**14 18 38.0**	**-7.2**
	19nm,0.3s,baz=310,slow=5.3,SNR=1.5						
DAV	**Davao City (W)**	**13.88**	**339**	*e*Pn	**Pn**	**14 16 12.2**	**+0.5**
DAV				S	**Sn**	**14 18 38.0**	**-7.2**
TWSI	**Taliwang, Sumb**	**13.90**	**258**	P	**Pn**	**14 16 11.1**	**-0.8**
DMPH	**Davao City--Mi**	**13.92**	**338**	*e*P	**P**	**14 16 16.6**	**+0.7**
WRAB	**Tennant Creek**	**14.36**	**166**	*e*P	**Pn**	**14 16 15.4**	**-2.2**
WRAB	**Tennant Creek**	**14.36**	**166**	*e*Pn	**Pn**	**14 16 13.8**	**-3.8**
WRA	**Warramunga Arr**	**14.37**	**166**	P	**Pn**	**14 16 14.0**	**-3.7**
	7.3nm,0.3s,baz=345,slow=13,SNR=148						
WRA				S	Sn	14 18 41.1	-16
	82nm,0.3s,baz=337,slow=23,SNR=15						
WRA				LR	LR	14 22 40.1	
	comp=Z,244nm,21.6s,baz=315,slow=40						
WRA	**Warramunga Arr**	**14.37**	**166**	P	**Pn**	**14 16 14.0**	**-3.7**
WRA				pmax	pmax		
	comp=Z,7.0nm,0.3s						
WRA				MLR	MLR		
	comp=Z,244nm,21.7s						
WB2	**Warramunga Arr**	**14.37**	**166**	*e*Pn	**Pn**	**14 16 14.2**	**-3.5**
WB2				*e*Sn	Sn	14 18 46.7	-10
BIPH	**Bislig**	**14.68**	**343**	*i*P	**P**	**14 16 23.8**	**-0.5**
COEN	**Coen**	**14.69**	**124**	*e*Pn	**Pn**	**14 16 22.5**	**+0.6**
BUKP	**Musuan**	**14.82**	**338**	*e*P	**Pn**	**14 16 24.6**	**+1.1**
BUKP				*e*S	**S**	**14 19 18.5**	**+1.8**
CGP	**Cagayan de Oro**	**15.49**	**338**	*i e*P	**P**	**14 16 36.8**	**+3.5**
IPIL	**Ipil**	**15.84**	**329**	*e*P	**P**	**14 16 38.6**	**+1.5**
BBKI	**Banjar Baru**	**15.92**	**278**	P	**P**	**14 16 39.5**	**+1.4**
DCPH	**Dipolog City**	**16.16**	**333**	*i e*P	**P**	**14 16 44.7**	**+4.0**
ABJI	**Asem Bagus**	**16.37**	**263**	P	**P**	**14 16 45.0**	**+1.9**
MYLDM	**Lahad Datu**	**16.40**	**312**	*e*Pn	**Pn**	**14 16 42.8**	**-0.1**
	comp=Z,136nm,1.2s						
JAGI	**Jajag, Banyuwa**	**16.53**	**260**	P	**P**	**14 16 44.9**	**+0.1**
JAGI	**Jajag, Banyuwa**	**16.53**	**260**	*e*Pn	**Pn**	**14 16 42.1**	**-2.5**
	comp=Z,69nm,0.4s						
PMG	**Port Moresby**	**16.74**	**103**	P	**Pn**	**14 16 48.9**	**+1.7**
	comp=Z,16nm,0.3s,baz=288,slow=5.4,SNR=98						
PMG				S	**Sn**	**14 19 45.7**	**-8.2**
	comp=Z,1.8nm,0.3s,baz=212,slow=22,SNR=5.7						
PMG				LR	LR	14 24 48.5	
	comp=Z,345nm,18.8s,baz=344,slow=42						
PMG	**Port Moresby**	**16.74**	**103**	*e*P	**Pn**	**14 16 49.8**	**+2.6**
	comp=Z,476nm,0.8s						
PMG				S	**Sn**	**14 19 45.7**	**-8.2**
BLJI	**Banyuglugur**	**17.00**	**263**	P	**Pn**	**14 16 51.4**	**+1.1**
MANU	**Manus Island**	**17.15**	**78**	*e*P	**Pn**	**14 16 54.4**	**+2.3**
	comp=Z,80nm,0.8s						
GMJI	**Gumukmas**	**17.20**	**261**	P	**Pn**	**14 16 52.9**	**+0.2**
	comp=Z,38nm,0.7s						
LLP	**Lapu-Lapu**	**17.47**	**338**	*i e*P	**Pn**	**14 16 58.1**	**+2.1**
LLP				*e*S	**S**	**14 20 07.9**	**-2.5**
AS31	**Alice Springs**	**17.89**	**170**	*e*P	**Pn**	**14 17 00.6**	**-0.4**
	comp=Z,120nm,0.6s						
ASAR	**Alice Springs**	**17.89**	**170**	P	**P**	**14 17 00.1**	**+0.4**
	comp=Z,52nm,0.3s,baz=352,slow=10,SNR=3259						
ASAR				S	**S**	**14 20 09.4**	**-9.3**
	comp=Z,15nm,0.3s,baz=349,slow=25,SNR=9.4						
AS01	**Alice Springs**	**17.90**	**170**	*e*P	**Pn**	**14 17 00.5**	**-0.6**
PLP	**Palo**	**17.91**	**342**	*i e*P	**Pn**	**14 17 01.8**	**+0.6**
OCLP	**Ormoc**	**17.92**	**340**	*e*P	**Pn**	**14 17 03.2**	**+1.8**
MTSU	**Mount Surprise**	**18.03**	**133**	P	**Pn**	**14 17 02.8**	**+0.1**
	baz=18,SNR=190						
GRJI	**Gresik**	**18.05**	**266**	P	**Pn**	**14 17 03.9**	**+1.0**
GUIM	**Jordan**	**18.31**	**334**	*e*P	**Pn**	**14 17 05.6**	**-0.4**
MBWA	**Marble Bar**	**18.43**	**214**	*e*P	**P**	**14 17 05.8**	**+0.2**
	comp=Z,136nm,0.6s						
KKM	**Kota Kinabalu**	**18.68**	**309**	*e*P	**P**	**14 17 09.1**	**+0.6**
	comp=Z,12nm,0.6s						
PWJI	**Pagerwojo**	**18.79**	**263**	P	**Pn**	**14 17 11.7**	**+0.1**
RCP	**Roxas**	**19.09**	**336**	*i e*P	**Pn**	**14 17 14.7**	**-0.4**
WRKA	**Warakurna**	**19.10**	**186**	P	**P**	**14 17 13.6**	**+0.6**
	baz=19,SNR=687						
PBKI	**Pangkalan Bun**	**19.17**	**279**	P	**Pn**	**14 17 19.3**	**+3.2**
	comp=Z,147nm,1.2s						
CUYO	**Cuyo Island**	**19.24**	**330**	*e*P	**Pn**	**14 17 17.0**	**+0.1**
STKI	**Sintang**	**20.02**	**287**	P	**P**	**14 17 23.7**	**+0.7**
	comp=Z,66nm,1.0s,comp=Z,8μm						
UGM	**Wanagama**	**20.04**	**263**	*e*P	**P**	**14 17 23.7**	**+0.4**
	comp=Z,293nm,1.5s						
OTRP	**Odiongan**	**20.11**	**335**	*e*P	**P**	**14 17 24.4**	**+0.5**
SBUM	**Sibu**	**20.18**	**294**	*e*P	**P**	**14 17 25.1**	**+0.3**
	comp=Z,54nm,0.6s						
ENPP	**El Nido**	**20.37**	**327**	*e*P	Pn	14 17 28.4	-1.7
PVCP	**Virac**	**20.46**	**342**	*e*P	Pn	14 17 30.0	-1.1
SJMP	**San Jose**	**20.59**	**333**	*e*P	Pn	14 17 31.6	-1.1
BUSP	**Coron**	**20.63**	**330**	*e*P	**P**	**14 17 30.7**	**+1.2**
CTA	**Charters Tower**	**20.69**	**134**	P	Pn	14 17 32.2	-1.7
	comp=Z,33nm,0.6s,baz=298,slow=11,SNR=63						
CTA				S	**S**	**14 21 14.9**	**+0.8**
	comp=Z,5.9nm,0.7s,baz=79,slow=23,SNR=7.2						
CTA	**Charters Tower**	**20.69**	**134**	P	Pn	14 17 32.2	-1.7
	baz=21						
CTAO	**Charters Tower**	**20.69**	**134**	*e*P	**P**	**14 17 31.8**	**+1.7**
CTAO				pmax	pmax		
	comp=Z,45nm,0.6s						
CTAO	**Charters Tower**	**20.69**	**134**	*e*P	**P**	**14 17 31.8**	**+1.7**
	comp=Z,45nm,0.6s						
RABL	**Rabaul**	**21.53**	**86**	*e*P	**P**	**14 17 40.7**	**+1.4**
	comp=Z,140nm,0.6s						
KSM	**Kuching**	**21.58**	**289**	*e*P	**P**	**14 17 38.5**	**-1.3**
	comp=Z,33nm,0.8s						
KPJI	**Karang Pucung**	**21.59**	**265**	P	**P**	**14 17 41.3**	**+1.5**
	comp=Z,92nm,0.6s						
CMJI	**Cimerak**	**22.09**	**264**	P	**P**	**14 17 46.1**	**+1.1**
	comp=Z,124nm,0.8s						
LUBP	**Lubang**	**22.11**	**332**	*e*P	**P**	**14 17 47.1**	**+1.9**
TGY	**Tagaytay City**	**22.12**	**334**	P	**P**	**14 17 47.2**	**+1.8**
	comp=Z,1μm,0.5s,baz=195,slow=3.4,SNR=27						
TGY				S	**S**	**14 21 41.3**	**+1.0**
	comp=Z,129nm,0.3s,baz=202,slow=18,SNR=2.8						
CISI	**Cisompet, Garu**	**22.70**	**265**	P	**P**	**14 17 52.1**	**+0.9**
	comp=Z,229nm,0.6s,comp=Z,5μm						
CISI	**Cisompet, Garu**	**22.70**	**265**	*e*P	**P**	**14 17 49.6**	**-1.6**
	comp=Z,182nm,0.5s						
CISI				*e*S	**S**	**14 21 48.2**	**-1.6**
GIRL	**Giralia**	**22.92**	**222**	P	**P**	**14 17 53.8**	**+0.8**
	baz=23,SNR=18						
CNJI	**Cibinong**	**23.37**	**265**	P	**P**	**14 17 55.0**	**-2.3**
	comp=Z,177nm,0.6s,comp=Z,2μm						
MEEK	**Meekatharra**	**23.54**	**208**	P	**P**	**14 17 58.5**	**-0.3**
	baz=24,SNR=50						
CBJI	**Citeko**	**23.64**	**268**	P	**P**	**14 18 01.7**	**+2.0**
	comp=Z,321nm,0.6s						
GUMO	**Guam**	**24.03**	**36**	P	**P**	**14 18 04.8**	**+1.6**
	comp=Z,41nm,0.3s,baz=217,slow=2.9,SNR=10						
GUMO	**Guam**	**24.03**	**36**	*e*P	**P**	**14 18 04.5**	**+1.3**
GUMO				pmax	pmax		
	comp=Z,273nm,1.3s						
GUMO	**Guam**	**24.03**	**36**	*e*P	**P**	**14 18 04.5**	**+1.3**
	comp=Z,273nm,1.3s						
SCZP	**Santa Cruz**	**24.06**	**334**	*e*P	**P**	**14 18 03.3**	**-0.1**
QLP	**Quilpie**	**24.28**	**149**	P	**P**	**14 18 06.1**	**+0.7**
	baz=24,SNR=30						
CAUP	**Cauayan**	**24.36**	**339**	*e*P	**P**	**14 18 07.3**	**+1.1**
PPBI	**Pangkal Pinang**	**24.71**	**278**	P	**P**	**14 18 10.9**	**+1.4**
	comp=Z,30nm,1.3s						
CGJI	**Cibinong**	**24.79**	**267**	P	**P**	**14 18 12.0**	**+1.8**
	comp=Z,50nm,0.5s						
FORT	**Forest**	**24.81**	**185**	P	**P**	**14 18 10.4**	**+0.3**
	baz=25,SNR=51						
FORT	**Forrest**	**24.81**	**185**	*e*P	**P**	**14 18 10.5**	**+0.3**
	comp=Z,1μm,0.6s						
KMBL	**Kambalda**	**26.57**	**197**	P	**P**	**14 18 25.9**	**-0.2**
	baz=27,SNR=47						
RMQ	**Roma**	**26.76**	**142**	P	**P**	**14 18 29.0**	**+1.1**
	baz=27,SNR=12						
MORW	**Morawa**	**26.80**	**209**	P	**P**	**14 18 28.2**	**-0.1**
	baz=27,SNR=7.5						
LHSI	**Lahat**	**27.08**	**273**	P	**P**	**14 18 34.9**	**+4.0**
	comp=Z,30nm,0.8s						
BBOO	**Buckleboo**	**27.19**	**170**	P	**P**	**14 18 31.4**	**-0.3**
	baz=27,SNR=53						
BBOO	**Buckleboo**	**27.19**	**170**	*e*P	**P**	**14 18 31.6**	**-0.1**
	comp=Z,104nm,0.8s						
EIDS	**Eidsvold**	**27.50**	**137**	P	**P**	**14 18 34.9**	**+0.4**
	baz=28,SNR=8.9						
EIDS	**Eidsvold**	**27.50**	**137**	*e*P	**P**	**14 18 34.8**	**+0.3**
	comp=Z,102nm,1.8s						
STKA	**Stephens Creek**	**27.76**	**160**	P	**P**	**14 18 37.0**	**+0.3**
	comp=Z,50nm,0.5s,baz=336,slow=8.2,SNR=194						
STKA				LR	LR	14 31 26.5	
	comp=Z,200nm,18.7s,baz=330,slow=40						
STKA	**Stephens Creek**	**27.76**	**160**	P	**P**	**14 18 37.0**	**+0.3**
	baz=28,SNR=139						
STKA	**Stephens Creek**	**27.76**	**160**	*e*P	**P**	**14 18 36.9**	**+0.2**
	comp=Z,12nm,0.4s						
BLDU	**Ballidu**	**27.80**	**206**	P	**P**	**14 18 37.1**	**0.0**
	baz=28,SNR=34						
MYKOM	**Kota Tinggi**	**27.82**	**285**	*e*P	**P**	**14 18 36.6**	**-0.9**
	comp=Z,49nm,1.6s						
KLBR	**Kellerberrin**	**28.21**	**204**	P	**P**	**14 18 40.7**	**0.0**
	baz=28,SNR=77						
HTT	**Hallett**	**28.41**	**165**	P	**P**	**14 18 43.0**	**+0.5**
	baz=28,SNR=32						
CMSA	**Cobar Meteorol**	**29.10**	**153**	P	**P**	**14 18 49.4**	**+0.7**
	baz=29,SNR=58						
MUN	**Mundaring**	**29.18**	**206**	P	**P**	**14 18 49.3**	**0.0**
	baz=29						
HNR	**Honiara**	**29.26**	**99**	P	**P**	**14 18 51.1**	**+0.9**
	comp=Z,110nm,0.7s,baz=173,slow=1.5,SNR=6.1						
HNR	**Honiara**	**29.26**	**99**	*e*P	**P**	**14 18 50.5**	**+0.3**
	comp=Z,106nm,0.8s						
NWAO	**Narrogin (SRO)**	**29.59**	**203**	P	**P**	**14 18 53.1**	**+0.2**
	comp=Z,21nm,0.5s,baz=268,slow=7.9,SNR=38						
NWAO				LR	LR	14 31 41.8	
	comp=Z,232nm,18.9s,baz=296,slow=38						
NWAO	**Narrogin (SRO)**	**29.59**	**203**	*e*P	**P**	**14 18 53.1**	**+0.2**
NWAO				pmax	pmax		
	comp=Z,112nm,1.4s						
NWAO	**Narrogin (SRO)**	**29.59**	**203**	*e*P	**P**	**14 18 53.1**	**+0.2**
	comp=Z,112nm,1.4s						
PDSI	**Padang**	**30.51**	**278**	P	**P**	**14 19 04.8**	**+3.5**
	comp=Z,20nm,0.7s						
YULB	**Yu-li**	**30.56**	**343**	*e*P	**P**	**14 18 58.9**	**-2.6**
	comp=Z,68nm,2.0s						
SSLB	**Suanglung**	**31.03**	**343**	*e*P	**P**	**14 19 03.6**	**-2.1**
	comp=Z,15nm,0.7s						
RKGY	**Rocky Gully**	**31.18**	**202**	P	**P**	**14 19 08.6**	**+1.7**
	baz=31,SNR=19						
IPM	**Ipoh**	**31.32**	**289**	*e*P	**P**	**14 19 07.3**	**-1.1**
	comp=Z,8.5nm,0.7s						
ARMA	**Armidale**	**31.35**	**143**	P	**P**	**14 19 10.3**	**+1.8**
	baz=32,SNR=12						
ARMA	**Armidale**	**31.35**	**143**	*e*P	**P**	**14 19 09.8**	**+1.3**
	comp=Z,37nm,1.4s						
MNSI	**Mandailing Nat**	**31.71**	**281**	P	**P**	**14 19 10.9**	**-0.9**
	comp=Z,35nm,0.5s						
YHNB	**Yeheng**	**31.75**	**344**	*e*P	**P**	**14 19 11.0**	**-1.1**
	comp=Z,25nm,0.7s						
KULM	**Kulim**	**31.94**	**290**	*e*P	**P**	**14 19 12.7**	**-1.1**
	comp=Z,14nm,0.6s						
QIZ	**Qiongzhong**	**32.18**	**321**	P	**P**	**14 19 16.4**	**+0.5**
QIZ				sP	**sP**	**14 20 00.5**	**+0.6**
QIZ				S	**S**	**14 24 19.3**	**+0.2**
QIZ				pmax	pmax		
	comp=Z,16nm,0.9s						
QIZ				LR	LR		
	comp=Z,140nm,14.0s						
QIZ				LR	LR		
	comp=Z,100nm,15.7s						
ARPS	**Mount Arapiles**	**32.34**	**163**	P	**P**	**14 19 18.2**	**+1.2**
	baz=32,SNR=55						
YNG	**Young**	**32.65**	**152**	P	**P**	**14 19 21.2**	**+1.3**
	baz=33,SNR=31						
UBPT	**Khong Chiam**	**32.65**	**311**	P	**P**	**14 19 20.3**	**+0.3**
	comp=Z,55nm,0.8s,comp=Z,676nm						
QZH	**Quanzhou**	**32.87**	**340**	*i*P	P	14 19 13.9	-7.9
QZH				pmax	pmax		
	comp=Z,100nm,0.6s						
MGCD	**Mangrove Creek**	**33.14**	**148**	P	**P**	**14 19 26.0**	**+1.9**
	baz=33,SNR=17						
CHBT	**CHBT**	**33.70**	**304**	P	**P**	**14 19 29.5**	**+0.4**
	comp=Z,72nm,0.5s,comp=Z,4μm						
CAN	**Canberra**	**33.77**	**152**	P	**P**	**14 19 30.6**	**+1.0**
	baz=34						
CAN	**Canberra**	**33.77**	**152**	*e*P	**P**	**14 19 31.1**	**+1.5**
CAN				pmax	pmax		
	comp=Z,27nm,0.6s						
CAN	**Canberra**	**33.77**	**152**	*e*P	**P**	**14 19 31.1**	**+1.5**
	comp=Z,27nm,0.6s						
GSI	**Gunungsitoli**	**33.77**	**281**	P	**P**	**14 19 30.9**	**+1.1**
	comp=Z,45nm,0.6s						
GSI	**Gunungsitoli**	**33.77**	**281**	*e*P	**P**	**14 19 27.1**	**-2.8**
	comp=Z,31nm,0.5s						
GSI				*e*S	**S**	**14 24 43.5**	**-0.5**
CNB	**Canberra Magne**	**33.94**	**152**	P	**P**	**14 19 32.4**	**+1.3**
	baz=34,SNR=22						
TOO	**Toolangi**	**34.26**	**159**	P	**P**	**14 19 35.8**	**+2.0**
	baz=34,SNR=33						
SRAK	**Srakaew**	**34.61**	**305**	P	**P**	**14 19 32.9**	**-4.1**
SKNT	**Sakolnakorn**	**34.82**	**311**	P	**P**	**14 19 39.1**	**+0.3**
	comp=Z,58nm,0.6s						
MILA	**Mila**	**35.28**	**154**	P	**P**	**14 19 44.5**	**+2.0**
	baz=35,SNR=9.9						
KHON	**Khomkaen**	**35.31**	**309**	P	**P**	**14 19 43.7**	**+0.7**
	comp=Z,39nm,0.8s,comp=Z,422nm						
CHAI	**Chaiyaphum**	**35.71**	**308**	P	**P**	**14 19 46.2**	**-0.2**
	comp=Z,33nm,0.5s,comp=Z,462nm						
PHET	**Kaeng Krachan**	**36.05**

KSAR Wonju Array Be 43.25 357 P **P** **14 20 49.9 +1.3**
KSRS Korea Array 43.26 357 P **P** **14 20 49.9 +1.2**
comp=Z,12nm,0.5s,baz=173,slow=8.9,SNR=76
KSRS LR LR 14 37 49.3
comp=Z,46nm,20.8s,baz=178,slow=34
KS01 Wonju Array Si 43.28 357 *e*P **P** **14 20 49.9 +1.1**
INCN Inchon 43.38 355 *e*P **P** **14 20 50.2 +0.6**
comp=Z,41nm,0.5s
TIA Tai'an 43.82 344 ⇑P **P** **14 20 53.1 -0.1**
TIA pmax pmax
comp=Z,20nm,0.9s
XAN Xi'an 44.77 334 P **P** **14 21 01.0 +0.2**
XAN pmax pmax
comp=Z,70nm,0.6s
XAN pmax pmax
comp=Z,110nm,4.5s
CD2 Chengdu 44.77 327 ⇑P **P** **14 21 01.1 +0.2**
CD2 pP pP 14 21 32.7 +1.6
CD2 sP sP 14 21 48.6 +2.6
CD2 PcS **PcS** **14 26 34.3 -0.4**
CD2 S **S** **14 27 29.1 +1.0**
CD2 sS sS 14 28 24.2 +3.9
CD2 pmax pmax
comp=Z,60nm,0.5s
CD2 pmax pmax
comp=Z,180nm,5.0s
BJT Baijiatuan 47.65 345 *e*P **P** **14 21 23.6 +0.4**
BJT pmax pmax
comp=Z,89nm,0.6s
BJT Baijiatuan 47.65 345 *e*P **P** **14 21 23.6 +0.4**
comp=Z,89nm,0.6s
BJI Beijing 47.67 345 P **P** **14 21 23.9 +0.6**
BJI pP **pP** **14 21 53.9 +0.1**
BJI PcP **PcP** **14 22 51.6 +0.9**
BJI pmax pmax
comp=Z,120nm,0.6s
BJI pmax pmax
comp=Z,200nm,3.9s
SNY Shenyang 47.99 353 ⇑P **P** **14 21 26.0 +0.2**
SNY pmax pmax
comp=Z,21nm,0.6s
SNY pmax pmax
comp=Z,150nm,4.2s
SNY LR LR
comp=Z,120nm,19.6s
SNY LR LR
comp=Z,170nm,18.5s
SNY LR LR
comp=Z,120nm,25.6s
LZH Lanzhou 48.79 331 *e*P **P** **14 21 33.7 +1.4**
LZH pmax pmax
comp=Z,64nm,1.1s
LZH pmax pmax
comp=Z,310nm,4.0s
VLA Vladivostok 48.86 1⇓*e*P **P** **14 21 31.8 -0.6**
VLA *e**PP **pP** **14 22 01.4 -1.6**
VLA *e* 14 22 54.8
VLA *e*S **S** **14 28 26.1 +0.4**
VLA pmax pmax
comp=Z,26nm,0.6s
CN2 Changchun 49.75 355 *e*P **P** **14 21 39.7 +0.5**
CN2 *e*S **S** **14 28 41.2 +3.0**
CN2 pmax pmax
comp=Z,30nm,0.6s
CN2 pmax pmax
comp=Z,100nm,4.0s
CN2 LR LR
comp=Z,100nm,21.0s
CN2 LR LR
comp=Z,100nm,21.0s
CN2 LR LR
comp=Z,100nm,19.0s
HHC Hu-ho-hao-te 49.76 341 *e*P **P** **14 21 40.6 +1.1**
HHC pmax pmax
comp=Z,30nm,0.8s
HHC pmax pmax
comp=Z,74nm,7.4s
USRK Ussuriysk Ar. 49.94 1 P **P** **14 21 41.6 +1.0**
comp=Z,21nm,0.6s,baz=180,slow=7.1,SNR=99
MDJ Mudanjiang 50.35 359 P **P** **14 21 45.2 +1.5**
MDJ pmax pmax
comp=Z,33nm,0.6s
MDJ pmax pmax
comp=Z,54nm,5.2s
MDJ Mudanjiang 50.35 359 *e*P **P** **14 21 44.0 +0.3**
comp=Z,27nm,0.6s
ASAJ Asahikawa 51.00 11 P **P** **14 21 49.9 +1.3**
comp=Z,6.7nm,0.3s,baz=222,slow=8.9
ASAJ Asahikawa 51.00 11 *e*P **P** **14 21 49.3 +0.7**
comp=Z,14nm,0.8s
RPZ Rata Peaks 51.69 143 P **P** **14 21 54.2 +0.4**
comp=Z,10.0nm,0.5s,baz=249,slow=3.3,SNR=14
RPZ Rata Peaks 51.69 143 *e*P **P** **14 21 54.6 +0.8**
comp=Z,104nm,1.8s
LSA Lhasa 51.88 315 P **P** **14 21 56.7 +0.7**
LSA pmax pmax
comp=Z,36nm,0.6s
LSA Lhasa 51.88 315 *e*P **P** **14 21 56.4 +0.4**
LSA pmax pmax
comp=Z,22nm,0.6s
LSA Lhasa 51.88 315 *e*P **P** **14 21 56.4 +0.4**
comp=Z,22nm,0.6s
BKZ Black Stump Fm 52.90 136 *e*P **P** **14 22 02.7 -0.2**
comp=Z,17nm,0.6s
URZ Urewera 52.94 134 P **P** **14 22 03.0 -0.1**
comp=Z,7.4nm,0.3s,baz=250,slow=4.4,SNR=23
URZ Urewera 52.94 134 *e*P **P** **14 22 03.7 +0.6**
GTA Gaotai 53.37 330 *e*P **P** **14 22 07.7 +1.3**
GTA pP pP 14 22 39.6 +2.1
GTA sP sP 14 22 55.6 +3.4
GTA ScP **ScP** **14 26 56.2 -1.3**
GTA S **S** **14 29 28.4 +0.1**
GTA sS sS 14 30 24.0 +2.0
GTA pmax pmax
comp=Z,47nm,0.8s
GTA pmax pmax
comp=Z,190nm,6.4s
GTA LR LR
comp=Z,66nm,12.8s
GTA LR LR
comp=Z,61nm,12.4s
GTA LR LR
comp=Z,85nm,12.4s
RAMN Ramite 53.70 310 *e*P **P** **14 22 09.5 +0.3**
comp=Z,240nm,0.5s
YSS Yuzh-Sakhalins 53.77 10⇑*i*P **P** **14 22 09.8 +0.9**
YSS *e* 14 22 49.5
YSS pmax pmax
comp=Z,20nm,0.9s
YSS Yuzh-Sakhalins 53.77 10 *e*P **P** **14 22 09.4 +0.4**
comp=Z,18nm,0.5s
HABR Khabarovsk 54.34 4 *e*P **P** **14 22 12.1 -0.9**
HABR *e**SP **sP** **14 22 57.3 -1.6**
HABR *e* 14 23 13.9
HABR *e* 14 24 15.6
HABR *e*PPP PPP 14 25 28.3
HABR *e*S **S** **14 29 41.1 +0.4**
HABR *e* 14 29 47.9
HABR *e**SS **sS** **14 30 34.5 0.0**
HABR *e* 14 31 47.8
HABR *e*SS **SS** **14 33 27.0 +2.0**
HABR pmax pmax
comp=N,9.0nm,0.9s
HABR pmax pmax
comp=E,8.0nm,0.9s
HABR pmax pmax
comp=Z,32nm,0.9s
HABR MLR MLR
comp=Z,32nm,19.0s
GUN Gumba 54.74 310 *e*P **P** **14 22 17.0 +0.2**
comp=Z,161nm,0.6s
PKIN Phulchoki 54.94 310 *e*P **P** **14 22 17.8 -0.4**
comp=Z,50nm,0.7s
KLR Kul'dur 54.97 1 P **P** **14 22 18.6 +1.0**
comp=Z,8.2nm,0.5s,baz=188,slow=5.8
KKN Kakani 55.14 310 *e*P **P** **14 22 19.4 -0.1**
comp=Z,63nm,0.6s
DMN Daman 55.18 310 *e*P **P** **14 22 20.0 +0.1**
comp=Z,64nm,0.6s
GKN Gorkha 55.74 310 *e*P **P** **14 22 23.6 -0.1**
comp=Z,144nm,0.6s
HYB Hyderabad 56.42 295 *i*P **P** **14 22 28.5 -0.1**
KOLN Koldanda 56.42 309 *e*P **P** **14 22 28.8 +0.1**
comp=Z,38nm,0.4s
PYUN Piuthan 57.05 309 *e*P **P** **14 22 33.3 +0.2**
comp=Z,119nm,0.7s

SONM Songino Array 57.66 341 P **P** **14 22 38.7 +1.8**
comp=Z,28nm,0.5s,baz=162,slow=6.7,SNR=142
SONM LR LR 14 51 35.4
comp=Z,34nm,18.2s,baz=134,slow=40
SONA1 Songino Array 57.67 341 *e*P **P** **14 22 38.0 +1.0**
ZAK Zakamensk 60.89 340 *e*P **P** **14 22 59.8 +0.8**
ZAK pmax pmax
comp=Z,11nm,1.4s
CASY Casey 61.82 189 *e*P **P** **14 23 05.4 +0.5**
comp=Z,1.4nm,0.6s
TLY Talaya 61.89 341 *e*P **P** **14 23 05.7 +0.1**
TLY pmax pmax
comp=Z,7.0nm,0.6s
MOY Mondy 62.75 340 *e*P **P** **14 23 13.3 +1.8**
MOY pmax pmax
comp=Z,61nm,2.5s
WMQ Urumqi 62.87 326 P **P** **14 23 13.7 +1.3**
WMQ pP pP 14 23 46.1 +1.7
WMQ sP sP 14 23 57.0 -1.8
WMQ ScP **ScP** **14 27 34.0 -5.3**
WMQ S **S** **14 31 30.8 -0.7**
WMQ sS sS 14 32 30.3 +3.6
WMQ pmax pmax
comp=Z,43nm,0.7s
WMQ pmax pmax
comp=Z,180nm,4.6s
WMQ LR LR
comp=Z,340nm,26.4s
WMQ LR LR
comp=Z,290nm,23.2s
WMQ LR LR
comp=Z,330nm,28.6s
PEA0 Petropavlovsk- 63.15 18 *e*P **P** **14 23 14.8 +0.9**
PEA0B Petropavlovsk- 63.15 18 *e*P **P** **14 23 15.1 +1.2**
comp=Z,19nm,0.7s
PETK Petropavlovsk- 63.15 18 P **P** **14 23 15.4 +1.5**
comp=Z,11nm,0.6s,baz=177,slow=3.4,SNR=34
PET Petropavlovsk 63.37 19 *e*P **P** **14 23 17.5 +2.1**
PET pmax pmax
comp=Z,23nm,1.0s
PET Petropavlovsk 63.37 19 *e*P **P** **14 23 16.4 +1.0**
comp=Z,19nm,1.0s
BOD Bodaibo 64.98 350 *e*P **P** **14 23 25.7 0.0**
BOD pmax pmax
comp=Z,19nm,1.2s
PDGK Podgornoye 67.36 322 P **P** **14 23 42.4 +1.2**
PDGK pmax pmax
comp=Z,32nm,0.6s
KSH Kashi 67.67 317 P **P** **14 23 45.1 +1.6**
KSH *e*pP pP 14 24 19.7 +3.7
KSH *e*sP sP 14 24 34.6 +4.3
KSH *e*PP **PP** **14 26 17.6 +3.0**
KSH PcS 14 28 14.7
KSH S **S** **14 32 28.3 -2.2**
KSH ScS **SKiKP** **14 33 27.1 -0.6**
KSH pmax pmax
comp=Z,16nm,0.7s
KSH pmax pmax
comp=Z,100nm,2.6s
KSH LR LR
comp=Z,100nm,4.9s
KSH LR LR
comp=Z,86nm,6.1s
KSH LR LR
comp=Z,120nm,6.1s
MK01 Makanchi Array 67.68 326 *e*P **P** **14 23 44.0 +0.7**
MK31 Makanchi Array 67.70 326 *e*P **P** **14 23 44.3 +0.9**
MK31 pmax pmax
comp=Z,52nm,0.5s
MK31 Makanchi Array 67.70 326 *e*P **P** **14 23 44.3 +0.9**
MKAR Makanchi Array 67.70 326 P **P** **14 23 44.4 +1.0**
comp=Z,111nm,0.4s,baz=115,slow=8.7,SNR=1130
MKAR LR LR 14 53 57.5
comp=Z,33nm,20.9s,baz=130,slow=36
MKAR Makanchi Array 67.70 326 P **P** **14 23 44.4 +1.0**
MKAR pmax pmax
comp=Z,137nm,0.5s
MKAR MLR MLR
comp=Z,33nm,20.9s
MKAR Makanchi Array 67.70 326 *e*P **P** **14 23 44.3 +0.9**
YAK Yakutsk 67.79 360*c i*P **P** **14 23 44.0 +0.4**
YAK *e* 14 24 09.2
YAK *e**PP **pP** **14 24 16.0 0.0**
YAK *e* 14 26 13.9
YAK *e*PPP PPP 14 27 53.0
YAK *e*S **S** **14 32 32.2 +1.5**
YAK *e* 14 33 30.5
YAK *e*SS **SS** **14 36 54.3 -0.6**
YAK pmax pmax
comp=Z,30nm,0.6s
YAK pmax pmax
comp=N,8.0nm,0.7s
YAK pmax pmax
comp=Z,65nm,5.3s
YAK pmax pmax
comp=N,35nm,3.8s
YAK pmax pmax
comp=E,24nm,3.3s
YAK smax smax
comp=E,37nm,3.0s
YAK smax smax
comp=N,21nm,2.5s
YAK Yakutsk 67.79 360 *e*P **P** **14 23 43.9 +0.3**
comp=N,92nm,0.7s
MAKZ Makanchi 67.88 326 *e*P **P** **14 23 45.5 +0.9**
MAKZ pmax pmax
comp=Z,112nm,0.6s
MAKZ Makanchi 67.88 326 *e*P **P** **14 23 45.5 +0.9**
comp=Z,112nm,0.6s
AAK Ala-Archa 70.15 319*c i*P **P** **14 24 00.4 +1.6**
AAK pmax pmax
comp=Z,66nm,0.8s
AAK Ala-Archa 70.15 319 *e*P **P** **14 24 00.1 +1.2**
comp=Z,25nm,0.8s
FRU Bishkek 70.17 320 *e*P **P** **14 23 59.0 +0.2**
FRU *e* 14 24 16.0
KBL Kabul 70.57 310 *e*P **P** **14 24 01.9 +0.3**
KBL pmax pmax
comp=Z,23nm,1.1s
KBL Kabul 70.57 310 *e*P **P** **14 24 01.9 +0.3**
comp=Z,23nm,1.1s
SEY Seymchan 70.67 10*c i*P **P** **14 24 03.0 +1.7**
ZAA0 Zalesovo Array 70.93 333 *e*P **P** **14 24 02.7 -0.3**
ZALV Zalesovo Beam 70.93 333 P **P** **14 24 03.2 +0.2**
comp=Z,19nm,0.5s,baz=136,slow=5.9,SNR=97
ZALV LR LR 14 57 46.4
comp=Z,26nm,19.0s,baz=70,slow=38
MNAS Manas 71.38 318 P **P** **14 24 07.5 +1.2**
MNAS pmax pmax
comp=Z,33nm,0.7s
NVS Novosibirsk 72.21 333⇑*i*P **P** **14 24 11.2 +0.5**
NVS *e**PP **pP** **14 24 43.7 +0.2**
NVS *e*S **S** **14 33 20.9 -1.6**
NVS pmax pmax
comp=Z,33nm,1.4s
NVS pmax pmax
comp=N,21nm,1.5s
NVS pmax pmax
comp=E,31nm,1.5s
NVS smax smax
comp=N,15nm,2.2s
NVS smax smax
comp=E,24nm,2.2s
KK31 Karatay Array 72.97 318 *i*P **P** **14 24 16.2 +0.7**
KK31 pmax pmax
comp=Z,15nm,0.7s
KKAR Karatay Array 72.97 318 *e*P **P** **14 24 15.8 +0.3**
KKAR Karatay Array 72.97 318 *e*P **P** **14 24 15.8 +0.3**
VNDA Vanda 73.40 173 P **P** **14 24 18.2 +0.8**
comp=Z,8.8nm,0.5s,baz=321,slow=6.9,SNR=42
VNDA LR LR 14 56 20.4
comp=Z,47nm,18.5s,baz=342,slow=35
VNDA Vanda 73.40 173 *e*P **P** **14 24 17.6 +0.2**
comp=Z,11nm,0.7s
OTUK Ortayu 74.17 324 P **P** **14 24 23.2 +0.8**
OTUK pmax pmax
comp=Z,28nm,0.6s
SBA Scott Base 74.28 173 *e*P **P** **14 24 24.1 +1.6**
SBA pmax pmax
comp=Z,9.0nm,0.6s
SBA Scott Base 74.28 173 *e*P **P** **14 24 24.1 +1.6**
comp=Z,9.5nm,0.6s
MAW Mawson 76.14 201 P **P** **14 24 34.4 +1.0**
comp=Z,13nm,0.6s,baz=82,slow=4.9,SNR=24
MAW LR LR 14 55 31.0
comp=Z,52nm,20.9s,baz=54,slow=34

MAW Mawson 76.14 201 P **P** **14 24 34.3 +1.0**
baz=76,SNR=15
MAW Mawson 76.14 201 *e*P **P** **14 24 34.0 +0.7**
comp=Z,17nm,1.5s
VOSK Vostochnaya 77.06 327 *e*P **P** **14 24 38.5 -0.3**
VOSK pmax pmax
comp=Z,50nm,0.6s
VOSK Vostochnaya 77.06 327 *e*P **P** **14 24 38.5 -0.3**
comp=Z,50nm,0.6s
TIXI Tiksi 77.46 359⇓*e*P **P** **14 24 40.4 -0.2**
TIXI pmax pmax
comp=Z,18nm,0.6s
TIXI Tiksi 77.46 359 *e*P **P** **14 24 40.6 0.0**
comp=Z,25nm,0.8s
BVA0 Borovoye Array 77.52 328 *i*P **P** **14 24 41.5 +0.2**
BVA0 pmax pmax
comp=Z,16nm,0.6s
BRVK Borovoye 77.59 328*c i*P **P** **14 24 41.9 +0.2**
BRVK pmax pmax
comp=Z,59nm,0.7s
BRVK Borovoye 77.59 328 *e*P **P** **14 24 41.8 0.0**
comp=Z,24nm,0.6s
CHKZ Chkalovo 77.70 328 P **P** **14 24 42.3 0.0**
CHKZ pmax pmax
comp=Z,14nm,0.7s
BILL Bilibino 77.97 13⇓*e*P **P** **14 24 45.4 +1.9**
BILL *e**PP **pP** **14 25 18.2 +1.5**
BILL *e* 14 27 47.9
BILL *e*PPP PPP 14 29 34.2
BILL pmax pmax
comp=Z,1.0nm,0.6s
ZRNK Zerenda 78.23 327 *e*P **P** **14 24 45.0 -0.3**
ZRNK pmax pmax
comp=Z,29nm,0.6s
ZRNK Zerenda 78.23 327 *e*P **P** **14 24 45.0 -0.3**
comp=Z,29nm,0.6s
UOSS Minazif 78.50 297 *e*P **P** **14 24 47.5 +0.1**
comp=Z,34nm,1.6s
ASHO Ashiyiah 78.58 297 *i*P **P** **14 24 48.4 +0.6**
SNR=8.3
FAQ Al Faqa, Dubai 79.00 297 *i*P **P** **14 24 50.6 +0.4**
SNR=8.9
GEYT Alibeck 80.02 310 P **P** **14 24 56.5 +1.1**
comp=Z,9.1nm,0.5s,baz=158,slow=4.4,SNR=21
NRIK Noril'sk 80.70 346 P **P** **14 24 59.2 +0.9**
comp=Z,10nm,0.6s,baz=142,slow=5.8,SNR=12
NRIK LR LR 15 04 44.1
comp=Z,30nm,20.6s,baz=140,slow=38
AB31 Akbulak array 82.08 321 *i*P **P** **14 25 05.7 -0.3**
AB31 pmax pmax
comp=Z,6.0nm,0.6s
ABKAR Akbulak array 82.08 321 *e*P **P** **14 25 05.4 -0.6**
QSPA South Pole Qui 84.01 180 *e*P **P** **14 25 15.8 -0.1**
comp=Z,16nm,0.7s
SVE Sverdlovsk 84.20 329*de*P **P** **14 25 16.9 +0.2**
SVE pmax pmax
comp=Z,36nm,0.7s
SYO Syowa Base 84.85 201⇑*e*P **P** **14 25 19.0 -0.8**
SYO Syowa Base 84.85 201⇑*e*PcP **PcP** **14 25 24.3 +1.4**
ARU Arti 85.15 328*d i*P **P** **14 25 21.4 -0.1**
ARU *PP **pP** **14 25 54.2 -1.1**
ARU 14 28 38.5
ARU PPP PPP 14 30 33.0
ARU S **S** **14 35 33.8 -6.3**
ARU SS **SS** **14 41 17.8 +0.8**
ARU pmax pmax
comp=Z,14nm,0.7s
ARU Arti 85.15 328 *e*P **P** **14 25 21.1 -0.4**
comp=Z,15nm,0.8s
SVW2 Sparrevohn 87.44 28 *e*P **P** **14 25 34.2 +1.6**
comp=Z,9.1nm,1.0s
OHAK Old Harbor 87.50 32 *e*P **P** **14 25 33.5 +0.5**
comp=Z,18nm,0.6s
TT01 Tatalina 87.78 26 *e*P **P** **14 25 35.3 +1.1**
TT01 *e*sP **sP** **14 26 19.5 -2.6**
TTA Tatalina 87.79 26 *e*P **P** **14 25 35.6 +1.3**
TTA pmax pmax
comp=Z,55nm,1.9s
TTA Tatalina 87.79 26 *e*P **P** **14 25 35.6 +1.3**
comp=Z,55nm,1.9s
CAST Castle Rocks 89.64 26 *e*P **P** **14 25 43.5 +0.6**
comp=Z,3.8nm,0.5s
KTH Kantishna Hill 90.18 26 *e*P **P** **14 25 45.1 -0.4**
TRF Thorofare Moun 90.43 26 *e*P **P** **14 25 46.1 -0.8**
MLY Manley 90.58 25 *e*P **P** **14 25 47.2 -0.1**
comp=Z,6.8nm,1.2s
MCK McKinley 91.08 26 *e*P **P** **14 25 49.1 -0.5**
MCK pmax pmax
comp=Z,5.0nm,0.8s
MCK McKinley 91.08 26 *e*P **P** **14 25 49.1 -0.5**
comp=Z,4.6nm,0.8s
COLD Coldfoot 91.28 22 *e*P **P** **14 25 50.4 0.0**
comp=Z,8.9nm,1.2s
SCM Sheep Creek Mo 91.46 28 *e*P **P** **14 25 52.6 +1.1**
SCM pmax pmax
comp=Z,37nm,1.8s
SCM Sheep Creek Mo 91.46 28 *e*P **P** **14 25 52.5 +1.1**
comp=Z,37nm,1.8s
WRH Wood River Hil 91.58 25 *e*P **P** **14 25 50.9 -1.0**
comp=Z,25nm,1.6s
DHY Denali Highway 91.65 27 *e*P **P** **14 25 51.4 -1.1**
comp=Z,7.7nm,0.7s
CCB Clear Creek Bu 91.74 25 *e*P **P** **14 25 51.6 -1.0**
comp=Z,6.5nm,0.8s
COLA College 91.76 25 *e*P **P** **14 25 52.6 -0.1**
COLA pmax pmax
comp=Z,3.0nm,0.7s
ILAR Eielson Array 92.15 25 P **P** **14 25 53.6 -0.9**
comp=Z,2.3nm,0.6s,baz=265,slow=4.2,SNR=38
ILAR PKKP **PKKPdf** **14 43 09.9 +0.1**
comp=Z,0.2nm,0.6s,baz=236,slow=1.2,SNR=4.2
ILB Eielson Array 92.15 25 *e*P **P** **14 25 52.7 -1.8**
PAX Paxson 92.49 27 *e*P **P** **14 25 56.3 0.0**
PAX pmax pmax
comp=Z,25nm,1.9s
PAX Paxson 92.49 27 *e*P **P** **14 25 56.3 0.0**
comp=Z,25nm,1.9s
DOT Dot Lake 93.21 26 *e*P **P** **14 25 59.1 -0.4**
comp=Z,5.9nm,0.5s
EGAK Eagle 94.58 25 *e*P **P** **14 26 06.0 +0.3**
comp=Z,5.0nm,0.9s
DAWY Dawson 95.31 26 *e*P **P** **14 26 09.4 +0.3**
comp=Z,9.9nm,1.0s
ANN Anapa 96.42 314 *e*P **P** **14 26 11.9 -2.6**
ANN *e*S **SKSac** **14 36 34.9 -3.9**
ANN pmax pmax
comp=Z,27nm,1.0s
SNAA Sanae 96.81 193 *e*P **P** **14 26 16.3 +0.4**
SNAA pmax pmax
comp=Z,5.0nm,0.7s
SNAA Sanae 96.81 193 *e*P **P** **14 26 16.3 +0.4**
comp=Z,4.7nm,0.7s
OBN Obninsk 97.17 325⇓*e*P **P** **14 26 16.2 -1.4**
OBN *e**PP **pP** **14 26 50.5 -1.3**
OBN *e* 14 30 12.9
OBN *e*PPP PPP 14 32 21.4
OBN pmax pmax
comp=Z,3.0nm,0.7s
BRTR Keskin Array B 99.14 309 P **Pdif** **14 26 26.1 -1.0**
comp=Z,0.7nm,0.8s,baz=133,slow=6.9,SNR=3.6
BRTR LR LR 15 21 02.7
comp=Z,13nm,18.0s,baz=99,slow=41
ARCES ARCESS Array B 100.82 340 P **Pdif** **14 26 32.9 -0.8**
comp=Z,0.7nm,0.5s,baz=89,slow=5.3,SNR=7.3
ARCES PKiKP **PKiKP** **14 30 58.3 -0.4**
comp=Z,1.4nm,0.9s,baz=94,slow=1.2,SNR=4.2
KIEV Kiev 101.81 320⇓*e*P **Pdif** **14 26 36.1 -2.4**
KIEV pmax pmax
comp=Z,9.0nm,2.3s
FINES FINESS Array B 102.15 332 P **Pdif** **14 26 38.3 -1.4**
comp=Z,2.0nm,0.8s,baz=46,slow=8.2,SNR=5.5
FINES PKiKP **PKiKP** **14 31 01.6 +0.3**
comp=Z,0.8nm,0.5s,baz=45,slow=1.1,SNR=3.7
FINES PKKPbc **PKKPbc** **14 42 43.3 -1.9**
comp=Z,1.2nm,0.8s,baz=208,slow=3.7,SNR=3.8
BUR08 Bucovina Ar. S 104.76 318 *e*Pdif **Pdif** **14 26 51.8 0.0**
YKA Yellowknife Ar 106.55 26 PKiKP **PKiKP** **14 31 09.2 -0.1**
comp=Z,0.8nm,0.5s,baz=292,slow=2.0,SNR=8.7
YKA PKKPbc **PKKPbc** **14 42 28.8 -3.1**
comp=Z,0.5nm,0.5s,baz=117,slow=3.6,SNR=4.2
MOA Molln 111.94 319 *i*PKiKP **PKiKP** **14 31 18.6 -1.4**
comp=Z,3.3nm,1.2s
GERES GERESS Array B 112.02 321 PKiKP **PKiKP** **14 31 19.9 -0.2**
comp=Z,1.2nm,0.5s,baz=79,slow=2.9,SNR=8.5
GERES SKP **SKPdf** **14 34 41.2 -2.2**
comp=Z,0.6nm,0.5s,baz=48,slow=2.0,SNR=5.2

GERES	**GERES Array B**	**112.02**	**321**	*i* PKiKP	**PKiKP**	**14 31 20.0**	**-0.2**
GERES	comp=Z,1.0nm,0.5s			pmax	pmax		
GERES	comp=N,1.0nm,0.5s			pmax	pmax		
OBKA	**Obir**	**112.12**	**318**	*i* PKiKP	**PKiKP**	**14 31 18.9**	**-1.5**
	comp=N,8.0nm,1.5s						
KBA	**Koelnbreinsper**	**112.75**	**319**	*i* PKiKP	**PKiKP**	**14 31 20.9**	**-0.9**
	comp=N,2.6nm,0.5s						
WTTA	**Wattenberg**	**113.81**	**319**	*i* PKiKP	**PKiKP**	**14 31 23.7**	**-0.1**
	comp=N,4.1nm,0.4s						
WATA	**Walderalm**	**113.83**	**319**	*i* PKiKP	**PKiKP**	**14 31 24.5**	**+0.8**
	comp=N,3.8nm,0.5s						
MOTA	**Moosalm**	**114.13**	**320**	*i* PKPdf	PKPdf	14 31 23.7	-0.6
	comp=N,2.4nm,0.5s						
RETA	**Reutte**	**114.31**	**320**	*i* PKiKP	**PKiKP**	**14 31 24.6**	**0.0**
	comp=N,1.1nm,0.4s						
FETA	**Feichten**	**114.48**	**319**	*i* PKPdf	PKPdf	14 31 24.2	-0.8
	comp=N,2.2nm,0.5s						
DAVA	**Damuels**	**114.94**	**320**	*i* PKiKP	PKPdf	14 31 26.0	+0.1
	comp=N,3.7nm,0.4s						
PDAR	**Pinedale Array**	**115.72**	**45**	PKP	**PKPdf**	**14 31 27.9**	**+0.3**
	comp=N,0.4nm,0.6s,baz=253,slow=4.5,SNR=3.9						
PV01	**Paradox Valley**	**117.72**	**50**	*e*PKPdf	**PKPdf**	**14 31 32.6**	**+0.9**
EKA	**Eskdalemuir Ar**	**118.54**	**332**	PKKPbc	PKKPbc	14 41 50.5	-1.2
	comp=N,0.6nm,0.6s,baz=236,slow=3.8,SNR=4.1						
S22A	**4UR Ranch, Cre**	**119.15**	**50**	P	**PKPdf**	**14 31 36.5**	**+2.0**
	baz=286						
S22A	**4UR Ranch, Cre**	**119.15**	**50**	*e*PKPdf	**PKPdf**	**14 31 36.2**	**+1.7**
SDCO	**Great Sand Dun**	**120.16**	**50**	P	**PKPdf**	**14 31 37.7**	**+1.2**
	baz=287						
SDCO	**Great Sand Dun**	**120.16**	**50**	*e*PKPdf	**PKPdf**	**14 31 37.6**	**+1.2**
ANMO	**Albuquerque**	**120.19**	**53**	P	**PKPdf**	**14 31 37.8**	**+1.4**
	baz=285						
ULM	**Lac du Bonnet**	**121.24**	**33**	PKP	**PKPdf**	**14 31 36.2**	**-1.5**
	comp=N,1.3nm,0.5s,baz=318,slow=2.7,SNR=4.4						
C31A	**Landman Farms,**	**121.45**	**36**	P	**PKPdf**	**14 31 38.3**	**+0.1**
	baz=300						
MNTX	**Cornudas Mount**	**121.87**	**56**	P	**PKPdf**	**14 31 40.5**	**+0.9**
	baz=284						
MNTX	**Cornudas Mount**	**121.87**	**56**	*e*PKPdf	**PKPdf**	**14 31 40.4**	**+0.9**
B35A	**Bob, Littlefor**	**123.45**	**34**	P	**PKPdf**	**14 31 41.8**	**-0.2**
	baz=304						
TX31	**Lajitas Ar. Si**	**123.86**	**59**	*e*PKPdf	**PKPdf**	**14 31 44.3**	**+0.8**
TXAR	**Lajitas Array**	**123.86**	**59**	PKP	**PKPdf**	**14 31 43.8**	**+0.2**
	comp=N,0.7nm,0.7s,baz=250,slow=1.3,SNR=9.6						
ECSD	**EROS Data Cent**	**124.10**	**40**	P	**PKPdf**	**14 31 43.7**	**+0.3**
	baz=298						
H34A	**Spellman Lake,**	**124.17**	**39**	P	**PKPdf**	**14 31 44.0**	**+0.5**
	baz=300						
P32A	**Huiting Farm,**	**124.56**	**45**	P	**PKPdf**	**14 31 45.2**	**+0.7**
	baz=294						
E36A	**McGregor**	**124.73**	**36**	P	**PKPdf**	**14 31 45.0**	**+0.5**
	baz=303						
D37A	**Cotton**	**124.85**	**35**	P	**PKPdf**	**14 31 44.9**	**+0.1**
	baz=304						
EYMN	**Ely**	**124.92**	**33**	P	**PKPdf**	**14 31 45.2**	**+0.3**
	baz=306						
F36A	**Milaca**	**124.93**	**36**	P	**PKPdf**	**14 31 45.3**	**+0.3**
	baz=302						
O34A	**Beatrice**	**125.66**	**44**	P	**PKPdf**	**14 31 46.3**	**-0.2**
	baz=296						
J36A	**Seneca 1, Swea**	**125.74**	**39**	P	**PKPdf**	**14 31 46.9**	**+0.3**
	baz=300						
P34A	**Walnut Farm, R**	**125.84**	**45**	P	**PKPdf**	**14 31 47.6**	**+0.7**
	baz=296						
H37A	**Dierke Farm, C**	**125.97**	**37**	P	**PKPdf**	**14 31 47.1**	**+0.1**
	baz=302						
J37A	**Redenius Farm,**	**126.24**	**39**	P	**PKPdf**	**14 31 48.0**	**+0.4**
	baz=301						
JCT	**Junction City**	**126.81**	**56**	P	**PKPdf**	**14 31 49.9**	**+0.8**
	baz=287						
JCT	**Junction City**	**126.81**	**56**	*e*PKiKP	**PKPdf**	**14 31 50.1**	**+1.1**
JCT	**Junction City**	**126.81**	**56**	*e*PKPdf	**PKPdf**	**14 31 50.1**	**+1.1**
S35A	**Otter Creek Ra**	**126.98**	**47**	P	**PKPdf**	**14 31 50.0**	**+0.9**
	baz=295						
U35A	**Pawnee**	**127.21**	**48**	P	**PKPdf**	**14 31 50.7**	**+1.1**
	baz=293						
433A	**Art**	**127.31**	**56**	P	**PKPdf**	**14 31 50.8**	**+0.8**
	baz=288						
J39A	**Decorah**	**127.38**	**38**	P	**PKPdf**	**14 31 49.4**	**-0.3**
	baz=303						
134A	**White-Moore Ra**	**127.56**	**53**	P	**PKPdf**	**14 31 51.7**	**+1.3**
	baz=290						
W35A	**Tecumseh**	**127.58**	**50**	P	**PKPdf**	**14 31 51.3**	**+0.9**
	baz=292						
S37A	**Fort Scott**	**128.02**	**46**	P	**PKPdf**	**14 31 51.6**	**+0.5**
	baz=296						
K40A	**Colesburg**	**128.07**	**39**	P	**PKPdf**	**14 31 51.1**	**0.0**
	baz=303						
P38A	**Dawn**	**128.07**	**43**	P	**PKPdf**	**14 31 51.6**	**+0.4**
	baz=298						
X36A	**Centrahoma**	**128.19**	**50**	P	**PKPdf**	**14 31 52.4**	**+0.9**
	baz=292						
V37A	**Hulbert**	**128.59**	**48**	P	**PKPdf**	**14 31 53.0**	**+0.8**
	baz=294						
W37B	**Quinton**	**128.67**	**49**	P	**PKPdf**	**14 31 53.7**	**+1.3**
	baz=294						
Q39A	**Willow Grove F**	**128.73**	**43**	P	**PKPdf**	**14 31 52.4**	**0.0**
	baz=299						
R39A	**Chumby, Stover**	**129.03**	**44**	P	**PKPdf**	**14 31 53.1**	**+0.1**
	baz=298						
S39A	**Bolivar**	**129.12**	**45**	P	**PKPdf**	**14 31 53.3**	**+0.1**
	baz=295						
V38A	**Canehill**	**129.14**	**48**	P	**PKPdf**	**14 31 53.3**	**0.0**
	baz=295						
TOA0	**Torodi Ar. Sit**	**129.20**	**282**	*e*PKPdf	**PKPdf**	**14 31 52.9**	**-1.1**
TORD	**Torodi Ar. Bea**	**129.20**	**282**	PKP	**PKPdf**	**14 31 53.8**	**-0.1**
	comp=N,1.4nm,0.6s,baz=88,slow=2.2,SNR=10						
TORD				SKPbc	SKPab	14 35 01.3	-1.1
	comp=N,2.3nm,0.5s,baz=64,slow=3.7,SNR=20						
T39A	**Clever**	**129.38**	**46**	P	**PKPdf**	**14 31 54.6**	**+0.9**
	baz=297						
R40A	**Maddies Statio**	**129.57**	**44**	P	**PKPdf**	**14 31 54.6**	**+0.6**
	baz=299						
U39A	**Green Forest**	**129.59**	**47**	P	**PKPdf**	**14 31 54.6**	**+0.4**
	baz=296						
PLCA	**Paso Flores**	**129.63**	**159**	PKP	**PKPdf**	**14 31 54.4**	**+0.2**
	comp=N,2.2nm,0.6s,baz=234,slow=6.0,SNR=6.0						
PLCA				SKPbc	SKPab	14 35 02.6	-1.1
	comp=N,12nm,1.3s,baz=230,slow=9.8,SNR=3.6						
X39A	**Fountain Ranch**	**129.91**	**49**	P	**PKPdf**	**14 31 55.8**	**+1.0**
	baz=294						
P42A	**Winchester**	**130.23**	**42**	P	**PKPdf**	**14 31 55.9**	**+0.6**
	baz=302						
MIAR	**Mount Ida**	**130.31**	**49**	*e*SKPbc	**SKPbc**	**14 35 06.9**	**+0.2**
WHAR	**Wooly Hollow**	**130.94**	**48**	*e*SKPbc	**SKPbc**	**14 35 08.5**	**-0.5**
WLAR	**White Oak Lake**	**131.01**	**50**	*e*SKPbc	**SKPab**	**14 35 10.1**	**+0.4**
OXF	**Oxford**	**133.40**	**47**	*e*SKPbc	**SKPbc**	**14 35 16.9**	**-0.8**
WCI	**Wyandotte Cave**	**133.62**	**41**	*e*SKPbc	**SKPbc**	**14 35 18.7**	**+0.3**
WVT	**Waverly**	**133.72**	**44**	*e*PKiKP	**PKPdf**	**14 32 02.9**	**+1.0**
WVT	**Waverly**	**133.72**	**44**	*e*PKPdf	**PKPdf**	**14 32 02.9**	**+1.0**
WVT				*e*SKPbc	**SKPbc**	**14 35 17.4**	**-1.3**
DBIC	**Dimbokro**	**135.75**	**273**	PKP	**PKPdf**	**14 32 06.3**	**0.0**
	comp=N,5.0nm,0.9s,baz=80,slow=2.7,SNR=2.4						
DBIC				SKPbc	**SKPbc**	**14 35 23.2**	**-2.6**
	comp=N,3.5nm,0.5s,baz=112,slow=3.9,SNR=8.1						
LRAL	**Lakeview Retre**	**135.87**	**47**	*e*PKPdf	**PKPdf**	**14 32 06.7**	**+0.7**
CPCT	**Cooper Cave**	**136.35**	**43**	*e*SKPbc	**SKPbc**	**14 35 25.5**	**-1.5**
TKL	**Tuckaleechee C**	**136.74**	**42**	*e*PKiKP	**PKPdf**	**14 32 09.0**	**+1.4**
TKL	**Tuckaleechee C**	**136.74**	**42**	*e*PKPdf	**PKPdf**	**14 32 09.0**	**+1.4**
SSPA	**Standing Stone**	**137.06**	**32**	*e*PKPdf	**PKPdf**	**14 32 09.5**	**+1.5**
SSPA				*e*SKPbc	**SKPbc**	**14 35 26.7**	**-2.3**
LVC	**Limon Verde**	**145.78**	**147**	*e*PKPdf	**PKPab**	**14 32 26.9**	**+1.1**
PB01	**IPOC Station P**	**146.69**	**144**	*e*PKPdf	**PKPbc**	**14 32 26.9**	**-0.8**
CPUP	**Villa Florida**	**146.99**	**167**	PKPbc	**PKPbc**	**14 32 28.9**	**+0.7**
	comp=N,6.0nm,0.6s,baz=203,slow=2.1,SNR=18						
CPUP				SKPbc	**SKPbc**	**14 35 53.0**	**-1.5**
	comp=N,1.8nm,0.6s,baz=123,slow=3.7,SNR=3.2						
PB11	**IPOC Station P**	**147.58**	**143**	*e*PKPbc	**PKPbc**	**14 32 31.2**	**+1.0**
OTAV	**Otavalo**	**150.43**	**100**	*e*PKPbc	**PKPbc**	**14 32 39.3**	**+1.3**
MALC	**Bahia Malaga**	**152.09**	**93**	*e*P	**PKPbc**	**14 32 40.8**	**-0.4**
HELC	**Santa Helena**	**154.00**	**88**	*e*P	**PKPbc**	**14 32 44.2**	**-1.6**
SJCC	**San Jacinto, C**	**154.16**	**80**	*e*P	**PKPbc**	**14 32 44.8**	**-1.0**
PRAC	**Prado**	**154.49**	**94**	*e*PKPbc	**PKPbc**	**14 32 47.2**	**+0.7**
ROSC	**El Rosal**	**155.15**	**91**	PKPab	**PKPab**	**14 33 07.4**	**+2.7**
	comp=N,4.0nm,0.3s,baz=154,slow=22,SNR=5.2						
CHIC	**Chingaza**	**155.72**	**92**	*e*P	PKPdf	14 32 51.0	+11
GRMC	**Gramalote, San**	**156.68**	**84**	*e*P	PKPdf	14 32 52.2	+11
SAML	**Samuel**	**159.79**	**137**	*e*PKPab	**PKPab**	**14 33 24.7**	**+0.7**

*ISCJB **03** 14:16:28.6±0.5,39.°13N±0.°02×28.°99E±0.°02,h2km±4km, Error ellipse: s-maj=3.8km s-min=2.7km az=164.4*
*ISK **03** 14:16:28.8,39.°12N×29.°02E,h5km,ML4.0*

*DDA **03** 14:16:28.5,39.°10N×29.°02E,h11km,Ml4.1*
*CSEM **03** 14:16:29.2±0.1,39.°11N×29.°01E,h5km,ML4.1, Error ellipse: s-maj=2.0km s-min=1.8km az=168.0*

ISC 03 14:16:29.4±1.0,**39.°12N**±0.°02×**28.°99E**±0.°02,**h7**km±8km, **n118,**σ0s**94**/145,**13C-15D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.23**	**250**	*i* P	**Pg**	**14 16 34.2**	**+0.2**
DEMI				*i* S	**Sg**	**14 16 37.7**	**+0.7**
DEMI	**Demirci**	**0.23**	**250**	P	**Pg**	**14 16 34.2**	**+0.2**
DEMI				S	**Sg**	**14 16 37.7**	**+0.7**
GEDZ	**Gediz**	**0.34**	**103**	*e*PG	**Pg**	**14 16 36.5**	**+0.4**
GEDZ				*e*SG	**Sg**	**14 16 40.4**	**-0.1**
GEDZ	**Gediz**	**0.34**	**103**	*e*Pg	**Pg**	**14 16 36.5**	**+0.4**
GEDZ				*e*Sg	**Sg**	**14 16 40.4**	**-0.1**
GDZ	**Gediz**	**0.38**	**94**	*i* P	**Pg**	**14 16 36.4**	**-0.6**
GDZ				*i* S	**Sg**	**14 16 41.8**	**-0.3**
GDZ	**Gediz**	**0.38**	**94**	P	**Pg**	**14 16 36.4**	**-0.6**
GDZ				S	**Sg**	**14 16 41.8**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**48**	*e*PG	**Pg**	**14 16 38.5**	**-0.5**
TVSB				*e*SG	**Sg**	**14 16 45.1**	**-0.4**
TVSB	**Tavsanli**	**0.49**	**48**	*e*Pg	**Pg**	**14 16 38.5**	**-0.5**
TVSB				*e*Sg	**Sg**	**14 16 45.1**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*PG	**Pg**	**14 16 41.7**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*Pg	**Pg**	**14 16 41.7**	**-0.4**
MANT	**Manisa**	**0.71**	**208**	*i* P	**Pg**	**14 16 42.1**	**-1.1**
MANT				*i* S	**Sg**	**14 16 51.4**	**-1.0**
MANT	**Manisa**	**0.71**	**208**	P	**Pg**	**14 16 42.1**	**-1.1**
MANT				S	**Sg**	**14 16 51.4**	**-1.0**
KHL	**Karahalli**	**0.90**	**152**	*e*PG	**Pg**	**14 16 46.3**	**-0.4**
KHL				*e*SG	**Sb**	**14 16 58.7**	**-0.9**
KHL	**Karahalli**	**0.90**	**152**	*e*Pg	**Pg**	**14 16 46.3**	**-0.4**
KHL				*e*Sg	**Sb**	**14 16 58.7**	**-0.9**
AKS	**Akhisar**	**0.95**	**256**	*e*PG	**Pb**	**14 16 48.0**	**-0.2**
AKS	**Akhisar**	**0.95**	**256**	*e*Pg	**Pb**	**14 16 48.0**	**-0.2**
BALB	**Balikesir**	**1.00**	**302**	*e*PG	**Pb**	**14 16 49.1**	**-0.1**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg	**Pb**	**14 16 49.1**	**-0.1**
IGD	**Bursa**	**1.16**	**8**	*i* P	**Pg**	**14 16 49.6**	**-2.0**
IGD				*i* S	**Sb**	**14 17 06.7**	**-0.2**
BALY	**Balya**	**1.23**	**301**	*i* P	**Pg**	**14 16 53.0**	**0.0**
BALY				*i* S	**Sn**	**14 17 10.3**	**+0.4**
BALY	**Balya**	**1.23**	**301**	P	**Pg**	**14 16 53.0**	**0.0**
BALY				S	**Sn**	**14 17 10.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	**Pg**	**14 16 53.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pg**	**14 16 53.2**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**14 16 52.8**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**14 16 52.8**	**-0.5**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pb**	**14 16 53.4**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pb**	**14 16 53.4**	**-0.2**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pg**	**14 16 53.7**	**-0.2**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pg**	**14 16 53.7**	**-0.2**
GEMT	**Gemlik**	**1.32**	**7**	*e*PN	**Pg**	**14 16 55.3**	**+0.5**
GEMT	**Gemlik**	**1.32**	**7**	*e*Pn	**Pg**	**14 16 55.3**	**+0.5**
DENT	**Denizli**	**1.36**	**179**	*e*PN	**Pb**	**14 16 55.0**	**-0.3**
DENT	**Denizli**	**1.36**	**179**	*e*Pn	**Pb**	**14 16 55.0**	**-0.3**
BORA	**Eskisehir**	**1.36**	**56**	*i* P	**Pn**	**14 16 54.2**	**-0.8**
BORA				*i* S	**Sb**	**14 17 12.7**	**-0.3**
BORA	**Eskisehir**	**1.36**	**56**	P	**Pn**	**14 16 54.2**	**-0.8**
BORA				S	**Sb**	**14 17 12.7**	**-0.3**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN	**Pb**	**14 16 55.2**	**-0.1**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn	**Pb**	**14 16 55.2**	**-0.1**
DNZL	**Cakiroluk**	**1.43**	**178**	*i* P	**Pn**	**14 16 55.2**	**-0.7**
DNZL				*i* S	**Sg**	**14 17 20.1**	**+4.8**
DNZL	**Cakiroluk**	**1.43**	**178**	P	**Pn**	**14 16 55.2**	**-0.7**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*PN	**Pb**	**14 16 56.1**	**-0.4**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*Pn	**Pb**	**14 16 56.1**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*PN	**Pn**	**14 16 56.4**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*Pn	**Pn**	**14 16 56.4**	**+0.2**
ESKT	**Eskisehir**	**1.50**	**74**	*e*PN	**Pn**	**14 16 56.5**	**-0.4**
ESKT	**Eskisehir**	**1.50**	**74**	*i* P	**Pn**	**14 16 56.3**	**-0.6**
ESKT				*i* S	**Sg**	**14 17 24.1**	**+6.5**
ESKT	**Eskisehir**	**1.50**	**74**	*e*Pn	**Pn**	**14 16 56.5**	**-0.4**
SEYT	**Eskypehyr**	**1.50**	**74**	P	**Pn**	**14 16 56.3**	**-0.5**
EDC	**Edincik**	**1.50**	**325**	*e*PN	**Pb**	**14 16 57.5**	**-0.2**
EDC	**Edincik**	**1.50**	**325**	*e*Pn	**Pb**	**14 16 57.5**	**-0.2**
IZM	**Izmir**	**1.53**	**242**	*e*PN	**Pb**	**14 16 58.3**	**+0.2**
IZM	**Izmir**	**1.53**	**242**	*e*Pn	**Pb**	**14 16 58.3**	**+0.2**
GPA	**Golpazari**	**1.55**	**41**	*e*PN	**Pb**	**14 16 57.8**	**-0.7**
GPA	**Golpazari**	**1.55**	**41**	*e*Pn	**Pb**	**14 16 57.8**	**-0.7**
BOLV	**Bolvadin**	**1.58**	**104**	*i* P	**Pn**	**14 16 57.9**	**-0.1**
BOLV				*i* S	**Sg**	**14 17 20.4**	**+0.1**
BOLV	**Bolvadin**	**1.58**	**104**	P	**Pn**	**14 16 57.9**	**-0.1**
BOLV				S	**Sg**	**14 17 20.4**	**+0.1**
KNL	**Bal¯kesir**	**1.61**	**316**	*i* P	**Pn**	**14 16 58.6**	**+0.4**
KNL				*i* S	**Sn**	**14 17 18.8**	**-0.5**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**14 17 00.5**	**0.0**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**14 17 00.5**	**0.0**
HRT	**Hereke**	**1.78**	**17**	*e*PN	**Pn**	**14 17 00.1**	**-0.6**
HRT	**Hereke**	**1.78**	**17**	*e*Pn	**Pn**	**14 17 00.1**	**-0.6**
AYVA	**Ayvalik**	**1.79**	**277**	*i* P	**Pg**	**14 17 03.2**	**-0.6**
AYVA				*i* S	**Sg**	**14 17 26.5**	**-0.6**
AYVA	**Ayvalik**	**1.79**	**277**	P	**Pg**	**14 17 03.2**	**-0.6**
AYVA				S	**Sg**	**14 17 26.5**	**-0.6**
SPNC	**Sapanca-Adapaz**	**1.86**	**33**	*e*PN	**Pn**	**14 17 02.5**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.86**	**33**	*e*Pn	**Pn**	**14 17 02.2**	**+0.4**
DGB	**¯zmir**	**1.96**	**238**	*i* P	**Pb**	**14 17 05.9**	**+0.4**
DGB				*i* S	**Sg**	**14 17 33.2**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*PN	**Pn**	**14 17 03.6**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*Pn	**Pn**	**14 17 03.6**	**0.0**
SART	**Tekirdag**	**2.10**	**319**	*i* P	**Pn**	**14 17 05.0**	**0.0**
SART	**Tekirdag**	**2.10**	**319**	P	**Pn**	**14 17 05.0**	**0.0**
PRK	**Paraskevi**	**2.12**	**274**	P	**Pn**	**14 17 05.2**	**0.0**
PRK	**Paraskevi**	**2.12**	**274**	P	**Pn**	**14 17 05.2**	**0.0**
ZEY	**¯zmir**	**2.13**	**246**	*i* P	**Pn**	**14 17 05.1**	**-0.3**
KAND	**Kocaeli-Kandir**	**2.18**	**25**	*i* P	**Pn**	**14 17 06.0**	**-0.1**
KAND	**Kocaeli-Kandir**	**2.18**	**25**	P	**Pn**	**14 17 05.9**	**-0.1**
SMG	**Samos**	**2.20**	**231**	P	**Pn**	**14 17 06.0**	**-0.4**
SMG	**Samos**	**2.20**	**231**	P	**Pn**	**14 17 06.0**	**-0.4**
SAHE	**Sakarya_HENDEK**	**2.25**	**39**	*i* P	**Pn**	**14 17 06.8**	**-0.3**
SAHE				*i* S	**Sn**	**14 17 36.4**	**+1.3**
SAHE	**Sakarya_HENDEK**	**2.25**	**39**	P	**Pn**	**14 17 06.8**	**-0.3**
SAHE				S	**Sn**	**14 17 36.4**	**+1.3**
KORT	**Korkueli**	**2.37**	**153**	*i* P	**Pn**	**14 17 09.5**	**+0.6**
KORT	**Korkueli**	**2.37**	**153**	P	**Pn**	**14 17 09.5**	**+0.6**
CHOS	**Chios island**	**2.41**	**253**	P	**Pn**	**14 17 09.1**	**-0.2**
CHOS	**Chios island**	**2.41**	**253**	P	**Pn**	**14 17 09.1**	**-0.2**
SIGR	**SIGRI**	**2.44**	**273**	P	**Pn**	**14 17 09.6**	**0.0**
SIGR	**SIGRI**	**2.44**	**273**	P	**Pn**	**14 17 09.6**	**0.0**
KDHN	**Kadinhani**	**2.52**	**103**	*i* P	**Pn**	**14 17 10.8**	**0.0**
KDHN	**Kadinhani**	**2.52**	**103**	P	**Pn**	**14 17 10.8**	**0.0**
ALN	**Alexandroupoli**	**2.87**	**309**	P	**Pn**	**14 17 15.9**	**+0.3**
ALN	**Alexandroupoli**	**2.87**	**309**	P	**Pn**	**14 17 15.9**	**+0.3**
SMTH	**Samothraki Isl**	**2.99**	**298**	P	**Pn**	**14 17 17.6**	**+0.4**
SMTH	**Samothraki Isl**	**2.99**	**298**	P	**Pn**	**14 17 17.6**	**+0.4**
LIA	**Limnos Island**	**3.04**	**286**	P	**Pn**	**14 17 18.4**	**+0.4**
LIA	**Limnos Island**	**3.04**	**286**	P	**Pn**	**14 17 18.4**	**+0.4**
APE	**Apeiranthos**	**3.41**	**234**	*i* P	**Pn**	**14 17 23.2**	**+0.1**
APE	**Apeiranthos**	**3.41**	**234**	*i* P	**Pn**	**14 17 23.2**	**+0.1**
KAVA	**Kavala**	**3.91**	**300**	P	**Pn**	**14 17 30.4**	**+0.5**
KAVA	**Kavala**	**3.91**	**300**	P	**Pn**	**14 17 30.4**	**+0.5**
PSN	**Preselentsi**	**4.60**	**353**	*i* P	**Sn**	**14 18 32.7**	**-0.3**
TLB	**Topalu**	**5.51**	**353**	*i* P	**Pn**	**14 17 51.9**	**+0.1**
TLB	**Topalu**	**5.51**	**353**	*i* P	**Pn**	**14 17 51.9**	**+0.1**
VTS	**Vitosha**	**5.59**	**310**	*i* P	**Pn**	**14 17 54.3**	**+1.2**
VTS	**Vitosha**	**5.59**	**310**	*i* P	**Pn**	**14 17 54.3**	**+1.2**
TLCR		**6.06**	**359**	*i* P	**Pn**	**14 17 59.9**	**+0.5**
TLCR		**6.06**	**359**	*i* P	**Pn**	**14 17 59.9**	**+0.5**
CFR	**Carcaliu**	**6.09**	**354**	*i* P	**Pn**	**14 17 59.8**	**0.0**
CFR	**Carcaliu**	**6.09**	**354**	*i* P	**Pn**	**14 17 59.8**	**0.0**
MLR	**Muntele Rosu**	**6.75**	**341**	*i* P	**Pn**	**14 18 10.4**	**+1.3**
MLR	**Muntele Rosu**	**6.75**	**341**	*i* P	**Pn**	**14 18 10.4**	**+1.3**
VRI	**Vrincioaia**	**6.95**	**347**	*i* P	**Pn**	**14 18 08.6**	**-3.0**
VOIR		**6.96**	**336**	*i* P	**Pn**	**14 18 12.7**	**+0.9**
VOIR		**6.96**	**336**	*i* P	**Pn**	**14 18 12.7**	**+0.9**
SELS	**Selova**	**7.21**	**307**	*e*Pn	**Pn**	**14 18 15.6**	**+0.3**
DOPR	**Dopca**	**7.34**	**340**	*i* P	**Pn**	**14 18 15.2**	**-1.8**
DOPR	**Dopca**	**7.34**	**340**	*i* P	**Pn**	**14 18 15.2**	**-1.8**
GZR	**Gura Zlata**	**7.78**	**326**	*i* P	**Pn**	**14 18 22.9**	**-0.2**
GZR	**Gura Zlata**	**7.78**	**326**	*i* P	**Pn**	**14 18 22.9**	**-0.2**
GRUS	**Gruza**	**7.82**	**310**	*e*Pn	**Pn**	**14 18 21.7**	**-1.9**
MDVR	**Moldovita**	**7.83**	**319**	*i* P	**Pn**	**14 18 23.4**	**-0.4**
MDVR	**Moldovita**	**7.83**	**319**	*i* P	**Pn**	**14 18 23.4**	**-0.4**

*ISCJB **03** 14:22:58.3±0.5,39.°11N±0.°03×29.°01E±0.°03,h2km±6km, Error ellipse: s-maj=5.7km s-min=3.3km az=157.5*
*DDA **03** 14:22:58.2,39.°12N×29.°03E,h7km,Md3.0*
*ISK **03** 14:22:58.2,39.°10N×29.°04E,h6km,MD2.8*

*CSEM **03** 14:22:58.6±0.1,39.°10N×29.°02E,h5km,MD3.0, Error ellipse: s-maj=1.9km s-min=1.4km az=148.0*

ISC 03 14:22:58.5±0.9,**39.°10N**±0.°02×**29.°02E**±0.°02,**h8**km±9km, **n47,**σ0s**52**/64,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.24**	**255**	*i* P	**Pg**	**14 23 03.6**	**+0.3**
DEMI				*i* S	**Sg**	**14 23 06.8**	**+0.2**
DEMI	**Demirci**	**0.24**	**255**	P	**Pg**	**14 23 03.6**	**+0.3**
DEMI				S	**Sg**	**14 23 06.8**	**+0.2**
GEDZ	**Gediz**	**0.31**	**101**	*e*PG	**Pg**	**14 23 04.6**	**-0.1**
GEDZ				*e*SG	**Sg**	**14 23 09.2**	**+0.3**
GEDZ	**Gediz**	**0.31**	**101**	*e*Pg	**Pg**	**14 23 04.6**	**-0.1**
GEDZ				*e*Sg	**Sg**	**14 23 09.2**	**+0.3**
GDZ	**Gediz**	**0.36**	**92**	*i* P	**Pg**	**14 23 05.8**	**+0.1**
GDZ				*i* S	**Sg**	**14 23 10.7**	**+0.3**
GDZ	**Gediz**	**0.36**	**92**	P	**Pg**	**14 23 05.8**	**+0.1**
GDZ				S	**Sg**	**14 23 10.7**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Pg**	**14 23 07.9**	**-0.1**
TVSB				*e*SG	**Sg**	**14 23 14.3**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	**14 23 07.9**	**-0.1**
TVSB				*e*Sg	**Sg**	**14 23 14.3**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG	**Pg**	**14 23 11.3**	**+0.3**
KULA				*e*SG	**Sb**	**14

couple: M≥2.77000×10^14 NP1:φs175.00000°,δ38.00000°, λ-85.00000°. NP2:φs348.00000°,δ52.00000°, λ-94.00000°.

JMA 03 14:49:27.2±0.2, 39.06N×144.36E, h37km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**2.04**	**285**	P	Pn	14 50 00.3	+1.4
OFUJ	**Ofunato**	**2.10**	**271**	P	Pn	14 50 01.0	+1.3
JTH	**Tanohata**	**2.12**	**295**	P	Pn	14 50 01.3	+1.2
JTH				S	Sn	14 50 26.7	+1.5
JOM	**Ohasama**	**2.42**	**281**	P	Pn	14 50 06.1	+2.0
JOM				S	Sn	14 50 34.5	+2.1
JMK	**Ichinoseki**	**2.45**	**268**	P	Pn	14 50 06.3	+1.7
JMK				S	Sn	14 50 34.9	+1.7
JANG	**Nango**	**2.56**	**302**	P	Pn	14 50 07.0	+0.9
JRG	**Rokugo**	**2.91**	**278**	P	Pn	14 50 13.4	+2.4
JRG				eS	Sn	14 50 48.8	+4.1
JOU	**Okura**	**2.97**	**258**	P	Pn	14 50 13.3	+1.5
JOU				S	Sn	14 50 48.1	+1.9
JTM	**Tenmabayashi**	**3.06**	**305**	P	Pn	14 50 14.9	+1.9
JTM				S	Sn	14 50 49.8	+1.4
JAH	**Hinai**	**3.09**	**293**	P	Pn	14 50 15.6	+2.2
JAH				S	Sn	14 50 52.1	+3.1
JYK	**Kaneyama**	**3.12**	**269**	P	Pn	14 50 15.8	+2.0
JYK				eS	Sn	14 50 53.8	+4.0
JOT	**Ohata**	**3.44**	**314**	P	Pn	14 50 19.6	+1.5
JNBK	**Urakawa-nobuka**	**3.44**	**340**	P	Pn	14 50 19.4	+1.2
JNBK				S	Sn	14 50 59.7	+2.0
JFT	**Otama**	**3.52**	**245**	P	Pn	14 50 20.9	+1.6
JCH	**Churui**	**3.63**	**348**	P	Pn	14 50 20.7	-0.1
JKB	**Kayabe**	**3.80**	**319**	P	Pn	14 50 26.3	+3.2
NEM2	**Nemuro 2**	**4.43**	**13**	P	Pn	14 50 29.3	-2.4
JTKR	**Abashiri--Toko**	**4.92**	**356**	P	Pn	14 50 38.1	-0.4
JTKR				S	Sn	14 51 31.7	-2.4
JRY	**Ryogami san**	**5.29**	**237**	P	Pn	14 50 44.0	+0.3
MAT	**Matsushiro**	**5.48**	**245**	P	Pn	14 50 48.3	+2.0

*NIED **03** 15:05:00,41.00N×143.10E,h26km,Mw3.9 Best double couple: M≥9.33000×10^14 NP1:φs246.00000°,δ41.00000°, λ-129.00000°. NP2:φs112.00000°,δ59.00000°, λ-62.00000°.*

*ISCJB **03** 15:05:22.9±0.8,41.00N±0.04×143.18E±0.07,h41km±7km, mb3.8/12,MS3.2/4,Error ellipse: s-maj=10.1km s-min=4.8km az=39.4*

*JMA **03** 15:05:23.3±0.1,41.01N×143.11E,h44km,M4.0*

*IDC **03** 15:05:26.0±1.0,41.02N×143.08E,h52km±7km,mb3.5/12, mb1 3.8/16,mb1mx3.6/45,mbtmp3.8/16,MS3.2/8, Ms1 3.2/8,ms1mx2.9/45,Error ellipse: s-maj=18.8km s-min=15.7km az=148.0*

ISC 03 15:05:23.4±0.8, 40.97N±0.05×143.26E±0.06, h34km±1km, n38,σ1ŝ59/40, mb3.8/12, MS3.1/4, 2C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEM	**Erimo**	**1.04**	**356**	P	**Pn**	**15 05 41.1**	**-0.5**
JEM				eS	**Sn**	**15 05 54.4**	**-0.6**
JNBK	**Urakawa-nobuka**	**1.36**	**344**	⇑P	**Pn**	**15 05 45.6**	**-0.4**
JANG	**Nango**	**1.46**	**246**	⇑P	**Pn**	**15 05 46.5**	**-0.8**
JANG				eS	**Sn**	**15 06 04.1**	**-1.1**
JCH	**Churui**	**1.64**	**3**	P	**Pn**	**15 05 49.5**	**-0.4**
JCH				eS	**Sn**	**15 06 08.8**	**-1.0**
JTM	**Tenmabayashi**	**1.67**	**264**	P	**Pn**	**15 05 49.7**	**-0.6**
JTM				eS	**Sn**	**15 06 09.3**	**-1.2**
JOT	**Ohata**	**1.72**	**284**	⇓P	**Pn**	**15 05 49.9**	**-1.0**
JOT				eS	**Sn**	**15 06 09.6**	**-2.1**
JKB	**Kayabe**	**1.91**	**299**	P	**Pn**	**15 05 52.5**	**-1.0**
JKB				eS	**Sn**	**15 06 14.2**	**-2.1**
JAK	**Akkeshi**	**2.29**	**27**	⇓P	**Pn**	**15 05 58.7**	**0.0**
JAK				eS	**Sn**	**15 06 23.9**	**-1.8**
JAR	**Ashorobuto**	**2.35**	**9**	P	**Pn**	**15 05 59.3**	**-0.3**
ASAJ	**Asahikawa** baz=90,slow=20	**3.18**	**351**	P	**Pn**	**15 06 11.9**	**+0.9**
MAT	**Matsushiro**	**5.93**	**223**	P	**Pn**	**15 06 50.5**	**+1.7**
MAT				S	**Sn**	**15 07 56.3**	**+0.7**
MJAR	**Matsushiro Arr** 1.6nm,0.3s,baz=30,slow=13,SNR=41	**5.93**	**223**	P	**Pn**	**15 06 50.7**	**+1.9**
MJAR				LR	LR	15 09 34.2	
	comp=Z,123nm,20.0s,baz=35,slow=42						
JHJ	**Hachijo jima 2** 9.8nm,0.3s,baz=59,slow=18,SNR=4.4	**8.32**	**201**	P	**Pn**	**15 07 20.1**	**-1.5**
JHJ				S	**Sn**	**15 08 48.4**	**-5.9**
	5.4nm,0.3s,baz=73,slow=19,SNR=2.9						
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=101,slow=24,SNR=4.5	**8.92**	**295**	P	**Pn**	**15 07 31.8**	**+2.1**
USRK				LR	LR	15 10 43.6	
	comp=Z,64nm,19.4s,baz=118,slow=36						
KLR	**Kul'dur** 0.1nm,0.3s,baz=124,slow=14,SNR=6.6	**11.58**	**319**	P	**Pn**	**15 08 08.6**	**+2.4**
KSRS	**Korea Array** comp=Z,76nm,20.4s,baz=84,slow=34	**12.40**	**259**	LR	LR	15 12 26.2	
JNU	**Nakatsue** comp=Z,556nm,21.2s,baz=304,slow=37	**12.61**	**236**	LR	LR	15 13 06.8	
SEY	**Seymchan** 1.1nm,0.5s,baz=164,slow=9.3,SNR=4.6	**22.65**	**11**	P	**P**	**15 10 20.4**	**-0.9**
SONM	**Songino Array** 0.3nm,0.5s,baz=101,slow=7.5,SNR=2.9	**27.02**	**297**	P	**P**	**15 11 01.8**	**-0.5**
SONM				pP	**sP**	**15 11 15.1**	**-1.1**
	2.0nm,0.9s,baz=98,slow=7.8,SNR=8.4						
H11N2	**WAKE ISLAND Hy 29.23** baz=323,slow=75,SNR=106	**129**		T	T	15 42 54.7	
H11N1	**WAKE ISLAND Hy 29.24** baz=323,slow=75,SNR=52	**129**		T	T	15 42 51.2	
H11N3	**WAKE ISLAND Hy 29.25** baz=323,slow=75,SNR=51	**129**		T	T	15 42 56.4	
H11S1	**WAKE ISLAND Hy 30.08** baz=324,slow=76,SNR=52	**131**		T	T	15 43 56.9	
H11S3	**WAKE ISLAND Hy 30.09** baz=324,slow=76,SNR=36	**131**		T	T	15 43 58.1	
H11S2	**WAKE ISLAND Hy 30.10** baz=324,slow=76,SNR=45	**131**		T	T	15 43 58.8	
NRIK	**Noril'sk** comp=Z,59nm,18.1s,baz=147,slow=38	**40.35**	**333**	LR	LR	15 31 04.4	
ZALV	**Zalesovo Beam** 0.6nm,0.4s,baz=91,slow=7.1,SNR=3.7	**40.44**	**309**	P	**P**	**15 12 58.9**	**+0.6**
MKAR	**Makanchi Array** 0.5nm,0.5s,baz=76,slow=10,SNR=3.8	**43.36**	**299**	P	**P**	**15 13 21.3**	**-1.0**
MKAR				pP	**sP**	**15 13 35.7**	**-0.6**
	1.3nm,0.6s,baz=86,slow=9.6,SNR=5.4						
MKAR				LR	LR	15 32 10.1	
	comp=Z,28nm,21.2s,baz=110,slow=37						
CMAR	**Chiang Mai Arr** comp=Z,21nm,18.3s,baz=195,slow=37	**43.96**	**253**	LR	LR	15 32 33.2	
ILAR	**Eielson Array** 0.9nm,0.7s,baz=259,slow=5.8,SNR=23	**45.42**	**34**	P	**P**	**15 13 39.9**	**+1.5**
ILAR				pP	**sP**	**15 13 53.9**	**+1.4**
	0.8nm,0.6s,baz=262,slow=5.6,SNR=5.4						
INK	**Inuvik** 1.8nm,0.5s,baz=310,slow=13,SNR=5.6	**50.24**	**29**	P	**P**	**15 14 16.7**	**+1.1**
WRA	**Warramunga Arr** 0.3nm,0.4s,baz=7.0,slow=6.8,SNR=13	**61.17**	**190**	P	**P**	**15 15 35.1**	**+0.5**
FINES	**FINESS Array B** 1.1nm,0.6s,baz=31,slow=7.8,SNR=10	**66.01**	**332**	P	**P**	**15 16 05.6**	**-0.4**
KBZ	**Khabaz** 1.2nm,0.4s,baz=87,slow=19,SNR=2.7	**69.44**	**310**	P	**P**	**15 16 27.6**	**-0.4**
NOA	**NORSAR Array B** comp=Z,12nm,21.6s,baz=55,slow=39	**71.11**	**338**	LR	LR	15 51 26.7	
AKASG	**Malin Array Be** 0.3nm,0.3s,baz=45,slow=6.7,SNR=3.5	**72.06**	**322**	P	**P**	**15 16 43.1**	**-0.7**
AKASG				pP	**sP**	**15 16 56.6**	**-1.6**
	0.4nm,0.3s,baz=46,slow=7.2,SNR=2.9						
PDAR	**Pinedale Array** 0.6nm,0.5s,baz=290,slow=6.1,SNR=5.4	**73.91**	**47**	P	**P**	**15 16 56.2**	**+1.0**
TXAR	**Lajitas Array** 0.4nm,0.7s,baz=299,slow=3.5,SNR=7.3	**86.60**	**54**	P	**P**	**15 18 05.0**	**+1.4**

MEX 03 15:08:23.3±0.6, 17.15N×100.38W, h40km±5km, MD3.5, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.15**	**134**	*i* P	Pn	15 08 28.7	-1.6
CAIG				*i* S	Sn	15 08 33.4	-1.7
ACX	**Acapulco**	**0.57**	**119**	*e*P	Pn	15 08 36.8	+1.7
ACX				*i* S	Sn	15 08 44.8	+1.4
MEIG	**Mezcala**	**1.06**	**43**	*e*P	Pn	15 08 40.0	-1.7
MEIG				eS	Sn	15 08 52.9	-2.4
ARIG	**Puente Sto Nin**	**1.12**	**2**	*e*P	Pn	15 08 40.7	-1.9
ARIG				*i* S	Sn	15 08 54.9	-1.9
ZIIG	**Zihuatanejo**	**1.13**	**294**	*e*P	Pn	15 08 41.0	-1.7
ZIIG				eS	Sn	15 08 55.4	-1.5
TLIG	**Tlapa**	**1.78**	**77**	*e*P	Pn	15 08 51.0	-0.7
TLIG				eS	Sn	15 09 10.9	-2.3
YAIG	**Yautepec**	**2.11**	**36**	*i* P	Pn	15 08 54.7	-1.5
YAIG				*i* S	Sn	15 09 19.7	-1.7
PNIG	**Pinotepa**	**2.29**	**109**	*i* P	Pn	15 08 57.1	-1.5
PNIG				*i* S	Sn	15 09 24.4	-1.2

DHMR 03 15:08:37.0±1.0, 16.59N×43.56E, h4km±10km, ML3.5, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**0.88**	**178**	*i* P	Pg	15 08 52.9	-1.1
HAJJ				*i* S	Sb	15 09 06.6	-0.7
HAJJ				AML	AML	15 09 10.2	
	comp=Z,2μm,0.2s						
SANA	**San'a**	**1.34**	**153**	*i* P	Pg	15 09 02.3	-0.4
SANA				*i* S	Sn	15 09 21.5	+0.2
SANA				AML	AML	15 09 29.8	
	comp=E,2μm,0.5s						
BDHA	**Al Bayda'**	**3.24**	**143**	*i* P	Pn	15 09 31.8	+2.9
BDHA				*i* S	Sb	15 10 13.8	-1.3
BDHA				AML	AML	15 10 25.1	
	comp=E,106nm,0.5s						

MEX 03 15:14:42.8±0.7, 17.59N×101.38W, h27km±5km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.08**	**279**	*i* P	Pb	15 14 46.2	-1.4
ZIIG				*i* S	Sb	15 14 49.9	-1.0
CAIG	**El Cayaco**	**1.19**	**117**	*e*P	Pn	15 15 01.4	-2.3
CAIG				eS	Sn	15 15 15.8	-3.2
ARIG	**Puente Sto Nin**	**1.20**	**55**	*e*P	Pn	15 15 01.2	-2.6
ARIG				eS	Sn	15 15 15.3	-3.8
ACX	**Acapulco**	**1.62**	**116**	*e*P	Pb	15 15 11.8	-0.3
ACX				eS	Sb	15 15 31.2	-0.9
MEIG	**Mezcala**	**1.71**	**79**	*e*P	Pn	15 15 09.4	-1.5
MEIG				eS	Sn	15 15 29.1	-2.8
TLIG	**Tlapa**	**2.68**	**90**	*i* P	Pn	15 15 22.3	-2.0
TLIG				*i* S	Sn	15 15 53.0	-3.0

*IDC **03** 15:15:09.7±1.0,51.77N×171.42W,h0km,mb3.9/11, mb1 4.1/13,mb1mx3.8/57,mbtmp3.9/13,ML3.4/2,MS3.1/5, Ms1 3.1/5,ms1mx2.7/69,Error ellipse: s-maj=29.4km s-min=16.0km az=176.0*

*ISCJB **03** 15:15:12.2±0.7,51.55N±0.09×171.37W±0.05,h27km, mb3.9/11,MS3.1/5,Error ellipse: s-maj=12.9km s-min=3.8km az=168.7*

*NEIC **03** 15:15:16.0,51.65N×171.44W,h33km,mb3.7/5, ML3.7(AEIC),After AEIC.*

ISC 03 15:15:13.8±0.9, 51.6N±0.1×171.45W±0.04, h27km, n44, σ1ŝ27/39, mb4.0/11, MS3.1/5, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**1.76**	**295**	P	**Pn**	**15 15 43.6**	**+1.1**
KOSE				S	**Sn**	**15 16 04.5**	**+0.5**
KOFP	**Korovin Flat P**	**1.76**	**292**	P	**Pn**	**15 15 43.1**	**+0.6**
KONE	**Korovin Northe**	**1.82**	**296**	P	**Pn**	**15 15 44.4**	**+1.2**
KOKL	**Mount Kliuchef**	**1.84**	**293**	P	**Pn**	**15 15 44.4**	**+0.8**
NIKH	**Nikolski High**	**2.08**	**49**	P	**Pn**	**15 15 47.0**	**+0.1**
NIKH				S	**Sn**	**15 16 11.8**	**-0.1**
OKER	**Okmok East Rim**	**2.76**	**47**	P	**Pn**	**15 15 57.9**	**+1.6**
GSMY	**Great Sitkin M**	**2.89**	**280**	P	**Pn**	**15 15 59.2**	**+1.2**
GSTD	**Great Sitkin T**	**2.94**	**280**	P	**Pn**	**15 15 59.8**	**+1.1**
GSTD				S	**Sn**	**15 16 33.4**	**+0.2**
GSCK	**Great Sitkin C**	**2.95**	**279**	P	**Pn**	**15 16 00.1**	**+1.3**
ETKA	**Kagalaska Isla**	**3.09**	**276**	P	**Pn**	**15 16 02.0**	**+1.3**
ADAG	**Mount Adagdak**	**3.22**	**278**	P	**Pn**	**15 16 04.5**	**+2.0**
UNV	**Unalaska Valle**	**3.73**	**52**	P	**Pn**	**15 16 10.9**	**+1.4**
UNV				S	**Sn**	**15 16 53.9**	**+1.3**
AKMO	**Akutan Morgan**	**4.11**	**51**	P	**Pn**	**15 16 15.9**	**+1.2**
AKUT	**Akutan**	**4.25**	**52**	Pn	**Pn**	**15 16 19.2**	**+2.6**
DT1	**Dutton Round H**	**6.50**	**54**	P	**Pn**	**15 16 49.1**	**+1.7**
SDPT	**Sand Point**	**7.53**	**56**	P	**Pn**	**15 17 01.9**	**+0.3**
BPAW	**Bear Paw Mtn.** 1.8nm,1.3s	**16.46**	**33**	*e*Pn	**P**	**15 19 04.8**	**-0.2**
ILAR	**Eielson Array** 0.2nm,0.3s,baz=219,slow=9.4,SNR=24	**18.29**	**35**	P	**Pn**	**15 19 22.6**	**-2.6**
PETK	**Petropavlovsk-** 0.1nm,0.3s,baz=72,slow=14,SNR=4.1	**18.83**	**287**	P	**P**	**15 19 31.4**	**+0.2**
COLD	**Coldfoot** 1.3nm,0.7s	**18.83**	**26**	*e*P	**Pn**	**15 19 32.2**	**+0.5**
BILL	**Bilibino** 2.7nm,0.4s	**19.69**	**335**	*e*P	**Pn**	**15 19 43.2**	**+1.1**
EGAK	**Eagle** 4.0nm,0.6s	**20.41**	**38**	*e*P	**P**	**15 19 48.1**	**-0.3**
DAWY	**Dawson** 7.8nm,1.4s	**20.83**	**41**	*e*P	**P**	**15 19 52.4**	**-0.6**
SEY	**Seymchan** 1.4nm,0.8s,baz=168,slow=16,SNR=4.2	**22.25**	**315**	P	**P**	**15 20 08.8**	**+0.7**
DLBC	**Dease Lake** 6.1nm,0.6s,baz=272,slow=9.3,SNR=13	**24.37**	**58**	P	**P**	**15 20 28.6**	**-0.7**
DLBC	**Dease Lake**	**24.37**	**58**	*e*P	**P**	**15 20 32.4**	**+3.1**
INK	**Inuvik** 2.5nm,0.6s,baz=228,slow=12,SNR=5.9	**24.67**	**33**	P	**P**	**15 20 31.2**	**-0.6**
YKA	**Yellowknife Ar** 1.0nm,0.7s,baz=276,slow=8.8,SNR=4.5	**31.69**	**48**	P	**P**	**15 21 33.6**	**-0.9**
YKA				LR	LR	15 36 12.4	
	comp=Z,7.7nm,18.0s,baz=0.0,slow=40						
KLR	**Kul'dur** comp=Z,34nm,18.3s,baz=133,slow=39	**35.49**	**289**	LR	LR	15 38 11.3	
H11N2	**WAKE ISLAND Hy 36.09** baz=21,slow=76,SNR=14	**216**		T	T	16 00 54.0	
H11N3	**WAKE ISLAND Hy 36.09** baz=21,slow=76,SNR=17	**216**		T	T	16 00 54.2	
H11N1	**WAKE ISLAND Hy 36.10** baz=21,slow=76,SNR=9.5	**216**		T	T	16 00 53.9	
H11S1	**WAKE ISLAND Hy 37.28** baz=22,slow=76,SNR=8.2	**216**		T	T	16 02 25.1	
H11S2	**WAKE ISLAND Hy 37.30** baz=22,slow=76,SNR=5.6	**216**		T	T	16 02 24.8	
H11S3	**WAKE ISLAND Hy 37.30** baz=22,slow=76,SNR=9.7	**216**		T	T	16 02 19.2	
PDAR	**Pinedale Array** 1.7nm,0.8s,baz=294,slow=8.8,SNR=10.0	**41.81**	**77**	P	**P**	**15 22 59.7**	**-1.5**
PDAR				LR	LR	15 38 16.6	
	comp=Z,48nm,18.4s,baz=274,slow=33						
SONM	**Songino Array** 1.0nm,0.7s,baz=293,slow=5.3,SNR=20	**50.57**	**300**	LR	LR	15 48 10.1	
TXAR	**Lajitas Array** comp=Z,9.6nm,18.2s,baz=44,slow=37	**54.06**	**87**	P	**P**	**15 24 36.8**	**+0.9**
ARCES	**ARCESS Array B**	**58.51**	**353**	LR	LR	15 51 34.4	
MKAR	**Makanchi Array** 0.3nm,0.4s,baz=42,slow=6.8,SNR=3.4	**63.37**	**312**	P	**P**	**15 25 39.4**	**-0.9**
BVAR	**Borovoye Array** 1.3nm,0.5s,baz=53,slow=5.7,SNR=8.4	**63.54**	**324**	P	**P**	**15 25 40.7**	**-0.7**
FINES	**FINESS Array B** 0.9nm,0.7s,baz=27,slow=6.4,SNR=2.7	**66.41**	**351**	P	**P**	**15 25 58.5**	**-1.3**
CMAR	**Chiang Mai Arr** 0.3nm,0.3s,baz=28,slow=7.2,SNR=3.8	**75.52**	**281**	P	**P**	**15 26 55.6**	**-0.1**
ASAR	**Alice Springs** 1.4nm,0.8s,baz=26,slow=4.9,SNR=26	**88.94**	**228**	P	**P**	**15 28 06.4**	**+0.8**

*BJI **03** 15:19:12.6,24.66N×121.82E,h7km,ML3.8/5,Ms3.6/1, Ms7 3.3/2*

*ISCJB **03** 15:19:14.6±0.2,24.72N±0.02×121.94E±0.02,h78km±2km, mb3.5/10,Error ellipse: s-maj=3.9km s-min=2.3km az=162.4*

*JMA **03** 15:19:14.5±0.2,24.64N×121.90E,h77km±2km,M3.7*

*TAP **03** 15:19:15.5,24.67N×121.90E,h69km,ML4.3,B*

*IDC **03** 15:19:26.0±5.2,24.67N×121.95E,h182km±51km, mb3.1/10,mb1 3.3/11,mb1mx3.1/44,mbtmp3.7/11,Error ellipse: s-maj=27.1km s-min=13.4km az=72.0*

ISC 03 15:19:15.1±0.7, 24.68N±0.03×121.94E±0.02, h72km±4km, n88, σ1ŝ11/134, mb3.5/10, 3C-27D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao** baz=207	**0.11**	**230**	⇓P	**Pn**	**15 19 26.2**	**+0.6**
TWC				S	**Sn**	**15 19 33.7**	**+0.4**
	baz=207						
EGS		**0.17**	**358**	⇓*i*P	**Pn**	**15 19 26.3**	**+0.5**
EGS	baz=25			*e*S	**Sn**	**15 19 33.9**	**+0.3**
ILA	**Ilan** baz=317	**0.19**	**297**	⇓*i*P	**Pn**	**15 19 26.7**	**+0.8**
ILA				*i* S	**Sn**	**15 19 34.5**	**+0.7**
	baz=317						
TWE	**Neicheng** baz=290	**0.25**	**280**	⇓*i*P	**Pn**	**15 19 27.0**	**+0.8**
TWE				*i* S	**Sn**	**15 19 35.2**	**+0.9**
	baz=290						
ENA	**Nanau** baz=204	**0.31**	**216**	⇓*i*P	**Pn**	**15 19 27.1**	**+0.6**
ENA				*e*S	**Sn**	**15 19 35.5**	**+0.5**
	baz=204						
TWB1	**Santiao Chiao** baz=23	**0.33**	**8**	⇑*i*P	**Pn**	**15 19 26.9**	**+0.2**
TWB1				*i* S	**Sn**	**15 19 35.0**	**-0.2**
	baz=23						
ENTT	**Nioudou** baz=263	**0.34**	**264**	⇓*i*P	**Pn**	**15 19 27.5**	**+0.7**
ENTT				S	**Sn**	**15 19 36.1**	**+0.7**
	baz=263						
EHP	**Heping Village** baz=191	**0.41**	**206**	*e*P	**Pn**	**15 19 29.0**	**+1.6**
NWF	**Wu-fen Shan** baz=352	**0.42**	**340**	⇓*i*P	**Pn**	**15 19 27.8**	**+0.4**
NWF				S	**Sn**	**15 19 36.2**	**-0.3**
	baz=352						
TWA	**Mucha** baz=324	**0.44**	**313**	⇓*i*P	**Pn**	**15 19 27.9**	**+0.3**
TWA				S	**Sn**	**15 19 37.0**	**+0.2**
	baz=324						
TAP1	**Taipei** baz=317	**0.52**	**314**	⇓*i*P	**Pn**	**15 19 28.5**	**+0.2**
TAP1				*i* S	**Sn**	**15 19 37.9**	**0.0**
	baz=317						
NSK	**Sanguang** baz=270	**0.53**	**270**	⇓*i*P	**Pn**	**15 19 28.7**	**+0.3**
NSK				*i* S	**Sn**	**15 19 37.9**	**-0.4**
	baz=270						
TAP	**Taipei** baz=317	**0.53**	**313**	⇓*i*P	**Pn**	**15 19 28.6**	**+0.2**
TAP				S	**Sn**	**15 19 37.8**	**-0.3**
	baz=317						
NNS	**Nan Shan** baz=251	**0.57**	**245**	⇓*i*P	**Pn**	**15 19 29.5**	**+0.6**
NNS				S	**Sn**	**15 19 39.3**	**+0.3**
	baz=251						
TWS1	**Kuangyinshan** baz=324	**0.63**	**312**	⇓*i*P	**Pn**	**15 19 30.0**	**+0.6**
TWS1				S	**Sn**	**15 19 40.5**	**+0.6**
	baz=324						
TWY	**Chenhua** baz=345	**0.67**	**333**	⇓*i*P	**Pn**	**15 19 30.2**	**+0.4**
TWY				S	**Sn**	**15 19 40.6**	**0.0**
	baz=345						
TWD	**Chiawan** baz=215	**0.67**	**208**	⇓*i*P	**Pn**	**15 19 29.8**	**-0.1**
TWD				*e*S	**Sn**	**15 19 40.1**	**-0.6**
	baz=215						
NCU	**National Centr** baz=287	**0.74**	**293**	⇓*i*P	**Pn**	**15 19 31.0**	**+0.4**
NCU				*i* S	**Sn**	**15 19 42.7**	**+0.6**
	baz=287						
HWA	**Hwalien** baz=211	**0.76**	**204**	P	**Pn**	**15 19 31.1**	**+0.3**
TWT	**Tachien** baz=230	**0.81**	**239**	⇓*i*P	**Pn**	**15 19 32.8**	**+1.2**
TWT				S	**Sn**	**15 19 44.5**	**+0.7**
	baz=230						
NSTT	**Nanjuang** baz=267	**0.85**	**267**	⇓P	**Pn**	**15 19 32.2**	**+0.3**
NSTT				*i* S	**Sn**	**15 19 44.3**	**-0.1**
	baz=267						
HSN	**Hsinchu** baz=281	**0.89**	**278**	*e*P	**Pn**	**15 19 32.4**	**+0.1**
HSN				S	**Sn**	**15 19 44.9**	**-0.3**
	baz=281						
ESF	**Shoufeng Towns** baz=211	**0.90**	**206**	*e*P	**Pn**	**15 19 31.9**	**-0.6**
JYNG	**Yonagunijimaku**	**0.94**	**104**	P	**Pn**	**15 19 33.2**	**+0.2**
JYNG				S	**Sn**	**15 19 46.4**	**+0.1**
PCYT	**Pengchaiyu** baz=7.0	**0.95**	**7**	*e*P	**Pn**	**15 19 34.0**	**+0.8**
ESL	**Shilin** baz=204	**0.98**	**208**	⇓P	**Pn**	**15 19 32.5**	**-0.9**
YOJ	**Yonaguni jima**	**1.00**	**102**	P	**Pn**	**15 19 33.8**	**+0.1**
YOJ				S	**Sn**	**15 19 47.9**	**+0.4**
YOJ	**Yonaguni jima** baz=102	**1.00**	**102**	⇓*i*P	**Pn**	**15 19 34.0**	**+0.3**
YOJ				*i* S	**Sn**	**15 19 47.7**	**+0.1**
	baz=102						
NSY	**Sanyi** baz=255	**1.10**	**257**	⇓*i*P	**Pn**	**15 19 36.0**	**+1.0**
NSY				*i* S	**Sn**	**15 19 50.8**	**+0.9**
	baz=255						
TWQ1	**Liyutan** baz=251	**1.11**	**253**	⇓*i*P	**Pn**	**15 19 35.7**	**+0.6**
TWQ1				S	**Sn**	**15 19 50.5**	**+0.4**
	baz=251						
SMLT	**Sun Moon Lake** baz=222	**1.23**	**230**	⇓*i*P	**Pn**	**15 19 38.1**	**+1.3**
SMLT				S	**Sn**	**15 19 55.1**	**+2.1**
	baz=222						
TYC	**Yuchr** baz=230	**1.25**	**232**	⇓*i*P	**Pn**	**15 19 38.0**	**+1.1**
TYC				*e*S	**Sn**	**15 19 53.9**	**+0.7**
	baz=230						
TCU	**Taichung** baz=243	**1.27**	**246**	*e*P	**Pn**	**15 19 37.8**	**+0.7**
EHY	**Hungye** baz=201	**1.30**	**206**	⇑*e*P	**Pn**	**15 19 36.4**	**-1.1**
WNT	**Mingjian** baz=244	**1.40**	**235**	*e*P	**Pn**	**15 19 39.4**	**+0.7**
WNT				*e*S	**Sn**	**15 19 57.9**	**+1.3**
	baz=244						
TWF1	**Yuli** baz=206	**1.45**	**204**	*e*P	**Pn**	**15 19 38.3**	**-1.1**
YUS	**Yu-Shan** baz=207	**1.49**	**217**	⇓*i*P	**Pn**	**15 19 41.4**	**+1.0**
ALS	**Alishan** baz=229	**1.56**	**222**	P	**Pn**	**15 19 42.6**	**+1.5**
ALS				*e*S	**Sn**	**15 20 03.6**	**+2.8**
	baz=229						
CHN5	**Tsauling** baz=235	**1.58**	**227**	⇑*i*P	**Pn**	**15 19 42.4**	**+1.2**
CHN5				*e*S	**Sn**	**15 20 02.6**	**+1.6**
	baz=235						
WGK	**Gukeng** baz=240	**1.60**	**232**	⇓P	**Pn**	**15 19 42.6**	**+1.2**
WGK				*e*S	**Sn**	**15 20 02.5**	**+1.2**
	baz=240						
CHKT	**Chengkung** baz=183	**1.66**	**199**	*e*P	**Pn**	**15 19 41.6**	**-0.7**
CHKT				*e*S	**Sn**	**15 20 00.2**	**-2.5**
	baz=183						
IRIF	**Iriomote-Funau**	**1.67**	**101**	P	**Pn**	**15 19 42.6**	**+0.3**
IRIF				eS	**Sn**	**15 20 02.9**	**0.0**
ELDTW	**Lidau** baz=199	**1.71**	**210**	*e*P	**Pn**	**15 19 43.6**	**+0.6**
WTCT	**Ta-ch'eng** baz=239	**1.72**	**242**	*e*P	**Pn**	**15 19 43.6**	**+0.6**
WTCT				*e*S	**Sn**

	baz=234							
TWK	**Hsinying**	**1.93**	**224**	*e*P		**Pn**	**15 19 46.9**	**+0.9**
	baz=220							
JKRS	**Kuro-shima**	**1.94**	**103**	P		**Pn**	**15 19 46.6**	**+0.7**
JKRS				S		**Sn**	**15 20 10.0**	**+0.6**
TWG	**Pinlang**	**2.01**	**203**	*e*P		**Pn**	**15 19 46.1**	**-0.9**
	baz=190							
SGST	**Jiashian**	**2.02**	**218**	*e*P		**Pn**	**15 19 48.7**	**+1.7**
	baz=226							
JIJ	**Ishigaki jima**	**2.03**	**98**	P		**Pn**	**15 19 47.3**	**+0.1**
JIJ				*e*S		**Sn**	**15 20 11.3**	**-0.4**
TTN	**Taitung**	**2.05**	**201**	*e*P		**Pn**	**15 19 47.1**	**-0.4**
	baz=190							
CHN8	**Yiju**	**2.06**	**230**	*e*P		**Pn**	**15 19 48.3**	**+0.7**
	baz=227							
CHN8				*e*S		**Sn**	**15 20 13.8**	**+1.4**
	baz=227							
JISG	**Ishigakijimahi**	**2.16**	**92**	P		**Pn**	**15 19 49.4**	**+0.5**
JISG				*e*S		**Sn**	**15 20 14.9**	**+0.1**
ECL	**Taimali**	**2.26**	**204**	*e*P		**Pn**	**15 19 49.9**	**-0.4**
	baz=193							
TAI1	**Yung-k'ang**	**2.26**	**224**	*e*P		**Pn**	**15 19 52.1**	**+1.9**
	baz=231							
TWM1	**Shoushan**	**2.31**	**217**	*e*P		**Pn**	**15 19 54.4**	**+3.4**
	baz=224							
PNG	**Penghu**	**2.44**	**244**	*e*P		**Pn**	**15 19 52.1**	**-0.6**
	baz=239							
EAST	**Anshuo**	**2.50**	**204**	*e*P		**Pn**	**15 19 53.4**	**-0.1**
	baz=192							
TAW	**Tawu**	**2.50**	**203**	*e*P		**Pn**	**15 19 54.2**	**+0.6**
	baz=192							
JTJ	**Tarama**	**2.52**	**90**	P		**Pn**	**15 19 55.1**	**+1.4**
JTJ				S		**Sn**	**15 20 24.6**	**+1.3**
WDGT	**Dungji**	**2.52**	**236**	*e*P		**Pn**	**15 19 51.8**	**-2.0**
	baz=233							
WDGT				*e*S		**Sn**	**15 20 22.2**	**-1.2**
	baz=233							
SCZT	**Fangliau**	**2.59**	**208**	*e*P		**Pn**	**15 19 57.1**	**+2.2**
	baz=202							
LAY	**Lan-yu**	**2.65**	**188**	*e*P		**Pn**	**15 19 54.4**	**-1.3**
	baz=184							
HEN	**Hengchun**	**2.88**	**203**	*e*P		**Pn**	**15 20 00.3**	**+1.6**
	baz=198							
TWK1	**Hengchun**	**2.92**	**201**	*e*P		**Pn**	**15 19 57.9**	**-1.3**
	baz=191							
JIRB	**Irabujima**	**2.94**	**86**	*e*S		**Sn**	**15 20 35.3**	**+1.5**
JIKM	**Ikemajima**	**3.02**	**85**	P		**Pn**	**15 20 03.2**	**+2.7**
JIKM				*e*S		**Sn**	**15 20 37.2**	**+1.6**
QZH	**Quanzhou**	**3.05**	**276**	⇓*i*Pn		Pn	15 19 52.1	-8.9
QZH				Sn		Sn	15 20 24.5	-12
QZH				smax	smax			
	comp=N,340nm,0.7s							
QZH				smax	smax			
	comp=E,180nm,0.6s							
JMJ	**Miyako jima 2**	**3.05**	**87**	*e*S		**Sn**	**15 20 38.0**	**+1.5**
JOGS	**Gusukube**	**3.15**	**88**	S		**Sn**	**15 20 40.1**	**+1.2**
KNM	**Kinmen**	**3.20**	**266**	*e*P		**Pn**	**15 20 04.2**	**+1.1**
	baz=262							
KSRS	**Korea Array**	**13.72**	**20**	P		**P**	**15 22 34.2**	**+1.6**
	comp=E,0.4nm,0.3s,baz=202,slow=11,SNR=15							
KLR	**Kul'dur**	**25.68**	**15**	P		**P**	**15 24 37.8**	**-0.5**
	comp=E,0.7nm,0.5s,baz=156,slow=5.5,SNR=4.5							
SONM	**Songino Array**	**26.19**	**336**	P		**P**	**15 24 44.1**	**+1.1**
	comp=E,0.5nm,0.6s,baz=136,slow=12,SNR=4.4							
MKAR	**Makanchi Array**	**38.47**	**315**	P		**P**	**15 26 30.6**	**+0.6**
	comp=E,0.5nm,0.7s,baz=106,slow=8.9,SNR=4.1							
ZALV	**Zalesovo Beam**	**40.21**	**326**	P		**P**	**15 26 43.6**	**-0.8**
	comp=E,0.4nm,0.3s,baz=126,slow=7.3,SNR=3.1							
WRA	**Warramunga Arr**	**45.97**	**164**	P		**P**	**15 27 30.4**	**-0.8**
	comp=E,0.5nm,0.4s,baz=347,slow=8.8,SNR=14							
BVAR	**Borovoye Array**	**47.73**	**320**	P		**P**	**15 27 44.9**	**+0.3**
	comp=E,0.2nm,0.6s,baz=101,slow=7.5,SNR=2.7							
ASAR	**Alice Springs**	**49.44**	**166**	P		**P**	**15 27 57.8**	**-0.2**
	comp=E,0.2nm,0.6s,baz=349,slow=6.9,SNR=7.3							
ILAR	**Eielson Array**	**68.46**	**27**	P		**P**	**15 30 08.4**	**-0.8**
	comp=E,0.3nm,0.8s,baz=277,slow=5.5,SNR=3.1							
FINES	**FINESS Array B**	**71.37**	**330**	P		**P**	**15 30 25.5**	**-1.5**
	comp=E,2.5nm,1.0s,baz=60,slow=8.2,SNR=3.6							
YKA	**Yellowknife Ar**	**82.25**	**23**	P		**P**	**15 31 26.9**	**-1.3**
	comp=E,0.7nm,0.6s,baz=306,slow=5.2,SNR=3.0							

GUC 03 15:36:42.4±0.5, 22°.86S×68°.51W, h147km±6km, ML3.7, 2C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
PB06	**IPOC Station P**	**0.99**	**279**	⇑*i*P		Pn	15 37 07.4	+0.4
PB06				*i*S		Sn	15 37 26.7	+1.0
PB06				IAML			15 37 29.5	
	comp=N,2μm,0.1s							
PB09	**IPOC Station P**	**1.26**	**327**	*i*P		Pn	15 37 10.2	+0.7
PB09				*i*S		Sn	15 37 31.5	+1.3
PB09				IAML			15 37 33.5	
	comp=N,2μm,0.4s							
PB04	**IPOC Station P**	**1.60**	**289**	*i*P		Pn	15 37 14.1	+1.1
PB04				*i*S		Sn	15 37 37.9	+1.4
PB04				IAML			15 37 44.6	
	comp=N,741nm,0.2s							
PB07	**IPOC Station P**	**1.70**	**311**	⇑*i*P		Pn	15 37 15.2	+1.1
PB07				*i*S		Sn	15 37 39.8	+1.3
PB07				IAML			15 37 42.0	
	comp=E,615nm,0.2s							
PB10	**IPOC Station P**	**1.99**	**251**	*i*P		Pn	15 37 17.7	+0.5
PB10				*e*S		Sn	15 37 43.9	-0.1
PB10				IAML			15 37 55.1	
	comp=N,681nm,0.4s							
PB01	**IPOC Station P**	**2.02**	**333**	⇓*i*P		Pn	15 37 18.2	+0.4
PB01				*i*S		Sn	15 37 46.0	+1.0
PB01				IAML			15 37 48.3	
	comp=N,230nm,0.2s							

*NIED **03** 15:36:00, 37°.80N×142°.00E, h8km, Mw3.6 Best double couple: M₀2.40000×10¹⁴ NP1:φ₁75.00000°, δ34.00000°, λ-89.00000°. NP2:φ₂253.00000°, δ56.00000°, λ-91.00000°.*

*IDC **03** 15:36:55.8±1.5, 37°.78N×142°.29E, h0km, mb3.6/4, mb1 3.5/8, mb1mx3.4/41, mbtmp3.5/8, ML3.3/3, Error ellipse: s-maj=34.8km s-min=19.8km az=78.0*

*ISCJB **03** 15:36:56.9±1.4, 37°.78N±0°.04×142°.13E±0°.08, h15km±9km, mb3.5/4, Error ellipse: s-maj=11.2km s-min=5.5km az=11.8*

*JMA **03** 15:36:58.8±0.1, 37°.79N×142°.02E, h25km±2km, M3.9*

ISC 03 15:36:57.2±2.2, 37°.79N±0°.04×141°.97E±0°.08, h6km±12km, n26, σ1$44/30, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.82**	**324**	P		**Pn**	**15 37 14.6**	**-0.8**
JIO				S		**Sb**	**15 37 25.6**	**+0.3**
JMM	**Marumori**	**0.93**	**275**	P		**Pn**	**15 37 16.4**	**-0.4**
JMM				S		**Sn**	**15 37 28.7**	**-1.8**
JFK	**Kawauchi**	**0.96**	**244**	P		**Pn**	**15 37 16.8**	**-0.5**
JFK				*e*S		**Sn**	**15 37 29.8**	**-1.6**
ONAJ	**Iwakimizuishiy**	**1.16**	**234**	P		**Pn**	**15 37 19.8**	**-0.2**
ONAJ				S		**Sn**	**15 37 35.1**	**-1.0**
JOU	**Okura**	**1.18**	**300**	P		**Pn**	**15 37 20.7**	**+0.4**
JOU				S		**Sn**	**15 37 36.4**	**-0.2**
JMK	**Ichinoseki**	**1.30**	**333**	P		**Pn**	**15 37 21.6**	**-0.3**
JMK				S		**Sb**	**15 37 38.3**	**-0.7**
JFT	**Otama**	**1.32**	**259**	P		**Pg**	**15 37 23.3**	**+0.8**
JYS	**Shirataka**	**1.56**	**287**	P		**Pg**	**15 37 27.0**	**-0.2**
JYK	**Kaneyama**	**1.69**	**312**	P		**Pb**	**15 37 28.0**	**-0.8**
JOM	**Ohasama**	**1.76**	**343**	P		**Pn**	**15 37 28.2**	**-0.1**
JOM				S		**Sn**	**15 37 50.3**	**-0.7**
JFY	**Yanaizu**	**1.84**	**259**	P		**Pg**	**15 37 31.2**	**-1.2**
MJAR	**Matsushiro Arr**	**3.25**	**249**	Pn		**Pn**	**15 37 51.0**	**+2.2**
	1.5nm,0.3s,baz=78,slow=16,SNR=19							
MJAR				Sn		**Sb**	**15 38 33.6**	**-1.5**
	2.0nm,0.3s,baz=81,slow=26,SNR=4.2							
MAT	**Matsushiro**	**3.25**	**249**	P		**Pn**	**15 37 50.8**	**+2.1**
MAT				S		**Sn**	**15 38 29.2**	**+1.5**
JHJ	**Hachijo jima 2**	**4.99**	**202**	Pn		**Pn**	**15 38 13.8**	**+1.2**
	13nm,0.3s,baz=101,slow=21,SNR=6.3							
JHJ				Sn		**Sn**	**15 39 07.9**	**-2.7**
	9.6nm,0.3s,baz=90,slow=19,SNR=4.7							
ASAJ	**Asahikawa**	**6.34**	**4**	Pn		**Pn**	**15 38 31.3**	**+0.1**
	0.5nm,0.3s,baz=212,slow=16,SNR=13							
USRK	**Ussuriysk Ar.**	**9.89**	**313**	Pn		**Pn**	**15 39 23.5**	**+3.7**
	0.1nm,0.3s,baz=121,slow=16,SNR=2.2							
H11N2	**WAKE ISLAND Hy 28.17**	**123**		T		T	16 12 18.8	
	baz=316,slow=75,SNR=215							
H11N1	**WAKE ISLAND Hy 28.18**	**123**		T		T	16 12 23.9	
	baz=316,slow=75,SNR=195							
H11N3	**WAKE ISLAND Hy 28.19**	**123**		T		T	16 12 15.7	
	baz=316,slow=75,SNR=170							
H11S1	**WAKE ISLAND Hy 28.91**	**125**		T		T	16 13 09.3	
	baz=317,slow=76,SNR=86							
H11S3	**WAKE ISLAND Hy 28.91**	**125**		T		T	16 13 09.1	
	baz=317,slow=76,SNR=90							
H11S2	**WAKE ISLAND Hy 28.93**	**125**		T		T	16 13 10.2	
	baz=317,slow=76,SNR=88							
ZALV	**Zalesovo Beam**	**41.74**	**312**	P		**P**	**15 44 46.1**	**-0.7**
	0.3nm,0.3s,baz=90,slow=8.6,SNR=2.4							
MKAR	**Makanchi Array**	**44.10**	**302**	P		**P**	**15 45 08.4**	**+2.3**
	0.2nm,0.2s,baz=82,slow=10,SNR=2.7							
WRA	**Warramunga Arr**	**57.87**	**188**	P		**P**	**15 46 49.7**	**-0.2**
	0.4nm,0.5s,baz=6.6,slow=6.9,SNR=8.6							
ASAR	**Alice Springs**	**61.60**	**188**	P		**P**	**15 47 15.1**	**-0.4**
	0.4nm,0.9s,baz=12,slow=10,SNR=3.9							

MAN 03 15:40:28, 6°.30N×126°.55E, h75km, mb4.6, ML3.5, MS3.4, 2C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
MATI	**Mati**	**0.70**	**335**	*e*P		Pn	15 40 45.9	+2.5
DMPH	**Davao City--Mi**	**1.29**	**307**	⇑*e*P		Pn	15 40 57.0	+6.6
DMPH				*i*S		Sn	15 41 15.4	+8.0
KCP	**Kidapawan**	**1.61**	**296**	⇑*i*P		Pn	15 40 58.5	+3.8
KCP				*i*S		Sn	15 41 19.7	+4.8
BIPH	**Bislig**	**1.88**	**354**	⇓*i*P		Pn	15 41 00.6	+2.4
BIPH				*i*S		Sn	15 41 17.8	-3.3
BUKP	**Musuan**	**2.15**	**317**	*e*P		Pn	15 41 03.5	+1.6
BUKP				*e*S		Sn	15 41 29.5	+1.7

WEL 03 15:43:12.2±0.3, 41°.30S×172°.57E, h224km±2km, ML3.6/14, 7C-1D, Error ellipse: s-maj=2.2km s-min=2.1km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
QRZ	**Quartz Range**	**0.47**	**357**	⇑PN		Pn	15 43 41.9	-0.3
QRZ				SN		S	15 44 04.1	-1.4
THZ	**Tophouse**	**0.53**	**151**	⇑PN		Pn	15 43 42.5	+0.2
THZ				SN		S	15 44 04.8	-1.2
NNZ	**Nelson**	**0.62**	**83**	⇑PN		Pn	15 43 42.3	-0.3
NNZ				SN		S	15 44 05.3	-0.9
DSZ	**Denniston Nort**	**0.73**	**232**	⇑PN		Pn	15 43 42.8	-0.3
TUWZ	**Tuamarina**	**1.05**	**98**	PN		Pn	15 43 44.9	+0.1
BSWZ	**Blackbirch Sta**	**1.07**	**113**	PN		Pn	15 43 45.0	+0.1
TCW	**Tory Channel**	**1.29**	**87**	PN		Pn	15 43 46.4	-0.1
TCW				AML		AML	15 44 12.8	
KHZ	**Kahutara**	**1.33**	**147**	⇑PN		Pn	15 43 46.7	-0.1
LTZ	**Lake Taylor**	**1.50**	**188**	PN		Pn	15 43 48.1	0.0
INZ	**Inchbonnie**	**1.65**	**210**	⇑PN		Pn	15 43 49.2	-0.2
WEL	**Wellington**	**1.66**	**90**	PN		Pn	15 43 49.2	-0.3
KIW	**Kapiti Island**	**1.82**	**77**	PN		Pn	15 43 50.6	-0.3
CAW	**Cannon Point**	**1.90**	**85**	PN		Pn	15 43 51.3	-0.3
MSWZ	**Moikau Station**	**2.02**	**94**	PN		Pn	15 43 52.6	-0.3
OGWZ	**Otaki Gorge**	**2.03**	**77**	⇑PN		Pn	15 43 52.7	-0.2
PLWZ	**Palliser**	**2.04**	**99**	PN		Pn	15 43 52.8	-0.3
MTW	**Mount Morrison**	**2.22**	**87**	PN		Pn	15 43 54.5	-0.3
WVZ	**Waitaha Valley**	**2.24**	**217**	⇓PN		Pn	15 43 54.2	-0.7
HOWZ	**Holdsworth Sta**	**2.27**	**81**	PN		Pn	15 43 55.0	-0.3
MRZ	**Mangatainoka R**	**2.37**	**75**	PN		Pn	15 43 55.8	-0.6
WAZ	**Wanganui**	**2.40**	**51**	PN		Pn	15 43 56.6	-0.1
MQZ	**McQueen's Vall**	**2.41**	**178**	PN		Pn	15 43 56.0	-0.6
TIWZ	**Tintock**	**2.56**	**79**	PN		Pn	15 43 58.2	-0.2
VRZ	**Vera Road**	**2.74**	**38**	PN		Pn	15 43 58.7	-1.7
BFZ	**Birch Farm**	**2.85**	**79**	PN		Pn	15 44 01.3	-0.2
TSZ	**Takapari Road**	**2.86**	**66**	PN		Pn	15 44 01.0	-0.7
FOZ	**Fox Glacier**	**3.02**	**221**	PN		Pn	15 44 01.9	-1.4
WNVZ	**Wahianoa**	**3.04**	**51**	PN		Pn	15 44 02.9	-1.0
KRHZ	**Kereru**	**3.34**	**62**	PN		Pn	15 44 06.2	-1.0
BKZ	**Black Stump Fm**	**3.68**	**56**	PN		Pn	15 44 09.8	-1.4

*CSEM **03** 15:45:40.6±0.2, 43°.81N×13°.29E, h2km, ML2.5/10, Error ellipse: s-maj=4.0km s-min=2.8km az=165.0*

*ROM **03** 15:45:40.5±0.2, 43°.76N×13°.25E, h1km±1km, Md2.4/18, Ml1.8/17, Error ellipse: s-maj=2.1km s-min=1.1km az=16.0*

ISC 03 15:45:41.5±0.9, 43°.75N±0°.03×13°.27E±0°.02, h15km±7km, n41, σ0$51/63, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
AOI	**Ancona**	**0.31**	**130**	Pg		**Pg**	**15 45 48.1**	**+0.1**
AOI				Sg		**Sb**	**15 45 53.7**	**0.0**
	67nm,0.2s							
AOI	**Ancona**	**0.31**	**130**	Pg		**Pg**	**15 45 48.1**	**+0.1**
AOI				Sg		**Sb**	**15 45 53.7**	**0.0**
	67nm,0.2s							
ARVD	**Arcevia**	**0.35**	**224**	Pg		**Pg**	**15 45 48.3**	**-0.4**
ARVD				Sg		**Sg**	**15 45 53.8**	**+0.2**
	45nm,0.1s							
ARVD	**Arcevia**	**0.35**	**224**	Pg		**Pg**	**15 45 48.3**	**-0.4**
ARVD				Sg		**Sg**	**15 45 53.8**	**+0.2**
	45nm,0.1s							
FSSB	**Fossombrone**	**0.36**	**261**	Pg		**Pg**	**15 45 48.3**	**-0.6**
FSSB				Sg		**Sg**	**15 45 54.2**	**+0.2**
	172nm,0.2s							
FSSB	**Fossombrone**	**0.36**	**261**	Pg		**Pg**	**15 45 48.3**	**-0.6**
FSSB				Sg		**Sg**	**15 45 54.2**	**+0.2**
	172nm,0.2s							
CING	**Cingoli**	**0.38**	**189**	Pg		**Pg**	**15 45 49.1**	**-0.1**
CING				Sg		**Sb**	**15 45 55.8**	**+0.1**
	61nm,0.2s							
CING	**Cingoli**	**0.38**	**189**	Pg		**Pg**	**15 45 49.1**	**-0.1**
CING				Sg		**Sb**	**15 45 55.8**	**+0.1**
	61nm,0.2s							
MPAG	**Monte Paganucc**	**0.39**	**252**	Pg		**Pg**	**15 45 48.8**	**-0.7**
MPAG				Sg		**Sg**	**15 45 54.9**	**0.0**
	48nm,0.3s							
MPAG	**Monte Paganucc**	**0.39**	**252**	Pg		**Pg**	**15 45 48.8**	**-0.7**
MPAG				Sg		**Sg**	**15 45 54.9**	**0.0**
	48nm,0.3s							
FRON	**Frontone**	**0.46**	**240**	Pg		**Pg**	**15 45 50.2**	**-0.5**
FRON				Sg		**Sb**	**15 45 57.7**	**-0.3**
	56nm,0.3s							
FRON	**Frontone**	**0.46**	**240**	Pg		**Pg**	**15 45 50.2**	**-0.5**
FRON				Sg		**Sb**	**15 45 57.7**	**-0.3**
	56nm,0.3s							
SSFR	**Montelago di S**	**0.47**	**229**	Pg		**Pg**	**15 45 50.3**	**-0.7**
SSFR	**Montelago di S**	**0.47**	**229**	Pg		**Pg**	**15 45 50.3**	**-0.7**
SNTG	**Esanatoglia**	**0.55**	**206**	Pg		**Pg**	**15 45 51.9**	**-0.5**
SNTG				Sg		**Sb**	**15 46 01.1**	**+0.5**
	46nm,0.5s							
SNTG	**Esanatoglia**	**0.55**	**206**	Pg		**Pg**	**15 45 51.9**	**-0.5**
SNTG				Sg		**Sb**	**15 46 01.1**	**+0.5**
	46nm,0.5s							
ATPC	**Poggio Castell**	**0.65**	**246**	Pg		**Pg**	**15 45 54.2**	**-0.1**
ATPC				Sg		**Sb**	**15 46 04.7**	**+1.2**
	59nm,0.4s							
ATPC	**Poggio Castell**	**0.65**	**246**	Pg		**Pg**	**15 45 54.2**	**-0.1**
ATPC				Sg		**Sb**	**15 46 04.7**	**+1.2**
	59nm,0.4s							
FDMO	**Fiordimonte**	**0.73**	**191**	Pg		**Pg**	**15 45 55.0**	**-0.7**
FDMO				Sg		**Sn**	**15 46 07.3**	**-0.8**
	28nm,0.3s							
FDMO	**Fiordimonte**	**0.73**	**191**	Pg		**Pg**	**15 45 55.0**	**-0.7**
FDMO				Sg		**Sn**	**15 46 07.3**	**-0.8**
	28nm,0.3s							
ATCC	**AVT- Casa Cast**	**0.73**	**219**	Pg		**Pg**	**15 45 55.5**	**-0.2**
ATCC				Sg		**Sb**	**15 46 06.9**	**+1.2**
	32nm,0.5s							
ATCC	**AVT- Casa Cast**	**0.73**	**219**	Pg		**Pg**	**15 45 55.5**	**-0.2**
ATCC				Sg		**Sb**	**15 46 06.9**	**+1.2**
	32nm,0.5s							
ATVO	**AVT- Monte Val**	**0.73**	**240**	Pg		**Pg**	**15 45 55.2**	**-0.5**
	18nm,0.3s							
ATVO	**AVT- Monte Val**	**0.73**	**240**	Pg		**Pg**	**15 45 55.2**	**-0.5**
	18nm,0.3s							
MURB	**Monte Urbino**	**0.73**	**228**	Pg		**Pg**	**15 45 55.3**	**-0.5**
	88nm,0.3s							
MURB	**Monte Urbino**	**0.73**	**228**	Pg		**Pg**	**15 45 55.3**	**-0.5**
	88nm,0.3s							
BADI	**Badiali**	**0.79**	**252**	Pg		**Pg**	**15 45 56.5**	**-0.3**
	23nm,0.4s							
BADI	**Badiali**	**0.79**	**252**	Pg		**Pg**	**15 45 56.5**	**-0.3**
	23nm,0.4s							
CESI	**CESI - Serrava**	**0.79**	**200**	Pg		**Pg**	**15 45 56.9**	**0.0**
	14nm,0.3s							
CESI	**CESI - Serrava**	**0.79**	**200**	Pg		**Pg**	**15 45 56.9**	**0.0**
	14nm,0.3s							
T0502	**Localit˜ San**	**0.83**	**281**	Pg		**Pb**	**15 45 57.9**	**+0.2**
	446μm,50.0s							
ATMC	**Monte Cedrone**	**0.84**	**249**	Pg		**Pg**	**15 45 57.5**	**-0.3**
ATMC	**Monte Cedrone**	**0.84**	**249**	Pg		**Pg**	**15 45 57.5**	**-0.3**
NRCA	**Norcia**	**0.92**	**187**	Pg		**Pg**	**15 45 58.7**	**-0.7**
	23nm,0.1s							
NRCA	**Norcia**	**0.92**	**187**	Pg		**Pg**	**15 45 58.7**	**-0.7**
	23nm,0.1s							
LNSS	**Leonessa**	**1.16**	**189**	Pg		**Pb**	**15 46 03.5**	**+0.2**
	13nm,0.3s							
LNSS	**Leonessa**	**1.16**	**189**	Pg		**Pb**	**15 46 03.5**	**+0.2**
	13nm,0.3s							
NVLJ	**Novalja**	**1.41**	**54**	*e*Pn		**Pn**	**15 46 06.8**	**+0.1**
NVLJ				Sn		**Sg**	**15 46 26.7**	**-0.2**
NVLJ	**Novalja**	**1.41**	**54**	*e*Pn		**Pn**	**15 46 06.7**	**+0.1**
NVLJ				Sn		**Sg**	**15 46 26.7**	**-0.2**
UDBI	**Udbina**	**1.96**	**66**	Sn		**Sn**	**15 46 38.5**	**-0.1**
UDBI	**Udbina**	**1.96**	**66**	Sn		**Sn**	**15 46 38.4**	**-0.1**

*IDC **03** 15:48:59.8±1.8, 4°.84S×133°.81E, h0km, mb3.5/1, mb1 4.1/6, mb1mx3.7/35, mbtmp4.0/6, ML3.9/5, Error ellipse: s-maj=66.7km s-min=23.2km az=70.0*

*ISCJB **03** 15:49:01.4±1.0, 5°.05S±0°.06×133°.6E±0°.1, h28km, mb3.4/1, Error ellipse: s-maj=19.1km s-min=9.3km az=176.3*

ISC 03 15:49:02.6±1.1, 5°.05S±0°.07×133°.5E±0°.2, h28km, n6, σ3$18/10, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
SIJI	**Sorong**	**4.72**	**332**	Pn		**Pn**	**15 50 12.9**	**+0.9**
	20nm,0.3s,baz=181,slow=18,SNR=2.0							
SIJI				Sn		**Sn**	**15 51 02.3**	**-3.6**
	23nm,0.3s,baz=194,slow=4.2,SNR=2.3							
WRA	**Warramunga Arr**	**14.82**	**177**	Pn		**Pn**	**15 52 31.8**	**+1.4**
	0.2nm,0.3s,baz=356,slow=13,SNR=20							
WRA				Sn		**Sn**	**15 55 11.1**	**-2.8**
	0.2nm,0.3s,baz=358,slow=22,SNR=3.6							
FITZ	**Fitzroy Crossi**	**15.08**	**210**	Pn		**P**	**15 52 37.4**	**-1.5**
	0.8nm,0.3s,baz=39,slow=12,SNR=26							
FITZ				Sn		**Sn**	**15 55 22.2**	**+2.0**
	0.9nm,0.3s,baz=196,slow=16,SNR=7.6							
ASAR	**Alice Springs**	**18.51**	**179**	P		**Pn**	**15 53 21.6**	**+4.5**
	0.5nm,0.3s,baz=6.2,slow=12,SNR=47							
ASAR				S		**Sn**	**15 56 39.0**	**-4.4**
	0.0nm,0.3s,baz=355,slow=28,SNR=2.8							
CTA	**Charters Tower**	**19.42**	**141**	P		**Pn**	**15 53 27.5**	**-0.6**
	0.2nm,0.3s,baz=348,slow=13,SNR=3.8							
MKAR	**Makanchi Array**	**68.59**	**325**	P		**P**	**16 00 04.3**	**+1.3**
	0.3nm,0.6s,baz=113,slow=8.2,SNR=4.3							

DJA 03 15:54:12.4±1.0, 6°.S±26°×10°.2E±1°.9, h126km±55km, M4.1/4, mb4.4/2, MLv4.0/4, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
MNAI	**Manna**	**1.69**	**34**	P		Pn	15 54 42.2	-0.3
LWLI	**Liwa**	**2.17**	**70**	P		Pn	15 54 48.3	0.0
LWLI				S		Sn	15 55 16.4	+0.5
KASI	**Kota Agung**	**2.48**	**84**	P		Pn	15 54 52.4	+0.3
KASI				S		Sn	15 55 23.0	+0.3
CGJI	**Cibinong**	**3.74**	**103**	P		Pn	15 55 09.1	+0.4
CNJI	**Cibinong**	**5.30**	**107**	P		Pn	15 55 29.3	-0.2
	54nm,1.0s,0.4nm							
CISI	**Cisompet, Garu**	**6.02**	**107**	P		Pn	15 55 39.0	-0.3

*ISCJB **03** 15:54:55.3±0.6, 37°.18N±0°.02×20°.30E±0°.02, h23km±4km, mb3.5/8, Error ellipse: s-maj=4.2km s-min=2.7km az=25.8*

*ATH **03** 15:54:56.0, 37°.22N×20°.43E, h26km, ML3.8/17, Error ellipse: s-maj=2.6km s-min=1.0km az=62.0*

*CSEM **03** 15:54:56.3±0.2, 37°.23N×20°.43E, h10km, ML3.7/5, Error ellipse: s-maj=5.8km s-min=3.2km az=29.0*

*NEIC **03** 15:54:57.8, 37°.23N×20°.51E, h7km, ML4.0(THE), After THE.*

*THE **03** 15:54:57.8, 37°.23N×20°.51E, h7km±1km, ML4.0/14, Error ellipse: s-maj=1.6km s-min=0.9km az=68.0*

*IDC **03** 15:54:58.2±3.5, 37°.31N×20°.56E, h33km±32km, mb3.4/8, mb1 3.5/16, mb1mx3.4/45, mbtmp3.6/16, ML3.7/7, MS2.6/4, Ms1 2.6/4, ms1mx2.3/42, Error ellipse: s-maj=19.3km s-min=14.6km az=10.0*

**ISC 03 15:54:56.6±1.2, 37°.21N±0°.03×20°.40E±

DRO				S	Sb	15 55 37.3	+1.2		
DRO	**Drossia**	**1.28**	**54**	P	Pb	15 55 20.0	0.0		
DRO				S	Sb	15 55 37.3	+1.2		
DRO	**Drossia**	**1.28**	**54**	P	Pb	15 55 20.0	0.0		
DRO				AML	AML	15 55 42.7			
	comp=E,14236µm,0.5s								
DRO				AML	AML	15 55 46.4			
	comp=N,11856µm,0.3s								
PDO	**Prodromos**	**1.52**	**24**	P	Pb	15 55 23.9	-0.2		
PDO				S	Sb	15 55 44.0	+1.0		
PDO	**Prodromos**	**1.52**	**24**	P	Pb	15 55 23.9	-0.2		
PDO				S	Sb	15 55 44.0	+1.0		
PDO	**Prodromos**	**1.52**	**24**	P	Pb	15 55 24.4	+0.3		
TRIP	**Tripoli**	**1.53**	**77**	P	Pb	15 55 23.4	-0.8		
TRIP	**Tripoli**	**1.53**	**77**	P	Pb	15 55 23.4	-0.8		
UPR	**University Cam**	**1.54**	**45**	P	Pb	15 55 24.4	0.0		
UPR	**University Cam**	**1.54**	**45**	P	Pb	15 55 24.4	0.0		
UPR	**University Cam**	**1.54**	**45**	P	Pb	15 55 24.6	+0.2		
VLX	**Vlachokerasia**	**1.59**	**83**	P	Pn	15 55 24.3	+1.0		
VLX	**Vlachokerasia**	**1.59**	**83**	P	Pn	15 55 24.3	+1.0		
VLX	**Vlachokerasia**	**1.59**	**83**	P	Pn	15 55 24.3	+1.0		
VLX	**Vlachokerasia**	**1.59**	**83**	P	Pn	15 55 24.3	+1.0		
LKD2	**Lefkada island**	**1.59**	**7**	P	Pb	15 55 25.2	-0.1		
LKD2				S	Sb	15 55 47.4	+2.3		
LKD2	**Lefkada island**	**1.59**	**7**	P	Pb	15 55 25.2	-0.1		
LKD2				S	Sb	15 55 45.8	+0.8		
LKD2	**Lefkada island**	**1.59**	**7**	P	Pb	15 55 25.2	-0.1		
LKD2				S	Sb	15 55 47.4	+2.3		
LKD2	**Lefkada island**	**1.59**	**7**	P	Pb	15 55 24.2	+0.9		
LKD2				S	Sb	15 55 45.8	+0.8		
LKD2				AML	AML	15 55 54.1			
	comp=E,5114µm,0.6s								
LKD2				AML	AML	15 55 56.6			
	comp=N,10065µm,0.6s								
KLV	**Kalavryta, Ach**	**1.62**	**58**	P	Pb	15 55 25.1	-0.8		
KLV				S	Sb	15 55 46.3	+0.4		
KLV	**Kalavryta, Ach**	**1.62**	**58**	P	Pb	15 55 25.1	-0.8		
KLV				S	Sb	15 55 46.3	+0.4		
KLV	**Kalavryta, Ach**	**1.62**	**58**	P	Pb	15 55 25.6	-0.3		
KLV				S	Sb	15 55 46.3	+0.4		
KLV	**Kalavryta, Ach**	**1.62**	**58**	P	Pb	15 55 25.6	-0.3		
KLV				AML	AML	15 56 01.8			
	comp=E,2948µm,0.8s								
KLV				AML	AML	15 56 04.9			
	comp=N,2616µm,0.8s								
LAKA	**Lakka**	**1.62**	**50**	P	Pb	15 55 25.7	-0.1		
LAKA	**Lakka**	**1.62**	**50**	P	Pb	15 55 25.7	-0.1		
LAKA	**Lakka**	**1.62**	**50**	P	Pb	15 55 25.7	-0.1		
PVO	**Paravola**	**1.67**	**32**	P	Pb	15 55 26.5	-0.1		
PVO				S	Sb	15 55 47.5	+0.4		
PVO	**Paravola**	**1.67**	**32**	P	Pb	15 55 26.5	-0.1		
PVO				S	Sb	15 55 47.5	+0.4		
EFP	**Efpalio**	**1.71**	**44**	P	Pb	15 55 26.6	-0.6		
EFP				S	Sb	15 55 47.8	-0.4		
EFP	**Efpalio**	**1.71**	**44**	P	Pb	15 55 26.6	-0.6		
EFP				S	Sb	15 55 47.8	-0.4		
EFP	**Efpalio**	**1.71**	**44**	P	Pb	15 55 27.4	+0.2		
GUR	**Goura**	**1.71**	**64**	P	Pn	15 55 26.0	+1.1		
GUR	**Goura**	**1.71**	**64**	P	Pn	15 55 26.0	+1.1		
GUR	**Goura**	**1.71**	**64**	P	Pn	15 55 26.0	+1.1		
GUR	**Goura**	**1.71**	**64**	P	Pb	15 55 26.3	-1.0		
TRIZ	**Trizonia**	**1.76**	**48**	P	Pb	15 55 27.4	-0.7		
KALE	**Kalithea**	**1.82**	**49**	P	Pb	15 55 28.7	-0.5		
KALE				S	Sb	15 55 50.5	-1.0		
KALE	**Kalithea**	**1.82**	**49**	P	Pb	15 55 28.7	-0.5		
KALE				S	Sb	15 55 50.5	-1.0		
KALE	**Kalithea**	**1.82**	**49**	P	Pb	15 55 28.7	-0.5		
KALE				S	Sb	15 55 50.5	-1.0		
KALE	**Kalithea**	**1.82**	**49**	P	Pb	15 55 28.9	-0.3		
KALE				AML	AML	15 55 58.6			
	comp=N,2847µm,0.4s								
KALE				AML	AML	15 56 05.3			
	comp=E,3701µm,0.4s								
THAL	**Thalero**	**1.98**	**65**	P	Pb	15 55 30.4	-1.5		
THAL	**Thalero**	**1.98**	**65**	P	Pn	15 55 29.2	+0.6		
THAL	**Thalero**	**1.98**	**65**	P	Pn	15 55 29.2	+0.6		
EVR	**Evrytania**	**2.04**	**33**	P	Pn	15 55 30.8	+1.3		
EVR	**Evrytania**	**2.04**	**33**	P	Pn	15 55 30.8	+1.3		
EVR	**Evrytania**	**2.04**	**33**	P	Pn	15 55 30.8	+1.3		
EVR	**Evrytania**	**2.04**	**33**	P	Pb	15 55 31.6	-1.3		
EVR				AML	AML	15 56 13.0			
	comp=N,3042µm,0.7s								
DSF	**Desfina**	**2.07**	**54**	P	Pn	15 55 31.4	+1.5		
DSF	**Desfina**	**2.07**	**54**	P	Pn	15 55 31.4	+1.5		
DSF	**Desfina**	**2.07**	**54**	P	Pn	15 55 31.4	+1.5		
DSF	**Desfina**	**2.07**	**54**	P	Pb	15 55 31.9	-1.6		
DSF				AML	AML	15 56 08.4			
	comp=N,1299µm,0.3s								
DSF				AML	AML	15 56 09.7			
	comp=E,1585µm,0.3s								
VLI	**Veliai**	**2.09**	**103**	P	Pb	15 55 32.6	-1.2		
VLI				S	Sb	15 55 58.1	-1.2		
VLI	**Veliai**	**2.09**	**103**	P	Pb	15 55 32.6	-1.2		
VLI				S	Sb	15 55 58.1	-1.2		
VLI	**Veliai**	**2.09**	**103**	P	Pb	15 55 32.6	-1.2		
VLI				S	Sb	15 55 58.1	-1.2		
VLI	**Veliai**	**2.09**	**103**	P	Pb	15 55 33.6	-0.1		
LTK	**Loutraki**	**2.20**	**67**	P	Pn	15 55 32.5	+0.9		
LTK	**Loutraki**	**2.20**	**67**	P	Pn	15 55 32.5	+0.9		
LTK	**Loutraki**	**2.20**	**67**	P	Pn	15 55 32.5	+0.9		
LTK	**Loutraki**	**2.20**	**67**	P	Pn	15 55 32.2	+0.6		
KRND	**KRANIDI**	**2.20**	**85**	P	Pn	15 55 32.4	+0.8		
KRND	**KRANIDI**	**2.20**	**85**	P	Pn	15 55 32.4	+0.8		
KRND	**KRANIDI**	**2.20**	**85**	P	Pn	15 55 31.8	+0.2		
KRND				AML	AML	15 56 20.0			
	comp=E,1463µm,0.7s								
KRND				AML	AML	15 56 21.7			
	comp=N,1142µm,0.8s								
DID	**Didima**	**2.28**	**82**	P	Pn	15 55 33.2	+0.5		
DID	**Didima**	**2.28**	**82**	P	Pn	15 55 33.2	+0.5		
DID	**Didima**	**2.28**	**82**	P	Pn	15 55 33.2	+0.5		
DID	**Didima**	**2.28**	**82**	P	Pn	15 55 32.4	-0.4		
AGG	**Agios Georgios**	**2.37**	**39**	P	Pn	15 55 35.8	+1.9		
AGG	**Agios Georgios**	**2.37**	**39**	P	Pn	15 55 35.8	+1.9		
AGG				S	Sn	15 56 04.4	+2.1		
AGG	**Agios Georgios**	**2.37**	**39**	P	Pn	15 55 35.8	+1.9		
AGG	**Agios Georgios**	**2.37**	**39**	P	Pb	15 55 36.8	-1.8		
AGG				S	Sn	15 56 04.4	+2.1		
AGG				AML	AML	15 56 19.8			
	comp=N,4091µm,0.4s								
AGG				AML	AML	15 56 20.7			
	comp=E,3649µm,0.5s								
JAN	**Janina**	**2.47**	**8**	P	Pb	15 55 39.3	-1.0		
VIL2	**Platees**	**2.49**	**65**	P	Pn	15 55 35.1	-0.5		
VILL	**Villia**	**2.50**	**67**	P	Pn	15 55 36.2	+0.4		
VILL	**Villia**	**2.50**	**67**	P	Pn	15 55 36.2	+0.4		
LKR	**Lokris**	**2.51**	**54**	P	Pn	15 55 36.9	+1.0		
LKR	**Lokris**	**2.51**	**54**	P	Pn	15 55 36.9	+1.0		
LKR	**Lokris**	**2.51**	**54**	P	Pn	15 55 36.9	+1.0		
LKR	**Lokris**	**2.51**	**54**	P	Pn	15 55 36.8	+0.9		
LKR				AML	AML	15 56 07.6			
	comp=E,1643µm,0.2s								
LKR				AML	AML	15 56 08.0			
	comp=N,1840µm,0.2s								
KEK	**Kerkira**	**2.55**	**350**	P	Pn	15 55 37.8	+1.4		
ATAL	**Atalanti**	**2.55**	**54**	P	Pn	15 55 37.8	+1.4		
ATAL	**Atalanti**	**2.55**	**54**	P	Pn	15 55 37.5	+1.1		
ATAL	**Atalanti**	**2.55**	**54**	P	Pn	15 55 37.8	+1.4		
ATAL	**Atalanti**	**2.55**	**54**	P	Pn	15 55 37.5	+1.1		
ATAL				AML	AML	15 56 25.3			
	comp=E,917µm,1.1s								
ATAL				AML	AML	15 56 25.9			
	comp=N,1483µm,0.9s								
THL	**Klokotos Trika**	**2.67**	**28**	P	Pn	15 55 39.9	+1.8		
THL	**Klokotos Trika**	**2.67**	**28**	P	Pn	15 55 39.9	+1.8		
ANKY	**Antikythira Is**	**2.69**	**119**	P	Pn	15 55 40.7	+2.3		
ANKY	**Antikythira Is**	**2.69**	**119**	P	Pn	15 55 40.7	+2.3		
ANKY	**Antikythira Is**	**2.69**	**119**	P	Pn	15 55 40.7	+2.3		
ANKY	**Antikythira Is**	**2.69**	**119**	P	Pb	15 55 41.5	-2.5		
VLY	**Voula,Athens**	**2.77**	**76**	P	Pn	15 55 38.1	-1.4		
VLY	**Voula,Athens**	**2.77**	**76**	P	Pn	15 55 38.1	-1.4		
ATHU	**Athens Univers**	**2.79**	**73**	P	Pn	15 55 38.7	-1.1		
ATHU	**Athens Univers**	**2.79**	**73**	P	Pn	15 55 38.7	-1.1		
PTL	**Penteli**	**2.88**	**72**	P	Pn	15 55 41.4	+0.5		
PTL	**Penteli**	**2.88**	**72**	P	Pn	15 55 41.4	+0.5		
PTL	**Penteli**	**2.88**	**72**	P	Pn	15 55 41.4	+0.5		
PTL	**Penteli**	**2.88**	**72**	P	Pn	15 55 40.2	-0.8		
FYTO	**Fytoko, Volos**	**2.97**	**41**	P	Pn	15 55 41.9	-0.3		
FYTO	**Fytoko, Volos**	**2.97**	**41**	P	Pn	15 55 41.9	-0.3		
EREA	**Eretria**	**3.05**	**66**	P	Pn	15 55 43.9	+0.6		
EREA	**Eretria**	**3.05**	**66**	P	Pn	15 55 43.9	+0.6		
EREA	**Eretria**	**3.05**	**66**	P	Pn	15 55 42.8	-0.5		
EREA				AML	AML	15 56 40.3			
	comp=E,707µm,0.7s								
EREA				AML	AML	15 56 47.7			
	comp=N,758µm,0.9s								
NEO	**Neokhori**	**3.06**	**46**	P	Pn	15 55 44.1	+0.7		
NEO	**Neokhori**	**3.06**	**46**	P	Pn	15 55 44.1	+0.7		
NEO	**Neokhori**	**3.06**	**46**	P	Pn	15 55 44.1	+0.7		
NEO	**Neokhori**	**3.06**	**46**	P	Pn	15 55 43.2	-0.2		
XOR	**Xorichti**	**3.08**	**45**	P	Pn	15 55 43.0	-0.7		
XOR	**Xorichti**	**3.08**	**45**	P	Pn	15 55 43.0	-0.7		
SKIA	**Skiathos**	**3.11**	**50**	P	Pn	15 55 44.3	+0.2		
SKIA	**Skiathos**	**3.11**	**50**	P	Pn	15 55 44.3	+0.2		
SKIA				AML	AML	15 56 36.8			
	comp=E,433µm,0.6s								
SKIA				AML	AML	15 56 46.3			
	comp=N,546µm,1.1s								
NEST	**Nestorio**	**3.24**	**9**	P	Pn	15 55 48.5	+2.5		
NEST	**Nestorio**	**3.24**	**9**	P	Pn	15 55 48.5	+2.5		
NEST	**Nestorio**	**3.24**	**9**	P	Pn	15 55 49.4	+3.3		
MHLO	**Agia Marina, M**	**3.25**	**98**	P	Pn	15 55 46.7	+0.7		
MHLO	**Agia Marina, M**	**3.25**	**98**	P	Pn	15 55 46.7	+0.7		
MHLO	**Agia Marina, M**	**3.25**	**98**	P	Pn	15 55 45.9	-0.1		
SERI	**Serifos**	**3.26**	**90**	P	Pn	15 55 44.5	-1.7		
SERI	**Serifos**	**3.26**	**90**	P	Pn	15 55 44.5	-1.7		
KZN	**Kozani**	**3.28**	**19**	P	Pn	15 55 48.2	+1.7		
AOS	**Alonnisos**	**3.37**	**53**	P	Pn	15 55 48.2	+0.5		
AOS	**Alonnisos**	**3.37**	**53**	P	Pn	15 55 48.2	+0.5		
AOS	**Alonnisos**	**3.37**	**53**	P	Pn	15 55 48.2	+0.5		
AOS	**Alonnisos**	**3.37**	**53**	P	Pn	15 55 46.9	-0.8		
TIP	**Timpagrande**	**3.48**	**306**	*e*Pn	Pn	15 55 50.8	+1.5		
TIP	**Timpagrande**	**3.48**	**306**	*e*Pn	Pn	15 55 50.8	+1.5		
VAM	**Vamos**	**3.56**	**119**	P	Pn	15 55 52.2	+1.9		
FNA	**Florina**	**3.65**	**12**	P	Pn	15 55 52.9	+1.3		
FNA	**Florina**	**3.65**	**12**	P	Pn	15 55 52.9	+1.3		
FNA	**Florina**	**3.65**	**12**	P	Pn	15 55 52.9	+1.3		
FNA	**Florina**	**3.65**	**12**	P	Pn	15 55 53.2	+1.6		
CEL	**Celeste**	**3.72**	**288**	*e*Pn	Pn	15 55 55.2	+2.6		
CEL	**Celeste**	**3.72**	**288**	*e*Pn	Pn	15 55 55.2	+2.6		
PAIG	**Paliouri**	**3.74**	**42**	P	Pn	15 55 51.2	-1.6		
PAIG	**Paliouri**	**3.74**	**42**	P	Pn	15 55 51.2	-1.6		
OHR	**Ohrid**	**3.91**	**4**	*e*Pn	Pn	15 55 53.3	-1.9		
OHR	**Ohrid**	**3.91**	**4**	*e*Pn	Pn	15 55 53.3	-1.9		
HORT	**Hortiatis**	**3.99**	**31**	P	Pn	15 55 55.0	-1.3		
HORT	**Hortiatis**	**3.99**	**31**	P	Pn	15 55 55.0	-1.3		
GRG	**Griva**	**4.06**	**22**	P	Pn	15 55 56.8	-0.3		
GRG	**Griva**	**4.06**	**22**	P	Pn	15 55 56.8	-0.3		
APE	**Apeiranthos**	**4.10**	**90**	⇑*i*P	Pn	15 56 00.3	+2.5		
APE	**Apeiranthos**	**4.10**	**90**	⇑*i*P	Pn	15 56 00.3	+2.5		
APE	**Apeiranthos**	**4.10**	**90**	P	Pn	15 55 55.7	-2.1		
IDI	**Anoyia**	**4.10**	**116**	Pn	Pn	15 55 57.6	-0.2		
	comp=N,0.4nm,0.3s,baz=297,slow=16,SNR=4.9								
IDI				Sn	Sn	15 56 43.5	-1.6		
	comp=N,14nm,0.3s,baz=159,slow=23,SNR=12								
IDI	**Anoyia**	**4.10**	**116**	*e*Pn	Pn	15 56 00.7	+2.9		
IDI	**Anoyia**	**4.10**	**116**	*e*Pn	Pn	15 56 00.7	+2.9		
TAR1	**Taranto**	**4.11**	**325**	*e*Pn	Pn	15 55 58.5	-0.7		
TAR1				Sn	Sn	15 56 44.1	-1.0		
TIR	**Tirane**	**4.16**	**354**	⇓*i*P	Pn	15 55 56.0	-2.5		
TIR	**Tirane**	**4.16**	**354**	⇓*i*P	Pn	15 55 56.0	-2.5		
TIR	**Tirane**	**4.16**	**354**	*e*Pn	Pn	15 55 59.4	+0.9		
TIR	**Tirane**	**4.16**	**354**	*e*Pn	Pn	15 55 59.4	+0.9		
SOH	**Sokhos**	**4.28**	**32**	P	Pn	15 56 00.9	+0.6		
SOH	**Sokhos**	**4.28**	**32**	P	Pn	15 56 00.9	+0.6		
KNT	**Kendrikon**	**4.40**	**25**	P	Pn	15 56 02.0	+0.1		
KNT	**Kendrikon**	**4.40**	**25**	P	Pn	15 56 02.0	+0.1		
VAY	**Valandovo**	**4.44**	**22**	*e*Pn	Pn	15 56 01.2	-1.2		
VAY	**Valandovo**	**4.44**	**22**	*e*Pn	Pn	15 56 01.2	-1.2		
CUC	**Castrocucco**	**4.54**	**309**	*e*Pn	Pn	15 56 06.9	+3.1		
CUC	**Castrocucco**	**4.54**	**309**	*e*Pn	Pn	15 56 06.9	+3.1		
LAST	**Lasithi**	**4.59**	**115**	P	Pn	15 56 05.0	+0.5		
LAST	**Lasithi**	**4.59**	**115**	P	Pn	15 56 05.0	+0.5		
SRS	**Serrai**	**4.63**	**31**	P	Pn	15 56 04.2	-0.8		
SRS	**Serrai**	**4.63**	**31**	P	Pn	15 56 04.2	-0.8		
CHOS	**Chios island**	**4.63**	**74**	P	Pn	15 56 05.3	+0.2		
CHOS	**Chios island**	**4.63**	**74**	P	Pn	15 56 05.3	+0.2		
CHOS	**Chios island**	**4.63**	**74**	P	Pn	15 56 05.3	+0.2		
SG1	**Sgolgore (BA)**	**4.64**	**323**	*e*Pn	Pn	15 56 07.5	+2.3		
BAI	**Bari**	**4.76**	**326**	*e*Pn	Pn	15 56 09.3	+2.6		
BAI				Sn	Sn	15 57 00.5	-0.6		
VAE	**Valguarnera**	**4.78**	**275**	Pn	Pn	15 56 09.9	+2.8		
	comp=N,2.0nm,0.3s,baz=128,slow=18,SNR=4.9								
VAE				Sn	Sn	15 57 00.6	-1.1		
	comp=N,4.0nm,0.3s,baz=158,slow=19,SNR=1.9								
CDT	**Castel del Mon**	**5.03**	**322**	*e*Pn	Pn	15 56 12.5	+2.0		
PDG	**Podgorica**	**5.29**	**351**	⇑*i*P	Pn	15 56 10.0	-4.1		
MS1	**Monte Sant'Ang**	**5.66**	**324**	*e*Pn	Pn	15 56 21.6	+2.3		
BARS	**Barje**	**5.71**	**11**	*e*Pn	Pn	15 56 18.9	-0.9		
VTS	**Vitosha**	**5.80**	**21**	⇓*i*P	Pn	15 56 22.9	+1.7		
VTS	**Vitosha**	**5.80**	**21**	⇓*i*P	Pn	15 56 22.9	+1.7		
IVAS	**Ivanjica**	**6.37**	**358**	*e*Pn	Pn	15 56 28.4	-0.5		
GRUS	**Gruza**	**6.68**	**2**	*e*Pn	Pn	15 56 32.4	-0.7		
BBLS	**Lazići**	**6.70**	**354**	*e*Pn	Pn	15 56 33.7	+0.3		
DIVS	**Divibare**	**6.89**	**358**	*e*Pn	Pn	15 56 35.1	-1.0		
TRUS	**Trudelj**	**7.01**	**0**	*e*Pn	Pn	15 56 37.0	-0.7		
UDBI	**Udbina**	**8.11**	**336**	*e*Pn	Pn	15 56 52.5	-0.4		
UDBI				Sn	Sn	15 58 21.6	-2.2		
UDBI	**Udbina**	**8.11**	**336**	*e*Pn	Pn	15 56 52.4	-0.4		
GZR	**Gura Zlata**	**8.37**	**12**	⇑*i*P	Pn	15 56 55.2	-1.2		
BZS	**Buzias**	**8.45**	**6**	⇑*i*P	Pn	15 57 05.1	+7.6		
NVLJ	**Novalja**	**8.46**	**332**	*e*Pn	Pn	15 56 57.4	-0.1		
NVLJ				Sn	Sn	15 58 27.3	-4.8		
NVLJ	**Novalja**	**8.46**	**332**	*e*Pn	Pn	15 56 57.4	-0.1		
ARR	**Arges**	**8.75**	**20**	⇓*i*P	Pn	15 57 03.0	+1.4		
ARR	**Arges**	**8.75**	**20**	⇓*i*P	Pn	15 57 03.0	+1.4		
VOIR		**8.94**	**22**	⇓*i*P	Pn	15 57 05.7	+1.6		
VOIR		**8.94**	**22**	⇓*i*P	Pn	15 57 05.7	+1.6		
KEST	**Kesra**	**9.03**	**264**	Pn	Pn	15 57 08.1	+2.7		
	comp=N,0.3nm,0.3s,baz=64,slow=18,SNR=4.4								
KEST				Sn	Sn	15 58 44.3	-2.0		
	comp=N,0.3nm,0.3s,baz=284,slow=17,SNR=2.5								
MLR	**Muntele Rosu**	**9.27**	**25**	Pn	Pn	15 57 12.4	+3.6		
	comp=N,0.1nm,0.3s,baz=163,slow=20,SNR=3.7								
MLR				LR	LR	16 01 35.6			
	comp=N,17nm,18.2s,baz=248,slow=44								
MLR	**Muntele Rosu**	**9.27**	**25**	⇓*i*P	Pn	15 57 09.5	+0.8		
MLR	**Muntele Rosu**	**9.27**	**25**	⇓*i*P	Pn	15 57 09.5	+0.8		
DOPR	**Dopca**	**9.52**	**22**	⇓*i*P	Pn	15 57 13.1	+1.0		
DOPR	**Dopca**	**9.52**	**22**	⇓*i*P	Pn	15 57 13.1	+1.0		
DRGR		**9.73**	**9**	⇓*i*P	Pn	15 57 13.1	-1.9		
VRI	**Vrincioaia**	**9.86**	**27**	⇓*i*P	Pn	15 57 18.6	+1.8		
VRI	**Vrincioaia**	**9.86**	**27**	⇓*i*P	Pn	15 57 18.6	+1.8		
OBKA	**Obir**	**10.27**	**337**	*i* Pn	Pn	15 57 24.2	+1.8		
	comp=N,1.1nm,0.3s								
OBKA	**Obir**	**10.27**	**337**	Pn	Pn	15 57 24.2	+1.8		
	comp=N,1.1nm,0.3s								
SOKA	**Soboth**	**10.27**	**339**	*i* Pn	Pn	15 57 23.3	+0.9		
	comp=N,0.9nm,0.2s								
SOKA				*i* Sn	Sn	15 59 19.2	+2.4		
SOKA	**Soboth**	**10.27**	**339**	Pn	Pn	15 57 23.3	+0.9		
	comp=N,0.9nm,0.2s								
SOKA				Sn	Sn	15 59 19.2	+2.4		
ARSA	**Arzberg**	**10.66**	**342**	*e*Pn	Pn	15 57 28.8	+1.0		
	comp=N,1.3nm,0.3s								
ARSA				*e*Sn	Sn	15 59 30.9	+4.5		
	comp=N,5.6nm,1.8s								
ARSA	**Arzberg**	**10.66**	**342**	Pn	Pn	15 57 28.8	+1.0		
	comp=N,1.3nm,0.3s								
ARSA				Sn	Sn	15 59 30.9	+4.5		
	comp=N,5.6nm,1.8s								
MYKA	**Terra Mystica**	**10.67**	**334**	*i* Sn	Sn	15 59 31.4	+4.7		
MYKA	**Terra Mystica**	**10.67**	**334**	Sn	Sn	15 59 31.4	+4.7		
BRTR	**Keskin Array B**	**10.68**	**72**	Pn	Pn	15 57 30.7	+2.5		
	comp=N,0.5nm,0.3s,baz=325,slow=14,SNR=12								
ABTA	**Abfaltersbach**	**11.19**	**331**	*i* Sn	Sn	15 59 41.8	+2.5		
	comp=N,0.9nm,0.3s								
ABTA	**Abfaltersbach**	**11.19**	**331**	Sn	Sn	15 59 41.8	+2.5		
	comp=N,0.9nm,0.3s								
CONA	**Conrad Observa**	**11.22**	**344**	*i* Sn	Sn	15 59 43.5	+3.4		
CONA	**Conrad Observa**	**11.22**	**344**	Sn	Sn	15 59 43.5	+3.4		
MOA	**Molln**	**11.55**	**339**	*i* Pn	Pn	15 57 41.5	+1.6		
	comp=N,1.4nm,0.5s								
MOA				*i* Sn	Sn	15 59 51.1	+3.0		
MOA	**Molln**	**11.55**	**339**	Pn	Pn	15 57 41.5	+1.6		
	comp=N,1.4nm,0.5s								
MOA				Sn	Sn	15 59 51.1	+3.0		
FETA	**Feichten**	**12.14**	**327**	*i* Pn	Pn	15 57 48.3	+0.2		
	comp=N,0.3nm,0.3s								
FETA				*i* Sn	Sn	16 00 04.7	+1.9		
	comp=N,0.1nm,0.1s								
FETA	**Feichten**	**12.14**	**327**	Pn	Pn	15 57 48.3	+0.2		
	comp=N,0.3nm,0.3s								
FETA				Sn	Sn	16 00 04.7	+1.9		
	comp=N,0.1nm,0.1s								
MOTA	**Moosalm**	**12.24**	**329**	*i* Pn	Pn	15 57 50.8	+1.4		
MOTA	**Moosalm**	**12.24**	**329**	Pn	Pn	15 57 50.8	+1.4		
DAVOX	**Davos/Dischmat**	**12.35**	**324**	LR	LR	16 03 39.1			
	comp=N,42nm,18.2s,baz=85,slow=42								
VRAC	**Vranov**	**12.41**	**348**	LR	LR	16 03 22.5			
	comp=N,29nm,18.2s,baz=102,slow=41								
RETA	**Reutte**	**12.49**	**328**	*i* Sn	Sn	16 00 15.3	+4.1		
	comp=N,0.5nm,0.1s								
RETA	**Reutte**	**12.49**	**328**	Sn	Sn	16 00 15.3	+4.1		
	comp=N,0.5nm,0.1s								
GERES	**GERESS Array B**	**12.62**	**339**	Pn	Pn	15 57 55.7	+1.2		
	comp=N,0.2nm,0.3s,baz=153,slow=15,SNR=3.6								
GERES				LR	LR	16 03 18.9			
	comp=N,33nm,21.3s,baz=314,slow=40								
DAVA	**Damuels**	**12.72**	**326**	*i* Pn	Pn	15 57 59.6	+3.5		
	comp=N,1.3nm,0.6s								
DAVA				*i* Sn	Sn	16 00 20.8	+3.9		
	comp=N,1.6nm,0.3s								
DAVA	**Damuels**	**12.72**	**326**	Pn	Pn	15 57 59.6	+3.5		
	comp=N,1.3nm,0.6s								
DAVA				Sn	Sn	16 00 20.8	+3.9		
	comp=N,1.6nm,0.3s								
KHC	**Kasperske Hory**	**12.91**	**340**	*e*P	P	15 58 05.1	-3.9		
KHC				*ex*	x	15 58 12.1			
MMAI	**Mount Meron Ar**	**12.97**	**104**	Pn	Pn	15 57 57.0	-2.4		
	comp=N,1.1nm,0.3s,baz=292,slow=12,SNR=2.7								
EIL	**Elat**	**14.28**	**118**	Pn	Pn	15 58 17.4	+0.2		
	comp=N,0.4nm,0.3s,baz=307,slow=5.1,SNR=4.8								
AKASG	**Malin Array Be**	**14.90**	**22**	Pn	P	15 58 29.7	-1.2		
	comp=N,1.0nm,0.3s,baz=208,slow=10,SNR=4.5								
ESDC	**Sonseca Array**	**19.23**	**285**	P	Pn	15 59 19.8	-0.2		
	comp

PRGZ	**Paritu Road**	**2.03**	**152**	PN	Pn	15 57 24.8	-0.4		
KNZ	**Kokohu**	**2.04**	**157**	PN	Pn	15 57 24.8	-0.5		
ARHZ	**Aropaoanui**	**2.14**	**173**	PN	Pn	15 57 26.3	0.0		
ARHZ				AML	AML	15 57 57.7			
OTVZ	**Oturere**	**2.16**	**201**	PN	Pn	15 57 27.6	+0.8		
NGZ	**Ngauruhoe**	**2.19**	**202**	PN	Pn	15 57 27.9	+0.8		
MHGZ	**Mahia Peninsul**	**2.24**	**154**	PN	Pn	15 57 27.1	-0.4		
TUVZ	**Tukino**	**2.26**	**200**	PN	Pn	15 57 28.3	+0.4		
FWVZ	**Far West T-bar**	**2.28**	**202**	⇓PN	Pn	15 57 28.8	+0.7		
KWHZ	**Kaweka Forest**	**2.29**	**184**	PN	Pn	15 57 27.7	-0.3		
KWHZ				AML	AML	15 58 01.2			
KWHZ				AML	AML	15 58 08.6			
WHVZ	**Whangaehu Hut**	**2.29**	**201**	PN	Pn	15 57 28.6	+0.3		
MCHZ	**McNeill Hill**	**2.30**	**179**	PN	Pn	15 57 27.9	-0.2		
WNVZ	**Wahianoa**	**2.33**	**200**	PN	Pn	15 57 28.9	+0.2		
MOVZ	**Moawhango**	**2.37**	**197**	PN	Pn	15 57 28.5	-0.5		
PKVZ	**Pokaka**	**2.38**	**205**	PN	Pn	15 57 29.7	+0.6		
BHHZ	**Black Hill Sta**	**2.39**	**191**	⇑PN	Pn	15 57 28.6	-0.7		
MTVZ	**Mangateitei**	**2.42**	**202**	PN	Pn	15 57 30.0	+0.4		
VRZ	**Vera Road**	**2.48**	**216**	PN	Pn	15 57 32.0	+1.8		
KRHZ	**Kereru**	**2.51**	**185**	PN	Pn	15 57 29.6	-1.0		
CKHZ	**Cape Kidnapper**	**2.54**	**172**	PN	Pn	15 57 30.3	-0.6		
CKHZ				AML	AML	15 58 03.9			
KAHZ	**Kahuranaki**	**2.66**	**176**	PN	Pn	15 57 31.6	-0.7		
PNHZ	**Pukenui**	**2.79**	**187**	PN	Pn	15 57 32.8	-1.2		
PXZ	**Pawanui**	**2.89**	**177**	⇑PN	Pn	15 57 33.7	-1.4		
WAZ	**Wanganui**	**2.92**	**206**	PN	Pn	15 57 35.5	+0.1		
WPHZ	**Waipukurau**	**2.92**	**183**	PN	Pn	15 57 34.1	-1.4		
TSZ	**Takapari Road**	**2.96**	**190**	PN	Pn	15 57 34.5	-1.5		
PRHZ	**Porangahau**	**3.12**	**180**	PN	Pn	15 57 36.4	-1.6		
DVHZ	**Dannevirke**	**3.17**	**187**	⇓PN	Pn	15 57 36.6	-2.0		
ANWZ	**Angora Road**	**3.32**	**182**	PN	Pn	15 57 38.2	-2.1		
ANWZ				AML	AML	15 58 19.5			
ANWZ				AML	AML	15 58 19.8			
POWZ	**Post Office Ro**	**3.32**	**192**	PN	Pn	15 57 38.6	-1.8		
PRWZ	**Pori Road**	**3.45**	**189**	PN	Pn	15 57 40.4	-1.6		
BFZ	**Birch Farm**	**3.55**	**185**	PN	Pn	15 57 41.0	-2.2		
MRZ	**Mangatainoka R**	**3.61**	**193**	PN	Pn	15 57 41.7	-2.3		
TIWZ	**Tintock**	**3.68**	**189**	PN	Pn	15 57 42.6	-2.3		
OGWZ	**Otaki Gorge**	**3.85**	**197**	PN	Pn	15 57 44.7	-2.3		
OGWZ				AML	AML	15 58 35.0			
HOWZ	**Holdsworth Sta**	**3.85**	**193**	PN	Pn	15 57 44.4	-2.7		
KIW	**Kapiti Island**	**3.95**	**199**	PN	Pn	15 57 45.7	-2.6		
TMWZ	**Te Maipa**	**4.00**	**188**	PN	Pn	15 57 46.5	-2.5		
MTW	**Mount Morrison**	**4.11**	**192**	PN	Pn	15 57 47.2	-3.2		
CAW	**Cannon Point**	**4.15**	**197**	PN	Pn	15 57 48.0	-2.8		
WEL	**Wellington**	**4.39**	**199**	PN	Pn	15 57 51.0	-2.8		
MSWZ	**Moikau Station**	**4.40**	**194**	PN	Pn	15 57 50.8	-3.3		
TCW	**Tory Channel**	**4.46**	**204**	PN	Pn	15 57 52.1	-2.8		
PLWZ	**Palliser**	**4.55**	**193**	PN	Pn	15 57 52.6	-3.4		
TUWZ	**Tuamarina**	**4.77**	**205**	PN	Pn	15 57 55.7	-3.1		
QRZ	**Quartz Range**	**4.88**	**220**	PN	Pn	15 57 57.9	-2.4		
THZ	**Tophouse**	**5.45**	**211**	PN	Pn	15 58 05.4	-2.3		
KHZ	**Kahutara**	**5.79**	**203**	PN	Pn	15 58 08.7	-3.3		
DSZ	**Denniston Nort**	**5.93**	**218**	PN	Pn	15 58 12.0	-2.0		
LTZ	**Lake Taylor**	**6.56**	**209**	PN	Pn	15 58 18.9	-3.3		
INZ	**Inchbonnie**	**6.86**	**214**	PN	Pn	15 58 22.9	-3.3		
MQZ	**McQueen's Vall**	**7.23**	**204**	PN	Pn	15 58 26.2	-4.8		

*ISCJB **03** 16:00:29.3±0.7,32°.21N±0°.03×115°.21W±0°.03,h14km±5km, Error ellipse: s-maj=4.8km s-min=4.0km az=36.4*
*NEIC **03** 16:00:31.4,32°.21N×115°.29W,h5km, ML3.4(ECX), ML3.3(PAS), After ECX.*
*ECX **03** 16:00:31.4±0.4,32°.21N×115°.29W,h5km, MD3.2, ML3.4*
ISC 03 16:00:30.0±1.0,32°.20N±0°.02×115°.31W±0°.02,h9km±9km, n35,σ1ş33/53,8C-3D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.22**	**0**	*e*P	**Pg**	**16 00 35.3**	**+0.8**
CPBX				*e*S	**Sg**	**16 00 38.2**	**+0.7**
CPBX				IAML		16 00 45.0	
	comp=N,19μm,0.2s						
CPBX				⇓*e*		16 00 45.0	
EMSC	**East Mesa**	**0.60**	**27**	⇓*i*P	**Pg**	**16 00 41.9**	**+0.2**
COA	**Coachella**	**0.68**	**13**	⇓*i*P	**Pg**	**16 00 43.0**	**-0.2**
YUH	**Yuha Desert**	**0.69**	**311**	⇑*i*P	**Pg**	**16 00 43.7**	**+0.3**
YMD	**Yuma Desert**	**0.73**	**61**	⇑*i*P	**Pg**	**16 00 43.5**	**-0.7**
COK	**Cook Ranch**	**0.74**	**331**	⇑*i*P	**Pg**	**16 00 44.6**	**+0.3**
ECBX	**El Chinero**	**0.76**	**163**	*e*P	**Pg**	**16 00 44.3**	**-0.4**
ECBX				*e*S	**Sg**	**16 00 54.8**	**+0.2**
RMX	**La Rumorosa**	**0.77**	**302**	⇑*e*P	**Pg**	**16 00 44.8**	**-0.1**
RMX				*e*S	**Sg**	**16 00 55.3**	**+0.4**
IKP	**In-Ko-Pah, Jac**	**0.81**	**304**	P	**Pg**	**16 00 45.9**	**+0.1**
	baz=122,SNR=218						
IKP				S	**Sg**	**16 00 57.1**	**+0.7**
	baz=122						
IKP	**In-Ko-Pah, Jac**	**0.81**	**304**	⇑*i*P	**Pg**	**16 00 46.2**	**+0.4**
SWSC	**Sam W. Stewart**	**0.85**	**331**	P	**Pg**	**16 00 45.6**	**-0.9**
	baz=148,SNR=37						
SWSC				S	**Sg**	**16 00 56.8**	**-0.7**
	baz=148						
CRR	**Carrizo Plain**	**0.89**	**321**	⇑*i*P	**Pg**	**16 00 47.2**	**+0.1**
GLA	**Glamis**	**0.94**	**25**	P	**Pg**	**16 00 46.5**	**-1.7**
	baz=202,SNR=90						
ZAX	**El Zacaton**	**1.07**	**231**	*e*P	**Pg**	**16 00 50.4**	**-0.3**
ZAX				*e*S	**Sg**	**16 01 05.3**	**+0.7**
CBX	**Cerro Bola**	**1.16**	**276**	⇑*e*P	**Pg**	**16 00 51.8**	**-0.5**
CBX				*e*S	**Sg**	**16 01 07.7**	**+0.4**
CBX				⇑*e*		16 01 10.1	
CBX				IAML		16 01 10.1	
	comp=E,1μm,0.4s						
MONP2	**Monument Peak**	**1.17**	**307**	P	**Pg**	**16 00 51.1**	**-1.4**
	baz=125,SNR=77						
MONP2				S	**Sg**	**16 01 07.5**	**-0.2**
	baz=125						
ECNX	**Esteban Cantu**	**1.22**	**244**	*e*P	**Pg**	**16 00 52.8**	**-0.8**
ECNX				*e*S	**Sg**	**16 01 09.7**	**+0.2**
BAR	**Barrett**	**1.25**	**293**	*e*Pn	Pn	16 01 01.5	+7.8
BAR				*e*Sn	**Sg**	**16 01 09.9**	**-0.4**
PBX	**Punta Banda**	**1.29**	**250**	*e*P	**Pn**	**16 00 53.8**	**-0.5**
BC3	**Big Chuckawall**	**1.46**	**355**	P	**Pn**	**16 00 54.5**	**-2.2**
	baz=173,SNR=64						
109C	**Camp Elliot, M**	**1.67**	**295**	Pb	**Pn**	**16 00 58.8**	**-0.6**
	baz=113,SNR=56						
109C				Sb	**Sn**	**16 01 22.4**	**+1.5**
	baz=113						
PFO	**Pinyon Flats O**	**1.71**	**326**	P	**Pn**	**16 00 58.2**	**-1.9**
	baz=144,SNR=13						
PFO	**Pinyon Flats O**	**1.71**	**326**	*e*Pn	**Pn**	**16 00 57.9**	**-2.2**
PFO				*e*Sn	**Sn**	**16 01 23.7**	**+1.6**
IRM	**Iron Mountain**	**1.96**	**4**	Pb	**Pn**	**16 01 03.4**	**-0.1**
	baz=182,SNR=61						
MURC	**Murrieta**	**2.12**	**312**	Sb	**Sb**	**16 01 36.6**	**+1.7**
	baz=130						
214A	**Organ Pipe Nat**	**2.13**	**96**	P	**Pn**	**16 01 03.4**	**-2.5**
	baz=277,SNR=15						
214A	**Organ Pipe Nat**	**2.13**	**96**	*e*Pn	**Pn**	**16 01 03.2**	**-2.6**
214A				*e*Pg	**Pb**	**16 01 08.7**	**-0.1**
LDFC	**Landfair**	**2.88**	**3**	*e*Pn	**Pg**	**16 01 27.4**	**+2.2**
LDFC				*e*Sn	Sg	16 02 12.1	+10
MWC	**Mount Wilson**	**3.06**	**312**	*e*Pn	**Pb**	**16 01 25.1**	**+0.2**
PASC	**Pasadena Art C**	**3.11**	**310**	*e*Pg	**Pb**	**16 01 26.0**	**+0.5**
PASC				*e*Sg	**Sb**	**16 02 04.4**	**+0.8**
OSI	**Osito Audit: C**	**3.74**	**311**	*e*Pn	**Pb**	**16 01 34.2**	**-2.1**
OSI				*e*Sg	**Sg**	**16 02 28.3**	**-1.8**
TUC	**Tucson**	**3.83**	**87**	*e*Pn	**Pn**	**16 01 27.5**	**-1.7**
TUC				*e*Pg	**Pb**	**16 01 38.3**	**+0.4**
TUC				*e*Sg	**Sb**	**16 02 28.3**	**+3.9**
ISA	**Isabella, Lake**	**4.34**	**324**	*e*Sg	**Sg**	**16 02 47.2**	**-2.3**
WUAZ	**Wupatki**	**4.65**	**44**	*e*Pn	**Pn**	**16 01 39.9**	**-0.7**
R11A	**Troy Canyon, C**	**6.14**	**358**	Pn	**Pn**	**16 02 01.0**	**0.0**
R11A				*e*Pg	**Pg**	**16 02 27.3**	**-0.3**
R11A				*e*Sg	**Sg**	**16 03 45.2**	**-1.9**

*CSEM **03** 16:01:03.0,41°.61N×14°.38E,h11km,MD2.3/8*
ROM 03 16:01:03.0±0.1,41°.61N×14°.38E,h11km±1km,Md2.3/8, Ml1.8/10,Error ellipse: s-maj=1.9km s-min=1.0km az=22.0,Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIDA	**Miranda**	**0.10**	**288**	Pg	Pg	16 01 05.8	0.0
MIDA				Sg	Sg	16 01 08.9	+1.1
	443nm,0.3s						
MIDA	**Miranda**	**0.10**	**288**	Pg	Pg	16 01 05.8	0.0
MIDA				Sg	Sg	16 01 08.9	+1.1
	443nm,0.3s						
BSSO	**Busso**	**0.17**	**112**	Pg	Pg	16 01 07.2	+0.4
BSSO				Sg	Sg	16 01 10.5	+1.1
	212nm,0.4s						
BSSO	**Busso**	**0.17**	**112**	Pg	Pg	16 01 07.2	+0.4
BSSO				Sg	Sg	16 01 10.5	+1.1
	212nm,0.4s						
RNI2	**Rionero Sannit**	**0.20**	**298**	Pg	Pb	16 01 08.0	-0.7
RNI2				Sg	Sg	16 01 11.9	+1.7
	223nm,0.3s						
RNI2	**Rionero Sannit**	**0.20**	**298**	Pg	Pb	16 01 08.0	-0.7
RNI2				Sg	Sg	16 01 11.9	+1.7
	223nm,0.3s						
TRIV	**Trivento**	**0.20**	**38**	Pg	Pb	16 01 08.3	-0.5
	111nm,0.5s						
TRIV	**Trivento**	**0.20**	**38**	Pg	Pb	16 01 08.3	-0.5
	111nm,0.5s						
VAGA	**Valle Agricola**	**0.23**	**210**	Pg	Pg	16 01 07.8	+0.1
VAGA				Sg	Sg	16 01 12.8	+1.9
	330nm,0.2s						
VAGA	**Valle Agricola**	**0.23**	**210**	Pg	Pg	16 01 07.8	+0.1
VAGA				Sg	Sg	16 01 12.8	+1.9
	330nm,0.2s						
PTRJ	**Pietraroja**	**0.27**	**156**	Pg	Pb	16 01 09.3	-0.6
	311nm,0.7s						
PTRJ	**Pietraroja**	**0.27**	**156**	Pg	Pb	16 01 09.3	-0.6
	311nm,0.7s						
CERA	**Filignano**	**0.28**	**268**	Pg	Pg	16 01 09.2	+0.6
CERA				Sg	Sb	16 01 14.2	-0.5
	141nm,0.8s						
CERA	**Filignano**	**0.28**	**268**	Pg	Pg	16 01 09.2	+0.6
CERA				Sg	Sb	16 01 14.2	-0.5
	141nm,0.8s						
SACR	**S. Croce Del S**	**0.32**	**131**	Pg	Pg	16 01 10.1	+0.6
SACR				Sg	Sb	16 01 15.4	-0.7
	72nm,0.9s						
SACR	**S. Croce Del S**	**0.32**	**131**	Pg	Pg	16 01 10.1	+0.6
SACR				Sg	Sb	16 01 15.4	-0.7
	72nm,0.9s						
CIGN	**Sant'Elia a Pi**	**0.39**	**83**	Pg	Pb	16 01 11.4	-0.6
CIGN				Sg	Sb	16 01 17.5	-0.6
CIGN	**Sant'Elia a Pi**	**0.39**	**83**	Pg	Pb	16 01 11.4	-0.6
CIGN				Sg	Sb	16 01 17.5	-0.6
POFI	**Posta Fibreno**	**0.52**	**282**	Pg	Pg	16 01 12.9	-0.2
POFI	**Posta Fibreno**	**0.52**	**282**	Pg	Pg	16 01 12.9	-0.2
INTR	**Introdacqua**	**0.54**	**318**	Pg	Pg	16 01 13.3	-0.2
INTR				Sg	Sg	16 01 21.4	+0.8
	52nm,0.6s						
INTR	**Introdacqua**	**0.54**	**318**	Pg	Pg	16 01 13.3	-0.2
INTR				Sg	Sg	16 01 21.4	+0.8
	52nm,0.6s						
VVLD	**Villa Vallelon**	**0.63**	**295**	Pg	Pg	16 01 15.6	+0.4
	26nm,0.9s						
VVLD	**Villa Vallelon**	**0.63**	**295**	Pg	Pg	16 01 15.6	+0.4
	26nm,0.9s						

*NIED **03** 16:05:00,45°.30N×149°.70E,h125km,Mw5.1 Best double couple: M0 5.22000×10^16 NP1:φ,δ,λ=36.00000°, 35.00000°,-123.00000°. NP2:φ,δ,λ=254.00000°, 61.00000°,-69.00000°.*
*BJI **03** 16:05:57.1,45°.84N×149°.52E,h159km,mb5.2/79, mB4.9/46*
*ISCJB **03** 16:05:57.3±0.2,45°.95N±0°.02×149°.54E±0°.02, h160km±2km,mb5.1/441,Error ellipse: s-maj=3.3km s-min=1.9km az=158.1*
*MOS **03** 16:05:57.8±1.0,45°.98N×149°.51E,h166km,mb5.2/146, Error ellipse: s-maj=5.4km s-min=3.7km az=97.8*
*GCMT **03** 16:05:58.2±0.2,46°.03N×149°.68E,h170km±1km, MW5.1/95,Moment Tensor Solution. s52,c74; s95,c167; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-5.38±.11; Mθθ 2.62±.16; Mφφ 2.76±.15; Mrθ 0.90±.13; Mφθ 3.96±.12; Mφr 1.01±.12; Best double couple: M0 6.16600×10^16 NP1:φ,δ,λ=224.00000°,δ51.00000°,λ-91.00000°. NP2: φ,δ,λ=45.00000°,δ39.00000°,λ-89.00000°. Principal axes: T 6.8010, Plg6.0000°, Azm314.0000°; N -1.2700, Plg1.0000°, Azm224.0000°; P -5.5310, Plg84.0000°, Azm127.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **03** 16:05:58.2±0.4,46°.00N×149°.46E,h155km±3km, mb5.2/284 Error ellipse: s-maj=3.2km s-min=1.8km az=149.0*
*IDC **03** 16:05:58.6±1.0,46°.05N×149°.53E,h155km±8km,mb4.8/46, mb1 4.9/56,mb1mx4.8/63,mbtmp5.3/56,MS3.4/3, Ms1 3.4/3,ms1mx2.9/52,Error ellipse: s-maj=8.2km s-min=7.1km az=92.0*
*SKHL **03** 16:05:58.0±0.9,45°.82N×149°.82E,h150km±20km,mb5.9/5, mbh5.8/3,Ms4.3/2,msh5.7/6*
*JMA **03** 16:05:59.8±0.4,45°.28N×149°.72E,h176km,M5.0*
ISC 03 16:05:58.4±0.4,45°.93N±0°.03×149°.54E±0°.03,h160km±2km, h159km:pP-P,n1380,σ1ş33/1528,mb5.2/450,55C-52D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.37**	**240**	*d*iPN	**Pn**	**16 06 28.2**	**+0.9**
KUR				*i*S	**Sn**	**16 06 51.0**	**+1.4**
KUR				pmax	pmax		
	comp=N,309nm,0.4s						
KUR				pmax	pmax		
	comp=E,107nm,0.4s						
KUR				pmax	pmax		
	comp=Z,1μm,0.4s						
KUR				pmax	pmax		
	comp=Z,6μm,2.0s						
KUR				smax	smax		
	comp=E,14μm,3.3s						
KUR				smax	smax		
	comp=N,7μm,2.4s						
KUR				smax	smax		
	comp=N,4μm,0.4s						
KUR				smax	smax		
	comp=E,2μm,0.4s						
KUR	**Kuril'sk**	**1.37**	**240**	*i* P	**Pn**	**16 06 28.2**	**+0.9**
KUR				AMB	AMB	16 06 29.2	
	comp=E,620nm,0.3s						
KUR				AMB	AMB	16 06 29.2	
	comp=E,210nm,0.3s						
KUR				AMB	AMB	16 06 29.2	
	comp=E,3μm,0.3s						
KUR				AMB	AMB	16 06 29.6	
	comp=E,6μm,2.0s						
KUR				*i* S	**Sn**	**16 06 50.9**	**+1.4**
KUR				A	A	16 06 52.5	
	comp=E,7μm,3.0s						
KUR				A	A	16 06 52.5	
	comp=E,14μm,3.0s						
KUR				A	A	16 06 55.6	
	comp=E,7μm,0.3s						
KUR				A	A	16 06 55.6	
	comp=E,4μm,0.3s						
SHO	**Shikotan**	**2.82**	**224**	*c i*PN	**Pn**	**16 06 41.6**	**-2.3**
SHO				pmax	pmax		
	comp=Z,2μm,0.7s						
SHO				pmax	pmax		
	comp=N,683nm,0.2s						
SHO				pmax	pmax		
	comp=E,1μm,0.6s						
SHO	**Shikotan**	**2.82**	**224**	*i* P	**Pn**	**16 06 41.9**	**-2.0**
SHO				AMB	AMB	16 06 42.8	
	comp=E,680nm,0.7s						
SHO				AMB	AMB	16 06 42.8	
	comp=E,1μm,0.7s						
SHO				AMB	AMB	16 06 42.8	
	comp=E,2μm,0.7s						
SHO				*i* S	**Sn**	**16 07 14.1**	**-5.0**
SHO				A	A	16 07 19.6	
	comp=E,3μm,0.5s						
SHO				A	A	16 07 19.6	
	comp=E,7μm,0.5s						
YUK	**Yuzh-Kuril'sk**	**3.23**	**235**	*d*iPN	**Pn**	**16 06 49.5**	**+0.6**
YUK				*i* S	**Sn**	**16 07 28.7**	**+0.6**
YUK				pmax	pmax		
	comp=E,1μm,0.4s						
YUK				pmax	pmax		
	comp=Z,2μm,0.4s						
YUK				pmax	pmax		
	comp=N,2μm,0.5s						
YUK				smax	smax		
	comp=N,3μm,0.3s						
YUK				smax	smax		
	comp=E,5μm,0.3s						
YUK				smax	smax		
	comp=N,13μm,2.8s						
YUK				smax	smax		
	comp=E,12μm,1.8s						
YUK	**Yuzh-Kuril'sk**	**3.23**	**235**	*i* P	**Pn**	**16 06 49.5**	**+0.6**
YUK				AMB	AMB	16 06 54.5	
	comp=E,2μm,0.5s						
YUK				AMB	AMB	16 06 54.5	
	comp=E,1μm,0.5s						
YUK				AMB	AMB	16 06 54.5	
	comp=E,2μm,0.5s						
YUK				*i* S	**Sn**	**16 07 28.8**	**+0.6**
YUK				A	A	16 07 31.4	
	comp=E,3μm,0.5s						
YUK				A	A	16 07 31.4	
	comp=E,5μm,0.5s						
YUK				A	A	16 07 32.4	
	comp=E,13μm,2.0s						
YUK				A	A	16 07 32.4	
	comp=E,12μm,2.0s						
JRA	**Rausu**	**3.72**	**239**	P	**Pn**	**16 06 55.9**	**+0.7**
JRA				*e*S	**Sn**	**16 07 39.6**	**+0.3**
NEM2	**Nemuro 2**	**3.73**	**228**	P	**Pn**	**16 06 53.8**	**-1.6**
NEM2				*e*S	**Sn**	**16 07 35.2**	**-4.5**
JNK	**Nakash**	**4.16**	**237**	P	**Pn**	**16 07 01.0**	**+0.1**
JTKR	**Abashiri--Toko**	**4.45**	**246**	P	**Pn**	**16 07 05.6**	**+0.9**
JTKR				*e*S	**Sn**	**16 07 57.5**	**+1.1**
JAK	**Akkeshi**	**4.54**	**231**	P	**Pn**	**16 07 04.3**	**-1.6**
JAK				*e*S	**Sn**	**16 07 54.1**	**-4.4**
JMP	**Maruseppu**	**4.79**	**249**	P	**Pn**	**16 07 10.3**	**+1.2**
YSS	**Yuzh-Sakhalins**	**4.80**	**285**	*α i*PN	**Pn**	**16 07 11.7**	**+2.5**
YSS				*i* S	**Sn**	**16 08 07.5**	**+2.9**
YSS				pmax	pmax		
	comp=Z,390nm,0.7s						
YSS				smax	smax		
	comp=N,270nm,1.1s						
YSS				smax	smax		
	comp=N,3μm,7.0s						
YSS				MLR	MLR		
	comp=Z,1μm,12.0s						
YSS	**Yuzh-Sakhalins**	**4.80**	**285**	*e*Pn	**Pn**	**16 07 11.5**	**+2.3**
YSS	**Yuzh-Sakhalins**	**4.80**	**285**	*i* P	**Pn**	**16 07 11.7**	**+2.5**
YSS				AMB	AMB	16 07 12.1	
	comp=Z,390nm,0.7s						
YSS				*i* S	**Sn**	**16 08 07.5**	**+2.9**
YSS				A	A	16 08 13.0	
	comp=Z,3μm,5.0s						
YSS				A	A	16 08 13.2	
	comp=Z,340nm,0.9s						
YSS				AMS	AMS	16 10 15.0	
	comp=Z,1μm,12.0s						
JAR	**Ashorobuto**	**4.89**	**239**	P	**Pn**	**16 07 10.8**	**+0.4**
JSE	**Soyaes**	**4.99**	**261**	P	**Pn**	**16 07 14.0**	**+2.3**
JOB	**Onbets**	**5.08**	**235**	P	**Pn**	**16 07 12.5**	**-0.5**
JOB				*e*S	**Sn**	**16 08 08.3**	**-3.0**
HRK	**Horoka**	**5.19**	**244**	*e*P	**Pn**	**16 07 15.4**	**+0.9**
HRK				*e*S	**Sn**	**16 08 15.0**	**+1.0**
JKA	**Kamikawa-asahi**	**5.24**	**252**	*e*P	**Pn**	**16 07 17.5**	**+2.4**
JKK2	**Kamakawa 2**	**5.24**	**249**	P	**Pn**	**16 07 16.6**	**+1.5**
JKK2				*e*S	**Sn**	**16 08 17.6**	**+2.4**
ASAJ	**Asahikawa**	**5.25**	**252**	P	**Pn**	**16 07 17.5**	**+2.4**
	baz=87,slow=15						
ASAJ	**Asahikawa**	**5.25**	**252**	P	**Pn**	**16 07 17.1**	**+2.0**
ASAJ	**Asahikawa**	**5.25**	**252**	*e*Pn	**Pn**	**16 07 17.2**	**+2.1**
JWK2	**Keihoku**	**5.39**	**266**	P	**Pn**	**16 07 20.7**	**+3.6**
JCH	**Churui**	**5.54**	**235**	P	**Pn**	**16 07 17.3**	**-1.7**
JCH				*e*S	**Sn**	**16 08 16.7**	**-5.4**
JSS	**Shosan**	**5.65**	**257**	P	**Pn**	**16 07 23.5**	**+3.1**
JFR	**Furan**	**5.68**	**243**	P	**Pn**	**16 07 21.5**	**+0.6**
JAB	**Ashibetsu**	**5.75**	**248**	P	**Pn**	**16 07 23.7**	**+1.9**
MYR	**Moyori**	**5.79**	**233**	*e*P	**Pn**	**16 07 20.6**	**-1.7**
UGL	**Uglegorsk**	**5.96**	**305**	*α i*PN	**Pn**	**16 07 27.0**	**+2.5**
UGL				*i* S	**Sn**	**16 08 36.0**	**+4.0**
UGL				pmax	pmax		
	comp=Z,310nm,0.5s						
UGL				pmax	pmax		
	comp=Z,3μm,2.0s						
UGL				pmax	pmax		
	comp=N,2μm,4.0s						
UGL				pmax	pmax		
	comp=E,3μm,4.0s						
UGL				smax	smax		
	comp=N,2μm,4.0s						
UGL				smax	smax		
	comp=E,2μm,4.0s						
UGL	**Uglegorsk**	**5.96**	**305**	*i* P	**Pn**	**16 07 27.0**	**+2.5**
UGL	comp=Z,360nm,0.8s			*i* P	**Pn**	**16 07 27.0**	**+2.5**
	comp=Z,5μm,3.0s,comp=E,3μm,3.0s,comp=N,2μm,3.0s						
UGL				AMB	AMB	16 07 28.0	
	comp=N,310nm,0.5s						
UGL				AMB	AMB	16 07 28.0	
	comp=N,2μm,3.0s						
UGL				AMB	AMB	16 07 28.0	
	comp=N,3μm,3.0s						
UGL				AMB	AMB	16 07 28.0	
	comp=N,3μm,3.0s						
UGL				*i* S	**Sn**	**16 08 36.0**	**+4.0**
UGL				A	A	16 08 40.0	
	comp=N,2μm,4.0s						
UGL				A	A	16 08 40.0	
	comp=N,2μm,4.0s						
JHR	**Hokuryu**	**5.97**	**251**	P	**Pn**	**16 07 26.8**	**+2.1**
JBT2	**Biratori 2**	**6.03**	**241**	P	**Pn**	**16 07 24.8**	**-0.7**
ERM	**Erimo**	**6.04**	**232**	*e*PN	**Pn**	**16 07 24.7**	**-1.0**
ERM	**Erimo**	**6.04**	**232**	*e*Pn	**Pn**	**16 07 24.7**	**-1.0**
JNBK	**Urakawa-nobuka**	**6.10**	**236**	P	**Pn**	**16 07 24.1**	**-2.3**
JNBK				*e*S	**Sn**	**16 08 28.3**	**-7.1**
SKR	**Severo-Kuril's**	**6.47**	**40**	*d i*PN	**Pn**	**16 07 30.6**	**-0.6**
SKR				*e*S	**Sn**	**16 08 41.8**	**-2.3**
SKR				pmax	pmax		
	comp=Z,600nm,1.2s						
SKR				pmax	pmax		
	comp=Z,355nm,0.9s						
SKR				smax	smax		
	comp=E,660nm,0.3s						
SKR				smax	smax		
	comp=N,781nm,0.5s						
SKR				MLR	MLR		
	comp=Z,600nm,16.0s						
SKR	**Severo-Kuril's**	**6.47**	**40**	*i* P	**Pn**	**16 07 30.6**	**-0.6**
SKR				AMB	AMB	16 07 33.6	
	comp=Z,600nm

JSH	**Shimam**	**7.56**	**248**	P	**Pn**	**16 07 46.1**	**+0.3**
JYM2	**Yakumo 2**	**7.63**	**243**	P	**Pn**	**16 07 45.6**	**-1.1**
JYM2				*e*S	**Sn**	**16 09 05.9**	**-6.1**
JSR	**Shiriuchi**	**7.94**	**240**	P	**Pn**	**16 07 48.9**	**-1.9**
JSR				*e*S	**Sn**	**16 09 11.5**	**-7.8**
JTM	**Tenmabayashi**	**8.03**	**233**	P	**Pn**	**16 07 48.6**	**-3.5**
JTM				*e*S	Sn	16 09 10.8	-11
JANG	**Nango**	**8.08**	**229**	*e*S	Sn	16 09 12.6	-10
JOSM	**Okushiri--Mats**	**8.21**	**246**	P	**Pn**	**16 07 53.1**	**-1.3**
JOSM				*e*S	**Sn**	**16 09 21.3**	**-4.6**
JTH	**Tanohata**	**8.22**	**226**	*e*S	Sn	16 09 16.5	-10
OKH	**Okha**	**8.74**	**333**	⇑*i*PN	**Pn**	**16 08 03.8**	**+2.5**
OKH				pmax	pmax		
	comp=Z,4μm,4.2s						
OKH				MLR	MLR		
	comp=Z,1μm,14.0s						
OKH	**Okha**	**8.74**	**333**	*e*P	**Pn**	**16 08 03.1**	**+1.8**
OKH				*i* P	**Pn**	**16 08 03.8**	**+2.5**
OKH				AMB	AMB	16 08 04.0	
	comp=Z,1μm,7.0s						
OKH				AMB	AMB	16 08 04.0	
	comp=Z,2μm,7.0s						
OKH				AMB	AMB	16 08 04.0	
	comp=Z,4μm,7.0s						
OKH				*e*S	**Sn**	**16 09 41.6**	**+3.2**
OKH				A	A	16 09 50.0	
	comp=Z,2μm,6.0s						
OKH				A	A	16 09 50.0	
	comp=Z,3μm,6.0s						
OKH				AMS	AMS	16 13 30.2	
	comp=Z,2μm,14.0s						
OKH				AMS	AMS	16 13 30.2	
	comp=Z,1μm,14.0s						
PEA0	**Petropavlovsk-**	**8.93**	**33**	*e*Pn	**Pn**	**16 08 03.1**	**-0.7**
PEA0B	**Petropavlovsk-**	**8.93**	**33**	*e*Pn	**Pn**	**16 08 03.0**	**-0.8**
PETK	**Petropavlovsk-**	**8.93**	**33**	P	**Pn**	**16 08 03.2**	**-0.6**
	comp=Z,16nm,0.3s,baz=191,slow=9.6,SNR=260						
TEY	**Ternei**	**9.13**	**269**	*e*P	**Pn**	**16 08 09.0**	**+2.4**
TEY				AMB	AMB	16 09 04.0	
	comp=Z,30nm,0.6s						
TEY				AMB	AMB	16 09 04.0	
	comp=Z,40nm,0.6s						
NKL	**Nikolayevsk**	**9.23**	**325**	*i* PN	**Pn**	**16 08 09.0**	**+1.1**
NKL				*e*		16 09 51.0	
NKL				pmax	pmax		
	comp=N,1μm,6.0s						
NKL				pmax	pmax		
	comp=E,1μm,6.0s						
NKL				pmax	pmax		
	comp=Z,1μm,6.0s						
NKL				pmax	pmax		
	comp=N,86nm,1.0s						
NKL				pmax	pmax		
	comp=E,56nm,1.0s						
NKL				pmax	pmax		
	comp=Z,230nm,1.0s						
NKL				MLR	MLR		
	comp=N,500nm,12.0s						
NKL				MLR	MLR		
	comp=Z,700nm,12.0s						
NKL	**Nikolayevsk**	**9.23**	**325**	*i* P	**Pn**	**16 08 09.0**	**+1.1**
	comp=Z,2μm,6.0s,comp=E,1μm,6.0s,comp=N,1μm,6.0s						
NKL				AMB	AMB	16 08 11.0	
	comp=N,90nm,1.0s						
NKL				AMB	AMB	16 08 11.0	
	comp=N,60nm,1.0s						
NKL				AMB	AMB	16 08 11.0	
	comp=N,20nm,1.0s						
NKL				AMS	AMS	16 12 04.0	
	comp=N,500nm,12.0s						
NKL				AMS	AMS	16 12 04.0	
	comp=N,700nm,12.0s						
PET	**Petropavlovsk**	**9.24**	**37**	*e*PN	**Pn**	**16 08 05.7**	**-2.3**
PET				*e*S	**Sn**	**16 09 46.0**	**-4.6**
PET				pmax	pmax		
	comp=Z,100nm,11.1s						
PET				pmax	pmax		
	comp=Z,58nm,0.8s						
PET				MLR	MLR		
	comp=Z,300nm,12.0s						
PET				MLR	MLR		
	comp=Z,200nm,12.0s						
PET	**Petropavlovsk**	**9.24**	**37**	*e*Pn	**Pn**	**16 08 05.9**	**-2.1**
PET	**Petropavlovsk**	**9.24**	**37**	*e*P	**Pn**	**16 08 05.9**	**-2.1**
PET				AMB	AMB	16 08 07.6	
	comp=Z,30nm,0.6s						
PET				*e*S	**Sn**	**16 09 44.2**	**-6.4**
PET				A	A	16 09 49.8	
	comp=Z,60nm,0.4s						
PET				AMS	AMS	16 11 39.7	
	comp=Z,350nm,12.0s						
JRG	**Rokugo**	**9.25**	**228**	P	**Pn**	**16 08 05.1**	**-3.2**
JOG2	**Oga 2**	**9.34**	**233**	P	**Pn**	**16 08 06.6**	**-2.8**
JOG2				*e*S	Sn	16 09 44.2	-8.9
GRNR	**Gornyy**	**9.98**	**304**	*i* P	**Pn**	**16 08 19.8**	**+2.0**
GRNR				AMB	AMB	16 08 20.4	
	comp=Z,270nm,0.2s						
GRNR				AMB	AMB	16 08 20.4	
	comp=Z,380nm,0.2s						
HABR	**Khabarovsk**	**10.18**	**290**	*d i*PN	**Pn**	**16 08 19.1**	**-1.4**
HABR				*e*S	**Sn**	**16 10 12.5**	**-0.7**
HABR				pmax	pmax		
	comp=N,12nm,1.3s						
HABR				pmax	pmax		
	comp=E,110nm,1.3s						
HABR				pmax	pmax		
	comp=Z,118nm,1.3s						
HABR				MLR	MLR		
	comp=Z,158nm,14.0s						
HABR	**Khabarovsk**	**10.18**	**290**	*i* P	**Pn**	**16 08 19.1**	**-1.4**
KLR	**Kul'dur**	**12.45**	**292**	P	**Pn**	**16 08 51.7**	**+1.6**
	comp=Z,1.0nm,0.3s,baz=98,slow=14,SNR=78						
KLR				PcP	**PcP**	**16 14 16.9**	**+1.0**
	comp=Z,0.4nm,0.3s,baz=97,slow=4.1,SNR=5.6						
KLR				ScP	**ScP**	**16 17 34.1**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=109,slow=4.9,SNR=3.9						
USRK	**Ussuriysk Ar.**	**12.53**	**268**	P	**Pn**	**16 08 52.0**	**+0.9**
	comp=Z,4.3nm,0.3s,baz=81,slow=13,SNR=72						
MAJO	**Matsushiro**	**12.66**	**226**	*d i*PN	**Pn**	**16 08 50.6**	**-2.2**
MAJO	**Matsushiro**	**12.66**	**226**	*e*Pn	**Pn**	**16 08 50.6**	**-2.2**
MAJO	**Matsushiro**	**12.66**	**226**	*e*P	**Pn**	**16 08 51.0**	**-1.9**
MJAR	**Matsushiro Arr**	**12.66**	**226**	P	**Pn**	**16 08 50.8**	**-2.0**
	comp=Z,4.3nm,0.3s,baz=31,slow=13,SNR=49						
MJB9	**Matsu-Tunnel**	**12.66**	**226**	*e*Pn	**Pn**	**16 08 50.7**	**-2.2**
VLA	**Vladivostok**	**12.91**	**264**	*i* PN	**Pn**	**16 08 55.2**	**-0.7**
VLA				*i* S	**Sn**	**16 11 16.0**	**-2.8**
VLA				pmax	pmax		
	comp=Z,87nm,1.4s						
VLA	**Vladivostok**	**12.91**	**264**	*e*P	**Pn**	**16 08 55.2**	**-0.7**
EKMR	**Ekimchan**	**12.91**	**310**	*e*P	**Pn**	**16 08 56.9**	**+1.0**
	comp=Z,20nm,0.5s,comp=E,20nm,0.5s,comp=N,30nm,0.5s						
EKMR				AMB	AMB	16 09 03.0	
	comp=N,20nm,0.6s						
EKMR				AMB	AMB	16 09 03.0	
	comp=N,40nm,0.6s						
EKMR				AMB	AMB	16 09 03.0	
	comp=N,70nm,0.6s						
MDJ	**Mudanjiang**	**14.11**	**272**	P	**Pn**	**16 09 12.3**	**+1.2**
MDJ				S	**Sn**	**16 11 40.4**	**-7.2**
MDJ				ScP	**ScP**	**16 17 40.8**	**+4.4**
MDJ				PcS	**PcS**	**16 17 48.8**	**-4.0**
MDJ				pmax	pmax		
	comp=N,170nm,0.8s						
MDJ				pmax	pmax		
	comp=N,110nm,5.2s						
MDJ				LR	LR		
	comp=N,710nm,15.1s						
MDJ				LR	LR		
	comp=N,170nm,15.1s						
MDJ				LR	LR		
	comp=N,410nm,13.1s						
MDJ	**Mudanjiang**	**14.11**	**272**	*e*Pn	**Pn**	**16 09 11.6**	**+0.6**
INU	**Inuyama**	**14.20**	**226**	*e*Pn	**Pn**	**16 09 10.8**	**-1.5**
JHJ2	**Mitsune**	**14.82**	**214**	*e*Pn	**Pn**	**16 09 20.7**	**+0.7**
JHJ	**Hachijo jima 2**	**14.83**	**214**	P	**Pn**	**16 09 20.8**	**+0.7**
	comp=N,28nm,0.3s,baz=236,slow=15,SNR=8.4						
BMKR	**Bomnak**	**15.82**	**311**	*i* P	**P**	**16 09 33.0**	**+0.3**
	comp=Z,50nm,0.9s,comp=E,30nm,0.9s,comp=N,40nm,0.9s						
BMKR				AMB	AMB	16 09 35.0	
	comp=N,20nm,0.5s						
BMKR				AMB	AMB	16 09 35.0	
	comp=N,30nm,0.5s						
BMKR				AMB	AMB	16 09 35.0	
	comp=N,50nm,0.5s						
ZEA	**Zeya**	**16.31**	**307**	*e*P	**Pn**	**16 09 38.6**	**+0.4**
ZEA				AMB	AMB	16 09 40.7	
	comp=N,260nm,1.0s						
ZEA				AMB	AMB	16 09 40.7	
	comp=N,280nm,1.0s						
ZEA				AMB	AMB	16 09 40.7	
	comp=N,450nm,1.0s						
ZEA				AMB	AMB	16 09 42.0	
	comp=N,800nm,5.0s						
ZEA				AMS	AMS	16 30 33.0	
	comp=N,200nm,15.0s						
KROS	**Kirovskiy**	**16.71**	**309**	*e*P	**P**	**16 09 41.7**	**-0.8**
KROS				AMB	AMB	16 09 44.8	
	comp=N,20nm,0.7s						
KROS				AMB	AMB	16 09 44.8	
	comp=N,40nm,0.7s						
KROS				AMB	AMB	16 09 44.8	
	comp=N,60nm,0.7s						
SEY	**Seymchan**	**17.11**	**4**	P	**P**	**16 09 46.5**	**-0.3**
	comp=N,7.4nm,0.3s,baz=181,slow=8.4,SNR=134						
SEY	**Seymchan**	**17.11**	**4**	*d i*P	**P**	**16 09 47.2**	**+0.4**
SEY	**Seymchan**	**17.11**	**4**	*e*P	**P**	**16 09 47.2**	**+0.4**
CN2	**Changchun**	**17.20**	**272**	*e*P	**P**	**16 09 47.7**	**-0.2**
CN2				*e*S	S	16 12 47.2	-12
CN2				pmax	pmax		
	comp=N,20nm,0.6s						
CN2				pmax	pmax		
	comp=N,100nm,3.0s						
CN2				LR	LR		
	comp=N,300nm,15.0s						
CN2				LR	LR		
	comp=N,300nm,15.0s						
CN2				LR	LR		
	comp=N,300nm,16.0s						
SMY	**Shemya**	**17.34**	**58**	*e*P	**Pn**	**16 09 50.6**	**+0.1**
SMY				pmax	pmax		
	comp=Z,187nm,1.0s						
SMY	**Shemya**	**17.34**	**58**	*e*P	**Pn**	**16 09 50.6**	**+0.1**
	comp=Z,188nm,1.0s						
KSRS	**Korea Array**	**18.19**	**250**	P	**Pn**	**16 10 00.3**	**-0.3**
	comp=Z,6.1nm,0.3s,baz=57,slow=11,SNR=138						
KSRS				PcP	**PcP**	**16 14 25.9**	**+1.6**
	comp=Z,0.6nm,0.3s,baz=14,slow=1.3,SNR=13						
KS01	**Wonju Array Si**	**18.20**	**250**	*e*P	**P**	**16 09 59.1**	**+0.2**
KS01				*e*PcP	**PcP**	**16 14 24.4**	**+0.1**
KS15	**Wonju Array Si**	**18.22**	**250**	*e*P	**P**	**16 09 59.6**	**+0.4**
KSAR	**Wonju Array Be**	**18.22**	**250**	P	**Pn**	**16 10 00.4**	**-0.7**
KSAR	**Wonju Array Be**	**18.22**	**250**	P	**Pn**	**16 10 00.3**	**-0.7**
KSAR				PcP	**PcP**	**16 14 25.9**	**+1.5**
CLNS	**Chul'man**	**18.75**	**315**	*e*P	**P**	**16 10 04.5**	**-0.3**
CLNS				*e*S	**S**	**16 13 28.5**	**-1.0**
CLNS				pmax	pmax		
	comp=Z,79nm,1.0s						
CLNS				pmax	pmax		
	comp=N,46nm,1.1s						
CLNS				pmax	pmax		
	comp=E,49nm,1.1s						
CLNS				smax	smax		
	comp=E,40nm,1.0s						
CLNS				smax	smax		
	comp=N,28nm,1.2s						
INCN	**Inchon**	**19.02**	**252**	*e*P	**P**	**16 10 09.0**	**+1.1**
	comp=N,126nm,0.6s						
SNY	**Shenyang**	**19.12**	**267**	⇓P	**Pn**	**16 10 10.3**	**-1.3**
SNY				S	**S**	**16 13 37.0**	**-0.1**
SNY				pmax	pmax		
	comp=N,18nm,1.3s						
SNY				LR	LR		
	comp=N,570nm,22.1s						
SNY				LR	LR		
	comp=N,310nm,25.3s						
SNY				LR	LR		
	comp=N,300nm,10.0s						
TJN	**Taejon**	**19.18**	**248**	*d i*P	**Pn**	**16 10 11.2**	**-1.1**
JNU	**Nakatsue**	**19.20**	**235**	P	**P**	**16 10 11.1**	**+1.2**
	comp=N,6.5nm,0.3s,baz=62,slow=1.7,SNR=32						
JNU	**Nakatsue**	**19.20**	**235**	*e*P	**P**	**16 10 10.7**	**+0.8**
	comp=N,100nm,0.8s						
JKIT	**Kitakata**	**19.24**	**233**	P	**Pn**	**16 10 13.2**	**+0.1**
CBIJ	**Chichi jima**	**19.69**	**200**	*e*P	**P**	**16 10 15.0**	**-0.2**
	comp=N,121nm,0.9s						
JCJ	**Chichijima**	**19.69**	**200**	P	**P**	**16 10 15.9**	**+0.7**
	comp=N,16nm,0.3s,baz=347,slow=18,SNR=2.2						
YAK	**Yakutsk**	**19.77**	**332**	P	**P**	**16 10 14.6**	**-1.1**
	comp=N,0.2nm,0.3s,baz=121,slow=3.1,SNR=140						
YAK				S	**S**	**16 13 42.6**	**-6.8**
	comp=N,0.0nm,0.3s,baz=14,slow=4.2,SNR=2.6						
YAK				ScP	**ScP**	**16 17 46.8**	**-0.7**
	comp=N,0.0nm,0.3s,baz=193,slow=2.9,SNR=4.2						
YAK				PKKP	**PKKPdf**	**16 37 17.7**	**-3.4**
	comp=N,0.0nm,0.3s,baz=357,slow=1.9,SNR=7.5						
YAK	**Yakutsk**	**19.77**	**332**	*c i*P	**P**	**16 10 14.6**	**-1.1**
YAK				*e*S	**S**	**16 13 48.6**	**-0.8**
YAK				pmax	pmax		
	comp=Z,93nm,0.9s						
YAK				pmax	pmax		
	comp=N,67nm,1.0s						
YAK				pmax	pmax		
	comp=E,46nm,1.2s						
YAK				smax	smax		
	comp=N,572nm,1.8s						
YAK				smax	smax		
	comp=E,191nm,1.3s						
YAK	**Yakutsk**	**19.77**	**332**	*e*P	**P**	**16 10 14.6**	**-1.1**
	comp=E,643nm,0.7s						
YAK				S	**S**	**16 13 42.6**	**-6.8**
YAK				ScP	**ScP**	**16 17 46.8**	**-0.7**
YAK				PKKP	**PKKPdf**	**16 37 17.7**	**-3.4**
HIA	**Hailar**	**20.30**	**290**	*e*P	**P**	**16 10 19.2**	**-2.4**
HIA				pmax	pmax		
	comp=Z,117nm,1.0s						
HIA	**Hailar**	**20.30**	**290**	*e*P	**P**	**16 10 19.2**	**-2.4**
	comp=Z,117nm,1.0s						
DL2	**Dalian**	**21.70**	**261**	P	**P**	**16 10 35.9**	**-0.6**
DL2				sP	**sP**	**16 11 26.3**	**+1.6**
DL2				S	**S**	**16 14 27.0**	**+1.1**
DL2				pmax	pmax		
	comp=Z,120nm,0.8s						
GSTR	**Great Sitkin T**	**23.23**	**62**	*e*P	**P**	**16 10 50.6**	**-0.4**
BILL	**Bilibino**	**23.80**	**16**	*d i*P	**P**	**16 10 54.5**	**-1.5**
BILL				*e**PP	**pP**	**16 11 31.5**	**+4.4**
BILL				*e*S	**S**	**16 15 01.4**	**+1.9**
BILL				pmax	pmax		
	comp=Z,9.0nm,0.5s						
BILL	**Bilibino**	**23.80**	**16**	*e*P	**P**	**16 10 53.7**	**-2.3**
	comp=Z,16nm,0.5s						
CIT	**Chita**	**24.21**	**298**	*e*P	**P**	**16 10 59.2**	**-0.8**
BOD	**Bodaibo**	**24.64**	**312**	*e*P	**P**	**16 11 01.2**	**-2.5**
BOD				*e*		16 11 42.0	
BOD				pmax	pmax		
	comp=Z,20nm,0.7s						
BJI	**Beijing**	**24.98**	**268**	P	**P**	**16 11 08.2**	**+1.2**
BJI				PcP	**PcP**	**16 14 38.1**	**+0.5**
BJI				S	**S**	**16 15 18.4**	**-0.4**
BJI				sS	**sS**	**16 16 16.2**	**-1.1**
BJI				pmax	pmax		
	comp=Z,220nm,0.8s						
BJT	**Baijiatuau**	**25.00**	**268**	*e*P	**P**	**16 11 07.8**	**+0.6**
BJT				pmax	pmax		
	comp=Z,170nm,0.8s						
BJT	**Baijiatuau**	**25.00**	**268**	*e*P	**P**	**16 11 07.8**	**+0.6**
	comp=Z,170nm,0.8s						
TIA	**Tai'an**	**26.14**	**260**	⇓P	**P**	**16 11 18.4**	**+0.9**
TIA				pmax	pmax		
	comp=Z,40nm,1.3s						
SSE	**Sheshan**	**26.50**	**246**	P	**P**	**16 11 22.2**	**+1.5**
SSE				pP	**pP**	**16 11 54.0**	**+0.1**
SSE				S	**S**	**16 15 45.9**	**+3.1**
SSE				pmax	pmax		
	comp=Z,100nm,0.9s						
SSE				pmax	pmax		
	comp=Z,69nm,2.7s						
SSE				LR	LR		
	comp=Z,140nm,27.7s						
SSE				LR	LR		
	comp=Z,150nm,27.4s						
SSE				LR	LR		
	comp=Z,230nm,22.0s						
NJ2	**Nanjing**	**27.39**	**250**	*e*P	**P**	**16 11 29.7**	**+1.0**
NJ2				S	**S**	**16 15 55.3**	**-1.6**
NJ2				pmax	pmax		
	comp=Z,74nm,0.6s						
NJ2				LR	LR		
	comp=Z,430nm,21.7s						
NJ2				LR	LR		
	comp=Z,470nm,24.9s						
NJ2				LR	LR		
	comp=Z,230nm,29.3s						
TIXI	**Tiksi**	**27.61**	**346**	P	**P**	**16 11 28.5**	**-1.7**
	comp=Z,55nm,0.5s,baz=140,slow=7.7,SNR=113						
TIXI				PcP	**PcP**	**16 14 43.5**	**+0.3**
	comp=Z,6.2nm,0.5s,baz=117,slow=1.7,SNR=4.2						
TIXI				S	**S**	**16 15 52.7**	**-6.9**
	comp=Z,6.2nm,1.0s,baz=286,slow=22,SNR=5.9						
TIXI				ScP	**ScP**	**16 18 08.6**	**0.0**
	comp=Z,7.3nm,1.0s,baz=135,slow=7.7,SNR=3.1						
TIXI	**Tiksi**	**27.61**	**346**	*c i*P	**P**	**16 11 28.3**	**-1.9**
TIXI				pmax	pmax		
	comp=Z,36nm,0.5s						
TIXI	**Tiksi**	**27.61**	**346**	*e*P	**P**	**16 11 28.2**	**-2.0**
	comp=Z,61nm,0.5s						
TIXI				PcP	**PcP**	**16 14 43.5**	**+0.3**
TIXI				S	**S**	**16 15 52.7**	**-6.9**
TIXI				ScP	**ScP**	**16 18 08.6**	**0.0**
HHC	**Hu-ho-hao-te**	**27.87**	**273**	*e*P	**P**	**16 11 34.9**	**+1.8**
HHC				pP	pP	16 12 07.3	+0.9
HHC				sP	sP	16 12 27.5	+2.6
HHC				S	**S**	**16 16 03.8**	**-0.8**
HHC				sS	sS	16 17 05.5	+1.9
HHC				SS	**SnSn**	**16 17 43.5**	**+5.7**
HHC				pmax	pmax		
	comp=Z,82nm,0.9s						
HHC				pmax	pmax		
	comp=Z,130nm,4.4s						
TIY	**Taiyuan**	**28.64**	**267**	*e*P	**P**	**16 11 42.6**	**+2.8**
TIY				S	**S**	**16 16 19.4**	**+2.8**
TIY				pmax	pmax		
	comp=Z,32nm,0.6s						
TIY				pmax	pmax		
	comp=Z,100nm,5.9s						
TIY				LR	LR		
	comp=Z,150nm,12.1s						
TIY				LR	LR		
	comp=Z,250nm,10.8s						
TIY				LR	LR		
	comp=Z,410nm,13.1s						
UNV	**Unalaska Valle**	**29.00**	**58**	*e*P	**P**	**16 11 40.9**	**-1.9**
	comp=Z,68nm,1.6s						
SONA	**Songino Array**	**29.26**	**290**	*e*P	**P**	**16 11 42.6**	**-2.8**
SONA1				*e*ScP	**ScP**	**16 18 14.5**	**0.0**
SONM	**Songino Array**	**29.27**	**290**	P	**P**	**16 11 44.8**	**-0.6**
	comp=Z,4.8nm,0.5s,baz=78,slow=8.7,SNR=25						
SONM				PcP	**PcP**	**16 14 48.5**	**+0.5**
	comp=Z,5.3nm,0.6s,baz=88,slow=2.3,SNR=8.0						
SONM				ScP	**ScP**	**16 18 14.7**	**+0.3**
	comp=Z,2.4nm,0.8s,baz=104,slow=2.1,SNR=5.7						
H11N2	**WAKE ISLAND Hy**	**29.79**	**146**	T	T	16 43 07.4	
	baz=335,slow=75,SNR=887						
H11N1	**WAKE ISLAND Hy**	**29.80**	**146**	T	T	16 43 08.4	
	baz=335,slow=75,SNR=563						
H11N3	**WAKE ISLAND Hy**	**29.81**	**146**	T	T	16 43 09.2	
	baz=335,slow=75,SNR=606						
TLY	**Talaya**	**30.36**	**298**	P	**P**	**16 11 54.7**	**-0.2**
	comp=Z,6.1nm,0.6s,baz=54,slow=5.9,SNR=3.8						
TLY				PcP	**PcP**	**16 14 51.5**	**+0.9**
	comp=Z,5.6nm,0.6s,baz=158,slow=3.3,SNR=5.2						
TLY	**Talaya**	**30.36**	**298**	*e*P	**P**	**16 11 54.0**	**-0.8**
TLY				*e*		16 12 46.9	
TLY				*e*S	**S**	**16 16 48.1**	**+4.9**
TLY				pmax	pmax		
	comp=Z,16nm,1.3s						
TLY				MLR	MLR		
	comp=Z,145nm,14.0s						
ZAK	**Zakamensk**	**30.78**	**295**	*e*P	**P**	**16 11 57.8**	**-0.9**
ZAK				*e*		16 12 34.2	
ZAK				*e*		16 14 50.9	
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.7s						
H11S1	**WAKE ISLAND Hy**	**30.82**	**147**	T	T	16 44 26.3	
	baz=336,slow=76,SNR=760						
H11S3	**WAKE ISLAND Hy**	**30.83**	**147**	T	T	16 44 28.2	
	baz=336,slow=76,SNR=435						
H11S2	**WAKE ISLAND Hy**	**30.84**	**147**	T	T	16 44 20.7	
	baz=336,slow=76,SNR=488						
YHNB	**Yeheng**	**31.01**	**236**	*e*P	**P**	**16 12 01.3**	**+0.5**
	comp=Z,21nm,0.8s						
WHN	**Wuhan**	**31.32**	**253**	⇓P	**P**	**16 12 04.4**	**+0.9**
WHN				S	**S**	**16 16 54.7**	**-3.8**
WHN				pmax	pmax		
	comp=Z,290nm,0.8s						
WHN				LR	LR		
	comp=Z,300nm,10.6s						
WHN				LR	LR		
	comp=Z,210nm,8.9s						
WHN				LR	LR		
	comp=Z,550nm,17.4s						
SSLB	**Suanglung**	**31.93**	**236**	*e*P	**P**	**16 12 09.1**	**+0.2**
	comp=Z,37nm,1.3s						
MOY	**Mondy**	**32.00**	**298**	*e*P	**P**	**16 12 09.0**	**-0.3**
MOY				pmax	pmax		
	comp=Z,20nm,1.7s						
YULB	**Yu-li**	**32.04**	**235**	*e*P	**P**	**16 12 10.4**	**+0.5**
	comp=Z,17nm,0.6s						
QZH	**Quanzhou**	**32.46**	**240**	⇓*i*P	P	16 12 06.7	-6.8
QZH				pP	pP	16 12 39.6	-7.6
QZH				S	**S**	**16 17 11.6**	**-4.7**
QZH				pmax	pmax		
	comp=Z,140nm,0.9s						
QZH				pmax	pmax		
	comp=Z,590nm,2.0s						
QZH				LR	LR		
	comp=N,620nm,17.5s						
QZH				LR	LR		
	comp=E,320nm,13.9s						
QZH				LR	LR		
	comp=Z,380nm,14.7s						
TWG	**Pinlang**	**32.62**	**235**	*e*P	**P**	**16 12 14.3**	**-0.6**
	comp=Z,292nm,0.5s						
XAN	**Xi'an**	**32.97**	**263**	P	**P**	**16 12 18.5**	**+0.6**
XAN				pP	pP	16 12 52.3	+0.6
XAN				sP	sP	16 13 10.5	+0.5
XAN				PP	**PP**	**16 13 34.5**	**-1.1**
XAN				S	**S**	**16 17 24.9**	**+0.7**
XAN				sS	sS	16 18 23.4	-0.3
XAN				SS	**SnSn**	**16 19 35.7**	**-5.8**
XAN				pmax	pmax		
	comp=Z,40nm,1.1s						
XAN				LR	LR		
	comp=Z,140nm,12.2s						
XAN				LR	LR		
	comp=Z,160nm,11.9s						
XAN				LR	LR		
	comp=Z,150nm,13.0s						
TT01	**Tatalina**	**34.66**	**41**	*e*P	**P**	**16 12 33.0**	**+1.0**
TT01				*e*ScP	**ScP**	**16 18 32.8**	**+0.5**
TTA	**Tatalina**	**34.67**	**41**	*e*P	**P**	**16 12 33.2**	**+1.0**
TTA				pmax	pmax		
	comp=Z,62nm,1.0s						
TTA	**Tatalina**	**34.67**	**41**	*e*P	**P**	**16 12 33.2**	**+1.0**
	comp=Z,62nm,1.0s						
TTA				*e*ScP	**ScP**	**16 18 33.6**	**+1.1**
ENH	**Enshi**	**34.78**	**257**	*e*P	**P**	**16 12 33.6**	**+0.2**
	comp=Z,55nm,0.8s						
SVW2	**Sparrevohn**	**34.81**	**44**	*e*P	**P**	**16 12 34.8**	**+1.3**
	comp=Z,52nm,1.0s						
SVW2				*e*ScP	**ScP**	**16 18 32.9**	**0.0**
LZH	**Lanzhou**	**35.43**	**270**	⇓P	**P**	**16 12 41.1**	**+1.9**
LZH				*e*S	**S**	**16 18 03.4**	**+1.3**
LZH				pmax	pmax		
	comp=Z,110nm,1.0s						
LZH				pmax	pmax		
	comp=Z,200nm,4.0s						
KRAR	**Krasnoyarsk**	**36.10**	**307**	⇑*e*P	**P**	**16 12 45.1**	**+0.7**
KRAR				pmax	pmax		
	comp=Z,406nm,1.0s						
RSO	**Redoubt South**	**36.21**	**45**	*e*P	**P**	**16 12 46.4**	**+0.8**
OHAK	**Old Harbor**	**36.22**	**51**	*e*P	**P**	**16 12 44.0**	**-1.4**
	comp=Z,80nm,1.1s						
OHAK				*e*PcP	**PcP**	**16 15 07.9**	**+0.9**
PPLA	**Purkeypile**	**36.42**	**41**

GTA pmax pmax
comp=Z,73nm,1.0s

GTA LR LR
comp=Z,130nm,5.7s

GTA LR LR
comp=Z,300nm,15.0s

GTA LR LR
comp=Z,210nm,12.4s

GTA LR LR
comp=Z,260nm,12.1s

HOM Homer 36.83 46 *e*P **P** **16 12 51.1 +0.6**
comp=Z,174nm,0.9s

BPAW Bear Paw Mtn. 36.96 39 *e*P **P** **16 12 52.7 +1.0**
comp=Z,49nm,1.0s

BPAW *e*ScP **ScP** **16 18 40.8 0.0**

KTH Kantishna Hill 36.98 40 *e*P **P** **16 12 53.3 +1.3**
comp=Z,147nm,1.0s

CNPM China Poot 37.04 47 *e*P **P** **16 12 52.0 -0.4**
comp=Z,75nm,1.4s

GZH Guangzhou 37.07 244 P **P** **16 12 48.9 -4.1**

MLY Manley 37.08 37 *e*P **P** **16 12 54.0 +1.3**
comp=Z,53nm,0.9s

MLY *e*ScP **ScP** **16 18 41.7 +0.5**

SUA Susitna One 37.14 43 *e*P **P** **16 12 53.5 +0.3**
comp=Z,31nm,0.8s

BRLK Bradley Lake 37.20 46 *e*P **P** **16 12 53.2 -0.5**
comp=Z,51nm,1.0s

BRLK *e*PcP **PcP** **16 15 10.7 +0.8**

TRF Thorofare Moun 37.27 40 *e*P **P** **16 12 54.9 +0.4**
comp=Z,22nm,0.8s

COLD Coldfoot 37.40 34 *e*P **P** **16 12 56.4 +1.2**
comp=Z,44nm,0.7s

BWN Browne 37.62 39 *e*P **P** **16 12 59.1 +1.9**
comp=Z,272nm,1.0s

RC01 Rabbit Creek A 37.65 44 *e*P **P** **16 12 57.6 +0.2**
comp=Z,68nm,0.9s

MCK McKinley 37.87 40 *e*P **P** **16 12 59.7 +0.4**
MCK pmax pmax
comp=Z,58nm,1.0s

MCK McKinley 37.87 40 *e*P **P** **16 12 59.6 +0.4**
comp=Z,58nm,1.0s

MCK McKinley 37.87 40 *e*P **P** **16 12 59.7 +0.4**

SEW Seward 37.88 46 *e*P **P** **16 12 59.1 -0.3**
comp=Z,42nm,0.8s

PMR Palmer 37.90 43 *e*P **P** **16 12 59.6 +0.1**
PMR pmax pmax
comp=Z,26nm,0.9s

PMR Palmer 37.90 43 *e*P **P** **16 12 59.6 +0.1**
comp=Z,26nm,0.9s

RND Reindeer 37.92 40 *e*P **P** **16 13 00.1 +0.3**
RND pmax pmax
comp=Z,73nm,1.2s

RND Reindeer 37.92 40 *e*P **P** **16 13 00.1 +0.3**
comp=Z,73nm,1.2s

MDM Murphy Dome 38.14 38 *e*P **P** **16 13 02.5 +0.9**
comp=Z,68nm,0.9s

NRIK Noril'sk 38.20 330 P **P** **16 13 00.9 -1.0**
comp=Z,24nm,1.0s,baz=146,slow=14,SNR=16

NRIK PcP **PcP** **16 15 13.1 +0.3**
comp=Z,6.9nm,0.6s,baz=103,slow=7.4,SNR=3.2

WRH Wood River Hil 38.22 38 *e*P **P** **16 13 02.7 +0.5**
comp=Z,50nm,1.2s

SML Sawmill 38.26 43 *e*P **P** **16 13 03.2 +0.6**
SML pmax pmax
comp=Z,150nm,0.8s

SML Sawmill 38.26 43 *e*P **P** **16 13 03.2 +0.6**
comp=Z,150nm,0.8s

COLA College 38.31 38 *e*P **P** **16 13 03.9 +1.0**
COLA pmax pmax
comp=Z,131nm,1.0s

COLA College 38.31 38 *e*P **P** **16 13 03.9 +1.0**
comp=Z,131nm,1.0s

COLA College 38.31 38 *e*P **P** **16 13 04.1 +1.2**

CCB Clear Creek Bu 38.33 38 *e*P **P** **16 13 03.6 +0.5**
comp=Z,28nm,1.0s

CD2 Chengdu 38.33 263 ⇓P **P** **16 13 04.0 +0.4**
CD2 pP pP 16 13 38.2 +0.1
CD2 sP sP 16 13 56.4 +0.1
CD2 PP **PP** **16 14 34.9 +0.4**
CD2 S **S** **16 18 46.5 +0.5**
CD2 sS sS 16 19 46.8 +0.3
CD2 pmax pmax
comp=Z,160nm,0.7s

CD2 pmax pmax
comp=Z,180nm,5.0s

CD2 LR LR
comp=Z,630nm,11.9s

CD2 LR LR
comp=Z,340nm,9.5s

DHY Denali Highway 38.60 41 *e*P **P** **16 13 05.9 +0.3**
comp=Z,64nm,1.2s

HDA Harding Lake 38.71 38 *e*P **P** **16 13 06.3 -0.1**
comp=Z,77nm,1.2s

IL1 Eielson Array 38.72 38 *e*P **P** **16 13 06.4 0.0**

ILAR Eielson Array 38.72 38 P **P** **16 13 06.8 +0.4**
comp=Z,60nm,1.1s,baz=256,slow=6.4,SNR=141

ILAR PcP **PcP** **16 15 13.7 -0.9**
comp=Z,3.5nm,0.7s,baz=282,slow=3.4,SNR=4.2

ILAR ScP **ScP** **16 18 46.6 -0.8**
comp=Z,2.5nm,0.7s,baz=289,slow=4.5,SNR=8.8

ILAR Eielson Array 38.72 38 P **P** **16 13 06.8 +0.4**
ILAR 16 15 13.7
ILAR 16 18 46.6
ILAR pmax pmax
comp=Z,57nm,1.0s

ILB Eielson Array 38.72 38 *e*P **P** **16 13 06.6 +0.2**

SCM Sheep Creek Mo 38.73 43 *e*P **P** **16 13 07.3 +0.7**
SCM pmax pmax
comp=Z,51nm,1.0s

SCM Sheep Creek Mo 38.73 43 *e*P **P** **16 13 07.3 +0.7**
comp=Z,51nm,1.0s

GYA Guiyang 39.12 255 ⇓*i*P **P** **16 13 11.0 +0.8**
GYA pP pP 16 13 45.4 +0.5
GYA sP sP 16 14 03.0 0.0
GYA PP **PnPn** **16 14 45.6 -1.9**
GYA PcP **PcP** **16 15 17.7 +1.1**
GYA ScP **ScP** **16 18 50.0 +0.3**
GYA S **S** **16 18 56.5 -1.5**
GYA PcS **PcS** **16 19 06.7 -0.1**
GYA ScS **ScS** **16 23 00.2 -1.7**
GYA pmax pmax
comp=Z,90nm,0.5s

GYA pmax pmax
comp=Z,120nm,8.1s

KLU Klutina 39.44 43 *e*P **P** **16 13 13.4 +1.0**
comp=Z,66nm,1.0s

PAX Paxson 39.48 41 *e*P **P** **16 13 13.2 +0.4**
PAX pmax pmax
comp=Z,28nm,1.1s

PAX Paxson 39.48 41 *e*P **P** **16 13 13.2 +0.4**
comp=Z,28nm,1.1s

DIV Divide 39.56 44 *e*P **P** **16 13 14.1 +0.7**
comp=Z,65nm,0.9s

EYAK Cordova Ski Ar 39.65 44 *e*P **P** **16 13 14.8 +0.7**
comp=Z,54nm,1.1s

DOT Dot Lake 40.04 39 *e*P **P** **16 13 17.0 -0.4**
comp=Z,44nm,0.8s

DOT *e*ScP **ScP** **16 18 53.0 +0.4**

BMRM Bremner River 40.14 44 *e*P **P** **16 13 19.1 +0.8**
comp=Z,63nm,0.8s

BMRM *e*ScP **ScP** **16 18 53.5 +0.4**

MENT Mentasta 40.28 41 *e*P **P** **16 13 20.4 +1.1**
comp=Z,17nm,0.6s

CRQM Cirque 40.89 44 *e*P **P** **16 13 25.7 +1.2**
comp=Z,120nm,0.9s

ZAA0 Zalesovo Array 41.08 306 *e*P **P** **16 13 24.1 -1.8**

ZALV Zalesovo Beam 41.08 306 P **P** **16 13 24.3 -1.6**
comp=Z,9.7nm,0.4s,baz=76,slow=6.9,SNR=58

ZALV PcP **PcP** **16 15 23.0 +0.7**
comp=Z,24nm,0.7s,baz=77,slow=2.7,SNR=25

ZALV ScP **ScP** **16 18 56.6 -0.2**
comp=Z,2.3nm,0.8s,baz=63,slow=4.1,SNR=3.8

ZALV PKiKP **PKiKP** **16 22 28.7 -1.0**
comp=Z,0.8nm,0.4s,baz=108,slow=1.6,SNR=4.1

EGAK Eagle 41.17 38 *e*P **P** **16 13 26.6 +0.1**
comp=Z,69nm,1.0s

NVS Novosibirsk 41.72 307 ⇓*i*P **P** **16 13 30.4 -0.7**
NVS *e* 16 15 16.5
NVS *e*S S 16 19 25.5 -10
NVS pmax pmax
comp=Z,32nm,1.2s

NVS pmax pmax
comp=N,9.0nm,1.4s

NVS pmax pmax
comp=E,22nm,1.4s

NVS smax smax
comp=N,11nm,1.5s

NVS smax smax
comp=E,9.0nm,1.3s

DAWY Dawson 42.03 38 *e*P **P** **16 13 34.1 +0.5**
comp=E,15nm,0.9s

QIZ Qiongzhong 42.26 244 P **P** **16 13 36.5 +0.6**
QIZ pP **pP** **16 14 09.2 -1.8**
QIZ S **S** **16 19 43.3 -1.1**
QIZ pmax pmax
comp=E,24nm,1.0s

QIZ pmax pmax
comp=E,91nm,7.1s

QIZ Qiongzhong 42.26 244 *e*P **P** **16 13 37.6 +1.7**
comp=E,29nm,1.1s

KMI Kunming 42.65 257 P **P** **16 13 40.4 +1.1**
KMI pP pP 16 14 13.9 -0.5
KMI sP sP 16 14 32.5 +0.1
KMI PP **PP** **16 15 22.8 +1.4**
KMI S **S** **16 19 50.8 +0.3**
KMI sS sS 16 20 49.0 -2.8
KMI SS **SS** **16 22 57.2 -10**
KMI pmax pmax
comp=E,66nm,1.1s

KMI pmax pmax
comp=E,190nm,4.1s

KMI LR LR
comp=E,160nm,15.0s

KMI LR LR
comp=E,150nm,15.0s

KMI LR LR
comp=E,180nm,16.0s

WMQ Urumqi 42.90 290 P **P** **16 13 42.8 +1.9**
WMQ pP pP 16 14 14.2 -1.9
WMQ sP sP 16 14 37.3 +3.2
WMQ PP **PcP** **16 15 30.0 +1.3**
WMQ S **S** **16 19 57.2 +3.7**
WMQ pmax pmax
comp=E,29nm,0.8s

WMQ pmax pmax
comp=E,120nm,3.9s

WMQ LR LR
comp=E,440nm,23.7s

WMQ LR LR
comp=E,340nm,26.6s

WMQ LR LR
comp=E,360nm,26.5s

HYT Haines Junctio 43.57 43 *e*P **P** **16 13 48.0 +1.9**

INK Inuvik 43.66 32 *e*P **P** **16 13 47.2 +0.7**
INK pmax pmax
comp=Z,62nm,1.0s

INK Inuvik 43.66 32 *e*P **P** **16 13 47.2 +0.7**
comp=Z,62nm,1.0s

INK Inuvik 43.66 32 *e*P **P** **16 13 47.2 +0.7**

MK31 Makanchi Array 45.10 297 P **P** **16 13 58.2 -0.2**
MK31 pmax pmax
comp=Z,12nm,0.5s

MKAR Makanchi Array 45.10 297 P **P** **16 13 58.4 0.0**
comp=Z,19nm,0.6s,baz=73,slow=7.9,SNR=179

MKAR PcP **PcP** **16 15 36.8 +0.7**
comp=Z,18nm,0.6s,baz=69,slow=4.6,SNR=12

MKAR ScP **ScP** **16 19 13.6 +0.3**
comp=Z,1.7nm,0.7s,baz=62,slow=3.3,SNR=3.7

MKAR PKiKP **PKiKP** **16 22 32.9 -0.8**
comp=Z,0.2nm,0.3s,baz=82,slow=0.3,SNR=3.0

MK01 Makanchi Array 45.11 297 *e*P **P** **16 13 57.7 -0.7**

KURK Kurchatov 45.74 303 P **P** **16 14 03.1 -0.2**
KURK 16 15 39.1
KURK pmax pmax
comp=Z,51nm,0.5s

KURK Kurchatov 45.74 303 P **P** **16 14 03.1 -0.2**
KURK PcP **PcP** **16 15 39.0 +0.9**
KURK ScP **ScP** **16 19 16.9 +1.0**

KURBB Kurchatov Arra 45.83 303 P **P** **16 14 03.1 -0.9**
comp=Z,51nm,0.5s,baz=71,slow=8.6,SNR=427

KURBB PcP **PcP** **16 15 39.0 +0.6**
comp=Z,10nm,0.7s,baz=72,slow=3.3,SNR=9.3

KURBB ScP **ScP** **16 19 16.9 +0.7**
comp=Z,1.7nm,0.9s,baz=67,slow=3.4,SNR=4.2

NONG Nongkai 47.26 250 P **P** **16 14 16.7 +1.2**
comp=Z,184nm,0.8s,comp=Z,5μm

SKNT Sakolnakorn 47.51 248 P **P** **16 14 18.4 +1.0**
comp=Z,150nm,0.9s

UBPT Khong Chiam 47.81 245 P **P** **16 14 21.1 +1.4**
comp=Z,44nm,1.2s,comp=Z,550nm

LSA Lhasa 47.83 271 P **P** **16 14 22.6 +2.3**
LSA pmax pmax
comp=Z,69nm,0.7s

LSA Lhasa 47.83 271 *e*P **P** **16 14 22.0 +1.7**
LSA pmax pmax
comp=Z,66nm,0.6s

LSA Lhasa 47.83 271 *e*P **P** **16 14 22.0 +1.7**
comp=Z,66nm,0.6s

DLBC Dease Lake 47.92 44 *e*P **P** **16 14 22.1 +1.9**
comp=Z,15nm,0.9s

PDGK Podgornoye 48.44 294 P **P** **16 14 24.4 +0.2**
PDGK pmax pmax
comp=Z,18nm,1.1s

MYLDM Lahad Datu 48.71 223 *e*P **P** **16 14 28.0 +1.4**
comp=Z,95nm,1.3s

KHON Khomkaen 48.73 248 P **P** **16 14 27.9 +1.2**
comp=Z,111nm,0.7s,comp=Z,1μm

JAY Jayapura 48.87 192 P **P** **16 14 29.2 +1.4**
comp=Z,27nm,1.1s

LOEI Loei 48.90 251 P **P** **16 14 26.7 -1.3**
comp=Z,144nm,1.1s

GENI Genyem 49.02 192 P **P** **16 14 30.7 +1.8**
comp=Z,87nm,1.2s

CHKZ Chkalovo 49.05 309 P **P** **16 14 27.5 -1.2**
CHKZ pmax pmax
comp=Z,32nm,0.5s

UTTA Uttaradit 49.20 252 P **P** **16 14 31.6 +1.3**
comp=Z,39nm,0.8s,comp=Z,310nm

VOSK Vostochnaya 49.26 308 P **P** **16 14 29.3 -1.0**
VOSK pmax pmax
comp=Z,45nm,0.6s

VOSK Vostochnaya 49.26 308 *e*P **P** **16 14 29.3 -1.0**
comp=Z,63nm,0.6s

VOSK *e*ScP **ScP** **16 19 30.1 -0.5**

LAMP Lampang 49.26 253 P **P** **16 14 32.4 +1.6**
comp=Z,50nm,0.8s,comp=Z,401nm

SWI Sorong 49.31 204 P **P** **16 14 31.8 +0.7**

BVAR Borovoye Array 49.45 309 P **P** **16 14 31.4 -0.4**
comp=Z,16nm,0.5s,baz=52,slow=8.0,SNR=156

BVAR PcP **PcP** **16 15 52.1 +0.6**
comp=Z,7.8nm,0.3s,baz=77,slow=4.0,SNR=12

BVAR ScP **ScP** **16 19 31.9 +0.4**
comp=Z,2.3nm,0.7s,baz=95,slow=3.3,SNR=4.1

BRVK Borovoye 49.49 309 *c i*P **P** **16 14 31.1 -1.0**
BRVK pmax pmax
comp=Z,67nm,0.7s

BRVK Borovoye 49.49 309 *e*P **P** **16 14 31.1 -1.0**
comp=Z,29nm,0.6s

CMMT Chiang Mai 49.51 254 P **P** **16 14 33.8 +1.1**
comp=Z,116nm,0.9s,comp=Z,1μm

CHTO Chiang Mai 49.52 254 P **P** **16 14 33.9 +1.2**
comp=Z,507nm,0.9s,comp=Z,4μm

CHTO Chiang Mai 49.52 254 *e*P **P** **16 14 34.0 +1.2**
CHTO pmax pmax
comp=Z,70nm,0.8s

CHTO Chiang Mai 49.52 254 P **P** **16 14 34.3 +1.6**
SNR=24

CHTO Chiang Mai 49.52 254 *e*P **P** **16 14 34.0 +1.2**
comp=Z,70nm,0.8s

CM31 Chiang Mai Arr 49.77 254 *e*P **P** **16 14 36.0 +1.4**

CMAR Chiang Mai Arr 49.77 254 P **P** **16 14 36.0 +1.4**
comp=Z,35nm,0.8s,baz=37,slow=7.4,SNR=186

CMAR PcP **PcP** **16 15 54.7 +1.6**
comp=Z,7.1nm,0.8s,baz=7.3,slow=2.5,SNR=8.5

CMAR ScP **ScP** **16 19 35.0 +1.6**
comp=Z,1.5nm,0.8s,baz=34,slow=3.9,SNR=6.2

CMAR Chiang Mai Arr 49.77 254 P **P** **16 14 36.0 +1.4**
CMAR 16 15 54.7
CMAR pmax pmax
comp=Z,36nm,0.8s

PBKT Sadao Pong 49.77 250 P **P** **16 14 35.7 +1.1**
comp=Z,97nm,0.7s

CM01 Chiang Mai Arr 49.78 254 *e*P **P** **16 14 36.1 +1.4**
CM01 *e*ScP **ScP** **16 19 34.9 +1.4**

SUKH Sukhothai 50.00 252 P **P** **16 14 37.9 +1.6**
comp=Z,33nm,0.8s,comp=Z,254nm

ZRNK Zerenda 50.23 309 *e*P **P** **16 14 36.9 -0.8**
ZRNK pmax pmax
comp=Z,35nm,0.4s

ZRNK Zerenda 50.23 309 *e*P **P** **16 14 36.9 -0.8**
comp=Z,34nm,0.4s

ZRNK *e*ScP **ScP** **16 19 34.3 -0.5**

OTUK Ortayu 50.50 302 P **P** **16 14 39.6 -0.3**
OTUK pmax pmax
comp=Z,24nm,0.6s

SRAK Srakaew 50.95 247 P **P** **16 14 42.1 -1.4**
comp=Z,506nm,0.8s,comp=Z,4μm

MRSI Marisa 51.36 216 P **P** **16 14 46.9 +0.4**
comp=Z,128nm,1.1s,comp=Z,5μm

UMPA Umpang Tak 51.42 252 P **P** **16 14 50.3 +3.2**
comp=Z,49nm,1.0s,comp=Z,929nm

CHBT CHBT 51.71 246 *i*P **P** **16 14 51.0 +1.9**
comp=Z,221nm,0.8s

FRU Bishkek 51.78 295 *i*P **P** **16 14 49.0 -0.4**
FRU *e* 16 16 00.0
FRU *e*S **S** **16 22 00.0 +1.1**
FRU pmax pmax
comp=Z,75nm,2.0s

AAK Ala-Archa 51.96 295 P **P** **16 14 51.7 +0.8**
comp=Z,11nm,0.5s,baz=98,slow=5.4,SNR=25

AAK PcP **PcP** **16 16 02.4 +1.3**
comp=Z,8.9nm,0.8s,baz=105,slow=1.7,SNR=3.9

AAK Ala-Archa 51.96 295 *e*P **P** **16 14 51.1 +0.2**
AAK 16 16 02.4
AAK pmax pmax
comp=Z,19nm,0.8s

AAK Ala-Archa 51.96 295 P **P** **16 14 51.6 +0.7**
SNR=14

AAK Ala-Archa 51.96 295 *e*P **P** **16 14 51.1 +0.2**
comp=Z,19nm,0.8s

AAK PcP **PcP** **16 16 02.4 +1.3**

AAK Ala-Archa 51.96 295 *e*P **P** **16 14 51.6 +0.7**

SANI Sanana 52.12 210 P **P** **16 14 51.8 -0.4**
comp=Z,149nm,1.0s,comp=Z,2μm

RES Resolute Bay 52.38 18 *e*P **P** **16 14 53.5 +0.1**
RES pmax pmax
comp=Z,62nm,0.8s

RES Resolute Bay 52.38 18 *e*P **P** **16 14 53.5 +0.1**
comp=Z,62nm,0.8s

PATY Pattaya 52.52 247 P **P** **16 14 57.3 +2.2**
comp=Z,21nm,0.8s,comp=Z,2μm

GUN Gumba 52.59 273 *e*P **P** **16 14 57.4 +1.4**
comp=Z,298nm,0.5s

SRDT SRDT 52.60 250 P **P** **16 14 57.3 +1.6**
comp=Z,194nm,0.8s

KSH Kashi 52.65 291 P P 16 15 01.1 +5.0
KSH *e*pP pP 16 15 38.1 +5.6
KSH *e*sP sP 16 15 56.4 +6.2
KSH *e*PP PP 16 17 05.1 +8.5
KSH *e*ScP **ScP** **16 19 47.8 +2.1**
KSH PcS **PcS** **16 20 04.8 +2.1**
KSH S **S** **16 22 17.7 +6.6**
KSH ScS **ScS** **16 24 31.4 +2.0**
KSH pmax pmax
comp=Z,26nm,0.9s

KSH LR LR
comp=Z,88nm,5.6s

KSH LR LR
comp=Z,230nm,6.5s

KSH LR LR
comp=Z,180nm,5.8s

RAMN Ramite 52.68 272 *e*P **P** **16 14 58.0 +1.5**
comp=Z,593nm,0.6s

SVE Sverdlovsk 52.73 316 *d i*P **P** **16 14 55.7 -0.5**
SVE pmax pmax
comp=Z,130nm,0.8s

KBS Kingsbay 52.91 351 *e*P **P** **16 14 56.4 -0.8**
KBS pmax pmax
comp=Z,37nm,0.8s

KBS Kingsbay 52.91 351 *e*P **P** **16 14 56.4 -0.8**
comp=Z,38nm,0.8s

SPA0 Spitsbergen Ar 52.96 349 *e*P **P** **16 14 56.5 -1.2**

SPA0 Spitsbergen Ar 52.96 349 *e*P **P** **16 14 56.4 -1.2**

SPITS Spitsbergen Ar 52.96 349 P **P** **16 14 56.8 -0.8**
comp=Z,10.0nm,0.6s,baz=62,slow=5.7,SNR=34

SPITS PcP **PcP** **16 16 04.1 -0.1**
comp=Z,0.6nm,0.3s,baz=46,slow=6.2,SNR=1.7

YKW3 Yellowknife Ar 53.00 35 *e*P **P** **16 14 57.9 -0.1**
comp=Z,38nm,1.0s

YKA Yellowknife Ar 53.04 35 P **P** **16 14 59.2 +0.8**
comp=Z,22nm,0.8s,baz=298,slow=7.0,SNR=57

YKA PcP **PcP** **16 16 05.2 +0.6**
comp=Z,3.1nm,0.6s,baz=305,slow=3.7,SNR=4.2

YKA ScP **ScP** **16 19 46.0 -0.7**
comp=Z,1.5nm,0.7s,baz=303,slow=3.7,SNR=4.7

YKA LR LR 16 39 15.6
comp=Z,6.5nm,19.9s,baz=0.0,slow=38

YKB5 Yellowknife Ar 53.04 35 *e*P **P** **16 14 58.1 -0.2**

KKN Kakani 53.08 273 *e*P **P** **16 15 00.9 +1.5**
comp=Z,285nm,0.5s

PKIN Phulchoki 53.13 273 *e*P **P** **16 15 01.1 +1.2**
comp=Z,135nm,0.6s

PKIN Phulchoki 53.13 273 *e*P **S** **16 22 19.1 +1.0**
comp=Z,75nm,1.3s

SOKR Solikamsk 53.16 321 *c i*P **P** **16 14 57.0 -2.2**
SOKR pmax pmax
comp=Z,52nm,0.9s

MNAS Manas 53.29 296 P **P** **16 15 01.4 +0.7**
MNAS pmax pmax
comp=Z,23nm,0.7s

DMN Daman 53.31 273 *e*P **P** **16 15 02.9 +1.7**
comp=Z,315nm,0.6s

PHET Kaeng Krachan 53.33 248 P **P** **16 15 03.1 +2.0**
comp=Z,83nm,0.8s,comp=Z,791nm

GKN Gorkha 53.40 274 *e*P **P** **16 15 03.2 +1.5**
comp=Z,241nm,0.4s

PCI Palu 53.49 218 P **P** **16 15 01.7 -0.5**
comp=Z,114nm,1.1s,comp=Z,893nm

ARU Arti 53.92 317 P **P** **16 15 04.0 -0.9**
comp=Z,90nm,0.6s,baz=68,slow=3.4,SNR=161

ARU Arti 53.92 317 *c i*P **P** **16 15 03.8 -1.1**
ARU *PP **pP** **16 15 42.6 +1.1**
ARU 16 16 08.0
ARU S **S** **16 22 25.3 -2.1**
ARU 16 24 35.0
ARU SS **SS** **16 26 05.1 -5.1**

ARU Arti 53.92 317 *e*P **P** **16 15 03.5 -1.4**
comp=Z,102nm,0.7s

SBUM Sibu 54.20 228 *e*P **P** **16 15 07.1 -0.3**
comp=Z,10nm,0.7s

KK31 Karatay Array 54.20 298 *i*P **P** **16 15 07.3 +0.1**
KK31 pmax pmax
comp=Z,15nm,0.6s

KOLN Koldanda 54.26 275 *e*P **P** **16 15 09.8 +1.8**
comp=Z,153nm,0.3s

PYUN Puthan 54.48 275 *e*P **P** **16 15 11.2 +1.6**
comp=Z,715nm,1.0s

PMG Port Moresby 55.12 183 *d e*P **P** **16 15 15.0 +1.1**
PMG pmax pmax
comp=Z,217nm,1.2s

KDI Kendari 55.13 213 P **P** **16 15 15.4 +1.4**
comp=Z,97nm,1.0s,comp=Z,955nm

LLLB Lillooet 55.74 50 *e*P **P** **16 15 17.8 -0.3**
comp=Z,24nm,1.1s

KSM Kuching 56.03 230 *e*P **P** **16 15 21.5 +1.0**
comp=Z,48nm,1.2s

SURA Surathani 56.14 245 P **P** **16 15 23.2 +1.9**
comp=Z,124nm,0.9s

NLWA Neilton Lookou 56.38 55 *e*P **P** **16 15 23.8 +1.1**
comp=Z,45nm,1.3s

LVZ Lovozero 56.51 336 ⇑*i*P **P** **16 15 22.6 -0.7**
LVZ pmax pmax
comp=Z,35nm,1.1s

SURT Suratani 56.83 246 P **P** **16 15 28.1 +1.9**
comp=Z,42nm,0.8s,comp=Z,512nm

THN Thein Dam 56.86 284 *e*P **P** **16 15 23.6 -2.6**

B05A Bryant 56.90 53 P **P** **16 15 26.5 +0.3**
baz=304,SNR=7.2

AB31 Akbulak array 57.02 309 P **P** **16 15 27.0 -0.1**
AB31 pmax pmax
comp=Z,9.0nm,0.4s

ABKAR Akbulak array 57.02 309 *e*P **P** **16 15 26.8 -0.3**

SKLT Songkhla 57.05 243 P **P** **16 15 29.5 +1.8**
comp=Z,138nm,0.7s,comp=Z,988nm

APA Apatity 57.09 336 ⇑*i*P **P** **16 15 25.0 -2.3**
APA *i* 16 16 02.5
APA *i*S S 16 23 00.0 -9.1
APA *i* 16 24 58.0
APA pmax pmax
comp=Z,12nm,1.0s

TRTT Trang 57.12 244 P **P** **16 15 29.8 +1.6**
comp=Z,96nm,0.8s,comp=Z,924nm

KAPI Kappang 57.23 216 *e*P **P** **16 15 29.3 +0.4**
comp=Z,34nm,0.8s

DAG Danmarks Havn 57.34 357 *i*P **P** **16 15 27.6 -1.3**
comp=Z,34nm,1.1s

DAG Danmarks Havn 57.34 357 *i*P **P** **16 15 27.6 -1.3**
DAG pmax pmax
comp=Z,42nm,1.1s

AKTO Aktyubinsk 57.40 311 P **P** 16 15 29.1 -0.6
comp=Z,20nm,0.6s,baz=66,slow=8.9,SNR=65
AKTO LR LR 16 42 07.4
comp=Z,61nm,19.9s,baz=83,slow=38
D05A Enumclaw 57.56 54 *e*P **P** 16 15 30.3 -0.6
comp=Z,50nm,1.5s
ARA0 ARCESS Array S 57.79 340 *e*P **P** 16 15 30.8 -1.4
ARCES ARCESS Array B 57.79 340 P **P** 16 15 31.3 -0.9
comp=Z,9.7nm,0.6s,baz=40,slow=7.4,SNR=47
ARCES PcP **PcP** 16 16 23.6 +0.6
comp=Z,3.6nm,0.6s,baz=66,slow=2.8,SNR=4.7
ARE0 ARCESS Array S 57.79 340 *e*P **P** 16 15 31.4 -0.8
ARE0 IAmb IAmb 16 15 32.8
comp=Z,32nm,1.1s
ARE0 ARCESS Array S 57.79 340 *e*P **P** 16 15 30.7 -1.5
comp=Z,31nm,1.1s
PKDT Phuket 57.93 246 P **P** 16 15 36.1 +2.2
comp=Z,120nm,0.8s,comp=Z,1um
G03D McMinnville, O 57.95 56 P **P** 16 15 35.2 +1.6
baz=305
BBKI Banjar Baru 58.01 222 P **P** 16 15 34.7 +0.3
comp=Z,61nm,1.4s
NDI New Delhi 58.12 280 *e*P P 16 15 29.5 -5.6
COR Corvallis 58.28 57 *e*P **P** 16 15 38.0 +2.0
COR pmax pmax
comp=Z,136nm,1.4s
COR Corvallis 58.28 57 *e*P **P** 16 15 38.0 +2.0
comp=Z,136nm,1.4s
B08A Colville Reser 58.37 52 P **P** 16 15 37.3 +0.7
KULLO Kullorsuaq 58.44 8 *i* P **P** 16 15 35.5 -1.1
comp=Z,65nm,0.9s
KULLO Kullorsuaq 58.44 8 *i* P **P** 16 15 35.5 -1.1
KULLO pmax pmax
comp=Z,65nm,0.9s
KULM Kulim 58.50 242 *e*P **P** 16 15 39.1 +1.3
comp=Z,87nm,0.7s
EDM Edmonton 58.65 44 *e*P **P** 16 15 38.8 +0.3
EDM pmax pmax
comp=Z,97nm,1.1s
EDM Edmonton 58.65 44 *e*P **P** 16 15 38.8 +0.3
comp=Z,97nm,1.1s
KTK1 Kautokeino 58.72 340 *e*P **P** 16 15 37.9 -0.8
KTK1 IAmb IAmb 16 15 39.1
comp=Z,30nm,0.7s
I03D Drain, OR 58.77 58 P **P** 16 15 41.1 +1.8
baz=306,SNR=7.2
IPM Ipoh 58.90 241 *e*P **P** 16 15 40.9 +0.2
comp=Z,26nm,0.7s
VFP Flag Point 58.93 55 P **P** 16 15 42.0 +1.3
G05D Wamic, OR 59.05 55 P **P** 16 15 43.1 +1.8
baz=306,SNR=5.7
SGF Sodankyl 59.07 338 P **P** 16 15 43.4 +2.4
SGF pmax pmax
comp=Z,82nm,1.1s
TRO Tromso 59.22 342 *e*P **P** 16 15 41.0 -0.9
TRO IAmb IAmb 16 15 42.1
comp=Z,53nm,0.8s
I04A Tendick Farm, 59.26 57 P **P** 16 15 44.2 +1.4
baz=306,SNR=13
C09A Chrisman Ranch 59.27 52 *e*P **P** 16 15 43.2 +0.4
comp=Z,82nm,0.3s
D08A Wollman Farm, 59.35 53 *e*P **P** 16 15 43.7 +0.4
comp=Z,29nm,1.4s
MYKOM Kota Tinggi 59.37 236 *e*P **P** 16 15 44.6 +0.9
comp=Z,53nm,1.3s
HAWA Hanford 59.40 54 *e*P **P** 16 15 44.4 +0.7
comp=Z,26nm,1.1s
G06A Carlson Farm, 59.45 55 *e*P **P** 16 15 44.9 +0.8
comp=Z,19nm,1.4s
MSF Maaselka 59.49 336 P **P** 16 15 43.8 -0.2
MSF pmax pmax
comp=Z,33nm,1.1s
KLMR Klimovskoe 59.50 328 *e*P **P** 16 15 41.6 -2.5
KLMR pmax pmax
comp=Z,62nm,1.0s
L02D Cave Junction, 59.51 59 P **P** 16 15 46.2 +1.7
baz=306
VTHM Trough 59.52 55 P **P** 16 15 46.0 +1.4
I05D Terrebonne, OR 59.57 56 P **P** 16 15 46.1 +1.2
baz=306,SNR=8.9
NEW Newport 59.62 51 P **P** 16 15 46.0 +0.8
baz=306,SNR=14
NEW Newport 59.62 51 *e*P **P** 16 15 44.4 -0.8
NEW pmax pmax
comp=Z,38nm,1.1s
NEW Newport 59.62 51 *e*P **P** 16 15 44.4 -0.8
comp=Z,38nm,1.1s
HUMO Hull Mountain 59.64 59 *e*P **P** 16 15 46.6 +1.3
comp=Z,19nm,1.5s
EDFI Ende, Flores 59.88 212 P **P** 16 15 46.7 -0.7
comp=Z,42nm,1.0s
COEN Coen 59.88 187 *e*P **P** 16 15 48.5 +1.3
comp=Z,48nm,0.8s
SOEI Soe 59.90 209 P **P** 16 15 47.3 -0.2
comp=Z,72nm,1.0s
SOEI Soe 59.90 209 *e*P **P** 16 15 47.0 -0.5
comp=Z,48nm,0.7s
KBL Kabul 60.04 290 *e*P **P** 16 15 48.4 -0.1
KBL pmax pmax
comp=Z,74nm,0.6s
KBL Kabul 60.04 290 *e*P **P** 16 15 48.4 -0.1
comp=Z,74nm,0.6s
E09A Wood Farm, Sta 60.10 53 *e*P **P** 16 15 49.9 +1.4
comp=Z,67nm,1.4s
KHMM Horse Mountain 60.20 61 *e*P **P** 16 15 50.9 +1.5
comp=Z,31nm,1.2s
J05D Fort Rock, OR 60.25 57 P **P** 16 15 51.5 +1.7
baz=307,SNR=20
BUOR Burton Butte 60.26 59 P **P** 16 15 51.1 +1.3
YBH Yreka Blue Hor 60.30 59 *e*P **P** 16 15 51.1 +1.1
YBH pmax pmax
comp=Z,34nm,1.2s
YBH Yreka Blue Hor 60.30 59 *e*P **P** 16 15 51.1 +1.1
comp=Z,34nm,1.2s
K04D Chiloquin, OR 60.34 58 P **P** 16 15 51.5 +1.2
baz=307
G08A Pilot Rock 60.37 54 *e*P **P** 16 15 51.2 +0.8
comp=Z,12nm,0.9s
M02C Callahan 60.42 60 P **P** 16 15 53.0 +2.2
baz=307,SNR=10
N02D Trinity Center 60.76 60 P **P** 16 15 55.1 +2.0
baz=307,SNR=7.0
K05A Summer Lake 60.79 58 P **P** 16 15 55.2 +1.8
M04C Macdoel 60.79 59 P **P** 16 15 54.7 +1.3
baz=307,SNR=14
MTN Manton Dam 60.81 201 *e*P **P** 16 15 53.6 +0.1
comp=Z,108nm,0.9s
WALA Waterton Lakes 60.85 48 *e*P **P** 16 15 54.3 +0.6
comp=Z,48nm,1.3s
F10A Beach Ranch, E 60.93 53 *e*P **P** 16 15 54.8 +0.5
comp=Z,24nm,1.3s
WDC Whiskeytown Da 61.09 60 *e*P **P** 16 15 56.2 +0.9
WDC pmax pmax
comp=Z,20nm,1.1s
WDC Whiskeytown Da 61.09 60 *e*P **P** 16 15 56.2 +0.9
comp=Z,20nm,1.1s
BSMT Bassoo Peak 61.13 50 P **P** 16 15 56.9 +1.3
BLMT Blacktail Moun 61.25 50 *e*P **P** 16 15 57.3 +0.8
PPBI Pangkal Pinang 61.32 232 P **P** 16 15 58.8 +1.8
comp=Z,61nm,0.9s,comp=Z,784nm
JTMT Jette 61.46 50 *e*P **P** 16 15 58.6 +0.8
PSI Prapat 61.50 241 *e*P **P** 16 15 58.8 +0.3
PSI pmax pmax
comp=Z,51nm,1.0s
PSI Prapat 61.50 241 *e*P **P** 16 15 58.8 +0.3
comp=Z,51nm,1.0s
YBMT Yellow Bay 61.53 50 *e*P **P** 16 15 59.2 +0.9
BMO Blue Mountains 61.57 54 *e*P **P** 16 15 59.4 +0.9
comp=Z,43nm,1.6s
LOF Lofoten 61.58 343 *e*P **P** 16 15 57.5 -0.5
MOD Modoc Plateau 61.63 58 *e*P **P** 16 15 59.9 +0.8
comp=Z,54nm,1.4s
SUMG Summit 61.66 3 *i* P **P** 16 15 59.0 0.0
comp=Z,39nm,0.7s
SUMG Summit 61.66 3 *e*P **P** 16 15 58.7 -0.3
SUMG pmax pmax
comp=Z,44nm,0.8s
SUMG Summit 61.66 3 *e*P **P** 16 15 58.7 -0.3
comp=Z,44nm,0.8s
O03D Paynes Creek 61.72 60 P **P** 16 16 00.5 +1.0
baz=308,SNR=16
SWMT Swartz Lake 61.76 50 *e*P **P** 16 16 00.5 +0.8
TWSI Taliwang, Sumb 61.78 217 P **P** 16 15 59.6 -0.5
comp=Z,25nm,0.9s
MLSI Meulaboh, Aceh 61.93 245 P **P** 16 16 01.3 +0.1
comp=Z,212nm,0.8s
BKNI Bangkinang 62.19 238 *e*P **P** 16 16 03.9 +1.0
comp=Z,56nm,0.5s
MSO Missoula 62.21 50 P **P** 16 16 03.6 +0.9
baz=309,SNR=44
MSO Missoula 62.21 50 *e*P **P** 16 16 03.2 +0.5
comp=Z,56nm,1.1s
TPTI 62.22 243 P **P** 16 16 02.2 -0.9
WVOR Wild Horse Val 62.29 57 *e*P **P** 16 16 03.7 +0.3
WVOR pmax pmax
comp=Z,42nm,1.3s
WVOR Wild Horse Val 62.29 57 *e*P **P** 16 16 03.7 +0.3
comp=Z,42nm,1.3s
ORV Oroville 62.35 61 *e*P **P** 16 16 03.8 +0.1
ORV pmax pmax
comp=Z,22nm,1.4s
ORV Oroville 62.35 61 *e*P **P** 16 16 03.8 +0.1
comp=Z,22nm,1.4s
CHMT Chamberlain Mo 62.52 50 P **P** 16 16 05.6 +0.6
FFC Flin Flon 62.93 38 *e*P **P** 16 16 07.6 +0.3
FFC pmax pmax
comp=Z,67nm,1.2s
FFC Flin Flon 62.93 38 *e*P **P** 16 16 07.6 +0.3
comp=Z,67nm,1.2s
FFC Flin Flon 62.93 38 *e*P **P** 16 16 08.0 +0.7
AFDM Forest Hills D 63.05 61 *e*P **P** 16 16 08.9 +0.5
comp=Z,20nm,1.2s
FCC Fort Churchill 63.28 32 *e*P **P**
FCC pmax pmax
comp=Z,45nm,0.5s
FCC Fort Churchill 63.28 32 *e*P **P** 16 16 09.4 0.0
comp=Z,45nm,0.5s
MFID Camas Ranch 63.30 54 *e*P **P** 16 16 10.4 +0.3
comp=Z,18nm,1.3s
HRY Holter Researc 63.41 50 *e*P **P** 16 16 11.6 +0.9
VAF Ylistaro 63.47 336 P **P** 16 16 10.9 +0.3
VAF pmax pmax
comp=Z,33nm,0.8s
GSI Gunungsitoli 63.51 242 *e*P **P** 16 16 12.0 +0.4
comp=Z,34nm,0.7s
PAHR Pah Rah Range 63.54 59 *e*P **P** 16 16 12.2 +0.5
comp=Z,27nm,1.0s
LRM Limekiln Ridge 63.65 51 *e*P **P** 16 16 13.0 +0.6
EGMT Eagleton 63.66 47 P **P** 16 16 13.3 +1.1
baz=310,SNR=26
EGMT Eagleton 63.66 47 *e*P **P** 16 16 12.1 -0.2
comp=Z,48nm,1.0s
MOS Moscow 63.68 324 *e*P **P** 16 16 10.1 -2.1
MOS *e* 16 16 53.0
MOS *e*S **S** 16 24 29.1 -4.2
MOS pmax pmax
comp=Z,74nm,1.3s
FIA1 FINESS Array S 63.69 333 *e*P **P** 16 16 10.7 -1.4
FINES FINESS Array B 63.69 333 P **P** 16 16 11.5 -0.6
comp=Z,59nm,0.6s,baz=37,slow=8.2,SNR=302
FINES FINESS Array B 63.69 333 P **P** 16 16 11.5 -0.6
FINES pmax pmax
comp=Z,58nm,0.6s
SCO Scoresbysund 63.73 357 *i* P **P** 16 16 12.5 +0.2
comp=Z,8.7nm,0.7s
SCO Scoresbysund 63.73 357 *e*P **P** 16 16 12.5 +0.2
SCO pmax pmax
comp=Z,9.0nm,0.7s
DLMT Dillon 63.86 51 *e*P **P** 16 16 14.0 +0.3
comp=Z,20nm,0.9s
CMB Columbia Colle 63.98 61 *e*P **P** 16 16 14.6 +0.1
CMB pmax pmax
comp=Z,40nm,1.4s
CMB Columbia Colle 63.98 61 *e*P **P** 16 16 14.6 +0.1
comp=Z,40nm,1.4s
HLID Hailey 64.00 54 P **P** 16 16 15.9 +1.2
baz=310,SNR=21
HLID Hailey 64.00 54 *e*P **P** 16 16 14.9 +0.2
comp=Z,15nm,1.1s
MCMT McKenzie Canyo 64.06 52 *e*P **P** 16 16 15.3 +0.1
ILULI Ilulissat 64.16 8 *i* P **P** 16 16 14.9 -0.2
comp=Z,39nm,0.6s
ILULI Ilulissat 64.16 8 *i* P **P** 16 16 14.9 -0.2
ILULI pmax pmax
comp=Z,39nm,0.6s
BOZ Bozeman (W) 64.20 50 P **P** 16 16 17.4 +1.5
baz=310,SNR=47
BOZ Bozeman (W) 64.20 50 *e*P **P** 16 16 16.9 +0.9
BOZ pmax pmax
comp=Z,80nm,1.5s
BOZ Bozeman (W) 64.20 50 *e*P **P** 16 16 16.9 +0.9
comp=Z,80nm,1.5s
WAKR Walker 64.26 61 *e*P **P** 16 16 17.4 +0.9
comp=Z,32nm,1.3s
BMN Battle Mountai 64.37 58 *e*P **P** 16 16 18.1 +0.9
BMN pmax pmax
comp=Z,43nm,1.4s
BMN Battle Mountai 64.37 58 *e*P **P** 16 16 18.1 +0.9
comp=Z,44nm,1.4s
HYB Hyderabad 64.52 269 *i* P **P** 16 16 18.5 +0.2
OBN Obninsk 64.55 324 P **P** 16 16 17.0 -0.8
comp=Z,38nm,0.5s,baz=92,slow=1.9,SNR=17
OBN Obninsk 64.55 324 *ce*P **P** 16 16 17.2 -0.6
OBN *e* 16 16 52.4
OBN *e**PP **pP** 16 16 57.0 +1.3
OBN *e* 16 18 42.0
OBN *e*PPP PPP 16 20 12.4
OBN *i* S **S** 16 24 35.9 -8.1
OBN pmax pmax
comp=Z,70nm,0.9s
OBN Obninsk 64.55 324 *e*P **P** 16 16 16.7 -1.1
comp=Z,49nm,0.7s
OBN Obninsk 64.55 324 *e*P **P** 16 16 17.2 -0.6
QLMT Earthquake Lak 64.83 51 *e*P **P** 16 16 21.1 +1.0
GEYT Alibeck 64.87 299 P **P** 16 16 21.3 +1.1
comp=Z,17nm,0.6s,baz=39,slow=2.8,SNR=52
NSS Namsos 64.97 341 *e*P **P** 16 16 19.8 -0.6
NSS IAmb IAmb 16 16 20.5
comp=Z,23nm,0.7s
YHB Horse Butte 65.01 51 *e*P **P** 16 16 22.1 +0.8
comp=Z,71nm,1.5s
VRH Novokhopyorsk 65.02 319 *e*P **P** 16 16 20.5 -0.4
VRH pmax pmax
comp=Z,3.0nm,0.8s
GCMT Greycliff 65.15 49 *e*P **P** 16 16 22.8 +0.7
YHH Holmes Hill 65.17 51 *e*P **P** 16 16 22.7 +0.3
comp=Z,37nm,1.2s
ELK Elko 65.33 56 *e*P **P** 16 16 24.3 +0.8
ELK pmax pmax
comp=Z,32nm,1.8s
ELK Elko 65.33 56 *e*P **P** 16 16 24.3 +0.8
comp=Z,32nm,1.8s
YPP Pitchstone Pla 65.54 51 *e*P **P** 16 16 25.6 +0.8
comp=Z,24nm,1.4s
H17A Grant Village 65.58 51 P **P** 16 16 27.7 +2.7
baz=311,SNR=14
H17A Grant Village 65.58 51 *e*P **P** 16 16 25.6 +0.6
comp=Z,54nm,1.2s
IMW Indian Meadow 65.71 51 *e*P **P** 16 16 27.1 +1.2
comp=Z,39nm,1.2s
FLWY Flagg Ranch 65.72 51 *e*P **P** 16 16 26.8 +1.0
comp=Z,24nm,1.2s
VSU Vasula 65.76 331 *d* P **P** 16 16 25.4 -0.1
VSU pmax pmax
comp=Z,111nm,0.7s
CTA Charters Tower 65.77 183 P **P** 16 16 26.2 +0.2
comp=Z,10nm,0.9s,baz=9.2,slow=9.9,SNR=7.7
CTA PcP **PcP** 16 16 56.8 +0.9
comp=Z,3.1nm,0.6s,baz=4.7,slow=8.0,SNR=3.9
CTAO Charters Tower 65.77 183 *e*P **P** 16 16 25.7 -0.4
CTAO pmax pmax
comp=Z,19nm,1.0s
CTAO Charters Tower 65.77 183 *e*P **P** 16 16 25.6 -0.4
comp=Z,19nm,1.0s
RLMT Red Lodge 65.80 50 P **P** 16 16 27.8 +1.4
baz=312,SNR=12
RLMT Red Lodge 65.80 50 *e*P **P** 16 16 27.4 +1.1
comp=Z,52nm,1.3s
MOOW Moose Ponds 65.91 51 *e*P **P** 16 16 28.3 +1.1
comp=Z,35nm,1.1s
TPAW Teton Pass 65.97 52 *e*P **P** 16 16 28.9 +1.3
comp=Z,82nm,1.3s
HVU Hansel Valley 66.07 54 *e*P **P** 16 16 28.9 +0.8
HVU pmax pmax
comp=Z,24nm,1.2s
HVU Hansel Valley 66.07 54 *e*P **P** 16 16 28.9 +0.8
comp=Z,24nm,1.2s
LOHW Long Hollow 66.08 52 *e*P **P** 16 16 29.5 +1.4
comp=Z,26nm,1.0s
SNOW Snow King Moun 66.09 52 *e*P **P** 16 16 29.6 +1.2
comp=Z,45nm,1.3s
REDW Red Top Meadow 66.11 52 *e*P **P** 16 16 29.6 +1.2
comp=Z,66nm,1.3s
DGMT Dagmar 66.14 44 P **P** 16 16 29.1 +0.9
baz=313,SNR=7.1
DGMT Dagmar 66.14 44 *e*P **P** 16 16 28.8 +0.5
comp=Z,45nm,0.6s
VSR Storozhevoye 66.17 320 *e*P **P** 16 16 28.4 +0.1
VSR pmax pmax
comp=Z,40nm,0.8s
VES Vestal, Richgr 66.18 63 P **P** 16 16 28.6 -0.1
baz=310,SNR=5.3
LAO LASA Array 66.34 47 *e*P **P** 16 16 30.4 +0.8
comp=Z,42nm,1.1s
PKM Mcpherson Peak 66.34 64 P **P** 16 16 31.3 +1.4
baz=311,SNR=5.5
A25A Svangstu Ranch 66.35 43 P **P** 16 16 30.8 +1.2
baz=314,SNR=6.4
SFJD Kangerlussuaq 66.36 9 *i* P **P** 16 16 29.5 +0.3
comp=Z,34nm,0.8s
SFJD Kangerlussuaq 66.36 9 *i* P **P** 16 16 29.5 +0.3
SFJD pmax pmax
comp=Z,34nm,0.8s
SFJD Kangerlussuaq 66.36 9 *e*P **P** 16 16 28.7 -0.5
comp=Z,36nm,0.7s
AHID Auburn Hatcher 66.36 52 *e*P **P** 16 16 30.5 +0.6
comp=Z,15nm,0.8s
CWC Cottonwood Cre 66.41 62 P **P** 16 16 31.2 +0.9
baz=311
BGU Big Grassy Mou 66.49 55 *e*P **P** 16 16 31.4 +0.7
comp=Z,13nm,1.4s
GRAC Grapevine Rang 66.49 61 P **P** 16 16 32.2 +1.6
baz=311,SNR=17
SPUT South Promonto 66.57 54 *e*P **P** 16 16 32.0 +0.7
comp=Z,36nm,1.2s
ISA Isabella, Lake 66.67 62 P **P** 16 16 32.0 +0.1
baz=311
ISA Isabella, Lake 66.67 62 *e*P **P** 16 16 31.4 -0.5
ISA pmax pmax
comp=Z,32nm,1.5s
ISA Isabella, Lake 66.67 62 *e*P **P** 16 16 31.4 -0.5
comp=Z,32nm,1.5s
R11A Troy Canyon, C 66.68 59 P **P** 16 16 32.9 +0.9
baz=311,SNR=35
R11A Troy Canyon, C 66.68 59 *e*P **P** 16 16 32.3 +0.2
comp=Z,17nm,1.1s
DAC Darwin (Calif) 66.82 61 *e*P **P** 16 16 33.3 +0.4
DAC pmax pmax
comp=Z,29nm,1.4s
DAC Darwin (Calif) 66.82 61 *e*P **P** 16 16 33.3 +0.4
comp=Z,29nm,1.4s
HWUT Hardware Ranch 66.87 54 *e*P **P** 16 16 34.0 +0.8
comp=Z,28nm,1.0s
A26A Wade Farm, Ken 66.89 43 P **P** 16 16 34.0 +1.0
baz=314,SNR=5.1
WRAB Tennant Creek 66.98 196 *d* P **P** 16 16 33.5 -0.3
WRAB pmax pmax
comp=Z,138nm,0.8s
WRAB Tennant Creek 66.98 196 *e*P **P** 16 16 33.5 -0.3
comp=Z,52nm,0.8s
WB2 Warramunga Arr 66.99 196 *e*P **P** 16 16 33.6 -0.2
comp=Z,58nm,0.6s
WB2 *e*PcP **PcP** 16 17 01.7 +0.7
WRA Warramunga Arr 67.00 196 P **P** 16 16 33.6 -0.2
comp=Z,51nm,0.6s,baz=11,slow=6.6,SNR=172
WRA PcP **PcP** 16 17 02.3 +1.3
comp=Z,15nm,0.7s,baz=13,slow=4.9,SNR=9.7
WRA PKP2bc 16 45 02.8
comp=Z,1.8nm,0.8s,baz=201,slow=3.3,SNR=5.2
MPMC Manual Prospec 67.02 62 P **P** 16 16 35.2 +0.9
baz=311,SNR=22
POO Poona 67.05 273 *ex* **P** 16 16 33.0 -1.4
DUG Dugway, Tooele 67.09 56 P **P** 16 16 35.7 +1.1
baz=312,SNR=40
DUG Dugway, Tooele 67.09 56 *e*P **P** 16 16 35.4 +0.9
DUG pmax pmax
comp=Z,23nm,0.9s
DUG Dugway, Tooele 67.09 56 *e*P **P** 16 16 35.4 +0.9
comp=Z,23nm,0.9s
FURC Furnace Creek, 67.14 61 P **P** 16 16 35.8 +1.2
baz=311,SNR=30
B26A Jensen Ranch, 67.16 43 P **P** 16 16 35.5 +0.8
baz=314
TPNV Topopah Spring 67.20 60 P **P** 16 16 36.2 +0.9
baz=311,SNR=29
TPNV Topopah Spring 67.20 60 *e*P **P** 16 16 35.6 +0.3
TPNV pmax pmax
comp=Z,62nm,1.4s
TPNV Topopah Spring 67.20 60 *e*P **P** 16 16 35.6 +0.3
comp=Z,62nm,1.4s
OSI Osito Audit: C 67.20 63 P **P** 16 16 36.2 +1.0
baz=311
OSI Osito Audit: C 67.20 63 *e*P **P** 16 16 35.5 +0.3
comp=Z,27nm,1.0s
BW06 Boulder Array 67.21 52 P **P** 16 16 36.0 +0.6
baz=312,SNR=19
BW06 Boulder Array 67.21 52 *e*P **P** 16 16 35.5 +0.1
comp=Z,45nm,1.4s
PD31 Pinedale Array 67.21 52 *e*P **P** 16 16 35.8 +0.4
PDAR Pinedale Array 67.21 52 P **P** 16 16 36.0 +0.7
comp=Z,8.1nm,0.6s,baz=299,slow=3.1,SNR=56
A27A Ledoux Ranch, 67.23 42 P **P** 16 16 36.4 +1.3
baz=315
LRMC Laurel Mtn Rad 67.28 62 P **P** 16 16 36.3 +0.5
baz=311,SNR=16
FITZ Fitzroy Crossi 67.31 205 *e*P **P** 16 16 36.3 +0.5
comp=Z,50nm,1.1s
BLG Laguna Peak, P 67.32 64 P **P** 16 16 36.4 +0.5
baz=311
CTU Camp Tracy 67.37 55 *e*P **P** 16 16 37.2 +0.8
comp=Z,75nm,1.3s
EDW2 Edwards Air Fo 67.48 63 P **P** 16 16 37.9 +0.9
baz=311,SNR=29
JLU Jordanelle 67.60 54 *e*P **P** 16 16 38.5 +0.6
comp=Z,30nm,1.2s
DECC Green Verdugo 67.68 63 P **P** 16 16 39.1 +0.9
baz=311
A28A Rude Farm, Bot 67.71 42 P **P** 16 16 38.9 +0.8
baz=315
SHOC Shoshone, Teco 67.87 61 P **P** 16 16 40.0 +0.7
baz=312,SNR=9.4
MWC Mount Wilson 67.87 63 *e*P **P** 16 16 39.9 +0.3
MWC pmax pmax
comp=Z,42nm,1.4s
MWC Mount Wilson 67.87 63 *e*P **P** 16 16 39.9 +0.3
comp=Z,42nm,1.4s
GSC Goldstone, Bar 67.94 62 P **P** 16 16 40.5 +0.7
baz=312,SNR=13
GSC Goldstone, Bar 67.94 62 *e*P **P** 16 16 40.1 +0.2
GSC pmax pmax
comp=Z,25nm,1.3s
GSC Goldstone, Bar 67.94 62 *e*P **P** 16 16 40.1 +0.2
comp=Z,25nm,1.3s
NC303 NORSAR Array S 67.97 340 *e*P **P** 16 16 38.5 -1.0
NC405 NORSAR Array S 67.98 339 *e*P **P** 16 16 38.7 -0.9
B28A Dugan Ranch, T 68.00 42 P **P** 16 16 40.4 +0.5
baz=315
D26A Manning 68.00 45 P **P** 16 16 40.2 +0.2
baz=314
NC204 NORSAR Array S 68.07 340 *e*P **P** 16 16 39.3 -0.9
BFSC Mount Baldy Ra 68.11 63 P **P** 16 16 41.8 +0.8
baz=312,SNR=11
AKN Aaknes 68.13 342 *e*P **P** 16 16 40.3 -0.2
NB201 NORSAR Array S 68.14 340 *e*P **P** 16 16 39.8 -0.8
SHPR Sheep Range 68.15 60 *e*P **P** 16 16 41.7 +0.4
comp=Z,40nm,1.3s
NB2 NORSAR Subarra 68.17 340 P **P** 16 16 40.0 -0.7
comp=Z,27nm,0.6s,baz=28,slow=6.5
NB2 NORSAR Subarra 68.17 340 P **P** 16 16 40.0 -0.7
baz=28,slow=6.5
NOA NORSAR Array B 68.17 340 P **P** 16 16 40.1 -0.7
comp=Z,30nm,0.6s,baz=30,slow=6.4,SNR=148
NOA NORSAR Array B 68.17 340 P **P** 16 16 40.1 -0.7
NOA pmax pmax
comp=Z,44nm,0.6s
A29A Manning Farm, 68.19 41 P **P** 16 16 41.7 +0.6
baz=316,SNR=9.2
NBO02 NORSAR Array S 68.24 340 *e*P **P** 16 16 40.2 -1.0
NBO00 NORSAR Array S 68.28 340 *e*P **P** 16 16 40.5 -1.0
NC602 NORSAR Array S 68.35 339 *e*P **P** 16 16 40.7 -1.2
NC602 IAmb IAmb 16 16 42.5
comp=Z,21nm,0.9s
NC602 NORSAR Array S 68.35 339 *e*P **P** 16 16 40.4 -1.5
TUQ Turquoise Moun 68.39 61 P **P** 16 16 43.6 +0.8
baz=312,SNR=12
NAO01 NORSAR Array S 68.42 340 *e*P **P** 16 16 41.1 -1.2
B29A Wagenman Farm, 68.46 42 P **P** 16 16 43.8 +1.1
baz=316,SNR=10
NACGM Naroch 68.50 329 *e* **P** 16 16 41.0 -1.8
CCUT Cedar City 68.53 58 *e*P **P** 16 16 43.4 -0.2

comp=Z,24nm,1.3s
HEC Hector,Ludlow 68.54 62 P P 16 16 44.9 +1.3
baz=312,SNR=5.2
MSU Marysvale 68.58 57 *e*P P 16 16 44.7 +0.7
MSU Marysvale 68.58 57 *e*P P 16 16 44.7 +0.7
A30A Hoffart Farm, 68.60 41 P P 16 16 44.8 +1.1
baz=316
GOF Gofitskoye 68.61 313⇓ *i*P P 16 16 44.9 +1.2
GOF pmax pmax
comp=Z,255nm,0.8s
TMUT Trail Mountain 68.61 55 *e*P P 16 16 44.7 +0.4
comp=Z,15nm,0.9s
ULM Lac du Bonnet 68.73 39 P P 16 16 44.4 0.0
comp=Z,6.3nm,0.5s,baz=309,slow=6.8,SNR=14
ULM Lac du Bonnet 68.73 39 *e*P P 16 16 44.1 -0.3
ULM pmax pmax
comp=Z,40nm,1.4s
ULM Lac du Bonnet 68.73 39 *e*P P 16 16 44.1 -0.3
comp=Z,40nm,1.4s
P17A Butcher Ranch, 68.76 55 *e*P P 16 16 45.7 +0.7
comp=Z,57nm,1.3s
MDND Maddock 68.78 42 P P 16 16 46.3 +1.5
baz=316
MDND Maddock 68.78 42 *e*P P 16 16 44.9 +0.1
comp=Z,49nm,1.1s
MURC Murrieta 68.82 63 P P 16 16 45.9 +0.6
baz=312,SNR=5.3
MTPU Mount Pierson 68.89 57 *e*P P 16 16 47.2 +1.1
comp=Z,12nm,0.9s
K22A Casper 68.93 50 P P 16 16 46.6 +0.5
baz=314,SNR=14
K22A Casper 68.93 50 *e*P P 16 16 45.6 -0.5
comp=Z,89nm,1.5s
B30A Myrvik Farm, E 68.94 41 P P 16 16 46.8 +1.0
baz=316,SNR=16
LCMT Little Creek M 68.96 58 *e*P P 16 16 46.9 +0.7
comp=Z,37nm,1.4s
GMRC Granite Mounta 68.98 61 P P 16 16 47.3 +0.9
baz=312,SNR=13
H25A Fruitdale 69.10 47 P P 16 16 47.4 +0.6
baz=315
LDFC Landfair 69.12 61 *e*P P 16 16 47.7 +0.4
comp=Z,117nm,1.4s
SRU San Rafael Swe 69.13 55 *e*P P 16 16 47.5 +0.2
SRU pmax pmax
comp=Z,29nm,0.8s
SRU San Rafael Swe 69.13 55 *e*P P 16 16 47.5 +0.2
comp=Z,29nm,0.8s
HYA Hoyanger 69.21 342 *e*P P 16 16 46.9 -0.2
HYA IAmb IAmb 16 16 48.5
comp=Z,32nm,0.9s
PKCU Pink Cliffs 69.22 57 *e*P P 16 16 48.8 +0.7
comp=Z,27nm,1.6s
RSSD Black Hills 69.22 48 P P 16 16 48.4 +0.6
baz=314
RSSD Black Hills 69.22 48 *e*P P 16 16 47.7 -0.1
RSSD pmax pmax
comp=Z,62nm,1.4s
RSSD Black Hills 69.22 48 *e*P P 16 16 47.7 -0.1
comp=Z,62nm,1.4s
PFO Pinyon Flats O 69.27 63 P P 16 16 48.8 +0.6
baz=312,SNR=6.9
PFO Pinyon Flats O 69.27 63 *e*P P 16 16 47.8 -0.4
PFO pmax pmax
comp=Z,29nm,1.4s
PFO Pinyon Flats O 69.27 63 *e*P P 16 16 47.8 -0.4
comp=Z,29nm,1.4s
B31A Greenbush Farm 69.27 41 P P 16 16 48.4 +0.7
baz=317,SNR=6.3
TPFO Pinon Flats 69.28 63 P P 16 16 49.0 +0.8
baz=312,SNR=8.7
BELC Belle Mtn. Jos 69.30 62 P P 16 16 48.8 +0.4
baz=312,SNR=7.0
109C Camp Elliot, M 69.35 64 P P 16 16 49.4 +0.9
baz=312
DZM Mont Dzumac 69.40 163 P P 16 16 51.3 +2.5
comp=Z,26nm,0.8s,baz=32,slow=7.5,SNR=16
DZM Mont Dzumac 69.40 163 *e*P P 16 16 49.8 +1.0
comp=Z,32nm,0.9s
NCK Nalchik 69.41 312⇑ *e*P P 16 16 50.1 +1.4
NCK pmax pmax
comp=Z,60nm,0.6s
C30A Mose, Pekin 69.41 42 P P 16 16 49.0 +0.3
baz=316,SNR=5.4
A32A Rocking H Ranc 69.44 40 P P 16 16 49.0 +0.2
baz=317,SNR=7.7
KVAR Kislovodsk Arr 69.55 312 P P 16 16 51.1 +1.3
comp=Z,95nm,0.8s,baz=269,slow=2.5,SNR=36
KIV Kislovodsk 69.56 312 *i* P P 16 16 51.0 +1.3
SNR=10
KIV Kislovodsk 69.56 312 *e*P P 16 16 51.1 +1.3
KIV *e*S S 16 25 46.2 +1.6
KIV pmax pmax
comp=Z,135nm,0.9s
KIV pmax pmax
comp=Z,25nm,5.3s
KIV Kislovodsk 69.56 312 P P 16 16 51.2 +1.5
SNR=17
KIV Kislovodsk 69.56 312 *e*P P 16 16 51.0 +1.3
comp=Z,120nm,0.8s
KIV Kislovodsk 69.56 312 *e*P P 16 16 51.1 +1.3
KBZ Khabaz 69.61 312 P P 16 16 51.4 +1.5
comp=Z,63nm,0.8s,baz=72,slow=3.4,SNR=136
KBZ LR LR 16 52 20.2
comp=Z,103nm,19.2s,baz=40,slow=40
IRM Iron Mountain 69.72 62 P P 16 16 51.7 +0.8
baz=312,SNR=26
O20A White River Ci 69.72 53 P P 16 16 51.7 +0.8
baz=314,SNR=12
O20A White River Ci 69.72 53 *e*P P 16 16 51.0 0.0
comp=Z,16nm,0.8s
BAR Barrett 69.76 64 *e*P P 16 16 51.1 0.0
comp=Z,35nm,1.4s
MONP2 Monument Peak 69.77 63 P P 16 16 51.8 +0.4
baz=312,SNR=7.2
KONO Kongsberg 69.78 340 *de*P P 16 16 51.0 +0.4
KONO pmax pmax
comp=Z,171nm,1.5s
KONO Kongsberg 69.78 340 *e*P P 16 16 50.4 -0.3
comp=Z,55nm,1.6s
B32A Ashes, Strandq 69.80 40 P P 16 16 51.3 +0.3
baz=317
W13A Hualapai Mount 69.86 60 *e*P P 16 16 52.1 +0.3
comp=Z,26nm,1.4s
BC3 Big Chuckawall 69.86 62 P P 16 16 52.3 +0.4
baz=312,SNR=16
U15A North Rim 69.91 58 *e*P P 16 16 53.1 +0.8
comp=Z,48nm,1.4s
A33A Warroad 69.92 39 P P 16 16 52.0 +0.3
baz=318,SNR=6.6
SEAG Tbilisi Sea 69.97 310 P P 16 16 54.3 +2.0
TBLG Delisi 70.03 310 P P 16 16 54.3 +1.6
TBLG Delisi 70.03 310 *e*P P 16 16 54.2 +1.6
NEY Neytrino 70.04 312⇓ *i*P P 16 16 54.5 +1.7
NEY pmax pmax
comp=Z,6.0nm,0.6s
ASK Askoy 70.04 342 *e*P P 16 16 52.3 +0.1
ASK IAmb IAmb 16 16 53.8
comp=Z,19nm,0.8s
BER Bergen 70.10 342 *e*P P 16 16 52.7 +0.1
BER IAmb IAmb 16 16 54.1
comp=Z,30nm,0.8s
F29A Eureka 70.12 44 P P 16 16 53.7 +0.7
baz=316
ONI Oni 70.12 311 P P 16 16 55.6 +2.4
ONI Oni 70.12 311 *e*P P 16 16 55.5 +2.4
PALK Pallekele 70.12 260 *e*P P 16 16 54.0 +0.5
PALK pmax pmax
comp=Z,31nm,0.9s
PALK Pallekele 70.12 260 *e*P P 16 16 54.0 +0.5
comp=Z,31nm,0.9s
SWSC Sam W. Stewart 70.13 63 P P 16 16 53.8 +0.6
baz=312
IKP In-Ko-Pah, Jac 70.13 63 P P 16 16 53.9 +0.5
baz=312,SNR=9.4
AGMN Agassiz Nation 70.18 40 P P 16 16 53.2 -0.1
baz=318,SNR=16
AGMN Agassiz Nation 70.18 40 *e*P P 16 16 52.9 -0.5
comp=Z,40nm,1.3s
PDMCI Parker Dam,Lak 70.23 61 P P 16 16 54.7 +0.8
baz=313,SNR=11
D31A Mcclaflin, Tow 70.24 42 P P 16 16 54.2 +0.5
baz=317,SNR=6.8
B33A Robert and Kas 70.32 40 P P 16 16 54.2 +0.1
baz=318
PV09 Paradox Valley 70.34 55 *e*P P 16 16 55.6 +0.7
Y12C Blythe 70.37 62 P P 16 16 55.8 +1.0
baz=313,SNR=11
Y12C Blythe 70.37 62 *e*P P 16 16 55.3 +0.6
comp=Z,67nm,1.4s
PHWY Pilot Hill 70.44 51 *e*P P 16 16 55.9 +0.5
comp=Z,17nm,1.4s
N23A Red Feather La 70.46 51 P P 16 16 56.7 +1.2
baz=314,SNR=17
N23A Red Feather La 70.46 51 *e*P P 16 16 56.4 +0.9
comp=Z,53nm,1.4s
PV10 Paradox Valley 70.48 55 *e*P P 16 16 56.5 +0.9
SUW Suwalki 70.49 330 *e*P P 16 16 54.6 -0.5
SUW Suwalki 70.49 330 *e*P P 16 16 54.6 -0.5
E31A Nome 70.52 43 P P 16 16 56.1 +0.6
baz=317
PV04 Paradox Valley 70.54 55 *e*P P 16 16 56.7 +0.7
B34A Aery, Baudette 70.58 39 P P 16 16 55.5 -0.3
baz=318,SNR=13
C33A Trail 70.62 41 P P 16 16 56.2 +0.2
baz=318
PV05 Paradox Valley 70.65 55 *e*P P 16 16 57.3 +0.6
GLA Glamis 70.66 62 P P 16 16 57.0 +0.5
baz=313,SNR=5.5
GLA Glamis 70.66 62 *e*P P 16 16 57.4 +0.8
GLA pmax pmax
comp=Z,57nm,1.4s
GLA Glamis 70.66 62 *e*P P 16 16 57.4 +0.8
comp=Z,57nm,1.4s
AS01 Alice Springs 70.70 195 *e*P P 16 16 57.5 +0.9
AS31 Alice Springs 70.71 195 *e*P P 16 16 57.5 +0.8
comp=Z,18nm,0.6s
ASAR Alice Springs 70.71 195 P P 16 16 57.9 +1.1
comp=Z,49nm,0.7s,baz=7.6,slow=6.0,SNR=434
ASAR Alice Springs 70.71 195 P P 16 16 57.9 +1.1
ASAR pmax pmax
comp=Z,50nm,0.7s
BLS5 Blasjo 70.72 341 *e*P P 16 16 56.6 +0.2
CHVG Ch'k'valeri 70.74 312 P P 16 16 58.5 +1.6
AKASG Malin Array Be 70.81 324 P P 16 16 56.4 -0.7
comp=Z,38nm,0.5s,baz=37,slow=6.3,SNR=124
AKBB Malin Array Si 70.81 324 *e*P P 16 16 56.2 -0.9
AKBB pmax pmax
comp=Z,50nm,0.6s
AKBB Malin Array Si 70.81 324 *e*P P 16 16 56.2 -0.9
comp=Z,50nm,0.6s
KIEV Kiev 70.82 324 *c i*P P 16 16 56.3 -0.8
KIEV pmax pmax
comp=Z,42nm,0.6s
KIEV Kiev 70.82 324 *e*P P 16 16 56.1 -1.0
comp=Z,48nm,0.6s
AK11 Malin Array Si 70.85 324 *e*P P 16 16 56.3 -1.0
F31A Hecla 70.86 43 P P 16 16 57.4 -0.1
baz=317
PV01 Paradox Valley 70.91 55 *e*P P 16 16 58.6 +0.3
AKH Akhalkalaki 70.92 310⇑ *i*P P 16 16 59.8 +1.6
AKH Akhalkalaki 70.92 310 P P 16 16 59.8 +1.6
G30A Faulkton 70.96 44 P P 16 16 58.3 +0.2
baz=317,SNR=7.5
EIDS Eidsvold 70.97 179 *e*P P 16 16 60.0 +1.7
comp=Z,15nm,0.7s
KLNR Kaliningrad 71.03 332⇓ *i*P P 16 16 58.1 -0.2
WUAZ Wupatki 71.08 58 P P 16 17 00.3 +1.1
baz=314,SNR=12
WUAZ Wupatki 71.08 58 *e*P P 16 17 00.0 +0.8
comp=Z,58nm,1.6s
B35A Bob, Littlefor 71.08 39 P P 16 16 58.6 -0.2
baz=319,SNR=17
SMCO Snowmass 71.09 53 *e*P P 16 17 00.0 +0.5
comp=Z,29nm,1.4s
GNI Garni 71.14 308 P P 16 17 01.1 +1.6
comp=Z,13nm,0.6s,baz=147,slow=3.2,SNR=11
GNI Garni 71.14 308 *i* P P 16 17 01.2 +1.8
SNR=5.6
GNI Garni 71.14 308 *d i*P P 16 17 02.3 +2.8
GNI pmax pmax
comp=Z,209nm,1.6s
GNI Garni 71.14 308 P P 16 17 02.0 +2.6
SNR=7.1
GNI Garni 71.14 308 *e*P P 16 17 00.2 +0.7
comp=Z,105nm,1.5s
Y14A Wickenburg 71.17 61 *e*P P 16 17 00.2 +0.6
comp=Z,206nm,1.4s
STAV Stavanger 71.33 341 *e*P P 16 16 60.0 -0.1
STAV IAmb IAmb 16 17 01.6
comp=Z,36nm,1.2s
SOC Sochi 71.34 314 *c i*P P 16 17 00.5 +0.1
SOC *e* 16 19 39.6
SOC *e*PPP PPP 16 21 18.3
SOC *e*S S 16 26 04.6 -0.3
SOC pmax pmax
comp=Z,44nm,0.6s
D34A Park Rapids 71.38 41 P P 16 17 00.8 +0.2
baz=318,SNR=7.8
F32A Veblen 71.38 43 P P 16 17 00.9 +0.3
baz=318
ISCO Idaho Springs 71.41 52 P P 16 17 02.4 +1.1
baz=315,SNR=20
ISCO Idaho Springs 71.41 52 *e*P P 16 17 02.2 +0.9
ISCO pmax pmax
comp=Z,39nm,1.3s
ISCO Idaho Springs 71.41 52 *e*P P 16 17 02.2 +0.9
comp=Z,39nm,1.3s
E33A Weeby DABS, E 71.44 42 P P 16 17 01.4 +0.4
baz=318,SNR=5.2
C35A Jirik Farms, M 71.47 40 P P 16 17 01.0 -0.2
baz=319,SNR=6.5
113A Mohawk Valley, 71.50 62 *e*P P 16 17 02.1 +0.5
comp=Z,26nm,1.4s
SNART Snartemo 71.51 340 *e*P P 16 17 01.4 +0.2
SNART IAmb IAmb 16 17 02.6
comp=Z,18nm,0.6s
ANN Anapa 71.58 316 *e*P P 16 17 01.6 -0.2
ANN *e*'PP pP 16 17 41.8 +1.4
ANN *e* 16 19 39.1
ANN *e*S S 16 26 07.4 -0.3
ANN pmax pmax
comp=Z,62nm,1.0s
MVCO Mesa Verde 71.59 55 P P 16 17 03.1 +0.7
baz=314,SNR=12
MVCO Mesa Verde 71.59 55 *e*P P 16 17 02.9 +0.5
comp=Z,83nm,1.7s
LRW Lerwick 71.62 345⇓ *e*P P 16 17 01.6 -0.2
SAN1 Sandwick 71.74 345 *e*P P 16 17 02.1 -0.3
X16A Lo Mia Camp, P 71.79 59 *e*P P 16 17 04.5 +0.9
comp=Z,30nm,1.3s
F33A 5 Mile Ranch, 71.80 42 P P 16 17 03.3 +0.2
baz=318,SNR=7.3
E34A Wadena 71.82 41 P P 16 17 03.3 0.0
baz=319
D35A Remer 71.90 40 P P 16 17 03.6 -0.2
baz=319,SNR=9.1
C36A Pine Crest Far 71.93 39 P P 16 17 03.8 -0.1
baz=320,SNR=18
MBWA Marble Bar 72.05 209 *e*P P 16 17 04.9 +0.2
comp=Z,118nm,1.4s
J30A Dallas 72.10 46 P P 16 17 04.9 -0.1
baz=317,SNR=5.9
E35A Pequot Lakes 72.14 41 P P 16 17 05.1 0.0
baz=319
S22A 4UR Ranch, Cre 72.17 54 P P 16 17 07.2 +1.3
baz=315,SNR=34
S22A 4UR Ranch, Cre 72.17 54 *e*P P 16 17 06.9 +1.0
comp=Z,40nm,1.3s
G33A Ortonville 72.21 43 P P 16 17 06.0 +0.4
baz=318,SNR=11
D36A Goodland 72.22 40 P P 16 17 05.3 -0.3
baz=320,SNR=9.0
C37A Embarrass 72.23 39 P P 16 17 05.6 -0.1
baz=320,SNR=17
Q24A Divide 72.25 52 P P 16 17 07.3 +1.0
baz=315,SNR=8.5
Q24A Divide 72.25 52 *e*P P 16 17 06.8 +0.5
comp=Z,13nm,1.0s
BSD Bornholm Skovb 72.27 335 *i* P P 16 17 04.9 -0.8
comp=Z,38nm,0.7s
BSD Bornholm Skovb 72.27 335 *i* P P 16 17 04.9 -0.8
BSD pmax pmax
comp=Z,38nm,0.7s
F34A Alexandria 72.31 42 P P 16 17 06.5 +0.3
baz=319,SNR=6.1
W18A Petrified Fore 72.32 58 P P 16 17 07.8 +1.1
baz=314
W18A Petrified Fore 72.32 58 *e*P P 16 17 07.6 +0.9
EYMN Ely 72.37 38 P P 16 17 06.5 0.0
baz=320,SNR=28
EYMN Ely 72.37 38 *e*P P 16 17 06.1 -0.4
comp=Z,50nm,1.2s
H33A Prehn Over Nor 72.45 43 P P 16 17 07.4 +0.4
baz=318,SNR=6.9
J31A Geddes 72.50 45 P P 16 17 07.8 +0.4
baz=317
COP Copenhagen 72.50 336 *i* P P 16 17 06.4 -0.7
comp=Z,26nm,0.7s
COP Copenhagen 72.50 336 *e*P P 16 17 06.4 -0.7
COP pmax pmax
comp=Z,26nm,0.7s
OGNE Ogallala 72.52 49 P P 16 17 08.2 +0.6
baz=316,SNR=6.8
OGNE Ogallala 72.52 49 *e*P P 16 17 07.6 0.0
comp=Z,168nm,1.4s
G34A Benson 72.55 42 P P 16 17 07.9 +0.3
baz=319,SNR=7.1
D37A Cotton 72.56 39 P P 16 17 07.5 -0.1
baz=320,SNR=11
F35A Swanville 72.58 41 P P 16 17 08.1 +0.3
baz=319,SNR=6.0
X18A Snowflake 72.60 58 *e*P P 16 17 09.0 +0.7
comp=Z,45nm,1.5s
C38A Sawbill Land. 72.64 38 P P 16 17 08.0 -0.1
baz=320,SNR=25
214A Organ Pipe Nat 72.65 62 P P 16 17 09.3 +0.8
baz=314,SNR=6.7
E36A McGregor 72.68 40 P P 16 17 08.4 +0.1
baz=320,SNR=20
I33A Coleman 72.89 44 P P 16 17 10.0 +0.3
baz=318,SNR=6.6
H34A Spellman Lake, 72.92 43 P P 16 17 10.0 +0.3
baz=319
SDCO Great Sand Dun 72.92 53 P P 16 17 11.1 +0.9
baz=315,SNR=21
SDCO Great Sand Dun 72.92 53 *e*P P 16 17 10.7 +0.4
comp=Z,20nm,1.3s
K31A O'Neill 72.98 46 P P 16 17 11.0 +0.8
baz=318
F36A Milaca 73.06 41 P P 16 17 10.3 -0.4
baz=320,SNR=12
G35A Watkins 73.11 42 P P 16 17 11.5 +0.6
baz=319
BEL Belsk 73.11 330 *e*P P 16 17 11.1 +0.4
BEL Belsk 73.11 330 *e*P P 16 17 11.1 +0.4
SORM Soroca 73.16 323⇑ *i*P P 16 17 10.6 -0.5
ECSD EROS Data Cent 73.21 44 P P 16 17 11.8 +0.3
baz=318,SNR=33
ECSD EROS Data Cent 73.21 44 *e*P P 16 17 11.2 -0.3
comp=Z,76nm,1.5s
L31A Butterfield Fa 73.27 46 P P 16 17 12.4 +0.4
baz=318,SNR=5.7
H35A Sunnyside Ranc 73.34 42 P P 16 17 12.8 +0.6
baz=319,SNR=13
I34A Hadley 73.35 43 P P 16 17 12.4 +0.1
baz=319
J33A Davis 73.35 44 P P 16 17 12.3 -0.1
baz=318
G36A St. Michael 73.43 41 P P 16 17 13.0 +0.3
baz=320
LVV L'vov 73.56 327 *e*P P 16 17 13.5 +0.1
BIGH Upper Bighouse 73.64 346 *e*P P 16 17 13.8 0.0
TUC Tucson 73.64 60 P P 16 17 15.0 +0.7
baz=314
TUC Tucson 73.64 60 *e*P P 16 17 14.4 0.0
TUC pmax pmax
comp=Z,25nm,1.3s
TUC Tucson 73.64 60 *e*P P 16 17 14.4 0.0
comp=Z,25nm,1.3s
L32A Elgin 73.81 46 P P 16 17 15.1 0.0
baz=318
H36A Jessenland, He 73.85 42 P P 16 17 15.8 +0.5
baz=320
SPMN Marine on St. 73.87 41 P P 16 17 15.5 +0.2
baz=320,SNR=6.5
SPMN Marine on St. 73.87 41 *e*P P 16 17 15.0 -0.3
comp=Z,31nm,1.2s
I35A Creekview Farm 73.90 43 P P 16 17 15.6 0.0
baz=319
T25A Trinidad 73.96 53 P P 16 17 16.5 +0.2
baz=316,SNR=17
T25A Trinidad 73.96 53 *e*P P 16 17 16.2 -0.1
comp=Z,44nm,1.4s
BANOM Banah 73.98 291 *i* P P 16 17 17.7 +1.3
SNR=32
BANOM Banah 73.98 291 P P 16 17 17.3 +0.9
SNR=6.6
KWP Kalwaria Pacla 74.21 327 *e*P P 16 17 18.7 +1.4
KWP Kalwaria Pacla 74.21 327 *e*P P 16 17 18.7 +1.4
I36A Fitzsimmons Fa 74.23 42 P P 16 17 17.8 +0.3
baz=320,SNR=5.1
K34A Le Mars 74.25 44 P P 16 17 17.7 +0.1
baz=319
WSAR Wadi Sarin 74.29 287 P P 16 17 19.8 +1.6
comp=Z,14nm,0.7s,baz=98,slow=5.1,SNR=11
H37A Dierke Farm, C 74.31 41 P P 16 17 18.5 +0.6
baz=320,SNR=8.0
LAZ Ladron 74.35 57 *e*P P 16 17 19.7 +1.2
ANMO Albuquerque 74.36 56 P P 16 17 19.4 +0.9
baz=316
ANMO Albuquerque 74.36 56 *d i*P P 16 17 19.5 +0.9
ANMO pmax pmax
comp=Z,22nm,1.3s
ANMO Albuquerque 74.36 56 *e*P P 16 17 19.0 +0.4
comp=Z,30nm,1.4s
MCD Coleburn Disti 74.39 345⇓ *e*P P 16 17 18.5 +0.4
LEOM Leova 74.51 322⇑ *i*P P 16 17 19.6 +0.6
LEOM Leova 74.51 322 P P 16 17 19.6 +0.6
I37A Lemond, Waseca 74.53 42 P P 16 17 19.7 +0.6
baz=320,SNR=13
M33A Taylor Creek F 74.54 46 P P 16 17 19.4 +0.1
baz=318
J36A Seneca 1, Swea 74.61 43 P P 16 17 19.9 +0.2
baz=320,SNR=5.5
K35A Storm Lake 74.64 44 P P 16 17 19.6 -0.3
baz=319
L34A Svendsen Farm, 74.65 45 P P 16 17 19.8 -0.1
baz=319
LPM Los Pinos Moun 74.71 56 *e*P P 16 17 20.2 -0.4
MDO Dochfour 74.72 346 *e*P P 16 17 20.1 +0.1
UOSS Minazif 74.72 290 *e*P P 16 17 20.8 +0.2
comp=Z,58nm,0.8s
OJC Ojcow 74.80 329 *e*P P 16 17 20.8 +0.2
OJC Ojcow 74.80 329 *e*P P 16 17 20.5 -0.1
OJC pmax pmax
comp=Z,72nm,1.4s
OJC Ojcow 74.80 329 *e*P P 16 17 20.5 -0.1
comp=Z,72nm,1.4s
COWI Conover 74.82 38 *e*P P 16 17 20.1 -0.7
comp=Z,36nm,1.3s
KAC Achnashellach 74.82 346 *e*P P 16 17 20.5 -0.1
BNM Barren Site 74.82 57 *e*P P 16 17 20.3 -1.1
BUR08 Bucovina Ar. S 74.85 325 *e*P P 16 17 20.6 -0.4
HATD Hatta, Dubai 74.85 290 *i* P P 16 17 22.4 +1.1
SNR=26
HATD Hatta, Dubai 74.85 290 P P 16 17 22.4 +1.1
SNR=11
BURAR Bucovina Array 74.86 325⇓ *i*P P 16 17 21.2 0.0
BURAR Bucovina Array 74.86 325 P P 16 17 21.2 0.0
M34A Aspy Farms, Fr 74.90 45 P P 16 17 21.5 +0.1
baz=319
HOQ Hoqain 74.93 288 P P 16 17 22.9 +1.1
SNR=7.7
STHS Stebnicka Huta 74.94 328 *e*P P 16 17 21.9 +0.5
STHS pmax pmax
comp=Z,23nm,0.7s
STHS Stebnicka Huta 74.94 328 *e*P P 16 17 21.9 +0.5
KOLS Kolonicke sedl 74.95 327 *e*P P 16 17 21.7 +0.2
KOLS pmax pmax
comp=Z,33nm,1.4s
KOLS Kolonicke sedl 74.95 327 *e*P P 16 17 21.7 +0.2
SCHQ Schefferville 74.99 21 P P 16 17 22.0 +0.4
comp=Z,1nm,0.6s,baz=336,slow=5.1,SNR=16
SCHQ Schefferville 74.99 21 *e*P P 16 17 21.9 +0.2
comp=Z,44nm,1.5s
J37A Redenius Farm, 74.99 42 P P 16 17 22.0 +0.1
baz=320,SNR=21
ASHO Ashiyiah 75.00 290 *i* P P 16 17 23.2 +1.0
SNR=18
ASHO Ashiyiah 75.00 290 P P 16 17 23.2 +1.0
SNR=8.1
I38A Scanlan Farm, 75.00 41 P P 16 17 21.8 -0.1
baz=321,SNR=10
KPL Plockton 75.03 346 *e*P P 16 17 22.0 +0.2
NAZ Nazwa, Dubai 75.05 290 P P 16 17 23.0 +0.6
KSB Sheil Bridge 75.12 346 *e*P P 16 17 22.4 +0.2
TESR Tescani 75.16 323⇑ *i*P P 16 17 23.0 +0.3
UZH Uzhgorod 75.19 327 *c i*P P 16 17 22.7 -0.1
UZH *e* 16 17 31.1
319A Douglas 75.21 60 *e*P P 16 17 23.9 +0.5

comp=Z,89nm,1.3s
FAQ **Al Faqa, Dubai** 75.26 290 *i* P P 16 17 24.4 +0.7
SNR=17
TLCR 75.27 321⇓ *i* P P 16 17 23.9 +0.5
P32A **Huiting Farm,** 75.28 48 P P 16 17 23.1 -0.4
baz=318,SNR=6.1
CRVS **Cervenica-Dubn** 75.28 328 *e* P P 16 17 23.8 +0.4
CRVS **Cervenica-Dubn** 75.28 328 *e* P P 16 17 23.8 +0.4
NIE **Niedzica** 75.28 328 *e* P P 16 17 23.8 +0.4
NIE **Niedzica** 75.28 328 *e* P P 16 17 23.8 +0.4
121A **Cookes Peak, D** 75.29 58 P P 16 17 25.3 +1.3
baz=316,SNR=17
121A **Cookes Peak, D** 75.29 58 *e* P P 16 17 24.8 +0.8
comp=Z,54nm,1.3s
M35A **Neola** 75.36 45 P P 16 17 24.1 +0.1
baz=319,SNR=5.2
K37A **Belmond** 75.37 43 P P 16 17 23.9 -0.1
baz=320,SNR=15
L36A **Harm Buss Farm** 75.38 44 P P 16 17 24.3 +0.1
baz=320,SNR=5.8
KSP **Ksiaz** 75.48 332 *e* P P 16 17 24.8 +0.3
KSP **Ksiaz** 75.48 332 *e* P P 16 17 24.8 +0.3
J38A **Wedel Dairy, R** 75.49 42 P P 16 17 24.5 -0.2
baz=321,SNR=14
TRPA **Tarpa** 75.50 326⇑ *e* PP P 16 17 25.4 +0.8
CFR **Carcaliu** 75.58 321⇑ *i* P P P 16 17 25.2 +0.1
ODBI **Odobesti** 75.58 322⇑ *i* P P 16 17 27.0 +1.9
ARQ **Araqi** 75.62 289 P P 16 17 26.8 +1.1
SNR=6.0
VRI **Vrincioaia** 75.64 323⇑ *i* P P 16 17 27.5 +1.9
VRI **Vrincioaia** 75.64 323 P P 16 17 27.4 +1.9
PLOR **Plostina** 75.68 323⇑ *i* P P 16 17 26.8 +1.0
OKC **Ostrava-Krasne** 75.70 330⇑ *e* P P 16 17 26.1 +0.3
OKC **Ostrava-Krasne** 75.70 330 *e* P P 16 17 26.1 +0.3
Q32A **Meitler Ranch,** 75.77 48 P P 16 17 25.5 -0.8
baz=318
L37A **Phoenix Point,** 75.80 43 P P 16 17 26.6 +0.1
baz=320,SNR=18
LANS **Liptovska Anna** 75.81 329 *e* P P 16 17 27.6 +1.1
LANS **Liptovska Anna** 75.81 329 *e* P P 16 17 27.5 +1.1
M36A **Felix, Anita** 75.81 44 P P 16 17 26.9 +0.4
baz=320
O34A **Beatrice** 75.83 46 P P 16 17 26.0 -0.7
baz=319,SNR=8.0
J39A **Decorah** 75.83 41 P P 16 17 26.1 -0.5
baz=321,SNR=12
HSIG 75.84 63 *e* P P 16 17 27.5 +0.5
comp=Z,14nm,1.2s
N35A **Tabor** 75.84 45 P P 16 17 26.7 0.0
baz=319
UPC **Upice** 75.86 331⇑ *e* P P 16 17 27.1 +0.4
UPC **Upice** 75.86 331 *e* P P 16 17 27.1 +0.4
K38A **Parkersburg** 75.87 42 P P 16 17 26.9 0.0
baz=321
DPC **Dobruska-Polom** 75.89 331 *e* P P 16 17 27.5 +0.6
DPC *ex* x 16 17 34.5
DPC *ex* x 16 17 42.9
DPC **Dobruska-Polom** 75.89 331 *e* P P 16 17 27.5 +0.6
DPC *e* 16 17 42.9
EAB **Aberfoyle** 75.91 345 *e* P P 16 17 26.8 0.0
MORC **Moravsky Berou** 75.96 330⇑ *i* P P 16 17 27.9 +0.6
MORC **Moravsky Berou** 75.96 330 *e* P P 16 17 27.4 +0.1
MORC pmax pmax
comp=Z,100nm,0.8s
MORC **Moravsky Berou** 75.96 330 *e* P P 16 17 27.4 +0.1
comp=Z,100nm,0.8s
KECS **Kecovo** 75.99 328 *e* P P 16 17 27.7 +0.3
KECS pmax pmax
comp=Z,4.0nm,0.8s
KECS **Kecovo** 75.99 328 *e* P P 16 17 27.7 +0.3
ARMA **Armidale** 76.01 178 *e* P P 16 17 29.5 +1.8
comp=Z,15nm,0.7s
TLB **Topalu** 76.08 321⇑ *i* P P 16 17 28.6 +0.6
DOPR **Dopca** 76.12 324⇑ *i* P P 16 17 29.7 +1.5
Q33A **Connelly Farm,** 76.14 48 P P 16 17 27.8 -0.6
baz=319,SNR=9.9
CLL **Collm** 76.14 334⇑ *i* P P 16 17 27.9 -0.3
comp=Z,75nm,0.5s
CLL *i* Pmax 16 17 28.8
comp=Z,75nm,0.5s
CLL *e* 16 17 43.0
CLL *e* S S 16 26 55.0 -3.5
CLL *e* SSS SSS 16 35 18.0
CLL **Collm** 76.14 334⇑ *i* P P 16 17 27.9 -0.3
CLL *e* 16 17 43.0
CLL *e* S S 16 26 55.0 -3.5
CLL pmax pmax
comp=Z,75nm,0.5s
CLL **Collm** 76.14 334 *e* P P 16 17 27.6 -0.6
comp=Z,83nm,0.4s
O35A **Humboldt** 76.16 46 P P 16 17 28.2 -0.3
baz=319
L38A **Oak Wood Farm,** 76.17 43 P P 16 17 28.5 -0.1
baz=321,SNR=13
M37A **Trindle Farm,** 76.21 44 P P 16 17 29.1 +0.3
baz=320,SNR=8.0
N36A **Muff Farm, Cla** 76.22 45 P P 16 17 29.1 +0.2
baz=320
BRG **Berggiesshubel** 76.22 333 *e* P P 16 17 28.4 -0.3
comp=Z,4.1nm,0.7s
BRG *e* 16 17 43.9
comp=Z,7.6nm,0.9s
BRG **Berggiesshubel** 76.22 333 *e* P P 16 17 28.4 -0.3
BRG *e* 16 17 43.9
BRG pmax pmax
comp=Z,4.0nm,0.7s
J40A **Soldiers Grove** 76.23 41 P P 16 17 28.4 -0.5
baz=322
SCIA **State Center** 76.23 43 *e* P P 16 17 28.8 -0.1
comp=Z,172nm,1.4s
K39A **Oelwein** 76.24 42 P P 16 17 28.4 -0.5
baz=321,SNR=8.5
P34A **Walnut Farm, R** 76.24 47 P P 16 17 28.6 -0.4
baz=319,SNR=8.4
CJR **Cluj-Napoca** 76.24 325⇑ *i* P P 16 17 29.9 +0.9
MLR **Muntele Rosu** 76.27 323 P P 16 17 29.7 +0.4
comp=Z,3.6nm,0.6s,baz=178,slow=4.9,SNR=31
MLR **Muntele Rosu** 76.27 323⇑ *i* P P 16 17 30.2 +1.0
MLR **Muntele Rosu** 76.27 323 *e* P P 16 17 29.8 +0.6
MLR pmax pmax
comp=Z,17nm,0.8s
MLR **Muntele Rosu** 76.27 323 *e* P P 16 17 29.8 +0.6
comp=Z,16nm,0.8s
PGBU **Glenifferbraes** 76.29 345 *e* P P 16 17 28.9 0.0
ISR **Istrita** 76.31 322⇑ *i* P P 16 17 30.5 +1.1
PVCC **Panska Ves** 76.32 332⇑ *e* P P 16 17 29.5 +0.3
PVCC **Panska Ves** 76.32 332 *e* P P 16 17 29.5 +0.3
EKA **Eskdalemuir Ar** 76.50 344 P P 16 17 30.2 +0.1
comp=Z,3.3nm,0.4s,baz=17,slow=5.1,SNR=43
EKA PP PP 16 20 21.7 -1.7
comp=Z,1.8nm,0.8s,baz=22,slow=7.2,SNR=3.5
ESK **Eskdalemuir** 76.53 344 *e* P P 16 17 30.4 +0.1
ESK **Eskdalemuir** 76.53 344 *e* P P 16 17 29.9 -0.4
ESK pmax pmax
comp=Z,26nm,1.2s
ESK **Eskdalemuir** 76.53 344 *e* P P 16 17 29.9 -0.4
comp=Z,26nm,1.2s
DRGR 76.53 326⇑ *i* P P 16 17 30.9 +0.3
R33A **Olander Ranch,** 76.57 48 P P 16 17 30.7 -0.3
baz=319
J41A **Loganville** 76.58 40 P P 16 17 30.6 -0.3
baz=322,SNR=9.7
VYHS **Vyhne** 76.58 329 *e* P P 16 17 31.5 +0.7
VYHS pmax pmax
comp=Z,19nm,1.4s
VYHS **Vyhne** 76.58 329 *e* P P 16 17 31.5 +0.7
K40A **Colesburg** 76.59 41 P P 16 17 30.6 -0.3
baz=322
M38A **Pleasantville** 76.61 43 P P 16 17 31.4 +0.4
baz=321,SNR=7.2
L39A **Vinton** 76.64 42 P P 16 17 31.4 +0.2
baz=321,SNR=17
ECK **Cauldkaine Hil** 76.64 344⇓ *e* P P 16 17 31.1 +0.1
Q34A **Chapman** 76.65 47 P P 16 17 31.1 -0.3
baz=319
P35A **Duane Minner,** 76.67 46 P P 16 17 31.1 -0.3
baz=319
PSZ **Piszkesteto** 76.68 328⇑ *i* P P 16 17 32.0 +0.6
PSZ **Piszkesteto** 76.68 328 *e* P P 16 17 31.5 +0.1
PSZ pmax pmax
comp=Z,18nm,1.1s
PSZ **Piszkesteto** 76.68 328 *e* P P 16 17 31.5 +0.1
comp=Z,18nm,1.1s
PSZ **Piszkesteto** 76.68 328⇓ *e* PP P 16 17 32.4 +1.0
VOIR 76.68 323⇑ *i* P P 16 17 32.4 +0.9

VRAC **Vranov** 76.69 331 P P 16 17 31.8 +0.5
comp=Z,9.4nm,0.4s,baz=28,slow=5.6,SNR=18
VRAC **Vranov** 76.69 331⇓ *i* P P 16 17 32.0 +0.6
KSU1 **Kansas State U** 76.69 47 P P 16 17 30.9 -0.6
baz=319
KSU1 **Kansas State U** 76.69 47 *e* P P 16 17 30.4 -1.2
comp=Z,53nm,1.5s
O36A **Bolckow** 76.73 45 P P 16 17 32.0 +0.2
baz=320
PSN **Preselentsi** 76.74 320⇓ *i* P P 16 17 33.0 +1.2
PSN **Preselentsi** 76.74 320 *i* P P 16 17 32.9 +1.2
BHH **Howats Hill** 76.74 344 *e* P P 16 17 32.1 +0.6
GOPC **GO Pecny, Ondr** 76.78 332 *e* P P 16 17 32.4 +0.5
GOPC *ex* x 16 17 47.2
GOPC **GO Pecny, Ondr** 76.78 332 *e* P P 16 17 32.4 +0.5
GOPC *e* 16 17 47.2
PRU **Pruhonice** 76.79 332⇑ *e* P P 16 17 32.3 +0.4
PRU *ex* x 16 17 37.2
PRU *ex* x 16 17 47.1
PRU **Pruhonice** 76.79 332 *e* P P 16 17 32.3 +0.4
PRU *e* 16 17 47.1
UMR **Umm Al-Rimmam** 76.89 299 P P 16 17 33.6 +0.8
ARR **Arges** 76.91 324⇑ *i* P P 16 17 34.2 +1.4
T32A **Huddler Ranch,** 76.92 50 P P 16 17 32.6 -0.3
baz=318
GMK **Mull of Kintyr** 76.93 346⇓ *e* P P 16 17 33.0 +0.5
R34A **Isabella, Hill** 76.96 48 P P 16 17 32.3 -0.8
baz=319,SNR=9.0
P36A **Good Intent, A** 77.00 46 P P 16 17 33.0 -0.3
baz=320
K41A **Shullsburg** 77.04 41 P P 16 17 33.1 -0.3
baz=322
L40A **Anamosa** 77.05 42 P P 16 17 32.7 -0.8
baz=322,SNR=6.2
M39A **Webster** 77.05 43 P P 16 17 33.8 +0.3
baz=321,SNR=22
N38A **Joes South For** 77.08 44 P P 16 17 33.9 +0.3
baz=321,SNR=7.7
BBO1 **Bothel** 77.08 344 *e* P P 16 17 33.9 +0.5
O37A **Wolven Farm, M** 77.11 45 P P 16 17 34.2 +0.3
baz=320,SNR=9.4
AMTX **Amarillo** 77.11 53 P P 16 17 35.0 +0.9
baz=318
AMTX **Amarillo** 77.11 53 *e* P P 16 17 34.4 +0.3
comp=Z,61nm,1.3s
Q35A **Mercer Eighty,** 77.16 47 P P 16 17 33.7 -0.5
baz=320
MSTX **Muleshoe** 77.17 54 P P 16 17 35.0 +0.5
baz=317,SNR=11
MSTX **Muleshoe** 77.17 54 *e* P P 16 17 34.3 -0.2
comp=Z,22nm,0.9s
KESW **Keswick, Cumbr** 77.20 344 *e* P P 16 17 34.5 +0.4
LOT **Lotru** 77.20 324⇑ *i* P P 16 17 35.0 +0.5
GAL1 **Galloway** 77.23 345 *e* P P 16 17 34.3 +0.1
NKC **Novy Kostel** 77.25 333⇑ *e* P P 16 17 34.7 +0.2
NKC **Novy Kostel** 77.25 333 *e* P P 16 17 34.7 +0.2
MNTX **Cornudas Mount** 77.31 58 P P 16 17 36.0 +0.9
baz=316,SNR=34
MNTX **Cornudas Mount** 77.31 58 *e* P P 16 17 35.6 +0.5
comp=Z,36nm,1.4s
N39A **Derby Farms, D** 77.36 43 P P 16 17 35.3 0.0
baz=321,SNR=10
L41A **Preston** 77.37 41 P P 16 17 35.1 -0.2
baz=322,SNR=6.4
P37A **Lathrop** 77.45 45 P P 16 17 35.8 0.0
baz=320,SNR=11
U32A **Winter Ranch,** 77.47 50 P P 16 17 36.5 +0.5
baz=318
R35A **Emporia Munici** 77.49 47 P P 16 17 36.0 0.0
baz=320,SNR=5.9
ANTO **Ankara** 77.55 315 *e* P P 16 17 37.5 +1.0
ANTO pmax pmax
comp=Z,49nm,0.6s
ANTO **Ankara** 77.55 315 *e* P P 16 17 37.5 +1.0
comp=Z,49nm,0.6s
BR231 **Keskin MP Arra** 77.58 315 *e* P P 16 17 37.9 +1.2
GZR **Gura Zlata** 77.65 325⇑ *e* P P 16 17 37.2 +0.3
VLDQ **Val d'Or** 77.73 30 *e* P P 16 17 35.8 -1.3
comp=Z,28nm,1.0s
CSKK **Cs˘‡kako** 77.75 328⇑ *e* P P 16 17 38.5 +1.2
STKA **Stephens Creek** 77.78 187 P P 16 17 38.7 +1.3
comp=Z,13nm,0.7s,baz=354,slow=7.0,SNR=17
STKA **Stephens Creek** 77.78 187 *e* P P 16 17 38.5 +1.1
comp=Z,3.6nm,0.8s
O39A **Kirksville** 77.83 44 P P 16 17 38.1 +0.3
baz=321,SNR=6.9
P38A **Dawn** 77.83 45 P P 16 17 38.1 +0.2
baz=321,SNR=11
R36A **Gordon, Harris** 77.84 47 P P 16 17 37.8 -0.2
baz=320,SNR=13
KHC **Kasperske Hory** 77.85 332⇑ *i* P P 16 17 38.5 +0.6
KHC *e* PCP PcP 16 17 48.2 +1.0
KHC *ex* x 16 17 53.2
KHC **Kasperske Hory** 77.85 332⇑ *i* P P 16 17 38.5 +0.6
KHC *e* 16 17 48.2
KHC **Kasperske Hory** 77.85 332 *e* P P 16 17 37.9 0.0
comp=Z,13nm,0.6s
S35A **Otter Creek Ra** 77.91 48 P P 16 17 38.4 +0.1
baz=320,SNR=8.7
U33A **Lingo Farm, Me** 77.91 50 P P 16 17 38.8 +0.4
baz=319
WIM **Isle of Man** 77.91 345 *e* P P 16 17 38.2 +0.2
BZS **Buzias** 77.93 326⇑ *i* P P 16 17 38.5 +0.2
V32A **Arapaho** 77.94 51 P P 16 17 40.4 +1.8
baz=319
Q37A **Longview Farm,** 77.95 46 P P 16 17 38.1 -0.4
baz=320
T34A **McClaskey Farm** 77.95 49 P P 16 17 38.9 +0.3
baz=319,SNR=11
GMM **Mts of Mourne** 78.05 346⇓ *e* P P 16 17 38.8 0.0
GEC2 **GERESS Array S** 78.06 332 *e* P P 16 17 38.9 -0.2
GEC2 pmax pmax
comp=Z,20nm,0.5s
GEC2 **GERESS Array S** 78.06 332 *e* P P 16 17 38.9 -0.2
comp=Z,20nm,0.5s
GERES **GERESS Array B** 78.06 332 P P 16 17 39.1 0.0
comp=Z,18nm,0.5s,baz=37,slow=6.0,SNR=94
GEA0 **GERESS Array S** 78.06 332 *e* P P 16 17 38.5 -0.6
SRE **Strehaia** 78.08 324⇑ *i* P P 16 17 40.4 +1.2
GRFO **Grafenberg** 78.11 334 *e* P P 16 17 39.4 +0.2
GRFO pmax pmax
comp=Z,58nm,0.5s
GRFO **Grafenberg** 78.11 334 *e* P P 16 17 39.4 +0.2
comp=Z,58nm,0.5s
CONA **Conrad Observa** 78.12 330 *i* P P 16 17 40.4 +0.9
comp=Z,21nm,0.6s,SNR=17
U34A **Anderson Ranch** 78.21 49 P P 16 17 40.5 +0.4
baz=319,SNR=12
U34A **Anderson Ranch** 78.21 49 *e* P P 16 17 40.2 +0.2
comp=Z,120nm,1.4s
S36A **Lake Cedric, C** 78.25 47 P P 16 17 40.3 +0.1
baz=320,SNR=18
O40A **La Belle** 78.25 43 P P 16 17 40.6 +0.4
baz=321,SNR=14
V33A **Lossen Ranch,** 78.28 50 P P 16 17 40.9 +0.5
baz=319
W32A **Sentinel** 78.28 51 P P 16 17 41.3 +0.8
baz=319,SNR=11
Q38A **Cooks Store, C** 78.30 45 P P 16 17 40.5 0.0
baz=321,SNR=24
P39B **Salisbury** 78.32 44 P P 16 17 40.7 +0.1
baz=321,SNR=6.9
PVL **Pavlikeni** 78.36 322 *i* P P 16 17 36.8 -3.9
T35A **Sooner Cattle** 78.39 48 P P 16 17 41.4 +0.3
baz=320,SNR=15
JMB **Yambol** 78.41 321 *i* P P 16 17 44.0 +3.0
Q39A **Willow Grove F** 78.55 45 P P 16 17 42.0 +0.1
baz=321,SNR=17
CWF **Charnwood Fore** 78.58 342 *e* P P 16 17 42.0 +0.2
CWF **Charnwood Fore** 78.58 342 *e* P P 16 17 41.9 +0.1
MDVR **Moldovita** 78.58 325⇑ *i* P P 16 17 42.0 0.0
T36A **Boggs Farm, Ca** 78.61 48 P P 16 17 42.4 +0.2
baz=320,SNR=12
WPM1 **Penmaenmawr** 78.61 344⇓ *e* P P 16 17 42.2 +0.3
S37A **Fort Scott** 78.61 47 P P 16 17 42.1 -0.1
baz=320,SNR=24
P40A **Paris** 78.63 44 P P 16 17 42.5 +0.2
baz=321,SNR=14
V34A **Guthrie** 78.68 50 P P 16 17 43.1 +0.4
baz=319,SNR=10
V34A **Guthrie** 78.68 50 *e* P P 16 17 42.7 0.0
comp=Z,49nm,1.1s
W33A **Caddo, Fort Co** 78.68 51 P P 16 17 43.9 +1.2
baz=319
U35A **Pawnee** 78.69 49 P P 16 17 43.2 +0.6
baz=320,SNR=11

BEBN **Eben Emael** 78.71 338 P P 16 17 43.8 +1.4
O41A **Passleys Farm,** 78.73 43 P P 16 17 43.0 +0.2
baz=322,SNR=18
MOA **Molln** 78.73 331 *i* P P 16 17 43.3 +0.6
comp=Z,14nm,0.6s,SNR=16
R38A **Fenwick Farm,** 78.75 46 P P 16 17 42.3 -0.7
baz=321,SNR=16
X32A **Elmer** 78.78 52 P P 16 17 43.8 +0.6
baz=319,SNR=6.1
MEM **Membach** 78.79 337 P P 16 17 43.7 +0.8
comp=Z,12nm,0.8s
FORT **Forrest** 78.80 199 *e* P P 16 17 43.9 +0.9
comp=Z,864nm,0.7s
ARSA **Arzberg** 78.82 330 *i* P P 16 17 44.0 +0.8
comp=Z,8.0nm,0.5s,SNR=8.8
WMOK **Wichita Mounta** 78.82 51 P P 16 17 44.0 +0.6
baz=319,SNR=27
WMOK **Wichita Mounta** 78.82 51 *e* P P 16 17 43.3 -0.2
WMOK pmax pmax
comp=Z,12nm,0.8s
WMOK **Wichita Mounta** 78.82 51 *e* P P 16 17 43.3 -0.2
comp=Z,12nm,0.8s
FOEL **Foel Wylfa** 78.83 344⇓ *e* P P 16 17 43.8 +0.7
FOEL AMB AMB 16 17 44.9
comp=Z,24nm,0.9s
MPEP **Malo Peshtene** 78.92 323 *i* P P 16 17 44.5 +0.7
YRE **Yr Eifl** 78.97 344⇓ *e* P P 16 17 44.1 +0.3
P41A **Barry, Barry** 78.99 43 P P 16 17 44.5 +0.3
baz=322,SNR=9.0
W34A **Bridge Creek,** 78.99 50 P P 16 17 45.1 +0.7
baz=319
W34A **Bridge Creek,** 78.99 50 *e* P P 16 17 44.7 +0.3
comp=Z,33nm,1.1s
Q40A **Laux Farm, Aux** 79.03 44 P P 16 17 44.9 +0.4
baz=322,SNR=12
T37A **Cheneyville 18** 79.06 47 P P 16 17 44.7 0.0
baz=320,SNR=16
DSB **Dublin** 79.08 346 *e* P P 16 17 44.3 -0.2
comp=Z,24nm,1.1s
R39A **Chumby, Stover** 79.09 45 P P 16 17 44.5 -0.3
baz=321,SNR=9.9
V35A **Meyer Ranch, C** 79.09 49 P P 16 17 45.5 +0.6
baz=320
HLM1 **Long Mynd** 79.11 343 *e* P P 16 17 45.1 +0.4
X33A **Lawton** 79.12 51 P P 16 17 45.5 +0.5
baz=319,SNR=7.0
HDIL **Hopedale** 79.13 42 P P 16 17 45.1 +0.1
baz=323,SNR=9.1
HDIL **Hopedale** 79.13 42 *e* P P 16 17 44.9 0.0
comp=Z,132nm,1.4s
BCLA **Clavier** 79.15 338 P P 16 17 45.0 +0.1
comp=Z,9.6nm,0.8s
S38A **Stockton** 79.18 46 P P 16 17 45.0 -0.3
baz=321,SNR=13
SNF **Seneffe** 79.34 338 P P 16 17 46.8 +0.9
PGB **Panagyurishte** 79.40 322 *i* P P 16 17 47.3 +0.8
P42A **Winchester** 79.40 43 P P 16 17 46.6 +0.2
baz=322,SNR=9.5
S39A **Bolivar** 79.43 46 P P 16 17 46.3 -0.4
baz=321,SNR=16
X34A **Smith Ranch, M** 79.44 51 P P 16 17 47.8 +1.0
baz=319,SNR=7.4
T38A **Diamond** 79.44 47 P P 16 17 46.7 -0.1
baz=321,SNR=36
Y33A **Hilltop Ranch,** 79.45 52 P P 16 17 47.2 +0.3
baz=319,SNR=16
SOKA **Soboth** 79.48 330 *i* P P 16 17 47.4 +0.5
comp=Z,14nm,0.5s,SNR=14
R40A **Maddies Statio** 79.49 45 P P 16 17 46.8 -0.2
baz=322,SNR=14
U37A **Salina** 79.50 48 P P 16 17 47.4 +0.3
baz=320,SNR=10
GROS **Grobnik** 79.51 330 *i* P P 16 17 47.2 +0.2
TUL1 **Leonard** 79.53 49 P P 16 17 47.5 +0.3
baz=320,SNR=6.9
TUL1 **Leonard** 79.53 49 *e* P P 16 17 45.5 -1.7
comp=Z,29nm,1.1s
W35A **Tecumseh** 79.53 50 P P 16 17 47.8 +0.6
baz=320,SNR=8.2
STU **Stuttgart** 79.54 335 *e* P P 16 17 46.6 -0.4
STU pmax pmax
comp=Z,16nm,0.6s
STU **Stuttgart** 79.54 335 *e* P P 16 17 46.6 -0.4
comp=Z,16nm,0.6s
WLF **Walferdange** 79.61 337 P P 16 17 48.9 +1.5
WLF **Walferdange** 79.61 337 *e* P P 16 17 49.8 +2.4
WLF **Walferdange** 79.61 337 *e* P P 16 17 49.8 +2.4
MCH1 **Michaelchurch** 79.63 343⇓ *e* P P 16 17 47.7 +0.3
MCH1 AMB AMB 16 17 49.1
comp=Z,33nm,1.0s
DOU **Dourbes** 79.63 338 P P 16 17 47.8 +0.3
KBA **Koelnbreinsper** 79.71 331 *i* P P 16 17 49.4 +1.1
comp=Z,46nm,0.4s,SNR=32
LPW **Lampeter** 79.73 344 *e* P P 16 17 48.2 +0.2
LPW AMB AMB 16 17 50.2
comp=Z,27nm,1.4s
MONM **Monmouth** 79.74 343 *e* P P 16 17 48.4 +0.4
MONM AMB AMB 16 17 49.8
comp=Z,47nm,1.0s
LANF **Langenberg** 79.76 336 *e* P P 16 17 47.8 -0.5
BAIF **Baives** 79.77 338 P P 16 17 48.1 -0.1
BAIF pmax pmax
comp=Z,7.0nm,0.6s
VTS **Vitosha** 79.77 323⇑ *i* P P 16 17 49.3 +0.7
VTS **Vitosha** 79.77 323 *e* P P 16 17 48.9 +0.3
VTS pmax pmax
comp=Z,44nm,0.8s
VTS **Vitosha** 79.77 323 *i* P P 16 17 49.4 +0.8
VTS **Vitosha** 79.77 323 *e* P P 16 17 48.9 +0.3
comp=Z,44nm,0.8s
OBKA **Obir** 79.80 330 *i* P P 16 17 49.3 +0.7
comp=Z,6.8nm,0.4s,SNR=8.3
SWN1 **Swindon** 79.84 342 *e* P P 16 17 49.4 +0.8
SWN1 AMB AMB 16 17 50.1
comp=Z,65nm,0.8s
Q42A **Golden Eagle** 79.84 43 P P 16 17 49.3 +0.4
baz=322,SNR=10
U38A **Gravette** 79.85 47 P P 16 17 48.9 -0.1
baz=321,SNR=14
RZN **Rozhen** 79.86 321 *i* P P 16 17 50.1 +0.9
W36A **Wetumka** 79.89 49 P P 16 17 49.3 +0.1
baz=320
V37A **Hulbert** 79.89 48 P P 16 17 49.4 +0.2
baz=320,SNR=15
WOL **Wolverton** 79.90 342 *e* P P 16 17 49.1 +0.2
WOL AMB AMB 16 17 50.3
comp=Z,50nm,0.8s
S40A **Lebanon** 79.91 45 P P 16 17 49.0 -0.2
baz=321,SNR=19
T39A **Clever** 79.92 46 P P 16 17 49.0 -0.3
baz=321,SNR=6.2
Z33A **Whitaker Ranch** 79.92 52 P P 16 17 49.5 +0.1
baz=319,SNR=7.7
ABTX **Abilene, Hawle** 79.92 53 P P 16 17 50.1 +0.7
baz=319,SNR=11
ABTX **Abilene, Hawle** 79.92 53 *e* P P 16 17 48.0 -1.5
comp=Z,46nm,1.4s
Y34A **Reagan Ranch,** 79.96 51 P P 16 17 49.9 +0.3
baz=319,SNR=9.7
GCIS **Gornji Cirnik** 79.97 329 *i* P P 16 17 49.6 +0.2
MYKA **Terra Mystica** 80.00 331 *i* P P 16 17 50.0 +0.3
comp=Z,7.3nm,0.4s
TX31 **Lajitas Ar. Si** 80.04 58 *e* P P 16 17 50.6 +0.4
TXAR **Lajitas Array** 80.04 58 P P 16 17 50.9 +0.7
comp=Z,19nm,0.7s,baz=297,slow=4.3,SNR=266
TXAR PKKPbc PKKPbc 16 36 32.4 +1.2
comp=Z,0.7nm,0.8s,baz=147,slow=5.7,SNR=7.8
X35A **Drake** 80.05 50 P P 16 17 50.1 0.0
baz=320,SNR=7.8
WATA **Walderalm** 80.07 332 *i* P P 16 17 50.9 +0.8
comp=Z,54nm,0.4s,SNR=45
WTTA **Wattenberg** 80.11 332 *i* P P 16 17 51.4 +1.0
comp=Z,42nm,0.4s,SNR=29
BFO **Black Forest** 80.19 335 *e* P P 16 17 50.2 -0.4
BFO pmax pmax
comp=Z,15nm,0.7s
BFO **Black Forest** 80.19 335 *e* P P 16 17 50.2 -0.4
comp=Z,15nm,0.7s
RETA **Reutte** 80.20 333 *i* P P 16 17 51.5 +0.8
comp=Z,12nm,0.6s,SNR=13
HHAR **Hobbs** 80.20 47 *e* P P 16 17 50.6 -0.3
comp=Z,42nm,1.4s
MOTA **Moosalm** 80.21 333 *i* P P 16 17 51.5 +0.6
comp=Z,29nm,0.5s,SNR=42
Q43A **New Douglas** 80.22 43 P P 16 17 50.9 0.0
baz=323
T40A **Mansfield** 80.25 46 P P 16 17 50.9 -0.2

baz=322,SNR=16
X36A Centrahoma 80.25 50 P P 16 17 51.4 +0.2
baz=320,SNR=9.7
SFIN Lafayette 80.27 40 P P 16 17 51.3 +0.1
baz=324,SNR=6.7
SFIN Lafayette 80.27 40 *e*P P 16 17 50.8 -0.3
comp=Z,48nm,1.4s
ABTA Abfaltersbach 80.28 332 *i* P P 16 17 51.7 +0.5
comp=Z,9.7nm,0.8s
V38A Canehill 80.29 48 P P 16 17 51.6 +0.3
baz=321,SNR=22
S41A Jillco Farms, 80.29 45 P P 16 17 51.2 -0.1
baz=322,SNR=13
W37B Quinton 80.31 49 P P 16 17 52.1 +0.6
baz=320,SNR=8.0
Z34A Collier Ranch, 80.32 52 P P 16 17 51.8 +0.3
baz=319,SNR=8.0
133A Hamilton Ranch 80.34 53 P P 16 17 51.9 +0.2
baz=319,SNR=6.6
U39A Green Forest 80.36 47 P P 16 17 51.7 -0.1
baz=321,SNR=34
TRQ Mont Tremblant 80.36 29 *e*P P 16 17 51.0 -0.6
MMB Musomiste 80.37 322 *i* P P 16 17 52.7 +1.0
Y35A Marietta 80.39 51 P P 16 17 52.0 +0.1
baz=320
BOJS Bojanci 80.42 329 *i* P P 16 17 51.9 +0.1
KKB Krupnik 80.42 322 *i* P P 16 17 57.0 +5.1
CDF Champ du Feu 80.42 336 P P 16 17 51.6 -0.3
CDF pmax pmax
comp=Z,12nm,0.6s
NVR Nevrokopi 80.51 322 P P 16 17 53.1 +0.7
NVR Nevrokopi 80.51 322 P P 16 17 53.1 +0.7
LMQ La Malbaie 80.57 26 *e*P P 16 17 52.5 -0.1
Q44A Meyer Farm, Va 80.57 42 P P 16 17 52.6 -0.1
baz=323,SNR=6.9
HPIG 80.59 61 *e*P P 16 17 53.4 +0.1
comp=Z,59nm,1.5s
FETA Feichten 80.62 333 *i* P P 16 17 53.8 +0.7
comp=Z,12nm,0.9s,SNR=7.5
ECH Echery 80.64 336 *e*P P 16 17 53.0 0.0
DAVA Damuels 80.65 333 *i* P P 16 17 53.9 +0.6
comp=Z,14nm,0.5s,SNR=11
V39A Pettigrew 80.70 47 P P 16 17 53.6 0.0
baz=321,SNR=21
U40A Yellville 80.70 46 P P 16 17 53.4 -0.1
baz=321,SNR=40
T41A Mountain View 80.71 45 P P 16 17 53.4 -0.1
baz=322,SNR=27
Z35A Perchaven, San 80.71 51 P P 16 17 53.8 +0.2
baz=320,SNR=7.3
PLE Pljevlja 80.72 326 ‖ *i* P P 16 17 54.6 +1.0
X37A Clayton 80.76 49 P P 16 17 54.0 +0.1
baz=320,SNR=7.2
233A Rising Star 80.79 53 P P 16 17 54.8 +0.7
baz=319,SNR=5.6
Y36A Durant 80.80 50 P P 16 17 54.5 +0.4
baz=320,SNR=6.4
SRS Serrai 80.81 322 P P 16 17 54.4 +0.4
SRS Serrai 80.81 322 P P 16 17 54.4 +0.4
SRS Serrai 80.81 322 P P 16 17 54.4 +0.4
134A White-Moore Ra 80.83 52 P P 16 17 54.8 +0.5
baz=319
W38A Poteau 80.84 48 P P 16 17 54.7 +0.4
baz=321,SNR=17
HTL Hartland 80.88 344 *e*P P 16 17 54.8 +0.6
IVA Berane 80.90 325 ‖ *i* P P 16 17 55.0 +0.4
THEF They Montfort 80.96 336 *e*P P 16 17 55.0 +0.3
MOF Molkenrain 80.97 335 *e*P P 16 17 54.6 -0.3
X38A Whitesboro 80.99 49 P P 16 17 55.5 +0.4
baz=321,SNR=20
UPM Unac-Piva 81.01 326 ‖ *i* P P 16 17 54.5 -0.8
R44A Waltonville 81.06 43 P P 16 17 55.7 +0.3
baz=323,SNR=6.6
DAVOX Davos/Dischmat 81.10 333 P P 16 17 56.6 +0.9
comp=Z,13nm,0.5s,baz=7.2,slow=2.9,SNR=34
PVY Plav 81.11 325 ‖ *i* P P 16 17 55.4 -0.3
LIA Limnos Island 81.11 320 P P 16 17 55.9 +0.3
LIA Limnos Island 81.11 320 P P 16 17 55.9 +0.3
S43A Fulton Ridge, 81.12 44 P P 16 17 55.8 +0.1
baz=323,SNR=19
FUORN Ofenpass-Fuorn 81.12 333 *e*P P 16 17 56.0 +0.1
comp=Z,31nm,1.1s
W39A Magazine 81.12 48 P P 16 17 55.8 +0.1
baz=321,SNR=15
OLIL Olney 81.14 42 *e*P P 16 17 56.0 +0.2
comp=Z,31nm,0.7s
V40A Witts Springs 81.14 47 P P 16 17 55.6 -0.3
baz=322,SNR=13
U41A Viola 81.18 46 P P 16 17 55.8 -0.2
baz=322,SNR=11
Z36A Blue Ridge 81.20 51 P P 16 17 56.5 +0.3
baz=320,SNR=5.8
135A Vickery Place, 81.21 52 P P 16 17 56.8 +0.6
baz=320,SNR=5.4
234A Clairette 81.23 53 P P 16 17 56.8 +0.4
baz=319,SNR=10
333A Richland Sprin 81.27 54 P P 16 17 56.8 +0.2
baz=319,SNR=16
ASF Jabal al Asfar 81.28 308 P P 16 17 58.1 +1.3
comp=Z,12nm,0.6s,baz=1.3,slow=2.5,SNR=12
NKY Niksic 81.31 326 ‖ *i* P P 16 17 55.1 -1.6
BRY Bratogost 81.41 326 ‖ *i* P P 16 17 56.0 -1.3
S44A Carbondale 81.42 43 P P 16 17 57.6 +0.3
baz=323,SNR=16
SIUC Southern Illin 81.42 43 *e*P P 16 17 57.3 +0.1
comp=Z,129nm,1.4s
JCT Junction City 81.44 55 P P 16 17 57.9 +0.3
baz=319,SNR=15
JCT Junction City 81.44 55 *e*P P 16 17 58.0 +0.4
JCT Junction City 81.44 55 *e*P P 16 17 58.0 +0.4
MMAI Mount Meron Ar 81.45 309 P P 16 17 59.4 +1.8
comp=Z,28nm,0.5s,baz=49,slow=8.2,SNR=16
X39A Fountain Ranch 81.48 48 P P 16 17 58.0 +0.4
baz=321,SNR=20
W40A Ferguson Farm, 81.50 47 P P 16 17 57.9 +0.2
baz=321,SNR=12
V41A Mountainview 81.50 46 P P 16 17 57.5 -0.2
baz=322,SNR=17
BLO Bloomington 81.51 41 *e*P P 16 17 57.5 -0.2
BLO pmax pmax
comp=Z,47nm,0.8s
BLO Bloomington 81.51 41 *e*P P 16 17 57.5 -0.2
comp=Z,47nm,0.8s
U42A Revenden 81.51 45 P P 16 17 57.7 -0.1
baz=322,SNR=6.4
LOMF Lomont 81.51 335 *e*P P 16 17 57.4 -0.3
PDG Podgorica 81.53 325 ‖ *i* P P 16 17 57.9 +0.2
TTG Podgorica 81.53 325 ‖ *i* P P 16 17 57.3 -0.4
PBMO Poplar Bluff 81.58 45 *e*P P 16 17 58.1 0.0
comp=Z,166nm,1.9s
Y38A Idabel 81.61 49 P P 16 17 58.4 +0.1
baz=321
WHTX Lake Whitney, 81.61 52 P P 16 17 58.9 +0.5
baz=320,SNR=8.7
WHTX Lake Whitney, 81.61 52 *e*P P 16 17 58.6 +0.2
comp=Z,31nm,1.0s
433A Art 81.64 54 P P 16 17 58.7 +0.1
baz=319,SNR=12
334A Lometa 81.68 53 P P 16 17 59.5 +0.7
baz=320,SNR=21
Z37A Pogue Cattle C 81.69 50 P P 16 17 59.1 +0.3
baz=320,SNR=8.5
MIAR Mount Ida 81.73 48 P P 16 17 59.4 +0.4
baz=321,SNR=27
MIAR Mount Ida 81.73 48 *e*P P 16 17 58.5 -0.5
MIAR pmax pmax
comp=Z,56nm,1.4s
MIAR Mount Ida 81.73 48 *e*P P 16 17 58.5 -0.5
comp=Z,56nm,1.4s
S45A Carrier Mills 81.75 43 P P 16 17 59.4 +0.3
baz=323,SNR=7.8
136A Ennis 81.76 51 P P 16 17 59.6 +0.5
baz=320,SNR=5.9
X201 Greenbrier Sit 81.78 47 *e*P P 16 17 58.5 -0.7
comp=Z,57nm,1.4s
BUM Brajici-Budva 81.78 325 ‖ *i* P P 16 17 59.2 0.0
X301 Greenbrier Sit 81.80 47 *e*P P 16 17 58.9 -0.4
comp=Z,54nm,1.6s
HCY Herceg Novi 81.81 326 ‖ *i* P P 16 17 58.5 -0.8
WHAR Wooly Hollow 81.82 47 *e*P P 16 17 59.2 -0.2
comp=Z,85nm,1.4s
ERPA Erie 81.87 35 *e*P P 16 17 59.5 0.0
comp=Z,51nm,0.5s
V42A Cord 81.87 46 P P 16 17 59.4 -0.2
baz=322,SNR=16
ULC Ulcinj 81.92 325 ‖ *i* P P 16 17 59.3 -0.6
W41A Tony Mavity, V 81.93 47 P P 16 18 00.2 +0.3
baz=322,SNR=16
W41B Gary Mavity, V 81.93 47 P P 16 18 00.2 +0.3
baz=322,SNR=15
Y39A Lockesburg 81.94 49 P P 16 18 00.5 +0.5
baz=321,SNR=12
USIN University of 81.95 42 *e*P P 16 17 59.7 -0.4
comp=Z,36nm,1.0s
434A Burnet 82.05 54 P P 16 18 00.5 -0.3
baz=320,SNR=6.9
JSA Saint Aubin 82.11 342 *e*P P 16 18 01.2 +0.5
JSA AMB AMB 16 18 02.3
comp=Z,35nm,1.4s
MMNY Mt. Morris Dam 82.16 33 *e*P P 16 18 00.6 -0.5
X40A Basin Creek Fa 82.16 48 P P 16 18 01.9 +0.7
baz=322,SNR=17
533A Kerrville 82.18 55 P P 16 18 01.9 +0.4
baz=319,SNR=8.4
TIR Tirane 82.19 324 ‖ *i* P P 16 18 02.1 +0.9
TIR Tirane 82.19 324 *e*P P 16 18 01.4 +0.2
TIR pmax pmax
comp=Z,50nm,0.6s
TIR Tirane 82.19 324 *e*P P 16 18 01.4 +0.2
comp=Z,50nm,0.6s
ALLY Alegheny Colle 82.20 35 *e*P P 16 18 01.2 -0.1
comp=Z,139nm,1.7s
ACSO Alum Creek Sta 82.20 38 *e*P P 16 18 01.0 -0.3
comp=Z,20nm,0.6s
SENIN Lac Senin/Sane 82.27 335 *e*P P 16 18 02.3 +0.4
comp=Z,7.7nm,0.8s
AOS Alonnisos 82.28 320 P P 16 18 02.2 +0.4
AOS Alonnisos 82.28 320 P P 16 18 02.2 +0.4
X41A Kaden, Bauxite 82.32 47 P P 16 18 02.3 +0.3
baz=322
WCI Wyandotte Cave 82.38 41 *e*P P 16 18 02.1 -0.2
WCI pmax pmax
comp=Z,55nm,1.3s
WCI Wyandotte Cave 82.38 41 *e*P P 16 18 02.1 -0.2
comp=Z,55nm,1.3s
336A Riehl 82.41 52 P P 16 18 03.0 +0.4
baz=320
GNAR Gosnell 82.42 45 *e*P P 16 18 03.2 +0.7
XOR Xorichti 82.43 321 P P 16 18 02.9 +0.3
XOR Xorichti 82.43 321 P P 16 18 02.9 +0.3
NCB Newcomb 82.44 30 *e*P P 16 18 02.0 -0.5
comp=Z,0.2nm,1.1s
M54A Oil Creek Stat 82.51 35 P P 16 18 02.9 0.0
baz=328,SNR=13
534A Blanco 82.53 54 P P 16 18 03.4 +0.2
baz=320,SNR=18
633A Saathoff Ranch 82.56 55 P P 16 18 04.2 +0.8
baz=319,SNR=8.7
Y41A Eaglette Beard 82.75 48 P P 16 18 04.9 +0.6
baz=322
SMIA Simia 82.82 321 P P 16 18 04.5 -0.1
Z40A Long Farm, Mag 82.83 49 P P 16 18 05.7 +1.1
baz=321,SNR=6.6
N54A Moraine State 82.84 35 P P 16 18 05.0 +0.3
baz=328,SNR=11
832A Faith Ranch, C 82.98 56 P P 16 18 06.5 +0.9
baz=319,SNR=5.5
AVF Avril sur Loir 83.00 337 P P 16 18 04.6 -0.7
AVF pmax pmax
comp=Z,18nm,0.6s
SMF Signal de Mont 83.00 337 P P 16 18 06.0 +0.7
SMF pmax pmax
comp=Z,27nm,0.5s
733A Divot King Ran 83.05 56 P P 16 18 06.6 +0.7
baz=319
ATAL Atalanti 83.06 321 P P 16 18 05.1 -0.7
ATAL Atalanti 83.06 321 P P 16 18 05.1 -0.7
RSL Roselend 83.08 335 *e*P P 16 18 06.6 +0.6
LKR Lokris 83.10 321 P P 16 18 05.5 -0.5
LKR Lokris 83.10 321 P P 16 18 05.5 -0.5
V45A Humboldt 83.12 44 P P 16 18 06.5 +0.4
baz=323
ACCN Adirondack Com 83.15 30 *e*P P 16 18 05.8 -0.3
comp=Z,11nm,0.8s
ROSF Rostrenen 83.15 342 *e*P P 16 18 06.8 +0.7
ROSF pmax pmax
comp=Z,59nm,1.2s
CCAR Cane Creek 83.16 47 *e*P P 16 18 06.6 +0.3
comp=Z,76nm,1.3s
JAN Janina 83.20 323 P P 16 18 07.0 +0.5
JAN Janina 83.20 323 P P 16 18 07.0 +0.5
JAN Janina 83.20 323 P P 16 18 07.0 +0.5
LPL La Plagne 83.20 335 *e*P P 16 18 07.2 +0.5
LPL pmax pmax
comp=Z,20nm,0.6s
LPG La Plagne 83.21 335 *e*P P 16 18 08.0 +1.2
LPG pmax pmax
comp=Z,21nm,0.6s
338A Crockett 83.28 51 P P 16 18 08.4 +1.4
baz=321,SNR=5.5
833A Chaparral WMA, 83.29 56 P P 16 18 07.5 +0.4
baz=319
NATX Nacogdoches 83.32 51 P P 16 18 07.5 +0.3
baz=321
NATX Nacogdoches 83.32 51 *e*P P 16 18 08.0 +0.8
comp=Z,177nm,1.5s
WVT Waverly 83.35 43 *e*P P 16 18 07.4 +0.1
WVT pmax pmax
comp=Z,18nm,0.7s
WVT Waverly 83.35 43 *e*P P 16 18 07.4 +0.1
comp=Z,18nm,0.7s
635A Leesville 83.41 54 P P 16 18 08.7 +0.9
baz=320
W45A Hickory Valley 83.47 45 P P 16 18 08.6 +0.6
baz=323
X44A Crenshaw 83.52 46 P P 16 18 08.9 +0.7
baz=323
Z42A Norrel Spur, H 83.57 48 P P 16 18 09.6 +1.1
baz=321,SNR=7.6
240A Hunter Patters 83.58 50 P P 16 18 10.1 +1.5
baz=321
PLDF La Plantade 83.68 337 *e*P P 16 18 09.9 +1.0
AGO Saint Agoulin 83.74 337 *e*P P 16 18 10.5 +1.4
636A Smothers Creek 83.75 54 P P 16 18 10.9 +1.5
baz=320,SNR=7.6
THAL Thalero 83.76 321 P P 16 18 08.4 -0.9
NWAO Narrogin (SRO) 83.76 207 P P 16 18 10.0 +0.9
comp=Z,40nm,0.6s,baz=251,slow=6.8,SNR=32
NWAO Narrogin (SRO) 83.76 207 *e*P P 16 18 09.8 +0.6
NWAO pmax pmax
comp=Z,43nm,0.8s
NWAO Narrogin (SRO) 83.76 207 *e*P P 16 18 09.8 +0.6
comp=Z,43nm,0.8s
TCF Toulx Ste Croi 83.77 338 *e*P P 16 18 09.6 +0.3
TCF pmax pmax
comp=Z,19nm,1.0s
735A Kenedy 83.80 55 P P 16 18 11.2 +1.5
baz=320,SNR=6.2
AQU L'Aquila 83.81 329 *e*P P 16 18 11.3 +1.6
AQU pmax pmax
comp=Z,30nm,1.0s
AQU L'Aquila 83.81 329 *e*P P 16 18 11.3 +1.6
comp=Z,30nm,1.0s
OXF Oxford 83.88 45 *e*P P 16 18 10.0 0.0
OXF pmax pmax
comp=Z,120nm,1.4s
OXF Oxford 83.88 45 *e*P P 16 18 10.0 0.0
comp=Z,120nm,1.4s
LAKA Lakka 83.89 321 P P 16 18 10.7 +0.6
LAKA Lakka 83.89 321 P P 16 18 10.7 +0.6
933A Laredo 83.89 56 P P 16 18 11.9 +1.6
baz=319,SNR=19
834A Tilden 83.92 55 P P 16 18 12.1 +1.7
baz=320
PDO Prodromos 83.94 322 P P 16 18 10.1 -0.2
SSPA Standing Stone 83.96 34 *e*P P 16 18 10.3 -0.1
comp=Z,14nm,0.7s
X45A UM Field Stati 83.96 45 P P 16 18 10.7 +0.2
baz=323
O56A Blue Knob Stat 84.00 35 P P 16 18 10.9 +0.3
baz=329,SNR=14
241A Mo Tay, Goldon 84.04 49 P P 16 18 12.3 +1.4
baz=322
SSB Saint Sauveur 84.06 336 *e*P P 16 18 11.2 +0.4
SSB Saint Sauveur 84.06 336 *e*P P 16 18 11.3 +0.4
SSB pmax pmax
comp=Z,11nm,0.7s
SSB Saint Sauveur 84.06 336 *e*P P 16 18 11.3 +0.5
comp=Z,11nm,0.7s
MFF Saint Martin d 84.07 340 *e*P P 16 18 11.7 +0.9
MFF pmax pmax
comp=Z,17nm,0.6s
142A Monroe 84.14 48 P P 16 18 12.6 +1.2
baz=322
736A Circle Diamond 84.14 54 P P 16 18 13.4 +1.9
baz=320,SNR=16
EIL Elat 84.26 307 P P 16 18 13.4 +1.4
comp=Z,19nm,0.5s,baz=8.5,slow=4.1,SNR=16
Y45A Yeager Farm, C 84.33 46 P P 16 18 13.2 +0.9
baz=323,SNR=11
934A Benavides 84.34 56 P P 16 18 13.4 +0.9
baz=320
Z44A Pea Ridge, Bel 84.35 47 P P 16 18 13.2 +0.8
baz=323,SNR=6.2
341A Kurthwood 84.45 50 P P 16 18 13.7 +0.8
baz=322
LBL Lubilhac 84.46 337 *e*P P 16 18 13.8 +0.9
LUCF Luceram 84.48 334 *e*P P 16 18 13.2 +0.2
ZKR Zakros 84.50 317 P P 16 18 13.5 +0.3
ZKR Zakros 84.50 317 P P 16 18 13.5 +0.3
N59A State Game Lan 84.53 33 P P 16 18 13.4 +0.1
baz=330,SNR=8.5
MVIF Mont Vial 84.54 334 *e*P P 16 18 13.5 +0.1
REVF Revere 84.61 333 *e*P P 16 18 14.1 +0.5
034A Hebbronville 84.65 56 P P 16 18 15.8 +1.8
baz=320,SNR=14
Y46A Houston 84.66 45 P P 16 18 14.5 +0.6
baz=324,SNR=16
LAST Lasithi 84.82 317 P P 16 18 15.0 +0.1
LAST Lasithi 84.82 317 P P 16 18 15.0 +0.1
LUPA Lehigh Univers 84.96 33 *e*P P 16 18 15.2 -0.2
comp=Z,51nm,1.7s
SWET Sewanee 85.00 43 *e*P P 16 18 15.4 -0.3
comp=Z,38nm,1.5s
TZTN Tazewell 85.01 40 *e*P P 16 18 15.8 +0.1
comp=Z,50nm,1.4s
CAF Calviac 85.06 337 *e*P P 16 18 16.6 +0.7
CAF pmax pmax
comp=Z,17nm,0.6s
MVL Millersville 85.10 34 *e*P P 16 18 16.0 0.0
comp=Z,7.8nm,0.7s
Y47A UCPJMC, Winfie 85.14 45 P P 16 18 16.6 +0.2
baz=324,SNR=15
PGF Pioggiola 85.16 332 *e*P P 16 18 16.3 -0.2
PGF pmax pmax
comp=Z,10.0nm,0.6s
Z46A Louisville 85.17 46 P P 16 18 17.4 +0.9
baz=324,SNR=5.0
244A Avery, Jackson 85.19 48 P P 16 18 17.9 +1.2
baz=323,SNR=8.8
LMR La Mourre 85.25 334 *e*P P 16 18 17.2 +0.5
LMR pmax pmax
comp=Z,39nm,1.0s
SIVA Sivas 85.25 317 P P 16 18 17.2 +0.3
SIVA Sivas 85.25 317 P P 16 18 17.2 +0.3
LFF La Frestale 85.40 338 *e*P P 16 18 18.0 +0.5
LFF pmax pmax
comp=Z,18nm,0.6s
CPCT Cooper Cave 85.47 42 *e*P P 16 18 18.1 +0.1
comp=Z,16nm,1.1s
ZAIG Zacatecas 85.55 62 *e*P P 16 18 19.5 +0.6
comp=Z,34nm,1.4s
Z47A Carrollton 85.59 45 P P 16 18 19.2 +0.6
baz=324,SNR=12
245A Little AP, Sta 85.61 47 P P 16 18 19.9 +1.2
baz=323,SNR=6.7
344A Westbrook Farm 85.64 48 P P 16 18 20.3 +1.4
baz=323,SNR=5.4
TKL Tuckaleechee C 85.64 41 *e*P P 16 18 18.6 -0.2
TKL pmax pmax
comp=Z,24nm,0.9s
TKL Tuckaleechee C 85.64 41 *e*P P 16 18 18.6 -0.2
comp=Z,24nm,0.9s
Z48A Northport 85.70 45 P P 16 18 19.2 0.0
baz=324,SNR=6.5
BLA Blacksburg 85.83 38 *e*P P 16 18 19.4 -0.4
BLA pmax pmax
comp=Z,14nm,0.9s
BLA Blacksburg 85.83 38 *e*P P 16 18 19.4 -0.4
comp=Z,14nm,0.9s
147A Livingston 85.92 46 P P 16 18 20.9 +0.7
baz=324,SNR=12
247A Quitman 86.25 46 P P 16 18 23.2 +1.3
baz=324,SNR=6.9
LRAL Lakeview Retre 86.25 45 *e*P P 16 18 21.5 -0.4
comp=Z,28nm,1.6s
445A Amite 86.41 48 P P 16 18 24.2 +1.5
baz=323
248A Dixon Mills 86.65 46 P P 16 18 25.1 +1.3
baz=324
347A Saraland 86.80 47 P P 16 18 25.9 +1.3
baz=324
446A Poplarville 86.87 48 P P 16 18 26.1 +1.2
baz=324
KMSC Kings Mountain 87.17 40 P P 16 18 26.4 +0.2
baz=327,SNR=10
KMSC Kings Mountain 87.17 40 *e*P P 16 18 26.3 0.0
comp=Z,41nm,1.4s
GOGA Godfrey 87.64 42 *e*P P 16 18 28.6 +0.1
GOGA pmax pmax
comp=Z,13nm,0.9s
GOGA Godfrey 87.64 42 *e*P P 16 18 28.6 +0.1
comp=Z,13nm,0.9s
VAE Valguarnera 87.68 326 P P 16 18 29.7 +0.9
comp=Z,5.1nm,0.3s,baz=156,slow=11,SNR=3.0
BRAL Brewton 87.74 46 *e*P P 16 18 29.9 +0.8
comp=Z,189nm,1.6s
JSC Jenkinsville 87.92 40 *e*P P 16 18 30.1 +0.3
JSC Jenkinsville 87.92 40 *e*P P 16 18 30.1 +0.3
TIGA Tifton 89.21 43 P P 16 18 37.0 +1.0
baz=326,SNR=7.0
TIGA Tifton 89.21 43 *e*P P 16 18 36.5 +0.6
comp=Z,137nm,1.6s
NHSC New Hope 89.39 40 *e*P P 16 18 37.4 +0.6
comp=Z,128nm,1.6s
THZ Tophouse 89.77 163 *e*P P 16 18 38.4 +0.3
comp=Z,22nm,0.7s
OXZ Oxford 91.09 164 *e*P P 16 18 45.0 +0.8
comp=Z,103nm,1.5s
KEST Kesra 91.14 329 P P 16 18 45.3 +0.3
comp=Z,7.3nm,0.5s,baz=289,slow=3.4,SNR=15
KEST Kesra 91.14 329 *e*P P 16 18 44.6 -0.4
comp=Z,17nm,1.0s
ES19 SONSECA Array 91.49 340 *e*P P 16 18 45.2 -1.2
ESDC Sonseca Array 91.53 340 P P 16 18 45.2 -1.5
comp=Z,1.1nm,0.6s,baz=11,slow=4.5,SNR=8.9
TORD Torodi Ar. Bea 114.44 325 PKP PKPdf 16 24 18.9 -0.5
comp=Z,2.1nm,0.5s,baz=20,slow=2.0,SNR=19
TORD PP **PP** **16 25 15.0 -2.1**
comp=Z,2.8nm,1.0s,baz=13,slow=6.0,SNR=7.5
TORD PKKPbc **PKKPbc** **16 34 57.2 +0.2**
comp=Z,0.6nm,0.5s,baz=196,slow=2.6,SNR=7.3
TORD PKKPab **PKKPab** **16 35 05.1 -2.8**
comp=Z,0.4nm,0.5s,baz=210,slow=4.3,SNR=4.9
LSZ Lusaka 122.55 282 *e*PKIKP **PKPdf** 16 24 35.2 +0.1
LSZ Lusaka 122.55 282 *e*PKPdf **PKPdf** 16 24 35.2 +0.1
DBIC Dimbokro 122.86 329 PKP **PKPdf** 16 24 35.6 0.0
comp=Z,10nm,0.6s,baz=358,slow=1.7,SNR=23
TIC Toumodi 122.94 329 *e*P **PKPdf** 16 24 35.2 -0.7
KIC Kosan Boka 123.10 329 *e*P **PKPdf** 16 24 35.8 -0.4
comp=Z,58nm,1.2s
LIC Lamto 123.33 329 *e*P **PKPdf** 16 24 32.0 -4.6
comp=Z,168nm,1.5s
VNDA Vanda 123.42 177 PKP **PKPdf** 16 24 35.2 +0.5
comp=Z,5.2nm,0.7s,baz=345,slow=2.8,SNR=26
VNDA Vanda 123.42 177 *e*PKPdf **PKPdf** 16 24 35.1 +0.3
PTGA Pitinga 128.06 39 *e*PKPdf **PKPdf** 16 24 45.8 +0.2
MAW Mawson 130.24 210 PKP **PKPdf** 16 24 49.0 +1.0
comp=Z,7.1nm,0.6s,baz=78,slow=4.0,SNR=11
MAW Mawson 130.24 210 PKIKP **PKPdf** 16 24 49.0 +1.0
MAW pmax pmax
comp=Z,7.0nm,0.6s
MAW Mawson 130.24 210 *e*PKPdf **PKPdf** 16 24 49.5 +1.5
LBTB Lobatse 130.90 275 *e*PKIKP **PKPdf** 16 24 51.3 +0.5
LBTB Lobatse 130.90 275 *e*PKPdf **PKPdf** 16 24 51.2 +0.5
SAML Samuel 133.69 48 *e*PKPdf **PKPdf** 16 24 56.6 +0.4
SYO Syowa Base 138.93 211 ‖ *e*PP PP 16 28 05.2 +6.2
HJA Humahuaca 143.80 63 *i* P PKPbc 16 25 13.1 +0.1
LCO Las Campanas 144.31 76 *e*PKPdf **PKPdf** **16 25 15.0 -0.5**
AZAP Zapla 144.75 64 *i* P PKPbc 16 25 15.9 +0.2
ASTB Santa Barbara 144.94 63 *i* P **PKPdf** **16 25 16.6 0.0**
ALOL LOMAS DE OLMED 145.13 62 *i* P **PKPbc** **16 25 16.1 -0.5**
FSA Cafayete 145.51 67 *i* P **PKPdf** **16 25 16.9 -0.7**
VCA Vinchina 145.81 73 *i* P **PKPab** **16 25 19.4 0.0**
AROD Rodeo 145.87 76 *i* P **PKPab** **16 25 20.4 +0.5**
AGUA GUANDACOL 146.10 74 *i* P **PKPbc** **16 25 19.0 -0.6**
AHML Horco Molle 146.39 67 *i* P **PKPdf** **16 25 19.0 +0.1**
BDFB Brasilia 146.41 32 PKPbc **PKPbc** **16 25 20.9 +0.2**
comp=Z,4μm,0.4s,baz=315,slow=0.0,SNR=6.3

ROC1	El Roble	146.48	82	*e*PKPdf	PKPdf	16 25 19.7	+0.6
AMOG	MOGNA	147.01	76	*i* P	PKPbc	16 25 21.1	-1.0
AUSP	Uspallata	147.17	79	*i* P	PKPbc	16 25 21.5	-1.2
CYA	Choya	147.21	70	*i* P	PKPdf	16 25 20.8	+0.7
ASAL	Salagasta	147.76	79	*i* P	PKPdf	16 25 21.8	+0.8
NVL	N'lazarevskaya	147.86	205	*e*PKP2	PKPab	16 25 25.9	-0.2
ACHE	Chepes	148.38	75	*i* P	PKPdf	16 25 21.3	-0.8
ACAN	Cantantal	148.70	77	*i* P	PKPdf	16 25 20.8	-1.6
TCA	Tanti	149.88	73	*i* P	PKPdf	16 25 25.1	+0.6
PLCA	Paso Flores	150.61	94	PKP	PKPdf	16 25 24.6	-0.7
	comp=Z,4.6nm,0.8s,baz=272,slow=6.4,SNR=4.9						
PLCA				PKPbc	PKiKP	16 25 31.7	+0.2
	comp=Z,58nm,0.6s,baz=301,slow=2.2,SNR=134						
CPUP	Villa Florida	151.01	57	PKP	PKPdf	16 25 26.3	+0.1
	comp=Z,3.0nm,0.8s,baz=272,slow=4.1,SNR=5.0						
CPUP				PKPbc	PKiKP	16 25 32.5	-0.2
	comp=Z,15nm,0.5s,baz=323,slow=1.9,SNR=54						
CPUP				PKPab	PKPab	16 25 40.1	-0.1
	comp=Z,8.2nm,0.7s,baz=284,slow=2.4,SNR=8.4						
SNAA	Sanae	151.05	198	PKP	PKPbc	16 25 31.1	+0.2
SNAA	Sanae	151.05	198	*e*PKIKP	PKPbc	16 25 30.8	-0.2
SNAA	Sanae	151.05	198	*e*PKPbc	PKPbc	16 25 30.8	-0.2
CHRN	Cochrane	151.27	108	*e*PKPbc	PKPbc	16 25 32.6	+0.6
VNA1	Neumayer--Stat	152.95	196	PKP	PKPbc	16 25 35.6	+0.5

JMA 03 16:06:56.7±0.2, 38°14N×144°27E, h41km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.24	296	P	Pn	16 07 32.7	+1.4
OFUJ				*e*S	Sn	16 07 59.7	+1.9
JIO	Ouri	2.32	279	P	Pn	16 07 33.7	+1.3
JIO				S	Sn	16 08 01.1	+1.5
MIYJ	Miyakonagasawa	2.39	308	P	Pn	16 07 34.6	+1.2
JMK	Ichinoseki	2.52	290	P	Pn	16 07 36.8	+1.6
JMK				S	Sn	16 08 06.6	+1.9
JOM	Ohasama	2.68	301	P	Pn	16 07 38.8	+1.5
JMM	Marumori	2.76	265	P	Pn	16 07 39.8	+1.4
JMM				S	Sn	16 08 11.3	+0.8
JOU	Okura	2.85	276	P	Pn	16 07 41.7	+2.1
JOU				S	Sn	16 08 15.0	+2.3
JANG	Nango	3.09	317	P	Pn	16 07 43.9	+0.9
JYK	Kaneyama	3.16	285	P	Pn	16 07 46.3	+2.3
JFT	Otama	3.18	260	P	Pn	16 07 46.2	+2.0
JFT				*e*S	Sn	16 08 23.1	+2.3

*ISCJB **03** 16:06:55.6±0.8, 40.°86S×0.°03×177.°13E±0.°06, h22km±5km, mb3.9/3, Error ellipse: s-maj=8.1km s-min=3.2km az=31.7*
*NEIC **03** 16:06:57.7, 40.°78S×176.°99E, h18km, ML4.4(WEL), After WEL.*
*IDC **03** 16:06:57.4±2.3, 40.°60S×176.°66E, h0km, mb4.0/3, mb1 4.1/5, mb1mx3.9/26, mbtmp3.9/5, ML3.6/2, Error ellipse: s-maj=53.1km s-min=29.5km az=130.0*
*WEL **03** 16:06:59.8±0.2, 40.°72S×176.°89E, h33km, ML4.4/92, Mw4.3, Error ellipse: s-maj=1.9km s-min=1.0km az=90.0*
WEL Felt from Hawke''s Bay to Wellington, maximum reported intensity MM 4.

ISC 03 16:06:57.4±0.9, 40.78S±0.04×177.01E±0.05, h20km±6km, n197, σ0991/203, mb3.9/3, 19C-4D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANWZ	Angora Road	0.52	308	⇓P*	Pb	16 07 08.0	+0.2
ANWZ				S*	Sb	16 07 14.7	-0.3
ANWZ				AML	AML	16 07 16.0	
PRHZ	Porangahau	0.59	331	P*	Pb	16 07 09.3	+0.2
PRHZ				S*	Sb	16 07 16.6	-0.4
PRHZ	Porangahau	0.59	331	⇑P*	Pb	16 07 09.3	+0.2
PRHZ				S*	Sb	16 07 16.6	-0.4
PRHZ				AML	AML	16 07 17.7	
BFZ	Birch Farm	0.59	280	P*	Pb	16 07 09.4	+0.3
BFZ				S*	Sn	16 07 17.8	-1.9
BFZ	Birch Farm	0.59	280	⇓P*	Pb	16 07 10.1	+1.0
BFZ				S*	Sn	16 07 17.8	-1.9
BFZ				AML	AML	16 07 26.1	
BFZ				AML	AML	16 07 26.1	
BFZ				AML	AML	16 07 26.3	
CPWZ	Castlepoint	0.63	258	AML	AML	16 07 26.3	
CPWZ				AML	AML	16 07 32.9	
PXZ	Pawanui	0.76	351	P*	Pn	16 07 12.1	-0.8
PXZ				S*	Sb	16 07 22.5	+0.7
PXZ	Pawanui	0.76	351	P*	Pn	16 07 12.1	-0.8
PXZ				S*	Sb	16 07 22.5	+0.7
PXZ				AML	AML	16 07 23.5	
PXZ				AML	AML	16 07 24.2	
PXZ				AML	AML	16 07 24.2	
DVHZ	Dannevirke	0.81	307	P*	Pn	16 07 12.5	-1.1
DVHZ	Dannevirke	0.81	307	⇑P*	Pn	16 07 12.5	-1.1
DVHZ				AML	AML	16 07 24.7	
DVHZ				AML	AML	16 07 24.9	
PRWZ	Pori Road	0.82	286	P*	Pn	16 07 13.6	-0.3
PRWZ				S*	Sb	16 07 24.0	+0.3
PRWZ	Pori Road	0.82	286	⇑P*	Pn	16 07 13.6	-0.3
PRWZ				S*	Sb	16 07 24.0	+0.3
PRWZ				AML	AML	16 07 28.0	
WPHZ	Waipukurau	0.84	328	P*	Pn	16 07 13.2	-0.8
WPHZ	Waipukurau	0.84	328	⇑P*	Pn	16 07 13.2	-0.8
WPHZ				AML	AML	16 07 24.3	
WPHZ				AML	AML	16 07 28.1	
TIWZ	Tintock	0.86	270	P*	Pn	16 07 14.2	-0.1
TIWZ	Tintock	0.86	270	⇑P*	Pn	16 07 14.2	-0.1
TIWZ				AML	AML	16 07 31.0	
TIWZ				AML	AML	16 07 37.7	
TMWZ	Te Maipa	0.91	249	P*	Pn	16 07 15.3	+0.2
TMWZ	Te Maipa	0.91	249	P*	Pn	16 07 15.3	+0.2
TMWZ				AML	AML	16 07 39.0	
TMWZ				AML	AML	16 07 40.4	
KAHZ	Kahuranaki	0.99	354	P*	Pn	16 07 16.0	-0.2
KAHZ	Kahuranaki	0.99	354	⇑PN	Pn	16 07 16.0	-0.2
KAHZ				AML	AML	16 07 37.4	
KAHZ				AML	AML	16 07 45.4	
POWZ	Post Office Ro	1.03	292	P*	Pn	16 07 16.2	-0.4
POWZ	Post Office Ro	1.03	292	⇑P*	Pn	16 07 16.2	-0.4
POWZ				AML	AML	16 07 22.3	
POWZ				AML	AML	16 07 33.4	
PNHZ	Pukenui	1.07	324	P*	Pn	16 07 16.5	-0.7
PNHZ	Pukenui	1.07	324	⇑P*	Pn	16 07 16.5	-0.7
PNHZ				AML	AML	16 07 33.8	
PNHZ				AML	AML	16 07 35.6	
TSZ	Takapari Road	1.08	312	P*	Pn	16 07 16.2	-1.1
TSZ	Takapari Road	1.08	312	P*	Pn	16 07 16.6	-0.8
TSZ				AML	AML	16 07 33.8	
TSZ				AML	AML	16 07 34.0	
MRZ	Mangatainoka R	1.10	276	P*	Pn	16 07 16.8	-0.8
MRZ	Mangatainoka R	1.10	276	P*	Pn	16 07 16.8	-0.8
MRZ				AML	AML	16 07 30.8	
MRZ				AML	AML	16 07 30.8	
CKHZ	Cape Kidnapper	1.12	3	Pn	Pn	16 07 17.8	-0.1
CKHZ	Cape Kidnapper	1.12	3	PN	Pn	16 07 17.8	-0.1
CKHZ				AML	AML	16 07 53.0	
CKHZ				AML	AML	16 07 53.1	
HOWZ	Holdsworth Sta	1.14	264	P*	Pn	16 07 18.1	-0.2
HOWZ	Holdsworth Sta	1.14	264	⇑P*	Pn	16 07 18.0	-0.2
HOWZ				AML	AML	16 07 41.4	
HOWZ				AML	AML	16 07 41.8	
TRWZ	Traveller	1.18	238	P*	Pn	16 07 18.9	+0.2
TRWZ	Traveller	1.18	238	⇑P*	Pn	16 07 18.9	+0.2
TRWZ				AML	AML	16 07 55.1	
TRWZ				AML	AML	16 08 02.2	
MTW	Mount Morrison	1.20	251	P*	Pn	16 07 19.1	0.0
MTW	Mount Morrison	1.20	251	⇓P*	Pn	16 07 19.1	0.0
MTW				AML	AML	16 07 44.8	
MTW				AML	AML	16 07 54.8	
KRHZ	Kereru	1.24	336	⇑PN	Pn	16 07 18.9	-0.7
KRHZ				AML	AML	16 07 40.2	
KRHZ				AML	AML	16 07 47.4	
PAWZ	Paruwai Farm	1.34	243	P*	Pn	16 07 20.8	-0.1
PAWZ	Paruwai Farm	1.34	243	PN	Pn	16 07 20.8	-0.1
PAWZ				AML	AML	16 07 55.4	
PAWZ				AML	AML	16 08 05.4	
MCHZ	McNeill Hill	1.36	350	Pn	Pn	16 07 21.2	+0.1
MCHZ	McNeill Hill	1.36	350	⇑PN	Pn	16 07 21.2	+0.1
MCHZ				AML	AML	16 07 51.2	
MCHZ				AML	AML	16 08 05.8	
OGWZ	Otaki Gorge	1.40	268	P*	Pn	16 07 21.7	-0.1
OGWZ	Otaki Gorge	1.40	268	⇑PN	Pn	16 07 21.7	-0.1
OGWZ				AML	AML	16 07 45.7	
OGWZ				AML	AML	16 07 48.1	
OHWZ	Ohakea	1.42	293	⇑PN	Pn	16 07 22.7	+0.7
KWHZ	Kaweka Forest	1.43	341	PN	Pn	16 07 21.5	-0.7
KWHZ				AML	AML	16 07 49.7	
KWHZ				AML	AML	16 07 50.6	
MSWZ	Moikau Station	1.48	244	Pn	Pn	16 07 22.5	-0.3
MSWZ	Moikau Station	1.48	244	PN	Pn	16 07 22.5	-0.3
MSWZ				AML	AML	16 07 57.9	
MSWZ				AML	AML	16 08 01.5	
BHHZ	Black Hill Sta	1.48	330	Pn	Pn	16 07 22.4	-0.6
BHHZ	Black Hill Sta	1.48	330	⇑PN	Pn	16 07 22.4	-0.6
BHHZ				AML	AML	16 07 46.3	
BHHZ				AML	AML	16 07 48.3	
CAW	Cannon Point	1.51	257	Pn	Pn	16 07 23.2	-0.1
CAW	Cannon Point	1.51	257	⇑PN	Pn	16 07 23.2	-0.1
CAW				AML	AML	16 07 53.7	
CAW				AML	AML	16 07 57.0	
ARHZ	Aropaoanui	1.52	359	Pn	Pn	16 07 23.4	+0.1
ARHZ	Aropaoanui	1.52	359	⇓PN	Pn	16 07 23.4	+0.1
ARHZ				AML	AML	16 07 56.3	
ARHZ				AML	AML	16 07 57.1	
PLWZ	Palliser	1.54	239	Pn	Pn	16 07 23.4	-0.4
PLWZ	Palliser	1.54	239	PN	Pb	16 07 26.2	+0.9
PLWZ				AML	AML	16 08 12.3	
PLWZ				AML	AML	16 08 18.5	
KIW	Kapiti Island	1.60	267	Pn	Pn	16 07 24.6	+0.1
KIW	Kapiti Island	1.60	267	⇑PN	Pn	16 07 24.6	+0.1
KIW				AML	AML	16 07 53.9	
KIW				AML	AML	16 07 58.4	
BKZ	Black Stump Fm	1.66	346	Pn	Pn	16 07 24.9	-0.6
BKZ	Black Stump Fm	1.66	346	PN	Pn	16 07 24.9	-0.6
BKZ				AML	AML	16 07 43.9	
BKZ				AML	AML	16 08 00.2	
MOVZ	Moawhango	1.68	324	Pn	Pn	16 07 25.8	+0.1
MOVZ	Moawhango	1.68	324	PN	Pn	16 07 25.8	+0.1
MOVZ				AML	AML	16 07 55.2	
MOVZ				AML	AML	16 07 57.5	
NMHZ	Naumai	1.69	355	Pn	Pn	16 07 25.9	+0.1
NMHZ	Naumai	1.69	355	⇑PN	Pn	16 07 25.9	+0.1
NMHZ				AML	AML	16 08 03.9	
NMHZ				AML	AML	16 08 06.1	
WHHZ	Waihua	1.71	6	PN	Pn	16 07 25.9	-0.1
WHHZ				AML	AML	16 08 14.4	
WHHZ				AML	AML	16 08 17.9	
BHW	Baring Head	1.73	248	Pn	Pn	16 07 26.1	-0.3
BHW	Baring Head	1.73	248	PN	Pn	16 07 26.1	-0.3
BHW				AML	AML	16 08 04.3	
BHW				AML	AML	16 08 04.7	
MHGZ	Mahia Peninsul	1.77	23	Pn	Pn	16 07 26.6	-0.2
MHGZ	Mahia Peninsul	1.77	23	PN	Pn	16 07 26.6	-0.2
MHGZ				AML	AML	16 08 23.1	
MHGZ				AML	AML	16 08 31.1	
WEL	Wellington	1.77	253	Pn	Pn	16 07 26.7	-0.1
WEL	Wellington	1.77	253	PN	Pn	16 07 26.7	-0.1
WEL				AML	AML	16 08 02.7	
WEL				AML	AML	16 08 02.9	
WEL				AML	AML	16 08 03.0	
WEL				AML	AML	16 08 06.3	
WNVZ	Wahianoa	1.81	323	Pn	Pn	16 07 28.1	+0.4
WNVZ	Wahianoa	1.81	323	PN	Pn	16 07 28.0	+0.4
KNZ	Kokohu	1.83	16	Pn	Pn	16 07 27.5	-0.2
KNZ	Kokohu	1.83	16	PN	Pn	16 07 27.5	-0.2
KNZ				AML	AML	16 08 20.1	
KNZ				AML	AML	16 08 20.5	
MTVZ	Mangateitei	1.83	319	Pn	Pn	16 07 28.6	+0.9
MTVZ	Mangateitei	1.83	319	PN	Pn	16 07 28.6	+0.9
MTVZ				AML	AML	16 08 00.0	
MTVZ				AML	AML	16 08 09.9	
TUVZ	Tukino	1.84	325	Pn	Pn	16 07 28.5	+0.6
TUVZ	Tukino	1.84	325	PN	Pn	16 07 28.5	+0.6
TUVZ				AML	AML	16 08 04.3	
TUVZ				AML	AML	16 08 11.3	
WHVZ	Whangaehu Hut	1.85	323	Pn	Pn	16 07 28.7	+0.5
WHVZ	Whangaehu Hut	1.85	323	PN	Pn	16 07 28.7	+0.5
WHVZ				AML	AML	16 08 01.6	
WHVZ				AML	AML	16 08 08.0	
TRVZ	Turoa	1.86	322	Pn	Pn	16 07 28.8	+0.5
TRVZ	Turoa	1.86	322	PN	Pn	16 07 28.8	+0.5
TRVZ				AML	AML	16 08 01.3	
TRVZ				AML	AML	16 08 03.9	
WAZ	Wanganui	1.86	303	Pn	Pn	16 07 29.0	+0.9
WAZ	Wanganui	1.86	303	PN	Pn	16 07 29.0	+0.9
WAZ				AML	AML	16 08 08.2	
WAZ				AML	AML	16 08 17.4	
RAHZ	Arahi	1.86	2	Pn	Pn	16 07 28.2	0.0
RAHZ	Arahi	1.86	2	⇑PN	Pn	16 07 28.2	0.0
RAHZ				SN	Sn	16 07 50.1	-1.0
RAHZ				AML	AML	16 08 11.6	
DRZ	Dome Shelter	1.87	323	AML	AML	16 08 03.6	
DRZ				AML	AML	16 08 03.8	
FWVZ	Far West T-bar	1.89	323	Pn	Pn	16 07 29.4	+0.6
FWVZ	Far West T-bar	1.89	323	PN	Pn	16 07 29.6	+0.8
FWVZ				AML	AML	16 08 09.6	
FWVZ				AML	AML	16 08 11.7	
OTVZ	Oturere	1.92	327	Pn	Pn	16 07 29.8	+0.7
OTVZ	Oturere	1.92	327	PN	Pn	16 07 29.8	+0.7
OTVZ				AML	AML	16 08 05.5	
OTVZ				AML	AML	16 08 16.3	
NGZ	Ngauruhoe	1.94	325	Pn	Pn	16 07 29.8	+0.5
NGZ	Ngauruhoe	1.94	325	PN	Pn	16 07 29.9	+0.6
NGZ				AML	AML	16 08 07.7	
NGZ				AML	AML	16 08 08.7	
PKVZ	Pokaka	1.97	319	Pn	Pn	16 07 30.6	+1.1
PKVZ	Pokaka	1.97	319	PN	Pn	16 07 30.6	+1.1
PKVZ				AML	AML	16 08 05.5	
PKVZ				AML	AML	16 08 11.0	
PRGZ	Paritu Road	1.98	20	Pn	Pn	16 07 29.4	-0.2
PRGZ	Paritu Road	1.98	20	PN	Pn	16 07 29.4	-0.2
PRGZ				AML	AML	16 07 54.0	
PRGZ				AML	AML	16 08 01.2	
KRVZ	Karewarewa	1.99	328	Pn	Pn	16 07 31.0	+1.0
KRVZ	Karewarewa	1.99	328	PN	Pn	16 07 30.9	+1.0
KRVZ				AML	AML	16 08 08.5	
KRVZ				AML	AML	16 08 11.8	
WTVZ	West Tongariro	1.99	326	Pn	Pn	16 07 30.8	+0.8
WTVZ	West Tongariro	1.99	326	PN	Pn	16 07 30.8	+0.8
WTVZ				AML	AML	16 08 16.3	
WTVZ				AML	AML	16 08 16.8	
MRHZ	Matea Rd	2.00	347	PN	Pn	16 07 30.2	+0.2
MRHZ				AML	AML	16 07 53.3	
MRHZ				AML	AML	16 08 13.6	
RITZ	Rihia Road	2.01	333	Pn	Pn	16 07 31.0	+0.8
RITZ	Rihia Road	2.01	333	PN	Pn	16 07 30.8	+0.7
RITZ				AML	AML	16 08 13.7	
RITZ				AML	AML	16 08 22.7	
SNGZ	Shannon Statio	2.02	7	Pn	Pn	16 07 30.0	-0.3
SNGZ	Shannon Statio	2.02	7	PN	Pn	16 07 29.9	-0.3
SNGZ				AML	AML	16 08 09.7	
SNGZ				AML	AML	16 08 23.1	
KATZ	Kakaramea	2.07	330	Pn	Pn	16 07 32.0	+0.8
KATZ	Kakaramea	2.07	330	PN	Pn	16 07 32.0	+0.8
KATZ				AML	AML	16 08 11.1	
KATZ				AML	AML	16 08 12.6	
TWVZ	Taurewa	2.10	324	Pn	Pn	16 07 32.0	+0.6
TWVZ	Taurewa	2.10	324	PN	Pn	16 07 32.0	+0.6
TWVZ				AML	AML	16 08 15.2	
TWVZ				AML	AML	16 08 16.3	
TCW	Tory Channel	2.12	257	Pn	Pn	16 07 31.6	0.0
TCW	Tory Channel	2.12	257	PN	Pn	16 07 31.6	0.0
TCW				AML	AML	16 08 09.7	
TCW				AML	AML	16 08 13.2	
RATZ	Rangitukua	2.14	333	Pn	Pn	16 07 32.7	+0.7
RATZ	Rangitukua	2.14	333	PN	Pn	16 07 32.6	+0.7
RATZ				AML	AML	16 08 20.6	
RATZ				AML	AML	16 08 20.9	
RIGZ	Rimuhau	2.15	16	PN	Pn	16 07 31.6	-0.5
RIGZ				AML	AML	16 08 00.4	
RIGZ				AML	AML	16 08 37.2	
RTZ	Ruatahuna	2.17	359	PN	Pn	16 07 31.9	-0.4
ALRZ	Allen Road	2.28	347	Pn	Pn	16 07 33.9	0.0
ALRZ	Allen Road	2.28	347	PN	Pn	16 07 33.8	0.0
ALRZ				AML	AML	16 08 26.8	
ALRZ				AML	AML	16 08 28.0	
WAIZ	Wairara	2.29	334	Pn	Pn	16 07 33.7	-0.4
WATZ	Wairara	2.29	334	PN	Pn	16 07 34.1	0.0
WATZ				AML	AML	16 08 42.6	
WATZ				AML	AML	16 08 48.8	
RAGZ	Rawiri	2.31	8	Pn	Pn	16 07 33.7	-0.6
RAGZ	Rawiri	2.31	8	PN	Pn	16 07 33.6	-0.6
RAGZ				AML	AML	16 08 05.1	
RAGZ				AML	AML	16 08 42.2	
MUGZ	Murupara	2.31	355	PN	Pn	16 07 34.3	0.0
CMWZ	Cape Campbell	2.32	245	AML	AML	16 08 10.1	
CMWZ				AML	AML	16 08 33.7	
PRRZ	Plateau Road	2.33	348	Pn	Pn	16 07 34.4	-0.1
PRRZ	Plateau Road	2.33	348	PN	Pn	16 07 34.4	-0.1
PRRZ				AML	AML	16 08 26.5	
PRRZ				AML	AML	16 08 27.4	
VRZ	Vera Road	2.40	313	Pn	Pn	16 07 36.4	+0.9
VRZ	Vera Road	2.40	313	PN	Pn	16 07 36.4	+0.9
VRZ				AML	AML	16 08 24.5	
VRZ				AML	AML	16 08 32.6	
LREZ	Lake Rotokare	2.40	303	PN	Pn	16 07 36.7	+1.3
LREZ				AML	AML	16 08 24.6	
LREZ				AML	AML	16 08 32.9	
TUWZ	Tuamarina	2.41	253	Pn	Pn	16 07 35.0	-0.6
TUWZ	Tuamarina	2.41	253	PN	Pn	16 07 35.0	-0.6
TUWZ				AML	AML	16 08 23.1	
TUWZ				AML	AML	16 08 27.8	
TKGZ	Te Karaka	2.43	16	Pn	Pn	16 07 35.2	-0.7
TKGZ	Te Karaka	2.43	16	PN	Pn	16 07 35.2	-0.7
TKGZ				AML	AML	16 08 10.1	
TKGZ				AML	AML	16 08 13.0	
HRRZ	Handcock Road	2.46	346	Pn	Pn	16 07 36.3	0.0
HRRZ	Handcock Road	2.46	346	PN	Pn	16 07 36.2	-0.1
HRRZ				AML	AML	16 08 29.5	
HRRZ				AML	AML	16 08 38.2	
KUTZ	Kaahu Road	2.47	338	Pn	Pn	16 07 36.4	-0.1
KUTZ	Kaahu Road	2.47	338	PN	Pn	16 07 36.2	-0.3
KUTZ				AML	AML	16 08 24.1	
KUTZ				AML	AML	16 08 32.3	
CNGZ	Carnagh Statio	2.48	22	Pn	Pn	16 07 36.4	-0.2
CNGZ	Carnagh Statio	2.48	22	PN	Pn	16 07 36.3	-0.2
CNGZ				AML	AML	16 08 07.4	
CNGZ				AML	AML	16 08 08.0	
MWZ	Matawai	2.48	9	PN	Pn	16 07 35.9	-0.8
MWZ				AML	AML	16 08 37.8	
MWZ				AML	AML	16 08 43.6	
URZ	Urewera	2.52	2	Pn	Pn	16 07 36.3	-0.9
	23nm,0.3s,baz=230,slow=4.7,SNR=82						
URZ				Sn	Sn	16 08 03.9	-3.3
	51nm,0.3s,baz=304,slow=22,SNR=16						
URZ	Urewera	2.52	2	PN	Pn	16 07 36.2	-0.9
URZ				AML	AML	16 08 23.6	
URZ				AML	AML	16 08 45.7	
BSWZ	Blackbirch Sta	2.54	247	Pn	Pn	16 07 37.0	-0.5
BSWZ	Blackbirch Sta	2.54	247	PN	Pn	16 07 37.0	-0.5
BSWZ				AML	AML	16 08 32.1	
BSWZ				AML	AML	16 08 32.2	
TARZ	Mount Tarawera	2.57	351	Pn	Pn	16 07 37.8	-0.2
TARZ	Mount Tarawera	2.57	351	PN	Pn	16 07 37.9	-0.1
TARZ				AML	AML	16 07 39.7	
TARZ				AML	AML	16 07 39.9	
HLRZ	Highlands Stat	2.58	348	PN	Pn	16 07 38.8	+0.8
HLRZ				AML	AML	16 08 30.7	
HLRZ				AML	AML	16 08 48.3	
PREZ	Palmer Road	2.62	302	Pn	Pn	16 07 40.2	+1.7
PREZ	Palmer Road	2.62	302	PN	Pn	16 07 40.2	+1.7
PREZ				AML	AML	16 08 29.3	
PREZ				AML	AML	16 08 32.2	
MHEZ	Mangahewa	2.68	309	PN	Pn	16 07 41.5	+2.2
DREZ	Durham Road	2.68	305	Pn	Pn	16 07 40.8	+1.4
DREZ	Durham Road	2.68	305	PN	Pn	16 07 40.8	+1.4
NEZ	North Egmont	2.70	303	Pn	Pn	16 07 41.2	+1.4
NEZ	North Egmont	2.70	303	PN	Pn	16 07 41.2	+1.4
TLZ	Tolley Road	2.70	335	Pn	Pn	16 07 39.2	-0.5
TLZ	Tolley Road	2.70	335	PN	Pn	16 07 39.3	-0.4
TLZ				AML	AML	16 07 56.5	
TLZ				AML	AML	16 08 36.3	
TWGZ	Tauwhareparae	2.71	16	Pn	Pn	16 07 39.2	-0.5
TWGZ	Tauwhareparae	2.71	16	PN	Pn	16 07 39.1	-0.7
TWGZ				AML	AML	16 08 17.0	
TWGZ				AML	AML	16 08 26.1	
NNZ	Nelson	2.78	260	Pn	Pn	16 07 40.8	0.0
NNZ	Nelson	2.78	260	PN	Pn	16 07 40.8	0.0
NNZ				AML	AML	16 08 36.8	
NNZ				AML	AML	16 08 42.2	
HIZ	Hauiti	2.81	323	Pn	Pn	16 07 41.3	+0.1
HIZ	Hauiti	2.81	323	PN	Pn	16 07 41.4	+0.3
HIZ				AML	AML	16 08 30.9	
HIZ				AML	AML	16 08 32.6	
PUZ	Puketiti	2.87	20	Pn	Pn	16 07 40.9	-1.2
PUZ	Puketiti	2.87	20	PN	Pn	16 07 40.8	-1.3
PUZ				AML	AML	16 08 20.4	
PUZ				AML	AML	16 08 25.7	
KHZ	Kahutara	3.07	237	*e*Pn	Pn	16 07 43.8	-1.0
KHZ	Kahutara	3.07	237	AML	AML	16 08 19.9	
KHZ				AML	AML	16 08 20.9	
HAZ	Te Kaha	3.08	11	PN	Pn	16 07 44.4	-0.4
HAZ				AML	AML	16 08 23.0	
HAZ				AML	AML	16 08 24.0	
WMGZ	Waiomatatini S	3.15	21	Pn	Pn	16 07 45.1	-0.7
WMGZ	Waiomatatini S	3.15	21	PN	Pn	16 07 45.1	-0.7
WMGZ				AML	AML	16 08 21.9	
WMGZ				AML	AML	16 08 22.6	
THZ	Tophouse	3.25	251	Pn	Pn	16 07 46.3	-0.9
THZ	Tophouse	3.25	251	PN	Pn	16 07 46.1	-1.1
THZ				AML	AML	16 08 48.7	
THZ				AML	AML	16 09 04.8	
TOZ	Tahuroa Road	3.27	338	Pn	Pn	16 07 47.0	-0.4
TOZ	Tahuroa Road	3.27	338	PN	Pn	16 07 47.0	-0.4
QRZ	Quartz Range	3.40	268

JFY	**Yanaizu**	**2.11**	**261**	P	Pb	16 09 09.7 -1.7

JMA 03 16:10:31.0±0.1, 37.45N×141.42E, h27km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.44**	**259**	P	Pb	16 10 40.2	-0.2
JFK				S	Sb	16 10 46.5	-0.3
ONAJ	**Iwakimizuishiy**	**0.61**	**235**	P	Pb	16 10 42.5	-0.6
ONAJ				S	Sb	16 10 50.5	-0.8
JMM	**Marumori**	**0.65**	**310**	P	Pb	16 10 43.4	-0.4
JMM				S	Sb	16 10 51.9	-0.5
JFT	**Otama**	**0.86**	**275**	P	Pb	16 10 47.3	-0.1
JFT				S	Sb	16 10 58.5	-0.1
JIO	**Ouri**	**1.00**	**357**	P	Pn	16 10 48.8	-0.5
JIO				S	Sn	16 11 00.9	-1.7
JOU	**Okura**	**1.09**	**327**	P	Pb	16 10 51.1	-0.2
JOU				S	Sb	16 11 05.0	-0.1
JFY	**Yanaizu**	**1.37**	**269**	P	Pn	16 10 55.1	+0.8
JFY				S	Sb	16 11 12.3	-0.7
MAT	**Matsushiro**	**2.73**	**252**	P	Pn	16 11 15.2	+2.2
MAT				S	Sn	16 11 48.0	+2.9

*DDA **03** 16:15:19.8, 35.77N×29.28E, h40km, Ml3.8*
*ISCJB **03** 16:15:20.6±0.2, 35.73N±0.02×29.37E±0.02, h49km±4km, mb3.9/11, Error ellipse: s-maj=3.1km s-min=2.2km az=15.7*
*ISK **03** 16:15:20.4, 35.90N×29.28E, h14km, ML3.4*
*IDC **03** 16:15:21.9±2.1, 35.82N×29.37E, h40km±22km, mb3.8/11, mb1 3.9/16, mb1mx3.6/54, mbtmp4.0/16, ML4.0/5, MS2.5/1, Ms1 2.5/1, ms1mx2.0/52, Error ellipse: s-maj=22.1km s-min=12.7km az=151.0*
*ATH **03** 16:15:21.6, 35.94N×29.21E, h33km±4km, ML3.7/10, Error ellipse: s-maj=6.1km s-min=0.7km az=90.0*
*THE **03** 16:15:22.5, 35.91N×29.19E, h5km±3km, ML3.7/6, Error ellipse: s-maj=4.7km s-min=0.6km az=127.0*
*CSEM **03** 16:15:22.2±0.1, 35.78N×29.35E, h40km, ML3.7, Error ellipse: s-maj=2.6km s-min=1.8km az=32.0*
*NIC **03** 16:15:26.5±0.4, 35.75N×29.62E, h25km, mb4.2, ML3.8*
*GII **03** 16:15:26.5±0.0, 35.46N×29.73E, h15km, MD2.9/6*
*HLW **03** 16:15:27.1, 35.43N×29.33E, h30km±20km, Md3.5*
*NSSC **03** 16:15:30.0±1.2, 35.74N×30.51E, h0km±56km, MD2.6, ML3.1*

ISC 03 16:15:21.5±0.7, 35.77N±0.03×29.36E±0.02, h35km±4km, n223, σ1§54/290, mb3.9/11, 1C, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSL	**Kastellorizon**	**0.42**	**25**	P	Pn	**16 15 30.3**	**-0.6**
KSL				S	Sn	**16 15 37.4**	**-0.2**
KSL	**Kastellorizon**	**0.42**	**25**	P	Pn	**16 15 30.1**	**-0.8**
KSL				S	Sn	**16 15 37.6**	**0.0**
KSL				AML	AML	16 15 38.0	
	comp=E,43097μm,0.4s						
KSL				AML	AML	16 15 39.4	
	comp=N,23227μm,0.8s						
AKAS	**Kas**	**0.50**	**23**	*i* P	**Pn**	**16 15 31.9**	**-0.4**
AKAS				*i* S	**Sn**	**16 15 40.4**	**+0.6**
AKAS	**Kas**	**0.50**	**23**	P	**Pn**	**16 15 31.9**	**-0.4**
AKAS				S	**Sn**	**16 15 40.4**	**+0.6**
ELL	**Elmali**	**1.07**	**24**	*e*PG	**Pn**	**16 15 39.9**	**-0.2**
ELL				*e*SG	**Sn**	**16 15 53.9**	**+0.1**
ELL	**Elmali**	**1.07**	**24**	*e*Pg	**Pn**	**16 15 39.9**	**-0.2**
ELL				*e*Sg	**Sn**	**16 15 53.9**	**+0.1**
ARG	**Arkhangelos**	**1.10**	**294**	P	**Sn**	**16 15 39.9**	**-0.5**
ARG				S	**Sn**	**16 15 53.4**	**-0.9**
ARG	**Arkhangelos**	**1.10**	**294**	P	**Pn**	**16 15 40.3**	**-0.1**
ARG				S	**Sn**	**16 15 53.4**	**-0.9**
DALY	**Dalyan (Mu¨la**	**1.19**	**331**	*e*PN	**Pn**	**16 15 41.3**	**-0.3**
DALY				*e*SN	**Sn**	**16 15 55.5**	**-1.0**
DALY	**Dalyan (Mu¨la**	**1.19**	**331**	*e*Pn	**Pn**	**16 15 41.3**	**-0.3**
DALY				*e*Sn	**Sn**	**16 15 55.5**	**-1.0**
TURN	**Turunc**	**1.26**	**331**	*i* P	**Pn**	**16 15 44.0**	**+1.4**
TURN				*i* S	**Sn**	**16 16 00.7**	**+2.4**
GLHS	**Glhisar (BURDU**	**1.39**	**4**	*e*PN	**Pn**	**16 15 44.5**	**0.0**
GLHS	**Glhisar (BURDU**	**1.39**	**4**	*e*Pn	**Pn**	**16 15 44.5**	**0.0**
KORT	**Korkueli**	**1.46**	**33**	*i* P	**Pn**	**16 15 46.7**	**+1.1**
KORT				*i* S	**Sn**	**16 16 08.9**	**+5.4**
KORT	**Korkueli**	**1.46**	**33**	P	**Pn**	**16 15 46.7**	**+1.1**
GOLH	**Golhisar**	**1.47**	**6**	*i* P	**Pn**	**16 15 46.5**	**+0.9**
GOLH				*i* S	**Sn**	**16 16 05.8**	**+2.1**
GOLH	**Golhisar**	**1.47**	**6**	P	**Pn**	**16 15 46.5**	**+0.9**
GOLH				S	**Sn**	**16 16 05.8**	**+2.1**
ANTB	**Antalya**	**1.53**	**42**	*e*PN	**Pn**	**16 15 47.4**	**+1.0**
ANTB	**Antalya**	**1.53**	**42**	*e*Pn	**Pn**	**16 15 47.4**	**+1.0**
YER	**Yerkesik**	**1.61**	**328**	*e*PN	**Pn**	**16 15 47.6**	**0.0**
YER	**Yerkesik**	**1.61**	**328**	*e*Pn	**Pn**	**16 15 47.6**	**0.0**
KARP	**Karpathos**	**1.81**	**263**	*e*PN	**Pn**	**16 15 51.1**	**+0.9**
KARP	**Karpathos**	**1.81**	**263**	P	**Pn**	**16 15 51.2**	**+1.0**
KARP				S	**Sn**	**16 16 12.8**	**+0.9**
KARP	**Karpathos**	**1.81**	**263**	P	**Pn**	**16 15 50.9**	**+0.7**
KARP				S	**Sn**	**16 16 12.8**	**+0.9**
KARP	**Karpathos**	**1.81**	**263**	P	**Pn**	**16 15 50.9**	**+0.7**
KARP				S	**Sn**	**16 16 12.0**	**+0.1**
KARP				AML	AML	16 16 15.5	
	comp=E,2350μm,0.4s						
KARP				AML	AML	16 16 17.4	
	comp=N,2290μm,0.5s						
DNZL	**Cakiroluk**	**1.93**	**353**	*i* P	**Pn**	**16 15 53.0**	**+1.0**
DNZL				*i* S	**Sn**	**16 16 18.5**	**+3.4**
DNZL	**Cakiroluk**	**1.93**	**353**	P	**Pn**	**16 15 53.0**	**+1.0**
DNZL				S	**Sn**	**16 16 18.5**	**+3.4**
NIS1	**Nisyros Isl.**	**1.95**	**296**	*e*PN	**Pn**	**16 15 52.3**	**+0.2**
NIS1	**Nisyros Isl.**	**1.95**	**296**	P	**Pn**	**16 15 52.2**	**+0.1**
NIS1				S	**Sn**	**16 16 15.1**	**-0.3**
NIS1	**Nisyros Isl.**	**1.95**	**296**	*e*Pn	**Pn**	**16 15 52.3**	**+0.2**
NIS1	**Nisyros Isl.**	**1.95**	**296**	P	**Pn**	**16 15 52.6**	**+0.5**
NIS1				S	**Sn**	**16 16 16.1**	**+0.7**
NIS1	**Nisyros Isl.**	**1.95**	**296**	P	**Pn**	**16 15 52.6**	**+0.5**
NIS1				S	**Sn**	**16 16 16.1**	**+0.7**
NIS1				AML	AML	16 16 18.4	
	comp=N,5603μm,0.7s						
NIS1				AML	AML	16 16 22.1	
	comp=E,5559μm,0.8s						
BCK	**Bucak**	**1.95**	**30**	*e*PN	**Pn**	**16 15 53.4**	**+1.2**
BCK	**Bucak**	**1.95**	**30**	*e*Pn	**Pn**	**16 15 53.4**	**+1.2**
DENT	**Denizli**	**2.00**	**352**	*e*PN	**Pn**	**16 15 53.2**	**+0.4**
DENT	**Denizli**	**2.00**	**352**	*e*Pn	**Pn**	**16 15 53.2**	**+0.4**
BDRM	**Kayabasi**	**2.01**	**310**	*i* P	**Pn**	**16 15 52.9**	**-0.1**
BDRM	**Kayabasi**	**2.01**	**310**	P	**Pn**	**16 15 52.9**	**-0.1**
BODT	**Bodrum**	**2.10**	**308**	*e*PN	**Pn**	**16 15 53.8**	**-0.3**
BODT	**Bodrum**	**2.10**	**308**	*e*Pn	**Pn**	**16 15 53.8**	**-0.3**
SUTC	**Sutluce-Ispart**	**2.15**	**37**	*e*PN	**Pn**	**16 15 56.5**	**+1.5**
SUTC	**Sutluce-Ispart**	**2.15**	**37**	*e*Pn	**Pn**	**16 15 56.5**	**+1.5**
GAZI	**Gazipasa**	**2.44**	**78**	*i* P	**Pn**	**16 15 58.9**	**+0.1**
GAZI				*i* S	**Sn**	**16 16 26.4**	**-1.1**
GAZI	**Gazipasa**	**2.44**	**78**	P	**Pn**	**16 15 58.9**	**+0.1**
GAZI				S	**Sn**	**16 16 26.4**	**-1.1**
AYDB	**Zeytinkoy-Aydi**	**2.47**	**332**	*e*PN	**Pn**	**16 15 59.6**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**2.47**	**332**	*e*Pn	**Pn**	**16 15 59.6**	**+0.2**
AKMC	**Akamas**	**2.54**	**106**	P	**Pn**	**16 16 01.6**	**+1.4**
	baz=288						
AKMC	**Akamas**	**2.54**	**106**	P	**Pn**	**16 16 01.6**	**+1.4**
KHL	**Karahalli**	**2.55**	**3**	*e*PN	**Pn**	**16 16 01.0**	**+0.6**
KHL	**Karahalli**	**2.55**	**3**	*e*Pn	**Pn**	**16 16 01.0**	**+0.6**
GCAM	**G?zelcaml?**	**2.57**	**319**	*i* P	**Pn**	**16 16 00.8**	**+0.1**
GCAM				*i* S	**Sn**	**16 16 28.5**	**-2.2**
GCAM	**G?zelcaml?**	**2.57**	**319**	P	**Pn**	**16 16 00.8**	**+0.1**
GCAM				S	**Sn**	**16 16 28.5**	**-2.2**
PPCY	**Paphos**	**2.59**	**109**	P	**Pn**	**16 16 03.1**	**+2.1**
	baz=291						
PPCY	**Paphos**	**2.59**	**109**	P	**Pn**	**16 16 03.1**	**+2.1**
ZKR	**Zakros**	**2.65**	**257**	P	**Pn**	**16 16 03.3**	**+1.5**
ZKR				S	**Sn**	**16 16 33.7**	**+1.0**
ZKR	**Zakros**	**2.65**	**257**	P	**Pn**	**16 16 03.2**	**+1.5**
ZKR				S	**Sn**	**16 16 33.7**	**+1.0**
ZKR	**Zakros**	**2.65**	**257**	P	**Pn**	**16 16 03.2**	**+1.5**
ZKR				S	**Sn**	**16 16 33.7**	**+1.0**
ZKR				AML	AML	16 16 34.7	
	comp=E,1691μm,0.5s						
ZKR				AML	AML	16 16 35.8	
	comp=N,1818μm,0.5s						
ALFC	**Alefka**	**2.71**	**102**	P	**Pn**	**16 16 03.7**	**+1.1**
	baz=284						
ALFC				S	**Sn**	**16 16 33.9**	**-0.3**
ALFC	**Alefka**	**2.71**	**102**	P	**Pn**	**16 16 03.7**	**+1.1**
ALFC				S	**Sn**	**16 16 33.9**	**-0.3**
MANT	**Manisa**	**2.79**	**347**	*i* P	**Pn**	16 16 09.8	+5.9
KULA	**Kula-Manisa**	**2.79**	**349**	*e*PN	**Pn**	**16 16 04.4**	**+0.6**
KULA	**Kula-Manisa**	**2.79**	**349**	*e*Pn	**Pn**	**16 16 04.4**	**+0.6**
SMG	**Samos**	**2.80**	**314**	P	**Pn**	**16 16 03.4**	**-0.4**
SMG				S	**Sn**	**16 16 34.3**	**-2.1**
SMG	**Samos**	**2.80**	**314**	P	**Pn**	**16 16 03.4**	**-0.4**
SMG				S	**Sn**	**16 16 34.3**	**-2.1**
SMG	**Samos**	**2.80**	**314**	P	**Pn**	**16 16 03.2**	**-0.6**
SMG				S	**Sn**	**16 16 32.2**	**-4.2**
SMG				AML	AML	16 16 35.5	
	comp=N,794μm,0.3s						
SMG				AML	AML	16 16 36.1	
	comp=E,716μm,0.3s						
ERMK	**Ermenek**	**3.00**	**72**	*i* P	**Pn**	**16 16 08.4**	**+1.7**
ERMK				*i* S	**Sn**	**16 16 42.0**	**+0.4**
ERMK	**Ermenek**	**3.00**	**72**	P	**Pn**	**16 16 08.4**	**+1.7**
ERMK				S	**Sn**	**16 16 42.0**	**+0.4**
SZAC	**Souni**	**3.05**	**108**	P	**Pn**	**16 16 09.0**	**+1.7**
	baz=291						
SZAC	**Souni**	**3.05**	**108**	P	**Pn**	**16 16 09.0**	**+1.7**
NPS	**Neapolis**	**3.10**	**262**	P	**Pn**	**16 16 09.1**	**+1.1**
NPS	**Neapolis**	**3.10**	**262**	P	**Pn**	**16 16 08.6**	**+0.6**
NPS				S	**Sn**	**16 16 44.2**	**+0.4**
NPS	**Neapolis**	**3.10**	**262**	P	**Pn**	**16 16 08.6**	**+0.6**
NPS				S	**Sn**	**16 16 44.2**	**+0.4**
NPS				AML	AML	16 16 46.6	
	comp=E,1633μm,0.4s						
NPS				AML	AML	16 16 47.9	
	comp=N,1023μm,0.4s						
IZM	**Izmir**	**3.11**	**328**	*e*PN	**Pn**	**16 16 08.3**	**+0.1**
IZM	**Izmir**	**3.11**	**328**	*e*Pn	**Pn**	**16 16 08.3**	**+0.1**
BOLV	**Bolvadin**	**3.20**	**23**	*i* P	**Pn**	**16 16 10.2**	**+0.8**
BOLV	**Bolvadin**	**3.20**	**23**	P	**Pn**	**16 16 10.2**	**+0.8**
MAMC	**Mammari**	**3.20**	**100**	P	**Pn**	**16 16 11.7**	**+2.3**
	baz=282						
MAMC	**Mammari**	**3.20**	**100**	P	**Pn**	**16 16 11.7**	**+2.3**
LAST	**Lasithi**	**3.23**	**260**	P	**Pn**	**16 16 11.2**	**+1.4**
LAST				S	**Sn**	**16 16 47.5**	**+0.5**
LAST	**Lasithi**	**3.23**	**260**	P	**Pn**	**16 16 11.2**	**+1.4**
LAST				S	**Sn**	**16 16 47.5**	**+0.5**
LAST	**Lasithi**	**3.23**	**260**	P	**Pn**	**16 16 11.2**	**+1.4**
KONT	**Konya--Tatoy**	**3.24**	**47**	*e*PN	**Pn**	**16 16 12.0**	**+2.2**
KONT	**Konya--Tatoy**	**3.24**	**47**	*e*Pn	**Pn**	**16 16 12.0**	**+2.2**
AKS	**Akhisar**	**3.34**	**339**	*e*PN	**Pn**	**16 16 12.5**	**+1.3**
AKS	**Akhisar**	**3.34**	**339**	*e*Pn	**Pn**	**16 16 12.5**	**+1.3**
CSS	**Mathiatis**	**3.34**	**103**	P	**Pn**	**16 16 12.8**	**+1.5**
	baz=285						
CSS				S	**Sn**	**16 16 49.5**	**-0.3**
CSS	**Mathiatis**	**3.34**	**103**	Pn	**Pn**	**16 16 12.0**	**+0.7**
CSS	**Mathiatis**	**3.34**	**103**	Pn	**Pn**	**16 16 12.0**	**+0.7**
CSS	**Mathiatis**	**3.34**	**103**	P	**Pn**	**16 16 12.8**	**+1.5**
CSS				S	**Sn**	**16 16 49.5**	**-0.3**
APE	**Apeiranthos**	**3.35**	**294**	*e*PN	**Pn**	**16 16 11.9**	**+0.5**
APE	**Apeiranthos**	**3.35**	**294**	P	**Pn**	**16 16 11.5**	**+0.1**
APE	**Apeiranthos**	**3.35**	**294**	P	**Pn**	**16 16 11.5**	**+0.1**
APE	**Apeiranthos**	**3.35**	**294**	*e*Pn	**Pn**	**16 16 11.9**	**+0.5**
APE	**Apeiranthos**	**3.35**	**294**	P	**Pn**	**16 16 11.0**	**-0.4**
LADK	**Ladik-KONYA**	**3.41**	**44**	*e*PN	**Pn**	**16 16 14.2**	**+1.8**
LADK	**Ladik-KONYA**	**3.41**	**44**	*e*Pn	**Pn**	**16 16 14.2**	**+1.8**
KDHN	**Kadinhani**	**3.52**	**38**	*i* P	**Pn**	**16 16 15.3**	**+1.5**
KDHN				*i* S	**Sn**	**16 16 53.9**	**-0.3**
KDHN	**Kadinhani**	**3.52**	**38**	P	**Pn**	**16 16 15.3**	**+1.5**
KDHN				S	**Sn**	**16 16 53.9**	**-0.3**
TVSB	**Tavsanli**	**3.67**	**1**	*e*PN	**Pn**	**16 16 14.9**	**-1.0**
TVSB	**Tavsanli**	**3.67**	**1**	*e*Pn	**Pn**	**16 16 14.9**	**-1.0**
IDI	**Anoyia**	**3.68**	**264**	Pn	**Pn**	**16 16 16.6**	**+0.6**
	comp=N,3.6nm,0.3s,baz=344,slow=5.3,SNR=39						
IDI				Sn	**Sn**	**16 16 56.3**	**-1.8**
	comp=N,31nm,0.3s,baz=272,slow=15,SNR=12						
IDI	**Anoyia**	**3.68**	**264**	P	**Pn**	**16 16 16.6**	**+0.6**
IDI	**Anoyia**	**3.68**	**264**	P	**Pn**	**16 16 16.6**	**+0.6**
IDI				S	**Sn**	**16 16 57.5**	**-0.6**
IDI	**Anoyia**	**3.68**	**264**	P	**Pn**	**16 16 15.5**	**-0.5**
IDI				S	**Sn**	**16 16 57.5**	**-0.6**
IDI				AML	AML	16 17 00.0	
	comp=E,486μm,0.3s						
IDI				AML	AML	16 17 03.5	
	comp=N,548μm,0.4s						
KIZT	**Kizilcal**	**3.69**	**32**	*e*PN	**Pn**	**16 16 17.1**	**+0.9**
KIZT	**Kizilcal**	**3.69**	**32**	*e*Pn	**Pn**	**16 16 17.1**	**+0.9**
CHOS	**Chios island**	**3.71**	**316**	*e*PN	**Pn**	**16 16 17.3**	**+0.9**
CHOS	**Chios island**	**3.71**	**316**	P	**Pn**	**16 16 16.3**	**-0.1**
CHOS	**Chios island**	**3.71**	**316**	P	**Pn**	**16 16 16.3**	**-0.1**
CHOS	**Chios island**	**3.71**	**316**	*e*Pn	**Pn**	**16 16 17.3**	**+0.9**
CHOS	**Chios island**	**3.71**	**316**	P	**Pn**	**16 16 15.7**	**-0.8**
CHOS				S	**Sn**	**16 16 51.9**	**-7.1**
CHOS				AML	AML	16 16 58.7	
	comp=N,190μm,0.3s						
CHOS				AML	AML	16 17 00.8	
	comp=E,199μm,0.3s						
SIVA	**Sivas**	**3.79**	**260**	P	**Pn**	**16 16 20.2**	**+2.8**
SIVA				S	**Sn**	**16 17 01.9**	**+1.0**
SIVA	**Sivas**	**3.79**	**260**	P	**Pn**	**16 16 20.2**	**+2.8**
SIVA				S	**Sn**	**16 17 01.9**	**+1.0**
SIVA				AML	AML	16 17 08.1	
	comp=E,664μm,0.3s						
SIVA				AML	AML	16 17 08.8	
	comp=N,868μm,0.6s						
KIZK	**Mersin**	**3.93**	**78**	*i* P	**Pn**	**16 16 20.3**	**+0.9**
KIZK				*i* S	**Sn**	**16 17 04.4**	**+0.1**
KIZK	**Mersin**	**3.93**	**78**	P	**Pn**	**16 16 20.3**	**+0.9**
KIZK				S	**Sn**	**16 17 04.4**	**+0.1**
SVRH	**Sivrihisar-ESK**	**4.05**	**24**	*e*PN	**Pn**	**16 16 21.3**	**+0.3**
SVRH	**Sivrihisar-ESK**	**4.05**	**24**	*e*Pn	**Pn**	**16 16 21.3**	**+0.3**
KERG	**Konya-Eregli**	**4.17**	**65**	*i* P	**Pn**	**16 16 24.5**	**+1.7**
KERG				*i* S	**Sn**	**16 17 12.1**	**+1.8**
KERG	**Konya-Eregli**	**4.17**	**65**	P	**Pn**	**16 16 24.5**	**+1.7**
KERG				S	**Sn**	**16 17 12.1**	**+1.8**
IMMV	**Iera Moni Meta**	**4.39**	**267**	P	**Pn**	**16 16 27.4**	**+1.7**
IMMV	**Iera Moni Meta**	**4.39**	**267**	P	**Pn**	**16 16 25.4**	**-0.3**
IMMV	**Iera Moni Meta**	**4.39**	**267**	P	**Pn**	**16 16 25.4**	**-0.3**
KKUL	**Konya-Kulu**	**4.42**	**39**	*i* P	**Pn**	**16 16 28.4**	**+2.3**
KKUL	**Konya-Kulu**	**4.42**	**39**	P	**Pn**	**16 16 28.4**	**+2.3**
ANKY	**Antikythira Is**	**4.93**	**273**	P	**Pn**	**16 16 33.2**	**+0.2**
ANKY	**Antikythira Is**	**4.93**	**273**	P	**Pn**	**16 16 33.2**	**+0.2**
BRTR	**Keskin Array B**	**5.20**	**39**	Pn	**Pn**	**16 16 38.1**	**+1.2**
	comp=N,4.5nm,0.3s,baz=226,slow=16,SNR=81						
BRTR				Sn	**Sn**	**16 17 36.0**	**+0.3**
	comp=N,4.2nm,0.3s,baz=214,slow=26,SNR=18						
VLI	**Veliai**	**5.28**	**282**	P	**Pn**	**16 16 38.6**	**+0.7**
VLI	**Veliai**	**5.28**	**282**	P	**Pn**	**16 16 38.5**	**+0.7**
VLI	**Veliai**	**5.28**	**282**	P	**Pn**	**16 16 38.5**	**+0.6**
VLI				AML	AML	16 17 41.7	
	comp=N,233μm,0.4s						
VLI				AML	AML	16 17 44.6	
	comp=E,165μm,0.3s						
SLUM	**Salum**	**5.50**	**220**	P	**Pn**	**16 16 41.6**	**+0.7**
	baz=223						
SLUM				S	**Sn**	**16 17 38.2**	**-4.6**
	baz=223						
SLUM	**Salum**	**5.50**	**220**	P	**Pn**	**16 16 41.6**	**+0.7**
BHL	**Bhannes**	**5.50**	**108**	*e*P	**Pn**	**16 16 40.1**	**-0.8**
BHL	**Bhannes**	**5.50**	**108**	*e*P	**Pn**	**16 16 40.2**	**-0.8**
DQRL	**Deir Qamar**	**5.51**	**110**	*e*P	**Pn**	**16 16 41.0**	**-0.2**
DQRL	**Deir Qamar**	**5.51**	**110**	*e*P	**Pn**	**16 16 41.0**	**-0.2**
HWQ	**Hawqa**	**5.60**	**104**	*e*P	**Pn**	**16 16 42.7**	**+0.2**
HWQ	**Hawqa**	**5.60**	**104**	*e*P	**Pn**	**16 16 42.7**	**+0.2**
OFRI	**'Ofer**	**5.62**	**122**	Pn	**Pn**	**16 16 43.6**	**+1.0**
OFRI	**'Ofer**	**5.62**	**122**	Pn	**Pn**	**16 16 43.6**	**+1.0**
MMA0B	**Mount Meron ar**	**5.70**	**117**	Pn	**Pn**	**16 16 44.2**	**+0.4**
MMA0B	**Mount Meron ar**	**5.70**	**117**	Pn	**Pn**	**16 16 44.2**	**+0.4**
MMAI	**Mount Meron Ar**	**5.70**	**117**	Pn	**Pn**	**16 16 44.4**	**+0.6**
	comp=E,17nm,0.3s,baz=316,slow=13,SNR=31						
MMAI				Sn	**Sn**	**16 17 44.4**	**-3.6**
	comp=E,25nm,0.3s,baz=309,slow=26,SNR=12						
MMAI				LR	LR	16 20 09.0	
	comp=E,45nm,18.9s,baz=320,slow=50						
BIDA	**Albida**	**5.74**	**96**	*e*P	**Pn**	**16 16 43.5**	**-0.8**
BIDA				*e*S	Sn	16 17 37.0	-12
BIDA				AML	AML	16 17 49.0	
	comp=E,140nm,0.4s						
BIDA				AML	AML	16 17 50.4	
	comp=N,159nm,0.6s						
BTCH	**Batrach**	**5.77**	**85**	*e*P	**Pn**	**16 16 44.8**	**+0.1**
BTCH				*e*S	Sn	16 17 39.5	-10
BTCH				AML	AML	16 17 57.0	
	comp=N,88nm,0.6s						
BTCH				AML	AML	16 17 58.4	
	comp=E,100nm,0.5s						
RCY	**Rachaya**	**5.80**	**111**	*e*P	**Pn**	**16 16 45.5**	**+0.4**
KSDI	**Kefar Szold**	**5.80**	**115**	Pn	**Pn**	**16 16 45.5**	**+0.4**
KSDI	**Kefar Szold**	**5.80**	**115**	Pn	**Pn**	**16 16 45.5**	**+0.4**
SLTI	**Sal'it**	**5.89**	**125**	Pn	**Pn**	**16 16 46.9**	**+0.7**
SLTI				Sn	**Sn**	**16 17 49.9**	**-2.6**
SLTI	**Sal'it**	**5.89**	**125**	Pn	**Pn**	**16 16 46.9**	**+0.7**
BRBR	**Barbar**	**5.92**	**112**	*e*P	**Pn**	**16 16 47.7**	**+0.8**
BRBR				*e*S	**Sn**	**16 17 44.9**	**-8.7**
BRBR				AML	AML	16 17 54.9	
	comp=N,114nm,0.5s						
BRBR				AML	AML	16 17 55.7	
	comp=E,45nm,0.5s						
KSHT	**Keshet**	**6.01**	**116**	Pn	**Pn**	**16 16 49.2**	**+1.1**
KSHT	**Keshet**	**6.01**	**116**	Pn	**Pn**	**16 16 49.2**	**+1.1**
MMLI	**Mount Malkishu**	**6.03**	**122**	Pn	**Pn**	**16 16 49.0**	**+0.8**
MMLI				Sn	**Sn**	**16 17 53.7**	**-2.3**
MMLI	**Mount Malkishu**	**6.03**	**122**	Pn	**Pn**	**16 16 49.0**	**+0.8**
RSH		**6.03**	**142**	P	**Pn**	**16 16 49.4**	**+1.1**
	baz=139						
RSH		**6.03**	**142**	P	**Pn**	**16 16 49.3**	**+1.1**
SQR	**Saqqara**	**6.07**	**165**	P	**Pn**	**16 16 49.4**	**+0.5**
	baz=163						
SQR	**Saqqara**	**6.07**	**165**	P	**Pn**	**16 16 49.3**	**+0.5**
MARH	**Ras Al Marh**	**6.10**	**105**	*e*P	**Pn**	**16 16 50.0**	**+0.5**
MARH				*e*S	Sn	16 17 47.9	-10
MARH				AML	AML	16 17 57.7	
	comp=N,25nm,0.4s						
MARH				AML	AML	16 18 07.6	
	comp=E,56nm,0.4s						
ITM	**Ithomi**	**6.15**	**285**	P	**Pn**	**16 16 52.9**	**+3.0**
ITM	**Ithomi**	**6.15**	**285**	P	**Pn**	**16 16 52.9**	**+3.0**
KOT	**Kottamia**	**6.19**	**160**	P	**Pn**	**16 16 50.7**	**+0.3**
	baz=158						
KOT	**Kottamia**	**6.19**	**160**	P	**Pn**	**16 16 50.7**	**+0.3**
HMDT	**Nahal Hemdat**	**6.21**	**123**	Pn	**Pn**	**16 16 51.7**	**+1.1**
HMDT				Sn	**Sn**	**16 17 58.6**	**-1.7**
HMDT	**Nahal Hemdat**	**6.21**	**123**	Pn	**Pn**	**16 16 51.7**	**+1.1**
HMDT				Sn	**Sn**	**16 17 58.6**	**-1.7**
KLV	**Kalavryta, Ach**	**6.21**	**294**	P	**Pn**	**16 16 52.9**	**+2.2**
KLV	**Kalavryta, Ach**	**6.21**	**294**	P	**Pn**	**16 16 52.9**	**+2.2**
HHAG	**Hagoal**	**6.24**	**158**	P	**Pn**	**16 16 51.3**	**+0.1**
	baz=156						
HHAG	**Hagoal**	**6.24**	**158**	P	**Pn**	**16 16 51.3**	**+0.1**
TCHB	**Talchebab**	**6.29**	**118**	*e*P	**Pn**	**16 16 53.1**	**+1.4**
TCHB				*e*S	**Sn**	**16 17 53.7**	**-8.7**
TCHB				AML	AML	16 18 04.9	
	comp=E,121nm,0.5s						
TCHB				AML	AML	16 18 05.4	
	comp=N,95nm,0.4s						
KZIT	**Kziot**	**6.43**	**138**	Pn	**Pn**	**16 16 54.3**	**+0.6**
KZIT	**Kziot**	**6.43**	**138**	Pn	**Pn**	**16 16 54.3**	**+0.6**
GLL	**Jalalah**	**6.49**	**162**	P	**Pn**	**16 16 54.9**	**+0.4**
	baz=160						
GLL	**Jalalah**	**6.49**	**162**	P	**Pn**	**16 16 54.9**	**+0.4**
YTIR	**Yattir**	**6.51**	**131**	Pn	**Pn**	**16 16 55.8**	**+0.9**
YTIR	**Yattir**	**6.51**	**131**	Pn	**Pn**	**16 16 55.8**	**+0.9**
DSI	**Dead Sea**	**6.54**	**128**	Pn	**Pn**	**16 16 56.1**	**+0.9**
DSI	**Dead Sea**	**6.54**	**128**	Pn	**Pn**	**16 16 56.1**	**+0.9**
SUZ	**Suez**	**6.60**	**153**	P	**Pn**	**16 16 57.0**	**+1.0**
	baz=151						
SUZ	**Suez**	**6.60**	**153**	P	**Pn**	**16 16 57.0**	**+1.0**
MZBI	**Masada**	**6.70**	**130**	Pn	**Pn**	**16 16 58.0**	**+0.7**
MZBI	**Masada**	**6.70**	**130**	Pn	**Pn**	**16 16 58.0**	**+0.7**

σ1§90/120, **mb4.4**/37, **MS3.6**/6, **4C-2D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.24**	**290**	P	**Pn**	**16 18 15.2**	**-2.4**
JFK	**Kawauchi**	**1.30**	**302**	P	**Pn**	**16 18 16.0**	**-2.4**
JHO	**Hitachi**	**1.36**	**268**	P	**Pn**	**16 18 17.0**	**-2.1**
JHO				*e*S	**Sn**	**16 18 33.4**	**-3.5**
JMM	**Marumori**	**1.67**	**316**	P	**Pn**	**16 18 21.9**	**-1.5**
JFT	**Otama**	**1.75**	**299**	P	**Pn**	**16 18 23.6**	**-0.9**
JIO	**Ouri**	**1.92**	**338**	P	**Pn**	**16 18 26.2**	**-0.6**
JIO				*e*S	**Sn**	**16 18 47.8**	**-2.9**
JOU	**Okura**	**2.11**	**324**	P	**Pn**	**16 18 29.6**	**+0.1**
JFY	**Yanaizu**	**2.17**	**290**	P	**Pn**	**16 18 30.0**	**-0.3**
BSO1	**Boso 1**	**2.27**	**208**	P	**Pn**	**16 18 31.4**	**+0.2**
JAG	**Ashikaga**	**2.27**	**265**	P	**Pn**	**16 18 30.5**	**-1.2**
JMK	**Ichinoseki**	**2.42**	**340**	P	**Pn**	**16 18 33.8**	**+0.1**
JNS	**Sasagawa**	**2.61**	**297**	P	**Pn**	**16 18 35.9**	**-0.4**
MJAR	**Matsushiro Arr**	**3.26**	**269**	Pn	**Pn**	**16 18 45.7**	**+0.4**
	22nm,0.3s,baz=94,slow=9.3,SNR=433						
MJAR				Sn	**Sn**	**16 19 25.9**	**+2.1**
	10nm,0.3s,baz=50,slow=37,SNR=3.4						
MJAR				LR	LR	16 19 39.9	
	comp=Z,105nm,20.0s,baz=115,slow=32						
MAJO	**Matsushiro**	**3.26**	**269** *c i*	P	**Pn**	**16 18 46.1**	**+0.8**
MAJO	**Matsushiro**	**3.26**	**269**	*e*Pn	**Pn**	**16 18 45.7**	**+0.4**
MAT	**Matsushiro**	**3.26**	**269**	P	**Pn**	**16 18 45.4**	**+0.1**
MAT				S	**Sn**	**16 19 21.5**	**-2.4**
MJB9	**Matsu-Tunnel**	**3.26**	**269**	*e*Pn	**Pn**	**16 18 45.8**	**+0.4**
JHJ2	**Mitsune**	**4.08**	**210**	*e*Pn	**Pn**	**16 18 57.0**	**+0.4**
JHJ2				*e*Sn	**Sn**	**16 19 40.3**	**-3.7**
JHJ	**Hachijo jima 2**	**4.09**	**211**	Pn	**Pn**	**16 18 56.9**	**+0.2**
	56nm,0.3s,baz=72,slow=12,SNR=15						
JHJ				Sn	**Sn**	**16 19 39.8**	**-4.4**
	96nm,0.3s,baz=237,slow=23,SNR=15						
INU	**Inuyama**	**4.45**	**254**	*e*Pn	**Pn**	**16 19 02.5**	**+0.9**
ERM	**Erimo**	**5.38**	**7** *c i*	P	**Pn**	**16 19 14.2**	**-0.2**
ERM	**Erimo**	**5.38**	**7**	*e*Pn	**Pn**	**16 19 14.0**	**-0.4**
ASAJ	**Asahikawa**	**7.44**	**2**	Pn	**Pn**	**16 19 43.2**	**+0.6**
	baz=222,slow=1.1						
ASAJ	**Asahikawa**	**7.44**	**2**	*e*Pn	**Pn**	**16 19 42.7**	**0.0**
KUR	**Kuril'sk**	**9.54**	**25**	*e*P	**Pn**	**16 20 13.1**	**+1.6**
KUR				*e*S	**Sn**	**16 21 52.3**	**-6.1**
KUR				pmax	pmax		
	comp=E,3.0nm,0.6s						
KUR				pmax	pmax		
	comp=Z,9.0nm,0.6s						
KUR				smax	smax		
	comp=N,19μm,0.6s						
KUR				smax	smax		
	comp=E,13nm,0.6s						
CBIJ	**Chichi jima**	**9.55**	**180**	*e*Pn	**Pn**	**16 20 10.8**	**-0.9**
JCJ	**Chichijima**	**9.55**	**180**	Pn	**Pn**	**16 20 11.8**	**0.0**
	baz=76,slow=4.2						
JNU	**Nakatsue**	**9.99**	**253**	Pn	**Pn**	**16 20 18.4**	**+0.6**
	comp=E,0.5nm,0.3s,baz=47,slow=18,SNR=3.0						
VLA	**Vladivostok**	**10.24**	**312** ⇓ *i*	P	**Pn**	**16 20 25.3**	**+4.3**
VLA				pmax	pmax		
	comp=Z,35nm,1.3s						
YSS	**Yuzh-Sakhalins**	**10.28**	**2**	*e*P	**Pn**	**16 20 21.7**	**+0.1**
YSS				MLR	MLR		
	comp=Z,200nm,16.0s						
YSS	**Yuzh-Sakhalins**	**10.28**	**2**	*e*Pn	**Pn**	**16 20 21.1**	**-0.4**
USRK	**Ussuriysk Ar.**	**10.84**	**317**	Pn	**Pn**	**16 20 31.9**	**+2.5**
	comp=Z,0.2nm,0.3s,baz=136,slow=12,SNR=14						
USRK				LR	LR	16 24 28.8	
	comp=Z,292nm,18.8s,baz=96,slow=36						
KSRS	**Korea Array**	**11.48**	**278**	Pn	**Pn**	**16 20 41.6**	**+3.5**
	comp=Z,0.2nm,0.3s,baz=92,slow=14,SNR=7.1						
KSAR	**Wonju Array Be**	**11.51**	**278**	P	**Pn**	**16 20 41.6**	**+3.1**
KSAR	**Wonju Array Be**	**11.51**	**278**	Pn	**Pn**	**16 20 41.6**	**+3.1**
HABR	**Khabarovsk**	**12.92**	**338**	*e*P	**Pn**	**16 20 55.8**	**-1.9**
HABR				*e*S	**Sn**	**16 23 18.2**	**-3.0**
HABR				pmax	pmax		
	comp=Z,13nm,1.8s						
HABR				pmax	pmax		
	comp=E,21nm,1.8s						
HABR				pmax	pmax		
	comp=N,12nm,1.8s						
HABR				MLR	MLR		
	comp=Z,149nm,15.0s						
KLR	**Kul'dur**	**14.70**	**332**	Pn	**Pn**	**16 21 24.4**	**+2.5**
	comp=Z,0.1nm,0.3s,baz=148,slow=10,SNR=3.5						
HHC	**Hu-ho-hao-te**	**24.23**	**289**	*e*P	**P**	**16 23 10.3**	**-0.7**
HHC				PP	**PnPn**	**16 23 46.9**	**+6.3**
HHC				S	**S**	**16 27 23.7**	**-5.3**
HHC				SS	**SnSn**	**16 28 18.2**	**+7.1**
HHC				pmax	pmax		
	comp=Z,20nm,1.0s						
HHC				pmax	pmax		
	comp=Z,130nm,7.7s						
HHC				LR	LR		
	comp=Z,110nm,11.3s						
HHC				LR	LR		
	comp=Z,130nm,13.4s						
HHC				LR	LR		
	comp=Z,170nm,13.1s						
YAK	**Yakutsk**	**26.57**	**347**	P	**P**	**16 23 32.2**	**+0.3**
	comp=Z,24nm,0.8s,baz=343,slow=2.2,SNR=17						
YAK	**Yakutsk**	**26.57**	**347**	*e*P	**P**	**16 23 31.5**	**-0.3**
YAK				pmax	pmax		
	comp=Z,16nm,0.9s						
YAK				pmax	pmax		
	comp=N,6.0nm,1.0s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.0s						
YAK	**Yakutsk**	**26.57**	**347**	*e*P	**P**	**16 23 31.0**	**-0.8**
	comp=E,23nm,0.8s						
SEY	**Seymchan**	**27.02**	**10**	P	**P**	**16 23 36.8**	**+0.9**
	comp=E,2.8nm,0.6s,baz=197,slow=5.1,SNR=11						
H11N2	**WAKE ISLAND Hy**	**27.39**	**121**	T	T	16 52 46.4	
	baz=311						
H11N1	**WAKE ISLAND Hy**	**27.39**	**121**	T	T	16 52 31.6	
	baz=311						
H11N3	**WAKE ISLAND Hy**	**27.40**	**121**	T	T	16 52 55.7	
	baz=311						
H11S1	**WAKE ISLAND Hy**	**28.10**	**124**	T	T	16 53 39.1	
	baz=313						
H11S3	**WAKE ISLAND Hy**	**28.10**	**124**	T	T	16 53 46.0	
	baz=313						
H11S2	**WAKE ISLAND Hy**	**28.11**	**124**	T	T	16 53 47.1	
	baz=313						
BOD	**Bodaibo**	**28.19**	**328**	*e*P	**P**	**16 23 44.7**	**-1.8**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.2s						
SONA1	**Songino Array**	**28.54**	**304**	*e*P	**P**	**16 23 49.0**	**-0.8**
SONM	**Songino Array**	**28.54**	**304**	P	**P**	**16 23 49.9**	**0.0**
	comp=Z,8.2nm,0.9s,baz=104,slow=8.8,SNR=30						
LZH	**Lanzhou**	**30.79**	**281**	*e*P	**P**	**16 24 09.6**	**-0.4**
LZH				pP	sP	16 24 18.1	+1.6
LZH				sP	pP	16 24 23.2	+8.6
LZH				pmax	pmax		
	comp=Z,13nm,1.0s						
ZAK	**Zakamensk**	**31.02**	**309**	*e*P	**P**	**16 24 11.5**	**-0.3**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.2s						
TLY	**Talaya**	**31.07**	**311**	LR	LR	16 36 52.8	
	comp=Z,106nm,21.7s,baz=112,slow=37						
TLY	**Talaya**	**31.07**	**311**	*e*P	**P**	**16 24 10.7**	**-1.4**
TLY				pmax	pmax		
	comp=Z,9.0nm,0.7s						
GYA	**Guiyang**	**31.83**	**262**	*e*P	**P**	**16 24 20.0**	**+0.9**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GTA	**Gaotai**	**33.31**	**288**	*e*P	**P**	**16 24 32.2**	**+0.2**
GTA				pP	pP	16 24 36.5	-0.1
GTA				sP	sP	16 24 39.4	+0.9
GTA				S	**S**	**16 29 47.3**	**-4.8**
GTA				sS	sS	16 30 02.7	+3.0
GTA				SS	**SnSn**	**16 31 51.5**	**-1.2**
GTA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,73nm,5.0s						
GTA				LR	LR		
	comp=Z,140nm,16.4s						
GTA				LR	LR		
	comp=Z,170nm,16.2s						
GTA				LR	LR		
	comp=Z,200nm,16.2s						
KMI	**Kunming**	**35.58**	**262**	P	**P**	**16 24 52.5**	**+0.6**
KMI				pmax	pmax		
	comp=Z,9.0nm,1.1s						
KMI				pmax	pmax		
	comp=Z,89nm,5.4s						
TIXI	**Tiksi**	**35.73**	**353**	LR	LR	16 40 51.5	
	comp=Z,85nm,18.4s,baz=161,slow=38						
WMQ	**Urumqi**	**41.60**	**297**	*e*P	**P**	**16 25 42.5**	**+0.4**
WMQ				pP	sP	16 25 51.4	+2.8
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,130nm,4.5s						
CMAR	**Chiang Mai Arr**	**42.06**	**256**	P	**P**	**16 25 46.2**	**+0.1**
	comp=Z,0.9nm,0.6s,baz=44,slow=8.4,SNR=8.7						
ZAA0	**Zalesovo Array**	**42.65**	**313**	*e*P	**P**	**16 25 50.0**	**-0.5**
ZALV	**Zalesovo Beam**	**42.65**	**313**	P	**P**	**16 25 50.5**	**+0.1**
	comp=Z,4.0nm,0.8s,baz=95,slow=6.6,SNR=15						
ZALV				LR	LR	16 44 11.1	
	comp=Z,135nm,18.9s,baz=70,slow=37						
NVS	**Novosibirsk**	**43.57**	**314**	*e*P	**P**	**16 25 55.0**	**-2.9**
MK01	**Makanchi Array**	**44.88**	**303**	*e*P	**P**	**16 26 07.8**	**-0.7**
MK31	**Makanchi Array**	**44.88**	**303**	*e*P	**P**	**16 26 07.7**	**-0.8**
MK31	**Makanchi Array**	**44.88**	**303**	*e*P	**P**	**16 26 07.7**	**-0.8**
MKAR	**Makanchi Array**	**44.88**	**303**	P	**P**	**16 26 08.5**	**0.0**
	comp=Z,2.3nm,0.8s,baz=86,slow=9.9,SNR=16						
KURK	**Kurchatov**	**46.68**	**308**	P	**P**	**16 26 22.8**	**+0.2**
KURK				pmax	pmax		
	comp=Z,2.0nm,0.4s						
KURK	**Kurchatov**	**46.68**	**308**	P	**P**	**16 26 22.8**	**+0.2**
KURBB	**Kurchatov Arra**	**46.75**	**308**	P	**P**	**16 26 22.8**	**-0.4**
	comp=Z,1.7nm,0.4s,baz=83,slow=8.4,SNR=24						
RAMN	**Ramite**	**47.70**	**275**	*e*P	**P**	**16 26 30.1**	**-1.1**
	comp=Z,28nm,0.9s						
PKIN	**Phulchoki**	**48.39**	**276**	*e*P	**P**	**16 26 36.9**	**+0.3**
KKN	**Kakani**	**48.39**	**277**	*e*P	**P**	**16 26 36.5**	**0.0**
GKN	**Gorkha**	**48.82**	**277**	*e*P	**P**	**16 26 40.4**	**+0.7**
ILAR	**Eielson Array**	**49.44**	**32**	P	**P**	**16 26 45.5**	**+1.7**
	comp=Z,0.6nm,0.7s,baz=263,slow=6.1,SNR=9.0						
IL1	**Eielson Array**	**49.44**	**32**	*e*P	**P**	**16 26 44.9**	**+1.1**
KOLN	**Koldanda**	**49.74**	**277**	*e*P	**P**	**16 26 49.0**	**+2.1**
VOSK	**Vostochnaya**	**51.02**	**312**	*e*P	**P**	**16 26 54.8**	**-1.1**
VOSK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
VOSK	**Vostochnaya**	**51.02**	**312**	*e*P	**P**	**16 26 54.8**	**-1.1**
	comp=Z,4.6nm,0.9s						
AAK	**Ala-Archa**	**51.25**	**299** ⇓	*e*P	**P**	**16 26 58.4**	**+0.4**
AAK				pmax	pmax		
	comp=Z,15nm,2.9s						
BVAR	**Borovoye Array**	**51.31**	**313**	*e*P	**P**	**16 26 57.9**	**-0.2**
	comp=Z,0.8nm,0.4s,baz=64,slow=7.3,SNR=5.2						
BRVK	**Borovoye**	**51.37**	**313**	*e*P	**P**	**16 26 58.5**	**0.0**
BRVK				pmax	pmax		
	comp=Z,10.0nm,2.5s						
ZRNK	**Zerenda**	**52.14**	**313**	*e*P	**P**	**16 27 03.4**	**-0.9**
ZRNK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ZRNK	**Zerenda**	**52.14**	**313**	*e*P	**P**	**16 27 03.4**	**-0.9**
	comp=Z,2.1nm,0.8s						
SVE	**Sverdlovsk**	**55.86**	**319**	*e*P	**P**	**16 27 31.9**	**+0.5**
SVE				pmax	pmax		
	comp=Z,9.0nm,1.1s						
WRA	**Warramunga Arr**	**56.81**	**189**	P	**P**	**16 27 38.3**	**-0.1**
	comp=Z,0.7nm,0.6s,baz=6.6,slow=7.3,SNR=11						
ARU	**Arti**	**57.07**	**319**	P	**P**	**16 27 40.0**	**0.0**
	comp=Z,1.8nm,0.5s,baz=79,slow=9.1,SNR=5.1						
ARU	**Arti**	**57.07**	**319** *c i*	P	**P**	**16 27 39.9**	**-0.1**
ARU						16 28 32.1	
ARU				S	**S**	**16 35 31.3**	**-2.8**
ARU				pmax	pmax		
	comp=Z,9.0nm,1.2s						
ARU	**Arti**	**57.07**	**319**	*e*P	**P**	**16 27 39.5**	**-0.5**
	comp=Z,9.3nm,1.2s						
ABKAR	**Akbulak array**	**58.69**	**311**	*e*P	**P**	**16 27 50.7**	**-0.7**
AKTO	**Aktyubinsk**	**59.41**	**312**	P	**P**	**16 27 56.4**	**-0.1**
	comp=Z,2.8nm,0.9s,baz=88,slow=5.4,SNR=7.1						
ASAR	**Alice Springs**	**60.53**	**189**	P	**P**	**16 28 04.8**	**+0.4**
	comp=Z,0.7nm,0.7s,baz=20,slow=7.2,SNR=9.8						
PALK	**Palkelekе**	**62.95**	**259** *i*	P	**P**	**16 28 21.5**	**+0.5**
GEYT	**Ailibeck**	**64.60**	**299**	P	**P**	**16 28 31.6**	**0.0**
	comp=Z,1.2nm,0.7s,baz=98,slow=4.4,SNR=3.8						
FINES	**FINESS Array B**	**69.44**	**333**	P	**P**	**16 29 01.0**	**-0.9**
	comp=Z,1.7nm,0.7s,baz=79,slow=9.9,SNR=4.7						
FINES	**FINESS Array B**	**69.44**	**333**	P	**P**	**16 29 01.0**	**-0.9**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KBZ	**Khabaz**	**71.65**	**311**	P	**P**	**16 29 15.6**	**0.0**
	comp=Z,3.4nm,0.9s,baz=83,slow=5.8,SNR=6.7						
KIV	**Kislovodsk**	**71.65**	**311**	*e*P	**P**	**16 29 15.2**	**-0.6**
KIV				pmax	pmax		
	comp=Z,8.0nm,1.1s						
NWAO	**Narrogin (SRO)**	**73.08**	**202**	LR	LR	17 03 20.5	
	comp=Z,25nm,18.8s,baz=13,slow=37						
NB2	**NORSAR Subarra**	**74.78**	**338**	P	**P**	**16 29 34.6**	**+0.7**
	comp=Z,0.7nm,0.6s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**74.78**	**338**	P	**P**	**16 29 34.4**	**+0.5**
	comp=Z,1.3nm,0.8s,baz=38,slow=5.9,SNR=4.6						
AKASG	**Malin Array Be**	**74.99**	**323**	P	**P**	**16 29 34.8**	**-0.5**
	comp=Z,1.9nm,0.6s,baz=47,slow=6.1,SNR=9.8						
KIEV	**Kiev**	**75.00**	**323**	*e*P	**P**	**16 29 34.6**	**-0.7**
KIEV				pmax	pmax		
	comp=Z,7.0nm,1.3s						
KIEV	**Kiev**	**75.00**	**323**	*e*P	**P**	**16 29 34.6**	**-0.7**
	comp=Z,6.9nm,1.3s						
BUR08	**Bucovina Ar. S**	**79.00**	**322**	*e*P	**P**	**16 29 58.6**	**+0.6**
BRTR	**Keskin Array B**	**79.59**	**312**	P	**P**	**16 30 02.6**	**+1.2**
	comp=Z,0.6nm,0.5s,baz=92,slow=3.7,SNR=5.7						
BR231	**Keskin MP Arra**	**80.03**	**313**	*e*P	**P**	**16 30 02.5**	**-1.3**
DPC	**Dobruska-Polom**	**81.12**	**328**	*e*P	**P**	**16 30 10.4**	**+1.0**
DPC	**Dobruska-Polom**	**81.12**	**328**	*e*P	**P**	**16 30 10.4**	**+1.0**
CLL	**Collm**	**81.74**	**331**	*e*P	**P**	**16 30 14.0**	**+1.4**
	comp=Z,3.0nm,0.9s						
CLL	**Collm**	**81.74**	**331**	*e*P	**P**	**16 30 14.0**	**+1.4**
CLL				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KHC	**Kasperske Hory**	**83.20**	**329**	*e*P	**P**	**16 30 21.1**	**+0.8**
KHC				*e*pP	**sP**	**16 30 30.9**	**+3.8**
BFO	**Black Forest**	**85.94**	**331**	*i* P	**P**	**16 30 35.8**	**+1.6**

NIED ***03*** *16:22:00, 28.˚90N×130.˚90E, h50km, Mw4.4 Best double couple: M₀4.81000×10¹⁵ NP1:φ₀333.00000°, δ4.00000°, λ29.00000°. NP2:φ₀214.00000°, δ88.00000°, λ94.00000°.*

BJI ***03*** *16:22:02.8, 28.˚49N×131.˚24E, h34km, mb4.4/42, mB4.6/23, Ms4.1/17, Ms7 4.0/14*

MOS ***03*** *16:22:07.7±1.2, 28.˚85N×130.˚93E, h34km, mb4.8/35, Error ellipse: s-maj=12.0km s-min=5.4km az=109.7*

ISCJB ***03*** *16:22:08.5±0.4, 28.˚83N±0.˚02×131.˚01E±0.˚03, h46km±3km, mb4.5/53, MS3.7/9, Error ellipse: s-maj=4.7km s-min=3.0km az=30.7*

NEIC ***03*** *16:22:08.5±1.3, 28.˚79N×130.˚79E, h31km±9km, mb4.8/12, Error ellipse: s-maj=7.0km s-min=4.9km az=134.0*

JMA ***03*** *16:22:09.4±0.1, 28.˚88N×130.˚90E, h87km±2km, M4.1*

IDC ***03*** *16:22:10.5±1.9, 28.˚93N×130.˚97E, h47km±18km, mb4.1/25, mb1 4.2/30, mb1mx4.1/50, mbtmp4.4/30, ML4.3/5, MS3.5/9, Ms1 3.5/9, ms1mx3.1/55, Error ellipse: s-maj=20.5km s-min=11.7km az=73.0*

ISC 03 16:22:08.2±0.7, 28.˚83N±0.˚03×130.˚99E±0.˚04, h29km±4km, n206, σ1§60/237, mb4.7/66, MS3.8/11, 25C-10D, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JZK	**Kikaishima**	**1.03**	**240**	P	**Pb**	**16 22 28.9**	**+1.4**
JZK				S	**Sb**	**16 22 44.5**	**+3.8**
JAM	**Amami Oshima**	**1.29**	**251**	P	**Pb**	**16 22 31.6**	**-0.2**
JAM				*e*S	**Sb**	**16 22 48.2**	**+0.2**
JNN	**Nakanoshima**	**1.40**	**316**	P	**Pb**	**16 22 33.3**	**-0.4**
JNN				S	**Sb**	**16 22 50.1**	**-1.1**
JYAK	**Yakushimahirau**	**1.46**	**343**	P	**Pb**	**16 22 34.1**	**-0.6**
JYAK				*e*S	**Sn**	**16 22 51.5**	**+0.7**
JTAJ	**Takarajima**	**1.60**	**282**	P	**Pn**	**16 22 35.5**	**+1.0**
JTAJ				*e*S	**Sn**	**16 22 54.7**	**+0.5**
JAMN	**Amaminishikomi**	**1.70**	**250**	P	**Pb**	**16 22 37.5**	**-1.3**
JAMN				S	**Sn**	**16 22 58.2**	**+1.5**
JKC	**Kuchinoerabu**	**1.76**	**337**	P	**Pn**	**16 22 38.2**	**+1.4**
JKC				S	**Sb**	**16 22 59.9**	**-1.7**
JTN	**Tanegashima 3**	**1.81**	**360**	P	**Pn**	**16 22 38.6**	**+1.1**
JTN				*e*S	**Sb**	**16 23 01.6**	**-1.5**
JTK	**Tokunoshima**	**2.08**	**240**	P	**Pn**	**16 22 42.7**	**+1.6**
JTK				*e*S	**Sn**	**16 23 07.4**	**+1.3**
JOKE	**Okinoerabujima**	**2.59**	**236**	P	**Pn**	**16 22 49.4**	**+1.2**
JOKE				S	**Sn**	**16 23 19.3**	**+0.5**
JNAR	**Kushima--Naru**	**2.69**	**5**	P	**Pn**	**16 22 51.2**	**+1.6**
JNAR				*e*S	**Sn**	**16 22 22.3**	**+1.1**
JSU	**Suzuyama**	**2.70**	**350**	P	**Pn**	**16 22 50.9**	**+1.2**
JSU				*e*S	**Sn**	**16 23 22.0**	**+0.5**
JMZ	**Minamidaito 2**	**3.01**	**176**	P	**Pn**	**16 22 54.4**	**+0.5**
JMZ				*e*S	**Sn**	**16 23 27.4**	**-1.6**
JSJ	**Shimokoshiki**	**3.04**	**339**	P	**Pn**	**16 22 55.0**	**+0.6**
JSJ				*e*S	**Sn**	**16 23 28.3**	**-1.5**
JTZ	**Takazaki**	**3.06**	**2**	P	**Pn**	**16 22 56.0**	**+1.4**
JTZ				*e*S	**Sn**	**16 23 30.8**	**+0.6**
JOW	**Kunigami**	**3.12**	**231**	P	**Pn**	**16 22 56.4**	**+0.9**
JOW				*e*S	**Sn**	**16 23 31.7**	**-0.2**
JIH	**Iheya**	**3.22**	**237**	P	**Pn**	**16 22 57.6**	**+0.8**
JIH				S	**Sn**	**16 23 32.9**	**-1.3**
JZO	**Okuchi**	**3.31**	**354**	P	**Pn**	**16 22 59.5**	**+1.4**
JZO				S	**Sn**	**16 23 37.3**	**+0.8**
JTSN	**Tsuno**	**3.43**	**7**	P	**Pn**	**16 23 00.5**	**+0.8**
JTSN				S	**Sn**	**16 23 37.8**	**-1.6**
JNU	**Nakatsue**	**4.28**	**359**	P	**Pn**	**16 23 12.8**	**+1.4**
	27nm,0.3s,baz=189,slow=12,SNR=77						
JNU				S	**Sn**	**16 23 58.3**	**-2.0**
	13nm,0.3s,baz=210,slow=19,SNR=6.5						
JNU				LR	LR	16 24 25.2	
	comp=Z,278nm,18.2s,baz=118,slow=32						
TJN	**Taejon**	**8.12**	**339** *d i*	P	**Pn**	**16 24 07.4**	**+3.3**
INU	**Inuyama**	**8.26**	**37**	*e*Pn	**Pn**	**16 24 08.4**	**+2.4**
INU				*e*Sn	**Sn**	**16 25 41.0**	**+2.5**
JHJ	**Hachijo jima 2**	**8.67**	**58**	P	**Pn**	**16 24 14.1**	**+2.4**
	41nm,0.3s,baz=97,slow=18,SNR=14						
JHJ2	**Mitsune**	**8.69**	**58**	*e*Pn	**Pn**	**16 24 14.1**	**+2.1**
KSAR	**Wonju Array Be**	**8.97**	**344**	P	**Pn**	**16 24 18.0**	**+2.2**
KSAR	**Wonju Array Be**	**8.97**	**344**	P	**Pn**	**16 24 18.0**	**+2.2**
KSRS	**Korea Array**	**8.97**	**344**	P	**Pn**	**16 24 18.0**	**+2.2**
	0.5nm,0.3s,baz=160,slow=14,SNR=15						
KSRS	**Korea Array**	**8.97**	**344**	P	**Pn**	**16 24 18.0**	**+2.2**
KSRS				pmax	pmax		
	comp=Z,1.0nm,0.3s						
NACB	**Ninganchiao**	**9.61**	**243**	*e*Pn	**Pn**	**16 24 22.4**	**-2.2**
MAJO	**Matsushiro**	**9.80**	**36** ⇑	*e*P	**Pn**	**16 24 29.6**	**+2.5**
MAJO	**Matsushiro**	**9.80**	**36**	*e*Pn	**Pn**	**16 24 29.5**	**+2.3**
MAT	**Matsushiro**	**9.80**	**36**	P	**Pn**	**16 24 29.5**	**+2.4**
MAT				*e*S	**Sn**	**16 26 13.6**	**-2.6**
MJAR	**Matsushiro Arr**	**9.80**	**36**	P	**Pn**	**16 24 29.6**	**+2.4**
	comp=Z,0.9nm,0.3s,baz=253,slow=18,SNR=6.4						
MJAR				LR	LR	16 28 09.3	
	comp=Z,128nm,20.6s,baz=205,slow=37						
MJB9	**Matsu-Tunnel**	**9.80**	**36**	*e*Pn	**Pn**	**16 24 29.5**	**+2.4**
CBIJ	**Chichi jima**	**10.05**	**97**	*e*Pn	**Pn**	**16 24 32.2**	**+1.7**
CBIJ				S	**Sn**	**16 26 19.2**	**-3.1**
JCJ	**Chichijima**	**10.05**	**97**	P	**Pn**	**16 24 32.6**	**+2.0**
	comp=Z,16nm,0.3s,baz=112,slow=5.4,SNR=3.3						
JCJ				S	**Sn**	**16 26 19.2**	**-3.1**
	baz=270,slow=20						
YULB	**Yu-li**	**10.26**	**240**	*e*Pn	**Pn**	**16 24 29.2**	**-4.2**
SSLB	**Suanglung**	**10.31**	**243**	*e*Pn	**Pn**	**16 24 31.7**	**-2.5**
USRK	**Ussuriysk Ar.**	**15.36**	**3**	P	**P**	**16 25 48.9**	**+1.7**
	comp=Z,0.3nm,0.3s,baz=179,slow=10,SNR=19						
CN2	**Changchun**	**15.59**	**345**	*e*P	**P**	**16 25 51.0**	**+1.3**
CN2				*e*sP	sP	16 26 03.4	+2.2
CN2				*e*S	**Sn**	**16 28 38.8**	**+1.3**
CN2				pmax	pmax		
	comp=Z,60nm,1.0s						
CN2				pmax	pmax		
	comp=Z,100nm,3.0s						
BJI	**Beijing**	**16.54**	**316**	P	**Pn**	**16 25 58.5**	**+0.5**
BJI				pmax	pmax		
	comp=Z,31nm,0.9s						
BJI				pmax	pmax		
	comp=Z,110nm,3.4s						
XAN	**Xi'an**	**19.52**	**291**	P	**P**	**16 26 33.3**	**0.0**
XAN				pmax	pmax		
	comp=Z,38nm,0.8s						
XAN				pmax	pmax		
	comp=Z,15nm,2.6s						
HABR	**Khabarovsk**	**19.86**	**8**	*e*P	**P**	**16 26 35.9**	**-0.9**
HABR				*e*S	**S**	**16 30 19.0**	**+0.2**
HABR				pmax	pmax		
	comp=N,10.0nm,1.5s						
HABR				pmax	pmax		
	comp=E,23nm,1.5s						
HABR				pmax	pmax		
	comp=Z,35nm,1.5s						
HABR				MLR	MLR		
	comp=Z,47nm,13.0s						
HHC	**Hu-ho-hao-te**	**19.90**	**312**	*e*P	**P**	**16 26 37.3**	**-0.1**
HHC				S	**S**	**16 30 13.2**	**-6.8**
HHC				pmax	pmax		
	comp=Z,28nm,0.7s						
HHC				pmax	pmax		
	comp=Z,67nm,7.4s						
GUMO	**Guam**	**19.91**	**137**	LR	LR	16 32 46.9	
	comp=Z,85nm,20.3s,baz=334,slow=32						
YSS	**Yuzh-Sakhalins**

WMQ LR LR
comp=N,220nm,21.4s
WMQ LR LR
comp=N,200nm,20.6s
PKIN Phulchoki 40.01 279 *eP* **P 16 29 40.4 -0.6**
comp=N,8.0nm,0.7s
KKN Kakani 40.07 280 *eP* **P 16 29 41.3 -0.1**
comp=N,9.1nm,0.5s
PMG Port Moresby 41.10 155 LR LR 16 43 59.5
comp=N,96nm,20.2s,baz=30,slow=32
KOLN Koldanda 41.52 280 *eP* **P 16 29 49.0 -4.4**
comp=N,8.8nm,0.7s
MK01 Makanchi Array 41.70 309 *eP* **P 16 29 52.6 -1.8**
MK31 Makanchi Array 41.72 309 *eP* **P 16 29 53.2 -1.3**
MK31 Makanchi Array 41.72 309 *eP* **P 16 29 53.2 -1.3**
MKAR Makanchi Array 41.72 309 P **P 16 29 53.0 -1.5**
comp=N,3.7nm,0.8s,baz=100,slow=9.7,SNR=18
MKAR PcP **PcP 16 31 50.1 -0.6**
comp=N,0.3nm,0.3s,baz=70,slow=2.5,SNR=3.5
ZAA0 Zalesovo Array 41.74 320 *eP* **P 16 29 52.9 -1.6**
ZALV Zalesovo Beam 41.74 320 P **P 16 29 53.5 -1.1**
comp=N,1.9nm,0.5s,baz=111,slow=8.6,SNR=11
ZALV PcP **PcP 16 31 47.7 -2.8**
comp=N,0.5nm,0.4s,baz=101,slow=2.9,SNR=2.9
PYUN Piuthan 41.98 281 *eP* **P 16 29 58.5 +1.4**
comp=N,11nm,0.6s
TIXI Tiksi 42.88 359 P **P 16 30 02.8 -0.7**
comp=N,2.1nm,0.6s,baz=195,slow=9.2,SNR=4.6
TIXI Tiksi 42.88 359‖ *eP* **P 16 30 05.9 +2.4**
TIXI pmax pmax
comp=Z,8.0nm,1.7s
TIXI Tiksi 42.88 359 *eP* **P 16 30 04.9 +1.4**
comp=Z,8.5nm,1.4s
BILL Bilibino 44.44 18‖↓ *eP* **P 16 30 17.0 +0.8**
BILL *e* 16 32 01.7
BILL *eS* **S 16 36 54.3 +5.3**
BILL pmax pmax
comp=Z,3.0nm,1.1s
KURK Kurchatov 44.69 314 P **P 16 30 17.9 -0.5**
KURK pmax pmax
comp=Z,7.0nm,0.4s
KURK Kurchatov 44.69 314 P **P 16 30 17.9 -0.5**
KURBB Kurchatov Arra 44.73 314 P **P 16 30 17.9 -0.8**
comp=Z,6.5nm,0.5s,baz=95,slow=8.5,SNR=61
KSH Kashi 46.12 298 *eP* **P 16 30 33.3 +3.2**
KSH *epP* sP 16 30 42.4 +0.1
KSH *eScP* **ScP 16 35 58.0 +0.9**
KSH S **S 16 37 17.5 +3.3**
KSH ScS **ScS 16 40 23.8 0.0**
KSH pmax pmax
comp=Z,31nm,3.5s
KSH LR LR
comp=Z,100nm,4.7s
KSH LR LR
comp=Z,88nm,6.8s
KSH LR LR
comp=Z,160nm,6.6s
FITZ Fitzroy Crossi 46.95 187 P **P 16 30 36.7 +0.3**
comp=Z,1.8nm,0.9s,baz=345,slow=12
NRIK Noril'sk 47.57 341 P **P 16 30 39.9 -0.9**
comp=Z,3.6nm,0.4s,baz=120,slow=8.3,SNR=5.8
OTUK Ortayu 48.55 310 P **P 16 30 51.1 +2.4**
OTUK pmax pmax
comp=Z,4.0nm,0.7s
WRA Warramunga Arr 48.60 176 P **P 16 30 49.4 +0.1**
comp=Z,0.9nm,0.6s,baz=353,slow=8.4,SNR=5.7
VOSK Vostochnaya 49.64 316 P **P 16 30 56.0 -1.0**
VOSK pmax pmax
comp=Z,4.0nm,0.8s
VOSK Vostochnaya 49.64 316 *eP* **P 16 30 56.0 -1.0**
comp=Z,3.9nm,0.8s
BVA0 Borovoye Array 50.02 317 *i* P **P 16 30 58.8 -1.1**
BVA0 pmax pmax
comp=Z,7.0nm,0.8s
BVAR Borovoye Array 50.02 317 P **P 16 30 59.4 -0.5**
comp=Z,6.4nm,0.7s,baz=92,slow=9.2,SNR=41
BVAR PcP **PcP 16 32 18.9 -0.6**
comp=Z,0.7nm,0.4s,baz=108,slow=3.2,SNR=3.2
BRVK Borovoye 50.09 317 *d iP* **P 16 30 59.9 -0.4**
BRVK pmax pmax
comp=Z,27nm,0.7s
BRVK Borovoye 50.09 317 *eP* **P 16 30 59.3 -1.0**
comp=Z,18nm,0.5s
ZRNK Zerenda 50.85 316 *eP* **P 16 31 05.6 -0.6**
ZRNK pmax pmax
comp=Z,11nm,1.0s
ZRNK Zerenda 50.85 316 *eP* **P 16 31 05.6 -0.6**
comp=Z,10nm,1.0s
ASAR Alice Springs 52.27 177 P **P 16 31 17.6 +0.6**
comp=Z,0.9nm,0.7s,baz=10.0,slow=14,SNR=9.1
SVE Sverdlovsk 55.74 321 *eP* **P 16 31 42.4 +0.4**
SVE pmax pmax
comp=Z,11nm,1.1s
ABKAR Akbulak array 56.69 312 *eP* **P 16 31 48.5 -0.4**
ARU Arti 56.90 321 P **P 16 31 48.9 -1.4**
comp=Z,2.2nm,0.5s,baz=97,slow=3.8,SNR=10.0
ARU Arti 56.90 321 *c iP* **P 16 31 50.5 +0.2**
ARU 16 32 45.6
ARU 16 33 54.9
ARU S **S 16 39 43.9 +1.9**
ARU SS **SS 16 43 31.5 +1.4**
ARU pmax pmax
comp=Z,11nm,1.0s
ARU Arti 56.90 321 *eP* **P 16 31 49.4 -0.9**
comp=Z,9.6nm,1.0s
SOKR Solikamsk 57.68 325 *eP* **P 16 31 54.8 -0.9**
SOKR pmax pmax
comp=Z,12nm,0.9s
AKTO Aktyubinsk 57.78 314 P **P 16 31 56.6 0.0**
comp=Z,3.5nm,0.7s,baz=66,slow=12,SNR=8.8
GEYT Alibeck 60.13 299 P **P 16 32 14.5 +1.3**
comp=Z,0.6nm,0.4s,baz=91,slow=7.2,SNR=2.4
ILAR Eielson Array 60.99 29 P **P 16 32 17.9 -0.6**
comp=Z,0.3nm,0.6s,baz=294,slow=7.5,SNR=4.8
KLMR Klimovskoe 65.96 328 *eP* **P 16 32 50.1 -1.3**
KLMR *e* 16 33 20.6
KLMR pmax pmax
comp=Z,5.0nm,0.7s
ARCES ARCESS Array B 68.48 339 P **P 16 33 07.0 -0.3**
comp=Z,2.7nm,0.8s,baz=71,slow=5.3,SNR=10
NCK Nalchik 69.02 309‖↓ *eP* **P 16 33 12.2 +1.1**
OBN Obninsk 69.28 322‖ *eP* **P 16 33 12.3 -0.1**
OBN *e* 16 33 35.5
OBN *e* 16 35 48.2
OBN *e*PPP PPP 16 37 27.9
OBN pmax pmax
comp=Z,5.0nm,0.7s
OBN MLR MLR
comp=Z,81nm,21.0s
KBZ Khabaz 69.41 309 P **P 16 33 13.9 +0.5**
comp=Z,5.7nm,0.7s,baz=107,slow=3.8,SNR=16
KIV Kislovodsk 69.48 310 *eP* **P 16 33 15.0 +1.0**
KIV pmax pmax
comp=Z,10.0nm,1.0s
NEY Neytrino 69.70 309‖↓ *eP* **P 16 33 17.5 +2.0**
NEY pmax pmax
comp=Z,1.0nm,0.8s
AKH Akhalkalaki 69.82 307↑ *iP* P 16 33 24.0 +7.7
FINES FINESS Array B 71.80 331 P **P 16 33 27.2 -0.5**
comp=Z,5.2nm,0.4s,baz=65,slow=5.8,SNR=49
DAG Danmarks Havn 72.99 353 *i* P **P 16 33 36.1 +1.5**
comp=Z,2.3nm,1.0s
DAG Danmarks Havn 72.99 353 *eP* **P 16 33 36.1 +1.5**
DAG pmax pmax
comp=Z,2.0nm,1.0s
AKASG Malin Array Be 75.14 320 P **P 16 33 47.2 -0.3**
comp=Z,7.3nm,0.6s,baz=53,slow=6.5,SNR=25
KIEV Kiev 75.15 320 *d iP* **P 16 33 47.1 -0.5**
KIEV pmax pmax
comp=Z,8.0nm,0.6s
KIEV Kiev 75.15 320 *eP* **P 16 33 46.7 -0.9**
comp=Z,8.9nm,0.7s
AK11 Malin Array Si 75.18 320 *eP* **P 16 33 46.9 -0.9**
SUW Suwalki 76.77 325 *eP* **P 16 33 57.1 +0.3**
SUW Suwalki 76.77 325 *eP* **P 16 33 57.1 +0.3**
SORM Soroca 76.84 318↑ *iP* **P 16 33 57.2 -0.1**
SORM Soroca 76.84 318↑ P **P 16 33 57.2 -0.1**
BR131 Keskin Array S 77.36 308 *eP* **P 16 34 00.6 0.0**
BRTR Keskin Array B 77.36 308 P **P 16 34 00.9 +0.3**
comp=Z,7.8nm,0.8s,baz=93,slow=5.2,SNR=36
NC405 NORSAR Array S 77.81 334 *eP* **P 16 34 02.1 -0.5**
BR231 Keskin MP Arra 77.90 309 *eP* **P 16 34 01.6 -2.0**
NB201 NORSAR Array S 78.01 334 *eP* **P 16 34 03.0 -0.7**
NB2 NORSAR Subarra 78.05 334 P **P 16 34 03.0 -0.9**
comp=Z,5.0nm,0.8s,baz=49,slow=5.9
NOA NORSAR Array B 78.05 334 P **P 16 34 03.4 -0.5**
comp=Z,4.5nm,0.7s,baz=50,slow=5.5,SNR=16
NOA NORSAR Array B 78.05 334 P **P 16 34 03.4 -0.5**
NOA pmax pmax
comp=Z,4.0nm,0.7s
NC204 NORSAR Array S 78.07 335 *eP* **P 16 34 03.5 -0.5**
SUMG Summit 78.60 357 *i* P **P 16 34 08.2 +1.0**
comp=Z,6.5nm,0.8s
SUMG Summit 78.60 357 *i* P **P 16 34 08.2 +1.0**
SUMG pmax pmax
comp=Z,7.0nm,0.8s
SUMG Summit 78.60 357 *eP* **P 16 34 07.6 +0.4**
comp=Z,6.9nm,0.8s
TESR Tescani 78.65 317⇑ *iP* **P 16 34 07.9 +0.5**
VRI Vrincioaia 78.92 316⇑ *iP* **P 16 34 10.4 +1.4**
VRI Vrincioaia 78.92 316⇑ P **P 16 34 10.4 +1.4**
BUR08 Bucovina Ar. S 78.93 318 *eP* **P 16 34 08.7 -0.4**
BURAR Bucovina Array 78.94 318⇑ *iP* **P 16 34 09.9 +0.8**
BURAR Bucovina Array 78.94 318⇑ P **P 16 34 09.9 +0.8**
KWP Kalwaria Pacla 79.31 321 *eP* **P 16 34 12.1 +1.0**
KWP Kalwaria Pacla 79.31 321 *eP* **P 16 34 12.0 +1.0**
URZ Urewera 79.46 145 LR LR 17 08 14.8
comp=Z,31nm,19.9s,baz=9.0,slow=35
DOPR Dopca 79.68 317⇑ *iP* **P 16 34 14.3 +1.2**
KOLS Kolonicke sedl 79.92 321 *eP* **P 16 34 14.9 +0.5**
KOLS pmax pmax
comp=Z,3.0nm,1.1s
KOLS Kolonicke sedl 79.92 321 *eP* **P 16 34 14.9 +0.5**
STHS Stebnicka Huta 80.23 321 *eP* **P 16 34 17.4 +1.4**
STHS pmax pmax
comp=Z,3.0nm,1.1s
STHS Stebnicka Huta 80.23 321 *eP* **P 16 34 17.4 +1.4**
CRVS Cervenica-Dubn 80.39 321 *eP* **P 16 34 18.0 +1.1**
CRVS Cervenica-Dubn 80.39 321 *eP* **P 16 34 18.0 +1.1**
ARR Arges 80.44 317⇓ *iP* **P 16 34 18.2 +0.9**
OJC Ojcow 80.56 323 *eP* **P 16 34 18.7 +0.9**
OJC Ojcow 80.56 323 *eP* **P 16 34 18.1 +0.3**
OJC pmax pmax
comp=Z,12nm,0.7s
OJC Ojcow 80.56 323 *eP* **P 16 34 18.1 +0.3**
comp=Z,12nm,0.7s
NIE Niedzica 80.74 322 *eP* **P 16 34 19.6 +0.8**
NIE Niedzica 80.74 322 *eP* **P 16 34 19.6 +0.8**
DRGR 80.82 319⇑ *iP* **P 16 34 20.0 +0.7**
DRGR 80.82 319⇑ P **P 16 34 20.0 +0.7**
GZR Gura Zlata 81.53 317⇑ *iP* **P 16 34 24.0 +0.9**
GZR Gura Zlata 81.53 317⇑ P **P 16 34 24.0 +0.9**
OKC Ostrava-Krasne 81.66 323 *eP* **P 16 34 24.5 +0.9**
OKC Ostrava-Krasne 81.66 323 *eP* **P 16 34 24.5 +0.9**
PSZ Piszkesteto 81.80 321⇑ *iP* **P 16 34 24.5 0.0**
PSZ Piszkesteto 81.80 321 *eP* **P 16 34 25.3 +0.8**
PSZ pmax pmax
comp=Z,9.0nm,1.2s
PSZ Piszkesteto 81.80 321 *eP* **P 16 34 25.3 +0.8**
comp=Z,9.4nm,1.2s
MORC Moravsky Berou 82.01 323⇑ *iP* **P 16 34 24.0 -1.5**
MORC Moravsky Berou 82.01 323⇑ P **P 16 34 24.0 -1.5**
KSP Ksiaz 82.03 324 *eP* **P 16 34 26.8 +1.2**
KSP Ksiaz 82.03 324 *eP* **P 16 34 26.8 +1.2**
VYHS Vyhne 82.06 322 *eP* **P 16 34 26.9 +1.1**
VYHS pmax pmax
comp=Z,4.0nm,1.1s
VYHS Vyhne 82.06 322 *eP* **P 16 34 26.9 +1.1**
DPC Dobruska-Polom 82.31 324 *eP* **P 16 34 28.9 +1.8**
DPC *epP* **sP 16 34 40.2 +0.5**
DPC *ex* x 16 34 45.0
DPC Dobruska-Polom 82.31 324 *eP* **P 16 34 28.9 +1.8**
DPC *e* 16 34 40.2
DPC *e* 16 34 45.0
MDVR Moldovita 82.50 317⇑ *iP* **P 16 34 28.6 +0.4**
VTS Vitosha 82.78 315⇑ *iP* **P 16 34 30.5 +0.7**
VTS Vitosha 82.78 315⇑ P **P 16 34 30.6 +0.7**
VRAC Vranov 82.79 323⇑ *iP* **P 16 34 28.4 -1.2**
VRAC Vranov 82.79 323⇑ P **P 16 34 28.4 -1.2**
RAR Rarotonga 83.24 119 LR LR 17 03 00.6
comp=Z,110nm,20.0s,baz=139,slow=29
CLL Collm 83.39 326↓ *iP* **P 16 34 33.1 +0.5**
comp=Z,6.0nm,0.7s
CLL *i* 16 34 35.3
comp=Z,8.0nm,0.7s
CLL *e* 16 34 42.0
CLL *e* 16 34 51.0
CLL Collm 83.39 326↓ *iP* **P 16 34 33.1 +0.5**
CLL pmax pmax
comp=Z,6.0nm,0.7s
CLL Collm 83.39 326 *eP* **P 16 34 31.6 -1.0**
comp=Z,7.8nm,0.7s
PRU Pruhonice 83.44 324 *eP* **P 16 34 33.8 +0.9**
PRU Pruhonice 83.44 324 *eP* **P 16 34 33.8 +0.9**
CONA Conrad Observa 84.00 322 *i* PcP **P 16 34 37.3 +1.4**
comp=Z,8.1nm,1.1s
NKC Novy Kostel 84.34 325 *eP* **P 16 34 38.8 +1.3**
NKC Novy Kostel 84.34 325 *eP* **P 16 34 38.8 +1.3**
KHC Kasperske Hory 84.47 324 *eP* **P 16 34 39.2 +1.0**
KHC *ex* x 16 34 56.1
KHC Kasperske Hory 84.47 324 *eP* **P 16 34 39.2 +1.0**
KHC *e* 16 34 56.1
GEC2 GERESS Array S 84.58 324 *eP* **P 16 34 38.2 -0.7**
GEC2 pmax pmax
comp=Z,4.0nm,1.0s
GEC2 GERESS Array S 84.58 324 *eP* **P 16 34 38.2 -0.7**
comp=Z,4.4nm,1.0s
GERES GERESS Array B 84.58 324 P **P 16 34 39.3 +0.5**
comp=Z,2.3nm,0.8s,baz=42,slow=4.2,SNR=6.9
GEA0 GERESS Array S 84.58 324 *eP* **P 16 34 38.8 -0.1**
ARSA Arzberg 84.59 322 *i* PcP **P 16 34 41.5 +2.6**
comp=Z,4.4nm,1.4s
MOA Molln 84.90 323 *i* PcP **P 16 34 42.3 +1.9**
comp=Z,3.1nm,0.7s
SOKA Soboth 85.21 322 *i* PcP **P 16 34 44.4 +2.4**
comp=Z,9.1nm,1.2s
OBKA Obir 85.58 322 *i* PcP **P 16 34 45.7 +1.8**
comp=Z,6.0nm,1.1s
KBA Koelnbreinsper 85.87 323 *i* PcP **P 16 34 48.7 +3.2**
comp=Z,5.5nm,0.7s
MYKA Terra Mystica 85.99 322 *i* PcP **P 16 34 48.4 +2.5**
comp=Z,7.2nm,0.9s
ABTA Abfaltersbach 86.52 323 *i* PcP **P 16 34 51.6 +3.1**
comp=Z,6.7nm,0.6s
WATA Walderalm 86.64 324 *i* pP P 16 34 57.1 +7.9
comp=Z,1.4nm,0.4s
WTTA Wattenberg 86.65 324 *i* PcP **P 16 34 52.7 +3.4**
comp=Z,2.2nm,0.5s
MOTA Moosalm 86.88 324 *i* PcP **P 16 34 52.2 +1.8**
comp=Z,2.0nm,0.6s
RETA Reutte 86.96 324 *i* PcP **P 16 34 52.1 +1.5**
comp=Z,1.2nm,0.6s
FETA Feichten 87.28 324 *i* P **P 16 34 49.1 -3.2**
comp=Z,1.7nm,0.8s
EKA Eskdalemuir Ar 87.45 336 P **P 16 34 53.4 +0.6**
comp=Z,0.6nm,0.4s,baz=44,slow=4.7,SNR=14
ESK Eskdalemuir 87.48 336 *i* P **P 16 34 51.9 -1.0**
DAVA Damuels 87.55 324 *i* PcP **P 16 34 55.6 +2.0**
comp=Z,3.0nm,0.8s
0.6nm,0.6s,baz=151,slow=6.5,SNR=4.2
MKAR Makanchi Array 80.13 319 P **P 16 49 36.1 -0.5**
0.2nm,0.3s,baz=97,slow=7.6,SNR=4.1
ZALV Zalesovo Beam 81.13 327 P **P 16 49 40.5 -1.2**
0.5nm,0.3s,baz=114,slow=7.2,SNR=4.5
ILAR Eielson Array 83.28 22 P **P 16 49 52.0 -0.8**
0.7nm,0.7s,baz=248,slow=5.3,SNR=11
TORD Torodi Ar. Bea 149.43 286 PKPbc **PKPbc 16 57 16.2 +0.2**
1.3nm,0.5s,baz=87,slow=2.2,SNR=22

*ISCJB **03** 16:43:00.7±0.6,38°.58N±0°.03×39°.60E±0°.04,h3km±7km, Error ellipse: s-maj=6.5km s-min=3.8km az=141.4*
*ISK **03** 16:43:00.4,38°.60N×39°.57E,h11km,MD2.6*
*DDA **03** 16:43:00.3,38°.56N×39°.60E,h7km,Md2.6*
*CSEM **03** 16:43:01.2±0.3,38°.55N×39°.54E,h10km,MD2.6, Error ellipse: s-maj=7.4km s-min=5.8km az=40.0*
ISC 03 16:43:00.4±1.0,38°.55N±0°.03×39°.55E±0°.03,h11km±10km, n19,σ0s49/34,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SVRC	**Sivrice-ELAZID**	**0.26**	**228**	*e*PG	**Pb**	**16 43 07.0**	**-0.1**
SVRC				*e*SG	**Sb**	**16 43 11.7**	**+0.1**
SVRC	**Sivrice-ELAZID**	**0.26**	**228**	*e*Pg	**Pb**	**16 43 07.0**	**-0.1**
SVRC				*e*Sg	**Sb**	**16 43 11.7**	**+0.1**
PTK	**Pertek**	**0.36**	**340**	*e*PG	**Pg**	**16 43 07.5**	**-0.2**
PTK				*e*SG	**Sg**	**16 43 12.4**	**-0.3**
PTK	**Pertek**	**0.36**	**340**	*e*Pg	**Pg**	**16 43 07.5**	**-0.2**
PTK				*e*Sg	**Sg**	**16 43 12.4**	**-0.3**
ELZG	**Elazig**	**0.45**	**264**	*i* P	**Pg**	**16 43 09.8**	**+0.6**
ELZG				*i* S	**Sb**	**16 43 16.9**	**-0.2**
ELZG	**Elazig**	**0.45**	**264**	P	**Pg**	**16 43 09.8**	**+0.6**
ELZG				S	**Sb**	**16 43 16.9**	**-0.2**
DYBB	**Diyarbakir**	**0.75**	**142**	*e*PG	**Pb**	**16 43 15.9**	**+0.4**
DYBB				*e*SG	**Sn**	**16 43 27.4**	**-1.0**
DIYA	**Diyarbakir**	**0.77**	**144**	*i* P	**Pn**	**16 43 16.8**	**-0.4**
DIYA				*i* S	**Sb**	**16 43 26.7**	**+0.4**
DIYA	**Diyarbakir**	**0.77**	**144**	P	**Pn**	**16 43 16.8**	**-0.4**
DIYA				S	**Sb**	**16 43 26.7**	**+0.4**
BINT	**Bingol**	**0.80**	**66**	*e*Pg	**Pn**	**16 43 19.2**	**+1.5**
DIY	**Diyarbakir**	**0.84**	**141**	*e*Pg	**Pg**	**16 43 15.9**	**-0.7**
DIY				*e*Sg	**Sg**	**16 43 27.4**	**-0.2**
BNGB	**Bing¶‖**	**0.98**	**63**	*e*PG	**Pb**	**16 43 19.2**	**-0.3**
SVAN	**Silvan-Diyarba**	**1.35**	**107**	*e*PN	**Pb**	**16 43 25.6**	**-0.2**
SVAN	**Silvan-Diyarba**	**1.35**	**107**	*e*Pn	**Pb**	**16 43 25.6**	**-0.2**
BTMN	**Batman**	**1.50**	**115**	*i* P	**Pb**	**16 43 28.3**	**-0.1**
BTMN				*i* S	**Sg**	**16 43 49.2**	**+0.4**
BTMN	**Batman**	**1.50**	**115**	P	**Pb**	**16 43 28.3**	**-0.1**
BTMN				S	**Sg**	**16 43 49.2**	**+0.4**
MARD	**Mardin**	**1.57**	**141**	*i* P	**Pn**	**16 43 28.6**	**+0.4**
MARD				*i* S	**Sb**	**16 43 50.2**	**+0.9**
KELT	**Kelkit**	**1.61**	**352**	*i* P	**Pb**	**16 43 30.4**	**+0.1**
KELT				*i* S	**Sb**	**16 43 50.4**	**-0.3**
KELT	**Kelkit**	**1.61**	**352**	P	**Pb**	**16 43 30.4**	**+0.1**
KELT				S	**Sb**	**16 43 50.4**	**-0.3**

*NAO **03** 16:43:01.8±4.0,70°.67N×6°.87W,ML3.0*
*CSEM **03** 16:43:03.6±1.0,70°.85N×6°.82W,h5km,ML3.5, Error ellipse: s-maj=32.8km s-min=8.7km az=174.0*
*BER **03** 16:43:04.3±3.5,70°.77N×6°.89W,h1km±84km,MD1.7, ML3.5,ML3.0(NAO)*
ISC 03 16:43:01.2±2.3,70°.6N±0°.2×7°.27W±0°.09,h10km,n22, σ0s86/28,5D,Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNE	**Jan Mayen East**	**0.51**	**318**↓	*i*P	**Pn**	**16 43 13.8**	**-0.7**
JNE				*e*S	**Sb**	**16 43 19.5**	**-0.2**
JNE				IAML		16 43 21.9	
	comp=Z,4μm,0.3s						
JNE	**Jan Mayen East** SNR=91	**0.51**	**318**↓	*i*P	**Pn**	**16 43 13.8**	**-0.7**
JNE				*e*S	**Sb**	**16 43 19.5**	**-0.2**
	SNR=91						
JMIC	**Jan Mayen**	**0.56**	**313**	Pg	**Pn**	**16 43 14.6**	**-0.5**
JMIC				Lg	Lg	16 43 21.9	
JMIC	**Jan Mayen**	**0.56**	**313**↓	*i*P	**Pn**	**16 43 14.7**	**-0.5**
JMIC				Lg	Lg	16 43 21.9	
JMIC	**Jan Mayen**	**0.56**	**313**	Pg	**Pn**	**16 43 14.6**	**-0.5**
JMIC				Lg	Lg	16 43 21.9	
	SNR=30						
JNW	**Jan Mayen West**	**0.57**	**318**↓	*i*P	**Pb**	**16 43 14.6**	**+1.4**
JNW				*e*S	**Sb**	**16 43 21.1**	**-0.2**
JNW				IAML		16 43 22.3	
	comp=Z,4μm,0.2s						
JNW	**Jan Mayen West** SNR=91	**0.57**	**318**↓	*i*P	**Pb**	**16 43 14.6**	**+1.4**
JNW				*e*S	**Sb**	**16 43 21.1**	**-0.2**
	SNR=91						
JMI	**Jan Mayen**	**0.58**	**304**	*e*P	**Pn**	**16 43 16.2**	**+0.7**
JMI				*e*S	**Sn**	**16 43 24.7**	**-0.3**
JMI				IAML		16 43 27.7	
	comp=Z,2μm,0.5s						
JMI	**Jan Mayen** SNR=91	**0.58**	**304**	*e*P	**Pn**	**16 43 16.2**	**+0.7**
JMI				*e*S	**Sn**	**16 43 24.7**	**-0.3**
	SNR=91						
DAG	**Danmarks Havn**	**6.95**	**338**	*i* P	**Pn**	**16 44 41.1**	**-1.8**
DAG				*i* S	Sn	16 45 52.3	-10
HSPB	**Hornsund (broa**	**8.95**	**34**	Pn	**Pn**	**16 45 10.5**	**+0.2**
HSPB	**Hornsund (broa** SNR=50	**8.95**	**34**	Pn	**Pn**	**16 45 10.5**	**+0.2**
HSP	**Hornsund**	**8.96**	**34**	Pn	**Pn**	**16 45 10.5**	**+0.1**
KBS	**Kingsbay**	**9.67**	**22**	Pn	**Pn**	**16 45 19.8**	**-0.4**
KBS	**Kingsbay**	**9.67**	**22**	Pn	**Pn**	**16 45 19.8**	**-0.4**
KBS	**Kingsbay** SNR=50	**9.67**	**22**	Pn	**Pn**	**16 45 19.8**	**-0.4**
SPA0	**Spitsbergen Ar** baz=221,slow=18	**9.79**	**29**	Pn	**Pn**	**16 45 23.4**	**+1.5**
SPA0	**Spitsbergen Ar** baz=221,slow=18	**9.79**	**29**	Pn	**Pn**	**16 45 23.4**	**+1.5**
SPA0	**Spitsbergen Ar** SNR=50	**9.79**	**29**	Pn	**Pn**	**16 45 23.4**	**+1.5**
ARA0	**ARCESS Array S** baz=270,slow=10	**11.15**	**80**	Pn	**Pn**	**16 45 40.0**	**-0.4**
ARA0	**ARCESS Array S** baz=270,slow=10	**11.15**	**80**	Pn	**Pn**	**16 45 40.0**	**-0.4**
ARA0	**ARCESS Array S** SNR=50	**11.15**	**80**	Pn	**Pn**	**16 45 40.0**	**-0.4**

*IDC **03** 16:47:57.0±2.2,35°.84N×140°.36E,h56km±20km,mb3.2/3, mb1 3.4/4,mb1mx3.1/39,mbtmp3.6/4,ML3.6/1,Error ellipse: s-maj=24.3km s-min=8.3km az=64.0*
*ISCJB **03** 16:47:57.5±0.6,35°.87N±0°.04×140°.15E±0°.06,h75km±5km, mb3.5/3,Error ellipse: s-maj=8.8km s-min=5.3km az=157.1*
*JMA **03** 16:47:59.1±0.1,35°.91N×140°.13E,h61km±1km,M3.3 Broadband fault plane solution: P waves. NP1: φs329.00000°,δ72.00000°,λ70.00000°. NP2: φs199.00000°,δ26.00000°,λ137.00000°. Principal axes: T Plg58.0000°, Azm212.0000°; N Plg19.0000°, Azm335.0000°; P Plg25.0000°, Azm74.0000°;*
JMA Felt I J1.
ISC 03 16:47:58.4±1.0,35°.88N±0°.04×140°.14E±0°.06,h68km±8km, n17,σ0s93/28,mb3.5/3,1C-4D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.35**	**7**⇑	P	**Pn**	**16 48 09.6**	**-0.1**
JYT				S	**Sn**	**16 48 17.4**	**-0.5**
TOK	**Tokyo**	**0.37**	**238**	P	**Pn**	**16 48 10.8**	**+1.0**
JAG	**Ashikaga**	**0.78**	**314**	↓P	**Pn**	**16 48 14.2**	**+0.1**
JAG				S	**Sn**	**16 48 25.4**	**-0.2**
JRY	**Ryogami san**	**1.01**	**278**	↓P	**Pn**	**16 48 17.5**	**+0.5**
JRY				S	**Sn**	**16 48 30.9**	**+0.1**
JOD2	**Odawara 2**	**1.06**	**235**	↓P	**Pn**	**16 48 17.5**	**0.0**
JOD2				S	**Sn**	**16 48 30.9**	**-0.9**
BSO3	**Boso 3**	**1.12**	**164**	P	**Pn**	**16 48 19.1**	**+1.0**
BSO3				S	**Sn**	**16 48 34.4**	**+1.7**
JKT	**Katashina**	**1.14**	**321**	P	**Pn**	**16 48 18.8**	**+0.1**
JKT				S	**Sn**	**16 48 33.9**	**+0.1**
JIM2	**Oshima 3**	**1.30**	**207**	P	**Pn**	**16 48 20.1**	**-0.6**
JIM2				*e*S	**Sn**	**16 48 36.4**	**-1.0**
JYN	**Shimob**	**1.35**	**254**	↓P	**Pn**	**16 48 21.9**	**+0.5**
JYN				S	**Sn**	**16 48 38.7**	**0.0**
BSO1	**Boso 1**	**1.40**	**151**	P	**Pn**	**16 48 22.2**	**+0.7**
MJAR	**Matsushiro Arr**	**1.70**	**293**	P	**Pn**	**16 48 26.3**	**+0.4**

16nm,0.3s,baz=99,slow=14,SNR=241
MJAR S **Sn** **16 48 48.9 +2.1**
10nm,0.3s,baz=112,slow=19,SNR=10
MAT **Matsushiro 1.70 293** P **Pn** **16 48 26.8 +0.8**
MAT S **Sn** **16 48 46.5 -0.3**
JHJ **Hachijo jima 2 2.77 186** P **Pn** **16 48 40.0 -0.5**
24nm,0.3s,baz=94,slow=8.8,SNR=9.8
JHJ S **Sn** **16 49 10.9 -1.9**
23nm,0.3s,baz=252,slow=19,SNR=4.4
ASAJ **Asahikawa 8.44 12** P **Pn** **16 49 56.0 -1.8**
baz=204,slow=9.8
ZALV **Zalesovo Beam 41.95 313** P **P** **16 55 42.5 +0.2**
0.3nm,0.4s,baz=69,slow=9.8,SNR=2.5
WRA **Warramunga Arr 55.79 187** P **P** **16 57 28.3 -0.3**
0.7nm,0.8s,baz=0.4,slow=7.7,SNR=5.5
ASAR **Alice Springs 59.52 187** P **P** **16 57 54.7 0.0**
0.2nm,0.7s,baz=359,slow=6.5,SNR=3.1

*IDC **03** 16:51:02.8±2.7, 36°.85N×140°.52E, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.2/43, mbtmp3.5/2, Error ellipse: s-maj=46.1km s-min=28.1km az=31.0*
*ISCJB **03** 16:51:03.1±0.8, 36°.99N±0°.03×140°.57E±0°.05, h15km±7km, mb3.6/2, Error ellipse: s-maj=7.5km s-min=5.3km az=21.9*
*JMA **03** 16:51:03.0, 36°.99N×140°.51E, h5km±1km, M3.1*
JMA Felt I J1.

ISC 03 16:51:00.2±1.7, 36°.96N±0°.04×140°.54E±0°.04, h1km±14km, n18,σ1°15/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
ONAJ	**Iwakimizuishiy**	**0.26**	**55**	P		**Pb**	**16 51 08.2**	**+0.5**
ONAJ				S		**Sb**	**16 51 12.0**	**-0.6**
JHO	**Hitachi**	**0.34**	**175**	P		**Pn**	**16 51 10.3**	**-2.0**
JFK	**Kawauchi**	**0.49**	**33**	P		**Pb**	**16 51 12.1**	**+0.4**
JFK				S		**Sb**	**16 51 18.6**	**-0.8**
JSB	**Shiboa**	**0.49**	**272**	P		**Pn**	**16 51 12.9**	**-1.5**
JSB				S		**Sb**	**16 51 19.7**	**+0.3**
JFT	**Otama**	**0.58**	**344**	P		**Pb**	**16 51 13.6**	**+0.4**
JFT				S		**Sb**	**16 51 21.0**	**-1.0**
JYT	**Yasato**	**0.78**	**201**	P		**Pn**	**16 51 17.9**	**-0.3**
JYT				S		**Sn**	**16 51 29.4**	**-1.1**
JFY	**Yanaizu**	**0.80**	**304**	P		**Pn**	**16 51 17.8**	**-0.9**
JFY				S		**Sb**	**16 51 27.7**	**-0.6**
JMM	**Marumori**	**0.93**	**13**	P		**Pn**	**16 51 19.6**	**-0.8**
MJAR	**Matsushiro Arr**	**1.91**	**258**	Pn		**Pg**	**16 51 36.7**	**-0.2**
	11nm,0.3s,baz=78,slow=17,SNR=25							
MJAR				Sn		**Sb**	**16 51 59.6**	**-0.7**
	7.0nm,0.3s,baz=79,slow=26,SNR=14							
MJAR				LR		LR	16 52 36.5	
	comp=Z,56nm,18.6s,baz=95,slow=51							
MAT	**Matsushiro**		**1.92 258**	P		**Pg**	**16 51 37.2**	**+0.3**
MAT				S		**Sg**	**16 52 01.9**	**+0.2**
H11N2	**WAKE ISLAND Hy**	**28.72**	**119**	T		T	17 26 51.6	
	baz=313,slow=75,SNR=6.0							
H11N1	**WAKE ISLAND Hy**	**28.72**	**120**	T		T	17 26 51.3	
	baz=313,slow=75,SNR=5.1							
H11N3	**WAKE ISLAND Hy**	**28.73**	**119**	T		T	17 26 52.8	
	baz=313,slow=75,SNR=5.0							
H11S1	**WAKE ISLAND Hy**	**29.41**	**122**	T		T	17 27 42.1	
	baz=314,slow=75,SNR=8.3							
H11S3	**WAKE ISLAND Hy**	**29.41**	**122**	T		T	17 27 43.9	
	baz=314,slow=75,SNR=9.5							
H11S2	**WAKE ISLAND Hy**	**29.43**	**122**	T		T	17 27 42.8	
	baz=314,slow=75,SNR=8.0							
WRA	**Warramunga Arr**		**56.89 187**	P		**P**	**17 00 47.3**	**+0.5**
	0.5nm,0.8s,baz=1.1,slow=7.3,SNR=4.9							
ASAR	**Alice Springs**		**60.62 187**	P		**P**	**17 01 15.5**	**+2.8**
	0.4nm,0.8s,baz=19,slow=8.8,SNR=3.1							

*ISCJB **03** 17:04:03.9±0.5, 24°.43S±0°.06×179°.7W±0°.1, h490km, mb4.2/20, Error ellipse: s-maj=13.5km s-min=8.0km az=11.7*
*NEIC **03** 17:04:04.4±1.1, 24°.46S×179°.62W, h492km±12km, mb4.5/7, Error ellipse: s-maj=14.3km s-min=11.2km az=122.0*
*IDC **03** 17:04:04.1±1.4, 24°.40S×179°.70W, h478km±13km, mb3.8/16, mb1 3.8/18, mb1mx3.8/24, mbtmp4.6/18, Error ellipse: s-maj=17.3km s-min=12.8km az=104.0*

ISC 03 17:04:04.4±0.5, 24°.41S±0°.08×179°.72W±0°.09, h490km, n75,σ1°82/89, mb4.2/20, 7C-12D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
AFI	**Afiamalu**	**12.85**	**37**	P		**P**	**17 06 51.6**	**-0.7**
	5.6nm,0.3s,baz=295,slow=11,SNR=5.3							
AFI				S		**S**	**17 09 02.7**	**-8.0**
	1.2nm,0.3s,baz=37,slow=20,SNR=2.8							
DZM	**Mont Dzumac**	**12.93**	**278**	P		**P**	**17 06 56.0**	**+2.9**
	1.3nm,0.3s,baz=84,slow=17,SNR=15							
URZ	**Urewera**	**14.07**	**190**	P		**P**	**17 07 03.1**	**-1.7**
	1.5nm,0.3s,baz=116,slow=14,SNR=9.1							
URZ				S		**S**	**17 09 30.7**	**-3.0**
	0.5nm,0.3s,baz=88,slow=17,SNR=3.2							
KHZ	**Kahutara**	**18.81**	**196**	*e*P		**P**	**17 07 52.4**	**-0.1**
	59nm,0.4s							
RPZ	**Rata Peaks**	**20.70**	**199**	P		**P**	**17 08 10.1**	**+0.4**
	14nm,0.5s,baz=198,slow=0.3,SNR=24							
RPZ	**Rata Peaks**	**20.70**	**199**	*e*P		**P**	**17 08 10.0**	**+0.3**
	17nm,0.6s							
HNR	**Honiara**	**24.44**	**304**	P		**P**	**17 08 43.1**	**-0.6**
	57nm,0.7s,baz=254,slow=3.4,SNR=4.6							
CTA	**Charters Tower**	**31.73**	**271**	P		**P**	**17 09 48.6**	**+1.1**
	13nm,0.5s,baz=96,slow=11,SNR=22							
STKA	**Stephens Creek**	**34.77**	**249**	P		**P**	**17 10 13.8**	**+0.7**
	2.1nm,0.5s,baz=94,slow=12,SNR=12							
ASAR	**Alice Springs**	**42.21**	**261**	P		**P**	**17 11 14.0**	**+0.2**
	3.4nm,0.8s,baz=96,slow=6.9,SNR=65							
ASAR				S		**S**	**17 16 54.2**	**-4.0**
	0.8nm,0.7s,baz=95,slow=20,SNR=5.5							
WRAB	**Tennant Creek**	**42.62**	**267**	*e*P		**P**	**17 11 16.7**	**-0.4**
	17nm,1.2s							
WRA	**Warramunga Arr**	**42.63**	**267**	P		**P**	**17 11 16.8**	**-0.3**
	7.5nm,0.6s,baz=102,slow=8.2,SNR=113							
WRA				PcP		**PcP**	**17 12 58.9**	**+0.5**
	1.5nm,0.7s,baz=102,slow=3.3,SNR=5.7							
WRA				ScP		**ScP**	**17 16 04.7**	**+2.5**
	2.7nm,1.0s,baz=101,slow=4.2,SNR=6.3							
WRA				S		**S**	**17 16 59.6**	**-4.6**
	1.7nm,0.8s,baz=100,slow=13,SNR=7.2							
FITZ	**Fitzroy Crossi**	**51.05**	**266**	S		**S**	**17 18 55.5**	**-6.0**
	1.2nm,0.7s,baz=165,slow=18,SNR=4.3							
FITZ	**Fitzroy Crossi**	**51.05**	**266**	*e*P		**P**	**17 12 21.5**	**+0.6**
	10nm,0.8s							
FITZ				S		**S**	**17 18 55.5**	**-6.0**
MJAR	**Matsushiro Arr**	**72.46**	**326**	P		**P**	**17 14 41.0**	**+0.4**
	6.0nm,0.8s,baz=161,slow=5.9,SNR=23							
MAT	**Matsushiro**	**72.46**	**326**	P		**P**	**17 14 40.6**	**0.0**
MAW	**Mawson**	**77.37**	**200**	P		**P**	**17 15 09.4**	**+1.7**
	1.4nm,0.4s,baz=63,slow=16,SNR=4.1							
KSRS	**Korea Array**	**78.80**	**320**	P		**P**	**17 15 17.4**	**+1.6**
	3.6nm,0.7s,baz=131,slow=5.7,SNR=18							
KSAR	**Wonju Array Be**	**78.81**	**320**	P		**P**	**17 15 17.4**	**+1.5**
PETK	**Petropavlovsk-**	**79.65**	**346**	P		**P**	**17 15 20.8**	**+0.8**
	6.7nm,0.7s,baz=108,slow=7.8,SNR=16							
USRK	**Ussuriysk Ar.**	**81.33**	**327**	P		**P**	**17 15 30.4**	**+1.5**
	4.8nm,0.6s,baz=148,slow=4.4,SNR=16							
ENH	**Enshi**	**86.94**	**305**	*e*P		**P**	**17 15 57.5**	**+0.5**
	12nm,0.9s							
PMR	**Palmer**	**89.17**	**14**	*e*P		**P**	**17 16 06.5**	**-0.1**
	11nm,1.5s							
CMAR	**Chiang Mai Arr**	**89.94**	**290**	P		**P**	**17 16 12.8**	**+1.5**
	3.2nm,0.9s,baz=134,slow=3.1,SNR=20							
CHTO	**Chiang Mai**	**90.09**	**291**	*e*P		**P**	**17 16 11.0**	**-1.0**
	2.4nm,0.9s							
TXAR	**Lajitas Array**	**90.48**	**58**	P		**P**	**17 16 15.3**	**+1.6**
	0.3nm,0.7s,baz=211,slow=7.0,SNR=5.3							
ILAR	**Eielson Array**	**92.46**	**13**	P		**P**	**17 16 21.9**	**0.0**
	0.5nm,0.7s,baz=219,slow=5.5,SNR=5.2							
YAK	**Yakutsk**	**95.14**	**339**	P		**P**	**17 16 34.4**	**+0.4**
	2.3nm,0.5s,baz=89,slow=1.5,SNR=2.5							
SONM	**Songino Array**	**97.65**	**319**	P		**P**	**17 16 47.7**	**+1.8**
	0.3nm,0.4s,baz=143,slow=2.9,SNR=3.0							
ZALV	**Zalesovo Beam**	**112.50**	**320**	PKiKP		**PKiKP**	**17 21 43.2**	**-0.8**
	0.3nm,0.5s,baz=153,slow=1.0,SNR=3.0							
MKAR	**Makanchi Array**	**112.68**	**312**	PKiKP		**PKiKP**	**17 21 44.3**	**-0.4**
	0.4nm,0.4s,baz=98,slow=1.4,SNR=5.7							
ARCES	**ARCESS Array B**	**132.43**	**348**	PKP		**PKPdf**	**17 22 21.8**	**0.0**
	2.2nm,0.8s,baz=53,slow=0.6,SNR=6.9							
ARCES				SKPbc		**SKPbc**	**17 25 03.4**	**+0.9**
	1.7nm,0.9s,baz=41,slow=4.8,SNR=4.0							
KMBO	**Kilima Mbogo**	**136.07**	**240**	SKPbc		**SKPbc**	**17 25 17.3**	**+1.1**
	0.7nm,0.6s,baz=43,slow=19,SNR=2.7							
FINES	**FINESS Array B**	**139.00**	**341**	PKhKP		PKPpre	17 22 24.9	
	1.4nm,0.6s,baz=64,slow=4.4,SNR=7.7							
FINES				PKP		**PKiKP**	**17 22 35.6**	**-0.9**
	2.5nm,0.7s,baz=100,slow=5.8,SNR=5.3							
FINES				SKPbc		**SKPbc**	**17 25 23.0**	**+0.3**
	2.7nm,0.8s,baz=50,slow=4.3,SNR=6.2							
NB2	**NORSAR Subarra**	**142.62**	**351**	PKP		**PKPdf**	**17 22 37.8**	**-2.9**
	comp=Z,1.1nm,0.7s,baz=15,slow=3.1							
NOA	**NORSAR Array B**	**142.62**	**351**	PKhKP		PKPpre	17 22 37.7	
	comp=Z,2.5nm,0.9s,baz=16,slow=4.7,SNR=7.6							
NACGM	**Naroch**		**143.77 334**	*e*		PKPab	17 22 41.0	-0.6
AKASG	**Malin Array Be**	**145.53**	**327**	PKPbc		**PKPbc**	**17 22 46.9**	**-0.3**
	comp=Z,3.1nm,0.4s,baz=44,slow=4.3,SNR=19							
AKASG				SKPbc		**SKiKP**	**17 25 40.1**	**+0.6**
	comp=Z,0.3nm,0.4s,baz=35,slow=1.8,SNR=4.3							
SORM	**Soroca**	**147.56**	**324**	*i*P		**PKPbc**	**17 22 53.2**	**+0.3**
BRTR	**Keskin Array B**	**148.08**	**307**	PKPbc		**PKPbc**	**17 22 54.9**	**+0.1**
	comp=Z,3.7nm,0.8s,baz=137,slow=4.3,SNR=17							
BRTR				PKPab		**PKPab**	**17 23 00.1**	**+0.7**
	comp=Z,4.8nm,0.7s,baz=108,slow=4.5,SNR=19							
CFR	**Carcaliu**	**149.38**	**320**	*i*P		**PKPbc**	**17 22 58.1**	**+0.6**
TESR	**Tescani**	**149.46**	**323**	*i*P		**PKPbc**	**17 22 58.4**	**+0.7**
BURAR	**Bucovina Array**	**149.53**	**326**	*i*P		**PKPbc**	**17 22 59.8**	**+1.9**
TIRR	**Tirgusor**	**149.60**	**318**	*i*P		**PKPbc**	**17 22 58.5**	**+0.5**
TLB	**Topalu**	**149.76**	**319**	*i*P		**PKPbc**	**17 22 59.3**	**+0.9**
VRI	**Vrincioaia**	**149.80**	**322**	*i*P		**PKPab**	**17 23 08.2**	**+2.2**
PLOR	**Plostina**	**149.85**	**322**	*i*P		**PKPbc**	**17 22 59.1**	**+0.4**
MLR	**Muntele Rosu**	**150.47**	**322**	PKPbc		**PKPbc**	**17 22 59.3**	**-1.0**
	comp=Z,0.5nm,0.5s,baz=130,slow=21,SNR=5.5							
MLR	**Muntele Rosu**	**150.47**	**322**	*i*P		**PKPbc**	**17 23 00.1**	**-0.2**
DOPR	**Dopca**	**150.49**	**323**	*i*P		**PKPbc**	**17 23 01.3**	**+1.2**
OKC	**Ostrava-Krasne**	**151.04**	**336**	*e*PKP		**PKPbc**	**17 23 02.3**	**+1.1**
UPC	**Upice**	**151.23**	**339**	*e*PKP		**PKPbc**	**17 23 02.5**	**+0.8**
UPC				*e*PKPAB		**PKPab**	**17 23 13.2**	**+1.4**
DPC	**Dobruska-Polom**	**151.26**	**338**	*e*PKP		**PKPbc**	**17 23 02.8**	**+1.0**
DPC				*e*PKPAB		**PKPab**	**17 23 13.5**	**+1.5**
ARR	**Arges**	**151.27**	**323**	*i*P		**PKPbc**	**17 23 03.4**	**+1.4**
MORC	**Moravsky Berou**	**151.31**	**336**	*i*P		**PKPbc**	**17 23 02.7**	**+0.8**
DRGR		**151.35**	**327**	*i*P		**PKPbc**	**17 23 02.5**	**+0.3**
CLL	**Collm**	**151.41**	**343**	*i*PKP		**PKPbc**	**17 23 02.5**	**+0.5**
	comp=Z,11nm,0.8s							
CLL				*e*			17 23 13.0	
BRG	**Berggiesshubel**	**151.54**	**342**	*i* PKP		**PKPbc**	**17 23 03.0**	**+0.7**
	comp=Z,7.4nm,0.6s							
BRG				*e*			17 23 13.9	
	comp=Z,4.9nm,1.0s							
VRAC	**Vranov**	**152.05**	**337**	PKPab		**PKPab**	**17 23 16.4**	**+1.1**
	comp=Z,3.1nm,0.5s,baz=42,slow=6.1,SNR=4.6							
BZS	**Buzias**	**152.71**	**326**	*i*P		**PKPbc**	**17 23 05.5**	**+0.4**
KHC	**Kasperske Hory**	**153.20**	**340**	*e*PKP		**PKPbc**	**17 23 07.0**	**+0.9**
KHC				*e*PKPAB		**PKPab**	**17 23 21.3**	**+1.0**
GERES	**GERESS Array B**	**153.42**	**340**	PKPbc		**PKPbc**	**17 23 07.0**	**+0.3**
	comp=Z,0.4nm,0.6s,baz=39,slow=3.8,SNR=3.1							
GERES				PKPab		**PKPab**	**17 23 22.0**	**+0.7**
	comp=Z,0.7nm,0.8s,baz=28,slow=4.4,SNR=3.9							
CONA	**Conrad Observa**	**153.47**	**336**	*i* PKPab		**PKPab**	**17 23 22.5**	**+1.0**
	comp=Z,5.0nm,0.7s							
MOA	**Molln**	**154.10**	**338**	*i* PKPab		**PKPab**	**17 23 25.3**	**+1.2**
	comp=Z,3.6nm,1.0s							
ARSA	**Arzberg**	**154.16**	**336**	*i* PKPab		**PKPab**	**17 23 25.2**	**+0.8**
	comp=Z,2.3nm,0.8s							
SOKA	**Soboth**	**154.82**	**336**	*i* PKPab		**PKPab**	**17 23 28.3**	**+1.0**
	comp=Z,5.6nm,1.3s							
KBA	**Koelnbreinsper**	**155.08**	**338**	*i* PKPab		**PKPab**	**17 23 29.9**	**+1.3**
	comp=Z,1.7nm,0.6s							
OBKA	**Obir**	**155.15**	**336**	*i* PKPdf		**PKPdf**	**17 23 00.7**	**-0.3**
	comp=Z,4.9nm,1.2s							
MYKA	**Terra Mystica**	**155.37**	**338**	*i* PKPab		**PKPab**	**17 23 29.9**	**+0.2**
	comp=Z,2.7nm,0.5s							
WATA	**Walderalm**	**155.41**	**341**	*i* PKPab		**PKPab**	**17 23 30.8**	**+1.0**
	comp=Z,1.5nm,0.5s							
RETA	**Reutte**	**155.50**	**343**	*i* PKPab		**PKPab**	**17 23 31.2**	**+1.0**
	comp=Z,2.3nm,0.6s							
MOTA	**Moosalm**	**155.53**	**342**	*i* PKPab		**PKPab**	**17 23 30.7**	**+0.3**
	comp=Z,2.4nm,0.6s							
DAVA	**Damuels**	**155.91**	**344**	*i* PKPab		**PKPab**	**17 23 33.0**	**+0.9**
	comp=Z,3.0nm,0.7s							
FETA	**Feichten**	**155.93**	**342**	*i* PKPab		**PKPab**	**17 23 28.5**	**-3.7**
	comp=Z,5.0nm,1.6s							
TORD	**Torodi Ar. Bea**	**168.72**	**187**	PKP		**PKPdf**	**17 23 14.8**	**-0.6**
	comp=Z,0.6nm,0.9s,baz=208,slow=4.9,SNR=3.1							
TORD				PKPab		**PKPab**	**17 24 29.2**	**+0.5**
	comp=Z,0.6nm,0.6s,baz=184,slow=5.8,SNR=3.1							

MEX 03 17:05:30.4±0.5, 16°.65N×98°.44W, h9km±6km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
PNIG	**Pinotepa**	**0.40**	**131**	*i* P		Pg	17 05 37.7	-0.5
PNIG				*i* S		Sg	17 05 43.5	+0.1
TLIG	**Tlapa**	**0.91**	**352**	*i* P		Pg	17 05 45.5	-2.5
TLIG				*i* S		Sg	17 05 56.9	-3.0
ACX	**Acapulco**	**1.38**	**279**	*e*P		Pn	17 05 55.8	-0.1
ACX				*e*S		Sb	17 06 12.6	-1.4
VHO	**Vista Hermosa**	**1.69**	**75**	*e*P		Pn	17 05 57.2	-3.1
VHO				*e*S		Sn	17 06 16.8	-5.4
MEIG	**Mezcala**	**1.69**	**318**	*e*P		Pn	17 05 57.2	-3.0
MEIG				*e*S		Sn	17 06 17.2	-5.0
CAIG	**El Cayaco**	**1.79**	**283**	*e*P		Pn	17 05 58.5	-3.1
CAIG				*e*S		Sn	17 06 20.0	-4.4
TPIG	**Tehuac#an**	**2.04**	**30**	*i* P		Pn	17 06 01.7	-3.3
TPIG				*i* S		Sn	17 06 26.4	-4.3
YAIG	**Yautepec**	**2.28**	**345**	*e*P		Pn	17 06 05.2	-3.1
YAIG				*i* S		Sn	17 06 33.1	-3.5
HUIG	**Huatulco**	**2.41**	**111**	*e*P		Pn	17 06 07.5	-2.5
HUIG				*i* S		Sn	17 06 35.1	-4.5
ARIG	**Puente Sto Nin**	**2.44**	**312**	*e*P		Pn	17 06 07.2	-3.2
ARIG				*i* S		Sn	17 06 36.9	-3.5

MAN 03 17:05:47, 17°.94N×120°.71E, h33km, mb3.8, ML2.5, MS2.1, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
ABRA	**Dolores**	**0.29**	**179**	*e*P		Pn	17 05 56.5	+1.6
ABRA				*e*S		Sb	17 06 02.5	+2.7
PIP	**Pasuquin**	**0.39**	**348**	*i*P		Pn	17 05 57.8	+1.4
APYP	**Conner**	**0.52**	**99**	*e*P		Pn	17 05 59.4	+1.3
APYP				*e*S		Sn	17 06 07.8	+2.0

*ISCJB **03** 17:19:30.0±0.4, 35°.84N±0°.03×53°.31E±0°.04, h21km±3km, Error ellipse: s-maj=5.6km s-min=3.8km az=150.1*
*CSEM **03** 17:19:29.3±0.2, 35°.76N×53°.33E, h2km, ML3.6, Error ellipse: s-maj=4.5km s-min=3.5km az=55.0*
*THR **03** 17:19:29.6±0.4, 35°.68N×53°.43E, h16km±6km, ML3.7*
*TEH **03** 17:19:30.2, 35°.69N×53°.33E, h3km, ML3.6*
*AZER **03** 17:19:34.4±1.5, 36°.22N×53°.29E, h3km, Error ellipse: s-maj=12.2km s-min=9.3km az=28.0*

ISC 03 17:19:29.9±0.9, 35°.75N±0°.03×53°.35E±0°.03, h13km±6km, n85,σ1°53/123, 12C-23D, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
ISHM	**Shahmirzad**	**0.08**	**322**	*e*Pg		**Pg**	**17 19 32.2**	**-0.8**
ISHM				*e*Sg		**Sg**	**17 19 34.6**	**-0.5**
ISHM				*e*AMB		AMB	17 19 35.8	
	comp=Z,74μm,0.1s							
ILAS	**Lasjerd**	**0.48**	**221**	*e*Pg		**Pg**	**17 19 39.2**	**-0.3**
ILAS				*e*AMB		AMB	17 19 47.7	
	comp=E,98μm,0.1s							
ILAS	**Lasjerd**	**0.48**	**221**	*e*Pg		**Pg**	**17 19 39.2**	**-0.3**
IFIR	**Firoozkooh**	**0.50**	**258**	*e*Pg		**Pg**	**17 19 39.0**	**-0.8**
IFIR				*e*AMB		AMB	17 19 49.0	
	comp=Z,21μm,0.1s							
IFIR	**Firoozkooh**	**0.50**	**258**	*e*Pg		**Pg**	**17 19 39.0**	**-0.8**
IANJ	**Anjilo**	**0.54**	**121**	*e*Pg		**Pg**	**17 19 38.9**	**-1.7**
IANJ				*e*AMB		AMB	17 19 46.7	
	comp=Z,25μm,0.0s							
IANJ	**Anjilo**	**0.54**	**121**	*e*Pg		**Pg**	**17 19 38.9**	**-1.7**
IALA	**Alasht**	**0.55**	**308**	*e*Pg		**Pg**	**17 19 40.7**	**-0.1**
IALA				*e*Sg		**Sg**	**17 19 48.7**	**+0.5**
IALA				*e*AMB		AMB	17 19 49.4	
	comp=Z,96μm,0.2s							
IALA	**Alasht**	**0.55**	**308**	*e*Pg		**Pg**	**17 19 40.7**	**-0.1**
IALA				*e*Sg		**Sg**	**17 19 48.7**	**+0.5**
IGLO	**Ghaloghah**	**0.85**	**27**	*e*Pg		**Pg**	**17 19 45.8**	**-0.6**
IGLO				*e*Sg		**Sb**	**17 19 59.2**	**+1.1**
IGLO				*e*AMB		AMB	17 20 03.3	
	comp=Z,30μm,0.3s							
IPRN	**Peran**	**0.96**	**301**	*e*Pg		**Pg**	**17 19 47.4**	**-1.1**
IPRN				*e*Sg		**Sg**	**17 20 00.5**	**-0.5**
IPRN				*e*AMB		AMB	17 20 03.3	
	comp=Z,27μm,0.2s							
IDMV	**Damavand**	**1.09**	**261**	*e*Pg		**Pg**	**17 19 49.3**	**-1.6**
IDMV				*e*AMB		AMB	17 20 07.8	
	comp=Z,21μm,0.1s							
IDMV	**Damavand**	**1.09**	**261**	*e*Pg		**Pg**	**17 19 49.3**	**-1.6**
IAFJ	**Afjeh**	**1.33**	**275**	*e*Pg		**Pg**	**17 19 54.0**	**-1.7**
IAFJ				*e*AMB		AMB	17 20 20.4	
	comp=Z,19μm,0.1s							
IAFJ	**Afjeh**	**1.33**	**275**	*e*Pg		**Pg**	**17 19 54.0**	**-1.7**
IVRN	**Varamin**	**1.52**	**241**	*e*Pn		**Pn**	**17 19 57.4**	**+0.4**
IVRN				*e*AMB		AMB	17 19 59.4	
	comp=Z,44μm,0.1s							
IVRN	**Varamin**	**1.52**	**241**	*e*Pn		**Pn**	**17 19 57.4**	**+0.4**
CHTH	**Charan**	**1.81**	**276**	AML		AML	17 20 40.2	
	comp=N,331nm,0.5s							
THKV	**Tehran--Karaj**	**2.02**	**276**	*e*Pn		**Pn**	**17 20 06.2**	**+2.4**
THKV				AML		AML	17 20 39.2	
	comp=E,547nm,0.6s							
THKV				AML		AML	17 20 41.0	
	comp=N,655nm,0.4s							
THKV	**Tehran--Karaj**	**2.02**	**276**	*e*Pn		**Pn**	**17 20 06.2**	**+2.4**
GHVR	**GHOM**	**2.11**	**234**	*e*P		**Pn**	**17 20 06.8**	**+1.8**
GHVR				*e*Sg		**Sg**	**17 20 37.3**	**-0.4**
SHRO	**Shahrood**	**2.17**	**83**	*e*Pn		**Pn**	**17 20 06.6**	**+0.6**
SHRO	**Shahrood**	**2.17**	**83**	*e*Pn		**Pn**	**17 20 06.6**	**+0.6**
IMHD	**Mahdasht**	**2.18**	**269**	*e*AMB		AMB	17 20 43.8	
	comp=Z,4μm,0.1s							
IMHD				*e*Pn		**Pn**	**17 20 06.9**	**+0.8**
QAM	**Ghamsar**	**2.53**	**219**	*e*Pn		**Pn**	**17 20 11.2**	**+0.3**
QAM				*e*AMB		AMB	17 20 54.2	
	comp=Z,7μm,0.2s							
IRAZ	**Razeghan**	**2.81**	**264**	*e*Pn		**Pn**	**17 20 15.3**	**+0.5**
IRAZ				*e*AMB		AMB	17 21 07.3	
	comp=Z,4μm,0.2s							
IRAZ	**Razeghan**	**2.81**	**264**	*e*Pn		**Pn**	**17 20 15.3**	**+0.5**
IKLH	**Kolahrood**	**2.83**	**212**	*e*Pn		**Pn**	**17 20 15.3**	**+0.2**
IKLH				*e*AMB		AMB	17 21 01.6	
	comp=Z,4μm,0.2s							
IKLH	**Kolahrood**	**2.83**	**212**	*e*Pn		**Pn**	**17 20 15.3**	**+0.2**
MRVT	**Maraveh tapeh**	**2.91**	**48**	*e*Pn		**Pn**	**17 20 17.3**	**+1.2**
MRVT	**Maraveh tapeh**	**2.91**	**48**	*e*Pn		**Pn**	**17 20 17.3**	**+1.2**
NASN	**Na'in**	**2.98**	**189**	*e*Pn		**Pn**	**17 20 17.8**	**+0.6**
NASN				AML		AML	17 21 14.2	
	comp=N,148nm,0.4s							
NASN				AML		AML	17 21 14.5	
	comp=E,274nm,0.4s							
NASN	**Na'in**	**2.98**	**189**	*e*Pn		**Pn**	**17 20 17.8**	**+0.6**
IGAR	**Gharneh**	**3.51**	**198**	*e*Pn		**Pn**	**17 20 26.7**	**+2.3**
IGAR				*e*AMB		AMB	17 21 20.8	
	comp=Z,638nm,0.2s							
IPIR	**Pirpir**	**3.67**	**214**	*e*Pn		**Pn**	**17 20 29.6**	**+2.9**
IPIR				*e*AMB		AMB	17 21 28.5	
	comp=Z,899nm,0.3s							
IPIR	**Pirpir**	**3.67**	**214**	*e*Pn		**Pn**	**17 20 29.6**	**+2.9**
ISAD	**Sadrabad**	**3.83**	**176**	*e*Pn		**Pn**	**17 20 29.0**	**+0.1**
ISAD				*e*AMB		AMB	17 21 39.6	
	comp=Z,1μm,0.2s							
ISAD	**Sadrabad**	**3.83**	**176**	*e*Pn		**Pn**	**17 20 29.0**	**+0.1**
ISFR	**Sfrayin**	**3.97**	**69**	*e*Pn		**Pn**	**17 20 32.2**	**+1.4**
ISFR				*e*AMB		AMB

GDB				S	**Sn**	**17 22 48.9**	**-1.9**
ZKTA	**Zakatala**	**7.89**	**320**	⇓P	**Pn**	**17 21 25.4**	**+1.0**
	SNR=5.1						
ZKTA				⇑S	**Sn**	**17 22 52.3**	**-1.2**
QZX	**Qazax, Azerbai**	**8.20**	**313**	⇓P	**Pn**	**17 21 30.3**	**+1.6**
QZX				⇓S	**Sn**	**17 23 01.5**	**+0.2**
QZX	**Qazax, Azerbai**	**8.20**	**313**	P	**Pn**	**17 21 30.3**	**+1.6**
QZX				S	**Sn**	**17 23 01.5**	**+0.2**

NIED ***03*** *17:29:00, 37˚.00N×140˚.60E, h5km, Mw3.8 Best double couple: M₀6.19000×10¹⁴ NP1:φs331.00000°, δ34.00000°, λ-91.00000°. NP2:φs151.00000°, δ56.00000°, λ-90.00000°.*

IDC ***03*** *17:29:37.6±0.8, 36˚.99N×140˚.63E, h0km, mb3.8/17, mb1 4.0/19, mb1mx3.8/47, mbtmp3.8/19, ML3.1/2, MS2.8/6, Ms1 2.9/6, ms1mx2.6/37, Error ellipse: s-maj=20.7km s-min=17.0km az=76.0*

ISCJB ***03*** *17:29:39.3±0.4, 36˚.97N±0˚.03×140˚.59E±0˚.04, h21km±3km, mb3.8/17, MS2.8/4, Error ellipse: s-maj=5.7km s-min=4.0km az=32.5*

JMA ***03*** *17:29:39.7, 36˚.99N×140˚.51E, h5km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs147.00000°, δ46.00000°, λ-83.00000°. NP2: φs317.00000°, δ44.00000°, λ-97.00000°. Principal axes: T Plg1.0000°, Azm232.0000°; N Plg5.0000°, Azm322.0000°; P Plg85.0000°, Azm134.0000°;*

JMA Felt II J1.

ISC 03 17:29:39.4±1.0, 36˚.97N±0˚.03×140˚.55E±0˚.03, h11km±6km, n40, σ1s06/42, mb3.9/17, MS2.7/4, 8C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**56**	⇑P		**Pg**	**17 29 45.0**	**+0.6**
ONAJ				S		**Sg**	**17 29 48.8**	**+1.0**
JHO	**Hitachi**	**0.35**	**178**	⇑P		**Pb**	**17 29 47.2**	**-0.5**
JHO				S		**Sb**	**17 29 52.8**	**-0.5**
JFK	**Kawauchi**	**0.47**	**33**	⇑P		**Pb**	**17 29 48.9**	**-0.9**
JFK				S		**Sb**	**17 29 55.3**	**-1.5**
JSB	**Shiboa**	**0.51**	**270**	⇑P		**Pb**	**17 29 49.7**	**-0.6**
JSB				S		**Sg**	**17 29 56.6**	**+0.6**
JFT	**Otama**	**0.58**	**343**	⇑P		**Pb**	**17 29 50.4**	**-1.1**
JFT				S		**Sg**	**17 29 57.7**	**-0.6**
JFY	**Yanaizu**	**0.81**	**303**	⇑P		**Pg**	**17 29 54.5**	**-0.5**
JFY				S		**Sg**	**17 30 04.5**	**-1.0**
JMM	**Marumori**	**0.92**	**12**	⇑P		**Pb**	**17 29 56.4**	**-0.9**
JMM				S		**Sg**	**17 30 08.0**	**-1.1**
JAG	**Ashikaga**	**1.03**	**239**	⇑P		**Pg**	**17 29 58.5**	**-0.8**
JAG				S		**Sg**	**17 30 12.7**	**-0.1**
MJAR	**Matsushiro Arr**	**1.93**	**258**	Pn		**Pn**	**17 30 12.9**	**+0.7**
	44nm,0.3s,baz=76,slow=16,SNR=276							
MJAR				Sn		**Sn**	**17 30 38.6**	**+2.1**
	51nm,0.3s,baz=200,slow=21,SNR=20							
MJAR				LR		LR	17 31 13.4	
	comp=Z,292nm,19.6s,baz=90,slow=49							
MAT	**Matsushiro**	**1.93**	**258**	P		**Pn**	**17 30 13.0**	**+0.8**
MAT				S		**Sb**	**17 30 38.7**	**0.0**
JHJ	**Hachijo jima 2**	**3.89**	**190**	Pn		**Pn**	**17 30 38.1**	**-1.0**
	7.1nm,0.3s,baz=255,slow=20,SNR=2.8							
JHJ				Sn		**Sn**	**17 31 23.7**	**-1.1**
	6.5nm,0.3s,baz=90,slow=18,SNR=2.8							
ASAJ	**Asahikawa**	**7.31**	**12**	Pn		**Pn**	**17 31 28.6**	**+2.6**
	0.7nm,0.3s,baz=211,slow=14,SNR=12							
JNU	**Nakatsue**	**8.81**	**247**	LR		LR	17 35 27.2	
	comp=Z,76nm,21.0s,baz=272,slow=39							
USRK	**Ussuriysk Ar.**	**9.72**	**321**	Pn		Pn	17 32 05.4	+6.3
	0.1nm,0.3s,baz=140,slow=13,SNR=8.8							
KSRS	**Korea Array**	**10.09**	**277**	Pn		**Pn**	**17 32 06.8**	**+2.7**
	0.1nm,0.3s,baz=98,slow=16,SNR=4.0							
KSRS				LR		LR	17 35 31.9	
	comp=Z,56nm,19.7s,baz=104,slow=35							
PETK	**Petropavlovsk-**	**20.10**	**31**	P		Pn	17 34 17.8	+3.1
	1.4nm,0.8s,baz=199,slow=27,SNR=3.1							
PETK				LR		LR	17 41 55.6	
	comp=Z,23nm,21.5s,baz=233,slow=37							
SONM	**Songino Array**	**27.25**	**304**	P		**P**	**17 35 23.5**	**-0.1**
	2.0nm,0.8s,baz=104,slow=8.0,SNR=9.6							
SONM				LR		LR	17 45 39.0	
	comp=Z,20nm,19.8s,baz=166,slow=35							
H11N2	**WAKE ISLAND Hy**	**28.71**	**120**	T		T	18 05 28.5	
	baz=312,slow=75,SNR=93							
H11N1	**WAKE ISLAND Hy**	**28.72**	**120**	T		T	18 05 27.6	
	baz=312,slow=75,SNR=96							
H11N3	**WAKE ISLAND Hy**	**28.73**	**120**	T		T	18 05 29.6	
	baz=312,slow=75,SNR=58							
H11S1	**WAKE ISLAND Hy**	**29.41**	**122**	T		T	18 06 19.1	
	baz=314,slow=76,SNR=212							
H11S3	**WAKE ISLAND Hy**	**29.41**	**122**	T		T	18 06 19.4	
	baz=314,slow=76,SNR=162							
H11S2	**WAKE ISLAND Hy**	**29.42**	**122**	T		T	18 06 19.2	
	baz=314,slow=76,SNR=117							
CMAR	**Chiang Mai Arr**	**40.81**	**255**	LR		LR	17 54 30.5	
	comp=Z,13nm,19.7s,baz=160,slow=36							
ZALV	**Zalesovo Beam**	**41.45**	**312**	P		**P**	**17 37 25.7**	**-0.2**
	1.0nm,0.5s,baz=99,slow=8.0,SNR=7.3							
ZALV				PcP		**PcP**	**17 39 22.3**	**-1.3**
	0.3nm,0.3s,baz=93,slow=2.9,SNR=3.2							
MKAR	**Makanchi Array**	**43.57**	**302**	P		**P**	**17 37 43.7**	**+0.4**
	0.8nm,0.9s,baz=82,slow=11,SNR=7.1							
KURBB	**Kurchatov Arra**	**45.50**	**308**	P		**P**	**17 37 58.3**	**-0.3**
	1.0nm,0.5s,baz=83,slow=7.8,SNR=15							
ILAR	**Eielson Array**	**49.92**	**32**	P		**P**	**17 38 31.9**	**-0.8**
	0.3nm,0.8s,baz=297,slow=4.0,SNR=4.7							
BVAR	**Borovoye Array**	**50.11**	**312**	P		**P**	**17 38 35.7**	**+1.4**
	0.9nm,0.6s,baz=92,slow=7.2,SNR=5.0							
WRA	**Warramunga Arr**	**56.91**	**187**	P		**P**	**17 39 24.5**	**+0.1**
	1.9nm,0.8s,baz=3.9,slow=7.2,SNR=15							
AKTO	**Aktyubinsk**	**58.21**	**312**	P		**P**	**17 39 32.3**	**-1.1**
	0.6nm,0.6s,baz=56,slow=7.3,SNR=2.3							
ASAR	**Alice Springs**	**60.63**	**187**	P		**P**	**17 39 50.7**	**+0.3**
	0.7nm,0.8s,baz=19,slow=5.1,SNR=7.4							
GEYT	**Alibeck**	**63.26**	**299**	P		**P**	**17 40 07.7**	**-0.4**
	1.0nm,0.6s,baz=60,slow=8.7,SNR=3.4							
FINES	**FINESS Array B**	**68.55**	**332**	P		**P**	**17 40 41.8**	**+0.2**
	2.9nm,0.9s,baz=23,slow=7.8,SNR=3.9							
KBZ	**Khabaz**	**70.42**	**310**	P		**P**	**17 40 54.2**	**+0.7**
	1.3nm,0.8s,baz=315,slow=4.3,SNR=3.3							
AKASG	**Malin Array Be**	**73.93**	**322**	P		**P**	**17 41 13.7**	**-0.7**
	0.6nm,0.5s,baz=46,slow=6.1,SNR=3.3							
NOA	**NORSAR Array B**	**73.98**	**337**	P		**P**	**17 41 15.1**	**+0.5**
	1.2nm,0.9s,baz=59,slow=10,SNR=3.1							
NOA				LR		LR	18 19 53.1	
	comp=Z,7.1nm,18.2s,baz=290,slow=41							
BRTR	**Keskin Array B**	**78.38**	**311**	P		**P**	**17 41 41.0**	**+0.9**
	0.5nm,0.7s,baz=59,slow=5.6,SNR=3.8							
GERES	**GERESS Array B**	**82.40**	**328**	P		**P**	**17 42 01.5**	**-0.1**
	0.2nm,0.4s,baz=25,slow=8.0,SNR=3.9							
TXAR	**Lajitas Array**	**90.71**	**52**	P		**P**	**17 42 43.7**	**+1.0**
	0.1nm,0.6s,baz=323,slow=6.8,SNR=2.7							

SJA 03 17:42:32.2±0.3, 23˚.74S×64˚.88W, h27km±2km, ML2.9, MW3.7, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
HJA	**Humahuaca**	**0.72**	**317**	*i* P		Pn	17 42 47.5	+0.5
HJA					IAML		17 43 09.4	
	comp=Z,372nm,0.3s							
ALOL	**LOMAS DE OLMED**	**0.82**	**96**	*i* P		Pn	17 42 48.3	+0.3
ALOL				*i* S		Sn	17 43 00.5	+1.2
SLA	**San Lorenzo**	**1.14**	**210**	*i* P		Pb	17 42 54.4	+1.1
SLA				*i* P		Pn	17 42 54.9	+2.4
SLA				*i* S		Sb	17 43 10.7	+2.9
SLA				*i* S		Sn	17 43 10.7	+3.4
FSA	**Cafayete**	**2.57**	**203**	*i* P		Pn	17 43 14.9	+2.7
FSA					IAML		17 44 03.0	
	comp=Z,43nm,0.5s							
CYA	**Choya**	**4.76**	**190**	*i* P		Pn	17 43 46.0	+3.7
CYA					IAML		17 45 27.2	
	comp=Z,15nm,0.4s							

ISCJB ***03*** *17:48:57.0±1.0, 19˚.9N±0˚.3×94˚.2E±0˚.2, h33km, mb3.3/3, Error ellipse: s-maj=41.7km s-min=7.6km az=30.8*

IDC ***03*** *17:49:04.4±1.5, 18˚.18N×94˚.49E, h0km, mb3.3/3, mb1 3.5/4, mb1mx3.2/51, mbtmp3.2/4, ML3.3/1, Error ellipse: s-maj=53.3km s-min=28.3km az=26.0*

ISC 03 17:48:59.7±1.4, 19˚.8N±0˚.3×94˚.1E±0˚.2, h35km, n8, σ1s26/8, mb3.3/3, Myanmar

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**4.77**	**106**	Pn		**Pn**	**17 50 10.6**	**+1.5**
	0.5nm,0.3s,baz=290,slow=14,SNR=25							
CMAR				Sn		**Sn**	**17 51 01.5**	**-1.7**
	0.5nm,0.3s,baz=298,slow=15,SNR=4.8							
RAMN	**Ramite**	**9.90**	**317**	*e*P		**Pn**	**17 51 19.9**	**+0.2**
	4.9nm,0.4s							
PKIN	**Phulchoki**	**11.11**	**316**	*e*P		**Pn**	**17 51 36.2**	**-0.1**
	2.4nm,0.3s							
GKN	**Gorkha**	**11.89**	**315**	*e*P		**Pn**	**17 51 47.1**	**+0.2**
	4.1nm,0.3s							
KOLN	**Koldanda**	**12.45**	**311**	*e*P		**Pn**	**17 51 53.5**	**-1.2**
	2.7nm,0.2s							
WRA	**Warramunga Arr**	**55.81**	**133**	P		**P**	**17 58 32.8**	**-0.9**
	0.3nm,1.0s,baz=319,slow=7.6,SNR=4.7							
ASAR	**Alice Springs**	**58.08**	**136**	P		**P**	**17 58 50.4**	**+0.7**
	0.1nm,0.6s,baz=318,slow=6.8,SNR=3.2							
GERES	**GERESS Array B**	**69.11**	**316**	P		P	18 00 21.3	+19
	0.3nm,0.5s,baz=100,slow=11,SNR=3.4							

IDC ***03*** *17:57:00.6±1.2, 3˚.02S×129˚.16E, h0km, mb3.7/4, mb1 3.9/7, mb1mx3.6/43, mbtmp3.7/7, ML3.4/3, MS2.7/1, Ms1 2.7/1, ms1mx2.2/28, Error ellipse: s-maj=41.8km s-min=21.9km az=80.0*

ISCJB ***03*** *17:57:04.3±0.6, 3˚.01S±0˚.05×129˚.55E±0˚.05, h35km, mb3.6/3, MS2.5/1, Error ellipse: s-maj=7.9km s-min=6.1km az=42.5*

DJA ***03*** *17:57:04.3±0.4, 3˚.S±4˚×13˚.0E±˚, h10km, M3.5/5, MLv3.5/5*

ISC 03 17:57:06.5±0.9, 2˚.89S±0˚.06×129˚.54E±0˚.05, h35km, n13, σ2s39/16, mb3.7/4, Seram

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MSAI	**Masohi**	**0.76**	**234**	P		**Pn**	**17 57 19.5**	**-1.3**
NLAI	**Namlea**	**2.46**	**262**	P		**Pn**	**17 57 44.9**	**+0.7**
NLAI				S		**Sn**	**17 58 16.4**	**+3.3**
SIJI	**Sorong**	**2.65**	**41**	Pn		Pn	17 57 47.9	+1.1
	7.8nm,0.3s,baz=91,slow=23,SNR=9.6							
SIJI				Sn		**Sn**	**17 58 19.4**	**+1.6**
	6.9nm,0.3s,baz=90,slow=20,SNR=1.0							
SWI	**Sorong**	**2.65**	**40**	P		**Pn**	**17 57 47.2**	**+0.4**
SWI				S		**Sn**	**17 58 18.8**	**+1.1**
FAKI	**Fak Fak**	**2.70**	**91**	P		**Pn**	**17 57 47.4**	**-0.1**
LBMI	**Labuha**	**3.03**	**318**	P		Pn	17 57 52.5	+0.4
LBMI				S		**Sn**	**17 58 28.5**	**+1.3**
FITZ	**Fitzroy Crossi**	**15.59**	**194**	Pn		**Pn**	**18 00 40.6**	**-3.2**
	0.0nm,0.3s,baz=11,slow=10,SNR=2.4							
WRA	**Warramunga Arr**	**17.58**	**165**	P		**Pn**	**18 01 06.4**	**-2.6**
	0.2nm,0.3s,baz=337,slow=13,SNR=18							
WRA				S		**Sn**	**18 04 27.6**	**+3.8**
	0.0nm,0.3s,baz=333,slow=23,SNR=1.8							
ASAR	**Alice Springs**	**21.08**	**169**	P		**P**	**18 01 46.7**	**-1.3**
	5.7nm,0.8s,baz=346,slow=10,SNR=44							
ASAR				S		**S**	**18 05 45.3**	**+4.5**
	1.9nm,1.2s,baz=351,slow=16,SNR=4.4							
GUMO	**Guam**	**22.35**	**43**	LR		LR	18 10 46.2	
	comp=Z,19nm,21.7s,baz=145,slow=36							
MKAR	**Makanchi Array**	**64.58**	**326**	P		**P**	**18 07 39.6**	**-0.7**
	0.3nm,0.7s,baz=107,slow=4.8,SNR=2.7							
ZALV	**Zalesovo Beam**	**67.73**	**333**	P		**P**	**18 07 59.4**	**-0.9**
	0.3nm,0.3s,baz=111,slow=8.2,SNR=2.0							
KURBB	**Kurchatov Arra**	**68.80**	**328**	P		**P**	**18 08 05.9**	**-1.2**
	0.5nm,0.7s,baz=126,slow=5.7,SNR=5.8							

IDC ***03*** *17:59:11.7±2.7, 35˚.43N×57˚.03E, h0km, mb3.3/4, mb1 3.6/8, mb1mx3.3/40, mbtmp3.5/8, ML3.5/4, MS2.8/7, Ms1 2.8/7, ms1mx2.5/29, Error ellipse: s-maj=40.2km s-min=23.1km az=173.0*

TEH ***03*** *17:59:12.1, 35˚.15N×57˚.23E, h12km, ML4.0*

THR ***03*** *17:59:12.0±0.5, 35˚.19N×56˚.98E, h26km±3km, ML4.0*

CSEM ***03*** *17:59:12.5±0.2, 35˚.17N×57˚.18E, h20km, ML4.0, Error ellipse: s-maj=6.0km s-min=5.3km az=126.0*

ISC 03 17:59:10.7±3.2, 35˚.23N±0˚.03×57˚.10E±0˚.03, h15km±24km, n66, σ2s07/67, mb3.1/4, MS2.8/4, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SHRO	**Shahrood**	**1.17**	**311**	*e*Pg		**Pn**	**17 59 32.8**	**+0.2**
SHRO				*e*Sg		**Sn**	**17 59 48.3**	**-0.1**
SHRO					AML	AML	17 59 58.8	
	comp=N,1μm,0.4s							
SHRO	**Shahrood**	**1.17**	**311**	*e*Pg		**Pn**	**17 59 32.8**	**+0.2**
TABS	**Tabas**	**1.58**	**179**	*e*Pg		**Pb**	**17 59 39.8**	**+0.2**
TABS				*e*Sg		**Sb**	**18 00 00.2**	**+0.8**
TABS					AML	AML	18 00 04.9	
	comp=N,4μm,0.4s							
TABS					AML	AML	18 00 05.4	
	comp=E,2μm,0.7s							
TABS	**Tabas**	**1.58**	**179**	*e*Pg		**Pb**	**17 59 39.8**	**+0.2**
TABS				*e*Sg		**Sb**	**18 00 00.2**	**+0.8**
IAKL	**Akhelmad**	**1.92**	**44**	*e*Pn		**Pn**	**17 59 43.7**	**+0.6**
IAKL					eAMB	AMB	17 59 45.5	
	comp=Z,8μm,0.2s							
IKRD	**Kardeh**	**1.92**	**36**	*e*Pn		Pb	17 59 53.0	+7.4
IKRD					eAMB	AMB	18 00 31.4	
	comp=Z,4μm,0.2s							
ISFR	**Sfrayin**	**1.96**	**22**	*e*Pn		**Pn**	**17 59 45.4**	**+1.8**
ISFR				*e*Sg		**Sb**	**18 00 13.9**	**+3.3**
ISFR					eAMB	AMB	18 00 14.7	
	comp=Z,20μm,0.3s							
IPAY	**Payeh**	**1.96**	**51**	*e*Pn		**Pn**	**17 59 45.0**	**+1.4**
IPAY					eAMB	AMB	18 00 13.9	
	comp=Z,9μm,0.3s							
IPAY	**Payeh**	**1.96**	**51**	*e*Pn		**Pn**	**17 59 45.0**	**+1.4**
IMOG	**Moghan**	**2.02**	**64**	*e*Pn		**Pn**	**17 59 45.2**	**+0.7**
IMOG					eAMB	AMB	17 59 48.9	
	comp=Z,6μm,0.1s							
IMOG	**Moghan**	**2.02**	**64**	*e*Pn		**Pn**	**17 59 45.2**	**+0.7**
BJRD	**Bojnurd**	**2.48**	**6**	*e*Pn		**Pb**	**17 59 53.5**	**-1.5**
BJRD	**Bojnurd**	**2.48**	**6**	*e*Pn		**Pb**	**17 59 53.5**	**-1.5**
IEMG	**Emamgholi**	**2.51**	**29**	*e*Pn		**Pn**	**17 59 52.9**	**+1.6**
IEMG					eAMB	AMB	18 00 49.1	
	comp=Z,2μm,0.3s							
IEMG	**Emamgholi**	**2.51**	**29**	*e*Pn		**Pn**	**17 59 52.9**	**+1.6**
MRVT	**Maraveh tapeh**	**2.56**	**342**	*e*Pn		**Pn**	**17 59 54.3**	**+2.6**
MRVT	**Maraveh tapeh**	**2.56**	**342**	*e*Pn		**Pn**	**17 59 54.3**	**+2.6**
IANJ	**Anjilo**	**2.62**	**276**	*e*Pn		**Pb**	**17 59 55.3**	**-2.1**
IANJ					eAMB	AMB	18 00 48.7	
	comp=Z,4μm,0.2s							
IANJ	**Anjilo**	**2.62**	**276**	*e*Pn		**Pb**	**17 59 55.3**	**-2.1**
IMYA	**Miami**	**2.68**	**65**	*e*Pn		**Pn**	**17 59 54.7**	**+1.3**
IMYA					eAMB	AMB	17 59 58.0	
	comp=Z,3μm,0.3s							
IMYA	**Miami**	**2.68**	**65**	*e*Pn		**Pn**	**17 59 54.7**	**+1.3**
ITEG	**Tejag**	**2.70**	**149**	*e*Pn		**Pn**	**17 59 53.2**	**-0.5**
ITEG				*e*Sg		**Sb**	**18 00 32.9**	**+1.1**
ITEG					eAMB	AMB	18 00 37.5	
	comp=Z,9μm,0.2s							
ITEG	**Tejag**	**2.70**	**149**	*e*Pn		**Pn**	**17 59 53.2**	**-0.5**
ITEG				*e*Sg		**Sb**	**18 00 32.9**	**+1.1**
GEYT	**Alibeck**	**2.81**	**17**	Pn		**Pn**	**17 59 57.4**	**+2.2**
	comp=Z,16nm,0.3s,baz=200,slow=16,SNR=102							
GEYT				Sn		**Sn**	**18 00 35.2**	**+0.2**
	comp=Z,15nm,0.3s,baz=214,slow=32,SNR=11							
GEYT				LR		LR	18 01 19.2	
	comp=Z,88nm,18.8s,baz=140,slow=48							
IGLO	**Ghaloghah**	**2.94**	**296**	*e*Pn		**Pb**	**18 00 00.9**	**-2.1**
IGLO					eAMB	AMB	18 00 55.0	
	comp=Z,4μm,0.2s							
SHRT	**Shahrakht**	**3.07**	**120**	AML		AML	18 00 47.2	
	comp=N,634nm,0.4s							
SHRT					AML	AML	18 00 48.0	
	comp=E,551nm,0.4s							
ISHM	**Shahmirzad**	**3.16**	**282**	*e*Pn		**Pb**	**18 00 03.8**	**-2.9**
ISHM					eAMB	AMB	18 01 02.4	
	comp=Z,5μm,0.2s							
IKOO	**Kooshah**	**3.22**	**150**	*e*Pn		**Pn**	**18 00 00.6**	**-0.3**
IKOO					eAMB	AMB	18 00 58.4	
	comp=Z,3μm,0.2s							
IKOO	**Kooshah**	**3.22**	**150**	*e*Pn		**Pn**	**18 00 00.6**	**-0.3**
IDAH	**Dahanechah**	**3.38**	**136**	eAMB		AMB	18 00 19.4	
	comp=Z,2μm,0.2s							
IDAH				*e*Pn		**Pn**	**18 00 02.7**	**-0.5**
ILAS	**Lasjerd**	**3.39**	**274**	*e*Pn		**Pn**	**18 00 07.0**	**+3.7**
ILAS					eAMB	AMB	18 01 05.5	
	comp=E,5μm,0.2s							
ILAS	**Lasjerd**	**3.39**	**274**	*e*Pn		**Pn**	**18 00 07.0**	**+3.7**
IFIR	**Firoozkooh**	**3.57**	**278**	*e*Pn		**Pn**	**18 00 08.6**	**+2.8**
IFIR					eAMB	AMB	18 01 15.6	
	comp=Z,2μm,0.2s							
IFIR	**Firoozkooh**	**3.57**	**278**	*e*Pn		**Pn**	**18 00 08.6**	**+2.8**
IALA	**Alasht**	**3.60**	**285**	*e*Pn		**Pb**	**18 00 11.1**	**-3.0**
IALA					eAMB	AMB	18 01 21.2	
	comp=Z,2μm,0.2s							
IALA	**Alasht**	**3.60**	**285**	*e*Pn		**Pb**	**18 00 11.1**	**-3.0**
ICHK	**Chekchek**	**3.73**	**218**	*e*Pn		**Pn**	**18 00 08.9**	**+1.0**
ICHK					eAMB	AMB	18 01 09.4	
	comp=Z,5μm,0.2s							
ICHK	**Chekchek**	**3.73**	**218**	*e*Pn		**Pn**	**18 00 08.9**	**+1.0**
IBAF	**Bafgh**	**3.85**	**200**	*e*Pn		**Pn**	**18 00 10.9**	**+1.4**
IBAF					eAMB	AMB	18 01 19.8	
	comp=Z,4μm,0.3s							
IBAF	**Bafgh**	**3.85**	**200**	*e*Pn		**Pn**	**18 00 10.9**	**+1.4**
IPRN	**Peran**	**4.00**	**286**	*e*Pn		**Pn**	**18 00 15.1**	**+3.5**
IPRN					eAMB	AMB	18 01 28.3	
	comp=Z,2μm,0.3s							
IDMV	**Damavand**	**4.16**	**276**	*e*Pn		**Pn**	**18 00 16.4**	**+2.6**
IDMV					eAMB	AMB	18 00 39.4	
	comp=Z,1μm,0.3s							
IDMV	**Damavand**	**4.16**	**276**	*e*Pn		**Pn**	**18 00 16.4**	**+2.6**
NASN	**Na'in**	**4.31**	**237**	*e*Pn		**Pn**	**18 00 16.8**	**+0.8**
NASN					AML	AML	18 01 33.2	
	comp=E,135nm,0.6s							
NASN					AML	AML	18 01 33.3	
	comp=N,143nm,0.5s							
NASN	**Na'in**	**4.31**	**237**	*e*Pn		**Pn**	**18 00 16.8**	**+0.8**
IMEH	**Mehriz**	**4.36**	**209**	*e*Pn		**Pn**	**18 00 17.4**	**+0.8**
IMEH					eAMB	AMB	18 01 46.5	
	comp=Z,2μm,0.4s							
IMEH	**Mehriz**	**4.36**	**209**	*e*Pn		**Pn**	**18 00 17.4**	**+0.8**
ISAD	**Sadrabad**	**4.37**	**222**	*e*Pn		**Pn**	**18 00 17.3**	**+0.5**
ISAD					eAMB	AMB	18 01 36.5	
	comp=Z,3μm,0.4s							
ISAD	**Sadrabad**	**4.37**	**222**	*e*Pn		**Pn**	**18 00 17.3**	**+0.5**
GHVR	**GHOM**	**4.83**	**263**	*e*Pn		**Pn**	**18 00 24.4**	**+1.5**
GHVR					AML	AML	18 02 01.6	
	comp=E,92nm,0.6s							
GHVR					AML	AML	18 02 07.5	
	comp=N,92nm,0.5s							
GHVR	**GHOM**	**4.83**	**263**	*e*Pn		**Pn**	**18 00 24.4**	**+1.5**
IRAM	**Ramesheh**	**5.21**	**230**	*e*Pn		**Pn**	**18 00 28.5**	**+0.2**
IRAM					eAMB	AMB	18 02 06.8	
	comp=Z,757nm,0.4s							
IRAM	**Ramesheh**	**5.21**	**230**	*e*Pn		**Pn**	**18 00 28.5**	**+0.2**
KRBR	**Kerman**	**5.24**	**183**	*e*Pn		**Pn**	**18 00 30.5**	**+1.7**
KRBR	**Kerman**	**5.24**	**183**	*e*Pn		**Pn**	**18 00 30.5**	**+1.7**
KBZ	**Khabaz**	**13.86**	**312**	LR		LR	18 09 37.8	
	comp=Z,20nm,21.8s,baz=40,slow=46							
AKTO	**Aktyubinsk**	**15.21**	**2**	Pn		**Pn**	**18 02 42.6**	**-2.2**
	comp=Z,0.1nm,0.3s,baz=174,slow=15,SNR=4.0							
AKTO				Sn		**Sn**	**18 05 24.9**	**-8.1**
	comp=Z,0.1nm,0.3s,baz=297,slow=18,SNR=1.7							
AAK	**Ala-Archa**	**15.41**	**56**	Pn		**Pn**	**18 02 47.2**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=243,slow=9.0,SNR=2.0							
AAK				LR		LR	18 09 32.4	
	comp=Z,61nm,18.2s,baz=218,slow=40							
BVAR	**Borovoye Array**	**20.12**	**24**	P		Pn	18 03 45.8	0.0
	comp=Z,0.1nm,0.3s,baz=202,slow=8.1,SNR=4.6							
KURBB	**Kurchatov Arra**	**21.86**	**39**	P		**P**	**18 04 05.3**	**+2.7**
	comp=Z,0.5nm,0.7s,baz=236,slow=12,SNR=4.4							
MKAR	**Makanchi Array**	**22.14**	**51**	P		**P**	**18 04 07.0**	**+1.2**
	comp=Z,0.9nm,1.0s,baz=236,slow=9.7,SNR=3.8							
MKAR				LR		LR	18 14 06.9	
	comp=Z,35nm,18.7s,baz=214,slow=41							
AKASG	**Malin Array Be**	**25.39**	**316**	P		**P**	**18 04 38.9**	**+1.6**
	comp=Z,2.5nm,0.7s,baz=121,slow=8.5,SNR=7.0							
MLR	**Muntele Rosu**	**25.71**	**303**	P		**P**	**18 04 42.4**	**+2.0**
	comp=Z,0.2nm,0.7s,baz=111,slow=17,SNR=1.9							
ATD	**Arta Tunnel**	**26.91**	**212**	LR		LR	18 18 00.3	
	comp=Z,25nm,19.3s,baz=336,slow=42							
ZALV	**Zalesovo Beam**	**26.93**	**37**	LR		LR	18 17 42.0	
	comp=Z,20nm,19.6s,baz=72,slow=41							
ARCES	**ARCESS Array B**	**38.48**	**343**	LR		LR	18 23 51.8	
	comp=Z

*ISCJB **03** 19:17:34.3±1.3, 35˚.74N±0˚.03×141˚.57E±0˚.07, h22km±8km, mb3.6/8, MS3.0/3, Error ellipse: s-maj=9.8km s-min=5.5km az=174.6*

*JMA **03** 19:17:35.2±0.2, 35˚.77N×141˚.47E, h16km±2km, M3.8*

ISC 03 19:17:34.9±1.8, 35.71N±0˚.04×141.54E±0˚.07, h16km±10km, n30, σ1§62/32, mb3.6/8, MS3.0/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.55**	**269**	P			**Pg**	**19 17 45.2**	**-0.7**
CHOJ				S			**Sg**	**19 17 52.1**	**-1.2**
JCN	**Nagara**	**1.13**	**255**	P			**Pn**	**19 17 56.8**	**+0.8**
BSO1	**Boso 1**	**1.15**	**204**	P			**Pn**	**19 17 56.2**	**+0.3**
BSO1				*e*S			**Sg**	**19 18 14.0**	**+1.9**
JHO	**Hitachi**	**1.19**	**319**	P			**Pn**	**19 17 55.8**	**-1.1**
JHO				S			**Sb**	**19 18 11.3**	**-1.0**
JYT	**Yasato**	**1.21**	**296**	P			**Pn**	**19 17 55.0**	**-2.1**
JYT				*e*S			**Sb**	**19 18 11.3**	**-1.4**
BSO4	**Boso 4**	**1.22**	**234**	P			**Pn**	**19 17 58.0**	**+0.8**
BSO3	**Boso 3**	**1.24**	**223**	P			**Pn**	**19 17 57.6**	**+0.3**
BSO3				S			**Sb**	**19 18 14.8**	**+1.4**
ONAJ	**Iwakimizuishiy**	**1.51**	**337**	P			**Pn**	**19 18 00.9**	**-0.4**
ONAJ				S			**Sn**	**19 18 19.2**	**-1.5**
MJAR	**Matsushiro Arr**	**2.82**	**288**	Pn			**Pn**	**19 18 19.0**	**-0.3**
MJAR	6.4nm,0.3s,baz=90,slow=8.6,SNR=70			Sn			**Sn**	**19 18 54.0**	**+1.0**
MAT	4.3nm,0.3s,baz=150,slow=15,SNR=5.9 **Matsushiro**	**2.82**	**288**	P			**Pn**	**19 18 19.1**	**-0.3**
MAT				S			**Sn**	**19 18 53.0**	**0.0**
JHJ	**Hachijo jima 2**	**2.97**	**210**	Pn			**Pn**	**19 18 21.1**	**-0.2**
JHJ	15nm,0.3s,baz=87,slow=22,SNR=14			Sn			**Sn**	**19 18 56.1**	**-0.5**
ASAJ	53nm,0.3s,baz=286,slow=20,SNR=8.9 **Asahikawa**	**8.43**	**5**	Pn			**Pn**	**19 19 37.2**	**+0.8**
JCJ	baz=356,slow=19 **Chichijima**	**8.61**	**176**	Pn			**Pn**	**19 19 37.2**	**-1.7**
JCJ	18nm,0.3s,baz=255,slow=12,SNR=1.7			Sn			**Sn**	**19 21 09.3**	**-6.4**
KSRS	14nm,0.3s,baz=76,slow=12,SNR=2.3 **Korea Array**	**11.09**	**283**	Pn			**Pn**	**19 20 14.5**	**+1.7**
KSRS	0.1nm,0.3s,baz=96,slow=11,SNR=3.1			LR			LR	19 24 32.6	
USRK	comp=Z,53nm,21.4s,baz=107,slow=38 **Ussuriysk Ar.**	**11.20**	**322**	LR			LR	19 24 27.8	
H11N2	comp=Z,107nm,20.6s,baz=73,slow=37 **WAKE ISLAND Hy 27.41**	**119**		T			T	19 52 18.1	
H11N1	baz=311,slow=75,SNR=83 **WAKE ISLAND Hy 27.41**	**119**		T			T	19 52 14.9	
H11N3	baz=311,slow=75,SNR=88 **WAKE ISLAND Hy 27.42**	**119**		T			T	19 52 23.0	
H11S1	baz=311,slow=75,SNR=81 **WAKE ISLAND Hy 28.08**	**121**		T			T	19 53 25.6	
H11S3	baz=313,slow=75,SNR=64 **WAKE ISLAND Hy 28.08**	**121**		T			T	19 53 15.9	
H11S2	baz=313,slow=75,SNR=30 **WAKE ISLAND Hy 28.09**	**121**		T			T	19 53 15.0	
SONM	baz=313,slow=75,SNR=30 **Songino Array**	**28.62**	**306**	P			**P**	**19 23 30.9**	**+0.2**
SONM	0.6nm,0.8s,baz=113,slow=9.6,SNR=3.0			LR			LR	19 35 23.8	
CMAR	comp=Z,23nm,19.6s,baz=90,slow=37 **Chiang Mai Arr**	**41.28**	**257**	P			**P**	**19 25 20.6**	**+1.0**
ZALV	0.3nm,0.5s,baz=57,slow=8.7,SNR=3.1 **Zalesovo Beam**	**42.89**	**313**	P			**P**	**19 25 33.8**	**+1.4**
MKAR	0.4nm,0.4s,baz=96,slow=13,SNR=2.7 **Makanchi Array**	**44.92**	**303**	P			**P**	**19 25 50.0**	**+1.2**
ILAR	0.7nm,0.6s,baz=90,slow=11,SNR=8.3 **Eielson Array**	**50.56**	**32**	P			**P**	**19 26 33.1**	**+0.8**
ILAR	0.2nm,0.5s,baz=266,slow=5.8,SNR=4.4			LR			LR	19 49 30.9	
AAK	comp=Z,14nm,19.1s,baz=206,slow=38 **Ala-Archa**	**51.22**	**299**	LR			LR	19 49 06.7	
WRA	comp=Z,25nm,18.9s,baz=204,slow=37 **Warramunga Arr**	**55.77**	**188**	P			**P**	**19 27 10.6**	**-0.5**
ASAR	1.8nm,0.7s,baz=3.4,slow=7.8,SNR=19 **Alice Springs**	**59.50**	**188**	P			**P**	**19 27 37.0**	**-0.2**
AKASG	0.3nm,0.5s,baz=7.1,slow=8.2,SNR=13 **Malin Array Be**	**75.40**	**323**	P			**P**	**19 29 17.8**	**+0.1**
	0.4nm,0.4s,baz=50,slow=5.9,SNR=3.1								

*NSSP **03** 19:21:53.2, 38˚.42N×45˚.10E, h10km, Ms3.0*

*TEH **03** 19:21:56.7, 38˚.41N×44˚.98E, h5km, ML2.9*

*CSEM **03** 19:21:58.5±1.0, 38˚.47N×45˚.15E, h5km, ML2.9, Error ellipse: s-maj=22.5km s-min=15.7km az=54.0*

*ISCJB **03** 19:21:59.4±1.2, 38˚.45N±0˚.05×45˚.20E±0˚.08, h10km, Error ellipse: s-maj=10.0km s-min=5.9km az=146.2*

ISC 03 19:21:59.9±1.6, 38˚.48N±0˚.06×45˚.22E±0˚.09, h10km, n14, σ1§57/20, 4C-2D, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ISHB	**Shabestar**	**0.37**	**122**	*e*Sg			**Sg**	**19 22 12.6**	**+0.5**
ISHB				*e*Pg			**Pg**	**19 22 06.1**	**-1.1**
ISHB				*e*AMB			AMB	19 22 13.2	
IMRD	comp=Z,22μm,0.1s **Marand**	**0.45**	**58**	*e*Sg			**Sb**	**19 22 16.5**	**-0.2**
IMRD				*e*Pg			**Pg**	**19 22 08.5**	**-0.1**
IMRD				*e*AMB			AMB	19 22 18.9	
ITBZ	comp=Z,30μm,0.1s **Tabriz**	**0.77**	**108**	*e*Pg			**Pg**	**19 22 13.4**	**-1.3**
ITBZ				*e*Sg			**Sb**	**19 22 26.3**	**+0.3**
ITBZ				*e*AMB			AMB	19 22 26.4	
ITBZ	comp=Z,1μm,0.1s **Tabriz**	**0.77**	**108**	*e*Pg			**Pg**	**19 22 13.4**	**-1.3**
ITBZ				*e*Sg			**Sb**	**19 22 26.3**	**+0.3**
GRS	**Goris**	**1.34**	**40**	⇑*i*	P	n	Pn	19 22 20.0	-4.8
GRS				⇓*i*	S		**Sb**	**19 22 40.0**	**-2.5**
GRS	**Goris**	**1.34**	**40**	⇑⇑	P	n	Pn	19 22 20.0	-4.8
GRS					S		**Sb**	**19 22 40.0**	**-2.5**
IHRS	**Heris**	**1.44**	**96**	*e*Pn			**Pn**	**19 22 26.6**	**+0.4**
IHRS				*e*AMB			AMB	19 22 51.9	
IHRS	comp=N,2μm,0.2s **Heris**	**1.44**	**96**	*e*Pn			**Pn**	**19 22 26.6**	**+0.4**
IBST	**Bostanabad**	**1.53**	**120**	*e*Pn			**Pn**	**19 22 26.1**	**-1.4**
IBST				*e*AMB			AMB	19 22 47.9	
IBST	comp=Z,2μm,0.2s **Bostanabad**	**1.53**	**120**	*e*Pn			**Pn**	**19 22 26.1**	**-1.4**
GNI	**Garni**	**1.71**	**348**	⇑*i*	P		**Pn**	**19 22 29.4**	**-0.5**
GNI				⇓*i*	S		**Sn**	**19 22 54.5**	**+2.5**
GNI	**Garni**	**1.71**	**348**	⇑⇑	P		**Pn**	**19 22 29.4**	**-0.5**
GNI					S		**Sn**	**19 22 54.5**	**+2.5**
ISRB	**Sarab**	**2.03**	**108**	*e*Pn			**Pn**	**19 22 36.3**	**+1.9**
ISRB				*e*AMB			AMB	19 22 39.1	
ISRB	comp=Z,503nm,0.3s **Sarab**	**2.03**	**108**	*e*Pn			**Pn**	**19 22 36.3**	**+1.9**

*ISK **03** 19:22:00.8, 39˚.10N×28˚.98E, h5km, MD2.6*

*DDA **03** 19:22:00.5, 39˚.14N×28˚.98E, h7km, Md2.6*

*ISCJB **03** 19:22:01.1±0.4, 39˚.09N±0˚.04×28˚.98E±0˚.03, h8km±6km, Error ellipse: s-maj=6.3km s-min=4.1km az=172.7*

*CSEM **03** 19:22:01.3±0.1, 39˚.08N×28˚.99E, h8km, MD2.6, Error ellipse: s-maj=2.4km s-min=1.8km az=146.0*

ISC 03 19:22:00.9±0.9, 39˚.10N±0˚.03×28˚.99E±0˚.02, h16km±7km, n29, σ0§49/44, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**256**	*i* P			**Pg**	**19 22 06.0**	**+0.1**
DEMI				*i* S			**Sg**	**19 22 09.2**	**-0.1**
DEMI	**Demirci**	**0.22**	**256**	P			**Pg**	**19 22 06.0**	**+0.1**
DEMI				S			**Sg**	**19 22 09.2**	**-0.1**
GEDZ	**Gediz**	**0.34**	**99**	*e*PG			**Pg**	**19 22 07.9**	**0.0**
GEDZ				*e*SG			**Sg**	**19 22 13.2**	**+0.5**
GEDZ	**Gediz**	**0.34**	**99**	*e*Pg			**Pg**	**19 22 07.9**	**0.0**
GEDZ				*e*Sg			**Sg**	**19 22 13.2**	**+0.5**
GDZ	**Gediz**	**0.39**	**91**	*i* P			**Pg**	**19 22 08.8**	**-0.1**
GDZ				*i* S			**Sg**	**19 22 14.0**	**-0.3**
GDZ	**Gediz**	**0.39**	**91**	P			**Pg**	**19 22 08.8**	**-0.1**
GDZ				S			**Sg**	**19 22 14.0**	**-0.3**
TVSB	**Tavsanli**	**0.51**	**46**	*e*PG			**Pg**	**19 22 11.1**	**-0.1**
TVSB	**Tavsanli**	**0.51**	**46**	*e*Pg			**Pg**	**19 22 11.1**	**-0.1**
KULA	**Kula-Manisa**	**0.63**	**204**	*e*PG			**Pb**	**19 22 13.9**	**+0.2**
KULA				*e*SG			**Sb**	**19 22 22.5**	**+0.2**
KULA	**Kula-Manisa**	**0.63**	**204**	*e*Pg			**Pb**	**19 22 13.9**	**+0.2**
KULA				*e*Sg			**Sb**	**19 22 22.5**	**+0.2**
MANT	**Manisa**	**0.69**	**209**	*i* P			**Pg**	**19 22 14.3**	**-0.1**
MANT				*i* S			**Sg**	**19 22 22.4**	**-1.3**
MANT	**Manisa**	**0.69**	**209**	P			**Pg**	**19 22 14.4**	**-0.1**
MANT				S			**Sg**	**19 22 22.4**	**-1.3**
BALB	**Balikesir**	**1.01**	**303**	*e*PG			**Pn**	**19 22 20.7**	**+0.2**
BALB				*e*SG			**Sn**	**19 22 35.2**	**+0.7**
BALB	**Balikesir**	**1.01**	**303**	*e*Pg			**Pn**	**19 22 20.7**	**+0.2**
BALB				*e*Sg			**Sn**	**19 22 35.2**	**+0.7**
IGD	**Bursa**	**1.18**	**8**	*i* P			**Pn**	**19 22 22.3**	**-0.5**
IGD				*i* S			**Sb**	**19 22 36.4**	**-1.6**
KCTX	**Karacabey (Bur**	**1.27**	**338**	*e*PN			**Pg**	**19 22 25.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**338**	*e*Pn			**Pg**	**19 22 25.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**357**	*e*PN			**Pg**	**19 22 25.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**357**	*e*Pn			**Pg**	**19 22 25.8**	**+0.3**
CAVI	**Cavuskoy**	**1.29**	**31**	*e*PN			**Pg**	**19 22 25.8**	**0.0**
CAVI	**Cavuskoy**	**1.29**	**31**	*e*Pn			**Pg**	**19 22 25.8**	**0.0**
IZI	**Iznik**	**1.30**	**17**	*e*PN			**Pg**	**19 22 26.0**	**+0.1**
IZI	**Iznik**	**1.30**	**17**	*e*Pn			**Pg**	**19 22 26.0**	**+0.1**
BORA	**Eskisehir**	**1.38**	**55**	*i* P			**Pb**	**19 22 26.8**	**+0.3**
BORA				*i* S			**Sg**	**19 22 45.2**	**-0.3**
BORA	**Eskisehir**	**1.38**	**55**	P			**Pb**	**19 22 26.8**	**+0.3**
BORA				S			**Sg**	**19 22 45.2**	**-0.3**
ADVT	**Abdulvahap**	**1.46**	**23**	*e*PN			**Pg**	**19 22 28.5**	**-0.5**
ADVT	**Abdulvahap**	**1.46**	**23**	*e*Pn			**Pg**	**19 22 28.5**	**-0.5**
ESKT	**Eskisehir**	**1.51**	**73**	*i* P			**Pb**	**19 22 29.1**	**+0.5**
SEYT	**Eskypehyr**	**1.51**	**73**	P			**Pb**	**19 22 29.1**	**+0.5**

*ISCJB **03** 19:23:10.3±0.3, 44˚.19N±0˚.01×20˚.28E±0˚.02, h8km±2km, Error ellipse: s-maj=2.2km s-min=1.8km az=32.0*

*PDG **03** 19:23:10.8±0.5, 44˚.16N×20˚.29E, h16km, MD3.1/1, ML3.0/10, Error ellipse: s-maj=0.5km s-min=0.8km az=0.0*

*CSEM **03** 19:23:11.3±0.1, 44˚.17N×20˚.30E, h10km, ML3.1, Error ellipse: s-maj=2.2km s-min=2.0km az=126.0*

*BEO **03** 19:23:11.1±0.2, 44˚.13N×20˚.27E, h6km±2km, M3.1/1*

*PRU **03** 19:23:12.1, 44˚.14N×20˚.29E, h13km*

ISC 03 19:23:10.9±0.8, 44˚.16N±0˚.01×20˚.29E±0˚.02, h13km±5km, n164, σ1§29/238, 49C-34D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
TRUS	**Trudelj**	**0.11**	**54**	⇓*i*	P	g	**Pg**	**19 23 14.0**	**0.0**
TRUS					S	g	**Sg**	**19 23 16.9**	**+0.8**
TRUS	**Trudelj**	**0.11**	**54**	⇓*i*	Pg		**Pg**	**19 23 14.0**	**0.0**
TRUS					Sg		**Sg**	**19 23 16.9**	**+0.8**
DIVS	**Divibare**	**0.22**	**254**	⇓*i*	Pg		**Pg**	**19 23 15.1**	**-0.7**
DIVS					Sg		**Sg**	**19 23 17.8**	**-1.3**
DIVS	**Divibare**	**0.22**	**254**	⇓*i*	Pg		**Pg**	**19 23 15.1**	**-0.7**
DIVS					Sg		**Sg**	**19 23 17.9**	**-1.2**
GRUS	**Gruza**	**0.41**	**131**	*e*Pg			**Pg**	**19 23 19.2**	**+0.1**
GRUS				*e*Sg			**Sg**	**19 23 25.4**	**+0.8**
GRUS	**Gruza**	**0.41**	**131**	*e*Pg			**Pg**	**19 23 19.2**	**+0.1**
GRUS				*e*Sg			**Sg**	**19 23 25.4**	**+0.8**
IVAS	**Ivanjica**	**0.59**	**190**	*i* Pg			**Pg**	**19 23 21.6**	**-0.9**
IVAS				*e*Sg			**Sg**	**19 23 28.8**	**-1.5**
IVAS	**Ivanjica**	**0.59**	**190**	*i* Pg			**Pg**	**19 23 21.6**	**-0.9**
IVAS				*e*Sg			**Sg**	**19 23 28.8**	**-1.5**
BEO	**Beograd**	**0.66**	**11**	*e*Pg			**Pb**	**19 23 25.0**	**+0.7**
BEO				*e*Sg			**Sb**	**19 23 33.7**	**+0.3**
BEO	**Beograd**	**0.66**	**11**	*e*Pg			**Pb**	**19 23 25.0**	**+0.7**
BEO				*e*Sg			**Sb**	**19 23 33.7**	**+0.3**
TEKS	**Tekeris**	**0.67**	**306**	*i* Pg			**Pg**	**19 23 23.9**	**0.0**
TEKS				*e*Sg			**Sb**	**19 23 33.7**	**+0.1**
TEKS	**Tekeris**	**0.67**	**306**	*i* Pg			**Pg**	**19 23 23.9**	**0.0**
TEKS				*e*Sg			**Sb**	**19 23 33.7**	**+0.1**
BBLS	**Lazić**	**0.70**	**245**	*e*Sg			**Sg**	**19 23 33.1**	**-0.7**
BBLS	**Lazić**	**0.70**	**245**	*e*Sg			**Sg**	**19 23 33.1**	**-0.7**
BLJ	**Bijeljina**	**0.96**	**311**	*e*Pg			**Pg**	**19 23 28.9**	**-0.5**
BLJ				*e*Sg			**Sn**	**19 23 43.4**	**-0.2**
KUBS	**Kucevo**	**1.03**	**75**	*i* Pg			**Pb**	**19 23 29.7**	**-0.8**
KUBS				*e*Sg			**Sn**	**19 23 45.2**	**-0.1**
KUBS	**Kucevo**	**1.03**	**75**	*i* Pg			**Pb**	**19 23 29.7**	**-0.8**
KUBS				*e*Sg			**Sn**	**19 23 45.2**	**-0.1**
FGSL	**Fruska Gora**	**1.05**	**341**	⇑*i*	Pg		**Pb**	**19 23 31.0**	**0.0**
FGSL				*e*Sg			**Sb**	**19 23 44.8**	**+0.1**
FRGS	**Fruska Gora**	**1.05**	**341**	⇑*i*	Pg		**Pb**	**19 23 31.0**	**0.0**
FRGS				*e*Sg			**Sb**	**19 23 44.8**	**+0.1**
PLE	**Pljevlja**	**1.05**	**218**	⇑*i*	Pg		**Pb**	**19 23 30.5**	**-0.6**
PLE	**Pljevlja**	**1.05**	**218**	⇑*i*	Pg		**Pb**	**19 23 30.5**	**-0.6**
PLE				*e*Sg			**Sn**	**19 23 47.1**	**+1.0**
SELS	**Selova**	**1.12**	**147**	⇑*i*	Pg		**Pb**	**19 23 31.0**	**-1.1**
SELS				*e*Sg			**Sg**	**19 23 47.4**	**+0.5**
MDVR	**Moldovita**	**1.19**	**58**	⇓*i*	P		**Pb**	**19 23 33.7**	**+0.3**
MDVR	**Moldovita**	**1.19**	**58**	⇓*i*	P		**Pb**	**19 23 33.7**	**+0.3**
MDVR					S		**Sn**	**19 23 50.2**	**+0.7**
BEY	**Berane**	**1.32**	**193**		P		**Pn**	**19 23 35.4**	**+0.3**
BEY				*e*Sg			**Sg**	**19 23 55.8**	**+2.4**
IVA	**Berane**	**1.32**	**193**	⇑*i*	Pg		**Pn**	**19 23 35.3**	**+0.2**
IVA				*e*Sg			**Sg**	**19 23 55.8**	**+2.4**
BANR	**Banloc**	**1.36**	**26**	⇑*i*	P		**Pb**	**19 23 36.3**	**+0.1**
BANR	**Banloc**	**1.36**	**26**	⇑*i*	P		**Pb**	**19 23 36.3**	**+0.1**
BANR					S		**Sg**	**19 23 54.5**	**-0.3**
UPM	**Unac-Piva**	**1.39**	**227**	⇓*i*	Pg		**Pn**	**19 23 36.2**	**+0.1**
UPM				*e*Sg			**Sg**	**19 23 57.1**	**+1.5**
UPM	**Unac-Piva**	**1.39**	**227**		P		**Pn**	**19 23 36.2**	**+0.1**
UPM				*e*Sg			**Sg**	**19 23 57.1**	**+1.5**
PEJK	**Peje**	**1.52**	**180**		S		**Sg**	**19 23 59.2**	**-0.1**
PVY	**Plav**	**1.58**	**189**	⇓*i*	Pg		**Pn**	**19 23 39.4**	**+0.6**
PVY				*e*Sn			**Sg**	**19 24 01.6**	**-0.3**
PVY	**Plav**	**1.58**	**189**	⇓*i*	Pn		**Pn**	**19 23 39.4**	**+0.6**
PVY				*e*Sn			**Sg**	**19 24 01.6**	**-0.3**
NKY	**Niksic**	**1.64**	**215**	⇓*i*	Pn		**Pb**	**19 23 40.9**	**-0.2**
NKY				*e*Sn			**Sg**	**19 24 03.5**	**-0.3**
NKY	**Niksic**	**1.64**	**215**	⇓*i*	Pn		**Pb**	**19 23 40.9**	**-0.2**
NKY				*e*Sn			**Sg**	**19 24 03.5**	**-0.3**
DOB	**Doboj**	**1.67**	**291**	*e*Sn			**Sb**	**19 24 02.8**	**+0.5**
DJES	**Djerdap**	**1.68**	**72**	*e*Pg			**Pn**	**19 23 40.8**	**+0.9**
DJES				*e*Sg			**Sg**	**19 24 04.0**	**-0.8**
DJES	**Djerdap**	**1.68**	**72**	*e*Pg			**Pn**	**19 23 40.8**	**+0.9**
DJES				*e*Sg			**Sg**	**19 24 04.0**	**-0.8**
NKME	**Niksic**	**1.70**	**215**	⇓*i*	Pn		**Pn**	**19 23 41.2**	**+0.9**
NKME				*e*Sn			**Sb**	**19 24 04.2**	**+0.9**
NKME	**Niksic**	**1.70**	**215**	⇓*i*	Pn		**Pn**	**19 23 41.2**	**+0.9**
NKME				*e*Sn			**Sb**	**19 24 04.2**	**+0.9**
TIM	**Timisoara**	**1.71**	**22**	⇑*i*	P		**Pn**	**19 23 39.9**	**-0.5**
TIM	**Timisoara**	**1.71**	**22**	⇑*i*	P		**Pn**	**19 23 39.9**	**-0.5**
TIM					S		**Sn**	**19 24 01.3**	**-0.8**
BZS	**Buzias**	**1.73**	**33**	⇓*i*	P		**Pn**	**19 23 41.0**	**+0.3**
BZS	**Buzias**	**1.73**	**33**	⇓*i*	Pn		**Pn**	**19 23 40.8**	**+0.1**
BZS	**Buzias**	**1.73**	**33**	⇓*i*	P		**Pn**	**19 23 41.0**	**+0.3**
BZS					S		**Sn**	**19 24 03.2**	**+0.5**
BARS	**Barje**	**1.74**	**140**	⇑*i*	Pg		**Pn**	**19 23 40.7**	**-0.2**
BARS				*e*Sg			**Sg**	**19 24 07.0**	**0.0**
BRY	**Bratogost**	**1.79**	**226**	⇓*i*	Pn		**Pn**	**19 23 41.8**	**+0.2**
BRY				*e*Sn			**Sb**	**19 24 06.9**	**+0.9**
BRY	**Bratogost**	**1.79**	**226**	⇓*i*	Pn		**Pn**	**19 23 41.8**	**+0.2**
BRY				*e*Sn			**Sn**	**19 24 04.2**	**-0.1**
PDG	**Podgorica**	**1.89**	**204**	⇑*i*	P		**Pn**	**19 23 43.1**	**+0.3**
PDG	**Podgorica**	**1.89**	**204**	*e*Pn			**Pn**	**19 23 43.9**	**+1.1**
PDG	**Podgorica**	**1.89**	**204**	⇑*i*	P		**Pn**	**19 23 43.1**	**+0.3**
PDG	**Podgorica**	**1.89**	**204**	*e*Pn			**Pn**	**19 23 43.9**	**+1.1**
PDG				*e*Sn			**Sn**	**19 24 06.5**	**+0.1**
PDG				S			**Sb**	**19 24 07.0**	**-1.6**
TTG	**Podgorica**	**1.89**	**204**	⇑*i*	Pn		**Pb**	**19 23 44.1**	**-1.1**
TTG				*e*Sn			**Sb**	**19 24 09.4**	**+0.8**
CEME	**Cevo**	**1.90**	**212**	⇑*i*	Pn		**Pn**	**19 23 43.5**	**+0.5**
CEME				*e*Sn			**Sb**	**19 24 09.4**	**+0.4**
CEME	**Cevo**	**1.90**	**212**	⇑*i*	Pn		**Pn**	**19 23 43.5**	**+0.5**
CEME				*e*Sn			**Sb**	**19 24 09.4**	**+0.4**
ZAPS	**Zavoj**	**1.92**	**117**	⇑*i*	Pn		**Pn**	**19 23 44.1**	**+0.8**
ZAPS				*e*Sg			**Sg**	**19 24 12.4**	**-0.1**
TREB	**Trebinje**	**2.02**	**225**	*e*Pg			**Pb**	**19 23 46.7**	**-0.7**
TREB	**Trebinje**	**2.02**	**225**	*e*Pn			**Pn**	**19 23 44.9**	**+0.3**
TREB				*e*Sn			**Sn**	**19 24 10.5**	**+0.8**
BUM	**Brajici-Budva**	**2.12**	**209**	⇓*i*	Pn		**Pb**	**19 23 47.9**	**-1.3**
BUM				*e*Sn			**Sb**	**19 24 14.6**	**-0.8**
BUM	**Brajici-Budva**	**2.12**	**209**	⇓*i*	Pn		**Pb**	**19 23 47.9**	**-1.3**
BUM				*e*Sn			**Sb**	**19 24 14.6**	**-0.8**
SRE	**Strehaia**	**2.15**	**75**	⇑*i*	P		**Pn**	**19 23 47.8**	**+1.4**
SRE	**Strehaia**	**2.15**	**75**	⇑*i*	P		**Pn**	**19 23 47.8**	**+1.4**
SRE					S		**Sb**	**19 24 15.3**	**-0.9**
HCY	**Herceg Novi**	**2.16**	**218**	⇓*i*	Pn		**Pn**	**19 23 47.5**	**+1.0**
HCY				*e*Sn			**Sb**	**19 24 15.5**	**-0.9**
HCY	**Herceg Novi**	**2.16**	**218**	⇓*i*	Pn		**Pn**	**19 23 47.5**	**+1.0**
HCY				*e*Sn			**Sb**	**19 24 15.5**	**-0.9**
GZR	**Gura Zlata**	**2.16**	**54**	⇓*i*	P		**Pn**	**19 23 47.3**	**+0.7**
GZR	**Gura Zlata**	**2.16**	**54**	⇓*i*	P		**Pn**	**19 23 47.3**	**+0.7**
GZR					S		**Sn**	**19 24 14.1**	**+0.8**
BLY	**Banja Luka**	**2.30**	**286**	*e*Pn			**Pn**	**19 23 49.4**	**+0.9**
BLY	**Banja Luka**	**2.30**	**286**	*e*Pn			**Pn**	**19 23 49.4**	**+0.9**
BLY				*e*Sn			**Sn**	**19 24 17.1**	**+0.5**
SIRR	**Siria**	**2.32**	**24**	⇑*i*	P		**Pn**	**19 23 47.0**	**-1.8**
SIRR	**Siria**	**2.32**	**24**		S		**Sn**	**19 24 17.2**	**0.0**
SIRR	**Siria**	**2.32**	**24**		S		**Sn**	**19 24 17.2**	**0.0**
ULC	**Ulcinj**	**2.33**	**200**	⇑*i*	Pn		**Pn**	**19 23 50.6**	**+1.7**
ULC				*e*Sn			**Sb**	**19 24 20.1**	**-1.2**
ULC	**Ulcinj**	**2.33**	**200**	⇑*i*	Pn		**Pn**	**19 23 50.6**	**+1.7**
ULC				*e*Sn			**Sb**	**19 24 20.1**	**-1.2**
DEV	**Deva**	**2.53**	**46**	⇑*i*	P		**Pn**	**19 23 52.8**	**+1.1**
DEV	**Deva**	**2.53**	**46**	⇑*i*	P		**Pn**	**19 23 52.8**	**+1.1**
DEV					S		**Sn**	**19 24 23.9**	**+1.6**
VTS	**Vitosha**	**2.64**	**125**	⇑*i*	P		**Pn**	**19 23 53.7**	**+0.3**
VTS	**Vitosha**	**2.64**	**125**	⇑*i*	Pn		**Pn**	**19 23 53.5**	**+0.1**
VTS	**Vitosha**	**2.64**	**125**	⇑*i*	P		**Pn**	**19 23 53.7**	**+0.3**
LOT	**Lotru**	**2.79**	**61**	⇓*i*	P		**Pn**	**19 23 56.7**	**+1.3**
LOT	**Lotru**	**2.79**	**61**	⇓*i*	P		**Pn**	**19 23 56.7**	**+1.3**
LOT					S		**Sn**	**19 24 31.4**	**+2.4**
DRGR		**3.13**	**32**	⇑*i*	P		**Pn**	**19 24 01.0**	**+1.0**
DRGR		**3.13**	**32**	⇑*i*	P		**Pn**	**19 24 01.0**	**+1.0**
UDBI	**Udbina**	**3.27**	**278**	*e*Pn			**Pn**	**19 24 03.6**	**+1.7**
UDBI	**Udbina**	**3.27**	**278**	*e*Pn			**Pn**	**19 24 03.5**	**+1.7**
ARR	**Arges**	**3.32**	**67**	⇓*i*	P		**Pn**	**19 24 04.7**	**+2.1**
ARR	**Arges**	**3.32**	**67**	⇓*i*	P		**Pn**	**19 24 04.7**	**+2.1**
HUMR	**Humele**	**3.39**	**82**	⇑*i*	P		**Pn**	**19 24 04.9**	**+1.5**
HUMR	**Humele**	**3.39**	**82**	⇑*i*	P		**Pn**	**19 24 04.9**	**+1.5**
BEHE	**Becsehely**	**3.39**	**314**	⇑*i*	ePn		**Pn**	**19 24 04.1**	**+0.7**
BEHE				*e*Sn			**Sn**	**19 24 45.3**	**+1.8**
BEHE	**Becsehely**	**3.39**	**314**	⇑*i*	ex		**Pn**	**19 24 04.1**	**+0.7**
BEHE				ex			**Sn**	**19 24 46.1**	**+2.6**
BUD	**Budapest**	**3.44**	**346**	*e*Sn			**Sn**	**19 24 43.4**	**-1.3**
BUD	**Budapest**	**3.44**	**346**	⇓*i*	ex		**Pn**	**19 24 04.7**	**+0.6**
BUD				ex			**Sn**	**19 24 43.4**	**-1.3**
CJR	**Cluj-Napoca**	**3.46**	**41

JHO	**Hitachi**	**1.15**	**287**	P		**Pn**	**19 34 29.9**	**-1.7**
ONAJ	**Iwakimizuishiy**	**1.23**	**313**	P		**Pn**	**19 34 31.6**	**-1.2**
JFK	**Kawauchi**	**1.38**	**322**	P		**Pn**	**19 34 34.1**	**-0.7**
JFK				*e*S		**Sn**	**19 34 52.5**	**+0.6**
JFT	**Otama**	**1.78**	**315**	P		**Pn**	**19 34 40.7**	**+0.4**
BSO1	**Boso 1**	**1.79**	**206**	P		**Pn**	**19 34 39.8**	**-0.2**
BSO1				*e*S		**Sn**	**19 35 02.3**	**+1.0**
JMM	**Marumori**	**1.83**	**331**	P		**Pn**	**19 34 41.2**	**+0.2**
JAG	**Ashikaga**	**2.00**	**275**	P		**Pn**	**19 34 42.6**	**-0.8**
JAG				*e*S		**Sn**	**19 35 07.4**	**+0.2**
JFY	**Yanaizu**	**2.11**	**303**	P		**Pn**	**19 34 45.5**	**+0.6**
JRY	**Ryogami san**	**2.46**	**265**	P		**Pn**	**19 34 48.9**	**-0.8**
JRY				S		**Sn**	**19 35 19.2**	**+0.6**
MJAR	**Matsushiro Arr**	**3.01**	**276**	P		**Pn**	**19 34 57.4**	**+0.2**
	2.3nm,0.3s,baz=103,slow=9.1,SNR=29							
MJAR				S		**Sn**	**19 35 36.4**	**+4.3**
	1.0nm,0.3s,baz=200,slow=20,SNR=4.1							
MAT	**Matsushiro**	**3.01**	**276**	P		**Pn**	**19 34 58.0**	**+0.8**
MAT				S		**Sn**	**19 35 29.2**	**-2.9**
SONM	**Songino Array**	**28.55**	**305**	P		P	19 40 06.9	+3.3
	0.4nm,0.7s,baz=92,slow=7.9,SNR=3.1							
DAV	**Davao City (W)**	**32.69**	**211**	LR		LR	19 50 43.8	
	comp=Z,358nm,22.0s,baz=190,slow=32							
MKAR	**Makanchi Array**	**44.88**	**303**	P		P	19 42 24.0	+2.1
	0.3nm,0.7s,baz=86,slow=8.7,SNR=3.0							
KURBB	**Kurchatov Arra**	**46.80**	**309**	P		P	19 42 41.6	+4.6
	2.8nm,0.2s,baz=85,slow=8.4,SNR=2.1							
WRA	**Warramunga Arr**	**56.37**	**189**	P		**P**	**19 43 48.3**	**-0.4**
	0.6nm,1.0s,baz=5.5,slow=7.4,SNR=2.5							
GNI	**Garni**	**72.49**	**307**	LR		LR	20 20 15.1	
	comp=Z,14nm,18.0s,baz=140,slow=38							
NWAO	**Narrogin (SRO)**	**72.62**	**202**	LR		LR	20 17 54.3	
	comp=Z,32nm,18.9s,slow=37							

MEX 03 19:44:44.4±0.6, 16°80N×100°12W, h2km±4km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ACP2	**Acapulco**	**0.24**	**72**	*i* P	Pg	19 44 49.1	+0.1
ACP2				*e*S	Sg	19 44 52.5	+0.4
ACX	**Acapulco**	**0.26**	**75**	*e*P	Pb	19 44 52.5	+0.6
ACX				*e*S	Sb	19 44 56.3	-0.6
CAIG	**El Cayaco**	**0.28**	**331**	*i* P	Pg	19 44 49.9	+0.1
CAIG				*e*S	Sg	19 44 53.7	+0.2
MEIG	**Mezcala**	**1.22**	**23**	*i* P	Pg	19 45 04.5	-3.3
MEIG				*i* S	Sg	19 45 20.2	-3.4
ARIG	**Puente Sto Nin**	**1.49**	**352**	*e*P	Pn	19 45 09.2	-3.0
ARIG				*e*S	Sb	19 45 27.6	-4.6
ZIIG	**Zihuatanejo**	**1.51**	**302**	*e*P	Pn	19 45 08.4	-4.1
ZIIG				*e*S	Sn	19 45 27.9	-5.0
TLIG	**Tlapa**	**1.67**	**63**	*e*P	Pn	19 45 11.4	-3.5
TLIG				*e*S	Sn	19 45 32.4	-4.5
PNIG	**Pinotepa**	**1.96**	**102**	*i* P	Pn	19 45 15.1	-3.5
PNIG				*i* S	Sn	19 45 40.1	-3.7
YAIG	**Yautepec**	**2.29**	**26**	*i* P	Pn	19 45 19.5	-3.8
YAIG				*i* S	Sn	19 45 48.0	-4.1

*ISCJB **03** 19:45:30.9±0.2,0°.28N±0°.03×126°.14E±0°.03,h44km, mb4.3/34,MS3.2/9,Error ellipse: s-maj=5.0km s-min=4.1km az=137.0*
*DJA **03** 19:45:30.8±0.5,0°.5±°×12°.6E±°,h10km,M4.6/2,mb5.0/2, mB5.0/2,MLv4.4/1,Mw(mB)4.3/2*
*IDC **03** 19:45:33.0±1.9,0°.18N×126°.10E,h49km±20km,mb4.0/25, mb1 4.1/28,mb1mx4.0/47,mbtmp4.3/28,ML4.2/3,MS3.3/11, Ms1 3.2/11,ms1mx3.0/46,Error ellipse: s-maj=13.9km s-min=11.9km az=78.0*
*NEIC **03** 19:45:35.8±1.6,0°.15N×126°.08E,h79km±16km,mb4.4/9, Error ellipse: s-maj=15.2km s-min=7.2km az=57.0*
*BJI **03** 19:45:36.2,0°.78N×126°.21E,h56km,mb4.4/8,mB4.9/7, Ms4.6/1*

ISC 03 19:45:32.9±0.4, 0°.19N±0°.05×126°.16E±0°.04, h44km, n74, σ1s67/79, mb4.2/34, MS3.4/9, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LBMI	**Labuha**	**1.57**	**122**	P	**Pn**	**19 45 58.6**	**+0.2**
LBMI				S	**Sn**	**19 46 18.9**	**+1.3**
KMSI	**Cibinong**	**2.21**	**280**	P	**Pn**	**19 46 08.0**	**+0.8**
KMSI				S	**Sn**	**19 46 36.8**	**+3.5**
SANI	**Sanana**	**2.23**	**184**	P	**Pn**	**19 46 08.0**	**+0.5**
SANI				S	**Sn**	**19 46 37.0**	**+3.2**
NLAI	**Namlea**	**3.54**	**165**	P	**Pn**	**19 46 25.9**	**+0.5**
LUWI	**Luwuk**	**3.60**	**250**	P	**Pn**	**19 46 27.0**	**+0.7**
LUWI	**Luwuk**	**3.60**	**250**	*e*Pn	**Pn**	**19 46 28.5**	**+2.2**
LUWI				*e*Sn	**Sn**	**19 47 08.4**	**+0.7**
MRSI	**Marisa**	**4.23**	**274**	P	**Pn**	**19 46 35.5**	**+0.6**
MSAI	**Masohi**	**4.47**	**142**	P	**Pn**	**19 46 38.5**	**+0.3**
SIJI	**Sorong**	**5.21**	**102**	P	**Pn**	**19 46 50.9**	**+2.5**
	13nm,0.3s,baz=352,slow=2.8,SNR=1.6						
SIJI				S	**Sn**	**19 47 49.3**	**+2.0**
	11nm,0.3s,baz=5.7,slow=10,SNR=1.7						
KDI	**Kendari**	**5.43**	**221**	P	**Pn**	**19 46 52.4**	**+1.0**
	110nm,0.8s,947nm0.3nm						
PCI	**Palu**	**6.42**	**260**	P	Pn	19 47 12.1	+7.1
TTSI	**Tana Toraja**	**7.11**	**243**	P	**Pn**	**19 47 15.3**	**+0.9**
KAPI	**Kappang**	**8.23**	**231**	P	**Pn**	**19 47 29.2**	**-0.6**
	2.0nm,0.3s,baz=61,slow=9.4,SNR=5.9						
KAPI				S	**Sn**	**19 49 01.1**	**-0.4**
	0.8nm,0.3s,baz=198,slow=20,SNR=1.9						
KAPI	**Kappang**	**8.23**	**231**	*e*Pn	**Pn**	**19 47 29.9**	**0.0**
KAPI				*e*Sn	**Sn**	**19 48 56.8**	**-4.8**
KAPI				S	**Sn**	**19 49 01.1**	**-0.4**
SOEI	**Soe**	**10.06**	**191**	*e*Pn	Pn	19 48 00.2	+5.2
SBUM	**Sibu**	**14.12**	**279**	*e*P	**P**	**19 48 57.9**	**+0.8**
JAGI	**Jajag, Banyuwa**	**14.74**	**234**	P	**P**	**19 49 04.0**	**+0.1**
TGY	**Tagaytay City**	**14.76**	**340**	LR	LR	19 54 49.9	
	comp=Z,103nm,21.2s,baz=199,slow=38						
JAY	**Jayapura**	**14.79**	**101**	LR	LR	19 54 24.8	
	comp=Z,8.4nm,21.9s,baz=183,slow=36						
KSM	**Kuching**	**15.90**	**275**	*e*Pn	**Pn**	**19 49 14.0**	**+0.2**
	45nm,1.1s						
FITZ	**Fitzroy Crossi**	**18.19**	**182**	P	**P**	**19 49 41.1**	**-1.0**
	0.4nm,0.3s,baz=23,slow=8.5,SNR=30						
FITZ				LR	LR	19 57 00.8	
	comp=Z,112nm,21.4s,baz=12,slow=38						
FITZ	**Fitzroy Crossi**	**18.19**	**182**	P	**P**	**19 49 40.0**	**-2.1**
	8.7nm,0.8s						
WRAB	**Tennant Creek**	**21.55**	**159**	*e*P	**P**	**19 50 17.2**	**-1.5**
	56nm,0.7s						
WRA	**Warramunga Arr**	**21.55**	**159**	P	**P**	**19 50 17.1**	**-1.7**
	43nm,0.7s,baz=338,slow=11,SNR=229						
WB2	**Warramunga Arr**	**21.56**	**159**	*e*P	**P**	**19 50 17.5**	**-1.3**
	60nm,0.7s						
COEN	**Coen**	**21.94**	**131**	*e*P	**P**	**19 50 24.5**	**+1.5**
	26nm,1.1s						
GUMO	**Guam**	**22.81**	**54**	LR	LR	19 59 23.3	
	comp=Z,72nm,18.6s,baz=232,slow=36						
PMG	**Port Moresby**	**22.98**	**115**	P	**P**	**19 50 34.2**	**+0.2**
	8.8nm,0.8s,baz=30,slow=14,SNR=2.5						
AS31	**Alice Springs**	**24.88**	**163**	*e*P	**P**	**19 50 51.7**	**-0.1**
	5.5nm,0.8s						
ASAR	**Alice Springs**	**24.88**	**163**	P	**P**	**19 50 51.9**	**+0.1**
	11nm,0.6s,baz=343,slow=10,SNR=124						
AS01	**Alice Springs**	**24.89**	**163**	*e*P	**P**	**19 50 51.1**	**-0.8**
CTA	**Charters Tower**	**28.17**	**137**	P	**P**	**19 51 25.7**	**+4.3**
	5.8nm,0.9s,baz=304,slow=11,SNR=4.0						
CMAR	**Chiang Mai Arr**	**32.31**	**306**	P	**P**	**19 51 57.8**	**-0.3**
	1.3nm,1.0s,baz=110,slow=11,SNR=4.0						
STKA	**Stephens Creek**	**35.08**	**157**	P	**P**	**19 52 21.1**	**-0.9**
	6.7nm,0.7s,baz=328,slow=9.3,SNR=14						
STKA				LR	LR	20 07 21.9	
	comp=Z,62nm,18.0s,baz=5.7,slow=37						
KSAR	**Wonju Array Be**	**37.10**	**2**	P	**P**	**19 52 39.5**	**+0.4**
KSRS	**Korea Array**	**37.11**	**2**	P	**P**	**19 52 39.5**	**+0.3**
	2.3nm,0.8s,baz=177,slow=10,SNR=8.2						
KSRS				LR	LR	20 09 18.6	
	comp=Z,14nm,18.3s,baz=166,slow=38						
MJAR	**Matsushiro Arr**	**37.85**	**16**	P	**P**	**19 52 44.7**	**-0.9**
	1.6nm,0.8s,baz=188,slow=8.8,SNR=4.5						
MJAR				LR	LR	20 10 59.5	
	comp=Z,5.1nm,18.9s,baz=220,slow=40						
USRK	**Ussuriysk Ar.**	**44.12**	**6**	P	**P**	**19 53 36.8**	**-0.2**
	2.3nm,0.6s,baz=190,slow=8.1,SNR=7.4						
LSA	**Lhasa**	**44.42**	**315**	*e*P	**P**	**19 53 38.7**	**-1.5**
KLR	**Kul'dur**	**49.09**	**5**	P	**P**	**19 54 16.3**	**+0.5**
	1.0nm,0.6s,baz=187,slow=8.3,SNR=3.9						
SONM	**Songino Array**	**50.47**	**343**	P	**P**	**19 54 25.6**	**-0.9**
	2.4nm,0.8s,baz=161,slow=7.6,SNR=13						
SONM				PcP	**PcP**	**19 55 43.4**	**-0.9**
	0.4nm,0.5s,baz=157,slow=4.1,SNR=2.7						
SONM				LR	LR	20 18 20.5	
	comp=Z,38nm,19.3s,baz=145,slow=39						
SONA1	**Songino Array**	**50.48**	**343**	*e*P	**P**	**19 54 26.8**	**+0.1**
PEA0	**Petropavlovsk-**	**58.90**	**22**	*e*P	**P**	**19 55 28.1**	**+0.7**
PETK	**Petropavlovsk-**	**58.90**	**22**	P	**P**	**19 55 26.6**	**-0.8**
	3.6nm,0.7s,baz=164,slow=3.8,SNR=7.8						
RPZ	**Rata Peaks**	**59.24**	**143**	LR	LR	20 20 11.2	
	comp=Z,42nm,21.4s,baz=344,slow=35						
MK01	**Makanchi Array**	**60.13**	**327**	*e*P	**P**	**19 55 34.5**	**-1.6**
MK31	**Makanchi Array**	**60.15**	**327**	*e*P	**P**	**19 55 35.0**	**-1.1**
MKAR	**Makanchi Array**	**60.15**	**327**	P	**P**	**19 55 35.0**	**-1.1**
	2.2nm,0.5s,baz=119,slow=8.3,SNR=26						
MKAR				LR	LR	20 21 44.7	
	comp=Z,36nm,21.7s,baz=117,slow=36						
KSH	**Kashi**	**60.17**	**317**	*e*P	P	19 55 42.2	+5.6
KSH				*e*sP	sP	19 55 55.8	+1.5
KSH				*e*PcP	**PcP**	**19 56 24.7**	**+2.8**
KSH				PcS	**PcS**	**20 00 26.5**	**+2.1**
KSH				S	**S**	**20 03 53.2**	**+5.9**
KSH				ScS	**ScS**	**20 05 24.1**	**+0.2**
KSH				pmax	pmax		
	comp=Z,66nm,4.6s						
YAK	**Yakutsk**	**61.74**	**2**	P	**P**	**19 55 46.3**	**-0.3**
	3.6nm,0.3s,baz=204,slow=3.8,SNR=2.6						
AAK	**Ala-Archa**	**62.62**	**319**	P	**P**	**19 55 54.6**	**+1.5**
	1.1nm,0.3s,baz=180,slow=6.1,SNR=2.9						
ZAA0	**Zalesovo Array**	**63.48**	**334**	*e*P	**P**	**19 55 57.0**	**-1.3**
ZALV	**Zalesovo Beam**	**63.48**	**334**	P	**P**	**19 55 56.8**	**-1.6**
	1.2nm,0.6s,baz=119,slow=5.2,SNR=6.2						
KURBB	**Kurchatov Arra**	**64.42**	**329**	P	**P**	**19 56 02.7**	**-1.9**
	3.0nm,0.7s,baz=128,slow=6.3,SNR=8.0						
KURK	**Kurchatov**	**64.42**	**329**	P	**P**	**19 56 01.9**	**-2.7**
VOSK	**Vostochnaya**	**69.52**	**328**	*e*P	**P**	**19 56 36.0**	**-0.9**
	2.1nm,0.7s						
BVAR	**Borovoye Array**	**69.98**	**328**	P	**P**	**19 56 39.6**	**-0.2**
	1.0nm,0.5s,baz=134,slow=6.4,SNR=7.5						
ZRNK	**Zerenda**	**70.68**	**327**	*e*P	**P**	**19 56 43.3**	**-0.8**
	5.3nm,1.1s						
TIXI	**Tiksi**	**71.36**	**1**	P	**P**	**19 56 46.9**	**-1.0**
	1.2nm,0.6s,baz=239,slow=6.0,SNR=3.6						
GEYT	**Ailbeck**	**72.68**	**310**	P	**P**	**19 56 57.1**	**+0.6**
	0.5nm,0.3s,baz=126,slow=7.3,SNR=3.1						
NRIK	**Noril'sk**	**73.71**	**347**	P	**P**	**19 57 01.5**	**-0.4**
	1.5nm,0.6s,baz=75,slow=12,SNR=3.9						
NRIK				LR	LR	20 32 08.0	
	comp=Z,27nm,19.5s,baz=146,slow=38						
ABKAR	**Akbulak array**	**74.53**	**322**	*e*P	**P**	**19 57 03.2**	**-3.8**
AKTO	**Aktyubinsk**	**76.08**	**322**	P	**P**	**19 57 15.7**	**-0.3**
	2.8nm,0.6s,baz=110,slow=8.1,SNR=12						
ARU	**Arti**	**77.61**	**328**	P	**P**	**19 57 23.7**	**-0.8**
	2.2nm,0.6s,baz=295,slow=0.2,SNR=5.7						
ARU	**Arti**	**77.61**	**328**	*e*P	**P**	**19 57 22.4**	**-2.0**
	8.9nm,1.3s						
MAW	**Mawson**	**80.26**	**200**	P	**P**	**19 57 38.3**	**-0.4**
	2.8nm,0.9s,baz=228,slow=7.1,SNR=4.3						
KBZ	**Khabaz**	**84.99**	**314**	P	**P**	**19 58 03.9**	**0.0**
	3.4nm,1.0s,baz=169,slow=5.7,SNR=4.8						
ILAR	**Eielson Array**	**88.52**	**25**	P	**P**	**19 58 20.4**	**-0.2**
	0.3nm,0.9s,baz=261,slow=4.5,SNR=3.2						
BRTR	**Keskin Array B**	**91.82**	**310**	P	**P**	**19 58 34.8**	**-2.0**
	0.5nm,0.7s,baz=138,slow=11,SNR=3.8						
ARCES	**ARCESS Array B**	**93.55**	**340**	P	**P**	**19 58 41.7**	**-2.2**
	1.4nm,0.7s,baz=72,slow=4.0,SNR=4.3						
DLBC	**Dease Lake**	**97.05**	**31**	LR	LR	20 41 40.2	
	comp=Z,18nm,18.8s,baz=265,slow=35						
TORD	**Torodi Ar. Bea**	**123.40**	**286**	PKP	**PKPdf**	**20 04 26.1**	**-0.3**
	0.6nm,0.9s,baz=68,slow=1.1,SNR=3.7						
TXAR	**Lajitas Array**	**124.17**	**54**	PKP	**PKPdf**	**20 04 28.1**	**+0.5**
	0.2nm,0.8s,baz=282,slow=0.8,SNR=3.1						
CPUP	**Villa Florida**	**153.80**	**173**	PKPbc	**PKPbc**	**20 05 29.0**	**+0.9**
	2.7nm,0.9s,baz=180,slow=1.0,SNR=2.6						

*CSEM **03** 19:51:59.5±0.3,37°.14N×32°.84E,h2km,MD2.7,Error ellipse: s-maj=6.2km s-min=6.0km az=179.0*
*DDA **03** 19:52:00.3,37°.07N×32°.91E,h7km,Md2.7*
*ISK **03** 19:52:01.0,37°.39N×32°.98E,h12km,MD2.9*

ISC 03 19:51:59.4±1.1, 37°.17N±0°.02×32°.84E±0°.03, h8km±10km, n23, σ1s66/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ERMK	**Ermenek**	**0.53**	**173**	*i* P	**Pg**	**19 52 09.3**	**-0.4**
ERMK				*i* S	**Sg**	**19 52 16.6**	**-0.1**
ERMK	**Ermenek**	**0.53**	**173**	P	**Pg**	**19 52 09.3**	**-0.4**
ERMK				S	**Sg**	**19 52 16.6**	**-0.1**
KONT	**Konya--Tatoy**	**0.86**	**334**	*e*PG	**Pg**	**19 52 15.8**	**-0.1**
KONT				*e*SG	**Sg**	**19 52 26.9**	**-0.2**
KONT	**Konya--Tatoy**	**0.86**	**334**	*e*Pg	**Pg**	**19 52 15.8**	**-0.1**
KONT				*e*Sg	**Sg**	**19 52 26.9**	**-0.2**
GAZI	**Gazipasa**	**1.02**	**204**	*i* P	**Pg**	**19 52 18.3**	**-0.7**
GAZI				*i* S	**Sg**	**19 52 31.4**	**-0.9**
GAZI	**Gazipasa**	**1.02**	**204**	P	**Pg**	**19 52 18.3**	**-0.7**
GAZI				S	**Sg**	**19 52 31.4**	**-0.9**
KERG	**Konya-Eregli**	**1.05**	**76**	*i* P	**Pg**	**19 52 19.1**	**-0.5**
KERG				*i* S	**Sn**	**19 52 35.0**	**-0.6**
KERG	**Konya-Eregli**	**1.05**	**76**	P	**Pg**	**19 52 19.1**	**-0.5**
KERG				S	**Sn**	**19 52 35.0**	**-0.6**
SULT	**Sultanhani-AKS**	**1.16**	**27**	*e*PG	**Pg**	**19 52 18.8**	**-2.8**
SULT	**Sultanhani-AKS**	**1.16**	**27**	*e*Pg	**Pg**	**19 52 18.8**	**-2.8**
KIZK	**Mersin**	**1.25**	**123**	*i* P	**Pg**	**19 52 22.7**	**-0.7**
KIZK				*i* S	**Sg**	**19 52 37.2**	**-2.5**
KIZK	**Mersin**	**1.25**	**123**	P	**Pg**	**19 52 22.7**	**-0.7**
KIZK				S	**Sg**	**19 52 37.2**	**-2.5**
MERS	**Mersin**	**1.38**	**102**	*e*PN	**Pg**	**19 52 26.4**	**+0.5**
MERS				*e*SN	**Sn**	**19 52 44.5**	**+1.0**
MERS	**Mersin**	**1.38**	**102**	*e*Pn	**Pg**	**19 52 26.4**	**+0.5**
MERS				*e*Sn	**Sn**	**19 52 44.6**	**+1.0**
KDHN	**Kadinhani**	**1.46**	**337**	*i* P	**Pg**	**19 52 30.8**	**+3.4**
KDHN				*i* S	**Sn**	**19 52 39.5**	**-6.1**
SUTC	**Sutluce-Ispart**	**1.50**	**282**	*e*PN	**Pb**	**19 52 29.2**	**+1.7**
SUTC	**Sutluce-Ispart**	**1.50**	**282**	*e*Pn	**Pb**	**19 52 29.2**	**+1.7**
GULE	**Gulek**	**1.55**	**85**	*i* P	**Pg**	**19 52 30.2**	**+1.1**
GULE				*i* S	**Sg**	**19 52 50.0**	**+0.7**
GULE	**Gulek**	**1.55**	**85**	P	**Pg**	**19 52 30.2**	**+1.1**
GULE				S	**Sg**	**19 52 50.0**	**+0.7**
KARA	**Karaisali**	**1.77**	**86**	*e*PN	**Pn**	**19 52 30.7**	**+0.4**
KARA	**Karaisali**	**1.77**	**86**	*e*Pn	**Pn**	**19 52 30.7**	**+0.4**
KOZT	**Kozan**	**2.40**	**82**	*e*PN	**Pn**	**19 52 39.3**	**+0.3**
KOZT	**Kozan**	**2.40**	**82**	*e*Pn	**Pn**	**19 52 39.3**	**+0.3**

MEX 03 19:58:04.6±0.5, 14°43N×93°58W, h15km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.31**	**37**	*e*P	Pn	19 58 38.2	-4.0
CCIG				*i* S	Sn	19 59 06.1	-4.4

IDC 03 20:21:51.0±2.3, 8°.07S×130°.49E, h0km, mb3.2/1, mb1 3.2/3, mb1mx3.1/32, mbtmp3.0/3, ML2.8/2, Error ellipse: s-maj=103.0km s-min=29.7km az=69.0, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**12.38**	**163**	Pn	Pn	20 24 48.8	+0.2
	0.0nm,0.3s,baz=346,slow=14,SNR=5.2						
WRA				Sn	Sn	20 27 08.5	+1.1
	0.2nm,0.3s,baz=341,slow=23,SNR=6.0						
ASAR	**Alice Springs**	**15.85**	**168**	Pn	Pn	20 25 35.6	-0.1
	0.1nm,0.3s,baz=347,slow=10,SNR=4.1						
MKAR	**Makanchi Array**	**69.38**	**327**	P	P	20 33 00.8	0.0
	0.1nm,0.5s,baz=123,slow=10,SNR=1.2						

*CSEM **03** 20:28:59.3±1.2,79°.51N×2°.98E,h20km,ML3.0,Error ellipse: s-maj=70.4km s-min=13.2km az=5.0*
*BER **03** 20:29:00.8±2.4,79°.80N×4°.28E,h15km±18km,ML2.3*

ISC 03 20:28:55.9±1.7, 79°.6N±0°.2×3°.19E±0°.05, h10km, n12, σ2s12/19, 4C, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KBS	**Kingsbay**	**1.78**	**109**	*i* P	**Pb**	**20 29 28.0**	**-0.4**
KBS				*e*S	**Sn**	**20 29 47.6**	**-1.6**
KBS				IAML		20 29 49.4	
	comp=Z,41nm,0.4s						
KBS	**Kingsbay**	**1.78**	**109**	*i* P	**Pb**	**20 29 28.1**	**-0.4**
	SNR=56						
KBS				*e*S	**Sn**	**20 29 47.6**	**-1.6**
	SNR=50						
SPA0	**Spitsbergen Ar**	**2.93**	**113**	*i* P	**Pn**	**20 29 44.7**	**+2.3**
SPA0				*e*Pg	**Pb**	**20 29 46.8**	**-1.2**
SPA0				*e*S	**Sn**	**20 30 16.8**	**-0.8**
SPA0				IAML		20 30 26.2	
	comp=Z,26nm,0.6s						
SPA0	**Spitsbergen Ar**	**2.93**	**113**	*i* P	**Pn**	**20 29 44.7**	**+2.3**
	SNR=50						
HSPB	**Hornsund (broa**	**3.63**	**130**	*e*P	**Pn**	**20 29 54.8**	**+2.8**
HSPB				*e*S	**Sn**	**20 30 34.1**	**-0.7**
HSPB				IAML		20 30 40.8	
	comp=Z,18nm,0.5s						
HSPB	**Hornsund (broa**	**3.63**	**130**	*e*P	**Pn**	**20 29 54.8**	**+2.8**
	SNR=50						
HSPB				*e*S	**Sn**	**20 30 34.1**	**-0.7**
	SNR=50						
DAG	**Danmarks Havn**	**5.28**	**249**	*i* P	**Pn**	**20 30 16.8**	**+2.1**
DAG	**Danmarks Havn**	**5.28**	**249**	*i* S	**Sn**	**20 31 12.9**	**-2.6**
	SNR=51						
HOPEN	**Hopen**	**5.46**	**114**	*e*P	**Pn**	**20 30 18.4**	**+1.3**
HOPEN				*e*S	**Sn**	**20 31 15.3**	**-4.5**
HOPEN				IAML		20 31 19.7	
	comp=Z,9.3nm,0.6s						
HOPEN	**Hopen**	**5.46**	**114**	*e*P	**Pn**	**20 30 18.4**	**+1.3**
	SNR=49						
SUMG	**Summit**	**11.89**	**256**	*i* P	**Pn**	**20 31 46.2**	**+0.8**
SUMG				*i*		20 31 48.4	
SUMG	**Summit**	**11.89**	**256**	*i* P	**Pn**	**20 31 46.3**	**+0.8**
	SNR=51						

*NIED **03** 20:41:00,37°.90N×142°.70E,h17km,Mw4.4 Best double couple: M0 3.76000×10^15 NP1:φs=334.00000°,δ0.00000°, λ-136.00000°. NP2:φs=200.00000°,δ90.00000°, λ-90.00000°.*
*IDC **03** 20:41:02.7±0.6,37°.87N×142°.62E,h0km,mb4.4/30, mb1 4.4/35,mb1mx4.3/63,mbtmp4.4/35,ML3.2/4,MS3.8/20, Ms1 3.8/20,ms1mx3.5/45,Error ellipse: s-maj=17.1km s-min=13.0km az=89.0*
*ISCJB **03** 20:41:03.7±0.8,37°.88N±0°.03×142°.67E±0°.03,h15km±5km, mb4.6/82,MS4.0/31,Error ellipse: s-maj=5.0km s-min=3.7km az=140.5*
*BJI **03** 20:41:03.5,37°.83N×142°.64E,h23km,mb4.7/69,mB4.7/47, Ms4.2/55,Ms7 4.1/54*
*MOS **03** 20:41:04.6±1.1,37°.93N×142°.65E,h22km,mb4.8/45,Error ellipse: s-maj=8.3km s-min=5.0km az=113.9*
*JMA **03** 20:41:05.7±0.2,37°.91N×142°.58E,h39km±4km,M4.5*
JMA Felt II J1.
*NEIC **03** 20:41:08.3±0.3,37°.92N×142°.60E,h35km,mb4.7/21,Error ellipse: s-maj=7.6km s-min=4.8km az=128.0*
NEIC Recorded [2 JMA] in Miyagi.

ISC 03 20:41:06.0±0.6, 37°.82N±0°.04×142°.74E±0°.04, h25km±3km, h25km:pP-P,n238, σ1s81/265, mb4.6/86, MS4.0/34, 22C-12D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.27**	**300**	P	**Pn**	**20 41 25.4**	**-2.7**
JIO				S	**Sn**	**20 41 39.0**	**-5.2**
OFUJ	**Ofunato**	**1.51**	**326**	P	Pn	**20 41 28.8**	**-2.6**
JMM	**Marumori**	**1.54**	**272**	P	**Pn**	**20 41 29.6**	**-2.3**
JMM				*e*S	**Sn**	**20 41 46.6**	**-4.5**
JFK	**Kawauchi**	**1.55**	**254**	P	**Pn**	**20 41 29.9**	**-2.1**
JFK				*e*S	**Sn**	**20 41 47.1**	**-4.3**
JMK	**Ichinoseki**	**1.64**	**314**	P	**Pn**	**20 41 30.9**	**-2.3**
JOU	**Okura**	**1.73**	**289**	P	**Pn**	**20 41 32.6**	**-1.8**
JFT	**Otama**	**1.93**	**262**	P	**Pn**	**20 41 36.2**	**-1.0**
JFT				*e*S	**Sn**	**20 41 58.3**	**-2.4**
JOM	**Ohasama**	**2.00**	**326**	P	**Pn**	**20 41 36.3**	**-1.9**
JYS	**Shirataka**	**2.15**	**281**	P	**Pn**	**20 41 38.7**	**-1.5**
JYK	**Kaneyama**	**2.17**	**301**	P	**Pn**	**20 41 38.7**	**-1.8**
JRG	**Rokugo**	**2.28**	**314**	P	**Pn**	**20 41 40.5**	**-1.5**
JANG	**Nango**	**2.72**	**340**	P	**Pn**	**20 41 46.5**	**-1.6**
MJAR	**Matsushiro Arr**	**3.84**	**252**	Pn	**Pn**	**20 42 04.6**	**+1.2**
	11nm,0.3s,baz=64,slow=10,SNR=70						
MJAR				LR	LR	20

CN2 eS Sn 20 47 07.8 +1.3
CN2 pmax pmax
comp=N,10.0nm,0.5s
CN2 pmax pmax
comp=N,100nm,3.0s
CN2 LR LR
comp=N,300nm,17.0s
CN2 LR LR
comp=N,400nm,17.0s
CN2 LR LR
comp=N,400nm,16.0s
SNY Shenyang 15.26 291 ⇓P P 20 44 44.8 +0.5
SNY S Sn 20 47 00.9 -27
SNY pmax pmax
comp=Z,18nm,0.6s
SNY pmax pmax
comp=Z,40nm,3.0s
SNY LR LR
comp=N,110nm,16.0s
SNY LR LR
comp=E,760nm,14.6s
SNY LR LR
comp=Z,1μm,16.4s
DL2 Dalian 16.60 280 P Pn 20 44 57.7 +0.8
DL2 eS Sn 20 47 59.0 -1.3
DL2 pmax pmax
comp=Z,58nm,0.9s
DL2 pmax pmax
comp=Z,110nm,4.7s
DL2 LR LR
comp=Z,290nm,20.0s
DL2 LR LR
comp=Z,450nm,19.0s
PETK Petropavlovsk- 18.48 29 P Pn 20 45 20.9 +0.8
comp=Z,0.1nm,0.3s,baz=208,slow=9.0,SNR=2.8
PETK LR LR 20 53 05.6
comp=Z,100nm,18.4s,baz=221,slow=39
NJ2 Nanjing 20.39 261 eP P 20 45 41.7 +0.8
NJ2 S S 20 49 28.3 +0.2
NJ2 pmax pmax
comp=Z,13nm,0.5s
NJ2 LR LR
comp=Z,230nm,13.0s
NJ2 LR LR
comp=Z,430nm,9.8s
NJ2 LR LR
comp=Z,410nm,9.8s
TIA Tai'an 20.50 273 eP P 20 45 39.4 -2.7
TIA pmax pmax
comp=Z,40nm,0.8s
BJI Beijing 20.76 284 P P 20 45 41.3 -3.6
BJI S S 20 49 32.0 -3.3
BJI pmax pmax
comp=Z,23nm,1.3s
BJI pmax pmax
comp=Z,110nm,6.3s
BJI LR LR
comp=Z,92nm,8.7s
BJI LR LR
comp=Z,200nm,13.8s
BJI LR LR
comp=Z,140nm,21.1s
BJT Baijiatuau 20.77 284 eP P 20 45 41.5 -3.5
BJT pmax pmax
comp=Z,29nm,0.8s
BJT Baijiatuau 20.77 284 eP P 20 45 41.5 -3.5
comp=Z,29nm,0.8s
CLNS Chul'man 22.42 334 eP P 20 46 01.0 -1.6
CLNS e*PP sP 20 46 11.8 -1.0
CLNS e 20 46 23.2
CLNS ePPP PPP 20 46 38.1
CLNS eSS Sn 20 50 54.9 +34
CLNS e 20 57 12.4
CLNS pmax pmax
comp=Z,27nm,0.9s
CLNS pmax pmax
comp=N,16nm,0.9s
CLNS pmax pmax
comp=E,11nm,0.9s
CLNS pmax pmax
comp=E,6.0nm,1.2s
CLNS pmax pmax
comp=N,20nm,1.0s
CLNS pmax pmax
comp=Z,11nm,0.8s
CLNS MLR MLR
comp=Z,280nm,15.0s
CLNS MLR MLR
comp=N,282nm,15.0s
CLNS MLR MLR
comp=E,81nm,12.0s
HHC Hu-ho-hao-te 24.24 287 eP P 20 46 22.9 +2.0
HHC sP sP 20 46 32.6 +1.0
HHC PP PnPn 20 46 58.2 +7.3
HHC S S 20 50 35.9 -2.1
HHC sS sS 20 50 48.8 -1.5
HHC SS SnSn 20 51 28.5 +7.5
HHC pmax pmax
comp=E,30nm,1.0s
HHC pmax pmax
comp=E,95nm,4.3s
HHC LR LR
comp=E,110nm,14.6s
HHC LR LR
comp=E,340nm,14.6s
HHC LR LR
comp=E,360nm,13.5s
WHN Wuhan 24.52 261 P P 20 46 23.5 +0.1
WHN S S 20 50 41.7 -0.8
WHN pmax pmax
comp=E,60nm,1.0s
WHN LR LR
comp=E,220nm,8.6s
WHN LR LR
comp=E,750nm,14.4s
WHN LR LR
comp=E,810nm,15.3s
CIT Chita 24.86 314 eP P 20 46 25.8 -0.6
CIT e 20 46 34.4
CIT pmax pmax
comp=Z,163nm,1.1s
YAK Yakutsk 25.55 346 P P 20 46 31.8 -0.5
comp=Z,32nm,0.9s,baz=151,slow=1.6,SNR=12
YAK Yakutsk 25.55 346 eP P 20 46 31.7 -0.7
YAK e 20 47 09.4
YAK e 20 50 01.4
YAK eS S 20 50 55.1 -3.2
YAK eSS SnSn 20 51 52.1 -0.4
YAK e 20 57 24.2
YAK pmax pmax
comp=Z,16nm,0.9s
YAK pmax pmax
comp=N,12nm,1.3s
YAK pmax pmax
comp=E,6.0nm,1.1s
YAK pmax pmax
comp=Z,87nm,3.4s
YAK pmax pmax
comp=N,75nm,4.9s
YAK pmax pmax
comp=E,33nm,4.0s
YAK smax smax
comp=N,30nm,2.5s
YAK smax smax
comp=E,33nm,2.8s
YAK Yakutsk 25.55 346 eP P 20 46 30.4 -2.0
comp=E,34nm,0.9s
SEY Seymchan 25.82 10 P P 20 46 35.9 +1.0
comp=E,9.4nm,0.9s,baz=193,slow=6.6,SNR=19
BOD Bodaibo 27.45 326 eP P 20 46 48.5 -1.1
BOD pmax pmax
comp=Z,20nm,1.0s
XAN Xi'an 27.56 272 P P 20 46 49.8 -1.1
XAN pP pP 20 46 57.8 -0.6
XAN sP sP 20 47 00.8 -0.7
XAN pmax pmax
comp=Z,6.0nm,0.6s
XAN pmax pmax
comp=Z,41nm,4.7s
XAN LR LR
comp=Z,88nm,13.4s
XAN LR LR
comp=Z,130nm,11.3s
XAN LR LR
comp=Z,140nm,11.8s
H11N2 WAKE ISLAND Hy 27.67 124 T T 21 16 08.4
baz=316,slow=75,SNR=1003
H11N1 WAKE ISLAND Hy 27.68 124 T T 21 16 06.2
baz=316,slow=75,SNR=831
H11N3 WAKE ISLAND Hy 27.69 124 T T 21 16 10.1
baz=316,slow=75,SNR=1030
SONA1 Songino Array 28.24 302 eP P 20 46 56.7 -0.2
SONM Songino Array 28.24 302 P P 20 46 56.9 -0.1
comp=Z,7.3nm,0.6s,baz=118,slow=8.5,SNR=60
SONM LR LR 20 58 30.4
comp=Z,176nm,18.9s,baz=111,slow=37
H11S1 WAKE ISLAND Hy 28.43 126 T T 21 16 58.3
baz=319
H11S3 WAKE ISLAND Hy 28.43 126 T T 21 16 59.3
baz=319
H11S2 WAKE ISLAND Hy 28.45 126 T T 21 17 02.9
baz=319
ENH Enshi 28.46 265 eP P 20 46 57.7 -1.2
comp=Z,23nm,0.7s
ZAK Zakamensk 30.63 307 eP P 20 47 16.8 -1.2
ZAK pmax pmax
comp=Z,8.0nm,1.1s
TLY Talaya 30.63 310 eP P 20 47 18.2 +0.2
TLY eS S 20 52 18.5 -0.1
TLY pmax pmax
comp=Z,11nm,0.9s
TLY MLR MLR
comp=Z,277nm,16.0s
LZH Lanzhou 30.98 279 eP P 20 47 29.0 +7.6
LZH pP sP 20 47 41.1 +9.0
LZH sP pP 20 47 45.9 +17
LZH pmax pmax
comp=Z,35nm,1.4s
LZH pmax pmax
comp=Z,48nm,4.2s
LZH LR LR
comp=N,180nm,12.4s
LZH LR LR
comp=E,340nm,16.4s
LZH LR LR
comp=Z,280nm,15.9s
MOY Mondy 32.25 309 eP P 20 47 32.3 -0.1
GYA Guiyang 32.40 260 ⇑*i*P P 20 47 32.9 -1.0
GYA pP pP 20 47 42.6 +1.2
GYA PP PnPn 20 48 41.2 +0.2
GYA S S 20 52 44.4 -2.5
GYA sS sS 20 52 59.0 -0.3
GYA SS SnSn 20 54 38.7 -1.6
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,480nm,17.8s
GYA LR LR
comp=Z,440nm,18.0s
GYA LR LR
comp=Z,400nm,18.3s
CD2 Chengdu 32.73 270 eP P 20 47 35.8 -0.9
CD2 sP sP 20 47 48.0 +0.6
CD2 PP PP 20 48 49.3 -1.5
CD2 S S 20 52 49.4 -2.5
CD2 sS sS 20 53 03.9 -0.5
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.4s
BILL Bilibino 32.98 16⇓eP P 20 47 39.8 +1.5
BILL *e* 20 48 47.5
BILL pmax pmax
comp=Z,4.0nm,1.2s
GTA Gaotai 33.35 286 eP P 20 47 42.2 +0.1
GTA pP pP 20 47 46.3 -3.4
GTA sP sP 20 47 50.1 -2.7
GTA pmax pmax
comp=Z,21nm,1.0s
QIZ Qiongzhong 34.22 246 P P 20 47 50.8 +1.1
QIZ S S 20 53 18.4 +3.5
QIZ LR LR
comp=Z,120nm,11.2s
QIZ LR LR
comp=Z,130nm,14.9s
QIZ LR LR
comp=Z,170nm,14.9s
TIXI Tiksi 34.64 352⇑eP P 20 47 54.1 +1.4
TIXI pmax pmax
comp=Z,2.0nm,0.7s
KMI Kunming 36.13 261 P P 20 48 06.5 +0.2
KMI pmax pmax
comp=Z,12nm,1.1s
KMI pmax pmax
comp=Z,76nm,5.2s
KMI LR LR
comp=Z,140nm,15.7s
KMI LR LR
comp=Z,170nm,17.2s
KMI LR LR
comp=Z,210nm,20.0s
WMQ Urumqi 41.43 296 P P 20 48 51.1 +0.6
WMQ pP pP 20 48 58.2 0.0
WMQ sP sP 20 49 01.4 +0.1
WMQ PcP PcP 20 50 47.2 -0.8
WMQ S S 20 55 05.4 +1.4
WMQ pmax pmax
comp=Z,34nm,0.7s
WMQ pmax pmax
comp=Z,130nm,4.6s
WMQ LR LR
comp=Z,200nm,14.2s
WMQ LR LR
comp=Z,290nm,20.3s
WMQ LR LR
comp=Z,360nm,21.4s
ZAA0 Zalesovo Array 42.17 312 eP P 20 48 55.6 -0.6
ZALV Zalesovo Beam 42.17 312 P P 20 48 56.2 0.0
comp=Z,6.6nm,0.5s,baz=88,slow=7.2,SNR=44
ZALV PcP PcP 20 50 50.6 +0.4
comp=Z,1.4nm,0.6s,baz=102,slow=4.2,SNR=3.3
ZALV LR LR 21 07 05.4
comp=Z,190nm,18.3s,baz=70,slow=37
CHTO Chiang Mai 42.51 256 eP P 20 48 59.7 +0.3
CHTO pmax pmax
comp=Z,21nm,1.8s
CHTO Chiang Mai 42.51 256 eP P 20 48 59.7 +0.3
comp=Z,21nm,1.8s
CMAR Chiang Mai Arr 42.72 256 P P 20 49 01.5 +0.4
comp=Z,1.9nm,0.8s,baz=50,slow=6.2,SNR=13
CMAR LR LR 21 07 50.8
comp=Z,40nm,19.6s,baz=55,slow=38
CM01 Chiang Mai Arr 42.73 256 eP P 20 49 01.0 -0.2
NRIK Noril'sk 43.00 335 LR LR 21 07 54.9
comp=Z,238nm,18.7s,baz=100,slow=38
NVS Novosibirsk 43.07 313⇓*i*P P 20 49 03.5 0.0
NVS pmax pmax
comp=Z,14nm,1.4s
NVS pmax pmax
comp=N,4.0nm,1.3s
NVS pmax pmax
comp=E,7.0nm,1.3s
LSA Lhasa 43.19 275 P P 20 49 08.2 +2.8
LSA pmax pmax
comp=E,5.0nm,1.5s
LSA Lhasa 43.19 275 P P 20 49 03.0 -2.4
LSA pmax pmax
comp=Z,9.0nm,0.8s
LSA Lhasa 43.19 275 P P 20 49 03.0 -2.4
comp=Z,8.6nm,0.8s
SVW2 Sparrevohn 44.25 38 eP P 20 49 15.8 +2.8
comp=Z,11nm,1.3s
MK01 Makanchi Array 44.60 302 eP P 20 49 15.6 -0.4
MK31 Makanchi Array 44.60 302 eP P 20 49 16.1 +0.1
MK31 Makanchi Array 44.60 302 eP P 20 49 16.1 +0.1
MKAR Makanchi Array 44.60 302 P P 20 49 15.5 -0.5
comp=Z,8.1nm,0.6s,baz=87,slow=9.1,SNR=70
MKAR LR LR 21 09 10.0
comp=Z,66nm,18.1s,baz=78,slow=38
MKAR Makanchi Array 44.60 302 eP P 20 49 16.1 +0.1
CAST Castle Rocks 45.98 35 eP P 20 49 33.4 +6.7
comp=Z,18nm,1.9s
KURK Kurchatov 46.28 308 eP P 20 49 28.2 -1.0
KURK Kurchatov 46.28 308 eP P 20 49 28.2 -1.0
comp=Z,160nm,0.8s
KURBB Kurchatov Arra 46.36 308 P P 20 49 29.4 -0.4
comp=Z,12nm,0.6s,baz=82,slow=8.2,SNR=152
PDGK Podgornoye 47.35 298 P P 20 49 37.3 -0.3
PDGK pmax pmax
comp=Z,9.0nm,1.0s
RAMN Ramite 48.00 274 eP P 20 49 43.2 0.0
comp=Z,37nm,0.7s
GUN Gumba 48.13 276 eP P 20 49 44.7 +0.4
comp=Z,43nm,0.5s
IL1 Eielson Array 48.26 33 eP P 20 49 45.7 +1.3
ILAR Eielson Array 48.26 33 P P 20 49 45.5 +1.1
comp=Z,1.1nm,0.8s,baz=264,slow=6.3,SNR=10
ILB Eielson Array 48.26 33 eP P 20 49 46.2 +1.8
KKN Kakani 48.66 276 eP P 20 49 48.4 +0.1
comp=Z,41nm,0.7s
PKIN Phulchoki 48.66 276 eP P 20 49 48.1 -0.3
comp=Z,13nm,0.6s
GKN Gorkha 49.07 276 eP P 20 49 51.5 +0.2
comp=Z,36nm,0.7s
KOLN Koldanda 49.99 277 eP P 20 49 58.6 +0.2
comp=Z,12nm,0.6s
TKM2 Tokmak 2 50.19 298 eP P 20 50 00.5 +0.8
TKM2 pmax pmax
comp=Z,14nm,0.8s
TKM2 Tokmak 2 50.19 298 eP P 20 50 00.5 +0.8
comp=Z,14nm,0.8s
PYUN Piuthan 50.32 277 eP P 20 50 01.1 +0.2
comp=Z,42nm,0.7s
VOSK Vostochnaya 50.55 312 eP P 20 50 01.9 -0.1
VOSK pmax pmax
comp=Z,9.0nm,1.0s
VOSK Vostochnaya 50.55 312 eP P 20 50 01.9 -0.1
comp=Z,9.4nm,1.0s
OTUK Ortayu 50.82 306 P P 20 50 04.3 +0.1
OTUK pmax pmax
comp=Z,7.0nm,0.8s
BVAR Borovoye Array 50.83 312 P P 20 50 03.9 -0.2
comp=Z,2.9nm,0.7s,baz=76,slow=7.9,SNR=21
BVAR PcP PcP 20 51 20.4 -0.2
comp=Z,1.4nm,0.6s,baz=90,slow=5.8,SNR=2.4
BRVK Borovoye 50.88 312*c i*P P 20 50 04.2 -0.4
BRVK pmax pmax
comp=Z,13nm,0.8s
BRVK Borovoye 50.88 312 eP P 20 50 04.5 -0.1
comp=Z,5.2nm,0.8s
FRU Bishkek 50.90 298 eP P 20 50 04.0 -0.9
AAK Ala-Archa 51.05 298 P P 20 50 05.5 -0.6
comp=Z,3.1nm,0.5s,baz=170,slow=8.5,SNR=3.8
AAK Ala-Archa 51.05 298⇓*i*P P 20 50 06.4 +0.2
AAK pmax pmax
comp=Z,17nm,1.3s
AAK Ala-Archa 51.05 298 eP P 20 50 05.6 -0.6
comp=Z,4.9nm,0.9s
KSH Kashi 51.05 294 eP P 20 50 10.1 +3.9
KSH e*p*P sP 20 50 17.4 +0.3
KSH e*s*P pP 20 50 21.0 +7.0
KSH PcS PcS 20 55 22.9 +3.3
KSH S S 20 57 23.1 +0.9
KSH SS SS 21 00 57.2 +0.1
KSH pmax pmax
comp=Z,10.0nm,1.2s
KSH pmax pmax
comp=Z,60nm,4.3s
KSH LR LR
comp=Z,90nm,7.0s
KSH LR LR
comp=Z,110nm,7.2s
KSH LR LR
comp=Z,210nm,16.8s
EKS2 Erkin-Say 51.54 298 eP P 20 50 09.2 -0.6
EKS2 pmax pmax
comp=Z,3.0nm,0.8s
EKS2 Erkin-Say 51.54 298 eP P 20 50 09.2 -0.6
comp=Z,3.5nm,0.8s
ZRNK Zerenda 51.66 312 eP P 20 50 10.4 0.0
ZRNK pmax pmax
comp=Z,9.0nm,1.0s
ZRNK Zerenda 51.66 312 eP P 20 50 10.3 0.0
comp=Z,8.7nm,1.0s
MNAS Manas 52.48 299 P P 20 50 17.4 +0.5
MNAS pmax pmax
comp=Z,9.0nm,1.1s
KKAR Karatay Array 53.65 300 eP P 20 50 25.2 -0.1
KKAR pmax pmax
comp=Z,2.0nm,0.6s
KKAR Karatay Array 53.65 300 eP P 20 50 25.1 -0.1
comp=Z,2.4nm,0.6s
GSI Gunungsitoli 55.11 240 eP P 20 50 37.4 +1.2
comp=Z,36nm,1.5s
SVE Sverdlovsk 55.26 318 eP P 20 50 37.0 +0.3
SVE pmax pmax
comp=Z,17nm,1.1s
SVE MLR MLR
comp=Z,329nm,16.0s
ARU Arti 56.47 318 P P 20 50 44.7 -0.7
comp=Z,5.1nm,0.8s,baz=6.4,slow=1.9,SNR=11
ARU Arti 56.47 318*c i*P P 20 50 45.2 -0.2
ARU 20 51 42.5
ARU 20 52 49.5
ARU S S 20 58 33.6 -1.2
ARU pmax pmax
comp=Z,8.0nm,1.0s
ARU MLR MLR
comp=Z,278nm,17.0s
ARU Arti 56.47 318 eP P 20 50 45.0 -0.4
comp=Z,16nm,1.3s
WRAB Tennant Creek 57.99 189⇓eP P 20 50 57.2 +0.7
WRAB pmax pmax
comp=Z,40nm,1.8s
WB2 Warramunga Arr 58.00 189 eP P 20 50 57.7 +1.2
comp=Z,13nm,1.2s
WRA Warramunga Arr 58.00 189 P P 20 50 57.4 +0.9
comp=Z,4.6nm,0.6s,baz=7.3,slow=7.1,SNR=70
KBL Kabul 58.12 291 eP P 20 50 57.4 -0.3
KBL pmax pmax
comp=Z,12nm,1.0s
KBL Kabul 58.12 291 eP P 20 50 57.4 -0.3
comp=Z,12nm,1.0s
ABKAR Akbulak array 58.24 310 eP P 20 50 57.9 -0.1
AKTO Aktyubinsk 58.94 312 P P 20 51 02.5 -0.3
comp=Z,4.2nm,0.8s,baz=79,slow=12,SNR=12
ASAR Alice Springs 61.72 189 P P 20 51 23.4 +1.3
comp=Z,1.4nm,0.6s,baz=16,slow=6.7,SNR=25
ARCES ARCESS Array B 63.63 340 P P 20 51 34.4 +0.1
comp=Z,2.9nm,0.9s,baz=52,slow=7.9,SNR=5.8
KLMR Klimovskoe 63.65 328 eP P 20 51 33.3 -1.3
KLMR pmax pmax
comp=Z,9.0nm,1.5s
GEYT Alibeck 64.38 299 P P 20 51 39.8 0.0
comp=Z,3.6nm,0.7s,baz=356,slow=2.1,SNR=12
GEYT LR LR 21 22 24.1
comp=Z,75nm,18.0s,baz=140,slow=39
OBN Obninsk 68.09 324⇓eP P 20 52 03.7 +0.5
OBN *e* 20 54 34.6
OBN pmax pmax
comp=Z,5.0nm,1.0s
OBN MLR MLR
comp=Z,96nm,15.0s
FINES FINESS Array B 68.61 333 P P 20 52 05.9 -0.5
comp=Z,4.1nm,0.7s,baz=57,slow=7.3,SNR=12
FINES LR LR 21 24 10.1
comp=Z,67nm,19.7s,baz=33,slow=38
VSR Storozhevoye 69.03 319 eP P 20 51 58.9 -10
VSR pmax pmax
comp=Z,10.0nm,0.8s
STKA Stephens Creek 69.35 181 P P 20 52 11.0 -0.2
comp=Z,6.4nm,1.1s,baz=330,slow=20,SNR=3.4
K05A Summer Lake 69.63 51 eP P 20 52 16.5 +3.2
comp=Z,28nm,1.8s
KVAR Kislovodsk Arr 71.18 311 P P 20 52 23.5 +0.8
comp=Z,6.7nm,0.8s,baz=264,slow=3.8,SNR=8.2
KIV Kislovodsk 71.19 311 eP P 20 52 23.8 +1.1
KIV pmax pmax
comp=Z,13nm,0.9s
KIV MLR MLR
comp=Z,83nm,18.0s
KIV Kislovodsk 71.19 311 eP P 20 52 24.3 +1.6
comp=Z,14nm,1.0s
KBZ Khabaz 71.19 311 P P 20 52 22.5 0.0
comp=Z,5.3nm,0.9s,baz=6.5,slow=2.2,SNR=13
NEY Neytrino 71.57 311⇑eP P 20 52 26.7 +1.6
NEY pmax pmax
comp=Z,1.0nm,0.8s
SOC Sochi 73.16 312 eP P 20 52 32.8 -1.5
SOC ePPP PPP 20 57 05.0
SOC eS S 21 01 57.5 -3.0
SOC eSS SS 21 06 40.1 -1.0
SOC pmax pmax
comp=Z,9.0nm,0.6s
SOC MLR MLR
comp=Z,117nm,16.0s

ANN	Anapa	73.74	314	eP	P	20 52 34.3	-3.4
ANN				e*PP	pP	20 52 43.9	-1.9
ANN				ePPP	PPP	20 57 01.9	
ANN				eS	SKiKP	21 02 01.3	-4.0
ANN				pmax	pmax		
	comp=Z,20nm,1.5s						
NB2	NORSAR Subarra	73.86	338	P	P	20 52 38.4	+0.2
	comp=Z,1.6nm,0.6s,baz=38,slow=6.2						
NOA	NORSAR Array B	73.86	338	P	P	20 52 38.6	+0.3
	comp=Z,2.8nm,0.7s,baz=39,slow=6.0,SNR=13						
NOA				LR	LR	21 27 57.0	
	comp=Z,72nm,19.7s,baz=50,slow=38						
AKASG	Malin Array Be	74.32	323	P	P	20 52 40.9	-0.1
	comp=Z,1.7nm,0.4s,baz=45,slow=5.9,SNR=10						
AKASG				LR	LR	21 28 01.2	
	comp=Z,76nm,19.1s,baz=15,slow=38						
KIEV	Kiev	74.33	323	ceP	P	20 52 40.7	-0.3
KIEV				pmax	pmax		
	comp=Z,6.0nm,0.9s						
KIEV	Kiev	74.33	323	eP	P	20 52 41.1	0.0
	comp=Z,5.2nm,0.8s						
PDAR	Pinedale Array	76.36	46	P	P	20 52 53.7	+0.5
	comp=Z,0.7nm,0.6s,baz=249,slow=2.5,SNR=6.0						
SORM	Soroca	76.45	321	⇑iP	P	20 52 53.1	-0.2
SORM	Soroca	76.45	321	⇑P	P	20 52 53.1	-0.2
BUR08	Bucovina Ar. S	78.33	322	eP	P	20 53 04.6	+0.6
BURAR	Bucovina Array	78.34	322	⇑iP	P	20 53 04.6	+0.6
BURAR	Bucovina Array	78.34	322	⇑P	P	20 53 04.6	+0.6
TESR	Tescani	78.40	321	⇓iP	P	20 53 04.9	+0.6
VRI	Vrincioaia	78.81	320	⇑iP	P	20 53 08.3	+1.8
VRI	Vrincioaia	78.81	320	⇑P	P	20 53 08.3	+1.8
OJC	Ojcow	78.97	327	eP	P	20 53 08.3	+1.0
OJC	Ojcow	78.97	327	eP	P	20 53 08.3	+1.0
BRTR	Keskin Array B	79.12	312	P	P	20 53 09.0	+0.5
	comp=Z,0.6nm,0.4s,baz=116,slow=2.9,SNR=6.4						
BRTR				LR	LR	21 31 26.5	
	comp=Z,25nm,18.8s,baz=58,slow=38						
DOPR	Dopca	79.41	321	⇑iP	P	20 53 12.1	+2.3
MLR	Muntele Rosu	79.46	320	P	P	20 53 11.0	+0.8
	comp=Z,0.2nm,0.4s,baz=352,slow=8.7,SNR=5.2						
MLR	Muntele Rosu	79.46	320	⇑iP	P	20 53 11.2	+0.9
MLR	Muntele Rosu	79.46	320	⇑P	P	20 53 11.2	+0.9
BR231	Keskin MP Arra	79.55	313	eP	P	20 53 09.9	-0.9
OKC	Ostrava-Krasne	79.97	327	AMS	AMS	21 31 20.0	
	comp=Z,100nm,16.7s						
ARR	Arges	80.21	321	⇓iP	P	20 53 15.9	+1.7
MORC	Moravsky Berou	80.27	327	⇑iP	P	20 53 15.5	+1.1
MORC	Moravsky Berou	80.27	327	eP	P	20 53 15.6	+1.1
MORC	Moravsky Berou	80.27	327	eP	P	20 53 15.6	+1.2
DPC	Dobruska-Polom	80.35	328	eP	P	20 53 16.3	+1.4
DPC				epP	sP	20 53 25.4	-0.6
DPC	Dobruska-Polom	80.35	328	eP	P	20 53 16.3	+1.4
DPC				e		20 53 25.4	
HUMR	Humele	80.62	320	⇓iP	P	20 53 16.5	+0.1
VYHS	Vyhne	80.67	326	eP	P	20 53 17.5	+0.9
VYHS				e		20 56 22.3	
VYHS	Vyhne	80.67	326	eP	P	20 53 17.5	+0.9
VYHS				ePP	PP	20 56 22.2	+2.4
BRG	Berggiesshubel	80.91	330	eP	P	20 53 19.0	+1.2
	comp=Z,2.7nm,0.7s						
BRG				e		20 53 27.3	
	comp=Z,5.1nm,1.1s						
BRG	Berggiesshubel	80.91	330	eP	P	20 53 19.0	+1.2
BRG				e		20 53 27.3	
BRG				pmax	pmax		
	comp=Z,3.0nm,0.7s						
BRG				pmax	pmax		
	comp=Z,5.0nm,1.2s						
PVCC	Panska Ves	80.92	329	eP	P	20 53 19.3	+1.4
PVCC				epP	sP	20 53 27.9	-1.2
PVCC				AMS	AMS	21 31 50.0	
	comp=Z,200nm,17.7s						
PVCC	Panska Ves	80.92	329	eP	P	20 53 19.3	+1.4
PVCC				e		20 53 27.9	
PVCC				MLR	MLR		
	comp=Z,200nm,17.7s						
CLL	Collm	80.93	331	eP	P	20 53 16.0	-1.9
CLL				i		20 53 27.7	
	comp=Z,6.0nm,1.0s						
CLL	Collm	80.93	331	eP	P	20 53 16.0	-1.9
CLL				i		20 53 27.7	
VRAC	Vranov	81.03	328	P	P	20 53 18.2	-0.2
	comp=Z,2.0nm,0.8s,baz=59,slow=5.4,SNR=3.1						
VRAC	Vranov	81.03	328	⇓iP	P	20 53 18.6	+0.1
GZR	Gura Zlata	81.11	322	⇑iP	P	20 53 19.4	+0.4
GZR	Gura Zlata	81.11	322	⇑P	P	20 53 19.4	+0.4
GOPC	GO Pecny, Ondr	81.31	329	AMS	AMS	21 32 00.0	
PRU	Pruhonice	81.36	329	eP	P	20 53 21.4	+1.2
PRU				epP	sP	20 53 30.8	-0.6
PRU	Pruhonice	81.36	329	eP	P	20 53 21.4	+1.2
PRU				e		20 53 30.8	
ASF	Jabal al Asfar	81.94	305	P	P	20 53 24.3	+0.6
	comp=Z,1.4nm,0.5s,baz=332,slow=5.1,SNR=4.2						
MDVR	Moldovita	82.07	322	⇑iP	P	20 53 24.3	+0.2
MMAI	Mount Meron Ar	82.37	306	P	P	20 53 26.6	+0.7
	comp=Z,2.2nm,0.6s,baz=40,slow=9.2,SNR=5.8						
MMAI				LR	LR	21 33 27.0	
	comp=Z,43nm,19.2s,baz=140,slow=38						
CONA	Conrad Observa	82.40	327	iP	pP	20 53 35.9	+1.8
	comp=Z,2.7nm,0.7s						
KHC	Kasperske Hory	82.42	329	eP	P	20 53 26.5	+0.7
KHC				ePCP	PcP	20 53 30.3	-0.7
KHC				epP	pP	20 53 35.8	+1.7
KHC	Kasperske Hory	82.42	329	eP	P	20 53 26.5	+0.7
KHC				e		20 53 30.3	
KHC				e		20 53 35.8	
KHC	Kasperske Hory	82.42	329	eP	P	20 53 26.2	+0.4
GERES	GERESS Array B	82.59	329	P	P	20 53 26.8	-0.1
	comp=Z,0.5nm,0.4s,baz=52,slow=6.4,SNR=6.3						
GERES				LR	LR	21 33 12.2	
	comp=Z,99nm,18.4s,baz=48,slow=38						
VTS	Vitosha	82.91	320	⇓iP	P	20 53 30.0	+1.3
VTS	Vitosha	82.91	320	⇓P	P	20 53 30.0	+1.3
VTS	Vitosha	82.91	320	eP	P	20 53 29.9	+1.3
ARSA	Arzberg	83.07	327	iPP	pP	20 53 37.2	-0.3
	comp=Z,1.5nm,0.7s						
MOA	Molln	83.14	328	iPP	pP	20 53 36.9	-0.9
	comp=Z,4.4nm,1.4s						
ANMO	Albuquerque	83.27	51	⇑eP	P	20 53 33.4	+2.7
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.2s						
SOKA	Soboth	83.72	327	iPcP	P	20 53 33.4	+0.7
	comp=Z,5.7nm,1.3s						
OBKA	Obir	84.06	327	iPcP	P	20 53 39.4	+5.0
	comp=Z,4.2nm,1.1s						
KBA	Koelnbreinsper	84.13	328	iPP	pP	20 53 44.5	+1.3
	comp=Z,1.9nm,0.6s						
MYKA	Terra Mystica	84.36	327	iP	P	20 53 36.1	+0.2
	comp=Z,2.0nm,0.5s						
WTTA	Wattenberg	84.69	329	iPcP	P	20 53 43.1	+5.3
	comp=Z,3.5nm,0.9s						
ABTA	Abfaltersbach	84.74	328	eP	P	20 53 34.8	-3.1
	comp=Z,3.5nm,1.3s						
MOTA	Moosalm	84.84	329	iPcP	P	20 53 39.2	+0.7
	comp=Z,2.5nm,0.7s						
RETA	Reutte	84.86	330	iPP	pP	20 53 48.0	+1.2
	comp=Z,4.7nm,0.8s						
BFO	Black Forest	85.13	331	iP	P	20 53 41.3	+1.6
FETA	Feichten	85.25	329	iP	P	20 53 40.1	-0.5
	comp=Z,3.2nm,0.8s						
DAVA	Damuels	85.38	330	eP	P	20 53 39.6	-1.6
	comp=Z,3.7nm,1.1s						
FUORN	Ofenpass-Fuorn	85.77	329	eP	P	20 53 44.2	+0.9
TXAR	Lajitas Array	88.80	53	P	P	20 53 59.7	+1.7
	comp=Z,0.3nm,0.5s,baz=312,slow=2.9,SNR=7.3						
TXAR				LR	LR	21 28 22.7	
	comp=Z,16nm,21.1s,baz=0.0,slow=32						
PBMO	Poplar Bluff	90.98	40	eP	P	20 54 13.3	+5.4
CPCT	Cooper Cave	94.94	37	eP	P	20 54 33.0	+6.8
ESDC	Sonseca Array	97.04	335	LR	LR	21 43 31.3	
	comp=Z,36nm,18.2s,baz=85,slow=39						

*ISCJB **03** 20:44:13.4±0.5,39.10N±0.04×29.00E±0.03,h5km±8km, Error ellipse: s-maj=6.4km s-min=4.3km az=166.7*
*DDA **03** 20:44:13.2,39.06N×29.02E,h7km,Md2.6*
*ISK **03** 20:44:13.5,39.10N×29.02E,h6km,MD2.6*
*CSEM **03** 20:44:13.8±0.1,39.09N×29.01E,h5km,MD2.6, Error ellipse: s-maj=2.7km s-min=2.4km az=141.0*
ISC 03 20:44:13.6±0.9,**39.10N**±0.02×**29.01E**±0.02,**h11**km±9km, **n31**,σ0**965**/**42**,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	255	iP	Pg	20 44 18.5	-0.1
DEMI				iS	Sg	20 44 21.9	0.0
DEMI	Demirci	0.23	255	P	Pg	20 44 18.5	-0.1
DEMI				S	Sg	20 44 21.9	0.0
GEDZ	Gediz	0.32	101	ePG	Pg	20 44 20.2	+0.1
GEDZ				eSG	Sg	20 44 25.0	+0.5
GEDZ	Gediz	0.32	101	ePg	Pg	20 44 20.3	+0.1
GEDZ				eSg	Sg	20 44 25.0	+0.5
GDZ	Gediz	0.37	92	iP	Pg	20 44 20.8	-0.3
GDZ				iS	Sg	20 44 25.6	-0.5
GDZ	Gediz	0.37	92	P	Pg	20 44 20.8	-0.3
GDZ				S	Sg	20 44 25.6	-0.5
TVSB	Tavsanli	0.49	46	ePG	Pg	20 44 23.2	-0.2
TVSB	Tavsanli	0.49	46	ePg	Pg	20 44 23.2	-0.2
KULA	Kula-Manisa	0.65	205	ePG	Pg	20 44 26.4	+0.2
KULA	Kula-Manisa	0.65	205	ePg	Pg	20 44 26.4	+0.2
MANT	Manisa	0.70	210	iP	Pg	20 44 26.5	-0.8
MANT				iS	Sg	20 44 35.5	-1.1
MANT	Manisa	0.70	210	P	Pg	20 44 26.5	-0.8
MANT				S	Sg	20 44 35.5	-1.1
KHL	Karahalli	0.88	152	ePG	Pb	20 44 30.9	0.0
KHL				eSG	Sb	20 44 42.5	-0.2
KHL	Karahalli	0.88	152	ePg	Pb	20 44 30.9	0.0
KHL				eSg	Sb	20 44 42.5	-0.2
AKS	Akhisar	0.96	257	ePG	Pb	20 44 32.5	+0.3
AKS	Akhisar	0.96	257	ePg	Pb	20 44 32.5	+0.3
BALB	Balikesir	1.02	302	ePG	Pb	20 44 34.0	+0.7
BALB	Balikesir	1.02	302	ePg	Pb	20 44 34.0	+0.7
IGD	Bursa	1.17	7	iP	Pg	20 44 34.6	-1.5
IGD				iS	Sg	20 44 49.2	-2.2
KCTX	Karacabey (Bur	1.26	337	ePN	Pn	20 44 37.9	+0.7
KCTX	Karacabey (Bur	1.26	337	ePn	Pn	20 44 37.9	+0.7
MDNY	Mudanya-Bursa	1.27	356	ePN	Pn	20 44 37.9	+0.7
MDNY	Mudanya-Bursa	1.27	356	ePn	Pn	20 44 37.9	+0.7
IZI	Iznik	1.28	16	ePN	Pg	20 44 38.6	+0.3
IZI	Iznik	1.28	16	ePn	Pg	20 44 38.6	+0.3
AYDB	Zeytinkoy-Aydi	1.45	217	ePN	Pg	20 44 41.2	-0.3
AYDB	Zeytinkoy-Aydi	1.45	217	ePn	Pg	20 44 41.2	-0.3
ARMT	Armutlu	1.46	356	ePN	Pb	20 44 41.3	+0.4
ARMT	Armutlu	1.46	356	ePn	Pb	20 44 41.3	+0.4
GULT	Gulveren	1.76	41	ePN	Pb	20 44 45.7	-0.3
GULT	Gulveren	1.76	41	ePn	Pb	20 44 45.7	-0.3

*NIED **03** 21:04:00,38.40N×142.20E,h35km,Mw3.8 Best double couple: M0 6.58000×10^14 NP1:φs=284.00000°,δ11.00000°, λ173.00000°. NP2:φs21.00000°,δ89.00000°,λ79.00000°.*
*ISCJB **03** 21:04:49.3±0.9,38.35N±0.04×142.22E±0.07,h39km±9km, mb3.7/7,MS2.8/1,Error ellipse: s-maj=10.2km s-min=5.1km az=19.0*
*JMA **03** 21:04:49.6±0.1,38.40N×142.19E,h37km±1km,M3.9*
JMA Felt I J1.
*IDC **03** 21:04:51.2±0.8,38.31N×142.23E,h41km±7km,mb3.5/7, mb1 3.7/11,mb1mx3.5/35,mbtmp3.7/11,ML3.3/3,MS2.9/6, Ms1 2.9/6,ms1mx2.7/31,Error ellipse: s-maj=23.6km s-min=12.6km az=95.0*
ISC 03 21:04:50.3±0.9,**38.35N**±0.04×**142.22E**±0.07,**h32**km±5km, **n33**,σ1**956**/**40**,**mb3.8/7**,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.69	279	P	Pn	21 05 02.6	-1.2
JIO				S	Sb	21 05 11.4	-1.7
OFUJ	Ofunato	0.84	330	P	Pn	21 05 04.4	-1.6
OFUJ				S	Sn	21 05 14.9	-2.4
JMK	Ichinoseki	0.98	308	P	Pn	21 05 06.7	-1.2
JMK				S	Sn	21 05 18.8	-1.9
JOU	Okura	1.22	271	P	Pn	21 05 10.7	-0.4
JOU				S	Sn	21 05 26.0	-0.6
JMM	Marumori	1.22	247	P	Pn	21 05 10.0	-1.1
JMM				S	Sn	21 05 25.1	-1.5
JOM	Ohasama	1.33	328	P	Pn	21 05 11.9	-0.8
JOM				S	Sn	21 05 28.1	-1.2
JFK	Kawauchi	1.45	228	P	Pn	21 05 13.2	-1.1
JFK				S	Sn	21 05 29.9	-2.3
JYK	Kaneyama	1.56	292	P	Pn	21 05 15.4	-0.4
JYK				S	Sn	21 05 35.0	0.0
JRG	Rokugo	1.62	311	P	Pn	21 05 16.3	-0.3
JYS	Shirataka	1.70	266	P	Pn	21 05 17.7	0.0
JYS				eS	Sn	21 05 38.3	0.0
JFT	Otama	1.70	241	P	Pn	21 05 18.0	+0.2
JFT				S	Sn	21 05 38.4	-0.1
MJAR	Matsushiro Arr	3.66	242	P	Pn	21 05 46.9	+2.1
	2.4nm,0.3s,baz=53,slow=9.4,SNR=21						
MJAR				LR	LR	21 07 25.2	
	comp=Z,150nm,18.5s,baz=30,slow=42						
MAT	Matsushiro	3.67	242	P	Pn	21 05 47.0	+2.2
MAT				S	Sn	21 06 27.1	+0.2
JHJ	Hachijo jima 2	5.58	201	P	Pn	21 06 10.9	-0.2
	7.1nm,0.3s,baz=42,slow=18,SNR=3.9						
JHJ				S	Sn	21 07 10.6	-3.6
	11nm,0.3s,baz=50,slow=20,SNR=1.8						
ASAJ	Asahikawa	5.77	3	P	Pn	21 06 14.5	+0.9
	0.6nm,0.3s,baz=201,slow=12,SNR=6.3						
ASAJ				S	Sn	21 07 20.9	+2.3
	0.6nm,0.3s,baz=111,slow=17,SNR=2.2						
USRK	Ussuriysk Ar.	9.66	310	P	Pn	21 07 08.8	+1.8
	0.1nm,0.3s,baz=114,slow=14,SNR=4.7						
USRK				LR	LR	21 10 40.5	
	comp=Z,54nm,18.9s,baz=185,slow=36						
JNU	Nakatsue	10.59	244	LR	LR	21 11 47.1	
	comp=Z,65nm,20.2s,baz=293,slow=39						
KSRS	Korea Array	11.33	270	P	Pn	21 07 34.1	+4.3
	0.1nm,0.3s,baz=96,slow=14,SNR=4.7						
KSRS				LR	LR	21 11 21.5	
	comp=Z,52nm,19.6s,baz=74,slow=34						
KLR	Kul'dur	13.23	329	LR	LR	21 12 56.3	
	comp=Z,56nm,19.2s,baz=138,slow=36						
SONM	Songino Array	27.61	302	LR	LR	21 22 06.2	
	comp=Z,26nm,18.9s,baz=138,slow=37						
H11N2	WAKE ISLAND Hy	28.31	124	T	T	21 40 30.8	
	baz=316,slow=75,SNR=149						
H11N1	WAKE ISLAND Hy	28.32	124	T	T	21 40 29.2	
	baz=316,slow=75,SNR=76						
H11N3	WAKE ISLAND Hy	28.33	124	T	T	21 40 30.2	
	baz=316,slow=75,SNR=99						
H11S1	WAKE ISLAND Hy	29.08	126	T	T	21 41 28.7	
	baz=318,slow=76,SNR=14						
H11S3	WAKE ISLAND Hy	29.08	126	T	T	21 41 28.1	
	baz=318,slow=76,SNR=35						
H11S2	WAKE ISLAND Hy	29.09	126	T	T	21 41 29.2	
	baz=318,slow=76,SNR=13						
ZALV	Zalesovo Beam	41.51	311	P	P	21 12 33.9	-0.4
	1.3nm,0.5s,baz=86,slow=9.1,SNR=7.8						
MKAR	Makanchi Array	43.97	301	P	P	21 12 54.2	-0.2
	0.4nm,0.4s,baz=84,slow=7.3,SNR=6.7						
ILAR	Eielson Array	48.04	33	P	P	21 13 26.6	+0.4
	0.3nm,0.8s,baz=246,slow=6.8,SNR=3.5						
WRA	Warramunga Arr	58.45	189	P	P	21 14 42.3	-0.8
	0.6nm,0.4s,baz=6.4,slow=7.2,SNR=17						
WRA				pP	pP	21 14 54.4	+1.5
	1.0nm,0.8s,baz=7.4,slow=7.2,SNR=3.9						
ASAR	Alice Springs	62.18	189	P	P	21 15 08.4	-0.2
	0.6nm,0.7s,baz=2.7,slow=4.6,SNR=8.0						
ASAR				pP	pP	21 15 19.7	+1.3
	0.4nm,0.9s,baz=2.1,slow=5.0,SNR=1.7						
FINES	FINESS Array B	67.95	332	P	P	21 15 45.1	-0.5
	0.7nm,0.6s,baz=34,slow=7.8,SNR=3.9						
TXAR	Lajitas Array	88.82	53	P	P	21 17 41.5	+0.1
	0.2nm,0.6s,baz=306,slow=4.2,SNR=3.8						
TXAR				pP	sP	21 17 53.9	-1.3
	0.2nm,0.7s,baz=328,slow=4.4,SNR=3.4						

WBNET 03 21:06:22.0,50.20N×12.45E,h10km,MI0.4,1C-4D, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NKC	Novy Kostel	0.04	360	⇓P	Pg	21 06 23.9	-0.2
KVC	Kvetna	0.04	78	S	Sg	21 06 25.1	-0.5
VAC	Vackov	0.06	310	⇓P	Pg	21 06 24.1	-0.2
SKC	Skalna	0.06	244	⇓P	Pg	21 06 24.1	-0.1
KACW	Kace˘ov	0.07	140	S	Sg	21 06 25.7	-0.2
POCW	Po¯¸itky	0.12	354	⇑P	Pg	21 06 25.0	0.0
KRCW	Kraslice	0.14	21	S	Sg	21 06 27.4	-0.3
KOCW	Kopaniny	0.15	296	⇓P	Pg	21 06 25.4	-0.1
KOCW				S	Sg	21 06 27.7	-0.2
ZHC	Zelena Hora	0.15	215	S	Sg	21 06 27.7	-0.3

*PRU **03** 21:06:57.2,50.18N×12.39E,h2km,West Bohemia*
WBNET 03 21:06:56.8,50.20N×12.45E,h10km,MI0.6,6C-11D, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NKC	Novy Kostel	0.04	2	ePG	Pg	21 06 58.6	-0.2
NKC				eSG	Sg	21 06 59.8	-0.4
	comp=Z,6.2nm,0.1s						
NKC	Novy Kostel	0.04	2	⇓P	Pg	21 06 58.4	-0.4
NKC				S	Sg	21 06 59.8	-0.4
NKC	Novy Kostel	0.04	2	⇓P	Pg	21 06 58.6	-0.2
NKC				S	Sg	21 06 60.0	-0.2
KVC	Kvetna	0.04	79	S	Sg	21 06 59.6	-0.7
KVC	Kvetna	0.04	79	⇓P	Pg	21 06 58.5	-0.3
KVC				S	Sg	21 06 59.8	-0.5
VAC	Vackov	0.06	311	⇓P	Pg	21 06 58.6	-0.4
VAC				S	Sg	21 07 00.1	-0.4
VAC	Vackov	0.06	311	⇓P	Pg	21 06 58.8	-0.1
VAC				S	Sg	21 07 00.3	-0.2
SKC	Skalna	0.06	244	⇑P	Pg	21 06 58.6	-0.4
SKC				S	Sg	21 07 00.1	-0.5
SKC	Skalna	0.06	244	⇑P	Pg	21 06 58.8	-0.2
SKC				S	Sg	21 07 00.3	-0.2
KACW	Kace˘ov	0.07	139	S	Sg	21 07 00.2	-0.5
KACW	Kace˘ov	0.07	139	⇑P	Pg	21 06 58.9	-0.2
KACW				S	Sg	21 07 00.4	-0.3
POCW	Po¯¸itky	0.12	354	⇓P	Pg	21 06 59.5	-0.3
POCW				S	Sg	21 07 01.7	-0.3
POCW	Po¯¸itky	0.12	354	⇓P	Pg	21 06 59.7	-0.1
POCW				S	Sg	21 07 01.9	-0.1
KRCW	Kraslice	0.14	22	S	Sg	21 07 01.9	-0.6
KRCW	Kraslice	0.14	22	⇑P	Pg	21 07 00.0	-0.1
KRCW				S	Sg	21 07 02.2	-0.3
KOCW	Kopaniny	0.15	297	⇓P	Pg	21 06 59.9	-0.4
KOCW				S	Sg	21 07 02.2	-0.4
KOCW	Kopaniny	0.15	297	⇓P	Pg	21 07 00.1	-0.1
KOCW				S	Sg	21 07 02.5	-0.2
ZHC	Zelena Hora	0.15	215	⇑P	Pg	21 06 59.9	-0.4
ZHC	Zelena Hora	0.15	215	⇑P	Pg	21 07 00.1	-0.2
ZHC				S	Sg	21 07 02.4	-0.2
LACW	Lazy	0.19	142	⇓P	Pg	21 07 00.4	-0.4
LACW	Lazy	0.19	142	⇓P	Pg	21 07 00.6	-0.2
LACW				S	Sg	21 07 03.4	-0.1

IDC 03 21:31:29.1±2.6,**23.04S**×**167.97E**,**h0**km,**mb3.6**/3, **mb1 3.9**/3,**mb1mx3.6**/23,**mbtmp3.6**/3,**MS2.9**/1,**Ms1 2.9**/1, **ms1mx2.4**/26,**Error ellipse: s-maj=49.5km s-min=37.3km az=43.0,New Caledonia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	1.71	304	Pn	Pn	21 32 00.1	-0.2
	5.3nm,0.3s,baz=124,slow=13,SNR=112						
DZM				Sn	Sg	21 32 25.7	+1.6
	36nm,0.3s,baz=110,slow=20,SNR=7.3						
DZM				LR	LR	21 32 27.6	
	comp=Z,88nm,19.7s,baz=38,slow=34						
ASAR	Alice Springs	31.24	262	P	P	21 37 50.4	-0.3
	1.0nm,1.0s,baz=97,slow=9.4,SNR=4.8						
ASAR				LR	LR	21 48 44.2	
	comp=Z,24nm,21.8s,baz=93,slow=33						
WRA	Warramunga Arr	31.40	269	P	P	21 37 52.0	-0.2
	0.2nm,0.5s,baz=94,slow=8.6,SNR=7.7						
FITZ	Fitzroy Crossi	39.83	269	P	P	21 39 04.1	-0.4
	2.1nm,0.8s,baz=132,slow=10,SNR=5.0						
GERES	GERESS Array B	147.18	328	PKPbc	PKPbc	21 51 14.1	-0.3
	0.4nm,0.6s,baz=57,slow=3.6,SNR=4.6						

*NIED **03** 21:47:00,39.10N×142.90E,h26km,Mw3.9 Best double couple: M0 8.73000×10^14 NP1:φs=194.00000°,δ17.00000°, λ80.00000°. NP2:φs25.00000°,δ73.00000°,λ93.00000°.*
*BJI **03** 21:47:21.8,39.50N×143.24E,h23km,mb4.3/11,mB4.5/5*
*NEIC **03** 21:47:23.5±1.4,39.06N×143.39E,h43km±12km,mb4.9/8, Error ellipse: s-maj=20.7km s-min=10.3km az=107.0*
*ISCJB **03** 21:47:23.2±0.8,39.13N±0.04×143.11E±0.07,h38km±6km, mb4.5/20,MS3.1/5,Error ellipse: s-maj=10.1km s-min=5.5km az=19.1*
*JMA **03** 21:47:24.1±0.2,39.14N×142.92E,h26km±2km,M3.8*
*IDC **03** 21:47:25.9±0.9,39.08N×143.08E,h41km±6km,mb3.6/10, mb1 3.7/16,mb1mx3.6/45,mbtmp3.8/16,ML3.7/4,MS3.1/10, Ms1 3.2/10,ms1mx2.9/41,Error ellipse: s-maj=20.3km s-min=14.5km az=106.0*
ISC 03 21:47:23.0±0.7,**39.09N**±0.05×**143.16E**±0.07,**h27**km±3km, **h27**km:**pP-P**,**n63**,σ1**97**/**67**,**mb4.3**/20,**MS3.2**/5,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.15	296	P	Pn	21 47 41.5	-1.8
OFUJ	Ofunato	1.16	270	P	Pn	21 47 42.0	-1.4
OFUJ				S	Sn	21 47 54.7	-3.7
JTH	Tanohata	1.31	311	P	Pn	21 47 44.4	-1.2
JOM	Ohasama	1.50	286	P	Pn	21 47 47.1	-1.0
JOM				S	Sn	21 48 03.9	-2.9
JMK	Ichinoseki	1.52	266	P	Pn	21 47 47.6	-0.7
JMK				eS	Sn	21 48 04.9	-2.3
JIO	Ouri	1.55	247	P	Pn	21 47 48.3	-0.5
JANG	Nango	1.81	316	P	Pn	21 47 51.6	-0.7
JRG	Rokugo	1.98	280	P	Pn	21 47 55.0	+0.2
JOU	Okura	2.08	251	P	Pn	21 47 56.7	+0.6
JYK	Kaneyama	2.19	266	P	Pn

baz=319,slow=76,SNR=16
H11S3 WAKE ISLAND Hy 28.94 128 T T 22 24 53.4
baz=319,slow=76,SNR=16
H11S2 WAKE ISLAND Hy 28.95 128 T T 22 24 51.9
baz=319,slow=76,SNR=13
GTA Gaotai 33.33 285 *eP* **P 21 53 59.9 +1.2**
GTA pP pP 21 54 04.1 -2.7
GTA sP sP 21 54 07.8 -2.4
GTA pmax pmax
comp=Z,3.0nm,0.7s
DAV Davao City (W) 35.60 211 *eP* **P 21 54 15.6 -2.8**
221nm,0.4s
ZAA0 Zalesovo Array 41.59 311 *eP* **P 21 55 08.4 +0.2**
ZALV Zalesovo Beam 41.59 311 P **P 21 55 08.8 +0.6**
2.1nm,0.4s,baz=95,slow=7.3,SNR=15
ZALV pP **sP 21 55 20.4 +0.6**
2.5nm,0.5s,baz=90,slow=7.6,SNR=7.4
PcP **PcP 21 57 06.2 +1.2**
ZALV 0.5nm,0.5s,baz=56,slow=3.6,SNR=3.0
ZALV LR LR 22 13 04.4
comp=Z,55nm,18.4s,baz=68,slow=37
CMAR Chiang Mai Arr 43.36 255 P **P 21 55 22.9 -0.1**
0.4nm,0.7s,baz=41,slow=8.6,SNR=2.8
CMAR LR LR 22 14 47.2
comp=Z,8.0nm,18.5s,baz=220,slow=38
MK01 Makanchi Array 44.23 301 *eP* **P 21 55 30.2 +0.4**
MK31 Makanchi Array 44.23 301 *eP* **P 21 55 29.7 -0.1**
MKAR Makanchi Array 44.23 301 P **P 21 55 30.2 +0.4**
1.7nm,0.6s,baz=83,slow=9.6,SNR=19
KURK Kurchatov 45.78 307 *eP* **P 21 55 42.4 +0.4**
BWN Browne 45.92 34 *eP* **P 21 55 42.7 -0.2**
136nm,2.0s
ILAR Eielson Array 47.03 33 P **P 21 55 53.8 +2.2**
0.4nm,0.7s,baz=271,slow=6.4,SNR=7.5
ILAR pP **sP 21 56 05.4 +2.1**
0.3nm,0.6s,baz=267,slow=6.2,SNR=3.4
ZRNK Zerenda 51.06 312 *eP* **P 21 56 23.6 +0.9**
4.4nm,1.0s
MMRI Maumere 51.31 207 *eP* **P 21 56 23.8 -1.0**
84nm,1.6s
KKAR Karatay Array 53.30 299 *eP* **P 21 56 39.5 -0.1**
17nm,0.4s
ABKAR Akbulak array 57.68 310 *eP* **P 21 57 11.6 +0.7**
ABKAR *epP* **pP 21 57 11.7 -7.6**
WRAB Tennant Creek 59.28 190 *eP* **P 21 57 22.6 +0.3**
28nm,1.8s
WB2 Warramunga Arr 59.29 190 *eP* **P 21 57 22.4 +0.1**
WRA Warramunga Arr 59.30 190 P **P 21 57 23.2 +0.9**
0.3nm,0.4s,baz=6.1,slow=7.3,SNR=21
WRA pP **sP 21 57 34.4 +0.3**
0.8nm,0.5s,baz=7.3,slow=7.0,SNR=5.5
FINES FINESS Array B 67.64 332 P **P 21 58 17.8 +0.8**
0.7nm,0.6s,baz=18,slow=10,SNR=4.2
FINES pP **sP 21 58 30.0 +1.1**
1.2nm,0.5s,baz=39,slow=12,SNR=2.8
FINES LR LR 22 30 59.0
comp=Z,22nm,18.7s,baz=214,slow=39
KCPM Cahto Peak 68.58 56 *eP* P 21 58 18.4 -5.1
12μm,0.6s
KCPM *eS* **S 22 07 21.6 -2.7**
NB2 NORSAR Subarra 72.82 338 P **P 21 58 49.1 +0.3**
comp=Z,1.6nm,0.8s,baz=43,slow=5.9
NOA NORSAR Array B 72.82 338 P **P 21 58 50.1 +1.3**
comp=Z,0.9nm,0.9s,baz=43,slow=5.5,SNR=4.4
AKASG Malin Array Be 73.51 323 P **P 21 58 53.6 +0.6**
comp=Z,0.3nm,0.4s,baz=46,slow=6.5,SNR=2.6

NIED **03** *22:15:00,38.˚60N×144.˚60E,h5km,Mw3.5 Best double couple: M0 1.83000×10^14 NP1:ϕs=355.00000°,δ31.00000°, λ-66.00000°. NP2:ϕs=147.00000°,δ62.00000°, λ-104.00000°.*
IDC **03** *22:15:16.3±1.7,38.˚55N×144.˚97E,h0km,mb3.8/4, mb1 4.0/6,mb1mx3.5/52,mbtmp3.9/6,ML3.7/2,MS2.6/1, Ms1 2.6/1,ms1mx2.1/58,Error ellipse: s-maj=48.9km s-min=26.3km az=81.0*
ISCJB **03** *22:15:20.2±0.8,38.˚55N±0.˚05×144.˚67E±0.˚06,h35km, mb3.8/4,Error ellipse: s-maj=6.8km s-min=6.5km az=164.7*
JMA **03** *22:15:21.7±0.2,38.˚60N×144.˚57E,h39km,M3.9*
ISC 03 22:15:21.7±1.2**,38˚67N**±0˚06×**144˚70E**±0˚09**,h35km,n22,**
σ1°55/34,mb3.9/4,Off east of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.40**	**281**	P	**Pn**	**22 15 58.8**	**+0.2**
OFUJ				S	**Sn**	**22 16 26.1**	**-0.7**
MIYJ	**Miyakonagasawa**	**2.42**	**293**	P	**Pn**	**22 15 59.2**	**+0.4**
MIYJ				*eS*	**Sn**	**22 16 27.1**	**0.0**
JMK	**Ichinoseki**	**2.74**	**277**	P	**Pn**	**22 16 03.6**	**+0.5**
JMK				*eS*	**Sn**	**22 16 34.4**	**-0.6**
JOM	**Ohasama**	**2.77**	**288**	P	**Pn**	**22 16 04.4**	**+0.8**
JOM				*eS*	**Sn**	**22 16 36.2**	**+0.3**
JANG	**Nango**	**2.99**	**306**	P	**Pn**	**22 16 07.4**	**+0.7**
JOU	**Okura**	**3.18**	**266**	P	**Pn**	**22 16 09.8**	**+0.5**
JOU				S	**Sn**	**22 16 45.0**	**-1.1**
JRG	**Rokugo**	**3.25**	**284**	P	**Pn**	**22 16 11.4**	**+1.2**
JYK	**Kaneyama**	**3.40**	**275**	P	**Pn**	**22 16 13.6**	**+1.3**
JYK				*eS*	**Sn**	**22 16 51.8**	**+0.3**
JTM	**Tenmabayashi**	**3.51**	**308**	P	**Pn**	**22 16 14.7**	**+0.9**
JTM				S	**Sn**	**22 16 53.7**	**-0.3**
JFT	**Otama**	**3.63**	**253**	P	**Pn**	**22 16 16.0**	**+0.5**
JFT				S	**Sn**	**22 16 56.3**	**-0.8**
JCH	**Churui**	**4.07**	**346**	P	**Pn**	**22 16 21.1**	**-0.3**
JCH				*eS*	**Sn**	**22 17 06.2**	**-1.6**
NEM2	**Nemuro 2**	**4.75**	**9**	P	**Pn**	**22 16 28.7**	**-2.1**
NEM2				*eS*	**Sn**	**22 17 19.9**	**-4.8**
BSO1	**Boso 1**	**5.01**	**218**	S	**Sn**	**22 17 27.8**	**-2.4**
JRY	**Ryogami san**	**5.33**	**242**	P	**Pn**	**22 16 38.4**	**-0.4**
JRY				S	**Sn**	**22 17 34.9**	**-4.1**
MJAR	**Matsushiro Arr**	**5.58**	**250**	Pn	**Pn**	**22 16 43.3**	**+1.1**
MJAR	1.4nm,0.3s,baz=69,slow=14,SNR=15			Sn	**Sn**	**22 17 44.8**	**-0.3**
	0.8nm,0.3s,baz=74,slow=12,SNR=3.5						
MAT	**Matsushiro**	**5.58**	**250**	P	**Pn**	**22 16 43.4**	**+1.1**
MAT				S	**Sn**	**22 17 44.5**	**-0.6**
JHJ	**Hachijo jima 2**	**6.83**	**217**	Pn	**Pn**	**22 16 57.5**	**-1.9**
	8.4nm,0.3s,baz=78,slow=19,SNR=1.4						
JHJ				Sn	Sn	22 18 05.7	-10
	4.8nm,0.3s,baz=42,slow=17,SNR=1.6						
KSRS	**Korea Array**	**13.28**	**270**	LR	LR	22 22 51.6	
	comp=Z,21nm,18.3s,baz=38,slow=34						
KURBB	**Kurchatov Arra**	**47.07**	**307**	P	**P**	**22 23 50.1**	**+0.3**
	0.4nm,0.6s,baz=81,slow=7.2,SNR=4.3						
WRA	**Warramunga Arr**	**49.11**	**191**	P	**P**	**22 25 18.3**	**-0.4**
	1.3nm,0.7s,baz=9.8,slow=6.9,SNR=12						
ASAR	**Alice Springs**	**62.83**	**191**	P	**P**	**22 25 42.8**	**-1.2**
	0.3nm,0.6s,baz=9.4,slow=7.4,SNR=4.5						
FINES	**FINESS Array B**	**68.56**	**333**	P	**P**	**22 26 22.5**	**+2.1**
	2.4nm,1.0s,baz=44,slow=10,SNR=3.4						

IDC **03** *22:21:17.4±3.9,42.˚45N×84.˚72E,h0km,mb1 3.0/5, mb1mx3.0/57,mbtmp3.0/5,ML2.6/5,Error ellipse: s-maj=52.7km s-min=31.3km az=42.0*
NNC **03** *22:21:24.4±4.9,42.˚60N×84.˚18E,h0km,mb3.7,mpv3.3, Error ellipse: s-maj=37.8km s-min=23.7km az=132.0*
SOME **03** *22:21:31.7,43.˚10N×83.˚65E,h5km*
ISC 03 22:21:21.3±1.7**,42˚56N**±0˚10×**84˚79E**±0˚08**,h22km,n23,**
σ2°18/25,5C-5D,Northern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SHLS	**Shalkode**	**3.66**	**281**	*eP*	**Pb**	**22 22 23.8**	**-1.6**
	13nm,0.2s						
SHLS				*eS*	**Sb**	**22 23 05.4**	**-4.0**
	109nm,0.5s						
PDGK	**Podgornoye**	**3.97**	**283**	⇓Pn	**Pn**	**22 22 21.4**	**+0.6**
	5.7nm,0.4s						
PDGK				⇑Lg	Lg	22 23 13.3	
	53nm,0.7s						
DJR	**Jarkent**	**4.05**	**298**	*eP*	**Pb**	**22 22 30.6**	**-1.4**
	13nm,0.4s						
DJR				*eS*	**Sb**	**22 23 17.9**	**-2.6**
	40nm,0.4s						
UZB	**Uzynbulak**	**4.28**	**280**	*eP*	**Pb**	**22 22 35.4**	**-0.6**
	6.2nm,0.4s						
UZB				*eS*	**Sb**	**22 23 27.3**	**0.0**
	24nm,0.4s						
MK31	**Makanchi Array**	**4.59**	**338**	⇓Pg	**Pb**	**22 22 42.5**	**+1.3**
	1.6nm,0.3s,baz=150,slow=17,SNR=35						
MK31				⇓Lg	Lg	22 23 46.4	
	2.9nm,0.3s,baz=155,slow=28,SNR=8.4						
MKAR	**Makanchi Array**	**4.59**	**338**	Pn	**Pn**	**22 22 30.4**	**+0.9**
	0.3nm,0.3s,baz=158,slow=14,SNR=9.7						
MKAR				Pg	**Pb**	**22 22 42.0**	**+0.8**
	2.1nm,0.3s,baz=153,slow=17,SNR=33						
MKAR				Lg	Lg	22 23 45.7	
	4.6nm,0.3s,baz=163,slow=29,SNR=8.6						
ZHN	**Zhinishke**	**4.71**	**280**	*eP*	**Pb**	**22 22 44.4**	**+1.1**
	6.9nm,0.1s						
ZHN				*eS*	**Sb**	**22 23 42.8**	**+3.3**
	27nm,0.2s						
KAPS	**Kapalarasan**	**4.78**	**307**	*eP*	**Pb**	**22 22 43.3**	**-1.1**
	4.2nm,0.5s						
KAPS				*eS*	**Sb**	**22 23 41.5**	**+0.1**
	27nm,0.6s						
ZSN	**Zaisan**	**4.90**	**357**	*eP*	Pb	22 22 52.8	+6.4
	3.5nm,0.3s						
ZSN				*eS*	Sb	22 23 59.7	+15
	19nm,0.6s						
ARXS	**Arharly**	**5.34**	**290**	*eP*	**Pb**	**22 22 51.8**	**-2.1**
	4.1nm,0.3s						
ARXS				*eS*	**Sb**	**22 23 59.3**	**+1.7**
	20nm,0.7s						
IZV	**Izvestkoviy**	**6.04**	**277**	*eP*	**Pb**	**22 23 06.3**	**+0.5**
IZV				*eS*	**Sb**	**22 24 22.6**	**+4.9**
	25nm,0.9s						
DGS	**Degeres**	**6.66**	**279**	*eP*	**Pb**	**22 23 16.8**	**+0.4**
	2.3nm,0.6s						
DGS				*eS*	**Sb**	**22 24 39.9**	**+4.4**
	14nm,0.7s						
TKM2	**Tokmak 2**	**6.78**	**276**	⇑Lg	Lg	22 24 44.0	
	6.6nm,0.6s						
AAK	**Ala-Archa**	**7.60**	**274**	Lg	Lg	22 25 07.9	
	0.3nm,0.3s,baz=6.6,slow=15,SNR=1.3						
AAK	**Ala-Archa**	**7.60**	**274**	⇑Lg	Lg	22 25 12.3	
	2.0nm,0.5s						
MNAS	**Manas**	**9.08**	**274**	⇑Lg	Lg	22 26 00.5	
	1.8nm,0.7s						
KURBB	**Kurchatov Arra**	**9.14**	**334**	Pn	**Pn**	**22 23 31.8**	**0.0**
	0.0nm,0.3s,baz=151,slow=13,SNR=3.2						
KURBB				Lg	Lg	22 26 09.1	
	0.1nm,0.3s,baz=151,slow=33,SNR=4.6						
KURBB	**Kurchatov Arra**	**9.14**	**334**	⇓Lg	Lg	22 26 16.9	
	4.8nm,0.7s						
KURK	**Kurchatov**	**9.19**	**335**	⇓Lg	Lg	22 26 11.4	
	7.0nm,1.0s						
OTUK	**Ortayu**	**10.44**	**307**	⇑Lg	Lg	22 26 46.4	
	2.2nm,0.8s						
ZALV	**Zalesovo Beam**	**11.40**	**0**	Pn	**Pn**	**22 24 04.5**	**+1.8**
	0.2nm,0.3s,baz=183,slow=15,SNR=2.8						
ZALV				Sn	**Sn**	**22 26 09.1**	**-0.1**
	0.5nm,0.3s,baz=181,slow=26,SNR=5.4						
BVAR	**Borovoye Array**	**14.23**	**322**	Pn	**Pn**	**22 24 39.1**	**-2.3**
	0.1nm,0.3s,baz=138,slow=6.7,SNR=3.3						
SONM	**Songino Array**	**16.10**	**63**	Pn	**Pn**	**22 25 05.2**	**-1.1**
	0.0nm,0.3s,baz=259,slow=11,SNR=4.1						

IDC 03 22:26:26.0±1.7**,0˚28S×132˚47E,h0km,mb3.8/2, mb1 4.0/4,mb1mx3.5/40,mbtmp3.8/4,ML3.8/2,Error ellipse: s-maj=26.8km s-min=19.3km az=160.0,Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**1.34**	**244**	Pg	Pg	22 26 51.8	0.0
	18nm,0.3s,baz=270,slow=24,SNR=21						
SIJI				Lg	Lg	22 27 08.9	
	21nm,0.3s,baz=90,slow=24,SNR=14						
FITZ	**Fitzroy Crossi**	**18.94**	**200**	P	P	22 30 48.8	0.0
	0.2nm,0.3s,baz=50,slow=10,SNR=3.0						
FITZ				S	Sn	22 34 11.3	-11
	0.1nm,0.3s,baz=60,slow=11,SNR=2.3						
WRA	**Warramunga Arr**	**19.62**	**175**	P	P	22 30 56.2	-0.1
	0.4nm,0.3s,baz=354,slow=11,SNR=19						
WRA				S	Sn	22 34 28.8	-10
	0.1nm,0.3s,baz=353,slow=23,SNR=5.6						
ASAR	**Alice Springs**	**23.29**	**177**	P	P	22 31 35.5	-0.1
	6.6nm,0.9s,baz=351,slow=9.0,SNR=31						
MKAR	**Makanchi Array**	**64.13**	**324**	P	P	22 37 02.2	-0.1
	0.2nm,0.4s,baz=114,slow=7.0,SNR=3.8						

DJA **03** *22:30:11.7±0.7,0˚N±6˚×13˚2E±˚,h22km,M5.1/3,mb5.5/1, MLv4.9/3*
IDC **03** *22:30:11.4±0.8,0.˚23S×132.˚57E,h0km,mb4.0/10, mb1 4.2/13,mb1mx3.9/46,mbtmp4.0/13,ML4.0/3,MS2.9/1, Ms1 2.9/1,ms1mx2.2/45,Error ellipse: s-maj=26.9km s-min=15.1km az=76.0*
ISCJB **03** *22:30:14.1±0.4,0.˚38S±0.˚04×132.˚51E±0.˚06,h33km, mb4.5/21,Error ellipse: s-maj=9.2km s-min=5.1km az=173.4*
NEIC **03** *22:30:16.5±1.4,0.˚32S×132.˚65E,h37km±13km,mb4.6/15, Error ellipse: s-maj=11.8km s-min=7.1km az=66.0*
ISC 03 22:30:15.6±0.5**,0˚45S**±0˚05×**132˚32E**±0˚06**,h33km,n45,**
σ2°18/55,mb4.4/21,Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**1.13**	**248**	Pg	**Pb**	**22 30 37.5**	**+0.8**
	13nm,0.3s,baz=90,slow=24,SNR=17						
SIJI				Lg	Lg	22 30 55.3	
	31nm,0.3s,baz=270,slow=24,SNR=6.1						
FAKI	**Fak Fak**	**2.46**	**182**	P	**Pb**	**22 30 57.4**	**-1.8**
FAKI				S	**Sb**	**22 31 31.5**	**+2.4**
FAKI	**Fak Fak**	**2.46**	**182**	*ePn*	**Pb**	**22 30 57.4**	**-1.8**
FAKI				*eSn*	**Sn**	**22 31 24.6**	**+2.3**
MSAI	**Masohi**	**4.45**	**230**	P	**Pn**	**22 31 20.3**	**-0.5**
MSAI				S	**Sb**	**22 32 25.6**	**-0.6**
BNDI	**Bandanaira**	**4.71**	**211**	P	**Pn**	**22 31 27.3**	**+2.9**
LBMI	**Labuha**	**4.82**	**268**	P	**Pn**	**22 31 21.9**	**-4.0**
NLAI	**Namlea**	**5.91**	**242**	P	**Pn**	**22 31 40.2**	**-0.6**
MTN	**Manton Dam**	**12.37**	**185**	*ePn*	**Pn**	**22 33 10.8**	**+1.3**
MTN				*eSn*	**Sn**	**22 35 26.0**	**-0.4**
KAPI	**Kappang**	**13.34**	**250**	Pn	**P**	**22 33 28.3**	**-3.7**
	0.6nm,0.3s,baz=63,slow=17,SNR=3.0						
KAPI				LR	LR	22 40 42.2	
	comp=Z,43nm,18.1s,baz=116,slow=46						
COEN	**Coen**	**17.20**	**142**	*ePn*	**Pn**	**22 34 11.8**	**-1.7**
	23nm,1.3s						
FITZ	**Fitzroy Crossi**	**18.73**	**200**	P	**Pn**	**22 34 34.4**	**+2.1**
	0.2nm,0.3s,baz=51,slow=8.2,SNR=5.5						
FITZ				S	**Sn**	**22 37 56.2**	**-4.8**
	0.1nm,0.3s,baz=114,slow=13,SNR=2.2						
FITZ	**Fitzroy Crossi**	**18.73**	**200**	*eP*	**P**	**22 34 30.0**	**-1.7**
	20nm,1.5s						
FITZ				*eSn*	**Sn**	**22 37 56.2**	**-4.8**
WRAB	**Tennant Creek**	**19.47**	**174**	*eP*	**Pn**	**22 34 42.2**	**+1.1**
	12nm,0.9s						
WR1	**Warramunga Arr**	**19.48**	**174**	*eP*	**Pn**	**22 34 41.8**	**+0.5**
	10nm,0.8s						
WR1				*eS*	**S**	**22 38 13.6**	**-4.7**
WRA	**Warramunga Arr**	**19.48**	**174**	P	**Pn**	**22 34 41.8**	**+0.5**
	0.7nm,0.3s,baz=354,slow=11,SNR=26						
WRA				S	**S**	**22 38 13.6**	**-4.7**
	0.2nm,0.3s,baz=7.9,slow=22,SNR=8.1						
WB2	**Warramunga Arr**	**19.48**	**174**	*eP*	**P**	**22 34 41.2**	**+1.3**
JAGI	**Jajag, Banyuwa**	**19.77**	**246**	*eP*	**Pn**	**22 34 47.6**	**+2.8**
	50nm,0.9s						
SARN	**Sarigan**	**21.60**	**37**	*eP*	**P**	**22 35 00.8**	**-2.2**
AS31	**Alice Springs**	**23.13**	**176**	*eP*	**P**	**22 35 21.2**	**+2.1**
	4.7nm,0.7s						
AS31				*eS*	**S**	**22 39 30.7**	**+2.2**
ASAR	**Alice Springs**	**23.13**	**176**	P	**P**	**22 35 21.2**	**+2.0**
	22nm,0.9s,baz=350,slow=8.4,SNR=56						
ASAR				S	**S**	**22 39 30.7**	**+2.2**
	0.6nm,0.8s,baz=357,slow=19,SNR=3.0						
AS01	**Alice Springs**	**23.14**	**176**	*eP*	**P**	**22 35 21.0**	**+1.8**
CTA	**Charters Tower**	**23.82**	**146**	P	**P**	**22 35 27.8**	**+2.0**
	3.2nm,0.7s,baz=336,slow=10,SNR=3.9						
MBWA	**Marble Bar**	**23.98**	**210**	*eP*	**P**	**22 35 30.0**	**+2.7**
	30nm,1.3s						
XMIS	**Christmas Isla**	**28.32**	**248**	*eP*	**P**	**22 36 06.2**	**-0.4**
	95nm,1.1s						
BKNI	**Bangkinang**	**31.29**	**271**	*eP*	**P**	**22 36 32.6**	**-0.3**
	62nm,0.4s						
STKA	**Stephens Creek**	**32.47**	**165**	P	**P**	**22 36 45.1**	**+2.0**
	4.0nm,0.7s,baz=315,slow=7.0,SNR=4.9						
STKA	**Stephens Creek**	**32.47**	**165**	*eP*	**P**	**22 36 45.1**	**+2.0**
	10.0nm,1.8s						
CAN	**Canberra**	**38.02**	**158**	*eP*	**P**	**22 37 29.7**	**-1.2**
	64nm,1.8s						
LHI	**Lord Howe Isla**	**39.95**	**143**	*eP*	**P**	**22 37 46.4**	**-0.6**
	50nm,1.0s						
SONA0	**Songino Array**	**53.11**	**338**	*eP*	**P**	**22 39 30.9**	**+0.8**
	3.0nm,1.4s						
SONM	**Songino Array**	**53.11**	**338**	P	**P**	**22 39 30.9**	**+0.8**
	0.4nm,0.6s,baz=150,slow=6.6,SNR=3.2						
MLZ	**Mavora Lakes**	**54.74**	**150**	*eP*	**P**	**22 39 41.7**	**-0.3**
	83nm,1.5s						
MXZ	**Matakaoa Point**	**56.17**	**137**	*eP*	**P**	**22 39 50.2**	**-2.1**
	190nm,1.2s						
MK01	**Makanchi Array**	**64.15**	**324**	*eP*	**P**	**22 40 47.7**	**+0.8**
MK32	**Makanchi Array**	**64.17**	**324**	*eP*	**P**	**22 40 48.0**	**+0.9**
MKAR	**Makanchi Array**	**64.17**	**324**	P	**P**	**22 40 48.0**	**+0.9**
	0.8nm,0.6s,baz=114,slow=8.2,SNR=6.9						
CASY	**Casey**	**67.50**	**189**	*eP*	**P**	**22 41 08.9**	**+0.8**
	30nm,1.8s						
KURK	**Kurchatov**	**68.26**	**327**	*eP*	**P**	**22 41 13.8**	**+0.7**
KURBB	**Kurchatov Arra**	**68.26**	**326**	P	**P**	**22 41 13.8**	**+0.6**
	1.2nm,0.9s,baz=121,slow=6.2,SNR=4.7						
UNV	**Unalaska Valle**	**73.78**	**33**	*eP*	**P**	**22 41 47.2**	**+0.7**
	31nm,1.4s						
BVAR	**Borovoye Array**	**73.85**	**326**	P	**P**	**22 41 47.6**	**+0.6**
	0.3nm,0.3s,baz=95,slow=6.4,SNR=4.7						
GEYT	**Alibeck**	**77.84**	**309**	P	**P**	**22 42 12.2**	**+1.9**
	1.5nm,0.6s,baz=151,slow=3.3,SNR=4.9						
VNDA	**Vanda**	**78.65**	**174**	P	**P**	**22 42 16.0**	**+2.2**
	0.9nm,0.8s,baz=284,slow=5.1,SNR=4.1						
ILAR	**Eielson Array**	**86.47**	**25**	P	**P**	**22 42 53.3**	**-1.5**
	0.5nm,0.8s,baz=252,slow=4.6,SNR=5.7						
ILB	**Eielson Array**	**86.47**	**25**	*eP*	**P**	**22 42 52.1**	**-2.7**

ISCJB **03** *22:32:32.9±0.4,37.˚28N±0.˚03×57.˚48E±0.˚04,h14km, mb3.3/1,Error ellipse: s-maj=5.2km s-min=4.5km az=32.8*
CSEM **03** *22:32:32.3±0.3,37.˚28N×57.˚41E,h2km,ML3.0,Error ellipse: s-maj=8.8km s-min=6.5km az=7.0*
TEH **03** *22:32:33.5,37.˚27N×57.˚46E,h5km,ML3.0*
IDC **03** *22:32:34.5±2.7,37.˚33N×57.˚48E,h0km,mb3.2/2, mb1 3.4/3,mb1mx3.2/42,mbtmp3.4/3,ML3.9/1,Error ellipse: s-maj=19.8km s-min=4.6km az=40.0*
ISC 03 22:32:33.8±0.8**,37˚32N**±0˚04×**57˚54E**±0˚04**,h14km,n31,**
σ1°20/34,Iran-Turkmenistan border region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BJRD	**Bojnurd**	**0.39**	**345**	*ePg*	**Pg**	**22 32 40.7**	**-1.1**
BJRD				*eSg*	**Sg**	**22 32 46.9**	**-0.3**
ISFR	**Sfrayin**	**0.45**	**125**	*ePg*	**Pg**	**22 32 41.8**	**-1.1**
ISFR				*eSg*	**Sg**	**22 32 49.0**	**-0.1**
ISFR				*eAMB*	AMB	22 32 58.4	
	comp=Z,20μm,0.2s						
ISFR	**Sfrayin**	**0.45**	**125**	*ePg*	**Pg**	**22 32 41.8**	**-1.1**
ISFR				*eSg*	**Sg**	**22 32 49.0**	**-0.1**
GEYT	**Alibeck**	**0.76**	**37**	Pg	**Pg**	**22 32 48.6**	**0.0**
	comp=Z,26nm,0.3s,baz=220,slow=18,SNR=82						
GEYT				Lg	Lg	22 33 01.1	
	comp=Z,67nm,0.3s,baz=220,slow=51,SNR=28						
IEMG	**Emamgholi**	**0.89**	**83**	*ePg*	**Pg**	**22 32 50.5**	**-0.6**
IEMG				*eAMB*	AMB	22 33 12.7	
	comp=Z,6μm,0.2s						
IEMG	**Emamgholi**	**0.89**	**83**	*ePg*	**Pg**	**22 32 50.5**	**-0.6**
IKRD	**Kardeh**	**0.95**	**124**	*eAMB*	AMB	22 33 38.5	
	comp=Z,1μm,0.1s						
IKRD				*ePn*	Pn	22 33 04.4	+11
MRVT	**Maraveh tapeh**	**1.20**	**287**	*ePg*	**Pn**	**22 32 53.1**	**-3.1**
IAKL	**Akhelmad**	**1.21**	**126**	*eAMB*	AMB	22 33 05.0	
	comp=Z,2μm,0.1s						
IAKL				*eSg*	**Sb**	**22 33 11.8**	**-0.4**
IPAY	**Payeh**	**1.46**	**126**	*ePn*	**Pb**	**22 33 01.0**	**+0.2**
IPAY				*eAMB*	AMB	22 33 26.4	
	comp=Z,2μm,0.1s						
IPAY	**Payeh**	**1.46**	**126**	*ePn*	**Pb**	**22 33 01.0**	**+0.2**
SHRO	**Shahrood**	**1.81**	**223**	*eP*	**Pn**	**22 33 02.7**	**-1.9**
SHRO				*eSg*	**Sn**	**22 33 26.3**	**-1.1**
IMOG	**Moghan**	**1.89**	**129**	*eAMB*	AMB	22 33 43.2	
	comp=Z,930nm,0.1s						
IMOG				*ePn*	**Pb**	**22 33 07.4**	**-0.8**
IMYA	**Miami**	**2.28**	**115**	*ePn*	**Pb**	**22 33 14.4**	**-0.3**
IMYA				*eAMB*	AMB	22 33 56.3	
	comp=Z,1μm,0.3s						
IMYA	**Miami**	**2.28**	**115**	*ePn*	**Pb**	**22 33 14.4**	**-0.3**
IGLO	**Ghaloghah**	**3.08**	**256**	*ePn*	**Pn**	**22 33 22.9**	**+0.7**
IGLO				*eAMB*	AMB	22 34 19.1	
	comp=Z,903nm,0.2s						
IANJ	**Anjilo**	**3.46**	**239**	*ePn*	**Pn**	**22 33 27.0**	**-0.4**
IANJ				*eAMB*	AMB	22 34 29.2	
	comp=Z,266nm,0.2s						
IANJ	**Anjilo**	**3.46**	**239**	*ePn*	**Pn**	**22 33 27.0**	**-0.4**
ISHM	**Shahmirzad**	**3.74**	**247**	*ePn*	**Pn**	**22 33 32.0**	**+0.7**
ISHM				*eSg*	**Sb**	**22 34 27.3**	**+2.4**
ISHM				*eAMB*	AMB	22 34 33.9	
	comp=Z,480nm,0.2s						
IFIR	**Firoozkooh**	**4.20**	**248**	*ePn*	**Pn**	**22 33 36.5**	**-1.2**
IFIR				*eAMB*	AMB	22 33 38.3	
	comp=Z,246nm,0.1s						
IFIR	**Firoozkooh**	**4.20**	**248**	*ePn*	**Pn**	**22 33 36.5**	**-1.2**
ITEG	**Tejag**	**4.52**	**167**	*ePn*	**Pn**	**22 33 41.6**	**-0.4**
ITEG				*eAMB*	AMB	22 33 46.1	
	comp=Z,116nm,0.1s						
ITEG	**Tejag**	**4.52**	**167**	*ePn*	**Pn**	**22 33 41.6**	**-0.4**
IKOO	**Kooshah**	**5.03**	**166**	*ePn*	**Pn**	**22 33 49.0**	**0.0**
IKOO				*eAMB*	AMB	22 33 59.8	
	comp=E,67nm,0.1s						
IKOO	**Kooshah**	**5.03**	**166**	*ePn*	**Pn**	**22 33 49.0**	**0.0**
IKLH	**Kolahrood**	**6.30**	**232**	*eAMB*	AMB	22 34 07.4	
	comp=Z,51nm,0.2s						
IKLH				*ePn*	**Pn**	**22 34 05.1**	**-1.3**
IPIR	**Pirpir**

	16nm,0.8s										
WR1					*e*S		**S**		**22 43 37.7**	**-6.5**
WRA	**Warramunga Arr**	**19.58**	**175**	P			**P**		**22 40 05.5**	**+0.7**
	1.0nm,0.3s,baz=353,slow=11,SNR=14										
WRA					S		**S**		**22 43 37.7**	**-6.5**
	0.3nm,0.3s,baz=354,slow=22,SNR=6.4										
WB2	**Warramunga Arr**	**19.58**	**175**	*e*P			**Pn**		**22 40 06.5**	**+0.2**
	17nm,0.9s										
JAGI	**Jajag, Banyuwa**	**20.05**	**246**	P			**P**		**22 40 09.7**	**-0.3**
JAGI	**Jajag, Banyuwa**	**20.05**	**246**	*e*P			**P**		**22 40 10.8**	**+0.9**
	53nm,0.8s										
SBUM	**Sibu**	**20.52**	**278**	*e*P			**P**		**22 40 15.9**	**+0.7**
	10nm,0.8s										
PBKI	**Pangkalan Bun**	**21.02**	**263**	P			**P**		**22 40 21.4**	**+0.9**
	174nm,1.0s,2μm										
STKI	**Sintang**	**21.09**	**271**	P			**P**		**22 40 23.1**	**+1.9**
AS31	**Alice Springs**	**23.24**	**177**	*e*P			**P**		**22 40 45.2**	**+1.2**
	4.9nm,0.9s										
ASAR	**Alice Springs**	**23.24**	**177**	P			**P**		**22 40 45.2**	**+1.2**
	25nm,0.9s,baz=353,slow=9.2,SNR=42										
ASAR					S		**S**		**22 45 02.9**	**+8.8**
	3.1nm,1.1s,baz=0.0,slow=28,SNR=4.6										
ASAR						LR	LR		22 51 21.4		
	comp=Z,146nm,19.6s,baz=11,slow=41										
AS01	**Alice Springs**	**23.25**	**177**	*e*P			**P**		**22 40 44.4**	**+0.3**
MBWA	**Marble Bar**	**24.21**	**210**	*e*P			**P**		**22 40 52.5**	**-0.7**
	20nm,1.0s										
STKA	**Stephens Creek**	**32.53**	**166**	P			**P**		**22 42 09.0**	**+1.6**
	3.4nm,0.8s,baz=306,slow=7.7,SNR=3.3										
STKA						LR	LR		22 58 09.0		
	comp=Z,96nm,20.6s,baz=14,slow=42										
STKA	**Stephens Creek**	**32.53**	**166**	*e*P			**P**		**22 42 09.0**	**+1.6**
	12nm,1.8s										
PSI	**Prapat**	**33.77**	**275**	*e*P			**P**		**22 42 18.1**	**-0.5**
	9.9nm,0.8s										
MJAR	**Matsushiro Arr**	**37.05**	**8**	LR			LR		22 55 01.6		
	comp=Z,77nm,21.6s,baz=190,slow=32										
ENH	**Enshi**	**37.52**	**326**	*e*P			**P**		**22 42 46.9**	**-3.7**
	8.9nm,0.3s										
KSRS	**Korea Array**	**37.83**	**354**	LR			LR		22 56 42.6		
	comp=Z,47nm,21.1s,baz=164,slow=34										
H11N1	**WAKE ISLAND Hy**	**39.09**	**57**	T			T		23 24 48.7		
	baz=248										
H11N2	**WAKE ISLAND Hy**	**39.11**	**57**	T			T		23 24 49.7		
	baz=248										
H11N3	**WAKE ISLAND Hy**	**39.11**	**57**	T			T		23 24 49.2		
	baz=248,SNR=10.0										
SONA0	**Songino Array**	**53.09**	**338**	*e*P			**P**		**22 44 54.2**	**+0.4**
	7.1nm,1.8s										
SONM	**Songino Array**	**53.09**	**338**	P			**P**		**22 44 54.2**	**+0.4**
	0.4nm,0.6s,baz=149,slow=3.4,SNR=3.2										
PETK	**Petropavlovsk-**	**57.22**	**18**	LR			LR		23 06 04.5		
	comp=Z,23nm,20.9s,baz=198,slow=32										
MK01	**Makanchi Array**	**64.19**	**324**	*e*P			**P**		**22 46 11.4**	**+0.4**
MK31	**Makanchi Array**	**64.21**	**324**	*e*P			**P**		**22 46 10.4**	**-0.7**
MK32	**Makanchi Array**	**64.21**	**324**	*e*P			**P**		**22 46 11.4**	**+0.4**
MKAR	**Makanchi Array**	**64.21**	**324**	P			**P**		**22 46 11.4**	**+0.4**
	1.1nm,0.7s,baz=112,slow=8.1,SNR=11										
MKAR	**Makanchi Array**	**64.21**	**324**	*e*P			**P**		**22 46 10.2**	**-0.9**
	11nm,0.7s										
ZAA0	**Zalesovo Array**	**66.86**	**332**	*e*P			**P**		**22 46 26.8**	**-1.2**
ZALV	**Zalesovo Beam**	**66.86**	**332**	P			**P**		**22 46 28.4**	**+0.4**
	0.4nm,0.4s,baz=120,slow=5.8,SNR=3.4										
ZAA1	**Zalesovo Array**	**66.86**	**332**	*e*P			**P**		**22 46 28.4**	**+0.4**
KURK	**Kurchatov**	**68.29**	**326**	*e*P			**P**		**22 46 37.8**	**+0.7**
KURBB	**Kurchatov Arra**	**68.29**	**326**	P			**P**		**22 46 37.8**	**+0.7**
	0.9nm,0.3s,baz=120,slow=5.7,SNR=6.3										
KKAR	**Karatay Array**	**70.15**	**317**	*e*P			**P**		**22 46 48.8**	**-0.1**
TIXI	**Tiksi**	**71.89**	**359**	P			**P**		**22 46 58.6**	**-0.2**
	1.9nm,0.8s,baz=201,slow=3.2,SNR=4.0										
BVAR	**Borovoye Array**	**73.89**	**326**	P			**P**		**22 47 10.8**	**-0.3**
	0.7nm,0.8s,baz=123,slow=11,SNR=3.8										
BRVK	**Borovoye**	**73.96**	**326**	*e*P			**P**		**22 47 11.1**	**-0.3**
ZRNK	**Zerenda**	**74.63**	**326**	*e*P			**P**		**22 47 15.9**	**+0.5**
	9.0nm,1.5s										
NRIK	**Noril'sk**	**75.77**	**345**	LR			LR		23 23 09.9		
	comp=Z,36nm,18.6s,baz=148,slow=38										
GEYT	**Alibeck**	**77.96**	**309**	P			**P**		**22 47 35.6**	**+0.9**
	3.0nm,0.7s,baz=129,slow=4.0,SNR=7.8										
ILAR	**Eielson Array**	**86.25**	**25**	P			**P**		**22 48 17.1**	**-0.4**
	0.6nm,0.7s,baz=249,slow=4.8,SNR=6.8										
ILB	**Eielson Array**	**86.25**	**25**	*e*P			**P**		**22 48 17.1**	**-0.4**
ARCES	**ARCESS Array B**	**96.22**	**340**	LR			LR		23 37 34.7		
	comp=Z,14nm,19.9s,baz=44,slow=39										

NIED ***03*** *22:42:00, 38˚.40N× 142˚.20E, h23km, Mw3.9 Best double couple: M0 7.81000×10^14 NP1:φ=165.00000°, δ=10.00000°, λ=125.00000°. NP2:φ=310.00000°, δ=82.00000°, λ=84.00000°.*
IDC ***03*** *22:42:11.9±2.7, 38˚.50N× 142˚.80E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.3/62, mbtmp3.5/4, ML2.9/1, Error ellipse: s-maj=68.3km s-min=31.9km az=59.0*
ISCJB ***03*** *22:42:15.3±1.3, 38˚.32N± 0˚.05× 142˚.24E± 0˚.08, h24km±7km, mb3.6/3, Error ellipse: s-maj=10.4km s-min=7.9km az=177.7*
JMA ***03*** *22:42:17.1±0.1, 38˚.42N× 142˚.18E, h31km±1km, M3.9*
JMA Felt I J1.

ISC 03 22:42:15.2±3.0, **38˚32N**±0˚.05× **142˚15E**±0˚.09, **h12**km±17km, **n19,** σ**1º00**/21, **mb3.8**/3, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.64**	**283**	P		**Pn**	**22 42 29.8**	**-0.4**
JIO				S		**Sb**	**22 42 38.4**	**+1.1**
OFUJ	**Ofunato**	**0.85**	**334**	P		**Pb**	**22 42 31.6**	**-0.3**
JMK	**Ichinoseki**	**0.96**	**311**	P		**Pb**	**22 42 34.0**	**+0.1**
JMK				*e*S		**Sb**	**22 42 45.6**	**-1.0**
JMM	**Marumori**	**1.16**	**248**	P		**Pb**	**22 42 37.8**	**+0.6**
JMM				S		**Sn**	**22 42 53.0**	**0.0**
JOU	**Okura**	**1.17**	**273**	P		**Pn**	**22 42 37.4**	**0.0**
JOU				*e*S		**Sg**	**22 42 53.5**	**+0.6**
JOM	**Ohasama**	**1.33**	**330**	P		**Pn**	**22 42 39.2**	**-0.5**
JOM				S		**Sn**	**22 42 55.6**	**-1.8**
JFK	**Kawauchi**	**1.39**	**227**	P		**Pn**	**22 42 40.7**	**+0.3**
JFK				*e*S		**Sn**	**22 42 57.8**	**-0.8**
JYK	**Kaneyama**	**1.52**	**294**	P		**Pn**	**22 42 43.0**	**+0.7**
JYK				S		**Sb**	**22 43 02.3**	**-0.4**
JRG	**Rokugo**	**1.60**	**313**	P		**Pn**	**22 42 43.9**	**+0.6**
JRG				S		**Sb**	**22 43 04.9**	**0.0**
MJAR	**Matsushiro Arr**	**3.60**	**242**	Pn		**Pb**	**22 43 16.2**	**-2.7**
	0.8nm,0.3s,baz=57,slow=13,SNR=3.5							
H11N2	**WAKE ISLAND Hy**	**28.34**	**124**	T		T	23 17 58.6	
	baz=316,slow=76,SNR=43							
H11N1	**WAKE ISLAND Hy**	**28.35**	**124**	T		T	23 17 59.3	
	baz=316,SNR=51							
H11N3	**WAKE ISLAND Hy**	**28.36**	**124**	T		T	23 18 00.9	
	baz=316,slow=76,SNR=41							
H11S1	**WAKE ISLAND Hy**	**29.10**	**126**	T		T	23 18 55.8	
	baz=319,slow=76,SNR=34							
H11S3	**WAKE ISLAND Hy**	**29.10**	**126**	T		T	23 18 55.2	
	baz=319,slow=76,SNR=27							
H11S2	**WAKE ISLAND Hy**	**29.12**	**126**	T		T	23 18 58.3	
	baz=319,slow=76,SNR=39							
MKAR	**Makanchi Array**	**43.95**	**301**	P		**P**	**22 50 23.2**	**+1.2**
	0.1nm,0.2s,baz=72,slow=9.3,SNR=2.7							
WRA	**Warramunga Arr**	**58.41**	**189**	P		**P**	**22 52 10.9**	**+0.2**
	1.3nm,1.0s,baz=6.0,slow=7.1,SNR=13							
ASAR	**Alice Springs**	**62.14**	**189**	P		**P**	**22 52 36.5**	**+0.3**
	0.5nm,0.7s,baz=10,slow=5.7,SNR=4.9							

DDA ***03*** *22:49:52.9, 39˚.93N× 40˚.73E, h6km, Md2.8*
CSEM ***03*** *22:49:52.8±0.2, 39˚.87N× 40˚.70E, h8km, MD2.8, Error ellipse: s-maj=6.2km s-min=5.0km az=152.0*
ISCJB ***03*** *22:49:53.1±0.5, 39˚.87N± 0˚.03× 40˚.74E± 0˚.03, h7km±5km, Error ellipse: s-maj=5.1km s-min=3.6km az=150.3*
ISK ***03*** *22:49:53.1, 39˚.90N× 40˚.64E, h7km, MD2.6*

ISC 03 22:49:53.2±0.9, **39˚89N**±0˚.02× **40˚74E**±0˚.02, **h10**km±8km, **n28,** σ**0º99**/48, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KOPT	**Kop Dagi**	**0.22**	**305**	*i* P		**Pg**	**22 49 57.5**	**-0.4**
KOPT				*i* S		**Sg**	**22 50 02.5**	**+1.3**
KOPT	**Kop Dagi**	**0.22**	**305**	P		**Pg**	**22 49 57.5**	**-0.4**
KOPT				S		**Sg**	**22 50 02.5**	**+1.3**
YEDI	**Yedisu-Bingol**	**0.48**	**198**	*e*PG		**Pg**	**22 50 02.9**	**+0.4**
YEDI				*e*SG		**Sg**	**22 50 09.7**	**+0.9**
YEDI	**Yedisu-Bingol**	**0.48**	**198**	*e*Pg		**Pg**	**22 50 02.9**	**+0.4**
YEDI				*e*Sg		**Sg**	**22 50 09.7**	**+0.9**
EZM	**Erzurum**	**0.48**	**88**	*e*PG		**Pg**	**22 50 02.9**	**+0.3**
EZM				*e*SG		**Sb**	**22 50 10.8**	**-0.4**
ERZM	**Erzurum**	**0.49**	**88**	*i* P		**Pg**	**22 50 02.2**	**-0.5**
ERZM				*i* S		**Sg**	**22 50 07.3**	**-1.9**
ERZM	**Erzurum**	**0.49**	**88**	P		**Pg**	**22 50 02.2**	**-0.5**
ERZM				S		**Sg**	**22 50 07.3**	**-1.9**
EUZM	**Uzumlu**	**0.82**	**257**	*i* P		**Pg**	**22 50 07.1**	**-1.9**
EUZM				*i* S		**Sb**	**22 50 21.2**	**+0.5**
EUZM	**Uzumlu**	**0.82**	**257**	P		**Pg**	**22 50 07.1**	**-1.9**
EUZM				S		**Sb**	**22 50 21.2**	**+0.5**
BNGB	**Bing˜¶l**	**0.90**	**183**	*e*PG		**Pg**	**22 50 10.8**	**+0.3**
BNGB				*e*SG		**Sb**	**22 50 23.9**	**+0.9**
BINT	**Bingol**	**1.03**	**191**	*e*Pg		**Pg**	**22 50 10.8**	**-2.2**
BINT				*e*Sg		**Sg**	**22 50 23.9**	**-2.5**
GUMT	**Gumushane**	**1.12**	**301**	*e*PN		**Pg**	**22 50 13.5**	**-1.1**
GUMT	**Gumushane**	**1.12**	**301**	*e*Pn		**Pg**	**22 50 13.5**	**-1.1**
KELT	**Kelkit**	**1.17**	**283**	*i* P		**Pg**	**22 50 14.5**	**-1.0**
KELT				*i* S		**Sn**	**22 50 32.0**	**+0.3**
KELT	**Kelkit**	**1.17**	**283**	P		**Pg**	**22 50 14.5**	**-1.0**
KELT				S		**Sn**	**22 50 32.0**	**+0.3**
DDEM	**Demirkent**	**1.27**	**37**	*i* P		**Pb**	**22 50 17.3**	**+0.2**
DDEM				*i* S		**Sn**	**22 50 35.3**	**+1.2**
DDEM	**Demirkent**	**1.27**	**37**	P		**Pb**	**22 50 17.3**	**+0.2**
DDEM				S		**Sn**	**22 50 35.3**	**+1.2**
MACK	**Trabzon**	**1.28**	**325**	*i* P		**Pb**	**22 50 17.1**	**-0.3**
MACK				*i* S		**Sb**	**22 50 33.9**	**-0.1**
MACK	**Trabzon**	**1.28**	**325**	P		**Pb**	**22 50 17.1**	**-0.3**
MACK				S		**Sb**	**22 50 33.9**	**-0.1**
SENK	**Senkaya-Erzuru**	**1.41**	**61**	*e*PN		**Pb**	**22 50 20.0**	**+0.4**
SENK	**Senkaya-Erzuru**	**1.41**	**61**	*e*Pn		**Pb**	**22 50 20.0**	**+0.4**
PTK	**Pertek**	**1.44**	**227**	*e*Pn		**Pn**	**22 50 19.8**	**+0.3**
PTK	**Pertek**	**1.44**	**227**	*e*Pn		**Pn**	**22 50 19.8**	**+0.3**
DAGI	**Agillar**	**1.49**	**37**	*i* P		**Pn**	**22 50 20.1**	**0.0**
DAGI				*i* S		**Sg**	**22 50 41.6**	**+0.5**
DBOC	**Borcka**	**1.62**	**26**	*i* P		**Pn**	**22 50 21.7**	**0.0**
DBOC				*i* S		**Sb**	**22 50 43.4**	**-0.1**
DBOC	**Borcka**	**1.62**	**26**	P		**Pn**	**22 50 21.7**	**0.0**
DBOC				S		**Sb**	**22 50 43.4**	**-0.1**
ESPY	**Espiye-Giresun**	**1.84**	**304**	*e*PN		**Pn**	**22 50 25.4**	**+0.5**
ESPY	**Espiye-Giresun**	**1.84**	**304**	*e*Pn		**Pn**	**22 50 25.4**	**+0.5**

ARO 03 23:17:41.9, 11˚N±10˚× **4˚2E**±1˚, **h8**km±28km, **ML4.1, Ethiopia**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GBR	**Grand-Bara**	**0.84**	**60**	*e*P		Pg	23 17 56.5	-1.6
GBR				*e*S		Sg	23 18 08.6	-0.4
SGH	**Sud-Ghoubbet**	**1.14**	**52**	*e*P		Pg	23 18 01.3	-2.4
LDLD	**Lac de Lave**	**1.14**	**42**	*e*P		Pg	23 18 01.0	-2.8
ATD	**Arta Tunnel**	**1.36**	**54**	*e*P		Pn	23 18 05.1	-2.1
ATD				*e*S		Sb	23 18 23.6	-1.7
MAOD	**Malaho**	**1.44**	**20**	*e*P		Pn	23 18 06.3	-2.1
TDD	**Tadjoura Ara**	**1.58**	**47**	*e*P		Pn	23 18 08.4	-1.8
ATA	**Atar**	**1.62**	**63**	*e*P		Pn	23 18 09.3	-1.5
MCAD	**Moucha**	**1.77**	**56**	*e*P		Pn	23 18 11.3	-1.5
OBO	**Obock**	**1.98**	**51**	*e*P		Pn	23 18 14.1	-1.6

ISCJB ***03*** *23:22:50.6±0.4, 50˚.05N± 0˚.02× 18˚.35E± 0˚.03, h0km, Error ellipse: s-maj=3.5km s-min=2.3km az=20.8*
WAR ***03*** *23:22:51.4, 50˚.05N× 18˚.41E, h1km, Mw2.4*
IPEC ***03*** *23:22:51.7±0.2, 50˚.05N× 18˚.47E, h0km, ML2.2/4, Error ellipse: s-maj=2.1km s-min=1.1km az=160.0*
CSEM ***03*** *23:22:51.4±0.3, 50˚.08N× 18˚.39E, h2km, ML2.8/15, Error ellipse: s-maj=5.1km s-min=3.3km az=20.0*
VIE ***03*** *23:22:55.0±0.7, 49˚.94N× 18˚.24E, h0km, mb1.8/3, ML2.4/5, Error ellipse: s-maj=4.6km s-min=3.8km az=41.0, Suspected Mining induced.*

ISC 03 23:22:51.6±0.7, **50˚08N**±0˚.03× **18˚41E**±0˚.02, **h0**km, **n49,** σ**0º92**/91, **1C, Poland**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAC	**Raciborz**	**0.14**	**273**	*i*Pg		**Pg**	**23 22 55.8**	**+1.5**
RAC				*e*Sg		**Sg**	**23 22 59.1**	**+3.0**
OKC	**Ostrava-Krasne**	**0.29**	**216**	*e*PG		**Pg**	**23 22 58.0**	**+0.8**
OKC				*e*SG		**Sg**	**23 23 02.4**	**+1.4**
	comp=Z,108nm,0.6s							
OKC	**Ostrava-Krasne**	**0.29**	**216**	Pg		**Pg**	**23 22 58.0**	**+0.8**
OKC				Sg		**Sg**	**23 23 02.4**	**+1.4**
	108nm,0.6s							
MORC	**Moravsky Berou**	**0.64**	**242**	*e*Pg		**Pg**	**23 23 04.0**	**+0.2**
MORC				*e*Sg		**Sg**	**23 23 12.3**	**+0.3**
	31nm,0.2s							
OJC	**Ojcow**	**0.90**	**80**	*e*Pg		**Pg**	**23 23 08.6**	**-0.3**
OJC				*e*Sg		**Sg**	**23 23 21.2**	**+0.7**
OJC	**Ojcow**	**0.90**	**80**	*e*Pg		**Pg**	**23 23 08.6**	**-0.3**
OJC				*e*Sg		**Sg**	**23 23 21.2**	**+0.7**
OJC	**Ojcow**	**0.90**	**80**	*e*Pg		**Pg**	**23 23 08.6**	**-0.3**
OJC				*e*Sg		**Sg**	**23 23 21.2**	**+0.6**
KRLC	**Kraliky**	**1.05**	**271**	*e*PG		**Pg**	**23 23 11.1**	**-0.6**
KRLC				*e*SG		**Sg**	**23 23 25.5**	**+0.2**
KRLC	**Kraliky**	**1.05**	**271**	Pg		**Pg**	**23 23 11.1**	**-0.6**
KRLC				Sg		**Sg**	**23 23 25.5**	**+0.2**
LANS	**Liptovska Anna**	**1.15**	**143**	*e*Pg		**Pg**	**23 23 13.8**	**+0.2**
LANS				*e*Sg		**Sb**	**23 23 30.4**	**+0.5**
LANS	**Liptovska Anna**	**1.15**	**143**	*e*PG		**Pg**	**23 23 13.8**	**+0.2**
LANS				*e*SG		**Sb**	**23 23 30.4**	**+0.5**
JAVC	**Velka Javorina**	**1.31**	**202**	*e*Sg		**Sn**	**23 23 35.5**	**+0.1**
	26nm,0.5s							
DPC	**Dobruska-Polom**	**1.37**	**282**	*e*PG		**Pg**	**23 23 17.4**	**-0.5**
DPC				*e*SG		**Sn**	**23 23 36.6**	**-0.3**
	comp=Z,39nm,0.5s							
DPC	**Dobruska-Polom**	**1.37**	**282**	Pg		**Pg**	**23 23 17.4**	**-0.5**
DPC				Sg		**Sn**	**23 23 36.6**	**-0.3**
	39nm,0.5s							
NIE	**Niedzica**	**1.39**	**118**	*e*Pg		**Pg**	**23 23 18.2**	**0.0**
NIE				*e*Sg		**Sn**	**23 23 37.4**	**+0.1**
NIE	**Niedzica**	**1.39**	**118**	*e*Pg		**Pg**	**23 23 18.2**	**0.0**
NIE				*e*Sg		**Sn**	**23 23 37.4**	**+0.1**
NIE	**Niedzica**	**1.39**	**118**	*e*Pg		**Pg**	**23 23 18.2**	**0.0**
NIE				*e*Sg		**Sn**	**23 23 37.4**	**+0.1**
VRAC	**Vranov**	**1.41**	**238**	*e*Pg		**Pn**	**23 23 18.0**	**-0.5**
VRAC				*e*Sg		**Sg**	**23 23 36.6**	**-0.2**
	29nm,0.3s							
KSP	**Ksiaz**	**1.56**	**300**	Pn		**Pn**	**23 23 20.3**	**-0.3**
KSP				*e*Pg		**Pg**	**23 23 22.6**	**+1.2**
KSP				*e*Sg		**Sg**	**23 23 42.9**	**+1.3**
KSP	**Ksiaz**	**1.56**	**300**	*e*Pn		**Pn**	**23 23 20.3**	**-0.3**
KSP	**Ksiaz**	**1.56**	**300**	Pn		**Pn**	**23 23 20.3**	**-0.2**
KSP				*e*Pg		**Pg**	**23 23 22.6**	**+1.2**
KSP				*e*Sg		**Sg**	**23 23 42.9**	**+1.3**
UPC	**Upice**	**1.60**	**287**	*e*PG		**Pb**	**23 23 21.6**	**-0.4**
UPC				*e*SG		**Sg**	**23 23 43.8**	**+0.9**
UPC	**Upice**	**1.60**	**287**	Pg		**Pb**	**23 23 21.6**	**-0.4**
UPC				Sg		**Sg**	**23 23 43.8**	**+0.9**
VYHS	**Vyhne**	**1.61**	**170**	*e*Pg		**Pn**	**23 23 21.0**	**-0.2**
VYHS				*e*Sg		**Sn**	**23 23 41.3**	**-1.4**
VYHS	**Vyhne**	**1.61**	**170**	*e*PG		**Pn**	**23 23 21.0**	**-0.2**
VYHS				*e*SG		**Sn**	**23 23 41.3**	**-1.4**
VYHS				*e*LG		Lg	23 23 45.9	
KRUC	**Moravsky**	**1.66**	**233**	*e*Pg		**Pn**	**23 23 21.9**	**0.0**
KRUC				*e*Sg		**Sb**	**23 23 44.4**	**-0.1**
	24nm,0.4s							
SMOL	**Smolenice**	**1.69**	**203**	*e*Sg		**Sn**	**23 23 44.2**	**-0.5**
SMOL	**Smolenice**	**1.69**	**203**	*e*SG		**Sn**	**23 23 44.2**	**-0.5**
TREC	**Trest**	**2.06**	**249**	*e*SG		**Sb**	**23 23 55.9**	**0.0**
	comp=Z,12nm,0.2s							
TREC	**Trest**	**2.06**	**249**	Sg		**Sb**	**23 23 55.9**	**0.0**
	12nm,0.2s							
CRVS	**Cervenica-Dubn**	**2.31**	**119**	*e*Pn		**Pb**	**23 23 34.0**	**-0.1**
CRVS	**Cervenica-Dubn**	**2.31**	**119**	*e*PN		**Pb**	**23 23 34.0**	**-0.1**
GOPC	**GO Pecny, Ondr**	**2.35**	**267**	*e*PG		**Pg**	**23 23 35.7**	**-0.8**
GOPC				*e*SG		**Sb**	**23 24 05.4**	**+1.2**
	comp=Z,6.0nm,0.4s							
GOPC	**GO Pecny, Ondr**	**2.35**	**267**	Pg		**Pg**	**23 23 35.7**	**-0.8**
GOPC				Sg		**Sb**	**23 24 05.4**	**+1.2**
	6.0nm,0.4s							
PRU	**Pruhonice**	**2.50**	**269**	*e*PG		**Pb**	**23 23 37.4**	**+0.1**
PRU				*e*SN		**Sn**	**23 24 04.4**	**-0.2**
PRU				*e*SG		**Sb**	**23 24 09.9**	**+1.3**
	comp=Z,4.8nm,0.4s							
PRU	**Pruhonice**	**2.50**	**269**	Pg		**Pb**	**23 23 37.4**	**+0.1**
PRU				Sn		**Sn**	**23 24 04.4**	**-0.2**
PRU				Sg		**Sb**	**23 24 09.9**	**+1.3**
	4.8nm,0.4s							
PVCC	**Panska Ves**	**2.51**	**282**	*e*PG		**Pg**	**23 23 39.3**	**-0.3**
PVCC				*e*SG		**Sg**	**23 24 11.2**	**-0.9**
	comp=Z,13nm,0.4s							
PVCC	**Panska Ves**	**2.51**	**282**	Pg		**Pg**	**23 23 39.3**	**-0.3**
PVCC				Sg		**Sg**	**23 24 11.2**	**-0.9**
	13nm,0.4s							
CONA	**Conrad Observa**	**2.73**	**219**	Pn		**Pn**	**23 23 37.5**	**+0.8**
CONA				Sn		**Sn**	**23 24 09.7**	**-0.7**
	2.5nm,0.3s							
KOLS	**Kolonicke sedl**	**2.76**	**113**	*e*Pn		**Pb**	**23 23 41.2**	**-0.6**
KOLS	**Kolonicke sedl**	**2.76**	**113**	*e*PN		**Pb**	**23 23 41.2**	**-0.6**
BRG	**Berggiesshubel**	**2.97**	**287**	PG		**Pg**	**23 23 48.8**	**+0.4**
BRG				SG		**Sg**	**23 24 28.7**	**+1.9**
	4.3nm,0.5s							
KHC	**Kasperske Hory**	**3.28**	**255**	*e*PN		**Pn**	**23 23 44.0**	**-0.3**
KHC				*e*PG		**Pg**	**23 23 52.9**	**-1.6**
KHC				*ex*		x	23 23 54.7	
KHC				*ex*		x	23 24 33.5	
KHC				*e*SG		**Sg**	**23 24 35.9**	**-1.1**
	comp=Z,10nm,0.4s							
KHC	**Kasperske Hory**	**3.28**	**255**	Pn		**Pn**	**23 23 44.0**	**-0.3**
ARSA	**Arzberg**	**3.42**	**215**	Pg		**Pg**	**23 23 57.7**	**+0.7**
	0.6nm,0.2s							
ARSA				Sg		**Sg**	**23 24 42.0**	**+0.8**
	0.7nm,0.3s							
MOA	**Molln**	**3.53**	**232**	Pn		**Pn**	**23 23 49.2**	**+1.6**
	0.4nm,0.2s							
MOA				Sn		**Sn**	**23 24 29.3**	**-0.7**
	4.2nm,0.4s							
CLL	**Collm**	**3.66**	**292**	*e*Sg		**Sg**	**23 24 49.0**	**+0.1**
NKC	**Novy Kostel**	**3.84**	**275**	*e*PG		**Pg**	**23 24 02.9**	**-2.2**
NKC				*e*SG		**Sg**	**23 24 52.8**	**-2.1**
	comp=Z,4.6nm,0.6s							
NKC	**Novy Kostel**	**3.84**	**275**	Pg		**Pg**	**23 24 02.9**	**-2.2**
NKC				Sg		**Sg**	**23 24 52.8**	**-2.1**
	4.6nm,0.6s							

IDC ***03*** *23:32:20.4±1.0, 23˚.99S× 175˚.87W, h0km, mb4.3/8, mb1 4.5/8, mb1mx4.2/25, mbtmp4.3/8, MS3.4/7, Ms1 3.4/7, ms1mx3.1/27, Error ellipse: s-maj=45.3km s-min=24.0km az=152.0*
ISCJB ***03*** *23:32:23.6±0.5, 24˚.04S± 0˚.09× 176˚.0W± 0˚.1, h31km, mb4.6/21, MS3.5/6, Error ellipse: s-maj=15.9km s-min=11.1km az=32.7*
NEIC ***03*** *23:32:25.7±0.4, 23˚.98S× 175˚.91W, h35km, mb4.6/12, Error ellipse: s-maj=12.4km s-min=9.1km az=133.0*

ISC 03 23:32:25.1±0.6, **24˚03S**±0˚.09× **175˚9W**±0˚.1, **h31**km, **n33,** σ**1º02**/31, **mb4.6**/21, **MS3.5**/6, **South of Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**5.50**	**199**	Pn		**Pn**	**23 33 44.9**	**0.0**
	251nm,0.4s							
URZ	**Urewera**	**15.38**	**201**	Pn		**P**	**23 36 04.7**	**+0.4**
	0.8nm,0.3s,baz=45,slow=8.6,SNR=3.4							
URZ				Sn		**Sn**	**23 38 46.0**	**-3.2**
	0.5nm,0.3s,baz=203,slow=23,SNR=1.3							
DZM	**Mont Dzumac**	**16.36**	**273**	LR		LR	23 40 45.1	
	comp=Z,48nm,20.3s,baz=33,slow

ADEN			*i* S		**Sn**	**23 52 00.4**	**+0.4**
ADEN			AML		AML	23 52 05.9	
	comp=N,692nm,0.3s						
ATA	**Atar**	**1.15 240**	*e*P		**Pn**	**23 51 46.5**	**+0.3**
ATD	**Arta Tunnel**	**1.43 249**	*e*P		**Pg**	**23 51 51.2**	**+0.3**
ATD			*e*S		**Sg**	**23 52 10.0**	**+0.5**
SGH	**Sud-Ghoubbet**	**1.66 249**	*e*P		**Pg**	**23 51 54.8**	**-0.5**
LDLD	**Lac de Lave**	**1.74 255**	*e*P		**Pb**	**23 51 55.1**	**-0.8**
GBR	**Grand-Bara**	**1.93 243**	*e*P		**Pb**	**23 51 59.1**	**-0.1**
UDYN	**Al 'Udayn**	**1.93 353**	*i* P		**Pg**	**23 51 59.5**	**-1.0**
UDYN			*i* S		**Sg**	**23 52 27.4**	**+1.9**
UDYN			AML		AML	23 52 34.9	
	comp=E,218nm,0.5s						
BDHA	**Al Bayda'**	**2.33 34**	*i* P		**Pg**	**23 52 07.2**	**-0.9**
BDHA			*i* S		**Sg**	**23 52 38.4**	**-0.1**
BDHA			AML		AML	23 52 53.5	
	comp=N,295nm,0.7s						

*ISCJB **03** 23:54:37.5±0.9,21°.9S±0°.1×176°.3W±0°.2, h10km, mb4.3/10, Error ellipse: s-maj=27.7km s-min=15.6km az=18.3*
*NEIC **03** 23:54:42.7±0.7,21°.89S×176°.28W, h35km, mb4.4/7, Error ellipse: s-maj=24.9km s-min=14.0km az=110.0*
*IDC **03** 23:54:44.1±6.8,20°.16S×177°.46W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.6/27, mbtmp3.9/3, Error ellipse: s-maj=315.3km s-min=60.6km az=148.0*

ISC 03 23:54:39.8±1.0, 21°.9S±0°.1×176°.3W±0°.2, h10km, n17, σ1°77/15, mb4.1/10, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**7.49**	**191**	Pn	**Pn**	**23 56 28.5**	**-0.6**
ASAR	**Alice Springs**	**45.77**	**258**	P	**P**	**00 03 01.4**	**-0.6**
	0.8nm,0.5s,baz=101,slow=7.5,SNR=12						
ASAR	**Alice Springs**	**45.77**	**258**	P	**P**	**00 03 01.4**	**-0.6**
WRA	**Warramunga Arr**	**46.00**	**263**	P	**P**	**00 03 02.5**	**-1.2**
	0.4nm,0.3s,baz=95,slow=8.3,SNR=9.5						
WRA	**Warramunga Arr**	**46.00**	**263**	P	**P**	**00 03 02.5**	**-1.2**
MIDW	**Midway**	**49.81**	**359**	P	P	00 03 30.3	-2.6
	32nm,0.9s						
FITZ	**Fitzroy Crossi**	**54.43**	**263**	P	**P**	**00 04 08.5**	**+0.8**
	0.8nm,0.5s,baz=83,slow=5.8,SNR=5.6						
FITZ	**Fitzroy Crossi**	**54.43**	**263**	P	**P**	**00 04 08.5**	**+0.8**
MAJO	**Matsushiro**	**72.26**	**323**	P	P	00 06 03.5	-1.9
	3.2nm,0.6s						
HWUT	**Hardware Ranch**	**87.00**	**43**	P	**P**	**00 07 25.5**	**-0.2**
	0.9nm,0.8s						
BJT	**Baijiatuan**	**87.98**	**315**	P	**P**	**00 07 29.2**	**-0.9**
	1.2nm,0.4s						
COLA	**College**	**89.22**	**12**	*e*P	**P**	**00 07 35.0**	**-0.3**
	0.6nm,0.5s						
CHTO	**Chiang Mai**	**92.20**	**289**	*e*P	**P**	**00 07 49.7**	**-0.7**
	0.8nm,0.4s						
YAK	**Yakutsk**	**93.98**	**338**	*e*P	**P**	**00 07 57.0**	**-0.5**
	0.3nm,0.3s						
KIV	**Kislovodsk**	**141.05**	**314**	*e*PKPdf	**PKPdf**	**00 14 09.5**	**-1.1**
BRTR	**Keskin Array B**	**148.94**	**312**	PKPbc	**PKPdf**	**00 14 28.2**	**+3.8**
	0.4nm,0.6s,baz=154,slow=6.4,SNR=3.1						
BRTR	**Keskin Array B**	**148.94**	**312**	PKPbc	**PKPdf**	**00 14 28.2**	**+3.8**

*CSEM **03** 23:59:19.1,41°.81N×43°.68E, h0km, ML1.7*

TIF 03 23:59:19.1,41°.81N×43°.68E, h20km±1km, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKH	**Akhalkalaki**	**0.43**	**199**	P	Pb	23 59 28.1	0.0
AKH				S	Sb	23 59 34.3	+0.1
AKH	**Akhalkalaki**	**0.43**	**199**	P	Pb	23 59 28.1	0.0
AKH				S	Sb	23 59 34.3	+0.2
BGD	**Bogdanovka**	**0.55**	**187**	P	Pb	23 59 30.2	0.0
BGD				S	Sb	23 59 37.6	-0.2
BGD	**Bogdanovka**	**0.55**	**187**	P	Pb	23 59 30.2	0.0
BGD				S	Sb	23 59 37.6	-0.2
ONI	**Oni**	**0.79**	**348**	P	Pb	23 59 34.7	+0.5
ONI				S	Sn	23 59 46.1	-0.4
TBLG	**Delisi**	**0.79**	**96**	P	Pn	23 59 34.9	-0.3
TBLG				S	Sn	23 59 46.2	-0.3
TBLG	**Delisi**	**0.79**	**96**	P	Pb	23 59 34.5	+0.3
TBLG				S	Sn	23 59 45.9	-0.6

*NIED **04** 00:06:00,40°.10N×142°.30E, h50km, Mw3.5 Best double couple: M₀2.20000×10¹⁴ NP1:φs196.00000°, δ17.00000°, λ88.00000°. NP2:φs18.00000°, δ73.00000°, λ91.00000°.*

JMA 04 00:06:10.1±0.1, 40°.09N×142°.24E, h42km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.33**	**243**	P	Pn	00 06 18.8	0.0
JTH				*e*S	Sn	00 06 25.0	+0.1
MIYJ	**Miyakonagasawa**	**0.61**	**212**	P	Pn	00 06 21.9	-0.4
MIYJ				*e*S	Sn	00 06 30.3	-0.7
JANG	**Nango**	**0.62**	**297**	P	Pn	00 06 22.3	-0.3
JANG				*e*S	Sn	00 06 30.8	-0.7
JKZ	**Kuzumaki**	**0.71**	**262**	P	Pn	00 06 23.8	+0.1
JKZ				*e*S	Sn	00 06 33.5	0.0
JOM	**Ohasama**	**0.96**	**230**	P	Pn	00 06 27.3	+0.2
JOM				*e*S	Sn	00 06 39.5	0.0
OFUJ	**Ofunato**	**1.10**	**204**	P	Pn	00 06 29.9	+0.9
JTM	**Tenmabayashi**	**1.13**	**308**	P	Pn	00 06 29.6	+0.1
JTM				S	Sn	00 06 44.5	+0.7
JAH	**Hinai**	**1.23**	**275**	P	Pn	00 06 31.1	+0.2
JAH				*e*S	Sn	00 06 46.2	-0.1
JMK	**Ichinoseki**	**1.38**	**215**	P	Pn	00 06 33.3	+0.4
JRG	**Rokugo**	**1.42**	**241**	P	Pn	00 06 34.0	+0.6

IDC 04 00:15:11.3±2.1, 5°.64S×150°.90E, h0km, mb3.3/3, mb1 3.7/3, mb1mx3.4/42, mbtmp3.4/3, Error ellipse: s-maj=144.9km s-min=30.3km az=126.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**21.48**	**227**	P	P	00 20 01.9	+0.2
	0.4nm,0.3s,baz=53,slow=10,SNR=8.3						
ASAR	**Alice Springs**	**24.27**	**221**	P	P	00 20 30.4	-0.1
	0.6nm,0.6s,baz=51,slow=11,SNR=6.0						
ILAR	**Eielson Array**	**83.65**	**22**	P	P	00 27 41.5	0.0
	0.2nm,0.6s,baz=228,slow=5.0,SNR=5.5						

*IDC **04** 00:17:43.1±2.4, 36°.89N×141°.23E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.2/62, mbtmp3.3/3, ML3.2/1, Error ellipse: s-maj=45.3km s-min=30.6km az=49.0*
*JMA **04** 00:17:45.5, 37°.19N×140°.90E, h8km±1km, M3.0*
JMA Felt I J1.

ISC 04 00:17:44.7±1.4, 37°.17N±0°.04×140°.98E±0°.07, h8km±8km, n14, σ0°91/20, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**246**	P	**Pg**	**00 17 48.3**	**+0.2**
ONAJ				*e*S	**Sg**	**00 17 50.3**	**-0.1**
JFK	**Kawauchi**	**0.22**	**338**	P	**Pg**	**00 17 49.4**	**+0.2**
JFK				*e*S	**Sg**	**00 17 52.1**	**-0.1**
JFT	**Otama**	**0.62**	**305**	P	**Pg**	**00 17 56.6**	**-0.1**
JFT				*e*S	**Sg**	**00 18 04.5**	**-0.4**
JHO	**Hitachi**	**0.64**	**211**	P	**Pb**	**00 17 57.5**	**-0.7**
JHO				*e*S	**Sg**	**00 18 06.0**	**+0.5**
JMM	**Marumori**	**0.71**	**348**	P	**Pg**	**00 17 58.4**	**-0.1**
JMM				S	**Sg**	**00 18 07.6**	**-0.3**
JSB	**Shiboa**	**0.87**	**257**	P	**Pb**	**00 18 01.9**	**-0.2**
JSB				*e*S	**Sg**	**00 18 13.1**	**+0.4**
JFY	**Yanaizu**	**1.04**	**284**	P	**Pg**	**00 18 04.2**	**-0.6**
JFY				*e*S	**Sg**	**00 18 17.2**	**-1.1**
MJAR	**Matsushiro Arr**	**2.31**	**255**	Pn	**Pn**	**00 18 24.3**	**+1.3**
	5.0nm,0.3s,baz=70,slow=14,SNR=18						
MJAR				Sn	**Sb**	**00 18 55.2**	**0.0**
	2.2nm,0.3s,baz=81,slow=28,SNR=4.2						
MAT	**Matsushiro**	**2.31**	**255**	P	**Pb**	**00 18 25.8**	**-0.8**
MAT				S	**Sb**	**00 18 55.2**	**-0.1**
H11N2	**WAKE ISLAND Hy**	**28.51**	**120**	T	T	00 53 25.3	
	baz=313,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**28.52**	**120**	T	T	00 53 28.2	
	baz=313,slow=75,SNR=13						
H11N3	**WAKE ISLAND Hy**	**28.53**	**120**	T	T	00 53 29.2	
	baz=313,slow=75,SNR=12						
MKAR	**Makanchi Array**	**43.75**	**302**	P	**P**	**00 25 52.5**	**+2.0**
	0.2nm,0.3s,baz=76,slow=12,SNR=2.8						
WRA	**Warramunga Arr**	**57.14**	**187**	P	**P**	**00 27 29.9**	**-2.1**
	0.4nm,0.8s,baz=4.3,slow=7.1,SNR=6.0						

*ISCJB **04** 00:23:40.1±1.0, 17°.3S±0°.4×178°.3W±0°.2, h350km, mb3.7/8, Error ellipse: s-maj=60.4km s-min=8.7km az=156.6*
*IDC **04** 00:23:40.1±1.9, 17°.36S×178°.21W, h338km±20km, mb3.4/7, mb1 3.6/8, mb1mx3.3/31, mbtmp4.1/8, Error ellipse: s-maj=49.0km s-min=12.5km az=152.0*

ISC 04 00:23:40.8±1.1, 17°.4S±0°.4×178°.1W±0°.2, h350km, n12, σ0°86/16, mb3.7/8, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.05**	**61**	P	**Pn**	**00 25 24.2**	**+0.3**
	4.7nm,0.3s,baz=169,slow=5.7,SNR=4.2						
AFI				S	**S**	**00 26 46.4**	**-1.3**
	2.9nm,0.3s,baz=11,slow=23,SNR=3.2						
CTA	**Charters Tower**	**33.78**	**260**	P	**P**	**00 29 52.7**	**+1.4**
	1.6nm,0.3s,baz=78,slow=18,SNR=3.7						
STKA	**Stephens Creek**	**39.10**	**241**	P	**P**	**00 30 35.1**	**-0.6**
	2.1nm,0.7s,baz=69,slow=8.6,SNR=2.0						
WRA	**Warramunga Arr**	**44.98**	**259**	P	**P**	**00 31 22.4**	**-0.4**
	0.6nm,0.5s,baz=97,slow=7.0,SNR=15						
WRA				PcP	**PcP**	**00 32 56.9**	**-0.5**
	0.4nm,0.4s,baz=96,slow=3.6,SNR=5.2						
ASAR	**Alice Springs**	**45.17**	**254**	P	**P**	**00 31 24.1**	**-0.3**
	2.8nm,0.4s,baz=90,slow=8.3,SNR=43						
ASAR				PcP	**PcP**	**00 32 57.1**	**-0.9**
	0.6nm,0.5s,baz=99,slow=3.9,SNR=6.5						
SIJI	**Sorong**	**52.37**	**283**	P	**P**	**00 32 17.1**	**-1.6**
	64nm,0.3s,baz=141,slow=9.6,SNR=2.8						
FITZ	**Fitzroy Crossi**	**53.36**	**260**	P	**P**	**00 32 26.5**	**+0.7**
	0.8nm,0.5s,baz=75,slow=2.2,SNR=5.7						
ILAR	**Eielson Array**	**85.34**	**13**	P	**P**	**00 35 39.7**	**+0.9**
	0.3nm,0.4s,baz=225,slow=5.2,SNR=12						
TXAR	**Lajitas Array**	**85.51**	**58**	P	**P**	**00 35 41.1**	**+0.6**
	1.3nm,0.9s,baz=222,slow=4.8,SNR=10						
BRTR	**Keskin Array B**	**144.61**	**315**	PKP	**PKPdf**	**00 42 37.0**	**+0.4**
	0.3nm,0.8s,baz=87,slow=4.1,SNR=5.3						
GERES	**GERESS Array B**	**147.19**	**346**	PKPbc	**PKPbc**	**00 42 43.5**	**+0.1**
	0.4nm,0.5s,baz=48,slow=2.0,SNR=5.2						
GERES				PKPab	**PKPab**	**00 42 45.9**	**-0.1**
	0.4nm,0.5s,baz=38,slow=2.4,SNR=5.3						
DAVOX	**Davos/Dischmat**	**149.96**	**349**	PKPbc	**PKPbc**	**00 42 50.7**	**+0.2**

*ISCJB **04** 00:35:30.0±1.2, 17°.8S±0°.3×178°.3W±0°.2, h590km, mb3.8/9, Error ellipse: s-maj=45.4km s-min=16.9km az=150.7*
*IDC **04** 00:35:33.1±4.6, 17°.90S×178°.24W, h618km±51km, mb3.2/9, mb1 3.5/9, mb1mx3.2/25, mbtmp4.2/9, Error ellipse: s-maj=41.7km s-min=22.2km az=139.0*

ISC 04 00:35:30.7±1.1, 17°.9S±0°.3×178°.2W±0°.2, h590km, n15, σ0°92/17, mb3.8/9, 1C, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**38.84**	**241**	P	**P**	**00 42 06.9**	**+0.4**
	5.8nm,0.8s,baz=95,slow=9.6,SNR=5.7						
JAY	**Jayapura**	**43.12**	**286**	P	**P**	**00 42 41.9**	**+1.3**
	1.0nm,0.6s,baz=100,slow=22,SNR=6.3						
WRA	**Warramunga Arr**	**44.86**	**259**	P	**P**	**00 42 53.4**	**-0.6**
	4.9nm,0.6s,baz=95,slow=7.0,SNR=104						
WRA				PcP	**PcP**	**00 44 21.6**	**-1.1**
	0.4nm,0.3s,baz=91,slow=3.7,SNR=5.2						
ASAR	**Alice Springs**	**45.02**	**254**	P	**P**	**00 42 54.9**	**-0.2**
	9.5nm,0.6s,baz=89,slow=8.0,SNR=78						
ASAR				PcP	**PcP**	**00 44 22.2**	**-1.1**
	1.0nm,0.4s,baz=102,slow=3.9,SNR=7.2						
PETK	**Petropavlovsk-**	**73.72**	**345**	P	**P**	**00 46 05.0**	**-0.2**
	2.8nm,0.7s,baz=134,slow=7.5,SNR=2.6						
TXAR	**Lajitas Array**	**85.79**	**58**	P	**P**	**00 47 09.7**	**+0.7**
	0.5nm,0.7s,baz=213,slow=8.5,SNR=6.6						
ILAR	**Eielson Array**	**85.81**	**13**	P	**P**	**00 47 06.7**	**-1.4**
	0.4nm,0.5s,baz=224,slow=4.3,SNR=9.1						
PDAR	**Pinedale Array**	**87.18**	**43**	P	**P**	**00 47 16.6**	**+1.2**
	0.2nm,0.4s,baz=230,slow=6.8,SNR=2.2						
CMAR	**Chiang Mai Arr**	**89.09**	**290**	P	**P**	**00 47 25.1**	**+0.6**
	0.9nm,0.7s,baz=111,slow=2.9,SNR=4.4						
BRTR	**Keskin Array B**	**144.93**	**315**	PKP	**PKPdf**	**00 54 01.7**	**-0.2**
	1.8nm,0.8s,baz=131,slow=4.0,SNR=9.4						
CLL	**Collm**	**145.49**	**348**	*i* P	**PKPdf**	**00 54 02.9**	**+0.7**
	comp=Z,5.0nm,0.9s						
MMAI	**Mount Meron Ar**	**146.32**	**303**	PKPbc	**PKPbc**	**00 54 06.2**	**-0.5**
	comp=Z,1.5nm,0.5s,baz=67,slow=6.4,SNR=9.1						
KHC	**Kasperske Hory**	**147.41**	**346**	*e*P	**PKPbc**	**00 54 08.0**	**-1.0**
GERES	**GERESS Array B**	**147.65**	**345**	PKPbc	**PKPbc**	**00 54 09.0**	**-0.7**
	comp=Z,1.0nm,0.6s,baz=43,slow=2.5,SNR=9.6						
DAVOX	**Davos/Dischmat**	**150.43**	**349**	PKPbc	**PKPbc**	**00 54 15.9**	**-0.8**
	comp=Z,2.1nm,0.6s,baz=222,slow=4.9,SNR=6.7						

*ISCJB **04** 00:51:00.3±0.5, 10°.84N±0°.03×62°.00W±0°.03, h71km±7km, Error ellipse: s-maj=6.3km s-min=4.0km az=142.9*
*TRN **04** 00:51:01.8, 10°.86N×61°.96W, h57km, MD3.8*
*FUNV **04** 00:51:02.0, 10°.86N×61°.90W, h50km, MW3.6*

ISC 04 00:51:01.0±1.2, 10°.84N±0°.04×62°.00W±0°.03, h65km±9km, n27, σ1°15/40, 2C-3D, Trinidad

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TCE	**Chacachacare**	**0.28**	**121**	*e*P	**Pn**	**00 51 11.9**	**+0.5**
GUIV	**Guiria**	**0.29**	**229**	↓*i*P	**Pn**	**00 51 11.8**	**+0.2**
GUIV				*e*S	**Sn**	**00 51 19.0**	**-0.3**
TRN	**Trinidad (W)**	**0.61**	**108**	*i*P	**Pn**	**00 51 14.7**	**+0.1**
TRN				*e*S	**Sn**	**00 51 23.4**	**-1.1**
TPP	**Pointe-a-Pierr**	**0.75**	**134**	*e*P	**Pn**	**00 51 16.9**	**+0.8**
TBH	**Brigand Hill**	**0.98**	**111**	*i*P	**Pn**	**00 51 19.3**	**+0.3**
TBH				*e*S	**Sn**	**00 51 32.3**	**0.0**
GUNV	**Guanoco**	**1.15**	**234**	↓*i*P	**Pn**	**00 51 22.3**	**+1.2**
GUNV				*e*S	**Sn**	**00 51 37.7**	**+1.5**
CRUV	**Carupano**	**1.23**	**262**	↓*i*P	**Pn**	**00 51 22.6**	**+0.4**
CRUV				*e*S	**Sn**	**00 51 38.2**	**+0.2**
BOT	**Bacolet**	**1.30**	**75**	*e*P	**Pn**	**00 51 23.5**	**+0.4**
BOT				*e*S	**Sn**	**00 51 39.9**	**+0.3**
GRGR	**Grenville**	**1.33**	**15**	*e*P	**Pn**	**00 51 23.2**	**-0.3**
GRGR				*e*S	**Sn**	**00 51 39.8**	**-0.7**
GRGR	**Grenville**	**1.33**	**15**	*e*P	**Pn**	**00 51 22.7**	**-0.8**
GRW	**Mount Saint Ca**	**1.35**	**14**	*e*P	**Pn**	**00 51 24.8**	**+0.9**
GRSS	**Sisters**	**1.50**	**15**	*e*P	**Pn**	**00 51 26.6**	**+0.8**
GRSS				*e*S	**Sn**	**00 51 45.2**	**+0.8**
TOSP	**Speyside**	**1.50**	**72**	*e*P	**Pn**	**00 51 25.8**	**0.0**
TOSP				*e*S	**Sn**	**00 51 44.1**	**-0.5**
ORIV	**Oritupano**	**2.24**	**218**	*e*P	**Pn**	**00 51 37.5**	**+1.7**
ORIV				*e*S	**Sn**	**00 52 02.6**	**+0.1**
FCV	**Fort Charlotte**	**2.42**	**18**	*e*P	**Pn**	**00 51 39.1**	**+0.9**
SVB	**Belmont**	**2.52**	**17**	*e*P	**Pn**	**00 51 40.4**	**+0.7**
SVB				*e*S	**Sn**	**00 52 08.9**	**-0.5**
PCRV	**Puerto La Cruz**	**2.68**	**256**	*e*P	**Pn**	**00 51 42.9**	**+1.1**
RIOV	**Rio Grande**	**2.76**	**176**	*e*P	**Pn**	**00 51 43.8**	**+0.9**
GURV	**El Guri**	**3.24**	**199**	*e*P	**Pn**	**00 51 50.0**	**+0.6**
PRGV	**PARIAGUAN**	**3.33**	**232**	*e*P	**Pn**	**00 51 51.2**	**+0.5**
CUPV	**Cœpira**	**3.81**	**259**	*e*P	**Pn**	**00 51 59.1**	**+1.8**
BIRV	**Birongo**	**4.22**	**265**	*e*P	**Pn**	**00 52 04.2**	**+1.5**
BIRV				*e*S	**Sn**	**00 52 49.3**	**-1.5**
LUEV	**Luepa**	**4.99**	**174**	*e*P	**Pn**	**00 52 12.3**	**-1.3**
TURV	**Turiamo**	**5.76**	**267**	*e*P	**Pn**	**00 52 25.2**	**+1.3**
BAUV	**El Baul**	**6.25**	**253**	*e*P	**Pn**	**00 52 30.6**	**0.0**
BAUV				*e*S	**Sn**	**00 53 36.3**	**-4.4**
TEPV	**Terepaima**	**7.13**	**264**	*e*P	**Pn**	**00 52 42.7**	**0.0**
MONV	**Montecano**	**7.90**	**279**	*e*P	**Pn**	**00 52 52.9**	**-0.3**

SJA 04 01:42:44.8±1.3, 28°.69S×70°.60W, h76km±13km, ML3.8, MW3.7, Central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LCO	**Las Campanas**	**0.34**	**196**	*e*P	Pn	01 42 58.0	+0.6
LCO				*e*S	Sn	01 43 07.6	+1.1
AGUA	**GUANDACOL**	**2.01**	**114**	*e*P	Pn	01 43 19.6	+2.8
VCA	**Vinchina**	**2.10**	**92**	*e*P	Pn	01 43 20.9	+2.7
VCA				IAML		01 43 55.7	
	comp=Z,668nm,0.2s						
AMOG	**MOGNA**	**2.90**	**141**	*e*P	Pn	01 43 30.7	+1.9
RTLL	**Cerro Villicun**	**3.21**	**146**	*e*P	Pn	01 43 35.1	+2.0
RTLS	**Leoncito**	**3.30**	**160**	*e*P	Pn	01 43 37.5	+3.0
AVFE	**Valle Fertil**	**3.37**	**126**	*e*P	Pn	01 43 36.4	+1.3
AVFE				IAML		01 44 21.2	
	comp=Z,160nm,0.2s						
RTCV	**Cerro Valdivia**	**3.63**	**151**	*e*P	Pn	01 43 40.8	+2.1
ACHE	**Chepes**	**4.21**	**127**	*e*P	Pn	01 43 47.9	+1.2
CYA	**Choya**	**4.22**	**88**	IAML		01 44 38.5	
	comp=Z,58nm,0.3s						
ACAN	**Cantantal**	**4.63**	**141**	*e*P	Pn	01 43 53.7	+1.4

*ISCJB **04** 01:44:19.0±0.4, 36°.09S±0°.03×71°.29W±0°.06, h105km±2km, mb4.7/110, Error ellipse: s-maj=7.7km s-min=4.8km az=178.1*
*NEIC **04** 01:44:20.0, 36°.07S×71°.56W, h117km, mb4.7/101, After GUC.*
NEIC Felt [IV] at Cauquenes and Longavi and [III] in much of Bio-Bio, Maule and O'Higgins.
*GUC **04** 01:44:20.4±0.5, 36°.07S×71°.56W, h117km±3km, ML4.6*
*IDC **04** 01:44:21.2±0.6, 36°.04S×71°.20W, h108km±5km, mb4.3/10, mb1 4.4/13, mb1mx4.3/23, mbtmp4.7/13, MS3.5/7, Ms1 3.4/7, ms1mx3.2/21, Error ellipse: s-maj=20.8km s-min=11.8km az=78.0*
*BJI **04** 01:44:21.0, 36°.10S×71°.60W, h117km, mB5.0/3*

ISC 04 01:44:20.8±0.4, 36°.08S±0°.04×71°.39W±0°.06, h107km±3km, h107km:pP-P, n413, σ0°91/448, mb4.7/110, 4C, Central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TALC	**Talca**	**0.70**	**344**	↑*e*P	**Pn**	**01 44 38.8**	**-0.1**
TALC				*e*S	**Sn**	**01 44 52.8**	**+0.3**
CCHI	**Chillan**	**0.76**	**226**	↑*e*P	**Pn**	**01 44 39.1**	**-0.3**
CCHI				*e*S	**Sn**	**01 44 52.8**	**-0.7**
NICH	**Los Niches**	**1.08**	**7**	↑*e*P	**Pn**	**01 44 42.8**	**+0.2**
NICH				*e*S	**Sn**	**01 45 00.1**	**+1.0**
COCH	**Cobquecura**	**1.13**	**267**	*e*P	**Pn**	**01 44 41.9**	**-1.2**
COCH				*e*S	**Sn**	**01 44 58.2**	**-1.9**
COCH				IAML		01 45 00.6	
	comp=N,16μm,0.5s						
CCSP	**San Pedro de C**	**1.58**	**240**	*e*P	**Pn**	**01 44 46.7**	**-1.8**
CCSP				*e*S	**Sn**	**01 45 07.1**	**-2.4**
CCSP				IAML		01 45 08.9	
	comp=N,8μm,0.6s						
CHPI	**Pichilemu**	**1.75**	**343**	*e*P	**Pn**	**01 44 50.0**	**-0.6**
CHPI				*e*S	**Sn**	**01 45 12.0**	**-1.2**
CHPI				IAML		01 45 15.1	
	comp=E,10μm,0.9s						
ROC1	**El Roble**	**3.11**	**6**	*e*Pn	**Pn**	**01 45 07.5**	**-1.0**
ROC1				*e*Sn	Sn	01 45 35.8	-9.2
PLCA	**Paso Flores**	**4.70**	**172**	P	**Pn**	**01 45 28.6**	**-0.9**
	comp=E,11nm,0.3s,baz=356,slow=11,SNR=131						
PLCA	**Paso Flores**	**4.70**	**172**	*e*Pn	**Pn**	**01 45 28.3**	**-1.2**
LCO	**Las Campanas**	**7.07**	**5**	*e*Pn	**Pn**	**01 46 00.4**	**-1.5**
LCO				*e*Sn	**Sn**	**01 47 14.1**	**-6.8**
TRQA	**Tornquist**	**7.78**	**108**	*e*Pn	**Pn**	**01 46 10.7**	**-0.6**
CHRN	**Cochrane**	**11.20**	**184**	*e*Pn	**Pn**	**01 46 55.3**	**-2.2**
LVC	**Limon Verde**	**13.59**	**10**	P	**Pn**	**01 47 28.4**	**-1.1**
	comp=E,23nm,0.3s,baz=206,slow=10.0,SNR=2.7						
LVC	**Limon Verde**	**13.59**	**10**	*e*Pn	**Pn**	**01 47 28.5**	**-1.0**
PB01	**IPOC Station P**	**15.07**	**7**	*e*Pn	**Pn**	**01 47 47.2**	**-1.0**
	comp=E,29nm,0.8s						
CPUP	**Villa Florida**	**15.45**	**55**	P	**Pn**	**01 47 53.6**	**+0.8**
	comp=E,0.4nm,0.3s,baz=234,slow=8.1,SNR=10						
CPUP				LR	LR	01 54 16.6	
	comp=E,145nm,18.8s,baz=236,slow=39						
EFI	**East Falkland**	**18.27**	**153**	*e*P	**P**	**01 48 24.0**	**-1.9**
	comp=E,115nm,1.4s						
USHA	**Ushuaia**	**18.87**	**175**	P	**Pn**	**01 48 33.8**	**-0.4**
	comp=E,217nm,0.3s,baz=343,slow=8.7,SNR=17						
SIV	**San Ignacio**	**22.02**	**27**	P	**P**	**01 49 05.8**	**-0.8**
	comp=E,3.3nm,0.5s,baz=208,slow=7.3,SNR=12						
NNA	**Nana**	**24.48**	**347**	LR	LR	01 56 54.2	
	comp=E,123nm,21.5s,baz=166,slow=31						
NNA	**Nana**	**24.48**	**347**	*e*P	**P**	**01 49 29.9**	**-0.1**
	comp=E,85nm,0.9s						
SAML	**Samuel**	**28.02**	**17**	*e*P	**P**	**01 50 00.5**	**-1.3**
	comp=E,1.7nm,0.5s						
HOPE	**Hope Point**	**30.18**	**138**	*e*P	**P**	**01 50 19.6**	**-0.9**
	comp=E,311nm,1.8s						
OTAV	**Otavalo**	**36.72**	**348**	*e*P	**P**	**01 51 16.0**	**-2.2**
	comp=E,19nm,1.4s						
PTGA	**Pitinga**	**36.73**	**19**	*e*P	**P**	**01 51 16.9**	**-0.9**
	comp=E,8.7nm,0.7s						
SJAC	**San Juan de Ar**	**39.22**	**356**	*e*P	**P**	**01 51 38.1**	**-0.7**
PRAC	**Prado**	**39.72**	**355**	*e*P	**P**	**01 51 43.4**	**+0.5**
	comp=E,25nm,0.6s						
VILC	**Villavicencio,**	**40.03**	**356**	*e*P	**P**	**01 51 45.4**

baz=162
HPIG 70.52 328 eP P 01 55 25.6 +1.4
comp=E,21nm,1.2s
JSC Jenkinsville 70.60 351 eP P 01 55 24.3 +0.1
comp=E,7.4nm,1.0s
Z47A Carrollton 70.66 345 P P 01 55 25.2 +0.6
baz=166
Z48A Northport 70.73 346 P P 01 55 25.3 +0.2
baz=166
338A Crockett 70.73 338 P P 01 55 26.7 +1.5
baz=160
533A Kerrville 70.74 335 P P 01 55 26.2 +0.9
baz=157,SNR=14
Z46A Louisville 70.84 344 P P 01 55 26.8 +1.1
baz=165
337A Centerville 70.87 338 P P 01 55 27.2 +1.3
baz=159
NATX Nacogdoches 70.92 339 P P 01 55 27.0 +0.7
baz=160
NATX Nacogdoches 70.92 339 eP P 01 55 27.2 +0.9
comp=E,26nm,0.8s
143A Socs Landing, 70.94 342 P P 01 55 27.6 +1.2
baz=163
MAW Mawson 71.04 163 P P 01 55 26.5 -0.1
comp=E,6.8nm,0.8s,baz=215,slow=5.8,SNR=12
MAW LR LR 02 29 39.3
comp=E,36nm,18.5s,baz=239,slow=38
434A Burnet 71.16 336 P P 01 55 28.5 +0.7
baz=158,SNR=13
336A Riesel 71.23 337 P P 01 55 29.0 +0.9
baz=159,SNR=6.0
Y47A UCPARC, Winfie 71.30 346 P P 01 55 29.0 +0.5
baz=166
335A Moody 71.32 337 P P 01 55 29.5 +0.8
baz=158,SNR=6.0
JCT Junction City 71.38 334 P P 01 55 29.6 +0.4
baz=156,SNR=10.0
JCT Junction City 71.38 334 eP P 01 55 30.1 +0.9
comp=E,22nm,0.9s
433A Art 71.39 335 P P 01 55 29.6 +0.5
baz=157,SNR=16
KMSC Kings Mountain 71.46 351 P P 01 55 29.5 0.0
baz=172
237A Washetta, Mont 71.48 338 P P 01 55 30.3 +0.7
baz=160
Y46A Houston 71.48 345 P P 01 55 29.7 +0.1
baz=165
334A Lometa 71.63 336 P P 01 55 31.2 +0.6
baz=158,SNR=20
TXAR Lajitas Array 71.80 331 P P 01 55 32.3 +0.6
comp=E,5.5nm,0.8s,baz=150,slow=8.6,SNR=69
TXAR pP pP 01 55 59.6 +0.8
comp=E,1.3nm,0.7s,baz=151,slow=7.3,SNR=2.8
TXAR LR LR 02 22 38.4
comp=E,29nm,18.8s,baz=0.0,slow=32
TX31 Lajitas Ar. Si 71.80 331 eP P 01 55 32.5 +0.7
Z41A Richland Creek 71.82 341 P P 01 55 32.4 +0.8
baz=162
333A Richland Sprin 71.87 335 P P 01 55 32.6 +0.5
baz=157,SNR=11
WHTX Lake Whitney, 71.98 337 P P 01 55 33.3 +0.6
baz=158,SNR=5.1
WHTX Lake Whitney, 71.98 337 eP P 01 55 33.3 +0.6
comp=E,18nm,0.8s
X45A UM Field Stati 72.12 344 P P 01 55 33.1 -0.3
baz=165
Z39A Irene McRaven, 72.18 340 P P 01 55 34.5 +0.8
baz=161
CPCT Cooper Cave 72.20 349 eP P 01 55 33.6 -0.2
comp=E,7.6nm,0.8s
OXF Oxford 72.21 344 eP P 01 55 33.8 -0.1
comp=E,22nm,0.8s
OXF pP pP 01 56 00.6 -0.4
SWET Sewanee 72.21 348 eP P 01 55 34.0 0.0
comp=E,12nm,0.8s
234A Clairette 72.22 336 P P 01 55 34.5 +0.4
baz=158,SNR=7.0
TKL Tuckaleechee C 72.29 349 eP P 01 55 34.1 -0.4
comp=E,11nm,1.0s
WLAR White Oak Lake 72.31 341 eP P 01 55 35.8 +1.3
comp=E,29nm,1.0s
Y41A Eaglette Beard 72.36 342 P P 01 55 35.7 +0.8
baz=162
233A Rising Star 72.48 336 P P 01 55 36.1 +0.4
baz=157,SNR=12
135A Vickery Place, 72.49 337 P P 01 55 36.3 +0.6
baz=158
Y40A Okolona 72.66 341 P P 01 55 37.0 +0.3
baz=162
134A White-Moore Ra 72.72 337 P P 01 55 37.3 +0.2
baz=158
Y39A Lockesburg 72.81 340 P P 01 55 37.9 +0.4
baz=161
Z36A Blue Ridge 72.86 338 P P 01 55 38.5 +0.7
baz=159,SNR=8.0
X40A Basin Creek Fa 73.00 342 P P 01 55 38.9 +0.3
baz=162
133A Hamilton Ranch 73.03 336 P P 01 55 39.4 +0.5
baz=157,SNR=8.3
TZTN Tazewell 73.13 350 eP P 01 55 38.2 -1.1
comp=E,29nm,1.5s
Z35A Perchaven, San 73.16 338 P P 01 55 40.2 +0.6
baz=159,SNR=5.2
MIAR Mount Ida 73.25 341 P P 01 55 39.8 -0.3
baz=162,SNR=5.5
MIAR Mount Ida 73.25 341 eP P 01 55 39.3 -0.7
comp=E,32nm,2.0s
ABTX Abilene, Hawle 73.28 335 P P 01 55 40.9 +0.5
baz=157,SNR=5.3
ABTX Abilene, Hawle 73.28 335 eP P 01 55 40.5 +0.2
comp=E,16nm,0.8s
ABTX epP pP 01 56 07.4 -0.1
X39A Fountain Ranch 73.36 341 P P 01 55 41.2 +0.5
baz=161
Y36A Durant 73.40 339 P P 01 55 41.3 +0.3
baz=159
Z34A Collier Ranch, 73.41 337 P P 01 55 41.4 +0.4
baz=158
WVT Waverly 73.45 346 eP P 01 55 40.8 -0.4
comp=E,36nm,1.0s
WVT epP pP 01 56 07.9 -0.5
W41B Gary Mavity, V 73.50 342 P P 01 55 41.5 0.0
baz=163,SNR=6.5
Z33A Whitaker Ranch 73.60 336 P P 01 55 42.4 +0.2
baz=157,SNR=9.1
X301 Greenbrier Sit 73.60 342 eP P 01 55 42.6 +0.5
comp=E,22nm,0.9s
WHAR Wooly Hollow 73.62 342 eP P 01 55 42.5 +0.3
comp=E,12nm,1.1s
WHAR epP pP 01 56 09.8 +0.4
X201 Greenbrier Sit 73.64 342 eP P 01 55 42.8 +0.4
comp=E,20nm,1.0s
Y34A Reagan Ranch, 73.90 337 P P 01 55 43.7 -0.2
baz=158
V42A Cord 73.90 343 P P 01 55 43.4 -0.4
baz=163
W39A Magazine 73.91 341 P P 01 55 44.4 +0.4
baz=162,SNR=15
W38A Poteau 73.99 340 P P 01 55 44.7 +0.3
baz=161,SNR=7.9
X36A Centrahoma 74.04 339 P P 01 55 44.6 -0.2
baz=159,SNR=8.9
V41A Mountainview 74.06 343 P P 01 55 44.6 -0.2
baz=163,SNR=16
Y33A Hilltop Ranch, 74.22 337 P P 01 55 45.9 +0.1
baz=158,SNR=7.3
V40A Witts Springs 74.24 342 P P 01 55 45.8 -0.2
baz=162,SNR=5.2
U42A Revenden 74.38 343 P P 01 55 46.5 -0.2
baz=164,SNR=8.6
V39A Pettigrew 74.49 341 P P 01 55 47.3 0.0
baz=162,SNR=8.6
X34A Smith Ranch, M 74.52 338 P P 01 55 47.4 -0.1
baz=158,SNR=6.4
W36A Wetumka 74.54 339 P P 01 55 47.0 -0.6
baz=160
U41A Viola 74.54 343 P P 01 55 47.4 -0.2
baz=163
MNTX Cornudas Mount 74.57 330 P P 01 55 47.7 -0.2
baz=152
MNTX Cornudas Mount 74.57 330 eP P 01 55 47.8 -0.2
comp=E,6.8nm,0.8s
MNTX epP pP 01 56 14.4 -0.7
PBMO Poplar Bluff 74.61 344 eP P 01 55 47.6 -0.3
comp=E,16nm,0.7s
X33A Lawton 74.67 337 P P 01 55 47.8 -0.6
baz=158
HSIG 74.69 325 eP P 01 55 49.9 +1.3
comp=E,54nm,1.9s
V38A Canehill 74.71 341 P P 01 55 48.3 -0.3
baz=161,SNR=6.3
U40A Yellville 74.78 342 P P 01 55 48.6 -0.4
baz=162,SNR=11
V37A Hulbert 74.93 340 P P 01 55 49.5 -0.3
baz=160
WMOK Wichita Mounta 74.94 337 P P 01 55 49.7 -0.2
baz=158,SNR=11
WMOK Wichita Mounta 74.94 337 eP P 01 55 50.0 0.0
comp=E,20nm,1.5s
WMOK epP pP 01 56 15.7 -1.4
U39A Green Forest 74.96 342 P P 01 55 50.1 0.0
baz=162,SNR=6.3
HHAR Hobbs 74.98 341 eP P 01 55 50.3 +0.1
comp=E,7.7nm,0.8s
V36A Jenks 75.06 340 P P 01 55 50.3 -0.3
baz=160,SNR=6.0
W34A Bridge Creek, 75.08 338 P P 01 55 50.4 -0.3
baz=158
TUL1 Leonard 75.13 340 P P 01 55 50.6 -0.4
baz=160,SNR=5.6
TUL1 Leonard 75.13 340 eP P 01 55 50.6 -0.4
comp=E,17nm,0.8s
T41A Mountain View 75.17 343 P P 01 55 50.6 -0.6
baz=163,SNR=6.6
USIN University of 75.20 347 eP P 01 55 50.8 -0.5
comp=E,24nm,0.9s
WCI Wyandotte Cave 75.21 348 eP P 01 55 50.7 -0.7
comp=E,5.2nm,0.8s
W33A Caddo, Fort Co 75.22 337 P P 01 55 50.8 -0.8
baz=158
S44A Carbondale 75.24 345 P P 01 55 51.2 -0.4
baz=165,SNR=5.6
SIUC Southern Illin 75.26 345 eP P 01 55 51.5 -0.2
comp=E,11nm,0.8s
V35A Meyer Ranch, C 75.30 339 P P 01 55 52.0 +0.1
baz=159
S43A Fulton Ridge, 75.30 345 P P 01 55 51.5 -0.4
baz=165,SNR=20
DBIC Dimbokro 75.36 70 P P 01 55 52.5 -0.3
comp=E,7.9nm,0.5s,baz=205,slow=6.4,SNR=21
DBIC LR LR 02 26 13.6
comp=E,23nm,19.9s,baz=162,slow=33
U37A Salina 75.41 340 P P 01 55 52.3 -0.3
baz=160
W32A Sentinel 75.44 337 P P 01 55 53.3 +0.4
baz=157,SNR=14
T40A Mansfield 75.45 343 P P 01 55 52.5 -0.3
baz=163
T39A Clever 75.54 342 P P 01 55 53.0 -0.3
baz=162
V34A Guthrie 75.56 338 P P 01 55 53.5 0.0
baz=159
U36A Ologah 75.57 340 P P 01 55 53.3 -0.2
baz=160
MSTX Muleshoe 75.60 333 P P 01 55 54.0 +0.1
baz=154
MSTX Muleshoe 75.60 333 eP P 01 55 54.3 +0.5
comp=E,12nm,0.8s
S41A Jillco Farms, 75.68 343 P P 01 55 54.3 +0.2
baz=163,SNR=17
V33A Lossen Ranch, 75.78 338 P P 01 55 55.3 +0.5
baz=158,SNR=7.4
T38A Diamond 75.78 341 P P 01 55 54.5 -0.2
baz=161
U35A Pawnee 75.83 339 P P 01 55 55.1 +0.1
baz=159,SNR=5.5
S40A Lebanon 75.87 343 P P 01 55 55.5 +0.3
baz=163,SNR=15
V32A Arapaho 75.93 337 P P 01 55 56.1 +0.5
baz=157
T37A Cheneyville 18 76.03 341 P P 01 55 56.0 -0.1
baz=161,SNR=9.3
AMTX Amarillo 76.03 335 eP P 01 55 56.8 +0.5
S39A Bolivar 76.16 342 P P 01 55 56.8 0.0
baz=162,SNR=7.4
T36A Boggs Farm, Ca 76.23 340 P P 01 55 57.6 +0.3
baz=160,SNR=5.5
S38A Stockton 76.25 342 P P 01 55 57.3 -0.1
baz=162,SNR=16
T35A Sooner Cattle 76.28 339 P P 01 55 58.1 +0.6
baz=160
121A Cookes Peak, D 76.28 329 P P 01 55 59.2 +1.3
baz=151
R40A Maddies Statio 76.48 343 P P 01 55 58.7 +0.1
baz=163,SNR=14
U32A Winter Ranch, 76.52 337 P P 01 55 59.1 +0.2
baz=158,SNR=6.0
Q43A New Douglas 76.54 345 P P 01 55 58.8 -0.1
baz=155,SNR=8.3
T34A McClaskey Farm 76.57 339 P P 01 55 59.3 +0.2
baz=159,SNR=6.1
S37A Fort Scott 76.61 341 P P 01 55 59.3 0.0
baz=161
R39A Chumby, Stover 76.68 343 P P 01 55 59.6 -0.1
baz=162,SNR=10.0
Q42A Golden Eagle 76.68 345 P P 01 55 59.7 -0.1
baz=164
N59A State Game Lan 76.72 357 P P 01 56 00.0 +0.1
baz=176
R38A Fenwick Farm, 76.77 342 P P 01 55 59.9 -0.3
baz=162
S36A Lake Cedric, C 76.78 340 P P 01 56 00.1 -0.2
baz=160,SNR=8.2
ODNJ Ogdensburg 76.84 358 eP P 01 56 01.5 +0.9
comp=E,18nm,1.5s
S35A Otter Creek Ra 76.94 340 P P 01 56 01.3 +0.1
baz=160
N54A Maine State 77.07 353 P P 01 56 02.1 +0.2
baz=173
Q40A Laux Farm, Aux 77.10 344 P P 01 56 02.3 +0.2
baz=163,SNR=14
R37A Teagarden Farm 77.13 341 P P 01 56 02.0 -0.2
baz=161,SNR=6.3
T32A Huddler Ranch, 77.23 338 P P 01 56 03.4 +0.5
baz=158
P42A Winchester 77.29 345 P P 01 56 02.7 -0.4
baz=164,SNR=5.1
Q39A Willow Grove F 77.36 343 P P 01 56 03.4 -0.2
baz=162,SNR=10
TUC Tucson 77.39 327 P P 01 56 05.4 +1.4
baz=148
TUC Tucson 77.39 327 eP P 01 56 05.0 +1.0
comp=E,12nm,1.4s
Q38A Cooks Store, C 77.44 342 P P 01 56 03.8 -0.1
baz=162,SNR=15
P40A Paris 77.61 344 P P 01 56 05.0 +0.1
baz=163,SNR=23
LAZ Ladron 77.65 330 eP P 01 56 07.2 +1.7
P39B Salisbury 77.73 343 P P 01 56 05.5 -0.1
baz=163,SNR=7.8
ANMO Albuquerque 77.85 331 P P 01 56 07.6 +0.9
baz=152
ANMO Albuquerque 77.85 331 eP P 01 56 07.0 +0.3
comp=E,9.9nm,1.1s
ANMO epP pP 01 56 34.2 +0.1
O41A Passleys Farm, 77.91 345 P P 01 56 06.3 -0.2
baz=164,SNR=6.3
Q35A Mercer Eighty, 77.96 341 P P 01 56 07.0 +0.1
baz=160
HDIL Hopedale 78.01 346 eP P 01 56 07.1 0.0
comp=E,23nm,1.0s
214A Organ Pipe Nat 78.02 325 P P 01 56 08.5 +1.1
baz=147
P38A Dawn 78.04 343 P P 01 56 07.2 -0.1
baz=162,SNR=8.7
O40A La Belle 78.13 344 P P 01 56 08.0 +0.2
baz=163
TSUM Tsumeb 78.15 105 eP P 01 56 08.0 -0.7
comp=E,11nm,1.1s
P37A Lathrop 78.21 342 P P 01 56 08.0 -0.3
baz=161
Q34A Chapman 78.27 340 P P 01 56 09.0 +0.4
baz=159
R32A Long Quarter, 78.31 338 P P 01 56 09.1 +0.2
baz=158
O39A Kirksville 78.41 344 P P 01 56 09.2 -0.1
baz=163
P36A Good Intent, A 78.46 341 P P 01 56 09.2 -0.4
baz=161,SNR=9.2
O38A Galt 78.50 343 P P 01 56 09.7 -0.1
baz=162
P35A Duane Minner, 78.58 341 P P 01 56 10.2 -0.2
baz=160
Q33A Connelly Farm, 78.59 339 P P 01 56 10.7 +0.4
baz=159
BOSA Boshof 78.65 117 P P 01 56 10.4 -0.9
comp=E,9.6nm,0.6s,baz=212,slow=3.0,SNR=19
BOSA Boshof 78.65 117 eP P 01 56 10.9 -0.4
O37A Wolven Farm, M 78.71 342 P P 01 56 10.8 -0.1
baz=162,SNR=5.7
Q32A Meitler Ranch, 78.80 339 P P 01 56 11.8 +0.3
baz=158
P34A Walnut Farm, R 78.82 340 P P 01 56 12.0 +0.4
baz=159
N39A Derby Farms, D 79.00 344 P P 01 56 12.4 -0.1
baz=163,SNR=8.3
T25A Trinidad 79.03 334 P P 01 56 14.2 +1.2
baz=154
T25A Trinidad 79.03 334 eP P 01 56 14.3 +1.2
comp=E,18nm,0.8s
T25A epP pP 01 56 42.2 +1.7
N38A Joes South For 79.08 343 P P 01 56 13.0 0.0
baz=162
X16A Lo Mia Camp, P 79.47 327 eP P 01 56 17.4 +1.9
comp=E,11nm,1.1s
O33A Hebron 79.52 340 P P 01 56 15.8 +0.3
baz=159
M38A Pleasantville 79.67 344 P P 01 56 15.9 -0.3
baz=162
L41A Preston 79.72 346 P P 01 56 15.9 -0.5
baz=165,SNR=6.3
N35A Tabor 79.74 342 P P 01 56 16.4 -0.1
baz=160
Y14A Wickenburg 79.76 326 eP P 01 56 18.7 +1.7
L40A Anamosa 79.85 345 P P 01 56 16.8 -0.3
baz=164
M37A Trindle Farm, 79.86 343 P P 01 56 17.4 +0.2
baz=162
N34A Lincoln 79.94 341 P P 01 56 17.5 -0.1
baz=160
SDCO Great Sand Dun 79.96 333 P P 01 56 18.9 +0.8
baz=153
SDCO Great Sand Dun 79.96 333 eP P 01 56 19.0 +0.8
comp=E,4.6nm,0.8s
SDCO epP pP 01 56 44.0 -1.8
L39A Vinton 80.08 345 P P 01 56 17.8 -0.5
baz=163
M36A Felix, Anita 80.08 342 P P 01 56 18.1 -0.3
baz=161
K41A Shullsburg 80.19 346 P P 01 56 18.5 -0.4
baz=165
Y12C Blythe 80.31 325 eP P 01 56 21.7 +1.9
comp=E,9.3nm,0.9s
LONY Lake Ozonia 80.37 358 eP P 01 56 19.5 -0.4
comp=E,7.6nm,1.0s
K40A Colesburg 80.45 345 P P 01 56 19.8 -0.5
baz=164
S22A 4UR Ranch, Cre 80.45 332 P P 01 56 22.0 +1.2
baz=152
S22A 4UR Ranch, Cre 80.45 332 eP P 01 56 22.2 +1.3
comp=E,4.3nm,0.8s
JFWS Jewell Farm 80.47 346 eP P 01 56 20.3 -0.2
comp=E,7.7nm,0.8s
K39A Oelwein 80.61 345 P P 01 56 20.7 -0.4
baz=164
MVCO Mesa Verde 80.63 331 P P 01 56 22.0 +0.2
baz=150
MVCO Mesa Verde 80.63 331 eP P 01 56 22.5 +0.8
comp=E,2.8nm,0.7s
L36A Harm Buss Farm 80.66 343 P P 01 56 21.3 -0.2
baz=161
SADO Sadowa 80.78 354 eP P 01 56 22.1 +0.1
comp=E,10nm,1.0s
J41A Loganville 80.86 346 P P 01 56 22.1 -0.4
baz=165
L35A Bielow Farm, R 80.89 342 P P 01 56 22.7 0.0
baz=161
Q24A Divide 80.91 334 P P 01 56 24.3 +1.0
baz=153
Q24A Divide 80.91 334 eP P 01 56 24.6 +1.3
comp=E,9.5nm,0.8s
J40A Soldiers Grove 81.04 346 P P 01 56 22.9 -0.5
baz=164
K37A Belmond 81.05 344 P P 01 56 23.1 -0.5
baz=162
PFO Pinyon Flats O 81.11 323 P P 01 56 25.9 +1.6
baz=145
PFO Pinyon Flats O 81.11 323 eP P 01 56 26.4 +2.1
comp=E,11nm,1.0s
K36A Gilmore City 81.12 343 P P 01 56 23.9 0.0
baz=162
W13A Hualapai Mount 81.13 326 eP P 01 56 26.3 +1.9
comp=E,4.6nm,1.0s
J39A Decorah 81.17 345 P P 01 56 23.6 -0.6
baz=164
BELC Belle Mtn. Jos 81.21 324 P P 01 56 25.5 +0.7
baz=145
J38A Wedel Dairy, R 81.32 345 P P 01 56 24.4 -0.5
baz=163
PV01 Paradox Valley 81.46 331 eP P 01 56 27.1 +0.9
U15A North Rim 81.53 328 eP P 01 56 28.1 +1.5
U15A epP pP 01 56 56.2 +2.0
J37A Redenius Farm, 81.55 344 P P 01 56 25.9 -0.2
baz=162
PV05 Paradox Valley 81.62 331 eP P 01 56 28.1 +1.1
GMRC Granite Mounta 81.69 325 P P 01 56 28.8 +1.5
baz=145
J36A Seneca 1, Swea 81.75 343 P P 01 56 27.2 0.0
baz=162
SMCO Snowmass 81.76 333 eP P 01 56 28.6 +0.7
comp=E,6.5nm,1.1s
ISCO Idaho Springs 81.82 334 P P 01 56 28.9 +0.8
baz=153
ISCO Idaho Springs 81.82 334 eP P 01 56 29.2 +1.2
comp=E,3.8nm,0.8s
L31A Butterfield Fa 81.82 340 P P 01 56 28.5 +0.8
baz=158
PV10 Paradox Valley 81.85 331 eP P 01 56 28.9 +0.7
TRQ Mont Tremblant 81.97 358 eP P 01 56 28.5 +0.2
TRQ epP pP 01 56 55.7 -0.3
I38A Scanlan Farm, 81.98 345 P P 01 56 28.0 -0.4
baz=163
PV09 Paradox Valley 82.00 331 eP P 01 56 30.4 +1.3
I37A Lemond, Waseca 82.19 344 P P 01 56 29.5 0.0
baz=162
BFSC Mount Baldy Ra 82.20 323 P P 01 56 28.4 -1.6
baz=144
KNB Kanab 82.26 328 eP P 01 56 32.2 +1.9
comp=E,17nm,1.3s
TUQ Turquoise Moun 82.35 325 P P 01 56 31.9 +1.2
baz=145
J33A Davis 82.38 341 P P 01 56 30.5 0.0
baz=160
I35A Creekview Farm 82.40 343 P P 01 56 30.5 -0.1
baz=161
LCMT Little Creek M 82.44 327 eP P 01 56 32.6 +1.5
comp=E,7.2nm,1.3s
K30A Basset 82.50 339 P P 01 56 32.0 +0.8
baz=158
H37A Dierke Farm, C 82.62 345 P P 01 56 31.1 -0.6
baz=163
GSC Goldstone, Bar 82.65 324 P P 01 56 33.4 +1.1
baz=145
GSC Goldstone, Bar 82.65 324 eP P 01 56 34.3 +2.0
comp=E,7.8nm,1.3s
ECSD EROS Data Cent 82.68 342 P P 01 56 32.2 +0.1
baz=160
ECSD EROS Data Cent 82.68 342 eP P 01 56 32.0 0.0
comp=E,24nm,1.4s
H36A Jessenland, He 82.84 344 P P 01 56 33.2 +0.4
baz=162
MTPU Mount Pierson 82.85 329 eP P 01 56 34.9 +1.4
comp=E,3.8nm,0.7s
SHPR Sheep Range 82.87 326 eP P 01 56 35.4 +1.9
comp=E,23nm,1.8s
N23A Red Feather La 82.91 334 P P 01 56 33.9 +0.2
baz=159
N23A Red Feather La 82.91 334 eP P 01 56 34.9 +1.2
comp=E,5.8nm,0.8s
CCUT Cedar City 82.94 328 eP P 01 56 35.0 +1.2
comp=E,9.1nm,1.1s
CCUT epP pP 01 57 02.8 +1.3
I33A Coleman 83.02 342 P P 01 56 34.0 +0.1
baz=160
O20A White River Ci 83.07 332 P P 01 56 34.9 +0.4
baz=151
O20A White River Ci 83.07 332 eP P 01 56 35.5 +1.0
comp=E,3.2nm,0.8s
SRU San Rafael Swe 83.08 330 eP P 01 56 35.4 +1.0
comp=E,6.6nm,0.8s
H35A Sunnyside Ranc 83.16 343 P P 01 56 34.3 -0.2
baz=161
SPMN Marine on St. 83.21 345 P P 01 56 34.4 -0.4
baz=163

SPMN	**Marine on St.**	**83.21**	**345**	*e*P	**P**	**01 56 34.3**	**-0.4**
	comp=E,8.8nm,0.9s						
MSU	**Marysvale**	**83.24**	**329**	*e*P	**P**	**01 56 37.0**	**+1.6**
COWI	**Conover**	**83.35**	**348**	*e*P	**P**	**01 56 35.7**	**+0.2**
	comp=E,5.5nm,0.8s						
P17A	**Butcher Ranch,**	**83.47**	**330**	*e*P	**P**	**01 56 37.5**	**+1.1**
	comp=E,5.7nm,0.9s						
TMUT	**Trail Mountain**	**83.51**	**330**	*e*P	**P**	**01 56 38.1**	**+1.3**
	comp=E,5.7nm,0.7s						
H32A	**Carlson Farm,**	**83.61**	**342**	P	**P**	**01 56 36.7**	**-0.2**
	baz=159						
TPNV	**Topopah Spring**	**83.73**	**325**	P	**P**	**01 56 38.5**	**+0.7**
	baz=145						
TPNV	**Topopah Spring**	**83.73**	**325**	*e*P	**P**	**01 56 39.9**	**+2.0**
	comp=E,2.8nm,0.8s						
DAC	**Darwin (Calif)**	**83.82**	**324**	*e*P	**P**	**01 56 40.1**	**+1.8**
	comp=E,6.9nm,1.0s						
H31A	**Wolsey**	**83.86**	**341**	P	**P**	**01 56 38.3**	**+0.2**
	baz=158						
G34A	**Benson**	**83.86**	**343**	P	**P**	**01 56 38.0**	**0.0**
	baz=161						
F36A	**Milaca**	**83.97**	**345**	P	**P**	**01 56 38.2**	**-0.4**
	baz=162						
VLDQ	**Val d'Or**	**83.99**	**356**	*e*P	**P**	**01 56 39.2**	**+0.6**
	comp=E,6.6nm,0.9s						
VES	**Vestal, Richgr**	**84.19**	**323**	P	**P**	**01 56 41.0**	**+1.0**
	baz=143						
F34A	**Alexandria**	**84.29**	**343**	P	**P**	**01 56 40.2**	**-0.1**
	baz=161						
G32A	**Webster**	**84.33**	**342**	P	**P**	**01 56 39.7**	**-0.8**
	baz=159						
E36A	**McGregor**	**84.54**	**345**	P	**P**	**01 56 41.4**	**0.0**
	baz=162						
F33A	**5 Mile Ranch,**	**84.58**	**343**	P	**P**	**01 56 41.3**	**-0.4**
	baz=160						
R11A	**Troy Canyon, C**	**84.58**	**327**	P	**P**	**01 56 43.3**	**+1.2**
	baz=146						
R11A	**Troy Canyon, C**	**84.58**	**327**	*e*P	**P**	**01 56 43.6**	**+1.4**
	comp=E,3.7nm,0.8s						
K22A	**Casper**	**84.66**	**335**	P	**P**	**01 56 42.9**	**+0.5**
	baz=152						
K22A	**Casper**	**84.66**	**335**	*e*P	**P**	**01 56 42.5**	**+0.1**
	comp=E,15nm,0.9s						
JLU	**Jordanelle**	**84.72**	**331**	*e*P	**P**	**01 56 43.9**	**+1.1**
	comp=E,6.0nm,0.8s						
G29A	**Hoven**	**84.91**	**340**	P	**P**	**01 56 44.0**	**+0.6**
	baz=157						
DUG	**Dugway, Tooele**	**84.93**	**329**	P	**P**	**01 56 44.5**	**+0.8**
	baz=148						
DUG	**Dugway, Tooele**	**84.93**	**329**	*e*P	**P**	**01 56 44.8**	**+1.0**
	comp=E,27nm,1.8s						
D37A	**Cotton**	**84.98**	**346**	P	**P**	**01 56 43.6**	**-0.1**
	baz=163						
F31A	**Hecla**	**85.08**	**342**	P	**P**	**01 56 44.7**	**+0.5**
	baz=159						
TCUT	**Toone Canyon**	**85.14**	**331**	*e*P	**P**	**01 56 45.8**	**+0.9**
	comp=E,37nm,1.6s						
RSSD	**Black Hills**	**85.15**	**337**	P	**P**	**01 56 45.3**	**+0.5**
	baz=154						
RSSD	**Black Hills**	**85.15**	**337**	*e*P	**P**	**01 56 45.5**	**+0.6**
	comp=E,10nm,1.0s						
D35A	**Remer**	**85.24**	**345**	P	**P**	**01 56 45.2**	**+0.2**
	baz=162						
C38A	**Sawbill Land.**	**85.30**	**347**	P	**P**	**01 56 44.7**	**-0.5**
	baz=164						
H25A	**Fruitdale**	**85.46**	**338**	P	**P**	**01 56 46.9**	**+0.7**
	baz=154						
F29A	**Eureka**	**85.47**	**340**	P	**P**	**01 56 46.1**	**-0.1**
	baz=157						
EYMN	**Ely**	**85.56**	**347**	P	**P**	**01 56 46.2**	**-0.3**
	baz=164						
EYMN	**Ely**	**85.56**	**347**	*e*P	**P**	**01 56 46.4**	**-0.2**
	comp=E,6.5nm,1.0s						
HWUT	**Hardware Ranch**	**85.62**	**331**	*e*P	**P**	**01 56 48.0**	**+0.7**
	comp=E,19nm,1.1s						
HWUT				*e*pP	**pP**	**01 57 14.3**	**-0.8**
BGU	**Big Grassy Mou**	**85.63**	**330**	*e*P	**P**	**01 56 48.8**	**+1.5**
	comp=E,4.4nm,1.1s						
E31A	**Nome**	**85.64**	**342**	P	**P**	**01 56 47.7**	**+0.7**
	baz=159						
C35A	**Jirik Farms, M**	**85.82**	**345**	P	**P**	**01 56 47.6**	**-0.2**
	baz=162						
BW06	**Boulder Array**	**85.85**	**333**	P	**P**	**01 56 48.4**	**0.0**
	baz=150						
BW06	**Boulder Array**	**85.85**	**333**	*e*P	**P**	**01 56 47.7**	**-0.7**
PDAR	**Pinedale Array**	**85.85**	**333**	P	**P**	**01 56 47.8**	**-0.7**
	comp=E,1.2nm,0.7s,baz=150,slow=6.2,SNR=11						
PDAR				pP	**pP**	**01 57 15.9**	**-0.3**
	comp=E,0.8nm,0.7s,baz=142,slow=3.6,SNR=2.3						
PDAR				LR	LR	02 30 55.5	
	comp=E,25nm,20.2s,baz=148,slow=32						
D31A	**Mcclellin, Tow**	**86.06**	**342**	P	**P**	**01 56 49.2**	**+0.2**
	baz=159						
HVU	**Hansel Valley**	**86.25**	**330**	*e*P	**P**	**01 56 51.0**	**+0.7**
	comp=E,7.8nm,0.8s						
C33A	**Trail**	**86.26**	**344**	P	**P**	**01 56 50.1**	**+0.1**
	baz=161						
B35A	**Bob, Littlefor**	**86.39**	**345**	P	**P**	**01 56 50.8**	**+0.1**
	baz=162						
ELK	**Elko**	**86.40**	**328**	*e*P	**P**	**01 56 52.3**	**+1.1**
	comp=E,3.6nm,0.9s						
B34A	**Aery, Baudette**	**86.70**	**345**	P	**P**	**01 56 52.2**	**0.0**
	baz=162						
C31A	**Landman Farms,**	**86.75**	**343**	P	**P**	**01 56 52.6**	**+0.2**
	baz=159						
AGMN	**Agassiz Nation**	**86.79**	**344**	P	**P**	**01 56 52.7**	**+0.1**
	baz=160						
AGMN	**Agassiz Nation**	**86.79**	**344**	*e*P	**P**	**01 56 52.5**	**-0.1**
	comp=E,7.4nm,0.8s						
C30A	**Mose, Pekin**	**86.85**	**342**	P	**P**	**01 56 53.2**	**+0.3**
	baz=158						
TPAW	**Teton Pass**	**86.99**	**332**	*e*P	**P**	**01 56 54.8**	**+0.7**
	comp=E,8.1nm,1.1s						
B32A	**Ashes, Strandq**	**87.04**	**344**	P	**P**	**01 56 53.7**	**0.0**
	baz=160						
MDND	**Maddock**	**87.28**	**341**	P	**P**	**01 56 55.2**	**+0.3**
	baz=158						
MDND	**Maddock**	**87.28**	**341**	*e*P	**P**	**01 56 55.2**	**+0.3**
	comp=E,39nm,0.8s						
D26A	**Manning**	**87.30**	**339**	P	**P**	**01 56 55.5**	**+0.4**
	baz=156						
PAHR	**Pah Rah Range**	**87.41**	**325**	*e*P	**P**	**01 56 57.9**	**+1.9**
	comp=E,3.3nm,0.9s						
B30A	**Myrvik Farm, E**	**87.51**	**342**	P	**P**	**01 56 56.5**	**+0.4**
	baz=159						
B29A	**Wagenman Farm,**	**87.78**	**342**	P	**P**	**01 56 57.7**	**+0.4**
	baz=158						
A30A	**Hoffart Farm,**	**87.96**	**343**	P	**P**	**01 56 58.4**	**+0.2**
	baz=159						
A29A	**Manning Farm,**	**88.17**	**342**	P	**P**	**01 56 59.7**	**+0.5**
	baz=158						
ORV	**Oroville**	**88.29**	**324**	*e*P	**P**	**01 57 01.8**	**+1.9**
	comp=E,10.0nm,1.3s						
HLID	**Hailey**	**88.40**	**330**	P	**P**	**01 57 01.3**	**+0.7**
	baz=147						
HLID	**Hailey**	**88.40**	**330**	*e*P	**P**	**01 57 01.3**	**+0.7**
	comp=E,2.7nm,0.9s						
ULM	**Lac du Bonnet**	**88.64**	**345**	P	**P**	**01 57 00.6**	**-0.7**
	comp=E,15nm,0.7s,baz=171,slow=2.7,SNR=26						
ULM				pP	**pP**	**01 57 28.7**	**-0.6**
	comp=E,2.0nm,0.7s,baz=146,slow=11,SNR=1.6						
LSZ	**Lusaka**	**88.66**	**108**	*e*P	**P**	**01 57 03.0**	**+0.4**
	comp=E,4.0nm,1.0s						
A27A	**Ledoux Ranch,**	**88.72**	**341**	P	**P**	**01 57 02.4**	**+0.6**
	baz=156						
MCMT	**McKenzie Canyo**	**88.85**	**332**	*e*P	**P**	**01 57 04.2**	**+1.4**
A26A	**Wade Farm, Ken**	**88.88**	**340**	P	**P**	**01 57 03.1**	**+0.5**
	baz=156						
MOD	**Modoc Plateau**	**89.58**	**326**	*e*P	**P**	**01 57 07.0**	**+0.8**
	comp=E,7.1nm,0.9s						
K05A	**Summer Lake**	**90.50**	**326**	*e*P	**P**	**01 57 12.3**	**+1.8**
	comp=E,9.7nm,0.9s						
WRA	**Warramunga Arr**	**119.20**	**208**	PKP	**PKPdf**	**02 02 57.0**	**-0.8**
	comp=E,0.2nm,0.6s,baz=153,slow=1.9,SNR=8.3						
WRA				pPKP	**pPKPdf**	**02 03 26.7**	**-0.3**
	comp=E,0.2nm,0.5s,baz=155,slow=1.8,SNR=1.5						
WRA				sPKP		02 03 37.2	
	comp=E,0.4nm,0.8s,baz=178,slow=1.4,SNR=4.8						
BRTR	**Keskin Array B**	**122.36**	**62**	PKP	**PKPdf**	**02 03 03.5**	**+0.2**
	comp=E,0.3nm,0.7s,baz=180,slow=5.3,SNR=3.2						
BRTR				pPKP	**pPKPdf**	**02 03 33.5**	**+1.0**
	comp=E,0.5nm,1.0s,baz=224,slow=41,SNR=2.6						
SEY	**Seymchan**	**142.09**	**329**	PKhKP	PKPpre	02 03 35.9	
	comp=E,0.8nm,0.4s,baz=93,slow=13,SNR=3.7						
TIXI	**Tiksi**	**142.83**	**350**	PKhKP	PKPpre	02 03 36.4	
	comp=E,1.4nm,0.6s,baz=257,slow=3.4,SNR=3.8						
BVAR	**Borovoye Array**	**148.39**	**45**	PKPbc	**PKPdf**	**02 03 52.1**	**+1.6**
	comp=E,0.8nm,0.3s,baz=269,slow=1.7,SNR=5.4						
BVAR				pPKPbc	**pPKPbc**	**02 04 25.2**	**+2.0**
	comp=E,0.6nm,0.4s,baz=328,slow=5.3,SNR=2.7						
YAK	**Yakutsk**	**150.86**	**340**	PKPbc	**PKPbc**	**02 03 59.8**	**0.0**
	comp=E,15nm,0.5s,baz=252,slow=0.8,SNR=4.2						
KURBB	**Kurchatov Arra**	**153.96**	**47**	PKPbc	**PKPbc**	**02 04 07.2**	**+0.1**
	comp=E,0.6nm,0.5s,baz=294,slow=2.9,SNR=7.9						
KURBB				PKPab	**PKPab**	**02 04 20.9**	**0.0**
	comp=E,0.5nm,0.6s,baz=289,slow=4.6,SNR=5.6						
KURBB				pPKPbc	**pPKPbc**	**02 04 37.4**	**+1.1**
	comp=E,0.9nm,0.6s,baz=299,slow=3.1,SNR=4.5						
KURBB				pPKPab	**pPKPab**	**02 04 49.2**	**0.0**
	comp=E,1.1nm,0.9s,baz=298,slow=3.5,SNR=3.3						
KURK	**Kurchatov**	**153.98**	**46**	PKPbc	**PKPbc**	**02 04 07.2**	**0.0**
KURK				PKPab	**PKPab**	**02 04 20.9**	**-0.1**
KURK				pPKPbc	**pPKPbc**	**02 04 37.4**	**+1.1**
KURK				pPKPab	**pPKPab**	**02 04 49.2**	**-0.1**
KSH	**Kashi**	**154.06**	**72**	*e*PKPbc	**PKPdf**	**02 04 01.6**	**+1.8**
KSH				*es*PKP		02 04 38.4	
KSH				PKS	**PKSdf**	**02 07 34.2**	**+0.1**
KSH				SKS	**SKSdf**	**02 10 55.1**	**-1.7**
KSH				AMB	AMB		
	comp=E,75nm,3.6s						
KSH				LR	LR		
	comp=E,85nm,5.8s						
KSH				LR	LR		
	comp=E,84nm,6.8s						
KSH				LR	LR		
	comp=E,120nm,7.1s						
ZALV	**Zalesovo Beam**	**155.65**	**35**	PKPbc	PKPdf	02 04 10.7	+9.4
	comp=E,0.7nm,0.4s,baz=292,slow=4.3,SNR=3.9						
MKAR	**Makanchi Array**	**157.65**	**53**	PKPab	**PKPab**	**02 04 36.4**	**-0.6**
	comp=E,0.4nm,0.5s,baz=289,slow=3.7,SNR=4.3						
USRK	**Ussuriysk Ar.**	**160.41**	**302**	PKPab	**PKPab**	**02 04 49.1**	**+0.1**
	comp=E,1.4nm,0.8s,baz=64,slow=8.7,SNR=3.7						
CMAR	**Chiang Mai Arr**	**160.48**	**152**	PKPab	**PKPab**	**02 04 49.0**	**-0.8**
	comp=E,0.6nm,0.3s,baz=207,slow=5.9,SNR=3.4						
WMQ	**Urumqi**	**162.22**	**58**	*e*PKP	**PKPdf**	**02 04 08.4**	**-1.0**
KSRS	**Korea Array**	**164.46**	**281**	PKPab	**PKPab**	**02 05 08.1**	**+1.1**
	comp=E,0.7nm,0.5s,baz=248,slow=30,SNR=3.8						
KSAR	**Wonju Array Be**	**164.49**	**281**	PKPab	**PKPab**	**02 05 08.1**	**+1.0**
KMI	**Kunming**	**167.97**	**154**	PKP	**PKPdf**	**02 04 14.2**	**-0.9**
SONM	**Songino Array**	**168.13**	**7**	PKPab	**PKPab**	**02 05 23.3**	**+0.4**
	comp=E,0.9nm,0.7s,baz=333,slow=4.1,SNR=4.8						
SONM				pPKPab	**pPKPab**	**02 05 51.0**	**-0.1**
	comp=E,1.5nm,1.0s,baz=344,slow=2.7,SNR=4.0						
GYA	**Guiyang**	**170.27**	**170**	*e*PKP	**PKPdf**	**02 04 15.2**	**-1.1**
GYA				PKPab	**PKPab**	**02 05 34.4**	**+1.6**
GYA				PKS	**PKSdf**	**02 07 47.8**	**-1.2**
GYA				PP	**PP**	**02 09 25.6**	**+3.4**
GYA				AMB	AMB		
	comp=E,120nm,8.4s						

*ISCJB **04** 01:46:14.2±1.3,32.˚1N±0.˚1×140.˚8E±0.˚2,h57km,mb3.3/2, Error ellipse: s-maj=21.8km s-min=11.2km az=146.6*
*JMA **04** 01:46:16.3±0.2,32.˚25N×140.˚88E,h30km,M3.7*
*IDC **04** 01:46:19.0±2.0,32.˚13N×139.˚91E,h89km±59km,mb2.9/2, mb1 3.2/3,mb1mx2.9/43,mbtmp3.3/3,ML3.2/1,Error ellipse: s-maj=190.7km s-min=29.9km az=66.0*
ISC 04 01:46:14.1±1.5,32.˚1N±0.˚1×140.˚8E±0.˚1, h57km, n9, σ1§98/12, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHCJ	**Hachijojimakas**	**1.32**	**320**	P	**Pn**	**01 46 37.8**	**+1.5**
JHCJ				*e*S	**Sn**	**01 46 53.1**	**+0.2**
JHJ2	**Mitsune**	**1.34**	**321**	P	**Pn**	**01 46 38.0**	**+1.5**
JHJ2				S	**Sn**	**01 46 53.3**	**0.0**
JHJ	**Hachijo jima 2**	**1.36**	**321**	P	**Pn**	**01 46 38.6**	**+1.8**
	15nm,0.3s,baz=85,slow=22,SNR=18						
JHJ				S	**Sn**	**01 46 53.4**	**-0.5**
	152nm,0.3s,baz=349,slow=23,SNR=22						
BSO1	**Boso 1**	**2.58**	**3**	P	**Pn**	**01 46 53.9**	**+1.0**
BSO3	**Boso 3**	**2.74**	**355**	P	**Pn**	**01 46 56.5**	**+1.2**
BSO3				X		01 47 27.3	
JIM2	**Oshima 3**	**2.88**	**337**	P	**Pn**	**01 46 59.9**	**+2.3**
MJAR	**Matsushiro Arr**	**4.96**	**335**	P	**Pn**	**01 47 27.7**	**+1.8**
	1.0nm,0.3s,baz=156,slow=13,SNR=4.9						
MKAR	**Makanchi Array**	**46.49**	**306**	P	**P**	**01 54 31.7**	**-3.9**
	0.2nm,0.5s,baz=86,slow=4.8,SNR=2.8						
WRA	**Warramunga Arr**	**52.09**	**189**	P	**P**	**01 55 19.7**	**+1.3**
	0.2nm,0.5s,baz=4.3,slow=7.6,SNR=4.9						

*NIED **04** 01:50:00,37.˚60N×142.˚80E,h11km,Mw3.7 Best double couple: M0.3.42000×10^14 NP1:φs354.00000°,δ35.00000°, λ65.00000°. NP2:φs203.00000°,δ59.00000°,λ106.00000°.*
*JMA **04** 01:50:20.4±0.3,37.˚56N×142.˚84E,h13km±4km,M4.2*
*ISCJB **04** 01:50:21.3±0.6,37.˚54N±0.˚04×142.˚89E±0.˚07,h24km, mb3.6/9,Error ellipse: s-maj=7.6km s-min=5.9km az=179.0*
*IDC **04** 01:50:26.9±3.0,37.˚51N×142.˚64E,h52km±27km,mb3.4/9, mb1 3.7/12,mb1mx3.5/46,mbtmp3.7/12,ML3.8/2,MS2.6/1, Ms1 2.6/1,ms1mx2.2/32,Error ellipse: s-maj=25.2km s-min=13.8km az=89.0*
ISC 04 01:50:23.6±0.8,37.˚55N±0.˚05×142.˚70E±0.˚07, h24km, n31, σ1§53/29, mb3.7/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.40**	**311**	P	**Pn**	**01 50 46.9**	**-0.7**
JIO				S	**Sn**	**01 51 06.0**	**+0.7**
JFK	**Kawauchi**	**1.46**	**263**	P	**Pn**	**01 50 48.4**	**-0.2**
JFK				*e*S	**Sb**	**01 51 09.2**	**+0.8**
JMM	**Marumori**	**1.54**	**282**	P	**Pn**	**01 50 49.3**	**-0.3**
JOU	**Okura**	**1.80**	**297**	P	**Pn**	**01 50 53.5**	**+0.3**
JMK	**Ichinoseki**	**1.82**	**321**	P	**Pn**	**01 50 53.3**	**-0.1**
JFT	**Otama**	**1.88**	**270**	P	**Pn**	**01 50 55.1**	**+0.8**
JOM	**Ohasama**	**2.21**	**331**	P	**Pn**	**01 50 58.5**	**-0.4**
JOM				*e*S	**Sn**	**01 51 26.5**	**+1.1**
JYK	**Kaneyama**	**2.29**	**307**	P	**Pn**	**01 51 00.7**	**+0.8**
JRG	**Rokugo**	**2.45**	**319**	P	**Pn**	**01 51 02.9**	**+0.7**
BSO1	**Boso 1**	**3.21**	**206**	P	**Pn**	**01 51 12.4**	**+0.3**
MJAR	**Matsushiro Arr**	**3.73**	**256**	P	**Pn**	**01 51 22.8**	**+3.1**
	5.2nm,0.3s,baz=79,slow=15,SNR=14						
MAT	**Matsushiro**	**3.73**	**256**	P	**Pn**	**01 51 23.2**	**+3.4**
MAT				*e*S	**Sb**	**01 52 09.0**	**-4.6**
JHJ	**Hachijo jima 2**	**5.02**	**209**	P	**Pn**	**01 51 38.2**	**+0.7**
	14nm,0.3s,baz=78,slow=22,SNR=4.4						
JHJ				S	**Sn**	**01 52 34.6**	**-0.2**
	14nm,0.3s,baz=83,slow=23,SNR=2.1						
USRK	**Ussuriysk Ar.**	**10.47**	**313**	P	**Pn**	**01 52 53.6**	**+1.4**
	0.1nm,0.3s,baz=126,slow=16,SNR=2.8						
KSRS	**Korea Array**	**11.74**	**274**	LR	LR	01 57 50.9	
	comp=Z,28nm,19.6s,baz=112,slow=38						
KLR	**Kul'dur**	**14.11**	**329**	P	**Pn**	**01 53 40.8**	**-1.1**
	0.2nm,0.3s,baz=131,slow=19,SNR=2.8						
SEY	**Seymchan**	**26.09**	**10**	P	**P**	**01 55 56.2**	**+1.1**
	0.9nm,0.4s,baz=167,slow=15,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**27.55**	**123**	T	T	02 24 52.7	
	baz=316,slow=74,SNR=87						
H11N1	**WAKE ISLAND Hy**	**27.56**	**123**	T	T	02 24 55.0	
	baz=316,slow=74,SNR=50						
H11N3	**WAKE ISLAND Hy**	**27.57**	**123**	T	T	02 24 50.0	
	baz=316,slow=74,SNR=52						
H11S1	**WAKE ISLAND Hy**	**28.30**	**126**	T	T	02 25 44.8	
	baz=318,slow=76,SNR=27						
H11S3	**WAKE ISLAND Hy**	**28.30**	**126**	T	T	02 25 47.2	
	baz=318,slow=76,SNR=30						
H11S2	**WAKE ISLAND Hy**	**28.32**	**126**	T	T	02 25 54.2	
	baz=318,slow=76,SNR=26						
SONM	**Songino Array**	**28.36**	**303**	P	**P**	**01 56 17.5**	**+1.7**
	0.4nm,0.5s,baz=126,slow=7.3,SNR=3.3						
ZALV	**Zalesovo Beam**	**42.33**	**312**	P	**P**	**01 58 14.7**	**-0.7**
	0.3nm,0.3s,baz=53,slow=25,SNR=2.1						
MKAR	**Makanchi Array**	**44.71**	**302**	P	**P**	**01 58 32.6**	**-2.1**
	0.2nm,0.5s,baz=345,slow=28,SNR=2.6						
KURBB	**Kurchatov Arra**	**46.49**	**308**	P	**P**	**01 58 48.8**	**+0.1**
	1.4nm,0.7s,baz=81,slow=7.8,SNR=4						
ILAR	**Eielson Array**	**48.51**	**33**	P	**P**	**01 59 03.9**	**-0.3**
	0.5nm,0.7s,baz=264,slow=5.8,SNR=7.0						
WRA	**Warramunga Arr**	**57.73**	**189**	P	**P**	**02 00 11.9**	**-0.5**
	1.6nm,0.6s,baz=7.4,slow=7.3,SNR=22						
ASAR	**Alice Springs**	**61.45**	**189**	P	**P**	**02 00 38.0**	**-0.1**
	0.9nm,0.8s,baz=6.1,slow=4.9,SNR=6.4						
TXAR	**Lajitas Array**	**88.99**	**53**	P	**P**	**02 03 16.8**	**0.0**
	0.1nm,0.5s,baz=304,slow=1.6,SNR=3.3						

*NIED **04** 02:07:00,34.˚00N×135.˚60E,h50km,Mw4.0 Best double couple: M0.1.15000×10^15 NP1:φs301.00000°,δ51.00000°, λ-49.00000°. NP2:φs67.00000°,δ54.00000°, λ-129.00000°.*
*ISCJB **04** 02:07:10.6±0.3,33.˚90N±0.˚03×135.˚55E±0.˚03,h56km±3km, mb3.9/11,MS3.1/4,Error ellipse: s-maj=5.6km s-min=4.3km az=179.9*
*JMA **04** 02:07:11.8,33.˚93N×135.˚55E,h46km±1km,M4.1 Broadband fault plane solution: P waves. NP1: φs298.00000°,δ54.00000°,λ-55.00000°. NP2:φs68.00000°, δ49.00000°,λ-128.00000°. Principal axes: T Plg3.0000°, Azm4.0000°; N Plg28.0000°, Azm96.0000°; P Plg62.0000°, Azm268.0000°;*
JMA Felt III J1.
*IDC **04** 02:07:11.8±1.2,33.˚94N×135.˚63E,h54km±13km,mb3.7/9, mb1 3.9/14,mb1mx3.6/49,mbtmp4.0/14,MS2.9/8, Ms1 2.9/8,ms1mx2.7/49 Error ellipse: s-maj=14.9km s-min=8.6km az=14.0*
*NEIC **04** 02:07:12.5±1.0,33.˚89N×135.˚56E,h59km±10km,mb4.1/2, Error ellipse: s-maj=11.9km s-min=9.9km az=101.0*
NEIC Recorded [3 JMA] in Wakayama.
ISC 04 02:07:11.5±0.7,33.˚92N±0.˚04×135.˚56E±0.˚03, h47km±6km, n41, σ0§93/46, mb4.0/11, MS3.0/4, 6C-6D, Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JWM	**Minabe**	**0.18**	**247**	⇓P	**Pn**	**02 07 19.5**	**+0.1**
JWM				S	**Sn**	**02 07 24.9**	**-0.1**
JWY	**Kouya**	**0.30**	**6**	⇓P	**Pn**	**02 07 20.6**	**+0.1**
JWY				S	**Sn**	**02 07 26.6**	**-0.3**
JWZ	**Kozaga**	**0.41**	**161**	⇑P	**Pn**	**02 07 21.7**	**+0.1**
JWZ				S	**Sn**	**02 07 29.2**	**+0.5**
JKN2	**Miekihoku**	**0.68**	**62**	⇓P	**Pn**	**02 07 24.9**	**+0.1**
JKN2				S	**Sn**	**02 07 34.3**	**-0.1**
JHE	**Heguri**	**0.74**	**8**	⇑P	**Pn**	**02 07 25.5**	**-0.2**
JHE				S	**Sn**	**02 07 35.6**	**-0.4**
JAJ2	**Tsuna**	**0.75**	**312**	⇑P	**Pn**	**02 07 25.9**	**+0.1**
JAJ2				S	**Sn**	**02 07 36.0**	**-0.1**
JAI	**Aioi**	**0.93**	**262**	⇓P	**Pn**	**02 07 28.4**	**+0.2**
JAI				S	**Sn**	**02 07 41.2**	**+0.8**
JIE	**Ise**	**1.06**	**63**	⇑P	**Pn**	**02 07 30.3**	**+0.3**
JIE				S	**Sn**	**02 07 44.8**	**+1.1**
TSUJ	**Tsu 2**	**1.06**	**42**	⇑P	**Pn**	**02 07 29.8**	**-0.2**
TTO1	**TONANKAI O.B.S**	**1.06**	**106**	⇓P	**Pn**	**02 07 30.3**	**+0.5**
TTO1				X		02 07 45.3	
JKS	**Kasai**	**1.21**	**331**	⇑P	**Pn**	**02 07 32.0**	**-0.1**
JKS				S	**Sn**	**02 07 46.8**	**-0.6**
TTO2	**TONANKAI O.B.S**	**1.24**	**98**	⇓P	**Pn**	**02 07 32.6**	**+0.5**
TTO2				X		02 07 49.4	
MAJO	**Matsushiro**	**3.40**	**39**	*e*Pn	**Pn**	**02 08 03.4**	**+1.3**
MAT	**Matsushiro**	**3.40**	**39**	P	**Pn**	**02 08 03.5**	**+1.4**
MAT				*e*S	**Sn**	**02 08 43.7**	**+2.6**
MJAR	**Matsushiro Arr**	**3.40**	**39**	P	**Pn**	**02 08 02.6**	**+0.5**
	11nm,0.3s,baz=225,slow=13,SNR=33						
MJAR				LR	LR	02 09 40.9	
	comp=Z,96nm,20.1s,baz=225,slow=44						
JHJ	**Hachijo jima 2**	**3.62**	**102**	P	**Pn**	**02 08 05.3**	**+0.3**
	34nm,0.3s,baz=260,slow=23,SNR=9.7						
JHJ				S	**Sn**	**02 08 45.9**	**-0.7**
	33nm,0.3s,baz=306,slow=24,SNR=4.1						
JNU	**Nakatsue**	**3.99**	**260**	P	**Pn**	**02 08 10.7**	**+0.5**
	6.7nm,0.3s,baz=54,slow=3.5,SNR=28						
JNU				S	**Sn**	**02 08 57.9**	**+2.2**
	2.9nm,0.3s,baz=268,slow=5.7,SNR=2.2						
JNU				LR	LR	02 09 55.2	
	comp=Z,136nm,21.4s,baz=296,slow=40						
KSRS	**Korea Array**	**7.14**	**302**	P	**Pn**	**02 08 55.0**	**+1.7**
	0.6nm,0.3s,baz=122,slow=15,SNR=8.1						
KSRS				S	**Sn**	**02 10 15.1**	**+1.9**
	1.0nm,0.3s,baz=119,slow=23,SNR=7.8						
KSRS				LR	LR	02 11 26.8	
	comp=Z,53nm,20.9s,baz=104,slow=35						
USRK	**Ussuriysk Ar.**	**10.63**	**346**	P	**Pn**	**02 09 43.1**	**+2.0**
	0.3nm,0.3s,baz=155,slow=11,SNR=6.1						
KLR	**Kul'dur**	**15.56**	**351**	P	**P**	**02 10 50.5**	**-0.6**
	0.2nm,0.3s,baz=138,slow=12,SNR=5.8						
KLR				LR	LR	02 16 31.1	
	comp=Z,32nm,18.7s,baz=146,slow=36						
PETK	**Petropavlovsk-**	**24.84**	**33**	LR	LR	02 22 05.0	
	comp=Z,25nm,20.3s,baz=247,slow=36						
SONM	**Songino Array**	**25.88**	**311**	P	**P**	**02 12 39.4**	**+0.5**
	3.1nm,0.8s,baz=120,slow=9.1,SNR=14						
YAK	**Yakutsk**	**28.38**	**354**	LR	LR	02 23 30.1	
	comp=Z,27nm,20

n25,σ1ᵍ53/35, mb4.0/10, 1C-4D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**0.55**	**0**	*iP*	**Pb**	**02 13 17.7**	**-0.3**
BIPH				*i* S	**Sb**	**02 13 25.9**	**+0.3**
MATI	**Mati**	**0.69**	**189**	*eP*	**Pb**	**02 13 20.4**	**0.0**
MATI				*eS*	**Sn**	**02 13 30.9**	**-0.7**
DAV	**Davao City (W)**	**0.95**	**234**	Pn	**Pb**	**02 13 23.5**	**-1.4**
	201nm,0.3s,baz=55,slow=3.2,SNR=11						
DAV				Sn	**Sn**	**02 13 40.0**	**+1.9**
	519nm,0.3s,baz=269,slow=21,SNR=31						
DMPH	**Davao City--Mi**	**1.01**	**237**	*eP*	**Pn**	**02 13 28.6**	**+2.8**
DMPH				*eS*	**Sn**	**02 13 44.5**	**+5.1**
BUKP	**Musuan**	**1.31**	**281**	*eP*	**Pn**	**02 13 27.9**	**-2.2**
BUKP				*eS*	**Sn**	**02 13 45.4**	**-1.6**
CGP	**Cagayan de Oro**	**1.84**	**296**	*eP*	**Pn**	**02 13 38.3**	**+0.9**
CGP				*eS*	**Sn**	**02 14 00.8**	**+0.8**
CTBH	**Cotabato--PC H**	**2.14**	**259**	*eP*	**Pn**	**02 13 40.3**	**-1.2**
CTBH				*i* S	**Sn**	**02 14 05.5**	**-1.8**
PAGZ	**Pagadian**	**2.96**	**274**	*eP*	**Pb**	**02 13 59.2**	**+0.1**
LLP	**Lapu-Lapu**	**3.57**	**319**	*eP*	**Pn**	**02 14 01.6**	**+0.4**
LLP				*eS*	**Sn**	**02 14 42.9**	**+0.3**
IPIL	**Ipil**	**3.76**	**273**	*eP*	**Pb**	**02 14 13.8**	**+1.1**
IPIL				*eS*	Sn	02 14 33.5	-14
PLP	**Palo**	**3.77**	**339**	*eP*	**Pn**	**02 14 05.1**	**+1.2**
PLP				*eS*	**Sn**	**02 14 51.0**	**+3.4**
KAPI	**Kappang**	**14.19**	**208**	LR	LR	02 22 23.8	
	comp=Z,38nm,21.1s,baz=56,slow=39						
FITZ	**Fitzroy Crossi**	**25.58**	**182**	P	**P**	**02 18 35.2**	**+0.5**
	1.2nm,0.4s,baz=18,slow=6.9,SNR=8.6						
WRA	**Warramunga Arr**	**28.50**	**164**	P	**P**	**02 19 00.9**	**-0.1**
	0.5nm,0.7s,baz=338,slow=9.0,SNR=8.1						
ASAR	**Alice Springs**	**31.97**	**167**	P	**P**	**02 19 32.2**	**+0.5**
	0.7nm,0.4s,baz=343,slow=7.1,SNR=14						
ASAR				pP	**sP**	**02 19 39.7**	**-1.2**
	0.8nm,0.5s,baz=343,slow=7.0,SNR=4.4						
USRK	**Ussuriysk Ar.**	**36.76**	**7**	P	**P**	**02 20 12.2**	**-0.7**
	1.1nm,0.6s,baz=184,slow=5.0,SNR=5.3						
USRK				pP	**pP**	**02 20 19.0**	**-0.5**
	0.7nm,0.5s,baz=140,slow=25,SNR=4.3						
USRK				sP	**sP**	**02 20 21.9**	**-0.3**
	2.2nm,0.8s,baz=196,slow=8.3,SNR=4.4						
H11N1	**WAKE ISLAND Hy**	**41.06**	**69**	T	T	03 04 29.4	
	baz=259,slow=74,SNR=9.1						
H11N2	**WAKE ISLAND Hy**	**41.07**	**69**	T	T	03 04 32.8	
	baz=259,slow=74,SNR=5.0						
H11N3	**WAKE ISLAND Hy**	**41.08**	**69**	T	T	03 04 30.4	
	baz=259,slow=74,SNR=7.0						
NWAO	**Narrogin (SRO)**	**41.26**	**192**	P	**P**	**02 20 51.5**	**+0.8**
	7.4nm,0.9s,baz=263,slow=9.5,SNR=1.3						
KLR	**Kul'dur**	**41.71**	**5**	P	**P**	**02 20 53.3**	**-0.9**
	0.9nm,0.5s,baz=149,slow=12,SNR=2.9						
STKA	**Stephens Creek**	**41.90**	**160**	P	**P**	**02 20 56.0**	**0.0**
	1.9nm,0.5s,baz=328,slow=8.8,SNR=4.3						
MKAR	**Makanchi Array**	**54.18**	**324**	P	**P**	**02 22 31.2**	**+0.2**
	2.0nm,0.5s,baz=123,slow=8.2,SNR=22						
MKAR				pP	**pP**	**02 22 38.1**	**+0.4**
	1.1nm,0.5s,baz=125,slow=7.7,SNR=6.6						
MKAR				PcP	**PcP**	**02 23 35.4**	**+0.1**
	1.0nm,0.8s,baz=115,slow=5.5,SNR=4.5						
ZALV	**Zalesovo Beam**	**56.98**	**332**	P	**P**	**02 22 50.2**	**-0.6**
	0.6nm,0.4s,baz=120,slow=8.0,SNR=2.9						
FINES	**FINESS Array B**	**88.24**	**332**	P	**P**	**02 25 55.7**	**-0.8**
	3.5nm,1.1s,baz=129,slow=8.1,SNR=5.5						

*ISCJB **04** 02:15:40.3±0.6, 33°.87N±0°.03×35°.81E±0°.04, h3km±6km, Error ellipse: s-maj=5.7km s-min=4.0km az=34.7*
*CSEM **04** 02:15:40.6, 33°.87N×35°.83E, h9km, ML3.0*
*NSSC **04** 02:15:40.7±0.6, 33°.83N×35°.83E, h0km±2km, MD1.5, ML1.8*
*GRAL **04** 02:15:40.6±0.3, 33°.87N×35°.83E, h10km±4km, MD3.0*

ISC 04 02:15:40.4±1.0, 33°.88N±0°.03×35°.82E±0°.04, h9km±10km, n16,σ0ᵍ42/28, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BHL	**Bhannes**	**0.14**	**282**	*eP*	**Pg**	**02 15 43.7**	**+0.2**
BHL	**Bhannes**	**0.14**	**282**	*eP*	**Pg**	**02 15 43.7**	**+0.2**
DQRL	**Deir Qamar**	**0.27**	**231**	*eP*	**Pg**	**02 15 45.7**	**-0.1**
DQRL				*eS*	**Sg**	**02 15 49.5**	**+0.2**
DQRL	**Deir Qamar**	**0.27**	**231**	*eP*	**Pg**	**02 15 45.7**	**-0.1**
DQRL				*eS*	**Sg**	**02 15 49.5**	**+0.2**
RCY	**Rachaya**	**0.38**	**178**	*eP*	**Pg**	**02 15 47.4**	**-0.4**
RCY				*eS*	**Sg**	**02 15 52.5**	**-0.4**
HWQ	**Hawqa**	**0.42**	**15**	*eP*	**Pg**	**02 15 48.3**	**-0.3**
HWQ	**Hawqa**	**0.42**	**15**	*eP*	**Pg**	**02 15 48.3**	**-0.3**
BRBR	**Barbar**	**0.48**	**166**	*eP*	**Pg**	**02 15 49.3**	**-0.4**
BRBR				*eS*	**Sg**	**02 15 56.0**	**+0.1**
BRBR				AML	AML	02 15 58.3	
	comp=N,149nm,0.4s						
BRBR				AML	AML	02 15 59.3	
	comp=E,59nm,0.3s						
QASN	**Qassioun**	**0.51**	**132**	*eP*	**Pg**	**02 15 50.4**	**0.0**
QASN				*eS*	**Sg**	**02 15 57.5**	**+0.4**
QASN				AML	AML	02 16 01.9	
	comp=E,299nm,0.4s						
QASN				AML	AML	02 16 04.1	
	comp=N,226nm,0.7s						
MARH	**Ras Al Marh**	**0.57**	**75**	*eP*	**Pg**	**02 15 52.1**	**+0.5**
MARH				*eS*	**Sb**	**02 16 00.8**	**-0.4**
MARH				AML	AML	02 16 06.4	
	comp=N,119nm,0.3s						
MARH				AML	AML	02 16 07.6	
	comp=E,50nm,0.4s						
FKH	**Fakeheh**	**0.62**	**53**	*eP*	**Pg**	**02 15 51.7**	**-0.7**
FKH				*eS*	**Sg**	**02 15 60.0**	**-0.5**
TOTH	**TOTAH**	**0.72**	**135**	*eP*	**Pg**	**02 15 54.7**	**+0.4**
TOTH				*eS*	**Sb**	**02 16 04.4**	**-0.9**
TOTH				AML	AML	02 16 10.2	
	comp=N,41nm,1.0s						
TOTH				AML	AML	02 16 13.3	
	comp=E,27nm,0.9s						
TCHB	**Talchebab**	**1.21**	**174**	*eP*	**Pb**	**02 16 03.3**	**-0.2**
TCHB				*eS*	**Sb**	**02 16 18.9**	**-0.3**
ROOS	**tl_alroos**	**1.26**	**76**	*eP*	**Pg**	**02 16 04.9**	**+0.4**
ROOS				*eS*	**Sn**	**02 16 22.0**	**+0.6**
ROOS				AML	AML	02 16 27.8	
	comp=E,20nm,0.3s						
ROOS				AML	AML	02 16 33.3	
	comp=N,30nm,0.6s						
SALA	**Sala**	**1.39**	**146**	*eP*	**Pn**	**02 16 06.4**	**+0.2**
SALA				*eS*	**Sb**	**02 16 24.2**	**-0.5**
SALA				AML	AML	02 16 31.0	
	comp=E,4.2nm,0.5s						
SALA				AML	AML	02 16 33.3	
	comp=N,24nm,0.4s						
ZALF	**Zalf**	**1.59**	**126**	*eP*	**Pn**	**02 16 09.3**	**+0.6**
ZALF				*eS*	**Sb**	**02 16 30.1**	**0.0**
ZALF				AML	AML	02 16 33.3	
	comp=N,10.0nm,0.3s						
ZALF				AML	AML	02 16 33.6	
	comp=E,11nm,0.6s						

*ISCJB **04** 02:16:46.7±0.7, 39°.08N±0°.06×29°.04E±0°.05, h9km, Error ellipse: s-maj=9.1km s-min=4.1km az=151.9*
*CSEM **04** 02:16:46.5±0.1, 39°.10N×29°.02E, h12km, MD2.5, Error ellipse: s-maj=3.9km s-min=1.7km az=143.0*
*DDA **04** 02:16:46.8, 39°.04N×29°.05E, h7km, Md2.5*

ISC 04 02:16:46.7±1.1, 39°.08N±0°.04×29°.04E±0°.03, h9km, n12, σ0ᵍ54/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**261**	*iP*	**Pg**	**02 16 52.4**	**+0.4**
DEMI				*i* S	**Sg**	**02 16 56.3**	**+0.9**
DEMI	**Demirci**	**0.26**	**261**	P	**Pg**	**02 16 52.3**	**+0.4**
DEMI				S	**Sg**	**02 16 56.3**	**+0.9**
GEDZ	**Gediz**	**0.29**	**98**	*ePG*	**Pg**	**02 16 53.2**	**+0.6**
GEDZ	**Gediz**	**0.29**	**98**	*ePg*	**Pg**	**02 16 53.2**	**+0.6**
GDZ	**Gediz**	**0.34**	**89**	*iP*	**Pg**	**02 16 54.0**	**+0.4**
GDZ				*i* S	**Sg**	**02 16 58.7**	**+0.6**
GDZ	**Gediz**	**0.34**	**89**	P	**Pg**	**02 16 54.0**	**+0.4**
GDZ				S	**Sg**	**02 16 58.7**	**+0.6**
TVSB	**Tavsanli**	**0.49**	**42**	*ePG*	**Pg**	**02 16 56.3**	**0.0**
TVSB				*eSG*	**Sg**	**02 17 02.5**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**42**	*ePg*	**Pg**	**02 16 56.3**	**0.0**
TVSB				*eSg*	**Sg**	**02 17 02.5**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**208**	*ePG*	**Pb**	**02 16 59.5**	**-0.6**
KULA	**Kula-Manisa**	**0.64**	**208**	*ePg*	**Pb**	**02 16 59.5**	**-0.6**
MANT	**Manisa**	**0.70**	**213**	*iP*	**Pg**	**02 17 00.2**	**-0.1**
MANT				*i* S	**Sg**	**02 17 09.3**	**-0.1**
MANT	**Manisa**	**0.70**	**213**	P	**Pg**	**02 17 00.2**	**-0.1**
MANT				S	**Sg**	**02 17 09.4**	**-0.1**

MAN 04 02:20:20, 7°.67N×126°.44E, h40km, mb3.5, ML2.2, MS1.6, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**0.52**	**351**	*iP*	Pn	02 20 33.6	+2.6
BIPH				*i* S	Sn	02 20 39.2	+0.5
MATI	**Mati**	**0.74**	**194**	*eP*	Pn	02 20 35.8	+1.7
MATI				*eS*	Sn	02 20 46.4	+2.2
BUKP	**Musuan**	**1.38**	**279**	*eP*	Pn	02 20 43.5	+0.6
BUKP				*eS*	Sn	02 21 01.5	+1.5

MAN 04 02:33:23, 7°.70N×126°.36E, h34km, mb4.3, ML3.2, MS3.0, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**0.49**	**0**	*iP*	Pn	02 33 36.0	+2.4
BIPH				*i* S	Sn	02 33 44.6	+3.8
MATI	**Mati**	**0.75**	**188**	*eP*	Pb	02 33 39.0	+1.3
MATI				*eS*	Sb	02 33 49.1	+1.3
BUKP	**Musuan**	**1.30**	**278**	*eP*	Pb	02 33 47.0	+0.1
BUKP				*eS*	Sn	02 34 01.9	+0.9

IDC 04 02:36:23.0±11.0, 16°.18S×179°.24W, h528km±126km, mb3.0/5, mb1 3.3/5, mb1mx3.0/32, mbtmp3.9/5, Error ellipse: s-maj=117.0km s-min=42.8km az=155.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**44.19**	**258**	P	P	02 43 45.5	+0.2
	1.0nm,0.5s,baz=94,slow=7.2,SNR=42						
ASAR	**Alice Springs**	**44.52**	**253**	P	P	02 43 47.0	-0.8
	6.6nm,0.6s,baz=88,slow=8.4,SNR=94						
FITZ	**Fitzroy Crossi**	**52.55**	**259**	P	P	02 44 47.9	+0.4
	1.5nm,0.8s,baz=107,slow=2.9,SNR=6.8						
ILAR	**Eielson Array**	**84.39**	**13**	P	P	02 47 58.5	-0.7
	0.3nm,0.9s,baz=218,slow=5.4,SNR=5.0						
TXAR	**Lajitas Array**	**85.75**	**58**	P	P	02 48 07.1	+0.4
	0.2nm,0.7s,baz=201,slow=6.7,SNR=3.5						
BRTR	**Keskin Array B**	**143.00**	**316**	PKP	PKPbc	02 54 55.5	+0.5
	0.5nm,0.6s,baz=126,slow=5.2,SNR=5.0						
GERES	**GERESS Array B**	**145.75**	**345**	PKPbc	PKPbc	02 55 02.6	-0.4
	0.5nm,0.5s,baz=0.0,slow=2.9,SNR=6.7						

MAN 04 02:45:34, 7°.73N×126°.40E, h32km, mb3.8, ML2.6, MS2.2, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**0.45**	**355**	*iP*	Pn	02 45 46.5	+2.2
BIPH				*i* S	Sn	02 45 54.6	+3.2
MATI	**Mati**	**0.79**	**191**	*eP*	Pb	02 45 49.3	-0.1
MATI				*eS*	Sb	02 45 59.8	0.0
BUKP	**Musuan**	**1.34**	**276**	*eP*	Pn	02 45 57.3	+0.8
BUKP				*eS*	Sn	02 46 13.6	+0.3

MEX 04 02:51:50.5±0.9, 14°.17N×92°.42W, h33km±35km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.12**	**7**	*eP*	Pn	02 52 21.5	-2.3
CCIG				*i* S	Sn	02 52 47.1	-2.0

MAN 04 02:56:22, 7°.70N×126°.48E, h34km, mb4.0, ML2.8, MS2.5, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**0.50**	**347**	*eP*	Pn	02 56 35.0	+2.2
BIPH				*eS*	Sn	02 56 42.6	+2.5
MATI	**Mati**	**0.78**	**196**	*eP*	Pb	02 56 37.3	+0.1
MATI				*eS*	Sb	02 56 48.2	+0.7
BUKP	**Musuan**	**1.41**	**277**	*eP*	Pn	02 56 45.3	-0.1
BUKP				*eS*	Sn	02 57 03.6	+0.8

MEX 04 03:16:09.3±0.8, 27°.34N×111°.31W, h16km±13km, MD3.5, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GUYB	**Guaymas**	**0.67**	**35**	*eP*	Pg	03 16 20.1	-2.5
GUYB				*eS*	Sg	03 16 28.3	-3.2
SRIG	**Santa Rosalia**	**0.83**	**269**	*eP*	Pb	03 16 22.7	-2.6
SRIG				*eS*	Sb	03 16 32.1	-4.1
HSIG		**1.70**	**11**	*eP*	Pn	03 16 35.3	-3.0
HSIG				*eS*	Sn	03 16 55.1	-4.6

MAN 04 03:20:35, 7°.73N×126°.32E, h165km, mb4.1, ML3.0, MS2.7, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**0.45**	**6**	*iP*	Pn	03 21 00.1	+2.2
BIPH				*i* S	Sn	03 21 06.6	-8.9
MATI	**Mati**	**0.78**	**184**	*eP*	Pn	03 21 00.3	+0.7
MATI				*eS*	Sn	03 21 21.1	+2.5
BUKP	**Musuan**	**1.25**	**277**	*eP*	Pn	03 21 05.0	+1.6
BUKP				*eS*	Sn	03 21 25.9	+0.7

*NIED **04** 03:24:00.36°.00N×141°.30E, h5km, Mw3.8 Best double couple: M0 5.32000×10¹⁴ NP1:ϕs 270.00000°, δ53.00000°, λ -2.00000°. NP2:ϕs 1.00000°, δ89.00000°, λ -143.00000°.*
*JMA **04** 03:24:31.8±0.2, 35°.96N×141°.24E, h27km±2km, M4.2*
JMA Felt II J1.
*IDC **04** 03:24:31.6±1.2, 35°.98N×141°.03E, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.5/30, mbtmp3.4/5, ML3.3/1, MS3.0/3, Ms1 3.1/3, ms1mx2.6/40, Error ellipse: s-maj=28.1km s-min=23.9km az=58.0*
*ISCJB **04** 03:24:32.5±1.2, 35°.96N±0°.05×141°.20E±0°.08, h23km±7km, mb3.6/5, MS3.1/2, Error ellipse: s-maj=11.9km s-min=7.2km az=154.3*

ISC 04 03:24:32.7±1.7, 36°.00N±0°.05×141°.15E±0°.08, h11km±10km, n21,σ1ᵍ11/16, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.38**	**219**	P	**Pg**	**03 24 40.4**	**+0.2**
CHOJ				*eS*	**Sg**	**03 24 46.4**	**+1.1**
JHO	**Hitachi**	**0.77**	**322**	P	**Pg**	**03 24 47.2**	**-0.4**
JHO				S	**Sb**	**03 24 59.5**	**+0.8**
JYT	**Yasato**	**0.81**	**287**	P	**Pb**	**03 24 48.0**	**-0.8**
JYT				S	**Sb**	**03 25 00.3**	**+0.6**
BSO3	**Boso 3**	**1.30**	**204**	P	**Pn**	**03 24 55.1**	**-1.5**
BSO1	**Boso 1**	**1.35**	**186**	P	**Pn**	**03 24 55.8**	**-1.2**
MJAR	**Matsushiro Arr**	**2.44**	**284**	Pn	**Pn**	**03 25 11.0**	**-1.6**
	7.6nm,0.3s,baz=98,slow=11,SNR=56						
MJAR				Sn	**Sn**	**03 25 42.0**	**-0.4**
	12nm,0.3s,baz=92,slow=32,SNR=6.9						
MAT	**Matsushiro**	**2.44**	**284**	P	**Pn**	**03 25 12.4**	**-0.2**
MAT				S	**Sn**	**03 25 43.2**	**+0.7**
KLR	**Kul'dur**	**14.91**	**335**	LR	LR	03 33 25.1	
	comp=Z,32nm,20.6s,slow=36						
YAK	**Yakutsk**	**27.03**	**348**	LR	LR	03 41 23.8	
	comp=Z,25nm,18.4s,baz=185,slow=37						
H11N2	**WAKE ISLAND Hy**	**27.82**	**119**	T	T	03 59 22.7	
	baz=311,slow=75,SNR=268						
H11N1	**WAKE ISLAND Hy**	**27.82**	**119**	T	T	03 59 24.9	
	baz=311,slow=75,SNR=300						
H11N3	**WAKE ISLAND Hy**	**27.84**	**119**	T	T	03 59 21.1	
	baz=311,slow=75,SNR=279						
H11S1	**WAKE ISLAND Hy**	**28.49**	**121**	T	T	04 00 15.3	
	baz=313,slow=76,SNR=333						
H11S3	**WAKE ISLAND Hy**	**28.49**	**121**	T	T	04 00 18.5	
	baz=313,slow=76,SNR=254						
H11S2	**WAKE ISLAND Hy**	**28.51**	**121**	T	T	04 00 14.3	
	baz=313,slow=76,SNR=158						
CMAR	**Chiang Mai Arr**	**41.04**	**256**	LR	LR	03 51 31.0	
	comp=Z,55nm,19.4s,baz=325,slow=40						
MKAR	**Makanchi Array**	**44.50**	**303**	P	**P**	**03 32 43.9**	**-0.2**
	0.3nm,0.3s,baz=86,slow=11,SNR=3.6						
ILAR	**Eielson Array**	**50.48**	**32**	P	**P**	**03 33 31.4**	**+1.1**
	0.2nm,0.8s,baz=266,slow=6.3,SNR=3.3						
WRA	**Warramunga Arr**	**56.01**	**188**	P	**P**	**03 34 10.5**	**-0.9**
	0.7nm,0.4s,baz=3.6,slow=7.1,SNR=11						
ASAR	**Alice Springs**	**59.74**	**188**	P	**P**	**03 34 39.2**	**+1.6**
	0.3nm,0.6s,baz=16,slow=11,SNR=2.9						
NB2	**NORSAR Subarra**	**75.06**	**337**	P	P	03 36 19.5	+5.3
	comp=Z,1.1nm,0.7s,baz=40,slow=5.9						

*ISCJB **04** 03:29:38.7±0.6, 24°.79N±0°.07×122°.53E±0°.03, h21km±7km, Error ellipse: s-maj=12.5km s-min=3.5km az=17.4*
*JMA **04** 03:29:39.2±0.1, 24°.73N×122°.52E, h31km±2km, M2.0*
*TAP **04** 03:29:39.9, 24°.77N×122°.47E, h12km±1km, ML2.7, D*

ISC 04 03:29:37.3±1.7, 24°.87N±0°.08×122°.55E±0°.03, h19km±4km, n16,σ0ᵍ50/28, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TWB1	**Santiao Chiao**	**0.53**	**285**	P	**Pn**	**03 29 49.2**	**-0.6**
	baz=299						
TWB1				S	**Sb**	**03 29 56.2**	**+1.0**
	baz=299						
JYNG	**Yonagunijimaku**	**0.55**	**139**	P	**Pb**	**03 29 48.9**	**+0.7**
JYNG				*eS*	**Sb**	**03 29 56.0**	**+0.4**
EGS		**0.56**	**268**	*eP*	**Pn**	**03 29 50.5**	**+0.3**
	baz=278						
EGS				*eS*	**Sb**	**03 29 56.5**	**+0.5**
	baz=278						
YOJ	**Yonaguni jima**	**0.58**	**134**	P	**Pn**	**03 29 49.7**	**-0.8**
YOJ				S	**Sb**	**03 29 57.0**	**+0.4**
TWC	**Suao**	**0.69**	**248**	P	**Pg**	**03 29 50.8**	**-0.1**
	baz=253						
TWC				S	**Sb**	**03 29 59.3**	**-0.5**
	baz=253						
NWF	**Wu-fen Shan**	**0.73**	**286**	P	**Pn**	**03 29 53.1**	**+0.5**
	baz=295						
NWF				S	**Sn**	**03 30 02.9**	**-0.3**
	baz=295						
TWE	**Neicheng**	**0.82**	**260**	*eP*	**Pn**	**03 29 53.8**	**0.0**
	baz=266						
TWE				S	**Sb**	**03 30 03.1**	**-0.4**
	baz=266						
ENA	**Nanau**	**0.86**	**239**	P	**Pb**	**03 29 53.6**	**0.0**
	baz=242						
ENTT	**Nioudou**	**0.93**	**256**	P	**Pn**	**03 29 55.8**	**+0.6**
	baz=260						
ENTT				S	**Sb**	**03 30 06.0**	**-0.6**
	baz=260						
NSK	**Sanguang**	**1.10**	**260**	P	**Pg**	**03 29 58.6**	**-0.1**
	baz=264						
NSK				*eS*	**Sb**	**03 30 11.3**	**-0.5**
	baz=264						
IRIF	**Iriomote-Funau**	**1.20**	**116**	P	**Pb**	**03 29 59.4**	**+0.1**
IRIF				*eS*	**Sn**	**03 30 14.7**	**0.0**
TWT	**Tachien**	**1.40**	**244**	*eP*	**Pg**	**03 30 04.5**	**+0.2**
	baz=246						
HATJ	**Hateruma jima**	**1.40**	**125**	P	**Pb**	**03 30 02.7**	**-0.1**
HATJ				*eS*	**Sb**	**03 30 20.4**	**+0.2**
JKRS	**Kuro-shima**	**1.47**	**115**	*eS*	**Sb**	**03 30 22.6**	**+0.4**
JIJ	**Ishigaki jima**	**1.53**	**109**	P	**Pb**	**03 30 04.6**	**-0.5**
JIJ				*eS*	**Sb**	**03 30 24.9**	**+0.8**
JISG	**Ishigakijimahi**	**1.62**	**100**	*eS*	**Sb**	**03 30 26.4**	**-0.3**

*IDC **04** 03:31:42.6±6.5, 25°.57N×127°.48E, h0km, mb3.6/4, mb1 3.7/4, mb1mx3.5/37, mbtmp3.6/4, MS3.0/7, Ms1 3.0/7, ms1mx2.8/46, Error ellipse: s-maj=375.4km s-min=29.3km az=63.0*
*JMA **04** 03:31:43.3±0.3, 26°.03N×128°.56E, h39km±4km, M3.3*

ISC 04 03:31:37.6±1.6, 25°.81N±0°.04×128°.58E±0°.04, h5km±10km, n27,σ2ᵍ32/32, mb3.6/4, MS3.1/4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JJT2	**Tamagusuku 2**	**0.82**	**294**	P	**Pn**	**03 31 57.5**	**+1.7**
JJT2				*eS*	**Sn**	**03 32 08.2**	**-0.1**
JNTH	**Nagotoyohara**	**0.86**	**325**	P	**Pb**	**03 31 56.3**	**+1.3**
JNTH				*eS*	**Sg**	**03 32 06.0**	**+0.7**
JOW	**Kunigami**	**1.05**	**345**	P	**Pg**	**03 31 59.0**	**+1.2**
JOW				*eS*	**Sg**	**03 32 10.2**	**-1.2**
JIH	**Iheya**	**1.33**	**336**	P	**Pn**	**03 32 03.5**	**+0.6**
JIH				S	**Sb**	**03 32 18.5**	**-2.0**
JAGN	**Aguni-jima**	**1.43**	**303**	P	**Pg**	**03 32 05.9**	**+0.9**
JAGN				*eS*	**Sb**	**03 32 22.2**	**-1.0**
JOKE	**Okinoerabujima**	**1.54**	**360**	P	**Pn**	**03 32 06.1**	**+0.3**
JOKE				*eS*	**Sn**	**03 32 22.6**	**-3.6**
JKE	**Kume jima 2**	**1.69**	**288**	P	**Pg**	**03 32 09.6**	**-0.4**
JKE				S	**Sn**	**03 32 28.9**	**-0.9**
JTK	**Tokunoshima**	**1.99**	**10**	P	**Pn**	**03 32 12.5**	**+0.5**
JTK				*eS*	**Sn**	**03 32 33.7**	**-3.6**
JMZ	**Minamidaito 2**	**2.38**	**89**	P	**Pb**	**03 32 19.8**	**-1.2**
JMZ				*eS*	**Sn**	**03 32 45.9**	**-1.0**
JAMN	**Amaminishikomi**	**2.48**	**12**	P	**Pn**	**03 32 19.8**	**+1.2**
JAM	**Amami Oshima**	**2.74**	**19**	P	**Pn**	**03 32 24.1**	**+1.8**
JAM				*eS*	**Sn**	**03 32 52.1**	**-3.7**
JIRB	**Irabujima**	**3.23**	**253**	P	**Pb**	**03 32 33.1**	**-2.4**
JIRB				S	**Sb**	**03 33 11.0**	**-4.2**
JTAJ	**Takarajima**	**3.37**	**9**	P	**Pn**	**03 32 32.5**	**+1.6**
JTJ	**Tarama**	**3.70**	**252**	P	**Pb**	**03 32 38.9**	**-4.6**
JTJ				*eS*	**Sn**	**03 33 20.6**	**+1.2**
JISG	**Ishigakijimahi**	**4.05**	**253**	P	**Pn**	**03 32 43.4**	**+3.1**
JISG				*eS*	**Sn**	**03 33 24.8**	**-3.4**
JIJ	**Ishigaki jima**	**4.27**	**251**	P	**Pn**	**03 32 46.3**	**+3.0**
JNU	**Nakatsue**	**7.55**	**15**	LR	LR	03 36 47.6	
	comp=Z,111nm,19.7s,baz=292,slow=38						
MJAR	**Matsushiro Arr**	**13.49**	**35**	LR	LR	03 40 47.4	
	comp=Z,57nm,21.2s,baz=235,slow=38						
GUMO	**Guam**	**19.55**	**125**	LR	LR	03 43 01.4	
	comp=Z,13nm,21.1s,baz=118,sl

Ms1 2.6/1,ms1mx2.2/29,Error ellipse: s-maj=77.8km s-min=16.8km az=76.0

*ISCJB **04** 03:38:47.3±0.7,35°.71N±0°.04×140°.77E±0°.08,h57km±5km, mb3.6/3,MS2.4/1,Error ellipse: s-maj=10.4km s-min=6.8km az=164.9*

*JMA **04** 03:38:48.3±0.1,35°.72N×140°.63E,h49km±1km,M2.9*

ISC 04 03:38:48.4±1.1,35°.71N±0°.04×140°.73E±0°.07,h49km±8km, n22,σ0⁹98/21,mb3.6/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.11**	**91**	P	**Pn**	**03 38 56.3**	**+0.1**
CHOJ				*eS*	**Sn**	**03 39 02.3**	**+0.7**
JCN	**Nagara**	**0.52**	**236**	P	**Pn**	**03 38 59.6**	**-0.2**
JCN				*eS*	**Sn**	**03 39 07.6**	**-0.3**
JYT	**Yasato**	**0.68**	**321**	P	**Pn**	**03 39 01.0**	**-0.8**
JYT				S	**Sn**	**03 39 10.4**	**-1.1**
BSO4	**Boso 4**	**0.78**	**204**	P	**Pn**	**03 39 02.8**	**-0.3**
BSO4				*eX*		03 39 20.0	
JHO	**Hitachi**	**0.91**	**352**	P	**Pn**	**03 39 04.9**	**-0.1**
BSO3	**Boso 3**	**0.92**	**191**	P	**Pn**	**03 39 04.6**	**-0.2**
BSO1	**Boso 1**	**1.07**	**169**	P	**Pn**	**03 39 06.9**	**+0.3**
JAG	**Ashikaga**	**1.26**	**305**	P	**Pn**	**03 39 09.0**	**-0.6**
JOD2	**Odawara 2**	**1.41**	**252**	P	**Pn**	**03 39 10.6**	**-1.1**
JOD2				*eS*	**Sn**	**03 39 29.8**	**+0.7**
MJAR	**Matsushiro Arr**	**2.20**	**293**	P	**Pn**	**03 39 23.0**	**+0.5**
	7.8nm,0.3s,baz=100,slow=14,SNR=50						
MAT	**Matsushiro**	**2.20**	**293**	P	**Pn**	**03 39 23.6**	**+1.0**
MAT				*eS*	**Sn**	**03 39 51.5**	**+2.9**
JHJ	**Hachijo jima 2**	**2.69**	**197**	P	**Pn**	**03 39 28.7**	**-0.6**
	38nm,0.3s,baz=86,slow=1.8,SNR=8.3						
JHJ				S	**Sn**	**03 40 01.8**	**+1.1**
	28nm,0.3s,baz=86,slow=20,SNR=2.5						
PETK	**Petropavlovsk-**	**21.11**	**29**	LR	LR	03 52 08.3	
	comp=Z,18nm,21.1s,baz=183,slow=38						
H11N2	**WAKE ISLAND Hy**	**27.98**	**118**	T	T	04 13 39.8	
	baz=310,slow=75,SNR=8.3						
H11N1	**WAKE ISLAND Hy**	**27.99**	**118**	T	T	04 13 43.2	
	baz=310,slow=75,SNR=8.2						
H11N3	**WAKE ISLAND Hy**	**28.00**	**118**	T	T	04 13 48.8	
	baz=310,slow=75,SNR=7.5						
H11S1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	04 14 39.9	
	baz=312,slow=75,SNR=33						
H11S3	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	04 14 34.2	
	baz=312,slow=75,SNR=22						
H11S2	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	04 14 41.5	
	baz=312,slow=75,SNR=18						
MKAR	**Makanchi Array**	**44.37**	**303**	P	**P**	**03 46 54.1**	**+0.2**
	0.3nm,0.5s,baz=84,slow=10,SNR=3.8						
KURBB	**Kurchatov Arra**	**46.39**	**309**	P	**P**	**03 47 09.6**	**-0.2**
	0.4nm,0.4s,baz=82,slow=8.6,SNR=8.0						
WRA	**Warramunga Arr**	**55.67**	**187**	P	**P**	**03 48 19.0**	**-0.7**
	0.3nm,0.4s,baz=2.8,slow=7.5,SNR=11						

*ISCJB **04** 03:43:05.4±1.0,32°.56N±0°.08×142°.6E±0°.1,h52km, mb3.7/5,Error ellipse: s-maj=18.4km s-min=7.2km az=149.0*

*IDC **04** 03:43:07.1±4.3,32°.46N×142°.49E,h39km±32km,mb3.4/5, mb1 3.6/9,mb1mx3.3/50,mbtmp3.7/9,ML3.3/3,Error ellipse: s-maj=57.4km s-min=17.5km az=70.0*

ISC 04 03:43:08.1±1.1,32°.52N±0°.10×142°.5E±0°.1,h52km,n10, σ1⁹22/13,mb3.8/5,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.33**	**286**	Pn	**Pn**	**03 43 42.5**	**-1.6**
	13nm,0.3s,baz=338,slow=23,SNR=6.8						
JHJ				Sn	**Sn**	**03 44 12.9**	**+1.5**
	30nm,0.3s,baz=299,slow=23,SNR=7.0						
MJAR	**Matsushiro Arr**	**5.33**	**320**	Pn	**Pn**	**03 44 23.8**	**-1.4**
	1.0nm,0.3s,baz=159,slow=11,SNR=6.5						
MJAR				Sn	**Sn**	**03 45 24.5**	**-0.8**
	1.1nm,0.3s,baz=196,slow=18,SNR=5.0						
MAT	**Matsushiro**	**5.33**	**320**	P	**Pn**	**03 44 25.5**	**+0.3**
MAT				S	**Sn**	**03 45 24.0**	**-1.3**
JCJ	**Chichijima**	**5.41**	**183**	Pn	**Pn**	**03 44 25.3**	**-1.0**
	baz=312,slow=2.9						
KLR	**Kul'dur**	**18.52**	**337**	P	**Pn**	**03 47 22.0**	**+1.2**
	0.2nm,0.3s,baz=151,slow=3.0,SNR=3.3						
MKAR	**Makanchi Array**	**47.35**	**306**	P	**P**	**03 51 38.5**	**+1.6**
	0.5nm,0.4s,baz=95,slow=8.6,SNR=3.9						
KURBB	**Kurchatov Arra**	**49.54**	**311**	P	**P**	**03 51 53.4**	**-0.1**
	0.3nm,0.5s,baz=89,slow=7.3,SNR=5.1						
WRA	**Warramunga Arr**	**52.74**	**190**	P	**P**	**03 52 17.0**	**-0.8**
	0.4nm,0.4s,baz=6.9,slow=7.6,SNR=6.2						
FITZ	**Fitzroy Crossi**	**52.85**	**200**	P	**P**	**03 52 18.9**	**+0.3**
	1.9nm,1.0s,baz=10.0,slow=17,SNR=2.3						
ASAR	**Alice Springs**	**56.46**	**189**	P	**P**	**03 52 44.3**	**-0.5**
	0.2nm,0.4s,baz=17,slow=6.1,SNR=3.0						

*IDC **04** 03:50:33.5±1.0,7°.72N×126°.44E,h0km,mb3.9/6, mb1 4.0/6,mb1mx3.6/53,mbtmp3.9/6,Error ellipse: s-maj=18.5km s-min=13.2km az=137.0*

*MAN **04** 03:50:34,7°.68N×126°.57E,h32km,mb4.0,ML2.7,MS2.4*

*ISCJB **04** 03:50:36.8±0.6,7°.65N±0°.04×126°.36E±0°.07,h35km, mb3.8/6,Error ellipse: s-maj=9.4km s-min=5.9km az=168.1*

ISC 04 03:50:37.7±1.1,7°.64N±0°.05×126°.38E±0°.08,h35km,n11, σ1⁹55/13,mb3.9/6,2C,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.54**	**358**	*iP*	**Pn**	**03 50 47.5**	**-1.5**
BIPH				*i* S	**Sn**	**03 50 55.6**	**-1.3**
MATI	**Mati**	**0.70**	**190**	*eP*	**Pn**	**03 50 50.3**	**-0.9**
MATI				*eS*	**Sn**	**03 51 00.6**	**-0.2**
DAV	**Davao City (W)**	**0.98**	**235**	Pg	**Pn**	**03 50 53.2**	**-1.8**
	171nm,0.3s,baz=65,slow=6.7,SNR=9.1						
DAV				Lg	Lg	03 51 09.6	
	300nm,0.3s,baz=217,slow=23,SNR=24						
BUKP	**Musuan**	**1.33**	**280**	*eP*	**Pn**	**03 50 58.4**	**-1.5**
BUKP				*eS*	**Sn**	**03 51 14.0**	**-2.5**
CGP	**Cagayan de Oro**	**1.86**	**296**	*eP*	**Pn**	**03 51 07.9**	**+0.8**
CGP				*eS*	**Sn**	**03 51 31.4**	**+2.0**
FITZ	**Fitzroy Crossi**	**25.59**	**182**	P	**P**	**03 56 05.0**	**+1.2**
	2.4nm,0.7s,baz=54,slow=1.8,SNR=6.8						
WRA	**Warramunga Arr**	**28.50**	**164**	P	**P**	**03 56 30.5**	**+0.5**
	0.3nm,0.6s,baz=332,slow=9.8,SNR=19						
ASAR	**Alice Springs**	**31.97**	**167**	P	P	03 57 02.1	+1.4
	0.6nm,0.4s,baz=345,slow=7.1,SNR=9.1						
STKA	**Stephens Creek**	**41.89**	**160**	P	P	03 58 26.9	+2.1
	5.3nm,0.9s,baz=323,slow=5.1,SNR=2.7						
MKAR	**Makanchi Array**	**54.19**	**324**	P	**P**	**04 00 00.9**	**+1.1**
	1.1nm,0.6s,baz=122,slow=8.1,SNR=13						
KURBB	**Kurchatov Arra**	**58.30**	**326**	P	**P**	**04 00 29.6**	**+0.5**
	0.3nm,0.3s,baz=134,slow=5.6,SNR=4.0						

*BJI **04** 03:57:50.6,60°.03N×152°.36W,h110km,mb4.7/6,mB4.9/3*

*ISCJB **04** 03:57:56.5±0.2,60°.34N±0°.02×152°.94W±0°.04, h116km±1km,mb4.3/78,Error ellipse: s-maj=3.3km s-min=2.7km az=34.9*

*NEIC **04** 03:57:58.3,60°.24N×152°.80W,h112km,mb4.4/56, MW4.2(SLM),After AEIC.*

NEIC Felt [II] at Homer. Also felt at Anchor Point, Elmendorf AFB, Kasilof, Kenai and Soldotna.

*IDC **04** 03:57:59.2±0.8,60°.55N×152°.89W,h121km±5km,mb3.8/18, mb1 4.0/21,mb1mx3.8/44,mbtmp4.2/21,MS2.7/1, Ms1 2.7/1,ms1mx2.2/42,Error ellipse: s-maj=14.6km s-min=10.8km az=16.0*

ISC 04 03:57:57.9±0.4,60°.29N±0°.03×152°.91W±0°.04, h118km±3km,h117km;pP-P,n380,σ1⁹27/418,mb4.3/78, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RED	**Redoubt Volcan**	**0.15**	**28**	P	**Pn**	**03 58 13.3**	**-0.9**
RDWB	**Redoubt West**	**0.20**	**10**	P	**Pn**	**03 58 13.4**	**-1.0**
RDWB				S	**Sn**	**03 58 25.9**	**-1.1**
ILIM	**Iliamna**	**0.21**	**186**	P	**Pn**	**03 58 13.5**	**-0.9**
INE	**Iliamna NE**	**0.24**	**198**	P	**Pn**	**03 58 13.8**	**-0.8**
ILW	**Iliamna West**	**0.25**	**206**	P	**Pn**	**03 58 13.8**	**-0.9**
NCT	**North Crescent**	**0.28**	**358**	P	**Pn**	**03 58 13.8**	**-0.8**
RDJH	**Redoubt Jeurge**	**0.31**	**10**	P	**Pn**	**03 58 13.8**	**-1.0**
RDJH				S	**Sn**	**03 58 26.6**	**-0.9**
ILS	**Iliamna Low So**	**0.34**	**193**	P	**Pn**	**03 58 13.7**	**-1.1**
BGRM	**Barrier Glacie**	**0.53**	**27**	P	**Pn**	**03 58 15.1**	**-0.8**
HOM	**Homer**	**0.90**	**134**	P	**Pn**	**03 58 18.0**	**-0.7**
HOM				S	**Sn**	**03 58 34.0**	**-0.4**
AUL	**Augustine Lava**	**0.95**	**196**	P	**Pn**	**03 58 18.5**	**-0.7**
CKL	**Chakachamna La**	**0.95**	**17**	P	**Pn**	**03 58 19.1**	**-0.3**
AUE	**Augustine Isla**	**0.96**	**194**	P	**Pn**	**03 58 18.4**	**-0.9**
AUSE	**Augustine SEas**	**0.98**	**195**	P	**Pn**	**03 58 18.6**	**-0.9**
SPCR	**Spurr Chakacha**	**0.98**	**20**	P	**Pn**	**03 58 19.1**	**-0.5**
SPCR				S	**Sn**	**03 58 35.1**	**-0.9**
AUI	**Augustine Isla**	**0.99**	**195**	P	**Pn**	**03 58 18.6**	**-1.0**
SPU	**Mount Spurr**	**0.99**	**25**	*ePn*	**Pn**	**03 58 19.2**	**-0.5**
SPU				*eSn*	**Sn**	**03 58 35.4**	**-0.8**
SPWE	**Spurr West**	**1.00**	**10**	P	**Pn**	**03 58 19.8**	**0.0**
SPBG	**Spurr Blockage**	**1.01**	**15**	P	**Pn**	**03 58 19.8**	**-0.1**
SPBG				S	**Sn**	**03 58 36.3**	**-0.2**
CNPM	**China Poot**	**1.14**	**131**	P	**Pn**	**03 58 19.9**	**-1.2**
CNPM				S	**Sn**	**03 58 37.3**	**-1.5**
BRLK	**Bradley Lake**	**1.15**	**116**	P	**Pn**	**03 58 19.8**	**-1.5**
BRLK				S	**Sn**	**03 58 36.8**	**-2.1**
MCNL	**McNeil River**	**1.32**	**214**	P	**Pn**	**03 58 22.2**	**-0.9**
STLK	**Strandline Lak**	**1.32**	**23**	P	**Pn**	**03 58 22.9**	**-0.3**
SLKM	**Skilak Lake**	**1.35**	**79**	P	**Pn**	**03 58 22.4**	**-1.1**
CDD	**Cape Douglas**	**1.41**	**196**	P	**Pn**	**03 58 22.9**	**-1.3**
VOGL	**Vogel Lake**	**1.42**	**59**	P	**Pn**	**03 58 24.8**	**+0.7**
SVW2	**Sparrevohn**	**1.54**	**303**	P	**Pn**	**03 58 24.9**	**-0.8**
FOSS	**Fourpeaked Sta**	**1.54**	**195**	P	**Pn**	**03 58 24.5**	**-1.2**
FOPK	**Fourpeaked Vol**	**1.56**	**191**	P	**Pn**	**03 58 24.2**	**-1.7**
SUA	**Susitna One**	**1.59**	**41**	P	**Pn**	**03 58 26.0**	**-0.3**
SUA				S	**Sn**	**03 58 47.5**	**-0.3**
FIB	**Fire Island**	**1.61**	**56**	P	**Pn**	**03 58 26.9**	**+0.5**
SEW	**Seward**	**1.74**	**95**	*ePn*	**Pn**	**03 58 26.9**	**-1.0**
SEW				*eS*	**Sn**	**03 58 48.2**	**-2.6**
RC01	**Rabbit Creek A**	**1.76**	**61**	P	**Pn**	**03 58 27.2**	**-0.9**
RC01				S	**Sn**	**03 58 48.3**	**-1.3**
KAPH	**Katmai Pasha**	**1.85**	**204**	P	**Pn**	**03 58 28.8**	**-0.6**
KAHC	**Katmai Hardscr**	**1.96**	**214**	P	**Pn**	**03 58 29.9**	**-0.9**
KAWH	**Katmai**	**2.14**	**208**	P	**Pn**	**03 58 32.1**	**-0.9**
PMR	**Palmer**	**2.26**	**53**	*ePn*	**Pn**	**03 58 34.1**	**-0.4**
PMR				*eS*	**Sn**	**03 59 00.4**	**-2.1**
KVTA	**Katmai Vly 10**	**2.27**	**214**	P	**Pn**	**03 58 33.9**	**-0.7**
KAKN	**Katmai Knife C**	**2.28**	**210**	P	**Pn**	**03 58 34.0**	**-0.8**
KAKN				S	**Sn**	**03 59 00.8**	**-2.3**
KELA	**Mount Kelaz**	**2.35**	**219**	P	**Pn**	**03 58 34.8**	**-0.9**
KABU	**Katmai Buttres**	**2.36**	**212**	P	**Pn**	**03 58 35.4**	**-0.5**
KABR	**Katmai Barrier**	**2.41**	**207**	P	**Pn**	**03 58 35.5**	**-0.9**
KDAK	**Kodiak Island**	**2.52**	**176**	P	**Pn**	**03 58 35.3**	**-2.4**
KDAK				S	**Sn**	**03 59 04.7**	**-3.7**
CNTC	**Contact Creek**	**2.54**	**218**	P	**Pn**	**03 58 37.5**	**-0.7**
PPLA	**Purkeypile**	**2.64**	**7**	P	**Pn**	**03 58 40.0**	**+0.5**
SML	**Sawmill**	**2.70**	**54**	P	**Pn**	**03 58 38.6**	**-1.5**
PLWL	**Peulik Whale M**	**2.86**	**220**	P	**Pn**	**03 58 41.3**	**-0.9**
TT01	**Tatalina**	**3.02**	**332**	P	**Pn**	**03 58 43.5**	**-0.8**
TTA	**Tatalina**	**3.04**	**332**	P	**Pn**	**03 58 44.4**	**-0.1**
OHAK	**Old Harbor**	**3.08**	**184**	P	**Pn**	**03 58 42.5**	**-2.6**
HUR	**Hurricane**	**3.12**	**29**	P	**Pn**	**03 58 44.7**	**-0.9**
PLK3	**Peulik 3**	**3.13**	**215**	P	**Pn**	**03 58 45.7**	**-0.1**
PLK1	**Peulik 1**	**3.14**	**219**	P	**Pn**	**03 58 45.3**	**-0.5**
CAST	**Castle Rocks**	**3.17**	**7**	P	**Pn**	**03 58 46.2**	**0.0**
HIN	**Hinchinbrook I**	**3.19**	**85**	P	**Pn**	**03 58 44.0**	**-2.6**
PLK4	**Peulik 4**	**3.21**	**215**	P	**Pn**	**03 58 46.7**	**-0.1**
VLZ	**Valdez**	**3.34**	**72**	P	**Pn**	**03 58 46.3**	**-2.2**
KTH	**Kantishna Hill**	**3.41**	**15**	P	**Pn**	**03 58 48.8**	**-0.7**
TRF	**Thorofare Moun**	**3.41**	**20**	P	**Pn**	**03 58 48.8**	**-0.8**
MID	**Middleton Isla**	**3.43**	**102**	P	**Pn**	**03 58 48.2**	**-1.4**
EYAK	**Cordova Ski Ar**	**3.56**	**83**	*ePn*	**Pn**	**03 58 50.6**	**-0.9**
DIV	**Divide**	**3.61**	**73**	P	**Pn**	**03 58 49.9**	**-2.3**
CHUM	**Lake Minchumin**	**3.62**	**4**	P	**Pn**	**03 58 52.2**	**+0.1**
KLU	**Klutina**	**3.62**	**67**	P	**Pn**	**03 58 50.4**	**-2.0**
BPAW	**Bear Paw Mtn.**	**3.93**	**12**	*ePn*	**Pn**	**03 58 53.9**	**-1.1**
BPAW				*eS*	**Sn**	**03 59 35.3**	**-6.4**
MCK	**McKinley**	**3.93**	**27**	P	**Pn**	**03 58 55.9**	**-0.5**
BMRM	**Bremner River**	**4.15**	**77**	*ePn*	**Pn**	**03 58 58.3**	**-1.1**
BWN	**Browne**	**4.22**	**21**	P	**Pn**	**03 58 59.4**	**-0.8**
PAX	**Paxson**	**4.46**	**50**	*ePn*	**Pn**	**03 59 02.5**	**-1.0**
PAX				*eS*	**Sn**	**03 59 52.1**	**-2.2**
NICHA	**Nichawak Mount**	**4.46**	**87**	P	**Pn**	**03 59 02.1**	**-1.3**
PS10	**TAPS Pump St10**	**4.62**	**44**	P	**Pn**	**03 59 05.8**	**+0.2**
VRDI	**Verde Repeater**	**4.74**	**74**	P	**Pn**	**03 59 05.0**	**-2.3**
WRH	**Wood River Hil**	**4.76**	**26**	*ePn*	**Pn**	**03 59 06.8**	**-0.6**
KHIT	**Khitrov Hills**	**4.80**	**84**	P	**Pn**	**03 59 06.3**	**-1.8**
CRQM	**Cirque**	**4.85**	**80**	*ePn*	**Pn**	**03 59 08.0**	**-0.9**
MLY	**Manley**	**4.87**	**11**	P	**Pn**	**03 59 07.7**	**-1.2**
MCARA	**McCarthy VSAT**	**4.96**	**73**	P	**Pn**	**03 59 09.8**	**-0.4**
CCB	**Clear Creek Bu**	**4.97**	**26**	P	**Pn**	**03 59 09.2**	**-1.1**
HDA	**Harding Lake**	**4.98**	**31**	P	**Pn**	**03 59 09.6**	**-0.8**
KULT	**Kultieth River**	**5.08**	**86**	P	**Pn**	**03 59 10.3**	**-1.5**
PS08	**TAPS Pump Stn8**	**5.10**	**31**	P	**Pn**	**03 59 10.6**	**-0.7**
MENT	**Mentasta**	**5.13**	**55**	*ePn*	**Pn**	**03 59 12.0**	**-0.5**
COLA	**College**	**5.16**	**25**	P	**Pn**	**03 59 11.8**	**-1.0**
MDM	**Murphy Dome**	**5.16**	**23**	P	**Pn**	**03 59 11.5**	**-1.4**
PTPK	**Patty Peak**	**5.21**	**75**	P	**Pn**	**03 59 12.1**	**-1.6**
VNHG	**Veniaminof 1**	**5.25**	**222**	P	**Pn**	**03 59 14.5**	**+0.4**
ISLE	**Juniper Island**	**5.25**	**82**	P	**Pn**	**03 59 12.4**	**-1.7**
BALM	**Baldy**	**5.25**	**77**	P	**Pn**	**03 59 12.7**	**-1.5**
IL1	**Eielson Array**	**5.29**	**29**	*ePn*	**Pn**	**03 59 12.9**	**-1.7**
ILAR	**Eielson Array**	**5.29**	**29**	P	**Pn**	**03 59 13.1**	**-1.5**
	35nm,0.3s,baz=213,slow=14,SNR=2035						
ILAR				S	**Sn**	**04 00 10.2**	**-4.2**
	27nm,0.3s,baz=215,slow=17,SNR=8.6						
ILB	**Eielson Array**	**5.29**	**29**	P	**Pn**	**03 59 13.5**	**-1.1**
DOT	**Dot Lake**	**5.37**	**47**	P	**Pn**	**03 59 14.6**	**-1.0**
BAGL	**Bagley Icefiel**	**5.37**	**83**	P	**Pn**	**03 59 15.1**	**-0.6**
MESA	**MESA**	**5.47**	**86**	P	**Pn**	**03 59 16.4**	**-0.8**
GRNC	**Granite Creek**	**5.53**	**81**	P	**Pn**	**03 59 17.2**	**-0.9**
BARN	**Barnard Glacie**	**5.59**	**77**	P	**Pn**	**03 59 18.4**	**-0.4**
CTGM	**Chitina Glacie**	**5.74**	**78**	P	**Pn**	**03 59 20.4**	**-0.4**
RKAV	**Rock Avalanche**	**5.75**	**85**	P	**Pn**	**03 59 20.8**	**-0.2**
TABL	**Table Mountain**	**5.84**	**83**	P	**Pn**	**03 59 21.4**	**-0.8**
LOGN	**Logan Glacier**	**5.90**	**80**	P	**Pn**	**03 59 22.3**	**-0.6**
BCA3	**Beaver Creek A**	**5.98**	**57**	P	**Pn**	**03 59 22.9**	**-1.1**
PCA	**Pinnacle**	**6.32**	**86**	P	**Pn**	**03 59 27.7**	**-0.8**
EGAK	**Eagle**	**7.05**	**45**	*ePn*	**Pn**	**03 59 36.8**	**-1.6**
COLD	**Coldfoot**	**7.07**	**9**	P	**Pn**	**03 59 37.5**	**-1.1**
FYU	**Fort Yukon**	**7.18**	**25**	*ePn*	**Pn**	**03 59 39.3**	**-0.7**
DAWY	**Dawson**	**7.37**	**53**	P	**Pn**	**03 59 41.8**	**-0.9**
DHAK	**Deception Hill**	**7.54**	**93**	P	**Pn**	**03 59 44.3**	**-0.6**
HYT	**Haines Junctio**	**7.62**	**79**	*ePn*	**Pn**	**03 59 45.1**	**-1.0**
SKAG	**Skagway**	**8.88**	**88**	*ePn*	**Pn**	**04 00 04.7**	**+1.7**
SKAG				*eS*	**Sn**	**04 01 41.1**	**-0.2**
UNV	**Unalaska Valle**	**9.81**	**235**	*ePn*	**Pn**	**04 00 15.1**	**-0.4**
CRAG	**Craig**	**11.57**	**106**	*ePn*	**Pn**	**04 00 38.6**	**-0.6**
CRAG				*eS*	**Sn**	**04 02 42.3**	**-4.0**
INK	**Inuvik**	**11.58**	**38**	P	**Pn**	**04 00 37.2**	**-2.0**
	1.7nm,0.3s,baz=237,slow=14,SNR=30						
INK				S	**Sn**	**04 02 44.3**	**-2.2**
	0.4nm,0.3s,baz=279,slow=22,SNR=2.9						
INK	**Inuvik**	**11.58**	**38**	*ePn*	**Pn**	**04 00 38.0**	**-1.3**
INK				*eS*	**Sn**	**04 02 44.1**	**-2.4**
DLBC	**Dease Lake**	**11.81**	**89**	P	**Pn**	**04 00 45.7**	**+3.3**
	1.6nm,0.3s,baz=274,slow=5.9,SNR=27						
DLBC				S	**Sn**	**04 02 52.9**	**+0.7**
	0.6nm,0.3s,baz=132,slow=24,SNR=3.0						
DLBC	**Dease Lake**	**11.81**	**89**	*ePn*	**Pn**	**04 00 45.6**	**+3.2**
DLBC				*eS*	**Sn**	**04 02 49.1**	**-3.0**
BBB	**Bella Bella**	**15.91**	**110**	P	**P**	**04 01 39.3**	**+3.1**
	0.2nm,0.3s,baz=319,slow=5.2,SNR=5.4						
BBB				S	**Sn**	**04 04 29.6**	**-1.5**
	0.3nm,0.3s,baz=63,slow=21,SNR=5.2						
BBB				LR	LR	04 06 39.3	
	comp=Z,27nm,20.3s,baz=242,slow=32						
YKA	**Yellowknife Ar**	**18.30**	**66**	P	**P**	**04 02 02.5**	**+0.3**
	0.5nm,0.3s,baz=276,slow=9.9,SNR=17						
YKA				PcP	**PcP**	**04 06 28.1**	**-0.3**
	0.2nm,0.3s,baz=278,slow=1.4,SNR=8.8						
YKA				ScP	**ScP**	**04 09 51.8**	**-0.8**
	0.2nm,0.3s,baz=286,slow=2.6,SNR=7.7						
EDM	**Edmonton**	**22.52**	**91**	*eP*	**P**	**04 02 48.0**	**+0.5**
	10nm,0.5s						
B08A	**Colville Reser**	**22.65**	**107**	*eP*	**P**	**04 02 49.5**	**+0.5**
	5.4nm,0.6s						
NEW	**Newport**	**23.78**	**104**	P	**P**	**04 03 00.4**	**+1.0**
	2.4nm,0.5s,baz=328,slow=7.8,SNR=4.5						
NEW	**Newport**	**23.78**	**104**	P	**P**	**04 03 00.1**	**+0.7**
	baz=314						
RES	**Resolute Bay**	**25.04**	**32**	P	**P**	**04 03 10.7**	**+0.2**
	1.6nm,0.3s,baz=253,slow=12,SNR=17						
RES	**Resolute Bay**	**25.04**	**32**	*eP*	**P**	**04 03 10.4**	**0.0**
F10A	**Beach Ranch, E**	**25.36**	**108**	*eP*	**P**	**04 03 15.0**	**+1.2**
	8.8nm,0.6s						
BMO	**Blue Mountains**	**26.16**	**110**	*eP*	**P**	**04 03 22.4**	**+1.4**
	4.0nm,0.6s						
MSO	**Missoula**	**26.32**	**103**	P	**P**	**04 03 23.5**	**+1.0**
	baz=315						
EGMT	**Eagleton**	**27.55**	**97**	P	**P**	**04 03 33.9**	**+0.4**
	baz=312						
O03D	**Paynes Creek**	**27.77**	**122**	P	**P**	**04 03 36.6**	**+1.1**
	baz=327						
MFID	**Camas Ranch**	**27.95**	**110**	*eP*	**P**	**04 03 38.4**	**+1.4**
	3.3nm,0.6s						
BOZ	**Bozeman (W)**	**28.29**	**102**	P	**P**	**04 03 41.1**	**+1.0**
	baz=316						
HLID	**Hailey**	**28.50**	**108**	P	**P**	**04 03 43.2**	**+1.3**
	baz=320						
HLID	**Hailey**	**28.50**	**108**	*eP*	**P**	**04 03 43.3**	**+1.3**
	2.7nm,0.9s						
FCC	**Fort Churchill**	**29.02**	**67**	*eP*	**P**	**04 03 46.3**	**+0.1**
IMW	**Indian Meadow**	**29.91**	**104**	*eP*	**P**	**04 03 56.6**	**+2.0**
	9.8nm,0.8s						
TPAW	**Teton Pass**	**30.20**	**105**	*eP*	**P**	**04 03 58.7**	**+1.5**
	8.4nm,0.6s						
LAO	**LASA Array**	**30.21**	**95**	*eP*	**P**	**04 03 55.6**	**-1.4**
	13nm,0.9s						
A25A	**Svangstu Ranch**	**30.24**	**89**	P	**P**	**04 03 58.0**	**+0.8**
	baz=311						
ELK	**Elko**	**30.31**	**113**	*eP*	**P**	**04 04 00.6**	**+2.5**
	2.7nm,0.8s						
SNOW	**Snow King Moun**	**30.32**	**105**	*eP*	**P**	**04 04 00.5**	**+2.3**
	8.1nm,0.6s						
REDW	**Red Top Meadow**	**30.35**	**105**	*eP*	**P**	**04 04 00.7**	**+2.3**
	3.7nm,0.6s						
HWUT	**Hardware Ranch**	**31.35**	**108**	*eP*	**P**	**04 04 09.4**	**+2.3**
	3.8nm,0.6s						
BW06	**Boulder Array**	**31.42**	**104**	*eP*	**P**	**04 04 08.8**	**+1.0**
BW06				*epP*	**pP**	**04 04 36.3**	**+2.7**
PDAR	**Pinedale Array**	**31.42**	**104**	P	**P**	**04 04 09.2**	**+1.3**
	1.6nm,0.6s,baz=300,slow=4.1,SNR=12						
PDAR				pP	**pP**	**04 04 36.9**	**+3.3**
	0.7nm,0.6s,baz=286,slow=6.0,SNR=2.6						
DUG	**Dugway, Tooele**	**31.86**	**111**	P	**P**	**04 04 12.9**	**+1.3**
	baz=323						
DUG	**Dugway, Tooele**	**31.86**	**111**	*eP*	**P**	**04 04 13.0**	**+1.3**
	4.6nm,1.0s						
R11A	**Troy Canyon, C**	**32.09**	**116**	P	**P**	**04 04 15.1**	**+1.4**
	baz=325						
A29A	**Manning Farm,**	**32.19**	**86**	P	**P**	**04 04 14.9**	**+0.7**
	baz=311						
MDND	**Maddock**	**32.72**	**88**	P	**P**	**04 04 20.2**	**+1.3**
	baz=312						
TPNV	**Topopah Spring**	**32.96**	**118**	P	**P**	**04 04 23.0**	**+1.8**
	baz=327,SNR=9.0						
TPNV	**Topopah Spring**	**32.96**	**118**	*eP*	**P**	**04 04 21.7**	**+0.5**
	3.8nm,0.6s						
K22A	**Casper**	**32.98**	**101**	P	**P**	**04 04 23.7**	**+2.3**
	baz=318						
ULM	**Lac du Bonnet**	**32.98**	**82**	P	**P**	**04 04 21.6**	**+0.5**
	1.5nm,0.3s,baz=322,slow=9.3,SNR=4.5						
RSSD	**Black Hills**	**33.12**	**97**	P	**P**	**04 04 23.9**	**+1.2**
	baz=317			

I38A	Scanlan Farm, baz=316	39.00	87	P		P	04 05 12.5	+0.1
ANMO	Albuquerque baz=325	39.07	109	P		P	04 05 14.5	+1.1
CBKS	Cedar Bluff baz=321	39.24	99	P		P	04 05 15.1	+0.6
L36A	Harm Buss Farm baz=318	39.26	91	P		P	04 05 14.1	-0.5
TUC	Tucson baz=328	39.28	116	P		P	04 05 16.2	+1.3
K37A	Belmond baz=318,SNR=6.6	39.28	89	P		P	04 05 15.1	+0.4
J38A	Wedel Dairy, R baz=317	39.45	87	P		P	04 05 16.8	+0.6
J39A	Decorah baz=317	39.83	87	P		P	04 05 19.6	+0.3
Q33A	Connelly Farm, baz=321	40.04	97	P		P	04 05 21.8	+0.7
L38A	Oak Wood Farm, baz=318	40.08	89	P		P	04 05 21.7	+0.3
M37A	Trindle Farm, baz=319	40.09	91	P		P	04 05 22.0	+0.5
P34A	Walnut Farm, R baz=320	40.11	95	P		P	04 05 22.3	+0.6
SUMG	Summit 4.3nm,0.6s	40.12	25	*i* P		P	04 05 21.4	-0.4
SUMG	Summit 18nm,1.5s	40.12	25	*e*P		P	04 05 21.4	-0.4
K39A	Oelwein baz=318,SNR=7.0	40.20	88	P		P	04 05 22.5	+0.2
DAG	Danmarks Havn 4.6nm,0.5s	40.21	15	*i* P		P	04 05 20.8	-1.2
J40A	Soldiers Grove baz=317	40.26	86	P		P	04 05 23.2	+0.3
N37A	Lee Faris, Mou baz=319	40.49	92	P		P	04 05 25.8	+1.0
P35A	Duane Minner, baz=320	40.53	94	P		P	04 05 25.7	+0.6
KSU1	Kansas State U baz=320	40.56	95	P		P	04 05 26.1	+0.7
L39A	Vinton baz=318	40.57	88	P		P	04 05 25.6	+0.2
K40A	Colesburg baz=318	40.58	87	P		P	04 05 25.5	0.0
O36A	Bolckow baz=320	40.59	93	P		P	04 05 26.4	+0.8
J41A	Loganville baz=317	40.64	85	P		P	04 05 26.6	+0.6
JFWS	Jewell Farm 5.8nm,0.7s	40.86	86	*e*P		P	04 05 27.6	-0.1
P36A	Good Intent, A baz=320	40.86	94	P		P	04 05 28.1	+0.3
R34A	Isabella, Hill baz=321	40.87	97	P		P	04 05 28.7	+0.8
M39A	Webster baz=318	40.97	89	P		P	04 05 29.2	+0.5
L40A	Anamosa baz=318	41.01	88	P		P	04 05 28.7	-0.3
K41A	Shullsburg baz=318,SNR=6.2	41.06	86	P		P	04 05 29.5	+0.1
P37A	Lathrop baz=320,SNR=7.1	41.31	93	P		P	04 05 31.9	+0.4
O38A	Galt baz=320	41.34	92	P		P	04 05 32.1	+0.3
L41A	Preston baz=318	41.36	87	P		P	04 05 31.4	-0.5
S34A	Willow Spring baz=322	41.40	97	P		P	04 05 32.6	+0.3
AMTX	Amarillo 7.5nm,0.6s	41.40	104	*e*P		P	04 05 34.1	+1.7
MSTX	Muleshoe baz=325	41.62	106	P		P	04 05 36.0	+1.8
O39A	Kirksville baz=319	41.70	91	P		P	04 05 34.8	+0.1
R36A	Gordon, Harris baz=321	41.71	95	P		P	04 05 35.2	+0.4
S35A	Otter Creek Ra baz=322,SNR=5.5	41.81	97	P		P	04 05 36.1	+0.5
T34A	McClaskey Farm baz=322	41.89	98	P		P	04 05 36.9	+0.6
S36A	Lake Cedric, C baz=321	42.13	96	P		P	04 05 38.0	-0.2
O40A	La Belle baz=320	42.14	90	P		P	04 05 38.5	+0.2
Q38A	Cooks Store, C baz=320,SNR=5.3	42.16	93	P		P	04 05 38.4	0.0
U34A	Anderson Ranch baz=322,SNR=5.5	42.18	99	P		P	04 05 39.4	+0.7
U34A	Anderson Ranch 18nm,1.1s	42.18	99	*e*P		P	04 05 39.2	+0.6
MNTX	Cornudas Mount baz=327,SNR=6.2	42.26	111	P		P	04 05 40.6	+1.2
MNTX	Cornudas Mount 3.1nm,0.9s	42.26	111	*e*P		P	04 05 41.1	+1.8
T35A	Sooner Cattle baz=322	42.31	97	P		P	04 05 40.2	+0.5
W32A	Sentinel baz=324	42.39	102	P		P	04 05 41.2	+0.8
Q39A	Willow Grove F baz=320,SNR=5.1	42.41	92	P		P	04 05 40.3	-0.1
KLR	Kul'dur 1.1nm,0.5s,baz=62,slow=5.7,SNR=3.3	42.48	290	P		P	04 05 41.4	+0.4
S37A	Fort Scott baz=321	42.48	95	P		P	04 05 40.7	-0.4
P40A	Paris baz=320	42.50	91	P		P	04 05 41.2	0.0
T36A	Boggs Farm, Ca baz=322,SNR=6.7	42.51	97	P		P	04 05 41.4	+0.1
R38A	Fenwick Farm, baz=321	42.61	94	P		P	04 05 41.6	-0.5
U35A	Pawnee baz=322	42.63	98	P		P	04 05 42.7	+0.4
O41A	Passleys Farm, baz=320	42.64	89	P		P	04 05 42.5	+0.2
V34A	Guthrie baz=323	42.67	99	P		P	04 05 42.9	+0.3
V34A	Guthrie 11nm,1.1s	42.67	99	*e*P		P	04 05 43.4	+0.8
P41A	Barry, Barry baz=320	42.88	90	P		P	04 05 44.3	0.0
Q40A	Laux Farm, Aux baz=320	42.90	91	P		P	04 05 44.3	-0.1
WMOK	Wichita Mounta baz=324,SNR=9.7	42.93	102	P		P	04 05 45.7	+0.9
WMOK	Wichita Mounta 6.8nm,1.0s	42.93	102	*e*P		P	04 05 45.6	+0.9
T37A	Cheneyville 18 baz=322,SNR=9.1	42.94	96	P		P	04 05 44.7	-0.1
R39A	Chumby, Stover baz=321,SNR=7.8	42.94	93	P		P	04 05 44.5	-0.3
S38A	Stockton baz=321	43.04	94	P		P	04 05 45.0	-0.6
V35A	Meyer Ranch, C baz=323	43.06	99	P		P	04 05 45.7	-0.1
HDIL	Hopedale baz=319	43.09	88	P		P	04 05 45.8	-0.1
S39A	Bolivar baz=321	43.29	94	P		P	04 05 46.8	-0.8
P42A	Winchester baz=320	43.31	89	P		P	04 05 47.1	-0.6
R40A	Maddies Statio baz=321	43.34	92	P		P	04 05 47.8	-0.2
SCHQ	Schefferville 2.2nm,0.3s,baz=320,slow=5.4,SNR=5.7	43.37	57	P		P	04 05 54.7	+6.7
V36A	Jenks baz=323	43.48	98	P		P	04 05 49.2	+0.1
W35A	Tecumseh baz=323,SNR=6.3	43.53	99	P		P	04 05 49.6	+0.1
NRIK	Noril'sk 6.5nm,0.5s,baz=59,slow=5.3,SNR=6.1	43.66	333	P		P	04 05 49.7	-0.4
U38A	Gravette baz=322,SNR=5.9	43.74	96	P		P	04 05 51.0	-0.2
S40A	Lebanon baz=321	43.77	93	P		P	04 05 50.5	-0.9
T39A	Clever baz=322	43.78	94	P		P	04 05 50.9	-0.6
V37A	Hulbert baz=323	43.80	97	P		P	04 05 51.6	-0.1
W36A	Wetumka baz=323	43.86	99	P		P	04 05 52.4	+0.2
Y34A	Reagan Ranch, baz=324	44.06	101	P		P	04 05 54.8	+1.1
X35A	Drake baz=324	44.08	100	P		P	04 05 53.9	-0.1
T40A	Mansfield baz=322	44.11	94	P		P	04 05 53.4	-0.8
Z33A	Whitaker Ranch baz=325	44.11	103	P		P	04 05 54.7	+0.6
Q43A	New Douglas baz=320,SNR=9.1	44.12	89	P		P	04 05 54.7	+0.5
S41A	Jillco Farms, baz=321,SNR=13	44.15	92	P		P	04 05 54.1	-0.3
V38A	Canehill baz=322,SNR=5.6	44.18	96	P		P	04 05 54.5	-0.2
ABTX	Abilene, Hawle baz=325	44.22	104	P		P	04 05 55.5	+0.4
U39A	Green Forest baz=322	44.23	95	P		P	04 05 54.4	-0.7
SFIN	Lafayette baz=320	44.32	86	P		P	04 05 56.0	+0.3
Y35A	Marietta baz=324	44.45	101	P		P	04 05 57.9	+1.0
Z34A	Collier Ranch, baz=324	44.45	102	P		P	04 05 57.8	+0.9
U40A	Yellville baz=322	44.56	95	P		P	04 05 57.1	-0.7
T41A	Mountain View baz=322	44.57	93	P		P	04 05 57.0	-0.8
V39A	Pettigrew baz=322	44.58	96	P		P	04 05 57.2	-0.7
133A	Hamilton Ranch baz=325	44.59	103	P		P	04 05 58.7	+0.7
X37A	Clayton baz=323	44.72	98	P		P	04 05 59.6	+0.6
W38A	Poteau baz=323	44.76	97	P		P	04 05 59.7	+0.4
Y36A	Durant baz=324	44.82	100	P		P	04 06 00.5	+0.7
X38A	Whitesboro baz=323	44.92	98	P		P	04 06 01.2	+0.6
S43A	Fulton Ridge, baz=321	44.99	91	P		P	04 06 00.8	-0.3
V40A	Witts Springs baz=322,SNR=7.4	45.01	95	P		P	04 06 00.9	-0.5
W39A	Magazine baz=323	45.02	96	P		P	04 06 01.2	-0.2
TX31	Lajitas Ar. Si	45.04	111	*e*P		P	04 06 03.4	+1.6
TXAR	Lajitas Array 2.3nm,0.8s,baz=319,slow=6.3,SNR=29	45.04	111	P		P	04 06 03.0	+1.2
TXAR					ScP	ScP	04 11 21.8	0.0
233A	0.3nm,0.9s,baz=318,slow=1.7,SNR=3.5 Rising Star baz=325,SNR=7.0	45.08	104	P		P	04 06 02.8	+0.9
OLIL	Olney 8.8nm,0.7s	45.08	88	*e*P		P	04 06 02.3	+0.5
Y37A	Hugo baz=324	45.09	99	P		P	04 06 02.9	+1.0
Z36A	Blue Ridge baz=324,SNR=5.1	45.26	100	P		P	04 06 03.4	+0.1
V41A	Mountainview baz=322	45.36	94	P		P	04 06 02.9	-1.2
U42A	Revenden baz=322	45.37	93	P		P	04 06 03.3	-0.8
W40A	Ferguson Farm, baz=323	45.38	96	P		P	04 06 04.0	-0.2
X39A	Fountain Ranch baz=323	45.40	97	P		P	04 06 04.8	+0.4
PBMO	Poplar Bluff 9.9nm,0.6s	45.44	92	*e*P		P	04 06 04.5	-0.1
234A	Clairette baz=325,SNR=7.9	45.46	103	P		P	04 06 05.8	+0.9
MIAR	Mount Ida baz=323	45.64	97	P		P	04 06 06.4	+0.1
MIAR	Mount Ida 4.0nm,0.7s	45.64	97	*e*P		P	04 06 06.6	+0.4
WHTX	Lake Whitney, baz=325	45.80	102	P		P	04 06 07.8	+0.3
136A	Ennis baz=325	45.86	101	P		P	04 06 08.7	+0.7
JCT	Junction City 1.7nm,0.8s,baz=326,SNR=14	45.91	106	P		P	04 06 09.7	+1.2
JCT	Junction City 21nm,0.8s	45.91	106	*e*P		P	04 06 09.7	+1.2
334A	Lometa baz=326	45.96	104	P		P	04 06 09.8	+0.9
433A	Art baz=326	46.03	105	P		P	04 06 09.9	+0.6
WCI	Wyandotte Cave 6.6nm,1.0s	46.37	87	*e*P		P	04 06 12.0	+0.1
434A	Burnet baz=326,SNR=9.0	46.37	104	P		P	04 06 13.2	+1.1
335A	Moody baz=326	46.40	103	P		P	04 06 12.8	+0.6
533A	Kerrville baz=326	46.62	106	P		P	04 06 15.1	+1.1
Y41A	Eaglette Beard baz=324	46.65	96	P		P	04 06 15.3	+1.1
435B	Jarrell baz=326	46.73	104	P		P	04 06 16.1	+1.3
534A	Blanco baz=326	46.92	105	P		P	04 06 17.3	+1.0
633A	Saathoff Ranch baz=327	47.06	106	P		P	04 06 18.2	+0.8
W45A	Hickory Valley baz=323	47.33	92	P		P	04 06 19.9	+0.5
N54A	Moraine State baz=320	47.39	80	P		P	04 06 20.2	+0.4
733A	Divot King Ran baz=327	47.62	107	P		P	04 06 22.9	+1.2
832A	Faith Ranch, C baz=328	47.66	108	P		P	04 06 23.5	+1.4
OXF	Oxford 39nm,0.6s	47.74	93	*e*P		P	04 06 23.1	+0.6
Y44A	Strider, Charl baz=323	47.78	94	P		P	04 06 23.5	+0.7
Y46A	Houston baz=323,SNR=18	48.51	93	P		P	04 06 29.5	+1.0
Y47A	UCPPARC, Winfie baz=323,SNR=11	49.00	92	P		P	04 06 32.5	+0.2
244A	Avery, Jackson baz=324	49.09	96	P		P	04 06 33.9	+1.0
146A	Union baz=324,SNR=5.1	49.41	94	P		P	04 06 36.1	+0.7
Z47A	Carrollton baz=324,SNR=7.5	49.45	93	P		P	04 06 35.8	+0.1
Z48A	Northport baz=324,SNR=5.4	49.56	92	P		P	04 06 36.6	0.0
ARCES	ARCESS Array B 1.4nm,0.7s,baz=346,slow=6.1,SNR=11	50.47	1	P		P	04 06 41.6	-1.3
347A	Saraland baz=325	50.67	95	P		P	04 06 45.7	+0.8
SONM	Songino Array 1.0nm,0.4s,baz=38,slow=6.6,SNR=8.4	54.66	306	P		P	04 07 15.1	+0.9
SONM					pP	pP	04 07 43.6	+1.4
ZALV	2.5nm,1.0s,baz=44,slow=6.8,SNR=5.1 Zalesovo Beam 3.3nm,0.4s,baz=28,slow=6.8,SNR=8.0	57.17	323	P		P	04 07 31.5	-0.3
ZALV					pP	pP	04 08 00.2	+0.3
NOA	0.9nm,0.3s,baz=35,slow=5.4,SNR=2.8 NORSAR Array B 0.4nm,0.5s,baz=352,slow=7.2,SNR=3.5	58.38	9	P		P	04 07 38.0	-2.3
NOA					pP	pP	04 08 06.9	-1.6
FINES	0.5nm,0.7s,baz=340,slow=5.9,SNR=3.6 FINESS Array B 0.7nm,0.5s,baz=8.1,slow=9.6,SNR=9.4	58.59	1	P		P	04 07 40.3	-1.4
ARU	Arti 4.0nm,0.5s	60.99	341	*e*P		P	04 07 56.9	-1.3
KURK	Kurchatov 3.4nm,0.7s	61.81	326	*e*P		P	04 08 02.9	-0.8
BRVK	Borovoye 6.7nm,0.7s	61.83	332	*e*P		P	04 08 03.1	-0.7
ZRNK	Zerenda 11nm,0.9s	62.22	333	*e*P		P	04 08 05.5	-1.0
ESK	Eskdalemuir 1.8nm,0.7s	62.25	19	*e*P		P	04 08 06.5	-0.1
MKAR	Makanchi Array 0.7nm,0.5s,baz=46,slow=4.5,SNR=7.5	64.23	321	P		P	04 08 18.5	-1.3
MKAR					pP	pP	04 08 48.2	-0.4
MK01	0.5nm,0.4s,baz=46,slow=6.9,SNR=2.6 Makanchi Array	64.25	321	*e*P		P	04 08 18.9	-1.1
WMQ	Urumqi	65.08	316	*e*P		P	04 08 29.0	+3.5
WMQ	comp=Z,9.0nm,0.6s				pmax	pmax		
AKTO	Aktyubinsk 3.9nm,0.5s,baz=24,slow=6.5,SNR=11	66.84	339	P		P	04 08 35.6	-0.9
ABKAR	Akbulak array 4.7nm,0.5s	67.61	337	*e*P		P	04 08 40.6	-0.8
AKASG	Malin Array Be 1.6nm,0.5s,baz=4.7,slow=6.1,SNR=9.3	69.35	359	P		P	04 08 50.7	-1.5
AKASG					pP	pP	04 09 20.2	-1.0
KIEV	0.4nm,0.3s,baz=3.1,slow=5.5,SNR=3.4 Kiev 9.3nm,0.6s	69.36	359	*e*P		P	04 08 51.5	-0.6
TKM2	Tokmak 2 2.1nm,0.8s	69.76	324	*e*P		P	04 08 55.0	-0.1
EKS2	Erkin-Say	70.52	325	*e*P		P	04 08 59.5	-0.2
GERES	2.6nm,0.5s GERESS Array B 0.4nm,0.5s,baz=15,slow=5.5,SNR=4.0	70.68	9	P		P	04 09 00.3	-0.2
KKAR	Karatay Array 1.9nm,0.5s	71.01	328	*e*P		P	04 09 01.6	-0.8
KBZ	Khabaz 1.0nm,0.6s,baz=330,slow=8.2,SNR=3.9	75.53	348	P		P	04 09 29.0	+0.1
KBZ				pP		pP	04 09 59.3	+0.9
ESDC	1.9nm,0.8s,baz=64,slow=1.9,SNR=2.8 Sonseca Array 0.3nm,0.5s,baz=356,slow=5.7,SNR=2.9	77.17	24	P		P	04 09 39.7	+1.4
OTAV	Otavalo 1.7nm,0.6s	82.12	103	*e*P		P	04 10 05.5	-0.3
BOSA	Boshof 1.0nm,0.3s,baz=28,slow=4.3,SNR=4.0	148.31	3	PKPbc		PKPbc	04 17 29.4	-0.5
QSPA	South Pole Qui	150.09	180	*e*PKPbc		PKPbc	04 17 32.3	-0.7

NIED **04** *04:15:00,39.60N×143.50E,h23km,Mw4.2 Best double couple: M₀2.45000×10¹⁵ NP1:φ₀202.00000°,δ27.00000°, λ84.00000°. NP2:φ₀29.00000°,δ63.00000°,λ93.00000°.*

ISCJB **04** *04:15:17.7±0.5,39.58N±0.04×143.52E±0.05,h11km, mb4.3/33,MS3.8/19,Error ellipse: s-maj=6.2km s-min=4.3km az=38.3*

BJI **04** *04:15:18.4,39.52N×143.43E,h23km,mb4.6/25,mB4.7/18, Ms4.2/15,Ms7 4.0/16*

JMA **04** *04:15:19.3±0.3,39.59N×143.53E,h30km,M4.3*

MOS **04** *04:15:22.8±1.3,39.67N×143.18E,h37km,mb4.5/15,Error ellipse: s-maj=9.6km s-min=7.3km az=109.8*

NEIC **04** *04:15:23.8±1.1,39.60N×143.33E,h43km±8km,mb4.4/7, Error ellipse: s-maj=12.7km s-min=7.4km az=121.0*

IDC **04** *04:15:24.3±2.4,39.58N×143.37E,h48km±21km,mb3.8/16, mb1 4.0/21,mb1mx3.9/47,mbtmp4.1/21,ML3.2/5,MS3.6/19, Ms1 3.6/19,ms1mx3.3/55,Error ellipse: s-maj=20.7km s-min=15.7km az=105.0*

ISC 04 04:15:20.1±0.6,39.64N±0.05×143.39E±0.05,h11km,n95, σ1ᵎ89/101,mb4.4/32,MS3.8/21,3C-4D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
JTH	Tanohata	1.22	285	P		Pn	04 15 42.3	-0.7
JTH				*e*S		Sn	04 16 00.9	+1.4
MIYJ	Miyakonagasawa	1.22	268	P		Pn	04 15 42.3	-0.7
MIYJ				*e*S		Sb	04 15 58.0	-0.8
OFUJ	Ofunato	1.45	248	P		Pn	04 15 45.3	-0.9
JANG	Nango	1.62	298	P		Pn	04 15 47.7	-0.9
JOM	Ohasama	1.63	265	P		Pn	04 15 48.7	0.0
JMK	Ichinoseki	1.82	249	P		Pn	04 15 50.8	-0.5
JIO	Ouri	1.98	234	P		Pn	04 15 52.2	-1.3
JTM	Tenmabayashi	2.12	304	P		Pn	04 15 55.8	+0.4
ERM	Erimo	2.38	356	⇓*e*P		Pn	04 15 59.4	+0.3
ERM	Erimo	2.38	356	*e*Pn		Pn	04 15 59.4	+0.3
ERM				*e*S		Sn	04 16 28.1	-0.1
JYK	Kaneyama	2.46	254	P		Pn	04 16 00.3	+0.1
JOT	Ohata	2.50	315	P		Pn	04 16 01.0	+0.4
JNBK	Urakawa-nobuka	2.69	350	P		Pn	04 16 03.8	+0.6
JNBK				*e*S		Sn	04 16 36.0	+0.3
ASAJ	Asahikawa	4.52	353	*e*Pn		Pn	04 16 29.0	+0.6
ASAJ				*e*S		Sn	04 17 17.8	-3.1
MJAR	Matsushiro Arr 4.2nm,0.3s,baz=38,slow=12,SNR=70	5.12	235	P		Pn	04 16 37.3	+0.5
MJAR				LR		LR	04 18 49.0	
MAJO	comp=Z,316nm,18.4s,baz=30,slow=40 Matsushiro	5.12	235	*e*P		Pn	04 16 37.2	+0.4
MAJO	comp=Z,95nm,0.6s			pmax		pmax		
MAJO	Matsushiro comp=Z,95nm,0.6s	5.12	235	*e*Pn		Pn	04 16 37.2	+0.4
MAJO				*e*S		Sn	04 17 23.5	-12
MAT	Matsushiro	5.12	235	P		Pn	04 16 37.5	+0.7
MAT				*e*S		Sn	04 17 38.0	+2.0
KUR	Kuril'sk	6.50	29	P		Pn	04 16 58.6	+3.0
KUR				*e*S		Sn	04 18 05.0	-4.7
KUR	comp=E,67nm,0.6s			smax		smax		
KUR	comp=N,37nm,0.5s			smax		smax		
VLA	Vladivostok	9.32	296	⇑*i*P		Pn	04 17 37.5	+3.2
VLA				*e*S		Sn	04 19 22.3	+3.1
VLA	comp=Z,13nm,0.5s			pmax		pmax		
USRK	Ussuriysk Ar. comp=Z,0.5nm,0.3s,baz=102,slow=13,SNR=17	9.64	302	P		Pn	04 17 41.5	+2.8
USRK				LR		LR	04 21 24.2	
MDJ	comp=Z,342nm,18.3s,baz=117,slow=37 Mudanjiang comp=Z,24nm,1.2s	11.39	300	*e*Pn		Pn	04 18 05.1	+2.5
JNU	Nakatsue comp=Z,342nm,18.7s,baz=112,slow=39	11.99	241	LR		LR	04 23 06.6	
KSRS	Korea Array comp=Z,0.2nm,0.3s,baz=83,slow=13,SNR=7.6	12.31	265	P		Pn	04 18 17.9	+2.6
KSRS				LR		LR	04 22 41.9	
KSAR	comp=Z,228nm,18.4s,baz=76,slow=36 Wonju Array Be	12.34	265	P		Pn	04 18 17.9	+2.2
KSAR	Wonju Array Be	12.34	265	P		Pn	04 18 17.9	+2.2
KLR	Kul'dur comp=Z,0.1nm,0.3s,baz=140,slow=11,SNR=5.8	12.68	323	P		Pn	04 18 20.9	+0.6
KLR				LR		LR	04 23 25.4	
PETK	comp=Z,223nm,19.7s,baz=132,slow=38 Petropavlovsk- comp=Z,0.4nm,0.3s,baz=215,slow=12,SNR=4.6	16.66	31	P		P	04 19 16.7	+1.0
PETK				LR		LR	04 26 50.6	
HIA	comp=Z,52nm,18.7s,baz=212,slow=41 Hailar	19.36	308	*e*P		P	04 19 44.0	-1.7
HIA	comp=Z,5.0nm,0.3s			pmax		pmax		
HIA	Hailar comp=Z,4.7nm,0.3s	19.36	308	*e*P		P	04 19 44.0	-1.7
BJT	Baijiatuau	20.89	280	*e*P		P	04 19 59.7	-2.5
BJT	comp=Z,9.0nm,1.0s			pmax		pmax		
BJT	Baijiatuau comp=Z,8.6nm,1.0s	20.89	280	*e*P		P	04 19 59.7	-2.5
TIA	Tai'an	20.98	269	⇓P		P	04 20 00.8	-2.4
TIA				S		S	04 23 53.1	-3.7
TIA	comp=Z,20nm,1.0s			pmax		pmax		
TIA	comp=Z,100nm,10.0s			LR		LR		
TIA	comp=Z,410nm,17.0s			LR		LR		
TIA	comp=Z,500nm,16.0s			LR		LR		
YAK	Yakutsk	23.93	344	*e*P		P	04 20 35.3	+1.5
YAK	comp=Z,22nm,0.8s			pmax		pmax		
SEY	Seymchan comp=Z,8.5nm,0.8s,baz=194,slow=11,SNR=14	23.95	10	P		P	04 20 33.8	-0.2
HHC	Hu-ho-hao-te	24.26	283	*e*P		P	04 20 35.3	-2.0
HHC				PP		PnPn	04 21 09.5	+2.6
HHC				sS		S	04 25 04.8	+9.0
HHC	comp=Z,64nm,3.9s			pmax		pmax		
HHC	comp=Z,79nm,9.7s			LR		LR		
HHC	comp=Z,260nm,13.8s			LR		LR		
HHC	comp=Z,300nm,14.5s			LR		LR		
SSLB	Suanglung comp=Z,5.5nm,0.6s	24.68	237	*e*P		P	04 20 38.8	-2.3
WHN	Wuhan	25.35	258	⇓*i*P		P	04 20 46.5	-0.5
WHN				S		S	04 25 16.8	+3.6
WHN	comp=Z,70nm,0.8s			pmax		pmax		
WHN	comp=Z,330nm,19.3s			LR		LR		
SONM	Songino Array comp=Z,3.6nm,0.8s,baz=97,slow=8.9,SNR=19	27.74	299	P		P	04 21 08.6	-0.1
SONM				LR		LR	04 32 48.6	
SONM	comp=Z,231nm,18.8s,baz=84,slow=38 Songino Array	27.74	299	*e*P		P	04 21 08.9	+0.2
SONM	comp=Z,4.0nm,0.8s			pmax		pmax		
XAN	Xi'an	28.04	269	P		P	04 21 11.5	+0.2
XAN				pP		sP	04 21 18.6	+2.5
XAN				sP		pP	04 21 22.0	+7.3
XAN				PP		PnPn	04 21 58.0	-0.4
XAN				S		S	04 25 56.4	+0.7
XAN				sS		sS	04 26 08.2	+6.9
XAN	comp=Z,6.0nm,0.9s			pmax		pmax		

XAN pmax pmax
comp=Z,18nm,3.3s
XAN LR LR
comp=Z,120nm,15.2s
XAN LR LR
comp=Z,200nm,14.2s
XAN LR LR
comp=Z,180nm,14.2s
H11N2 WAKE ISLAND Hy 28.32 128 T T 04 50 42.7
baz=320
H11N1 WAKE ISLAND Hy 28.33 128 T T 04 50 41.0
baz=320
H11N3 WAKE ISLAND Hy 28.34 128 T T 04 50 42.3
baz=320
H11S1 WAKE ISLAND Hy 29.14 130 T T 04 51 49.4
baz=322
H11S3 WAKE ISLAND Hy 29.14 130 T T 04 51 50.3
baz=322
H11S2 WAKE ISLAND Hy 29.16 130 T T 04 51 48.9
baz=322
TLY Talaya 29.91 307 *e*P **P 04 21 30.4 +2.7**
TLY pmax pmax
comp=Z,4.0nm,1.3s
ZAK Zakamensk 29.98 304 *e*P **P 04 21 27.5 -1.0**
ZAK pmax pmax
comp=Z,4.0nm,1.6s
GTA Gaotai 33.37 284 *e*P **P 04 21 59.0 +0.5**
GTA pP sP 04 22 03.0 -0.2
GTA sP pP 04 22 06.4 +4.6
GTA pmax pmax
comp=Z,9.0nm,0.9s
ZALV Zalesovo Beam 41.37 310 P **P 04 23 05.2 -0.7**
comp=Z,4.1nm,0.6s,baz=85,slow=7.3,SNR=16
ZALV PcP **PcP 04 25 03.0 -1.0**
comp=Z,1.7nm,0.7s,baz=83,slow=3.5,SNR=3.7
ZALV LR LR 04 41 04.1
comp=Z,52nm,18.9s,baz=70,slow=37
NRIK Noril'sk 41.59 334 LR LR 04 42 09.6
comp=Z,82nm,18.1s,baz=118,slow=39
CMAR Chiang Mai Arr 43.68 254 P **P 04 23 24.4 -0.8**
comp=Z,1.1nm,0.7s,baz=43,slow=7.6,SNR=4.9
CMAR LR LR 04 43 31.2
comp=Z,50nm,18.7s,baz=45,slow=39
MKAR Makanchi Array 44.11 300 P **P 04 23 27.8 -0.4**
comp=Z,4.2nm,0.7s,baz=82,slow=9.9,SNR=30
MKAR LR LR 04 42 46.6
comp=Z,99nm,18.6s,baz=62,slow=37
KURK Kurchatov 45.60 306 *e*P **P 04 23 39.6 -0.4**
KURK Kurchatov 45.60 306 *e*P **P 04 23 39.6 -0.4**
comp=Z,63nm,0.8s
ILAR Eielson Array 46.47 34 P **P 04 23 45.5 -1.3**
comp=Z,0.6nm,0.7s,baz=257,slow=6.8,SNR=8.5
ILAR Eielson Array 46.47 34 *e*P **P 04 23 49.2 +2.5**
ILAR pmax pmax
comp=Z,1.0nm,0.7s
TKM2 Tokmak 2 49.80 297 *e*P **P 04 24 13.2 +0.2**
TKM2 pmax pmax
comp=Z,10.0nm,0.9s
TKM2 Tokmak 2 49.80 297 *e*P **P 04 24 13.2 +0.2**
comp=Z,10nm,0.9s
BRVK Borovoye 50.06 311 *ce*P **P 04 24 14.5 -0.1**
BRVK pmax pmax
comp=Z,18nm,1.0s
BRVK Borovoye 50.06 311 *e*P **P 04 24 14.5 -0.1**
comp=Z,15nm,0.8s
AAK Ala-Archa 50.66 297 LR LR 04 47 01.5
comp=Z,98nm,18.1s,baz=45,slow=37
KSH Kashi 50.80 293 *e*P **P 04 24 24.8 +4.2**
KSH *e*PP **PP 04 26 22.7 +6.2**
KSH S **S 04 31 29.3 -7.0**
KSH pmax pmax
comp=Z,77nm,5.3s
KSH LR LR
comp=Z,220nm,10.1s
KSH LR LR
comp=Z,100nm,4.9s
KSH LR LR
comp=Z,110nm,6.4s
EKS2 Erkin-Say 51.14 297 *e*P **P 04 24 22.5 -0.6**
EKS2 pmax pmax
comp=Z,2.0nm,0.7s
EKS2 Erkin-Say 51.14 297 *e*P **P 04 24 22.5 -0.6**
comp=Z,2.1nm,0.7s
SVE Sverdlovsk 54.25 318 *e*P **P 04 24 46.2 +0.5**
SVE pmax pmax
comp=Z,11nm,0.9s
ARU Arti 55.46 318 *c iP* **P 04 24 54.3 -0.2**
ARU 04 26 56.3
ARU S **S 04 32 39.4 +0.4**
ARU SS **SS 04 36 18.0 -5.2**
ARU pmax pmax
comp=Z,14nm,1.0s
ARU MLR MLR
comp=Z,188nm,16.0s
ARU Arti 55.46 318 *e*P **P 04 24 54.4 -0.1**
comp=Z,12nm,1.0s
ABKAR Akbulak array 57.47 309 *e*P **P 04 25 08.3 -0.6**
comp=Z,4.3nm,0.6s
AKTO Aktyubinsk 58.11 311 LR LR 04 51 28.5
comp=Z,30nm,18.6s,baz=69,slow=37
SPITS Spitsbergen Ar 58.27 349 LR LR 04 52 57.2
comp=Z,42nm,19.2s,baz=90,slow=39
WRA Warramunga Arr 59.87 190 P **P 04 25 23.6 -2.2**
comp=Z,1.0nm,0.7s,baz=6.7,slow=6.8,SNR=6.5
WRA Warramunga Arr 59.87 190 *e*P **P 04 25 28.0 +2.2**
WRA pmax pmax
comp=Z,1.0nm,0.8s
ARCES ARCESS Array B 62.11 339 P **P 04 25 39.1 -1.5**
comp=Z,2.4nm,0.8s,baz=51,slow=7.1,SNR=4.4
ARCES LR LR 04 55 19.4
comp=Z,41nm,21.4s,baz=76,slow=38
ASAR Alice Springs 63.59 190 P **P 04 25 50.0 -0.9**
comp=Z,0.7nm,0.7s,baz=9.3,slow=6.4,SNR=4.9
ASAR Alice Springs 63.59 190 *e*P **P 04 25 50.7 -0.2**
ASAR pmax pmax
comp=Z,1.0nm,0.7s
FINES FINESS Array B 67.23 332 P **P 04 26 13.5 -0.6**
comp=Z,5.3nm,0.8s,baz=52,slow=7.5,SNR=11
FINES LR LR 04 58 38.7
comp=Z,101nm,18.5s,baz=24,slow=39
FINES FINESS Array B 67.23 332 *e*P **P 04 26 13.7 -0.3**
FINES pmax pmax
comp=Z,5.0nm,0.8s
KIV Kislovodsk 70.38 311 *e*P **P 04 26 35.1 +1.1**
KIV pmax pmax
comp=Z,18nm,1.1s
KIV MLR MLR
comp=Z,77nm,18.0s
KBZ Khabaz 70.39 311 P **P 04 26 33.8 -0.1**
comp=Z,5.1nm,0.8s,baz=37,slow=2.3,SNR=11
NB2 NORSAR Subarra 72.38 338 P **P 04 26 45.3 -0.5**
comp=Z,1.4nm,0.6s,baz=36,slow=6.2
NOA NORSAR Array B 72.38 338 P **P 04 26 45.0 -0.8**
comp=Z,1.9nm,0.8s,baz=43,slow=5.5,SNR=12
NOA LR LR 05 02 46.6
comp=Z,34nm,18.1s,baz=40,slow=39
NOA NORSAR Array B 72.38 338 P **P 04 26 45.0 -0.8**
NOA pmax pmax
comp=Z,2.0nm,0.8s
NOA MLR MLR
comp=Z,34nm,18.2s
NOA NORSAR Array B 72.38 338 P **P 04 26 45.0 -0.8**
AKASG Malin Array Be 73.18 323 P **P 04 26 49.7 -1.0**
comp=Z,1.6nm,0.5s,baz=45,slow=6.1,SNR=7.8
AKASG Malin Array Be 73.18 323 *e*P **P 04 26 50.0 -0.7**
AKASG pmax pmax
comp=Z,2.0nm,0.5s
KIEV Kiev 73.19 323⇓ *e*P **P 04 26 50.3 -0.4**
KIEV pmax pmax
comp=Z,4.0nm,0.9s
PFO Pinyon Flats O 76.32 58 LR LR 04 55 31.7
comp=Z,23nm,19.1s,baz=234,slow=32
UZH Uzhgorod 77.83 324 *e*P **P 04 27 17.0 -0.4**
UZH *e* 04 27 21.9
BRTR Keskin Array B 78.28 312 P **P 04 27 20.2 0.0**
comp=Z,0.2nm,0.3s,baz=53,slow=5.8,SNR=3.2
KHC Kasperske Hory 81.12 329 *e*P **P 04 27 35.8 +0.4**
KHC AMS AMS 05 06 50.0
comp=Z,100nm,19.2s
KHC Kasperske Hory 81.12 329 *e*P **P 04 27 35.8 +0.4**
KHC MLR MLR
comp=Z,100nm,19.2s
GERES GERESS Array B 81.30 329 P **P 04 27 34.8 -1.7**
comp=Z,0.7nm,0.8s,baz=46,slow=4.4,SNR=4.4
GERES LR LR 05 07 15.0
comp=Z,43nm,18.3s,baz=325,slow=38
TXAR Lajitas Array 87.31 54 P **P 04 28 08.3 +1.1**
comp=Z,0.3nm,0.9s,baz=332,slow=5.1,SNR=2.7

IDC 04 04:19:38.0±2.9, 6°46S×147°99E, h0km, mb3.7/2, mb1 3.9/4, mb1mx3.6/31, mbtmp3.7/4, ML3.7/1, Error ellipse: s-maj=74.2km s-min=36.5km az=106.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.04**	**196**	Pn	Pn	04 20 29.1	+1.8
	13nm,0.3s,baz=17,slow=6.0,SNR=13						
PMG				Sn	Sb	04 21 09.2	-1.5
	10nm,0.3s,baz=298,slow=11,SNR=7.6						
WRA	**Warramunga Arr**	**18.85**	**223**	P	P	04 23 59.3	-0.5
	0.3nm,0.3s,baz=50,slow=11,SNR=8.2						
ASAR	**Alice Springs**	**21.82**	**217**	P	P	04 24 31.2	-0.8
	0.6nm,0.4s,baz=49,slow=9.9,SNR=9.8						
FITZ	**Fitzroy Crossi**	**24.68**	**240**	P	P	04 25 00.2	-0.6
	3.5nm,0.5s,baz=50,slow=8.5,SNR=32						
TORD	**Torodi Ar. Bea**	**146.16**	**284**	PKPbc	PKPbc	04 39 21.0	-0.3
	0.7nm,0.5s,baz=72,slow=4.1,SNR=21						

WEL 04 04:21:24.0±0.3, 40°37S×173°25E, h239km±2km, ML3.5/16, 3C-1D, Error ellipse: s-maj=2.4km s-min=2.0km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
QRZ	**Quartz Range**	**0.71**	**230**	PN	Pn	04 21 56.2	-0.2
QRZ				SN	S	04 22 20.7	-1.0
NNZ	**Nelson**	**0.85**	**173**	PN	Pn	04 21 57.1	+0.1
NNZ				SN	S	04 22 22.2	-0.8
TCW	**Tory Channel**	**1.14**	**137**	PN	Pn	04 21 58.9	+0.2
TCW				AML	AML	04 22 26.9	
TCW				AML	AML	04 22 26.9	
TUWZ	**Tuamarina**	**1.18**	**154**	PN	Pn	04 21 59.2	+0.3
TUWZ				AML	AML	04 22 26.5	
TUWZ				AML	AML	04 22 27.5	
KHEZ	**Kahui Hut**	**1.23**	**29**	PN	Pn	04 22 00.1	-0.2
KIW	**Kapiti Island**	**1.35**	**112**	PN	Pn	04 22 00.1	-0.1
THZ	**Tophouse**	**1.41**	**190**	⇑PN	Pn	04 22 00.7	+0.1
THZ				SN	S	04 22 28.2	-1.2
OGWZ	**Otaki Gorge**	**1.53**	**107**	PN	Pn	04 22 01.5	0.0
OGWZ				AML	AML	04 22 31.9	
OGWZ				AML	AML	04 22 32.4	
CAW	**Cannon Point**	**1.56**	**119**	PN	Pn	04 22 01.6	-0.2
DSZ	**Denniston Nort**	**1.75**	**218**	⇑PN	Pn	04 22 02.8	-0.6
MRZ	**Mangatainoka R**	**1.80**	**100**	PN	Pn	04 22 03.2	-0.6
MSWZ	**Moikau Station**	**1.84**	**125**	PN	Pn	04 22 03.6	-0.5
MTW	**Mount Morrison**	**1.88**	**115**	PN	Pn	04 22 04.0	-0.4
PLWZ	**Palliser**	**1.93**	**129**	PN	Pn	04 22 04.4	-0.5
PLWZ				AML	AML	04 22 37.5	
PKVZ	**Pokaka**	**1.95**	**57**	PN	Pn	04 22 04.0	-1.2
TIWZ	**Tintock**	**2.05**	**102**	PN	Pn	04 22 05.7	-0.3
KHZ	**Kahutara**	**2.05**	**174**	PN	Pn	04 22 05.0	-0.9
WNVZ	**Wahianoa**	**2.09**	**61**	PN	Pn	04 22 05.5	-1.1
TMWZ	**Te Maipa**	**2.14**	**111**	PN	Pn	04 22 06.3	-0.5
TUVZ	**Tukino**	**2.16**	**60**	PN	Pn	04 22 06.2	-1.0
BFZ	**Birch Farm**	**2.31**	**99**	PN	Pn	04 22 07.9	-0.6
PNHZ	**Pukenui**	**2.31**	**79**	PN	Pn	04 22 07.8	-0.7
ANWZ	**Angora Road**	**2.46**	**93**	PN	Pn	04 22 09.6	-0.4
KRHZ	**Kereru**	**2.51**	**74**	PN	Pn	04 22 09.6	-1.0
LTZ	**Lake Taylor**	**2.52**	**197**	⇑PN	Pn	04 22 09.3	-1.3
INZ	**Inchbonnie**	**2.71**	**209**	⇑PN	Pn	04 22 11.5	-1.1
KAHZ	**Kahuranaki**	**2.84**	**79**	PN	Pn	04 22 13.8	-0.4
OXZ	**Oxford**	**3.08**	**197**	PN	Pn	04 22 14.9	-1.8
OXZ				SN	S	04 22 54.1	-4.2
WVZ	**Waitaha Valley**	**3.29**	**214**	⇓PN	Pn	04 22 17.2	-1.7
RAHZ	**Arahi**	**3.30**	**65**	AML	AML	04 23 01.2	
FOZ	**Fox Glacier**	**4.06**	**218**	PN	Pn	04 22 25.4	-2.5

*ISCJB **04** 04:39:54.4±1.5, 36°42N±0°05×141°08E±0°07, h7km±7km, mb3.6/5, MS2.6/3, Error ellipse: s-maj=10.2km s-min=7.4km az=40.4*
*IDC **04** 04:39:55.1±1.1, 36°46N×140°98E, h0km, mb3.6/5, mb1 3.7/6, mb1mx3.5/62, mbtmp3.5/6, ML3.0/1, MS2.7/5, Ms1 2.7/5, ms1mx2.4/42, Error ellipse: s-maj=26.5km s-min=21.8km az=70.0*
*JMA **04** 04:39:57.1, 36°50N×140°95E, h12km±1km, M3.4*
ISC 04 04:39:56.7±2.0, 36°50N±0°07×140°97E±0°07, h10km±10km, n24, σ0°72/18, mb3.7/5, MS2.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.34**	**289**	P	**Pg**	**04 40 03.5**	**0.0**
JHO				S	**Sg**	**04 40 08.5**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.62**	**347**	P	**Pb**	**04 40 09.2**	**-0.4**
JYT	**Yasato**	**0.68**	**247**	P	**Pg**	**04 40 09.8**	**-0.1**
JYT				S	**Sb**	**04 40 19.3**	**-0.8**
JFK	**Kawauchi**	**0.87**	**355**	P	**Pg**	**04 40 13.1**	**-0.4**
JFK				S	**Sg**	**04 40 25.5**	**+0.6**
JSB	**Shiboa**	**0.96**	**299**	P	**Pb**	**04 40 15.6**	**+0.1**
JFT	**Otama**	**1.14**	**334**	P	**Pg**	**04 40 18.3**	**-0.3**
MJAR	**Matsushiro Arr**	**2.22**	**272**	Pn	**Pn**	**04 40 33.9**	**+0.3**
	4.6nm,0.3s,baz=94,slow=9.5,SNR=25						
MJAR				Sn	**Sb**	**04 41 03.0**	**-1.5**
	15nm,0.3s,baz=86,slow=27,SNR=9.6						
MAT	**Matsushiro**	**2.23**	**272**	P	**Pn**	**04 40 34.4**	**+0.8**
MAT				S	**Sn**	**04 41 02.1**	**+0.9**
JNU	**Nakatsue**	**8.95**	**251**	LR	LR	04 44 46.0	
	comp=Z,17nm,21.8s,baz=118,slow=32						
KSRS	**Korea Array**	**10.48**	**279**	LR	LR	04 46 24.2	
	comp=Z,52nm,18.6s,baz=47,slow=37						
PETK	**Petropavlovsk-**	**20.33**	**30**	LR	LR	04 53 15.4	
	comp=Z,10nm,18.9s,baz=180,slow=39						
YAK	**Yakutsk**	**26.52**	**348**	LR	LR	04 57 27.2	
	comp=Z,18nm,18.5s,baz=66,slow=40						
H11N2	**WAKE ISLAND Hy**	**28.19**	**119**	T	T	05 15 18.3	
	baz=312,slow=75,SNR=1339						
H11N1	**WAKE ISLAND Hy**	**28.20**	**119**	T	T	05 15 18.7	
	baz=312,slow=75,SNR=2342						
H11N3	**WAKE ISLAND Hy**	**28.21**	**119**	T	T	05 15 19.5	
	baz=312,slow=75,SNR=1609						
H11S1	**WAKE ISLAND Hy**	**28.88**	**121**	T	T	05 16 08.2	
	baz=314,slow=76						
H11S3	**WAKE ISLAND Hy**	**28.88**	**121**	T	T	05 16 08.2	
	baz=314,slow=76						
H11S2	**WAKE ISLAND Hy**	**28.89**	**121**	T	T	05 16 09.4	
	baz=314,slow=76						
CMAR	**Chiang Mai Arr**	**41.02**	**256**	LR	LR	05 07 10.7	
	comp=Z,21nm,18.6s,baz=80,slow=40						
ZALV	**Zalesovo Beam**	**42.01**	**313**	P	**P**	**04 47 47.6**	**-0.3**
	0.9nm,0.6s,baz=93,slow=7.2,SNR=3.6						
KURBB	**Kurchatov Array**	**46.05**	**308**	P	**P**	**04 48 20.1**	**-0.3**
	0.6nm,0.6s,baz=86,slow=7.9,SNR=9.5						
ILAR	**Eielson Array**	**50.14**	**32**	P	**P**	**04 48 52.8**	**+1.0**
	0.3nm,0.6s,baz=269,slow=6.3,SNR=5.4						
WRA	**Warramunga Arr**	**56.48**	**187**	P	**P**	**04 49 38.2**	**-0.7**
	0.7nm,0.8s,baz=6.9,slow=7.6,SNR=6.5						
ASAR	**Alice Springs**	**60.21**	**187**	P	**P**	**04 50 04.7**	**-0.2**
	0.5nm,0.8s,baz=17,slow=7.7,SNR=3.8						

*ROM **04** 04:44:27.9±0.1, 46°41N×12°92E, h6km±1km, Md3.1/21, Ml3.0/21, Error ellipse: s-maj=1.2km s-min=1.0km az=21.0*
*CSEM **04** 04:44:27.9±0.1, 46°41N×12°89E, h5km, ML3.4/41, Error ellipse: s-maj=2.0km s-min=1.3km az=10.0*
*IASPEI **04** 04:44:28.2±0.8, 46°40N±0°02×12°91E±0°01, h15km±4km, Error ellipse: s-maj=2.3km s-min=1.7km az=14.2, GT5 selection from ISC bulletin GT5 identified by Bond˙jr and McLaughlin (2009) selection criteria Bond˙jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*LDG **04** 04:44:29.7±0.1, 46°34N×12°98E, h10km, Md3.0/5, Ml3.0/13, Error ellipse: s-maj=4.7km s-min=2.7km az=8.0*
*PRU **04** 04:44:30.1, 46°46N×12°97E, h5km*
*STR **04** 04:44:35.5±0.2, 46°90N×12°52E, h10km, Ml3.1, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 04 04:44:28.3±0.7, 46°40N±0°01×12°902E±0°010, h16km±3km, n229, σ1°19/383, 7C-7D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FUSE	**Fusea**	**0.07**	**81**	⇑*i*	Pg	**04 44 30.9**	**-0.5**
FUSE				*i*	Sg	**04 44 33.0**	**-0.6**
FUSE	**Fusea**	**0.07**	**81**	*i*	Pg	**04 44 31.0**	**-0.5**
FUSE				*i*	Sg	**04 44 33.0**	**-0.6**
BOO	**Bordano**	**0.16**	**121**	⇓*i*	Pg	**04 44 31.9**	**-0.6**
BOO	**Bordano**	**0.16**	**121**	*i*	P	**04 44 31.9**	**-0.6**
ZOU	**Zoufplan**	**0.16**	**18**	⇓*i*	Pg	**04 44 32.5**	**-0.2**
ZOU				*i*	Sg	**04 44 35.6**	**0.0**
STAL	**STALIGIAL**	**0.20**	**223**	Pg		**04 44 32.5**	**-0.5**
STAL				Sg		**04 44 35.9**	**-0.3**
	4µm,0.2s						
STAL	**STALIGIAL**	**0.20**	**223**	Pg	**Pg**	**04 44 32.5**	**-0.5**
STAL				Sg	**Sg**	**04 44 35.9**	**-0.3**
	4µm,0.2s						
CSMI	**Casera Mimoias**	**0.20**	**302**	⇓*i*	Pg	**04 44 33.0**	**-0.3**
CSMI				*i*	Sg	**04 44 36.4**	**-0.2**
CSMI	**Casera Mimoias**	**0.20**	**302**	*i*	Pg	**04 44 33.0**	**-0.3**
CSMI				*i*	Sg	**04 44 36.4**	**-0.2**
FVI	**Forni Avoltri**	**0.21**	**337**	Pg		**04 44 33.1**	**-0.2**
FVI				Sg		**04 44 36.6**	**-0.1**
FVI	**Forni Avoltri**	**0.21**	**337**	Pg	**Pg**	**04 44 33.1**	**-0.2**
FVI				Sg	**Sg**	**04 44 36.6**	**-0.1**
PLRO	**Paularo**	**0.22**	**49**	⇑*e*Pg	**Pg**	**04 44 33.4**	**-0.2**
PLRO				*e*Sg	**Sg**	**04 44 37.1**	**0.0**
PLRO	**Paularo**	**0.22**	**49**	*e*Pg	**Pg**	**04 44 33.4**	**-0.2**
PLRO				*e*Sg	**Sg**	**04 44 37.1**	**0.0**
BUA	**Buia**	**0.24**	**140**	⇓*e*Pg	**Pg**	**04 44 33.1**	**-0.5**
BUA				*e*Sg	**Sg**	**04 44 37.7**	**+0.4**
BUA	**Buia**	**0.24**	**140**	*e*Pg	**Pg**	**04 44 33.2**	**-0.5**
BUA				*e*Sg	**Sg**	**04 44 37.7**	**+0.4**
BAD	**Bernadia**	**0.29**	**125**	⇓*e*Pg	**Pg**	**04 44 33.9**	**-0.6**
BAD				*e*Sg	**Sg**	**04 44 38.8**	**0.0**
BAD	**Bernadia**	**0.29**	**125**	*e*Pg	**Pg**	**04 44 33.9**	**-0.6**
BAD				*e*Sg	**Sg**	**04 44 38.8**	**0.0**
VINO	**Villanova**	**0.30**	**119**	Pg		**04 44 34.0**	**-0.7**
VINO				Sg		**04 44 39.0**	**-0.1**
VINO	**Villanova**	**0.30**	**119**	⇓*e*Pg	**Pg**	**04 44 34.0**	**-0.7**
VINO				*e*Sg	**Sg**	**04 44 39.0**	**-0.1**
VINO	**Villanova**	**0.30**	**119**	Pg	**Pg**	**04 44 34.0**	**-0.7**
VINO				Sg	**Sg**	**04 44 39.0**	**-0.1**
PTCC	**Patocco-Chiusa**	**0.31**	**90**	Pg	**Pg**	**04 44 34.5**	**-0.4**
PTCC				Sg	**Sg**	**04 44 39.7**	**+0.2**
	848nm,0.3s						
PTCC	**Patocco-Chiusa**	**0.31**	**90**	Pg	**Pg**	**04 44 34.5**	**-0.4**
PTCC				Sg	**Sg**	**04 44 39.7**	**+0.2**
	848nm,0.3s						
MLNI	**Malnisio**	**0.33**	**219**	⇑*e*Pg	**Pg**	**04 44 34.7**	**-0.4**
MLNI				*e*Sg	**Sg**	**04 44 40.5**	**+0.7**
MLNI	**Malnisio**	**0.33**	**219**	*e*Pg	**Pg**	**04 44 34.7**	**-0.4**
MLNI				*e*Sg	**Sg**	**04 44 40.5**	**+0.7**
CIMO	**Cimolais**	**0.33**	**254**	⇑*e*Pg	**Pg**	**04 44 34.7**	**-0.6**
CIMO				*e*Sg	**Sg**	**04 44 39.5**	**-0.5**
CIMO	**Cimolais**	**0.33**	**254**	*e*Pg	**Pg**	**04 44 34.7**	**-0.6**
CIMO				*e*Sg	**Sg**	**04 44 39.5**	**-0.5**
ABTA	**Abfaltersbach**	**0.44**	**322**	*e*Pg	**Pg**	**04 44 37.1**	**-0.1**
	118nm,0.2s,SNR=118						
ABTA				Sg	**Sg**	**04 44 42.2**	**-1.0**
	109nm,0.2s						
ABTA	**Abfaltersbach**	**0.44**	**322**	Pg	**Pg**	**04 44 37.1**	**-0.1**
	118nm,0.2s,SNR=118						
ABTA				Sg	**Sg**	**04 44 42.2**	**-1.0**
	109nm,0.2s						
LSR	**Lussari**	**0.44**	**80**	⇑*e*Pg	**Pg**	**04 44 36.7**	**-0.5**
LSR				*e*Sg	**Sg**	**04 44 43.9**	**+0.6**
LSR	**Lussari**	**0.44**	**80**	*e*Pg	**Pg**	**04 44 36.7**	**-0.5**
LSR				*e*Sg	**Sg**	**04 44 43.9**	**+0.6**
ACOM	**Acomizza, Ital**	**0.45**	**71**	Pg	**Pg**	**04 44 37.1**	**-0.3**
ACOM				Sg	**Sg**	**04 44 44.2**	**+0.7**
ACOM	**Acomizza, Ital**	**0.45**	**71**	⇑*e*Pg	**Pg**	**04 44 37.0**	**-0.3**
ACOM				*e*Sg	**Sg**	**04 44 44.2**	**+0.7**
ACOM	**Acomizza, Ital**	**0.45**	**71**	Pg	**Pg**	**04 44 37.1**	**-0.3**
ACOM				Sg	**Sg**	**04 44 44.2**	**+0.7**
ROBS	**Robic**	**0.45**	**110**	*i* Pg	**Pg**	**04 44 36.4**	**-1.0**
ROBS	**Robic**	**0.45**	**110**	*i* Pg	**Pg**	**04 44 36.4**	**-1.0**
POLC	**Polcenigo**	**0.47**	**217**	Pg	**Pg**	**04 44 37.9**	**+0.2**
POLC				Sg	**Sb**	**04 44 45.5**	**+0.6**
POLC	**Polcenigo**	**0.47**	**217**	Pg	**Pg**	**04 44 37.9**	**+0.2**
POLC	**Polcenigo**	**0.47**	**217**	P	**Pg**	**04 44 37.9**	**+0.2**
POLC				Sg	**Sb**	**04 44 45.5**	**+0.6**
TLI	**Talmassons**	**0.50**	**164**	*e*Pg	**Pg**	**04 44 38.2**	**-0.1**
TLI	**Talmassons**	**0.50**	**164**	*e*P	**Pg**	**04 44 38.2**	**-0.1**
CAE	**Caneva**	**0.51**	**219**	⇑*e*Pg	**Pg**	**04 44 38.3**	**-0.2**
CAE				*e*Sg	**Sb**	**04 44 46.6**	**+0.4**
CAE	**Caneva**	**0.51**	**219**	*e*Pg	**Pg**	**04 44 38.3**	**-0.2**
CAE				*e*Sg	**Sb**	**04 44 46.6**	**+0.4**
AFL	**Alpe Faloria**	**0.52**	**284**	*e*Pg	**Pg**	**04 44 38.6**	**0.0**
AFL	**Alpe Faloria**	**0.52**	**284**	*e*P	**Pg**	**04 44 38.7**	**0.0**
MYKA	**Terra Mystica**	**0.56**	**66**	Pg	**Pg**	**04 44 38.9**	**-0.5**
	16nm,0.2s						
MYKA				Sg	**Sg**	**04 44 45.1**	**-1.8**
	12nm,0.1s						
MYKA	**Terra Mystica**	**0.56**	**66**	Pg	**Pg**	**04 44 38.9**	**-0.5**
	16nm,0.2s						
MYKA				Sg	**Sg**	**04 44 45.1**	**-1.8**
	12nm,0.1s						
DRE	**Drenchia**	**0.56**	**114**	⇓*e*Pg	**Pg**	**04 44 38.6**	**-0.9**
DRE				*e*Sg	**Sb**	**04 44 48.2**	**+0.5**
DRE	**Drenchia**	**0.56**	**114**	*e*Pg	**Pg**	**04 44 38.6**	**-0.9**
DRE				*e*Sg	**Sb**	**04 44 48.2**	**+0.5**
AGOR	**Agordo**	**0.60**	**259**	Pg	**Pg**	**04 44 40.3**	**+0.1**
AGOR				Sg	**Sb**	**04 44 49.3**	**+0.4**
	414nm,0.3s						
AGOR	**Agordo**	**0.60**	**259**	*e*Pg	**Pg**	**04 44 40.4**	**+0.1**
AGOR				*e*Sg	**Sb**	**04 44 49.4**	**+0.6**
CADS	**Cadrg**	**0.60**	**107**	*i* Pg	**Pg**	**04 44 39.1**	**-1.1**
CADS				*i* Sg	**Sg**	**04 44 49.0**	**+0.7**
	comp=Z,82nm,0.2s						
CADS	**Cadrg**	**0.60**	**107**	*i* Pg	**Pg**	**04 44 39.2**	**-1.1**
CADS				*i* Sg	**Sg**	**04 44 49.0**	**+0.7**
	comp=Z,82nm,0.2s						
SABO	**M.te Sabotino**	**0.64**	**131**	Pg	**Pg**	**04 44 40.5**	**-0.5**
SABO				Sg	**Sb**	**04 44 51.2**	**+1.2**
	comp=Z,479nm,0.6s						
SABO	**M.te Sabotino**	**0.64**	**131**	*e*Pg	**Pg**	**04 44 40.6**	**-0.4**
SABO				*e*Sg	**Sb**	**04 44 51.3**	**+1.3**
SABO	**M.te Sabotino**	**0.64**	**131**	Pg	**Pg**	**04 44 40.5**	**-0.5**
SABO				Sg	**Sb**	**04 44 51.2**	**+1.2**
	comp=Z,479nm,0.6s						
FAU	**Forcella Aurin**	**0.66**	**255**	*e*Pg	**Pg**	**04 44 40.7**	**-0.7**
FAU	**Forcella Aurin**	**0.66**	**255**	*e*P	**Pg**	**04 44 40.7**	**-0.7**
VARN	**Col Varnada, M**	**0.69**	**234**	*e*Pg	**Pg**	**04 44 41.1**	**-0.7**
VARN	**Col Varnada, M**	**0.69**	**234**	*e*P	**Pg**	**04 44 41.1**	**-0.7**
KBA	**Koelnbreinsper**	**0.74**	**24**	*e*Pg	**Pg**	**04 44 42.7**	**-0.1**
	comp=Z,44nm,0.2s,SNR=107						
KBA				*e*Sg	**Sg**	**04 44 52.6**	**-0.1**
	comp=Z,248nm,0.2s						
KBA	**Koelnbreinsper**	**0.74**	**24**	Pg	**Pg**	**04 44 42.7**	**-0.1**
	comp=Z,44nm,0.2s,SNR=107						
KBA				Sg	**Sg**	**04 44 52.6**	**-0.1**
	comp=Z,248nm,0.2s						
GORS	**Gorjuse**	**0.76**	**96**	*i* Pg	**Pb**	**04 44 42.2**	**-1.1**
GORS				*e*Sg	**Sg**	**04 44 54.7**	**+1.4**
	comp=Z,77nm,0.2s						
GORS	**Gorjuse**	**0.76**	**96**	*i* Pg	**Pb**	**04 44 42.2**	**-1.1**
GORS				*e*Sg	**Sg**	**04 44 54.7**	**+1.4**
	comp=Z,77nm,0.2s						
VOJS	**Vojsko**	**0.78**	**118**	*i* Pg	**

CRNS	**Crni Vrh**	**1.00**	**108**	*i* Pg		**Pb**	04 44 46.6	-0.7	
	comp=Z,86nm,0.1s								
KOSI	**Kohlern**	**1.06**	**274**	Pg		**Pn**	04 44 48.6	0.0	
KOSI				Sg		**Sg**	04 45 02.8	+0.2	
	comp=Z,190nm,0.5s								
KOSI	**Kohlern**	**1.06**	**274**	Pg		**Pn**	04 44 48.6	0.0	
KOSI				Sg		**Sg**	04 45 02.8	+0.2	
	comp=Z,190nm,0.5s								
MOZS	**Mozjanca**	**1.07**	**95**	*i* Pg		**Pb**	04 44 48.9	+0.3	
	comp=Z,30nm,0.1s								
MOZS	**Mozjanca**	**1.07**	**95**	*i* Pg		**Pb**	04 44 48.9	+0.3	
	comp=Z,30nm,0.1s								
ABSI	**Aberstueckl**	**1.14**	**287**	Pg		**Pn**	04 44 49.9	+0.1	
ABSI				Sg		**Sg**	04 45 05.6	+0.3	
	comp=Z,342nm,0.5s								
ABSI	**Aberstueckl**	**1.14**	**287**	Pg		**Pn**	04 44 49.9	+0.1	
ABSI				Sg		**Sg**	04 45 05.6	+0.3	
	comp=Z,342nm,0.5s								
OBKA	**Obir**	**1.14**	**84**	Pg		**Pn**	04 44 49.8	0.0	
	comp=Z,1.9nm,0.1s,SNR=21								
OBKA				*e*Sn		**Sg**	04 45 06.6	+1.2	
	comp=Z,71nm,0.3s								
OBKA	**Obir**	**1.14**	**84**	Pg		**Pn**	04 44 49.8	0.0	
	comp=Z,1.9nm,0.1s,SNR=21								
OBKA				Sg		**Sg**	04 45 06.6	+1.2	
	comp=Z,71nm,0.3s								
PANI	**Panarotta**	**1.14**	**253**	*e*Pg		**Pg**	04 44 50.4	-0.1	
ROSI	**Rosskopf**	**1.15**	**298**	Pg		**Pb**	04 44 50.3	+0.3	
	comp=Z,182nm,0.4s								
ROSI	**Rosskopf**	**1.15**	**298**	*e*Pg		**Pb**	04 44 50.4	+0.3	
ROSI	**Rosskopf**	**1.15**	**298**	Pg		**Pb**	04 44 50.3	+0.3	
	comp=Z,182nm,0.4s								
APPI	**Appiano**	**1.16**	**274**	Pg		**Pg**	04 44 50.5	-0.2	
	comp=Z,258nm,0.3s								
APPI	**Appiano**	**1.16**	**274**	Pg		**Pg**	04 44 50.5	-0.2	
	comp=Z,258nm,0.3s								
GBAS	**Gorenja Brezov**	**1.17**	**113**	*i* Pg		**Pn**	04 44 49.5	-0.6	
	comp=Z,49nm,0.1s								
GBAS	**Gorenja Brezov**	**1.17**	**113**	*i* Pg		**Pn**	04 44 49.5	-0.6	
LJU	**Ljubljana**	**1.18**	**107**	*i* Pg		**Pb**	04 44 50.7	+0.3	
LJU				*e*Sg		**Sg**	04 45 07.5	+0.9	
	comp=Z,83nm,0.1s								
LJU	**Ljubljana**	**1.18**	**107**	*i* Pg		**Pb**	04 44 50.7	+0.3	
	comp=Z,83nm,0.1s								
WTTA	**Wattenberg**	**1.22**	**315**	*e*Pg		**Pb**	04 44 51.5	+0.4	
	comp=Z,12nm,0.1s,SNR=62								
WTTA				Sg		**Sn**	04 45 07.6	+0.3	
	comp=Z,184nm,0.4s								
WTTA	**Wattenberg**	**1.22**	**315**	*e*PG		**Pg**	04 44 51.7	-0.3	
WTTA	**Wattenberg**	**1.22**	**315**	Pg		**Pb**	04 44 51.6	+0.4	
WTTA				Sg		**Sn**	04 45 07.3	0.0	
	comp=Z,271nm,0.6s								
WTTA	**Wattenberg**	**1.22**	**315**	Pg		**Pb**	04 44 51.6	+0.4	
WTTA				Sg		**Sn**	04 45 07.3	0.0	
	comp=Z,271nm,0.6s								
CEY	**Cerknica**	**1.25**	**122**	*e*Pg		**Pn**	04 44 51.4	+0.2	
CEY				*e*Sg		**Sg**	04 45 08.9	+0.1	
	comp=Z,204nm,0.3s								
CEY	**Cerknica**	**1.25**	**122**	*e*Pg		**Pn**	04 44 51.4	+0.2	
CEY				*e*Sg		**Sg**	04 45 08.9	+0.1	
	comp=Z,204nm,0.3s								
OZOL	**Ozolo**	**1.28**	**271**	*e*Pg		**Pg**	04 44 52.7	-0.3	
OZOL	**Ozolo**	**1.28**	**271**	*e*Pg		**Pg**	04 44 52.7	-0.3	
DDS	**Dosso del Somm**	**1.30**	**247**	*e*Pg		**Pg**	04 44 53.1	-0.3	
DDS	**Dosso del Somm**	**1.30**	**247**	*e*Pg		**Pg**	04 44 53.1	-0.3	
WATA	**Walderalm**	**1.30**	**316**	*e*Pg		**Pg**	04 44 53.1	-0.4	
	comp=Z,13nm,0.1s,SNR=29								
WATA				*e*Sg		**Sb**	04 45 08.5	-0.6	
	comp=Z,20nm,0.2s								
WATA	**Walderalm**	**1.30**	**316**	Pg		**Pg**	04 44 53.1	-0.4	
	comp=Z,13nm,0.1s,SNR=29								
WATA				Sg		**Sb**	04 45 08.5	-0.6	
	comp=Z,20nm,0.2s								
KNDS	**Knezji Dol**	**1.35**	**130**	*i* Pg		**Pb**	04 44 53.6	+0.3	
KNDS				*i* Sg		**Sg**	04 45 12.9	+0.9	
	comp=Z,32nm,0.1s								
KNDS	**Knezji Dol**	**1.35**	**130**	*i* Pg		**Pb**	04 44 53.6	+0.3	
KNDS				*i* Sg		**Sg**	04 45 12.9	+0.9	
	comp=Z,32nm,0.1s								
MARN	**Marana (Italy)**	**1.41**	**238**	*e*Pg		**Pb**	04 44 54.3	+0.1	
MARN	**Marana (Italy)**	**1.41**	**238**	*e*Pg		**Pb**	04 44 54.3	+0.1	
VISS	**Visnje**	**1.48**	**113**	*i* Pn		**Pb**	04 44 55.5	+0.1	
VISS				*i* Sn		**Sg**	04 45 15.9	0.0	
	comp=Z,63nm,0.2s								
VISS	**Visnje**	**1.48**	**113**	*i* Pn		**Pb**	04 44 55.5	+0.1	
VISS				*i* Sn		**Sg**	04 45 15.9	0.0	
	comp=Z,63nm,0.2s								
ROVR	**Rover¯¤ Verone**	**1.48**	**240**	Pg		**Pb**	04 44 55.7	+0.1	
ROVR				Sg		**Sg**	04 45 15.6	-0.6	
	comp=Z,506nm,0.4s								
ROVR	**Rover¯¤ Verone**	**1.48**	**240**	Pg		**Pb**	04 44 55.7	+0.1	
ROVR				Sg		**Sg**	04 45 15.6	-0.6	
	comp=Z,506nm,0.4s								
PDKS	**Podkum**	**1.49**	**102**	*i* Pn		**Pb**	04 44 55.7	0.0	
PDKS				*i* Sn		**Sg**	04 45 16.1	-0.4	
PDKS	**Podkum**	**1.49**	**102**	*i* Pn		**Pb**	04 44 55.7	0.0	
PDKS				*i* Sn		**Sg**	04 45 16.1	-0.4	
SOKA	**Soboth**	**1.50**	**79**	*e*Pg		**Pb**	04 44 55.8	0.0	
	comp=Z,1.9nm,0.2s								
SOKA				*e*Sn		**Sn**	04 45 13.6	-0.3	
	comp=Z,2.8nm,0.1s								
SOKA	**Soboth**	**1.50**	**79**	Pg		**Pb**	04 44 55.8	0.0	
	comp=Z,1.9nm,0.2s								
SOKA				Sg		**Sn**	04 45 13.6	-0.3	
	comp=Z,2.8nm,0.1s								
CARE	**Lago del Cares**	**1.53**	**272**	*e*Pg		**Pb**	04 44 57.1	+0.6	
CARE	**Lago del Cares**	**1.53**	**272**	*e*Pg		**Pb**	04 44 57.1	+0.6	
PERS	**Pernice**	**1.55**	**81**	*i* Pn		**Pb**	04 44 56.6	0.0	
	comp=Z,10.0nm,0.2s								
PERS	**Pernice**	**1.55**	**81**	*i* Pn		**Pb**	04 44 56.6	0.0	
	comp=Z,10.0nm,0.2s								
MOTA	**Moosalm**	**1.55**	**308**	Pg		**Pb**	04 44 57.4	+0.6	
	SNR=47								
MOTA				Sg		**Sg**	04 45 17.8	-0.6	
	comp=Z,24nm,0.2s								
MOTA	**Moosalm**	**1.55**	**308**	Pg		**Pb**	04 44 57.4	+0.6	
	SNR=47								
MOTA				Sg		**Sg**	04 45 17.8	-0.6	
	comp=Z,24nm,0.2s								
FETA	**Feichten**	**1.62**	**293**	Pg		**Pb**	04 44 58.6	+0.7	
	comp=Z,21nm,0.3s,SNR=57								
FETA				*e*Sg		**Sg**	04 45 21.6	+1.1	
	comp=Z,26nm,0.4s								
FETA	**Feichten**	**1.62**	**293**	Pg		**Pb**	04 44 58.6	+0.7	
	comp=Z,21nm,0.3s,SNR=57								
FETA				Sg		**Sg**	04 45 21.6	+1.1	
	comp=Z,26nm,0.4s								
BALD	**Monte Baldo**	**1.62**	**244**	*e*Pg		**Pb**	04 44 58.3	+0.3	
BALD	**Monte Baldo**	**1.62**	**244**	*e*Pg		**Pb**	04 44 58.3	+0.3	
MOSI	**Grossmontoni**	**1.64**	**278**	Pg		**Pb**	04 44 59.1	+0.8	
MOSI				Sg		**Sg**	04 45 20.5	-0.7	
	comp=Z,393nm,0.4s								
MOSI	**Grossmontoni**	**1.64**	**278**	Pg		**Pb**	04 44 59.1	+0.8	
MOSI				Sg		**Sg**	04 45 20.5	-0.7	
	comp=Z,393nm,0.4s								
RNI	**Roncone**	**1.64**	**256**	*e*Pg		**Pb**	04 44 58.4	+0.1	
MABI	**Malga Bissina**	**1.69**	**259**	Pg		**Pb**	04 44 59.3	+0.1	
	comp=Z,117nm,0.3s								
MABI	**Malga Bissina**	**1.69**	**259**	Pg		**Pb**	04 44 59.3	+0.1	
	comp=Z,117nm,0.3s								
MAGA	**Magasa**	**1.70**	**249**	Pg		**Pb**	04 44 58.6	-0.7	
MAGA				Sg		**Sg**	04 45 22.5	-0.7	
	comp=Z,681nm,0.3s								
MAGA	**Magasa**	**1.70**	**249**	Pg		**Pb**	04 44 58.6	-0.7	
MAGA				Sg		**Sg**	04 45 22.5	-0.7	
	comp=Z,681nm,0.3s								
MOA	**Molln**	**1.72**	**32**	*e*Pg		**Pb**	04 45 00.3	+0.7	
	comp=Z,3.1nm,0.1s,SNR=20								
MOA				Sg		**Sg**	04 45 24.2	+0.4	
	comp=Z,25nm,0.3s								
MOA	**Molln**	**1.72**	**32**	Pg		**Pb**	04 45 00.3	+0.7	
	comp=Z,3.1nm,0.1s,SNR=20								
MOA				Sg		**Sg**	04 45 24.2	+0.4	
	comp=Z,25nm,0.3s								
LEGS	**Legarje**	**1.74**	**104**	*i* Pn		**Pn**	04 44 58.9	+1.0	
LEGS				*e*Sn		**Sb**	04 45 21.4	0.0	
LEGS	**Legarje**	**1.74**	**104**	*i* Pn		**Pn**	04 44 58.9	+1.0	
LEGS				*e*Sn		**Sb**	04 45 21.5	0.0	
BRMO	**Bormio**	**1.75**	**273**	Pg		**Pb**	04 45 00.6	+0.4	
BRMO				Sg		**Sg**	04 45 23.6	-1.1	
	comp=Z,70nm,0.6s								
BRMO	**Bormio**	**1.75**	**273**	Pg		**Pb**	04 45 00.6	+0.4	
BRMO				Sg		**Sg**	04 45 23.6	-1.1	
	comp=Z,70nm,0.6s								
RETA	**Reutte**	**1.82**	**307**	Pg		**Pg**	04 45 02.7	-0.7	
	comp=Z,31nm,0.3s								
RETA				Sg		**Sg**	04 45 28.5	+1.4	
	comp=Z,73nm,0.4s								
RETA	**Reutte**	**1.82**	**307**	Pg		**Pg**	04 45 02.7	-0.7	
	comp=Z,31nm,0.3s								
RETA				Sg		**Sg**	04 45 28.5	+1.4	
	comp=Z,73nm,0.4s								
SALO	**Salr**	**1.83**	**245**	Pg		**Pb**	04 45 00.7	-0.8	
	comp=Z,231nm,0.7s								
SALO	**Salr**	**1.83**	**245**	Pg		**Pb**	04 45 00.7	-0.8	
	comp=Z,231nm,0.7s								
FUORN	**Ofenpass-Fuorn**	**1.83**	**278**	Pg		**Pb**	04 45 01.8	+0.1	
	comp=Z,88nm,0.9s								
FUORN	**Ofenpass-Fuorn**	**1.83**	**278**	Pg		**Pb**	04 45 01.8	+0.1	
	comp=Z,88nm,0.9s								
CRES	**Cresnjev**	**1.87**	**107**	*e*Pn		**Pn**	04 45 00.5	+0.8	
CRES				*i* Sn		**Sb**	04 45 24.9	-0.3	
	comp=Z,23nm,0.2s								
CRES	**Cresnjev**	**1.87**	**107**	*e*Pn		**Pn**	04 45 00.5	+0.8	
CRES				*i* Sn		**Sb**	04 45 24.9	-0.3	
	comp=Z,23nm,0.2s								
BOJS	**Bojanci**	**1.87**	**118**	*i* Pn		**Pn**	04 45 01.1	+1.4	
BOJS				*i* Sn		**Sb**	04 45 25.9	+0.7	
	comp=Z,34nm,0.2s								
BOJS	**Bojanci**	**1.87**	**118**	*i* Pn		**Pn**	04 45 01.1	+1.4	
BOJS				*i* Sn		**Sb**	04 45 25.9	+0.7	
	comp=Z,34nm,0.2s								
ARSA	**Arzberg**	**1.99**	**64**	Pg		**Pb**	04 45 04.5	+0.3	
	comp=Z,3.2nm,0.2s								
ARSA				*e*Sn		**Sb**	04 45 28.1	-0.6	
	comp=Z,3.0nm,0.2s								
ARSA	**Arzberg**	**1.99**	**64**	Pg		**Pb**	04 45 04.5	+0.3	
	comp=Z,3.2nm,0.2s								
ARSA				Sg		**Sb**	04 45 28.1	-0.6	
	comp=Z,3.0nm,0.2s								
BERNI	**Berninapass**	**1.99**	**271**	Pg		**Pb**	04 45 03.9	-0.5	
	comp=Z,28nm,0.5s								
BERNI	**Berninapass**	**1.99**	**271**	Pg		**Pb**	04 45 03.9	-0.5	
	comp=Z,28nm,0.5s								
DAVOX	**Davos/Dischmat**	**2.12**	**281**	Pg		**Pb**	04 45 06.3	-0.2	
	comp=Z,41nm,0.5s								
DAVOX	**Davos/Dischmat**	**2.12**	**281**	Pg		**Pb**	04 45 06.3	-0.2	
	comp=Z,41nm,0.5s								
DAVA	**Damuels**	**2.25**	**294**	*e*Pg		**Pb**	04 45 08.6	-0.2	
	comp=Z,11nm,0.2s								
DAVA				*e*Sg		**Sg**	04 45 41.3	+0.5	
	comp=Z,40nm,0.3s								
DAVA	**Damuels**	**2.25**	**294**	Pg		**Pb**	04 45 08.6	-0.2	
	comp=Z,11nm,0.2s								
DAVA				Sg		**Sg**	04 45 41.3	+0.5	
	comp=Z,40nm,0.3s								
NVLJ	**Novalja**	**2.30**	**142**	*e*Pn		**Pn**	04 45 06.3	+0.6	
NVLJ				Sn		**Sn**	04 45 35.0	+1.4	
NVLJ	**Novalja**	**2.30**	**142**	*e*Pn		**Pn**	04 45 06.2	+0.6	
NVLJ				Sn		**Sn**	04 45 35.0	+1.4	
CONA	**Conrad Observa**	**2.53**	**52**	Pg		**Pn**	04 45 09.8	+0.9	
	comp=Z,0.6nm,0.1s								
CONA				Sg		**Sg**	04 45 48.1	-1.5	
	comp=Z,8.1nm,0.4s								
UDBI	**Udbina**	**2.75**	**132**	*e*Pn		**Pn**	04 45 13.1	+1.2	
UDBI				Sn		**Sb**	04 45 48.4	-2.3	
UDBI	**Udbina**	**2.75**	**132**	*e*Pn		**Pn**	04 45 13.1	+1.2	
UDBI				Sn		**Sb**	04 45 48.4	-2.3	
KHC	**Kasperske Hory**	**2.77**	**9**	*e*PN		**Pn**	04 45 13.6	+1.5	
KHC				*e*PG		**Pg**	04 45 20.0	-1.4	
KHC				*e*SN		**Sn**	04 45 47.5	+2.3	
KHC				*e*SG		**Sg**	04 45 56.0	-1.2	
	comp=Z,26nm,0.5s								
KHC	**Kasperske Hory**	**2.77**	**9**	Pn		**Pn**	04 45 13.6	+1.5	
SPAK	**Spaichingen-Ko**	**3.28**	**303**	P		**Pn**	04 45 20.5	+1.4	
SPAK				S		**Sn**	04 45 57.3	-0.5	
FELD	**Feldberg im Sc**	**3.65**	**296**	P		**Pn**	04 45 26.1	+1.8	
FELD				S		**Sn**	04 46 07.9	+0.8	
GOPC	**GO Pecny, Ondr**	**3.73**	**19**	*e*PN		**Pn**	04 45 26.9	+1.6	
GOPC				*e*SN		**Sn**	04 46 11.0	+2.1	
GOPC	**GO Pecny, Ondr**	**3.73**	**19**	Pn		**Pn**	04 45 26.9	+1.6	
GOPC				Sn		**Sn**	04 46 11.0	+2.1	
PRU	**Pruhonice**	**3.75**	**16**	*e*PN		**Pn**	04 45 27.0	+1.5	
PRU				*e*SN		**Sn**	04 46 10.5	+1.2	
PRU				*e*SG		**Sg**	04 46 26.2	-2.5	
	comp=Z,16nm,0.5s								
PRU	**Pruhonice**	**3.75**	**16**	Pn		**Pn**	04 45 27.0	+1.5	
PRU				Sn		**Sn**	04 46 10.5	+1.2	
PRU				Sg		**Sg**	04 46 26.2	-2.5	
	comp=Z,16nm,0.5s								
NKC	**Novy Kostel**	**3.84**	**356**	*e*PN		**Pn**	04 45 28.9	+2.1	
NKC				*e*SN		**Sn**	04 46 12.6	+0.9	
NKC				*e*SG		**Sg**	04 46 30.4	-1.3	
	comp=Z,15nm,0.4s								
NKC	**Novy Kostel**	**3.84**	**356**	Pn		**Pn**	04 45 28.9	+2.1	
NKC				Sn		**Sn**	04 46 12.6	+0.9	
NKC				Sg		**Sg**	04 46 30.4	-1.3	
	comp=Z,15nm,0.4s								
MOF	**Molkenrain**	**4.20**	**292**	P		**Pn**	04 45 33.5	+1.8	
MOF				S		**Sn**	04 46 21.6	+1.1	
MOF	**Molkenrain**	**4.20**	**292**	P		**Pn**	04 45 33.5	+1.8	
MOF				S		**Sn**	04 46 21.6	+1.1	
TOD	**Tromm**	**4.22**	**321**	P		**Pn**	04 45 32.3	+0.3	
TOD				S		**Sn**	04 46 18.9	-2.1	
LOMF	**Lomont**	**4.27**	**285**	P		**Pn**	04 45 35.4	+2.6	
LOMF				S		**Sn**	04 46 24.9	+2.6	
LOMF	**Lomont**	**4.27**	**285**	P		**Pn**	04 45 35.4	+2.6	
LOMF				S		**Sn**	04 46 24.9	+2.6	
ECH	**Echery**	**4.31**	**297**	P		**Pn**	04 45 34.8	+1.6	
ECH				S		**Sn**	04 46 23.9	+0.8	
ECH	**Echery**	**4.31**	**297**	P		**Pn**	04 45 34.8	+1.6	
ECH				S		**Sn**	04 46 23.9	+0.8	
CDF	**Champ du Feu**	**4.32**	**300**	*e*Pn		**Pn**	04 45 34.8	+1.4	
CDF				*e*Sn		**Sn**	04 46 22.4	-1.0	
	comp=Z,4.8nm,0.4s								
CDF				*e*Sg		**Sg**	04 46 46.1	-0.7	
	comp=Z,7.4nm,0.5s								
CDF	**Champ du Feu**	**4.32**	**300**	*e*Pn		**Pn**	04 45 34.8	+1.4	
CDF				*e*Sn		**Sn**	04 46 22.4	-1.0	
	comp=Z,2.4nm,0.4s								
CDF				*e*Sg		**Sg**	04 46 46.1	-0.7	
	comp=Z,3.7nm,0.5s								
HINF	**Hinteralfeld**	**4.37**	**291**	*e*Pn		**Pn**	04 45 35.7	+1.7	
HINF				*e*Sn		**Sn**	04 46 24.2	-0.4	
	comp=Z,11nm,0.3s								
HINF	**Hinteralfeld**	**4.37**	**291**	*e*Pn		**Pn**	04 45 35.7	+1.7	
HINF				*e*Sn		**Sn**	04 46 24.2	-0.4	
	comp=Z,5.4nm,0.3s								
LPG	**La Plagne**	**4.38**	**260**	*e*P		**Pn**	04 45 38.4	+3.9	
LPG	**La Plagne**	**4.38**	**260**	*e*P		**Pn**	04 45 38.4	+3.9	
LPL	**La Plagne**	**4.39**	**261**	*e*P		**Pn**	04 45 38.3	+3.7	
LPL				*e*Sn		**Sn**	04 46 24.5	-1.0	
	comp=Z,3.0nm,0.5s								
LPL	**La Plagne**	**4.39**	**261**	*e*P		**Pn**	04 45 38.3	+3.7	
LPL				*e*Sn		**Sn**	04 46 24.5	-1.0	
	comp=Z,1.5nm,0.5s								
BRG	**Berggiesshubel**	**4.53**	**8**	SG		**Sg**	04 46 50.2	-3.3	
	comp=Z,8.5nm,0.9s								
DPC	**Dobruska-Polom**	**4.56**	**29**	*e*SG		**Sg**	04 46 51.8	-2.8	
	comp=Z,9.0nm,0.6s								
DPC	**Dobruska-Polom**	**4.56**	**29**	Sg		**Sg**	04 46 51.8	-2.8	
	comp=Z,9.0nm,0.6s								
MBDF	**Montbardon**	**4.62**	**251**	*e*Pn		**Pn**	04 45 37.7	+0.1	
MBDF				*e*Sn		**Sn**	04 46 29.1	-1.9	
	comp=Z,2.6nm,0.3s								
MBDF	**Montbardon**	**4.62**	**251**	*e*Pn		**Pn**	04 45 37.7	+0.1	
MBDF				*e*Sn		**Sn**	04 46 29.1	-1.9	
	comp=Z,1.3nm,0.3s								
SBF	**Sospel**	**4.63**	**239**	*e*P		**Pn**	04 45 41.5	+3.9	
SBF				*e*Sn		**Sn**	04 46 29.0	-2.1	
	comp=Z,18nm,0.3s								
SBF	**Sospel**	**4.63**	**239**	*e*P		**Pn**	04 45 41.5	+3.9	
SBF				*e*Sn		**Sn**	04 46 29.0	-2.1	
	comp=Z,8.9nm,0.3s								
CABF	**La Chapelle**	**4.71**	**275**	*e*Pn		**Pn**	04 45 40.8	+2.0	
CABF	**La Chapelle**	**4.71**	**275**	*e*Pn		**Pn**	04 45 40.8	+2.0	
HAU	**Haudompre**	**4.75**	**292**	*e*Pn		**Pn**	04 45 40.9	+1.7	
HAU				*e*Sn		**Sn**	04 46 32.6	-1.3	
	comp=Z,18nm,0.6s								
HAU	**Haudompre**	**4.75**	**292**	*e*Pn		**Pn**	04 45 40.9	+1.7	
HAU				*e*Sn		**Sn**	04 46 32.6	-1.3	
	comp=Z,9.0nm,0.6s								
PGF	**Pioggiola**	**4.76**	**217**	*e*Sn		**Sn**	04 46 31.4	-3.0	
	comp=Z,2.6nm,0.3s								
PGF	**Pioggiola**	**4.76**	**217**	*e*Sn		**Sn**	04 46 31.4	-3.0	
	comp=Z,1.3nm,0.3s								
CLL	**Collm**	**4.91**	**1**	*e*Pn		**Pn**	04 45 40.0	-1.4	
CLL				*e*			04 45 43.0		
CLL				*e*Sg		**Sg**	04 47 02.0	-3.8	
	comp=Z,8.0nm,0.7s								
THEF	**They Montfort**	**5.04**	**294**	P		**Pn**	04 45 45.5	+2.2	
THEF				S		**Sn**	04 46 43.3	+2.0	
THEF	**They Montfort**	**5.04**	**294**	P		**Pn**	04 45 45.5	+2.2	
THEF				S		**Sn**	04 46 43.3	+2.0	
ORIF	**Oris-en-Rattie**	**5.14**	**256**	*e*P		**Pn**	04 45 48.6	+3.9	
ORIF	**Oris-en-Rattie**	**5.14**	**256**	*e*P		**Pn**	04 45 48.6	+3.9	
BBLS	**Lazići**	**5.25**	**117**	*e*Pn		**Pn**	04 45 47.7	+1.4	
FRF	**La Foret Royal**	**5.27**	**240**	*e*Pn		**Pn**	04 45 46.8	+0.4	
FRF				*e*Sn		**Sn**	04 46 44.3	-2.5	
	comp=Z,1.7nm,0.3s								
FRF	**La Foret Royal**	**5.27**	**240**	*e*Pn		**Pn**	04 45 46.8	+0.4	
FRF				*e*Sn		**Sn**	04 46 44.3	-2.5	
	comp=Z,0.9nm,0.3s								
LMR	**La Mourre**	**5.48**	**238**	*e*Sn		**Sn**	04 46 48.7	-3.3	
	comp=Z,3.1nm,0.4s								
SFTF	**Sexfontaines**	**5.64**	**291**	*e*Pn		**Pn**	04 45 52.1	+0.6	
SFTF	**Sexfontaines**	**5.64**	**291**	*e*Pn		**Pn**	04 45 52.1	+0.6	
VIVF	**Saint-Julien-l**	**5.97**	**258**	*e*Pn		**Pn**	04 45 56.2	+0.1	
VIVF	**Saint-Julien-l**	**5.97**	**258**	*e*Pn		**Pn**	04 45 56.2	+0.1	
GRUS	**Gruza**	**6.07**	**112**	*e*Pn		**Pn**	04 45 59.3	+1.9	
SMF	**Signal de Mont**	**6.26**	**275**	*e*Pn		**Pn**	04 46 01.3	+1.3	
SMF				*e*Sn		**Sn**	04 47 08.4	-2.7	
	comp=Z,2.3nm,0.4s								
SMF	**Signal de Mont**	**6.26**	**275**	*e*Pn		**Pn**	04 46 01.3	+1.3	
LOR	**Lormes**	**6.26**	**281**	*e*Pn		**Pn**	04 46 00.4	+0.3	
	baz=104								
LOR				*e*Sn		**Sn**	04 47 09.6	-1.7	
	comp=Z,2.7nm,0.3s								
LOR	**Lormes**	**6.26**	**281**	*e*Pn		**Pn**	04 46 00.4	+0.3	
LOR				*e*Sn		**Sn**	04 47 09.6	-1.7	
	comp=Z,1.4nm,0.3s								
AVF	**Avril sur Loir**	**6.59**	**277**	*e*Pn		**Pn**	04 46 06.0	+1.5	
AVF	**Avril sur Loir**	**6.59**	**277**	*e*Pn		**Pn**	04 46 06.0	+1.5	
BGF	**Bois d'Agland**	**6.95**	**275**	*e*Pn		**Pn**	04 46 10.3	+0.9	
BGF				*e*Sn		**Sn**	04 47 25.4	-2.7	
	comp=Z,5.6nm,0.3s								
BGF	**Bois d'Agland**	**6.95**	**275**	*e*Pn		**Pn**	04 46 10.3	+0.9	
TCF	**Toulx Ste Croi**	**7.40**	**273**	*e*Pn		**Pn**	04 46 16.1	+0.4	
TCF	**Toulx Ste Croi**	**7.40**	**273**	*e*Pn		**Pn**	04 46 16.1	+0.4	

ISCJB ***04*** *04:47:32.9±0.5,40°06'N±0°03'×27°14'E±0°03,h5m±6km, Error ellipse: s-maj=5.4km s-min=4.3km az=3.0*
CSEM ***04*** *04:47:33.4±0.1,40°06'N×27°15'E,h5m,MD2.7,Error ellipse: s-maj=3.4km s-min=2.6km az=164.0*
ISK ***04*** *04:47:33.2,40°09'N×27°19'E,h8m,MD2.7*
ATH ***04*** *04:47:36.1,40°01'N×26°89'E,h13m±5km,ML1.7/3,Error ellipse: s-maj=5.9km s-min=1.3

GOPC	**GO Pecny, Ondr**	**1.73**	**212**	Sg	Sb	04 48 49.7		0.0
	4.4nm,0.5s							
PRU	**Pruhonice**	**1.76**	**217**	*e*SG	Sb	04 48 50.2		-0.1
	comp=Z,5.0nm,0.4s							
PRU	**Pruhonice**	**1.76**	**217**	Sg	Sb	04 48 50.2		-0.1
	5.0nm,0.4s							
CLL	**Collm**	**2.00**	**269**	*e*Pg	Pb	04 48 32.0		+0.2
CLL				*e*Sg	Sb	04 48 58.0		+0.7
NKC	**Novy Kostel**	**2.65**	**245**	*e*SG	Sg	04 49 19.4		-0.1
	comp=Z,7.3nm,0.3s							
NKC	**Novy Kostel**	**2.65**	**245**	Sg	Sg	04 49 19.4		-0.1
	7.3nm,0.3s							
KHC	**Kasperske Hory**	**2.82**	**217**	*e*SG	Sb	04 49 23.0		+2.0
KHC	**Kasperske Hory**	**2.82**	**217**	Sg	Sb	04 49 23.0		+2.0

*ATH **04** 04:48:44.6, 38°.83N×20°.47E, h19km±1km, ML2.2/6, Error ellipse: s-maj=2.1km s-min=1.4km az=325.0*
*ISCJB **04** 04:48:46.8±0.7, 38°.73N±0°.03×20°.54E±0°.04, h1km±5km, Error ellipse: s-maj=5.6km s-min=4.5km az=165.7*
*CSEM **04** 04:48:46.9±0.3, 38°.74N×20°.57E, h8km, ML2.3, Error ellipse: s-maj=6.6km s-min=4.5km az=58.0*
*THE **04** 04:48:47.7, 38°.72N×20°.61E, h0km±1km, ML2.3/6, Error ellipse: s-maj=1.4km s-min=0.4km az=38.0*

ISC 04 04:48:47.2±0.9, 38.73N±0°.02×20.59E±0°.03, h7km±6km, n40, σ0.86/67, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKD2	**Lefkada island**	**0.08**	**42**	P	**Pg**	**04 48 49.4**	**+0.2**
LKD2				S	**Sg**	**04 48 50.7**	**+0.1**
LKD2	**Lefkada island**	**0.08**	**42**	P	**Pg**	**04 48 49.4**	**+0.2**
LKD2				S	**Sg**	**04 48 50.7**	**+0.1**
LKD2	**Lefkada island**	**0.08**	**42**	P	**Pg**	**04 48 49.6**	**+0.4**
LKD2				S	**Sg**	**04 48 50.6**	**-0.1**
LKD2				AML	AML	04 48 51.0	
	comp=E,9586μm,0.2s						
LKD2				AML	AML	04 48 51.5	
	comp=N,4852μm,0.1s						
PDO	**Prodromos**	**0.48**	**105**	P	**Pg**	**04 48 56.7**	**+0.2**
PDO				S	**Sg**	**04 49 03.7**	**+0.9**
PDO	**Prodromos**	**0.48**	**105**	P	**Pg**	**04 48 56.7**	**+0.2**
PDO				S	**Sg**	**04 49 03.7**	**+0.9**
PDO	**Prodromos**	**0.48**	**105**	P	**Pg**	**04 48 56.6**	**+0.2**
PDO				S	**Sb**	**04 49 05.2**	**-0.1**
PDO				AML	AML	04 49 08.1	
	comp=N,398μm,0.1s						
PDO				AML	AML	04 49 09.3	
	comp=E,404μm,0.4s						
VLS	**Valsamata**	**0.55**	**180**	P	**Pg**	**04 48 57.9**	**+0.1**
VLS				S	**Sg**	**04 49 06.1**	**+1.1**
VLS	**Valsamata**	**0.55**	**180**	P	**Pg**	**04 48 58.1**	**+0.3**
VLS				S	**Sg**	**04 49 06.1**	**+1.1**
KFL	**Anninata**	**0.64**	**166**	P	**Pg**	**04 48 59.7**	**+0.2**
KFL				S	**Sb**	**04 49 08.9**	**-0.8**
KFL	**Anninata**	**0.64**	**166**	P	**Pg**	**04 48 59.7**	**+0.2**
KFL				S	**Sb**	**04 49 08.9**	**-0.8**
KFL	**Anninata**	**0.64**	**166**	P	**Pg**	**04 48 59.7**	**+0.2**
KFL				S	**Sb**	**04 49 10.0**	**+0.2**
PVO	**Paravola**	**0.74**	**98**	P	**Pb**	**04 49 02.1**	**-0.3**
PVO				S	**Sb**	**04 49 12.2**	**-0.5**
PVO	**Paravola**	**0.74**	**98**	P	**Pb**	**04 49 02.1**	**-0.3**
PVO				S	**Sb**	**04 49 12.2**	**-0.5**
PVO	**Paravola**	**0.74**	**98**	P	**Pb**	**04 49 02.1**	**-0.3**
PVO				S	**Sb**	**04 49 13.1**	**+0.3**
AXS	**Araxos**	**0.82**	**130**	P	**Pg**	**04 49 02.9**	**+0.1**
AXS	**Araxos**	**0.82**	**130**	P	**Pg**	**04 49 03.1**	**+0.3**
AXS				S	**Sb**	**04 49 15.8**	**+1.0**
AXS	**Araxos**	**0.82**	**130**	P	**Pg**	**04 49 03.1**	**+0.3**
AXS				S	**Sb**	**04 49 15.8**	**+1.0**
SGD	**Sagiada**	**0.92**	**343**	P	**Pb**	**04 49 05.0**	**-0.5**
SGD				S	**Sn**	**04 49 19.6**	**-0.5**
SGD	**Sagiada**	**0.92**	**343**	P	**Pb**	**04 49 05.0**	**-0.5**
RLS	**Riolos of Patr**	**0.96**	**134**	P	**Pg**	**04 49 04.7**	**-0.9**
RLS				S	**Sb**	**04 49 19.8**	**+0.8**
RLS	**Riolos of Patr**	**0.96**	**134**	S	**Sb**	**04 49 19.8**	**+0.8**
RLS				AML	AML	04 49 26.5	
	comp=N,98μm,0.4s						
RLS				AML	AML	04 49 26.9	
	comp=E,118μm,0.5s						
ZKS	**Zakynthos**	**1.04**	**171**	P	**Pg**	**04 49 06.5**	**-0.7**
ZKS				S	**Sb**	**04 49 22.1**	**+0.7**
ZKS	**Zakynthos**	**1.04**	**171**	P	**Pg**	**04 49 06.5**	**-0.7**
ZKS				S	**Sb**	**04 49 22.1**	**+0.7**
ZKS	**Zakynthos**	**1.04**	**171**	P	**Pg**	**04 49 06.0**	**-1.2**
ZKS				S	**Sn**	**04 49 23.1**	**+0.1**
ZKS				AML	AML	04 49 31.5	
	comp=N,358μm,0.4s						
ZKS				AML	AML	04 49 32.5	
	comp=E,342μm,0.4s						
EFP	**Efpalio**	**1.08**	**106**	P	**Pg**	**04 49 07.3**	**-0.5**
EFP				S	**Sn**	**04 49 24.4**	**+0.6**
EFP	**Efpalio**	**1.08**	**106**	P	**Pg**	**04 49 07.3**	**-0.5**
EFP				S	**Sn**	**04 49 24.4**	**+0.6**
KEK	**Kerkira**	**1.16**	**328**	P	**Pn**	**04 49 09.7**	**-0.1**
KEK				S	**Sn**	**04 49 27.3**	**+1.4**
KEK	**Kerkira**	**1.16**	**328**	P	**Pn**	**04 49 09.7**	**-0.1**
DRO	**Drossia**	**1.18**	**131**	P	**Pb**	**04 49 08.5**	**-1.3**
DRO				S	**Sn**	**04 49 28.5**	**+2.2**
DRO	**Drossia**	**1.18**	**131**	P	**Pb**	**04 49 08.5**	**-1.3**
DRO				S	**Sn**	**04 49 28.6**	**+2.2**
DRO				AML	AML	04 49 34.6	
	comp=N,153μm,0.4s						
DRO				AML	AML	04 49 34.7	
	comp=E,237μm,0.3s						
TRIZ	**Trizonia**	**1.22**	**107**	P	**Pn**	**04 49 09.7**	**-0.9**
TRIZ	**Trizonia**	**1.22**	**107**	S	**Sn**	**04 49 28.9**	**+1.6**
TRIZ	**Trizonia**	**1.22**	**107**	S	**Sn**	**04 49 28.9**	**+1.5**
KALE	**Kalithea**	**1.26**	**105**	P	**Pn**	**04 49 10.2**	**-1.1**
KALE	**Kalithea**	**1.26**	**105**	S	**Sn**	**04 49 29.5**	**+1.0**
KALE	**Kalithea**	**1.26**	**105**	P	**Pn**	**04 49 10.2**	**-1.1**
KALE				S	**Sn**	**04 49 29.5**	**+1.0**
KALE				AML	AML	04 49 32.3	
	comp=E,58μm,0.2s						
KALE				AML	AML	04 49 32.7	
	comp=N,80μm,0.2s						
KLV	**Kalavryta, Ach**	**1.41**	**119**	P	**Pn**	**04 49 11.8**	**-1.4**
KLV	**Kalavryta, Ach**	**1.41**	**119**	P	**Pn**	**04 49 11.8**	**-1.4**
GUR	**Goura**	**1.59**	**119**	P	**Pb**	**04 49 16.4**	**-0.5**
GUR	**Goura**	**1.59**	**119**	P	**Pb**	**04 49 16.4**	**-0.5**

IDC 04 04:59:31.3±12.0, 56.00S×27.52W, h203km±112km, mb3.8/2, mb1 3.9/2, mb1mx3.2/21, mbtmp4.4/2, MS3.3/1, Ms1 3.2/1, ms1mx2.7/18, Error ellipse: s-maj=65.3km s-min=26.1km az=109.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNAA	**Sanae**	**18.86**	**156**	P	P	05 03 32.1	-3.8
MAW	**Mawson**	**40.30**	**144**	LR	LR	05 22 35.7	
	comp=Z,36nm,19.1s,baz=56,slow=34						
VNDA	**Vanda**	**46.62**	**183**	P	P	05 07 38.2	-0.1
	1.1nm,0.6s,baz=183,slow=5.8,SNR=8.2						
TORD	**Torodi Ar. Bea**	**73.10**	**30**	P	P	05 10 39.2	0.0
	5.9nm,0.6s,baz=199,slow=6.5,SNR=93						
ARCES	**ARCESS Array B**	**130.96**	**22**	PKP	PKPdf	05 18 16.4	-0.4
	2.2nm,1.0s,baz=199,slow=2.5,SNR=4.3						
ILAR	**Eielson Array**	**149.94**	**312**	PKPbc	PKPbc	05 18 55.5	-0.4
	2.4nm,0.8s,baz=124,slow=2.0,SNR=21						
SONM	**Songino Array**	**150.91**	**87**	PKPbc	PKPbc	05 18 58.6	-0.3
	2.2nm,0.4s,baz=224,slow=3.8,SNR=13						

IDC 04 05:16:01.4±1.6, 10.93S×165.63E, h0km, mb3.8/3, mb1 4.2/4, mb1mx3.7/37, mbtmp4.0/4, ML4.1/1, MS3.1/2, Ms1 3.1/2, ms1mx2.6/26, Error ellipse: s-maj=52.5km s-min=29.1km az=128.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.79**	**284**	LR	LR	05 19 55.2	
	comp=Z,98nm,20.4s,baz=97,slow=40						
DZM	**Mont Dzumac**	**11.10**	**176**	Pn	Pn	05 18 42.5	+0.8
	1.2nm,0.3s,baz=105,slow=10.0,SNR=11						
H11S2	**WAKE ISLAND Hy 29.26**		**2**	T	T	05 52 30.7	
	baz=181,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy 29.26**		**2**	T	T	05 52 11.8	
	baz=181,slow=76,SNR=3.0						
H11S1	**WAKE ISLAND Hy 29.27**		**2**	T	T	05 52 05.5	
	baz=181,slow=76,SNR=5.3						
H11N1	**WAKE ISLAND Hy 30.48**		**2**	T	T	05 54 11.1	
	baz=181,slow=74						
H11N3	**WAKE ISLAND Hy 30.48**		**2**	T	T	05 54 04.8	
	baz=181						
H11N2	**WAKE ISLAND Hy 30.50**		**2**	T	T	05 54 08.6	
	baz=181,slow=74						
WRA	**Warramunga Arr**	**31.41**	**250**	P	P	05 22 24.9	+0.3
	1.8nm,0.7s,baz=82,slow=9.0,SNR=14						
ASAR	**Alice Springs**	**32.74**	**243**	P	P	05 22 35.7	-0.6
	0.3nm,0.4s,baz=69,slow=9.9,SNR=5.1						
ASAR				LR	LR	05 36 04.0	
	comp=Z,49nm,18.0s,baz=106,slow=37						
ILAR	**Eielson Array**	**83.44**	**19**	P	P	05 28 30.5	0.0
	0.6nm,0.5s,baz=231,slow=4.9,SNR=15						

SGS 04 05:16:22.2, 25.25N×37.79E, h7km, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNY12	**LNY12**	**0.02**	**328**	P	Pg	05 16 23.6	0.0
LNY12	**LNY12**	**0.02**	**328**	S	Sg	05 16 24.4	-0.2
LNY12				P	Pg	05 16 23.6	0.0
LNY06	**LNY06**	**0.04**	**190**	S	Sg	05 16 25.0	+0.2
LNY06				P	Pg	05 16 23.9	+0.1
LNY06	**LNY06**	**0.04**	**190**	P	Pg	05 16 23.8	+0.1
LNY11	**LNY11**	**0.07**	**350**	P	Pg	05 16 24.1	+0.1
LNY11	**LNY11**	**0.07**	**350**	S	Sg	05 16 25.4	0.0
LNY11				P	Pg	05 16 24.1	0.0
LNY04	**LNY04**	**0.13**	**279**	P	Pg	05 16 25.1	+0.1
LNY04	**LNY04**	**0.13**	**279**	S	Sg	05 16 26.9	0.0
LNY04				P	Pg	05 16 25.1	+0.1
LNY02	**LNY02**	**0.13**	**149**	P	Pg	05 16 25.1	+0.1
LNY02	**LNY02**	**0.13**	**149**	S	Sg	05 16 27.1	+0.2
LNY02				P	Pg	05 16 25.1	+0.1
LNY03	**LNY03**	**0.14**	**26**	S	Sg	05 16 27.3	0.0
LNY03				P	Pg	05 16 25.5	+0.3
LNY01	**LNY01**	**0.16**	**101**	P	Pg	05 16 25.6	+0.1
LNY01	**LNY01**	**0.16**	**101**	S	Sg	05 16 27.9	+0.1
LNY01				P	Pg	05 16 25.6	+0.1
LNY07	**LNY07**	**0.23**	**238**	S	Sg	05 16 30.0	+0.2
LNY07				P	Pg	05 16 27.0	+0.2

IDC 04 05:17:03.2±2.5, 54.02N×86.53E, h0km, mb1 3.1/2, mb1mx3.0/51, mbtmp3.1/2, ML2.8/2, Error ellipse: s-maj=20.6km s-min=12.7km az=62.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.01**	**267**	*i*		05 23 24.7	
	baz=85,slow=320,SNR=6.5						
ZALV	**Zalesovo Beam**	**1.01**	**267**	Pg	Pg	05 17 21.2	-1.4
	0.7nm,0.3s,baz=84,slow=18,SNR=8.2						
ZALV				Lg	Lg	05 17 37.0	
	2.9nm,0.3s,baz=87,slow=31,SNR=9.0						
ZALV				Rg	Rg	05 17 41.8	
	32nm,1.1s,baz=87,slow=32,SNR=36						
KURBB	**Kurchatov Arra**	**5.97**	**239**	Pn	Pn	05 18 34.3	+1.5
	0.1nm,0.3s,baz=56,slow=14,SNR=10						
KURBB				Lg	Lg	05 20 13.3	
	0.0nm,0.3s,baz=58,slow=32,SNR=3.6						
MKAR	**Makanchi Array**	**7.72**	**202**	Pn	Pn	05 18 57.4	+0.5
	0.3nm,0.3s,baz=23,slow=13,SNR=8.2						
MKAR				Lg	Lg	05 21 08.5	
	0.1nm,0.3s,baz=15,slow=36,SNR=3.7						

JMA 04 05:21:47.0±0.4, 36.53N×143.76E, h83km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**2.44**	**284**	P	Pn	05 22 25.6	+0.7
ONAJ				S	Sn	05 22 54.8	+0.8
JFK	**Kawauchi**	**2.46**	**291**	P	Pn	05 22 25.9	+0.8
JFK				S	Sn	05 22 55.1	+0.8
JHO	**Hitachi**	**2.57**	**273**	P	Pn	05 22 27.2	+0.6
JHO				*e*S	Sn	05 22 57.7	+0.7
JFT	**Otama**	**2.91**	**291**	P	Pn	05 22 33.1	+1.9
JFT				*e*S	Sn	05 23 07.5	+2.3
JMK	**Ichinoseki**	**3.15**	**321**	P	Pn	05 22 35.5	+1.2
JMK				*e*S	Sn	05 23 12.4	+1.6
JAG	**Ashikaga**	**3.47**	**270**	P	Pn	05 22 40.0	+1.2
JAG				S	Sn	05 23 19.8	+1.0
JRY	**Ryogami san**	**3.96**	**264**	P	Pn	05 22 46.3	+0.9
JRY				S	Sn	05 23 30.8	+0.1
JOD2	**Odawara 2**	**4.00**	**253**	P	Pn	05 22 46.8	+0.9
JOD2				*e*S	Sn	05 23 31.7	+0.1
JHJ2	**Mitsune**	**4.71**	**225**	P	Pn	05 22 54.3	-1.2
JHJ2				S	Sn	05 23 46.4	-2.5

*NIED **04** 05:32:00, 37°.80N×144°.00E, h5km, Mw3.4 Best double couple: M₀1.36000×10¹⁴ NP1:φ=350.00000°, δ48.00000°, λ=-123.00000°. NP2:φ=214.00000°, δ52.00000°, λ=-59.00000°.*

JMA 04 05:32:53.9±0.2, 37.82N×144.00E, h43km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.18**	**288**	P	Pn	05 33 29.1	+1.4
JIO				*e*S	Sn	05 33 55.0	+1.5
OFUJ	**Ofunato**	**2.22**	**305**	P	Pn	05 33 29.6	+1.4
JMK	**Ichinoseki**	**2.46**	**298**	*e*S	Sn	05 34 02.4	+2.1
JOM	**Ohasama**	**2.69**	**309**	P	Pn	05 33 35.9	+1.3
JOM				*e*S	Sn	05 34 08.3	+2.4
JOU	**Okura**	**2.69**	**283**	*e*S	Sn	05 34 08.6	+2.6
JFT	**Otama**	**2.92**	**265**	*e*S	Sn	05 34 14.3	+2.6
JYK	**Kaneyama**	**3.06**	**292**	P	Pn	05 33 42.0	+2.2
JYK				*e*S	Sn	05 34 18.0	+2.8
JRG	**Rokugo**	**3.07**	**302**	*e*S	Sn	05 34 17.4	+2.0
JANG	**Nango**	**3.20**	**324**	*e*S	Sn	05 34 19.8	+1.2
JTM	**Tenmabayashi**	**3.73**	**323**	*e*S	Sn	05 34 32.0	+0.3

MEX 04 05:41:42.1±0.7, 27.37N×111.35W, h16km±40km, MD3.5, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUYB	**Guaymas**	**0.68**	**39**	*e*P	Pg	05 41 52.7	-2.7
GUYB				*e*S	Sg	05 42 01.2	-3.2
SRIG	**Santa Rosalia**	**0.79**	**267**	*e*P	Pb	05 41 55.0	-2.5
SRIG				*e*S	Sb	05 42 03.7	-4.3
HSIG		**1.68**	**12**	*e*P	Pn	05 42 07.5	-3.4
HSIG				*e*S	Sn	05 42 27.5	-4.7

*CSEM **04** 05:57:07.5, 37°.61N×24°.88W, h4km, ML1.9*

PDA 04 05:57:07.5±0.3, 37.61N×24.88W, h4km±2km, MD3.5, ML1.9, Error ellipse: s-maj=5.6km s-min=0.8km az=64.0, Azores Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BART	**Pico Bartolome**	**0.28**	**306**	*e*P	Pg	05 57 12.7	-0.3
BART				*e*S	Sg	05 57 16.5	-0.2
BART				A	A	05 57 18.3	
	43nm,0.1s						
BART	**Pico Bartolome**	**0.28**	**306**	*e*P	Pg	05 57 12.7	-0.3
BART				*e*S	Sg	05 57 16.5	-0.2
CMLA	**Cha da Macela**	**0.53**	**287**	*e*S	Sg	05 57 23.6	-1.0
CMLA	**Cha da Macela**	**0.53**	**287**	*e*S	Sg	05 57 23.6	-1.0
PSMN	**Pico do Norte,**	**0.62**	**194**	*e*P	Pg	05 57 18.1	-1.4
PSMN				*e*S	Sg	05 57 26.1	-1.5
PSMN				A	A	05 57 28.3	
	9.6nm,0.2s						
PSMN	**Pico do Norte,**	**0.62**	**194**	*e*P	Pg	05 57 18.1	-1.4
PSMN				*e*S	Sg	05 57 26.1	-1.5
PDA	**Ponta Delgada**	**0.63**	**282**	*e*P	Pg	05 57 18.3	-1.4
PDA				*e*S	Sg	05 57 26.3	-1.6
PDA				A	A	05 57 27.2	
	32nm,0.2s						
PDA	**Ponta Delgada**	**0.63**	**282**	*e*P	Pg	05 57 18.3	-1.4
PDA				*e*S	Sg	05 57 26.3	-1.6
PSMA	**Santa Maria**	**0.65**	**198**	*e*P	Pg	05 57 18.4	-1.5
PSMA				*e*S	Sg	05 57 26.5	-1.8
PSMA				A	A	05 57 27.6	
	35nm,0.1s						
PSET	**Sete Cidades**	**0.70**	**288**	*e*S	Sg	05 57 27.9	-2.0
PSET				A	A	05 57 28.7	
	21nm,0.2s						
PSET	**Sete Cidades**	**0.70**	**288**	*e*S	Sg	05 57 27.9	-2.0

*IDC **04** 06:27:51.3±1.4, 31°.25N×59°.70E, h0km, mb3.4/6, mb1 3.6/10, mb1mx3.4/55, mbtmp3.6/10, ML3.7/4, MS2.9/14, Ms1 2.9/14, ms1mx2.8/40, Error ellipse: s-maj=33.2km s-min=20.1km az=125.0*
*TEH **04** 06:27:52.9, 31°.33N×60°.31E, h22km, ML4.3*
*ISCJB **04** 06:27:53.1±0.4, 31°.35N±0°.03×60°.08E±0°.05, h15km, mb3.3/6, MS2.9/9, Error ellipse: s-maj=6.3km s-min=4.5km az=166.2*
*THR **04** 06:27:53.2±0.6, 31°.44N×60°.02E, h18km±16km, ML3.9*
*CSEM **04** 06:27:55.9±0.3, 31°.44N×59°.95E, h20km, ML4.3, Error ellipse: s-maj=9.0km s-min=5.5km az=93.0*

ISC 04 06:27:54.2±0.7, 31.37N±0°.04×60.08E±0°.06, h15km, n56, σ1.06/47, mb3.4/6, MS2.9/9, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDAH	**Dahanechah**	**1.38**	**353**	*e*Pn	**Pn**	**06 28 18.7**	**-0.5**
IDAH				*e*AMB	AMB	06 28 21.3	
	comp=Z,54μm,0.1s						
IDAH	**Dahanechah**	**1.38**	**353**	*e*Pn	**Pn**	**06 28 18.7**	**-0.5**
IKOO	**Kooshah**	**1.40**	**319**	*e*Pn	**Pn**	**06 28 18.7**	**-0.7**
IKOO				*e*AMB	AMB	06 28 20.5	
	comp=Z,8μm,0.1s						
IKOO				*e*Sg	**Sg**	**06 28 41.8**	**+2.5**
IKOO	**Kooshah**	**1.40**	**319**	*e*Pn	**Pn**	**06 28 18.7**	**-0.7**
ZHSF	**Zahedan**	**1.85**	**161**	*e*Pg	**Pb**	**06 28 28.5**	**+0.7**
ZHSF				*e*Sg	**Sg**	**06 28 54.3**	**+0.5**
ZHSF	**Zahedan**	**1.85**	**161**	*e*Pg	**Pb**	**06 28 28.5**	**+0.7**
ZHSF				*e*Sg	**Sg**	**06 28 54.3**	**+0.5**
ITEG	**Tejag**	**1.90**	**324**	*e*Pn	**Pn**	**06 28 25.8**	**-0.5**
ITEG				*e*AMB	AMB	06 28 29.8	
	comp=Z,15μm,0.2s						
ITEG	**Tejag**	**1.90**	**324**	*e*Pn	**Pn**	**06 28 25.8**	**-0.5**
SHRT	**Shahrakht**	**2.28**	**4**	*e*Pn	**Pn**	**06 28 30.9**	**-0.5**
SHRT	**Shahrakht**	**2.28**	**4**	*e*Pn	**Pn**	**06 28 31.0**	**-0.5**
CHMN	**Cheshme madani**	**2.65**	**236**	*e*Pn	**Pn**	**06 28 35.6**	**-1.2**
CHMN	**Cheshme madani**	**2.65**	**236**	*e*Pn	**Pn**	**06 28 35.6**	**-1.2**
TVBK	**TV Kerman**	**3.17**	**245**	*e*Pn	**Pn**	**06 28 44.1**	**+0.2**
TVBK	**TV Kerman**	**3.17**	**245**	*e*Pn	**Pn**	**06 28 44.1**	**+0.2**
KRBR	**Kerman**	**3.17**	**245**	*e*Pn	**Pn**	**06 28 44.1**	**+0.3**
KRBR				AML	AML	06 29 40.5	
	comp=N,294nm,0.4s						
KRBR				AML	AML	06 29 41.3	
	comp=E,313nm,0.5s						
KRBR	**Kerman**	**3.17**	**245**	*e*Pn	**Pn**	**06 28 44.2**	**+0.3**
KHGB	**Koh Gahri**	**3.25**	**253**	*e*Pn	**Pn**	**06 28 44.7**	**-0.2**
KHGB	**Koh Gabri**	**3.25**	**253**	*e*Pn	**Pn**	**06 28 44.7**	**-0.2**
NGRK	**Negar Kerman**	**3.36**	**240**	*e*Pn	**Pn**	**06 28 46.4**	**-0.1**
NGRK	**Negar Kerman**	**3.36**	**240**	*e*Pn	**Pn**	**06 28 46.4**	**-0.1**
TABS	**Tabas**	**3.38**	**313**	*e*Pn	**Pn**	**06 28 46.4**	**-0.2**
TABS				AML	AML	06 29 56.0	
	comp=N,161nm,0.5s						
TABS	**Tabas**	**3.38**	**313**	*e*Pn	**Pn**	**06 28 46.4**	**-0.2**
IBAF	**Bafgh**	**3.86**	**274**	*e*Pn	**Pn**	**06 28 53.7**	**+0.5**
IBAF				*e*AMB	AMB	06 29 58.4	
	comp=Z,3μm,0.3s						
IBAF	**Bafgh**	**3.86**	**274**	*e*Pn	**Pn**	**06 28 53.7**	**+0.5**
IMEH	**Mehriz**	**4.67**	**272**	*e*Pn	**Pn**	**06 29 05.1**	**+0.6**
IMEH				*e*AMB	AMB	06 30 25.8	
	comp=Z,2μm,0.3s						
IMEH	**Mehriz**	**4.67**	**272**	*e*Pn	**Pn**	**06 29 05.1**	**+0.6**
ICHK	**Chekchek**	**4.91**	**282**	*e*Pn	**Pn**	**06 29 07.5**	**-0.2**
ICHK				*e*AMB	AMB	06 30 45.9	
	comp=Z,3μm,0.3s						
ICHK	**Chekchek**	**4.91**	**282**	*e*Pn	**Pn**	**06 29 07.5**	**-0.2**
BNDS	**Bandar-Abbas**	**5.22**	**222**	*e*P	**Pn**	**06 29 13.0**	**+1.1**
BNDS	**Bandar-Abbas**	**5.22**	**222**	*e*P	**Pn**	**06 29 13.0**	**+1.1**
SHRO	**Shahrood**	**5.72**	**325**	*e*Pn	**Pn**	**06 29 18.7**	**-0.1**
SHRO	**Shahrood**	**5.72**	**325**	*e*Pn	**Pn**	**06 29 18.7**	**-0.1**
NASN	**Na'in**	**6.33**	**285**	AML	AML	06 31 21.8	
	comp=N,54nm,0.5s						
NASN				AML	AML	06 31 22.9	
	comp=E,43nm,0.6s						
IANJ	**Anjilo**	**6.58**	**310**	*e*Pn	**Pn**	**06 29 30.1**	**-0.5**
IANJ				*e*AMB	AMB	06 30 07.2	
	comp=Z,320nm,0.3s						
IANJ	**Anjilo**	**6.58**	**310**	*e*Pn	**Pn**	**06 29 30.1**	**-0.5**
GEYT	**Alibeck**	**6.74**	**347**	Pn	**Pn**	**06 29 32.4**	**-0.3**
	comp=Z,1.2nm,0.3s,baz=182,slow=12,SNR=2.8						
GEYT				LR	LR	06 32 49.2	
	comp=Z,177nm,20.9s,baz=155,slow=44						
WSAR	**Wadi Sarin**	**8.20**	**189**	Pn	Pn	06 29 48.0	-4.7
	comp=Z,0.4nm,0.3s,baz=66,slow=10.0,SNR=3.1						
GNI	**Garni**	**15.21**	**309**	LR	LR	06 37 15.2	
	comp=Z,41nm,20.9s,baz=126,slow=38						
KSH	**Kashi**	**15.28**	**53**	*e*P	**Pn**	**06 31 27.5**	**-2.0**
KSH				pmax	pmax		
	comp=Z,5.0nm,0.8s						
AAK	**Ala-Archa**	**16.07**	**42**	Pn	**P**	**06 31 42.9**	**-0.2**
	comp=Z,0.8nm,0.3s,baz=212,slow=11,SNR=4.5						
AAK				LR	LR	06 39 40.5	
	comp=Z,8.3nm,19.3s,baz=226,slow=43						
KVAR	**Kislovodsk Arr**	**18.59**	**317**	LR	LR	06 41 51.6	
	comp=Z,26nm,19.4s,baz=38,slow=46						
AKTO	**Aktyubinsk**	**19.11**	**356**	P	**P**	**06 32 16.1**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=193,slow=12,SNR=4.8						
AKTO				LR	LR	06 40 09.2	
	comp=Z,19nm,20.9s,baz=154,slow=38						
BVAR	**Borovoye Array**	**22.91**	**16**	P	**P**	**06 32 57.8**	**+0.4**
	comp=Z,1.3nm,0.7s,baz=195,slow=10,SNR=5.8						
**MKAR

ASAR	**Alice Springs**	**21.39**	**213**	P		**P**	**06 44 28.2**	**-0.6**
	2.2nm,0.6s,baz=58,slow=8.7,SNR=27								
FITZ	**Fitzroy Crossi**	**23.71**	**238**	P		**P**	**06 44 52.9**	**-0.1**
	8.8nm,0.7s,baz=65,slow=8.6,SNR=24								
FITZ				LR		LR	06 54 42.2		
	comp=Z,58nm,18.9s,baz=58,slow=38								
FITZ	**Fitzroy Crossi**	**23.71**	**238**	*e*P		**P**	**06 44 53.6**	**+0.7**
	6.0nm,0.6s								
ILAR	**Eielson Array**	**85.64**	**23**	P		**P**	**06 52 17.4**	**-1.3**
	1.2nm,0.7s,baz=256,slow=5.0,SNR=20								
TORD	**Torodi Ar. Bea**	**144.67**	**284**	PKP		**PKPdf**	**06 59 17.3**	**-0.8**
	4.8nm,0.9s,baz=88,slow=3.7,SNR=21								

SKO ***04*** *06:46:31.1,40.˝38N×20.˝73E,h152km*
THE ***04*** *06:46:35.0,40.˝22N×20.˝67E,h16km±2km,ML2.5/6,Error ellipse: s-maj=2.8km s-min=0.7km az=131.0*
ISCJB ***04*** *06:46:35.4±0.6,40.˝19N±0.˝03×20.˝70E±0.˝04,h7km±6km, Error ellipse: s-maj=5.9km s-min=3.8km az=31.8*
ATH ***04*** *06:46:35.0,40.˝20N×20.˝68E,h11km±5km,ML2.3/4, Error ellipse: s-maj=5.1km s-min=1.0km az=53.0*
CSEM ***04*** *06:46:35.7±0.3,40.˝17N×20.˝74E,h2km,ML2.3, Error ellipse: s-maj=6.1km s-min=4.3km az=121.0*
TIR ***04*** *06:46:36.7,40.˝21N×22.˝93E,h2km,ML3.5*

ISC 04 06:46:35.8±0.9,40.˝16N±0.˝02×20.˝76E±0.˝02,h14km±8km, n34,σ1¶59/55,Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PENT	**Pentalofos**	**0.29**	**82**	P		**Pg**	**06 46 41.9**	**-0.1**
PENT				S		**Sb**	**06 46 47.7**	**0.0**
PENT	**Pentalofos**	**0.29**	**82**	P		**Pg**	**06 46 41.7**	**-0.3**
PENT				S		**Sg**	**06 46 46.1**	**-0.2**
PENT	**Pentalofos**	**0.29**	**82**	P		**Pg**	**06 46 41.7**	**-0.3**
PENT				S		**Sg**	**06 46 46.1**	**-0.2**
PENT				AML		AML	06 46 51.0	
	comp=N,1066μm,0.3s							
PENT				AML		AML	06 46 51.5	
	comp=E,1322μm,0.4s							
NEST	**Nestorio**	**0.34**	**41**	P		**Pg**	**06 46 42.0**	**-0.8**
NEST				S		**Sb**	**06 46 47.7**	**-1.3**
NEST	**Nestorio**	**0.34**	**41**	P		**Pg**	**06 46 42.0**	**-0.8**
NEST				S		**Sb**	**06 46 47.7**	**-1.3**
NEST	**Nestorio**	**0.34**	**41**	P		**Pg**	**06 46 42.0**	**-0.8**
NEST				S		**Sb**	**06 46 48.7**	**-0.3**
NEST				AML		AML	06 46 50.0	
	comp=N,1172μm,0.3s							
NEST				AML		AML	06 46 52.0	
	comp=E,2032μm,0.5s							
JAN	**Janina**	**0.51**	**172**	P		**Pg**	**06 46 46.1**	**+0.3**
JAN				S		**Sb**	**06 46 54.7**	**+1.0**
JAN	**Janina**	**0.51**	**172**	P		**Pg**	**06 46 46.1**	**+0.3**
JAN				S		**Sg**	**06 46 53.4**	**+0.8**
JAN	**Janina**	**0.51**	**172**	AML		AML	06 46 57.8	
	comp=E,1184μm,0.4s							
KPRO	**Kipourio**	**0.51**	**113**	P		**Pg**	**06 46 45.6**	**-0.2**
KPRO				S		**Sb**	**06 46 56.3**	**+2.5**
KPRO	**Kipourio**	**0.51**	**113**	P		**Pg**	**06 46 45.6**	**-0.2**
KPRO				S		**Sb**	**06 46 56.3**	**+2.5**
KPRO	**Kipourio**	**0.51**	**113**	P		**Pg**	**06 46 45.2**	**-0.6**
KPRO				S		**Sb**	**06 46 55.5**	**+1.8**
KPRO				AML		AML	06 46 59.6	
	comp=E,738μm,0.4s							
KPRO				AML		AML	06 47 00.5	
	comp=N,692μm,0.3s							
SGD	**Sagiada**	**0.68**	**217**	P		**Pg**	**06 46 48.6**	**-0.4**
SGD				S		**Sb**	**06 46 59.2**	**+0.7**
SGD	**Sagiada**	**0.68**	**217**	P		**Pb**	**06 46 49.3**	**0.0**
SGD				S		**Sg**	**06 46 57.8**	**-0.1**
SGD	**Sagiada**	**0.68**	**217**	P		**Pb**	**06 46 49.3**	**0.0**
SGD				S		**Sg**	**06 46 57.8**	**-0.1**
FNA	**Florina**	**0.78**	**37**	P		**Pb**	**06 46 50.2**	**-1.0**
FNA				S		**Sb**	**06 47 01.1**	**-0.6**
FNA	**Florina**	**0.78**	**37**	P		**Pb**	**06 46 50.4**	**-0.8**
FNA				S		**Sb**	**06 47 01.1**	**-0.6**
FNA	**Florina**	**0.78**	**37**	P		**Pb**	**06 46 50.4**	**-0.8**
KZN	**Kozani**	**0.79**	**79**	P		**Pb**	**06 46 51.2**	**-0.1**
KEK	**Kerkira**	**0.86**	**239**	P		**Pg**	**06 46 50.2**	**-2.3**
KEK				S		**Sg**	**06 47 03.4**	**-0.3**
KEK	**Kerkira**	**0.86**	**239**	P		**Pg**	**06 46 50.2**	**-2.3**
KEK				S		**Sg**	**06 47 03.4**	**-0.3**
OHR	**Ohrid**	**0.95**	**2**	*i* Pg		**Pn**	**06 46 53.8**	**-1.0**
OHR				*i* Sg		**Sn**	**06 47 06.6**	**-1.6**
OHR	**Ohrid**	**0.95**	**2**	*i* Pg		**Pn**	**06 46 53.8**	**-1.0**
OHR				*i* Sg		**Sn**	**06 47 06.6**	**-1.6**
THL	**Klokotos Trika**	**1.14**	**121**	P		**Pn**	**06 46 57.5**	**+0.3**
LIT	**Litokhoron**	**1.33**	**92**	P		**Pn**	**06 47 00.1**	**+0.2**
LIT	**Litokhoron**	**1.33**	**92**	P		**Pn**	**06 47 00.1**	**+0.2**
TIR	**Tirane**	**1.37**	**331**	*i* PN		**Pg**	**06 47 03.1**	**+1.0**
TIR				*i* SN		**Sg**	**06 47 26.3**	**+6.4**
TIR	**Tirane**	**1.37**	**331**	*i* Pn		**Pg**	**06 47 03.1**	**+1.0**
TIR				*i* Sn		**Sg**	**06 47 26.3**	**+6.4**
LKD2	**Lefkada island**	**1.37**	**183**	P		**Pn**	**06 47 00.3**	**-0.2**
LKD2	**Lefkada island**	**1.37**	**183**	P		**Pn**	**06 47 00.3**	**-0.2**
PDO	**Prodromos**	**1.59**	**168**	P		**Pg**	**06 47 06.9**	**+0.5**
PDO	**Prodromos**	**1.59**	**168**	P		**Pg**	**06 47 06.9**	**+0.5**
AGG	**Agios Georgios**	**1.66**	**132**	P		**Pg**	**06 47 07.6**	**-0.1**
AGG	**Agios Georgios**	**1.66**	**132**	P		**Pg**	**06 47 07.6**	**-0.1**

IDC 04 06:59:36.1±3.3,53.˝42N×87.˝51E,h0km,mb1 2.8/2, mb1mx2.7/52,mbtmp2.8/2,ML2.5/2,Error ellipse: s-maj=34.6km s-min=17.1km az=57.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.68**	**289**	*i*			07 09 50.0	
	baz=108,slow=324,SNR=12							
ZALV	**Zalesovo Beam**	**1.68**	**289**	Pn		Pn	07 00 06.2	-0.5
	0.8nm,0.3s,baz=106,slow=16,SNR=6.3							
ZALV				Lg		Lg	07 00 29.5	
	0.6nm,0.3s,baz=115,slow=26,SNR=5.9							
KURBB	**Kurchatov Arra**	**6.21**	**247**	Pn		Pn	07 01 09.4	+0.5
	0.1nm,0.3s,baz=64,slow=15,SNR=4.3							
MKAR	**Makanchi Array**	**7.43**	**209**	Pn		Pn	07 01 27.1	+1.3
	0.1nm,0.3s,baz=29,slow=14,SNR=7.0							

MOS ***04*** *07:10:58.5±1.4,0.˝03S×124.˝51E,h60km,mb4.8/38, Error ellipse: s-maj=14.6km s-min=7.0km az=121.3*
ISCJB ***04*** *07:10:59.5±0.2,0.˝17S±0.˝03×124.˝53E±0.˝03,h73km, mb4.5/63, Error ellipse: s-maj=5.2km s-min=3.8km az=145.2*
DJA ***04*** *07:11:01.0±0.3,0.˚3S×123.˚5E±.˚,h50km±6km,M4.8/7, mb5.0/7,mB5.4/3,MLv4.7/5,Mw(mB)4.9/3*
NEIC ***04*** *07:11:02.1±1.0,0.˚23S×124.˚46E,h80km±10km,mb4.7/21, Error ellipse: s-maj=13.7km s-min=7.1km az=52.0*
KLM ***04*** *07:11:03.2,0.˚61S×124.˚06E,h45km,mb5.0,MS6.0*
IDC ***04*** *07:11:03.2±2.7,0.˚18S×124.˚24E,h89km±25km,mb4.1/22, mb1 4.2/24,mb1mx4.1/51,mbtmp4.4/24,MS3.2/13, Ms1 3.2/13,ms1mx2.9/44,Error ellipse: s-maj=19.2km s-min=10.3km az=74.0*

ISC 04 07:11:01.5±0.3,0.˝16S±0.˝04×124.˝49E±0.˝05,h73km,n149, σ1¶51/165,mb4.7/63,9C-2D,Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KMSI	**Cibinong**	**0.89**	**325**	P		**Pn**	**07 11 17.7**	**-1.1**
KMSI				S		**Sn**	**07 11 29.8**	**-1.9**
LUWI	**Luwuk**	**1.93**	**243**	P		**Pn**	**07 11 33.6**	**+1.4**
LUWI				S		**Sn**	**07 11 55.4**	**-0.3**
LUWI	**Luwuk**	**1.93**	**243**	*e*Pn		**Pn**	**07 11 31.6**	**-0.6**
LUWI				*e*Sn		**Sn**	**07 11 55.9**	**+0.2**
SANI	**Sanana**	**2.40**	**141**	P		**Pn**	**07 11 35.9**	**-2.7**
MRSI	**Marisa**	**2.63**	**284**	P		**Pn**	**07 11 38.9**	**-2.8**
LBMI	**Labuha**	**3.05**	**99**	P		**Pn**	**07 11 46.2**	**-1.2**
NLAI	**Namlea**	**4.02**	**140**	P		**Pn**	**07 12 00.2**	**-0.4**
KDI	**Kendari**	**4.21**	**206**	P		**Pn**	**07 12 02.3**	**-0.9**
PCI	**Palu**	**4.71**	**261**	P		**Pn**	**07 12 11.0**	**+0.8**
PCI	**Palu**	**4.71**	**261**	P		**Pn**	**07 12 10.9**	**+0.8**
MSAI	**Masohi**	**5.45**	**126**	P		**Pn**	**07 12 19.5**	**-0.7**
TTSI	**Tana Toraja**	**5.48**	**238**	P		**Pn**	**07 12 21.6**	**+1.0**
KAPI	**Kappang**	**6.76**	**224**	P		**Pn**	**07 12 37.8**	**-0.3**
	27nm,0.3s,baz=18,slow=6.1,SNR=31							
KAPI				S		**Sn**	**07 13 51.5**	**-2.1**
	20nm,0.3s,baz=73,slow=20,SNR=9.9							
KAPI				LR		LR	07 15 56.9	
	comp=Z,204nm,19.5s,baz=65,slow=45							
KAPI	**Kappang**	**6.76**	**224**	*e*Pn		**Pn**	**07 12 38.1**	**+0.1**
KAPI				*e*Sn		**Sn**	**07 13 52.6**	**-1.0**
DAV	**Davao City (W)**	**7.26**	**9**	LR		LR	07 15 55.3	
	comp=Z,308nm,21.6s,baz=162,slow=40							
MYLDM	**Lahad Datu**	**8.00**	**312**	⇑P		**Pn**	**07 12 57.2**	**+2.1**
MYLDM	**Lahad Datu**	**8.00**	**312**	*e*Pn		**Pn**	**07 12 57.0**	**+2.0**
FAKI	**Fak Fak**	**8.22**	**110**	*e*Pn		**Pn**	**07 12 56.8**	**-1.3**
SDKM	**Sandakan**	**9.29**	**308**	⇑P		**Pn**	**07 13 14.2**	**+1.5**
BBKI	**Banjar Baru**	**10.19**	**251**	P		Pn	07 13 31.5	+6.5
KKM	**Kota Kinabalu**	**10.31**	**307**	⇓P		**Pn**	**07 13 28.1**	**+1.4**
KKM	**Kota Kinabalu**	**10.31**	**307**	*e*Pn		**Pn**	**07 13 28.5**	**+1.8**
BTM	**Bintulu**	**11.88**	**286**	⇑P		**Pn**	**07 13 45.9**	**-2.2**
STKI	**Sintang**	**13.02**	**271**	P		**P**	**07 14 07.7**	**-3.5**
MTN	**Manton Dam**	**14.22**	**153**	*e*Pn		**Pn**	**07 14 18.7**	**-0.6**
PWJI	**Pagerwojo**	**14.86**	**238**	P		**P**	**07 14 33.6**	**+1.9**
KPJI	**Karang Pucung**	**17.07**	**245**	P		**P**	**07 15 02.0**	**+5.7**
FITZ	**Fitzroy Crossi**	**17.86**	**176**	P		**Pn**	**07 15 05.3**	**+0.1**
	0.4nm,0.3s,baz=8.2,slow=9.8,SNR=13							
FITZ				S		**S**	**07 18 25.5**	**-0.2**
	0.3nm,0.3s,baz=174,slow=19,SNR=4.2							
FITZ				LR		LR	07 22 36.6	
	comp=Z,38nm,18.4s,baz=2.0,slow=39							
FITZ	**Fitzroy Crossi**	**17.86**	**176**	*e*P		**Pn**	**07 15 05.5**	**+0.3**
	43nm,1.9s							
FITZ				*e*S		**Sn**	**07 18 24.2**	**+0.2**
MYKOM	**Kota Tinggi**	**20.73**	**275**	⇓P		**P**	**07 15 36.0**	**-0.3**
WRAB	**Tennant Creek**	**21.89**	**154**	⇑P		**P**	**07 15 51.8**	**+3.1**
WRAB				pmax		pmax		
	comp=Z,44nm,1.0s							
WRAB	**Tennant Creek**	**21.89**	**154**	*e*P		**P**	**07 15 48.1**	**-0.6**
	comp=Z,33nm,1.2s							
WRA	**Warramunga Arr**	**21.90**	**154**	P		**P**	**07 15 47.5**	**-1.3**
	comp=Z,8.4nm,0.7s,baz=335,slow=11,SNR=58							
WRA				PcP		**PcP**	**07 19 47.0**	**+1.3**
	comp=Z,0.9nm,0.5s,baz=331,slow=1.7,SNR=6.2							
WR1	**Warramunga Arr**	**21.90**	**154**	*e*P		**P**	**07 15 47.5**	**-1.3**
	comp=Z,32nm,1.1s							
WR1				*e*S		**S**	**07 19 47.0**	**+0.3**
WB2	**Warramunga Arr**	**21.90**	**154**	*e*P		**P**	**07 15 48.2**	**-0.6**
	comp=Z,26nm,1.0s							
IPM	**Ipoh**	**23.89**	**281**	⇑P		**P**	**07 16 08.9**	**+0.1**
IPM	**Ipoh**	**23.89**	**281**	*e*P		**P**	**07 16 08.8**	**+0.1**
	comp=Z,17nm,0.6s							
UBPT	**Khong Chiam**	**24.26**	**310**	P		**P**	**07 16 13.6**	**+1.6**
	comp=Z,15nm,1.3s							
PMG	**Port Moresby**	**24.36**	**113**	*i* P		**P**	**07 16 11.1**	**-1.8**
PMG				pmax		pmax		
	comp=Z,97nm,1.0s							
ASAR	**Alice Springs**	**25.09**	**159**	P		**P**	**07 16 20.1**	**+0.6**
	comp=Z,4.0nm,0.8s,baz=342,slow=8.0,SNR=30							
ASAR				PcP		**PcP**	**07 19 53.7**	**+1.3**
	comp=Z,2.9nm,0.4s,baz=350,slow=2.0,SNR=23							
ASAR				LR		LR	07 27 05.9	
	comp=Z,42nm,18.5s,baz=318,slow=38							
AS01	**Alice Springs**	**25.10**	**159**	*e*P		**P**	**07 16 20.9**	**+1.3**
AS01				*e*PcP		**PcP**	**07 19 53.9**	**+1.4**
CHBT	**CHBT**	**25.45**	**301**	P		**P**	**07 16 26.3**	**+3.5**
CTA	**Charters Tower**	**29.09**	**134**	LR		LR	07 29 58.4	
	comp=Z,202nm,19.5s,baz=200,slow=39							
CM01	**Chiang Mai Arr**	**31.15**	**308**	*e*P		**P**	**07 17 14.9**	**+1.3**
CMAR	**Chiang Mai Arr**	**31.18**	**308**	P		**P**	**07 17 14.4**	**+0.4**
	comp=Z,3.2nm,0.7s,baz=138,slow=7.6,SNR=14							
CMAR				LR		LR	07 32 03.2	
	comp=Z,34nm,18.1s,baz=126,slow=41							
CHTO	**Chiang Mai**	**31.38**	**308**	*e*P		**P**	**07 17 16.5**	**+0.8**
CHTO				pmax		pmax		
	comp=Z,12nm,0.7s							
CHTO	**Chiang Mai**	**31.38**	**308**	*e*P		**P**	**07 17 16.5**	**+0.8**
	comp=Z,12nm,0.7s							
GYA	**Guiyang**	**31.55**	**328**	*e*P		**P**	**07 17 19.5**	**+2.3**
GYA				pP		pP	07 17 38.4	+3.8
GYA				PP		**PP**	**07 18 27.2**	**-2.6**
GYA				S		**S**	**07 22 23.0**	**+2.2**
GYA				sS		sS	07 22 54.6	+4.0
GYA				pmax		pmax		
	comp=Z,10.0nm,0.8s							
GYA				pmax		pmax		
	comp=Z,110nm,5.0s							
KMI	**Kunming**	**32.78**	**322**	P		**P**	**07 17 30.8**	**+2.7**
KMI				pmax		pmax		
	comp=Z,9.0nm,0.5s							
KMI				pmax		pmax		
	comp=Z,91nm,5.4s							
ENH	**Enshi**	**33.47**	**336**	*e*P		**P**	**07 17 36.0**	**+2.2**
	comp=Z,12nm,0.6s							
STKA	**Stephens Creek**	**35.45**	**154**	P		**P**	**07 17 51.0**	**+0.1**
	comp=Z,2.2nm,0.6s,baz=328,slow=9.3,SNR=4.2							
STKA				LR		LR	07 33 44.4	
	comp=Z,54nm,18.0s,baz=27,slow=38							
CD2	**Chengdu**	**36.64**	**329**	*e*P		**P**	**07 18 01.5**	**+0.4**
CD2				pP		pP	07 18 19.5	+0.8
CD2				sP		sP	07 18 28.4	+1.2
CD2				S		**S**	**07 23 40.7**	**+1.6**
CD2				sS		sS	07 24 12.0	+2.8
CD2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
CD2				pmax		pmax		
	comp=Z,160nm,5.4s							
KSRS	**Korea Array**	**37.56**	**4**	P		**P**	**07 18 09.8**	**+1.1**
	comp=Z,21nm,0.6s,baz=181,slow=9.8,SNR=6.5							
MJAR	**Matsushiro Arr**	**38.68**	**18**	P		**P**	**07 18 18.4**	**+0.2**
	comp=Z,6.7nm,0.8s,baz=194,slow=9.0,SNR=11							
MJAR				LR		LR	07 33 24.1	
	comp=Z,15nm,20.7s,baz=235,slow=35							
MJAR	**Matsushiro Arr**	**38.68**	**18**	P		**P**	**07 18 18.4**	**+0.2**
MJAR				pmax		pmax		
	comp=Z,6.0nm,0.8s							
MJAR				MLR		MLR		
	comp=Z,15nm,20.7s							
BJI	**Beijing**	**40.73**	**350**	P		**P**	**07 18 37.3**	**+2.2**
BJI				pP		**pP**	**07 18 52.5**	**-0.4**
BJI				PP		**PnPn**	**07 20 13.3**	**-1.7**
BJI				S		**S**	**07 24 40.9**	**+0.7**
BJI				pmax		pmax		
	comp=Z,10.0nm,0.7s							
BJI				pmax		pmax		
	comp=Z,69nm,5.2s							
LZH	**Lanzhou**	**40.86**	**334**	*e*P		**P**	**07 18 39.0**	**+2.5**
LZH				pP		sP	07 18 58.9	-3.9
LZH				sP		pP	07 19 07.7	+13
LZH				pmax		pmax		
	comp=Z,15nm,1.0s							
LZH				pmax		pmax		
	comp=Z,70nm,4.0s							
HHC	**Hu-ho-hao-te**	**42.48**	**345**	*e*P		**P**	**07 18 50.3**	**+0.7**
HHC				pmax		pmax		
	comp=Z,10.0nm,0.9s							
HHC				pmax		pmax		
	comp=Z,87nm,5.1s							
LSA	**Lhasa**	**43.49**	**316**	*e*P		**P**	**07 19 00.3**	**+1.9**
LSA				pmax		pmax		
	comp=Z,7.0nm,0.5s							
LSA	**Lhasa**	**43.49**	**316**	*e*P		**P**	**07 19 00.3**	**+1.9**
	comp=Z,6.5nm,0.5s							
CN2	**Changchun**	**43.78**	**1**	*e*P		**P**	**07 18 57.9**	**-2.0**
USRK	**Ussuriysk Ar.**	**44.67**	**8**	P		**P**	**07 19 08.0**	**+1.0**
	comp=Z,7.7nm,0.4s,baz=192,slow=7.3,SNR=58							
RAMN	**Ramite**	**45.32**	**310**	*e*P		**P**	**07 19 13.1**	**+0.3**
	comp=Z,32nm,0.5s							
GTA	**Gaotai**	**45.40**	**333**	*e*P		**P**	**07 19 14.6**	**+1.6**
GTA				pmax		pmax		
	comp=Z,14nm,1.0s							
GUN	**Gumba**	**46.35**	**310**	*e*P		**P**	**07 19 21.0**	**0.0**
	comp=Z,32nm,0.5s							
PKIN	**Phulchoki**	**46.56**	**310**	*e*P		**P**	**07 19 22.4**	**-0.1**
	comp=Z,4.9nm,0.3s							
KKN	**Kakani**	**46.75**	**310**	*e*P		**P**	**07 19 24.1**	**+0.1**
	comp=Z,10nm,0.4s							
DMN	**Daman**	**46.80**	**309**	*e*P		**P**	**07 19 24.5**	**+0.1**
	comp=Z,12nm,0.5s							
GKN	**Gorkha**	**47.35**	**310**	*e*P		**P**	**07 19 28.4**	**-0.2**
	comp=Z,19nm,0.4s							
KOLN	**Koldanda**	**48.04**	**309**	*e*P		**P**	**07 19 33.8**	**-0.2**
	comp=Z,26nm,0.5s							
PYUN	**Piuthan**	**48.67**	**309**	*e*P		**P**	**07 19 38.9**	**0.0**
	comp=Z,46nm,0.5s							
KLR	**Kul'dur**	**49.60**	**6**	LR		LR	07 41 31.7	
	comp=Z,11nm,21.6s,baz=37							
SONA0	**Songino Array**	**50.33**	**344**	*e*P		**P**	**07 19 50.6**	**-0.4**
	comp=Z,6.1nm,0.8s							
SONM	**Songino Array**	**50.33**	**344**	P		**P**	**07 19 50.6**	**-0.4**
	comp=Z,5.0nm,0.7s,baz=159,slow=8.3,SNR=18							
SONM				LR		LR	07 42 10.6	
	comp=Z,22nm,19.6s,baz=24,slow=37							
SONA1	**Songino Array**	**50.34**	**344**	*e*P		**P**	**07 19 51.0**	**-0.1**
WMQ	**Urumqi**	**54.71**	**328**	*e*P		**P**	**07 20 24.3**	**+0.9**
WMQ				pP		pP	07 20 40.2	-1.8
WMQ				pmax		pmax		
	comp=Z,13nm,0.7s							
WMQ				pmax		pmax		
	comp=Z,120nm,3.7s							
WMQ				LR		LR		
	comp=Z,160nm,27.6s							
WMQ				LR		LR		
	comp=Z,130nm,27.8s							
WMQ				LR		LR		
	comp=Z,140nm,19.4s							
BOD	**Bodaibo**	**58.41**	**353**	*e*P		**P**	**07 20 49.2**	**-0.1**
BOD				pmax		pmax		
	comp=Z,14nm,1.0s							
PDGK	**Podgornoye**	**59.07**	**323**	P		**P**	**07 20 55.3**	**+1.2**
PDGK				pmax		pmax		
	comp=Z,9.0nm,1.4s							
KSH	**Kashi**	**59.30**	**318**	P		**P**	**07 20 56.3**	**+0.3**
KSH				*e*pP		pP	07 21 15.5	+0.7
KSH				*e*sP		sP	07 21 24.4	+1.4
KSH				*e*PP		**PP**	**07 23 09.6**	**+1.9**
KSH				S		**S**	**07 28 54.7**	**-4.3**
KSH				pmax		pmax		
	comp=Z,2.0nm,0.6s							
KSH				pmax		pmax		
	comp=Z,35nm,3.0s							
KSH				LR		LR		
	comp=Z,140nm,5.7s							
KSH				LR		LR		
	comp=Z,120nm,7.8s							
KSH				LR		LR		
	comp=Z,140nm,5.8s							
MK01	**Makanchi Array**	**59.52**	**328**	*e*P		**P**	**07 20 56.5**	**-0.7**
MK31	**Makanchi Array**	**59.54**	**328**	*e*P		**P**	**07 20 57.0**	**-0.4**
MK31	**Makanchi Array**	**59.54**	**328**	*e*P		**P**	**07 20 57.0**	**-0.4**
MK32	**Makanchi Array**	**59.54**	**328**	*e*P		**P**	**07 20 56.8**	**-0.6**
MKAR	**Makanchi Array**	**59.54**	**328**	P		**P**	**07 20 56.8**	**-0.6**
	comp=Z,4.0nm,0.4s,baz=124,slow=8.5,SNR=48							
MKAR	**Makanchi Array**	**59.54**	**328**	*e*P		**P**	**07 20 56.9**	**-0.5**
MAKZ	**Makanchi**	**59.72**	**327**	*e*P		**P**	**07 20 57.5**	**-1.1**
MAKZ				pmax		pmax		
	comp=Z,5.0nm,0.6s							
MAKZ	**Makanchi**	**59.72**	**327**	*e*P		**P**	**07 20 57.5**	**-1.1**
	comp=Z,4.6nm,0.6s							
PEA0	**Petropavlovsk-**	**59.85**	**22**	*e*P		**P**	**07 21 01.4**	**+2.0**
PETK	**Petropavlovsk-**	**59.85**	**22**	P		**P**	**07 21 01.1**	**+1.7**
	comp=Z,3.5nm,0.5s,baz=189,slow=4.4,SNR=9.9							
PEA1	**Petropavlovsk-**	**59.86**	**22**	*e*P		**P**	**07 21 01.1**	**+1.7**
TKM2	**Tokmak 2**	**61.25**	**321**	*e*P		**P**	**07 21 08.9**	**-0.5**
TKM2				pmax		pmax		
	comp=Z,7.0nm,0.8s							
TKM2	**Tokmak 2**	**61.25**	**321**	*e*P		**P**	**07 21 08.9**	**-0.5**
	comp=Z,6.6nm,0.8s							
AAK	**Ala-Archa**	**61.80**	**320**	P		**P**	**07 21 15.2**	**+2.2**
	comp=Z,3.4nm,0.4s,baz=121,slow=4.6,SNR=5.3							
AAK	**Ala-Archa**	**61.80**	**320**	*e*P		**P**	**07 21 15.5**	**+2.5**
AAK				pmax		pmax		
	comp=Z,5.0nm,0.6s							
AAK	**Ala-Archa**	**61.80**	**320**	*e*P		**P**	**07 21 15.5**	**+2.5**
	comp=Z,4.7nm,0.6s							
YAK	**Yakutsk**	**62.16**	**3**	*e*P		**P**	**07 21 16.1**	**+1.3**
YAK				pmax		pmax		
	comp=Z,29nm,0.9s							
YAK				pmax		pmax		
	comp=N,6.0nm,0.9s							
KBL	**Kabul**	**62.19**	**310**	*e*P		**P**	**07 21 14.9**	**-0.9**
KBL				pmax		pmax		
	comp=Z,9.0nm,0.6s							
KBL	**Kabul**	**62.19**	**310**	*e*P		**P**	**07 21 14.9**	**-0.9**
	comp=Z,8.6nm,0.6s							
EKS2	**Erkin-Say**	**62.28**	**320**	*e*P		**P**	**07 21 16.4**	**+0.2**
EKS2				pmax		pmax		
	comp=Z,6.0nm,0.6s							
EKS2	**Erkin-Say**	**62.28**	**320**	*e*P		**P**	**07 21 16.4**	**+0.2**
	comp=Z,5.6nm,0.6s							
MNAS	**Manas**	**63.02**	**319**	P		**P**	**07 21 21.5**	**+0.3**
MNAS				pmax		pmax		
	comp=Z,8.0nm,0.9s							
ZAA0	**Zalesovo Array**	**63.08**	**335**	*e*P		**P**	**07 21 19.6**	**-1.5**
ZALV	**Zalesovo Beam**	**63.08**	**335**	P		**P**	**07 21 19.4**	**-1.7**
	comp=Z,3.3nm,0.3s,baz=129,slow=5.8,SNR=14							
ZALV				LR		LR	07 51 19.2	
	comp=Z,22nm,18.0s,baz=70,slow=38							
ZAA1	**Zalesovo Array**	**63.08**	**335**	*e*P		**P**	**07 21 19.4**	**-1.7**
KURBB	**Kurchatov Arra**	**63.85**	**329**	P		**P**	**07 21 25.2**	**-1.0**
	comp=Z,4.7nm,0.5s,baz=132,slow=5.7,SNR=39							
KURK	**Kurchatov**	**63.87**	**329**

comp=Z,4.0nm,0.6s
OBN MLR MLR
comp=Z,20nm,15.0s
ILAR Eielson Array 89.55 25 P **P 07 23 50.1 -0.5**
comp=Z,0.6nm,0.5s,baz=247,slow=4.7,SNR=8.8
BR101 Keskin Array S 90.76 310 *eP* **P 07 23 55.7 -1.3**
BRTR Keskin Array B 90.76 310 P **P 07 23 55.7 -1.3**
comp=Z,0.3nm,0.3s,baz=72,slow=4.0,SNR=4.1
BRTR Keskin Array B 90.76 310 P **P 07 23 55.7 -1.3**
BRTR pmax pmax
comp=Z,1.0nm,0.6s
ARA0 ARCESS Array S 93.30 340 *eP* **P 07 24 06.8 -1.1**
ARCES ARCESS Array B 93.30 340 P **P 07 24 06.8 -1.1**
comp=Z,0.8nm,0.4s,baz=91,slow=6.1,SNR=12
HYT Haines Junctio 94.05 29 *eP* **P 07 24 13.9 +2.2**
FIA0 FINESS Array S 94.17 332 *eP* **P 07 24 09.7 -2.3**
FIA0 FINESS Array S 94.17 332 *eP* **P 07 24 09.7 -2.3**
FINES FINESS Array B 94.17 332 P **P 07 24 09.7 -2.3**
comp=Z,0.9nm,0.5s,baz=97,slow=3.6,SNR=6.6
TORD Torodi Ar. Bea 121.89 285 PKP **PKPdf 07 29 48.3 -0.1**
comp=Z,1.0nm,0.6s,baz=82,slow=1.6,SNR=15
TOA1 Torodi Ar. Sit 121.89 285 *e*PKPdf **PKPdf 07 29 48.3 -0.1**
LTX Lajitas 125.72 53 *e*PKIKP **PKPdf 07 29 56.3 +0.7**
LTX Lajitas 125.72 53 *e*PKPdf **PKPdf 07 29 56.3 +0.7**
TXAR Lajitas Array 125.72 53 PKP **PKPdf 07 29 56.3 +0.7**
comp=Z,0.3nm,0.8s,baz=277,slow=1.5,SNR=3.9

IDC 04 07:17:05.0±6.5, 18°20'S×173°56'W, h0km, mb4.0/3, mb1 4.3/3, mb1mx3.8/30, mbtmp4.0/3, Error ellipse: s-maj=291.4km s-min=35.3km az=142.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**4.60**	**22**	Sn	Sn	07 19 08.3	-1.8
	7.9nm,0.3s,baz=84,slow=13,SNR=7.4						
WRA	**Warramunga Arr**	**49.11**	**259**	P	P	07 25 54.9	+0.1
	0.9nm,0.4s,baz=96,slow=7.5,SNR=32						
ASAR	**Alice Springs**	**49.15**	**254**	P	P	07 25 54.6	-0.4
	3.6nm,0.8s,baz=94,slow=8.2,SNR=27						
ILAR	**Eielson Array**	**85.21**	**11**	P	P	07 29 42.6	-0.3
	0.3nm,0.6s,baz=224,slow=5.3,SNR=6.9						
BRTR	**Keskin Array B**	**148.17**	**318**	PKPbc	PKPbc	07 36 53.2	-0.2
	0.6nm,0.6s,baz=25,slow=3.8,SNR=3.2						

*ISCJB **04** 07:30:52.9±0.7, 41°.2'N±0°.04×25°.54'E±0°.03, h1km±5km, Error ellipse: s-maj=6.3km s-min=3.4km az=7.3*
*ATH **04** 07:30:53.2, 41°.24'N×25°.55'E, h26km±3km, ML2.2/2, Error ellipse: s-maj=4.4km s-min=1.2km az=178.0*
*CSEM **04** 07:30:53.4±0.2, 41°.28'N×25°.53'E, h5km, ML2.7, Error ellipse: s-maj=4.0km s-min=2.1km az=9.0*
*THE **04** 07:30:53.5, 41°.25'N×25°.54'E, h7km±2km, ML2.4/6, Error ellipse: s-maj=2.2km s-min=0.8km az=129.0*
*ISK **04** 07:30:54.4, 41°.26'N×25°.67'E, h5km, ML2.7*
*DDA **04** 07:30:56.2, 41°.11'N×25°.67'E, h7km, Ml3.1*
ISC 04 07:30:53.0±1.1, 41°28'N±0°.04×25°54'E±0°.02, h10km±9km, n49, σ0°38'/75, Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ALN	**Alexandroupoli**	**0.54**	**134**	*e*PG	**Pb**	**07 31 04.7**	**+0.1**
ALN				*e*SG	**Sg**	**07 31 10.5**	**-0.1**
ALN	**Alexandroupoli**	**0.54**	**134**	P	**Pg**	**07 31 03.9**	**+0.4**
ALN				S	**Sg**	**07 31 10.8**	**+0.2**
ALN	**Alexandroupoli**	**0.54**	**134**	P	**Pg**	**07 31 03.9**	**+0.4**
ALN	**Alexandroupoli**	**0.54**	**134**	*e*Pg	**Pb**	**07 31 04.7**	**+0.1**
ALN				*e*Sg	**Sg**	**07 31 10.5**	**-0.1**
ALN	**Alexandroupoli**	**0.54**	**134**	P	**Pg**	**07 31 03.9**	**+0.4**
ALN				S	**Sg**	**07 31 10.2**	**-0.4**
ALN				AML	AML	07 31 11.0	
	comp=N,462μm,0.5s						
ALN				AML	AML	07 31 13.1	
	comp=E,416μm,0.3s						
ENEZ	**Enez**	**0.71**	**139**	*e*PG	**Pb**	**07 31 07.6**	**+0.1**
ENEZ				*e*SG	**Sb**	**07 31 16.9**	**-0.5**
ENEZ	**Enez**	**0.71**	**139**	*e*Pg	**Pb**	**07 31 07.6**	**+0.1**
ENEZ				*e*Sg	**Sb**	**07 31 16.9**	**-0.5**
SMTH	**Samothraki Isl**	**0.80**	**180**	P	**Pg**	**07 31 08.8**	**+0.3**
SMTH				S	**Sg**	**07 31 18.8**	**-0.2**
SMTH	**Samothraki Isl**	**0.80**	**180**	P	**Pg**	**07 31 08.8**	**+0.3**
SMTH				S	**Sg**	**07 31 18.8**	**-0.2**
SMTH	**Samothraki Isl**	**0.80**	**180**	P	**Pb**	**07 31 09.2**	**0.0**
SMTH				S	**Sg**	**07 31 18.6**	**-0.3**
SMTH				AML	AML	07 31 22.4	
	comp=E,350μm,0.2s						
SMTH				AML	AML	07 31 23.3	
	comp=N,196μm,0.3s						
KAVA	**Kavala**	**0.82**	**251**	P	**Pg**	**07 31 09.1**	**+0.2**
KAVA				S	**Sb**	**07 31 20.5**	**-0.1**
KAVA	**Kavala**	**0.82**	**251**	P	**Pg**	**07 31 09.1**	**+0.2**
KAVA				S	**Sb**	**07 31 20.3**	**-0.3**
KAVA	**Kavala**	**0.82**	**251**	P	**Pg**	**07 31 09.0**	**+0.2**
ERIK	**Erikli-Kesan**	**0.95**	**129**	*e*PG	**Pg**	**07 31 11.5**	**+0.1**
ERIK				*e*SG	**Sg**	**07 31 23.8**	**0.0**
ERIK	**Erikli-Kesan**	**0.95**	**129**	*e*Pg	**Pg**	**07 31 11.5**	**+0.1**
ERIK				*e*Sg	**Sg**	**07 31 23.8**	**0.0**
KESN	**Edirne-Kesan**	**0.97**	**117**	*i* P	**Pb**	**07 31 12.4**	**+0.2**
KESN				*i* S	**Sg**	**07 31 24.9**	**+0.4**
KESN	**Edirne-Kesan**	**0.97**	**117**	P	**Pb**	**07 31 12.4**	**+0.2**
KESN				S	**Sg**	**07 31 24.9**	**+0.4**
EDRB	**Edirne**	**1.07**	**57**	*e*PG	**Pb**	**07 31 13.7**	**0.0**
EDRB	**Edirne**	**1.07**	**57**	P	**Pb**	**07 31 13.5**	**-0.2**
EDRB	**Edirne**	**1.07**	**57**	*e*Pg	**Pb**	**07 31 13.7**	**0.0**
GADA	**Gvkgeada**	**1.12**	**166**	*e*PG	**Pn**	**07 31 15.2**	**+0.4**
GADA	**Gvkgeada**	**1.12**	**166**	*e*Pg	**Pn**	**07 31 15.2**	**+0.4**
GELI	**Tayfur-Gelibol**	**1.13**	**141**	*e*PG	**Pg**	**07 31 14.8**	**+0.1**
GELI	**Tayfur-Gelibol**	**1.13**	**141**	*e*Pg	**Pg**	**07 31 14.8**	**+0.1**
NVR	**Nevrokopi**	**1.26**	**274**	P	**Pn**	**07 31 17.1**	**+0.2**
NVR				S	**Sn**	**07 31 34.4**	**+0.5**
NVR	**Nevrokopi**	**1.26**	**274**	P	**Pn**	**07 31 17.1**	**+0.2**
NVR				S	**Sn**	**07 31 34.4**	**+0.5**
LPK	**Lapseki**	**1.29**	**134**	*e*PN	**Pb**	**07 31 17.5**	**0.0**
LPK	**Lapseki**	**1.29**	**134**	*e*Pn	**Pb**	**07 31 17.5**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.37**	**115**	*e*PN	**Pb**	**07 31 19.2**	**+0.3**
RKY				*e*SN	**Sg**	**07 31 37.1**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.37**	**115**	*e*Pn	**Pb**	**07 31 19.2**	**+0.3**
RKY				*e*Sn	**Sg**	**07 31 37.1**	**-0.1**
SART	**Tekirdag**	**1.38**	**115**	*i* P	**Pg**	**07 31 19.4**	**0.0**
SART				*i* S	**Sn**	**07 31 37.1**	**+0.4**
SART	**Tekirdag**	**1.38**	**115**	P	**Pg**	**07 31 19.4**	**0.0**
SART				S	**Sn**	**07 31 37.1**	**+0.4**
SRS	**Serrai**	**1.48**	**265**	P	**Pn**	**07 31 20.0**	**+0.3**
SRS				S	**Sb**	**07 31 39.4**	**0.0**
SRS	**Serrai**	**1.48**	**265**	P	**Pn**	**07 31 20.2**	**+0.5**
SRS				S	**Sb**	**07 31 39.4**	**0.0**
SRS	**Serrai**	**1.48**	**265**	P	**Pn**	**07 31 20.2**	**+0.5**
BOZC	**Bozcaada**	**1.48**	**164**	*i* P	**Pg**	**07 31 21.2**	**-0.3**
BOZC				*i* S	**Sb**	**07 31 39.2**	**-0.4**
OUR	**Ouranopolis**	**1.51**	**232**	P	**Pn**	**07 31 19.7**	**-0.4**
OUR				S	**Sg**	**07 31 41.2**	**-0.3**
OUR	**Ouranopolis**	**1.51**	**232**	P	**Pn**	**07 31 19.7**	**-0.4**
OUR				S	**Sg**	**07 31 41.2**	**-0.3**
OUR	**Ouranopolis**	**1.51**	**232**	P	**Pn**	**07 31 18.8**	**-1.3**
EZN	**Ezine**	**1.57**	**157**	*e*PN	**Pb**	**07 31 22.6**	**+0.5**
EZN	**Ezine**	**1.57**	**157**	*e*Pn	**Pb**	**07 31 22.6**	**+0.5**
KRBG	**Karabiga-Canak**	**1.60**	**123**	*e*PN	**Pb**	**07 31 22.7**	**0.0**
KRBG	**Karabiga-Canak**	**1.60**	**123**	*e*Pn	**Pb**	**07 31 22.7**	**0.0**
MRMT	**Marmara Adasi**	**1.70**	**113**	*e*PN	**Pb**	**07 31 23.9**	**-0.5**
MRMT	**Marmara Adasi**	**1.70**	**113**	*e*Pn	**Pb**	**07 31 23.9**	**-0.5**
SIGR	**SIGRI**	**2.08**	**173**	*e*PN	**Pb**	**07 31 30.3**	**-0.5**
SIGR	**SIGRI**	**2.08**	**173**	*e*Pn	**Pb**	**07 31 30.3**	**-0.5**
CTYL	**Yalikoy Yolu**	**2.08**	**84**	*e*PN	**Pb**	**07 31 29.9**	**-1.0**
CTYL	**Yalikoy Yolu**	**2.08**	**84**	*e*Pn	**Pb**	**07 31 29.9**	**-1.0**

*CSEM **04** 07:46:28.1±0.4, 28°.27'N×59°.17'E, h10km, ML3.6, Error ellipse: s-maj=12.3km s-min=9.7km az=84.0*
TEH 04 07:46:26.6, 28°.33'N×59°.07'E, h10km, ML3.6, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZHSF	**Zahedan**	**1.96**	**49**	*e*P	Pg	07 47 09.5	+5.2
CHMN	**Cheshme madani**	**2.03**	**319**	*e*Pn	Pb	07 47 02.9	-0.9
CHMN	**Cheshme madani**	**2.03**	**319**	*e*Pn	Pb	07 47 02.9	-0.9
IBND	**Bandar-abas**	**2.41**	**249**	*e*AMB	AMB	07 47 51.0	
	comp=Z,5μm,0.1s						
IBND				*e*Pn	Pb	07 47 08.4	-1.6
NGRK	**Negar Kerman**	**2.43**	**303**	*e*Pn	Pb	07 47 10.3	-0.4
NGRK	**Negar Kerman**	**2.43**	**303**	*e*Pn	Pb	07 47 10.3	-0.4
KRBR	**Kerman**	**2.60**	**310**	*e*Pn	Pb	07 47 11.9	-1.7
KRBR				*e*Sg	Sg	07 47 50.0	-0.3
TVBK	**TV Kerman**	**2.61**	**310**	*e*Pn	Pb	07 47 11.8	-1.8
TVBK	**TV Kerman**	**2.61**	**310**	*e*Pn	Pb	07 47 11.8	-1.8
GENO	**Geno**	**2.73**	**251**	*e*Pn	Pb	07 47 13.8	-1.8
GENO	**Geno**	**2.73**	**251**	*e*Pn	Pb	07 47 13.8	-1.8
CHBR	**Chabahar**	**3.00**	**155**	*e*Pn	Pn	07 47 13.9	-0.4
KHGB	**Koh Gabri**	**3.04**	**313**	*e*Pn	Pn	07 47 17.6	+2.5
KHGB	**Koh Gabri**	**3.04**	**313**	*e*Pn	Pn	07 47 17.6	+2.5
IKOO	**Kooshah**	**4.08**	**359**	*e*Pn	Pn	07 47 31.7	+2.4
IKOO				*e*AMB	AMB	07 48 47.0	
	comp=Z,1μm,0.2s						
IKOO	**Kooshah**	**4.08**	**359**	*e*Pn	Pn	07 47 31.7	+2.4
IDAH	**Dahanechah**	**4.45**	**9**	*e*Pn	Pn	07 47 37.9	+3.5
IDAH				*e*AMB	AMB	07 47 39.6	
	comp=Z,455nm,0.1s						
IDAH	**Dahanechah**	**4.45**	**9**	*e*Pn	Pn	07 47 37.9	+3.5
IBAF	**Bafgh**	**4.45**	**318**	*e*Pn	Pb	07 47 46.6	+1.7
IBAF				*e*AMB	AMB	07 48 56.4	
	comp=Z,357nm,0.2s						
IBAF	**Bafgh**	**4.45**	**318**	*e*Pn	Pb	07 47 46.6	+1.7
ISRV	**Sarvestan**	**5.33**	**283**	*e*Pn	Pn	07 47 50.2	+3.7
ISRV				*e*AMB	AMB	07 47 57.0	
	comp=Z,134nm,0.1s						
ISRV	**Sarvestan**	**5.33**	**283**	*e*Pn	Pn	07 47 50.2	+3.7

IDC 04 07:46:49.5±2.2, 2°.85S×141°.76E, h0km, mb3.4/3, mb1 3.7/4, mb1mx3.4/40, mbtmp3.5/4, ML3.6/1, MS3.2/1, Ms1 3.2/1, ms1mx2.4/24, Error ellipse: s-maj=34.3km s-min=15.4km az=37.0, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**1.11**	**287**	Pg	Pg	07 47 11.0	+0.2
	0.8nm,0.3s,baz=94,slow=21,SNR=24						
JAY				Lg	Lg	07 47 25.9	
	1.8nm,0.3s,baz=270,slow=20,SNR=19						
WRA	**Warramunga Arr**	**18.47**	**203**	P	Pn	07 51 07.7	+0.6
	0.2nm,0.3s,baz=24,slow=12,SNR=14						
FITZ	**Fitzroy Crossi**	**21.90**	**225**	P	P	07 51 44.2	-0.3
	2.2nm,0.8s,baz=16,slow=7.4,SNR=5.5						
ASAR	**Alice Springs**	**22.05**	**200**	P	P	07 51 45.8	-0.3
	0.4nm,0.3s,baz=26,slow=12,SNR=8.5						
ASAR				LR	LR	08 00 27.8	
	comp=Z,52nm,18.4s,baz=71,slow=37						
MKAR	**Makanchi Array**	**71.78**	**321**	P	P	07 58 13.9	0.0
	0.3nm,0.5s,baz=129,slow=5.7,SNR=4.0						

MEX 04 07:50:27.0±0.8, 14°.03N×92°.34W, h16km±999km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.25**	**5**	*e*P	Pn	07 51 01.4	-2.4
CCIG				*e*S	Sn	07 51 26.2	-5.2

*ISCJB **04** 07:51:54.6±0.8, 25°.7S±0°.2×177°.3W±0°.2, h126km, mb4.0/10, Error ellipse: s-maj=25.4km s-min=19.2km az=149.8*
*IDC **04** 07:52:01.0±11.0, 25°.66S×177°.31W, h170km±98km, mb3.7/10, mb1 3.8/10, mb1mx3.7/27, mbtmp4.1/10, MS3.1/1, Ms1 3.1/1, ms1mx2.5/34, Error ellipse: s-maj=36.0km s-min=20.8km az=68.0*
ISC 04 07:51:55.8±0.7, 25°.7S±0°.2×177°.0W±0°.1, h126km, n20, σ1s51°/19, mb4.1/10, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**15.54**	**280**	P	**P**	**07 55 33.9**	**+4.0**
	0.5nm,0.3s,baz=272,slow=18,SNR=6.3						
HNR	**Honiara**	**27.19**	**302**	LR	LR	08 06 36.8	
	comp=Z,40nm,18.6s,baz=152,slow=32						
CTA	**Charters Tower**	**34.20**	**272**	P	**P**	**07 58 30.2**	**+0.7**
	2.6nm,0.5s,baz=96,slow=10.0,SNR=7.2						
STKA	**Stephens Creek**	**36.61**	**251**	P	**P**	**07 58 50.1**	**+0.1**
	1.9nm,0.6s,baz=85,slow=13,SNR=4.2						
ASAR	**Alice Springs**	**44.42**	**262**	P	**P**	**07 59 52.4**	**-2.0**
	2.8nm,0.4s,baz=96,slow=7.3,SNR=58						
WRA	**Warramunga Arr**	**44.99**	**267**	P	**P**	**07 59 56.5**	**-2.3**
	1.7nm,0.5s,baz=103,slow=7.7,SNR=44						
VNDA	**Vanda**	**52.83**	**186**	P	**P**	**08 00 58.8**	**+1.0**
	1.0nm,0.7s,baz=3.3,slow=4.4,SNR=8.9						
FITZ	**Fitzroy Crossi**	**53.39**	**266**	P	**P**	**08 01 01.3**	**-1.4**
	2.4nm,0.8s,baz=74,slow=5.0,SNR=5.4						
MAW	**Mawson**	**76.99**	**200**	P	**P**	**08 03 34.2**	**0.0**
	2.1nm,0.5s,baz=111,slow=8.6,SNR=12						
PETK	**Petropavlovsk-**	**81.51**	**345**	P	**P**	**08 03 58.8**	**+0.1**
	1.7nm,0.6s,baz=142,slow=7.4,SNR=3.7						
TXAR	**Lajitas Array**	**89.13**	**57**	P	**P**	**08 04 38.3**	**+0.9**
	0.2nm,0.6s,baz=269,slow=4.5,SNR=3.7						
ILAR	**Eielson Array**	**93.18**	**12**	P	**P**	**08 04 54.9**	**-0.3**
	0.3nm,0.7s,baz=222,slow=3.5,SNR=4.5						
MKAR	**Makanchi Array**	**115.36**	**312**	PKP	**PKPdf**	**08 10 21.3**	**-1.1**
	0.4nm,0.5s,baz=82,slow=1.8,SNR=5.4						
BVAR	**Borovoye Array**	**123.58**	**318**	PKP	**PKPdf**	**08 10 37.5**	**-0.6**
	0.6nm,0.4s,baz=80,slow=1.7,SNR=4.2						
ARCES	**ARCESS Array B**	**134.18**	**349**	PKP	**PKPdf**	**08 10 57.8**	**0.0**
	1.0nm,0.6s,baz=5.7,slow=0.9,SNR=6.0						
NB2	**NORSAR Subarra1**	**144.23**	**353**	PKP	**PKPab**	**08 11 13.8**	**-0.7**
	comp=Z,1.3nm,0.7s,baz=12,slow=3.7						
NOA	**NORSAR Array B**	**144.23**	**353**	PKP	**PKPab**	**08 11 13.7**	**-0.7**
	comp=Z,0.9nm,0.7s,baz=9.0,slow=2.3,SNR=7.1						
AKASG	**Malin Array Be**	**147.93**	**328**	PKPbc	**PKPdf**	**08 11 24.7**	**+1.9**
	comp=Z,0.4nm,0.4s,baz=47,slow=3.7,SNR=4.2						
BRTR	**Keskin Array B**	**150.81**	**306**	PKPbc	**PKPbc**	**08 11 33.0**	**-0.7**
	comp=Z,0.9nm,0.6s,baz=112,slow=1.6,SNR=4.6						
TORD	**Torodi Ar. Bea**	**167.45**	**174**	PKPab	**PKPab**	**08 12 53.4**	**0.0**
	comp=Z,0.5nm,0.7s,baz=188,slow=2.4,SNR=3.7						

*IDC **04** 08:18:51.9±2.6, 35°.79N×142°.03E, h0km, mb3.6/3, mb1 3.6/5, mb1mx3.3/57, mbtmp3.5/5, ML3.2/2, Error ellipse: s-maj=62.7km s-min=28.5km az=62.0*
*ISCJB **04** 08:18:53.6±1.2, 35°.73N±0°.07×141°.91E±0°.09, h22km, mb3.6/3, Error ellipse: s-maj=12.6km s-min=8.3km az=44.8*
*JMA **04** 08:18:54.8±0.2, 35°.84N×141°.83E, h21km±3km, M3.4*
ISC 04 08:18:55.7±1.6, 35°.73N±0°.09×141°.8E±0°.1, h22km, n8, σ0s74°/12, mb3.8/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.78**	**268**	P	**Pb**	**08 19 09.8**	**-0.7**
CHOJ				S	**Sb**	**08 19 20.5**	**-0.2**
JYT	**Yasato**	**1.40**	**291**	P	**Pn**	**08 19 18.9**	**-1.1**
JYT				S	**Sn**	**08 19 37.7**	**-0.1**
MJAR	**Matsushiro Arr**	**3.03**	**287**	Pn	**Pn**	**08 19 43.2**	**+0.9**
	1.3nm,0.3s,baz=95,slow=8.0,SNR=10						
MAT	**Matsushiro**	**3.03**	**287**	P	**Pn**	**08 19 43.1**	**+0.7**
MAT				*e*S	**Sn**	**08 20 19.2**	**+1.2**
JHJ	**Hachijo jima 2**	**3.10**	**213**	Pn	**Pn**	**08 19 43.2**	**-0.1**
	13nm,0.3s,baz=60,slow=20,SNR=4.5						
JHJ				Sn	**Sn**	**08 20 20.2**	**+0.5**
	11nm,0.3s,baz=48,slow=24,SNR=3.2						
KURBB	**Kurchatov Arra**	**47.06**	**309**	P	**P**	**08 27 25.5**	**-0.1**
	0.3nm,0.3s,baz=85,slow=7.3,SNR=4.2						
WRA	**Warramunga Arr**	**55.82**	**189**	P	**P**	**08 28 31.4**	**0.0**
	0.8nm,0.9s,baz=6.7,slow=7.1,SNR=7.9						
ASAR	**Alice Springs**	**59.55**	**188**	P	**P**	**08 28 57.9**	**+0.4**
	0.2nm,0.5s,baz=8.5,slow=7.5,SNR=3.4						

MEX 04 08:22:39.0±0.7, 16°.13N×97°.15W, h8km±8km, MD3.5, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.97**	**286**	*e*P	Pg	08 22 54.3	-3.4
PNIG				*i* S	Sg	08 23 08.0	-2.3
VHO	**Vista Hermosa**	**1.02**	**23**	*e*P	Pg	08 22 56.0	-2.7
VHO				*e*S	Sg	08 23 09.1	-3.0
HUIG	**Huatulco**	**1.07**	**109**	*e*P	Pg	08 22 56.6	-2.9
HUIG				*e*S	Sg	08 23 10.1	-3.3
TLIG	**Tlapa**	**1.97**	**317**	*e*P	Pn	08 23 09.9	-3.0
TLIG				*e*S	Sn	08 23 33.3	-4.5

*ISCJB **04** 08:28:27.7±0.5, 39°.11N±0°.04×29°.00E±0°.03, h3km±6km, Error ellipse: s-maj=6.1km s-min=3.4km az=163.9*
*CSEM **04** 08:28:27.9±0.1, 39°.10N×29°.00E, h2km, MD3.1, Error ellipse: s-maj=3.0km s-min=2.1km az=164.0*

*ISK **04** 08:28:27.8, 39°.12N×29°.02E, h6km, ML2.8*
*DDA **04** 08:28:27.3, 39°.10N×29°.01E, h7km, Md3.1*
ISC 04 08:28:27.9±0.9, 39°.10N±0°.02×29°.01E±0°.02, h11km±8km, n33, σ0s67°/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.23**	**256**	*i* P	**Pg**	**08 28 32.9**	**+0.1**
DEMI				*i* S	**Sg**	**08 28 36.0**	**-0.1**
DEMI	**Demirci**	**0.23**	**256**	P	**Pg**	**08 28 32.9**	**+0.1**
DEMI				S	**Sg**	**08 28 36.0**	**-0.1**
GEDZ	**Gediz**	**0.32**	**100**	*e*PG	**Pb**	**08 28 35.1**	**-0.6**
GEDZ				*e*SG	**Sg**	**08 28 39.6**	**+1.0**
GEDZ	**Gediz**	**0.32**	**100**	*e*Pg	**Pb**	**08 28 35.1**	**-0.6**
GEDZ				*e*Sg	**Sg**	**08 28 39.6**	**+1.0**
GDZ	**Gediz**	**0.37**	**91**	*i* P	**Pg**	**08 28 35.2**	**-0.1**
GDZ				*i* S	**Sg**	**08 28 40.1**	**-0.1**
GDZ	**Gediz**	**0.37**	**91**	P	**Pg**	**08 28 35.2**	**-0.1**
GDZ				S	**Sg**	**08 28 40.2**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**45**	*e*PG	**Pg**	**08 28 37.6**	**-0.1**
TVSB				*e*SG	**Sg**	**08 28 44.0**	**-0.3**
TVSB	**Tavsanli**	**0.50**	**45**	*e*Pg	**Pg**	**08 28 37.6**	**-0.1**
TVSB				*e*Sg	**Sg**	**08 28 44.0**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*PG	**Pg**	**08 28 40.3**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*Pg	**Pg**	**08 28 40.3**	**-0.1**
MANT	**Manisa**	**0.70**	**210**	*i* P	**Pg**	**08 28 40.3**	**-1.2**
MANT				*i* S	**Sg**	**08 28 49.5**	**-1.3**
MANT	**Manisa**	**0.70**	**210**	P	**Pg**	**08 28 40.3**	**-1.2**
MANT				S	**Sg**	**08 28 49.5**	**-1.3**
KHL	**Karahalli**	**0.87**	**152**	*e*PG	**Pb**	**08 28 45.2**	**+0.1**
KHL	**Karahalli**	**0.87**	**152**	*e*Pg	**Pb**	**08 28 45.2**	**+0.1**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pb**	**08 28 46.9**	**+0.4**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pb**	**08 28 46.9**	**+0.4**
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pb**	**08 28 48.0**	**+0.2**
BALB	**Balikesir**	**1.03**	**302**	*e*Pg	**Pb**	**08 28 48.0**	**+0.2**
IGD	**Bursa**	**1.17**	**7**	*i* P	**Pg**	**08 28 48.8**	**-1.7**
IGD				*i* S	**Sg**	**08 29 03.4**	**-2.4**
BALY	**Balya**	**1.25**	**301**	*i* P	**Pg**	**08 28 51.9**	**-0.2**
BALY				*i* S	**Sg**	**08 29 08.0**	**-0.3**
BALY	**Balya**	**1.25**	**301**	P	**Pg**	**08 28 51.8**	**-0.2**
BALY				S	**Sg**	**08 29 08.0**	**-0.3**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pg**	**08 28 52.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pg**	**08 28 52.5**	**+0.2**
BORA	**Eskisehir**	**1.36**	**55**	*i* P	**Pn**	**08 28 53.1**	**+0.1**
BORA				*i* S	**Sn**	**08 29 11.8**	**+0.6**
BORA	**Eskisehir**	**1.36**	**55**	P	**Pn**	**08 28 53.1**	**+0.1**
BORA				S	**Sn**	**08 29 11.8**	**+0.6**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pb**	**08 28 54.3**	**+0.3**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn	**Pb**	**08 28 54.3**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*PN	**Pb**	**08 28 55.4**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*Pn	**Pb**	**08 28 55.4**	**+0.4**
ESKT	**Eskisehir**	**1.49**	**73**	*i* P	**Pn**	**08 28 55.4**	**+0.6**
ESKT				*i* S	**Sg**	**08 29 15.5**	**-0.4**
SEYT	**Eskypehyr**	**1.49**	**73**	P	**Pn**	**08 28 55.4**	**+0.6**
SEYT				S	**Sg**	**08 29 15.5**	**-0.4**
IZM	**Izmir**	**1.53**	**243**	*e*PN	**Pb**	**08 28 56.6**	**+0.2**
IZM	**Izmir**	**1.53**	**243**	*e*Pn	**Pb**	**08 28 56.6**	**+0.2**

*ISCJB **04** 08:35:50.7±0.6, 23°.2S±0°.1×177°.1W±0°.1, h100km, mb4.5/23, Error ellipse: s-maj=19.0km s-min=10.2km az=139.8*
*IDC **04** 08:35:52.5±4.5, 23°.22S×176°.94W, h108km±35km, mb4.1/14, mb1 4.3/15, mb1mx4.1/33, mbtmp4.5/15, MS4.2/1, Ms1 4.2/1, ms1mx2.8/27, Error ellipse: s-maj=41.5km s-min=15.7km az=146.0*
*NEIC **04** 08:35:53.7±1.7, 23°.09S×177°.04W, h116km±14km, mb4.7/10, Error ellipse: s-maj=15.7km s-min=8.1km az=144.0*
ISC 04 08:35:52.1±0.6, 23°.1S±0°.1×177°.1W±0°.1, h100km, n52, σ1s07°/54, mb4.5/23, 7C-1D, South of Fiji Islands

| Code | Station Name | Δ° | AZ° | Ph

UPC	**Upice**	**150.79 343**	⇑*e*PKP	**PKPbc**	**08 55 32.6**	**0.0**
DPC	**Dobruska-Polom**	**150.85 342**	⇑*e*PKP	**PKPbc**	**08 55 33.0**	**+0.2**
DPC			*e*PKPAB	**PKPab**	**08 55 40.9**	**+0.6**
LANS	**Liptovska Anna**	**150.89 337**	*e*	**PKPbc**	**08 55 33.8**	**+0.9**
LANS			*e*		08 55 41.2	
BRG	**Berggiesshubel**	**150.98 345**	*i* PKP	**PKPbc**	**08 55 32.8**	**-0.2**
	comp=Z,16nm,0.6s					
KECS	**Kecovo**	**151.07 335**	*e*	**PKPbc**	**08 55 32.8**	**-0.5**
PVCC	**Panska Ves**	**151.15 344**	⇑*e*PKP	**PKPbc**	**08 55 33.3**	**-0.1**
PRU	**Pruhonice**	**151.65 344**	⇑*e*PKP	**PKPbc**	**08 55 34.2**	**-0.4**
GOPC	**GO Pecny, Ondr**	**151.66 344**	⇑*e*PKP	**PKPbc**	**08 55 34.2**	**-0.5**
NKC	**Novy Kostel**	**151.91 347**	*e*PKPAB	**PKPab**	**08 55 45.0**	**+0.3**
KHC	**Kasperske Hory**	**152.69 345**	⇑*e*PKP	**PKPbc**	**08 55 36.6**	**-0.4**
KHC			*e*PKPAB	**PKPab**	**08 55 48.4**	**+0.4**
GERES	**GERESS Array B**	**152.92 344**	PKPbc	**PKPbc**	**08 55 36.8**	**-0.8**
	comp=Z,1.0nm,0.5s,baz=90,slow=1.3,SNR=8.7					
GERES			PKPab	**PKPab**	**08 55 49.1**	**0.0**
	comp=Z,1.6nm,0.5s,baz=23,slow=5.1,SNR=6.4					

*BJI **04** 08:36:49.7, 41°.09S × 176°.78E, h10km, mb5.3/7, mB5.5/6, Ms5.2/3, Ms7 5.0/4*

*ISCJB **04** 08:36:50.7 ± 0.7, 40°.83S ± 0°.02 × 177°.08E ± 0°.05, h21km ± 4km, mb4.9/19, MS4.0/8, Error ellipse: s-maj=6.8km s-min=2.9km az=29.2*

*WEL **04** 08:36:51.7 ± 0.1, 40°.79S × 177°.01E, h12km, ML5.1/107, Mw4.9, Error ellipse: s-maj=1.3km s-min=0.7km az=90.0*

WEL Felt between Hawke''s Bay and Wellington, maximum reported intensity MM 4.

*NEIC **04** 08:36:51.6, 40°.79S × 177°.02E, h12km, mb5.3/10, ML5.0(WEL), After WEL.*

NEIC Felt in the Waipawa-Wellington area.

*IDC **04** 08:36:52.0 ± 0.8, 40°.51S × 176°.82E, h0km, mb4.4/9, mb1 4.6/10, mb1mx4.4/26, mbtmp4.5/10, ML4.2/1, MS3.9/9, Ms1 3.9/9, ms1mx3.5/23, Error ellipse: s-maj=31.0km s-min=18.2km az=77.0*

ISC 04 08:36:52.2 ± 1.2, 40°.63S × 176°.92E ± 0°.03, h13km ± 6km, n280, σ2s09/281, mb4.9/19, MS3.9/8, 32C-7D, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ANWZ	**Angora Road**	**0.38**	**297**	⇓PG	**Pn**	**08 37 02.3**	**-1.1**
ANWZ				SG	**Sb**	**08 37 08.7**	**+2.1**
ANWZ				AML	AML	08 37 08.8	
PRHZ	**Porangahau**	**0.42**	**329**	P*	**Pn**	**08 37 03.6**	**-0.4**
PRHZ				Sg	**Sb**	**08 37 11.2**	**+3.3**
PRHZ	**Porangahau**	**0.42**	**329**	⇓P*	**Pn**	**08 37 03.6**	**-0.4**
PRHZ				SG	**Sb**	**08 37 11.2**	**+3.3**
PRHZ				AML	AML	08 37 11.3	
BFZ	**Birch Farm**	**0.52**	**264**	*e*Pg	**Pn**	**08 37 04.5**	**-0.8**
BFZ				*e*Sg	**Sb**	**08 37 12.8**	**+2.2**
BFZ	**Birch Farm**	**0.52**	**264**	⇓P*	**Pn**	**08 37 04.6**	**-0.7**
BFZ				SG	**Sb**	**08 37 12.4**	**+1.8**
BFZ				AML	AML	08 37 13.9	
BFZ				AML	AML	08 37 20.4	
BFZ				AML	AML	08 37 20.4	
PXZ	**Pawanui**	**0.60**	**356**	P*	**Pn**	**08 37 07.1**	**+0.6**
PXZ	**Pawanui**	**0.60**	**356**	⇓P*	**Pn**	**08 37 07.1**	**+0.6**
PXZ				AML	AML	08 37 18.1	
PXZ				AML	AML	08 37 18.1	
PXZ				AML	AML	08 37 28.0	
PXZ				AML	AML	08 37 28.0	
CPWZ	**Castlepoint**	**0.61**	**243**	P*	**Pn**	**08 37 06.5**	**-0.1**
CPWZ	**Castlepoint**	**0.61**	**243**	⇑P*	**Pn**	**08 37 06.5**	**-0.1**
CPWZ				AML	AML	08 37 27.0	
CPWZ				AML	AML	08 37 27.0	
DVHZ	**Dannevirke**	**0.66**	**300**	P*	**Pn**	**08 37 06.9**	**-0.4**
DVHZ	**Dannevirke**	**0.66**	**300**	⇑P*	**Pn**	**08 37 06.9**	**-0.4**
DVHZ				AML	AML	08 37 18.6	
DVHZ				AML	AML	08 37 18.6	
WPHZ	**Waipukurau**	**0.67**	**327**	P*	**Pn**	**08 37 07.7**	**+0.2**
WPHZ	**Waipukurau**	**0.67**	**327**	⇑P*	**Pn**	**08 37 07.6**	**+0.2**
WPHZ				AML	AML	08 37 27.1	
WPHZ				AML	AML	08 37 33.7	
PRWZ	**Pori Road**	**0.73**	**276**	P*	**Pn**	**08 37 08.1**	**-0.1**
PRWZ	**Pori Road**	**0.73**	**276**	⇑P*	**Pn**	**08 37 08.1**	**-0.1**
PRWZ				AML	AML	08 37 22.5	
PRWZ				AML	AML	08 37 25.9	
TIWZ	**Tintock**	**0.80**	**259**	P*	**Pn**	**08 37 08.8**	**-0.5**
TIWZ	**Tintock**	**0.80**	**259**	⇑P*	**Pn**	**08 37 08.8**	**-0.5**
TIWZ				AML	AML	08 37 31.0	
TIWZ				AML	AML	08 37 34.3	
KAHZ	**Kahuranaki**	**0.84**	**358**	P*	**Pn**	**08 37 10.6**	**+0.8**
KAHZ	**Kahuranaki**	**0.84**	**358**	P*	**Pn**	**08 37 10.6**	**+0.8**
KAHZ				AML	AML	08 37 35.2	
KAHZ				AML	AML	08 37 41.8	
PNHZ	**Pukenui**	**0.90**	**322**	P*	**Pn**	**08 37 11.0**	**+0.3**
PNHZ	**Pukenui**	**0.90**	**322**	⇑P*	**Pn**	**08 37 11.0**	**+0.3**
PNHZ				AML	AML	08 37 27.4	
PNHZ				AML	AML	08 37 29.5	
POWZ	**Post Office Ro**	**0.91**	**285**	P*	**Pn**	**08 37 10.7**	**-0.1**
POWZ	**Post Office Ro**	**0.91**	**285**	⇑P*	**Pn**	**08 37 10.7**	**-0.1**
POWZ				AML	AML	08 37 30.7	
POWZ				AML	AML	08 37 31.3	
TMWZ	**Te Maipa**	**0.91**	**238**	P*	**Pb**	**08 37 10.0**	**0.0**
TMWZ	**Te Maipa**	**0.91**	**238**	P*	**Pb**	**08 37 10.0**	**0.0**
TMWZ				AML	AML	08 37 36.7	
TMWZ				AML	AML	08 37 37.6	
TSZ	**Takapari Road**	**0.93**	**308**	P*	**Pn**	**08 37 11.0**	**0.0**
TSZ	**Takapari Road**	**0.93**	**308**	⇓P*	**Pn**	**08 37 11.0**	**0.0**
TSZ				AML	AML	08 37 26.6	
TSZ				AML	AML	08 37 27.7	
CKHZ	**Cape Kidnapper**	**0.98**	**7**	P*	**Pn**	**08 37 12.6**	**+0.9**
CKHZ	**Cape Kidnapper**	**0.98**	**7**	P*	**Pn**	**08 37 12.6**	**+0.9**
CKHZ				AML	AML	08 37 51.1	
CKHZ				AML	AML	08 37 56.7	
MRZ	**Mangatainoka R**	**1.02**	**268**	P*	**Pn**	**08 37 11.8**	**-0.5**
MRZ	**Mangatainoka R**	**1.02**	**268**	⇓P*	**Pn**	**08 37 11.8**	**-0.5**
MRZ				AML	AML	08 37 31.3	
MRZ				AML	AML	08 37 31.4	
KRHZ	**Kereru**	**1.07**	**337**	⇑P*	**Pn**	**08 37 13.4**	**+0.4**
KRHZ				AML	AML	08 37 41.8	
KRHZ				AML	AML	08 37 45.7	
HOWZ	**Holdsworth Sta**	**1.10**	**256**	P*	**Pb**	**08 37 12.7**	**-0.4**
HOWZ	**Holdsworth Sta**	**1.10**	**256**	⇑P*	**Pb**	**08 37 12.7**	**-0.4**
HOWZ				AML	AML	08 37 40.7	
HOWZ				AML	AML	08 37 41.5	
MCHZ	**McNeill Hill**	**1.20**	**352**	P*	**Pn**	**08 37 15.8**	**+1.1**
MCHZ	**McNeill Hill**	**1.20**	**352**	⇑PN	**Pn**	**08 37 15.8**	**+1.1**
MCHZ				AML	AML	08 37 58.1	
MCHZ				AML	AML	08 38 03.1	
MTW	**Mount Morrison**	**1.20**	**243**	*e*P*	**Pb**	**08 37 13.6**	**-1.2**
MTW	**Mount Morrison**	**1.20**	**243**	*e*P*	**Pb**	**08 37 13.6**	**-1.2**
MTW				AML	AML	08 37 40.4	
MTW				AML	AML	08 37 45.7	
TRWZ	**Traveller**	**1.21**	**230**	P*	**Pn**	**08 37 13.7**	**-1.2**
TRWZ	**Traveller**	**1.21**	**230**	⇑P*	**Pn**	**08 37 13.6**	**-1.2**
TRWZ				AML	AML	08 37 58.5	
TRWZ				AML	AML	08 38 12.6	
KWHZ	**Kaweka Forest**	**1.26**	**342**	⇑PN	**Pn**	**08 37 16.3**	**+0.6**
KWHZ				AML	AML	08 37 45.0	
KWHZ				AML	AML	08 37 53.4	
OHWZ	**Ohakea**	**1.30**	**289**	⇑P*	**Pg**	**08 37 17.1**	**0.0**
BHHZ	**Black Hill Sta**	**1.32**	**330**	PN	**Pg**	**08 37 16.9**	**-0.6**
BHHZ				AML	AML	08 37 42.2	
BHHZ				AML	AML	08 37 46.8	
OGWZ	**Otaki Gorge**	**1.34**	**261**	P*	**Pb**	**08 37 16.3**	**-0.9**
OGWZ	**Otaki Gorge**	**1.34**	**261**	⇑P*	**Pb**	**08 37 16.3**	**-0.9**
OGWZ				AML	AML	08 37 41.9	
OGWZ				AML	AML	08 37 44.3	
PAWZ	**Paruwai Farm**	**1.36**	**236**	P*	**Pn**	**08 37 15.7**	**-1.2**
PAWZ	**Paruwai Farm**	**1.36**	**236**	P*	**Pn**	**08 37 15.7**	**-1.2**
PAWZ				AML	AML	08 37 52.3	
PAWZ				AML	AML	08 38 08.6	
ARHZ	**Aropaoanui**	**1.37**	**2**	Pn	**Pg**	**08 37 17.9**	**-0.6**
ARHZ	**Aropaoanui**	**1.37**	**2**	⇑PN	**Pg**	**08 37 17.9**	**-0.6**
ARHZ				AML	AML	08 37 53.4	
ARHZ				AML	AML	08 38 03.5	
CAW	**Cannon Point**	**1.48**	**251**	Pn	**Pn**	**08 37 17.9**	**-0.8**
CAW	**Cannon Point**	**1.48**	**251**	⇑PN	**Pn**	**08 37 17.9**	**-0.8**
CAW				AML	AML	08 37 47.9	
CAW				AML	AML	08 37 50.4	
MSWZ	**Moikau Station**	**1.49**	**238**	P*	**Pn**	**08 37 17.2**	**-1.5**
MSWZ	**Moikau Station**	**1.49**	**238**	P*	**Pn**	**08 37 17.2**	**-1.5**
MSWZ				AML	AML	08 37 53.6	
MSWZ				AML	AML	08 38 08.3	
BKZ	**Black Stump Fm**	**1.50**	**347**	*e*Pn	**Pg**	**08 37 19.8**	**-1.2**
BKZ				*e*Sn	**Sg**	**08 37 38.8**	**-1.7**
BKZ	**Black Stump Fm**	**1.50**	**347**	PN	**Pg**	**08 37 19.1**	**-1.9**
BKZ				AML	AML	08 38 05.2	
BKZ				AML	AML	08 38 07.0	
MOVZ	**Moawhango**	**1.52**	**323**	*e*Pn	**Pg**	**08 37 20.2**	**-1.1**
MOVZ	**Moawhango**	**1.52**	**323**	*e*PN	**Pg**	**08 37 20.2**	**-1.1**
MOVZ				AML	AML	08 37 51.6	
MOVZ				AML	AML	08 37 52.7	
NMHZ	**Naumai**	**1.53**	**357**	Pn	**Pg**	**08 37 20.5**	**-1.2**
NMHZ	**Naumai**	**1.53**	**357**	⇑PN	**Pg**	**08 37 20.5**	**-1.2**
NMHZ				AML	AML	08 37 53.5	
NMHZ				AML	AML	08 38 06.7	
KIW	**Kapiti Island**	**1.54**	**261**	Pn	**Pn**	**08 37 19.2**	**-0.3**
KIW	**Kapiti Island**	**1.54**	**261**	⇑PN	**Pn**	**08 37 19.2**	**-0.3**
KIW				AML	AML	08 37 49.6	
KIW				AML	AML	08 37 52.6	
PLWZ	**Palliser**	**1.57**	**233**	Pn	**Pn**	**08 37 18.2**	**-1.6**
PLWZ	**Palliser**	**1.57**	**233**	PN	**Pn**	**08 37 18.2**	**-1.6**
PLWZ				AML	AML	08 38 05.5	
PLWZ				AML	AML	08 38 07.3	
WHHZ	**Waihua**	**1.57**	**9**	⇑PN	**Pg**	**08 37 20.7**	**-1.7**
WHHZ				AML	AML	08 38 12.3	
WHHZ				AML	AML	08 38 18.7	
WNVZ	**Wahianoa**	**1.65**	**322**	Pn	**Pg**	**08 37 22.5**	**-1.4**
WNVZ	**Wahianoa**	**1.65**	**322**	⇑PN	**Pg**	**08 37 22.5**	**-1.4**
MHGZ	**Mahia Peninsul**	**1.66**	**28**	Pn	**Pb**	**08 37 21.8**	**-0.9**
MHGZ	**Mahia Peninsul**	**1.66**	**28**	PN	**Pb**	**08 37 21.8**	**-0.9**
MHGZ				AML	AML	08 38 39.4	
MHGZ				AML	AML	08 38 49.5	
MTVZ	**Mangateitei**	**1.67**	**318**	Pn	**Pg**	**08 37 22.8**	**-1.5**
MTVZ	**Mangateitei**	**1.67**	**318**	PN	**Pg**	**08 37 22.8**	**-1.5**
MTVZ				AML	AML	08 38 01.9	
MTVZ				AML	AML	08 38 16.6	
TUVZ	**Tukino**	**1.67**	**324**	Pn	**Pg**	**08 37 23.0**	**-1.3**
TUVZ	**Tukino**	**1.67**	**324**	PN	**Pg**	**08 37 23.0**	**-1.3**
TUVZ				AML	AML	08 38 00.1	
TUVZ				AML	AML	08 38 12.4	
WHVZ	**Whangaehu Hut**	**1.69**	**322**	Pn	**Pg**	**08 37 23.3**	**-1.4**
WHVZ	**Whangaehu Hut**	**1.69**	**322**	PN	**Pg**	**08 37 23.3**	**-1.4**
WHVZ				AML	AML	08 37 55.1	
WHVZ				AML	AML	08 37 55.1	
TRVZ	**Turoa**	**1.70**	**321**	Pn	**Pg**	**08 37 23.2**	**-1.7**
TRVZ	**Turoa**	**1.70**	**321**	PN	**Pg**	**08 37 23.2**	**-1.7**
TRVZ				AML	AML	08 37 55.1	
TRVZ				AML	AML	08 37 55.3	
KNZ	**Kokohu**	**1.71**	**20**	Pn	**Pb**	**08 37 22.0**	**-1.5**
KNZ	**Kokohu**	**1.71**	**20**	⇑PN	**Pb**	**08 37 22.0**	**-1.5**
KNZ				AML	AML	08 38 17.7	
KNZ				AML	AML	08 38 20.6	
DRZ	**Dome Shelter**	**1.71**	**322**	Pn	**Pg**	**08 37 24.6**	**-0.5**
DRZ	**Dome Shelter**	**1.71**	**322**	PN	**Pg**	**08 37 24.6**	**-0.5**
DRZ				AML	AML	08 37 57.4	
DRZ				AML	AML	08 37 57.6	
RAHZ	**Arahi**	**1.72**	**4**	Pn	**Pg**	**08 37 22.8**	**-2.4**
RAHZ	**Arahi**	**1.72**	**4**	AML	AML	08 38 10.2	
RAHZ				AML	AML	08 38 25.0	
WAZ	**Wanganui**	**1.72**	**300**	Pn	**Pg**	**08 37 23.6**	**-1.7**
WAZ	**Wanganui**	**1.72**	**300**	⇑PN	**Pg**	**08 37 23.6**	**-1.7**
WAZ				AML	AML	08 37 55.4	
WAZ				AML	AML	08 37 56.5	
FWVZ	**Far West T-bar**	**1.73**	**322**	Pn	**Pg**	**08 37 23.8**	**-1.6**
FWVZ	**Far West T-bar**	**1.73**	**322**	PN	**Pg**	**08 37 23.8**	**-1.6**
FWVZ				AML	AML	08 37 56.0	
FWVZ				AML	AML	08 38 03.5	
BHW	**Baring Head**	**1.73**	**243**	Pn	**Pn**	**08 37 20.7**	**-1.3**
BHW	**Baring Head**	**1.73**	**243**	PN	**Pn**	**08 37 20.7**	**-1.3**
BHW				AML	AML	08 38 02.4	
BHW				AML	AML	08 38 11.6	
OTVZ	**Oturere**	**1.75**	**326**	Pn	**Pg**	**08 37 24.4**	**-1.5**
OTVZ	**Oturere**	**1.75**	**326**	PN	**Pg**	**08 37 24.4**	**-1.5**
OTVZ				AML	AML	08 37 59.4	
OTVZ				AML	AML	08 38 10.3	
WEL	**Wellington**	**1.76**	**247**	Pn	**Pn**	**08 37 21.1**	**-1.2**
WEL	**Wellington**	**1.76**	**247**	PN	**Pn**	**08 37 21.1**	**-1.2**
WEL				AML	AML	08 37 58.8	
WEL				AML	AML	08 37 58.8	
WEL				AML	AML	08 38 06.3	
WEL				AML	AML	08 38 06.4	
NGZ	**Ngauruhoe**	**1.77**	**325**	Pn	**Pg**	**08 37 24.6**	**-1.6**
NGZ	**Ngauruhoe**	**1.77**	**325**	PN	**Pg**	**08 37 24.6**	**-1.6**
NGZ				AML	AML	08 38 02.6	
NGZ				AML	AML	08 38 12.3	
PKVZ	**Pokaka**	**1.81**	**317**	*e*Pn	**Pg**	**08 37 24.5**	**-2.3**
PKVZ	**Pokaka**	**1.81**	**317**	*e*PN	**Pg**	**08 37 24.5**	**-2.3**
PKVZ				AML	AML	08 37 59.5	
PKVZ				AML	AML	08 38 10.6	
SNZO	**South Karori**	**1.81**	**247**	*e*Pn	**Pn**	**08 37 22.0**	**-1.1**
SNZO				*e*Sn	**Sn**	**08 37 42.3**	**-3.6**
KRVZ	**Karewarewa**	**1.82**	**327**	*e*Pn	**Pg**	**08 37 24.9**	**-2.3**
KRVZ	**Karewarewa**	**1.82**	**327**	*e*PN	**Pg**	**08 37 24.9**	**-2.3**
KRVZ				AML	AML	08 38 03.6	
KRVZ				AML	AML	08 38 05.5	
WTVZ	**West Tongariro**	**1.83**	**325**	Pn	**Pg**	**08 37 24.9**	**-2.4**
WTVZ	**West Tongariro**	**1.83**	**325**	PN	**Pg**	**08 37 24.9**	**-2.4**
WTVZ				AML	AML	08 38 04.3	
WTVZ				AML	AML	08 38 08.6	
MRHZ	**Matea Rd**	**1.84**	**348**	PN	**Pg**	**08 37 24.8**	**-2.6**
MRHZ				AML	AML	08 37 49.8	
MRHZ				AML	AML	08 38 06.6	
RITZ	**Rihia Road**	**1.84**	**333**	Pn	**Pg**	**08 37 25.5**	**-2.1**
RITZ	**Rihia Road**	**1.84**	**333**	PN	**Pg**	**08 37 25.5**	**-2.1**
RITZ				AML	AML	08 38 05.8	
RITZ				AML	AML	08 38 10.6	
PRZ	**Paritu Road**	**1.86**	**24**	Pn	**Pb**	**08 37 24.3**	**-1.7**
PRGZ	**Paritu Road**	**1.86**	**24**	PN	**Pb**	**08 37 24.3**	**-1.7**
PRGZ				AML	AML	08 38 19.9	
PRGZ				AML	AML	08 38 20.0	
SNGZ	**Shannon Statio**	**1.88**	**10**	Pn	**Pb**	**08 37 24.5**	**-1.8**
SNGZ	**Shannon Statio**	**1.88**	**10**	⇑PN	**Pb**	**08 37 24.5**	**-1.8**
SNGZ				AML	AML	08 38 16.3	
SNGZ				AML	AML	08 38 38.6	
KATZ	**Kakaramea**	**1.90**	**330**	Pn	**Pg**	**08 37 26.3**	**-2.5**
KATZ	**Kakaramea**	**1.90**	**330**	PN	**Pg**	**08 37 26.3**	**-2.5**
KATZ				AML	AML	08 38 04.8	
KATZ				AML	AML	08 38 06.2	
TWVZ	**Taurewa**	**1.93**	**323**	Pn	**Pg**	**08 37 26.4**	**-2.9**
TWVZ	**Taurewa**	**1.93**	**323**	PN	**Pg**	**08 37 26.4**	**-2.9**
TWVZ				AML	AML	08 38 04.5	
TWVZ				AML	AML	08 38 09.9	
RATZ	**Rangitukua**	**1.97**	**333**	Pn	**Pg**	**08 37 27.1**	**-2.9**
RATZ	**Rangitukua**	**1.97**	**333**	PN	**Pg**	**08 37 27.1**	**-2.9**
RATZ				AML	AML	08 38 17.0	
RATZ				AML	AML	08 38 19.8	
RTZ	**Ruatahuna**	**2.01**	**1**	⇑PN	**Pb**	**08 37 26.6**	**-2.1**
RIGZ	**Rimuhau**	**2.03**	**19**	PN	**Pb**	**08 37 26.4**	**-2.6**
RIGZ				AML	AML	08 38 31.9	
RIGZ				AML	AML	08 38 42.5	
TCW	**Tory Channel**	**2.08**	**253**	Pn	**Pn**	**08 37 26.1**	**-0.8**
TCW	**Tory Channel**	**2.08**	**253**	PN	**Pn**	**08 37 26.1**	**-0.8**
TCW				AML	AML	08 38 09.6	
TCW				AML	AML	08 38 12.4	
ALRZ	**Allen Road**	**2.11**	**348**	Pn	**Pb**	**08 37 28.2**	**-2.2**
ALRZ	**Allen Road**	**2.11**	**348**	PN	**Pb**	**08 37 28.2**	**-2.2**
ALRZ				AML	AML	08 38 15.3	
ALRZ				AML	AML	08 38 20.8	
WATZ	**Wairara**	**2.13**	**334**	Pn	**Pb**	**08 37 28.6**	**-2.0**
WATZ	**Wairara**	**2.13**	**334**	PN	**Pb**	**08 37 28.6**	**-2.0**
WATZ				AML	AML	08 38 19.5	
WATZ				AML	AML	08 38 24.8	
MUGZ	**Murupara**	**2.15**	**357**	PN	**Pb**	**08 37 28.8**	**-2.3**
RAGZ	**Rawiri**	**2.17**	**10**	Pn	**Pb**	**08 37 28.4**	**-3.0**
RAGZ	**Rawiri**	**2.17**	**10**	PN	**Pb**	**08 37 28.4**	**-3.0**
RAGZ				AML	AML	08 38 41.2	
RAGZ				AML	AML	08 38 43.2	
PRRZ	**Plateau Road**	**2.17**	**349**	Pn	**Pb**	**08 37 29.1**	**-2.3**
PRRZ	**Plateau Road**	**2.17**	**349**	⇑PN	**Pb**	**08 37 29.0**	**-2.3**
PRRZ				AML	AML	08 38 25.8	
PRRZ				AML	AML	08 38 44.3	
WPRZ	**Whakapapatarin**	**2.19**	**344**	Pn	**Pb**	**08 37 29.5**	**-2.1**
WPRZ	**Whakapapatarin**	**2.19**	**344**	PN	**Pb**	**08 37 29.5**	**-2.1**
WPRZ				AML	AML	08 38 22.8	
WPRZ				AML	AML	08 38 35.5	
VRZ	**Vera Road**	**2.24**	**311**	Pn	**Pb**	**08 37 30.6**	**-2.0**
VRZ	**Vera Road**	**2.24**	**311**	PN	**Pb**	**08 37 30.6**	**-2.0**
VRZ				AML	AML	08 38 19.5	
VRZ				AML	AML	08 38 22.7	
LREZ	**Lake Rotokare**	**2.26**	**300**	PN	**Pb**	**08 37 31.4**	**-1.4**
LREZ				AML	AML	08 38 14.8	
LREZ				AML	AML	08 38 28.9	
HRRZ	**Handcock Road**	**2.29**	**347**	Pn	**Pb**	**08 37 31.1**	**-2.4**
HRRZ	**Handcock Road**	**2.29**	**347**	PN	**Pb**	**08 37 31.1**	**-2.4**
HRRZ				AML	AML	08 38 28.7	
HRRZ				AML	AML	08 38 35.9	
KUTZ	**Kaahu Road**	**2.30**	**338**	Pn	**Pb**	**08 37 30.8**	**-2.8**
KUTZ	**Kaahu Road**	**2.30**	**338**	⇑PN	**Pb**	**08 37 30.8**	**-2.8**
KUTZ				AML	AML	08 38 21.3	
KUTZ				AML	AML	08 38 34.5	
TKGZ	**Te Karaka**	**2.30**	**18**	Pn	**Pn**	**08 37 30.3**	**+0.4**
TKGZ	**Te Karaka**	**2.30**	**18**	⇑PN	**Pn**	**08 37 30.3**	**+0.4**
TKGZ				AML	AML	08 38 09.6	
TKGZ				AML	AML	08 38 24.8	
RRRZ	**Republican Roa**	**2.31**	**352**	Pn	**Pb**	**08 37 30.8**	**-3.0**
RRRZ	**Republican Roa**	**2.31**	**352**	⇑PN	**Pb**	**08 37 30.8**	**-3.0**
RRRZ				AML	AML	08 38 27.6	
RRRZ				AML	AML	08 38 36.0	
CMWZ	**Cape Campbell**	**2.33**	**240**	AML	AML	08 38 27.5	
CMWZ				AML	AML	08 38 35.3	
MWZ	**Matawai**	**2.34**	**12**	Pn	**Pn**	**08 37 30.4**	**0.0**
MWZ	**Matawai**	**2.34**	**12**	PN	**Pn**	**08 37 30.4**	**0.0**
MWZ				AML	AML	08 38 32.1	
MWZ				AML	AML	08 38 32.6	
MWZ				AML	AML	08 38 48.3	
MWZ				AML	AML	08 38 48.4	
CNGZ	**Carnagh Statio**	**2.36**	**25**	Pn	**Pn**	**08 37 31.4**	**+0.7**
CNGZ	**Carnagh Statio**	**2.36**	**25**	PN	**Pn**	**08 37 31.4**	**+0.7**
CNGZ				AML	AML	08 38 43.7	
CNGZ				AML	AML	08 38 54.6	
URZ	**Urewera**	**2.37**	**4**	Pn	**Pn**	**08 37 31.0**	**+0.2**
	71nm,0.3s,baz=216,slow=6.8,SNR=307						
URZ				Sn	**Sb**	**08 37 59.1**	**-4.9**
	129nm,0.3s,baz=320,slow=23,SNR=14						
URZ				LR	LR	08 38 44.1	
	comp=Z,2μm,18.8s,baz=271,slow=50						
URZ	**Urewera**	**2.37**	**4**	*e*Pn	**Pb**	**08 37 31.4**	**-3.4**
URZ				Sn	**Sb**	**08 37 59.1**	**-4.9**
URZ	**Urewera**	**2.37**	**4**	PN	**Pn**	**08 37 31.0**	**+0.2**
URZ				AML	AML	08 38 35.5	
URZ				AML	AML	08 38 37.6	
HSRZ	**Hossack Road**	**2.37**	**347**	PN	**Pb**	**08 37 31.7**	**-3.1**
HSRZ				AML	AML	08 38 24.8	
HSRZ				AML	AML	08 38 24.8	
TUWZ	**Tuamarina**	**2.39**	**250**	Pn	**Pn**	**08 37 29.5**	**-1.6**
TUWZ	**Tuamarina**	**2.39**	**250**	PN	**Pn**	**08 37 29.5**	**-1.6**
TUWZ				AML	AML	08 38 17.5	
TUWZ				AML	AML	08 38 24.2	
TARZ	**Mount Tarawera**	**2.41**	**352**	Pn	**Pb**	**08 37 32.5**	**-3.0**
TARZ	**Mount Tarawera**	**2.41**	**352**	⇑PN	**Pb**	**08 37 32.5**	**-3.0**
TARZ				AML	AML	08 38 38.9	
TARZ				AML	AML	08 38 46.9	
HLRZ	**Highlands Stat**	**2.42**	**349**	PN	**Pb**	**08 37 33.1**	**-2.5**
HLRZ				AML	AML	08 38 15.9	
HLRZ				AML	AML	08 38 42.5	
PREZ	**Palmer Road**	**2.48**	**300**	Pn	**Pb**	**08 37 35.0**	**-1.7**
PREZ	**Palmer Road**	**2.48**	**300**	PN	**Pb**	**08 37 35.0**	**-1.7**
PREZ				AML	AML	08 38 31.4	
PREZ				AML	AML	08 38 37.1	
MHEZ	**Mangahewa**	**2.53**	**307**	Pn	**Pb**	**08 37 35.8**	**-1.7**
MHEZ	**Mangahewa**	**2.53**	**307**	PN	**Pb**	**08 37 35.8**	**-1.7**
TLZ	**Tolley Road**	**2.54**	**335**	PN	**Pb**	**08 37 33.7**	**-3.9**
DREZ	**Durham Road**	**2.54**	**304**	Pn	Pg	08 37 43.9	+3.0
DREZ	**Durham Road**	**2.54**	**304**	PN	**Pb**	**08 37 35.4**	**-2.2**
BSWZ	**Blackbirch Sta**	**2.54**	**244**	Pn	**Pn**	**08 37 31.6**	**-1.5**
BSWZ	**Blackbirch Sta**	**2.54**	**244**	PN	**Pn**	**08 37 31.6**	**-1.5**
BSWZ				AML	AML	08 38 24.7	
BSWZ				AML	AML	08 38 43.8	
OMRZ	**Omania**	**2.56**	**350**	PN	**Pb**	**08 37 34.0**	**-4.0**
OMRZ				AML	AML	08 39 06.1	
OMRZ				AML	AML	08 39 19.9	
NEZ	**North Egmont**	**2.56**	**301**	Pn	**Pb**	**08 37 35.7**	**-2.4**
NEZ	**North Egmont**	**2.56**	**301**

RPZ				Sn	**Sn**	08 39 05.9	**-7.1**	
	45nm,0.3s,baz=314,slow=22,SNR=36							
RPZ	**Rata Peaks**	**5.34**	**233**	*e*Pn	**Pn**	08 38 09.7	**-1.9**	
RPZ				*e*Sn	**Sn**	08 39 06.7	**-6.3**	
RPZ	**Rata Peaks**	**5.34**	**233**	PN	**Pn**	08 38 09.4	**-2.2**	
RPZ				AML	AML	08 39 52.0		
RPZ				AML	AML	08 40 11.1		
CTZ	**Chatham Island**	**5.72**	**125**	Pn	**Pn**	08 38 18.4	**+1.6**	
CTZ	**Chatham Island**	**5.72**	**125**	PN	**Pn**	08 38 18.1	**+1.4**	
FOZ	**Fox Glacier**	**6.03**	**239**	*e*Pn	**Pn**	08 38 19.4	**-1.7**	
FOZ	**Fox Glacier**	**6.03**	**239**	PN	**Pn**	08 38 19.9	**-1.1**	
FOZ				AML	AML	08 39 57.3		
FOZ				AML	AML	08 39 57.7		
LBZ	**Lake Benmore**	**6.23**	**231**	*e*Pn	**Pn**	08 38 21.6	**-2.2**	
LBZ	**Lake Benmore**	**6.23**	**231**	PN	**Pn**	08 38 22.9	**-0.9**	
LBZ				AML	AML	08 39 40.3		
LBZ				AML	AML	08 40 33.6		
ODZ	**Otahua Downs**	**6.38**	**224**	*e*Pn	**Pn**	08 38 24.8	**-1.1**	
ODZ	**Otahua Downs**	**6.38**	**224**	⇑PN	**Pn**	08 38 24.7	**-1.1**	
ODZ				AML	AML	08 39 47.6		
ODZ				AML	AML	08 43 39.2		
JCZ	**Jackson Bay**	**6.94**	**238**	Pn	**Pn**	08 38 31.7	**-2.0**	
JCZ	**Jackson Bay**	**6.94**	**238**	PN	**Pn**	08 38 31.7	**-2.0**	
JCZ				AML	AML	08 40 29.4		
JCZ				AML	AML	08 40 37.0		
EAZ	**Earnscleugh**	**7.23**	**228**	PN	**Pn**	08 38 35.2	**-2.4**	
EAZ				AML	AML	08 39 54.9		
EAZ				AML	AML	08 40 20.3		
TUZ	**Tuapeka**	**7.52**	**223**	Pn	**Pn**	08 38 40.5	**-1.0**	
TUZ	**Tuapeka**	**7.52**	**223**	PN	**Pn**	08 38 40.5	**-1.0**	
TUZ				AML	AML	08 40 30.8		
TUZ				AML	AML	08 40 34.6		
DZM	**Mont Dzumac**	**20.52**	**331**	*e*P	Pn	08 41 32.4	-0.1	
	75nm,1.2s							
DZM				*e*LR	LR	08 46 24.7		
	489nm,21.4s							
DZM	**Mont Dzumac**	**20.52**	**331**	P	Pn	08 41 30.5	-2.1	
	12nm,1.1s,baz=152,slow=17,SNR=4.2							
DZM				LR	LR	08 49 23.4		
	comp=Z,669nm,18.7s,baz=162,slow=37							
DZM	**Mont Dzumac**	**20.52**	**331**	*e*P	Pn	08 41 33.7	+1.2	
	38nm,1.2s							
EIDS	**Eidsvold**	**26.35**	**297**	*e*P	**P**	**08 42 26.1**	**-2.0**	
	50nm,1.8s							
STKA	**Stephens Creek**	**29.64**	**276**	LR	LR	08 54 38.1		
	comp=Z,254nm,18.5s,baz=75,slow=36							
TBI	**Tubuai**	**33.06**	**69**	*e*T	T	09 18 04.8		
	17nm,0.3s							
CTA	**Charters Tower**	**33.20**	**299**	P	**P**	**08 43 30.3**	**+1.5**	
	6.9nm,0.7s,baz=131,slow=13,SNR=5.0							
PAE	**Paea**	**36.80**	**61**	*e*T	T	09 22 46.9		
	9.0nm,0.3s							
PPT2	**Papeete2**	**36.85**	**61**	*e*LR	LR	08 53 56.0		
	215nm,24.8s							
PPT2	**Papeete2**	**36.85**	**61**	*e*T	T	09 22 51.3		
	7.6nm,0.3s							
PPT	**Papeete**	**36.87**	**61**	LR	LR	08 57 06.9		
	comp=Z,222nm,19.8s,baz=240,slow=33							
TVO	**Taravao**	**36.94**	**62**	*e*T	T	09 22 57.1		
	1.7nm,0.3s							
VNDA	**Vanda**	**37.53**	**185**	P	**P**	**08 44 09.5**	**+4.0**	
	0.9nm,0.8s,baz=346,slow=7.6,SNR=5.5							
COEN	**Coen**	**39.66**	**302**	*e*P	**P**	**08 44 25.2**	**+1.2**	
	34nm,1.3s							
AS01	**Alice Springs**	**39.69**	**282**	*e*P	**P**	**08 44 24.0**	**-0.3**	
ASAR	**Alice Springs**	**39.72**	**282**	P	**P**	**08 44 24.4**	**-0.2**	
	4.2nm,0.6s,baz=129,slow=8.7,SNR=6.3							
ASAR				LR	LR	09 01 31.7		
	comp=Z,338nm,18.4s,baz=130,slow=37							
PMG	**Port Moresby**	**40.78**	**311**	P	**P**	**08 44 34.6**	**+1.4**	
	27nm,0.6s,baz=111,slow=5.8,SNR=9.1							
PMG	**Port Moresby**	**40.78**	**311**	*e*P	**P**	**08 44 35.6**	**+2.3**	
	130nm,1.5s							
WRAB	**Tennant Creek**	**41.66**	**287**	*e*P	**P**	**08 44 41.0**	**+0.5**	
	50nm,1.8s							
WRA	**Warramunga Arr**	**41.66**	**287**	P	**P**	**08 44 40.7**	**+0.2**	
	3.9nm,0.4s,baz=126,slow=8.2,SNR=8.7							
RABL	**Rabaul**	**42.57**	**322**	*e*P	**P**	**08 44 49.4**	**+1.4**	
	115nm,0.7s							
RKT	**Rikitea**	**43.85**	**82**	*e*LR	LR	08 57 00.2		
	192nm,29.2s							
TAOE	**Nuku Hiva Isla**	**49.47**	**62**	*e*S	**S**	**08 52 45.2**	**-4.5**	
	2µm,29.5s							
TAOE				*e*LR	LR	08 59 45.5		
	185nm,23.5s							
MAW	**Mawson**	**61.30**	**204**	LR	LR	09 13 12.0		
	comp=Z,139nm,18.4s,baz=67,slow=36							
GUMO	**Guam**	**61.59**	**324**	LR	LR	09 09 45.9		
	comp=Z,46nm,21.1s,baz=149,slow=32							
KAPI	**Kappang**	**62.13**	**289**	*e*P	**P**	**08 47 15.3**	**+2.0**	
	23nm,1.1s							
SYO	**Syowa Base**	**66.21**	**195**⇑	*e*P	**P**	**08 47 39.8**	**+0.7**	
SYO	**Syowa Base**	**66.21**	**195**⇑	*e*PcP	**PcP**	**08 48 05.3**	**-3.9**	
ROC1	**El Roble**	**83.62**	**128**	*e*P	P	08 49 16.8	-4.0	
	16nm,0.5s							
MJAR	**Matsushiro Arr**	**84.62**	**330**	P	**P**	**08 49 26.7**	**+1.5**	
	1.9nm,1.0s,baz=149,slow=7.4,SNR=4.1							
QIZ	**Qiongzhong**	**85.97**	**299**	P	**P**	**08 49 31.9**	**-0.4**	
QIZ				S	**S**	**09 00 09.4**	**+3.4**	
QIZ				pmax	pmax			
	comp=Z,7.0nm,1.8s							
QIZ				LR	LR			
	comp=Z,100nm,6.7s							
KSRS	**Korea Array**	**89.74**	**323**	P	**P**	**08 49 51.6**	**+1.7**	
	2.7nm,0.9s,baz=146,slow=5.9,SNR=7.4							
KSAR	**Wonju Array Be**	**89.75**	**323**	P	**P**	**08 49 51.6**	**+1.6**	
KS01	**Wonju Array Si**	**89.77**	**323**	*e*P	**P**	**08 49 51.9**	**+1.9**	
WHN	**Wuhan**	**91.46**	**310**	P	**P**	**08 50 00.8**	**+2.7**	
CMAR	**Chiang Mai Arr**	**93.08**	**292**	P	**P**	**08 50 07.6**	**+1.7**	
	1.6nm,0.8s,baz=144,slow=2.6,SNR=6.8							
CMAR				LR	LR	09 37 00.4		
	comp=Z,32nm,18.1s,baz=190,slow=39							
GYA	**Guiyang**	**93.27**	**302**	P	**P**	**08 50 07.2**	**+0.4**	
GYA				PP	**PP**	**08 53 55.0**	**+4.1**	
GYA				SKS	**SKSac**	**09 00 39.2**	**-1.6**	
GYA				S	**S**	**09 01 12.8**	**-1.1**	
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
PETK	**Petropavlovsk-**	**94.83**	**349**	LR	LR	09 29 10.6		
	comp=Z,42nm,19.5s,baz=140,slow=33							
KMI	**Kunming**	**94.92**	**299**	P	**P**	**08 50 15.3**	**+0.8**	
KMI				pmax	pmax			
	comp=Z,13nm,0.8s							
KMI				pmax	pmax			
	comp=Z,100nm,5.4s							
MWC	**Mount Wilson**	**95.56**	**49**	*e*P	P	08 50 11.6	-5.6	
	27nm,0.6s							
ISA	**Isabella, Lake**	**96.36**	**48**	*e*P	**P**	**08 50 21.1**	**+0.5**	
	14nm,0.3s							
CD2	**Chengdu**	**98.17**	**304**	*e*P	Pdif	08 50 28.8	-0.1	
LZH	**Lanzhou**	**101.59**	**308**	*e*P	**Pdif**	**08 50 46.7**	**+2.5**	
LZH				pP	pP	08 50 51.5	+2.8	
LZH				sP		08 50 54.1		
WMQ	**Urumqi**	**116.11**	**306**	*e*PKP	**PKPdf**	**08 55 30.6**	**-4.1**	
MKAR	**Makanchi Array**	**120.90**	**307**	PKP	**PKPdf**	**08 55 44.5**	**+0.7**	
	1.5nm,0.7s,baz=96,slow=1.2,SNR=12							
KSH	**Kashi**	**121.53**	**297**	*e*PKP	**PKPdf**	**08 55 43.0**	**-2.3**	
KSH				*e*PP	**PP**	**08 57 23.8**	**+5.9**	
KSH				SKS	**SKSdf**	**09 02 50.0**	**-7.0**	
KSH				SKKS	**SKKSac**	**09 04 13.7**	**-2.8**	
KSH				AMB	AMB			
	comp=Z,48nm,3.8s							
KSH				LR	LR			
	comp=N,150nm,5.5s							
KSH				LR	LR			
	comp=E,120nm,7.5s							
KSH				LR	LR			
	comp=Z,180nm,6.5s							
ZALV	**Zalesovo Beam**	**122.66**	**315**	PKP	**PKPdf**	**08 55 47.0**	**+0.1**	
	0.5nm,0.3s,baz=80,slow=3.2,SNR=3.6							
KBZ	**Khabaz**	**146.12**	**291**	PKPbc	**PKPab**	**08 56 32.8**	**+0.5**	
	3.4nm,0.9s,baz=161,slow=1.3,SNR=6.5							
DBIC	**Dimbokro**	**146.15**	**177**	PKPbc	**PKPab**	**08 56 34.6**	**+1.5**	
	3.1nm,0.8s,baz=144,slow=5.8,SNR=3.8							
ARCES	**ARCESS Array B**	**147.38**	**342**	PKPbc	**PKPab**	**08 56 36.0**	**-0.5**	
	20nm,0.7s,baz=45,slow=2.1,SNR=59							
BRTR	**Keskin Array B**	**152.06**	**280**	PKPbc	**PKPbc**	**08 56 48.5**	**+1.3**	
	6.4nm,0.8s,baz=140,slow=5.5,SNR=16							
TORD	**Torodi Ar. Bea**	**152.30**	**190**	PKPbc	**PKPbc**	**08 56 49.4**	**+1.2**	
	0.8nm,0.6s,baz=155,slow=3.8,SNR=10							
TORD				PKPab	**PKPab**	**08 56 59.4**	**+1.4**	
	2.4nm,0.8s,baz=157,slow=3.1,SNR=6.1							
FINES	**FINESS Array B**	**152.65**	**329**	PKPbc	**PKPbc**	**08 56 49.0**	**+1.4**	
	5.4nm,0.7s,baz=85,slow=4.6,SNR=14							

*IDC **04** 08:46:22.4±10.0, 51.97°N×172.81°W, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.4/45, mbtmp3.4/5, ML3.3/1, MS2.6/1, Ms1 2.7/1, ms1mx2.2/28, Error ellipse: s-maj=204.9km s-min=50.4km az=77.0*
*ISCJB **04** 08:46:32.9±1.1, 52.0°N±0.1×171.59°W±0.07, h54km±11km, mb3.4/4, Error ellipse: s-maj=25.4km s-min=4.4km az=166.0*
*NEIC **04** 08:46:33.0, 51.99°N×171.62W, h55km, ML3.3(AEIC), After AEIC.*

ISC 04 08:46:33.8±2.2, 52.0°N±0.3×171.61W±0.07, h46km±21km, n26, σ1°10/27, mb3.5/4, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOSE	**Korovin Southe**	**1.54**	**284**	P	**Pn**	**08 46 59.2**	**+0.3**
KOSE				S	**Sn**	**08 47 18.3**	**+0.6**
KOFP	**Korovin Flat P**	**1.56**	**281**	P	**Pn**	**08 46 58.8**	**-0.4**
KOFP				S	**Sn**	**08 47 17.5**	**-0.7**
KOKL	**Mount Kliuchef**	**1.63**	**283**	P	**Pn**	**08 47 00.2**	**+0.1**
KOKL				S	**Sn**	**08 47 21.1**	**+1.2**
NIKH	**Nikolski High**	**1.95**	**59**	P	**Pn**	**08 47 02.6**	**-1.9**
NIKH				S	**Sn**	**08 47 25.9**	**-1.8**
OKWR	**Okmok West Rim**	**2.52**	**54**	P	**Pn**	**08 47 13.0**	**+0.6**
OKAK	**Okmok**	**2.53**	**50**	P	**Pn**	**08 47 11.2**	**-1.2**
OKAK				S	**Sn**	**08 47 42.0**	**0.0**
OKTU	**Okmok Mt. Tuli**	**2.58**	**56**	P	**Pn**	**08 47 13.5**	**+0.4**
OKER	**Okmok East Rim**	**2.61**	**55**	P	**Pn**	**08 47 13.1**	**-0.5**
GSTR	**Great Sitkin T**	**2.75**	**274**	P	**Pn**	**08 47 15.2**	**-0.2**
GSCK	**Great Sitkin C**	**2.81**	**272**	P	**Pn**	**08 47 15.9**	**-0.4**
ADAG	**Mount Adagdak**	**3.09**	**272**	P	**Pn**	**08 47 20.2**	**+0.2**
MSOM	**Makushin Julie**	**3.36**	**55**	P	**Pn**	**08 47 24.5**	**+0.8**
MTBL	**Makushin Table**	**3.58**	**55**	P	**Pn**	**08 47 28.5**	**+1.7**
UNV	**Unalaska Valle**	**3.60**	**57**	P	**Pn**	**08 47 27.3**	**+0.2**
UNV				S	**Sn**	**08 48 08.1**	**-0.2**
AKUT	**Akutan**	**4.12**	**56**	*e*Pn	**Pn**	**08 47 35.8**	**+1.6**
AKUT				*e*Sn	**Sn**	**08 48 23.9**	**+2.9**
ILAR	**Eielson Array**	**18.05**	**35**	P	**P**	**08 50 40.3**	**-0.5**
	0.0nm,0.3s,baz=231,slow=10,SNR=3.7						
ILAR				LR	LR	08 58 13.5	
	comp=Z,19nm,18.9s,baz=224,slow=38						
INK	**Inuvik**	**24.42**	**34**	P	**P**	**08 51 46.2**	**-1.3**
	0.6nm,0.5s,baz=240,slow=8.1,SNR=3.3						
YKA	**Yellowknife Ar**	**31.52**	**48**	P	**P**	**08 52 50.6**	**-0.4**
	0.4nm,0.6s,baz=287,slow=8.3,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**36.32**	**216**	T	T	09 32 00.9	
	baz=21,slow=75,SNR=6.2						
H11N3	**WAKE ISLAND Hy**	**36.33**	**216**	T	T	09 32 01.9	
	baz=21,slow=75,SNR=4.5						
H11N1	**WAKE ISLAND Hy**	**36.34**	**216**	T	T	09 31 57.6	
	baz=21,slow=75,SNR=5.9						
H11S1	**WAKE ISLAND Hy**	**37.52**	**215**	T	T	09 33 31.2	
	baz=29,slow=74,SNR=8.2						
H11S2	**WAKE ISLAND Hy**	**37.53**	**215**	T	T	09 33 30.7	
	baz=29						
H11S3	**WAKE ISLAND Hy**	**37.54**	**215**	T	T	09 33 33.8	
	baz=29,slow=74						
PDAR	**Pinedale Array**	**41.83**	**77**	P	**P**	**08 54 19.6**	**+0.4**
	0.7nm,0.6s,baz=329,slow=5.5,SNR=5.0						
TXAR	**Lajitas Array**	**54.14**	**87**	P	**P**	**08 55 54.6**	**+0.4**
	0.4nm,0.6s,baz=299,slow=5.2,SNR=9.8						

*GUC **04** 09:12:30.5±0.5, 32.84S×70.92W, h60km±4km, ML3.2*
*SJA **04** 09:12:35.8±1.0, 32.64S×70.41W, h90km±13km, ML2.6, MW3.2*

ISC 04 09:12:32.8±1.4, 32.75S±0.05×70.63W±0.06, h6km±16km, n20, σ1°14/26, 2D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROCH	**El Roble**	**0.39**	**235**⇓	*e*P	**Pg**	**09 12 40.0**	**-0.3**
ROCH				*e*S	**Sg**	**09 12 47.0**	**+1.5**
ROCH				IAML		09 12 50.1	
	comp=N,1µm,0.5s						
PEL	**Peldehue**	**0.39**	**186**	*e*P	**Pg**	**09 12 41.1**	**+0.7**
PEL				*e*S	**Sb**	**09 12 49.2**	**+0.6**
PEL				IAML		09 12 49.8	
	comp=N,7µm,0.2s						
FCH	**Farellones**	**0.64**	**154**	*e*P	**Pg**	**09 12 45.7**	**+0.5**
FCH				*e*S	**Sb**	**09 12 57.3**	**+1.3**
CLCH	**Cerro Calan**	**0.65**	**173**⇓	*e*P	**Pg**	**09 12 44.3**	**-1.0**
CLCH				*e*S	**Sg**	**09 12 54.7**	**+1.0**
CLCH				IAML		09 12 55.6	
	comp=N,2µm,0.3s						
ANTU	**Antumapu**	**0.81**	**180**	*e*P	**Pg**	**09 12 45.7**	**-2.8**
ANTU				*e*S	**Sg**	**09 12 57.1**	**-2.0**
ANTU				IAML		09 12 58.0	
	comp=E,2µm,0.5s						
AUSP	**Uspallata**	**1.18**	**64**	*e*P	**Pb**	**09 12 56.2**	**+0.5**
AUSP				*e*S	**Sb**	**09 13 12.1**	**+0.8**
ARCO	**CERRO ARCO**	**1.44**	**94**	*e*P	**Pn**	**09 13 00.1**	**+0.7**
ARCO				IAML		09 13 26.8	
	comp=Z,58nm,0.5s						
RTLS	**Leoncito**	**1.48**	**50**	*e*P	**Pn**	**09 13 00.5**	**+0.2**
ASAL	**Salagasta**	**1.52**	**84**	*e*P	**Pn**	**09 13 01.2**	**+0.6**
AAGR	**Agrelo**	**1.55**	**103**	*e*P	**Pn**	**09 13 01.2**	**+0.1**
RTCV	**Cerro Valdivia**	**1.98**	**64**	*e*P	**Pn**	**09 13 06.8**	**-0.1**
ACCO	**Cerro Coronel**	**2.54**	**32**	*e*P	**Pn**	**09 13 14.2**	**-0.7**
ACCO				IAML		09 13 48.9	
	comp=Z,29nm,0.3s						
AMOG	**MOGNA**	**2.57**	**46**	*e*P	**Pn**	**09 13 14.2**	**-0.8**
AROD	**Rodeo**	**2.76**	**21**	*e*P	**Pn**	**09 13 18.6**	**+0.8**
ACDV	**Cuesta del Vie**	**2.88**	**27**	*e*P	**Pn**	**09 13 19.0**	**-0.4**
ACAN	**Cantantal**	**2.95**	**82**	*e*P	**Pn**	**09 13 19.5**	**-0.7**
AVFE	**Valle Fertil**	**3.42**	**53**	*e*P	**Pn**	**09 13 25.6**	**-1.1**
ACHE	**Chepes**	**3.73**	**66**	*e*P	**Pn**	**09 13 29.5**	**-1.5**
AGUA	**GUANDACOL**	**3.74**	**30**	*e*P	**Pn**	**09 13 30.4**	**-0.7**
VCA	**Vinchina**	**4.51**	**28**	*e*P	**Pn**	**09 13 40.7**	**-1.2**
VCA				IAML		09 14 18.3	
	comp=Z,11nm,0.3s						

IDC 04 09:15:40.0±9.4, 18.11N×148.01E, h45km±72km, mb3.3/4, mb1 3.6/5, mb1mx3.3/39, mbtmp3.7/5, ML4.3/1, Error ellipse: s-maj=99.8km s-min=27.2km az=83.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**5.41**	**214**	P	Pn	09 16 58.8	+0.6
	9.4nm,0.3s,baz=98,slow=12,SNR=6.7						
GUMO				S	Sn	09 17 59.4	+0.1
	5.5nm,0.3s,baz=35,slow=18,SNR=2.4						
WRA	**Warramunga Arr**	**40.12**	**200**	P	P	09 23 11.4	-0.2
	0.3nm,0.4s,baz=26,slow=9.1,SNR=9.7						
ASAR	**Alice Springs**	**43.74**	**199**	P	P	09 23 41.4	+0.2
	0.4nm,0.7s,baz=21,slow=8.7,SNR=5.3						
ZALV	**Zalesovo Beam**	**59.82**	**322**	P	P	09 25 40.5	-0.2
	0.6nm,0.3s,baz=92,slow=7.4,SNR=3.6						
MKAR	**Makanchi Array**	**60.45**	**314**	P	P	09 25 45.0	-0.2
	0.1nm,0.3s,baz=93,slow=6.2,SNR=2.0						

*JMA **04** 09:32:31.4±0.1, 24.08N×122.59E, h46km±4km, M2.2*
*TAP **04** 09:32:32.2, 24.04N×122.57E, h26km±1km, ML3.0, D*

ISC 04 09:32:29.4±1.2, 24.04N±0.05×122.62E±0.02, h15km±10km, n24, σ0°70/44, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.51**	**36**	P	**Pn**	**09 32 42.3**	**+0.1**
JYNG				S	**Sn**	**09 32 50.0**	**-0.7**
YOJ	**Yonaguni jima**	**0.56**	**40**	P	**Pn**	**09 32 42.9**	**+0.1**
YOJ				*e*S	**Sn**	**09 32 50.9**	**-0.9**
TWC	**Suao**	**0.90**	**309**	P	**Pn**	**09 32 47.7**	**+0.1**
	baz=311						
TWC				S	**Sn**	**09 33 00.1**	**-0.3**
	baz=311						
TWD	**Chiawan**	**0.94**	**273**	*e*P	**Pn**	**09 32 48.6**	**+0.6**
	baz=272						
TWD				*e*S	**Sb**	**09 32 60.0**	**+0.4**
	baz=272						
IRIF	**Iriomote-Funau**	**1.06**	**73**	P	**Pn**	**09 32 50.2**	**+0.5**
IRIF				*e*S	**Sb**	**09 33 03.5**	**+0.4**
HATJ	**Hateruma jima**	**1.09**	**89**	P	**Pn**	**09 32 51.3**	**+1.2**
HATJ				*e*S	**Sn**	**09 33 05.7**	**+0.8**
ENTT	**Nioudou**	**1.13**	**302**	P	**Pg**	**09 32 51.8**	**+0.5**
	baz=303						
WHF	**Hehuan Shan**	**1.24**	**275**	P	**Pg**	**09 32 53.0**	**-0.4**
	baz=275						
WHF				S	**Sb**	**09 33 08.3**	**-0.5**
	baz=275						
JKRS	**Kuro-shima**	**1.29**	**81**	P	**Pg**	**09 32 54.0**	**-0.2**
JKRS				S	**Sg**	**09 33 10.9**	**-0.1**
EHY	**Hungye**	**1.30**	**246**	*e*P	**Pg**	**09 32 53.9**	**-0.5**
	baz=245						
EHY				*e*S	**Sb**	**09 33 09.7**	**-0.4**
	baz=245						
NSK	**Sanguang**	**1.31**	**299**	P	**Pb**	**09 32 54.2**	**+0.3**
	baz=299						
NSK				*e*S	**Sn**	**09 33 10.9**	**+0.3**
	baz=299						
WDT	**Danda**	**1.39**	**259**	P	**Pb**	**09 32 55.4**	**+0.2**
	baz=257						
WDT				*e*S	**Sb**	**09 33 12.1**	**-0.8**
	baz=257						
TWF1	**Yuli**	**1.39**	**241**	P	**Pb**	**09 32 55.3**	**+0.2**
	baz=239						
TWF1				*e*S	**Sn**	**09 33 12.1**	**-0.3**
	baz=239						
JIJ	**Ishigaki jima**	**1.43**	**76**	P	**Pn**	**09 32 55.1**	**+0.2**
JIJ				S	**Sn**	**09 33 12.1**	**-1.3**
CHKT	**Chengkung**	**1.48**	**231**	*e*S	**Sn**	**09 33 13.0**	**-1.6**
	baz=229						
SMLT	**Sun Moon Lake**	**1.58**	**265**	*e*P	**Pb**	**09 32 58.5**	**+0.1**
	baz=264						
TYC	**Yuchr**	**1.62**	**266**	*e*P	**Pb**	**09 32 59.0**	**0.0**
	baz=265						
TYC				*e*S	**Sn**	**09 33 17.7**	**-0.3**
	baz=265						
YUS	**Yu-Shan**	**1.62**	**251**	P	**Pb**	**09 32 59.3**	**0.0**
	baz=249						
YUS				S	**Sn**	**09 33 18.4**	**-0.4**
	baz=249						
JISG	**Ishigakijimahi**	**1.64**	**70**	P	**Pn**	**09 32 57.6**	**-0.1**
JISG				S	**Sn**	**09 33 17.2**	**-1.4**
ALS	**Alishan**	**1.74**	**253**	*e*P	**Pb**	**09 33 01.4**	**+0.1**
	baz=251						
ALS				*e*S	**Sn**	**09 33 21.8**	**+0.3**
	baz=251						
CHN5	**Tsauling**	**1.83**	**257**	*e*P	**Pb**	**09 33 02.6**	**-0.1**
	baz=255						
CHN5				*e*S	**Sb**	**09 33 24.6**	**-0.8**
	baz=255						
CHN4	**Tsaushan**	**1.98**	**250**	*e*P	**Pb**	**09 33 04.8**	**-0.3**
	baz=249						
CHN4				*e*S	**Sn**	**09 33 27.9**	**+1.0**
	baz=249						
JTJ	**Tarama**	**2.00**	**72**	P	**Pn**	**09 33 04.1**	**+1.5**
JTJ				S	**Sn**	**09 33 27.6**	**+0.2**
TWK	**Hsinying**	**2.10**	**249**	*e*S	**Sn**	**09 33 31.5**	**+1.5**
	baz=247						

*CSEM **04** 09:38:33.1, 38.57N×13.13E, h17km, ML3.4/30*

ROM 04 09:38:33.1±0.2, 38.57N×13.13E, h17km±2km, MlI3.4/30, Error ellipse: s-maj=2.9km s-min=2.8km az=142.0, Sicily

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MPG	**Monte Pellegri**	**0.44**	**156**	Pg	Pg	09 38 41.1	-1.0
	3µm,0.2s						
MPG	**Monte Pellegri**	**0.44**	**156**	Pg	Pg	09 38 41.1	-1.0
	3µm,0.2s						
MTGR	**Montagna Grand**	**0.73**	**203**	Pg	Pb	09 38 47.3	-0.1
MTGR				Sg	Sb	09 38 56.9	-0.2
MTGR	**Montagna Grand**	**0.73**	**203**	Pg	Pb	09 38 47.3	-0.1
MTGR				Sg	Sb	09 38 56.9	-0.2
GIB	**Gibilmanna**	**0.91**	**129**	Pg	Pb	09 38 50.4	-0.1
GIB				Sg	Sg	09 39 03.1	+0.2
	3µm,0.5s						
GIB	**Gibilmanna**	**0.91**	**129**	Pg	Pb	09 38 50.4	-0.1
GIB				Sg	Sg	09 39 03.1	+0.2
	3µm,0.5s						
PLLN	**Pollina**	**0.98**	**125**	Pg	Pb	09 38 51.5	-0.2
PLLN				Sg	Sb	09 39 04.6	+0.2
	1µm,0.5s						
PLLN	**Pollina**	**0.98**	**125**	Pg	Pb	09 38 51.5	-0.2
PLLN				Sg	Sb	09 39 04.6	+0.2
	1µm,0.5s						
CLTB	**Caltabellotta**	**0.99**	**176**	Pg	Pb	09 38 51.9	+0.1
	4µm,0.5s						
CLTB	**Caltabellotta**	**0.99**	**176**	Pg	Pb	09 38 51.9	+0.1
	4µm,0.5s						
IFIL	**Filicudi I Eol**	**1.13**	**90**	Pg	Pb	09 38 54.2	+0.1
	289µm,33.0s						
IFIL	**Filicudi I Eol**	**1.13**	**90**	Pg	Pb	09 38 54.2	+0.1
	289µm,33.0s						
RESU	**Resuttano**	**1.18**	**141**	Pg	Pg	09 38 55.9	+0.1
	1µm,0.5s						
RESU	**Resuttano**	**1.18**	**141**	Pg	Pg	09 38 55.9	+0.1
	1µm,0.5s						
MSFR	**San Fratello**	**1.27**	**114**	Pg	Pn	09 38 55.8	-0.3
	311nm,0.7s						
MSFR	**San Fratello**	**1.27**	**114**	Pg	Pn	09 38 55.8	-0.3
	311nm,0.7s						
MNO	**Monte Soro**	**1.39**	**117**	Pg	Pn	09 38 58.1	+0.3
	417nm,0.6s						
MNO	**Monte Soro**	**1.39**	**117**	Pg	Pn	09 38 58.1	+0.3

SSY					Sg	Sn	09 39 33.5	+0.6
	594nm,0.4s								
MSCL	**Scilla**	**2.12**	**98**	Pg	Pn	09 39 07.9	+0.1
	209nm,0.6s								
MSCL	**Scilla**	**2.12**	**98**	Pg	Pn	09 39 07.9	+0.1
	209nm,0.6s								
JOPP	**Joppolo**	**2.16**	**88**	Pg	Pn	09 39 08.8	+0.5
	58nm,0.7s								
JOPP	**Joppolo**	**2.16**	**88**	Pg	Pn	09 39 08.8	+0.5
	58nm,0.7s								
CEL	**Celeste**	**2.19**	**97**	Pg	Pn	09 39 08.9	+0.1
	88nm,0.4s								
CEL	**Celeste**	**2.19**	**97**	Pg	Pn	09 39 08.9	+0.1
	88nm,0.4s								
HAVL	**Avola**	**2.25**	**135**	Pg	Pn	09 39 10.3	+0.7
HAVL	**Avola**	**2.25**	**135**	Pg	Pn	09 39 10.3	+0.7
MPAZ	**Palizzi**	**2.35**	**104**	Pg	Pn	09 39 11.9	+1.0
	146nm,0.6s								
MPAZ	**Palizzi**	**2.35**	**104**	Pg	Pn	09 39 11.9	+1.0
	146nm,0.6s								
SOI	**Samo**	**2.35**	**101**	Pg	Pn	09 39 11.7	+0.8
	137nm,0.5s								
SOI	**Samo**	**2.35**	**101**	Pg	Pn	09 39 11.7	+0.8
	137nm,0.5s								
CUC	**Castrocucco**	**2.53**	**55**	Pg	Pn	09 39 15.4	+2.0
CUC	**Castrocucco**	**2.53**	**55**	Pg	Pn	09 39 15.4	+2.0
PLAC	**Placanica**	**2.60**	**92**	Pg	Pn	09 39 15.4	+1.0
	66nm,0.7s								
PLAC	**Placanica**	**2.60**	**92**	Pg	Pn	09 39 15.4	+1.0
	66nm,0.7s								
SERS	**Sersale**	**2.82**	**79**	Pg	Pn	09 39 19.2	+1.7
	33nm,0.4s								
SERS	**Sersale**	**2.82**	**79**	Pg	Pn	09 39 19.2	+1.7
	33nm,0.4s								
TIP	**Timpagrande**	**2.90**	**77**	Pg	Pn	09 39 20.4	+1.9
	28nm,0.6s								
TIP	**Timpagrande**	**2.90**	**77**	Pg	Pn	09 39 20.4	+1.9
	28nm,0.6s								
VSL	**Villasalto**	**3.06**	**289**	Pg	Pn	09 39 21.6	+0.9
	98nm,0.2s								
VSL	**Villasalto**	**3.06**	**289**	Pg	Pn	09 39 21.6	+0.9
	98nm,0.2s								
CGL	**Cagliari Serpe**	**3.09**	**286**	Pg	Pn	09 39 22.1	+1.0
	148nm,0.3s								
CGL	**Cagliari Serpe**	**3.09**	**286**	Pg	Pn	09 39 22.1	+1.0
	148nm,0.3s								

MEX 04 09:53:33.2±0.8, 13°.86N×92°.48W, h20km±687km, MD3.6, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.43**	**8**	*eP*	Pn	09 54 09.4	-2.5
CCIG				*eS*	Sn	09 54 38.3	-2.8

*NIED **04** 09:55:00, 37°.40N×141°.40E, h23km, Mw3.9 Best double couple: M₀7.78000×10¹⁴ NP1:φs17.00000°, δ14.00000°, λ-124.00000°. NP2:φs232.00000°, δ79.00000°, λ-82.00000°.*
*IDC **04** 09:55:35.4±1.1, 37°.41N×141°.34E, h0km, mb4.0/11, mb1 4.0/14, mb1mx3.8/67, mbtmp4.0/14, ML3.4/3, MS3.0/10, Ms1 3.0/10, ms1mx2.8/46, Error ellipse: s-maj=25.5km s-min=21.4km az=112.0*
*ISCJB **04** 09:55:36.2±1.0, 37°.36N±0°.03×141°.50E±0°.06, h17km±6km, mb3.9/13, MS3.1/5, Error ellipse: s-maj=8.3km s-min=5.1km az=17.6*
*JMA **04** 09:55:38.6±0.1, 37°.40N×141°.32E, h29km±1km, M4.2*
JMA Felt II J1.
*NEIC **04** 09:55:41.2±1.0, 37°.41N×141°.30E, h38km±9km, mb4.0/1, Error ellipse: s-maj=12.5km s-min=8.4km az=106.0*
NEIC Recorded [2 JMA] in Fukushima.

ISC 04 09:55:36.5±2.2, 37°.37N±0°.04×141°.38E±0°.06, h7km±13km, n45, σ1s19/43, mb4.0/13, MS3.1/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.40**	**270**	P	**Pb**	**09 55 46.6**	**+0.5**
JFK				S	**Sb**	**09 55 52.1**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.54**	**240**	P	**Pb**	**09 55 49.0**	**+0.7**
ONAJ				S	**Sb**	**09 55 56.2**	**-0.1**
JMM	**Marumori**	**0.68**	**317**	P	**Pb**	**09 55 50.6**	**-0.2**
JFT	**Otama**	**0.84**	**281**	P	**Pn**	**09 55 54.0**	**-0.9**
JFT				S	**Sb**	**09 56 04.6**	**-0.5**
JHO	**Hitachi**	**1.00**	**221**	P	**Pb**	**09 55 55.3**	**-0.9**
JHO				*e*S	**Sg**	**09 56 07.4**	**-1.2**
JIO	**Ouri**	**1.08**	**359**	P	**Pb**	**09 55 56.8**	**-0.9**
JOU	**Okura**	**1.15**	**331**	P	**Pb**	**09 55 58.5**	**-0.2**
JOU				*e*S	**Sg**	**09 56 13.0**	**-0.4**
JFY	**Yanaizu**	**1.33**	**272**	P	**Pb**	**09 56 01.6**	**-0.3**
JFY				*e*S	**Sg**	**09 56 18.5**	**-1.0**
JYS	**Shirataka**	**1.34**	**310**	P	**Pb**	**09 56 01.9**	**-0.2**
JYS				*e*S	**Sg**	**09 56 19.3**	**-0.5**
MJAR	**Matsushiro Arr**	**2.67**	**253**	Pn	**Pn**	**09 56 21.1**	**+1.0**
	2.9nm,0.3s,baz=68,slow=10,SNR=22						
MJAR				Sn	**Sb**	**09 56 56.0**	**-1.7**
	9.7nm,0.3s,baz=68,slow=17,SNR=7.2						
MAJO	**Matsushiro**	**2.67**	**253**	*e*Pn	**Pn**	**09 56 21.8**	**+1.7**
MAT	**Matsushiro**	**2.67**	**253**	P	**Pn**	**09 56 21.7**	**+1.6**
MAT				S	**Sb**	**09 56 56.3**	**-1.5**
JHJ2	**Mitsune**	**4.43**	**197**	Pn	**Pn**	**09 56 46.2**	**+1.9**
JHJ	**Hachijo jima 2**	**4.44**	**198**	Pn	**Pn**	**09 56 45.1**	**+0.8**
	19nm,0.3s,baz=18,slow=20,SNR=5.4						
JHJ				Sn	**Sn**	**09 57 34.3**	**-1.9**
	31nm,0.3s,baz=49,slow=20,SNR=5.6						
ASAJ	**Asahikawa**	**6.80**	**7**	Pn	**Pn**	**09 57 16.9**	**+0.1**
	0.5nm,0.3s,baz=192,slow=12,SNR=4.9						
JNU	**Nakatsue**	**9.57**	**247**	LR	LR	10 01 54.6	
	comp=Z,52nm,18.9s,baz=114,slow=40						
USRK	**Ussuriysk Ar.**	**9.86**	**317**	Pn	**Pn**	**09 58 02.8**	**+4.1**
	0.1nm,0.3s,baz=135,slow=12,SNR=12						
USRK				LR	LR	10 01 34.2	
	comp=Z,124nm,19.2s,baz=128,slow=37						
KSRS	**Korea Array**	**10.71**	**275**	Pn	Pn	09 58 15.8	+5.5
	0.1nm,0.3s,baz=95,slow=15,SNR=2.2						
KSRS				LR	LR	10 02 03.1	
	comp=Z,61nm,18.3s,baz=114,slow=36						
KSAR	**Wonju Array Be**	**10.74**	**274**	Pn	Pn	09 58 15.8	+5.1
KLR	**Kul'dur**	**13.76**	**333**	LR	LR	10 04 08.0	
	comp=Z,61nm,19.1s,baz=147,slow=37						
PETK	**Petropavlovsk-**	**19.41**	**31**	LR	LR	10 08 01.3	
	comp=Z,16nm,19.0s,baz=108,slow=38						
GUMO	**Guam**	**23.89**	**172**	LR	LR	10 15 21.8	
	comp=Z,12nm,18.1s,baz=60,slow=50						
SEY	**Seymchan**	**26.47**	**11**	P	**P**	**10 01 16.0**	**+1.9**
	3.7nm,1.0s,baz=202,slow=16,SNR=4.5						
SONM	**Songino Array**	**27.58**	**303**	P	**P**	**10 01 24.3**	**-0.1**
	1.4nm,0.6s,baz=95,slow=13,SNR=2.6						
SONM				LR	LR	10 12 23.4	
	comp=Z,45nm,19.7s,baz=303,slow=37						
H11N2	**WAKE ISLAND Hy 28.34**	**121**		T	T	10 31 08.8	
	baz=314,slow=76,SNR=250						
H11N1	**WAKE ISLAND Hy 28.35**	**121**		T	T	10 31 07.8	
	baz=314,slow=76,SNR=301						
H11N3	**WAKE ISLAND Hy 28.36**	**121**		T	T	10 31 07.8	
	baz=314,slow=76,SNR=231						
H11S1	**WAKE ISLAND Hy 29.07**	**123**		T	T	10 32 01.4	
	baz=315,slow=74,SNR=85						
H11S3	**WAKE ISLAND Hy 29.07**	**123**		T	T	10 32 02.3	
	baz=315						
H11S2	**WAKE ISLAND Hy 29.08**	**123**		T	T	10 32 02.0	
	baz=315,slow=74,SNR=17						
ZALV	**Zalesovo Beam**	**41.67**	**312**	P	**P**	**10 03 24.9**	**-0.6**
	2.5nm,0.3s,baz=88,slow=5.9,SNR=6.7						
MKAR	**Makanchi Array**	**43.92**	**302**	P	**P**	**10 03 43.2**	**-0.7**
	1.9nm,0.7s,baz=89,slow=9.8,SNR=12						
MKAR				LR	LR	10 22 23.6	
	comp=Z,23nm,19.9s,baz=14,slow=37						
KURK	**Kurchatov**	**45.70**	**308**	*e*P	**P**	**10 03 57.0**	**-1.1**
KURK				P	**P**	**10 03 57.6**	**-0.5**
KURBB	**Kurchatov Arra**	**45.77**	**308**	P	**P**	**10 03 57.6**	**-1.0**
	5.5nm,0.8s,baz=84,slow=8.4,SNR=40						
ILAR	**Eielson Array**	**49.23**	**33**	P	**P**	**10 04 25.7**	**+0.4**
	0.2nm,0.6s,baz=268,slow=5.8,SNR=5.3						
BVAR	**Borovoye Array**	**50.33**	**312**	P	**P**	**10 04 33.7**	**-0.1**
	0.9nm,0.7s,baz=79,slow=7.5,SNR=3.4						
WRAB	**Tennant Creek**	**57.38**	**188**	*e*P	**P**	**10 05 26.2**	**+0.6**
ABKAR	**Akbulak array**	**57.70**	**310**	*e*P	**P**	**10 05 28.2**	**+0.4**
	1.2nm,0.8s						
ASAR	**Alice Springs**	**61.12**	**188**	P	**P**	**10 05 50.6**	**-0.9**
	0.4nm,0.5s,baz=4.7,slow=9.6,SNR=2.5						
ARCES	**ARCESS Array B**	**63.67**	**339**	LR	LR	10 37 23.3	
	comp=Z,24nm,19.2s,baz=105,slow=39						
FINES	**FINESS Array B**	**68.51**	**332**	P	**P**	**10 06 38.2**	**-1.0**
	1.2nm,0.6s,baz=23,slow=7.5,SNR=4.2						
NB2	**NORSAR Subarra**	**73.87**	**337**	P	**P**	**10 07 10.9**	**-0.9**
	comp=Z,1.3nm,0.6s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.87**	**337**	P	**P**	**10 07 11.2**	**-0.7**
	comp=Z,1.2nm,0.6s,baz=39,slow=6.0,SNR=6.5						
NOA				LR	LR	10 42 59.2	
	comp=Z,16nm,18.7s,baz=260,slow=38						
AKASG	**Malin Array Be**	**74.02**	**322**	P	**P**	**10 07 11.7**	**-1.1**
	comp=Z,0.7nm,0.4s,baz=45,slow=6.3,SNR=5.0						
TXAR	**Lajitas Array**	**89.94**	**52**	P	**P**	**10 08 37.5**	**+0.5**
	comp=Z,0.3nm,0.7s,baz=298,slow=2.8,SNR=4.4						

*MOS **04** 09:56:43.9±2.9, 52°.90N×107°.55E, h10km, mb4.2/1, Error ellipse: s-maj=43.7km s-min=26.5km az=51.1*

BYKL 04 09:56:43.5±0.2, 52°.88N×107°.60E, h22km±3km, 3C, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELR	**Kotokel**	**0.32**	**112**	⇑*i*Pg	Pb	09 56 50.0	-0.5
KELR				*e*Sg	Sb	09 56 54.6	-0.7
ZRHB	**Zarechye**	**0.42**	**220**	*e*Pg	Pb	09 56 52.2	-0.1
ZRHB				*e*Sg	Sb	09 56 58.2	-0.1
ZRHB				Pmax			
	116nm,0.2s						
ZRHB				Smax			
	1µm,0.3s						
OGRR	**Ongureny**	**0.77**	**360**	⇑*i*Pg	Pb	09 56 58.1	0.0
OGRR				*e*Sg	Sb	09 57 08.4	+0.3
OGRR				Pmax			
	40nm,0.1s						
OGRR				Smax			
	362nm,0.2s						
OGRR	**Ongureny**	**0.77**	**360**	⇑*i*PG	Pb	09 56 57.1	-1.0
OGRR				*e*		09 57 08.3	
OGRR				pmax	pmax		
	comp=Z,49nm,0.1s						
OGRR				smax	smax		
	comp=E,360nm,0.3s						
TRG	**Tyrgan**	**0.77**	**262**	*e*Pg	Pb	09 56 57.7	-0.5
TRG				*e*Sg	Sb	09 57 08.6	+0.4
TRG				Pmax			
	comp=E,59nm,0.2s						
TRG				Smax			
	comp=E,695nm,0.1s						
TRG	**Tyrgan**	**0.77**	**262**	*e*PG	Pb	09 56 57.7	-0.5
TRG				*e*		09 57 08.9	
TRG				pmax	pmax		
	comp=Z,58nm,0.2s						
TRG				smax	smax		
	comp=N,735nm,0.2s						
MXMB	**Maximikha**	**0.79**	**60**	*e*Pg	Pb	09 56 58.3	-0.3
MXMB				*e*Sg	Sb	09 57 09.5	+0.7
KAB	**Kabansk**	**1.01**	**215**	*e*Pg	Pn	09 57 02.5	+0.1
KAB				*e*Sg	Sn	09 57 15.6	-0.3
KAB				*e*Sb	Sb	09 57 18.5	+3.3
KAB				Pmax			
	comp=N,59nm,0.1s						
KAB				max			
	comp=N,715nm,0.3s						
UUDB	**Ulan-Yde**	**1.01**	**178**	*e*Pg	Pb	09 57 01.9	-0.5
UUDB				*e*Pb	Pn	09 57 03.6	+1.2
UUDB				*e*Sg	Sb	09 57 15.6	+0.3
UUDB				*e*Sb	Sn	09 57 17.8	+1.8
UUDB				max			
	comp=N,121nm,0.1s						
UUDB				max			
	comp=N,474nm,0.1s						
STDB	**Stepnoy Dvoret**	**1.04**	**227**	*e*Sg	Sn	09 57 17.6	+1.1
BGT	**Bolshoye Golou**	**1.58**	**239**	*e*Pg	Pb	09 57 12.1	+0.1
BGT				*e*Sg	Sb	09 57 32.7	+1.2
BGT				Pmax			
	comp=N,15nm,0.1s						
BGT				Smax			
	comp=N,114nm,0.3s						
SYVR	**Suvo**	**1.64**	**61**	*e*Pg	Pb	09 57 13.0	0.0
SYVR				*e*Sg	Sb	09 57 35.5	+2.3
SYVR				Pmax			
	comp=N,39nm,0.2s						
SYVR				Smax			
	comp=N,133nm,0.3s						
LSTR	**Listvyanka**	**1.98**	**240**	*e*Pn	Pn	09 57 16.1	+0.5
LSTR				*e*Pg	Pb	09 57 18.7	0.0
LSTR				*e*Sn	Sn	09 57 40.9	+1.2
LSTR				*e*Sg	Sb	09 57 44.1	+1.2
LSTR				Pmax			
	comp=N,7.0nm,0.2s						
LSTR				Smax			
	comp=N,53nm,0.3s						
IRK	**Irkutsk**	**2.13**	**254**	*e*Pg	Pb	09 57 21.7	+0.3
IRK				*e*Sg	Sb	09 57 49.9	+2.6
IRK				Pmax			
	comp=N,190nm,0.1s						
IRK				Smax			
	comp=N,744nm,0.4s						
IRK	**Irkutsk**	**2.13**	**254**	*e*PN	Pb	09 57 21.6	+0.2
IRK				*e*		09 57 48.5	
IRK				pmax	pmax		
	comp=Z,189nm,0.2s						
IRK				smax	smax		
	comp=N,746nm,0.4s						
IVK	**Ivanovka**	**2.23**	**242**	*e*Pn	Pn	09 57 20.3	+1.1
IVK				*e*Pg	Pb	09 57 23.5	+0.4
IVK				*e*Sn	Sn	09 57 47.2	+1.1
IVK				*e*Sg	Sb	09 57 53.2	+2.9
IVK				Pmax			
	comp=N,19nm,0.2s						
IVK				Smax			
	comp=N,159nm,0.2s						
TLY	**Talaya**	**2.71**	**245**	*e*Pg	Pb	09 57 31.5	+0.2
TLY				*e*Sg	Sb	09 58 07.9	+3.8
TLY				Pmax			
	comp=N,5.0nm,0.2s						
TLY				Smax			
	comp=N,70nm,0.3s						
TLY	**Talaya**	**2.71**	**245**	*e*PN	Pb	09 57 31.7	+0.4
TLY				*e*		09 58 08.2	
TLY				pmax	pmax		
	comp=Z,5.0nm,0.2s						
TLY				smax	smax		
	comp=N,76nm,0.4s						
YLYR	**Ulyunkhan**	**2.91**	**45**	*e*Pn	Pn	09 57 29.6	+1.2
YLYR				*e*Pg	Pb	09 57 35.1	+0.5
YLYR				*e*Sn	Sn	09 58 03.0	+0.4
YLYR				*e*Sg	Sb	09 58 13.9	+4.2
YLYR				Pmax			
	comp=N,5.0nm,0.2s						
YLYR				Smax			
	comp=N,17nm,0.2s						
NIZ	**Nizh Angarsk**	**3.12**	**21**	*e*	Pb	09 57 36.6	-1.6
NIZ				*e*Sg	Sb	09 58 19.0	+3.3
NIZ				Smax			
	comp=N,53nm,0.4s						
ARS	**Arshan**	**3.31**	**255**	*e*Pn	Pn	09 57 34.9	+0.8
ARS				*e*Pg	Pb	09 57 42.1	+0.5
ARS				*e*Sg	Sb	09 58 24.6	+3.2
ARS				Pmax			
	comp=N,24nm,0.4s						
ARS				Smax			
	comp=N,279nm,0.6s						
ARS	**Arshan**	**3.31**	**255**	*e*PN	Pb	09 57 42.2	+0.6
ARS				*e*		09 58 24.1	
ARS				pmax	pmax		
	comp=Z,24nm,0.4s						
ARS				smax	smax		
	comp=N,279nm,0.5s						
ZAK	**Zakamensk**	**3.67**	**229**	*e*Pn	Pn	09 57 40.6	+1.6
ZAK				*e*Pg	Pb	09 57 50.5	+2.8
ZAK				*e*Sg	Sb	09 58 37.8	+6.0
ZAK				Pmax			
	comp=N,3.0nm,0.2s						
ZAK				Smax			
	comp=N,14nm,0.2s						
KMO	**Kumora**	**3.67**	**34**	*e*Sg	Sb	09 58 37.0	+5.2
KMO				Smax			
	comp=N,48nm,1.2s						
KPC	**Khapcheranga**	**4.37**	**135**	*e*Pn	Pn	09 57 48.2	-0.4
KPC				*e*Pg	Pb	09 58 01.9	+2.3
KPC				*e*Sn	Sn	09 58 39.8	+1.0
KPC				*e*Sg	Sb	09 58 59.0	+7.2
KPC				Pmax			
	comp=N,8.0nm,0.3s						
KPC				Smax			
	comp=N,39nm,0.3s						
ORL	**Orlik**	**4.75**	**269**	*e*Pn	Pn	09 57 55.2	+1.4
ORL				*e*Pg	Pb	09 58 09.8	+3.7
ORL				*e*Sn	Sn	09 58 47.5	-0.7
ORL				*e*Sg	Sb	09 59 10.9	+8.1
ORL				Pmax			
	comp=N,5.0nm,0.6s						
ORL				Smax			
	comp=N,28nm,1.0s						
TUP	**Tupik**	**7.50**	**73**	*e*Sg	Sb	10 00 36.4	+15
TUP				Smax			
	comp=N,41nm,1.2s						

*IDC **04** 09:59:54.3±2.9, 6°.89S×129°.92E, h117km±36km, mb3.6/3, mb1 3.7/7, mb1mx3.4/50, mbtmp4.1/7, Error ellipse: s-maj=66.2km s-min=21.3km az=90.0*

ISC 04 09:59:51.6±0.9, 7°.11S±0°.07×129°.8E±0°.2, h104km, n7, σ2s70/10, mb4.0/3, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**6.38**	**14**	P	**Pn**	**10 01 23.1**	**-0.1**
	14nm,0.3s,baz=184,slow=8.5,SNR=1.8						
SIJI				S	Sn	10 02 22.8	-12
	24nm,0.3s,baz=195,slow=12,SNR=3.1						
FITZ	**Fitzroy Crossi**	**11.64**	**200**	P	**P**	**10 02 39.5**	**-4.1**
	0.4nm,0.3s,baz=28,slow=15,SNR=21						
FITZ				S	**Sn**	**10 04 44.0**	**+1.3**
	1.4nm,0.3s,baz=38,slow=19,SNR=13						
WRA	**Warramunga Arr**	**13.50**	**161**	P	**P**	**10 03 02.5**	**-1.9**
	1.4nm,0.3s,baz=347,slow=14,SNR=74						
WRA				S	**Sn**	**10 05 27.4**	**-0.3**
	2.3nm,0.3s,baz=332,slow=23,SNR=11						
ASAR	**Alice Springs**	**16.93**	**167**	P	**P**	**10 03 47.8**	**+5.3**
	0.8nm,0.3s,baz=353,slow=9.7,SNR=39						
ASAR				S	**Sn**	**10 06 50.5**	**0.0**
	0.3nm,0.3s,baz=348,slow=26,SNR=6.7						
SONM	**Songino Array**	**58.48**	**342**	P	**P**	**10 09 36.7**	**-0.1**
	0.8nm,0.5s,baz=141,slow=9.3,SNR=3.0						
MKAR	**Makanchi Array**	**68.20**	**327**	P	**P**	**10 10 41.7**	**+0.8**
	1.6nm,0.5s,baz=116,slow=8.1,SNR=12						
KURBB	**Kurchatov Arra**	**72.49**	**329**	P	**P**	**10 11 07.2**	**+0.3**
	0.6nm,0.6s,baz=123,slow=5.0,SNR=5.5						

*IDC **04** 10:02:43.3±2.4, 40°.59S×176°.80E, h0km, mb3.7/3, mb1 3.9/5, mb1mx3.7/31, mbtmp3.7/5, ML3.4/2, Error ellipse: s-maj=58.7km s-min=29.8km az=129.0*
*ISCJB **04** 10:02:44.3±0.5, 40°.76S±0°.03×177°.00E±0°.05, h32km, mb3.7/3, Error ellipse: s-maj=5.8km s-min=2.9km az=32.8*
*WEL **04** 10:02:46.8±0.1, 40°.67S×176°.85E, h33km, ML4.2/76, Error ellipse: s-maj=2.0km s-min=1.0km az=90.0*
WEL Felt from Hawke''s Bay to Manawatu, maximum reported intensity MM 4.
*NEIC **04** 10:02:46.9, 40°.67S×176°.85E, h33km, ML4.2(WEL), After WEL.*

ISC 04 10:02:45.8±0.9, 40°.68S±0°.03×176°.88E±0°.04, h32km, n150, σ1s51/153, mb3.8/3, 22C-5D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANWZ	**Angora Road**	**0.38**	**306**	⇓P*	**Pn**	**10 02 54.1**	**-0.9**
ANWZ				S*	**Sn**	**10 03 00.6**	**-0.6**
ANWZ				AML	AML	10 03 02.1	
PRHZ	**Porangahau**	**0.46**	**336**	P*	**Pn**	**10 02 55.2**	**-0.9**
PRHZ				S*	**Sn**	**10 03 02.0**	**-1.2**
PRHZ	**Porangahau**	**0.46**	**336**	⇓P*	**Pn**	**10 02 55.2**	**-0.9**
PRHZ				S*	**Sn**	**10 03 02.0**	**-1.2**
PRHZ				AML	AML	10 03 03.9	
BFZ	**Birch Farm**	**0.48**	**270**	⇑P*	**Pn**	**10 02 56.6**	**+0.2**
BFZ				S*	**Sn**	**10 03 04.6**	**+0.8**
BFZ	**Birch Farm**	**0.48**	**270**	⇑P*	**Pn**	**10 02 56.6**	**+0.2**
BFZ				S*	**Sn**	**10 03 04.6**	**+0.8**
BFZ				AML	AML	10 03 06.5	
BFZ				AML	AML	10 03 06.6	
BFZ				AML	AML	10 03 06.6	
CPWZ	**Castlepoint**	**0.56**	**246**	P*	**Pn**	**10 02 58.7**	**+1.2**
CPWZ	**Castlepoint**	**0.56**	**246**	P*	**Pn**	**10 02 58.7**	**+1.2**
CPWZ				AML	AML	10 03 06.8	
CPWZ				AML	AML	10 03 09.8	
PXZ	**Pawanui**	**0.65**	**359**	⇑P*	**Pb**	**10 02 58.6**	**-0.2**
PXZ	**Pawanui**	**0.65**	**359**	⇑P*	**Pb**	**10 02 58.6**	**-0.2**
PXZ				AML	AML	10 03 09.2	
PXZ				AML	AML	10 03 11.1	
PXZ				AML	AML	10 03 14.4	
PXZ				AML	AML	10 03 14.4	
DVHZ	**Dannevirke**	**0.66**	**305**	P*	**Pn**	**10 02 58.8**	**-0.2**
DVHZ	**Dannevirke**	**0.66**	**305**	⇑P*	**Pn**	**10 02 58.8**	**-0.2**
DVHZ				AML	AML	10 03 10.8	
DVHZ				AML	AML	10 03 10.8	
PRWZ	**Pori Road**	**0.70**	**280**	P*	**Pn**	**10 03 00.0**	**+0.5**
PRWZ	**Pori Road**	**0.70**	**280**	⇑P*	**Pn**	**10 03 00.0**	**+0.5**
PRWZ				AML	AML	10 03 14.7	
PRWZ				AML	AML	10 03 33.7	
WPHZ	**Waipukurau**	**0.70**	**332**	P*	**Pb**	**10 02 59.4**	**-0.3**
WPHZ	**Waipukurau**	**0.70**	**332**	⇑P*	**Pb**	**10 02 59.3**	**-0.3**
WPHZ				AML	AML	10 03 10.2	
WPHZ				AML	AML	10 03 12.9	
TIWZ	**Tintock**	**0.76**	**263**	P*	**Pb**	**10 03 00.8**	**+0.2**
TIWZ	**Tintock**	**0.76**	**263**	⇑P*	**Pb**	**10 03 00.8**	**+0.2**
TIWZ				AML	AML	10 03 14.1	
TIWZ				AML	AML	10 03 15.5	
TMWZ	**Te Maipa**	**0.86**	**240**	P*	**Pb**	**10 03 02.2**	**-0.1**
TMWZ	**Te Maipa**	**0.86**	**240**	P*	**Pb**	**10 03 02.2**	**-0.1**
TMWZ				AML	AML	10 03 29.5	
TMWZ				AML	AML	10 03 29.9	
KAHZ	**Kahuranaki**	**0.89**	**0**	Pn	**Pb**	**10 03 02.1**	**-0.6**
KAHZ	**Kahuranaki**	**0.89**	**0**	⇑PN	**Pb**	**10 03 02.1**	**-0.6**
KAHZ				AML	AML	10 03 22.7	
KAHZ				AML	AML	10 03 25.9	
POWZ	**Post Office Ro**	**0.89**	**289**	P*	**Pb**	**10 03 02.6**	**-0.2**
POWZ	**Post Office Ro**	**0.89**	**289**	⇑P*	**Pb**	**10 03 02.6**	**-0.2**
POWZ				AML	AML	10 03 28.0	
POWZ				AML	AML	10 03 39.9	
PNHZ	**Pukenui**	**0.93**	**326**	P*	**Pb**	**10 03 02.7**	**-0.7**
PNHZ	**Pukenui**	**0.93**	**326**	⇑P*	**Pb**	**10 03 02.7**	**-0.7**
PNHZ				AML	AML	10 03 15.7	
PNHZ				AML	AML	10 03 16.1	
TSZ	**Takapari Road**	**0.94**	**312**	P*	**Pb**	**10 03 02.5**	**-1.1**
TSZ	**Takapari Road**	**0.94**	**312**	P*	**Pb**	**10 03 02.5**	**-1.1**
TSZ				AML	AML	10 03 19.1	
TSZ				AML	AML	10 03 39.4	
MRZ	**Mangatainoka R**	**0.99**	**271**	P*	**Pb**	**10 03 03.5**	**-0.9**
MRZ	**Mangatainoka R**	**0.99**	**271**	P*	**Pb**	**10 03 03.5**	**-0.9**
MRZ				AML	AML	10 03 23.2	
MRZ				AML	A

KWHZ	Kaweka Forest	1.31	344	PN	Pb	10 03 07.9	-1.9	
KWHZ				AML	AML	10 03 35.3		
KWHZ				AML	AML	10 03 43.1		
BHHZ	Black Hill Sta	1.35	332	Pn	Pb	10 03 08.6	-1.9	
BHHZ	Black Hill Sta	1.35	332	⇑PN	Pb	10 03 08.6	-1.9	
BHHZ				AML	AML	10 03 37.9		
BHHZ				AML	AML	10 03 44.5		
ARHZ	Aropaoanui	1.42	4	Pn	Pn	10 03 09.5	+0.1	
ARHZ	Aropaoanui	1.42	4	PN	Pn	10 03 09.5	+0.1	
ARHZ				AML	AML	10 03 47.9		
ARHZ				AML	AML	10 04 02.9		
MSWZ	Moikau Station	1.43	239	PN	Pb	10 03 09.5	-2.4	
MSWZ	Moikau Station	1.43	239	PN	Pb	10 03 09.5	-2.4	
MSWZ				AML	AML	10 04 02.2		
MSWZ				AML	AML	10 04 10.7		
CAWZ	Cannon Point	1.44	252	Pn	Pb	10 03 09.9	-2.0	
CAWZ	Cannon Point	1.44	252	⇑PN	Pb	10 03 09.9	-2.0	
CAW				AML	AML	10 04 01.1		
CAW				AML	AML	10 04 03.7		
KIWZ	Kapiti Island	1.50	263	Pn	Pb	10 03 11.2	-1.9	
KIWZ	Kapiti Island	1.50	263	PN	Pb	10 03 11.2	-1.9	
KIW				AML	AML	10 03 39.1		
KIW				AML	AML	10 03 59.4		
PLWZ	Palliser	1.51	234	Pn	Pb	10 03 10.6	-2.6	
PLWZ	Palliser	1.51	234	PN	Pb	10 03 10.6	-2.6	
PLWZ				AML	AML	10 03 58.3		
PLWZ				AML	AML	10 04 08.5		
MOVZ	Moawhango	1.54	326	Pn	Pb	10 03 12.2	-1.6	
MOVZ	Moawhango	1.54	326	PN	Pb	10 03 12.1	-1.6	
MOVZ				AML	AML	10 03 44.2		
MOVZ				AML	AML	10 04 02.5		
BKZ	Black Stump Fm	1.54	349	Pn	Pn	10 03 11.1	0.0	
BKZ	Black Stump Fm	1.54	349	PN	Pn	10 03 11.1	0.0	
BKZ				AML	AML	10 03 43.9		
BKZ				AML	AML	10 03 49.8		
NMHZ	Naumai	1.59	358	Pn	Pn	10 03 12.1	+0.3	
NMHZ	Naumai	1.59	358	⇑PN	Pn	10 03 12.1	+0.3	
NMHZ				AML	AML	10 04 06.8		
NMHZ				AML	AML	10 04 11.9		
WHHZ	Waihua	1.63	10	PN	Pn	10 03 12.3	0.0	
WHHZ				AML	AML	10 04 20.7		
WHHZ				AML	AML	10 04 23.4		
WNVZ	Wahianoa	1.67	324	Pn	Pb	10 03 14.3	-1.8	
WNVZ	Wahianoa	1.67	324	PN	Pb	10 03 14.3	-1.8	
BHWZ	Baring Head	1.68	244	Pn	Pb	10 03 13.0	-3.1	
BHWZ	Baring Head	1.68	244	PN	Pb	10 03 13.0	-3.1	
BHW				AML	AML	10 04 08.9		
BHW				AML	AML	10 04 16.0		
MTVZ	Mangateitei	1.69	320	Pn	Pb	10 03 14.7	-1.5	
MTVZ	Mangateitei	1.69	320	PN	Pb	10 03 14.7	-1.5	
MTVZ				AML	AML	10 03 52.5		
MTVZ				AML	AML	10 04 11.9		
TUVZ	Tukino	1.70	326	Pn	Pb	10 03 14.9	-1.6	
TUVZ	Tukino	1.70	326	PN	Pb	10 03 14.9	-1.6	
TUVZ				AML	AML	10 03 51.3		
TUVZ				AML	AML	10 03 53.5		
WELZ	Wellington	1.71	249	Pn	Pb	10 03 13.6	-2.8	
WELZ	Wellington	1.71	249	PN	Pb	10 03 13.6	-2.8	
WEL				AML	AML	10 03 49.2		
WEL				AML	AML	10 03 49.2		
WEL				AML	AML	10 03 49.3		
WEL				AML	AML	10 03 49.4		
WHVZ	Whangaehu Hut	1.71	324	Pn	Pb	10 03 15.1	-1.7	
WHVZ	Whangaehu Hut	1.71	324	PN	Pb	10 03 15.1	-1.7	
WHVZ				AML	AML	10 03 52.1		
WHVZ				AML	AML	10 03 52.2		
TRVZ	Turoa	1.72	323	Pn	Pb	10 03 15.3	-1.6	
TRVZ	Turoa	1.72	323	PN	Pb	10 03 15.3	-1.6	
TRVZ				AML	AML	10 03 46.7		
TRVZ				AML	AML	10 03 47.0		
WAZ	Wanganui	1.72	302	Pn	Pb	10 03 15.4	-1.4	
WAZ	Wanganui	1.72	302	PN	Pb	10 03 15.4	-1.4	
WAZ				AML	AML	10 04 16.7		
WAZ				AML	AML	10 04 23.1		
FWVZ	Far West T-bar	1.75	324	Pn	Pb	10 03 15.6	-1.8	
FWVZ	Far West T-bar	1.75	324	PN	Pb	10 03 15.6	-1.8	
FWVZ				AML	AML	10 04 10.4		
FWVZ				AML	AML	10 04 12.9		
SNZO	South Karori	1.76	248	*e*Pn	Pb	10 03 14.0	-3.4	
KNZ	Kokohu	1.77	21	Pn	Pn	10 03 13.6	-0.6	
KNZ	Kokohu	1.77	21	PN	Pn	10 03 13.6	-0.6	
KNZ				AML	AML	10 04 31.1		
KNZ				AML	AML	10 04 34.4		
RAHZ	Arahi	1.77	5	Pn	Pn	10 03 14.4	+0.1	
RAHZ	Arahi	1.77	5	AML	AML	10 03 55.9		
RAHZ				AML	AML	10 04 06.5		
OTVZ	Oturere	1.78	328	Pn	Pb	10 03 16.1	-1.8	
OTVZ	Oturere	1.78	328	PN	Pb	10 03 16.1	-1.8	
OTVZ				AML	AML	10 03 55.9		
OTVZ				AML	AML	10 04 06.6		
NGZ	Ngauruhoe	1.80	327	Pn	Pb	10 03 16.2	-2.0	
NGZ	Ngauruhoe	1.80	327	PN	Pb	10 03 16.2	-2.0	
NGZ				AML	AML	10 03 53.7		
NGZ				AML	AML	10 03 54.7		
PKVZ	Pokaka	1.82	319	Pn	Pb	10 03 16.7	-1.9	
PKVZ	Pokaka	1.82	319	PN	Pb	10 03 16.7	-1.9	
PKVZ				AML	AML	10 03 54.0		
PKVZ				AML	AML	10 04 10.2		
KRVZ	Karewarewa	1.85	329	Pn	Pb	10 03 17.2	-1.8	
KRVZ	Karewarewa	1.85	329	PN	Pb	10 03 17.2	-1.8	
KRVZ				AML	AML	10 03 57.5		
KRVZ				AML	AML	10 04 04.5		
WTVZ	West Tongariro	1.85	327	Pn	Pb	10 03 17.0	-2.1	
WTVZ	West Tongariro	1.85	327	PN	Pb	10 03 17.0	-2.1	
WTVZ				AML	AML	10 03 55.1		
WTVZ				AML	AML	10 03 55.9		
MRHZ	Matea Rd	1.88	349	PN	Pn	10 03 16.6	+0.8	
MRHZ				AML	AML	10 03 58.8		
MRHZ				AML	AML	10 04 02.8		
SNGZ	Shannon Statio	1.93	11	Pn	Pn	10 03 16.2	-0.3	
SNGZ	Shannon Statio	1.93	11	PN	Pn	10 03 16.2	-0.3	
SNGZ				AML	AML	10 04 16.5		
SNGZ				AML	AML	10 04 49.8		
TWVZ	Taurewa	1.96	325	PN	Pb	10 03 24.3	+3.5	
RATZ	Rangitukua	2.00	335	PN	Pb	10 03 19.7	-1.9	
TCW	Tory Channel	2.04	254	Pn	Pb	10 03 18.2	-4.0	
TCW	Tory Channel	2.04	254	PN	Pb	10 03 18.2	-4.0	
TCW				AML	AML	10 04 03.3		
TCW				AML	AML	10 04 18.0		
RTZ	Ruatahuna	2.07	2	⇓PN	Pn	10 03 18.5	0.0	
RIGZ	Rimuhau	2.09	19	PN	Pn	10 03 18.0	-0.6	
RIGZ				AML	AML	10 04 10.7		
RIGZ				AML	AML	10 04 27.6		
ALRZ	Allen Road	2.16	349	Pn	Pn	10 03 20.0	+0.5	
ALRZ	Allen Road	2.16	349	PN	Pn	10 03 20.0	+0.5	
ALRZ				AML	AML	10 04 13.7		
ALRZ				AML	AML	10 04 14.2		
PRRZ	Plateau Road	2.21	350	Pn	Pn	10 03 20.7	+0.4	
PRRZ	Plateau Road	2.21	350	⇑PN	Pn	10 03 20.7	+0.4	
PRRZ				AML	AML	10 04 09.9		
PRRZ				AML	AML	10 04 12.3		
VRZ	Vera Road	2.25	313	PN	Pb	10 03 22.7	-3.1	
VRZ				AML	AML	10 04 09.6		
VRZ				AML	AML	10 04 29.9		
LREZ	Lake Rotokare	2.26	302	PN	Pb	10 03 23.3	-2.6	
LREZ				AML	AML	10 04 13.1		
LREZ				AML	AML	10 04 36.1		
TUWZ	Tuamarina	2.34	250	Pn	Pn	10 03 21.8	-0.3	
TUWZ	Tuamarina	2.34	250	PN	Pn	10 03 21.7	-0.3	
TUWZ				AML	AML	10 04 16.4		
TUWZ				AML	AML	10 04 16.9		
TKGZ	Te Karaka	2.37	19	PN	Pn	10 03 21.9	-0.4	
TKGZ				AML	AML	10 03 55.6		
TKGZ				AML	AML	10 04 26.8		
MWZ	Matawai	2.40	12	Pn	Pn	10 03 22.1	-0.8	
MWZ	Matawai	2.40	12	PN	Pn	10 03 22.1	-0.8	
MWZ				AML	AML	10 04 22.6		
MWZ				AML	AML	10 04 23.3		
CNGZ	Carnagh Statio	2.43	26	*e*PN	Pn	10 03 22.8	-0.4	
CNGZ				AML	AML	10 03 53.6		
CNGZ				AML	AML	10 04 15.8		
URZ	Urewera	2.43	4	Pn	Pn	10 03 22.7	-0.5	
	18nm,0.3s,baz=224,slow=7.3,SNR=61							
URZ				Sn	Sn	10 03 49.5	-2.3	
	28nm,0.3s,baz=298,slow=21,SNR=17							
URZ	Urewera	2.43	4	*e*Pn	Pn	10 03 22.4	-0.8	
URZ	Urewera	2.43	4	⇑PN	Pn	10 03 22.6	-0.7	
URZ				AML	AML	10 04 27.5		
URZ				AML	AML	10 04 42.5		
TARZ	Mount Tarawera	2.46	353	⇑PN	Pn	10 03 24.2	+0.4	
TARZ				AML	AML	10 03 48.9		
TARZ				AML	AML	10 04 18.4		
PREZ	Palmer Road	2.48	302	PN	Pb	10 03 26.6	-3.1	
PREZ				AML	AML	10 04 14.0		
PREZ				AML	AML	10 04 31.3		
BSWZ	Blackbirch Sta	2.49	245	PN	Pn	10 03 23.8	-0.3	
BSWZ				AML	AML	10 04 17.8		
BSWZ				AML	AML	10 04 46.8		
NEZ	North Egmont	2.56	303	PN	Pb	10 03 27.8	-3.3	
TWGZ	Tauwhareparae	2.65	19	PN	Pn	10 03 25.6	-0.7	
TWGZ				AML	AML	10 04 19.2		
TWGZ				AML	AML	10 04 23.5		
HIZ	Hauiti	2.67	324	PN	Pn	10 03 27.7	+1.1	
HIZ				AML	AML	10 04 17.3		
HIZ				AML	AML	10 04 37.2		
PKE	Pukeiti	2.67	303	PN	Pb	10 03 29.6	-3.4	
PKE				AML	AML	10 04 19.2		
PKE				AML	AML	10 04 34.8		
NNZ	Nelson	2.70	258	⇓PN	Pn	10 03 27.6	+0.6	
NNZ				AML	AML	10 04 20.0		
NNZ				AML	AML	10 04 39.3		
HAZ	Te Kaha	3.01	14	AML	AML	10 04 08.7		
HAZ				AML	AML	10 04 09.4		
KHZ	Kahutara	3.04	234	*e*Pn	Pn	10 03 30.9	-0.8	
KHZ	Kahutara	3.04	234	PN	Pn	10 03 30.9	-0.8	
KHZ				AML	AML	10 04 28.3		
KHZ				AML	AML	10 04 28.6		
KHZ				AML	AML	10 04 28.6		
TOZ	Tahuroa Road	3.14	340	PN	Pn	10 03 33.6	+0.6	
THZ	Tophouse	3.18	249	PN	Pn	10 03 33.1	-0.6	
THZ				AML	AML	10 04 53.4		
THZ				AML	AML	10 04 55.8		
QRZ	Quartz Range	3.31	266	PN	Pn	10 03 35.8	+0.5	
QRZ				AML	AML	10 05 04.0		
QRZ				AML	AML	10 05 04.0		
QRZ				AML	AML	10 05 06.6		
QRZ				AML	AML	10 05 06.6		
DSZ	Denniston Nort	3.97	253	PN	Pn	10 03 44.0	-0.4	
DSZ				AML	AML	10 05 02.3		
DSZ				AML	AML	10 05 19.9		
LTZ	Lake Taylor	4.03	237	PN	Pn	10 03 44.9	-0.4	
LTZ				AML	AML	10 05 15.1		
MQZ	McQueen's Vall	4.35	225	PN	Pn	10 03 49.0	-0.6	
INZ	Inchbonnie	4.55	242	PN	Pn	10 03 51.9	-0.5	
WVZ	Waitaha Valley	5.17	240	PN	Pn	10 04 01.0	+0.1	
RPZ	Rata Peaks	5.28	233	Pn	Pn	10 04 03.6	+1.2	
	0.6nm,0.3s,baz=90,slow=13,SNR=3.4							
RPZ				Sn	Sn	10 04 58.8	-3.3	
	5.8nm,0.3s,baz=126,slow=23,SNR=11							
RPZ	Rata Peaks	5.28	233	*e*Pn	Pn	10 04 02.2	-0.2	
	22nm,0.5s							
RPZ	Rata Peaks	5.28	233	PN	Pb	10 04 10.4	-6.9	
RPZ				AML	AML	10 05 56.5		
CTZ	Chatham Island	5.71	124	⇑PN	Pn	10 04 10.2	+1.9	
ASAR	Alice Springs	39.70	282	P	P	10 10 16.7	+1.4	
	0.4nm,0.4s,baz=123,slow=6.7,SNR=4.2							
WRA	Warramunga Arr	41.64	287	P	P	10 10 32.5	+1.3	
	0.7nm,0.3s,baz=126,slow=8.2,SNR=6.1							
FITZ	Fitzroy Crossi	49.20	282	P	P	10 11 32.7	+1.7	
	1.0nm,0.7s,baz=135,slow=7.1,SNR=3.1							
ARCES	ARCESS Array B	147.42	342	PKPbc	PKPab	10 22 27.9	+0.7	
	1.6nm,0.7s,baz=31,slow=3.3,SNR=5.7							
BRTR	Keskin Array B	152.03	280	PKPbc	PKPbc	10 22 39.2	+1.6	
	0.7nm,0.7s,baz=132,slow=2.8,SNR=3.7							

IDC 04 10:03:59.8±3.0, 53.55N×87.81E, h0km, mb1 2.9/2, mb1mx2.8/58, mbtmp2.9/2, ML2.7/2, Error ellipse: s-maj=25.1km s-min=17.8km az=54.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	ZALESOVO INFRA	1.82	284	*i*		10 15 54.2	
	baz=99,slow=322,SNR=13						
ZALV	Zalesovo Beam	1.82	284	Pn	Pn	10 04 32.3	-0.1
	1.4nm,0.3s,baz=100,slow=11,SNR=8.3						
ZALV				Lg	Lg	10 04 57.5	
	4.7nm,0.3s,baz=105,slow=27,SNR=19						
KURBB	Kurchatov Arra	6.43	247	Pn	Pn	10 05 36.2	+0.5
	0.1nm,0.3s,baz=61,slow=14,SNR=4.9						
KURBB				Sn	Sn	10 06 48.8	-0.9
	0.0nm,0.3s,baz=67,slow=27,SNR=2.8						
KURBB				Lg	Lg	10 07 24.2	
	0.1nm,0.3s,baz=60,slow=32,SNR=6.8						
MKAR	Makanchi Array	7.63	210	Pn	Pn	10 05 53.5	+1.3
	0.1nm,0.3s,baz=29,slow=16,SNR=3.4						
MKAR				Lg	Lg	10 08 01.5	
	0.1nm,0.3s,baz=26,slow=34,SNR=5.9						

*IDC **04** 10:05:59.8±2.9, 36.41N×141.32E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/49, mbtmp3.4/4, ML3.1/1, Error ellipse: s-maj=75.7km s-min=29.3km az=53.0*

*JMA **04** 10:06:04.7±0.1, 36.35N×141.03E, h41km±1km, M3.1*

ISC 04 10:06:02.1±2.8, 36.39N±0.08×141.14E±0.09, h12km±16km, n15, σ0.86/15, mb3.7/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	Hitachi	0.51	296	P	Pn	10 06 14.6	-0.7
JHO				S	Sb	10 06 21.9	+1.4
ONAJ	Iwakimizuishiy	0.76	339	P	Pn	10 06 18.8	0.0
ONAJ				S	Sb	10 06 28.6	+0.9
JYT	Yasato	0.78	258	P	Pb	10 06 17.9	+0.3
JYT				S	Sg	10 06 26.7	-0.7
JFK	Kawauchi	1.00	348	P	Pn	10 06 22.3	+0.3
JFK				S	Sb	10 06 34.1	-0.4
MJAR	Matsushiro Arr	2.37	275	Pn	Pn	10 06 41.6	+0.8
	3.6nm,0.3s,baz=104,slow=9.1,SNR=29						
MJAR				Sn	Sn	10 07 08.9	-1.0
	2.2nm,0.3s,baz=89,slow=15,SNR=5.9						
MAT	Matsushiro	2.37	275	P	Pn	10 06 41.8	+0.9
MAT				S	Sn	10 07 08.7	-1.2
H11N2	WAKE ISLAND Hy	28.02	119	T	T	10 41 25.9	
	baz=315						
H11N1	WAKE ISLAND Hy	28.02	119	T	T	10 41 49.9	
	baz=315,slow=74						
H11N3	WAKE ISLAND Hy	28.03	119	T	T	10 41 33.4	
	baz=315,slow=74						
H11S1	WAKE ISLAND Hy	28.70	122	T	T	10 42 20.3	
	baz=314						
H11S3	WAKE ISLAND Hy	28.70	122	T	T	10 42 11.3	
	baz=314,slow=74,SNR=29						
H11S2	WAKE ISLAND Hy	28.72	122	T	T	10 42 09.3	
	baz=314,slow=74,SNR=26						
KURBB	Kurchatov Arra	46.23	308	P	P	10 14 27.2	+0.2
	0.4nm,0.5s,baz=83,slow=7.8,SNR=4.5						
WRA	Warramunga Arr	56.39	188	P	P	10 15 43.3	-0.1
	0.4nm,0.5s,baz=5.4,slow=7.3,SNR=13						
ASAR	Alice Springs	60.12	188	P	P	10 16 09.2	-0.3
	0.3nm,0.8s,baz=13,slow=8.7,SNR=2.8						

*NIED **04** 10:10:00, 36.90N×141.20E, h20km, Mw3.7 Best double couple: M0 3.38000×10^14 NP1:φs=90.00000°, δ63.00000°, λ-24.00000°. NP2:φs191.00000°, δ69.00000°, λ-151.00000°.*

*IDC **04** 10:10:26.3±1.4, 36.86N×140.93E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.4/37, mbtmp3.5/4, ML3.2/2, MS2.9/1, Ms1 2.9/1, ms1mx2.2/44, Error ellipse: s-maj=40.4km s-min=24.3km az=118.0*

*ISCJB **04** 10:10:28.5±1.0, 36.83N±0.05×141.24E±0.07, h35km, mb3.6/2, MS2.8/1, Error ellipse: s-maj=8.7km s-min=7.5km az=24.4*

*JMA **04** 10:10:29.5±0.1, 36.85N×141.18E, h32km±2km, M3.6*

JMA Felt I J1.

ISC 04 10:10:30.5±1.3, 36.82N±0.07×141.10E±0.08, h35km, n19, σ2.93/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	0.37	319	*e*S	Sn	10 10 44.1	-1.5
JHO	Hitachi	0.48	244	*e*S	Sn	10 10 48.2	+0.2
JFK	Kawauchi	0.57	342	P	Pn	10 10 40.8	-1.5
JFK				*e*S	Sn	10 10 48.2	-2.3
JFT	Otama	0.93	319	P	Pn	10 10 47.3	+0.2
JFT				*e*S	Sn	10 10 59.4	+0.2
JSB	Shiboa	0.96	279	*e*S	Sn	10 11 02.4	+2.4
JMM	Marumori	1.07	347	*e*S	Sn	10 11 01.3	-1.4
JFY	Yanaizu	1.26	298	P	Pn	10 10 53.1	+1.4
JFY				*e*S	Sn	10 11 09.5	+2.1
MJAR	Matsushiro Arr	2.34	264	Pn	Pn	10 11 04.1	-2.4
	2.7nm,0.3s,baz=76,slow=15,SNR=18						
MAT	Matsushiro	2.34	264	P	Pn	10 11 04.4	-2.1
MAT				S	Sn	10 11 30.1	-4.0
ASAJ	Asahikawa	7.38	8	Pn	Pn	10 12 14.9	-0.7
	0.6nm,0.3s,baz=241,slow=12,SNR=2.7						
YAK	Yakutsk	26.23	348	LR	LR	10 26 18.5	
	comp=Z,24nm,18.1s,baz=274,slow=36						
H11N2	WAKE ISLAND Hy	28.25	120	T	T	10 45 52.4	
	baz=313,slow=75,SNR=110						
H11N1	WAKE ISLAND Hy	28.26	120	T	T	10 45 51.9	
	baz=313,slow=75,SNR=105						
H11N3	WAKE ISLAND Hy	28.27	120	T	T	10 45 55.0	
	baz=313,slow=75,SNR=155						
H11S1	WAKE ISLAND Hy	28.95	122	T	T	10 47 12.7	
	baz=314,slow=75,SNR=67						
H11S3	WAKE ISLAND Hy	28.95	122	T	T	10 46 44.5	
	baz=314,slow=75,SNR=76						
H11S2	WAKE ISLAND Hy	28.97	122	T	T	10 46 45.2	
	baz=314,slow=75,SNR=57						
ILAR	Eielson Array	49.81	32	P	P	10 19 20.8	+1.3
	0.4nm,0.8s,baz=265,slow=6.4,SNR=7.0						
WRA	Warramunga Arr	56.82	188	P	P	10 20 12.3	+0.9
	0.4nm,0.6s,baz=5.2,slow=7.2,SNR=9.3						

WEL 04 10:43:18.1±0.2, 40.61S×176.80E, h29km±1km, ML3.5/54, 12C-4D, Error ellipse: s-maj=2.2km s-min=1.2km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ANWZ	Angora Road	0.29	302	⇓P*	Pb	10 43 24.9	-0.4
ANWZ				S*	Sb	10 43 30.4	+0.2
ANWZ				AML	AML	10 43 32.9	
PRHZ	Porangahau	0.37	340	⇓P*	Pb	10 43 26.0	-0.4
PRHZ				S*	Sn	10 43 33.2	-0.5
PRHZ				AML	AML	10 43 33.6	
BFZ	Birch Farm	0.43	261	P*	Pb	10 43 27.5	+0.2
BFZ				AML	AML	10 43 38.3	
BFZ				AML	AML	10 43 38.3	
BFZ				AML	AML	10 43 43.1	
BFZ				AML	AML	10 43 43.1	
CPWZ	Castlepoint	0.54	237	P*	Pn	10 43 29.5	-0.3
CPWZ				AML	AML	10 43 40.6	
CPWZ				AML	AML	10 43 41.1	
DVHZ	Dannevirke	0.58	303	⇑P*	Pb	10 43 29.6	-0.2
DVHZ				S*	Sb	10 43 38.2	+0.5
DVHZ				AML	AML	10 43 41.5	
PXZ	Pawanui	0.58	5	⇓P*	Pb	10 43 29.3	-0.5
PXZ				AML	AML	10 43 39.8	
PXZ				AML	AML	10 43 39.9	
PXZ				AML	AML	10 43 45.0	
PXZ				AML	AML	10 43 45.0	
WPHZ	Waipukurau	0.61	333	⇑P*	Pb	10 43 30.1	-0.2
WPHZ				AML	AML	10 43 44.2	
WPHZ				AML	AML	10 43 46.8	
PRWZ	Pori Road	0.64	275	⇑P*	Pb	10 43 30.9	+0.2
PRWZ				AML	AML	10 43 45.2	
PRWZ				AML	AML	10 43 45.4	
TIWZ	Tintock	0.71	257	⇑P*	Pb	10 43 31.7	-0.3
TIWZ				AML	AML	10 43 44.8	
TIWZ				AML	AML	10 43 50.4	
POWZ	Post Office Ro	0.82	285	⇑P*	Pn	10 43 33.4	-0.2
POWZ				AML	AML	10 43 51.3	
POWZ				AML	AML	10 43 51.7	
KAHZ	Kahuranaki	0.82	4	PN	Pn	10 43 32.9	-0.8
KAHZ				AML	AML	10 43 53.3	
KAHZ				AML	AML	10 43 56.5	
PNHZ	Pukenui	0.84	326	⇑P*	Pn	10 43 33.5	-0.4
PNHZ				AML	AML	10 43 46.5	
PNHZ				AML	AML	10 43 46.8	
TSZ	Takapari Road	0.85	311	P*	Pn	10 43 33.3	-0.8
TSZ				AML	AML	10 43 50.0	
TSZ				AML	AML	10 43 50.0	
TMWZ	Te Maipa	0.85	234	P*	Pb	10 43 35.5	+1.2
TMWZ				AML	AML	10 44 00.3	
TMWZ				AML	AML	10 44 00.8	
MRZ	Mangatainoka R	0.93	267	P*	Pn	10 43 34.6	-0.6
MRZ				AML	AML	10 43 54.0	
MRZ				AML	AML	10 43 55.0	
CKHZ	Cape Kidnapper	0.98	13	PN	Pn	10 43 34.6	-1.2
CKHZ				AML	AML	10 44 02.2	
CKHZ				AML	AML	10 44 14.3	
HOWZ	Holdsworth Sta	1.02	253	⇑P*	Pn	10 43 35.6	-0.8
HOWZ				AML	AML	10 43 59.2	
HOWZ				AML	AML	10 44 04.5	
KRHZ	Kereru	1.02	341	PN	Pn	10 43 35.8	-0.7
KRHZ				AML	AML	10 43 56.3	
KRHZ				AML	AML	10 44 00.3	
MTWZ	Mount Morrison	1.13	241	P*	Pn	10 43 34.5	-3.4
MTW				AML	AML	10 44 06.7	
MTW				AML	AML	10 44 10.5	
TRWZ	Traveller	1.15	227	AML	AML	10 44 22.7	
TRWZ				AML	AML	10 44 33.6	
MCHZ	McNeill Hill	1.17	356	⇑PN	Pn	10 43 38.2	-0.3
MCHZ				AML	AML	10 44 07.1	
MCHZ				AML	AML	10 44 23.0	
OHWZ	Ohakea	1.21	289	P*	Pb	10 43 39.9	-0.3
KWHZ	Kaweka Forest	1.22	346	PN	Pn	10 43 38.9	-0.4
KWHZ				AML	AML	10 44 06.0	
KWHZ				AML	AML	10 44 06.1	
OGWZ	Otaki Gorge	1.26	260	⇑P*	Pn	10 43 39.1	-0.5
OGWZ				AML	AML	10 43 57.1	
OGWZ				AML	AML	10 44 09.6	
BHHZ	Black Hill Sta	1.26	333	PN	Pn	10 43 39.4	-0.3
BHHZ				AML	AML	10 44 04.6	
BHHZ				AML	AML	10 44 09.5	
PAWZ	Paruwai Farm	1.29	233	P*	Pn	10 43 39.0	-1.2
PAWZ				AML	AML	10 44 14.4	
PAWZ				AML	AML	10 44 17.2	
ARHZ	Aropaoanui	1.36	6	PN	Pn	10 43 40.4	-0.6
ARHZ				AML	AML	10 43 58.9	
ARHZ				AML

RAHZ				SN	Sn	10 44 06.6	-0.2	
RAHZ				AML	AML	10 44 07.2		
PKVZ	**Pokaka**	**1.73**	**319**	PN	Pn	10 43 47.7	+1.5	
PKVZ				AML	AML	10 44 22.2		
PKVZ				AML	AML	10 44 24.7		
KRVZ	**Karewarewa**	**1.76**	**329**	PN	Pn	10 43 48.1	+1.4	
KRVZ				AML	AML	10 44 27.8		
KRVZ				AML	AML	10 44 35.2		
WTVZ	**West Tongariro**	**1.76**	**328**	PN	Pn	10 43 48.0	+1.3	
WTVZ				AML	AML	10 44 24.3		
WTVZ				AML	AML	10 44 25.8		
SNGZ	**Shannon Statio**	**1.88**	**13**	PN	Pn	10 43 47.0	-1.2	
SNGZ				AML	AML	10 44 47.1		
SNGZ				AML	AML	10 45 01.2		
RTZ	**Ruatahuna**	**2.00**	**4**	PN	Pn	10 43 49.2	-0.8	
TCW	**Tory Channel**	**2.00**	**252**	PN	Pn	10 43 49.1	-0.8	
TCW				AML	AML	10 44 16.3		
TCW				AML	AML	10 44 28.4		
RIGZ	**Rimuhau**	**2.04**	**22**	AML	AML	10 44 20.1		
ALRZ	**Allen Road**	**2.08**	**350**	PN	Pn	10 43 50.8	-0.2	
PRRZ	**Plateau Road**	**2.13**	**351**	PN	Pn	10 43 51.4	-0.3	
VRZ	**Vera Road**	**2.16**	**313**	PN	Pn	10 43 53.4	+1.3	
VRZ				AML	AML	10 44 45.1		
TUWZ	**Tuamarina**	**2.31**	**248**	PN	Pn	10 43 52.8	-1.3	
TKGZ	**Te Karaka**	**2.32**	**21**	PN	Pn	10 43 52.8	-1.4	
TKGZ				AML	AML	10 44 22.5		
TKGZ				AML	AML	10 44 24.2		
MWZ	**Matawai**	**2.34**	**14**	PN	Pn	10 43 52.8	-1.9	
MWZ				AML	AML	10 44 54.0		
MWZ				AML	AML	10 46 23.4		
URZ	**Urewera**	**2.36**	**6**	PN	Pn	10 43 53.4	-1.4	
URZ				AML	AML	10 44 21.5		
NEZ	**North Egmont**	**2.48**	**302**	PN	Pn	10 43 57.4	+0.9	
HIZ	**Hauiti**	**2.58**	**324**	PN	Pn	10 43 58.6	+0.8	
TWGZ	**Tauwhareparae**	**2.60**	**21**	AML	AML	10 44 30.6		
TWGZ				AML	AML	10 44 34.6		
NNZ	**Nelson**	**2.66**	**256**	PN	Pn	10 43 58.5	-0.4	
HAZ	**Te Kaha**	**2.95**	**15**	PN	Pn	10 44 01.4	-1.6	
HAZ				AML	AML	10 44 09.3		
HAZ				AML	AML	10 45 11.1		
KHZ	**Kahutara**	**3.04**	**233**	PN	Pn	10 44 02.0	-2.1	
THZ	**Tophouse**	**3.16**	**247**	PN	Pn	10 44 03.9	-1.9	
QRZ	**Quartz Range**	**3.25**	**265**	PN	Pn	10 44 06.5	-0.6	
LTZ	**Lake Taylor**	**4.03**	**236**	PN	Pn	10 44 16.6	-1.1	
INZ	**Inchbonnie**	**4.53**	**241**	PN	Pn	10 44 24.2	-0.5	

IDC ***04*** *10:43:17.5±3.5, 11°.18S×166°.21E, h90km±29km, mb3.6/5, mb1 4.0/7, mb1mx3.6/48, mbtmp4.2/7, MS3.1/1, Ms1 3.1/1, ms1mx2.5/30, Error ellipse: s-maj=28.0km s-min=25.1km az=34.0*

ISC 04 10:43:23.3±1.5, 11°.5S±0°.1×166°.0E±0°.1, h146km, n10, σ2s69/8, mb3.8/4, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**6.30**	**288**	P			Pn	10 44 49.3	-4.7
	36nm,0.3s,baz=129,slow=5.6,SNR=6.1								
HNR				S			**Sn**	**10 46 01.2**	**-3.9**
	17nm,0.3s,baz=246,slow=12,SNR=2.8								
DZM	**Mont Dzumac**	**10.55**	**178**	P			**Pn**	**10 45 49.8**	**-1.1**
	4.5nm,0.3s,baz=300,slow=16,SNR=94								
DZM				S			**Sn**	**10 47 45.7**	**-1.9**
	0.9nm,0.3s,baz=131,slow=19,SNR=4.8								
DZM				LR		LR	LR	10 49 09.8	
	comp=Z,96nm,20.3s,baz=80,slow=32								
CTA	**Charters Tower**	**20.84**	**243**	P			**P**	**10 47 56.1**	**+2.4**
	4.0nm,0.7s,baz=65,slow=14,SNR=3.9								
H11S2	**WAKE ISLAND Hy**	**29.78**	**1**	T		T	T	11 19 56.4	
	baz=181,slow=76,SNR=25								
H11S3	**WAKE ISLAND Hy**	**29.78**	**1**	T		T	T	11 19 45.2	
	baz=181,slow=76,SNR=14								
H11S1	**WAKE ISLAND Hy**	**29.79**	**1**	T		T	T	11 19 53.3	
	baz=181,slow=76,SNR=12								
WRA	**Warramunga Arr**	**31.59**	**251**	P			**P**	**10 49 34.3**	**+1.8**
	2.7nm,0.8s,baz=82,slow=8.9,SNR=13								
ASAR	**Alice Springs**	**32.84**	**244**	P			**P**	**10 49 44.9**	**+1.4**
	1.0nm,0.8s,baz=67,slow=10,SNR=9.4								
FITZ	**Fitzroy Crossi**	**39.53**	**255**	P			**P**	**10 50 42.3**	**+2.0**
	1.8nm,0.6s,baz=84,slow=7.9,SNR=9.8								
ILAR	**Eielson Array**	**83.83**	**18**	P			**P**	**10 55 35.0**	**-1.0**
	0.3nm,0.5s,baz=239,slow=5.1,SNR=4.6								

NIED ***04*** *10:45:00, 40°.10N×142°.70E, h35km, Mw4.6 Best double couple: M₀1.00000×10¹⁶ NP1:φ=160.00000°, δ8.00000°, λ54.00000°. NP2:φ=16.00000°, δ83.00000°, λ95.00000°.*

BJI ***04*** *10:45:09.8, 40°.08N×143°.01E, h32km, mb4.8/52, mB4.8/36, Ms4.2/42, Ms7 4.1/41*

JMA ***04*** *10:45:13.3±0.1, 40°.11N×142°.69E, h28km±2km, M4.5*

JMA Felt II J1.

IDC ***04*** *10:45:14.2±0.8, 40°.03N×142°.72E, h39km±4km, mb4.1/28, mb1 4.2/30, mb1mx4.1/63, mbtmp4.3/30, ML3.3/1, MS3.8/30, Ms1 3.8/30, ms1mx3.6/56, Error ellipse: s-maj=16.6km s-min=14.5km az=141.0*

ISCJB ***04*** *10:45:14.5±0.5, 40°.17N±0°.03×142°.61E±0°.04, h46km±4km, mb4.6/86, MS3.9/38, Error ellipse: s-maj=5.8km s-min=4.2km az=141.3*

MOS ***04*** *10:45:14.9±1.0, 40°.23N×142°.62E, h50km, mb4.9/47, Error ellipse: s-maj=7.8km s-min=5.2km az=100.7*

NEIC ***04*** *10:45:14.8±0.2, 40°.12N×142°.68E, h35km, mb4.7/31, Error ellipse: s-maj=6.7km s-min=4.7km az=150.0*

NEIC Felt at Misawa. Recorded [2 JMA] in Aomori and Iwate.

ISC 04 10:45:13.5±0.4, 40°.15N±0°.04×142°.73E±0°.04, h28km±1km, h27km:pP-P, n225, σ1s65/258, mb4.7/86, MS4.0/38, 7C-8D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.70**	**253**	P			**Pb**	**10 45 26.2**	**-0.9**
JTH					*e*S		**Sb**	**10 45 35.4**	**-0.9**
MIYJ	**Miyakonagasawa**	**0.90**	**231**	P			**Pn**	**10 45 28.8**	**-1.5**
MIYJ					*e*S		**Sb**	**10 45 40.5**	**-1.7**
JANG	**Nango**	**0.96**	**284**	P			**Pn**	**10 45 30.2**	**-0.8**
JKZ	**Kuzumaki**	**1.09**	**262**	P			**Pn**	**10 45 32.2**	**-0.7**
JOM	**Ohasama**	**1.30**	**239**	P			**Pn**	**10 45 35.3**	**-0.4**
OFUJ	**Ofunato**	**1.35**	**218**	P			**Pn**	**10 45 36.1**	**-0.3**
JTM	**Tenmabayashi**	**1.42**	**297**	P			**Pn**	**10 45 37.9**	**+0.5**
JAH	**Hinai**	**1.60**	**272**	P			**Pb**	**10 45 40.6**	**-1.8**
JAH					*e*S		**Sb**	**10 46 00.7**	**-1.6**
JMK	**Ichinoseki**	**1.67**	**225**	P			**Pn**	**10 45 41.2**	**+0.3**
ERM	**Erimo**	**1.89**	**10**	*c*P			**Pn**	**10 45 44.4**	**+0.5**
ERM					pmax	pmax			
	comp=Z,260nm,1.0s								
ERM	**Erimo**	**1.89**	**10**	*e*Pn			**Pb**	**10 45 47.6**	**+0.3**
ASAJ	**Asahikawa**	**3.97**	**359**	Pn			**Pn**	**10 46 14.2**	**+1.8**
	baz=218,slow=7.2								
ASAJ					Sn		**Sn**	**10 47 01.2**	**+3.2**
	comp=Z,25nm,0.3s,baz=283,slow=20,SNR=6.5								
MJAR	**Matsushiro Arr**	**5.06**	**226**	Pn			**Pn**	**10 46 29.7**	**+2.2**
	comp=Z,4.8nm,0.3s,baz=31,slow=13,SNR=89								
MJAR					LR		LR	10 48 42.8	
	comp=Z,1μm,19.6s,baz=60,slow=42								
MJB9	**Matsu-Tunnel**	**5.06**	**226**	*e*Pn			**Pn**	**10 46 29.8**	**+2.3**
MAJO	**Matsushiro**	**5.06**	**226**	*e*P			**Pn**	**10 46 29.8**	**+2.3**
MAJO	**Matsushiro**	**5.06**	**226**	*e*Pn			**Pn**	**10 46 29.8**	**+2.3**
MAT	**Matsushiro**	**5.06**	**226**	P			**Pn**	**10 46 29.7**	**+2.2**
MAT					*e*S		**Sn**	**10 47 27.2**	**+2.2**
KUR	**Kuril'sk**	**6.33**	**35**	*d*	*i*P		**Pn**	**10 46 44.6**	**-0.3**
KUR					*e*S		**Sn**	**10 47 51.9**	**-4.4**
KUR					pmax	pmax			
	comp=Z,117nm,0.6s								
KUR					pmax	pmax			
	comp=N,29nm,0.3s								
KUR					pmax	pmax			
	comp=E,22nm,0.5s								
KUR					smax	smax			
	comp=N,158nm,0.6s								
KUR					smax	smax			
	comp=E,118nm,0.6s								
INU	**Inuyama**	**6.59**	**225**	*e*Pn			**Pn**	**10 46 50.7**	**+2.2**
YSS	**Yuzh-Sakhalins**	**6.80**	**0**	‖*eP*			**Pn**	**10 46 54.2**	**+2.9**
YSS					*e*S		**Sn**	**10 48 07.1**	**-0.7**
YSS					pmax	pmax			
	comp=Z,20nm,1.1s								
YSS					MLR	MLR			
	comp=Z,500nm,16.0s								
YSS	**Yuzh-Sakhalins**	**6.80**	**0**	*e*Pn			**Pn**	**10 46 54.9**	**+3.6**
JHJ	**Hachijo jima 2**	**7.41**	**200**	Pn			**Pn**	**10 47 00.9**	**+1.2**
	comp=Z,13nm,0.3s,baz=32,slow=19,SNR=3.8								
JHJ					Sn		**Sn**	**10 48 18.9**	**-3.8**
	comp=Z,3.2nm,0.3s,baz=66,slow=19,SNR=2.5								
USRK	**Ussuriysk Ar.**	**8.94**	**300**	Pn			**Pn**	**10 47 24.1**	**+3.4**
	comp=Z,3.1nm,0.3s,baz=110,slow=13,SNR=58								
USRK					LR		LR	10 50 45.7	
	comp=Z,1μm,18.8s,baz=150,slow=37								
HABR	**Khabarovsk**	**9.97**	**329**	*e*P			**Pn**	**10 47 32.8**	**-2.0**
HABR					*e*S		**Sn**	**10 49 23.6**	**-2.0**
HABR					pmax	pmax			
	comp=N,22nm,1.9s								
HABR					pmax	pmax			
	comp=Z,53nm,1.9s								
HABR					pmax	pmax			
	comp=E,39nm,1.9s								
HABR					MLR	MLR			
	comp=Z,530nm,15.0s								
MDJ	**Mudanjiang**	**10.69**	**299**	P			Pn	10 47 50.8	+6.1
MDJ					S		Sn	10 49 53.3	+10
MDJ					pmax	pmax			
	comp=Z,23nm,0.9s								
MDJ					pmax	pmax			
	comp=Z,100nm,5.4s								
MDJ					LR	LR			
	comp=Z,220nm,19.3s								
MDJ					LR	LR			
	comp=Z,650nm,16.8s								
MDJ					LR	LR			
	comp=Z,990nm,18.8s								
MDJ	**Mudanjiang**	**10.69**	**299**	*e*Pn			**Pn**	**10 47 44.9**	**+0.3**
	comp=Z,13nm,0.8s								
TYV	**Tymovskoe**	**10.71**	**360**	*e*P			**Pn**	**10 47 43.2**	**-1.7**
TYV					*e*			10 49 43.0	
TYV					pmax	pmax			
	comp=Z,8.0nm,0.6s								
TYV					MLR	MLR			
	comp=E,1μm,17.0s								
TYV					MLR	MLR			
	comp=Z,1μm,20.0s								
JNU	**Nakatsue**	**11.82**	**237**	LR		LR	LR	10 52 34.2	
	comp=Z,428nm,21.7s,baz=117,slow=38								
KSRS	**Korea Array**	**11.86**	**262**	Pn			Pn	10 48 05.0	+4.3
	comp=Z,0.5nm,0.3s,baz=82,slow=14,SNR=12								
KSRS					Sn		Sn	10 50 20.5	+8.4
	comp=Z,0.2nm,0.3s,baz=68,slow=22,SNR=3.6								
KSRS					LR		LR	10 52 22.4	
	comp=Z,626nm,19.1s,baz=78,slow=36								
KS01	**Wonju Array Si**	**11.88**	**262**	*e*Pn			**Pn**	**10 48 04.9**	**+4.0**
KSAR	**Wonju Array Be**	**11.90**	**262**	P			**Pn**	**10 48 05.0**	**+3.8**
KSAR								10 50 20.5	
KSAR	**Wonju Array Be**	**11.90**	**262**	Pn			**Pn**	**10 48 05.0**	**+3.8**
KSAR					Sn		**Sn**	**10 50 20.5**	**+7.6**
KLR	**Kul'dur**	**11.97**	**323**	Pn			**Pn**	**10 48 04.0**	**+2.0**
	comp=Z,0.2nm,0.3s,baz=137,slow=14,SNR=3.9								
KLR					LR		LR	10 52 54.6	
	comp=Z,683nm,18.1s,baz=139,slow=38								
CN2	**Changchun**	**13.37**	**291**	*e*P			**Pn**	**10 48 20.6**	**-0.6**
CN2					*e*S		**Sn**	**10 50 47.8**	**-1.0**
CN2					LR		LR		
	comp=Z,300nm,15.0s								
CN2					LR		LR		
	comp=Z,400nm,15.0s								
CN2					LR		LR		
	comp=Z,500nm,17.0s								
DL2	**Dalian**	**16.33**	**272**	P			**P**	**10 49 02.3**	**-1.1**
DL2					pP		**pP**	**10 49 11.1**	**+0.3**
DL2					*e*S		**Sn**	**10 52 01.7**	**+0.8**
DL2					pmax	pmax			
	comp=Z,28nm,0.6s								
DL2					LR		LR		
	comp=Z,220nm,23.6s								
DL2					LR		LR		
	comp=Z,540nm,22.4s								
DL2					LR		LR		
	comp=Z,570nm,23.8s								
PETK	**Petropavlovsk-**	**16.50**	**33**	P			Pn	**10 48 58.1**	**-4.7**
	comp=Z,0.4nm,0.3s,baz=195,slow=9.2,SNR=5.0								
PETK					LR		LR	10 55 49.6	
	comp=Z,122nm,21.0s,baz=220,slow=38								
BJI	**Beijing**	**20.30**	**278**	P			**P**	**10 49 45.1**	**-1.9**
BJI					pP		**sP**	**10 49 56.2**	**-1.8**
BJI					S		Sn	10 53 35.2	-1.6
BJI					pmax	pmax			
	comp=Z,8.0nm,1.1s								
BJI					pmax	pmax			
	comp=Z,51nm,3.6s								
BJI					LR	LR			
	comp=Z,150nm,13.0s								
BJI					LR	LR			
	comp=Z,320nm,17.9s								
BJI					LR	LR			
	comp=Z,310nm,22.0s								
TIA	**Tai'an**	**20.48**	**267**	‖*eP*			**P**	**10 49 47.8**	**-1.3**
TIA					pmax	pmax			
	comp=Z,10.0nm,1.0s								
TIA					LR	LR			
	comp=Z,200nm,15.0s								
TIA					LR	LR			
	comp=Z,510nm,17.0s								
TIA					LR	LR			
	comp=Z,560nm,19.0s								
NJ2	**Nanjing**	**20.87**	**255**	*e*P			**P**	**10 49 52.6**	**-0.7**
NJ2					pmax	pmax			
	comp=Z,36nm,0.8s								
YAK	**Yakutsk**	**23.30**	**344**	P			**P**	**10 50 17.6**	**-1.2**
	comp=Z,17nm,0.4s,baz=15,slow=2.5,SNR=6.8								
YAK					LR		LR	11 00 11.3	
	comp=Z,83nm,19.7s,baz=140,slow=38								
YAK	**Yakutsk**	**23.30**	**344**	*e*P			**P**	**10 50 15.9**	**-2.9**
YAK					*e**PP		**sP**	**10 50 36.7**	**+6.7**
YAK					*e*			10 54 01.3	
YAK					*e*S		**S**	**10 54 21.7**	**-7.5**
YAK					*e**SS		Sn	10 54 46.6	-1.8
YAK					pmax	pmax			
	comp=Z,26nm,0.9s								
YAK					pmax	pmax			
	comp=E,4.0nm,0.7s								
YAK					pmax	pmax			
	comp=N,6.0nm,0.9s								
YAK					smax	smax			
	comp=N,141nm,1.8s								
YAK					smax	smax			
	comp=E,87nm,1.8s								
SEY	**Seymchan**	**23.54**	**11**	P			**P**	**10 50 22.4**	**+1.3**
	comp=E,5.3nm,0.7s,baz=158,slow=5.4,SNR=10								
SEY	**Seymchan**	**23.54**	**11**	‖*iP*			**P**	**10 50 22.3**	**+1.3**
SEY					*i* *PP		**sP**	**10 50 32.0**	**-0.5**
SEY					*e**SP		pP	10 50 37.5	+8.5
SMY	**Shemya**	**24.79**	**49**	*e*P			**P**	**10 50 34.4**	**+1.6**
SMY					pmax	pmax			
	comp=Z,80nm,1.5s								
SMY	**Shemya**	**24.79**	**49**	*e*P			**P**	**10 50 34.4**	**+1.6**
	comp=Z,80nm,1.5s								
WHN	**Wuhan**	**24.96**	**256**	‖P			**P**	**10 50 32.6**	**-1.9**
WHN					pP		**pP**	**10 50 39.1**	**-3.5**
WHN					S		**S**	**10 54 55.2**	**-1.3**
WHN					LR	LR			
	comp=Z,540nm,13.8s								
WHN					LR	LR			
	comp=Z,640nm,17.0s								
WHN					LR	LR			
	comp=Z,940nm,17.0s								
BOD	**Bodaibo**	**25.54**	**323**	*e*P			**P**	**10 50 39.1**	**-0.4**
BOD					pmax	pmax			
	comp=Z,54nm,1.0s								
GUMO	**Guam**	**26.52**	**175**	LR		LR	LR	11 00 18.6	
	comp=Z,56nm,21.6s,baz=12,slow=34								
SONA1	**Songino Array**	**27.05**	**299**	*e*P			**P**	**10 50 53.2**	**-0.2**
SONM	**Songino Array**	**27.05**	**299**	P			**P**	**10 50 52.7**	**-0.7**
	comp=Z,2.4nm,0.5s,baz=96,slow=9.2,SNR=12								
SONM					LR		LR	11 02 11.7	
	comp=Z,482nm,19.0s,baz=74,slow=38								
XAN	**Xi'an**	**27.54**	**268**	P			**P**	**10 50 56.0**	**-1.8**
XAN					pP		sP	10 51 07.9	-1.5
XAN					sP		pP	10 51 13.4	+7.4
XAN					pmax	pmax			
	comp=Z,6.0nm,0.8s								
XAN					pmax	pmax			
	comp=Z,41nm,5.2s								
XAN					LR	LR			
	comp=Z,92nm,14.7s								
XAN					LR	LR			
	comp=Z,230nm,16.2s								
H11N2	**WAKE ISLAND Hy**	**29.04**	**127**	T		T	T	11 21 54.9	
	baz=319,slow=75,SNR=325								
H11N1	**WAKE ISLAND Hy**	**29.05**	**127**	T		T	T	11 21 55.6	
	baz=319,slow=75,SNR=406								
H11N3	**WAKE ISLAND Hy**	**29.06**	**127**	T		T	T	11 21 55.1	
	baz=319,slow=75,SNR=123								
TLY	**Talaya**	**29.19**	**306**	P			**P**	**10 51 14.9**	**+2.5**
	comp=Z,2.4nm,0.6s,baz=118,slow=6.4,SNR=3.0								
TLY					LR		LR	11 03 39.4	
	comp=Z,292nm,18.1s,baz=96,slow=38								
TLY	**Talaya**	**29.19**	**306**	*e*P			**P**	**10 51 15.4**	**+3.0**
TLY					*e*			10 52 20.2	
TLY					*e*SS		SS	10 57 59.3	-7.7
TLY					pmax	pmax			
	comp=Z,4.0nm,0.8s								
TLY					MLR	MLR			
	comp=Z,247nm,15.0s								
ZAK	**Zakamensk**	**29.27**	**304**	*e*P			**P**	**10 51 12.1**	**-1.1**
ZAK					pmax	pmax			
	comp=Z,7.0nm,1.4s								
LZH	**Lanzhou**	**30.69**	**275**	*e*P			P	10 51 30.6	+4.6
LZH					pmax	pmax			
	comp=Z,25nm,1.2s								
LZH					pmax	pmax			
	comp=Z,110nm,5.9s								
LZH					LR	LR			
	comp=Z,190nm,13.8s								
LZH					LR	LR			
	comp=Z,240nm,15.8s								
LZH					LR	LR			
	comp=Z,290nm,16.0s								
BILL	**Bilibino**	**30.75**	**17**	‖*eP*			**P**	**10 51 27.0**	**+1.1**
BILL					*e*			10 52 24.4	
BILL					pmax	pmax			
	comp=Z,5.0nm,1.3s								
BILL					MLR	MLR			
	comp=Z,193nm,20.0s								
GTA	**Gaotai**	**32.76**	**283**	*e*P			**P**	**10 51 44.3**	**+0.2**
GTA					pP		sP	10 51 55.5	-0.2
GTA					sP		pP	10 52 01.8	+10
GTA					S		**S**	**10 56 56.0**	**-3.2**
GTA					sS		sS	10 57 15.5	+2.8
GTA					SS		**SnSn**	**10 58 54.6**	**-1.2**
GTA					pmax	pmax			
	comp=Z,13nm,0.9s								
GTA					pmax	pmax			
	comp=Z,65nm,6.4s								
GTA					LR	LR			
	comp=Z,130nm,18.3s								
GTA					LR	LR			
	comp=Z,390nm,18.8s								
GTA					LR	LR			
	comp=Z,480nm,16.9s								
CD2	**Chengdu**	**32.81**	**266**	*e*P			**P**	**10 51 43.5**	**-1.0**
CD2					pP		sP	10 51 55.2	-0.9
CD2					sP		pP	10 52 00.6	+7.9
CD2					S		**S**	**10 56 57.7**	**-2.3**
CD2					sS		sS	10 57 17.8	+4.3
CD2					pmax	pmax			
	comp=Z,10.0nm,0.5s								
CD2					pmax	pmax			
	comp=Z,120nm,5.6s								
QIZ	**Qiongzhong**	**35.21**	**243**	P			**P**	**10 52 06.1**	**+0.8**
QIZ					sP		**sP**	**10 52 21.8**	**+4.8**
QIZ					S		**S**	**10 57 41.0**	**+3.9**
QIZ					LR	LR			
	comp=Z,140nm,19.2s								
QIZ					LR	LR			
	comp=Z,170nm,21.4s								
KMI	**Kunming**	**36.53**	**258**	P			**P**	**10 52 18.5**	**+1.6**
KMI					pmax	pmax			
	comp=Z,12nm,1.1s								
KMI					pmax	pmax			
	comp=Z,72nm,5.0s								
WMQ	**Urumqi**	**40.44**	**294**	*e*P			**P**	**10 52 49.5**	**+0.1**
WMQ					pP		sP	10 53 02.1	+1.0
WMQ					sP		pP	10 53 07.2	+9.5
WMQ					pmax	pmax			
	comp=Z,24nm,1.0s								
WMQ					pmax	pmax			
	comp=Z,160nm,3.7s								
WMQ					LR	LR			
	comp=Z,250nm,19.4s								
WMQ					LR	LR			
	comp=Z,410nm,23.2s								
WMQ					LR	LR			
	comp=Z,370nm,22.3s								
ZAA0	**Zalesovo Array**	**40.65**	**310**	*e*P			**P**	**10 52 50.4**	**-0.5**
ZAA0					*e*P		pP	10 52 50.9	-8.3
ZALV	**Zalesovo Beam**	**40.65**	**310**	P			**P**	**10 52 50.5**	**-0.4**
	comp=Z,12nm,0.5s,baz=91,slow=7.8,SNR=40								
ZALV					pP		**sP**	**10 53 02.0**	**-0.6**
	comp=Z,16nm,0.7s,baz=87,slow=7.4,SNR=13								
ZALV					LR		LR	11 10 32.8	
	comp=Z,310nm,18.7s,baz=70,slow=37								
NRIK	**Noril'sk**	**40.91**	**334**	P			**P**	**10 52 52.3**	**-0.5**
	comp=Z,3.8nm,0.5s,baz=135,slow=9.2,SNR=3.7								
NRIK					LR		LR	11 10 56.0	
	comp=Z,394nm,19.2s,baz=112,slow=38								
NVS	**Novosibirsk**	**41.50**	**311**	‖*iP*			**P**	**10 52 57.7**	**-0.1**
NVS					pmax	pmax			
	comp=E,14nm,1.1s								
NVS					pmax	pmax			
	comp=Z,15nm,1.1s								
CHTO	**Chiang Mai**	**43.11**	**254**	*e*P			**P**	**10 53 11.6**	**+0.2**
CHTO					pmax	pmax			
	comp=Z,5.0nm,0.6s								
CHTO	**Chiang Mai**	**43.11**	**254**	*e*P			**P**	**10 53 11.6**	**+0.2**
	comp=Z,4.5nm,0.6s								
CMAR	**Chiang Mai Arr**	**43.34**	**253**	P			**P**	**10 53 12.4**	**-0.8**
	comp=Z,1.1nm,0.5s,baz=49,slow=8.0,SNR=5.7								
CMAR					LR		LR	11 11 09.9	
	comp=Z,56nm,18.0s,baz=56,slow=36								
MK01	**Makanchi Array**	**43.41**	**300**	*e*P			**P**	**10 53 13.2**	**-0.4**
MK31	**Makanchi Array**	**43.41**	**300**	*e*P			**P**	**10 53 13.5**	**0.0**
MK31	**Makanchi Array**	**43.41**	**300**	*e*P			**P**	**10 53 13.5**	**0.0**
MKAR	**Makanchi Array**	**43.41**	**300**	P			**P**	**10 53 13.4**	**-0.1**
	comp=Z,4.1nm,0.6s,baz=82,slow=9.9,SNR=36								
MKAR					pP		**sP**	**10 53 23.7**	**-1.6**
	comp=Z,10nm,1.0s,baz=78,slow=7.7,SNR=7.0								
MKAR					LR		LR	11 12 09.1	
	comp=Z,249nm,19.6s,baz=70,slow=37								
MAKZ	**Makanchi**	**43.62**	**300**	*i* P			**P**	**10 53 13.9**	**-1.3**
MAKZ					pmax	pmax			
	comp=Z,16nm,0.9s								
MAKZ	**Makanchi**	**43.62**	**300**	*e*P			**P**	**10 53 15.2**	**0.0**
	comp=Z,14nm,0.9s								
KDAK	**Kodiak Island**	**44.12**	**44**	*e*P			**P**	**10 53 18.8**	**-0.2**
KDAK					pmax	pmax			

comp=Z,11nm,0.4s
CHKZ Chkalovo 48.98 311 P **P** **10 53 56.6 -0.6**
CHKZ pmax pmax
comp=Z,20nm,0.9s
TKM2 Tokmak 2 49.11 296 *eP* **P** **10 53 59.0 +0.4**
TKM2 pmax pmax
comp=Z,21nm,0.8s
TKM2 Tokmak 2 49.11 296 *eP* **P** **10 53 59.0 +0.4**
comp=Z,22nm,0.8s
BVA0 Borovoye Array 49.29 311 P **P** **10 53 59.4 -0.2**
BVA0 pmax pmax
comp=Z,10.0nm,0.6s
BRVK Borovoye 49.34 311 *c iP* **P** **10 54 00.0 0.0**
BRVK *i* *PP **sP** **10 54 11.8 0.0**
BRVK pmax pmax
comp=Z,25nm,0.6s
BRVK Borovoye 49.34 311 *eP* **P** **10 54 00.3 +0.3**
comp=Z,18nm,1.0s
OTUK Ortayu 49.49 304 P **P** **10 54 00.9 -0.3**
OTUK pmax pmax
comp=Z,17nm,1.3s
KOLN Koldanda 49.75 275 *eP* **P** **10 54 03.6 -0.1**
comp=Z,11nm,0.5s
FRU Bishkek 49.82 297 *eP* **P** **10 54 03.0 -0.8**
FRU *e* 10 54 12.0
AAK Ala-Archa 49.97 296 *eP* **P** **10 54 05.4 +0.3**
AAK pmax pmax
comp=Z,6.0nm,0.7s
AAK Ala-Archa 49.97 296 *eP* **P** **10 54 05.4 +0.3**
comp=Z,5.5nm,0.7s
PYUN Piuthan 50.05 275 *eP* **P** **10 54 05.9 -0.1**
ZRNK Zerenda 50.11 311 *eP* **P** **10 54 06.1 +0.3**
ZRNK pmax pmax
comp=Z,25nm,0.8s
ZRNK Zerenda 50.11 311 *eP* **P** **10 54 06.1 +0.3**
comp=Z,25nm,0.8s
KSH Kashi 50.13 292 P **P** **10 54 10.6 +4.2**
KSH *epP sP 10 54 22.7 +4.5
KSH S **S** **11 01 19.0 +2.7**
KSH SS **SS** **11 04 50.8 +1.5**
KSH pmax pmax
comp=Z,4.0nm,0.6s
KSH LR LR
comp=Z,180nm,11.3s
KSH LR LR
comp=Z,120nm,9.7s
KSH LR LR
comp=Z,330nm,13.3s
EKS2 Erkin-Say 50.45 297 *eP* **P** **10 54 08.8 0.0**
EKS2 pmax pmax
comp=Z,8.0nm,0.8s
EKS2 Erkin-Say 50.45 297 *eP* **P** **10 54 08.8 0.0**
comp=Z,8.0nm,0.8s
INK Inuvik 51.15 28 P **P** **10 54 13.7 +0.3**
comp=Z,2.5nm,0.5s,baz=293,slow=6.2,SNR=14
INK Inuvik 51.15 28 *eP* **P** **10 54 14.1 +0.6**
INK pmax pmax
comp=Z,4.0nm,0.8s
INK Inuvik 51.15 28 *eP* **P** **10 54 14.1 +0.6**
comp=Z,4.1nm,0.8s
MNAS Manas 51.39 297 P **P** **10 54 15.9 +0.1**
MNAS pmax pmax
comp=Z,24nm,0.9s
HNR Honiara 51.84 158 LR LR 11 15 03.3
comp=Z,33nm,20.9s,baz=2.5,slow=35
KK31 Karatay Array 52.50 298 *i* P **P** **10 54 23.3 -0.7**
KK31 pmax pmax
comp=Z,5.0nm,0.7s
KKAR Karatay Array 52.50 298 *eP* **P** **10 54 23.8 -0.2**
KKAR Karatay Array 52.50 298 *eP* **P** **10 54 23.8 -0.2**
SOKR Solikamsk 54.51 321 *eP* **P** **10 54 37.0 -1.3**
SOKR pmax pmax
comp=Z,12nm,0.7s
SOKR MLR MLR
comp=Z,137nm,15.0s
ARU Arti 54.74 317 P **P** **10 54 39.8 -0.3**
comp=Z,3.9nm,0.4s,baz=74,slow=5.9,SNR=13
ARU pP **sP** **10 54 51.9 -0.1**
comp=Z,10nm,0.6s,baz=60,slow=5.2,SNR=4.6
ARU Arti 54.74 317 *c iP* **P** **10 54 40.0 -0.1**
ARU 10 55 39.8
ARU 10 56 42.5
ARU S **S** **11 02 20.5 +2.0**
ARU pmax pmax
comp=Z,22nm,1.2s
ARU MLR MLR
comp=Z,425nm,17.0s
ARU Arti 54.74 317 *eP* **P** **10 54 40.0 -0.1**
comp=Z,17nm,0.7s
ARU pP **sP** **10 54 51.9 -0.1**
DZET Dzherino 55.47 294 P **P** **10 54 44.2 -1.6**
DZET pmax pmax
comp=Z,9.0nm,0.9s
AB31 Akbulak array 56.75 309 P **P** **10 54 54.1 -0.5**
AB31 pmax pmax
comp=Z,8.0nm,0.5s
ABKAR Akbulak array 56.75 309 *eP* **P** **10 54 54.5 -0.2**
KBL Kabul 57.30 290 *eP* **P** **10 54 58.4 -0.6**
KBL *e*PP **sP** **10 55 09.6 -1.3**
KBL pmax pmax
comp=Z,28nm,0.8s
KBL Kabul 57.30 290 *eP* **P** **10 54 58.4 -0.6**
comp=Z,28nm,0.8s
KBL *ep*P **sP** **10 55 09.6 -1.3**
AKTO Aktyubinsk 57.39 311 P **P** **10 54 58.9 -0.2**
comp=Z,6.5nm,0.7s,baz=58,slow=6.3,SNR=17
AKTO LR LR 11 21 07.1
comp=Z,162nm,18.1s,baz=70,slow=38
SPITS Spitsbergen Ar 57.67 349 LR LR 11 21 24.9
comp=Z,46nm,19.2s,baz=335,slow=38
FITZ Fitzroy Crossi 60.10 199 *eP* **P** **10 55 16.1 -2.1**
comp=Z,10nm,0.9s
WRAB Tennant Creek 60.28 189 P **P** **10 55 20.2 +0.8**
WRAB pmax pmax
comp=Z,10.0nm,1.1s
WRA Warramunga Arr 60.29 189 P **P** **10 55 17.3 -2.2**
comp=Z,1.0nm,0.6s,baz=5.2,slow=7.3,SNR=5.0
YKA Yellowknife Ar 60.61 31 P **P** **10 55 20.8 -0.4**
comp=Z,0.6nm,0.5s,baz=302,slow=6.6,SNR=4.6
ARCES ARCESS Array B 61.45 339 P **P** **10 55 26.7 -0.2**
comp=Z,1.3nm,0.8s,baz=50,slow=8.0,SNR=5.3
ARCES LR LR 11 26 21.3
comp=Z,59nm,18.4s,baz=98,slow=40
KLMR Klimovskoe 61.69 327 P **P** **10 55 26.7 -1.9**
KLMR *e* 10 57 42.7
KLMR pmax pmax
comp=Z,12nm,1.0s
DAG Danmarks Havn 62.76 355 *i* P **P** **10 55 34.8 -0.7**
comp=Z,3.2nm,0.9s
DAG Danmarks Havn 62.76 355 *i* P **P** **10 55 34.8 -0.7**
DAG pmax pmax
comp=Z,3.0nm,0.9s
GEYT Alibeck 63.25 298 P **P** **10 55 38.8 -0.7**
comp=Z,3.8nm,0.4s,baz=19,slow=5.2,SNR=7.5
ASAR Alice Springs 64.02 189 P **P** **10 55 42.4 -2.1**
comp=Z,0.3nm,0.4s,baz=332,slow=14,SNR=4.3
OBN Obninsk 66.23 323 *eP* **P** **10 55 59.3 +0.8**
OBN *e* 10 58 25.5
OBN pmax pmax
comp=Z,5.0nm,0.8s
OBN MLR MLR
comp=Z,203nm,16.0s
FIA1 FINESS Array S 66.54 332 *eP* **P** **10 56 00.3 -0.1**
FINES FINESS Array B 66.55 332 P **P** **10 56 00.2 -0.2**
comp=Z,5.9nm,0.8s,baz=56,slow=7.1,SNR=13
FINES LR LR 11 27 24.6
comp=Z,185nm,19.9s,baz=16,slow=38
JMIC Jan Mayen 67.26 350 LR LR 11 26 08.8
comp=Z,11nm,20.1s,baz=60,slow=36
VSR Storozhevoye 67.28 318 *eP* **P** **10 56 05.0 -0.3**
VSR pmax pmax
comp=Z,10.0nm,0.6s
SUMG Summit 67.57 0 *i* P **P** **10 56 08.8 +1.5**
SUMG Summit 67.57 0 *eP* **P** **10 56 08.8 +1.5**
K05A Summer Lake 68.19 52 *eP* **P** **10 56 12.9 +1.4**
K05A *ep*P **sP** **10 56 23.1 -0.4**
VSU Vasula 68.30 329 *i* P **P** **10 56 11.8 +0.3**
SWMT Swartz Lake 69.34 45 *eP* **P** **10 56 19.3 +0.9**
KIV Kislovodsk 69.65 311 *eP* **P** **10 56 21.8 +1.4**
KIV pmax pmax
comp=Z,17nm,0.9s
KIV MLR MLR
comp=Z,129nm,17.0s
KBZ Khabaz 69.67 310 P **P** **10 56 20.4 +0.1**
comp=Z,5.9nm,0.8s,baz=48,slow=5.8,SNR=11
KBZ LR LR 11 29 45.5
comp=Z,94nm,18.6s,baz=58,slow=38
WVOR Wild Horse Val 69.72 51 *eP* **P** **10 56 21.8 +0.9**
WVOR pmax pmax
comp=Z,6.0nm,1.1s
WVOR Wild Horse Val 69.72 51 *eP* **P** **10 56 21.8 +0.9**
comp=Z,5.5nm,1.1s
FFC Flin Flon 70.54 34 *eP* **P** **10 56 26.1 +0.6**
NACGM Naroch 70.69 327 *e* **P** **10 56 27.0 +0.6**
MFID Camas Ranch 70.79 49 *eP* **P** **10 56 28.3 +0.9**
comp=Z,12nm,1.8s
LRM Limekiln Ridge 71.22 46 *eP* **P** **10 56 30.8 +0.7**
DLMT Dillon 71.42 46 *eP* **P** **10 56 32.0 +0.8**
comp=Z,11nm,1.4s
NC204 NORSAR Array S 71.66 338 *eP* **P** **10 56 32.7 +0.5**
STKA Stephens Creek 71.67 181 LR LR 11 30 58.9
comp=Z,10nm,19.9s,baz=25,slow=38
HFS Hagfors 71.67 336 P **P** **10 56 32.1 -0.2**
comp=Z,5.0nm,0.6s,baz=54,slow=7.3,SNR=16
NB2 NORSAR Subarra 71.71 337 P **P** **10 56 32.2 -0.3**
comp=Z,3.4nm,0.7s,baz=41,slow=6.2
NOA NORSAR Array B 71.71 337 P **P** **10 56 32.2 -0.3**
comp=Z,4.2nm,0.8s,baz=39,slow=6.0,SNR=14
NOA LR LR 11 32 51.9
comp=Z,64nm,19.1s,baz=20,slow=40
BOZ Bozeman (W) 71.77 45 *eP* **P** **10 56 34.0 +0.7**
BOZ pmax pmax
comp=Z,6.0nm,1.0s
BOZ Bozeman (W) 71.77 45 *eP* **P** **10 56 34.0 +0.7**
comp=Z,5.6nm,1.0s
NBO02 NORSAR Array S 71.81 338 *eP* **P** **10 56 33.3 +0.2**
AKASG Malin Array Be 72.47 322 P **P** **10 56 36.5 -0.6**
comp=Z,2.8nm,0.6s,baz=45,slow=6.3,SNR=10
AKASG pP **sP** **10 56 48.9 -0.4**
comp=Z,4.6nm,0.6s,baz=43,slow=6.8,SNR=7.6
AKASG LR LR 11 32 04.5
comp=Z,68nm,19.7s,baz=40,slow=39
KIEV Kiev 72.48 322 *i iP* **P** **10 56 37.2 0.0**
KIEV *i* *PP **sP** **10 56 48.8 -0.5**
KIEV pmax pmax
comp=Z,4.0nm,0.9s
KIEV Kiev 72.48 322 *eP* **P** **10 56 36.6 -0.7**
comp=Z,2.8nm,0.8s
KIEV *ep*P **sP** **10 56 48.4 -0.9**
CRMT Chrome Mountai 72.70 45 *eP* **P** **10 56 38.9 -0.2**
R11A Troy Canyon, C 74.05 53 *eP* **P** **10 56 47.4 +0.3**
BW06 Boulder Array 74.76 47 *eP* **P** **10 56 50.9 -0.2**
PDAR Pinedale Array 74.76 47 P **P** **10 56 50.8 -0.4**
comp=Z,1.0nm,0.6s,baz=340,slow=1.1,SNR=6.7
PDAR LR LR 11 26 01.3
comp=Z,24nm,21.8s,baz=294,slow=33
JLU Jordanelle 75.09 49 *eP* **P** **10 56 57.2 +4.1**
comp=Z,9.3nm,1.8s
SHPR Sheep Range 75.47 54 *eP* **P** **10 56 56.8 +1.5**
comp=Z,4.9nm,1.2s
SHPR *ep*P **sP** **10 57 06.4 -0.9**
CCUT Cedar City 75.92 53 *eP* **P** **10 56 58.0 +0.2**
CCUT *ePcP* **pP** **10 57 07.8 +1.1**
MSU Marysvale 76.01 51 *ePcP* **PcP** **10 57 13.4 +2.8**
MTPU Mount Pierson 76.31 52 *eP* **P** **10 57 01.7 +1.5**
comp=Z,15nm,1.9s
LCMT Little Creek M 76.33 53 *eP* **P** **10 57 01.4 +1.3**
comp=Z,4.0nm,1.0s
ULM Lac du Bonnet 76.34 34 P **P** **10 56 59.1 -0.6**
comp=Z,1.4nm,0.5s,baz=299,slow=7.3,SNR=3.3
PFO Pinyon Flats O 76.47 57 *eP* **P** **10 57 02.6 +1.7**
BUR08 Bucovina Ar. S 76.49 322 *eP* **P** **10 57 01.4 +0.6**
SRU San Rafael Swe 76.60 50 *eP* **P** **10 57 02.4 +0.7**
SRU pmax pmax
comp=Z,4.0nm,0.9s
SRU San Rafael Swe 76.60 50 *eP* **P** **10 57 02.4 +0.7**
comp=Z,4.1nm,0.9s
BRTR Keskin Array B 77.56 312 P **P** **10 57 07.0 0.0**
comp=Z,1.2nm,0.6s,baz=34,slow=4.6,SNR=6.2
BRTR pP **sP** **10 57 18.3 -0.8**
comp=Z,1.9nm,0.9s,baz=38,slow=2.2,SNR=5.0
BRTR LR LR 11 36 02.0
comp=Z,47nm,19.4s,baz=48,slow=39
PV10 Paradox Valley 77.96 50 *eP* **P** **10 57 10.5 +1.1**
BR231 Keskin MP Arra 77.97 312 *eP* **P** **10 57 07.7 -1.5**
OKC Ostrava-Krasne 78.01 327 *eP* **P** **10 57 10.4 +1.3**
OKC *ep*P **sP** **10 57 22.1 +0.9**
OKC Ostrava-Krasne 78.01 327 *eP* **P** **10 57 10.4 +1.3**
OKC *e* 10 57 22.1
PV05 Paradox Valley 78.12 50 *eP* **P** **10 57 11.3 +1.0**
MORC Moravsky Berou 78.31 327 *eP* **P** **10 57 11.6 +0.8**
MORC pmax pmax
comp=Z,13nm,0.8s
MORC Moravsky Berou 78.31 327 *eP* **P** **10 57 11.6 +0.8**
comp=Z,13nm,0.8s
DPC Dobruska-Polom 78.36 328 *eP* **P** **10 57 11.7 +0.6**
DPC *ep*P **sP** **10 57 23.7 +0.4**
DPC Dobruska-Polom 78.36 328 *eP* **P** **10 57 11.7 +0.6**
DPC *e* 10 57 23.7
WUAZ Wupatki 78.45 53 *eP* **P** **10 57 13.3 +1.3**
comp=Z,4.8nm,0.9s
VYHS Vyhne 78.74 326 *eP* **P** **10 57 13.8 +0.6**
VYHS pmax pmax
comp=Z,2.0nm,1.2s
VYHS Vyhne 78.74 326 *eP* **P** **10 57 13.8 +0.6**
CLL Collm 78.90 331 *eP* **P** **10 57 14.0 0.0**
CLL *e* 10 57 24.0
CLL Collm 78.90 331 *eP* **P** **10 57 14.0 0.0**
KHC Kasperske Hory 80.42 329 *eP* **P** **10 57 22.8 +0.5**
KHC *ep*P **sP** **10 57 34.9 +0.4**
KHC Kasperske Hory 80.42 329 *eP* **P** **10 57 22.8 +0.5**
KHC *e* 10 57 34.9
KHC Kasperske Hory 80.42 329 *eP* **P** **10 57 23.0 +0.6**
EKA Eskdalemuir Ar 80.53 341 P **P** **10 57 22.5 -0.3**
comp=Z,1.3nm,0.7s,baz=29,slow=4.1,SNR=5.1
GERES GERESS Array B 80.60 329 P **P** **10 57 23.4 0.0**
comp=Z,0.4nm,0.3s,baz=64,slow=4.5,SNR=8.2
GERES pP **sP** **10 57 35.6 +0.1**
comp=Z,1.4nm,0.7s,baz=39,slow=8.6,SNR=4.2
GERES LR LR 11 36 35.6
comp=Z,109nm,18.5s,baz=34,slow=38
GEA0 GERESS Array S 80.61 329 *eP* **P** **10 57 23.6 +0.2**
GRFO Grafenberg 80.88 330 *eP* **P** **10 57 24.7 -0.1**
GRFO Grafenberg 80.88 330 *eP* **P** **10 57 24.6 -0.1**
MMAI Mount Meron Ar 81.00 306 P **P** **10 57 26.2 +0.5**
comp=Z,2.6nm,0.7s,baz=32,slow=5.6,SNR=4.2
VTS Vitosha 81.13 319 *eP* **P** **10 57 27.2 +0.8**
VTS Vitosha 81.13 319 *eP* **P** **10 57 27.2 +0.8**
ANMO Albuquerque 81.81 51 *i iP* **P** **10 57 31.0 +0.8**
ANMO pmax pmax
comp=Z,4.0nm,1.2s
ANMO Albuquerque 81.81 51 *eP* **P** **10 57 31.3 +1.1**
ANMO *ep*P **pP** **10 57 40.4 +1.3**
SCHQ Schefferville 82.06 17 LR LR 11 36 49.8
comp=Z,28nm,20.2s,baz=319,slow=38
FUORN Ofenpass-Fuorn 83.77 329 *eP* **P** **10 57 41.3 +1.1**
MNTX Cornudas Mount 84.71 53 *eP* **P** **10 57 45.5 +0.5**
MNTX *ep*P **sP** **10 57 57.7 +0.6**
PPT Papeete 85.13 118 LR LR 11 27 42.4
comp=Z,90nm,21.5s,baz=316,slow=30
PPT2 Papeete2 85.15 118 *e*LR LR 11 24 35.2
comp=Z,145nm,22.2s
TAOE Nuku Hiva Isla 85.95 105 *e*LR LR 11 25 08.0
comp=Z,157nm,21.3s
TX31 Lajitas Ar. Si 87.42 53 *eP* **P** **10 57 58.4 -0.1**
TXAR Lajitas Array 87.42 53 P **P** **10 57 58.3 -0.1**
comp=Z,1.0nm,0.9s,baz=285,slow=3.5,SNR=7.3
CEL Celeste 88.03 321 *e*PcP **PcP** **10 58 08.2 +5.1**
TORD Torodi Ar. Bea 115.81 317 PKP **PKPdf** **11 03 54.3 +0.5**
comp=Z,0.6nm,0.9s,baz=351,slow=1.1,SNR=2.9

*SJA **04** 10:47:44.3±1.1,30.82S×71.36W,h137km±17km,ML4.9, MW4.4*
*GUC **04** 10:47:45.1±0.5,30.98S×71.27W,h65km±18km,ML4.8*
*IDC **04** 10:47:45.4±0.6,31.02S×71.21W,h62km±3km,mb4.3/5, mb1 4.3/8,mb1mx3.9/28,mbtmp4.4/8,MS3.3/5,Ms1 3.3/5, ms1mx3.0/22,Error ellipse: s-maj=22.3km s-min=20.1km az=70.0*
*BJI **04** 10:47:59.3,31.20S×69.80W,h15km,mB5.2/3,Ms5.4/3, Ms7 5.2/3*
*NEIC **04** 10:47:59.2±3.4,31.03S×67.97W,h27km±24km,mb4.6/14, Error ellipse: s-maj=25.7km s-min=11.6km az=92.0*
NEIC Felt at Mendoza.
ISC 04 10:47:44.7±0.5,30.93S±0.04×71.55W±0.06,h61km±4km, n141,σ1s58/70,mb4.7/5,15D,Near coast of central Chile

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

TLL Tololo Astrono 0.99 41 *e*P **Pn** **10 48 02.7 -0.3**
TLL *e*S **Sn** **10 48 15.9 -0.6**
TLL IAML 10 48 17.7
comp=N,40μm,0.5s
AROD Rodeo 1.95 68 *⇓e*P **Pn** **10 48 17.4 +1.6**
LCO Las Campanas 2.05 21 *e*P **Pn** **10 48 17.9 +0.8**
LCO *e*S **Sn** **10 48 42.5 +0.9**
LCO IAML 10 48 44.6
comp=E,12μm,0.3s
ROCH El Roble 2.09 167 *e*P **Pn** **10 48 17.5 -0.2**
ROCH *e*S **Sn** **10 48 42.2 -0.5**
RTLS Leoncito 2.12 115 *e*P **Pn** **10 48 18.8 +0.8**
ACCO Cerro Coronel 2.17 82 *⇓e*P **Pn** **10 48 19.9 +1.1**
ACCO *⇓e*S **Sn** **10 48 46.3 +1.6**
ACCO IAML 10 48 49.5
comp=Z,6μm,0.4s
ACDV Cuesta del Vie 2.23 71 *⇓e*P **Pn** **10 48 20.9 +1.4**
AUSP Uspallata 2.26 126 *e*P **Pn** **10 48 20.9 +0.9**
PEL Peldehue 2.33 162 *⇓e*P **Pn** **10 48 20.0 -0.7**
PEL *e*S **Sn** **10 48 46.6 -1.8**
FCH Farellones 2.62 156 *e*P **Pn** **10 48 24.9 0.0**
FCH *e*S **Sn** **10 48 55.0 -0.8**
RTLL Cerro Villicun 2.67 99 *⇓e*P **Pn** **10 48 25.5 +0.1**
RTCV Cerro Valdivia 2.74 111 *e*P **Pn** **10 48 27.0 +0.7**
ASAL Salagasta 2.85 126 *⇓e*P **Pn** **10 48 29.5 +1.6**
ASAL *⇓e*S **Sn** **10 49 03.2 +2.1**
ARCO CERRO ARCO 2.94 131 *e*P **Pn** **10 48 30.8 +1.7**
ARCO *⇓e*S **Sn** **10 49 08.8 +5.5**
ARCO IAML 10 49 16.0
comp=Z,3μm,0.4s
AAGR Agrelo 3.16 134 *⇓e*P **Pn** **10 48 34.3 +2.1**
AVFE Valle Fertil 3.54 87 *⇓e*P **Pn** **10 48 36.9 -0.3**
AVFE *⇓e*S **Sn** **10 49 16.4 -1.4**
AVFE IAML 10 49 25.4
comp=Z,2μm,0.7s
VCA Vinchina 3.64 54 *e*P **Pn** **10 48 41.6 +2.9**
VCA IAML 10 49 31.9
comp=Z,3μm,0.4s
CPCH Copiapo 3.71 17 *e*P **Pn** **10 48 40.2 +0.7**
ACAN Cantantal 3.96 111 *⇓e*P **Pn** **10 48 42.8 -0.2**
ACHE Chepes 4.20 94 *⇓e*P **Pn** **10 48 45.7 -0.7**
CYA Choya 5.58 65 *⇓e*P **Pn** **10 49 04.5 -0.8**
CYA IAML 10 49 08.2
comp=Z,273nm,0.6s
TCA Tanti 5.98 96 *e*P **Pn** **10 49 08.8 -1.9**
TCA IAML 10 50 49.0
comp=Z,371nm,0.6s
LVC Limon Verde 8.61 17 P **Pn** **10 49 45.0 -2.1**
comp=Z,38nm,0.3s,baz=195,slow=9.9,SNR=11
LVC S **Sn** **10 51 26.2 +3.3**
comp=Z,226nm,0.3s,baz=201,slow=18,SNR=4.1
PB04 IPOC Station P 8.65 9 *e*Pn sPn 10 50 04.9 +0.1
PLCA Paso Flores 9.82 176 P **Pn** **10 50 02.0 -1.2**
comp=Z,0.2nm,0.3s,baz=356,slow=14,SNR=3.1
PLCA Paso Flores 9.82 176 *e*Pn sPn 10 50 19.7 -1.1
TRQA Tornquist 10.63 135 *e*Pn **Pn** **10 50 11.6 -2.6**
CPUP Villa Florida 13.30 73 P **Pn** **10 50 46.1 -4.7**
comp=Z,0.8nm,0.3s,baz=240,slow=13,SNR=11
CPUP LR LR 10 56 26.2
comp=Z,164nm,20.7s,baz=266,slow=40
SIV San Ignacio 17.69 35 P **Pn** **10 51 46.1 -0.9**
comp=Z,0.5nm,0.3s,baz=224,slow=12,SNR=18
NNA Nana 19.47 344 LR LR 10 58 26.1
comp=Z,30nm,21.7s,baz=170,slow=33
USHA Ushuaia 24.00 176 P **P** **10 52 54.0 +0.6**
comp=Z,27nm,0.7s,baz=359,slow=9.7,SNR=2.7
PRAC Prado 34.59 354 *e*P sP 10 54 52.7 +2.4
comp=Z,39nm,1.8s
SNAA Sanae 54.28 159 P **P** **10 57 04.3 +0.1**
QSPA South Pole Qui 59.30 180 *e*P **pP** **10 57 58.1 +1.9**
QSPA *ep*P sP 10 58 04.7 +1.5
TXAR Lajitas Array 67.28 330 P **P** **10 58 35.2 +2.2**
comp=Z,0.7nm,0.7s,baz=152,slow=7.4,SNR=8.0
TXAR pP **pP** **10 58 51.3 +1.8**
comp=Z,0.7nm,0.7s,baz=146,slow=7.9,SNR=3.9
TXAR sP **PcP** **10 58 59.3 -1.1**
comp=Z,1.2nm,0.7s,baz=157,slow=8.1,SNR=5.9
133A Hamilton Ranch 68.29 335 P sP 10 59 05.1 +2.5
baz=154
Z35A Perchaven, San 68.37 337 P sP 10 59 06.0 +2.9
baz=155
Y35A Marietta 68.82 337 P sP 10 59 09.4 +3.5
baz=155
W39A Magazine 69.02 341 P sP 10 59 10.4 +3.3
baz=158
Y33A Hilltop Ranch, 69.45 336 P sP 10 59 12.4 +2.6
baz=154
V39A Pettigrew 69.58 341 P sP 10 59 13.4 +2.7
baz=158
PBMO Poplar Bluff 69.64 344 *e*P sP 10 59 12.5 +1.6
comp=Z,8.9nm,0.8s
W36A Wetumka 69.70 339 P sP 10 59 14.0 +2.7
baz=156
X34A Smith Ranch, M 69.72 337 P sP 10 59 14.0 +2.5
baz=155
U40A Yellville 69.85 342 P sP 10 59 14.4 +2.1
baz=159
U39A Green Forest 70.04 341 P sP 10 59 15.4 +2.0
baz=159
MNTX Cornudas Mount 70.06 330 P sP 10 59 15.9 +2.3
baz=148
HHAR Hobbs 70.08 341 *e*P sP 10 59 15.4 +1.8
comp=Z,7.2nm,0.7s
V36A Jenks 70.21 339 P sP 10 59 16.7 +2.3
baz=156
T41A Mountain View 70.22 343 P sP 10 59 16.7 +2.2
baz=160
TUL1 Leonard 70.28 339 P sP 10 59 17.3 +2.4
baz=157
TUL1 Leonard 70.28 339 *e*P sP 10 59 17.6 +2.8
comp=Z,6.9nm,0.7s
S43A Fulton Ridge, 70.31 344 P sP 10 59 16.9 +1.9
baz=162
W33A Caddo, Fort Co 70.44 337 P sP 10 59 18.5 +2.6
baz=154
U37A Salina 70.53 340 P sP 10 59 18.8 +2.4
baz=157
T39A Clever 70.62 342 P sP 10 59 18.4 +1.5
baz=159
W32A Sentinel 70.68 336 P sP 10 59 19.9 +2.5
baz=154
S41A Jillco Farms, 70.73 343 P sP 10 59 19.4 +1.8
baz=160
V34A Guthrie 70.75 338 P sP 10 59 20.0 +2.2
baz=155
T38A Diamond 70.88 341 P sP 10 59 21.0 +2.4
baz=158
S40A Lebanon 70.93 343 P sP 10 59 20.9 +2.0
baz=160
MSTX Muleshoe 70.95 333 P sP 10 59 21.8 +2.6
baz=151
MSTX Muleshoe 70.95 333 *e*P sP 10 59 22.1 +2.9
comp=Z,5.0nm,0.8s
V33A Lossen Ranch, 70.99 337 P sP 10 59 21.6 +2.3
baz=155
T37A Cheneyville 18 71.14 340 P sP 10 59 22.3 +2.2
baz=158
S39A Bolivar 71.23 342 P sP 10 59 23.5 +2.8
baz=159
S38A Stockton 71.33 341 P sP 10 59 23.8 +2.6
baz=158
AMTX Amarillo 71.34 334 P sP 10 59 25.5 +4.0
baz=152
T36A Boggs Farm, Ca 71.36 340 P sP 10 59 24.4 +3.0
baz=157
T35A Sooner Cattle 71.42 339 P sP 10 59 25.4 +3.6
baz=156
S37A Fort Scott 71.71 341 P sP 10 59 25.8 +2.3
baz=158
T34A McClaskey Farm 71.73 339 P sP 10 59 27.2 +3.5
baz=156
121A Cookes Peak, D 71.83 328 P sP 10 59 29.0 +4.3
baz=147
S35A Otter Creek Ra 72.07 340 P sP 10 59 27.9 +2.2
baz=156
Q40A Laux Farm, Aux 72.14 343 P sP 10 59 28.1 +2.0
baz=160
R37A Teagarden Farm 72.23 341 P sP 10 59 28.9 +2.3
baz=158
R36A Gordon, Harris 72.43 340 P sP 10 59 30.9 +3.0
baz=157
Q38A Cooks Store, C 72.50 342 P sP 10 59 30.3 +2.0
baz=159
P40A Paris 72.64 344 P sP 10 59 31.2 +2.1
baz=160
P39B Salisbury 72.78 343 P sP 10 59 31.8 +2.0

baz=160
P38A Dawn 73.10 342 P sP 10 59 34.2 +2.3
baz=159
P36A Good Intent, A 73.55 341 P sP 10 59 36.6 +2.1
baz=158
DBIC Dimbokro 73.82 72 P **P** **10 59 12.5 -0.6**
comp=Z,8.9nm,0.8s,baz=204,slow=6.7,SNR=8.6
DBIC pP **pP** **10 59 29.3 -0.6**
comp=Z,3.2nm,0.6s,baz=206,slow=6.7,SNR=2.0
DBIC LR LR 11 28 16.2
comp=Z,22nm,21.9s,baz=215,slow=33
Q32A Meitler Ranch, 73.97 338 P sP 10 59 39.6 +2.6
baz=155
T25A Trinidad 74.37 333 P sP 10 59 43.0 +3.4
baz=150
O33A Hebron 74.66 340 P sP 10 59 43.6 +2.6
baz=156
M37A Trindle Farm, 74.91 343 P sP 10 59 44.6 +2.2
baz=159
N34A Lincoln 75.05 341 P sP 10 59 45.6 +2.4
baz=157
SDCO Great Sand Dun 75.32 333 P sP 10 59 47.9 +2.7
baz=149
L36A Harm Buss Farm 75.72 342 P sP 10 59 49.0 +1.9
baz=158
S22A 4UR Ranch, Cre 75.85 332 P sP 10 59 51.4 +3.1
baz=148
WUAZ Wupatki 75.95 327 P sP 10 59 53.1 +4.3
baz=144
L35A Bielow Farm, R 75.97 342 P sP 10 59 51.0 +2.6
baz=158
IKP In-Ko-Pah, Jac 76.00 322 P sP 10 59 53.0 +4.1
baz=141
MAW Mawson 76.00 164 LR LR 11 32 51.4
comp=Z,25nm,18.9s,baz=78,slow=36
MVCO Mesa Verde 76.09 330 P sP 10 59 53.0 +3.4
baz=147
K36A Gilmore City 76.17 343 P sP 10 59 51.6 +2.0
baz=158
Q24A Divide 76.25 334 *e*P sP 10 59 53.1 +2.5
comp=Z,7.8nm,0.8s
BC3 Big Chuckawall 76.44 323 P sP 10 59 55.8 +4.3
baz=141
J36A Seneca 1, Swea 76.79 343 P sP 10 59 55.6 +2.5
baz=159
PV01 Paradox Valley 76.90 331 *e*P sP 10 59 58.2 +4.0
PFO Pinyon Flats O 76.93 323 P sP 10 59 58.4 +4.1
baz=141
PFO Pinyon Flats O 76.93 323 *e*P sP 10 59 59.0 +4.7
comp=Z,4.7nm,1.1s
SMCO Snowmass 77.14 332 *e*P sP 10 59 59.9 +4.2
comp=Z,8.8nm,0.9s
PV10 Paradox Valley 77.30 331 *e*P sP 11 00 00.3 +3.9
GMRC Granite Mounta 77.44 324 P sP 11 00 01.2 +4.0
baz=141
ECSD EROS Data Cent 77.76 342 P sP 11 00 00.3 +1.7
baz=157
H35A Sunnyside Ranc 78.20 343 P sP 11 00 02.8 +1.8
baz=158
MTPU Mount Pierson 78.40 328 *e*P sP 11 00 06.8 +4.1
comp=Z,2.6nm,0.9s
GSC Goldstone, Bar 78.43 324 P sP 11 00 06.4 +3.8
baz=140
SHPR Sheep Range 78.55 325 *e*P sP 11 00 07.8 +4.4
comp=Z,3.2nm,0.9s
H32A Carlson Farm, 78.70 341 P sP 11 00 05.9 +2.1
baz=156
EDW2 Edwards Air Fo 78.71 323 P sP 11 00 07.9 +3.8
baz=140
F36A Milaca 78.98 345 P sP 11 00 07.1 +1.9
baz=160
MPMC Manual Prospec 79.36 324 P sP 11 00 11.0 +3.2
baz=140
JLU Jordanelle 80.18 330 *e*P sP 11 00 18.3 +6.0
comp=Z,12nm,1.8s
HWUT Hardware Ranch 81.06 331 *e*P sP 11 00 20.4 +3.4
comp=Z,4.7nm,0.8s
BOSA Boshof 81.14 118 P **P** **10 59 53.3 -0.7**
comp=Z,2.5nm,0.9s,baz=225,slow=4.3,SNR=4.5
BOSA pP **pP** **11 00 10.4 -0.6**
comp=Z,2.6nm,0.7s,baz=228,slow=6.3,SNR=2.5
BOSA LR LR 11 33 24.6
comp=Z,29nm,18.1s,baz=36,slow=34
HVU Hansel Valley 81.72 330 *e*P sP 11 00 23.6 +3.2
comp=Z,2.9nm,0.8s
TORD Torodi Ar. Bea 82.78 70 P **P** **11 00 01.9 -0.7**
comp=Z,6.0nm,0.7s,baz=254,slow=4.7,SNR=31
TORD pP **pP** **11 00 18.9 -0.7**
comp=Z,2.2nm,0.5s,baz=266,slow=4.8,SNR=6.4
TORD sP **sP** **11 00 26.2 -0.1**
comp=Z,4.1nm,0.5s,baz=270,slow=5.5,SNR=7.2
ULM Lac du Bonnet 83.65 345 pP pP 11 00 24.9 +1.7
comp=Z,3.8nm,1.0s,baz=157,slow=5.0,SNR=3.3
HLID Hailey 83.87 330 *e*P sP 11 00 35.5 +4.0
comp=Z,1.9nm,0.9s
DOT Dot Lake 110.02 333 *e*Pdif pPdif 11 02 25.7 +1.3
ASAR Alice Springs 120.48 207 PKP **PKPdf** **11 06 29.6 -0.3**
comp=Z,0.5nm,1.0s,baz=134,slow=2.0,SNR=3.6
ASAR pPKP **pPKPdf** **11 06 47.5 -0.3**
comp=Z,0.5nm,0.7s,baz=134,slow=1.2,SNR=3.3
WRA Warramunga Arr 123.64 210 PKP **PKPdf** **11 06 36.0 0.0**
comp=Z,0.6nm,0.4s,baz=155,slow=1.6,SNR=21
WRA pPKP **pPKPdf** **11 06 53.9 +0.1**
comp=Z,0.6nm,0.5s,baz=154,slow=1.9,SNR=3.8
H11N3 WAKE ISLAND Hy 126.51 273 T T 13 26 10.0
baz=117,slow=75,SNR=18
H11N1 WAKE ISLAND Hy 126.52 273 T T 13 26 13.2
baz=117,slow=75,SNR=6.4
H11N2 WAKE ISLAND Hy 126.53 273 T T 13 26 12.3
baz=117,slow=75,SNR=85
BVAR Borovoye Array 144.71 40 PKP **PKPdf** **11 07 13.9 -0.1**
comp=Z,0.9nm,0.6s,baz=306,slow=3.4,SNR=4.2
BVAR pPKP **pPKPdf** **11 07 31.7 -0.3**
comp=Z,1.5nm,0.4s,baz=335,slow=2.5,SNR=7.9
KKAR Karatay Array 147.63 57 *e*PKPdf pPKPbc 11 07 40.2 +0.2
KURBB Kurchatov Arra 150.31 40 PKPbc **PKPbc** **11 07 29.1 +0.5**
KURBB pPKPbc **pPKPbc** **11 07 46.8 +0.4**
comp=Z,1.1nm,1.0s,baz=304,slow=3.2,SNR=5.3
comp=Z,1.0nm,0.6s,baz=301,slow=3.1,SNR=4.3
ZAA0 Zalesovo Array 151.39 30 PKPdf **PKPab** **11 07 44.0 +4.6**
ZALV Zalesovo Beam 151.39 30 PKPbc **PKPbc** **11 07 31.5 +0.5**
comp=Z,1.3nm,0.5s,baz=275,slow=3.2,SNR=8.4
ZALV pPKPbc **pPKPbc** **11 07 49.3 +0.5**
comp=Z,5.1nm,0.4s,baz=307,slow=3.5,SNR=10
ZALV sPKPbc **sPKPbc** **11 07 56.6 +1.2**
comp=Z,8.1nm,0.6s,baz=302,slow=4.1,SNR=11
ZALV Zalesovo Beam 151.39 30 PKPbc **PKPbc** **11 07 31.5 +0.5**
KSH Kashi 152.24 63 *e*PKPbc **PKPab** **11 07 43.0 -0.7**
KSH SKS SKSdf 11 14 52.3 +23
KSH AMB AMB
comp=Z,73nm,4.6s
KSH LR LR
comp=Z,150nm,6.4s
KSH LR LR
comp=Z,130nm,9.2s
KSH LR LR
comp=Z,90nm,8.2s
MK31 Makanchi Array 154.36 44 *e*PKPdf **PKPab** **11 07 51.4 -0.9**
MK31 *e*PKPbc **PKPab** **11 07 52.7 +0.5**
MKAR Makanchi Array 154.36 44 PKPab **PKPab** **11 07 52.2 -0.1**
comp=Z,1.0nm,0.7s,baz=277,slow=3.7,SNR=5.9
MKAR pPKPab **pPKPab** **11 08 09.5 -0.2**
comp=Z,3.0nm,0.7s,baz=293,slow=3.6,SNR=9.0
MKAR Makanchi Array 154.36 44 PKPab **PKPab** **11 07 52.2 -0.1**
MK01 Makanchi Array 154.38 44 *e*PKPdf **PKPab** **11 07 52.8 +0.4**
WMQ Urumqi 159.15 46 *e*PKP PKPdf 11 07 53.2 +17
WMQ pPKP PKPab 11 08 04.2 -8.8
HHC Hu-ho-hao-te 169.78 347 *e*PKP PKPdf 11 08 07.8 +22

DJA 04 10:51:24.7±1.3, 9°S±19″×12°4E±1″1, h141km±8km, M3.4/6, mb3.7/2, MLv3.3/6, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOEI	**Soe**	**1.11**	**148**	P	Pn	10 51 49.5	-0.3
SOEI				S	Sn	10 52 08.2	-0.7
BATI	**Baumata**	**1.39**	**180**	P	Pn	10 51 54.0	+1.6
MMRI	**Maumere**	**1.43**	**277**	P	Pn	10 51 53.0	+0.2
MMRI				S	Sn	10 52 14.8	+0.6
EDFI	**Ende, Flores**	**1.96**	**272**	P	Pn	10 52 00.0	+1.1
EDFI				S	Sn	10 52 25.2	+0.1
PLAI	**Plampang** 14nm,1.0s,0.1nm	**5.83**	**269**	P	Pn	10 52 48.0	-1.0
TWSI	**Taliwang, Sumb**	**6.71**	**270**	P	Pn	10 53 00.3	-0.6

NIED ***04*** *10:52:00,37.70N×141.70E,h47km,Mw3.8 Best double couple: M₀6.07000×10¹⁴ NP1:φ₀38.00000°,δ47.00000°, λ116.00000°. NP2:φ₀183.00000°,δ49.00000°,λ65.00000°.*
ISCJB ***04*** *10:52:17.3±0.9,37.73N±0.04×141.80E±0.09,h58km±8km, mb3.8/7, Error ellipse: s-maj=12.7km s-min=5.3km az=24.2*
JMA ***04*** *10:52:18.5,37.72N×141.71E,h51km±1km, M3.9*
IDC ***04*** *10:52:18.9±2.9,37.70N×141.74E,h59km±25km, mb3.5/7, mb1 3.7/10,mb1mx3.4/66,mbtmp3.8/10, ML3.5/2, Error ellipse: s-maj=28.9km s-min=17.2km az=119.0*
ISC 04 10:52:18.4±1.1, 37.72N±0.05×141.82E±0.08, h51km±10km, n29, σ1°47/36, mb3.7/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.82**	**333**	P	**Pn**	**10 52 33.6**	**-0.2**
JIO				S	**Sn**	**10 52 44.1**	**-0.8**
JMM	**Marumori**	**0.82**	**280**	P	**Pn**	**10 52 33.0**	**-0.8**
JMM				S	**Sn**	**10 52 43.5**	**-1.6**
JFK	**Kawauchi**	**0.83**	**245**	P	**Pn**	**10 52 33.0**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.02**	**233**	P	**Pn**	**10 52 35.7**	**-0.8**
ONAJ				*e*S	**Sn**	**10 52 47.9**	**-2.0**
JOU	**Okura**	**1.11**	**305**	P	**Pn**	**10 52 37.1**	**-0.6**
JOU				*e*S	**Sn**	**10 52 50.9**	**-1.2**
JFT	**Otama**	**1.20**	**261**	P	**Pn**	**10 52 38.6**	**-0.2**
JFT				S	**Sn**	**10 52 52.9**	**-1.1**
JMK	**Ichinoseki**	**1.31**	**339**	P	**Pn**	**10 52 40.7**	**+0.3**
JMK				S	**Sn**	**10 52 56.5**	**-0.3**
JYS	**Shirataka**	**1.47**	**290**	P	**Pn**	**10 52 42.1**	**-0.5**
JYK	**Kaneyama**	**1.66**	**317**	P	**Pn**	**10 52 45.0**	**-0.1**
JYK				*e*S	**Sn**	**10 53 04.5**	**-0.7**
JFY	**Yanaizu**	**1.71**	**260**	P	**Pn**	**10 52 45.4**	**-0.4**
JFY				*e*S	**Sn**	**10 53 05.5**	**-1.0**
JOM	**Ohasama**	**1.79**	**347**	P	**Pn**	**10 52 47.5**	**+0.5**
JOM				*e*S	**Sn**	**10 53 09.0**	**+0.4**
MJAR	**Matsushiro Arr** 2.1nm,0.3s,baz=55,slow=11,SNR=27	**3.12**	**249**	P	**Pn**	**10 53 05.6**	**+0.5**
MJAR				S	**Sn**	**10 53 43.0**	**+1.9**
MAT	**Matsushiro**	**3.12**	**249**	P	**Pn**	**10 53 05.7**	**+0.6**
MAT				S	**Sn**	**10 53 46.2**	**+5.1**
ASAJ	**Asahikawa** 1.6nm,0.3s,baz=233,slow=11,SNR=8.8	**6.41**	**5**	P	**Pn**	**10 53 49.4**	**-0.8**
ASAJ				S	**Sn**	**10 55 03.1**	**+1.0**
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=126,slow=16,SNR=9.9 baz=240,slow=20	**9.85**	**314**	P	**Pn**	**10 54 38.4**	**+1.1**
KSRS	**Korea Array** 0.2nm,0.3s,baz=84,slow=15,SNR=5.2	**11.03**	**273**	P	**Pn**	**10 54 57.2**	**+3.8**
H11N2	**WAKE ISLAND Hy** baz=316,slow=75,SNR=7.4	**28.23**	**122**	T	T	11 28 27.7	
H11N1	**WAKE ISLAND Hy** baz=316,slow=75,SNR=6.9	**28.24**	**122**	T	T	11 28 26.7	
H11N3	**WAKE ISLAND Hy** baz=316,slow=75,SNR=7.2	**28.25**	**122**	T	T	11 28 26.3	
H11S1	**WAKE ISLAND Hy** baz=317,slow=75,SNR=7.9	**28.97**	**124**	T	T	11 29 30.6	
H11S3	**WAKE ISLAND Hy** baz=317,slow=75,SNR=6.1	**28.97**	**125**	T	T	11 29 20.7	
H11S2	**WAKE ISLAND Hy** baz=317,slow=75,SNR=3.8	**28.99**	**125**	T	T	11 29 22.3	
MKAR	**Makanchi Array** 1.0nm,0.7s,baz=92,slow=8.9,SNR=5.8	**44.03**	**302**	P	**P**	**11 00 20.0**	**-0.9**
KURBB	**Kurchatov Arra** 1.8nm,0.7s,baz=83,slow=8.4,SNR=9.0	**45.84**	**308**	P	**P**	**11 00 34.2**	**-0.9**
ILAR	**Eielson Array** 0.7nm,0.9s,baz=266,slow=6.3,SNR=4.1	**48.74**	**33**	P	**P**	**11 00 58.1**	**+0.6**
INK	**Inuvik** 1.2nm,0.8s,baz=256,slow=8.3,SNR=2.7	**53.63**	**27**	P	**P**	**11 01 34.6**	**+0.6**
WRA	**Warramunga Arr** 0.7nm,0.8s,baz=6.0,slow=7.3,SNR=4.9	**57.79**	**188**	P	**P**	**11 02 02.8**	**-1.6**
WRA				pP	**pP**	**11 02 19.4**	**+0.9**
AKASG	**Malin Array Be** 0.3nm,0.3s,baz=46,slow=6.5,SNR=3.0	**73.95**	**322**	P	**P**	**11 03 47.2**	**-0.8**
TXAR	**Lajitas Array** 0.3nm,0.7s,baz=299,slow=2.3,SNR=5.2	**89.44**	**53**	P	**P**	**11 05 10.5**	**+0.4**

ISCJB ***04*** *10:55:50.2±0.7,38.99N±0.03×29.79E±0.05,h4km±7km, Error ellipse: s-maj=6.5km s-min=5.3km az=28.0*
CSEM ***04*** *10:55:50.7±0.3,39.00N×29.78E,h5km, ML2.6, Error ellipse: s-maj=7.1km s-min=4.7km az=137.0*
ISK ***04*** *10:55:50.5,39.00N×29.69E,h10km, MD2.4*
DDA ***04*** *10:55:50.0,39.00N×29.79E,h7km, Ml2.6*
ISC 04 10:55:50.4±1.1, 38.99N±0.03×29.79E±0.03, h11km±9km, n19, σ0°60/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**293**	*i* P	**Pg**	**10 55 55.5**	**-0.3**
GDZ				*i* S	**Sg**	**10 56 00.5**	**+1.0**
GDZ	**Gediz**	**0.26**	**293**	P	**Pg**	**10 55 55.5**	**-0.3**
GDZ				S	**Sg**	**10 56 00.5**	**+1.0**
TVSB	**Tavsanli**	**0.53**	**331**	*e*PG	**Pg**	**10 56 00.3**	**-0.4**
TVSB				*e*SG	**Sg**	**10 56 07.5**	**-0.2**
TVSB	**Tavsanli**	**0.53**	**331**	*e*Pg	**Pg**	**10 56 00.4**	**-0.4**
TVSB				*e*Sg	**Sg**	**10 56 07.5**	**-0.2**
KHL	**Karahalli**	**0.70**	**198**	*e*PG	**Pg**	**10 56 04.2**	**+0.3**
KHL				*e*SG	**Sb**	**10 56 14.3**	**0.0**
KHL	**Karahalli**	**0.70**	**198**	*e*Pg	**Pg**	**10 56 04.2**	**+0.3**
KHL				*e*Sg	**Sb**	**10 56 14.3**	**0.0**
DEMI	**Demirci**	**0.84**	**274**	*i* P	**Pn**	**10 56 08.1**	**-0.2**
DEMI				*i* S	**Sb**	**10 56 19.2**	**+0.8**
DEMI	**Demirci**	**0.84**	**274**	P	**Pn**	**10 56 08.1**	**-0.2**
DEMI				S	**Sb**	**10 56 19.2**	**+0.8**
ESKT	**Eskisehir**	**0.98**	**57**	*e*PG	**Pn**	**10 56 10.8**	**+0.5**
ESKT	**Eskisehir**	**0.98**	**57**	*i* P	**Pg**	**10 56 09.3**	**0.0**
ESKT	**Eskisehir**	**0.98**	**57**	*e*Pg	**Pn**	**10 56 10.8**	**+0.5**
SEYT	**Eskyperyr**	**0.98**	**57**	P	**Pg**	**10 56 09.3**	**0.0**
KULA	**Kula-Manisa**	**1.00**	**242**	*e*PG	**Pg**	**10 56 08.9**	**-0.8**
KULA				*e*SG	**Sg**	**10 56 22.4**	**-0.3**
KULA	**Kula-Manisa**	**1.00**	**242**	*e*Pg	**Pg**	**10 56 08.9**	**-0.8**
KULA				*e*Sg	**Sg**	**10 56 22.4**	**-0.3**
BORA	**Eskisehir**	**1.03**	**30**	*i* S	**Sg**	**10 56 22.4**	**-1.2**
BORA	**Eskisehir**	**1.03**	**30**	S	**Sg**	**10 56 22.4**	**-1.2**
CAVI	**Cavuskoy**	**1.21**	**2**	*e*PN	**Pg**	**10 56 14.1**	**+0.3**
CAVI	**Cavuskoy**	**1.21**	**2**	*e*Pn	**Pg**	**10 56 14.1**	**+0.3**
IGD	**Bursa**	**1.35**	**341**	*i* P	**Pb**	**10 56 15.6**	**-0.3**
IGD				*i* S	**Sn**	**10 56 33.5**	**+0.2**

NIED ***04*** *10:59:00,37.00N×140.50E,h5km,Mw4.2 Best double couple: M₀2.20000×10¹⁵ NP1:φ₀321.00000°,δ31.00000°, λ-107.00000°. NP2:φ₀161.00000°,δ61.00000°, λ-80.00000°.*
ISCJB ***04*** *10:59:57.1±0.5,37.00N±0.03×140.56E±0.04,h22km±3km, mb4.2/23,MS3.5/4, Error ellipse: s-maj=6.1km s-min=4.1km az=23.7*
JMA ***04*** *10:59:57.1,36.99N×140.51E,h6km±1km,M4.4 Broadband fault plane solution: P waves. NP1: φ₀158.00000°,δ51.00000°,λ-70.00000°. NP2: φ₀308.00000°,δ43.00000°,λ-113.00000°. Principal axes: T Plg4.0000°, Azm234.0000°; N Plg16.0000°, Azm325.0000°; P Plg74.0000°, Azm131.0000°;*
JMA Felt III J1.
IDC ***04*** *10:59:58.8±4.0,37.00N×140.39E,h20km±24km, mb4.0/20, mb1 4.2/22,mb1mx4.0/63,mbtmp4.1/22, ML3.7/1, MS3.1/6, Ms1 3.2/6,ms1mx2.8/51 Error ellipse: s-maj=18.7km s-min=13.0km az=95.0*
NEIC ***04*** *11:00:01.0±0.4,36.99N×140.41E,h35km,mb4.6/3, Error ellipse: s-maj=10.5km s-min=6.9km az=134.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 04 10:59:56.4±0.9, 37.02N±0.03×140.43E±0.04, h5km±6km, n55, σ0°86/56, mb4.3/23, MS3.2/4, 7C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.30**	**74**	↑P	**Pg**	**11 00 02.5**	**+0.1**
JSB	**Shiboa**	**0.41**	**263**	↑P	**Pb**	**11 00 07.0**	**+0.7**
JSB				S	**Sb**	**11 00 14.0**	**+1.1**
JHO	**Hitachi**	**0.42**	**165**	↑P	**Pg**	**11 00 04.4**	**-0.2**
JFK	**Kawauchi**	**0.49**	**45**	↑P	**Pg**	**11 00 06.3**	**+0.3**
JFK				S	**Sg**	**11 00 12.7**	**+0.3**
JFT	**Otama**	**0.50**	**351**	↑P	**Pb**	**11 00 07.9**	**+0.1**
JFT				*e*S	**Sb**	**11 00 15.1**	**-0.4**
JFY	**Yanaizu**	**0.70**	**304**	↑P	**Pb**	**11 00 11.8**	**+0.7**
JFY				S	**Sb**	**11 00 21.9**	**+0.8**
JYT	**Yasato**	**0.81**	**194**	P	**Pg**	**11 00 12.0**	**0.0**
JYT				S	**Sg**	**11 00 22.8**	**+0.2**
JMM	**Marumori**	**0.89**	**19**	↑P	**Pg**	**11 00 13.8**	**+0.2**
JMM				*e*S	**Sg**	**11 00 25.2**	**0.0**
MJAR	**Matsushiro Arr** 65nm,0.3s,baz=76,slow=16,SNR=432	**1.85**	**256**	Pn	**Pb**	**11 00 30.0**	**-0.7**
MJAR				Lg	Lg	11 00 55.0	
MJAR	122nm,0.3s,baz=80,slow=28,SNR=17			LR	LR	11 01 31.7	
	comp=Z,644nm,20.9s,baz=75,slow=52						
MAJO	**Matsushiro**	**1.85**	**256**	*e*Pn	**Pb**	**11 00 30.9**	**+0.2**
MAT	**Matsushiro**	**1.85**	**256**	P	**Pb**	**11 00 30.8**	**+0.1**
MAT				S	**Sg**	**11 00 56.8**	**+1.0**
JHJ	**Hachijo jima 2** 13nm,0.3s,baz=336,slow=9.8,SNR=5.0	**3.93**	**188**	Pn	**Pn**	**11 00 59.0**	**+1.6**
JHJ				Sn	**Sn**	**11 01 43.7**	**-0.2**
	21nm,0.3s,baz=229,slow=19,SNR=3.2						
ASAJ	**Asahikawa** baz=185,slow=18	**7.28**	**12**	Pn	**Pn**	**11 01 45.8**	**+2.4**
JNU	**Nakatsue** 1.3nm,0.3s,baz=80,slow=12,SNR=4.5	**8.74**	**246**	Pn	Pn	11 02 09.1	+5.5
JNU				LR	LR	11 05 53.7	
	comp=Z,212nm,18.4s,baz=118,slow=41						
USRK	**Ussuriysk Ar.** 0.3nm,0.3s,baz=135,slow=12,SNR=19	**9.62**	**321**	Pn	Pn	11 02 21.8	+6.2
KSRS	**Korea Array** 0.2nm,0.3s,baz=99,slow=14,SNR=14	**9.98**	**276**	Pn	Pn	11 02 27.7	+7.1
KSRS				LR	LR	11 05 60.0	
	comp=Z,146nm,18.3s,baz=90,slow=36						
KSAR	**Wonju Array Be**	**10.02**	**276**	Pn	Pn	11 02 27.7	+6.7
KLR	**Kul'dur** 0.1nm,0.3s,baz=129,slow=14,SNR=3.3	**13.74**	**335**	Pn	**P**	**11 03 17.2**	**-3.5**
KLR				LR	LR	11 08 09.8	
	comp=Z,33nm,18.3s,baz=153,slow=36						
PETK	**Petropavlovsk-** 2.2nm,0.8s,baz=217,slow=7.1,SNR=4.7	**20.10**	**31**	P	**P**	**11 04 31.5**	**+0.6**
PETK				LR	LR	11 13 31.7	
	comp=Z,37nm,18.2s,baz=235,slow=40						
SEY	**Seymchan** 3.5nm,0.8s,baz=171,slow=6.6,SNR=6.4	**26.96**	**12**	P	**P**	**11 05 39.9**	**+1.3**
SONM	**Songino Array** 4.6nm,0.8s,baz=102,slow=8.8,SNR=15	**27.14**	**304**	P	**P**	**11 05 40.1**	**-0.5**
H11N2	**WAKE ISLAND Hy** baz=312,slow=75,SNR=76	**28.82**	**119**	T	T	11 35 45.4	
H11N1	**WAKE ISLAND Hy** baz=312,slow=75,SNR=63	**28.83**	**119**	T	T	11 35 45.6	
H11N3	**WAKE ISLAND Hy** baz=312,slow=75,SNR=48	**28.84**	**119**	T	T	11 35 46.8	
H11S1	**WAKE ISLAND Hy** baz=317,slow=74,SNR=178	**29.52**	**122**	T	T	11 36 36.7	
H11S3	**WAKE ISLAND Hy** baz=317,slow=74,SNR=126	**29.52**	**122**	T	T	11 36 37.5	
H11S2	**WAKE ISLAND Hy** baz=317	**29.53**	**122**	T	T	11 36 36.7	
CMAR	**Chiang Mai Arr** comp=Z,23nm,19.5s,baz=260,slow=36	**40.73**	**254**	LR	LR	11 24 15.4	
ZALV	**Zalesovo Beam** 3.0nm,0.6s,baz=90,slow=4.3,SNR=11	**41.34**	**312**	P	**P**	**11 07 42.8**	**-0.2**
ZALV				PcP	**PcP**	**11 09 40.9**	**-0.4**
	1.2nm,0.5s,baz=83,slow=4.5,SNR=2.7						
ZALV	**Zalesovo Beam**	**41.34**	**312**	P	**P**	**11 07 42.8**	**-0.2**
ZALV				PcP	**PcP**	**11 09 40.9**	**-0.4**
NRIK	**Noril'sk** comp=Z,46nm,18.3s,baz=140,slow=38	**42.95**	**335**	LR	LR	11 27 14.0	
MKAR	**Makanchi Array** 1.4nm,0.6s,baz=79,slow=7.5,SNR=9.2	**43.46**	**302**	P	**P**	**11 08 00.2**	**-0.2**
MKAR	**Makanchi Array**	**43.46**	**302**	P	**P**	**11 08 00.2**	**-0.2**
KURK	**Kurchatov** 51nm,0.8s	**45.32**	**308**	*e*P	**P**	**11 08 14.3**	**-0.9**
KURK				P	**pP**	**11 08 15.4**	**-1.2**
KURK				PcP	**PcP**	**11 09 54.6**	**-0.1**
KURBB	**Kurchatov Arra** 4.9nm,0.8s,baz=82,slow=8.4,SNR=18	**45.39**	**308**	P	**P**	**11 08 15.4**	**-0.3**
KURBB				PcP	**PcP**	**11 09 54.6**	**-0.4**
	0.6nm,0.7s,baz=90,slow=3.7,SNR=3.2						
ILAR	**Eielson Array** 0.7nm,0.7s,baz=267,slow=6.4,SNR=12	**49.93**	**32**	P	**P**	**11 08 50.3**	**-0.5**
BVAR	**Borovoye Array** 2.1nm,0.9s,baz=76,slow=7.9,SNR=5.4	**50.00**	**312**	P	**P**	**11 08 51.7**	**+0.1**
BVAR				PcP	**PcP**	**11 10 11.4**	**0.0**
	0.7nm,0.5s,baz=97,slow=4.9,SNR=2.5						
EGAK	**Eagle** 3.8nm,0.6s	**52.37**	**32**	*e*P	**P**	**11 09 11.1**	**+2.0**
ARU	**Arti** 7.9nm,0.9s	**55.85**	**318**	*e*P	**P**	**11 09 34.6**	**-0.1**
FITZ	**Fitzroy Crossi** 3.6nm,1.0s,baz=18,slow=9.6,SNR=4.0	**56.57**	**197**	P	**P**	**11 09 40.6**	**+0.5**
WRA	**Warramunga Arr** 3.7nm,0.8s,baz=2.3,slow=7.4,SNR=15	**56.95**	**187**	P	**P**	**11 09 41.6**	**-1.2**
ABKAR	**Akbulak array** 3.7nm,0.7s	**57.35**	**310**	*e*P	**P**	**11 09 45.4**	**0.0**
ASAR	**Alice Springs** 1.2nm,0.8s,baz=7.3,slow=5.1,SNR=8.6	**60.67**	**187**	P	**P**	**11 10 08.2**	**-0.5**
GEYT	**Alibeck** 1.5nm,0.4s,baz=64,slow=3.4,SNR=4.1	**63.15**	**299**	P	**P**	**11 10 25.6**	**+0.2**
ARCES	**ERCESS Array B** 1.7nm,0.8s,baz=64,slow=8.5,SNR=7.3	**63.73**	**339**	P	**P**	**11 10 28.2**	**-0.5**
NLWA	**Neilton Lookou**	**67.30**	**47**	P	**P**	**11 10 51.8**	**-0.4**
FINES	**FINESS Array B** 3.3nm,0.8s,baz=46,slow=8.8,SNR=7.5	**68.46**	**332**	P	**P**	**11 10 58.5**	**-0.6**
KBZ	**Khabaz** 2.9nm,1.0s,baz=49,slow=4.0,SNR=4.2	**70.31**	**310**	P	**P**	**11 11 11.3**	**+0.4**
AKASG	**Malin Array Be** 2.1nm,0.7s,baz=48,slow=6.9,SNR=8.2	**73.83**	**322**	P	**P**	**11 11 31.3**	**-0.6**
NB2	**NORSAR Subarra** comp=Z,1.0nm,0.7s,baz=36,slow=6.2	**73.89**	**337**	P	**P**	**11 11 31.8**	**-0.4**
NOA	**NORSAR Array B** comp=Z,2.2nm,0.8s,baz=38,slow=5.9,SNR=6.0	**73.89**	**337**	P	**P**	**11 11 32.0**	**-0.2**
BRTR	**Keskin Array B** comp=Z,1.3nm,0.9s,baz=70,slow=3.0,SNR=4.6	**78.27**	**311**	P	**P**	**11 11 57.6**	**-0.1**
RAR	**Rarotonga** comp=Z,324nm,19.8s,baz=274,slow=34	**80.79**	**125**	LR	LR	11 45 11.6	
GERES	**GERESS Array B** comp=Z,0.9nm,0.5s,baz=38,slow=6.8,SNR=5.5	**82.31**	**328**	P	**P**	**11 12 18.9**	**-0.3**
TXAR	**Lajitas Array** comp=Z,0.4nm,0.7s,baz=303,slow=3.8,SNR=7.3	**90.75**	**52**	P	**P**	**11 13 01.3**	**+0.4**

IDC 04 11:04:04.2±5.0, 7°47S×147°42E, h124km±48km, mb3.0/2, mb1 3.1/3, mb1mx2.9/31, mbtmp3.3/3, Error ellipse: s-maj=88.4km s-min=47.6km az=125.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby** 20nm,0.3s,baz=5.7,slow=10,SNR=90	**1.94**	**187**	P	Pn	11 04 37.0	-0.2
PMG				S	Sn	11 05 02.9	+0.5
	25nm,0.3s,baz=30,slow=20,SNR=23						
WRA	**Warramunga Arr** 0.1nm,0.3s,baz=51,slow=11,SNR=6.4	**17.74**	**224**	P	P	11 08 02.3	-0.3
ASAR	**Alice Springs** 0.4nm,0.5s,baz=51,slow=9.0,SNR=14	**20.68**	**217**	P	P	11 08 35.0	+0.5
FITZ	**Fitzroy Crossi** 1.9nm,1.0s,baz=62,slow=12,SNR=4.3	**23.69**	**241**	P	P	11 09 04.5	-0.4
TORD	**Torodi Ar. Bea** 0.1nm,0.5s,baz=78,slow=2.4,SNR=2.7	**145.83**	**282**	PKPbc	PKPdf	11 23 29.3	0.0

ISCJB ***04*** *11:20:16.5±0.5,33.78N±0.02×35.71E±0.04,h5km±5km, Error ellipse: s-maj=5.3km s-min=3.6km az=176.6*
CSEM

HWQ	**Hawqa**	**0.51**	**17**	*eP*	**Pg**	**11 20 25.5**	**-0.5**
HWQ				*eS*	**Sg**	**11 20 32.2**	**-0.5**
MARH	**Ras Al Marh**	**0.64**	**68**	*eP*	**Pb**	**11 20 29.7**	**-0.1**
MARH				*eS*	**Sn**	**11 20 41.1**	**-1.5**
MARH				AML	AML	11 20 43.4	
	comp=N,198nm,0.5s						
MARH				AML	AML	11 20 48.4	
	comp=E,192nm,0.4s						
TOTH	**TOTAH**	**0.69**	**128**	*eP*	**Pb**	**11 20 30.1**	**-0.6**
TOTH				*eS*	**Sn**	**11 20 42.6**	**-1.1**
TOTH				AML	AML	11 20 50.0	
	comp=E,65nm,0.7s						
TOTH				AML	AML	11 20 57.1	
	comp=N,86nm,0.6s						
HAWK	**Haweek**	**0.90**	**36**	*eP*	**Pb**	**11 20 33.8**	**-0.4**
HAWK				*eS*	**Sn**	**11 20 48.8**	**0.0**
HAWK				AML	AML	11 20 52.6	
	comp=N,54nm,0.4s						
HAWK				AML	AML	11 20 55.2	
	comp=E,48nm,0.5s						
HAWK	**Haweek**	**0.90**	**36**	*eP*	**Pg**	**11 20 33.5**	**0.0**
HAWK				*eS*	**Sb**	**11 20 46.1**	**-0.4**
HAWK				AML	AML	11 20 52.6	
	comp=N,54nm,0.4s						
TCHB	**Talchebab**	**1.13**	**172**	*eP*	**Pg**	**11 20 37.6**	**-0.2**
TCHB				*eS*	**Sb**	**11 20 53.0**	**-0.1**
TCHB				AML	AML	11 20 55.7	
	comp=E,77nm,0.6s						
TCHB				AML	AML	11 21 16.8	
	comp=N,38nm,0.9s						
BIDA	**Albida**	**1.30**	**20**	*eP*	**Pg**	**11 20 41.7**	**+0.5**
BIDA				*eS*	**Sn**	**11 21 00.2**	**+1.5**
BIDA				AML	AML	11 21 03.6	
	comp=E,97nm,0.3s						
BIDA				AML	AML	11 21 05.6	
	comp=N,93nm,0.4s						
ROOS	**tl_alroos**	**1.32**	**73**	*eP*	**Pg**	**11 20 42.4**	**+1.0**
ROOS				*eS*	**Sn**	**11 21 02.2**	**+3.1**
ROOS				AML	AML	11 21 10.4	
	comp=N,98nm,0.6s						
ROOS				AML	AML	11 21 21.1	
	comp=E,70nm,0.5s						
SALA	**Sala**	**1.34**	**143**	*eP*	**Pn**	**11 20 41.5**	**-0.1**
SALA				*eS*	**Sn**	**11 21 00.7**	**+0.9**
SALA				AML	AML	11 21 05.0	
	comp=N,45nm,0.7s						
SALA				AML	AML	11 21 06.2	
	comp=E,6.8nm,0.3s						
SALA	**Sala**	**1.34**	**143**	*eP*	**Pn**	**11 20 41.7**	**+0.1**
SALA				*eS*	**Sg**	**11 20 59.4**	**0.0**
SALA				AML	AML	11 21 05.0	
	comp=N,45nm,0.7s						
ZALF	**Zalf**	**1.57**	**123**	*eP*	**Pn**	**11 20 45.0**	**+0.4**
ZALF				*eS*	**Sg**	**11 21 07.3**	**+0.7**
ZALF				AML	AML	11 21 10.8	
	comp=E,39nm,0.4s						
ZALF				AML	AML	11 21 18.4	
	comp=N,18nm,0.5s						
ZALF	**Zalf**	**1.57**	**123**	*eP*	**Pb**	**11 20 45.4**	**-0.2**
ZALF				*eS*	**Sn**	**11 21 04.2**	**-1.0**
ZALF				AML	AML	11 21 18.4	
	comp=N,18nm,0.5s						

*ISCJB **04** 11:29:35.4±0.4, 7.°60S±0.°04×128.°33E±0.°06, h150km, mb4.0/12, Error ellipse: s-maj=8.7km s-min=5.5km az=11.5*
*DJA **04** 11:29:36.1±0.7, 7.°5S±7.°1×12.°8E±.°, h217km±29km, M4.6/5, mB4.8/2, mb4.2/5, MLv4.8/5, Mw(mB)4.0/2*
*IDC **04** 11:29:37.7±2.4, 7.°68S×128.°33E, h159km±25km, mb3.8/12, mb1 3.9/16, mb1mx3.7/53, mbtmp4.4/16, Error ellipse: s-maj=29.5km s-min=17.6km az=93.0*
*NEIC **04** 11:29:37.3±1.7, 7.°66S×128.°43E, h156km±18km, mb4.5/1, Error ellipse: s-maj=18.6km s-min=9.8km az=50.0*

ISC 04 11:29:36.1±0.6, 7.°76S±0.°05×128.°42E±0.°07, h150km, n28, σ1§98/38, mb4.1/12, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOEI	**Soe**	**4.55**	**244**	P	**Pn**	**11 30 46.7**	**+2.9**
SOEI				S	**Sn**	**11 31 33.2**	**-3.2**
SOEI	**Soe**	**4.55**	**244**	*e*Pn	**Pn**	**11 30 46.7**	**+2.9**
BATI	**Baumata**	**5.29**	**242**	P	**Pn**	**11 30 55.9**	**+2.5**
FAKI	**Fak Fak**	**6.14**	**39**	P	**Pn**	**11 31 03.7**	**-1.0**
EDFI	**Ende, Flores**	**6.73**	**261**	P	**Pn**	**11 31 12.6**	**0.0**
EDFI				S	**Sn**	**11 32 23.5**	**-4.8**
SIJI	**Sorong**	**7.41**	**23**	P	**Pn**	**11 31 23.3**	**+1.6**
	17nm,0.3s,baz=182,slow=9.2,SNR=2.6						
SIJI				S	**Sn**	**11 32 40.9**	**-3.7**
	14nm,0.3s,baz=185,slow=21,SNR=2.4						
FITZ	**Fitzroy Crossi**	**10.63**	**194**	P	**Pn**	**11 32 05.9**	**+1.4**
	4.1nm,0.3s,baz=23,slow=12,SNR=139						
FITZ				S	**Sn**	**11 34 00.3**	**-1.8**
	7.8nm,0.3s,baz=70,slow=18,SNR=11						
FITZ	**Fitzroy Crossi**	**10.63**	**194**	*e*Pn	**Pn**	**11 32 05.6**	**+1.2**
	21nm,0.7s						
FITZ				P	**Pn**	**11 32 05.9**	**+1.4**
FITZ				*e*Sn	**Sn**	**11 33 59.7**	**-2.4**
FITZ				S	**Sn**	**11 34 00.3**	**-1.8**
WRAB	**Tennant Creek**	**13.40**	**155**	*e*Pn	**Pn**	**11 32 41.6**	**+1.2**
	17nm,0.7s						
WRA	**Warramunga Arr**	**13.40**	**155**	P	**Pn**	**11 32 42.3**	**+1.8**
	1.5nm,0.3s,baz=335,slow=12,SNR=68						
WRA				S	**Sn**	**11 35 04.6**	**-4.4**
	6.0nm,0.3s,baz=320,slow=24,SNR=16						
MBWA	**Marble Bar**	**15.74**	**211**	*e*Pn	**Pn**	**11 33 11.9**	**+2.1**
ASAR	**Alice Springs**	**16.67**	**162**	P	**Pn**	**11 33 24.8**	**+3.7**
	2.0nm,0.3s,baz=342,slow=10,SNR=157						
ASAR				S	**S**	**11 36 25.7**	**-0.8**
	1.4nm,0.3s,baz=318,slow=20,SNR=8.9						
CMAR	**Chiang Mai Arr**	**39.04**	**312**	P	**P**	**11 36 48.9**	**+0.4**
	0.7nm,0.5s,baz=139,slow=7.2,SNR=4.4						
KSAR	**Wonju Array Be**	**44.97**	**359**	P	**P**	**11 37 36.1**	**-0.1**
KSRS	**Korea Array**	**44.98**	**359**	P	**P**	**11 37 36.1**	**-0.2**
	1.2nm,0.5s,baz=177,slow=9.3,SNR=6.6						
USRK	**Ussuriysk Ar.**	**51.82**	**3**	P	**P**	**11 38 28.4**	**-0.1**
	1.1nm,0.6s,baz=196,slow=6.8,SNR=6.0						
SONM	**Songino Array**	**58.68**	**343**	P	**P**	**11 39 18.3**	**+0.4**
	0.6nm,0.4s,baz=158,slow=6.9,SNR=5.3						
PETK	**Petropavlovsk-**	**65.54**	**19**	P	**P**	**11 40 04.0**	**+0.7**
	2.2nm,0.5s,baz=181,slow=5.9,SNR=3.7						
MKAR	**Makanchi Array**	**68.01**	**328**	P	**P**	**11 40 19.3**	**+0.1**
	1.7nm,0.5s,baz=139,slow=6.8,SNR=24						
ZALV	**Zalesovo Beam**	**71.58**	**335**	P	**P**	**11 40 40.1**	**-0.6**
	3.1nm,0.4s,baz=135,slow=4.7,SNR=11						
KURBB	**Kurchatov Arra**	**72.34**	**329**	P	**P**	**11 40 45.6**	**+0.2**
	4.7nm,0.6s,baz=132,slow=5.1,SNR=48						
KURK	**Kurchatov**	**72.36**	**329**	P	**P**	**11 40 45.6**	**+0.2**
KURK				*e*Pn	**P**	**11 40 45.8**	**+0.3**
SEY	**Seymchan**	**72.84**	**11**	P	**P**	**11 40 48.6**	**+0.5**
	2.9nm,0.7s,baz=237,slow=17,SNR=6.8						
BVAR	**Borovoye Array**	**77.87**	**328**	P	**P**	**11 41 16.8**	**-0.2**
	1.5nm,0.5s,baz=116,slow=6.6,SNR=9.5						
TIXI	**Tiksi**	**79.24**	**0**	P	**P**	**11 41 23.9**	**-0.2**
	1.8nm,0.4s,baz=190,slow=2.9,SNR=6.6						
AKTO	**Aktyubinsk**	**83.72**	**323**	P	**P**	**11 41 47.6**	**-0.5**
	0.7nm,0.3s,baz=131,slow=3.5,SNR=4.0						
PDAR	**Pinedale Array**	**118.54**	**45**	PKP	**PKPdf**	**11 48 06.8**	**+0.2**
	0.3nm,0.6s,baz=327,slow=1.5,SNR=2.5						
TORD	**Torodi Ar. Bea**	**127.41**	**281**	PKP	**PKPdf**	**11 48 25.2**	**+1.1**
	0.6nm,0.7s,baz=11,slow=2.6,SNR=5.0						

IDC 04 11:39:59.4±6.0, 15.°59S×173.°25W, h0km, mb4.3/2, mb1 4.4/3, mb1mx3.7/35, mbtmp4.2/3, ML3.8/1, Error ellipse: s-maj=294.5km s-min=26.5km az=142.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.20**	**41**	Pn	Pn	11 40 35.9	-1.4
	25nm,0.3s,baz=217,slow=12,SNR=31						
AFI				Sn	Sn	11 40 58.7	-6.5
	52nm,0.3s,baz=225,slow=20,SNR=6.3						
WRA	**Warramunga Arr**	**49.94**	**257**	P	P	11 48 54.5	-1.0
	1.5nm,0.9s,baz=90,slow=7.1,SNR=16						
ASAR	**Alice Springs**	**50.19**	**252**	P	P	11 48 57.2	-0.2
	7.1nm,0.7s,baz=86,slow=8.1,SNR=85						
BRTR	**Keskin Array B**	**146.40**	**321**	PKPbc	PKPab	11 59 44.1	+0.4
	1.0nm,0.6s,baz=48,slow=2.1,SNR=5.7						

*IDC **04** 11:50:20.8±1.0, 51.°90N×170.°06W, h0km, mb3.8/9, mb1 4.0/11, mb1mx3.8/36, mbtmp3.7/11, ML3.5/2, MS3.4/2, Ms1 3.3/2, ms1mx2.6/49, Error ellipse: s-maj=32.9km s-min=17.0km az=177.0*
*ISCJB **04** 11:50:23.2±0.6, 51.°74N±0.°08×169.°95W±0.°06, h29km, mb3.8/12, MS3.3/2, Error ellipse: s-maj=11.7km s-min=4.1km az=161.2*
*NEIC **04** 11:50:25.7, 51.°87N×170.°01W, h42km, mb4.1/4, ML3.6(AEIC), After AEIC.*

ISC 04 11:50:25.4±0.8, 51.°9N±0.°1×170.°02W±0.°05, h29km, n33, σ1§06/36, mb3.8/12, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	**1.28**	**33**	P	**Pn**	**11 50 46.8**	**-0.5**
NIKH				S	**Sb**	**11 51 04.8**	**-0.1**
OKWR	**Okmok West Rim**	**1.88**	**35**	P	**Pn**	**11 50 57.0**	**+1.3**
OKTU	**Okmok Mt. Tuli**	**1.91**	**38**	P	**Pn**	**11 50 56.8**	**+0.9**
OKAK	**Okmok**	**1.95**	**30**	P	**Pn**	**11 50 55.8**	**-0.7**
OKER	**Okmok East Rim**	**1.96**	**37**	P	**Pn**	**11 50 58.2**	**+1.6**
KOSE	**Korovin Southe**	**2.52**	**282**	P	**Pn**	**11 51 05.4**	**+1.0**
KOSE				S	**Sn**	**11 51 35.5**	**+1.3**
KOFP	**Korovin Flat P**	**2.54**	**280**	P	**Pn**	**11 51 05.3**	**+0.6**
KOKL	**Mount Kliuchef**	**2.61**	**281**	P	**Pn**	**11 51 06.6**	**+1.0**
KOKL				S	**Sn**	**11 51 39.5**	**+3.1**
MSOM	**Makushin Julie**	**2.67**	**43**	P	**Pn**	**11 51 06.9**	**+0.6**
MGOD	**Makushin Gods**	**2.68**	**44**	P	**Pn**	**11 51 06.8**	**+0.2**
UNV	**Unalaska Valle**	**2.88**	**46**	P	**Pn**	**11 51 09.1**	**-0.2**
UNV				S	**Sn**	**11 51 43.6**	**+0.7**
MTBL	**Makushin Table**	**2.89**	**43**	P	**Pn**	**11 51 10.3**	**+0.9**
AKGG	**Akutan Green G**	**3.34**	**45**	P	**Pn**	**11 51 17.7**	**+2.1**
AKUT	**Akutan**	**3.40**	**47**	*e*Pn	**Pn**	**11 51 18.5**	**+2.2**
GSMY	**Great Sitkin M**	**3.74**	**274**	P	**Pn**	**11 51 20.8**	**-0.3**
GSCK	**Great Sitkin C**	**3.80**	**274**	P	**Pn**	**11 51 21.7**	**-0.3**
ADAG	**Mount Adagdak**	**4.08**	**274**	P	**Pn**	**11 51 26.2**	**+0.5**
ILAR	**Eielson Array**	**17.56**	**34**	P	**Pn**	**11 54 26.0**	**-1.6**
	0.1nm,0.3s,baz=231,slow=10,SNR=7.4						
PETK	**Petropavlovsk-**	**19.60**	**286**	P	**P**	**11 54 50.9**	**-0.1**
	0.7nm,0.3s,baz=82,slow=14,SNR=20						
DAWY	**Dawson**	**20.04**	**41**	*e*P	**P**	**11 54 55.9**	**+0.1**
	1.7nm,0.6s						
SEY	**Seymchan**	**22.69**	**314**	P	**P**	**11 55 23.6**	**-0.6**
	2.2nm,0.8s,baz=73,slow=12,SNR=5.3						
INK	**Inuvik**	**23.95**	**33**	P	**P**	**11 55 36.5**	**-0.1**
	1.5nm,0.5s,baz=247,slow=5.2,SNR=8.6						
INK				LR	LR	12 06 02.2	
	comp=Z,54nm,19.5s,baz=162,slow=39						
YKA	**Yellowknife Ar**	**30.84**	**48**	P	**P**	**11 56 38.9**	**+0.4**
	0.4nm,0.4s,baz=275,slow=7.0,SNR=5.0						
EDM	**Edmonton**	**33.70**	**65**	*e*P	**P**	**11 57 04.5**	**+0.8**
	6.3nm,0.8s						
PDAR	**Pinedale Array**	**40.88**	**78**	P	**P**	**11 58 04.8**	**-0.1**
	0.4nm,0.4s,baz=290,slow=5.4,SNR=5.1						
SONM	**Songino Array**	**51.19**	**301**	P	**P**	**11 59 25.2**	**-0.7**
	0.4nm,0.4s,baz=30,slow=6.7,SNR=2.9						
TXAR	**Lajitas Array**	**53.16**	**88**	P	**P**	**11 59 40.7**	**+0.1**
	1.0nm,0.7s,baz=298,slow=5.1,SNR=19						
SCHQ	**Schefferville**	**56.04**	**43**	LR	LR	12 25 47.3	
	comp=Z,42nm,18.9s,baz=83,slow=38						
MKAR	**Makanchi Array**	**63.83**	**313**	P	**P**	**12 00 53.9**	**-0.8**
	0.2nm,0.3s,baz=54,slow=6.2,SNR=4.1						
ABKAR	**Akbulak array**	**70.61**	**328**	*e*P	**P**	**12 01 37.1**	**-0.5**
	1.3nm,0.7s						
EKS2	**Erkin-Say**	**70.84**	**316**	P	**P**	**12 01 38.4**	**-0.8**
	1.8nm,0.7s						
CMAR	**Chiang Mai Arr**	**76.33**	**282**	P	**P**	**12 02 12.2**	**+0.5**
	0.6nm,0.4s,baz=22,slow=6.6,SNR=5.5						
ASAR	**Alice Springs**	**89.79**	**230**	P	**P**	**12 03 20.3**	**-0.6**
	0.7nm,0.8s,baz=37,slow=4.7,SNR=8.1						

NNC 04 11:51:16.9±2.5, 37.°00N×70.°91E, h206km±44km, mb2.5, mpv3.6, 5C-5D, Error ellipse: s-maj=40.5km s-min=16.2km az=128.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.44**	**318**	⇑P	Pn	11 52 00.7	+0.2
	39nm,0.5s						
DZET				⇓S	S	11 52 35.1	+0.9
	216nm,0.4s						
MNAS	**Manas**	**5.61**	**12**	⇓P	Pn	11 52 39.8	+0.5
	2.4nm,0.4s						
MNAS				⇑S	S	11 53 46.8	+2.5
	18nm,0.6s						
KK31	**Karatay Array**	**6.10**	**357**	⇓P	Pn	11 52 46.1	+0.7
	2.4nm,0.4s,baz=182,slow=12,SNR=32						
KK31				⇓S	S	11 53 55.1	-0.3
	2.7nm,0.3s,baz=188,slow=22,SNR=11						
AAK	**Ala-Archa**	**6.26**	**25**	⇑P	Pn	11 52 47.5	-0.1
	2.9nm,0.7s						
AAK				⇓S	S	11 54 00.8	+1.3
	5.4nm,0.6s						
TKM2	**Tokmak 2**	**6.92**	**30**	⇑P	Pn	11 52 55.2	-1.0
	1.0nm,0.3s						
TKM2				⇑S	S	11 54 13.9	-1.1
	4.6nm,0.8s						

WEL 04 11:57:55.2±0.2, 36.°89S×176.°55E, h231km±3km, ML3.6/10, 1C-4D, Error ellipse: s-maj=3.7km s-min=3.5km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.31**	**132**	PN	Pn	11 58 30.3	+0.2
HAZ				AML	AML	11 59 01.6	
HAZ				AML	AML	11 59 34.1	
URZ	**Urewera**	**1.44**	**162**	PN	Pn	11 58 31.4	+0.3
URZ				SN	S	11 58 59.1	-0.3
MWZ	**Matawai**	**1.64**	**152**	PN	Pn	11 58 32.9	0.0
MWZ				AML	AML	11 59 11.3	
MWZ				AML	AML	11 59 50.4	
TWGZ	**Tauwhareparae**	**1.71**	**139**	PN	Pn	11 58 33.8	+0.3
TWGZ				SN	S	11 59 03.1	-0.4
TWGZ				AML	AML	11 59 04.6	
WMGZ	**Waiomatatini S**	**1.75**	**123**	PN	Pn	11 58 33.8	0.0
WMGZ				AML	AML	11 59 02.9	
WMGZ				AML	AML	11 59 03.4	
RTZ	**Ruatahuna**	**1.75**	**169**	PN	Pn	11 58 34.1	+0.2
PUZ	**Puketiti**	**1.80**	**132**	PN	Pn	11 58 34.1	-0.1
PUZ				AML	AML	11 59 03.5	
PUZ				AML	AML	11 59 30.4	
TKGZ	**Te Karaka**	**1.86**	**147**	PN	Pn	11 58 34.6	-0.1
TKGZ				SN	S	11 59 04.1	-1.6
TKGZ				AML	AML	11 59 18.2	
SNGZ	**Shannon Statio**	**1.99**	**162**	PN	Pn	11 58 36.1	+0.1
SNGZ				AML	AML	11 59 10.2	
SNGZ				AML	AML	11 59 12.0	
RIGZ	**Rimuhau**	**2.05**	**152**	PN	Pn	11 58 36.9	+0.3
RIGZ				AML	AML	11 59 12.3	
RIGZ				AML	AML	11 59 12.5	
CNGZ	**Carnagh Statio**	**2.06**	**141**	*e*PN	Pn	11 58 37.2	+0.5
NMHZ	**Naumai**	**2.21**	**175**	PN	Pn	11 58 38.9	+0.7
WHHZ	**Waihua**	**2.25**	**166**	PN	Pn	11 58 38.5	+0.1
BKZ	**Black Stump Fm**	**2.27**	**181**	⇑PN	Pn	11 58 38.6	-0.2
KNZ	**Kokohu**	**2.31**	**158**	PN	Pn	11 58 38.4	-0.7
ARHZ	**Aropaoanui**	**2.40**	**172**	PN	Pn	11 58 40.3	+0.3
ARHZ				AML	AML	11 59 18.4	
FWVZ	**Far West T-bar**	**2.49**	**198**	PN	Pn	11 58 42.4	+1.2
KWHZ	**Kaweka Forest**	**2.53**	**182**	PN	Pn	11 58 41.6	+0.1
KWHZ				AML	AML	11 59 19.6	
KWHZ				AML	AML	11 59 21.0	
WNVZ	**Wahianoa**	**2.55**	**197**	PN	Pn	11 58 42.5	+0.7
MCHZ	**McNeill Hill**	**2.55**	**177**	PN	Pn	11 58 41.8	+0.2
MOVZ	**Moawhango**	**2.59**	**194**	PN	Pn	11 58 42.3	+0.2
BHHZ	**Black Hill Sta**	**2.62**	**188**	PN	Pn	11 58 42.4	0.9
KRHZ	**Rereru**	**2.75**	**183**	PN	Pn	11 58 43.5	-0.3
CKHZ	**Cape Kidnapper**	**2.79**	**172**	PN	Pn	11 58 43.7	-0.5
KAHZ	**Kahuranaki**	**2.91**	**175**	PN	Pn	11 58 45.1	-0.5
PNHZ	**Pukenui**	**3.03**	**185**	⇓PN	Pn	11 58 46.1	-0.7
WAZ	**Wanganui**	**3.11**	**203**	PN	Pn	11 58 48.7	+0.9
PXZ	**Pawanui**	**3.15**	**176**	⇓PN	Pn	11 58 47.0	-1.1
TSZ	**Takapari Road**	**3.20**	**188**	PN	Pn	11 58 48.0	-0.8
PRHZ	**Porangahau**	**3.37**	**179**	PN	Pn	11 58 49.3	-1.4
DVHZ	**Dannevirke**	**3.42**	**185**	PN	Pn	11 58 50.0	-1.2
OHWZ	**Ohakea**	**3.45**	**196**	PN	Pn	11 58 51.7	+0.2
POWZ	**Post Office Ro**	**3.55**	**190**	PN	Pn	11 58 51.6	-1.2
ANWZ	**Angora Road**	**3.56**	**181**	PN	Pn	11 58 51.7	-1.2
BFZ	**Birch Farm**	**3.79**	**184**	PN	Pn	11 58 54.1	-1.6
MRZ	**Mangatainoka R**	**3.84**	**191**	⇓PN	Pn	11 58 54.5	-1.7
TIWZ	**Tintock**	**3.92**	**187**	PN	Pn	11 58 55.6	-1.5
OGWZ	**Otaki Gorge**	**4.07**	**195**	PN	Pn	11 58 57.4	-1.4
HOWZ	**Holdsworth Sta**	**4.08**	**191**	PN	Pn	11 58 57.2	-1.9
KIW	**Kapiti Island**	**4.17**	**197**	PN	Pn	11 58 58.5	-1.6
CAW	**Cannon Point**	**4.37**	**195**	PN	Pn	11 59 00.4	-2.1
MSWZ	**Moikau Station**	**4.63**	**192**	PN	Pn	11 59 03.4	-2.4
TCW	**Tory Channel**	**4.66**	**202**	PN	Pn	11 59 04.4	-1.7
TUWZ	**Tuamarina**	**4.96**	**203**	PN	Pn	11 59 07.9	-2.0
NNZ	**Nelson**	**4.98**	**209**	PN	Pn	11 59 08.4	-1.6
QRZ	**Quartz Range**	**5.03**	**217**	PN	Pn	11 59 09.2	-1.5
THZ	**Tophouse**	**5.63**	**209**	⇓PN	Pn	11 59 16.3	-1.9
KHZ	**Kahutara**	**5.99**	**202**	PN	Pn	11 59 19.1	-3.6

*ISCJB **04** 12:17:14.0±0.4, 32.°35N±0.°05×95.°76E±0.°06, h10km, mb3.8/12, MS3.2/16, Error ellipse: s-maj=8.1km s-min=6.0km az=145.6*
*BJI **04** 12:17:16.8, 32.°43N×95.°86E, h10km, mb4.4/10, mB4.4/2, ML4.0/3, Ms3.9/9, Ms7 3.7/8*
*IDC **04** 12:17:18.5±6.6, 32.°37N×95.°96E, h33km±52km, mb3.6/12, mb1 3.8/16, mb1mx3.6/54, mbtmp3.8/16, ML3.8/4, MS3.3/19, Ms1 3.3/19, ms1mx3.1/48, Error ellipse: s-maj=31.2km s-min=15.2km az=46.0*

ISC 04 12:17:16.5±0.6, 32.°51N±0.°06×95.°79E±0.°06, h10km, n41, σ2§10/27, mb3.9/12, MS3.3/16, 1D, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.87**	**236**	Pn	**Pn**	**12 18 32.6**	**+2.4**
LZH	**Lanzhou**	**7.56**	**60**	*e*Pn	**Pn**	**12 19 09.4**	**+2.5**
LZH				Pg	Pg	12 19 35.5	-5.7
LZH				Sn	**Sn**	**12 20 38.1**	**+5.4**
LZH				Sg	**Sg**	**12 21 14.5**	**-4.5**
LZH				smax	smax		
	comp=N,47nm,1.3s						
LZH				smax	smax		
	comp=E,57nm,1.3s						
LZH				LR	LR		
	comp=N,550nm,6.6s						
LZH				LR	LR		
	comp=E,370nm,8.9s						
LZH				LR	LR		
	comp=Z,310nm,6.4s						
GTA	**Gaotai**	**7.62**	**24**	*e*Pn	Pn	12 19 13.7	+6.0
GTA				LR	LR		
	comp=N,460nm,14.3s						
GTA				LR	LR		
	comp=E,1μm,12.8s						
GTA				LR	LR		
	comp=Z,260nm,9.3s						
SHL	**Shillong**	**7.72**	**207**	*e*P	**Pn**	**12 19 08.0**	**-1.1**
SHL				*e*S	**Sn**	**12 20 39.5**	**+2.8**
RAMN	**Ramite**	**9.72**	**238**	*e*P	Pn	12 19 34.4	-2.2
	25nm,0.4s						
GUN	**Gumba**	**9.72**	**244**	*e*P	**Pn**	**12 19 37.1**	**+0.3**
	33nm,0.5s						
KKN	**Kakani**	**10.24**	**245**	*e*P	**Pn**	**12 19 43.4**	**-0.4**
	22nm,0.6s						
PKIN	**Phulchoki**	**10.26**	**244**	*e*P	**Pn**	**12 19 43.3**	**-0.8**
	21nm,0.6s						
DMN	**Daman**	**10.47**	**245**	*e*P	**Pn**	**12 19 45.8**	**-1.1**
	17nm,0.6s						
GKN	**Gorkha**	**10.64**	**248**	*e*P	**Pn**	**12 19 49.0**	**-0.1**
	17nm,0.5s						
GYA	**Guiyang**	**11.22**	**120**	⇓*i*P	**Pn**	**12 19 57.3**	**+0.2**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
PYUN	**Piuthan**	**11.90**	**252**	*e*P	Pn	12 20 04.6	-1.9
	60nm,0.8s						
WMQ	**Urumqi**	**12.96**	**333**	*e*P	Pn	12 20 14.2	-6.5
WMQ				*e*S	**Sn**	**12 22 40.8**	**-4.2**
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,100nm,4.2s						
WMQ				LR	LR		
	comp=N,230nm,10.8s						
WMQ				LR	LR		
	comp=E,240nm,8.7s						
WMQ				LR	LR		
	comp=Z,380nm,14.2s						
CMAR	**Chiang Mai Arr**	**14.28**	**168**	Pn	**Pn**	**12 20 37.6**	**-1.2**
	comp=Z,0.2nm,0.3s,baz=343,slow=11,SNR=6.0						
CMAR				LR	LR	12 26 13.8	
	comp=Z,148nm,18.8s,baz=335,slow=38						
SONM	**Songino Array**	**17.29**	**25**	P	**Pn**	**12 21 19.5**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=213,slow=11,SNR=18						
MKAR	**Makanchi Array**	**17.62**	**328**	P	**Pn**	**12 21 21.9**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=133,slow=14,SNR=6.9						
MKAR				LR	LR	12 29 22.9	
	comp=Z,47nm,20.9s,baz=150,slow=41						
AAK	**Ala-Archa**	**19.63**	**307**	P	**P**	**12 21 47.3**	**+2.0**
	comp=Z,0.6nm,0.3s,baz=96,slow=6.8,SNR=8.7						
AAK				LR	LR	12 30 44.1	
	comp=Z,154nm,20.6s,baz=109,slow=41						
KURBB	**Kurchatov Arra**	**22.14**	**330**	P	**P**	**12 22 12.3**	**+0.1**
	comp=Z,0.9nm,0.5s,baz=136,slow=12,SNR=6.7						
ZALV	**Zalesovo Beam**	**22.82**	**343**	P	**P**	**12 22 20.1**	**+0.7**
	comp=Z,3.0nm,0.8s,baz=155,slow=11,SNR=10						
ZALV				LR	LR	12 31 56.7	
	comp=Z,50nm,20.5s,baz=250,slow=38						
KSRS	**Korea Array**	**26.71**	**70**	P	**P**	**12 22 54.1**	**-1.

*SOME **04** 12:24:01.6, 49.˚58N×83.˚62E, h0km*
*NNC **04** 12:24:02.4±4.8, 49.˚52N×83.˚76E, h0km, mb3.1, mpv2.8, Error ellipse: s-maj=44.8km s-min=12.2km az=67.0, Suspected Mining explosion.*
*ISCJB **04** 12:24:04.5±0.9, 49.˚74N±0.˚06×83.˚4E±0.˚1, h0km, Error ellipse: s-maj=13.3km s-min=7.2km az=158.1*
*IDC **04** 12:24:05.4±1.5, 49.˚71N×83.˚53E, h0km, mb1 2.4/3, mb1mx2.4/56, mbtmp2.4/3, ML2.0/3, Error ellipse: s-maj=20.7km s-min=11.2km az=88.0*

ISC 04 12:24:06.5±1.1, 49.˚69N±0.˚05×83.˚43E±0.˚06, h0km, n10, σ0ᵗ991/13, 4C-4D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SEM	**Semipalatinsk**	**2.17**	**290**	*e*P		**Pb**	**12 24 46.3**	**-0.3**
	6.9nm,0.1s							
SEM				*e*S		**Sg**	**12 25 17.8**	**+1.5**
	20nm,0.2s							
ZSN	**Zaisan**	**2.33**	**164**	*e*P		**Pn**	**12 24 46.2**	**0.0**
	16nm,0.5s							
ZSN				*e*S		**Sb**	**12 25 17.5**	**-1.4**
	59nm,0.6s							
MK31	**Makanchi Array**	**3.00**	**195**	⇑Pg		**Pn**	**12 24 55.5**	**+0.2**
	1.5nm,0.6s,baz=27,slow=14,SNR=12							
MK31				⇑Lg		Lg	12 25 33.0	
	5.0nm,0.5s,baz=34,slow=27,SNR=19							
MKAR	**Makanchi Array**	**3.00**	**195**	Pn		**Pn**	**12 24 55.8**	**+0.5**
	0.9nm,0.3s,baz=28,slow=15,SNR=13							
MKAR				Sn		**Sn**	**12 25 32.9**	**+0.9**
	1.6nm,0.3s,baz=22,slow=26,SNR=14							
MKAR				Lg		Lg	12 25 38.0	
	2.7nm,0.3s,baz=28,slow=32,SNR=30							
MAKZ	**Makanchi**	**3.04**	**199**	⇓Pg		**Pn**	**12 24 56.2**	**+0.3**
	2.2nm,0.6s							
MAKZ				⇓Lg		Lg	12 25 37.5	
	8.6nm,0.7s							
KURK	**Kurchatov**	**3.26**	**290**	⇑Pg		**Pb**	**12 25 05.4**	**+0.3**
	1.0nm,0.4s							
KURK				⇑Lg		Lg	12 25 50.9	
	9.6nm,0.6s							
KURBB	**Kurchatov Arra**	**3.29**	**288**	Pn		**Pn**	**12 24 59.0**	**-0.2**
	0.1nm,0.3s,baz=101,slow=14,SNR=6.5							
KURBB				Lg		Lg	12 25 52.1	
	0.5nm,0.3s,baz=108,slow=31,SNR=11							
KURBB	**Kurchatov Arra**	**3.29**	**288**	⇓Pg		**Pg**	**12 25 08.4**	**-1.0**
	2.1nm,0.5s							
KURBB				⇓Lg		Lg	12 25 56.5	
	19nm,0.5s							
I46RU	**ZALESOVO INFRA**	**4.35**	**11**	*i*			12 52 10.0	
	baz=191,slow=332,SNR=3.8							
ZALV	**Zalesovo Beam**	**4.35**	**11**	Pn		**Pn**	**12 25 13.2**	**-0.6**
	0.2nm,0.3s,baz=196,slow=15,SNR=3.0							
ZALV				Pg		**Pb**	**12 25 24.8**	**+1.1**
	0.9nm,0.3s,baz=186,slow=18,SNR=10							
ZALV				Lg		Lg	12 26 21.0	
	0.8nm,0.3s,baz=191,slow=28,SNR=7.6							

NNC 04 12:26:06.3±5.1, 38.˚69N×66.˚04E, h0km, mb3.7, mpv3.3, 2C-6D, Error ellipse: s-maj=38.2km s-min=25.3km az=52.0, Southeastern Uzbekistan

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.18**	**86**	⇑Pn		Pn	12 26 43.3	-0.7
	33nm,0.5s							
DZET				⇓Sn		Sn	12 27 12.9	+1.1
	152nm,0.4s							
KK31	**Karatay Array**	**5.56**	**36**	⇓Pn		Pn	12 27 33.4	+3.1
	0.6nm,0.3s,baz=233,slow=12,SNR=14							
KK31				⇑Sn		Sn	12 28 36.0	+1.1
	0.9nm,0.3s,baz=225,slow=23,SNR=3.6							
KK31				⇓Lg		Lg	12 28 59.9	
	3.0nm,0.4s,baz=221,slow=29,SNR=9.2							
MNAS	**Manas**	**6.21**	**50**	⇓Pn		Pn	12 27 38.9	-0.4
	0.8nm,0.4s							
MNAS				⇓Sn		Sn	12 28 52.2	+1.1
	3.2nm,0.6s							
MNAS				⇓Lg		Lg	12 29 21.1	
	4.0nm,0.6s							

*NIED **04** 12:28:00, 37.˚80N×144.˚00E, h5km, Mw3.7 Best double couple: M₀3.48000×10¹⁴ NP1:φs15.00000°, δ28.00000°, λ-101.00000°. NP2:φs208.00000°, δ63.00000°, λ-84.00000°.*
*IDC **04** 12:28:14.6±1.2, 37.˚64N×144.˚29E, h0km, mb3.7/3, mb1 3.9/6, mb1mx3.6/62, mbtmp3.7/6, ML3.4/3, MS2.5/1, Ms1 2.5/1, ms1mx2.1/46, Error ellipse: s-maj=36.0km s-min=23.1km az=97.0*
*ISCJB **04** 12:28:17.3±0.8, 37.˚77N±0.˚06×144.˚09E±0.˚06, h33km, mb3.9/3, Error ellipse: s-maj=8.1km s-min=7.3km az=6.4*
*JMA **04** 12:28:18.3±0.2, 37.˚82N×144.˚01E, h43km, M3.9*

ISC 04 12:28:19.7±1.2, 37.˚80N±0.˚08×144.˚07E±0.˚08, h35km, n20, σ1ᵗ905/22, mb3.9/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.25**	**288**	P		**Pn**	**12 28 53.5**	**-0.8**
JIO				S		**Sn**	**12 29 19.8**	**-1.0**
OFUJ	**Ofunato**	**2.28**	**305**	P		**Pn**	**12 28 54.0**	**-0.8**
OFUJ				S		**Sn**	**12 29 20.3**	**-1.4**
JMK	**Ichinoseki**	**2.52**	**298**	P		**Pn**	**12 28 57.7**	**-0.4**
JMK				S		**Sn**	**12 29 26.8**	**-0.8**
JOM	**Ohasama**	**2.75**	**308**	P		**Pn**	**12 29 01.1**	**-0.1**
JOM				S		**Sn**	**12 29 32.7**	**-0.5**
JFT	**Otama**	**2.98**	**266**	S		**Sn**	**12 29 38.8**	**-0.1**
JYK	**Kaneyama**	**3.12**	**292**	P		**Pn**	**12 29 06.5**	**0.0**
JANG	**Nango**	**3.25**	**323**	P		**Pn**	**12 29 08.4**	**+0.2**
JRY	**Ryogami san**	**4.51**	**248**	P		**Pn**	**12 29 24.4**	**-1.1**
JCH	**Churui**	**4.84**	**354**	P		**Pn**	**12 29 29.2**	**-0.8**
MJAR	**Matsushiro Arr**	**4.85**	**257**	Pn		**Pn**	**12 29 30.4**	**+0.3**
	3.0nm,0.3s,baz=85,slow=14,SNR=24							
MJAR				LR		LR	12 31 31.8	
	comp=Z,50nm,20.2s,baz=85,slow=40							
MAT	**Matsushiro**	**4.85**	**257**	P		**Pn**	**12 29 30.9**	**+0.8**
MAT				S		**Sn**	**12 30 25.5**	**+0.4**
ASAJ	**Asahikawa**	**6.41**	**350**	Pn		**Pn**	**12 29 51.1**	**-0.5**
	1.8nm,0.3s,baz=150,slow=2.3,SNR=6.3							
USRK	**Ussuriysk Ar.**	**11.14**	**309**	Pn		**Pn**	**12 30 59.7**	**+3.3**
	0.3nm,0.3s,baz=95,slow=13,SNR=4.9							
KLR	**Kul'dur**	**14.49**	**326**	Pn		**P**	**12 31 49.0**	**+0.7**
	0.1nm,0.3s,baz=132,slow=11,SNR=5.0							
H11N2	**WAKE ISLAND Hy**	**26.80**	**126**	T		T	13 01 50.0	
	baz=323,SNR=3.6							
H11N1	**WAKE ISLAND Hy**	**26.81**	**126**	T		T	13 01 50.4	
	baz=323							
H11N3	**WAKE ISLAND Hy**	**26.82**	**126**	T		T	13 01 49.6	
	baz=323							
ILAR	**Eielson Array**	**47.72**	**33**	P		**P**	**12 36 53.2**	**+0.6**
	0.3nm,0.7s,baz=259,slow=6.1,SNR=4.9							
WRA	**Warramunga Arr**	**58.16**	**191**	P		**P**	**12 38 09.0**	**-1.0**
	2.1nm,0.7s,baz=12,slow=7.3,SNR=26							
ASAR	**Alice Springs**	**61.88**	**191**	P		**P**	**12 38 35.1**	**-0.4**
	0.6nm,0.7s,baz=5.6,slow=7.3,SNR=7.7							

IDC 04 12:30:57.1±3.5, 4.˚54S×100.˚71E, h0km, mb3.6/6, mb1 3.7/6, mb1mx3.5/58, mbtmp3.6/6, Error ellipse: s-maj=140.6km s-min=20.2km az=56.0, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**22.92**	**356**	P		P	12 36 02.9	0.0
	1.2nm,0.8s,baz=183,slow=9.4,SNR=6.6							
H01W3	**Cape Leeuwin H**	**32.65**	**159**	T		T	13 12 03.9	
	baz=336,slow=76,SNR=21							
H01W2	**Cape Leeuwin H**	**32.67**	**159**	T		T	13 12 04.9	
	baz=336,slow=76,SNR=23							
H01W1	**Cape Leeuwin H**	**32.67**	**159**	T		T	13 11 57.1	
	baz=336,slow=76,SNR=13							
WRA	**Warramunga Arr**	**36.14**	**118**	P		P	12 38 01.6	+0.2
	0.6nm,1.0s,baz=299,slow=11,SNR=10							
ASAR	**Alice Springs**	**37.23**	**124**	P		P	12 38 10.2	-0.5
	0.3nm,0.8s,baz=294,slow=7.8,SNR=7.7							
SONM	**Songino Array**	**52.39**	**5**	P		P	12 40 11.1	-0.2
	1.1nm,0.8s,baz=182,slow=7.3,SNR=5.7							
MKAR	**Makanchi Array**	**53.65**	**344**	P		P	12 40 20.5	0.0
	0.7nm,0.5s,baz=164,slow=8.7,SNR=7.0							
ZALV	**Zalesovo Beam**	**59.78**	**349**	P		P	12 41 03.4	-0.4
	0.5nm,0.4s,baz=186,slow=1.3,SNR=3.8							
TXAR	**Lajitas Array**	**146.22**	**40**	PKPbc		PKPbc	12 50 40.0	-0.4
	0.4nm,0.5s,baz=263,slow=1.8,SNR=7.1							

*ISCJB **04** 12:35:40.6±0.5, 6.˚00S×0.˚05×146.˚08E±0.˚07, h100km, mb4.0/8, Error ellipse: s-maj=10.2km s-min=7.0km az=176.6*
*IDC **04** 12:35:41.4±2.0, 6.˚00S×146.˚33E, h109km±21km, mb3.7/6, mb1 3.9/8, mb1mx3.5/40, mbtmp4.0/8, Error ellipse: s-maj=25.0km s-min=16.7km az=78.0*
*NEIC **04** 12:35:42.6±1.2, 5.˚91S×145.˚87E, h87km±19km, mb4.0/6, Error ellipse: s-maj=17.9km s-min=10.6km az=114.0*

ISC 04 12:35:41.7±0.7, 5.˚97S±0.˚07×146.˚16E±0.˚09, h100km, n25, σ1ᵗ910/25, mb4.0/8, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.56**	**164**	P		**Pn**	**12 36 35.4**	**+0.5**
	21nm,0.3s,baz=340,slow=6.8,SNR=52							
PMG				S		**Sn**	**12 37 14.7**	**-1.4**
	34nm,0.3s,baz=345,slow=8.1,SNR=5.1							
MANU	**Manus Island**	**4.08**	**17**	*e*Pn		**Pn**	**12 36 43.1**	**+1.2**
RABL	**Rabaul**	**6.23**	**74**	*e*Pn		Pn	12 37 14.9	+3.7
JAY	**Jayapura**	**6.43**	**302**	P		**Pn**	**12 37 15.3**	**+1.4**
	0.1nm,0.3s,baz=101,slow=23,SNR=4.5							
COEN	**Coen**	**8.47**	**200**	*e*Pn		**Pn**	**12 37 43.4**	**+1.8**
CTA	**Charters Tower**	**14.04**	**180**	P		**P**	**12 39 01.1**	**+0.3**
	2.7nm,0.3s,baz=357,slow=14,SNR=38							
CTAO	**Charters Tower**	**14.04**	**180**	*e*Pn		**P**	**12 39 00.6**	**-0.2**
HNR	**Honiara**	**14.09**	**105**	*e*P		**P**	**12 39 03.2**	**+1.9**
MTN	**Manton Dam**	**16.32**	**244**	*e*Pn		**Pn**	**12 39 24.7**	**-0.3**
	38nm,1.6s							
WRAB	**Tennant Creek**	**18.02**	**219**	*e*P		**P**	**12 39 44.6**	**-0.2**
	4.4nm,0.8s							
WB2	**Warramunga Arr**	**18.02**	**218**	*e*P		**P**	**12 39 44.3**	**-0.6**
	6.3nm,0.9s							
WRA	**Warramunga Arr**	**18.03**	**219**	P		**P**	**12 39 44.4**	**-0.6**
	0.6nm,0.3s,baz=33,slow=11,SNR=29							
AS31	**Alice Springs**	**21.18**	**213**	*e*P		**P**	**12 40 19.1**	**-0.1**
	6.9nm,1.6s							
ASAR	**Alice Springs**	**21.19**	**213**	P		**P**	**12 40 19.1**	**-0.1**
	1.0nm,0.6s,baz=47,slow=8.5,SNR=22							
FITZ	**Fitzroy Crossi**	**23.38**	**237**	P		**P**	**12 40 40.4**	**-1.3**
	4.1nm,0.4s,baz=58,slow=11,SNR=39							
FITZ	**Fitzroy Crossi**	**23.38**	**237**	*e*P		**P**	**12 40 40.2**	**-1.5**
	7.4nm,0.8s							
KSRS	**Korea Array**	**46.43**	**340**	P		**P**	**12 43 57.6**	**-0.7**
	1.2nm,0.6s,baz=159,slow=8.5,SNR=4.5							
USRK	**Ussuriysk Ar.**	**51.55**	**347**	P		**P**	**12 44 36.3**	**-1.0**
	0.8nm,0.5s,baz=168,slow=9.0,SNR=4.4							
CM01	**Chiang Mai Arr**	**52.47**	**299**	*e*P		**P**	**12 44 45.2**	**+0.5**
CM31	**Chiang Mai Arr**	**52.50**	**299**	*e*P		**P**	**12 44 46.0**	**+1.1**
CMAR	**Chiang Mai Arr**	**52.50**	**299**	P		**P**	**12 44 45.7**	**+0.8**
	7.0nm,0.5s,baz=124,slow=6.0,SNR=36							
CHTO	**Chiang Mai**	**52.64**	**299**	*e*P		**P**	**12 44 46.2**	**+0.2**
	5.7nm,0.9s							
ILAR	**Eielson Array**	**85.78**	**23**	P		**P**	**12 48 07.2**	**-2.3**
	0.4nm,0.5s,baz=254,slow=4.7,SNR=8.9							
TORD	**Torodi Ar. Bea**	**144.28**	**284**	PKP		**PKPab**	**12 55 05.2**	**0.0**
	3.2nm,0.4s,baz=74,slow=2.9,SNR=35							
DBIC	**Dimbokro**	**151.19**	**273**	PKPbc		**PKPbc**	**12 55 24.2**	**-0.2**
	6.3nm,0.6s,baz=74,slow=1.9,SNR=11							

IDC 04 12:42:13.5±2.4, 54.˚28N×86.˚07E, h0km, mb1 3.3/2, mb1mx3.1/46, mbtmp3.3/2, ML3.1/2, Error ellipse: s-maj=18.9km s-min=11.8km az=51.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.81**	**246**	*i*			12 46 50.0	
	baz=68,slow=314,SNR=4.4							
ZALV	**Zalesovo Beam**	**0.81**	**246**	Pg		Pg	12 42 27.7	-1.3
	2.4nm,0.3s,baz=62,slow=17,SNR=19							
ZALV				Lg		Lg	12 42 41.0	
	6.3nm,0.3s,baz=65,slow=28,SNR=23							
ZALV				Rg		Rg	12 42 44.7	
	9.8nm,0.4s,baz=68,slow=34,SNR=18							
KURBB	**Kurchatov Arra**	**5.88**	**235**	Pn		Pn	12 43 42.5	+0.6
	0.3nm,0.3s,baz=52,slow=13,SNR=11							
KURBB				Lg		Lg	12 45 21.4	
	0.1nm,0.3s,baz=52,slow=30,SNR=4.3							
MKAR	**Makanchi Array**	**7.87**	**199**	Pn		Pn	12 44 10.4	+1.2
	0.5nm,0.3s,baz=25,slow=13,SNR=12							

NNC 04 13:08:13.4±3.0, 38.˚88N×66.˚28E, h0km, mb3.5, mpv3.1, 4C-2D, Error ellipse: s-maj=26.1km s-min=15.2km az=39.0, Southeastern Uzbekistan

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**1.99**	**91**	⇑Pn		Pn	13 08 48.4	0.0
	14nm,0.4s							
DZET				⇑Sn		Sn	13 09 14.9	+0.8
	54nm,0.4s							
KK31	**Karatay Array**	**5.30**	**36**	⇓Pn		Pn	13 09 34.1	+0.3
	0.4nm,0.3s,baz=221,slow=13,SNR=16							
KK31				⇑Lg		Lg	13 11 02.8	
	2.5nm,0.5s,baz=221,slow=29,SNR=3.7							
MNAS	**Manas**	**5.95**	**51**	⇓Pn		Pn	13 09 43.6	+0.8
	1.0nm,0.4s							
MNAS				⇑Sn		Sn	13 10 52.8	+1.1
	1.1nm,0.5s							

*ISCJB **04** 13:19:02.7±0.5, 22.˚95S±0.˚07×68.˚41W±0.˚06, h121km±5km, mb3.8/7, Error ellipse: s-maj=13.6km s-min=7.1km az=33.2*
*IDC **04** 13:19:02.9±0.7, 22.˚93S×68.˚30W, h108km±5km, mb3.7/7, mb1 3.9/9, mb1mx3.7/27, mbtmp4.0/9, Error ellipse: s-maj=23.1km s-min=15.5km az=22.0*
*GUC **04** 13:19:03.2±0.5, 23.˚04S×68.˚48W, h104km±526km, ML4.3*
*SJA **04** 13:19:26.9±0.5, 23.˚52S×66.˚54W, h70km±20km, ML2.8, MW3.3*

ISC 04 13:19:03.2±0.7, 22.˚87S±0.˚06×68.˚34W±0.˚06, h113km±5km, n24, σ2ᵗ920/35, mb4.0/7, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**0.59**	**296**	P		**Pn**	**13 19 21.8**	**+0.4**
	12μm,0.3s,baz=125,slow=6.7,SNR=3255							
LVC				S		**Sn**	**13 19 35.5**	**+0.4**
	71μm,0.3s,baz=213,slow=24,SNR=160							
PB04	**IPOC Station P**	**1.76**	**287**	*i* P		**Pn**	**13 19 33.2**	**-0.2**
PB04				*i* S		**Sn**	**13 19 55.9**	**-0.6**
PB04				IAML			13 20 06.8	
	comp=E,2μm,0.4s							
PB07	**IPOC Station P**	**1.83**	**308**	*i* P		**Pn**	**13 19 35.0**	**+0.6**
PB07				*i* S		**Sn**	**13 19 59.0**	**+0.8**
PB07				IAML			13 20 03.1	
	comp=N,3μm,0.3s							
PB01	**IPOC Station P**	**2.11**	**329**	*i* P		**Pn**	**13 19 39.6**	**+1.7**
PB01				*i* S		**Sn**	**13 20 06.5**	**+2.2**
PB01				IAML			13 20 08.5	
	comp=E,3μm,0.3s							
PB10	**IPOC Station P**	**2.14**	**252**	*i* P		**Pn**	**13 19 36.0**	**-2.0**
PB10				*i* S		**Sn**	**13 20 01.2**	**-3.6**
PB10				IAML			13 20 17.6	
	comp=N,3μm,0.3s							
HJA	**Humahuaca**	**2.72**	**98**	*e*P		**Pn**	**13 19 48.6**	**+2.7**
HJA				IAML			13 19 49.1	
	comp=Z,153nm,0.5s							
HJA				*e*S		Sn	13 20 04.5	-14
HMBC	**Humberstone**	**2.96**	**330**	*e*P		**Pn**	**13 19 49.3**	**+0.4**
HMBC				*e*S		**Sn**	**13 20 19.8**	**-4.2**
HMBC				IAML			13 20 58.5	
	comp=N,745nm,0.4s							
SLA	**San Lorenzo**	**3.18**	**126**	*e*P		**Pn**	**13 19 53.8**	**+1.9**
AZAP	**Zapla**	**3.29**	**115**	*e*P		**Pn**	**13 19 54.3**	**+1.0**
AZAP				IAML			13 19 56.3	
	comp=Z,144nm,0.4s							
PSGC	**Pisagua**	**3.66**	**333**	*e*P		**Pn**	**13 19 57.7**	**-0.4**
PSGC				*e*S		**Sn**	**13 20 32.6**	**-8.1**
PSGC				IAML			13 21 00.2	
	comp=E,254nm,0.3s							
ASTB	**Santa Barbara**	**3.72**	**107**	*e*P		**Pn**	**13 19 59.8**	**+0.8**
SIV	**San Ignacio**	**9.68**	**46**	P		**Pn**	**13 21 18.0**	**-1.6**
	comp=E,5.5nm,0.3s,baz=239,slow=12,SNR=45							
SIV				S		**Sn**	**13 23 03.3**	**-3.2**
	comp=E,1.3nm,0.3s,baz=337,slow=21,SNR=3.4							
CPUP	**Villa Florida**	**10.59**	**111**	P		**Pn**	**13 21 29.1**	**-2.6**
	comp=E,0.1nm,0.3s,baz=256,slow=8.5,SNR=3.6							
PTGA	**Pitinga**	**23.47**	**21**	P		**P**	**13 24 03.4**	**+0.7**
	comp=E,1.0nm,0.3s,baz=146,slow=9.1,SNR=5.2							
TXAR	**Lajitas Array**	**62.05**	**325**	P		**P**	**13 29 13.2**	**+1.1**
	comp=E,0.1nm,0.6s,baz=150,slow=9.1,SNR=2.9							
TXAR				sP		**sP**	**13 29 51.7**	**-0.1**
	comp=E,0.1nm,0.6s,baz=153,slow=8.1,SNR=2.3							
PDAR	**Pinedale Array**	**75.56**	**330**	P		**P**	**13 30 36.5**	**+0.8**
	comp=E,0.3nm,0.5s,baz=115,slow=6.4,SNR=3.2							
ULM	**Lac du Bonnet**	**76.78**	**342**	P		**P**	**13 30 42.9**	**+0.8**
	comp=E,1.2nm,0.4s,baz=125,slow=3.8,SNR=3.1							
TORD	**Torodi Ar. Bea**	**77.32**	**70**	P		**P**	**13 30 46.1**	**+0.2**
	comp=E,3.5nm,0.6s,baz=254,slow=5.5,SNR=38							
TORD				pP		**pP**	**13 31 14.8**	**+0.3**
	comp=E,2.8nm,0.9s,baz=252,slow=5.1,SNR=4.6							
MAW	**Mawson**	**82.87**	**163**	P		**P**	**13 31 14.6**	**-0.2**
	comp=E,1.9nm,0.6s,baz=210,slow=8.1,SNR=5.7							
YKA	**Yellowknife Ar**	**92.65**	**340**	P		**P**	**13 32 02.5**	**+0.8**
	comp=E,0.5nm,0.5s,baz=142,slow=4.5,SNR=5.0							
ASAR	**Alice Springs**	**128.94**	**206**	PKP		**PKPdf**	**13 37 58.1**	**-0.3**
	comp=E,0.7nm,0.7s,baz=135,slow=2.0,SNR=13							
ASAR				pPKP		**pPKPdf**	**13 38 29.3**	**+0.3**
	comp=E,0.4nm,0.8s,baz=169,slow=1.6,SNR=2.2							
WRA	**Warramunga Arr**	**132.03**	**209**	PKP		**PKPdf**	**13 38 04.2**	**-0.1**
	comp=E,0.7nm,0.6s,baz=150,slow=1.6,SNR=20							
ZALV	**Zalesovo Beam**	**142.95**	**26**	PKP		**PKPdf**	**13 38 22.1**	**-1.2**
	comp=E,0.9nm,0.4s,baz=344,slow=4.3,SNR=4.8							
MKAR	**Makanchi Array**	**146.41**	**38**	PKPbc		**PKPdf**	**13 38 30.6**	**+1.1**
	comp=E,2.2nm,0.7s,baz=270,slow=0.6,SNR=16							

*SOME **04** 13:21:00.1, 44.˚67N×82.˚17E, h10km*
*ISCJB **04** 13:21:03.0±1.7, 44.˚73N±0.˚08×82.˚3E±0.˚1, h10km, Error ellipse: s-maj=17.9km s-min=6.3km az=34.2*

ISC 04 13:20:59.2±2.3, 44.˚70N±0.˚08×82.˚2E±0.˚1, h10km, n5, σ1ᵗ945/10, 4C, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.79**	**259**	*e*P		**Pg**	**13 21 33.5**	**0.0**
	4.6nm,0.2s							
DJR				*e*S		**Sg**	**13 21 57.5**	**+0.8**
	4.0nm,0.2s							
MK31	**Makanchi Array**	**2.10**	**1**	⇑Pn		**Pb**	**13 21 37.9**	**+0.6**
	1.2nm,0.3s,baz=181,slow=14,SNR=66							
MK31				⇑Sn		**Sg**	**13 22 05.2**	**-1.4**
	0.5nm,0.3s,baz=183,slow=27,SNR=12							
MAKZ	**Makanchi**	**2.12**	**355**	⇑Pn		**Pb**	**13 21 37.6**	**-0.1**
	0.4nm,0.5s							
MAKZ				⇑Sn		**Sb**	**13 22 05.6**	**+1.6**
	1.9nm,0.6s							
KAPS	**Kapalarasan**	**2.12**	**287**	*e*P		**Pg**	**13 21 39.1**	**-0.9**
	1.5nm,0.2s							
KAPS				*e*S		**Sg**	**13 22 07.0**	**-0.4**
	2.9nm,0.3s							
UZB	**Uzynbulak**	**2.79**	**237**	*e*P		**Pb**	**13 21 50.3**	**+1.0**
	0.3nm,0.1s							
UZB				*e*S		**Sg**	**13 22 26.1**	**-2.7**
	1.6nm,0.2s							

MEX 04 13:29:01.5±0.6, 28.˚61N×113.˚00W, h7km±8km, MD3.7, Baja California

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**1.45**	**152**	*e*P		Pn	13 29 24.5	-3.6
SRIG				*e*S		Sn	13 29 42.0	-5.3
HSIG		**1.85**	**77**	*e*P		Pn	13 29 29.5	-4.1
HSIG				*i* S		Sn	13 29 53.2	-4.1
GUYB	**Guaymas**	**2.01**	**110**	*e*P		Pn	13 29 33.4	-2.4
GUYB				*e*S		Sn	13 29 56.5	-4.6

*IDC **04** 13:41:30.7±1.6, 5.˚11S×130.˚77E, h0km, mb3.5/2, mb1 4.1/6, mb1mx3.7/38, mbtmp3.9/6, ML3.9/4, Error ellipse: s-maj=73.9km s-min=22.6km az=84.0*
*ISCJB **04** 13:41:33.8±0.9, 5.˚25S±0.˚06×131.˚0E±0.˚2, h61km, mb3.6/2, Error ellipse: s-maj=26.3km s-min=8.6km az=179.8*

ISC 04 13:41:34.9±0.9, 5.˚20S±0.˚06×131.˚1E±0.˚2, h61km, n6, σ3ᵗ900/10, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**4.30**	**2**	Pn		**Pn**	**13 42 36.5**	**-1.4**
	23nm,0.3s,baz=176,slow=5.2,SNR=2.7							
SIJI				Sn		**Sn**	**13 43 22.4**	**-4.3**
	17nm,0.3s,baz=270,slow=23,SNR=5.0							
FITZ	**Fitzroy Crossi**	**13.89**	**202**	Pn		**Pn**	**13 44 48.1**	**-0.8**
	0.3nm,0.3s,baz=36,slow=13,SNR=13							
FITZ				Sn		**Sn**	**13 47 18.5**	**-3.1**
	0.1nm,0.3s,baz=333,slow=19,SNR=2.5							
WRA	**Warramunga Arr**	**14.99**	**168**	Pn		**Pn**	**13 45 04.0**	**+0.7**
	0.4nm,0.3s,baz=350,slow=13,SNR=18							
WRA				Sn		**Sn**	**13 47 47.0**	**-1.4**
	0.3nm,0.3s,baz=348,slow=24,SNR=5.4							
ASAR	**Alice Springs**	**18.56**	**172**	P		**Pn**	**13 45 51.7**	**+3.9**
	0.6nm,0.3s,baz=350,slow=9.6,SNR=36							
ASAR				S		**Sn**	**13 49 13.5**	**-1.3**
	0.1nm,0.3s,baz=0.8,slow=28,SNR=3.7							
SONM	**Songino Array**	**57.10**	**340**	P		**P**	**13 51 17.3**	**+2.1**
	0.5nm,0.8

JMK	**Ichinoseki**	**1.19**	**329**	P		**Pb**	**14 00 43.0**	**+0.5**
JMK				S		**Sg**	**14 00 56.6**	**-1.4**
JFT	**Otama**	**1.39**	**253**	P		**Pb**	**14 00 46.1**	**+0.3**
JFT				S		**Sb**	**14 01 02.2**	**-1.5**
JYK	**Kaneyama**	**1.62**	**308**	P		**Pn**	**14 00 49.1**	**+0.5**
JYK				*e*S		**Sn**	**14 01 07.6**	**-2.1**
JOM	**Ohasama**	**1.64**	**340**	P		**Pn**	**14 00 49.9**	**+1.1**
JOM				*e*S		**Sn**	**14 01 09.1**	**-1.0**
JRG	**Rokugo**	**1.81**	**324**	P		**Pn**	**14 00 52.5**	**+1.3**
JFY	**Yanaizu**	**1.90**	**255**	P		**Pn**	**14 00 53.0**	**+0.6**
JYA	**Atsumi**	**1.92**	**291**	P		**Pn**	**14 00 53.1**	**+0.4**
MJAR	**Matsushiro Arr**	**3.33**	**247**	Pn		**Pn**	**14 01 13.7**	**+1.6**
	2.3nm,0.3s,baz=82,slow=14,SNR=16							
MAT	**Matsushiro**	**3.33**	**247**	P		**Pn**	**14 01 13.7**	**+1.6**
MAT				*e*S		**Sn**	**14 01 55.5**	**+3.6**
JHJ	**Hachijo jima 2**	**5.13**	**201**	Pn		**Pn**	**14 01 37.2**	**+0.4**
	14nm,0.3s,baz=66,slow=20,SNR=5.2							
JHJ				Sn		**Sn**	**14 02 32.5**	**-3.7**
	18nm,0.3s,baz=57,slow=18,SNR=1.7							
ASAJ	**Asahikawa**	**6.20**	**4**	Pn		**Pn**	**14 01 52.1**	**+0.7**
	baz=213,slow=18							
KLR	**Kul'dur**	**13.50**	**330**	LR		LR	14 08 29.5	
	comp=Z,25nm,19.8s,baz=160,slow=36							
GUMO	**Guam**	**24.38**	**173**	LR		LR	14 14 12.3	
	comp=Z,19nm,20.4s,baz=146,slow=34							
H11N2	**WAKE ISLAND Hy**	**28.22**	**123**	T		T	14 35 38.5	
	baz=316,slow=76,SNR=79							
H11N1	**WAKE ISLAND Hy**	**28.23**	**123**	T		T	14 35 44.4	
	baz=316,slow=76,SNR=82							
H11N3	**WAKE ISLAND Hy**	**28.24**	**123**	T		T	14 35 45.9	
	baz=316,slow=76,SNR=66							
H11S1	**WAKE ISLAND Hy**	**28.97**	**125**	T		T	14 36 41.1	
	baz=317,slow=76,SNR=51							
H11S3	**WAKE ISLAND Hy**	**28.97**	**125**	T		T	14 36 41.5	
	baz=317,slow=76,SNR=49							
H11S2	**WAKE ISLAND Hy**	**28.99**	**125**	T		T	14 36 42.8	
	baz=317,slow=76,SNR=50							
ILAR	**Eielson Array**	**48.49**	**33**	P		**P**	**14 09 02.6**	**+0.1**
	0.3nm,0.7s,baz=272,slow=7.4,SNR=5.7							
WRA	**Warramunga Arr**	**58.01**	**189**	P		**P**	**14 10 12.7**	**-0.3**
	1.0nm,0.6s,baz=5.5,slow=7.1,SNR=14							
ASAR	**Alice Springs**	**61.74**	**188**	P		**P**	**14 10 38.8**	**+0.2**
	0.5nm,0.9s,baz=17,slow=10,SNR=3.3							
AFI	**Afiamalu**	**67.35**	**131**	LR		LR	14 33 22.9	
	comp=Z,49nm,21.9s,baz=7.5,slow=30							

IDC 04 14:08:03.2±2.3, 7°25S×127°60E, h0km, mb3.7/1, mb1 3.9/3, mb1mx3.5/26, mbtmp3.7/3, ML3.8/2, Error ellipse: s-maj=303.6km s-min=31.2km az=64.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.21**	**153**	Pn	Pn	14 11 24.1	-1.9
	0.5nm,0.3s,baz=328,slow=13,SNR=26						
WRA				Sn	Sn	14 13 50.4	-14
	0.8nm,0.3s,baz=335,slow=23,SNR=9.6						
ASAR	**Alice Springs**	**17.41**	**160**	P	P	14 12 09.1	-0.1
	0.2nm,0.3s,baz=342,slow=11,SNR=23						
ASAR				S	Sn	14 15 13.0	-9.3
	0.1nm,0.3s,baz=353,slow=26,SNR=4.0						
MKAR	**Makanchi Array**	**67.15**	**328**	P	P	14 18 58.9	0.0
	0.3nm,0.3s,baz=125,slow=7.6,SNR=6.7						

*BJI **04** 14:21:30.4, 14°.30S×167°.20E, h124km, mb4.8/41, mB4.9/28*

*NEIC **04** 14:21:31.5±0.1, 14°.32S×167°.19E, mb4.7/92, Error ellipse: s-maj=4.8km s-min=3.5km az=144.0*

*IDC **04** 14:21:31.8±0.6, 14°.34S×167°.21E, h124km±4km, mb4.5/22, mb1 4.6/24, mb1mx4.5/32, mbtmp4.8/24, MS3.5/7, Ms1 3.5/7, ms1mx3.1/29, Error ellipse: s-maj=13.3km s-min=9.3km az=85.0*

*ISCJB **04** 14:21:32.7±0.9, 14°.37S±0°.04×167°.06E±0°.03, h147km±8km, mb4.7/127, Error ellipse: s-maj=6.2km s-min=5.1km az=177.3*

*MOS **04** 14:21:35.0±1.6, 14°.22S×167°.07E, h158km, mb4.8/54, Error ellipse: s-maj=8.1km s-min=7.7km az=25.9*

ISC 04 14:21:32.7±0.4, 14°40S±0°.04×167°08E±0°.05, h132km±2km, h132km:pP-P,n423,σ1s28/471, mb4.7/126, 11C-11D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.66**	**184**	*e*Pn	**Pn**	**14 23 21.6**	**0.0**
	105nm,0.3s						
DZM				*e*Sn	**Sn**	**14 24 40.4**	**-6.5**
	127nm,0.3s						
DZM	**Mont Dzumac**	**7.66**	**184**	P	**Pn**	**14 23 22.6**	**+1.1**
	16nm,0.3s,baz=22,slow=16,SNR=67						
DZM				S	**Sn**	**14 24 46.1**	**-0.9**
	12nm,0.3s,baz=116,slow=23,SNR=3.3						
DZM				LR	LR	14 25 56.2	
	comp=Z,289nm,18.6s,baz=65,slow=34						
DZM	**Mont Dzumac**	**7.66**	**184**	*e*Pn	**Pn**	**14 23 21.4**	**-0.2**
DZM				S	**Sn**	**14 24 46.1**	**-0.9**
HNR	**Honiara**	**8.55**	**304**	P	**Pn**	**14 23 35.4**	**+1.8**
	39nm,0.3s,baz=202,slow=2.0,SNR=24						
HNR				S	**Sn**	**14 25 08.8**	**+0.3**
	42nm,0.3s,baz=66,slow=22,SNR=9.0						
HNR	**Honiara**	**8.55**	**304**	*e*P	**Pn**	**14 23 34.0**	**+0.4**
HNR				*e*S	**Sn**	**14 25 06.0**	**-2.5**
HNR	**Honiara**	**8.55**	**304**	*e*Pn	**Pn**	**14 23 34.8**	**+1.2**
HNR				S	**Sn**	**14 25 08.8**	**+0.3**
MSVF	**Nonsavu**	**11.05**	**109**	*e*P	**Pn**	**14 24 09.1**	**+2.0**
MSVF	**Nonsavu**	**11.05**	**109**	*e*Pn	**Pn**	**14 24 09.1**	**+2.0**
FUNA	**Funafuti**	**13.23**	**65**	*e*Pn	**Pn**	**14 24 35.5**	**0.0**
RABL	**Rabaul**	**17.86**	**303**	*e*P	**Pn**	**14 25 32.8**	**-0.3**
	35nm,0.6s						
EIDS	**Eidsvold**	**18.57**	**232**	*e*P	**Pn**	**14 25 42.3**	**+1.0**
	75nm,0.6s						
PMG	**Port Moresby**	**20.11**	**282**	P	**P**	**14 25 57.9**	**+1.5**
	42nm,0.8s,baz=69,slow=7.0,SNR=9.4						
PMG	**Port Moresby**	**20.11**	**282**	*e*P	Pn	14 25 58.0	-1.4
PMG				pmax	pmax		
	comp=Z,42nm,0.8s						
PMG	**Port Moresby**	**20.11**	**282**	*e*P	Pn	14 25 58.0	-1.5
	comp=Z,42nm,0.8s						
AFI	**Afiamalu**	**20.50**	**91**	P	Pn	14 26 03.2	-0.9
	comp=Z,53nm,0.8s,baz=269,slow=7.7,SNR=8.2						
AFI	**Afiamalu**	**20.50**	**91**	*e*P	**P**	**14 26 02.2**	**+1.6**
AFI				pmax	pmax		
	comp=Z,120nm,0.9s						
AFI	**Afiamalu**	**20.50**	**91**	*e*P	**P**	**14 26 02.1**	**+1.6**
	comp=Z,120nm,0.9s						
CTA	**Charters Tower**	**20.67**	**251**	P	**P**	**14 26 04.0**	**+1.6**
	comp=Z,34nm,0.6s,baz=78,slow=12,SNR=84						
CTA	**Charters Tower**	**20.67**	**251**	P	**P**	**14 26 04.0**	**+1.6**
CTA				pmax	pmax		
	comp=Z,34nm,0.6s						
CTAO	**Charters Tower**	**20.67**	**251**	*e*P	**P**	**14 26 04.0**	**+1.6**
CTAO				pmax	pmax		
	comp=Z,35nm,0.6s						
CTAO	**Charters Tower**	**20.67**	**251**	*e*P	**P**	**14 26 04.0**	**+1.6**
	comp=Z,35nm,0.6s						
ARMA	**Armidale**	**21.37**	**219**	*e*P	**P**	**14 26 11.7**	**+1.9**
	comp=Z,36nm,1.0s						
PATS	**Pohnpei**	**22.82**	**337**	*e*P	**P**	**14 26 24.9**	**+0.4**
	comp=Z,128nm,1.1s						
COEN	**Coen**	**23.18**	**268**	*e*P	**P**	**14 26 28.6**	**+0.6**
	comp=Z,21nm,0.9s						
URZ	**Urewera**	**25.37**	**161**	P	**P**	**14 26 48.6**	**+1.0**
	comp=Z,7.8nm,0.8s,baz=274,slow=3.0,SNR=2.7						
URZ				LR	LR	14 35 10.4	
	comp=Z,183nm,19.1s,baz=320,slow=32						
STKA	**Stephens Creek**	**29.07**	**229**	P	**P**	**14 27 22.5**	**+1.7**
	comp=Z,11nm,0.5s,baz=50,slow=9.0,SNR=50						
STKA				PcP	**PcP**	**14 30 25.7**	**0.0**
	comp=Z,8.6nm,0.9s,baz=49,slow=5.7,SNR=3.9						
STKA				LR	LR	14 38 38.9	
	comp=Z,129nm,19.1s,baz=83,slow=35						
STKA	**Stephens Creek**	**29.07**	**229**	*e*P	**P**	**14 27 22.6**	**+1.9**
	comp=Z,3.2nm,0.6s						
STKA				PcP	**PcP**	**14 30 25.7**	**0.0**
OXZ	**Oxford**	**29.14**	**173**	*e*P	**P**	**14 27 20.8**	**-0.4**
	comp=Z,142nm,2.0s						
RPZ	**Rata Peaks**	**29.41**	**174**	P	**P**	**14 27 23.9**	**+0.3**
	comp=Z,6.3nm,0.5s,baz=324,slow=3.6,SNR=5.2						
RPZ				LR	LR	14 38 57.7	
	comp=Z,58nm,18.9s,baz=22,slow=36						
RPZ	**Rata Peaks**	**29.41**	**174**	*e*P	**P**	**14 27 23.2**	**-0.4**
	comp=Z,42nm,1.3s						
CRLZ	**Canterbury Las**	**29.46**	**172**	*e*P	**P**	**14 27 25.4**	**+1.4**
	comp=Z,248nm,1.8s						
WB2	**Warramunga Arr**	**31.72**	**255**	*e*P	**P**	**14 27 43.4**	**-0.9**
	comp=Z,12nm,1.0s						
WRAB	**Tennant Creek**	**31.72**	**255**	||*i*P	**P**	**14 27 44.0**	**-0.3**
WRAB				*e**PP	**pP**	**14 28 16.5**	**+3.7**
WRAB				pmax	pmax		
	comp=Z,15nm,1.0s						
WRAB	**Tennant Creek**	**31.72**	**255**	*e*P	**P**	**14 27 43.6**	**-0.7**
	comp=Z,9.6nm,1.0s						
WRA	**Warramunga Arr**	**31.73**	**255**	P	**P**	**14 27 43.5**	**-0.8**
	comp=Z,5.1nm,0.5s,baz=85,slow=9.5,SNR=76						
WRA				ScP	**ScP**	**14 34 05.7**	**+1.4**
	comp=Z,1.1nm,0.9s,baz=78,slow=4.3,SNR=4.1						
WRA				LR	LR	14 40 23.9	
	comp=Z,91nm,18.8s,baz=230,slow=36						
AS01	**Alice Springs**	**32.58**	**249**	*e*P	**P**	**14 27 51.1**	**-0.7**
AS31	**Alice Springs**	**32.62**	**249**	*e*P	**P**	**14 27 51.5**	**-0.7**
	comp=Z,4.6nm,0.4s						
ASAR	**Alice Springs**	**32.62**	**249**	P	**P**	**14 27 51.5**	**-0.6**
	comp=Z,6.5nm,0.4s,baz=73,slow=9.7,SNR=277						
ASAR				pP	**pP**	**14 28 22.0**	**+1.2**
	comp=Z,4.4nm,0.7s,baz=74,slow=9.0,SNR=2.3						
ASAR				S	**S**	**14 32 57.0**	**-1.6**
	comp=Z,1.8nm,1.1s,baz=74,slow=19,SNR=4.8						
ASAR				ScP	**ScP**	**14 34 08.6**	**+1.4**
	comp=Z,1.7nm,1.0s,baz=99,slow=3.3,SNR=5.1						
BBOO	**Buckleboo**	**33.64**	**232**	*e*P	**P**	**14 28 01.9**	**+1.1**
	comp=Z,154nm,1.8s						
MTN	**Manton Dam**	**34.95**	**268**	*e*P	**P**	**14 28 12.6**	**+0.3**
	comp=Z,14nm,0.5s						
FITZ	**Fitzroy Crossi**	**39.90**	**259**	*e*P	**P**	**14 28 54.1**	**+0.1**
	comp=Z,7.8nm,0.7s						
PPT2	**Papeete2**	**41.72**	**100**	*e*LR	LR	14 40 55.9	
	comp=Z,200nm,30.8s						
TBI	**Tubuai**	**41.94**	**109**	*e*LR	LR	14 41 04.9	
	comp=Z,266nm,33.8s						
PCI	**Palu**	**48.58**	**282**	P	P	14 30 12.4	+9.2
PCI	**Palu**	**48.58**	**282**	P	**P**	**14 30 03.1**	**-0.1**
PCI				pmax	pmax		
	comp=Z,35nm,0.9s						
KIP	**Kipapa**	**49.41**	**45**	||P	**P**	**14 30 10.7**	**+1.4**
KIP				pmax	pmax		
	comp=Z,93nm,1.1s						
KPJI	**Karang Pucung**	**57.42**	**270**	P	**P**	**14 31 07.9**	**-0.1**
	comp=Z,30nm,0.8s						
MJAR	**Matsushiro Arr**	**57.53**	**333**	P	**P**	**14 31 07.2**	**-1.1**
	comp=Z,6.6nm,0.7s,baz=171,slow=8.1,SNR=18						
MAJO	**Matsushiro**	**57.53**	**333**	||P	**P**	**14 31 08.3**	**-0.1**
MAJO				pmax	pmax		
	comp=Z,53nm,0.8s						
MAJO	**Matsushiro**	**57.53**	**333**	*e*P	**P**	**14 31 07.4**	**-1.0**
	comp=Z,12nm,0.8s						
MJB9	**Matsu-Tunnel**	**57.53**	**333**	*e*P	**P**	**14 31 07.3**	**-1.1**
	comp=Z,3.0nm,0.8s						
CGJI	**Cibinong**	**60.71**	**270**	P	**P**	**14 31 29.9**	**-0.8**
	comp=Z,27nm,0.5s						
ASAJ	**Asahikawa**	**62.37**	**340**	*e*P	**P**	**14 31 42.5**	**+1.2**
	comp=Z,86nm,1.5s						
VNDA	**Vanda**	**63.19**	**181**	P	**P**	**14 31 46.3**	**0.0**
	comp=Z,4.7nm,0.7s,baz=355,slow=7.6,SNR=37						
VNDA				pP	**pP**	**14 32 17.7**	**-0.3**
	comp=Z,3.6nm,0.8s,baz=21,slow=10,SNR=2.6						
VNDA	**Vanda**	**63.19**	**181**	*e*P	**P**	**14 31 46.2**	**0.0**
VNDA				*PP	**pP**	**14 32 17.7**	**-0.3**
VNDA				pmax	pmax		
	comp=Z,6.0nm,0.7s						
VNDA	**Vanda**	**63.19**	**181**	*e*P	**P**	**14 31 46.2**	**0.0**
	comp=Z,5.8nm,0.7s						
VNDA				pP	**pP**	**14 32 17.7**	**-0.3**
KSRS	**Korea Array**	**63.37**	**326**	P	**P**	**14 31 48.0**	**+0.1**
	comp=Z,5.3nm,0.9s,baz=138,slow=6.9,SNR=18						
KSRS				pP	**pP**	**14 32 18.8**	**-1.0**
	comp=Z,3.3nm,0.9s,baz=140,slow=7.1,SNR=4.2						
KSAR	**Wonju Array Be**	**63.38**	**326**	P	**P**	**14 31 48.0**	**0.0**
KSAR				*PP	**pP**	**14 32 18.8**	**-1.1**
KSAR	**Wonju Array Be**	**63.38**	**326**	P	**P**	**14 31 48.0**	**0.0**
KSAR				pP	**pP**	**14 32 18.8**	**-1.1**
SBA	**Scott Base**	**63.47**	**180**	*e*P	**P**	**14 31 48.8**	**+0.8**
SBA				pmax	pmax		
	comp=Z,17nm,0.8s						
SBA	**Scott Base**	**63.47**	**180**	*e*P	**P**	**14 31 48.8**	**+0.8**
	comp=Z,17nm,0.8s						
CASY	**Casey**	**63.76**	**202**	*e*P	**P**	**14 31 49.9**	**-0.3**
YSS	**Yuzh-Sakhalins**	**64.86**	**342**	||*e*P	**P**	**14 31 59.4**	**+1.9**
YSS				pmax	pmax		
	comp=Z,40nm,1.0s						
QIZ	**Qiongzhong**	**65.42**	**299**	P	**P**	**14 32 01.9**	**+0.2**
QIZ				pP	**pP**	**14 32 37.7**	**+4.0**
QIZ				PP	**PP**	**14 34 28.3**	**+0.8**
QIZ				S	**S**	**14 40 37.9**	**+1.8**
QIZ				sS	**sS**	**14 41 26.3**	**-4.9**
QIZ				pmax	pmax		
	comp=Z,10.0nm,1.3s						
VLA	**Vladivostok**	**65.70**	**332**	||*i*P	**P**	**14 32 01.6**	**-1.4**
VLA				*i*		14 32 32.3	
VLA				*i*		14 34 28.2	
VLA				pmax	pmax		
	comp=Z,30nm,1.9s						
USRK	**Ussuriysk Ar.**	**66.51**	**333**	P	**P**	**14 32 08.6**	**+0.4**
	comp=Z,4.9nm,0.7s,baz=119,slow=6.6,SNR=9.8						
PET	**Petropavlovsk**	**67.54**	**355**	*e*P	**P**	**14 32 14.4**	**0.0**
PET				pmax	pmax		
	comp=Z,30nm,1.3s						
PET	**Petropavlovsk**	**67.54**	**355**	*e*P	**P**	**14 32 14.2**	**-0.2**
	comp=Z,36nm,1.2s						
PEA0	**Petropavlovsk-**	**67.71**	**354**	*e*P	**P**	**14 32 15.4**	**-0.2**
PEA0B	**Petropavlovsk-**	**67.71**	**354**	*e*P	**P**	**14 32 15.4**	**-0.2**
	comp=Z,39nm,1.0s						
PETK	**Petropavlovsk-**	**67.71**	**354**	P	**P**	**14 32 15.5**	**-0.1**
	comp=Z,25nm,0.9s,baz=136,slow=7.2,SNR=38						
PETK	**Petropavlovsk-**	**67.71**	**354**	P	**P**	**14 32 15.5**	**-0.1**
PETK				pmax	pmax		
	comp=Z,27nm,0.9s						
MDJ	**Mudanjiang**	**67.91**	**332**	P	**P**	**14 32 17.9**	**+0.9**
MDJ				pmax	pmax		
	comp=Z,21nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,110nm,5.1s						
MDJ	**Mudanjiang**	**67.91**	**332**	*e*P	**P**	**14 32 17.2**	**+0.3**
	comp=Z,27nm,1.0s						
DL2	**Dalian**	**67.93**	**323**	P	**P**	**14 32 17.6**	**+0.4**
DL2				pmax	pmax		
	comp=Z,34nm,0.7s						
TYV	**Tymovskoe**	**68.41**	**344**	*e*P	**P**	**14 32 17.8**	**-2.2**
TYV				pmax	pmax		
	comp=Z,18nm,0.8s						
MNSI	**Mandailing Nat**	**68.45**	**277**	P	**P**	**14 32 22.1**	**+1.1**
HABR	**Khabarovsk**	**68.76**	**338**	*e*P	**P**	**14 32 21.0**	**-1.2**
HABR				*e*		14 32 44.4	
HABR				*e**PP	**pP**	**14 32 57.1**	**+2.6**
HABR				*e**SP	**sP**	**14 33 13.6**	**+4.9**
HABR				*e*		14 34 54.4	
HABR				*e*PPP	PPP	14 36 35.8	
HABR				*e*S	**S**	**14 41 12.4**	**-2.6**
HABR				*e*		14 42 06.7	
HABR				*e*SS	**SS**	**14 45 41.3**	**-1.6**
HABR				pmax	pmax		
	comp=N,8.0nm,0.8s						
HABR				pmax	pmax		
	comp=E,8.0nm,1.5s						
HABR				pmax	pmax		
	comp=Z,17nm,1.5s						
HABR				MLR	MLR		
	comp=Z,105nm,21.0s						
TIA	**Tai'an**	**68.97**	**318**	*e*P	**P**	**14 32 23.5**	**-0.3**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CN2	**Changchun**	**69.27**	**329**	*e*P	**P**	**14 32 24.5**	**-1.0**
CN2				*e*pP	pP	14 32 55.5	-2.3
CN2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CN2				pmax	pmax		
	comp=Z,100nm,3.0s						
PSI	**Prapat**	**69.63**	**279**	P	**P**	**14 32 28.2**	**-0.3**
SKNT	**Sakolnakorn**	**69.64**	**294**	P	**P**	**14 32 28.9**	**+0.6**
	comp=Z,23nm,1.0s						
ENH	**Enshi**	**71.02**	**309**	*e*P	**P**	**14 32 35.3**	**-1.2**
ENH				*e*pP	**pP**	**14 33 07.1**	**-1.9**
GYA	**Guiyang**	**71.38**	**305**	*e*P	**P**	**14 32 40.0**	**+1.2**
GYA				pP	pP	14 33 11.2	-0.2
GYA				sP	sP	14 33 25.6	+0.1
GYA				PP	**PP**	**14 35 22.8**	**+3.7**
GYA				S	**S**	**14 41 47.4**	**+0.7**
GYA				SKS	**SKSac**	**14 42 27.0**	**-3.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BJI	**Beijing**	**71.90**	**321**	P	**P**	**14 32 42.0**	**+0.5**
BJI				pmax	pmax		
	comp=Z,11nm,0.8s						
BJI				pmax	pmax		
	comp=Z,120nm,3.0s						
LOEI	**Loei**	**72.25**	**294**	P	**P**	**14 32 42.8**	**-1.3**
	comp=Z,78nm,1.5s						
KMI	**Kunming**	**73.98**	**302**	P	**P**	**14 32 55.5**	**+1.1**
KMI				pmax	pmax		
	comp=Z,15nm,0.8s						
KMI				pmax	pmax		
	comp=Z,120nm,6.1s						
LAMP	**Lampang**	**74.06**	**294**	P	**P**	**14 32 56.2**	**+1.5**
	comp=Z,15nm,0.7s,comp=Z,158nm						
CM01	**Chiang Mai Arr**	**74.62**	**294**	*e*P	**P**	**14 32 58.8**	**+0.8**
CM31	**Chiang Mai Arr**	**74.65**	**294**	*e*P	**P**	**14 32 59.2**	**+1.1**
CMAR	**Chiang Mai Arr**	**74.65**	**294**	P	**P**	**14 32 59.2**	**+1.1**
	comp=Z,6.3nm,0.8s,baz=129,slow=4.7,SNR=40						
CMAR				pP	**pP**	**14 33 31.5**	**+0.6**
	comp=Z,12nm,1.1s,baz=121,slow=4.4,SNR=9.4						
CMMT	**Chiang Mai**	**74.77**	**294**	P	**P**	**14 32 59.8**	**+1.0**
	comp=Z,14nm,1.2s						
CHTO	**Chiang Mai**	**74.78**	**294**	P	**P**	**14 32 59.9**	**+1.0**
	comp=Z,62nm,1.2s						
CHTO	**Chiang Mai**	**74.78**	**294**	*e*P	**P**	**14 32 59.7**	**+0.8**
CHTO				pmax	pmax		
	comp=Z,12nm,0.9s						
CHTO	**Chiang Mai**	**74.78**	**294**	*e*P	**P**	**14 32 59.7**	**+0.8**
	comp=Z,12nm,0.9s						
HHC	**Hu-ho-hao-te**	**75.22**	**320**	*e*P	**P**	**14 33 00.8**	**-0.3**
HHC				S	**S**	**14 42 29.8**	**+0.4**
HHC				pmax	pmax		
	comp=Z,18nm,1.1s						
HHC				pmax	pmax		
	comp=Z,64nm,7.9s						
QSPA	**South Pole Qui**	**75.63**	**180**	*e*P	**P**	**14 33 02.7**	**-0.3**
	comp=Z,17nm,1.1s						
SEY	**Seymchan**	**77.93**	**353**	||*i*P	**P**	**14 33 15.9**	**+0.2**
LZH	**Lanzhou**	**77.97**	**312**	*e*P	**P**	**14 33 18.6**	**+1.9**
LZH				pP	pP	14 33 49.7	0.0
LZH				sP	sP	14 34 03.7	-0.1
LZH				pmax	pmax		
	comp=Z,19nm,1.1s						
LZH				pmax	pmax		
	comp=Z,110nm,4.6s						
KDAK	**Kodiak Island**	**79.22**	**21**	*i*P	**P**	**14 33 22.7**	**-0.1**
YAK	**Yakutsk**	**81.66**	**343**	*e*P	**P**	**14 33 34.5**	**-1.3**
YAK				pmax	pmax		
	comp=Z,33nm,0.8s						
YAK				pmax	pmax		
	comp=E,5.0nm,0.7s						
YAK				pmax	pmax		
	comp=N,7.0nm,0.9s						
YAK	**Yakutsk**	**81.66**	**343**	*e*P	**P**	**14 33 35.6**	**-0.2**
	comp=N,56nm,0.6s						
MAW	**Mawson**	**82.12**	**202**	P	**P**	**14 33 38.5**	**+0.2**
	comp=N,4.8nm,0.5s,baz=134,slow=5.2,SNR=16						
MAW	**Mawson**	**82.12**	**202**	*e*P	**P**	**14 33 38.8**	**+0.5**
	comp=N,1.4nm,0.6s						
SONM	**Songino Array**	**82.12**	**324**	P	**P**	**14 33 38.7**	**-0.1**
	comp=N,1.6nm,0.5s,baz=140,slow=5.3,SNR=11						
SONM				pP	**pP**	**14 34 10.0**	**-2.0**
	comp=N,3.9nm,1.0s,baz=139,slow=5.4,SNR=4.5						
SONA1	**Songino Array**	**82.13**	**324**	*e*P	**P**	**14 33 38.4**	**-0.4**
SONA1				*e*pP	**pP**	**14 34 10.1**	**-2.0**
BILL	**Bilibino**	**82.21**	**360**	*e*P	**P**	**14 33 38.0**	**-0.6**
BILL				pmax	pmax		
	comp=Z,29nm,0.9s						
BILL	**Bilibino**	**82.21**	**360**	*e*P	**P**	**14 33 38.0**	**-0.6**
	comp=Z,29nm,0.9s						
GTA	**Gaotai**	**82.31**	**314**	*e*P	**P**	**14 33 40.1**	**+0.2**
GTA				pP	pP	14 34 11.7	-1.5
GTA				sP	sP	14 34 25.2	-2.0
GTA				pmax	pmax		
	comp=Z,7.0nm,1.2s						
PMR	**Palmer**	**83.25**	**19**	*e*P	**P**	**14 33 42.5**	**-1.5**
PMR				pmax	pmax		
	comp=Z,12nm,1.0s						
PMR	**Palmer**	**83.25**	**19**	*e*P	**P**	**14 33 42.5**	**-1.5**
	comp=Z,12nm,1.0s						
SML	**Sawmill**	**83.67**	**20**	*e*P	**P**	**14 33 45.0**	**-1.2**
SML				pmax	pmax		
	comp=Z,37nm,1.7s						
SML	**Sawmill**	**83.67**	**20**	*e*P	**P**	**14 33 45.0**	**-1.2**
	comp=Z,37nm,1.7s						
SCM	**Sheep Creek Mo**	**84.02**	**20**	*e*P	**P**	**14 33 47.2**	**-0.9**
SCM				pmax	pmax		
	comp=Z,11nm,0.9s						
SCM	**Sheep Creek Mo**	**84.02**	**20**	*e*P	**P**	**14 33 47.2**	**-0.9**
	comp=Z,11nm,0.9s						
DIV	**Divide**	**84.04**	**21**	*e*P	**P**	**14 33 46.8**	**-1.4**
	comp=Z,7.5nm,0.8s						
KTH	**Kantishna Hill**	**84.17**	**18**	*e*P	**P**	**14 33 46.7**	**-2.1**
	comp=Z,11nm,0.9s						
TRF	**Thorofare Moun**	**84.28**	**18**	*e*P	**P**	**14 33 47.4**	**-2.1**
	comp=Z,11nm,0.9s						
BMRM	**Bremner River**	**84.34**	**21**	*e*P	**P**	**14 33 48.5**	**-1.2**
RND	**Reindeer**	**84.68**	**18**	*e*P	**P**	**14 33 49.7**	**-1.7**
RND				pmax	pmax		
	comp=Z,14nm,1.0s						
RND	**Reindeer**	**84.68**	**18**	*e*P	**P**	**14 33 49.7**	**-1.7**
	comp=Z,14nm,1.0s						
MCK	**McKinley**	**84.90**	**18**	*e*P	**P**	**14 33 50.2**	**-2.2**
MCK				pmax	pmax		
	comp=Z,15nm

COLA pmax pmax
comp=Z,4.0nm,0.7s
COLA College 86.06 18 *e*P **P 14 33 56.6 -1.4**
comp=Z,3.6nm,0.7s
EDW2 Edwards Air Fo 86.18 53 P **P 14 33 59.1 -0.4**
baz=250,SNR=12
BFSC Mount Baldy Ra 86.22 53 P **P 14 33 59.3 -0.5**
baz=250,SNR=6.6
IL1 Eielson Array 86.27 18 *e*P **P 14 33 56.6 -2.6**
ILAR Eielson Array 86.27 18 P **P 14 33 57.0 -2.1**
comp=Z,7.7nm,0.7s,baz=235,slow=5.5,SNR=96
ILAR pP **pP 14 34 34.3 +1.6**
comp=Z,1.6nm,0.6s,baz=247,slow=4.9,SNR=2.7
ILB Eielson Array 86.27 18 *e*P **P 14 33 56.9 -2.3**
I04A Tendick Farm, 86.34 43 P **P 14 33 59.1 -0.9**
baz=246
DOT Dot Lake 86.36 20 *e*P **P 14 33 58.1 -1.6**
comp=Z,13nm,0.8s
WAKR Walker 86.39 49 *e*P **P 14 33 59.9 -0.7**
comp=Z,8.6nm,1.1s
LRMC Laurel Mtn Rad 86.63 52 P **P 14 34 01.6 -0.2**
baz=250
CWC Cottonwood Cre 86.66 51 P **P 14 34 01.3 -0.6**
baz=249
E03A Lebam 86.73 40 *e*P **P 14 34 01.3 -0.5**
comp=Z,20nm,0.9s
MONP2 Monument Peak 86.74 55 P **P 14 34 02.2 -0.2**
baz=251,SNR=12
PAHR Pah Rah Range 86.87 48 *e*P **P 14 34 01.8 -1.0**
comp=Z,4.9nm,0.9s
IKP In-Ko-Pah, Jac 86.91 55 P **P 14 34 03.0 -0.1**
baz=251
J05D Fort Rock, OR 86.93 44 P **P 14 34 02.7 -0.4**
baz=247,SNR=12
K05A Summer Lake 86.94 45 *e*P **P 14 34 02.3 -0.9**
comp=Z,9.8nm,0.8s
PFO Pinyon Flats O 86.95 54 P **P 14 34 03.1 -0.2**
comp=Z,4.0nm,0.8s,baz=273,slow=4.6,SNR=13
PFO Pinyon Flats O 86.95 54 *e*P **P 14 34 02.8 -0.6**
baz=251,SNR=5.8
PFO Pinyon Flats O 86.95 54 *e*P **P 14 34 02.3 -1.0**
comp=Z,4.1nm,0.8s
MPMC Manual Prospec 86.98 52 P **P 14 34 02.8 -0.7**
baz=250,SNR=8.5
MOD Modoc Plateau 87.03 46 *e*P **P 14 34 03.0 -0.6**
comp=Z,4.4nm,0.8s
COLD Coldfoot 87.16 15 *e*P **P 14 34 03.8 +0.4**
comp=Z,3.6nm,0.9s
GSC Goldstone, Bar 87.24 53 P **P 14 34 04.0 -0.7**
baz=250
GSC Goldstone, Bar 87.24 53 *e*P **P 14 34 03.1 -1.6**
GSC pmax pmax
comp=Z,5.0nm,1.0s
GSC Goldstone, Bar 87.24 53 *e*P **P 14 34 03.1 -1.6**
comp=Z,4.8nm,1.0s
SWSC Sam W. Stewart 87.25 55 P **P 14 34 04.1 -0.5**
baz=251,SNR=6.3
I05D Terrebonne, OR 87.27 43 P **P 14 34 04.3 -0.3**
baz=247
BELC Belle Mtn. Jos 87.44 54 P **P 14 34 05.5 -0.2**
baz=251,SNR=16
HEC Hector,Ludlow 87.45 53 P **P 14 34 05.1 -0.6**
baz=251,SNR=5.4
FURC Furnace Creek, 87.59 52 P **P 14 34 05.9 -0.2**
baz=250
BC3 Big Chuckawall 87.76 55 P **P 14 34 06.7 -0.5**
baz=251
GMRC Granite Mounta 87.96 53 P **P 14 34 07.5 -0.7**
baz=251,SNR=7.9
TUQ Turquoise Moun 87.97 53 P **P 14 34 07.6 -0.6**
baz=251
GLA Glamis 88.06 55 P **P 14 34 08.7 +0.1**
baz=252,SNR=5.4
GLA Glamis 88.06 55 *e*P **P 14 34 08.1 -0.4**
GLA pmax pmax
comp=Z,9.0nm,0.8s
GLA Glamis 88.06 55 *e*P **P 14 34 08.1 -0.4**
comp=Z,8.7nm,0.8s
EGAK Eagle 88.07 20 *e*P **P 14 34 06.5 -1.3**
comp=Z,3.2nm,0.8s
A04D Lummi Island 88.16 39 P **P 14 34 08.6 +0.1**
baz=246
IRM Iron Mountain 88.16 54 P **P 14 34 08.8 -0.2**
baz=251,SNR=10.0
TPNV Topopah Spring 88.22 51 P **P 14 34 08.7 -0.7**
baz=250,SNR=6.2
TPNV Topopah Spring 88.22 51 *e*P **P 14 34 08.4 -1.0**
TPNV pmax pmax
comp=Z,5.0nm,0.8s
TPNV Topopah Spring 88.22 51 *e*P **P 14 34 08.4 -1.0**
comp=Z,4.7nm,0.8s
B05A Bryant 88.35 39 P **P 14 34 09.4 0.0**
baz=246
WVOR Wild Horse Val 88.38 45 *e*P **P 14 34 08.7 -1.2**
WVOR pmax pmax
comp=Z,7.0nm,1.4s
WVOR Wild Horse Val 88.38 45 *e*P **P 14 34 08.7 -1.2**
comp=Z,7.2nm,1.4s
LDFC Landfair 88.48 53 *e*P **P 14 34 10.0 -0.6**
comp=Z,18nm,0.8s
Y12C Blythe 88.52 55 P **P 14 34 10.8 +0.2**
baz=252
Y12C Blythe 88.52 55 *e*P **P 14 34 10.5 -0.2**
comp=Z,7.8nm,0.9s
113A Mohawk Valley, 88.82 56 *e*P **P 14 34 11.8 -0.2**
comp=Z,3.7nm,0.8s
SHPR Sheep Range 88.90 52 *e*P **P 14 34 12.2 -0.3**
comp=Z,5.7nm,0.9s
SYO Syowa Base 88.97 197⇑ *e*P **P 14 34 10.3 -1.8**
PDMCI Parker Dam,Lak 89.00 54 P **P 14 34 12.9 +0.1**
baz=252,SNR=10.0
R11A Troy Canyon, C 89.17 50 P **P 14 34 13.2 -0.6**
baz=251,SNR=6.3
R11A Troy Canyon, C 89.17 50 *e*P **P 14 34 12.7 -1.1**
comp=Z,12nm,2.0s
G08A Pilot Rock 89.20 43 *e*P **P 14 34 12.9 -0.8**
comp=Z,9.7nm,0.9s
214A Organ Pipe Nat 89.35 57 P **P 14 34 15.1 +0.4**
baz=253
W13A Hualapai Mount 89.44 54 *e*P **P 14 34 14.4 -0.9**
comp=Z,5.5nm,0.9s
TIXI Tiksi 89.61 349⇓ *i*P **P 14 34 15.4 +0.6**
TIXI pmax pmax
comp=Z,6.0nm,0.9s
TIXI Tiksi 89.61 349 *e*P **P 14 34 14.4 -0.4**
comp=Z,7.2nm,1.0s
Y14A Wickenburg 89.78 55 *e*P **P 14 34 15.8 -0.8**
comp=Z,12nm,0.8s
BMO Blue Mountains 90.14 44 *e*P **P 14 34 16.9 -1.2**
BMO pmax pmax
comp=Z,7.0nm,0.9s
BMO Blue Mountains 90.14 44 *e*P **P 14 34 16.9 -1.2**
comp=Z,7.1nm,0.9s
ELK Elko 90.20 48 *e*P **P 14 34 17.6 -1.1**
ELK pmax pmax
comp=Z,4.0nm,0.8s
ELK Elko 90.20 48 *e*P **P 14 34 17.6 -1.1**
comp=Z,3.7nm,0.8s
LCMT Little Creek M 90.52 52 *e*P **P 14 34 19.4 -0.7**
comp=Z,7.2nm,0.8s
CCUT Cedar City 90.59 51 *e*P **P 14 34 19.3 -1.2**
comp=Z,5.2nm,0.9s
MFID Camas Ranch 90.66 45 *e*P **P 14 34 19.5 -1.0**
comp=Z,6.4nm,0.8s
U15A North Rim 91.08 53 *e*P **P 14 34 22.4 -0.5**
comp=Z,7.9nm,0.8s
TUC Tucson 91.10 57 P **P 14 34 22.8 0.0**
baz=254
TUC Tucson 91.10 57 *e*P **P 14 34 22.2 -0.6**
TUC pmax pmax
comp=Z,6.0nm,0.8s
TUC Tucson 91.10 57 *e*P **P 14 34 22.2 -0.6**
comp=Z,5.8nm,0.8s
X16A Lo Mia Camp, P 91.16 55 *e*P **P 14 34 22.8 -0.4**
comp=Z,4.7nm,0.8s
PKCU Pink Cliffs 91.36 52 *e*P **P 14 34 23.3 -0.9**
comp=Z,4.9nm,1.0s
WUAZ Wupatki 91.53 54 P **P 14 34 24.6 -0.2**
baz=253
WUAZ Wupatki 91.53 54 *e*P **P 14 34 24.1 -0.7**
comp=Z,5.0nm,0.9s
MTPU Mount Pierson 91.63 51 *e*P **P 14 34 25.1 -0.5**
comp=Z,5.0nm,0.9s
HLID Hailey 91.68 45 P **P 14 34 25.2 -0.2**
baz=252
HLID Hailey 91.68 45 *e*P **P 14 34 24.2 -1.2**
comp=Z,2.9nm,1.0s
MSU Marysvale 91.77 51 *e*P **P 14 34 25.6 -0.4**
MSU Marysvale 91.77 51 *e*P **P 14 34 25.6 -0.4**
319A Douglas 92.07 58 *e*P **P 14 34 26.9 -0.5**
comp=Z,8.5nm,0.8s
WMQ Urumqi 92.37 315 *e*P **P 14 34 28.6 +0.2**
WMQ pmax pmax
comp=Z,11nm,0.5s
WMQ pmax pmax
comp=Z,130nm,4.4s
X18A Snowflake 92.38 55 *e*P **P 14 34 28.4 -0.4**
comp=Z,3.7nm,0.8s
W18A Petrified Fore 92.70 55 P **P 14 34 30.3 0.0**
baz=254
W18A Petrified Fore 92.70 55 *e*P **P 14 34 29.9 -0.4**
comp=Z,8.6nm,0.9s
TMUT Trail Mountain 92.72 50 *e*P **P 14 34 30.2 -0.3**
comp=Z,3.0nm,0.7s
DLMT Dillon 93.46 44 *e*P **P 14 34 33.1 -0.4**
comp=Z,2.6nm,0.8s
SNAA Sanae 93.87 183 P **P 14 34 33.3 -1.6**
SNAA Sanae 93.87 183⇓ *i*P **P 14 34 33.7 -1.2**
PV09 Paradox Valley 94.06 51 *e*P **P 14 34 36.2 -0.5**
PV01 Paradox Valley 94.40 52 *e*P **P 14 34 37.1 -1.0**
PDAR Pinedale Array 94.86 47 LR LR 15 16 48.7
comp=Z,14nm,18.7s,baz=252,slow=35
ANMO Albuquerque 95.26 55⇑ *i*P **P 14 34 41.8 -0.3**
ANMO pmax pmax
comp=Z,1.0nm,1.0s
TX31 Lajitas Ar. Si 96.28 61 *e*P **P 14 34 46.0 -0.7**
TXAR Lajitas Array 96.28 61 P **P 14 34 45.8 -0.9**
comp=Z,0.7nm,0.7s,baz=224,slow=5.4,SNR=12
TXAR LR LR 15 12 01.6
comp=Z,11nm,19.7s,baz=0.0,slow=32
MK01 Makanchi Array 96.83 316 *e*P **P 14 34 47.8 -0.9**
MK01 *e*pP **pP 14 35 20.1 -2.5**
MK31 Makanchi Array 96.84 316 *e*P **P 14 34 48.2 -0.6**
MK31 Makanchi Array 96.84 316 *e*P **P 14 34 48.2 -0.6**
MK31 *e*pP **pP 14 35 19.9 -2.8**
MKAR Makanchi Array 96.84 316 P **P 14 34 48.2 -0.6**
comp=Z,3.5nm,0.6s,baz=88,slow=5.8,SNR=33
MKAR pP **pP 14 35 20.4 -2.3**
comp=Z,3.3nm,0.9s,baz=92,slow=7.3,SNR=5.0
MKAR PKiKP **PKiKP 14 39 24.0 -0.6**
comp=Z,0.9nm,0.6s,baz=131,slow=0.9,SNR=6.9
ZAA0 Zalesovo Array 97.02 324 *e*P **P 14 34 47.8 -1.5**
ZAA0 *e*pP **pP 14 35 19.6 -3.6**
ZALV Zalesovo Beam 97.02 324 P **P 14 34 48.0 -1.3**
comp=Z,3.0nm,0.6s,baz=114,slow=4.9,SNR=12
ZALV pP **pP 14 35 20.2 -3.1**
comp=Z,1.3nm,0.7s,baz=129,slow=2.1,SNR=1.6
ZALV PKiKP **PKiKP 14 39 25.0 +0.4**
comp=Z,0.7nm,0.5s,baz=122,slow=1.9,SNR=3.8
MAKZ Makanchi 97.05 316 *e*P **P 14 34 48.9 -0.8**
MAKZ pmax pmax
comp=Z,7.0nm,1.3s
MAKZ Makanchi 97.05 316 *e*P **P 14 34 48.9 -0.8**
comp=Z,6.8nm,1.3s
YKA Yellowknife Ar 97.34 27 P **P 14 34 48.5 -2.0**
comp=Z,2.2nm,0.8s,baz=255,slow=4.5,SNR=14
YKB5 Yellowknife Ar 97.34 27 *e*P **P 14 34 48.4 -2.1**
NRIK Noril'sk 99.70 339 P **Pdif 14 34 59.8 -1.2**
comp=Z,4.1nm,0.7s,baz=97,slow=4.1,SNR=6.0
ABKAR Akbulak array 111.95 318 *e*PKiKP **PKiKP 14 39 51.8 -0.3**
ARU Arti 112.11 325 *i* PKiKP **PKiKP 14 39 52.4 +0.1**
ARU 14 40 42.4
ARU 14 46 50.3
ARU SP SP 14 49 56.9 -0.5
ARU SS **SS 14 56 08.5 +2.0**
ARU Arti 112.11 325 *e*PKiKP **PKiKP 14 39 52.0 -0.3**
GEYT Alibeck 113.60 305 PKiKP **PKiKP 14 39 55.2 -0.5**
comp=Z,2.9nm,0.7s,baz=73,slow=5.0,SNR=6.0
HAMF Hammerfest 119.50 347 *e*P **PKPdf 14 40 05.5 -0.5**
ARA0 ARCESS Array S 119.89 345 *e*PKPdf **PKPdf 14 40 05.8 -1.0**
ARCES ARCESS Array B 119.89 345 PKP **PKPdf 14 40 06.1 -0.8**
comp=Z,15nm,0.6s,baz=94,slow=1.2,SNR=74
ARE0 ARCESS Array S 119.89 345 *e*P **PKPdf 14 40 06.2 -0.7**
ARE0 IAmb IAmb 14 40 07.6
comp=Z,17nm,0.6s
ARE0 ARCESS Array S 119.89 345 *e*PKPdf **PKPdf 14 40 05.7 -1.2**
KLMR Klimovskoe 120.31 333 *e*PKiKP **PKPdf 14 40 04.4 -3.5**
KLMR pmax pmax
comp=Z,14nm,0.6s
KTK1 Kautokeino 120.82 346 *e*P **PKPdf 14 40 07.5 -1.2**
KTK1 IAmb IAmb 14 40 08.8
comp=Z,6.3nm,0.8s
HEF Hetta 121.17 345 *e*P **PKPdf 14 40 08.4 -1.0**
TRO Tromso 121.31 348 *e*P **PKPdf 14 40 07.5 -2.0**
KIF Kilpisjarvi 121.40 346 *e*P **PKPdf 14 40 08.4 -1.4**
VRH Novokhopyorsk 123.02 322 *e*PKiKP PKPpre 14 40 04.1
VRH pmax pmax
comp=Z,140nm,1.0s
DGRG David-gareji 123.08 310 P **PKPdf 14 40 15.8 +1.9**
DGRG David-gareji 123.08 310 *e*PKiKP **PKPdf 14 40 15.7 +1.9**
STEI Steigen 123.48 348 *e*P **PKPdf 14 40 12.9 -0.8**
STEI IAmb IAmb 14 40 14.2
comp=Z,12nm,0.6s
TBLG Delisi 123.50 311 P **PKPdf 14 40 15.9 +1.2**
TBLG Delisi 123.50 311 *e*PKiKP **PKPdf 14 40 15.8 +1.2**
BOSA Boshof 123.51 221 PKP **PKPdf 14 40 15.3 0.0**
comp=Z,2.6nm,0.7s,baz=72,slow=4.4,SNR=3.9
GUDG Gudauri 123.54 312 P **PKPdf 14 40 15.8 +0.8**
ZEI Tsey 123.89 312 *e*PKiKP **PKPdf 14 40 15.0 -0.6**
ONI Oni 124.26 312 P **PKPdf 14 40 17.5 +1.3**
ONI Oni 124.26 312 *e*PKiKP **PKPdf 14 40 17.4 +1.3**
OBN Obninsk 124.33 328*c* *i*PKiKP **PKPdf 14 40 16.5 +0.8**
OBN *e* 14 40 52.8
OBN *e*PPP PPP 14 44 39.5
OBN pmax pmax
comp=Z,10.0nm,0.5s
KBZ Khabaz 124.39 313 PKP **PKPdf 14 40 17.2 +1.0**
comp=Z,4.6nm,0.7s,baz=119,slow=3.8,SNR=14
AKH Akhalkalaki 124.48 311⇑ *i*P **PKPdf 14 40 18.4 +1.7**
AKH Akhalkalaki 124.48 311 P **PKPdf 14 40 18.5 +1.7**
AKH Akhalkalaki 124.48 311 *e*PKiKP **PKPdf 14 40 18.5 +1.7**
KIV Kislovodsk 124.49 314 *i* PKiKP **PKPdf 14 40 16.1 -0.5**
KIV pmax pmax
comp=Z,7.0nm,0.9s
VSR Storozhevoye 124.51 323 *e*PKiKP **PKPdf 14 40 16.5 +0.3**
VSR pmax pmax
comp=Z,20nm,0.6s
FIA1 FINESS Array S 125.35 338 *e*PKPdf **PKPdf 14 40 15.9 -1.6**
FIA1 *e*PKPdf **PKiKP 14 40 16.4 -1.5**
FINES FINESS Array B 125.35 338 PKP **PKPdf 14 40 16.6 -0.9**
comp=Z,7.2nm,0.6s,baz=35,slow=3.4,SNR=36
VSU Vasula 127.04 335⇑ *i*PKiKP **PKPdf 14 40 21.1 +0.3**
SIM Simferopol' 130.01 317 *i* PKiKP **PKPdf 14 40 28.5 +1.6**
SIM pmax pmax
comp=Z,11nm,0.7s
NC303 NORSAR Array S 130.06 345 *e*PKPdf **PKPdf 14 40 25.6 -0.9**
NB2 NORSAR Subarra1 130.26 345 PKPdf **PKPdf 14 40 27.1 +0.1**
comp=Z,3.5nm,0.7s,baz=31,slow=1.9
NB2 NORSAR Subarra1 130.26 345 PKPdf **PKPdf 14 40 27.1 +0.1**
baz=31,slow=1.9
NOA NORSAR Array B 130.26 345 PKP **PKPdf 14 40 26.7 -0.3**
comp=Z,5.1nm,0.6s,baz=35,slow=2.1,SNR=30
NOA SKPbc **SKPbc 14 43 39.3 +1.2**
comp=Z,5.5nm,0.8s,baz=33,slow=2.9,SNR=15
NBO02 NORSAR Array S 130.34 345 *e*PKPdf **PKPdf 14 40 26.9 -0.2**
NBO02 *e*SKPbc **SKPbc 14 43 40.3 +1.9**
AKASG Malin Array Be 130.36 326 PKP **PKPdf 14 40 27.5 +0.1**
comp=Z,3.6nm,0.5s,baz=58,slow=2.2,SNR=11
AKASG SKPbc **SKPbc 14 43 40.3 +1.6**
comp=Z,0.4nm,0.3s,baz=47,slow=4.6,SNR=5.0
KIEV Kiev 130.37 326⇑ *i*PKiKP **PKPdf 14 40 27.8 +0.4**
KIEV Kiev 130.37 326 *e*PKPdf **PKPdf 14 40 26.5 -0.9**
AK11 Malin Array Si 130.40 326 *e*PKPdf **PKPdf 14 40 27.3 -0.2**
NC602 NORSAR Array S 130.44 344 *e*PKPdf **PKPdf 14 40 27.1 -0.2**
KONO Kongsberg 131.87 345 *e*SKPbc **SKPab 14 43 47.7 +2.9**
BR131 Keskin Array S 132.16 311 *e*PKPdf **PKPdf 14 40 31.0 -0.3**
BRTR Keskin Array B 132.16 311 PKP **PKPdf 14 40 31.4 0.0**
comp=Z,4.6nm,0.8s,baz=131,slow=3.8,SNR=15
BRTR SKPbc **SKPab 14 43 48.1 +1.2**
comp=Z,1.9nm,0.8s,baz=96,slow=5.0,SNR=6.6
BRTR Keskin Array B 132.16 311 PKiKP **PKPdf 14 40 31.4 0.0**
BRTR pmax pmax
comp=Z,4.0nm,0.6s
BRTR pmax pmax
comp=N,2.0nm,0.8s
ANTO Ankara 132.73 311 *e*PKiKP **PKPdf 14 40 33.1 +0.7**
ANTO Ankara 132.73 311 *e*PKPdf **PKPdf 14 40 33.1 +0.7**
BR231 Keskin MP Arra 132.75 311 *e*PKPdf **PKPdf 14 40 31.8 -0.7**
BR231 *e*SKPbc **SKPab 14 43 48.7 -0.7**
CFR Carcaliu 133.75 320⇓ *i*P **PKPdf 14 40 35.8 +1.8**
BUR08 Bucovina Ar. S 134.23 324 *e*PKPdf **PKPdf 14 40 35.5 +0.6**
BURAR Bucovina Array 134.24 324⇓ *i*P **PKPdf 14 40 36.5 +1.5**
BURAR Bucovina Array 134.24 324 PKiKP **PKPdf 14 40 36.5 +1.5**
MLR Muntele Rosu 134.94 321⇓ *i*P **PKPdf 14 40 39.5 +3.0**
MLR Muntele Rosu 134.94 321 PKiKP **PKPdf 14 40 39.4 +3.0**
KOLS Kolonicke sedl 135.07 327 *e*PKiKP **PKPdf 14 40 38.2 +1.8**
KOLS Kolonicke sedl 135.07 327 *e*PKP **PKPdf 14 40 38.2 +1.8**
KOLS *e*PDIFF **SKPdf 14 43 59.4 0.0**
STHS Stebnicka Huta 135.30 329 *e*PDIFF **SKPab 14 44 00.4 +0.4**
OJC Ojcow 135.49 330 *e*PKiKP **PKPdf 14 40 37.1 0.0**
OJC Ojcow 135.49 330 *e*PKPdf **PKPdf 14 40 37.1 0.0**
CRVS Cervenica-Dubn 135.51 328 *e*PKiKP **PKPdf 14 40 38.7 +1.5**
CRVS Cervenica-Dubn 135.51 328 *e*PKP **PKPdf 14 40 38.7 +1.5**
CRVS *e*PDIFF **SKPdf 14 43 59.7 -0.5**
ARR Arges 135.79 322⇓ *i*P **PKPdf 14 40 38.4 +0.5**
DRGR 136.11 325⇑ *i*P **PKPdf 14 40 39.6 +1.1**
DRGR 136.11 325 PKiKP **PKPdf 14 40 39.5 +1.1**
MORC Moravsky Berou 136.85 331⇑ *i*P **PKPdf 14 40 40.5 +0.8**
MORC Moravsky Berou 136.85 331 *e*PKiKP **PKPdf 14 40 39.8 +0.1**
MORC Moravsky Berou 136.85 331 *e*PKPdf **PKPdf 14 40 39.8 +0.1**
KRLC Kraliky 137.00 332 *e*PKPdf **PKPdf 14 40 41.7 +1.7**
KRLC Kraliky 137.00 332 *e*PKiKP **PKPdf 14 40 41.7 +1.7**
DPC Dobruska-Polom 137.00 333 *e*PKPdf **PKPdf 14 40 41.4 +1.4**
DPC *e*SKP 14 44 03.4
DPC Dobruska-Polom 137.00 333 *e*PKiKP **PKPdf 14 40 41.4 +1.4**
UPC Upice 137.03 333 *e*PKPdf **PKPdf 14 40 41.6 +1.6**
UPC Upice 137.03 333 *e*PKiKP **PKPdf 14 40 41.6 +1.6**
VYHS Vyhne 137.10 329 *e*PKiKP **PKPdf 14 40 40.6 +0.4**
VYHS Vyhne 137.10 329 *e*PKP **PKPdf 14 40 40.6 +0.4**
VYHS *e*PDIFF **SKPdf 14 44 04.3 +1.3**
BZS Buzias 137.41 324⇓ *i*P **PKPdf 14 40 41.2 +0.4**
PVCC Panska Ves 137.63 334 *e*PKPdf **PKPdf 14 40 42.9 +1.8**
PVCC Panska Ves 137.63 334 *e*PKiKP **PKPdf 14 40 42.9 +1.8**
BRG Berggiesshubel 137.64 335 *e*PKP **PKPdf 14 40 43.9 +2.8**
comp=N,8.4nm,0.7s
BRG *e* 14 44 06.0
comp=N,8.4nm,1.1s
BRG Berggiesshubel 137.64 335 *e*PKiKP **PKPdf 14 40 43.9 +2.8**
BRG pmax pmax
comp=Z,8.0nm,0.7s
CLL Collm 137.68 336 *e*PKPdf **PKPdf 14 40 39.0 -2.1**
CLL *i* 14 40 42.9
comp=Z,12nm,0.7s
CLL *e*SKP 14 44 05.0
comp=Z,7.0nm,1.0s
CLL Collm 137.68 336 *e*PKiKP **PKPdf 14 40 39.0 -2.1**
CLL Collm 137.68 336 *e*PKPdf **PKPdf 14 40 40.3 -0.8**
MDVR Moldovita 137.84 323⇑ *i*P **PKPdf 14 40 41.3 -0.4**
GOPC GO Pecny, Ondr 138.00 333 *e*PKPdf **PKPdf 14 40 43.0 +1.2**
GOPC GO Pecny, Ondr 138.00 333 *e*PKiKP **PKPdf 14 40 43.0 +1.2**
PRU Pruhonice 138.05 334 *e*PKPdf **PKPdf 14 40 42.9 +1.1**
PRU *ex* x 14 40 44.3
PRU *e*SKP 14 44 05.9
PRU Pruhonice 138.05 334 *e*PKiKP **PKPdf 14 40 42.9 +1.1**
VTS Vitosha 138.12 319 *e*PKiKP **PKPdf 14 40 41.8 -0.6**
VTS Vitosha 138.12 319 *e*PKPdf **PKPdf 14 40 41.8 -0.6**
CONA Conrad Observa 138.94 330 *i* PKPdf **PKPdf 14 40 42.2 -1.5**
comp=Z,9.7nm,0.6s
KHC Kasperske Hory 139.11 333 *e*PKPdf **PKPdf 14 40 45.0 +1.1**
KHC *ex* x 14 40 47.0
KHC *e*SKP 14 44 08.9
KHC Kasperske Hory 139.11 333 *e*PKiKP **PKPdf 14 40 45.0 +1.1**
KHC Kasperske Hory 139.11 333 *e*PKPdf **PKPdf 14 40 44.4 +0.5**
GEC2 GERESS Array S 139.27 333 *e*PKiKP **PKPdf 14 40 44.6 +0.3**
GEC2 GERESS Array S 139.27 333 *e*PKPdf **PKPdf 14 40 44.6 +0.3**
GEC2 *e*SKPbc **SKPbc 14 44 08.1 +0.6**
GERES GERESS Array B 139.27 333 PKhKP PKPpre 14 40 37.0
comp=Z,0.7nm,0.7s,baz=356,slow=1.9,SNR=5.4
GERES PKP **PKPdf 14 40 44.0 -0.3**
comp=Z,5.1nm,0.7s,baz=48,slow=2.0,SNR=18
GERES SKPbc **SKiKP 14 44 09.2 -1.4**
comp=Z,3.7nm,0.9s,baz=5.7,slow=2.7,SNR=14
GEA0 GERESS Array S 139.27 333 *e*PKPdf **PKPdf 14 40 43.7 -0.6**
GEA0 *e*SKPbc **SKPbc 14 44 08.0 +0.5**
MOA Molln 139.75 332 *i* PKPdf **PKPdf 14 40 42.9 -2.2**
comp=Z,5.9nm,0.6s
MEM Membach 140.76 341 PKP **PKPdf 14 40 47.4 +0.6**
MYKA Terra Mystica 140.93 331 *i* PKPdf **PKPdf 14 40 46.8 -0.5**
comp=Z,7.6nm,0.6s
ABTA Abfaltersbach 141.37 332 *e*PKPdf **PKPdf 14 40 44.8 -3.3**
comp=Z,7.7nm,0.6s
WTTA Wattenberg 141.37 333 *i* PKPdf **PKPdf 14 40 45.1 -3.1**
comp=Z,7.5nm,0.5s
LANF Langenberg 141.53 338 PKP **PKPdf 14 40 46.7 -1.5**
MOTA Moosalm 141.54 334 *e*PKPdf **PKPdf 14 40 46.5 -2.0**
comp=Z,9.5nm,0.7s
RETA Reutte 141.58 334 *e*PKPdf **PKPdf 14 40 45.6 -2.8**
comp=Z,2.8nm,0.5s
DOU Dourbes 141.64 342 PKP **PKPdf 14 40 51.5 +3.2**
FETA Feichten 141.95 334 *e*PKPdf **PKPdf 14 40 47.2 -2.1**
comp=Z,9.2nm,0.7s
DAVA Damuels 142.10 335 *i* PKPdf **PKPdf 14 40 47.6 -1.9**
comp=Z,8.4nm,0.7s
ECH Echery 142.41 338 PKP **PKPdf 14 40 48.9 -0.9**
FUORN Ofenpass-Fuorn 142.47 334 *e*PKPpre PKPpre 14 40 45.9
MOF Molkenrain 142.72 338 PKP **PKPdf 14 40 49.5 -1.0**
THEF They Montfort 142.82 339 PKP **PKPdf 14 40 49.5 -1.1**
LOMF Lomont 143.26 337 PKP PKPbc 14 40 50.0 +1.2
SENIN Lac Senin/Sane 143.90 336 *e*PKPdf PKPbc 14 40 51.1 +0.2
AQU L'Aquila 144.06 326 *e*PKiKP PKPbc 14 40 51.9 +0.6
AQU L'Aquila 144.06 326 *e*PKPdf PKPbc 14 40 51.9 +0.6
TIP Timpagrande 144.08 319 *e*PKPdf PKPbc 14 40 51.6 +0.2
CUC Castrocucco 144.19 321 *e*PKPpre **PKPab 14 40 50.1 -1.2**
RSL Roselend 144.72 336 PKP **PKPab 14 40 53.1 -0.1**
CEL Celeste 145.16 318 *e*PKPbc **PKPbc 14 40 54.8 0.0**
GDM Grand'Maison 145.32 336 PKP **PKPdf 14 40 54.6 -0.6**
GRN Grenoble 145.43 337 PKP **PKPdf 14 40 55.3 0.0**
PLDF La Plantade 145.58 339 PKP **PKPdf 14 40 55.1 -0.4**
AGO Saint Agoulin 145.67 340 PKP **PKPdf 14 40 55.0 -0.6**
AUTN L'Aution 145.77 334 PKP **PKPdf 14 40 55.3 -0.8**
SSB Saint Sauveur 145.85 338 PKP **PKPdf 14 40 56.0 0.0**
SSB Saint Sauveur 145.85 338 *e*PKP2 **PKPbc 14 40 56.8 +0.1**
SSB Saint Sauveur 145.85 338 *e*PKPdf **PKPbc 14 40 56.8 +0.1**
LUCF Luceram 145.88 333 PKP **PKPdf 14 40 55.7 -0.4**
MVIF Mont Vial 145.97 334 PKP **PKPdf 14 40 56.0 -0.3**
OG26 St.-Nazaire-De 146.16 336 PKP **PKPdf 14 40 56.3 -0.2**
LBL Lubilhac 146.35 339 PKP **PKPdf 14 40 56.5 -0.4**
CLTB Caltabellotta 147.27 320 *e*PKPbc **PKPbc 14 41 00.7 -0.5**
VSL Villasalto 148.24 326 *e*PKPbc **PKPbc 14 41 03.1 -0.5**
LRDF Laroque-de-Fa 148.60 338 PKP **PKPdf 14 41 01.1 +0.5**
FILF Fillols 148.92 338 PKP **PKPdf 14 41 01.2 0.0**
RESF Ens 149.47 341 PKP **PKPdf 14 41 02.7 +0.6**
VIEF Viey 149.50 341 PKP **PKPdf 14 41 02.6 +0.5**
KEST Kesra 150.84 321 PKPbc **PKPbc 14 41 10.6 +0.4**
comp=Z,47nm,0.7s,baz=105,slow=1.8,SNR=54
KEST Kesra 150.84 321 *e*PKPbc **PKPbc 14 41 10.0 -0.1**
PBRG Braganca 152.17 350 *e*PKPbc **PKPbc 14 41 13.6 +0.6**
PBRG Braganca 152.17 350 *e*PKPab **PKPab 14 41 23.8 +0.8**
PGAV Gavieira, Arco 152.24 353 *e*PKPbc **PKPbc 14 41 13.6 +0.4**
POLO Lamas de Olo 152.76 352 *e*PKPbc **PKPbc 14 41 14.4 0.0**
POLO Lamas de Olo 152.76 352 *e*PKPab **PKPab 14 41 26.3 +0.8**
PVRL Vila Real 152.84 351 *e*PKPbc **PKPbc 14 41 15.3 +0.8**
PVRL Vila Real 152.84 351 *e*PKPab **PKPab 14 41 26.3 +0.5**
MVO Moncorvo 152.84 350 *e*PKPbc **PKPbc 14 41 14.5 0.0**
PVIS Viseu 153.42 351 *e*PKPbc **PKPbc 14 41 16.3 +0.5**
PVIS Viseu 153.42 351 *e*PKPab **PKPab 14 41 29.1 +0.8**
ES19 SONSECA Array 153.58 344 *e*PKPdf **PKPdf 14 41 07.7 -0.6**
ES19 *e*PKPbc **PKPbc 14 41 16.0 -0.1**
ES19 *e*PKPab **PKPab 14 41 29.5 +0.5**
ESDC Sonseca Array 153.62 344 PKP **PKPdf 14 41 09.7 +1.3**
comp=Z,0.4nm,0.5s,baz=15,slow=1.7,SNR=4.9
ESDC PKPbc **PKiKP 14 41 16.4 +0.1**
comp=Z,3.4nm,0.8s,baz=14,slow=2.4,SNR=13
ESDC PKPab **PKPab 14 41 29.4 +0.3**
comp=Z,5.0nm,0.8s,baz=14,slow=4.3,SNR=10
PCBR Castelo Branco 154.21 350 *e*PKPbc **PKPbc 14 41 17.9 +0.5**
PMRV Marv??o 154.60 350 *e*PKPbc **PKPbc 14 41 19.2 +0.9**
PBAR Barrancos 155.75 349 *e*PKPab **PKPab 14 41 39.1 +0.9**
PBEJ Beja 156.04 350 *e*PKPab **PKPab 14 41 41.2 +1.7**
MESJ Messejana 156.28 351 *e*PKPab **PKPab 14 41 41.5 +1.0**
PVAQ Vaqueiros 156.62 350 *e*PKPab **PKPab 14 41 43.3 +1.3**
MORF Marmelete 156.87 351 *e*PKPab **PKPab 14 41 45.1 +2.0**
TOA0 Torodi Ar. Sit 165.75 267 *e*PKPdf **PKPdf 14 41 21.4 -1.5**
TOA0 *e*PKPab **PKPab 14 42 22.8 0.0**
TORD Torodi Ar. Bea 165.75 267 PKP **PKPdf 14 41 21.2 -1.5**
comp=Z,0.7nm,0.6s,baz=75,slow=1.2,SNR=5.6
TORD PKPab **PKPab 14 42 22.7 -0.1**
comp=Z,2.6nm,0.9s,baz=108,slow=3.5,SNR=8.9
TORD pPKPab **pPKPab 14 42 56.3 -0.5**
comp=Z,2.0nm,1.1s,baz=90,slow=4.4,SNR=3.0

KRSC 04 14:35:11.2±0.5, 55°.96N×161°.32E, h116km±5km, ML3.8,

Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZLN	**Zelenaya**	**0.29**	**281**	*i* P	Pn	14 35 29.1	+1.2
ZLN				*e*S	Sn	14 35 41.3	+0.9
CIRR	**Tsirk**	**0.35**	**296**	*e*P	Pn	14 35 29.2	+1.0
CIRR				*e*S	Sn	14 35 41.5	+0.6
LGNR	**Loginova**	**0.37**	**289**	*i* P	Pn	14 35 29.4	+1.0
BZMR	**Bezymyannaya**	**0.47**	**267**	*e*P	Pn	14 35 29.7	+0.9
BZMR				*e*S	Sn	14 35 43.2	+1.3
KRSR	**Krestovskiy**	**0.49**	**301**	*i* P	Pn	14 35 29.5	+0.6
KRSR				*e*S	Sn	14 35 42.4	+0.3
KLY	**Klyuchi**	**0.51**	**313**	*e*P	Pn	14 35 29.2	+0.4
KLY				*e*S	Sn	14 35 42.3	+0.2
KIRR	**Kirishev**	**0.55**	**269**	*e*P	Pn	14 35 30.3	+1.0
KIRR				*e*S	Sn	14 35 43.8	+0.9
BDR	**Baidarnaya**	**0.61**	**354**	*e*P	Pn	14 35 30.8	+1.2
BDR				*e*S	Sn	14 35 45.2	+1.7
KPT	**Kopyto**	**0.62**	**271**	*e*P	Pn	14 35 30.8	+1.1
KPT				*e*S	Sn	14 35 44.9	+1.3
SMKR	**Semkarok**	**0.63**	**8**	*e*P	Pn	14 35 31.1	+1.4
SMKR				*e*S	Sn	14 35 45.1	+1.4
KMNR	**Kamenistaya**	**0.65**	**252**	*e*P	Pn	14 35 30.9	+1.0
KMNR				*e*S	Sn	14 35 45.6	+1.6
SRKR	**Sorokina**	**0.70**	**353**	*i* P	Pn	14 35 31.4	+1.1
SRKR				*i* S	Sn	14 35 45.8	+1.1
KOZ	**Kozyrevsk**	**0.82**	**277**	*e*P	Pn	14 35 32.0	+0.8
KOZ				*e*S	Sn	14 35 47.0	+0.7
KBG	**Krutoberegovo**	**0.83**	**69**	*i* P	Pn	14 35 32.5	+1.2
KBG				*i* S	Sn	14 35 48.5	+2.1
TUMR	**Tumrok**	**0.95**	**225**	*e*P	Pn	14 35 34.0	+1.4
TUMR				*i* S	Sn	14 35 50.1	+1.4
KZV	**Kizimen**	**1.03**	**215**	*e*P	Pn	14 35 34.8	+1.4
MKZ	**Mys Kozlova**	**1.43**	**170**	*e*P	Pn	14 35 38.9	+1.4
MKZ				*e*S	Sn	14 35 59.2	+1.7
ESO	**Esso**	**1.47**	**270**	*e*P	Pn	14 35 38.8	+0.7
ESO				*e*S	Sn	14 35 58.9	+0.4
KII	**Karymskiy**	**2.21**	**210**	*e*P	Pn	14 35 48.7	+1.5
BKI	**Bering**	**2.75**	**104**	*i* P	Pn	14 35 55.5	+1.5
BKI				*i* S	Sn	14 36 28.1	+1.2
SPN	**Mys Shipunski**	**2.97**	**195**	*e*P	Pn	14 35 57.3	+0.4
SPN				*e*S	Sn	14 36 33.1	+0.9
GNL	**Ganaly**	**3.00**	**222**	*e*P	Pn	14 35 59.0	+1.6
NLC	**Nalytchevo**	**3.02**	**203**	*e*P	Pn	14 35 59.1	+1.4
NLC				*e*S	Sn	14 36 33.9	+0.5
KRX	**Arik**	**3.04**	**212**	*e*P	Pn	14 36 00.1	+2.1
SDLR	**Sedlovina**	**3.04**	**209**	*e*P	Pn	14 36 00.2	+2.2
KRER	**Koryakskii**	**3.06**	**210**	*e*P	Pn	14 36 01.1	+2.8
AVH	**Avacha**	**3.09**	**210**	*e*P	Pn	14 36 01.2	+2.5
KOK	**Koryaka**	**3.10**	**211**	*e*P	Pn	14 36 02.4	+3.6
UGLR	**Uglovaya**	**3.12**	**209**	*e*P	Pn	14 36 02.0	+3.0
DALK	**Dalny**	**3.30**	**208**	*e*P	Pn	14 36 03.4	+2.1
DALK				*e*S	Sn	14 36 41.4	+1.5
PET	**Petropavlovsk**	**3.33**	**209**	*e*P	Pn	14 36 03.9	+2.2
PET				*e*S	Sn	14 36 42.7	+2.0
OSSR	**Ossora**	**3.43**	**15**	*e*P	Pn	14 36 05.1	+2.2
OSSR				*e*S	Sn	14 36 44.8	+1.9
KRMR	**Karymshinskiy**	**3.65**	**212**	*e*P	Pn	14 36 07.2	+1.2
RUS	**Russkaya**	**3.90**	**206**	*e*P	Pn	14 36 10.3	+1.0
ASAK	**Asacha**	**4.11**	**211**	*e*P	Pn	14 36 13.5	+1.3
TILK	**Tilichiki**	**5.17**	**28**	S	Sn	14 37 25.9	+1.3
SKR	**Severo-Kuril's**	**6.14**	**213**	*e*P	Pn	14 36 42.5	+3.1

*KRNET **04** 14:35:17.3±0.1, 40.°63N×77.°93E, mb3.3*
*SOME **04** 14:35:20.2, 40.°75N×78.°08E, h20km*
ISC 04 14:35:20.5±1.6, 40.°86N±0.°05×78.°06E±0.°06, h3km±12km, n16, σ1°22/32, 14C-4D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDJ	**Kajisay**	**1.43**	**333**	⇓*e*P	**Pn**	**14 35 46.5**	**-1.0**
	baz=340						
KDJ				⇓*e*S	**Sn**	**14 36 08.4**	**+1.5**
	baz=340						
ULHL	**Ulahol**	**1.94**	**316**	⇑*i*P	**Pn**	**14 35 55.0**	**+0.4**
	baz=322						
ULHL				⇑*i*S	**Sg**	**14 36 22.6**	**-0.3**
	baz=322						
ANVS	**Anan'yevo**	**1.94**	**351**	⇑*e*P	**Pb**	**14 35 56.7**	**+0.1**
	baz=355						
ANVS				⇑*e*S	**Sg**	**14 36 25.9**	**+3.0**
	baz=355						
KSH	**Kashi**	**2.09**	**231**	Pn	**Pb**	**14 35 58.4**	**-0.6**
KSH				Sn	**Sg**	**14 36 29.4**	**+1.9**
KSH				smax	smax		
	comp=N,31nm,0.4s						
KSH				smax	smax		
	comp=E,72nm,1.3s						
SATY	**Saty**	**2.21**	**7**	*e*P	**Pg**	**14 36 02.7**	**-0.2**
	comp=E,19nm,0.3s						
SATY				*e*S	**Sg**	**14 36 33.1**	**+1.5**
	comp=E,62nm,0.4s						
BOOM	**Boomskoye usch**	**2.27**	**316**	⇑*e*P	**Pn**	**14 35 57.5**	**-1.6**
	baz=322						
BOOM				⇑*e*S	**Sn**	**14 36 27.5**	**-0.2**
	baz=322						
TNSS	**Tian-Shan**	**2.33**	**339**	*e*P	**Pb**	**14 36 03.2**	**-0.2**
	comp=E,29nm,0.5s						
TNSS				*e*S	**Sg**	**14 36 34.3**	**-1.2**
	comp=E,26nm,0.4s						
UZB	**Uzynbulak**	**2.40**	**17**	*e*P	**Pb**	**14 36 03.6**	**-0.7**
	comp=E,4.5nm,0.3s						
UZB				*e*S	**Sb**	**14 36 35.1**	**+0.8**
	comp=E,28nm,0.6s						
MDOK	**Medeo**	**2.42**	**342**	*e*P	**Pb**	**14 36 04.3**	**-0.5**
	comp=E,13nm,0.4s						
MDOK				*e*S	**Sb**	**14 36 36.0**	**+0.9**
	comp=E,34nm,0.7s						
IZV	**Izvestkoviy**	**2.43**	**334**	*e*P	**Pb**	**14 36 05.1**	**+0.2**
	comp=E,21nm,0.3s						
IZV				*e*S	**Sg**	**14 36 37.5**	**-0.9**
	comp=E,59nm,0.5s						
KZA	**Kyzart**	**2.44**	**301**	⇑*i*P	**Pn**	**14 36 01.0**	**-0.5**
	baz=307						
KZA				⇑*i*S	**Sn**	**14 36 32.7**	**+0.7**
	baz=307						
KST	**Kastek**	**2.68**	**325**	*e*P	**Pb**	**14 36 08.6**	**-0.6**
	comp=E,10nm,1.0s						
KST				*e*S	**Sb**	**14 36 43.6**	**+1.0**
	comp=E,15nm,0.7s						
PDGK	**Podgornoye**	**2.68**	**23**	⇓*i*P	**Pb**	**14 36 07.0**	**-2.1**
	baz=23						
PDGK				⇓*i*S	**Sb**	**14 36 42.9**	**+0.5**
	baz=23						
TKM2	**Tokmak 2**	**2.76**	**319**	⇑*i*P	**Pn**	**14 36 06.7**	**+0.9**
	baz=323						
TKM2				⇑*i*S	**Sb**	**14 36 42.4**	**-2.5**
	baz=323						
KBK	**Karagaybulak**	**2.94**	**309**	⇑*i*P	**Pn**	**14 36 08.4**	**+0.2**
	baz=313						
KBK				⇑*i*S	**Sn**	**14 36 45.4**	**+1.3**
	baz=313						
UCH	**Uchtor**	**2.99**	**298**	⇑*i*P	**Pn**	**14 36 08.5**	**-0.7**
	baz=303						
UCH				⇑*i*S	**Sn**	**14 36 45.5**	**-0.3**
	baz=303						

*ISCJB **04** 14:44:43.6±0.8, 36.°75N±0.°04×140.°75E±0.°07, h13km±4km, mb3.6/2, MS3.0/1, Error ellipse: s-maj=9.9km s-min=4.6km az=24.5*
*JMA **04** 14:44:44.5, 36.°79N×140.°62E, h4km, M3.2 Broadband fault plane solution: P waves. NP1:φ=324.00000°, δ=51.00000°, λ=-103.00000°. NP2:φ=164.00000°, δ=41.00000°, λ=-75.00000°. Principal axes: T Plg5.0000°, Azm63.0000°; N Plg10.0000°, Azm332.0000°; P Plg79.0000°, Azm179.0000°;*
JMA Felt I J1.
*IDC **04** 14:44:45.0±3.8, 36.°53N×140.°53E, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.2/32, mbtmp3.5/2, MS3.0/1, Ms1 3.0/1, ms1mx2.3/30 Error ellipse: s-maj=77.2km s-min=27.7km az=26.0*
ISC 04 14:44:43.7±1.3, 36.°82N±0.°06×140.°62E±0.°05, h6km±12km, n17, σ0°53/18, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.21**	**192**	⇑P	**Pg**	**14 44 48.2**	**+0.2**
JHO				S	**Sg**	**14 44 50.9**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.31**	**27**	⇑P	**Pb**	**14 44 51.4**	**-0.4**
ONAJ				*e*S	**Sb**	**14 44 56.4**	**-0.7**
JFK	**Kawauchi**	**0.58**	**20**	P	**Pb**	**14 44 56.2**	**-0.1**
JFK				S	**Sb**	**14 45 04.7**	**-0.1**
JSB	**Shiboa**	**0.58**	**285**	⇑P	**Pb**	**14 44 56.7**	**+0.4**
JSB				S	**Sb**	**14 45 05.3**	**+0.4**
JYT	**Yasato**	**0.69**	**210**	⇑P	**Pg**	**14 44 57.0**	**+0.1**
JYT				S	**Sg**	**14 45 06.0**	**+0.2**
JFT	**Otama**	**0.73**	**342**	P	**Pb**	**14 44 59.4**	**+0.5**
JFT				S	**Sb**	**14 45 09.7**	**+0.5**
MJAR	**Matsushiro Arr**	**1.96**	**263**	Pn	**Pn**	**14 45 17.7**	**+0.2**
	16nm,0.3s,baz=88,slow=15,SNR=106						
MJAR				Sn	**Sb**	**14 45 44.1**	**-0.4**
	26nm,0.3s,baz=102,slow=17,SNR=20						
MJAR				LR	LR	14 46 19.4	
	comp=Z,46nm,20.5s,baz=65,slow=51						
MAT	**Matsushiro**	**1.96**	**263**	P	**Pb**	**14 45 19.0**	**-0.9**
MAT				S	**Sg**	**14 45 45.6**	**-1.2**
H11N2	**WAKE ISLAND Hy**	**28.59**	**119**	T	T	15 20 24.5	
	baz=312,slow=75,SNR=23						
H11N1	**WAKE ISLAND Hy**	**28.60**	**119**	T	T	15 20 25.2	
	baz=312,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy**	**28.61**	**119**	T	T	15 20 25.8	
	baz=312,slow=75,SNR=21						
H11S1	**WAKE ISLAND Hy**	**29.28**	**121**	T	T	15 21 16.9	
	baz=314,slow=76,SNR=443						
H11S3	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	15 21 17.1	
	baz=314,slow=76,SNR=268						
H11S2	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	15 21 17.9	
	baz=314,slow=76,SNR=278						
NRIK	**Noril'sk**	**43.20**	**336**	LR	LR	15 13 28.4	
	comp=Z,18nm,18.0s,baz=124,slow=40						
WRA	**Warramunga Arr**	**56.77**	**187**	P	**P**	**14 54 28.7**	**+0.1**
	0.4nm,0.6s,baz=1.0,slow=7.6,SNR=5.5						
ASAR	**Alice Springs**	**60.49**	**187**	P	**P**	**14 54 54.7**	**+0.1**
	0.6nm,1.1s,baz=6.1,slow=7.5,SNR=3.1						

MEX 04 14:46:29.4±0.4, 14.°90N×89.°72W, h16km±931km, MD3.7, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.70**	**301**	*e*P	Pn	14 47 09.2	-3.2
CCIG				*e*S	Sn	14 47 40.8	-4.1

*ISK **04** 14:50:26.9, 37.°29N×28.°14E, h5km, MD2.6*
*CSEM **04** 14:50:27.9±0.3, 37.°29N×28.°16E, h10km, MD2.6, Error ellipse: s-maj=8.5km s-min=7.9km az=173.0*
*DDA **04** 14:50:28.8, 37.°23N×28.°19E, h7km, Md2.5*
ISC 04 14:50:27.6±1.2, 37.°30N±0.°04×28.°14E±0.°03, h4km±12km, n15, σ0°45/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.20**	**146**	*e*PG	**Pg**	**14 50 31.4**	**-0.1**
YER				*e*SG	**Sg**	**14 50 34.8**	**+0.7**
YER	**Yerkesik**	**0.20**	**146**	*e*Pg	**Pg**	**14 50 31.4**	**-0.1**
YER				*e*Sg	**Sg**	**14 50 34.8**	**+0.7**
TURN	**Turunc**	**0.56**	**139**	*i* P	**Pg**	**14 50 37.4**	**-1.1**
TURN				*i* S	**Sg**	**14 50 45.0**	**-0.8**
BDRM	**Kayabasi**	**0.60**	**248**	*i* P	**Pb**	**14 50 40.9**	**+0.1**
BDRM				*i* S	**Sb**	**14 50 50.0**	**+0.3**
BDRM	**Kayabasi**	**0.60**	**248**	P	**Pb**	**14 50 40.9**	**+0.1**
BDRM				S	**Sb**	**14 50 50.0**	**+0.3**
DALY	**Dalyan (Mu¨la**	**0.63**	**139**	*e*PG	**Pg**	**14 50 39.7**	**0.0**
DALY	**Dalyan (Mu¨la**	**0.63**	**139**	*e*Pg	**Pg**	**14 50 39.7**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.68**	**343**	*e*PG	**Pg**	**14 50 40.5**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.68**	**343**	*e*Pg	**Pg**	**14 50 40.5**	**-0.2**
BODT	**Bodrum**	**0.70**	**251**	*e*PG	**Pg**	**14 50 41.0**	**-0.2**
BODT	**Bodrum**	**0.70**	**251**	*e*Pg	**Pg**	**14 50 41.0**	**-0.2**
DNZL	**Cakiroluk**	**0.82**	**61**	*i* P	**Pb**	**14 50 44.9**	**+0.3**
DNZL				*i* S	**Sn**	**14 50 59.1**	**+0.2**
DNZL	**Cakiroluk**	**0.82**	**61**	P	**Pb**	**14 50 44.9**	**+0.3**
DNZL				S	**Sn**	**14 50 59.1**	**+0.2**
KULA	**Kula-Manisa**	**1.28**	**18**	*e*PN	**Pn**	**14 50 52.0**	**-0.4**
KULA	**Kula-Manisa**	**1.28**	**18**	*e*Pn	**Pn**	**14 50 52.1**	**-0.4**

IDC 04 15:00:26.5±2.6, 13.°68S×74.°70W, h94km±24km, mb3.2/3, mb1 3.6/4, mb1mx3.3/25, mbtmp3.7/4, Error ellipse: s-maj=32.4km s-min=15.6km az=57.0, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**10.45**	**149**	P	Pn	15 02 54.1	+0.5
	13nm,0.3s,baz=323,slow=10,SNR=2.1						
LVC				S	Sn	15 04 49.0	0.0
	8.1nm,0.3s,baz=170,slow=24,SNR=1.2						
TXAR	**Lajitas Array**	**51.10**	**327**	P	P	15 09 19.5	-0.3
	0.2nm,0.6s,baz=158,slow=8.3,SNR=3.7						
TORD	**Torodi Ar. Bea**	**80.23**	**74**	P	P	15 12 27.6	+0.2
	0.4nm,0.5s,baz=268,slow=4.4,SNR=5.7						
YKA	**Yellowknife Ar**	**82.07**	**342**	P	P	15 12 35.9	-0.1
	0.3nm,0.7s,baz=140,slow=5.1,SNR=3.1						
WRA	**Warramunga Arr**	**136.04**	**221**	PKP	PKPdf	15 19 37.3	-0.2
	1.1nm,1.2s,baz=122,slow=2.0,SNR=6.5						

*ISCJB **04** 15:05:36.9±0.5, 24.°12S±0.°06×66.°98W±0.°06, h194km±6km, mb3.6/3, Error ellipse: s-maj=11.8km s-min=5.2km az=38.2*
*IDC **04** 15:05:37.4±1.5, 24.°14S×66.°88W, h182km±13km, mb3.7/3, mb1 3.7/5, mb1mx3.3/26, mbtmp4.0/5, Error ellipse: s-maj=28.5km s-min=18.5km az=17.0*
*GUC **04** 15:05:38.7±0.4, 23.°94S×67.°45W, h233km±18km, ML4.8*
*SJA **04** 15:05:44.9±1.3, 24.°53S×66.°05W, h172km±9km, ML2.3, MW2.9*
ISC 04 15:05:36.7±0.8, 24.°26S±0.°06×66.°97W±0.°06, h182km±7km, n26, σ2°27/37, mb3.6/3, 6C-1D, Salta Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**1.41**	**109**	*i* P	**Pn**	**15 06 10.1**	**+2.0**
SLA				*i* S	**Sn**	**15 06 28.1**	**-4.4**
SLA				IAML		15 06 38.0	
	comp=Z,78nm,0.7s						
AZAP	**Zapla**	**1.73**	**89**	*i* P	**Pn**	**15 06 12.9**	**+1.5**
HJA	**Humahuaca**	**1.77**	**54**	*i* P	**Pn**	**15 06 16.7**	**+4.8**
HJA				*i* S	**Sn**	**15 06 40.9**	**+1.8**
FSA	**Cafayete**	**2.05**	**154**	*i* P	**Pn**	**15 06 16.9**	**+2.3**
FSA				*i* S	**Sn**	**15 06 42.7**	**-1.5**
FSA				IAML		15 06 45.9	
	comp=Z,7.6nm,0.6s						
ASTB	**Santa Barbara**	**2.32**	**83**	*i* P	**Pn**	**15 06 18.6**	**+1.0**
ASTB				*i* S	Sn	15 06 41.4	-7.9
LVC	**Limon Verde**	**2.43**	**312**	P	**Pn**	**15 06 20.5**	**+1.5**
	comp=Z,3μm,0.3s,baz=133,slow=9.1,SNR=261						
LVC				S	**Sn**	**15 06 52.3**	**+0.4**
	comp=Z,4μm,0.3s,baz=315,slow=18,SNR=41						
PB06	**IPOC Station P**	**2.85**	**302**	⇑*i*P	**Pn**	**15 06 24.8**	**+1.0**
PB06				*i* S	**Sn**	**15 06 59.3**	**-1.2**
PB06				IAML		15 07 01.4	
	comp=E,2μm,0.1s						
AHML	**Horco Molle**	**2.92**	**150**	*i* P	**Pn**	**15 06 26.0**	**+1.6**
AHML				*i* S	**Sn**	**15 06 56.4**	**-5.4**
AHML				IAML		15 07 06.0	
	comp=Z,9.9nm,0.5s						
PB09	**IPOC Station P**	**3.23**	**319**	⇑*i*P	**Pn**	**15 06 29.7**	**+1.3**
PB09				*i* S	**Sn**	**15 07 08.3**	**-0.4**
PB09				IAML		15 07 10.6	
	comp=N,2μm,0.2s						
PB04	**IPOC Station P**	**3.50**	**303**	⇓*i*P	**Pn**	**15 06 32.2**	**+0.5**
PB04				*i* S	**Sn**	**15 07 12.3**	**-2.4**
PB04				IAML		15 07 15.5	
	comp=N,1μm,0.2s						
PB07	**IPOC Station P**	**3.69**	**313**	⇑*i*P	**Pn**	**15 06 34.4**	**+0.3**
PB07				*i* S	**Sn**	**15 07 16.4**	**-2.6**
PB07				IAML		15 07 18.1	
	comp=N,772nm,0.2s						
PB01	**IPOC Station P**	**3.96**	**323**	⇑*i*P	**Pn**	**15 06 37.4**	**-0.1**
PB01				*i* S	**Sn**	**15 07 22.6**	**-2.4**
PB01				IAML		15 07 25.4	
	comp=E,355nm,0.3s						
CYA	**Choya**	**4.29**	**166**	*i* P	**Pn**	**15 06 45.4**	**+3.7**
PB08	**IPOC Station P**	**4.57**	**333**	⇑*i*P	**Pn**	**15 06 46.1**	**+0.5**
PB08				*i* S	**Sn**	**15 07 37.7**	**-1.8**
VCA	**Vinchina**	**4.60**	**194**	*i* P	Pn	15 06 55.0	+9.4
HMBC	**Humberstone**	**4.80**	**325**	⇑*i*P	**Pn**	**15 06 46.7**	**-1.5**
HMBC				*i* S	**Sn**	**15 07 39.6**	**-4.8**
CPUP	**Villa Florida**	**8.96**	**105**	P	**Pn**	**15 07 43.0**	**+0.4**
	comp=E,0.1nm,0.3s,baz=299,slow=11,SNR=5.3						
SIV	**San Ignacio**	**9.91**	**35**	P	**Pn**	**15 07 53.3**	**-1.8**
	comp=E,0.5nm,0.3s,baz=246,slow=12,SNR=17						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TORD	**Torodi Ar. Bea**	**76.63**	**69**	P	**P**	**15 17 07.5**	**-0.3**
	comp=E,0.9nm,0.7s,baz=256,slow=5.7,SNR=6.8						
MAW	**Mawson**	**81.18**	**163**	P	**P**	**15 17 33.0**	**+1.4**
	comp=E,2.6nm,0.6s,baz=224,slow=3.7,SNR=6.7						
YKA	**Yellowknife Ar**	**94.38**	**340**	P	**P**	**15 18 35.9**	**+0.7**
	comp=E,0.2nm,0.5s,baz=131,slow=4.2,SNR=3.2						
ASAR	**Alice Springs**	**128.24**	**205**	PKP	**PKPdf**	**15 24 21.6**	**-0.5**
	comp=E,0.3nm,0.7s,baz=140,slow=2.1,SNR=6.3						
WRA	**Warramunga Arr**	**131.41**	**207**	PKP	**PKPdf**	**15 24 28.7**	**+0.6**
	comp=E,0.2nm,0.5s,baz=154,slow=1.5,SNR=9.7						
ZALV	**Zalesovo Beam**	**143.61**	**28**	PKP	**PKPdf**	**15 24 48.2**	**-1.2**
	comp=E,1.0nm,0.6s,baz=302,slow=3.5,SNR=5.3						
MKAR	**Makanchi Array**	**146.70**	**40**	PKPbc	**PKPab**	**15 24 57.5**	**-1.0**
	comp=E,1.9nm,0.7s,baz=290,slow=3.5,SNR=16						
KLR	**Kul'dur**	**151.07**	**334**	PKPbc	**PKPbc**	**15 25 08.0**	**+0.2**
	comp=E,0.9nm,0.7s,baz=76,slow=4.2,SNR=3.2						

*ISCJB **04** 15:11:57.6±0.5, 41.°40N±0.°03×35.°83E±0.°04, h12km±4km, Error ellipse: s-maj=6.3km s-min=4.4km az=33.5*
*DDA **04** 15:11:57.5, 41.°42N×35.°81E, h7km, Md2.6*
*CSEM **04** 15:11:57.7±0.2, 41.°36N×35.°81E, h12km, MD2.6, Error ellipse: s-maj=6.4km s-min=3.9km az=29.0*
*ISK **04** 15:11:57.0, 41.°39N×35.°84E, h9km, MD2.7*
ISC 04 15:11:57.5±1.1, 41.°38N±0.°03×35.°83E±0.°02, h9km±9km, n26, σ0°89/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.27**	**94**	*i* P	**Pg**	**15 12 03.3**	**+0.4**
SAMS				*i* S	**Sb**	**15 12 08.7**	**-0.5**
SAMS	**Samsun-Alacam**	**0.27**	**94**	P	**Pg**	**15 12 03.3**	**+0.4**
SAMS				S	**Sb**	**15 12 08.7**	**-0.5**
HAVZ	**Havza**	**0.32**	**195**	*i* P	**Pg**	**15 12 04.5**	**+0.7**
HAVZ				*i* S	**Sb**	**15 12 10.6**	**+0.1**
HAVZ	**Havza**	**0.32**	**195**	P	**Pg**	**15 12 04.4**	**+0.7**
HAVZ				S	**Sb**	**15 12 10.6**	**+0.1**
KVT	**Kavak**	**0.34**	**151**	*e*PG	**Pg**	**15 12 04.1**	**-0.1**
KVT				*e*SG	**Sg**	**15 12 09.9**	**+1.2**
KVT	**Kavak**	**0.34**	**151**	*e*Pg	**Pg**	**15 12 04.1**	**-0.1**
KVT				*e*Sg	**Sg**	**15 12 09.9**	**+1.2**
BOYT	**Boyabat**	**0.69**	**274**	*i* P	**Pg**	**15 12 11.1**	**+0.2**
BOYT				*i* S	**Sn**	**15 12 25.9**	**+1.4**
BOYT	**Boyabat**	**0.69**	**274**	P	**Pg**	**15 12 11.1**	**+0.2**
SNOP	**Sinop**	**0.79**	**324**	*e*PG	**Pg**	**15 12 12.7**	**0.0**
SNOP				*e*SG	**Sb**	**15 12 23.9**	**-0.3**
SNOP	**Sinop**	**0.79**	**324**	*e*Pg	**Pg**	**15 12 12.7**	**0.0**
SNOP				*e*Sg	**Sb**	**15 12 23.9**	**-0.3**
BYBT	**Boyabat**	**0.80**	**277**	*e*PG	**Pg**	**15 12 13.0**	**+0.1**
BYBT	**Boyabat**	**0.80**	**277**	*e*Pg	**Pg**	**15 12 13.0**	**+0.1**
ERBA	**Erbaa**	**0.99**	**135**	*i* P	**Pg**	**15 12 16.6**	**+0.1**
ERBA				*i* S	**Sg**	**15 12 27.6**	**-1.8**
ERBA	**Erbaa**	**0.99**	**135**	P	**Pg**	**15 12 16.6**	**+0.1**
ERBA				S	**Sg**	**15 12 27.5**	**-1.8**
CTAK	**Corum_Osmancik**	**1.07**	**227**	*i* P	**Pg**	**15 12 17.9**	**-0.2**
CTAK	**Corum_Osmancik**	**1.07**	**227**	P	**Pg**	**15 12 17.9**	**-0.2**
COAL	**Corum-Alaca**	**1.29**	**210**	*i* P	**Pn**	**15 12 19.6**	**-2.1**
COAL				*i* S	**Sn**	**15 12 41.1**	**+1.9**
COAL	**Corum-Alaca**	**1.29**	**210**	P	**Pn**	**15 12 19.6**	**-2.1**
TOS	**Tosya**	**1.40**	**256**	*e*PN	**Pn**	**15 12 23.4**	**+0.1**
TOS	**Tosya**	**1.40**	**256**	*e*Pn	**Pn**	**15 12 23.4**	**+0.1**
BZK	**Bozkurt**	**1.48**	**294**	*e*PN	**Pb**	**15 12 24.7**	**-0.5**
BZK	**Bozkurt**	**1.48**	**294**	*e*Pn	**Pb**	**15 12 24.7**	**-0.5**
CORM	**Corum**	**1.50**	**218**	*e*PN	**Pn**	**15 12 25.0**	**+0.3**
CORM	**Corum**	**1.50**	**218**	*e*Pn	**Pn**	**15 12 25.0**	**+0.3**
ORDU	**Ordu-Boztepe**	**1.58**	**104**	*i* P	**Pn**	**15 12 26.4**	**+0.7**
ORDU				*i* S	**Sn**	**15 12 46.8**	**+0.5**
ORDU	**Ordu-Boztepe**	**1.58**	**104**	P	**Pn**	**15 12 26.4**	**+0.7**
ORDU				S	**Sn**	**15 12 46.8**	**+0.5**

*INMG **04** 15:14:35.9±0.7, 32.°32N×7.°73W, h18km±11km, ML2.7, Error ellipse: s-maj=6.6km s-min=5.7km az=100.0*
*MDD **04** 15:14:35.1±3.1, 32.°36N×7.°63W, h0km, mb3.8/5, Error ellipse: s-maj=37.2km s-min=25.9km az=70.0, PRXIMO SOLUCIN POBRE*
*CSEM **04** 15:14:38.8±0.3, 32.°62N×7.°49W, h10km, mb3.8, Error ellipse: s-maj=8.0km s-min=5.5km az=56.0*
ISC 04 15:14:38.8±3.7, 32.°6N±0.°2×7.°5W±0.°1, h10km, n27, σ0°37/44, 1D, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBDV	**Barranco-do-Ve**	**4.63**	**356**	*e*Pn	**Pn**	**15 15 49.5**	**+0.7**
PBDV	**Barranco-do-Ve**	**4.63**	**356**	P	**Pn**	**15 15 49.5**	**+0.7**
PBDV	**Barranco-do-Ve**	**4.63**	**356**	P	**Pn**	**15 15 49.5**	**+0.7**
PVAQ	**Vaqueiros**	**4.78**	**358**	*e*Pn	**Pn**	**15 15 50.4**	**-0.4**
PVAQ

east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.02**	**302**	P	Pn	15 17 12.0	+0.6
JIO				S	Sn	15 17 24.4	-0.1
JMM	**Marumori**	**1.32**	**268**	P	Pn	15 17 16.1	+0.7
JMM				S	Sn	15 17 32.5	+0.7
JFK	**Kawauchi**	**1.38**	**247**	P	Pn	15 17 16.7	+0.5
JFK				S	Sn	15 17 33.3	+0.1
JMK	**Ichinoseki**	**1.42**	**317**	P	Pn	15 17 17.7	+0.9
JOU	**Okura**	**1.48**	**288**	P	Pn	15 17 19.3	+1.6
JFT	**Otama**	**1.73**	**257**	P	Pn	15 17 22.9	+1.8
JOM	**Ohasama**	**1.80**	**330**	P	Pn	15 17 23.4	+1.4
JYS	**Shirataka**	**1.91**	**280**	P	Pn	15 17 25.7	+2.1
JYK	**Kaneyama**	**1.93**	**302**	P	Pn	15 17 25.7	+1.9
JRG	**Rokugo**	**2.05**	**316**	P	Pn	15 17 27.7	+2.2
JYA	**Atsumi**	**2.26**	**288**	P	Pn	15 17 30.6	+2.2

*ISCJB **04** 15:18:31.2±0.5, 67°.12N±0°.03×20°.64E±0°.10, h0km, Error ellipse: s-maj=5.5km s-min=3.6km az=14.7*
*CSEM **04** 15:18:32.4±0.2, 67°.15N×20°.67E, h2km, ML1.7, Error ellipse: s-maj=5.9km s-min=4.0km az=97.0, Mining explosion.*
*UPP **04** 15:18:32.6±0.1, 67°.17N×20°.66E, h0km, ML1.7, Suspected explosion*
*IDC **04** 15:18:33.9±1.0, 67°.16N×20°.89E, h0km, mb1 2.8/3, mb1mx2.8/42, mbtmp2.7/3, ML2.6/3, Error ellipse: s-maj=15.5km s-min=8.1km az=113.0*
*HEL **04** 15:18:33.3±0.1, 67°.17N×20°.67E, h0km, ML2.2, ML1.7(UPP), Explosion*
*NAO **04** 15:18:33.0±0.9, 67°.17N×20°.88E, ML2.3*
*BER **04** 15:18:35.2±4.0, 67°.19N×20°.66E, h0km, ML2.1, ML2.3(NAO), Suspected explosion*

ISC 04 15:18:32.2±0.7, 67°.14N±0°.02×20°.65E±0°.03, h0km, n60, σ1$06/85, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MASU	**Masugnsbyn**	**0.61**	**58**	P	**Pg**	**15 18 44.1**	**+0.2**
MASU				S	**Sg**	**15 18 52.0**	**+0.2**
MASU	**Masugnsbyn**	**0.61**	**58**	*i* P	**Pg**	**15 18 44.1**	**+0.2**
MASU				*i* S	**Sg**	**15 18 52.0**	**+0.2**
MASU	**Masugnsbyn**	**0.61**	**58**	P	**Pg**	**15 18 44.1**	**+0.2**
MASU				S	**Sg**	**15 18 52.0**	**+0.2**
KUA	**Kurravaara**	**0.82**	**352**	P	**Pg**	**15 18 47.4**	**-0.6**
KUA	**Kurravaara**	**0.82**	**352**	*i* P	**Pg**	**15 18 47.4**	**-0.6**
KUA	**Kurravaara**	**0.82**	**352**	P	**Pg**	**15 18 47.4**	**-0.6**
ERTU	**Ertsjaerv**	**0.85**	**133**	P	**Pg**	**15 18 48.5**	**+0.1**
ERTU	**Ertsjaerv**	**0.85**	**133**	*i* P	**Pg**	**15 18 48.5**	**+0.1**
ERTU	**Ertsjaerv**	**0.85**	**133**	P	**Pg**	**15 18 48.5**	**+0.1**
SALU	**Saltoluokta**	**0.87**	**287**	P	**Pg**	**15 18 49.0**	**+0.2**
SALU	**Saltoluokta**	**0.87**	**287**	*i* P	**Pg**	**15 18 49.0**	**+0.2**
SALU	**Saltoluokta**	**0.87**	**287**	P	**Pg**	**15 18 49.0**	**+0.2**
NIKU	**Nikkaluokta**	**0.96**	**320**	P	**Pg**	**15 18 50.2**	**-0.3**
NIKU	**Nikkaluokta**	**0.96**	**320**	*e*P	**Pg**	**15 18 50.2**	**-0.3**
NIKU	**Nikkaluokta**	**0.96**	**320**	P	**Pg**	**15 18 50.2**	**-0.3**
PAJU	**Pajala**	**0.97**	**96**	P	**Pg**	**15 18 50.8**	**0.0**
PAJU	**Pajala**	**0.97**	**96**	*e*P	**Pg**	**15 18 50.8**	**0.0**
PAJU	**Pajala**	**0.97**	**96**	P	**Pg**	**15 18 50.8**	**0.0**
HARU	**Harads**	**0.99**	**172**	P	**Pg**	**15 18 51.6**	**+0.4**
HARU	**Harads**	**0.99**	**172**	*e*P	**Pg**	**15 18 51.6**	**+0.4**
HARU	**Harads**	**0.99**	**172**	P	**Pg**	**15 18 51.6**	**+0.4**
LANU	**Lannavaara**	**1.05**	**29**	P	**Pg**	**15 18 51.2**	**-1.0**
LANU	**Lannavaara**	**1.05**	**29**	*e*P	**Pg**	**15 18 51.5**	**-0.7**
LANU	**Lannavaara**	**1.05**	**29**	P	**Pg**	**15 18 51.5**	**-0.7**
SJUU	**Sjulsmark**	**1.69**	**166**	P	**Pb**	**15 19 03.9**	**-0.2**
SJUU	**Sjulsmark**	**1.69**	**166**	*e*P	**Pb**	**15 19 03.9**	**-0.2**
SJUU	**Sjulsmark**	**1.69**	**166**	P	**Pb**	**15 19 03.9**	**-0.2**
HEF	**Hetta**	**1.71**	**41**	*e*PG	**Pn**	**15 19 03.4**	**+0.1**
HEF				MSG		15 19 25.4	
	comp=Z,16nm,0.2s						
HEF				*e*SN	**Sn**	**15 19 25.9**	**0.0**
HEF	**Hetta**	**1.71**	**41**	Pg	**Pn**	**15 19 03.3**	**+0.1**
HEF				Sn	**Sn**	**15 19 25.8**	**0.0**
TOF	**Tornio**	**1.81**	**124**	*e*PG	**Pb**	**15 19 06.1**	**-0.1**
TOF	**Tornio**	**1.81**	**124**	Pg	**Pb**	**15 19 06.1**	**-0.1**
KIF	**Kilpisjarvi**	**1.87**	**2**	Pn	**Pn**	**15 19 06.4**	**+1.0**
KIF				Lg	Lg	15 19 32.0	
KIF	**Kilpisjarvi**	**1.87**	**2**	Pn	**Pn**	**15 19 06.4**	**+1.0**
KIF				Lg	Lg	15 19 32.0	
KIF	**Kilpisjarvi**	**1.87**	**2**	*e*P	**Pn**	**15 19 06.3**	**+0.9**
KIF				*e*SG	**Sb**	**15 19 31.6**	**+0.4**
KIF				MSG		15 19 37.4	
	comp=Z,23nm,0.4s						
KIF	**Kilpisjarvi**	**1.87**	**2**	P	**Pn**	**15 19 06.3**	**+0.9**
KIF				Sg	**Sb**	**15 19 31.5**	**+0.4**
KIF				Lg	Lg	15 19 32.0	
	SNR=8.0						
KTK1	**Kautokeino**	**2.11**	**26**	*e*P	**Pb**	**15 19 10.3**	**-1.0**
KTK1				*e*Sg	**Sb**	**15 19 38.2**	**+0.1**
KTK1				IAML		15 19 40.5	
	comp=Z,29nm,0.7s						
KTK1	**Kautokeino**	**2.11**	**26**	*e*P	**Pb**	**15 19 10.4**	**-1.0**
	SNR=50						
KTK1				*e*Sg	**Sb**	**15 19 38.2**	**+0.1**
	SNR=90						
ARA0	**ARCESS Array S**	**3.00**	**35**	Pn	**Pn**	**15 19 21.5**	**+0.5**
	baz=212,slow=14						
ARA0				Sn	**Sn**	**15 19 58.3**	**+0.7**
	baz=214,slow=28						
ARA0				Lg	Lg	15 20 03.7	
	baz=211,slow=28						
ARA0	**ARCESS Array S**	**3.00**	**35**	Pn	**Pn**	**15 19 21.5**	**+0.5**
	baz=212,slow=14						
ARA0				Sn	**Sn**	**15 19 58.3**	**+0.7**
	baz=214,slow=28						
ARA0				Lg	Lg	15 20 03.7	
	baz=211,slow=28						
ARA0	**ARCESS Array S**	**3.00**	**35**	Pn	**Pn**	**15 19 21.5**	**+0.5**
	SNR=50						
ARA0				Sn	**Sn**	**15 19 58.3**	**+0.7**
	SNR=50						
ARA0				Lg	Lg	15 20 03.7	
ARCES	**ARCESS Array B**	**3.00**	**35**	Pn	**Pn**	**15 19 21.5**	**+0.5**
	comp=Z,0.7nm,0.3s,baz=219,slow=13,SNR=22						
ARCES				Sn	**Sn**	**15 19 59.3**	**+1.7**
	comp=Z,1.2nm,0.3s,baz=216,slow=22,SNR=7.8						
ARE0	**ARCESS Array S**	**3.00**	**35**	*e*P	**Pn**	**15 19 22.1**	**+1.1**
ARE0				*e*S	**Sn**	**15 19 59.1**	**+1.4**
ARE0	**ARCESS Array S**	**3.00**	**35**	P	**Pn**	**15 19 22.1**	**+1.1**
ARE0				S	**Sn**	**15 19 59.1**	**+1.4**
UMAU	**Umeaa**	**3.27**	**180**	*e*PG	**Pb**	**15 19 32.9**	**+1.8**
UMAU	**Umeaa**	**3.27**	**180**	Pg	**Pb**	**15 19 32.9**	**+1.8**
VRF	**Varrio**	**3.51**	**76**	*e*P	**Pn**	**15 19 28.4**	**+0.5**
VRF	**Varrio**	**3.51**	**76**	P	**Pn**	**15 19 28.4**	**+0.5**
VAF	**Ylistaro**	**4.21**	**167**	*e*P	**Pn**	**15 19 38.5**	**+1.0**
VAF				*e*SG	**Sg**	**15 20 44.2**	**-3.0**
VAF	**Ylistaro**	**4.21**	**167**	P	**Pn**	**15 19 38.5**	**+1.0**
VAF				Sg	**Sg**	**15 20 44.1**	**-3.0**
FIA0	**FINESS Array S**	**6.19**	**155**	Pn	**Pn**	**15 20 05.7**	**+1.0**
	baz=345,slow=14						
FIA0				Sn	**Sn**	**15 21 15.1**	**-1.0**
	baz=341,slow=28						
FIA0				Lg	Lg	15 21 48.6	
	baz=340,slow=37						
FIA0	**FINESS Array S**	**6.19**	**155**	Pn	**Pn**	**15 20 05.7**	**+1.0**
	baz=345,slow=14						
FIA0				Sn	**Sn**	**15 21 15.1**	**-1.0**
	baz=341,slow=28						
FIA0				Lg	Lg	15 21 48.6	
	baz=340,slow=37						
FIA0	**FINESS Array S**	**6.19**	**155**	Pn	**Pn**	**15 20 05.7**	**+1.0**
	SNR=50						
FIA0				Sn	**Sn**	**15 21 15.1**	**-1.0**
	SNR=50						
FIA0				Lg	Lg	15 21 48.7	
	SNR=4.1						
FINES	**FINESS Array B**	**6.19**	**155**	Pn	**Pn**	**15 20 06.7**	**+2.0**
	comp=Z,0.3nm,0.3s,baz=347,slow=12,SNR=4.7						
FINES				Sn	**Sn**	**15 21 15.5**	**-0.5**
	comp=Z,0.4nm,0.3s,baz=346,slow=23,SNR=5.8						
FINES				Lg	Lg	15 21 48.0	
	comp=Z,0.6nm,0.3s,baz=338,slow=29,SNR=5.4						
NB2	**NORSAR Subarra**	**7.38**	**218**	Pn	**Pn**	**15 20 23.0**	**+1.9**
NB2	**NORSAR Subarra**	**7.38**	**218**	Pn	**Pn**	**15 20 23.0**	**+1.9**
NB2	**NORSAR Subarra**	**7.38**	**218**	Pn	**Pn**	**15 20 23.0**	**+1.9**
	SNR=50						
NOA	**NORSAR Array B**	**7.38**	**218**	Pn	**Pn**	**15 20 23.4**	**+2.3**
	comp=Z,0.1nm,0.3s,baz=25,slow=11,SNR=3.3						
NOA				Sn	**Sn**	**15 21 43.1**	**-2.4**
	comp=Z,0.3nm,0.3s,baz=98,slow=15,SNR=3.8						
NOA				Lg	Lg	15 22 27.0	
	comp=Z,0.4nm,0.3s,baz=66,slow=7.8,SNR=4.6						
HFS	**Hagfors**	**7.68**	**207**	Pn	**Pn**	**15 20 25.2**	**0.0**
	baz=20,slow=16						
HFS				Sn	**Sn**	**15 21 50.9**	**-1.9**
	baz=29,slow=28						
HFS				Lg	Lg	15 22 31.9	
	baz=45,slow=28						
HFS	**Hagfors**	**7.68**	**207**	Pn	**Pn**	**15 20 25.2**	**0.0**
	baz=20,slow=16						
HFS				Sn	**Sn**	**15 21 50.9**	**-1.9**
	baz=29,slow=28						
HFS				Lg	Lg	15 22 31.9	
	baz=45,slow=28						
HFS	**Hagfors**	**7.68**	**207**	Pn	**Pn**	**15 20 25.2**	**0.0**
	SNR=50						
HFS				Sn	**Sn**	**15 21 50.9**	**-1.9**
	SNR=50						
HFS				Lg	Lg	15 22 31.9	

*NIED **04** 15:19:00, 39°.00N×142°.50E, h29km, Mw4.0 Best double couple: M0 1.03000×10^15 NP1:φs349.00000°, δ34.00000°, λ-85.00000°. NP2:φs162.00000°, δ57.00000°, λ-93.00000°.*
*JMA **04** 15:19:16.4±0.1, 38°.98N×142°.41E, h36km±2km, M4.0*
JMA Felt I J1.
*IDC **04** 15:19:19.4±2.3, 38°.88N×142°.44E, h54km±21km, mb3.6/13, mb1 3.8/18, mb1mx3.7/36, mbtmp3.9/18, ML3.8/4, MS3.0/7, Ms1 3.0/7, ms1mx2.7/35, Error ellipse: s-maj=21.1km s-min=13.7km az=102.0*

ISC 04 15:19:15.0±3.1, 38°.91N±0°.05×142°.42E±0°.08, h17km±19km, n38, σ1$41/35, mb3.9/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.61**	**287**	P	**Pn**	**15 19 28.3**	**-0.6**
OFUJ				S	**Sb**	**15 19 36.5**	**+0.9**
MIYJ	**Miyakonagasawa**	**0.82**	**325**	P	**Pb**	**15 19 30.4**	**-0.4**
MIYJ				S	**Sb**	**15 19 40.2**	**-1.3**
JMK	**Ichinoseki**	**0.94**	**273**	P	**Pn**	**15 19 33.3**	**-0.1**
JMK				*e*S	**Sb**	**15 19 45.4**	**+0.4**
JIO	**Ouri**	**0.95**	**242**	P	**Pn**	**15 19 33.4**	**-0.2**
JIO				*e*S	**Sb**	**15 19 45.3**	**-0.1**
JOM	**Ohasama**	**1.04**	**303**	P	**Pn**	**15 19 34.5**	**-0.4**
JOM				S	**Sb**	**15 19 47.3**	**-0.8**
JTH	**Tanohata**	**1.12**	**337**	P	**Pb**	**15 19 34.6**	**-1.3**
JRG	**Rokugo**	**1.48**	**290**	P	**Pb**	**15 19 41.2**	**-0.8**
JOU	**Okura**	**1.48**	**249**	P	**Pb**	**15 19 41.4**	**-0.6**
JYK	**Kaneyama**	**1.61**	**271**	P	**Pb**	**15 19 43.2**	**-1.1**
JANG	**Nango**	**1.62**	**335**	P	**Pn**	**15 19 42.4**	**-0.5**
MJAR	**Matsushiro Arr**	**4.09**	**236**	P	**Pn**	**15 20 19.1**	**+2.4**
	11nm,0.3s,baz=34,slow=13,SNR=67						
MJAR				LR	LR	15 22 08.4	
	comp=Z,296nm,18.4s,baz=40,slow=42						
MAT	**Matsushiro**	**4.09**	**236**	P	**Pn**	**15 20 20.8**	**+4.0**
MAT				*e*S	**Sg**	**15 21 25.8**	**-0.5**
ASAJ	**Asahikawa**	**5.21**	**1**	P	**Pn**	**15 20 33.6**	**+1.5**
	2.7nm,0.3s,baz=226,slow=8.3,SNR=12						
JHJ	**Hachijo jima 2**	**6.16**	**201**	P	**Pn**	**15 20 46.7**	**+1.6**
	7.9nm,0.3s,baz=79,slow=19,SNR=1.9						
JHJ				S	**Sn**	**15 21 52.7**	**-2.4**
	8.0nm,0.3s,baz=254,slow=24,SNR=1.9						
USRK	**Ussuriysk Ar.**	**9.44**	**307**	P	**Pn**	**15 21 34.0**	**+3.8**
	0.4nm,0.3s,baz=129,slow=13,SNR=7.9						
USRK				LR	LR	15 25 03.5	
	comp=Z,138nm,20.3s,baz=182,slow=36						
JNU	**Nakatsue**	**10.98**	**242**	LR	LR	15 26 28.6	
	comp=Z,136nm,19.6s,baz=121,slow=39						
KSRS	**Korea Array**	**11.51**	**267**	P	Pn	15 22 02.8	+4.4
	0.2nm,0.3s,baz=80,slow=13,SNR=6.5						
KSRS				LR	LR	15 26 06.0	
	comp=Z,65nm,19.6s,baz=84,slow=35						
KLR	**Kudur**	**12.85**	**327**	LR	LR	15 27 05.1	
	comp=Z,65nm,19.9s,baz=136,slow=36						
PETK	**Petropavlovsk-**	**17.67**	**32**	LR	LR	15 31 20.0	
	comp=Z,22nm,18.9s,baz=233,slow=41						
SEY	**Seymchan**	**24.80**	**11**	P	**P**	**15 24 36.7**	**+0.9**
	1.1nm,0.5s,baz=209,slow=10,SNR=5.2						
SONM	**Songino Array**	**27.46**	**301**	P	**P**	**15 25 00.3**	**+0.2**
	0.4nm,0.5s,baz=85,slow=7.2,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.50**	**125**	T	T	15 55 31.3	
	baz=318,slow=75,SNR=237						
H11N1	**WAKE ISLAND Hy**	**28.50**	**125**	T	T	15 55 34.1	
	baz=318,slow=75,SNR=220						
H11N3	**WAKE ISLAND Hy**	**28.51**	**125**	T	T	15 55 35.3	
	baz=318,slow=75,SNR=178						
H11S1	**WAKE ISLAND Hy**	**29.28**	**127**	T	T	15 56 32.0	
	baz=319,slow=76,SNR=30						
H11S3	**WAKE ISLAND Hy**	**29.28**	**127**	T	T	15 56 32.8	
	baz=319,slow=76,SNR=50						
H11S2	**WAKE ISLAND Hy**	**29.29**	**127**	T	T	15 56 34.1	
	baz=319,slow=76,SNR=38						
ZALV	**Zalesovo Beam**	**41.27**	**311**	P	**P**	**15 26 59.0**	**-0.1**
	1.2nm,0.5s,baz=93,slow=8.3,SNR=6.4						
CMAR	**Chiang Mai Arr**	**42.76**	**254**	P	**P**	**15 27 13.2**	**+1.6**
	0.3nm,0.4s,baz=56,slow=6.7,SNR=3.7						
MKAR	**Makanchi Array**	**43.83**	**301**	P	**P**	**15 27 19.8**	**-0.2**
	1.8nm,0.7s,baz=84,slow=9.9,SNR=12						
ILAR	**Eielson Array**	**47.49**	**33**	P	**P**	**15 27 48.9**	**+0.2**
	1.8nm,0.7s,baz=271,slow=6.5,SNR=31						
INK	**Inuvik**	**52.36**	**28**	P	**P**	**15 28 26.4**	**+0.9**
	0.5nm,0.4s,baz=278,slow=13,SNR=4.6						
WRA	**Warramunga Arr**	**59.02**	**189**	P	**P**	**15 29 13.0**	**-0.9**
	1.7nm,0.5s,baz=7.0,slow=7.0,SNR=17						
ASAR	**Alice Springs**	**62.75**	**189**	P	**P**	**15 29 38.8**	**-0.4**
	0.6nm,0.6s,baz=15,slow=10,SNR=16						
ASAR				pP	sP	15 29 53.6	+6.8
	0.6nm,0.6s,baz=11,slow=5.2,SNR=4.4						
FINES	**FINESS Array B**	**67.53**	**332**	P	**P**	**15 30 09.2**	**-0.7**
	1.6nm,0.8s,baz=123,slow=10.0,SNR=3.9						
FINES				LR	LR	16 04 28.2	
	comp=Z,6.3nm,21.5s,baz=254,slow=40						
NOA	**NORSAR Array B**	**72.77**	**337**	P	**P**	**15 30 41.7**	**-0.4**
	0.3nm,0.5s,baz=38,slow=6.1,SNR=2.7						
AKASG	**Malin Array Be**	**73.31**	**322**	P	**P**	**15 30 44.6**	**-0.7**
	1.0nm,0.5s,baz=45,slow=6.1,SNR=3.7						
TXAR	**Lajitas Array**	**88.35**	**53**	P	**P**	**15 32 06.1**	**-0.1**
	0.3nm,0.6s,baz=296,slow=3.8,SNR=4.5						

*IDC **04** 15:21:18.5±3.8, 36°.42N×70°.81E, h166km±39km, mb3.0/1, mb1 2.9/3, mb1mx2.7/41, mbtmp3.5/3, Error ellipse: s-maj=57.1km s-min=10.6km az=169.0*
*NNC **04** 15:21:23.2±5.8, 36°.79N×70°.99E, h87km±621km, mb3.4, mpv3.7, Error ellipse: s-maj=53.4km s-min=36.3km az=75.0*

ISC 04 15:21:19.7±2.1, 36°.7N±0°.2×70°.9E±0°.1, h188km, n6, σ1$20/10, 1C-5D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAS	**Manas**	**5.93**	**12**	⇓P	**Pn**	**15 22 46.9**	**+1.0**
	6.3nm,0.8s						
MNAS				⇓S	**Sn**	**15 23 52.8**	**-1.2**
	12nm,0.6s						
KK31	**Karatay Array**	**6.42**	**358**	⇓P	**Pn**	**15 22 53.6**	**+1.5**
	4.6nm,0.3s,baz=194,slow=18,SNR=34						
KK31				⇓S	**Sn**	**15 24 05.5**	**+0.3**
	2.4nm,0.5s,baz=187,slow=25,SNR=7.8						
TKM2	**Tokmak 2**	**7.22**	**29**	⇓P	**Pn**	**15 23 04.6**	**+1.8**
	1.0nm,0.5s						
TKM2				⇑S	**Sn**	**15 24 23.5**	**-1.0**
	2.4nm,0.6s						
GEYT	**Alibeck**	**10.22**	**281**	P	**Pn**	**15 23 41.8**	**-0.1**
	0.5nm,0.3s,baz=102,slow=12,SNR=3.8						
GEYT				S	**Sn**	**15 25 35.5**	**-0.4**
	0.8nm,0.3s,baz=64,slow=13,SNR=4.2						
MKAR	**Makanchi Array**	**13.21**	**37**	P	**P**	**15 24 22.7**	**-0.7**
	0.1nm,0.3s,baz=233,slow=14,SNR=4.2						
ZALV	**Zalesovo Beam**	**19.80**	**25**	P	**Pn**	**15 25 38.6**	**-0.7**
	0.9nm,0.4s,baz=214,slow=10,SNR=5.2						

IDC 04 15:22:35.7±1.1, 6°.46S×129°.90E, h0km, mb3.5/1, mb1 3.6/4, mb1mx3.3/30, mbtmp3.4/4, ML2.9/3, MS3.2/1, Ms1 3.2/1, ms1mx2.5/23, Error ellipse: s-maj=19.6km s-min=12.4km az=65.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.30**	**199**	Pn	Pn	15 25 32.2	0.0
	0.0nm,0.3s,baz=19,slow=8.9,SNR=4.7						
WRA	**Warramunga Arr**	**14.08**	**163**	Pn	Pn	15 25 56.5	-0.1
	0.1nm,0.3s,baz=340,slow=14,SNR=4.3						
WRA				Sn	Sn	15 28 20.5	-13
	0.2nm,0.3s,baz=337,slow=23,SNR=7.8						
ASAR	**Alice Springs**	**17.54**	**168**	P	Pn	15 26 41.9	0.0
	0.1nm,0.3s,baz=344,slow=11,SNR=13						
KSRS	**Korea Array**	**43.72**	**358**	LR	LR	15 47 20.0	
	comp=Z,32nm,21.0s,baz=159,slow=34						
MKAR	**Makanchi Array**	**67.72**	**327**	P	P	15 33 35.1	0.0
	0.2nm,0.4s,baz=129,slow=7.1,SNR=3.7						

*IDC **04** 15:29:16.0±1.2, 35°.60N×141°.04E, h0km, mb3.4/4, mb1 3.7/5, mb1mx3.4/31, mbtmp3.5/5, ML2.9/2, MS2.8/3, Ms1 2.8/3, ms1mx2.3/27, Error ellipse: s-maj=32.1km s-min=22.0km az=86.0*
*ISCJB **04** 15:29:17.4±0.8, 35°.65N±0°.03×141°.01E±0°.08, h18km±6km, mb3.5/4, MS3.0/1, Error ellipse: s-maj=10.6km s-min=5.2km az=173.7*
*JMA **04** 15:29:18.1±0.1, 35°.64N×140°.93E, h14km±1km, M3.2*

ISC 04 15:29:17.8±1.1, 35°.63N±0°.03×140°.96E±0°.06, h14km±6km, n23, σ1$05/23, mb3.5/4, 2C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.11**	**312**	⇓P	**Pg**	**15 29 21.1**	**0.0**
CHOJ				S	**Sg**	**15 29 23.3**	**0.0**
JCN	**Nagara**	**0.65**	**251**	⇑P	**Pb**	**15 29 31.1**	**+0.2**
JCN				*e*S	**Sg**	**15 29 39.2**	**0.0**
KTR	**Katsuura**	**0.71**	**228**	⇑P	**Pg**	**15 29 31.4**	**-0.3**
KTR				*e*S	**Sb**	**15 29 41.3**	**-0.3**
BSO4	**Boso 4**	**0.81**	**219**	P	**Pb**	**15 29 33.7**	**0.0**
JYT	**Yasato**	**0.86**	**314**	P	**Pg**	**15 29 33.8**	**-0.7**
JYT				*e*S	**Sg**	**15 29 44.8**	**-1.0**
BSO3	**Boso 3**	**0.91**	**204**	P	**Pb**	**15 29 35.3**	**+0.2**
BSO1	**Boso 1**	**0.98**	**179**	P	**Pg**	**15 29 35.5**	**-1.1**
BSO1				*e*S	**Sn**	**15 29 49.9**	**0.0**
JHO	**Hitachi**	**1.03**	**342**	P	**Pg**	**15 29 36.5**	**-1.2**
JHO				*e*S	**Sg**	**15 29 50.0**	**-1.1**
MJAR	**Matsushiro Arr**	**2.40**	**293**	Pn	**Pn**	**15 29 56.9**	**+0.1**
	2.0nm,0.3s,baz=124,slow=16,SNR=16						
MAT	**Matsushiro**	**2.41**	**293**	P	**Pn**	**15 29 58.6**	**+1.8**
MAT				*e*S	**Sb**	**15 30 30.2**	**-0.2**
JHJ	**Hachijo jima 2**	**2.69**	**201**	Pn	**Pn**	**15 30 01.8**	**+1.2**
	5.6nm,0.3s,baz=66,slow=20,SNR=2.7						
JHJ				Sn	**Sn**	**15 30 29.9**	**-3.1**
	13nm,0.3s,baz=359,slow=21,SNR=1.7						
JNU	**Nakatsue**	**8.70**	**256**	LR	LR	15 35 28.6	
	comp=Z,45nm,18.1s,baz=301,slow=42						
KSRS	**Korea Array**	**10.64**	**284**	LR	LR	15 35 42.8	
	comp=Z,34nm,20.2s,baz=215,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.78**	**118**	T	T	16 04 03.0	
	baz=310,slow=75,SNR=41						
H11N1	**WAKE ISLAND Hy**	**27.79**	**118**	T	T	16 04 05.2	
	baz=310,slow=75,SNR=38						
H11N3	**WAKE ISLAND Hy**	**27.80**	**118**	T	T	16 04 03.6	
	baz=310,slow=75,SNR=50						
H11S1	**WAKE ISLAND Hy**	**28.44**	**120**	T	T	16 04 54.6	
	baz=312,slow=76,SNR=405						
H11S3	**WAKE ISLAND Hy**	**28.44**	**120**	T	T	16 04 53.9	
	baz=312,slow=76,SNR=237						
H11S2	**WAKE ISLAND Hy**	**28.46**	**120**	T	T	16 04 55.1	
	baz=312,slow=76,SNR=286						
MKAR	**Makanchi Array**	**44.56**	**303**	P	**P**	**15 37 30.1**	**+0.9**
	0.2nm,0.3s,baz=86,slow=9.2,SNR=3.3						
ILAR	**Eielson Array**	**50.88**	**32**	P	**P**	**15 38 18.4**	**+0.5**
	0.3nm,0.7s,baz=282,slow=6.4,SNR=3.4						
WRA	**Warramunga Arr**	**55.62**	**188**	P	**P**	**15 38 53.0**	**-0.3**
	0.9nm,0.7s,baz=7.0,slow=7.8,SNR=9.4						
WRA				LR	LR	16 00 08.0	
	comp=Z,15nm,21.6s,baz=235,slow=33						
ASAR	**Alice Springs**	**59.35**	**189**	P	**P**	**15 39 19.8**	**+0.3**
	0.3nm,0.8s,baz=15,slow=8.7,SNR=7.3						

*GEN **04** 15:34:40.2, 44°.43N×12°.27E, h3km, ML2.2*
*CSEM **04** 15:34:42.7±0.3, 44°.36N×12°.01E, h10km, ML2.8/4, Error ellipse: s-maj=5.2km s-min=3.1km az=23.0*
*ROM **04** 15:34:42.2±0.3, 44°.39N×11°.93E, h24km±4km, Md2.6/14, Ml2.1/12, Error ellipse: s-maj=4.1km s-min=2.3km az=30.0*

ISC 04 15:34:43.2±1.1, 44°.34N±0°.04×11°.96E±0°.03, h13km±8km, n32, σ1$61/49, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMOL	**Imola, Italy**	**0.16**	**276**	Pg	**Pg**	**15 34 46.7**	**-0.4**
IMOL				Sg	**Sb**	**15 34 50.8**	**-0.4**
	240nm,0.3s						
IMOL	**Imola, Italy**	**0.16**	**276**	Pg	**Pg**	**15 34 46.7**	**-0.4**
IMOL				Sg	**Sb**	**15 34 50.8**	**-0.4**
	240nm,0.3s						
MTRZ	**Monterenzio**	**0.36**	**276**	Pg	**Pb**	**15 34 51.2**	**-0.3**
	154nm,0.5s						
MTRZ

s-min=7.0km az=143.0
NIED ***04*** *15:53:00.37˝50N×141˝40E.h53km.Mw3.7 Best double couple: M₀4.12000×10¹⁴ NP1:φ₀215.00000°,δ16.00000°, λ-81.00000°. NP2:φ₀26.00000°,δ74.00000°,λ-93.00000°.*
ISCJB ***04*** *15:53:02.6±1.2,37˝45N±0˝.04×141˝50E±0˝.08,h27km±6km, mb3.4/4,MS3.3/1,Error ellipse: s-maj=11.0km s-min=6.8km az=20.9*
JMA ***04*** *15:53:04.5±0.1,37˝46N×141˝37E,h33km±1km,M3.5*
JMA Felt I J1.

ISC 04 15:53:02.6±1.5,**37˝44N**±0˝.04×**141˝35E**±0˝.07,**h20**km±5km, **n21,**σ**0$75/22,mb3.5/4,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.39**	**259**	P			**Pn**	**15 53 13.6**	**+0.5**
JFK					*e*S		**Sn**	**15 53 19.6**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.56**	**232**	P			**Pn**	**15 53 15.9**	**+0.4**
ONAJ					*e*S		**Sn**	**15 53 23.8**	**-0.4**
JMM	**Marumori**	**0.61**	**314**	P			**Pn**	**15 53 16.4**	**+0.2**
JMM					*e*S		**Sn**	**15 53 24.7**	**-0.8**
JFT	**Otama**	**0.81**	**276**	P			**Pn**	**15 53 20.4**	**+1.5**
JFT					S		**Sn**	**15 53 31.2**	**+0.8**
JIO	**Ouri**	**1.01**	**0**	P			**Pg**	**15 53 22.0**	**-0.3**
JIO					S		**Sb**	**15 53 34.2**	**-0.1**
JHO	**Hitachi**	**1.04**	**217**	P			**Pg**	**15 53 22.6**	**-0.2**
JOU	**Okura**	**1.07**	**330**	P			**Pg**	**15 53 23.5**	**+0.1**
JYS	**Shirataka**	**1.28**	**308**	P			**Pg**	**15 53 27.1**	**-0.2**
JYS					S		**Sg**	**15 53 43.8**	**-0.3**
JFY	**Yanaizu**	**1.31**	**269**	P			**Pg**	**15 53 28.1**	**+0.2**
JFY					S		**Sg**	**15 53 44.6**	**-0.5**
MJAR	**Matsushiro Arr**	**2.67**	**251**	Pn			**Pb**	**15 53 47.7**	**-2.0**
	1.0nm,0.3s,baz=80,slow=17,SNR=14								
MJAR					Sn		**Sb**	**15 54 22.7**	**+0.6**
	2.8nm,0.3s,baz=66,slow=29,SNR=7.9								
SONM	**Songino Array**	**27.52**	**303**	P			**P**	**15 58 48.5**	**+0.6**
	0.3nm,0.5s,baz=123,slow=10,SNR=2.8								
H11N2	**WAKE ISLAND Hy**	**28.40**	**121**	T			T	16 28 33.6	
	baz=314,slow=75,SNR=32								
H11N1	**WAKE ISLAND Hy**	**28.41**	**121**	T			T	16 28 32.9	
	baz=314,slow=75,SNR=33								
H11N3	**WAKE ISLAND Hy**	**28.42**	**121**	T			T	16 28 36.4	
	baz=314,slow=75,SNR=30								
H11S1	**WAKE ISLAND Hy**	**29.13**	**123**	T			T	16 29 30.3	
	baz=316,slow=76,SNR=18								
H11S3	**WAKE ISLAND Hy**	**29.13**	**123**	T			T	16 29 28.9	
	baz=316,slow=76,SNR=14								
H11S2	**WAKE ISLAND Hy**	**29.14**	**123**	T			T	16 29 30.1	
	baz=316,slow=76,SNR=11								
ZALV	**Zalesovo Beam**	**41.60**	**312**	P			**P**	**16 00 49.6**	**+0.6**
	0.5nm,0.5s,baz=83,slow=12,SNR=3.1								
MKAR	**Makanchi Array**	**43.86**	**302**	P			**P**	**16 01 07.9**	**+0.4**
	0.3nm,0.4s,baz=90,slow=9.4,SNR=5.4								
PMG	**Port Moresby**	**46.92**	**172**	LR			LR	16 27 55.0	
	comp=Z,29nm,18.0s,baz=32,slow=45								
WRA	**Warramunga Arr**	**57.46**	**188**	P			**P**	**16 02 50.3**	**+0.2**
	0.5nm,0.8s,baz=5.2,slow=7.4,SNR=5.5								

NIED ***04*** *16:06:00.40˝20N×142˝50E,h44km,Mw4.5 Best double couple: M₀5.50000×10¹⁵ NP1:φ₀182.00000°,δ15.00000°, λ76.00000°. NP2:φ₀17.00000°,δ75.00000°,λ94.00000°.*
MOS ***04*** *16:06:41.7±1.0,40˝25N×142˝35E,h54km,mb4.8/57,Error ellipse: s-maj=8.2km s-min=5.4km az=104.4*
JMA ***04*** *16:06:41.7±0.1,40˝16N×142˝38E,h37km±1km,M4.5*
JMA Felt II J1.
ISCJB ***04*** *16:06:41.2±0.4,40˝18N±0˝.03×142˝39E±0˝.04,h52km±3km, mb4.5/97,MS3.7/29,Error ellipse: s-maj=6.0km s-min=4.0km az=33.9*
BJI ***04*** *16:06:43.2,40˝20N×142˝20E,h64km,mb4.7/55,mB4.8/38, Ms4.1/34,Ms7 3.9/33*
IDC ***04*** *16:06:44.1±2.0,40˝17N×142˝37E,h64km±17km,mb4.1/24, mb1 4.2/30,mb1mx4.1/43,mbtmp4.3/30,MS3.6/26, Ms1 3.6/26,ms1mx3.4/45,Error ellipse: s-maj=14.8km s-min=11.4km az=108.0*
NEIC ***04*** *16:06:44.2±0.6,40˝21N×142˝32E,h66km±5km,mb4.7/29, Error ellipse: s-maj=7.6km s-min=4.2km az=124.0*
NEIC Felt at Misawa. Recorded [2 JMA] in Aomori and Iwate.

ISC 04 16:06:42.3±0.6,**40˝18N**±0˝.04×**142˝36E**±0˝.04,**h49**km±4km, **h48**km:**pP-P,n224,**σ**1$90/243,mb4.6/97,MS3.7/31, 11C-10D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.45**	**237**	P			**Pn**	**16 06 51.7**	**-1.2**
JTH					S		**Sn**	**16 06 58.8**	**-1.7**
JANG	**Nango**	**0.67**	**287**	P			**Pn**	**16 06 54.8**	**-0.8**
JANG					S		**Sn**	**16 07 04.0**	**-1.3**
MIYJ	**Miyakonagasawa**	**0.73**	**214**	P			**Pn**	**16 06 55.3**	**-1.1**
MIYJ					*e*S		**Sn**	**16 07 05.2**	**-1.5**
JKZ	**Kuzumaki**	**0.81**	**256**	P			**Pn**	**16 06 57.2**	**-0.3**
JKZ					S		**Sn**	**16 07 08.1**	**-0.5**
JOM	**Ohasama**	**1.08**	**229**	P			**Pn**	**16 07 01.0**	**-0.1**
JOM					S		**Sn**	**16 07 15.0**	**-0.1**
JTM	**Tenmabayashi**	**1.15**	**302**	P			**Pn**	**16 07 02.2**	**+0.1**
JTM					S		**Sn**	**16 07 17.2**	**+0.5**
JAH	**Hinai**	**1.32**	**271**	P			**Pn**	**16 07 04.7**	**+0.4**
JMK	**Ichinoseki**	**1.51**	**216**	P			**Pn**	**16 07 07.0**	**+0.1**
JMK					S		**Sn**	**16 07 26.5**	**+1.0**
JRG	**Rokugo**	**1.54**	**240**	P			**Pn**	**16 07 07.6**	**+0.2**
ERM	**Erimo**	**1.93**	**18**	*e*P			**Pn**	**16 07 14.9**	**+2.3**
ERM	**Erimo**	**1.93**	**18**	*e*Pn			**Pn**	**16 07 14.9**	**+2.3**
ASAJ	**Asahikawa**	**3.93**	**3**	P			**Pn**	**16 07 41.1**	**+0.9**
	9.7nm,0.3s,baz=228,slow=8.9,SNR=57								
ASAJ					S		**Sn**	**16 08 32.7**	**+7.7**
	21nm,0.3s,baz=311,slow=26,SNR=6.3								
MJB9	**Matsu-Tunnel**	**4.88**	**223**	*e*Pn			**Pn**	**16 07 55.4**	**+2.2**
MAJO	**Matsushiro**	**4.88**	**223**	*d i*P			**Pn**	**16 07 55.9**	**+2.7**
MAJO	**Matsushiro**	**4.88**	**223**	*e*Pn			**Pn**	**16 07 55.3**	**+2.1**
MAT	**Matsushiro**	**4.88**	**223**	P			**Pn**	**16 07 55.5**	**+2.3**
MAT					*e*S		**Sn**	**16 08 50.9**	**+2.4**
MJAR	**Matsushiro Arr**	**4.88**	**223**	P			**Pn**	**16 07 55.6**	**+2.4**
	11nm,0.3s,baz=31,slow=14,SNR=184								
MJAR					S		Sn	16 08 58.5	+10
	baz=18,slow=25,SNR=3.1								
MJAR					LR		LR	16 10 03.5	
	comp=Z,588nm,20.4s,baz=50,slow=41								
INU	**Inuyama**	**6.42**	**223**	*e*Pn			**Pn**	**16 08 16.4**	**+2.2**
KUR	**Kurii'sk**	**6.47**	**37**	*c i*P			**Pn**	**16 08 14.3**	**-0.6**
KUR					*i*S		**Sn**	**16 09 24.2**	**-3.2**
KUR					pmax		pmax		
	comp=Z,55nm,0.5s								
KUR					pmax		pmax		
	comp=N,33nm,0.3s								
KUR					pmax		pmax		
	comp=E,27nm,0.5s								
KUR					pmax		pmax		
	comp=Z,297nm,2.5s								
KUR					smax		smax		
	comp=N,140nm,0.7s								
KUR					smax		smax		
	comp=E,82nm,0.7s								
KUR					smax		smax		
	comp=N,552nm,2.2s								
KUR					smax		smax		
	comp=E,197nm,2.1s								
YSS	**Yuzh-Sakhalins**	**6.77**	**2**	*e*P			Pn	16 08 27.1	+8.1
YSS					pmax		pmax		
	comp=Z,40nm,1.2s								
YSS	**Yuzh-Sakhalins**	**6.77**	**2**	*e*Pn			**Pn**	**16 08 19.2**	**+0.2**
JHJ	**Hachijo jima 2**	**7.35**	**197**	P			**Pn**	**16 08 26.1**	**-0.9**
	comp=Z,24nm,0.3s,baz=80,slow=22,SNR=6.2								
JHJ					S		**Sn**	**16 09 44.6**	**-4.4**
	comp=Z,9.4nm,0.3s,baz=58,slow=23,SNR=4.1								
JHJ					LR		LR	16 11 26.9	
	comp=Z,309nm,21.3s,baz=84,slow=39								
USRK	**Ussuriysk Ar.**	**8.68**	**301**	P			**Pn**	**16 08 47.5**	**+2.4**
	comp=Z,1.5nm,0.3s,baz=106,slow=12,SNR=26								
USRK					LR		LR	16 12 03.0	
	comp=Z,467nm,18.9s,baz=126,slow=37								
HABR	**Khabarovsk**	**9.80**	**330**	*e*P			Pn	16 08 51.8	-8.6
HABR					*e*SS		**Sn**	**16 10 44.4**	**-4.5**
HABR					pmax		pmax		
	comp=E,94nm,2.3s								
HABR					pmax		pmax		
	comp=N,48nm,2.3s								
HABR					pmax		pmax		
	comp=Z,29nm,2.3s								
HABR					MLR		MLR		
	comp=Z,229nm,14.0s								
MDJ	**Mudanjiang**	**10.43**	**299**	P			**Pn**	**16 09 12.3**	**+3.2**
MDJ					pmax		pmax		
	comp=Z,18nm,0.9s								
MDJ					pmax		pmax		
	comp=Z,50nm,6.3s								
MDJ					LR		LR		
	comp=Z,190nm,19.8s								
MDJ					LR		LR		
	comp=Z,310nm,18.1s								
MDJ					LR		LR		
	comp=Z,430nm,18.6s								
TYV	**Tymovskoe**	**10.68**	**1**	*e*P			**Pn**	**16 09 11.8**	**-0.7**
TYV					pmax		pmax		
	comp=Z,13nm,0.8s								
KSRS	**Korea Array**	**11.59**	**261**	P			**Pn**	**16 09 28.1**	**+3.1**
	comp=Z,0.6nm,0.3s,baz=85,slow=14,SNR=14								
KSRS					S		**Sn**	**16 11 38.8**	**+5.9**
	comp=Z,0.2nm,0.3s,baz=63,slow=24,SNR=3.0								
KSRS					LR		LR	16 13 39.4	
	comp=Z,328nm,18.4s,baz=84,slow=36								
KSAR	**Wonju Array Be**	**11.62**	**261**	P			**Pn**	**16 09 28.1**	**+2.7**
KSAR					S		**Sn**	**16 11 38.8**	**+5.1**
KSAR	**Wonju Array Be**	**11.62**	**261**	P			**Pn**	**16 09 28.1**	**+2.7**
KSAR					S		**Sn**	**16 11 38.8**	**+5.1**
KLR	**Kul'dur**	**11.77**	**324**	P			**Pn**	**16 09 29.3**	**+1.9**
	comp=Z,0.2nm,0.3s,baz=121,slow=15,SNR=6.2								
KLR					LR		LR	16 14 04.4	
	comp=Z,331nm,19.4s,baz=138,slow=37								
DL2	**Dalian**	**16.04**	**272**	P			**P**	**16 10 26.7**	**-0.5**
DL2					pP		**pP**	**16 10 36.9**	**-1.4**
DL2					*e*S		**Sn**	**16 13 24.6**	**+3.3**
DL2					pmax		pmax		
	comp=Z,28nm,0.8s								
DL2					LR		LR		
	comp=Z,210nm,17.2s								
DL2					LR		LR		
	comp=Z,240nm,18.8s								
DL2					LR		LR		
	comp=Z,390nm,24.3s								
PETK	**Petropavlovsk-**	**16.63**	**34**	P			**Pn**	**16 10 31.2**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=229,slow=34,SNR=3.7								
PETK					LR		LR	16 17 50.2	
	comp=Z,23nm,18.3s,baz=221,slow=40								
JOW	**Kunigami**	**17.72**	**226**	*e*Pn			**P**	**16 10 45.6**	**-0.2**
	comp=Z,1.2nm,0.8s								
BJI	**Beijing**	**20.01**	**278**	P			**P**	**16 11 08.7**	**-2.1**
BJI					S		**S**	**16 14 47.3**	**-5.7**
BJI					pmax		pmax		
	comp=Z,13nm,0.8s								
BJI					LR		LR		
	comp=Z,140nm,13.5s								
BJI					LR		LR		
	comp=Z,130nm,24.8s								
NJ2	**Nanjing**	**20.61**	**254**	*e*P			**P**	**16 11 17.8**	**+0.4**
NJ2					pmax		pmax		
	comp=Z,29nm,0.7s								
NJ2					LR		LR		
	comp=Z,160nm,13.6s								
CIT	**Chita**	**23.05**	**311**	*e*P			**P**	**16 11 43.8**	**+0.5**
CIT				*e*				16 12 02.2	
CIT				*e*				16 12 21.3	
CIT					pmax		pmax		
	comp=Z,53nm,1.2s								
YAK	**Yakutsk**	**23.19**	**345**	P			**P**	**16 11 42.4**	**-2.1**
	comp=Z,30nm,0.6s,baz=356,slow=2.6,SNR=16								
YAK	**Yakutsk**	**23.19**	**345**	*ce*P			**P**	**16 11 41.7**	**-2.8**
YAK					*e**PP		**pP**	**16 11 52.3**	**-3.9**
YAK					*e*PPP		PPP	16 12 28.3	
YAK					*e*S		**S**	**16 15 48.1**	**-4.3**
YAK					*e*SSS		SSS	16 16 42.0	
YAK					pmax		pmax		
	comp=N,3.0nm,0.8s								
YAK					pmax		pmax		
	comp=E,3.0nm,0.9s								
YAK					pmax		pmax		
	comp=Z,11nm,0.8s								
YAK					pmax		pmax		
	comp=Z,4.0nm,0.3s								
YAK					pmax		pmax		
	comp=N,7.0nm,0.6s								
YAK					pmax		pmax		
	comp=E,4.0nm,0.4s								
YAK					smax		smax		
	comp=N,73nm,2.0s								
YAK					smax		smax		
	comp=E,73nm,2.1s								
YAK	**Yakutsk**	**23.19**	**345**	*e*P			**P**	**16 11 41.8**	**-2.8**
	comp=E,35nm,0.7s								
HHC	**Hu-ho-hao-te**	**23.36**	**282**	*e*P			**P**	**16 11 46.3**	**-0.3**
HHC					PP		**PnPn**	**16 12 19.3**	**+5.1**
HHC					S		**S**	**16 15 49.4**	**-6.5**
HHC					sS		Sn	16 16 17.2	-0.4
HHC					pmax		pmax		
	comp=E,20nm,0.8s								
HHC					pmax		pmax		
	comp=E,63nm,4.1s								
HHC					LR		LR		
	comp=E,54nm,8.8s								
HHC					LR		LR		
	comp=E,200nm,15.1s								
HHC					LR		LR		
	comp=E,200nm,14.9s								
SEY	**Seymchan**	**23.56**	**11**	P			**P**	**16 11 47.9**	**-0.2**
	comp=E,6.4nm,0.7s,baz=200,slow=10,SNR=13								
NACB	**Ninganchiao**	**23.65**	**234**	*e*P			**P**	**16 11 45.5**	**-3.8**
	comp=E,14nm,0.9s								
SSLB	**Suanglung**	**24.33**	**234**	*e*P			**P**	**16 11 54.2**	**-1.3**
	comp=E,8.5nm,0.9s								
YULB	**Yu-li**	**24.41**	**233**	*e*P			**P**	**16 11 56.5**	**+0.2**
	comp=E,6.5nm,0.9s								
WHN	**Wuhan**	**24.70**	**256**	P			**P**	**16 11 57.6**	**-1.2**
WHN					S		**S**	**16 16 13.0**	**-4.2**
WHN					LR		LR		
	comp=E,300nm,11.3s								
WHN					LR		LR		
	comp=E,400nm,15.8s								
WHN					LR		LR		
	comp=E,470nm,17.7s								
TPUB	**Ta-pu**	**24.89**	**234**	*e*P			**P**	**16 12 00.0**	**-0.6**
	comp=E,9.6nm,0.7s								
TWG	**Pinlang**	**24.98**	**232**	*e*P			**P**	**16 12 01.7**	**+0.3**
	comp=E,78nm,0.4s								
GUMO	**Guam**	**26.59**	**175**	LR			LR	16 21 40.4	
	comp=E,55nm,21.8s,baz=8.0,slow=34								
SONA1	**Songino Array**	**26.78**	**299**	*e*P			**P**	**16 12 16.4**	**-1.2**
SONM	**Songino Array**	**26.78**	**299**	P			**P**	**16 12 17.9**	**+0.2**
	comp=E,4.0nm,0.6s,baz=100,slow=8.5,SNR=27								
SONM					LR		LR	16 23 28.3	
	comp=E,214nm,18.5s,baz=89,slow=38								
XAN	**Xi'an**	**27.25**	**268**	P			**P**	**16 12 20.6**	**-1.3**
XAN					pmax		pmax		
	comp=E,4.0nm,0.6s								
XAN					pmax		pmax		
	comp=E,37nm,4.4s								
TLY	**Talaya**	**28.94**	**306**	*e*P			**P**	**16 12 37.0**	**+0.2**
TLY					pmax		pmax		
	comp=Z,3.0nm,0.8s								
TLY					MLR		MLR		
	comp=Z,101nm,15.0s								
ZAK	**Zakamensk**	**29.02**	**304**	*e*P			**P**	**16 12 36.0**	**-1.5**
ZAK					pmax		pmax		
	comp=Z,6.0nm,1.3s								
H11N2	**WAKE ISLAND Hy**	**29.29**	**127**	T			T	16 43 23.3	
	baz=318,slow=75,SNR=899								
H11N1	**WAKE ISLAND Hy**	**29.30**	**127**	T			T	16 43 23.8	
	baz=318,slow=75,SNR=971								
H11N3	**WAKE ISLAND Hy**	**29.30**	**127**	T			T	16 43 24.7	
	baz=318,slow=75,SNR=631								
H11S1	**WAKE ISLAND Hy**	**30.10**	**129**	T			T	16 44 34.1	
	baz=321,slow=76,SNR=163								
H11S3	**WAKE ISLAND Hy**	**30.10**	**129**	T			T	16 44 45.6	
	baz=321,slow=76,SNR=123								
H11S2	**WAKE ISLAND Hy**	**30.12**	**129**	T			T	16 44 33.7	
	baz=321,slow=76,SNR=110								
LZH	**Lanzhou**	**30.41**	**275**	*e*P			**P**	**16 12 49.9**	**-0.2**
LZH					pP		sP	16 13 04.8	-3.7
LZH					sP		pP	16 13 13.1	+10
LZH					pmax		pmax		
	comp=Z,13nm,1.0s								
BILL	**Bilibino**	**30.80**	**17**	*e*P			P	16 12 58.0	+5.0
BILL					*e*			16 13 59.8	
BILL					pmax		pmax		
	comp=Z,18nm,2.5s								
BILL					MLR		MLR		
	comp=Z,137nm,21.0s								
GTA	**Gaotai**	**32.47**	**283**	*e*P			**P**	**16 13 08.1**	**0.0**
GTA					pmax		pmax		
	comp=Z,6.0nm,1.1s								
CD2	**Chengdu**	**32.53**	**266**	*e*P			**P**	**16 13 07.8**	**-0.8**
CD2					pP		sP	16 13 23.4	-3.7
CD2					sP		pP	16 13 31.1	+10
CD2					S		**S**	**16 18 18.2**	**-2.3**
CD2					sS		sS	16 18 45.4	+3.5
CD2					pmax		pmax		
	comp=Z,10.0nm,0.5s								
CD2					pmax		pmax		
	comp=Z,120nm,5.2s								
GYA	**Guiyang**	**32.59**	**256**	*e*P			**P**	**16 13 09.8**	**+0.5**
GYA					pmax		pmax		
	comp=Z,10.0nm,0.8s								
QIZ	**Qiongzhong**	**34.97**	**243**	P			**P**	**16 13 29.7**	**-0.2**
QIZ					S		**S**	**16 18 57.5**	**-0.8**
QIZ					sS		**sS**	**16 19 25.0**	**+5.2**
QIZ					pmax		pmax		
	comp=Z,6.0nm,1.5s								
QIZ					LR		LR		
	comp=Z,98nm,16.9s								
KMI	**Kunming**	**36.26**	**258**	P			**P**	**16 13 41.2**	**0.0**
KMI					pmax		pmax		
	comp=Z,18nm,0.7s								
KMI					pmax		pmax		
	comp=Z,51nm,4.7s								
WMQ	**Urumqi**	**40.16**	**294**	*e*P			**P**	**16 14 16.2**	**+2.6**
WMQ					pP		sP	16 14 31.6	-0.7
WMQ					S		**S**	**16 20 21.4**	**+4.5**
WMQ					SS		**SS**	**16 23 09.2**	**-6.6**
WMQ					pmax		pmax		
	comp=Z,12nm,0.8s								
WMQ					pmax		pmax		
	comp=Z,140nm,4.9s								
WMQ					LR		LR		
	comp=Z,180nm,21.0s								
WMQ					LR		LR		
	comp=Z,220nm,26.4s								
WMQ					LR		LR		
	comp=Z,240nm,28.0s								
NONG	**Nongkai**	**40.29**	**248**	P			**P**	**16 14 15.6**	**+0.8**
	comp=Z,37nm,0.8s,comp=Z,6μm								
ZAA0	**Zalesovo Array**	**40.41**	**310**	*e*P			**P**	**16 14 14.7**	**-0.7**
ZALV	**Zalesovo Beam**	**40.41**	**310**	P			**P**	**16 14 15.3**	**-0.1**
	comp=Z,6.1nm,0.7s,baz=91,slow=7.9,SNR=18								
ZALV					PcP		**PcP**	**16 16 18.2**	**+0.6**
	comp=Z,2.3nm,0.5s,baz=99,slow=4.1,SNR=4.7								
ZALV					LR		LR	16 31 50.8	
	comp=Z,136nm,18.9s,baz=70,slow=37								
UBPT	**Khong Chiam**	**40.56**	**243**	P			**P**	**16 14 18.3**	**+1.2**
	comp=Z,15nm,1.0s								
NRIK	**Noril'sk**	**40.75**	**334**	P			**P**	**16 14 18.7**	**+0.7**
	comp=Z,2.7nm,0.5s,baz=113,slow=5.9,SNR=4.5								
NRIK					LR		LR	16 32 05.5	
	comp=Z,179nm,19.6s,baz=98,slow=37								
NVS	**Novosibirsk**	**41.26**	**311**	*e*P			**P**	**16 14 19.7**	**-2.7**
NVS					pmax		pmax		
	comp=Z,7.0nm,1.0s								
NVS					pmax		pmax		
	comp=E,7.0nm,1.4s								
LOEI	**Loei**	**42.00**	**250**	P			**P**	**16 14 26.9**	**-2.0**
	comp=E,7.1nm,1.1s,comp=E,4μm								
UTTA	**Uttaradit**	**42.36**	**251**	P			**P**	**16 14 32.8**	**+1.0**
	comp=E,3.6nm,1.0s								
CHAI	**Chaiyaphum**	**42.56**	**247**	P			**P**	**16 14 33.7**	**+0.3**
	comp=E,5.3nm,0.9s								
LSA	**Lhasa**	**42.74**	**272**	P			**P**	**16 14 36.5**	**+1.1**
LSA					pmax		pmax		
	comp=Z,4.0nm,0.6s								
LSA	**Lhasa**	**42.74**	**272**	P			**P**	**16 14 36.5**	**+1.1**
	comp=Z,4.1nm,0.6s								
PBKT	**Sadao Pong**	**42.83**	**249**	P			**P**	**16 14 36.8**	**+1.2**
	comp=Z,8.2nm,1.3s								
CMMT	**Chiang Mai**	**42.84**	**253**	P			**P**	**16 14 36.6**	**+0.8**
	comp=Z,7.2nm,1.0s								
CHTO	**Chiang Mai**	**42.85**	**253**	P			**P**	**16 14 36.7**	**+0.9**
	comp=Z,32nm,1.0s								
CHTO	**Chiang Mai**	**42.85**	**253**	*e*P			**P**	**16 14 35.9**	**+0.1**
CHTO					pmax		pmax		
	comp=Z,9.0nm,1.1s								
CHTO	**Chiang Mai**	**42.85**	**253**	*e*P			**P**	**16 14 35.9**	**+0.1**
	comp=Z,9.4nm,1.1s								
CMAR	**Chiang Mai Arr**	**43.07**	**253**	P			**P**	**16 14 38.2**	**+0.6**
	comp=Z,1.7nm,0.8s,baz=51,slow=5.9,SNR=12								
CMAR					LR		LR	16 33 11.9	
	comp=Z,17nm,18.9s,baz=60,slow=37								
CM01	**Chiang Mai Arr**	**43.09**	**253**	*e*P			**P**	**16 14 35.9**	**-1.8**
MK01	**Makanchi Array**	**43.14**	**299**	*e*P			**P**	**16 14 37.6**	**-0.3**
MK31	**Makanchi Array**	**43.14**	**299**	*i*P			**P**	**16 14 37.9**	**0.0**
MK31					pmax		pmax		
	comp=Z,9.0nm,0.7s								
MK31	**Makanchi Array**	**43.14**	**299**	*e*P			**P**	**16 14 37.7**	**-0.2**
MKAR	**Makanchi Array**	**43.14**	**299**	P			**P**	**16 14 38.2**	**+0.3**
	comp=Z,3.4nm,0.5s,baz=85,slow=9.7,SNR=29								
MKAR					LR		LR	16 33 26.3	
	comp=Z,108nm,19.8s,baz=56,slow=37								
SUKH	**Sukhothai**	**43.20**	**251**	P			**P**	**16 14 40.5**	**+1.9**
	comp=Z,3.0nm,1.0s								
MAKZ	**Makanchi**	**43.35**	**300**	*i*P			**P**	**16 14 39.3**	**-0.3**
MAKZ					pmax		pmax		
	comp=Z,6.0nm,0.7s								
MAKZ	**Makanchi**	**43.35**	**300**	*e*P			**P**	**16 14 39.3**	**-0.3**
	comp=Z,6.2nm,0.8s								
COLD	**Coldfoot**	**45.05**	**31**	*e*P			**P**	**16 14 54.3**	**+1.4**
	comp=Z,12nm,1.3s								
PMR	**Palmer**	**45.68**	**38**	*e*P			**P**	**16 14 57.6**	**-0.3**
PMR					pmax		pmax		
	comp=Z,5.0nm,0.8s								
PMR	**Palmer**	**45.68**	**38**	*e*P			**P**	**16 14 57.6**	**-0.3**
	comp=Z,5.3nm,0.8s								
PDGK	**Podgornoye**	**46.02**	**296**	P			**P**	**16 15 00.2**	**-0.6**
PDGK					pmax		pmax		
	comp=Z,9.0nm,0.6s								
COLA	**College**	**46.04**	**34**	*e*P			**P**	**16 15 01.6**	**+0.9**
COLA					pmax		pmax		
	comp=Z,7.0nm,0.8s								
COLA	**College**	**46.04**	**34**	*e*P			**P**	**16 15 01.6**	**+0.9**
	comp=Z,6.5nm,0.8s

KSH ePP PP 16 17 31.1 +5.5
KSH PcS PcS 16 20 49.6 +1.9
KSH S S 16 22 36.7 -0.4
KSH ScS ScS 16 25 15.6 -2.4
KSH pmax pmax
comp=Z,69nm,6.0s
KSH LR LR
comp=Z,85nm,6.7s
KSH LR LR
comp=Z,100nm,5.0s
KSH LR LR
comp=Z,90nm,7.4s
ZRNK Zerenda 49.87 311 eP P 16 15 30.0 -0.5
ZRNK pmax pmax
comp=Z,11nm,0.8s
ZRNK Zerenda 49.87 311 eP P 16 15 30.0 -0.5
comp=Z,11nm,0.8s
KULM Kulim 51.07 238 eP P 16 15 40.5 +0.6
comp=Z,9.5nm,0.8s
MNAS Manas 51.12 297 P P 16 15 40.1 -0.1
MNAS pmax pmax
comp=Z,8.0nm,0.7s
INK Inuvik 51.26 28 P P 16 15 41.5 +0.9
comp=Z,3.1nm,0.7s,baz=282,slow=6.2,SNR=11
INK LR LR 16 39 55.5
comp=Z,46nm,18.9s,baz=293,slow=39
INK Inuvik 51.26 28 eP P 16 15 41.7 +1.1
INK pmax pmax
comp=Z,6.0nm,0.8s
INK Inuvik 51.26 28 eP P 16 15 41.7 +1.1
comp=Z,6.4nm,0.8s
KK31 Karatay Array 52.23 298 *i* P P 16 15 47.5 -0.9
KK31 pmax pmax
comp=Z,4.0nm,0.8s
KKAR Karatay Array 52.23 298 eP P 16 15 46.9 -1.5
KKAR Karatay Array 52.23 298 eP P 16 15 46.9 -1.5
SVE Sverdlovsk 53.31 317|| eP P 16 15 56.9 +0.9
SVE pmax pmax
comp=Z,25nm,0.8s
SOKR Solikamsk 54.30 321 eP P 16 16 01.2 -2.0
SOKR pmax pmax
comp=Z,17nm,1.1s
ARU Arti 54.52 317 *c i* P P 16 16 05.3 +0.4
ARU 16 17 09.1
ARU 16 18 04.0
ARU S S 16 23 39.3 -1.0
ARU SS SKiKP 16 27 16.6 +7.0
ARU pmax pmax
comp=Z,24nm,1.0s
ARU MLR MLR
comp=Z,152nm,16.0s
ARU Arti 54.52 317 eP P 16 16 05.0 +0.1
comp=Z,19nm,0.8s
DLBC Dease Lake 55.71 40 LR LR 16 41 28.2
comp=Z,35nm,19.1s,baz=306,slow=37
AB31 Akbulak array 56.51 309 *i* P P 16 16 19.2 -0.1
AB31 pmax pmax
comp=Z,4.0nm,0.5s
ABKAR Akbulak array 56.51 309 eP P 16 16 19.0 -0.3
KBL Kabul 57.02 290 eP P 16 16 22.7 -0.7
KBL pmax pmax
comp=Z,19nm,0.9s
KBL Kabul 57.02 290 eP P 16 16 22.7 -0.7
comp=Z,19nm,0.9s
AKTO Aktyubinsk 57.15 311 P P 16 16 24.1 +0.2
comp=Z,8.5nm,0.8s,baz=71,slow=13,SNR=21
AKTO LR LR 16 42 15.9
comp=Z,82nm,18.3s,baz=62,slow=37
FITZ Fitzroy Crossi 60.04 198 P P 16 16 44.5 +0.4
comp=Z,4.5nm,0.8s
WRAB Tennant Creek 60.27 189 P P 16 16 44.9 -0.8
WRAB pmax pmax
comp=Z,11nm,0.9s
WRA Warramunga Arr 60.28 189 P P 16 16 45.1 -0.7
comp=Z,5.2nm,0.8s,baz=6.2,slow=6.9,SNR=43
YKA Yellowknife Ar 60.73 31 P P 16 16 47.7 -0.6
comp=Z,1.1nm,0.9s,baz=302,slow=6.8,SNR=4.9
ARCES ARCESS Array B 61.32 339 P P 16 16 52.7 +0.4
comp=Z,1.4nm,0.6s,baz=49,slow=8.2,SNR=12
ARCES LR LR 16 46 31.5
comp=Z,35nm,20.8s,baz=68,slow=39
KLMR Klimovskoe 61.50 327 eP P 16 16 52.9 -0.8
KLMR *e* 16 19 06.5
KLMR pmax pmax
comp=Z,5.0nm,0.6s
MSF Maaselka 62.51 335 P P 16 17 00.2 -0.2
MSF pmax pmax
comp=Z,9.0nm,1.0s
DAG Danmarks Havn 62.70 355 *i* P P 16 17 01.3 -0.2
comp=Z,4.8nm,0.8s
DAG *e* 16 17 17.1
DAG Danmarks Havn 62.70 355 *i* P P 16 17 01.3 -0.2
DAG *e* 16 17 17.1
DAG pmax pmax
comp=Z,4.0nm,0.8s
GEYT Alibeck 62.99 298 P P 16 17 04.2 +0.1
comp=Z,8.7nm,0.8s,baz=42,slow=4.6,SNR=17
JOF Joensuu 63.54 332 P P 16 17 06.7 -0.5
JOF pmax pmax
comp=Z,10.0nm,1.9s
ASAR Alice Springs 64.01 189 P P 16 17 10.6 -0.1
comp=Z,3.2nm,0.8s,baz=6.4,slow=5.1,SNR=38
OBN Obninsk 66.03 323|| eP P 16 17 24.0 +0.5
OBN *e* 16 17 56.9
OBN *e* 16 19 49.3
OBN eS S 16 26 38.5 +31
OBN pmax pmax
comp=Z,9.0nm,0.8s
OBN MLR MLR
comp=Z,77nm,15.0s
FINES FINESS Array B 66.38 332 P P 16 17 25.9 +0.2
comp=Z,5.5nm,0.7s,baz=44,slow=8.5,SNR=16
FINES LR LR 16 48 42.6
comp=Z,78nm,18.7s,baz=17,slow=38
SUMG Summit 67.54 0 *i* P P 16 17 33.9 +0.5
comp=Z,4.0nm,0.6s
SUMG *i* 16 17 50.1
SUMG Summit 67.54 0 *i* P P 16 17 33.9 +0.5
SUMG *i* 16 17 50.1
SUMG pmax pmax
comp=Z,4.0nm,0.6s
GOF Gofitskoye 68.56 311⇑ eP P 16 17 40.7 +0.9
GOF pmax pmax
comp=Z,18nm,0.6s
KIV Kislovodsk 69.42 310 eP P 16 17 46.4 +1.2
KIV pmax pmax
comp=Z,33nm,1.1s
KIV MLR MLR
comp=Z,72nm,17.0s
KIV Kislovodsk 69.42 310 eP P 16 17 45.6 +0.4
comp=Z,28nm,1.0s
KBZ Khabaz 69.42 310 P P 16 17 45.9 +0.8
comp=Z,9.0nm,0.8s,baz=45,slow=3.7,SNR=19
KBZ LR LR 16 50 43.3
comp=Z,48nm,18.9s,baz=102,slow=38
WVOR Wild Horse Val 69.92 51 P P 16 17 47.7 -0.7
WVOR pmax pmax
comp=Z,4.0nm,1.0s
WVOR Wild Horse Val 69.92 51 P P 16 17 47.7 -0.7
comp=Z,4.0nm,1.0s
NC204 NORSAR Array S 71.52 338 eP P 16 17 58.1 +0.4
NB2 NORSAR Subarra 71.57 337 P P 16 17 58.0 0.0
comp=Z,7.3nm,0.9s,baz=38,slow=6.2
NOA NORSAR Array B 71.57 337 P P 16 17 58.0 0.0
comp=Z,5.2nm,0.9s,baz=39,slow=6.0,SNR=16
NOA LR LR 16 52 08.0
comp=Z,42nm,21.8s,baz=35,slow=38
DLMT Dillon 71.60 46 eP P 16 18 00.2 +1.6
comp=Z,7.7nm,0.8s
NBO02 NORSAR Array S 71.67 337 eP P 16 17 58.6 0.0
BOZ Bozeman (W) 71.95 45 eP P 16 18 02.2 +1.5
BOZ pmax pmax
comp=Z,1.0nm,0.6s
BOZ Bozeman (W) 71.95 45 eP P 16 18 02.2 +1.5
comp=Z,1.2nm,0.6s
AKASG Malin Array Be 72.27 322 P P 16 18 02.4 +0.2
comp=Z,8.3nm,0.8s,baz=43,slow=6.5,SNR=22
KIEV Kiev 72.28 322 *d i* P P 16 18 02.7 +0.4
KIEV pmax pmax
comp=Z,13nm,1.1s
KIEV Kiev 72.28 322 eP P 16 18 01.6 -0.7
comp=Z,8.9nm,0.8s
PDAR Pinedale Array 74.95 46 P P 16 18 19.1 +0.6
comp=Z,0.6nm,0.7s,baz=336,slow=3.3,SNR=3.7
PDAR LR LR 16 50 54.2
comp=Z,14nm,20.0s,baz=276,slow=35

KWP Kalwaria Pacla 76.00 324 eP P 16 18 25.8 +1.7
KWP Kalwaria Pacla 76.00 324 eP P 16 18 25.8 +1.7
BUR08 Bucovina Ar. S 76.29 322 eP P 16 18 26.6 +0.7
BURAR Bucovina Array 76.30 322|| iP P 16 18 26.9 +0.9
TESR Tescani 76.39 320|| iP P 16 18 27.1 +0.7
CFR Carcaliu 76.58 318⇑ iP P 16 18 26.7 -0.7
CFR Carcaliu 76.58 318 P P 16 18 29.1 +1.7
CFR pmax pmax
comp=Z,7.0nm,1.0s
KOLS Kolonicke sedl 76.71 324 eP P 16 18 29.5 +1.4
KOLS pmax pmax
comp=Z,3.0nm,0.8s
KOLS Kolonicke sedl 76.71 324 eP P 16 18 29.5 +1.4
VRI Vrincioaia 76.81 320⇑ iP P 16 18 30.9 +2.2
OJC Ojcow 76.84 326 eP P 16 18 30.1 +1.3
OJC Ojcow 76.84 326 eP P 16 18 30.1 +1.3
CRVS Cervenica-Dubn 77.09 324 eP P 16 18 31.1 +0.8
CRVS Cervenica-Dubn 77.09 324 eP P 16 18 31.1 +0.8
NIE Niedzica 77.22 325 eP P 16 18 32.8 +1.8
NIE Niedzica 77.22 325 eP P 16 18 32.8 +1.8
BRTR Keskin Array B 77.32 312 P P 16 18 32.1 +0.2
comp=Z,2.0nm,0.9s,baz=43,slow=2.5,SNR=9.6
BRTR LR LR 16 57 51.7
comp=Z,24nm,18.8s,baz=88,slow=40
BR231 Keskin MP Arra 77.73 312 eP P 16 18 32.9 -1.2
VOIR 77.94 320⇑ iP P 16 18 36.6 +1.4
VOIR 77.94 320 P P 16 18 36.1 +0.9
VOIR pmax pmax
comp=Z,4.0nm,0.9s
MORC Moravsky Berou 78.12 327⇑ iP P 16 18 37.0 +0.9
MORC Moravsky Berou 78.12 327 eP P 16 18 36.6 +0.5
MORC pmax pmax
comp=Z,21nm,0.9s
MORC Moravsky Berou 78.12 327 eP P 16 18 36.6 +0.5
comp=Z,21nm,0.9s
DPC Dobruska-Polom 78.18 328 eP P 16 18 37.6 +1.2
DPC epP sP 16 18 52.7 -3.2
DPC Dobruska-Polom 78.18 328 eP P 16 18 37.6 +1.2
DPC *e* 16 18 52.7
ARR Arges 78.19 320|| iP P 16 18 38.9 +2.3
VYHS Vyhne 78.55 326 eP P 16 18 39.4 +1.0
VYHS pmax pmax
comp=Z,2.0nm,0.9s
VYHS Vyhne 78.55 326 eP P 16 18 39.4 +1.0
CLL Collm 78.73 330 eP P 16 18 40.0 +0.7
CLL Collm 78.73 330 eP P 16 18 40.0 +0.7
GZR Gura Zlata 79.07 321|| iP P 16 18 42.5 +1.1
PRU Pruhonice 79.18 329 eP P 16 18 42.3 +0.5
PRU Pruhonice 79.18 329 eP P 16 18 42.3 +0.5
KHC Kasperske Hory 80.24 329 eP P 16 18 48.4 +0.8
KHC epP pP 16 19 02.1 +0.4
KHC Kasperske Hory 80.24 329 eP P 16 18 47.9 +0.2
KHC pmax pmax
comp=Z,2.0nm,0.8s
KHC Kasperske Hory 80.24 329 eP P 16 18 47.9 +0.2
comp=Z,1.6nm,0.8s
GERES GERESS Array B 80.42 328 P P 16 18 48.0 -0.6
comp=Z,1.0nm,0.7s,baz=42,slow=6.1,SNR=9.5
GERES LR LR 16 57 14.2
comp=Z,59nm,19.3s,baz=34,slow=38
GEA0 GERESS Array S 80.43 328 eP P 16 18 48.7 0.0
VTS Vitosha 80.92 319|| iP P 16 18 52.8 +1.3
VTS Vitosha 80.92 319 eP P 16 18 51.5 0.0
VTS pmax pmax
comp=Z,8.0nm,0.8s
VTS Vitosha 80.92 319 eP P 16 18 51.5 0.0
comp=Z,7.7nm,0.8s
ANMO Albuquerque 82.01 51 eP P 16 19 06.3 +8.8
ANMO pmax pmax
comp=Z,6.0nm,1.4s
SCHQ Schefferville 82.11 17 LR LR 16 56 54.5
comp=Z,31nm,21.8s,baz=354,slow=37
BFO Black Forest 82.92 331 *i* P P 16 19 03.3 +1.6
PDG Podgorica 82.98 321⇑ iP P 16 19 02.6 +0.5
FUORN Ofenpass-Fuorn 83.59 329 eP P 16 19 05.9 +0.3
comp=Z,10.0nm,1.1s
PPT Papeete 85.40 117 LR LR 16 50 05.2
comp=Z,77nm,20.0s,baz=69,slow=30
TXAR Lajitas Array 87.62 53 P P 16 19 26.7 +1.0
comp=Z,0.4nm,0.6s,baz=317,slow=4.1,SNR=6.4
ESDC Sonseca Array 94.78 335 LR LR 17 07 54.5
comp=Z,47nm,18.7s,baz=95,slow=39
TORD Torodi Ar. Bea 115.59 317 PKP **PKPdf 16 25 17.7 -1.8**
comp=Z,0.3nm,0.6s,baz=331,slow=0.5,SNR=3.6
SNAA Sanae 143.97 198 PKP PKPab 16 26 08.8 +0.2
SNAA Sanae 143.97 198 ePKIKP PKPab 16 26 08.6 0.0
SNAA Sanae 143.97 198 ePKPdf PKPab 16 26 08.6 0.0

IDC 04 16:18:26.7±5.8, 2.66N×123.20E, h450km±70km, mb2.8/5, mb1 3.0/5, mb1mx2.6/36, mbtmp3.6/5, Error ellipse: s-maj=103.6km s-min=20.2km az=62.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**20.77**	**173**	P	P	16 22 35.0	-0.2
	0.7nm,0.5s,baz=19,slow=10,SNR=4.8						
WRA	**Warramunga Arr**	**24.99**	**155**	P	P	16 23 12.8	-0.4
	0.6nm,0.4s,baz=336,slow=9.8,SNR=18						
ASAR	**Alice Springs**	**28.17**	**159**	P	P	16 23 41.2	-0.1
	0.2nm,0.3s,baz=333,slow=7.6,SNR=11						
ASAR				PcP	PcP	16 26 40.9	-0.7
	0.3nm,0.9s,baz=347,slow=2.3,SNR=3.1						
STKA	**Stephens Creek**	**38.54**	**154**	P	P	16 25 10.2	+0.9
	6.7nm,1.1s,baz=323,slow=8.1,SNR=5.1						
MKAR	**Makanchi Array**	**56.48**	**327**	P	P	16 27 24.6	0.0
	0.2nm,0.4s,baz=134,slow=8.3,SNR=3.8						

*ISCJB **04** 16:29:41.8±0.5, 48.95N±0.06×155.82E±0.10, h34km, mb3.6/9, MS3.2/5, Error ellipse: s-maj=11.7km s-min=3.7km az=40.4*
*MOS **04** 16:29:43.1±1.1, 49.02N×155.80E, h56km, mb4.1/5, Error ellipse: s-maj=16.4km s-min=4.6km az=74.0*
*SKHL **04** 16:29:43.4±0.7, 48.97N×156.00E, h56km±4km, mb4.4/6*
*IDC **04** 16:29:45.8±3.5, 49.08N×155.53E, h58km±32km, mb3.4/9, mb1 3.7/13, mb1mx3.5/54, mbtmp3.8/13, ML3.0/3, MS3.2/9, Ms1 3.2/9, ms1mx3.0/27, Error ellipse: s-maj=26.4km s-min=15.7km az=141.0*
*KRSC **04** 16:29:46.3±1.7, 49.33N×156.87E, h16km±30km, ML4.3*

ISC 04 16:29:42.8±0.8, 49.05N±0.07×155.95E±0.08, h34km, n81, σ2s63/83, mb3.8/9, MS3.3/5, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.64**	**4**||	iPN	Pn	16 30 10.1	+0.9
SKR				*i* S	Sb	16 30 29.6	-3.2
SKR				pmax	pmax		
	comp=Z,357nm,0.6s						
SKR				smax	smax		
	comp=N,2μm,0.7s						
SKR				smax	smax		
	comp=E,1μm,0.6s						
SKR	**Severo-Kuril's**	**1.64**	**4**	*eP*	Pn	16 30 10.1	+0.9
SKR				eS	Sb	16 30 30.0	-2.8
SKR	**Severo-Kuril's**	**1.64**	**4**	*i* P	Pn	16 30 10.1	+0.9
SKR				AMB	AMB	16 30 12.3	
	comp=E,360nm,0.6s						
SKR				*i* S	Sb	16 30 29.6	-3.2
SKR				A	A	16 30 33.7	
	comp=E,2μm,0.7s						
SKR				A	A	16 30 33.7	
	comp=E,1μm,0.7s						
PAU	**Pauzhetka**	**2.49**	**13**	PN	Pn	16 30 22.5	+1.7
PAU				S	Sn	16 30 50.2	+0.3
PAU	**Pauzhetka**	**2.49**	**13**	*eP*	Pn	16 30 22.5	+1.7
PAU				eS	Sn	16 30 50.2	+0.3
PAU	**Pauzhetka**	**2.49**	**13**	*eP*	Pn	16 30 21.9	+1.1
PAU				eS	Sn	16 30 51.3	+1.4
PAU				A	A	16 30 53.6	
	comp=E,400nm,0.4s						
ASAK	**Asacha**	**3.56**	**20**	PN	Pn	16 30 38.4	+2.7
ASAK	**Asacha**	**3.56**	**20**	*eP*	Pn	16 30 38.4	+2.7
RUS	**Russkaya**	**3.76**	**25**	PN	Pn	16 30 40.4	+2.1
RUS	**Russkaya**	**3.76**	**25**	*eP*	Pn	16 30 40.4	+2.1
RUS				eS	Sn	16 31 18.8	-2.5
RUS	**Russkaya**	**3.76**	**25**	*eP*	Pn	16 30 40.4	+2.1
KRMR	**Karymshinskiy**	**4.03**	**19**	PN	Pn	16 30 45.5	+3.5
KRMR	**Karymshinskiy**	**4.03**	**19**	*eP*	Pn	16 30 45.5	+3.5
KRMR				eS	Sn	16 31 26.6	-1.4
PETK	**Petropavlovsk-**	**4.21**	**14**	P	Pn	16 30 48.4	+3.9
	comp=E,2.1nm,0.3s,baz=176,slow=10,SNR=46						
PETK				S	Sb	16 31 46.8	+0.3
	comp=E,1.1nm,0.3s,baz=120,slow=20,SNR=2.5						
PETK				LR	LR	16 32 45.1	
	comp=E,154nm,18.2s,baz=159,slow=42						
PET	**Petropavlovsk**	**4.33**	**22**	*eP*	Pn	16 30 49.4	+3.3
PET				eS	Sn	16 31 39.0	+3.6
PET	**Petropavlovsk**	**4.33**	**22**	*eP*	Pn	16 30 49.5	+3.3
PET				AMB	AMB	16 30 51.6	
	comp=E,20nm,0.5s						
PET				eS	Sn	16 31 39.0	+3.6
PET				A	A	16 31 50.5	
	comp=E,120nm,0.5s						
PET				A	A	16 31 50.5	
	comp=E,110nm,0.5s						
DALK	**Dalny**	**4.37**	**23**	PN	Pn	16 30 49.2	+2.6
DALK	**Dalny**	**4.37**	**23**	*eP*	Pn	16 30 49.2	+2.6
DALK				eS	Sn	16 31 35.9	-0.3
UGLR	**Uglovaya**	**4.54**	**22**	PN	Pn	16 30 51.7	+2.5
UGLR	**Uglovaya**	**4.54**	**22**	*eP*	Pn	16 30 51.7	+2.5
AVH	**Avacha**	**4.57**	**21**	PN	Pn	16 30 53.4	+3.9
AVH	**Avacha**	**4.57**	**21**	*eP*	Pn	16 30 53.4	+3.9
KOK	**Koryaka**	**4.58**	**21**	PN	Pn	16 30 53.5	+3.9
KOK	**Koryaka**	**4.58**	**21**	*eP*	Pn	16 30 53.5	+3.9
SMAR	**Somma**	**4.59**	**22**	PN	Pn	16 30 53.9	+4.0
SMAR	**Somma**	**4.59**	**22**	*eP*	Pn	16 30 53.9	+4.0
KRER	**Koryakskii**	**4.61**	**21**	PN	Pn	16 30 53.7	+3.5
KRER	**Koryakskii**	**4.61**	**21**	*eP*	Pn	16 30 53.7	+3.5
SDLR	**Sedlovina**	**4.62**	**22**	PN	Pn	16 30 52.5	+2.3
SDLR	**Sedlovina**	**4.62**	**22**	*eP*	Pn	16 30 52.5	+2.3
KRX	**Arik**	**4.64**	**20**	PN	Pn	16 30 53.4	+2.9
KRX	**Arik**	**4.64**	**20**	*eP*	Pn	16 30 53.4	+2.9
NLC	**Nalytchevo**	**4.65**	**26**	PN	Pn	16 30 52.6	+2.1
NLC	**Nalytchevo**	**4.65**	**26**	*eP*	Pn	16 30 52.6	+2.1
NLC				eS	Sn	16 31 40.4	-2.8
SPN	**Mys Shipunski**	**4.80**	**31**	PN	Pn	16 30 56.1	+3.5
SPN	**Mys Shipunski**	**4.80**	**31**	P	Pn	16 30 56.1	+3.5
SPN				S	Sn	16 31 45.8	-1.1
SPN	**Mys Shipunski**	**4.80**	**31**	*eP*	Pn	16 30 56.1	+3.5
GNL	**Ganaly**	**4.82**	**14**	PN	Pn	16 30 56.8	+3.8
GNL	**Ganaly**	**4.82**	**14**	*eP*	Pn	16 30 56.8	+3.8
MKZ	**Mys Kozlova**	**6.58**	**31**	PN	Pn	16 31 18.2	+1.3
MKZ	**Mys Kozlova**	**6.58**	**31**	*eP*	Pn	16 31 18.2	+1.3
MKZ				eS	Sn	16 32 28.2	-2.4
KUR	**Kuril'sk**	**6.70**	**238**	*eP*	Pn	16 31 20.6	+1.9
KUR				eS	Sn	16 32 34.1	+0.3
KUR				pmax	pmax		
	comp=N,7.0nm,0.4s						
KUR				pmax	pmax		
	comp=E,5.0nm,0.4s						
KUR				pmax	pmax		
	comp=Z,30nm,0.4s						
KUR				smax	smax		
	comp=N,29nm,0.6s						
KUR				smax	smax		
	comp=E,17nm,0.5s						
KUR	**Kuril'sk**	**6.70**	**238**	*eP*	Pn	16 31 19.9	+1.2
KUR				AMB	AMB	16 31 23.7	
	comp=E,20nm,0.8s						
KUR				eS	Sn	16 32 32.3	-1.5
KUR				A	A	16 32 45.5	
	comp=E,170nm,0.9s						
TUMR	**Tumrok**	**6.76**	**21**	PN	Pn	16 31 23.0	+3.5
TUMR	**Tumrok**	**6.76**	**21**	*eP*	Pn	16 31 23.0	+3.5
ESO	**Esso**	**7.09**	**13**	PN	Pn	16 31 29.0	+5.0
ESO	**Esso**	**7.09**	**13**	*eP*	Pn	16 31 29.0	+5.0
KMNR	**Kamenistaya**	**7.21**	**20**	PN	Pn	16 31 29.6	+3.8
KMNR	**Kamenistaya**	**7.21**	**20**	*eP*	Pn	16 31 29.6	+3.8
YUK	**Yuzh-Kuril'sk**	**8.57**	**238**	*eP*	Pn	16 31 44.8	+0.5
YUK				AMB	AMB	16 31 48.1	
	comp=E,50nm,0.6s						
BKI	**Bering**	**8.71**	**41**	PN	Pn	16 31 47.6	+1.4
BKI	**Bering**	**8.71**	**41**	*eP*	Pn	16 31 47.6	+1.4
BKI				eS	Sn	16 33 18.6	-4.5
TYV	**Tymovskoe**	**8.77**	**287**	*eP*	Pn	16 31 49.0	+2.0
TYV				*e*		16 33 28.0	
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
TYV				MLR	MLR		
	comp=E,1μm,14.0s						
TYV				MLR	MLR		
	comp=Z,500nm,18.0s						
TYV	**Tymovskoe**	**8.77**	**287**	*eP*	Pn	16 31 50.2	+3.2
TYV				AMB	AMB	16 31 52.3	
	comp=Z,10.0nm,0.9s						
EKMR	**Ekimchan**	**14.99**	**294**	*eP*	Pn	16 33 12.7	+0.8
EKMR				AMB	AMB	16 33 20.5	
	comp=Z,7.0nm,0.5s						
KLR	**Kul'dur**	**15.83**	**280**	P	Pn	16 33 23.0	+0.2
	comp=Z,0.1nm,0.3s,baz=78,slow=13,SNR=4.2						
KLR				LR	LR	16 39 52.4	
	comp=Z,125nm,18.5s,baz=75,slow=39						
KLR	**Kul'dur**	**15.83**	**280**	P	Pn	16 33 23.0	+0.2
KLR				MLR	MLR		
	comp=Z,125nm,18.5s						
KLR	**Kul'dur**	**15.83**	**280**	*eP*	Pn	16 33 23.0	+0.2
USRK	**Ussuriysk Ar.**	**17.13**	**263**	P	Pn	16 33 37.9	-1.5
	comp=Z,0.4nm,0.3s,baz=66,slow=14,SNR=9.4						
MJAR	**Matsushiro Arr**	**17.99**	**233**	P	Pn	16 33 48.0	-2.0
	baz=18,slow=13,SNR=2.6						
MJAR				LR	LR	16 41 28.5	
	comp=Z,50nm,18.4s,baz=60,slow=40						
YAK	**Yakutsk**	**19.56**	**321**	LR	LR	16 41 40.4	
	comp=Z,64nm,19.9s,baz=112,slow=37						
KSRS	**Korea Array**	**23.33**	**251**	P	P	16 34 46.1	-1.6
	comp=Z,3.0nm,0.7s,baz=51,slow=10,SNR=8.0						
TIXI	**Tiksi**	**25.86**	**341**	LR	LR	16 46 13.5	
	comp=Z,28nm,19.6s,baz=184,slow=38						
H11N2	**WAKE ISLAND Hy**	**30.54**	**159**	T	T	17 08 27.7	
	baz=344,slow=76,SNR=28						
H11N1	**WAKE ISLAND Hy**	**30.56**	**159**	T	T	17 08 31.2	
	baz=344,slow=76,SNR=30						
H11N3	**WAKE ISLAND Hy**	**30.56**	**159**	T	T	17 08 25.9	
	baz=344,slow=76,SNR=28						
H11S1	**WAKE ISLAND Hy**	**31.68**	**160**	T	T	17 09 38.0	
	baz=346,slow=76,SNR=447						
H11S3	**WAKE ISLAND Hy**	**31.69**	**160**	T	T	17 09 39.4	
	baz=346,slow=76,SNR=864						
H11S2	**WAKE ISLAND Hy**	**31.70**	**160**	T	T	17 09 39.3	
	baz=346,slow=76,SNR=617						
ILAR	**Eielson Array**	**33.56**	**41**	P	P	16 36 20.8	+1.7
	comp=Z,1.7nm,1.2s,baz=262,slow=5.6,SNR=6.0						
NRIK	**Noril'sk**	**37.81**	**327**	LR	LR	16 54 22.9	
	comp=Z,39nm,18.4s,baz=84,slow=39						
MKAR	**Makanchi Array**	**47.60**	**297**	P	P	16 38 14.4	-0.6
	comp=Z,0.6nm,0.6s,baz=57,slow=7.8,SNR=5.4						
BVAR	**Borovoye Array**	**50.88**	**309**	P	P	16 38 37.7	-2.3
	comp=Z,0.3nm,0.4s,baz=57,slow=9.1,SNR=3.0						
CMAR	**Chiang Mai Arr**	**54.76**	**257**	P	P	16 39 08.4	-0.6
	comp=Z,1.6nm,0.7s,baz=33,slow=6.9,SNR=11						
ARCES	**ARCESS Array B**	**56.30**	**341**	LR	LR	17 07 28.2	
	comp=Z,28nm,19.8s,baz=54,slow=40						
FINES	**FINESS Array B**	**62.76**	**335**	LR	LR	17 10 10.9	
	comp=Z,25nm,20.3s,baz=22,slow=39						
NOA	**NORSAR Array B**	**66.65**	**342**	LR	LR	17 13 46.6	
	comp=Z,19nm,19.4s,baz=15,slow=40						
WRA	**Warramunga Arr**	**71.33**	**201**	P	P	16 40 57.9	-0.9
	comp=Z,0.4nm,0.8s,baz=11,slow=6.5,SNR=3.3						
TXAR	**Lajitas Array**	**74.72**	**63**	P	P	16 41 21.3	+2.1
	comp=Z,0.6nm,0.6s,baz=304,slow=4.3,SNR=14						
ASAR	**Alice Springs**	**75.01**	**201**	P	P	16 41 21.2	+0.7
	comp=Z,0.3nm,0.8s,baz=17,slow=7.0,SNR=3.4						
GERES	**GERESS Array B**	**77.19**	**335**	P	P	16 41 31.6	-1.3
	comp=Z,0.1nm,0.3s,baz=38,slow=6.8,SNR=4.0						

*JMA **04** 16:34:02.9±0.1, 24.52N×122.41E, h76km±2km, M1.8*
*TAP **04** 16:34:04.0, 24.58N×122.43E, h59km±1km, ML3.0, D*
*ISCJB **04** 16:34:04.1±0.7, 24.54N±0.05×122.45E±0.02, h61km±8km, Error ellipse: s-maj=8.7km s-min=3.1km az=171.7*

ISC 04 16:34:04.4±1.5, 24.56N±0.07×122.45E±0.03, h61km±13km, n30, σ0s61/54, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.47**	**103**	P	Pn	16 34 16.3	+0.2
JYNG				eS	Sn	16 34 25.8	+1.2
TWC	**Suao**	**0.55**	**276**	*i* P	Pn	16 34 16.5	-0.4
	baz=273						
TWC				S	Sn	16 34 25.9	-0.1
	baz=273						
ENA	**Nanau**	**0.65**	**259**	P	Pn	16 34 18.1	0.0
	baz=256						
ENA				eS	Sn	16 34 28.8	+0.6
	baz=256						
TWE	**Neicheng**	**0.73**	**283**	*i* P	Pn	16 34 18.7	-0.3
	baz=281						

TWE				S		Sn	16 34 29.4	-0.3
	baz=281							
ENTT	**Nioudou**	**0.81**	**276**	P		**Pn**	16 34 19.9	-0.1
	baz=274							
ENTT				S		Sn	16 34 31.6	+0.1
	baz=274							
TWD	**Chiawan**	**0.91**	**239**	P		**Pn**	16 34 20.9	-0.4
	baz=236							
TWD				S		Sn	16 34 33.9	+0.2
	baz=236							
NNS	**Nan Shan**	**0.98**	**264**	P		**Pn**	16 34 21.9	-0.5
	baz=261							
NNS				*e*S		Sn	16 34 35.5	-0.2
	baz=261							
NSK	**Sanguang**	**1.00**	**277**	P		**Pn**	16 34 22.2	-0.3
	baz=275							
NSK				S		Sn	16 34 35.8	-0.1
	baz=275							
WHF	**Hehuan Shan**	**1.15**	**249**	P		**Pn**	16 34 24.5	-0.4
	baz=247							
WHF				S		Sn	16 34 39.4	-0.6
	baz=247							
ESL	**Shilin**	**1.18**	**232**	*e*S		Sn	16 34 39.1	-1.1
	baz=229							
IRIF	**Iriomote-Funau**	**1.19**	**100**	P		**Pn**	16 34 24.4	-0.6
IRIF				S		Sn	16 34 40.4	+0.1
TWT	**Tachien**	**1.20**	**256**	P		**Pn**	16 34 25.6	+0.3
	baz=254							
TWT				S		Sn	16 34 41.0	+0.2
	baz=254							
NSTT	**Nanjuang**	**1.32**	**274**	P		**Pn**	16 34 26.7	0.0
	baz=272							
NSTT				S		Sn	16 34 43.3	-0.1
	baz=272							
JKRS	**Kuro-shima**	**1.46**	**102**	P		**Pn**	16 34 28.3	-0.3
JKRS				S		Sn	16 34 47.5	+0.7
EHY	**Hungye**	**1.47**	**225**	*e*S		Sn	16 34 45.2	-1.7
	baz=223							
TWQ1	**Liyutan**	**1.54**	**263**	*e*P		**Pn**	16 34 29.9	+0.3
	baz=261							
TWQ1				*e*S		Sn	16 34 49.2	+0.5
	baz=261							
JIJ	**Ishigaki jima**	**1.56**	**97**	P		**Pn**	16 34 29.2	-0.7
JIJ				*e*S		Sn	16 34 49.0	-0.1
SMLT	**Sun Moon Lake**	**1.56**	**245**	P		**Pn**	16 34 31.1	+1.0
	baz=243							
SMLT				*e*S		Sn	16 34 49.0	-0.4
	baz=243							
TYC	**Yuchr**	**1.59**	**246**	P		**Pn**	16 34 30.7	+0.4
	baz=244							
TYC				*e*S		Sn	16 34 49.9	0.0
	baz=244							
TWF1	**Yuli**	**1.59**	**221**	*e*P		**Pn**	16 34 30.2	-0.2
	baz=220							
TWF1				*e*S		Sn	16 34 48.7	-1.3
	baz=220							
JISG	**Ishigakijimahi**	**1.70**	**89**	P		**Pn**	16 34 31.1	-0.7
JISG				*e*S		Sn	16 34 53.2	+0.7
YUS	**Yu-Shan**	**1.73**	**232**	*e*P		**Pn**	16 34 32.7	0.0
	baz=231							
YUS				*e*S		Sn	16 34 53.9	-0.1
	baz=231							
CHKT	**Chengkung**	**1.75**	**215**	*e*P		**Pn**	16 34 33.0	+0.4
	baz=213							
ALS	**Alishan**	**1.82**	**236**	*e*P		**Pn**	16 34 34.3	+0.5
	baz=234							
ALS				*e*S		Sn	16 34 56.1	0.0
	baz=234							
CHN5	**Tsauling**	**1.88**	**240**	P		**Pn**	16 34 35.1	+0.8
	baz=238							
CHN5				*e*S		Sn	16 34 57.4	+0.4
	baz=238							
ELDTW	**Lidau**	**1.89**	**224**	*e*S		Sn	16 34 56.2	-1.1
	baz=222							
CHN4	**Tsaushan**	**2.08**	**235**	*e*P		**Pn**	16 34 38.3	+1.3
	baz=233							
CHN4				*e*S		Sn	16 35 02.1	+0.3
	baz=233							
STYT	**Tauyuan**	**2.08**	**228**	*e*P		**Pn**	16 34 37.4	+0.4
	baz=227							
STYT				*e*S		Sn	16 35 02.3	+0.4
	baz=227							
WTP	**Ta-pu**	**2.12**	**232**	*e*S		Sn	16 35 03.6	+0.7
	baz=231							
SGST	**Jiashian**	**2.25**	**230**	*e*S		Sn	16 35 06.2	+0.2
	baz=228							

DDA ***04*** *16:35:26.4,38.˚59N×28.˚56E,h6km,Md2.5*
ISK ***04*** *16:35:27.7,38.˚53N×28.˚66E,h6km,MD2.4*
CSEM ***04*** *16:35:27.1±0.2,38.˚58N×28.˚62E,h2km,MD2.4,Error ellipse: s-maj=6.4km s-min=4.8km az=109.0*

ISC 04 16:35:27.2±1.1,38.˚58N±0.˚03×28.˚59E±0.˚04,h3km±12km, n14,σ0936/20,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KULA	**Kula-Manisa**	**0.08**	**138**	*e*PG		**Pg**	**16 35 28.9**	**0.0**
KULA				*e*SG		**Sg**	**16 35 30.3**	**+0.3**
KULA	**Kula-Manisa**	**0.08**	**138**	*e*Pg		**Pg**	**16 35 28.9**	**0.0**
KULA				*e*Sg		**Sg**	**16 35 30.3**	**+0.3**
MANT	**Manisa**	**0.09**	**197**	*i* P		**Pg**	**16 35 28.5**	**-0.6**
MANT				*i* S		**Sg**	**16 35 30.7**	**+0.4**
MANT	**Manisa**	**0.09**	**197**	P		**Pg**	**16 35 28.5**	**-0.6**
MANT				S		**Sg**	**16 35 30.7**	**+0.4**
DEMI	**Demirci**	**0.48**	**12**	*i* P		**Pg**	**16 35 36.7**	**+0.3**
DEMI				*i* S		**Sg**	**16 35 42.2**	**-0.4**
DEMI	**Demirci**	**0.48**	**12**	P		**Pg**	**16 35 36.7**	**+0.3**
DEMI				S		**Sg**	**16 35 42.2**	**-0.4**
KHL	**Karahalli**	**0.77**	**109**	*e*PG		**Pg**	**16 35 42.0**	**0.0**
KHL	**Karahalli**	**0.77**	**109**	*e*Pg		**Pg**	**16 35 42.0**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.83**	**222**	*e*PG		**Pb**	**16 35 44.3**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.83**	**222**	*e*Pg		**Pb**	**16 35 44.3**	**-0.1**
IZM	**Izmir**	**1.06**	**261**	*e*PN		**Pn**	**16 35 49.3**	**+0.4**
IZM	**Izmir**	**1.06**	**261**	*e*Pn		**Pn**	**16 35 49.3**	**+0.4**
TVSB	**Tavsanli**	**1.11**	**38**	*e*PN		**Pn**	**16 35 49.4**	**-0.3**
TVSB	**Tavsanli**	**1.11**	**38**	*e*Pn		**Pn**	**16 35 49.4**	**-0.3**

ISCJB ***04*** *16:37:58.6±0.7,4.˚83S±0.˚09×153.˚1E±0.˚1,h100km, mb3.9/12,Error ellipse: s-maj=18.6km s-min=8.9km az=34.4*
IDC ***04*** *16:37:58.4±3.8,4.˚82S×153.˚15E,h80km±35km,mb3.7/12, mb1 3.9/13,mb1mx3.7/35,mbtmp4.1/13,MS3.3/3, Ms1 3.3/3,ms1mx2.8/22,Error ellipse: s-maj=25.3km s-min=18.1km az=106.0*

ISC 04 16:38:00.3±0.9,4.˚9S±0.˚1×153.˚1E±0.˚1,h100km,n16, σ0972/16,mb3.9/12,New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.44**	**232**	P		**Pn**	**16 39 45.9**	**-0.4**
	4.3nm,0.3s,baz=37,slow=12,SNR=18							
PMG				S		**Sn**	**16 41 08.9**	**-0.2**
	2.0nm,0.3s,baz=315,slow=20,SNR=4.7							
DZM	**Mont Dzumac**	**21.42**	**144**	P		**P**	**16 42 40.6**	**+0.1**
	6.2nm,0.8s,baz=160,slow=14,SNR=5.2							
DZM				LR		LR	16 48 49.9	
	comp=Z,54nm,21.4s,baz=66,slow=30							
WRA	**Warramunga Arr**	**23.64**	**229**	P		**P**	**16 43 03.1**	**+0.3**
	6.6nm,0.8s,baz=50,slow=9.9,SNR=26							
ASAR	**Alice Springs**	**26.32**	**223**	P		**P**	**16 43 27.2**	**+0.2**
	2.6nm,0.6s,baz=56,slow=8.9,SNR=28							
FITZ	**Fitzroy Crossi**	**29.91**	**242**	P		**P**	**16 43 58.8**	**-0.2**
	6.2nm,0.6s,baz=74,slow=7.2,SNR=24							
FITZ				LR		LR	16 56 56.0	
	comp=Z,42nm,18.1s,baz=66,slow=38							
KSRS	**Korea Array**	**48.21**	**333**	P		**P**	**16 46 30.5**	**-0.3**
	0.8nm,0.7s,baz=147,slow=11,SNR=3.9							
USRK	**Ussuriysk Ar.**	**52.42**	**341**	P		**P**	**16 47 02.6**	**+0.1**
	1.0nm,0.5s,baz=152,slow=8.7,SNR=4.4							
KLR	**Kul'dur**	**57.00**	**343**	P		**P**	**16 47 35.3**	**-0.2**
	1.0nm,0.6s,baz=184,slow=5.4,SNR=6.0							
PETK	**Petropavlovsk-**	**57.89**	**3**	P		**P**	**16 47 41.7**	**0.0**
	0.6nm,0.5s,baz=162,slow=7.2,SNR=6.0							
SONM	**Songino Array**	**66.56**	**328**	P		**P**	**16 48 40.5**	**+0.7**
	0.5nm,0.6s,baz=148,slow=5.6,SNR=4.1							
MKAR	**Makanchi Array**	**80.59**	**319**	P		**P**	**16 50 02.6**	**+0.6**
	0.6nm,0.5s,baz=100,slow=7.4,SNR=6.9							
ZALV	**Zalesovo Beam**	**81.39**	**326**	P		**P**	**16 50 05.4**	**-0.6**
	0.9nm,0.5s,baz=113,slow=3.7,SNR=3.1							
ILAR	**Eielson Array**	**82.10**	**22**	P		**P**	**16 50 08.0**	**-1.5**
	0.4nm,0.7s,baz=244,slow=5.6,SNR=4.7							
PDAR	**Pinedale Array**	**98.66**	**48**	LR		LR	17 30 14.1	
	comp=Z,20nm,20.3s,baz=252,slow=32							

GERES	**GERESS Array B**	**124.28**	**329**	PKP		**PKPdf**	**16 56 49.2**	**+1.5**
	0.3nm,0.3s,baz=40,slow=2.3,SNR=3.7							
TORD	**Torodi Ar. Bea**	**150.64**	**288**	PKPbc		**PKPbc**	**16 57 42.5**	**+0.7**
	1.2nm,0.6s,baz=74,slow=1.7,SNR=7.1							

NIED ***04*** *16:44:00,29.˚00N×131.˚10E,h5km,Mw4.5 Best double couple: M05.40000×10^15 NP1:φs177.00000°,δ44.00000°, λ-106.00000°. NP2:φs19.00000°,δ48.00000°, λ-75.00000°.*
BJI ***04*** *16:44:39.3,28.˚71N×131.˚27E,h10km,mb4.3/24,mB4.6/27, Ms4.1/31,Ms7 3.9/30*
IDC ***04*** *16:44:41.3±0.7,28.˚94N×131.˚16E,h0km,mb4.0/19, mb1 4.1/23,mb1mx4.1/36,mbtmp3.9/23,ML3.4/4,MS3.4/12, Ms1 3.4/12,ms1mx3.2/37,Error ellipse: s-maj=21.1km s-min=14.5km az=93.0*
NEIC ***04*** *16:44:42.8±0.3,28.˚88N×131.˚06E,h10km,mb4.6/16,Error ellipse: s-maj=8.4km s-min=4.9km az=138.0*
ISCJB ***04*** *16:44:43.1±0.8,28.˚98N±0.˚02×131.˚15E±0.˚03,h19km±5km, mb4.3/46,MS3.7/18,Error ellipse: s-maj=5.3km s-min=3.2km az=32.3*
MOS ***04*** *16:44:45.2±1.2,29.˚02N×131.˚22E,h33km,mb4.5/25,Error ellipse: s-maj=12.1km s-min=6.6km az=101.9*
JMA ***04*** *16:44:45.3±0.1,28.˚97N×131.˚07E,h72km±3km,M3.9*

ISC 04 16:44:45.7±1.0,28.˚90N±0.˚04×131.˚18E±0.˚04,h31km±6km, n148,σ1989/188,mb4.3/46,MS3.8/19,1C-3D,Southeast of Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JZK	**Kikaishima**	**1.21**	**241**	P		**Pn**	**16 45 06.2**	**-0.3**
JZK				*e*S		**Sn**	**16 45 21.6**	**-0.2**
JYAK	**Yakushimahirau**	**1.46**	**337**	P		**Pn**	**16 45 08.8**	**-1.1**
JYAK				S		**Sn**	**16 45 25.7**	**-2.3**
JAM	**Amami Oshima**	**1.46**	**251**	P		**Pn**	**16 45 09.0**	**-1.0**
JAM				S		**Sn**	**16 45 27.9**	**-0.2**
JNN	**Nakanoshima**	**1.47**	**310**	P		**Pn**	**16 45 09.0**	**-1.2**
JNN				S		**Sn**	**16 45 26.3**	**-2.2**
JTAJ	**Takarajima**	**1.75**	**279**	P		**Pn**	**16 45 12.6**	**-1.3**
JTAJ				*e*S		**Sn**	**16 45 33.1**	**-2.0**
JTN	**Tanegashima 3**	**1.76**	**354**	P		**Pn**	**16 45 12.8**	**-1.3**
JTN				S		**Sn**	**16 45 33.0**	**-2.5**
JKC	**Kuchinoerabu**	**1.78**	**332**	P		**Pn**	**16 45 13.4**	**-0.9**
JKC				*e*S		**Sn**	**16 45 33.2**	**-2.7**
JAMN	**Amaminishikomi**	**1.88**	**250**	P		**Pn**	**16 45 15.1**	**-0.6**
JAMN				*e*S		**Sn**	**16 45 37.6**	**-0.8**
JTK	**Tokunoshima**	**2.25**	**241**	P		**Pn**	**16 45 20.6**	**-0.3**
JTK				*e*S		**Sn**	**16 45 47.5**	**-0.2**
JNAR	**Kushima--Naru**	**2.62**	**2**	P		**Pn**	**16 45 25.3**	**-0.7**
JNAR				*e*S		**Sn**	**16 45 53.7**	**-3.0**
JSU	**Suzuyama**	**2.67**	**347**	P		**Pn**	**16 45 25.9**	**-0.8**
JSU				*e*S		**Sn**	**16 45 54.5**	**-3.6**
JOKE	**Okinoerabujima**	**2.76**	**237**	P		**Pn**	**16 45 27.3**	**-0.6**
JOKE				*e*S		**Sn**	**16 45 58.5**	**-1.8**
JTZ	**Takazaki**	**2.99**	**359**	P		**Pn**	**16 45 30.3**	**-0.8**
JTZ				*e*S		**Sn**	**16 46 03.3**	**-2.7**
JSJ	**Shimokoshiki**	**3.04**	**336**	P		**Pn**	**16 45 30.2**	**-1.6**
JSJ				*e*S		**Sn**	**16 46 03.6**	**-3.6**
JZO	**Okuchi**	**3.27**	**351**	P		**Pn**	**16 45 34.6**	**-0.3**
JZO				*e*S		**Sn**	**16 46 09.3**	**-3.5**
JOW	**Kunigami**	**3.29**	**232**	P		**Pn**	**16 45 34.4**	**-0.8**
JIH	**Iheya**	**3.39**	**238**	P		**Pn**	**16 45 35.6**	**-1.0**
JIH				S		**Sn**	**16 46 12.9**	**-2.8**
JIU2	**Izumi 2**	**3.65**	**355**	P		**Pn**	**16 45 39.2**	**-0.9**
JIU2				S		**Sn**	**16 46 18.1**	**-4.0**
JNU	**Nakatsue**	**4.22**	**357**	Pn		**Pn**	**16 45 45.9**	**-2.1**
	5.0nm,0.3s,baz=201,slow=14,SNR=13							
JNU				Sn		**Sn**	**16 46 31.6**	**-4.6**
	9.0nm,0.3s,baz=38,slow=20,SNR=9.1							
JNU	**Nakatsue**	**4.22**	**357**	*e*Pn		**Pn**	**16 45 46.8**	**-1.2**
JNU				*e*Pg		Pb	16 46 05.6	+6.3
JNU				Sn		**Sn**	**16 46 31.6**	**-4.6**
INU	**Inuyama**	**8.12**	**36**	*e*Pn		**Pn**	**16 46 41.7**	**+0.2**
INU				*e*Sn		**Sn**	**16 48 14.2**	**+2.0**
SSE	**Sheshan**	**8.93**	**287**	P		**Pn**	**16 46 50.9**	**-1.8**
SSE				pmax		pmax		
	comp=Z,43nm,0.6s							
SSE				pmax		pmax		
	comp=Z,65nm,4.4s							
SSE				LR		LR		
	comp=N,180nm,12.0s							
SSE				LR		LR		
	comp=E,470nm,12.0s							
SSE				LR		LR		
	comp=Z,540nm,12.0s							
KSAR	**Wonju Array Be**	**8.96**	**343**	P		**Pn**	**16 46 52.7**	**-0.3**
KSAR	**Wonju Array Be**	**8.96**	**343**	Pn		**Pn**	**16 46 52.7**	**-0.3**
KSRS	**Korea Array**	**8.96**	**343**	Pn		**Pn**	**16 46 52.7**	**-0.3**
	0.1nm,0.3s,baz=164,slow=15,SNR=4.8							
KSRS				LR		LR	16 50 38.6	
	comp=Z,134nm,18.2s,baz=164,slow=40							
MAJO	**Matsushiro**	**9.65**	**36**	*i* P		**Pn**	**16 47 02.9**	**+0.4**
MAJO	**Matsushiro**	**9.65**	**36**	*e*Pn		**Pn**	**16 47 02.9**	**+0.4**
MAT	**Matsushiro**	**9.65**	**36**	P		**Pn**	**16 47 03.0**	**+0.5**
MAT				S		**Sn**	**16 48 48.6**	**-1.3**
MJAR	**Matsushiro Arr**	**9.65**	**36**	Pn		**Pn**	**16 47 03.3**	**+0.8**
	2.8nm,0.3s,baz=11,slow=19,SNR=24							
MJAR				LR		LR	16 50 44.8	
	comp=Z,90nm,18.1s,baz=230,slow=38							
MJB9	**Matsu-Tunnel**	**9.65**	**36**	*e*Pn		**Pn**	**16 47 03.0**	**+0.5**
NACB	**Ninganchiao**	**9.78**	**243**	*e*Pn		**Pn**	**16 47 00.4**	**-4.0**
YULB	**Yu-li**	**10.43**	**241**	*e*Pn		Pn	16 47 07.2	-6.1
SSLB	**Suanglung**	**10.48**	**243**	*e*Pn		**Pn**	**16 47 09.6**	**-4.4**
TPUB	**Ta-pu**	**10.99**	**242**	*e*Pn		**Pn**	**16 47 17.9**	**-3.1**
NJ2	**Nanjing**	**11.08**	**290**	*e*P		**Pn**	**16 47 19.6**	**-2.5**
NJ2				S		**Sn**	**16 49 21.9**	**-3.1**
NJ2				pmax		pmax		
	comp=Z,15nm,0.5s							
NJ2				LR		LR		
	comp=N,630nm,9.8s							
NJ2				LR		LR		
	comp=E,310nm,11.9s							
NJ2				LR		LR		
	comp=Z,340nm,11.4s							
WHN	**Wuhan**	**14.71**	**281**	P		**Pn**	**16 48 13.1**	**+1.4**
WHN				S		**S**	**16 51 04.6**	**-7.2**
WHN				LR		LR		
	comp=N,970nm,14.3s							
WHN				LR		LR		
	comp=E,610nm,10.6s							
WHN				LR		LR		
	comp=Z,630nm,10.9s							
USRK	**Ussuriysk Ar.**	**15.29**	**2**	Pn		**Pn**	**16 48 19.6**	**+0.4**
	0.2nm,0.3s,baz=185,slow=14,SNR=3.1							
CN2	**Changchun**	**15.56**	**344**	*e*P		**P**	**16 48 26.4**	**-0.5**
CN2				PP		**sP**	**16 48 38.7**	**-0.2**
CN2				*e*S		**Sn**	**16 51 20.8**	**+6.5**
CN2				pmax		pmax		
	comp=Z,10.0nm,1.0s							
CN2				pmax		pmax		
	comp=Z,100nm,3.0s							
CN2				LR		LR		
	comp=N,300nm,12.0s							
CN2				LR		LR		
	comp=E,300nm,12.0s							
CN2				LR		LR		
	comp=Z,300nm,13.0s							
BJI	**Beijing**	**16.60**	**316**	P		**P**	**16 48 38.0**	**-0.4**
BJI				S		**Sn**	**16 51 40.3**	**+0.7**
BJI				pmax		pmax		
	comp=Z,54nm,3.4s							
BJI				LR		LR		
	comp=N,310nm,11.7s							
BJI				LR		LR		
	comp=E,430nm,12.1s							
BJI				LR		LR		
	comp=Z,170nm,15.2s							
ENH	**Enshi**	**18.91**	**279**	*e*Pn		**P**	**16 49 03.7**	**-0.3**
	17nm,0.6s							
XAN	**Xi'an**	**19.65**	**291**	P		**P**	**16 49 09.8**	**-2.3**
XAN				pP		Pn	16 49 13.5	-0.1
XAN				PP		**PnPn**	**16 49 32.3**	**+4.8**
XAN				S		**Sn**	**16 52 59.6**	**+6.2**
XAN				pmax		pmax		
	comp=Z,4.0nm,0.5s							
XAN				pmax		pmax		
	comp=Z,78nm,4.3s							
XAN				LR		LR		
	comp=N,230nm,14.4s							
XAN				LR		LR		
	comp=E,280nm,11.6s							
XAN				LR		LR		
	comp=Z,230nm,10.8s							
HHC	**Hu-ho-hao-te**	**19.98**	**312**	*e*P		**Pn**	**16 49 17.0**	**-0.5**
HHC				PP		**PnPn**	**16 49 37.5**	**+5.5**
HHC				S		**S**	**16 52 58.6**	**-0.2**
HHC				SS		**SnSn**	**16 53 23.0**	**+7.2**
HHC				pmax		pmax		
	comp=Z,23nm,0.8s							
HHC				pmax		pmax		
	comp=Z,120nm,4.4s							
HHC				LR		LR		
	comp=N,190nm,12.2s							
HHC				LR		LR		
	comp=E,160nm,11.9s							
HHC				LR		LR		
	comp=Z,230nm,12.0s							
KLR	**Kul'dur**	**20.31**	**1**	P		**P**	**16 49 17.6**	**-1.4**
	3.5nm,0.8s,baz=164,slow=9.2,SNR=6.7							
QIZ	**Qiongzhong**	**21.80**	**248**	P		**P**	**16 49 36.7**	**+1.4**
QIZ				S		**S**	**16 53 34.8**	**-0.1**
QIZ				pmax		pmax		
	comp=Z,14nm,1.3s							
QIZ				LR		LR		
	comp=N,220nm,15.1s							
QIZ				LR		LR		
	comp=Z,230nm,16.1s							
GYA	**Guiyang**	**21.84**	**269**	*e*P		**P**	**16 49 34.8**	**-1.0**
GYA				PP		**PnPn**	**16 50 00.2**	**+2.7**
GYA				S		**S**	**16 53 35.5**	**-0.3**
GYA				SS		**SnSn**	**16 54 06.0**	**+4.4**
GYA				pmax		pmax		
	comp=Z,10.0nm,0.8s							
GYA				pmax		pmax		
	comp=Z,110nm,4.7s							
GYA				LR		LR		
	comp=N,440nm,13.8s							
GYA				LR		LR		
	comp=E,420nm,14.0s							
GYA				LR		LR		
	comp=Z,400nm,14.3s							
DAV	**Davao City (W)**	**22.35**	**195**	LR		LR	16 57 14.8	
	comp=Z,127nm,21.8s,baz=16,slow=34							
CD2	**Chengdu**	**23.83**	**282**	*e*P		**P**	**16 49 54.4**	**-1.9**
CD2				pP		pP	16 49 57.4	-7.6
CD2				sP		sP	16 49 58.7	-10
CD2				PcP		**PcP**	**16 53 38.1**	**-0.9**
CD2				S		**S**	**16 54 10.5**	**+0.2**
CD2				sS		sS	16 54 15.6	-9.3
CD2				pmax		pmax		
	comp=Z,20nm,0.5s							
CD2				pmax		pmax		
	comp=Z,220nm,5.0s							
CD2				LR		LR		
	comp=N,540nm,14.5s							
CD2				LR		LR		
	comp=E,250nm,8.4s							
CD2				LR		LR		
	comp=Z,370nm,9.7s							
LZH	**Lanzhou**	**24.09**	**294**	*e*P		**P**	**16 49 57.1**	**-1.7**
LZH				pP		pP	16 50 01.7	-5.9
LZH				sP		sP	16 50 04.5	-6.9
LZH				pmax		pmax		
	comp=Z,10.0nm,1.0s							
KMI	**Kunming**	**25.58**	**268**	P		**P**	**16 50 11.2**	**-1.3**
KMI				pmax		pmax		
	comp=Z,16nm,0.8s							
KMI				pmax		pmax		
	comp=Z,120nm,6.2s							
KMI				LR		LR		
	comp=N,170nm,11.9s							
KMI				LR		LR		
	comp=E,250nm,11.9s							
KMI				LR		LR		
	comp=Z,290nm,11.9s							
SONM	**Songino Array**	**26.92**	**321**	P		**P**	**16 50 24.0**	**-0.3**
	1.2nm,0.8s,baz=139,slow=9.4,SNR=5.6							
SONM				LR		LR	17 02 20.7	
	comp=Z,129nm,18.6s,baz=124,slow=39							
SONM	**Songino Array**	**26.92**	**321**	P		**P**	**16 50 24.0**	**-0.3**
SONM				pmax		pmax		
	comp=Z,1.0nm,0.8s							
SONM				MLR		MLR		
	comp=Z,129nm,18.6s							
CHTO	**Chiang Mai**	**31.05**	**258**	*e*P		**P**	**16 51 01.7**	**+0.6**
CHTO				pmax		pmax		
	comp=Z,3.0nm,0.6s							
CHTO	**Chiang Mai**	**31.05**	**258**	*e*P		**P**	**16 51 01.7**	**+0.6**
	comp=Z,3.2nm,0.6s							
PEA0	**Petropavlovsk-**	**31.07**	**31**	*e*P		**P**	**16 51 00.1**	**-0.8**
PETK	**Petropavlovsk-**	**31.07**	**31**	P		**P**	**16 51 01.3**	**+0.4**
	comp=Z,7.4nm,0.8s,baz=230,slow=13,SNR=4.9							
PETK				LR		LR	17 05 24.5	
	comp=Z,40nm,18.5s,baz=206,slow=40							
CMAR	**Chiang Mai Arr**	**31.20**	**258**	P		**P**	**16 51 01.7**	**-0.8**
	comp=Z,0.3nm,0.3s,baz=55,slow=7.5,SNR=5.0							
CMAR				LR		LR	17 03 52.4	
	comp=Z,30nm,20.2s,baz=40,slow=37							
YAK	**Yakutsk**	**33.15**	**359**	*i* P		**P**	**16 51 17.8**	**-1.2**
YAK				pmax		pmax		
	comp=Z,8.0nm,0.9s							
YAK	**Yakutsk**	**33.15**	**359**	*e*P		**P**	**16 51 18.1**	**-0.9**
	comp=Z,9.5nm,0.8s							
SEY	**Seymchan**	**36.73**	**16**	*e*P		**P**	**16 51 50.2**	**+0.3**
WMQ	**Urumqi**	**37.60**	**305**	*e*P		**P**	**16 51 58.5**	**+0.8**
WMQ				pP		pP	16 52 05.9	-0.8
WMQ				PP		**PnPn**	**16 53 26.5**	**+1.7**
WMQ				S		**S**	**16 57 43.7**	**-1.6**
WMQ				pmax		pmax		
	comp=Z,8.0nm,0.5s							
WMQ				pmax		pmax		
	comp=Z,73nm,4.4s							
WMQ				LR		LR		
	comp=Z,250nm,27.2s							
WMQ				LR		LR		
	comp=Z,220nm,24.4s							
WMQ				LR		LR		
	comp=Z,270nm,22.2s							
MK01	**Makanchi Array**	**41.79**	**309**	*e*P		**P**	**16 52 32.4**	**0.0**
ZALV	**Zalesovo Beam**	**41.80**	**320**	P		**P**	**16 52 33.7**	**+1.4**
	comp=Z,0.2nm,0.3s,baz=98,slow=9.5,SNR=3.6							
ZALV				PcP		**PcP**	**16 54 28.2**	**+0.2**
	comp=Z,1.0nm,0.6s,baz=48,slow=2.2,SNR=4.1							
ZALV				LR		LR	17 11 13.7	
	comp=Z,71nm,18.6s,baz=70,slow=38							
MK31	**Makanchi Array**	**41.80**	**309**	*e*P		**P**	**16 52 32.3**	**-0.2**
MK31	**Makanchi Array**	**41.80**	**309**	*e*P		**P**	**16 52 32.2**	**-0.2**
MKAR	**Makanchi Array**	**41.80**	**309**	P		**P**	**16 52 33.0**	**+0.5**
	comp=Z,0.3nm,0.4s,baz=106,slow=8.9,SNR=3.8							
MK

BRVK pmax pmax
comp=Z,5.0nm,1.1s
BRVK Borovoye 50.15 317 *e*P **P 16 53 37.6 -0.5**
comp=Z,5.3nm,1.1s
ZRNK Zerenda 50.92 316 *e*P **P 16 53 43.6 -0.4**
ZRNK pmax pmax
comp=Z,3.0nm,1.0s
ZRNK Zerenda 50.92 316 *e*P **P 16 53 43.6 -0.4**
comp=Z,3.1nm,1.0s
ASAR Alice Springs 52.33 177 P **P 16 53 56.5 +1.7**
comp=Z,1.1nm,1.1s,baz=12,slow=12,SNR=5.9
ABKAR Akbulak array 56.77 312 *e*P **P 16 54 27.2 +0.5**
KDAK Kodiak Island 58.82 37 *i* P **P 16 54 40.8 -0.2**
ILAR Eielson Array 60.85 29 P **P 16 54 54.6 -0.3**
comp=Z,0.4nm,0.6s,baz=273,slow=5.9,SNR=7.9
ILAR Eielson Array 60.85 29 P **P 16 54 54.6 -0.3**
ILAR pmax pmax
comp=Z,1.0nm,0.6s
DOT Dot Lake 62.23 30 *e*P **P 16 55 04.0 -0.3**
comp=Z,8.9nm,0.7s
INK Inuvik 65.41 24 *e*P **P 16 55 25.3 +0.3**
INK pmax pmax
comp=Z,7.0nm,1.3s
INK Inuvik 65.41 24 *e*P **P 16 55 25.3 +0.3**
comp=Z,6.5nm,1.3s
ARCES ARCESS Array B 68.48 339 P **P 16 55 45.0 +0.4**
comp=Z,2.5nm,0.9s,baz=55,slow=9.1,SNR=4.0
ARCES LR LR 17 33 39.1
comp=Z,26nm,18.1s,baz=52,slow=43
ARCES ARCESS Array B 68.48 339 P **P 16 55 45.0 +0.4**
ARCES pmax pmax
comp=Z,3.0nm,0.9s
ARCES MLR MLR
comp=Z,27nm,18.1s
OBN Obninsk 69.33 322 ||*e*P **P 16 55 52.0 +2.0**
OBN *e* 16 58 23.1
OBN *e*PPP PPP 17 00 04.7
OBN pmax pmax
comp=Z,4.0nm,0.9s
OBN MLR MLR
comp=Z,53nm,17.0s
KBZ Khabaz 69.50 309 P **P 16 55 52.2 +0.9**
comp=Z,3.1nm,1.0s,baz=23,slow=1.0,SNR=5.2
KIV Kislovodsk 69.56 310 *e*P **P 16 55 51.6 -0.3**
KIV pmax pmax
comp=Z,7.0nm,1.1s
KIV MLR MLR
comp=Z,27nm,17.0s
FINES FINESS Array B 71.83 331 P **P 16 56 04.4 -0.8**
comp=Z,0.7nm,0.4s,baz=75,slow=5.3,SNR=10
YKA Yellowknife Ar 75.00 26 P **P 16 56 22.7 -1.1**
comp=Z,1.7nm,0.8s,baz=304,slow=5.8,SNR=6.2
AKASG Malin Array Be 75.19 320 P **P 16 56 24.9 -0.3**
comp=Z,0.8nm,0.4s,baz=54,slow=6.9,SNR=10
KIEV Kiev 75.20 320 *e*P **P 16 56 25.0 -0.2**
KIEV pmax pmax
comp=Z,7.0nm,1.3s
BR131 Keskin Array S 77.45 308 *e*P **P 16 56 38.3 -0.1**
BRTR Keskin Array B 77.45 308 P **P 16 56 39.2 +0.8**
comp=Z,3.3nm,1.0s,baz=96,slow=3.7,SNR=12
BRTR LR LR 17 35 05.2
comp=Z,16nm,18.7s,baz=91,slow=39
BR231 Keskin MP Arra 77.98 309 *e*P **P 16 56 39.5 -1.9**
NB2 NORSAR Subarra 78.06 334 P **P 16 56 40.8 -0.5**
comp=Z,2.6nm,0.7s,baz=51,slow=5.9
NOA NORSAR Array B 78.06 334 P **P 16 56 40.9 -0.5**
comp=Z,2.7nm,0.8s,baz=50,slow=5.5,SNR=8.4
BUR08 Bucovina Ar. S 78.99 319 *e*P **P 16 56 47.1 +0.3**
KWP Kalwaria Pacla 79.36 321 *e*P **P 16 56 50.0 +1.4**
KWP Kalwaria Pacla 79.36 321 *e*P **P 16 56 50.0 +1.4**
KOLS Kolonicke sedl 79.97 321 *e*P **P 16 56 52.9 +0.9**
KOLS pmax pmax
comp=Z,3.0nm,1.3s
KOLS Kolonicke sedl 79.97 321 *e*P **P 16 56 52.9 +0.9**
STHS Stebnicka Huta 80.28 321 *e*P **P 16 56 53.7 +0.1**
STHS pmax pmax
comp=Z,4.0nm,1.2s
STHS Stebnicka Huta 80.28 321 *e*P **P 16 56 53.7 +0.1**
CRVS Cervenica-Dubn 80.44 321 *e*P **P 16 56 57.6 +3.1**
CRVS Cervenica-Dubn 80.44 321 *e*P **P 16 56 57.6 +3.1**
OJC Ojcow 80.61 323 *e*P **P 16 56 56.4 +1.1**
OJC Ojcow 80.61 323 *e*P **P 16 56 56.1 +0.8**
OJC pmax pmax
comp=Z,13nm,1.0s
OJC Ojcow 80.61 323 *e*P **P 16 56 56.1 +0.8**
comp=Z,13nm,1.0s
NIE Niedzica 80.79 322 *e*P **P 16 56 58.2 +1.8**
NIE Niedzica 80.79 322 *e*P **P 16 56 58.2 +1.8**
RPZ Rata Peaks 80.98 152 LR LR 17 28 27.4
comp=Z,64nm,19.4s,baz=36,slow=32
OKC Ostrava-Krasne 81.70 323 *e*P **P 16 57 02.3 +1.1**
OKC Ostrava-Krasne 81.70 323 *e*P **P 16 57 02.3 +1.1**
MORC Moravsky Berou 82.06 323 *e*P **P 16 57 03.7 +0.6**
MORC pmax pmax
comp=Z,23nm,1.2s
MORC Moravsky Berou 82.06 323 *e*P **P 16 57 03.7 +0.6**
comp=Z,23nm,1.2s
KSP Ksiaz 82.07 325 *e*P **P 16 57 05.3 +2.2**
KSP Ksiaz 82.07 325 *e*P **P 16 57 05.3 +2.2**
VYHS Vyhne 82.11 322 *e*P **P 16 57 05.0 +1.7**
VYHS *e* 16 57 15.5
VYHS pmax pmax
comp=Z,4.0nm,1.1s
VYHS Vyhne 82.11 322 *e*P **P 16 57 05.0 +1.7**
VYHS *e* 16 57 15.5
DPC Dobruska-Polom 82.35 324 *e*P **P 16 57 06.2 +1.6**
DPC *ex* x 16 57 17.5
DPC Dobruska-Polom 82.35 324 *e*P **P 16 57 06.2 +1.6**
DPC *e* 16 57 17.5
GOPC GO Pecny, Ondr 83.40 324 *e*P **P 16 57 11.1 +1.0**
GOPC *ex* x 16 57 24.2
GOPC GO Pecny, Ondr 83.40 324 *e*P **P 16 57 11.1 +1.0**
GOPC *e* 16 57 24.2
GOPC MLR MLR
comp=Z,400nm,21.6s
TREC Trest 83.42 324 *e*P **P 16 57 11.1 +0.9**
TREC Trest 83.42 324 *e*P **P 16 57 11.1 +0.9**
CLL Collm 83.43 326 ||*i*P **P 16 57 10.8 +0.7**
comp=Z,19nm,1.3s
CLL *i* 16 57 21.9
CLL LmV 17 38 00.0
comp=Z,100nm,18.5s
CLL Collm 83.43 326 ||*i*P **P 16 57 10.8 +0.7**
CLL *i* 16 57 21.9
CLL pmax pmax
comp=Z,19nm,1.3s
CLL Collm 83.43 326 *e*P **P 16 57 10.4 +0.3**
comp=Z,14nm,1.1s
PRU Pruhonice 83.48 324 *e*P **P 16 57 11.9 +1.5**
PRU *ex* x 16 57 23.1
PRU Pruhonice 83.48 324 *e*P **P 16 57 11.9 +1.5**
PRU *e* 16 57 23.1
NKC Novy Kostel 84.38 326 *e*P **P 16 57 16.5 +1.4**
NKC Novy Kostel 84.38 326 *e*P **P 16 57 16.5 +1.4**
KHC Kasperske Hory 84.51 324 *e*P **P 16 57 16.7 +1.0**
KHC *ex* x 16 57 27.0
KHC Kasperske Hory 84.51 324 *e*P **P 16 57 16.1 +0.4**
KHC pmax pmax
comp=Z,3.0nm,1.4s
KHC Kasperske Hory 84.51 324 *e*P **P 16 57 16.1 +0.4**
comp=Z,2.9nm,1.4s
GEC2 GERESS Array S 84.62 324 *e*P **P 16 57 17.5 +1.1**
GEC2 pmax pmax
comp=Z,5.0nm,1.1s
GEC2 GERESS Array S 84.62 324 *e*P **P 16 57 17.5 +1.1**
comp=Z,5.4nm,1.4s
GERES GERESS Array B 84.62 324 P **P 16 57 16.9 +0.5**
comp=Z,1.4nm,0.9s,baz=19,slow=4.5,SNR=9.5
GEA0 GERESS Array S 84.63 324 *e*P **P 16 57 16.9 +0.5**
PAHR Pah Rah Range 85.37 47 *e*P **P 16 57 20.9 +0.6**
comp=Z,8.0nm,1.3s
MFID Camas Ranch 85.43 42 *e*P **P 16 57 21.6 +1.0**
comp=Z,5.8nm,1.3s
DLMT Dillon 86.11 39 *e*P **P 16 57 24.6 +0.7**
comp=Z,5.5nm,1.0s
HLID Hailey 86.17 42 *e*P **P 16 57 25.6 +1.3**
comp=Z,4.0nm,1.0s
PDAR Pinedale Array 89.45 40 P **P 16 57 41.2 +1.1**
comp=Z,0.3nm,0.4s,baz=328,slow=8.4,SNR=4.1
PV01 Paradox Valley 93.02 43 *e*P **P 16 57 58.0 +1.2**
KMBO Kilima Mbogo 93.98 271 LR LR 17 43 17.4
comp=Z,32nm,18.1s,baz=90,slow=37

*ISCJB **04** 17:00:04.6±0.4,40°.44N±0°.03×26°.25E±0°.04,h17km±8km, Error ellipse: s-maj=5.5km s-min=4.6km az=8.9*
*CSEM **04** 17:00:04.5±0.1,40°.44N×26°.26E,h16km,MD2.6, Error ellipse: s-maj=2.0km s-min=1.5km az=177.0*
*ISK **04** 17:00:04.2,40°.43N×26°.26E,h16km,MD2.6*
*THE **04** 17:00:05.5,40°.45N×26°.18E,h13km±1km, ML1.5/2, Error ellipse: s-maj=1.5km s-min=0.4km az=292.0*
ISC 04 17:00:04.5±0.9, 40°.44N±0°.02×26°.25E±0°.02, h18km±5km, n32, σ0§17/45, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GELI	**Tayfur-Gelibol**	**0.17**	**104**	*e*PG	**Pg**	**17 00 08.9**	**-0.1**
GELI				*e*SG	**Sg**	**17 00 12.0**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.17**	**104**	*e*Pg	**Pg**	**17 00 08.9**	**-0.1**
GELI				*e*SG	**Sg**	**17 00 12.0**	**-0.1**
ENEZ	**Enez**	**0.30**	**346**	*e*PG	**Pb**	**17 00 11.4**	**0.0**
ENEZ				*e*SG	**Sb**	**17 00 16.1**	**0.0**
ENEZ	**Enez**	**0.30**	**346**	P	**Pb**	**17 00 11.4**	**0.0**
ENEZ	**Enez**	**0.30**	**346**	P	**Pb**	**17 00 11.4**	**0.0**
ENEZ				*e*Sg	**Sb**	**17 00 16.1**	**0.0**
ERIK	**Erikli-Kesan**	**0.30**	**41**	*e*PG	**Pg**	**17 00 11.2**	**+0.1**
ERIK	**Erikli-Kesan**	**0.30**	**41**	*e*Pg	**Pg**	**17 00 11.2**	**+0.1**
GADA	**Gvkgeada**	**0.37**	**227**	*e*PG	**Pg**	**17 00 12.2**	**0.0**
GADA				*e*SG	**Sg**	**17 00 17.7**	**+0.2**
GADA	**Gvkgeada**	**0.37**	**227**	P	**Pg**	**17 00 12.1**	**-0.1**
GADA				S	**Sg**	**17 00 17.6**	**+0.2**
GADA	**Gvkgeada**	**0.37**	**227**	*e*Pg	**Pg**	**17 00 12.2**	**0.0**
GADA				S	**Sg**	**17 00 17.6**	**+0.2**
LPK	**Lapseki**	**0.39**	**100**	*e*PG	**Pg**	**17 00 12.5**	**-0.1**
LPK				*e*SG	**Sb**	**17 00 18.7**	**-0.1**
LPK	**Lapseki**	**0.39**	**100**	*e*Pg	**Pg**	**17 00 12.5**	**-0.1**
LPK				*e*Sg	**Sb**	**17 00 18.7**	**-0.1**
ALN	**Alexandroupoli**	**0.48**	**341**	*e*PG	**Pg**	**17 00 14.3**	**0.0**
ALN	**Alexandroupoli**	**0.48**	**341**	P	**Pg**	**17 00 14.4**	**+0.2**
ALN				S	**Sg**	**17 00 20.8**	**0.0**
ALN	**Alexandroupoli**	**0.48**	**341**	P	**Pg**	**17 00 14.4**	**+0.2**
ALN				S	**Sg**	**17 00 20.8**	**0.0**
SMTH	**Samothraki Isl**	**0.55**	**273**	P	**Pg**	**17 00 15.1**	**-0.4**
SMTH				S	**Sg**	**17 00 22.7**	**-0.2**
SMTH	**Samothraki Isl**	**0.55**	**273**	P	**Pg**	**17 00 15.1**	**-0.4**
SMTH				S	**Sg**	**17 00 22.7**	**-0.2**
EZN	**Ezine**	**0.62**	**175**	*e*PG	**Pg**	**17 00 16.7**	**0.0**
EZN	**Ezine**	**0.62**	**175**	*e*Pg	**Pg**	**17 00 16.7**	**0.0**
RKY	**Sarkoy-Tekirda**	**0.75**	**70**	*e*PG	**Pg**	**17 00 18.8**	**-0.3**
RKY	**Sarkoy-Tekirda**	**0.75**	**70**	*e*Pg	**Pg**	**17 00 18.8**	**-0.3**
KRBG	**Karabiga-Canak**	**0.80**	**93**	*e*PG	**Pb**	**17 00 19.9**	**0.0**
KRBG	**Karabiga-Canak**	**0.80**	**93**	*e*Pg	**Pb**	**17 00 19.9**	**0.0**
MRMT	**Marmara Adasi**	**1.04**	**81**	*e*PG	**Pb**	**17 00 24.0**	**0.0**
MRMT	**Marmara Adasi**	**1.04**	**81**	*e*Pg	**Pb**	**17 00 24.0**	**0.0**
EDC	**Edincik**	**1.23**	**94**	*e*PN	**Pn**	**17 00 27.5**	**+0.2**
EDC	**Edincik**	**1.23**	**94**	*e*Pn	**Pn**	**17 00 27.1**	**+0.2**
SIGR	**SIGRI**	**1.27**	**194**	*e*PN	**Pb**	**17 00 27.8**	**0.0**
SIGR	**SIGRI**	**1.27**	**194**	P	**Pb**	**17 00 27.8**	**0.0**
SIGR	**SIGRI**	**1.27**	**194**	P	**Pb**	**17 00 27.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.62**	**96**	*e*PN	**Pn**	**17 00 32.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.62**	**96**	*e*Pn	**Pn**	**17 00 32.3**	**+0.1**

WEL 04 17:27:48.0±0.1, 43°.59S×172°.75E, h5km, ML3.6/15, 3C-4D, Error ellipse: s-maj=0.9km s-min=0.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.10**	**276**	||PG	Pg	17 27 50.2	+0.1
CRLZ				SG	Sg	17 27 51.7	+0.2
CRLZ				AML	AML	17 27 52.2	
CRLZ				AML	AML	17 27 52.2	
CRLZ				AML	AML	17 27 52.3	
MQZ	**McQueen's Vall**	**0.14**	**211**	PG	Pg	17 27 51.0	+0.1
MQZ				SG	Sg	17 27 53.4	+0.5
OXZ	**Oxford**	**0.58**	**296**	P*	Pg	17 27 59.2	0.0
OXZ				SG	Sg	17 28 07.7	+0.9
OXZ				AML	AML	17 28 09.3	
OXZ				AML	AML	17 28 09.5	
OXZ				AML	AML	17 28 09.6	
RPZ	**Rata Peaks**	**1.24**	**263**	||P*	Pg	17 28 10.3	-1.6
RPZ				AML	AML	17 28 29.7	
RPZ				AML	AML	17 28 31.5	
INZ	**Inchbonnie**	**1.29**	**311**	P*	Pn	17 28 12.0	-0.6
KHZ	**Kahutara**	**1.30**	**27**	P*	Pn	17 28 10.1	-2.7
KHZ				AML	AML	17 28 16.3	
KHZ				AML	AML	17 28 31.2	
KHZ				AML	AML	17 28 31.2	
WVZ	**Waitaha Valley**	**1.56**	**288**	||PN	Pn	17 28 15.5	-0.9
WVZ				AML	AML	17 28 40.9	
WVZ				AML	AML	17 28 43.9	
THZ	**Tophouse**	**1.82**	**4**	↑PN	Pn	17 28 18.0	-2.0
THZ				AML	AML	17 28 56.0	
THZ				AML	AML	17 28 59.4	
DSZ	**Denniston Nort**	**1.97**	**339**	PN	Pn	17 28 20.9	-1.1
DSZ				AML	AML	17 28 48.6	
DSZ				AML	AML	17 28 56.8	
DSZ				AML	AML	17 28 58.1	
DSZ				AML	AML	17 28 58.2	
LBZ	**Lake Benmore**	**2.02**	**246**	PN	Pn	17 28 21.4	-1.3
LBZ				AML	AML	17 29 00.3	
LBZ				AML	AML	17 29 00.4	
BSWZ	**Blackbirch Sta**	**2.04**	**24**	PN	Pn	17 28 21.1	-1.9
ODZ	**Otahua Downs**	**2.10**	**225**	PN	Pn	17 28 22.3	-1.5
ODZ				AML	AML	17 28 57.7	
ODZ				AML	AML	17 28 57.7	
ODZ				AML	AML	17 29 01.0	
ODZ				AML	AML	17 29 01.0	
FOZ	**Fox Glacier**	**2.14**	**270**	||PN	Pn	17 28 24.3	+0.1
FOZ				AML	AML	17 28 52.0	
NNZ	**Nelson**	**2.41**	**11**	↑PN	Pn	17 28 26.6	-1.4
QRZ	**Quartz Range**	**2.76**	**356**	*e*PN	Pn	17 28 31.6	-1.4
QRZ				AML	AML	17 29 20.3	
JCZ	**Jackson Bay**	**2.91**	**259**	PN	Pn	17 28 33.9	-1.1
JCZ				AML	AML	17 29 34.8	
WKZ	**Wanaka**	**2.96**	**244**	AML	AML	17 29 28.2	
WKZ				AML	AML	17 29 33.2	
EAZ	**Earnscleugh**	**2.97**	**235**	↑PN	Pn	17 28 34.2	-1.6
EAZ				AML	AML	17 29 23.8	
EAZ				AML	AML	17 29 23.8	
EAZ				AML	AML	17 29 26.9	
EAZ				AML	AML	17 29 27.0	
CAW	**Cannon Point**	**3.01**	**35**	PN	Pn	17 28 33.9	-2.5
TUZ	**Tuapeka**	**3.25**	**222**	PN	Pn	17 28 38.3	-1.3
TUZ				AML	AML	17 29 39.9	
TUZ				AML	AML	17 29 41.9	
MRZ	**Mangatainoka R**	**3.60**	**37**	PN	Pn	17 28 41.4	-3.0

MAN 04 17:27:55, 17°.99N×120°.70E, h7km, mb4.1, ML2.9, MS2.6, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABRA	**Dolores**	**0.34**	**178**	*e*P	Pg	17 28 02.2	+0.6
ABRA				*e*S	Sb	17 28 08.4	-0.6
PIP	**Pasuquin**	**0.34**	**347**	||*i*P	Pb	17 28 02.9	-0.6
PIP				*e*S	Sb	17 28 10.4	+1.3
APYP	**Conner**	**0.53**	**104**	*e*P	Pb	17 28 06.2	-0.5
SGCP	**Mt. Cagua**	**1.30**	**79**	*e*P	Pn	17 28 18.9	-0.8
SGCP				*e*S	Sn	17 28 38.5	+1.1
CAUP	**Cauayan**	**1.49**	**134**	*e*P	Pb	17 28 23.1	0.0

*ISCJB **04** 17:34:12.1±0.5, 49°.90N±0°.04×18°.42E±0°.03, h0km, Error ellipse: s-maj=5.3km s-min=2.6km az=10.3*
*IPEC **04** 17:34:12.8±0.2, 49°.84N×18°.53E, h0km, ML1.7/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*
*CSEM **04** 17:34:13.1±0.2, 49°.88N×18°.43E, h1km, ML2.4/6, Error ellipse: s-maj=7.1km s-min=3.3km az=7.0*
*PRU **04** 17:34:13.7, 49°.90N×18°.44E, h0km*
ISC 04 17:34:12.9±0.8, 49°.88N±0°.04×18°.45E±0°.02, h0km, n25, σ0§76/45, 2D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OKC	**Ostrava-Krasne**	**0.20**	**258**	||*i*PG	**Pg**	**17 34 18.0**	**+1.2**
OKC				*e*SG	**Sg**	**17 34 20.8**	**+1.4**
	comp=Z,84nm,0.4s						
OKC	**Ostrava-Krasne**	**0.20**	**258**	Pg	**Pg**	**17 34 18.0**	**+1.2**
OKC				Sg	**Sg**	**17 34 20.8**	**+1.4**
	84nm,0.4s						
MORC	**Moravsky Berou**	**0.60**	**261**	*e*Pg	**Pg**	**17 34 24.8**	**+0.4**
MORC				*e*Sg	**Sg**	**17 34 33.1**	**+1.0**
	13nm,0.3s						
OJC	**Ojcow**	**0.93**	**68**	*e*Pg	**Pg**	**17 34 30.5**	**-0.3**
OJC				*e*Sg	**Sg**	**17 34 43.5**	**+0.6**
OJC	**Ojcow**	**0.93**	**68**	*e*Pg	**Pg**	**17 34 30.5**	**-0.3**
OJC				*e*Sg	**Sg**	**17 34 43.5**	**+0.6**
LANS	**Liptovska Anna**	**0.98**	**137**	*e*Pg	**Pg**	**17 34 32.0**	**+0.2**
LANS				*e*Sg	**Sb**	**17 34 46.2**	**-0.2**
LANS	**Liptovska Anna**	**0.98**	**137**	*e*PG	**Pg**	**17 34 32.0**	**+0.2**
LANS				*e*SG	**Sb**	**17 34 46.1**	**-0.3**
KRLC	**Kraliky**	**1.10**	**281**	*e*PG	**Pg**	**17 34 33.4**	**-0.5**
KRLC				*e*SG	**Sg**	**17 34 48.5**	**+0.4**
KRLC	**Kraliky**	**1.10**	**281**	Pg	**Pg**	**17 34 33.4**	**-0.5**
KRLC				Sg	**Sg**	**17 34 48.5**	**+0.4**
NIE	**Niedzica**	**1.29**	**110**	*e*Pg	**Pb**	**17 34 37.9**	**-0.1**
NIE				*e*Sg	**Sn**	**17 34 56.3**	**+0.2**
NIE	**Niedzica**	**1.29**	**110**	*e*Pg	**Pb**	**17 34 37.9**	**-0.1**
NIE				*e*Sg	**Sn**	**17 34 56.3**	**+0.2**
VRAC	**Vranov**	**1.34**	**245**	*e*Pg	**Pg**	**17 34 38.4**	**-0.1**
VRAC				*e*Sg	**Sg**	**17 34 55.7**	**-0.2**
	11nm,0.3s						
VYHS	**Vyhne**	**1.41**	**170**	*e*Pn	**Pn**	**17 34 39.0**	**-0.8**
VYHS				*e*Sn	**Sb**	**17 34 58.4**	**-0.2**
VYHS	**Vyhne**	**1.41**	**170**	*e*PN	**Pn**	**17 34 39.0**	**-0.8**
VYHS				*e*SN	**Sb**	**17 34 58.4**	**-0.2**
VYHS				eLG	Lg	17 35 00.2	
DPC	**Dobruska-Polom**	**1.45**	**290**	*e*PG	**Pn**	**17 34 40.3**	**-0.2**
DPC				*e*SG	**Sn**	**17 35 00.6**	**+0.4**
	comp=Z,9.1nm,0.3s						
DPC	**Dobruska-Polom**	**1.45**	**290**	Pg	**Pn**	**17 34 40.3**	**-0.2**
DPC				Sg	**Sn**	**17 35 00.6**	**+0.4**
	9.1nm,0.3s						
KRUC	**Moravsky**	**1.57**	**239**	*e*Pg	**Pn**	**17 34 41.8**	**-0.3**
KRUC				*e*Sg	**Sn**	**17 35 02.7**	**-0.4**
	4.6nm,0.2s						
UPC	**Upice**	**1.69**	**293**	||*e*PG	**Pb**	**17 34 44.5**	**-0.4**
UPC				*e*SG	**Sg**	**17 35 07.4**	**+0.2**
UPC	**Upice**	**1.69**	**293**	Pg	**Pb**	**17 34 44.5**	**-0.4**
UPC				Sg	**Sg**	**17 35 07.4**	**+0.2**
STHS	**Stebnicka Huta**	**1.87**	**103**	*e*Pn	**Pg**	**17 34 48.7**	**-0.1**
STHS	**Stebnicka Huta**	**1.87**	**103**	*e*PN	**Pg**	**17 34 48.7**	**-0.1**
STHS				*e*SN	**Sg**	**17 35 15.4**	**+2.4**
STHS				eLG	Lg	17 35 18.1	
BRG	**Berggiesshubel**	**3.05**	**291**	PG	**Pb**	**17 35 08.9**	**+0.8**
BRG	**Berggiesshubel**	**3.05**	**291**	SG	**Sg**	**17 35 50.9**	**-0.1**
	3.3nm,0.5s						
KHC	**Kasperske Hory**	**3.26**	**259**	*e*SG	**Sg**	**17 35 56.1**	**-1.6**
	comp=Z,2.8nm,0.5s						
KHC	**Kasperske Hory**	**3.26**	**259**	Sg	**Sg**	**17 35 56.1**	**-1.6**
	2.8nm,0.5s						

*ISCJB **04** 17:34:39.5±0.9, 49°.92N±0°.05×18°.46E±0°.05, h0km, Error ellipse: s-maj=8.0km s-min=3.3km az=28.8*
*CSEM **04** 17:34:40.9±0.4, 49°.88N×18°.46E, h1km, ML2.5/5, Error ellipse: s-maj=7.9km s-min=3.0km az=25.0*
*IPEC **04** 17:34:40.9±0.2, 49°.89N×18°.51E, h0km, ML1.7/3, Error ellipse: s-maj=2.3km s-min=1.1km az=163.0*
*PRU **04** 17:34:41.8, 49°.88N×18°.44E, h0km*
ISC 04 17:34:39.9±1.1, 49°.89N±0°.06×18°.57E±0°.05, h0km, n21, σ0§59/32, 2D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OKC	**Ostrava-Krasne**	**0.27**	**260**	||*i*PG	**Pg**	**17 34 45.9**	**+0.7**
OKC				*e*SG	**Sg**	**17 34 49.3**	**+0.6**
	comp=Z,124nm,0.4s						
OKC	**Ostrava-Krasne**	**0.27**	**260**	Pg	**Pg**	**17 34 45.9**	**+0.7**
OKC				Sg	**Sg**	**17 34 49.3**	**+0.6**
	124nm,0.4s						
MORC	**Moravsky Berou**	**0.67**	**261**	*e*Pg	**Pg**	**17 34 53.1**	**+0.4**
	baz=80						
MORC				*e*Sg	**Sg**	**17 35 00.8**	**-0.6**
	15nm,0.3s,baz=80						
LANS	**Liptovska Anna**	**0.94**	**141**	*e*Pg	**Pn**	**17 35 00.3**	**-0.1**
LANS				*e*Sg	**Sn**	**17 35 14.3**	**-0.3**
LANS	**Liptovska Anna**	**0.94**	**141**	*e*PG	**Pn**	**17 35 00.3**	**-0.1**
LANS				*e*SG	**Sn**	**17 35 14.3**	**-0.3**
KRLC	**Kraliky**	**1.17**	**280**	*e*SG	**Sg**	**17 35 16.5**	**-0.9**
KRLC	**Kraliky**	**1.17**	**280**	Sg	**Sg**	**17 35 16.5**	**-0.9**
VYHS	**Vyhne**	**1.40**	**173**	*e*Pn	**Pb**	**17 35 07.0**	**0.0**
VYHS				*e*Sn	**Sn**	**17 35 25.9**	**-0.1**
VYHS	**Vyhne**	**1.40**	**173**	*e*PN	**Pb**	**17 35 07.0**	**0.0**
VYHS				*e*SN	**Sn**	**17 35 25.9**	**-0.1**
VYHS				eLG	Lg	17 35 28.0	
VRAC	**Vranov**	**1.41**	**247**	*e*Pg	**Pn**	**17 35 06.4**	**-0.4**
VRAC				*e*Sg	**Sg**	**17 35 24.0**	**-1.1**
	16nm,0.4s,baz=64						
DPC	**Dobruska-Polom**	**1.52**	**289**	*e*PG	**Pn**	**17 35 08.3**	**-0.1**
DPC				*e*SG	**Sg**	**17 35 28.2**	**-0.4**
	comp=Z,7.6nm,0.3s						
DPC	**Dobruska-Polom**	**1.52**	**289**	Pg	**Pn**	**17 35 08.3**	**-0.1**
DPC				Sg	**Sg**	**17 35 28.2**	**-0.4**
	7.6nm,0.3s						
SMOL	**Smolenice**	**1.56**	**209**	*e*Sn	**Sn**	**17 35 29.8**	**-0.1**
SMOL	**Smolenice**	**1.56**	**209**	*e*SN	**Sn**	**17 35 29.8**	**-0.1**
KRUC	**Moravsky**	**1.64**	**241**	*e*Pg	**Pn**	**17 35 10.1**	**+0.1**
	baz=58						
KRUC				*e*Sg	**Sn**	**17 35 31.1**	**-0.6**
	5.4nm,0.2s,baz=58						
UPC	**Upice**	**1.75**	**292**	||*e*SG	**Sb**	**17 35 35.2**	**-0.3**
UPC	**Upice**	**1.75**	**292**	Sg	**Sb**	**17 35 35.2**	**-0.3**
KECS	**Kecovo**	**1.89**	**137**	*e*Sn	**Sb**	**17 35 39.4**	**+0.1**
KECS	**Kecovo**	**1.89**	**137**	*e*SN	**Sb**	**17 35 39.4**	**+0.1**
KECS				eLG	Lg	17 35 46.2	
BRG	**Berggiesshubel**	**3.12**	**290**	PG	**Pb**	**17 35 37.2**	**+1.0**
BRG	**Berggiesshubel**	**3.12**	**290**	SG	**Sg**	**17 36 18.4**	**-1.7**
	3.1nm,0.5s						

*MEX **04** 17:39:26.9±0.8, 14°.90N×94°.04W, h25km±24km, MD4.0*
*NEIC **04** 17:39:26.9, 14°.90N×94°.04W, h25km, MD4.0(MEX), After MEX.*
*IDC **04** 17:39:30.1±5.8, 15°.33N×93°.90W, h58km±36km, mb3.7/6, mb1 3.9/8, mb1mx3.6/41, mbtmp3.9/8, ML3.7/2, MS3.0/2, Ms1 2.9/2, ms1mx2.5/30, Error ellipse: s-maj=50.9km s-min=18.0km az=15.0*
ISC 04 17:39:25.1±1.2, 14°.92N±0°.10×94°.03W±0°.04, h33km, n21, σ1§15/32, mb4.1/6, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGIG		**2.04**	**25**	*e*P	**Pn**	**17 39 58.1**	**+0.8**
TGIG				*e*S	**Sn**	**17 40 21.7**	**0.0**
TGIG		**2.04**	**25**	*e*P	**Pn**	**17 39 58.1**	**+0.8**
TGIG				*e*S	**Sn**	**17 40 21.7**	**0.0**
HUIG	**Huatulco**	**2.18**	**293**	*e*P	**Pn**	**17 39 59.4**	**+0.4**
HUIG				*i* S	**Sn**	**17 40 24.1**	**-0.8**
HUIG	**Huatulco**	**2.18**	**293**	*e*P	**Pn**	**17 39 59.4**	**+0.4**
HUIG				*i* S	**Sn**	**17 40 24.1**	**-0.8**
CCIG	**Comitan**	**2.27**	**53**	*e*P	**Pn**	**17 40 01.9**	**+1.5**
CCIG				*e*S

INK	**Inuvik**	**59.01**	**344**	P		**P**	**17 49 19.8**	**-1.5**
	1.8nm,0.9s,baz=144,slow=15,SNR=4.1								
ILAR	**Eielson Array**	**61.23**	**337**	P		**P**	**17 49 36.9**	**+0.3**
	1.0nm,0.8s,baz=140,slow=4.6,SNR=11								
NB2	**NORSAR Subarra**	**84.27**	**28**	P		**P**	**17 51 53.7**	**+0.3**
	comp=Z,0.9nm,0.7s,baz=290,slow=5.3								
NOA	**NORSAR Array B**	**84.27**	**28**	P		**P**	**17 51 53.7**	**+0.3**
	comp=Z,1.7nm,0.8s,baz=290,slow=5.1,SNR=6.3								
ARCES	**ARCESS Array B**	**85.88**	**18**	P		**P**	**17 52 00.5**	**-0.7**
	comp=Z,0.8nm,0.6s,baz=297,slow=5.3,SNR=4.4								

NIED ***04*** *17:42:00, 37.10N×142.40E, h17km, Mw3.4 Best double couple: M₀1.57000×10¹⁴ NP1:φ=296.00000°, δ=26.00000°, λ=-159.00000°. NP2:φ=187.00000°, δ=81.00000°, λ=-66.00000°.*

ISCJB ***04*** *17:42:14.8±1.0, 37.07N±0.07×142.52E±0.10, h9km, mb3.5/4, Error ellipse: s-maj=11.9km s-min=8.9km az=153.9*

IDC ***04*** *17:42:15.8±1.8, 37.03N×142.55E, h0km, mb3.5/4, mb1 3.6/8, mb1mx3.4/50, mbtmp3.5/8, ML3.3/3, Error ellipse: s-maj=39.7km s-min=21.8km az=60.0*

JMA ***04*** *17:42:17.4±0.5, 37.11N×142.37E, h24km, M3.6*

ISC 04 17:42:18.1±1.3, 37.07N±0.07×142.26E±0.09, h9km, n25, σ1°52/21, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.15**	**286**	P	**Pb**	**17 42 39.9**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.17**	**272**	P	**Pb**	**17 42 40.0**	**-0.5**
JMM	**Marumori**	**1.41**	**305**	P	**Pn**	**17 42 42.1**	**-1.9**
JIO	**Ouri**	**1.56**	**333**	P	**Pn**	**17 42 44.9**	**-1.1**
JFT	**Otama**	**1.60**	**287**	P	**Pn**	**17 42 45.4**	**-1.1**
JOU	**Okura**	**1.81**	**290**	P	**Pn**	**17 42 48.7**	**-0.8**
JFY	**Yanaizu**	**2.07**	**280**	P	**Pn**	**17 42 53.9**	**+0.9**
JYS	**Shirataka**	**2.09**	**304**	*e*S	**Sn**	**17 43 19.6**	**+0.2**
JAG	**Ashikaga**	**2.34**	**255**	P	**Pn**	**17 42 56.2**	**-0.6**
JYK	**Kaneyama**	**2.38**	**321**	P	**Pn**	**17 42 57.1**	**-0.2**
MJAR	**Matsushiro Arr**	**3.29**	**262**	Pn	**Pn**	**17 43 11.5**	**+1.7**
	3.4nm,0.3s,baz=90,slow=15,SNR=36								
MJAR				Sn	**Sb**	**17 43 54.5**	**-2.3**
	0.6nm,0.3s,baz=251,slow=16,SNR=3.2								
MAT	**Matsushiro**	**3.29**	**262**	P	**Pn**	**17 43 11.9**	**+2.0**
MAT				*e*S	**Sn**	**17 43 48.2**	**-1.0**
JHJ	**Hachijo jima 2**	**4.43**	**208**	Pn	**Pn**	**17 43 24.5**	**-1.0**
	7.2nm,0.3s,baz=302,slow=9.5,SNR=6.4								
USRK	**Uesuriysk Ar.**	**10.56**	**316**	Pn	**Pn**	**17 44 51.5**	**+2.0**
	0.0nm,0.3s,baz=114,slow=16,SNR=2.0								
KSRS	**Korea Array**	**11.44**	**276**	Pn	**Pn**	**17 45 04.3**	**+2.8**
	0.1nm,0.3s,baz=81,slow=13,SNR=3.5								
H11N2	**WAKE ISLAND Hy**	**27.59**	**122**	T	T	18 16 57.1	
	baz=315,slow=75,SNR=22								
H11N1	**WAKE ISLAND Hy**	**27.59**	**122**	T	T	18 17 06.4	
	baz=315,slow=75,SNR=23								
H11N3	**WAKE ISLAND Hy**	**27.60**	**122**	T	T	18 17 00.8	
	baz=315,slow=75,SNR=18								
H11S1	**WAKE ISLAND Hy**	**28.31**	**124**	T	T	18 17 56.7	
	baz=317,slow=76,SNR=17								
H11S3	**WAKE ISLAND Hy**	**28.31**	**124**	T	T	18 17 53.0	
	baz=317,slow=76,SNR=16								
H11S2	**WAKE ISLAND Hy**	**28.33**	**124**	T	T	18 18 02.7	
	baz=317,slow=76,SNR=16								
MKAR	**Makanchi Array**	**44.67**	**302**	P	**P**	**17 50 33.1**	**+2.0**
	0.2nm,0.5s,baz=91,slow=7.8,SNR=3.1								
KURBB	**Kurchatov Arra**	**46.52**	**308**	P	**P**	**17 50 44.8**	**-0.8**
	0.5nm,0.5s,baz=83,slow=8.0,SNR=4.3								
WRA	**Warramunga Arr**	**57.19**	**189**	P	**P**	**17 52 03.8**	**-1.6**
	0.6nm,1.1s,baz=7.1,slow=6.9,SNR=4.7								
ASAR	**Alice Springs**	**60.92**	**189**	P	**P**	**17 52 31.2**	**-0.1**
	0.6nm,1.2s,baz=2.9,slow=5.6,SNR=2.9								

NIED ***04*** *17:47:00, 24.10N×125.90E, h35km, Mw4.0 Best double couple: M₀1.31000×10¹⁵ NP1:φ=91.00000°, δ=56.00000°, λ=144.00000°. NP2:φ=203.00000°, δ=61.00000°, λ=40.00000°.*

IDC ***04*** *17:47:55.7±1.0, 23.93N×125.47E, h0km, mb3.8/9, mb1 3.9/11, mb1mx3.6/45, mbtmp3.8/11, ML3.5/2, MS3.1/6, Ms1 3.1/6, ms1mx2.8/35, Error ellipse: s-maj=46.9km s-min=17.4km az=70.0*

ISCJB ***04*** *17:47:57.2±0.6, 23.97N±0.04×126.05E±0.03, h37km±7km, mb3.7/10, MS3.1/5, Error ellipse: s-maj=6.9km s-min=3.9km az=157.4*

JMA ***04*** *17:47:59.4±0.1, 24.13N×125.92E, h81km±4km, M3.5*

NEIC ***04*** *17:48:01.9±1.4, 24.04N×125.69E, h46km±13km, mb4.0/1, Error ellipse: s-maj=17.2km s-min=12.0km az=127.0*

ISC 04 17:47:58.8±1.9, 24.00N±0.06×125.96E±0.06, h28km±13km, n50, σ1°50/61, mb3.7/10, MS3.2/5, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOGS	**Gusukube**	**0.91**	**326**	P	**Pb**	**17 48 16.1**	**+0.2**
JOGS				S	**Sn**	**17 48 28.5**	**+0.8**
JMJ	**Miyako jima 2**	**1.01**	**323**	P	**Pn**	**17 48 17.4**	**-0.3**
JMJ				*e*S	**Sn**	**17 48 31.1**	**+0.8**
JIRB	**Irabujima**	**1.09**	**319**	P	**Pn**	**17 48 18.3**	**+0.2**
JIRB				S	**Sn**	**17 48 32.3**	**0.0**
JIKM	**Ikemajima**	**1.12**	**325**	P	**Pn**	**17 48 18.7**	**+0.1**
JIKM				*e*S	**Sn**	**17 48 33.3**	**+0.2**
JTJ	**Tarama**	**1.31**	**299**	P	**Pn**	**17 48 21.4**	**+0.2**
JTJ				S	**Sn**	**17 48 37.4**	**-0.3**
JISG	**Ishigakijimahi**	**1.61**	**291**	P	**Pn**	**17 48 25.6**	**+0.3**
JISG				S	**Sn**	**17 48 44.6**	**-0.5**
JIJ	**Ishigaki jima**	**1.69**	**283**	P	**Pn**	**17 48 27.1**	**+0.6**
JIJ				S	**Sn**	**17 48 46.0**	**-1.2**
JKRS	**Kuro-shima**	**1.79**	**278**	P	**Pn**	**17 48 28.8**	**+1.0**
JKRS				S	**Sn**	**17 48 49.0**	**-0.7**
HATJ	**Hateruma jima**	**1.97**	**272**	P	**Pn**	**17 48 30.8**	**+0.6**
HATJ				S	**Sn**	**17 48 53.2**	**-0.8**
IRIF	**Iriomote-Funau**	**2.06**	**280**	P	**Pn**	**17 48 32.1**	**+0.6**
IRIF				S	**Sn**	**17 48 56.1**	**-0.1**
JKE	**Kume jima 2**	**2.43**	**18**	P	**Pn**	**17 48 36.1**	**-0.5**
JJT2	**Tamagusuku 2**	**2.68**	**37**	P	**Pn**	**17 48 39.7**	**-0.3**
YOJ	**Yonaguni jima**	**2.73**	**280**	P	**Pn**	**17 48 41.1**	**+0.4**
JYNG	**Yonagunijimaku**	**2.79**	**280**	P	**Pn**	**17 48 42.3**	**+0.8**
JAGN	**Aguni-jima**	**2.83**	**24**	P	**Pn**	**17 48 41.9**	**-0.1**
JAGN				S	**Sn**	**17 49 14.0**	**-1.1**
JNTH	**Nagotoyohara**	**3.12**	**36**	P	**Pn**	**17 48 45.4**	**-0.8**
JNTH				S	**Sn**	**17 49 18.6**	**-3.9**
JOW	**Kunigami**	**3.51**	**36**	P	**Pn**	**17 48 50.9**	**-0.6**
JOW				S	**Sn**	**17 49 28.1**	**-4.0**
JIH	**Iheya**	**3.52**	**31**	P	**Pn**	**17 48 50.8**	**-0.8**
NACB	**Ninganchiao**	**3.99**	**273**	*e*Pn	**Pn**	**17 48 57.6**	**-0.5**
JOKE	**Okinoerabujima**	**4.09**	**35**	P	**Pn**	**17 48 58.7**	**-0.8**
YHNB	**Yeheng**	**4.23**	**280**	*e*Pn	**Pn**	**17 49 02.9**	**+1.4**
YULB	**Yu-li**	**4.31**	**263**	*e*Pn	**Pn**	**17 49 01.3**	**-1.2**
SSLB	**Suanglung**	**4.58**	**268**	*e*Pn	**Pn**	**17 49 05.8**	**-0.5**
JTK	**Tokunoshima**	**4.63**	**35**	P	**Pn**	**17 49 05.4**	**-1.5**
TWG	**Pinlang**	**4.64**	**256**	*e*Pn	**Pn**	**17 49 05.4**	**-1.6**
TPUB	**Ta-pu**	**4.93**	**263**	*e*Pn	**Pn**	**17 49 11.8**	**+0.7**
JMZ	**Minamidaito 2**	**5.11**	**68**	P	**Pn**	**17 49 10.4**	**-3.0**
JAMN	**Amaminishikomi**	**5.12**	**34**	P	**Pn**	**17 49 11.5**	**-2.0**
JAM	**Amami Oshima**	**5.48**	**36**	P	**Pn**	**17 49 16.8**	**-1.7**
JZK	**Kikaishima**	**5.61**	**39**	P	**Pn**	**17 49 19.2**	**-1.1**
APYP	**Conner**	**7.53**	**217**	*e*P	**Pn**	**17 49 47.4**	**+0.6**
APYP				*e*S	**Sn**	**17 51 06.2**	**-5.0**
ABRA	**Dolores**	**8.00**	**219**	*e*P	**Sn**	**17 51 19.8**	**-2.9**
BALP	**Baler**	**9.19**	**207**	*e*P	**Pn**	**17 50 10.5**	**+0.9**
KSAR	**Wonju Array Be**	**13.50**	**7**	Pn	**Pn**	**17 51 08.2**	**-0.1**
KSRS	**Korea Array**	**13.51**	**7**	Pn	**Pn**	**17 51 08.2**	**-0.3**
	0.1nm,0.3s,baz=187,slow=16,SNR=4.0								
KSRS				LR	LR	17 57 01.6	
	comp=Z,39nm,19.7s,baz=157,slow=40								
MJAR	**Matsushiro Arr**	**16.36**	**37**	Pn	**P**	**17 51 52.0**	**+3.0**
	0.3nm,0.3s,baz=226,slow=11,SNR=4.8								
GUMO	**Guam**	**20.66**	**117**	LR	LR	17 59 19.4	
	comp=Z,21nm,21.8s,baz=130,slow=32								
CMAR	**Chiang Mai Arr**	**25.76**	**263**	LR	LR	18 04 52.0	
	comp=Z,29nm,18.1s,baz=190,slow=40								
SONM	**Songino Array**	**28.41**	**332**	P	**P**	**17 53 50.5**	**-0.5**
	0.3nm,0.4s,baz=147,slow=8.2,SNR=4.2								
SONM				LR	LR	18 06 50.2	
	comp=Z,59nm,20.8s,baz=130,slow=40								
MKAR	**Makanchi Array**	**41.54**	**314**	P	**P**	**17 55 43.8**	**0.0**
	0.9nm,0.5s,baz=101,slow=9.9,SNR=22								
MKAR				LR	LR	18 14 48.4	
	comp=Z,35nm,18.3s,baz=58,slow=39								
ZALV	**Zalesovo Beam**	**42.83**	**325**	P	**P**	**17 55 53.2**	**-0.9**
	0.9nm,0.6s,baz=111,slow=9.2,SNR=4.5								
WRA	**Warramunga Arr**	**44.44**	**169**	P	**P**	**17 56 08.5**	**+1.1**
	2.0nm,0.9s,baz=348,slow=8.8,SNR=8.5								
KURK	**Kurchatov**	**45.07**	**319**	P	**P**	**17 56 10.4**	**-1.7**
KURBB	**Kurchatov Arra**	**45.09**	**319**	P	**P**	**17 56 11.4**	**-0.9**
	0.9nm,0.6s,baz=108,slow=8.3,SNR=7.6								
ASAR	**Alice Springs**	**48.01**	**170**	P	**P**	**17 56 36.8**	**+1.3**
	0.5nm,0.7s,baz=353,slow=7.9,SNR=13								
ABKAR	**Akbulak array**	**56.69**	**314**	*e*P	**P**	**17 57 40.7**	**+1.1**
	1.0nm,0.6s								
FINES	**FINESS Array B**	**73.78**	**330**	P	**P**	**17 59 31.4**	**+1.3**
	1.3nm,0.5s,baz=93,slow=8.2,SNR=8.2								
BRTR	**Keskin Array B**	**76.76**	**308**	P	**P**	**17 59 46.0**	**-1.9**
	0.5nm,0.7s,baz=108,slow=4.0,SNR=3.5								
NOA	**NORSAR Array B**	**80.38**	**333**	P	**P**	**18 00 08.3**	**+0.9**
	0.4nm,0.8s,baz=40,slow=5.9,SNR=2.4								
VAE	**Valguarnera**	**91.27**	**312**	LR	LR	18 47 37.2	
	comp=Z,26nm,18.3s,baz=154,slow=39								

ISCJB ***04*** *17:53:12.8±0.5, 39.06N±0.03×29.03E±0.04, h7km±7km, Error ellipse: s-maj=5.9km s-min=4.2km az=145.5*

CSEM ***04*** *17:53:12.9±0.1, 39.07N×29.03E, h8km, MD2.6, Error ellipse: s-maj=2.6km s-min=2.0km az=119.0*

ISK ***04*** *17:53:12.4, 39.08N×29.05E, h8km, MD2.7*

DDA ***04*** *17:53:12.8, 39.06N×29.03E, h7km, Md2.6*

ISC 04 17:53:13.2±0.9, 39.07N±0.03×29.03E±0.03, h12km±8km, n29, σ0°45/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**263**	*i* P	**Pg**	**17 53 18.6**	**+0.1**
DEMI				*i* S	**Sg**	**17 53 22.1**	**+0.1**
DEMI	**Demirci**	**0.25**	**263**	P	**Pg**	**17 53 18.6**	**+0.1**
DEMI				S	**Sg**	**17 53 22.1**	**+0.1**
GDZ	**Gediz**	**0.35**	**87**	*i* P	**Pg**	**17 53 20.2**	**-0.1**
GDZ				*i* S	**Sg**	**17 53 25.4**	**+0.3**
GDZ	**Gediz**	**0.35**	**87**	P	**Pg**	**17 53 20.2**	**-0.1**
GDZ				S	**Sg**	**17 53 25.4**	**+0.3**
TVSB	**Tavsanli**	**0.50**	**41**	*e*PG	**Pg**	**17 53 22.8**	**-0.3**
TVSB				*e*SG	**Sg**	**17 53 29.1**	**-0.8**
TVSB	**Tavsanli**	**0.50**	**41**	*e*Pg	**Pg**	**17 53 22.8**	**-0.3**
TVSB				*e*Sg	**Sg**	**17 53 29.1**	**-0.8**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*PG	**Pg**	**17 53 25.4**	**0.0**
KULA				*e*SG	**Sg**	**17 53 33.8**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*Pg	**Pg**	**17 53 25.4**	**0.0**
KULA				*e*Sg	**Sg**	**17 53 33.8**	**+0.1**
MANT	**Manisa**	**0.69**	**213**	*i* P	**Pg**	**17 53 25.5**	**-1.1**
MANT				*i* S	**Sg**	**17 53 34.7**	**-1.0**
MANT	**Manisa**	**0.69**	**213**	P	**Pg**	**17 53 25.5**	**-1.1**
MANT				S	**Sg**	**17 53 34.7**	**-1.0**
KHL	**Karahalli**	**0.84**	**153**	*e*PG	**Pg**	**17 53 29.3**	**-0.1**
KHL				*e*SG	**Sb**	**17 53 41.4**	**+0.4**
KHL	**Karahalli**	**0.84**	**153**	*e*Pg	**Pg**	**17 53 29.3**	**-0.1**
KHL				*e*Sg	**Sb**	**17 53 41.4**	**+0.4**
AKS	**Akhisar**	**0.97**	**259**	*e*PG	**Pb**	**17 53 32.0**	**+0.1**
AKS	**Akhisar**	**0.97**	**259**	*e*Pg	**Pb**	**17 53 32.0**	**+0.1**
BALB	**Balikesir**	**1.06**	**303**	*e*PG	**Pb**	**17 53 33.3**	**-0.1**
BALB	**Balikesir**	**1.06**	**303**	*e*Pg	**Pb**	**17 53 33.3**	**-0.1**
IGD	**Bursa**	**1.20**	**6**	*i* P	**Pb**	**17 53 35.7**	**-0.1**
IGD				*i* S	**Sn**	**17 53 52.2**	**+0.3**
CAVI	**Cavuskoy**	**1.29**	**29**	*e*PN	**Pn**	**17 53 37.1**	**+0.1**
CAVI	**Cavuskoy**	**1.29**	**29**	*e*Pn	**Pn**	**17 53 37.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*PN	**Pb**	**17 53 37.6**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*Pn	**Pb**	**17 53 37.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*PN	**Pg**	**17 53 37.9**	**-0.3**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*Pn	**Pg**	**17 53 37.9**	**-0.3**
IZI	**Iznik**	**1.31**	**15**	*e*PN	**Pn**	**17 53 37.3**	**0.0**
IZI	**Iznik**	**1.31**	**15**	*e*Pn	**Pn**	**17 53 37.3**	**0.0**
GONE	**Gonen-Balikesi**	**1.43**	**314**	*e*PN	**Pn**	**17 53 39.2**	**+0.4**
GONE	**Gonen-Balikesi**	**1.43**	**314**	*e*Pn	**Pn**	**17 53 39.2**	**+0.4**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN	**Pn**	**17 53 40.3**	**+0.4**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn	**Pn**	**17 53 40.3**	**+0.4**

IDC ***04*** *18:21:00.7±1.4, 6.32S×150.27E, h0km, mb4.4/5, mb1 4.7/6, mb1mx4.0/34, mbtmp4.5/6, ML2.3/1, MS3.4/7, Ms1 3.4/7, ms1mx3.1/28, Error ellipse: s-maj=68.4km s-min=22.6km az=124.0*

NEIC ***04*** *18:21:02.2±0.8, 6.27S×150.19E, h10km, mb4.6/2, Error ellipse: s-maj=35.4km s-min=13.4km az=127.0*

ISCJB ***04*** *18:21:05.4±1.1, 6.2S±0.2×149.9E±0.2, h43km, mb4.2/5, MS3.3/6, Error ellipse: s-maj=44.1km s-min=12.5km az=40.8*

ISC 04 18:21:07.1±1.1, 6.3S±0.2×150.1E±0.3, h43km, n13, σ0°88/11, mb4.3/5, MS3.2/6, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.22**	**223**	Pn	**Pn**	**18 22 09.3**	**+0.4**
	11nm,0.3s,baz=60,slow=5.5,SNR=49						
PMG				Sn	**Sn**	**18 22 56.1**	**-0.9**
	40nm,0.3s,baz=38,slow=11,SNR=14						
PMG				LR	LR	18 23 52.9	
	comp=Z,519nm,19.4s,baz=41,slow=40						
WRAB	**Tennant Creek**	**20.41**	**227**	*e*P	**P**	**18 25 40.4**	**-0.4**
	24nm,0.7s						
WRA	**Warramunga Arr**	**20.42**	**227**	P	**P**	**18 25 40.7**	**-0.2**
	18nm,0.6s,baz=52,slow=11,SNR=114						
ASAR	**Alice Springs**	**23.23**	**220**	P	**P**	**18 26 09.8**	**-0.9**
	5.9nm,0.8s,baz=56,slow=8.4,SNR=44						
ASAR				LR	LR	18 34 57.0	
	comp=Z,97nm,21.7s,baz=60,slow=36						
FITZ	**Fitzroy Crossi**	**26.55**	**242**	P	**P**	**18 26 41.8**	**+0.6**
	11nm,0.9s,baz=71,slow=7.5,SNR=22						
FITZ				LR	LR	18 38 49.6	
	comp=Z,109nm,20.8s,baz=44,slow=40						
STKA	**Stephens Creek**	**26.64**	**196**	P	**P**	**18 26 42.1**	**+0.2**
	13nm,1.0s,baz=339,slow=10,SNR=6.0						
STKA				LR	LR	18 37 40.6	
	comp=Z,142nm,19.1s,baz=26,slow=38						
JNU	**Nakatsue**	**43.24**	**336**	LR	LR	18 44 39.1	
	comp=Z,37nm,21.2s,baz=122,slow=33						
MJAR	**Matsushiro Arr**	**44.05**	**346**	LR	LR	18 45 21.8	
	comp=Z,29nm,20.6s,baz=200,slow=33						
KSRS	**Korea Array**	**48.19**	**336**	LR	LR	18 47 57.1	
	comp=Z,26nm,20.7s,baz=156,slow=34						
QSPA	**South Pole Qui**	**83.66**	**180**	*e*P	**P**	**18 33 31.5**	**+0.3**
	1.8nm,0.6s						
ILAR	**Eielson Array**	**84.58**	**23**	P	**P**	**18 33 34.2**	**-1.4**
	0.5nm,0.8s,baz=246,slow=5.7,SNR=5.6						
GERES	**GERESS Array B**	**123.86**	**327**	PKP	**PKPdf**	**18 40 01.6**	**+0.8**
	0.7nm,0.7s,baz=202,slow=1.4,SNR=7.0						
TORD	**Torodi Ar. Bea**	**148.12**	**285**	PKPbc	**PKPbc**	**18 40 50.4**	**+1.1**
	2.4nm,0.6s,baz=51,slow=2.8,SNR=20						

ISCJB ***04*** *18:39:01.2±0.4, 0.14S±0.05×122.95E±0.05, h162km, mb3.6/8, Error ellipse: s-maj=7.9km s-min=6.2km az=36.5*

IDC ***04*** *18:39:03.5±2.0, 0.17S×122.86E, h168km±18km, mb3.3/8, mb1 3.5/10, mb1mx3.3/43, mbtmp3.9/10, Error ellipse: s-maj=25.5km s-min=11.2km az=71.0*

DJA ***04*** *18:39:03.5±0.4, 0°S±3°×12°3E±°, h132km±5km, M4.5/12, mB5.1/1, mb4.5/3, MLv4.4/12, Mw(mB)4.4/1*

ISC 04 18:39:02.4±0.6, 0.13S±0.05×122.95E±0.05, h162km, n22, σ1°65/30, mb3.6/8, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTOI	**Gorontalo**	**0.76**	**4**	S	**Sn**	**18 39 45.0**	**-0.2**
LUWI	**Luwuk**	**0.92**	**191**	P	**Pn**	**18 39 26.0**	**-1.7**
LUWI				S	**Sn**	**18 39 44.0**	**-3.2**
MRSI	**Marisa**	**1.18**	**301**	P	**Pn**	**18 39 27.5**	**-2.3**
MRSI				S	**Sn**	**18 39 46.1**	**-4.7**
KMSI	**Cibinong**	**1.24**	**56**	P	**Sn**	**18 39 30.2**	**-0.2**
KMSI				S	**Sn**	**18 39 51.8**	**-0.1**
PCI	**Palu**	**3.21**	**256**	P	**Pn**	**18 39 53.0**	**+0.1**
SANI	**Sanana**	**3.58**	**122**	P	**Pn**	**18 39 55.8**	**-1.8**
SANI				S	**Sn**	**18 40 36.6**	**-4.0**
KDI	**Kendari**	**3.82**	**185**	P	**Pn**	**18 40 00.3**	**-0.3**
TTSI	**Tana Toraja**	**4.27**	**227**	P	**Pn**	**18 40 06.5**	**+0.1**
LBMI	**Labuha**	**4.58**	**96**	P	**Pn**	**18 40 09.9**	**-0.6**
SPSI	**Sidrap Palu**	**4.96**	**220**	P	**Pn**	**18 40 16.2**	**+0.7**
NLAI	**Namlea**	**5.17**	**127**	P	**Pn**	**18 40 18.9**	**+0.7**
	76nm,0.7s,2μm1.9nm						
KAPI	**Kappang**	**5.81**	**213**	P	**Pn**	**18 40 27.6**	**+0.9**
	1.4nm,0.3s,baz=326,slow=2.7,SNR=6.3						
KAPI				S	**Sn**	**18 41 31.4**	**-1.5**
	baz=41,slow=20,SNR=2.6						
FITZ	**Fitzroy Crossi**	**18.05**	**172**	P	**P**	**18 43 02.5**	**+1.0**
	0.7nm,0.3s,baz=4.2,slow=8.5,SNR=33						
WRA	**Warramunga Arr**	**22.63**	**151**	P	**P**	**18 43 50.2**	**+0.4**
	2.5nm,0.4s,baz=326,slow=11,SNR=51						
WRA				ScP	**ScP**	**18 50 59.5**	**-0.4**
	0.4nm,0.7s,baz=324,slow=2.6,SNR=4.5						
ASAR	**Alice Springs**	**25.70**	**156**	P	**P**	**18 44 18.4**	**+0.6**
	0.6nm,0.5s,baz=330,slow=7.6,SNR=16						
ASAR				PcP	**PcP**	**18 47 44.1**	**+0.2**
	0.5nm,0.5s,baz=335,slow=1.8,SNR=8.8						
ASAR				ScP	**ScP**	**18 51 08.4**	**+0.1**
	0.3nm,0.6s,baz=336,slow=2.9,SNR=4.6						
CMAR	**Chiang Mai Arr**	**29.96**	**309**	P	**P**	**18 44 57.1**	**+1.4**
	1.0nm,0.6s,baz=133,slow=7.1,SNR=12						
STKA	**Stephens Creek**	**36.17**	**153**	P	**P**	**18 45 50.7**	**+1.4**
	3.5nm,0.7s,baz=329,slow=8.1,SNR=6.7						
USRK	**Ussuriysk Ar.**	**44.87**	**9**	P	**P**	**18 47 01.2**	**+0.7**
	0.9nm,0.8s,baz=196,slow=8.2,SNR=3.8						
SONM	**Songino Array**	**49.90**	**345**	P	**P**	**18 47 40.1**	**+0.6**
	0.4nm,0.5s,baz=158,slow=7.9,SNR=3.2						
MKAR	**Makanchi Array**	**58.70**	**328**	P	**P**	**18 48 42.7**	**-0.3**
	0.4nm,0.5s,baz=121,slow=9.3,SNR=8.1						
VNDA	**Vanda**	**80.13**	**172**	P	**P**	**18 50 53.7**	**-0.2**
	0.7nm,0.5s,baz=314,slow=5.4,SNR=7.1						
TORD	**Torodi Ar. Bea**	**120.40**	**285**	PKP	**PKPdf**	**18 57 34.2**	**-1.4**
	0.5nm,0.6s,baz=70,slow=2.6,SNR=5.2						

IDC ***04*** *18:42:09.4±0.9, 45.80N×27.58E, h0km, mb3.7/1, mb1 3.2/3, mb1mx3.0/32, mbtmp3.2/3, ML3.1/2, Error ellipse: s-maj=10.1km s-min=9.1km az=151.0*

ISCJB ***04*** *18:42:11.9±0.5, 45.81N±0.01×27.50E±0.02, h8km±3km, mb3.5/1, Error ellipse: s-maj=2.6km s-min=2.2km az=145.8*

CSEM ***04*** *18:42:11.4, 45.78N×27.48E, h14km, MD3.7/3*

BUC ***04*** *18:42:11.4±1.0, 45.78N×27.48E, h14km±9km, MD3.7/3, Error ellipse: s-maj=7.1km s-min=5.3km az=83.0*

SIGU ***04*** *18:42:12.1, 45.80N×27.51E, h12km, mb3.3*

ISC 04 18:42:11.6±1.0, 45.79N±0.01×27.51E±0.01, h12km±8km, n117, σ1°24/183, 60C-28D, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ODBI	**Odobesti**	**0.32**	**265**	↓*i* P	**Pb**	**18 42 19.0**	**-0.2**
ODBI	**Odobesti**	**0.32**	**265**	↓P	**Pb**	**18 42 19.0**	**-0.2**
ODBI				*i* S	**Sb**	**18 42 24.5**	**+0.2**
ODBI	**Odobesti**	**0.32**	**265**	↓S	**Pb**	**18 42 19.0**	**-0.2**
ODBI				*i* S	**Sb**	**18 42 24.5**	**+0.2**
VRI	**Vrincioaia**	**0.55**	**278**	↓*i* P	**Pg**	**18 42 22.3**	**-0.1**
VRI	**Vrincioaia**	**0.55**	**278**	↓P	**Pg**	**18 42 22.3**	**-0.1**
VRI				*i* S	**Sg**	**18 42 29.8**	**+0.1**
VRI	**Vrincioaia**	**0.55**	**278**	↓P	**Pg**	**18 42 22.3**	**-0.1**
VRI				*i* S	**Sg**	**18 42 29.8**	**+0.1**
GRER		**0.56**	**223**	↑*i* P	**Pb**	**18 42 23.6**	**+0.4**
GRER		**0.56**	**223**	↑P	**Pb**	**18 42 23.6**	**+0.4**
GRER				*i* S	**Sn**	**18 42 32.6**	**-1.8**
GRER		**0.56**	**223**	↑*i* P	**Pb**	**18 42 23.6**	**+0.4**
GRER				*i* S	**Sn**	**18 42 32.6**	**-1.8**
GIUM	**Giurgiulesti**	**0.58**	**122**	P	**Pn**	**18 42 24.7**	**-0.8**
GIUM				S	**Sn**	**18 42 33.8**	**-1.1**
PLOR	**Plostina**	**0.60**	**276**	↓*i* P	**Pg**	**18 42 23.3**	**-0.1**
PLOR	**Plostina**	**0.60**	**276**	↓P	**Pg**	**18 42 23.3**	**-0.1**
PLOR				*i* S	**Sg**	**18 42 31.7**	**+0.3**
PLOR	**Plostina**	**0.60**	**276**	↓S	**

VOIR					*i* S		**Sb**	**18 43 04.7**	**-1.2**
PRAR	**RASCA**	**1.80**	**331**	⇑	*i*P		**Pb**	**18 42 44.4**	**-0.1**
PRAR	**RASCA**	**1.80**	**331**	⇑	*i*P		**Pb**	**18 42 44.4**	**-0.1**
PRAR	**RASCA**	**1.80**	**331**	⇑	*i*P		**Pb**	**18 42 44.4**	**-0.1**
EFOR	**EFORIE**	**1.89**	**155**		S		**Sb**	**18 43 09.8**	**+0.4**
EFOR	**EFORIE**	**1.89**	**155**		*i* S		**Sb**	**18 43 09.8**	**+0.4**
EFOR	**EFORIE**	**1.89**	**155**		*i* S		**Sb**	**18 43 09.8**	**+0.4**
ARR	**Arges**	**2.06**	**259**	⇑	*i*P		**Pn**	**18 42 46.3**	**+0.2**
ARR	**Arges**	**2.06**	**259**	⇑	*i*P		**Pn**	**18 42 46.3**	**+0.2**
ARR					*i* S		**Sb**	**18 43 14.1**	**-0.5**
ARR	**Arges**	**2.06**	**259**	⇑	*i*P		**Pn**	**18 42 46.3**	**+0.2**
ARR					*i* S		**Sb**	**18 43 14.1**	**-0.5**
BURAR	**Bucovina Array**	**2.41**	**320**	⇓	*i*P		**Pb**	**18 42 53.1**	**-1.8**
BURAR	**Bucovina Array**	**2.41**	**320**	⇓	*i*P		**Pb**	**18 42 53.1**	**-1.8**
BURAR					*i* S		**Sn**	**18 43 20.2**	**-0.2**
BURAR	**Bucovina Array**	**2.41**	**320**	⇓	*i*P		**Pb**	**18 42 53.1**	**-1.8**
BURAR					*i* S		**Sn**	**18 43 20.2**	**-0.2**
SORM	**Soroca**	**2.42**	**13**		P		**Pn**	**18 42 51.6**	**+0.8**
SORM					S		**Sb**	**18 43 22.0**	**-2.6**
SORM	**Soroca**	**2.42**	**13**	⇑	*i*P		**Pn**	**18 42 50.7**	**-0.1**
SORM	**Soroca**	**2.42**	**13**	⇑	*i*P		**Pn**	**18 42 50.7**	**-0.1**
SORM					*i* S		**Sn**	**18 43 21.5**	**+1.2**
SORM	**Soroca**	**2.42**	**13**	⇑	*i*P		**Pn**	**18 42 50.7**	**-0.1**
SORM					*i* S		**Sn**	**18 43 21.5**	**+1.2**
LOT	**Lotru**	**2.65**	**264**	⇑	*i*P		**Pn**	**18 42 53.5**	**-0.6**
LOT	**Lotru**	**2.65**	**264**	⇑	*i*P		**Pn**	**18 42 53.5**	**-0.6**
LOT	**Lotru**	**2.65**	**264**	⇑	*i*P		**Pn**	**18 42 53.5**	**-0.6**
CHRU	**Chernivtsi**	**2.73**	**337**		*i* Sn		**Sb**	**18 43 30.6**	**-3.2**
CHRU					Snm			18 43 31.5	
NDNU	**Novodnistrovsk**	**2.81**	**358**		*i* Pn		**Pn**	**18 42 57.7**	**+1.5**
NDNU					Pnm			18 43 04.4	
NDNU					*i* Sn		**Sn**	**18 43 32.1**	**+2.1**
NDNU					Snm			18 43 37.1	
KSV	**Kosov**	**3.03**	**327**		*i* Pn		**Pn**	**18 43 00.8**	**+1.5**
KSV					Pnm			18 43 10.0	
KSV					*i* Sn		**Sn**	**18 43 38.0**	**+2.5**
KSV					Snm			18 43 43.6	
NSLU	**Nyzhne Selyshc**	**3.19**	**320**		*i* Pn		**Pg**	**18 43 10.5**	**-2.1**
NSLU					Pnm			18 43 15.7	
NSLU					*i* Sn		**Sg**	**18 43 54.5**	**+0.6**
NSLU					Snm			18 44 16.3	
GZR	**Gura Zlata**	**3.35**	**265**	⇓	*i*P		**Pn**	**18 43 03.4**	**-0.3**
GZR	**Gura Zlata**	**3.35**	**265**	⇓	*i*P		**Pn**	**18 43 03.4**	**-0.3**
GZR	**Gura Zlata**	**3.35**	**265**	⇓	*i*P		**Pn**	**18 43 03.4**	**-0.3**
DRGR		**3.48**	**288**	⇓	*i*P		**Pn**	**18 43 05.2**	**-0.3**
DRGR		**3.48**	**288**	⇓	*i*P		**Pn**	**18 43 05.2**	**-0.3**
DRGR		**3.48**	**288**	⇓	*i*P		**Pn**	**18 43 05.2**	**-0.3**
HORU	**Horodok**	**3.50**	**348**		*i* Pn		**Pn**	**18 43 07.3**	**+1.5**
HORU					*i* Sn		**Sn**	**18 43 50.5**	**+3.4**
MEZ	**Mezhgor'ye**	**3.85**	**316**		*e*Pn		**Pn**	**18 43 13.1**	**+2.5**
MEZ					*i* Sn		**Sn**	**18 43 59.1**	**+3.3**
MEZ					Snm			18 44 03.9	
BRIU	**Brid**	**3.99**	**311**		*e*Pn		**Pn**	**18 43 15.1**	**+2.7**
BRIU					*e*Sn		**Sn**	**18 44 02.7**	**+3.6**
MORS	**Morshin**	**4.15**	**325**		*i* Pn		**Pn**	**18 43 17.3**	**+2.7**
MORS					*i* Sn		**Sn**	**18 44 06.3**	**+3.3**
SHIU	**Shidnytsya**	**4.44**	**322**		*i* Pn		**Pn**	**18 43 21.1**	**+2.4**
SHIU					*i* Sn		**Sn**	**18 44 14.3**	**+4.1**
SEV	**Sevastopol'**	**4.53**	**104**		*e*Pn		**Pn**	**18 43 20.7**	**+0.8**
SEV					Pnm			18 43 29.6	
SEV					*e*Sn		**Sn**	**18 44 11.3**	**-1.1**
SEV					Snm			18 44 16.9	
STZU	**Stuzhytsa**	**4.63**	**316**		*e*Pn		**Pn**	**18 43 23.8**	**+2.5**
STZU					*i* Sn		**Sn**	**18 44 18.8**	**+3.9**
LVV	**L'vov**	**4.66**	**331**		*i* Sn		**Sn**	**18 44 19.2**	**+3.5**
LVV					Snm			18 44 37.0	
SIM	**Simferopol'**	**4.73**	**98**		*e*Sn		**Sn**	**18 44 20.8**	**+3.4**
SIM					Snm			18 44 24.0	
SIM					Snm			18 44 24.0	
KOLS	**Kolonicke sedl**	**4.75**	**313**		*e*PG		**Pb**	**18 43 33.5**	**-1.2**
KOLS					*e*SG		**Sg**	**18 44 47.9**	**+4.0**
YAL	**Yalta**	**4.88**	**103**		*e*Sn		**Sn**	**18 44 23.7**	**+2.7**
YAL					Snm			18 44 26.4	
ALU	**Alushta**	**4.99**	**100**		*e*Sn		**Sn**	**18 44 26.2**	**+2.4**
ALU					Snm			18 44 28.8	
AKASG	**Malin Array Be**	**5.05**	**12**		Pn		**Pn**	**18 43 27.3**	**+0.4**
	1.5nm,0.3s,baz=195,slow=13,SNR=3.5								
AKASG					Sn		**Sn**	**18 44 22.6**	**-2.5**
	3.0nm,0.3s,baz=199,slow=21,SNR=4.7								
AKASG					Lg		Lg	18 44 45.1	
	6.0nm,0.3s,baz=193,slow=30,SNR=9.9								
SUDU	**Sudak**	**5.36**	**97**		*e*Pn		**Pn**	**18 43 31.3**	**+0.1**
SUDU					Pnm			18 43 42.8	
SUDU					*e*Sn		**Sn**	**18 44 32.3**	**-0.5**
SUDU					Snm			18 44 39.9	
BRTR	**Keskin Array B**	**7.55**	**141**		Pn		**Pn**	**18 44 02.5**	**+0.9**
	0.2nm,0.3s,baz=322,slow=11,SNR=4.2								
BRTR					Sn		**Sn**	**18 45 26.9**	**-0.2**
	0.1nm,0.3s,baz=322,slow=18,SNR=3.2								
TORD	**Torodi Ar. Bea**	**39.19**	**222**		P		**P**	**18 49 37.7**	**-1.8**
	0.5nm,0.5s,baz=24,slow=8.6,SNR=8.4								

GUC 04 18:55:05.4±0.6, 21°.39S×69°.59W, h39km±2km, ML3.7, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.36**	**15**	*i* P	Pn	18 55 14.3	+0.1
PB01				*i* S	Sn	18 55 20.5	-0.4
PB01				IAML		18 55 20.9	
	comp=N,25μm,0.2s						
PB07	**IPOC Station P**	**0.44**	**219**	*e*P	Pn	18 55 15.3	0.0
PB07				*i* P	Pn	18 55 15.4	+0.1
PB07				*i* S	Sn	18 55 22.6	+0.2
PB07				IAML		18 55 23.0	
	comp=N,19μm,0.1s						
PB09	**IPOC Station P**	**0.52**	**142**	*e*P	Pn	18 55 17.3	+0.7
PB09				*i* S	Sn	18 55 24.7	+0.3
PB09				IAML		18 55 26.2	
	comp=E,19μm,0.1s						
PB04	**IPOC Station P**	**1.07**	**209**	*i* P	Pn	18 55 25.1	+0.9
PB04				*i* S	Sn	18 55 39.4	+1.5
PB04				IAML		18 55 39.7	
	comp=E,2μm,0.2s						
HMBC	**Humberstone**	**1.14**	**346**	*i* P	Pn	18 55 25.9	+0.9
HMBC				*e*S	Sn	18 55 40.1	+0.7
HMBC				IAML		18 55 46.2	
	comp=N,2μm,0.2s						
PB08	**IPOC Station P**	**1.31**	**18**	*i* P	Pn	18 55 29.1	+1.7
PB08				*e*S	Sn	18 55 46.5	+2.6
PB08				IAML		18 55 48.9	
	comp=N,1μm,0.2s						
PB06	**IPOC Station P**	**1.31**	**179**	*i* P	Pn	18 55 28.8	+1.4
PB06				*i* S	Sn	18 55 46.0	+2.3
PB06				IAML		18 55 46.6	
	comp=E,1μm,0.1s						
PB11	**IPOC Station P**	**1.62**	**358**	*i* P	Pn	18 55 33.2	+1.6
PB11				*e*S	Sn	18 55 53.4	+2.1
PSGC	**Pisagua**	**1.85**	**344**	*i* P	Pn	18 55 36.1	+1.4

IDC ***04*** *19:00:51.7±0.5, 1°.39N×97°.12E, h0km, mb4.7/27, mb1 4.8/29, mb1mx4.7/39, mbtmp4.7/29, ML4.4/2, MS4.8/27, Ms1 4.8/27, ms1mx4.7/34, Error ellipse: s-maj=17.9km s-min=10.6km az=40.0*

BJI ***04*** *19:00:54.6, 1°.30N×97°.25E, h36km, mb5.2/79, mB5.5/66, Ms5.5/85, Ms7 5.4/83*

DJA ***04*** *19:00:55.3±0.3, 2°.N±2°.×97°.7E±°, h10km, M5.0/37, mb5.1/37, mB5.2/24, MLv5.6/17, Mw(mB)4.9/24, Mwp5.5/1*

KLM ***04*** *19:00:55.7, 1°.47N×96°.91E, h28km, mb5.1, ML5.3, MS6.2*

ISCJB ***04*** *19:00:56.0±0.4, 1°.46N±0°.02×97°.12E±0°.03, h38km±3km, mb5.1/137, MS5.0/203, Error ellipse: s-maj=4.9km s-min=3.0km az=139.2*

NEIC ***04*** *19:00:57.5±0.7, 1°.42N×97°.17E, h39km±6km, mb5.2/41, MS5.0/137, Error ellipse: s-maj=7.3km s-min=4.2km az=51.0*

NEIC Felt [II] on Nias.

MOS ***04*** *19:00:57.9±1.2, 1°.53N×97°.19E, h53km, mb5.4/51, MS4.8/29, Error ellipse: s-maj=8.0km s-min=4.6km az=111.2*

GCMT ***04*** *19:00:57.5±0.2, 1°.24N×96°.87E, h24km, MW5.3/87, Moment Tensor Solution. s80,c126; s87,c146; Duration: 1s0 Moment tensor: Scale 10^17 Nm; Mrr0.75±.02; Mθθ-0.28±.01; Mϕϕ-0.47±.01; Mrθ0.41±.02; Mθϕ0.29±.01; Mϕr-0.46±.02; Best double couple: M0 0.94100×10^17 NP1:ϕs141.00000°, δ65.00000°, λ87.00000°. NP2:ϕs327.00000°, δ25.00000°, λ96.00000°.*

Principal axes: T 0.9770, Plg70.0000°, Azm45.0000°; N -0.0720, Plg2.0000°, Azm142.0000°; P -0.9050, Plg20.0000°, Azm233.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

ISC 04 19:00:57.0±0.5, 1°.42N±0°.03×97°.04E±0°.04, h33km±1km, h33km:pP-P, n596, σ1s87/545, mb5.2/143, MS5.0/203, 45C-15D, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**0.55**	**102**	P	**Pb**	**19 01 07.2**	**-1.3**
GSI				S	**Sn**	**19 01 16.4**	**-0.1**
GSI	**Gunungsitoli**	**0.55**	**102**	*e*Pn	**Pb**	**19 01 07.1**	**-1.3**
TPTI		**1.83**	**4**	P	**Pn**	**19 01 24.4**	**-1.7**
KCSI	**Kotacane, Aceh**	**2.21**	**19**	P	**Pn**	**19 01 31.4**	**0.0**
KCSI				S	**Sb**	**19 02 07.4**	**+4.0**
PSI	**Prapat**	**2.33**	**54**	*e*P	**Pn**	**19 01 32.8**	**-0.3**
PSI	**Prapat**	**2.33**	**54**	*e*Pn	**Pn**	**19 01 32.8**	**-0.3**
TSI	**Tuntungan**	**2.57**	**36**	P	**Pn**	**19 01 37.1**	**+0.8**
TSI				S	Sn	19 01 56.7	-10
MNSI	**Mandailing Nat**	**2.62**	**104**	P	**Pn**	**19 01 36.5**	**-0.4**
MLSI	**Meulaboh, Aceh**	**2.90**	**347**	P	**Pn**	**19 01 40.0**	**-0.8**
MLSI				S	**Sn**	**19 02 16.3**	**+1.8**
LHMI	**Lhok Sumawe**	**3.78**	**359**	P	**Pn**	**19 01 53.5**	**+0.5**
LHMI	**Lhok Sumawe**	**3.78**	**359**	*e*Pn	**Pn**	**19 01 53.6**	**+0.6**
PDSI	**Padang**	**4.14**	**124**	P	**Pn**	**19 01 57.9**	**0.0**
BKNI	**Bangkinang**	**4.15**	**105**	P	**Pn**	**19 01 56.8**	**-1.2**
BKNI	**Bangkinang**	**4.15**	**105**	*e*Pn	**Pn**	**19 01 57.6**	**-0.4**
SDSI	**Sungai Dareh**	**4.97**	**118**	P	**Pn**	**19 02 13.8**	**+4.4**
IPM	**Ipoh**	**5.01**	**53**	⇓P	**Pn**	**19 02 10.5**	**+0.6**
IPM	**Ipoh**	**5.01**	**53**	*e*Pn	**Pn**	**19 02 09.8**	**-0.1**
PPSI	**Pulau Pagai**	**5.11**	**144**	P	**Pn**	**19 02 15.0**	**+3.7**
KULM	**Kulim**	**5.27**	**43**	⇑P	**Pn**	**19 02 13.6**	**+0.2**
KULM	**Kulim**	**5.27**	**43**	*e*Pn	**Pn**	**19 02 13.0**	**-0.4**
KGM	**Kluang**	**6.31**	**85**	⇓P	**Pn**	**19 02 28.0**	**+0.3**
PKDT	**Phuket**	**6.55**	**11**	P	**Pn**	**19 02 31.0**	**-0.1**
	185nm,0.9s,4μm1.9nm						
SKLT	**Songkhla**	**6.74**	**32**	P	**Pn**	**19 02 33.4**	**-0.2**
	838nm,1.2s,8μm3.9nm						
MYKOM	**Kota Tinggi**	**6.82**	**87**	⇑P	**Pn**	**19 02 35.5**	**+0.7**
MYKOM	**Kota Tinggi**	**6.82**	**87**	*e*Pn	**Pn**	**19 02 34.1**	**-0.7**
TRTT	**Trang**	**6.90**	**22**	P	**Pn**	**19 02 34.7**	**-1.1**
	282nm,0.9s,4μm3.4nm						
KTGM	**Kuala Trenggan**	**7.22**	**57**	⇓P	**Pn**	**19 02 40.2**	**0.0**
KSI	**Kapahiang**	**7.50**	**132**	P	**Pn**	**19 02 47.9**	**+3.7**
	300nm,1.1s,3μm2.0nm						
TPRI	**Tanjung Pinang**	**7.50**	**94**	P	**Pn**	**19 02 45.8**	**+1.6**
	84nm,0.6s,10μm1.8nm						
SURT	**Suratani**	**7.69**	**13**	P	**Pn**	**19 02 45.8**	**-0.9**
	60nm,0.9s,783nm0.4nm						
SURA	**Surathani**	**8.11**	**18**	P	**Pn**	**19 02 51.1**	**-1.4**
	164nm,1.0s,15μm0.6nm						
MNAI	**Manna**	**8.24**	**134**	P	**Pn**	**19 02 52.7**	**-1.6**
	193nm,1.0s						
MNAI	**Manna**	**8.24**	**134**	*e*Pn	**Pn**	**19 02 52.2**	**-2.2**
LHSI	**Lahat**	**8.32**	**129**	P	**Pn**	**19 02 55.6**	**+0.2**
	134nm,0.8s,2μm0.6nm						
LWLI	**Liwa**	**9.49**	**132**	P	**Pn**	**19 03 11.5**	**-0.1**
	117nm,0.7s,2μm						
PPBI	**Pangkal Pinang**	**9.77**	**111**	P	**Pn**	**19 03 19.9**	**+4.6**
	51nm,1.2s,1μm						
KASI	**Kota Agung**	**10.15**	**133**	P	**Pn**	**19 03 24.2**	**+3.7**
	56nm,0.7s						
PHET	**Kaeng Krachan**	**11.70**	**13**	P	**Pn**	**19 03 43.3**	**+1.6**
	13nm,1.4s,199nm						
PATY	**Pattaya**	**12.04**	**18**	P	**P**	**19 04 00.6**	**+1.8**
DGPR	**DIGLIPUR**	**12.37**	**341**	*e*P	**Pn**	**19 03 51.8**	**+0.9**
CHBT	**CHBT**	**12.42**	**25**	P	**Pn**	**19 03 52.5**	**+1.0**
	90nm,1.2s,3μm						
SRDT	**SRDT**	**13.01**	**9**	P	**P**	**19 04 08.2**	**-1.4**
KSM	**Kuching**	**13.27**	**90**	⇑P	**Pn**	**19 04 04.3**	**+1.1**
KSM	**Kuching**	**13.27**	**90**	*e*Pn	**Pn**	**19 04 03.1**	**-0.1**
STKI	**Sintang**	**14.50**	**95**	P	**Pn**	**19 04 20.2**	**+0.2**
KPJI	**Karang Pucung**	**14.71**	**126**	P	**P**	**19 04 28.1**	**-0.5**
	41nm,1.0s						
UMPA	**Umpang Tak**	**14.80**	**7**	P	**P**	**19 04 28.9**	**-0.6**
CHAI	**Chaiyaphum**	**15.19**	**18**	P	**Pn**	**19 04 30.4**	**+1.2**
	16nm,1.0s,198nm						
PBKI	**Pangkalan Bun**	**15.19**	**106**	P	**Pn**	**19 04 31.1**	**+1.8**
	153nm,1.1s,2μm						
SBUM	**Sibu**	**15.21**	**86**	⇓P	**Pn**	**19 04 30.2**	**+0.8**
SBUM	**Sibu**	**15.21**	**86**	*e*Pn	**Pn**	**19 04 29.3**	**-0.2**
	76nm,1.0s						
PBKT	**Sadao Pong**	**15.54**	**14**	P	**Pn**	**19 04 33.1**	**-0.7**
	65nm,1.4s						
KHON	**Khomkaen**	**15.88**	**21**	P	**P**	**19 04 40.5**	**-1.0**
	32nm,1.4s,498nm						
UBPT	**Khong Chiam**	**16.09**	**31**	P	**Pn**	**19 04 39.9**	**-0.9**
	250nm,1.2s,2μm						
BTM	**Bintulu**	**16.13**	**83**	⇓P	**P**	**19 04 43.5**	**-0.9**
SUKH	**Sukhothai**	**16.16**	**9**	P	**Pn**	**19 04 41.4**	**-0.3**
	28nm,1.1s,279nm						
LOEI	**Loei**	**16.52**	**14**	P	**Pn**	**19 04 47.1**	**+0.8**
	32nm,1.3s						
UTTA	**Uttaradit**	**16.58**	**12**	P	**Pn**	**19 04 47.4**	**+0.3**
	13nm,1.2s,142nm						
NGJI	**Ngawi**	**16.83**	**121**	P	**P**	**19 04 57.0**	**+4.9**
SKNT	**Sakolnakorn**	**16.90**	**23**	P	**Pn**	**19 04 49.7**	**-1.4**
	94nm,1.5s						
CM01	**Chiang Mai Arr**	**17.00**	**6**	*e*Pn	**Pn**	**19 04 50.0**	**-2.3**
CM31	**Chiang Mai Arr**	**17.03**	**6**	*e*Pn	**Pn**	**19 04 51.5**	**-1.2**
CMAR	**Chiang Mai Arr**	**17.03**	**6**	P	**Pn**	**19 04 51.6**	**-1.2**
	1.2nm,0.3s,baz=196,slow=11,SNR=36						
CMAR				S	**S**	**19 08 08.2**	**-2.1**
	baz=206,slow=11,SNR=2.6						
CMAR				LR	LR	19 12 27.8	
	comp=Z,7μm,18.6s,baz=191,slow=41						
LAMP	**Lampang**	**17.18**	**8**	P	**P**	**19 04 55.4**	**-0.6**
	17nm,1.1s,178nm						
PALK	**Pallekele**	**17.29**	**290**	P	**P**	**19 04 57.3**	**+0.1**
	0.4nm,0.3s,baz=117,slow=4.6,SNR=3.7						
PALK				LR	LR	19 11 28.6	
	comp=Z,5μm,18.2s,baz=115,slow=37						
PALK	**Pallekele**	**17.29**	**290**	*e*P	**P**	**19 04 57.8**	**+0.6**
PALK	**Pallekele**	**17.29**	**290**	*e*P	**P**	**19 04 57.8**	**+0.6**
CHTO	**Chiang Mai**	**17.38**	**6**	P	**Pn**	**19 04 55.6**	**-1.5**
	116nm,1.5s,4μm						
CHTO	**Chiang Mai**	**17.38**	**6**	*e*P	**Pn**	**19 04 54.7**	**-2.4**
CHTO				pmax	pmax		
	comp=Z,31nm,1.0s						
CHTO	**Chiang Mai**	**17.38**	**6**	*e*Pn	**Pn**	**19 04 54.7**	**-2.4**
	comp=Z,31nm,1.0s						
CMMT	**Chiang Mai**	**17.38**	**6**	P	**Pn**	**19 04 55.6**	**-1.5**
	comp=Z,99nm,1.1s,comp=Z,912nm						
NONG	**Nongkai**	**17.59**	**20**	P	**Pn**	**19 04 57.9**	**-1.8**
	comp=Z,76nm,0.9s						
BBKI	**Banjar Baru**	**18.45**	**105**	P	**Pn**	**19 05 10.8**	**+0.6**
	comp=Z,102nm,1.1s,comp=Z,3μm						
KKM	**Kota Kinabalu**	**19.68**	**76**	⇓P	**P**	**19 05 24.2**	**+0.7**
KKM	**Kota Kinabalu**	**19.68**	**76**	*e*P	**P**	**19 05 22.9**	**-0.6**
	comp=Z,115nm,1.0s						
JAGI	**Jajag, Banyuwa**	**19.69**	**120**	P	**Pn**	**19 05 32.0**	**+6.8**
JAGI	**Jajag, Banyuwa**	**19.69**	**120**	*e*P	**P**	**19 05 23.1**	**-0.6**
	comp=Z,65nm,1.3s						
BKB	**Balikpapan**	**20.04**	**98**	P	Pn	19 05 30.4	+1.1
	comp=Z,343nm,1.7s,comp=Z,5μm						
MDRS	**Chennai**	**20.26**	**306**	*e*P	**P**	**19 05 29.8**	**+0.1**
MDRS				IAmb	IAmb	19 05 56.9	
	comp=Z,256nm,2.0s						
SDKM	**Sandakan**	**20.55**	**78**	⇑P	**P**	**19 05 32.6**	**-0.4**
TSM	**Tawau**	**21.00**	**82**	⇓P	**P**	**19 05 37.2**	**-0.7**
VIS	**Vishakhapatnam**	**21.07**	**321**	*e*P	**P**	**19 05 40.5**	**+2.1**
VIS				IAmb	IAmb	19 05 57.8	
	comp=Z,94nm,1.2s						
VIS				*i* S	Sn	19 09 35.3	-3.3
TRD	**Trivandrum**	**21.19**	**290**	*e*P	**P**	**19 05 40.8**	**+0.9**
TRD				IAmb	IAmb	19 06 06.3	
	comp=Z,47nm,1.0s						
QIZ	**Qiongzhong**	**21.53**	**35**	P	**P**	**19 05 43.0**	**-0.5**
QIZ				pmax	pmax		
	comp=Z,57nm,1.9s						
QIZ				LR	LR		
	comp=Z,5μm,14.2s						
QIZ				LR	LR		
	comp=Z,5μm,13.4s						
QIZ				LR	LR		
	comp=Z,4μm,15.8s						
QIZ	**Qiongzhong**	**21.53**	**35**	*e*P	**P**	**19 05 42.5**	**-1.0**
	comp=Z,134nm,1.5s						
QIZ				LR	LR		
	comp=Z,3μm,21.0s						
BWNR	**Bhubaneshwar**	**21.73**	**330**	*e*P	**P**	**19 05 46.0**	**+0.4**
BWNR				IAmb	IAmb	19 05 49.4	
	comp=Z,46nm,1.0s						
MYLDM	**Lahad Datu**	**21.75**	**80**	*e*P	**P**	**19 05 45.1**	**-0.8**
	comp=Z,326nm,1.3s						
TWSI	**Taliwang, Sumb**	**22.21**	**117**	P	**P**	**19 05 55.7**	**+4.9**
	comp=Z,31nm,0.8s						
PCI	**Palu**	**22.91**	**96**	P	**P**	**19 05 59.6**	**+1.2**
	comp=Z,94nm,1.1s,comp=Z,2μm						
TTSI	**Tana Toraja**	**23.20**	**101**	P	**P**	**19 06 01.4**	**+0.1**
	comp=Z,59nm,2.1s,comp=Z,1μm						
SPSI	**Sidrap Palu**	**23.34**	**103**	P	**P**	**19 06 03.2**	**+0.6**
	comp=Z,34nm,1.1s,comp=Z,843nm						
KAPI	**Kappang**	**23.58**	**106**	P	**P**	**19 06 03.8**	**-1.1**
	comp=Z,54nm,1.0s,baz=297,slow=12,SNR=11						
KAPI				S	**S**	**19 10 14.1**	**-3.0**
	comp=Z,3.6nm,0.6s,baz=305,slow=22,SNR=3.1						
KAPI	**Kappang**	**23.58**	**106**	*e*P	**P**	**19 06 04.5**	**-0.5**
	comp=Z,83nm,1.2s						
KAPI				S	**S**	**19 10 14.1**	**-3.0**
KAPI				LR	LR		
	comp=Z,4μm,19.0s						
HYB	**Hyderabad**	**24.14**	**312**	*i* P	**P**	**19 06 15.0**	**+4.8**
HYB				*e*		19 06 20.0	
HYB				*e*		19 06 34.0	
HYB				*e*S	**S**	**19 10 28.0**	**+1.8**
HYB	**Hyderabad**	**24.14**	**312**	*e*P	**P**	**19 06 12.6**	**+2.3**
KMI	**Kunming**	**24.20**	**13**	P	**P**	**19 06 11.8**	**+0.9**
KMI				pP	sP	19 06 22.7	-1.8
KMI				sP	pP	19 06 26.6	+6.1
KMI				PP	**PnPn**	**19 06 49.1**	**+7.9**
KMI				S	**S**	**19 10 24.4**	**-2.9**
KMI				sS	sS	19 10 45.0	+2.0
KMI				SS	**SnSn**	**19 11 13.5**	**+2.5**
KMI				pmax	pmax		
	comp=Z,180nm,1.5s						
KMI				pmax	pmax		
	comp=Z,1μm,4.5s						
KMI				LR	LR		
	comp=Z,12μm,15.9s						
KMI				LR	LR		
	comp=Z,8μm,14.4s						
KMI				LR	LR		
	comp=Z,13μm,15.9s						
SHL	**Shillong**	**24.51**	**349**	*e*P	**P**	**19 06 13.7**	**0.0**
BOK	**Bokaro**	**24.73**	**335**	*e*P	**P**	**19 06 15.4**	**0.0**
BOK				IAmb	IAmb	19 06 19.5	
	comp=Z,66nm,0.9s						
MRSI	**Marisa**	**24.92**	**92**	P	**P**	**19 06 16.9**	**-0.4**
	comp=Z,92nm,1.0s,comp=Z,3μm						
LUWI	**Luwuk**	**25.85**	**95**	P	**P**	**19 06 30.2**	**+4.4**
	comp=Z,227nm,1.1s,comp=Z,3μm						
LUWI	**Luwuk**	**25.85**	**95**	*e*P	**P**	**19 06 24.9**	**-0.8**
	comp=Z,345nm,1.2s						
DGAR	**Diego Garcia**	**26.05**	**250**	PFAKE		19 06 40.0	+12
DGAR				LR	LR		
	comp=Z,2μm,19.0s						
H08S2	**Diego Garcia H**	**26.09**	**249**	T	T	19 33 33.2	
	baz=70,slow=75						
H08S3	**Diego Garcia H**	**26.09**	**249**	T	T	19 33 33.4	
	baz=70,slow=75						
H08S1	**Diego Garcia H**	**26.10**	**249**	T	T	19 33 34.5	
	baz=70,slow=75						
GYA	**Guiyang**	**26.56**	**20**	⇑ *i*P	**P**	**19 06 31.4**	**-0.7**
GYA				pP	sP	19 06 45.2	-0.6
GYA				PP	**PnPn**	**19 07 20.0**	**+6.6**
GYA				PcP	**PcP**	**19 09 58.4**	**+2.1**
GYA				sS	S	19 11 24.0	+19
GYA				SS	**SnSn**	**19 12 18.7**	**+10**
GYA				pmax	pmax		
	comp=Z,80nm,1.2s						
GYA				pmax	pmax		
	comp=Z,350nm,6.2s						
GYA				LR	LR		
	comp=Z,10μm,14.3s						
GYA				LR	LR		
	comp=Z,4μm,14.3s						
GYA				LR	LR		
	comp=Z,13μm,14.3s						
EDFI	**Ende, Flores**	**26.57**	**113**	P	**P**	**19 06 29.9**	**-2.5**
GZH	**Guangzhou**	**26.73**	**35**	P	**P**	**19 06 39.4**	**+5.9**
GZH				S	S	19 11 30.2	+23
GZH				pmax	pmax		
	comp=Z,950nm,10.2s						
TGY	**Tagaytay City**	**26.78**	**61**	LR	LR	19 16 47.4	
	comp=Z,1μm,20.9s

WHN S **S** **19 12 49.2 -0.8**
WHN pmax pmax
comp=Z,76nm,1.0s
WHN pmax pmax
comp=Z,810nm,3.5s
WHN LR LR
comp=Z,6μm,14.0s
WHN LR LR
comp=Z,6μm,13.0s
WHN LR LR
comp=Z,13μm,14.2s
DDI Dehra Dun 33.92 330 *e*P **P** **19 07 39.0 +1.8**
DDI IAmb IAmb 19 07 50.9
comp=Z,71nm,1.2s
FITZ Fitzroy Crossi 34.19 126 P **P** **19 07 37.5 -2.1**
comp=Z,5.6nm,0.8s
FITZ Fitzroy Crossi 34.19 126 P **P** **19 07 38.0 -1.6**
baz=34,SNR=12
FITZ Fitzroy Crossi 34.19 126 *e*P **P** **19 07 37.0 -2.6**
comp=Z,16nm,1.1s
XAN Xi'an 34.30 18 P **P** **19 07 39.5 -0.9**
XAN pP pP 19 07 50.0 -0.1
XAN sP sP 19 07 54.3 +0.1
XAN PP **PP** **19 08 57.5 -1.1**
XAN S **S** **19 13 03.4 -2.2**
XAN sS sS 19 13 21.5 -0.2
XAN SS **SnSn** **19 15 16.6 -0.1**
XAN pmax pmax
comp=Z,100nm,1.1s
XAN pmax pmax
comp=Z,280nm,5.3s
XAN LR LR
comp=Z,6μm,15.1s
XAN LR LR
comp=Z,4μm,15.1s
XAN LR LR
comp=Z,8μm,14.7s
SMLA Simla 35.02 329 *e*P **P** **19 07 47.0 +0.4**
SMLA IAmb IAmb 19 07 49.9
comp=Z,28nm,1.1s
LZH Lanzhou 35.06 10 ⇓P **P** **19 07 47.6 +0.5**
LZH pP sP 19 08 00.4 -0.5
LZH sP pP 19 08 03.9 +7.1
LZH PP **PP** **19 09 08.1 +1.0**
LZH S **S** **19 13 16.6 -1.0**
LZH sS sS 19 13 33.0 -0.6
LZH SS **SnSn** **19 15 38.0 +2.7**
LZH pmax pmax
comp=Z,110nm,1.3s
LZH pmax pmax
comp=Z,680nm,4.0s
LZH LR LR
comp=Z,5μm,15.9s
LZH LR LR
comp=Z,6μm,16.4s
LZH LR LR
comp=Z,6μm,17.6s
SDNR Sundarnagar 35.42 330 *e*P **P** **19 07 52.0 +1.9**
DHRM DHARAMSHALA 36.36 330 *e*P **P** **19 07 59.3 +0.9**
DHRM IAmb IAmb 19 08 16.0
comp=Z,121nm,1.3s
MTN Manton Dam 36.68 114 *e*P **P** **19 07 57.8 -3.3**
comp=Z,17nm,0.8s
NJ2 Nanjing 36.76 32 *e*P **P** **19 08 01.8 +0.3**
NJ2 PP **PnPn** **19 09 26.5 +0.7**
NJ2 S **S** **19 13 47.5 +4.2**
NJ2 pmax pmax
comp=Z,13nm,0.8s
NJ2 pmax pmax
comp=Z,290nm,6.0s
NJ2 LR LR
comp=Z,4μm,14.1s
NJ2 LR LR
comp=Z,3μm,13.0s
NJ2 LR LR
comp=Z,5μm,13.6s
SSE Sheshan 37.33 35 P **P** **19 08 06.5 +0.2**
SSE pP **pP** **19 08 15.7 -0.4**
SSE PP **PnPn** **19 09 38.3 +5.6**
SSE S **S** **19 13 59.2 +7.2**
SSE pmax pmax
comp=Z,36nm,0.8s
SSE pmax pmax
comp=Z,220nm,4.8s
SSE LR LR
comp=Z,3μm,16.9s
SSE LR LR
comp=Z,1μm,16.9s
SSE LR LR
comp=Z,4μm,16.5s
GTA Gaotai 37.89 4 P **P** **19 08 11.2 0.0**
GTA pP pP 19 08 21.0 0.0
GTA sP sP 19 08 25.0 0.0
GTA S **S** **19 13 59.4 -1.3**
GTA sS sS 19 14 16.5 -0.3
GTA SS **SnSn** **19 16 38.6 -5.1**
GTA pmax pmax
comp=Z,37nm,1.8s
GTA pmax pmax
comp=Z,630nm,6.2s
GTA LR LR
comp=Z,3μm,13.5s
GTA LR LR
comp=Z,2μm,13.8s
GTA LR LR
comp=Z,3μm,13.5s
TIY Taiyuan 38.80 20 *e*P **P** **19 08 19.3 +0.6**
TIY S **S** **19 14 10.3 -3.9**
TIY pmax pmax
comp=Z,340nm,6.4s
TIY LR LR
comp=Z,7μm,14.5s
TIY LR LR
comp=Z,4μm,13.7s
TIY LR LR
comp=Z,8μm,14.2s
NWAO Narrogin (SRO) 39.13 153 LR LR 19 23 44.3
comp=Z,2μm,20.5s,baz=212,slow=35
TIA Tai'an 39.30 26 ⇑P **P** **19 08 22.1 -0.8**
TIA S **S** **19 14 22.8 +1.0**
TIA pmax pmax
comp=Z,30nm,1.6s
TIA pmax pmax
comp=Z,470nm,7.0s
TIA LR LR
comp=Z,4μm,16.0s
TIA LR LR
comp=Z,4μm,15.0s
TIA LR LR
comp=Z,7μm,15.0s
H01W3 Cape Leeuwin H 39.51 158 T T 19 49 59.5
baz=333,slow=76,SNR=51
H01W2 Cape Leeuwin H 39.52 158 T T 19 50 03.6
baz=333,slow=76,SNR=48
H01W1 Cape Leeuwin H 39.53 158 T T 19 50 00.9
baz=333,slow=76,SNR=40
WRKA Warakurna 40.11 133 P **P** **19 08 29.9 0.0**
baz=40,SNR=13
BTO Baotou 40.74 15 *e*P **P** **19 08 34.2 -0.7**
HHC Hu-ho-hao-te 41.39 17 *e*P **P** **19 08 41.0 +0.7**
HHC PP **PP** **19 10 18.4 +2.1**
HHC S **S** **19 14 53.7 +0.6**
HHC sS sS 19 15 10.8 +1.5
HHC ScS **ScS** **19 18 39.5 -2.4**
HHC pmax pmax
comp=Z,47nm,1.1s
HHC pmax pmax
comp=Z,690nm,6.2s
HHC LR LR
comp=Z,6μm,15.4s
HHC LR LR
comp=Z,5μm,15.6s
HHC LR LR
comp=Z,5μm,16.0s
BJT Baijiatuau 42.17 22 *e*P **P** **19 08 47.1 +0.6**
BJT pmax pmax
comp=Z,68nm,0.9s
BJT MLR MLR
comp=Z,1μm,19.0s
BJT Baijiatuau 42.17 22 *e*P **P** **19 08 47.1 +0.6**
comp=Z,68nm,0.9s
BJT LR LR
comp=Z,1μm,19.0s
BJI Beijing 42.20 22 P **P** **19 08 47.2 +0.5**
BJI pP **pP** **19 08 56.0 -0.5**
BJI sP **sP** **19 09 00.9 +0.4**
BJI S **S** **19 15 05.0 +0.3**
BJI sS **sS** **19 15 18.4 -2.5**
BJI pmax pmax
comp=Z,63nm,0.8s
BJI pmax pmax
comp=Z,840nm,4.3s
BJI LR LR
comp=Z,2μm,15.6s
BJI LR LR
comp=Z,1μm,17.0s
BJI LR LR
comp=Z,1μm,22.7s
WRA Warramunga Arr 42.29 122 P **P** **19 08 46.4 -1.4**
comp=Z,11nm,0.9s,baz=301,slow=9.1,SNR=49
WRA S **S** **19 15 03.4 -3.3**
comp=Z,4.0nm,1.1s,baz=295,slow=16,SNR=5.5
WRA LR LR 19 26 47.6
comp=Z,1μm,21.8s,baz=300,slow=37
WRAB Tennant Creek 42.30 122 *ce*P **P** **19 08 47.6 -0.3**
WRAB pmax pmax
comp=Z,77nm,1.5s
WRAB Tennant Creek 42.30 122 *e*P **P** **19 08 46.4 -1.5**
comp=Z,22nm,0.9s
WRAB LR LR
comp=Z,1μm,20.0s
WB2 Warramunga Arr 42.30 122 *e*P **P** **19 08 45.8 -2.1**
comp=Z,18nm,0.8s
KSH Kashi 42.50 336 *e*P **P** **19 08 48.7 -0.7**
KSH *e*pP pP 19 08 59.2 -0.1
KSH *e*sP sP 19 09 02.9 -0.4
KSH *e*PcP **PcP** **19 10 42.9 +1.1**
KSH S **S** **19 15 06.3 -3.2**
KSH sS sS 19 15 22.4 -3.4
KSH ScS **ScS** **19 18 46.1 -2.7**
KSH pmax pmax
comp=Z,7.0nm,0.8s
KSH pmax pmax
comp=Z,300nm,3.5s
KSH LR LR
comp=Z,810nm,17.5s
KSH LR LR
comp=Z,1μm,20.3s
KSH LR LR
comp=Z,1μm,21.3s
WMQ Urumqi 43.03 350 P **P** **19 08 54.8 +1.3**
WMQ pP pP 19 09 04.2 +0.8
WMQ sP sP 19 09 07.5 +0.1
WMQ PcP **PcP** **19 10 45.4 +2.0**
WMQ S **S** **19 15 18.1 +1.1**
WMQ sS sS 19 15 32.7 -0.6
WMQ ScS **ScS** **19 18 52.9 +1.2**
WMQ pmax pmax
comp=Z,50nm,1.8s
WMQ pmax pmax
comp=Z,370nm,4.4s
WMQ LR LR
comp=Z,1μm,16.6s
WMQ LR LR
comp=Z,2μm,20.2s
WMQ LR LR
comp=Z,2μm,27.6s
FORT Forrest 43.55 140 *e*P **P** **19 08 57.7 -0.1**
comp=Z,432nm,0.9s
DL2 Dalian 43.56 28 ⇑*i*P **P** **19 08 56.9 -0.9**
DL2 PP **PP** **19 10 42.1 +2.6**
DL2 S **S** **19 15 25.8 +1.0**
DL2 pmax pmax
comp=Z,99nm,1.0s
DL2 pmax pmax
comp=Z,620nm,5.6s
DL2 LR LR
comp=Z,2μm,17.9s
DL2 LR LR
comp=Z,2μm,15.3s
DL2 LR LR
comp=Z,2μm,18.0s
AS31 Alice Springs 43.66 127 *e*P **P** **19 08 57.8 -1.1**
comp=Z,8.3nm,1.4s
ASAR Alice Springs 43.66 127 P **P** **19 08 57.3 -1.6**
comp=Z,7.8nm,0.9s,baz=299,slow=7.7,SNR=49
ASAR S **S** **19 15 25.1 -1.8**
comp=Z,3.8nm,1.1s,baz=296,slow=15,SNR=10
AS01 Alice Springs 43.70 127 *e*P **P** **19 08 57.7 -1.5**
SHLS Shalkode 44.29 342 *i*P **P** **19 09 03.6 -0.3**
comp=Z,328nm,1.9s
SHLS *e*S **S** **19 15 36.5 +0.7**
SHLS *i*LR LR 19 28 08.8
comp=Z,230nm,16.8s
UZB Uzynbulak 44.55 341 *i*P **P** **19 09 04.8 -1.1**
comp=Z,306nm,1.7s
UZB *e*S **S** **19 15 39.0 -0.5**
UZB *i*LR LR 19 29 47.2
comp=Z,240nm,11.6s
PDGK Podgornoye 44.57 342 P **P** **19 09 07.4 +1.6**
PDGK pmax pmax
comp=Z,30nm,2.0s
SATY Saty 44.68 341 *i*P **P** **19 09 06.2 -0.7**
comp=Z,605nm,1.5s
SATY *e*S **S** **19 15 40.9 -0.4**
SATY *i*LR LR 19 28 17.9
comp=Z,254nm,16.7s
JNU Nakatsue 44.75 42 *e*P **P** **19 09 05.2 -2.3**
comp=Z,94nm,1.0s
INCN Inchon 45.05 34 *e*P **P** **19 09 08.0 -1.8**
comp=Z,77nm,1.3s
INCN LR LR
comp=Z,2μm,20.0s
MDOK Medeo 45.23 339 *i*P **P** **19 09 09.9 -1.4**
comp=Z,477nm,1.9s
MDOK *e*S **S** **19 15 48.1 -1.3**
MDOK *e*SS **ScS** **19 19 06.7 +0.8**
MDOK *i*LR LR 19 30 26.9
comp=Z,390nm,17.4s
AAA Alma-Ata 45.36 339 *e*P **P** **19 09 10.9 -1.3**
comp=Z,476nm,2.1s
AAA *e*S **S** **19 15 50.0 -1.1**
AAA *i*LR LR 19 28 33.1
comp=Z,252nm,16.7s
TKM2 Tokmak 2 45.55 338 *e*P **P** **19 09 14.6 +0.7**
TKM2 pmax pmax
comp=Z,42nm,1.1s
TKM2 MLR MLR
comp=Z,1μm,21.0s
TKM2 Tokmak 2 45.55 338 *e*P **P** **19 09 14.6 +0.7**
comp=Z,42nm,1.1s
TKM2 LR LR
comp=Z,1μm,21.0s
KS15 Wonju Array Si 45.73 35 *e*P **P** **19 09 14.2 -0.9**
KSAR Wonju Array Be 45.73 35 P **P** **19 09 14.8 -0.3**
KSAR Wonju Array Be 45.73 35 P **P** **19 09 14.8 -0.3**
AAK Ala-Archa 45.73 337 *e*P **P** **19 09 16.3 +1.0**
AAK pmax pmax
comp=Z,95nm,1.5s
AAK MLR MLR
comp=Z,1μm,19.0s
AAK Ala-Archa 45.73 337 *e*P **P** **19 09 16.3 +1.0**
comp=Z,95nm,1.5s
AAK LR LR
comp=Z,1μm,19.0s
KS01 Wonju Array Si 45.76 35 *e*P **P** **19 09 14.3 -1.1**
KSRS Korea Array 45.76 35 P **P** **19 09 14.8 -0.6**
comp=Z,44nm,1.0s,baz=225,slow=8.3,SNR=106
KSRS LR LR 19 28 48.1
comp=Z,1μm,20.8s,baz=226,slow=37
FRU Bishkek 45.85 337 ⇑*e*P **P** **19 09 16.0 -0.1**
FRU *e* 19 09 36.0
FRU *e*S **S** **19 16 00.0 +1.9**
FRU *e* 19 16 14.0
FRU pmax pmax
comp=Z,220nm,2.4s
EKS2 Erkin-Say 46.04 336 *e*P **P** **19 09 19.0 +1.3**
EKS2 pmax pmax
comp=Z,21nm,0.8s
EKS2 MLR MLR
comp=Z,794nm,20.0s
EKS2 Erkin-Say 46.04 336 *e*P **P** **19 09 18.9 +1.3**
comp=Z,21nm,0.8s
EKS2 LR LR
comp=Z,794nm,20.0s
MNAS Manas 46.42 335 P **P** **19 09 22.4 +1.7**
MNAS pmax pmax
comp=Z,32nm,1.3s
SNY Shenyang 46.78 27 ⇑P **P** **19 09 22.7 -0.6**
SNY S **S** **19 16 13.1 +1.8**
SNY pmax pmax
comp=Z,45nm,1.2s
SNY pmax pmax
comp=Z,66nm,2.6s
SNY LR LR
comp=Z,3μm,16.7s
SNY LR LR
comp=Z,4μm,16.1s
SNY LR LR
comp=Z,5μm,16.2s
SONM Songino Array 46.94 9 P **P** **19 09 25.2 +0.5**
comp=Z,24nm,0.8s,baz=187,slow=7.2,SNR=74
SONM LR LR 19 31 38.0
comp=Z,3μm,18.9s,baz=189,slow=39
SONA1 Songino Array 46.95 9 *e*P **P** **19 09 24.4 -0.3**
MK01 Makanchi Array 46.96 346 *e*P **P** **19 09 24.7 0.0**
MK31 Makanchi Array 46.99 346 *e*P **P** **19 09 25.9 +1.0**
MK31 Makanchi Array 46.99 346 *e*P **P** **19 09 25.9 +1.0**
MKAR Makanchi Array 46.99 346 P **P** **19 09 25.6 +0.7**
comp=Z,15nm,0.8s,baz=158,slow=6.8,SNR=66
MKAR LR LR 19 33 00.9
comp=Z,1μm,21.4s,baz=158,slow=41
ZSN Zaisan 47.05 349 *i*P **P** **19 09 25.4 0.0**
comp=Z,435nm,1.6s
ZSN *e*S **S** **19 16 16.3 +1.3**
ZSN *i*LR LR 19 29 36.2
comp=Z,422nm,17.8s
QIS Mount Isa 47.05 120 P **P** **19 09 24.8 -1.1**
baz=47,SNR=3.4
MAKZ Makanchi 47.08 346 *e*P **P** **19 09 26.4 +0.8**
MAKZ pmax pmax
comp=Z,35nm,0.9s
MAKZ Makanchi 47.08 346 *e*P **P** **19 09 26.4 +0.8**
comp=Z,35nm,0.9s
IUG luzhnay 47.24 333 *i*P **P** **19 09 26.8 -0.3**
comp=Z,290nm,1.9s
IUG *e*S **S** **19 16 18.3 +0.1**
KKAR Karatay Array 47.79 334 *e*P **P** **19 09 32.3 +1.1**
KKAR Karatay Array 47.79 334 *e*P **P** **19 09 32.3 +1.1**
BRLS Borolday 47.91 333 *e*P **P** **19 09 31.2 -0.9**
comp=Z,41nm,1.2s
BRLS *e*S **S** **19 16 26.7 -0.7**
COEN Coen 48.19 110 P **P** **19 09 33.3 -1.5**
baz=48,SNR=6.6
COEN Coen 48.19 110 *e*P **P** **19 09 34.9 +0.1**
comp=Z,38nm,1.1s
ZAK Zakamensk 49.07 5 *e*P **P** **19 09 40.2 -0.8**
ZAK pmax pmax
comp=Z,20nm,1.6s
CN2 Changchun 49.18 27 *e*P **P** **19 09 40.8 -1.1**
CN2 *e*sP sP 19 09 54.8 -1.0
CN2 PP **PP** **19 11 36.3 +0.4**
CN2 *e*S **S** **19 16 44.4 -0.9**
CN2 SS **SS** **19 20 10.8 -6.2**
CN2 pmax pmax
comp=Z,40nm,1.2s
CN2 pmax pmax
comp=Z,400nm,3.0s
CN2 LR LR
comp=Z,2μm,16.0s
CN2 LR LR
comp=Z,3μm,16.0s
CN2 LR LR
comp=Z,2μm,17.0s
INU Inuyama 50.18 43 *e*P **P** **19 09 49.4 -0.2**
comp=Z,69nm,1.5s
MOY Mondy 50.18 3 *e*P **P** **19 09 49.9 +0.4**
MOY pmax pmax
comp=Z,61nm,3.2s
TLY Talaya 50.39 5 *c i*P **P** **19 09 51.7 +0.8**
TLY *e* 19 11 09.2
TLY *e* 19 11 45.9
TLY *e*S **S** **19 17 03.8 +1.9**
TLY *e*PS pS 19 17 14.9 +1.1
TLY *e*SSS SSS 19 22 05.8
TLY pmax pmax
comp=Z,33nm,1.5s
TLY MLR MLR
comp=Z,2μm,14.0s
TLY Talaya 50.39 5 PFAKE 19 10 00.0 +9.1
TLY LR LR
comp=Z,3μm,19.0s
MTSU Mount Surprise 50.41 115 P **P** **19 09 52.5 +0.8**
baz=50,SNR=9.9
SEM Semipalatinsk 50.85 346 *i*P **P** **19 09 53.5 -0.9**
comp=Z,202nm,1.8s
SEM *e*S **S** **19 17 07.8 -0.5**
SEM *i*LR LR 19 31 41.8
comp=Z,459nm,18.1s
GEYT Alibeck 50.94 320 P **P** **19 09 56.5 +1.1**
comp=Z,2.8nm,0.7s,baz=158,slow=9.6,SNR=7.8
GEYT LR LR 19 34 53.1
comp=Z,621nm,18.9s,baz=65,slow=40
IRK Irkutsk 51.01 6 *e*P **P** **19 09 55.5 -0.1**
IRK *e* 19 11 56.8
IRK pmax pmax
comp=Z,110nm,1.9s
PMG Port Moresby 51.06 103 P **P** **19 09 55.4 -1.2**
comp=Z,12nm,0.7s,baz=332,slow=3.5,SNR=4.6
PMG Port Moresby 51.06 103 P **P** **19 09 55.4 -1.2**
PMG MLR MLR
comp=Z,888nm,22.0s
PMG Port Moresby 51.06 103 P **P** **19 09 55.4 -1.2**
PMG LR LR
comp=Z,888nm,22.0s
OTUK Ortayu 51.28 339 P **P** **19 09 57.6 -0.2**
OTUK pmax pmax
comp=Z,65nm,1.8s
HIA Hailar 51.48 19 PFAKE 19 10 10.0 +11
HIA LR LR
comp=Z,2μm,20.0s
KURK Kurchatov 51.54 345 *e*P **P** **19 09 58.4 -1.1**
KURK MLR MLR
comp=Z,2μm,20.0s
KURK Kurchatov 51.54 345 *e*P **P** **19 09 58.4 -1.1**
comp=Z,3μm,2.0s
KURK LR LR
comp=Z,2μm,20.0s
MJB9 Matsu-Tunnel 51.64 43 *e*P **P** **19 09 58.5 -2.1**
comp=Z,16nm,1.8s
MAJO Matsushiro 51.64 43 *e*P **P** **19 09 58.1 -2.5**
MAJO pmax pmax
comp=Z,65nm,1.8s
MAJO MLR MLR
comp=Z,1μm,21.0s
MAJO Matsushiro 51.64 43 *e*P **P** **19 09 58.1 -2.5**
comp=Z,65nm,1.8s
MAJO LR LR
comp=Z,1μm,21.0s
MAT Matsushiro 51.64 43 P **P** **19 09 59.2 -1.4**
MAT S **S** **19 17 27.4 +7.7**
MJAR Matsushiro Arr 51.64 43 P **P** **19 10 00.7 0.0**
comp=Z,5.7nm,0.8s,baz=218,slow=6.1,SNR=16
MJAR LR LR 19 32 25.5
comp=Z,883nm,20.8s,baz=255,slow=37
MDJ Mudanjiang 51.75 29 P **P** **19 10 01.9 +0.6**
MDJ pP pP 19 10 10.5 -0.9
MDJ sP sP 19 10 14.5 -0.8
MDJ PP **PP** **19 11 54.9 -4.4**
MDJ S **S** **19 17 25.1 +4.1**
MDJ pmax pmax
comp=Z,31nm,1.4s
MDJ pmax pmax
comp=Z,410nm,5.8s
MDJ LR LR
comp=Z,2μm,20.9s
MDJ LR LR
comp=Z,2μm,22.6s
MDJ LR LR
comp=Z,3μm,19.1s
MDJ Mudanjiang 51.75 29 *e*P **P** **19 10 02.2 +0.9**
comp=Z,34nm,1.1s
MDJ LR LR
comp=Z,2μm,20.0s
VLA Vladivostok 51.87 32 *c i*P **P** **19 10 02.2 +0.1**
VLA pmax pmax
comp=Z,95nm,1.1s
CIT Chita 52.29 13 *e*P **P** **19 10 05.6 +0.4**
CIT *e* 19 10 18.7
CIT *e* 19 11 21.0
CIT pmax pmax
comp=Z,138nm,1.6s
HTT Hallett 52.49 135 P **P** **19 10 08.0 +0.9**
baz=53,SNR=3.7
USRK Ussuriysk Ar. 52.66 31 P **P** **19 10 08.0 -0.1**
comp=Z,51nm,0.9s,baz=235,slow=6.7,SNR=72
USRK LR LR 19 34 23.9
comp=Z,3μm,19.6s,baz=213,slow=38

CTA Charters Tower 52.75 117 P **P** **19 10 10.9 +1.8**
CTA pmax pmax
comp=Z,28nm,2.3s
CTAO Charters Tower 52.75 117 *e*P **P** **19 10 07.2 -1.9**
CTAO *e* 19 10 16.8
CTAO pmax pmax
comp=Z,40nm,1.4s
CTAO MLR MLR
comp=Z,2µm,20.0s
CTAO Charters Tower 52.75 117 *e*P **P** **19 10 07.2 -1.9**
comp=Z,40nm,1.4s
CTAO *e* 19 10 16.8
CTAO LR LR
comp=Z,2µm,20.0s
ABPO Ambohimpanom 52.96 245 PFAKE 19 10 20.0 +9.1
ABPO LR LR
comp=Z,529nm,19.0s
ZALV Zalesovo Beam 53.31 351 P **P** **19 10 13.2 +0.6**
comp=Z,12nm,0.5s,baz=175,slow=6.8,SNR=96
ZALV LR LR 19 38 01.7
comp=Z,1µm,18.9s,baz=140,slow=42
QLP Quilpie 53.32 125 P **P** **19 10 13.9 +0.6**
baz=53,SNR=7.5
STKA Stephens Creek 53.63 132 P **P** **19 10 15.7 +0.3**
comp=Z,9.4nm,0.9s,baz=308,slow=6.9,SNR=11
STKA LR LR 19 35 02.9
comp=Z,1µm,21.9s,baz=299,slow=38
STKA Stephens Creek 53.63 132 P **P** **19 10 15.9 +0.5**
baz=54,SNR=8.4
NVS Novosibirsk 54.43 350⇑ *i*P **P** **19 10 21.0 +0.2**
NVS *e* 19 12 22.7
NVS *e*S **S** **19 17 55.0 -2.0**
NVS pmax pmax
comp=Z,112nm,2.0s
NVS pmax pmax
comp=N,53nm,1.9s
NVS pmax pmax
comp=E,46nm,2.1s
NVS smax smax
comp=N,23nm,1.8s
NVS smax smax
comp=E,32nm,1.8s
KRAR Krasnoyarsk 54.52 357*c i*P **P** **19 10 22.1 +0.6**
BRVK Borovoye 56.05 341*ce*P **P** **19 10 32.3 -0.2**
BRVK pmax pmax
comp=Z,34nm,1.0s
BRVK Borovoye 56.05 341 PFAKE 19 10 50.0 +17
BRVK LR LR
comp=Z,626nm,22.0s
KLR Kul'dur 56.13 27*c i*P **P** **19 10 33.4 +0.2**
ZRNK Zerenda 56.39 340 *e*P **P** **19 10 34.4 -0.6**
ZRNK pmax pmax
comp=Z,22nm,1.0s
ZRNK Zerenda 56.39 340 *e*P **P** **19 10 34.4 -0.6**
comp=Z,22nm,1.0s
CMSA Cobar Meteorol 56.56 130 P **P** **19 10 37.1 +0.5**
baz=57,SNR=14
RMQ Roma 57.04 123 P **P** **19 10 40.9 +0.8**
baz=57,SNR=14
HABR Khabarovsk 57.14 29*de*P **P** **19 10 37.5 -2.9**
HABR *e**SP **pP** **19 10 51.9 +1.4**
HABR *e* 19 11 32.8
HABR *e* 19 12 44.5
HABR *e*S **S** **19 18 29.6 -3.8**
HABR *e**SS **sS** **19 18 47.1 -3.0**
HABR *e* 19 20 23.8
HABR *e*SS **SS** **19 22 20.3 -2.5**
HABR pmax pmax
comp=Z,95nm,1.6s
HABR pmax pmax
comp=E,46nm,1.6s
HABR pmax pmax
comp=N,12nm,0.8s
HABR MLR MLR
comp=Z,2µm,18.0s
ABKAR Akbulak array 57.24 332 *e*P **P** **19 10 41.3 +0.2**
ERM Erimo 57.80 39 PFAKE 19 11 00.0 +15
ERM LR LR
comp=Z,540nm,20.0s
BOD Bodaibo 57.82 11⇓ *i*P **P** **19 10 44.6 -0.4**
BOD pmax pmax
comp=Z,76nm,1.8s
EIDS Eidsvold 58.63 121 P **P** **19 10 51.6 +0.3**
baz=59,SNR=12
CLNS Chul'man 59.58 17 *e*P **P** **19 10 54.0 -3.3**
CLNS pmax pmax
comp=Z,20nm,0.9s
CLNS pmax pmax
comp=N,11nm,0.9s
CLNS pmax pmax
comp=E,8.0nm,0.9s
CLNS MLR MLR
comp=Z,3µm,19.0s
CLNS MLR MLR
comp=N,2µm,16.0s
CLNS MLR MLR
comp=E,4µm,17.0s
KMBO Kilima Mbogo 59.83 268 LR LR 19 35 54.7
comp=E,656nm,18.1s,baz=93,slow=35
YSS Yuzh-Sakhalins 60.26 34⇓ *e*P **P** **19 11 03.0 +0.9**
YSS *e**SP **sP** **19 11 21.4 +5.2**
YSS *e* 19 13 18.0
YSS *e*S **S** **19 19 13.3 -0.7**
YSS pmax pmax
comp=Z,40nm,1.0s
YSS MLR MLR
comp=Z,2µm,18.0s
YSS MLR MLR
comp=E,2µm,16.0s
YSS Yuzh-Sakhalins 60.26 34 *e*P **P** **19 11 03.4 +1.3**
YSS LR LR
comp=Z,295nm,19.0s
CAN Canberra 60.69 132 PFAKE 19 11 20.0 +15
CAN LR LR
comp=Z,2µm,21.0s
GNI Garni 61.02 316 PFAKE 19 11 20.0 +12
GNI LR LR
comp=Z,391nm,20.0s
DGRG David-gareji 61.16 318 P **P** **19 11 09.4 +0.9**
DGRG David-gareji 61.16 318 *e*P **P** **19 11 09.3 +0.9**
GROC Groznyy 61.67 320 *e*P **P** **19 11 11.1 -0.7**
GROC pmax pmax
comp=Z,71nm,1.3s
TBLG Delisi 61.71 318 P **P** **19 11 12.9 +0.7**
TBLG Delisi 61.71 318 *e*P **P** **19 11 12.8 +0.7**
GUDG Gudauri 62.21 318 P **P** **19 11 17.5 +1.8**
BGD Bogdanovka 62.28 317 P **P** **19 11 16.9 +0.7**
KUR Kuril'sk 62.38 38 *e*P **P** **19 11 17.1 +0.6**
KUR S **S** **19 19 36.5 -4.5**
KUR MLR MLR
comp=N,613nm,14.0s
KUR MLR MLR
comp=E,510nm,14.0s
KUR MLR MLR
comp=Z,663nm,14.0s
AKH Akhalkalaki 62.41 317 P **P** **19 11 18.2 +1.1**
AKH Akhalkalaki 62.41 317 *e*P **P** **19 11 18.1 +1.1**
SVE Sverdlovsk 62.42 338 *e*P **P** **19 11 16.9 +0.3**
SVE pmax pmax
comp=Z,51nm,1.8s
TYV Tymovskoe 62.47 31 *e*P **P** **19 11 12.8 -4.2**
TYV pmax pmax
comp=Z,173nm,1.8s
TYV pmax pmax
comp=Z,1µm,5.0s
TYV MLR MLR
comp=E,3µm,16.0s
TYV MLR MLR
comp=Z,4µm,16.0s
ZEI Tsey 62.73 319 *e*P **P** **19 11 21.3 +2.1**
ZEI pmax pmax
comp=Z,93nm,1.3s
NKL Nikolayevsk 62.91 28 *e*P **P** **19 11 19.8 0.0**
NKL *e* 19 11 40.0
NKL MLR MLR
comp=N,1µm,15.0s
NKL MLR MLR
comp=E,2µm,15.0s
NKL MLR MLR
comp=Z,2µm,15.0s
ARU Arti 62.92 337*c i*P **P** **19 11 19.5 -0.3**
ARU 19 12 00.0
ARU 19 13 35.4
ARU *e*S **S** **19 19 47.8 +0.5**
ARU 19 21 07.8
ARU SS **SS** **19 23 45.6 -7.5**
ARU pmax pmax
comp=Z,35nm,1.7s
ARU MLR MLR
comp=Z,752nm,18.0s
ARU Arti 62.92 337 *e*P **P** **19 11 19.7 -0.1**
comp=Z,42nm,1.3s
ARU LR LR
comp=Z,663nm,19.0s
ONI Oni 62.94 318 P **P** **19 11 22.4 +1.9**
ONI Oni 62.94 318 *e*P **P** **19 11 22.3 +1.9**
HNR Honiara 63.57 101 P **P** **19 11 23.7 -1.2**
comp=Z,68nm,0.9s,baz=265,slow=6.3,SNR=4.4
HNR Honiara 63.57 101 P **P** **19 11 23.7 -1.2**
HNR MLR MLR
comp=Z,504nm,20.0s
HNR Honiara 63.57 101 P **P** **19 11 23.7 -1.2**
HNR LR LR
comp=Z,504nm,20.0s
KBZ Khabaz 63.80 319 P **P** **19 11 26.1 +0.2**
comp=Z,6.6nm,0.8s,baz=130,slow=8.7,SNR=14
KBZ LR LR 19 43 59.9
comp=Z,141nm,19.1s,baz=116,slow=40
KIV Kislovodsk 64.03 319 *e*P **P** **19 11 28.1 +0.5**
KIV *e* 19 13 49.6
KIV *e*S **S** **19 20 02.0 0.0**
KIV *e*SS **SS** **19 24 11.5 +0.2**
KIV pmax pmax
comp=Z,14nm,1.0s
KIV Kislovodsk 64.03 319 *e*P **P** **19 11 28.2 +0.5**
comp=Z,37nm,1.0s
KIV LR LR
comp=Z,383nm,19.0s
GOF Gofitskoye 64.28 320⇑ *e*P **P** **19 11 25.1 -4.0**
YAK Yakutsk 65.25 16*c i*P **P** **19 11 34.2 -0.8**
YAK *e**PP **pP** **19 11 45.5 +0.1**
YAK *e* 19 12 02.3
YAK *e* 19 13 57.7
YAK *e*S **S** **19 20 15.3 -0.8**
YAK *e*SS **SS** **19 24 34.1 +4.8**
YAK pmax pmax
comp=Z,102nm,0.9s
YAK pmax pmax
comp=N,33nm,1.3s
YAK pmax pmax
comp=E,35nm,1.2s
YAK pmax pmax
comp=Z,25nm,1.4s
YAK pmax pmax
comp=N,92nm,2.7s
YAK pmax pmax
comp=E,43nm,2.0s
YAK smax smax
comp=N,181nm,2.6s
YAK smax smax
comp=E,78nm,2.4s
YAK MLR MLR
comp=N,2µm,20.0s
YAK MLR MLR
comp=E,1µm,16.0s
YAK MLR MLR
comp=Z,2µm,15.0s
YAK Yakutsk 65.25 16 *e*P **P** **19 11 34.3 -0.8**
comp=Z,108nm,0.9s
YAK LR LR
comp=Z,3µm,20.0s
SOKR Solikamsk 65.84 339*c i*P **P** **19 11 37.3 -1.5**
SOKR S **S** **19 20 20.5 -2.7**
SOKR pmax pmax
comp=Z,30nm,1.5s
SOC Sochi 65.85 318*c i*P **P** **19 11 37.9 -1.4**
SOC *e* 19 14 03.2
SOC *e*S **S** **19 20 23.4 -0.6**
SOC *e*SS **SS** **19 24 41.8 +2.5**
SOC pmax pmax
comp=Z,28nm,0.8s
SOC MLR MLR
comp=Z,264nm,18.0s
CSS Mathiatis 67.80 307 PFAKE 19 12 00.0 +8.0
CSS LR LR
comp=Z,86nm,21.0s
ANN Anapa 67.83 318 *e*P **P** **19 11 50.8 -1.1**
ANN *e*S **S** **19 20 47.5 -0.4**
ANN pmax pmax
comp=Z,49nm,1.9s
ANN MLR MLR
comp=Z,333nm,23.0s
NRIK Noril'sk 68.10 356 P **P** **19 11 52.4 -0.7**
comp=Z,7.8nm,0.5s,baz=158,slow=4.3,SNR=17
NRIK LR LR 19 45 55.1
comp=Z,1µm,19.7s,baz=173,slow=40
CASY Casey 68.24 174 PFAKE 19 12 10.0 +16
CASY LR LR
comp=Z,175nm,21.0s
BR131 Keskin Array S 68.84 312 *e*P **P** **19 11 58.5 -0.1**
BRTR Keskin Array B 68.84 312 P **P** **19 11 58.5 -0.1**
comp=Z,2.7nm,0.7s,baz=129,slow=6.6,SNR=15
BRTR LR LR 19 45 58.1
comp=Z,196nm,18.1s,baz=108,slow=39
VSR Storozhevoye 69.29 325 *e*P **P** **19 12 00.9 0.0**
VSR pmax pmax
comp=Z,10.0nm,0.8s
ANTO Ankara 69.51 312 PFAKE 19 12 20.0 +17
ANTO LR LR
comp=Z,245nm,21.0s
BR231 Keskin MP Arra 69.51 312 *e*P **P** **19 11 58.8 -3.8**
LSZ Lusaka 70.02 253 PFAKE 19 12 20.0 +14
LSZ LR LR
comp=Z,1µm,19.0s
SIM Simferopol' 70.09 318*c i*P **P** **19 12 06.3 +0.3**
SIM *i* S **S** **19 21 13.7 -1.1**
SIM pmax pmax
comp=Z,38nm,1.6s
SIM MLR MLR
comp=Z,330nm,22.8s
DZM Mont Dzumac 71.52 114 *e*P **P** **19 12 15.4 +0.2**
comp=Z,58nm,1.4s
DZM *e*S **S** **19 21 33.3 +0.9**
comp=Z,865nm,25.8s
DZM Mont Dzumac 71.52 114 *e*LR LR 19 34 00.4
comp=Z,752nm,25.0s
DZM Mont Dzumac 71.52 114 P **P** **19 12 14.3 -0.9**
comp=Z,13nm,1.0s,baz=150,slow=20,SNR=4.4
PEA0 Petropavlovsk- 71.64 34 *e*P **P** **19 12 14.7 -0.5**
PETK Petropavlovsk- 71.64 34 P **P** **19 12 14.7 -0.6**
comp=Z,5.1nm,0.8s,baz=211,slow=4.3,SNR=9.5
PETK LR LR 19 47 44.2
comp=Z,560nm,18.1s,baz=251,slow=39
MOS Moscow 72.06 329 *e*P **P** **19 12 17.3 -0.3**
MOS *e* 19 12 37.9
MOS *e* 19 14 57.9
MOS *e*PPP PPP 19 16 40.3
MOS *e*S **S** **19 21 32.2 -4.9**
MOS *e* 19 22 29.4
MOS pmax pmax
comp=Z,54nm,1.4s
MOS pmax pmax
comp=Z,200nm,2.5s
MOS smax smax
comp=N,600nm,4.0s
MOS smax smax
comp=E,500nm,4.2s
MOS MLR MLR
comp=Z,700nm,20.0s
PET Petropavlovsk 72.14 34*ce*P **P** **19 12 17.7 -0.5**
PET *e*PPP PPP 19 16 43.9
PET *e*S **S** **19 21 36.8 -1.3**
PET pmax pmax
comp=Z,400nm,6.1s
PET pmax pmax
comp=Z,47nm,1.2s
PET pmax pmax
comp=Z,300nm,16.5s
PET smax smax
comp=N,507nm,0.4s
PET smax smax
comp=E,108nm,0.6s
PET MLR MLR
comp=Z,400nm,20.0s
PET MLR MLR
comp=Z,300nm,17.0s
PET Petropavlovsk 72.14 34 *e*P **P** **19 12 17.8 -0.3**
PET LR LR
comp=Z,388nm,21.0s
OBN Obninsk 72.34 328*ce*P **P** **19 12 18.9 -0.4**
OBN *e* 19 15 05.6
OBN *i* S **S** **19 21 32.3 -8.1**
OBN *e*SS **SS** **19 26 22.9 +3.9**
OBN pmax pmax
comp=Z,35nm,1.7s
OBN Obninsk 72.34 328 PFAKE 19 12 30.0 +11
OBN LR LR
comp=Z,517nm,21.0s
MAW Mawson 72.89 193 LR LR 19 40 07.1
comp=Z,545nm,18.1s,baz=56,slow=32
TIXI Tiksi 73.00 10*ce*P **P** **19 12 22.0 -0.9**
TIXI pmax pmax
comp=Z,58nm,1.7s
TIXI Tiksi 73.00 10 *e*P **P** **19 12 22.1 -0.9**
TIXI LR LR
comp=Z,983nm,20.0s
KLMR Klimovskoe 73.48 334 *e*P **P** **19 12 24.3 -1.7**
KLMR pmax pmax
comp=Z,37nm,1.5s
SEY Seymchan 73.62 23⇑ *e*P **P** **19 12 26.7 -0.1**
KIS Kishinev 74.22 319 *e*P **P** **19 12 30.0 -0.6**
KIS *e*LR LR 19 48 20.0
comp=Z,300nm,16.0s
KIS Kishinev 74.22 319 *e*P **P** **19 12 30.0 -0.6**
KIS *e* 19 12 50.0
KIS *e* 19 22 00.0
SANT Santorini 74.36 307 PFAKE 19 12 40.0 +8.2
SANT LR LR
comp=Z,281nm,19.0s
BOSA Boshof 74.75 240 P **P** **19 12 33.7 -0.6**
comp=Z,3.5nm,0.8s,baz=102,slow=14,SNR=5.1
BOSA LR LR 19 40 24.1
comp=Z,601nm,20.0s,baz=61,slow=32
SORM Soroca 74.83 320⇓ *i*P **P** **19 12 34.3 +0.2**
SORM Soroca 74.83 320⇓ P **P** **19 12 34.3 +0.2**
AKASG Malin Array Be 74.98 322 P **P** **19 12 34.0 -1.0**
comp=Z,1.6nm,0.6s,baz=88,slow=4.5,SNR=14
KIEV Kiev 74.99 322*c i*P **P** **19 12 34.4 -0.6**
KIEV pmax pmax
comp=Z,18nm,1.7s
KIEV Kiev 74.99 322 *e*P **P** **19 12 34.6 -0.4**
KIEV LR LR
comp=Z,370nm,20.0s
VRI Vrincioaia 75.34 317⇑ *i*P **P** **19 12 38.0 +0.8**
VRI Vrincioaia 75.34 317⇑ P **P** **19 12 38.0 +0.8**
PLOR Plostina 75.39 317⇑ *i*P **P** **19 12 38.9 +1.4**
PLOR Plostina 75.39 317⇑ P **P** **19 12 38.9 +1.4**
TESR Tescani 75.55 318⇑ *i*P **P** **19 12 39.3 +1.0**
MLR Muntele Rosu 75.79 317⇑ *i*P **P** **19 12 40.4 +0.5**
MLR Muntele Rosu 75.79 317 *e*P **P** **19 12 41.8 +1.9**
MLR Muntele Rosu 75.79 317 *e*P **P** **19 12 41.8 +1.9**
DOPR Dopca 76.28 317⇑ *i*P **P** **19 12 44.5 +2.0**
VOIR 76.40 316⇑ *i*P **P** **19 12 43.4 +0.1**
VOIR 76.40 316⇑ P **P** **19 12 43.4 +0.1**
BURAR Bucovina Array 76.75 319⇑ *i*P **P** **19 12 46.6 +1.3**
BURAR Bucovina Array 76.75 319⇑ P **P** **19 12 46.6 +1.3**
BUR08 Bucovina Ar. S 76.77 319 *e*P **P** **19 12 46.3 +0.9**
MICGM Minsk 76.85 326 *e* **P** **19 12 44.0 -1.5**
MNK Minsk 76.85 326 *e*P **P** **19 12 44.0 -1.5**
VTS Vitosha 77.16 313⇓ *i*P **P** **19 12 48.0 +0.2**
VTS Vitosha 77.16 313 *e*P **P** **19 12 48.4 +0.6**
VTS Vitosha 77.16 313 *e*P **P** **19 12 48.4 +0.6**
LVV L'vov 77.99 321 *e*P P **19 13 00.0 +7.9**
DRGR 78.26 317⇑ *i*P **P** **19 12 56.1 +2.4**
DRGR 78.26 317⇑ P **P** **19 12 56.1 +2.4**
LVZ Lovozero 78.57 340 PFAKE 19 13 10.0 +15
LVZ LR LR
comp=Z,989nm,21.0s
KWP Kalwaria Pacla 78.80 320 *e*P **P** **19 12 57.4 +0.9**
KWP Kalwaria Pacla 78.80 320 *e*P **P** **19 12 57.4 +0.9**
APA Apatity 78.86 339⇑ *i*P P **19 13 04.0 +7.5**
APA pmax pmax
comp=Z,9.0nm,1.3s
APA MLR MLR
comp=Z,800nm,17.0s
UZH Uzhgorod 78.87 319 *e*P **P** **19 13 00.5 +3.6**
UZH *i* 19 13 09.7
UZH *e* 19 13 25.8
KOLS Kolonicke sedl 78.94 320 *e*P **P** **19 12 59.5 +2.2**
KOLS *e* 19 13 06.1
KOLS *e* 19 13 19.8
KOLS *e*S **S** **19 22 54.5 +0.8**
KOLS pmax pmax
comp=Z,30nm,1.3s
KOLS Kolonicke sedl 78.94 320 *e*P **P** **19 12 59.5 +2.2**
KOLS *e* 19 13 06.1
KOLS *e* 19 13 19.8
KOLS *e*S **S** **19 22 54.5 +0.8**
SUR Sutherland 79.15 237 PFAKE 19 13 10.0 +11
SUR LR LR
comp=Z,1µm,19.0s
TIR Tirane 79.44 312 PFAKE 19 13 10.0 +10
TIR LR LR
comp=Z,342nm,19.0s
CRVS Cervenica-Dubn 79.46 319 *e*P **P** **19 13 02.5 +2.3**
CRVS *e* 19 13 14.5
CRVS *e*S **S** **19 22 57.9 -1.3**
CRVS Cervenica-Dubn 79.46 319 *e*P **P** **19 13 02.5 +2.3**
CRVS *e* 19 13 14.5
CRVS *e*S **S** **19 22 57.9 -1.3**
STHS Stebnicka Huta 79.69 320 *e*P **P** **19 13 03.1 +1.7**
STHS pmax pmax
comp=Z,8.0nm,1.0s
STHS Stebnicka Huta 79.69 320 *e*P **P** **19 13 03.1 +1.7**
FINES FINESS Array B 79.73 333 P **P** **19 13 01.5 +0.2**
comp=Z,4.3nm,0.7s,baz=95,slow=5.7,SNR=21
FINES LR LR 19 51 48.3
comp=Z,341nm,20.3s,baz=104,slow=38
MSF Maaselka 79.85 337 P **P** **19 13 02.1 +0.2**
MSF pmax pmax
comp=Z,30nm,1.3s
SUF Sumiainen 80.05 334 P **P** **19 13 03.7 +0.7**
SUF pmax pmax
comp=Z,16nm,1.6s
SYO Syowa Base 80.16 198⇓ *e*PcP **PcP** **19 13 11.5 +0.8**
NIE Niedzica 80.30 320 *e*P **P** **19 13 06.5 +1.8**
NIE Niedzica 80.30 320 *e*P **P** **19 13 06.5 +1.8**
PSZ Piszkesteto 80.33 318 PFAKE 19 13 20.0 +15
PSZ LR LR
comp=Z,309nm,20.0s
PSZ Piszkesteto 80.33 318⇑ *e*P **P** **19 13 05.3 +0.3**
TSUM Tsumeb 80.51 250 PFAKE 19 13 20.0 +13
TSUM LR LR
comp=Z,399nm,20.0s
OJC Ojcow 80.75 321 P **P** **19 13 07.8 +0.7**
OJC pmax pmax
comp=Z,9.0nm,1.3s
BILL Bilibino 81.02 21⇑ *e*P **P** **19 13 07.2 -0.9**
BILL *e* 19 16 11.6
BILL *e*PPP PPP 19 18 01.8
BILL *e*SS SS 19 28 33.3 +3.8
BILL pmax pmax
comp=Z,14nm,1.7s
BILL MLR MLR
comp=Z,2µm,17.0s
BILL Bilibino 81.02 21 PFAKE 19 13 20.0 +12
BILL LR LR
comp=Z,2µm,19.0s
SMY Shemya 81.04 37 *e*P **P** **19 13 08.5 0.0**
SMY Shemya 81.04 37 *e*P **P** **19 13 08.5 0.0**
VYHS Vyhne 81.12 319 *e*P **P** **19 13 09.8 +0.7**
VYHS *e*S **S** **19 23 15.6 -1.0**
VYHS pmax pmax
comp=Z,10.0nm,1.8s
VYHS Vyhne 81.12 319 *e*P **P** **19 13 09.8 +0.7**
VYHS *e* 19 13 17.0
VYHS *e*S **S** **19 23 15.6 -1.0**
SGF Sodankyl 81.29 338 P **P** **19 13 12.0 +2.4**
SGF pmax pmax
comp=Z,27nm,1.4s
TIP Timpagrande 81.56 309 PFAKE 19 13 20.0 +8.3
TIP LR LR
comp=Z,205nm,19.0s
OKC Ostrava-Krasne 81.75 320 *e*P **P** **19 13 14.6 +2.2**
OKC *e*pP **pP** **19 13 22.0 -0.9**
OKC *e*S **S** **19 23 22.0 -1.1**
OKC AMS AMS 20 00 20.0
comp=Z,300nm,16.4s
OKC Ostrava-Krasne 81.75 320 *e*P **P** **19 13 14.6 +2.2**
OKC *e* 19 23 22.0
OKC MLR MLR
comp=Z,300nm,16.4s
MSVF Nonsavu 81.87 108 *e*P **P** **19 13 14.8 +1.0**
MSVF pmax pmax

comp=Z,15nm,1.1s
MORC Moravsky Berou 82.13 320 *e*P **P** **19 13 16.5 +2.0**
MORC Moravsky Berou 82.13 320 *e*P **P** **19 13 16.5 +2.0**
CEL Celeste 82.16 308 PFAKE 19 13 30.0 +15
CEL LR LR
comp=Z,180nm,19.0s
ARCES ARCESS Array B 82.27 340 P **P** **19 13 15.4 +0.6**
comp=Z,3.7nm,0.6s,baz=101,slow=4.6,SNR=22
ARCES LR LR 19 54 07.1
comp=Z,660nm,20.2s,baz=107,slow=39
CUC Castrocucco 82.36 310 PFAKE 19 13 30.0 +14
CUC LR LR
comp=Z,215nm,19.0s
FUNA Funafuti 82.46 99 PFAKE 19 13 30.0 +13
FUNA LR LR
comp=Z,9µm,19.0s
KRLC Kraliky 82.65 320 *e*P **P** **19 13 18.3 +1.1**
KRLC Kraliky 82.65 320 *e*P **P** **19 13 18.3 +1.1**
DPC Dobruska-Polom 82.98 320 *e*P **P** **19 13 19.4 +0.5**
DPC *ex* x 19 13 26.7
DPC *e*S **S** **19 23 36.4 +0.7**
DPC AMS AMS 19 56 10.0
comp=Z,400nm,21.1s
DPC Dobruska-Polom 82.98 320 *e*P **P** **19 13 19.4 +0.5**
DPC *e* 19 23 36.4
DPC MLR MLR
comp=Z,400nm,21.1s
WDD Wied Dalam 83.09 306 PFAKE 19 13 30.0 +10
WDD LR LR
comp=Z,338nm,19.0s
UPC Upice 83.19 321 *e*S **S** **19 23 35.0 -2.8**
UPC AMS AMS 19 57 10.0
comp=Z,500nm,19.3s
TREC Trest 83.41 319 AMS AMS 20 01 20.0
comp=Z,300nm,19.8s
GOPC GO Pecny, Ondr 83.92 320 *e*S **S** **19 23 44.5 -0.7**
GOPC AMS AMS 19 57 30.0
comp=Z,400nm,21.6s
PRU Pruhonice 84.08 320 *e*P **P** **19 13 24.8 +0.3**
PRU *ex* x 19 13 46.3
PRU *e*S **S** **19 23 48.2 +1.4**
PRU AMS AMS 19 57 40.0
comp=Z,400nm,20.3s
PRU Pruhonice 84.08 320 *e*P **P** **19 13 24.8 +0.3**
PRU *e* 19 13 46.3
PRU *e* 19 23 48.2
PRU MLR MLR
comp=Z,400nm,20.3s
PVCC Panska Ves 84.11 320 AMS AMS 19 56 50.0
comp=Z,400nm,21.5s
CLTB Caltabellotta 84.23 307 PFAKE 19 13 40.0 +14
CLTB LR LR
comp=Z,129nm,20.0s
AQU L'Aquila 84.33 312 PFAKE 19 13 40.0 +14
AQU LR LR
comp=Z,271nm,20.0s
BRG Berggiesshubel 84.53 321 *e*P **P** **19 13 24.5 -2.3**
comp=Z,12nm,1.8s
BRG *e* 19 13 52.1
comp=Z,25nm,1.7s
BRG Berggiesshubel 84.53 321 S **S** **19 23 53.0 +1.7**
BRG PS 19 24 58.0
comp=N,303nm,14.7s
comp=E,343nm,17.7s
comp=Z,560nm,20.1s
BRG Berggiesshubel 84.53 321 *e*P **P** **19 13 24.5 -2.3**
BRG S **S** **19 23 53.0 +1.7**
BRG pmax pmax
comp=Z,12nm,1.8s
BRG MLR MLR
comp=N,303nm,14.7s
BRG MLR MLR
comp=E,343nm,17.7s
BRG MLR MLR
comp=Z,560nm,20.1s
GERES GERESS Array B 84.54 319 P **P** **19 13 26.6 -0.3**
comp=Z,2.0nm,0.9s,baz=56,slow=3.4,SNR=15
KHC Kasperske Hory 84.64 319 *e*P **P** **19 13 29.3 +1.9**
KHC *e*pP **pP** **19 13 36.0 -2.0**
KHC *ex* x 19 13 47.5
KHC *e*S **S** **19 23 51.7 -0.8**
KHC AMS AMS 19 57 20.0
comp=Z,300nm,18.8s
KHC Kasperske Hory 84.64 319 *e*P **P** **19 13 29.3 +1.9**
KHC *e* 19 13 47.5
KHC *e* 19 23 51.7
KHC MLR MLR
comp=Z,300nm,18.8s
CLL Collm 85.16 321 *e*P **P** **19 13 33.0 +3.1**
CLL *e* 19 13 52.0
CLL *e*S **S** **19 23 59.0 +1.6**
CLL *e* 19 24 48.0
CLL *e*PPS PPS 19 26 00.0
CLL *e*SS SS 19 29 18.0 -14
CLL *e*SSS SSS 19 33 00.0
CLL *e*SSSS 19 37 00.0
CLL Lm MLR 19 59 00.0
comp=N,200nm,18.3s
CLL Lm MLR 19 59 00.0
comp=E,200nm,20.5s
CLL Lm MLR 19 59 00.0
comp=Z,200nm,20.1s
CLL Collm 85.16 321 *e*P **P** **19 13 33.0 +3.1**
CLL *e* 19 13 52.0
CLL *e*S **S** **19 23 59.0 +1.6**
CLL MLR MLR
comp=Z,200nm,20.1s
NKC Novy Kostel 85.44 320 AMS AMS 19 57 40.0
comp=Z,400nm,22.0s
MIDW Midway 85.45 62 PFAKE 19 13 40.0 +8.2
MIDW LR LR
comp=Z,250nm,20.0s
VNDA Vanda 86.07 169 LR LR 19 49 19.1
comp=Z,468nm,18.2s,baz=314,slow=34
VLC Villacollemand 86.61 314 PFAKE 19 13 50.0 +13
VLC LR LR
comp=Z,160nm,20.0s
NB2 NORSAR Subarra 86.73 331 P **P** **19 13 37.4 -0.2**
comp=Z,1.7nm,0.7s,baz=96,slow=4.6
NOA NORSAR Array B 86.73 331 P **P** **19 13 37.4 -0.2**
comp=Z,1.5nm,0.7s,baz=95,slow=5.0,SNR=9.2
NOA LR LR 19 57 13.5
comp=Z,176nm,19.9s,baz=95,slow=39
SBA Scott Base 87.17 169 *e*P **P** **19 13 40.7 +1.4**
SBA pmax pmax
comp=Z,46nm,1.9s
SBA MLR MLR
comp=Z,891nm,20.0s
SBA Scott Base 87.17 169 *e*P **P** **19 13 40.6 +1.4**
comp=Z,46nm,1.9s
SBA LR LR
comp=Z,891nm,20.0s
VSL Villasalto 87.29 309 PFAKE 19 13 50.0 +9.3
VSL LR LR
comp=Z,141nm,20.0s
KEST Kesra 87.30 306 LR LR 19 57 00.0
comp=Z,176nm,18.7s,baz=350,slow=38
KONO Kongsberg 87.48 329 PFAKE 19 13 50.0 +8.9
KONO LR LR
comp=Z,441nm,19.0s
KBS Kingsbay 87.67 349 PFAKE 19 13 50.0 +8.3
KBS LR LR
comp=Z,784nm,22.0s
BFO Black Forest 88.08 318 *i* P **P** **19 13 45.8 +1.5**
BFO Black Forest 88.08 318 PFAKE 19 14 00.0 +16
BFO LR LR
comp=Z,324nm,22.0s
BNI Bardonecchia 89.26 315 PFAKE 19 14 00.0 +10
BNI LR LR
comp=Z,275nm,21.0s
WLF Walferdange 89.50 319 PFAKE 19 14 00.0 +9.1
WLF LR LR
comp=Z,323nm,20.0s
NVL N'lazarevskaya 89.75 199 *e*P P 19 14 04.4 +13
SSB Saint Sauveur 90.76 315 PFAKE 19 14 10.0 +13
SSB LR LR
comp=Z,242nm,19.0s
TAM Tamanrasset 90.85 293 PFAKE 19 14 10.0 +12
TAM LR LR
comp=Z,293nm,19.0s
QSPA South Pole Qui 91.36 180 PFAKE 19 14 10.0 +11
QSPA LR LR
comp=Z,541nm,22.0s
DAG Danmarks Havn 94.35 348 *i* P **P** **19 14 13.8 +1.0**
DAG Danmarks Havn 94.35 348 *e*P **P** **19 14 13.8 +1.0**

ESK Eskdalemuir 94.67 326 PFAKE 19 14 30.0 +15
ESK LR LR
comp=Z,289nm,21.0s
TORD Torodi Ar. Bea 94.88 283 P **P** **19 14 18.7 +2.2**
comp=Z,0.6nm,0.9s,baz=93,slow=5.7,SNR=3.5
TORD LR LR 19 55 53.1
comp=Z,498nm,19.3s,baz=100,slow=35
PAB San Pablo 97.87 310 PFAKE 19 14 40.0 +10
PAB LR LR
comp=Z,281nm,19.0s
BPAW Bear Paw Mtn. 98.17 24 *e*P Pdif 19 14 30.7 +0.2
comp=Z,6.1nm,1.7s
COLA College 99.14 23 PFAKE 19 14 50.0 +15
COLA LR LR
comp=Z,475nm,21.0s
KDAK Kodiak Island 99.54 31 *i* P **Pdif** **19 14 38.2 +1.6**
KDAK Kodiak Island 99.54 31 PFAKE 19 14 50.0 +13
KDAK LR LR
comp=Z,149nm,20.0s
ILAR Eielson Array 99.56 23 P **Pdif** **19 14 36.6 0.0**
comp=Z,0.3nm,0.7s,baz=293,slow=5.1,SNR=4.6
ILAR PP **PP** **19 18 38.7 -1.5**
comp=Z,1.2nm,0.9s,baz=294,slow=8.6,SNR=4.6
RTC Rabat Centre 100.70 305 PFAKE 19 14 50.0 +7.6
RTC LR LR
comp=Z,1µm,20.0s
EGAK Eagle 101.74 22 PFAKE 19 15 00.0 +14
EGAK LR LR
comp=Z,1µm,20.0s
SHEL Horse Pasture 102.68 254 PFAKE 19 15 00.0 +8.4
SHEL LR LR
comp=Z,410nm,19.0s
POHA Pohakuloa 105.89 69 PFAKE 19 19 30.0
POHA LR LR
comp=Z,539nm,21.0s
SFJD Kangerlussuaq 108.02 347 PFAKE 19 19 30.0
SFJD LR LR
comp=Z,618nm,19.0s
WRAK Wrangell Islan 109.95 27 PFAKE 19 19 40.0
WRAK LR LR
comp=Z,541nm,20.0s
ASCN Ascension 111.39 262 PFAKE 19 19 40.0
ASCN LR LR
comp=Z,1µm,19.0s
TBI Tubuai 112.09 115 *e*LR LR 19 52 57.0
comp=Z,780nm,24.5s
PPT2 Papeete2 112.70 108 *e*LR LR 19 53 14.1
comp=Z,442nm,24.2s
NLWA Neilton Lookou 119.69 31 PFAKE 19 20 00.0 +16
NLWA LR LR
comp=Z,303nm,19.0s
FFC Flin Flon 121.88 13 PFAKE 19 20 00.0 +12
FFC LR LR
comp=Z,427nm,19.0s
NEW Newport 122.30 26 PFAKE 19 20 00.0 +11
NEW LR LR
comp=Z,399nm,19.0s
HAWA Hanford 122.54 29 PFAKE 19 20 00.0 +11
HAWA LR LR
comp=Z,332nm,19.0s
BMO Blue Mountains 124.73 29 PFAKE 19 20 00.0 +6.3
BMO LR LR
comp=Z,398nm,20.0s
RKT Rikitea 125.18 117 *e*LR LR 19 58 52.8
comp=Z,561nm,25.5s
EGMT Eagleton 125.50 22 PFAKE 19 20 10.0 +15
EGMT LR LR
comp=Z,515nm,21.0s
WVOR Wild Horse Val 125.78 32 PFAKE 19 20 10.0 +14
WVOR LR LR
comp=Z,346nm,19.0s
BOZ Bozeman (W) 126.71 25 PFAKE 19 20 10.0 +12
BOZ LR LR
comp=Z,500nm,19.0s
DGMT Dagmar 126.99 18 PFAKE 19 20 10.0 +12
DGMT LR LR
comp=Z,769nm,20.0s
HLID Hailey 127.09 28 PFAKE 19 20 10.0 +12
HLID LR LR
comp=Z,673nm,20.0s
LAO LASA Array 127.91 20 PFAKE 19 20 10.0 +10
LAO LR LR
comp=Z,308nm,19.0s
LKWY Lake 128.09 25 PFAKE 19 20 10.0 +10
LKWY LR LR
comp=Z,1µm,19.0s
RLMT Red Lodge 128.10 23 PFAKE 19 20 10.0 +10
RLMT LR LR
comp=Z,508nm,21.0s
AGMN Agassiz Nation 129.22 11 PFAKE 19 20 10.0 +8.0
AGMN LR LR
comp=Z,568nm,21.0s
AHID Auburn Hatcher 129.24 27 PFAKE 19 20 10.0 +7.5
AHID LR LR
comp=Z,780nm,19.0s
BW06 Boulder Array 129.91 25 PFAKE 19 20 20.0 +16
BW06 LR LR
comp=Z,299nm,20.0s
PDAR Pinedale Array 129.91 25 PKP **PKPdf** **19 20 04.8 +0.9**
comp=Z,0.5nm,0.6s,baz=299,slow=3.1,SNR=4.3
HWUT Hardware Ranch 129.93 28 PFAKE 19 20 20.0 +16
HWUT LR LR
comp=Z,451nm,19.0s
EYMN Ely 130.27 8 PFAKE 19 20 20.0 +16
EYMN LR LR
comp=Z,563nm,21.0s
DUG Dugway, Tooele 130.41 30 PFAKE 19 20 20.0 +15
DUG LR LR
comp=Z,455nm,20.0s
PKME Peaks-Kenny Pk 131.95 347 PFAKE 19 20 20.0 +13
PKME LR LR
comp=Z,586nm,19.0s
COWI Conover 132.37 6 PFAKE 19 20 20.0 +12
COWI LR LR
comp=Z,673nm,20.0s
RCBR Riachuelo 132.84 263 PFAKE 19 20 20.0 +10
RCBR LR LR
comp=Z,315nm,19.0s
PFO Pinyon Flats O 133.01 39 PFAKE 19 20 20.0 +10
PFO LR LR
comp=Z,280nm,22.0s
ECSD EROS Data Cent 133.41 14 PFAKE 19 20 20.0 +10
ECSD LR LR
comp=Z,529nm,20.0s
LONY Lake Ozonia 133.55 352 PFAKE 19 20 20.0 +10
LONY LR LR
comp=Z,351nm,19.0s
ISCO Idaho Springs 134.03 24 PFAKE 19 20 20.0 +8.2
ISCO LR LR
comp=Z,516nm,20.0s
OGNE Ogallala 134.40 20 PFAKE 19 20 20.0 +7.8
OGNE LR LR
comp=Z,625nm,19.0s
WUAZ Wupatki 134.67 33 PFAKE 19 20 20.0 +7.1
WUAZ LR LR
comp=Z,308nm,19.0s
MVCO Mesa Verde 134.85 29 PFAKE 19 20 20.0 +6.7
MVCO LR LR
comp=Z,505nm,21.0s
JFWS Jewell Farm 135.38 8 PFAKE 19 20 30.0 +16
JFWS LR LR
comp=Z,673nm,19.0s
SDCO Great Sand Dun 135.80 26 PFAKE 19 20 30.0 +15
SDCO LR LR
comp=Z,516nm,20.0s
SCIA State Center 135.88 11 PFAKE 19 20 30.0 +15
SCIA LR LR
comp=Z,531nm,20.0s
BINY Binghamton 136.12 353 PFAKE 19 20 30.0 +15
BINY LR LR
comp=Z,388nm,20.0s
AAM Ann Arbor 136.47 1 PFAKE 19 20 30.0 +14
AAM LR LR
comp=Z,468nm,21.0s
CBKS Cedar Bluff 137.09 19 PFAKE 19 20 30.0 +13
CBKS LR LR
comp=Z,562nm,19.0s
TUC Tucson 137.35 36 PFAKE 19 20 30.0 +12
TUC LR LR
comp=Z,401nm,20.0s
ANMO Albuquerque 137.66 29 *e*PKIKP **PKPdf** **19 20 18.5 0.0**
ANMO Albuquerque 137.66 29 PFAKE 19 20 30.0 +11
ANMO LR LR
comp=Z,487nm,19.0s
KSU1 Kansas State U 137.77 16 PFAKE 19 20 30.0 +12
KSU1 LR LR
comp=Z,732nm,19.0s
HDIL Hopedale 137.82 7 PFAKE 19 20 30.0 +12
HDIL LR LR
comp=Z,567nm,19.0s
ACSO Alum Creek Sta 138.54 0 PFAKE 19 20 30.0 +10
ACSO LR LR
comp=Z,511nm,20.0s
TRQA Tornquist 138.76 205 PFAKE 19 20 30.0 +10
TRQA LR LR
comp=Z,333nm,19.0s
CBN Corbin Frederi 140.23 353 PFAKE 19 20 30.0 +7.1
CBN LR LR
comp=Z,387nm,22.0s
MNTX Cornudas Mount 140.79 31 PFAKE 19 20 40.0 +16
MNTX LR LR
comp=Z,536nm,20.0s
WMOK Wichita Mounta 141.09 21 PFAKE 19 20 40.0 +15
WMOK LR LR
comp=Z,461nm,19.0s
BLA Blacksburg 141.49 357 PFAKE 19 20 40.0 +15
BLA LR LR
comp=Z,465nm,20.0s
BBSR BB Station 142.20 334 PFAKE 19 20 40.0 +13
BBSR LR LR
comp=Z,319nm,21.0s
X38A Whitesboro 142.41 16 P **PKPdf** **19 20 23.8 -3.1**
baz=340
X39A Fountain Ranch 142.75 15 P **PKPdf** **19 20 24.6 -2.9**
baz=341
MIAR Mount Ida 142.86 15 P **PKPdf** **19 20 25.1 -2.6**
baz=342
MIAR Mount Ida 142.86 15 PFAKE 19 20 40.0 +12
MIAR LR LR
comp=Z,536nm,20.0s
CNNC Cliffs of the 143.22 353 PFAKE 19 20 40.0 +12
CNNC LR LR
comp=Z,855nm,20.0s
Y39A Lockesburg 143.30 16 P PKPbc 19 20 25.5 0.0
baz=341
233A Rising Star 143.47 23 P PKPbc 19 20 26.4 +0.3
baz=332
TXAR Lajitas Array 143.56 31 PKP PKPbc 19 20 26.6 0.0
comp=Z,0.6nm,0.5s,baz=116,slow=0.4,SNR=12
234A Clairette 143.78 22 P PKPab 19 20 26.2 -0.1
baz=334
Y42A Garnett, Star 143.96 13 P PKPbc 19 20 27.4 0.0
baz=345
WHTX Lake Whitney, 144.04 21 P PKPbc 19 20 27.6 -0.1
baz=335
333A Richland Sprin 144.05 24 P PKPbc 19 20 27.6 -0.3
baz=332
Y43A Makayla and Ka 144.06 11 P PKPbc 19 20 28.1 +0.3
baz=346
Z40A Long Farm, Mag 144.13 15 P PKPbc 19 20 28.0 0.0
baz=342
Z41A Richland Creek 144.28 14 P PKPbc 19 20 28.6 +0.2
baz=343
334A Lometa 144.34 23 P **PKPab** **19 20 27.6 -0.8**
baz=333
139A Bunkhouse Ranc 144.40 17 P PKPbc 19 20 29.5 +0.7
baz=340
Y46A Houston 144.45 8 P **PKPab** **19 20 28.1 -0.6**
baz=350
JCT Junction City 144.45 25 P **PKPab** **19 20 28.5 -0.4**
baz=330
JCT Junction City 144.45 25 *e*PKIKP PKPbc 19 20 29.4 +0.3
JCT MLR MLR
comp=Z,360nm,19.0s
JCT Junction City 144.45 25 *e*PKPdf PKPbc 19 20 29.4 +0.3
JCT LR LR
comp=Z,360nm,19.0s
433A Art 144.51 24 P **PKPab** **19 20 27.8 -1.3**
baz=331
Y47A UCPARC, Winfie 144.56 7 P **PKPab** **19 20 28.1 -1.0**
baz=351
237A Washetta, Mont 144.60 19 P **PKPab** **19 20 29.3 0.0**
baz=337
335A Moody 144.69 22 P **PKPab** **19 20 29.0 -0.7**
baz=334
Z44A Pea Ridge, Bel 144.77 11 P PKPbc 19 20 30.4 +0.5
baz=347
434A Burnet 144.79 23 P **PKPab** **19 20 28.8 -1.3**
baz=333
238A Jacksonville 144.81 18 P PKPbc 19 20 30.4 +0.2
baz=338
141A Papa Simpson, 144.87 15 P PKPbc 19 20 30.3 0.0
baz=342
239A Gary 145.00 17 P PKPbc 19 20 30.8 0.0
baz=340
CPUP Villa Florida 145.06 223 PKPbc **PKPdf** **19 20 32.6 +0.8**
comp=Z,5.7nm,0.8s,baz=48,slow=2.8,SNR=11
Z46A Louisville 145.11 9 P **PKPbc** **19 20 31.0 -0.1**
baz=349
Z48A Northport 145.12 7 P **PKPbc** **19 20 29.9 -1.2**
baz=352
143A Socs Landing, 145.13 13 P **PKPab** **19 20 31.3 0.0**
baz=345
142A Monroe 145.16 13 P **PKPbc** **19 20 31.3 0.0**
baz=344
NATX Nacogdoches 145.18 18 P **PKPbc** **19 20 31.3 -0.1**
baz=339
NATX Nacogdoches 145.18 18 *e*PKPdf **PKPdf** **19 20 32.5 +0.6**
NATX LR LR
comp=Z,647nm,19.0s
337A Centerville 145.20 20 P **PKPbc** **19 20 31.4 0.0**
baz=337
Z47A Carrollton 145.23 8 P **PKPbc** **19 20 30.6 -0.8**
baz=351
GOGA Godfrey 145.35 1 *e*PKIKP **PKPbc** **19 20 31.0 -0.8**
GOGA MLR MLR
comp=Z,331nm,19.0s
GOGA Godfrey 145.35 1 *e*PKPdf **PKPbc** **19 20 31.0 -0.8**
GOGA LR LR
comp=Z,331nm,19.0s
338A Crockett 145.35 19 P **PKPbc** **19 20 31.9 -0.1**
baz=338
436A Wall Ranch, Ga 145.38 21 P **PKPbc** **19 20 32.1 0.0**
baz=335
534A Blanco 145.40 24 P **PKPbc** **19 20 31.3 -0.9**
baz=332
144A Alexander Plac 145.40 11 P **PKPab** **19 20 32.6 +0.4**
baz=347
241A Mo Tay, Goldon 145.42 15 P **PKPab** **19 20 32.4 +0.1**
baz=342
LRAL Lakeview Retre 145.52 6 *e*PKPdf **PKPdf** **19 20 31.6 -0.8**
145A Houston Renfro 145.52 10 P **PKPab** **19 20 32.8 +0.2**
baz=348
NHSC New Hope 145.56 356 PFAKE 19 20 40.0 +7.3
NHSC LR LR
comp=Z,516nm,20.0s
633A Saathoff Ranch 145.60 26 P **PKPab** **19 20 33.0 -0.1**
baz=330
339A Huntington 145.61 18 P **PKPdf** **19 20 32.6 0.0**
baz=339
146A Union 145.64 9 P **PKPab** **19 20 33.1 0.0**
baz=349
147A Livingston 145.72 8 P **PKPdf** **19 20 32.7 -0.1**
baz=350
340A Bronson 145.73 17 P **PKPbc** **19 20 33.1 -0.1**
baz=340
438A Sam Houston St 145.86 19 P **PKPbc** **19 20 33.7 +0.2**
baz=337
243A Waterproof 145.91 13 P **PKPbc** **19 20 33.8 +0.1**
baz=344
341A Kurthwood 146.01 16 P **PKPab** **19 20 34.3 -0.2**
baz=341
439A Center Grove, 146.05 18 P **PKPbc** **19 20 34.4 +0.3**
baz=338
245A Little AP, Sta 146.09 11 P **PKPab** **19 20 35.0 +0.2**
baz=347
537A Green Hill Far 146.18 21 P **PKPbc** **19 20 34.7 +0.2**
baz=335
733A Divot King Ran 146.19 26 P **PKPbc** **19 20 34.9 +0.3**
baz=330
342A Flagon Creek P 146.19 14 P **PKPab** **19 20 35.0 -0.2**
baz=343
635A Leesville 146.25 24 P **PKPab** **19 20 35.1 -0.4**
baz=332
832A Faith Ranch, C 146.25 28 P **PKPab** **19 20 35.4 -0.2**
baz=328
440A Kirbyville 146.34 17 P **PKPab** **19 20 35.7 -0.1**
baz=340
636A Smothers Creek 146.44 23 P **PKPab** **19 20 36.1 -0.1**
baz=334
833A Chaparral WMA, 146.48 27 P **PKPab** **19 20 36.2 -0.2**
baz=329

735A	**Kenedy** baz=332	**146.70**	**24**	P		**PKPab**	**19 20 37.1**	**-0.2**
637A	**Eagle Lake** baz=335	**146.75**	**22**	P		**PKPab**	**19 20 37.3**	**-0.1**
346A	**Big Creek Wild** baz=348	**146.79**	**10**	P		**PKPbc**	**19 20 36.6**	**+0.3**
736A	**Circle Diamond** baz=333	**146.91**	**23**	P		**PKPab**	**19 20 37.9**	**-0.1**
347A	**Saraland** baz=350	**146.93**	**9**	P		**PKPbc**	**19 20 37.2**	**+0.5**
348A	**Jackson** baz=351	**147.01**	**8**	P		**PKPab**	**19 20 37.7**	**-0.7**
834A	**Tilden** baz=330	**147.03**	**26**	P		**PKPab**	**19 20 37.8**	**-0.7**
933A	**Laredo** baz=329	**147.14**	**27**	P		**PKPab**	**19 20 38.3**	**-0.8**
TIGA	**Tifton** baz=359	**147.31**	**1**	P		**PKPbc**	**19 20 38.1**	**+0.3**
TIGA	**Tifton**	**147.31**	**1**	*e*PKPbc		**PKPab**	**19 20 38.6**	**-0.9**
BRAL	**Brewton**	**147.36**	**7**	PFAKE			19 20 50.0	+10
BRAL	comp=Z,567nm,20.0s			LR	LR			
KVTX	**Kingsville**	**147.81**	**25**	PFAKE			19 20 50.0	+8.4
KVTX	comp=Z,500nm,19.0s			LR	LR			
ANWB	**Willy Bob**	**151.80**	**313**	PFAKE			19 20 50.0	+0.7
ANWB	comp=Z,343nm,21.0s			LR	LR			
FDF	**Fort de France**	**153.09**	**307**	PFAKE			19 21 00.0	-3.8
FDF	comp=Z,287nm,19.0s			LR	LR			
SJG	**San Juan**	**154.49**	**320**	PFAKE			19 21 00.0	+4.8
SJG	comp=Z,267nm,20.0s			LR	LR			
LVC	**Limon Verde**	**154.90**	**212**	PFAKE			19 21 00.0	+3.5
LVC	comp=Z,365nm,19.0s			LR	LR			
GRGR	**Grenville**	**154.91**	**303**	PFAKE			19 21 00.0	+3.8
GRGR	comp=Z,273nm,19.0s			LR	LR			
SDDR	**Presa de Saban**	**156.70**	**331**	PFAKE			19 21 00.0	+10
SDDR	comp=Z,516nm,20.0s			LR	LR			
GTBY	**Guantanamo Bay**	**157.43**	**340**	PFAKE			19 21 00.0	+9.3
GTBY	comp=Z,309nm,19.0s			LR	LR			
SAML	**Samuel**	**158.94**	**249**	PFAKE			19 21 00.0	+7.3
SAML	comp=Z,458nm,20.0s			LR	LR			
MTDJ	**Mount Denham**	**159.76**	**345**	PFAKE			19 21 00.0	+6.4
MTDJ	comp=Z,394nm,19.0s			LR	LR			
SDV	**Santo Domingo**	**164.00**	**310**	PFAKE			19 21 10.0	+12
SDV	comp=Z,451nm,19.0s			LR	LR			
NNA	**Nana**	**167.88**	**210**	PFAKE			19 21 10.0	+8.9
NNA	comp=Z,201nm,19.0s			LR	LR			
PAYG	**Puerto Ayora**	**172.64**	**84**	PFAKE			19 21 10.0	+6.2
PAYG	comp=Z,477nm,21.0s			LR	LR			
OTAV	**Otavalo**	**175.20**	**290**	PFAKE			19 21 20.0	+15
OTAV	comp=Z,428nm,20.0s			LR	LR			

*CRAAG **04** 19:05:24.7, 36°.33N×3°.78E, Ml2.6*
*ISCJB **04** 19:05:26.4±0.9, 36°.41N±0°.06×3°.9E±0°.1, h16km, Error ellipse: s-maj=14.6km s-min=7.7km az=157.2*
*CSEM **04** 19:05:26.9±0.3, 36°.35N×3°.81E, h10km, mb3.7, Error ellipse: s-maj=10.2km s-min=5.6km az=55.0*
*MDD **04** 19:05:28.0±0.7, 36°.30N×3°.77E, h15km±18km, mb3.7/4, Error ellipse: s-maj=19.2km s-min=6.9km az=32.0, PRIMO SIN SOLUCIN*

ISC 04 19:05:26.7±1.0, 36°.40N±0°.07×3°.79E±0°.05, h16km, n21, σ1§99/22, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKET	**Djebel Ketaf**	**0.36**	**168**	P	**Pg**	**19 05 33.5**	**-0.7**
AKET	**Djebel Ketaf**	**0.36**	**168**	P	**Pg**	**19 05 33.5**	**-0.7**
AKET	**Djebel Ketaf**	**0.36**	**168**	P	**Pg**	**19 05 33.5**	**-0.7**
ATAF	**Djebel Tarf**	**0.66**	**143**	P	**Pg**	**19 05 39.1**	**-0.5**
ATAF	**Djebel Tarf**	**0.66**	**143**	P	**Pg**	**19 05 39.1**	**-0.5**
ATAF	**Djebel Tarf**	**0.66**	**143**	P	**Pg**	**19 05 39.1**	**-0.5**
EMHD	**Djebel Mahouad**	**0.71**	**254**	P	**Pg**	**19 05 40.1**	**-0.4**
EMHD	**Djebel Mahouad**	**0.71**	**254**	P	**Pg**	**19 05 40.1**	**-0.4**
EMHD	**Djebel Mahouad**	**0.71**	**254**	P	**Pg**	**19 05 40.1**	**-0.4**
ABA	**Alger-Bouzarea**	**0.73**	**303**	P	**Pb**	**19 05 42.4**	**+1.4**
ABA	**Alger-Bouzarea**	**0.73**	**303**	P	**Pb**	**19 05 42.4**	**+1.4**
ABA	**Alger-Bouzarea**	**0.73**	**303**	P	**Pb**	**19 05 42.4**	**+1.4**
EIBI	**Ibiza** 3.7nm,0.2s,SNR=7.9	**3.26**	**324**	P	**Pn**	**19 06 18.7**	**+1.6**
EIBI	**Ibiza** 3.7nm,0.2s,SNR=7.9	**3.26**	**324**	P	**Pn**	**19 06 18.7**	**+1.6**
ETOS	**Mallorca** 0.6nm,0.1s,SNR=7.9	**3.45**	**347**	P	**Pn**	**19 06 20.7**	**+0.9**
ETOS	0.9nm,0.2s,SNR=7.9			S	**Sn**	**19 06 58.0**	**-2.3**
ETOS	**Mallorca** 0.6nm,0.1s,SNR=7.9	**3.45**	**347**	P	**Pn**	**19 06 20.7**	**+0.9**
AFON	**Font Roja** 1.1nm,0.1s,SNR=7.9	**4.12**	**305**	S	**Sn**	**19 07 10.6**	**-6.4**
ETOB	**Tobarra** 0.7nm,0.2s,SNR=7.9	**4.80**	**299**	P	**Pn**	**19 06 40.5**	**+2.1**
ETOB	**Tobarra** 0.7nm,0.2s,SNR=7.9	**4.80**	**299**	P	**Pn**	**19 06 40.5**	**+2.1**
CFON	**Fontmartina** 0.5nm,0.1s,SNR=7.9	**5.46**	**349**	P	**Pn**	**19 06 48.9**	**+1.5**
CFON	**Fontmartina** 0.5nm,0.1s,SNR=7.9	**5.46**	**349**	P	**Pn**	**19 06 48.9**	**+1.5**

GUC 04 19:28:03.9±0.5, 23°.32S×68°.09W, h141km±7km, ML4.2, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.03**	**313**	*i* P	Pn	19 28 28.8	+0.3
LVC				*i* S	Sn	19 28 48.2	+0.9
PB06	**IPOC Station P**	**1.50**	**294**	*i* P	Pn	19 28 33.9	+1.0
PB06				*i* S	Sn	19 28 56.4	+1.3
PB09	**IPOC Station P**	**1.85**	**325**	*e*P	Pn	19 28 38.1	+1.1
PB09				*i* S	Sn	19 29 03.6	+1.4
PB09	comp=N,2μm,0.6s			IAML		19 29 06.1	
PB04	**IPOC Station P**	**2.14**	**297**	*i* P	Pn	19 28 41.2	+0.8
PB04				*e*S	Sn	19 29 09.2	+0.9
PB04	comp=N,1μm,0.2s			IAML		19 29 11.0	
PB07	**IPOC Station P**	**2.29**	**313**	*e*P	Pn	19 28 42.7	+0.4
PB07				*i* S	Sn	19 29 11.8	+0.1
PB07	comp=E,1μm,0.3s			IAML		19 29 12.9	
PB01	**IPOC Station P**	**2.61**	**330**	*e*P	Pn	19 28 45.8	-0.3
PB01				*e*S	Sn	19 29 18.1	-0.4
PB08	**IPOC Station P**	**3.31**	**342**	*e*P	Pn	19 28 53.4	0.0
PB08				*e*S	Sn	19 29 34.5	-0.6

*IDC **04** 19:34:23.5±1.1, 34°.59S×72°.12W, h0km, mb3.8/2, mb1 4.1/5, mb1mx3.9/16, mbtmp3.9/5, ML4.2/3, Error ellipse: s-maj=34.4km s-min=28.2km az=99.0*
*GUC **04** 19:34:25.4±0.5, 34°.55S×72°.03W, h17km±5km, ML4.3*

ISC 04 19:34:25.4±1.0, 34°.56S±0°.03×72°.04W±0°.05, h14km±6km, n32, σ1§86/48, 1C-6D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.17**	**11**	↓*i* P	**Pg**	**19 34 29.9**	**+0.3**
CHPI				*i* S	**Sg**	**19 34 32.8**	**+0.5**
NICH	**Los Niches**	**0.80**	**124**	↑P	**Pg**	**19 34 40.3**	**-0.8**
NICH				*i* S	**Sb**	**19 34 50.8**	**-1.0**
ANTU	**Antumapu**	**1.53**	**50**	*e*P	**Pn**	**19 34 51.5**	**-0.8**
ANTU				*e*S	**Sn**	**19 35 11.1**	**-1.0**
ANTU	comp=N,9μm,0.6s			IAML		19 35 15.9	
COCH	**Cobquecura**	**1.68**	**201**	↓*i* P	**Pn**	**19 34 54.1**	**-0.3**
COCH				*i* S	**Sn**	**19 35 15.7**	**0.0**
COCH	comp=N,3μm,0.7s			IAML		19 35 20.8	
CLCH	**Cerro Calan**	**1.71**	**48**	↓*i* P	**Pn**	**19 34 54.2**	**-0.5**
CLCH	comp=N,7μm,0.6s			IAML		19 35 21.3	

ROC1	**El Roble**	**1.80**	**29**	*i* P		**Pn**	**19 34 55.4**	**-0.8**
ROC1				*i* S		**Sg**	**19 35 26.2**	**+2.9**
ROCH	**El Roble** comp=N,4μm,0.5s	**1.80**	**29**	IAML			19 35 27.3	
PEL	**Peldehue**	**1.81**	**39**	↓*i* P		**Pn**	**19 34 55.7**	**-0.5**
PEL				*i* S		**Sn**	**19 35 19.7**	**+0.8**
PEL	comp=E,5μm,0.6s			IAML			19 35 24.4	
FCH	**Farellones**	**1.91**	**50**	↓*i* P		**Pn**	**19 34 57.7**	**-0.1**
FCH				*e*S		**Sn**	**19 35 22.4**	**+0.6**
FCH	comp=N,4μm,0.3s			IAML			19 35 26.6	
CCHI	**Chillan**	**2.04**	**181**	↓*i* P		**Pb**	**19 35 01.2**	**-1.1**
CCHI				*i* S		**Sb**	**19 35 27.4**	**0.0**
CCHI	comp=E,6μm,0.4s			IAML			19 35 32.1	
AAGR	**Agrelo**	**3.05**	**62**	*i* P		**Pb**	**19 35 17.7**	**-1.9**
AAGR				*i* S		**Sg**	**19 36 04.4**	**+0.9**
ARCO	**CERRO ARCO**	**3.11**	**57**	*i* P		**Pb**	**19 35 17.9**	**-2.7**
ARCO				*i* S		**Sg**	**19 36 03.9**	**-1.5**
ARCO	comp=Z,388nm,0.5s			IAML			19 36 09.2	
AVIZ	**Vizcacheras**	**3.12**	**71**	*i* P		**Pb**	**19 35 19.0**	**-1.8**
AVIZ				*i* S		**Sg**	**19 36 07.9**	**+2.1**
AUSP	**Uspallata**	**3.22**	**44**	*i* P		**Pn**	**19 35 17.9**	**+2.1**
AUSP				*i* S		**Sb**	**19 36 04.6**	**+2.9**
ASAL	**Salagasta**	**3.32**	**55**	*i* P		**Pn**	**19 35 20.5**	**+3.5**
ASAL				*i* S		**Sg**	**19 36 09.5**	**-2.6**
RTLS	**Leoncito**	**3.59**	**41**	*i* P		**Pn**	**19 35 22.7**	**+1.8**
RTLS				*i* S		**Sb**	**19 36 13.2**	**+0.8**
RTCV	**Cerro Valdivia**	**3.98**	**48**	*i* P		**Pn**	**19 35 29.1**	**+3.1**
RTCV				*i* S		**Sb**	**19 36 24.2**	**+0.8**
SJA	**San Juan**	**4.21**	**45**	*i* P		**Pn**	**19 35 31.2**	**+2.1**
SJA	comp=Z,169nm,0.4s			IAML			19 36 44.3	
RTLL	**Cerro Villicun**	**4.40**	**44**	*i* P		**Pn**	**19 35 33.6**	**+1.7**
RTLL				*i* S		**Sb**	**19 36 32.6**	**-2.9**
ACAN	**Cantantal**	**4.66**	**62**	*i* P		**Pn**	**19 35 39.3**	**+4.0**
AMOG	**MOGNA**	**4.69**	**41**	*i* P		**Pn**	**19 35 37.1**	**+1.3**
AMOG				*i* S		**Sb**	**19 36 39.3**	**-4.5**
AVFE	**Valle Fertil**	**5.49**	**46**	*i* P		**Pn**	**19 35 48.6**	**+1.8**
AVFE	comp=Z,35nm,0.3s			IAML			19 37 00.2	
ACHE	**Chepes**	**5.65**	**55**	*i* P		**Pn**	**19 35 52.0**	**+2.8**
AGUA	**GUANDACOL**	**5.89**	**32**	*i* P		**Pn**	**19 35 51.6**	**-0.7**
PLCA	**Paso Flores** comp=Z,2.8nm,0.3s,baz=357,slow=12,SNR=13	**6.28**	**170**	Pn		**Pn**	**19 35 58.9**	**+1.3**
PLCA	comp=Z,0.7nm,0.3s,baz=270,slow=19,SNR=3.4			Lg		Lg	19 37 37.0	
VCA	**Vinchina**	**6.66**	**30**	*i* P		**Pn**	**19 36 02.6**	**-0.4**
CPUP	**Villa Florida** comp=Z,0.1nm,0.3s,baz=104,slow=4.2,SNR=2.1	**15.10**	**61**	Pn		**Pn**	**19 37 58.3**	**0.0**
CPUP	comp=Z,0.1nm,0.3s,baz=152,slow=20,SNR=3.1			Lg		Lg	19 42 28.2	
LPAZ	**La Paz** comp=Z,0.3nm,0.3s,baz=189,slow=6.5,SNR=17	**18.53**	**12**	P		**P**	**19 38 42.4**	**+0.2**
TXAR	**Lajitas Array** comp=Z,0.5nm,0.5s,baz=159,slow=9.0,SNR=12	**70.22**	**331**	P		**P**	**19 45 38.9**	**+1.0**
TORD	**Torodi Ar. Bea** comp=Z,0.6nm,0.6s,baz=234,slow=48,SNR=10	**84.41**	**70**	P		**P**	**19 46 58.1**	**+0.4**
WRA	**Warramunga Arr** comp=Z,0.1nm,0.5s,baz=152,slow=1.9,SNR=11	**120.27**	**209**	PKP		**PKPdf**	**19 53 15.8**	**-0.8**
BVAR	**Borovoye Array** comp=Z,0.7nm,0.6s,baz=242,slow=3.2,SNR=5.2	**147.69**	**44**	PKPbc		**PKPbc**	**19 54 09.2**	**+0.2**

WEL 04 19:37:22.4±0.1, 43°.01S×171°.76E, h5km, ML3.9/26, 5C-2D, Error ellipse: s-maj=0.8km s-min=0.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INZ	**Inchbonnie**	**0.36**	**320**	↓PG	Pg	19 37 29.7	+0.3
INZ				SG	Sg	19 37 34.8	+0.6
OXZ	**Oxford**	**0.38**	**148**	PG	Pg	19 37 29.9	+0.1
OXZ				SG	Sg	19 37 35.4	+0.6
OXZ				AML	AML	19 37 35.7	
OXZ				AML	AML	19 37 35.7	
OXZ				AML	AML	19 37 35.7	
WVZ	**Waitaha Valley**	**0.75**	**264**	↑P*	Pg	19 37 36.7	-0.1
WVZ				S*	Sg	19 37 46.3	-0.3
WVZ				AML	AML	19 37 46.6	
CRLZ	**Canterbury Las**	**0.85**	**132**	↑P*	Pg	19 37 38.9	+0.2
CRLZ				AML	AML	19 37 51.6	
CRLZ				AML	AML	19 37 51.6	
RPZ	**Rata Peaks**	**0.88**	**216**	↑P*	Pg	19 37 39.2	0.0
RPZ				AML	AML	19 37 53.6	
RPZ				AML	AML	19 37 54.1	
MQZ	**McQueen's Vall**	**0.96**	**137**	P*	Pg	19 37 40.3	-0.5
MQZ				AML	AML	19 37 54.2	
MQZ				AML	AML	19 37 54.2	
DSZ	**Denniston Nort**	**1.26**	**2**	P*	Pg	19 37 45.6	-0.9
DSZ				AML	AML	19 38 05.4	
DSZ				AML	AML	19 38 05.5	
DSZ				AML	AML	19 38 05.8	
DSZ				AML	AML	19 38 05.8	
KHZ	**Kahutara**	**1.44**	**66**	AML	AML	19 38 11.8	
KHZ				AML	AML	19 38 13.8	
THZ	**Tophouse**	**1.50**	**35**	↓PN	Pn	19 37 49.3	-0.7
THZ				AML	AML	19 38 12.1	
THZ				AML	AML	19 38 12.2	
FOZ	**Fox Glacier**	**1.52**	**249**	↑PN	Pn	19 37 50.1	0.0
FOZ				AML	AML	19 38 12.3	
FOZ				AML	AML	19 38 13.2	
FOZ				AML	AML	19 38 14.3	
FOZ				AML	AML	19 38 14.3	
LBZ	**Lake Benmore**	**1.79**	**219**	PN	Pn	19 37 53.0	-1.0
LBZ				AML	AML	19 38 22.7	
LBZ				AML	AML	19 38 24.3	
BSWZ	**Blackbirch Sta**	**2.03**	**51**	PN	Pn	19 37 58.0	+0.7
BSWZ				AML	AML	19 38 32.7	
BSWZ				AML	AML	19 38 35.9	
NNZ	**Nelson**	**2.15**	**35**	PN	Pn	19 37 59.4	+0.4
NNZ				AML	AML	19 38 37.6	
NNZ				AML	AML	19 38 37.6	
NNZ				AML	AML	19 38 38.1	
NNZ				AML	AML	19 38 38.7	
ODZ	**Otahua Downs**	**2.19**	**201**	↑PN	Pn	19 37 57.7	-1.8
ODZ				AML	AML	19 38 07.5	
ODZ				AML	AML	19 38 07.5	
ODZ				AML	AML	19 38 38.4	
ODZ				AML	AML	19 38 38.4	
QRZ	**Quartz Range**	**2.25**	**15**	PN	Pn	19 37 59.4	-0.9
QRZ				AML	AML	19 38 37.2	
QRZ				AML	AML	19 38 37.2	
QRZ				AML	AML	19 38 40.4	
QRZ				AML	AML	19 38 40.4	
TUWZ	**Tuamarina**	**2.26**	**47**	*e*PN	Pn	19 38 01.0	+0.6
TUWZ				AML	AML	19 38 35.4	
TUWZ				AML	AML	19 38 35.7	
JCZ	**Jackson Bay**	**2.41**	**243**	PN	Pn	19 38 02.8	+0.2
JCZ				AML	AML	19 38 42.3	
JCZ				AML	AML	19 38 46.2	
TCW	**Tory Channel**	**2.59**	**47**	PN	Pn	19 38 05.5	+0.5
TCW				AML	AML	19 38 46.0	
TCW				AML	AML	19 38 46.9	
WKZ	**Wanaka**	**2.69**	**226**	*e*PN	Pn	19 38 04.6	-1.7
WKZ				AML	AML	19 38 58.3	
WKZ				AML	AML	19 39 02.3	
EAZ	**Earnscleugh**	**2.84**	**218**	AML	AML	19 38 58.9	
EAZ				AML	AML	19 39 02.4	
CAW	**Cannon Point**	**3.11**	**54**	AML	AML	19 38 52.2	
CAW				AML	AML	19 39 06.5	
KIW	**Kapiti Island**	**3.18**	**49**	PN	Pn	19 38 12.7	-0.3
KIW				AML	AML	19 39 05.1	
KIW				AML	AML	19 39 05.2	
TUZ	**Tuapeka**	**3.32**	**207**	PN	Pn	19 38 13.3	-1.7
TUZ				AML	AML	19 39 15.0	
TUZ				AML	AML	19 39 16.3	
MTW	**Mount Morrison**	**3.34**	**58**	*e*PN	Pn	19 38 13.7	-1.6
MTW				AML	AML	19 39 18.3	
MTW				AML	AML	19 39 19.3	
OGWZ	**Otaki Gorge**	**3.35**	**50**	AML	AML	19 39 13.3	
OGWZ				AML	AML	19 39 15.4	
MRZ	**Mangatainoka R**	**3.69**	**52**	AML	AML	19 39 02.2	
MRZ				AML	AML	19 39 07.0	
SYZ	**Scrubby Hill**	**3.99**	**207**	PN	Pn	19 38 22.4	-1.8
BFZ	**Birch Farm**	**4.08**	**57**	AML	AML	19 40 53.3	
KHEZ	**Kahui Hut**	**4.08**	**25**	PN	Pn	19 38 26.4	+0.9
PKE	**Pukeiti**	**4.16**	**25**	PN	Pn	19 38 27.1	+0.6

*NEIC **04** 19:58:06.1, 35°.81S×179°.14E, h115km, MG4.0(WEL), After WEL.*

WEL 04 19:58:05.3±0.5, 35°.94S×179°.41E, h5km, ML3.8/11, Error ellipse: s-maj=5.8km s-min=3.5km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**2.04**	**203**	Pn	Pn	19 58 40.2	-0.2
WMGZ	**Waiomatatini S**	**2.04**	**203**	PN	Pn	19 58 40.2	-0.2
HAZ	**Te Kaha**	**2.24**	**215**	P*	Pn	19 58 42.8	-0.2
HAZ				AML	AML	19 59 13.8	
HAZ				AML	AML	19 59 14.0	
PUZ	**Puketiti**	**2.32**	**203**	Pn	Pn	19 58 43.5	-0.7
PUZ	**Puketiti**	**2.32**	**203**	PN	Pn	19 58 43.6	-0.7
PUZ				AML	AML	19 58 50.1	
PUZ				SN	Sn	19 59 12.2	-1.0
TWGZ	**Tauwhareparae**	**2.51**	**207**	Pn	Pn	19 58 46.1	-0.8
TWGZ				SN	Sn	19 59 16.7	-1.2
TWGZ	**Tauwhareparae**	**2.51**	**207**	PN	Pn	19 58 46.1	-0.8
TWGZ				SN	Sn	19 59 16.7	-1.2
TWGZ				AML	AML	19 59 19.5	
CNGZ	**Carnagh Statio**	**2.72**	**200**	Pn	Pn	19 58 49.0	-0.6
CNGZ	**Carnagh Statio**	**2.72**	**200**	PN	Pn	19 58 49.0	-0.6
MWZ	**Matawai**	**2.83**	**212**	Pn	Pn	19 58 50.2	-1.0
MWZ				SN	Sn	19 59 23.4	-2.2
MWZ	**Matawai**	**2.83**	**212**	P*	Pn	19 58 50.2	-1.0
MWZ				S*	Sn	19 59 23.4	-2.2
MWZ				AML	AML	20 00 18.4	
URZ	**Urewera**	**2.96**	**218**	Pn	Pn	19 58 51.7	-1.2
URZ	**Urewera**	**2.96**	**218**	P*	Pn	19 58 51.7	-1.2
URZ				AML	AML	19 58 55.1	
OPRZ	**Ohinepanea**	**2.98**	**229**	P*	Pn	19 58 52.7	-0.5
OPRZ				AML	AML	19 58 52.9	
OPRZ				AML	AML	19 58 54.9	
RIGZ	**Rimuhau**	**3.06**	**205**	PN	Pn	19 58 53.0	-1.4
RIGZ				SN	Sn	19 59 29.8	-1.6
RIGZ				AML	AML	19 59 30.3	
SNGZ	**Shannon Statio**	**3.29**	**209**	Pn	Pn	19 58 56.3	-1.2
SNGZ	**Shannon Statio**	**3.29**	**209**	PN	Pn	19 58 56.3	-1.2
SNGZ				AML	AML	19 58 57.2	
SNGZ				AML	AML	19 59 36.1	
RAHZ	**Arahi**	**3.50**	**211**	Pn	Pn	19 58 59.4	-1.1
RAHZ	**Arahi**	**3.50**	**211**	PN	Pn	19 58 59.4	-1.0
RAHZ				AML	AML	19 59 28.8	
RAHZ				SN	Sn	19 59 38.0	-4.3
NMHZ	**Naumai**	**3.77**	**212**	Pn	Pn	19 59 02.5	-1.7
NMHZ	**Naumai**	**3.77**	**212**	PN	Pn	19 59 02.5	-1.7
NMHZ				AML	AML	19 59 06.0	
NMHZ				AML	AML	19 59 53.9	
ARHZ	**Aropaoanui**	**3.83**	**209**	Pn	Pn	19 59 02.6	-2.4
ARHZ	**Aropaoanui**	**3.83**	**209**	PN	Pn	19 59 02.6	-2.4
BKZ	**Black Stump Fm**	**3.97**	**215**	Pn	Pn	19 59 04.6	-2.3
BKZ	**Black Stump Fm**	**3.97**	**215**	P*	Pn	19 59 04.6	-2.3
MCHZ	**McNeill Hill**	**4.11**	**211**	Pn	Pn	19 59 07.0	-1.8
MCHZ	**McNeill Hill**	**4.11**	**211**	PN	Pn	19 59 07.0	-1.8
KWHZ	**Kaweka Forest**	**4.21**	**213**	P*	Pn	19 59 07.8	-2.4
KWHZ				AML	AML	19 59 58.5	
PXZ	**Pawanui**	**4.56**	**205**	Sn	Sn	20 00 01.3	-6.9

*ISCJB **04** 20:05:16.5±0.7, 16°.83N±0°.06×147°.3E±0°.1, h41km, mb4.3/27, MS3.3/4, Error ellipse: s-maj=18.2km s-min=6.9km az=14.9*
*NEIC **04** 20:05:18.3±1.8, 16°.82N×147°.30E, h42km±15km, mb4.6/8, Error ellipse: s-maj=18.3km s-min=8.1km az=91.0*
*IDC **04** 20:05:18.3±3.7, 16°.81N×147°.26E, h40km±32km, mb4.0/19, mb1 4.1/20, mb1mx3.9/53, mbtmp4.2/20, ML4.3/1, MS3.3/4, Ms1 3.3/4, ms1mx2.8/39, Error ellipse: s-maj=27.9km s-min=14.7km az=95.0*

ISC 04 20:05:18.3±1.0, 16°.80N±0°.09×147°.3E±0°.2, h41km, n40, σ0§83/38, mb4.4/27, MS3.2/4, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam** 22nm,0.3s,baz=116,slow=6.2,SNR=13	**3.96**	**217**	P	**Pn**	**20 06 17.0**	**+0.5**
GUMO	37nm,0.3s,baz=22,slow=22,SNR=9.2			S	**Sn**	**20 07 01.5**	**-0.2**
MJAR	**Matsushiro Arr** 6.5nm,0.7s,baz=172,slow=11,SNR=15	**21.25**	**339**	P	**P**	**20 10 01.0**	**0.0**
MAJO	**Matsushiro** 14nm,0.7s	**21.25**	**339**	*e*P	**P**	**20 10 00.3**	**-0.7**
MAT	**Matsushiro**	**21.25**	**339**	P	**P**	**20 10 01.1**	**+0.1**
YHNB	**Yeheng** 17nm,0.8s	**25.44**	**292**	*e*P	**P**	**20 10 42.5**	**-0.1**
TGY	**Tagaytay City** comp=Z,50nm,18.0s,baz=112,slow=33	**25.54**	**268**	LR	LR	20 19 26.7	
KSRS	**Korea Array** 1.3nm,0.5s,baz=142,slow=9.6,SNR=7.8	**26.74**	**324**	P	**P**	**20 10 52.4**	**-1.7**
KSAR	**Wonju Array Be**	**26.75**	**324**	P	**P**	**20 10 52.4**	**-1.8**
HNR	**Honiara** comp=Z,87nm,20.7s,baz=294,slow=35	**28.91**	**153**	LR	LR	20 22 03.6	
USRK	**Ussuriysk Ar.** 1.8nm,0.6s,baz=129,slow=9.2,SNR=5.8	**30.22**	**338**	P	**P**	**20 11 25.6**	**+0.6**
WRAB	**Tennant Creek**	**38.65**	**200**	*e*P	**P**	**20 12 38.0**	**-0.2**
WRA	**Warramunga Arr** 1.6nm,0.6s,baz=36,slow=8.3,SNR=17	**38.66**	**200**	P	**P**	**20 12 37.9**	**-0.4**
FITZ	**Fitzroy Crossi**	**40.71**	**213**	*e*P	**P**	**20 12 54.8**	**-0.4**
ASAR	**Alice Springs** 0.6nm,0.6s,baz=19,slow=10,SNR=8.8	**42.29**	**198**	P	**P**	**20 13 08.4**	**+0.2**
SONM	**Songino Array** 0.9nm,0.4s,baz=124,slow=6.6,SNR=11	**45.57**	**322**	P	**P**	**20 13 34.3**	**-0.1**
CMAR	**Chiang Mai Arr** 4.7nm,0.9s,baz=72,slow=6.5,SNR=24	**46.00**	**280**	P	**P**	**20 13 39.6**	**+1.5**
YAK	**Yakutsk** 19nm,0.6s	**46.86**	**349**	*e*P	**P**	**20 13 44.4**	**+0.2**
LSA	**Lhasa** 5.4nm,0.9s	**52.71**	**295**	*e*P	**P**	**20 14 30.9**	**+1.2**
PKIN	**Phulchoki** 4.1nm,0.5s	**57.80**	**292**	*e*P	**P**	**20 15 07.4**	**+1.2**
KKN	**Kakani**	**57.90**	**293**	*e*P	**P**	**20 15 06.0**	**-0.8**
GKN	**Gorkha** 10.0nm,0.7s	**58.45**	**293**	*e*P	**P**	**20 15 09.4**	**-1.2**
PYUN	**Piuthan**	**59.90**	**293**	*e*P	**P**	**20 15 21.3**	**+0.6**
ZALV	**Zalesovo Beam** 2.8nm,0.7s,baz=109,slow=7.1,SNR=12	**60.44**	**323**	P	**P**	**20 15 23.2**	**-0.4**
ZALV	comp=Z,42nm,19.2s,baz=68,slow=36			LR	LR	20 41 05.9	
MKAR	**Makanchi Array** 1.0nm,0.6s,baz=89,slow=9.1,SNR=11	**60.87**	**315**	P	**P**	**20 15 27.1**	**+0.3**
KURK	**Kurchatov** 36nm,0.8s	**63.69**	**319**	*e*P	**P**	**20 15 44.8

*CSEM **04** 20:05:47.4±0.2, 38.96N×26.52E, h5km, ML2.0, Error ellipse: s-maj=4.0km s-min=3.2km az=66.0*

ISC 04 20:05:47.1±0.1, 38.96N±0.02×26.50E±0.02, h9km±10km, n62, σ0s53/83, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PRK	**Paraskevi**	**0.34**	**327**	P		**Pb**	**20 05 54.9**	**-0.4**
PRK				S		**Sb**	**20 06 00.0**	**-0.8**
PRK	**Paraskevi**	**0.34**	**327**	P		**Pb**	**20 05 54.9**	**-0.4**
PRK				S		**Sb**	**20 06 00.0**	**-0.8**
PRK				AML	AML		20 06 00.7	
	comp=E,1287μm,0.4s							
PRK				AML	AML		20 06 01.0	
	comp=N,1177μm,0.4s							
AYVA	**Ayvalik**	**0.38**	**23**	*i* P		**Pg**	**20 05 53.5**	**-1.0**
AYVA	**Ayvalik**	**0.38**	**23**	P		**Pg**	**20 05 53.5**	**-1.0**
SIGR	**SIGRI**	**0.56**	**296**	*e*PG		**Pg**	**20 05 58.0**	**0.0**
SIGR				*e*SG		**Sg**	**20 06 06.5**	**+1.1**
SIGR	**SIGRI**	**0.56**	**296**	P		**Pg**	**20 05 58.2**	**+0.2**
SIGR				S		**Sg**	**20 06 05.2**	**-0.2**
SIGR				*e*Sg		**Sg**	**20 06 06.5**	**+1.1**
SIGR	**SIGRI**	**0.56**	**296**	P		**Pg**	**20 05 58.2**	**+0.2**
SIGR				S		**Sg**	**20 06 05.2**	**-0.2**
SIGR				AML	AML		20 06 08.7	
	comp=E,230μm,0.2s							
SIGR				AML	AML		20 06 09.7	
	comp=N,220μm,0.2s							
URLA	**Izmir**	**0.60**	**173**	*i* P		**Pg**	**20 06 00.3**	**+0.4**
URLA				*i* S		**Sg**	**20 06 06.6**	**-0.1**
URLA	**Izmir**	**0.60**	**173**	P		**Pb**	**20 06 00.3**	**+0.4**
URLA				S		**Sg**	**20 06 06.6**	**-0.1**
CHOS	**Chios island**	**0.67**	**212**	*e*PG		**Pg**	**20 06 06.6**	**+0.4**
CHOS				*e*SG		**Sb**	**20 06 10.1**	**-0.5**
CHOS	**Chios island**	**0.67**	**212**	P		**Pg**	**20 06 00.5**	**+0.4**
CHOS				S		**Sg**	**20 06 09.6**	**+0.7**
CHOS				*e*Sg		**Sb**	**20 06 10.1**	**-0.5**
CHOS	**Chios island**	**0.67**	**212**	P		**Pg**	**20 06 00.5**	**+0.4**
CHOS				S		**Sg**	**20 06 09.6**	**+0.7**
CHOS				AML	AML		20 06 11.6	
	comp=E,562μm,0.3s							
CHOS				AML	AML		20 06 12.2	
	comp=N,418μm,0.2s							
ZEY	**˜zmir**	**0.72**	**180**	*i* P		**Pg**	**20 06 00.9**	**-0.1**
IZM	**Izmir**	**0.82**	**133**	*e*PG		**Pb**	**20 06 03.3**	**-0.3**
IZM	**Izmir**	**0.82**	**133**	*e*Pg		**Pb**	**20 06 03.3**	**-0.3**
EZN	**Ezine**	**0.87**	**351**	*e*PG		**Pg**	**20 06 04.0**	**+0.1**
EZN				*e*SG		**Sb**	**20 06 16.5**	**+0.2**
EZN	**Ezine**	**0.87**	**351**	*e*Pg		**Pg**	**20 06 04.0**	**+0.1**
EZN				*e*Sg		**Sb**	**20 06 16.5**	**+0.2**
BOZC	**Bozcaada**	**0.95**	**338**	*i* P		**Pn**	**20 06 06.4**	**-0.2**
BOZC				*i* S		**Sn**	**20 06 20.1**	**-0.2**
DGB	**˜zmir**	**0.96**	**162**	*i* P		**Pg**	**20 06 05.1**	**-0.4**
DGB				*i* S		**Sg**	**20 06 17.2**	**-0.7**
AKS	**Akhisar**	**1.02**	**94**	*e*PG		**Pg**	**20 06 06.8**	**0.0**
AKS	**Akhisar**	**1.02**	**94**	*e*Pg		**Pg**	**20 06 06.8**	**0.0**
BALY	**Balya**	**1.16**	**48**	*i* P		**Pn**	**20 06 11.5**	**+1.8**
BALY	**Balya**	**1.16**	**48**	P		**Pn**	**20 06 11.5**	**+1.8**
BALB	**Balikesir**	**1.26**	**57**	*e*PN		**Pb**	**20 06 11.1**	**-0.1**
BALB	**Balikesir**	**1.26**	**57**	*e*Pn		**Pb**	**20 06 11.1**	**-0.1**
SMG	**Samos**	**1.28**	**168**	P		**Pn**	**20 06 10.2**	**-1.0**
SMG	**Samos**	**1.28**	**168**	P		**Pn**	**20 06 10.2**	**-1.0**
GADA	**Gvkgeada**	**1.31**	**339**	*e*PN		**Pn**	**20 06 11.9**	**+0.3**
GADA	**Gvkgeada**	**1.31**	**339**	*e*Pn		**Pn**	**20 06 12.0**	**+0.3**
LIA	**Limnos Island**	**1.39**	**313**	P		**Pg**	**20 06 13.2**	**0.0**
LIA				S		**Sg**	**20 06 31.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**40**	*e*PN		**Pn**	**20 06 13.3**	**+0.3**
GONE	**Gonen-Balikesi**	**1.42**	**40**	*e*Pn		**Pn**	**20 06 13.4**	**+0.3**
LPK	**Lapseki**	**1.42**	**8**	*e*PN		**Pn**	**20 06 13.3**	**+0.1**
LPK	**Lapseki**	**1.42**	**8**	*e*Pn		**Pn**	**20 06 13.3**	**+0.1**
GELI	**Tayfur-Gelibol**	**1.43**	**359**	*e*PN		**Pn**	**20 06 13.5**	**+0.2**
GELI	**Tayfur-Gelibol**	**1.43**	**359**	*e*Pn		**Pn**	**20 06 13.5**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**133**	*e*PN		**Pn**	**20 06 14.3**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**133**	*e*Pn		**Pn**	**20 06 14.3**	**+0.1**
KRBG	**Karabiga-Canak**	**1.56**	**23**	*e*PN		**Pn**	**20 06 15.4**	**+0.4**
KRBG	**Karabiga-Canak**	**1.56**	**23**	*e*Pn		**Pn**	**20 06 15.4**	**+0.4**
SMTH	**Samothraki Isl**	**1.68**	**334**	P		**Pg**	**20 06 19.3**	**-0.1**
SMTH				S		**Sg**	**20 06 41.1**	**-0.2**
SMTH	**Samothraki Isl**	**1.68**	**334**	P		**Pg**	**20 06 19.3**	**-0.1**
SMTH				S		**Sg**	**20 06 41.1**	**-0.2**
ERIK	**Erikli-Kesan**	**1.71**	**0**	*e*PN		**Pn**	**20 06 17.4**	**+0.3**
ERIK	**Erikli-Kesan**	**1.71**	**0**	*e*Pn		**Pn**	**20 06 17.4**	**+0.3**
DEMI	**Demirci**	**1.73**	**87**	*i* P		**Pg**	**20 06 20.6**	**+0.3**
DEMI				*i* S		**Sb**	**20 06 40.9**	**0.0**
DEMI	**Demirci**	**1.73**	**87**	P		**Pg**	**20 06 20.5**	**+0.3**
DEMI				S		**Sb**	**20 06 40.9**	**0.0**
EDC	**Edincik**	**1.74**	**37**	*e*PN		**Pn**	**20 06 17.8**	**+0.3**
EDC	**Edincik**	**1.74**	**37**	*e*Pn		**Pn**	**20 06 17.8**	**+0.3**
KULA	**Kula-Manisa**	**1.75**	**104**	*e*PN		**Pn**	**20 06 18.1**	**+0.4**
KULA	**Kula-Manisa**	**1.75**	**104**	*e*Pn		**Pn**	**20 06 18.1**	**+0.4**
ENEZ	**Enez**	**1.79**	**351**	*e*PN		**Pn**	**20 06 18.8**	**+0.6**
ENEZ	**Enez**	**1.79**	**351**	*e*Pn		**Pn**	**20 06 18.8**	**+0.6**
RKY	**Sarkoy-Tekirda**	**1.80**	**17**	*e*PN		**Pn**	**20 06 18.8**	**+0.4**
RKY	**Sarkoy-Tekirda**	**1.80**	**17**	*e*Pn		**Pn**	**20 06 18.8**	**+0.4**
MRMT	**Marmara Adasi**	**1.84**	**27**	*e*PN		**Pn**	**20 06 19.3**	**+0.3**
MRMT	**Marmara Adasi**	**1.84**	**27**	*e*Pn		**Pn**	**20 06 19.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.93**	**47**	*e*PN		**Pn**	**20 06 20.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.93**	**47**	*e*Pn		**Pn**	**20 06 20.5**	**+0.2**
ALN	**Alexandroupoli**	**1.96**	**350**	*e*PN		**Pn**	**20 06 21.1**	**+0.5**
ALN	**Alexandroupoli**	**1.96**	**350**	*e*Pn		**Pn**	**20 06 21.1**	**+0.5**
TVSB	**Tavsanli**	**2.35**	**77**	*e*PN		**Pn**	**20 06 26.6**	**+0.6**
TVSB	**Tavsanli**	**2.35**	**77**	*e*Pn		**Pn**	**20 06 26.6**	**+0.6**

*IDC **04** 20:11:23.9±1.9, 52.26N×29.91W, h0km, mb3.6/5, mb1 3.6/6, mb1mx3.3/59, mbtmp3.5/6, ML3.6/1, Error ellipse: s-maj=53.2km s-min=34.5km az=89.0*

ISC 04 20:11:27.3±1.9, 52.3N±0.2×29.3W±0.3, h10km, n8, σ0s72/8, mb3.7/5, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
EKA	**Eskdalemuir Ar**	**15.72**	**68**	Pn		**P**	**20 15 12.7**	**0.0**
	baz=268,slow=10,SNR=3.0							
NOA	**NORSAR Array B**	**23.58**	**52**	P		**P**	**20 16 37.6**	**-0.3**
	0.6nm,0.9s,baz=268,slow=13,SNR=2.4							
TORD	**Torodi Ar. Bea**	**46.27**	**136**	P		**P**	**20 19 52.9**	**-0.1**
	1.2nm,0.6s,baz=334,slow=8.4,SNR=8.3							
BVAR	**Borovoye Array**	**55.52**	**46**	P		**P**	**20 21 01.9**	**-0.2**
	0.4nm,0.5s,baz=345,slow=9.0,SNR=3.1							
MKAR	**Makanchi Array**	**65.31**	**45**	P		**P**	**20 22 09.9**	**+0.8**
	0.4nm,0.5s,baz=325,slow=5.4,SNR=4.4							
SONM	**Songino Array**	**73.34**	**29**	P		**P**	**20 22 59.0**	**-0.1**
	0.4nm,0.8s,baz=328,slow=6.5,SNR=3.2							
WRA	**Warramunga Arr**	**145.30**	**28**	PKPbc		**PKPbc**	**20 31 03.9**	**-1.1**
	0.6nm,0.9s,baz=344,slow=3.7,SNR=3.2							
ASAR	**Alice Springs**	**148.68**	**31**	PKPbc		**PKPdf**	**20 31 11.6**	**+0.7**
	0.2nm,0.7s,baz=354,slow=2.8,SNR=3.6							

*ISCJB **04** 20:19:03.8±0.6, 25.42N±0.06×60.09E±0.07, h10km, mb3.6/13, MS3.2/1, Error ellipse: s-maj=11.6km s-min=6.5km az=43.5*

*IDC **04** 20:19:03.6±0.9, 25.34N×60.13E, h0km, mb3.8/13, mb1 3.9/14, mb1mx3.6/47, mbtmp3.8/14, ML3.5/1, MS3.4/1, Ms1 3.4/1, ms1mx2.5/48, Error ellipse: s-maj=20.4km s-min=16.4km az=133.0*

*CSEM **04** 20:19:08.5±4.0, 25.68N×59.74E, h10km, ML3.6, Error ellipse: s-maj=105.5km s-min=46.9km az=53.0*

*OMAN **04** 20:19:10.7±10.0, 25.63N×59.63E, h12km, Error ellipse: s-maj=7.4km s-min=1.8km az=44.0*

*DSN **04** 20:19:12.1±0.1, 25.46N×59.56E, h15km, ML3.6, Error ellipse: s-maj=4.6km s-min=3.3km az=25.0*

ISC 04 20:19:05.7±0.8, 25.49N±0.07×59.96E±0.07, h10km, n31, σ1s48/31, mb3.7/13, Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WSAR	**Wadi Sarin**	**2.55**	**209**	Pn		**Pn**	**20 19 46.6**	**-0.5**
	11nm,0.3s,baz=60,slow=8.7,SNR=96							
WSAR				Sn		**Sn**	**20 20 17.2**	**-1.1**
	15nm,0.3s,baz=185,slow=22,SNR=15							
BANOM	**Banah**	**3.33**	**278**	P		**Pn**	**20 19 58.3**	**+0.4**
BANOM				S		**Sn**	**20 20 35.4**	**-2.1**
BANOM	**Banah**	**3.33**	**278**	P		**Pn**	**20 19 57.7**	**-0.2**
BANOM				S		**Sn**	**20 20 35.2**	**-2.3**
BANOM	**Banah**	**3.33**	**278**	P		**Pn**	**20 19 58.3**	**+0.4**
BANOM				S		**Sn**	**20 20 35.4**	**-2.1**
UOSS	**Minazif**	**3.44**	**262**	P		**Pn**	**20 19 58.1**	**-1.4**
	SNR=17							
HATD	**Hatta, Dubai**	**3.53**	**260**	P		**Pn**	**20 20 00.9**	**+0.2**
HATD	**Hatta, Dubai**	**3.53**	**260**	P		**Pn**	**20 20 00.9**	**+0.2**
ASHO	**Ashiyiah**	**3.63**	**258**	*i* P		**Pn**	**20 20 03.0**	**+1.0**
	SNR=31							
ASHO	**Ashiyiah**	**3.63**	**258**	P		**Pn**	**20 20 03.2**	**+1.2**
	SNR=31							
ASHO	**Ashiyiah**	**3.63**	**258**	P		**Pn**	**20 20 03.0**	**+1.0**
	SNR=31							
ARQ	**Araqi**	**3.80**	**236**	P		**Pn**	**20 20 06.9**	**+2.6**
	SNR=22							
ARQ	**Araqi**	**3.80**	**236**	P		**Pn**	**20 20 06.9**	**+2.6**
	SNR=22							
FAQ	**Al Faqa, Dubai**	**4.03**	**260**	P		**Pn**	**20 20 09.2**	**+1.7**
FAQ	**Al Faqa, Dubai**	**4.03**	**260**	P		**Pn**	**20 20 09.2**	**+1.7**
AAK	**Ala-Archa**	**20.86**	**31**	LR		LR	20 33 26.2	
	comp=Z,98nm,20.3s,baz=210,slow=41							
ASF	**Jabal al Asfar**	**21.25**	**294**	P		**P**	**20 23 53.8**	**+1.6**
	1.9nm,0.8s,baz=46,slow=8.9,SNR=3.9							
KVAR	**Kislovodsk Arr**	**23.17**	**327**	P		**P**	**20 24 13.5**	**+1.0**
	4.9nm,0.8s,baz=233,slow=20,SNR=2.7							
AKTO	**Aktyubinsk**	**24.95**	**357**	P		**P**	**20 24 29.4**	**+0.3**
	3.5nm,0.7s,baz=172,slow=10,SNR=8.7							
BRTR	**Keskin Array B**	**26.20**	**309**	P		**P**	**20 24 43.1**	**+2.3**
	2.1nm,0.8s,baz=128,slow=9.8,SNR=10							
MKAR	**Makanchi Array**	**27.70**	**34**	P		**P**	**20 24 54.7**	**+0.6**
	0.2nm,0.3s,baz=197,slow=3.8,SNR=4.4							
BVAR	**Borovoye Array**	**28.59**	**13**	P		**P**	**20 25 02.8**	**+0.9**
	0.8nm,0.7s,baz=202,slow=11,SNR=5.7							
KURBB	**Kurchatov Arra**	**28.88**	**25**	P		**P**	**20 25 03.3**	**-1.2**
	0.3nm,0.7s,baz=221,slow=9.0,SNR=3.6							
H08N2	**Diego Garcia H**	**33.40**	**160**	T		T	21 00 42.5	
	baz=341,slow=75,SNR=24							
H08N3	**Diego Garcia H**	**33.42**	**160**	T		T	21 00 44.6	
	baz=341,slow=75,SNR=22							
H08N1	**Diego Garcia H**	**33.42**	**160**	T		T	21 00 44.9	
	baz=341,slow=75,SNR=33							
ZALV	**Zalesovo Beam**	**33.90**	**26**	P		**P**	**20 25 48.9**	**+0.3**
	0.2nm,0.3s,baz=238,slow=8.3,SNR=4.3							
SONM	**Songino Array**	**42.61**	**46**	P		**P**	**20 27 02.8**	**+0.6**
	0.5nm,0.5s,baz=231,slow=6.9,SNR=3.8							
FINES	**FINESS Array B**	**42.62**	**337**	P		**P**	**20 27 01.7**	**-0.1**
	1.5nm,0.9s,baz=148,slow=9.0,SNR=3.7							
TORD	**Torodi Ar. Bea**	**55.96**	**269**	P		**P**	**20 28 45.0**	**+0.4**
	1.2nm,0.6s,baz=64,slow=6.6,SNR=11							
WRA	**Warramunga Arr**	**85.19**	**115**	P		**P**	**20 31 40.7**	**-2.1**
	0.7nm,0.8s,baz=306,slow=4.5,SNR=4.6							
ASAR	**Alice Springs**	**86.66**	**118**	P		**P**	**20 31 47.9**	**-2.1**
	0.6nm,1.0s,baz=308,slow=4.5,SNR=4.0							

*ISCJB **04** 20:21:05.7±1.3, 13.2N±0.2×51.4E±0.1, h18km, mb3.8/10, MS3.4/1, Error ellipse: s-maj=31.7km s-min=13.5km az=156.1*

*IDC **04** 20:21:05.1±1.6, 13.29N×51.39E, h0km, mb3.8/10, mb1 3.9/11, mb1mx3.6/46, mbtmp3.8/11, ML4.1/1, MS3.4/2, Ms1 3.3/2, ms1mx2.7/44, Error ellipse: s-maj=39.1km s-min=21.3km az=164.0*

ISC 04 20:21:07.9±1.4, 13.3N±0.2×51.4E±0.1, h18km, n11, σ0s91/11, mb3.8/10, Eastern Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ATD	**Arta Tunnel**	**8.53**	**259**	Pn		**Pn**	**20 23 10.9**	**+0.3**
	2.4nm,0.3s,baz=337,slow=4.0,SNR=14							
ATD				LR		LR	20 25 40.8	
	comp=Z,184nm,18.9s,baz=11,slow=32							
GEYT	**Alibeck**	**25.27**	**13**	P		**P**	**20 26 33.1**	**0.0**
	3.5nm,0.8s,baz=215,slow=7.2,SNR=9.1							
KBZ	**Khabaz**	**31.21**	**348**	P		**P**	**20 27 27.4**	**+1.3**
	2.3nm,0.8s,baz=183,slow=6.9,SNR=5.3							
KBZ				LR		LR	20 41 44.5	
	comp=Z,88nm,20.3s,baz=102,slow=40							
AKASG	**Malin Array Be**	**41.45**	**339**	P		**P**	**20 28 51.8**	**-1.7**
	0.2nm,0.3s,baz=154,slow=7.3,SNR=4.1							
MKAR	**Makanchi Array**	**42.28**	**32**	P		**P**	**20 29 00.8**	**+0.5**
	0.6nm,0.6s,baz=230,slow=11,SNR=4.1							
BVAR	**Borovoye Array**	**42.44**	**17**	P		**P**	**20 29 02.0**	**+0.5**
	0.7nm,0.5s,baz=199,slow=8.8,SNR=5.1							
KURBB	**Kurchatov Arra**	**43.29**	**25**	P		**P**	**20 29 08.3**	**-0.2**
	1.4nm,0.9s,baz=227,slow=8.1,SNR=12							
CMAR	**Chiang Mai Arr**	**45.92**	**77**	P		**P**	**20 29 29.7**	**-0.3**
	1.7nm,0.8s,baz=276,slow=8.7,SNR=12							
TORD	**Torodi Ar. Bea**	**48.32**	**276**	P		**P**	**20 29 48.6**	**-0.2**
	0.5nm,0.8s,baz=93,slow=7.2,SNR=3.2							
ZALV	**Zalesovo Beam**	**48.36**	**26**	P		**P**	**20 29 47.5**	**-0.9**
	1.5nm,0.7s,baz=238,slow=8.4,SNR=8.8							
SONM	**Songino Array**	**56.98**	**41**	P		**P**	**20 30 53.3**	**+0.7**
	1.2nm,0.9s,baz=256,slow=6.0,SNR=7.8							

*ISCJB **04** 20:26:57.4±0.5, 39.11N±0.04×28.98E±0.03, h5km±7km, Error ellipse: s-maj=7.4km s-min=4.1km az=164.6*

*CSEM **04** 20:26:57.6±0.1, 39.11N×28.98E, h8km, MD2.6, Error ellipse: s-maj=2.6km s-min=2.3km az=148.0*

*ISK **04** 20:26:57.2, 39.13N×28.99E, h8km, MD2.8*

*DDA **04** 20:26:57.4, 39.12N×29.01E, h7km, Md2.6*

ISC 04 20:26:57.8±0.9, 39.12N±0.03×28.98E±0.02, h13km±8km, n35, σ0s64/46, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DEMI	**Demirci**	**0.22**	**250**	*i* P		**Pg**	**20 27 02.8**	**+0.1**
DEMI				*i* S		**Sg**	**20 27 06.2**	**+0.2**
DEMI	**Demirci**	**0.22**	**250**	P		**Pg**	**20 27 02.8**	**+0.1**
DEMI				S		**Sg**	**20 27 06.2**	**+0.2**
GEDZ	**Gediz**	**0.34**	**102**	*e*PG		**Pg**	**20 27 04.7**	**0.0**
GEDZ				*e*SG		**Sg**	**20 27 09.0**	**-0.4**
GEDZ	**Gediz**	**0.34**	**102**	*e*Pg		**Pg**	**20 27 04.7**	**0.0**
GEDZ				*e*Sg		**Sg**	**20 27 09.0**	**-0.4**
GDZ	**Gediz**	**0.39**	**94**	*i* P		**Pg**	**20 27 05.1**	**-0.5**
GDZ				*i* S		**Sg**	**20 27 10.3**	**-0.6**
GDZ	**Gediz**	**0.39**	**94**	P		**Pg**	**20 27 05.1**	**-0.5**
GDZ				S		**Sg**	**20 27 10.3**	**-0.6**
TVSB	**Tavsanli**	**0.50**	**48**	*e*PG		**Pg**	**20 27 07.0**	**-0.6**
TVSB	**Tavsanli**	**0.50**	**48**	*e*Pg		**Pg**	**20 27 07.0**	**-0.6**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*PG		**Pg**	**20 27 10.5**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*Pg		**Pg**	**20 27 10.5**	**0.0**
MANT	**Manisa**	**0.71**	**208**	*i* P		**Pg**	**20 27 10.4**	**-1.2**
MANT				*i* S		**Sg**	**20 27 19.6**	**-1.3**
MANT	**Manisa**	**0.71**	**208**	P		**Pg**	**20 27 10.4**	**-1.2**
MANT				S		**Sg**	**20 27 19.6**	**-1.3**
KHL	**Karahalli**	**0.90**	**152**	*e*PG		**Pb**	**20 27 15.7**	**+0.4**
KHL	**Karahalli**	**0.90**	**152**	*e*Pg		**Pb**	**20 27 15.7**	**+0.4**
BALB	**Balikesir**	**1.00**	**302**	*e*PG		**Pg**	**20 27 16.5**	**-0.6**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg		**Pg**	**20 27 16.5**	**-0.6**
IGD	**Bursa**	**1.16**	**8**	*i* P		**Pg**	**20 27 18.4**	**-1.7**
IGD				*i* S		**Sb**	**20 27 35.1**	**+0.6**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN		**Pg**	**20 27 21.2**	**-0.5**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn		**Pg**	**20 27 21.3**	**-0.5**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN		**Pg**	**20 27 21.8**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn		**Pg**	**20 27 21.8**	**-0.4**
IZI	**Iznik**	**1.27**	**17**	*e*PN		**Pg**	**20 27 21.8**	**-0.5**
IZI	**Iznik**	**1.27**	**17**	*e*Pn		**Pg**	**20 27 21.8**	**-0.5**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN		**Pb**	**20 27 23.3**	**+0.2**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn		**Pb**	**20 27 23.3**	**+0.2**
BORA	**Eskisehir**	**1.37**	**56**	*i* P		**Pb**	**20 27 23.3**	**0.0**
BORA				*i* S		**Sg**	**20 27 41.8**	**-0.1**
BORA	**Eskisehir**	**1.37**	**56**	P		**Pb**	**20 27 23.3**	**0.0**
BORA				S		**Sg**	**20 27 41.8**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*PN		**Pb**	**20 27 24.7**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*Pn		**Pb**	**20 27 24.7**	**0.0**
EDC	**Edincik**	**1.50**	**325**	*e*PN		**Pn**	**20 27 24.7**	**+0.3**
EDC	**Edincik**	**1.50**	**325**	*e*Pn		**Pn**	**20 27 24.7**	**+0.3**
GULT	**Gulveren**	**1.77**	**41**	*e*PN		**Pn**	**20 27 28.7**	**+0.6**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn		**Pn**	**20 27 28.7**	**+0.6**
MRMT	**Marmara Adasi**	**1.83**	**325**	*e*PN		**Pn**	**20 27 29.8**	**+0.9**
MRMT	**Marmara Adasi**	**1.83**	**325**	*e*Pn		**Pn**	**20 27 29.8**	**+0.9**

GUC 04 20:30:59.4±0.6, 23.81S×70.34W, h36km±2km, ML3.7, 1D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ANCH	**Antofagasta**	**0.14**	**334**	*i* P		Pn	20 31 06.5	-3.3
ANCH				*i* S		Sn	20 31 10.2	-9.5
ANCH				IAML			20 31 11.8	
	comp=E,24μm,0.1s							
PB10	**IPOC Station P**	**0.35**	**326**	*i* P		Pn	20 31 07.7	-0.2
PB10				*i* S		Sn	20 31 13.6	-0.8
PB10				IAML			20 31 14.2	
	comp=E,60μm,0.2s							
PB14	**IPOC Station P**	**0.81**	**184**	*i* P		Pn	20 31 15.1	+0.4
PB14				*i* S		Sn	20 31 26.5	+0.7
PB14				IAML			20 31 27.3	
	comp=E,2μm,0.4s							
PB06	**IPOC Station P**	**1.31**	**33**	*i* P		Pn	20 31 22.3	+1.0
PB06				*i* S		Sn	20 31 39.8	+2.2
PB06				IAML			20 31 44.5	
	comp=N,2μm,0.5s							
PB04	**IPOC Station P**	**1.48**	**7**	*i* P		Pn	20 31 23.4	-0.3
PB04				*i* S		Sn	20 31 42.3	+0.5
PB04				IAML			20 31 46.4	
	comp=N,1μm,0.2s							
LVC	**Limon Verde**	**1.78**	**48**	*i* P		Pn	20 31 30.0	+2.1
LVC				*i* S		Sn	20 31 53.4	+3.9
PB07	**IPOC Station P**	**2.12**	**12**	*i* P		Pn	20 31 32.5	+0.1
PB09	**IPOC Station P**	**2.25**	**27**	*i* P		Pn	20 31 36.1	+1.9

JMA 04 20:38:21.8±0.2, 41.83N×143.78E, h40km±3km, M2.7, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JEM	**Erimo**	**0.50**	**292**	P		Pn	20 38 32.1	-0.4
JEM				*e*S		Sn	20 38 39.6	-0.5
JCH	**Churui**	**0.84**	**339**	P		Pn	20 38 37.5	+0.3
JOB	**Onbets**	**1.07**	**2**	P		Pn	20 38 40.9	+0.6
JOB				*e*S		Sn	20 38 55.0	+1.0
JAK	**Akkeshi**	**1.35**	**30**	P		Pn	20 38 44.1	0.0
JAK				*e*S		Sn	20 39 00.9	+0.1
JAR	**Ashorobuto**	**1.47**	**360**	P		Pn	20 38 45.9	+0.2
JAR				*e*S		Sn	20 39 04.3	+0.6

*IDC **04** 20:38:34.6±18.0, 41.53N×143.77E, h0km, mb3.8/5, mb1 3.9/5, mb1mx3.5/38, mbtmp3.8/5, Error ellipse: s-maj=422.4km s-min=59.1km az=162.0*

*JMA **04** 20:38:50.7±0.1, 42.32N×143.00E, h48km±1km, M3.4*

ISC 04 20:38:48.1±1.7, 42.2N±0.2×142.98E±0.09, h43km, n19, σ1s84/13, mb3.6/5, 3C-2D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JNBK	**Urakawa-nobuka**	**0.20**	**299**	↑↑P		**Pn**	**20 38 58.6**	**+3.0**
JEM	**Erimo**	**0.21**	**142**	↑↑P		Pn	20 38 59.8	+4.1
JEM				*e*S		Sn	20 39 06.9	+5.8
JCH	**Churui**	**0.51**	**33**	↑↑P		**Pn**	**20 39 00.6**	**+1.5**
JCH				*e*S		**Sn**	**20 39 08.7**	**+1.8**
JBT2	**Biratori 2**	**0.75**	**323**	↓↓P		**Pn**	**20 39 03.8**	**+1.5**
JOB	**Onbets**	**0.95**	**41**	P		**Pn**	**20 39 06.9**	**+1.9**
JAR	**Ashorobuto**	**1.25**	**27**	*e*S		**Sn**	**20 39 24.6**	**-0.2**
JEW	**Eniwo**	**1.31**	**301**	↓↓P		**Pn**	**20 39 11.9**	**+2.0**
JAB	**Ashibetsu**	**1.43**	**337**	P		**Pn**	**20 39 13.0**	**+1.4**
SONM	**Songino Array**	**26.30**	**295**	P		**P**	**20 44 19.2**	**-0.4**
	0.8nm,0.7s,baz=80,slow=9.5,SNR=5.9							
H11N2	**WAKE IS

SSLN Shishaldin Nor 3.43 265 P Pn 21 02 23.9 +2.4
KELA Mount Kelaz 3.44 21 P Pn 21 02 22.1 +0.4
SSLS Shishaldin Sou 3.45 263 P Pn 21 02 24.4 +2.5
KAKN Katmai Knife C 3.47 27 P Pn 21 02 22.4 +0.3
KVTA Katmai Vly 10 3.49 25 P Pn 21 02 22.4 +0.1
SSLW Shishaldin Wes 3.51 264 P Pn 21 02 24.6 +2.0
KAWH Katmai 3.62 29 P Pn 21 02 23.8 -0.2
KAHC Katmai Hardscr 3.79 25 P Pn 21 02 26.6 0.0
WESN West Dahl Nort 3.81 262 *e*Pn Pn 21 02 29.1 +2.4
WESE West Dahl East 3.84 261 *e*Pn Pn 21 02 29.3 +2.2
WESP Westdahl Peak 3.91 261 P Pn 21 02 30.5 +2.4
KAPH Katmai Pasha 3.92 30 P Pn 21 02 28.6 +0.3
KDAK Kodiak Island 3.96 48 *e*P Pn 21 02 27.7 -1.0
KDAK *e* 21 03 13.5
KDAK Kodiak Island 3.96 48 *e*Pn Pn 21 02 27.9 -1.0
KDAK *e*Sn Sn 21 03 13.5 -0.6
FOSS Fourpeaked Sta 4.28 32 *e*Pn Pn 21 02 34.0 +0.8
FOPK Fourpeaked Vol 4.32 34 P Pn 21 02 33.7 0.0
CDD Cape Douglas 4.41 32 P Pn 21 02 35.0 +0.2
MCNL McNeil River 4.43 26 P Pn 21 02 35.3 +0.1
AKSA Akutan Strait 4.56 259 *e*Pn Pn 21 02 38.9 +1.9
AKUT Akutan 4.60 259 *e*Pn Pn 21 02 39.0 +1.5
AKUT *e*Sn Sn 21 03 28.8 -1.1
AKGG Akutan Green G 4.71 260 P Pn 21 02 40.6 +1.6
AUSE Augustine SEas 4.82 30 P Pn 21 02 40.9 +0.4
AUE Augustine Isla 4.84 30 *e*Pn Pn 21 02 41.5 +0.7
AUL Augustine Lava 4.84 29 P Pn 21 02 41.0 +0.2
UNV Unalaska Valle 5.10 257 *e*Pn Pn 21 02 45.3 +1.0
UNV *e*Sn Sn 21 03 36.7 -5.5
OPT Oil Point 5.13 29 *e*Pn Pn 21 02 45.3 +0.5
MTBL Makushin Table 5.16 259 *e*Pn Pn 21 02 46.6 +1.4
MGOD Makushin Gods 5.33 258 *e*Pn Pn 21 02 48.8 +1.3
ILW Iliamna West 5.50 27 *e*Pn Pn 21 02 50.3 +0.3
HOM Homer 5.62 36 *e*Pn Pn 21 02 54.2 +2.7
HOM *e*Sn Sn 21 03 52.5 -2.3
CNPM China Poot 5.66 38 *e*Pn Pn 21 02 51.7 -0.4
CNPM *e*Sn Sn 21 03 57.4 +1.4
RSO Redoubt South 5.94 26 *e*Pn Pn 21 02 56.1 0.0
RDWB Redoubt West 5.94 26 P Pn 21 02 56.2 +0.1
BRLK Bradley Lake 5.95 38 *e*Pn Pn 21 02 54.8 -1.3
SVW2 Sparrevohn 6.00 12 *e*Pn Pn 21 02 57.5 +0.8
SVW2 *e*Sn Sn 21 04 07.2 +2.8
RDJH Redoubt Jeurge 6.04 26 P Pn 21 02 57.5 +0.1
OKER Okmok East Rim 6.10 257 P Pn 21 02 59.8 +1.6
OKTU Okmok Mt. Tuli 6.12 256 P Pn 21 03 00.5 +2.0
CKL Chakachamna La 6.68 25 P Pn 21 03 06.6 +0.5
SPWE Spurr West 6.70 24 P Pn 21 03 07.4 +1.0
SEW Seward 6.71 40 *e*Pn Pn 21 03 06.3 -0.1
SEW *e*Sn Sn 21 04 16.9 -4.8
SLKM Skilak Lake 6.73 35 *e*P Pn 21 03 05.9 -0.8
SLKM Skilak Lake 6.73 35 *e*Pn Pn 21 03 05.8 -0.8
NIKH Nikolski High 6.73 255 *e*Pn Pn 21 03 08.3 +1.6
NIKH *e*Sn Sn 21 04 18.6 -3.8
SPU Mount Spurr 6.74 26 *e*Pn Pn 21 03 07.0 +0.1
SPU *e*Sn Sn 21 04 19.0 -3.5
STLK Strandline Lak 7.07 25 P Pn 21 03 11.8 +0.4
SUA Susitna One 7.32 29 *e*Pn Pn 21 03 14.1 -0.8
RC01 Rabbit Creek A 7.32 34 *e*Pn Pn 21 03 14.1 -0.7
MID Middleton Isla 7.60 52 *e*P Pn 21 03 14.0 -4.7
MID Middleton Isla 7.60 52 *e*Pn Pn 21 03 14.0 -4.7
TT01 Tatalina 7.75 7 *e*Pn Pn 21 03 20.8 +0.2
TT01 *e*Sn Sn 21 04 44.9 -2.3
TTA Tatalina 7.77 7 *e*P Pn 21 03 21.4 +0.3
TTA *e* 21 04 45.5
TTA Tatalina 7.77 7 *e*Pn Pn 21 03 21.4 +0.3
TTA *e*Sn Sn 21 04 45.5 -2.5
PMR Palmer 7.89 33 *e*P Pn 21 03 21.4 -1.3
PMR *e* 21 04 51.5
PMR Palmer 7.89 33 *e*Pn Pn 21 03 21.4 -1.3
PMR *e*Sn Sn 21 04 51.5 +0.6
HIN Hinchinbrook I 8.04 45 *e*Pn Pn 21 03 23.0 -1.7
PPLA Purkeypile 8.24 19 *e*Pn Pn 21 03 30.2 +2.7
PPLA *e*Sn Sn 21 04 59.0 -0.5
SML Sawmill 8.31 34 *e*P Pn 21 03 27.2 -1.2
SML Sawmill 8.31 34 *e*Pn Pn 21 03 27.2 -1.2
EYAK Cordova Ski Ar 8.44 46 *e*Pn Pn 21 03 28.4 -1.7
SCM Sheep Creek Mo 8.66 36 P Pn 21 03 31.7 -1.5
SCM Sheep Creek Mo 8.66 36 P Pn 21 03 31.7 -1.5
CAST Castle Rocks 8.74 18 *e*Pn Pn 21 03 34.3 0.0
DIV Divide 8.76 43 *e*Pn Pn 21 03 33.0 -1.6
KLU Klutina 8.93 41 *e*Pn Pn 21 03 35.2 -1.7
KTH Kantishna Hill 9.08 21 *e*Pn Pn 21 03 41.2 +2.2
TRF Thorofare Moun 9.12 23 *e*Pn Pn 21 03 38.3 -1.4
BMRM Bremner River 9.14 46 *e*Pn Pn 21 03 37.9 -1.9
RND Reindeer 9.42 26 *e*P Pn 21 03 42.7 -1.0
RND Reindeer 9.42 26 *e*Pn Pn 21 03 42.7 -1.0
BPAW Bear Paw Mtn. 9.56 19 *e*Pn Pn 21 03 44.3 -1.2
DHY Denali Highway 9.56 31 *e*Pn Pn 21 03 44.3 -1.4
CRQM Cirque 9.65 49 *e*Pn Pn 21 03 45.6 -1.3
MCK McKinley 9.68 25 *e*P Pn 21 03 45.7 -1.4
MCK McKinley 9.68 25 *e*Pn Pn 21 03 45.7 -1.4
BWN Browne 9.93 22 *e*Pn Pn 21 03 49.3 -1.3
PAX Paxson 10.07 35 *e*P Pn 21 03 51.7 -0.9
PAX Paxson 10.07 35 *e*Pn Pn 21 03 51.7 -0.9
BALM Baldy 10.12 49 *e*P Pn 21 03 51.6 -1.7
BALM Baldy 10.12 49 *e*Pn Pn 21 03 51.6 -1.7
MLY Manley 10.46 17 *e*Pn Pn 21 03 55.6 -2.2
WRH Wood River Hil 10.50 24 *e*Pn Pn 21 03 54.5 -3.9
MENT Mentasta 10.65 38 *e*Pn Pn 21 03 58.4 -2.0
PCA Pinnacle 10.69 56 *e*Pn Pn 21 04 00.0 -1.0
CCB Clear Creek Bu 10.72 24 *e*Pn Pn 21 03 57.7 -3.6
HDA Harding Lake 10.73 27 *e*Pn Pn 21 03 56.9 -4.6
MDM Murphy Dome 10.88 23 *e*Pn Pn 21 04 00.6 -3.0
COLA College 10.90 24 *i*P Pn 21 04 00.8 -2.9
DOT Dot Lake 11.00 35 *e*Pn Pn 21 04 05.2 0.0
IL1 Eielson Array 11.04 26 *e*Pn Pn 21 04 01.0 -4.8
ILAR Eielson Array 11.04 26 Pn Pn 21 04 01.2 -4.6
2.3nm,0.3s,baz=217,slow=14,SNR=68
ILAR Sn Sn 21 05 57.9 -10
baz=212,slow=18,SNR=2.5
ILAR LR LR 21 08 29.9
comp=Z,3μm,21.6s,baz=230,slow=38
ILAR Eielson Array 11.04 26 P Pn 21 04 01.2 -4.6
ILAR 21 05 57.9
ILAR pmax pmax
comp=Z,2.0nm,0.3s
ILAR MLR MLR
comp=Z,3μm,21.6s
ILB Eielson Array 11.04 26 *e*Pn Pn 21 04 01.2 -4.6
ILB *e*Sn Sn 21 05 57.9 -10
DHAK Deception Hill 11.43 62 *e*Pn Pn 21 04 10.8 -0.4
HYT Haines Junctio 12.22 54 *e*Pn Pn 21 04 23.5 +1.5
COLD Coldfoot 12.58 14 *e*Pn Pn 21 04 25.7 -1.0
EGAK Eagle 12.71 35 *e*Pn Pn 21 04 27.8 -0.7
DAWY Dawson 12.88 39 *e*Pn Pn 21 04 30.3 -0.5
FYU Fort Yukon 12.91 23 *e*Pn Pn 21 04 33.9 +2.6
SKAG Skagway 12.96 62 *e*Pn Pn 21 04 32.1 +0.2
DLBC Dease Lake 15.62 67 Pn Pn 21 05 03.5 -4.4
comp=Z,1.2nm,0.3s,baz=222,slow=18,SNR=3.1
DLBC Sn Sn 21 07 55.0 -4.8
comp=Z,0.8nm,0.3s,baz=152,slow=17,SNR=3.5
DLBC LR LR 21 11 10.6
comp=Z,2μm,18.5s,baz=287,slow=37
DLBC Dease Lake 15.62 67 *e*Pn P 21 05 11.7 -0.2
comp=Z,61nm,1.2s
DLBC *e*Sn Sn 21 07 55.0 -4.8
SMY Shemya 16.51 273 *e*P Pn 21 05 19.6 +0.5
SMY pmax pmax
comp=Z,253nm,1.9s
SMY Shemya 16.51 273 *e*Pn Pn 21 05 19.6 +0.5
comp=Z,253nm,1.9s
INK Inuvik 17.31 31 P Pn 21 05 25.6 -3.5
comp=Z,11nm,0.3s,baz=223,slow=11,SNR=66
INK S Sn 21 08 41.9 +1.4
baz=61,slow=32,SNR=18
INK LR LR 21 12 40.0
comp=Z,4μm,19.4s,baz=221,slow=39
BBB Bella Bella 17.93 87 LR LR 21 11 04.1
comp=Z,2μm,20.0s,baz=295,slow=32
BILL Bilibino 20.82 322 *c i*P P 21 06 08.2 -0.5
BILL *e* 21 06 24.4
BILL pmax pmax
comp=Z,49nm,1.2s
BILL MLR MLR
comp=Z,4μm,17.0s
BILL Bilibino 20.82 322 *e*P P 21 06 08.7 0.0
comp=Z,90nm,1.5s
A04D Lummi Island 22.56 92 P P 21 06 29.9 +2.3
baz=300
NLWA Neilton Lookou 22.59 96 *e*P P 21 06 30.0 +2.0
comp=Z,82nm,1.1s

B05A Bryant 23.14 93 P P 21 06 35.2 +1.6
baz=301
YKW3 Yellowknife Ar 23.20 54 *e*P P 21 06 33.2 -0.9
comp=Z,26nm,0.9s
YKA Yellowknife Ar 23.21 54 P P 21 06 33.1 -1.0
comp=Z,5.2nm,0.5s,baz=274,slow=9.9,SNR=32
YKA LR LR 21 16 41.5
comp=Z,144nm,18.3s,baz=180,slow=39
YKB5 Yellowknife Ar 23.21 54 *e*P P 21 06 33.1 -1.0
D05A Enumclaw 23.78 95 *e*P P 21 06 43.4 +3.6
comp=Z,260nm,1.6s
OBSR Observation Ro 24.04 95 *e*P P 21 06 44.9 +2.3
TDL Tradedollar La 24.12 97 *e*P P 21 06 45.4 +2.2
LON Longmire 24.12 95 *e*P P 21 06 46.0 +2.9
LON pmax pmax
comp=Z,104nm,1.8s
LON Longmire 24.12 95 *e*P P 21 06 46.0 +2.9
comp=Z,104nm,1.8s
FL2 Flat Top 2 24.13 97 *e*P P 21 06 44.4 +1.1
MTMW Mount Mitchell 24.31 97 P P 21 06 47.0 +2.1
B08A Colville Reser 24.68 90 *e*P P 21 06 50.2 +2.1
comp=Z,22nm,1.1s
I03D Drain, OR 25.09 103 P P 21 06 53.6 +1.8
baz=310
PET Petropavlovsk 25.14 283 *ce*P P 21 06 51.8 -0.4
PET *e*S S 21 11 09.9 -5.1
PET pmax pmax
comp=Z,40nm,0.7s
PET pmax pmax
comp=Z,400nm,3.6s
PET pmax pmax
comp=Z,200nm,12.0s
PET MLR MLR
comp=Z,2μm,20.0s
PET MLR MLR
comp=Z,1μm,19.0s
PET Petropavlovsk 25.14 283 *e*P P 21 06 52.3 +0.1
comp=Z,30nm,0.7s
VFP Flag Point 25.15 98 P P 21 06 54.7 +2.2
I04A Tendick Farm, 25.55 102 P P 21 06 57.5 +1.4
baz=309,SNR=9.7
C09A Chrisman Ranch 25.57 90 *e*P P 21 07 00.1 +3.9
comp=Z,102nm,1.8s
HAWA Hanford 25.62 94 *e*P P 21 06 59.0 +2.4
comp=Z,75nm,1.4s
PEA1 Petropavlovsk- 25.64 284 *e*P P 21 06 56.4 -0.3
PEA0 Petropavlovsk- 25.64 284 *e*P P 21 06 56.1 -0.6
PEA0B Petropavlovsk- 25.64 284 *e*P P 21 06 56.5 -0.2
comp=Z,46nm,0.6s
PETK Petropavlovsk- 25.64 284 P P 21 06 56.4 -0.4
comp=Z,44nm,0.6s,baz=78,slow=13,SNR=58
PETK LR LR 21 17 08.1
comp=Z,973nm,20.2s,baz=81,slow=37
VTHM Trough 25.74 97 P P 21 07 02.2 +4.5
I05D Terrebonne, OR 25.81 100 P P 21 07 01.1 +2.6
baz=308
EDM Edmonton 25.89 76 *e*P P 21 06 59.9 +0.9
EDM pmax pmax
comp=Z,112nm,1.3s
EDM Edmonton 25.89 76 *e*P P 21 06 59.9 +0.9
comp=Z,112nm,1.3s
SEY Seymchan 25.96 307 P P 21 06 58.2 -1.4
comp=Z,18nm,0.7s,baz=94,slow=9.1,SNR=43
SEY LR LR 21 18 09.9
comp=Z,3μm,20.5s,baz=142,slow=39
NEW Newport 25.99 88 P P 21 07 01.3 +1.3
comp=Z,2.6nm,0.6s,baz=296,slow=10,SNR=3.8
NEW LR LR 21 15 33.6
comp=Z,1μm,21.5s,baz=294,slow=32
NEW Newport 25.99 88 P P 21 07 01.4 +1.3
baz=301,SNR=5.7
NEW Newport 25.99 88 P P 21 07 01.3 +1.3
NEW pmax pmax
comp=Z,5.0nm,1.0s
NEW MLR MLR
comp=Z,1μm,21.5s
HUMO Hull Mountain 26.01 104 *e*P P 21 07 05.2 +5.0
comp=Z,46nm,1.2s
J05D Fort Rock, OR 26.53 101 P P 21 07 07.3 +2.2
baz=310
G08A Pilot Rock 26.59 96 *e*P P 21 07 07.8 +2.3
comp=Z,41nm,1.3s
K05A Summer Lake 27.08 102 *e*P P 21 07 12.4 +2.3
comp=Z,94nm,1.4s
M04C Macdoel 27.18 105 P P 21 07 13.3 +2.4
baz=312
N02D Trinity Center 27.25 107 P P 21 07 14.3 +2.8
baz=314
BSMT Bassoo Peak 27.54 87 *e*P P 21 07 18.3 +4.2
KCPM Cahto Peak 27.68 110 *e*S S 21 11 57.2 +1.7
MOD Modoc Plateau 27.95 103 *e*P P 21 07 17.9 +0.1
comp=Z,39nm,1.5s
YBMT Yellow Bay 27.98 87 *e*P P 21 07 21.7 +3.7
WVOR Wild Horse Val 28.54 100 *e*P P 21 07 25.3 +2.2
WVOR pmax pmax
comp=Z,30nm,1.2s
WVOR Wild Horse Val 28.54 100 *e*P P 21 07 25.3 +2.2
comp=Z,30nm,1.2s
MSO Missoula 28.58 89 P P 21 07 23.7 +0.4
baz=303
MSO Missoula 28.58 89 *e*P P 21 07 28.4 +5.1
comp=Z,34nm,1.5s
CHMT Chamberlain Mo 28.93 88 *e*P P 21 07 32.5 +6.0
MFID Camas Ranch 29.51 96 *e*P P 21 07 33.0 +1.3
comp=Z,33nm,1.4s
AFDM Forest Hills D 29.62 108 *e*P P 21 07 37.8 +5.3
comp=Z,25nm,1.4s
PAHR Pah Rah Range 29.96 105 *e*P P 21 07 37.5 +1.9
comp=Z,30nm,1.3s
HLID Hailey 30.22 94 P P 21 07 39.4 +1.4
baz=308
HLID Hailey 30.22 94 *e*P P 21 07 39.6 +1.6
comp=Z,39nm,1.8s
PNTR Pine Nut 30.27 106 *e*P P 21 07 41.4 +2.9
EGMT Eagleton 30.32 83 P P 21 07 40.3 +1.6
baz=302
EGMT Eagleton 30.32 83 *e*P P 21 07 41.7 +3.0
comp=Z,29nm,1.1s
MCMT McKenzie Canyo 30.35 91 *e*P P 21 07 40.9 +1.7
YERR Yerington 30.54 106 *e*P P 21 07 43.0 +2.1
comp=Z,88nm,1.8s
BOZ Bozeman (W) 30.57 89 *e*P P 21 07 45.0 +4.0
BOZ pmax pmax
comp=Z,40nm,1.8s
BOZ Bozeman (W) 30.57 89 *e*P P 21 07 45.0 +4.0
comp=Z,40nm,1.8s
WAKR Walker 30.78 107 *e*P P 21 07 45.6 +2.7
comp=Z,35nm,1.4s
RES Resolute Bay 30.79 28 P P 21 07 42.0 -0.4
comp=Z,13nm,0.8s,baz=260,slow=12,SNR=5.7
RES sP **sP** 21 07 53.5 -1.1
comp=Z,15nm,0.8s,baz=290,slow=5.1,SNR=4.8
RES Resolute Bay 30.79 28 *e*P P 21 07 42.0 -0.4
comp=Z,30nm,1.1s
TVH1 TV Hill, Hawth 31.18 106 *e*P P 21 07 48.9 +2.2
comp=Z,22nm,0.9s
TVH3 East Aurora ar 31.22 106 *e*P P 21 07 49.2 +2.3
comp=Z,53nm,1.8s
TVH2 Borealis Mine 31.24 106 *e*P P 21 07 49.2 +2.1
comp=Z,35nm,1.7s
YHH Holmes Hill 31.52 89 *e*P P 21 07 52.2 +2.6
comp=Z,22nm,0.9s
ELK Elko 31.57 99 LR LR 21 19 13.7
comp=Z,1μm,19.0s,baz=316,slow=34
ELK Elko 31.57 99 *e*P P 21 07 52.1 +2.1
ELK pmax pmax
comp=Z,25nm,1.4s
ELK Elko 31.57 99 *e*P P 21 07 52.0 +2.1
comp=Z,25nm,1.4s
IMW Indian Meadow 32.01 91 *e*P P 21 07 58.7 +4.9
comp=Z,36nm,1.5s
RLMT Red Lodge 32.23 88 *e*P P 21 08 00.5 +4.8
comp=Z,42nm,1.3s
HVU Hansel Valley 32.29 96 *e*P P 21 07 58.8 +2.6
HVU pmax pmax
comp=Z,64nm,1.6s
HVU Hansel Valley 32.29 96 *e*P P 21 07 58.8 +2.6
comp=Z,64nm,1.6s
REDW Red Top Meadow 32.38 92 *e*P P 21 08 02.0 +5.0
comp=Z,25nm,1.5s
BGU Big Grassy Mou 32.70 97 *e*P P 21 08 02.2 +2.4
comp=Z,46nm,1.5s
R11A Troy Canyon, C 33.02 103 P P 21 08 04.1 +1.5
baz=315,SNR=7.7
R11A S S 21 13 16.4 -2.9
baz=315
R11A Troy Canyon, C 33.02 103 *e*P P 21 08 04.3 +1.7
comp=Z,46nm,1.5s
DUG Dugway, Tooele 33.31 98 P P 21 08 06.9 +1.8
baz=312,SNR=7.7
DUG Dugway, Tooele 33.31 98 *e*P P 21 08 07.1 +2.0
DUG pmax pmax
comp=Z,40nm,1.1s
DUG Dugway, Tooele 33.31 98 *e*P P 21 08 07.1 +2.0
comp=Z,40nm,1.1s
BW06 Boulder Array 33.50 91 P P 21 08 07.8 +0.9
baz=309
BW06 Boulder Array 33.50 91 *e*P P 21 08 09.8 +2.9
comp=Z,8.6nm,1.0s
PD31 Pinedale Array 33.50 91 *e*P P 21 08 08.6 +1.8
PDAR Pinedale Array 33.50 91 P P 21 08 08.6 +1.8
comp=Z,2.2nm,0.5s,baz=322,slow=4.0,SNR=9.9
PDAR LR LR 21 19 36.0
comp=Z,208nm,19.3s,baz=327,slow=32
TPNV Topopah Spring 33.65 105 P P 21 08 09.8 +1.6
baz=316
TPNV Topopah Spring 33.65 105 *e*P P 21 08 09.7 +1.6
TPNV pmax pmax
comp=Z,85nm,1.5s
TPNV Topopah Spring 33.65 105 *e*P P 21 08 09.7 +1.6
comp=Z,85nm,1.5s
FCC Fort Churchill 33.84 57 *e*P P 21 08 09.9 +0.6
FCC pmax pmax
comp=Z,35nm,1.0s
FCC Fort Churchill 33.84 57 *e*P P 21 08 09.9 +0.6
comp=Z,35nm,1.0s
TIXI Tiksi 33.84 327 P P 21 08 08.3 -0.9
comp=Z,17nm,0.9s,baz=339,slow=0.9,SNR=18
TIXI Tiksi 33.84 327 *i*P P 21 08 08.4 -0.8
TIXI pmax pmax
comp=Z,28nm,1.2s
TIXI Tiksi 33.84 327 *e*P P 21 08 07.7 -1.5
comp=Z,25nm,1.1s
LRMC Laurel Mtn Rad 33.95 109 P P 21 08 11.9 +1.3
baz=318,SNR=6.0
EDW2 Edwards Air Fo 34.23 110 P P 21 08 14.7 +1.7
baz=319
SHOC Shoshone, Teco 34.40 107 P P 21 08 15.9 +1.4
baz=318
GSC Goldstone, Bar 34.55 108 P P 21 08 16.9 +1.0
baz=318,SNR=5.1
GSC Goldstone, Bar 34.55 108 *e*P P 21 08 17.5 +1.6
GSC pmax pmax
comp=Z,59nm,1.5s
GSC Goldstone, Bar 34.55 108 *e*P P 21 08 17.5 +1.6
comp=Z,59nm,1.5s
SHPR Sheep Range 34.57 105 *e*P P 21 08 20.5 +4.4
comp=Z,9.1nm,1.2s
MSU Marysvale 34.82 99 *e*P P 21 08 20.6 +2.3
MSU Marysvale 34.82 99 *e*P P 21 08 20.6 +2.3
CCUT Cedar City 34.83 102 *e*P P 21 08 19.3 +0.9
comp=Z,52nm,1.6s
TMUT Trail Mountain 34.83 97 *e*P P 21 08 20.7 +2.2
comp=Z,84nm,1.7s
TUQ Turquoise Moun 34.94 107 P P 21 08 20.6 +1.4
baz=318,SNR=5.3
TYV Tymovskoe 34.95 288 *e*P P 21 08 17.2 -1.8
TYV pmax pmax
comp=Z,24nm,0.8s
TYV MLR MLR
comp=E,1μm,17.0s
TYV MLR MLR
comp=Z,2μm,20.0s
Q16A Castle Valley 35.11 98 *e*P P 21 08 23.1 +2.3
comp=Z,151nm,1.8s
Q16A *e*S S 21 13 52.2 +0.6
MTPU Mount Pierson 35.14 100 *e*P P 21 08 23.6 +2.3
comp=Z,43nm,1.9s
HEC Hector,Ludlow 35.16 108 P P 21 08 22.8 +1.6
baz=319
LCMT Little Creek M 35.27 102 *e*P P 21 08 24.1 +2.0
comp=Z,18nm,1.3s
K22A Casper 35.31 89 P P 21 08 24.1 +1.7
baz=309
K22A Casper 35.31 89 *e*P P 21 08 25.3 +2.9
comp=Z,34nm,1.1s
SRU San Rafael Swe 35.34 97 *e*P P 21 08 25.0 +2.2
SRU pmax pmax
comp=Z,56nm,0.9s
SRU San Rafael Swe 35.34 97 *e*P P 21 08 25.0 +2.2
comp=Z,56nm,0.9s
PKCU Pink Cliffs 35.49 101 *e*P P 21 08 27.1 +2.9
comp=Z,51nm,1.6s
KNB Kanab 35.51 102 *e*P P 21 08 26.0 +1.8
KNB pmax pmax
comp=Z,36nm,1.6s
KNB Kanab 35.51 102 *e*P P 21 08 26.0 +1.8
comp=Z,36nm,1.6s
GMRC Granite Mounta 35.56 107 P P 21 08 25.8 +1.1
baz=318,SNR=5.0
A29A Manning Farm, 35.75 75 P P 21 08 26.3 +0.4
baz=303
RSSD Black Hills 35.82 85 P P 21 08 27.5 +0.7
baz=308
RSSD Black Hills 35.82 85 *e*P P 21 08 28.1 +1.3
RSSD pmax pmax
comp=Z,40nm,1.4s
RSSD Black Hills 35.82 85 *e*P P 21 08 28.1 +1.3
comp=Z,40nm,1.4s
B29A Wagenman Farm, 35.93 76 P P 21 08 27.8 +0.3
baz=303
O20A White River Ci 35.95 94 P P 21 08 29.0 +0.9
baz=312,SNR=15
O20A White River Ci 35.95 94 *e*P P 21 08 29.6 +1.6
comp=Z,54nm,0.8s
BELC Belle Mtn. Jos 35.97 109 P P 21 08 28.9 +0.8
baz=319
PFO Pinyon Flats O 36.01 109 P P 21 08 30.8 +2.3
comp=Z,2.4nm,0.7s,baz=325,slow=7.6,SNR=3.9
PFO Pinyon Flats O 36.01 109 P P 21 08 29.6 +1.2
baz=320
PFO Pinyon Flats O 36.01 109 *e*P P 21 08 30.8 +2.3
comp=Z,47nm,1.6s
MDND Maddock 36.14 77 P P 21 08 28.7 -0.6
baz=304
U15A North Rim 36.23 102 *e*P P 21 08 32.5 +2.0
comp=Z,55nm,1.9s
W13A Hualapai Mount 36.31 105 *e*P P 21 08 33.1 +2.0
comp=Z,37nm,1.4s
IRM Iron Mountain 36.31 107 P P 21 08 32.0 +1.0
baz=319
YAK Yakutsk 36.35 311 P P 21 08 29.5 -1.3
comp=Z,106nm,0.5s,baz=210,slow=0.2,SNR=37
YAK Yakutsk 36.35 311 *e*P P 21 08 29.4 -1.5
YAK *e* 21 10 54.6
YAK *e*S S 21 14 07.5 -2.1
YAK *e* 21 18 42.3
YAK pmax pmax
comp=E,9.0nm,0.7s
YAK pmax pmax
comp=Z,51nm,0.7s
YAK pmax pmax
comp=N,6.0nm,1.0s
YAK smax smax
comp=E,116nm,22.4s
YAK smax smax
comp=N,42nm,22.4s
YAK MLR MLR
comp=N,1μm,21.0s
YAK MLR MLR
comp=Z,949nm,18.0s
YAK MLR MLR
comp=E,484nm,15.0s
YAK Yakutsk 36.35 311 *e*P P 21 08 29.5 -1.3
comp=E,118nm,0.6s
B30A Myrvik Farm, E 36.51 75 P P 21 08 32.1 -0.4
baz=304
BC3 Big Chuckawall 36.52 108 P P 21 08 33.4 +0.6
baz=319
PV09 Paradox Valley 36.55 97 *e*P P 21 08 37.9 +4.6
MONP2 Monument Peak 36.58 110 P P 21 08 34.3 +0.8
baz=320
BAR Barrett 36.61 111 *e*P P 21 08 35.6 +2.1
comp=E,48nm,1.6s
PV10 Paradox Valley 36.69 97 *e*P P 21 08 37.2 +2.8
N23A Red Feather La 36.77 91 *e*P P 21 08 38.8 +3.7
comp=E,32nm,1.3s
PV05 Paradox Valley 36.87 97 *e*P P 21 08 37.5 +1.6
ULM Lac du Bonnet 36.87 71 P P 21 08 35.4 -0.1
comp=E,3.6nm,0.7s,baz=298,slow=10,SNR=4.1
ULM pP **pP** 21 08 44.0 -0.1
comp=E,12nm,0.6s,baz=301,slow=9.2,SNR=4.8
ULM LR LR 21 23 46.8
comp=E,1μm,18.6s,baz=284,slow=36

ULM Lac du Bonnet 36.87 71 *eP* **P** 21 08 35.8 +0.3
ULM *PP **pP** 21 08 44.0 -0.1
ULM pmax pmax
comp=Z,46nm,1.3s
ULM Lac du Bonnet 36.87 71 *eP* **P** 21 08 35.8 +0.3
comp=Z,46nm,1.3s
ULM pP **pP** 21 08 44.0 -0.1
Y12C Blythe 36.96 107 *eP* **P** 21 08 38.9 +2.5
comp=Z,90nm,1.4s
YSS Yuzh-Sakhalins 37.03 282 ⇓ *eP* **P** 21 08 37.4 +0.6
YSS pmax pmax
comp=Z,50nm,1.5s
YSS MLR MLR
comp=Z,1µm,17.0s
PV01 Paradox Valley 37.13 96 *eP* **P** 21 08 39.5 +1.4
WUAZ Wupatki 37.40 102 P **P** 21 08 40.6 +0.2
baz=317
WUAZ Wupatki 37.40 102 *eP* **P** 21 08 42.0 +1.7
comp=Z,28nm,1.3s
MVCO Mesa Verde 37.81 97 P **P** 21 08 45.4 +1.5
baz=315
MVCO Mesa Verde 37.81 97 *eP* **P** 21 08 45.5 +1.6
comp=Z,96nm,1.8s
AGMN Agassiz Nation 37.95 74 P **P** 21 08 44.2 -0.4
baz=304
AGMN Agassiz Nation 37.95 74 *eP* **P** 21 08 44.6 -0.1
S22A 4UR Ranch, Cre 38.39 95 *eP* **P** 21 08 51.9 +3.1
comp=Z,59nm,1.6s
Q24A Divide 38.51 92 *eP* **P** 21 08 50.9 +1.1
comp=Z,31nm,1.3s
B34A Aery, Baudette 38.51 73 P **P** 21 08 49.0 -0.4
baz=304
I30A Oacoma 38.56 82 P **P** 21 08 50.1 +0.2
baz=308
J30A Dallas 38.90 83 P **P** 21 08 52.9 +0.2
baz=309
B35A Bob, Littlefor 39.09 72 P **P** 21 08 53.9 -0.3
baz=305
SDCO Great Sand Dun 39.15 94 P **P** 21 08 56.3 +1.1
baz=314,SNR=6.0
SDCO Great Sand Dun 39.15 94 *eP* **P** 21 08 57.3 +2.2
comp=Z,22nm,1.1s
K30A Basset 39.24 84 P **P** 21 08 56.4 +0.8
baz=309
214A Organ Pipe Nat 39.26 107 P **P** 21 08 56.6 +0.8
baz=320,SNR=6.7
C35A Jirik Farms, M 39.33 73 P **P** 21 08 56.0 -0.3
baz=306
ERM Erimo 39.82 276 *d iP* **P** 21 09 01.3 +0.9
ERM pmax pmax
comp=Z,154nm,1.6s
ERM Erimo 39.82 276 *eP* **P** 21 09 00.6 +0.2
comp=Z,150nm,1.5s
KSCO Kaye Shedlock' 39.92 90 *eP* **P** 21 09 05.1 +3.6
comp=Z,242nm,1.8s
C36A Pine Crest Far 39.92 73 P **P** 21 09 01.1 -0.1
baz=306
D36A Goodland 40.09 74 P **P** 21 09 02.3 -0.3
baz=306
TUC Tucson 40.10 105 P **P** 21 09 04.0 +1.1
baz=319
TUC Tucson 40.10 105 *eP* **P** 21 09 04.6 +1.7
TUC pmax pmax
comp=Z,22nm,1.3s
TUC Tucson 40.10 105 *eP* **P** 21 09 04.6 +1.7
comp=Z,22nm,1.3s
T25A Trinidad 40.19 94 *eP* **P** 21 09 05.7 +1.9
comp=Z,117nm,1.6s
ECSD EROS Data Cent 40.27 80 *eP* **P** 21 09 06.0 +1.9
comp=Z,6.3nm,0.8s
C37A Embarrass 40.30 72 P **P** 21 09 04.2 -0.1
baz=306,SNR=6.0
HABR Khabarovsk 40.39 289 *eP* **P** 21 09 03.8 -1.1
HABR *eSP **sP** 21 09 17.8 +0.6
HABR *eSSS SSS 21 18 33.9
HABR *e* 21 19 07.3
HABR pmax pmax
comp=N,7.0nm,1.1s
HABR pmax pmax
comp=E,24nm,1.2s
HABR pmax pmax
comp=Z,44nm,1.1s
HABR MLR MLR
comp=Z,645nm,19.0s
E36A McGregor 40.43 75 P **P** 21 09 05.1 -0.3
baz=307
D37A Cotton 40.50 73 P **P** 21 09 05.3 -0.7
baz=306
EYMN Ely 40.55 72 P **P** 21 09 06.1 -0.2
baz=306,SNR=10.0
EYMN Ely 40.55 72 *eP* **P** 21 09 06.6 +0.2
comp=Z,39nm,0.8s
ANMO Albuquerque 40.58 98 P **P** 21 09 07.6 +0.6
baz=316
ANMO Albuquerque 40.58 98 *d iP* **P** 21 09 08.4 +1.4
ANMO pmax pmax
comp=Z,5.0nm,1.7s
ANMO Albuquerque 40.58 98 *eP* **P** 21 09 08.4 +1.4
comp=Z,35nm,1.6s
LAZ Ladron 40.59 99 *eP* **P** 21 09 11.4 +4.3
F36A Milaca 40.68 75 P **P** 21 09 07.3 -0.1
baz=307
C38A Sawbill Land. 40.80 72 P **P** 21 09 08.0 -0.5
baz=306
BNM Barren Site 41.06 99 *eP* **P** 21 09 12.6 +1.6
121A Cookes Peak, D 41.61 102 P **P** 21 09 16.6 +1.2
baz=318,SNR=6.3
KLR Kul'dur 41.71 292 P **P** 21 09 15.5 -0.3
comp=Z,9.4nm,0.5s,baz=61,slow=7.5,SNR=41
I37A Lemond, Waseca 41.90 78 P **P** 21 09 16.6 -0.9
baz=309
N34A Lincoln 42.20 83 P **P** 21 09 19.8 -0.2
baz=311
J37A Redenius Farm, 42.26 79 P **P** 21 09 20.1 -0.3
baz=310
I38A Scanlan Farm, 42.48 77 P **P** 21 09 21.9 -0.3
baz=309
O34A Beatrice 42.52 84 P **P** 21 09 22.5 -0.2
baz=312
K37A Belmond 42.56 79 P **P** 21 09 22.5 -0.4
baz=310
Q33A Connelly Farm, 42.67 86 P **P** 21 09 24.1 +0.3
baz=313
J38A Wedel Dairy, R 42.86 78 P **P** 21 09 25.0 -0.3
baz=310,SNR=6.4
P34A Walnut Farm, R 42.88 85 P **P** 21 09 25.9 +0.5
baz=312
COWI Conover 42.95 72 *eP* **P** 21 09 25.6 -0.4
comp=Z,22nm,1.2s
N36A Muff Farm, Cla 43.09 82 P **P** 21 09 27.1 -0.1
baz=312
M37A Trindle Farm, 43.21 81 P **P** 21 09 28.5 +0.3
baz=311
Q34A Chapman 43.23 86 P **P** 21 09 28.4 0.0
baz=313
J39A Decorah 43.28 77 P **P** 21 09 28.5 -0.1
baz=310
KSU1 Kansas State U 43.30 85 P **P** 21 09 28.7 -0.2
baz=313
AMTX Amarillo 43.34 94 *eP* **P** 21 09 31.1 +1.7
comp=Z,60nm,1.3s
MSTX Muleshoe 43.38 96 *eP* **P** 21 09 33.5 +3.7
comp=Z,38nm,1.0s
N37A Lee Faris, Mou 43.55 82 P **P** 21 09 31.2 +0.2
baz=312
MNTX Cornudas Mount 43.58 100 P **P** 21 09 33.4 +2.2
baz=319
MNTX Cornudas Mount 43.58 100 *eP* **P** 21 09 33.0 +1.8
comp=Z,30nm,1.1s
K39A Oelwein 43.58 78 P **P** 21 09 30.1 -1.0
baz=310
M38A Pleasantville 43.69 80 P **P** 21 09 31.2 -0.8
baz=311
P36A Good Intent, A 43.75 84 P **P** 21 09 32.3 -0.2
baz=312,SNR=7.4
O37A Wolven Farm, M 43.98 82 P **P** 21 09 34.2 -0.2
baz=312
J41A Loganville 44.20 76 P **P** 21 09 35.3 -0.8
baz=310,SNR=5.9
H11N2 WAKE ISLAND Hy 44.21 231 T T 21 56 45.1
baz=28,slow=75,SNR=44
H11N3 WAKE ISLAND Hy 44.21 231 T T 21 56 31.5
baz=28,slow=75,SNR=40
H11N1 WAKE ISLAND Hy 44.23 231 T T 21 56 34.1
baz=28,slow=75,SNR=8.2
M39A Webster 44.23 80 P **P** 21 09 36.0 -0.3
baz=311
P37A Lathrop 44.26 83 P **P** 21 09 36.5 -0.1
baz=313
JFWS Jewell Farm 44.36 77 *eP* **P** 21 09 36.8 -0.6
JFWS pmax pmax
comp=Z,18nm,0.8s
JFWS Jewell Farm 44.36 77 *eP* **P** 21 09 36.8 -0.6
comp=Z,18nm,0.8s
L40A Anamosa 44.38 78 P **P** 21 09 36.0 -1.5
baz=314,SNR=6.1
T34A McClaskey Farm 44.40 88 P **P** 21 09 38.1 +0.3
baz=314
S35A Otter Creek Ra 44.44 87 P **P** 21 09 38.1 0.0
baz=314
K41A Shullsburg 44.53 77 P **P** 21 09 37.8 -0.9
baz=311
USRK Ussuriysk Ar. 44.69 286 P **P** 21 09 38.8 -1.1
comp=Z,2.4nm,0.6s,baz=49,slow=8.1,SNR=12
USRK LR LR 21 28 22.5
comp=Z,648nm,21.8s,baz=45,slow=36
P38A Dawn 44.70 83 P **P** 21 09 39.8 -0.3
baz=313,SNR=9.7
L41A Preston 44.77 78 P **P** 21 09 39.9 -0.8
baz=311
WMOK Wichita Mounta 45.11 92 P **P** 21 09 43.7 +0.3
baz=316,SNR=49
WMOK Wichita Mounta 45.11 92 *eP* **P** 21 09 44.2 +0.7
WMOK pmax pmax
comp=Z,130nm,1.8s
WMOK Wichita Mounta 45.11 92 *eP* **P** 21 09 44.2 +0.7
comp=Z,130nm,1.8s
P39B Salisbury 45.23 82 P **P** 21 09 44.0 -0.3
baz=313
BOD Bodaibo 45.27 311 ⇓ *iP* **P** 21 09 42.9 -1.5
BOD pmax pmax
comp=Z,66nm,1.3s
O40A La Belle 45.30 81 P **P** 21 09 44.6 -0.3
baz=312,SNR=5.5
Q39A Willow Grove F 45.41 83 P **P** 21 09 45.4 -0.4
baz=313
X33A Lawton 45.41 92 P **P** 21 09 45.9 +0.1
baz=316
VLA Vladivostok 45.45 285 ⇓ *iP* **P** 21 09 45.2 -0.8
VLA *i* *SP **sP** 21 09 58.8 +0.5
VLA pmax pmax
comp=Z,30nm,1.0s
R38A Fenwick Farm, 45.47 84 P **P** 21 09 45.2 -1.0
baz=314
V35A Meyer Ranch, C 45.49 89 P **P** 21 09 46.7 +0.3
baz=315,SNR=5.4
P40A Paris 45.60 82 P **P** 21 09 46.8 -0.5
baz=313,SNR=7.0
T37A Cheneyville 18 45.63 86 P **P** 21 09 47.6 0.0
baz=314
MDJ Mudanjiang 45.73 288 P **P** 21 09 47.2 -1.0
MDJ pmax pmax
comp=Z,10.0nm,0.6s
MDJ pmax pmax
comp=Z,150nm,5.7s
MDJ LR LR
comp=Z,460nm,23.1s
MDJ LR LR
comp=Z,530nm,24.5s
MDJ LR LR
comp=Z,880nm,21.8s
MDJ Mudanjiang 45.73 288 *eP* **P** 21 09 47.3 -0.9
comp=Z,24nm,1.4s
DAG Danmarks Havn 45.75 12 ⇑ *iP* **P** 21 09 47.6 -0.4
DAG *i* 21 09 58.7
comp=Z,910nm,20.0s
DAG Danmarks Havn 45.75 12 ⇑ *iP* **P** 21 09 47.6 -0.4
DAG *i* 21 09 58.7
DAG MLR MLR
comp=Z,970nm,20.0s
SUMG Summit 45.85 21 ⇑ *iP* **P** 21 09 49.5 +0.2
SUMG *i* 21 10 01.1
SUMG Summit 45.85 21 *eP* **P** 21 09 49.3 0.0
SUMG pmax pmax
comp=Z,145nm,1.3s
SUMG Summit 45.85 21 *eP* **P** 21 09 49.3 0.0
comp=Z,145nm,1.3s
W35A Tecumseh 45.90 90 P **P** 21 09 49.6 -0.1
baz=316,SNR=7.3
KBS Kingsbay 45.94 3 *i* P **P** 21 09 50.8 +1.4
KBS pmax pmax
comp=Z,211nm,2.5s
Q40A Laux Farm, Aux 45.95 82 P **P** 21 09 49.8 -0.3
baz=313
TUL1 Leonard 45.98 88 *eP* P 21 09 55.8 +5.5
comp=Z,78nm,1.5s
V36A Jenks 45.98 88 P **P** 21 09 49.4 -1.0
baz=315
U37A Salina 46.02 87 P **P** 21 09 50.9 +0.3
baz=315
T38A Diamond 46.05 86 P **P** 21 09 50.2 -0.7
baz=314
P41A Barry, Barry 46.06 81 P **P** 21 09 50.6 -0.3
baz=313
ABTX Abilene, Hawle 46.15 94 *eP* **P** 21 09 53.9 +2.1
comp=Z,41nm,1.0s
R40A Maddies Statio 46.33 83 P **P** 21 09 51.7 -1.3
baz=314
TX31 Lajitas Ar. Si 46.33 101 *eP* **P** 21 09 54.2 +0.9
LTX Lajitas 46.33 101 *eP* **P** 21 09 54.6 +1.3
LTX *e*PP **pP** 21 10 02.8 +0.7
LTX Lajitas 46.33 101 *eP* **P** 21 09 54.6 +1.3
LTX *e*pP **pP** 21 10 02.8 +0.7
TXAR Lajitas Array 46.33 101 P **P** 21 09 54.6 +1.3
comp=Z,1.5nm,0.5s,baz=302,slow=6.1,SNR=36
TXAR pP **pP** 21 10 02.8 +0.7
comp=Z,12nm,0.7s,baz=304,slow=5.6,SNR=43
TXAR LR LR 21 28 20.8
comp=Z,1µm,18.8s,baz=0.0,slow=35
MAJO Matsushiro 46.35 274 *c iP* **P** 21 09 53.6 +0.4
MAJO pmax pmax
comp=Z,75nm,0.8s
MAJO Matsushiro 46.35 274 *eP* **P** 21 09 53.4 +0.2
comp=Z,35nm,0.5s
MAT Matsushiro 46.35 274 P **P** 21 09 53.4 +0.2
MAT S **S** 21 16 39.8 +1.3
MJAR Matsushiro Arr 46.35 274 P **P** 21 09 53.5 +0.2
comp=Z,10nm,0.5s,baz=35,slow=7.6,SNR=51
MJAR LR LR 21 27 49.4
comp=Z,405nm,21.9s,baz=65,slow=34
MJB9 Matsu-Tunnel 46.35 274 *eP* **P** 21 09 53.9 +0.7
comp=Z,8.8nm,0.5s
U38A Gravette 46.41 86 P **P** 21 09 53.1 -0.6
baz=315
HDIL Hopedale 46.46 78 P **P** 21 09 53.8 -0.2
baz=312
HDIL Hopedale 46.46 78 *eP* **P** 21 09 53.5 -0.6
comp=Z,176nm,1.6s
133A Hamilton Ranch 46.58 94 P **P** 21 09 55.9 +0.9
baz=317,SNR=6.8
T39A Clever 46.58 85 P **P** 21 09 54.0 -1.0
baz=314
SFJD Kangerlussuaq 46.65 31 P **P** 21 09 55.2 +0.1
comp=Z,14nm,0.8s,baz=336,slow=11,SNR=7.8
SFJD Kangerlussuaq 46.65 31 ⇑ *iP* **P** 21 09 55.2 +0.1
comp=Z,18nm,0.9s
SFJD *i* 21 10 07.2
SFJD Kangerlussuaq 46.65 31 ⇑ *iP* **P** 21 09 55.2 +0.1
SFJD *i* 21 10 07.2
SFJD pmax pmax
comp=Z,18nm,0.9s
SFJD Kangerlussuaq 46.65 31 *eP* **P** 21 09 55.6 +0.4
comp=Z,59nm,1.3s
S40A Lebanon 46.68 84 P **P** 21 09 55.7 0.0
baz=314
W37B Quinton 46.74 88 P **P** 21 09 56.4 +0.2
baz=316,SNR=5.2
HHAR Hobbs 46.78 86 *eP* **P** 21 09 57.0 +0.4
comp=Z,12nm,0.9s
V38A Canehill 46.81 87 P **P** 21 09 56.7 -0.1
baz=315
Q42A Golden Eagle 46.88 81 P **P** 21 09 57.1 -0.2
baz=314
NRIK Noril'sk 46.94 334 P **P** 21 09 57.3 -0.1
comp=Z,37nm,0.7s,baz=56,slow=7.3,SNR=33
NRIK LR LR 21 33 19.4
comp=Z,1µm,18.5s,baz=58,slow=41
U39A Green Forest 46.97 86 P **P** 21 09 57.7 -0.3
baz=315
233A Rising Star 47.02 94 P **P** 21 09 58.8 +0.2
baz=318
S41A Jillco Farms, 47.11 83 P **P** 21 09 57.6 -1.6
baz=314
X37A Clayton 47.17 89 P **P** 21 09 59.7 +0.1
baz=316
V39A Pettigrew 47.26 86 P **P** 21 09 59.3 -1.1
baz=315
W38A Poteau 47.31 88 P **P** 21 09 59.5 -1.2
baz=316
Q43A New Douglas 47.34 80 P **P** 21 10 00.4 -0.5
baz=314,SNR=5.2
U40A Yellville 47.35 85 P **P** 21 10 00.8 -0.2
baz=315
333A Richland Sprin 47.49 95 P **P** 21 10 01.9 -0.3
baz=318
W39A Magazine 47.64 87 P **P** 21 10 03.2 0.0
baz=316
JCT Junction City 47.65 96 P **P** 21 10 04.2 +0.7
baz=319,SNR=11
JCT Junction City 47.65 96 *eP* **P** 21 10 04.2 +0.7
JCT pmax pmax
comp=Z,261nm,1.8s
JCT Junction City 47.65 96 *eP* **P** 21 10 04.2 +0.7
comp=Z,261nm,1.8s
V40A Witts Springs 47.76 86 P **P** 21 10 03.4 -0.8
baz=315,SNR=6.9
SFIN Lafayette 47.81 77 *eP* **P** 21 10 07.7 +3.1
comp=Z,43nm,1.1s
433A Art 47.85 96 P **P** 21 10 05.4 +0.4
baz=319,SNR=10
VLDQ Val d'Or 47.85 63 *eP* **P** 21 10 02.5 -2.3
comp=Z,25nm,0.9s
334A Lometa 47.91 94 P **P** 21 10 06.6 +1.2
baz=318,SNR=8.9
S43A Fulton Ridge, 48.07 82 P **P** 21 10 05.8 -0.8
baz=314,SNR=12
V41A Mountainview 48.15 85 P **P** 21 10 05.5 -1.7
baz=315
U42A Revenden 48.27 84 P **P** 21 10 08.1 0.0
baz=315
434A Burnet 48.27 95 P **P** 21 10 09.9 +1.7
baz=318,SNR=11
OLIL Olney 48.38 79 *eP* **P** 21 10 08.7 -0.2
comp=Z,171nm,1.4s
335A Moody 48.41 94 P **P** 21 10 10.6 +1.3
baz=318,SNR=5.4
WHAR Wooly Hollow 48.43 86 *eP* **P** 21 10 10.2 +0.8
comp=Z,36nm,1.6s
SIUC Southern Illin 48.46 81 *eP* P 21 10 14.4 +4.8
comp=Z,93nm,1.4s
CN2 Changchun 48.51 290 *eP* **P** 21 10 08.5 -1.4
CN2 *es*P sP 21 10 22.6 +0.3
CN2 *eS* **S** 21 17 06.3 -2.6
CN2 pmax pmax
comp=Z,40nm,0.7s
CN2 LR LR
comp=Z,500nm,19.0s
CN2 LR LR
comp=Z,500nm,19.0s
CN2 LR LR
comp=Z,500nm,19.0s
SCHQ Schefferville 48.58 50 P **P** 21 10 09.4 -1.0
comp=Z,8.6nm,0.7s,baz=323,slow=8.5,SNR=6.1
SCHQ LR LR 21 32 07.3
comp=Z,1µm,18.3s,baz=310,slow=38
SCHQ Schefferville 48.58 50 *eP* **P** 21 10 09.4 -1.0
comp=Z,14nm,0.8s
S45A Carrier Mills 48.85 81 P **P** 21 10 12.4 -0.2
baz=314,SNR=6.2
BLO Bloomington 48.96 78 *eP* **P** 21 10 13.1 -0.3
BLO pmax pmax
comp=Z,76nm,1.4s
BLO Bloomington 48.96 78 *eP* **P** 21 10 13.1 -0.3
comp=Z,76nm,1.4s
CIT Chita 49.10 305 *eP* **P** 21 10 14.6 +0.2
CIT *e* 21 10 20.2
CIT *e* 21 10 25.9
CIT pmax pmax
comp=Z,94nm,1.4s
USIN University of 49.16 80 *eP* **P** 21 10 14.8 -0.1
comp=Z,194nm,1.4s
SADO Sadowa 49.18 67 *eP* **P** 21 10 15.0 0.0
comp=Z,20nm,0.9s
ACSO Alum Creek Sta 50.20 74 *eP* **P** 21 10 26.3 +3.5
comp=Z,39nm,1.4s
WVT Waverly 50.37 82 *eP* **P** 21 10 23.9 -0.2
WVT pmax pmax
comp=Z,97nm,1.4s
WVT Waverly 50.37 82 *eP* **P** 21 10 23.9 -0.2
comp=Z,97nm,1.4s
TRQ Mont Tremblant 50.59 63 *eP* **P** 21 10 24.9 -0.9
SCO Scoresbysund 50.69 18 *i* P **P** 21 10 26.3 +0.2
comp=Z,44nm,1.3s
SCO *i* 21 10 37.9
comp=Z,750nm,17.0s
SCO Scoresbysund 50.69 18 *i* P **P** 21 10 26.3 +0.2
SCO *i* 21 10 37.9
SCO pmax pmax
comp=Z,44nm,1.3s
SCO MLR MLR
comp=Z,750nm,17.0s
ALLY Alegheny Colle 50.77 71 *eP* **P** 21 10 26.5 -0.6
comp=Z,93nm,1.4s
M54A Oil Creek Stat 51.12 71 P **P** 21 10 28.9 -0.9
baz=314
MMNY Mt. Morris Dam 51.22 69 *eP* **P** 21 10 30.9 +0.3
KS01 Wonju Array Si 51.53 282 *eP* **P** 21 10 32.1 -0.7
KSRS Korea Array 51.53 282 P **P** 21 10 33.6 +0.8
comp=Z,11nm,0.6s,baz=41,slow=7.3,SNR=64
KSRS LR LR 21 33 13.4
comp=Z,161nm,20.3s,baz=42,slow=37
KS15 Wonju Array Si 51.56 282 *eP* **P** 21 10 33.6 +0.5
KSAR Wonju Array Be 51.56 282 P **P** 21 10 33.6 +0.5
KSAR Wonju Array Be 51.56 282 P **P** 21 10 33.6 +0.5
LONY Lake Ozonia 51.67 65 *eP* **P** 21 10 33.6 -0.2
comp=Z,18nm,0.9s
Y47A UCPARC, Winfie 51.96 84 P **P** 21 10 35.7 -0.4
baz=317
FRNY Flat Rock 52.03 64 *eP* **P** 21 10 35.3 -1.2
comp=Z,18nm,0.9s
INCN Inchon 52.23 283 *eP* **P** 21 10 38.6 +0.5
comp=Z,26nm,0.6s
NCB Newcomb 52.30 65 *eP* **P** 21 10 38.2 -0.4
comp=Z,0.5nm,1.3s
TZTN Tazewell 52.48 78 *eP* **P** 21 10 39.6 -0.4
comp=Z,72nm,1.5s
BINY Binghamton 52.61 68 *eP* **P** 21 10 40.3 -0.7
SSPA Standing Stone 52.69 71 *eP* **P** 21 10 40.6 -0.9
comp=Z,42nm,1.0s
CPCT Cooper Cave 52.72 80 *eP* **P** 21 10 41.1 -0.7
comp=Z,19nm,1.3s
JNU Nakatsue 52.98 276 P **P** 21 10 44.0 +0.2
comp=Z,5.5nm,0.5s,baz=20,slow=10,SNR=3.7
JNU LR LR 21 32 18.4
comp=Z,541nm,21.6s,baz=122,slow=35
JNU Nakatsue 52.98 276 *eP* **P** 21 10 44.0 +0.2
comp=Z,116nm,1.9s
TKL Tuckaleechee C 52.99 79 *eP* **P** 21 10 43.7 -0.1
TKL pmax pmax
comp=Z,47nm,1.4s
TKL Tuckaleechee C 52.99 79 *eP* **P** 21 10 43.6 -0.1
comp=Z,47nm,1.4s
HNH Hanover 53.49 64 *eP* **P** 21 10 50.3 +3.0
comp=Z,20nm,0.8s
TLY Talaya 53.82 310 *eP* **P** 21 10 49.8 +0.1
TLY *eS* **S** 21 18 27.5 +5.3
TLY pmax pmax
comp=Z,46nm,1.4s
TLY MLR MLR
comp=Z,552nm,17.0s
TLY Talaya 53.82 310 *eP* **P** 21 10 50.0 +0.4
comp=Z,118nm,1.7s
PKME Peaks-Kenny Pk 53.91 61 *eP* **P** 21 10 50.6 +0.2
comp=Z,19nm,1.0s
DL2 Dalian 53.97 288 P **P** 21 10 48.2 -2.7
DL2 *eS* **S** 21 18 19.7 -4.7
DL2 pmax pmax
comp=Z,29nm,0.7s
DL2 pmax pmax
comp=Z,97nm,4.5s
DL2 LR LR
comp=Z,560nm,19.8s
DL2 LR LR
comp=Z,450nm,22.5s
DL2 LR LR
comp=Z,760nm,22.3s
LUPA Lehigh Univers 54.07 69 *eP* **P** 21 10 51.4 -0.2
comp=Z,28nm,0.9s
SDMD Soldier's Deli 54.13 71 *eP* **P** 21 10 54.5 +2.4
KMSC Kings Mountain 54.73 78 *eP* **P** 21 10 59.9 +3.4
comp=Z,68nm,1.6s
ZAK Zakamensk 54.91 309 *eP* **P** 21 10 56.2 -1.5

ZAK					*e*			21 11 58.8	
ZAK					pmax	pmax			
	comp=Z,13nm,1.6s								
ZAK					pmax	pmax			
	comp=Z,9.0nm,1.4s								
ZAK					pmax	pmax			
	comp=Z,5.0nm,1.5s								
WES	**Weston**	**54.92**	**65**	*e*P	**P**		**21 10 57.5**	**-0.2**	
WES				pmax	pmax				
	comp=Z,38nm,0.8s								
WES	**Weston**	**54.92**	**65**	*e*P	**P**		**21 10 57.5**	**-0.2**	
	comp=Z,38nm,0.8s								
MOY	**Mondy**	**54.98**	**312**	*e*P	**P**		**21 10 58.6**	**+0.4**	
MOY				pmax	pmax				
	comp=Z,57nm,2.2s								
KRAR	**Krasnoyarsk**	**55.00**	**320**	*c i*P	**P**		**21 10 58.2**	**+0.1**	
SONA1	**Songino Array**	**55.32**	**305**	*e*P	**P**		**21 11 00.5**	**-0.3**	
SONA0	**Songino Array**	**55.33**	**305**	*e*P	**P**		**21 11 01.2**	**+0.4**	
	comp=Z,108nm,1.7s								
SONA0				*e*PcP	**PcP**		**21 12 01.9**	**+0.8**	
SONM	**Songino Array**	**55.33**	**305**	P	**P**		**21 11 01.2**	**+0.4**	
	comp=Z,14nm,0.7s,baz=48,slow=6.7,SNR=92								
SONM				PcP	**PcP**		**21 12 01.9**	**+0.8**	
	comp=Z,5.1nm,0.6s,baz=102,slow=1.8,SNR=7.5								
SONM				LR	LR		21 36 30.0		
	comp=Z,1μm,19.7s,baz=40,slow=38								
JSC	**Jenkinsville**	**55.41**	**78**	*e*P	**P**		**21 11 05.6**	**+4.3**	
JSC				pmax	pmax				
	comp=Z,22nm,1.2s								
JSC	**Jenkinsville**	**55.41**	**78**	*e*P	**P**		**21 11 05.6**	**+4.3**	
	comp=Z,22nm,1.2s								
ARCES	**ARCESS Array B**	**55.49**	**358**	P	**P**		**21 11 00.6**	**-0.9**	
	comp=Z,4.3nm,0.4s,baz=19,slow=6.5,SNR=56								
ARCES				LR	LR		21 35 59.0		
	comp=Z,393nm,18.9s,baz=2.0,slow=37								
LMN	**Caledonia Moun**	**55.70**	**58**	*e*P	**P**		**21 11 02.2**	**-1.1**	
	comp=Z,176nm,1.8s								
BJI	**Beijing**	**56.08**	**293**	P	**P**		**21 11 05.7**	**-0.4**	
BJI				pP	**pP**		**21 11 14.2**	**-0.9**	
BJI				sP	**sP**		**21 11 18.6**	**0.0**	
BJI				PP	**PP**		**21 13 15.1**	**+4.2**	
BJI				S	**S**		**21 18 51.2**	**-1.5**	
BJI				sS	**sS**		**21 19 06.2**	**-1.3**	
BJI				pmax	pmax				
	comp=Z,16nm,1.4s								
BJI				pmax	pmax				
	comp=Z,240nm,6.0s								
BJI				LR	LR				
	comp=Z,500nm,19.2s								
BJI				LR	LR				
	comp=Z,590nm,22.0s								
BJI				LR	LR				
	comp=Z,670nm,25.6s								
LVZ	**Lovozero**	**56.80**	**354**	⇑*i*P	**P**		**21 11 10.4**	**-0.5**	
LVZ				pmax	pmax				
	comp=Z,62nm,1.7s								
LVZ	**Lovozero**	**56.80**	**354**	*e*P	**P**		**21 11 10.3**	**-0.6**	
	comp=Z,60nm,1.2s								
APA	**Apatity**	**57.19**	**355**	⇑*i*P	**P**		**21 11 11.3**	**-2.3**	
APA				*i*			21 12 07.0		
APA				pmax	pmax				
	comp=Z,8.0nm,1.0s								
APA				MLR	MLR				
	comp=Z,800nm,16.0s								
SGF	**Sodankyl**	**57.57**	**358**	P	**P**		**21 11 18.4**	**+2.1**	
SGF				pmax	pmax				
	comp=Z,96nm,1.2s								
HHC	**Hu-ho-hao-te**	**57.89**	**296**	*e*P	**P**		**21 11 19.4**	**+0.3**	
HHC				pP	sP		21 11 31.2	-0.4	
HHC				S	**S**		**21 19 15.0**	**-1.8**	
HHC				ScS	**ScS**		**21 21 06.4**	**+0.1**	
HHC				pmax	pmax				
	comp=Z,26nm,1.1s								
HHC				pmax	pmax				
	comp=Z,270nm,6.4s								
HHC				LR	LR				
	comp=Z,490nm,16.5s								
HHC				LR	LR				
	comp=Z,350nm,16.5s								
HHC				LR	LR				
	comp=Z,640nm,16.8s								
TIA	**Tai'an**	**58.38**	**289**	⇑P	**P**		**21 11 21.9**	**-0.5**	
TIA				pmax	pmax				
	comp=Z,20nm,1.4s								
TIA				pmax	pmax				
	comp=Z,170nm,5.0s								
TIA				LR	LR				
	comp=Z,340nm,23.0s								
TIA				LR	LR				
	comp=Z,660nm,24.0s								
TIA				LR	LR				
	comp=Z,670nm,23.0s								
BTO	**Baotou**	**58.86**	**297**	*e*P	**P**		**21 11 25.6**	**-0.2**	
MSF	**Maaselka**	**59.03**	**357**	P	**P**		**21 11 26.5**	**0.0**	
MSF				pmax	pmax				
	comp=Z,33nm,1.2s								
NVS	**Novosibirsk**	**59.34**	**324**	⇑*i*P	**P**		**21 11 29.0**	**+0.2**	
NVS				*i*			21 11 41.9		
NVS				*i*			21 13 45.4		
NVS				*e*			21 15 05.8		
NVS				pmax	pmax				
	comp=N,15nm,1.5s								
NVS				pmax	pmax				
	comp=E,14nm,1.5s								
NVS				pmax	pmax				
	comp=Z,41nm,1.5s								
ZAA1	**Zalesovo Array**	**59.52**	**322**	*e*P	**P**		**21 11 30.0**	**0.0**	
ZAA1				*e*pP	**sP**		**21 11 42.1**	**-0.5**	
ZAA0	**Zalesovo Array**	**59.52**	**322**	*e*P	**P**		**21 11 29.9**	**-0.1**	
ZALV	**Zalesovo Beam**	**59.52**	**322**	P	**P**		**21 11 30.0**	**-0.1**	
	comp=Z,6.0nm,0.5s,baz=20,slow=6.3,SNR=41								
ZALV				sP	**sP**		**21 11 42.1**	**-0.5**	
	comp=Z,5.5nm,0.6s,baz=18,slow=5.3,SNR=6.2								
ZALV				LR	LR		21 39 45.2		
	comp=Z,1μm,18.9s,baz=68,slow=39								
NJ2	**Nanjing**	**60.55**	**285**	*e*P	**P**		**21 11 37.0**	**-0.4**	
NJ2				pmax	pmax				
	comp=Z,15nm,0.7s								
NJ2				LR	LR				
	comp=Z,380nm,16.3s								
MOL	**Molde**	**61.97**	**7**	*e*P	**P**		**21 11 46.8**	**+0.2**	
MOL				IAmb	IAmb		21 11 48.3		
	comp=Z,44nm,1.1s								
VAF	**Ylistaro**	**62.03**	**360**	P	**P**		**21 11 46.9**	**-0.1**	
VAF				pmax	pmax				
	comp=Z,27nm,1.4s								
SOKR	**Solikamsk**	**62.16**	**341**	*c i*P	**P**		**21 11 45.5**	**-2.3**	
SOKR				pmax	pmax				
	comp=Z,98nm,1.8s								
SOKR				MLR	MLR				
	comp=Z,877nm,18.0s								
AKN	**Aaknes**	**62.32**	**8**	*e*P	**P**		**21 11 49.4**	**+0.4**	
AKN				IAmb	IAmb		21 12 02.3		
	comp=Z,144nm,1.2s								
KLMR	**Klimovskoe**	**63.40**	**350**	*e*P	**P**		**21 11 54.3**	**-1.8**	
KLMR				*e*			21 14 13.3		
KLMR				pmax	pmax				
	comp=Z,58nm,1.0s								
NC204	**NORSAR Array S**	**63.48**	**6**	*e*P	**P**		**21 11 57.0**	**+0.3**	
NC303	**NORSAR Array S**	**63.56**	**6**	*e*P	**P**		**21 11 57.2**	**0.0**	
FIA1	**FINESS Array S**	**63.59**	**358**	*e*P	**P**		**21 11 57.0**	**-0.4**	
FIA0	**FINESS Array S**	**63.59**	**358**	*e*P	**P**		**21 11 56.8**	**-0.6**	
FIA0				*e**PP	**sP**		**21 12 09.1**	**-0.9**	
FIA0	**FINESS Array S**	**63.59**	**358**	*e*P	**P**		**21 11 56.8**	**-0.6**	
FIA0				*e*pP	**sP**		**21 12 09.1**	**-0.9**	
FINES	**FINESS Array B**	**63.59**	**358**	P	**P**		**21 11 56.8**	**-0.6**	
	comp=Z,17nm,0.6s,baz=16,slow=7.7,SNR=152								
FINES				sP	**sP**		**21 12 09.1**	**-0.9**	
	comp=Z,15nm,0.9s,baz=15,slow=7.9,SNR=5.4								
NC405	**NORSAR Array S**	**63.69**	**6**	*e*P	**P**		**21 11 58.1**	**0.0**	
NBO02	**NORSAR Array S**	**63.71**	**6**	*e*P	**P**		**21 11 57.8**	**-0.4**	
NBO00	**NORSAR Array S**	**63.72**	**6**	*e*P	**P**		**21 11 58.5**	**+0.2**	
NB201	**NORSAR Array S**	**63.73**	**6**	*e*P	**P**		**21 11 58.6**	**+0.2**	
NB2	**NORSAR Subarra**	**63.74**	**6**	P	**P**		**21 11 58.0**	**-0.4**	
	comp=Z,92nm,1.7s,baz=354,slow=6.9								
NB2	**NORSAR Subarra**	**63.74**	**6**	P	**P**		**21 11 58.0**	**-0.4**	
	baz=354,slow=6.9								
NB200	**NORSAR Array S**	**63.74**	**6**	*e*P	**P**		**21 11 58.2**	**-0.2**	
NB200				*e*pP	**sP**		**21 12 10.5**	**-0.5**	
NOA	**NORSAR Array B**	**63.74**	**6**	P	**P**		**21 11 58.2**	**-0.2**	
	comp=Z,15nm,0.8s,baz=355,slow=6.5,SNR=44								
NOA				sP	**sP**		**21 12 10.5**	**-0.5**	
	comp=Z,13nm,1.1s,baz=354,slow=7.8,SNR=10.0								
NOA	**NORSAR Array B**	**63.74**	**6**	P	**P**		**21 11 58.2**	**-0.2**	
NOA				*SP	**sP**		**21 12 10.5**	**-0.5**	
NOA				pmax	pmax				
	comp=Z,17nm,0.8s								
NOA				pmax	pmax				
	comp=Z,13nm,1.1s								
ASK	**Askoy**	**63.84**	**9**	*e*P	**P**		**21 11 59.4**	**+0.4**	
ASK				IAmb	IAmb		21 12 00.8		
	comp=Z,18nm,0.9s								
NAO01	**NORSAR Array S**	**63.91**	**6**	*e*P	**P**		**21 11 59.6**	**+0.1**	
SVE	**Sverdlovsk**	**63.94**	**337**	*e*P	**P**		**21 11 59.6**	**-0.1**	
SVE				*e*S	**S**		**21 20 34.7**	**+1.6**	
SVE				pmax	pmax				
	comp=Z,66nm,1.5s								
SVE				MLR	MLR				
	comp=Z,567nm,22.0s								
BER	**Bergen**	**63.95**	**9**	*e*P	**P**		**21 11 59.9**	**+0.1**	
BER				IAmb	IAmb		21 12 01.4		
	comp=Z,25nm,0.8s								
NC602	**NORSAR Array S**	**64.06**	**6**	*e*P	**P**		**21 12 00.2**	**-0.3**	
NC602	**NORSAR Array S**	**64.06**	**6**	*e*P	**P**		**21 12 00.1**	**-0.3**	
WHN	**Wuhan**	**64.18**	**287**	P	**P**		**21 12 02.1**	**+0.4**	
WHN				pP	**sP**		**21 12 13.8**	**-0.5**	
WHN				S	**S**		**21 20 36.3**	**-0.5**	
WHN				pmax	pmax				
	comp=Z,400nm,7.1s								
WHN				LR	LR				
	comp=Z,860nm,17.1s								
WHN				LR	LR				
	comp=Z,490nm,15.0s								
WHN				LR	LR				
	comp=Z,1μm,16.9s								
KURK	**Kurchatov**	**64.33**	**324**	P	**P**		**21 12 03.1**	**+0.7**	
KURK				*SP	**sP**		**21 12 15.0**	**0.0**	
KURK				pmax	pmax				
	comp=Z,5.0nm,0.4s								
KURK				pmax	pmax				
	comp=Z,4.0nm,0.9s								
KURK	**Kurchatov**	**64.33**	**324**	*e*P	**P**		**21 12 02.8**	**+0.4**	
KURK				*e*pP	**sP**		**21 12 15.0**	**0.0**	
XAN	**Xi'an**	**64.41**	**293**	P	**P**		**21 12 03.1**	**-0.1**	
XAN				pP	pP		21 12 13.3	+0.9	
XAN				sP	sP		21 12 17.3	+1.5	
XAN				PP	**PP**		**21 14 25.7**	**+1.1**	
XAN				S	**S**		**21 20 35.3**	**-4.4**	
XAN				sS	sS		21 20 52.4	-2.4	
XAN				SS	**SS**		**21 24 45.7**	**-3.6**	
XAN				pmax	pmax				
	comp=Z,18nm,0.8s								
XAN				pmax	pmax				
	comp=Z,110nm,6.4s								
XAN				LR	LR				
	comp=Z,360nm,15.3s								
XAN				LR	LR				
	comp=Z,440nm,18.8s								
XAN				LR	LR				
	comp=Z,380nm,16.2s								
KURBB	**Kurchatov Arra**	**64.44**	**324**	P	**P**		**21 12 03.0**	**-0.1**	
	comp=Z,4.6nm,0.4s,baz=28,slow=7.3,SNR=94								
KURBB				sP	**sP**		**21 12 15.0**	**-0.7**	
	comp=Z,4.3nm,0.9s,baz=0.3,slow=5.0,SNR=7.1								
ODD1	**Odda**	**64.53**	**8**	*e*P	**P**		**21 12 03.8**	**+0.2**	
ODD1				IAmb	IAmb		21 12 05.3		
	comp=Z,27nm,1.1s								
ARU	**Arti**	**64.75**	**338**	*c i*P	**P**		**21 12 04.4**	**-0.6**	
ARU							21 12 38.2		
ARU				S	**S**		**21 20 42.1**	**-1.1**	
ARU							21 21 57.7		
ARU				pmax	pmax				
	comp=Z,54nm,1.7s								
ARU				MLR	MLR				
	comp=Z,734nm,21.0s								
ARU	**Arti**	**64.75**	**338**	*e*P	**P**		**21 12 04.5**	**-0.6**	
	comp=Z,19nm,0.7s								
GTA	**Gaotai**	**64.82**	**303**	*e*P	**P**		**21 12 05.9**	**-0.1**	
GTA				pP	pP		21 12 16.3	+1.2	
GTA				sP	sP		21 12 20.7	+2.1	
GTA				S	**S**		**21 20 43.8**	**-1.0**	
GTA				sS	sS		21 21 01.1	+1.2	
GTA				pmax	pmax				
	comp=Z,24nm,1.5s								
GTA				pmax	pmax				
	comp=Z,200nm,6.7s								
GTA				LR	LR				
	comp=Z,440nm,22.8s								
GTA				LR	LR				
	comp=Z,550nm,21.1s								
GTA				LR	LR				
	comp=Z,920nm,18.5s								
BVAR	**Borovoye Array**	**64.90**	**330**	P	**P**		**21 12 06.5**	**+0.3**	
	comp=Z,23nm,0.5s,baz=32,slow=6.8,SNR=233								
BRVK	**Borovoye**	**64.90**	**330**	*c i*P	**P**		**21 12 06.1**	**0.0**	
BRVK				*i* *PP	**pP**		**21 12 15.1**	**-0.2**	
BRVK				pmax	pmax				
	comp=Z,48nm,0.6s								
BRVK	**Borovoye**	**64.90**	**330**	*e*P	**P**		**21 12 06.1**	**0.0**	
	comp=Z,20nm,0.8s								
BLS5	**Blasjo**	**65.00**	**9**	*e*P	**P**		**21 12 06.9**	**+0.2**	
BLS5				IAmb	IAmb		21 12 08.4		
	comp=Z,18nm,0.8s								
KONO	**Kongsberg**	**65.02**	**7**	*e*P	**P**		**21 12 07.1**	**+0.3**	
KONO				IAmb	IAmb		21 12 08.8		
	comp=Z,31nm,1.0s								
KONO	**Kongsberg**	**65.02**	**7**	*c i*P	**P**		**21 12 07.1**	**+0.3**	
KONO				*i* *PP	**pP**		**21 12 16.5**	**+0.6**	
KONO				pmax	pmax				
	comp=Z,351nm,1.7s								
KONO	**Kongsberg**	**65.02**	**7**	*e*P	**P**		**21 12 07.2**	**+0.4**	
	comp=Z,84nm,1.3s								
ZRNK	**Zerenda**	**65.36**	**331**	*e*P	**P**		**21 12 09.0**	**-0.1**	
ZRNK				pmax	pmax				
	comp=Z,33nm,0.6s								
ZRNK	**Zerenda**	**65.36**	**331**	*e*P	**P**		**21 12 09.0**	**-0.1**	
	comp=Z,33nm,0.6s								
LZH	**Lanzhou**	**65.44**	**298**	⇑P	**P**		**21 12 10.5**	**+0.4**	
LZH				pP	sP		21 12 21.4	-1.3	
LZH				sP	pP		21 12 24.7	+5.5	
LZH				pmax	pmax				
	comp=Z,170nm,1.7s								
LZH				pmax	pmax				
	comp=Z,170nm,4.0s								
LZH				LR	LR				
	comp=Z,680nm,16.9s								
LZH				LR	LR				
	comp=Z,470nm,14.2s								
LZH				LR	LR				
	comp=Z,630nm,18.8s								
KPL	**Plockton**	**65.56**	**16**	*e*P	**P**		**21 12 09.8**	**-0.5**	
TAOE	**Nuku Hiva Isla**	**65.62**	**160**	*e*LR	LR		21 31 45.5		
	comp=Z,940nm,25.9s,baz=345								
SSLB	**Suanglung**	**65.72**	**277**	*e*P	**P**		**21 12 10.3**	**-1.5**	
	comp=Z,58nm,1.7s								
YULB	**Yu-li**	**65.83**	**276**	*e*P	**P**		**21 12 14.1**	**+1.5**	
	comp=Z,11nm,0.6s								
SNART	**Snartemo**	**66.14**	**8**	*e*P	**P**		**21 12 14.3**	**+0.4**	
SNART				IAmb	IAmb		21 12 15.8		
	comp=Z,16nm,0.8s								
HOMB	**Homborsund**	**66.31**	**8**	*e*P	**P**		**21 12 15.3**	**+0.2**	
HOMB				IAmb	IAmb		21 12 17.9		
	comp=Z,35nm,1.1s								
MK31	**Makanchi Array**	**66.34**	**319**	*e*P	**P**		**21 12 15.1**	**-0.4**	
MK31	**Makanchi Array**	**66.34**	**319**	*e*P	**P**		**21 12 15.1**	**-0.4**	
MK32	**Makanchi Array**	**66.34**	**319**	*e*P	**P**		**21 12 15.0**	**-0.5**	
MKAR	**Makanchi Array**	**66.34**	**319**	P	**P**		**21 12 15.0**	**-0.5**	
	comp=Z,8.1nm,0.5s,baz=44,slow=6.6,SNR=56								
MKAR				LR	LR		21 43 30.3		
	comp=Z,1μm,19.6s,baz=34,slow=38								
MKAR	**Makanchi Array**	**66.34**	**319**	*e*P	**P**		**21 12 15.1**	**-0.5**	
MKAR				pmax	pmax				
	comp=Z,68nm,0.6s								
MKAR	**Makanchi Array**	**66.34**	**319**	*e*P	**P**		**21 12 15.1**	**-0.5**	
	comp=Z,68nm,0.6s								
MK01	**Makanchi Array**	**66.36**	**319**	*e*P	**P**		**21 12 14.7**	**-1.0**	
MAKZ	**Makanchi**	**66.44**	**320**	*e*P	**P**		**21 12 15.9**	**-0.3**	
MAKZ				pmax	pmax				
	comp=Z,11nm,0.8s								
MAKZ	**Makanchi**	**66.44**	**320**	*e*P	**P**		**21 12 15.9**	**-0.3**	
	comp=Z,11nm,0.8s								
VSU	**Vasula**	**66.57**	**357**	*c i*P	**P**		**21 12 16.4**	**-0.3**	
VSU				pmax	pmax				
	comp=Z,337nm,1.7s								
WMQ	**Urumqi**	**66.69**	**314**	P	**P**		**21 12 18.8**	**+0.9**	
WMQ				pP	sP		21 12 30.3	-0.2	
WMQ				PcP	**PcP**		**21 12 48.6**	**+1.8**	
WMQ				S	**S**		**21 21 06.2**	**-1.2**	
WMQ				pmax	pmax				
	comp=Z,19nm,0.9s								
WMQ				pmax	pmax				
	comp=Z,160nm,3.7s								
WMQ				LR	LR				
	comp=Z,1μm,18.8s								
WMQ				LR	LR				
	comp=Z,810nm,21.2s								
WMQ				LR	LR				
	comp=Z,1μm,23.2s								
ENH	**Enshi**	**67.03**	**290**	*e*P	**P**		**21 12 20.6**	**+0.4**	
	comp=Z,70nm,1.9s								
EKA	**Eskdalemuir Ar**	**67.88**	**15**	P	**P**		**21 12 25.7**	**+0.6**	
	baz=334,slow=4.9								
ESK	**Eskdalemuir**	**67.88**	**15**	*e*P	**P**		**21 12 25.4**	**+0.3**	
ESK				pmax	pmax				
	comp=Z,69nm,1.4s								
ESK	**Eskdalemuir**	**67.88**	**15**	*e*P	**P**		**21 12 25.4**	**+0.3**	
	comp=Z,68nm,1.4s								
MUD	**Monsted U'grnd**	**68.16**	**8**	*i*P	**P**		**21 12 27.5**	**+0.7**	
	comp=Z,25nm,1.1s								
MUD				*i*			21 12 40.2		
MUD	**Monsted U'grnd**	**68.16**	**8**	*i*P	**P**		**21 12 27.5**	**+0.7**	
MUD				*i*			21 12 40.2		
MUD				pmax	pmax				
	comp=Z,25nm,1.1s								
MOS	**Moscow**	**68.62**	**351**	*e*P	**P**		**21 12 28.1**	**-1.6**	
MOS				*e*			21 12 36.8		
MOS				*e*			21 13 02.6		
MOS				pmax	pmax				
	comp=Z,29nm,1.1s								
MOS				pmax	pmax				
	comp=Z,100nm,1.3s								
IZAR	**Zarasai**	**69.30**	**357**	*e*P	**P**		**21 12 32.1**	**-1.8**	
IZAR				IAmb	IAmb		21 12 34.4		
	comp=Z,10nm,0.7s								
OBN	**Obninsk**	**69.34**	**351**	*c i*P	**P**		**21 12 33.2**	**-0.9**	
OBN				*e*			21 15 06.4		
OBN				*e*S	SKiKP		21 22 06.8	-14	
OBN				pmax	pmax				
	comp=Z,74nm,1.7s								
OBN				MLR	MLR				
	comp=Z,495nm,23.0s								
OBN	**Obninsk**	**69.34**	**351**	*e*P	**P**		**21 12 33.5**	**-0.6**	
	comp=Z,185nm,1.9s								
ISAL	**Salakas**	**69.48**	**357**	*e*P	**P**		**21 12 33.4**	**-1.6**	
ISAL				IAmb	IAmb		21 12 35.5		
	comp=Z,8.9nm,1.0s								
CD2	**Chengdu**	**69.56**	**295**	P	**P**		**21 12 36.5**	**+0.5**	
CD2				pP	sP		21 12 46.8	-1.9	
CD2				PP	**PP**		**21 15 09.8**	**+0.3**	
CD2				S	**S**		**21 21 41.4**	**-0.5**	
CD2				sS	sS		21 21 59.0	+1.9	
CD2				SS	**SS**		**21 26 09.6**	**+0.5**	
CD2				pmax	pmax				
	comp=Z,60nm,0.5s								
CD2				pmax	pmax				
	comp=Z,200nm,3.9s								
CD2				LR	LR				
	comp=Z,450nm,17.4s								
CD2				LR	LR				
	comp=Z,460nm,19.4s								
CD2				LR	LR				
	comp=Z,390nm,17.9s								
IDID	**Didziasalis**	**69.72**	**357**	*e*P	**P**		**21 12 35.1**	**-1.5**	
IDID				IAmb	IAmb		21 12 38.0		
	comp=Z,11nm,0.8s								
BSD	**Bornholm Skovb**	**69.84**	**4**	*i*P	**P**		**21 12 36.0**	**-1.3**	
	comp=Z,15nm,0.8s								
BSD	**Bornholm Skovb**	**69.84**	**4**	*e*P	**P**		**21 12 36.0**	**-1.3**	
BSD				pmax	pmax				
	comp=Z,15nm,0.8s								
NACGM	**Naroch**	**70.13**	**357**	*e*	**P**		**21 12 39.0**	**-0.1**	
NACGM				*e*LR	LR		21 38 36.0		
AKTO	**Aktyubinsk**	**70.45**	**336**	P	**P**		**21 12 41.1**	**0.0**	
	baz=31,slow=5.8								
MICGM	**Minsk**	**70.49**	**356**	*e*	**P**		**21 12 39.0**	**-2.3**	
MNK	**Minsk**	**70.49**	**356**	*e*P	**P**		**21 12 39.0**	**-2.3**	
CWF	**Charnwood Fore**	**70.67**	**15**	*e*P	**P**		**21 12 43.1**	**+0.7**	
	comp=Z,50nm,1.6s								
SUW	**Suwalki**	**71.09**	**359**	*e*P	**P**		**21 12 44.3**	**-0.6**	
SUW				*e*pP	**sP**		**21 12 56.1**	**-1.5**	
SUW	**Suwalki**	**71.09**	**359**	*e*P	**P**		**21 12 44.3**	**-0.6**	
SUW				*e**PP	**sP**		**21 12 56.1**	**-1.5**	
ABKAR	**Akbulak array**	**71.10**	**335**	*e*P	**P**		**21 12 44.3**	**-0.8**	
	comp=Z,222nm,0.4s								
GYA	**Guiyang**	**71.56**	**290**	P	**P**		**21 12 49.0**	**+0.6**	
GYA				pP	sP		21 12 59.8	-1.2	
GYA				PP	**PP**		**21 15 29.4**	**+2.5**	
GYA				S	**S**		**21 22 03.0**	**-2.5**	
GYA				sS	sS		21 22 20.7	0.0	
GYA				SKS	**SKSac**		**21 22 45.5**	**-4.2**	
GYA				SS	**SS**		**21 26 40.0**	**-0.2**	
GYA				pmax	pmax				
	comp=Z,20nm,1.0s								
GYA				pmax	pmax				
	comp=Z,130nm,5.8s								
GYA				LR	LR				
	comp=Z,610nm,20.3s								
GYA				LR	LR				
	comp=Z,560nm,21.3s								
GYA				LR	LR				
	comp=Z,550nm,20.3s								
GKP	**Gorka Klasztor**	**71.77**	**3**	*e*P	**P**		**21 12 49.2**	**+0.2**	
GKP				*e*pP	**sP**		**21 13 00.9**	**-0.8**	
GKP	**Gorka Klasztor**	**71.77**	**3**	*e*P	**P**		**21 12 49.2**	**+0.2**	
GKP				*e**PP	**sP**		**21 13 00.9**	**-0.8**	
TKM2	**Tokmak 2**	**72.11**	**322**	*e*P	**P**		**21 12 52.2**	**+0.6**	
TKM2				pmax	pmax				
	comp=Z,95nm,1.9s								
TKM2	**Tokmak 2**	**72.11**	**322**	*e*P	**P**		**21 12 52.2**	**+0.6**	
	comp=Z,95nm,1.9s								
FRU	**Bishkek**	**72.53**	**322**	*i*P	**P**		**21 12 54.0**	**+0.2**	
FRU				*i*			21 13 06.5		
FRU				pmax	pmax				
	comp=Z,90nm,2.0s								
FRU				pmax	pmax				
	comp=Z,135nm,2.0s								
AAK	**Ala-Archa**	**72.74**	**322**	*e*P	**P**		**21 12 56.1**	**+0.8**	
AAK				pmax	pmax				
	comp=Z,99nm,1.9s								
AAK	**Ala-Archa**	**72.74**	**322**	*e*P	**P**		**21 12 56.1**	**+0.8**	
	comp=Z,99nm,1.9s								
TIAR	**Tiarei**	**72.91**	**171**	*e*T	T		22 32 18.0		
	comp=Z,37nm,0.3s								
PPT2	**Papeete2**	**72.92**	**172**	*e*LR	LR		21 35 16.9		
	comp=Z,490nm,22.0s,baz=5.3								
VSR	**Storozhevoye**	**72.93**	**349**	*e*P	**P**		**21 12 55.1**	**-0.9**	
VS

KKAR pmax pmax
comp=Z,255nm,1.4s
KKAR Karatay Array 73.68 325 *e*P **P 21 13 00.8 +0.2**
comp=Z,255nm,1.4s
BCLA Clavier 73.78 11 P **P 21 13 00.9 -0.1**
comp=Z,21nm,1.9s
BCLA AP **pP 21 13 10.6 +0.3**
BCLA XP **sP 21 13 14.5 +0.7**
DOU Dourbes 74.02 12 P **P 21 13 02.7 +0.3**
comp=Z,16nm,1.7s
DOU AP **pP 21 13 10.0 -1.7**
DOU XP **sP 21 13 15.5 +0.3**
BRG Berggiesshubel 74.03 5 *e*PKP **P 21 13 02.5 0.0**
comp=Z,23nm,1.3s
BRG *i* 21 13 15.1
comp=Z,42nm,1.4s
comp=N,177nm,18.2s
comp=E,140nm,17.4s
comp=Z,215nm,14.5s
BRG Berggiesshubel 74.03 5 *e*P **P 21 13 02.5 0.0**
BRG *i* 21 13 15.1
BRG pmax pmax
comp=Z,23nm,1.3s
BRG pmax pmax
comp=Z,42nm,1.4s
BRG MLR MLR
comp=N,177nm,18.2s
BRG MLR MLR
comp=E,140nm,17.4s
BRG MLR MLR
comp=Z,215nm,14.5s
MOX Moxa 74.12 7 P **P 21 13 03.4 +0.4**
MOX pmax pmax
comp=Z,19nm,1.1s
KSP Ksiaz 74.16 4 *e*P **P 21 13 03.4 +0.1**
KSP Ksiaz 74.16 4 *e*P **P 21 13 03.4 +0.1**
AKASG Malin Array Be 74.23 355 P **P 21 13 03.0 -0.7**
comp=Z,8.0nm,0.4s,baz=7.0,slow=6.1,SNR=53
AKASG sP **sP 21 13 15.1 -1.3**
comp=Z,7.1nm,0.5s,baz=6.8,slow=5.9,SNR=4.8
AKASG LR LR 21 49 15.4
comp=Z,356nm,19.2s,baz=5.0,slow=39
AKBB Malin Array Si 74.23 355 *e*P **P 21 13 03.0 -0.7**
AKBB *e**PP **sP 21 13 15.1 -1.3**
AKBB pmax pmax
comp=Z,36nm,0.9s
AKBB Malin Array Si 74.23 355 *e*P **P 21 13 03.0 -0.7**
comp=Z,36nm,0.9s
AKBB *e*pP **sP 21 13 15.1 -1.3**
KIEV Kiev 74.24 355⇑ *i*P **P 21 13 03.1 -0.6**
KIEV *i **SP **sP 21 13 15.5 -0.9**
KIEV pmax pmax
comp=Z,38nm,1.1s
KIEV Kiev 74.24 355 *e*P **P 21 13 02.9 -0.8**
comp=Z,193nm,1.9s
AK11 Malin Array Si 74.26 355 *e*P **P 21 13 02.9 -0.9**
PVCC Panska Ves 74.41 5 *e*P **P 21 13 04.8 +0.1**
PVCC AMS AMS 21 55 50.0
comp=Z,200nm,22.9s
PVCC Panska Ves 74.41 5 *e*P **P 21 13 04.8 +0.1**
PVCC MLR MLR
comp=Z,200nm,22.9s
UPC Upice 74.49 4 *e*P **P 21 13 05.3 +0.1**
UPC *ex* x 21 13 17.8
UPC AMS AMS 21 50 30.0
comp=Z,300nm,19.6s
UPC Upice 74.49 4 *e*P **P 21 13 05.3 +0.1**
UPC *e* 21 13 17.8
UPC MLR MLR
comp=Z,300nm,19.6s
NKC Novy Kostel 74.58 6 *e*P **P 21 13 06.1 +0.3**
NKC *e*pP **pP 21 13 12.5 -2.5**
NKC *ex* x 21 13 18.5
NKC AMS AMS 21 47 40.0
comp=Z,300nm,21.7s
NKC Novy Kostel 74.58 6 *e*P **P 21 13 06.1 +0.3**
NKC *e* 21 13 12.5
NKC *e* 21 13 18.5
NKC MLR MLR
comp=Z,300nm,21.7s
WLF Walferdange 74.62 11 P **P 21 13 06.6 +0.7**
comp=Z,31nm,1.7s
WLF AP **sP 21 13 19.0 +0.3**
WLF Walferdange 74.62 11 *e*P **P 21 13 06.7 +0.7**
WLF pmax pmax
comp=Z,46nm,1.2s
WLF Walferdange 74.62 11 *e*P **P 21 13 06.7 +0.7**
comp=Z,46nm,1.2s
DPC Dobruska-Polom 74.66 4 *e*P **P 21 13 06.6 +0.4**
DPC *ex* x 21 13 17.4
DPC AMS AMS 21 50 50.0
comp=Z,200nm,20.8s
DPC Dobruska-Polom 74.66 4 *e*P **P 21 13 06.6 +0.4**
DPC *e* 21 13 17.4
DPC MLR MLR
comp=Z,200nm,20.8s
KMI Kunming 74.72 292 P **P 21 13 07.9 +0.7**
KMI pmax pmax
comp=Z,10.0nm,1.1s
KMI pmax pmax
comp=Z,140nm,7.0s
KMI LR LR
comp=Z,350nm,21.1s
KMI LR LR
comp=Z,390nm,22.5s
KMI LR LR
comp=Z,380nm,22.7s
OJC Ojcow 74.88 1 *e*P **P 21 13 07.5 +0.1**
OJC Ojcow 74.88 1 *e*P **P 21 13 07.5 +0.1**
OJC Ojcow 74.88 1 *e*P **P 21 13 07.5 +0.1**
comp=Z,51nm,1.7s
LDF La Druitiere 74.88 15 *e*P **P 21 13 06.9 -0.6**
LDF pmax pmax
comp=Z,27nm,1.2s
PRU Pruhonice 74.94 5 *e*P **P 21 13 08.0 +0.2**
PRU *e*pP **pP 21 13 17.6 +0.5**
PRU *e*S S 21 22 54.4 +12
PRU AMS AMS 21 51 40.0
comp=Z,300nm,16.7s
PRU Pruhonice 74.94 5 *e*P **P 21 13 08.0 +0.2**
PRU *e* 21 13 17.6
PRU MLR MLR
comp=Z,300nm,16.7s
KSH Kashi 74.95 320 P **P 21 13 11.8 +3.6**
KSH *e*pP PcP 21 13 22.3 +0.3
KSH *e*PcP **sP 21 13 24.9 +4.0**
KSH *e*sP pP 21 13 26.4 +8.9
KSH *e*PP **PP 21 16 02.7 +7.3**
KSH S **S 21 22 47.0 +3.4**
KSH ScS **ScS 21 23 18.7 +0.5**
KSH pmax pmax
comp=Z,53nm,1.5s
KSH LR LR
comp=Z,1μm,18.0s
KSH LR LR
comp=Z,310nm,13.3s
KSH LR LR
comp=Z,2μm,19.9s
KRLC Kraliky 74.95 3 *e*P **P 21 13 08.0 +0.1**
KRLC *ex* x 21 13 19.3
KRLC Kraliky 74.95 3 *e*P **P 21 13 08.0 +0.1**
KRLC *e* 21 13 19.3
GOPC GO Pecny, Ondr 75.03 5 *e*P **P 21 13 08.6 +0.3**
GOPC AMS AMS 21 51 40.0
comp=Z,200nm,21.5s
GOPC GO Pecny, Ondr 75.03 5 *e*P **P 21 13 08.6 +0.3**
GOPC MLR MLR
comp=Z,200nm,21.5s
GRFO Grafenberg 75.04 7 *e*P **P 21 13 08.9 +0.5**
GRFO pmax pmax
comp=Z,48nm,1.5s
GRFO Grafenberg 75.04 7 *e*P **P 21 13 08.8 +0.5**
comp=Z,48nm,1.5s
OKC Ostrava-Krasne 75.23 3 *e*P **P 21 13 09.3 -0.1**
OKC AMS AMS 21 51 20.0
comp=Z,200nm,19.9s
OKC Ostrava-Krasne 75.23 3 *e*P **P 21 13 09.3 -0.1**
OKC MLR MLR
comp=Z,200nm,19.9s
MORC Moravsky Berou 75.27 3⇑ *i*P **P 21 13 09.9 +0.1**
MORC Moravsky Berou 75.27 3 *e*P **P 21 13 09.9 +0.1**
MORC pmax pmax
comp=Z,92nm,1.3s
MORC Moravsky Berou 75.27 3 *e*P **P 21 13 09.9 +0.1**
comp=Z,92nm,1.3s

LVV L'vov 75.28 359⇓ *i*P **P 21 13 09.6 -0.1**
LANF Langenberg 75.46 10⇑ *e*P **P 21 13 10.9 +0.1**
KWP Kalwaria Pacla 75.48 359 *e*P **P 21 13 11.3 +0.4**
KWP *e*pP **sP 21 13 23.4 -0.3**
KWP Kalwaria Pacla 75.48 359 *e*P **P 21 13 11.3 +0.4**
KWP *e**PP **sP 21 13 23.4 -0.3**
TREC Trest 75.68 4 *e*P **P 21 13 11.8 -0.3**
TREC *ex* x 21 13 24.3
TREC AMS AMS 21 52 00.0
comp=Z,300nm,23.8s
TREC Trest 75.68 4 *e*P **P 21 13 11.8 -0.3**
TREC *e* 21 13 24.3
TREC MLR MLR
comp=Z,300nm,23.8s
NIE Niedzica 75.69 1 *e*P **P 21 13 12.3 +0.1**
NIE Niedzica 75.69 1 *e*P **P 21 13 12.3 +0.1**
STHS Stebnicka Huta 75.69 0 *e*P **P 21 13 13.1 +0.9**
STHS pmax pmax
comp=Z,15nm,0.6s
STHS Stebnicka Huta 75.69 0 *e*P **P 21 13 13.1 +0.9**
VRAC Vranov 75.71 4⇑ *i*P **P 21 13 12.6 +0.3**
VRAC Vranov 75.71 4 *i*P **P 21 13 12.6 +0.3**
KHC Kasperske Hory 75.75 6 *e*P **P 21 13 13.1 +0.6**
KHC *e*pP **pP 21 13 19.4 -2.4**
KHC *e*sP **sP 21 13 23.7 -1.5**
KHC *ex* x 21 15 15.0
KHC *e*S **S 21 22 51.3 -0.7**
KHC AMS AMS 21 50 50.0
comp=Z,300nm,22.8s
KHC Kasperske Hory 75.75 6 *e*P **P 21 13 13.1 +0.6**
KHC *e* 21 13 19.4
KHC *e* 21 13 23.7
KHC *e*S **S 21 22 51.3 -0.7**
KHC MLR MLR
comp=Z,300nm,22.8s
KHC Kasperske Hory 75.75 6 *e*P **P 21 13 12.7 +0.2**
comp=Z,20nm,1.3s
QIZ Qiongzhong 75.75 283 P **P 21 13 14.0 +1.1**
QIZ pP **pP 21 13 22.6 +0.4**
QIZ PP **PP 21 16 05.1 +2.5**
QIZ S **S 21 22 54.9 +2.2**
QIZ pmax pmax
comp=Z,11nm,1.8s
QIZ pmax pmax
comp=Z,87nm,8.3s
QIZ LR LR
comp=Z,170nm,21.4s
QIZ LR LR
comp=Z,140nm,21.4s
QIZ LR LR
comp=Z,210nm,18.9s
LANS Liptovska Anna 75.94 2 *e*P **P 21 13 14.7 +1.1**
LANS *e* 21 13 25.6
LANS Liptovska Anna 75.94 2 *e*P **P 21 13 14.7 +1.1**
LANS *e* 21 13 25.6
CDF Champ du Feu 75.97 10 *e*P **P 21 13 12.5 -1.4**
CDF pmax pmax
comp=Z,16nm,1.2s
WLS Welschbruch 75.98 10 *e*P **P 21 13 13.4 -0.5**
THEF They Montfort 76.02 11⇑ *e*P **P 21 13 13.6 -0.5**
GEC2 GERESS Array S 76.04 6 *e*P **P 21 13 14.8 +0.5**
GEC2 pmax pmax
comp=Z,19nm,1.1s
GEC2 GERESS Array S 76.04 6 *e*P **P 21 13 14.8 +0.5**
comp=Z,19nm,1.1s
GERES GERESS Array B 76.04 6 P **P 21 13 14.2 0.0**
comp=Z,2.8nm,0.6s,baz=359,slow=4.8,SNR=26
GERES sP **PcP 21 13 26.3 -0.1**
comp=Z,5.4nm,0.8s,baz=5.4,slow=2.8,SNR=9.2
GEA0 GERESS Array S 76.05 6 *e*P **P 21 13 14.2 0.0**
BFO Black Forest 76.15 9 *e*P **P 21 13 14.6 -0.2**
BFO pmax pmax
comp=Z,50nm,1.8s
BFO Black Forest 76.15 9 *e*P **P 21 13 14.6 -0.2**
comp=Z,50nm,1.8s
ECH Echery 76.15 10⇑ *e*P **P 21 13 14.9 +0.1**
KOLS Kolonicke sedl 76.18 360 *e*P **P 21 13 15.2 +0.3**
KOLS pmax pmax
comp=Z,61nm,2.1s
KOLS Kolonicke sedl 76.18 360 *e*P **P 21 13 15.2 +0.3**
CRVS Cervenica-Dubn 76.21 0 *e*P **P 21 13 15.6 +0.5**
CRVS Cervenica-Dubn 76.21 0 *e*P **P 21 13 15.6 +0.5**
UZH Uzhgorod 76.48 360 *d*P **P 21 13 16.6 0.0**
UZH *i* 21 13 19.6
UZH *e* 21 13 29.6
UZH *e* 21 16 15.0
UZH *e*S **S 21 22 58.0 -1.9**
UZH *e*PS **PnS 21 23 47.0 +7.6**
UZH *e*SS **SS 21 27 59.2 +5.8**
UZH MLR MLR
comp=Z,900nm,22.0s
MOF Molkenrain 76.51 10⇑ *e*P **P 21 13 17.0 +0.1**
VYHS Vyhne 76.59 2 *e*P **P 21 13 17.6 +0.3**
VYHS *e* 21 13 28.9
VYHS pmax pmax
comp=Z,21nm,1.3s
VYHS Vyhne 76.59 2 *e*P **P 21 13 17.6 +0.3**
VYHS *e* 21 13 28.9
KECS Kecovo 76.62 1 *e*P **P 21 13 18.1 +0.7**
KECS *e* 21 13 28.3
KECS pmax pmax
comp=Z,10.0nm,1.1s
KECS Kecovo 76.62 1 *e*P **P 21 13 18.1 +0.7**
KECS *e* 21 13 28.3
MFF Saint Martin d 76.82 15 *e*P **P 21 13 18.5 -0.1**
MFF pmax pmax
comp=Z,53nm,1.2s
SORM Soroca 76.84 356⇑ *i*P **P 21 13 17.9 -0.7**
LSA Lhasa 76.84 303 P **P 21 13 20.1 +0.5**
LSA pmax pmax
comp=Z,22nm,0.8s
LSA Lhasa 76.84 303 *e*P **P 21 13 20.4 +0.8**
LSA pmax pmax
comp=Z,15nm,0.8s
LSA Lhasa 76.84 303 *e*P **P 21 13 20.4 +0.8**
comp=Z,15nm,0.8s
SSF Saint Saulge 76.88 13 *e*P **P 21 13 18.7 -0.2**
SSF pmax pmax
comp=Z,47nm,1.3s
LOMF Lomont 76.98 10 *e*P **P 21 13 19.1 -0.5**
TRPA Tarpa 76.98 360⇑ *e*P **P 21 13 19.9 +0.5**
TRPA *e*P **sP 21 13 31.9 -0.3**
CONA Conrad Observa 77.06 4 *i*P **P 21 13 20.5 +0.4**
comp=Z,14nm,1.1s,SNR=9.7
MOA Mollin 77.06 5 *e*P **P 21 13 20.0 +0.1**
comp=Z,9.2nm,1.6s
PSZ Piszkesteto 77.18 1⇓ *i*P **P 21 13 21.3 +0.6**
PSZ Piszkesteto 77.18 1 *e*P **P 21 13 21.4 +0.7**
PSZ pmax pmax
comp=Z,46nm,1.3s
PSZ Piszkesteto 77.18 1 *e*P **P 21 13 21.4 +0.7**
comp=Z,46nm,1.3s
PSZ Piszkesteto 77.18 1⇑ *e*P **P 21 13 21.3 +0.7**
PSZ *e*P **sP 21 13 32.3 -1.1**
RETA Reutte 77.20 8 *e*P **P 21 13 21.0 +0.2**
comp=Z,9.0nm,1.1s
BGF Bois d'Agland 77.29 13 *e*P **P 21 13 20.7 -0.5**
BGF pmax pmax
comp=Z,20nm,1.0s
SMF Signal de Mont 77.33 13 *e*P **P 21 13 20.9 -0.6**
SMF pmax pmax
comp=Z,10.0nm,0.8s
MOTA Moosalm 77.36 8 *i*P **P 21 13 21.9 +0.1**
comp=Z,14nm,1.0s,SNR=11
WATA Walderalm 77.41 7 *i*P **P 21 13 22.2 +0.1**
comp=Z,20nm,1.0s
BUR08 Bucovina Ar. S 77.43 358 *e*P **P 21 13 22.4 +0.3**
BURAR Bucovina Array 77.46 358⇓ *i*P **P 21 13 22.3 0.0**
TCF Toulx Ste Croi 77.47 14 *e*P **P 21 13 21.9 -0.4**
TCF pmax pmax
comp=Z,13nm,1.0s
WTTA Wattenberg 77.48 7 *i*P **P 21 13 23.0 +0.5**
comp=Z,16nm,0.8s,SNR=7.1
FETA Feichten 77.66 8 *i*P **P 21 13 23.9 +0.4**
comp=Z,18nm,1.1s,SNR=10
PRAR RASCA 77.69 357⇑ *i*P **P 21 13 22.8 -0.7**
CSKK Cs˘‡kako 77.70 3⇑ *e*P **P 21 13 24.0 +0.5**
CSKK *ex* x 21 13 36.4
ARSA Arzberg 77.72 4 *i*P **P 21 13 24.3 +0.6**
comp=Z,12nm,1.2s,SNR=7.7
KBA Koelnbreinsper 77.78 6 *i*P **P 21 13 25.0 +0.8**
comp=Z,28nm,0.9s,SNR=15
AGO Saint Agoulin 77.82 13 *e*P **P 21 13 24.8 +0.6**
DAVOX Davos/Dischmat 77.83 8 P **P 21 13 25.1 +0.6**

comp=Z,2.8nm,0.7s,baz=330,slow=3.0,SNR=8.8
KIS Kishinev 77.95 355⇓ *i*P **P 21 13 25.0 +0.1**
comp=Z,200nm,1.0s
KIS Kishinev 77.95 355 *i* PcP **PcP 21 13 32.0 -2.6**
KIS *e*LR LR 21 43 20.0
comp=Z,800nm,16.0s
KIS Kishinev 77.95 355⇓ *i*P **P 21 13 25.0 +0.1**
KIS *i* 21 13 32.0
KIS *e* 21 23 30.0
KIS *e* 21 23 52.0
KIS pmax pmax
comp=Z,200nm,1.0s
KIS MLR MLR
comp=Z,800nm,16.0s
KIS MLR MLR
comp=Z,600nm,17.0s
PLDF La Plantade 77.97 13 *e*P **P 21 13 25.5 +0.4**
SENIN Lac Senin/Sane 78.00 10 *e*P **P 21 13 25.9 +0.4**
comp=Z,44nm,2.0s
FUORN Ofenpass-Fuorn 78.02 8 *e*P **P 21 13 26.7 +1.1**
comp=Z,32nm,1.2s
ABTA Abfaltersbach 78.06 7 *i*P **P 21 13 25.5 -0.1**
comp=Z,18nm,1.6s,SNR=5.1
MYKA Terra Mystica 78.24 6 *e*P **P 21 13 26.4 -0.3**
comp=Z,3.8nm,0.7s
SOKA Soboth 78.27 5 *i*P **P 21 13 27.2 +0.4**
comp=Z,22nm,1.0s,SNR=20
PERS Pernice 78.32 5 *i*P **P 21 13 27.4 +0.4**
DRGR 78.32 359⇑ *i*P **P 21 13 27.0 -0.1**
DRGR 78.32 359 P **P 21 13 27.2 +0.1**
CJR Cluj-Napoca 78.39 359⇑ *i*P **P 21 13 28.0 +0.6**
OBKA Obir 78.42 5 *i*P **P 21 13 28.0 +0.4**
comp=Z,24nm,0.8s,SNR=13
GOF Gofitskoye 78.47 345⇑ *i*P **P 21 13 28.1 +0.3**
GOF pmax pmax
comp=Z,126nm,1.0s
LEOM Leova 78.50 356⇑ *i*P **P 21 13 27.8 -0.2**
LEOM Leova 78.50 356 P **P 21 13 27.7 -0.2**
MOTC Monteria, Cord 78.52 91 *e*P P 21 13 34.1 +5.6
TESR Tescani 78.52 357⇑ *i*P **P 21 13 27.7 -0.4**
BEHE Becsehely 78.55 4⇑ *e*P **P 21 13 29.3 +1.1**
BEHE *ex* x 21 13 41.5
TBI Tubuai 78.63 172 *e*LR LR 21 37 50.1
comp=Z,581nm,23.8s,baz=359
TBI Tubuai 78.63 172 *e*T T 22 39 27.6
comp=Z,50nm,0.3s
LBL Lubilhac 78.64 13 *e*P **P 21 13 28.8 -0.1**
SSB Saint Sauveur 78.76 12 *e*P **P 21 13 29.5 0.0**
SSB pmax pmax
comp=Z,23nm,1.4s
SSB Saint Sauveur 78.76 12 *e*P **P 21 13 29.5 0.0**
comp=Z,23nm,1.4s
LPL La Plagne 78.78 11 *e*P **P 21 13 28.2 -1.6**
LPL pmax pmax
comp=Z,34nm,2.0s
CAF Calviac 78.78 14 *e*P **P 21 13 28.2 -1.4**
CAF pmax pmax
comp=Z,36nm,1.3s
LPG La Plagne 78.80 11 *e*P **P 21 13 31.8 +1.8**
LPG pmax pmax
comp=Z,17nm,1.5s
SIRR Siria 78.85 0⇑ *i*P **P 21 13 29.8 -0.1**
JAVS Javornik 79.00 6 *i*P **P 21 13 30.8 -0.1**
DOPR Dopca 79.11 358⇑ *i*P **P 21 13 32.3 +1.0**
VISS Visnje 79.13 5 *i*P **P 21 13 29.2 -1.9**
VRI Vrincioaia 79.17 357⇑ *i*P **P 21 13 31.9 +0.3**
VRI Vrincioaia 79.17 357 P **P 21 13 31.9 +0.3**
PLOR Plostina 79.18 357⇑ *i*P **P 21 13 32.0 +0.2**
PLOR Plostina 79.18 357 P **P 21 13 31.9 +0.2**
VIVF Saint-Julien-l 79.19 12 *e*P **P 21 13 31.8 0.0**
VIVF pmax pmax
comp=Z,21nm,1.3s
BOJS Bojanci 79.45 5 *i*P **P 21 13 33.1 -0.1**
BZS Buzias 79.50 0⇑ *i*P **P 21 13 33.7 +0.3**
MBDF Montbardon 79.56 11 *e*P **P 21 13 34.7 +0.7**
MBDF pmax pmax
comp=Z,9.0nm,0.8s
MLR Muntele Rosu 79.57 357 P **P 21 13 34.1 +0.1**
baz=7.1,slow=5.6
MLR Muntele Rosu 79.57 357⇑ *i*P **P 21 13 34.9 +0.9**
MLR Muntele Rosu 79.57 357 *e*P **P 21 13 34.1 +0.1**
comp=Z,18nm,1.0s
KVAR Kislovodsk Arr 79.60 345 P **P 21 13 34.5 +0.3**
comp=Z,13nm,0.7s,baz=41,slow=1.8,SNR=17
KIV Kislovodsk 79.60 345 *e*P **P 21 13 34.7 +0.6**
KIV pmax pmax
comp=Z,34nm,1.1s
KIV MLR MLR
comp=Z,334nm,18.0s
KIV Kislovodsk 79.60 345 *e*P **P 21 13 34.5 +0.3**
comp=Z,115nm,1.7s
SIM Simferopol' 79.63 351 *c*P **P 21 13 34.5 +0.3**
SIM *i* 21 13 46.0
SIM pmax pmax
comp=Z,40nm,1.8s
SIM MLR MLR
comp=Z,430nm,19.0s
DBBC Dabeiba 79.64 93 *e*P P 21 13 43.8 +9.1
VOIR 79.64 358⇓ *i*P **P 21 13 34.7 +0.4**
LOT Lotru 79.66 359⇓ *i*P **P 21 13 34.1 -0.3**
GZR Gura Zlata 79.72 359⇑ *i*P **P 21 13 34.8 +0.1**
ARR Arges 79.72 358⇓ *i*P **P 21 13 35.4 +0.7**
KBZ Khabaz 79.79 345 P **P 21 13 35.6 +0.6**
comp=Z,13nm,1.2s,baz=356,slow=3.7,SNR=17
KBZ LR LR 21 52 10.7
comp=Z,411nm,21.8s,baz=15,slow=38
PGAV Gavieira, Arco 79.79 22 *e*P **P 21 13 37.2 +2.0**
comp=Z,31nm,1.8s
PGAV *e*pP **sP 21 13 48.3 +0.3**
PGAV Gavieira, Arco 79.79 22 *e*LR LR 21 43 30.0
comp=Z,290nm,18.0s
CFR Carcaliu 79.80 356⇑ *i*P **P 21 13 34.9 -0.1**
CFR Carcaliu 79.80 356 P **P 21 13 34.8 -0.2**
GROC Groznyy 79.83 342 *e*P **P 21 13 33.5 -1.8**
GROC pmax pmax
comp=Z,35nm,1.6s
PCAB Cabril 80.09 22 *e*P **P 21 13 37.6 +0.8**
comp=Z,21nm,1.8s
PCAB *e*pP **sP 21 13 50.4 +0.9**
NONG Nongkai 80.23 287 P **P 21 13 38.5 +0.7**
comp=Z,109nm,1.0s,comp=Z,9μm
PBRG Braganca 80.27 21 *e*P **P 21 13 38.6 +0.8**
comp=Z,9.2nm,1.7s
PBRG *e*pP **sP 21 13 50.8 +0.3**
OCAC Ocana 80.30 90 *e*P P 21 13 45.0 +6.5
MDVR Moldovita 80.33 0⇑ *i*P **P 21 13 38.0 0.0**
SOC Sochi 80.38 347 *e*P **P 21 13 36.4 -1.8**
SOC *e* 21 16 39.8
SOC *e*PPP PPP 21 18 37.5
SOC *e*S **S 21 23 39.4 -2.4**
SOC *e*SS **SS 21 28 54.5 +2.4**
SOC pmax pmax
comp=Z,42nm,1.0s
SOC MLR MLR
comp=Z,348nm,16.0s
TLB Topalu 80.39 356⇓ *i*P **P 21 13 38.5 +0.2**
POLO Lamas de Olo 80.46 22 *e*P **P 21 13 39.7 +0.8**
comp=Z,18nm,1.5s
POLO *e*pP **sP 21 13 52.2 +0.6**
TIRR Tirgusor 80.50 355⇑ *i*P **P 21 13 38.8 -0.1**
TIRR Tirgusor 80.50 355 *e*P **P 21 13 38.7 -0.1**
TIRR *e**PP **sP 21 13 49.6 -2.0**
TIRR Tirgusor 80.50 355 *e*P **P 21 13 38.7 -0.1**
TIRR *e*pP **sP 21 13 49.6 -2.0**
RKT Rikitea 80.53 159 *e*T T 22 41 53.4
comp=Z,3.8nm,0.3s
ZEI Tsey 80.55 344 *e*P **P 21 13 38.7 -0.7**
ZEI pmax pmax
comp=Z,67nm,1.1s
HUMR Humele 80.55 358⇓ *i*P **P 21 13 38.4 -0.7**
PVRL Vila Real 80.57 22 *e*P **P 21 13 40.3 +0.9**
comp=Z,31nm,1.3s
PVRL *e*pP **sP 21 13 53.1 +0.9**
SKNT Sakolnakorn 80.66 286 P **P 21 13 40.2 +0.1**
comp=Z,25nm,0.6s
GUDG Gudauri 80.77 343 P **P 21 13 41.9 +1.2**
ONI Oni 80.81 344 P **P 21 13 40.8 +0.1**
ONI Oni 80.81 344 *e*P **P 21 13 40.8 +0.1**
GUN Gumba 80.83 306 *e*P **P 21 13 41.5 +0.2**
comp=Z,30nm,0.5s
MVO Moncorvo 80.83 22 *e*P **P 21 13 41.6 +0.8**
comp=Z,29nm,1.6s
MVO *e*pP **sP 21 13 53.9 +0.3**
MVO Moncorvo 80.83 22 *e*LR LR 21 44 56.1

comp=Z,380nm,22.0s
CHVG Ch'k'valeri 80.90 345 P **P** **21 13 42.5 +1.4**
DIVS Divibare 81.00 1 P **P** **21 13 39.3 -2.4**
GRMC Gramalote, San 81.02 89 *eP* **P** **21 13 38.7 -3.5**
CBRI Barrientos, No 81.03 89 *eP* P 21 13 47.8 +5.5
PVIS Viseu 81.07 22 *eP* **P** **21 13 43.0 +0.9**
comp=Z,31nm,1.3s
PVIS *epP* **sP** **21 13 55.1 +0.3**
KKN Kakani 81.21 307 *eP* **P** **21 13 43.3 +0.1**
comp=Z,24nm,0.6s
UBPT Khong Chiam 81.22 284 P **P** **21 13 43.5 +0.4**
comp=Z,25nm,0.5s,comp=Z,511nm
RAMN Ramite 81.31 305 *eP* **P** **21 13 43.7 -0.1**
comp=Z,55nm,0.6s
GKN Gorkha 81.32 307 *eP* **P** **21 13 43.8 +0.1**
comp=Z,40nm,0.9s
PKIN Phulchoki 81.33 307 *eP* **P** **21 13 44.0 +0.1**
comp=Z,13nm,0.5s
PAMC Pamplona, Colo 81.39 90 *eP* **P** **21 13 43.2 -1.4**
DMN Daman 81.44 307 *eP* **P** **21 13 44.5 0.0**
comp=Z,25nm,0.6s
TBLG Delisi 81.44 343 P **P** **21 13 44.2 +0.2**
TBLG Delisi 81.44 343 *eP* **P** **21 13 44.1 +0.1**
GUYC Guyana, Colomb 81.57 93 *eP* **P** **21 13 49.5 +4.0**
PCAS Casmilo, Conde 81.57 23 *eP* **P** **21 13 45.5 +0.8**
comp=Z,42nm,1.1s
PCAS *epP* **sP** **21 13 57.9 +0.5**
NORC Norcasia 81.59 92 *eP* **P** **21 13 43.2 -1.9**
LOEI Loei 81.71 289 P **P** **21 13 44.0 -1.7**
comp=Z,81nm,0.9s,comp=Z,5µm
BARC Barichara 81.72 90 *eP* **P** **21 13 48.4 +2.3**
MPEP Malo Peshtene 81.75 359 *eP* **P** **21 13 44.0 -1.5**
LAMP Lampang 81.76 290 P **P** **21 13 48.6 +2.7**
comp=Z,4,3nm,0.6s
PRD Provadia 81.80 356 *eP* **P** **21 13 45.0 -0.8**
KBL Kabul 81.88 322 *eP* **P** **21 13 45.6 -1.0**
KBL pmax pmax
comp=Z,9.0nm,0.7s
KBL Kabul 81.88 322 *eP* **P** **21 13 45.6 -1.0**
comp=Z,8.9nm,0.7s
CMMT Chiang Mai 81.89 291 P **P** **21 13 47.0 +0.4**
comp=Z,9.4nm,1.8s
CHTO Chiang Mai 81.89 291 P **P** **21 13 47.1 +0.5**
comp=Z,50nm,1.0s
CHTO Chiang Mai 81.89 291 *eP* **P** **21 13 46.4 -0.2**
CHTO pmax pmax
comp=Z,34nm,1.8s
CHTO Chiang Mai 81.89 291 *eP* **P** **21 13 46.4 -0.2**
comp=Z,34nm,1.8s
UTTA Uttaradit 81.90 289 P **P** **21 13 47.6 +0.9**
comp=Z,3.6nm,0.6s,comp=Z,41nm
AKH Akhalkalaki 81.96 344⇓*iP* **P** **21 13 48.0 +1.1**
AKH Akhalkalaki 81.96 344 P **P** **21 13 47.6 +0.6**
AKH Akhalkalaki 81.96 344 *eP* **P** **21 13 47.5 +0.6**
PYUN Piuthan 81.98 309 *eP* **P** **21 13 47.4 +0.1**
comp=Z,37nm,0.6s
KOLN Koldanda 81.99 308 *eP* **P** **21 13 47.3 0.0**
comp=Z,18nm,0.5s
PCBR Castelo Branco 82.00 22 *eP* **P** **21 13 47.4 +0.5**
comp=Z,22nm,1.9s
PCBR *epP* **sP** **21 14 00.4 +0.7**
PTOM Tomar 82.00 23 *eP* **P** **21 13 48.0 +1.1**
comp=Z,30nm,1.6s
BGD Bogdanovka 82.09 344 P **P** **21 13 48.4 +0.7**
GEYT Alibeck 82.15 332 P **P** **21 13 48.7 +0.9**
comp=Z,8.6nm,0.6s,baz=328,slow=5.4,SNR=22
GEYT sP **sP** **21 14 00.8 +0.3**
comp=Z,7.4nm,0.6s,baz=328,slow=7.0,SNR=5.3
GEYT LR LR 21 55 17.2
comp=Z,905nm,18.6s,baz=15,slow=39
CM31 Chiang Mai Arr 82.18 291 *eP* **P** **21 13 48.4 +0.2**
CMAR Chiang Mai Arr 82.18 291 P **P** **21 13 48.4 +0.2**
comp=Z,12nm,0.7s,baz=17,slow=4.9,SNR=53
CMAR LR LR 21 54 33.9
comp=Z,232nm,18.4s,baz=25,slow=39
CM01 Chiang Mai Arr 82.20 291 *eP* **P** **21 13 46.7 -1.5**
RUSC La Rusia 82.34 91 *eP* **P** **21 13 48.9 -0.7**
RUSC La Rusia 82.34 91 *eP* **P** **21 13 49.1 -0.5**
comp=Z,30nm,1.7s
PMRV Marv??o 82.41 22 *eP* **P** **21 13 49.5 +0.4**
comp=Z,28nm,1.6s
PMRV Marv??o 82.41 22 *e*LR LR 21 45 59.0
comp=Z,278nm,20.0s
ROSC El Rosal 82.49 92 LR LR 21 51 21.2
comp=Z,59nm,21.8s,baz=249,slow=36
VTS Vitosha 82.52 359⇑*iP* **P** **21 13 49.1 -0.7**
VTS Vitosha 82.52 359 *eP* **P** **21 13 49.8 0.0**
VTS pmax pmax
comp=Z,30nm,1.5s
VTS Vitosha 82.52 359 *eP* **P** **21 13 49.0 -0.7**
VTS Vitosha 82.52 359 *eP* **P** **21 13 49.8 0.0**
comp=Z,30nm,1.5s
SUKH Sukhothai 82.61 290 P **P** **21 13 54.4 +4.0**
comp=Z,2.5nm,0.5s
PBKT Sadao Pong 82.64 288 P **P** **21 13 51.3 +0.8**
comp=Z,15nm,1.5s
PDG Podgorica 82.66 2⇑*iP* **P** **21 13 50.3 0.0**
DZM Mont Dzumac 82.75 213 *e*LR LR 21 39 43.8
comp=Z,472nm,23.2s
ES19 SONSECA Array 82.87 20 *eP* **P** **21 13 52.1 +0.6**
ESDC Sonseca Array 82.89 20 P **P** **21 13 52.1 +0.5**
comp=Z,5.8nm,0.6s,baz=342,slow=4.7,SNR=53
ESDC sP **sP** **21 14 04.9 +0.5**
comp=Z,14nm,1.0s,baz=346,slow=5.9,SNR=9.4
ESDC LR LR 21 53 10.3
comp=Z,141nm,19.7s,baz=315,slow=37
ESLA Sonseca Array 82.89 20 *eP* **P** **21 13 52.3 +0.7**
comp=Z,50nm,1.3s
PAB San Pablo 82.93 20 *eP* **P** **21 13 52.4 +0.5**
PAB *e**PP **sP** **21 14 04.9 +0.2**
PAB pmax pmax
comp=Z,28nm,1.4s
PAB San Pablo 82.93 20 *eP* **P** **21 13 52.4 +0.5**
comp=Z,28nm,1.4s
PAB *epP* **sP** **21 14 04.9 +0.2**
GNI Garni 82.98 343 P **P** **21 13 52.7 +0.4**
comp=Z,6.0nm,0.6s,baz=301,slow=7.5,SNR=3.7
GNI sP **sP** **21 14 05.2 +0.2**
comp=Z,21nm,1.1s,baz=325,slow=21,SNR=4.1
KDZ Kurdzhali 83.42 357 *eP* **P** **21 13 54.0 -0.3**
PNCL Nicolau / Gran 83.42 24 *eP* **P** **21 13 55.1 +0.8**
comp=Z,46nm,1.2s
PNCL *epP* **sP** **21 14 07.9 +0.8**
PBAR Barrancos 83.69 23 *eP* **P** **21 13 56.5 +0.8**
comp=Z,132nm,1.3s
PBAR *epP* **sP** **21 14 09.4 +0.9**
NVR Nevrokopi 83.75 359 P **P** **21 13 55.9 -0.1**
KNT Kendrikon 83.95 359 P **P** **21 13 57.7 +0.7**
SRS Serrai 83.98 359 P **P** **21 13 57.6 +0.4**
UMPA Umpang Tak 84.08 290 P **P** **21 14 02.5 +4.5**
comp=Z,6.0nm,0.6s,comp=Z,66nm
ALN Alexandroupoli 84.15 357 P **P** **21 13 57.7 -0.3**
GRG Griva 84.16 360 P **P** **21 13 58.7 +0.6**
PVAQ Vaqueiros 84.28 23 *eP* **P** **21 13 59.7 +1.0**
comp=Z,44nm,1.4s
PVAQ *epP* **sP** **21 14 09.8 -1.7**
PVAQ Vaqueiros 84.28 23 *e*LR LR 21 45 48.2
comp=Z,250nm,18.0s
FNA Florina 84.33 0 P **P** **21 13 55.7 -3.3**
ANTO Ankara 84.79 352 *eP* **P** **21 14 02.8 +1.5**
ANTO pmax pmax
comp=Z,114nm,1.6s
ANTO Ankara 84.79 352 *eP* **P** **21 14 02.8 +1.5**
comp=Z,114nm,1.6s
BR231 Keskin MP Arra 84.82 352 *eP* **P** **21 14 02.3 +0.8**
BR101 Keskin Array S 84.86 351 *eP* **P** **21 14 02.2 +0.4**
BR101 *epP* **sP** **21 14 14.7 +0.1**
BR131 Keskin Array S 84.86 351 *eP* **P** **21 14 02.2 +0.4**
BRTR Keskin Array B 84.86 351 P **P** **21 14 02.2 +0.4**
comp=Z,5.3nm,0.8s,baz=38,slow=2.2,SNR=32
BRTR sP **sP** **21 14 14.7 +0.1**
comp=Z,5.0nm,0.7s,baz=17,slow=2.2,SNR=8.7
BRTR LR LR 21 58 21.2
comp=Z,134nm,19.9s,baz=8.0,slow=40
CUC Castrocucco 84.98 5 *eP* **P** **21 14 01.8 -0.4**
comp=Z,20nm,1.3s
LIT Litokhoron 85.01 360 P **P** **21 14 01.4 -1.0**
SRDT SRDT 85.47 289 P **P** **21 14 07.8 +2.8**
comp=Z,53nm,0.9s,comp=Z,3µm
XOR Xorichti 85.74 359 P **P** **21 14 02.9 -3.1**
TIP Timpagrande 85.83 4 *eP* **P** **21 14 05.7 -0.9**
comp=Z,48nm,1.5s
RAO Raoul Island 85.87 197 LR LR 21 48 48.4
comp=Z,2µm,18.1s,baz=352,slow=33
AGG Agios Georgios 86.09 360 *eP* **P** **21 14 07.5 -0.3**
AGG *e**PP **sP** **21 14 20.7 +0.1**
AGG Agios Georgios 86.09 360 *eP* **P** **21 14 07.5 -0.3**
AGG *ep*P **sP** **21 14 20.6 +0.1**
PHET Kaeng Krachan 86.37 287 P **P** **21 14 10.8 +1.3**
GUR Goura 87.17 360 P **P** **21 14 13.1 -0.1**
CLTB Caltabellotta 87.23 7 *eP* **P** **21 14 14.2 +0.7**
comp=Z,28nm,1.2s
KEST Kesra 88.73 10 P **P** **21 14 20.2 -0.5**
comp=Z,2.3nm,0.6s,baz=262,slow=1.3,SNR=4.3
KEST LR LR 21 58 47.4
comp=Z,188nm,18.7s,baz=322,slow=39
KEST Kesra 88.73 10 *eP* **P** **21 14 20.2 -0.5**
comp=Z,21nm,1.4s
LAST Lasithi 89.89 357 *eP* **P** **21 14 25.4 -0.7**
comp=Z,95nm,1.6s
IPM Ipoh 92.53 281 *eP* **P** **21 14 38.7 +0.2**
comp=Z,8.0nm,0.7s
WR1 Warramunga Arr 94.16 241 *eP* **P** **21 14 44.6 -1.2**
comp=Z,25nm,1.6s
WRA Warramunga Arr 94.16 241 P **P** **21 14 44.6 -1.2**
comp=Z,0.7nm,0.7s,baz=35,slow=5.7,SNR=7.0
AS31 Alice Springs 97.51 239 *eP* Pdif 21 15 00.9 -0.1
comp=Z,1.2nm,0.9s
ASAR Alice Springs 97.51 239 P Pdif 21 15 00.9 -0.1
comp=Z,0.3nm,0.5s,baz=27,slow=4.8,SNR=3.6
TOA1 Torodi Ar. Sit 109.75 21 *e*PKiKP **PKiKP** **21 19 56.8 -1.3**
TORD Torodi Ar. Bea 109.75 21 PKiKP **PKiKP** **21 19 56.8 -1.3**
comp=Z,0.7nm,1.1s,baz=341,slow=3.0,SNR=5.8
QSPA South Pole Qui 145.04 180 *e*PKPbc **PKPab** **21 21 02.2 -0.2**
LBTB Lobatse 149.67 353 *e*PKP2 **PKPbc** **21 21 17.2 +0.6**
LBTB Lobatse 149.67 353 PKPbc **PKPbc** **21 21 17.2 +0.6**
BOSA Boshof 153.27 353 PKPbc **PKPbc** **21 21 23.5 -1.3**
comp=Z,3.4nm,0.9s,baz=57,slow=1.6,SNR=3.9

*IDC **04** 21:02:37.4±2.5,35°.61N×141°.28E,h0km,mb3.6/4, mb1 3.7/6,mb1mx3.5/48,mbtmp3.5/6,ML3.3/2,MS3.1/1, Ms1 3.1/1,ms1mx2.6/36,Error ellipse: s-maj=66.2km s-min=22.8km az=65.0*
*ISCJB **04** 21:02:41.2±1.1,35°.54N±0°.05×141°.2E±0°.1,h33km, mb3.7/4,Error ellipse: s-maj=12.5km s-min=7.0km az=163.0*
*JMA **04** 21:02:43.4±0.1,35°.54N×140°.99E,h42km±1km,M3.1*
ISC 04 21:02:43.1±1.3,35°.54N±0°.06×141°.0E±0°.1,h33km,n21, σ1§53/18,mb3.6/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.22**	**318**	P	**Pn**	**21 02 50.9**	**+1.2**
CHOJ				S	**Sb**	**21 02 56.1**	**+1.6**
JCN	**Nagara**	**0.70**	**260**	P	**Pb**	**21 02 57.1**	**+0.3**
JCN				*e*S	**Sn**	**21 03 06.6**	**+0.4**
KTR	**Katsuura**	**0.71**	**237**	P	**Pb**	**21 02 56.8**	**-0.3**
BSO4	**Boso 4**	**0.80**	**227**	P	**Pb**	**21 02 57.7**	**-0.7**
BSO3	**Boso 3**	**0.85**	**211**	P	**Pb**	**21 02 58.4**	**-0.9**
BSO1	**Boso 1**	**0.89**	**183**	P	**Pb**	**21 02 59.2**	**-0.4**
JYT	**Yasato**	**0.97**	**315**	P	**Pn**	**21 03 00.6**	**+0.2**
MJAR	**Matsushiro Arr**	**2.50**	**294**	Pn	**Pn**	**21 03 22.7**	**+1.2**
	2.4nm,0.3s,baz=100,slow=14,SNR=15						
MAT	**Matsushiro**	**2.51**	**294**	P	**Pn**	**21 03 23.1**	**+1.6**
MAT				*e*S	**Sn**	**21 03 46.2**	**-4.8**
JHJ	**Hachijo jima 2**	**2.63**	**204**	Pn	**Pn**	**21 03 23.5**	**+0.4**
	28nm,0.3s,baz=114,slow=22,SNR=9.4						
JHJ				Sn	**Sn**	**21 03 54.9**	**+0.9**
	28nm,0.3s,baz=52,slow=19,SNR=4.4						
JNU	**Nakatsue**	**8.74**	**257**	LR	LR	21 08 41.1	
	comp=Z,125nm,18.8s,baz=120,slow=41						
H11N2	**WAKE ISLAND Hy**	**27.68**	**118**	T	T	21 37 35.4	
	baz=310,slow=74,SNR=17						
H11N1	**WAKE ISLAND Hy**	**27.69**	**118**	T	T	21 37 35.6	
	baz=310,slow=74,SNR=17						
H11N3	**WAKE ISLAND Hy**	**27.70**	**118**	T	T	21 37 39.4	
	baz=310,slow=74,SNR=18						
H11S1	**WAKE ISLAND Hy**	**28.34**	**120**	T	T	21 38 24.1	
	baz=312,slow=75,SNR=71						
H11S3	**WAKE ISLAND Hy**	**28.34**	**120**	T	T	21 38 20.2	
	baz=312,slow=75,SNR=56						
H11S2	**WAKE ISLAND Hy**	**28.35**	**120**	T	T	21 38 24.6	
	baz=312,slow=75,SNR=54						
MKAR	**Makanchi Array**	**44.67**	**303**	P	**P**	**21 10 52.6**	**0.0**
	0.2nm,0.3s,baz=83,slow=10,SNR=2.9						
KURBB	**Kurchatov Arra**	**46.70**	**309**	P	**P**	**21 11 08.0**	**-0.5**
	0.5nm,0.7s,baz=84,slow=7.5,SNR=8.3						
WRA	**Warramunga Arr**	**55.54**	**188**	P	**P**	**21 12 14.3**	**-0.9**
	1.7nm,1.0s,baz=1.6,slow=7.9,SNR=9.7						
ASAR	**Alice Springs**	**59.27**	**188**	P	**P**	**21 12 42.1**	**+0.7**
	0.4nm,0.6s,baz=7.9,slow=14,SNR=3.5						

*NNC **04** 21:28:27.9±3.8,44°.80N×81°.34E,h0km,mb2.5,mpv2.1, Error ellipse: s-maj=106.7km s-min=9.1km az=118.0*
*SOME **04** 21:28:29.4,44°.72N×81°.33E,h20km*
ISC 04 21:28:27.5±3.5,44°.71N±0°.06×81°.44E±0°.08,h4km±28km, n8,σ0§47/16,5C-2D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**1.24**	**253**⇓*iP*		**Pn**	**21 28 51.1**	**-0.5**
	7.1nm,0.1s						
DJR				*e*S	**Sb**	**21 29 07.1**	**-0.6**
	21nm,0.3s						
KAPS	**Kapalarasan**	**1.59**	**292**	*e*P	**Pn**	**21 28 56.9**	**+0.5**
	1.8nm,0.1s						
KAPS				*e*S	**Sn**	**21 29 16.9**	**-0.5**
	9.6nm,0.2s						
SHLS	**Shalkode**	**1.91**	**216**	*e*P	**Pb**	**21 29 02.8**	**-0.2**
	2.7nm,0.2s						
SHLS				*e*S	**Sb**	**21 29 27.8**	**+0.4**
	44nm,0.3s						
PDGK	**Podgornoye**	**1.97**	**226**	⇑Pn	**Pn**	**21 29 01.8**	**+0.2**
	0.5nm,0.3s						
PDGK				⇑Sn	**Sb**	**21 29 29.7**	**+0.9**
	33nm,0.7s						
MAKZ	**Makanchi**	**2.13**	**10**	⇑Pn	**Pb**	**21 29 06.6**	**-0.1**
	0.7nm,0.5s						
MAKZ				⇓Sn	**Sn**	**21 29 31.0**	**+0.1**
	3.7nm,0.5s						
MK31	**Makanchi Array**	**2.17**	**16**	⇑Pn	**Pn**	**21 29 04.2**	**-0.1**
	0.6nm,0.5s,baz=197,slow=15,SNR=8.2						
MK31				⇑Sn	**Sn**	**21 29 31.7**	**-0.1**
	1.1nm,0.3s,baz=193,slow=17,SNR=16						
UZB	**Uzynbulak**	**2.34**	**229**	*e*P	**Pb**	**21 29 10.1**	**-0.2**
	0.8nm,0.3s						
UZB				*e*S	**Sb**	**21 29 39.5**	**0.0**
	9.6nm,0.3s						
ARXS	**Arharly**	**2.63**	**260**	*e*P	**Pb**	**21 29 15.3**	**0.0**
	2.1nm,0.5s						
ARXS				*e*S	**Sb**	**21 29 48.6**	**+0.6**
	7.2nm,0.4s						

*IDC **04** 21:30:47.8±0.8,13°.63N×121°.16E,h118km±5km,mb3.1/6, mb1 3.3/6,mb1mx3.1/45,mbtmp3.5/6,Error ellipse: s-maj=47.5km s-min=16.2km az=62.0*
ISC 04 21:30:47.0±1.1,13°.3N±0°.1×120°.8E±0°.2,h100km,n9, σ2§11/10,mb3.4/6,1C-1D,Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGY	**Tagaytay City**	**0.80**	**12**	P	**Pn**	**21 31 07.5**	**+2.0**
	270nm,0.3s,baz=202,slow=2.2,SNR=17						
TGY				S	**Sn**	**21 31 20.7**	**+1.4**
	494nm,0.3s,baz=56,slow=22,SNR=40						
TGY	**Tagaytay City**	**0.80**	**12**⇓*iP*		**Pn**	**21 31 07.4**	**+2.0**
TGY				*i*S	**Sn**	**21 31 18.6**	**-0.7**
LQP	**Lukban**	**1.10**	**44**⇑*e*P		Pn	21 31 11.0	+2.3
LQP				*e*S	Sn	21 31 31.4	+6.4
CMAR	**Chiang Mai Arr**	**21.59**	**287**	P	**P**	**21 35 31.6**	**+2.7**
	1.0nm,0.7s,baz=97,slow=8.1,SNR=11						
WRA	**Warramunga Arr**	**35.65**	**158**	P	**P**	**21 37 35.4**	**-0.2**
	0.4nm,0.5s,baz=336,slow=9.7,SNR=6.0						
SONM	**Songino Array**	**36.44**	**344**	P	**P**	**21 37 40.4**	**-1.8**
	0.2nm,0.5s,baz=164,slow=9.8,SNR=3.6						
ASAR	**Alice Springs**	**38.94**	**161**	P	**P**	**21 38 03.5**	**+0.2**
	0.2nm,0.5s,baz=349,slow=13,SNR=5.5						
MKAR	**Makanchi Array**	**46.38**	**324**	P	**P**	**21 39 02.1**	**-1.1**
	0.5nm,0.7s,baz=133,slow=8.9,SNR=3.4						
ZALV	**Zalesovo Beam**	**49.42**	**333**	P	**P**	**21 39 23.6**	**-2.9**
	0.5nm,0.4s,baz=131,slow=6.3,SNR=2.8						

IDC 04 21:35:32.9±6.2,17°.22S×177°.24W,h0km,mb4.0/2, mb1 4.3/2,mb1mx3.6/29,mbtmp4.0/2,Error ellipse: s-maj=292.7km s-min=45.2km az=144.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**45.86**	**259**	P	P	21 43 56.9	-0.5
	0.6nm,0.7s,baz=95,slow=7.9,SNR=13						
ASAR	**Alice Springs**	**46.05**	**254**	P	P	21 43 59.2	+0.4
	2.6nm,0.4s,baz=89,slow=8.0,SNR=54						
BRTR	**Keskin Array B**	**145.08**	**316**	PKPbc	PKPbc	21 55 10.5	-1.7
	0.3nm,0.6s,baz=50,slow=4.5,SNR=2.5						
GERES	**GERESS Array B**	**147.22**	**347**	PKPbc	PKPbc	21 55 18.5	+0.1
	0.2nm,0.3s,baz=40,slow=2.3,SNR=3.6						

*ISCJB **04** 21:36:52.4±0.4,24°.24N±0°.02×121°.81E±0°.02,h6km±3km, Error ellipse: s-maj=3.5km s-min=2.4km az=135.8*
*TAP **04** 21:36:52.3,24°.25N×121°.76E,h17km,ML3.3,B*
*JMA **04** 21:36:52.3±0.1,24°.25N×121°.74E,h12km±2km,M2.4*
ISC 04 21:36:52.6±0.8,24°.24N±0°.02×121°.77E±0°.02,h16km±5km, n51,σ0§78/76,9C-1D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.07**	**339**	*i*P	**Pg**	**21 36 56.0**	**+0.3**
	baz=351						
EHP				*i*S	**Sg**	**21 36 58.3**	**+0.5**
	baz=351						
ENA	**Nanau**	**0.18**	**352**⇑*iP*		**Pg**	**21 36 56.9**	**-0.2**
	baz=355						
ENA				*i*S	**Sg**	**21 36 59.8**	**-0.3**
	baz=355						
TWD	**Chiawan**	**0.23**	**224**⇓*iP*		**Pg**	**21 36 57.5**	**-0.2**
	baz=229						
TWD				*i*S	**Sb**	**21 37 01.3**	**-0.9**
	baz=229						
HWA	**Hwalien**	**0.30**	**209**	*e*P	**Pb**	**21 36 59.4**	**-0.3**
	baz=212						
TWC	**Suao**	**0.37**	**11**⇑*iP*		**Pg**	**21 37 00.2**	**-0.1**
	baz=8.0						
TWC				*i*S	**Sg**	**21 37 05.3**	**-0.1**
	baz=8.0						
NNS	**Nan Shan**	**0.41**	**298**⇑*iP*		**Pb**	**21 37 01.0**	**-0.6**
	baz=299						
NNS				*e*S	**Sg**	**21 37 06.0**	**-0.7**
	baz=299						
ENTT	**Nioudou**	**0.43**	**335**⇑*iP*		**Pb**	**21 37 01.4**	**-0.6**
	baz=334						
ENTT				*i*S	**Sb**	**21 37 07.4**	**-0.9**
	baz=334						
WHF	**Hehuan Shan**	**0.47**	**258**⇑*iP*		**Pb**	**21 37 02.0**	**-0.8**
	baz=259						
WHF				S	**Sg**	**21 37 08.2**	**-0.5**
	baz=259						
TWE	**Neicheng**	**0.48**	**349**⇑*iP*		**Pb**	**21 37 02.2**	**-0.5**
	baz=349						
TWE				*i*S	**Sb**	**21 37 09.1**	**-0.5**
	baz=349						
ILA	**Ilan**	**0.52**	**358**	*e*P	**Pb**	**21 37 02.8**	**-0.6**
	baz=350						
ESL	**Shilin**	**0.53**	**216**	*e*P	**Pg**	**21 37 02.8**	**-0.3**
	baz=222						
TWT	**Tachien**	**0.54**	**271**⇑*iP*		**Pb**	**21 37 03.8**	**0.0**
	baz=272						
TWT				S	**Sb**	**21 37 11.0**	**-0.5**
	baz=272						
NSK	**Sanguang**	**0.57**	**319**⇑*iP*		**Pb**	**21 37 03.9**	**-0.4**
	baz=319						
NSK				S	**Sb**	**21 37 11.3**	**-0.9**
	baz=319						
EGS		**0.62**	**14**	*e*P	**Pb**	**21 37 04.8**	**-0.3**
	baz=19						
TWA	**Mucha**	**0.75**	**347**	*e*P	**Pb**	**21 37 07.3**	**0.0**
	baz=347						
TWB1	**Santiao Chiao**	**0.79**	**15**	*e*P	**Pg**	**21 37 07.4**	**-0.5**
	baz=6.0						
NSTT	**Nanjuang**	**0.80**	**299**	*e*P	**Pn**	**21 37 08.3**	**-1.0**
	baz=299						
NSTT				S	**Sb**	**21 37 18.8**	**+0.1**
	baz=299						
NWF	**Wu-fen Shan**	**0.82**	**1**	*e*P	**Pb**	**21 37 08.6**	**0.0**
	baz=351						
NWF				*e*S	**Sb**	**21 37 19.5**	**-0.1**
	baz=351						
SMLT	**Sun Moon Lake**	**0.87**	**246**	*e*P	**Pb**	**21 37 09.4**	**-0.1**
	baz=241						
SMLT				*e*S	**Sb**	**21 37 20.8**	**-0.1**
	baz=241						
NCU	**National Centr**	**0.90**	**324**	*e*P	**Pn**	**21 37 11.3**	**+0.7**
	baz=323						
TYC	**Yuchr**	**0.90**	**248**	*e*P	**Pn**	**21 37 09.9**	**-0.7**
	baz=243						
TYC				*e*S	**Sg**	**21 37 21.5**	**-0.4**
	baz=243						
TWS1	**Kuangyinshan**	**0.91**	**340**	*e*P	**Pn**	**21 37 10.8**	**+0.1**
	baz=339						
TWQ1	**Liyutan**	**0.92**	**277**	*e*P	**Pn**	**21 37 10.5**	**-0.4**
	baz=277						
TWQ1				*e*S	**Sn**	**21 37 24.6**	**+0.8**
	baz=277						
HSN	**Hsinchu**	**0.92**	**308**	*e*P	**Pn**	**21 37 10.7**	**-0.2**
	baz=301						
NSY	**Sanyi**	**0.94**	**281**	*e*P	**Pn**	**21 37 11.8**	**+0.6**
	baz=273						
NSY				*e*S	**Sn**	**21 37 25.4**	**+1.1**
	baz=273						
TWF1	**Yuli**	**0.99**	**206**	*e*P	**Pb**	**21 37 10.5**	**-0.9**
	baz=219						
TCU	**Taichung**	**1.00**	**265**	*e*P	**Pn**	**21 37 13.2**	**+1.2**
	baz=266						
TCU				*e*S	**Sn**	**21 37 29.0**	**+3.1**
	baz=266						
TWY	**Chenhua**	**1.04**	**352**	*e*P	**Pn**	**21 37 12.4**	**-0.1**
	baz=335						
TWY				*e*S	**Sn**	**21 37 28.1**	**+1.3**
	baz=335						
WNT	**Mingjian**	**1.06**	**250**	*e*P	**Pn**	**21 37 13.3**	**+0.5**
	baz=249						
WNT				*e*S	**Sn**	**21 37 29.4**	**+2.2**
	baz=249						
YUS	**Yu-Shan**	**1.06**	**225**	*e*P	**Pb**	**21 37 12.5**	**-0.4**
	baz=227						
JYNG	**Yonagunijimaku**	**1.09**	**79**	P	**Pn**	**21 37 13.4**	**+0.1**
ALS	**Alishan**	**1.15**	**231**⇑*iP*		**Pg**	**21 37 14.4**	**-0.4**
	baz=232						
YOJ	**Yonaguni jima**	**1.15**	**79**	P	**Pb**	**21 37 14.4**	**+0.2**
YOJ				*e*S	**Sn**	**21 37 29.9**	**+0.3**
YOJ	**Yonaguni jima**	**1.15**	**79**	P	**Pg**	**21 37 14.7**	**-0.2**
	baz=67						
CHN5	**Tsauling**	**1.19**	**237**	*e*P	**Pg**	**21 37 15.7**	**+0.1**
	baz=241						
CHN5				S	**Sg**	**21 37 32.8**	**+1.7**
	baz=241						
CHKT	**Chengkung**	**1.20**	**198**	*e*P	**Pn**	**21 37 14.4**	**-0.3**
	baz=187						
WGK	**Gukeng**	**1.24**	**244**	*e*P	**Pg**	**21 37 15.8**	**-0.6**
	baz=245						
ELDTW	**Lidau**	**1.26**	**213**	*e*P	**Pn**	**21 37 15.5**	**-0.2**
	baz=202						
CHN4	**Tsaushan**	**1.40**	**231**	*e*P	**Pg**	**21 37 18.7**	**-0.8**
	baz=235						
CHN4				*e*S	**Sg**	**21 37 38.7**	**+1.0**
	baz=235						
PCYT	**Pengchaiyu**	**1.41**	**11**	*e*P	**Pn**	**21 37 17.8**	**+0.2**
	baz=8.0						
STYT	**Tauyuan**	**1.42**	**221**	*e*P	**Pb**	**21 37 18.5**	**-0.3**
	baz=225						
STYT				*e*S	**Sg**	**21 37 38.6**	**+0.2**
	baz=225						
CHY	**Chiayi**	**1.44**	**239**	*e*P	**Pb**	**21 37 19.0**	**0.0**
	baz=228						
WTP	**Ta-pu**	**1.45**	**227**	*e*P	**Pg**	**21 37 19.9**	**-0.6**
	baz=229						
TWK	**Hsinying**	**1.52**	**231**	*e*P	**Pg**	**21 37 21.1**	**-0.8**
	baz=233						
SGST	**Jiashian**	**1.59**	**223**	*e*P	**Pg**	**21 37 22.4**	**-0.8**
	baz=228						
SGST				*e*S	**Sg**	**21 37 44.0**	**+0.2**
	baz=228						
IRIF	**Iriomote-Funau**	**1.79**

IDC ***04*** *21:42:09.9±0.6,23˚.45S×175˚.41W,h0km,mb4.8/18, mb1 4.9/18,mb1mx4.8/29,mbtmp4.8/18,MS4.4/21, Ms1 4.4/21,ms1mx4.3/33,Error ellipse: s-maj=20.3km s-min=17.8km az=140.0*

ISCJB ***04*** *21:42:11.7±2.8,23˚.50S±0˚.06×175˚.47W±0˚.04, h15km±17km,mb5.2/128,MS4.5/45,Error ellipse: s-maj=9.8km s-min=5.4km az=157.5*

MOS ***04*** *21:42:14.8±1.9,23˚.45S×175˚.55W,h33km,mb5.2/32, MS4.7/20,Error ellipse: s-maj=10.5km s-min=9.4km az=113.8*

BJI ***04*** *21:42:15.5,23˚.17S×175˚.06W,h45km,mb5.4/45, mB5.5/33,Ms5.0/28,Ms7 4.7/30*

NEIC ***04*** *21:42:18.1±1.4,23˚.52S×175˚.55W,h56km±12km,mb5.1/74, Error ellipse: s-maj=7.9km s-min=5.5km az=146.0*

ISC 04 21:42:15.2±0.3,23˚.54S±0˚.06×175˚.42W±0˚.06,h33km±1km, h33km:pP-P,n436,σ1$47/481,mb5.2/126,MS4.6/46, 43C-20D,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
MSVF	**Nonsavu**	**8.41**	**312**	*c*	*i*P	**Pn**	**21 44 18.7**	**+3.8**
MSVF	**Nonsavu**	**8.41**	**312**		*e*Pn	**Pn**	**21 44 18.0**	**+3.1**
RAR	**Rarotonga**	**14.66**	**84**	Pn		Pn	21 45 29.7	-11
	5.7nm,0.3s,baz=243,slow=5.4,SNR=8.7							
RAR				LR		LR	21 50 09.2	
	comp=Z,2μm,19.4s,baz=275,slow=33							
URZ	**Urewera**	**16.00**	**202**	Pn		**P**	**21 46 01.1**	**+0.2**
	1.1nm,0.3s,baz=297,slow=2.3,SNR=3.2							
URZ				Sn		Sn	21 48 42.4	-12
	1.1nm,0.3s,baz=45,slow=14,SNR=3.3							
DZM	**Mont Dzumac**	**16.79**	**271**		*e*P	**P**	**21 46 09.5**	**-0.4**
	118nm,1.1s							
DZM					*e*LR	LR	21 50 07.2	
	1μm,21.7s							
DZM	**Mont Dzumac**	**16.79**	**271**	Pn		**P**	**21 46 11.8**	**+1.9**
	1.2nm,0.3s,baz=83,slow=17,SNR=16							
DZM	**Mont Dzumac**	**16.79**	**271**		*e*Pn	**P**	**21 46 11.8**	**+1.9**
	57nm,1.1s							
BKZ	**Black Stump Fm**	**17.02**	**202**		*e*Pn	**Pn**	**21 46 05.7**	**-5.1**
	77nm,1.5s							
THZ	**Tophouse**	**20.62**	**205**		*e*P	**P**	**21 46 49.4**	**-2.3**
	54nm,1.5s							
KHZ	**Kahutara**	**20.94**	**203**		*e*P	**P**	**21 46 52.3**	**-2.8**
	54nm,1.3s							
FOZ	**Fox Glacier**	**23.36**	**208**		*e*P	**P**	**21 47 21.0**	**+0.3**
	104nm,1.6s							
TBI	**Tubuai**	**23.81**	**95**		*e*LR	LR	21 52 56.0	
	2μm,22.5s							
PPT2	**Papeete2**	**24.89**	**81**		*e*LR	LR	21 53 21.4	
	2μm,22.0s							
PPT	**Papeete**	**24.90**	**81**	LR		LR	21 55 02.1	
	comp=Z,1μm,20.6s,baz=270,slow=31							
HNR	**Honiara**	**27.41**	**297**	LR		LR	21 58 20.6	
	comp=Z,578nm,19.2s,baz=156,slow=36							
HNR	**Honiara**	**27.41**	**297**		*e*P	**P**	**21 47 55.5**	**-2.4**
HNR				pmax		pmax		
	comp=Z,123nm,1.1s							
HNR	**Honiara**	**27.41**	**297**		*e*P	**P**	**21 47 55.5**	**-2.4**
	comp=Z,123nm,1.1s							
EIDS	**Eidsvold**	**30.50**	**260**		*e*P	**P**	**21 48 25.2**	**-0.2**
	comp=Z,23nm,1.1s							
EIDS					*ep*P	**sP**	**21 48 38.0**	**-0.8**
CTA	**Charters Tower**	**35.67**	**268**	P		**P**	**21 49 09.8**	**-0.8**
	comp=Z,7.3nm,0.5s,baz=99,slow=11,SNR=10							
CTAO	**Charters Tower**	**35.67**	**268**		*e*P	**P**	**21 49 10.9**	**+0.3**
CTAO				pmax		pmax		
	comp=Z,52nm,1.4s							
CTAO	**Charters Tower**	**35.67**	**268**		*e*P	**P**	**21 49 10.9**	**+0.3**
	comp=Z,52nm,1.4s							
TAOE	**Nuku Hiva Isla**	**36.76**	**72**		*e*LR	LR	21 58 47.8	
	comp=Z,920nm,22.2s							
RKT	**Rikitea**	**37.06**	**98**		*e*LR	LR	21 59 02.0	
	comp=Z,881nm,21.8s							
PMG	**Port Moresby**	**38.40**	**285**	P		**P**	**21 49 33.2**	**-0.6**
	comp=Z,79nm,1.0s,baz=142,slow=2.6,SNR=11							
PMG	**Port Moresby**	**38.40**	**285**	*d*	*i*P	**P**	**21 49 33.5**	**-0.3**
PMG					*e**PP	**pP**	**21 49 44.7**	**+1.3**
PMG					*SP	**sP**	**21 49 47.8**	**+0.5**
PMG					pmax	pmax		
	comp=Z,342nm,1.0s							
PMG	**Port Moresby**	**38.40**	**285**		*e*P	**P**	**21 49 33.7**	**-0.1**
	comp=Z,85nm,0.9s							
PMG					*ep*P	**sP**	**21 49 45.9**	**-1.4**
STKA	**Stephens Creek**	**38.75**	**248**	P		**P**	**21 49 35.6**	**-0.9**
	comp=Z,7.7nm,1.1s,baz=101,slow=11,SNR=3.6							
STKA				LR		LR	22 05 20.5	
	comp=Z,826nm,18.0s,baz=64,slow=36							
STKA	**Stephens Creek**	**38.75**	**248**		*e*P	**P**	**21 49 35.6**	**-0.9**
	comp=Z,19nm,2.0s							
COEN	**Coen**	**40.23**	**276**		*e*P	**P**	**21 49 46.8**	**-2.3**
	comp=Z,22nm,1.0s							
BBOO	**Buckleboo**	**43.44**	**247**		*e*P	**P**	**21 50 13.0**	**-2.2**
	comp=Z,84nm,1.6s							
AS01	**Alice Springs**	**46.19**	**259**		*e*P	**P**	**21 50 36.1**	**-1.1**
AS31	**Alice Springs**	**46.23**	**259**		*e*P	**P**	**21 50 36.4**	**-1.1**
	comp=Z,3.2nm,0.9s							
AS31					*e*S	**S**	**21 57 20.6**	**-1.6**
ASAR	**Alice Springs**	**46.23**	**259**	P		**P**	**21 50 36.4**	**-1.1**
	comp=Z,9.4nm,0.9s,baz=93,slow=8.1,SNR=46							
ASAR				S		**S**	**21 57 20.6**	**-1.6**
	comp=Z,1.4nm,1.0s,baz=101,slow=15,SNR=6.0							
ASAR				LR		LR	22 10 12.7	
	comp=Z,882nm,18.5s,baz=108,slow=36							
WB2	**Warramunga Arr**	**46.60**	**264**		*e*P	**P**	**21 50 38.6**	**-1.9**
WRAB	**Tennant Creek**	**46.61**	**264**	⇑	*i*P	**P**	**21 50 39.6**	**-1.0**
WRAB					pmax	pmax		
	comp=Z,72nm,1.2s							
WRAB	**Tennant Creek**	**46.61**	**264**		*e*P	**P**	**21 50 39.5**	**-1.0**
	comp=Z,19nm,0.9s							
WR1	**Warramunga Arr**	**46.62**	**264**		*e*P	**P**	**21 50 39.2**	**-1.4**
	comp=Z,32nm,1.1s							
WR1					*e*PcP	**PcP**	**21 52 15.1**	**+0.8**
WRA	**Warramunga Arr**	**46.62**	**264**		P	**P**	**21 50 39.2**	**-1.4**
	comp=Z,7.6nm,0.6s,baz=104,slow=8.6,SNR=51							
WRA					PcP	**PcP**	**21 52 15.1**	**+0.8**
	comp=Z,3.4nm,0.9s,baz=94,slow=4.3,SNR=3.5							
WRA					S	**S**	**21 57 22.2**	**-5.6**
	comp=Z,2.1nm,1.2s,baz=105,slow=13,SNR=2.6							
WRA					LR	LR	22 10 31.1	
	comp=Z,908nm,18.2s,baz=90,slow=36							
JAY	**Jayapura**	**47.29**	**290**		LR	LR	22 10 15.0	
	comp=Z,12nm,18.4s,slow=36							
HPAH	**Hawaii Prepara**	**47.39**	**26**		*e*P	**P**	**21 50 42.4**	**-4.1**
	comp=Z,209nm,1.7s							
KIP	**Kipapa**	**47.80**	**22**		*e*P	**P**	**21 50 49.5**	**-0.1**
KIP					pmax	pmax		
	comp=Z,73nm,1.1s							
KIP	**Kipapa**	**47.80**	**22**		*e*P	**P**	**21 50 49.5**	**-0.1**
	comp=Z,73nm,1.1s							
FORT	**Forrest**	**50.36**	**249**		*e*P	**P**	**21 51 06.9**	**-2.4**
	comp=Z,273nm,0.9s							
ANA2	**Anatahan**	**54.90**	**313**		*e*P	**P**	**21 51 42.3**	**-0.7**
SBA	**Scott Base**	**55.02**	**185**		*e*P	**P**	**21 51 46.9**	**+3.9**
SBA					pmax	pmax		
	comp=Z,13nm,1.1s							
SBA	**Scott Base**	**55.02**	**185**		*e*P	**P**	**21 51 46.9**	**+3.9**
	comp=Z,13nm,1.1s							
FITZ	**Fitzroy Crossi**	**55.04**	**264**		*e*P	**P**	**21 51 43.2**	**-0.8**
	comp=Z,21nm,1.2s							
VNDA	**Vanda**	**55.12**	**186**	P		**P**	**21 51 45.4**	**+1.6**
	comp=Z,2.6nm,0.9s,baz=18,slow=6.9,SNR=11							
VNDA					LR	LR	22 12 23.8	
	comp=Z,168nm,20.4s,baz=22,slow=33							
VNDA	**Vanda**	**55.12**	**186**		*e*P	**P**	**21 51 45.4**	**+1.6**
VNDA					*ep*P	**sP**	**21 51 56.7**	**-0.9**
SOEI	**Soe**	**59.01**	**273**	P		**P**	**21 52 13.9**	**+1.6**
	comp=Z,108nm,1.2s							
SOEI	**Soe**	**59.01**	**273**		*e*P	**P**	**21 52 12.6**	**+0.3**
	comp=Z,144nm,1.2s							
EDFI	**Ende, Flores**	**61.74**	**273**	P		**P**	**21 52 29.2**	**-1.8**
CASY	**Casey**	**62.27**	**206**		*e*P	**P**	**21 52 35.1**	**+1.5**
CASY					*ep*P	**pP**	**21 52 44.7**	**+1.1**
PLAI	**Plampang**	**65.30**	**271**	P		**P**	**21 52 54.9**	**+0.5**
	comp=Z,44nm,0.9s							
TWSI	**Taliwang, Sumb**	**66.16**	**271**	P		**P**	**21 53 00.9**	**+1.0**
	comp=Z,26nm,1.2s							
QSPA	**South Pole Qui**	**66.54**	**180**		*e*P	**P**	**21 53 03.5**	**+1.7**
PCI	**Palu**	**66.56**	**280**	P		**P**	**21 53 04.8**	**+2.3**
	comp=Z,41nm,1.1s							
MIR	**Mirnyy**	**69.27**	**205**		*e*P	**P**	**21 53 20.0**	**+1.3**
MIR					pmax	pmax		
	comp=Z,4.0nm,2.0s							
MJAR	**Matsushiro Arr**	**74.06**	**323**	P		**P**	**21 53 46.7**	**-1.3**
	comp=Z,3.6nm,0.9s,baz=153,slow=5.4,SNR=7.9							
MJAR					LR	LR	22 22 24.2	
	comp=Z,110nm,21.8s,baz=70,slow=33							
MAJO	**Matsushiro**	**74.07**	**323**	⇑	*e*P	**P**	**21 53 46.6**	**-1.4**
MAJO					pmax	pmax		
	comp=Z,29nm,0.9s							
KSM	**Kuching**	**76.20**	**278**		*e*P	**P**	**21 54 00.1**	**-0.7**
KSM					*ep*P	**PcP**	**21 54 13.5**	**+0.8**
SMY	**Shemya**	**76.49**	**353**		*e*P	**P**	**21 54 00.5**	**-0.9**
SMY					*e*		21 54 06.1	
SMY	**Shemya**	**76.49**	**353**		*e*P	**P**	**21 54 00.5**	**-0.9**
SMY					*e*PcP	**pP**	**21 54 06.1**	**-5.7**
CGJI	**Cibinong**	**77.22**	**268**		P	**P**	**21 54 04.6**	**-1.9**
ASAJ	**Asahikawa**	**77.53**	**330**		P	**P**	**21 54 08.4**	**+0.9**
	comp=Z,54nm,0.9s,baz=211,slow=8.0,SNR=12							
ASAJ	**Asahikawa**	**77.53**	**330**		*e*P	**P**	**21 54 08.4**	**+0.9**
	comp=Z,104nm,1.1s							
TPUB	**Ta-pu**	**77.62**	**302**		*e*P	**P**	**21 54 07.2**	**-1.3**
	comp=Z,41nm,0.9s							
SSLB	**Suanglung**	**77.63**	**303**		*e*P	**P**	**21 54 07.0**	**-1.6**
	comp=Z,12nm,0.9s							
KASI	**Kota Agung**	**78.73**	**269**		P	**P**	**21 54 15.1**	**+0.1**
	comp=Z,50nm,1.0s							
LPIG	**La Paz**	**78.95**	**58**		LR	LR	22 23 05.2	
	comp=Z,447nm,19.1s,baz=202,slow=31							
MONP2	**Monument Peak**	**79.45**	**47**		P	**P**	**21 54 20.5**	**+1.8**
	baz=233							
PET	**Petropavlovsk**	**79.51**	**344**		*e*P	P	21 54 11.6	-6.6
PET					*e*S	**S**	**22 04 09.8**	**-7.3**
PET					pmax	pmax		
	comp=Z,100nm,15.6s							
PET					MLR	MLR		
	comp=Z,300nm,19.0s							
PET					MLR	MLR		
	comp=Z,300nm,13.0s							
MAW	**Mawson**	**79.51**	**199**		P	**P**	**21 54 18.9**	**+0.7**
	comp=Z,10nm,1.0s,baz=107,slow=7.0,SNR=9.4							
MAW	**Mawson**	**79.51**	**199**		*e*P	**P**	**21 54 18.9**	**+0.7**
	comp=Z,3.2nm,1.1s							
EDW2	**Edwards Air Fo**	**79.62**	**45**		P	**P**	**21 54 19.2**	**-0.2**
	baz=232							
YSS	**Yuzh-Sakhalins**	**79.68**	**332**	⇓	*e*P	**P**	**21 54 20.0**	**+0.7**
YSS					pmax	pmax		
	comp=Z,90nm,1.2s							
PEA0	**Petropavlovsk-**	**79.83**	**344**		*e*P	**P**	**21 54 19.3**	**-0.6**
PEA0B	**Petropavlovsk-**	**79.83**	**344**		*e*P	**P**	**21 54 20.3**	**+0.3**
PEA0B					*ep*P	**sP**	**21 54 33.8**	**-0.3**
PETK	**Petropavlovsk-**	**79.83**	**344**		P	**P**	**21 54 19.7**	**-0.3**
	comp=Z,25nm,0.9s,baz=121,slow=7.6,SNR=23							
PETK					LR	LR	22 23 27.9	
	comp=Z,308nm,21.9s,baz=156,slow=31							
PEA1	**Petropavlovsk-**	**79.83**	**344**		*e*P	**P**	**21 54 19.7**	**-0.3**
PFO	**Pinyon Flats O**	**79.86**	**47**		LR	LR	22 24 44.4	
	comp=Z,451nm,18.7s,baz=289,slow=32							
CMB	**Columbia Colle**	**80.12**	**41**		*e*P	**P**	**21 54 22.0**	**0.0**
CMB					*e**PP	**sP**	**21 54 38.8**	**+2.7**
CMB	**Columbia Colle**	**80.12**	**41**		*e*P	**P**	**21 54 22.0**	**0.0**
CMB					*ep*P	**sP**	**21 54 38.8**	**+2.7**
LHSI	**Lahat**	**80.29**	**270**		P	**P**	**21 54 24.5**	**+1.1**
	comp=Z,24nm,1.5s							
AFDM	**Forest Hills D**	**80.36**	**40**		*e*P	**P**	**21 54 23.8**	**+0.6**
	comp=Z,6.7nm,1.1s							
HEC	**Hector,Ludlow**	**80.67**	**46**		P	**P**	**21 54 24.8**	**-0.3**
	baz=233							
MPMC	**Manual Prospec**	**80.67**	**44**		P	**P**	**21 54 25.1**	**-0.1**
	baz=232							
KSRS	**Korea Array**	**80.74**	**318**		P	**P**	**21 54 25.5**	**+0.3**
	comp=Z,9.1nm,1.0s,baz=138,slow=6.2,SNR=27							
KSRS					LR	LR	22 25 13.0	
	comp=Z,121nm,21.5s,baz=124,slow=32							
KS15	**Wonju Array Si**	**80.75**	**318**		*e*P	**P**	**21 54 25.5**	**+0.2**
KSAR	**Wonju Array Be**	**80.75**	**318**		P	**P**	**21 54 25.5**	**+0.2**
KSAR	**Wonju Array Be**	**80.75**	**318**		P	**P**	**21 54 25.5**	**+0.2**
KS01	**Wonju Array Si**	**80.77**	**318**		*e*P	**P**	**21 54 25.4**	**0.0**
WAKR	**Walker**	**80.99**	**41**		*e*P	**P**	**21 54 28.0**	**+1.2**
	comp=Z,12nm,1.1s							
JMBI	**JAMBI**	**81.04**	**272**		P	**P**	**21 54 30.0**	**+2.6**
IRM	**Iron Mountain**	**81.06**	**47**		P	**P**	**21 54 27.3**	**+0.2**
	baz=234							
KSI	**Kapahiang**	**81.21**	**270**		P	**P**	**21 54 29.0**	**+0.6**
	comp=Z,65nm,1.2s							
TVH2	**Borealis Mine**	**81.33**	**42**		*e*P	**P**	**21 54 29.5**	**+0.8**
	comp=Z,4.4nm,1.1s							
GRAC	**Grapevine Rang**	**81.33**	**43**		P	**P**	**21 54 28.6**	**+0.1**
	baz=232							
YERR	**Yerington**	**81.42**	**41**		*e*P	**P**	**21 54 29.9**	**+0.8**
	comp=Z,13nm,1.3s							
Y14A	**Wickenburg**	**82.38**	**48**		*e*P	**P**	**21 54 36.1**	**+2.0**
Y14A					*ep*P	**sP**	**21 54 50.5**	**+2.3**
W13A	**Hualapai Mount**	**82.45**	**47**		*e*P	**P**	**21 54 35.6**	**+0.9**
W13A					*ep*P	**sP**	**21 54 48.1**	**-0.8**
MOD	**Modoc Plateau**	**82.67**	**38**		*e*P	**P**	**21 54 35.7**	**+0.1**
	comp=Z,7.6nm,1.1s							
MOD					*ep*P	**sP**	**21 54 51.3**	**+1.6**
USRK	**Ussuriysk Ar.**	**82.81**	**325**		P	**P**	**21 54 37.2**	**+1.2**
	comp=Z,39nm,0.9s,baz=128,slow=3.5,SNR=50							
K05A	**Summer Lake**	**82.88**	**37**		*e*P	**P**	**21 54 36.8**	**+0.1**
	comp=Z,39nm,1.5s							
TUC	**Tucson**	**83.02**	**50**		P	**P**	**21 54 40.5**	**+3.0**
TUC					pmax	pmax		
	comp=Z,6.0nm,2.6s							
J05D	**Fort Rock, OR**	**83.06**	**37**		P	**P**	**21 54 37.4**	**-0.1**
	baz=229							
R11A	**Troy Canyon, C**	**83.27**	**43**		P	**P**	**21 54 38.0**	**-0.8**
	baz=233							
BMN	**Battle Mountai**	**83.54**	**41**		*e*P	**P**	**21 54 40.3**	**+0.2**
BMN					pmax	pmax		
	comp=Z,18nm,1.6s							
BMN	**Battle Mountai**	**83.54**	**41**		*e*P	**P**	**21 54 40.3**	**+0.2**
	comp=Z,18nm,1.6s							
NJ2	**Nanjing**	**83.65**	**309**		*e*P	**P**	**21 54 41.8**	**+1.2**
NJ2					pmax	pmax		
	comp=Z,22nm,0.7s							
X16A	**Lo Mia Camp, P**	**83.72**	**48**		*e*P	**P**	**21 54 43.0**	**+1.8**
	comp=Z,9.0nm,1.3s							
WVOR	**Wild Horse Val**	**83.96**	**39**		*e*P	**P**	**21 54 41.9**	**-0.3**
WVOR					pmax	pmax		
	comp=Z,18nm,1.4s							
WVOR	**Wild Horse Val**	**83.96**	**39**		*e*P	**P**	**21 54 41.9**	**-0.3**
	comp=Z,18nm,1.4s							
LCMT	**Little Creek M**	**83.98**	**45**		*e*P	**P**	**21 54 42.5**	**+0.1**
	comp=Z,7.3nm,1.2s							
CCUT	**Cedar City**	**84.22**	**45**		*e*P	**P**	**21 54 43.1**	**-0.6**
	comp=Z,13nm,1.3s							
HABR	**Khabarovsk**	**84.26**	**329**		*e*P	**P**	**21 54 42.3**	**-1.0**
HABR					*e**PP	**sP**	**21 54 57.1**	**-0.4**
HABR					*e*		21 57 57.0	
HABR					*e*S	**S**	**22 05 00.4**	**-5.9**
HABR					*e*SS	**SS**	**22 10 34.5**	**-2.5**
HABR					*e*SSS	SSS	22 14 05.6	
HABR					pmax	pmax		
	comp=Z,65nm,1.5s							
HABR					pmax	pmax		
	comp=Z,114nm,1.5s							
HABR					MLR	MLR		
	comp=Z,117nm,21.0s							
KNB	**Kanab**	**84.26**	**46**		*e*P	**P**	**21 54 44.6**	**+0.7**
KNB					pmax	pmax		
	comp=Z,32nm,1.5s							
KNB	**Kanab**	**84.26**	**46**		*e*P	**P**	**21 54 44.6**	**+0.7**
	comp=Z,32nm,1.5s							
QIZ	**Qiongzhong**	**84.27**	**293**		P	**P**	**21 54 44.4**	**+0.3**
QIZ					PP	**PP**	**21 57 58.3**	**-0.9**
QIZ					S	**S**	**22 05 12.8**	**+5.1**
QIZ					sS	**sS**	**22 05 27.9**	**+3.0**
QIZ					pmax	pmax		
	comp=Z,12nm,1.8s							
QIZ					LR	LR		
	comp=Z,120nm,20.6s							
QIZ					LR	LR		
	comp=Z,160nm,18.9s							
U15A	**North Rim**	**84.28**	**46**		*e*P	**P**	**21 54 44.5**	**+0.3**
	comp=Z,17nm,1.3s							
SYO	**Syowa Base**	**84.28**	**192**	⇑	*i*P	**P**	**21 54 42.0**	**-1.3**
MDJ	**Mudanjiang**	**84.37**	**324**		P	**P**	**21 54 45.0**	**+1.0**
MDJ					pP	sP	21 54 58.0	-0.2
MDJ					sP	pP	21 55 01.8	+7.4
MDJ					S	**S**	**22 05 13.6**	**+6.0**
MDJ					pmax	pmax		
	comp=Z,40nm,1.0s							
MDJ					pmax	pmax		
	comp=Z,210nm,5.8s							
MDJ					LR	LR		
	comp=Z,49nm,22.6s							
MDJ					LR	LR		
	comp=Z,100nm,25.5s							
MDJ					LR	LR		
	comp=Z,160nm,19.8s							
MDJ	**Mudanjiang**	**84.37**	**324**		*e*P	**P**	**21 54 45.5**	**+1.5**
	comp=Z,41nm,0.9s							
MDJ					*ep*P	**sP**	**21 54 58.1**	**0.0**
SZCU	**Shurtz Canyon**	**84.42**	**45**		*e*P	**P**	**21 54 46.1**	**+1.3**
	comp=Z,26nm,0.2s							
NLWA	**Neilton Lookou**	**84.47**	**32**		*e*P	**P**	**21 54 45.8**	**+1.3**
	comp=Z,11nm,1.0s							
PKCU	**Pink Cliffs**	**84.84**	**45**		*e*P	**P**	**21 54 49.5**	**+2.5**
	comp=Z,56nm,1.9s							
SNAA	**Sanae**	**84.90**	**178**		P	**P**	**21 54 46.4**	**-0.1**
SNAA	**Sanae**	**84.90**	**178**		*e*P	**P**	**21 54 46.4**	**-0.1**
SNAA					pmax	pmax		
	comp=Z,11nm,1.0s							
SNAA	**Sanae**	**84.90**	**178**		*e*P	**P**	**21 54 46.4**	**-0.1**
	comp=Z,12nm,1.0s							
MTPU	**Mount Pierson**	**85.27**	**45**		*e*P	**P**	**21 54 50.0**	**+0.9**
	comp=Z,19nm,1.3s							
TLIG	**Tlapa**	**85.41**	**69**		*e*P	**P**	**21 54 51.0**	**+1.0**
	comp=Z,59nm,1.9s							
PLCA	**Paso Flores**	**85.46**	**133**		P	**P**	**21 54 49.8**	**-0.2**
	comp=Z,5.3nm,1.1s,baz=248,slow=14,SNR=3.7							
PLCA					LR	LR	22 24 01.5	
	comp=Z,184nm,21.8s,baz=316,slow=29							
PLCA	**Paso Flores**	**85.46**	**133**		*e*P	**P**	**21 54 49.8**	**-0.2**
	comp=Z,21nm,1.4s							
MSU	**Marysvale**	**85.54**	**45**		*e*P	**P**	**21 54 51.2**	**+0.9**
MSU					*e**PP	**sP**	**21 55 04.4**	**-0.1**
MSU	**Marysvale**	**85.54**	**45**		*e*P	**P**	**21 54 51.2**	**+0.9**
MSU					*ep*P	**sP**	**21 55 04.4**	**-0.1**
DL2	**Dalian**	**85.57**	**316**		P	**P**	**21 54 50.7**	**+0.6**
DL2					pP	**sP**	**21 55 03.7**	**-0.6**
DL2					*e*S	**S**	**22 05 20.7**	**+0.9**
DL2					pmax	pmax		
	comp=Z,45nm,0.8s							
DL2					pmax	pmax		
	comp=Z,250nm,5.3s							
DL2					LR	LR		
	comp=Z,200nm,16.2s							
DL2					LR	LR		
	comp=Z,230nm,16.3s							
DL2					LR	LR		
	comp=Z,270nm,18.7s							
G08A	**Pilot Rock**	**85.61**	**36**		*e*P	**P**	**21 54 50.2**	**-0.2**
	comp=Z,12nm,1.1s							
VNA1	**Neumayer--Stat**	**85.63**	**176**		P	**P**	**21 54 50.2**	**+0.2**
IPM	**Ipoh**	**85.87**	**277**		*e*P	**P**	**21 54 52.4**	**+0.1**
	comp=Z,39nm,1.0s							
BBB	**Bella Bella**	**85.98**	**27**		LR	LR	22 27 58.1	
	comp=Z,153nm,18.1s,baz=245,slow=32							
CN2	**Changchun**	**86.16**	**321**		*e*P	**P**	**21 54 53.0**	**+0.1**
CN2					*ep*P	sP	21 55 06.5	-0.6
CN2					*e*S	**S**	**22 05 22.7**	**-2.6**
CN2					pmax	pmax		
	comp=Z,40nm,1.1s							
CN2					pmax	pmax		
	comp=Z,300nm,4.0s							
CN2					LR	LR		
	comp=Z,200nm,18.0s							
CN2					LR	LR		
	comp=Z,200nm,18.0s							
CN2					LR	LR		
	comp=Z,200nm,19.0s							
WHN	**Wuhan**	**86.16**	**306**	⇓	*i*P	**P**	**21 54 54.3**	**+1.0**
WHN					pP	**sP**	**21 55 07.7**	**+0.3**
WHN					S	**S**	**22 05 26.0**	**+0.1**
WHN					pmax	pmax		
	comp=Z,88nm,1.4s							
WHN					LR	LR		
	comp=Z,460nm,16.3s							
MFID	**Camas Ranch**	**86.19**	**39**		*e*P	**P**	**21 54 53.3**	**0.0**
	comp=Z,4.2nm,1.1s							
KLR	**Kul'dur**	**86.35**	**328**	⇓	*i*P	**P**	**21 54 55.5**	**+1.7**
UBPT	**Khong Chiam**	**86.37**	**288**		P	**P**	**21 54 56.0**	**+1.4**
	comp=Z,30nm,1.2s							
KULM	**Kulim**	**86.54**	**277**		*e*P	**P**	**21 54 56.5**	**+1.0**
	comp=Z,18nm,1.0s							
KULM					*ep*P	**sP**	**21 55 08.8**	**-1.0**
MNTX	**Cornudas Mount**	**86.60**	**53**		P	**P**	**21 54 55.0**	**-0.5**
	baz=240							
MNTX	**Cornudas Mount**	**86.60**	**53**		*e*P	**P**	**21 54 55.0**	**-0.5**
	comp=Z,11nm,1.4s							
TMUT	**Trail Mountain**	**86.60**	**44**		*e*P	**P**	**21 54 57.4**	**+1.8**
	comp=Z,75nm,1.5s							
LTX	**Lajitas**	**86.72**	**56**		*e*P	**P**	**21 54 55.6**	**-0.6**
LTX	**Lajitas**	**86.72**	**56**		*e*P	**P**	**21 54 55.5**	**-0.6**
TX31	**Lajitas Ar. Si**	**86.72**	**56**		*e*P	**P**	**21 54 56.2**	**+0.1**
TXAR	**Lajitas Array**	**86.72**	**56**		P	**P**	**21 54 55.5**	**-0.6**
	comp=Z,2.3nm,1.0s,baz=216,slow=6.2,SNR=16							
TXAR					LR	LR	22 27 50.7	
	comp=Z,259nm,19.0s,baz=0.0,slow=32							
BNM	**Barren Site**	**86.94**	**51**		*e*P	**P**	**21 54 58.9**	**+1.5**
SRU	**San Rafael Swe**	**86.94**	**45**		*e*

comp=Z,167nm,21.8s,baz=257,slow=31
MSTX Muleshoe 89.62 52 *e*P **P 21 55 11.4 +1.5**
comp=Z,26nm,1.8s
CHAI Chaiyaphum 89.67 287 P **P 21 55 12.0 +1.6**
comp=Z,6.5nm,1.1s
PKDT Phuket 89.69 279 P **P 21 55 13.6 +3.0**
comp=Z,52nm,1.1s
SURT Suratani 89.70 280 P **P 21 55 13.3 +2.7**
comp=Z,26nm,1.2s
ENH Enshi 89.71 303 *e*P **P 21 55 11.5 +1.2**
comp=Z,119nm,1.3s
BJI Beijing 89.72 314 P **P 21 55 10.7 +0.6**
BJI pP **sP 21 55 23.6 -0.7**
BJI SKS **SKSac 22 05 39.0 +0.8**
BJI S **S 22 05 58.8 -0.6**
BJI SS **SS 22 12 00.0 +2.7**
BJI pmax pmax
comp=Z,23nm,2.0s
BJI pmax pmax
comp=Z,290nm,4.7s
BJI LR LR
comp=Z,140nm,28.6s
BJI LR LR
comp=Z,120nm,26.5s
BJI LR LR
comp=Z,150nm,25.1s
SEY Seymchan 89.88 346⇑ *i*P **P 21 55 10.9 +0.7**
BOZ Bozeman (W) 89.93 39 P **P 21 55 11.2 +0.1**
baz=235
BOZ Bozeman (W) 89.93 39 *e*P **P 21 55 11.3 +0.1**
BOZ pmax pmax
comp=Z,14nm,1.8s
BOZ Bozeman (W) 89.93 39 *e*P **P 21 55 11.3 +0.1**
comp=Z,14nm,1.8s
DLBC Dease Lake 89.93 22 LR LR 22 28 41.4
comp=Z,221nm,21.3s,baz=206,slow=31
T25A Trinidad 90.01 49 P **P 21 55 11.7 -0.1**
baz=240
T25A Trinidad 90.01 49 *e*P **P 21 55 12.1 +0.3**
comp=Z,13nm,1.8s
GYA Guiyang 90.21 299⇑ *i*P **P 21 55 13.3 +0.4**
GYA pP sP 21 55 27.2 +0.1
GYA SKS **SKSac 22 05 38.0 -4.0**
GYA S **S 22 06 00.5 -4.4**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,120nm,6.4s
WRH Wood River Hil 90.27 11 *e*P **P 21 55 11.5 -0.6**
comp=Z,21nm,1.4s
DOT Dot Lake 90.33 13 *e*P **P 21 55 12.2 -0.2**
comp=Z,27nm,1.2s
Q24A Divide 90.42 47 P **P 21 55 14.0 +0.3**
baz=240
HDA Harding Lake 90.42 12 *e*P **P 21 55 12.6 -0.2**
comp=Z,72nm,1.6s
CCB Clear Creek Bu 90.48 12 *e*P **P 21 55 12.1 -0.9**
comp=Z,12nm,1.4s
PHET Kaeng Krachan 90.54 284 P **P 21 55 17.5 +3.0**
comp=Z,15nm,1.1s,comp=Z,183nm
COLA College 90.68 11 P **P 21 55 15.0 +1.1**
IL1 Eielson Array 90.76 12 *e*P **P 21 55 11.7 -2.7**
ILAR Eielson Array 90.76 12 P **P 21 55 13.3 -1.1**
comp=Z,3.5nm,1.1s,baz=219,slow=5.3,SNR=14
ILB Eielson Array 90.76 12 *e*P **P 21 55 13.3 -1.1**
PBKT Sadao Pong 90.83 288 P **P 21 55 18.0 +2.2**
comp=Z,38nm,1.2s,comp=Z,2µm
433A Art 90.88 57 P **P 21 55 16.1 +0.3**
baz=243
LOEI Loei 90.96 289 P **P 21 55 16.4 0.0**
comp=Z,116nm,1.2s
534A Blanco 91.03 58 P **P 21 55 16.2 -0.3**
baz=243
GCMT Greycliff 91.15 40 *e*P **P 21 55 16.3 -0.5**
434A Burnet 91.54 57 P **P 21 55 17.9 -1.0**
baz=244
SRDT SRDT 91.57 285 P **P 21 55 22.7 +3.5**
comp=Z,70nm,2.6s
UTTA Uttaradit 91.67 289 P **P 21 55 22.0 +2.3**
comp=Z,7.9nm,1.2s,comp=Z,71nm
DAWY Dawson 91.74 15 *e*P **P 21 55 19.1 +0.1**
comp=Z,8.8nm,1.1s
334A Lometa 91.80 57 P **P 21 55 19.9 -0.1**
baz=244
XAN Xi'an 91.86 306 P **P 21 55 21.3 +1.0**
XAN pP sP 21 55 34.1 -0.4
XAN pmax pmax
comp=Z,34nm,1.1s
XAN pmax pmax
comp=Z,120nm,6.1s
EGAK Eagle 91.94 14 *e*P **P 21 55 19.6 -0.2**
comp=Z,9.3nm,1.1s
BILL Bilibino 92.31 353⇑ *e*P **P 21 55 21.8 +0.4**
BILL *e* 21 58 59.3
BILL pmax pmax
comp=Z,5.0nm,1.0s
EGMT Eagleton 92.32 38 P **P 21 55 21.6 -0.5**
baz=237
SUKH Sukhothai 92.37 288 P **P 21 55 25.7 +2.8**
comp=Z,9.9nm,1.1s,comp=Z,86nm
X32A Elmer 92.39 53 P **P 21 55 22.6 0.0**
baz=243
134A White-Moore Ra 92.47 56 P **P 21 55 23.0 -0.1**
baz=244
W32A Sentinel 92.74 53 P **P 21 55 23.6 -0.7**
baz=243
LAMP Lampang 92.79 289 P **P 21 55 27.6 +2.8**
comp=Z,18nm,1.1s,comp=Z,178nm
KMI Kunming 92.84 296 P **P 21 55 26.6 +1.4**
KMI pmax pmax
comp=Z,31nm,1.1s
KMI pmax pmax
comp=Z,140nm,5.1s
KMI LR LR
comp=Z,110nm,13.9s
KMI LR LR
comp=Z,160nm,17.7s
KMI LR LR
comp=Z,140nm,21.5s
WMOK Wichita Mounta 92.90 53 P **P 21 55 24.0 -1.0**
baz=243
HHC Hu-ho-hao-te 93.17 313 *e*P **P 21 55 27.5 +1.2**
HHC pP sP 21 55 39.5 -1.0
HHC sP pP 21 55 43.6 +6.9
HHC SKS **SKSac 22 05 59.1 +1.0**
HHC S **S 22 06 31.0 0.0**
HHC pmax pmax
comp=Z,22nm,1.3s
HHC pmax pmax
comp=Z,120nm,8.2s
HHC LR LR
comp=Z,110nm,17.6s
HHC LR LR
comp=Z,190nm,18.4s
HHC LR LR
comp=Z,220nm,18.8s
CM01 Chiang Mai Arr 93.33 289 *e*P **P 21 55 28.4 +1.1**
CM31 Chiang Mai Arr 93.36 289 *e*P **P 21 55 28.9 +1.4**
CM31 *e*pP **sP 21 55 41.6 -0.1**
CMAR Chiang Mai Arr 93.36 289 P **P 21 55 28.9 +1.4**
comp=Z,20nm,1.0s,baz=126,slow=3.2,SNR=77
CMAR LR LR 22 38 38.5
comp=Z,46nm,19.3s,baz=285,slow=36
CMMT Chiang Mai 93.50 289 P **P 21 55 29.9 +1.8**
CHTO Chiang Mai 93.50 289 P **P 21 55 30.0 +1.9**
comp=Z,132nm,1.1s
CHTO Chiang Mai 93.50 289 *e*P **P 21 55 30.2 +2.1**
CHTO pmax pmax
comp=Z,29nm,1.0s
CHTO Chiang Mai 93.50 289 *e*P **P 21 55 30.2 +2.1**
comp=Z,29nm,1.0s
LAO LASA Array 93.65 40 *e*P **P 21 55 29.0 +0.8**
comp=Z,6.1nm,0.6s
RSSD Black Hills 93.70 43 P **P 21 55 28.1 -0.6**
baz=241
RSSD Black Hills 93.70 43 *e*P **P 21 55 28.8 0.0**
RSSD pmax pmax
comp=Z,8.0nm,1.0s
RSSD Black Hills 93.70 43 *e*P **P 21 55 28.8 0.0**
comp=Z,7.6nm,1.0s
Y36A Durant 94.40 55 P **P 21 55 31.6 -0.3**
baz=245
CD2 Chengdu 94.42 302 *e*P **P 21 55 31.8 -0.4**
CD2 pP sP 21 55 46.1 -0.3
CD2 PP **PP 21 59 19.3 -0.9**
CD2 SKS **SKSac 22 06 02.3 -2.9**
CD2 S **S 22 06 39.8 -2.5**
CD2 sS sS 22 07 04.5 +4.8
CD2 SS **SS 22 13 03.8 -1.7**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
R32A Long Quarter, 94.59 50 P **P 21 55 33.1 +0.3**
baz=244
R33A Olander Ranch, 95.06 50 P **P 21 55 34.3 -0.5**
baz=244
YAK Yakutsk 95.82 337 P **P 21 55 38.1 +0.4**
YAK pmax pmax
comp=Z,7.0nm,1.1s
LZH Lanzhou 96.50 306 *e*P **P 21 55 43.6 +1.9**
LZH pP sP 21 55 56.1 +0.2
LZH sP pP 21 56 01.0 +8.8
LZH pmax pmax
comp=Z,21nm,1.0s
LZH pmax pmax
comp=Z,100nm,4.0s
LZH LR LR
comp=Z,130nm,14.2s
LZH LR LR
comp=Z,180nm,16.0s
LZH LR LR
comp=Z,210nm,17.8s
INK Inuvik 96.59 14 LR LR 22 33 08.0
comp=Z,192nm,21.9s,baz=206,slow=32
YKA Yellowknife Ar 98.28 24 LR LR 22 34 05.8
comp=Z,14nm,21.3s,baz=180,slow=32
SONA0 Songino Array 99.61 318 *e*Pdif **Pdif 21 55 55.5 +0.2**
comp=Z,3.2nm,1.2s
SONM Songino Array 99.61 318 P **Pdif 21 55 55.5 +0.2**
comp=Z,0.4nm,0.5s,baz=102,slow=2.9,SNR=4.6
SONM LR LR 22 36 24.8
comp=Z,51nm,20.8s,baz=114,slow=33
GTA Gaotai 100.73 308 *e*P **Pdif 21 56 02.2 +1.7**
GTA pmax pmax
comp=Z,2.0nm,1.3s
WMQ Urumqi 110.71 310 *e*PKP PKiKP 22 00 44.6 -0.1
WMQ sPKP 22 00 58.4
WMQ *e*PP **PP 22 01 26.0 +3.9**
WMQ PKS **PKSdf 22 04 16.0 -5.3**
WMQ SS SS 22 16 46.4 -3.6
WMQ AMB AMB
comp=Z,69nm,5.1s
WMQ LR LR
comp=Z,330nm,18.6s
WMQ LR LR
comp=Z,210nm,12.4s
WMQ LR LR
comp=Z,390nm,23.9s
ZALV Zalesovo Beam 114.35 320 PKP PKPdf 22 00 49.8 -1.3
comp=Z,0.8nm,0.6s,baz=194,slow=1.2,SNR=6.0
ZAA1 Zalesovo Array 114.35 320 *e*PKiKP PKPdf 22 00 49.8 -1.3
MK32 Makanchi Array 115.01 312 *e*PKiKP **PKPdf 22 00 52.0 -0.8**
MKAR Makanchi Array 115.01 312 PKP **PKPdf 22 00 52.0 -0.7**
comp=Z,1.1nm,0.7s,baz=108,slow=4.0,SNR=5.8
MKAR Makanchi Array 115.01 312 PKIKP **PKPdf 22 00 52.0 -0.7**
MKAR pmax pmax
comp=Z,1.0nm,0.7s
KURK Kurchatov 117.84 316 *e*PKIKP **PKPdf 22 00 57.1 -0.9**
KURK Kurchatov 117.84 316 *e*PKPdf **PKPdf 22 00 57.1 -0.9**
KSH Kashi 118.57 303 *e*PKP **PKPdf 22 01 01.5 +1.5**
KSH *es*PKP 22 01 17.7
KSH *e*PP **PP 22 02 23.3 +5.5**
KSH PKS **PKSdf 22 04 37.3 +0.6**
KSH SKKS 22 09 11.7
KSH SS **SS 22 18 35.8 +2.0**
KSH AMB AMB
comp=Z,42nm,4.0s
KSH LR LR
comp=Z,89nm,9.8s
KSH LR LR
comp=Z,120nm,5.6s
KSH LR LR
comp=Z,120nm,9.2s
TKM2 Tokmak 2 119.26 307 *e*PKIKP **PKPdf 22 01 01.2 -0.1**
TKM2 Tokmak 2 119.26 307 *e*PKPdf **PKPdf 22 01 01.2 -0.1**
EKS2 Erkin-Say 120.57 307 *e*PKIKP **PKPdf 22 01 04.1 +0.4**
EKS2 Erkin-Say 120.57 307 *e*PKPdf **PKPdf 22 01 04.1 +0.4**
KKAR Karatay Array 122.99 307 *e*PKIKP **PKPdf 22 01 07.7 -0.5**
KKAR Karatay Array 122.99 307 *e*PKPdf **PKPdf 22 01 07.7 -0.5**
BRVK Borovoye 123.00 319*c i*PKIKP **PKPdf 22 01 06.8 -1.0**
BRVK pmax pmax
comp=Z,16nm,1.0s
BRVK Borovoye 123.00 319 *e*PKPdf **PKPdf 22 01 07.8 -0.1**
KBL Kabul 123.42 297 *e*PKIKP **PKPdf 22 01 09.9 +0.4**
KBL Kabul 123.42 297 *e*PKPdf **PKPdf 22 01 09.9 +0.4**
ZRNK Zerenda 123.77 319 *e*PKIKP **PKPdf 22 01 08.7 -0.7**
ZRNK Zerenda 123.77 319 *e*PKPdf **PKPdf 22 01 08.7 -0.7**
SUMG Summit 125.51 15 *e*PKIKP **PKPdf 22 01 11.7 -0.9**
SUMG Summit 125.51 15 *e*PKPdf **PKPdf 22 01 11.7 -0.9**
SOKR Solikamsk 128.90 329 *e*PKIKP **PKPdf 22 01 16.9 -2.0**
SOKR pmax pmax
comp=Z,10.0nm,0.7s
ARU Arti 129.05 325 *i* PKIKP **PKPdf 22 01 18.9 -0.4**
ARU 22 08 25.4
ARU Arti 129.05 325 *e*PKPdf **PKPdf 22 01 19.6 +0.3**
ABKAR Akbulak array 129.93 315 *e*PKPdf **PKPdf 22 01 22.1 +0.9**
ARA0 ARCESS Array S 132.32 350 *e*PKPdf **PKPdf 22 01 25.3 +0.1**
ARCES ARCESS Array B 132.32 350 PKP **PKPdf 22 01 25.3 +0.1**
comp=Z,2.2nm,1.0s,baz=90,slow=0.2,SNR=3.5
GEYT Alibeck 132.41 301 PKP **PKPdf 22 01 26.8 +0.4**
comp=Z,3.9nm,0.9s,baz=298,slow=3.2,SNR=7.3
OBN Obninsk 140.56 331⇑ *i*PKIKP **PKPdf 22 01 42.7 +1.9**
OBN *e* 22 04 39.3
OBN *e* 22 08 41.2
OBN pmax pmax
comp=Z,7.0nm,0.6s
OBN MLR MLR
comp=Z,178nm,22.0s
NB2 NORSAR Subarra 142.24 355 PKP PKPpre 22 01 39.7
comp=Z,0.6nm,0.8s,baz=20,slow=2.9
NB200 NORSAR Array S 142.24 355 *e*PKPpre PKPpre 22 01 38.1
NOA NORSAR Array B 142.24 355 PKhKP PKPpre 22 01 38.1
comp=Z,2.1nm,1.0s,baz=15,slow=4.7,SNR=4.2
KBZ Khabaz 142.71 312 PKP **PKPdf 22 01 42.3 -2.7**
comp=Z,1.8nm,0.8s,baz=142,slow=3.9,SNR=4.4
KIV Kislovodsk 142.77 313 *i* PKIKP **PKPdf 22 01 43.8 -1.5**
KIV pmax pmax
comp=Z,5.0nm,1.0s
KIV MLR MLR
comp=Z,228nm,22.0s
AKH Akhalkalaki 143.02 308⇑ *i*P PKPbc 22 01 42.7 -0.1
NACGM Naroch 144.58 338 *e* PKPbc 22 01 47.0 +0.3
NACGM *e*LR LR 23 04 00.0
SUW Suwalki 146.51 340 *e*PKP **PKPbc 22 01 52.1 -0.6**
SUW Suwalki 146.51 340 *e*PKP2 **PKPbc 22 01 52.1 -0.6**
AKASG Malin Array Be 146.82 331 PKPbc **PKPdf 22 01 52.8 +0.9**
comp=Z,29nm,1.0s,baz=40,slow=3.9,SNR=53
AKBB Malin Array Si 146.82 331 *e*PKP2 **PKPdf 22 01 52.8 +0.9**
AKBB Malin Array Si 146.82 331 *e*PKPdf **PKPdf 22 01 52.8 +0.9**
KIEV Kiev 146.83 331 *e*PKIKP **PKPdf 22 01 52.1 +0.2**
KIEV Kiev 146.83 331 *e*PKPdf **PKPdf 22 01 52.1 +0.2**
AK11 Malin Array Si 146.86 331 *e*PKPdf **PKPdf 22 01 52.8 +0.8**
SIM Simferopol' 147.85 319*c i*PKP2 **PKPbc 22 01 57.3 +0.5**
SIM pmax pmax
comp=Z,36nm,1.0s
SIM MLR MLR
comp=Z,130nm,21.5s
GKP Gorka Klasztor 148.80 345 *e*PKP **PKPbc 22 01 58.6 -0.4**
GKP Gorka Klasztor 148.80 345 *e*PKP2 **PKPbc 22 01 58.6 -0.4**
SORM Soroca 149.03 328⇓ *i*P **PKPbc 22 01 59.7 -0.1**
SORM Soroca 149.03 328⇓ *i*PKP2 **PKPbc 22 01 59.7 -0.1**
BEL Belsk 149.12 340 *e*PKP **PKPbc 22 01 59.9 0.0**
BEL Belsk 149.12 340 *e*PKP2 **PKPbc 22 01 59.9 0.0**
KIS Kishinev 149.58 326 *e*PKP **PKPbc 22 02 00.0 -1.2**
KIS LRM MLR 23 14 12.0
comp=Z,300nm,20.0s
LVV L'vov 149.67 335 *e*PKP2 **PKPbc 22 02 01.2 -0.1**
LEOM Leova 150.22 326 *i* P **PKPbc 22 02 02.9 +0.2**
LEOM Leova 150.22 326 PKIKP **PKPbc 22 02 02.9 +0.2**
KWP Kalwaria Pacla 150.33 336 *e*PKP **PKPbc 22 02 03.5 +0.6**
KWP Kalwaria Pacla 150.33 336 *e*PKIKP **PKPbc 22 02 03.5 +0.6**
BR101 Keskin Array S 150.63 310 *e*PKPbc **PKPbc 22 02 04.0 -0.2**
BR131 Keskin Array S 150.63 310 *e*PKPbc **PKPbc 22 02 04.0 -0.2**
BRTR Keskin Array B 150.63 310 PKPbc **PKPbc 22 02 04.0 -0.2**
comp=Z,11nm,1.0s,baz=132,slow=1.8,SNR=42
OJC Ojcow 150.84 340 *e*PKP **PKPbc 22 02 04.0 -0.1**
OJC Ojcow 150.84 340 *e*PKIKP **PKPbc 22 02 04.0 -0.1**
OJC Ojcow 150.84 340 *e*PKPbc **PKPbc 22 02 04.0 -0.1**
BUR08 Bucovina Ar. S 150.86 331 *e*PKPbc **PKPbc 22 02 04.9 +0.5**
BURAR Bucovina Array 150.87 331⇓ *i*P **PKPbc 22 02 05.1 +0.7**
BURAR Bucovina Array 150.87 331 ⇓PKIKP **PKPbc 22 02 05.1 +0.7**
TESR Tescani 151.00 328⇓ *i*P **PKPbc 22 02 04.3 -0.3**
STHS Stebnicka Huta 151.04 337 *e*PKIKP **PKPbc 22 02 05.3 +0.7**
STHS Stebnicka Huta 151.04 337 *e*PKP **PKPbc 22 02 05.3 +0.7**
KOLS Kolonicke sedl 151.06 336 *e*PKIKP **PKPbc 22 02 05.2 +0.5**
KOLS Kolonicke sedl 151.06 336 *e*PKP **PKPbc 22 02 05.2 +0.5**
CFR Carcaliu 151.14 324⇑ *i*P **PKPbc 22 02 04.6 -0.3**
CFR Carcaliu 151.14 324⇑ *i*PKIKP **PKPbc 22 02 04.6 -0.3**
ANTO Ankara 151.16 311 *e*PKIKP **PKPbc 22 02 05.8 +0.5**
ANTO Ankara 151.16 311 *e*PKPbc **PKPbc 22 02 05.8 +0.5**
BR231 Keskin MP Arra 151.19 311 *e*PKPbc **PKPbc 22 02 04.2 -1.2**
KSP Ksiaz 151.27 344 *e*PKP **PKPbc 22 02 05.4 +0.3**
KSP Ksiaz 151.27 344 *e*PKIKP **PKPbc 22 02 05.4 +0.3**
UZH Uzhgorod 151.30 335*d i*PKIKP **PKPbc 22 02 05.0 -0.2**
UZH *i* 22 02 10.2
UZH *e* 22 02 18.6
NIE Niedzica 151.37 338 *e*PKP **PKPbc 22 02 06.0 +0.6**
NIE Niedzica 151.37 338 *e*PKIKP **PKPbc 22 02 06.0 +0.6**
CRVS Cervenica-Dubn 151.39 336 *e*PKIKP **PKPbc 22 02 05.7 +0.2**
CRVS Cervenica-Dubn 151.39 336 *e*PKP **PKPbc 22 02 05.7 +0.2**
VRI Vrincioaia 151.41 327⇑ *i*P **PKPbc 22 02 05.8 +0.2**
VRI Vrincioaia 151.41 327⇑ *i*PKIKP **PKPbc 22 02 05.9 +0.3**
TIRR Tirgusor 151.45 323⇓ *i*P **PKPbc 22 02 05.4 -0.2**
TIRR Tirgusor 151.45 323⇓ *i*PKIKP **PKPbc 22 02 05.5 -0.2**
PLOR Plostina 151.46 327⇓ *i*P **PKPbc 22 02 06.0 +0.2**
PLOR Plostina 151.46 327⇓ *i*PKIKP **PKPbc 22 02 06.0 +0.2**
CLL Collm 151.53 349 *e*PKPdf **PKPdf 22 02 00.0 +0.5**
CLL ⇑ *i*PKPbc **PKPbc 22 02 05.3 -0.3**
comp=Z,29nm,1.1s
CLL *i* pPKPbc **pPKPbc 22 02 18.4 +2.0**
CLL LmV 23 10 00.0
comp=Z,200nm,21.9s
CLL Collm 151.53 349⇑ *i*PKIKP **PKPbc 22 02 05.3 -0.3**
CLL *i* 22 02 18.4
CLL pmax pmax
comp=Z,29nm,1.1s
CLL MLR MLR
comp=Z,200nm,21.9s
CLL Collm 151.53 349 *e*PKPbc **PKPbc 22 02 05.2 -0.5**
HARR Harsova 151.56 324⇓ *i*P **PKPbc 22 02 06.2 +0.3**
HARR Harsova 151.56 324⇓ *i*PKIKP **PKPbc 22 02 06.2 +0.3**
TLB Topalu 151.57 323⇑ *i*P **PKPbc 22 02 05.8 -0.1**
TLB Topalu 151.57 323⇑ *i*PKIKP **PKPbc 22 02 05.8 -0.1**
UPC Upice 151.65 345⇑ *e*PKP **PKPbc 22 02 06.4 +0.4**
UPC *ep*PKP **PKPab 22 02 19.2 +4.5**
UPC AMS AMS 23 08 30.0
comp=Z,200nm,20.9s
UPC Upice 151.65 345 *e*PKIKP **PKPbc 22 02 06.4 +0.4**
UPC *e* 22 02 19.2
UPC MLR MLR
comp=Z,200nm,20.9s
OKC Ostrava-Krasne 151.68 341⇑ *e*PKP **PKPbc 22 02 05.8 -0.3**
OKC *ep*PKP **PKPab 22 02 19.0 +4.2**
OKC Ostrava-Krasne 151.68 341 *e*PKIKP **PKPbc 22 02 05.8 -0.3**
OKC *e* 22 02 19.0
DPC Dobruska-Polom 151.71 344⇑ *e*PKP **PKPbc 22 02 06.2 0.0**
DPC *ep*PKPAB **PKPab 22 02 14.3 -0.7**
DPC AMS AMS 23 11 50.0
comp=Z,200nm,19.8s
DPC Dobruska-Polom 151.71 344 *e*PKIKP **PKPbc 22 02 06.2 0.0**
DPC *e* 22 02 14.3
DPC MLR MLR
comp=Z,200nm,19.8s
BRG Berggiesshubel 151.76 347 *e*PKP **PKPdf 22 01 59.5 -0.3**
comp=Z,8.1nm,1.4s
BRG *e* 22 02 06.1
comp=Z,24nm,1.1s
BRG *e* 22 02 19.3
comp=Z,21nm,1.1s
comp=N,152nm,22.4s
comp=E,60nm,12.6s
comp=Z,194nm,19.2s
BRG Berggiesshubel 151.76 347 *e*PKIKP **PKPdf 22 01 59.5 -0.3**
BRG *e* 22 02 06.1
BRG pmax pmax
comp=Z,8.0nm,1.4s
BRG pmax pmax
comp=Z,24nm,1.1s
BRG MLR MLR
comp=N,152nm,22.4s
BRG MLR MLR
comp=E,60nm,12.6s
BRG MLR MLR
comp=Z,194nm,19.2s
KRLC Kraliky 151.85 343⇑ *e*PKP **PKPbc 22 02 06.5 0.0**
KRLC *ep*PKP **PKPab 22 02 19.8 +4.2**
KRLC Kraliky 151.85 343 *e*PKIKP **PKPbc 22 02 06.5 0.0**
KRLC *e* 22 02 19.8
LANS Liptovska Anna 151.87 339 *e*PKIKP **PKPbc 22 02 07.4 +0.8**
LANS Liptovska Anna 151.87 339 *e*PKP **PKPbc 22 02 07.4 +0.8**
MORC Moravsky Berou 151.91 342⇑ *i*P **PKPbc 22 02 06.6 -0.1**
MORC Moravsky Berou 151.91 342⇑ *i*PKIKP **PKPbc 22 02 06.6 -0.1**
MORC Moravsky Berou 151.91 342 *e*PKPbc **PKPbc 22 02 07.0 +0.4**
PVCC Panska Ves 151.96 346⇑ *e*PKP **PKPbc 22 02 06.8 +0.1**
PVCC *ep*PKP **PKPab 22 02 19.6 +3.7**
PVCC AMS AMS 23 15 20.0
comp=Z,200nm,20.6s
PVCC Panska Ves 151.96 346 *e*PKIKP **PKPbc 22 02 06.8 +0.1**
PVCC *e* 22 02 19.6
PVCC MLR MLR
comp=Z,200nm,20.6s
DOPR Dopca 152.00 328⇑ *i*P **PKPbc 22 02 07.3 +0.3**
MLR Muntele Rosu 152.06 327⇑ *i*P **PKPbc 22 02 06.8 -0.5**
MLR Muntele Rosu 152.06 327 *e*PKIKP **PKPbc 22 02 07.0 -0.3**
MLR Muntele Rosu 152.06 327 *e*PKPbc **PKPbc 22 02 07.0 -0.3**
KECS Kecovo 152.09 337 *e*PKIKP **PKPbc 22 02 08.0 +0.9**
KECS Kecovo 152.09 337 *e*PKP **PKPbc 22 02 08.0 +0.9**
CJR Cluj-Napoca 152.28 331⇑ *i*P **PKPbc 22 02 07.4 -0.2**
CJR Cluj-Napoca 152.28 331⇑ *i*PKIKP **PKPbc 22 02 07.4 -0.2**
PRU Pruhonice 152.47 346⇑ *e*PKP **PKPbc 22 02 07.8 0.0**
PRU *ep*PKPAB **PKPab 22 02 20.5 +2.4**
PRU AMS AMS 23 18 10.0
comp=Z,200nm,21.2s
PRU Pruhonice 152.47 346 *e*PKIKP **PKPbc 22 02 07.8 0.0**
PRU *e* 22 02 20.5
PRU MLR MLR
comp=Z,200nm,21.2s
GOPC GO Pecny, Ondr 152.49 346⇑ *e*PKP **PKPbc 22 02 08.2 +0.3**
GOPC *ep*PKPAB **PKPab 22 02 18.1 -0.1**
GOPC AMS AMS 23 15 00.0
comp=Z,300nm,21.2s
GOPC GO Pecny, Ondr 152.49 346 *e*PKIKP **PKPbc 22 02 08.2 +0.3**
GOPC *e* 22 02 18.1
GOPC MLR MLR
comp=Z,300nm,21.2s
VOIR 152.55 328⇑ *i*P **PKPdf 22 02 01.8 +0.5**
VOIR 152.55 328⇑ *i*PKIKP **PKPdf 22 02 01.8 +0.5**
VRAC Vranov 152.60 343⇓ *i*P **PKPbc 22 02 07.4 -0.8**
VRAC Vranov 152.60 343⇓ *i*PKIKP **PKPbc 22 02 07.4 -0.8**
DRGR 152.60 332⇓ *i*P **PKPbc 22 02 07.9 -0.4**
DRGR 152.60 332⇓ *i*PKIKP **PKPbc 22 02 07.9 -0.4**
VYHS Vyhne 152.65 339 *e*PKIKP **PKPbc 22 02 08.5 +0.2**
VYHS *e* 22 02 19.8
VYHS Vyhne 152.65 339 *e*PKP **PKPbc 22 02 08.5 +0.2**
VYHS *e* 22 02 19.8
NKC Novy Kostel 152.66 349⇑ *e*PKP **PKPbc 22 02 08.5 +0.2**
NKC Novy Kostel 152.66 349 *e*PKIKP **PKPbc 22 02 08.5 +0.2**
PSZ Piszkesteto 152.78 337 *e*PKPab **PKPbc 22 02 18.8 -0.8**
ARR Arges 152.80 328 *i* P **PKPdf 22 02 01.9 +0.2**
TREC Trest 152.90 344⇑ *e*PKP **PKPbc 22 02 08.9 0.0**
TREC AMS AMS 23 14 40.0
comp=Z,300nm,23.1s
TREC Trest 152.90 344 *e*PKIKP **PKPbc 22 02 08.9 0.0**
TREC MLR MLR
comp=Z,300nm,23.1s
HUMR Humele 153.23 326⇑ *i*P **PKPbc 22 02 09.3 -0.4**
GRFO Grafenberg 153.38 350 *e*PKPab **PKPbc 22 02 22.4 +0.4**
KHC Kasperske Hory 153.49 347⇑ *e*PKP **PKPbc 22 02 09.8 -0.4**
KHC *ep*PKPAB **PKPab 22 02 23.0 +0.5**
KHC *ep*PKP pPKP 22 02 34.8
KHC AMS AMS 23 16 00.0
comp=Z,300nm,19.2s
KHC Kasperske Hory 153.49 347 *e*PKIKP PKPpre 22 01 56.0
KHC *e* 22 02 09.8
KHC *e* 22 02 23.0
KHC MLR MLR
comp=Z,300nm,19.2s
KHC Kasperske Hory 153.49 347 *e*PKPdf **PKPdf 22 02 01.7 -0.9**
GZR Gura Zlata 153.66 330⇑ *i*P **PKPbc 22 02 09.6 -1.1**
GZR Gura Zlata 153.66 330⇑ *i*PKIKP **PKPbc 22 02 09.6 -1.1**
GEC2 GERESS Array S 153.74 346 *e*PKIKP **PKPbc 22 02 10.9 +0.1**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GEC2	GERESS Array S	153.74	346	ePKPbc	PKPbc	22 02 10.8	+0.1
GERES	GERESS Array B	153.74	346	PKP	PKPdf	22 02 02.5	-0.5
	comp=Z,0.5nm,0.8s,baz=24,slow=4.7,SNR=4.8						
GERES				PKPbc	PKPbc	22 02 09.7	-1.1
	comp=Z,2.9nm,1.0s,baz=48,slow=2.0,SNR=14						
GEA0	GERESS Array S	153.74	346	ePKPdf	PKPdf	22 02 04.3	+1.4
BZS	Buzias	154.00	332	⇑iP	PKPbc	22 02 10.1	-1.2
BZS	Buzias	154.00	332	⇑PKIKP	PKPbc	22 02 10.1	-1.2
CONA	Conrad Observa	154.06	342	i PKPdf	PKPdf	22 02 03.4	-0.1
	comp=Z,1.6nm,1.0s						
CONA				ePKPbc	PKPbc	22 02 10.9	-0.6
	comp=Z,7.7nm,1.3s						
MPEP	Malo Peshtene	154.69	326	eP	PKPab	22 02 28.0	+0.2
ARSA	Arzberg	154.77	342	i PKiKP	PKiKP	22 02 13.3	+0.3
	comp=Z,4.1nm,1.1s						
KDZ	Kurdzhali	154.92	321	eP	PKPab	22 02 29.0	+0.2
BFO	Black Forest	155.08	354	ePKP2	PKPab	22 02 29.1	-0.2
BFO	Black Forest	155.08	354	ePKPab	PKPab	22 02 29.1	-0.2
PERS	Pernice	155.44	342	i PKPdf	PKPab	22 02 31.1	+0.2
KBA	Koelnbreinsper	155.48	345	ePKPdf	PKPdf	22 02 04.7	-0.9
	comp=Z,6.6nm,1.3s						
VTS	Vitosha	155.51	325	ePKP2	PKPab	22 02 32.6	+1.1
VTS	Vitosha	155.51	325	eP	PKPab	22 02 32.0	+0.5
VTS	Vitosha	155.51	325	ePKPab	PKPab	22 02 32.5	+1.1
MMB	Musomiste	155.92	323	eP	PKPab	22 02 33.0	-0.1
ABTA	Abfaltersbach	155.98	347	i PKPdf	PKPdf	22 02 04.6	-1.5
	comp=Z,6.8nm,1.2s						
FETA	Feichten	156.06	350	ePKPdf	PKPdf	22 02 04.7	-1.6
	comp=Z,6.9nm,1.0s						
VISS	Visnje	156.28	342	i PKPdf	PKPab	22 02 34.5	0.0
JAVS	Javornik	156.41	343	i PKPdf	PKPab	22 02 34.3	-0.8
BOJS	Bojanci	156.43	341	i PKPdf	PKPab	22 02 35.3	+0.2
FUORN	Ofenpass-Fuorn	156.52	350	ePKPab	PKPab	22 02 36.0	+0.2
AGG	Agios Georgios	158.42	320	ePKP2	PKPab	22 02 44.1	+0.1
AGG	Agios Georgios	158.42	320	ePKPab	PKPab	22 02 44.1	+0.1
PAB	San Pablo	162.34	23	ePKIKP	PKPdf	22 02 14.4	+0.7
PAB	San Pablo	162.34	23	ePKPdf	PKPdf	22 02 14.4	+0.7
ES19	SONSECA Array	162.36	22	ePKPdf	PKPdf	22 02 14.1	+0.4
ESDC	Sonseca Array	162.36	22	PKP	PKPdf	22 02 13.6	-0.2
	comp=Z,1.5nm,0.9s,baz=354,slow=3.4,SNR=7.3						
KEST	Kesra	167.17	342	PKPab	PKPab	22 03 21.1	-1.3
	comp=Z,5.2nm,1.1s,baz=315,slow=4.0,SNR=4.2						
TAM	Tamanrasset	178.85	230	ePKIKP	PKPdf	22 02 24.5	+1.3
TAM	Tamanrasset	178.85	230	ePKPdf	PKPdf	22 02 24.5	+1.3

PRU 04 21:45:30.5, 49°.83N×18°.52E, h0km, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OKC	Ostrava-Krasne	0.24	272	ePG	Pg	21 45 35.0	-0.1
OKC				eSG	Sg	21 45 38.6	+0.4
	comp=Z,7.1nm,0.6s						
DPC	Dobruska-Polom	1.51	291	eSG	Sg	21 46 18.3	-0.6

JMA 04 21:53:19.3±0.4, 37°.78N×144°.28E, h46km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.41	287	S	Sn	21 54 25.5	+1.1
OFUJ	Ofunato	2.43	303	S	Sn	21 54 26.4	+1.5
JMK	Ichinoseki	2.67	297	eS	Sn	21 54 32.5	+1.5
JOM	Ohasama	2.89	307	eS	Sn	21 54 38.3	+2.1
JFT	Otama	3.14	266	eS	Sn	21 54 43.4	+0.9
JYK	Kaneyama	3.29	291	P	Pn	21 54 10.6	+2.4
JYK				eS	Sn	21 54 48.9	+2.8
JANG	Nango	3.37	321	eS	Sn	21 54 49.0	+0.9
JOT	Ohata	4.38	326	eS	Sn	21 55 13.4	+0.5
JRY	Ryogami san	4.66	249	P	Pn	21 54 28.1	+1.0
JRY				eS	Sn	21 55 18.3	-1.6
JCH	Churui	4.88	352	P	Pn	21 54 31.4	+1.3
JCH				eS	Sn	21 55 23.9	-1.4
JTKR	Abashiri--Toko	6.19	358	P	Pn	21 54 49.3	+1.2
JTKR				eS	Sn	21 55 55.6	-1.9

NIED 04 22:01:00, 35°.60N×142°.50E, h5km, Mw4.2 Best double couple: $M_0$2.19000×10^{15} NP1:ϕ_s359.00000°, δ26.00000°, λ-90.00000°. NP2:ϕ_s179.00000°, δ64.00000°, λ-90.00000°.
IDC 04 22:01:03.7±0.7, 35°.42N×142°.51E, h0km, mb4.0/14, mb1 4.2/19, mb1mx4.0/48, mbtmp4.0/19, ML3.8/3, MS3.4/1, Ms1 3.4/1, ms1mx2.7/38, Error ellipse: s-maj=18.1km s-min=15.2km az=95.0
JMA 04 22:01:07.2±0.5, 35°.57N×142°.45E, h62km, M3.9
NEIC 04 22:01:07.6±1.9, 35°.37N×142°.50E, h27km±14km, mb4.9/21, Error ellipse: s-maj=6.3km s-min=5.1km az=82.0
ISCJB 04 22:01:09.0±0.3, 35°.39N±0°.04×142°.37E±0°.04, h56km, mb4.7/34, Error ellipse: s-maj=5.3km s-min=4.1km az=167.0
ISC 04 22:01:10.3±0.5, 35°.39N±0°.04×142°.43E±0°.06, h56km, n82, σ1s.97/86, mb4.7/34, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.31	284	P	Pn	22 01 29.9	-2.5
CHOJ				S	Sn	22 01 46.9	-2.0
BSO1	Boso 1	1.40	239	P	Pn	22 01 31.7	-1.3
BSO3	Boso 3	1.68	250	P	Pn	22 01 37.3	+0.2
JFT	Otama	2.71	322	P	Pn	22 01 48.1	-3.3
JFT				S	Sn	22 02 18.1	-4.9
JOD2	Odawara 2	2.73	268	P	Pn	22 01 49.6	-2.1
JOD2				S	Sn	22 02 22.4	-1.2
JRY	Ryogami san	2.93	283	P	Pn	22 01 53.4	-1.1
JHJ2	Mitsune	3.14	224	ePn	Pn	22 01 56.4	-0.9
JHJ2				eSn	Sn	22 02 33.8	+0.3
JHJ	Hachijo jima 2	3.15	225	Pn	Pn	22 01 56.2	-1.3
	51nm,0.3s,baz=331,slow=22,SNR=18						
JHJ				Sn	Sn	22 02 33.8	-0.1
	117nm,0.3s,baz=53,slow=23,SNR=11						
JYN	Shimob	3.17	273	P	Pn	22 01 56.1	-1.7
MJAR	Matsushiro Arr	3.61	290	Pn	Pn	22 02 02.0	-1.8
	9.0nm,0.3s,baz=92,slow=8.4,SNR=55						
MJAR				Sn	Sn	22 02 45.7	+0.6
	4.3nm,0.3s,baz=100,slow=18,SNR=8.3						
MAJO	Matsushiro	3.61	290	ePn	Pn	22 02 02.4	-1.4
MAT	Matsushiro	3.61	290	P	Pn	22 02 01.9	-1.8
MAT				S	Sn	22 02 44.6	-0.5
MAT	Matsushiro	3.61	290	P	Pn	22 02 02.0	-1.8
MJB9	Matsu-Tunnel	3.61	290	ePn	Pn	22 02 02.4	-1.4
JOM	Ohasama	4.17	348	S	Sn	22 02 53.9	-5.0
INU	Inuyama	4.42	271	ePn	Pn	22 02 13.9	-0.9
ERM	Erimo	6.64	5	ePn	Pn	22 02 39.0	-6.2
CBIJ	Chichi jima	8.27	181	ePn	Pn	22 03 04.9	-2.8
CBIJ				eSn	Sn	22 04 32.3	-7.5
JCJ	Chichijima	8.27	181	Pn	Pn	22 03 04.9	-2.8
JCJ				Sn	Sn	22 04 32.3	-7.5
	28nm,0.3s,baz=222,slow=6.1,SNR=2.8						
ASAJ	Asahikawa	8.71	1	ePn	Pn	22 03 07.3	-6.3
ASAJ				eSn	Sn	22 04 42.0	-8.4
JNU	Nakatsue	9.82	260	LR	LR	22 07 50.8	
	comp=Z,208nm,19.0s,baz=122,slow=41						
KSRS	Korea Array	11.86	284	Pn	Pn	22 03 56.1	-0.5
	0.2nm,0.3s,baz=96,slow=12,SNR=12						
KS15	Wonju Array Si	11.89	284	ePn	Pn	22 03 56.1	-1.0
KSAR	Wonju Array Be	11.89	284	Pn	Pn	22 03 56.1	-1.0
USRK	Ussuriysk Ar.	11.90	321	Pn	Pn	22 03 54.6	-2.5
	0.1nm,0.3s,baz=148,slow=12,SNR=5.2						
TPUB	Ta-pu	22.44	243	eP	P	22 06 03.5	-1.2
	17nm,1.0s						
H11S1	WAKE ISLAND Hy	27.29	122	T	T	22 35 44.0	
	baz=316,slow=74						
H11S3	WAKE ISLAND Hy	27.29	122	T	T	22 35 43.0	
	baz=316,slow=74						
H11S2	WAKE ISLAND Hy	27.31	122	T	T	22 35 30.0	
	baz=316						
ENH	Enshi	28.07	269	eP	P	22 06 57.3	+0.7
	17nm,1.0s						
SONA1	Songino Array	29.39	306	eP	P	22 07 09.7	+1.3
SONA0	Songino Array	29.39	306	eP	P	22 07 09.3	+1.0
	6.6nm,1.2s						
SONM	Songino Array	29.39	306	P	P	22 07 09.3	+1.0
	2.2nm,0.7s,baz=101,slow=8.8,SNR=11						
BILL	Bilibino	35.38	15	eP	P	22 08 01.6	+1.3
	10nm,0.5s						
CMAR	Chiang Mai Arr	41.91	258	P	P	22 08 55.6	+0.1
	0.4nm,0.3s,baz=64,slow=6.1,SNR=3.9						
SDPT	Sand Point	43.38	44	eP	P	22 09 06.7	-0.3
	50nm,1.4s						
ZAA0	Zalesovo Array	43.63	314	eP	P	22 09 10.5	+1.5
ZAA1	Zalesovo Array	43.63	314	eP	P	22 09 09.6	+0.6
ZAA1				ePcP	PcP	22 10 56.0	+0.6
ZALV	Zalesovo Beam	43.63	314	P	P	22 09 09.6	+0.6
	0.7nm,0.5s,baz=102,slow=8.3,SNR=4.6						
ZALV				PcP	PcP	22 10 56.0	+0.6
	1.0nm,0.6s,baz=118,slow=3.2,SNR=3.8						
MK01	Makanchi Array	45.69	304	eP	P	22 09 28.3	+2.7
MK31	Makanchi Array	45.69	304	eP	P	22 09 29.6	+4.0
MK32	Makanchi Array	45.69	304	eP	P	22 09 27.4	+1.8
MKAR	Makanchi Array	45.69	304	P	P	22 09 27.4	+1.8
	1.8nm,0.7s,baz=93,slow=10.0,SNR=14						
MKAR	Makanchi Array	45.69	304	eP	P	22 09 26.8	+1.2
	24nm,0.6s						
TT01	Tatalina	46.31	34	eP	P	22 09 31.4	+1.2
OHAK	Old Harbor	47.42	42	eP	P	22 09 36.8	-2.1
	22nm,1.5s						
KURK	Kurchatov	47.59	309	eP	P	22 09 42.5	+2.2
KURBB	Kurchatov Arra	47.66	309	P	P	22 09 42.9	+2.0
	2.3nm,0.7s,baz=83,slow=8.2,SNR=20						
KDAK	Kodiak Island	47.78	41	eP	P	22 09 42.1	+0.4
	7.4nm,0.6s						
CNPM	China Poot	48.46	39	eP	P	22 09 46.5	-0.5
	12nm,1.2s						
PMR	Palmer	49.46	36	eP	P	22 09 55.2	+0.7
	14nm,1.4s						
MDM	Murphy Dome	49.88	31	eP	P	22 09 59.1	+1.4
	15nm,1.2s						
IL1	Eielson Array	50.45	32	eP	P	22 10 02.8	+0.7
ILAR	Eielson Array	50.45	32	P	P	22 10 02.5	+0.5
	1.5nm,0.7s,baz=262,slow=6.0,SNR=17						
ILB	Eielson Array	50.45	32	eP	P	22 10 02.5	+0.5
INK	Inuvik	55.48	27	P	P	22 10 39.5	+0.6
	2.0nm,0.6s,baz=304,slow=7.4,SNR=8.9						
INK	Inuvik	55.48	27	eP	P	22 10 39.5	+0.6
	2.5nm,0.6s						
FITZ	Fitzroy Crossi	55.53	199	eP	P	22 10 41.0	+1.1
	30nm,1.7s						
WB2	Warramunga Arr	55.56	189	eP	P	22 10 39.8	-0.3
WR1	Warramunga Arr	55.56	189	eP	P	22 10 41.0	+1.0
	18nm,1.4s						
WRA	Warramunga Arr	55.56	189	P	P	22 10 41.0	+0.9
	3.8nm,0.8s,baz=6.8,slow=7.6,SNR=23						
POHA	Pohakuloa	56.32	89	eP	P	22 10 44.5	-1.5
	130nm,1.5s						
ARU	Arti	58.13	319	eP	P	22 10 58.1	+0.1
	15nm,1.8s						
AS01	Alice Springs	59.28	189	eP	P	22 11 07.7	+1.5
AS31	Alice Springs	59.29	189	eP	P	22 11 08.1	+1.8
	1.4nm,0.4s						
ASAR	Alice Springs	59.29	189	P	P	22 11 08.1	+1.8
	0.9nm,0.6s,baz=1.1,slow=6.9,SNR=9.3						
ABKAR	Akbulak array	59.63	311	eP	P	22 11 09.7	+1.3
	11nm,0.6s						
MBWA	Marble Bar	60.22	205	eP	P	22 11 13.1	+0.4
	91nm,1.6s						
MSVF	Nonsavu	62.72	141	eP	P	22 11 28.5	-1.2
	65nm,1.7s						
BBOO	Buckleboo	68.11	186	eP	P	22 12 03.9	-0.3
	140nm,1.8s						
KCPM	Cahto Peak	71.17	54	eP	P	22 12 18.1	-5.2
	12µm,0.6s						
NB200	NORSAR Array S	76.01	338	eP	P	22 12 52.3	+1.0
NOA	NORSAR Array B	76.01	338	P	P	22 12 52.3	+1.0
	0.6nm,0.7s,baz=40,slow=5.7,SNR=3.3						
AKASG	Malin Array Be	76.09	323	P	P	22 12 51.6	-0.3
	0.4nm,0.4s,baz=47,slow=6.8,SNR=3.1						
AKBB	Malin Array Si	76.09	323	eP	P	22 12 51.6	-0.3
BR101	Keskin Array S	80.55	312	eP	P	22 13 17.2	+0.4
BRTR	Keskin Array B	80.55	312	P	P	22 13 17.2	+0.4
	1.1nm,0.8s,baz=118,slow=4.4,SNR=5.4						
BR231	Keskin MP Arra	81.00	313	eP	P	22 13 19.5	+0.3
GERES	GERESS Array B	84.53	329	P	P	22 13 37.6	+0.3
	0.3nm,0.5s,baz=270,slow=2.7,SNR=4.0						
GDL2	Guadalupe Moun	88.12	51	eP	P	22 13 56.1	+0.8
LTX	Lajitas	90.46	53	eP	P	22 14 07.7	+1.4
TXAR	Lajitas Array	90.46	53	P	P	22 14 07.7	+1.4
	0.8nm,0.8s,baz=157,slow=6.8,SNR=3.9						

IDC 04 22:02:20.6±1.4, 3°.29N×128°.23E, h0km, mb3.6/4, mb1 3.7/4, mb1mx3.4/37, mbtmp3.6/4, ML4.6/1, MS3.9/2, Ms1 3.9/2, ms1mx3.0/22, Error ellipse: s-maj=110.0km s-min=20.0km az=65.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SIJI	Sorong	5.13	144	Pn	Pn	22 03 38.7	0.0
	22nm,0.3s,baz=177,slow=16,SNR=2.1						
SIJI				Sn	Sn	22 04 32.0	-6.7
	12nm,0.3s,baz=9.4,slow=16,SNR=2.6						
WRA	Warramunga Arr	23.86	166	P	P	22 07 36.3	+0.5
	0.3nm,0.6s,baz=346,slow=11,SNR=5.2						
ASAR	Alice Springs	27.36	169	P	P	22 08 07.3	-0.4
	0.3nm,0.6s,baz=355,slow=11,SNR=3.2						
USRK	Ussuriysk Ar.	40.88	4	LR	LR	22 25 25.4	
	comp=Z,136nm,21.2s,baz=122,slow=34						
MKAR	Makanchi Array	58.77	325	P	P	22 12 20.8	+0.2
	0.3nm,0.3s,baz=106,slow=11,SNR=3.5						
KURBB	Kurchatov Arra	62.92	327	P	P	22 12 48.5	-0.2
	1.4nm,0.7s,baz=128,slow=6.3,SNR=10						
NRIK	Noril'sk	71.21	346	LR	LR	22 46 42.1	
	comp=Z,92nm,21.6s,baz=104,slow=37						

ATH 04 22:20:50.5, 38°.16N×27°.28E, h24km±2km, ML3.1/5, Error ellipse: s-maj=4.5km s-min=1.2km az=251.0
ISK 04 22:20:50.7, 38°.15N×27°.27E, h5km, ML3.1
ISCJB 04 22:20:50.8±0.4, 38°.16N±0°.02×27°.25E±0°.02, h3km±4km, Error ellipse: s-maj=3.0km s-min=2.3km az=143.0
DDA 04 22:20:50.8, 38°.16N×27°.26E, h10km, Ml3.5
THE 04 22:20:51.5, 38°.13N×27°.21E, h1km, ML3.3/4, Error ellipse: s-maj=0.9km s-min=0.4km az=68.0
CSEM 04 22:20:51.1±0.1, 38°.15N×27°.26E, h2km, ML3.1, Error ellipse: s-maj=2.3km s-min=2.0km az=66.0
ISC 04 22:20:51.0±1.0, 38°.15N±0°.01×27°.26E±0°.02, h7km±8km, n143, σ0s.86/190, 2C, Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IZM	Izmir	0.24	0	ePG	Pg	22 20 56.3	+0.4
IZM	Izmir	0.24	0	ePg	Pg	22 20 56.3	+0.4
DGB	˜zmir	0.31	252	i P	Pg	22 20 57.5	+0.3
DGB				i S	Sg	22 21 01.7	+0.3
GCAM	G?zelcaml?	0.45	183	i P	Pg	22 20 59.5	-0.3
GCAM				i S	Sg	22 21 06.3	+0.6
GCAM	G?zelcaml?	0.45	183	P	Pg	22 20 59.5	-0.3
GCAM				S	Sg	22 21 06.3	+0.6
AYDB	Zeytinkoy-Aydi	0.54	112	ePG	Pg	22 21 01.4	-0.1
AYDB				eSG	Sg	22 21 08.5	0.0
AYDB	Zeytinkoy-Aydi	0.54	112	ePg	Pg	22 21 01.4	-0.1
AYDB				eSg	Sg	22 21 08.5	0.0
SMG	Samos	0.56	217	P	Pg	22 21 01.7	-0.1
SMG	Samos	0.56	217	P	Pg	22 21 01.7	-0.1
SMG				S	Sb	22 21 10.5	-0.7
SMG	Samos	0.56	217	P	Pg	22 21 01.1	-0.7
SMG				S	Sb	22 21 10.5	-0.7
SMG				AML	AML	22 21 14.0	
	comp=E,7016µm,0.3s						
SMG				AML	AML	22 21 14.7	
	comp=N,9415µm,0.3s						
URLA	Izmir	0.56	292	i P	Pg	22 21 02.2	+0.3
URLA				i S	Sg	22 21 08.1	-1.2
URLA	Izmir	0.56	292	P	Pg	22 21 02.2	+0.3
URLA				S	Sg	22 21 08.1	-1.2
ZEY	˜zmir	0.60	278	i P	Pg	22 21 02.7	0.0
ZEY				i S	Sb	22 21 11.8	-0.8
AKS	Akhisar	0.85	31	ePG	Pg	22 21 07.3	0.0
AKS	Akhisar	0.85	31	ePg	Pg	22 21 07.3	0.0
DKL	Dikili	0.96	343	ePG	Pb	22 21 09.9	-0.1
DKL	Dikili	0.96	343	ePg	Pb	22 21 09.9	-0.1
CHOS	Chios island	0.98	284	ePG	Pb	22 21 10.4	+0.1
CHOS				eSG	Sb	22 21 24.3	+0.8
CHOS	Chios island	0.98	284	P	Pg	22 21 09.9	+0.1
CHOS				S	Sb	22 21 24.0	+0.6
CHOS	Chios island	0.98	284	P	Pb	22 21 10.2	-0.1
CHOS				S	Sb	22 21 24.0	+0.6
CHOS	Chios island	0.98	284	P	Pb	22 21 10.2	-0.1
CHOS				S	Sn	22 21 24.6	-0.8
CHOS				AML	AML	22 21 29.6	
	comp=E,2381µm,0.4s						
CHOS				AML	AML	22 21 30.1	
	comp=N,2299µm,0.5s						
MANT	Manisa	1.07	71	i P	Pg	22 21 09.9	-1.8
MANT				i S	Sg	22 21 23.4	-2.3
MANT	Manisa	1.07	71	P	Pg	22 21 09.9	-1.8
MANT				S	Sg	22 21 23.4	-2.3
BODT	Bodrum	1.09	178	ePN	Pg	22 21 11.6	-0.3
BODT	Bodrum	1.09	178	P	Pg	22 21 11.4	-0.5
BODT				S	Sn	22 21 27.8	-0.2
BODT	Bodrum	1.09	178	P	Pg	22 21 11.4	-0.5
BODT				S	Sn	22 21 27.8	-0.2
BDRM	Kayabasi	1.09	172	i P	Pg	22 21 11.3	-0.7
BDRM				i S	Sn	22 21 28.5	+0.4
BDRM	Kayabasi	1.09	172	P	Pg	22 21 11.3	-0.7
BDRM				S	Sn	22 21 28.5	+0.4
KULA	Kula-Manisa	1.16	71	ePN	Pb	22 21 13.5	0.0
KULA	Kula-Manisa	1.16	71	P	Pn	22 21 13.9	+0.2
KULA	Kula-Manisa	1.16	71	ePn	Pb	22 21 13.5	0.0
KULA	Kula-Manisa	1.16	71	P	Pn	22 21 13.9	+0.2
AYVA	Ayvalik	1.24	339	i P	Pn	22 21 15.4	+0.7
AYVA				i S	Sn	22 21 31.8	+0.2
AYVA	Ayvalik	1.24	339	P	Pn	22 21 15.4	+0.7
AYVA				S	Sn	22 21 31.8	+0.2
YER	Yerkesik	1.30	141	ePN	Pn	22 21 15.4	-0.3
YER	Yerkesik	1.30	141	P	Pn	22 21 15.3	-0.3
YER				S	Sn	22 21 34.2	+0.9
YER	Yerkesik	1.30	141	P	Pn	22 21 15.3	-0.3
YER				S	Sn	22 21 34.2	+0.9
PRK	Paraskevi	1.34	325	P	Pn	22 21 15.8	-0.3
PRK				S	Sn	22 21 35.2	+1.1
PRK	Paraskevi	1.34	325	P	Pn	22 21 15.8	-0.3
PRK				S	Sg	22 21 34.1	0.0
PRK	Paraskevi	1.34	325	P	Pn	22 21 15.7	-0.3
PRK				S	Sg	22 21 34.1	0.0
PRK				AML	AML	22 21 37.0	
	comp=E,3628µm,0.9s						
PRK				AML	AML	22 21 37.1	
	comp=N,2214µm,0.4s						
DEMI	Demirci	1.45	52	i P	Pn	22 21 18.0	+0.3
DEMI				i S	Sg	22 21 37.7	+0.1
DEMI	Demirci	1.45	52	P	Pn	22 21 18.0	+0.3
DEMI				S	Sg	22 21 37.7	+0.1
DNZL	Cakiroluk	1.49	108	i P	Pb	22 21 18.9	-0.2
DNZL				i S	Sg	22 21 42.5	+3.7
DNZL	Cakiroluk	1.49	108	P	Pb	22 21 18.9	-0.2
DNZL				S	Sg	22 21 42.5	+3.7
SIGR	SIGRI	1.52	314	ePN	Pn	22 21 19.1	+0.4
SIGR	SIGRI	1.52	314	P	Pn	22 21 18.5	-0.2
SIGR				S	Sb	22 21 39.2	+0.1
SIGR	SIGRI	1.52	314	P	Pn	22 21 18.5	-0.2
SIGR	SIGRI	1.52	314	ePn	Pn	22 21 19.1	+0.4
SIGR				S	Sb	22 21 39.2	+0.1
SIGR	SIGRI	1.52	314	P	Pn	22 21 18.0	-0.7
SIGR				S	Sn	22 21 38.2	-0.5
NIS1	Nisyros Isl.	1.55	182	ePN	Pn	22 21 19.4	+0.4
NIS1	Nisyros Isl.	1.55	182	ePn	Pn	22 21 19.4	+0.4
NIS1	Nisyros Isl.	1.55	182	P	Pg	22 21 20.3	-0.4
NIS1				S	Sn	22 21 38.8	-0.5
NIS1	Nisyros Isl.	1.55	182	P	Pg	22 21 20.3	-0.4
NIS1				S	Sn	22 21 38.8	-0.5
NIS1				AML	AML	22 21 52.2	
	comp=N,684µm,0.7s						
NIS1				AML	AML	22 21 54.3	
	comp=E,1435µm,1.0s						
BALB	Balikesir	1.56	18	ePN	Pb	22 21 19.8	-0.5
BALB	Balikesir	1.56	18	ePn	Pb	22 21 19.8	-0.5
BALY	Balya	1.61	10	i P	Pn	22 21 19.3	-0.6
BALY	Balya	1.61	10	P	Pn	22 21 19.3	-0.6
TURN	Turunc	1.67	140	i P	Pn	22 21 18.7	-1.9
TURN				i S	Sg	22 21 44.1	-0.4
DALY	Dalyan (Mu˜la	1.73	140	ePN	Pb	22 21 22.9	-0.2
DALY	Dalyan (Mu˜la	1.73	140	ePn	Pb	22 21 22.9	-0.2
APE	Apeiranthos	1.75	232	ePN	Pn	22 21 22.6	+0.8
APE	Apeiranthos	1.75	232	P	Pn	22 21 22.3	+0.5
APE	Apeiranthos	1.75	232	ePn	Pn	22 21 22.6	+0.8
APE	Apeiranthos	1.75	232	P	Pn	22 21 22.3	+0.5
KHL	Karahalli	1.79	84	ePN	Pb	22 21 23.3	-0.9
KHL	Karahalli	1.79	84	ePn	Pb	22 21 23.3	-0.9
EZN	Ezine	1.82	337	ePN	Pn	22 21 23.7	+0.9
EZN	Ezine	1.82	337	P	Pn	22 21 23.0	+0.2
EZN	Ezine	1.82	337	P	Pn	22 21 23.0	+0.2
EZN	Ezine	1.82	337	ePn	Pn	22 21 23.7	+0.9
GEDZ	Gediz	1.91	61	ePN	Pn	22 21 24.9	+0.9
GEDZ	Gediz	1.91	61	ePn	Pn	22 21 24.9	+0.9
GONE	Gonen-Balikesi	1.92	10	ePN	Pb	22 21 25.4	-1.0
GONE	Gonen-Balikesi	1.92	10	ePn	Pb	22 21 25.4	-1.0
BOZC	Bozcaada	1.93	331	i P	Pn	22 21 23.8	-0.5
BOZC				i S	Sg	22 21 53.1	0.0
GDZ	Gediz	1.98	61	i P	Pg	22 21 28.5	-0.4
GDZ				i S	Sg	22 21 55.4	+0.9
GDZ	Gediz	1.98	61	P	Pg	22 21 28.5	-0.4
GDZ				S	Sg	22 21 55.4	+0.9
GLHS	Glhisar (BURDU	2.04	119	ePN	Pn	22 21 27.1	+1.3
GLHS	Glhisar (BURDU	2.04	119	ePn	Pn	22 21 27.1	+1.3
GOLH	Golhisar	2.04	116	i P	Pb	22 21 28.8	+0.3
GOLH	Golhisar	2.04	116	P	Pb	22 21 28.8	+0.3
KNL	Bal˜–kesir	2.13	6	i P	Pb	22 21 30.2	+0.3
KNL				i S	Sg	22 21 58.4	-1.0
TVSB	Tavsanli	2.15	52	ePN	Pn	22 21 28.7	+1.3
TVSB	Tavsanli	2.15	52	ePn	Pn	22 21 28.7	+1.3
KRBG	Karabiga-Canak	2.24	1	ePN	Pn	22 21 29.6	+1.1
KRBG	Karabiga-Canak	2.24	1	ePn	Pn	22 21 29.6	+1.1
EDC	Edincik	2.24	12	ePN	Pn	22 21 29.8	+1.2
EDC	Edincik	2.24	12	ePn	Pn	22 21 29.8	+1.2
LPK	Lapseki	2.25	350	ePN	Pn	22 21 29.3	+0.7
LPK	Lapseki	2.25	350	ePn	Pn	22 21 29.3	+0.7
KCTX	Karacabey (Bur	2.28	22	ePN	Pn	22 21 29.6	+0.5
KCTX	Karacabey (Bur	2.28	22	ePn	Pn	22 21 29.6	+0.5
GADA	Gvkgeada	2.29	333	ePN	Pn	22 21 30.2	+0.9
GADA	Gvkgeada	2.29	333	ePn	Pn	22 21 30.2	+0.9
THR5	Thira Island,	2.31	222	ePN	Pn	22 21 30.4	+1.0
THR5	Thira Island,	2.31	222	ePn	Pn	22 21 30.4	+1.0
GELI	Tayfur-Gelibol	2.32	345	ePN	Pn	22 21 30.8	+1.1
GELI	Tayfur-Gelibol	2.32	345	ePn	Pn	22 21 30.8	+1.1
LIA	Limnos Island	2.38	318	P	Pn	22 21 30.3	-0.1
LIA				S	Sn	22 22 00.6	+0.8
LIA	Limnos Island	2.38	318	P	Pn	22 21 30.3	-0.1
LIA				S	Sn	22 22 00.6	+0.8
MRMT	Marmara Adasi	2.46	6	ePN	Pn	22 21 32.2	+0.6
MRMT	Marmara Adasi	2.46	6	ePn	Pn	22 21 32.2	+0.6
ELL	Elmali	2.53	123	ePN	Pn	22 21 33.5	+0.9
ELL	Elmali	2.53	123	ePn	Pn	22 21 33.5	+0.9
RKY	Sarkoy-Tekirda	2.53	359	ePN	Pn	22 21 33.5	+0.9
RKY	Sarkoy-Tekirda	2.53	359	ePn	Pn	22 21 33.5	+0.9
SART	Tekirdag	2.53	359	i P	Pn	22 21 32.7	+0.1
SART				i S	Sg	22 22 11.9	-0.6
SART	Tekirdag	2.53	359	P	Pn	22 21 32.7	+0.1
MDNY	Mudanya-Bursa	2.55	29	ePN	Pn	22 21 34.1	+1.4
MDNY	Mudanya-Bursa	2.55	29	ePn	Pn	22 21 34.1	+1.4
ERIK	Erikli-Kesan	2.58	347	ePN	Pn	22 21 33.7	+0.5
ERIK	Erikli-Kesan	2.58	347	ePn	Pn	22 21 33.7	+0.5
IGD	Bursa	2.59	35	i P	Pb	22 21 37.6	-0.2
IGD				i S	Sg	22 22 12.5	-1.8
SMTH	Samothraki Isl	2.68	330	P	Pn	22 21 34.8	+0.3
SMTH	Samothraki Isl	2.68	330	P	Pn	22 21 34.8	+0.3
KESN	Edirne-Kesan	2.71	351	i P	Pn	22 21 35.5	+0.2
KESN				i S	Sg	22 22 16.6	-1.4
KESN	Edirne-Kesan	2.71	351	P	Pn	22 21 35.5	+0.2
ENEZ	Enez	2.72	342	ePN	Pn	22 21 35.7	+0.6
ENEZ	Enez	2.72	342	P	Pn	22 21 35.6	+0.6
ENEZ	Enez	2.72	342	ePn	Pn	22 21 35.7	+0.6
IZI	Iznik	2.78	38	ePN	Pn	22 21 37.2	+1.2
IZI	Iznik	2.78	38	ePn	Pn	22 21 37.2	+1.2
AOS	Alonnisos	2.83	292	P	Pn	22 21 37.1	+0.4
AOS	Alonnisos	2.83	292	P	Pn	22 21 37.1	+0.4
AOS				AML	AML	22 22 27.2	
	comp=E,77µm,0.5s						
AOS				AML	AML	22 22 27.5	
	comp=N,93µm,0.7s						
CAVI	Cavuskoy	2.87	44	ePN	Pn	22 21 38.5	+1.3
CAVI	Cavuskoy	2.87	44	ePn	Pn	22 21 38.5	+1.3
ALN	Alexandroupoli	2.90	341	P	Pn	22 21 37.7	+0.2
ALN	Alexandroupoli	2.90	341	P	Pn	22 21 37.7	+0.2
ADVT	Abdulvahap	2.98	39	ePN	Pn	22 21 40.3	+1.6
ADVT	Abdulvahap	2.98	39	ePn	Pn	22 21 40.3	+1.6
BORA	Eskisehir	3.03	54	i P	Pg	22 21 47.9	-1.2
BORA				i S	Sg	22 22 28.3	0.0
SKIA	Skiathos	3.14	290	P	Pn	22 21 40.7	-0.2
SKIA	Skiathos	3.14	290	P	Pn	22 21 40.7	-0.2
LAST	Lasithi	3.31	206	P	Pn	22 21 41.8	-1.5
LAST	Lasithi	3.31	206	P	Pn	22 21 41.8	-1.5
ATAL	Atalanti	3.37	281	P	Pn	22 21 44.5	+0.4
ATAL	Atalanti	3.37	281	P	Pn	22 21 44.5	+0.4

KLV	Kalavryta, Ach	4.03	270	P		Pn	22 21 54.0 +0.8
KLV	Kalavryta, Ach	4.03	270	P		Pn	22 21 54.0 +0.8
KALE	Kalithea	4.04	275	P		Pn	22 21 53.7 +0.4
KALE	Kalithea	4.04	275	P		Pn	22 21 53.7 +0.4
BARS	Barje	6.24	320	*i* Pn		Pn	22 22 24.5 +1.0
BOVS	Bovan	6.91	324	*i* Pn		Pn	22 22 33.9 +1.3

ISCJB ***04*** *22:33:12.4±0.8, 51.38N±0.04×16.13E±0.04, h0km, Error ellipse: s-maj=5.7km s-min=2.9km az=19.5*
CSEM ***04*** *22:33:13.7±0.5, 51.42N×16.10E, h2km, ML3.1/10, Error ellipse: s-maj=7.4km s-min=4.1km az=17.0*
WAR ***04*** *22:33:13.6, 51.48N×16.11E, h1km, Mw2.5*
PRU ***04*** *22:33:13.9, 51.45N×16.13E, h0km*
VIE ***04*** *22:33:17.8±0.9, 51.16N×16.23E, h0km, mb1.8/3, ML2.6/5, Error ellipse: s-maj=6.9km s-min=5.7km az=120.0, Suspected Mining induced.*

ISC 04 22:33:14.1±1.2**, 51.40N**±0.05×**16.14E**±0.03**, h0**km**, n38,** σ**0**s**58/64, Poland**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.56**	**170**	*e*Pg	**Pb**	**22 33 25.8**	**-0.9**
KSP				*e*Sg	**Sb**	**22 33 34.5**	**-0.8**
KSP	**Ksiaz**	**0.56**	**170**	*e*Pg	**Pb**	**22 33 25.8**	**-0.9**
KSP				*e*Sg	**Sb**	**22 33 34.5**	**-0.8**
UPC	**Upice**	**0.89**	**185**	*e*PG	**Pg**	**22 33 31.6**	**+0.5**
UPC				*e*SG	**Sb**	**22 33 45.0**	**+0.2**
	comp=Z,123nm,0.4s						
UPC	**Upice**	**0.89**	**185**	Pg	**Pg**	**22 33 31.6**	**+0.5**
UPC				Sg	**Sb**	**22 33 45.0**	**+0.2**
	123nm,0.4s						
DPC	**Dobruska-Polom**	**1.05**	**174**	*e*PG	**Pg**	**22 33 34.5**	**+0.3**
DPC				*e*SG	**Sb**	**22 33 49.1**	**-0.4**
	comp=Z,18nm,0.4s						
DPC	**Dobruska-Polom**	**1.05**	**174**	Pg	**Pg**	**22 33 34.5**	**+0.3**
DPC				Sg	**Sb**	**22 33 49.1**	**-0.4**
	18nm,0.4s						
PVCC	**Panska Ves**	**1.32**	**229**	*e*PG	**Pg**	**22 33 39.0**	**-0.3**
PVCC				*e*SG	**Sn**	**22 33 57.9**	**-0.1**
	comp=Z,93nm,0.5s						
PVCC	**Panska Ves**	**1.32**	**229**	Pg	**Pg**	**22 33 39.0**	**-0.3**
PVCC				Sg	**Sn**	**22 33 57.9**	**-0.1**
	93nm,0.5s						
KRLC	**Kraliky**	**1.38**	**163**	*e*PG	**Pb**	**22 33 40.9**	**+0.1**
KRLC				*e*SG	**Sb**	**22 33 59.2**	**+0.2**
KRLC	**Kraliky**	**1.38**	**163**	Pg	**Pb**	**22 33 40.9**	**+0.1**
KRLC				Sg	**Sb**	**22 33 59.2**	**+0.2**
BRG	**Berggiesshubel**	**1.48**	**250**	PN	**Pn**	**22 33 41.7**	**-0.2**
BRG				PG	**Pn**	**22 33 41.7**	**-0.2**
BRG				SG	**Sb**	**22 34 01.7**	**0.0**
	36nm,0.6s						
GOPC	**GO Pecny, Ondr**	**1.71**	**211**	*e*PG	**Pb**	**22 33 46.3**	**-0.1**
GOPC				*e*SG	**Sg**	**22 34 09.2**	**+0.1**
GOPC	**GO Pecny, Ondr**	**1.71**	**211**	Pg	**Pb**	**22 33 46.3**	**-0.1**
GOPC				Sg	**Sg**	**22 34 09.2**	**+0.1**
PRU	**Pruhonice**	**1.74**	**216**	*e*PG	**Pb**	**22 33 46.5**	**-0.3**
PRU				*e*SG	**Sg**	**22 34 10.3**	**+0.5**
	comp=Z,18nm,0.5s						
PRU	**Pruhonice**	**1.74**	**216**	Pg	**Pb**	**22 33 46.5**	**-0.3**
PRU				Sg	**Sg**	**22 34 10.3**	**+0.5**
	18nm,0.5s						
MORC	**Moravsky Berou**	**1.85**	**151**	*e*Pn	**Pn**	**22 33 46.4**	**-0.7**
MORC				*e*Sg	**Sg**	**22 34 13.7**	**+0.2**
CLL	**Collm**	**1.97**	**269**	*e*Pg	**Pb**	**22 33 50.0**	**-0.7**
CLL				*i* Sg	**Sb**	**22 34 15.8**	**0.0**
	comp=Z,18nm,0.6s						
OKC	**Ostrava-Krasne**	**2.02**	**140**	*e*SG	**Sg**	**22 34 18.3**	**-0.5**
	comp=Z,18nm,0.6s						
OKC	**Ostrava-Krasne**	**2.02**	**140**	Sg	**Sg**	**22 34 18.3**	**-0.5**
	comp=Z,18nm,0.6s						
VRAC	**Vranov**	**2.11**	**172**	*e*Pn	**Pn**	**22 33 51.0**	**+0.4**
VRAC				*e*Sg	**Sg**	**22 34 22.2**	**+0.4**
TREC	**Trest**	**2.14**	**191**	*e*SG	**Sg**	**22 34 23.3**	**+0.4**
TREC	**Trest**	**2.14**	**191**	Sg	**Sg**	**22 34 23.3**	**+0.4**
NKC	**Novy Kostel**	**2.61**	**245**	*e*PN	**Pn**	**22 33 57.3**	**-0.2**
NKC				*e*PG	**Pb**	**22 34 02.6**	**+0.8**
NKC				*e*SG	**Sg**	**22 34 38.9**	**+0.9**
	comp=Z,25nm,0.5s						
NKC	**Novy Kostel**	**2.61**	**245**	Pn	**Pn**	**22 33 57.3**	**-0.2**
KHC	**Kasperske Hory**	**2.80**	**217**	*e*PN	**Pn**	**22 33 59.8**	**-0.3**
KHC				*e*PG	**Pb**	**22 34 05.3**	**+0.4**
KHC				*e*SN	**Sn**	**22 34 34.1**	**-0.5**
KHC				*e*SG	**Sg**	**22 34 43.6**	**-0.3**
	comp=Z,6.4nm,0.5s						
KHC	**Kasperske Hory**	**2.80**	**217**	Pn	**Pn**	**22 33 59.8**	**-0.3**
SMOL	**Smolenice**	**3.00**	**163**	*e*SG	**Sg**	**22 34 51.4**	**+1.0**
LANS	**Liptovska Anna**	**3.10**	**135**	*e*Sg	**Sg**	**22 34 53.9**	**+0.3**
LANS	**Liptovska Anna**	**3.10**	**135**	*e*SG	**Sg**	**22 34 53.9**	**+0.3**
VYHS	**Vyhne**	**3.39**	**148**	*e*Sg	**Sg**	**22 35 02.8**	**0.0**
VYHS	**Vyhne**	**3.39**	**148**	*e*SG	**Sg**	**22 35 02.8**	**0.0**
CONA	**Conrad Observa**	**3.48**	**183**	Pn	**Pn**	**22 34 10.8**	**+1.4**
	comp=Z,0.3nm,0.2s						
CONA				Sg	**Sg**	**22 35 04.7**	**-0.9**
	comp=Z,7.4nm,0.3s						
MOA	**Molln**	**3.75**	**200**	Pn	**Pn**	**22 34 13.9**	**+0.7**
	comp=Z,0.5nm,0.2s						
MOA				Sg	**Sg**	**22 35 14.9**	**+0.4**
	comp=Z,4.5nm,0.4s						
STHS	**Stebnicka Huta**	**3.82**	**119**	*e*Sg	**Sg**	**22 35 18.1**	**+1.4**
STHS	**Stebnicka Huta**	**3.82**	**119**	*e*SG	**Sg**	**22 35 18.1**	**+1.4**
STHS				*e*LG	Lg	22 35 30.8	
KECS	**Kecovo**	**4.05**	**134**	*e*Sg	**Sg**	**22 35 23.2**	**-0.8**
KECS	**Kecovo**	**4.05**	**134**	*e*SG	**Sg**	**22 35 23.2**	**-0.8**
ARSA	**Arzberg**	**4.17**	**186**	Sg	**Sg**	**22 35 27.2**	**-0.7**
	comp=Z,4.5nm,0.5s						

ISCJB ***04*** *22:40:14.9±0.6, 39.08N±0.05×29.07E±0.05, h5km±10km, Error ellipse: s-maj=9.3km s-min=4.4km az=143.9*
ISK ***04*** *22:40:14.3, 39.05N×29.18E, h10km, MD2.6*
CSEM ***04*** *22:40:15.0±0.2, 39.09N×29.08E, h5km, MD2.5, Error ellipse: s-maj=5.9km s-min=3.2km az=128.0*
DDA ***04*** *22:40:15.1, 39.08N×29.07E, h7km, Md2.5*

ISC 04 22:40:15.2±0.9**, 39.08N**±0.03×**29.08E**±0.03**, h12**km±10km**, n18,** σ**0**s**59/28, Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.29**	**263**	*i* P	**Pg**	**22 40 21.0**	**-0.1**
DEMI				*i* S	**Sg**	**22 40 24.9**	**-0.1**
DEMI	**Demirci**	**0.29**	**263**	P	**Pg**	**22 40 21.0**	**-0.1**
DEMI				S	**Sg**	**22 40 24.9**	**-0.1**
GDZ	**Gediz**	**0.31**	**87**	*i* P	**Pg**	**22 40 21.7**	**+0.1**
GDZ				*i* S	**Sg**	**22 40 26.5**	**+0.7**
GDZ	**Gediz**	**0.31**	**87**	P	**Pg**	**22 40 21.7**	**+0.1**
GDZ				S	**Sg**	**22 40 26.5**	**+0.7**
TVSB	**Tavsanli**	**0.48**	**38**	*e*PG	**Pg**	**22 40 23.8**	**-0.8**
TVSB				*e*SG	**Sg**	**22 40 30.4**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**38**	*e*Pg	**Pg**	**22 40 23.8**	**-0.8**
TVSB				*e*Sg	**Sg**	**22 40 30.4**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*PG	**Pb**	**22 40 28.4**	**-0.1**
KULA				*e*SG	**Sg**	**22 40 36.9**	**+0.5**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*Pg	**Pb**	**22 40 28.4**	**-0.1**
KULA				*e*Sg	**Sg**	**22 40 36.9**	**+0.5**
MANT	**Manisa**	**0.71**	**215**	*i* P	**Pg**	**22 40 28.2**	**-0.8**
MANT				*i* S	**Sg**	**22 40 37.7**	**-0.7**
MANT	**Manisa**	**0.71**	**215**	P	**Pg**	**22 40 28.2**	**-0.8**
MANT				S	**Sg**	**22 40 37.7**	**-0.7**
BALB	**Balikesir**	**1.09**	**302**	*e*PN	**Pn**	**22 40 37.3**	**+1.1**
BALB	**Balikesir**	**1.09**	**302**	*e*Pn	**Pn**	**22 40 37.3**	**+1.1**
IZI	**Iznik**	**1.29**	**13**	*e*PN	**Pn**	**22 40 39.0**	**-0.2**
IZI	**Iznik**	**1.29**	**13**	*e*Pn	**Pn**	**22 40 39.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN	**Pg**	**22 40 40.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn	**Pg**	**22 40 40.4**	**0.0**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pn**	**22 40 42.3**	**+0.4**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pn**	**22 40 42.3**	**+0.4**

ISCJB ***04*** *22:46:07.9±0.6, 39.72N±0.04×40.34E±0.04, h10km, Error ellipse: s-maj=6.5km s-min=4.6km az=12.8*
ISK ***04*** *22:46:07.3, 39.72N×40.27E, h4km, MD2.5*
CSEM ***04*** *22:46:08.3±0.3, 39.73N×40.32E, h2km, MD2.5, Error ellipse: s-maj=8.1km s-min=6.0km az=15.0*
DDA ***04*** *22:46:10.3, 40.04N×40.37E, h7km, Md2.3*

ISC 04 22:46:08.5±1.0**, 39.73N**±0.03×**40.33E**±0.03**, h10**km**, n16,** σ**0**s**73/21, Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOPT	**Kop Dagi**	**0.31**	**25**	*i* P	**Pg**	**22 46 14.2**	**-0.7**
KOPT	**Kop Dagi**	**0.31**	**25**	P	**Pg**	**22 46 14.2**	**-0.7**
YEDI	**Yedisu-Bingol**	**0.34**	**150**	*e*PG	**Pg**	**22 46 14.8**	**-0.5**
YEDI				*e*SG	**Sg**	**22 46 20.2**	**+0.4**
YEDI	**Yedisu-Bingol**	**0.34**	**150**	*e*Pg	**Pg**	**22 46 14.8**	**-0.5**
YEDI				*e*Sg	**Sg**	**22 46 20.2**	**+0.4**
EUZM	**Uzumlu**	**0.48**	**267**	*i* P	**Pg**	**22 46 18.4**	**+0.5**
EUZM	**Uzumlu**	**0.48**	**267**	P	**Pg**	**22 46 18.5**	**+0.5**
ERZN	**Erzincan**	**0.49**	**253**	*e*PG	**Pg**	**22 46 16.5**	**-1.5**
EZM	**Erzurum**	**0.82**	**78**	*e*PG	**Pg**	**22 46 23.4**	**-0.8**
EZM				*e*SG	**Sg**	**22 46 35.2**	**+0.3**
ERZM	**Erzurum**	**0.82**	**78**	*i* P	**Pg**	**22 46 24.1**	**-0.2**
ERZM	**Erzurum**	**0.82**	**78**	P	**Pg**	**22 46 24.1**	**-0.2**
KELT	**Kelkit**	**0.92**	**297**	*i* P	**Pb**	**22 46 26.9**	**+0.3**
KELT				*i* S	**Sb**	**22 46 39.4**	**+0.4**
KELT	**Kelkit**	**0.92**	**297**	P	**Pb**	**22 46 27.0**	**+0.3**
KELT				S	**Sb**	**22 46 39.4**	**+0.4**
GUMT	**Gumushane**	**0.97**	**319**	*e*PG	**Pg**	**22 46 26.2**	**-1.0**
GUMT	**Gumushane**	**0.97**	**319**	*e*Pg	**Pg**	**22 46 26.2**	**-1.0**
PTK	**Pertek**	**1.11**	**221**	*e*PG	**Pg**	**22 46 28.8**	**-1.0**
PTK	**Pertek**	**1.11**	**221**	*e*Pg	**Pg**	**22 46 28.8**	**-1.0**

NIED ***04*** *23:05:00, 36.70N×142.20E, h14km, Mw3.5 Best double couple: M0 1.98000×10^14 NP1:φ=202.00000°, δ=43.00000°, λ=-76.00000°. NP2:φ=4.00000°, δ=48.00000°, λ=-102.00000°.*

JMA 04 23:05:30.5±0.4**, 36.69N×142.20E, h28**km**, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.20**	**291**	P	Pn	23 05 51.0	-0.4
JFK	**Kawauchi**	**1.26**	**303**	P	Pn	23 05 52.3	+0.1
JHO	**Hitachi**	**1.31**	**267**	P	Pn	23 05 52.8	-0.2
JMM	**Marumori**	**1.62**	**317**	P	Pn	23 05 58.0	+0.8
JFT	**Otama**	**1.70**	**300**	P	Pb	23 05 59.8	-1.4
JOU	**Okura**	**2.07**	**324**	P	Pb	23 06 05.9	-1.5
JOU				S	Sb	23 06 30.7	-2.0
JAG	**Ashikaga**	**2.23**	**264**	P	Pn	23 06 06.7	+1.2
JAG				S	Sn	23 06 32.8	+0.7

KRSC 04 23:20:39.3±2.4**, 52.05N×161.82E, h48**km±24km**, ML3.6, Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SPN	**Mys Shipunski**	**1.52**	**315**	*e*P	Pn	23 21 05.7	+1.7
SPN				*e*S	Sn	23 21 23.7	+1.2
NLC	**Nalytchevo**	**1.88**	**308**	*e*S	Sn	23 21 33.7	+2.3
RUS	**Russkaya**	**2.07**	**282**	*e*P	Pn	23 21 13.3	+1.8
RUS				*e*S	Sn	23 21 36.7	+0.7
DALK	**Dalny**	**2.11**	**299**	P	Pn	23 21 15.0	+2.9
DALK				S	Sn	23 21 39.4	+2.3
UGLR	**Uglovaya**	**2.16**	**304**	*e*P	Pn	23 21 16.4	+3.5
UGLR				S	Sn	23 21 41.1	+3.6
PET	**Petropavlovsk**	**2.16**	**298**	S	Sn	23 21 41.1	+2.7
SDLR	**Sedlovina**	**2.17**	**306**	P	Pn	23 21 16.1	+3.1
SDLR				S	Sn	23 21 41.2	+2.5
AVH	**Avacha**	**2.23**	**304**	*e*P	Pn	23 21 17.5	+3.6
AVH				S	Sn	23 21 44.1	+3.8
KRER	**Koryakskii**	**2.25**	**305**	*e*P	Pn	23 21 18.2	+4.0
KRER				S	Sn	23 21 45.1	+4.3
KRX	**Arik**	**2.33**	**305**	P	Pn	23 21 18.8	+3.6
KRX				S	Sn	23 21 45.7	+3.0
KRMR	**Karymshinskiy**	**2.39**	**291**	*e*S	Sn	23 21 46.0	+2.1
ASAK	**Asacha**	**2.43**	**279**	*e*P	Pn	23 21 19.1	+2.5
ASAK				S	Sn	23 21 46.8	+1.7
GNL	**Ganaly**	**2.87**	**307**	*e*P	Pn	23 21 27.2	+4.6
GNL				S	Sn	23 22 00.5	+4.6
BKI	**Bering**	**4.01**	**36**	S	Sn	23 22 24.7	+0.9
ZLN	**Zelenaya**	**4.02**	**352**	S	Sn	23 22 29.8	+5.6

NEIC ***04*** *23:35:42.0, 33.05N×117.98W, h6km, ML3.7(PAS), After PAS.*
NEIC Felt [II] at Laguna Beach and Redondo Beach. Also felt at Avalon and in parts of Orange and San Diego Counties.

ISC 04 23:35:40.9±1.1**, 33.03N**±0.03×**118.00W**±0.03**, h9**km±9km**, n43,** σ**1**s**90/57, Southern California**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SCI2	**San Clemente I**	**0.46**	**264**	P	**Pg**	**23 35 51.4**	**+1.6**
	baz=83,SNR=501						
CIS	**Catalina Islan**	**0.51**	**317**	P	**Pg**	**23 35 50.9**	**+0.1**
	baz=135,SNR=103						
CIS				S	**Sg**	**23 35 57.6**	**+0.1**
	baz=135						
FMP	**Fort Macarthur**	**0.72**	**340**	P	**Pg**	**23 35 54.4**	**-0.5**
	baz=158,SNR=20						
FMP				S	**Sg**	**23 36 04.7**	**+0.4**
	baz=158						
109C	**Camp Elliot, M**	**0.77**	**100**	P	**Pg**	**23 35 55.5**	**-0.3**
	baz=282,SNR=159						
109C				S	**Sg**	**23 36 06.2**	**+0.4**
	baz=282						
MURC	**Murrieta**	**0.88**	**50**	P	**Pg**	**23 35 57.2**	**-0.8**
	baz=230,SNR=132						
MURC				S	**Sg**	**23 36 08.1**	**-1.3**
	baz=230						
PASC	**Pasadena Art C**	**1.15**	**352**	*e*P	**Pg**	**23 36 02.7**	**-0.3**
PASC				*e*S	**Sg**	**23 36 18.0**	**+0.1**
BAR	**Barrett**	**1.17**	**107**	*e*Pn	**Pg**	**23 36 01.9**	**-1.6**
MWC	**Mount Wilson**	**1.19**	**358**	*e*Pn	**Pg**	**23 36 01.9**	**-2.0**
BFSC	**Mount Baldy Ra**	**1.24**	**13**	P	**Pg**	**23 36 03.4**	**-1.3**
	baz=193,SNR=364						
BFSC				S	**Sg**	**23 36 18.9**	**-2.0**
	baz=193						
DECC	**Green Verdugo**	**1.25**	**347**	Pg	**Pg**	**23 36 04.6**	**-0.3**
	baz=166,SNR=28						
SNCC	**San Nicolas Is**	**1.29**	**280**	P	**Pn**	**23 36 03.7**	**-1.5**
	baz=99,SNR=35						
MONP2	**Monument Peak**	**1.34**	**95**	P	**Pn**	**23 36 04.4**	**-1.6**
	baz=277,SNR=144						
MONP2				S	**Sg**	**23 36 22.7**	**-1.3**
	baz=277						
CBX	**Cerro Bola**	**1.34**	**122**	P	**Pn**	**23 36 04.7**	**-1.3**
CBX				S	**Sb**	**23 36 23.6**	**0.0**
BLG	**Laguna Peak, P**	**1.39**	**321**	P	**Pn**	**23 36 04.9**	**-1.7**
	baz=139,SNR=20						
BLG				S	**Sb**	**23 36 22.2**	**-2.9**
	baz=139						
PFO	**Pinyon Flats O**	**1.42**	**65**	P	**Pn**	**23 36 05.9**	**-1.1**
	baz=246,SNR=351						
PFO				S	**Sb**	**23 36 24.4**	**-1.5**
	baz=246						
PFO	**Pinyon Flats O**	**1.42**	**65**	*e*Pn	**Pn**	**23 36 05.9**	**-1.1**
BBRC	**Big Bear Solar**	**1.52**	**36**	S	**Sn**	**23 36 27.5**	**-1.3**
	baz=216						
IKP	**In-Ko-Pah, Jac**	**1.64**	**103**	P	**Pn**	**23 36 09.4**	**-0.6**
	baz=284						
IKP				Sb	**Sn**	**23 36 31.9**	**+0.6**
	baz=284						
SCZ2	**Santa Cruz Isl**	**1.67**	**306**	Sb	**Sg**	**23 36 35.6**	**+1.1**
	baz=124						
OSI	**Osito Audit: C**	**1.69**	**339**	*e*Pn	**Pg**	**23 36 13.9**	**+0.5**
EDW2	**Edwards Air Fo**	**1.85**	**0**	Sb	**Sn**	**23 36 37.7**	**+1.3**
	baz=180						
SWSC	**Sam W. Stewart**	**1.85**	**92**	Pb	**Pn**	**23 36 13.6**	**+0.7**
	baz=274						
SWSC				Sg	**Sb**	**23 36 39.1**	**+0.7**
	baz=274						
BELC	**Belle Mtn. Jos**	**1.94**	**59**	Pb	**Pn**	**23 36 15.2**	**+1.0**
	baz=240,SNR=306						
BELC				Sb	**Sn**	**23 36 39.9**	**+1.2**
	baz=240						
RRX	**Edison Barstow**	**2.02**	**24**	Sb	**Sb**	**23 36 43.1**	**-0.1**
	baz=204						
CPBX	**Cerro Prieto**	**2.36**	**104**	P	**Pb**	**23 36 23.6**	**+0.1**
CPBX				S	**Sb**	**23 36 55.5**	**+2.7**
GSC	**Goldstone, Bar**	**2.47**	**23**	*e*Pn	**Pn**	**23 36 21.4**	**-0.2**
ISA	**Isabella, Lake**	**2.66**	**352**	*e*Pn	**Pn**	**23 36 26.6**	**+2.5**
SPIG	**San Pedro Mart**	**2.93**	**132**	P	**Pn**	**23 36 27.2**	**-0.7**
SPIG				S	**Sn**	**23 37 06.0**	**+2.6**
SPX	**San Pedro Mart**	**2.93**	**132**	P	**Pn**	**23 36 28.6**	**+0.6**
SPX				S	**Sn**	**23 37 04.6**	**+1.1**
Y12C	**Blythe**	**3.00**	**75**	*e*Pn	**Pn**	**23 36 29.8**	**+1.1**
LDFC	**Landfair**	**3.15**	**49**	*e*Pn	**Pb**	**23 36 38.0**	**+0.7**
PAGB	**Antelope Grade**	**3.27**	**326**	*e*Pn	**Pn**	**23 36 32.5**	**0.0**
W13A	**Hualapai Mount**	**3.99**	**58**	*e*Pn	**Pn**	**23 36 44.5**	**+2.0**
TPNV	**Topopah Spring**	**4.17**	**20**	*e*Pn	**Pn**	**23 36 46.5**	**+1.6**
SHPR	**Sheep Range**	**4.18**	**33**	*e*Pn	Pn	23 36 50.9	+5.7
Y14A	**Wickenburg**	**4.27**	**76**	*e*Pg	**Pg**	**23 37 01.7**	**-1.2**
X16A	**Lo Mia Camp, P**	**5.64**	**74**	*e*Pn	**Pn**	**23 37 07.8**	**+2.6**
R11A	**Troy Canyon, C**	**5.66**	**20**	*e*Pn	**Pn**	**23 37 04.8**	**-0.6**
	1.7nm,0.6s						
R11A				*e*Pg	**Pg**	**23 37 27.1**	**-2.3**
R11A				*e*Sg	**Sb**	**23 38 35.5**	**+7.4**
U15A	**North Rim**	**5.80**	**53**	*e*Pn	**Pn**	**23 37 10.7**	**+3.3**
KNB	**Kanab**	**5.82**	**45**	*e*Pn	Pn	23 37 14.0	+6.4
CCUT	**Cedar City**	**5.89**	**39**	*e*Pn	Pb	23 37 17.6	-6.4
KCPM	**Cahto Peak**	**8.02**	**327**	*e*Pn	Pn	23 37 32.7	-5.1
KCPM				*e*Sn	**Sn**	**23 39 03.2**	**-5.4**
LAZ	**Ladron**	**9.15**	**78**	*e*Pn	Pn	23 37 45.3	-8.1

ISCJB ***04*** *23:42:46.3±0.3, 23.81N±0.02×121.91E±0.02, h26km±3km, Error ellipse: s-maj=3.5km s-min=2.3km az=138.7*
JMA ***04*** *23:42:46.0±0.1, 23.83N×121.89E, h24km±4km, M2.7*
TAP ***04*** *23:42:46.8, 23.85N×121.86E, h30km, ML3.2, D*

ISC 04 23:42:46.5±1.0**, 23.83N**±0.02×**121.88E**±0.02**, h30**km±10km**, n41,** σ**0**s**57/82, 1D, Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HWA	**Hwalien**	**0.29**	**301**	P	**Pn**	**23 42 54.5**	**-0.3**
	baz=299						
HWA				*e*S	**Sn**	**23 42 59.8**	**-0.3**
	baz=299						
TWD	**Chiawan**	**0.36**	**314**	*i* P	**Pn**	**23 42 55.1**	**-0.6**
	baz=314						
TWD				*i* S	**Sn**	**23 43 01.0**	**-0.8**
	baz=314						
ESL	**Shilin**	**0.41**	**268**	P	**Pb**	**23 42 55.8**	**+0.3**
	baz=264						
ESL				S	**Sn**	**23 43 02.6**	**-0.4**
	baz=264						
EHY	**Hungye**	**0.60**	**238**	*e*P	**Pb**	**23 42 58.5**	**-0.2**
	baz=234						
EHY				S	**Sb**	**23 43 07.2**	**+0.3**
	baz=234						
ENA	**Nanau**	**0.61**	**348**	*e*P	**Pn**	**23 42 59.0**	**-0.2**
	baz=350						
ENA				S	**Sb**	**23 43 07.2**	**+0.2**
	baz=350						
TWF1	**Yuli**	**0.71**	**228**	*e*P	**Pb**	**23 43 00.3**	**-0.1**
	baz=225						
TWF1				*e*S	**Sb**	**23 43 10.1**	**+0.1**
	baz=225						
NNS	**Nan Shan**	**0.76**	**323**	P	**Pn**	**23 43 01.4**	**-0.1**
	baz=323						
NNS				S	**Sb**	**23 43 11.0**	**-0.4**
	baz=323						
TWT	**Tachien**	**0.77**	**303**	*i* P	**Pn**	**23 43 01.9**	**+0.4**
	baz=302						
TWT				*i* S	**Sb**	**23 43 11.6**	**0.0**
	baz=302						
TWC	**Suao**	**0.78**	**358**	P	**Pn**	**23 43 01.4**	**-0.1**
	baz=359						
TWC				S	**Sn**	**23 43 12.2**	**0.0**
	baz=359						
ENTT	**Nioudou**	**0.85**	**341**	P	**Pb**	**23 43 02.5**	**-0.3**
	baz=341						
ENTT				S	**Sn**	**23 43 14.1**	**0.0**
	baz=341						
CHKT	**Chengkung**	**0.87**	**213**	P	**Pb**	**23 43 03.0**	**0.0**
	baz=210						
CHKT				S	**Sb**	**23 43 12.6**	**-1.7**
	baz=210						
SMLT	**Sun Moon Lake**	**0.89**	**274**	*i* P	**Pb**	**23 43 03.4**	**-0.2**
	baz=272						
SMLT				*i* S	**Sn**	**23 43 15.4**	**+0.2**
	baz=272						
TWE	**Neicheng**	**0.91**	**348**	*e*P	**Pn**	**23 43 03.3**	**0.0**
	baz=349						
TWE				*e*S	**Sn**	**23 43 15.5**	**+0.1**
	baz=349						
YUS	**Yu-Shan**	**0.91**	**248**	P	**Pb**	**23 43 04.6**	**+0.5**
	baz=246						
YUS				S	**Sb**	**23 43 15.7**	**-0.4**
	baz=246						
TYC	**Yuchr**	**0.94**	**275**	*e*P	**Pn**	**23 43 03.5**	**-0.2**
	baz=273						
TYC				*e*S	**Sn**	**23 43 16.2**	**+0.2**
	baz=273						
NSK	**Sanguang**	**0.96**	**331**	P	**Pb**	**23 43 04.4**	**-0.4**
	baz=331						
NSK				S	**Sb**	**23 43 15.8**	**-1.4**
	baz=331						
EGS		**1.01**	**3**	*e*P	**Pb**	**23 43 05.2**	**-0.3**
	baz=4.0						
EGS				S	**Sn**	**23 43 18.6**	**+0.6**
	baz=4.0						
ELDTW	**Lidau**	**1.01**	**231**	*e*P	**Pn**	**23 43 04.8**	**-0.1**
	baz=229						
ELDTW				*e*S	**Sb**	**23 43 17.2**	**-1.4**
	baz=229						
ALS	**Alishan**	**1.03**	**252**	*e*P	**Pb**	**23 43 05.8**	**-0.2**
	baz=250						
ALS				S	**Sn**	**23 43 19.3**	**+0.4**
	baz=250						
WNT	**Mingjian**	**1.09**	**273**	*e*P	**Pb**	**23 43 07.9**	**+1.1**
	baz=271

JKRS				*e*S	**Sn**	**23 43 42.7**	**+0.5**
JIJ	**Ishigaki jima**	**2.14**	**75**	P	**Pn**	**23 43 20.5**	**+0.3**
JIJ				*e*S	**Sn**	**23 43 45.1**	**-0.7**
JISG	**Ishigakijimahi**	**2.35**	**71**	P	**Pn**	**23 43 23.2**	**+0.1**
JISG				*e*S	**Sn**	**23 43 50.1**	**-0.9**

NIED ***04*** *23:44:00.39˚00N×142˚40E, h29km, Mw3.4 Best double couple: M₀1.28000×10¹⁴ NP1:φs317.00000°, δ17.00000°, λ-116.00000°. NP2:φs164.00000°, δ75.00000°, λ-82.00000°.*

JMA 04 23:44:47.0±0.1, 38˚97N×142˚40E, h35km±2km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**281**	P	Pn	23 44 58.8	0.0
OFUJ				S	Sn	23 45 06.7	-0.3
MIYJ	**Miyakonagasawa**	**0.76**	**324**	P	Pn	23 45 01.0	-0.2
MIYJ				S	Sn	23 45 10.9	-0.5
JMK	**Ichinoseki**	**0.92**	**269**	P	Pn	23 45 03.8	+0.4
JMK				S	Sn	23 45 15.6	+0.2
JIO	**Ouri**	**0.97**	**238**	P	Pn	23 45 04.0	-0.1
JIO				S	Sn	23 45 15.9	-0.7
JOM	**Ohasama**	**1.00**	**301**	P	Pn	23 45 05.0	+0.5
JOM				S	Sn	23 45 18.0	+0.7
JTH	**Tanohata**	**1.05**	**337**	P	Pn	23 45 05.4	+0.1
JRG	**Rokugo**	**1.44**	**288**	P	Pn	23 45 12.1	+1.6
JRG				S	Sn	23 45 29.5	+1.3
JOU	**Okura**	**1.49**	**247**	P	Pn	23 45 11.9	+0.7
JOU				S	Sn	23 45 30.8	+1.3
JYK	**Kaneyama**	**1.59**	**269**	P	Pn	23 45 14.1	+1.4
JMM	**Marumori**	**1.68**	**229**	P	Pn	23 45 14.0	+0.2
MAT	**Matsushiro**	**4.11**	**235**	P	Pn	23 45 51.4	+4.0

DDA ***05*** *00:05:48.8, 41˚14N×43˚81E, h7km, Md2.6*
ISCJB ***05*** *00:05:49.8±0.6, 41˚14N±0˚03×43˚80E±0˚04, h12km±4km, Error ellipse: s-maj=5.3km s-min=4.2km az=150.7*
TIF ***05*** *00:05:49.5, 41˚18N×43˚85E, h19km*
CSEM ***05*** *00:05:49.4±0.1, 41˚14N×43˚80E, h10km, ML1.6, Error ellipse: s-maj=3.4km s-min=2.5km az=145.0*

ISC 05 00:05:49.6±0.9, 41˚13N±0˚03×43˚81E±0˚02, h15km±7km, n19, σ0.953/38, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGD	**Bogdanovka**	**0.21**	**310**	P	**Pg**	**00 05 54.4**	**-0.1**
BGD				S	**Sg**	**00 05 57.9**	**+0.1**
BGD	**Bogdanovka**	**0.21**	**310**	P	**Pg**	**00 05 54.5**	**-0.1**
BGD				S	**Sg**	**00 05 57.9**	**+0.1**
AKH	**Akhalkalaki**	**0.37**	**319**	P	**Pg**	**00 05 56.8**	**-0.4**
AKH				S	**Sg**	**00 06 02.0**	**-0.3**
AKH	**Akhalkalaki**	**0.37**	**319**	P	**Pg**	**00 05 56.8**	**-0.4**
AKH				S	**Sg**	**00 06 02.0**	**-0.3**
EAK	**Akyaka**	**0.47**	**199**	*i* P	**Pb**	**00 06 00.0**	**+0.2**
EAK				*i* S	**Sg**	**00 06 05.7**	**+0.3**
EAK	**Akyaka**	**0.47**	**199**	P	**Pb**	**00 06 00.0**	**+0.2**
EAK				S	**Sg**	**00 06 05.7**	**+0.3**
DIGO	**Kars**	**0.79**	**205**	*i* P	**Pg**	**00 06 04.1**	**-0.9**
DIGO				*i* S	**Sg**	**00 06 15.4**	**0.0**
DIGO	**Kars**	**0.79**	**205**	P	**Pg**	**00 06 04.1**	**-0.9**
DIGO				S	**Sg**	**00 06 15.4**	**0.0**
EPOS	**Posof**	**0.90**	**295**	*i* P	**Pg**	**00 06 06.4**	**-0.6**
EPOS				*i* S	**Sb**	**00 06 18.7**	**-0.2**
EPOS	**Posof**	**0.90**	**295**	P	**Pg**	**00 06 06.4**	**-0.6**
EPOS				S	**Sb**	**00 06 18.7**	**-0.2**
TBLG	**Delisi**	**0.92**	**49**	P	**Pg**	**00 06 06.4**	**-1.0**
TBLG				S	**Sg**	**00 06 19.2**	**-0.3**
TBLG	**Delisi**	**0.92**	**49**	P	**Pg**	**00 06 07.0**	**-0.4**
TBLG				S	**Sg**	**00 06 19.0**	**-0.5**
SEAG	**Tbilisi Sea**	**0.98**	**49**	P	**Pg**	**00 06 07.8**	**-0.8**
SEAG				S	**Sb**	**00 06 21.1**	**0.0**
SEAG	**Tbilisi Sea**	**0.98**	**49**	P	**Pg**	**00 06 07.8**	**-0.8**
SEAG				S	**Sb**	**00 06 21.1**	**0.0**
DGRG	**David-gareji**	**1.22**	**74**	P	**Pb**	**00 06 12.7**	**+0.2**
DGRG				S	**Sn**	**00 06 29.5**	**+1.0**
DGRG	**David-gareji**	**1.22**	**74**	P	**Pb**	**00 06 12.7**	**+0.2**
DGRG				S	**Sg**	**00 06 28.8**	**-0.2**
DAGI	**Agillar**	**1.44**	**268**	*i* P	**Pg**	**00 06 16.5**	**-0.7**
DAGI				*i* S	**Sg**	**00 06 35.6**	**-0.3**
DBOC	**Borcka**	**1.63**	**278**	*i* P	**Pn**	**00 06 18.7**	**+0.8**
DBOC				*i* S	**Sn**	**00 06 38.1**	**-0.6**
DBOC	**Borcka**	**1.63**	**278**	P	**Pn**	**00 06 18.7**	**+0.8**
DBOC				S	**Sn**	**00 06 38.1**	**-0.6**

CASC 05 00:12:45.9±2.3, 10˚36N×83˚05W, h8km±15km, MD4.1, 4D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URSC	**Urasca**	**0.89**	**234**	ǁ*i*P	Pg	00 13 03.0	0.0
BUS	**Buena Vista**	**1.06**	**221**	*e*P	Pg	00 13 06.3	-0.1
BUS				*e*S	Sn	00 13 21.9	-0.8
HDC	**Heredia**	**1.11**	**251**	*e*P	Pg	00 13 05.9	-1.3
HDC				*e*S	Sg	00 13 20.4	-1.2
CGA2	**Cerro Gallo 2**	**1.44**	**256**	*e*P	Pn	00 13 11.0	-1.4
QCR	**Quepos**	**1.44**	**230**	ǁ*e*P	Pn	00 13 12.1	-0.2
BRU2	**Volcan**	**1.59**	**167**	*e*P	Pb	00 13 15.2	-0.5
BRU2				*e*S	Sb	00 13 36.6	+0.5
TBS2		**1.60**	**166**	*e*P	Pn	00 13 13.5	-1.1
TBS2				*e*S	Sg	00 13 37.0	-0.5
JCR	**Jicaral**	**2.09**	**256**	*e*P	Pn	00 13 20.7	-0.6
JCR				*e*S	Sn	00 13 48.7	+1.1
VCR	**Vista de Mar**	**2.55**	**265**	*e*P	Pn	00 13 27.4	-0.3
ZANG	**Zanguenga, Cho**	**3.43**	**114**	*e*P	Pn	00 13 37.6	-2.1
UPD2	**Meteti**	**5.28**	**110**	ǁ*e*P	Pn	00 14 05.6	+0.4
UPD2				ǁ*e*S	Sn	00 15 08.8	+2.6

IDC ***05*** *00:19:49.6±1.4, 35˚02N×141˚35E, h0km, mb3.7/5, mb1 3.8/7, mb1mx3.6/35, mbtmp3.7/7, ML3.7/2, Error ellipse: s-maj=34.1km s-min=21.4km az=86.0*
ISCJB ***05*** *00:19:57.3±0.9, 34˚89N±0˚05×140˚79E±0˚09, h59km±5km, mb3.7/5, Error ellipse: s-maj=13.5km s-min=7.4km az=157.2*
JMA ***05*** *00:19:57.4±0.1, 34˚92N×140˚78E, h59km±2km, M3.0*

ISC 05 00:19:57.7±1.1, 34˚92N±0˚06×140˚83E±0˚08, h55km±8km, n15, σ1.839/22, mb3.7/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO3	**Boso 3**	**0.28**	**245**	P	**Pn**	**00 20 07.0**	**+0.2**
BSO3				X		00 20 15.0	
BSO1	**Boso 1**	**0.29**	**155**	P	**Pn**	**00 20 07.4**	**+0.9**
BSO1				X		00 20 15.9	
BSO4	**Boso 4**	**0.41**	**280**	P	**Pn**	**00 20 08.4**	**+0.3**
BSO4				X		00 20 17.1	
KTR	**Katsuura**	**0.48**	**298**	P	**Pn**	**00 20 08.6**	**-0.3**
KTR				S	**Sn**	**00 20 16.9**	**-0.2**
JCN	**Nagara**	**0.71**	**314**	P	**Pn**	**00 20 12.0**	**+0.3**
JCN				eS	**Sn**	**00 20 21.9**	**-0.1**
TATJ	**Tateyama 2**	**0.78**	**278**	P	**Pn**	**00 20 12.3**	**-0.3**
TATJ				*e*S	**Sn**	**00 20 23.7**	**+0.3**
JIM2	**Oshima 3**	**1.17**	**260**	P	**Pn**	**00 20 16.9**	**-0.8**
JIM2				S	**Sn**	**00 20 30.5**	**-2.2**
JHJ	**Hachijo jima 2**	**2.00**	**206**	Pn	**Pn**	**00 20 29.6**	**+0.6**
JHJ	76nm,0.3s,baz=338,slow=20,SNR=27				Sn	**Sn**	**00 20 53.0**	**+0.1**
MJAR	98nm,0.3s,baz=72,slow=22,SNR=9.2 **Matsushiro Arr**	**2.67**	**308**	Pn	**Pn**	**00 20 38.6**	**+0.3**
MJAR	5.2nm,0.3s,baz=124,slow=15,SNR=15				Sn	**Sn**	**00 21 11.7**	**+2.2**
MAT	3.5nm,0.3s,baz=130,slow=52,SNR=6.6 **Matsushiro**	**2.67**	**308**	P	**Pn**	**00 20 38.7**	**+0.4**
MAT				*e*S	**Sn**	**00 21 10.5**	**+1.0**
PETK	**Petropavlovsk-**	**21.76**	**28**	P	**P**	**00 24 40.2**	**-4.3**
SONM	1.4nm,0.5s,baz=218,slow=14,SNR=3.4 **Songino Array**	**28.63**	**307**	P	**P**	**00 25 50.5**	**+1.5**
ZALV	0.3nm,0.4s,baz=99,slow=8.6,SNR=3.3 **Zalesovo Beam**	**43.01**	**314**	P	**P**	**00 27 51.7**	**+0.2**
MKAR	0.6nm,0.5s,baz=87,slow=7.8,SNR=4.3 **Makanchi Array**	**44.87**	**304**	P	**P**	**00 28 07.4**	**+0.9**
WRA	0.3nm,0.5s,baz=90,slow=8.1,SNR=2.0 **Warramunga Arr**	**54.91**	**187**	P	**P**	**00 29 22.9**	**+0.1**
	0.7nm,0.3s,baz=1.7,slow=7.7,SNR=21						

NIED ***05*** *00:20:00.37˚60N×144˚30E, h8km, Mw4.0 Best double couple: M₀1.14000×10¹⁵ NP1:φs68.00000°, δ27.00000°, λ-94.00000°. NP2:φs253.00000°, δ63.00000°, λ-88.00000°.*
IDC ***05*** *00:20:14.4±0.8, 37˚28N×144˚68E, h0km, mb3.9/12, mb1 4.1/16, mb1mx3.9/36, mbtmp3.9/16, ML3.1/3, MS3.2/3, Ms1 3.2/3, ms1mx2.7/36, Error ellipse: s-maj=20.0km s-min=19.2km az=111.0*
ISCJB ***05*** *00:20:18.0±0.4, 37˚47N±0˚04×144˚42E±0˚04, h33km, mb4.2/24, MS3.2/2, Error ellipse: s-maj=5.7km s-min=4.3km az=9.2*
JMA ***05*** *00:20:19.6±0.1, 37˚62N×144˚32E, h33km, M4.4*
NEIC ***05*** *00:20:19.8±0.4, 37˚35N×144˚70E, h35km, mb4.5/13, Error ellipse: s-maj=9.3km s-min=8.7km az=62.0*

ISC 05 00:20:19.9±0.6, 37˚46N±0˚05×144˚50E±0˚06, h35km, n75, σ2.950/82, mb4.2/24, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.68**	**293**	P	**Pn**	**00 20 59.3**	**-1.2**
JIO				*e*S	**Sn**	**00 21 28.5**	**-3.2**
OFUJ	**Ofunato**	**2.75**	**307**	P	**Pn**	**00 21 00.0**	**-1.5**
OFUJ				S	**Sn**	**00 21 30.7**	**-2.8**
JMK	**Ichinoseki**	**2.98**	**301**	P	**Pn**	**00 21 03.6**	**-1.1**
JMK				*e*S	**Sn**	**00 21 36.7**	**-2.4**
JOM	**Ohasama**	**3.22**	**310**	*e*S	**Sn**	**00 21 42.8**	**-2.3**
JFT	**Otama**	**3.31**	**272**	P	**Pn**	**00 21 08.7**	**-0.5**
JFT				*e*S	**Sn**	**00 21 45.0**	**-2.3**
JYK	**Kaneyama**	**3.57**	**295**	P	**Pn**	**00 21 12.5**	**-0.3**
JYK				*e*S	**Sn**	**00 21 52.4**	**-1.3**
JANG	**Nango**	**3.72**	**322**	P	**Pn**	**00 21 13.6**	**-1.3**
JANG				*e*S	**Sn**	**00 21 53.6**	**-3.9**
ERM	**Erimo**	**4.66**	**348**	*e*Pn	**Pn**	**00 21 26.7**	**-1.1**
ERM				*e*Sn	**Sn**	**00 22 14.1**	**-6.6**
JRY	**Ryogami san**	**4.72**	**254**	P	**Pn**	**00 21 27.4**	**-1.2**
JRY				*e*S	**Sn**	**00 22 17.5**	**-4.6**
JOT	**Ohata**	**4.74**	**327**	P	**Pn**	**00 21 28.4**	**-0.4**
JOT				S	**Sn**	**00 22 18.9**	**-3.6**
MJAR	**Matsushiro Arr**	**5.11**	**262**	Pn	**Pn**	**00 21 33.1**	**-1.0**
MJAR	baz=90,slow=14,SNR=4.3				Sn	**Sn**	**00 22 28.5**	**-3.3**
MAT	baz=12,slow=26,SNR=2.0 **Matsushiro**	**5.12**	**262**	P	**Pn**	**00 21 34.0**	**-0.1**
MAT				*e*S	**Sn**	**00 22 30.3**	**-1.6**
JKB	**Kayabe**	**5.17**	**330**	P	**Pn**	**00 21 34.6**	**-0.1**
JCH	**Churui**	**5.22**	**351**	P	**Pn**	**00 21 33.6**	**-1.9**
JCH				S	**Sn**	**00 22 29.2**	**-5.2**
JHJ2	**Mitsune**	**5.79**	**223**	*e*Pn	**Pn**	**00 21 39.6**	**-3.6**
JHJ2				*e*Sn	**Sn**	**00 22 40.6**	**-7.7**
NEM2	**Nemuro 2**	**5.97**	**9**	P	**Pn**	**00 21 42.3**	**-3.5**
NEM2				*e*S	**Sn**	**00 22 45.1**	**-7.8**
JTKR	**Abashiri--Toko**	**6.52**	**356**	P	**Pn**	**00 21 51.4**	**-1.9**
JTKR				*e*S	**Sn**	**00 23 01.5**	**-4.8**
JHR	**Hokuryu**	**6.62**	**342**	P	**Pn**	**00 21 54.9**	**+0.2**
JHR				*e*S	**Sn**	**00 23 05.6**	**-3.2**
ASAJ	**Asahikawa**	**6.80**	**348**	*e*Pn	**Pn**	**00 21 56.5**	**-0.7**
YSS	**Yuzh-Sakhalins**	**9.57**	**353**	*e*Pn	**Pn**	**00 22 37.6**	**+2.5**
USRK	**Ussuriysk Ar.**	**11.61**	**309**	Pn	**Pn**	**00 23 04.1**	**+1.0**
KSRS	0.4nm,0.3s,baz=110,slow=6,SNR=8.1 **Korea Array**	**13.17**	**275**	Pn	**Pn**	**00 23 27.2**	**+2.8**
KS15	0.3nm,0.3s,baz=88,slow=13,SNR=8.2 **Wonju Array Si**	**13.20**	**275**	*e*Pn	**Pn**	**00 23 27.2**	**+2.3**
KSAR	**Wonju Array Be**	**13.20**	**275**	Pn	**Pn**	**00 23 27.2**	**+2.3**
MDJ	**Mudanjiang**	**13.32**	**307**	*e*Pn	**Pn**	**00 23 27.0**	**+0.7**
KLR	**Kul'dur**	**14.95**	**326**	Pn	**Pn**	**00 23 49.4**	**+0.8**
PETK	0.1nm,0.3s,baz=142,slow=13,SNR=3.5 **Petropavlovsk-**	**18.15**	**26**	LR	LR	00 32 48.0	
GUMO	comp=Z,36nm,19.2s,baz=232,slow=41 **Guam**	**23.78**	**179**	LR	LR	00 32 53.2	
TPUB	comp=Z,34nm,19.5s,baz=126,slow=32 **Ta-pu**	**24.87**	**242**	*e*P	**P**	**00 25 35.9**	**-3.5**
SONM	40nm,1.4s **Songino Array**	**29.61**	**303**	P	**P**	**00 26 25.1**	**+3.3**
SONA0	0.6nm,0.8s,baz=92,slow=7.2,SNR=2.9 **Songino Array**	**29.61**	**303**	*e*P	**P**	**00 26 25.1**	**+3.3**
TGY	7.5nm,1.7s **Tagaytay City**	**31.31**	**228**	LR	LR	00 38 30.5	
ZAA1	comp=Z,134nm,20.7s,baz=18,slow=35 **Zalesovo Array**	**43.45**	**312**	*e*P	**P**	**00 28 19.7**	**+0.5**
ZALV	**Zalesovo Beam**	**43.45**	**312**	P	**P**	**00 28 19.7**	**+0.5**
SVW2	0.7nm,0.6s,baz=90,slow=7.2,SNR=4.1 **Sparrevohn**	**43.69**	**37**	*e*P	**P**	**00 28 19.7**	**-1.4**
CMAR	16nm,1.8s **Chiang Mai Arr**	**43.99**	**257**	P	**P**	**00 28 24.6**	**+0.6**
KDAK	0.6nm,0.4s,baz=43,slow=6.8,SNR=3.0 **Kodiak Island**	**45.13**	**42**	*e*P	**P**	**00 28 33.3**	**+0.7**
MK01	14nm,1.4s **Makanchi Array**	**45.97**	**302**	*e*P	**P**	**00 28 41.2**	**+1.7**
MK31	**Makanchi Array**	**45.97**	**302**	*e*P	**P**	**00 28 41.2**	**+1.7**
MK32	**Makanchi Array**	**45.97**	**302**	*e*P	**P**	**00 28 40.7**	**+1.2**
MKAR	**Makanchi Array**	**45.97**	**302**	P	**P**	**00 28 40.7**	**+1.2**
MKAR	1.3nm,0.8s,baz=87,slow=9.9,SNR=6.7 **Makanchi Array**	**45.97**	**302**	*e*P	**P**	**00 28 43.2**	**+3.7**
RND	26nm,0.8s **Reindeer**	**46.94**	**34**	*e*P	**P**	**00 28 45.3**	**-1.7**
WRH	4.3nm,1.0s **Wood River Hil**	**47.29**	**33**	*e*P	**P**	**00 28 49.4**	**-0.2**
KURK	3.7nm,1.1s **Kurchatov**	**47.60**	**308**	*e*P	**P**	**00 28 55.4**	**+3.3**
IL1	**Eielson Array**	**47.81**	**33**	*e*P	**P**	**00 28 53.1**	**-0.5**
ILAR	**Eielson Array**	**47.81**	**33**	P	**P**	**00 28 54.1**	**+0.5**
ILB	1.0nm,0.8s,baz=262,slow=6.6,SNR=13 **Eielson Array**	**47.81**	**33**	*e*P	**P**	**00 28 54.1**	**+0.5**
TKM2	**Tokmak 2**	**51.58**	**299**	*e*P	**P**	**00 29 23.2**	**+0.4**
VOSK	5.7nm,0.8s **Vostochnaya**	**51.82**	**312**	*e*P	**P**	**00 29 26.0**	**+1.8**
ZRNK	2.5nm,0.9s **Zerenda**	**52.93**	**313**	*e*P	**P**	**00 29 34.0**	**+1.5**
WB2	2.5nm,0.9s **Warramunga Arr**	**57.89**	**191**	*e*P	**P**	**00 30 07.0**	**-1.4**
WR1	**Warramunga Arr**	**57.89**	**191**	*e*P	**P**	**00 30 06.7**	**-1.8**
WRA	29nm,1.6s **Warramunga Arr**	**57.89**	**191**	P	**P**	**00 30 06.7**	**-1.8**
AS31	1.7nm,0.5s,baz=12,slow=7.3,SNR=14 **Alice Springs**	**61.61**	**191**	*e*P	**P**	**00 30 32.9**	**-1.0**
ASAR	1.6nm,1.0s **Alice Springs**	**61.61**	**191**	P	**P**	**00 30 32.9**	**-1.1**
MSVF	0.5nm,0.5s,baz=9.3,slow=4.9,SNR=5.1 **Nonsavu**	**63.34**	**144**	*e*P	**P**	**00 30 44.8**	**-0.9**
FIA0	76nm,1.9s **FINESS Array S**	**69.56**	**333**	*e*P	**P**	**00 31 24.9**	**+0.1**
FINES	**FINESS Array B**	**69.56**	**333**	P	**P**	**00 31 24.9**	**+0.1**
NB2	1.5nm,0.9s,baz=38,slow=9.6,SNR=3.5 **NORSAR Subarra**	**74.72**	**338**	P	**P**	**00 31 56.5**	**+0.7**
NB200	comp=Z,0.7nm,0.6s,baz=39,slow=5.9 **NORSAR Array S**	**74.72**	**338**	*e*P	**P**	**00 31 56.8**	**+1.0**
NOA	**NORSAR Array B**	**74.72**	**338**	P	**P**	**00 31 56.8**	**+1.0**
AKASG	comp=Z,1.1nm,0.7s,baz=40,slow=5.7,SNR=6.7 **Malin Array Be**	**75.44**	**324**	P	**P**	**00 32 01.3**	**+1.3**
AKBB	comp=Z,1.0nm,0.5s,baz=43,slow=4.9,SNR=3.1 **Malin Array Si**	**75.44**	**324**	*e*P	**P**	**00 32 01.3**	**+1.3**
PD31	**Pinedale Array**	**75.60**	**47**	*e*P	**P**	**00 32 02.0**	**+0.5**
PDAR	**Pinedale Array**	**75.60**	**47**	P	**P**	**00 32 02.0**	**+0.5**
LTX	comp=Z,0.2nm,0.3s,baz=297,slow=6.5,SNR=4.0 **Lajitas Array**	**87.89**	**54**	*e*P	**P**	**00 33 06.5**	**+0.2**
TXAR	**Lajitas Array**	**87.89**	**54**	P	**P**	**00 33 06.5**	**+0.2**
	comp=Z,0.4nm,0.6s,baz=310,slow=4.5,SNR=5.9						

IDC ***05*** *01:07:09.8±2.1, 52˚51N×171˚99W, h0km, mb3.8/6, mb1 3.9/7, mb1mx3.5/34, mbtmp3.7/7, ML3.6/1, Error ellipse: s-maj=52.5km s-min=24.7km az=5.0*
NEIC ***05*** *01:07:11.2, 51˚77N×171˚51W, h42km, ML3.7(AEIC), After AEIC.*

ISC 05 01:07:15.4±1.4, 52˚4N±0˚2×171˚75W±0˚07, h44km, n31, σ1.936/30, mb3.7/6, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**1.41**	**271**	P	**Pn**	**01 07 38.7**	**0.0**
KOFP	**Korovin Flat P**	**1.45**	**268**	P	**Pn**	**01 07 38.6**	**-0.6**
KONE	**Korovin Northe**	**1.46**	**273**	P	**Pn**	**01 07 39.6**	**+0.3**
KOKV	**Korovin Volcan**	**1.48**	**272**	P	**Pn**	**01 07 39.7**	**0.0**
KOKV				S	**Sn**	**01 08 01.8**	**+3.9**
KOKL	**Mount Kliuchef**	**1.51**	**270**	P	**Pn**	**01 07 39.7**	**-0.3**
NIKH	**Nikolski High**	**1.87**	**69**	P	**Pn**	**01 07 43.0**	**-1.9**
NIKH				S	**Sn**	**01 08 07.0**	**-0.3**
OKWR	**Okmok West Rim**	**2.41**	**62**	P	**Pn**	**01 07 53.9**	**+1.5**
OKTU	**Okmok Mt. Tuli**	**2.48**	**64**	P	**Pn**	**01 07 53.8**	**+0.6**
OKER	**Okmok East Rim**	**2.50**	**62**	P	**Pn**	**01 07 54.3**	**+0.7**
GSMY	**Great Sitkin M**	**2.67**	**265**	P	**Pn**	**01 07 54.6**	**-1.3**
GSTD	**Great Sitkin T**	**2.72**	**266**	P	**Pn**	**01 07 55.3**	**-1.4**
GSTD				S	**Sn**	**01 08 29.3**	**+0.9**
GSCK	**Great Sitkin C**	**2.74**	**265**	P	**Pn**	**01 07 55.4**	**-1.4**
ETKA	**Kagalaska Isla**	**2.91**	**262**	P	**Pn**	**01 07 58.0**	**-1.2**
ADAG	**Mount Adagdak**	**3.01**	**265**	P	**Pn**	**01 07 59.7**	**-0.9**
UNV	**Unalaska Valle**	**3.50**	**62**	*e*Pn	**Pn**	**01 08 07.6**	**+0.3**
UNV				*e*S	**Sn**	**01 08 50.1**	**+2.7**
TASE	**Tanaga Southea**	**3.91**	**265**	P	**Pn**	**01 08 13.2**	**+0.2**
AKUT	**Akutan**	**4.01**	**61**	*e*Pn	**Pn**	**01 08 15.5**	**+1.2**
AKUT				*e*S	**Sn**	**01 08 59.4**	**-0.6**
SDPT	**Sand Point**	**7.31**	**61**	*e*Pn	**Pn**	**01 08 60.0**	**+0.4**
ILAR	**Eielson Array**	**17.81**	**36**	P	**Pn**	**01 11 19.7**	**0.0**
INK	0.1nm,0.3s,baz=234,slow=10,SNR=6.3 **Inuvik**	**24.18**	**34**	P	**P**	**01 12 26.5**	**-0.6**
YKA	0.7nm,0.4s,baz=239,slow=7.2,SNR=6.9 **Yellowknife Ar**	**31.35**	**49**	P	**P**	**01 13 30.8**	**-0.5**
H11N2	0.4nm,0.6s,baz=270,slow=7.8,SNR=7.2 **WAKE ISLAND Hy**	**36.56**	**215**	T	T	01 52 44.7	
H11N3	baz=21,slow=75,SNR=5.4 **WAKE ISLAND Hy**	**36.57**	**215**	T	T	01 52 43.8	
H11N1	baz=21,slow=75,SNR=5.9 **WAKE ISLAND Hy**	**36.58**	**215**	T	T	01 52 40.4	
H11S1	baz=21,slow=75,SNR=5.6 **WAKE ISLAND Hy**	**37.76**	**215**	T	T	01 54 12.3	
H11S2	baz=20,slow=76,SNR=5.0 **WAKE ISLAND Hy**	**37.77**	**215**	T	T	01 54 08.2	
H11S3	baz=20,slow=76,SNR=3.9 **WAKE ISLAND Hy**	**37.77**	**215**	T	T	01 54 16.5	
TXAR	baz=20,slow=76,SNR=3.0 **Lajitas Array**	**54.20**	**87**	P	**P**	**01 16 38.7**	**+2.2**
ARCES	0.3nm,0.6s,baz=323,slow=5.9,SNR=2.8 **ARCESS Array B**	**57.78**	**353**	P	**P**	**01 16 59.8**	**-1.6**
MKAR	1.5nm,0.8s,baz=9.1,slow=7.4,SNR=3.5 **Makanchi Array**	**62.75**	**312**	P	**P**	**01 17 34.7**	**-1.1**
BVAR	0.4nm,0.4s,baz=43,slow=7.0,SNR=8.0 **Borovoye Array**	**62.86**	**323**	P	**P**	**01 17 36.2**	**-0.2**
	2.4nm,0.5s,baz=51,slow=6.1,SNR=28						

WEL 05 01:16:37.7±0.3, 40˚26S×173˚43E, h166km±2km, ML3.6/30, 11C-4D, Error ellipse: s-maj=1.8km s-min=1.0km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DUWZ	**D'Urville Isla**	**0.66**	**146**	PN	Pn	01 17 01.8	+0.2
DUWZ				SN	Sn	01 17 19.2	-0.9
QRZ	**Quartz Range**	**0.89**	**230**	PN	Pn	01 17 03.0	-0.1
QRZ				SN	Sn	01 17 20.9	-1.8
NNZ	**Nelson**	**0.95**	**182**	⇑PN	Pn	01 17 03.5	-0.1
NNZ				SN	Sn	01 17 22.5	-1.1
KHEZ	**Kahui Hut**	**1.06**	**25**	⇓PN	Pn	01 17 04.7	+0.1
NEZ	**North Egmont**	**1.11**	**27**	⇑PN	Pn	01 17 04.9	-0.2
TCW	**Tory Channel**	**1.14**	**146**	⇑PN	Pn	01 17 05.5	+0.4
TCW				AML	AML	01 17 25.8	
TCW				AML	AML	01 17 27.0	
TUWZ	**Tuamarina**	**1.23**	**162**	PN	Pn	01 17 06.0	+0.2
TUWZ				AML	AML	01 17 06.7	
TUWZ				AML	AML	01 17 06.8	
KIW	**Kapiti Island**	**1.27**	**119**	PN	Pn	01 17 08.3	0.0
KIW				AML	AML	01 17 26.2	
KIW				AML	AML	01 17 29.0	
WAZ	**Wanganui**	**1.29**	**67**	⇑PN	Pn	01 17 06.9	+0.4
OGWZ	**Otaki Gorge**	**1.44**	**113**	PN	Pn	01 17 07.9	+0.1
OGWZ				AML	AML	01 17 29.6	
OGWZ				AML	AML	01 17 32.4	
BSWZ	**Blackbirch Sta**	**1.49**	**167**	PN	Pn	01 17 08.5	+0.2
CAW	**Cannon Point**	**1.50**	**125**	PN	Pn	01 17 08.5	0.0
CAW				AML	AML	01 17 32.7	
CAW				AML	AML	01 17 33.0	
VRZ	**Vera Road**	**1.53**	**42**	⇓PN	Pn	01 17 08.1	-0.6
VRZ				SN	Sn	01 17 31.4	-1.3
THZ	**Tophouse**	**1.55**	**195**	⇑PN	Pn	01 17 08.7	-0.3
BHW	**Baring Head**	**1.58**	**137**	PN	Pn	01 17 09.0	-0.2
BHW				AML	AML	01 17 33.5	
MRZ	**Mangatainoka R**	**1.68**	**104**	⇑PN	Pn	01 17 10.1	-0.2
MRZ				AML	AML	01 17 33.6	
MRZ				AML	AML	01 17 33.9	
HOWZ	**Holdsworth Sta**	**1.71**	**113**	PN	Pn	01 17 10.4	-0.2
HOWZ				AML	AML	01 17 33.7	
HOWZ				AML	AML	01 17 33.9	
PKVZ	**Pokaka**	**1.77**	**57**	PN	Pn	01 17 10.7	-0.6
POWZ	**Post Office Ro**	**1.79**	**95**	AML	AML	01 17 37.8	
POWZ				AML	AML	01 17 38.7	
MSWZ	**Moikau Station**	**1.80**	**131**	PN	Pn	01 17 11.3	-0.2
MSWZ				AML	AML	01 17 35.7	
MSW

MCHZ	**McNeill Hill**	**2.64**	**73**	PN	Pn	01 17 20.7	-0.6
MCHZ				AML	AML	01 17 57.6	
KAHZ	**Kahuranaki**	**2.68**	**81**	PN	Pn	01 17 21.4	-0.5
KAHZ				AML	AML	01 17 23.2	
MRHZ	**Matea Rd**	**2.71**	**59**	⇓PN	Pn	01 17 20.2	-2.0
URZ	**Urewera**	**3.48**	**56**	PN	Pn	01 17 29.0	-2.7
MQZ	**McQueen's Vall**	**3.49**	**189**	PN	Pn	01 17 29.5	-2.3
RIGZ	**Rimuhau**	**3.69**	**66**	PN	Pn	01 17 32.5	-1.9
MWZ	**Matawai**	**3.71**	**60**	PN	Pn	01 17 32.2	-2.5
MWZ				AML	AML	01 17 52.4	
MWZ				AML	AML	01 18 00.3	

*IDC **05** 01:32:09.8±1.7,38.54S×145.80E,h0km,mb4.2/4, mb1 4.4/7,mb1mx4.1/23,mbtmp4.2/7,ML4.0/3,MS3.5/4, Ms1 3.5/4,ms1mx3.1/22,Error ellipse: s-maj=59.1km s-min=18.4km az=53.0*

*ISCJB **05** 01:32:10.6±0.4,38.39S±0.04×145.85E±0.05,h8km, mb4.7/10,MS3.3/3,Error ellipse: s-maj=5.8km s-min=5.3km az=39.8*

*NEIC **05** 01:32:11.0,38.41S×145.84E,h2km,mb4.4/6, ML4.4(AUST),After AUST.*

NEIC Felt [IV] at Warragul, [III] at Melbourne and [II] at Cranbourne, Healesville, Pakenham and Wonthaggi. Also felt at Moe and Yallourn.

*AUST **05** 01:32:11.4±0.9,38.41S×145.84E,h2km±7km,Error ellipse: s-maj=3.5km s-min=2.9km az=85.0*

*BJI **05** 01:32:13.3,38.34S×146.55E,h16km,mb5.0/12,mB4.9/6, Ms4.6/1,Ms7 4.7/1*

ISC 05 01:32:12.6±0.6,38.39S±0.04×145.82E±0.06,h8km,n46, σ1s21/50,mb5.0/10,MS3.3/3,Near southeast coast of Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOO	**Toolangi**	**0.86**	**342**	P	**Pg**	**01 32 28.6**	**-0.6**
	baz=0.9,SNR=1000						
TOO	**Toolangi**	**0.86**	**342**	P	**Pb**	**01 32 29.5**	**-0.3**
TOO				S	**Sg**	**01 32 40.6**	**+0.3**
MILA	**Mila**	**2.96**	**64**	P	**Pn**	**01 32 59.4**	**-0.7**
	baz=3.0						
MILA	**Mila**	**2.96**	**64**	P	**Pn**	**01 32 59.7**	**-0.4**
MILA				S	**Sn**	**01 33 33.6**	**-2.2**
ARPS	**Mount Arapiles**	**3.55**	**296**	P	**Pn**	**01 33 07.8**	**-0.2**
	baz=3.6						
ARPS	**Mount Arapiles**	**3.55**	**296**	P	**Pn**	**01 33 08.6**	**+0.5**
CAN	**Canberra**	**3.99**	**41**	P	**Pn**	**01 33 14.1**	**-0.1**
	baz=4.0						
CAN	**Canberra**	**3.99**	**41**	*e*Pn	**Pn**	**01 33 14.0**	**-0.1**
CAN				*e*S	**Sn**	**01 34 00.3**	**-0.8**
MOO	**Moorlands**	**4.18**	**166**	P	**Pn**	**01 33 15.8**	**-0.9**
	baz=4.2						
MOO				P	**Pn**	**01 33 15.8**	**-0.9**
	baz=4.2,SNR=5.7						
CNB	**Canberra Magne**	**4.18**	**44**	P	**Pn**	**01 33 16.3**	**-0.5**
	baz=4.2,SNR=26						
CNB				P	Pb	01 33 16.6	-10
	baz=4.2						
YNG	**Young**	**4.58**	**28**	P	**Pn**	**01 33 21.8**	**-0.5**
	baz=4.6						
YNG				P	**Pn**	**01 33 22.1**	**-0.2**
	baz=4.6,SNR=33						
TAU	**Tasmania Unive**	**4.66**	**166**	*e*Pn	**Pn**	**01 33 21.6**	**-1.6**
TAU				*e*Sg	**Sg**	**01 34 40.0**	**-2.1**
MGCD	**Mangrove Creek**	**6.72**	**41**	P	**Pn**	**01 33 51.7**	**+0.1**
	baz=6.7						
CMSA	**Cobar Meteorol**	**6.84**	**359**	P	**Pn**	**01 33 52.3**	**-0.9**
	baz=6.9						
STKA	**Stephens Creek**	**7.36**	**331**	Pn	**Pn**	**01 34 00.0**	**-0.4**
	3.0nm,0.3s,baz=161,slow=9.7,SNR=50						
STKA				Sn	**Sn**	**01 35 20.2**	**-3.9**
	11nm,0.3s,baz=154,slow=7.4,SNR=4.5						
STKA				Lg	Lg	01 36 03.5	
	18nm,0.3s,baz=55,slow=19,SNR=3.6						
STKA	**Stephens Creek**	**7.36**	**331**	P	**Pn**	**01 34 00.2**	**-0.2**
	baz=7.4,SNR=24						
HTT	**Hallett**	**7.47**	**309**	P	**Pn**	**01 34 02.6**	**+0.7**
	baz=7.5						
ARMA	**Armidale**	**9.29**	**33**	*e*Pn	**Pn**	**01 34 28.7**	**+1.8**
BBOO	**Buckleboo**	**9.70**	**302**	*e*Pn	**Pn**	**01 34 31.6**	**-0.9**
QLP	**Quilpie**	**11.85**	**353**	P	**Pn**	**01 35 01.7**	**-0.3**
	baz=12						
EIDS	**Eidsvold**	**13.73**	**20**	*e*Pn	**Pn**	**01 35 27.3**	**-0.3**
EIDS				*e*S	Sn	01 37 50.9	-9.4
AS01	**Alice Springs**	**17.83**	**322**	*e*Pn	**P**	**01 36 22.1**	**+0.1**
AS31	**Alice Springs**	**17.85**	**322**	*e*Pn	**Pn**	**01 36 21.4**	**-0.1**
	2.8nm,0.7s						
ASAR	**Alice Springs**	**17.85**	**322**	P	**Pn**	**01 36 20.1**	**-1.4**
	0.2nm,0.3s,baz=146,slow=12,SNR=12						
ASAR				S	**Sn**	**01 39 41.7**	**+1.0**
	0.3nm,0.3s,baz=151,slow=22,SNR=5.1						
ASAR				LR	LR	01 43 33.4	
	comp=Z,158nm,18.6s,baz=148,slow=38						
MLZ	**Mavora Lakes**	**17.98**	**120**	*e*Pn	**Pn**	**01 36 22.8**	**-0.1**
	176nm,1.9s						
CTA	**Charters Tower**	**18.24**	**1**	P	**Pn**	**01 36 24.9**	**-1.3**
	0.1nm,0.3s,baz=175,slow=14,SNR=3.3						
WB2	**Warramunga Arr**	**20.90**	**328**	*e*P	**P**	**01 36 56.0**	**+0.5**
	26nm,1.0s						
WRA	**Warramunga Arr**	**20.90**	**328**	P	**P**	**01 36 54.9**	**-0.6**
	18nm,0.9s,baz=150,slow=9.7,SNR=51						
WRA				S	Sn	01 40 53.0	-1.3
	2.3nm,0.8s,baz=162,slow=18,SNR=4.2						
WRAB	**Tennant Creek**	**20.91**	**328**	*e*P	**P**	**01 36 55.3**	**-0.3**
	12nm,0.7s						
DZM	**Mont Dzumac**	**24.04**	**53**	LR	LR	01 45 12.5	
	comp=Z,69nm,19.7s,baz=61,slow=32						
FITZ	**Fitzroy Crossi**	**26.81**	**313**	P	**P**	**01 37 52.8**	**-0.5**
	2.0nm,0.9s,baz=144,slow=10,SNR=4.1						
FITZ				LR	LR	01 49 13.3	
	comp=Z,83nm,21.5s,baz=134,slow=38						
FITZ	**Fitzroy Crossi**	**26.81**	**313**	*e*P	**P**	**01 37 53.7**	**+0.3**
MTN	**Manton Dam**	**28.60**	**329**	*e*P	**P**	**01 38 10.2**	**+0.8**
	34nm,1.4s						
VNDA	**Vanda**	**39.83**	**175**	LR	LR	01 53 51.0	
	comp=Z,72nm,18.2s,baz=344,slow=33						
VNDA	**Vanda**	**39.83**	**175**	*e*P	**P**	**01 39 48.4**	**+2.4**
	2.5nm,0.9s						
QSPA	**South Pole Qui**	**51.72**	**180**	*e*P	**P**	**01 41 20.1**	**0.0**
	49nm,1.1s						
CMAR	**Chiang Mai Arr**	**71.62**	**313**	P	**P**	**01 43 34.2**	**-0.6**
	0.9nm,0.3s,baz=160,slow=6.1,SNR=7.2						
MJAR	**Matsushiro Arr**	**74.89**	**354**	P	**P**	**01 43 53.0**	**-0.7**
	1.6nm,0.7s,baz=166,slow=5.6,SNR=3.7						
KMI	**Kunming**	**74.98**	**320**	P	P	01 44 01.8	+7.1
KMI				pmax	pmax		
	comp=Z,15nm,0.5s						
CN2	**Changchun**	**83.87**	**345**	*e*P	**P**	**01 44 45.9**	**+3.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
HHC	**Hu-ho-hao-te**	**84.85**	**335**	*e*P	**P**	**01 44 49.9**	**+2.3**
HHC				pmax	pmax		
	comp=Z,22nm,0.9s						
HHC				pmax	pmax		
	comp=Z,93nm,8.1s						
WMQ	**Urumqi**	**97.26**	**322**	*e*P	Pdif	01 45 47.3	+1.4
WMQ				pP	sP	01 45 54.9	+5.5
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.7s						
WMQ				pmax	pmax		
	comp=Z,96nm,4.7s						
GERES	**GERESS Array B**	**144.33**	**303**	PKP	**PKPab**	**01 51 45.9**	**-1.1**
	1.0nm,0.9s,baz=96,slow=1.0,SNR=7.0						
WATA	**Walderalm**	**145.72**	**300**	*i* PKPbc	**PKPdf**	**01 51 50.9**	**-0.5**
	3.1nm,0.9s						
MOTA	**Moosalm**	**146.04**	**300**	*i* sPKPdf	**PKPdf**	**01 51 52.1**	**+0.1**
	8.3nm,1.0s						
RETA	**Reutte**	**146.27**	**300**	*i* PKPbc	**PKPdf**	**01 51 52.7**	**+0.4**
	5.8nm,1.6s						

KRSC 05 01:32:27.1±2.0,60.84N×166.83E,h0km±5km,ML3.8, Eastern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TILK	**Tilichiki**	**0.52**	**221**	*e*P	Pb	01 32 38.1	-0.9
TILK				*e*S	Sb	01 32 45.5	-1.5
KMSK	**Kamenskaya**	**1.66**	**350**	*e*P	Pb	01 32 58.6	+0.1
KMSK				S	Sg	01 33 21.2	+0.8
OSSR	**Ossora**	**2.47**	**232**	P	Pb	01 33 12.7	+0.4
OSSR				S	Sb	01 33 44.4	+1.2

*ISCJB **05** 01:39:51.9±0.8,22.06N±0.05×122.20E±0.03,h9km±7km, Error ellipse: s-maj=8.7km s-min=3.4km az=166.5*

*TAP **05** 01:39:53.1,22.01N×122.12E,h22km,ML3.5,C*

*JMA **05** 01:39:53.9±0.2,22.05N×122.08E,h73km,M4.0*

ISC 05 01:39:47.9±1.4,22.10N±0.05×122.33E±0.03,h13km±10km, n35,σ0s90/66,2C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.73**	**266**	⇑*i*P	**Pn**	**01 40 03.5**	**-0.5**
	baz=273						
LAY				*e*S	**Sg**	**01 40 11.2**	**-0.4**
	baz=273						
CHKT	**Chengkung**	**1.34**	**318**	*e*P	**Pg**	**01 40 14.7**	**+1.0**
	baz=327						
CHKT				*e*S	**Sg**	**01 40 30.3**	**-0.8**
	baz=327						
TSEB	**Hengchuen, Pin**	**1.34**	**262**	*e*P	**Pg**	**01 40 14.7**	**+0.9**
	baz=265						
TSEB				*e*S	**Sb**	**01 40 30.4**	**+0.2**
	baz=265						
TWG	**Pinlang**	**1.37**	**302**	P	**Pg**	**01 40 15.5**	**+1.2**
	baz=321						
TWG				*e*S	**Sg**	**01 40 31.4**	**-0.7**
	baz=321						
EAST	**Anshuo**	**1.41**	**282**	⇑*i*P	**Pb**	**01 40 14.5**	**+0.5**
	baz=299						
EAST				*e*S	**Sn**	**01 40 31.2**	**-0.5**
	baz=299						
TWK1	**Hengchun**	**1.43**	**264**	P	**Pg**	**01 40 15.2**	**-0.1**
	baz=267						
TWK1				S	**Sn**	**01 40 31.5**	**-0.7**
	baz=267						
HEN	**Hengchun**	**1.48**	**267**	*e*P	**Pb**	**01 40 15.5**	**+0.1**
	baz=279						
HEN				*e*S	**Sn**	**01 40 32.9**	**-0.7**
	baz=279						
TWF1	**Yuli**	**1.57**	**323**	*e*P	**Pg**	**01 40 18.9**	**+0.8**
	baz=331						
TWF1				*e*S	**Sg**	**01 40 38.2**	**-0.4**
	baz=331						
SCZT	**Fangliau**	**1.61**	**280**	*e*P	**Pb**	**01 40 18.0**	**+0.4**
	baz=294						
STYT	**Tauyuan**	**1.80**	**306**	*e*P	**Pg**	**01 40 22.1**	**-0.3**
	baz=312						
YUS	**Yu-Shan**	**1.88**	**318**	*e*P	**Pg**	**01 40 24.1**	**0.0**
	baz=335						
SGST	**Jiashian**	**1.89**	**302**	*e*P	**Pg**	**01 40 24.8**	**+0.6**
	baz=307						
SGST				*e*S	**Sg**	**01 40 48.5**	**-0.3**
	baz=307						
WTP	**Ta-pu**	**1.96**	**306**	*e*P	**Pg**	**01 40 25.4**	**0.0**
	baz=311						
WTP				*e*S	**Sg**	**01 40 49.6**	**-1.2**
	baz=311						
WDT	**Danda**	**1.99**	**326**	*e*P	**Pg**	**01 40 25.9**	**-0.2**
	baz=344						
WDT				S	**Sg**	**01 40 50.2**	**-1.7**
	baz=344						
CHN1	**Nanshi**	**1.99**	**303**	*e*P	**Pg**	**01 40 26.5**	**+0.4**
	baz=309						
CHN1				*e*S	**Sg**	**01 40 51.7**	**-0.2**
	baz=309						
ALS	**Alishan**	**1.99**	**315**	*e*P	**Pg**	**01 40 26.5**	**+0.3**
	baz=321						
CHN4	**Tsaushan**	**2.03**	**308**	*e*P	**Pg**	**01 40 27.1**	**+0.2**
	baz=324						
CHN4				*e*S	**Sg**	**01 40 52.4**	**-1.0**
	baz=324						
TWK	**Hsinying**	**2.06**	**305**	*e*P	**Pg**	**01 40 26.5**	**-1.0**
	baz=310						
TWK				*e*S	**Sg**	**01 40 53.0**	**-1.3**
	baz=310						
TWD	**Chiawan**	**2.09**	**341**	*e*P	**Pg**	**01 40 28.2**	**+0.2**
	baz=347						
TWD				*e*S	**Sb**	**01 40 52.4**	**+0.9**
	baz=347						
CHN5	**Tsauling**	**2.13**	**315**	*e*P	**Pg**	**01 40 28.6**	**-0.2**
	baz=320						
CHN5				*e*S	**Sg**	**01 40 55.9**	**-0.7**
	baz=320						
SMLT	**Sun Moon Lake**	**2.21**	**324**	*e*P	**Pg**	**01 40 30.5**	**+0.1**
	baz=338						
SMLT				*e*S	**Sb**	**01 40 56.9**	**+1.6**
	baz=338						
TYC	**Yuchr**	**2.25**	**323**	*e*P	**Pg**	**01 40 30.5**	**-0.7**
	baz=338						
TYC				S	**Sb**	**01 40 58.1**	**+1.7**
	baz=338						
WHF	**Hehuan Shan**	**2.26**	**334**	*e*P	**Pb**	**01 40 29.3**	**+0.4**
	baz=351						
WHF				*e*S	**Sb**	**01 40 57.3**	**+0.3**
	baz=351						
HATJ	**Hateruma jima**	**2.38**	**35**	P	**Pg**	**01 40 34.0**	**+0.5**
HATJ				*e*S	**Sg**	**01 41 03.2**	**-1.1**
TWT	**Tachien**	**2.40**	**334**	*e*P	**Pb**	**01 40 32.3**	**+1.3**
	baz=350						
TWT				*e*S	**Sb**	**01 41 00.3**	**-0.3**
	baz=350						
JYNG	**Yonagunijimaku**	**2.41**	**13**	P	**Pg**	**01 40 34.0**	**-0.1**
JYNG				*e*S	**Sg**	**01 41 04.6**	**-0.8**
YOJ	**Yonaguni jima**	**2.43**	**15**	P	**Pg**	**01 40 34.4**	**-0.2**
YOJ				*e*S	**Sg**	**01 41 04.9**	**-1.3**
NNS	**Nan Shan**	**2.49**	**339**	*e*P	**Pg**	**01 40 35.8**	**0.0**
	baz=344						
NNS				*e*S	**Sb**	**01 41 03.3**	**0.0**
	baz=344						
TWC	**Suao**	**2.54**	**350**	*e*P	**Pb**	**01 40 34.3**	**+0.9**
	baz=355						
TWC				*e*S	**Sb**	**01 41 04.9**	**+0.4**
	baz=355						
JKRS	**Kuro-shima**	**2.63**	**36**	P	**Pg**	**01 40 37.9**	**-0.4**
JKRS				*e*S	**Sb**	**01 41 09.5**	**+2.3**
TWQ1	**Liyutan**	**2.66**	**328**	*e*P	**Pb**	**01 40 36.9**	**+1.4**
	baz=318						
TWQ1				*e*S	**Sb**	**01 41 10.4**	**+2.4**
	baz=318						
NSK	**Sanguang**	**2.72**	**341**	*e*P	**Pg**	**01 40 39.3**	**-0.7**
	baz=345						
NSK				*e*S	**Sb**	**01 41 08.3**	**-1.5**
	baz=345						
JIJ	**Ishigaki jima**	**2.80**	**36**	P	**Pb**	**01 40 39.6**	**+1.7**
JIJ				S	**Sb**	**01 41 12.8**	**+0.6**
JISG	**Ishigakijimahi**	**3.07**	**36**	P	**Pb**	**01 40 43.3**	**+0.8**
JISG				*e*S	**Sb**	**01 41 20.4**	**+0.5**
JTJ	**Tarama**	**3.34**	**40**	P	**Pb**	**01 40 47.1**	**+0.1**
JTJ				S	**Sb**	**01 41 27.1**	**-0.5**

MAN 05 01:40:04,18.85N×119.69E,h49km,mb3.8,ML2.5,MS2.1, 1C,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**1.02**	**121**	⇑*i*P	Pn	01 40 22.4	+0.4
PIP				*e*S	Sn	01 40 37.3	+2.1
ABRA	**Dolores**	**1.54**	**141**	*e*P	Pn	01 40 30.5	+1.5
ABRA				*e*S	Sn	01 40 48.9	+1.1
APYP	**Conner**	**1.77**	**123**	*e*P	Pn	01 40 33.6	+1.4
APYP				*e*S	Sn	01 40 55.0	+1.5

*IDC **05** 01:40:06.2±0.9,28.43N×66.17E,h0km,mb3.9/19, mb1 4.1/21,mb1mx3.9/45,mbtmp4.0/21,ML4.0/2,MS3.4/13, Ms1 3.4/13,ms1mx3.2/38,Error ellipse: s-maj=20.0km s-min=16.2km az=23.0*

*NEIC **05** 01:40:07.6±4.4,28.42N×66.14E,h8km±28km,mb4.2/7, Error ellipse: s-maj=10.7km s-min=9.3km az=158.0*

*ISCJB **05** 01:40:08.6±0.5,28.56N±0.05×66.45E±0.04,h20km, mb4.0/25,MS3.5/13,Error ellipse: s-maj=7.8km s-min=4.6km az=10.6*

ISC 05 01:40:09.9±0.7,28.51N±0.08×66.43E±0.06,h20km,n59, σ2s26/65,mb4.0/25,MS3.5/13,Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THW	**Thamme Wali**	**6.26**	**46**	P	**Pn**	**01 41 42.4**	**+1.3**
SARP	**Sargodha**	**6.38**	**56**	P	**Pn**	**01 41 43.8**	**+1.0**
CEP	**Cherat**	**7.08**	**40**	P	**Pn**	**01 41 53.4**	**+0.9**
CEP				S	**Sn**	**01 43 14.0**	**+1.6**
KHET	**Khetri**	**8.28**	**91**	*e*P	**Pn**	**01 42 10.2**	**+1.4**
KHET				*e*S	**Sn**	**01 43 41.0**	**-0.8**
KHET				IAML		01 45 03.9	
	comp=E,19nm,0.6s						
KHET				IAML		01 45 05.4	
	comp=N,48nm,1.3s						
WSAR	**Wadi Sarin**	**8.77**	**235**	P	Pn	01 42 10.6	-5.0
	comp=N,1.4nm,0.3s,baz=106,slow=7.5,SNR=22						
WSAR				Sn	Sn	01 43 38.0	-16
	comp=N,0.8nm,0.3s,baz=266,slow=15,SNR=4.1						
KUDL	**Kundal**	**8.87**	**90**	*e*P	**Pn**	**01 42 18.6**	**+1.6**
KUDL				*e*S	**Sn**	**01 43 55.3**	**-1.1**
KUDL				IAML		01 45 19.0	
	comp=E,19nm,0.9s						
KUDL				IAML		01 45 24.2	
	comp=N,25nm,0.9s						
THN	**Thein Dam**	**8.91**	**62**	*e*P	**Pn**	**01 42 19.0**	**+1.5**
THN				*e*S	**Sn**	**01 44 00.8**	**+3.4**
KKR	**Kurukshetra**	**9.19**	**78**	*e*S	**Sn**	**01 44 04.3**	**0.0**
BHGR	**Bahadurgarh**	**9.24**	**86**	*e*S	**Sn**	**01 44 05.2**	**-0.2**
NDI	**New Delhi**	**9.48**	**86**	*e*P	Pn	01 42 21.0	-4.4
NDI				*e*S	**Sn**	**01 44 06.0**	**-5.4**
SDNR	**Sundarnagar**	**9.61**	**69**	*e*P	**Pn**	**01 42 28.0**	**+0.9**
SDNR				*e*S	**Sn**	**01 44 16.6**	**+2.0**
JOSI	**Joshimath**	**11.61**	**77**	*e*S	**Sn**	**01 45 02.3**	**-1.7**
GEYT	**Alibeck**	**11.68**	**326**	Pn	**Pn**	**01 42 58.5**	**+3.0**
	comp=N,0.3nm,0.3s,baz=153,slow=9.7,SNR=2.6						
GEYT				Lg	Lg	01 46 20.2	
	comp=N,0.0nm,0.3s,baz=98,slow=33,SNR=2.5						
GEYT				LR	LR	01 48 17.1	
	comp=N,49nm,19.4s,baz=105,slow=42						
PYUN	**Piuthan**	**14.60**	**88**	*e*P	**Pn**	**01 43 36.1**	**+0.6**
	comp=N,24nm,0.5s						
PYUN				*e*S	**Sn**	**01 46 11.5**	**-5.4**
KKAR	**Karatay Array**	**14.93**	**12**	*e*Pn	**Pn**	**01 43 40.6**	**+0.9**
	comp=N,4.2nm,0.6s						
KOLN	**Koldanda**	**15.17**	**89**	*e*P	**Pn**	**01 43 43.7**	**+0.5**
	comp=N,11nm,0.4s						
EKS2	**Erkin-Say**	**15.32**	**21**	*e*Pn	**Pn**	**01 43 43.0**	**-2.1**
	comp=N,4.7nm,0.8s						
EKS2				*e*S	**Sn**	**01 46 30.8**	**-3.5**
AAK	**Ala-Archa**	**15.53**	**23**	Pn	**P**	**01 43 50.6**	**-1.5**
	comp=N,0.7nm,0.3s,baz=216,slow=8.7,SNR=4.3						
AAK				Sn	**Sn**	**01 46 33.0**	**-6.5**
	comp=N,0.4nm,0.3s,baz=0.0,slow=17,SNR=2.6						
AAK	**Ala-Archa**	**15.53**	**23**	*e*Pn	**Pn**	**01 43 49.5**	**+1.6**
AAK				*e*S	**Sn**	**01 46 36.9**	**-2.6**
GKN	**Gorkha**	**16.05**	**87**	*e*P	**Pn**	**01 43 55.7**	**+1.0**
	comp=N,13nm,0.4s						
TKM2	**Tokmak 2**	**16.17**	**25**	*e*Pn	**Pn**	**01 43 55.0**	**-1.2**
	comp=N,14nm,0.9s						
DMN	**Daman**	**16.51**	**89**	*e*P	**Pn**	**01 44 01.3**	**+0.6**
KKN	**Kakani**	**16.64**	**88**	*e*P	**Pn**	**01 44 02.8**	**+0.5**
	comp=N,8.6nm,0.4s						
PKIN	**Phulchoki**	**16.77**	**89**	*e*P	**Pn**	**01 44 04.6**	**+0.6**
	comp=N,12nm,0.5s						
PKIN				*e*S	**Sn**	**01 47 02.8**	**-7.1**
GUN	**Gumba**	**17.16**	**87**	*e*P	**Pn**	**01 44 09.9**	**+1.0**
	comp=N,59nm,0.6s						
RAMN	**Ramite**	**17.93**	**90**	*e*P	**P**	**01 44 19.3**	**+0.5**
	comp=N,31nm,0.6s						
ABKAR	**Akbulak array**	**21.30**	**348**	*e*P	**P**	**01 44 55.5**	**+0.3**
	comp=N,3.0nm,0.7s						
LSA	**Lhasa**	**21.62**	**81**	*e*P	**P**	**01 45 03.1**	**+3.8**
	comp=N,13nm,0.8s						
MKAR	**Makanchi Array**	**22.08**	**30**	P	**P**	**01 45 03.3**	**-0.3**
	comp=N,3.0nm,0.7s,baz=212,slow=12,SNR=20						
MKAR				LR	LR	01 55 12.6	
	comp=N,178nm,21.5s,baz=222,slow=41						
AKTO	**Aktyubinsk**	**22.81**	**346**	P	**P**	**01 45 12.0**	**+0.7**
	comp=N,2.0nm,0.7s,baz=158,slow=12,SNR=4.0						
WMQ	**Urumqi**	**22.89**	**42**	*e*P	**P**	**01 45 17.2**	**+4.9**
WMQ				pP	sP	01 45 27.6	+7.0
WMQ				sP	pP	01 45 30.5	+12
WMQ				S	**S**	**01 49 17.5**	**-3.5**
WMQ				SS	**SnSn**	**01 49 53.0**	**+0.3**
WMQ				pmax	pmax		
	comp=Z,23nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,85nm,3.5s						
WMQ				LR	LR		
	comp=N,350nm,14.8s						
WMQ				LR	LR		
	comp=E,170nm,12.7s						
WMQ				LR	LR		
	comp=Z,280nm,21.5s						
KURBB	**Kurchatov Arra**	**23.91**	**19**	P	**P**	**01 45 22.7**	**+0.5**
	comp=Z,0.9nm,0.5s,baz=210,slow=9.1,SNR=7.1						
KURK	**Kurchatov**	**24.02**	**19**	P	**P**	**01 45 22.7**	**-0.6**
KBZ	**Khabaz**	**24.21**	**315**	P	**P**	**01 45 23.7**	**-1.5**
	comp=Z,1.8nm,0.6s,baz=86,slow=8.6,SNR=6.5						
KIV	**Kislovodsk**	**24.46**	**315**	*e*P	**P**	**01 45 26.9**	**-0.7**
	comp=Z,7.2nm,0.8s						
BVAR	**Borovoye Array**	**24.66**	**6**	P	**P**	**01 45 30.1**	**+0.9**
	comp=Z,3.2nm,0.6s,baz=179,slow=12,SNR=17						
BRVK	**Borovoye**	**24.69**	**6**	*e*P	**P**	**01 45 32.3**	**+2.9**
	comp=Z,20nm,1.1s						
ZALV	**Zalesovo Beam**	**28.76**	**23**	P	**P**	**01 46 05.8**	**-0.2**
	comp=Z,2.3nm,0.6s,baz=229,slow=9.6,SNR=10						
ZALV				LR	LR	01 58 42.3	
	comp=Z,102nm,18.8s,baz=248,slow=39						
CMAR	**Chiang Mai Arr**	**31.37**	**101**	LR	LR	01 59 37.3	
	comp=Z,28nm,21.9s,baz=165,slow=37						
AKASG	**Malin Array Be**	**35.69**	**319**	P	**P**	**01 47 05.5**	**-1.2**
	comp=Z,0.3nm,0.3s,baz=118,slow=7.5,SNR=2.6						
TLY	**Talaya**	**36.10**	**40**	LR	LR	02 05 07.2	
	comp=Z,124nm,21.0s,baz=244,slow=41						
SONM	**Songino Array**	**36.35**	**47**	P	**P**	**01 47 14.7**	**+2.1**
	comp=Z,2.0nm,0.9s,baz=260,slow=8.0,SNR=5.0						
SONM				LR	LR	02 03 45.9	
	comp=Z,94nm,20.9s,baz=189,slow=39						
FINES	**FINESS Array B**	**42.38**	**333**	P	**P**	**01 48 01.7**	**-0.9**
	comp=Z,1.0nm,0.5s,baz=117,slow=9.1,SNR=11						
FINES				LR	LR	02 07 32.1	
	comp=Z,41nm,21.8s,baz=122,slow=39						
NRIK	**Noril'sk**	**42.67**	**11**	LR	LR	02 09 17.4	
	comp=Z,51nm,19.8s,baz=200,slow=41						
GERES	**GERESS Array B**	**44.88**	**312**	P	**P**	**01 48 20.1**	**-2.9**
	comp=Z,0.9nm,0.6s,baz=90,slow=7.1,SNR=9.2						
GERES				LR	LR	02 11 06.8	
	comp=Z,27nm,18.4s,baz=67,slow=42						
ARCES	**ARCESS Array B**	**47.28**	**342**	P	**P**	**01 48 41.4**	**-0.1**
	comp=Z,1.1nm,0.6s,baz=134,slow=6.9,SNR=9.4						
ARCES				LR	LR	02 09 09.6	
	comp=Z,46nm,21.5s,baz=110,slow=37						
NB2	**NORSAR Subarra**	**48.76**	**328**	P	**P**	**01 48 52.0**	**-1.1**
	comp=

JMK				*e*S	Sn	01 49 35.0	+0.5
JTM	**Tenmabayashi**	**1.34**	**311**	P	Pn	01 49 18.8	+0.7
JTM				S	Sn	01 49 35.8	+1.1
JAH	**Hinai**	**1.38**	**282**	P	Pn	01 49 19.5	+0.8
JAH				*e*S	Sn	01 49 37.5	+1.8
JRG	**Rokugo**	**1.46**	**250**	P	Pn	01 49 21.0	+1.2

NIED ***05*** *02:00:00.39′.30N×142′.20E,h44km,Mw3.9 Best double couple: M₀8.71000×10¹⁴ NP1:φs171.00000°,δ19.00000°, λ59.00000°. NP2:φs24.00000°,δ74.00000°,λ100.00000°.*
JMA ***05*** *02:00:50.1±0.1,39′.28N×142′.24E,h43km±1km,M3.8*
JMA Felt II J1.
IDC ***05*** *02:00:53.7±2.8,39′.17N×142′.17E,h78km±26km,mb3.5/9, mb1 3.6/12,mb1mx3.4/46,mbtmp3.9/12,MS2.8/4, Ms1 2.8/4,ms1mx2.6/31,Error ellipse: s-maj=26.7km s-min=20.0km az=79.0*

ISC 05 02:00:48.1±1.7,39′.22N±0′.04×142′.34E±0′.08,h29km±11km, n29,σ1¶43/29,mb3.8/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.54**	**311**	P	**Pn**	**02 01 00.1**	**+0.2**
MIYJ				S	**Sn**	**02 01 07.2**	**-0.8**
OFUJ	**Ofunato**	**0.54**	**255**	P	**Pn**	**02 01 00.6**	**+0.7**
OFUJ				S	**Sn**	**02 01 08.0**	**-0.1**
JTH	**Tanohata**	**0.81**	**333**	P	**Pb**	**02 01 03.7**	**+0.1**
JTH				S	**Sb**	**02 01 13.9**	**-0.3**
JOM	**Ohasama**	**0.85**	**287**	P	**Pb**	**02 01 04.5**	**+0.1**
JOM				S	**Sb**	**02 01 15.0**	**-0.5**
JMK	**Ichinoseki**	**0.92**	**253**	P	**Pb**	**02 01 05.8**	**+0.4**
JMK				S	**Sb**	**02 01 16.9**	**-0.3**
JIO	**Ouri**	**1.09**	**226**	P	**Pb**	**02 01 08.4**	**0.0**
JIO				S	**Sb**	**02 01 21.3**	**-0.9**
JKZ	**Kuzumaki**	**1.09**	**315**	P	**Pb**	**02 01 08.1**	**-0.3**
JANG	**Nango**	**1.32**	**331**	P	**Pn**	**02 01 10.8**	**+0.2**
JANG				S	**Sb**	**02 01 27.0**	**-1.7**
JRG	**Rokugo**	**1.34**	**278**	P	**Pb**	**02 01 11.7**	**-0.9**
MJAR	**Matsushiro Arr**	**4.22**	**232**	P	**Pn**	**02 01 54.8**	**+4.2**
	4.0nm,0.3s,baz=36,slow=11,SNR=34						
MJAR				LR	LR	02 03 39.3	
	comp=Z,72nm,19.9s,baz=65,slow=41						
JHJ	**Hachijo jima 2**	**6.43**	**200**	P	**Pn**	**02 02 23.2**	**+2.3**
	5.7nm,0.3s,baz=320,slow=24,SNR=2.2						
JHJ				S	**Sn**	**02 03 31.0**	**-2.3**
	15nm,0.3s,baz=78,slow=21,SNR=3.1						
USRK	**Ussuriysk Ar.**	**9.20**	**306**	P	**Pn**	**02 03 02.2**	**+3.4**
	0.3nm,0.3s,baz=113,slow=15,SNR=7.4						
USRK				LR	LR	02 06 23.2	
	comp=Z,91nm,18.9s,baz=117,slow=36						
JNU	**Nakatsue**	**11.08**	**240**	LR	LR	02 07 56.5	
	comp=Z,39nm,20.3s,baz=274,slow=39						
KLR	**Kul'dur**	**12.55**	**326**	LR	LR	02 08 21.6	
	comp=Z,52nm,21.7s,baz=181,slow=36						
SONM	**Songino Array**	**27.25**	**300**	P	**P**	**02 06 30.4**	**+0.7**
	0.2nm,0.3s,baz=91,slow=11,SNR=2.6						
H11N2	**WAKE ISLAND Hy 28.73**	**125**		T	T	02 37 10.2	
	baz=318,slow=75,SNR=973						
H11N1	**WAKE ISLAND Hy 28.74**	**126**		T	T	02 37 12.3	
	baz=318,slow=75,SNR=984						
H11N3	**WAKE ISLAND Hy 28.75**	**125**		T	T	02 37 15.5	
	baz=318,slow=75,SNR=933						
H11S1	**WAKE ISLAND Hy 29.52**	**127**		T	T	02 38 09.2	
	baz=319,slow=76,SNR=118						
H11S3	**WAKE ISLAND Hy 29.52**	**127**		T	T	02 38 09.3	
	baz=319,slow=76,SNR=90						
H11S2	**WAKE ISLAND Hy 29.53**	**127**		T	T	02 38 10.5	
	baz=319,slow=76,SNR=66						
ZALV	**Zalesovo Beam**	**41.02**	**311**	P	**P**	**02 08 27.8**	**-0.7**
	1.9nm,0.4s,baz=92,slow=10,SNR=7.1						
MKAR	**Makanchi Array**	**43.61**	**300**	P	**P**	**02 08 49.0**	**-0.8**
	1.3nm,0.8s,baz=90,slow=9.0,SNR=8.3						
ILAR	**Eielson Array**	**47.26**	**33**	P	**P**	**02 09 19.5**	**+1.1**
	0.5nm,0.7s,baz=274,slow=5.7,SNR=6.8						
INK	**Inuvik**	**52.11**	**28**	P	**P**	**02 09 56.4**	**+1.3**
	0.9nm,0.7s,baz=284,slow=6.8,SNR=3.1						
WRA	**Warramunga Arr**	**59.33**	**189**	P	**P**	**02 10 47.0**	**-0.4**
	0.4nm,0.4s,baz=6.1,slow=7.0,SNR=7.8						
FINES	**FINESS Array B**	**67.22**	**332**	P	**P**	**02 11 38.7**	**-0.6**
	1.6nm,0.7s,baz=23,slow=7.5,SNR=6.0						
AKASG	**Malin Array Be**	**73.02**	**322**	P	**P**	**02 12 14.3**	**-0.7**
	0.9nm,0.3s,baz=45,slow=5.7,SNR=4.5						
BRTR	**Keskin Array B**	**77.95**	**312**	P	**P**	**02 12 43.5**	**-0.2**
	0.3nm,0.4s,baz=38,slow=7.3,SNR=4.7						

ISCJB ***05*** *02:06:03.2±0.7,40′.20N±0′.05×27′.77E±0′.05,h13km±7km, Error ellipse: s-maj=8.6km s-min=5.9km az=4.7*
CSEM ***05*** *02:06:03.2,40′.23N×27′.76E,h14km,MD2.5*
DDA ***05*** *02:06:04.0,40′.21N×27′.77E,h7km,Md2.3*
ISK ***05*** *02:06:03.2,40′.23N×27′.76E,h14km,MD2.5*

ISC 05 02:06:03.3±1.1,40′.23N±0′.04×27′.76E±0′.03,h15km±8km, n21,σ0¶20/28,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDC	**Edincik**	**0.14**	**34**	*e*Pg	**Pb**	**02 06 07.6**	**-0.2**
EDC				*e*SG	**Sg**	**02 06 09.8**	**+0.1**
EDC	**Edincik**	**0.14**	**34**	*e*Pg	**Pb**	**02 06 07.6**	**-0.2**
EDC				*e*Sg	**Sg**	**02 06 09.8**	**+0.1**
KNL	**Bal¯–kesir**	**0.18**	**284**	*i* P	**Pb**	**02 06 08.3**	**-0.1**
KNL				*i* S	**Sg**	**02 06 10.7**	**0.0**
KRBG	**Karabiga-Canak**	**0.39**	**295**	*e*PG	**Pb**	**02 06 11.7**	**-0.2**
KRBG				*e*SG	**Sg**	**02 06 16.9**	**+0.3**
KRBG	**Karabiga-Canak**	**0.39**	**295**	*e*Pg	**Pb**	**02 06 11.7**	**-0.2**
KRBG				*e*Sg	**Sg**	**02 06 16.9**	**+0.3**
MRMT	**Marmara Adasi**	**0.40**	**342**	*e*PG	**Pb**	**02 06 11.8**	**-0.3**
MRMT				*e*SG	**Sb**	**02 06 18.0**	**0.0**
MRMT	**Marmara Adasi**	**0.40**	**342**	*e*Pg	**Pb**	**02 06 11.8**	**-0.3**
MRMT				*e*Sg	**Sb**	**02 06 18.0**	**0.0**
KCTX	**Karacabey (Bur**	**0.46**	**85**	*e*PG	**Pg**	**02 06 12.4**	**-0.1**
KCTX	**Karacabey (Bur**	**0.46**	**85**	*e*Pg	**Pg**	**02 06 12.4**	**-0.1**
BALB	**Balikesir**	**0.59**	**171**	*e*PG	**Pb**	**02 06 15.1**	**-0.3**
BALB	**Balikesir**	**0.59**	**171**	*e*Pg	**Pb**	**02 06 15.1**	**-0.3**
LPK	**Lapseki**	**0.78**	**281**	*e*PG	**Pb**	**02 06 18.8**	**+0.2**
LPK	**Lapseki**	**0.78**	**281**	*e*Pg	**Pb**	**02 06 18.8**	**+0.2**
MDNY	**Mudanya-Bursa**	**0.87**	**80**	*e*PG	**Pb**	**02 06 20.4**	**+0.3**
MDNY	**Mudanya-Bursa**	**0.87**	**80**	*e*Pg	**Pb**	**02 06 20.4**	**+0.3**
ARMT	**Armutlu**	**0.91**	**68**	*e*PG	**Pg**	**02 06 21.0**	**+0.1**
ARMT	**Armutlu**	**0.91**	**68**	*e*Pg	**Pg**	**02 06 21.0**	**+0.1**
CTKS	**Kestanelik-??a**	**1.16**	**29**	*e*PN	**Pg**	**02 06 25.5**	**-0.1**
CTKS	**Kestanelik-??a**	**1.16**	**29**	*e*Pn	**Pg**	**02 06 25.5**	**-0.1**
IZI	**Iznik**	**1.31**	**85**	*e*PN	**Pb**	**02 06 27.7**	**-0.1**
IZI	**Iznik**	**1.31**	**85**	*e*Pn	**Pb**	**02 06 27.7**	**-0.1**

ISCJB ***05*** *02:06:56.3±0.4,41′.62N±0′.01×24′.00E±0′.02,h7km±2km, Error ellipse: s-maj=2.4km s-min=2.1km az=168.1*
ATH ***05*** *02:06:56.6,41′.56N×24′.01E,h24km±1km,ML2.5/13,Error ellipse: s-maj=2.1km s-min=0.9km az=184.0*
CSEM ***05*** *02:06:56.9±0.1,41′.58N×23′.98E,h5km,ML2.6,Error ellipse: s-maj=2.4km s-min=2.1km az=72.0*
THE ***05*** *02:06:56.5,41′.60N×24′.02E,h0km±1km,ML2.6/15,Error ellipse: s-maj=1.1km s-min=0.5km az=344.0*
SOF ***05*** *02:06:56.2,41′.64N×24′.01E,h3km,MD2.7*
ISK ***05*** *02:06:57.0,41′.65N×23′.97E,h22km,MD3.4*
BEO ***05*** *02:06:58.1±0.5,41′.66N×24′.02E,h10km±2km,M2.8/1*
DDA ***05*** *02:07:24.1,40′.48N×26′.02E,h6km,Md3.1*

ISC 05 02:06:56.8±1.0,41′.60N±0′.01×24′.00E±0′.01,h8km±8km, n166,σ0¶88/248,13C-10D,Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MMB	**Musomiste**	**0.20**	**268**	Pg	**Pg**	**02 07 00.8**	**-0.1**
NVR	**Nevrokopi**	**0.27**	**202**	P	**Pg**	**02 07 02.1**	**0.0**
NVR				S	**Sg**	**02 07 06.1**	**+0.5**
NVR	**Nevrokopi**	**0.27**	**202**	P	**Pg**	**02 07 02.1**	**0.0**
NVR				S	**Sg**	**02 07 05.7**	**+0.1**
RZN	**Rozhen**	**0.55**	**80**	P	**Pg**	**02 07 07.1**	**-0.3**
SRS	**Serrai**	**0.57**	**213**	P	**Pg**	**02 07 07.8**	**+0.1**
SRS				S	**Sb**	**02 07 16.4**	**-0.9**
SRS	**Serrai**	**0.57**	**213**	P	**Pg**	**02 07 07.8**	**+0.1**
SRS				S	**Sb**	**02 07 16.4**	**-0.9**
SRS	**Serrai**	**0.57**	**213**	P	**Pg**	**02 07 07.9**	**+0.2**
SRS				S	**Sg**	**02 07 15.7**	**+0.6**
SRS				AML	AML	02 07 19.7	
	comp=N,971μm,0.2s						
SRS				AML	AML	02 07 23.9	
	comp=E,1087μm,0.1s						
KAVA	**Kavala**	**0.72**	**147**	P	**Pg**	**02 07 09.6**	**-0.9**
KAVA				S	**Sg**	**02 07 20.3**	**+0.5**
KAVA	**Kavala**	**0.72**	**147**	P	**Pg**	**02 07 09.6**	**-0.9**
KAVA				S	**Sg**	**02 07 20.3**	**+0.5**
KAVA	**Kavala**	**0.72**	**147**	P	**Pg**	**02 07 09.3**	**-1.2**
PLD	**Plovdiv**	**0.73**	**46**	*i*Pg	**Pg**	**02 07 10.4**	**-0.4**
PLD				*e*Sg	**Sg**	**02 07 20.5**	**+0.1**
PLD	**Plovdiv**	**0.73**	**46**	P	**Pg**	**02 07 10.9**	**+0.1**
PLD	**Plovdiv**	**0.73**	**46**	*i*Pg	**Pg**	**02 07 10.4**	**-0.4**
PLD				*e*Sg	**Sg**	**02 07 20.5**	**+0.1**
KKB	**Krupnik**	**0.73**	**292**	P	**Pg**	**02 07 09.9**	**-1.0**
SOH	**Sokhos**	**0.92**	**212**	P	**Pg**	**02 07 14.1**	**-0.2**
SOH				S	**Sb**	**02 07 27.1**	**-0.2**
SOH	**Sokhos**	**0.92**	**212**	P	**Pg**	**02 07 14.1**	**-0.2**
SOH				S	**Sb**	**02 07 27.1**	**-0.2**
SOH	**Sokhos**	**0.92**	**212**	P	**Pg**	**02 07 14.3**	**0.0**
SOH				S	**Sb**	**02 07 27.1**	**-0.2**
SOH				AML	AML	02 07 30.1	
	comp=N,880μm,0.4s						
SOH				AML	AML	02 07 34.8	
	comp=E,853μm,0.4s						
KNT	**Kendrikon**	**0.94**	**243**	P	**Pg**	**02 07 14.2**	**-0.5**
KNT				S	**Sb**	**02 07 28.2**	**+0.4**
KNT	**Kendrikon**	**0.94**	**243**	P	**Pg**	**02 07 14.2**	**-0.5**
KNT				S	**Sb**	**02 07 28.2**	**+0.4**
KNT	**Kendrikon**	**0.94**	**243**	P	**Pg**	**02 07 14.5**	**-0.2**
KNT				S	**Sg**	**02 07 27.0**	**+0.1**
KNT				AML	AML	02 07 31.6	
	comp=N,582μm,0.3s						
KNT				AML	AML	02 07 31.6	
	comp=E,555μm,0.2s						
PGB	**Panagyurishte**	**0.96**	**8**	P	**Pg**	**02 07 13.8**	**-1.4**
KDZ	**Kurdzhali**	**1.07**	**87**	P	**Pg**	**02 07 15.2**	**-2.0**
VAY	**Valandovo**	**1.11**	**256**	P	**Pg**	**02 07 18.0**	**0.0**
VAY				S	**Sn**	**02 07 34.6**	**+0.5**
VAY	**Valandovo**	**1.11**	**256**	*e*Pg	**Pn**	**02 07 19.9**	**+1.3**
VAY				*e*Sg	**Sn**	**02 07 34.1**	**0.0**
VAY	**Valandovo**	**1.11**	**256**	*e*Pg	**Pg**	**02 07 18.2**	**+0.2**
VAY				*e*Sg	**Sn**	**02 07 35.5**	**+1.4**
VAY	**Valandovo**	**1.11**	**256**	P	**Pg**	**02 07 18.0**	**0.0**
VAY				*e*Sg	**Sn**	**02 07 34.1**	**0.0**
VTS	**Vitosha**	**1.15**	**330**	P	**Pg**	**02 07 18.0**	**-0.9**
VTS				S	**Sn**	**02 07 35.4**	**-0.1**
VTS	**Vitosha**	**1.15**	**330**	*i*Pg	**Pg**	**02 07 18.3**	**-0.6**
VTS				*e*Sg	**Sb**	**02 07 34.7**	**+0.4**
VTS	**Vitosha**	**1.15**	**330**	P	**Pg**	**02 07 18.3**	**-0.6**
VTS	**Vitosha**	**1.15**	**330**	P	**Pg**	**02 07 18.0**	**-0.9**
VTS	**Vitosha**	**1.15**	**330**	*i*Pg	**Pg**	**02 07 18.3**	**-0.6**
VTS				*e*Sg	**Sb**	**02 07 34.7**	**+0.4**
VTS				S	**Sn**	**02 07 35.4**	**-0.1**
HORT	**Hortiatis**	**1.21**	**214**	*e*PN	**Pb**	**02 07 19.7**	**-0.2**
HORT				*e*SN	**Sb**	**02 07 36.2**	**+0.5**
HORT	**Hortiatis**	**1.21**	**214**	P	**Pb**	**02 07 19.4**	**-0.5**
HORT				S	**Sn**	**02 07 36.9**	**+0.2**
HORT	**Hortiatis**	**1.21**	**214**	P	**Pb**	**02 07 19.4**	**-0.5**
HORT	**Hortiatis**	**1.21**	**214**	*e*Pn	**Pb**	**02 07 19.7**	**-0.2**
HORT				*e*Sn	**Sb**	**02 07 36.9**	**+0.5**
HORT	**Hortiatis**	**1.21**	**214**	P	**Pb**	**02 07 19.6**	**-0.4**
HORT				S	**Sg**	**02 07 35.0**	**-0.6**
HORT				AML	AML	02 07 39.3	
	comp=E,743μm,0.4s						
HORT				AML	AML	02 07 40.3	
	comp=N,329μm,0.3s						
DIM	**Dimitrovgrad**	**1.23**	**68**	P	**Pg**	**02 07 20.6**	**+0.2**
THE	**Thessaloniki**	**1.24**	**219**	P	**Pn**	**02 07 19.9**	**-0.5**
THE				S	**Sn**	**02 07 37.7**	**+0.4**
THE	**Thessaloniki**	**1.24**	**219**	P	**Pn**	**02 07 19.9**	**-0.5**
THE				S	**Sn**	**02 07 37.7**	**+0.4**
THE	**Thessaloniki**	**1.24**	**219**	P	**Pn**	**02 07 20.0**	**-0.4**
THE				S	**Sg**	**02 07 36.9**	**+0.3**
THE				AML	AML	02 07 40.4	
	comp=E,345μm,0.4s						
THE				AML	AML	02 07 41.1	
	comp=N,280μm,0.4s						
OUR	**Ouranopolis**	**1.26**	**181**	*e*PN	**Pg**	**02 07 21.2**	**+0.2**
OUR				*e*SN	**Sn**	**02 07 37.9**	**0.0**
OUR	**Ouranopolis**	**1.26**	**181**	P	**Pn**	**02 07 20.4**	**-0.3**
OUR				S	**Sn**	**02 07 38.9**	**+1.0**
OUR	**Ouranopolis**	**1.26**	**181**	P	**Pn**	**02 07 20.4**	**-0.3**
OUR	**Ouranopolis**	**1.26**	**181**	*e*Pn	**Pg**	**02 07 21.2**	**+0.2**
OUR				*e*Sn	**Sn**	**02 07 37.9**	**0.0**
OUR				S	**Sn**	**02 07 38.9**	**+1.0**
OUR	**Ouranopolis**	**1.26**	**181**	P	**Pn**	**02 07 20.8**	**+0.1**
OUR				S	**Sb**	**02 07 37.3**	**+0.1**
OUR				AML	AML	02 07 39.3	
	comp=E,1603μm,0.3s						
OUR				AML	AML	02 07 39.3	
	comp=N,3122μm,0.3s						
PLG	**Polygyros**	**1.29**	**199**	P	**Pn**	**02 07 21.0**	**-0.2**
PLG				S	**Sn**	**02 07 39.4**	**+0.7**
PLG	**Polygyros**	**1.29**	**199**	P	**Pn**	**02 07 21.0**	**-0.2**
PLG				S	**Sn**	**02 07 39.4**	**+0.7**
PLG	**Polygyros**	**1.29**	**199**	P	**Pb**	**02 07 21.5**	**+0.2**
PLG				S	**Sb**	**02 07 36.9**	**-1.3**
PLG				AML	AML	02 07 42.4	
	comp=N,576μm,0.2s						
PLG				AML	AML	02 07 42.4	
	comp=E,753μm,0.5s						
GRG	**Griva**	**1.36**	**242**	*e*PN	**Pn**	**02 07 21.4**	**-0.7**
GRG				*e*SN	**Sb**	**02 07 39.2**	**-1.0**
GRG	**Griva**	**1.36**	**242**	P	**Pn**	**02 07 22.2**	**0.0**
GRG				S	**Sg**	**02 07 41.3**	**+0.7**
GRG	**Griva**	**1.36**	**242**	*e*Pn	**Pn**	**02 07 21.4**	**-0.7**
GRG	**Griva**	**1.36**	**242**	P	**Pn**	**02 07 22.2**	**0.0**
GRG				*e*Sn	**Sb**	**02 07 39.2**	**-1.0**
GRG				S	**Sg**	**02 07 41.3**	**+0.7**
GRG	**Griva**	**1.36**	**242**	P	**Pn**	**02 07 22.3**	**+0.2**
GRG				S	**Sg**	**02 07 41.7**	**+1.1**
GRG				AML	AML	02 07 42.9	
	comp=E,204μm,0.2s						
GRG				AML	AML	02 07 45.7	
	comp=N,341μm,0.4s						
SMTH	**Samothraki Isl**	**1.62**	**134**	P	**Pn**	**02 07 25.1**	**-0.5**
SMTH				S	**Sb**	**02 07 48.0**	**+0.6**
SMTH	**Samothraki Isl**	**1.62**	**134**	P	**Pn**	**02 07 25.1**	**-0.5**
SMTH				S	**Sb**	**02 07 48.0**	**+0.6**
SMTH	**Samothraki Isl**	**1.62**	**134**	P	**Pn**	**02 07 25.3**	**-0.4**
SMTH				S	**Sb**	**02 07 47.5**	**0.0**
SMTH				AML	AML	02 07 51.7	
	comp=N,130μm,0.4s						
SMTH				AML	AML	02 07 52.6	
	comp=E,98μm,0.2s						
PAIG	**Paliouri**	**1.69**	**188**	P	**Pn**	**02 07 26.2**	**-0.4**
PAIG				S	**Sb**	**02 07 49.8**	**+0.4**
PAIG	**Paliouri**	**1.69**	**188**	P	**Pn**	**02 07 26.2**	**-0.4**
PAIG				S	**Sb**	**02 07 49.8**	**+0.4**
PAIG	**Paliouri**	**1.69**	**188**	P	**Pn**	**02 07 26.4**	**-0.2**
PAIG				S	**Sn**	**02 07 47.0**	**-1.3**
PAIG				AML	AML	02 07 52.9	
	comp=E,316μm,0.7s						
PAIG				AML	AML	02 07 54.2	
	comp=N,149μm,0.7s						
ALN	**Alexandroupoli**	**1.70**	**114**	*e*PN	**Pn**	**02 07 27.0**	**+0.3**
ALN				*e*SN	**Sn**	**02 07 48.5**	**-0.1**
ALN	**Alexandroupoli**	**1.70**	**114**	P	**Pn**	**02 07 26.8**	**+0.1**
ALN				S	**Sb**	**02 07 50.0**	**+0.3**
ALN	**Alexandroupoli**	**1.70**	**114**	*e*Pn	**Pn**	**02 07 27.0**	**+0.3**
ALN				*e*Sn	**Sn**	**02 07 48.5**	**-0.1**
ALN				S	**Sb**	**02 07 50.0**	**+0.3**
ALN	**Alexandroupoli**	**1.70**	**114**	P	**Pn**	**02 07 27.1**	**+0.3**
ALN				S	**Sn**	**02 07 48.5**	**-0.1**
ALN				AML	AML	02 07 54.5	
	comp=E,150μm,0.6s						
ALN				AML	AML	02 07 56.9	
	comp=N,103μm,0.6s						
MPEP	**Malo Peshtene**	**1.77**	**354**	P	**Pb**	**02 07 29.9**	**+0.4**
ENEZ	**Enez**	**1.84**	**117**	*e*PN	**Pn**	**02 07 28.9**	**+0.2**
ENEZ				*e*SN	**Sn**	**02 07 52.1**	**-0.1**
ENEZ	**Enez**	**1.84**	**117**	*e*Pn	**Pn**	**02 07 28.9**	**+0.2**
ENEZ				*e*Sn	**Sn**	**02 07 52.1**	**-0.1**
LIT	**Litokhoron**	**1.88**	**218**	P	**Pn**	**02 07 28.7**	**-0.6**
LIT				S	**Sb**	**02 07 55.1**	**0.0**
LIT	**Litokhoron**	**1.88**	**218**	P	**Pn**	**02 07 28.7**	**-0.6**
LIT				S	**Sb**	**02 07 55.1**	**0.0**
LIT	**Litokhoron**	**1.88**	**218**	P	**Pn**	**02 07 27.8**	**-1.5**
PVL	**Pavlikeni**	**1.90**	**31**	P	**Pn**	**02 07 30.0**	**+0.5**
LIA	**Limnos Island**	**1.92**	**152**	P	**Pn**	**02 07 29.4**	**-0.4**
LIA				S	**Sn**	**02 07 55.1**	**+0.9**
LIA	**Limnos Island**	**1.92**	**152**	P	**Pn**	**02 07 29.4**	**-0.4**
LIA				S	**Sn**	**02 07 55.1**	**+0.9**
ZAPS	**Zavoj**	**1.96**	**329**	*e*Pn	**Pb**	**02 07 32.1**	**-0.6**
ZAPS				*e*Sg	**Sg**	**02 07 58.7**	**-0.9**
GADA	**Gvkgeada**	**2.01**	**134**	*e*PN	**Pn**	**02 07 31.6**	**+0.5**
GADA	**Gvkgeada**	**2.01**	**134**	P	**Pn**	**02 07 30.9**	**-0.2**
GADA	**Gvkgeada**	**2.01**	**134**	P	**Pn**	**02 07 30.9**	**-0.2**
GADA	**Gvkgeada**	**2.01**	**134**	*e*Pn	**Pn**	**02 07 31.6**	**+0.5**
BARS	**Barje**	**2.03**	**308**	*e*Pn	**Pn**	**02 07 32.3**	**+1.0**
BARS				*e*Sg	**Sb**	**02 08 00.4**	**+1.1**
BARS	**Barje**	**2.03**	**308**	*e*Pn	**Pn**	**02 07 32.3**	**+1.0**
BARS				*e*Sg	**Sb**	**02 08 00.4**	**+1.1**
EDRB	**Edirne**	**2.07**	**82**	*e*PN	**Pn**	**02 07 31.7**	**-0.2**
EDRB	**Edirne**	**2.07**	**82**	P	**Pn**	**02 07 31.5**	**-0.4**
EDRB	**Edirne**	**2.07**	**82**	*e*Pn	**Pn**	**02 07 31.7**	**-0.2**
ERIK	**Erikli-Kesan**	**2.11**	**115**	*e*PN	**Pn**	**02 07 32.8**	**+0.4**
ERIK	**Erikli-Kesan**	**2.11**	**115**	*e*Pn	**Pn**	**02 07 32.8**	**+0.4**
KZN	**Kozani**	**2.12**	**233**	P	**Pn**	**02 07 32.7**	**+0.1**
KZN	**Kozani**	**2.12**	**233**	P	**Pn**	**02 07 32.7**	**+0.1**
FNA	**Florina**	**2.14**	**249**	P	**Pn**	**02 07 33.1**	**+0.3**
FNA	**Florina**	**2.14**	**249**	P	**Pn**	**02 07 33.1**	**+0.3**
KESN	**Edirne-Kesan**	**2.17**	**110**	*i*P	**Pb**	**02 07 36.1**	**-0.4**
KESN	**Edirne-Kesan**	**2.17**	**110**	P	**Pb**	**02 07 36.1**	**-0.4**
SZH	**Strazhica**	**2.20**	**40**	Pg	**Pg**	**02 07 38.9**	**0.0**
GELI	**Tayfur-Gelibol**	**2.23**	**122**	*e*PN	**Pn**	**02 07 34.2**	**+0.2**
GELI	**Tayfur-Gelibol**	**2.23**	**122**	*e*Pn	**Pn**	**02 07 34.2**	**+0.2**
ZIMR		**2.29**	**26**	*i*P	**Pb**	**02 07 37.0**	**-1.4**
XOR	**Xorichti**	**2.31**	**196**	P	**Pn**	**02 07 35.2**	**0.0**
XOR	**Xorichti**	**2.31**	**196**	P	**Pn**	**02 07 35.2**	**0.0**
XOR	**Xorichti**	**2.31**	**196**	P	**Pn**	**02 07 35.0**	**-0.2**
BOZC	**Bozcaada**	**2.35**	**138**	*i*P	**Pn**	**02 07 36.5**	**+0.8**
BOZC				*i*S	**Sn**	**02 08 03.7**	**-1.0**
NEO	**Neokhori**	**2.36**	**195**	P	**Pn**	**02 07 35.4**	**-0.5**
NEO	**Neokhori**	**2.36**	**195**	P	**Pn**	**02 07 35.4**	**-0.5**
NEO				S	**Sn**	**02 08 04.4**	**-0.7**
NEO	**Neokhori**	**2.36**	**195**	P	**Pn**	**02 07 35.0**	**-1.0**
NEO				S	**Sn**	**02 08 04.4**	**-0.7**
NEO				AML	AML	02 08 16.2	
	comp=E,110μm,0.7s						
NEO				AML	AML	02 08 16.9	
	comp=N,127μm,0.5s						
LPK	**Lapseki**	**2.42**	**119**	*e*PN	**Pn**	**02 07 37.1**	**+0.4**
LPK	**Lapseki**	**2.42**	**119**	*e*Pn	**Pn**	**02 07 37.1**	**+0.4**
AOS	**Alonnisos**	**2.43**	**182**	*e*PN	**Pn**	**02 07 37.0**	**+0.3**
AOS	**Alonnisos**	**2.43**	**182**	P	**Pn**	**02 07 36.1**	**-0.6**
AOS	**Alonnisos**	**2.43**	**182**	P	**Pn**	**02 07 36.1**	**-0.6**
AOS	**Alonnisos**	**2.43**	**182**	*e*Pn	**Pn**	**02 07 37.0**	**+0.3**
AOS				S	**Sn**	**02 08 04.8**	**-1.8**
AOS	**Alonnisos**	**2.43**	**182**	P	**Pn**	**02 07 35.8**	**-1.0**
AOS				S	**Sn**	**02 08 04.8**	**-1.8**
AOS				AML	AML	02 08 19.4	
	comp=N,56μm,0.7s						
AOS				AML	AML	02 08 20.3	
	comp=E,54μm,0.7s						
SKIA	**Skiathos**	**2.46**	**190**	P	**Pn**	**02 07 36.9**	**-0.3**
SKIA	**Skiathos**	**2.46**	**190**	P	**Pn**	**02 07 36.9**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.57**	**110**	*e*PN	**Pn**	**02 07 39.0**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.57**	**110**	*e*Pn	**Pn**	**02 07 39.0**	**+0.2**
SART	**Tekirdag**	**2.57**	**110**	*i* P	**Pg**	**02 07 44.7**	**-1.3**
SART				*i* S	**Sg**	**02 08 20.6**	**+1.3**
BOVS	**Bovan**	**2.65**	**321**	*e*Pn	**Pn**	**02 07 39.0**	**-0.8**
BOVS				*e*Sg	**Sg**	**02 08 20.4**	**-1.4**
BOVS	**Bovan**	**2.65**	**321**	*e*Pn	**Pn**	**02 07 39.0**	**-0.8**
BOVS				*e*Sg	**Sg**	**02 08 20.4**	**-1.4**
SELS	**Selova**	**2.68**	**308**	*e*Pn	**Pn**	**02 07 40.1**	**-0.1**
SELS				*e*Sn	**Sn**	**02 08 13.3**	**+0.4**
BOLS	**Boljevac**	**2.69**	**327**	*e*Pn	**Pn**	**02 07 40.8**	**+0.4**
BOLS	**Boljevac

CBRI				*i*			02 16 02.6		
	comp=Z,44nm,0.5s								
CAPV	**Capacho**	**1.30**	**36**	*e*P		**Pn**	**02 15 44.1**	**+1.5**
CAPV				*e*S		**Sn**	**02 16 05.0**	**0.0**
NORC	**Norcasia**	**2.16**	**236**	*e*P		**Pn**	**02 15 51.4**	**0.0**
NORC				*e*S		**Sn**	**02 16 19.3**	**-1.5**
CHIC	**Chingaza**	**2.25**	**197**	*e*P		**Pn**	**02 15 53.9**	**+1.1**
CHIC				*i*			02 15 56.6		
	comp=Z,19nm,0.3s								
CHIC				*e*S		**Sn**	**02 16 23.4**	**+0.2**
HELC	**Santa Helena**	**2.51**	**256**	*e*P		**Pn**	**02 15 57.5**	**+1.7**
HELC				*e*S		**Sn**	**02 16 27.7**	**-0.7**
HELC				*i*			02 16 34.1		
	comp=Z,24nm,0.3s								
VIGV	**El Vigia**	**2.65**	**40**	*e*P		**Pn**	**02 15 57.2**	**0.0**
VIGV				*e*S		**Sn**	**02 16 30.0**	**-1.1**
SOCV	**Socops**	**2.65**	**56**	*e*P		**Pn**	**02 15 58.4**	**+1.1**
SOCV				*e*S		**Sn**	**02 16 30.3**	**-0.9**
DBBC	**Dabeiba**	**3.11**	**274**	*e*P		**Pn**	**02 16 03.1**	**+0.1**
TOLC	**Tolima**	**3.13**	**226**	*e*P		**Pn**	**02 16 06.0**	**+2.5**
ELOV	**Elorza**	**3.58**	**87**	*e*P		**Pn**	**02 16 08.4**	**-0.4**
VIRV	**Villa del Rosa**	**3.74**	**10**	*e*P		**Pn**	**02 16 10.5**	**-0.4**
VIRV				*e*S		**Sn**	**02 16 54.3**	**-1.3**
CURV	**Curarigua**	**4.44**	**44**	*e*P		**Pn**	**02 16 20.8**	**+0.9**
MONV	**Montecano**	**5.97**	**31**	*e*P		**Pn**	**02 16 40.3**	**+0.2**

IDC 05 02:24:41.5±10.0, 19°65N×143°71E, *h*0km, mb4.0/4, mb1 4.2/4, mb1mx3.5/42, mbtmp4.0/4, Error ellipse: s-maj=309.1km s-min=49.6km az=174.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILAR	**Eielson Array**	**63.63**	**27**	P	P	02 35 13.9	-0.2
	0.9nm,0.7s,baz=261,slow=5.6,SNR=13						
BVAR	**Borovoye Array**	**64.54**	**320**	P	P	02 35 21.5	+1.2
	1.1nm,0.5s,baz=80,slow=7.9,SNR=4.8						
YKA	**Yellowknife Ar**	**78.02**	**28**	P	P	02 36 42.5	+0.8
	0.4nm,0.4s,baz=291,slow=6.0,SNR=8.3						
FINES	**FINESS Array B**	**85.23**	**335**	P	P	02 37 18.0	-1.8
	0.7nm,0.4s,baz=60,slow=5.1,SNR=7.8						

*IDC **05** 02:25:15.3±1.2, 32°.49S×71°.59W, *h*0km, mb4.3/4, mb1 4.2/8, mb1mx3.9/24, mbtmp4.1/8, ML4.3/4, MS3.3/6, Ms1 3.3/6, ms1mx3.1/21, Error ellipse: s-maj=38.3km s-min=24.7km az=85.0*

*NEIC **05** 02:25:19.0, 32°.51S×71°.55W, *h*43km, mb4.3/2, After GUC.*

NEIC Felt [IV] at Zapallar; [III] at Nogales, Petorca, Puchuncavi, Quintero, San Bernardo, Santiago, Valparaiso, Villa Alemana and Vina del Mar; [II] at Colina, Melipilla, Rancagua, San Felipe and Tiltil.

*GUC **05** 02:25:19.9±0.3, 32°.51S×71°.55W, *h*43km±2km, ML4.3*

ISC 05 02:25:15.7±1.9, 32°.62S±0°.05×71°.91W±0°.07, *h*10km±12km, n42, σ1°51/43, mb4.3/6, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PEL	**Peldehue**	**1.15**	**117**	*e*P	**Pb**	**02 25 37.6**	**-0.1**
PEL				*e*S	**Sb**	**02 25 51.0**	**-1.7**
PEL				IAML		02 25 52.7	
	comp=E,12µm,0.3s						
RCDM	**Rinconada Maip**	**1.26**	**133**	*e*P	**Pg**	**02 25 40.5**	**+0.5**
RCDM				*e*S	**Sb**	**02 25 56.0**	**-0.1**
ANTU	**Antumapu**	**1.43**	**132**	*e*P	**Pb**	**02 25 42.9**	**+0.5**
ANTU				*e*S	**Sn**	**02 26 00.3**	**-0.3**
ANTU				IAML		02 26 05.8	
	comp=N,12µm,0.4s						
FSR	**Penalolen**	**1.44**	**127**	*e*P	**Pb**	**02 25 42.8**	**+0.1**
FSR				*e*S	**Sn**	**02 26 00.0**	**-0.9**
FCH	**Farellones**	**1.53**	**118**	*e*P	**Pn**	**02 25 43.8**	**+0.4**
FCH				*e*P	**Pb**	**02 25 43.9**	**+0.4**
FCH				*e*S	**Sn**	**02 26 02.2**	**-1.3**
FCH				*e*S	**Sn**	**02 26 02.3**	**-1.3**
FCH				IAML		02 26 03.5	
	comp=E,8µm,0.2s						
YECH	**El Yeso**	**1.85**	**125**	*e*P	**Pn**	**02 25 47.9**	**+0.1**
YECH				*e*S	**Sn**	**02 26 09.2**	**-2.2**
AUSP	**Uspallata**	**2.17**	**80**	*e*P	**Pn**	**02 25 54.6**	**+2.4**
RTLS	**Leoncito**	**2.36**	**70**	*e*P	**Pb**	**02 25 57.9**	**-0.7**
ARCO	**CERRO ARCO**	**2.52**	**96**	*e*P	**Pb**	**02 26 00.9**	**-0.2**
ARCO				*e*S	**Sb**	**02 26 34.1**	**+1.9**
ASAL	**Salagasta**	**2.59**	**90**	*e*P	**Pb**	**02 26 02.2**	**-0.1**
ASAL				*e*S	**Sb**	**02 26 35.4**	**+1.0**
AAGR	**Agrelo**	**2.63**	**101**	*e*P	**Pb**	**02 26 02.3**	**-0.7**
AAGR				*e*S	**Sb**	**02 26 35.2**	**-0.3**
RTCV	**Cerro Valdivia**	**2.95**	**76**	*e*P	Pn	02 26 06.3	+3.6
SJA	**San Juan**	**3.04**	**70**	*e*P	**Pn**	**02 26 04.0**	**0.0**
SJA				*e*S	**Sn**	**02 26 43.4**	**+2.9**
RTLL	**Cerro Villicun**	**3.19**	**67**	*e*P	Pn	02 26 08.9	+2.9
RTLL				*e*S	**Sn**	**02 26 46.2**	**+2.1**
LCO	**Las Campanas**	**3.75**	**16**	*e*P	**Pn**	**02 26 14.8**	**+0.9**
LCO				*e*S	Sn	02 27 01.0	+2.7
LCO	**Las Campanas**	**3.75**	**16**	*e*Pn	**Pn**	**02 26 14.4**	**+0.5**
LCO				*e*S	Sn	02 27 01.4	+3.2
AVFE	**Valle Fertil**	**4.27**	**64**	*e*P	Pn	02 26 23.8	+2.9
VCA	**Vinchina**	**5.02**	**40**	IAML		02 27 47.6	
	comp=Z,589nm,0.5s						
TCA	**Tanti**	**6.34**	**80**	IAML		02 28 09.2	
	comp=Z,161nm,0.6s						
CYA	**Choya**	**6.71**	**53**	IAML		02 27 00.0	
	comp=Z,138nm,0.5s						
PLCA	**Paso Flores**	**8.17**	**173**	Pn	**Pn**	**02 27 17.9**	**+3.6**
	comp=Z,0.7nm,0.3s,baz=355,slow=12,SNR=12						
PLCA				LR	LR	02 30 06.8	
	comp=Z,55nm,20.9s,baz=354,slow=35						
TRQA	**Tornquist**	**9.75**	**127**	*e*Pn	**Pn**	**02 27 37.6**	**+1.6**
	comp=Z,12nm,0.7s						
TRQA				*e*S	**Sn**	**02 29 27.5**	**+1.9**
LVC	**Limon Verde**	**10.32**	**16**	Pn	**Pn**	**02 27 41.1**	**-3.2**
	comp=Z,8.1nm,0.3s,baz=193,slow=15,SNR=5.1						
LVC				LR	LR	02 31 34.2	
	comp=Z,846nm,20.2s,baz=214,slow=38						
LVC	**Limon Verde**	**10.32**	**16**	*e*Pn	**Pn**	**02 27 41.0**	**-3.2**
	comp=Z,10nm,0.6s						
LVC				*e*S	Sn	02 29 27.7	-13
CPUP	**Villa Florida**	**14.15**	**67**	Pn	**Pn**	**02 28 34.6**	**-1.7**
	comp=Z,0.5nm,0.3s,baz=230,slow=8.3,SNR=11						
CPUP				Sn	Sn	02 31 04.4	-9.1
	comp=Z,0.2nm,0.3s,baz=215,slow=18,SNR=3.0						
CPUP				LR	LR	02 33 34.4	
	comp=Z,44nm,21.2s,baz=244,slow=36						
SIV	**San Ignacio**	**19.26**	**33**	P	**P**	**02 29 39.9**	**-0.6**
	comp=Z,0.4nm,0.3s,baz=214,slow=9.3,SNR=7.9						
SIV				LR	LR	02 38 22.0	
	comp=Z,152nm,19.0s,baz=98,slow=41						
EFI	**East Falkland**	**21.56**	**156**	*e*P	**P**	**02 30 06.6**	**+1.5**
	comp=Z,10nm,0.6s						
SAML	**Samuel**	**24.91**	**21**	*e*P	**P**	**02 30 38.6**	**-0.4**
	comp=Z,7.4nm,0.9s						
PMSA	**Palmer Station**	**32.54**	**174**	LR	LR	02 44 12.7	
	comp=Z,102nm,18.8s,baz=300,slow=35						
PTGA	**Pitinga**	**33.66**	**22**	P	**P**	**02 31 55.7**	**-1.1**
	comp=Z,3.9nm,0.9s,baz=201,slow=8.1,SNR=5.2						
TXAR	**Lajitas Array**	**68.59**	**330**	P	**P**	**02 36 20.9**	**+1.9**
	comp=Z,0.4nm,0.6s,baz=152,slow=9.1,SNR=5.8						
DBIC	**Dimbokro**	**74.64**	**72**	P	**P**	**02 36 55.1**	**-0.5**
	comp=Z,8.7nm,1.0s,baz=218,slow=8.5,SNR=4.4						
DBIC				LR	LR	03 07 18.7	
	comp=Z,19nm,20.1s,baz=140,slow=34						
BOSA	**Boshof**	**80.61**	**118**	P	**P**	**02 37 29.1**	**0.0**
	comp=Z,1.8nm,0.5s,baz=239,slow=6.7,SNR=8.0						
H11S2	**WAKE ISLAND Hyd**	**25.89**	**270**	T	T	05 03 18.1	
	baz=118,slow=75,SNR=186						
H11S1	**WAKE ISLAND Hyd**	**25.90**	**270**	T	T	05 03 19.2	
	baz=118,slow=75,SNR=212						
H11S3	**WAKE ISLAND Hyd**	**25.91**	**270**	T	T	05 03 20.0	
	baz=118,slow=75,SNR=143						
H11N3	**WAKE ISLAND Hyd**	**26.27**	**272**	T	T	05 03 45.9	
	baz=118,slow=75,SNR=31						
H11N1	**WAKE ISLAND Hyd**	**26.28**	**271**	T	T	05 03 48.9	
	baz=118,slow=75,SNR=19						
H11N2	**WAKE ISLAND Hyd**	**26.29**	**272**	T	T	05 03 45.7	
	baz=118,slow=75,SNR=64						
KKAR	**Karatay Array**	**148.77**	**59**	*e*PKPbc	**PKPbc**	**02 45 03.2**	**-0.1**
ZALV	**Zalesovo Beam**	**153.00**	**31**	PKPbc	**PKPbc**	**02 45 12.8**	**-0.1**
	comp=Z,3.7nm,0.7s,baz=309,slow=3.6,SNR=11						
MKAR	**Makanchi Array**	**155.76**	**47**	PKPab	**PKPab**	**02 45 36.0**	**-0.3**
	comp=Z,0.9nm,0.7s,baz=286,slow=5.0,SNR=6.2						

*IDC **05** 02:26:25.3±1.0, 7°.41N×123°.70E, *h*0km, mb3.7/7, mb1 3.9/7, mb1mx3.7/39, mbtmp3.7/7, MS2.8/2, Ms1 2.8/2, ms1mx2.4/48, Error ellipse: s-maj=29.0km s-min=14.0km az=26.0*

*ISCJB **05** 02:26:29.9±0.8, 8°.46N±0°.05×126°.54E±0°.08, h70km±8km, mb3.6/7, Error ellipse: s-maj=13.5km s-min=7.0km az=157.4*

*MAN **05** 02:26:31, 8°.47N×126°.44E, h31km, mb4.6, ML3.5, MS3.5*

ISC 05 02:26:31.0±1.1, 8°.46N±0°.05×126°.54E±0°.09, h57km±9km, n21, σ2°47/25, mb3.7/7, 3C-4D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.33**	**214**	*e*P	**Pn**	**02 26 41.3**	**+0.2**
BIPH				*e*S	**Sn**	**02 26 46.6**	**-1.7**
MATI	**Mati**	**1.53**	**191**	*e*P	**Pn**	**02 26 56.4**	**+0.4**
MATI				*e*S	**Sn**	**02 27 15.4**	**+0.5**
BUKP	**Musuan**	**1.57**	**249**	*e*P	**Pn**	**02 26 56.1**	**-0.5**
BUKP				*e*S	**Sn**	**02 27 16.9**	**+0.8**
DAV	**Davao City (W)**	**1.68**	**215**	Pg	**Pn**	**02 27 00.1**	**+2.0**
	74nm,0.3s,baz=111,slow=5.7,SNR=5.2						
DAV				Lg	Lg	02 27 25.7	
	181nm,0.3s,baz=252,slow=21,SNR=7.9						
DAV				LR	LR	02 27 29.8	
	comp=Z,252nm,18.8s,baz=7.0,slow=34						
DMPH	**Davao City--Mi**	**1.71**	**217**	*e*P	**Pn**	**02 27 02.9**	**+4.4**
DMPH				*e*S	**Sn**	**02 27 24.2**	**+4.9**
CGP	**Cagayan de Oro**	**1.83**	**270**	*e*P	**Pn**	**02 26 58.8**	**-1.3**
CGP				*e*S	**Sn**	**02 27 20.1**	**-2.0**
PLP	**Palo**	**3.10**	**330**	*e*P	**Pn**	**02 27 17.8**	**+0.4**
PLP				*e*S	**Sn**	**02 27 56.6**	**+3.3**
LLP	**Lapu-Lapu**	**3.14**	**306**	*e*P	**Pn**	**02 27 18.5**	**+0.4**
LLP				*e*S	**Sn**	**02 27 54.8**	**+0.4**
DCPH	**Dipolog City**	**3.16**	**272**	*e*P	**Pn**	**02 27 17.8**	**-0.5**
OCLP	**Ormoc**	**3.21**	**324**	*e*P	**Pn**	**02 27 19.6**	**+0.7**
OCLP				*e*S	**Sn**	**02 28 02.6**	**+6.7**
IPIL	**Ipil**	**3.99**	**261**	*e*P	**Pn**	**02 27 31.6**	**+1.9**
RCP	**Roxas**	**4.85**	**310**	*e*P	**Pn**	**02 27 42.6**	**+1.2**
JNU	**Nakatsue**	**24.87**	**9**	LR	LR	02 40 24.0	
	comp=Z,23nm,21.7s,baz=121,slow=32						
KSRS	**Korea Array**	**28.89**	**2**	LR	LR	02 45 56.9	
	comp=Z,16nm,18.1s,baz=176,slow=39						
WRA	**Warramunga Arr**	**29.25**	**165**	P	**P**	**02 32 27.4**	**-0.4**
	0.3nm,0.6s,baz=348,slow=10,SNR=3.1						
ASAR	**Alice Springs**	**32.73**	**167**	P	**P**	**02 32 58.3**	**-0.1**
	0.2nm,0.3s,baz=356,slow=8.0,SNR=4.3						
MKAR	**Makanchi Array**	**53.63**	**323**	P	**P**	**02 35 44.4**	**-2.3**
	0.6nm,0.7s,baz=138,slow=7.1,SNR=4.4						
ZALV	**Zalesovo Beam**	**56.34**	**332**	P	**P**	**02 36 05.2**	**-0.8**
	0.7nm,0.4s,baz=111,slow=6.3,SNR=2.1						
ILAR	**Eielson Array**	**80.94**	**26**	P	P	02 38 52.7	+14
	0.3nm,0.3s,baz=249,slow=5.2,SNR=4.8						
FINES	**FINESS Array B**	**87.60**	**332**	P	**P**	**02 39 11.4**	**-1.5**
	0.7nm,0.7s,baz=83,slow=4.6,SNR=3.5						
YKA	**Yellowknife Ar**	**95.29**	**24**	P	P	02 39 59.9	+11
	0.3nm,0.7s,baz=303,slow=4.5,SNR=2.8						

*ISCJB **05** 02:30:30.2±0.5, 38°.51N±0°.04×118°.79W±0°.04, h9km, Error ellipse: s-maj=5.5km s-min=4.7km az=169.4*

*NEIC **05** 02:30:30.2, 38°.42N×118°.74W, h4km, ML3.6(REN), After REN.*

ISC 05 02:30:31.0±0.8, 38°.41N±0°.03×118°.75W±0°.03, h9km, n16, σ2°38/30, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLAC	**Mammoth, Mammo**	**0.79**	**185**	P	**Pg**	**02 30 45.5**	**-0.7**
	baz=5.3						
CMB	**Columbia Colle**	**1.34**	**254**	*e*Pn	**Pn**	**02 30 55.2**	**-0.8**
CMB				*e*S	**Sb**	**02 31 12.5**	**-1.2**
TIN	**Tinemaha, Big**	**1.42**	**163**	P	**Pn**	**02 30 57.0**	**-0.1**
	baz=344						
GRAC	**Grapevine Rang**	**1.79**	**142**	Sb	**Sg**	**02 31 29.1**	**+0.5**
	baz=323						
BMN	**Battle Mountai**	**2.34**	**30**	*e*Pn	**Pn**	**02 31 08.3**	**-1.4**
BMN				*e*Pg	**Pb**	**02 31 13.4**	**0.0**
BMN				*e*S	**Sg**	**02 31 44.0**	**-2.2**
R11A	**Troy Canyon, C**	**2.49**	**90**	Pb	**Pb**	**02 31 14.8**	**-1.1**
	baz=273						
R11A				Sb	**Sb**	**02 31 48.1**	**+1.4**
	baz=273						
R11A	**Troy Canyon, C**	**2.49**	**90**	*e*Pn	**Pb**	**02 31 14.5**	**-1.4**
R11A				*e*S	**Sn**	**02 31 43.3**	**+0.9**
MPMC	**Manual Prospec**	**2.56**	**156**	Pb	**Pb**	**02 31 17.7**	**+0.5**
	baz=338						
ISA	**Isabella, Lake**	**2.75**	**175**	Pb	**Pb**	**02 31 20.4**	**0.0**
	baz=356						
MCCM	**Marconi Confer**	**3.26**	**267**	*e*Pn	**Pn**	**02 31 22.6**	**+0.4**
ELK	**Elko**	**3.58**	**48**	*e*Pn	**Pn**	**02 31 25.9**	**-1.0**
ELK				*e*Sg	**Sb**	**02 32 21.1**	**+3.0**
MOD	**Modoc Plateau**	**3.68**	**342**	*e*Pn	**Pn**	**02 31 28.8**	**+0.5**
MOD				*e*Pg	**Pb**	**02 31 37.8**	**+1.4**
MOD				*e*S	**Sg**	**02 32 26.9**	**-2.4**
WVOR	**Wild Horse Val**	**4.02**	**1**	*e*Pn	**Pn**	**02 31 31.5**	**-1.3**
WVOR				*e*Pg	**Pb**	**02 31 44.2**	**+2.2**
WVOR				*e*S	**Sg**	**02 32 37.3**	**-2.7**
DUG	**Dugway, Tooele**	**4.94**	**67**	*e*Pn	**Pn**	**02 31 46.1**	**+0.6**
DUG				*e*Pg	**Pg**	**02 32 05.8**	**+0.3**
DUG				*e*S	**Sb**	**02 33 02.8**	**+5.6**
HUMO	**Hull Mountain**	**5.28**	**324**	*e*Pn	**Pn**	**02 31 53.2**	**+3.2**
HLID	**Hailey**	**6.10**	**31**	*e*Pn	**Pn**	**02 31 59.6**	**-1.9**
	2.8nm,0.8s						
HLID				*e*Pg	**Pb**	**02 32 19.6**	**+2.1**
HLID				*e*S	**Sg**	**02 33 39.3**	**-7.5**

DHMR 05 03:09:54.5±0.8, 13°.04N×42°.35E, h2km±8km, ML3.5, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UDYN	**Al 'Udayn**	**1.83**	**59**	*i* P	Pb	03 10 28.4	-0.4
UDYN				*i* S	Sg	03 10 54.0	+0.7
HAJJ	**Hajjah**	**2.91**	**24**	*i* P	Pn	03 10 44.4	+2.4
HAJJ				*i* S	Sb	03 11 24.1	+0.7
HAJJ				AML	AML	03 11 48.2	
	comp=Z,208nm,0.5s						
BDHA	**Al Bayda'**	**3.27**	**73**	*i* S	Sb	03 11 32.7	-1.1
BDHA				AML	AML	03 11 55.0	
	comp=N,287nm,0.5s						

*ISCJB **05** 03:13:01.2±0.6, 9°.0S±0°.1×124°.2E±0°.2, h100km, mb4.0/5, Error ellipse: s-maj=28.5km s-min=7.7km az=150.8*

*IDC **05** 03:13:02.2±5.2, 8°.99S×124°.01E, h81km±57km, mb3.8/5, mb1 4.0/8, mb1mx3.6/40, mbtmp4.2/8, ML4.2/3, Error ellipse: s-maj=46.6km s-min=26.8km az=86.0*

ISC 05 03:13:03.0±0.8, 9°.18S±0°.10×124°.2E±0°.2, h100km, n15, σ2°37/17, mb4.1/5, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**8.98**	**171**	P	**Pn**	**03 15 11.5**	**+1.7**
	3.0nm,0.3s,baz=354,slow=9.7,SNR=121						
FITZ				S	**Sn**	**03 16 45.8**	**-3.4**
	11nm,0.3s,baz=262,slow=2.2,SNR=16						
WRA	**Warramunga Arr**	**14.51**	**139**	P	**Pn**	**03 16 25.8**	**+2.3**
	0.9nm,0.3s,baz=313,slow=13,SNR=40						
WRA				S	Sn	03 18 58.6	-5.0
	2.0nm,0.3s,baz=307,slow=22,SNR=8.7						
ASAR	**Alice Springs**	**17.14**	**148**	P	**Pn**	**03 17 00.9**	**+4.6**
	0.5nm,0.3s,baz=317,slow=11,SNR=31						
ASAR				S	**Sn**	**03 20 02.1**	**-4.9**
	0.8nm,0.3s,baz=327,slow=26,SNR=14						
NWAO	**Narrogin (SRO)**	**24.49**	**194**	P	**P**	**03 18 15.4**	**+2.5**
	3.8nm,0.6s,baz=280,slow=8.3,SNR=4.6						
CMAR	**Chiang Mai Arr**	**37.09**	**318**	P	**P**	**03 20 03.2**	**-0.6**
	1.5nm,0.6s,baz=144,slow=7.7,SNR=5.8						
RAMN	**Ramite**	**51.18**	**316**	*e*P	**P**	**03 21 56.3**	**-0.2**
	24nm,0.5s						
GUN	**Gumba**	**52.28**	**316**	*e*P	**P**	**03 22 04.1**	**-0.8**
	22nm,0.6s						
PKIN	**Phulchoki**	**52.41**	**315**	*e*P	**P**	**03 22 04.9**	**-0.8**
	8.5nm,0.6s						
DMN	**Daman**	**52.63**	**315**	*e*P	**P**	**03 22 06.4**	**-0.9**
GKN	**Gorkha**	**53.20**	**315**	*e*P	**P**	**03 22 10.3**	**-1.1**
	8.4nm,0.3s						
USRK	**Ussuriysk Ar.**	**53.59**	**7**	P	**P**	**03 22 14.2**	**+0.5**
	0.9nm,0.5s,baz=189,slow=8.5,SNR=4.0						
KOLN	**Koldanda**	**53.78**	**314**	*e*P	**P**	**03 22 15.4**	**-0.3**
PYUN	**Piuthan**	**54.41**	**314**	*e*P	**P**	**03 22 19.2**	**-1.1**
	11nm,0.4s						
MKAR	**Makanchi Array**	**67.06**	**330**	P	**P**	**03 23 45.2**	**-0.3**
	0.9nm,0.3s,baz=130,slow=7.8,SNR=5.8						
ZALV	**Zalesovo Beam**	**71.14**	**337**	P	**P**	**03 24 08.8**	**-1.8**
	1.0nm,0.5s,baz=141,slow=5.0,SNR=3.6						

*PGC **05** 03:24:53.0±1.5, 59°.82N×142°.01W, h10km, ML2.7/5, 154km Wnw of Yakutat, Ak Gulf Of Alaska*

*NEIC **05** 03:24:54.9, 59°.89N×141°.80W, h23km, ML2.7(OTT), ML2.5(AEIC), After AEIC.*

ISC 05 03:24:53.3±1.3, 59°.83N±0°.04×141°.93W±0°.02, h12km±9km, n43, σ1°47/63, Southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MESA	**MESA**	**0.35**	**358**	P	**Pb**	**03 25 01.1**	**-0.6**
MESA				S	**Sb**	**03 25 07.4**	**+0.2**
RKAV	**Rock Avalanche**	**0.55**	**32**	P	**Pg**	**03 25 04.4**	**+0.3**
RKAV				S	**Sg**	**03 25 12.7**	**+1.2**
KULT	**Kultieth River**	**0.58**	**317**	P	**Pb**	**03 25 05.9**	**+0.4**
KULT				S	**Sn**	**03 25 15.5**	**-1.4**
SAMH	**Samovar Hills**	**0.65**	**62**	P	**Pg**	**03 25 06.2**	**+0.2**
SAMH				S	**Sg**	**03 25 16.0**	**+1.5**
BAGL	**Bagley Icefiel**	**0.67**	**353**	P	**Pb**	**03 25 06.4**	**-0.5**
TABL	**Table Mountain**	**0.73**	**32**	P	**Pg**	**03 25 07.4**	**-0.1**
TABL				S	**Sg**	**03 25 18.0**	**+1.1**
ISLE	**Juniper Island**	**0.80**	**345**	P	**Pb**	**03 25 08.9**	**-0.3**
GRIN	**Grindle Hills**	**0.83**	**304**	P	**Pn**	**03 25 10.5**	**-0.4**
PCA	**Pinnacle**	**0.88**	**72**	P	**Pg**	**03 25 09.9**	**-0.5**
PCA				S	**Sg**	**03 25 21.9**	**+0.1**
PCA	**Pinnacle**	**0.88**	**72**	P	**Pg**	**03 25 09.8**	**-0.5**
KHIT	**Khitrov Hills**	**0.90**	**313**	P	**Pn**	**03 25 11.2**	**-0.7**
GRNC	**Granite Creek**	**0.91**	**5**	P	**Pg**	**03 25 10.4**	**-0.5**
SUCK	**Suckling Hills**	**0.96**	**285**	P	**Pn**	**03 25 13.4**	**+0.8**
TGL	**Tana Glacier**	**1.03**	**335**	P	**Pg**	**03 25 12.7**	**-0.5**
LOGN	**Logan Glacier**	**1.10**	**24**	P	**Pg**	**03 25 13.2**	**-1.2**
NICHA	**Nichawak Mount**	**1.10**	**293**	P	**Pn**	**03 25 15.4**	**+0.8**
CRQM	**Cirque**	**1.11**	**328**	P	**Pg**	**03 25 13.8**	**-0.9**
KIAG	**Kiagna River**	**1.12**	**349**	P	**Pg**	**03 25 13.7**	**-1.1**
CTGM	**Chitina Glacie**	**1.18**	**14**	P	**Pb**	**03 25 14.4**	**-1.2**
CTGM				S	**Sb**	**03 25 29.9**	**-1.0**
CTGM	**Chitina Glacie**	**1.18**	**14**	P	**Pb**	**03 25 14.4**	**-1.2**
BALM	**Baldy**	**1.23**	**350**	P	**Pn**	**03 25 15.4**	**-1.0**
BALM				S	**Sb**	**03 25 31.7**	**-0.6**
BALM	**Baldy**	**1.23**	**350**	P	**Pn**	**03 25 15.3**	**-1.0**
PTPK	**Patty Peak**	**1.39**	**349**	P	**Pn**	**03 25 18.1**	**-0.6**
VRDI	**Verde Repeater**	**1.59**	**332**	P	**Pn**	**03 25 21.2**	**-0.3**
MCARA	**McCarthy VSAT**	**1.65**	**341**	P	**Pb**	**03 25 23.6**	**-0.1**
BMRM	**Bremner River**	**1.75**	**312**	P	**Pb**	**03 25 24.5**	**-0.9**
YUK7	**Dusty Glacier**	**2.02**	**68**	Pn	**Pn**	**03 25 27.9**	**+0.6**
YUK7				Sg	**Sb**	**03 25 55.4**	**+0.2**
YUK2	**White River**	**2.03**	**15**	Pg	**Pb**	**03 25 29.2**	**-1.0**
YUK2				Sg	**Sb**	**03 25 56.3**	**+0.8**
DHAK	**Deception Hill**	**2.04**	**110**	P	**Pn**	**03 25 26.8**	**-0.7**
DHAK				S	**Sn**	**03 25 52.1**	**-0.7**
YUK3	**Moose Creek**	**2.08**	**20**	Pg	**Pb**	**03 25 30.4**	**-0.7**
YUK3				Sg	**Sb**	**03 25 58.3**	**+1.3**
DIV	**Divide**	**2.31**	**306**	Sg	**Sb**	**03 26 03.5**	**+0.1**
DIV	**Divide**	**2.31**	**306**	*e*Pn	**Pb**	**03 25 32.9**	**-1.9**
DIV				*e*S	**Sb**	**03 26 02.7**	**-0.6**
HIN	**Hinchinbrook I**	**2.36**	**286**	P	**Pb**	**03 25 33.7**	**-2.0**
HYT	**Haines Junctio**	**2.42**	**64**	Pg	**Pb**	**03 25 36.0**	**-0.8**
KLU	**Klutina**	**2.58**	**312**	P	**Pn**	**03 25 35.8**	**+0.9**
BVCY	**Beaver Creek**	**2.64**	**11**	Pn	**Pb**	**03 25 39.5**	**-1.1**
PLBC	**Pleasant Camp**	**2.85**	**95**	Pn	**Pn**	**03 25 38.5**	**-0.1**
PLBC				Sn	**Sn**	**03 26 13.1**	**+0.3**
PMR	**Palmer**	**3.96**	**300**	*e*Pn	**Pn**	**03 25 57.6**	**+0.8**
PMR				*e*S	**Sb**	**03 26 49.0**	**-1.6**
DOT	**Dot Lake**	**3.96**	**346**	*e*Pn	**Pn**	**03 25 53.6**	**-0.3**
DOT				*e*S	**Sn**	**03 26 40.9**	**+0.6**
RC01	**Rabbit Creek A**	**4.07**	**291**	*e*Pn	**Pn**	**03 25 57.2**	**+1.9**
RC01				*e*S	**Sn**	**03 26 46.1**	**+3.3**
DAWY	**Dawson**	**4.42**	**15**	*e*Pn	**Pn**	**03 26 01.8**	**+1.6**
DAWY				*e*S	**Sb**	**03 27 08.6**	**+4.7**
EGAK	**Eagle**	**4.98**	**4**	*e*Pn	**

DALY	Dalyan (Mu˘la	0.94	98	*e*Pg	Pn	03 32 17.5	+2.7
AYDB	Zeytinkoy-Aydi	1.04	17	*e*PG	Pg	03 32 17.0	+0.5
AYDB	Zeytinkoy-Aydi	1.04	17	*e*Pg	Pg	03 32 17.0	+0.5
DGB	˘zmir	1.20	336	*i* P	Pg	03 32 19.6	+0.1
DGB				*i* S	Sb	03 32 32.5	-1.6
APE	Apeiranthos	1.58	275	*e*PN	Pg	03 32 27.1	+0.5
APE	Apeiranthos	1.58	275	*e*Pn	Pg	03 32 27.1	+0.5
KULA	Kula-Manisa	1.81	30	*e*Pn	Pb	03 32 29.5	+0.3
KULA	Kula-Manisa	1.81	30	*e*Pn	Pb	03 32 29.5	+0.3

MOS ***05*** *03:36:21.9±1.0,38.˚64S×175.˚76E,h147km,mb5.4/30, Error ellipse: s-maj=10.7km s-min=9.1km az=106.9*

BJI ***05*** *03:36:22.3,38.˚50S×176.˚53E,h165km,mb5.2/37, mB5.4/32*

ISCJB ***05*** *03:36:23.7±0.1,38.˚72S±0.˚02×175.˚63E±0.˚03,h158km±1km, mb5.2/134, Error ellipse: s-maj=3.7km s-min=2.9km az=38.0*

IDC ***05*** *03:36:23.6±0.6,38.˚87S×176.˚13E,h167km±3km,mb5.0/15, mb1 5.0/16,mb1mx4.9/24,mbtmp5.5/16,MS3.9/10, Ms1 4.0/10,ms1mx3.8/20,Error ellipse: s-maj=20.2km s-min=9.9km az=171.0*

GCMT ***05*** *03:36:25.1±0.1,38.˚63S×175.˚68E,h159km,MW5.5/122, Moment Tensor Solution. s104,c165; s122,c221; Duration: 1§4 Moment tensor: Scale 10^{17}Nm; M_{rr}1.17±.03; $M_{\theta\theta}$0.79±.04; $M_{\phi\phi}$-1.95±.03; $M_{r\theta}$1.47±.02; $M_{\theta\phi}$0.39±.04; $M_{\phi r}$-0.84±.03; Best double couple: M_o2.43100×10^{17} NP1:ϕ_s138.00000°,δ72.00000°, λ54.00000°. NP2:ϕ_s25.00000°,δ40.00000°,λ151.00000°. Principal axes: T 2.4950, Plg50.0000°, Azm8.0000°; N -0.1190, Plg34.0000°, Azm150.0000°; P -2.3680, Plg19.0000°, Azm254.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

WEL ***05*** *03:36:25.1±0.2,38.˚65S×175.˚71E,h153km±1km,ML6.5/57, Mw5.5 Error ellipse: s-maj=1.0km s-min=0.8km az=90.0*

WEL Felt from Fiordland to Gisborne, maximum reported intensity MM 6.

NEIC ***05*** *03:36:25.1,38.˚67S×175.˚75E,h152km,mb5.4/67,After WEL.*

NEIC Felt [IV] at Wellington and [III] at Wanganui. Also felt at Feilding, Gisborne, Hastings, Kapiti, Levin, Lower Hutt, Marton, Napier, New Plymouth, Pahiatua, Palmerston North, Tauranga, Upper Hutt and Waipawa. Felt [II] at Christchurch on the South Island. Also felt at Akaroa, Blenheim, Karamea and Nelson.

ISC 05 03:36:24.7±0.2,38.70S±0.03×175.68E±0.03,h164km±1km, h164km:pP-P,n1058,σ1§61/1145,mb5.3/128,86C-58D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATZ	Rangitukua	0.18	157	Pn	Pn	03 36 45.3	-1.4
RATZ	Rangitukua	0.18	157	PN	Pn	03 36 45.3	-1.4
WHTZ	Whakaora	0.22	82	Pn	Pn	03 36 45.8	-1.0
WHTZ	Whakaora	0.22	82	PN	Pn	03 36 45.8	-1.0
KUTZ	Kaahu Road	0.23	29	Pn	Pn	03 36 45.7	-1.1
KUTZ				Sn	Sn	03 37 02.5	-1.1
KUTZ	Kaahu Road	0.23	29	⇑PN	Pn	03 36 45.7	-1.1
KUTZ				SN	Sn	03 37 02.5	-1.1
KATZ	Kakaramea	0.28	178	Pn	Pn	03 36 46.0	-1.0
KATZ	Kakaramea	0.28	178	PN	Pn	03 36 46.0	-1.0
RITZ	Rihia Road	0.31	154	Pn	Pn	03 36 46.2	-0.8
RITZ	Rihia Road	0.31	154	PN	Pn	03 36 46.2	-0.8
HATZ	Hinemaiaia	0.38	121	Pn	Pn	03 36 45.9	-1.3
HATZ	Hinemaiaia	0.38	121	⇑PN	Pn	03 36 45.9	-1.3
HATZ				SN	Sn	03 37 02.1	-2.3
TLZ	Tolley Road	0.38	343	Pn	Pn	03 36 46.0	-1.3
TLZ	Tolley Road	0.38	343	⇓PN	Pn	03 36 46.0	-1.3
KRVZ	Karewarewa	0.40	184	Pn	Pn	03 36 46.3	-1.1
KRVZ	Karewarewa	0.40	184	⇑PN	Pn	03 36 46.3	-1.1
WPRZ	Whakapapatarin	0.42	65	Pn	Pn	03 36 46.1	-1.3
WPRZ	Whakapapatarin	0.42	65	⇑PN	Pn	03 36 46.1	-1.3
WPRZ				SN	Sn	03 37 02.7	-1.9
TWVZ	Taurewa	0.42	207	⇑Pn	Pn	03 36 46.6	-0.9
TWVZ	Taurewa	0.42	207	⇑PN	Pn	03 36 46.6	-0.9
WTVZ	West Tongariro	0.42	190	⇑Pn	Pn	03 36 46.5	-0.9
WTVZ	West Tongariro	0.42	190	⇑PN	Pn	03 36 46.5	-0.9
OTVZ	Oturere	0.47	181	Pn	Pn	03 36 46.8	-1.0
OTVZ	Oturere	0.47	181	⇑PN	Pn	03 36 46.7	-1.0
GRRZ	Galatos Road	0.48	44	PN	Pn	03 36 46.6	-1.0
GRRZ				SN	Sn	03 37 04.1	-1.0
NGZ	Ngauruhoe	0.48	187	Pn	Pn	03 36 46.7	-1.1
NGZ	Ngauruhoe	0.48	187	⇑PN	Pn	03 36 46.7	-1.1
ALRZ	Allen Road	0.54	76	Pn	Pn	03 36 46.6	-1.3
ALRZ				Sn	Sn	03 37 03.2	-2.3
ALRZ	Allen Road	0.54	76	PN	Pn	03 36 46.6	-1.3
ALRZ				SN	Sn	03 37 03.2	-2.3
HRRZ	Handcock Road	0.56	57	Pn	Pn	03 36 47.1	-0.9
HRRZ	Handcock Road	0.56	57	PN	Pn	03 36 47.1	-0.9
FWVZ	Far West T-bar	0.57	190	Pn	Pn	03 36 46.9	-1.3
FWVZ	Far West T-bar	0.57	190	PN	Pn	03 36 46.9	-1.3
TUVZ	Tukino	0.57	182	Pn	Pn	03 36 47.4	-0.7
TUVZ	Tukino	0.57	182	PN	Pn	03 36 47.4	-0.7
HSRZ	Hossack Road	0.58	49	PN	Pn	03 36 47.2	-0.9
DRZ	Dome Shelter	0.59	189	*e*Pn	Pn	03 36 47.6	-0.8
DRZ	Dome Shelter	0.59	189	*e*PN	Pn	03 36 47.6	-0.8
PRRZ	Plateau Road	0.59	71	*e*Pn	Pn	03 36 46.8	-1.3
PRRZ				Sn	Sn	03 37 02.5	-3.5
PRRZ	Plateau Road	0.59	71	*e*PN	Pn	03 36 46.8	-1.3
PRRZ				SN	Sn	03 37 02.5	-3.5
WHVZ	Whangaehu Hut	0.59	187	Pn	Pn	03 36 47.5	-0.9
WHVZ	Whangaehu Hut	0.59	187	⇓PN	Pn	03 36 47.5	-0.9
MRHZ	Matea Rd	0.59	104	⇑PN	Pn	03 36 46.8	-1.4
MRHZ				SN	Sn	03 37 02.9	-3.2
MRHZ				AML	AML	03 37 03.8	
TRVZ	Turoa	0.61	190	Pn	Pn	03 36 47.9	-0.6
TRVZ	Turoa	0.61	190	PN	Pn	03 36 47.9	-0.6
WNVZ	Wahianoa	0.63	186	Pn	Pn	03 36 47.9	-0.6
WNVZ	Wahianoa	0.63	186	⇑PN	Pn	03 36 47.9	-0.6
PKVZ	Pokaka	0.65	204	⇑Pn	Pn	03 36 47.8	-0.7
PKVZ	Pokaka	0.65	204	⇑PN	Pn	03 36 47.8	-0.7
UTU	Utuhina	0.66	38	Pn	Pn	03 36 47.6	-0.9
UTU	Utuhina	0.66	38	PN	Pn	03 36 47.6	-0.9
HIZ	Hauiti	0.67	285	*e*Pn	Pn	03 36 47.6	-0.9
HIZ	Hauiti	0.67	285	⇓PN	Pn	03 36 47.5	-1.0
HLRZ	Highlands Stat	0.69	50	*e*PN	Pn	03 36 48.0	-0.7
MTVZ	Mangateitei	0.71	193	⇑Pn	Pn	03 36 48.2	-0.6
MTVZ	Mangateitei	0.71	193	⇑PN	Pn	03 36 48.2	-0.6
MOVZ	Moawhango	0.71	176	Pn	Pn	03 36 48.0	-0.8
MOVZ	Moawhango	0.71	176	⇑PN	Pn	03 36 48.0	-0.8
RRRZ	Republican Roa	0.74	62	Pn	Pn	03 36 47.9	-1.1
RRRZ				Sn	Sn	03 37 05.1	-2.5
RRRZ	Republican Roa	0.74	62	PN	Pn	03 36 47.9	-1.1
RRRZ				SN	Sn	03 37 05.1	-2.5
BKZ	Black Stump Fm	0.79	127	Pn	Pn	03 36 48.1	-1.2
BKZ	Black Stump Fm	0.79	127	PN	Pn	03 36 48.1	-1.2
BKZ				AML	AML	03 37 06.4	
BKZ				AML	AML	03 37 06.4	
BKZ				AML	AML	03 37 06.4	
BKZ				AML	AML	03 37 08.3	
TARZ	Mount Tarawera	0.79	55	Pn	Pn	03 36 48.2	-1.3
TARZ	Mount Tarawera	0.79	55	⇓PN	Pn	03 36 48.2	-1.3
OMRZ	Omania	0.80	43	Pn	Pn	03 36 48.1	-1.3
OMRZ	Omania	0.80	43	⇓PN	Pn	03 36 48.1	-1.3
KARZ	Kaharoa	0.81	33	*e*Pn	Pn	03 36 48.1	-1.4
KARZ	Kaharoa	0.81	33	⇓*e*PN	Pn	03 36 48.1	-1.4
MKRZ	Makatiti	0.83	48	Pn	Pn	03 36 48.9	-0.8
MKRZ	Makatiti	0.83	48	PN	Pn	03 36 49.4	-0.3
VRZ	Vera Road	0.84	239	Pn	Pn	03 36 48.4	-1.2
VRZ	Vera Road	0.84	239	PN	Pn	03 36 48.4	-1.2
BHHZ	Black Hill Sta	0.85	160	Pn	Pn	03 36 48.9	-0.8
BHHZ	Black Hill Sta	0.85	160	⇑PN	Pn	03 36 48.9	-0.8
BHHZ				AML	AML	03 37 08.0	
BHHZ				AML	AML	03 37 10.8	
KMRZ	Kaimai	0.87	14	⇓PN	Pn	03 36 48.7	-1.3
MUGZ	Murupara	0.88	76	⇓PN	Pn	03 36 48.5	-1.4
LIRZ	Lichensteins R	0.89	39	Pn	Pn	03 36 48.7	-1.3
LIRZ	Lichensteins R	0.89	39	PN	Pn	03 36 48.7	-1.3
KWHZ	Kaweka Forest	0.93	142	⇑PN	Pn	03 36 49.8	-0.5
KWHZ				AML	AML	03 37 13.9	
KWHZ				AML	AML	03 37 15.2	
NMHZ	Naumai	0.97	115	Pn	Pn	03 36 50.6	0.0
NMHZ	Naumai	0.97	115	⇑PN	Pn	03 36 50.6	0.0
NMHZ				AML	AML	03 37 11.4	
NMHZ				AML	AML	03 37 11.4	
TOZ	Tahuroa Road	0.97	352	Pn	Pn	03 36 49.5	-1.2
TOZ	Tahuroa Road	0.97	352	PN	Pn	03 36 49.4	-1.2
EDRZ	Edgecumbe	1.02	55	Pn	Pn	03 36 49.7	-1.4
EDRZ	Edgecumbe	1.02	55	⇑PN	Pn	03 36 49.7	-1.4
RTZ	Ruatahuna	1.02	86	⇓PN	Pn	03 36 49.8	-1.2
MARZ	Manawahe	1.05	48	Pn	Pn	03 36 50.0	-1.3
MARZ	Manawahe	1.05	48	PN	Pn	03 36 50.0	-1.3
TGRZ	Tauranga	1.07	26	*e*Pn	Pn	03 36 50.0	-1.4
TGRZ	Tauranga	1.07	26	⇓*e*PN	Pn	03 36 50.0	-1.4
KRHZ	Kereru	1.09	151	⇑PN	Pn	03 36 51.2	-0.3
KRHZ				AML	AML	03 37 12.6	
KRHZ				AML	AML	03 37 14.2	
MCHZ	McNeill Hill	1.09	134	Pn	Pn	03 36 51.8	+0.3
MCHZ	McNeill Hill	1.09	134	⇑PN	Pn	03 36 51.8	+0.3
MCHZ				AML	AML	03 37 12.8	
MCHZ				AML	AML	03 37 20.8	
OPRZ	Ohinepanea	1.09	39	Pn	Pn	03 36 49.9	-1.7
OPRZ	Ohinepanea	1.09	39	PN	Pn	03 36 49.9	-1.7
RAHZ	Arahi	1.12	102	AML	AML	03 38 01.3	
RAHZ				AML	AML	03 38 10.5	
MHEZ	Mangahewa	1.13	250	Pn	Pn	03 36 51.7	-0.1
MHEZ	Mangahewa	1.13	250	⇑PN	Pn	03 36 51.7	-0.1
ARHZ	Aropaoanui	1.17	119	Pn	Pn	03 36 52.2	0.0
ARHZ	Aropaoanui	1.17	119	PN	Pn	03 36 52.2	0.0
ARHZ				AML	AML	03 37 13.0	
ARHZ				AML	AML	03 37 14.3	
URZ	Urewera	1.20	69	P	Pn	03 36 51.2	-1.3
	8µm,0.3s,baz=254,slow=7.1						
URZ				S	Sn	03 37 10.4	-3.5
	5µm,0.3s,baz=148,slow=23,SNR=71						
URZ	Urewera	1.20	69	*e*Pn	Pn	03 36 50.8	-1.7
URZ				*e*Sn	Sn	03 37 10.6	-3.3
URZ	Urewera	1.20	69	⇓PN	Pn	03 36 50.5	-2.0
URZ				AML	AML	03 37 10.9	
LREZ	Lake Rotokare	1.25	232	⇑PN	Pn	03 36 53.1	+0.1
DREZ	Durham Road	1.25	246	Pn	Pn	03 36 52.9	-0.1
DREZ	Durham Road	1.25	246	⇑PN	Pn	03 36 52.9	-0.1
WHHZ	Waihua	1.27	108	PN	Pn	03 36 53.0	-0.1
WHHZ				AML	AML	03 37 15.4	
WHHZ				AML	AML	03 37 19.7	
PNHZ	Pukenui	1.28	162	⇑PN	Pn	03 36 52.8	-0.4
PNHZ				AML	AML	03 37 15.8	
PNHZ				AML	AML	03 37 16.7	
SNGZ	Shannon Statio	1.30	94	Pn	Pn	03 36 52.9	-0.5
SNGZ	Shannon Statio	1.30	94	⇓PN	Pn	03 36 52.9	-0.5
SNGZ				AML	AML	03 37 14.1	
SNGZ				AML	AML	03 37 23.8	
PREZ	Palmer Road	1.35	241	Pn	Pn	03 36 53.9	0.0
PREZ	Palmer Road	1.35	241	⇑PN	Pn	03 36 53.9	0.0
NEZ	North Egmont	1.36	245	Pn	Pn	03 36 54.0	-0.1
NEZ	North Egmont	1.36	245	⇑PN	Pn	03 36 54.0	-0.1
RAGZ	Rawiri	1.37	82	Pn	Pn	03 36 53.0	-1.1
RAGZ	Rawiri	1.37	82	⇓PN	Pn	03 36 53.0	-1.1
RAGZ				AML	AML	03 37 15.3	
RAGZ				AML	AML	03 37 15.7	
TSZ	Takapari Road	1.38	171	Pn	Pn	03 36 53.4	-0.8
TSZ	Takapari Road	1.38	171	⇓PN	Pn	03 36 53.3	-0.8
TSZ				AML	AML	03 37 17.6	
TSZ				AML	AML	03 37 17.6	
TSZ				AML	AML	03 37 21.4	
TSZ				AML	AML	03 37 21.5	
PKE	Pukeiti	1.41	249	Pn	Pn	03 36 54.2	-0.3
PKE	Pukeiti	1.41	249	⇑PN	Pn	03 36 54.2	-0.3
KHEZ	Kahui Hut	1.43	245	Pn	Pn	03 36 54.5	-0.2
KHEZ	Kahui Hut	1.43	245	⇑PN	Pn	03 36 54.5	-0.2
KAHZ	Kahuranaki	1.44	140	Pn	Pn	03 36 54.7	0.0
KAHZ	Kahuranaki	1.44	140	⇑PN	Pn	03 36 54.7	0.0
KAHZ				AML	AML	03 37 19.2	
KAHZ				AML	AML	03 37 21.5	
CKHZ	Cape Kidnapper	1.45	132	Pn	Pn	03 36 54.9	+0.1
CKHZ	Cape Kidnapper	1.45	132	PN	Pn	03 36 54.9	+0.1
CKHZ				AML	AML	03 37 17.8	
CKHZ				AML	AML	03 37 17.8	
WPHZ	Waipukurau	1.49	157	Pn	Pn	03 36 54.9	-0.3
WPHZ	Waipukurau	1.49	157	⇑PN	Pn	03 36 54.9	-0.3
WPHZ				AML	AML	03 37 17.4	
WPHZ				AML	AML	03 37 17.6	
MWZ	Matawai	1.49	77	*e*Pn	Pn	03 36 53.5	-1.8
MWZ	Matawai	1.49	77	PN	Pn	03 36 53.9	-1.4
MWZ				AML	AML	03 37 16.8	
MWZ				AML	AML	03 37 16.8	
MWZ				AML	AML	03 37 17.0	
MWZ				AML	AML	03 37 17.1	
NWEZ	Newall Road	1.53	247	Pn	Pn	03 36 55.4	-0.2
NWEZ	Newall Road	1.53	247	PN	Pn	03 36 55.4	-0.2
OHWZ	Ohakea	1.54	191	⇑PN	Pn	03 36 55.7	+0.1
NMEZ	Namu Road	1.58	242	Pn	Pn	03 36 56.2	+0.1
NMEZ	Namu Road	1.58	242	⇑PN	Pn	03 36 56.2	+0.1
KNZ	Kokohu	1.59	102	*e*Pn	Pn	03 36 55.3	-0.9
KNZ	Kokohu	1.59	102	*e*PN	Pn	03 36 55.3	-0.9
KNZ				AML	AML	03 37 18.5	
KNZ				AML	AML	03 37 20.6	
PXZ	Pawanui	1.62	146	Pn	Pn	03 36 56.1	-0.3
PXZ	Pawanui	1.62	146	⇑PN	Pn	03 36 56.1	-0.3
PXZ				AML	AML	03 37 20.8	
PXZ				AML	AML	03 37 21.2	
PXZ				AML	AML	03 37 21.2	
PXZ				AML	AML	03 37 22.5	
RIGZ	Rimuhau	1.63	91	⇓PN	Pn	03 36 56.0	-0.7
RIGZ				AML	AML	03 37 19.6	
RIGZ				AML	AML	03 37 19.9	
MKAZ	Moumakai	1.64	345	Pn	Pn	03 36 55.6	-1.2
MKAZ	Moumakai	1.64	345	PN	Pn	03 36 55.6	-1.2
DVHZ	Dannevirke	1.65	167	Pn	Pn	03 36 56.1	-0.7
DVHZ	Dannevirke	1.65	167	⇑PN	Pn	03 36 56.1	-0.7
DVHZ				AML	AML	03 37 19.6	
DVHZ				AML	AML	03 37 21.8	
WIZ	White Island	1.67	46	Pn	Pn	03 36 55.7	-1.3
WIZ	White Island	1.67	46	PN	Pn	03 36 55.7	-1.3
POWZ	Post Office Ro	1.70	178	Pn	Pn	03 36 56.6	-0.7
POWZ	Post Office Ro	1.70	178	⇑PN	Pn	03 36 56.6	-0.7
POWZ				AML	AML	03 37 23.3	
POWZ				AML	AML	03 37 28.4	
KBAZ	Karaka Road Bo	1.72	338	Pn	Pn	03 36 57.1	-0.4
KBAZ	Karaka Road Bo	1.72	338	PN	Pn	03 36 57.1	-0.4
TKGZ	Te Karaka	1.72	82	Pn	Pn	03 36 56.9	-0.6
TKGZ	Te Karaka	1.72	82	⇓PN	Pn	03 36 56.9	-0.6
TKGZ				AML	AML	03 37 24.0	
TKGZ				AML	AML	03 37 24.7	
PRHZ	Porangahau	1.73	155	Pn	Pn	03 36 57.4	-0.3
PRHZ	Porangahau	1.73	155	⇑PN	Pn	03 36 57.4	-0.3
PRHZ				AML	AML	03 37 24.2	
PRHZ				AML	AML	03 37 26.1	
PRGZ	Paritu Road	1.74	98	Pn	Pn	03 36 57.1	-0.6
PRGZ	Paritu Road	1.74	98	PN	Pn	03 36 57.1	-0.6
PRGZ				AML	AML	03 37 23.3	
PRGZ				AML	AML	03 37 24.2	
MHGZ	Mahia Peninsul	1.80	105	Pn	Pn	03 36 58.1	-0.3
MHGZ	Mahia Peninsul	1.80	105	PN	Pn	03 36 58.1	-0.3
MHGZ				AML	AML	03 37 23.7	
MHGZ				AML	AML	03 37 29.3	
AWAZ	Awhitu Peninsu	1.82	333	PN	Pn	03 36 58.1	-0.7
ETAZ	East Tamaki Re	1.84	341	Pn	Pn	03 36 58.1	-0.8
ETAZ	East Tamaki Re	1.84	341	⇑PN	Pn	03 36 58.1	-0.8
ANWZ	Angora Road	1.87	161	⇑PN	Pn	03 36 58.2	-0.3
ANWZ				AML	AML	03 37 24.3	
ANWZ				AML	AML	03 37 28.7	
PRWZ	Pori Road	1.87	173	Pn	Pn	03 36 58.7	-0.5
PRWZ	Pori Road	1.87	173	⇑PN	Pn	03 36 58.7	-0.5
PRWZ				AML	AML	03 37 26.8	
PRWZ				AML	AML	03 37 26.8	
TWGZ	Tauwhareparae	1.88	75	Pn	Pn	03 36 58.6	-0.7
TWGZ	Tauwhareparae	1.88	75	⇑PN	Pn	03 36 58.6	-0.7
TWGZ				AML	AML	03 37 25.0	
TWGZ				AML	AML	03 37 29.6	
HAZ	Te Kaha	1.90	61	*e*Pn	Pn	03 36 56.7	-2.8
HAZ				AML	AML	03 37 00.9	
HAZ				AML	AML	03 37 24.0	
KUZ	Kuaotunu	1.95	1	Pn	Pn	03 36 58.7	-1.4
KUZ	Kuaotunu	1.95	1	PN	Pn	03 36 58.7	-1.4
WIAZ	Waiheke Island	1.95	347	PN	Pn	03 36 59.3	-0.8
MRZ	Mangatainoka R	1.96	182	Pn	Pn	03 36 58.8	-1.4
MRZ	Mangatainoka R	1.96	182	PN	Pn	03 36 58.8	-1.4
MRZ				AML	AML	03 37 27.8	
MRZ				AML	AML	03 37 27.9	
WTAZ	Waiatarua	1.97	333	Pn	Pn	03 37 00.1	-0.2
WTAZ	Waiatarua	1.97	333	PN	Pn	03 37 00.1	-0.2
CNGZ	Carnagh Statio	1.99	85	Pn	Pn	03 36 59.9	-0.6
CNGZ	Carnagh Statio	1.99	85	⇓PN	Pn	03 36 59.9	-0.6
CNGZ				AML	AML	03 37 29.3	
CNGZ				AML	AML	03 37 48.8	
BFZ	Birch Farm	2.03	168	*e*Pn	Pn	03 37 00.1	-0.9
BFZ	Birch Farm	2.03	168	⇓PN	Pn	03 37 00.1	-0.9
BFZ				AML	AML	03 37 29.0	
BFZ				AML	AML	03 37 29.0	
BFZ				AML	AML	03 37 30.7	
TIWZ	Tintock	2.08	176	Pn	Pn	03 37 00.7	-1.0
TIWZ	Tintock	2.08	176	⇑PN	Pn	03 37 00.7	-1.0
TIWZ				AML	AML	03 37 31.7	
TIWZ				AML	AML	03 37 34.3	
RVAZ	Riverhead Bore	2.11	335	Pn	Pn	03 37 01.6	-0.3
RVAZ	Riverhead Bore	2.11	335	PN	Pn	03 37 01.6	-0.3
PUZ	Puketiti	2.12	74	*e*Pn	Pn	03 37 00.1	-1.9
PUZ	Puketiti	2.12	74	⇓*e*PN	Pn	03 37 00.1	-1.9
PUZ				AML	AML	03 37 28.1	
PUZ				AML	AML	03 37 30.4	
OGWZ	Otaki Gorge	2.15	190	Pn	Pn	03 37 01.5	-0.9
OGWZ	Otaki Gorge	2.15	190	⇑PN	Pn	03 37 01.5	-0.9
OGWZ				AML	AML	03 37 31.2	
OGWZ				AML	AML	03 37 31.5	
HOWZ	Holdsworth Sta	2.20	183	Pn	Pn	03 37 01.7	-1.3
HOWZ	Holdsworth Sta	2.20	183	⇑PN	Pn	03 37 01.7	-1.3
HOWZ				AML	AML	03 37 32.1	
HOWZ				AML	AML	03 37 32.2	
KIW	Kapiti Island	2.24	195	Pn	Pn	03 37 02.1	-1.4
KIW	Kapiti Island	2.24	195	⇑PN	Pn	03 37 02.1	-1.4
KIW				AML	AML	03 37 33.7	
KIW				AML	AML	03 37 34.3	
CPWZ	Castlepoint	2.25	170	Pn	Pn	03 37 03.1	-0.4
CPWZ	Castlepoint	2.25	170	⇑PN	Pn	03 37 03.1	-0.4
CPWZ				AML	AML	03 37 35.7	
CPWZ				AML	AML	03 37 37.9	
WMGZ	Waiomatatini S	2.32	69	Pn	Pn	03 37 02.9	-1.5
WMGZ	Waiomatatini S	2.32	69	⇓PN	Pn	03 37 02.8	-1.5
WMGZ				AML	AML	03 37 33.1	
WMGZ				AML	AML	03 37 34.5	
MXZ	Matakaoa Point	2.36	62	Pn	Pn	03 37 03.8	-1.1
MXZ	Matakaoa Point	2.36	62	PN	Pn	03 37 03.7	-1.1
MXZ				AML	AML	03 37 05.7	
MXZ				AML	AML	03 37 08.5	
TMWZ	Te Maipa	2.41	176	Pn	Pn	03 37 04.2	-1.3
TMWZ	Te Maipa	2.41	176	⇑PN	Pn	03 37 04.2	-1.3
TMWZ				AML	AML	03 37 37.0	
TMWZ				AML	AML	03 37 37.0	
GRZ	Great Barrier	2.45	356	PN	Pn	03 37 05.3	-0.6
CAW	Cannon Point	2.46	191	Pn	Pn	03 37 04.5	-1.4
CAW	Cannon Point	2.46	191	⇑PN	Pn	03 37 04.5	-1.4
CAW				AML	AML	03 37 37.2	
CAW				AML	AML	03 37 37.5	
MTW	Mount Morrison	2.46	183	Pn	Pn	03 37 04.1	-1.6
MTW	Mount Morrison	2.46	183	⇑PN	Pn	03 37 04.4	-1.6
MTW				AML	AML	03 37 37.4	
MTW				AML	AML	03 37 37.4	
WEL	Wellington	2.68	195	P	Pn	03 37 07.1	-1.5
WEL	Wellington	2.68	195	Pn	Pn	03 37 07.1	-1.5
WEL	Wellington	2.68	195	PN	Pn	03 37 07.1	-1.5
WEL				AML	AML	03 37 42.0	
WEL				AML	AML	03 37 42.0	
WEL				AML	AML	03 37 44.2	
WEL				AML	AML	03 37 44.2	
PAWZ	Paruwai Farm	2.69	184	Pn	Pn	03 37 07.1	-1.7
PAWZ	Paruwai Farm	2.69	184	⇑PN	Pn	03 37 07.1	-1.7
PAWZ				AML	AML	03 37 42.0	
PAWZ				AML	AML	03 37 42.4	
TRWZ	Traveller	2.70	180	Pn	Pn	03 37 07.3	-1.6
TRWZ	Traveller	2.70	180	⇑PN	Pn	03 37 07.3	-1.6
TRWZ				AML	AML	03 37 43.1	
TRWZ				AML	AML	03 37 43.1	
SNZO	South Karori	2.72	196	*e*Pn	Pn	03 37 07.3	-1.8
SNZO				*e*Sn	Sn	03 37 39.1	-4.4
TCW	Tory Channel	2.73	203	Pn	Pn	03 37 07.6	-1.6
TCW	Tory Channel	2.73	203	PN	Pn	03 37 07.6	-1.6
TCW				AML	AML	03 37 42.9	
TCW				AML	AML	03 37 42.9	
MSWZ	Moikau Station	2.74	187	Pn	Pn	03

PYZ Puysegur Point 9.99 219 PN Pn 03 38 39.4 -4.9
RAO Raoul Island 10.81 31 LR LR 03 42 42.1
comp=Z,1µm,21.9s,baz=290,slow=35
DZM Mont Dzumac 18.37 332 *eP* **Pn 03 40 28.5 -0.6**
1µm,1.2s
DZM *e*LR LR 03 44 34.5
2µm,26.4s
DZM Mont Dzumac 18.37 332 P **Pn 03 40 29.0 -0.1**
6.6nm,0.3s,baz=150,slow=11,SNR=99
DZM Mont Dzumac 18.37 332 *eP* **P 03 40 27.9 +0.9**
715nm,1.3s
MSVF Nonsavu 20.99 6 *eP* **P 03 40 55.3 +0.1**
MSVF pmax pmax
comp=Z,253nm,1.0s
MSVF Nonsavu 20.99 6 *eP* **P 03 40 55.3 +0.1**
comp=Z,254nm,1.0s
ARMA Armidale 21.42 285 *eP* **P 03 41 01.2 +1.4**
comp=Z,143nm,1.5s
CAN Canberra 21.55 271 *eP* **P 03 41 02.1 +1.1**
CAN pmax pmax
comp=Z,423nm,1.6s
CAN Canberra 21.55 271 *eP* **P 03 41 02.1 +1.1**
comp=Z,423nm,1.6s
TAU Tasmania Unive 21.83 250 *eP* **P 03 41 05.4 +1.6**
TAU pmax pmax
comp=Z,592nm,1.8s
TAU Tasmania Unive 21.83 250 *eP* **P 03 41 05.4 +1.6**
comp=Z,592nm,1.8s
EIDS Eidsvold 24.64 295 *eP* **P 03 41 33.1 +3.1**
comp=Z,42nm,1.1s
AFI Afiamalu 27.07 28 P **P 03 41 49.7 -2.3**
comp=Z,85nm,0.7s,baz=62,slow=4.4,SNR=6.4
AFI Afiamalu 27.07 28 *eP* **P 03 41 50.5 -1.5**
RAR Rarotonga 27.36 57 LR LR 03 52 18.8
comp=Z,201nm,18.8s,baz=258,slow=35
STKA Stephens Creek 28.53 273 P **P 03 42 07.7 +2.9**
comp=Z,22nm,0.8s,baz=104,slow=11,SNR=20
CTA Charters Tower 31.44 298 P **P 03 42 33.7 +3.1**
comp=Z,15nm,0.7s,baz=127,slow=11,SNR=4.7
CTAO Charters Tower 31.44 298 *eP* **P 03 42 32.7 +2.1**
CTAO pmax pmax
comp=Z,51nm,1.2s
CTAO Charters Tower 31.44 298 *eP* **P 03 42 32.7 +2.1**
comp=Z,50nm,1.2s
CTAO *e*ScP **ScP 03 48 40.7 -6.8**
BBOO Buckleboo 32.50 268 *eP* **P 03 42 40.4 +0.6**
comp=Z,58nm,1.0s
TBI Tubuai 33.33 73 *eS* **S 03 47 51.9 -3.6**
TBI *e*LQ LQ 03 50 12.3
comp=Z,1µm,32.2s
TBI *e*LR LR 03 51 26.9
comp=Z,563nm,35.2s
PAE Paea 36.79 65 *eP* **P 03 43 18.5 +1.9**
comp=Z,101nm,1.1s
PPT2 Papeete2 36.84 65 *eP* **P 03 43 19.3 +2.2**
comp=Z,426nm,1.2s
PPT2 *e*S **S 03 48 43.6 -5.8**
comp=Z,328nm,24.8s
PPT2 *e*LQ LQ 03 51 34.3
comp=Z,1µm,26.8s
PPT2 *e*LR LR 03 53 03.6
comp=Z,1µm,27.8s
PPT Papeete 36.85 65 P **P 03 43 19.2 +2.0**
comp=Z,263nm,0.7s,baz=112,slow=4.3,SNR=9.1
PPT LR LR 03 54 41.6
comp=Z,237nm,21.9s,baz=188,slow=30
TVO Taravao 36.94 66 *eP* **P 03 43 20.1 +2.1**
comp=Z,72nm,0.9s
TIAR Tiarei 37.02 65 *eP* **P 03 43 20.7 +2.1**
comp=Z,146nm,0.9s
MEH Mehetia 37.73 67 *eP* **P 03 43 26.8 +2.2**
comp=Z,168nm,1.2s
MEH *e*pP **pP 03 43 59.4 -0.5**
comp=Z,86nm,1.1s
COEN Coen 37.82 302 *eP* **P 03 43 27.2 +1.8**
comp=Z,71nm,1.0s
AS01 Alice Springs 38.38 281 *eP* **P 03 43 30.6 +0.6**
AS31 Alice Springs 38.41 281 *eP* **P 03 43 31.9 +1.6**
comp=Z,56nm,1.2s
ASAR Alice Springs 38.41 281 P **P 03 43 31.8 +1.5**
comp=Z,104nm,1.0s,baz=122,slow=7.7,SNR=348
ASAR pP **pP 03 44 07.3 +1.6**
comp=Z,18nm,0.8s,baz=120,slow=8.0,SNR=2.2
ASAR PcP **PcP 03 45 39.4 -0.9**
comp=Z,14nm,0.8s,baz=115,slow=4.9,SNR=5.9
ASAR ScP **ScP 03 49 08.8 -3.8**
comp=Z,1.7nm,0.6s,baz=126,slow=4.5,SNR=7.0
ASAR S **S 03 49 12.5 -0.5**
comp=Z,1.7nm,0.6s,baz=127,slow=15,SNR=4.5
ASAR PKiKP **PKiKP 03 52 52.2 -2.0**
comp=Z,0.5nm,0.5s,baz=128,slow=1.2,SNR=4.7
ASAR P3KPbc 04 13 36.8
comp=Z,0.9nm,0.7s,baz=302,slow=4.5,SNR=7.9
ASAR Alice Springs 38.41 281 P **P 03 43 31.8 +1.5**
ASAR *P*P **pP 03 44 07.3 +1.6**
ASAR 03 45 39.4
ASAR S **S 03 49 12.5 -0.5**
ASAR pmax pmax
comp=Z,104nm,1.0s
ASAR pmax pmax
comp=Z,18nm,0.8s
ASAR pmax pmax
comp=Z,14nm,0.8s
ASAR pmax pmax
comp=N,2.0nm,0.6s
ASAR smax smax
comp=N,2.0nm,0.6s
PMG Port Moresby 38.78 311 P **P 03 43 35.1 +1.8**
comp=N,75nm,0.7s,baz=117,slow=4.6,SNR=20
PMG LR LR 04 00 23.3
comp=N,294nm,18.1s,baz=160,slow=37
PMG Port Moresby 38.78 311 *ceP* **P 03 43 35.7 +2.3**
PMG pmax pmax
comp=Z,281nm,0.8s
PMG Port Moresby 38.78 311 *eP* **P 03 43 34.7 +1.4**
comp=Z,101nm,0.8s
VNDA Vanda 39.38 185 P **P 03 43 41.2 +3.7**
comp=Z,7.3nm,0.5s,baz=2.8,slow=8.5,SNR=52
VNDA pP **pP 03 44 15.1 +2.0**
comp=Z,21nm,0.8s,baz=359,slow=6.3,SNR=7.5
VNDA LR LR 03 56 43.9
comp=Z,342nm,21.5s,baz=35,slow=31
SBA Scott Base 39.45 183 *eP* **P 03 43 42.6 +4.5**
SBA pmax pmax
comp=Z,92nm,1.1s
SBA Scott Base 39.45 183 *eP* **P 03 43 42.6 +4.5**
comp=Z,92nm,1.1s
FORT Forrest 39.56 267 *eP* **P 03 43 41.3 +1.6**
comp=Z,574nm,0.7s
VAH Vaihoa 39.80 64 *eP* **P 03 43 43.4 +1.6**
comp=Z,355nm,1.4s
TARA Tarawa 39.93 356 *eP* **P 03 43 42.5 -0.4**
comp=Z,285nm,1.1s
WB2 Warramunga Arr 40.19 286 *eP* **P 03 43 46.4 +1.3**
comp=Z,45nm,0.9s
WRAB Tennant Creek 40.20 286 *eP* **P 03 43 46.0 +0.9**
WRAB pmax pmax
comp=Z,45nm,0.6s
WRAB Tennant Creek 40.20 286 *eP* **P 03 43 45.9 +0.8**
comp=Z,36nm,0.8s
WRA Warramunga Arr 40.20 286 P **P 03 43 46.4 +1.2**
comp=Z,15nm,0.6s,baz=127,slow=7.3,SNR=128
WRA pP **pP 03 44 21.8 +1.0**
comp=Z,46nm,1.0s,baz=126,slow=7.7,SNR=8.9
WRA ScP **ScP 03 49 15.1 -4.5**
comp=Z,8.2nm,1.2s,baz=123,slow=4.3,SNR=4.7
WRA S **S 03 49 39.0 -0.7**
comp=Z,7.0nm,1.1s,baz=126,slow=14,SNR=9.3
WRA PKiKP **PKiKP 03 52 53.6 -2.2**
comp=Z,0.4nm,0.4s,baz=185,slow=0.5,SNR=11
RKT Rikitea 44.57 84 *eS* **S 03 50 45.5 +1.9**
comp=Z,371nm,29.5s
RKT *e*LQ LQ 03 54 58.5
comp=Z,2µm,36.2s
RKT *e*LR LR 03 56 44.5
comp=Z,601nm,27.2s
CASY Casey 45.38 211 *eP* **P 03 44 26.2 +0.1**
comp=Z,103nm,1.4s
MTN Manton Dam 47.05 291 *eP* **P 03 44 41.3 +1.5**
comp=Z,41nm,0.7s
NWAO Narrogin (SRO) 47.06 258 *eP* **P 03 44 39.9 +0.1**
NWAO *e**PP **pP 03 45 14.0 -2.4**
NWAO pmax pmax
comp=Z,72nm,1.0s
NWAO Narrogin (SRO) 47.06 258 *eP* **P 03 44 39.9 +0.1**
comp=Z,72nm,1.0s
NWAO *ep*P **pP 03 45 14.0 -2.4**
KWAJ Kwajalein Atol 47.85 349 *eP* **P 03 44 46.1 +0.2**
KWAJ pmax pmax
comp=Z,522nm,0.7s
KWAJ Kwajalein Atol 47.85 349 *eP* **P 03 44 46.1 +0.2**
comp=Z,522nm,0.7s
FITZ Fitzroy Crossi 47.91 281 *eP* **P 03 44 48.4 +2.0**
FITZ pP **pP 03 45 24.4 +1.2**
JAY Jayapura 48.11 310 P **P 03 44 48.8 +0.7**
comp=Z,4.6nm,0.8s,baz=82,slow=23,SNR=14
JAY Jayapura 48.11 310 P **P 03 44 51.0 +3.0**
GENI Genyem 48.37 309 P **P 03 44 53.1 +3.1**
comp=Z,79nm,1.6s
H01W1 Cape Leeuwin H 48.61 254 P **P 03 44 53.5 +2.1**
baz=120,slow=10,SNR=7.9
H01W2 Cape Leeuwin H 48.62 254 P **P 03 44 53.3 +1.9**
baz=120,slow=10,SNR=4.9
H01W3 Cape Leeuwin H 48.62 254 P **P 03 44 53.4 +2.0**
baz=120,slow=10,SNR=3.3
TAOE Nuku Hiva Isla 49.47 65 *eS* **S 03 51 48.6 -4.8**
comp=Z,305nm,23.3s
TAOE *e*LR LR 03 59 01.2
comp=Z,604nm,28.6s
MBWA Marble Bar 50.77 273 *eP* **P 03 45 07.7 -0.4**
comp=Z,121nm,1.5s
MBWA *ep*P **pP 03 45 43.9 -1.4**
QSPA South Pole Qui 51.43 180 *eP* **P 03 45 16.0 +3.4**
MIR Mirnyy 52.37 210 *eP* **P 03 45 21.0 +1.7**
MIR pmax pmax
comp=Z,8.0nm,1.2s
FAKI Fak Fak 53.20 301 *eP* **P 03 45 26.0 -0.1**
comp=Z,31nm,0.7s
SOEI Soe 54.13 288 P P 03 45 40.2 +7.1
comp=Z,64nm,1.0s
MMRI Maumere 56.38 287 P **P 03 45 52.0 +3.0**
comp=Z,77nm,1.1s,comp=Z,5µm
MMRI Maumere 56.38 287 *eP* **P 03 45 49.8 +0.8**
comp=Z,24nm,0.3s
EDFI Ende, Flores 56.71 287 P **P 03 45 53.0 +1.5**
comp=Z,26nm,1.3s
SANI Sanana 58.13 296 P **P 03 46 02.6 +1.4**
comp=Z,97nm,1.0s
GUMO Guam 59.46 325 P **P 03 46 11.3 +1.0**
comp=Z,48nm,0.4s,baz=135,slow=16,SNR=4.1
LUWI Luwuk 61.11 294 P **P 03 46 24.1 +2.5**
comp=Z,161nm,1.3s
LUWI P **PcP 03 47 03.1 +0.1**
comp=Z,161nm,1.3s
LUWI Luwuk 61.11 294 *eP* **P 03 46 22.5 +0.9**
comp=Z,454nm,1.3s
LUWI *ep*P **pP 03 46 59.0 -1.1**
KMSI Cibinong 61.40 297 P **P 03 46 26.1 +2.6**
comp=Z,250nm,0.8s
ANA2 Anatahan 61.53 327 *eP* **P 03 46 25.1 +0.8**
TTSI Tana Toraja 61.88 290 P **P 03 46 28.3 +1.5**
comp=Z,32nm,0.8s
MAW Mawson 62.69 203 P **P 03 46 32.3 +0.9**
comp=Z,24nm,0.8s,baz=121,slow=8.0,SNR=34
MAW pP **pP 03 47 09.7 -0.2**
comp=Z,81nm,1.1s,baz=122,slow=7.1,SNR=11
MRSI Marisa 62.76 295 P **P 03 46 33.3 +0.7**
comp=Z,36nm,1.0s,comp=Z,6µm
MRSI P **pP 03 47 12.8 +1.5**
comp=Z,36nm,1.0s,comp=Z,6µm
BLJI Banyuglugur 63.49 282 P **P 03 46 41.7 +4.3**
comp=Z,39nm,0.7s,comp=Z,3µm
PWJI Pagerwojo 64.69 280 P **P 03 46 47.3 +2.0**
comp=Z,40nm,0.9s
BBKI Banjar Baru 65.29 286 P **P 03 46 51.1 +1.9**
comp=Z,102nm,0.9s,comp=Z,12µm
PMSA Palmer Station 66.83 156 *eP* **P 03 46 56.8 -1.3**
comp=Z,36nm,0.8s
KPJI Karang Pucung 67.33 279 P **P 03 47 06.1 +3.9**
comp=Z,27nm,1.2s
SYO Syowa Base 67.81 196 ⇓*i*X **P 03 47 02.6 -1.7**
SYO Syowa Base 67.81 196 ⇓*i*pP pP 03 47 41.6 -1.9
CISI Cisompet, Garu 68.06 278 P **P 03 47 10.7 +3.9**
comp=Z,74nm,0.9s,comp=Z,4µm
CISI Cisompet, Garu 68.06 278 *eP* **P 03 47 08.0 +1.2**
comp=Z,217nm,0.9s
CISI *ep*P **pP 03 47 45.8 -0.2**
SDKM Sandakan 69.74 295 ⇑P **P 03 47 17.8 +0.6**
SNAA Sanae 69.93 180 P **P 03 47 18.8 +1.4**
SNAA Sanae 69.93 180 *eP* **P 03 47 19.0 +1.5**
SNAA *e**PP **pP 03 47 56.1 -0.8**
SNAA pmax pmax
comp=Z,64nm,1.0s
SNAA Sanae 69.93 180 *eP* **P 03 47 18.9 +1.5**
comp=Z,64nm,1.0s
SNAA *ep*P **pP 03 47 56.1 -0.8**
NVL N'lazarevskaya 70.22 186 *eP* P 03 47 24.2 +5.1
NVL *e**PP pP 03 48 01.8 +3.2
NVL *e*S **S 03 56 22.2 +5.3**
KKM Kota Kinabalu 70.72 295 *eP* **P 03 47 23.6 +0.5**
comp=Z,91nm,0.6s
VNA1 Neumayer--Stat 70.92 179 P **P 03 47 25.8 +2.5**
SBUM Sibu 71.16 289 *eP* **P 03 47 27.0 +1.3**
comp=Z,60nm,1.3s
KASI Kota Agung 71.89 278 P **P 03 47 31.8 +1.7**
comp=Z,43nm,1.3s
USHA Ushuaia 71.93 147 P **P 03 47 32.2 +2.6**
comp=Z,93nm,0.9s,baz=198,slow=7.7,SNR=12
KSM Kuching 71.94 287 *eP* **P 03 47 30.3 0.0**
comp=Z,47nm,1.0s
KSM *ep*P **pP 03 48 09.7 -0.3**
TGY Tagaytay City 73.29 304 P **P 03 47 39.6 +1.3**
comp=Z,610nm,0.8s,baz=208,slow=2.9,SNR=29
KSI Kapahiang 74.54 278 P **P 03 47 49.3 +3.6**
comp=Z,73nm,0.8s
CHRN Cochrane 75.02 139 *eP* **P 03 47 50.1 +2.2**
comp=Z,6.6nm,1.0s
PDSI Padang 77.91 279 P **P 03 48 04.1 -0.6**
comp=Z,24nm,1.2s,comp=Z,5µm
EFI East Falkland 78.52 149 *d*/P **P 03 48 08.9 +1.5**
EFI pmax pmax
comp=Z,48nm,0.9s
EFI East Falkland 78.52 149 *eP* **P 03 48 07.9 +0.6**
comp=Z,66nm,0.8s
JHJ Hachijo jima 2 78.85 330 P **P 03 48 09.2 0.0**
comp=Z,83nm,0.4s,baz=156,slow=10.0,SNR=4.4
MNSI Mandaling Nat 79.67 279 P **P 03 48 14.1 -0.1**
comp=Z,24nm,0.5s
TWG Pinlang 79.74 310 *eP* **P 03 48 13.5 -0.9**
comp=Z,141nm,1.2s
YULB Yu-li 80.04 311 *eP* **P 03 48 15.2 -0.8**
comp=Z,16nm,0.9s
YULB *ep*P **pP 03 48 56.4 0.0**
PLCA Paso Flores 80.50 135 P **P 03 48 21.1 +2.6**
comp=Z,27nm,0.8s,baz=273,slow=4.9,SNR=25
PLCA LR LR 04 16 04.6
comp=Z,103nm,19.1s,baz=208,slow=30
SSLB Suanglung 80.55 311 *eP* **P 03 48 17.8 -0.9**
comp=Z,42nm,0.9s
SSLB *ep*P **pP 03 48 58.8 -0.4**
IPM Ipoh 80.90 283 *eP* **P 03 48 21.3 +0.5**
comp=Z,26nm,0.7s
IPM *ep*P **pP 03 49 00.2 -1.1**
PSI Prapat 81.44 281 *eP* **P 03 48 23.2 -0.6**
PSI *e**PP **pP 03 49 02.8 -1.6**
PSI pmax pmax
comp=Z,44nm,1.0s
PSI Prapat 81.44 281 *eP* **P 03 48 23.2 -0.6**
comp=Z,44nm,1.0s
PSI *ep*P **pP 03 49 02.8 -1.6**
GSI Gunungsitoli 81.54 278 P **P 03 48 26.2 +2.0**
comp=Z,197nm,0.9s,comp=Z,2µm
GSI Gunungsitoli 81.54 278 *eP* **P 03 48 26.1 +1.9**
comp=Z,161nm,0.9s
GSI *ep*P **pP 03 49 05.3 +0.6**
KULM Kulim 81.71 284 *eP* **P 03 48 24.6 -0.5**
KULM *ep*P **pP 03 49 04.1 -1.4**
INU Inuyama 81.90 329 *eP* **P 03 48 26.0 +0.5**
comp=Z,92nm,1.0s
MJAR Matsushiro Arr 82.47 330 P **P 03 48 27.8 -0.6**
comp=Z,44nm,1.0s,baz=166,slow=6.1,SNR=73
MJAR pP **pP 03 49 09.2 +0.1**
comp=Z,14nm,0.9s,baz=163,slow=5.2,SNR=5.1
MJAR LR LR 04 22 21.1
comp=Z,24nm,21.9s,baz=60,slow=33
MAJO Matsushiro 82.47 330 *eP* **P 03 48 29.3 +0.8**
MAJO *e**PP **pP 03 49 09.1 0.0**
MAJO pmax pmax
comp=Z,78nm,1.0s
MAJO Matsushiro 82.47 330 *eP* **P 03 48 29.3 +0.8**
comp=Z,78nm,1.0s
MAJO *ep*P **pP 03 49 09.1 0.0**
MAT Matsushiro 82.47 330 P **P 03 48 28.1 -0.4**
MAT S **S 03 58 23.0 -8.0**
MJB9 Matsu-Tunnel 82.47 330 *eP* **P 03 48 29.4 +0.9**
comp=Z,19nm,1.0s
JNU Nakatsue 82.68 323 P **P 03 48 30.4 +0.7**
comp=Z,48nm,0.8s,baz=128,slow=5.9,SNR=22
JNU pP **pP 03 49 11.6 +1.2**
comp=Z,29nm,0.9s,baz=132,slow=5.9,SNR=3.2
JNU Nakatsue 82.68 323 *eP* **P 03 48 30.8 +1.1**
JNU pP **pP 03 49 11.6 +1.2**
QZH Quanzhou 82.83 310 ⇑*i*P P 03 48 23.6 -6.9
QZH pP pP 03 49 04.5 -6.7
QZH Quanzhou 82.83 310 S **S 03 58 27.5 -7.5**
SKLT Songkhla 82.94 285 P **P 03 48 32.6 +1.2**
comp=Z,46nm,1.2s,comp=Z,660nm
TPTI 83.07 280 P **P 03 48 32.6 +0.5**
comp=Z,59nm,0.8s
TRTT Trang 84.07 285 P **P 03 48 37.9 +0.8**
comp=Z,69nm,1.1s,comp=Z,1µm
QIZ Qiongzhong 84.19 300 P **P 03 48 38.6 +1.0**
QIZ pP **pP 03 49 20.2 +1.8**
QIZ S **S 03 58 47.6 -1.4**
QIZ pmax pmax
comp=Z,23nm,1.4s
QIZ pmax pmax
comp=Z,170nm,7.2s
QIZ Qiongzhong 84.19 300 *eP* **P 03 48 38.3 +0.6**
comp=Z,11nm,0.9s
QIZ *ep*P **pP 03 49 17.9 -0.5**
MLSI Meulaboh, Aceh 84.31 280 P **P 03 48 39.4 +1.0**
comp=Z,145nm,1.2s
UBPT Khong Chiam 84.69 294 P **P 03 48 41.2 +1.0**
comp=Z,40nm,1.2s,comp=Z,763nm
PKDT Phuket 85.13 284 P **P 03 48 43.7 +1.2**
comp=Z,60nm,1.1s,comp=Z,2µm
CHBT CHBT 85.29 290 P **P 03 48 44.0 +0.8**
comp=Z,64nm,1.2s,comp=Z,2µm
SURT Suratani 85.46 285 P **P 03 48 45.2 +1.1**
comp=Z,21nm,1.1s
SKNT Sakolnakorn 86.88 295 P **P 03 48 48.0 -3.0**
TRQA Tornquist 87.03 138 *eP* **P 03 48 52.8 +1.2**
comp=Z,93nm,1.8s
KHON Khomkaen 87.28 293 P **P 03 48 54.9 +2.0**
comp=Z,17nm,1.0s,comp=Z,909nm
PHET Kaeng Krachan 87.38 289 P **P 03 48 55.0 +1.6**
comp=Z,18nm,0.9s,comp=Z,199nm
CHAI Chaiyaphum 87.60 292 P **P 03 48 55.1 +0.7**
comp=Z,8.9nm,0.7s
KSRS Korea Array 87.61 324 P **P 03 48 55.8 +1.8**
comp=Z,45nm,0.8s,baz=144,slow=5.5,SNR=150
KSRS pP **pP 03 49 36.8 +1.7**
comp=Z,21nm,0.9s,baz=144,slow=5.5,SNR=6.9
KSRS LR LR 04 27 34.9
comp=Z,21nm,18.1s,baz=148,slow=35
KS15 Wonju Array Si 87.62 324 *eP* **P 03 48 56.5 +2.5**
KSAR Wonju Array Be 87.62 324 P **P 03 48 55.8 +1.8**
KSAR *PP **pP 03 49 36.8 +1.7**
KSAR Wonju Array Be 87.62 324 P **P 03 48 55.8 +1.8**
KSAR pP **pP 03 49 36.8 +1.7**
KS01 Wonju Array Si 87.65 324 *eP* **P 03 48 54.8 +0.7**
KS01 *ep*P **pP 03 49 30.8 -4.5**
ASAJ Asahikawa 87.69 337 *eP* **P 03 48 55.3 +1.1**
comp=Z,90nm,1.3s
NJ2 Nanjing 88.01 315 *eP* **P 03 48 56.6 +0.6**
NJ2 pP **pP 03 49 38.7 +1.6**
NJ2 pmax pmax
comp=Z,19nm,0.5s
LCO Las Campanas 88.52 127 *eP* **P 03 49 00.9 +1.8**
comp=Z,20nm,0.8s
PBKT Sadao Pong 88.77 292 P **P 03 49 01.4 +1.5**
comp=Z,24nm,0.9s
LOEI Loei 89.17 293 P **P 03 49 01.9 +0.1**
comp=Z,11nm,1.1s,comp=Z,376nm
WHN Wuhan 89.48 311 ⇓*i*P **P 03 49 04.3 +1.4**
WHN pP **pP 03 49 45.9 +1.7**
WHN SKS **SKSac 03 59 19.7 +2.2**
WHN S **S 03 59 41.3 +2.0**
WHN pmax pmax
comp=Z,78nm,1.1s
WHN pmax pmax
comp=Z,270nm,7.9s
UTTA Uttaradit 89.84 293 P **P 03 49 07.4 +2.5**
comp=Z,3.1nm,0.7s,comp=Z,76nm
UMPA Umpang Tak 90.07 281 P **P 03 49 07.4 +1.3**
comp=Z,7.1nm,0.9s,comp=Z,878nm
LAMP Lampang 91.01 293 P **P 03 49 12.7 +2.4**
comp=Z,6.7nm,0.8s
SMY Shemya 91.06 359 *eP* **P 03 49 09.2 -0.5**
SMY *e**PP **pP 03 49 50.6 -0.4**
SMY pmax pmax
comp=Z,69nm,1.0s
SMY Shemya 91.06 359 *eP* **P 03 49 09.2 -0.5**
comp=Z,69nm,1.0s
SMY *ep*P **pP 03 49 50.6 -0.4**
GYA Guiyang 91.42 303 P **P 03 49 14.2 +2.0**
GYA pP pP 03 49 55.2 +1.7
GYA sP sP 03 50 12.4 +1.7
GYA PP **PP 03 52 57.5 +4.9**
GYA SKS **SKSac 03 59 29.8 +0.7**
GYA S **S 03 59 56.0 -1.5**
GYA sS sS 04 01 08.2 -1.2
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,140nm,6.2s
CM01 Chiang Mai Arr 91.43 292 *eP* **P 03 49 13.2 +0.9**
CMAR Chiang Mai Arr 91.46 292 P **P 03 49 14.1 +1.6**
comp=Z,22nm,0.9s,baz=154,slow=3.3,SNR=80
CMAR pP **pP 03 49 54.4 +0.7**
comp=Z,7.3nm,0.8s,baz=148,slow=3.1,SNR=3.1
CMAR PKKPbc **PKKPbc 04 06 34.1 +2.8**
comp=Z,2.7nm,0.4s,baz=293,slow=3.8,SNR=14
USRK Ussuriysk Ar. 91.47 330 P **P 03 49 13.3 +1.5**
comp=Z,12nm,0.8s,baz=129,slow=3.4,SNR=28
USRK pP **pP 03 49 54.0 +0.9**
comp=Z,2.1nm,0.7s,baz=162,slow=5.9,SNR=1.6
CHTO Chiang Mai 91.69 293 P **P 03 49 14.8 +1.3**
comp=Z,131nm,1.2s,comp=Z,2µm
CHTO Chiang Mai 91.69 293 *eP* **P 03 49 15.2 +1.7**
CHTO *e**PP **pP 03 49 55.1 +0.3**
CHTO pmax pmax
comp=Z,29nm,1.0s
CHTO Chiang Mai 91.69 293 *eP* **P 03 49 15.2 +1.7**
comp=Z,29nm,1.0s
CHTO *ep*P **pP 03 49 55.1 +0.3**
TIA Tai'an 92.07 316 ⇓P **P 03 49 16.4 +1.6**
TIA pmax pmax
comp=Z,30nm,1.2s
ENH Enshi 92.24 308 *eP* **P 03 49 16.1 +0.2**
comp=Z,8.0nm,0.3s
NIKH Nikolski High 92.28 9 *eP* **P 03 49 15.0 -0.3**
comp=Z,54nm,0.8s
NIKH *ep*P **pP 03 49 57.3 +0.7**
PET Petropavlovsk 92.53 350 *eP* **P 03 49 17.1 +0.6**
PET *e*S **S 04 00 07.0 +1.1**
PET *e**SS **sS 04 01 15.3 -2.7**
PEA0 Petropavlovsk- 92.75 349 *eP* **P 03 49 17.6 +0.1**
PETK Petropavlovsk- 92.75 349 P **P 03 49 17.1 -0.5**
comp=Z,3.3nm,0.5s,baz=126,slow=7.7,SNR=4.9
PETK pP **pP 03 49 58.3 -0.6**
comp=Z,4.6nm,0.8s,baz=162,slow=5.9,SNR=2.3
PETK LR LR 04 27 18.8
comp=Z,74nm,19.4s,baz=166,slow=33
PETK Petropavlovsk- 92.75 349 P **P 03 49 17.1 -0.5**
PETK *P*P **pP 03 49 58.3 -0.6**
PETK pmax pmax
comp=Z,3.0nm,0.5s
PETK pmax pmax
comp=Z,6.0nm,0.9s
MDJ Mudanjiang 92.76 329 P **P 03 49 18.8 +1.0**
MDJ pP pP 03 49 58.9 -0.2
MDJ sP sP 03 50 16.2 -0.1
MDJ S **S 04 00 12.0 +3.6**
MDJ pmax pmax
comp=Z,20nm,1.4s
MDJ pmax pmax
comp=Z,160nm,4.4s
MDJ Mudanjiang 92.76 329 *eP* **P 03 49 19.0 +1.2**
comp=Z,19nm,1.2s
SNY Shenyang 93.12 324 ⇑P **P 03 49 18.6 -0.9**
SNY PP **PP 03 53 04.4 -1.2**
SNY S **S 04 00 15.1 +3.5**
SNY sS **sS 04 01 27.2 +3.4**
SNY pmax pmax
comp=Z,160nm,8.5s

SNY LR LR
comp=Z,98nm,20.6s
SNY LR LR
comp=Z,120nm,21.0s
SNY LR LR
comp=Z,150nm,14.2s
KMI Kunming 93.14 300 P **P** **03 49 22.3 +2.0**
KMI pP pP 03 50 03.1 +1.4
KMI S **S** **04 00 15.2 +2.1**
KMI sS sS 04 01 28.0 +2.7
KMI SS **SS** **04 06 32.8 0.0**
KMI pmax pmax
comp=Z,16nm,0.8s
KMI LR LR
comp=Z,150nm,15.9s
KMI LR LR
comp=Z,140nm,21.2s
KMI LR LR
comp=Z,190nm,28.0s
SLBS Sierra La Lagu 93.18 62 *e*P **P** **03 49 22.4 +2.0**
comp=Z,45nm,1.0s
PB04 IPOC Station P 93.52 122 *e*P **P** **03 49 25.7 +3.4**
comp=Z,56nm,1.1s
CN2 Changchun 93.84 326 *e*P **P** **03 49 23.0 +0.2**
CN2 *es*P sP 03 50 21.0 -0.3
CN2 *e*S **S** **04 00 16.2 -1.7**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,300nm,4.0s
SCI2 San Clemente I 93.86 50 P **P** **03 49 23.2 0.0**
baz=226
SCZ2 Santa Cruz Isl 93.93 49 P **P** **03 49 23.6 +0.1**
baz=225
LVC Limon Verde 94.14 123 *e*P **P** **03 49 26.6 +1.2**
comp=Z,36nm,1.2s
BLG Laguna Peak, P 94.34 49 P **P** **03 49 26.0 +0.6**
baz=225
BAR Barrett 94.80 52 *e*P **P** **03 49 28.9 +1.4**
comp=Z,34nm,1.6s
PB01 IPOC Station P 94.86 122 *e*P **P** **03 49 31.8 +3.5**
comp=Z,19nm,1.1s
OSI Osito Audit: C 94.90 49 P **P** **03 49 28.4 +0.4**
baz=226
MONP2 Monument Peak 95.09 52 P **P** **03 49 30.0 +0.9**
baz=227,SNR=12
MURC Murrieta 95.11 51 P **P** **03 49 29.7 +0.8**
baz=226
IKP In-Ko-Pah, Jac 95.12 52 P **P** **03 49 30.2 +1.2**
baz=227,SNR=13
XAN Xi'an 95.19 310 P **P** **03 49 30.0 +0.7**
XAN pP pP 03 50 10.7 0.0
XAN sP sP 03 50 27.7 -0.1
XAN PP **PP** **03 53 23.3 +1.4**
XAN SKS **SKSac** **03 59 48.8 -0.5**
XAN S **S** **04 00 26.7 -3.5**
XAN pmax pmax
comp=Z,5.0nm,1.1s
XAN pmax pmax
comp=Z,110nm,6.8s
ARVC Arvin 95.19 48 P **P** **03 49 29.8 +0.5**
baz=226
BFSC Mount Baldy Ra 95.27 50 P **P** **03 49 30.2 +0.4**
baz=226,SNR=9.9
SWSC Sam W. Stewart 95.51 52 P **P** **03 49 31.9 +1.2**
baz=227,SNR=7.3
EDW2 Edwards Air Fo 95.52 49 P **P** **03 49 31.0 +0.2**
baz=226,SNR=7.4
VES Vestal, Richgr 95.54 48 P **P** **03 49 31.2 +0.4**
baz=225
TPFO Pinon Flats 95.56 51 P **P** **03 49 31.7 +0.6**
baz=227,SNR=5.6
PFO Pinyon Flats O 95.56 51 P **P** **03 49 31.4 +0.3**
baz=227,SNR=5.8
PFO Pinyon Flats O 95.56 51 *e*P **P** **03 49 31.7 +0.6**
PFO pmax pmax
comp=Z,17nm,0.3s
PFO Pinyon Flats O 95.56 51 *e*P **P** **03 49 31.7 +0.6**
comp=Z,17nm,0.3s
KLR Kul'dur 95.78 333 P **P** **03 49 32.3 +0.7**
comp=Z,5.6nm,1.1s,baz=129,slow=4.9,SNR=5.3
NNA Nana 95.82 110 *e*P **P** **03 49 33.4 +0.7**
NNA pmax pmax
comp=Z,149nm,1.5s
NNA Nana 95.82 110 *e*P **P** **03 49 33.4 +0.7**
comp=Z,149nm,1.5s
BELC Belle Mtn. Jos 96.11 51 P **P** **03 49 34.4 +0.8**
baz=227,SNR=8.5
LRMC Laurel Mtn Rad 96.11 49 P **P** **03 49 34.2 +0.6**
baz=226
GLA Glamis 96.18 52 P **P** **03 49 35.5 +1.6**
baz=227,SNR=6.9
GLA Glamis 96.18 52 *e*P **P** **03 49 35.9 +2.1**
GLA pmax pmax
comp=Z,21nm,1.0s
GLA Glamis 96.18 52 *e*P **P** **03 49 35.9 +2.1**
comp=Z,21nm,1.0s
BC3 Big Chuckawall 96.21 51 P **P** **03 49 35.4 +1.4**
baz=227,SNR=9.6
CD2 Chengdu 96.29 305 *e*P **P** **03 49 36.0 +1.6**
CD2 pP pP 03 50 16.7 +0.9
CD2 sP sP 03 50 33.9 +1.0
CD2 SKS **SKSac** **03 59 56.9 +1.6**
CD2 S **ScS** **04 00 42.2 +1.9**
CD2 sS sS 04 01 54.0 +1.8
CD2 SS **SS** **04 07 20.9 +3.8**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.4s
HEC Hector,Ludlow 96.47 50 P **P** **03 49 35.9 +0.7**
baz=227
GSC Goldstone, Bar 96.51 50 P **P** **03 49 36.1 +0.8**
baz=227
GSC Goldstone, Bar 96.51 50 *e*P **P** **03 49 36.3 +1.0**
GSC pmax pmax
comp=Z,22nm,1.7s
GSC Goldstone, Bar 96.51 50 *e*P **P** **03 49 36.3 +1.0**
comp=Z,22nm,1.7s
CWC Cottonwood Cre 96.54 48 P **P** **03 49 36.1 +0.5**
baz=226
MPMC Manual Prospec 96.63 49 P **P** **03 49 36.8 +0.8**
baz=226
113A Mohawk Valley, 96.65 53 *e*P **P** **03 49 37.4 +1.5**
214A Organ Pipe Nat 96.72 54 P **P** **03 49 37.5 +1.3**
baz=228,SNR=6.8
IRM Iron Mountain 96.73 51 P **P** **03 49 37.3 +1.0**
baz=227,SNR=12
Y12C Blythe 96.84 52 P **P** **03 49 37.9 +1.1**
baz=228
Y12C Blythe 96.84 52 *e*P **P** **03 49 38.3 +1.6**
comp=Z,9.3nm,0.9s
GMRC Granite Mounta 96.85 51 P **P** **03 49 37.8 +0.9**
baz=227
TUQ Turquoise Moun 97.13 50 P Pdif 03 49 38.9 +0.7
baz=227
SHOC Shoshone, Teco 97.23 49 P Pdif 03 49 39.5 +1.0
baz=227
LDFC Landfair 97.38 51 *e*P Pdif 03 49 41.1 +1.7
comp=Z,24nm,1.3s
PDMCI Parker Dam,Lak 97.45 52 P Pdif 03 49 40.6 +1.1
baz=228
MRIV Mauritius Mete 97.60 237 *e*P **P** **03 49 39.6 -1.0**
ZAIG Zacatecas 97.81 67 *e*P Pdif 03 49 44.1 +2.3
comp=Z,12nm,1.3s
Y14A Wickenburg 97.91 53 *e*P Pdif 03 49 43.2 +1.5
TPNV Topopah Spring 97.96 49 *e*P Pdif 03 49 42.5 +0.5
TPNV pmax pmax
comp=Z,8.0nm,0.8s
TPNV Topopah Spring 97.96 49 *e*P Pdif 03 49 42.5 +0.5
comp=Z,7.9nm,0.8s
W13A Hualapai Mount 98.14 51 *e*P Pdif 03 49 44.9 +2.1
HPIG 98.23 62 *e*P Pdif 03 49 44.6 +1.1
comp=Z,4.3nm,0.7s
HPIG *e*PP **PP** **03 53 46.2 +0.7**
TUC Tucson 98.24 55 Pdiff Pdif 03 49 44.2 +1.0
baz=229
TUC Tucson 98.24 55 *e*P Pdif 03 49 43.5 +0.3
TUC pmax pmax
comp=Z,4.0nm,0.8s
TUC Tucson 98.24 55 *e*P Pdif 03 49 43.5 +0.3
comp=Z,4.1nm,0.8s
SHPR Sheep Range 98.31 50 *e*P Pdif 03 49 45.5 +2.0
comp=Z,9.8nm,1.4s
SHPR *e*PP **PP** **03 53 47.8 +1.8**
HHC Hu-ho-hao-te 98.43 316 *e*P Pdif 03 49 46.0 +2.2

HHC pP pP 03 50 24.0 -1.3
HHC SKS **SKSac** **04 00 06.5 +0.7**
HHC S **ScS** **04 00 57.8 0.0**
HHC pmax pmax
comp=Z,26nm,0.7s
HHC pmax pmax
comp=Z,91nm,6.5s
HHC LR LR
comp=Z,140nm,12.4s
HHC LR LR
comp=Z,110nm,13.1s
HHC LR LR
comp=Z,120nm,14.8s
CPUP Villa Florida 98.50 134 P Pdif 03 49 45.5 +1.0
comp=Z,2.5nm,0.8s,baz=230,slow=6.0,SNR=5.7
CPUP LR LR 04 27 13.1
comp=Z,91nm,20.7s,baz=223,slow=31
319A Douglas 98.61 57 *e*P Pdif 03 49 46.8 +1.8
I03D Drain, OR 98.81 40 Pdiff Pdif 03 49 46.4 +1.1
baz=224
X16A Lo Mia Camp, P 99.20 53 *e*P **Pdif** **03 49 49.5 +1.9**
LZH Lanzhou 99.64 309 *e*P **Pdif** **03 49 51.1 +1.6**
LZH pP pP 03 50 31.6 +0.7
LZH pmax pmax
comp=Z,14nm,1.0s
WUAZ Wupatki 99.95 52 Pdiff **Pdif** **03 49 51.6 +0.7**
baz=229
WUAZ Wupatki 99.95 52 *e*Pdif **Pdif** **03 49 53.0 +2.1**
comp=Z,9.8nm,1.4s
U15A North Rim 99.98 51 *e*Pdif **Pdif** **03 49 52.8 +1.7**
KNB Kanab 100.05 50 *e*P **Pdif** **03 49 53.4 +2.1**
KNB *e* 03 53 59.7
KNB pmax pmax
comp=Z,8.0nm,1.2s
KNB Kanab 100.05 50 *e*Pdif **Pdif** **03 49 53.4 +2.1**
comp=Z,8.1nm,1.2s
KNB *e*PP **PP** **03 53 59.7 +0.5**
TX31 Lajitas Ar. Si 101.10 61 *e*Pdif **Pdif** **03 49 56.7 +0.7**
TX31 *e*PP **PP** **03 54 08.2 +1.1**
TXAR Lajitas Array 101.10 61 P **Pdif** **03 49 57.1 +1.1**
comp=Z,1.8nm,0.8s,baz=200,slow=7.7,SNR=22
TXAR PP **PP** **03 54 06.5 -0.6**
comp=Z,0.7nm,0.8s,baz=230,slow=5.6,SNR=4.5
MTPU Mount Pierson 101.10 50 *e*Pdif **Pdif** **03 49 58.9 +2.7**
MTPU *e*PP **PP** **03 54 08.8 +1.5**
MNTX Cornudas Mount 101.39 59 Pdiff **Pdif** **03 49 57.6 +0.5**
baz=231
MNTX Cornudas Mount 101.39 59 *e*Pdif **Pdif** **03 49 58.2 +1.0**
MNTX *e*PP **PP** **03 54 08.7 -0.6**
BNM Barren Site 102.10 56 *e*PP PP 03 54 11.2 -3.6
ANMO Albuquerque 102.70 55 Pdiff **Pdif** **03 50 03.5 +0.3**
baz=232
ANMO Albuquerque 102.70 55 *e*P **Pdif** **03 50 04.3 +1.2**
ANMO *e* 03 54 15.5
ANMO Albuquerque 102.70 55 *e*Pdif **Pdif** **03 50 04.3 +1.2**
ANMO *e*PP **PP** **03 54 15.5 -3.8**
A04D Lummi Island 102.72 37 Pdiff **Pdif** **03 50 04.5 +2.0**
baz=225
SRU San Rafael Swe 102.78 50 *e*P **Pdif** **03 50 03.6 +0.2**
SRU *e* 03 54 20.5
SRU San Rafael Swe 102.78 50 *e*Pdif **Pdif** **03 50 03.6 +0.2**
SRU *e*PP **PP** **03 54 20.4 +0.7**
832A Faith Ranch, C 103.03 64 Pdiff **Pdif** **03 50 05.4 +0.9**
baz=233
933A Laredo 103.12 65 Pdiff **Pdif** **03 50 05.7 +0.8**
baz=233
034A Hebbronville 103.22 66 Pdiff **Pdif** **03 50 06.0 +0.6**
baz=233
833A Chaparral WMA, 103.46 65 Pdiff **Pdif** **03 50 06.8 +0.4**
baz=233
633A Saathoff Ranch 104.29 64 Pdiff **Pdif** **03 50 10.8 +0.7**
baz=233
MSTX Muleshoe 104.52 58 Pdiff **Pdif** **03 50 11.0 -0.1**
baz=233
O20A White River Ci 104.80 50 *e*PP PP 03 54 34.8 +0.1
SDCO Great Sand Dun 105.03 54 *e*PP PP 03 54 38.7 +2.1
T25A Trinidad 105.35 55 *e*PP PP 03 54 39.4 +0.5
PDAR Pinedale Array 105.65 48 Pdiff **Pdif** **03 50 20.2 +4.2**
comp=Z,0.6nm,0.7s,baz=210,slow=5.2,SNR=4.4
PDAR PP **PP** **03 54 38.5 -2.6**
comp=Z,0.7nm,0.7s,baz=231,slow=5.7,SNR=5.9
AMTX Amarillo 105.79 58 *e*Pdif **Pdif** **03 50 17.1 +0.4**
AMTX *e*PP **PP** **03 54 42.5 +0.5**
SONM Songino Array 105.88 319 Pdiff **Pdif** **03 50 15.6 -1.2**
comp=Z,0.4nm,0.5s,baz=98,slow=4.4,SNR=2.5
SONM PKiKP **PKiKP** **03 54 27.2 -1.2**
comp=Z,0.6nm,0.6s,baz=122,slow=1.6,SNR=3.7
SONM PP **PP** **03 54 39.8 -2.6**
comp=Z,0.4nm,0.5s,baz=142,slow=7.3,SNR=3.9
SONM PKKPbc **PKKPbc** **04 05 53.1 +0.9**
comp=Z,1.5nm,0.5s,baz=255,slow=2.1,SNR=10
SONA1 Songino Array 105.88 319 *e*PP PP 03 54 39.1 -3.4
MCK McKinley 105.89 16 *e*PKP **PKiKP** **03 54 26.1 -1.6**
ISCO Idaho Springs 106.19 52 *e*PP PP 03 54 46.9 +1.7
BOZ Bozeman (W) 106.25 44 PKiKP **PKiKP** **03 54 29.5 +0.3**
baz=231
BOZ Bozeman (W) 106.25 44 *e*P **Pdif** **03 50 18.4 -0.2**
BOZ pmax pmax
comp=Z,1.0nm,0.7s
BOZ Bozeman (W) 106.25 44 *e*Pdif **Pdif** **03 50 18.4 -0.2**
comp=Z,1.1nm,0.7s
BOZ *e*PKP **PKiKP** **03 54 29.0 -0.2**
WRH Wood River Hil 106.71 16 *e*PKiKP **PKiKP** **03 54 28.0 -1.3**
134A White-Moore Ra 106.87 62 PKiKP **PKiKP** **03 54 30.7 +0.1**
baz=235
ILAR Eielson Array 107.23 16 Pdiff **Pdif** **03 50 23.1 +0.8**
comp=Z,0.2nm,0.7s,baz=220,slow=5.4,SNR=3.4
ILAR PKiKP **PKiKP** **03 54 28.1 -2.1**
comp=Z,1.1nm,0.5s,baz=220,slow=2.6,SNR=18
ILAR PKKPbc **PKKPbc** **04 05 44.3 -4.1**
comp=Z,0.4nm,0.7s,baz=5.7,slow=2.9,SNR=5.9
K22A Casper 107.35 49 *e*PP PP 03 54 53.2 -0.2
W32A Sentinel 107.55 59 PKiKP **PKiKP** **03 54 31.8 0.0**
baz=235
BOSA Boshof 107.56 207 PKiKP **PKiKP** **03 54 31.9 -0.4**
comp=Z,3.8nm,1.0s,baz=146,slow=3.6,SNR=3.1
WMOK Wichita Mounta 107.64 59 PKiKP **PKiKP** **03 54 31.5 -0.5**
baz=235
237A Washetta, Mont 108.12 63 PKiKP **PKiKP** **03 54 33.0 +0.1**
baz=235
DAWY Dawson 108.40 19 *e*PKP **PKiKP** **03 54 31.1 -1.3**
238A Jacksonville 108.61 64 PKiKP **PKiKP** **03 54 34.0 +0.2**
baz=236
339A Huntington 108.63 65 PKiKP **PKiKP** **03 54 33.5 -0.3**
baz=236
W35A Tecumseh 109.16 60 PKiKP **PKiKP** **03 54 34.7 -0.1**
baz=236
X36A Centrahoma 109.19 61 PKiKP **PKiKP** **03 54 34.5 -0.3**
baz=236
CBKS Cedar Bluff 109.33 56 PKiKP **PKiKP** **03 54 34.9 -0.1**
baz=236
W36A Wetumka 109.60 60 PKiKP **PKiKP** **03 54 35.5 -0.1**
baz=236
RSSD Black Hills 109.68 49 PKiKP **PKiKP** **03 54 35.2 -0.5**
baz=235
R32A Long Quarter, 109.77 56 PKiKP **PKiKP** **03 54 35.9 0.0**
baz=236
X37A Clayton 109.88 61 PKiKP **PKiKP** **03 54 35.8 -0.3**
baz=236
U35A Pawnee 109.94 59 PKiKP **PKiKP** **03 54 35.9 -0.3**
baz=236
V36A Jenks 110.15 60 PKiKP **PKiKP** **03 54 36.2 -0.4**
baz=236
R33A Olander Ranch, 110.18 57 PKiKP **PKiKP** **03 54 36.1 -0.5**
baz=236
X38A Whitesboro 110.29 61 PKiKP **PKiKP** **03 54 36.6 -0.3**
baz=236
X39A Fountain Ranch 110.70 62 PKiKP **PKiKP** **03 54 37.2 -0.5**
baz=237
S35A Otter Creek Ra 110.94 58 PKiKP **PKiKP** **03 54 37.8 -0.2**
baz=237
W39A Magazine 111.30 62 PKiKP **PKiKP** **03 54 38.7 -0.1**
baz=237
Y41A Eaglette Beard 111.40 63 PKiKP **PKiKP** **03 54 38.4 -0.6**
baz=237
O33A Hebron 111.41 55 PKiKP **PKiKP** **03 54 38.2 -0.7**
baz=237
S36A Lake Cedric, C 111.44 58 PKiKP **PKiKP** **03 54 38.0 -1.0**
baz=237
KSU1 Kansas State U 111.52 57 PKiKP **PKiKP** **03 54 38.8 -0.3**
baz=237
X40A Basin Creek Fa 111.57 63 PKiKP **PKiKP** **03 54 38.9 -0.5**
baz=237
BGNE Belgrade 111.77 54 PKiKP **PKiKP** **03 54 38.9 -0.6**
baz=237
BGNE Belgrade 111.77 54 *e*PKP **PKiKP** **03 54 38.6 -1.0**

X41A Kaden, Bauxite 111.80 63 PKiKP **PKiKP** **03 54 38.9 -0.8**
baz=237
T38A Diamond 111.94 60 PKiKP **PKiKP** **03 54 39.2 -0.8**
baz=237
S37A Fort Scott 111.97 59 PKiKP **PKiKP** **03 54 39.5 -0.5**
baz=237
P35A Duane Minner, 112.13 57 PKiKP **PKiKP** **03 54 39.6 -0.7**
baz=238
U39A Green Forest 112.14 61 PKiKP **PKiKP** **03 54 39.6 -0.8**
baz=238
V40A Witts Springs 112.29 61 PKiKP **PKiKP** **03 54 40.4 -0.4**
baz=238
W41B Gary Mavity, V 112.35 62 PKiKP **PKiKP** **03 54 40.2 -0.5**
baz=238
WHAR Wooly Hollow 112.38 62 *e*PKiKP **PKiKP** **03 54 40.3 -0.5**
WHAR *e*PP **PP** **03 55 26.9 -2.7**
S38A Stockton 112.52 59 PKiKP **PKiKP** **03 54 39.8 -1.2**
baz=238
T39A Clever 112.56 60 PKiKP **PKiKP** **03 54 40.0 -1.1**
baz=238
U40A Yellville 112.56 61 PKiKP **PKiKP** **03 54 39.9 -1.3**
baz=238
V41A Mountainview 112.74 62 PKiKP **PKiKP** **03 54 39.8 -1.7**
baz=238
R38A Fenwick Farm, 112.82 59 PKiKP **PKiKP** **03 54 40.3 -1.3**
baz=238
S39A Bolivar 112.95 59 PKiKP **PKiKP** **03 54 40.7 -1.1**
baz=238
U41A Viola 113.19 61 PKiKP **PKiKP** **03 54 41.2 -1.2**
baz=238
T40A Mansfield 113.21 60 PKiKP **PKiKP** **03 54 41.1 -1.3**
baz=238
INK Inuvik 113.21 18 PKiKP **PKiKP** **03 54 39.9 -1.4**
comp=Z,3.4nm,0.5s,baz=186,slow=2.1,SNR=18
INK Inuvik 113.21 18 *e*PKP **PKiKP** **03 54 39.4 -1.9**
P37A Lathrop 113.26 57 PKiKP **PKiKP** **03 54 41.4 -1.0**
baz=238
V42A Cord 113.28 62 PKiKP **PKiKP** **03 54 41.4 -1.1**
baz=238
Q38A Cooks Store, C 113.41 58 PKiKP **PKiKP** **03 54 41.4 -1.3**
baz=238
S40A Lebanon 113.45 60 PKiKP **PKiKP** **03 54 41.7 -1.1**
baz=238
R39A Chumby, Stover 113.46 59 PKiKP **PKiKP** **03 54 41.7 -1.1**
baz=238
U42A Revenden 113.67 62 PKiKP **PKiKP** **03 54 42.0 -1.3**
baz=238
Q39A Willow Grove F 113.89 58 PKiKP **PKiKP** **03 54 42.3 -1.3**
baz=239
S41A Jillco Farms, 113.96 60 PKiKP **PKiKP** **03 54 42.9 -0.9**
baz=239
ECSD EROS Data Cent 113.97 52 PKiKP **PKiKP** **03 54 42.5 -1.2**
baz=239
ECSD EROS Data Cent 113.97 52 *e*PKiKP **PKiKP** **03 54 42.5 -1.2**
ECSD *e*PP **PP** **03 55 39.0 -1.7**
R40A Maddies Statio 113.97 59 PKiKP **PKiKP** **03 54 42.5 -1.3**
baz=239
Z47A Carrollton 114.25 66 PKiKP PKPdf 03 54 43.5 -1.0
baz=238
P39B Salisbury 114.26 58 PKiKP PKPdf 03 54 43.1 -1.1
baz=239
Q40A Laux Farm, Aux 114.46 59 PKiKP PKPdf 03 54 43.8 -0.9
baz=239
N38A Joes South For 114.61 57 PKiKP PKPdf 03 54 44.2 -0.7
baz=239
Z48A Northport 114.71 66 PKiKP PKPdf 03 54 44.2 -1.1
baz=239
P40A Paris 114.75 58 PKiKP PKPdf 03 54 44.5 -0.8
baz=239
K36A Gilmore City 114.76 54 PKiKP PKPdf 03 54 44.0 -1.2
baz=239
B29A Wagenman Farm, 114.77 47 PKiKP PKPdf 03 54 44.1 -0.9
baz=239
Y47A UCPARC, Winfie 114.77 66 PKiKP PKPdf 03 54 44.5 -1.0
baz=239
O39A Kirksville 114.79 57 PKiKP PKPdf 03 54 44.7 -0.6
baz=239
C30A Mose, Pekin 114.88 48 PKiKP PKPdf 03 54 44.9 -0.4
baz=239
S43A Fulton Ridge, 115.09 61 PKiKP **PKPdf** **03 54 44.6 -1.4**
baz=239
N39A Derby Farms, D 115.13 57 PKiKP **PKPdf** **03 54 45.1 -0.9**
baz=240
O40A La Belle 115.17 58 PKiKP **PKPdf** **03 54 44.6 -1.4**
baz=240
YKA Yellowknife Ar 115.18 29 PKP **PKPdf** **03 54 43.4 -1.9**
comp=Z,2.6nm,0.5s,baz=238,slow=1.6,SNR=46
YKA PKKPbc **PKKPbc** **04 05 21.3 -0.7**
comp=Z,0.5nm,0.5s,baz=54,slow=3.9,SNR=12
J36A Seneca 1, Swea 115.18 54 PKiKP **PKPdf** **03 54 44.8 -1.2**
baz=240
F33A 5 Mile Ranch, 115.24 51 PKiKP **PKPdf** **03 54 44.9 -1.1**
baz=240
G34A Benson 115.33 51 PKiKP **PKPdf** **03 54 45.0 -1.2**
baz=240
K37A Belmond 115.35 55 PKiKP **PKPdf** **03 54 44.6 -1.7**
baz=240
B30A Myrvik Farm, E 115.35 47 PKiKP **PKPdf** **03 54 44.8 -1.4**
baz=240
C31A Landman Farms, 115.36 48 PKiKP **PKPdf** **03 54 44.8 -1.4**
baz=240
Q42A Golden Eagle 115.45 60 PKiKP **PKPdf** **03 54 45.2 -1.4**
baz=240
L38A Oak Wood Farm, 115.47 55 PKiKP **PKPdf** **03 54 45.0 -1.6**
baz=240
H35A Sunnyside Ranc 115.56 52 PKiKP **PKPdf** **03 54 45.1 -1.5**
baz=240
M39A Webster 115.65 56 PKiKP **PKPdf** **03 54 45.6 -1.4**
baz=240
J37A Redenius Farm, 115.67 54 PKiKP **PKPdf** **03 54 45.5 -1.4**
baz=240
S44A Carbondale 115.71 61 PKiKP **PKPdf** **03 54 45.8 -1.4**
baz=240
K38A Parkersburg 115.84 55 PKiKP **PKPdf** **03 54 46.0 -1.2**
baz=240
P42A Winchester 115.92 59 PKiKP **PKPdf** **03 54 45.9 -1.5**
baz=240
WVT Waverly 115.92 63 *e*PKIKP **PKPdf** **03 54 46.0 -1.6**
WVT Waverly 115.92 63 *e*PKPdf **PKPdf** **03 54 46.0 -1.6**
Q43A New Douglas 116.03 60 PKiKP **PKPdf** **03 54 46.6 -1.1**
baz=240
H36A Jessieland, He 116.06 53 PKiKP **PKPdf** **03 54 46.4 -1.2**
baz=240
I37A Lemond, Waseca 116.11 53 PKiKP **PKPdf** **03 54 46.3 -1.4**
baz=240
F35A Swanville 116.29 51 PKiKP **PKPdf** **03 54 46.8 -1.2**
baz=241
J38A Wedel Dairy, R 116.36 54 PKiKP **PKPdf** **03 54 46.7 -1.6**
baz=241
O42A Bath 116.39 59 PKiKP **PKPdf** **03 54 46.7 -1.6**
baz=240
K39A Oelwein 116.44 55 PKiKP **PKPdf** **03 54 46.4 -2.0**
baz=241
G36A St. Michael 116.49 52 PKiKP **PKPdf** **03 54 47.0 -1.4**
baz=241
FFC Flin Flon 116.53 40 *e*PKIKP **PKPdf** **03 54 47.2 -1.0**
FFC Flin Flon 116.53 40 *e*PKPdf **PKPdf** **03 54 47.2 -1.0**
A32A Rocking H Ranc 116.64 48 PKiKP **PKPdf** **03 54 46.8 -1.7**
baz=241
AGMN Agassiz Nation 116.70 48 PKiKP **PKPdf** **03 54 46.8 -1.9**
baz=241
SWET Sewanee 116.80 65 *e*PKPdf **PKPdf** **03 54 48.2 -1.2**
I38A Scanlan Farm, 116.80 54 PKiKP **PKPdf** **03 54 47.3 -1.8**
baz=241
J39A Decorah 116.86 55 PKiKP **PKPdf** **03 54 47.0 -2.2**
baz=241
K40A Colesburg 116.92 56 PKiKP **PKPdf** **03 54 47.6 -1.7**
baz=241
F36A Milaca 116.93 52 PKiKP **PKPdf** **03 54 47.5 -1.7**
baz=241
SPMN Marine on St. 117.07 53 PKiKP **PKPdf** **03 54 48.3 -1.2**
baz=241
SPMN Marine on St. 117.07 53 *e*PKPdf **PKPdf** **03 54 48.4 -1.2**
HDIL Hopedale 117.09 58 PKiKP **PKPdf** **03 54 48.2 -1.5**
baz=241
HDIL Hopedale 117.09 58 *e*PKPdf **PKPdf** **03 54 48.9 -0.9**
A33A Warroad 117.29 48 PKiKP **PKPdf** **03 54 48.5 -1.4**
baz=242
E36A McGregor 117.41 51 PKiKP **PKPdf** **03 54 48.4 -1.7**
baz=242
K41A Shullsburg 117.41 56 PKiKP **PKPdf** **03 54 48.6 -1.7**
baz=242
B34A Aery, Baudette 117.50 49 PKiKP **PKPdf** **03 54 48.6 -1.6**
baz=242
J40A Soldiers Grove 117.51 55 PKiKP **PKPdf** **03 54 48.4 -2.1**
baz=242
JFWS Jewell Farm 117.59 56 *e*PKIKP **PKPdf** **03 54 49.2 -1.4**
JFWS *e* 03 56 04.8

JFWS **Jewell Farm** 117.59 56 *e*PKPdf **PKPdf** 03 54 49.2 -1.4
JFWS *e*PP **PP** 03 56 04.8 -1.3
ULM **Lac du Bonnet** 117.63 46 PKP **PKPdf** 03 54 48.3 -2.1
comp=Z,5.1nm,0.6s,baz=254,slow=3.1,SNR=9.2
D36A **Goodland** 117.78 50 PKiKP **PKPdf** 03 54 49.4 -1.5
baz=242
CPCT **Cooper Cave** 117.92 66 *e*PKPdf **PKPdf** 03 54 50.6 -0.9
J41A **Loganville** 117.96 55 PKiKP **PKPdf** 03 54 49.3 -2.0
baz=242
B35A **Bob, Littlefor** 117.99 49 PKiKP **PKPdf** 03 54 49.4 -1.8
baz=242
WCI **Wyandotte Cave** 118.02 62 *e*PKIKP **PKPdf** 03 54 50.9 -0.7
WCI **Wyandotte Cave** 118.02 62 *e*PKPdf **PKPdf** 03 54 50.9 -0.7
D37A **Cotton** 118.21 51 PKiKP **PKPdf** 03 54 50.5 -1.2
baz=242
TKL **Tuckaleechee C** 118.55 66 *e*PKIKP **PKPdf** 03 54 52.0 -0.7
TKL **Tuckaleechee C** 118.55 66 *e*PKPdf **PKPdf** 03 54 52.0 -0.7
C37A **Embarrass** 118.62 50 PKiKP **PKPdf** 03 54 51.1 -1.3
baz=243
MK31 **Makanchi Array** 118.96 308 *i* PKIKP **PKPdf** 03 54 51.7 -1.5
MK31 pmax pmax
comp=Z,10.0nm,0.6s
MK31 **Makanchi Array** 118.96 308 *e*PKPdf **PKPdf** 03 54 51.6 -1.6
MKAR **Makanchi Array** 118.96 308 PKP **PKPdf** 03 54 51.1 -2.0
comp=Z,7.6nm,0.5s,baz=140,slow=1.7,SNR=23
MKAR PKKPbc **PKKPab** 04 05 09.1 +0.4
comp=Z,1.4nm,0.6s,baz=298,slow=3.1,SNR=11
EYMN **Ely** 119.13 50 PKiKP **PKPdf** 03 54 52.3 -1.1
baz=243
TZTN **Tazewell** 119.14 65 *e*PKPdf **PKPdf** 03 54 53.8 0.0
PDGK **Podgornoye** 119.16 304 PKIKP **PKPdf** 03 54 52.1 -1.7
PDGK pmax pmax
comp=Z,12nm,0.6s
JSC **Jenkinsville** 119.70 68 *e*PKIKP **PKPdf** 03 54 55.1 +0.1
JSC **Jenkinsville** 119.70 68 *e*PKPdf **PKPdf** 03 54 55.0 +0.1
COWI **Conover** 119.76 53 *e*PKPdf **PKPdf** 03 54 53.0 -1.7
COWI *e*PP **PP** 03 56 20.6 -0.3
KSH **Kashi** 119.78 299 *e*PKP **PKPdf** 03 54 54.3 -0.8
KSH *es*PKP 03 55 52.6
KSH PKS **PKSdf** 03 58 29.5 -2.3
KSH SKS **SKSdf** 04 01 49.1 -2.5
KSH AMB AMB
comp=Z,30nm,4.0s
KSH LR LR
comp=Z,86nm,8.8s
KSH LR LR
comp=Z,89nm,5.3s
KSH LR LR
comp=Z,110nm,6.3s
KMSC **Kings Mountain** 120.06 67 PKiKP **PKPdf** 03 54 54.7 -0.9
baz=242
ZALV **Zalesovo Beam** 120.61 317 PKP **PKPdf** 03 54 53.9 -2.1
comp=Z,8.4nm,0.4s,baz=132,slow=2.1,SNR=22
ACSO **Alum Creek Sta** 121.22 61 *e*PKPdf **PKPdf** 03 54 56.7 -1.0
TKM2 **Tokmak 2** 121.54 302 *e*PKIKP **PKPdf** 03 54 57.1 -1.4
TKM2 **Tokmak 2** 121.54 302 *e*PKPdf **PKPdf** 03 54 57.1 -1.4
BLA **Blacksburg** 121.67 66 *e*PKIKP **PKPdf** 03 54 58.3 -0.4
BLA **Blacksburg** 121.67 66 *e*PKPdf **PKPdf** 03 54 58.3 -0.4
NVS **Novosibirsk** 121.82 317⇑ *i*PKIKP **PKPdf** 03 54 57.2 -1.1
NVS *e* 03 56 33.8
NVS *e* 03 59 11.3
NVS pmax pmax
comp=N,8.0nm,0.5s
NVS pmax pmax
comp=E,8.0nm,0.5s
NVS pmax pmax
comp=Z,23nm,0.5s
AAK **Ala-Archa** 122.16 301 *e*PKIKP **PKPdf** 03 54 59.0 -0.6
AAK **Ala-Archa** 122.16 301 *e*PKPdf **PKPdf** 03 54 59.0 -0.6
FCC **Fort Churchill** 122.21 38 *e*PKIKP **PKPdf** 03 54 56.7 -2.2
FCC **Fort Churchill** 122.21 38 *e*PKPdf **PKPdf** 03 54 56.6 -2.2
KBL **Kabul** 122.44 290 *e*PKIKP **PKPdf** 03 55 00.3 -0.2
KBL **Kabul** 122.44 290 *e*PKPdf **PKPdf** 03 55 00.3 -0.2
EKS2 **Erkin-Say** 122.65 301 *e*PKIKP **PKPdf** 03 54 59.8 -0.7
EKS2 **Erkin-Say** 122.65 301 *e*PKPdf **PKPdf** 03 54 59.8 -0.7
KURK **Kurchatov** 122.80 311 *d* PKIKP **PKPdf** 03 54 58.9 -1.4
KURK pmax pmax
comp=Z,141nm,1.0s
KURK **Kurchatov** 122.80 311 *e*PKPdf **PKPdf** 03 54 58.5 -1.8
KURK PKKPbc **PKKPbc** 04 04 55.3 +1.5
KURK PKKP **PKKPdf** 04 05 34.8 +3.6
KURBB **Kurchatov Arra** 122.82 311 PKKPbc PKKPbc 04 04 55.3 +1.5
comp=Z,1.1nm,0.7s,baz=293,slow=4.5,SNR=6.9
KURBB PKKP **PKKPdf** 04 05 34.8 +3.6
comp=Z,1.3nm,0.9s,baz=295,slow=4.3,SNR=2.8
MNAS **Manas** 123.43 300 PKIKP **PKPdf** 03 55 00.9 -1.2
MNAS pmax pmax
comp=Z,22nm,0.7s
N54A **Moraine State** 123.59 62 PKiKP **PKPdf** 03 55 01.2 -1.0
baz=245
M54A **Oil Creek Stat** 124.04 61 PKiKP **PKPdf** 03 55 02.2 -0.9
baz=246
ERPA **Erie** 124.06 60 *e*PKPdf **PKPdf** 03 55 02.4 -0.7
O56A **Blue Knob Stat** 124.29 63 PKiKP **PKPdf** 03 55 03.1 -0.5
baz=246
SSPA **Standing Stone** 124.92 63 *e*PKPdf **PKPdf** 03 55 04.1 -0.7
NRIK **Noril'sk** 124.96 334 PKP **PKPdf** 03 55 02.9 -1.0
comp=Z,30nm,0.9s,baz=102,slow=2.5,SNR=22
KMBO **Kilima Mbogo** 124.97 234 *e*PKIKP **PKPdf** 03 55 04.5 -1.6
KMBO **Kilima Mbogo** 124.97 234 *e*PKPdf **PKPdf** 03 55 04.5 -1.6
KK31 **Karatay Array** 125.02 300 *i* PKIKP **PKPdf** 03 55 04.4 -0.5
KK31 pmax pmax
comp=Z,13nm,0.7s
KKAR **Karatay Array** 125.02 300 *e*PKIKP **PKPdf** 03 55 04.0 -0.9
KKAR **Karatay Array** 125.02 300 *e*PKPdf **PKPdf** 03 55 04.0 -0.9
BUF **Buffalo** 125.15 60 *e*PKPdf **PKPdf** 03 55 05.0 -0.2
SDMD **Soldier's Deli** 125.15 65 *e*PKPdf **PKPdf** 03 55 04.9 -0.4
SADO **Sadowa** 125.66 58 *e*PKPdf **PKPdf** 03 55 04.9 -1.1
OTUK **Ortayu** 125.72 307 PKIKP **PKPdf** 03 55 04.7 -1.4
OTUK pmax pmax
comp=Z,21nm,0.6s
MMNY **Mt. Morris Dam** 125.72 61 *e*PKPdf **PKPdf** 03 55 05.8 -0.4
MVL **Millersville** 125.74 64 *e*PKPdf **PKPdf** 03 55 06.0 -0.4
N59A **State Game Lan** 126.50 63 PKiKP **PKPdf** 03 55 07.1 -0.7
baz=247
LUPA **Lehigh Univers** 126.66 64 *e*PKPdf **PKPdf** 03 55 07.7 -0.4
RES **Resolute Bay** 126.73 19 PKP **PKPdf** 03 55 06.1 -1.1
comp=Z,6.9nm,0.6s,baz=222,slow=2.7,SNR=4.6
RES **Resolute Bay** 126.73 19 *e*PKPdf **PKPdf** 03 55 06.3 -0.9
BINY **Binghamton** 126.84 62 *e*PKPdf **PKPdf** 03 55 07.6 -0.8
RCBR **Riachuelo** 126.90 139 *e*PKPdf **PKPdf** 03 55 10.8 +1.3
BRNJ **Basking Ridge** 127.26 64 *e*PKPdf **PKPdf** 03 55 08.9 -0.3
CPNY **Central Park** 127.73 64 *e*PKPdf **PKPdf** 03 55 09.7 -0.4
VOSK **Vostochnaya** 127.95 312 PKIKP **PKPdf** 03 55 08.7 -1.5
VOSK pmax pmax
comp=Z,20nm,0.6s
BVA0 **Borovoye Array** 128.38 312 PKIKP **PKPdf** 03 55 09.5 -1.5
BVA0 pmax pmax
comp=Z,14nm,0.7s
CHKZ **Chkalovo** 128.42 313 PKIKP **PKPdf** 03 55 09.3 -1.7
CHKZ pmax pmax
comp=Z,16nm,0.6s
BRVK **Borovoye** 128.45 312⇑ *e*PKIKP **PKPdf** 03 55 09.6 -1.5
BRVK **Borovoye** 128.45 312 *e*PKPdf **PKPdf** 03 55 09.3 -1.8
BRVK *e*PP **PP** 03 57 15.1 -3.8
TRY **Troy** 128.63 62 *e*PKPdf **PKPdf** 03 55 11.8 0.0
ACCN **Adirondack Com** 128.85 61 *e*PKPdf **PKPdf** 03 55 11.7 -0.5
ZRNK **Zerenda** 129.17 312 PKIKP **PKPdf** 03 55 10.7 -1.8
ZRNK pmax pmax
comp=Z,16nm,0.5s
FRNY **Flat Rock** 129.39 59 *e*PKPdf **PKPdf** 03 55 12.2 -0.9
BRYW **Bryant College** 129.83 64 *e*PKPdf **PKPdf** 03 55 13.8 -0.3
GEYT **Ailbeck** 131.87 290 PKP **PKPdf** 03 55 17.6 -0.5
comp=Z,6.5nm,0.8s,baz=166,slow=3.0,SNR=6.3
PKME **Peaks-Kenny Pk** 132.42 60 *e*PKPdf **PKPdf** 03 55 17.9 -1.0
AB31 **Akbulak array** 133.87 305 PKIKP **PKPdf** 03 55 20.9 -0.6
AB31 pmax pmax
comp=Z,4.0nm,0.7s
ABKAR **Akbulak array** 133.87 305 *e*PKPdf **PKPdf** 03 55 20.4 -1.1
ABKAR *es*PKP **SKPbc** 03 58 31.3 -3.8
ARU **Arti** 135.71 315 *i* PKIKP **PKPdf** 03 55 23.8 -0.9
ARU **Arti** 135.71 315 *e*PKPdf **PKPdf** 03 55 23.9 -0.8
SOKR **Solikamsk** 136.75 319 *e*PKIKP **PKPdf** 03 55 24.5 -1.9
SOKR pmax pmax
comp=Z,31nm,1.1s
DAG **Danmarks Havn** 141.31 5 *i* P PKPpre 03 55 27.3
comp=Z,3.4nm,0.6s
DAG **Danmarks Havn** 141.31 5 *i* PKHKP PKPpre 03 55 27.3
DAG pmax pmax
comp=Z,2.0nm,0.6s
SUMG **Summit** 142.08 16 *i* P PKPpre 03 55 30.9
SUMG **Summit** 142.08 16 *i* PKHKP PKPpre 03 55 30.9
SUMG **Summit** 142.08 16 *e*PKPpre PKPpre 03 55 30.9
SUMG *e*PKPdf **PKiKP** 03 55 38.4 -1.0

GNI **Garni** 142.46 288 *i* PKIKP **PKPdf** 03 55 37.0 -0.7
GNI pmax pmax
comp=Z,96nm,1.2s
GNI **Garni** 142.46 288 *e*PKPdf **PKPdf** 03 55 37.0 -0.7
TBLG **Delisi** 142.82 291 P **PKPdf** 03 55 34.7 -3.4
TBLG **Delisi** 142.82 291 *e*PKIKP **PKPdf** 03 55 34.7 -3.4
GUDG **Gudauri** 143.15 292 P PKPbc 03 55 37.0 +0.6
EAK **Akyaka** 143.43 289 *i* P PKPbc 03 55 36.9 -0.3
BGD **Bogdanovka** 143.56 290 P PKPab 03 55 36.9 +0.3
ZEI **Tsey** 143.63 292 *i* PKHKP PKPpre 03 55 35.2
ZEI pmax pmax
comp=Z,171nm,1.1s
AKH **Akhalkalaki** 143.66 290⇑ *i*P PKPbc 03 55 37.7 -0.2
AKH **Akhalkalaki** 143.66 290 P PKPbc 03 55 37.6 -0.3
AKH **Akhalkalaki** 143.66 290 *e*PKIKP PKPbc 03 55 37.6 -0.3
LVZ **Lovozero** 143.76 336 *e*PKIKP PKPab 03 55 35.7 -0.7
LVZ **Lovozero** 143.76 336 *e*PKPdf PKPab 03 55 35.7 -0.6
ONI **Oni** 143.92 292 P PKPab 03 55 37.9 +0.1
ONI **Oni** 143.92 292 *e*PKIKP PKPab 03 55 37.9 +0.1
EPOS **Posof** 144.25 290 *i* P **PKPdf** 03 55 40.3 -0.6
EPOS **Posof** 144.25 290 *i* P pPKPdf 03 56 20.9 -3.2
MZRK **Al-Mazaregh** 144.36 280 *i* P **PKPdf** 03 55 41.2 +0.1
KBZ **Khabaz** 144.51 294 PKP **PKPab** 03 55 39.8 0.0
comp=Z,109nm,0.9s,baz=117,slow=2.3,SNR=167
KBZ pPKP **pPKPdf** 03 56 21.1 -3.1
comp=Z,58nm,0.9s,baz=112,slow=2.3,SNR=4.6
HOMI **Horasan** 144.55 287 *i* P **PKPab** 03 55 40.3 -0.2
GOF **Gofitskoye** 144.58 296⇑ *i*PKIKP **PKPab** 03 55 39.7 -0.4
GOF pmax pmax
comp=Z,411nm,0.9s
KIV **Kislovodsk** 144.69 294 *i* PKIKP **PKPab** 03 55 39.6 -1.1
KIV *e**PP **pPKPdf** 03 56 20.8 -3.9
KIV *e* 03 59 02.5
KIV *e*SS SS 04 17 30.2 -5.4
KIV pmax pmax
comp=Z,72nm,1.1s
KIV **Kislovodsk** 144.69 294 *e*PKPdf **PKPab** 03 55 40.4 -0.3
DAGI **Agillar** 144.76 289 *i* P PKPbc 03 55 41.1 0.0
DAGI **Agillar** 144.76 289 *i* P pPKPdf 03 56 23.0 -2.0
ARTV **Artvin** 144.77 289 *i* P **PKPab** 03 55 41.4 +0.1
ARTV **Artvin** 144.77 289 *i* P pPKPdf 03 56 23.0 -2.2
KBSD **Kabsdagh** 144.80 282 *i* P **PKPdf** 03 55 41.6 -0.1
HAMF **Hammerfest** 144.82 344 *e*P PKPbc 03 55 39.1 -1.1
HAMF IAmb IAmb 03 55 39.8
comp=Z,158nm,1.3s
DDEM **Demirkent** 144.85 289 *i* P **PKPab** 03 55 41.4 0.0
DDEM **Demirkent** 144.85 289 *i* P pPKPdf 03 56 23.2 -1.9
ERZM **Erzurum** 144.92 287 *i* P **PKPdf** 03 55 43.7 +1.4
SFNV **Sufian** 144.96 280 *i* P **PKPdf** 03 55 42.9 +0.7
DBOC **Borcka** 145.00 289 *i* P **PKPdf** 03 55 42.5 +0.5
DBOC **Borcka** 145.00 289 *i* P pPKPdf 03 56 22.1 -3.2
KLMR **Klimovskoe** 145.01 324 *c* iPKP2 **PKPbc** 03 55 39.6 -1.4
KLMR *e* 03 58 58.2
KLMR pmax pmax
comp=Z,410nm,1.2s
ARCES **ARCESS Array B** 145.25 342 PKPbc **PKPdf** 03 55 40.6 -0.9
comp=Z,108nm,0.7s,baz=51,slow=2.7,SNR=398
ARCES pPKPbc pPKPbc 03 56 22.9 -1.3
comp=Z,54nm,1.0s,baz=30,slow=2.4,SNR=3.8
ARE0 **ARCESS Array S** 145.25 342⇑ *i*P **PKPdf** 03 55 40.8 -0.7
ARE0 IAmb IAmb 03 55 42.1
comp=Z,184nm,0.8s
ARE0 pPKPdf **pPKPdf** 03 56 23.9 -0.9
MNKR **ALMNKUR** 145.47 279 *i* P **PKPdf** 03 55 39.2 -3.8
KOPT **Kop Dagi** 145.60 287 *i* P **PKPab** 03 55 44.8 +0.3
ZALF **Zalf** 145.95 273 *i* P **PKPbc** 03 55 44.9 0.0
KTK1 **Kautokeino** 146.18 343 ⇓ *i*P **PKPdf** 03 55 43.5 +0.4
KTK1 IAmb IAmb 03 55 44.3
comp=Z,95nm,0.8s
KTK1 *e*pPKPdf **pPKPdf** 03 56 25.7 -0.7
HEF **Hetta** 146.53 342⇑ *i*P **PKPdf** 03 55 44.0 +0.3
TRO **Tromso** 146.61 345⇑ *i*P **PKPdf** 03 55 44.0 +0.2
TRO IAmb IAmb 03 55 45.3
comp=Z,116nm,0.8s
TRO pPKPdf **pPKPdf** 03 56 26.7 -0.4
KIF **Kilpisjarvi** 146.73 344⇑ *i*P **PKPdf** 03 55 44.4 +0.5
KIF pPKPdf **pPKPdf** 03 56 27.5 +0.2
SOC **Sochi** 146.78 293 *e*PKIKP **PKPdf** 03 55 44.6 -0.3
SOC *i* 03 55 49.7
SOC *e* 03 56 26.8
SOC *e* 03 59 12.0
SOC pmax pmax
comp=Z,54nm,0.9s
SOC pmax pmax
comp=Z,41nm,1.1s
SCO **Scoresbysund** 146.83 11⇑ *i*P **PKPbc** 03 55 45.4 -0.8
comp=Z,23nm,0.8s
SCO **Scoresbysund** 146.83 11⇑ *i*PKP2 **PKPbc** 03 55 45.4 -0.8
SCO pmax pmax
comp=Z,23nm,0.8s
TCHB **Talchebab** 146.92 272 *i* P **PKPbc** 03 55 48.2 +0.5
VSR **Storozhevoye** 147.26 307 *e*PKP2 **PKPbc** 03 55 47.0 -1.0
VSR pmax pmax
comp=Z,170nm,1.1s
MOS **Moscow** 147.42 315 *e*PKIKP **PKPdf** 03 55 46.3 +0.8
MOS *e* 03 59 25.8
MOS pmax pmax
comp=Z,158nm,0.8s
BTCH **Batrach** 147.67 278 *i* P **PKPdf** 03 55 46.5 -0.2
LIC **Lamto** 147.67 179 *e*PKP1 **PKPbc** 03 55 50.4 +0.2
comp=Z,134nm,1.4s
DRWC **Darouich** 147.68 279 *i* P **PKPdf** 03 55 47.6 +0.9
KIC **Kosan Boka** 147.81 179 *e*PKP1 **PKPbc** 03 55 50.8 +0.2
comp=Z,304nm,1.3s
TIC **Toumodi** 148.09 179 *e*PKP1 **PKPbc** 03 55 51.4 0.0
DBIC **Dimbokro** 148.12 179 PKPbc **PKPbc** 03 55 51.5 +0.1
comp=Z,22nm,0.7s,baz=156,slow=4.1,SNR=42
DBIC pPKPbc **pPKPbc** 03 56 32.8 -1.5
comp=Z,42nm,0.7s,baz=162,slow=3.9,SNR=7.9
OBN **Obninsk** 148.16 315 *e*PKIKP **PKPdf** 03 55 45.8 -0.9
OBN pmax pmax
comp=Z,75nm,0.9s
OBN **Obninsk** 148.16 315 *e*PKPbc **PKPbc** 03 55 49.1 -1.1
ANN **Anapa** 148.52 295 *i* PKIKP **PKPbc** 03 55 50.6 -0.9
ANN pmax pmax
comp=Z,110nm,1.3s
STEI **Steigen** 148.77 346 *e*P **PKPbc** 03 55 50.8 -0.7
STEI IAmb IAmb 03 55 51.3
comp=Z,162nm,0.7s
STEI pPKPdf **pPKPdf** 03 56 32.1 +1.4
LOF **Lofoten** 148.91 347⇑ *i*P **PKPbc** 03 55 50.2 -1.5
LOF IAmb IAmb 03 55 51.3
comp=Z,195nm,1.1s
CSS **Mathiatis** 149.77 275 P pPKPdf 03 56 34.7 +1.3
CSS **Mathiatis** 149.77 275 *e*PKPdf **PKPdf** 03 55 49.3 -0.8
CSS *e*PKPbc **PKPbc** 03 55 54.7 -0.4
CSS *e*PKPab **PKPab** 03 56 00.5 -0.5
KONS **Konsvik** 150.43 346 *e*P **PKPbc** 03 55 54.4 -1.1
KONS IAmb IAmb 03 55 55.2
comp=Z,88nm,0.9s
FINES **FINESS Array B** 150.50 330 PKPbc **PKPbc** 03 55 54.5 -1.3
comp=Z,93nm,0.8s,baz=46,slow=4.0,SNR=14
STOK **Stokkvaagen** 150.59 346 *e*P **PKPbc** 03 55 55.1 -0.7
STOK IAmb IAmb 03 55 56.2
comp=N,5.2nm,0.7s
BRTR **Keskin Array B** 150.71 284 PKP **PKPdf** 03 55 49.8 -1.8
comp=N,1.8nm,1.0s,baz=188,slow=2.9,SNR=8.5
BRTR PKPbc **PKPbc** 03 55 56.2 -1.1
comp=N,420nm,1.0s,baz=142,slow=4.2,SNR=88
BRTR pPKPbc **pPKPbc** 03 56 37.5 -2.7
comp=N,15nm,1.0s,baz=127,slow=3.8,SNR=3.2
SACV **Santiago Islan** 150.89 139 *e*PKPbc **PKPbc** 03 55 57.5 -0.7
ANTO **Ankara** 151.38 284 *e*PKIKP **PKPdf** 03 55 51.9 -0.6
ANTO *e* 03 56 07.3
ANTO **Ankara** 151.38 284 *e*PKPdf **PKPdf** 03 55 51.9 -0.6
ANTO *e*PKPbc **PKPbc** 03 55 58.0 -0.7
ANTO *e*PKPab **PKPab** 03 56 07.3 -0.3
VSU **Vasula** 151.89 325 *c* iPKIKP **PKPbc** 03 55 58.6 -0.5
VSU pmax pmax
comp=Z,284nm,1.2s
BORG **Borgarnes** 152.06 16 *e*PKIKP **PKPbc** 03 55 59.2 -0.1
BORG **Borgarnes** 152.06 16 *e*PKPbc **PKPbc** 03 55 59.1 -0.1
NSS **Namsos** 152.40 345⇑ *i*P **PKPbc** 03 55 58.0 -2.1
NSS IAmb IAmb 03 55 59.5
comp=Z,92nm,1.0s
IDID **Didziasalis** 153.39 319 *e*P **PKPbc** 03 56 02.5 -0.1
IDID IAmb IAmb 03 56 03.2
comp=Z,20nm,0.7s
IZAR **Zarasai** 153.44 320 *e*P **PKPbc** 03 56 02.3 -0.4
IZAR IAmb IAmb 03 56 03.3
comp=Z,16nm,0.7s
NACGM **Naroch** 153.54 318 *e* **PKPbc** 03 56 02.0 -0.9
AKASG **Malin Array Be** 153.54 308 PKP **PKPdf** 03 55 52.6 -2.5
comp=Z,0.6nm,0.4s,baz=59,slow=1.4,SNR=7.9
AKASG PKPbc **PKPbc** 03 56 01.6 -1.4
comp=Z,8.5nm,0.4s,baz=62,slow=2.8,SNR=35
AKASG PKPab **PKPab** 03 56 15.7 -0.5
comp=Z,9.4nm,0.6s,baz=65,slow=3.9,SNR=13
AKASG pPKPbc **pPKPbc** 03 56 43.2 -2.9
comp=Z,14nm,1.1s,baz=64,slow=2.8,SNR=2.6
AKASG pPKPab **pPKPab** 03 56 57.0 -0.9
comp=Z,6.0nm,0.8s,baz=64,slow=4.0,SNR=2.5
KIEV **Kiev** 153.55 308 *e*PKIKP **PKPdf** 03 55 53.5 -1.7
KIEV *e* 03 56 16.1
KIEV **Kiev** 153.55 308 *e*PKPdf **PKPdf** 03 55 53.5 -1.7
KIEV *e*PKPbc **PKPbc** 03 56 02.0 -1.0
KIEV *e*PKPab **PKPab** 03 56 16.1 -0.2
ISAL **Salakas** 153.59 320 *e*P **PKPbc** 03 56 02.4 -0.6
ISAL IAmb IAmb 03 56 03.7
comp=Z,19nm,0.9s
TBLU **Trondheim** 153.88 345 *e*P **PKPbc** 03 56 02.3 -1.1
TBLU IAmb IAmb 03 56 02.6
comp=Z,26nm,1.1s
KULA **Kula-Manisa** 154.30 280 P **PKPab** 03 56 19.1 -0.9
ISK **Istanbul-Kandi** 154.36 286 P **PKPab** 03 56 20.1 0.0
TLCR 154.64 296⇑ *i*P **PKPab** 03 56 21.6 +0.5
TLCR 154.64 296⇑ PKP2 **PKPab** 03 56 21.6 +0.5
MANR **Mangalia** 154.84 292 ⇓ *i*P **PKPab** 03 56 22.2 +0.2
TIRR **Tirgusor** 154.95 294 ⇓ *i*P **PKPab** 03 56 22.5 0.0
TIRR **Tirgusor** 154.95 294 ⇓ PKP2 **PKPab** 03 56 22.5 0.0
CFR **Carcaliu** 155.12 296 ⇓ *i*P **PKPab** 03 56 23.2 +0.1
CFR **Carcaliu** 155.12 296 ⇓ PKP2 **PKPab** 03 56 23.2 +0.1
TLB **Topalu** 155.22 294 ⇓ *i*P **PKPab** 03 56 23.7 +0.1
TLB **Topalu** 155.22 294 ⇓ PKP2 **PKPab** 03 56 23.7 +0.1
AKN **Aaknes** 155.48 347 *e*P PKPdf 03 56 05.9 +8.3
AKN IAmb IAmb 03 56 06.9
comp=Z,22nm,0.8s
NB2 **NORSAR Subarra** 155.62 342 PKPdf PKPdf 03 56 05.8 +8.0
comp=Z,4.7nm,0.6s,baz=31,slow=1.9
NB2 **NORSAR Subarra** 155.62 342 PKPdf PKPdf 03 56 05.8 +8.0
baz=31,slow=1.9
NOA **NORSAR Array B** 155.62 342 PKP **PKPdf** 03 55 55.9 -1.9
comp=Z,2.7nm,1.0s,baz=46,slow=1.9,SNR=6.3
NOA PKPbc PKPbc 03 56 05.8
comp=Z,5.8nm,0.7s,baz=34,slow=2.0,SNR=9.0
NOA PKPab **PKPab** 03 56 23.7 -1.1
comp=Z,3.3nm,0.6s,baz=25,slow=3.2,SNR=8.9
NOA pPKPab **pPKPab** 03 57 05.2 -1.3
comp=Z,7.3nm,0.9s,baz=28,slow=3.2,SNR=6.9
SUW **Suwalki** 155.82 318 *e*PKPdf **PKPdf** 03 55 58.0 -0.2
SUW *e* 03 56 07.3
SUW *e*PKPab **PKPab** 03 56 25.3 -0.6
SUW **Suwalki** 155.82 318 *e*PKIKP **PKPdf** 03 55 58.0 -0.2
SUW *e* 03 56 07.3
TESR **Tescani** 156.02 299⇑ *i*P **PKPab** 03 56 27.5 +0.5
VRI **Vrincioaia** 156.04 297⇑ *i*P **PKPab** 03 56 28.1 +0.9
VRI **Vrincioaia** 156.04 297 ⇑PKP2 **PKPab** 03 56 28.1 +0.9
PLOR **Plostina** 156.10 297 ⇓ *i*P **PKPab** 03 56 27.7 +0.3
PLOR **Plostina** 156.10 297 ⇓ PKP2 **PKPab** 03 56 27.7 +0.3
APE **Apeiranthos** 156.43 275⇑ *i*P **PKPab** 03 56 29.3 +0.2
APE **Apeiranthos** 156.43 275 ⇑PKP2 **PKPab** 03 56 29.3 +0.2
IDI **Vinoyia** 156.47 271 P **PKPab** 03 56 29.6 +0.2
ENEZ **Enez** 156.53 285 P **PKPab** 03 56 29.4 0.0
ALN **Alexandroupoli** 156.62 285 P **PKPab** 03 56 29.5 -0.3
MLR **Muntele Rosu** 156.63 297 ⇓ *i*P **PKPab** 03 56 30.1 +0.2
MLR **Muntele Rosu** 156.63 297 ⇓ PKP2 **PKPab** 03 56 30.1 +0.2
GADA **Gvkgeada** 156.66 283 P **PKPab** 03 56 29.6 -0.4
SZH **Strazhica** 156.78 291 *i* P **PKPab** 03 56 30.4 0.0
BURAR **Bucovina Array** 156.80 302 ⇓ *i*P **PKPab** 03 56 31.0 +0.5
BURAR **Bucovina Array** 156.80 302 ⇓ PKP2 **PKPab** 03 56 31.0 +0.5
DOPR **Dopca** 156.96 298 ⇓ *i*P **PKPab** 03 56 31.5 +0.4
SMTH **Samothraki Isl** 156.97 284 P **PKPab** 03 56 31.1 -0.2
LVV **L'vov** 156.99 308 *e*PKP2 **PKPab** 03 56 30.6 -0.5
LIA **Limnos Island** 157.18 282 P **PKPab** 03 56 31.7 -0.5
IMMV **Iera Moni Meta** 157.23 271 P **PKPab** 03 56 32.2 -0.4
ARR **Arges** 157.56 297 ⇓ *i*P **PKPdf** 03 56 00.3 -0.6
RZN **Rozhen** 157.66 287 *i* P **PKPab** 03 56 34.2 -0.3
KAVA **Kavala** 157.78 285 P **PKPab** 03 56 34.8 0.0
KWP **Kalwaria Pacla** 157.86 308 *e*PKPdf **PKPdf** 03 56 01.3 +0.3
KWP *e*PKPab **PKPab** 03 56 35.3 +0.5
KWP *e* 03 57 17.1
KWP **Kalwaria Pacla** 157.86 308 *e*PKIKP **PKPdf** 03 56 01.3 +0.3
BEL **Belsk** 158.12 315 *e*PKPdf PKPdf 03 56 12.5 +11
BEL *e*PKPab **PKPab** 03 56 36.1 +0.3
BEL *e* 03 57 18.3
BEL **Belsk** 158.12 315 *e*PKP2 **PKPab** 03 56 36.1 +0.3
OUR **Ouranopolis** 158.14 283 P **PKPab** 03 56 35.4 -1.0
LOT **Lotru** 158.16 297 ⇓ *i*P PKPab 03 56 28.6 -7.8
NVR **Nevrokopi** 158.29 286 P **PKPab** 03 56 35.9 -1.2
PAIG **Paliouri** 158.33 282 P **PKPab** 03 56 36.4 -0.8
KOLS **Kolonicke sedl** 158.36 307 *e*PKIKP **PKPdf** 03 56 00.4 -1.2
KOLS *e* 03 56 37.6
KOLS **Kolonicke sedl** 158.36 307 *e*PKP **PKPdf** 03 56 00.4 -1.2
KOLS *e* 03 56 37.5
KOLS *e* 03 57 20.0
MPEP **Malo Peshtene** 158.37 291 *i* P **PKPab** 03 56 37.7 +0.4
MMB **Musomiste** 158.40 287 *i* P **PKPab** 03 56 37.0 -0.5
UZH **Uzhgorod** 158.44 306 *d* iPKP2 **PKPab** 03 56 35.8 -1.6
LTK **Loutraki** 158.62 277 P PKPab 03 56 30.6 -8.0
DRGR 158.64 301⇑ *i*P **PKPab** 03 56 39.3 +0.9
DRGR 158.64 301 ⇑PKP2 **PKPab** 03 56 39.3 +0.9
ATAL **Atalanti** 158.69 279 P **PKPab** 03 56 37.6 -1.2
LKR **Lokris** 158.69 278 P **PKPab** 03 56 37.5 -1.3
VTS **Vitosha** 158.79 289⇑ *i*P **PKPab** 03 56 39.6 +0.2
VTS **Vitosha** 158.79 289 ⇑PKP2 **PKPab** 03 56 39.6 +0.2
VTS **Vitosha** 158.79 289 *i* P **PKPab** 03 56 38.7 -0.7
GZR **Gura Zlata** 158.85 297 ⇓ *i*P **PKPab** 03 56 39.7 +0.3
GZR **Gura Zlata** 158.85 297 ⇓ PKP2 **PKPab** 03 56 39.7 +0.3
CRVS **Cervenica-Dubn** 158.87 307 *e*PKIKP **PKPdf** 03 55 59.1 -3.2
CRVS *e* 03 56 40.0
CRVS **Cervenica-Dubn** 158.87 307 *e*PKP **PKPdf** 03 55 59.1 -3.2
CRVS *e* 03 56 40.0
CRVS *e* 03 57 21.4
KKB **Krupnik** 158.89 287 *i* P **PKPab** 03 56 39.1 -0.5
VLX **Vlachokerasia** 158.95 275 P **PKPab** 03 56 39.6 0.0
KENT **Kendrikon** 159.01 285 P **PKPab** 03 56 39.6 -0.6
GUR **Goura** 159.09 276 P **PKPab** 03 56 39.6 -1.1
GKP **Gorka Klasztor** 159.22 322 *e*PKPdf **PKPdf** 03 56 02.0 -0.5
GKP *e*PKPab **PKPab** 03 56 41.2 +0.7
GKP *e* 03 57 22.8
GKP **Gorka Klasztor** 159.22 322 *e*PKIKP **PKPdf** 03 56 02.0 -0.5
KLV **Kalavryta, Ach** 159.25 277 P **PKPab** 03 56 41.4 0.0
LIT **Litokhoron** 159.26 282 P **PKPab** 03 56 40.6 -0.7
AGG **Agios Georgios** 159.26 279 P **PKPab** 03 56 40.6 -0.8
GRG **Griva** 159.38 285 P **PKPab** 03 56 41.1 -0.7
OJC **Ojcow** 159.38 312 *e*PKPdf **PKPdf** 03 56 01.4 -1.3
OJC *e*PKPab **PKPab** 03 56 42.0 +0.5
OJC *e* 03 57 23.6
OJC **Ojcow** 159.38 312 *e*PKIKP **PKPdf** 03 56 01.5 -1.3
NIE **Niedzica** 159.41 309 *e*PKPdf **PKPdf** 03 56 02.3 -0.6
NIE *e*PKPab **PKPab** 03 56 42.5 +0.9
NIE *e* 03 57 24.3
NIE **Niedzica** 159.41 309 *e*PKIKP **PKPdf** 03 56 02.3 -0.6
SIRR **Siria** 159.46 300 ⇓ *i*P **PKPab** 03 56 42.5 +0.5
ANX **Ano

KSP	**Ksiaz**	**161.06 317**	*e*PKPdf	**PKPdf**	**03 56 03.0**	**-1.6**
KSP			*e*PKPab	**PKPab**	**03 56 48.8**	**+0.1**
KSP	**Ksiaz**	**161.06 317**	*e*PKIKP	**PKPdf**	**03 56 03.0**	**-1.6**
KRLC	**Kraliky**	**161.18 314**	*e*PKPDF	**PKPdf**	**03 56 03.3**	**-1.5**
KRLC			*e*PKPAB	**PKPab**	**03 56 49.6**	**+0.2**
KRLC			*ex*	x	03 57 36.1	
KRLC	**Kraliky**	**161.18 314**	*e*PKIKP	**PKPdf**	**03 56 03.3**	**-1.5**
KRLC			*e*		03 56 49.6	
DPC	**Dobruska-Polom**	**161.30 315**	*e*PKPDF	**PKPdf**	**03 56 03.8**	**-1.2**
DPC			*e*PKPAB	**PKPab**	**03 56 50.5**	**+0.6**
DPC			*e*pPKP	**pPKPab**	**03 57 32.0**	**+0.6**
DPC	**Dobruska-Polom**	**161.30 315**	*e*PKIKP	**PKPdf**	**03 56 03.8**	**-1.2**
DPC			*e*		03 56 50.5	
UPC	**Upice**	**161.39 316**	*e*PKPDF	**PKPdf**	**03 56 03.6**	**-1.4**
UPC			*e*PKPAB	**PKPab**	**03 56 50.8**	**+0.6**
UPC	**Upice**	**161.39 316**	*e*PKIKP	**PKPdf**	**03 56 03.6**	**-1.4**
UPC			*e*		03 56 50.8	
VRAC	**Vranov**	**161.65 312**	⇓*i*P	**PKPab**	**03 56 53.1**	**+1.7**
VRAC	**Vranov**	**161.65 312**	⇓PKP2	**PKPab**	**03 56 53.1**	**+1.7**
PDG	**Podgorica**	**161.72 289**	⇓*i*P	**PKPab**	**03 56 51.7**	**-0.2**
TAM	**Tamanrasset**	**162.05 211**	*e*PKIKP	**PKPdf**	**03 56 06.9**	**+0.2**
TAM	**Tamanrasset**	**162.05 211**	*e*PKPdf	**PKPdf**	**03 56 06.9**	**+0.2**
PVCC	**Panska Ves**	**162.15 318**	*e*PKPDF	**PKPdf**	**03 56 04.9**	**-0.9**
PVCC			*e*PKPAB	**PKPab**	**03 56 53.6**	**+0.1**
PVCC	**Panska Ves**	**162.15 318**	*e*PKIKP	**PKPdf**	**03 56 04.9**	**-0.9**
PVCC			*e*		03 56 53.6	
BRG	**Berggiesshubel**	**162.28 319**	*e*PKP	**PKPdf**	**03 56 04.6**	**-1.3**
	comp=Z,22nm,1.4s					
BRG			*ep*PKP	**PKPab**	**03 56 54.2**	**+0.2**
	comp=Z,14nm,1.1s					
BRG			SS	SS	04 20 51.0	+5.3
BRG	**Berggiesshubel**	**162.28 319**	*e*PKIKP	**PKPdf**	**03 56 04.6**	**-1.3**
BRG			*e*		03 56 54.2	
BRG			SS	SS	04 20 51.0	+5.3
BRG			pmax	pmax		
	comp=Z,22nm,1.4s					
BRG			pmax	pmax		
	comp=Z,14nm,1.1s					
TREC	**Trest**	**162.30 313**	*e*PKPDF	**PKPdf**	**03 56 04.2**	**-1.8**
TREC			*e*PKPAB	**PKPab**	**03 56 55.0**	**+0.8**
TREC			*e*pPKP	**pPKPab**	**03 57 36.8**	**+1.0**
TREC	**Trest**	**162.30 313**	*e*PKIKP	**PKPdf**	**03 56 04.2**	**-1.8**
TREC			*e*		03 56 55.0	
GOPC	**GO Pecny, Ondr**	**162.37 316**	*e*PKPDF	**PKPdf**	**03 56 04.2**	**-1.8**
GOPC			*e*PKPAB	**PKPab**	**03 56 55.3**	**+0.8**
GOPC	**GO Pecny, Ondr**	**162.37 316**	*e*PKIKP	**PKPdf**	**03 56 04.2**	**-1.8**
GOPC			*e*		03 56 55.3	
PRU	**Pruhonice**	**162.46 316**	*e*PKPDF	**PKPdf**	**03 56 04.1**	**-2.0**
PRU			*e*PKPAB	**PKPab**	**03 56 55.6**	**+0.7**
PRU	**Pruhonice**	**162.46 316**	*e*PKIKP	**PKPdf**	**03 56 04.1**	**-2.0**
PRU			*e*		03 56 55.6	
CLL	**Collm**	**162.48 322**	*i* PKPdf	**PKPdf**	**03 56 04.2**	**-1.8**
	comp=Z,9.0nm,1.3s					
CLL			⇓*i*PKPab	**PKPab**	**03 56 54.8**	**-0.1**
	comp=Z,32nm,1.3s					
CLL			*e*		03 57 14.0	
CLL			*i* pPKPab	**pPKPab**	**03 57 36.7**	**+0.3**
	comp=Z,37nm,1.7s					
CLL			*ep*PP	**PP**	**04 00 39.0**	**-0.9**
CLL			*ep*PP		04 01 17.0	
CLL			*e*PPP	PPP	04 04 36.0	
CLL			*e*PPPP		04 06 42.0	
CLL			*e*PSKS		04 11 08.0	
CLL			*e*		04 14 15.0	
CLL			*e*		04 15 18.0	
CLL			*e*SS	SS	04 20 54.0	+6.3
CLL			*e*		04 22 05.0	
CLL			*e*		04 23 05.0	
CLL			*e*SSS	SSS	04 27 15.0	
CLL			*e*		04 34 48.0	
CLL	**Collm**	**162.48 322**	⇓*i*PKIKP	**PKPdf**	**03 56 04.2**	**-1.8**
CLL			*i*		03 56 54.8	
CLL			pmax	pmax		
	comp=Z,9.0nm,1.3s					
CLL			pmax	pmax		
	comp=Z,32nm,1.3s					
CONA	**Conrad Observa**	**162.70 309**	*i* PKPab	**PKPab**	**03 56 57.0**	**+0.9**
	comp=Z,16nm,1.3s,SNR=6.7					
CONA			*ep*PKPab	**pPKPab**	**03 57 37.8**	**+0.2**
	comp=Z,21nm,1.4s					
ARSA	**Arzberg**	**163.18 307**	*e*PKPab	**PKPab**	**03 56 58.0**	**-0.2**
	comp=Z,6.7nm,1.1s					
ARSA			*ep*PKPab	**pPKPab**	**03 57 39.6**	**-0.2**
	comp=Z,19nm,1.8s					
ESK	**Eskdalemuir**	**163.35 358**	*e*PKP2	**PKPab**	**03 56 57.5**	**-1.0**
ESK	**Eskdalemuir**	**163.35 358**	*e*PKPab	**PKPab**	**03 56 57.5**	**-1.0**
NKC	**Novy Kostel**	**163.42 320**	*e*PKPDF	**PKPdf**	**03 56 06.0**	**-1.0**
NKC			*e*PKPAB	**PKPab**	**03 56 59.3**	**+0.2**
NKC	**Novy Kostel**	**163.42 320**	*e*PKIKP	**PKPdf**	**03 56 06.0**	**-1.0**
NKC			*e*		03 56 59.3	
KHC	**Kasperske Hory**	**163.46 315**	*e*PKPDF	**PKPdf**	**03 56 05.2**	**-1.9**
KHC			*e*PKPAB	**PKPab**	**03 56 58.9**	**-0.4**
KHC			*e*pPKP	**pPKPab**	**03 57 41.1**	**+0.2**
KHC	**Kasperske Hory**	**163.46 315**	*e*PKIKP	**PKPdf**	**03 56 05.2**	**-1.9**
KHC			*e*		03 56 58.9	
GERES	**GERESS Array B**	**163.54 314**	PKP	**PKPdf**	**03 56 06.0**	**-1.3**
	comp=Z,0.3nm,0.5s,baz=57,slow=3.6,SNR=4.2					
GERES			PKPab	**PKPab**	**03 56 59.7**	**-0.1**
	comp=Z,2.6nm,0.7s,baz=46,slow=4.2,SNR=16					
GERES			pPKPab	**pPKPab**	**03 57 40.5**	**-0.8**
	comp=Z,1.4nm,0.7s,baz=54,slow=5.0,SNR=2.6					
GERES	**GERESS Array B**	**163.54 314**	PKIKP	**PKPdf**	**03 56 06.0**	**-1.3**
GERES					03 56 59.7	
GERES			pmax	pmax		
	comp=Z,1.0nm,0.8s					
GERES			pmax	pmax		
	comp=Z,3.0nm,0.7s					
GERES			pmax	pmax		
	comp=Z,1.0nm,0.7s					
TIP	**Timpagrande**	**163.59 278**	*e*PKPdf	**PKPdf**	**03 56 06.3**	**-1.3**
TIP			*e*PKPab	**PKPab**	**03 57 00.2**	**-0.1**
MOA	**Molln**	**163.70 310**	*e*PKPab	**PKPab**	**03 57 01.3**	**+0.8**
	comp=Z,9.1nm,1.1s,SNR=5.5					
MOA			*ep*PKPab	**pPKPab**	**03 57 42.0**	**+0.1**
	comp=Z,21nm,1.4s					
SOKA	**Soboth**	**163.72 306**	*i* PKPab	**PKPab**	**03 57 01.1**	**+0.5**
	comp=Z,9.4nm,1.1s					
SOKA			*ep*PKPab	**pPKPab**	**03 57 41.9**	**-0.3**
	comp=Z,12nm,1.2s					
OBKA	**Obir**	**164.09 305**	*i* PKPab	**PKPab**	**03 57 02.5**	**+0.2**
	comp=Z,7.8nm,1.1s					
OBKA			*ep*PKPab	**pPKPab**	**03 57 43.5**	**-0.3**
	comp=Z,12nm,1.4s					
CRNS	**Crni Vrh**	**164.43 304**	*e*PKPab	**PKPab**	**03 57 03.9**	**+0.1**
CRNS			*ep*PKPab	**pPKPab**	**03 57 44.6**	**-0.7**
KBA	**Koelnbreinsper**	**164.60 309**	*i* sPKPdf	**PKPab**	**03 57 04.7**	**0.0**
	comp=Z,8.9nm,1.2s					
KBA			*ep*PKPab	**pPKPab**	**03 57 45.5**	**-0.7**
	comp=Z,12nm,1.3s					
CADS	**Cadrg**	**164.72 305**	*e*PKPab	**PKPab**	**03 57 04.6**	**-0.4**
CADS			*ep*PKPab	**pPKPab**	**03 57 45.8**	**-0.7**
ABTA	**Abfaltersbach**	**165.26 308**	*i* sPKPdf	**PKPab**	**03 57 07.0**	**-0.5**
	comp=Z,12nm,1.3s					
ABTA			*i* pPKPab	**pPKPab**	**03 57 47.6**	**-1.3**
	comp=Z,20nm,1.3s					
WTTA	**Wattenberg**	**165.54 311**	*i* sPKPdf	**PKPab**	**03 57 08.8**	**0.0**
	comp=Z,18nm,1.2s					
WTTA			*i* pPKPab	**pPKPab**	**03 57 50.0**	**-0.2**
	comp=Z,20nm,1.2s					
BEBN	**Eben Emael**	**165.99 333**	PKP	**PKPab**	**03 57 10.5**	**+0.2**
BEBN			APKP	**pPKPab**	**03 57 51.9**	**+0.1**
MEM	**Membach**	**166.02 332**	PKP	**PKPab**	**03 57 11.1**	**+0.6**
MEM			APKP	**pPKPab**	**03 57 52.0**	**+0.1**
AQU	**L'Aquila**	**166.03 291**	*e*PKP2	**PKPab**	**03 57 11.1**	**+0.1**
AQU	**L'Aquila**	**166.03 291**	*e*PKPab	**PKPab**	**03 57 11.1**	**+0.1**
FETA	**Feichten**	**166.19 312**	*e*PKPab	**PKPab**	**03 57 11.9**	**+0.3**
	comp=Z,12nm,1.0s					
BCLA	**Clavier**	**166.43 333**	PKP	**PKPab**	**03 57 12.1**	**-0.1**
BCLA			APKP		03 57 53.9	
WLF	**Walferdange**	**166.72 329**	*e*PKIKP	**PKPdf**	**03 56 09.0**	**-0.8**
WLF			*e*		03 57 14.3	
WLF	**Walferdange**	**166.72 329**	*e*PKPdf	**PKPdf**	**03 56 09.0**	**-0.8**
WLF			*e*PKPab	**PKPab**	**03 57 14.3**	**+0.7**
KEST	**Kesra**	**168.71 259**	PKPab	**PKPab**	**03 57 23.8**	**+0.7**
	comp=Z,8.0nm,0.9s,baz=124,slow=3.6,SNR=6.8					
KEST			pPKPab	**pPKPab**	**03 58 04.5**	**0.0**
	comp=Z,25nm,1.0s,baz=316,slow=2.5,SNR=9.2					
PGAV	**Gavieira, Arco**	**175.55 41**	*e*PKPdf	**PKPdf**	**03 56 14.9**	**+0.2**
PGAV	**Gavieira, Arco**	**175.55 41**	*e*PP	PP	04 01 46.1	+0.1
PCAB	**Cabril**	**175.86 42**	*e*PKPdf	**PKPdf**	**03 56 15.0**	**+0.3**
PCAB	**Cabril**	**175.86 42**	*e*PKPab	**PKPab**	**03 57 54.4**	**-0.1**
PFVI	**Vila Bisbo**	**176.11 112**	*e*PKPab	**PKPab**	**03 58 00.8**	**+5.0**
PFVI	**Vila Bisbo**	**176.11 112**	*e*PP	PP	04 01 56.4	+7.3
PMAFR	**Mafra**	**176.12 85**	*e*PKPdf	**PKPdf**	**03 56 15.2**	**+0.4**
PMAFR	**Mafra**	**176.12 85**	*e*PKPab	**PKPab**	**03 57 57.5**	**+1.7**
PMAFR	**Mafra**	**176.12 85**	*e*PP	PP	04 01 51.8	+2.4
PMAFR	**Mafra**	**176.12 85**	*e*SS	SS	04 23 21.0	+16
PMST	**Lisbon--Monsan**	**176.19 88**	*e*PKPab	**PKPab**	**03 57 57.1**	**+1.0**
PMST	**Lisbon--Monsan**	**176.19 88**	*e*PP	PP	04 01 49.8	0.0
POLO	**Lamas de Olo**	**176.22 44**	*e*PKPdf	**PKPdf**	**03 56 15.3**	**+0.4**
POLO	**Lamas de Olo**	**176.22 44**	*e*PKPab	**PKPab**	**03 57 55.8**	**-0.4**
POLO	**Lamas de Olo**	**176.22 44**	*e*PP	PP	04 01 49.8	+0.6
POLO	**Lamas de Olo**	**176.22 44**	*e*SS	SS	04 23 27.7	+23
MORF	**Marmelete**	**176.31 111**	*e*PKPdf	**PKPdf**	**03 56 15.9**	**+0.9**
MORF	**Marmelete**	**176.31 111**	*e*PKPab	**PKPab**	**03 58 03.9**	**+7.2**
MORF	**Marmelete**	**176.31 111**	*e*PP	PP	04 01 53.4	+3.2
PVRL	**Vila Real**	**176.33 44**	*e*PKPdf	**PKPdf**	**03 56 15.2**	**+0.4**
PVRL	**Vila Real**	**176.33 44**	*e*PKPab	**PKPab**	**03 57 55.4**	**-1.2**
PBRG	**Braganca**	**176.38 30**	*e*PKPab	**PKPab**	**03 58 00.5**	**+3.8**
PCAS	**Casmilo, Conde**	**176.49 66**	*e*PKPdf	**PKPdf**	**03 56 17.2**	**+2.4**
PCAS	**Casmilo, Conde**	**176.49 66**	*e*PKPab	**PKPab**	**03 57 57.7**	**+0.3**
PCAS	**Casmilo, Conde**	**176.49 66**	*e*PP	PP	04 01 50.8	-0.1
PCAS	**Casmilo, Conde**	**176.49 66**	*e*SS	SS	04 23 20.1	+12
PVIS	**Viseu**	**176.58 53**	*e*PKPdf	**PKPdf**	**03 56 15.1**	**+0.2**
PVIS	**Viseu**	**176.58 53**	*e*PKPab	**PKPab**	**03 57 57.2**	**-0.6**
PNCL	**Nicolau / Gran**	**176.64 99**	*e*PKPdf	**PKPdf**	**03 56 15.9**	**+1.0**
PNCL	**Nicolau / Gran**	**176.64 99**	*e*PKPab	**PKPab**	**03 58 00.8**	**+2.7**
PNCL	**Nicolau / Gran**	**176.64 99**	*e*PP	PP	04 01 49.4	-2.5
PNCL	**Nicolau / Gran**	**176.64 99**	*e*SS	SS	04 23 26.3	+17
PTOM	**Tomar**	**176.69 73**	*e*PKPab	**PKPab**	**03 57 58.7**	**+0.4**
MVO	**Moncorvo**	**176.77 39**	*e*PKPdf	**PKPdf**	**03 56 14.9**	**0.0**
MVO	**Moncorvo**	**176.77 39**	*e*PKPab	**PKPab**	**03 57 57.0**	**-1.6**
MVO	**Moncorvo**	**176.77 39**	*e*PP	PP	04 01 51.8	+0.2
MVO	**Moncorvo**	**176.77 39**	*e*SS	SS	04 23 49.9	+41
PBDV	**Barranco-do-Ve**	**176.80 116**	*e*PKPab	**PKPab**	**03 58 03.0**	**+4.2**
PBDV	**Barranco-do-Ve**	**176.80 116**	*e*PP	PP	04 01 52.6	+0.2
PBDV	**Barranco-do-Ve**	**176.80 116**	*e*SS	SS	04 23 15.4	+4.6
MESJ	**Messejana**	**176.81 104**	*e*PKPab	**PKPab**	**03 58 01.0**	**+2.1**
PCVE	**Castro Verde**	**176.88 109**	*e*PKPdf	**PKPdf**	**03 56 14.5**	**-0.5**
PCVE	**Castro Verde**	**176.88 109**	*e*PKPab	**PKPab**	**03 57 58.6**	**-0.6**
PCVE	**Castro Verde**	**176.88 109**	*e*PP	PP	04 01 54.7	+1.8
PCVE	**Castro Verde**	**176.88 109**	*e*SS	SS	04 23 17.8	+6.0
PVAQ	**Vaqueiros**	**177.02 115**	*e*SS	SS	04 23 11.9	-1.0
EVO	**Evora**	**177.10 92**	*e*PKPdf	**PKPdf**	**03 56 15.7**	**+0.7**
EVO	**Evora**	**177.10 92**	*e*PKPab	PKPab	03 58 00.8	+0.6
EVO	**Evora**	**177.10 92**	*e*PP	PP	04 01 55.2	+1.1
PBEJ	**Beja**	**177.13 102**	*e*PKPdf	**PKPdf**	**03 56 15.9**	**+0.9**
PBEJ	**Beja**	**177.13 102**	*e*PKPab	PKPab	03 58 01.9	+1.6
PCBR	**Castelo Branco**	**177.29 64**	*e*PKPdf	**PKPdf**	**03 56 15.5**	**+0.5**
PCBR	**Castelo Branco**	**177.29 64**	*e*PKPab	PKPab	03 58 00.0	-0.9
PMRV	**Marv??o**	**177.50 72**	*e*PKPab	PKPab	03 58 01.8	-0.1
PMRV	**Marv??o**	**177.50 72**	*e*PP	PP	04 01 56.1	+0.3
PMRV	**Marv??o**	**177.50 72**	*e*SS	SS	04 23 14.8	-2.9
PBAR	**Barrancos**	**177.80 103**	*e*PKPdf	**PKPdf**	**03 56 15.9**	**+0.8**
PBAR	**Barrancos**	**177.80 103**	*e*PKPab	PKPab	03 58 05.0	+1.7
PBAR	**Barrancos**	**177.80 103**	*e*PP	PP	04 01 58.7	+1.4
PBAR	**Barrancos**	**177.80 103**	*e*SS	SS	04 23 21.6	+1.0
ESDC	**Sonseca Array**	**178.98 344**	PKP	**PKPdf**	**03 56 14.3**	**-0.9**
	comp=Z,0.5nm,0.4s,baz=332,slow=1.6,SNR=14					
ESDC			pPKP	**pPKPdf**	**03 56 56.5**	**-2.3**
	comp=Z,0.2nm,0.3s,baz=22,slow=3.3,SNR=2.1					
ESDC			PKPab		03 58 07.2	
	comp=Z,4.2nm,0.9s,baz=355,slow=4.8,SNR=12					
ESDC			pPKPab	**pPKPab**	**03 58 48.7**	**-1.1**
	comp=Z,1.8nm,0.8s,baz=1.1,slow=3.6,SNR=3.8					

*ISCJB **05** 03:47:02.0±0.6,23.1°S×69.36E±0.10,h10km, mb4.3/14,MS4.0/11,Error ellipse: s-maj=20.1km s-min=12.9km az=4.4*
*IDC **05** 03:47:02.1±0.9,23.18S×69.34E, h0km,mb4.2/10, mb1 4.4/10,mb1mx4.0/51,mbtmp4.2/10,MS4.0/11, Ms1 4.0/11,ms1mx3.7/28,Error ellipse: s-maj=32.6km s-min=18.9km az=8.0*
*NEIC **05** 03:47:04.0±0.4,23.10S×69.34E,h10km,mb4.5/4,Error ellipse: s-maj=15.8km s-min=10.2km az=4.0*

ISC 05 03:47:04.2±0.7, 23.1°S±0.2×69.3°E±0.1, h10km, n32, σ0s86/17, mb4.3/13, MS3.9/11, 1C, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
RER	**Riviere de l'E**	**12.70**	**276**	*e*Pn		Pn	03 49 59.9	-5.2
H08S1	**Diego Garcia H**	**15.63**	**12**	T		T	04 06 15.0	
	baz=192,slow=76,SNR=751							
H08S2	**Diego Garcia H**	**15.63**	**12**	T		T	04 06 12.5	
	baz=192,slow=76,SNR=630							
H08S3	**Diego Garcia H**	**15.65**	**12**	T		T	04 06 16.4	
	baz=192,slow=76,SNR=906							
ABPO	**Ambohimpanom**	**20.98**	**277**	*e*P		**P**	**03 51 47.4**	**-0.6**
	54nm,1.3s							
OPO	**Ambohidratompo**	**21.14**	**278**	LR		LR	03 57 44.5	
	comp=Z,626nm,20.6s,baz=101,slow=30							
KMBO	**Kilima Mbogo**	**37.99**	**300**	LR		LR	04 06 16.1	
	comp=Z,202nm,21.3s,baz=144,slow=30							
LSZ	**Lusaka**	**39.49**	**274**	P		**P**	**03 54 34.4**	**-0.9**
	2.6nm,0.8s,baz=122,slow=9.4,SNR=4.4							
LSZ	**Lusaka**	**39.49**	**274**	*e*P		**P**	**03 54 34.6**	**-0.8**
	6.6nm,1.1s							
LBTB	**Lobatse**	**39.83**	**258**	P		**P**	**03 54 38.2**	**+0.1**
	2.7nm,0.8s,baz=120,slow=8.1,SNR=3.4							
BOSA	**Boshof**	**39.86**	**253**	LR		LR	04 07 57.4	
	comp=Z,247nm,19.5s,baz=99,slow=32							
H01W2	**Cape Leeuwin H**	**40.65**	**117**	T		T	04 38 11.2	
	baz=274,slow=75,SNR=17							
H01W3	**Cape Leeuwin H**	**40.65**	**117**	T		T	04 38 10.5	
	baz=274,slow=75,SNR=14							
H01W1	**Cape Leeuwin H**	**40.67**	**117**	T		T	04 38 07.9	
	baz=274,slow=75,SNR=15							
ATD	**Arta Tunnel**	**43.04**	**320**	LR		LR	04 09 21.7	
	comp=Z,122nm,21.3s,baz=146,slow=31							
WSAR	**Wadi Sarin**	**47.18**	**347**	LR		LR	04 12 23.5	
	comp=Z,79nm,19.0s,baz=198,slow=32							
SYO	**Syowa Base**	**49.34**	**194**	*e*ScP		**ScP**	**04 01 11.8**	**+0.6**
CMAR	**Chiang Mai Arr**	**50.41**	**38**	P		**P**	**03 56 02.1**	**+0.1**
	0.8nm,0.3s,baz=224,slow=6.3,SNR=4.2							
FITZ	**Fitzroy Crossi**	**52.71**	**96**	P		**P**	**03 56 18.5**	**-0.9**
	2.8nm,0.8s,baz=260,slow=8.5,SNR=7.8							
ASAR	**Alice Springs**	**58.83**	**105**	P		**P**	**03 57 02.4**	**-1.0**
	2.7nm,0.8s,baz=258,slow=6.4,SNR=18							
ASAR				LR		LR	04 18 48.8	
	comp=Z,329nm,20.9s,baz=286,slow=32							
WRA	**Warramunga Arr**	**60.15**	**100**	P		**P**	**03 57 11.6**	**-0.9**
	4.0nm,0.6s,baz=256,slow=6.7,SNR=30							
WRA				LR		LR	04 21 53.1	
	comp=Z,168nm,18.3s,baz=210,slow=35							
WRAB	**Tennant Creek**	**60.17**	**100**	*e*P		**P**	**03 57 11.4**	**-1.2**
	4.9nm,0.7s							
STKA	**Stephens Creek**	**63.71**	**115**	LR		LR	04 21 31.5	
	comp=Z,210nm,20.9s,baz=214,slow=32							
QSPA	**South Pole Qui**	**67.06**	**180**	*e*P		**P**	**03 57 58.6**	**+1.1**
	27nm,1.3s							
VNDA	**Vanda**	**68.21**	**166**	LR		LR	04 24 36.1	
	comp=Z,64nm,18.5s,baz=262,slow=33							
MKAR	**Makanchi Array**	**70.51**	**9**	LR		LR	04 27 51.8	
	comp=Z,56nm,19.7s,baz=180,slow=35							
ABKAR	**Akbulak array**	**72.47**	**354**	*e*P		**P**	**03 58 30.8**	**+0.1**
	2.3nm,0.8s							
AKTO	**Aktyubinsk**	**73.85**	**353**	P		**P**	**03 58 39.4**	**+0.6**
	7.6nm,1.1s,baz=132,slow=7.0,SNR=4.3							
ZALV	**Zalesovo Beam**	**77.85**	**9**	P		**P**	**03 59 00.7**	**-0.9**
	2.0nm,0.4s,baz=210,slow=6.0,SNR=2.6							
ZALV				LR		LR	04 32 37.1	
	comp=Z,54nm,19.0s,baz=78,slow=35							
SONM	**Songino Array**	**78.04**	**25**	P		**P**	**03 59 03.9**	**+1.0**
	1.8nm,0.9s,baz=216,slow=4.6,SNR=3.8							
AKASG	**Malin Array Be**	**81.51**	**336**	P		**P**	**03 59 22.2**	**+0.7**
	0.5nm,0.5s,baz=133,slow=4.2,SNR=2.9							
COWI	**Conover**	**151.13**	**328**	*e*PKPbc		**PKPbc**	**04 06 58.0**	**+0.4**

SGS 05 04:51:42.2, 26.56N×35.17E, h24km, Red Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
BIDS	**Bi'r al Bayda'**	**1.63**	**79**	S		Sn	04 52 26.3	-3.4
BIDS				P		Pn	04 52 07.6	-1.9
BIDS	**Bi'r al Bayda'**	**1.63**	**79**	S		Sn	04 52 26.4	-3.4
BIDS				P		Pn	04 52 07.7	-1.8
RSHS		**1.76**	**349**	P		Pb	04 52 17.1	+3.2
BDAS	**Al Bad'**	**1.86**	**358**	S		Sn	04 52 28.5	-7.0
BDAS				P		Pn	04 52 10.5	-2.3
TBKS	**Tabuk**	**2.05**	**36**	S		Sn	04 52 37.5	-2.7
TBKS				P		Pn	04 52 13.3	-2.0
TBKS	**Tabuk**	**2.05**	**36**	S		Sn	04 52 38.1	-2.1
TBKS				P		Pn	04 52 13.9	-1.4
JLOS		**2.18**	**8**	P		Pn	04 52 14.6	-2.6
JLOS		**2.18**	**8**	P		Pn	04 52 15.1	-2.2
UMJS	**Umm Lajj**	**2.34**	**124**	S		Sn	04 52 43.8	-3.5
UMJS				P		Pn	04 52 17.1	-2.2
HAQS	**Haql**	**2.49**	**355**	P		Pn	04 52 18.7	-2.6
HAQS	**Haql**	**2.49**	**355**	P		Pn	04 52 18.7	-2.6
LNY09	**LNY09**	**2.53**	**117**	S		Sn	04 52 49.5	-2.5
LNY09				P		Pn	04 52 20.7	-1.2
LNY04	**LNY04**	**2.58**	**119**	P		Pn	04 52 21.0	-1.5
LNY07	**LNY07**	**2.59**	**123**	P		Pn	04 52 20.9	-1.9
LNY11	**LNY11**	**2.66**	**117**	S		Sn	04 52 53.0	-2.2
LNY11				P		Pn	04 52 22.5	-1.2
LNY12	**LNY12**	**2.68**	**118**	P		Pn	04 52 22.9	-1.1
LNY03	**LNY03**	**2.69**	**115**	S		Sn	04 52 54.5	-1.5
LNY03				P		Pn	04 52 23.2	-1.0
LNY06	**LNY06**	**2.71**	**119**	P		Pn	04 52 23.3	-1.1
HQLS		**2.73**	**358**	P		Pn	04 52 22.9	-1.7
HQLS		**2.73**	**358**	S		Sn	04 52 53.4	-3.5
HQLS				P		Pn	04 52 23.2	-1.4
LNY10	**LNY10**	**2.75**	**117**	S		Sn	04 52 55.7	-1.8
LNY10				P		Pn	04 52 23.9	-1.0
LNY02	**LNY02**	**2.81**	**120**	P		Pn	04 52 24.9	-1.0
LNY08	**LNY08**	**2.86**	**122**	P		Pn	04 52 25.5	-1.0

IDC 05 04:54:26.7±4.2, 7.31S×127.04E, h0km, mb1 3.5/2, mb1mx3.2/40, mbtmp3.2/2, ML3.0/2, Error ellipse: s-maj=272.7km s-min=43.1km az=71.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**14.42**	**151**	P		Pn	04 57 53.7	+1.4
	0.1nm,0.3s,baz=331,slow=12,SNR=3.7							
WRA				Sn		Sn	05 00 32.0	-0.9
	0.1nm,0.3s,baz=321,slow=24,SNR=4.0							
ASAR	**Alice Springs**	**17.55**	**159**	P		Pn	04 58 32.7	-0.3
	0.1nm,0.3s,baz=330,slow=9.7,SNR=4.3							
TXAR	**Lajitas Array**	**127.60**	**59**	PKP		PKPdf	05 13 34.4	-0.4
	0.4nm,0.9s,baz=204,slow=2.7,SNR=3.7							

*NIED **05** 04:55:00,32.00N×129.30E,h5km,Mw3.8 Best double couple: M0 6.08000×10^14 NP1:φs=41.00000°, δ58.00000°, λ=-154.00000°. NP2:φs=297.00000°, δ68.00000°, λ=-35.00000°.*
*ISCJB **05** 04:55:18.1±1.4,32.02N±0.04×129.22E±0.05, h13km±10km, mb3.6/5, MS2.9/2, Error ellipse: s-maj=8.0km s-min=6.0km az=144.1*
*JMA **05** 04:55:18.1,32.05N×129.27E, h0km, M3.9*
*IDC **05** 04:55:18.0±1.1,31.97N×129.29E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.5/47, mbtmp3.5/5, ML3.4/1, MS2.8/5, Ms1 2.9/5, ms1mx2.6/42, Error ellipse: s-maj=23.5km s-min=13.5km az=120.0*

ISC 05 04:55:18.8±1.4, 32.01N±0.04×129.31E±0.05, h6km±10km, n19, σ1s03/21, mb3.7/5, 1C-5D, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
JSJ	**Shimokoshiki**	**0.48**	**133**

436nm,0.2s
FSSB Fossombrone 0.73 229 Pg Pb 05 05 57.7 +0.2
FSSB Sg Sn 05 06 09.8 -0.3
436nm,0.2s
MPAG Monte Paganucc 0.78 226 Pg Pb 05 05 58.6 +0.2
MPAG Sg Sn 05 06 11.0 -0.4
220nm,0.2s
MPAG Monte Paganucc 0.78 226 Pg Pb 05 05 58.6 +0.2
MPAG Sg Sn 05 06 11.0 -0.4
220nm,0.2s
ARVD Arcevia 0.80 212 Pg Pb 05 05 59.0 +0.3
ARVD Sg Sn 05 06 11.7 -0.1
83nm,0.5s
ARVD Arcevia 0.80 212 Pg Pb 05 05 59.0 +0.3
ARVD Sg Sn 05 06 11.7 -0.1
83nm,0.5s
CING Cingoli 0.83 197 Pg Pb 05 05 59.7 +0.3
CING Sg Sn 05 06 12.4 -0.3
111nm,0.6s
CING Cingoli 0.83 197 Pg Pb 05 05 59.7 +0.3
CING Sg Sn 05 06 12.4 -0.3
111nm,0.6s
FRON Frontone 0.88 222 Pg Pn 05 06 00.5 -0.6
FRON Sg Sn 05 06 14.5 +0.7
159nm,0.4s
FRON Frontone 0.88 222 Pg Pn 05 06 00.5 -0.6
FRON Sg Sn 05 06 14.5 +0.7
159nm,0.4s
SSFR Montelago di S 0.92 217 Pg Pn 05 06 01.0 -0.6
237nm,0.2s
SSFR Montelago di S 0.92 217 Pg Pn 05 06 01.0 -0.6
237nm,0.2s
CPGN Carpegna, Ital 0.95 247 Pg Pn 05 06 02.3 +0.1
558µm,25.0s
CPGN Carpegna, Ital 0.95 247 Pg Pn 05 06 02.3 +0.1
558µm,25.0s
SNTG Esanatoglia 1.01 205 Pg Pb 05 06 02.3 -0.1
SNTG Sg Sn 05 06 18.0 +0.8
103nm,0.6s
SNTG Esanatoglia 1.01 205 Pg Pb 05 06 02.3 -0.1
SNTG Sg Sn 05 06 18.0 +0.8
103nm,0.6s
NVLJ Novalja 1.04 68 *i* Pg **Pb 05 06 02.7 -0.1**
NVLJ Sg Sb 05 06 17.1 +0.8
NVLJ Novalja 1.04 68 *i* Pg **Pb 05 06 02.6 -0.1**
NVLJ Sg Sb 05 06 17.1 +0.8
ATPC Poggio Castell 1.04 229 Pg Pn 05 06 03.1 -0.3
176nm,0.5s
ATPC Poggio Castell 1.04 229 Pg Pn 05 06 03.1 -0.3
176nm,0.5s
T0502 Localit` San 1.04 255 Pg Pn 05 06 03.3 0.0
203nm,0.3s
PARC Parchiule 1.07 241 Pg Pn 05 06 03.4 -0.4
73nm,0.3s
PARC Parchiule 1.07 241 Pg Pn 05 06 03.4 -0.4
73nm,0.3s
ATVO AVT- Monte Val 1.14 226 Pg Pn 05 06 04.5 -0.2
30nm,0.3s
ATVO AVT- Monte Val 1.14 226 Pg Pn 05 06 04.5 -0.2
30nm,0.3s
BADI Badiali 1.14 235 Pg Pn 05 06 04.7 0.0
3µm,0.2s
BADI Badiali 1.14 235 Pg Pn 05 06 04.7 0.0
3µm,0.2s
GUMA Gualdo di Mace 1.15 165 Pg Pb 05 06 03.8 -0.9
213nm,0.4s
GUMA Gualdo di Mace 1.15 165 Pg Pb 05 06 03.8 -0.9
213nm,0.4s
MURB Monte Urbino 1.17 219 Pg Pn 05 06 05.0 -0.1
227nm,0.3s
MURB Monte Urbino 1.17 219 Pg Pn 05 06 05.0 -0.1
227nm,0.3s
ATCC AVT- Casa Cast 1.18 213 Pg Pb 05 06 05.0 -0.3
98nm,0.4s
ATCC AVT- Casa Cast 1.18 213 Pg Pb 05 06 05.0 -0.3
98nm,0.4s
FDMO Fiordimonte 1.18 196 Pg Pb 05 06 04.6 -0.7
55nm,0.3s
FDMO Fiordimonte 1.18 196 Pg Pb 05 06 04.6 -0.7
55nm,0.3s
ATMC Monte Cedrone 1.21 234 Pg Pg 05 06 05.9 -0.3
90nm,0.6s
ATMC Monte Cedrone 1.21 234 Pg Pg 05 06 05.9 -0.3
90nm,0.6s
SFI Santa Sofia 1.24 258 Pg Pg 05 06 06.6 -0.2
59nm,0.6s
SFI Santa Sofia 1.24 258 Pg Pg 05 06 06.6 -0.2
59nm,0.6s
CESI CESI - Serrava 1.25 201 Pg Pn 05 06 05.6 -0.7
30nm,0.4s
CESI CESI - Serrava 1.25 201 Pg Pn 05 06 05.6 -0.7
30nm,0.4s
CRE Caprese Michel 1.27 245 Pg Pg 05 06 07.2 -0.1
52nm,0.4s
CRE Caprese Michel 1.27 245 Pg Pg 05 06 07.2 -0.1
52nm,0.4s
ATTE AVT- Monte Tez 1.30 222 Pg Pg 05 06 07.4 -0.4
51nm,0.5s
ATTE AVT- Monte Tez 1.30 222 Pg Pg 05 06 07.4 -0.4
51nm,0.5s
ASQU Asqua 1.31 254 Pg Pb 05 06 07.2 -0.3
61nm,0.4s
ASQU Asqua 1.31 254 Pg Pb 05 06 07.2 -0.3
61nm,0.4s
NRCA Norcia 1.37 193 Pg Pn 05 06 07.3 -0.7
51nm,0.3s
NRCA Norcia 1.37 193 Pg Pn 05 06 07.3 -0.7
51nm,0.3s
CAFI Castiglion Fio 1.41 234 Pg Pb 05 06 08.7 -0.5
45nm,0.7s
CAFI Castiglion Fio 1.41 234 Pg Pb 05 06 08.7 -0.5
45nm,0.7s
SKDS Skadanscina 1.41 14 *i* Pg **Pn 05 06 07.7 -0.8**
SKDS *i* Sg **Sn 05 06 25.9 -1.1**
SKDS Skadanscina 1.41 14 *i* Pg **Pn 05 06 07.7 -0.8**
SKDS *i* Sg **Sn 05 06 25.9 -1.1**
TRI Trieste 1.54 6 *e*Pg **Pn 05 06 09.4 -0.8**
TRI Trieste 1.54 6 *e*P **Pn 05 06 09.4 -0.8**
LNSS Leonessa 1.61 193 Pg Pn 05 06 10.8 -0.5
66nm,0.7s
LNSS Leonessa 1.61 193 Pg Pn 05 06 10.8 -0.5
66nm,0.7s
RM32 Poggio Cancell 1.61 186 Pg Pn 05 06 10.6 -0.7
36nm,0.7s
RM32 Poggio Cancell 1.61 186 Pg Pn 05 06 10.6 -0.7
36nm,0.7s
MGAB Montegabbione 1.63 220 Pg Pn 05 06 11.5 +0.1
68nm,0.4s
MGAB Montegabbione 1.63 220 Pg Pn 05 06 11.5 +0.1
68nm,0.4s
UDBI Udbina 1.64 77 *e*Pn **Pg 05 06 14.2 -0.2**
UDBI Sn **Sb 05 06 34.3 +0.5**
UDBI Udbina 1.64 77 *e*Pn **Pg 05 06 14.2 -0.2**
UDBI Sn **Sb 05 06 34.3 +0.5**
RM33 Pellescritta (1.68 188 Pg Pn 05 06 11.5 -0.7
26nm,0.6s
RM33 Pellescritta (1.68 188 Pg Pn 05 06 11.5 -0.7
26nm,0.6s
CEY Cerknica 1.69 22 *i* Pn **Pn 05 06 12.1 -0.2**
CEY *e*Sn **Sn 05 06 33.8 0.0**
comp=Z,22nm,0.2s
CEY Cerknica 1.69 22 *i* Pn **Pn 05 06 12.1 -0.2**
CEY *e*Sn **Sn 05 06 33.8 0.0**
comp=Z,22nm,0.2s
SABO M.te Sabotino 1.81 2 *e*Pg **Pn 05 06 13.3 -0.6**
SABO *e*Sg **Sn 05 06 36.7 0.0**
SABO M.te Sabotino 1.81 2 *e*Pg **Pn 05 06 13.3 -0.6**
SABO *e*Sg **Sn 05 06 36.7 0.0**
GBAS Gorenja Brezov 1.88 20 *i* Pn **Pn 05 06 15.0 +0.2**
GBAS Gorenja Brezov 1.88 20 *i* Pn **Pn 05 06 15.0 +0.2**
DRE Drenchia 2.00 2 *e*Pg **Pn 05 06 15.9 -0.7**
DRE Drenchia 2.00 2 *e*P **Pn 05 06 15.9 -0.7**
CADS Cadrg 2.06 4 *i* Pn **Pn 05 06 16.8 -0.6**
CADS Cadrg 2.06 4 *i* Pn **Pn 05 06 16.8 -0.6**
BUA Buia 2.06 352 *e*Pg **Pn 05 06 17.1 -0.3**
BUA Buia 2.06 352 *e*P **Pn 05 06 17.1 -0.3**
BAD Bernadia 2.07 354 *e*Pg **Pn 05 06 16.9 -0.7**
BAD Bernadia 2.07 354 *e*P **Pn 05 06 16.9 -0.7**
VINO Villanova 2.09 355 Pg **Pn 05 06 17.1 -0.7**
VINO Villanova 2.09 355 *e*Pg **Pn 05 06 17.0 -0.7**
VINO Villanova 2.09 355 Pg **Pn 05 06 17.1 -0.7**
CGRP Cima Grappa 2.10 325 *e*Pg **Pn 05 06 18.0 0.0**
CGRP Cima Grappa 2.10 325 *e*P **Pn 05 06 18.0 0.0**
STAL STALIGIAL 2.16 345 Pg **Pn 05 06 18.1 -0.7**
comp=Z,44nm,0.3s
STAL STALIGIAL 2.16 345 Pg **Pn 05 06 18.1 -0.7**
comp=Z,44nm,0.3s
MARN Marana (Italy) 2.20 312 *e*Pg **Pn 05 06 18.5 -0.8**
MARN Marana (Italy) 2.20 312 *e*P **Pn 05 06 18.5 -0.8**
PTCC Patocco-Chiusa 2.23 357 Pg **Pn 05 06 19.1 -0.7**
comp=Z,30nm,0.8s
PTCC Patocco-Chiusa 2.23 357 Pg **Pn 05 06 19.1 -0.7**
comp=Z,30nm,0.8s
CIMO Cimolais 2.27 341 *e*Pg **Pn 05 06 19.6 -0.6**
CIMO Cimolais 2.27 341 *e*P **Pn 05 06 19.6 -0.6**
DDS Dosso del Somm 2.38 317 *e*Pg **Pn 05 06 21.4 -0.5**
DDS Dosso del Somm 2.38 317 *e*P **Pn 05 06 21.4 -0.5**
ZOU Zoufplan 2.41 351 *e*Pg **Pn 05 06 22.0 -0.4**
PANI Panarotta 2.44 321 *e*Pg **Pn 05 06 22.1 -0.5**
OBKA Obir 2.44 17 Pn **Pn 05 06 23.0 +0.3**
comp=Z,1.0nm,0.1s
OBKA *e*Sg **Sg 05 07 02.1 +0.7**
comp=Z,40nm,0.5s
OBKA Obir 2.44 17 Pn **Pn 05 06 23.0 +0.3**
comp=Z,1.0nm,0.1s
BALD Monte Baldo 2.45 309 *e*Pg **Pn 05 06 21.9 -0.9**
BALD Monte Baldo 2.45 309 *e*P **Pn 05 06 21.9 -0.9**
MYKA Terra Mystica 2.46 2 *e*Pn **Pn 05 06 23.0 +0.2**
comp=Z,1.8nm,0.2s
MYKA Terra Mystica 2.46 2 Pn **Pn 05 06 23.0 +0.2**
comp=Z,1.8nm,0.2s
RNI Roncone 2.74 312 *e*Pg **Pn 05 06 26.4 -0.5**
RNI Roncone 2.74 312 *e*P **Pn 05 06 26.4 -0.5**
OZOL Ozolo 2.83 323 *e*Pg **Pn 05 06 27.9 -0.2**
OZOL Ozolo 2.83 323 *e*P **Pn 05 06 27.9 -0.2**
KBA Koelnbreinsper 2.91 358 *e*Pn **Pn 05 06 29.6 +0.5**
comp=Z,0.6nm,0.1s
KBA *e*Sn **Sn 05 07 02.5 -1.6**
comp=Z,3.2nm,0.3s
KBA Koelnbreinsper 2.91 358 Pn **Pn 05 06 29.6 +0.5**
comp=Z,0.6nm,0.1s
KBA Sn **Sn 05 07 02.5 -1.6**
comp=Z,3.2nm,0.3s
CARE Lago del Cares 3.01 319 *e*Pg **Pn 05 06 30.7 0.0**
CARE Lago del Cares 3.01 319 *e*P **Pn 05 06 30.7 0.0**
WTTA Wattenberg 3.36 337 *i* Pn **Pn 05 06 35.3 -0.1**
comp=Z,2.4nm,0.2s
WTTA Wattenberg 3.36 337 Pn **Pn 05 06 35.3 -0.1**
comp=Z,2.4nm,0.2s
ARSA Arzberg 3.38 24 *i* Pn **Pn 05 06 35.7 +0.2**
comp=Z,0.8nm,0.2s
ARSA Arzberg 3.38 24 Pn **Pn 05 06 35.7 +0.2**
comp=Z,0.8nm,0.2s
WATA Walderalm 3.44 337 *i* Pn **Pn 05 06 38.0 +1.5**
comp=Z,9.8nm,0.2s
WATA Walderalm 3.44 337 Pn **Pn 05 06 38.0 +1.5**
comp=Z,9.8nm,0.2s
FETA Feichten 3.46 326 *i* Pn **Pn 05 06 37.8 +1.1**
comp=Z,0.3nm,0.1s
FETA Feichten 3.46 326 Pn **Pn 05 06 37.8 +1.1**
comp=Z,0.3nm,0.1s
MOTA Moosalm 3.60 333 *e*Pn **Pn 05 06 40.0 +1.4**
comp=Z,1.4nm,0.1s
MOTA Moosalm 3.60 333 Pn **Pn 05 06 40.0 +1.4**
comp=Z,1.4nm,0.1s
MOA Molln 3.71 8 *i* Pn **Pn 05 06 40.7 +0.7**
comp=Z,0.6nm,0.1s
MOA Molln 3.71 8 Pn **Pn 05 06 40.7 +0.7**
comp=Z,0.6nm,0.1s
RETA Reutte 3.84 331 *e*Pn **Pn 05 06 43.1 +1.3**
comp=Z,2.8nm,0.2s
RETA Reutte 3.84 331 Pn **Pn 05 06 43.1 +1.3**
comp=Z,2.8nm,0.2s
DAVA Damuels 4.03 322 *e*Pn **Pn 05 06 45.5 +1.0**
comp=Z,2.4nm,0.3s
DAVA Damuels 4.03 322 Pn **Pn 05 06 45.5 +1.0**
comp=Z,2.4nm,0.3s
CONA Conrad Observa 4.09 23 *i* Pn **Pn 05 06 46.2 +0.9**
comp=Z,0.4nm,0.1s
CONA Conrad Observa 4.09 23 Pn **Pn 05 06 46.2 +0.9**
comp=Z,0.4nm,0.1s

WEL 05 05:12:33.5±0.6, 38°.16S×179°.54E, h33km, ML3.6/10, 3C, Error ellipse: s-maj=5.9km s-min=2.8km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**0.95**	**291**	⇑PN	Pn	Pn	05 12 50.2	-0.4
WMGZ				SN	Sn	Sn	05 13 03.1	+0.1
WMGZ				AML	AML	AML	05 13 04.2	
PUZ	**Puketiti**	**1.02**	**275**	⇑PN	Pn	Pn	05 12 50.7	-0.8
PUZ				SN	Sn	Sn	05 13 02.7	-2.0
PUZ				AML	AML	AML	05 13 04.3	
CNGZ	**Carnagh Statio**	**1.10**	**252**	PN	Pn	Pn	05 12 51.9	-0.7
CNGZ				AML	AML	AML	05 13 16.6	
CNGZ				AML	AML	AML	05 13 17.3	
TWGZ	**Tauwhareparae**	**1.23**	**269**	⇑PN	Pn	Pn	05 12 54.0	-0.4
TWGZ				SN	Sn	Sn	05 13 09.4	-0.5
TWGZ				AML	AML	AML	05 13 10.3	
HAZ	**Te Kaha**	**1.45**	**286**	PN	Pn	Pn	05 12 57.0	-0.4
HAZ				AML	AML	AML	05 13 18.8	
HAZ				AML	AML	AML	05 13 25.8	
RIGZ	**Rimuhau**	**1.50**	**248**	PN	Pn	Pn	05 12 57.8	-0.3
RIGZ				AML	AML	AML	05 13 16.6	
RIGZ				AML	AML	AML	05 13 17.6	
MWZ	**Matawai**	**1.59**	**263**	PN	Pn	Pn	05 12 58.7	-0.8
MWZ				AML	AML	AML	05 13 22.7	
MWZ				AML	AML	AML	05 13 24.1	
URZ	**Urewera**	**1.92**	**266**	PN	Pn	Pn	05 13 04.2	+0.4
URZ				AML	AML	AML	05 13 35.8	
URZ				AML	AML	AML	05 13 40.7	
WHHZ	**Waihua**	**2.02**	**242**	AML	AML	AML	05 13 33.1	
WHHZ				AML	AML	AML	05 13 38.8	
RTZ	**Ruatahuna**	**2.06**	**256**	PN	Pn	Pn	05 13 06.2	+0.3
MCHZ	**McNeill Hill**	**2.56**	**239**	PN	Pn	Pn	05 13 12.6	-0.1
MCHZ				AML	AML	AML	05 13 51.3	
BKZ	**Black Stump Fm**	**2.59**	**246**	PN	Pn	Pn	05 13 12.6	-0.5
BHHZ	**Black Hill Sta**	**3.02**	**243**	PN	Pn	Pn	05 13 18.4	-0.7
TSZ	**Takapari Road**	**3.37**	**235**	PN	Pn	Pn	05 13 22.0	-1.8

WEL 05 05:21:44.7±0.5, 38°.17S×179°.54E, h33km, ML3.9/21, 3C, Error ellipse: s-maj=5.1km s-min=2.1km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**0.95**	**291**	⇑PN	Pn	Pn	05 22 01.4	-0.4
WMGZ				SN	Sn	Sn	05 22 14.3	+0.1
WMGZ				AML	AML	AML	05 22 15.5	
PUZ	**Puketiti**	**1.01**	**275**	PN	Pn	Pn	05 22 01.5	-1.2
PUZ				AML	AML	AML	05 22 15.3	
PUZ				AML	AML	AML	05 22 15.5	
CNGZ	**Carnagh Statio**	**1.09**	**253**	PN	Pn	Pn	05 22 03.2	-0.5
CNGZ				AML	AML	AML	05 22 34.3	
CNGZ				AML	AML	AML	05 22 38.3	
TWGZ	**Tauwhareparae**	**1.23**	**269**	⇑PN	Pn	Pn	05 22 05.2	-0.4
TWGZ				SN	Sn	Sn	05 22 20.3	-0.7
TWGZ				AML	AML	AML	05 22 21.2	
TKGZ	**Te Karaka**	**1.35**	**258**	PN	Pn	Pn	05 22 06.6	-0.7
TKGZ				AML	AML	AML	05 22 27.6	
TKGZ				AML	AML	AML	05 22 28.7	
HAZ	**Te Kaha**	**1.45**	**286**	⇑PN	Pn	Pn	05 22 08.1	-0.5
HAZ				AML	AML	AML	05 22 08.7	
HAZ				AML	AML	AML	05 22 27.1	
HAZ				AML	AML	AML	05 22 27.1	
HAZ				AML	AML	AML	05 22 31.6	
RIGZ	**Rimuhau**	**1.49**	**249**	PN	Pn	Pn	05 22 08.8	-0.4
RIGZ				AML	AML	AML	05 22 27.8	
RIGZ				AML	AML	AML	05 22 28.6	
MWZ	**Matawai**	**1.59**	**264**	PN	Pn	Pn	05 22 09.7	-0.9
MWZ				SN	Sn	Sn	05 22 28.3	-1.7
MWZ				AML	AML	AML	05 22 32.3	
MWZ				AML	AML	AML	05 22 33.9	
MWZ				AML	AML	AML	05 22 35.3	
MHGZ	**Mahia Peninsul**	**1.61**	**232**	*e*PN	Pn	Pn	05 22 10.6	-0.2
MHGZ				AML	AML	AML	05 22 31.4	
MHGZ				AML	AML	AML	05 22 34.0	
RAGZ	**Rawiri**	**1.70**	**258**	PN	Pn	Pn	05 22 12.5	+0.3
RAGZ				AML	AML	AML	05 22 39.0	
RAGZ				AML	AML	AML	05 22 39.8	
URZ	**Urewera**	**1.91**	**267**	PN	Pn	Pn	05 22 15.2	+0.2
URZ				AML	AML	AML	05 22 40.1	
URZ				AML	AML	AML	05 22 47.8	
WHHZ	**Waihua**	**2.02**	**243**	PN	Pn	Pn	05 22 16.4	0.0
WHHZ				AML	AML	AML	05 22 41.6	
WHHZ				AML	AML	AML	05 22 49.7	
RTZ	**Ruatahuna**	**2.06**	**257**	PN	Pn	Pn	05 22 17.3	+0.2
ARHZ	**Aropaoanui**	**2.27**	**241**	PN	Pn	Pn	05 22 20.2	+0.4
ARHZ				AML	AML	AML	05 22 50.9	
ARHZ				AML	AML	AML	05 23 07.6	
NMHZ	**Naumai**	**2.33**	**246**	PN	Pn	Pn	05 22 20.8	0.0
NMHZ				AML	AML	AML	05 22 48.5	
NMHZ				AML	AML	AML	05 23 01.5	
MCHZ	**McNeill Hill**	**2.56**	**239**	PN	Pn	Pn	05 22 23.8	-0.1
MCHZ				AML	AML	AML	05 22 58.8	
MCHZ				AML	AML	AML	05 23 40.2	
BKZ	**Black Stump Fm**	**2.58**	**246**	PN	Pn	Pn	05 22 23.8	-0.4
BKZ				SN	Sn	Sn	05 22 52.2	-2.3
BKZ				AML	AML	AML	05 23 21.6	
KRHZ	**Kereru**	**2.87**	**238**	PN	Pn	Pn	05 22 27.2	-1.0
KRHZ				AML	AML	AML	05 23 01.6	
KRHZ				AML	AML	AML	05 23 08.6	
BHHZ	**Black Hill Sta**	**3.02**	**243**	PN	Pn	Pn	05 22 29.6	-0.6
BHHZ				SN	Sn	Sn	05 23 03.1	-2.1
BHHZ				AML	AML	AML	05 23 04.9	
PNHZ	**Pukenui**	**3.13**	**235**	PN	Pn	Pn	05 22 30.2	-1.5
PNHZ				AML	AML	AML	05 23 12.5	
MOVZ	**Moawhango**	**3.20**	**246**	PN	Pn	Pn	05 22 32.4	-0.4
WNVZ	**Wahianoa**	**3.29**	**248**	PN	Pn	Pn	05 22 33.4	-0.6
TSZ	**Takapari Road**	**3.36**	**235**	PN	Pn	Pn	05 22 33.2	-1.7
MRZ	**Mangatainoka R**	**3.95**	**230**	PN	Pn	Pn	05 22 40.5	-2.4
MRZ				SN	Sn	Sn	05 23 23.8	-4.3
MRZ				AML	AML	AML	05 23 25.9	
TMWZ	**Te Maipa**	**4.06**	**223**	AML	AML	AML	05 23 28.8	

ATH ***05*** *05:22:35.2, 35°.68N×28°.38E, h20km±6km, ML2.4/1, Error ellipse: s-maj=6.7km s-min=1.2km az=348.0*
CSEM ***05*** *05:22:35.5±0.4, 35°.71N×28°.36E, h10km, ML2.4, Error ellipse: s-maj=11.5km s-min=5.8km az=162.0*
DDA ***05*** *05:22:36.4, 35°.99N×28°.28E, h7km, Md2.9*
ISCJB ***05*** *05:22:37.6±0.8, 35°.85N±0°.06×28°.28E±0°.05, h46km±13km, Error ellipse: s-maj=10.8km s-min=6.2km az=160.6*

ISC 05 05:22:37.0±1.2, 35°.83N±0°.05×28°.32E±0°.04, h29km±12km, n13, σ0s87/24, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ARG	**Arkhangelos**	**0.41**	**338**	P	P	**Pb**	**05 22 46.6**	**+0.6**
ARG				S	S	**Sn**	**05 22 54.9**	**+1.1**
KARP	**Karpathos**	**0.98**	**253**	P	P	**Pn**	**05 22 54.4**	**-0.6**
KARP				S	S	**Sb**	**05 23 07.8**	**-0.3**
KARP	**Karpathos**	**0.98**	**253**	P	P	**Pn**	**05 22 54.4**	**-0.6**
KARP				S	S	**Sb**	**05 23 07.8**	**-0.3**
KARP				AML	AML		05 23 10.1	
KARP	comp=N,699µm,0.3s			AML	AML		05 23 10.3	
	comp=E,666µm,0.3s							
TURN	**Turunc**	**1.06**	**12** *i*	P	**Pn**		**05 22 55.6**	**-0.4**
TURN				*i* S	**Sn**		**05 23 09.5**	**-0.3**
KSL	**Kastellorizon**	**1.07**	**73**	P	**Pb**		**05 22 56.2**	**-0.8**
KSL				S	**Sn**		**05 23 10.2**	**+0.1**
AKAS	**Kas**	**1.12**	**69** *i*	P	**Pb**		**05 22 57.0**	**-0.8**
AKAS				*i* S	**Sn**		**05 23 12.9**	**+1.5**
AKAS	**Kas**	**1.12**	**69**	P	**Pb**		**05 22 57.0**	**-0.8**
AKAS				S	**Sn**		**05 23 12.9**	**+1.5**
BDRM	**Kayabasi**	**1.42**	**330** *i*	P	**Pn**		**05 23 01.1**	**+0.2**
BDRM				*i* S	**Sn**		**05 23 18.0**	**-0.6**
BDRM	**Kayabasi**	**1.42**	**330**	P	**Pn**		**05 23 01.1**	**+0.2**
BDRM				S	**Sn**		**05 23 18.0**	**-0.6**
GOLH	**Golhisar**	**1.72**	**35** *i*	P	**Pb**		**05 23 07.0**	**-1.0**
GOLH				*i* S	**Sb**		**05 23 29.9**	**+0.6**
GOLH	**Golhisar**	**1.72**	**35**	P	**Pb**		**05 23 07.0**	**-1.0**
GOLH				S	**Sb**		**05 23 29.9**	**+0.6**
ZKR	**Zakros**	**1.86**	**248**	P	**Pn**		**05 23 08.0**	**+1.0**
ZKR	**Zakros**	**1.86**	**248**	P	**Pn**		**05 23 08.0**	**+1.0**

JMA 05 05:32:03.1±0.1, 41°.68N×138°.87E, h31km±1km, M3.5, 1C-2D, Eastern Sea of Japan

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JOSM	**Okushiri--Mats**	**0.60**	**48**	⇑P	P	Pb	05 32 14.9	-0.4
JOSM				*e*S	S	Sb	05 32 22.9	-0.7
JSR	**Shiriuchi**	**1.17**	**97**	P	P	Pn	05 32 24.0	+0.7
JYM2	**Yakumo 2**	**1.20**	**68**	P	P	Pn	05 32 24.1	+0.3
JSH	**Shimam**	**1.30**	**42**	*e*S	S	Sn	05 32 40.9	-0.5
JIW	**Iwasaki**	**1.39**	**141**	P	P	Pn	05 32 26.3	0.0
JIW				*e*S	S	Sn	05 32 43.2	-0.3
JKB	**Kayabe**	**1.63**	**82**	P	P	Pn	05 32 30.6	+1.0
JOT	**Ohata**	**1.66**	**100**	⇓P	P	Pn	05 32 30.7	+0.6
JOT				*e*S	S	Sn	05 32 50.9	+0.6
JNB	**Noboribetsu**	**1.80**	**63**	P	P	Pn	05 32 32.8	+0.9
JTM	**Tenmabayashi**	**1.88**	**118**	P	P	Pn	05 32 34.0	+0.9
JTM				*e*S	S	Sn	05 32 56.7	+0.9
JAH	**Hinai**	**2.00**	**137**	⇓P	P	Pn	05 32 35.6	+0.8
JAH				*e*S	S	Sn	05 33 00.3	+1.6
JSK	**Shakotan**	**2.05**	**35**	P	P	Pn	05 32 36.0	+0.6

IDC ***05*** *05:38:24.0±11.0, 6°.86S×129°.62E, h106km±126km, mb3.7/5, mb1 3.9/8, mb1mx3.6/29, mbtmp4.1/8, ML4.1/3, Error ellipse: s-maj=75.6km s-min=38.1km az=20.0*
ISCJB ***05*** *05:38:25.1±0.8, 6°.94S±0°.08×129°.6E±0°.2, h139km, mb3.8/5, Error ellipse: s-maj=31.1km s-min=8.2km az=163.7*

ISC 05 05:38:26.1±0.9, 7°.09S±0°.09×129°.7E±0°.2, h139km, n8, σ1s79/10, mb3.8/5, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.65**	**200**	P	P	**Pn**	**05 41 08.2**	**-0.1**
	0.6nm,0.3s,baz=12,slow=9.5,SNR=27							
FITZ				S	S	Sn	05 43 06.0	-11
	1.5nm,0.3s,baz=68,slow=13,SNR=4.8							
WRA	**Warramunga Arr**	**13.54**	**161**	P	P	**P**	**05 41 35.4**	**-1.6**
	0.5nm,0.3s,baz=343,slow=13,SNR=24							
WRA				S	S	**Sn**	**05 44 01.6**	**-0.9**
	2.1nm,0.3s,baz=338,slow=22,SNR=9.5							
ASAR	**Alice Springs**	**16.97**	**167**	P	P	**Pn**	**05 42 19.4**	**+4.0**
	3.8nm,0.3s,baz=342,slow=9.9,SNR=212							
ASAR				S	S		**05 45 24.1**	**-0.7**
	0.6nm,0.3s,baz=346,slow=26,SNR=6.6							
CMAR	**Chiang Mai Arr**	**39.58**	**310**	P	P	**P**	**05 45 43.7**	**-0.4**
	0.5nm,0.3s,baz=137,slow=13,SNR=4.8							
SONM	**Songino Array**	**58.44**	**342**	P	P	**P**	**05 48 08.5**	**+1.1**
	0.4nm,0.4s,baz=165,slow=6.0,SNR=3.2							
PETK	**Petropavlovsk-**	**64.49**	**18**	P	P	**P**	**05 48 47.6**	**-0.2**
	1.0nm,0.6s,baz=198,slow=13,SNR=2.4							
MKAR	**Makanchi Array**	**68.15**	**327**	P	P	**P**	**05 49 10.6**	**-0.7**
	0.6nm,0.5s,baz=129,slow=7.6,SNR=5.4							
ZALV	**Zalesovo Beam**	**71.54**	**334**	P	P	**P**	**05 49 31.0**	**-0.7**
	1.6nm,0.3s,baz=122,slow=7.0,SNR=2.2							

IDC 05 06:05:55.1±6.3, 0°.84S×140°.32E, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.4/25, mbtmp3.5/3, ML3.5/1, Error ellipse: s-maj=251.1km s-min=31.9km az=86.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.87**	**197**	P	P	P	06 10 27.6	-0.5
	0.2nm,0.3s,baz=19,slow=12,SNR=12							
ASAR	**Alice Springs**	**23.53**	**195**	P	P		06 11 07.5	+0.3
	1.0nm,0.7s,baz=20,slow=10.0,SNR=10							
MKAR	**Makanchi Array**	**69.32**	**321**	P	P		06 17 04.5	0.0
	0.2nm,0.6s,baz=116,slow=6.6,SNR=2.6							

IDC ***05*** *06:38:57.7±0.6, 38°.23N×144°.45E, h0km, mb4.4/30, mb1 4.5/38, mb1mx4.4/51, mbtmp4.4/38, ML3.6/7, MS3.7/28, Ms1 3.7/28, ms1mx3.5/39, Error ellipse: s-maj=16.0km s-min=12.5km az=123.0*
NIED ***05*** *06:39:00, 38°.30N×144°.10E, h5km, Mw4.6 Best double couple: M0 9.20000×10^15 NP1: φ=24.00000°, δ26.00000°, λ-79.00000°. NP2: φ=193.00000°, δ64.00000°, λ-95.00000°.*
ISCJB ***05*** *06:39:00.8±0.9, 38°.43N±0°.03×144°.21E±0°.02, h18km±5km, mb4.6/152, MS4.0/39, Error ellipse: s-maj=4.7km s-min=2.9km az=171.3*
JMA ***05*** *06:39:02.6±0.2, 38°.32N×144°.10E, h35km, M4.6*
MOS ***05*** *06:39:

ellipse: s-maj=4.6km s-min=2.7km az=162.0
BJI ***05*** *06:39:05.0,38°.55N×144°.15E,h48km,mb4.7/56,mB4.9/44, Ms4.4/51,Ms7.4.2/50*
ISC 05 06:39:03.3±0.5,**38°34N**±0'.04×**144°33E**±0'.04,**h31**km,2km, **h31**km**:pP-P,n342,**σ1§**82**/394,**mb4.7**/152,**MS4.0**/40,**6C-7D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.21**	**290**	P		**Pn**	**06 39 36.1**	**-1.7**
OFUJ				*e*S		**Sn**	**06 40 01.0**	**-3.1**
MIYJ	**Miyakonagasawa**	**2.32**	**303**	P		**Pn**	**06 39 37.9**	**-1.3**
MIYJ				*e*S		**Sn**	**06 40 03.1**	**-3.6**
JIO	**Ouri**	**2.35**	**274**	P		**Pn**	**06 39 37.8**	**-1.9**
JIO				S		**Sn**	**06 40 03.8**	**-3.6**
JMK	**Ichinoseki**	**2.51**	**285**	P		**Pn**	**06 39 40.5**	**-1.4**
JMK				*e*S		**Sn**	**06 40 08.4**	**-3.1**
JOM	**Ohasama**	**2.63**	**296**	P		**Pn**	**06 39 42.4**	**-1.1**
JOM				S		**Sn**	**06 40 12.0**	**-2.4**
JANG	**Nango**	**2.98**	**314**	P		**Pn**	**06 39 47.4**	**-1.0**
JANG				*e*S		**Sn**	**06 40 19.9**	**-3.2**
JYK	**Kaneyama**	**3.17**	**282**	P		**Pn**	**06 39 49.7**	**-1.2**
JYK				*e*S		**Sn**	**06 40 26.0**	**-1.6**
JFT	**Otama**	**3.27**	**257**	P		**Pn**	**06 39 51.5**	**-0.8**
JFT				*e*S		**Sn**	**06 40 26.9**	**-3.2**
ERM	**Erimo**	**3.78**	**347**	*d* *i* P		**Pn**	**06 39 59.3**	**0.0**
ERM	**Erimo**	**3.78**	**347**	*e*Pn		**Pn**	**06 39 59.0**	**-0.3**
JOT	**Ohata**	**3.95**	**321**	P		**Pn**	**06 40 02.0**	**+0.3**
JOT				*e*S		**Sn**	**06 40 42.9**	**-4.1**
JAW	**Awa shima**	**4.00**	**273**	P		**Pn**	**06 40 01.6**	**-0.7**
JCH	**Churui**	**4.33**	**350**	P		**Pn**	**06 40 05.0**	**-1.9**
JCH				*e*S		**Sn**	**06 40 51.7**	**-4.7**
JKB	**Kayabe**	**4.35**	**325**	P		**Pn**	**06 40 08.0**	**+0.8**
JKB				*e*S		**Sn**	**06 40 53.5**	**-3.4**
JRY	**Ryogami san**	**4.92**	**244**	P		**Pn**	**06 40 13.0**	**-2.1**
JRY				*e*S		**Sn**	**06 41 05.1**	**-5.8**
NEM2	**Nemuro 2**	**5.13**	**12**	P		**Pn**	**06 40 14.1**	**-3.8**
NEM2				*e*S		**Sn**	**06 41 09.6**	**-6.4**
MJAR	**Matsushiro Arr**	**5.19**	**252**	Pn		**Pn**	**06 40 18.4**	**-0.4**
	8.4nm,0.3s,baz=70,slow=11,SNR=46							
MJAR				Sn		**Sn**	**06 41 16.9**	**-0.8**
	7.0nm,0.3s,baz=92,slow=24,SNR=8.0							
MJAR				LR		LR	06 42 37.3	
	comp=Z,635nm,21.4s,baz=85,slow=42							
MAJO	**Matsushiro**	**5.20**	**252**	*e*P		**Pn**	**06 40 18.7**	**-0.1**
MAJO	**Matsushiro**	**5.20**	**252**	*e*Pn		**Pn**	**06 40 18.7**	**-0.1**
MAT	**Matsushiro**	**5.20**	**252**	P		**Pn**	**06 40 18.5**	**-0.4**
MAT				S		**Sn**	**06 41 15.7**	**-2.0**
MJB9	**Matsu-Tunnel**	**5.20**	**252**	*e*Pn		**Pn**	**06 40 19.0**	**+0.1**
JOD2	**Odawara 2**	**5.21**	**235**	P		**Pn**	**06 40 16.7**	**-2.4**
JOD2				*e*S		**Sn**	**06 41 13.0**	**-5.1**
JOSM	**Okushiri--Mats**	**5.27**	**317**	P		**Pn**	**06 40 20.2**	**+0.4**
JTKR	**Abashiri--Toko**	**5.63**	**357**	P		**Pn**	**06 40 22.8**	**-2.0**
JTKR				S		**Sn**	**06 41 23.6**	**-4.8**
JHR	**Hokuryu**	**5.75**	**341**	P		**Pn**	**06 40 26.3**	**-0.1**
JHR				*e*S		**Sn**	**06 41 29.6**	**-1.6**
ASAJ	**Asahikawa**	**5.92**	**348**	Pn		**Pn**	**06 40 27.3**	**-1.4**
	baz=181,slow=13							
ASAJ	**Asahikawa**	**5.92**	**348**	*e*Pn		**Pn**	**06 40 31.4**	**+2.7**
JHJ	**Hachijo jima 2**	**6.39**	**217**	Pn		**Pn**	**06 40 31.4**	**-3.8**
	21nm,0.3s,baz=38,slow=19,SNR=4.7							
JHJ				Sn		**Sn**	**06 41 39.5**	**-7.7**
	44nm,0.3s,baz=233,slow=20,SNR=4.7							
INU	**Inuyama**	**6.58**	**245**	*e*Pn		**Pn**	**06 40 39.4**	**+1.5**
KUR	**Kuril'sk**	**7.37**	**20⇑**	*i* P		**Pn**	**06 40 45.3**	**-3.4**
KUR				*e*S		**Sn**	**06 42 04.9**	**-6.3**
KUR				pmax	pmax			
	comp=Z,31nm,0.5s							
KUR				smax	smax			
	comp=N,35nm,0.6s							
KUR				smax	smax			
	comp=E,63nm,0.6s							
VLA	**Vladivostok**	**10.58**	**301⇑**	*i* P		**Pn**	**06 41 33.8**	**+1.1**
VLA				*i* S		**Sn**	**06 43 33.9**	**+3.9**
VLA				pmax	pmax			
	comp=Z,74nm,1.0s							
USRK	**Ussuriysk Ar.**	**10.98**	**306**	Pn		**Pn**	**06 41 38.3**	**+0.2**
	comp=Z,0.7nm,0.3s,baz=125,slow=14,SNR=14							
USRK				LR		LR	06 45 38.2	
	comp=Z,503nm,19.5s,baz=118,slow=36							
JNU	**Nakatsue**	**12.11**	**249**	Pn		**Pn**	**06 41 53.3**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=45,slow=14,SNR=3.5							
JNU				LR		LR	06 46 48.0	
	comp=Z,588nm,19.5s,baz=116,slow=39							
JNU	**Nakatsue**	**12.11**	**249**	Pn		**Pn**	**06 41 53.3**	**-0.4**
JNU				*e*Pn		P	06 42 00.4	-5.6
MDJ	**Mudanjiang**	**12.70**	**304**	P		**Pn**	**06 42 01.8**	**+0.2**
MDJ				S		**Sn**	**06 44 15.8**	**-6.1**
MDJ				pmax	pmax			
	comp=Z,25nm,1.3s							
MDJ				LR	LR			
	comp=Z,360nm,14.0s							
MDJ				LR	LR			
	comp=Z,550nm,14.6s							
MDJ				LR	LR			
	comp=Z,890nm,15.6s							
MDJ	**Mudanjiang**	**12.70**	**304**	*e*Pn		**Pn**	**06 42 02.0**	**+0.3**
	comp=Z,92nm,1.1s							
KSRS	**Korea Array**	**13.00**	**271**	Pn		**Pn**	**06 42 05.9**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=91,slow=13,SNR=12							
KSRS				LR		LR	06 46 38.0	
	comp=Z,491nm,20.4s,baz=64,slow=35							
KS01	**Wonju Array Si**	**13.02**	**271**	*e*Pn		**Pn**	**06 42 09.3**	**+3.4**
KSAR	**Wonju Array Be**	**13.03**	**271**	P		**Pn**	**06 42 05.9**	**-0.2**
KSAR	**Wonju Array Be**	**13.03**	**271**	Pn		**Pn**	**06 42 05.9**	**-0.2**
KLR	**Kul'dur**	**14.16**	**324**	Pn		**Pn**	**06 42 19.3**	**-2.2**
	comp=Z,0.2nm,0.3s,baz=129,slow=12,SNR=9.3							
KLR				LR		LR	06 47 46.8	
	comp=Z,237nm,21.7s,baz=121,slow=37							
CN2	**Changchun**	**15.24**	**297⇑**	P		**Pn**	**06 42 38.0**	**+1.9**
CN2				*e*sP		sP	06 42 53.2	+0.2
CN2				*e*S		**Sn**	**06 45 25.4**	**+1.5**
CN2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
CN2				LR	LR			
	comp=Z,200nm,12.0s							
CN2				LR	LR			
	comp=Z,300nm,12.0s							
CN2				LR	LR			
	comp=Z,300nm,13.0s							
SNY	**Shenyang**	**16.26**	**289**	⇓P		**Pn**	**06 42 48.0**	**-1.2**
SNY				pmax	pmax			
	comp=Z,170nm,6.8s							
SNY				LR	LR			
	comp=Z,290nm,13.9s							
SNY				LR	LR			
	comp=Z,520nm,19.6s							
SNY				LR	LR			
	comp=Z,680nm,20.6s							
PEA0	**Petropavlovsk-**	**17.42**	**28**	*e*sP		sP	06 43 27.0	+10
PETK	**Petropavlovsk-**	**17.42**	**28**	P		**Pn**	**06 43 01.0**	**-2.8**
	comp=Z,0.5nm,0.3s,baz=228,slow=3.7,SNR=3.4							
PETK				LR		LR	06 50 26.4	
	comp=Z,41nm,19.4s,baz=210,slow=39							
DL2	**Dalian**	**17.75**	**279**	P		**Pn**	**06 43 05.7**	**-2.2**
DL2				*e*S		**Sn**	**06 46 17.3**	**-7.4**
DL2				pmax	pmax			
	comp=Z,36nm,0.9s							
DL2				pmax	pmax			
	comp=Z,170nm,6.3s							
DL2				LR	LR			
	comp=Z,550nm,13.1s							
DL2				LR	LR			
	comp=Z,640nm,16.5s							
DL2				LR	LR			
	comp=Z,840nm,15.1s							
MA2	**Magadan**	**21.65**	**9**	P		**P**	**06 43 50.1**	**-0.7**
	comp=Z,8.0nm,0.6s,baz=194,slow=11,SNR=7.7							
MA2				LR		LR	06 52 36.9	
	comp=Z,46nm,20.2s,baz=166,slow=38							
MA2	**Magadan**	**21.65**	**9**	*i* P		**P**	**06 43 51.8**	**+1.0**
TIA	**Tai'an**	**21.73**	**273**	*e*P		**P**	**06 43 53.3**	**+1.4**
TIA				S		**S**	**06 47 45.7**	**-5.0**
TIA				pmax	pmax			
	comp=Z,30nm,1.0s							
TIA				pmax	pmax			
	comp=Z,270nm,6.3s							
TIA				LR	LR			
	comp=Z,410nm,13.1s							
TIA				LR	LR			
	comp=Z,360nm,11.5s							
TIA				LR	LR			
	comp=Z,350nm,13.3s							
BJI	**Beijing**	**21.86**	**283**	P		**P**	**06 43 54.2**	**+1.0**
BJI				S		**S**	**06 47 53.2**	**+0.1**
BJI				pmax	pmax			
	comp=Z,11nm,1.2s							
BJI				pmax	pmax			
	comp=Z,96nm,4.8s							
BJI				LR	LR			
	comp=Z,220nm,13.8s							
BJI				LR	LR			
	comp=Z,660nm,15.3s							
BJI				LR	LR			
	comp=Z,320nm,15.3s							
GUMO	**Guam**	**24.66**	**179**	LR		LR	06 52 14.9	
	comp=Z,54nm,18.6s,baz=0.0,slow=32							
SMY	**Shemya**	**25.11**	**45**	*e*P		**P**	**06 44 26.6**	**+1.6**
SMY				pmax	pmax			
	comp=Z,53nm,1.2s							
SMY	**Shemya**	**25.11**	**45**	*e*P		**P**	**06 44 26.6**	**+1.6**
	comp=Z,53nm,1.2s							
SEY	**Seymchan**	**25.11**	**9**	P		**P**	**06 44 26.1**	**+1.2**
	comp=Z,11nm,0.7s,baz=177,slow=4.7,SNR=17							
HHC	**Hu-ho-hao-te**	**25.30**	**286**	*e*P		**P**	**06 44 28.0**	**+1.0**
HHC				sP		sP	06 44 45.9	+6.1
HHC				S		**S**	**06 48 46.1**	**-4.9**
HHC				sS		sS	06 49 07.0	+1.1
HHC				pmax	pmax			
	comp=Z,25nm,1.1s							
HHC				pmax	pmax			
	comp=Z,140nm,6.2s							
HHC				LR	LR			
	comp=Z,330nm,13.6s							
HHC				LR	LR			
	comp=Z,630nm,13.6s							
HHC				LR	LR			
	comp=Z,730nm,13.6s							
YAK	**Yakutsk**	**25.38**	**344**	P		**P**	**06 44 27.3**	**0.0**
	comp=Z,19nm,0.4s,baz=195,slow=4.1,SNR=5.2							
YAK				LR		LR	06 55 04.6	
	comp=Z,98nm,18.5s,baz=152,slow=38							
YAK	**Yakutsk**	**25.38**	**344**	*e*P		**P**	**06 44 27.6**	**+0.2**
YAK				*e*PP		**sP**	**06 44 40.0**	**-0.2**
YAK				*e*			06 45 03.5	
YAK				*e*			06 48 05.4	
YAK				*e*S		**S**	**06 48 51.8**	**+0.1**
YAK				*e*SS		**SnSn**	**06 49 48.6**	**+3.8**
YAK				*e*			06 55 17.8	
YAK				pmax	pmax			
	comp=Z,45nm,1.2s							
YAK				pmax	pmax			
	comp=E,10.0nm,1.6s							
YAK				pmax	pmax			
	comp=N,29nm,1.4s							
YAK				pmax	pmax			
	comp=Z,20nm,1.0s							
YAK				pmax	pmax			
	comp=N,13nm,1.2s							
YAK				pmax	pmax			
	comp=E,42nm,1.9s							
YAK				smax	smax			
	comp=N,171nm,3.5s							
YAK				smax	smax			
	comp=E,166nm,3.6s							
YAK				MLR	MLR			
	comp=Z,196nm,15.0s							
YAK				MLR	MLR			
	comp=N,136nm,16.0s							
YAK				MLR	MLR			
	comp=E,158nm,14.0s							
WHN	**Wuhan**	**25.84**	**262**	P		**P**	**06 44 30.9**	**-1.0**
WHN				LR	LR			
	comp=E,1μm,20.1s							
WHN				LR	LR			
	comp=E,730nm,10.0s							
WHN				LR	LR			
	comp=E,1μm,14.1s							
H11N2	**WAKE ISLAND Hy**	**26.95**	**127**	T		T	07 12 42.6	
	baz=318,slow=74,SNR=28							
H11N1	**WAKE ISLAND Hy**	**26.96**	**127**	T		T	07 12 43.1	
	baz=318,slow=74,SNR=3.7							
H11N3	**WAKE ISLAND Hy**	**26.97**	**127**	T		T	07 12 45.4	
	baz=318,slow=74,SNR=16							
BOD	**Bodaibo**	**27.74**	**325**	*e*P		**P**	**06 44 47.9**	**-0.8**
BOD				pmax	pmax			
	comp=Z,15nm,1.4s							
XAN	**Xi'an**	**28.79**	**272**	P		**P**	**06 45 02.0**	**+3.6**
XAN				pP		sP	06 45 13.8	+2.6
XAN				sP		pP	06 45 19.4	+12
XAN				S		**S**	**06 49 51.9**	**+5.8**
XAN				pmax	pmax			
	comp=Z,48nm,1.1s							
XAN				pmax	pmax			
	comp=Z,140nm,4.7s							
XAN				LR	LR			
	comp=Z,170nm,13.0s							
XAN				LR	LR			
	comp=Z,210nm,13.7s							
XAN				LR	LR			
	comp=Z,210nm,13.3s							
SONA1	**Songino Array**	**29.03**	**301**	*e*P		**P**	**06 45 01.3**	**+0.8**
SONM	**Songino Array**	**29.03**	**301**	P		**P**	**06 45 00.8**	**+0.2**
	comp=Z,1.5nm,0.8s,baz=72,slow=9.5,SNR=9.7							
SONM				LR		LR	06 56 59.6	
	comp=Z,216nm,19.5s,baz=90,slow=37							
ENH	**Enshi**	**29.75**	**265**	*e*P		**P**	**06 45 07.0**	**+0.1**
	comp=Z,27nm,0.8s							
TLY	**Talaya**	**31.28**	**309**	*e*P		P	06 45 26.1	+5.9
TLY				*e*S		**S**	**06 50 24.6**	**-0.2**
TLY				pmax	pmax			
	comp=Z,6.0nm,0.6s							
TLY				MLR	MLR			
	comp=Z,316nm,15.0s							
ZAK	**Zakamensk**	**31.33**	**306**	*e*P		**P**	**06 45 22.7**	**+2.0**
ZAK				pmax	pmax			
	comp=Z,4.0nm,1.3s							
BILL	**Bilibino**	**32.14**	**15**	*i* P		**P**	**06 45 27.1**	**-0.4**
BILL				pmax	pmax			
	comp=Z,12nm,1.2s							
LZH	**Lanzhou**	**32.15**	**279**	*e*P		**P**	**06 45 29.6**	**+1.4**
LZH				pP		sP	06 45 39.3	-1.7
LZH				sP		pP	06 45 45.0	+7.8
LZH				S		**S**	**06 50 35.4**	**-3.5**
LZH				sS		sS	06 50 54.5	+0.6
LZH				pmax	pmax			
	comp=Z,21nm,1.0s							
LZH				pmax	pmax			
	comp=Z,140nm,4.2s							
LZH				LR	LR			
	comp=Z,640nm,15.5s							
LZH				LR	LR			
	comp=Z,550nm,15.2s							
LZH				LR	LR			
	comp=Z,770nm,16.3s							
GYA	**Guiyang**	**33.72**	**261⇑**	*i* P		**P**	**06 45 41.5**	**-0.5**
GYA				pP		sP	06 45 55.8	+1.0
GYA				PP		**PP**	**06 46 58.0**	**-0.5**
GYA				S		**S**	**06 51 03.2**	**-0.2**
GYA				sS		sS	06 51 24.6	+6.1
GYA				SS		**SnSn**	**06 53 09.8**	**+0.9**
GYA				pmax	pmax			
	comp=Z,20nm,0.8s							
GYA				pmax	pmax			
	comp=Z,120nm,4.9s							
GYA				LR	LR			
	comp=Z,410nm,17.3s							
GYA				LR	LR			
	comp=Z,360nm,18.0s							
GYA				LR	LR			
	comp=Z,350nm,17.8s							
CD2	**Chengdu**	**33.99**	**270**	*e*P		**P**	**06 45 43.6**	**-0.6**
CD2				pP		sP	06 45 55.7	-1.4
CD2				sP		pP	06 46 01.3	+8.0
CD2				PP		**PP**	**06 47 01.0**	**-0.4**
CD2				S		**S**	**06 51 05.7**	**-1.7**
CD2				sS		sS	06 51 26.5	+4.1
CD2				pmax	pmax			
	comp=Z,10.0nm,0.5s							
CD2				pmax	pmax			
	comp=Z,120nm,5.2s							
TIXI	**Tiksi**	**34.31**	**351**	*de*P		**P**	**06 45 46.1**	**-0.3**
TIXI				pmax	pmax			
	comp=Z,5.0nm,0.4s							
GTA	**Gaotai**	**34.41**	**286**	*e*P		**P**	**06 45 48.9**	**+1.0**
GTA				pP		sP	06 46 01.2	+0.4
GTA				sP		pP	06 46 06.6	+10
GTA				S		**S**	**06 51 10.1**	**-3.8**
GTA				sS		sS	06 51 32.2	+3.2
GTA				pmax	pmax			
	comp=Z,5.0nm,1.3s							
GTA				pmax	pmax			
	comp=Z,58nm,8.1s							
GTA				LR	LR			
	comp=Z,210nm,16.2s							
GTA				LR	LR			
	comp=Z,260nm,21.4s							
GTA				LR	LR			
	comp=Z,370nm,20.2s							
QIZ	**Qiongzhong**	**35.57**	**247**	P		**P**	**06 45 59.2**	**+1.3**
QIZ				pP		**sP**	**06 46 10.3**	**-0.5**
QIZ				S		**S**	**06 51 32.0**	**+0.1**
QIZ				sS		**sS**	**06 51 52.5**	**+5.6**
QIZ				pmax	pmax			
	comp=Z,8.0nm,1.3s							
QIZ				LR	LR			
	comp=Z,160nm,21.2s							
QIZ				LR	LR			
	comp=Z,150nm,22.7s							
QIZ				LR	LR			
	comp=Z,260nm,15.5s							
KMI	**Kunming**	**37.45**	**262**	P		**P**	**06 46 14.6**	**+0.5**
KMI				pP		sP	06 46 27.9	+0.9
KMI				sP		pP	06 46 33.2	+10
KMI				S		**S**	**06 52 03.0**	**+2.2**
KMI				pmax	pmax			
	comp=Z,23nm,1.0s							
KMI				pmax	pmax			
	comp=Z,80nm,3.6s							
KMI				LR	LR			
	comp=Z,140nm,18.1s							
KMI				LR	LR			
	comp=Z,200nm,16.3s							
KMI				LR	LR			
	comp=Z,240nm,24.7s							
SKNT	**Sakolnakorn**	**41.17**	**250**	P		**P**	**06 46 46.3**	**+1.3**
	comp=Z,18nm,1.0s							
UBPT	**Khong Chiam**	**41.17**	**247**	P		**P**	**06 46 48.4**	**+3.4**
	comp=Z,9.9nm,1.4s							
WMQ	**Urumqi**	**42.33**	**296**	*e*P		**P**	**06 46 54.4**	**+0.1**
WMQ				pP		sP	06 47 08.8	+1.5
WMQ				PP		**PP**	**06 48 37.4**	**+4.9**
WMQ				S		**S**	**06 53 06.2**	**-7.1**
WMQ				pmax	pmax			
	comp=Z,8.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,110nm,5.3s							
WMQ				LR	LR			
	comp=Z,510nm,15.6s							
WMQ				LR	LR			
	comp=Z,350nm,15.0s							
WMQ				LR	LR			
	comp=Z,430nm,27.4s							
ZAA0	**Zalesovo Array**	**42.77**	**311**	*e*P		**P**	**06 46 58.0**	**+0.4**
ZAA0				*e*pP		**pP**	**06 47 08.3**	**+1.4**
ZAA0				*e*PcP		**PcP**	**06 48 48.5**	**-0.1**
ZALV	**Zalesovo Beam**	**42.77**	**311**	P		**P**	**06 46 57.4**	**-0.2**
	comp=Z,2.7nm,0.8s,baz=90,slow=8.9,SNR=5.5							
ZALV				PcP		**PcP**	**06 48 48.6**	**0.0**
	comp=Z,3.8nm,0.7s,baz=67,slow=3.7,SNR=6.4							
ZALV				LR		LR	07 05 27.6	
	comp=Z,188nm,18.8s,baz=68,slow=37							
NRIK	**Noril'sk**	**43.08**	**334**	P		**P**	**06 46 59.7**	**-0.1**
	comp=Z,2.5nm,0.5s,baz=104,slow=6.4,SNR=4.2							
NRIK				LR		LR	07 05 56.3	
	comp=Z,192nm,19.8s,baz=111,slow=38							
UTTA	**Uttaradit**	**43.26**	**254**	P		**P**	**06 47 03.1**	**+1.1**
	comp=Z,2.8nm,1.0s,comp=Z,41nm							
CHAI	**Chaiyaphum**	**43.33**	**251**	P		**P**	**06 47 04.0**	**+1.4**
	comp=Z,3.9nm,1.0s							
LAMP	**Lampang**	**43.50**	**256**	P		**P**	**06 47 06.7**	**+2.8**
	comp=Z,4.3nm,1.0s							
CMMT	**Chiang Mai**	**43.85**	**257**	P		**P**	**06 47 08.1**	**+1.3**
	comp=Z,7.3nm,1.3s							
CHTO	**Chiang Mai**	**43.85**	**257**	P		**P**	**06 47 08.2**	**+1.4**
	comp=Z,33nm,1.3s							
CHTO	**Chiang Mai**	**43.85**	**257**	*e*P		**P**	**06 47 07.6**	**+0.8**
CHTO				pmax	pmax			
	comp=Z,7.0nm,1.0s							
CHTO	**Chiang Mai**	**43.85**	**257**	*e*P		**P**	**06 47 07.6**	**+0.8**
	comp=Z,7.1nm,1.0s							
CMAR	**Chiang Mai Arr**	**44.06**	**256**	P		**P**	**06 47 08.2**	**-0.3**
	comp=Z,1.6nm,0.8s,baz=52,slow=6.2,SNR=8.2							
CMAR				LR		LR	07 07 16.1	
	comp=Z,62nm,19.2s,baz=34,slow=38							
CM01	**Chiang Mai Arr**	**44.07**	**256**	*e*P		**P**	**06 47 09.1**	**+0.6**
SUKH	**Sukhothai**	**44.12**	**255**	P		**P**	**06 47 11.2**	**+2.3**
	comp=Z,2.4nm,1.0s							
KDAK	**Kodiak Island**	**44.57**	**43**	*e*P		**P**	**06 47 11.8**	**-0.2**
KDAK				pmax	pmax			
	comp=Z,41nm,1.1s							
KDAK	**Kodiak Island**	**44.57**	**43**	*e*P		**P**	**06 47 11.8**	**-0.2**
	comp=Z,41nm,1.1s							
CHBT	**CHBT**	**45.12**	**247**	P		**P**	**06 47 19.1**	**+2.2**
KTH	**Kantishna Hill**	**45.36**	**35**	*e*P		**P**	**06 47 19.6**	**+1.3**
	comp=Z,10nm,1.2s							
MK31	**Makanchi Array**	**45.40**	**302**	*e*P		**P**	**06 47 19.4**	**+0.6**
MK31	**Makanchi Array**	**45.40**	**302**	*e*P		**P**	**06 47 19.4**	**+0.6**
MKAR	**Makanchi Array**	**45.40**	**302**	P		**P**	**06 47 19.2**	**+0.4**
	comp=Z,4.2nm,0.9s,baz=83,slow=10.0,SNR=25							
MKAR				LR		LR	07 06 48.3	
	comp=Z,154nm,21.2s,baz=60,slow=37							
MKAR	**Makanchi Array**	**45.40**	**302**	*e*P		**P**	**06 47 19.4**	**+0.6**
MLY	**Manley**	**45.51**	**33**	*e*P		**P**	**06 47 20.4**	**+1.0**
	comp=Z,6.1nm,1.1s							
MAKZ	**Makanchi**	**45.61**	**302**	*e*P		**P**	**06 47 21.0**	**+0.5**
MAKZ				pmax	pmax			
	comp=Z,10.0nm,1.1s							
MAKZ	**Makanchi**	**45.61**	**302**	*e*P		**P**	**06 47 21.0**	**+0.5**
	comp=Z,10nm,1.1s							
RC01	**Rabbit Creek A**	**45.91**	**38**	*e*P		**P**	**06 47 22.6**	**0.0**
	comp=Z,9.5nm,1.1s							
PMR	**Palmer**	**46.19**	**37**	*e*P		**P**	**06 47 25.1**	**+0.3**
PMR				pmax	pmax			
	comp=Z,9.0nm,1.2s							
PMR	**Palmer**	**46.19**	**37**	*e*P		**P**	**06 47 25.1**	**+0.3**
	comp=Z,9.3nm,1.2s							
SBUM	**Sibu**	**46.24**	**227**	*e*P		**P**	**06 47 26.1**	**+0.4**
	comp=Z,9.7nm,0.9s							
RND	**Reindeer**	**46.29**	**35**	*e*P		**P**	**06 47 25.9**	**+0.2**
RND				pmax	pmax			
	comp=Z,13nm,1.3s							
RND	**Reindeer**	**46.29**	**35**	*e*P		**P**	**06 47 25.9**	**+0.2**
	comp=Z,13nm,1.3s							
MDM	**Murphy Dome**	**46.57**	**33**	*e*P		**P**	**06 47 29.0**	**+1.1**
	comp=Z,15nm,1.3s							
WRH	**Wood River Hil**	**46.63**	**33**	*e*PcP		**PcP**	**06 49 02.1**	**+0.5**
COLA	**College**	**46.73**	**33**	*e*P		**P**	**06 47 29.8**	**+0.8**
COLA				pmax	pmax			
	comp=Z,2.0nm,1.1s							
KURK	**Kurchatov**	**46.96**	**308**	*e*P		**P**	**06 47 31.4**	**+0.4**
KURK				pmax	pmax			
	comp=Z,21nm,1.0s							
KURK	**Kurchatov**	**46.96**	**308**	*e*P		**P**	**06 47 31.4**	**+0.4**
	comp=Z,21nm,1.0s							
SCM	**Sheep Creek Mo**	**47.04**	**37**	*e*P		**P**	**06 47 32.3**	**+0.8**
SCM				pmax	pmax			
	comp=Z,20nm,1.2s							
SCM	**Sheep Creek Mo**	**47.04**	**37**	*e*P		**P**	**06 47 32.3**	**+0.8**
	comp=Z,20nm,1.2s							
IL1	**Eielson Array**	**47.15**	**33**	*e*P		**P**	**

BRVK Borovoye 51.47 312 eP P 06 48 06.5 +1.1
comp=Z,8.0nm,1.0s
OTUK Ortayu 51.54 306 P P 06 48 07.1 +1.0
OTUK pmax pmax
comp=Z,4.0nm,1.0s
HYT Haines Junctio 51.86 38 eP P 06 48 10.8 +2.4
AAK Ala-Arcba 51.91 298 LR LR 07 13 08.5
comp=Z,70nm,18.2s,baz=22,slow=39
AAK Ala-Arcba 51.91 298‖ eP P 06 48 09.9 +0.8
AAK pmax pmax
comp=Z,8.0nm,1.1s
KSH Kashi 51.99 294 eP P 06 48 14.3 +4.6
KSH epP sP 06 48 27.1 +4.3
KSH ePP PP **06 50 14.7 +7.0**
KSH PcS PcS **06 53 21.7 +1.6**
KSH S S **06 55 33.8 +2.7**
KSH ScS ScS **06 57 57.0 -0.6**
KSH SS SS **06 59 09.5 +1.6**
KSH pmax pmax
comp=Z,92nm,3.5s
KSH LR LR
comp=Z,150nm,7.0s
KSH LR LR
comp=Z,140nm,5.7s
KSH LR LR
comp=Z,210nm,10.2s
INK Inuvik 52.16 28 eP P 06 48 11.0 +0.7
INK *e**PP **sP 06 48 21.4 -2.1**
INK pmax pmax
comp=Z,6.0nm,1.3s
INK Inuvik 52.16 28 eP P 06 48 11.0 +0.7
comp=Z,6.5nm,1.3s
INK epP **sP 06 48 21.4 -2.1**
ZRNK Zerenda 52.24 312 eP P 06 48 11.8 +0.6
ZRNK pmax pmax
comp=Z,13nm,1.1s
ZRNK Zerenda 52.24 312 eP P 06 48 11.8 +0.6
comp=Z,13nm,1.1s
MTN Manton Dam 52.40 196 eP P 06 48 11.9 -0.7
comp=Z,24nm,0.9s
MNAS Manas 53.34 299 P P 06 48 21.1 +1.5
MNAS pmax pmax
comp=Z,9.0nm,1.1s
KKAR Karatay Array 54.47 300 eP P 06 48 28.7 +0.9
KKAR Karatay Array 54.47 300 eP P 06 48 28.7 +0.9
SVE Sverdlovsk 55.70 319‖ iP P 06 48 37.7 +1.3
SVE pmax pmax
comp=Z,24nm,1.0s
SVE MLR MLR
comp=Z,450nm,15.0s
ARU Arti 56.92 319 P P 06 48 45.1 +0.1
comp=Z,7.2nm,0.7s,baz=66,slow=3.7,SNR=19
ARU Arti 56.92 319 *d* **iP P 06 48 45.2 +0.1**
ARU 06 49 36.2
ARU 06 50 50.3
ARU S S **06 56 38.4 +1.8**
ARU SS SS **07 00 25.5 +1.0**
ARU pmax pmax
comp=Z,23nm,1.0s
ARU MLR MLR
comp=Z,366nm,17.0s
ARU Arti 56.92 319 eP P 06 48 44.9 -0.1
comp=Z,28nm,1.2s
WRAB Tennant Creek 58.72 191‖ eP P 06 48 55.5 -2.5
WRAB pmax pmax
comp=Z,36nm,1.7s
WB2 Warramunga Arr 58.73 191 eP P 06 48 56.7 -1.4
WRA Warramunga Arr 58.73 191 P P 06 48 56.3 -1.8
comp=Z,5.1nm,0.8s,baz=11,slow=7.4,SNR=32
FITZ Fitzroy Crossi 58.82 201 eP P 06 48 58.6 -0.1
comp=Z,10nm,1.2s
ABKAR Akbulak array 58.87 310 eP P 06 48 59.1 +0.3
AKTO Aktyubinsk 59.52 312 P P 06 49 02.9 -0.5
comp=Z,9.1nm,0.8s,baz=69,slow=10,SNR=26
AKTO LR LR 07 15 52.7
comp=Z,79nm,18.4s,baz=62,slow=37
KBS Kingsbay 59.76 350 eP P 06 49 05.2 +0.6
YKA Yellowknife Ar 61.50 31 P P 06 49 15.8 -0.9
comp=Z,1.6nm,0.9s,baz=295,slow=7.2,SNR=7.0
AS01 Alice Springs 62.44 191 eP P 06 49 21.9 -1.5
ASAR Alice Springs 62.45 191 P P 06 49 22.0 -1.5
comp=Z,2.0nm,0.9s,baz=12,slow=7.0,SNR=15
ASAR Alice Springs 62.45 191 P P 06 49 22.0 -1.5
ASAR pmax pmax
comp=Z,2.0nm,0.9s
ARCES ARCESS Array B 63.58 340 P P 06 49 30.5 +0.1
comp=Z,2.4nm,0.9s,baz=51,slow=6.4,SNR=4.7
ARCES LR LR 07 20 12.8
comp=Z,53nm,20.6s,baz=76,slow=39
KLMR Klimovskoe 63.88 328 eP P 06 49 31.0 -1.5
KLMR *e* 06 50 07.0
KLMR pmax pmax
comp=Z,6.0nm,0.9s
NLWA Neilton Lookou 64.12 49 eP P 06 49 36.4 +2.0
comp=Z,26nm,1.3s
GEYT Alibeck 65.22 300 P P 06 49 41.6 -0.1
comp=Z,2.0nm,0.3s,baz=324,slow=7.3,SNR=3.9
GEYT LR LR 07 19 47.5
comp=Z,83nm,20.2s,baz=200,slow=38
EDM Edmonton 66.87 40 eP P 06 49 52.3 +0.2
EDM pmax pmax
comp=Z,18nm,1.4s
EDM Edmonton 66.87 40 eP P 06 49 52.3 +0.2
comp=Z,18nm,1.4s
NEW Newport 67.57 46 eP P 06 49 57.6 +1.0
NEW pmax pmax
comp=Z,15nm,1.3s
NEW Newport 67.57 46 eP P 06 49 57.6 +1.0
comp=Z,15nm,1.3s
K05A Summer Lake 68.32 52 eP P 06 50 03.4 +1.7
comp=Z,28nm,1.2s
OBN Obninsk 68.42 324 P P 06 50 02.0 +0.3
comp=Z,27nm,0.3s,baz=199,slow=18,SNR=3.7
OBN Obninsk 68.42 324 *i* P P **06 50 01.3 -0.4**
OBN pmax pmax
comp=Z,14nm,1.0s
OBN MLR MLR
comp=Z,155nm,15.0s
OBN Obninsk 68.42 324 eP P 06 50 03.1 +1.4
FINES FINESS Array B 68.72 333 P P 06 50 03.2 -0.3
comp=Z,4.5nm,0.9s,baz=106,slow=6.8,SNR=6.1
FINES LR LR 07 22 02.9
comp=Z,114nm,21.7s,baz=28,slow=38
WALA Waterton Lakes 68.90 44 eP P 06 50 06.0 +1.0
comp=Z,9.3nm,1.1s
BMO Blue Mountains 69.33 49 eP P 06 50 09.0 +1.2
comp=Z,11nm,1.5s
SUMG Summit 69.36 1 eP P 06 50 08.6 +0.8
SUMG pmax pmax
comp=Z,13nm,1.1s
SUMG Summit 69.36 1 eP P 06 50 08.6 +0.8
comp=Z,13nm,1.1s
VSR Storozhevoye 69.46 320 eP P 06 50 08.4 +0.1
VSR pmax pmax
comp=Z,10.0nm,0.9s
SWMT Swartz Lake 69.74 45 eP P 06 50 11.5 +1.3
WVOR Wild Horse Val 69.88 51 eP P 06 50 12.7 +1.5
WVOR pmax pmax
comp=Z,6.0nm,1.1s
WVOR Wild Horse Val 69.88 51 eP P 06 50 12.7 +1.5
comp=Z,6.4nm,1.1s
MSO Missoula 70.16 46 eP P 06 50 13.5 +0.7
comp=Z,12nm,1.4s
PAHR Pah Rah Range 70.93 54 eP P 06 50 19.0 +1.3
comp=Z,10nm,1.3s
MFID Camas Ranch 71.02 49 eP P 06 50 19.4 +1.2
comp=Z,9.9nm,1.3s
CMB Columbia Colle 71.22 56 eP P 06 50 20.6 +1.2
CMB pmax pmax
comp=Z,7.0nm,1.0s
CMB Columbia Colle 71.22 56 eP P 06 50 20.6 +1.2
comp=Z,6.6nm,1.0s
FFC Flin Flon 71.34 34 eP P 06 50 20.3 +0.6
FFC pmax pmax
comp=Z,14nm,1.1s
FFC Flin Flon 71.34 34 eP P 06 50 20.3 +0.6
comp=Z,14nm,1.1s
LRM Limekiln Ridge 71.58 46 eP P 06 50 22.7 +1.0
KVAR Kislovodsk Arr 71.78 312 P P 06 50 23.4 +0.7
comp=Z,14nm,0.8s,baz=72,slow=6.4,SNR=13
HLID Hailey 71.78 49 eP P 06 50 24.0 +1.2
comp=Z,6.3nm,1.3s
KIV Kislovodsk 71.78 312 eP P 06 50 23.5 +0.8
KIV pmax pmax
comp=Z,28nm,1.1s
KIV Kislovodsk 71.78 312 eP P 06 50 24.9 +2.3
KIV epP **sP 06 50 35.0 -1.1**
KBZ Khabaz 71.79 312 P P 06 50 23.7 +1.1
comp=Z,9.3nm,0.9s,baz=41,slow=1.6,SNR=17
KBZ LR LR 07 23 24.1
comp=Z,49nm,21.6s,baz=51,slow=37
BMN Battle Mountai 71.88 53 eP P 06 50 24.8 +1.3
BMN pmax pmax
comp=Z,12nm,1.3s
BMN Battle Mountai 71.88 53 eP P 06 50 24.8 +1.3
comp=Z,12nm,1.3s
BOZ Bozeman (W) 72.15 46 eP P 06 50 25.8 +0.8
BOZ pmax pmax
comp=Z,8.0nm,1.2s
BOZ Bozeman (W) 72.15 46 eP P 06 50 25.8 +0.8
comp=Z,8.2nm,1.2s
IMW Indian Meadow 73.60 47 eP P 06 50 35.7 +2.0
comp=Z,9.5nm,1.1s
NC204 NORSAR Array S 73.80 339 eP P 06 50 35.6 +1.3
MOOW Moose Ponds 73.80 47 eP P 06 50 36.7 +1.8
comp=Z,8.0nm,1.1s
HFS Hagfors 73.83 337 P P 06 50 34.3 -0.1
comp=Z,3.5nm,0.9s,baz=57,slow=5.3,SNR=6.7
TPAW Teton Pass 73.84 47 eP P 06 50 37.2 +2.0
comp=Z,13nm,1.4s
NB2 NORSAR Subarra 73.86 338 P P 06 50 34.1 -0.5
comp=Z,10nm,1.2s,baz=40,slow=5.9
NOA NORSAR Array B 73.86 338 P P 06 50 34.3 -0.3
comp=Z,3.2nm,0.9s,baz=37,slow=5.8,SNR=6.8
NOA LR LR 07 28 33.4
comp=Z,30nm,18.2s,baz=25,slow=40
NBO02 NORSAR Array S 73.95 338 eP P 06 50 35.2 +0.1
SNOW Snow King Moun 73.97 47 eP P 06 50 37.8 +1.9
comp=Z,7.2nm,1.1s
REDW Red Top Meadow 73.98 47 eP P 06 50 37.5 +1.6
comp=Z,7.8nm,1.3s
R11A Troy Canyon, C 74.13 54 eP P 06 50 37.6 +0.8
comp=Z,7.7nm,1.2s
TPNV Topopah Spring 74.53 55 eP P 06 50 40.4 +1.2
TPNV pmax pmax
comp=Z,11nm,1.1s
TPNV Topopah Spring 74.53 55 eP P 06 50 40.4 +1.2
comp=Z,10nm,1.1s
HWUT Hardware Ranch 74.63 49 eP P 06 50 41.2 +1.5
comp=Z,12nm,1.2s
AKASG Malin Array Be 74.66 323 P P 06 50 39.1 -0.3
comp=Z,9.8nm,1.1s,baz=43,slow=6.2,SNR=16
AKASG LR LR 07 25 02.0
comp=Z,38nm,20.1s,baz=70,slow=37
KIEV Kiev 74.67 323 eP P 06 50 39.5 0.0
KIEV pmax pmax
comp=Z,11nm,1.1s
KIEV Kiev 74.67 323 eP P 06 50 39.5 0.0
comp=Z,11nm,1.1s
DUG Dugway, Tooele 74.74 51 eP P 06 50 41.8 +1.5
DUG pmax pmax
comp=Z,11nm,1.3s
DUG Dugway, Tooele 74.74 51 eP P 06 50 41.8 +1.5
comp=Z,11nm,1.3s
MWC Mount Wilson 74.95 58 eP P 06 50 43.2 +1.5
MWC pmax pmax
comp=Z,13nm,1.2s
MWC Mount Wilson 74.95 58 eP P 06 50 43.2 +1.5
comp=Z,13nm,1.2s
CTU Camp Tracy 75.08 50 eP P 06 50 43.7 +1.4
comp=Z,24nm,1.2s
BW06 Boulder Array 75.09 47 eP P 06 50 42.4 +0.1
BW06 eP P **06 50 43.0 +0.6**
PD31 Pinedale Array 75.09 47 eP P 06 50 43.0 +0.6
PDAR Pinedale Array 75.09 47 P P 06 50 41.6 -0.8
comp=Z,1.0nm,0.6s,baz=264,slow=4.0,SNR=9.6
PDAR LR LR 07 23 43.0
comp=Z,13nm,18.8s,baz=256,slow=36
GSC Goldstone, Bar 75.15 57 eP P 06 50 43.8 +1.1
GSC pmax pmax
comp=Z,8.0nm,1.1s
GSC Goldstone, Bar 75.15 57 eP P 06 50 43.8 +1.1
comp=Z,7.7nm,1.1s
JLU Jordanelle 75.32 50 eP P 06 50 45.7 +2.0
comp=Z,8.9nm,1.2s
WMUT West Mountain 75.41 50 eP P 06 50 45.1 +0.9
SHPR Sheep Range 75.50 55 eP P 06 50 46.2 +1.5
comp=Z,9.9nm,1.2s
CCUT Cedar City 76.01 53 eP P 06 50 48.3 +0.5
comp=Z,11nm,1.2s
MSU Marysvale 76.16 52 eP P 06 50 50.4 +1.8
MSU Marysvale 76.16 52 eP P 06 50 50.4 +1.8
TMUT Trail Mountain 76.27 51 eP P 06 50 50.6 +1.3
comp=Z,10nm,1.4s
PFO Pinyon Flats O 76.39 58 eP P 06 50 50.7 +0.9
PFO pmax pmax
comp=Z,7.0nm,1.1s
PFO Pinyon Flats O 76.39 58 eP P 06 50 50.7 +0.9
comp=Z,6.6nm,1.1s
LDFC Landfair 76.39 56 eP P 06 50 50.7 +0.9
comp=Z,14nm,1.2s
LCMT Little Creek M 76.41 54 eP P 06 50 51.5 +1.6
comp=Z,10nm,1.1s
P17A Butcher Ranch, 76.44 50 eP P 06 50 51.5 +1.4
comp=Z,15nm,1.2s
MTPU Mount Pierson 76.45 52 eP P 06 50 52.2 +1.8
comp=Z,9.9nm,1.2s
KNB Kanab 76.68 53 eP P 06 50 53.3 +1.8
KNB pmax pmax
comp=Z,18nm,1.3s
KNB Kanab 76.68 53 eP P 06 50 53.3 +1.8
comp=Z,18nm,1.3s
SRU San Rafael Swe 76.80 50 eP P 06 50 53.3 +1.1
SRU pmax pmax
comp=Z,10.0nm,1.0s
SRU San Rafael Swe 76.80 50 eP P 06 50 53.3 +1.1
comp=Z,10nm,1.0s
BAR Barrett 76.80 59 eP P 06 50 52.9 +0.8
comp=Z,4.9nm,1.1s
K22A Casper 76.89 46 eP P 06 50 53.3 +0.7
ULM Lac du Bonnet 77.12 35 eP P 06 50 54.1 +0.6
ULM Lac du Bonnet 77.12 35 eP P 06 50 54.1 +0.6
W13A Hualapai Mount 77.17 55 eP P 06 50 55.3 +1.0
RSSD Black Hills 77.30 43 eP P 06 50 55.3 +0.4
RSSD pmax pmax
comp=Z,6.0nm,1.2s
RSSD Black Hills 77.30 43 eP P 06 50 55.3 +0.4
comp=Z,6.1nm,1.2s
O20A White River Ci 77.52 49 eP P 06 50 57.0 +0.8
comp=Z,14nm,1.4s
Y12C Blythe 77.58 57 eP P 06 50 57.6 +1.2
PV09 Paradox Valley 78.03 50 eP P 06 51 00.5 +1.3
PV10 Paradox Valley 78.17 50 eP P 06 51 01.1 +1.2
PV05 Paradox Valley 78.32 51 eP P 06 51 02.1 +1.4
N23A Red Feather La 78.36 47 eP P 06 51 02.3 +1.4
Y14A Wickenburg 78.46 56 eP P 06 51 02.5 +1.1
WUAZ Wupatki 78.53 54 eP P 06 51 03.3 +1.5
comp=Z,9.8nm,1.0s
AGMN Agassiz Station 78.53 36 eP P 06 51 01.1 -0.2
comp=Z,6.4nm,1.0s
PV01 Paradox Valley 78.60 50 eP P 06 51 03.5 +1.2
BUR08 Bucovina Ar. S 78.68 323 eP P 06 51 03.3 +0.9
BUR08 epP **sP 06 51 13.9 -1.9**
STHS Stebnicka Huta 79.20 326 eP P 06 51 05.4 +0.4
STHS pmax pmax
comp=Z,4.0nm,1.2s
STHS Stebnicka Huta 79.20 326 eP P 06 51 05.4 +0.4
OJC Ojcow 79.22 327 eP P 06 51 05.8 +0.7
OJC Ojcow 79.22 327 eP P 06 51 05.8 +0.7
MVCO Mesa Verde 79.24 51 eP P 06 51 07.0 +1.3
comp=Z,11nm,1.2s
CRVS Cervenica-Dubn 79.48 326 eP P 06 51 06.1 -0.5
CRVS Cervenica-Dubn 79.48 326 eP P 06 51 06.1 -0.5
BRTR Keskin Array B 79.69 313 P P 06 51 08.7 +0.6
comp=Z,1.2nm,0.6s,baz=90,slow=2.5,SNR=7.3
BRTR LR LR 07 30 45.6
comp=Z,32nm,18.2s,baz=35,slow=39
MLR Muntele Rosu 79.86 321 P P 06 51 09.7 +0.9
comp=Z,0.4nm,0.8s,baz=154,slow=1.4,SNR=4.0
S22A 4UR Ranch, Cre 79.90 50 eP P 06 51 11.0 +1.5
BR231 Keskin MP Arra 80.11 313 eP P 06 51 09.4 -0.9
LANS Liptovska Anna 80.17 327 eP P 06 51 12.3 +1.9
LANS Liptovska Anna 80.17 327 eP P 06 51 12.2 +1.9
KSP Ksiaz 80.18 330 eP P 06 51 11.4 +1.1
KSP Ksiaz 80.18 330 eP P 06 51 11.4 +1.1
MORC Moravsky Berou 80.50 328 eP P 06 51 13.3 +1.2
MORC Moravsky Berou 80.50 328 eP P 06 51 13.3 +1.2
DPC Dobruska-Polom 80.55 329 eP P 06 51 13.4 +1.0
DPC Dobruska-Polom 80.55 329 eP P 06 51 13.4 +1.0
SDCO Great Sand Dun 80.69 49 eP P 06 51 14.9 +1.2
comp=Z,3.7nm,1.2s
EYMN Ely 80.77 34 eP P 06 51 14.2 +0.6
comp=Z,11nm,1.1s
PSZ Piszkesteto 80.91 326 eP P 06 51 15.7 +1.3
PSZ Piszkesteto 80.91 326 eP P 06 51 15.7 +1.3
TUC Tucson 80.93 56 eP P 06 51 15.4 +0.6
TUC pmax pmax
comp=Z,4.0nm,1.0s
TUC Tucson 80.93 56 eP P 06 51 15.4 +0.6
comp=Z,3.6nm,1.0s
VYHS Vyhne 80.94 327 eP P 06 51 15.7 +1.3
VYHS pmax pmax
comp=Z,4.0nm,1.4s
VYHS Vyhne 80.94 327 eP P 06 51 15.7 +1.3
BRG Berggiesshubel 81.08 331 eP P 06 51 15.3 +0.2
comp=Z,4.6nm,1.0s
BRG Berggiesshubel 81.08 331 eP P 06 51 15.3 +0.2
BRG pmax pmax
comp=Z,5.0nm,1.0s
CLL Collm 81.09 332 *i* P P **06 51 15.3 +0.2**
comp=Z,7.0nm,1.1s
CLL Collm 81.09 332 *i* P P **06 51 15.3 +0.2**
CLL pmax pmax
comp=Z,7.0nm,1.1s
CLL Collm 81.09 332 eP P 06 51 15.3 +0.2
VRAC Vranov 81.25 328 P P 06 51 17.0 +0.9
comp=Z,1.6nm,0.4s,baz=80,slow=5.2,SNR=7.7
VRAC Vranov 81.25 328 P P 06 51 17.0 +0.9
VRAC pmax pmax
comp=Z,2.0nm,0.4s
ECSD EROS Data Cent 81.44 40 eP P 06 51 17.1 -0.1
comp=Z,7.1nm,1.1s
PRU Pruhonice 81.55 330 eP P 06 51 18.4 +0.8
PRU AMS AMS 07 31 50.0
comp=Z,100nm,19.2s
PRU Pruhonice 81.55 330 eP P 06 51 18.4 +0.8
PRU MLR MLR
comp=Z,100nm,19.2s
T25A Trinidad 81.75 49 eP P 06 51 20.3 +1.1
LAZ Ladron 81.90 52 eP P 06 51 22.3 +2.2
ANMO Albuquerque 81.97 52‖ eP P 06 51 21.3 +0.9
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO Albuquerque 81.97 52 eP P 06 51 21.7 +1.3
BNM Barren Site 82.39 52 eP P 06 51 23.9 +1.3
KHC Kasperske Hory 82.61 330 eP P 06 51 22.9 -0.4
KHC AMS AMS 07 32 40.0
comp=Z,200nm,16.0s
KHC Kasperske Hory 82.61 330 eP P 06 51 22.9 -0.4
KHC MLR MLR
comp=Z,200nm,16.0s
GERES GERESS Array B 82.79 330 P P 06 51 24.4 +0.2
comp=Z,1.0nm,0.8s,baz=46,slow=6.5,SNR=5.2
GERES LR LR 07 30 55.7
comp=Z,49nm,19.7s,baz=28,slow=38
MMAI Mount Meron Ar 83.07 307 P P 06 51 25.1 -0.9
comp=Z,3.3nm,0.7s,baz=38,slow=7.3,SNR=7.5
PPT Papeete 83.18 119 LR LR 07 25 34.0
comp=Z,144nm,18.8s,baz=300,slow=34
MNTX Cornudas Mount 84.80 53 eP P 06 51 35.5 +0.7
MSTX Muleshoe 84.87 50 eP P 06 51 36.2 +1.0
AMTX Amarillo 84.90 49 eP P 06 51 36.5 +1.1
BFO Black Forest 85.26 332 *i* P P **06 51 37.9 +1.1**
BFO Black Forest 85.26 332 eP P 06 51 37.5 +0.7
FUORN Ofenpass-Fuorn 85.95 330 eP P 06 51 41.4 +0.8
DAVOX Davos/Dischmat 85.97 331 P P 06 51 40.0 -0.6
comp=Z,2.4nm,0.5s,baz=189,slow=5.5,SNR=5.3
DAVOX Davos/Dischmat 85.97 331 P P 06 51 40.0 -0.6
DAVOX pmax pmax
comp=Z,2.0nm,0.5s
U34A Anderson Ranch 86.20 45 eP P 06 51 42.5 +0.9
VLDQ Val d'Or 86.24 27 eP P 06 51 41.1 -0.5
V34A Guthrie 86.64 46 eP P 06 51 44.5 +0.7
WMOK Wichita Mounta 86.70 47 eP P 06 51 44.6 +0.4
WMOK Wichita Mounta 86.70 47 eP P 06 51 44.6 +0.4
W34A Bridge Creek, 86.92 46 eP P 06 51 46.1 +0.9
HDIL Hopedale 87.43 38 eP P 06 51 47.9 +0.3
TX31 Lajitas Ar. Si 87.48 54 eP P 06 51 48.1 0.0
TX31 eP P **06 51 48.6 +0.4**
TXAR Lajitas Array 87.48 54 P P 06 51 48.2 0.0
comp=Z,1.0nm,0.9s,baz=308,slow=3.4,SNR=9.8
TXAR LR LR 07 30 52.0
comp=Z,18nm,18.0s,baz=0.0,slow=36
LOR Lormes 87.75 334 eP P 06 51 49.1 +0.1
LOR pmax pmax
comp=Z,15nm,1.2s
SSF Saint Saulge 88.05 334 eP P 06 51 51.6 +1.2
SSF pmax pmax
comp=Z,8.0nm,1.2s
LPL La Plagne 88.22 332 eP P 06 51 52.8 +1.2
LPL pmax pmax
comp=Z,6.0nm,1.1s
LPG La Plagne 88.23 332 eP P 06 51 54.0 +2.3
LPG pmax pmax
comp=Z,6.0nm,0.9s
SMF Signal de Mont 88.29 334 eP P 06 51 53.1 +1.5
SMF pmax pmax
comp=Z,3.0nm,0.7s
AVF Avril sur Loir 88.33 334 eP P 06 51 50.9 -0.8
AVF pmax pmax
comp=Z,14nm,1.2s
SFIN Lafayette 88.62 37 eP P 06 51 53.5 +0.3
TRQ Mont Tremblant 88.87 26 eP P 06 51 54.3 -0.1
TCF Toulx Ste Croi 89.16 335 eP P 06 51 56.0 +0.3
TCF pmax pmax
comp=Z,2.0nm,0.5s
SIUC Southern Illin 89.67 40 eP P 06 51 58.7 +0.5
PBMO Poplar Bluff 89.77 41 eP P 06 51 59.2 +0.6
MIAR Mount Ida 89.78 44 eP P 06 51 59.3 +0.5
MIAR Mount Ida 89.78 44 eP P 06 51 59.3 +0.5
WHAR Wooly Hollow 89.92 43 eP P 06 51 59.9 +0.5
LMR La Mourre 90.16 331 eP P 06 52 01.5 +1.1
LMR pmax pmax
comp=Z,54nm,1.8s
WLAR White Oak Lake 90.67 45 eP P 06 52 04.1 +1.2
KEST Kesra 95.34 325 LR LR 07 39 38.5
comp=Z,49nm,18.9s,baz=253,slow=38
CNNC Cliffs of the 97.00 34 eP P 06 52 33.1 +1.2
SNAA Sanae 142.66 196 PKP PKPdf 06 58 27.7 -4.5
VNA1 Neumayer--Stat 144.60 195 PKP PKPab 06 58 33.8 -0.3

MAN 05 06:40:16, 16.67N×122.74E, h53km, mb4.1, ML2.9, MS2.6, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAUP	**Cauayan**	**0.92**	**287**	*e*P		Pn 06 40 32.9	+0.1
CAUP				*e*S		Sn 06 40 47.3	+2.1
CVP	**Callao Caves**	**1.35**	**320‖**	*i*P		Pn 06 40 39.0	+0.4
CVP				*i* S		Sn 06 40 56.3	+0.8
SGCP	**Mt. Cagua**	**1.70**	**337**	*e*P		Pn 06 40 44.6	+1.3
SGCP				*e*S		Sn 06 41 05.4	+1.5
APYP	**Conner**	**1.86**	**310**	*e*P		Pn 06 40 47.5	+2.0
APYP				*e*S		Sn 06 41 09.7	+1.8
PCPH	**Palayan**	**1.93**	**235‖**	*e*P		Pn 06 40 53.1	+6.7
ABRA	**Dolores**	**2.17**	**297**	*e*P		Pn 06 40 51.1	+1.3
ABRA				*e*S		Sn 06 41 14.8	-0.8

ISCJB ***05*** *06:56:40.9±0.6, 40.°13N±0.°03×24.°88E±0.°03, h5km±5km, Error ellipse: s-maj=4.8km s-min=3.1km az=17.8*
ATH ***05*** *06:56:40.5, 40.°12N×24.°91E, h26km±1km, ML2.0/8, Error ellipse: s-maj=1.4km s-min=0.7km az=155.0*
THE ***05*** *06:56:41.5, 40.°13N×24.°90E, h6km±3km, ML2.2/7, Error ellipse: s-maj=3.8km s-min=0.5km az=145.0*
CSEM ***05*** *06:56:41.1±0.1, 40.°12N×24.°88E, h12km, ML2.0, Error ellipse: s-maj=3.5km s-min=2.4km az=12.0*

ISC 05 06:56:41.1±1.0, 40.°13N±0.°02×24.°89E±0.°02, h12km±8km, n43, σ0.945/77, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LIA	**Limnos Island**	**0.33**	**136**	P	**Pg**	**06 56 47.7**	**0.0**
LIA				S	**Sg**	**06 56 52.1**	**+0.1**
LIA	**Limnos Island**	**0.33**	**136**	P	**Pg**	**06 56 47.9**	**+0.2**
LIA				S	**Sg**	**06 56 52.1**	**+0.1**
SMTH	**Samothraki Isl**	**0.60**	**55**	P	**Pg**	**06 56 52.3**	**-0.4**
SMTH				S	**Sb**	**06 57 02.2**	**+0.3**
SMTH	**Samothraki Isl**	**0.60**	**55**	P	**Pg**	**06 56 52.3**	**-0.4**
SMTH				S	**Sg**	**06 57 00.6**	**0.0**
SMTH	**Samothraki Isl**	**0.60**	**55**	P	**Pg**	**06 56 52.2**	**-0.5**
SMTH				S	**Sg**	**06 57 00.6**	**0.0**
SMTH				AML	AML	06 57 03.5	
	comp=E,177μm,0.3s						

SMTH				AML	AML	06 57 05.3	
	comp=N,270μm,0.3s						
OUR	**Ouranopolis**	**0.72**	**286**	P	**Pb**	**06 56 55.6**	**0.0**
OUR				S	**Sb**	**06 57 05.7**	**+0.2**
OUR	**Ouranopolis**	**0.72**	**286**	P	**Pb**	**06 56 55.6**	**0.0**
OUR				S	**Sb**	**06 57 05.7**	**+0.2**
OUR	**Ouranopolis**	**0.72**	**286**	P	**Pb**	**06 56 56.0**	**+0.3**
OUR				S	**Sb**	**06 57 05.7**	**+0.2**
OUR				AML	AML	06 57 07.3	
	comp=N,451μm,0.4s						
OUR				AML	AML	06 57 08.6	
	comp=E,562μm,0.2s						
GADA	**Gvkgeada**	**0.78**	**85**	P	**Pb**	**06 56 56.6**	**0.0**
GADA				S	**Sb**	**06 57 06.9**	**-0.2**
GADA	**Gvkgeada**	**0.78**	**85**	P	**Pb**	**06 56 56.6**	**0.0**
GADA				S	**Sb**	**06 57 06.9**	**-0.2**
KAVA	**Kavala**	**0.91**	**342**	P	**Pb**	**06 56 59.0**	**+0.2**
KAVA				S	**Sb**	**06 57 11.4**	**+0.5**
KAVA	**Kavala**	**0.91**	**342**	P	**Pb**	**06 56 59.0**	**+0.2**
KAVA				S	**Sb**	**06 57 11.2**	**+0.3**
KAVA	**Kavala**	**0.91**	**342**	P	**Pn**	**06 57 00.1**	**+0.4**
PAIG	**Paliouri**	**0.95**	**258**	P	**Pg**	**06 56 59.4**	**0.0**
PAIG				S	**Sn**	**06 57 14.1**	**+0.3**
PAIG	**Paliouri**	**0.95**	**258**	P	**Pg**	**06 56 59.4**	**0.0**
PAIG				S	**Sn**	**06 57 13.9**	**+0.1**
PAIG	**Paliouri**	**0.95**	**258**	P	**Pb**	**06 56 59.8**	**+0.3**
PAIG				S	**Sn**	**06 57 13.9**	**+0.1**
PAIG				AML	AML	06 57 16.6	
	comp=N,103μm,0.4s						
PAIG				AML	AML	06 57 16.7	
	comp=E,82μm,0.3s						
PLG	**Polygyros**	**1.13**	**283**	P	**Pb**	**06 57 02.5**	**-0.1**
PLG				S	**Sn**	**06 57 18.7**	**+0.4**
PLG	**Polygyros**	**1.13**	**283**	P	**Pb**	**06 57 02.5**	**-0.1**
PLG				S	**Sb**	**06 57 16.8**	**-0.5**
PLG	**Polygyros**	**1.13**	**283**	P	**Pb**	**06 57 02.5**	**-0.1**
PLG				S	**Sb**	**06 57 16.8**	**-0.5**
PLG				AML	AML	06 57 20.0	
	comp=N,132μm,0.3s						
PLG				AML	AML	06 57 20.4	
	comp=E,104μm,0.4s						
ENEZ	**Enez**	**1.14**	**58**	P	**Pb**	**06 57 02.1**	**-0.6**
ENEZ				S	**Sn**	**06 57 19.2**	**+0.8**
ENEZ	**Enez**	**1.14**	**58**	P	**Pb**	**06 57 02.1**	**-0.6**
ENEZ				S	**Sn**	**06 57 19.2**	**+0.8**
ALN	**Alexandroupoli**	**1.17**	**49**	P	**Pb**	**06 57 02.8**	**-0.4**
ALN				S	**Sn**	**06 57 20.0**	**+0.8**
ALN	**Alexandroupoli**	**1.17**	**49**	P	**Pn**	**06 57 03.3**	**0.0**
ALN				S	**Sg**	**06 57 18.9**	**+0.2**
ALN	**Alexandroupoli**	**1.17**	**49**	P	**Pn**	**06 57 03.3**	**0.0**
ALN				S	**Sg**	**06 57 18.9**	**+0.2**
ALN				AML	AML	06 57 21.1	
	comp=E,95μm,0.4s						
ALN				AML	AML	06 57 28.9	
	comp=N,68μm,0.7s						
SIGR	**SIGRI**	**1.19**	**141**	P	**Pg**	**06 57 03.7**	**-0.2**
SIGR				S	**Sn**	**06 57 20.3**	**+0.7**
SIGR	**SIGRI**	**1.19**	**141**	P	**Pg**	**06 57 03.7**	**-0.2**
SIGR				S	**Sn**	**06 57 19.3**	**-0.3**
SIGR	**SIGRI**	**1.19**	**141**	P	**Pg**	**06 57 04.2**	**+0.3**
SIGR				S	**Sn**	**06 57 19.3**	**-0.3**
SOH	**Sokhos**	**1.36**	**301**	P	**Pn**	**06 57 05.5**	**-0.5**
SOH				S	**Sg**	**06 57 25.0**	**+0.2**
SOH	**Sokhos**	**1.36**	**301**	P	**Pn**	**06 57 05.5**	**-0.5**
SOH				S	**Sg**	**06 57 25.1**	**+0.2**
SOH				AML	AML	06 57 27.3	
	comp=N,162μm,0.4s						
SOH				AML	AML	06 57 27.6	
	comp=E,162μm,0.3s						
PRK	**Paraskevi**	**1.39**	**129**	P	**Pg**	**06 57 07.6**	**-0.1**
PRK				S	**Sb**	**06 57 24.4**	**-0.2**
PRK	**Paraskevi**	**1.39**	**129**	P	**Pg**	**06 57 07.6**	**-0.1**
PRK				S	**Sb**	**06 57 24.4**	**-0.2**
SRS	**Serrai**	**1.39**	**315**	P	**Pn**	**06 57 06.5**	**+0.1**
SRS	**Serrai**	**1.39**	**315**	P	**Pn**	**06 57 06.5**	**+0.1**
SRS				S	**Sb**	**06 57 25.6**	**+0.7**
SRS	**Serrai**	**1.39**	**315**	P	**Pn**	**06 57 05.5**	**-1.0**
SRS				S	**Sb**	**06 57 25.6**	**+0.7**
SRS				AML	AML	06 57 27.8	
	comp=E,206μm,0.5s						
SRS				AML	AML	06 57 28.6	
	comp=N,99μm,0.2s						
HORT	**Hortiatis**	**1.44**	**289**	P	**Pn**	**06 57 06.5**	**-0.7**
HORT				S	**Sn**	**06 57 24.7**	**-1.5**
HORT	**Hortiatis**	**1.44**	**289**	P	**Pn**	**06 57 06.5**	**-0.7**
HORT				S	**Sn**	**06 57 24.7**	**-1.5**
HORT				AML	AML	06 57 29.5	
	comp=N,50μm,0.3s						
HORT				AML	AML	06 57 31.0	
	comp=E,40μm,0.4s						
NVR	**Nevrokopi**	**1.44**	**328**	P	**Pn**	**06 57 06.9**	**-0.3**
KNT	**Kendrikon**	**1.83**	**305**	P	**Pn**	**06 57 12.6**	**+0.2**
KNT	**Kendrikon**	**1.83**	**305**	P	**Pn**	**06 57 12.6**	**+0.2**
CHOS	**Chios island**	**1.96**	**152**	P	**Pn**	**06 57 14.4**	**+0.1**
CHOS	**Chios island**	**1.96**	**152**	P	**Pn**	**06 57 14.4**	**+0.1**
GRG	**Griva**	**2.07**	**294**	P	**Pn**	**06 57 16.3**	**+0.6**
GRG	**Griva**	**2.07**	**294**	P	**Pn**	**06 57 16.3**	**+0.6**

*ATH **05** 06:56:55.7, 38°.93N×23°.68E, h30km±1km, ML2.1/15, Error ellipse: s-maj=2.0km s-min=1.0km az=45.0*
*ISCJB **05** 06:56:56.7±0.6, 38°.92N±0°.03×23°.68E±0°.04, h21km±6km, Error ellipse: s-maj=5.7km s-min=4.1km az=163.5*
*CSEM **05** 06:56:56.6±0.2, 38°.88N×23°.66E, h10km, ML2.1, Error ellipse: s-maj=4.7km s-min=3.1km az=79.0*
*THE **05** 06:56:56.4, 38°.89N×23°.63E, h22km±2km, ML2.4/7, Error ellipse: s-maj=2.4km s-min=0.5km az=358.0*

ISC 05 06:56:57.0±1.1, 38°.90N±0°.02×23°.64E±0°.03, h22km±3km, n45, σ0♀91/74, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKIA	**Skiathos**	**0.30**	**333**	P	**Pb**	**06 57 03.4**	**-0.4**
SKIA				S	**Sb**	**06 57 08.5**	**0.0**
SKIA	**Skiathos**	**0.30**	**333**	P	**Pb**	**06 57 03.4**	**-0.4**
SKIA				S	**Sb**	**06 57 08.5**	**0.0**
SKIA	**Skiathos**	**0.30**	**333**	P	**Pb**	**06 57 03.7**	**-0.1**
SKIA				S	**Sb**	**06 57 08.5**	**0.0**
SKIA				AML	AML	06 57 11.0	
	comp=N,661μm,0.5s						
SKIA				AML	AML	06 57 13.7	
	comp=E,741μm,0.3s						
AOS	**Alonnisos**	**0.33**	**35**	P	**Pb**	**06 57 03.6**	**-0.6**
AOS				S	**Sb**	**06 57 08.6**	**-0.6**
AOS	**Alonnisos**	**0.33**	**35**	P	**Pb**	**06 57 04.4**	**+0.2**
AOS				S	**Sb**	**06 57 08.6**	**-0.6**
AOS	**Alonnisos**	**0.33**	**35**	P	**Pb**	**06 57 03.6**	**-0.6**
AOS	**Alonnisos**	**0.33**	**35**	P	**Pb**	**06 57 04.4**	**+0.2**
AOS				S	**Sb**	**06 57 08.1**	**-1.1**
SMIA	**Simia**	**0.34**	**267**	P	**Pb**	**06 57 03.5**	**-0.8**
SMIA				S	**Sb**	**06 57 08.8**	**-0.6**
SMIA	**Simia**	**0.34**	**267**	P	**Pb**	**06 57 03.5**	**-0.8**
SMIA				S	**Sb**	**06 57 08.8**	**-0.6**
SMIA	**Simia**	**0.34**	**267**	P	**Pb**	**06 57 03.3**	**-1.0**
SMIA				AML	AML	06 57 09.9	
	comp=E,1103μm,0.5s						
SMIA				S	**Sn**	**06 57 11.7**	**-1.1**
SMIA				AML	AML	06 57 12.8	
	comp=N,2197μm,0.6s						
NEO	**Neokhori**	**0.52**	**322**	P	**Pb**	**06 57 06.8**	**-0.7**
NEO				S	**Sb**	**06 57 14.2**	**-0.5**
NEO	**Neokhori**	**0.52**	**322**	P	**Pb**	**06 57 07.6**	**+0.1**
NEO				S	**Sb**	**06 57 14.6**	**-0.1**
NEO	**Neokhori**	**0.52**	**322**	P	**Pb**	**06 57 06.8**	**-0.7**
NEO	**Neokhori**	**0.52**	**322**	P	**Pb**	**06 57 07.6**	**+0.1**
NEO				S	**Sb**	**06 57 14.6**	**-0.1**
NEO				AML	AML	06 57 14.9	
	comp=E,877μm,0.2s						
NEO				AML	AML	06 57 15.3	
	comp=N,995μm,0.3s						
ATAL	**Atalanti**	**0.53**	**247**	P	**Pb**	**06 57 06.3**	**-1.3**
ATAL				S	**Sb**	**06 57 14.0**	**-0.7**
ATAL	**Atalanti**	**0.53**	**247**	P	**Pb**	**06 57 07.0**	**-0.6**
ATAL				S	**Sb**	**06 57 14.0**	**-0.7**
ATAL	**Atalanti**	**0.53**	**247**	P	**Pb**	**06 57 07.0**	**-0.6**
ATAL				AML	AML	06 57 14.6	
	comp=E,112μm,0.4s						
ATAL				AML	AML	06 57 19.3	
	comp=N,107μm,0.3s						
EREA	**Eretria**	**0.53**	**154**	P	**Pb**	**06 57 06.7**	**-1.0**
EREA	**Eretria**	**0.53**	**154**	P	**Pb**	**06 57 06.7**	**-1.0**
EREA	**Eretria**	**0.53**	**154**	P	**Pb**	**06 57 06.2**	**-1.5**
EREA				AML	AML	06 57 15.6	
	comp=E,1247μm,0.2s						
EREA				AML	AML	06 57 18.8	
	comp=N,909μm,0.4s						
LKR	**Lokris**	**0.56**	**244**	P	**Pb**	**06 57 07.1**	**-1.0**
LKR	**Lokris**	**0.56**	**244**	P	**Pb**	**06 57 07.1**	**-1.0**
LKR	**Lokris**	**0.56**	**244**	P	**Pb**	**06 57 06.6**	**-1.5**
LKR				S	**Sn**	**06 57 17.6**	**-0.6**
LKR				AML	AML	06 57 19.4	
	comp=N,220μm,0.2s						
LKR				AML	AML	06 57 19.5	
	comp=E,249μm,0.2s						
XOR	**Xorichti**	**0.58**	**323**	P	**Pb**	**06 57 07.2**	**-1.4**
XOR				S	**Sb**	**06 57 16.4**	**0.0**
XOR	**Xorichti**	**0.58**	**323**	P	**Pb**	**06 57 07.1**	**-1.5**
XOR				S	**Sb**	**06 57 16.5**	**0.0**
XOR	**Xorichti**	**0.58**	**323**	P	**Pb**	**06 57 07.2**	**-1.4**
XOR	**Xorichti**	**0.58**	**323**	P	**Pb**	**06 57 07.0**	**-1.5**
XOR				S	**Sb**	**06 57 16.5**	**0.0**
XOR				AML	AML	06 57 17.2	
	comp=E,205μm,0.4s						
XOR				AML	AML	06 57 18.8	
	comp=N,303μm,0.2s						
FYTO	**Fytoko, Volos**	**0.74**	**313**	P	**Pb**	**06 57 09.0**	**-2.3**
FYTO				S	**Sb**	**06 57 21.4**	**+0.4**
FYTO				AML	AML	06 57 24.2	
	comp=N,176μm,0.4s						
FYTO				AML	AML	06 57 24.4	
	comp=E,192μm,0.7s						
VIL2	**Platees**	**0.74**	**203**	P	**Pn**	**06 57 13.4**	**+1.2**
VIL2				AML	AML	06 57 22.6	
	comp=N,543μm,0.5s						
VIL2				AML	AML	06 57 25.3	
	comp=E,507μm,0.5s						
VILL	**Villia**	**0.78**	**199**	P	**Pb**	**06 57 10.5**	**-1.3**
VILL				S	**Sb**	**06 57 22.2**	**+0.2**
VILL	**Villia**	**0.78**	**199**	P	**Pb**	**06 57 10.5**	**-1.3**
VILL				S	**Sb**	**06 57 22.2**	**+0.2**
PROD	**Prodromos**	**0.86**	**222**	P	**Pn**	**06 57 14.8**	**+1.0**
PROD	**Prodromos**	**0.86**	**222**	P	**Pn**	**06 57 14.8**	**+1.0**
PROD				AML	AML	06 57 27.9	
	comp=E,417μm,0.2s						
PROD				AML	AML	06 57 28.2	
	comp=N,537μm,0.3s						
PTL	**Penteli**	**0.87**	**168**	P	**Pb**	**06 57 12.3**	**-1.1**
PTL	**Penteli**	**0.87**	**168**	P	**Pb**	**06 57 12.3**	**-1.1**
PTL				S	**Sn**	**06 57 26.7**	**+0.9**
PTL				AML	AML	06 57 26.7	
	comp=E,219μm,0.4s						
PTL				AML	AML	06 57 27.3	
	comp=N,340μm,0.4s						
ATHU	**Athens Univers**	**0.94**	**173**	P	**Pb**	**06 57 13.1**	**-1.5**
ATHU				S	**Sn**	**06 57 27.2**	**-0.4**
ATHU	**Athens Univers**	**0.94**	**173**	P	**Pb**	**06 57 13.1**	**-1.5**
ATHU				S	**Sn**	**06 57 27.2**	**-0.4**
ATHU				AML	AML	06 57 27.8	
	comp=E,92μm,0.4s						
ATHU				AML	AML	06 57 28.8	
	comp=N,125μm,0.5s						
DSF	**Desfina**	**1.00**	**241**	P	**Pn**	**06 57 16.6**	**+0.9**
DSF	**Desfina**	**1.00**	**241**	P	**Pn**	**06 57 16.6**	**+0.9**
DSF				S	**Sn**	**06 57 31.1**	**+1.9**
DSF				AML	AML	06 57 32.6	
	comp=E,120μm,0.5s						
DSF				AML	AML	06 57 34.4	
	comp=N,88μm,0.2s						
KALE	**Kalithea**	**1.28**	**247**	P	**Pb**	**06 57 19.7**	**-0.7**
KALE	**Kalithea**	**1.28**	**247**	P	**Pb**	**06 57 19.7**	**-0.7**
DID	**Didima**	**1.43**	**193**	P	**Pb**	**06 57 22.9**	**0.0**
DID				S	**Sb**	**06 57 40.5**	**-0.1**
DID	**Didima**	**1.43**	**193**	P	**Pb**	**06 57 22.9**	**0.0**
DID				S	**Sb**	**06 57 40.5**	**-0.1**
DID				AML	AML	06 57 43.8	
	comp=E,303μm,0.3s						
DID				AML	AML	06 57 44.6	
	comp=N,261μm,0.3s						
KLV	**Kalavryta, Ach**	**1.45**	**234**	P	**Pb**	**06 57 22.8**	**-0.5**
KLV				S	**Sb**	**06 57 42.3**	**+1.0**
KLV	**Kalavryta, Ach**	**1.45**	**234**	P	**Pb**	**06 57 22.8**	**-0.5**
KLV				S	**Sb**	**06 57 42.3**	**+1.0**
KLV				AML	AML	06 57 49.0	
	comp=E,22μm,0.7s						
KLV				AML	AML	06 57 54.1	
	comp=N,24μm,0.7s						

MAN 05 07:24:46, 7°.65N×123°.53E, h20km, mb4.4, ML3.2, MS3.1, 2C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	**Cotabato--PC H**	**0.83**	**121**	∥*e*P	Pn	07 25 03.0	+0.5
CTBH				*i* S	Sn	07 25 15.0	+0.9
DCPH	**Dipolog City**	**0.95**	**349**	∥*e*P	Pb	07 25 03.1	-0.6
CGP	**Cagayan de Oro**	**1.40**	**55**	∥*e*P	Pb	07 25 13.8	+2.2
CGP				*e*S	Sb	07 25 29.7	+0.7
SNPH	**Sibulan**	**1.71**	**350**	∥*i*P	Pn	07 25 10.8	-3.9
SNPH				*i* S	Sn	07 25 32.7	-3.4
GUIM	**Jordan**	**3.10**	**343**	*e*P	Pn	07 25 36.4	+2.6
OTRP	**Odiongan**	**4.91**	**343**	*e*P	Pn	07 26 00.8	+2.0

KRSC 05 07:48:16.1±1.2, 50°.05N×157°.29E, h24km±9km, ML3.8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.98**	**310**	*i* P	Pn	07 48 34.1	-0.2
SKR				*i* S	Sb	07 48 47.0	0.0
PAU	**Pauzhetka**	**1.45**	**348**	*i* P	Pb	07 48 42.3	-0.1
PAU				*i* S	Sb	07 49 01.1	+0.7
ASAK	**Asacha**	**2.37**	**9**	P	Pb	07 48 56.4	-1.7
RUS	**Russkaya**	**2.50**	**17**	*e*P	Pn	07 48 57.8	+2.6
RUS				*e*S	Sb	07 49 28.6	-2.1
UGLR	**Uglovaya**	**3.30**	**16**	P	Pn	07 49 09.1	+2.8
AVH	**Avacha**	**3.34**	**15**	P	Pb	07 49 10.9	-3.8
SPN	**Mys Shipunski**	**3.49**	**28**	*e*S	Sn	07 49 52.5	+3.1

*NIED **05** 07:51:00, 36°.80N×140°.60E, h5km, Mw3.7 Best double couple: M0 4.25000×10^14 NP1:φ1=328.00000°, δ26.00000°, λ=-121.00000°. NP2:φ2=182.00000°, δ68.00000°, λ=-76.00000°.*
*IDC **05** 07:51:58.6±0.9, 36°.76N×140°.59E, h0km, mb3.6/6, mb1 3.8/8, mb1mx3.6/36, mbtmp3.7/8, ML3.9/1, MS2.7/2, Ms1 2.7/2, ms1mx2.4/24, Error ellipse: s-maj=22.1km s-min=16.9km az=103.0*
*ISCJB **05** 07:51:59.5±0.6, 36°.82N±0°.02×140°.63E±0°.05, h12km±4km, mb3.7/8, Error ellipse: s-maj=6.5km s-min=3.7km az=16.4*
*JMA **05** 07:51:59.8, 36°.83N×140°.57E, h4km±1km, M4.0 Broadband fault plane solution: P waves. NP1: φs=193.00000°, δ54.00000°, λ-65.00000°. NP2: φs=335.00000°, δ43.00000°, λ-120.00000°. Principal axes: T Plg6.0000°, Azm266.0000°; N Plg20.0000°, Azm358.0000°; P Plg69.0000°, Azm160.0000°;*
JMA Felt II J1.
*NEIC **05** 07:52:03.3±2.9, 36°.81N×140°.62E, h32km±23km, mb4.2/2 Error ellipse: s-maj=14.0km s-min=9.5km az=120.0*
NEIC Recorded [2 JMA] in Ibaraki.

ISC 05 07:52:00.2±1.2, 36°.82N±0°.03×140°.59E±0°.04, h4km±8km, n31, σ1♀40/35, mb3.8/8, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.21**	**185**	∥P	**Pg**	**07 52 04.3**	**0.0**
JHO				S	**Sg**	**07 52 07.3**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.32**	**31**	∥P	**Pg**	**07 52 06.1**	**-0.4**
ONAJ				S	**Sg**	**07 52 10.9**	**+0.1**
JSB	**Shiboa**	**0.56**	**285**	∥P	**Pg**	**07 52 10.9**	**0.0**
JSB				S	**Sg**	**07 52 18.9**	**+0.8**
JFK	**Kawauchi**	**0.59**	**23**	P	**Pg**	**07 52 10.7**	**-0.8**
JYT	**Yasato**	**0.68**	**208**	∥P	**Pg**	**07 52 12.7**	**-0.4**
JYT				S	**Sg**	**07 52 21.9**	**0.0**
JFT	**Otama**	**0.72**	**344**	P	**Pg**	**07 52 13.6**	**-0.5**
JFT				S	**Sg**	**07 52 23.2**	**-0.3**
JFY	**Yanaizu**	**0.92**	**310**	∥P	**Pg**	**07 52 16.8**	**-1.0**
JFY				S	**Sg**	**07 52 28.8**	**-0.9**
MJAR	**Matsushiro Arr**	**1.94**	**262**	Pn	**Pn**	**07 52 33.1**	**-0.8**
	52nm,0.3s,baz=86,slow=15,SNR=280						
MJAR				Sn	**Sn**	**07 52 58.0**	**-0.5**
	36nm,0.3s,baz=304,slow=33,SNR=9.9						
MJAR				LR	LR	07 53 34.0	
	comp=Z,148nm,19.8s,baz=100,slow=50						
MAJO	**Matsushiro**	**1.94**	**262**	*e*Pn	**Pn**	**07 52 33.6**	**-0.2**
MAJO				*e*Sg	**Sb**	**07 53 00.1**	**-0.4**
JHJ	**Hachijo jima 2**	**3.75**	**190**	Pn	**Pn**	**07 52 58.9**	**+0.1**
	24nm,0.3s,baz=3.1,slow=17,SNR=3.9						
JHJ				Sn	**Sn**	**07 53 42.5**	**-1.0**
	20nm,0.3s,baz=252,slow=19,SNR=3.6						
JHJ2	**Mitsune**	**3.76**	**190**	*e*Pn	**Pn**	**07 52 59.3**	**+0.4**
ERM	**Erimo**	**5.55**	**20**	*e*Pn	**Pn**	**07 53 23.6**	**+0.1**
ERM				*e*Sn	**Sn**	**07 54 28.9**	**+1.2**
ASAJ	**Asahikawa**	**7.44**	**11**	Pn	**Pn**	**07 53 49.0**	**-0.5**
	baz=270,slow=20						
ASAJ				Sn	**Sn**	**07 55 17.4**	**+3.1**
	baz=90,slow=20						
JNU	**Nakatsue**	**8.78**	**248**	LR	LR	07 57 44.3	
	comp=Z,42nm,19.7s,baz=122,slow=40						
USRK	**Ussuriysk Ar.**	**9.85**	**321**	Pn	**Pn**	**07 54 25.0**	**+2.5**
	0.2nm,0.3s,baz=134,slow=10,SNR=3.3						
KSRS	**Korea Array**	**10.13**	**277**	Pn	**Pn**	**07 54 29.7**	**+3.3**
	0.2nm,0.3s,baz=96,slow=13,SNR=9.8						
KSRS				LR	LR	07 57 42.1	
	comp=Z,41nm,18.6s,baz=108,slow=34						
KSAR	**Wonju Array Be**	**10.17**	**277**	Pn	**Pn**	**07 54 29.7**	**+2.9**
SONM	**Songino Array**	**27.36**	**305**	P	**P**	**07 57 45.4**	**-1.0**
	0.7nm,0.5s,baz=68,slow=9.7,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**28.61**	**119**	T	T	08 27 43.1	
	baz=312,slow=75,SNR=112						
H11N1	**WAKE ISLAND Hy**	**28.62**	**119**	T	T	08 27 42.2	
	baz=312,slow=75,SNR=82						
H11N3	**WAKE ISLAND Hy**	**28.63**	**119**	T	T	08 27 44.0	
	baz=312,slow=75,SNR=150						
H11S1	**WAKE ISLAND Hy**	**29.31**	**121**	T	T	08 28 33.2	
	baz=314,slow=76,SNR=1037						
H11S3	**WAKE ISLAND Hy**	**29.31**	**121**	T	T	08 28 33.8	
	baz=314,slow=76,SNR=624						
H11S2	**WAKE ISLAND Hy**	**29.32**	**121**	T	T	08 28 31.7	
	baz=314,slow=76,SNR=569						
MKAR	**Makanchi Array**	**43.67**	**302**	P	**P**	**08 00 05.2**	**-0.8**
	0.1nm,0.4s,baz=95,slow=7.2,SNR=2.3						
KURK	**Kurchatov**	**45.54**	**308**	*e*P	**P**	**08 00 19.4**	**-1.3**
	3.2nm,0.8s						
ILAR	**Eielson Array**	**50.02**	**32**	P	**P**	**08 00 55.0**	**-0.3**
	0.4nm,0.9s,baz=271,slow=5.2,SNR=4.3						
WRAB	**Tennant Creek**	**56.76**	**187**	*e*P	**P**	**08 01 48.0**	**+2.8**
	2.0nm,1.2s						
WRA	**Warramunga Arr**	**56.77**	**187**	P	**P**	**08 01 43.8**	**-1.6**
	0.7nm,0.6s,baz=3.1,slow=7.4,SNR=14						
ASAR	**Alice Springs**	**60.49**	**187**	P	**P**	**08 02 09.2**	**-2.1**
	0.5nm,0.8s,baz=0.0,slow=5.6,SNR=4.1						
TXAR	**Lajitas Array**	**90.77**	**52**	P	**P**	**08 05 04.6**	**-0.2**
	0.5nm,0.8s,baz=300,slow=2.7,SNR=6.0						

*ISCJB **05** 07:56:13.8±0.7, 52°.92S±0°.09×22°.8E±0°.3, h10km, mb4.1/9, MS3.4/9, Error ellipse: s-maj=22.0km s-min=13.4km az=178.3*
*IDC **05** 07:56:13.6±0.8, 52°.92S×22°.90E, h0km, mb3.9/7, mb1 4.1/7, mb1mx3.8/25, mbtmp3.9/7, MS3.4/9, Ms1 3.4/9, ms1mx3.3/21, Error ellipse: s-maj=33.3km s-min=23.7km az=61.0*
*NEIC **05** 07:56:15.2±0.6, 52°.90S×22°.89E, h10km, mb4.7/2, Error ellipse: s-maj=21.7km s-min=13.9km az=84.0*

ISC 05 07:56:15.2±0.8, 52°.9S±0°.1×22°.9E±0°.2, h10km, n25, σ1♀00/16, mb4.1/9, MS3.5/9, 1C, South of Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SYO	**Syowa Base**	**17.95**	**160**	∥*e*P	**Pn**	**08 00 24.0**	**-0.5**
SUR	**Sutherland**	**20.58**	**355**	LR	LR	08 06 59.8	
	comp=Z,14nm,20.5s,baz=143,slow=31						
SNAA	**Sanae**	**21.95**	**202**	P	**P**	**08 01 08.8**	**+0.1**
SNAA	**Sanae**	**21.95**	**202**	*e*P	**P**	**08 01 08.7**	**0.0**
VNA1	**Neumayer--Stat**	**22.63**	**207**	P	**P**	**08 01 16.7**	**+0.9**
MAW	**Mawson**	**24.10**	**143**	P	**P**	**08 01 29.2**	**-1.4**
	1.4nm,0.7s,baz=287,slow=11,SNR=2.6						
BOSA	**Boshof**	**24.34**	**5**	P	**P**	**08 01 31.8**	**-1.5**
	2.8nm,1.0s,baz=170,slow=11,SNR=1.8						
BOSA				LR	LR	08 09 07.5	
	comp=Z,126nm,20.5s,baz=204,slow=32						
LBTB	**Lobatse**	**27.94**	**5**	LR	LR	08 11 06.1	
	comp=Z,130nm,19.7s,baz=196,slow=32						
QSPA	**South Pole Qui**	**37.31**	**180**	*e*P	**P**	**08 03 27.1**	**-0.2**
	21nm,1.1s						
VNDA	**Vanda**	**47.36**	**169**	P	**P**	**08 04 48.5**	**-0.1**
	1.1nm,0.9s,baz=243,slow=6.6,SNR=4.6						
VNDA				LR	LR	08 24 36.8	
	comp=Z,53nm,18.8s,baz=199,slow=36						
SBA	**Scott Base**	**47.62**	**170**	*e*P	**P**	**08 04 52.0**	**+1.4**
	7.5nm,1.6s						
PLCA	**Paso Flores**	**60.68**	**240**	LR	LR	08 28 09.4	
	comp=Z,27nm,20.1s,baz=171,slow=32						
CPUP	**Villa Florida**	**63.68**	**261**	P	**P**	**08 06 45.6**	**-1.0**
	1.8nm,0.8s,baz=126,slow=4.5,SNR=5.4						
H01W2	**Cape Leeuwin H**	**63.74**	**114**	T	T	09 16 53.7	
	baz=222,slow=75,SNR=4.9						
H01W3	**Cape Leeuwin H**	**63.76**	**114**	T	T	09 16 53.7	
	baz=222,slow=75,SNR=4.3						
H01W1	**Cape Leeuwin H**	**63.76**	**114**	T	T	09 16 52.5	
	baz=222,slow=75,SNR=3.9						
DBIC	**Dimbokro**	**63.86**	**329**	LR	LR	08 28 46.5	
	comp=Z,30nm,21.4s,baz=128,slow=31						
ASAR	**Alice Springs**	**83.19**	**120**	P	**P**	**08 08 42.6**	**+0.9**
	0.9nm,0.8s,baz=216,slow=6.6,SNR=5.9						
WRA	**Warramunga Arr**	**86.48**	**119**	P	**P**	**08 08 57.8**	**-0.5**
	1.3nm,1.0s,baz=212,slow=3.4,SNR=5.6						
KEST	**Kesra**	**89.06**	**349**	LR	LR	08 50 00.2	
	comp=Z,25nm,18.3s,baz=275,slow=36						
BRTR	**Keskin Array B**	**92.73**	**8**	P	**P**	**08 09 28.7**	**

KULA	**Kula-Manisa**	**1.27**	**17**	*e*Pn		**Pb**	**07 59 05.7**	**0.0**

IDC ***05*** *08:22:50.5±1.4, 36.80N×141.18E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/37, mbtmp3.4/4, ML2.6/1, Error ellipse: s-maj=33.8km s-min=26.8km az=33.0*
ISCJB ***05*** *08:22:51.4±1.3, 36.83N±0.04×141.31E±0.08, h22km±7km, mb3.5/3, Error ellipse: s-maj=11.5km s-min=6.5km az=21.3*
JMA ***05*** *08:22:53.4±0.1, 36.86N×141.16E, h34km±1km, M3.4*
JMA Felt I J1.
ISC 05 08:22:51.9±1.8, 36°84'N±0.05×141°28'E±0.08, h16km±9km, n13, σ1°80/22, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.47**	**305**	P	**Pg**	**08 23 02.0**	**+0.7**
ONAJ				S	**Sg**	**08 23 07.8**	**+0.1**
JHO	**Hitachi**	**0.61**	**249**	P	**Pg**	**08 23 04.3**	**+0.3**
JHO				S	**Sg**	**08 23 11.9**	**-0.3**
JFK	**Kawauchi**	**0.62**	**329**	P	**Pg**	**08 23 04.4**	**+0.2**
JFK				S	**Sg**	**08 23 12.0**	**-0.5**
JFT	**Otama**	**1.02**	**312**	P	**Pb**	**08 23 11.0**	**-0.2**
JFT				S	**Sb**	**08 23 23.3**	**-1.0**
JYT	**Yasato**	**1.07**	**236**	P	**Pb**	**08 23 11.2**	**-0.8**
JYT				S	**Sb**	**08 23 23.7**	**-2.0**
JMM	**Marumori**	**1.10**	**339**	P	**Pb**	**08 23 11.9**	**-0.7**
JMM				*e*S	**Sb**	**08 23 25.1**	**-1.6**
JSB	**Shiboa**	**1.10**	**277**	P	**Pb**	**08 23 12.6**	**0.0**
JSB				*e*S	**Sb**	**08 23 26.4**	**-0.3**
MJAR	**Matsushiro Arr**	**2.49**	**264**	Pn	**Pn**	**08 23 32.3**	**+0.5**
	1.6nm,0.3s,baz=84,slow=15,SNR=9.8						
MJAR				Sn	**Sn**	**08 24 01.9**	**+0.1**
	4.2nm,0.3s,baz=324,slow=45,SNR=5.1						
MAT	**Matsushiro**	**2.49**	**264**	P	**Pn**	**08 23 32.9**	**+1.1**
MAT				S	**Sn**	**08 24 02.4**	**+0.5**
ZALV	**Zalesovo Beam**	**41.97**	**313**	P	**P**	**08 30 42.1**	**+0.2**
	0.3nm,0.3s,baz=104,slow=6.1,SNR=2.5						
MKAR	**Makanchi Array**	**44.13**	**302**	P	**P**	**08 30 59.5**	**-0.1**
	0.2nm,0.3s,baz=95,slow=8.9,SNR=3.0						
WRA	**Warramunga Arr**	**56.85**	**188**	P	**P**	**08 32 36.1**	**+0.3**
	0.5nm,0.7s,baz=5.3,slow=7.3,SNR=9.5						
LPAZ	**La Paz**	**146.88**	**60**	PKPbc	**PKPab**	**08 42 36.4**	**+0.3**
	baz=346,slow=4.2						

ISCJB ***05*** *08:33:32.7±0.4, 49.93N±0.03×18.41E±0.03, h0km, Error ellipse: s-maj=4.0km s-min=2.3km az=14.6*
CSEM ***05*** *08:33:33.8±0.2, 49.90N×18.41E, h1km, ML3.0/12, Error ellipse: s-maj=4.8km s-min=2.6km az=10.0, Mining induced.*
IPEC ***05*** *08:33:34.0±0.2, 49.86N×18.50E, h0km, ML2.4/4, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*
PRU ***05*** *08:33:35.1, 49.88N×18.37E, h0km, Rockburst In Region Felt In Karvina Mining induced.*
VIE ***05*** *08:33:35.6±1.2, 49.86N×18.30E, h0km, mb2.1/3, ML2.7/3, Error ellipse: s-maj=8.8km s-min=7.3km az=34.0, Suspected Mining induced.*
ISC 05 08:33:33.7±0.7, 49°88'N±0.03×18°42'E±0.02, h0km, n43, σ0°95/80, 2C-8D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OKC	**Ostrava-Krasne**	**0.18**	**256**	⇓*i* P	**Pg**	**08 33 38.8**	**+1.6**
OKC				*e*SG	**Sg**	**08 33 40.9**	**+1.4**
	comp=Z,426nm,0.4s						
OKC	**Ostrava-Krasne**	**0.18**	**256**	Pg	**Pg**	**08 33 38.8**	**+1.6**
OKC				Sg	**Sg**	**08 33 40.9**	**+1.4**
	426nm,0.4s						
RAC	**Raciborz**	**0.25**	**324**	*e*Sg	**Sb**	**08 33 46.0**	**+4.3**
MORC	**Moravsky Berou**	**0.58**	**260**	⇑*i* P	**Pg**	**08 33 45.6**	**+0.8**
MORC				S	**Sb**	**08 33 54.1**	**-1.4**
MORC	**Moravsky Berou**	**0.58**	**260**	*e*Pg	**Pg**	**08 33 45.5**	**+0.8**
MORC				*e*Sg	**Sg**	**08 33 53.3**	**+1.0**
	49nm,0.4s						
MORC				S	**Sb**	**08 33 54.1**	**-1.4**
OJC	**Ojcow**	**0.95**	**69**	*e*Pg	**Pg**	**08 33 51.7**	**-0.2**
OJC				*e*Sg	**Sg**	**08 34 04.4**	**+0.2**
OJC	**Ojcow**	**0.95**	**69**	*e*Pg	**Pg**	**08 33 51.7**	**-0.2**
OJC				*e*Sg	**Sg**	**08 34 04.4**	**+0.2**
LANS	**Liptovska Anna**	**1.00**	**137**	*e*Pg	**Pg**	**08 33 53.1**	**+0.2**
LANS				*e*Sg	**Sb**	**08 34 07.6**	**-0.1**
LANS	**Liptovska Anna**	**1.00**	**137**	*e*PG	**Pg**	**08 33 53.1**	**+0.2**
LANS				*e*SG	**Sb**	**08 34 07.6**	**-0.1**
KRLC	**Kraliky**	**1.07**	**281**	⇓*i* PG	**Pg**	**08 33 54.1**	**-0.2**
KRLC				*e*SG	**Sb**	**08 34 09.2**	**-0.6**
KRLC	**Kraliky**	**1.07**	**281**	Pg	**Pg**	**08 33 54.1**	**-0.2**
KRLC				Sg	**Sb**	**08 34 09.2**	**-0.6**
JAVC	**Velka Javorina**	**1.14**	**206**	*e*Sg	**Sn**	**08 34 13.3**	**+0.1**
	52nm,0.7s						
NIE	**Niedzica**	**1.31**	**110**	*e*Pg	**Pg**	**08 33 58.9**	**+0.2**
NIE				*e*Sg	**Sn**	**08 34 17.6**	**+0.2**
VRAC	**Vranov**	**1.32**	**245**	⇓*i* P	**Pb**	**08 33 59.2**	**-0.2**
VRAC				S	**Sn**	**08 34 17.4**	**-0.3**
VRAC	**Vranov**	**1.32**	**245**	*e*Pg	**Pb**	**08 33 59.1**	**-0.3**
VRAC				*e*Sg	**Sb**	**08 34 16.9**	**+0.1**
	44nm,0.5s						
VRAC				S	**Sn**	**08 34 17.4**	**-0.3**
VYHS	**Vyhne**	**1.42**	**169**	*e*Pn	**Pn**	**08 34 00.0**	**-0.7**
VYHS				*e*Sn	**Sg**	**08 34 19.2**	**0.0**
VYHS	**Vyhne**	**1.42**	**169**	*e*PN	**Pn**	**08 34 00.0**	**-0.7**
VYHS				*e*SN	**Sg**	**08 34 19.2**	**0.0**
VYHS				*e*LG	Lg	08 34 20.6	
DPC	**Dobruska-Polom**	**1.43**	**290**	*e*PG	**Pg**	**08 34 01.0**	**-0.1**
DPC				*e*SG	**Sn**	**08 34 20.4**	**-0.1**
	comp=Z,19nm,0.4s						
DPC	**Dobruska-Polom**	**1.43**	**290**	Pg	**Pg**	**08 34 01.0**	**-0.1**
DPC				Sg	**Sn**	**08 34 20.4**	**-0.1**
	19nm,0.4s						
SMOL	**Smolenice**	**1.52**	**206**	*e*Pn	**Pn**	**08 34 01.7**	**-0.4**
SMOL				*e*Sn	**Sb**	**08 34 22.2**	**-0.3**
SMOL	**Smolenice**	**1.52**	**206**	*e*PN	**Pn**	**08 34 01.7**	**-0.4**
SMOL				*e*SN	**Sb**	**08 34 22.2**	**-0.3**
KRUC	**Moravsky**	**1.56**	**239**	*e*Pg	**Pn**	**08 34 02.6**	**0.0**
KRUC				*e*Sg	**Sg**	**08 34 23.7**	**+0.1**
	46nm,0.8s						
KSP	**Ksiaz**	**1.67**	**306**	*e*Pg	**Pg**	**08 34 05.8**	**+0.1**
KSP				*e*Sg	**Sg**	**08 34 27.4**	**+0.2**
KSP	**Ksiaz**	**1.67**	**306**	*e*Pg	**Pg**	**08 34 05.8**	**+0.1**
KSP				*e*Sg	**Sg**	**08 34 27.4**	**+0.2**
UPC	**Upice**	**1.67**	**293**	⇓*e*PG	**Pb**	**08 34 05.2**	**-0.1**
UPC				*e*SG	**Sg**	**08 34 27.9**	**+0.6**
	comp=Z,25nm,0.5s						
UPC	**Upice**	**1.67**	**293**	Pg	**Pb**	**08 34 05.2**	**-0.1**
UPC				Sg	**Sg**	**08 34 27.9**	**+0.6**
	25nm,0.5s						
STHS	**Stebnicka Huta**	**1.89**	**103**	*e*Pn	**Pb**	**08 34 09.6**	**+0.5**
STHS	**Stebnicka Huta**	**1.89**	**103**	*e*PN	**Pb**	**08 34 09.6**	**+0.5**
STHS				*e*SN	**Sg**	**08 34 36.8**	**+2.3**
STHS				*e*LG	Lg	08 34 42.3	
KECS	**Kecovo**	**1.95**	**135**	*e*Sn	**Sn**	**08 34 34.0**	**+0.8**
KECS	**Kecovo**	**1.95**	**135**	*e*SN	**Sn**	**08 34 34.0**	**+0.8**
KECS				*e*LG	Lg	08 34 34.4	
GOPC	**GO Pecny, Ondr**	**2.35**	**272**	*e*PN	**Pn**	**08 34 13.1**	**-0.5**
GOPC				*e*PG	**Pb**	**08 34 16.2**	**-0.7**
GOPC				*e*SG	**Sb**	**08 34 47.6**	**+1.1**
	comp=Z,12nm,0.8s						
GOPC	**GO Pecny, Ondr**	**2.35**	**272**	Pn	**Pn**	**08 34 13.1**	**-0.5**
GOPC				Sg	**Sb**	**08 34 47.6**	**+1.1**
	12nm,0.8s						
PRU	**Pruhonice**	**2.51**	**274**	⇓*e*PG	**Pg**	**08 34 20.9**	**-0.9**
PRU				*e*SG	**Sb**	**08 34 52.4**	**+1.4**
	comp=Z,8.6nm,0.4s						
PRU	**Pruhonice**	**2.51**	**274**	Pg	**Pg**	**08 34 20.9**	**-0.9**
PRU				Sg	**Sb**	**08 34 52.4**	**+1.4**
	8.6nm,0.4s						
BRG	**Berggiesshubel**	**3.03**	**291**	PG	**Pb**	**08 34 29.6**	**+1.1**
BRG				SG	**Sg**	**08 35 10.1**	**-1.0**
	8.1nm,0.6s						
KHC	**Kasperske Hory**	**3.24**	**258**	*e*PN	**Pn**	**08 34 25.4**	**-0.5**
KHC				*e*PG	**Pb**	**08 34 32.6**	**+0.4**
KHC				*e*SG	**Sg**	**08 35 16.8**	**-1.1**
	comp=Z,9.8nm,0.4s						
KHC	**Kasperske Hory**	**3.24**	**258**	Pn	**Pn**	**08 34 25.4**	**-0.5**
KHC				Sg	**Sg**	**08 35 16.8**	**-1.1**
	9.8nm,0.4s						
MOA	**Molln**	**3.41**	**235**	Pn	**Pn**	**08 34 29.4**	**+1.2**
	1.6nm,0.3s						
MOA				Sg	**Sg**	**08 35 22.2**	**-1.2**
	9.0nm,0.4s						
NKC	**Novy Kostel**	**3.86**	**277**	⇓*e*SG	**Sg**	**08 35 37.6**	**-0.2**
	comp=Z,8.0nm,0.4s						
NKC	**Novy Kostel**	**3.86**	**277**	Sg	**Sg**	**08 35 37.6**	**-0.2**
	8.0nm,0.4s						
DRGR		**4.21**	**136**	⇓*i* P	**Pn**	**08 34 39.1**	**-0.1**
DRGR		**4.21**	**136**	⇓*i* P	**Pn**	**08 34 39.1**	**-0.1**
DRGR				S	**Sn**	**08 35 26.4**	**-2.8**
BURAR	**Bucovina Array**	**5.04**	**114**	⇑*i* P	Pn	08 34 44.3	-6.3

IDC ***05*** *08:51:21.0±2.2, 36.88N×143.17E, h0km, mb3.6/5, mb1 3.7/8, mb1mx3.5/54, mbtmp3.6/8, ML2.9/3, MS2.9/2, Ms1 2.9/2, ms1mx2.4/45, Error ellipse: s-maj=59.4km s-min=23.9km az=61.0*
ISCJB ***05*** *08:51:25.2±0.9, 36.95N±0.04×142.72E±0.08, h25km, mb3.6/5, MS3.5/1, Error ellipse: s-maj=9.4km s-min=5.1km az=17.5*
JMA ***05*** *08:51:25.7±0.2, 36.97N×142.75E, h47km, M3.4*
ISC 05 08:51:25.5±1.3, 36°94N±0.05×142°86E±0.10, h25km, n31, σ1°86/33, mb3.7/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.64**	**286**	P	**Pn**	**08 51 51.5**	**-1.3**
ONAJ	**Iwakimizuishiy**	**1.66**	**276**	P	**Pn**	**08 51 51.5**	**-1.6**
JHO	**Hitachi**	**1.87**	**261**	P	**Pn**	**08 51 55.0**	**-0.9**
JHO				*e*S	**Sn**	**08 52 16.4**	**-2.3**
JMM	**Marumori**	**1.89**	**300**	P	**Pn**	**08 51 55.1**	**-1.1**
JMM				S	**Sn**	**08 52 16.7**	**-2.5**
JIO	**Ouri**	**1.93**	**322**	P	**Pn**	**08 51 56.0**	**-0.8**
JIO				*e*S	**Sn**	**08 52 18.3**	**-1.9**
JFT	**Otama**	**2.10**	**287**	P	**Pn**	**08 51 58.7**	**-0.3**
JMK	**Ichinoseki**	**2.39**	**328**	P	**Pn**	**08 52 02.7**	**-0.4**
JMK				*e*S	**Sn**	**08 52 29.9**	**-1.7**
BSO1	**Boso 1**	**2.75**	**214**	*e*S	**Sn**	**08 52 40.1**	**+0.5**
JAG	**Ashikaga**	**2.79**	**260**	P	**Pn**	**08 52 08.0**	**-0.5**
JAG				*e*S	**Sn**	**08 52 39.3**	**-2.0**
JYK	**Kaneyama**	**2.79**	**316**	P	**Pn**	**08 52 08.1**	**-0.6**
JOM	**Ohasama**	**2.82**	**334**	P	**Pn**	**08 52 08.6**	**-0.3**
JRY	**Ryogami san**	**3.32**	**255**	P	**Pn**	**08 52 15.6**	**-0.3**
JRY				*e*S	**Sn**	**08 52 51.3**	**-3.3**
JOD2	**Odawara 2**	**3.48**	**242**	P	**Pn**	**08 52 18.2**	**+0.1**
JOD2				*e*S	**Sn**	**08 52 55.8**	**-2.7**
MJAR	**Matsushiro Arr**	**3.75**	**265**	Pn	**Pn**	**08 52 22.8**	**+0.9**
	2.6nm,0.3s,baz=91,slow=15,SNR=17						
MJAR				LR	LR	08 54 00.2	
	comp=Z,58nm,19.9s,baz=120,slow=40						
MAT	**Matsushiro**	**3.76**	**265**	P	**Pn**	**08 52 22.9**	**+1.0**
MAT				*e*S	**Sn**	**08 53 10.1**	**+4.8**
JYN	**Shimob**	**3.77**	**249**	P	**Pn**	**08 52 22.9**	**+0.7**
JYN				*e*S	**Sn**	**08 53 05.5**	**-0.3**
JHJ	**Hachijo jima 2**	**4.57**	**214**	Sn	**Sn**	**08 53 21.5**	**-3.8**
	21nm,0.3s,baz=253,slow=19,SNR=4.7						
USRK	**Ussuriysk Ar.**	**10.99**	**315**	Pn	**Pn**	**08 54 01.5**	**+0.4**
	0.2nm,0.3s,baz=129,slow=16,SNR=3.2						
KSRS	**Korea Array**	**11.93**	**277**	Pn	**Pn**	**08 54 17.0**	**+3.1**
	0.1nm,0.3s,baz=89,slow=13,SNR=6.0						
H11N2	**WAKE ISLAND Hy**	**27.11**	**123**	T	T	09 25 52.9	
	baz=320,slow=74						
H11N1	**WAKE ISLAND Hy**	**27.12**	**123**	T	T	09 26 04.6	
	baz=320,slow=74						
H11N3	**WAKE ISLAND Hy**	**27.13**	**123**	T	T	09 26 07.0	
	baz=320						
H11S1	**WAKE ISLAND Hy**	**27.84**	**125**	T	T	09 26 45.1	
	baz=317						
H11S3	**WAKE ISLAND Hy**	**27.85**	**125**	T	T	09 26 54.0	
	baz=317						
H11S2	**WAKE ISLAND Hy**	**27.86**	**125**	T	T	09 26 59.8	
	baz=317						
SONM	**Songino Array**	**28.80**	**304**	P	**P**	**08 57 22.2**	**+0.7**
	1.0nm,0.5s,baz=108,slow=9.3,SNR=4.1						
ZALV	**Zalesovo Beam**	**42.83**	**312**	P	**P**	**08 59 22.2**	**+1.0**
	0.6nm,0.4s,baz=75,slow=11,SNR=3.2						
MKAR	**Makanchi Array**	**45.15**	**302**	P	**P**	**08 59 41.8**	**+1.8**
	0.3nm,0.3s,baz=93,slow=9.6,SNR=6.8						
WRA	**Warramunga Arr**	**57.14**	**190**	P	**P**	**09 01 09.3**	**-0.8**
	0.3nm,0.8s,baz=6.0,slow=7.1,SNR=3.5						
ASAR	**Alice Springs**	**60.87**	**189**	P	**P**	**09 01 34.9**	**-1.0**
	0.5nm,1.0s,baz=1.0,slow=5.1,SNR=2.9						
WSAR	**Wadi Sarin**	**72.01**	**286**	LR	LR	09 37 10.9	
	comp=Z,22nm,18.3s,slow=38						

IDC 05 08:57:58.2±5.0, 15°49S×172°76W, h0km, mb4.2/3, mb1 4.4/3, mb1mx3.7/29, mbtmp4.2/3, Error ellipse: s-maj=182.3km s-min=99.9km az=149.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**44.53**	**240**	P	P	09 06 12.3	+0.4
	2.2nm,0.6s,baz=90,slow=8.1,SNR=4.4						
WRA	**Warramunga Arr**	**50.43**	**257**	P	P	09 06 57.4	-0.6
	0.7nm,0.5s,baz=94,slow=6.9,SNR=28						
WRA				PcP	PcP	09 08 16.4	-0.1
	0.4nm,0.8s,baz=96,slow=5.9,SNR=2.8						
ASAR	**Alice Springs**	**50.67**	**252**	P	P	09 06 59.8	-0.1
	4.4nm,0.4s,baz=88,slow=8.2,SNR=123						

ISCJB ***05*** *09:16:24.7±0.5, 38.46S±0.04×145.79E±0.08, h8km, mb3.8/1, Error ellipse: s-maj=8.9km s-min=5.4km az=158.5*
NEIC ***05*** *09:16:26.0, 38.41S×145.81E, h6km, mb3.7/1, ML3.7(AUST), After AUST.*
NEIC Felt [II] at Melbourne. Also felt at Pakenham and Warragul.
AUST ***05*** *09:16:26.1±0.8, 38.41S×145.81E, h7km±6km, Error ellipse: s-maj=3.5km s-min=2.9km az=61.0*
IDC ***05*** *09:16:28.4±4.5, 37.36S×147.41E, h0km, mb3.8/2, mb1 4.0/4, mb1mx3.8/23, mbtmp3.8/4, ML3.8/2, Error ellipse: s-maj=196.9km s-min=50.5km az=50.0*
ISC 05 09:16:26.7±1.0, 38°37S±0.05×145°87E±0.07, h8km, n22, σ2°33/28, Near southeast coast of Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TOO	**Toolangi**	**0.85**	**339**	P	**Pg**	**09 16 42.9**	**-0.1**
	baz=0.9,SNR=1000						
TOO	**Toolangi**	**0.85**	**339**	P	**Pg**	**09 16 43.4**	**+0.4**
TOO				S	**Sg**	**09 16 56.4**	**+2.3**
MILA	**Mila**	**2.91**	**64**	P	**Pn**	**09 17 13.4**	**+0.1**
	baz=3.0,SNR=88						
MILA	**Mila**	**2.91**	**64**	P	**Pn**	**09 17 13.4**	**+0.1**
ARPS	**Mount Arapiles**	**3.58**	**295**	P	**Pn**	**09 17 22.0**	**-0.5**
	baz=3.5,SNR=60						
ARPS	**Mount Arapiles**	**3.58**	**295**	P	**Pn**	**09 17 22.4**	**0.0**
CAN	**Canberra**	**3.94**	**40**	P	**Pn**	**09 17 28.0**	**+0.5**
	baz=4.0						
CAN	**Canberra**	**3.94**	**40**	*e*Pn	**Pn**	**09 17 28.6**	**+1.1**
CAN				*e*Sn	**Sn**	**09 18 10.6**	**-3.4**
CNB	**Canberra Magne**	**4.14**	**44**	P	**Pn**	**09 17 30.8**	**+0.6**
	baz=4.2,SNR=9.7						
MOO	**Moorlands**	**4.19**	**167**	P	**Pn**	**09 17 29.9**	**-1.0**
	baz=4.2,SNR=3.1						
YNG	**Young**	**4.54**	**27**	P	**Pn**	**09 17 36.6**	**+0.9**
	baz=4.6,SNR=13						
TAU	**Tasmania Unive**	**4.67**	**167**	*e*Pn	**Pn**	**09 17 37.6**	**+0.2**
TAU				*e*Sn	**Sn**	**09 18 29.4**	**-2.3**
CMSA	**Cobar Meteorol**	**6.82**	**359**	P	**Pn**	**09 18 06.9**	**-0.1**
	baz=6.9						
STKA	**Stephens Creek**	**7.36**	**330**	Pn	**Pn**	**09 18 14.5**	**+0.1**
	1.3nm,0.3s,baz=147,slow=16,SNR=17						
STKA				Sn	**Sn**	**09 19 33.7**	**-4.5**
	2.2nm,0.3s,baz=227,slow=19,SNR=2.6						
STKA				Lg	Lg	09 20 20.8	
	3.1nm,0.3s,baz=76,slow=20,SNR=2.9						
STKA	**Stephens Creek**	**7.36**	**330**	P	**Pn**	**09 18 14.8**	**+0.3**
	baz=7.4,SNR=16						
HTT	**Hallett**	**7.49**	**309**	P	**Pn**	**09 18 16.0**	**-0.2**
	baz=7.5						
BBOO	**Buckleboo**	**9.72**	**302**	P	**Pn**	**09 18 45.4**	**-1.4**
	baz=9.7						
BBOO	**Buckleboo**	**9.72**	**302**	*e*Pn	**Pn**	**09 18 48.9**	**+2.0**
BBOO				*e*Sn	**Sn**	**09 20 35.0**	**-1.2**
ASAR	**Alice Springs**	**17.86**	**322**	P	**Pn**	**09 20 37.4**	**+1.8**
	0.1nm,0.3s,baz=150,slow=12,SNR=14						
ASAR				S	**Sn**	**09 23 48.9**	**-6.1**
	0.1nm,0.3s,baz=157,slow=22,SNR=3.2						
WRA	**Warramunga Arr**	**20.91**	**328**	P	**P**	**09 21 11.3**	**+1.7**
	1.4nm,0.6s,baz=144,slow=12,SNR=19						
WRAB	**Tennant Creek**	**20.91**	**328**	*e*P	**P**	**09 21 11.3**	**+1.7**
	2.1nm,0.6s						
FITZ	**Fitzroy Crossi**	**26.82**	**313**	P	**P**	**09 22 13.4**	**+5.9**
	2.6nm,0.9s,baz=139,slow=11,SNR=3.0						

MEX ***05*** *09:25:48.2±0.7, 14.18N×92.13W, h30km±13km, MD4.0*
NEIC ***05*** *09:25:48.2, 14.18N×92.13W, h30km, mb3.7/5, MD4.0(MEX), After MEX.*
CASC ***05*** *09:25:50.6±0.8, 14.33N×91.89W, h48km±164km, ML3.9, mb3.7(NEIC)*
ISCJB ***05*** *09:25:51.4±0.8, 14.59N±0.07×91.75W±0.07, h67km, mb3.8/3, Error ellipse: s-maj=13.2km s-min=4.5km az=44.4*
ISC 05 09:25:51.7±1.3, 14°48N±0.09×91°87W±0.09, h67km, n19, σ1°54/25, mb3.9/3, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IXG	**Ixpaco**	**1.41**	**102**	*e*P	**Pn**	**09 26 14.1**	**-1.4**
CCIG	**Comitan**	**1.81**	**352**	*e*P	**Pn**	**09 26 19.6**	**-1.3**
CCIG				*e*S	**Sn**	**09 26 43.8**	**+0.9**
CCIG	**Comitan**	**1.81**	**352**	*e*P	**Pn**	**09 26 19.6**	**-1.3**
CCIG				*e*S	**Sn**	**09 26 43.8**	**+0.9**
RBDL	**Robledal**	**2.15**	**100**	*e*P	**Pn**	**09 26 24.5**	**-1.0**
RTR	**El Retiro**	**2.24**	**105**	*e*P	**Pn**	**09 26 25.9**	**-0.8**
MONT	**Ecomontaæa**	**2.25**	**106**	*e*P	**Pn**	**09 26 25.9**	**-1.0**
SBLS	**San Blas**	**2.27**	**106**	*e*P	**Pn**	**09 26 25.6**	**-1.6**
SNJE	**San Jose**	**2.28**	**105**	*e*P	**Pn**	**09 26 26.9**	**-0.4**
TGIG		**2.58**	**332**	*e*P	**Pn**	**09 26 29.1**	**-2.2**
TGIG				*e*S	**Sn**	**09 27 00.1**	**-1.5**
TGIG		**2.58**	**332**	*e*P	**Pn**	**09 26 29.1**	**-2.2**
TGIG				*e*S	**Sn**	**09 27 00.1**	**-1.5**
SNET	**Serv Nac Est T**	**2.68**	**107**	*e*P	**Pn**	**09 26 31.3**	**-1.3**
SNET				*e*S	**Sn**	**09 27 03.2**	**-0.8**
SNET				AML	AML	09 27 19.6	
	comp=Z,801nm,0.3s						
LFU	**La Fuente**	**2.77**	**105**	*e*P	**Pn**	**09 26 32.5**	**-1.4**
LFRS	**El Faro**	**2.86**	**107**	*e*P	**Pn**	**09 26 34.2**	**-0.9**
LFRS				*e*S	**Sn**	**09 27 07.5**	**-0.8**
TEIG	**Tepich**	**6.67**	**30**	*e*Pn	**Pn**	**09 27 26.9**	**-0.1**
	comp=Z,2.4nm,0.3s						
TEIG				*e*Sn	**Sn**	**09 28 39.0**	**-2.5**
LRAL	**Lakeview Retre**	**19.00**	**13**	*e*P	**Pn**	**09 30 10.1**	**+0.8**
	comp=Z,1.9nm,0.7s						
MIAR	**Mount Ida**	**20.04**	**356**	*e*P	Pn	09 30 22.2	+0.6
	comp=Z,2.9nm,1.0s						
121A	**Cookes Peak, D**	**23.09**	**324**	*e*P	**P**	**09 30 52.2**	**+0.1**
	comp=Z,1.4nm,0.7s						
REDW	**Red Top Meadow**	**33.06**	**334**	*e*P	**P**	**09 32 21.9**	**+0.7**
	comp=Z,1.6nm,0.9s						
SNOW	**Snow King Moun**	**33.11**	**334**	*e*P	**P**	**09 32 25.2**	**+3.6**
	comp=Z,1.3nm,0.3s						

JMA ***05*** *09:29:50.6±0.2, 36.65N×142.15E, h46km, M3.4*
IDC ***05*** *09:29:51.7±2.0, 37.30N×141.83E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.3/46, mbtmp3.3/4, ML3.2/1, MS3.1/1, Ms1 3.1/1, ms1mx2.3/18, Error ellipse: s-maj=43.6km s-min=30.7km az=59.0*
ISC 05 09:29:50.1±2.0, 36°69N±0.08×142°1E±0.1, h19km, n20, σ2°01/19, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**1.20**	**267**	P	**Pb**	**09 30 11.8**	**-0.3**
JHO				S	**Sg**	**09 30 28.2**	**-0.7**
JMM	**Marumori**	**1.54**	**320**	P	**Pb**	**09 30 16.8**	**-1.2**
JFT	**Otama**	**1.60**	**301**	P	**Pb**	**09 30 18.6**	**-0.4**
JFT				S	**Sb**	**09 30 39.3**	**+0.4**
JIO	**Ouri**	**1.85**	**343**	P	**Pb**	**09 30 21.5**	**-1.7**
JOU	**Okura**	**2.00**	**327**	P	**Pb**	**09 30 24.7**	**-1.2**
JOU				*e*S	**Sb**	**09 30 49.4**	**-1.0**
JAG	**Ashikaga**	**2.11**	**264**	P	**Pb**	**09 30 25.8**	**-1.9**
JMK	**Ichinoseki**	**2.35**	**344**	P	**Pb**	**09 30 28.9**	**-2.9**
JMK				S	**Sn**	**09 30 57.5**	**+1.5**
JRY	**Ryogami san**	**2.63**	**256**	P	**Pn**	**09 30 32.8**	**+1.2**
JRY				S	**Sn**	**09 31 03.9**	**+0.9**
MJAR	**Matsushiro Arr**	**3.10**	**268**	Pn	**Pn**	**09 30 39.9**	**+2.0**
	3.6nm,0.3s,baz=92,slow=9.1,SNR=40						
MJAR				Sn	**Sb**	**09 31 18.7**	**-3.2**
	2.3nm,0.3s,baz=68,slow=23,SNR=5.6						
MAT	**Matsushiro**	**3.10**	**268**	P	**Pb**	**09 30 40.8**	**-3.8**
MAT				*e*S	**Sn**	**09 31 17.7**	**+3.2**
H11N2	**WAKE ISLAND Hy**	**27.53**	**121**	T	T	10 05 06.0	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**27.54**	**121**	T	T	10 05 19.1	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**27.55**	**121**	T	T	10 05 03.8	
	baz=313						
H11S1	**WAKE ISLAND Hy**	**28.24**	**123**	T	T	10 06 06.8	
	baz=315

*NNC **05** 09:38:32.1±3.3, 38˚.24N×71˚.18E, h0km, mb3.8, mpv3.5, Error ellipse: s-maj=30.4km s-min=24.4km az=80.0*
*IDC **05** 09:38:32.2±7.4, 37˚.43N×72˚.02E, h70km±58km, mb3.4/3, mb1 3.5/9, mb1mx3.2/51, mbtmp3.7/9, ML3.3/6, Error ellipse: s-maj=65.6km s-min=49.6km az=147.0*
ISC 05 09:38:33.6±1.8, 38˚.4N±0˚.1×71˚.22E±0˚.10, h10km, n14, σ3°19/20, 8C-4D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAS	**Manas**	**4.25**	**13**	⇓Pn	**Pn**	**09 39 39.9**	**+1.4**
	2.2nm,0.4s						
MNAS				⇓Pg	**Pg**	**09 39 53.4**	**-1.5**
	13nm,0.9s						
MNAS				⇑Sn	**Sn**	**09 40 32.7**	**+4.5**
MNAS				⇑Lg	Lg	09 40 51.0	
	24nm,1.0s						
KK31	**Karatay Array**	**4.78**	**354**	⇑Pn	**Pn**	**09 39 46.2**	**+0.5**
	2.3nm,0.4s						
KK31				⇑Sn	**Sn**	**09 40 46.6**	**+5.5**
	7.5nm,0.5s						
KK31				⇑Lg	Lg	09 41 03.2	
	15nm,0.6s						
AAK	**Ala-Archa**	**4.96**	**29**	P	**Pn**	**09 39 51.8**	**+3.5**
	1.3nm,0.3s,baz=166,slow=9.4,SNR=3.7						
AAK				S	**Sb**	**09 40 55.1**	**-5.3**
	1.0nm,0.3s,baz=328,slow=23,SNR=5.5						
AAK	**Ala-Archa**	**4.96**	**29**	Pn	**Pn**	**09 39 51.3**	**+3.1**
	2.6nm,0.5s						
AAK				⇓Pg	**Pb**	**09 40 03.9**	**+3.4**
	5.6nm,0.5s						
AAK				Lg	Lg	09 41 07.6	
	9.4nm,0.8s						
TKM2	**Tokmak 2**	**5.65**	**35**	⇑Pn	**Pn**	**09 39 58.1**	**+0.3**
	2.4nm,0.7s						
TKM2				⇑Lg	Lg	09 41 33.3	
	5.3nm,0.6s						
MKAR	**Makanchi Array**	**11.73**	**40**	P	**Pn**	**09 41 21.0**	**0.0**
	0.1nm,0.3s,baz=229,slow=12,SNR=13						
KURBB	**Kurchatov Arra**	**13.33**	**21**	P	**P**	**09 41 48.1**	**-4.3**
	0.1nm,0.3s,baz=214,slow=13,SNR=3.0						
AB31	**Akbulak array**	**13.59**	**327**	⇑Pn	**Pn**	**09 41 43.2**	**-3.0**
	0.6nm,0.6s,baz=141,slow=13,SNR=9.7						
AB31				⇓Sn	**Sn**	**09 44 14.4**	**-2.8**
	1.3nm,0.6s,baz=137,slow=25,SNR=5.8						
BVAR	**Borovoye Array**	**14.69**	**358**	P	**P**	**09 42 07.5**	**-0.1**
	0.3nm,0.3s,baz=177,slow=11,SNR=3.6						
AKTO	**Aktyubinsk**	**15.30**	**326**	P	**P**	**09 42 18.6**	**+4.3**
	0.3nm,0.3s,baz=134,slow=12,SNR=7.0						
ZALV	**Zalesovo Beam**	**18.18**	**26**	P	**Pn**	**09 42 44.7**	**-1.1**
	0.1nm,0.3s,baz=207,slow=9.6,SNR=3.5						
FINES	**FINESS Array B**	**36.06**	**325**	P	**P**	**09 45 35.8**	**+0.9**
	0.0nm,99.9s,baz=101,slow=7.2,SNR=4.6						
ARCES	**ARCESS Array B**	**39.51**	**337**	P	**P**	**09 46 05.0**	**+1.0**
	2.3nm,0.9s,baz=117,slow=7.5,SNR=5.9						
NOA	**NORSAR Array B**	**43.02**	**322**	P	**P**	**09 46 32.9**	**-0.1**
	0.3nm,0.6s,baz=95,slow=8.1,SNR=2.4						

DJA 05 09:40:08.0±0.8, 9˚S±6˚×11˚0E±˚, h10km, M3.5/7, MLv3.5/7, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UGM	**Wanagama**	**1.49**	**7**	P	Pn	09 40 32.4	-2.5
UGM				S	Sn	09 40 54.3	-0.1
PWJI	**Pagerwojo**	**1.99**	**47**	P	Pn	09 40 40.0	-1.8
PWJI				S	Sn	09 41 04.2	-2.6
NGJI	**Ngawi**	**2.30**	**29**	P	Pn	09 40 47.5	+1.4
CMJI	**Cimerak**	**2.46**	**311**	P	Pn	09 40 47.7	-0.6
KPJI	**Karang Pucung**	**2.48**	**326**	P	Pn	09 40 49.6	+1.1
GMJI	**Gumukmas**	**3.27**	**70**	P	Pn	09 40 58.7	-0.6

*ISCJB **05** 09:41:15.5±0.7, 52˚.97S±0˚.09×22˚.6E±0˚.3, h10km, mb4.2/9, MS2.8/3, Error ellipse: s-maj=24.9km s-min=12.9km az=175.0*
*IDC **05** 09:41:15.2±0.9, 53˚.00S×22˚.60E, h0km, mb3.9/7, mb1 4.1/7, mb1mx3.8/29, mbtmp3.9/7, MS2.9/3, Ms1 2.9/3, ms1mx2.7/25, Error ellipse: s-maj=34.5km s-min=22.9km az=75.0*
*NEIC **05** 09:41:16.9±0.5, 52˚.94S×22˚.65E, h10km, mb4.6/1, Error ellipse: s-maj=18.0km s-min=11.1km az=86.0*
ISC 05 09:41:17.3±0.9, 53˚.0S±0˚.1×22˚.8E±0˚.2, h10km, n15, σ1°08/13, mb4.0/9, MS3.0/3, 1C, South of Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SYO	**Syowa Base**	**17.92**	**160**	⇑*e*P	**Pn**	**09 45 25.6**	**-0.6**
SUR	**Sutherland**	**20.63**	**355**	LR	LR	09 51 38.8	
	comp=Z,7.2nm,20.2s,baz=140,slow=30						
SNAA	**Sanae**	**21.86**	**202**	*e*P	**P**	**09 46 10.3**	**+0.5**
	576nm,1.2s						
MAW	**Mawson**	**24.10**	**143**	P	**P**	**09 46 32.3**	**-0.3**
	2.3nm,0.7s,baz=277,slow=13,SNR=3.6						
BOSA	**Boshof**	**24.41**	**5**	P	**P**	**09 46 35.6**	**-0.4**
	2.0nm,0.8s,baz=178,slow=5.4,SNR=3.5						
BOSA				LR	LR	09 54 09.6	
	comp=Z,50nm,19.7s,baz=201,slow=32						
LBTB	**Lobatse**	**28.01**	**5**	LR	LR	09 56 03.7	
	comp=Z,81nm,18.8s,baz=202,slow=32						
MATP	**Matopo**	**32.79**	**10**	P	**P**	**09 47 50.9**	**+0.1**
	0.7nm,0.4s,baz=181,slow=12,SNR=3.1						
VNDA	**Vanda**	**47.32**	**169**	P	**P**	**09 49 50.5**	**+0.1**
	0.8nm,0.7s,baz=220,slow=8.8,SNR=3.5						
SBA	**Scott Base**	**47.57**	**170**	*e*P	**P**	**09 49 53.5**	**+1.1**
	5.7nm,1.0s						
CPUP	**Villa Florida**	**63.59**	**261**	P	**P**	**09 51 46.8**	**-1.4**
	1.6nm,0.8s,baz=113,slow=7.7,SNR=3.8						
ASAR	**Alice Springs**	**83.23**	**121**	P	**P**	**09 53 43.4**	**-0.6**
	0.8nm,0.8s,baz=210,slow=5.0,SNR=5.7						
WRA	**Warramunga Arr**	**86.52**	**119**	P	**P**	**09 54 00.1**	**-0.4**
	1.9nm,1.0s,baz=211,slow=4.1,SNR=6.1						
PDAR	**Pinedale Array**	**146.99**	**272**	PKPbc	**PKPdf**	**10 00 58.1**	**+0.4**
	0.4nm,0.3s,baz=131,slow=4.9,SNR=7.6						
LAO	**LASA Array**	**147.09**	**280**	*e*PKPbc	**PKPdf**	**10 00 59.5**	**+2.0**
HWUT	**Hardware Ranch**	**147.53**	**268**	*e*PKPbc	**PKPdf**	**10 01 00.3**	**+1.7**

NNC 05 09:45:55.2±1.5, 36˚.85N×70˚.96E, h216km±19km, mb2.4, mpv3.7, 3C-2D, Error ellipse: s-maj=23.3km s-min=10.0km az=122.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.58**	**320**	⇓P	Pn	09 46 41.5	+0.4
	8.9nm,0.2s						
DZET				⇑S	S	09 47 17.5	+0.6
	16nm,0.4s						
MNAS	**Manas**	**5.75**	**11**	⇓P	Pn	09 47 18.8	-0.9
	5.6nm,0.5s						
MNAS				⇑S	S	09 48 27.6	+1.1
	5.5nm,0.7s						
KK31	**Karatay Array**	**6.26**	**357**	P	Pn	09 47 25.7	-0.2
	2.4nm,0.6s,baz=171,slow=11,SNR=22						
KK31				⇑S	S	09 48 38.9	+0.9
	0.9nm,0.4s,baz=178,slow=21,SNR=3.8						
AB31	**Akbulak array**	**14.77**	**331**	P	Pn	09 49 13.7	0.0
	0.4nm,0.6s,baz=140,slow=12,SNR=4.4						

MEX 05 09:56:39.1±0.9, 16˚.14N×98˚.03W, h5km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.27**	**340**	*i* P	Pg	09 56 43.4	-0.9
PNIG				*e*S	Sg	09 56 47.5	-0.5
TLIG	**Tlapa**	**1.50**	**340**	*e*P	Pn	09 57 03.8	-3.1
TLIG				*e*S	Sn	09 57 22.4	-4.6
VHO	**Vista Hermosa**	**1.55**	**53**	*e*P	Pn	09 57 03.6	-4.0
VHO				*e*S	Sn	09 57 23.6	-4.6
HUIG	**Huatulco**	**1.89**	**101**	*e*P	Pn	09 57 07.6	-4.4
HUIG				*i* S	Sn	09 57 31.9	-4.3
CAIG	**El Cayaco**	**2.33**	**293**	*e*P	Pn	09 57 14.7	-3.4
CAIG				*i* S	Sn	09 57 43.0	-4.1
MEIG	**Mezcala**	**2.34**	**320**	*e*P	Pn	09 57 15.1	-3.2
MEIG				*e*S	Sn	09 57 43.8	-3.7

*IDC **05** 09:57:03.5±4.1, 6˚.79S×107˚.69E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.4/28, mbtmp3.4/3, Error ellipse: s-maj=225.8km s-min=26.8km az=49.0*

*ISCJB **05** 09:57:26.0±1.1, 8˚.3S±0˚.2×108˚.99E±0˚.05, h64km±19km, mb3.1/2, Error ellipse: s-maj=28.5km s-min=8.0km az=6.3*
*DJA **05** 09:57:26.9±0.8, 8˚S±7˚×10˚9E±˚, h39km±9km, M3.6/6, MLv3.6/6*
ISC 05 09:57:26.6±1.8, 8˚.4S±0˚.2×108˚.99E±0˚.05, h47km±31km, n7, σ0°60/12, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**0.78**	**317**	P	**Pn**	**09 57 42.0**	**+0.7**
CMJI				S	**Sn**	**09 57 51.8**	**-0.2**
KPJI	**Karang Pucung**	**1.02**	**357**	P	**Pn**	**09 57 44.9**	**+0.3**
KPJI				S	**Sn**	**09 57 57.6**	**-0.2**
CISI	**Cisompet, Garu**	**1.41**	**304**	P	**Pn**	**09 57 49.8**	**-0.1**
CISI				S	**Sn**	**09 58 07.0**	**-0.4**
UGM	**Wanagama**	**1.58**	**74**	P	**Pn**	**09 57 52.5**	**+0.2**
UGM				S	**Sn**	**09 58 10.9**	**-0.7**
CNJI	**Cibinong**	**2.12**	**299**	P	**Pn**	**09 58 00.0**	**+0.5**
CNJI				S	**Sn**	**09 58 23.5**	**-1.1**
WRA	**Warramunga Arr**	**27.10**	**118**	P	**P**	**10 03 05.3**	**0.0**
	0.5nm,0.9s,baz=292,slow=12,SNR=3.0						
ASAR	**Alice Springs**	**28.30**	**125**	P	**P**	**10 03 16.2**	**+0.2**
	0.4nm,0.7s,baz=306,slow=9.0,SNR=6.5						

*NIED **05** 09:57:00, 25˚.40N×143˚.10E, h5km, Mw3.6 Best double couple: M0 3.01000×10^14 NP1:φs166.00000°, δ16.00000°, λ41.00000°. NP2:φs36.00000°, δ80.00000°, λ102.00000°.*
IDC 05 09:57:51.8±3.8, 25˚.38N×140˚.65E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.5/28, mbtmp3.7/4, MS2.4/1, Ms1 2.4/1, ms1mx2.2/36, Error ellipse: s-maj=297.3km s-min=25.2km az=85.0, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSRS	**Korea Array**	**16.19**	**321**	LR	LR	10 07 23.4	
	comp=Z,13nm,20.6s,baz=59,slow=35						
H11N1	**WAKE ISLAND Hy**	**24.86**	**98**	T	T	10 26 29.2	
	baz=292						
H11N2	**WAKE ISLAND Hy**	**24.86**	**98**	T	T	10 26 29.6	
	baz=292,slow=74						
H11N3	**WAKE ISLAND Hy**	**24.88**	**98**	T	T	10 26 36.2	
	baz=292,slow=74						
H11S3	**WAKE ISLAND Hy**	**25.08**	**101**	T	T	10 26 50.7	
	baz=292,slow=75,SNR=9.7						
H11S1	**WAKE ISLAND Hy**	**25.08**	**101**	T	T	10 26 50.9	
	baz=292,slow=75,SNR=7.8						
H11S2	**WAKE ISLAND Hy**	**25.09**	**101**	T	T	10 26 51.1	
	baz=292,slow=75,SNR=7.2						
WRA	**Warramunga Arr**	**45.47**	**188**	P	P	10 06 12.4	-0.5
	0.6nm,0.4s,baz=8.1,slow=8.8,SNR=20						
ASAR	**Alice Springs**	**49.19**	**188**	P	P	10 06 42.2	+0.4
	0.2nm,0.7s,baz=18,slow=7.7,SNR=3.7						
FINES	**FINESS Array B**	**78.87**	**334**	P	P	10 09 57.5	+0.9
	1.1nm,0.5s,baz=66,slow=5.2,SNR=7.0						
NOA	**NORSAR Array B**	**84.68**	**338**	P	P	10 10 26.2	-1.1
	0.3nm,0.4s,baz=44,slow=4.8,SNR=2.7						

WEL 05 10:04:18.9±1.4, 47˚.71S×165˚.17E, h33km, ML3.5/10, 1D, Error ellipse: s-maj=16.7km s-min=9.5km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYZ	**Puysegur Point**	**1.85**	**34**	PN	Pn	10 04 47.1	-1.3
PYZ				AML	AML	10 05 16.0	
APZ	**The Paps**	**2.11**	**67**	PN	Pn	10 04 50.5	-1.3
APZ				AML	AML	10 05 17.1	
DCZ	**Deep Cove**	**2.62**	**32**	AML	AML	10 05 30.9	
WHZ	**Wether Hill Ro**	**2.63**	**47**	⇓PN	Pn	10 04 58.0	-1.1
WHZ				SN	Sn	10 05 25.8	-4.0
SYZ	**Scrubby Hill**	**2.95**	**68**	PN	Pn	10 05 03.0	-0.4
SYZ				AML	AML	10 07 34.3	
MLZ	**Mavora Lakes**	**3.10**	**42**	PN	Pn	10 05 05.8	+0.3
MLZ				SN	Sn	10 05 40.4	-1.0
TUZ	**Tuapeka**	**3.53**	**62**	PN	Pn	10 05 10.7	-0.6
TUZ				SN	Sn	10 05 49.6	-2.2
EAZ	**Earnscleugh**	**3.78**	**51**	PN	Pn	10 05 14.6	-0.3
WKZ	**Wanaka**	**3.92**	**44**	PN	Pn	10 05 17.6	+0.7
ODZ	**Otahua Downs**	**4.63**	**57**	PN	Pn	10 05 25.2	-1.3
ODZ				AML	AML	10 06 17.8	

*NIED **05** 10:08:00, 38˚.30N×144˚.20E, h5km, Mw3.6 Best double couple: M0 2.49000×10^14 NP1:φs25.00000°, δ26.00000°, λ-76.00000°. NP2:φs190.00000°, δ65.00000°, λ-97.00000°.*
JMA 05 10:08:00.4±0.2, 38˚.35N×144˚.16E, h39km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.08**	**291**	P	Pn	10 08 34.3	+1.5
MIYJ	**Miyakonagasawa**	**2.20**	**305**	P	Pn	10 08 35.4	+1.0
MIYJ				*e*S	Sn	10 09 01.6	+1.3
JIO	**Ouri**	**2.21**	**274**	P	Pn	10 08 35.6	+1.1
JIO				*e*S	Sn	10 09 02.1	+1.5
JMK	**Ichinoseki**	**2.38**	**286**	P	Pn	10 08 37.7	+1.9
JOM	**Ohasama**	**2.50**	**298**	P	Pn	10 08 40.3	+1.7
JOM				*e*S	Sn	10 09 10.1	+2.3
JOU	**Okura**	**2.75**	**271**	P	Pn	10 08 44.3	+2.3
JOU				*e*S	Sn	10 09 16.6	+2.7
JANG	**Nango**	**2.88**	**315**	P	Pn	10 08 45.6	+1.9
JANG				*e*S	Sn	10 09 18.3	+1.2
JRG	**Rokugo**	**2.94**	**292**	P	Pn	10 08 46.7	+2.1
JRG				*e*S	Sn	10 09 20.7	+2.0
JYK	**Kaneyama**	**3.03**	**282**	P	Pn	10 08 48.1	+2.3
JYK				*e*S	Sn	10 09 23.7	+2.9
JFT	**Otama**	**3.13**	**256**	P	Pn	10 08 49.5	+2.2
JFT				*e*S	Sn	10 09 25.7	+2.2
JTM	**Tenmabayashi**	**3.41**	**316**	P	Pn	10 08 52.7	+1.7
JTM				*e*S	Sn	10 09 30.5	+0.3
JKB	**Kayabe**	**4.27**	**327**	*e*S	Sn	10 09 51.5	+0.2
JCH	**Churui**	**4.30**	**352**	P	Pn	10 09 03.2	-0.1
JCH				*e*S	Sn	10 09 50.6	-1.6
JRY	**Ryogami san**	**4.80**	**243**	P	Pn	10 09 11.7	+1.5
JRY				*e*S	Sn	10 10 04.4	-0.2
NEM2	**Nemuro 2**	**5.15**	**13**	P	Pn	10 09 12.5	-2.4
NEM2				*e*S	Sn	10 10 07.2	-5.9
JTKR	**Abashiri--Toko**	**5.62**	**358**	P	Pn	10 09 21.1	-0.2
JTKR				*e*S	Sn	10 10 20.8	-3.8

OBM 05 10:11:20.0±0.1, 48˚.83N×91˚.71E, h2km, MI3.5/1, Error ellipse: s-maj=1.1km s-min=1.0km az=88.0, Mongolia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULG	**Ulaangom**	**1.15**	**11**	*e*Pg	Pg	10 11 41.2	-0.8
ULG				*e*Sg	Sg	10 11 56.3	-0.7
	491nm,0.2s						
BYO	**Bayan-Olgiy**	**1.16**	**277**	*e*Pg	Pb	10 11 43.0	+0.1
BYO				*e*Sg	Sb	10 11 59.2	+0.7
	301nm,0.4s						
TSC	**Tosontsengel**	**4.33**	**88**	*e*Sg	Sg	10 13 34.7	-4.2
HTG	**Hatgal**	**5.73**	**70**	*e*Sg	Sg	10 14 17.5	-6.5
TTS	**Tsetserleg**	**6.65**	**98**	*e*Sg	Sg	10 14 48.3	-5.2

*CSEM **05** 10:14:32.4, 37˚.81N×21˚.26E, h26km, ML1.4/5*
ATH 05 10:14:32.4, 37.81N×21˚.26E, h26km±4km, ML1.4/4, Error ellipse: s-maj=4.5km s-min=1.1km az=196.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRO	**Drossia**	**0.38**	**68**	P	Pb	10 14 40.3	-0.6
DRO				S	Sb	10 14 47.1	+0.5
DRO	**Drossia**	**0.38**	**68**	P	Pb	10 14 40.3	-0.6
DRO				S	Sb	10 14 47.1	+0.5
DRO				AML	AML	10 14 49.2	
	comp=E,176μm,0.3s						
DRO				AML	AML	10 14 50.6	
	comp=N,166μm,0.4s						
ZKS	**Zakynthos**	**0.39**	**254**	P	Pb	10 14 39.6	-1.4
ZKS				S	Sn	10 14 48.2	-0.8
ZKS	**Zakynthos**	**0.39**	**254**	P	Pb	10 14 39.6	-1.4
ZKS				S	Sn	10 14 48.2	-0.9
ZKS				AML	AML	10 14 50.6	
	comp=N,198μm,0.3s						
ZKS				AML	AML	10 14 51.9	
	comp=E,216μm,0.3s						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AXS	**Araxos**	**0.40**	**13**	P	Pb	10 14 40.5	-0.6
AXS				S	Sb	10 14 46.4	-0.5
AXS	**Araxos**	**0.40**	**13**	P	Pb	10 14 40.5	-0.6
AXS				S	Sb	10 14 46.4	-0.5
AMT	**Artemida-Makis**	**0.45**	**128**	P	Pb	10 14 41.6	-0.3
AMT				S	Sn	10 14 50.0	-0.4
AMT	**Artemida-Makis**	**0.45**	**128**	P	Pb	10 14 41.6	-0.3
AMT				S	Sn	10 14 50.0	-0.4
AMT				AML	AML	10 14 50.1	
	comp=E,70μm,0.3s						
AMT				AML	AML	10 14 50.6	
	comp=N,78μm,0.4s						
KFL	**Anninata**	**0.48**	**309**	P	Pn	10 14 43.6	0.0
KFL				S	Sb	10 14 49.3	+0.1
KFL	**Anninata**	**0.48**	**309**	P	Pn	10 14 43.6	0.0
KFL				S	Sb	10 14 49.3	+0.1
LAKA	**Lakka**	**0.71**	**52**	P	Pn	10 14 46.6	-0.2
LAKA	**Lakka**	**0.71**	**52**	P	Pn	10 14 46.6	-0.2
KLV	**Kalavryta, Ach**	**0.74**	**71**	P	Pb	10 14 45.6	-1.2
KLV				S	Sn	10 14 58.2	+0.5
KLV	**Kalavryta, Ach**	**0.74**	**71**	P	Pb	10 14 45.6	-1.2
KLV				S	Sn	10 14 58.2	+0.5
PDO	**Prodromos**	**0.79**	**356**	P	Pn	10 14 49.1	+1.2
PDO				S	Sn	10 14 59.7	+0.8
PDO	**Prodromos**	**0.79**	**356**	P	Pn	10 14 49.1	+1.2
PDO				S	Sn	10 14 59.7	+0.8
PDO				AML	AML	10 15 05.6	
	comp=E,50μm,0.2s						
PDO				AML	AML	10 15 08.0	
	comp=N,58μm,0.3s						
PVO	**Paravola**	**0.83**	**14**	P	Pn	10 14 49.8	+1.3
PVO	**Paravola**	**0.83**	**14**	P	Pn	10 14 49.8	+1.4
SERG	**Sergoula**	**0.87**	**46**	P	Pn	10 14 50.8	+1.8

*GUC **05** 10:18:14.1±0.5, 32˚.54S×71˚.64W, h39km±2km, ML2.8*
ISC 05 10:18:16.0±2.4, 32˚.66S±0˚.04×71˚.42W±0˚.10, h3km±12km, n16, σ1°56/25, 1C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PEL	**Peldehue**	**0.79**	**128**	⇓*e*P	**Pb**	**10 18 32.5**	**+0.1**
PEL				*e*S	**Sn**	**10 18 46.3**	**-0.1**
PEL				IAML		10 18 47.2	
	comp=E,456nm,0.3s						
RCDM	**Rinconada Maip**	**0.98**	**148**	⇓*e*P	**Pg**	**10 18 35.0**	**+0.2**
RCDM				*e*S	**Sn**	**10 18 50.6**	**-0.5**
RCDM				IAML		10 18 52.2	
	comp=E,654nm,0.2s						
CLCH	**Cerro Calan**	**1.05**	**135**	⇓*e*P	**Pb**	**10 18 36.5**	**-0.3**
CLCH				*e*S	**Sn**	**10 18 53.2**	**+0.3**
CLCH				IAML		10 18 55.7	
	comp=E,230nm,0.6s						
ANTU	**Antumapu**	**1.12**	**144**	*e*S	**Sn**	**10 18 55.4**	**+0.6**
FCH	**Farellones**	**1.16**	**125**	⇑*e*P	**Pb**	**10 18 38.6**	**-0.4**
AUSP	**Uspallata**	**1.77**	**76**	*e*P	**Pg**	**10 18 48.9**	**-1.1**
AUSP				*e*S	**Sg**	**10 19 15.8**	**+2.8**
RTLS	**Leoncito**	**1.99**	**65**	*e*P	**Pb**	**10 18 52.5**	**-0.6**
RTLS				*e*S	**Sg**	**10 19 21.6**	**+1.5**
ARCO	**CERRO ARCO**	**2.11**	**96**	*e*P	**Pg**	**10 18 55.3**	**-1.0**
ARCO				*e*S	**Sg**	**10 19 26.2**	**+2.5**
ARCO				IAML		10 19 33.1	
	comp=Z,44nm,0.5s						
ASAL	**Salagasta**	**2.18**	**89**	*e*P	**Pg**	**10 18 56.5**	**-1.3**
ASAL				*e*S	**Sg**	**10 19 26.8**	**+0.7**
AAGR	**Agrelo**	**2.22**	**102**	*e*P	**Pb**	**10 18 56.5**	**-0.4**
RTCV	**Cerro Valdivia**	**2.57**	**73**	*e*P	**Pb**	**10 19 00.9**	**-1.9**
ACAN	**Cantantal**	**3.60**	**85**	*e*P	**Pn**	**10 19 13.6**	**+0.8**
ACAN				*e*S	**Sb**	**10 20 03.4**	**-1.0**
AGUA	**GUANDACOL**	**4.04**	**39**	*e*P	**Pn**	**10 19 19.3**	**+0.5**
AGUA				*e*S	**Sb**	**10 20 15.4**	**-1.7**
VCA	**Vinchina**	**4.79**	**36**	*e*P	**Pn**	**10 19 28.6**	**-0.6**
VCA				*e*S	**Sn**	**10 20 29.7**	**+4.3**
VCA				IAML		10 20 40.0	
	comp=Z,22nm,0.4s						
TCA	**Tanti**	**5.95**	**79**	*e*P	**Pn**	**10 19 44.1**	**-1.0**
CYA	**Choya**	**6.41**	**51**	IAML		10 19 54.5	
	comp=Z,3.2nm,0.3s						

*NIED **05** 10:18:00, 34˚.00N×135˚.20E, h8km, Mw5.0 Best double couple: M0 3.35000×10^16 NP1:φs233.00000°, δ48.00000°, λ124.00000°. NP2:φs9.00000°, δ52.00000°, λ59.00000°.*
*BJI **05** 10:18:37.5, 33˚.72N×135˚.59E, h6km, mb5.1/83, mB5.3/62, Ms5.1/86, Ms7 4.9/82*
*IDC **05** 10:18:41.3±0.3, 34˚.01N×135˚.23E, h0km, mb5.2/36, mb1 5.3/41, mb1mx5.3/44, mbtmp5.2/41, ML4.5/5, MS4.2/33, Ms1 4.2/33, ms1mx4.1/46, Error ellipse: s-maj=11.0km s-min=8.1km az=93.0*
*ISCJB **05** 10:18:42.2±0.4, 33˚.98N±0˚.01×135˚.17E±0˚.01, h12km±2km, mb5.4/438, MS4.5/213, Error ellipse: s-maj=2.5km s-min=1.7km az=160.3*
*JMA **05** 10:18:43.4, 33˚.99N×135˚.23E, h7km, M5.5 Broadband fault plane solution: P waves. NP1:φs34.00000°, δ65.00000°, λ88.00000°. NP2:φs220.00000°, δ25.00000°, λ95.00000°. Principal axes: T Plg70.0000°, Azm299.0000°; N Plg2.0000°, Azm35.0000°; P Plg20.0000°, Azm126.0000°;*
*GCMT **05** 10:18:43.9±0.2, 34˚.09N×135˚.06E, h13km, MW5.0/84, Moment Tensor Solution. s42,c63; s84,c138; Duration: 0 Moment tensor: Scalar M0 16Nm; Mrr 3.57±.15; Mθθ -0.40±.10; Mφφ -3.17±.11; Mre -1.29±.31; Mθφ -1.95±.08; Mθr -0.74±.23; Best double couple: M0 4.16700×10^16 NP1:φs220.00000°, δ55.00000°, λ106.00000°. NP2: φs14.00000°, δ38.00000°, λ68.00000°. Principal axes: T 3.9560, Plg74.0000°, Azm175.0000°; N 0.4180, Plg13.0000°, Azm31.0000°; P -4.3780, Plg9.0000°, Azm299.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **05** 10:18:44.4±1.1, 33˚.99N×135˚.14E, h16km±6km, mb5.5/284 Error ellipse: s-maj=2.6km s-min=1.9km az=145.0*
NEIC Felt [III] at Kobe and [II] at Osaka. Also felt at Akashi, Higashiosaka, Izumi, Kurashiki, Kure, Kyoto, Nishinomiya, Suita, Takatsuki, Tsu and Yawata. Felt at Anan, Kawanoe and Takamatsu, Shikoku. Recorded [5U JMA] in Wakayama, Honshu.
*MOS **05** 10:18:45.2±1.0, 34˚.03N×135˚.14E, h33km, mb5.6/156, MS4.4/68, Error ellipse: s-maj=5.7km s-min=3.4km az=106.6*
**ISC 05 10:18:43.9±0.3, 33˚.99N±0˚.02×135˚.26E±0˚.02, h17km±1km, h16km: pP-P, n1399, σ1°25/1451, m

UWA2 **Uwa jima 2** 2.33 251 ⇑P Pn 10 19 20.4 -1.1
JNA **Nagahama** 2.35 260 ⇑P Pn 10 19 20.9 -0.9
JGF **Kuroka** 2.36 47 P Pn 10 19 21.9 -0.1
JNM **Ikuma** 2.37 310 ⇑P Pn 10 19 22.2 +0.2
JKG **Kaga** 2.44 21 P Pn 10 19 23.5 +0.4
JNY **Yasuok** 2.54 57 P Pn 10 19 24.7 +0.2
JGN **Niukaw** 2.79 37 P Pn 10 19 28.3 +0.3
JHIK **Hikimi** 2.81 282 ⇑P Pn 10 19 27.4 -0.7
JKD **Kudamatsu** 2.81 272 ⇑P Pn 10 19 27.6 -0.5
MAJO **Matsushiro** 3.51 43 *e*P Pn 10 19 38.4 +0.6
MAJO **Matsushiro** 3.51 43 *e*Pn Pn 10 19 38.4 +0.6
MAT **Matsushiro** 3.51 43 P Pn 10 19 38.3 +0.5
MAT S Sn 10 20 20.2 +1.3
MAT **Matsushiro** 3.51 43 P Pn 10 19 38.3 +0.5
MJAR **Matsushiro Arr** 3.51 43 Pn Pn 10 19 38.6 +0.8
13nm,0.3s,baz=232,slow=14,SNR=104
MJAR Lg Lg 10 20 33.5
32nm,0.3s,baz=227,slow=25,SNR=7.7
MJB9 **Matsu-Tunnel** 3.51 43 *e*Pn Pn 10 19 38.5 +0.7
JFA **Akaike** 3.72 267 ⇑P Pn 10 19 39.8 -0.8
JNU **Nakatsue** 3.76 258 Pn Pn 10 19 40.6 -0.5
73nm,0.3s,baz=75,slow=10,SNR=321
JNU Pg Pb 10 19 52.5 +2.7
286nm,0.3s,baz=68,slow=12,SNR=76
JNU Lg Lg 10 20 42.1
252nm,0.3s,baz=177,slow=14,SNR=10
JNU **Nakatsue** 3.76 258 *e*Pn Pn 10 19 41.4 +0.2
JNU *e*Sn Sn 10 20 24.5 -0.5
JHJ **Hachijo jima 2** 3.88 102 Pn Pn 10 19 42.9 +0.1
107nm,0.3s,baz=214,slow=16,SNR=24
JHJ Sn Sn 10 20 26.6 -1.4
122nm,0.3s,baz=91,slow=20,SNR=9.2
JHJ LR LR 10 21 08.4
comp=Z,3μm,21.0s,baz=296,slow=37
JHJ2 **Mitsune** 3.91 102 P Pn 10 19 42.9 -0.3
JHJ2 **Mitsune** 3.91 102 *e*Pn Pn 10 19 43.0 -0.2
JHJ2 *e*Sn Sn 10 20 26.7 -2.1
JSB **Shiboa** 4.83 51 P Pn 10 19 55.4 -0.5
JSB **Shiboa** 4.83 51 P Pn 10 19 55.4 -0.5
KSRS **Korea Array** 6.89 302 Pn Pn 10 20 24.6 +0.5
22nm,0.3s,baz=124,slow=15,SNR=78
KSRS Sn Sn 10 21 42.6 +0.4
16nm,0.3s,baz=118,slow=19,SNR=8.4
KSRS LR LR 10 23 10.3
comp=Z,860nm,21.5s,baz=184,slow=39
KS15 **Wonju Array Si** 6.91 302 *e*Pn Pn 10 20 24.6 +0.2
KS15 *e*Sn Sn 10 21 41.3 -1.4
KSAR **Wonju Array Be** 6.91 302 P Pn 10 20 24.7 +0.2
KSAR **Wonju Array Be** 6.91 302 Pn Pn 10 20 24.6 +0.2
KS01 **Wonju Array Si** 6.92 302 *e*Pn Pn 10 20 23.6 -1.0
INCN **Inchon** 7.83 299 P Pn 10 20 37.3 +0.2
SNR=9.4
INCN **Inchon** 7.83 299 *e*Pn Pn 10 20 37.2 +0.1
VLA **Vladivostok** 9.49 345 ⇓*i*P Pn 10 21 03.9 +4.1
VLA *e*S Sn 10 22 52.1 +6.1
VLA pmax pmax
comp=Z,69nm,1.0s
VLA MLR MLR
comp=E,154μm,13.0s
ERM **Erimo** 10.15 36 *e*P Pn 10 21 10.7 +1.9
ERM **Erimo** 10.15 36 *e*Pn Pn 10 21 10.7 +1.9
USRK **Ussuriysk Ar.** 10.50 347 Pn Pn 10 21 15.0 +1.3
comp=E,0.8nm,0.3s,baz=162,slow=12,SNR=51
USRK LR LR 10 25 02.7
comp=E,741nm,18.8s,baz=158,slow=36
MDJ **Mudanjiang** 11.48 339 P Pn 10 21 27.3 +0.3
MDJ S Sn 10 23 36.2 +1.4
MDJ ScP ScP 10 30 53.6 +2.7
MDJ PcS PcS 10 30 54.7 +2.0
MDJ pmax pmax
comp=E,7.0nm,0.7s
MDJ LR LR
comp=E,2μm,13.4s
MDJ LR LR
comp=E,4μm,12.6s
MDJ LR LR
comp=E,2μm,15.2s
MDJ **Mudanjiang** 11.48 339 *e*Pn Pn 10 21 27.3 +0.3
MDJ *e*Sn Sn 10 23 34.0 -0.9
DL2 **Dalian** 12.02 298 ⇑*i*P Pn 10 21 35.3 +0.9
DL2 S Sn 10 23 49.0 +1.0
DL2 pmax pmax
comp=E,30nm,0.9s
DL2 pmax pmax
comp=E,530nm,8.8s
DL2 LR LR
comp=E,7μm,8.3s
DL2 LR LR
comp=E,7μm,9.4s
DL2 LR LR
comp=E,10μm,10.6s
SNY **Shenyang** 12.09 314 ⇓P P 10 21 41.9 -6.2
SNY S Sn 10 23 53.1 +3.4
SNY pmax pmax
comp=E,32nm,1.5s
SNY pmax pmax
comp=E,750nm,9.6s
SNY LR LR
comp=E,3μm,8.2s
SNY LR LR
comp=E,2μm,8.2s
SNY LR LR
comp=E,3μm,11.0s
SSE **Sheshan** 12.22 260 P Pn 10 21 37.4 +0.2
SSE S Sn 10 23 53.6 +0.6
SSE pmax pmax
comp=E,31nm,0.8s
SSE LR LR
comp=E,2μm,10.3s
SSE LR LR
comp=E,6μm,10.2s
SSE LR LR
comp=E,8μm,11.0s
CN2 **Changchun** 12.41 325 ⇑P Pn 10 21 44.0 +4.2
CN2 *e*sP P 10 21 50.0 -1.7
CN2 *e*S Sn 10 24 02.8 +5.1
CN2 pmax pmax
comp=E,40nm,1.1s
CN2 LR LR
comp=E,4μm,16.0s
CN2 LR LR
comp=E,4μm,16.0s
CN2 LR LR
comp=E,3μm,14.0s
NJ2 **Nanjing** 13.90 267 *e*P P 10 22 05.4 -2.9
NJ2 S Sn 10 24 43.6 +10
NJ2 pmax pmax
comp=E,35nm,1.1s
NJ2 LR LR
comp=E,4μm,10.3s
NJ2 LR LR
comp=E,2μm,9.8s
NJ2 LR LR
comp=E,3μm,7.3s
YSS **Yuzh-Sakhalins** 14.14 21 *e*P Pn 10 21 59.2 -4.2
YSS pmax pmax
comp=Z,80nm,0.8s
YSS MLR MLR
comp=Z,2μm,16.0s
YSS MLR MLR
comp=N,2μm,11.0s
YSS MLR MLR
comp=E,2μm,12.0s
YSS **Yuzh-Sakhalins** 14.14 21 *e*Pn Pn 10 22 02.4 -1.0
YSS *e*Sn Sn 10 24 42.4 +2.6
HABR **Khabarovsk** 14.47 359 *e*P Pn 10 22 06.6 -1.3
HABR *e*S Sn 10 24 45.7 -2.1
HABR pmax pmax
comp=Z,34nm,1.5s
HABR MLR MLR
comp=Z,749nm,11.0s
KUR **Kuril'sk** 14.83 37 ⇓*i*P P 10 22 18.6 +0.1
KUR S Sn 10 25 00.6 +4.0
KUR pmax pmax
comp=N,13nm,1.1s
KUR pmax pmax
comp=E,7.0nm,1.1s
KUR pmax pmax
comp=Z,31nm,1.1s
KUR pmax pmax
comp=Z,471nm,3.8s
KUR MLR MLR
comp=N,661nm,17.0s
KUR MLR MLR
comp=Z,870nm,17.0s

TIA **Tai'an** 15.01 284 ⇓P Pn 10 22 16.4 +1.1
TIA pmax pmax
comp=Z,30nm,0.9s
TIA LR LR
comp=Z,3μm,10.8s
TIA LR LR
comp=Z,7μm,10.3s
TIA LR LR
comp=Z,8μm,11.0s
YHNB **Yeheng** 15.24 236 *e*Pn Pn 10 22 16.0 -2.5
comp=Z,57nm,1.1s
YHNB *e*Sn Sn 10 25 05.7 -1.3
KLR **Kul'dur** 15.45 351 Pn Pn 10 22 21.9 +0.9
comp=Z,1.5nm,0.3s,baz=156,slow=11,SNR=61
KLR PcP PcP 10 27 24.5 +0.6
comp=Z,0.3nm,0.3s,baz=243,slow=2.3,SNR=4.1
KLR LR LR 10 28 09.7
comp=Z,732nm,20.9s,baz=166,slow=37
SSLB **Suanglung** 16.11 235 *e*Pn Pn 10 22 30.3 +0.5
comp=Z,59nm,1.2s
SSLB *e*Sn Sn 10 25 22.9 -5.2
YULB **Yu-li** 16.15 233 *e*Pn Pn 10 22 29.4 -0.8
comp=Z,17nm,0.8s
YULB *e*Sn Sn 10 25 25.6 -3.5
BJT **Baijiatuau** 16.38 297 *e*P Pn 10 22 32.0 -1.1
BJT pmax pmax
comp=Z,274nm,1.6s
BJT **Baijiatuau** 16.38 297 *e*Pn Pn 10 22 32.0 -1.1
comp=Z,274nm,1.6s
BJI **Beijing** 16.38 297 P Pn 10 22 33.8 +0.8
BJI S Sn 10 25 35.5 +1.1
BJI pmax pmax
comp=Z,30nm,1.1s
BJI pmax pmax
comp=Z,400nm,4.8s
BJI LR LR
comp=Z,3μm,10.1s
BJI LR LR
comp=Z,2μm,10.1s
BJI LR LR
comp=Z,1μm,23.9s
QZH **Quanzhou** 17.07 243 ⇑*i*P Pn 10 22 32.1 -10
QZH S Sn 10 25 34.6 -17
QZH LR LR
comp=N,4μm,12.2s
QZH LR LR
comp=E,4μm,12.8s
QZH LR LR
comp=Z,7μm,11.6s
TYV **Tymovskoe** 17.71 16 *e*P Pn 10 22 48.8 -0.8
TYV pmax pmax
comp=E,26nm,0.8s
TYV pmax pmax
comp=Z,44nm,0.8s
TYV pmax pmax
comp=Z,1μm,4.0s
TYV MLR MLR
comp=E,2μm,13.0s
TYV MLR MLR
comp=Z,2μm,13.0s
WHN **Wuhan** 18.01 265 ⇓*i*P P 10 22 54.2 +0.3
WHN sP sP 10 23 05.9 +5.2
WHN S S 10 26 19.6 -0.3
WHN pmax pmax
comp=Z,190nm,1.0s
WHN pmax pmax
comp=Z,1μm,7.5s
WHN LR LR
comp=Z,5μm,15.7s
WHN LR LR
comp=Z,3μm,9.0s
WHN LR LR
comp=Z,4μm,11.3s
TIY **Taiyuan** 18.86 288 *e*P Pn 10 23 05.6 +1.7
TIY S Sn 10 26 33.2 -1.4
TIY pmax pmax
comp=Z,37nm,1.0s
TIY pmax pmax
comp=Z,1μm,5.6s
TIY LR LR
comp=Z,660nm,8.0s
TIY LR LR
comp=Z,2μm,9.6s
TIY LR LR
comp=Z,2μm,10.7s
HIA **Hailar** 19.11 328 *e*P Pn 10 23 07.6 +0.8
HIA pmax pmax
comp=Z,219nm,0.9s
HIA **Hailar** 19.11 328 *e*P Pn 10 23 07.6 +0.8
comp=Z,219nm,0.9s
NKL **Nikolayevsk** 19.54 10 *e*P P 10 23 09.0 -1.5
NKL *e*S Sn 10 26 52.0 +1.4
NKL pmax pmax
comp=Z,400nm,5.0s
NKL pmax pmax
comp=N,43nm,1.0s
NKL pmax pmax
comp=E,43nm,1.0s
NKL pmax pmax
comp=Z,43nm,1.0s
NKL smax smax
comp=E,600nm,11.0s
NKL MLR MLR
comp=N,1μm,13.0s
NKL MLR MLR
comp=E,2μm,13.0s
NKL MLR MLR
comp=Z,2μm,15.0s
HHC **Hu-ho-hao-te** 19.99 297 *e*P Pn 10 23 17.0 -0.5
HHC sP sP 10 23 24.0 +1.4
HHC S S 10 27 00.9 +0.9
HHC sS Sn 10 27 03.5 +1.6
HHC pmax pmax
comp=Z,170nm,1.1s
HHC pmax pmax
comp=Z,920nm,4.4s
HHC LR LR
comp=Z,1μm,8.7s
HHC LR LR
comp=Z,4μm,9.6s
HHC LR LR
comp=Z,3μm,9.7s
BTO **Baotou** 21.09 296 *e*P P 10 23 27.9 +0.3
XAN **Xi'an** 21.81 278 P P 10 23 34.8 -0.6
XAN pP pP 10 23 38.9 -1.2
XAN sP sP 10 23 41.8 -0.5
XAN PP PnPn 10 23 59.7 +3.1
XAN S S 10 27 29.6 -6.4
XAN pmax pmax
comp=Z,37nm,1.3s
XAN pmax pmax
comp=Z,280nm,3.8s
XAN LR LR
comp=Z,1μm,10.0s
XAN LR LR
comp=Z,2μm,12.1s
XAN LR LR
comp=Z,2μm,12.6s
GZH **Guangzhou** 22.06 246 P P 10 23 32.5 -5.5
GZH S S 10 27 33.2 -7.5
GZH SS SnSn 10 28 13.1 +6.0
GZH pmax pmax
comp=Z,1μm,8.5s
GUMO **Guam** 22.11 154 P P 10 23 39.0 +0.5
comp=Z,394nm,0.8s,baz=184,slow=6.3,SNR=19
GUMO LR LR 10 31 18.9
comp=Z,417nm,18.9s,baz=350,slow=34
GUMO **Guam** 22.11 154 *e*P P 10 23 40.0 +1.4
comp=Z,1μm,1.3s
ENH **Enshi** 22.11 267 *e*P P 10 23 39.3 +0.6
comp=Z,395nm,0.8s
ENH LR LR
comp=Z,500nm,22.0s
SKR **Severo-Kuril's** 22.59 36 *e*P P 10 23 40.0 -3.5
SKR *e*PPP PPP 10 23 49.5
SKR pmax pmax
comp=Z,400nm,2.4s
SKR pmax pmax
comp=Z,287nm,1.0s
SKR pmax pmax
comp=Z,900nm,2.0s
SKR MLR MLR
comp=Z,1μm,15.0s
TGY **Tagaytay City** 23.68 217 P P 10 23 55.6 +0.7
comp=Z,416nm,0.8s,baz=16,slow=4.4,SNR=15
CIT **Chita** 23.86 326 *e*P P 10 23 55.4 -1.0

CIT *e* 10 24 02.7
CIT pmax pmax
comp=Z,266nm,1.7s
CLNS **Chul'man** 23.92 346 *e*P P 10 23 54.1 -2.8
CLNS *e**PP sP 10 24 03.3 -0.7
CLNS *e* 10 27 33.1
CLNS *e*S S 10 28 12.6 +0.1
CLNS *e*SS SnSn 10 29 18.6 +26
CLNS pmax pmax
comp=E,6.0nm,0.9s
CLNS pmax pmax
comp=Z,12nm,0.9s
CLNS pmax pmax
comp=N,12nm,1.0s
CLNS pmax pmax
comp=Z,20nm,0.9s
CLNS pmax pmax
comp=N,17nm,1.3s
CLNS pmax pmax
comp=E,7.0nm,0.9s
CLNS smax smax
comp=N,116nm,12.3s
CLNS smax smax
comp=E,173nm,11.8s
CLNS MLR MLR
comp=E,2μm,12.0s
CLNS MLR MLR
comp=Z,2μm,13.0s
CLNS MLR MLR
comp=N,1μm,12.0s
PEA0 **Petropavlovsk-** 24.91 33 *e*P P 10 24 06.2 +0.3
PEA0 *e*PcP PcP 10 27 41.6 +0.4
PEA0B **Petropavlovsk-** 24.91 33 *e*P P 10 24 06.5 +0.6
comp=N,91nm,1.0s
PEA0B *e*PcP PcP 10 27 39.9 -1.3
PEA0B LR LR
comp=Z,800nm,22.0s
PETK **Petropavlovsk-** 24.91 33 P P 10 24 06.3 +0.3
comp=Z,38nm,0.8s,baz=212,slow=6.4,SNR=36
PETK PcP PcP 10 27 41.5 +0.3
comp=Z,7.4nm,0.8s,baz=126,slow=2.6,SNR=4.2
PETK LR LR 10 33 15.5
comp=Z,648nm,21.8s,baz=226,slow=35
PEA1 **Petropavlovsk-** 24.92 33 *e*P P 10 24 06.3 +0.3
PEA1 *e*PcP PcP 10 27 41.5 +0.3
PET **Petropavlovsk** 25.30 34 *c i*P P 10 24 08.8 -0.6
PET *e* 10 27 41.5
PET *i*S S 10 28 34.6 +0.1
PET *e*SS SnSn 10 29 35.8 +10
PET pmax pmax
comp=Z,300nm,5.4s
PET pmax pmax
comp=Z,800nm,3.8s
PET pmax pmax
comp=Z,136nm,1.4s
PET MLR MLR
comp=Z,1μm,22.0s
PET MLR MLR
comp=Z,900nm,19.0s
PET **Petropavlovsk** 25.30 34 *e*P P 10 24 10.3 +0.9
comp=Z,171nm,1.2s
PET LR LR
comp=Z,1μm,22.0s
SONA0 **Songino Array** 25.65 311 *e*P P 10 24 13.1 +0.3
SONA0 *e*PcP PcP 10 27 43.5 +0.4
SONA1 **Songino Array** 25.65 311 *e*P P 10 24 13.0 +0.2
SONA1 *e*PcP PcP 10 27 43.5 +0.3
SONM **Songino Array** 25.65 311 P P 10 24 13.1 +0.3
comp=Z,80nm,0.8s,baz=123,slow=9.3,SNR=216
SONM PcP PcP 10 27 43.5 +0.4
comp=Z,2.4nm,0.7s,baz=159,slow=3.1,SNR=4.1
SONM LR LR 10 34 10.2
comp=Z,578nm,18.3s,baz=99,slow=36
LZH **Lanzhou** 25.75 284 ⇓P P 10 24 14.4 +0.5
LZH pP pP 10 24 19.1 +0.2
LZH sP sP 10 24 21.5 +0.5
LZH S S 10 28 43.1 +0.7
LZH pmax pmax
comp=Z,120nm,1.0s
LZH pmax pmax
comp=Z,690nm,6.8s
LZH LR LR
comp=Z,1μm,10.6s
LZH LR LR
comp=Z,2μm,11.4s
LZH LR LR
comp=Z,2μm,12.2s
GYA **Guiyang** 25.76 261 ⇑*i*P P 10 24 14.6 +0.6
GYA PP PnPn 10 24 56.0 +5.2
GYA SS 10 29 45.2
GYA ScP ScP 10 31 24.8 +2.3
GYA pmax pmax
comp=Z,140nm,1.2s
GYA pmax pmax
comp=Z,400nm,5.6s
GYA LR LR
comp=Z,2μm,10.6s
GYA LR LR
comp=Z,3μm,10.6s
GYA LR LR
comp=Z,4μm,12.7s
CD2 **Chengdu** 26.70 272 ⇑*i*P P 10 24 22.2 -0.2
CD2 pP pP 10 24 26.7 -0.8
CD2 sP sP 10 24 28.7 -0.8
CD2 PcP PcP 10 27 45.8 0.0
CD2 S S 10 29 03.0 +5.7
CD2 sS sS 10 29 07.6 +2.0
CD2 pmax pmax
comp=Z,660nm,4.2s
CD2 LR LR
comp=Z,3μm,9.9s
CD2 LR LR
comp=Z,2μm,13.4s
CD2 LR LR
comp=Z,3μm,10.9s
QIZ **Qiongzhong** 27.09 243 P P 10 24 27.3 +1.4
QIZ pP pP 10 24 30.4 -0.5
QIZ sP sP 10 24 31.9 -1.1
QIZ S S 10 29 07.3 +3.9
QIZ sS sS 10 29 15.2 +3.5
QIZ pmax pmax
comp=Z,22nm,1.3s
QIZ pmax pmax
comp=Z,240nm,8.5s
QIZ LR LR
comp=Z,930nm,10.7s
QIZ LR LR
comp=Z,1μm,12.0s
QIZ LR LR
comp=Z,2μm,11.7s
QIZ **Qiongzhong** 27.09 243 *e*P P 10 24 27.7 +1.8
comp=Z,28nm,1.1s
QIZ LR LR
comp=Z,800nm,20.0s
MA2 **Magadan** 27.57 17 P P 10 24 29.5 -0.4
comp=Z,42nm,0.8s,baz=204,slow=8.6,SNR=44
MA2 PcP PcP 10 27 45.4 -1.8
comp=Z,12nm,0.8s,baz=141,slow=2.3,SNR=6.0
MA2 LR LR 10 36 21.0
comp=Z,710nm,18.2s,baz=206,slow=38
BOD **Bodaibo** 27.81 335 *e*P P 10 24 29.3 -2.7
BOD *e* 10 27 43.6
BOD pmax pmax
comp=Z,30nm,1.3s
DAV **Davao City (W)** 28.24 201 LR LR 10 36 53.1
comp=Z,588nm,18.0s,baz=20,slow=39
DAV **Davao City (W)** 28.24 201 PFAKE 10 24 50.0 +14
DAV LR LR
comp=Z,800nm,20.0s
YAK **Yakutsk** 28.28 354 P P 10 24 34.5 -1.6
comp=Z,44nm,0.5s,baz=135,slow=1.9,SNR=7.6
YAK PcP PcP 10 27 48.7 -0.1
comp=Z,19nm,0.4s,baz=86,slow=0.4,SNR=4.8
YAK LR LR 10 34 52.4
comp=Z,441nm,21.1s,baz=174,slow=34
YAK **Yakutsk** 28.28 354 *e*P P 10 24 34.8 -1.4
YAK *e**PP pP 10 24 41.3 +0.1
YAK *e*PPP PPP 10 25 31.7
YAK *e* 10 27 49.6
YAK *e*S S 10 29 19.4 -2.0
YAK *e**SS sS 10 29 32.7 +2.9
YAK *e* 10 35 16.0
YAK pmax pmax
comp=Z,35nm,1.0s
YAK pmax pmax
comp=N,30nm,1.7s

YAK pmax pmax
comp=E,8.0nm,1.0s
YAK pmax pmax
comp=Z,13nm,0.8s
YAK pmax pmax
comp=N,19nm,0.9s
YAK pmax pmax
comp=E,26nm,1.2s
YAK smax smax
comp=N,153nm,3.5s
YAK smax smax
comp=E,61nm,2.5s
YAK MLR MLR
comp=Z,1µm,18.0s
YAK MLR MLR
comp=N,853nm,15.0s
YAK MLR MLR
comp=E,625nm,13.0s
YAK Yakutsk 28.28 354 *e*P **P 10 24 35.5 -0.7**
YAK LR LR
comp=E,116nm,1.3s
comp=Z,500nm,21.0s
ZAK Zakamensk 28.51 315 *e*P **P 10 24 37.9 -0.6**
ZAK pmax pmax
comp=Z,19nm,1.7s
IRK Irkutsk 28.74 319 *e*P **P 10 24 38.0 -2.4**
IRK pmax pmax
comp=Z,70nm,2.2s
GTA Gaotai 28.80 291 *e*P **P 10 24 41.0 -0.2**
GTA pP pP 10 24 45.1 -1.2
GTA sP sP 10 24 48.7 +0.3
GTA PcP **PcP** **10 27 51.5 +0.7**
GTA S **S** **10 29 26.2 -4.2**
GTA pmax pmax
comp=Z,31nm,1.3s
GTA pmax pmax
comp=Z,190nm,6.7s
GTA LR LR
comp=Z,960nm,13.3s
GTA LR LR
comp=Z,1µm,11.2s
GTA LR LR
comp=Z,1µm,11.9s
TLY Talaya 28.84 317 P **P 10 24 41.5 +0.3**
comp=Z,111nm,0.7s,baz=156,slow=4.3,SNR=15
TLY LR LR 10 36 11.5
comp=Z,572nm,20.6s,baz=121,slow=36
TLY Talaya 28.84 317 *e*P **P 10 24 41.7 +0.4**
TLY *e* 10 25 40.6
TLY *e*S **S** **10 29 30.7 +0.2**
TLY *e*SS **SnSn** **10 30 53.7 +1.4**
TLY *e*SSS SSS 10 31 21.3
TLY pmax pmax
comp=Z,47nm,1.9s
TLY MLR MLR
comp=Z,542nm,13.0s
TLY Talaya 28.84 317 *e*P **P 10 24 41.5 +0.3**
TLY LR LR
comp=Z,701nm,21.0s
KMI Kunming 29.53 261 P **P 10 24 49.2 +1.2**
KMI pP sP 10 24 55.1 0.0
KMI sP pP 10 24 57.9 +4.9
KMI S **S** **10 29 45.1 +2.8**
KMI sS sS 10 29 55.7 +5.1
KMI SS **SnSn** **10 31 16.6 +6.4**
KMI pmax pmax
comp=Z,34nm,0.9s
KMI pmax pmax
comp=Z,210nm,4.6s
KMI LR LR
comp=Z,740nm,12.2s
KMI LR LR
comp=Z,3µm,11.3s
KMI LR LR
comp=Z,3µm,13.2s
MOY Mondy 30.34 316 *e*P **P 10 24 54.6 -0.1**
SEY Seymchan 30.90 15 P **P 10 24 59.4 +0.1**
comp=Z,8.5nm,0.7s,baz=223,slow=5.7,SNR=21
SEY PcP **PcP** **10 27 55.3 -0.2**
comp=Z,11nm,1.0s,baz=180,slow=9.1,SNR=4.3
H11N2 WAKE ISLAND Hy 31.45 109 T T 10 57 38.2
baz=303,slow=75,SNR=147
H11N1 WAKE ISLAND Hy 31.46 109 T T 10 57 28.0
baz=303,slow=75,SNR=148
H11N3 WAKE ISLAND Hy 31.47 109 T T 10 57 39.4
baz=303,slow=75,SNR=160
H11S3 WAKE ISLAND Hy 31.98 111 T T 10 58 20.6
baz=305,slow=75,SNR=331
H11S1 WAKE ISLAND Hy 31.98 111 T T 10 58 22.5
baz=305,slow=75,SNR=274
H11S2 WAKE ISLAND Hy 32.00 111 T T 10 58 22.3
baz=305,slow=75,SNR=171
MYLDM Lahad Datu 32.62 212 *e*P **P 10 25 16.9 +2.0**
comp=Z,121nm,1.1s
UBPT Khong Chiam 32.68 243 P **P 10 25 16.4 +0.9**
comp=Z,71nm,1.5s,comp=Z,936nm
SKNT Sakolnakorn 32.75 247 P **P 10 25 16.7 +0.6**
comp=Z,69nm,1.1s
NONG Nongkai 32.75 249 P **P 10 25 16.8 +0.7**
comp=Z,102nm,0.9s,comp=Z,7µm
SDKM Sandakan 32.81 215 ⇓P **P 10 25 17.6 +0.9**
KKM Kota Kinabalu 32.93 217 *e*P **P 10 25 18.8 +1.0**
comp=Z,93nm,1.4s
SMY Shemya 33.35 44 *e*P **P 10 25 22.6 +1.6**
SMY *e* 10 28 02.8
SMY pmax pmax
comp=Z,81nm,1.5s
SMY Shemya 33.35 44 *e*P **P 10 25 22.6 +1.6**
comp=Z,81nm,1.5s
SMY *e*PcP **PcP** **10 28 02.8 +0.4**
KHON Khomkaen 34.02 247 P **P 10 25 27.9 +0.8**
comp=Z,22nm,0.9s,comp=Z,2µm
KMSI Cibinong 34.88 200 P **P 10 25 35.2 +0.6**
UTTA Uttaradit 34.96 251 P **P 10 25 35.7 +0.4**
comp=Z,19nm,0.8s,comp=Z,147nm
LBMI Labuha 35.21 194 P **P 10 25 37.1 -0.3**
LAMP Lampang 35.26 253 P **P 10 25 39.6 +1.7**
comp=Z,21nm,1.0s,comp=Z,198nm
PBKT Sadao Pong 35.31 249 P **P 10 25 38.8 +0.5**
comp=Z,65nm,1.0s,comp=Z,928nm
MRSI Marisa 35.60 203 P **P 10 25 41.0 +0.2**
CMMT Chiang Mai 35.65 254 P **P 10 25 41.7 +0.4**
comp=Z,26nm,1.4s,comp=Z,576nm
CHTO Chiang Mai 35.65 254 P **P 10 25 41.8 +0.5**
comp=Z,118nm,1.4s,comp=Z,2µm
CHTO Chiang Mai 35.65 254 *e*P **P 10 25 41.8 +0.5**
CHTO *e* 10 28 10.2
CHTO pmax pmax
comp=Z,71nm,1.6s
CHTO MLR MLR
comp=Z,600nm,19.0s
CHTO Chiang Mai 35.65 254 *e*P **P 10 25 41.8 +0.5**
comp=Z,71nm,1.6s
CHTO *e*PcP **PcP** **10 28 10.2 +0.5**
CHTO LR LR
comp=Z,600nm,19.0s
SUKH Sukhothai 35.83 252 P **P 10 25 43.6 +0.8**
comp=Z,15nm,0.9s,comp=Z,122nm
CM31 Chiang Mai Arr 35.84 254 *e*P **P 10 25 43.8 +0.9**
CMAR Chiang Mai Arr 35.84 254 P **P 10 25 42.7 -0.2**
comp=Z,13nm,0.9s,baz=49,slow=7.3,SNR=28
CMAR PcP **PcP** **10 28 11.3 +1.0**
comp=Z,6.1nm,0.7s,baz=12,slow=1.5,SNR=10
CMAR ScP **ScP** **10 31 57.4 +1.7**
comp=Z,0.6nm,0.3s,baz=56,slow=2.3,SNR=5.9
CMAR LR LR 10 39 02.7
comp=Z,188nm,21.0s,baz=42,slow=34
CM01 Chiang Mai Arr 35.85 254 *e*P **P 10 25 43.3 +0.3**
CM01 *e*PcP **PcP** **10 28 11.3 +1.0**
CHBT CHBT 36.63 243 P **P 10 25 50.5 +0.9**
comp=Z,130nm,1.2s
JAY Jayapura 36.67 171 P **P 10 25 50.0 0.0**
comp=Z,1.9nm,0.9s,baz=274,slow=22,SNR=5.4
GENI Genyem 36.68 172 P **P 10 25 51.0 +1.0**
comp=Z,89nm,1.1s,comp=Z,3µm
FAKI Fak Fak 36.82 185 P **P 10 25 50.4 -0.8**
comp=Z,263nm,0.9s,comp=Z,2µm
FAKI Fak Fak 36.82 185 *e*P **P 10 25 51.2 0.0**
comp=Z,221nm,0.9s
FAKI LR LR
comp=Z,500nm,20.0s
SANI Sanana 36.90 196 P **P 10 25 50.0 -1.8**
BTM Bintulu 36.96 219 ⇓P **P 10 25 53.2 +0.8**
UMPA Umpang Tak 37.16 251 P **P 10 25 56.3 +2.1**
comp=Z,18nm,1.2s
LSA Lhasa 37.49 276 P **P 10 25 58.6 +1.1**
LSA pmax pmax
comp=Z,39nm,1.0s
LSA Lhasa 37.49 276 *e*P **P 10 25 58.6 +1.1**
LSA pmax pmax
comp=Z,31nm,0.9s
LSA MLR MLR
comp=Z,600nm,19.0s
LSA Lhasa 37.49 276 *e*P **P 10 25 58.6 +1.1**
comp=Z,31nm,0.9s
LSA LR LR
comp=Z,600nm,19.0s
MSAI Masohi 37.61 190 P **P 10 25 59.4 +1.5**
comp=Z,74nm,1.0s,comp=Z,932nm
WMQ Urumqi 37.83 299 P **P 10 26 00.0 +0.3**
WMQ pP pP 10 26 04.8 0.0
WMQ PP **PnPn** **10 27 30.3 +3.0**
WMQ PcP **PcP** **10 28 14.6 -1.4**
WMQ S **S** **10 31 49.9 -0.2**
WMQ pmax pmax
comp=Z,31nm,1.1s
WMQ pmax pmax
comp=Z,250nm,3.9s
WMQ LR LR
comp=Z,700nm,13.3s
WMQ LR LR
comp=Z,1µm,11.5s
WMQ LR LR
comp=Z,880nm,15.8s
TIXI Tiksi 37.87 357 LR LR 10 42 15.9
comp=Z,675nm,19.6s,baz=179,slow=37
TIXI Tiksi 37.87 357 *c iP* **P 10 25 58.3 -1.3**
TIXI pmax pmax
comp=Z,43nm,0.8s
TIXI MLR MLR
comp=Z,1µm,15.0s
TIXI Tiksi 37.87 357 *e*P **P 10 25 58.7 -0.8**
comp=Z,39nm,0.7s
TIXI LR LR
comp=Z,900nm,20.0s
SBUM Sibu 38.04 219 ⇑P **P 10 26 02.3 +0.7**
SBUM Sibu 38.04 219 *e*P **P 10 26 02.0 +0.4**
comp=Z,86nm,1.3s
SBUM LR LR
comp=Z,300nm,21.0s
SRDT SRDT 38.05 248 P **P 10 26 02.5 +0.8**
comp=Z,146nm,1.4s,comp=Z,4µm
BILL Bilibino 38.42 18 *i* P **P 10 26 04.1 -0.2**
BILL *i* 10 28 18.0
BILL pmax pmax
comp=Z,51nm,1.0s
BILL MLR MLR
comp=Z,627nm,16.0s
BILL Bilibino 38.42 18 *e*P **P 10 26 05.0 +0.8**
comp=Z,76nm,1.0s
BILL LR LR
comp=Z,424nm,20.0s
PHET Kaeng Krachan 38.55 246 P **P 10 26 07.1 +1.2**
comp=Z,30nm,0.9s,comp=Z,230nm
BNDI Bandanaira 38.64 189 P **P 10 26 06.2 -0.4**
comp=Z,526nm,1.1s
KDI Kendari 39.59 200 P **P 10 26 15.1 +0.6**
comp=Z,65nm,1.0s,comp=Z,971nm
TTSI Tana Toraja 39.61 205 P **P 10 26 16.0 +1.3**
comp=Z,14nm,0.9s,comp=Z,2µm
MTKI Muara Teweh, K 39.67 213 P **P 10 26 16.0 +0.8**
comp=Z,124nm,0.9s
KSM Kuching 39.89 221 ⇑P **P 10 26 18.7 +1.7**
KSM Kuching 39.89 221 *e*P **P 10 26 17.9 +0.8**
comp=Z,93nm,0.8s
KSM *e*PcP **PcP** **10 28 23.4 +0.7**
ZAA0 Zalesovo Array 40.39 315 *e*P **P 10 26 20.1 -0.8**
ZAA0 *e*PcP **PcP** **10 28 23.6 -0.1**
ZALV Zalesovo Beam 40.39 315 P **P 10 26 20.6 -0.3**
comp=Z,8.9nm,0.6s,baz=102,slow=7.3,SNR=22
ZALV PcP **PcP** **10 28 23.4 -0.3**
comp=Z,12nm,0.6s,baz=98,slow=3.0,SNR=13
ZALV LR LR 10 41 43.7
comp=Z,386nm,20.0s,baz=74,slow=34
ZAA1 Zalesovo Array 40.39 315 *e*P **P 10 26 20.6 -0.3**
ZAA1 *e*PcP **PcP** **10 28 23.4 -0.3**
STKI Sintang 40.45 218 P **P 10 26 23.0 +1.3**
comp=Z,56nm,0.7s
MIDW Midway 40.69 85 PFAKE 10 26 40.0 +16
MIDW LR LR
comp=Z,389nm,19.0s
KTGM Kuala Trenggan 41.23 233 ⇓P **P 10 26 29.9 +1.7**
NVS Novosibirsk 41.44 316 *e*P **P 10 26 28.9 -0.5**
NVS pmax pmax
comp=Z,35nm,1.1s
NVS pmax pmax
comp=N,8.0nm,1.0s
NVS pmax pmax
comp=E,16nm,1.1s
KAPI Kappang 41.47 204 P **P 10 26 29.7 -0.3**
comp=E,62nm,0.9s,baz=2.7,slow=4.4,SNR=22
KAPI Kappang 41.47 204 *e*P **P 10 26 29.5 -0.6**
comp=E,107nm,1.2s
KAPI *e*PcP **PcP** **10 28 28.4 +0.6**
KAPI LR LR
comp=Z,209nm,19.0s
MK01 Makanchi Array 41.56 304 *e*P **P 10 26 30.9 +0.3**
MK01 *e*PcP **PcP** **10 28 27.7 0.0**
MK31 Makanchi Array 41.57 304 *i* P **P 10 26 30.7 0.0**
MK31 pmax pmax
comp=Z,22nm,0.6s
MK31 Makanchi Array 41.57 304 *e*P **P 10 26 31.1 +0.4**
MK32 Makanchi Array 41.57 304 *e*P **P 10 26 30.9 +0.2**
MK32 *e*PcP **PcP** **10 28 27.5 -0.3**
MKAR Makanchi Array 41.57 304 P **P 10 26 30.9 +0.2**
comp=Z,32nm,0.6s,baz=91,slow=10,SNR=248
MKAR PcP **PcP** **10 28 27.5 -0.3**
comp=Z,3.7nm,0.8s,baz=57,slow=5.3,SNR=2.9
MKAR LR LR 10 43 10.8
comp=Z,279nm,21.4s,baz=91,slow=35
MKAR Makanchi Array 41.57 304 *e*P **P 10 26 31.1 +0.4**
comp=Z,316nm,0.6s
SKLT Songkhla 41.64 238 P **P 10 26 32.6 +1.1**
comp=Z,63nm,1.3s,comp=Z,914nm
SURT Suratani 41.73 242 P **P 10 26 33.2 +0.9**
comp=Z,58nm,0.9s,comp=Z,478nm
MAKZ Makanchi 41.78 304 *e*P **P 10 26 32.9 +0.5**
MAKZ pmax pmax
comp=Z,43nm,0.7s
MAKZ MLR MLR
comp=Z,200nm,20.0s
MAKZ Makanchi 41.78 304 *e*P **P 10 26 32.9 +0.5**
comp=Z,43nm,0.7s
MAKZ LR LR
comp=Z,200nm,20.0s
TRTT Trang 41.84 240 P **P 10 26 34.2 +1.0**
comp=Z,76nm,1.2s,comp=Z,786nm
BBKI Banjar Baru 41.94 211 P **P 10 26 34.1 +0.2**
comp=Z,202nm,0.8s,comp=Z,5µm
RAMN Ramite 42.20 274 *e*P **P 10 26 36.4 0.0**
comp=Z,103nm,0.8s
GUN Gumba 42.45 276 *e*P **P 10 26 38.8 +0.3**
comp=Z,238nm,1.0s
PKDT Phuket 42.78 241 P **P 10 26 41.9 +1.0**
comp=Z,224nm,1.1s,comp=Z,3µm
KULM Kulim 42.95 236 ⇑P **P 10 26 43.3 +1.0**
KULM Kulim 42.95 236 *e*P **P 10 26 43.1 +0.9**
comp=Z,86nm,1.1s
KULM LR LR
comp=Z,268nm,20.0s
PKIN Phulchoki 42.97 275 *e*P **P 10 26 42.7 +0.1**
KKN Kakani 42.99 276 *e*P **P 10 26 42.7 0.0**
comp=Z,60nm,0.9s
IPM Ipoh 43.28 235 *e*P **P 10 26 45.1 +0.2**
comp=Z,95nm,1.0s
IPM LR LR
comp=Z,400nm,18.0s
MYKOM Kota Tinggi 43.44 229 *e*P **P 10 26 47.1 +0.9**
comp=Z,25nm,0.9s
MYKOM LR LR
comp=Z,300nm,18.0s
GKN Gorkha 43.44 276 *e*P **P 10 26 46.3 -0.1**
comp=Z,113nm,1.1s
TPRI Tanjung Pinang 43.70 228 P **P 10 26 48.7 +0.4**
PDGK Podgornoye 43.82 299 P **P 10 26 49.0 +0.1**
PDGK pmax pmax
comp=Z,93nm,0.7s
KURK Kurchatov 43.94 310 *e*P **P 10 26 50.2 +0.4**
KURK pmax pmax
comp=Z,135nm,0.9s
KURK MLR MLR
comp=Z,500nm,20.0s
KURK Kurchatov 43.94 310 *e*P **P 10 26 50.2 +0.4**
comp=Z,135nm,0.9s
KURK LR LR
comp=Z,500nm,20.0s
NRIK Noril'sk 44.05 338 P **P 10 26 49.6 -0.9**
comp=Z,32nm,0.9s,baz=114,slow=9.6,SNR=18
NRIK PcP **PcP** **10 28 35.9 +0.3**
comp=Z,29nm,0.9s,baz=113,slow=3.9,SNR=7.8
NRIK LR LR 10 44 02.1
comp=Z,314nm,18.5s,baz=124,slow=34
MMRI Maumere 44.16 199 P **P 10 26 52.4 +0.5**
KOLN Koldanda 44.38 276 *e*P **P 10 26 54.1 +0.1**
comp=Z,30nm,0.8s
EDFI Ende, Flores 44.41 199 P **P 10 26 52.5 -1.6**
comp=Z,32nm,1.5s
PMG Port Moresby 44.61 163 PFAKE 10 27 10.0 +14
PMG LR LR
comp=Z,295nm,19.0s
SOEI Soe 44.74 195 P **P 10 26 55.9 -0.8**
comp=Z,176nm,1.2s
SOEI Soe 44.74 195 *e*P **P 10 26 55.5 -1.2**
comp=Z,383nm,1.5s
PYUN Piuthan 44.77 277 *e*P **P 10 26 57.2 +0.2**
comp=Z,162nm,0.9s
PPBI Pangkal Pinang 45.21 223 P **P 10 27 01.6 +1.3**
comp=Z,86nm,1.1s
BATI Baumata 45.31 196 P **P 10 27 00.9 -0.2**
comp=Z,68nm,1.0s
LHMI Lhok Sumawe 45.60 240 P **P 10 27 06.4 +2.9**
LHMI Lhok Sumawe 45.60 240 *e*P **P 10 27 05.5 +2.0**
comp=Z,420nm,1.3s
WSI Waingapu 45.69 201 P **P 10 27 07.4 +3.4**
PLAI Plampang 45.70 205 P **P 10 27 02.8 -1.4**
comp=Z,96nm,1.1s
PSI Prapat 45.93 235 *e*P **P 10 27 06.3 +0.1**
PSI *e* 10 28 43.3
PSI pmax pmax
comp=Z,61nm,1.0s
PSI Prapat 45.93 235 *e*P **P 10 27 06.3 +0.1**
comp=Z,61nm,1.0s
PSI *e*PcP **PcP** **10 28 43.3 +0.2**
TWSI Taliwang, Sumb 45.93 206 P **P 10 27 05.4 -0.6**
comp=Z,116nm,1.1s,comp=Z,1µm
BKNI Bangkinang 46.35 231 P **P 10 27 10.9 +1.5**
comp=Z,300nm,1.0s
MLSI Meulaboh, Aceh 46.65 239 P **P 10 27 11.3 -0.5**
comp=Z,228nm,0.9s
TKM2 Tokmak 2 46.69 299 *e*P **P 10 27 13.3 +1.2**
TKM2 pmax pmax
comp=Z,128nm,1.3s
TKM2 MLR MLR
comp=Z,400nm,20.0s
TKM2 Tokmak 2 46.69 299 *e*P **P 10 27 13.3 +1.2**
comp=Z,128nm,1.3s
TKM2 LR LR
comp=Z,400nm,20.0s
JAGI Jajag, Banyuwa 46.73 209 P **P 10 27 12.1 -0.2**
comp=Z,58nm,1.0s
JAGI Jajag, Banyuwa 46.73 209 *e*P **P 10 27 10.8 -1.5**
comp=Z,50nm,0.9s
GMJI Gumukmas 46.85 210 P **P 10 27 13.1 -0.1**
comp=Z,92nm,1.2s
NGJI Ngawi 46.91 213 P **P 10 27 15.6 +1.9**
comp=Z,76nm,1.2s
MNSI Mandailing Nat 46.96 233 P **P 10 27 13.9 -0.2**
comp=Z,95nm,1.4s,comp=Z,4µm
SDSI Sungai Dareh 47.07 229 P **P 10 27 15.9 +0.9**
comp=Z,137nm,1.0s,comp=Z,41µm
KSH Kashi 47.08 295 P **P 10 27 19.3 +4.3**
KSH *e*pP sP 10 27 23.9 +1.6
KSH *e*PP **PP** **10 29 10.1 +4.4**
KSH S **S** **10 34 11.0 +4.5**
KSH ScS **ScS** **10 37 11.4 +2.5**
KSH pmax pmax
comp=Z,18nm,0.7s
KSH pmax pmax
comp=Z,260nm,4.9s
KSH LR LR
comp=Z,980nm,13.5s
KSH LR LR
comp=Z,540nm,12.4s
KSH LR LR
comp=Z,750nm,11.5s
FRU Bishkek 47.42 299 *i* P **P 10 27 17.0 -0.5**
FRU pmax pmax
comp=Z,150nm,1.6s
AAK Ala-Archa 47.54 299 *e*P **P 10 27 19.4 +0.7**
AAK *e* 10 28 48.7
AAK pmax pmax
comp=Z,22nm,0.7s
AAK MLR MLR
comp=Z,400nm,20.0s
AAK Ala-Archa 47.54 299 P **P 10 27 19.3 +0.7**
SNR=18
AAK Ala-Archa 47.54 299 *e*P **P 10 27 19.4 +0.7**
comp=Z,22nm,0.7s
AAK *e*PcP **PcP** **10 28 48.6 +0.1**
AAK LR LR
comp=Z,400nm,20.0s
PDSI Padang 47.67 231 P **P 10 27 19.8 +0.1**
comp=Z,18nm,0.9s
UGM Wanagama 47.82 214 P **P 10 27 20.7 -0.1**
comp=Z,220nm,1.1s
UGM Wanagama 47.82 214 *e*P **P 10 27 18.7 -2.1**
comp=Z,306nm,1.2s
GSI Gunungsitoli 47.93 235 P **P 10 27 21.6 -0.2**
comp=Z,606nm,1.2s,comp=Z,6µm
GSI Gunungsitoli 47.93 235 *e*P **P 10 27 21.6 -0.2**
comp=Z,858nm,1.3s
CHLP Challavanipeta 47.96 265 *e*P **P 10 27 21.9 0.0**
CHLP IAmb IAmb 10 27 23.4
comp=Z,49nm,1.0s
CHLP *es*P **sP** **10 27 28.3 -0.9**
CHLP *e*PcP **PcP** **10 28 49.9 -0.3**
CHLP *e*PP **PP** **10 29 12.8 -1.2**
CHLP IVMs_BB IVMs_BB 10 47 08.0
comp=Z,239nm,5.0s
EKS2 Erkin-Say 48.06 299 *e*P **P 10 27 23.1 +0.5**
EKS2 *e* 10 28 50.7
EKS2 pmax pmax
comp=Z,17nm,0.9s
EKS2 MLR MLR
comp=Z,400nm,18.0s
EKS2 Erkin-Say 48.06 299 *e*P **P 10 27 23.1 +0.5**
comp=Z,17nm,0.9s
EKS2 *e*PcP **PcP** **10 28 50.7 +0.4**
EKS2 LR LR
comp=Z,400nm,18.0s
LHSI Lahat 48.07 225 P **P 10 27 24.1 +1.3**
comp=Z,218nm,1.3s,comp=Z,3µm
KPJI Karang Pucung 48.08 216 P **P 10 27 22.8 0.0**
comp=Z,177nm,1.1s
KLI Kotabumi 48.15 223 P **P 10 27 24.4 +1.1**
comp=Z,97nm,0.9s,comp=Z,7µm
OTUK Ortayu 48.18 307 P **P 10 27 23.6 +0.2**
OTUK pmax pmax
comp=Z,219nm,1.1s
COEN Coen 48.27 170 *e*P **P 10 27 24.7 +0.4**
comp=Z,35nm,0.8s
BLSI Bandar Lampung 48.34 222 P **P 10 27 25.1 +0.2**
comp=Z,148nm,0.4s
KSI Kapahiang 48.48 226 P **P 10 27 26.0 0.0**
comp=Z,198nm,0.8s
LWLI Liwa 48.72 223 P **P 10 27 31.6 +3.7**
CHKZ Chkalovo 48.78 314 P **P 10 27 27.4 -0.4**
CHKZ pmax pmax
comp=Z,89nm,0.7s
BVA0 Borovoye Array 48.95 314 P **P 10 27 28.1 -1.1**
BVA0 pmax pmax
comp=Z,65nm,0.8s
MNAS Manas 49.01 299 P **P 10 27 30.6 +0.6**
MNAS pmax pmax
comp=Z,33nm,1.0s
BRVK Borovoye 49.02 314 *c iP* **P 10 27 29.5 -0.1**
BRVK pmax pmax
comp=Z,224nm,0.8s
BRVK Borovoye 49.02 314 *e*P **P 10 27 29.6 0.0**
comp=Z,77nm,0.8s
BRVK LR LR
comp=Z,500nm,21.0s
HNR Honiara 49.14 147 PFAKE 10 27 40.0 +9.1
HNR LR LR
comp=Z,566nm,21.0s
THN Thein Dam 49.22 286 *e*P **P 10 27 28.0 -3.4**
CHGN Chignik 49.61 42 *e*P **P 10 27 33.1 -1.0**
ZRNK Zerenda 49.80 314 *e*P **P 10 27 35.7 +0.1**
ZRNK pmax pmax
comp=Z,151nm,0.9s

ZRNK MLR MLR
comp=Z,400nm,19.0s
ZRNK Zerenda 49.80 314 *e*P **P 10 27 35.7 +0.1**
comp=Z,151nm,0.9s
ZRNK LR LR
comp=Z,400nm,19.0s
KK31 Karatay Array 50.32 301 *i* P **P 10 27 40.1 +0.3**
KK31 pmax pmax
comp=Z,88nm,0.8s
KKAR Karatay Array 50.32 301 *e*P **P 10 27 40.3 +0.5**
KKAR pmax pmax
comp=Z,718nm,0.8s
KKAR Karatay Array 50.32 301 *e*P **P 10 27 40.3 +0.5**
comp=Z,718nm,0.8s
PVM Polavaram 50.59 265 *e*P **P 10 27 41.7 -0.4**
PVM IAmb IAmb 10 27 43.3
comp=Z,52nm,0.8s
PVM *es*P **sP 10 27 49.3 0.0**
PVM IVMs_BB IVMs_BB 10 51 02.3
comp=Z,308nm,4.2s
TT01 Tatalina 50.75 33 *e*P **P 10 27 44.0 +1.3**
TTA Tatalina 50.75 33 *e*P **P 10 27 44.5 +1.7**
TTA pmax pmax
comp=Z,39nm,1.3s
TTA Tatalina 50.75 33 *e*P **P 10 27 44.5 +1.7**
comp=Z,39nm,1.3s
SVW2 Sparrevohn 50.95 36 *e*P **P 10 27 45.8 +1.5**
comp=Z,32nm,1.1s
SVW2 LR LR
comp=Z,200nm,20.0s
RPR Rampur 51.74 268 *e*P **P 10 27 50.1 -0.6**
RPR IAmb IAmb 10 27 51.1
comp=Z,33nm,0.7s
RPR *ep*P **pP 10 27 55.1 -0.8**
RPR IVMs_BB IVMs_BB 10 47 47.0
comp=Z,468nm,4.6s
OHAK Old Harbor 52.36 41 *e*P **P 10 27 54.9 +0.1**
comp=Z,31nm,0.9s
OHAK LR LR
comp=Z,301nm,21.0s
RSO Redoubt South 52.36 37 *e*P **P 10 27 56.1 +1.1**
SRSP Sriramsagar 52.50 269 *e*P **P 10 27 55.5 -0.9**
SRSP IAmb IAmb 10 27 57.0
comp=Z,63nm,1.0s
SRSP *ep*P **pP 10 28 00.8 -0.8**
SRSP IVMs_BB IVMs_BB 10 53 43.1
comp=Z,456nm,6.1s
PPLA Purkeypile 52.50 33 *e*P **P 10 27 57.6 +1.7**
comp=Z,124nm,1.4s
CAST Castle Rocks 52.53 33 *e*P **P 10 27 57.4 +1.4**
comp=Z,100nm,1.7s
CAST LR LR
comp=Z,200nm,21.0s
FITZ Fitzroy Crossi 52.61 192 P **P 10 27 57.0 +0.1**
comp=Z,74nm,0.7s,baz=16,slow=7.6,SNR=198
FITZ Fitzroy Crossi 52.61 192 *e*P **P 10 27 57.0 +0.1**
comp=Z,77nm,0.8s
DZET Dzherino 52.63 296 P **P 10 27 57.5 +0.2**
DZET pmax pmax
comp=Z,56nm,0.7s
SPU Mount Spurr 52.66 36 *e*P **P 10 27 58.0 +1.0**
ADKI Addanki 52.67 264 *e*P **P 10 27 58.0 +0.3**
ADKI IAmb IAmb 10 27 59.2
comp=Z,33nm,1.0s
KDAK Kodiak Island 52.68 40 *i* P **P 10 27 57.3 +0.2**
KDAK Kodiak Island 52.68 40 PFAKE 10 28 10.0 +13
KDAK LR LR
comp=Z,201nm,18.0s
NJS Nagarjunasagar 52.86 265 *e*P **P 10 27 58.5 -0.6**
NJS IAmb IAmb 10 28 00.0
comp=Z,83nm,1.0s
NJS IVMs_BB IVMs_BB 10 49 43.6
comp=Z,446nm,5.4s
BPAW Bear Paw Mtn. 52.99 32 *e*P **P 10 28 00.7 +1.3**
comp=Z,59nm,1.5s
BPAW LR LR
comp=Z,200nm,20.0s
KTH Kantishna Hill 53.04 33 *e*P **P 10 28 01.1 +1.2**
comp=Z,116nm,1.6s
KTH LR LR
comp=Z,200nm,21.0s
HYB Hyderabad 53.06 267 *i* P **P 10 28 00.5 0.0**
comp=Z,50nm,1.0s
HYBB Hyderabad (bro 53.06 267 *e*P **P 10 27 59.9 -0.6**
HYBB IAmb IAmb 10 28 01.3
comp=Z,68nm,1.0s
MLY Manley 53.06 31 *e*P **P 10 28 01.3 +1.4**
comp=Z,37nm,1.1s
MLY LR LR
comp=Z,300nm,21.0s
CNPM China Poot 53.20 38 *e*P **P 10 28 01.7 +0.7**
comp=Z,17nm,0.8s
COLD Coldfoot 53.22 28 *e*P **P 10 28 01.6 +0.5**
comp=Z,16nm,1.2s
COLD LR LR
comp=Z,299nm,18.0s
SUA Susitna One 53.27 35 *e*P **P 10 28 02.1 +0.5**
comp=Z,36nm,0.7s
TRF Thorofare Moun 53.33 33 *e*P **P 10 28 02.7 +0.6**
comp=Z,14nm,1.0s
TRF LR LR
comp=Z,200nm,18.0s
BRLK Bradley Lake 53.35 37 *e*P **P 10 28 03.6 +1.4**
comp=Z,31nm,1.0s
SRLM Srisailam 53.43 265 *e*P **P 10 28 02.5 -0.8**
SRLM IAmb IAmb 10 28 04.2
comp=Z,67nm,1.0s
SRLM IVMs_BB IVMs_BB 10 51 49.7
comp=Z,488nm,4.3s
WRAB Tennant Creek 53.63 181 *c i*P **P 10 28 04.1 -0.4**
WRAB pmax pmax
comp=Z,650nm,1.0s
WRAB Tennant Creek 53.63 181 *e*P **P 10 28 04.2 -0.4**
comp=Z,229nm,0.9s
WB2 Warramunga Arr 53.64 181 *e*P **P 10 28 04.4 -0.2**
comp=Z,222nm,0.8s
WR1 Warramunga Arr 53.64 181 *e*P **P 10 28 04.5 -0.1**
comp=Z,245nm,0.9s
WR1 *e*PcP **PcP 10 29 11.3 +0.4**
WRA Warramunga Arr 53.64 181 P **P 10 28 04.5 -0.1**
comp=Z,217nm,0.9s,baz=358,slow=7.7,SNR=308
WRA PcP **PcP 10 29 11.3 +0.4**
comp=Z,7.5nm,0.7s,baz=352,slow=4.2,SNR=2.8
WRA PKPPKP **P'P'df 10 58 23.1 +6.0**
comp=Z,0.6nm,1.0s,baz=168,slow=1.9,SNR=5.4
WRA PKP2bc 10 58 35.0
comp=Z,1.3nm,0.8s,baz=176,slow=1.6,SNR=4.8
WRA Warramunga Arr 53.64 181 P **P 10 28 04.5 -0.1**
WRA 10 29 11.3
WRA pmax pmax
comp=Z,210nm,0.9s
WRA pmax pmax
comp=Z,8.0nm,0.7s
BWN Browne 53.65 32 *e*P **P 10 28 06.2 +1.9**
comp=Z,120nm,0.9s
BWN LR LR
comp=Z,400nm,19.0s
RCLA Racherla 53.71 264 *e*P **P 10 28 04.8 -0.5**
RCLA *e*P **pP 10 28 04.9 -5.7**
RCLA IAmb IAmb 10 28 05.9
comp=Z,30nm,0.8s
RCLA *es*P **sP 10 28 12.3 -0.2**
RCLA IVMs_BB IVMs_BB 10 53 36.3
comp=Z,539nm,4.3s
RC01 Rabbit Creek A 53.79 36 *e*P **P 10 28 05.8 +0.5**
comp=Z,30nm,1.1s
KBL Kabul 53.79 291 *e*P **P 10 28 06.5 +0.5**
KBL pmax pmax
comp=Z,128nm,1.6s
KBL MLR MLR
comp=Z,300nm,20.0s
KBL Kabul 53.79 291 *e*P **P 10 28 06.5 +0.5**
comp=Z,128nm,1.6s
KBL LR LR
comp=Z,300nm,20.0s
MCK McKinley 53.91 32 *e*P **P 10 28 07.2 +1.0**
MCK pmax pmax
comp=Z,33nm,1.0s
MCK McKinley 53.91 32 *e*P **P 10 28 07.2 +1.0**
comp=Z,33nm,1.0s
SKHT Srikalahasti 53.98 262 *e*P **P 10 28 07.0 -0.3**
SKHT IAmb IAmb 10 28 09.0
comp=Z,106nm,1.1s
SKHT *es*P **sP 10 28 13.7 -0.9**
SKHT IVMs_BB IVMs_BB 10 53 01.0
comp=Z,536nm,5.2s
RND Reindeer 53.98 33 *e*P **P 10 28 07.2 +0.5**

RND pmax pmax
comp=Z,54nm,1.0s
RND Reindeer 53.98 33 *e*P **P 10 28 07.2 +0.5**
comp=Z,54nm,1.0s
PMR Palmer 54.02 35 *e*P **P 10 28 07.3 +0.3**
PMR pmax pmax
comp=Z,34nm,1.0s
PMR Palmer 54.02 35 *e*P **P 10 28 07.3 +0.3**
comp=Z,34nm,1.0s
SEW Seward 54.04 37 *e*P **P 10 28 07.1 0.0**
comp=Z,23nm,0.7s
MDM Murphy Dome 54.12 31 *e*P **P 10 28 08.9 +1.2**
comp=Z,81nm,0.9s
MDM LR LR
comp=Z,300nm,18.0s
SVE Sverdlovsk 54.13 319 *d i*P **P 10 28 07.8 0.0**
SVE pmax pmax
comp=Z,130nm,1.1s
SVE MLR MLR
comp=Z,320nm,11.0s
WRH Wood River Hil 54.22 31 *e*P **P 10 28 09.3 +0.9**
comp=Z,31nm,1.0s
WRH LR LR
comp=Z,300nm,21.0s
COLA College 54.29 31 *e*P **P 10 28 10.3 +1.4**
COLA pmax pmax
comp=Z,43nm,1.0s
COLA MLR MLR
comp=Z,183nm,20.0s
COLA College 54.29 31 *e*P **P 10 28 10.3 +1.4**
comp=Z,43nm,1.0s
COLA LR LR
comp=Z,183nm,20.0s
CCB Clear Creek Bu 54.33 31 *e*P **P 10 28 09.6 +0.4**
comp=Z,15nm,0.9s
CCB LR LR
comp=Z,200nm,19.0s
KLRI Killari 54.36 269 *e*P **P 10 28 09.1 -1.0**
KLRI IAmb IAmb 10 28 10.6
comp=Z,96nm,0.9s
KLRI *es*P **sP 10 28 16.8 -0.7**
KLRI IVMs_BB IVMs_BB 10 57 16.3
comp=Z,871nm,4.3s
SML Sawmill 54.38 35 *e*P **P 10 28 10.6 +1.0**
SML pmax pmax
comp=Z,51nm,1.0s
SML Sawmill 54.38 35 *e*P **P 10 28 10.6 +1.0**
comp=Z,51nm,1.0s
DHY Denali Highway 54.68 33 *e*P **P 10 28 13.0 +1.1**
comp=Z,33nm,1.2s
DHY LR LR
comp=Z,200nm,21.0s
IL1 Eielson Array 54.71 31 *e*P **P 10 28 11.8 -0.2**
ILAR Eielson Array 54.71 31 P **P 10 28 11.9 -0.1**
comp=Z,10nm,0.7s,baz=283,slow=6.3,SNR=36
ILAR PcP **PcP 10 29 14.3 -0.1**
comp=Z,4.1nm,0.7s,baz=266,slow=3.6,SNR=4.6
ILAR LR LR 10 53 08.6
comp=Z,143nm,18.8s,baz=282,slow=38
ILAR PKPPKP P'P'df 10 58 17.3 -12
comp=Z,0.4nm,0.9s,baz=50,slow=1.9,SNR=4.6
ILB Eielson Array 54.71 31 *e*P **P 10 28 11.9 -0.1**
HDA Harding Lake 54.72 31 *e*P **P 10 28 12.2 +0.1**
comp=Z,39nm,0.9s
CTA Charters Tower 54.79 167 P **P 10 28 13.0 0.0**
comp=Z,29nm,0.9s,baz=346,slow=9.4,SNR=31
CTA Charters Tower 54.79 167 P **P 10 28 13.0 0.0**
CTA pmax pmax
comp=Z,29nm,0.9s
CTAO Charters Tower 54.79 167 *e*P **P 10 28 13.0 0.0**
CTAO pmax pmax
comp=Z,57nm,1.0s
CTAO Charters Tower 54.79 167 *e*P **P 10 28 13.0 0.0**
comp=Z,58nm,1.0s
SCM Sheep Creek Mo 54.85 34 *e*P **P 10 28 14.0 +0.9**
SCM pmax pmax
comp=Z,44nm,0.8s
SCM Sheep Creek Mo 54.85 34 *e*P **P 10 28 14.0 +0.9**
comp=Z,44nm,0.8s
FYU Fort Yukon 55.21 29 PFAKE 10 28 30.0 +14
FYU LR LR
comp=Z,200nm,20.0s
ARU Arti 55.32 319 *c i*P **P 10 28 15.9 -0.6**
ARU 10 29 13.0
ARU 10 30 18.7
ARU S **S 10 35 59.6 -0.1**
ARU SS **SS 10 39 38.2 -5.4**
ARU pmax pmax
comp=Z,130nm,1.2s
ARU MLR MLR
comp=Z,324nm,13.0s
ARU Arti 55.32 319 *e*P **P 10 28 15.9 -0.6**
comp=Z,110nm,1.1s
ARU LR LR
comp=Z,201nm,19.0s
PAX Paxson 55.55 33 *e*P **P 10 28 19.3 +1.1**
PAX *e* 10 29 19.0
PAX MLR MLR
comp=Z,300nm,21.0s
PAX Paxson 55.55 33 *e*P **P 10 28 19.2 +1.1**
PAX *e*PcP **PcP 10 29 19.0 +1.1**
PAX LR LR
comp=Z,300nm,21.0s
KLU Klutina 55.56 35 *e*P **P 10 28 19.5 +1.3**
comp=Z,22nm,1.0s
DIV Divide 55.69 35 *e*P **P 10 28 20.2 +1.0**
comp=Z,31nm,0.9s
SOKR Solikamsk 55.69 323 *c i*P **P 10 28 17.1 -1.9**
SOKR pmax pmax
comp=Z,54nm,1.0s
SOKR MLR MLR
comp=Z,1µm,15.0s
EYAK Cordova Ski Ar 55.80 36 *e*P **P 10 28 19.6 -0.2**
comp=Z,24nm,1.2s
EYAK LR LR
comp=Z,300nm,19.0s
AB31 Akbulak array 56.05 310 *i* P **P 10 28 21.3 -0.5**
AB31 pmax pmax
comp=Z,69nm,1.2s
ABKAR Akbulak array 56.05 310 *e*P **P 10 28 21.9 0.0**
comp=Z,489nm,1.0s
DOT Dot Lake 56.08 32 *e*P **P 10 28 22.1 +0.3**
comp=Z,93nm,1.2s
BMRM Bremner River 56.28 35 *e*P **P 10 28 24.8 +1.5**
comp=Z,37nm,0.9s
MENT Mentasta 56.35 33 *e*P **P 10 28 25.2 +1.4**
comp=Z,31nm,0.8s
PALK Pallekele 56.77 255 *i* P **P 10 28 28.0 +0.6**
SNR=8.0
PALK Pallekele 56.77 255 *i* P **P 10 28 28.4 +1.0**
PALK Pallekele 56.77 255 *e*P **P 10 28 28.4 +1.0**
comp=Z,147nm,1.4s
MBWA Marble Bar 56.80 197 *e*P **P 10 28 26.9 -0.4**
comp=Z,53nm,1.0s
MBWA LR LR
comp=Z,253nm,20.0s
CRQM Cirque 57.02 35 *e*P **P 10 28 30.3 +1.5**
comp=Z,79nm,1.4s
EGAK Eagle 57.14 30 *e*P **P 10 28 29.6 +0.3**
comp=Z,51nm,1.6s
EGAK LR LR
comp=Z,218nm,20.0s
BALM Baldy 57.34 35 *e*P **P 10 28 32.2 +1.2**
BALM pmax pmax
comp=Z,31nm,1.2s
BALM Baldy 57.34 35 *e*P **P 10 28 32.2 +1.2**
comp=Z,30nm,1.2s
AS01 Alice Springs 57.35 181 *e*P **P 10 28 31.0 -0.2**
AS31 Alice Springs 57.35 181 *e*P **P 10 28 31.1 -0.2**
comp=Z,23nm,0.9s
ASAR Alice Springs 57.35 181 P **P 10 28 31.1 -0.2**
comp=Z,56nm,0.8s,baz=10,slow=8.1,SNR=334
ASAR LR LR 10 52 45.1
comp=Z,100nm,19.1s,baz=2.0,slow=36
ASAR PKPPKP **P'P'df 10 58 13.9 +2.2**
comp=Z,1.2nm,1.0s,baz=159,slow=5.2,SNR=4.8
ASAR PKP2bc 10 58 30.6
comp=Z,3.1nm,0.8s,baz=133,slow=2.2,SNR=7.4
DAWY Dawson 58.04 31 *e*P **P 10 28 36.5 +0.8**
comp=Z,28nm,1.4s
PCA Pinnacle 58.56 36 *e*P **P 10 28 40.3 +0.8**
comp=Z,51nm,1.0s
INK Inuvik 59.34 26 P **P 10 28 45.2 +0.6**
comp=Z,28nm,1.0s,baz=288,slow=7.2,SNR=37
INK PKPPKP **P'P'df 10 58 15.4 -7.2**
comp=Z,3.2nm,1.2s,baz=54,slow=3.6,SNR=3.5
INK Inuvik 59.34 26 *e*P **P 10 28 45.2 +0.6**

comp=Z,44nm,1.1s
INK LR LR
comp=Z,300nm,20.0s
HYT Haines Junctio 59.69 35 *e*P **P 10 28 49.3 +1.9**
GEYT Alibeck 60.86 298 P **P 10 28 56.2 +0.6**
comp=Z,41nm,1.0s,baz=32,slow=3.7,SNR=32
GEYT LR LR 10 56 27.3
comp=Z,331nm,20.6s,baz=140,slow=37
EIDS Eidsvold 60.92 164 *e*P **P 10 28 56.0 +0.1**
comp=Z,38nm,1.0s
SKAG Skagway 61.13 36 *e*P **P 10 28 57.9 +0.9**
comp=Z,62nm,1.3s
SPA0 Spitsbergen Ar 62.50 348 *e*P **P 10 29 05.4 -0.6**
KBS Kingsbay 62.76 350 *e*P **P 10 29 08.2 +0.5**
KBS pmax pmax
comp=Z,45nm,0.8s
KBS MLR MLR
comp=Z,349nm,20.0s
KBS Kingsbay 62.76 350 *e*P **P 10 29 08.2 +0.5**
comp=Z,45nm,0.8s
KBS LR LR
comp=Z,349nm,20.0s
LVZ Lovozero 62.79 335 *e*P **P 10 29 09.8 +1.7**
LVZ pmax pmax
comp=Z,52nm,1.1s
LVZ MLR MLR
comp=Z,270nm,19.0s
LVZ Lovozero 62.79 335 *e*P **P 10 29 09.8 +1.7**
comp=Z,52nm,1.1s
LVZ LR LR
comp=Z,270nm,19.0s
DZM Mont Dzumac 63.17 147 *e*P **P 10 29 10.9 -0.3**
comp=Z,71nm,1.4s
DZM *e*S **S 10 37 42.3 +0.3**
comp=Z,151nm,29.0s
DZM Mont Dzumac 63.17 147 *e*LR LR 10 48 09.1
comp=Z,431nm,25.4s
DZM Mont Dzumac 63.17 147 LR LR 10 52 37.1
comp=Z,176nm,21.3s,baz=18,slow=32
DZM Mont Dzumac 63.17 147 *e*P **P 10 29 11.5 +0.3**
comp=Z,22nm,0.9s
HSPB Hornsund (broa 63.33 347 *e*P **P 10 29 12.3 +0.8**
APA Apatity 63.36 335 *i*P **P 10 29 10.6 -1.2**
APA *i* 10 29 26.5
APA *i* S **S 10 37 41.0 -2.2**
APA pmax pmax
comp=Z,33nm,0.8s
APA MLR MLR
comp=Z,800nm,10.0s
KLMR Klimovskoe 63.60 327 *e*P **P 10 29 11.7 -1.8**
KLMR *e* 10 29 47.9
KLMR pmax pmax
comp=Z,22nm,0.8s
DLBC Dease Lake 64.07 36 LR LR 10 59 32.1
comp=Z,103nm,18.3s,baz=330,slow=38
DLBC Dease Lake 64.07 36 *e*P **P 10 29 18.6 +1.8**
comp=Z,37nm,1.1s
FORT Forrest 64.78 187 *e*P **P 10 29 21.3 -0.2**
comp=Z,1µm,0.8s
DIB Dawson Inlet, 64.87 42 *e*P **P 10 29 24.4 +2.5**
comp=Z,108nm,1.4s
ARA0 ARCESS Array S 65.03 339 *e*P **P 10 29 22.9 +0.1**
ARCES ARCESS Array B 65.03 339 P **P 10 29 22.9 +0.1**
comp=Z,17nm,0.8s,baz=63,slow=8.4,SNR=35
ARCES LR LR 11 01 09.3
comp=Z,233nm,18.9s,baz=83,slow=39
ARCES ARCESS Array B 65.03 339 P **P 10 29 22.9 +0.1**
ARCES pmax pmax
comp=Z,18nm,0.8s
ARCES MLR MLR
comp=Z,233nm,18.9s
ARE0 ARCESS Array S 65.03 339 *e*P **P 10 29 23.1 +0.3**
comp=Z,23nm,0.8s
MSVF Nonsavu 65.63 135 *e*P **P 10 29 29.2 +1.8**
MSVF pmax pmax
comp=Z,48nm,1.3s
MSVF Nonsavu 65.63 135 *e*P **P 10 29 29.1 +1.8**
comp=Z,48nm,1.3s
MSF Maaselka 65.66 334 P **P 10 29 27.0 +0.1**
MSF pmax pmax
comp=Z,47nm,1.3s
SGF Sodankyl 65.77 336 P **P 10 29 29.9 +2.3**
SGF pmax pmax
comp=Z,161nm,0.9s
STKA Stephens Creek 65.79 174 P **P 10 29 28.4 +0.4**
comp=Z,28nm,0.7s,baz=344,slow=6.8,SNR=39
STKA LR LR 10 56 56.7
comp=Z,236nm,20.5s,baz=16,slow=35
STKA Stephens Creek 65.79 174 *e*P **P 10 29 28.4 +0.4**
comp=Z,7.7nm,0.8s
VRH Novokhopyorsk 66.40 317 *e*P P 10 29 36.8 +4.9
VRH pmax pmax
comp=Z,6.0nm,1.3s
BBOO Buckleboo 66.45 179 *e*P **P 10 29 32.7 +0.4**
comp=Z,60nm,0.9s
MOS Moscow 66.64 322 *e*P **P 10 29 33.4 +0.1**
MOS *e* 10 30 01.6
MOS pmax pmax
comp=Z,75nm,0.9s
RES Resolute Bay 66.73 13 *e*P **P 10 29 33.8 +0.1**
RES pmax pmax
comp=Z,51nm,0.9s
RES Resolute Bay 66.73 13 *e*P **P 10 29 33.8 +0.1**
comp=Z,51nm,0.9s
BIDO Bidbid 67.00 284 P **P 10 29 36.0 -0.2**
SNR=6.0
BIDO P **P 10 29 36.0 -0.2**
SNR=6.0
SMDO Samad 67.28 283 P **P 10 29 38.7 +0.5**
SNR=5.9
BANOM Banah 67.34 287 P **P 10 29 39.1 +0.7**
OBN Obninsk 67.46 322 *i*P **P 10 29 37.6 -0.9**
OBN *i* 10 30 04.7
OBN *i* S **S 10 38 29.2 -4.5**
OBN pmax pmax
comp=Z,36nm,1.1s
OBN MLR MLR
comp=Z,725nm,15.0s
OBN Obninsk 67.46 322 PFAKE 10 29 50.0 +11
OBN LR LR
comp=Z,400nm,18.0s
HOQ Hoqain 67.63 284 P **P 10 29 40.5 +0.3**
SNR=10
VSR Storozhevoye 67.84 318 *e*P **P 10 29 40.4 -0.6**
VSR pmax pmax
comp=Z,70nm,0.9s
UOSS Minazif 67.87 286 *e*P **P 10 29 42.0 +0.2**
comp=Z,34nm,0.8s
HATD Hatta, Dubai 67.99 286 *i* P **P 10 29 43.1 +0.6**
SNR=12
ASHO Ashiyiah 68.11 286 *i* P **P 10 29 43.8 +0.5**
SNR=17
ASHO Ashiyiah 68.11 286 P **P 10 29 44.0 +0.7**
SNR=6.7
ASHO P **P 10 29 44.0 +0.7**
SNR=6.7
NAZ Nazwa, Dubai 68.29 286 *i* P **P 10 29 44.5 +0.2**
SNR=9.1
DAG Danmarks Havn 68.31 354 *i* P **P 10 29 43.6 +0.1**
comp=Z,50nm,0.9s
DAG Danmarks Havn 68.31 354 *i* P **P 10 29 43.6 +0.1**
DAG pmax pmax
comp=Z,42nm,0.9s
ARQ Araqi 68.38 284 P **P 10 29 45.6 +0.7**
SNR=17
FAQ Al Faqa, Dubai 68.46 286 *i* P **P 10 29 45.4 0.0**
SNR=19
FAQ Al Faqa, Dubai 68.46 286 P **P 10 29 45.7 +0.3**
SNR=6.0
NWAO Narrogin (SRO) 68.69 196 P **P 10 29 46.1 -0.3**
comp=Z,43nm,1.0s,baz=242,slow=7.2,SNR=21
NWAO Narrogin (SRO) 68.69 196 *e*P **P 10 29 45.9 -0.5**
NWAO pmax pmax
comp=Z,150nm,1.4s
NWAO Narrogin (SRO) 68.69 196 *e*P **P 10 29 45.9 -0.5**
comp=Z,150nm,1.4s
ZEI Tsey 68.77 308 *e*P **P 10 29 45.6 -1.7**
ZEI pmax pmax
comp=Z,82nm,0.6s
YKA Yellowknife Ar 68.90 28 P **P 10 29 47.7 +0.3**
comp=Z,28nm,1.0s,baz=299,slow=6.0,SNR=58
YKA LR LR 11 04 26.8
comp=Z,10nm,18.0s,baz=0.0,slow=40
YKB5 Yellowknife Ar 68.90 28 *e*P **P 10 29 46.9 -0.6**
KBZ Khabaz 68.99 309 P **P 10 29 48.5 +0.1**
comp=Z,46nm,0.9s,baz=81,slow=2.5,SNR=82
KBZ LR LR 11 01 19.1

comp=Z,213nm,20.1s,baz=56,slow=37
KIV Kislovodsk 69.02 309 *i* P **P 10 29 49.1 +0.4**
SNR=13
KIV Kislovodsk 69.02 309 *e*P **P 10 29 48.7 0.0**
KIV pmax pmax
comp=Z,97nm,1.1s
KIV MLR MLR
comp=Z,285nm,17.0s
KIV Kislovodsk 69.02 309 P **P 10 29 49.2 +0.4**
SNR=30
KIV P **P 10 29 49.2 +0.4**
SNR=30
KIV Kislovodsk 69.02 309 *e*P **P 10 29 49.0 +0.3**
comp=Z,91nm,1.0s
KIV LR LR
comp=Z,400nm,20.0s
FIA1 FINESS Array S 69.09 331 *e*P **P 10 29 48.1 -0.5**
FIA0 FINESS Array S 69.09 331 *e*P **P 10 29 48.2 -0.5**
FIA0 FINESS Array S 69.09 331 *e*P **P 10 29 48.1 -0.5**
FINES FINESS Array B 69.09 331 P **P 10 29 48.1 -0.5**
comp=Z,40nm,0.9s,baz=72,slow=6.6,SNR=74
GNI Garni 69.41 305 *i* P **P 10 29 52.4 +1.2**
SNR=7.0
GNI Garni 69.41 305*c i*P **P 10 29 51.9 +0.6**
GNI pmax pmax
comp=Z,313nm,1.7s
GNI Garni 69.41 305 P **P 10 29 52.5 +1.2**
SNR=16
GNI P **P 10 29 52.5 +1.2**
SNR=16
GNI Garni 69.41 305 *e*P **P 10 29 52.4 +1.2**
comp=Z,57nm,0.9s
GNI LR LR
comp=Z,258nm,19.0s
VAF Ylistaro 69.52 333 P **P 10 29 51.0 -0.3**
VAF pmax pmax
comp=Z,44nm,1.1s
AKH Akhalkalaki 69.67 307⇑*i*P **P 10 29 53.8 +0.9**
AKH Akhalkalaki 69.67 307 P **P 10 29 53.7 +0.9**
VSU Vasula 70.45 328*c i*P **P 10 29 56.4 -0.7**
VSU pmax pmax
comp=Z,163nm,1.0s
SOC Sochi 71.09 310 *e*P **P 10 30 00.0 -1.3**
SOC *e* 10 32 45.3
SOC *e*PPP PPP 10 34 16.7
SOC *e*S **S 10 39 12.8 -4.3**
SOC *e*SSS SSS 10 46 58.3
SOC pmax pmax
comp=Z,45nm,0.7s
SOC MLR MLR
comp=Z,285nm,17.0s
KULLO Kullorsuaq 71.39 3⇑*i*P **P 10 30 02.3 -0.2**
comp=Z,21nm,0.8s
KULLO *i* 10 30 05.2
KULLO Kullorsuaq 71.39 3⇑*i*P **P 10 30 02.3 -0.2**
KULLO pmax pmax
comp=Z,21nm,0.8s
LLLB Lillooet 71.88 41 *e*P **P 10 30 07.2 +1.2**
comp=Z,50nm,0.9s
ANN Anapa 71.92 312 *e*P **P 10 30 05.6 -0.7**
ANN pmax pmax
comp=Z,114nm,0.9s
PGC Sidney 72.03 43 *e*P **P 10 30 08.0 +1.2**
comp=Z,80nm,1.3s
MICGM Minsk 72.10 324 *e* **P 10 30 07.0 -0.2**
MNK Minsk 72.10 324 *e*P **P 10 30 07.0 -0.2**
JMIC Jan Mayen 72.17 348 LR LR 11 00 35.1
comp=Z,14nm,20.2s,baz=56,slow=35
IZAR Zarasai 72.18 326 *e*P **P 10 30 07.7 +0.1**
IZAR IAmb IAmb 10 30 09.2
comp=Z,21nm,1.0s
IDID Didziasalis 72.20 325 *e*P **P 10 30 07.8 +0.1**
IDID IAmb IAmb 10 30 09.3
comp=Z,14nm,0.9s
ISAL Salakas 72.34 326 *e*P **P 10 30 08.6 0.0**
ISAL IAmb IAmb 10 30 10.2
comp=Z,20nm,1.0s
NACGM Naroch 72.41 325 *e* **P 10 30 09.0 0.0**
NACGM *e*LR LR 10 59 20.0
A04D Lummi Island 72.41 43 P **P 10 30 10.8 +1.7**
baz=302
NLWA Neilton Lookou 72.44 44 *e*P **P 10 30 11.5 +2.1**
comp=Z,138nm,1.2s
NLWA LR LR
comp=Z,159nm,19.0s
CMW Cultus Mountai 72.90 43 P **P 10 30 13.8 +1.6**
B05A Bryant 73.00 43 P **P 10 30 13.9 +1.3**
baz=302
E03A Lebam 73.05 45 *e*P **P 10 30 15.2 +2.2**
comp=Z,140nm,1.2s
JCW Jim Creek 73.13 43 *e*P **P 10 30 15.0 +1.5**
B06A Marblemount 73.20 43 *e*P **P 10 30 15.1 +1.3**
comp=Z,100nm,1.0s
AKASG Malin Array Be 73.53 320 P **P 10 30 14.8 -0.9**
comp=Z,19nm,0.7s,baz=50,slow=6.5,SNR=12
AKASG LR LR 11 03 16.4
comp=Z,249nm,18.5s,baz=50,slow=36
AKBB Malin Array Si 73.53 320 *e*P **P 10 30 15.7 0.0**
AKBB pmax pmax
comp=Z,31nm,0.8s
AKBB MLR MLR
comp=Z,300nm,20.0s
AKBB Malin Array Si 73.53 320 *e*P **P 10 30 15.7 0.0**
comp=Z,31nm,0.8s
AKBB LR LR
comp=Z,300nm,20.0s
KIEV Kiev 73.54 320 *e*P **P 10 30 14.9 -0.9**
KIEV pmax pmax
comp=Z,29nm,0.8s
KIEV MLR MLR
comp=Z,300nm,20.0s
KIEV Kiev 73.54 320 *e*P **P 10 30 14.9 -0.9**
comp=Z,29nm,0.8s
KIEV LR LR
comp=Z,300nm,20.0s
AK11 Malin Array Si 73.57 320 *e*P **P 10 30 15.0 -0.9**
F04D Rainier, OR 73.62 45 P **P 10 30 17.8 +1.5**
baz=302
D05A Enumclaw 73.63 44 *e*P **P 10 30 18.3 +1.9**
comp=Z,73nm,1.0s
SUMG Summit 73.63 358⇑*i*P **P 10 30 17.4 +0.9**
comp=Z,76nm,1.0s
SUMG Summit 73.63 358 *e*P **P 10 30 17.6 +1.2**
SUMG pmax pmax
comp=Z,78nm,1.0s
SUMG Summit 73.63 358 *e*P **P 10 30 17.6 +1.2**
comp=Z,78nm,1.0s
C06D Leavenworth 73.86 43 P **P 10 30 18.9 +1.1**
baz=303
WRW Wenatchee Ridg 73.90 43 P **P 10 30 19.2 +1.1**
G03D McMinnville, O 73.94 46 P **P 10 30 20.0 +1.8**
baz=302
TDL Tradedollar La 73.95 45 *e*P **P 10 30 19.9 +1.5**
LON Longmire 73.97 44 *e*P **P 10 30 19.5 +1.0**
LON pmax pmax
comp=Z,19nm,1.1s
LON MLR MLR
comp=Z,100nm,21.0s
LON Longmire 73.97 44 *e*P **P 10 30 19.5 +1.0**
comp=Z,19nm,1.1s
LON LR LR
comp=Z,100nm,21.0s
F04A Amboy 74.05 45 *e*P **P 10 30 20.4 +1.5**
comp=Z,66nm,0.8s
MTMW Mount Mitchell 74.12 45 P **P 10 30 20.9 +1.4**
COR Corvallis 74.25 47 *e*P **P 10 30 22.3 +2.3**
COR pmax pmax
comp=Z,113nm,1.0s
COR Corvallis 74.25 47 *e*P **P 10 30 22.3 +2.3**
comp=Z,113nm,1.0s
B08A Colville Reser 74.49 42 P **P 10 30 22.4 +1.0**
WTV Waterville 74.51 43 *e*P **P 10 30 22.3 +0.7**
SCO Scoresbysund 74.53 352⇑*i*P **P 10 30 21.9 +0.7**
comp=Z,32nm,1.0s
SCO Scoresbysund 74.53 352⇑*i*P **P 10 30 21.9 +0.7**
SCO pmax pmax
comp=Z,32nm,1.0s
SUW Suwalki 74.64 325 *e*P **P 10 30 21.9 -0.1**
SUW Suwalki 74.64 325 *e*P **P 10 30 22.0 -0.1**
I03D Drain, OR 74.69 47 P **P 10 30 24.6 +2.0**
baz=303,SNR=14
NC405 NORSAR Array S 74.72 335 *e*P **P 10 30 22.2 -0.3**
NC303 NORSAR Array S 74.76 335 *e*P **P 10 30 22.6 -0.2**
TDH Tom, Dick, Har 74.77 45 P **P 10 30 24.6 +1.3**
EDM Edmonton 74.79 35 *e*P **P 10 30 23.9 +0.8**
EDM pmax pmax
comp=Z,163nm,1.2s
EDM Edmonton 74.79 35 *e*P **P 10 30 23.9 +0.8**
comp=Z,163nm,1.2s
SAW Saint Andrews 74.82 42 P **P 10 30 24.2 +0.8**
NC204 NORSAR Array S 74.93 336 *e*P **P 10 30 24.1 +0.3**
NB2 NORSAR Subarra 74.94 335 P **P 10 30 23.1 -0.7**
comp=Z,32nm,1.0s,baz=46,slow=5.9
NB2 NORSAR Subarra 74.94 335 P **P 10 30 23.1 -0.7**
baz=46,slow=5.9
NB200 NORSAR Array S 74.94 335 *e*P **P 10 30 23.2 -0.7**
NB200 *e*PP **PP 10 33 09.1 -1.9**
NOA NORSAR Array B 74.94 335 P **P 10 30 23.2 -0.7**
comp=Z,14nm,0.9s,baz=48,slow=5.9,SNR=25
NOA PP **PP 10 33 09.1 -1.9**
comp=Z,1.2nm,0.8s,baz=48,slow=7.6,SNR=3.6
NOA LR LR 11 04 34.9
comp=Z,217nm,18.9s,baz=50,slow=37
NC602 NORSAR Array S 75.04 335 *e*P **P 10 30 22.7 -1.6**
NB002 NORSAR Array S 75.06 335 *e*P **P 10 30 23.9 -0.6**
G05D Wamic, OR 75.08 45 P **P 10 30 26.5 +1.6**
baz=303,SNR=10
NBO00 NORSAR Array S 75.10 335 *e*P **P 10 30 24.6 -0.1**
NAO01 NORSAR Array S 75.20 335 *e*P **P 10 30 24.9 -0.3**
E07A Sunnyside 75.20 44 *e*P **P 10 30 26.9 +1.4**
comp=Z,113nm,1.4s
I04A Tendick Farm, 75.21 47 P **P 10 30 27.0 +1.3**
baz=303,SNR=24
L02D Cave Junction, 75.36 49 P **P 10 30 28.1 +1.5**
baz=303,SNR=6.8
C09A Chrisman Ranch 75.39 42 *e*P **P 10 30 28.0 +1.3**
comp=Z,73nm,0.8s
D08A Wollman Farm, 75.45 43 *e*P **P 10 30 28.2 +1.2**
comp=Z,56nm,0.9s
HAWA Hanford 75.48 44 *e*P **P 10 30 28.8 +1.7**
comp=Z,40nm,0.9s
G06A Carlson Farm, 75.48 45 *e*P **P 10 30 28.7 +1.4**
comp=Z,70nm,1.1s
HUMO Hull Mountain 75.52 48 *e*P **P 10 30 29.2 +1.7**
comp=Z,86nm,1.8s
VTHM Trough 75.56 45 P **P 10 30 29.1 +1.4**
I05D Terrebonne, OR 75.56 46 P **P 10 30 29.0 +1.3**
baz=304,SNR=18
NEW Newport 75.76 41 P **P 10 30 29.8 +1.0**
baz=305
NEW Newport 75.76 41 *e*P **P 10 30 29.7 +0.9**
NEW pmax pmax
comp=Z,78nm,1.3s
NEW MLR MLR
comp=Z,117nm,21.0s
NEW Newport 75.76 41 *e*P **P 10 30 29.7 +0.9**
comp=Z,78nm,1.3s
NEW LR LR
comp=Z,117nm,21.0s
KIS Kishinev 75.83 317 *e*P **P 10 30 29.0 -0.1**
KIS LRM MLR 11 06 44.0
comp=Z,500nm,15.0s
KIS Kishinev 75.83 317 *e*P **P 10 30 29.0 -0.1**
KIS MLR MLR
comp=Z,500nm,15.0s
KIS MLR MLR
comp=Z,600nm,16.0s
KHMM Horse Mountain 75.97 50 *e*P **P 10 30 32.0 +1.7**
comp=Z,76nm,1.1s
YBH Yreka Blue Hor 76.15 49 *e*P **P 10 30 32.9 +1.7**
YBH pmax pmax
comp=Z,55nm,0.9s
YBH Yreka Blue Hor 76.15 49 *e*P **P 10 30 32.9 +1.7**
comp=Z,54nm,0.9s
E09A Wood Farm, Sta 76.20 43 *e*P **P 10 30 32.8 +1.5**
comp=Z,142nm,1.4s
J05D Fort Rock, OR 76.21 47 P **P 10 30 33.2 +1.7**
baz=304,SNR=7.2
M02C Callahan 76.25 49 P **P 10 30 33.5 +1.7**
baz=303,SNR=9.9
K04D Chiloquin, OR 76.25 48 P **P 10 30 33.3 +1.5**
baz=304,SNR=5.3
G08A Pilot Rock 76.43 44 *e*P **P 10 30 34.0 +1.3**
comp=Z,71nm,1.6s
LEOM Leirva 76.45 317⇑*i*P **P 10 30 33.3 +0.6**
KONO Kongsberg 76.50 335*ce*P **P 10 30 32.1 -0.6**
KONO pmax pmax
comp=Z,136nm,1.7s
KONO Kongsberg 76.50 335 *e*P **P 10 30 32.1 -0.6**
comp=Z,22nm,1.2s
KONO LR LR
comp=Z,310nm,19.0s
N02D Trinity Center 76.57 50 P **P 10 30 35.2 +1.6**
baz=304,SNR=9.6
M04C Macdoel 76.67 49 P **P 10 30 35.6 +1.4**
baz=304,SNR=32
K05A Summer Lake 76.72 47 *e*P **P 10 30 36.4 +1.8**
comp=Z,122nm,1.0s
LVV L'vov 76.75 322 *e*P **P 10 30 32.7 -1.6**
LVV *e* 10 41 01.2
LVV MLR MLR
comp=Z,400nm,16.0s
TLCR 76.87 316⇑*i*P **P 10 30 35.0 0.0**
WDC Whiskeytown Da 76.89 50 *e*P **P 10 30 36.6 +1.3**
WDC pmax pmax
comp=Z,49nm,1.2s
WDC Whiskeytown Da 76.89 50 *e*P **P 10 30 36.6 +1.3**
comp=Z,49nm,1.2s
BR101 Keskin Array S 76.98 309 *e*P **P 10 30 36.3 +0.3**
BR131 Keskin Array S 76.98 309 *e*P **P 10 30 36.1 +0.1**
BRTR Keskin Array B 76.98 309 P **P 10 30 36.3 +0.3**
comp=Z,30nm,0.9s,baz=97,slow=5.1,SNR=130
BRTR LR LR 11 07 36.2
comp=Z,112nm,21.4s,baz=40,slow=38
ILULI Ilulissat 77.00 2 *i* P **P 10 30 35.6 +0.3**
ILULI Ilulissat 77.00 2 *i* P **P 10 30 35.6 +0.3**
WALA Waterton Lakes 77.01 39 *e*P **P 10 30 36.9 +0.9**
comp=Z,57nm,1.0s
WALA LR LR
comp=Z,200nm,19.0s
F10A Beach Ranch, E 77.03 43 *e*P **P 10 30 37.2 +1.1**
comp=Z,38nm,0.9s
BEL Belsk 77.12 325 *e*P P 10 30 28.9 -7.4
BEL Belsk 77.12 325 *e*P P 10 30 28.9 -7.4
CFR Carcaliu 77.27 316⇑*i*P **P 10 30 37.1 -0.2**
BSMT Bassoo Peak 77.27 40 *e*P **P 10 30 39.0 +1.5**
TESR Tescani 77.33 318⇑*i*P **P 10 30 37.5 -0.1**
BLMT Blacktail Moun 77.41 40 *e*P **P 10 30 39.8 +1.5**
ANTO Ankara 77.45 310 *e*P **P 10 30 39.2 +0.7**
ANTO pmax pmax
comp=Z,25nm,0.8s
ANTO MLR MLR
comp=Z,200nm,21.0s
ANTO Ankara 77.45 310 P **P 10 30 39.1 +0.5**
SNR=11
ANTO P **P 10 30 39.1 +0.5**
SNR=11
ANTO Ankara 77.45 310 *e*P **P 10 30 39.2 +0.7**
comp=Z,25nm,0.8s
ANTO LR LR
comp=Z,200nm,21.0s
BUR08 Bucovina Ar. S 77.45 319 *e*P **P 10 30 38.8 +0.4**
BURAR Bucovina Array 77.46 319⇑*i*P **P 10 30 38.7 +0.2**
BURAR Bucovina Array 77.46 319 P **P 10 30 38.7 +0.2**
BR231 Keskin MP Arra 77.47 310 *e*P **P 10 30 36.7 -2.1**
O03D Paynes Creek 77.52 50 P **P 10 30 39.3 +0.3**
baz=304,SNR=16
TIRR Tirgusor 77.52 315⇑*i*P **P 10 30 38.5 -0.2**
TIRR Tirgusor 77.52 315 *e*P **P 10 30 38.6 -0.2**
TIRR pmax pmax
comp=Z,39nm,1.0s
TIRR MLR MLR
comp=Z,200nm,19.0s
TIRR Tirgusor 77.52 315 *e*P **P 10 30 38.6 -0.2**
comp=Z,39nm,1.0s
TIRR LR LR
comp=Z,200nm,19.0s
ODBI Odobesti 77.54 317⇑*i*P **P 10 30 40.5 +1.7**
KWP Kalwaria Pacla 77.55 322 *e*P **P 10 30 39.1 +0.4**
KWP Kalwaria Pacla 77.55 322 *e*P **P 10 30 39.2 +0.4**
MOD Modoc Plateau 77.55 48 *e*P **P 10 30 40.4 +1.2**
comp=Z,41nm,1.0s
JTMT Jette 77.61 40 *e*P **P 10 30 40.7 +1.4**
EFOR EFORIE 77.61 315⇑*i*P **P 10 30 39.1 -0.1**
BSD Bornholm Skovb 77.62 329 *i* P **P 10 30 38.4 -0.7**
BSD Bornholm Skovb 77.62 329 *i* P **P 10 30 38.4 -0.7**
BMO Blue Mountains 77.64 44 *e*P **P 10 30 40.8 +1.2**
comp=Z,41nm,0.8s
BMO LR LR
comp=Z,97nm,19.0s
TLB Topalu 77.67 316⇑*i*P **P 10 30 39.4 -0.1**
VRI Vrincioaia 77.67 317⇑*i*P **P 10 30 39.9 +0.3**
VRI Vrincioaia 77.67 317 P **P 10 30 39.8 +0.2**
HARR Harsova 77.67 316⇑*i*P **P 10 30 40.0 +0.5**
YBMT Yellow Bay 77.68 40 *e*P **P 10 30 41.0 +1.3**
PLOR Plostina 77.72 317⇑*i*P **P 10 30 40.4 +0.5**
GKP Gorka Klasztor 77.85 327 *e*P **P 10 30 41.0 +0.6**
GKP Gorka Klasztor 77.85 327 *e*P **P 10 30 41.0 +0.6**
SWMT Swartz Lake 77.90 40 *e*P **P 10 30 42.0 +1.1**
PSN Preselentsi 78.11 315 *i* P **P 10 30 42.7 +0.7**
ORV Oroville 78.12 50 *e*P **P 10 30 42.7 +0.5**
ORV pmax pmax
comp=Z,34nm,1.2s
ORV Oroville 78.12 50 *e*P **P 10 30 42.7 +0.5**
comp=Z,34nm,1.2s
KOLS Kolonicke sedl 78.20 322 *e*P **P 10 30 41.9 -0.6**
KOLS pmax pmax
comp=Z,6.0nm,1.1s
KOLS Kolonicke sedl 78.20 322 *e*P **P 10 30 41.9 -0.6**
KOLS *e*PP **PP 10 33 36.5 -2.1**
KOLS *e*L L 11 08 57.3
ISR Istrita 78.21 317⇑*i*P **P 10 30 43.6 +0.9**
ISR Istrita 78.21 317 P **P 10 30 43.5 +0.9**
COP Copenhagen 78.25 331 *i* P **P 10 30 42.5 0.0**
comp=Z,39nm,0.9s
COP Copenhagen 78.25 331 *i* P **P 10 30 42.5 0.0**
COP pmax pmax
comp=Z,39nm,0.9s
WVOR Wild Horse Val 78.26 47 *e*P **P 10 30 44.4 +1.3**
WVOR pmax pmax
comp=Z,38nm,1.0s
WVOR MLR MLR
comp=Z,139nm,19.0s
WVOR Wild Horse Val 78.26 47 *e*P **P 10 30 44.4 +1.3**
comp=Z,38nm,1.0s
WVOR LR LR
comp=Z,139nm,19.0s
MLR Muntele Rosu 78.33 317⇑*i*P **P 10 30 43.4 0.0**
MLR Muntele Rosu 78.33 317 *e*P **P 10 30 43.8 +0.4**
MLR pmax pmax
comp=Z,27nm,1.0s
MLR Muntele Rosu 78.33 317 *e*P **P 10 30 43.8 +0.4**
comp=Z,27nm,1.0s
MSO Missoula 78.35 41 P **P 10 30 44.0 +0.5**
baz=308
MSO Missoula 78.35 41 *e*P **P 10 30 44.0 +0.5**
comp=Z,64nm,1.3s
DOPR Dopca 78.36 318⇑*i*P **P 10 30 44.3 +0.9**
UZH Uzhgorod 78.38 321 *e*P **P 10 30 43.0 -0.4**
UZH *e* 10 30 51.0
STHS Stebnicka Huta 78.43 322 *e*P **P 10 30 43.8 +0.1**
STHS pmax pmax
comp=Z,10.0nm,0.9s
STHS Stebnicka Huta 78.43 322 *e*P **P 10 30 43.8 +0.1**
SECR 78.53 317⇑*i*P **P 10 30 45.3 +0.9**
TRPA Tarpa 78.57 321⇑*e*P **P 10 30 44.7 +0.2**
OJC Ojcow 78.64 324 *e*P **P 10 30 45.1 +0.3**
OJC Ojcow 78.64 324 *e*P **P 10 30 44.5 -0.3**
OJC pmax pmax
comp=Z,26nm,0.9s
OJC Ojcow 78.64 324 *e*P **P 10 30 44.5 -0.3**
comp=Z,26nm,0.9s
CRVS Cervenica-Dubn 78.64 322 *e*P **P 10 30 44.9 0.0**
CRVS Cervenica-Dubn 78.64 322 *e*P **P 10 30 44.9 0.0**
SULR 78.64 317⇑*i*P **P 10 30 45.7 +0.8**
CHMT Chamberlain Mo 78.67 41 *e*P **P 10 30 45.7 +0.3**
AFDM Forest Hills D 78.81 51 *e*P **P 10 30 47.0 +1.0**
comp=Z,32nm,1.2s
PRD Provadia 78.86 315 *i* P **P 10 30 47.0 +0.9**
VOIR 78.86 318⇑*i*P **P 10 30 46.3 0.0**
CJR Cluj-Napoca 78.88 319⇑*i*P **P 10 30 47.8 +1.5**
FCC Fort Churchill 78.88 24 *e*P **P 10 30 46.6 +0.6**
FCC pmax pmax
comp=Z,70nm,1.0s
FCC Fort Churchill 78.88 24 *e*P **P 10 30 46.6 +0.6**
comp=Z,70nm,1.0s
NIE Niedzica 78.90 323 *e*P **P 10 30 47.0 +0.6**
NIE Niedzica 78.90 323 *e*P **P 10 30 47.0 +0.6**
FFC Flin Flon 78.91 30 *e*P **P 10 30 46.5 +0.3**
FFC pmax pmax
comp=Z,52nm,0.8s
FFC MLR MLR
comp=Z,131nm,19.0s
FFC Flin Flon 78.91 30 *e*P **P 10 30 46.5 +0.3**
comp=Z,52nm,0.8s
FFC LR LR
comp=Z,131nm,19.0s
MUD Monsted U'grnd 78.98 333 *i* P **P 10 30 45.7 -0.8**
comp=Z,38nm,1.1s
MUD Monsted U'grnd 78.98 333 *i* P **P 10 30 45.7 -0.8**
MUD pmax pmax
comp=Z,38nm,1.1s
ARR Arges 79.14 318⇑*i*P **P 10 30 48.8 +1.0**
SFJD Kangerlussuaq 79.23 2⇑*i*P **P 10 30 48.0 +0.3**
comp=Z,25nm,0.8s
SFJD Kangerlussuaq 79.23 2⇑*i*P **P 10 30 48.0 +0.3**
SFJD pmax pmax
comp=Z,25nm,0.8s
SFJD Kangerlussuaq 79.23 2 *e*P **P 10 30 48.0 +0.3**
comp=Z,29nm,0.9s
SFJD LR LR
comp=Z,200nm,21.0s
DRGR 79.31 320⇑*i*P **P 10 30 49.3 +0.5**
DRGR 79.31 320 P **P 10 30 49.2 +0.5**
MFID Camas Ranch 79.35 45 *e*P **P 10 30 50.2 +1.2**
comp=Z,78nm,1.3s
PAHR Pah Rah Range 79.38 49 *e*P **P 10 30 50.3 +1.0**
comp=Z,71nm,1.1s
KECS Kecovo 79.41 322 *e*P **P 10 30 50.0 +0.9**
KECS pmax pmax
comp=Z,5.0nm,0.9s
KECS Kecovo 79.41 322 *e*P **P 10 30 50.0 +0.9**
LANS Liptovska Anna 79.49 323 *e*P **P 10 30 51.1 +1.5**
LANS Liptovska Anna 79.49 323 *e*P **P 10 30 51.1 +1.5**
HRY Holter Researc 79.56 40 *e*P **P 10 30 51.7 +1.6**
LOT Lotru 79.57 318⇑*i*P **P 10 30 51.2 +1.0**
PNTR Pine Nut 79.60 50 *e*P **P 10 30 52.3 +1.7**
comp=Z,39nm,1.1s
OKC Ostrava-Krasne 79.69 324 *e*P **P 10 30 51.2 +0.6**
OKC AMS AMS 11 10 00.0
comp=Z,600nm,12.4s
OKC Ostrava-Krasne 79.69 324 *e*P **P 10 30 51.2 +0.6**
OKC MLR MLR
comp=Z,600nm,12.4s
CMB Columbia Colle 79.70 51 *e*P **P 10 30 51.8 +0.8**
CMB pmax pmax
comp=Z,64nm,1.4s
CMB Columbia Colle 79.70 51 *e*P **P 10 30 51.8 +0.8**
comp=Z,64nm,1.4s
LRM Limekiln Ridge 79.78 41 *e*P **P 10 30 52.5 +1.0**
EGMT Eagleton 79.81 38 P **P 10 30 52.3 +0.9**
baz=310
EGMT Eagleton 79.81 38 PFAKE 10 31 00.0 +8.6
EGMT LR LR
comp=Z,287nm,21.0s
CSS Mathiatis 79.84 305 P **P 10 30 51.4 -0.3**
CSS Mathiatis 79.84 305 *e*P **P 10 30 51.7 0.0**
comp=Z,7.2nm,0.8s
CSS LR LR
comp=Z,100nm,21.0s
YERR Yerington 79.89 50 *e*P **P 10 30 53.3 +1.2**
comp=Z,58nm,1.1s
KSP Ksiaz 79.91 326 *e*P **P 10 30 52.2 +0.4**
KSP Ksiaz 79.91 326 *e*P **P 10 30 52.2 +0.4**
DLMT Dillon 79.99 42 *e*P **P 10 30 53.5 +1.0**
comp=Z,60nm,0.9s
MORC Moravsky Berou 80.03 324⇓*i*P **P 10 30 53.1 +0.6**
MORC Moravsky Berou 80.03 324 *e*P **P 10 30 53.1 +0.6**
MORC pmax pmax
comp=Z,86nm,1.1s
MORC MLR MLR
comp=Z,1μm,19.0s
MORC Moravsky Berou 80.03 324 *e*P **P 10 30 53.1 +0.6**
comp=Z,86nm,1.1s
MORC LR LR
comp=Z,1μm,19.0s
WAKR Walker 80.04 50 *e*P **P 10 30 54.5 +1.5**
comp=Z,56nm,1.5s
PSZ Piszkesteto 80.07 322⇑*i*P **P 10 30 53.8 +1.0**
PSZ Piszkesteto 80.07 322 *e*P **P 10 30 53.5 +0.7**
PSZ pmax pmax
comp=Z,48nm,1.3s
PSZ MLR MLR
comp=Z,300nm,21.0s
PSZ Piszkesteto 80.07 322 *e*P **P 10 30 53.5 +0.7**
comp=Z,48nm,1.3s
PSZ LR LR

comp=Z,300nm,21.0s
HLID Hailey 80.08 44 P **P 10 30 54.5 +1.4**
baz=308
HLID Hailey 80.08 44 *e*P **P 10 30 54.5 +1.4**
comp=Z,37nm,1.0s
HLID LR LR
comp=Z,87nm,19.0s
GZR Gura Zlata 80.15 319⇑ *i*P **P 10 30 53.4 +0.1**
MCMT McKenzie Canyo 80.18 42 *e*P **P 10 30 54.3 +0.6**
KRLC Kraliky 80.19 325 *e*P **P 10 30 54.1 +0.7**
KRLC Kraliky 80.19 325 *e*P **P 10 30 54.1 +0.7**
DPC Dobruska-Polom 80.22 325 *e*P **P 10 30 54.4 +0.8**
DPC AMS AMS 11 10 30.0
comp=Z,500nm,11.3s
DPC Dobruska-Polom 80.22 325 *e*P **P 10 30 54.4 +0.8**
DPC MLR MLR
comp=Z,500nm,11.3s
VYHS Vyhne 80.23 323 *e*P **P 10 30 53.6 0.0**
VYHS pmax pmax
comp=Z,14nm,1.3s
VYHS Vyhne 80.23 323 *e*P **P 10 30 53.6 0.0**
VYHS *e*L L 11 10 08.0
UPC Upice 80.26 326 *e*P **P 10 30 54.3 +0.6**
UPC *e*pP **pP 10 30 57.9 -1.3**
UPC AMS AMS 11 10 30.0
comp=Z,600nm,14.6s
UPC Upice 80.26 326 *e*P **P 10 30 54.3 +0.6**
UPC MLR MLR
comp=Z,600nm,14.6s
BMN Battle Mountai 80.30 48 *e*P **P 10 30 55.6 +1.3**
BMN pmax pmax
comp=Z,56nm,1.1s
BMN Battle Mountai 80.30 48 *e*P **P 10 30 55.6 +1.3**
comp=Z,56nm,1.1s
BOZ Bozeman (W) 80.34 41 P **P 10 30 55.5 +1.0**
baz=309
BOZ Bozeman (W) 80.34 41 *e*P **P 10 30 55.4 +1.0**
BOZ pmax pmax
comp=Z,59nm,1.3s
BOZ MLR MLR
comp=Z,132nm,20.0s
BOZ Bozeman (W) 80.34 41 *e*P **P 10 30 55.4 +1.0**
comp=Z,59nm,1.3s
BOZ LR LR
comp=Z,132nm,20.0s
TVH1 TV Hill, Hawth 80.50 50 *e*P **P 10 30 56.9 +1.3**
comp=Z,53nm,1.2s
TVH3 East Aurora ar 80.52 50 *e*P **P 10 30 57.0 +1.4**
comp=Z,46nm,1.2s
TVH2 Borealis Mine 80.55 50 *e*P **P 10 30 57.0 +1.2**
comp=Z,33nm,1.2s
BZS Buzias 80.64 319‖ *i*P **P 10 30 56.2 +0.4**
VRAC Vranov 80.80 324⇑ *i*P **P 10 30 57.0 +0.4**
VRAC Vranov 80.80 324 P **P 10 30 57.0 +0.4**
BUD Budapest 80.80 322‖ *e*PKiKP **P 10 30 58.0 +1.4**
KULA Kula-Manisa 80.85 310 P **P 10 30 56.8 -0.4**
KULA Kula-Manisa 80.85 310 P **P 10 30 56.8 -0.4**
MPEP Malo Peshtene 80.89 317 *i*P **P 10 30 57.2 0.0**
PVCC Panska Ves 80.92 326 *i*P **P 10 30 58.1 +0.9**
PVCC AMS AMS 11 10 40.0
comp=Z,500nm,13.6s
PVCC Panska Ves 80.92 326 *i*P **P 10 30 58.1 +0.9**
PVCC MLR MLR
comp=Z,500nm,13.6s
MLAC Mammoth, Mammo 80.94 51 P **P 10 30 59.0 +1.1**
baz=306
QLMT Earthquake Lak 80.97 41 *e*P **P 10 30 59.4 +1.5**
BRG Berggiesshubel 80.97 327 *i*P **P 10 30 57.4 0.0**
comp=Z,43nm,1.4s
BRG Berggiesshubel 80.97 327 S **S 10 41 02.0 -3.6**
comp=N,384nm,12.9s
comp=E,360nm,13.6s
comp=Z,753nm,12.6s
BRG Berggiesshubel 80.97 327 *i*P **P 10 30 57.4 0.0**
BRG S **S 10 41 02.0 -3.6**
BRG pmax pmax
comp=Z,43nm,1.4s
BRG MLR MLR
comp=N,384nm,12.9s
BRG MLR MLR
comp=E,360nm,13.6s
BRG MLR MLR
comp=Z,753nm,12.6s
CLL Collm 81.09 327⇑ *i*P **P 10 30 57.8 -0.3**
comp=Z,73nm,1.0s
CLL *i* 10 31 01.4
comp=Z,57nm,1.0s
CLL *e*PP **PP 10 34 00.0 -2.5**
CLL *e*PPPP 10 37 18.0
CLL *e*S **S 10 41 06.0 -0.8**
CLL *e*PS **PnS 10 41 49.0 -4.7**
CLL *e*SS **SS 10 46 24.0 +3.5**
CLL *e*SSS SSS 10 50 06.0
CLL *e* 10 52 00.0
CLL *e*(SSSS) 10 52 30.0
CLL Lmax 11 11 00.0
CLL Collm 81.09 327⇑ *i*P **P 10 30 57.8 -0.3**
CLL *e*S **S 10 41 06.0 -0.8**
CLL pmax pmax
comp=Z,73nm,1.0s
CLL Collm 81.09 327 *e*P **P 10 30 58.1 0.0**
comp=Z,56nm,0.9s
CLL LR LR
comp=Z,300nm,18.0s
PAGB Antelope Grade 81.12 53 *e*P **P 10 31 00.0 +1.4**
comp=Z,97nm,1.8s
MDVR Moldovita 81.12 319⇑ *i*P **P 10 30 58.2 -0.3**
YHB Horse Butte 81.15 41 *e*P **P 10 31 00.3 +1.4**
comp=Z,70nm,1.1s
YHB LR LR
comp=Z,200nm,22.0s
GOPC GO Pecny, Ondr 81.25 326 *i*P **P 10 30 59.7 +0.7**
GOPC *e*pP **pP 10 31 02.2 -2.3**
GOPC AMS AMS 11 11 00.0
comp=Z,600nm,11.1s
GOPC GO Pecny, Ondr 81.25 326 *i*P **P 10 30 59.7 +0.7**
GOPC MLR MLR
comp=Z,600nm,11.1s
CSKK Cs˘tkako 81.27 322‖ *e*PKiKP **P 10 30 59.7 +0.6**
GCMT Greycliff 81.31 40 *e*P **P 10 31 00.7 +1.1**
PRU Pruhonice 81.31 326 *e*P **P 10 30 59.7 +0.4**
PRU *e*pP **pP 10 31 02.6 -2.2**
PRU AMS AMS 11 11 00.0
comp=Z,600nm,12.9s
PRU Pruhonice 81.31 326 *e*P **P 10 30 59.7 +0.4**
PRU MLR MLR
comp=Z,600nm,12.9s
YHH Holmes Hill 81.31 41 *e*P **P 10 31 01.1 +1.3**
comp=Z,36nm,1.3s
ELK Elko 81.31 46 *e*P **P 10 31 01.3 +1.5**
ELK pmax pmax
comp=Z,26nm,1.3s
ELK Elko 81.31 46 *e*P **P 10 31 01.3 +1.5**
comp=Z,26nm,1.3s
YMR Madison River 81.33 41 *e*P **P 10 31 01.0 +1.2**
comp=Z,31nm,1.0s
TREC Trest 81.34 325 *i*P **P 10 31 00.2 +0.7**
TREC AMS AMS 11 11 50.0
comp=Z,400nm,10.8s
TREC Trest 81.34 325 *i*P **P 10 31 00.2 +0.7**
TREC MLR MLR
comp=Z,400nm,10.8s
RZN Rozhen 81.35 315 *i*P **P 10 31 00.6 +0.7**
RCTC Rector, Farmer 81.45 52 P **P 10 31 00.9 +0.6**
baz=306
SMMC Simmler 81.53 53 P **P 10 31 02.0 +1.2**
baz=306
YFT Old Faithful 81.54 41 *e*P **P 10 31 03.9 +3.0**
comp=Z,70nm,1.3s
TIN Tinemaha, Big 81.67 51 P **P 10 31 02.6 +1.0**
baz=307
VTS Vitosha 81.67 316 P **P 10 31 02.7 +1.2**
VTS Vitosha 81.67 316⇑ *i*P **P 10 31 01.9 +0.4**
VTS Vitosha 81.67 316 *e*P **P 10 31 01.9 +0.4**
VTS pmax pmax
comp=Z,32nm,0.9s
VTS Vitosha 81.67 316 *i*P **P 10 31 01.4 -0.1**
VTS Vitosha 81.67 316 *e*P **P 10 31 01.9 +0.4**
comp=Z,32nm,0.9s
YPP Pitchstone Pla 81.67 42 *e*P **P 10 31 03.9 +2.2**
comp=Z,60nm,1.5s
LKWY Lake 81.70 41 *e*P **P 10 31 04.8 +3.0**
LKWY pmax pmax
comp=Z,44nm,0.9s
LKWY MLR MLR
comp=Z,151nm,19.0s
LKWY Lake 81.70 41 *e*P **P 10 31 04.8 +3.0**
comp=Z,44nm,0.9s
LKWY LR LR
comp=Z,151nm,19.0s
H17A Grant Village 81.71 41 *e*P **P 10 31 04.7 +2.8**
comp=Z,69nm,1.0s
VES Vestal, Richgr 81.83 52 P **P 10 31 02.3 0.0**
baz=306,SNR=13
IMW Indian Meadow 81.83 42 *e*P **P 10 31 04.3 +1.8**
comp=Z,37nm,1.0s
FLWY Flagg Ranch 81.85 42 *e*P **P 10 31 04.6 +2.0**
comp=Z,73nm,1.3s
PKM Mcpherson Peak 81.90 53 P **P 10 31 02.9 0.0**
baz=306
RLMT Red Lodge 81.95 40 P **P 10 31 04.1 +1.1**
baz=311
RLMT Red Lodge 81.95 40 *e*P **P 10 31 04.2 +1.1**
comp=Z,84nm,1.5s
RLMT LR LR
comp=Z,133nm,20.0s
MMB Musomiste 81.99 315 *i*P **P 10 31 03.6 +0.5**
MOOW Moose Ponds 82.04 42 *e*P **P 10 31 05.1 +1.5**
comp=Z,73nm,1.6s
NVR Nevrokopi 82.06 315 P **P 10 31 03.5 0.0**
NVR Nevrokopi 82.06 315 P **P 10 31 03.5 0.0**
TPAW Teton Pass 82.09 42 *e*P **P 10 31 05.5 +1.6**
comp=Z,28nm,1.0s
CONA Conrad Observa 82.09 324 *i*P **P 10 31 04.0 +0.5**
comp=Z,50nm,1.6s,SNR=23
NKC Novy Kostel 82.10 327 *e*P **P 10 31 04.1 +0.6**
NKC AMS AMS 11 11 00.0
comp=Z,700nm,13.4s
NKC Novy Kostel 82.10 327 *e*P **P 10 31 04.1 +0.6**
NKC MLR MLR
comp=Z,700nm,13.4s
CWC Cottonwood Cre 82.13 51 P **P 10 31 04.6 +0.5**
baz=307
HVU Hansel Valley 82.13 44 *e*P **P 10 31 05.4 +1.4**
HVU pmax pmax
comp=Z,39nm,1.0s
HVU Hansel Valley 82.13 44 *e*P **P 10 31 05.4 +1.4**
comp=Z,39nm,1.0s
KKB Krupnik 82.19 316 *i*P **P 10 31 04.4 +0.3**
LOHW Long Hollow 82.20 42 *e*P **P 10 31 06.2 +1.7**
comp=Z,17nm,1.1s
LOHW LR LR
comp=Z,100nm,18.0s
SNOW Snow King Moun 82.22 42 *e*P **P 10 31 06.2 +1.6**
comp=Z,35nm,1.2s
REDW Red Top Meadow 82.22 42 *e*P **P 10 31 05.7 +1.2**
comp=Z,31nm,1.1s
GRAC Grapevine Rang 82.26 50 P **P 10 31 05.5 +0.9**
baz=307
DGMT Dagmar 82.28 35 P **P 10 31 04.7 +0.2**
baz=314
DGMT Dagmar 82.28 35 *e*P **P 10 31 05.1 +0.6**
comp=Z,75nm,1.0s
ISA Isabella, Lake 82.33 52 P **P 10 31 04.8 -0.3**
baz=307
ISA Isabella, Lake 82.33 52 *e*P **P 10 31 06.9 +1.8**
ISA pmax pmax
comp=Z,18nm,1.3s
ISA Isabella, Lake 82.33 52 *e*P **P 10 31 06.9 +1.8**
comp=Z,18nm,1.3s
KHC Kasperske Hory 82.36 326 *e*P **P 10 31 04.9 +0.1**
KHC *e*pP **PcP 10 31 08.1 -2.0**
KHC AMS AMS 11 12 00.0
comp=Z,400nm,12.3s
KHC Kasperske Hory 82.36 326 *e*P **P 10 31 05.0 +0.1**
KHC pmax pmax
comp=Z,13nm,0.9s
KHC MLR MLR
comp=Z,201nm,20.0s
KHC Kasperske Hory 82.36 326 *e*P **P 10 31 05.0 +0.1**
comp=Z,12nm,0.9s
KHC LR LR
comp=Z,201nm,20.0s
ARVC Arvin 82.42 53 P **P 10 31 05.9 +0.5**
baz=306
AHID Auburn Hatcher 82.47 43 *e*P **P 10 31 06.9 +1.1**
comp=Z,25nm,1.0s
AHID LR LR
comp=Z,121nm,19.0s
A25A Svangstu Ranch 82.47 34 P **P 10 31 06.3 +0.8**
baz=315
GEC2 GERESS Array S 82.50 325 *e*P **P 10 31 05.6 -0.1**
GEC2 pmax pmax
comp=Z,30nm,1.1s
GEC2 MLR MLR
comp=Z,300nm,21.0s
GEC2 GERESS Array S 82.50 325 *e*P **P 10 31 05.6 -0.1**
comp=Z,30nm,1.1s
GEC2 LR LR
comp=Z,300nm,21.0s
GERES GERESS Array B 82.50 325 P **P 10 31 06.0 +0.3**
comp=Z,14nm,0.9s,baz=36,slow=5.0,SNR=88
GERES LR LR 11 10 30.4
comp=Z,144nm,18.8s,baz=40,slow=38
GERES GERESS Array B 82.50 325 P **P 10 31 06.0 +0.3**
GERES pmax pmax
comp=Z,14nm,0.9s
GERES MLR MLR
comp=Z,144nm,18.8s
LAO LASA Array 82.50 38 P **P 10 31 06.6 +0.8**
baz=313
LAO LASA Array 82.50 38 *e*P **P 10 31 06.6 +0.8**
comp=Z,56nm,1.0s
LAO LR LR
comp=Z,142nm,20.0s
GEA0 GERESS Array S 82.50 325 *e*P **P 10 31 05.4 -0.3**
DIVS Divibare 82.51 319 P **P 10 31 05.4 -0.4**
BGU Big Grassy Mou 82.52 45 *e*P **P 10 31 07.4 +1.3**
comp=Z,14nm,0.9s
R11A Troy Canyon, C 82.56 49 P **P 10 31 07.5 +1.1**
baz=308
R11A Troy Canyon, C 82.56 49 *e*P **P 10 31 07.4 +1.1**
comp=Z,63nm,1.4s
CHOS Chios island 82.56 312 P **P 10 31 03.3 -2.9**
CHOS Chios island 82.56 312 P **P 10 31 03.3 -2.9**
BEHE Becsehely 82.63 322‖ *e*PKiKP **P 10 31 07.3 +1.0**
DAMY Dhamar 82.70 283 *e*P **P 10 31 09.1 +1.5**
comp=Z,115nm,1.4s
ARSA Arzberg 82.72 323 *i*P **P 10 31 07.0 +0.2**
comp=Z,21nm,0.9s,SNR=14
MPMC Manual Prospec 82.74 51 P **P 10 31 07.9 +0.6**
baz=307,SNR=21
VAY Valandovo 82.84 316 *e*P **P 10 31 07.6 +0.1**
FURC Furnace Creek, 82.90 51 P **P 10 31 09.1 +1.2**
baz=307
B25A Knox Farm, Ray 82.92 35 P **P 10 31 08.8 +1.0**
baz=315
MOA Molln 82.92 324 *i*P **P 10 31 08.3 +0.4**
comp=Z,40nm,1.1s,SNR=17
HWUT Hardware Ranch 82.94 44 *e*P **P 10 31 09.6 +1.3**
comp=Z,80nm,1.2s
HWUT LR LR
comp=Z,208nm,22.0s
LRMC Laurel Mtn Rad 82.96 52 P **P 10 31 08.8 +0.4**
baz=307
TPNV Topopah Spring 83.00 50 P **P 10 31 09.3 +0.7**
baz=308
TPNV Topopah Spring 83.00 50 *e*P **P 10 31 09.5 +0.9**
TPNV pmax pmax
comp=Z,151nm,1.8s
TPNV Topopah Spring 83.00 50 *e*P **P 10 31 09.5 +0.9**
comp=Z,151nm,1.8s
A26A Wade Farm, Ken 83.00 34 P **P 10 31 08.7 +0.5**
baz=315
GRFO Grafenberg 83.04 327 *e*P **P 10 31 09.0 +0.6**
GRFO pmax pmax
comp=Z,102nm,1.0s
GRFO MLR MLR
comp=Z,300nm,19.0s
GRFO Grafenberg 83.04 327 *e*P **P 10 31 09.0 +0.6**
comp=Z,102nm,1.0s
GRFO LR LR
comp=Z,300nm,19.0s
SNCC San Nicolas Is 83.06 55 P **P 10 31 09.7 +0.9**
baz=306
SKO Skopje 83.07 317 P **P 10 31 10.2 +1.5**
SKO Skopje 83.07 317 *e*P **P 10 31 09.5 +0.8**
SKO Skopje 83.07 317 *e*P **P 10 31 10.2 +1.5**
SKO Skopje 83.07 317 *e*P **P 10 31 10.2 +1.5**
DUG Dugway, Tooele 83.11 46 P **P 10 31 10.5 +1.3**
baz=309
DUG Dugway, Tooele 83.11 46 *e*P **P 10 31 10.4 +1.3**
DUG pmax pmax
comp=Z,72nm,1.2s
DUG MLR MLR
comp=Z,72nm,19.0s
DUG Dugway, Tooele 83.11 46 *e*P **P 10 31 10.4 +1.3**
comp=Z,72nm,1.2s
DUG LR LR
comp=Z,72nm,19.0s
EDW2 Edwards Air Fo 83.11 52 P **P 10 31 09.8 +0.6**
baz=307,SNR=19
GRG Griva 83.17 315 P **P 10 31 09.2 0.0**
GRG Griva 83.17 315 *e*P **P 10 31 09.2 0.0**
GRG Griva 83.17 315 *e*P **P 10 31 09.2 0.0**
DECC Green Verdugo 83.26 53 P **P 10 31 10.3 +0.4**
baz=307
C25A Freed Ranch, W 83.26 35 P **P 10 31 10.4 +0.8**
baz=315
B26A Jensen Ranch, 83.28 34 P **P 10 31 10.4 +0.7**
baz=315
BW06 Boulder Array 83.33 42 P **P 10 31 10.6 +0.3**
baz=311
BW06 Boulder Array 83.33 42 *e*P **P 10 31 11.0 +0.6**
comp=Z,29nm,1.3s
BW06 LR LR
comp=Z,117nm,20.0s
PD31 Pinedale Array 83.33 42 *e*P **P 10 31 11.0 +0.7**
PDAR Pinedale Array 83.33 42 P **P 10 31 10.6 +0.3**
comp=Z,7.3nm,0.7s,baz=318,slow=2.0,SNR=54
PLE Pijevlje 83.34 319⇑ *i*P **P 10 31 10.6 +0.4**
TCUT Toone Canyon 83.35 44 *e*P **P 10 31 11.8 +1.4**
comp=Z,78nm,1.1s
PERS Pernice 83.35 323 *i*P **P 10 31 10.1 0.0**
IVA Berane 83.36 318⇑ *i*P **P 10 31 10.4 +0.1**
SOKA Soboth 83.36 323 *i*P **P 10 31 10.3 +0.1**
comp=Z,95nm,0.8s,SNR=47
PASC Pasadena Art C 83.41 53 *e*P **P 10 31 11.3 +0.7**
comp=Z,56nm,1.9s
AOS Alonnisos 83.42 313 P **P 10 31 09.5 -1.0**
AOS Alonnisos 83.42 313 *e*P **P 10 31 09.5 -1.0**
CTU Camp Tracy 83.42 45 *e*P **P 10 31 11.8 +1.1**
comp=Z,126nm,1.2s
MWC Mount Wilson 83.46 53 *e*P **P 10 31 11.9 +0.8**
MWC pmax pmax
comp=Z,73nm,1.8s
MWC Mount Wilson 83.46 53 *e*P **P 10 31 11.9 +0.8**
comp=Z,73nm,1.8s
PSUT Pine Spring 83.52 48 PFAKE 10 31 20.0 +8.7
PSUT LR LR
comp=Z,200nm,19.0s
FMP Fort Macarthur 83.61 54 P **P 10 31 12.3 +0.7**
baz=307
SHOC Shoshone, Teco 83.62 51 P **P 10 31 12.3 +0.7**
baz=308,SNR=19
GSC Goldstone, Bar 83.64 52 P **P 10 31 12.4 +0.6**
baz=308,SNR=29
GSC Goldstone, Bar 83.64 52 *e*P **P 10 31 12.9 +1.1**
GSC pmax pmax
comp=Z,33nm,1.1s
GSC Goldstone, Bar 83.64 52 *e*P **P 10 31 12.9 +1.1**
comp=Z,33nm,1.1s
JLU Jordanelle 83.65 45 *e*P **P 10 31 13.2 +1.2**
comp=Z,34nm,1.2s
LIT Litokhoron 83.66 315 P **P 10 31 11.1 -0.7**
LIT Litokhoron 83.66 315 *e*P **P 10 31 11.1 -0.7**
LIT Litokhoron 83.66 315 *e*P **P 10 31 11.1 -0.7**
NLU North Lily Min 83.70 46 *e*P **P 10 31 13.5 +1.3**
comp=Z,53nm,1.2s
XOR Xorichti 83.71 314 P **P 10 31 11.1 -0.9**
XOR Xorichti 83.71 314 P **P 10 31 11.1 -0.9**
CIS Catalina Islan 83.71 54 P **P 10 31 12.4 +0.2**
baz=307
BFSC Mount Baldy Ra 83.72 53 P **P 10 31 12.4 0.0**
baz=307,SNR=8.0
OBKA Obir 83.72 323 *i*P **P 10 31 11.7 -0.3**
comp=Z,27nm,0.8s,SNR=9.8
RRX Edison Barstow 83.77 52 P **P 10 31 13.2 +0.7**
baz=307
A28A Rude Farm, Bot 83.81 33 P **P 10 31 13.0 +0.6**
baz=317,SNR=24
SCI2 San Clemente I 83.88 54 P **P 10 31 13.5 +0.5**
baz=307
NKY Niksic 83.90 318⇑ *i*P **P 10 31 12.7 -0.4**
KBA Koelnbreinsper 83.91 324 *i*P **P 10 31 12.9 -0.2**
comp=Z,34nm,0.7s,SNR=27
MPU Maple Canyon 83.92 45 *e*P **P 10 31 14.6 +1.3**
comp=Z,57nm,1.2s
MPU LR LR
comp=Z,200nm,21.0s
NKME Niksic 83.95 318⇑ *i*P **P 10 31 13.0 -0.3**
KZN Kozani 83.95 315 P **P 10 31 13.0 -0.3**
KZN Kozani 83.95 315 P **P 10 31 13.0 -0.3**
KZN Kozani 83.95 315 P **P 10 31 13.0 -0.3**
SHPR Sheep Range 83.96 50 *e*P **P 10 31 14.8 +1.3**
comp=Z,44nm,1.3s
OHR Ohrid 84.00 316 *e*P **P 10 31 13.1 -0.4**
PDG Podgorica 84.01 318 P **P 10 31 13.6 +0.1**
PDG Podgorica 84.01 318⇑ *i*P **P 10 31 13.6 +0.1**
TTG Podgorica 84.01 318⇑ *i*P **P 10 31 13.5 +0.1**
TTG Podgorica 84.01 318 P **P 10 31 13.6 +0.1**
TTG Podgorica 84.01 318 P **P 10 31 13.6 +0.1**
LJU Ljubljana 84.05 323 *i*P **P 10 31 13.5 -0.2**
MYKA Terra Mystica 84.08 324 *i*P **P 10 31 13.3 -0.5**
comp=Z,21nm,0.7s,SNR=7.4
BRY Bratogost 84.09 319⇑ *i*P **P 10 31 13.7 -0.4**
B28A Dugan Ranch, T 84.10 34 P **P 10 31 14.5 +0.7**
baz=317,SNR=11
CEME Cevo 84.12 318⇑ *i*P **P 10 31 14.0 -0.1**
TUQ Turquoise Moun 84.13 51 P **P 10 31 15.1 +0.7**
baz=308,SNR=29
LEVU Levan 84.14 46 *e*P **P 10 31 15.8 +1.4**
D26A Manning 84.14 36 P **P 10 31 14.7 +0.6**
baz=315,SNR=18
SANT Santorini 84.18 310 PFAKE 10 31 30.0 +15
SANT LR LR
comp=Z,160nm,19.0s
BBRC Big Bear Solar 84.19 52 P **P 10 31 15.1 +0.3**
baz=308,SNR=5.7
HEC Hector,Ludlow 84.23 52 P **P 10 31 15.4 +0.6**
baz=308,SNR=16
ATAL Atalanti 84.24 313 P **P 10 31 13.3 -1.4**
ATAL Atalanti 84.24 313 *e*P **P 10 31 13.3 -1.4**
A29A Manning Farm, 84.27 33 P **P 10 31 15.2 +0.5**
baz=317,SNR=38
LKR Lokris 84.28 313 P **P 10 31 14.2 -0.7**
LKR Lokris 84.28 313 P **P 10 31 14.2 -0.7**
BUM Brajici-Budva 84.29 318⇑ *i*P **P 10 31 14.9 -0.1**
CADS Cadrg 84.32 324 *i*P **P 10 31 13.9 -1.2**
ULC Ulcinj 84.32 318⇑ *i*P **P 10 31 14.6 -0.5**
TCRU Three Creeks R 84.33 47 PFAKE 10 31 30.0 +14
TCRU LR LR
comp=Z,100nm,18.0s
TIR Tirane 84.38 317 PFAKE 10 31 30.0 +15
TIR LR LR
comp=Z,222nm,19.0s
MURC Murrieta 84.41 53 P **P 10 31 16.1 +0.4**
baz=307
HCY Herceg Novi 84.42 318⇑ *i*P **P 10 31 15.9 +0.3**
CCUT Cedar City 84.44 48 *e*P **P 10 31 16.2 +0.1**
comp=Z,28nm,1.5s
AGG Agios Georgios 84.44 314 P **P 10 31 13.8 -2.0**
AGG Agios Georgios 84.44 314 *e*P **P 10 31 14.9 -0.9**
AGG MLR MLR
comp=Z,100nm,19.0s
AGG Agios Georgios 84.44 314 *e*P **P 10 31 14.9 -0.9**
AGG LR LR
comp=Z,100nm,19.0s
B29A Wagenman Farm, 84.55 33 P **P 10 31 16.6 +0.5**
baz=317,SNR=13
ABTA Abfaltersbach 84.55 324 *i*P **P 10 31 15.2 -1.1**
comp=Z,45nm,0.9s,SNR=10
MSU Marysvale 84.55 47 *e*P **P 10 31 18.2 +1.6**
MSU Marysvale 84.55 47 *e*P **P 10 31 18.2 +1.6**
WATA Walderalm 84.57 325 *i*P **P 10 31 16.2 -0.3**
comp=Z,32nm,0.8s,SNR=8.2
SZCU Shurtz Canyon 84.58 48 *e*P **P 10 31 18.1 +1.3**
comp=Z,54nm,1.4s
WTTA Wattenberg 84.60 325 *i*P **P 10 31 16.5 -0.2**
comp=Z,48nm,1.6s,SNR=8.5
MEM Membach 84.61 330 P **P 10 31 15.8 -0.6**
comp=Z,23nm,1.3s
STU Stuttgart 84.62 328 *e*P **P 10 31 16.9 +0.4**
STU pmax pmax
comp=Z,85nm,1.0s
STU MLR MLR
comp=Z,200nm,19.0s
STU Stuttgart 84.62 328 *e*P **P 10 31 16.9 +0.4**

comp=Z,85nm,1.0s
STU LR LR
comp=Z,200nm,19.0s
TMUT Trail Mountain 84.63 46 eP P 10 31 18.6 +1.5
comp=Z,28nm,1.2s
A30A Hoffart Farm, 84.67 32 P P 10 31 17.2 +0.4
baz=318,SNR=26
TRI Trieste 84.67 323 PFAKE 10 31 30.0 +13
TRI LR LR
comp=Z,400nm,18.0s
GMRC Granite Mounta 84.70 51 P P 10 31 17.9 +0.6
baz=308,SNR=18
DSF Desfina 84.71 313 P P 10 31 15.5 -1.7
DSF Desfina 84.71 313 eP P 10 31 15.5 -1.7
ULM Lac du Bonnet 84.73 30 P P 10 31 17.0 0.0
comp=Z,57nm,0.9s,baz=315,slow=5.4,SNR=66
ULM LR LR 11 15 18.4
comp=Z,63nm,18.3s,baz=310,slow=40
ULM Lac du Bonnet 84.73 30 P P 10 31 17.0 0.0
ULM pmax pmax
comp=Z,57nm,0.9s
ULM Lac du Bonnet 84.73 30 eP P 10 31 16.9 0.0
comp=Z,72nm,0.9s
P17A Butcher Ranch, 84.80 45 eP P 10 31 19.1 +1.3
comp=Z,99nm,1.4s
RETA Reutte 84.85 326 i P P 10 31 17.8 +0.1
comp=Z,73nm,1.1s,SNR=26
LCMT Little Creek M 84.85 48 eP P 10 31 19.3 +1.3
comp=Z,63nm,1.5s
MTPU Mount Pierson 84.85 47 eP P 10 31 20.0 +1.7
comp=Z,80nm,1.5s
DID Didima 84.86 312 P P 10 31 14.8 -3.1
DID Didima 84.86 312 eP P 10 31 14.8 -3.1
LDFC Landfair 84.87 51 eP P 10 31 18.9 +0.7
comp=Z,61nm,1.4s
MDND Maddock 84.88 34 P P 10 31 18.4 +0.6
baz=317,SNR=11
MDND Maddock 84.88 34 eP P 10 31 18.6 +0.8
comp=Z,92nm,0.8s
MDND LR LR
comp=Z,101nm,19.0s
PFO Pinyon Flats O 84.89 53 P P 10 31 18.7 +0.4
baz=308,SNR=27
PFO Pinyon Flats O 84.89 53 eP P 10 31 18.7 +0.4
PFO pmax pmax
comp=Z,20nm,1.0s
PFO Pinyon Flats O 84.89 53 eP P 10 31 18.7 +0.4
comp=Z,20nm,1.0s
TPFO Pinon Flats 84.90 53 P P 10 31 18.7 +0.4
baz=308,SNR=27
109C Camp Elliot, M 84.90 54 P P 10 31 18.5 +0.3
baz=308
LAST Lasithi 84.91 309 eP P 10 31 18.8 +0.5
comp=Z,136nm,1.5s
BELC Belle Mtn. Jos 84.96 52 P P 10 31 18.7 +0.1
baz=308,SNR=13
ANX Ano Chora 84.96 314 P P 10 31 17.5 -1.0
B30A Myrvik Farm, E 85.02 33 P P 10 31 18.8 +0.3
baz=318,SNR=18
BCLA Clavier 85.04 331 P P 10 31 18.0 -0.6
comp=Z,22nm,1.6s
K22A Casper 85.08 41 P P 10 31 19.2 +0.1
baz=313
K22A Casper 85.08 41 eP P 10 31 19.2 +0.1
comp=Z,10nm,0.8s
LANF Langenberg 85.08 328⇑ eP P 10 31 18.7 -0.1
LANF Langenberg 85.08 328 P P 10 31 18.0 -0.8
DSL Palaion Diasel 85.11 315 P P 10 31 18.6 -0.5
DSL Palaion Diasel 85.11 315 eP P 10 31 18.6 -0.5
PKCU Pink Cliffs 85.15 48 eP P 10 31 21.7 +1.9
comp=Z,24nm,1.1s
SRU San Rafael Swe 85.16 45 eP P 10 31 20.6 +1.0
SRU pmax pmax
comp=Z,26nm,0.8s
SRU San Rafael Swe 85.16 45 eP P 10 31 20.6 +1.0
comp=Z,26nm,0.8s
A31A Linda, St. Vin 85.16 32 P P 10 31 18.9 -0.3
baz=319
KLV Kalavryta, Ach 85.18 313 P P 10 31 16.7 -2.9
KLV Kalavryta, Ach 85.18 313 eP P 10 31 16.7 -2.9
FETA Feichten 85.20 326 i P P 10 31 19.4 -0.3
comp=Z,44nm,0.9s,SNR=22
H25A Fruitdale 85.26 38 P P 10 31 20.1 +0.2
baz=315,SNR=6.6
WLF Walferdange 85.27 330 P P 10 31 20.2 +0.5
comp=Z,42nm,1.8s
WLF Walferdange 85.27 330 eP P 10 31 20.2 +0.5
WLF pmax pmax
comp=Z,48nm,1.1s
WLF MLR MLR
comp=Z,400nm,19.0s
WLF Walferdange 85.27 330 eP P 10 31 20.2 +0.5
comp=Z,48nm,1.1s
WLF LR LR
comp=Z,400nm,19.0s
MMU Miners Mountai 85.29 46 eP P 10 31 21.7 +1.3
SGD Sagiada 85.30 315 P P 10 31 19.2 -0.8
BAR Barrett 85.32 54 eP P 10 31 20.7 +0.4
comp=Z,15nm,1.1s
BFO Black Forest 85.33 328 i P P 10 31 20.0 -0.1
BFO Black Forest 85.33 328 eP P 10 31 20.0 -0.1
comp=Z,60nm,0.9s
BFO LR LR
comp=Z,200nm,18.0s
B31A Greenbush Farm 85.34 32 P P 10 31 20.1 0.0
baz=318,SNR=13
MONP2 Monument Peak 85.35 53 P P 10 31 21.1 +0.4
baz=308,SNR=14
RSSD Black Hills 85.38 38 P P 10 31 20.9 +0.2
baz=314
RSSD Black Hills 85.38 38 eP P 10 31 21.3 +0.6
RSSD pmax pmax
comp=Z,29nm,1.1s
RSSD Black Hills 85.38 38 eP P 10 31 21.3 +0.6
comp=Z,29nm,1.1s
SNF Seneffe 85.39 331 P P 10 31 20.1 -0.2
DAVA Damuels 85.40 326 i P P 10 31 20.6 -0.1
comp=Z,80nm,1.0s,SNR=38
IRM Iron Mountain 85.42 52 P P 10 31 21.4 +0.6
baz=308,SNR=15
A32A Rocking H Ranc 85.47 31 P P 10 31 20.6 -0.2
baz=319,SNR=9.6
KEK Kerkira 85.49 316 P P 10 31 20.5 -0.5
KEK Kerkira 85.49 316 P P 10 31 20.5 -0.5
DRO Drossia 85.50 313 P P 10 31 21.8 +0.7
C30A Mose, Pekin 85.50 33 P P 10 31 21.0 0.0
baz=318,SNR=8.2
BC3 Big Chuckawall 85.53 52 P P 10 31 21.9 +0.4
baz=308,SNR=14
VLI Veliai 85.54 312 P P 10 31 19.2 -2.1
VLI Veliai 85.54 312 eP P 10 31 19.2 -2.1
DOU Dourbes 85.58 331 P P 10 31 20.4 -0.8
comp=Z,12nm,1.6s
IMMV Iera Moni Meta 85.68 310 P P 10 31 21.8 -0.2
CWF Charnwood Fore 85.70 335 eP P 10 31 21.6 -0.2
comp=Z,25nm,0.9s
WLS Welschbruch 85.70 328 eP P 10 31 21.4 -0.6
IKP In-Ko-Pah, Jac 85.71 53 P P 10 31 22.8 +0.4
baz=308,SNR=12
FUORN Ofenpass-Fuorn 85.71 326 eP P 10 31 22.5 +0.2
comp=Z,103nm,0.9s
FUORN LR LR
comp=Z,500nm,22.0s
SWSC Sam W. Stewart 85.73 53 P P 10 31 22.7 +0.4
baz=308
CDF Champ du Feu 85.74 328 eP P 10 31 21.3 -0.9
CDF pmax pmax
comp=Z,44nm,1.0s
AMT Artemida-Makis 85.77 313 P P 10 31 21.1 -1.4
C31A Landman Farms, 85.77 33 P P 10 31 22.4 +0.1
baz=318,SNR=22
U15A North Rim 85.81 48 eP P 10 31 24.2 +1.2
comp=Z,99nm,1.8s
O20A White River Ci 85.81 43 P P 10 31 23.4 +0.5
baz=312
O20A White River Ci 85.81 43 eP P 10 31 23.4 +0.5
comp=Z,25nm,1.0s
B32A Ashes, Strandq 85.85 32 P P 10 31 22.3 -0.3
baz=319,SNR=5.7
ITM Ithomi 85.87 313 P P 10 31 21.9 -1.1
ITM Ithomi 85.87 313 P P 10 31 21.9 -1.1
A33A Warroad 85.93 31 P P 10 31 22.9 -0.2
baz=320,SNR=9.5
ECH Echery 85.94 328⇑ eP P 10 31 22.7 -0.4
KFL Anninata 85.95 314 P P 10 31 23.0 -0.3
PDMCI Parker Dam,Lak 85.98 51 P P 10 31 24.0 +0.5
baz=309,SNR=7.9

Y12C Blythe 86.08 52 P P 10 31 24.7 +0.7
baz=309,SNR=6.8
Y12C Blythe 86.08 52 eP P 10 31 25.2 +1.2
comp=Z,18nm,1.1s
PYL PYLOS 86.16 313 P P 10 31 22.4 -2.0
PYL PYLOS 86.16 313 eP P 10 31 22.4 -2.0
AGMN Agassiz Nation 86.22 31 P P 10 31 24.1 -0.3
baz=320,SNR=12
AGMN Agassiz Nation 86.22 31 eP P 10 31 24.2 -0.3
comp=Z,26nm,1.0s
AGMN LR LR
comp=Z,138nm,21.0s
MOF Molkenrain 86.22 328⇑ eP P 10 31 24.2 -0.4
MOF Molkenrain 86.22 328 P P 10 31 24.6 0.0
ZKS Zakynthos 86.22 314 P P 10 31 23.0 -1.7
TUE Stuetta 86.25 326 eP P 10 31 24.0 -0.9
comp=Z,100nm,1.4s
TUE LR LR
comp=Z,400nm,19.0s
F29A Eureka 86.25 35 P P 10 31 25.2 +0.5
baz=317,SNR=8.8
C32A Crookston 86.28 32 P P 10 31 24.8 0.0
baz=319
GLA Glamis 86.31 52 P P 10 31 26.0 +0.8
baz=309,SNR=12
GLA Glamis 86.31 52 eP P 10 31 26.2 +1.0
GLA pmax pmax
comp=Z,13nm,0.8s
GLA Glamis 86.31 52 eP P 10 31 26.2 +1.0
comp=Z,13nm,0.8s
D31A Mcclaflin, Tow 86.33 33 P P 10 31 25.2 +0.1
baz=318,SNR=8.3
B33A Robert and Kas 86.36 31 P P 10 31 24.8 -0.3
baz=320
PV09 Paradox Valley 86.38 45 eP P 10 31 27.1 +1.2
THEF They Montfort 86.44 329⇑ eP P 10 31 24.9 -0.7
PV10 Paradox Valley 86.52 45 eP P 10 31 27.9 +1.4
PHWY Pilot Hill 86.58 41 eP P 10 31 27.4 +0.6
comp=Z,23nm,1.3s
D32A Dogwood Acres, 86.59 33 P P 10 31 26.1 -0.1
baz=319
N23A Red Feather La 86.59 42 P P 10 31 27.8 +1.1
baz=313,SNR=17
N23A Red Feather La 86.59 42 eP P 10 31 27.9 +1.1
comp=Z,38nm,1.1s
B34A Aery, Baudette 86.59 31 P P 10 31 26.0 -0.3
baz=321,SNR=11
E31A Nome 86.63 34 P P 10 31 26.7 +0.2
baz=318,SNR=5.8
F30A Lenola 86.63 35 P P 10 31 26.8 +0.2
baz=318
C33A Trail 86.67 32 P P 10 31 26.5 -0.2
baz=320
G29A Hoven 86.67 36 P P 10 31 26.9 +0.1
baz=317
PV05 Paradox Valley 86.68 45 eP P 10 31 28.4 +1.2
LOMF Lomont 86.74 328 eP P 10 31 26.8 -0.3
Y14A Wickenburg 86.94 51 eP P 10 31 29.4 +1.1
comp=Z,80nm,1.4s
PV01 Paradox Valley 86.95 45 eP P 10 31 29.5 +0.9
WUAZ Wupatki 86.96 49 P P 10 31 29.6 +0.9
baz=310,SNR=12
WUAZ Wupatki 86.96 49 eP P 10 31 29.5 +0.9
comp=Z,20nm,1.1s
WUAZ LR LR
comp=Z,120nm,19.0s
E32A Braaten, Kindr 86.97 33 P P 10 31 28.3 +0.1
baz=319
F31A Hea 86.98 34 P P 10 31 28.5 +0.3
baz=318,SNR=11
B35A Bob, Littlefor 87.08 30 P P 10 31 28.9 +0.2
baz=321,SNR=18
D33A AnnSam, Waubun 87.11 32 P P 10 31 28.6 -0.3
baz=320,SNR=6.2
C34A RKJ Ranch, Bem 87.12 31 P P 10 31 28.6 -0.3
baz=320
SMCO Snowmass 87.18 44 eP P 10 31 31.0 +1.1
comp=Z,16nm,0.8s
AQU L'Aquila 87.22 321 eP P 10 31 30.1 +0.5
AQU pmax pmax
comp=Z,37nm,1.1s
AQU MLR MLR
comp=Z,364nm,21.0s
AQU L'Aquila 87.22 321 eP P 10 31 30.1 +0.5
comp=Z,37nm,1.1s
AQU LR LR
comp=Z,364nm,21.0s
SENIN Las Senin/Sane 87.27 327 eP P 10 31 29.3 -0.7
comp=Z,18nm,1.0s
SENIN LR LR
comp=Z,400nm,18.0s
D34A Park Rapids 87.44 32 P P 10 31 30.4 -0.1
baz=320,SNR=12
VLC Villacollemand 87.45 324 PFAKE 10 31 40.0 +9.4
VLC LR LR
comp=Z,200nm,19.0s
G31A Conde 87.47 35 P P 10 31 31.0 +0.3
baz=318
C35A Jirik Farms, M 87.49 31 P P 10 31 30.4 -0.2
baz=321,SNR=22
F32A Veblen 87.49 34 P P 10 31 30.9 +0.2
baz=319
E33A Westby DABS, E 87.52 33 P P 10 31 31.0 +0.1
baz=320,SNR=7.8
ISCO Idaho Springs 87.53 42 P P 10 31 32.2 +0.8
baz=314,SNR=6.8
ISCO Idaho Springs 87.53 42 eP P 10 31 32.5 +1.1
ISCO pmax pmax
comp=Z,7.0nm,1.0s
ISCO MLR MLR
comp=Z,116nm,20.0s
ISCO Idaho Springs 87.53 42 eP P 10 31 32.5 +1.1
comp=Z,7.2nm,1.0s
ISCO LR LR
comp=Z,116nm,20.0s
CUC Castrocucco 87.56 318 eP P 10 31 29.9 -1.3
comp=Z,15nm,1.4s
CUC LR LR
comp=Z,100nm,19.0s
TIP Timpagrande 87.59 317 eP P 10 31 32.4 +0.9
comp=Z,20nm,1.2s
TIP LR LR
comp=Z,201nm,21.0s
MVCO Mesa Verde 87.61 46 P P 10 31 32.7 +0.9
baz=312,SNR=10
MVCO Mesa Verde 87.61 46 eP P 10 31 33.1 +1.3
comp=Z,19nm,1.1s
MVCO LR LR
comp=Z,126nm,20.0s
X16A Lo Mia Camp, P 87.63 49 eP P 10 31 33.3 +1.5
comp=Z,12nm,1.2s
SUSD Miller 87.69 36 P P 10 31 32.1 +0.3
baz=318
G32A Webster 87.78 34 P P 10 31 32.6 +0.5
baz=319,SNR=11
I30A Oacoma 87.85 36 P P 10 31 33.1 +0.6
baz=318
F33A 5 Mile Ranch, 87.90 33 P P 10 31 33.0 +0.3
baz=320,SNR=6.5
H31A Wolsey 87.90 35 P P 10 31 32.7 0.0
baz=318
C36A Pine Crest Far 87.92 30 P P 10 31 32.7 -0.1
baz=322,SNR=14
D35A Remer 87.94 31 P P 10 31 32.5 -0.3
baz=321,SNR=6.2
PPT2 Papeete2 87.95 113 eLR LR 10 59 21.7
comp=Z,293nm,23.5s
LOR Lormes 88.09 329 eP P 10 31 32.0 -1.6
LOR pmax pmax
comp=Z,22nm,1.3s
LPL La Plagne 88.17 327 eP P 10 31 33.0 -1.3
LPL pmax pmax
comp=Z,29nm,0.6s
LPG La Plagne 88.18 327 eP P 10 31 33.2 -1.2
LPG pmax pmax
comp=Z,36nm,0.6s
E35A Pequot Lakes 88.19 32 P P 10 31 33.9 -0.2
baz=321,SNR=5.9
I31A Royce, Wessing 88.20 36 P P 10 31 34.4 +0.3
baz=318
C37A Embarrass 88.22 30 P P 10 31 34.3 +0.2
baz=322
S22A 4UR Ranch, Cre 88.23 44 P P 10 31 35.9 +1.1
baz=313,SNR=20
S22A 4UR Ranch, Cre 88.23 44 eP P 10 31 36.5 +1.7
comp=Z,14nm,1.0s
W18A Petrified Fore 88.24 48 P P 10 31 35.4 +0.7
baz=311
D36A Goodland 88.24 31 P P 10 31 34.0 -0.3
baz=322,SNR=6.9
J30A Dallas 88.25 37 P P 10 31 34.9 +0.4
baz=317,SNR=16
G33A Ortonville 88.32 34 P P 10 31 35.2 +0.5
baz=320
214A Organ Pipe Nat 88.32 52 P P 10 31 35.6 +0.6
baz=310
EYMN Ely 88.33 29 P P 10 31 34.8 +0.2
baz=323
EYMN Ely 88.33 29 eP P 10 31 35.0 +0.3
comp=Z,46nm,1.1s
EYMN LR LR
comp=Z,177nm,20.0s
Q24A Divide 88.36 43 P P 10 31 35.9 +0.5
baz=314
H32A Carlson Farm, 88.37 35 P P 10 31 35.3 +0.3
baz=319
SSF Saint Saulge 88.40 329 eP P 10 31 33.6 -1.4
SSF pmax pmax
comp=Z,6.0nm,0.7s
X18A Snowflake 88.49 49 eP P 10 31 37.4 +1.4
comp=Z,12nm,1.5s
BNI Bardonecchia 88.55 326 PFAKE 10 31 50.0 +14
BNI LR LR
comp=Z,400nm,18.0s
D37A Cotton 88.57 30 P P 10 31 35.7 -0.1
baz=322
H33A Prehn Over Nor 88.57 34 P P 10 31 36.4 +0.5
baz=319,SNR=21
SMF Signal de Mont 88.58 329 eP P 10 31 35.1 -0.8
SMF pmax pmax
comp=Z,4.0nm,0.7s
C38A Sawbill Land. 88.60 29 P P 10 31 36.2 +0.3
baz=323
J31A Geddes 88.65 36 P P 10 31 36.5 +0.2
baz=318
G34A Benson 88.65 33 P P 10 31 36.8 +0.6
baz=320,SNR=26
LDF La Druitiere 88.65 332 eP P 10 31 34.5 -1.7
LDF pmax pmax
comp=Z,32nm,1.5s
FLN La Foliniere 88.65 332 eP P 10 31 36.5 +0.3
FLN pmax pmax
comp=Z,57nm,1.8s
F35A Swanville 88.66 32 P P 10 31 36.3 0.0
baz=321,SNR=9.0
K30A Basset 88.67 37 P P 10 31 37.0 +0.6
baz=317,SNR=6.7
OGNE Ogallala 88.67 40 P P 10 31 36.7 +0.2
baz=316,SNR=8.5
OGNE Ogallala 88.67 40 eP P 10 31 37.3 +0.7
comp=Z,55nm,1.4s
OGNE LR LR
comp=Z,167nm,20.0s
AVF Avril sur Loir 88.68 329 eP P 10 31 34.9 -1.4
AVF pmax pmax
comp=Z,13nm,0.8s
CEL Celeste 88.71 317 PFAKE 10 31 50.0 +13
CEL LR LR
comp=Z,200nm,21.0s
E36A McGregor 88.72 31 P P 10 31 36.7 +0.1
baz=322,SNR=18
I32A Karley and Nic 88.72 35 P P 10 31 36.6 0.0
baz=319
MBDF Montbardon 88.75 326 eP P 10 31 35.0 -1.9
MBDF pmax pmax
comp=Z,25nm,0.8s
SDCO Great Sand Dun 89.00 44 P P 10 31 39.4 +1.0
baz=314,SNR=16
SDCO Great Sand Dun 89.00 44 eP P 10 31 39.4 +1.0
comp=Z,14nm,1.3s
I33A Coleman 89.02 35 P P 10 31 38.3 +0.3
baz=319
ORIF Oris-en-Rattie 89.02 327 eP P 10 31 37.4 -0.7
ORIF pmax pmax
comp=Z,13nm,0.7s
J32A Parkston 89.02 36 P P 10 31 38.2 +0.1
baz=318
H34A Spellman Lake, 89.03 34 P P 10 31 38.3 +0.3
baz=320
ISO Isola 89.04 326 P P 10 31 39.0 +0.8
ISO pmax pmax
comp=Z,12nm,1.3s
E37A Wrenshall 89.05 31 P P 10 31 38.1 +0.1
baz=322
SBF Sospel 89.10 325 eP P 10 31 36.4 -2.1
SBF pmax pmax
comp=Z,32nm,0.8s
F36A Milaca 89.11 32 P P 10 31 38.2 -0.2
baz=322,SNR=9.2
K31A O'Neill 89.14 37 P P 10 31 39.0 +0.4
baz=318,SNR=5.3
PLDF La Plantade 89.21 329 eP P 10 31 38.6 -0.4
ECSD EROS Data Cent 89.34 35 P P 10 31 39.8 +0.3
baz=319
ECSD EROS Data Cent 89.34 35 eP P 10 31 40.0 +0.4
comp=Z,34nm,1.1s
ECSD LR LR
comp=Z,172nm,20.0s
SSB Saint Sauveur 89.34 328 eP P 10 31 39.0 -0.6
SSB pmax pmax
comp=Z,19nm,0.8s
SSB MLR MLR
comp=Z,200nm,19.0s
SSB Saint Sauveur 89.34 328 eP P 10 31 39.0 -0.6
comp=Z,19nm,0.8s
SSB LR LR
comp=Z,200nm,19.0s
AGO Saint Agoulin 89.36 329 eP P 10 31 39.4 -0.2
TUC Tucson 89.41 51 PFAKE 10 31 50.0 +10
TUC LR LR
comp=Z,158nm,21.0s
L31A Butterfield Fa 89.42 37 P P 10 31 40.4 +0.4
baz=318,SNR=7.6
H35A Sunnyside Ranc 89.43 33 P P 10 31 40.7 +0.8
baz=321,SNR=64
I34A Hadley 89.47 34 P P 10 31 40.4 +0.3
baz=320
J33A Davis 89.49 35 P P 10 31 40.4 +0.2
baz=319
K32A Verdigre 89.50 36 P P 10 31 40.3 0.0
baz=316
G36A St. Michael 89.50 32 P P 10 31 40.6 +0.4
baz=321,SNR=7.5
SCHQ Schefferville 89.52 13 P P 10 31 40.1 0.0
comp=Z,10nm,0.9s,baz=13,slow=5.8,SNR=4.6
SCHQ Schefferville 89.52 13 eP P 10 31 40.5 +0.3
comp=Z,17nm,1.1s
TCF Toulx Ste Croi 89.56 330 eP P 10 31 40.1 -0.4
TCF pmax pmax
comp=Z,8.0nm,0.8s
FRF La Foret Royal 89.70 325 eP P 10 31 39.3 -1.9
FRF pmax pmax
comp=Z,12nm,0.8s
KSCO Kaye Shedlock' 89.73 41 P P 10 31 42.2 +0.6
baz=316
SPMN Marine on St. 89.93 32 P P 10 31 42.5 +0.3
baz=322,SNR=15
SPMN Marine on St. 89.93 32 eP P 10 31 42.7 +0.5
comp=Z,36nm,0.8s
H36A Jessenland, He 89.94 33 P P 10 31 43.5 +1.2
baz=321,SNR=13
LMR La Mourre 89.94 325 eP P 10 31 43.1 +0.8
LMR pmax pmax
comp=Z,33nm,1.2s
LBL Lubilhac 89.95 328 eP P 10 31 42.2 -0.2
L32A Elgin 89.97 37 P P 10 31 42.8 +0.3
baz=318
M31A Lambtecht Ranc 89.97 38 P P 10 31 42.7 +0.1
baz=318
J34A George 90.00 35 P P 10 31 42.8 +0.2
baz=320
K33A Hardington 90.01 36 P P 10 31 43.1 +0.4
baz=319
I35A Creekview Farm 90.01 34 P P 10 31 43.0 +0.4
baz=320,SNR=6.4
T25A Trinidad 90.05 44 P P 10 31 43.9 +0.7
baz=314,SNR=7.9
T25A Trinidad 90.05 44 eP P 10 31 44.1 +0.9
comp=Z,8.9nm,0.9s
L33A Hoskins 90.21 36 P P 10 31 43.9 +0.3
baz=319
MFF Saint Martin d 90.28 331 eP P 10 31 42.9 -0.9
MFF pmax pmax
comp=Z,19nm,1.0s

J35A **Milford** **90.28** **34** P **P** **10 31 44.2 +0.3**
baz=320
LAZ **Ladron** **90.31** **47** *eP* **P** **10 31 46.0 +1.5**
I36A **Fitzsimmons Fa** **90.33** **33** P **P** **10 31 44.8 +0.7**
baz=321
BGNE **Belgrade** **90.34** **37** P **P** **10 31 44.5 +0.2**
baz=318
BGNE **Belgrade** **90.34** **37** *eP* **P** **10 31 44.8 +0.5**
comp=Z,91nm,1.1s
ANMO **Albuquerque** **90.35** **46** P **P** **10 31 45.6 +0.9**
baz=313
ANMO **Albuquerque** **90.35** **46** *eP* **P** **10 31 45.9 +1.2**
ANMO pmax pmax
comp=Z,10.0nm,1.0s
ANMO MLR MLR
comp=Z,161nm,19.0s
ANMO **Albuquerque** **90.35** **46** *eP* **P** **10 31 45.9 +1.2**
comp=Z,10nm,1.0s
ANMO LR LR
comp=Z,161nm,19.0s
N31A **Bailey Ranch,** **90.36** **38** P **P** **10 31 44.6 +0.1**
baz=318
H37A **Dierke Farm, C** **90.38** **32** P **P** **10 31 45.1 +0.7**
baz=322,SNR=13
K34A **Le Mars** **90.38** **35** P **P** **10 31 44.7 +0.3**
baz=320
TAOE **Nuku Hiva Isla** **90.45** **100** *e*LR LR 11 00 16.3
comp=Z,358nm,31.6s
I37A **Lemond, Waseca** **90.61** **33** P **P** **10 31 46.4 +0.9**
baz=322,SNR=32
Y22D **IRIS PASSCAL I** **90.66** **47** P **P** **10 31 46.5 +0.4**
baz=313
O31A **Woolen Ranch,** **90.67** **39** P **P** **10 31 45.6 -0.2**
baz=318
M33A **Taylor Creek F** **90.69** **37** P **P** **10 31 46.1 +0.2**
baz=319
CLTB **Caltabellotta** **90.70** **318** PFAKE 10 32 00.0 +14
CLTB LR LR
comp=Z,103nm,19.0s
CAF **Calviac** **90.71** **329** *eP* **P** **10 31 45.3 -0.6**
CAF pmax pmax
comp=Z,23nm,1.0s
J36A **Seneca 1, Swea** **90.72** **34** P **P** **10 31 46.2 +0.3**
baz=321,SNR=10
N32A **Stulken Farm,** **90.75** **38** P **P** **10 31 45.8 -0.4**
baz=318
K35A **Storm Lake** **90.77** **35** P **P** **10 31 46.2 0.0**
baz=320
COWI **Conover** **90.77** **29** *eP* **P** **10 31 47.1 +1.0**
comp=Z,35nm,0.9s
COWI LR LR
comp=Z,132nm,20.0s
BNM **Barren Site** **90.79** **47** *eP* **P** **10 31 47.8 +1.0**
L34A **Svendsen Farm,** **90.80** **36** P **P** **10 31 46.5 +0.1**
baz=320
319A **Douglas** **90.99** **51** *eP* **P** **10 31 48.6 +1.0**
comp=Z,9.7nm,1.2s
I38A **Scanlan Farm,** **91.07** **32** P **P** **10 31 47.8 +0.3**
baz=322,SNR=14
L35A **Bielow Farm, R** **91.09** **35** P **P** **10 31 47.7 0.0**
baz=320
J37A **Redenius Farm,** **91.09** **33** P **P** **10 31 48.1 +0.4**
baz=322,SNR=8.6
121A **Cookes Peak, D** **91.17** **49** P **P** **10 31 49.2 +0.8**
baz=312
WDD **Wied Dalam** **91.18** **316** PFAKE 10 32 00.0 +12
WDD LR LR
comp=Z,142nm,20.0s
N33A **J Bar K, Exete** **91.19** **37** P **P** **10 31 47.8 -0.4**
baz=319
K36A **Gilmore City** **91.20** **34** P **P** **10 31 48.8 +0.6**
baz=321,SNR=7.5
LFF **La Frestale** **91.26** **330** *eP* **P** **10 31 47.8 -0.6**
LFF pmax pmax
comp=Z,40nm,0.8s
VSL **Villasalto** **91.39** **321** PFAKE 10 32 00.0 +11
VSL LR LR
comp=Z,189nm,19.0s
CBKS **Cedar Bluff** **91.43** **40** P **P** **10 31 49.2 -0.2**
baz=317
CBKS **Cedar Bluff** **91.43** **40** *eP* **P** **10 31 49.7 +0.3**
CBKS pmax pmax
comp=Z,11nm,0.9s
CBKS MLR MLR
comp=Z,116nm,19.0s
CBKS **Cedar Bluff** **91.43** **40** *eP* **P** **10 31 49.7 +0.3**
comp=Z,11nm,0.9s
CBKS LR LR
comp=Z,116nm,19.0s
P32A **Huiting Farm,** **91.44** **39** P **P** **10 31 49.2 -0.2**
baz=318
K37A **Belmond** **91.48** **34** P **P** **10 31 49.8 +0.3**
baz=321,SNR=13
M35A **Neola** **91.51** **36** P **P** **10 31 50.1 +0.4**
baz=320
L36A **Harm Buss Farm** **91.51** **35** P **P** **10 31 50.0 +0.3**
baz=321
J38A **Wedel Dairy, R** **91.57** **33** P **P** **10 31 50.1 +0.2**
baz=322,SNR=6.9
N34A **Lincoln** **91.59** **37** P **P** **10 31 49.7 -0.3**
baz=319
O33A **Hebron** **91.62** **38** P **P** **10 31 49.7 -0.5**
baz=319
MTLF **Montolieu** **91.90** **328** *eP* **P** **10 31 50.3 -1.1**
MTLF pmax pmax
comp=Z,15nm,1.3s
J39A **Decorah** **91.90** **32** P **P** **10 31 51.4 0.0**
baz=323,SNR=11
L37A **Phoenix Point,** **91.92** **34** P **P** **10 31 51.8 +0.3**
baz=321
Q32A **Meitler Ranch,** **91.92** **39** P **P** **10 31 51.4 -0.3**
baz=318
M36A **Felix, Anita** **91.95** **35** P **P** **10 31 52.2 +0.5**
baz=321,SNR=9.1
K38A **Parkersburg** **91.97** **33** P **P** **10 31 52.0 +0.2**
baz=322
O34A **Beatrice** **91.99** **37** P **P** **10 31 51.7 -0.2**
baz=319
N35A **Tabor** **91.99** **36** P **P** **10 31 52.5 +0.5**
baz=320
P33A **Williams Farm,** **92.04** **38** P **P** **10 31 52.2 0.0**
baz=319
R32A **Long Quarter,** **92.27** **39** P **P** **10 31 53.1 -0.1**
baz=318
J40A **Soldiers Grove** **92.28** **32** P **P** **10 31 53.2 0.0**
baz=323
L38A **Oak Wood Farm,** **92.28** **34** P **P** **10 31 53.6 +0.4**
baz=322,SNR=11
Q33A **Connelly Farm,** **92.30** **39** P **P** **10 31 53.4 0.0**
baz=318
O35A **Humboldt** **92.32** **37** P **P** **10 31 53.3 -0.1**
baz=320
K39A **Oelwein** **92.32** **33** P **P** **10 31 53.2 -0.2**
baz=323,SNR=5.8
M37A **Trindle Farm,** **92.34** **35** P **P** **10 31 54.3 +0.8**
baz=321,SNR=9.9
SCIA **State Center** **92.34** **34** *eP* **P** **10 31 54.8 +1.2**
comp=Z,41nm,1.1s
N36A **Muff Farm, Cla** **92.36** **36** P **P** **10 31 54.4 +0.8**
baz=320
P34A **Walnut Farm, R** **92.40** **38** P **P** **10 31 53.9 0.0**
baz=319
J41A **Loganville** **92.62** **31** P **P** **10 31 55.2 +0.4**
baz=324
K40A **Colesburg** **92.66** **32** P **P** **10 31 55.1 +0.2**
baz=323,SNR=18
S32A **Newby Ranch, P** **92.68** **40** P **P** **10 31 55.6 +0.4**
baz=318
L39A **Vinton** **92.73** **33** P **P** **10 31 55.5 +0.2**
baz=322,SNR=10
R33A **Olander Ranch,** **92.73** **39** P **P** **10 31 55.5 +0.1**
baz=318
M38A **Pleasantville** **92.74** **34** P **P** **10 31 55.7 +0.4**
baz=322
N37A **Lee Faris, Mou** **92.77** **35** P **P** **10 31 55.8 +0.3**
baz=321
Q34A **Chapman** **92.81** **38** P **P** **10 31 56.0 +0.2**
baz=319
P35A **Duane Minner,** **92.82** **37** P **P** **10 31 55.5 -0.2**
baz=320
KSU1 **Kansas State U** **92.85** **38** P **P** **10 31 55.8 -0.1**
baz=319
KSU1 **Kansas State U** **92.85** **38** *eP* **P** **10 31 56.6 +0.7**
comp=Z,24nm,1.1s
KSU1 LR LR
comp=Z,143nm,19.0s
JFWS **Jewell Farm** **92.88** **32** *eP* **P** **10 31 56.1 +0.1**
JFWS pmax pmax
comp=Z,28nm,1.2s
JFWS MLR MLR
comp=Z,116nm,20.0s
JFWS **Jewell Farm** **92.88** **32** *eP* **P** **10 31 56.1 +0.1**
comp=Z,28nm,1.2s
JFWS LR LR
comp=Z,116nm,20.0s
O36A **Bolckow** **92.89** **36** P **P** **10 31 56.5 +0.4**
baz=320
EPF **Esparros** **92.97** **329** *eP* **P** **10 31 54.8 -1.6**
EPF pmax pmax
comp=Z,6.0nm,1.0s
T32A **Huddler Ranch,** **93.07** **40** P **P** **10 31 57.6 +0.6**
baz=318
K41A **Shullsburg** **93.10** **32** P **P** **10 31 57.1 +0.1**
baz=324
R34A **Isabella, Hill** **93.12** **39** P **P** **10 31 57.5 +0.3**
baz=315
L40A **Anamosa** **93.13** **33** P **P** **10 31 57.4 +0.2**
baz=323,SNR=14
P36A **Good Intent, A** **93.16** **37** P **P** **10 31 57.3 0.0**
baz=320,SNR=8.2
M39A **Webster** **93.16** **34** P **P** **10 31 57.5 +0.2**
baz=322,SNR=10.0
VLDQ **Val d'Or** **93.18** **21** *eP* **P** **10 31 56.9 -0.3**
comp=Z,11nm,0.9s
AMTX **Amarillo** **93.20** **44** P **P** **10 31 58.4 +0.7**
baz=316
AMTX **Amarillo** **93.20** **44** *eP* **P** **10 31 59.0 +1.2**
comp=Z,15nm,1.0s
N38A **Joes South For** **93.20** **35** P **P** **10 31 57.9 +0.4**
baz=322
MSTX **Muleshoe** **93.22** **45** P **P** **10 31 57.9 0.0**
baz=315
MSTX **Muleshoe** **93.22** **45** *eP* **P** **10 31 58.6 +0.8**
comp=Z,12nm,1.1s
MNTX **Cornudas Mount** **93.23** **48** P **P** **10 31 58.4 +0.6**
baz=314
MNTX **Cornudas Mount** **93.23** **48** *eP* **P** **10 31 58.5 +0.7**
comp=Z,7.2nm,1.0s
MNTX LR LR
comp=Z,115nm,19.0s
S33A **Kaszmaul Farm,** **93.25** **40** P **P** **10 31 58.0 +0.2**
baz=318
O37A **Wolven Farm, M** **93.26** **36** P **P** **10 31 58.3 +0.5**
baz=321
Q35A **Mercer Eighty,** **93.32** **38** P **P** **10 31 58.3 +0.2**
baz=320
L41A **Preston** **93.45** **32** P **P** **10 31 58.5 -0.1**
baz=324
N39A **Derby Farms, D** **93.48** **34** P **P** **10 31 59.1 +0.3**
baz=322,SNR=9.8
P37A **Lathrop** **93.61** **36** P **P** **10 31 59.2 -0.1**
baz=321
O38A **Galt** **93.62** **35** P **P** **10 31 59.3 -0.1**
baz=322
S34A **Willow Spring** **93.64** **39** P **P** **10 31 59.5 -0.1**
baz=319
R35A **Emporia Munici** **93.65** **38** P **P** **10 31 60.0 +0.4**
baz=320
O39A **Kirksville** **93.95** **35** P **P** **10 32 01.2 +0.3**
baz=322
P38A **Dawn** **93.97** **36** P **P** **10 32 01.4 +0.4**
baz=321,SNR=6.9
R36A **Gordon, Harris** **94.00** **38** P **P** **10 32 01.2 0.0**
baz=320
U33A **Lingo Farm, Me** **94.06** **40** P **P** **10 32 01.8 +0.3**
baz=318
S35A **Otter Creek Ra** **94.07** **39** P **P** **10 32 02.0 +0.5**
baz=320
V32A **Arapaho** **94.08** **41** P **P** **10 32 02.1 +0.4**
baz=316
T34A **McClaskey Farm** **94.11** **40** P **P** **10 32 02.0 +0.2**
baz=319
KEST **Kesra** **94.18** **319** P **P** **10 32 02.1 -0.1**
comp=Z,3.4nm,0.7s,baz=301,slow=12,SNR=3.4
KEST LR LR 11 17 23.4
comp=Z,212nm,19.0s,baz=330,slow=37
KEST **Kesra** **94.18** **319** P **P** **10 32 02.1 -0.1**
KEST LR LR
comp=Z,300nm,21.0s
R37A **Teagarden Farm** **94.35** **37** P **P** **10 32 02.6 -0.2**
baz=320,SNR=5.8
U34A **Anderson Ranch** **94.36** **40** P **P** **10 32 03.6 +0.6**
baz=319
U34A **Anderson Ranch** **94.36** **40** *eP* **P** **10 32 04.0 +1.1**
comp=Z,21nm,1.1s
O40A **La Belle** **94.37** **34** P **P** **10 32 03.2 +0.3**
baz=323,SNR=9.9
W32A **Sentinel** **94.40** **42** P **P** **10 32 03.7 +0.5**
baz=318
S36A **Lake Cedric, C** **94.41** **38** P **P** **10 32 03.2 0.0**
baz=320
V33A **Lossen Ranch,** **94.42** **41** P **P** **10 32 03.1 -0.1**
baz=318
Q38A **Cooks Store, C** **94.45** **36** P **P** **10 32 03.1 -0.2**
baz=321,SNR=6.8
P39B **Salisbury** **94.46** **35** P **P** **10 32 03.5 +0.2**
baz=322
T35A **Sooner Cattle** **94.55** **39** P **P** **10 32 04.0 +0.2**
baz=319
Q39A **Willow Grove F** **94.70** **36** P **P** **10 32 04.5 +0.2**
baz=322,SNR=14
P40A **Paris** **94.76** **35** P **P** **10 32 05.1 +0.4**
baz=322,SNR=11
T36A **Boggs Farm, Ca** **94.77** **39** P **P** **10 32 05.0 +0.2**
baz=320,SNR=8.2
S37A **Fort Scott** **94.77** **38** P **P** **10 32 04.7 0.0**
baz=320,SNR=9.0
W33A **Caddo, Fort Co** **94.81** **42** P **P** **10 32 05.1 +0.1**
baz=318
V34A **Guthrie** **94.82** **40** P **P** **10 32 05.4 +0.4**
baz=319
V34A **Guthrie** **94.82** **40** *eP* **P** **10 32 06.0 +1.0**
comp=Z,13nm,0.9s
O41A **Passleys Farm,** **94.84** **34** P **P** **10 32 05.1 +0.1**
baz=323
U35A **Pawnee** **94.84** **40** P **P** **10 32 05.4 +0.3**
baz=319
X32A **Elmer** **94.89** **43** P **P** **10 32 05.4 -0.1**
baz=317
R38A **Fenwick Farm,** **94.91** **37** P **P** **10 32 04.8 -0.5**
baz=321
WMOK **Wichita Mounta** **94.94** **42** P **P** **10 32 05.8 +0.1**
baz=318
WMOK **Wichita Mounta** **94.94** **42** *eP* **P** **10 32 06.2 +0.5**
WMOK pmax pmax
comp=Z,6.0nm,1.1s
WMOK MLR MLR
comp=Z,135nm,19.0s
WMOK **Wichita Mounta** **94.94** **42** *eP* **P** **10 32 06.2 +0.5**
comp=Z,5.8nm,1.1s
WMOK LR LR
comp=Z,135nm,19.0s
W34A **Bridge Creek,** **95.13** **41** P **P** **10 32 06.6 +0.1**
baz=318
Q40A **Laux Farm, Aux** **95.17** **35** P **P** **10 32 06.7 +0.1**
baz=322,SNR=5.9
HDIL **Hopedale** **95.21** **32** P **P** **10 32 06.5 -0.1**
baz=324
HDIL **Hopedale** **95.21** **32** *eP* **P** **10 32 07.5 +0.8**
comp=Z,17nm,0.8s
HDIL LR LR
comp=Z,187nm,19.0s
T37A **Cheneyville 18** **95.22** **38** P **P** **10 32 06.8 0.0**
baz=326,SNR=8.5
R39A **Chumby, Stover** **95.24** **36** P **P** **10 32 06.6 -0.3**
baz=322,SNR=12
V35A **Meyer Ranch, C** **95.24** **40** P **P** **10 32 07.1 +0.1**
baz=319
X33A **Lawton** **95.25** **42** P **P** **10 32 06.8 -0.2**
baz=318
S38A **Stockton** **95.34** **37** P **P** **10 32 06.9 -0.4**
baz=321
U36A **Ologah** **95.35** **39** P **P** **10 32 07.5 +0.1**
baz=320
P42A **Winchester** **95.51** **34** P **P** **10 32 08.1 0.0**
baz=324
Y33A **Hilltop Ranch,** **95.57** **42** P **P** **10 32 08.5 0.0**
baz=318
S39A **Bolivar** **95.58** **37** P **P** **10 32 07.9 -0.5**
baz=321,SNR=8.0
T38A **Diamond** **95.60** **38** P **P** **10 32 08.4 -0.2**
baz=321,SNR=11
SADO **Sadowa** **95.61** **24** PFAKE 10 32 20.0 +12
SADO LR LR
comp=Z,300nm,18.0s
R40A **Maddies Statio** **95.63** **36** P **P** **10 32 08.4 -0.2**
baz=322,SNR=8.7
LMQ **La Malbaie** **95.64** **17** *eP* **P** **10 32 08.7 +0.1**
comp=Z,13nm,1.1s
U37A **Salina** **95.66** **39** P **P** **10 32 08.9 0.0**
baz=320,SNR=5.3
W35A **Tecumseh** **95.68** **41** P **P** **10 32 09.3 +0.3**
baz=319
TUL1 **Leonard** **95.69** **39** P **P** **10 32 09.3 +0.3**
baz=320
TUL1 **Leonard** **95.69** **39** *eP* **P** **10 32 10.3 +1.4**
comp=Z,16nm,1.4s
V36A **Jenks** **95.70** **40** P **P** **10 32 09.3 +0.3**
baz=320
TRQ **Mont Tremblant** **95.74** **20** *eP* **P** **10 32 09.4 +0.3**
TX31 **Lajitas Ar. Si** **95.93** **49** *eP* **P** **10 32 11.0 +0.7**
LTX **Lajitas** **95.93** **49** *eP* **P** **10 32 11.0 +0.7**
LTX **Lajitas** **95.93** **49** *eP* **P** **10 32 11.0 +0.7**
LTX *e*PP **PP** **10 35 56.0 -6.0**
TXAR **Lajitas Array** **95.93** **49** P **P** **10 32 11.0 +0.7**
comp=Z,4.9nm,0.9s,baz=287,slow=3.6,SNR=48
TXAR PP **PP** **10 35 56.0 -6.0**
comp=Z,0.3nm,0.8s,baz=294,slow=6.7,SNR=2.5
TXAR LR LR 11 15 05.7
comp=Z,76nm,18.7s,baz=0.0,slow=35
Q42A **Golden Eagle** **95.96** **34** P **P** **10 32 10.2 0.0**
baz=323
ABTX **Abilene, Hawle** **96.00** **44** P **P** **10 32 10.9 +0.4**
baz=317
Z33A **Whitaker Ranch** **96.02** **43** P **P** **10 32 10.5 0.0**
baz=318
V37A **Hulbert** **96.05** **39** P **P** **10 32 10.6 0.0**
baz=320,SNR=6.8
S40A **Lebanon** **96.06** **36** P **P** **10 32 10.4 -0.3**
baz=322,SNR=6.8
T39A **Clever** **96.07** **37** P **P** **10 32 10.5 -0.2**
baz=321
AAM **Ann Arbor** **96.11** **28** PFAKE 10 32 20.0 +9.2
AAM LR LR
comp=Z,125nm,19.0s
X35A **Drake** **96.19** **41** P **P** **10 32 11.1 -0.2**
baz=319
HPIG **96.30** **52** *eP* **P** **10 32 13.5 +1.3**
comp=Z,4.9nm,0.8s
SFIN **Lafayette** **96.31** **31** P **P** **10 32 11.9 +0.2**
baz=326
SFIN **Lafayette** **96.31** **31** *eP* **P** **10 32 12.5 +0.8**
comp=Z,9.5nm,0.9s
HHAR **Hobbs** **96.36** **38** *eP* **P** **10 32 12.2 +0.1**
comp=Z,4.4nm,0.8s
T40A **Mansfield** **96.40** **37** P **P** **10 32 11.6 -0.6**
baz=322
S41A **Jillco Farms,** **96.44** **36** P **P** **10 32 11.8 -0.6**
baz=322
V38A **Canehill** **96.45** **39** P **P** **10 32 12.2 -0.2**
baz=321,SNR=8.1
U39A **Green Forest** **96.52** **38** P **P** **10 32 12.4 -0.4**
baz=321,SNR=8.9
Z35A **Perchaven, San** **96.84** **42** P **P** **10 32 14.1 -0.1**
baz=319
U40A **Yellville** **96.86** **37** P **P** **10 32 14.0 -0.3**
baz=322,SNR=10
V39A **Pettigrew** **96.86** **38** P **P** **10 32 14.0 -0.4**
baz=321
233A **Rising Star** **96.88** **44** P **P** **10 32 14.5 0.0**
baz=318
X37A **Clayton** **96.91** **40** P **P** **10 32 14.2 -0.4**
baz=320
134A **White-Moore Ra** **96.94** **43** P **P** **10 32 14.1 -0.6**
baz=318
Y36A **Durant** **96.94** **41** P **P** **10 32 14.8 +0.1**
baz=319
W38A **Poteau** **97.00** **39** P **P** **10 32 14.9 -0.1**
baz=320
R44A **Waltonville** **97.17** **34** P **P** **10 32 15.4 -0.3**
baz=324
LONY **Lake Ozonia** **97.19** **21** PFAKE 10 32 30.0 +14
LONY LR LR
comp=Z,139nm,19.0s
OLIL **Olney** **97.22** **33** *eP* Pdif 10 32 16.0 0.0
comp=Z,14nm,1.0s
S43A **Fulton Ridge,** **97.25** **35** P **P** **10 32 15.9 -0.1**
baz=324
KMBO **Kilima Mbogo** **97.27** **274** P **P** **10 32 16.0 -0.8**
comp=Z,0.8nm,0.3s,baz=131,slow=2.6,SNR=3.7
KMBO LR LR 11 17 47.9
comp=Z,82nm,18.1s,baz=77,slow=36
KMBO **Kilima Mbogo** **97.27** **274** *eP* **P** **10 32 16.0 -0.8**
comp=Z,17nm,1.7s
KMBO LR LR
comp=Z,118nm,20.0s
W39A **Magazine** **97.28** **39** P **P** **10 32 16.3 0.0**
baz=321
234A **Clairette** **97.32** **43** P Pdif 10 32 16.7 +0.1
baz=318
333A **Richland Sprin** **97.33** **44** P Pdif 10 32 16.8 +0.1
baz=317
U41A **Viola** **97.33** **37** P **P** **10 32 16.4 0.0**
baz=322
Z36A **Blue Ridge** **97.33** **42** P **P** **10 32 16.4 -0.1**
baz=319
JCT **Junction City** **97.47** **46** P Pdif 10 32 17.4 +0.1
baz=317
JCT **Junction City** **97.47** **46** PFAKE 10 32 30.0 +13
JCT LR LR
comp=Z,138nm,21.0s
ES19 **SONSECA Array** **97.52** **329** *eP* **P** **10 32 16.7 -0.6**
S44A **Carbondale** **97.54** **34** P Pdif 10 32 17.4 0.0
baz=324
SIUC **Southern Illin** **97.54** **34** *eP* Pdif 10 32 17.8 +0.4
comp=Z,15nm,0.9s
SIUC LR LR
comp=Z,100nm,20.0s
BLO **Bloomington** **97.56** **31** PFAKE 10 32 30.0 +13
BLO LR LR
comp=Z,100nm,18.0s
ESDC **Sonseca Array** **97.57** **329** P **P** **10 32 16.6 -1.0**
comp=Z,0.5nm,0.4s,baz=5.0,slow=5.1,SNR=7.6
ESDC PP **PP** **10 36 14.7 +0.7**
comp=Z,0.2nm,0.3s,baz=14,slow=7.4,SNR=4.9
ESDC LR LR 11 20 52.7
comp=Z,72nm,18.1s,baz=320,slow=38
X39A **Fountain Ranch** **97.64** **39** P **P** **10 32 17.2 -0.7**
baz=321
V41A **Mountainview** **97.66** **37** P **P** **10 32 17.1 -0.8**
baz=322
U42A **Revenden** **97.66** **36** P **P** **10 32 17.5 -0.4**
baz=323
PBMO **Poplar Bluff** **97.72** **35** *eP* Pdif 10 32 18.6 +0.4
comp=Z,8.8nm,0.9s
334A **Lometa** **97.76** **44** P **P** **10 32 18.4 -0.1**
baz=318
PAB **San Pablo** **97.84** **330** PFAKE 10 32 30.0 +11
PAB LR LR
comp=Z,100nm,20.0s
MIAR **Mount Ida** **97.89** **39** P **P** **10 32 19.0 0.0**
baz=321,SNR=6.8
MIAR **Mount Ida** **97.89** **39** *eP* Pdif 10 32 20.4 +1.4
MIAR pmax pmax
comp=Z,39nm,2.0s
MIAR MLR MLR
comp=Z,132nm,20.0s
MIAR **Mount Ida** **97.89** **39** *eP* Pdif 10 32 20.4 +1.3
comp=Z,39nm,2.0s
MIAR LR LR
comp=Z,132nm,20.0s
X201 **Greenbrier Sit** **97.94** **38** *eP* Pdif 10 32 19.9 +0.7
comp=Z,12nm,1.3s
X301 **Greenbrier Sit** **97.96** **38** *eP* Pdif 10 32 19.9 +0.6
comp=Z,7.1nm,1.2s
WHAR **Wooly Hollow** **97.98** **38** *eP* Pdif 10 32 20.0 +0.6
comp=Z,8.4nm,1.1s
V42A **Cord** **98.02** **37** P **P** **10 32 18.9 -0.6**
baz=323
PKME **Peaks-Kenny Pk** **98.03** **17** PFAKE 10 32 30.0 +11
PKME LR LR
comp=Z,144nm,19.0s
Y39A **Lockesburg** **98.09** **40** P **P** **10 32 19.7 -0.2**
baz=321
ACSO **Alum Creek Sta** **98.14** **29** *eP* Pdif 10 32 21.2 +1.1
comp=Z,12nm,0.8s
ACSO LR LR
comp=Z,101nm,21.0s
M54A **Oil Creek Stat** **98.30** **26** P **P** **10 32 20.1 -0.6**
baz=331
UALR **University of** **98.35** **38** PFAKE 10 32 30.0 +8.9
UALR LR LR
comp=Z,200nm,22.0s
Y40A **Okolona** **98.46** **39** P **P** **10 32 21.4 -0.1**

baz=321
336A Riesel 98.52 43 P **P** 10 32 21.7 -0.1
baz=319
534A Blanco 98.58 45 P **P** 10 32 21.8 -0.4
baz=318
633A Saathoff Ranch 98.58 46 P **P** 10 32 22.1 -0.1
baz=317
WVL Waterville 98.60 18 PFAKE 10 32 30.0 +8.1
WVL LR LR
comp=Z,300nm,20.0s
HNH Hanover 98.69 20 PFAKE 10 32 30.0 +7.6
HNH LR LR
comp=Z,300nm,19.0s
BINY Binghamton 98.94 23 PFAKE 10 32 40.0 +16
BINY LR LR
comp=Z,164nm,21.0s
EMMW East Machias 98.99 16 PFAKE 10 32 40.0 +16
EMMW LR LR
comp=Z,4μm,20.0s
TRY Troy 99.18 21 PFAKE 10 32 40.0 +15
TRY LR LR
comp=Z,300nm,18.0s
CCAR Cane Creek 99.32 38 PFAKE 10 32 40.0 +15
CCAR LR LR
comp=Z,300nm,20.0s
NATX Nacogdoches 99.45 41 PFAKE 10 32 40.0 +14
NATX LR LR
comp=Z,129nm,22.0s
WVT Waverly 99.47 34 *e*P **Pdif** **10 32 26.6 +0.6**
WVT pmax pmax
comp=Z,9.0nm,1.4s
WVT Waverly 99.47 34 *e*P **Pdif** **10 32 26.6 +0.6**
comp=Z,8.8nm,1.4s
O56A Blue Knob Stat 99.78 26 Pdiff **Pdif** **10 32 27.2 -0.2**
baz=332
WES Weston 100.18 20 PFAKE 10 32 40.0 +11
WES LR LR
comp=Z,200nm,20.0s
CPNY Central Park 100.86 22 PFAKE 10 32 40.0 +7.9
CPNY LR LR
comp=Z,400nm,18.0s
CPCT Cooper Cave 101.54 32 PFAKE 10 32 50.0 +15
CPCT LR LR
comp=Z,100nm,18.0s
BLA Blacksburg 101.76 28 PFAKE 10 32 50.0 +14
BLA LR LR
comp=Z,130nm,19.0s
CBN Corbin Frederi 102.04 26 PFAKE 10 32 50.0 +13
CBN LR LR
comp=Z,153nm,20.0s
RTC Rabat Centre 103.60 328 PFAKE 10 33 00.0 +16
RTC LR LR
comp=Z,376nm,20.0s
GOGA Godfrey 103.72 33 PFAKE 10 33 00.0 +15
GOGA LR LR
comp=Z,125nm,20.0s
BRAL Brewton 103.89 36 PFAKE 10 33 00.0 +14
BRAL LR LR
comp=Z,135nm,19.0s
CNNC Cliffs of the 104.47 28 PFAKE 10 33 00.0 +12
CNNC LR LR
comp=Z,245nm,22.0s
TAM Tamanrasset 106.01 312 PFAKE 10 37 20.0
TAM LR LR
comp=Z,150nm,20.0s
LSZ Lusaka 112.40 266 PFAKE 10 37 30.0
LSZ LR LR
comp=Z,277nm,20.0s
BOSA Boshof 120.99 255 PKP **PKPdf** **10 37 35.9 -0.1**
comp=Z,15nm,0.7s,baz=74,slow=1.6,SNR=26
QSPA South Pole Qui 123.74 180 *e*PKPdf **PKPdf** **10 37 39.9 -0.1**
DBIC Dimbokro 124.68 309 PKP **PKPdf** **10 37 42.5 -0.8**
comp=Z,4.6nm,0.6s,baz=24,slow=1.9,SNR=10.0
TIC Toumodi 124.81 309 *e*PKIKP **PKPdf** **10 37 42.5 -1.1**
KIC Kosan Boka 124.84 309 *e*PKIKP **PKPdf** **10 37 42.4 -1.2**
comp=Z,147nm,2.0s
LIC Lamto 125.13 309 *e*PKIKP **PKPdf** **10 37 42.4 -1.8**
comp=Z,28nm,0.7s
SMRT St. Maarten 125.38 22 PFAKE 10 38 00.0 +15
SMRT LR LR
comp=Z,200nm,19.0s
SEUS St. Eustatius 125.93 22 PFAKE 10 38 00.0 +14
SEUS LR LR
comp=Z,200nm,20.0s
SDV Santo Domingo 130.79 35 PKP **PKPdf** **10 37 55.0 -0.3**
comp=Z,39nm,1.0s,baz=5.9,slow=2.7,SNR=5.5
SDV SKPbc **SKPbc** **10 41 17.6 -1.0**
comp=Z,6.4nm,0.3s,baz=109,slow=2.1,SNR=3.4
SDV Santo Domingo 130.79 35 *e*PKPdf **PKPdf** **10 37 55.7 +0.5**
SDV LR LR
comp=Z,188nm,20.0s
PCRV Puerto La Cruz 132.18 27 PKP **PKPdf** **10 37 56.8 -0.8**
comp=Z,8.5nm,0.8s,baz=73,slow=19,SNR=4.9
ROSC El Rosal 132.33 42 PKP **PKPdf** **10 37 59.0 +0.6**
comp=Z,9.0nm,0.7s,baz=331,slow=9.1,SNR=4.5
SNAA Sanae 136.35 198 PKP PKPpre 10 37 51.0
SNAA Sanae 136.35 198 *e*PKIKP **PKPdf** **10 38 03.8 +0.1**
SNAA Sanae 136.35 198 *e*PKPdf **PKPdf** **10 38 03.8 +0.1**
VNA1 Neumayer--Stat 138.36 197 PKP PKPpre 10 37 57.0
ASCN Ascension 141.84 306 PFAKE 10 38 30.0 +15
ASCN LR LR
comp=Z,2μm,22.0s
NNA Nana 143.47 61 *e*PKIKP PKPab 10 38 14.9 +0.4
NNA Nana 143.47 61 *e*PKPpre PKPab 10 38 14.9 +0.4
PTGA Pitinga 143.97 27 PKP PKPab 10 38 16.6 +0.2
comp=Z,15nm,0.7s,baz=323,slow=2.4,SNR=9.7
SAML Samuel 149.85 38 PFAKE 10 38 40.0 +0.8
SAML LR LR
comp=Z,300nm,20.0s
RCBR Riachuelo 150.80 342 PKPbc **PKPbc** **10 38 35.2 -0.9**
comp=Z,40nm,1.1s,baz=72,slow=1.9,SNR=5.8
LPAZ La Paz 152.56 56 PKPbc **PKPbc** **10 38 41.1 +0.3**
comp=Z,10nm,0.9s,baz=346,slow=8.3,SNR=4.7
USHA Ushuaia 153.39 149 PKPbc **PKPbc** **10 38 41.6 +0.9**
comp=Z,107nm,0.8s,baz=108,slow=2.9,SNR=9.0
LVC Limon Verde 155.95 68 PFAKE 10 38 50.0 +12
LVC LR LR
comp=Z,216nm,21.0s
PLCA Paso Flores 158.46 116 PKPab **PKPab** **10 39 15.4 +0.1**
comp=Z,9.7nm,1.0s,baz=258,slow=5.7,SNR=4.1

JMA 05 10:19:43.2, 37.11N×140.63E, h6km±1km, M2.1, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**93**	P		Pg	10 19 46.1	+0.1
ONAJ				S		Sg	10 19 48.3	+0.4
JFK	**Kawauchi**	**0.32**	**37**	P		Pg	10 19 49.5	0.0
JFK				S		Sg	10 19 54.0	+0.2
JFT	**Otama**	**0.47**	**330**	P		Pg	10 19 52.8	+0.5
JFT				S		Sg	10 19 59.1	+0.7
JHO	**Hitachi**	**0.50**	**186**	P		Pg	10 19 52.8	0.0
JHO				S		Sg	10 19 59.9	+0.5

*ISK **05** 10:23:30.6, 39.76N×30.83E, h11km, MD2.5*
*ISCJB **05** 10:23:31.1±0.5, 39.76N±0.03×30.82E±0.04, h0km, Error ellipse: s-maj=5.8km s-min=3.2km az=139.2*
*DDA **05** 10:23:31.9, 39.72N×30.74E, h7km, Md2.8, Suspected Mining explosion.*
*CSEM **05** 10:23:31.1±0.2, 39.76N×30.81E, h1km, MD2.8, Error ellipse: s-maj=7.5km s-min=4.3km az=57.0, Suspected Mining explosion.*

ISC 05 10:23:31.2±0.8, 39.77N±0.03×30.83E±0.03, h0km, n25, σ0s49/39, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ESKT	**Eskisehir**	**0.25**	**176**	*e*PG		**Pg**	**10 23 36.1**	**+0.1**
ESKT				*e*SG		**Sg**	**10 23 40.0**	**+0.8**
ESKT	**Eskisehir**	**0.25**	**176**	*i* P		**Pg**	**10 23 36.2**	**+0.1**
ESKT				*i* S		**Sg**	**10 23 39.4**	**+0.1**
ESKT	**Eskisehir**	**0.25**	**176**	*e*Pg		**Pg**	**10 23 36.1**	**+0.1**
ESKT				*e*Sg		**Sg**	**10 23 40.0**	**+0.8**
SEYT	**Eskypehyr**	**0.25**	**176**	P		**Pg**	**10 23 36.2**	**+0.1**
SEYT				S		**Sg**	**10 23 39.3**	**+0.1**
BORA	**Eskisehir**	**0.31**	**291**	*i* P		**Pg**	**10 23 37.0**	**-0.1**
BORA				*i* S		**Sg**	**10 23 42.4**	**+1.3**
BORA	**Eskisehir**	**0.31**	**291**	P		**Pg**	**10 23 37.0**	**-0.1**
BORA				S		**Sg**	**10 23 42.4**	**+1.3**
SVRH	**Sivrihisar-ESK**	**0.63**	**121**	*e*PG		**Pg**	**10 23 43.2**	**0.0**
SVRH				*e*SG		**Sg**	**10 23 52.1**	**+0.7**
SVRH	**Sivrihisar-ESK**	**0.63**	**121**	*e*Pg		**Pg**	**10 23 43.2**	**0.0**
SVRH				*e*Sg		**Sg**	**10 23 52.1**	**+0.7**
MDUB	**Mudurnu**	**0.76**	**22**	*e*PG		**Pg**	**10 23 45.7**	**0.0**
MDUB	**Mudurnu**	**0.76**	**22**	*e*Pg		**Pg**	**10 23 45.7**	**0.0**
CAVI	**Cavuskoy**	**0.87**	**300**	*e*PG		**Pg**	**10 23 48.0**	**+0.1**
CAVI				*e*SG		**Sb**	**10 24 00.6**	**-0.8**
CAVI	**Cavuskoy**	**0.87**	**300**	*e*Pg		**Pg**	**10 23 48.0**	**+0.1**
CAVI				*e*Sg		**Sb**	**10 24 00.6**	**-0.8**
BOLV	**Bolvadin**	**1.06**	**175**	*i* P		**Pb**	**10 23 52.1**	**-0.3**
BOLV				*i* S		**Sb**	**10 24 06.9**	**+0.1**
BOLV	**Bolvadin**	**1.06**	**175**	P		**Pb**	**10 23 52.1**	**-0.3**
BOLV				S		**Sb**	**10 24 06.9**	**+0.1**
ADVT	**Abdulvahap**	**1.07**	**309**	*e*PG		**Pg**	**10 23 51.5**	**-0.1**
ADVT	**Abdulvahap**	**1.07**	**309**	*e*Pg		**Pg**	**10 23 51.5**	**-0.1**
SAHE	**Sakarya_HENDEK**	**1.08**	**1**	*i* P		**Pn**	**10 23 53.8**	**+0.1**
SAHE				*i* S		**Sn**	**10 24 09.3**	**-0.1**
SAHE	**Sakarya_HENDEK**	**1.08**	**1**	P		**Pn**	**10 23 53.8**	**+0.1**
TVSB	**Tavsanli**	**1.10**	**254**	*e*PN		**Pg**	**10 23 52.2**	**-0.1**
TVSB	**Tavsanli**	**1.10**	**254**	*e*Pn		**Pg**	**10 23 52.2**	**-0.1**
IZI	**Iznik**	**1.18**	**299**	*e*PN		**Pg**	**10 23 53.8**	**-0.1**
IZI	**Iznik**	**1.18**	**299**	*e*Pn		**Pg**	**10 23 53.8**	**-0.1**
KIZT	**Kizilcal**	**1.21**	**137**	*e*PN		**Pg**	**10 23 53.8**	**-0.6**
KIZT	**Kizilcal**	**1.21**	**137**	*e*Pn		**Pg**	**10 23 53.8**	**-0.6**
IGD	**Bursa**	**1.34**	**292**	*i* P		**Pg**	**10 23 56.3**	**-0.6**
IGD				*i* S		**Sb**	**10 24 14.6**	**-0.4**

*ISCJB **05** 10:30:15.8±0.3, 19.53S±0.02×68.31W±0.03, h132km±2km, mb4.4/60, Error ellipse: s-maj=5.2km s-min=3.8km az=159.6*
*SCB **05** 10:30:15.2±0.3, 19.30S×68.24W, h149km, Ml4.5/1, Error ellipse: s-maj=13.5km s-min=4.9km az=58.0*
*GUC **05** 10:30:18.0±0.3, 19.69S×68.78W, h152km±2km, ML4.9*
*IDC **05** 10:30:18.7±0.5, 19.64S×68.25W, h143km±4km, mb4.2/18, mb1 4.4/23, mb1mx4.3/35, mbtmp4.7/23, MS3.4/2, Ms1 3.4/2, ms1mx3.1/31, Error ellipse: s-maj=12.7km s-min=6.4km az=94.0*
*NEIC **05** 10:30:19.3±0.3, 19.63S×68.25W, mb4.5/47, Error ellipse: s-maj=8.9km s-min=6.3km az=74.0*
*GCMT **05** 10:30:19.3±0.4, 19.66S×68.44W, h139km±4km, MW5.0/73, Moment Tensor Solution. s9,c11; s73,c94; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}=0.71±.13; $M_{\theta\theta}$=2.25±.14; $M_{\phi\phi}$=2.96±.18; $M_{r\theta}$=0.93±.08; $M_{\theta\phi}$=1.93±.14; $M_{\phi r}$=0.70±.13; Best double couple: M_0=3.49100×10^{16} NP1:ϕ_s=336.00000°, δ78.00000°, λ-160.00000°. NP2: ϕ_s=241.00000°, δ70.00000°, λ-13.00000°. Principal axes: T 3.6320, Plg5.0000°, Azm107.0000°; N -0.2820, Plg67.0000°, Azm5.0000°; P -3.3490, Plg23.0000°, Azm200.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **05** 10:30:20.2, 19.60S×68.30W, h133km*

ISC 05 10:30:18.8±0.4, 19.62S±0.04×68.47W±0.04, h147km±3km, h146km:pP-P, n402, σ1s69/472, mb4.4/60, 6C-2D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.82**	**231**	*e*P		**Pn**	**10 30 41.1**	**-1.2**
PB08				*e*S		**Sn**	**10 30 58.5**	**-1.7**
PB08				IAML			10 30 59.0	
	comp=N,12μm,0.9s							
PB11	**IPOC Station P**	**1.12**	**263**	*e*Pn		**Pn**	**10 30 42.9**	**-1.7**
PB11				*e*Sn		**Sn**	**10 31 02.8**	**-1.3**
MNMC	**Minye Minye**	**1.17**	**294**	*e*P		**Pn**	**10 30 43.3**	**-1.8**
MNMC				*e*S		**Sn**	**10 31 02.5**	**-2.6**
MNMC				IAML			10 31 08.3	
	comp=E,14μm,0.4s							
HMBC	**Humberstone**	**1.48**	**244**	*e*P		**Pn**	**10 30 45.4**	**-2.7**
HMBC				*e*S		**Sn**	**10 31 06.3**	**-4.1**
HMBC				IAML			10 31 09.5	
	comp=E,17μm,0.3s							
PSGC	**Pisagua**	**1.56**	**271**	*e*P		**Pn**	**10 30 46.0**	**-2.8**
PSGC				*e*S		**Sn**	**10 31 07.4**	**-4.4**
PSGC				IAML			10 31 10.1	
	comp=N,6μm,1.2s							
PB13	**IPOC Station P**	**1.60**	**323**	*e*P		**Pn**	**10 30 49.7**	**-0.2**
PB13				*e*S		**Sn**	**10 31 13.9**	**+0.3**
PB13				IAML			10 31 15.9	
	comp=N,68μm,0.9s							
PB01	**IPOC Station P**	**1.71**	**214**	*e*P		**Pn**	**10 30 48.4**	**-2.1**
PB01				*e*S		**Sn**	**10 31 11.6**	**-3.2**
PB01				IAML			10 31 13.8	
	comp=E,17μm,0.7s							
PB01	**IPOC Station P**	**1.71**	**214**	*e*Pn		**Pn**	**10 30 49.2**	**-1.3**
PB01				*e*Sn		**Sn**	**10 31 13.0**	**-1.8**
PB12	**IPOC Station P**	**2.02**	**299**	*e*P		**Pn**	**10 30 52.1**	**-2.0**
PB12				*e*S		**Sn**	**10 31 17.5**	**-3.6**
PB12				IAML			10 31 19.7	
	comp=N,24μm,0.6s							
PB07	**IPOC Station P**	**2.48**	**212**	*e*P		**Pn**	**10 30 57.7**	**-2.0**
PB07				*e*S		**Sn**	**10 31 28.2**	**-3.0**
PB07				IAML			10 31 35.8	
	comp=E,4μm,0.7s							
BBOJ	**La Paz, Jacaqu**	**2.64**	**6**	*e*Pn		**Pn**	**10 30 59.0**	**-3.1**
BBOE	**La Paz, Chanca**	**2.83**	**10**	*e*Pn		**Pn**	**10 31 01.6**	**-2.9**
BBOD	**La Paz, Gloria**	**2.97**	**358**	*e*Pn		**Pn**	**10 31 04.3**	**-1.9**
LVC	**Limon Verde**	**3.00**	**188**	P		**Pn**	**10 31 06.1**	**-0.3**
	comp=E,4μm,0.3s,baz=27,slow=11,SNR=686							
LVC				S		**Sn**	**10 31 41.6**	**-1.7**
	comp=E,3μm,0.3s,baz=348,slow=15,SNR=12							
LVC	**Limon Verde**	**3.00**	**188**	*e*Pn		**Pn**	**10 31 05.8**	**-0.7**
LVC				*e*Sn		**Sn**	**10 31 40.5**	**-2.8**
MOCB	**Mochara**	**3.12**	**122**	*i*Pn		**Pn**	**10 31 09.3**	**+1.3**
MOCB				*e*Sn		**Sn**	**10 31 49.5**	**+3.6**
	comp=E,935nm,0.8s							
PB04	**IPOC Station P**	**3.12**	**210**	*e*Pn		**Pn**	**10 31 05.6**	**-2.2**
PB04				*e*Sn		**Sn**	**10 31 39.2**	**-6.5**
LPAZ	**La Paz**	**3.33**	**6**	P		**Pn**	**10 31 10.6**	**-0.3**
	comp=E,59nm,0.3s,baz=183,slow=8.0,SNR=683							
LPAZ				S		**Sn**	**10 31 52.0**	**+0.9**
	comp=E,1.7nm,0.3s,baz=326,slow=14,SNR=2.1							
BBOB	**La Paz, Bander**	**3.48**	**5**	*e*Pn		**Pn**	**10 31 10.0**	**-2.7**
PB10	**IPOC Station P**	**4.33**	**206**	*e*Pn		**Pn**	**10 31 20.5**	**-2.9**
PB10				*e*Sn		**Sn**	**10 32 07.6**	**-6.0**
SLA	**San Lorenzo**	**5.78**	**152**	*e*P		**Pn**	**10 31 43.5**	**+0.8**
SLA				*e*S		**Sn**	**10 32 47.7**	**-0.5**
SLA				IAML			10 33 00.5	
	comp=Z,145nm,0.5s							
FSA	**Cafayete**	**6.86**	**161**	*e*P		**Pn**	**10 31 56.5**	**-0.7**
AHML	**Horco Molle**	**7.69**	**159**	*e*P		**Pn**	**10 32 07.0**	**-1.2**
SIV	**San Ignacio**	**7.92**	**64**	P		**Pn**	**10 32 07.9**	**-3.4**
	comp=Z,62nm,0.3s,baz=268,slow=11,SNR=451							
SIV				S		**Sn**	**10 33 32.1**	**-7.5**
	comp=Z,3.8nm,0.3s,baz=165,slow=22,SNR=8.7							
SIV	**San Ignacio**	**7.92**	**64**	*i*Pn		**Pn**	**10 32 07.9**	**-3.4**
SIV				*e*Sn		**Sn**	**10 33 31.9**	**-7.7**
VCA	**Vinchina**	**9.08**	**179**	*e*P		**Pn**	**10 32 23.7**	**-3.1**
CYA	**Choya**	**9.12**	**165**	*e*P		**Pn**	**10 32 24.2**	**-2.9**
LCO	**Las Campanas**	**9.57**	**192**	*e*Pn		Pn	10 32 27.3	-6.1
LCO				*e*Sn		**Sn**	**10 34 14.2**	**-5.3**
NNA	**Nana**	**11.06**	**312**	*e*Pn		**Pn**	**10 32 50.6**	**-2.5**
NNA				*e*Sn		Sn	10 34 43.3	-12
SAML	**Samuel**	**11.78**	**27**	*e*Pn		**Pn**	**10 32 58.4**	**-4.1**
SAML				*e*Sn		**Sn**	**10 35 04.6**	**-8.1**
CPUP	**Villa Florida**	**12.24**	**125**	P		**Pn**	**10 33 06.3**	**-2.1**
	comp=Z,3.2nm,0.3s,baz=308,slow=11,SNR=56							
CPUP				LR		LR	10 39 10.7	
	comp=Z,154nm,19.7s,baz=294,slow=44							
CPUP	**Villa Florida**	**12.24**	**125**	*e*Pn		**Pn**	**10 33 06.5**	**-1.9**
ATAH	**Atahualpa**	**15.71**	**321**	P		**P**	**10 33 54.5**	**+0.8**
	comp=Z,0.6nm,0.3s,baz=132,slow=11,SNR=6.9							
TRQA	**Tornquist**	**19.22**	**164**	*e*P		**P**	**10 34 31.3**	**-0.3**
	comp=Z,328nm,1.5s							
BDFB	**Brasilia**	**19.89**	**82**	P		**P**	**10 34 37.4**	**-1.8**
	comp=Z,493nm,0.3s,baz=77,slow=0.0,SNR=18							
SPB	**Sao Paulo**	**19.96**	**105**	*e*P		**P**	**10 34 37.8**	**-1.8**
	comp=Z,130nm,1.2s							
PTGA	**Pitinga**	**20.54**	**25**	P		**P**	**10 34 43.5**	**-2.4**
	comp=Z,20nm,0.3s,baz=214,slow=13,SNR=84							
PTGA				LR		LR	10 44 11.2	
	comp=Z,144nm,19.9s,baz=198,slow=41							
PTGA	**Pitinga**	**20.54**	**25**	*e*P		**P**	**10 34 41.0**	**-4.9**
	comp=Z,68nm,1.6s							
PLCA	**Paso Flores**	**21.12**	**184**	P		**P**	**10 34 52.1**	**+0.1**
	comp=Z,95nm,0.9s,baz=29,slow=11,SNR=66							
PLCA	**Paso Flores**	**21.12**	**184**	*e*P		**P**	**10 34 52.4**	**+0.4**
	comp=Z,148nm,0.9s							
OTAV	**Otavalo**	**22.03**	**332**	*e*P		**P**	**10 35 04.2**	**+2.0**
OTAV	**Otavalo**	**22.03**	**332**	*e*P		**P**	**10 35 04.7**	**+2.5**
	comp=Z,17nm,0.9s							
SJAC	**San Juan de Ar**	**23.38**	**346**	*e*P		**P**	**10 35 13.3**	**-1.3**
POPC	**Popayan, Colom**	**23.45**	**339**	*e*P		**P**	**10 35 15.0**	**-0.4**
PRAC	**Prado**	**24.03**	**344**	*e*P		**P**	**10 35 20.5**	**+0.1**
	comp=Z,9.4nm,0.7s							
ROSC	**El Rosal**	**24.98**	**346**	P		**P**	**10 35 31.8**	**+2.4**
	comp=Z,6.2nm,0.3s,baz=310,slow=23,SNR=5.3							
ROSC	**El Rosal**	**24.98**	**346**	*e*P		**P**	**10 35 33.2**	**+3.8**
	comp=Z,8.2nm,0.8s							
RUSC	**La Rusia**	**25.75**	**349**	*e*P		**P**	**10 35 36.5**	**-0.1**
RUSC	**La Rusia**	**25.75**	**349**	*e*P		**P**	**10 35 36.3**	**-0.3**
	comp=Z,18nm,0.7s							
BARC	**Barichara**	**26.46**	**349**	*e*P		**P**	**10 35 41.6**	**-1.0**
HELC	**Santa Helena**	**26.57**	**344**	*e*P		**P**	**10 35 42.1**	**-1.6**
HELC	**Santa Helena**	**26.57**	**344**	*e*P		**P**	**10 35 43.2**	**-0.6**
	comp=Z,68nm,0.6s							
PAMC	**Pamplona, Colo**	**27.11**	**351**	*e*P		**P**	**10 35 46.1**	**-2.6**
CBRI	**Barrientos, No**	**27.50**	**351**	*e*P		**P**	**10 35 48.4**	**-3.4**
GUEC	**Guerrero, Nort**	**27.63**	**350**	*e*P		**P**	**10 35 49.5**	**-3.6**
SDV	**Santo Domingo**	**28.41**	**356**	P		**P**	**10 35 59.9**	**0.0**
	comp=Z,14nm,0.6s,baz=136,slow=0.4,SNR=3.2							
PCRV	**Puerto La Cruz**	**29.85**	**8**	P		**P**	**10 36 11.9**	**-0.6**
	comp=Z,9.4nm,0.6s,baz=300,slow=2.5,SNR=9.2							
SJCC	**San Jacinto, C**	**30.07**	**347**	*e*P		**P**	**10 36 13.3**	**-1.2**
RCBR	**Riachuelo**	**34.51**	**71**	P		**P**	**10 36 52.0**	**-1.4**
	comp=Z,10nm,0.5s,baz=230,slow=8.9,SNR=10							
USHA	**Ushuaia**	**35.15**	**180**	P		**P**	**10 36 59.5**	**+1.2**
	comp=Z,73nm,0.6s,baz=343,slow=6.2,SNR=18							
CELP	**Cerrillos**	**37.51**	**3**	*e*P		**P**	**10 37 16.4**	**-2.2**
CMIG	**Matias Romero**	**44.77**	**323**	P		**P**	**10 38 20.6**	**+2.6**
	comp=Z,4.2nm,0.9s,baz=142,slow=4.8,SNR=3.6							
CMIG				pP		**pP**	**10 38 52.3**	**+1.4**
	comp=Z,8.1nm,1.1s,baz=139,slow=6.3,SNR=4.6							
PMSA	**Palmer Station**	**45.23**	**177**	P		**P**	**10 38 22.2**	**+1.3**
	comp=Z,12nm,0.7s,baz=8.5,slow=6.7,SNR=5.9							
ZAIG	**Zacatecas**	**53.70**	**320**	*e*P		**P**	**10 39 28.5**	**+2.4**
ZAIG				*e*pP		**pP**	**10 40 01.7**	**+1.6**
034A	**Hebbronville**	**54.87**	**327**	P		**P**	**10 39 35.5**	**+1.3**
	baz=145							
247A	**Quitman**	**54.88**	**339**	P		**P**	**10 39 35.1**	**+1.0**
	baz=157							
934A	**Benavides**	**55.23**	**327**	P		**P**	**10 39 38.4**	**+1.7**
	baz=145							
736A	**Circle Diamond**	**55.62**	**329**	P		**P**	**10 39 41.4**	**+1.9**
	baz=147,SNR=7.5							
933A	**Laredo**	**55.62**	**327**	P		**P**	**10 39 40.8**	**+1.2**
	baz=144,SNR=5.1							
342A	**Flagon Creek P**	**55.63**	**335**	P		**P**	**10 39 40.6**	**+1.1**
	baz=152							
834A	**Tilden**	**55.67**	**328**	P		**P**	**10 39 41.3**	**+1.4**
	baz=145							
Z47A	**Carrollton**	**55.76**	**340**	P		**P**	**10 39 41.4**	**+1.0**
	baz=157							
Z48A	**Northport**	**55.76**	**341**	P		**P**	**10 39 40.6**	**+0.2**
	baz=158							
KMSC	**Kings Mountain**	**55.81**	**347**	P		**P**	**10 39 41.6**	**+0.8**
	baz=165							
145A	**Houston Renfro**	**55.84**	**338**	P		**P**	**10 39 42.2**	**+1.2**
	baz=155							
538A	**Harpers Horsep**	**55.96**	**332**	P		**P**	**10 39 43.1**	**+1.2**
	baz=149							
Z46A	**Louisville**	**56.04**	**339**	P		**P**	**10 39 43.6**	**+1.2**
	baz=156							
636A	**Smothers Creek**	**56.06**	**330**	P		**P**	**10 39 44.3**	**+1.7**
	baz=147,SNR=6.1							
537A	**Green Hill Far**	**56.22**	**331**	P		**P**	**10 39 45.5**	**+1.8**
	baz=148							
833A	**Chaparral WMA,**	**56.26**	**327**	P		**P**	**10 39 45.1**	**+1.0**
	baz=144							
734A	**La Parita Cree**	**56.27**	**328**	P		**P**	**10 39 44.6**	**+0.5**
	baz=145							
340A	**Bronson**	**56.30**	**334**	P		**P**	**10 39 44.4**	**+0.1**
	baz=151							
Y47A	**UCPARC, Winfie**	**56.34**	**341**	P		**P**	**10 39 45.4**	**+0.9**
	baz=158							
832A	**Faith Ranch, C**	**56.53**	**326**	P		**P**	**10 39 46.6**	**+0.6**
	baz=144,SNR=6.1							
733A	**Divot King Ran**	**56.53**	**327**	P		**P**	**10 39 46.6**	**+0.6**
	baz=145							
536A	**Bastrop**	**56.56**	**330**	P		**P**	**10 39 46.5**	**+0.3**
	baz=147							
634A	**China Grove, S**	**56.60**	**329**	P		**P**	**10 39 46.6**	**+0.1**
	baz=146							
Z44A	**Pea Ridge, Bel**	**56.63**	**338**	P		**P**	**10 39 46.9**	**+0.4**
	baz=155							
NATX	**Nacogdoches**	**56.92**	**333**	P		**P**	**10 39 49.7**	**+1.0**
	baz=150							
SWET	**Sewanee**	**57.00**	**343**	*e*P		**P**	**10 39 48.3**	**-0.9**
SWET				*e*pP		**pP**	**10 40 24.7**	**+1.2**
633A	**Saathoff Ranch**	**57.07**	**328**	P		**P**	**10 39 50.7**	**+0.9**
	baz=145,SNR=9.4							
X45A	**UM Field Stati**	**57.31**	**339**	P		**P**	**10 39 51.8**	**+0.4**
	baz=156							
OXF	**Oxford**	**57.40**	**339**	*e*P		**P**	**10 39 52.1**	**+0.1**
	comp=Z,27nm,1.1s							
533A	**Kerrville**	**57.51**	**328**	P		**P**	**10 39 53.6**	**+0.7**
	baz=145							
336A	**Riesel**	**57.56**	**331**	P		**P**	**10 39 54.3**	**+1.1**
	baz=148							
Z40A	**Long Farm, Mag**	**57.72**	**335**	P		**P**	**10 39 55.4**	**+1.1**
	baz=152							
434A	**Burnet**	**57.75**	**330**	P		**P**	**10 39 55.0**	**+0.5**
	baz=146							
W45A	**Hickory Valley**	**57.92**	**340**	P		**P**	**10 39 55.9**	**+0.3**
	baz=157							
433A	**Art**	**58.09**	**329**	P		**P**	**10 39 57.5**	**+0.5**
	baz=146,SNR=6.2							
334A	**Lometa**	**58.16**	**330**	P		**P**	**10 39 58.7**	**+1.3**
	baz=147							
JCT	**Junction City**	**58.22**	**328**	P		**P**	**10 39 58.2**	**+0.3**
	baz=145							
Y40A	**Okolona**	**58.34**	**336**	P		**P**	**10 39 58.9**	**+0.4**
	baz=152							
WHTX	**Lake Whitney,**	**58.35**	**331**	*e*P		**P**	**10 40 00.0**	**+1.3**
WHTX				*e*pP		**pP**	**10 40 34.7**	**+1.5**
Z38A	**Mt. Pleasant**	**58.35**	**334**	P		**P**	**10 39 59.1**	**+0.4**
	baz=150							
V45A	**Humboldt**	**58.38**	**340**	P		**P**	**10 39 59.0**	**+0.2**
	baz=157							
WVT	**Waverly**	**58.40**	**342**	*e*P		**P**	**10 39 58.6**	**-0.3**
	comp=Z,9.3nm,0.9s							
WVT				*e*pP		**

U42A	Revenden	59.69	339	P	P	10 40 07.3	-0.4
	baz=155						
W38A	Poteau	59.75	335	P	P	10 40 08.5	+0.3
	baz=151						
V40A	Witts Springs	59.76	337	P	P	10 40 08.3	0.0
	baz=153						
Y35A	Marietta	59.79	333	P	P	10 40 09.5	+1.0
	baz=148						
ABTX	Abilene, Hawle	59.90	330	P	P	10 40 09.9	+0.5
	baz=146,SNR=6.5						
ABTX	Abilene, Hawle	59.90	330	eP	P	10 40 10.6	+1.3
ABTX				epP	pP	10 40 45.5	+1.5
U41A	Viola	59.91	338	P	P	10 40 09.1	-0.2
	baz=154						
Z33A	Whitaker Ranch	60.04	331	P	P	10 40 10.2	-0.1
	baz=147,SNR=8.6						
S45A	Carrier Mills	60.05	342	P	P	10 40 09.8	-0.4
	baz=158						
X36A	Centrahoma	60.06	334	P	P	10 40 10.4	0.0
	baz=149						
V39A	Pettigrew	60.09	337	P	P	10 40 10.8	+0.2
	baz=152						
Y34A	Reagan Ranch,	60.14	332	P	P	10 40 12.0	+1.0
	baz=148,SNR=5.8						
W37B	Quinton	60.17	335	P	P	10 40 11.9	+0.7
	baz=150						
X35A	Drake	60.18	333	P	P	10 40 11.4	+0.2
	baz=149						
U40A	Yellville	60.26	337	P	P	10 40 11.9	+0.1
	baz=153						
S44A	Carbondale	60.27	341	P	P	10 40 11.7	-0.1
	baz=157,SNR=5.4						
O56A	Blue Knob Stat	60.32	351	P	P	10 40 12.0	-0.1
	baz=169						
V38A	Canehill	60.40	336	P	P	10 40 12.7	0.0
	baz=152						
S43A	Fulton Ridge,	60.41	340	P	P	10 40 12.3	-0.4
	baz=156						
W36A	Wetumka	60.50	334	P	P	10 40 13.0	-0.4
	baz=150						
U39A	Green Forest	60.51	337	P	P	10 40 13.0	-0.5
	baz=153						
Y33A	Hilltop Ranch,	60.58	331	P	P	10 40 14.5	+0.6
	baz=147,SNR=5.8						
HHAR	Hobbs	60.59	336	eP	P	10 40 13.8	-0.2
	comp=Z,7.8nm,1.2s						
HHAR				epP	pP	10 40 47.8	-0.9
V37A	Hulbert	60.70	335	P	P	10 40 14.4	-0.3
	baz=151						
X34A	Smith Ranch, M	60.72	332	P	P	10 40 15.5	+0.6
	baz=148						
R44A	Waltonville	60.73	341	P	P	10 40 14.7	-0.2
	baz=158						
W35A	Tecumseh	60.78	333	P	P	10 40 15.4	+0.1
	baz=149						
T40A	Mansfield	60.85	338	P	P	10 40 15.5	-0.2
	baz=154						
V36A	Jenks	60.94	335	P	P	10 40 16.9	+0.5
	baz=150						
S41A	Jillco Farms,	60.98	339	P	P	10 40 16.3	-0.2
	baz=155						
TUL1	Leonard	60.99	335	P	P	10 40 16.9	+0.3
	baz=150						
T39A	Clever	61.04	337	P	P	10 40 17.0	0.0
	baz=153						
U37A	Salina	61.15	336	P	P	10 40 17.2	-0.6
	baz=151						
S40A	Lebanon	61.24	338	P	P	10 40 18.2	-0.2
	baz=154						
WMOK	Wichita Mounta	61.26	332	P	P	10 40 18.4	-0.2
	baz=147						
V35A	Meyer Ranch, C	61.29	334	P	P	10 40 18.4	-0.2
	baz=149						
Q44A	Meyer Farm, Va	61.32	342	P	P	10 40 18.1	-0.7
	baz=158						
T38A	Diamond	61.39	337	P	P	10 40 19.3	-0.1
	baz=152						
W33A	Caddo, Fort Co	61.47	332	P	P	10 40 20.3	+0.3
	baz=148,SNR=6.2						
S39A	Bolivar	61.62	338	P	P	10 40 20.8	-0.1
	baz=153						
V34A	Guthrie	61.63	333	P	P	10 40 21.0	0.0
	baz=149						
M54A	Oil Creek Stat	61.70	350	P	P	10 40 21.2	-0.1
	baz=168						
T37A	Cheneyville 18	61.70	336	P	P	10 40 21.4	-0.1
	baz=152						
U35A	Pawnee	61.77	334	P	P	10 40 22.2	+0.3
	baz=150						
S38A	Stockton	61.77	337	P	P	10 40 21.8	-0.1
	baz=153						
Q42A	Golden Eagle	61.78	341	P	P	10 40 21.9	0.0
	baz=156						
R40A	Maddies Statio	61.79	339	P	P	10 40 21.7	-0.3
	baz=154						
W32A	Sentinel	61.79	332	P	P	10 40 22.7	+0.6
	baz=147,SNR=10						
V33A	Lossen Ranch,	61.95	333	P	P	10 40 22.9	-0.3
	baz=148,SNR=5.7						
T36A	Boggs Farm, Ca	62.02	335	P	P	10 40 23.0	-0.6
	baz=150						
R39A	Chumby, Stover	62.07	338	P	P	10 40 24.2	+0.3
	baz=154						
MNTX	Cornudas Mount	62.10	325	P	P	10 40 24.1	-0.1
	baz=140						
MNTX	Cornudas Mount	62.10	325	eP	P	10 40 24.8	+0.5
MNTX				epP	pP	10 40 59.4	+0.3
T35A	Sooner Cattle	62.15	335	P	P	10 40 24.0	-0.5
	baz=150						
U34A	Anderson Ranch	62.16	334	P	P	10 40 24.5	0.0
	baz=149						
SFIN	Lafayette	62.16	344	P	P	10 40 23.9	-0.5
	baz=160						
SFIN	Lafayette	62.16	344	eP	P	10 40 22.8	-1.6
	comp=Z,8.8nm,0.8s						
SFIN				epP	pP	10 40 59.5	+0.2
S37A	Fort Scott	62.23	337	P	P	10 40 24.4	-0.6
	baz=152						
R38A	Fenwick Farm,	62.27	338	P	P	10 40 25.0	-0.2
	baz=153						
P42A	Winchester	62.34	341	P	P	10 40 25.0	-0.7
	baz=157						
Q40A	Laux Farm, Aux	62.36	339	P	P	10 40 25.6	-0.2
	baz=155						
U33A	Lingo Farm, Me	62.40	333	P	P	10 40 26.1	0.0
	baz=148						
S36A	Lake Cedric, C	62.49	336	P	P	10 40 26.7	0.0
	baz=151						
MSTX	Muleshoe	62.51	328	P	P	10 40 26.6	-0.5
	baz=143,SNR=8.4						
MSTX	Muleshoe	62.51	328	eP	P	10 40 27.9	+0.8
MSTX				epP	pP	10 41 02.8	+0.8
T34A	McClaskey Farm	62.51	334	P	P	10 40 26.6	-0.2
	baz=149						
Q39A	Willow Grove F	62.71	339	P	P	10 40 27.4	-0.7
	baz=154						
AMTX	Amarillo	62.72	330	P	P	10 40 28.1	-0.3
	baz=144						
R37A	Teagarden Farm	62.72	337	P	P	10 40 28.1	-0.1
	baz=152						
S35A	Otter Creek Ra	62.73	335	P	P	10 40 28.2	-0.1
	baz=150						
O42A	Bath	62.82	342	P	P	10 40 28.3	-0.5
	baz=157						
P40A	Paris	62.83	340	P	P	10 40 28.2	-0.7
	baz=155						
Q38A	Cooks Store, C	62.85	338	P	P	10 40 29.0	-0.1
	baz=153						
HDIL	Hopedale	62.92	342	P	P	10 40 28.6	-0.9
	baz=158						
R36A	Gordon, Harris	62.98	336	P	P	10 40 29.7	-0.2
	baz=151						
O41A	Passleys Farm,	62.99	341	P	P	10 40 29.5	-0.4
	baz=156						
P39B	Salisbury	63.03	339	P	P	10 40 30.3	+0.1
	baz=154						
O40A	La Belle	63.31	340	P	P	10 40 31.5	-0.5
	baz=155						
P38A	Dawn	63.42	339	P	P	10 40 32.6	-0.2
	baz=153						
R34A	Isabella, Hill	63.64	335	P	P	10 40 34.2	-0.1
	baz=150						
P37A	Lathrop	63.67	338	P	P	10 40 34.5	+0.1
	baz=153						
SNAA	Sanae	63.92	161	eP	P	10 40 36.4	+0.6
	comp=Z,9.4nm,0.8s						
R33A	Olander Ranch,	63.94	334	P	P	10 40 36.8	+0.5
	baz=149						
P36A	Good Intent, A	64.01	337	P	P	10 40 36.7	+0.1
	baz=152						
121A	Cookes Peak, D	64.06	323	P	P	10 40 37.5	+0.1
	baz=138						
319A	Douglas	64.06	322	eP	P	10 40 39.4	+2.1
319A				epP	pP	10 41 13.6	+1.2
KSU1	Kansas State U	64.08	336	P	P	10 40 36.9	-0.2
	baz=150						
O37A	Wolven Farm, M	64.11	338	P	P	10 40 37.5	+0.2
	baz=153						
P35A	Duane Minner,	64.23	337	P	P	10 40 38.7	+0.7
	baz=151						
R32A	Long Quarter,	64.33	334	P	P	10 40 39.0	+0.1
	baz=148						
M39A	Webster	64.64	340	P	P	10 40 40.5	-0.2
	baz=155						
BNM	Barren Site	64.64	325	eP	P	10 40 42.4	+1.2
BNM				epP	pP	10 41 17.1	+0.7
L40A	Anamosa	64.88	341	P	P	10 40 42.6	+0.3
	baz=156						
O34A	Beatrice	65.05	336	P	P	10 40 44.1	+0.7
	baz=150						
CBKS	Cedar Bluff	65.09	333	P	P	10 40 44.6	+0.8
	baz=147,SNR=5.4						
CBKS	Cedar Bluff	65.09	333	eP	P	10 40 45.2	+1.4
CBKS				epP	pP	10 41 21.8	+2.9
K41A	Shullsburg	65.11	342	P	P	10 40 43.4	-0.3
	baz=157						
LAZ	Ladron	65.11	325	eP	P	10 40 44.8	+0.6
LAZ				epP	pP	10 41 19.8	+0.5
ANMO	Albuquerque	65.16	326	P	P	10 40 44.9	+0.4
	baz=140						
ANMO	Albuquerque	65.16	326	eP	P	10 40 45.2	+0.7
ANMO				epP	pP	10 41 21.8	+2.2
L39A	Vinton	65.17	341	P	P	10 40 44.8	+0.7
	baz=155						
M37A	Trindle Farm,	65.18	339	P	P	10 40 44.6	+0.3
	baz=153						
N35A	Tabor	65.26	338	P	P	10 40 45.0	+0.3
	baz=152						
O33A	Hebron	65.30	336	P	P	10 40 45.1	0.0
	baz=150						
JFWS	Jewell Farm	65.38	343	eP	P	10 40 45.2	-0.3
JFWS				epP	pP	10 41 21.8	+1.2
K40A	Colesburg	65.44	342	P	P	10 40 45.5	-0.3
	baz=156						
M36A	Felix, Anita	65.48	339	P	P	10 40 45.9	-0.3
	baz=153						
L38A	Oak Wood Farm,	65.49	340	P	P	10 40 46.4	+0.2
	baz=154						
N34A	Lincoln	65.55	337	P	P	10 40 46.8	+0.2
	baz=151						
TUC	Tucson	65.62	321	P	P	10 40 47.6	+0.2
	baz=136						
K39A	Oelwein	65.66	341	P	P	10 40 46.9	-0.4
	baz=156						
J41A	Loganville	65.73	343	P	P	10 40 46.9	-0.8
	baz=158						
TRQ	Mont Tremblant	65.76	355	eP	P	10 40 48.4	+0.5
TRQ				epP	pP	10 41 25.0	+1.9
T25A	Trinidad	65.84	329	P	P	10 40 48.5	-0.3
	baz=143						
T25A	Trinidad	65.84	329	eP	P	10 40 50.8	+2.0
T25A				epP	pP	10 41 26.6	+2.6
L36A	Harm Buss Farm	66.01	339	P	P	10 40 48.9	-0.7
	baz=153						
J39A	Decorah	66.19	342	P	P	10 40 50.0	-0.7
	baz=156						
K37A	Belmond	66.27	340	P	P	10 40 51.1	0.0
	baz=154						
J38A	Wedel Dairy, R	66.40	341	P	P	10 40 52.1	+0.1
	baz=155						
K36A	Gilmore City	66.42	339	P	P	10 40 52.6	+0.5
	baz=153						
214A	Organ Pipe Nat	66.59	320	P	P	10 40 54.2	+0.7
	baz=134						
J37A	Redenius Farm,	66.73	340	P	P	10 40 54.4	+0.3
	baz=154						
SDCO	Great Sand Dun	66.85	329	P	P	10 40 56.4	+1.1
	baz=142						
SDCO	Great Sand Dun	66.85	329	eP	P	10 40 57.1	+1.7
SDCO				epP	pP	10 41 33.1	+2.5
J36A	Seneca 1, Swea	67.00	340	P	P	10 40 56.0	+0.2
	baz=153						
I38A	Scanlan Farm,	67.01	342	P	P	10 40 55.8	0.0
	baz=155						
LIC	Lamto	67.48	74	eP	P	10 40 58.1	-1.4
S22A	4UR Ranch, Cre	67.51	328	P	P	10 40 59.1	-0.4
	baz=141						
X16A	Lo Mia Camp, P	67.52	322	eP	P	10 41 01.0	+1.6
	comp=Z,4.7nm,1.1s						
X16A				epP	pP	10 41 37.5	+2.6
L31A	Butterfield Fa	67.58	336	P	P	10 41 00.1	+0.5
	baz=149						
Q24A	Divide	67.64	330	P	P	10 41 00.7	+0.3
	baz=142						
TIC	Toumodi	67.66	74	eP	P	10 40 58.7	-1.9
KIC	Kosan Boka	67.80	74	eP	P	10 40 59.7	-1.8
	comp=Z,74nm,0.7s						
DBIC	Dimbokro	67.82	74	P	P	10 41 00.1	-1.5
	comp=Z,35nm,0.6s,baz=228,slow=6.2,SNR=51						
DBIC	Dimbokro	67.82	74	eP	P	10 41 00.1	-1.5
	comp=Z,43nm,0.7s						
MVCO	Mesa Verde	67.96	326	P	P	10 41 03.1	+0.9
	baz=139						
MVCO	Mesa Verde	67.96	326	eP	P	10 41 03.3	+1.0
MVCO				epP	pP	10 41 40.1	+2.4
H36A	Jessenland, He	67.99	341	P	P	10 41 02.3	+0.3
	baz=154						
J32A	Parkston	68.25	337	P	P	10 41 04.3	+0.7
	baz=150						
WUAZ	Wupatki	68.27	323	P	P	10 41 05.3	+1.1
	baz=136						
WUAZ	Wupatki	68.27	323	eP	P	10 41 06.1	+1.9
	comp=Z,8.8nm,1.0s						
WUAZ				epP	pP	10 41 41.8	+2.2
H35A	Sunnyside Ranc	68.38	340	P	P	10 41 05.3	+0.8
	baz=153						
J31A	Geddes	68.50	337	P	P	10 41 06.2	+0.9
	baz=149						
ISCO	Idaho Springs	68.52	330	P	P	10 41 06.8	+1.0
	baz=142						
ISCO	Idaho Springs	68.52	330	eP	P	10 41 07.8	+2.0
ISCO				epP	pP	10 41 43.9	+2.6
H34A	Spellman Lake,	68.66	339	P	P	10 41 06.9	+0.7
	baz=152						
SMCO	Snowmass	68.69	329	eP	P	10 41 09.2	+2.3
SMCO				epP	pP	10 41 45.4	+2.9
PV01	Paradox Valley	68.69	327	eP	P	10 41 08.0	+1.2
PV01				epP	pP	10 41 45.3	+3.0
J30A	Dallas	68.82	336	P	P	10 41 07.8	+0.6
	baz=149						
H33A	Prehn Over Nor	69.00	339	P	P	10 41 08.8	+0.5
	baz=151						
PDMCI	Parker Dam,Lak	69.02	321	P	P	10 41 09.0	+0.4
	baz=134						
F36A	Milaca	69.02	342	P	P	10 41 08.2	-0.2
	baz=155						
BC3	Big Chuckawall	69.37	319	P	P	10 41 12.3	+1.4
	baz=133						
U15A	North Rim	69.44	323	eP	P	10 41 13.2	+1.7
	comp=Z,6.1nm,0.9s						
U15A				epP	pP	10 41 50.2	+3.1
MONP2	Monument Peak	69.46	318	P	P	10 41 12.6	+1.0
	baz=132						
IRM	Iron Mountain	69.52	320	P	P	10 41 12.6	+0.9
	baz=133						
E36A	McGregor	69.54	342	P	P	10 41 13.2	+1.7
	baz=155						
N23A	Red Feather La	69.54	331	P	P	10 41 13.4	+1.4
	baz=142						
N23A	Red Feather La	69.54	331	eP	P	10 41 14.6	+2.5
N23A				epP	pP	10 41 50.8	+3.1
BELC	Belle Mtn. Jos	69.94	319	P	P	10 41 16.1	+1.7
	baz=132						
TPFO	Pinon Flats	69.96	319	P	P	10 41 16.4	+1.8
	baz=132						
PFO	Pinyon Flats O	69.96	319	P	P	10 41 16.4	+1.8
	baz=132						
PFO	Pinyon Flats O	69.96	319	eP	P	10 41 16.7	+2.1
	comp=Z,6.5nm,1.2s						
PFO				epP	pP	10 41 53.1	+2.9
O20A	White River Ci	70.05	329	P	P	10 41 16.9	+1.8
	baz=140						
O20A	White River Ci	70.05	329	eP	P	10 41 17.2	+2.2
	comp=Z,6.2nm,0.9s						
LDFC	Landfair	70.13	321	eP	P	10 41 18.0	+2.4
	comp=Z,8.9nm,1.1s						
LDFC				epP	pP	10 41 54.4	+3.2
GMRC	Granite Mounta	70.26	320	P	P	10 41 18.0	+1.6
	baz=133						
D35A	Remer	70.28	342	P	P	10 41 18.6	+2.6
	baz=154						
C37A	Embarrass	70.34	343	P	P	10 41 17.5	+1.1
	baz=156						
LCMT	Little Creek M	70.39	323	eP	P	10 41 18.8	+1.7
	comp=Z,5.6nm,1.1s						
LCMT				epP	pP	10 41 55.3	+2.5
SRU	San Rafael Swe	70.44	326	eP	P	10 41 18.2	+0.8
	comp=Z,5.5nm,0.8s						
MTPU	Mount Pierson	70.54	325	eP	P	10 41 19.8	+1.5
	comp=Z,19nm,1.8s						
C36A	Pine Crest Far	70.55	343	P	P	10 41 18.9	+1.2
	baz=156						
QSPA	South Pole Qui	70.56	180	eP	P	10 41 19.3	+1.5
P17A	Butcher Ranch,	70.82	327	eP	P	10 41 20.7	+1.0
	comp=Z,7.9nm,1.0s						
C35A	Jirik Farms, M	70.82	342	P	P	10 41 20.4	+1.1
	baz=154						
CCUT	Cedar City	70.84	324	eP	P	10 41 21.2	+1.3
	comp=Z,9.1nm,1.0s						
CCUT				epP	pP	10 41 57.2	+1.5
TUQ	Turquoise Moun	70.86	320	P	P	10 41 21.2	+1.2
	baz=133						
MSU	Marysvale	70.88	325	eP	P	10 41 21.8	+1.6
MSU				epP	pP	10 41 58.9	+3.1
BFSC	Mount Baldy Ra	71.12	318	P	P	10 41 23.3	+1.7
	baz=131						
SHPR	Sheep Range	71.14	322	eP	P	10 41 23.5	+1.9
	comp=Z,4.6nm,0.9s						
SHPR				epP	pP	10 42 01.0	+3.6
RSSD	Black Hills	71.29	334	P	P	10 41 23.4	+0.9
	baz=145						
RSSD	Black Hills	71.29	334	eP	P	10 41 23.0	+0.5
RSSD				epP	pP	10 42 01.9	+3.6
GSC	Goldstone, Bar	71.30	320	P	P	10 41 24.0	+1.4
	baz=132						
B35A	Bob, Littlefor	71.34	343	P	P	10 41 23.4	+1.0
	baz=155						
SHOC	Shoshone, Teco	71.38	321	P	P	10 41 24.3	+1.3
	baz=132						
MPU	Maple Canyon	71.68	326	eP	P	10 41 26.2	+1.2
	comp=Z,8.1nm,1.3s						
MPU				epP	pP	10 42 03.7	+3.0
B34A	Aery, Baudette	71.72	342	P	P	10 41 26.0	+1.3
	baz=154						
EDW2	Edwards Air Fo	71.75	319	P	P	10 41 26.0	+0.7
	baz=131						
AGMN	Agassiz Nation	71.91	341	P	P	10 41 26.9	+1.1
	baz=153						
AGMN	Agassiz Nation	71.91	341	eP	P	10 41 26.6	+0.8
	comp=Z,7.7nm,1.0s						
LRMC	Laurel Mtn Rad	71.95	319	P	P	10 41 28.1	+1.6
	baz=131						
JLU	Jordanelle	72.02	327	eP	P	10 41 28.1	+1.2
	comp=Z,5.7nm,0.9s						
JLU				epP	pP	10 42 05.8	+3.0
C31A	Landman Farms,	72.06	340	P	P	10 41 28.2	+1.4
	baz=151						
TPNV	Topopah Spring	72.08	321	P	P	10 41 28.3	+1.0
	baz=133						
TPNV	Topopah Spring	72.08	321	eP	P	10 41 29.2	+1.9
	comp=Z,4.6nm,0.9s						
TPNV				epP	pP	10 42 05.5	+2.4
FURC	Furnace Creek,	72.12	321	P	P	10 41 28.2	+1.0
	baz=132						
B32A	Ashes, Strandq	72.21	341	P	P	10 41 29.2	+1.6
	baz=152						
MPMC	Manual Prospec	72.22	320	P	P	10 41 29.6	+1.4
	baz=132						
C30A	Mose, Pekin	72.23	339	P	P	10 41 28.7	+0.9
	baz=150						
A33A	Warroad	72.34	342	P	P	10 41 29.1	+0.7
	baz=153						
DUG	Dugway, Tooele	72.43	326	P	P	10 41 30.8	+1.4
	baz=136						
DUG	Dugway, Tooele	72.43	326	eP	P	10 41 30.4	+1.1
DUG				epP	pP	10 42 06.3	+1.2
R11A	Troy Canyon, C	72.65	323	P	P	10 41 31.8	+1.1
	baz=134						
R11A	Troy Canyon, C	72.65	323	eP	P	10 41 32.4	+1.7
	comp=Z,2.9nm,0.9s						
R11A				epP	pP	10 42 09.8	+3.2
BW06	Boulder Array	72.70	330	eP	P	10 41 32.7	+1.7
PDAR	Pinedale Array	72.70	330	P	P	10 41 31.9	+0.9
	comp=Z,1.2nm,1.0s,baz=141,slow=4.6,SNR=5.6						
MDND	Maddock	72.73	339	P	P	10 41 31.3	+0.5
	baz=149						
MDND	Maddock	72.73	339	eP	P	10 41 31.7	+0.9
	comp=Z,27nm,0.8s						
HWUT	Hardware Ranch	72.82	328	eP	P	10 41 33.4	+1.8
	comp=Z,3.7nm,0.8s						
B30A	Myrvik Farm, E	72.83	340	P	P	10 41 32.1	+0.8
	baz=150						
PKM	Mcpherson Peak	72.90	318	P	P	10 41 33.5	+1.2
	baz=130						
VES	Vestal, Richgr	73.06	319	P	P	10 41 33.9	+1.0
	baz=130						
BGU	Big Grassy Mou	73.07	326	eP	P	10 41 35.2	+2.1
	comp=Z,4.6nm,1.0s						
B29A	Wagenman Farm,	73.18	339	P	P	10 41 34.2	+0.8
	baz=150						
A30A	Hoffart Farm,	73.25	340	P	P	10 41 34.2	+0.4
	baz=151						
RCTC	Rector, Farmer	73.45	319	P	P	10 41 36.3	+1.1
	baz=130						
A29A	Manning Farm,	73.54	339	P	P	10 41 36.1	+0.7
	baz=150						
HVU	Hansel Valley	73.56	327	eP	P	10 41 37.9	+2.0
	comp=Z,6.1nm,1.1s						
HVU				epP	pP	10 42 14.3	+2.5
ULM	Lac du Bonnet	73.66	342	P	P	10 41 36.2	+0.1
	comp=Z,2.5nm,0.6s,baz=125,slow=5.5,SNR=4.2						
TPAW	Teton Pass	73.91	329	eP	P	10 41 39.0	+0.9
	comp=Z,3.6nm,0.8s						
MLAC	Mammoth, Mammo	74.07	321	P	P	10 41 39.9	+0.8
	baz=131						
B26A	Jensen Ranch,	74.11	337	P	P	10 41 40.3	+1.5
	baz=147						
ELK	Elko	74.12	325	eP	P	10 41 41.4	+2.1
	comp=Z,3.0nm,0.9s						
ELK				epP	pP	10 42 18.0	+2.7
LAO	LASA Array	74.28	334	P	P	10 41 41.0	+1.2
	baz=143						
RLMT	Red Lodge	74.36	331	P	P	10 41 42.2	+1.5
	baz=140						
TVH1	TV Hill, Hawth	74.57	321	eP	P	10 41 45.5	+3.3
	comp=Z,3.0nm,0.8s						
YHB	Horse Butte	74.97	330	eP	P	10 41 48.1	+4.0
YHB				epP	pP	10 42 23.8	+3.6
HLID	Hailey	75.68	327	P	P	10 41 49.7	+1.5
	baz=136						
HLID	Hailey	75.68	327	eP	P	10 41 50.4	+2.2
	comp=Z,5.9nm,0.9s						
PAHR	Pah Rah Range	75.75	322	eP	P	10 41 50.2	+1.6
	comp=Z,8.7nm,0.9s						
MCMT	McKenzie Canyo	75.82	329	eP	P	10 41 50.5	+1.5
BOZ	Bozeman (W)	75.85	330	P	P	10 41 50.1	+1.1
	baz=138						
DLMT	Dillon	76.09	330	eP	P	10 41 51.8	+1.4
	comp=Z,6.0nm,1.4s						
ORV	Oroville	76.90	321	eP	P	10 41 57.7	+2.8
ORV				epP	pP	10 42 36.2	+5.0
MSO	Missoula	77.80	330	P	P	10 42 00.7	+0.8
	baz=136						
MSO	Missoula	77.80	330	eP	P	10 42 00.5	+0.6
	comp=Z,6.8nm,1.3s						
BMO	Blue Mountains	78.07	327	eP	P	10 42 02.8	+1.4
	comp=Z,5.5nm,0.8s						
SYO	Syowa Base	78.11	160⇑	eX	P	10 42 00.4	-0.8
N02D	Trinity Center	78.51	321	P	P	10 42 05.1	+1.2
	baz=129						
M04C	Macdoel	78.52	322	P	P	10 42 04.9	+0.9
	baz=130						
VNDA	Vanda	78.76	190	P	P	10 42 06.0	+1.4
	comp=Z,2.4nm,0.8s,baz=124,slow=5.0,SNR=9.7						
J05D	Fort Rock, OR	79.13	324	P	P	10 42 09.1	+1.8
	baz=130						
I05D	Terrebonne, OR	79.87	324	P	P	10 42 12.7	+1.5
	baz=130						
I04A	Tendick Farm,	80.12	324	P	P	10 42 14.3	+1.8
	baz=129						
MDT	Midelt	80.23	50	P	P	10 42 12.4	-1.0

comp=Z,4.2nm,0.9s,baz=216,slow=8.1,SNR=5.6
NEW Newport 80.34 329 P **P** **10 42 14.3 +0.8**
baz=134
G05D Wamic, OR 80.44 325 P **P** **10 42 15.3 +1.1**
baz=130
F04A Amboy 81.48 325 *e*P **P** **10 42 21.9 +2.3**
comp=Z,24nm,1.2s
EDM Edmonton 82.24 335 *e*P **P** **10 42 24.3 +0.8**
comp=Z,14nm,1.0s
EDM *e*pP **pP** **10 43 03.2 +3.0**
B05A Bryant 82.81 327 P **P** **10 42 27.2 +0.8**
baz=130
BOSA Boshof 83.97 118 P **P** **10 42 32.9 -0.3**
comp=Z,4.0nm,0.5s,baz=251,slow=4.4,SNR=11
ESDC Sonseca Array 84.21 44 P **P** **10 42 33.8 -0.1**
comp=Z,2.4nm,0.7s,baz=244,slow=5.2,SNR=11
ESDC pP **pP** **10 43 10.7 0.0**
comp=Z,0.5nm,0.5s,baz=260,slow=5.7,SNR=1.9
ES19 SONSECA Array 84.27 44 *e*P **P** **10 42 34.5 +0.3**
LBTB Lobatse 85.43 115 *e*P **P** **10 42 40.5 0.0**
comp=Z,65nm,1.9s
MAW Mawson 86.00 163 P **P** **10 42 42.7 +0.3**
comp=Z,2.2nm,0.5s,baz=225,slow=6.8,SNR=5.1
YKA Yellowknife Ar 89.56 340 P **P** **10 42 59.1 0.0**
comp=Z,4.5nm,0.9s,baz=132,slow=4.7,SNR=20
YKA pP **pP** **10 43 37.4 +1.1**
comp=Z,5.8nm,0.8s,baz=133,slow=4.8,SNR=8.6
YKB5 Yellowknife Ar 89.56 340 *e*P **P** **10 42 59.1 0.0**
YKB5 *e*pP **pP** **10 43 37.4 +1.1**
RAO Raoul Island 96.43 236 LR LR 11 16 35.3
comp=Z,831nm,19.7s,baz=204,slow=29
ASAR Alice Springs 131.76 208 PKP **PKPdf** **10 49 15.1 -0.2**
comp=Z,1.0nm,0.5s,baz=133,slow=1.7,SNR=21
ASAR SKPbc **SKPab** **10 52 28.6 +0.3**
comp=Z,0.9nm,0.7s,baz=147,slow=3.8,SNR=7.2
AS31 Alice Springs 131.76 208 *e*PKPdf **PKPdf** **10 49 15.2 -0.2**
WR1 Warramunga Arr 134.77 211 *e*PKPdf **PKPdf** **10 49 21.0 0.0**
WR1 *e*SKPbc **SKPbc** **10 52 38.8 +1.0**
WRA Warramunga Arr 134.77 211 PKP **PKPdf** **10 49 21.0 0.0**
comp=Z,1.5nm,0.5s,baz=150,slow=1.8,SNR=26
WRA SKPbc **SKPbc** **10 52 38.8 +1.0**
comp=Z,2.3nm,0.8s,baz=147,slow=3.0,SNR=10
MK32 Makanchi Array 143.87 35 *e*PKPpre PKPab 10 49 34.5 +0.3
MKAR Makanchi Array 143.87 35 PKP PKPab 10 49 34.5 +0.3
comp=Z,0.8nm,0.6s,baz=294,slow=3.1,SNR=6.0
MKAR SKPbc **SKPbc** **10 53 00.2 -1.7**
comp=Z,1.1nm,0.9s,baz=290,slow=4.3,SNR=4.3
JAY Jayapura 143.87 236 PKP PKPbc 10 49 36.6 +0.8
comp=Z,1.0nm,0.8s,baz=90,slow=20,SNR=3.8
ASAJ Asahikawa 144.40 320 PKP PKPbc 10 49 36.7 +0.3
comp=Z,5.0nm,0.8s,baz=306,slow=19
WMQ Urumqi 148.70 34 *e*PKPbc **PKPdf** **10 49 43.7 -1.3**
USRK Ussuriysk Ar. 150.12 330 PKPbc **PKPbc** **10 49 52.3 0.0**
comp=Z,2.0nm,0.6s,baz=140,slow=41,SNR=7.0
MJAR Matsushiro Arr 151.18 311 PKPbc **PKPbc** **10 49 55.1 0.0**
comp=Z,0.9nm,0.7s,baz=87,slow=2.0,SNR=5.7
SONA0 Songino Array 151.55 7 *e*PKPbc **PKPbc** **10 49 55.7 0.0**
SONM Songino Array 151.55 7 PKPbc **PKPbc** **10 49 55.7 0.0**
comp=Z,1.8nm,0.5s,baz=283,slow=1.6,SNR=4.1
HHC Hu-ho-hao-te 158.84 360 *e*PKP **PKPdf** **10 50 04.1 +4.6**
CMAR Chiang Mai Arr 168.04 93 PKPab **PKPab** **10 51 16.0 -1.2**
comp=Z,0.5nm,0.3s,baz=246,slow=7.0,SNR=4.6

DDA ***05*** *10:32:19.7,36°28′N×36°96′E,h7km,Md3.0*
NSSC ***05*** *10:32:19.0±1.7,36°33′N×37°13′E,h4km±8km,ML2.0*
ISCJB ***05*** *10:32:20.3±0.9,36°28′N±0°03′×37°05′E±0°05,h0km±9km, Error ellipse: s-maj=7.3km s-min=4.1km az=32.5*
CSEM ***05*** *10:32:25.4,36°53′N×36°79′E,h5km,MD2.8*
ISK ***05*** *10:32:25.4,36°53′N×36°79′E,h5km,MD2.8*
ISC 05 10:32:19.6±1.2,36°24′N±0°03′×37°03′E±0°03′,h9km±10km, n17,σ1°§13/29,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DRWC	**Darouich**	**0.48**	**322**	*e*P		**Pg**		**10 32 28.7**	**-0.3**
DRWC				*e*S		**Sg**		**10 32 34.7**	**-0.7**
DRWC				AML		AML		10 32 42.3	
	comp=E,64nm,0.6s								
DRWC				AML		AML		10 32 45.1	
	comp=N,180nm,0.5s								
BTCH	**Batrach**	**0.51**	**247**	*e*P		**Pn**		**10 32 31.6**	**-1.5**
BTCH				*e*S		**Sb**		**10 32 39.5**	**+1.3**
BTCH				AML		AML		10 32 46.4	
	comp=E,152nm,0.6s								
BTCH				AML		AML		10 32 48.7	
	comp=N,117nm,0.5s								
KUZU	**Kuzuini**	**0.54**	**4**	*i* P		**Pg**		**10 32 29.4**	**-0.6**
KUZU				*i* S		**Sg**		**10 32 36.6**	**-0.4**
TAHT	**Tahtakopru-Hat**	**0.70**	**282**	*e*PG		**Pn**		**10 32 35.7**	**0.0**
TAHT				*e*SG		**Sb**		**10 32 43.3**	**-0.4**
TAHT	**Tahtakopru-Hat**	**0.70**	**282**	*e*Pg		**Pn**		**10 32 35.7**	**0.0**
TAHT				*e*Sg		**Sb**		**10 32 43.3**	**-0.4**
YAYL	**Yayladag**	**0.78**	**255**	*i* P		**Pg**		**10 32 33.8**	**-0.7**
YAYL				*i* S		**Sn**		**10 32 47.6**	**-1.1**
GAZ	**Gaziantep**	**0.94**	**9**	*e*PG		**Pn**		**10 32 39.9**	**+0.8**
GAZ				*e*SG		**Sg**		**10 32 50.4**	**+0.4**
GAZ	**Gaziantep**	**0.94**	**9**	*e*Pg		**Pn**		**10 32 39.9**	**+0.8**
GAZ				*e*Sg		**Sg**		**10 32 50.4**	**+0.4**
HCB	**Kahramanmara¯**	**1.11**	**355**	*i* P		**Pg**		**10 32 40.6**	**-0.3**
HCB				*i* S		**Sg**		**10 32 55.7**	**+0.4**
KMRS	**Kahramanmaras**	**1.27**	**355**	*e*PG		**Pg**		**10 32 44.7**	**+0.7**
KMRS	**Kahramanmaras**	**1.27**	**355**	*e*Pg		**Pg**		**10 32 44.7**	**+0.7**
BIDA	**Albida**	**1.35**	**206**	*e*P		**Pg**		**10 32 45.0**	**-0.5**
BIDA				*e*S		**Sn**		**10 33 05.0**	**+2.2**
BIDA				AML		AML		10 33 08.2	
	comp=N,64nm,0.4s								
BIDA				AML		AML		10 33 10.2	
	comp=E,25nm,0.3s								
KRTS	**Karatas**	**1.38**	**285**	*e*PN		**Pg**		**10 32 47.7**	**+1.7**
KRTS	**Karatas**	**1.38**	**285**	*e*Pn		**Pg**		**10 32 47.7**	**+1.7**
KSRV	**Kasrt alli**	**1.64**	**103**	*e*P		**Pg**		**10 32 50.6**	**-0.4**
KSRV				*e*S		**Sg**		**10 33 14.7**	**+2.5**
KSRV				AML		AML		10 33 17.9	
	comp=Z,12nm,0.3s								
SARI	**SarD1z-Kayseri**	**2.22**	**347**	*e*PN		**Pb**		**10 32 59.6**	**-0.5**
SFNV	**Sufian**	**2.49**	**85**	*e*P		**Pn**		**10 33 00.3**	**-0.1**
SFNV				*e*S		**Sn**		**10 33 28.8**	**-2.1**
SFNV				AML		AML		10 33 49.1	
	comp=Z,16nm,0.4s								

NIED ***05*** *10:34:00,34°00′N×135°20′E,h8km,Mw4.3 Best double couple: M03.12000×10^15 NP1:φ225.00000°,δ41.00000°, λ117.00000°. NP2:φ10.00000°,δ54.00000°,λ68.00000°.*
BJI ***05*** *10:34:50.8,33°73′N×135°58′E,h8km,mb4.5/41,mB5.0/24, Ms4.5/13,Ms7 4.1/15*
IDC ***05*** *10:34:53.5±0.5,33°98′N×135°21′E,h0km,mb4.4/28, mb1 4.5/32,mb1mx4.4/52,mbtmp4.4/32,ML4.0/4,MS3.0/3, Ms1 3.0/3,ms1mx2.7/58,Error ellipse: s-maj=13.7km s-min=11.3km az=140.0*
JMA ***05*** *10:34:55.6,34°00′N×135°24′E,h7km,M4.5 Broadband fault plane solution: P waves. NP1:φ32.00000°, δ70.00000°,λ100.00000°. NP2:φ186.00000°,δ22.00000°, λ66.00000°. Principal axes: T Plg64.0000°, Azm318.0000°; N Plg9.0000°, Azm209.0000°; P Plg24.0000°, Azm115.0000°;*
JMA Felt IV J1.
ISCJB ***05*** *10:34:55.2±0.4,33°96′N±0°02′×135°21′E±0°02,h16km±3km, mb4.6/116,MS4.4/2 Error ellipse: s-maj=4.0km s-min=2.9km az=178.2*
MOS ***05*** *10:34:57.6±1.1,33°95′N×135°12′E,h36km,mb4.7/50,Error ellipse: s-maj=8.5km s-min=5.6km az=94.0*
NEIC ***05*** *10:34:59.3±0.2,33°93′N×135°22′E,h35km,mb4.7/66,Error ellipse: s-maj=5.2km s-min=4.3km az=173.0*
NEIC Recorded [4 JMA] in Wakayama.
ISC 05 10:34:55.8±0.8,33°96′N±0°03′×135°24′E±0°02′,h12km±5km, n233,σ1°§31/251,mb4.7/116,MS4.6/3,9C-12D,Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JWM	**Minabe**	**0.14**	**137**	⇓P		**Pg**		**10 34 59.3**	**0.0**
JWM				S		**Sg**		**10 35 01.8**	**0.0**
JWY	**Kouya**	**0.40**	**48**	⇑P		**Pg**		**10 35 02.8**	**-1.0**
JWY				S		**Sg**		**10 35 08.0**	**-1.1**
JAJ2	**Tsuna**	**0.55**	**328**	⇓P		**Pg**		**10 35 05.7**	**-0.9**
JAJ2				*e*S		**Sg**		**10 35 12.9**	**-0.9**
JWZ	**Kozaga**	**0.58**	**137**	⇓P		**Pg**		**10 35 07.2**	**0.0**
JWZ				S		**Sb**		**10 35 15.7**	**-0.4**
JAI	**Aioi**	**0.67**	**256**	⇓P		**Pg**		**10 35 08.6**	**-0.3**
JAI				S		**Sg**		**10 35 17.3**	**-0.5**
JHE	**Heguri**	**0.79**	**28**	⇑P		**Pg**		**10 35 10.0**	**-1.1**
JKN2	**Miekihoku**	**0.91**	**71**	P		**Pg**		**10 35 11.6**	**-1.7**
JKN2				S		**Sg**		**10 35 23.9**	**-1.2**
JMN	**Monobe**	**1.15**	**259**	⇑P		**Pg**		**10 35 17.1**	**-1.0**
JMN				S		**Sb**		**10 35 32.5**	**-0.2**
INU	**Inuyama**	**2.02**	**46**	*e*Pn		**Pn**		**10 35 29.2**	**-0.5**
INU				*e*Sn		**Sn**		**10 35 56.1**	**+1.2**
MAJO	**Matsushiro**	**3.54**	**42**	*e*P		**Pn**		**10 35 50.5**	**-0.2**
MAJO				*e*				10 36 33.7	
MAJO	**Matsushiro**	**3.54**	**42**	*e*Pn		**Pn**		**10 35 50.5**	**-0.2**
MAJO				*e*Sn		**Sn**		**10 36 33.7**	**+1.2**
MAT	**Matsushiro**	**3.54**	**42**	P		**Pn**		**10 35 50.4**	**-0.3**
MAT				S		**Sb**		**10 36 38.1**	**-3.4**
MJAR	**Matsushiro Arr**	**3.54**	**42**	Pn		**Pn**		**10 35 50.9**	**+0.2**
	11nm,0.3s,baz=246,slow=23,SNR=39								
MJAR				Pg		**Pb**		**10 36 00.3**	**+1.8**
	18nm,0.3s,baz=222,slow=15,SNR=55								
MJAR				Lg		Lg		10 36 46.6	
	17nm,0.3s,baz=230,slow=27,SNR=5.5								
MJAR				LR		LR		10 37 36.1	
	comp=Z,249nm,20.9s,baz=250,slow=46								
MJB9	**Matsu-Tunnel**	**3.54**	**42**	*e*Pn		**Pn**		**10 35 50.5**	**-0.2**
JNU	**Nakatsue**	**3.73**	**258**	Pn		**Pn**		**10 35 53.4**	**+0.1**
	9.8nm,0.3s,baz=87,slow=4.1,SNR=34								
JNU				Pg		**Pg**		**10 36 05.9**	**-1.5**
	73nm,0.3s,baz=70,slow=11,SNR=48								
JNU				LR		LR		10 36 49.1	
	comp=Z,218nm,20.9s,baz=112,slow=31								
JNU				Lg		Lg		10 36 58.0	
	26nm,0.3s,baz=158,slow=14,SNR=8.3								
JNU	**Nakatsue**	**3.73**	**258**	*e*Pn		**Pn**		**10 35 53.4**	**+0.1**
JNU				*e*Sn		**Sn**		**10 36 35.9**	**-1.4**
JHJ	**Hachijo jima 2**	**3.89**	**101**	Pn		**Pn**		**10 35 55.4**	**0.0**
	155nm,0.3s,baz=79,slow=19,SNR=35								
JHJ				Sn		**Sn**		**10 36 39.3**	**-1.6**
	93nm,0.3s,baz=41,slow=22,SNR=5.5								
JHJ2	**Mitsune**	**3.92**	**101**	*e*Pn		**Pn**		**10 35 55.4**	**-0.4**
JHJ2				*e*Sn		**Sn**		**10 36 37.9**	**-3.7**
KSRS	**Korea Array**	**6.90**	**302**	Pn		**Pn**		**10 36 36.7**	**-0.1**
	2.4nm,0.3s,baz=119,slow=14,SNR=48								
KSRS				Sn		**Sn**		**10 37 56.0**	**+0.8**
	1.2nm,0.3s,baz=122,slow=23,SNR=4.7								
KSRS				LR		LR		10 39 24.0	
	comp=Z,122nm,20.6s,baz=164,slow=39								
KS15	**Wonju Array Si**	**6.92**	**302**	*e*Pn		**Pn**		**10 36 38.0**	**+1.0**
KS15				*e*Sn		**Sn**		**10 37 55.1**	**-0.5**
KS01	**Wonju Array Si**	**6.93**	**303**	*e*Pn		**Pn**		**10 36 38.4**	**+1.2**
CBIJ	**Chichi jima**	**9.09**	**137**	*e*Pn		**Pn**		**10 37 05.3**	**-1.6**
JCJ	**Chichijima**	**9.09**	**137**	Pn		**Pn**		**10 37 11.0**	**+4.2**
	22nm,0.3s,baz=262,slow=2.9,SNR=3.6								
JOW	**Kunigami**	**9.30**	**222**	*e*Pn		**Pn**		**10 37 06.0**	**-3.8**
VLA	**Vladivostok**	**9.52**	**345**	⇑ *i*P		**Pn**		**10 37 16.1**	**+3.4**
VLA				*e*S		**Sn**		**10 39 01.1**	**+1.6**
VLA				pmax		pmax			
	comp=Z,44nm,1.9s								
ERM	**Erimo**	**10.18**	**36**	⇓ *e*P		**Pn**		**10 37 24.1**	**+2.3**
USRK	**Ussuriysk Ar.**	**10.54**	**347**	Pn		**Pn**		**10 37 30.1**	**+3.5**
	comp=Z,0.2nm,0.3s,baz=158,slow=10,SNR=8.1								
MDJ	**Mudanjiang**	**11.51**	**339**	P		**Pn**		**10 37 41.5**	**+1.6**
MDJ				pmax		pmax			
	comp=Z,2.0nm,0.3s								
MDJ				pmax		pmax			
	comp=Z,210nm,3.8s								
CN2	**Changchun**	**12.43**	**325**	*e*P		**Pn**		**10 37 54.1**	**+1.5**
CN2				pmax		pmax			
	comp=Z,10.0nm,0.7s								
YSS	**Yuzh-Sakhalins**	**14.18**	**21**	*e*P		**Pn**		**10 38 13.9**	**-2.5**
YSS				pmax		pmax			
	comp=Z,20nm,1.5s								
KUR	**Kuril'sk**	**14.87**	**37**	*e*P		**P**		**10 38 30.0**	**-1.5**
KUR				*e*S		**Sn**		**10 41 16.8**	**+6.5**
KLR	**Kul'dur**	**15.48**	**351**	Pn		**Pn**		**10 38 35.3**	**+1.4**
	comp=Z,0.3nm,0.3s,baz=147,slow=11,SNR=20								
WHN	**Wuhan**	**17.99**	**265**	⇑ *i*P		**P**		**10 39 09.8**	**+3.6**
WHN				pmax		pmax			
	comp=Z,34nm,0.9s								
HIA	**Hailar**	**19.13**	**328**	*d i*P		**Pn**		**10 39 20.4**	**+0.8**
HIA				pmax		pmax			
	comp=Z,29nm,1.2s								
HIA	**Hailar**	**19.13**	**328**	*e*P		**Pn**		**10 39 20.2**	**+0.6**
	comp=Z,21nm,0.8s								
XAN	**Xi'an**	**21.80**	**278**	P		**P**		**10 39 50.5**	**+2.7**
XAN				pmax		pmax			
	comp=Z,18nm,1.1s								
XAN				pmax		pmax			
	comp=Z,83nm,6.9s								
ENH	**Enshi**	**22.10**	**268**	*e*P		**P**		**10 39 53.7**	**+2.7**
	comp=Z,39nm,0.8s								
PEA0	**Petropavlovsk-**	**24.95**	**33**	*e*P		**P**		**10 40 18.7**	**-0.2**
PETK	**Petropavlovsk-**	**24.95**	**33**	P		**P**		**10 40 18.8**	**-0.1**
	comp=Z,7.0nm,0.8s,baz=221,slow=11,SNR=6.1								
PEA1	**Petropavlovsk-**	**24.95**	**33**	*e*P		**P**		**10 40 18.8**	**-0.1**
PET	**Petropavlovsk**	**25.34**	**34**	*e*P		**P**		**10 40 23.3**	**+1.0**
PET				pmax		pmax			
	comp=Z,25nm,1.3s								
SONA0	**Songino Array**	**25.66**	**311**	*e*P		**P**		**10 40 25.2**	**-0.3**
	comp=Z,9.4nm,0.9s								
SONA1	**Songino Array**	**25.66**	**311**	*e*P		**P**		**10 40 25.3**	**-0.2**
SONM	**Songino Array**	**25.66**	**311**	P		**P**		**10 40 25.2**	**-0.3**
	comp=Z,8.5nm,0.7s,baz=122,slow=9.4,SNR=19								
GYA	**Guiyang**	**25.74**	**261**	*e*P		**P**		**10 40 27.8**	**+1.3**
GYA				pmax		pmax			
	comp=Z,10.0nm,0.8s								
LZH	**Lanzhou**	**25.74**	**284**	*e*P		**P**		**10 40 26.2**	**-0.3**
LZH				pP		sP		10 40 31.4	-0.2
LZH				sP		pP		10 40 34.3	+4.2
LZH				pmax		pmax			
	comp=Z,16nm,1.0s								
CD2	**Chengdu**	**26.69**	**272**	*e*P		**P**		**10 40 34.0**	**-0.9**
CD2				pP		pP		10 40 36.8	-1.8
CD2				PcP		**PcP**		**10 43 57.8**	**-0.6**
CD2				S		**S**		**10 45 10.0**	**-0.2**
CD2				pmax		pmax			
	comp=Z,10.0nm,0.5s								
CD2				pmax		pmax			
	comp=Z,120nm,5.0s								
MA2	**Magadan**	**27.61**	**17**	P		**P**		**10 40 41.9**	**-0.9**
	comp=Z,7.5nm,0.8s,baz=192,slow=7.4,SNR=10								
MA2	**Magadan**	**27.61**	**17**	*e*P		**P**		**10 40 44.6**	**+1.8**
YAK	**Yakutsk**	**28.32**	**354**	*e*P		**P**		**10 40 50.1**	**+1.0**
YAK				pmax		pmax			
	comp=Z,10.0nm,0.6s								
ZAK	**Zakamensk**	**28.53**	**315**	*e*P		**P**		**10 40 51.8**	**+0.5**
ZAK				pmax		pmax			
	comp=Z,3.0nm,1.4s								
GTA	**Gaotai**	**28.80**	**291**	*e*P		**P**		**10 40 53.4**	**-0.5**
GTA				pP		sP		10 40 57.9	-1.2
GTA				sP		pP		10 41 01.3	+3.7
GTA				pmax		pmax			
	comp=Z,4.0nm,1.0s								
KMI	**Kunming**	**29.51**	**261**	P		**P**		**10 41 03.4**	**+3.0**
KMI				pmax		pmax			
	comp=Z,20nm,0.6s								
SEY	**Seymchan**	**30.94**	**15**	P		**P**		**10 41 11.0**	**-1.3**
	comp=Z,1.6nm,0.7s,baz=194,slow=14,SNR=4.7								
H11N2	**WAKE ISLAND Hy**	**31.45**	**109**	T		T		11 13 41.5	
	baz=303,slow=75,SNR=52								
H11N1	**WAKE ISLAND Hy**	**31.46**	**109**	T		T		11 13 43.0	
	baz=303,slow=75,SNR=35								
H11N3	**WAKE ISLAND Hy**	**31.47**	**109**	T		T		11 13 43.9	
	baz=303,slow=75,SNR=43								
H11S3	**WAKE ISLAND Hy**	**31.98**	**111**	T		T		11 14 32.0	
	baz=304,slow=75,SNR=116								
H11S1	**WAKE ISLAND Hy**	**31.98**	**111**	T		T		11 14 33.9	
	baz=304,slow=75,SNR=112								
H11S2	**WAKE ISLAND Hy**	**32.00**	**111**	T		T		11 14 34.5	
	baz=304,slow=75,SNR=96								
CMAR	**Chiang Mai Arr**	**35.82**	**254**	P		**P**		**10 41 55.2**	**-0.2**
	comp=Z,1.1nm,0.7s,baz=57,slow=8.7,SNR=3.6								
CM01	**Chiang Mai Arr**	**35.83**	**254**	*e*P		**P**		**10 41 58.2**	**+2.8**
WMQ	**Urumqi**	**37.84**	**299**	*e*P		**P**		**10 42 13.0**	**+0.6**
WMQ				pP		sP		10 42 16.9	-0.7
WMQ				pmax		pmax			
	comp=Z,9.0nm,0.6s								
WMQ				pmax		pmax			
	comp=Z,80nm,5.8s								
WMQ				LR		LR			
	comp=Z,210nm,14.2s								
TIXI	**Tiksi**	**37.91**	**357**	P		**P**		**10 42 11.1**	**-1.4**
	comp=Z,6.7nm,0.7s,baz=152,slow=3.1,SNR=5.5								
TIXI	**Tiksi**	**37.91**	**357**	*e*P		**P**		**10 42 11.2**	**-1.3**
TIXI				pmax		pmax			
	comp=Z,6.0nm,1.1s								
BILL	**Bilibino**	**38.46**	**18**	*e*P		**P**		**10 42 17.0**	**-0.2**
BILL				*i*				10 44 29.5	
BILL				pmax		pmax			
	comp=Z,8.0nm,0.9s								
ZAA0	**Zalesovo Array**	**40.40**	**315**	*e*P		**P**		**10 42 29.3**	**-4.3**
MK01	**Makanchi Array**	**41.57**	**304**	*e*P		**P**		**10 42 43.2**	**-0.1**
MK31	**Makanchi Array**	**41.58**	**304**	*i* P		**P**		**10 42 42.9**	**-0.5**
MK31				pmax		pmax			
	comp=Z,2.0nm,0.6s								
MK31	**Makanchi Array**	**41.58**	**304**	*e*P		**P**		**10 42 43.7**	**+0.3**
MK32	**Makanchi Array**	**41.58**	**304**	*e*P		**P**		**10 42 43.5**	**+0.1**
MKAR	**Makanchi Array**	**41.58**	**304**	P		**P**		**10 42 43.5**	**+0.1**
	comp=Z,2.9nm,0.6s,baz=91,slow=10.0,SNR=26								
MAKZ	**Makanchi**	**41.79**	**304**	*e*P		**P**		**10 42 45.2**	**+0.1**
MAKZ				pmax		pmax			
	comp=Z,5.0nm,0.8s								
MAKZ	**Makanchi**	**41.79**	**304**	*e*P		**P**		**10 42 45.2**	**+0.1**
	comp=Z,5.0nm,0.8s								
PDGK	**Podgornoye**	**43.82**	**299**	P		**P**		**10 43 00.7**	**-0.9**
PDGK				pmax		pmax			
	comp=Z,9.0nm,0.7s								
KURK	**Kurchatov**	**43.95**	**310**	*c i*P		**P**		**10 43 01.7**	**-0.9**
KURK				pmax		pmax			
	comp=Z,46nm,0.8s								
KURK	**Kurchatov**	**43.95**	**310**	*e*P		**P**		**10 43 02.8**	**+0.2**
KURBB	**Kurchatov Arra**	**44.01**	**310**	P		**P**		**10 43 02.8**	**-0.3**
	comp=Z,6.2nm,0.8s,baz=94,slow=8.3,SNR=47								
TKM2	**Tokmak 2**	**46.70**	**299**	*e*P		**P**		**10 43 25.8**	**+1.0**
TKM2				pmax		pmax			
	comp=Z,11nm,1.3s								
TKM2	**Tokmak 2**	**46.70**	**299**	*e*P		**P**		**10 43 25.8**	**+1.0**
	comp=Z,11nm,1.3s								
MTN	**Manton Dam**	**46.70**	**186**	*e*P		**P**		**10 43 23.7**	**-0.9**
	comp=Z,18nm,0.8s								
KSH	**Kashi**	**47.08**	**295**	*e*P		**P**		**10 43 30.6**	**+2.9**
KSH				*e*pP		sP		10 43 34.5	+1.5
KSH				*e*PP		**PP**		**10 45 21.1**	**+2.8**
KSH				S		**S**		**10 50 22.5**	**+2.9**
KSH				pmax		pmax			
	comp=Z,100nm,4.6s								
KSH				LR		LR			
	comp=Z,260nm,11.4s								
KSH				LR		LR			
	comp=Z,200nm,8.7s								
KSH				LR		LR			
	comp=Z,180nm,9.2s								
AAK	**Ala-Archa**	**47.55**	**299**	⇓ *e*P		**P**		**10 43 31.5**	**+0.2**
AAK				pmax		pmax			
	comp=Z,3.0nm,0.7s								
GSI	**Gunungsitoli**	**47.90**	**235**	*e*P		**P**		**10 43 34.3**	**+0.2**
	comp=Z,109nm,1.4s								
OTUK	**Ortayu**	**48.19**	**307**	P		**P**		**10 43 36.0**	**-0.1**
OTUK				pmax		pmax			
	comp=Z,23nm,1.1s								
MNAS	**Manas**	**49.02**	**299**	P		**P**		**10 43 45.8**	**+3.1**
MNAS				pmax		pmax			
	comp=Z,3.0nm,2.0s								
BRVK	**Borovoye**	**49.03**	**314**	*d i*P		**P**		**10 43 42.3**	**-0.1**
BRVK				pmax		pmax			
	comp=Z,12nm,0.6s								
ZRNK	**Zerenda**	**49.81**	**314**	*e*P		**P**		**10 43 48.1**	**-0.3**
ZRNK				pmax		pmax			
	comp=Z,14nm,0.9s								
ZRNK	**Zerenda**	**49.81**	**314**	*e*P		**P**		**10 43 48.0**	**-0.3**
	comp=Z,14nm,0.9s								
KK31	**Karatay Array**	**50.32**	**301**	*i* P		**P**		**10 43 52.0**	**-0.4**
KK31				pmax		pmax			
	comp=Z,8.0nm,0.8s								
KKAR	**Karatay Array**	**50.32**	**301**	*e*P		**P**		**10 43 52.7**	**+0.2**
KKAR	**Karatay Array**	**50.32**	**301**	*e*P		**P**		**10 43 52.7**	**+0.2**
FITZ	**Fitzroy Crossi**	**52.57**	**192**	*e*P		**P**		**10 44 09.4**	**+0.1**
	comp=Z,7.7nm,0.9s								
KDAK	**Kodiak Island**	**52.72**	**40**	*i* P		**P**		**10 44 09.9**	**-0.1**
KTH	**Kantishna Hill**	**53.08**	**33**	*e*P		**P**		**10 44 13.6**	**+0.8**
	comp=Z,13nm,1.5s								
MLY	**Manley**	**53.09**	**31**	*e*P		**P**		**10 44 13.4**	**+0.6**
	comp=Z,3.9nm,1.0s								
WRAB	**Tennant Creek**	**53.59**	**181**	⇓ *e*P		**P**		**10 44 16.5**	**-0.4**
WRAB				pmax		pmax			
	comp=Z,60nm,1.0s								
WRAB	**Tennant Creek**	**53.59**	**181**	*e*P		**P**		**10 44 16.6**	**-0.4**
	comp=Z,20nm,0.9s								
WB2	**Warramunga Arr**	**53.60**	**181**	*e*P		**P**		**10 44 16.7**	**-0.2**
	comp=Z,21nm,0.9s								
WR1	**Warramunga Arr**	**53.60**	**181**	*e*P		**P**		**10 44 16.4**	**-0.6**
	comp=Z,22nm,0.9s								
WRA	**Warramunga Arr**	**53.60**	**181**	P		**P**		**10 44 16.4**	**-0.6**
	comp=Z,18nm,0.9s,baz=356,slow=7.8,SNR=109								
WRA	**Warramunga Arr**	**53.60**	**181**	P		**P**		**10 44 16.4**	**-0.6**

	comp=Z,11nm,1.1s							
FIA1	**FINESS Array S**	**69.11**	**331**	*eP*		**P**	**10 46 00.3**	**-1.2**
FIA0	**FINESS Array S**	**69.11**	**331**	*eP*		**P**	**10 46 00.7**	**-0.8**
FIA0	**FINESS Array S**	**69.11**	**331**	*eP*		**P**	**10 46 00.7**	**-0.8**
FINES	**FINESS Array B**	**69.11**	**331**	P		**P**	**10 46 00.7**	**-0.8**
	comp=Z,4.2nm,0.8s,baz=94,slow=7.6,SNR=9.1							
NLWA	**Neilton Lookou**	**72.47**	**44**	*eP*		**P**	**10 46 22.3**	**+0.1**
	comp=Z,16nm,1.1s							
E03A	**Lebam**	**73.09**	**45**	*eP*		**P**	**10 46 27.3**	**+1.4**
	comp=Z,39nm,1.4s							
AKASG	**Malin Array Be**	**73.55**	**320**	P		**P**	**10 46 27.7**	**-0.8**
	comp=Z,1.9nm,0.6s,baz=47,slow=6.5,SNR=5.4							
KIEV	**Kiev**	**73.56**	**320**	*eP*		**P**	**10 46 27.4**	**-1.1**
KIEV				pmax	pmax			
	comp=Z,3.0nm,0.9s							
B08A	**Colville Reser**	**74.53**	**42**	*eP*		**P**	**10 46 34.9**	**+0.5**
	comp=Z,8.2nm,0.9s							
HFS	**Hagfors**	**74.71**	**334**	P		**P**	**10 46 33.9**	**-1.2**
	comp=Z,1.3nm,0.6s,baz=90,slow=8.9,SNR=5.3							
EDM	**Edmonton**	**74.83**	**35**	*eP*		**P**	**10 46 36.5**	**+0.5**
EDM				pmax	pmax			
	comp=Z,21nm,1.1s							
EDM	**Edmonton**	**74.83**	**35**	*eP*		**P**	**10 46 36.5**	**+0.5**
	comp=Z,21nm,1.1s							
NB2	**NORSAR Subarra**	**74.97**	**335**	P		**P**	**10 46 35.3**	**-1.4**
	comp=Z,4.3nm,1.0s,baz=48,slow=6.2							
NB200	**NORSAR Array S**	**74.97**	**335**	*eP*		**P**	**10 46 35.7**	**-0.9**
NOA	**NORSAR Array B**	**74.97**	**335**	P		**P**	**10 46 35.7**	**-0.9**
	comp=Z,1.6nm,1.0s,baz=48,slow=6.0,SNR=5.1							
C09A	**Chrisman Ranch**	**75.43**	**42**	*eP*		**P**	**10 46 40.4**	**+0.9**
	comp=Z,9.8nm,0.8s							
K05A	**Summer Lake**	**76.76**	**47**	*eP*		**P**	**10 46 48.5**	**+1.1**
	comp=Z,15nm,0.9s							
BR101	**Keskin Array S**	**77.00**	**309**	*eP*		**P**	**10 46 47.9**	**-0.8**
BR131	**Keskin Array S**	**77.00**	**309**	*eP*		**P**	**10 46 49.0**	**+0.2**
BRTR	**Keskin Array B**	**77.00**	**309**	P		**P**	**10 46 47.9**	**-0.8**
	comp=Z,4.5nm,1.0s,baz=96,slow=5.0,SNR=15							
BRTR	**Keskin Array B**	**77.00**	**309**	*cP*		**P**	**10 46 48.7**	**-0.1**
BRTR				pmax	pmax			
	comp=Z,5.0nm,0.9s							
WALA	**Waterton Lakes**	**77.05**	**39**	*eP*		**P**	**10 46 49.4**	**+0.5**
	comp=Z,13nm,1.4s							
F10A	**Beach Ranch, E**	**77.07**	**43**	*eP*		**P**	**10 46 49.7**	**+0.8**
	comp=Z,4.4nm,0.8s							
BSMT	**Bassoo Peak**	**77.31**	**40**	*eP*		**P**	**10 46 51.2**	**+0.7**
BLMT	**Blacktail Moun**	**77.44**	**40**	*eP*		**P**	**10 46 52.4**	**+1.2**
BR231	**Keskin MP Arra**	**77.49**	**310**	*eP*		**P**	**10 46 49.4**	**-2.1**
MOD	**Modoc Plateau**	**77.58**	**48**	*eP*		**P**	**10 46 53.2**	**+1.1**
	comp=Z,8.1nm,1.0s							
JTMT	**Jette**	**77.64**	**40**	*eP*		**P**	**10 46 53.3**	**+1.1**
BMO	**Blue Mountains**	**77.68**	**44**	*eP*		**P**	**10 46 52.5**	**+0.1**
	comp=Z,4.5nm,0.7s							
VRI	**Vrincioaia**	**77.68**	**317**	P		**P**	**10 46 56.2**	**+3.9**
VRI				pmax	pmax			
	comp=Z,51nm,1.1s							
YBMT	**Yellow Bay**	**77.72**	**40**	*eP*		**P**	**10 46 53.4**	**+0.8**
SWMT	**Swartz Lake**	**77.94**	**40**	*eP*		**P**	**10 46 54.2**	**+0.3**
WVOR	**Wild Horse Val**	**78.30**	**47**	*eP*		**P**	**10 46 56.4**	**+0.5**
WVOR				pmax	pmax			
	comp=Z,6.0nm,1.0s							
WVOR	**Wild Horse Val**	**78.30**	**47**	*eP*		**P**	**10 46 56.4**	**+0.5**
	comp=Z,6.3nm,1.0s							
MSO	**Missoula**	**78.39**	**41**	*eP*		**P**	**10 46 56.7**	**+0.3**
	comp=Z,9.8nm,1.4s							
FFC	**Flin Flon**	**78.94**	**30**	*eP*		**P**	**10 46 59.0**	**-0.1**
FFC				pmax	pmax			
	comp=Z,7.0nm,0.8s							
FFC	**Flin Flon**	**78.94**	**30**	*eP*		**P**	**10 46 59.0**	**-0.1**
	comp=Z,7.4nm,0.8s							
MFID	**Camas Ranch**	**79.39**	**45**	*eP*		**P**	**10 47 02.9**	**+1.0**
	comp=Z,9.0nm,1.0s							
PAHR	**Pah Rah Range**	**79.41**	**49**	*eP*		**P**	**10 47 03.0**	**+0.9**
	comp=Z,11nm,1.2s							
LRM	**Limekiln Ridge**	**79.82**	**41**	*eP*		**P**	**10 47 05.2**	**+0.8**
EGMT	**Eagleton**	**79.85**	**38**	*eP*		**P**	**10 47 03.7**	**-0.6**
	comp=Z,54nm,0.8s							
YERR	**Yerington**	**79.92**	**50**	*eP*		**P**	**10 47 05.3**	**+0.3**
	comp=Z,11nm,1.2s							
DLMT	**Dillon**	**80.03**	**42**	*eP*		**P**	**10 47 05.9**	**+0.5**
	comp=Z,11nm,0.8s							
HLID	**Hailey**	**80.11**	**44**	*eP*		**P**	**10 47 07.1**	**+1.2**
	comp=Z,4.3nm,0.9s							
BOZ	**Bozeman (W)**	**80.38**	**41**	*eP*		**P**	**10 47 07.8**	**+0.5**
BOZ				pmax	pmax			
	comp=Z,8.0nm,1.3s							
BOZ	**Bozeman (W)**	**80.38**	**41**	*eP*		**P**	**10 47 07.8**	**+0.5**
	comp=Z,8.2nm,1.3s							
TVH3	**East Aurora ar**	**80.56**	**50**	*eP*		**P**	**10 47 09.1**	**+0.6**
	comp=Z,6.6nm,1.2s							
TVH2	**Borealis Mine**	**80.58**	**50**	*eP*		**P**	**10 47 09.6**	**+0.9**
	comp=Z,2.4nm,0.9s							
CLL	**Collm**	**81.11**	**327**	*i*P		**P**	**10 47 10.8**	**-0.1**
CLL	comp=Z,7.0nm,1.1s			*i*			10 47 13.4	
	comp=Z,8.0nm,0.9s							
CLL	**Collm**	**81.11**	**327**	*i*P		**P**	**10 47 10.8**	**-0.1**
CLL				pmax	pmax			
	comp=Z,7.0nm,1.1s							
CLL	**Collm**	**81.11**	**327**	*eP*		**P**	**10 47 10.6**	**-0.3**
	comp=Z,8.6nm,1.0s							
YHB	**Horse Butte**	**81.18**	**41**	*eP*		**P**	**10 47 13.1**	**+1.3**
	comp=Z,10nm,1.1s							
ELK	**Elko**	**81.35**	**46**	*eP*		**P**	**10 47 14.5**	**+1.8**
ELK				pmax	pmax			
	comp=Z,3.0nm,1.0s							
ELK	**Elko**	**81.35**	**46**	*eP*		**P**	**10 47 14.5**	**+1.8**
	comp=Z,3.2nm,1.0s							
HVU	**Hansel Valley**	**82.17**	**44**	*eP*		**P**	**10 47 17.8**	**+0.9**
HVU				pmax	pmax			
	comp=Z,5.0nm,0.9s							
HVU	**Hansel Valley**	**82.17**	**44**	*eP*		**P**	**10 47 17.8**	**+0.9**
	comp=Z,5.2nm,0.9s							
SNOW	**Snow King Moun**	**82.25**	**42**	*eP*		**P**	**10 47 18.6**	**+1.2**
	comp=Z,7.9nm,1.3s							
KHC	**Kasperske Hory**	**82.38**	**326**	*eP*		**P**	**10 47 17.9**	**+0.2**
KHC				pmax	pmax			
	comp=Z,1.0nm,0.8s							
KHC	**Kasperske Hory**	**82.38**	**326**	*eP*		**P**	**10 47 17.9**	**+0.2**
	comp=Z,1.4nm,0.8s							
GERES	**GERESS Array B**	**82.52**	**325**	P		**P**	**10 47 17.8**	**-0.7**
	comp=Z,1.5nm,0.9s,baz=180,slow=1.1,SNR=20							
GEA0	**GERESS Array S**	**82.53**	**325**	*eP*		**P**	**10 47 18.2**	**-0.3**
R11A	**Troy Canyon, C**	**82.60**	**48**	*eP*		**P**	**10 47 19.6**	**+0.4**
	comp=Z,6.6nm,1.3s							
HWUT	**Hardware Ranch**	**82.98**	**44**	*eP*		**P**	**10 47 22.1**	**+0.9**
	comp=Z,10nm,1.2s							
TPNV	**Topopah Spring**	**83.03**	**50**	*eP*		**P**	**10 47 22.1**	**+0.6**
TPNV				pmax	pmax			
	comp=Z,14nm,1.6s							
TPNV	**Topopah Spring**	**83.03**	**50**	*eP*		**P**	**10 47 22.1**	**+0.6**
	comp=Z,14nm,1.6s							
DUG	**Dugway, Tooele**	**83.14**	**46**	*eP*		**P**	**10 47 23.1**	**+1.1**
DUG				pmax	pmax			
	comp=Z,12nm,1.4s							
DUG	**Dugway, Tooele**	**83.14**	**46**	*eP*		**P**	**10 47 23.1**	**+1.1**
	comp=Z,12nm,1.4s							
BW06	**Boulder Array**	**83.37**	**42**	*eP*		**P**	**10 47 23.2**	**0.0**
PD31	**Pinedale Array**	**83.37**	**42**	*eP*		**P**	**10 47 23.3**	**+0.1**
PDAR	**Pinedale Array**	**83.37**	**42**	P		**P**	**10 47 23.3**	**+0.1**
	comp=Z,1.6nm,0.9s,baz=318,slow=2.0,SNR=7.4							
IMU	**Iron Mountain**	**83.92**	**47**	*eP*		**P**	**10 47 23.7**	**-2.3**
MPU	**Maple Canyon**	**83.95**	**45**	*eP*		**P**	**10 47 26.7**	**+0.5**
	comp=Z,8.4nm,1.3s							
SHPR	**Sheep Range**	**83.99**	**50**	*eP*		**P**	**10 47 26.4**	**0.0**
	comp=Z,5.1nm,1.1s							
EKA	**Eskdalemuir Ar**	**84.20**	**338**	P		**P**	**10 47 26.0**	**-0.8**
	comp=Z,1.3nm,0.7s,baz=32,slow=6.7,SNR=3.2							
MSU	**Marysvale**	**84.59**	**47**	*eP*		**P**	**10 47 30.6**	**+1.1**
MSU	**Marysvale**	**84.59**	**47**	*eP*		**P**	**10 47 30.6**	**+1.1**
ULM	**Lac du Bonnet**	**84.76**	**30**	P		**P**	**10 47 29.4**	**-0.4**
	comp=Z,9.3nm,0.9s,baz=302,slow=4.1,SNR=8.5							
ULM	**Lac du Bonnet**	**84.76**	**30**	*eP*		**P**	**10 47 29.6**	**-0.2**
ULM				pmax	pmax			
	comp=Z,11nm,1.0s							
ULM	**Lac du Bonnet**	**84.76**	**30**	*eP*		**P**	**10 47 29.6**	**-0.2**
	comp=Z,11nm,1.0s							
LCMT	**Little Creek M**	**84.88**	**48**	*eP*		**P**	**10 47 31.5**	**+0.6**
	comp=Z,3.0nm,0.9s							
MTPU	**Mount Pierson**	**84.88**	**47**	*eP*		**P**	**10 47 32.2**	**+1.0**
	comp=Z,9.2nm,1.4s							
PFO	**Pinyon Flats O**	**84.92**	**53**	*i* P		**P**	**10 47 32.2**	**+1.1**
BFO	**Black Forest**	**85.36**	**328**	*eP*		**P**	**10 47 32.3**	**-0.6**
BFO				pmax	pmax			
	comp=Z,7.0nm,0.9s							
BFO	**Black Forest**	**85.36**	**328**	*eP*		**P**	**10 47 32.2**	**-0.6**
	comp=Z,7.1nm,0.9s							
FUORN	**Ofenpass-Fuorn**	**85.73**	**326**	*eP*		**P**	**10 47 35.0**	**-0.1**
	comp=Z,12nm,0.9s							
DAVOX	**Davos/Dischmat**	**85.80**	**326**	P		**P**	**10 47 33.3**	**-2.1**
	comp=Z,4.2nm,0.8s,baz=48,slow=3.5,SNR=6.2							
U15A	**North Rim**	**85.84**	**48**	*eP*		**P**	**10 47 36.7**	**+0.8**
	comp=Z,9.8nm,0.3s							
TUE	**Stuetta**	**86.27**	**326**	*eP*		**P**	**10 47 38.5**	**+0.8**
	comp=Z,6.1nm,1.0s							
PV09	**Paradox Valley**	**86.41**	**45**	*eP*		**P**	**10 47 39.5**	**+0.8**
PV10	**Paradox Valley**	**86.55**	**45**	*eP*		**P**	**10 47 40.4**	**+1.1**
PV01	**Paradox Valley**	**86.99**	**45**	*eP*		**P**	**10 47 42.0**	**+0.6**
ECSD	**EROS Data Cent**	**89.38**	**35**	*eP*		**P**	**10 47 52.4**	**0.0**
	comp=Z,3.8nm,1.0s							
ANMO	**Albuquerque**	**90.39**	**46**	*eP*		**P**	**10 47 58.7**	**+1.2**
ANMO				pmax	pmax			
	comp=Z,2.0nm,1.0s							
LPIG	**La Paz**	**95.09**	**57**	LR		LR	11 22 30.4	
	comp=Z,234nm,20.4s,baz=303,slow=30							
LTX	**Lajitas**	**95.96**	**49**	*eP*		**P**	**10 48 23.4**	**+0.2**
LTX	**Lajitas**	**95.96**	**49**	*eP*		**P**	**10 48 23.4**	**+0.2**
TXAR	**Lajitas Array**	**95.96**	**49**	P		**P**	**10 48 23.4**	**+0.2**
	comp=Z,0.3nm,0.6s,baz=277,slow=2.8,SNR=5.2							

*NIED **05** 10:39:00,37.90N×143.60E,h8km,Mw4.0 Best double couple: M₀1.00000×10¹⁵ NP1:φs352.00000°, δ24.00000°, λ-153.00000°. NP2:φs238.00000°, δ80.00000°, λ-69.00000°.*

*ISCJB **05** 10:39:22.0±0.5,37.78N±0.03×143.63E±0.04,h19km, mb4.1/14, Error ellipse: s-maj=5.0km s-min=4.4km az=27.7*

*IDC **05** 10:39:21.0±0.8,37.58N×143.96E,h0km,mb3.8/11, mb1 4.0/14,mb1mx3.8/54,mbtmp3.9/14,ML3.6/3, Error ellipse: s-maj=20.6km s-min=17.0km az=125.0*

*NEIC **05** 10:39:22.4±0.7,37.69N×143.87E,h10km,mb4.4/2, Error ellipse: s-maj=15.2km s-min=10.5km az=122.0*

*JMA **05** 10:39:24.2±0.2,37.87N×143.60E,h43km,M4.3*

ISC 05 10:39:23.7±0.7, 37.83N±0.04×143.53E±0.06, h19km, n43, σ2s19/53, mb3.9/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
JIO	**Ouri**	**1.82**	**290**	P		**Pb**	**10 39 54.7**	**-1.8**
JIO				*e*S		**Sb**	**10 40 17.1**	**-1.9**
OFUJ	**Ofunato**	**1.92**	**311**	P		**Pb**	**10 39 55.7**	**-2.4**
JMK	**Ichinoseki**	**2.13**	**302**	P		**Pb**	**10 39 59.0**	**-2.7**
JMK				*e*S		**Sb**	**10 40 25.3**	**-2.4**
JOU	**Okura**	**2.32**	**284**	P		**Pb**	**10 40 02.3**	**-2.7**
JOM	**Ohasama**	**2.40**	**314**	P		**Pb**	**10 40 02.8**	**-3.4**
JOM				*e*S		**Sn**	**10 40 31.3**	**+0.5**
JFT	**Otama**	**2.55**	**264**	P		**Pn**	**10 40 05.4**	**+1.3**
JFT				*e*S		**Sn**	**10 40 35.2**	**+0.6**
JYK	**Kaneyama**	**2.71**	**294**	P		**Pb**	**10 40 07.7**	**-4.0**
JYK				*e*S		**Sn**	**10 40 40.3**	**+1.7**
JRG	**Rokugo**	**2.75**	**305**	P		**Pn**	**10 40 08.0**	**+1.2**
JRG				*e*S		**Sn**	**10 40 40.8**	**+1.3**
JANG	**Nango**	**2.98**	**329**	P		**Pn**	**10 40 09.6**	**-0.4**
JANG				*e*S		**Sn**	**10 40 43.9**	**-1.3**
JAH	**Hinai**	**3.25**	**317**	P		**Pn**	**10 40 14.9**	**+1.1**
JAW	**Awa shima**	**3.43**	**282**	P		**Pn**	**10 40 18.1**	**+2.0**
JTM	**Tenmabayashi**	**3.51**	**328**	*e*S		**Sn**	**10 40 57.2**	**-1.1**
JAG	**Ashikaga**	**3.55**	**248**	P		**Pn**	**10 40 18.7**	**+0.9**
JAG				*e*S		**Sn**	**10 40 59.5**	**+0.3**
BSO1	**Boso 1**	**3.78**	**214**	P		**Pn**	**10 40 20.0**	**-0.5**
BSO1				*e*S		**Sn**	**10 41 03.8**	**-0.5**
JOT	**Ohata**	**4.03**	**332**	P		**Pn**	**10 40 25.6**	**+1.2**
JRY	**Ryogami san**	**4.13**	**245**	P		**Pn**	**10 40 26.6**	**+0.8**
ERM	**Erimo**	**4.18**	**356**	*e*Pn		**Pn**	**10 40 26.6**	**+0.1**
JOD2	**Odawara 2**	**4.40**	**236**	*e*S		**Sn**	**10 41 17.2**	**-3.0**
MJAR	**Matsushiro Arr**	**4.44**	**255**	Pn		**Pn**	**10 40 32.5**	**+2.4**
	4.5nm,0.3s,baz=84,slow=15,SNR=4.9							
MJAR				Sn		**Sn**	**10 41 23.5**	**+2.3**
	3.7nm,0.3s,baz=85,slow=30,SNR=4.0							
MAJO	**Matsushiro**	**4.44**	**255**	*e*Pn		**Pn**	**10 40 32.8**	**+2.7**
MAJO				*e*Sn		**Sn**	**10 41 25.8**	**+4.6**
JKB	**Kayabe**	**4.48**	**335**	P		**Pn**	**10 40 31.7**	**+1.1**
JKB				*e*S		**Sn**	**10 41 19.7**	**-2.4**
JCH	**Churui**	**4.78**	**359**	P		**Pn**	**10 40 33.7**	**-1.0**
JCH				*e*S		**Sn**	**10 41 25.4**	**-4.1**
JHJ2	**Mitsune**	**5.60**	**214**	*e*Pn		**Pn**	**10 40 44.9**	**-1.1**
JHJ2				*e*Sn		**Sn**	**10 41 45.4**	**-4.4**
JHJ	**Hachijo jima 2**	**5.61**	**214**	Pn		**Pn**	**10 40 44.6**	**-1.5**
	7.3nm,0.3s,baz=113,slow=21,SNR=6.4							
JHJ				Sn		**Sn**	**10 41 44.6**	**-5.4**
	18nm,0.3s,baz=49,slow=19,SNR=3.8							
ASAJ	**Asahikawa**	**6.32**	**354**	*e*Pn		**Pn**	**10 40 55.9**	**+0.1**
USRK	**Ussuriysk Ar.**	**10.78**	**310**	Pn		**Pn**	**10 42 00.1**	**+3.0**
	0.4nm,0.3s,baz=120,slow=13,SNR=4.4							
KSRS	**Korea Array**	**12.38**	**273**	Pn		Pn	10 42 23.0	+4.2
	0.2nm,0.3s,baz=85,slow=13,SNR=4.1							
KSAR	**Wonju Array Be**	**12.41**	**273**	Pn		Pn	10 42 23.0	+3.7
SEY	**Seymchan**	**25.70**	**9**	P		**P**	**10 44 54.5**	**+2.1**
	1.6nm,0.6s,baz=53,slow=3.6,SNR=4.0							
SONM	**Songino Array**	**28.76**	**302**	P		P	10 45 26.0	+5.8
	1.0nm,0.5s,baz=94,slow=12,SNR=2.1							
ZALV	**Zalesovo Beam**	**42.63**	**312**	P		P	10 47 24.1	+5.5
	3.7nm,0.5s,baz=96,slow=8.7,SNR=6.1							
MKAR	**Makanchi Array**	**45.12**	**302**	P		**P**	**10 47 41.3**	**+2.5**
	1.1nm,0.6s,baz=96,slow=8.5,SNR=9.7							
KURK	**Kurchatov**	**46.77**	**308**	P		**P**	**10 47 53.9**	**+2.2**
KURBB	**Kurchatov Arra**	**46.84**	**308**	P		**P**	**10 47 53.9**	**+1.7**
	5.4nm,0.5s,baz=82,slow=8.3,SNR=14							
ILAR	**Eielson Array**	**47.91**	**33**	P		**P**	**10 48 01.1**	**+0.7**
	1.1nm,0.7s,baz=260,slow=6.2,SNR=15							
INK	**Inuvik**	**52.91**	**28**	P		**P**	**10 48 38.7**	**+0.7**
	0.9nm,0.8s,baz=335,slow=9.0,SNR=4.2							
WRAB	**Tennant Creek**	**58.10**	**190**	*eP*		**P**	**10 49 16.2**	**+0.2**
	2.4nm,0.4s							
WRA	**Warramunga Arr**	**58.12**	**190**	P		**P**	**10 49 15.2**	**-0.8**
	0.7nm,0.6s,baz=142,slow=1.7,SNR=9.4							
ABKAR	**Akbulak array**	**58.71**	**310**	*eP*		**P**	**10 49 21.9**	**+2.0**
	1.0nm,0.5s							
ASAR	**Alice Springs**	**61.84**	**190**	P		**P**	**10 49 41.0**	**-0.6**
	0.3nm,0.7s,baz=360,slow=6.9,SNR=3.5							
PDAR	**Pinedale Array**	**75.90**	**47**	P		**P**	**10 51 09.0**	**-0.3**
	0.3nm,0.5s,baz=278,slow=1.4,SNR=3.7							
TXAR	**Lajitas Array**	**88.30**	**54**	P		**P**	**10 52 13.5**	**-0.8**
	0.1nm,0.6s,baz=306,slow=3.2,SNR=2.7							
PAB	**San Pablo**	**97.53**	**335**	*eP*		Pdif	10 52 55.9	-0.9
	31nm,0.8s							

*IDC **05** 11:01:35.0±2.9, 19.67S×178.10W,h470km±28km, mb3.0/5, mb1 3.3/6,mb1mx3.0/32,mbtmp3.9/6, Error ellipse: s-maj=93.1km s-min=16.2km az=149.0*

*ISCJB **05** 11:01:36.4±1.6, 19.5S±0.6×178.2W±0.4, h500km, mb3.4/5, Error ellipse: s-maj=90.3km s-min=10.7km az=147.1*

ISC 05 11:01:37.3±1.6, 19.4S±0.6×178.2W±0.4, h500km, n8, σ1s35/10, mb3.7/5, Fiji Islands region

KRSC 05 10:43:47.9±2.2, 50.29N×157.19E, h40km±23km, ML3.7, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
SKR	**Severo-Kuril's**	**0.79**	**300**	*i* P		Pn	10 44 02.4	-0.2
SKR				*i* S		Sn	10 44 11.3	-1.9
ASAK	**Asacha**	**2.15**	**12**	*e*P		Pn	10 44 23.9	+2.7
RUS	**Russkaya**	**2.30**	**21**	*e*P		Pn	10 44 25.9	+2.6
RUS				*e*S		Sn	10 44 52.4	+2.0
KRMR	**Karymshinskiy**	**2.61**	**13**	*e*P		Pn	10 44 32.0	+4.4
PET	**Petropavlovsk**	**2.89**	**18**	P		Pn	10 44 35.1	+3.8
PET				S		Sn	10 45 08.6	+3.8
DALK	**Dalny**	**2.92**	**19**	*e*P		Pn	10 44 35.1	+3.4
DALK				*e*S		Sn	10 45 09.2	+3.8
UGLR	**Uglovaya**	**3.10**	**19**	P		Pn	10 44 38.6	+4.3
AVH	**Avacha**	**3.13**	**17**	P		Pn	10 44 39.4	+4.6
AVH				S		Sn	10 45 16.2	+5.2
KRER	**Koryakskii**	**3.17**	**17**	P		Pn	10 44 40.0	+4.6
KRER				S		Sn	10 45 18.0	+5.9
SDLR	**Sedlovina**	**3.17**	**19**	P		Pn	10 44 38.8	+3.4
SDLR				S		Sn	10 45 15.9	+3.9
NLC	**Nalytchevo**	**3.18**	**24**	P		Pn	10 44 38.4	+3.1
NLC				S		Sn	10 45 14.8	+2.7
KRX	**Arik**	**3.21**	**16**	P		Pn	10 44 40.6	+4.7
KRX				S		Sn	10 45 18.9	+6.0
SPN	**Mys Shipunski**	**3.32**	**31**	P		Pn	10 44 41.2	+3.9
SPN				S		Sn	10 45 18.8	+3.3
GNL	**Ganaly**	**3.44**	**7**	P		Pn	10 44 42.9	+3.8
MKZ	**Mys Kozlova**	**5.10**	**31**	P		Pn	10 45 04.9	+3.2

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
AFI	**Afiamalu**	**8.21**	**49**	P		**P**	**11 03 34.8**	**-1.3**
	2.9nm,0.3s,baz=216,slow=14,SNR=5.6							
AFI				S		**S**	**11 05 11.9**	**-1.6**
	2.9nm,0.3s,baz=212,slow=19,SNR=2.8							
STKA	**Stephens Creek**	**38.13**	**243**	P		**P**	**11 08 11.9**	**-1.2**
	2.7nm,0.9s,baz=76,slow=8.3,SNR=2.6							
WRA	**Warramunga Arr**	**44.60**	**261**	P		**P**	**11 09 04.8**	**+0.1**
	0.8nm,0.3s,baz=95,slow=7.9,SNR=95							
WRA				PcP		**pP**	**11 10 37.4**	**-0.2**
	0.2nm,0.4s,baz=99,slow=3.5,SNR=4.8							
ASAR	**Alice Springs**	**44.62**	**256**	P		**P**	**11 09 04.7**	**-0.2**
	3.0nm,0.8s,baz=97,slow=7.9,SNR=37							
ASAR				PcP		**pP**	**11 10 36.8**	**-0.9**
	0.8nm,0.5s,baz=105,slow=4.0,SNR=12							
TXAR	**Lajitas Array**	**86.61**	**57**	P		**P**	**11 13 29.4**	**+1.8**
	0.1nm,0.7s,baz=225,slow=6.0,SNR=2.4							
ILAR	**Eielson Array**	**87.30**	**13**	P		**P**	**11 13 31.6**	**+1.7**
	0.2nm,0.6s,baz=218,slow=5.7,SNR=4.3							
AKASG	**Malin Array Be**	**141.99**	**332**	PKhKP		PKPpre	11 20 09.1	
	0.3nm,0.3s,baz=43,slow=3.8,SNR=4.5							
GERES	**GERESS Array B**	**149.12**	**345**	PKPbc		**PKPbc**	**11 20 29.5**	**+0.6**
	0.3nm,0.3s,baz=46,slow=4.2,SNR=3.8							

*ISCJB **05** 11:01:46.5±0.5,21.09S±0.04×68.86W±0.07,h123km±6km, mb3.7/3,Error ellipse: s-maj=10.5km s-min=5.7km az=165.2*

*GUC **05** 11:01:46.9±0.4,21.09S×68.90W,h114km±2km,ML3.9*

*IDC **05** 11:01:47.4±1.3,21.06S×68.51W,h107km±18km,mb3.4/3, mb1 3.6/6,mb1mx3.4/37,mbtmp3.8/6, Error ellipse: s-maj=29.7km s-min=14.1km az=131.0*

*SJA **05** 11:02:11.7±0.7,22.32S×67.14W,h151km±27km,ML2.9, MW3.1*

ISC 05 11:01:46.9±0.8, 21.06S±0.04×68.72W±0.06, h108km±8km, n21, σ1s54/30, mb3.8/3, 1C-4D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
PB01	**IPOC Station P**	**0.72**	**271**	*e*P		**Pn**	**11 02 05.1**	**-0.2**
PB01				*e*S		**Sn**	**11 02 18.7**	**-0.4**
PB01				IAML			11 02 20.1	
	comp=E,5μm,0.3s							
PB08	**IPOC Station P**	**1.00**	**336**	*e*P		**Pn**	**11 02 09.5**	**+1.1**
PB08				*e*S		**Sn**	**11 02 26.3**	**+1.9**
PB08				IAML			11 02 28.2	
	comp=E,2μm,0.2s							
PB07	**IPOC Station P**	**1.28**	**238**	*e*P		**Pn**	**11 02 10.5**	**-0.7**
PB07				*e*S		**Sn**	**11 02 28.3**	**-1.2**
PB07				IAML			11 02 28.9	
	comp=N,2μm,0.4s							
HMBC	**Humberstone**	**1.34**	**305**	*e*P		**Pn**	**11 02 11.7**	**-0.2**
HMBC				*e*S		**Sn**	**11 02 30.2**	**-0.5**
HMBC				IAML			11 02 31.5	
	comp=E,4μm,1.0s							
LVC	**Limon Verde**	**1.56**	**187**	P		**Pn**	**11 02 15.6**	**+0.9**
	comp=E,1μm,0.3s,baz=15,slow=11,SNR=284							
LVC				S		**Sn**	**11 02 36.7**	**+1.1**
	comp=E,5μm,0.3s,baz=99,slow=19,SNR=79							
LVC	**Limon Verde**	**1.56**	**187**	*e*P		**Pn**	**11 02 15.3**	**+0.6**
LVC				*e*S		**Sn**	**11 02 36.6**	**+0

SVKR				pmax	pmax			
	comp=Z,446nm,0.3s							
SVKR				smax	smax			
	comp=E,2μm,0.7s							
CRS	**Chara**	**2.01**	**55**	*e*Pn	Pn	11 39 16.3	-1.5	
CRS				*e*Pg	Pb	11 39 19.4	-0.7	
CRS				*e*		11 39 26.2		
CRS				*e*Sn	Sn	11 39 42.0	-1.7	
CRS				*e*Sg	Sb	11 39 45.6	-0.1	
CRS				max				
	comp=E,52nm,0.2s							
CRS				Smax				
	comp=E,133nm,0.5s							
CRS	**Chara**	**2.01**	**55**	*e*PN	Pb	11 39 19.0	-1.1	
CRS				*e*		11 39 45.7		
CRS				pmax	pmax			
	comp=Z,51nm,0.4s							
CRS				smax	smax			
	comp=E,150nm,0.6s							
YOA	**Uoyan**	**2.03**	**282**	*e*Pg	Pn	11 39 19.0	+0.9	
YOA				*e*Sg	Sb	11 39 46.5	+0.3	
YOA				Pmax				
	comp=E,99nm,0.3s							
YOA				Smax				
	comp=E,2μm,0.7s							
BOD	**Bodaibo**	**2.17**	**342**	*e*Pn	Pn	11 39 18.0	-2.0	
BOD				*e*Pg	Pb	11 39 21.3	-1.4	
BOD				*e*Sn	Sn	11 39 45.2	-2.3	
BOD				*e*Sg	Sb	11 39 49.5	-0.7	
BOD				Pmax				
	comp=E,33nm,0.2s							
BOD				Smax				
	comp=E,304nm,0.6s							
BOD	**Bodaibo**	**2.17**	**342**	*e*PN	Pn	11 39 17.8	-2.2	
BOD				*e*		11 39 20.7		
BOD				*e*		11 39 49.2		
BOD				pmax	pmax			
	comp=Z,34nm,0.2s							
BOD				smax	smax			
	comp=E,303nm,0.4s							
KMO	**Kumora**	**2.30**	**275**	*e*Pn	Pn	11 39 19.8	-2.0	
KMO				*e*Pg	Pb	11 39 23.0	-2.0	
KMO				*e*		11 39 25.7		
KMO				*e*		11 39 32.1		
KMO				*e*Sn	Sn	11 39 48.2	-2.7	
KMO				*e*Sg	Sb	11 39 53.5	-0.5	
KMO				max				
	comp=E,33nm,0.4s							
KMO				Smax				
	comp=E,274nm,0.9s							
KMO	**Kumora**	**2.30**	**275**	*e*PN	Pn	11 39 23.4	+1.6	
KMO				*e*		11 39 53.7		
KMO				pmax	pmax			
	comp=Z,34nm,0.5s							
KMO				smax	smax			
	comp=N,272nm,0.9s							
YLYR	**Ulyunkhan**	**2.52**	**251**	*e*Pn	Pn	11 39 22.8	-2.0	
YLYR				*e*Pg	Pb	11 39 27.2	-1.5	
YLYR				*e*		11 39 34.3		
YLYR				*e*Sn	Sn	11 39 54.8	-1.3	
YLYR				*e*Sg	Sb	11 40 01.3	+1.1	
YLYR				max				
	comp=N,30nm,0.5s							
YLYR				Smax				
	comp=N,112nm,0.3s							
YLYR	**Ulyunkhan**	**2.52**	**251**	*e*PN	Pn	11 39 23.1	-1.7	
YLYR				*e*		11 39 28.0		
YLYR				*e*S	Sn	11 39 55.0	-1.1	
YLYR				*e*		11 40 00.6		
YLYR				pmax	pmax			
	comp=Z,30nm,0.5s							
YLYR				smax	smax			
	comp=E,127nm,0.4s							
TUP	**Tupik**	**3.00**	**115**	*e*Pn	Pn	11 39 29.4	-2.1	
TUP				*e*Pg	Pb	11 39 35.9	-1.1	
TUP				*e*Sg	Sb	11 40 16.2	+2.0	
TUP				Pmax				
	comp=E,22nm,0.3s							
TUP				Smax				
	comp=E,247nm,0.6s							
TUP	**Tupik**	**3.00**	**115**	*e*PN	Pb	11 39 36.0	-1.0	
TUP				*e*		11 40 16.1		
TUP				pmax	pmax			
	comp=Z,22nm,0.3s							
TUP				smax	smax			
	comp=N,245nm,0.7s							
NIZ	**Nizh Angarsk**	**3.24**	**272**	*e*Pn	Pn	11 39 33.4	-1.3	
NIZ				*e*Pg	Pb	11 39 40.0	-1.0	
NIZ				*e*Sn	Sn	11 40 11.6	-2.4	
NIZ				*e*Sg	Sb	11 40 22.1	+1.1	
NIZ				Pmax				
	comp=N,4.0nm,0.1s							
NIZ				Smax				
	comp=N,54nm,0.4s							
SYVR	**Suvo**	**3.72**	**238**	*e*Pn	Pn	11 39 41.3	0.0	
SYVR				*e*Pg	Pb	11 39 49.6	+0.4	
SYVR				*e*Sn	Sn	11 40 23.6	-2.2	
SYVR				*e*Sg	Sb	11 40 37.2	+2.4	
SYVR				Pmax				
	comp=N,4.0nm,0.2s							
SYVR				Smax				
	comp=N,54nm,0.2s							
CIT	**Chita**	**3.89**	**196**	*e*Sg	Sb	11 40 42.9	+3.1	
CIT				Smax				
	comp=N,181nm,0.2s							
KELR	**Kotokel**	**5.19**	**237**	*e*Sg	Sg	11 41 23.8	-5.3	
UUDB	**Ulan-Yde**	**5.97**	**232**	*e*Sg	Sg	11 41 47.6	-6.6	
UUDB				Smax				
	comp=N,66nm,1.3s							
TRG	**Tyrgan**	**6.04**	**244**	*e*Sg	Sb	11 41 48.7	+7.3	
TRG				Smax				
	comp=N,11nm,0.4s							
KPC	**Khapcheranga**	**6.33**	**197**	*e*Pn	Pn	11 40 18.4	+1.3	
KPC				*e*Pg	Pb	11 40 37.2	+3.6	
KPC				*e*Sn	Sn	11 41 26.0	-4.1	
KPC				*e*Sg	Sg	11 41 59.2	-6.5	
KPC				Pmax				
	comp=N,2.0nm,0.3s							
KPC				Smax				
	comp=N,43nm,1.4s							
IVK	**Ivanovka**	**7.56**	**243**	*e*Sg	Sg	11 42 36.9	-8.4	
IVK				Smax				
	comp=N,8.0nm,0.5s							
ZAK	**Zakamensk**	**9.01**	**238**	*e*Sg	Sn	11 43 21.1	+45	
ZAK				Smax				
	comp=N,14nm,1.1s							
MOY	**Mondy**	**9.41**	**250**	*e*Sg	Sn	11 43 34.2	+48	
MOY				Smax				
	comp=N,20nm,1.6s							

*ISCJB **05** 11:56:52.6±0.7, 36°.75N±0°.07×4°.75E±0°.09, h13km, Error ellipse: s-maj=13.3km s-min=5.9km az=135.2*
*CRAAG **05** 11:56:52.7, 36°.65N×4°.71E, Ml3.1*
*CSEM **05** 11:56:53.8±0.2, 36°.61N×4°.77E, h20km, mb3.7, Error ellipse: s-maj=12.4km s-min=5.7km az=33.0*
*MDD **05** 11:56:55.4±1.5, 36°.56N×4°.81E, h43km±86km, mb3.7/2, Error ellipse: s-maj=20.8km s-min=13.0km az=162.0, PRXIMO*

ISC 05 11:56:51.8±1.2, 36°.60N±0°.07×4°.81E±0°.07, h13km, n16, σ1§22/20, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SET	**Setif**	**0.62**	**130**	P	**Pn**	**11 57 07.0**	**+0.6**
SET	**Setif**	**0.62**	**130**	P	**Pn**	**11 57 07.0**	**+0.6**
SET	**Setif**	**0.62**	**130**	P	**Pn**	**11 57 07.0**	**+0.6**
CKHR	**Kef el Ahmar**	**0.81**	**136**	P	**Pn**	**11 57 09.4**	**+0.3**
CKHR	**Kef el Ahmar**	**0.81**	**136**	P	**Pn**	**11 57 09.4**	**+0.3**
CKHR	**Kef el Ahmar**	**0.81**	**136**	P	**Pn**	**11 57 09.4**	**+0.3**
DFRA	**Djebel Bou Aff**	**0.86**	**93**	P	**Pn**	**11 57 10.7**	**+1.0**
DFRA	**Djebel Bou Aff**	**0.86**	**93**	P	**Pn**	**11 57 10.7**	**+1.0**
DFRA	**Djebel Bou Aff**	**0.86**	**93**	P	**Pn**	**11 57 10.7**	**+1.0**
ADJB	**Djebel Djouab**	**1.19**	**249**	P	**Pg**	**11 57 15.1**	**+0.4**
ADJB	**Djebel Djouab**	**1.19**	**249**	P	**Pg**	**11 57 15.1**	**+0.4**
ADJB	**Djebel Djouab**	**1.19**	**249**	P	**Pg**	**11 57 15.1**	**+0.4**
ETOS	**Mallorca**	**3.53**	**334**	P	**Pn**	**11 57 47.5**	**+1.2**
	SNR=7.9						
ETOS				P	**Pn**	**11 57 47.5**	**+1.2**
	0.3nm,0.1s,SNR=7.9						
ETOS				S	**Sn**	**11 58 25.3**	**-2.6**
	1.1nm,0.1s,SNR=7.9						
ETOS	**Mallorca**	**3.53**	**334**	P	**Pn**	**11 57 47.5**	**+1.2**
	SNR=7.9						
EIBI	**Ibiza**	**3.66**	**312**	P	**Pn**	**11 57 49.3**	**+1.2**
	1.1nm,0.2s,SNR=7.9						
EIBI				S	**Sn**	**11 58 29.3**	**-1.8**
	1.0nm,0.2s,SNR=7.9						
EIBI	**Ibiza**	**3.66**	**312**	P	**Pn**	**11 57 49.3**	**+1.2**
	1.1nm,0.2s,SNR=7.9						
EIBI				S	**Sn**	**11 58 29.3**	**-1.8**
	1.0nm,0.2s,SNR=7.9						

MEX 05 12:00:53.4±0.8, 14°.07N×91°.96W, h56km±46km, MD3.7, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.21**	**356**	*e*P	Pn	12 01 25.6	-2.2
CCIG				*e*S	Sn	12 01 52.8	-1.2
TGIG		**2.92**	**338**	*e*P	Pn	12 01 36.3	-1.1
TGIG				*i* S	Sn	12 02 09.5	-1.8

IDC 05 12:15:04.7±1.8, 9°.26S×123°.96E, h0km, mb4.2/1, mb1 3.6/4, mb1mx3.4/28, mbtmp3.5/4, ML3.2/3, Error ellipse: s-maj=83.8km s-min=18.9km az=66.0, Timor region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**8.94**	**170**	Pn	Pn	12 17 17.2	+2.0
	0.2nm,0.3s,baz=352,slow=12,SNR=19						
FITZ				Sn	Sn	12 18 58.8	+2.0
	0.5nm,0.3s,baz=162,slow=9.8,SNR=11						
WRA	**Warramunga Arr**	**14.61**	**138**	Pn	Pn	12 18 33.5	+0.6
	0.1nm,0.3s,baz=322,slow=13,SNR=6.9						
WRA				Sn	Sn	12 21 15.2	-0.5
	0.1nm,0.3s,baz=314,slow=23,SNR=3.2						
ASAR	**Alice Springs**	**17.20**	**148**	P	Pn	12 19 06.4	-0.2
	0.1nm,0.3s,baz=329,slow=12,SNR=9.5						
ASAR				S	Sn	12 22 18.3	-0.4
	0.0nm,0.3s,baz=313,slow=22,SNR=2.9						
SONM	**Songino Array**	**58.94**	**346**	P	P	12 25 05.6	-0.2
	1.3nm,0.4s,baz=163,slow=8.4,SNR=2.6						

*IDC **05** 12:42:07.2±3.0, 36°.40N×70°.93E, h163km±26km, mb3.6/14, mb1 3.7/18, mb1mx3.5/44, mbtmp4.1/18, MS4.2/1, Ms1 4.2/1, ms1mx2.4/39, Error ellipse: s-maj=21.2km s-min=11.9km az=28.0*
*ISCJB **05** 12:42:08.5±0.3, 36°.55N±0°.03×71°.02E±0°.05, h188km, mb4.0/17, Error ellipse: s-maj=6.4km s-min=3.3km az=156.4*
*NEIC **05** 12:42:09.5±1.8, 36°.54N×70°.89E, h178km±15km, mb4.4/8, Error ellipse: s-maj=18.1km s-min=9.8km az=207.0*
*MOS **05** 12:42:09.0±1.3, 36°.55N×70°.92E, h186km, mb4.8/6, Error ellipse: s-maj=12.6km s-min=7.0km az=94.4*
*NNC **05** 12:42:13.6±1.6, 36°.98N×70°.69E, h192km±11km, mb3.3, mpv4.3, Error ellipse: s-maj=15.8km s-min=9.1km az=153.0*

ISC 05 12:42:09.1±0.5, 36°.55N±0°.05×71°.04E±0°.06, h188km, n80, σ2§17/92, mb4.1/17, 15C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CEP	**Cherat**	**2.81**	**165**	⇑P	**Pn**	**12 42 56.3**	**+0.2**
CEP				S	**Sn**	**12 43 31.0**	**-1.7**
DZET	**Dzherino**	**2.86**	**323**	⇑P	**Pn**	**12 42 54.7**	**-1.8**
	258nm,0.3s						
DZET				⇑S	**Sn**	**12 43 28.6**	**-5.0**
	846nm,0.4s						
CHCP	**Chirah Chowk**	**3.41**	**147**	P	**Pn**	**12 43 04.1**	**+0.8**
THW	**Thamme Wali**	**3.79**	**171**	P	**Pn**	**12 43 07.7**	**-0.3**
SARP	**Sargodha**	**4.81**	**163**	P	**Pn**	**12 43 20.1**	**-0.8**
THN	**Thein Dam**	**5.64**	**135**	*e*P	**Pn**	**12 43 28.8**	**-2.7**
THN				*e*x	x	12 44 33.0	
MNAS	**Manas**	**6.04**	**10**	⇑P	**Pn**	**12 43 36.7**	**-0.1**
	9.5nm,0.5s						
MNAS				⇑S	**Sn**	**12 44 42.8**	**-3.2**
	147nm,0.8s						
DHRM	**DHARAMSHALA**	**6.11**	**133**	*e*P	**Pn**	**12 43 38.3**	**+0.4**
DHRM				*e*S	**Sn**	**12 44 43.8**	**-4.1**
DHRM				IAML		12 44 50.8	
	comp=N,620nm,0.4s						
DHRM				IAML		12 44 51.3	
	comp=E,480nm,0.1s						
PONG	**Pong**	**6.13**	**137**	*e*S	**Sn**	**12 44 42.0**	**-5.9**
EKS2	**Erkin-Say**	**6.46**	**18**	*e*PN	**Pn**	**12 43 44.0**	**+1.7**
EKS2				pmax	pmax		
	comp=Z,11nm,0.4s						
EKS2	**Erkin-Say**	**6.46**	**18**	*e*Pn	**Pn**	**12 43 44.0**	**+1.7**
	comp=Z,11nm,0.4s						
KK31	**Karatay Array**	**6.56**	**357**	P	**Pn**	**12 43 42.7**	**-0.8**
	comp=Z,16nm,0.3s,baz=189,slow=13,SNR=181						
KK31				⇑S	**Sn**	**12 44 52.7**	**-5.4**
	comp=Z,38nm,0.3s,baz=185,slow=20,SNR=12						
KKAR	**Karatay Array**	**6.56**	**357**	*e*PN	**Pn**	**12 43 43.1**	**-0.4**
KKAR				pmax	pmax		
	comp=Z,43nm,0.4s						
KKAR	**Karatay Array**	**6.56**	**357**	*e*Pn	**Pn**	**12 43 43.0**	**-0.4**
	comp=Z,43nm,0.4s						
KKAR				*e*Sn	**Sn**	**12 44 53.4**	**-4.7**
AAK	**Ala-Archa**	**6.64**	**23**	P	**Pn**	**12 43 45.1**	**+0.5**
	comp=Z,4.0nm,0.3s,baz=163,slow=3.5,SNR=9.6						
AAK				S	**Sn**	**12 44 59.3**	**-0.8**
	comp=Z,5.1nm,0.3s,baz=134,slow=20,SNR=19						
AAK	**Ala-Archa**	**6.64**	**23**	⇓P	**Pn**	**12 43 45.7**	**+1.0**
	comp=Z,6.8nm,0.3s						
AAK				⇑S	**Sn**	**12 44 59.2**	**-1.0**
	comp=Z,34nm,0.6s						
AAK	**Ala-Archa**	**6.64**	**23**	*e*PN	**Pn**	**12 43 44.8**	**+0.2**
AAK				*e*		12 44 59.8	
AAK				pmax	pmax		
	comp=Z,15nm,0.3s						
AAK	**Ala-Archa**	**6.64**	**23**	*e*Pn	**Pn**	**12 43 44.8**	**+0.2**
	comp=Z,14nm,0.3s						
AAK				*e*Sn	**Sn**	**12 44 59.8**	**-0.3**
SDNR	**Sundarnagar**	**7.04**	**134**	*e*P	**Pn**	**12 43 49.0**	**-0.9**
SDNR				*e*S	**Sn**	**12 45 04.0**	**-5.6**
TKM2	**Tokmak 2**	**7.27**	**27**	⇑P	**Pn**	**12 43 53.5**	**+0.6**
	comp=Z,6.1nm,0.5s						
TKM2				⇑S	**Sn**	**12 45 13.2**	**-2.0**
	comp=Z,13nm,0.8s						
TKM2	**Tokmak 2**	**7.27**	**27**	*e*PN	**Pn**	**12 43 53.6**	**+0.6**
TKM2				pmax	pmax		
	comp=Z,11nm,0.4s						
TKM2	**Tokmak 2**	**7.27**	**27**	*e*Pn	**Pn**	**12 43 53.6**	**+0.6**
	comp=Z,11nm,0.4s						
TKM2				*e*Sn	**Sn**	**12 45 15.0**	**-0.2**
SMLA	**Simla**	**7.43**	**135**	*e*P	**Pn**	**12 43 54.5**	**-0.4**
SMLA				*e*S	**Sn**	**12 45 13.9**	**-4.8**
SMLA				IAML		12 45 18.4	
	comp=N,213nm,0.3s						
SMLA				IAML		12 45 20.1	
	comp=E,222nm,0.6s						
NDI	**New Delhi**	**9.41**	**145**	*e*P	Pn	12 44 11.2	-10
NDI				*e*S	Sn	12 45 45.5	-21
GEYT	**Alibeck**	**10.39**	**281**	P	Pn	12 44 26.6	-7.1
	comp=E,0.6nm,0.3s,baz=72,slow=9.3,SNR=1.9						
GEYT				S	Sn	12 46 20.0	-9.5
	comp=E,2.0nm,0.3s,baz=161,slow=14,SNR=3.5						
PYUN	**Piuthan**	**13.15**	**126**	*e*P	**Pn**	**12 45 09.5**	**+0.4**
	comp=E,36nm,0.5s						
MK31	**Makanchi Array**	**13.23**	**36**	⇑P	**P**	**12 45 13.8**	**+0.7**
	comp=E,0.8nm,0.5s,baz=212,slow=10,SNR=13						
MKAR	**Makanchi Array**	**13.23**	**36**	P	**Pn**	**12 45 11.5**	**+1.6**
	comp=E,0.4nm,0.3s,baz=210,slow=10.0,SNR=12						
KOLN	**Koldanda**	**13.77**	**126**	*e*P	**Pn**	**12 45 17.6**	**+0.7**
	comp=E,25nm,0.4s						
KOLN				*e*S	**Sn**	**12 47 42.7**	**-7.8**
GKN	**Gorkha**	**14.30**	**123**	*e*P	**Pn**	**12 45 24.2**	**+0.7**
	comp=E,82nm,0.5s						
GKN				*e*S	Sn	12 47 52.9	-10
BHPL	**Bhopal**	**14.37**	**156**	*e*P	**P**	**12 45 27.3**	**+1.4**
BHPL				*e*x	x	12 47 53.9	
DMN	**Daman**	**14.87**	**123**	*e*P	**P**	**12 45 32.0**	**+0.3**
	comp=E,84nm,0.7s						
KKN	**Kakani**	**14.88**	**122**	*e*P	**Pn**	**12 45 31.2**	**+0.6**
	comp=E,103nm,0.8s						
AB31	**Akbulak array**	**15.06**	**331**	⇑P	**Pn**	**12 45 30.1**	**-2.3**
	comp=E,2.3nm,0.3s,baz=145,slow=12,SNR=105						
AB31				⇓S	Sn	12 48 08.5	-12
	comp=E,6.1nm,0.6s,baz=153,slow=23,SNR=8.1						
ABKAR	**Akbulak array**	**15.06**	**331**	*e*Pn	**Pn**	**12 45 30.7**	**-1.7**
	comp=E,5.0nm,0.3s						
ABKAR				*e*Sn	Sn	12 48 07.0	-13
KURBB	**Kurchatov Arra**	**15.07**	**19**	P	**Pn**	**12 45 30.6**	**-1.9**
	comp=E,0.1nm,0.3s,baz=208,slow=11,SNR=4.8						
PKIN	**Phulchoki**	**15.09**	**122**	*e*P	**Pn**	**12 45 33.5**	**+0.2**
KURK	**Kurchatov**	**15.18**	**19**	*e*P	**P**	**12 45 35.7**	**+1.2**
KURK				*e*		12 48 22.1	
KURK	**Kurchatov**	**15.18**	**19**	*e*Pn	**P**	**12 45 35.7**	**+1.2**
KURK				*e*Sn	**S**	**12 48 22.1**	**-1.1**
GUN	**Gumba**	**15.21**	**120**	*e*P	**Pn**	**12 45 34.3**	**-0.6**
	comp=E,39nm,0.6s						
RAMN	**Ramite**	**16.31**	**122**	*e*P	**Pn**	**12 45 48.5**	**+0.4**
	comp=E,69nm,0.7s						
BVA0	**Borovoye Array**	**16.48**	**359**	P	**Pn**	**12 45 50.2**	**+0.6**
	comp=E,3.7nm,0.9s,baz=158,slow=12,SNR=14						
BVAR	**Borovoye Array**	**16.48**	**359**	P	**Pn**	**12 45 50.0**	**+0.4**
	comp=E,0.7nm,0.3s,baz=176,slow=11,SNR=15						
BRVK	**Borovoye**	**16.52**	**358**	⇑*e*P	**Pn**	**12 45 50.2**	**+0.2**
BRVK				pmax	pmax		
	comp=Z,14nm,0.8s						
BRVK	**Borovoye**	**16.52**	**358**	*e*P	**P**	**12 45 49.5**	**+0.2**
	comp=Z,12nm,0.8s						
AKTO	**Aktyubinsk**	**16.75**	**330**	P	**P**	**12 45 52.8**	**+0.9**
	comp=Z,1.5nm,0.3s,baz=145,slow=11,SNR=40						
AKTO				S	**S**	**12 48 54.7**	**-2.2**
	comp=Z,0.8nm,0.3s,baz=218,slow=20,SNR=5.8						
AKTO	**Aktyubinsk**	**16.75**	**330**	⇓P	**P**	**12 45 52.5**	**+0.5**
	comp=Z,20nm,0.8s						
AKTO				⇓S	**S**	**12 48 50.7**	**-6.3**
	comp=Z,4.9nm,0.6s						
BOK	**Bokaro**	**18.04**	**131**	*ex*	x	12 46 09.2	
BOK				IAmb	IAmb	12 46 09.7	
	comp=Z,26nm,0.9s						
LSA	**Lhasa**	**18.16**	**106**	*e*P	**Pn**	**12 46 13.0**	**+2.8**
LSA				pmax	pmax		
	comp=Z,10.0nm,0.7s						
LSA	**Lhasa**	**18.16**	**106**	*e*P	**Pn**	**12 46 13.0**	**+2.8**
	comp=Z,9.7nm,0.7s						
ZALV	**Zalesovo Beam**	**19.86**	**24**	P	**Pn**	**12 46 27.9**	**-1.6**
	comp=Z,3.2nm,0.3s,baz=217,slow=12,SNR=7.8						
SHL	**Shillong**	**20.90**	**116**	*e*P	Pn	12 46 53.2	+10
GNI	**Garni**	**20.91**	**288**	P	**P**	**12 46 36.6**	**-0.5**
	comp=Z,4.3nm,0.3s,baz=165,slow=8.4,SNR=6.4						
GNI	**Garni**	**20.91**	**288**	*ce*P	**P**	**12 46 39.3**	**+2.2**
GNI				pmax	pmax		
	comp=Z,73nm,1.1s						
GNI	**Garni**	**20.91**	**288**	*e*P	**P**	**12 46 38.6**	**+1.5**
ARU	**Arti**	**21.60**	**341**	P	**P**	**12 46 45.0**	**+1.0**
	comp=Z,1.6nm,0.3s,baz=147,slow=5.9,SNR=5.3						
ARU	**Arti**	**21.60**	**341**	*e*P	**P**	**12 46 44.3**	**+0.3**
ARU				pmax	pmax		
	comp=Z,7.0nm,1.0s						
ARU	**Arti**	**21.60**	**341**	*e*P	**P**	**12 46 44.9**	**+0.9**
	comp=Z,9.9nm,1.1s						
ZEI	**Tsey**	**21.75**	**295**	*e*P	**P**	**12 46 47.2**	**+1.3**
KBZ	**Khabaz**	**22.61**	**297**	P	**P**	**12 46 54.6**	**+0.9**
	comp=Z,2.0nm,0.8s,baz=73,slow=9.0,SNR=4.9						
TLY	**Talaya**	**27.59**	**46**	P	**P**	**12 47 42.3**	**+3.7**
	comp=Z,1.6nm,0.4s,baz=278,slow=15,SNR=3.1						
OBN	**Obninsk**	**29.92**	**319**	*e*P	**P**	**12 48 01.1**	**+2.0**
OBN				*i* *PP	**pP**	**12 48 35.7**	**-2.1**
OBN				pmax	pmax		
	comp=Z,8.0nm,0.4s						
CMAR	**Chiang Mai Arr**	**30.45**	**119**	P	**P**	**12 48 05.6**	**+1.3**
	comp=Z,1.4nm,0.8s,baz=305,slow=8.5,SNR=10						
AKASG	**Malin Array Be**	**32.94**	**309**	P	**P**	**12 48 26.3**	**+0.7**
	comp=Z,3.2nm,0.6s,baz=81,slow=7.2,SNR=13						
KIEV	**Kiev**	**32.95**	**309**	⇑*e*P	**P**	**12 48 26.2**	**+0.5**
KIEV				pmax	pmax		
	comp=Z,5.0nm,0.8s						
VSU	**Vasula**	**36.17**	**322**	⇑*e*P	**P**	**12 48 54.9**	**+1.7**
VSU				*i* *PP	**pP**	**12 49 33.1**	**+0.5**
VSU				pmax	pmax		
	comp=Z,33nm,1.0s						
FINES	**FINESS Array B**	**37.46**	**326**	P	**P**	**12 49 05.2**	**+1.2**
	comp=Z,2.6nm,0.7s,baz=113,slow=13,SNR=8.5						
FINES	**FINESS Array B**	**37.46**	**326**	*i* P	**P**	**12 49 05.1**	**+1.0**
FINES				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ARCES	**ARCESS Array B**	**41.11**	**338**	P	**P**	**12 49 35.7**	**+1.5**
	comp=Z,2.9nm,0.6s,baz=106,slow=8.9,SNR=19						
YAK	**Yakutsk**	**43.91**	**35**	*e*P	P	12 50 02.3	+5.5
YAK				pmax	pmax		
	comp=Z,6.0nm,0.6s						
NB2	**NORSAR Subarra**	**44.36**	**323**	P	**P**	**12 50 00.7**	**+0.3**
	comp=Z,5.6nm,0.6s,baz=96,slow=7.9						
NOA	**NORSAR Array B**	**44.36**	**323**	P	**P**	**12 50 01.1**	**+0.6**
	comp=Z,5.3nm,0.6s,baz=97,slow=7.9,SNR=29						
KONO	**Kongsberg**	**45.07**	**321**	⇓*e*P	**P**	**12 50 06.2**	**+0.2**
KONO				pmax	pmax		
	comp=Z,92nm,2.6s						
MA2	**Magadan**	**54.31**	**38**	*e*P	P	12 51 20.9	+5.2
JHJ	**Hachijo jima 2**	**55.43**	**72**	LR	LR	13 16 56.6	
	comp=Z,243nm,20.4s,baz=78,slow=38						
ILAR	**Eielson Array**	**74.72**	**16**	P	**P**	**12 53 28.5**	**+0.7**
	comp=Z,0.2nm,0.6s,baz=316,slow=3.8,SNR=3.0						
YKA	**Yellowknife Ar**	**81.20**	**3**	P	**P**	**12 54 05.6**	**+2.1**
	comp=Z,0.1nm,0.4s,baz=348,slow=5.5,SNR=2.9						
WRA	**Warramunga Arr**	**81.99**	**122**	P	**P**	**12 54 08.2**	**0.0**
	comp=Z,1.5nm,0.8s,baz=325,slow=4.9,SNR=19						
ASAR	**Alice Springs**	**84.26**	**125**	P	**P**	**12 54 19.9**	**+0.2**
	comp=Z,1.3nm,0.6s,baz=310,slow=5.1,SNR=21						
ASAR	**Alice Springs**	**84.26**	**125**	P	**P**	**12 54 20.0**	**+0.2**

IDC 05 12:44:26.1±5.6, 18°.73S×177°.54W, h0km, mb3.4/2, mb1 3.6/2, mb1mx3.4/23, mbtmp3.4/2, MS3.3/1, Ms1 3.3/1, ms1mx2.6/22, Error ellipse: s-maj=322.6km s-min=77.3km az=154.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**45.30**	**260**	P	P	12 52 45.6	-0.5
	0.2nm,0.3s,baz=97,slow=7.4,SNR=7.6						
ASAR	**Alice Springs**	**45.37**	**255**	P	P	12 52 47.0	+0.3
	0.2nm,0.5s,baz=88,slow=8.0,SNR=5.3						
ASAR				LR	LR	13 10 12.3	
	comp=Z,40nm,20.5s,baz=94,slow=34						
NOA	**NORSAR Array B**	**137.28**	**354**	PKP	PKPdf	13 03 50.8	-0.5
	0.2nm,0.5s,baz=16,slow=1.9,SNR=2.3						

**IDC 05 12:45:40.2±3.5, 54°.32N×87°.52E, h0km, mb1 3.1/2, mb1mx3.0/34, mbtmp3.1/2

URZ S **Sn** **13 00 52.1 +0.8**
12nm,0.3s,baz=57,slow=11,SNR=14
URZ **Urewera** **3.75 202** PN **Pn** **13 00 05.8 +0.7**
URZ SN **Sn** **13 00 51.6 +0.3**
MUGZ **Murupara** **4.06 205** *e*PN **Pn** **13 00 09.9 +0.9**
RTZ **Ruatahuna** **4.12 202** PN **Pn** **13 00 09.9 +0.1**
SNGZ **Shannon Statio** **4.17 197** PN **Pn** **13 00 11.4 +0.9**
MRHZ **Matea Rd** **4.50 206** *e*PN **Pn** **13 00 14.8 +0.2**
BKZ **Black Stump Fm** **4.78 203** *e*PN **Pn** **13 00 16.4 -1.7**
KRHZ **Kereru** **5.25 202** PN **Pn** **13 00 22.7 -1.3**
TSZ **Takapari Road** **5.76 203** PN **Pn** **13 00 29.1 -1.5**
MRZ **Mangatainoka R** **6.42 203** *e*PN **Pn** **13 00 36.2 -2.3**
HOWZ **Holdsworth Sta** **6.68 203** *e*PN **Pn** **13 00 40.2 -2.1**
OGWZ **Otaki Gorge** **6.70 205** *e*PN **Pn** **13 00 40.2 -2.6**
CAW **Cannon Point** **7.00 205** PN **Pn** **13 00 44.2 -2.5**
TUWZ **Tuamarina** **7.70 209** PN **Pn** **13 00 53.2 -2.5**
THZ **Tophouse** **8.41 212** PN **Pn** **13 01 03.3 -1.8**
THZ SN **Sn** **13 02 39.1 -0.6**
KHZ **Kahutara** **8.70 207** PN **Pn** **13 01 05.6 -3.1**
DZM **Mont Dzumac** **16.75 316** P **Pn** **13 02 48.7 -1.3**
0.3nm,0.3s,baz=177,slow=7.8,SNR=4.5
STKA **Stephens Creek** **31.21 265** P P 13 05 10.7 +3.6
1.5nm,0.8s,baz=124,slow=11,SNR=3.2
ASAR **Alice Springs** **40.53 274** P **P** **13 06 28.1 +1.8**
3.6nm,0.5s,baz=115,slow=7.9,SNR=52
WRA **Warramunga Arr** **41.93 279** P **P** **13 06 38.5 +0.7**
3.1nm,0.7s,baz=118,slow=7.8,SNR=32
FITZ **Fitzroy Crossi** **49.96 275** P P **13 07 42.5 +2.1**
0.4nm,0.3s,baz=117,slow=4.5,SNR=8.1
KAPI **Kappang** **62.00 284** P **P** **13 09 05.3 -0.5**
9.5nm,0.2s,baz=148,slow=9.5,SNR=4.3
PMSA **Palmer Station** **69.33 156** P **P** **13 09 50.1 -1.7**
12nm,0.8s,baz=250,slow=3.8,SNR=7.5
BRTR **Keskin Array B** **152.05 290** PKPbc **PKPbc** **13 18 38.4 +0.3**
0.5nm,0.4s,baz=113,slow=2.3,SNR=1.8

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*ISCJB **05** 13:05:11.4±0.1, 62°.53N±0°.01×151°.09W±0°.04, h96km±1km, mb4.4/85, Error ellipse: s-maj=2.8km s-min=2.4km az=15.2*
*MOS **05** 13:05:11.1±1.0, 62°.54N×151°.29W, h91km, mb4.6/40, Error ellipse: s-maj=12.2km s-min=5.8km az=99.5*
*IDC **05** 13:05:13.8±0.6, 62°.71N×151°.15W, h95km±4km, mb4.1/33, mb1 4.1/37, mb1mx4.1/59, mbtmp4.4/37, MS3.1/10, Ms1 3.1/10, ms1mx2.9/31, Error ellipse: s-maj=11.7km s-min=7.8km az=167.0*
*NEIC **05** 13:05:13.5, 62°.50N×151°.07W, h86km, mb4.4/41, After AEIC.*
NEIC Felt [II] at Palmer. Also felt at Anchorage, Cantwell, Eagle River, Skwentna and Talkeetna.
ISC 05 13:05:12.8±0.4, 62°.52N±0°.03×151°.14W±0°.03, h94km±3km, h93km:pP-P, n288, σ1s36/325, mb4.5/85, 5C-3D, Central Alaska

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CUT	**Chulitna**	**0.42**	**106**	P		**Pn**	**13 05 26.5**	**-0.8**
PPLA	**Purkeypile**	**0.61**	**308**	P		**Pn**	**13 05 28.8**	**-0.2**
PPLA				S		**Sn**	**13 05 40.7**	**-0.4**
HUR	**Hurricane**	**0.83**	**56**	P		**Pn**	**13 05 30.4**	**-0.5**
CAST	**Castle Rocks**	**1.00**	**335**	P		**Pn**	**13 05 32.4**	**-0.3**
TRF	**Thorofare Moun**	**1.01**	**22**	P		**Pn**	**13 05 33.0**	**0.0**
TRF				S		**Sn**	**13 05 47.9**	**-0.3**
KTH	**Kantishna Hill**	**1.04**	**5**	P		**Pn**	**13 05 33.1**	**-0.1**
KTH				S		**Sn**	**13 05 47.9**	**-0.7**
STLK	**Strandline Lak**	**1.08**	**198**	P		**Pn**	**13 05 33.0**	**-0.7**
SUSI	**Susitna One**	**1.08**	**170**	P		**Pn**	**13 05 33.2**	**-0.6**
SUA				S		**Sn**	**13 05 48.6**	**-0.9**
GHO	**Glory Hole Cre**	**1.28**	**125**	P		**Pn**	**13 05 36.0**	**-0.1**
RND	**Reindeer**	**1.37**	**49**	P		**Pn**	**13 05 36.7**	**-0.5**
RND				S		**Sn**	**13 05 54.8**	**-0.8**
RND	**Reindeer**	**1.37**	**49**	P		**Pn**	**13 05 36.7**	**-0.5**
RND				S		**Sn**	**13 05 54.8**	**-0.8**
SPU	**Mount Spurr**	**1.41**	**198**	*e*Pn		**Pn**	**13 05 37.1**	**-0.6**
SPU				*e*Sn		**Sn**	**13 05 54.4**	**-2.1**
SPCR	**Spurr Chakacha**	**1.42**	**201**	P		**Pn**	**13 05 37.3**	**-0.4**
SPWE	**Spurr West**	**1.42**	**209**	P		**Pn**	**13 05 37.6**	**-0.3**
FIB	**Fire Island**	**1.44**	**161**	P		**Pn**	**13 05 38.0**	**+0.1**
FIB	**Fire Island**	**1.44**	**161**	P		**Pn**	**13 05 38.0**	**+0.1**
CKL	**Chakachamna La**	**1.45**	**204**	P		**Pn**	**13 05 38.0**	**-0.2**
CHUM	**Lake Minchumin**	**1.47**	**339**	P		**Pn**	**13 05 38.4**	**+0.2**
CHUM				S		**Sn**	**13 05 57.2**	**-0.3**
MCK	**McKinley**	**1.57**	**39**	P		**Pn**	**13 05 39.6**	**-0.1**
MCK				S		**Sn**	**13 05 59.9**	**-0.1**
MCK	**McKinley**	**1.57**	**39**	P		**Pn**	**13 05 39.6**	**-0.1**
MCK				S		**Sn**	**13 05 59.9**	**-0.1**
RC01	**Rabbit Creek A**	**1.58**	**155**	P		**Pn**	**13 05 38.4**	**-1.3**
BPAW	**Bear Paw Mtn.**	**1.59**	**2**	P		**Pn**	**13 05 39.4**	**-0.4**
DHY	**Denali Highway**	**1.82**	**71**	P		**Pn**	**13 05 42.4**	**-0.4**
BWN	**Browne**	**1.82**	**24**	P		**Pn**	**13 05 43.1**	**+0.3**
BWN				S		**Sn**	**13 06 05.3**	**-0.2**
BGRM	**Barrier Glacie**	**1.87**	**200**	P		**Pn**	**13 05 42.9**	**-0.6**
SCM	**Sheep Creek Mo**	**1.92**	**109**	P		**Pn**	**13 05 42.9**	**-1.2**
SCM				S		**Sn**	**13 06 07.7**	**-0.2**
SCM	**Sheep Creek Mo**	**1.92**	**109**	P		**Pn**	**13 05 42.9**	**-1.2**
SCM				S		**Sn**	**13 06 07.7**	**-0.2**
SLKM	**Skilak Lake**	**2.07**	**167**	P		**Pn**	**13 05 45.0**	**-1.0**
SLKM	**Skilak Lake**	**2.07**	**167**	P		**Pn**	**13 05 45.0**	**-1.0**
RDJH	**Redoubt Jeurge**	**2.10**	**203**	P		**Pn**	**13 05 46.3**	**-0.2**
NCT	**North Crescent**	**2.15**	**204**	P		**Pn**	**13 05 47.0**	**-0.1**
RDWB	**Redoubt West**	**2.20**	**203**	P		**Pn**	**13 05 47.6**	**-0.3**
RSO	**Redoubt South**	**2.21**	**201**	*e*Pn		**Pn**	**13 05 47.7**	**-0.4**
NEA	**Nenana**	**2.26**	**23**	P		**Pn**	**13 05 48.0**	**-0.5**
TTA	**Tatalina**	**2.28**	**282**	P		**Pn**	**13 05 49.2**	**+0.3**
TTA	**Tatalina**	**2.28**	**282**	P		**Pn**	**13 05 49.2**	**+0.3**
TT01	**Tatalina**	**2.28**	**282**	P		**Pn**	**13 05 48.1**	**-0.6**
WRH	**Wood River Hil**	**2.39**	**34**	P		**Pn**	**13 05 49.8**	**-0.4**
MLY	**Manley**	**2.52**	**4**	P		**Pn**	**13 05 51.6**	**-0.4**
SVW2	**Sparrevohn**	**2.55**	**238**	P		**Pn**	**13 05 52.2**	**-0.1**
SEW	**Seward**	**2.56**	**161**	P		**Pn**	**13 05 50.9**	**-1.5**
CCB	**Clear Creek Bu**	**2.60**	**33**	P		**Pn**	**13 05 52.6**	**-0.4**
ILIM	**Iliamna**	**2.60**	**201**	P		**Pn**	**13 05 53.4**	**+0.3**
PS10	**TAPS Pump St10**	**2.61**	**67**	P		**Pn**	**13 05 54.0**	**+0.8**
HDA	**Harding Lake**	**2.67**	**43**	P		**Pn**	**13 05 53.6**	**-0.3**
KLU	**Klutina**	**2.67**	**110**	P		**Pn**	**13 05 52.3**	**-1.7**
VLZ	**Valdez**	**2.67**	**119**	P		**Pn**	**13 05 51.9**	**-2.1**
PS11	**TAPS Pump St11**	**2.68**	**97**	P		**Pn**	**13 05 54.0**	**0.0**
VMT	**TAPS Tl Valdez**	**2.69**	**120**	P		**Pn**	**13 05 52.5**	**-1.6**
ILS	**Iliamna Low So**	**2.74**	**201**	P		**Pn**	**13 05 55.4**	**+0.5**
MDM	**Murphy Dome**	**2.77**	**27**	P		**Pn**	**13 05 55.2**	**-0.1**
SRLK	**Bradley Lake**	**2.77**	**177**	P		**Pn**	**13 05 54.2**	**-1.1**
I53US	**FAIRBANKS INFR**	**2.78**	**30**	P		**Pn**	**13 05 55.5**	**+0.2**
	baz=202,slow=16							
I53US				S		**Sn**	**13 06 26.9**	**-1.1**
	baz=237,slow=48							
I53US				*i*			13 20 00.0	
	baz=220,slow=328,SNR=6.9							
COLA	**College**	**2.78**	**30**	P		**Pn**	**13 05 55.2**	**-0.1**
COLA	**College**	**2.78**	**30**	P		**Pn**	**13 05 55.2**	**-0.1**
PS08	**TAPS Pump Stn8**	**2.80**	**42**	P		**Pn**	**13 05 55.3**	**-0.4**
HOM	**Homer**	**2.88**	**185**	*e*Pn		**Pn**	**13 05 57.6**	**+0.8**
DIV	**Divide**	**2.90**	**116**	P		**Pn**	**13 05 55.0**	**-2.1**
IL1	**Eielson Array**	**2.95**	**38**	*e*Pn		**Pn**	**13 05 56.8**	**-0.8**
ILAR	**Eielson Array**	**2.95**	**38**	P		**Pn**	**13 05 57.5**	**-0.1**
	32nm,0.3s,baz=224,slow=14,SNR=1385							
ILAR				S		**Sn**	**13 06 29.4**	**-2.7**
	141nm,0.3s,baz=222,slow=22,SNR=41							
ILB	**Eielson Array**	**2.95**	**38**	*e*Pn		**Pn**	**13 05 57.2**	**-0.4**
CNPM	**China Poot**	**3.01**	**181**	P		**Pn**	**13 05 57.4**	**-1.1**
OPT	**Oil Point**	**3.05**	**200**	P		**Pn**	**13 05 60.0**	**+0.9**
HIN	**Hinchinbrook I**	**3.08**	**132**	P		**Pn**	**13 05 57.8**	**-1.6**
EYAK	**Cordova Ski Ar**	**3.25**	**125**	P		**Pn**	**13 06 00.1**	**-1.6**
AUL	**Augustine Lava**	**3.34**	**201**	P		**Pn**	**13 06 04.5**	**+1.6**
AUE	**Augustine Isla**	**3.36**	**200**	P		**Pn**	**13 06 04.2**	**+1.1**
AUSE	**Augustine SEas**	**3.38**	**200**	P		**Pn**	**13 06 04.6**	**+1.2**
AUI	**Augustine Isla**	**3.39**	**200**	P		**Pn**	**13 06 05.3**	**+1.8**
PS06	**TAPS Pump Stn6**	**3.40**	**10**	P		**Pn**	**13 06 03.5**	**-0.2**
DOT	**Dot Lake**	**3.41**	**68**	P		**Pn**	**13 06 03.4**	**-0.5**
MENT	**Mentasta**	**3.44**	**80**	P		**Pn**	**13 06 04.2**	**-0.1**
BMRM	**Bremner River**	**3.48**	**114**	P		**Pn**	**13 06 02.8**	**-2.0**
IM3	**Indian Mountai**	**3.66**	**343**	P		**Pn**	**13 06 07.5**	**+0.3**
MCNL	**McNeil River**	**3.70**	**206**	P		**Pn**	**13 06 08.3**	**+0.6**
CDD	**Cape Douglas**	**3.81**	**200**	P		**Pn**	**13 06 09.9**	**+0.6**
VRDI	**Verde Repeater**	**3.86**	**106**	P		**Pn**	**13 06 08.2**	**-1.9**
MID	**Middleton Isla**	**3.89**	**141**	P		**Pn**	**13 06 09.9**	**-0.3**
MID	**Middleton Isla**	**3.89**	**141**	P		**Pn**	**13 06 09.9**	**-0.3**
FOSS	**Fourpeaked Sta**	**3.94**	**200**	P		**Pn**	**13 06 11.8**	**+0.8**
FOPK	**Fourpeaked Vol**	**3.95**	**198**	P		**Pn**	**13 06 11.5**	**+0.4**
MCARA	**McCarthy VSAT**	**4.00**	**103**	P		**Pn**	**13 06 10.5**	**-1.3**
NICHA	**Nichawak Mount**	**4.14**	**120**	P		**Pn**	**13 06 11.9**	**-1.8**
CRQM	**Cirque**	**4.21**	**111**	P		**Pn**	**13 06 13.5**	**-1.3**
PS05	**TAPS Pump Stn5**	**4.31**	**3**	P		**Pn**	**13 06 17.0**	**+1.0**
SUCK	**Suckling Hills**	**4.32**	**121**	P		**Pn**	**13 06 14.5**	**-1.6**
KHIT	**Khitrov Hills**	**4.32**	**115**	P		**Pn**	**13 06 14.8**	**-1.4**
PTPK	**Patty Peak**	**4.32**	**104**	P		**Pn**	**13 06 14.9**	**-1.4**
BCA3	**Beaver Creek A**	**4.33**	**79**	P		**Pn**	**13 06 15.2**	**-1.1**
KAHC	**Katmai Hardscr**	**4.33**	**208**	P		**Pn**	**13 06 16.1**	**-0.3**
TGL	**Tana Glacier**	**4.34**	**110**	P		**Pn**	**13 06 14.8**	**-1.7**
GRIN	**Grindle Hills**	**4.38**	**117**	P		**Pn**	**13 06 15.6**	**-1.4**
BALM	**Baldy**	**4.43**	**106**	P		**Pn**	**13 06 15.7**	**-2.1**
BALM	**Baldy**	**4.43**	**106**	P		**Pn**	**13 06 15.7**	**-2.1**
KIAG	**Kiagna River**	**4.47**	**107**	P		**Pn**	**13 06 16.4**	**-2.0**
KAWH	**Katmai**	**4.53**	**205**	P		**Pn**	**13 06 20.0**	**+1.0**
ISLE	**Juniper Island**	**4.63**	**111**	P		**Pn**	**13 06 18.3**	**-2.2**
KVTA	**Katmai Vly 10**	**4.64**	**208**	P		**Pn**	**13 06 21.2**	**+0.8**
KULT	**Kultieth River**	**4.64**	**116**	P		**Pn**	**13 06 19.0**	**-1.6**
KAKN	**Katmai Knife C**	**4.66**	**206**	P		**Pn**	**13 06 21.3**	**+0.4**
KELA	**Mount Kelaz**	**4.69**	**211**	P		**Pn**	**13 06 21.6**	**+0.4**
BARN	**Barnard Glacie**	**4.73**	**104**	P		**Pn**	**13 06 20.8**	**-1.1**
KABU	**Katmai Buttres**	**4.74**	**208**	P		**Pn**	**13 06 23.3**	**+1.5**
COLD	**Coldfoot**	**4.74**	**4**	P		**Pn**	**13 06 22.3**	**+0.5**
BAGL	**Bagley Icefiel**	**4.79**	**111**	P		**Pn**	**13 06 20.7**	**-1.8**
FYU	**Fort Yukon**	**4.79**	**30**	P		**Pn**	**13 06 23.3**	**+0.8**
KABR	**Katmai Barrier**	**4.80**	**205**	P		**Pn**	**13 06 23.4**	**+0.6**
KDAK	**Kodiak Island**	**4.81**	**189**	P		**Pn**	**13 06 21.0**	**-1.8**
KDAK	**Kodiak Island**	**4.81**	**189**	P		**Pn**	**13 06 21.0**	**-1.8**
GRNC	**Granite Creek**	**4.82**	**108**	P		**Pn**	**13 06 21.5**	**-1.7**
CTGM	**Chitina Glacie**	**4.92**	**104**	P		**Pn**	**13 06 22.9**	**-1.4**
EGAK	**Eagle**	**4.99**	**59**	P		**Pn**	**13 06 24.8**	**-0.4**
MESA	**MESA**	**5.01**	**114**	P		**Pn**	**13 06 24.2**	**-1.4**
LOGN	**Logan Glacier**	**5.12**	**105**	P		**Pn**	**13 06 25.6**	**-1.5**
RKAV	**Rock Avalanche**	**5.20**	**111**	P		**Pn**	**13 06 26.6**	**-1.6**
TABL	**Table Mountain**	**5.22**	**109**	P		**Pn**	**13 06 26.7**	**-1.9**
OHAK	**Old Harbor**	**5.43**	**192**	P		**Pn**	**13 06 28.9**	**-2.2**
DAWY	**Dawson**	**5.52**	**69**	P		**Pn**	**13 06 31.6**	**-0.9**
PCA	**Pinnacle**	**5.78**	**110**	P		**Pn**	**13 06 34.4**	**-1.6**
ANNW	**Aniakchak Nort**	**6.62**	**216**	P		**Pn**	**13 06 48.7**	**+1.3**
HYT	**Haines Junctio**	**6.71**	**99**	P		**Pn**	**13 06 46.9**	**-1.7**
DHAK	**Deception Hill**	**7.19**	**113**	P		**Pn**	**13 06 53.9**	**-1.3**
CHGN	**Chignik**	**7.26**	**214**	*e*Pn		**Pn**	**13 06 55.6**	**-0.4**
PLBC	**Pleasant Camp**	**7.81**	**107**	P		**Pn**	**13 07 02.2**	**-1.3**
SKAG	**Skagway**	**8.27**	**105**	*e*Pn		**Pn**	**13 07 07.8**	**-1.9**
SDPT	**Sand Point**	**8.65**	**218**	*e*Pn		**Pn**	**13 07 15.4**	**+0.4**
INK	**Inuvik**	**9.33**	**44**	P		**Pn**	**13 07 24.1**	**0.0**
	0.7nm,0.3s,baz=240,slow=18,SNR=32							
INK				S		**Sn**	**13 09 03.0**	**-4.0**
	1.3nm,0.3s,baz=134,slow=29,SNR=4.2							
INK				LR		LR	13 11 27.2	
	comp=Z,64nm,18.4s,baz=300,slow=41							
INK	**Inuvik**	**9.33**	**44**	P		**Pn**	**13 07 23.9**	**-0.2**
DLBC	**Dease Lake**	**11.17**	**102**	P		**Pn**	**13 07 47.5**	**-1.8**
	0.5nm,0.3s,baz=291,slow=11,SNR=8.3							
DLBC				LR		LR	13 12 29.4	
	comp=Z,98nm,18.4s,baz=296,slow=39							
DLBC	**Dease Lake**	**11.17**	**102**	*e*Pn		**Pn**	**13 07 46.8**	**-2.4**
WRAK	**Wrangell Islan**	**11.32**	**114**	*e*Pn		**Pn**	**13 07 50.7**	**-0.4**
UNV	**Unalaska Valle**	**11.86**	**230**	*e*Pn		**Pn**	**13 07 58.0**	**-0.4**
BBB	**Bella Bella**	**16.07**	**120**	P		**P**	**13 08 56.4**	**+1.9**
	0.4nm,0.3s,baz=318,slow=14,SNR=4.3							
YKA	**Yellowknife Ar**	**16.73**	**74**	P		**P**	**13 09 01.7**	**-0.1**
	0.2nm,0.3s,baz=71,slow=11,SNR=7.2							
YKA				LR		LR	13 14 54.3	
	comp=Z,5.3nm,20.4s,baz=0.0,slow=35							
YKA	**Yellowknife Ar**	**16.73**	**74**	*ce*P		**P**	**13 09 03.0**	**+1.3**
YKA				pmax		pmax		
	comp=Z,1.0nm,0.5s							
BILL	**Bilibino**	**18.32**	**306**	*e*P		**P**	**13 09 13.1**	**-6.1**
BILL				pmax		pmax		
	comp=Z,4.0nm,1.2s							
LLLB	**Lillooet**	**19.84**	**113**	*e*P		**Pn**	**13 09 39.0**	**+0.6**
	comp=Z,9.8nm,0.8s							
PGC	**Sidney**	**20.70**	**119**	*e*P		**P**	**13 09 46.6**	**+1.5**
	comp=Z,20nm,0.8s							
EDM	**Edmonton**	**21.83**	**98**	*e*P		**P**	**13 09 57.2**	**0.0**
EDM				pmax		pmax		
	comp=Z,69nm,1.6s							
EDM	**Edmonton**	**21.83**	**98**	*e*P		**P**	**13 09 57.2**	**0.0**
	comp=Z,69nm,1.6s							
RES	**Resolute Bay**	**22.70**	**35**	P		**P**	**13 10 07.3**	**+1.3**
	comp=Z,2.4nm,0.5s,baz=260,slow=9.8,SNR=4.1							
LTY	**Liberty**	**22.94**	**118**	*e*P		**P**	**13 10 08.9**	**+0.1**
	comp=Z,20nm,1.6s							
NEW	**Newport**	**23.65**	**111**	P		**P**	**13 10 17.9**	**+2.5**
	comp=Z,7.2nm,1.0s,baz=328,slow=11,SNR=4.0							
NEW	**Newport**	**23.65**	**111**	*e*P		**P**	**13 10 18.3**	**+2.9**
NEW				pmax		pmax		
	comp=Z,7.0nm,0.9s							
NEW	**Newport**	**23.65**	**111**	*e*P		**P**	**13 10 18.2**	**+2.9**
	comp=Z,7.4nm,0.9s							
D08A	**Wollman Farm,**	**23.82**	**116**	*e*P		**P**	**13 10 17.2**	**+0.3**
	comp=Z,7.2nm,0.8s							
WALA	**Waterton Lakes**	**24.46**	**106**	P		**P**	**13 10 23.7**	**+0.9**
	comp=Z,13nm,1.1s							
SEY	**Seymchan**	**25.18**	**296**	P		**P**	**13 10 28.8**	**-0.2**
	comp=Z,12nm,0.8s,baz=94,slow=6.5,SNR=20							
YBMT	**Yellow Bay**	**25.31**	**108**	*e*P		**P**	**13 10 31.2**	**+0.7**
F10A	**Beach Ranch, E**	**25.39**	**115**	*e*P		**P**	**13 10 31.8**	**+0.6**
	comp=Z,9nm,0.8s							
HUMO	**Hull Mountain**	**25.92**	**127**	*e*P		**P**	**13 10 38.2**	**+2.3**
	comp=Z,10nm,1.3s							
FFC	**Flin Flon**	**26.16**	**85**	*i* P		**P**	**13 10 41.6**	**+3.7**
BMO	**Blue Mountains**	**26.26**	**116**	*e*P		**P**	**13 10 42.1**	**+3.1**
	comp=Z,2.7nm,0.7s							
LRM	**Limekiln Ridge**	**27.57**	**109**	*e*P		**P**	**13 10 51.2**	**+0.2**
MFID	**Camas Ranch**	**28.05**	**116**	*e*P		**P**	**13 10 55.8**	**+0.6**
	comp=Z,3.5nm,0.7s							
PEA0	**Petropavlovsk-**	**28.09**	**274**	*e*P		**P**	**13 10 54.6**	**-0.6**
PETK	**Petropavlovsk-**	**28.09**	**274**	P		**P**	**13 10 54.7**	**-0.5**
	comp=Z,4.3nm,0.8s,baz=64,slow=13,SNR=4.4							
PETK				LR		LR	13 20 50.3	
	comp=Z,23nm,21.2s,baz=79,slow=33							
HLID	**Hailey**	**28.52**	**114**	*e*P		**P**	**13 11 00.6**	**+1.2**
	comp=Z,1.7nm,0.8s							
TPAW	**Teton Pass**	**30.07**	**110**	*e*P		**P**	**13 11 14.7**	**+1.5**
	comp=Z,2.7nm,0.8s							
HVU	**Hansel Valley**	**30.68**	**115**	*e*P		**P**	**13 11 19.3**	**+0.9**
HVU				pmax		pmax		
	comp=Z,3.0nm,0.7s							
HVU	**Hansel Valley**	**30.68**	**115**	*e*P		**P**	**13 11 19.3**	**+0.9**
	comp=Z,2.6nm,0.7s							
BW06	**Boulder Array**	**31.25**	**110**	*e*P		**P**	**13 11 24.2**	**+0.6**
PDAR	**Pinedale Array**	**31.25**	**110**	P		**P**	**13 11 24.2**	**+0.7**
	comp=Z,1.5nm,0.9s,baz=302,slow=6.8,SNR=11							
PDAR				pP		**pP**	**13 11 46.4**	**+1.6**
	comp=Z,1.2nm,0.8s,baz=308,slow=5.3,SNR=3.7							
PDAR				LR		LR	13 24 28.2	
	comp=Z,57nm,20.7s,baz=304,slow=37							
ULM	**Lac du Bonnet**	**31.90**	**87**	P		**P**	**13 11 29.7**	**+0.8**
	comp=Z,2.5nm,0.6s,baz=313,slow=10,SNR=4.6							
DUG	**Dugway, Tooele**	**31.98**	**116**	*e*P		**P**	**13 11 31.2**	**+1.4**
DUG	**Dugway, Tooele**	**31.98**	**116**	*e*P		**P**	**13 11 31.2**	**+1.4**
R11A	**Troy Canyon, C**	**32.42**	**121**	*e*P		**P**	**13 11 34.8**	**+1.0**
	comp=Z,3.7nm,1.2s							
RSSD	**Black Hills**	**32.65**	**102**	*e*P		**P**	**13 11 36.2**	**+0.5**
RSSD				pmax		pmax		
	comp=Z,4.0nm,0.8s							
RSSD	**Black Hills**	**32.65**	**102**	*e*P		**P**	**13 11 36.2**	**+0.5**
	comp=Z,4.0nm,0.8s							
DAC	**Darwin (Calif)**	**33.46**	**126**	*e*P		**P**	**13 11 43.9**	**+1.1**
DAC				pmax		pmax		
	comp=Z,5.0nm,1.3s							
DAC	**Darwin (Calif)**	**33.46**	**126**	*e*P		**P**	**13 11 43.9**	**+1.1**
	comp=Z,5.2nm,1.3s							
MSU	**Marysvale**	**33.66**	**117**	*e*P		**P**	**13 11 45.9**	**+1.3**
MSU	**Marysvale**	**33.66**	**117**	*e*P		**P**	**13 11 45.9**	**+1.3**
SRU	**San Rafael Swe**	**33.85**	**115**	*e*P		**P**	**13 11 47.5**	**+1.4**
SRU				pmax		pmax		
	comp=Z,7.0nm,0.8s							
SRU	**San Rafael Swe**	**33.85**	**115**	*e*P		**P**	**13 11 47.5**	**+1.4**
	comp=Z,7.0nm,0.8s							
CCUT	**Cedar City**	**34.00**	**119**	*e*P		**P**	**13 11 48.1**	**+0.6**
	comp=Z,2.3nm,0.6s							
LCMT	**Little Creek M**	**34.51**	**120**	*e*P		**P**	**13 11 53.5**	**+1.6**
	comp=Z,3.8nm,1.1s							
GSC	**Goldstone, Bar**	**34.62**	**126**	*e*P		**P**	**13 11 55.0**	**+2.3**
GSC				pmax		pmax		
	comp=Z,7.0nm,1.3s							
GSC	**Goldstone, Bar**	**34.62**	**126**	*e*P		**P**	**13 11 55.0**	**+2.3**
	comp=Z,7.0nm,1.3s							
YAK	**Yakutsk**	**34.68**	**306**	*e*P		**P**	**13 11 52.6**	**-0.2**
YAK				pmax		pmax		
	comp=Z,13nm,0.6s							
PV10	**Paradox Valley**	**35.09**	**114**	*e*P		**P**	**13 11 58.6**	**+1.7**
U15A	**North Rim**	**35.40**	**119**	*e*P		**P**	**13 12 01.5**	**+1.8**
	comp=Z,12nm,1.8s							
PV01	**Paradox Valley**	**35.49**	**113**	*e*P		**P**	**13 12 01.6**	**+1.1**
PFO	**Pinyon Flats O**	**36.25**	**127**	*i* P		**P**	**13 12 08.9**	**+2.1**
WUAZ	**Wupatki**	**36.56**	**119**	*e*P		**P**	**13 12 11.1**	**+1.7**
	comp=Z,6.7nm,0.8s							
SPMN	**Marine on St.**	**36.98**	**90**	*e*P		**P**	**13 12 12.8**	**+0.1**
	comp=Z,7.4nm,0.6s							
SDCO	**Great Sand Dun**	**37.14**	**110**	*e*P		**P**	**13 12 16.4**	**+1.9**
	comp=Z,6.0nm,1.4s							
X16A	**Lo Mia Camp, P**	**37.49**	**120**	*e*P		**P**	**13 12 19.1**	**+1.8**
	comp=Z,2.7nm,0.8s							
SUMG	**Summit**	**37.73**	**27**	*i* P		pP	13 12 41.0	+0.2
	comp=Z,3.7nm,0.8s							
ANMO	**Albuquerque**	**39.09**	**114**	‖*e*P		**P**	**13 12 33.2**	**+2.4**
ANMO				pmax		pmax		
	comp=Z,6.0nm,2.5s							
JFWS	**Jewell Farm**	**39.93**	**90**	*e*P		**P**	**13 12 38.2**	**+0.8**
JFWS				pmax		pmax		
	comp=Z,9.0nm,0.7s							
JFWS	**Jewell Farm**	**39.93**	**90**	*e*P		**P**	**13 12 38.2**	**+0.8**
	comp=Z,9.0nm,0.7s							
NRIK	**Noril'sk**	**42.04**	**333**	P		**P**	**13 12 54.6**	**+0.2**
	comp=Z,4.8nm,0.6s,baz=48,slow=2.9,SNR=6.0							
NRIK				pP		**pP**	**13 13 14.4**	**-1.9**
	comp=Z,3.1nm,0.5s,baz=87,slow=3.9,SNR=2.9							
NRIK				LR		LR	13 31 30.1	
	comp=Z,29nm,21.4s,baz=94,slow=38							
MNTX	**Cornudas Mount**	**42.34**	**115**	*e*P		**P**	**13 12 59.0**	**+1.7**
	comp=Z,2.2nm,1.0s							
KLR	**Kul'dur**	**42.54**	**289**	P		**P**	**13 12 58.3**	**-0.4**
	comp=Z,5.0nm,0.4s,baz=54,slow=6.9,SNR=21							
WMOK	**Wichita Mounta**	**42.62**	**106**	*e*P		**P**	**13 12 58.6**	**-0.9**
WMOK				pmax		pmax		
	comp=Z,3.0nm,0.9s							
WMOK	**Wichita Mounta**	**42.62**	**106**	*e*P		**P**	**13 12 58.6**	**-0.9**
	comp=Z,3.3nm,0.9s							
ERM	**Erimo**	**42.86**	**273**	‖*e*P		**P**

comp=Z,0.6nm,0.6s,baz=27,slow=6.6,SNR=2.3
KURBB PcP **PcP** **13 15 55.5 -0.7**
comp=Z,0.9nm,0.6s,baz=29,slow=4.7,SNR=6.0
ZRNK Zerenda 60.61 333 *e*P **P** **13 15 12.1 -1.0**
ZRNK pmax pmax
comp=Z,8.0nm,0.8s
ZRNK Zerenda 60.61 333 *e*P **P** **13 15 12.1 -1.0**
comp=Z,7.8nm,0.8s
OBN Obninsk 62.55 355 *e*P **P** **13 15 25.6 -0.4**
OBN *i* 13 16 06.2
OBN pmax pmax
comp=Z,14nm,0.8s
MK31 Makanchi Array 63.01 322 *e*P **P** **13 15 27.9 -1.4**
MK31 Makanchi Array 63.01 322 *e*P **P** **13 15 27.9 -1.4**
MKAR Makanchi Array 63.01 322 P **P** **13 15 28.3 -1.0**
comp=Z,5.4nm,0.7s,baz=43,slow=6.5,SNR=43
MKAR pP **pP** **13 15 51.8 -1.0**
comp=Z,0.9nm,0.6s,baz=31,slow=8.8,SNR=2.5
MKAR LR LR 13 43 45.8
comp=Z,19nm,20.1s,baz=305,slow=37
MK01 Makanchi Array 63.03 322 *e*P **P** **13 15 28.3 -1.2**
MAKZ Makanchi 63.09 322 *e*P **P** **13 15 28.7 -1.1**
MAKZ pmax pmax
comp=Z,7.0nm,0.7s
MAKZ Makanchi 63.09 322 *e*P **P** **13 15 28.7 -1.1**
comp=Z,7.2nm,0.7s
GTA Gaotai 63.71 305 *e*P **P** **13 15 34.9 +0.7**
GTA pmax pmax
comp=Z,17nm,0.9s
WMQ Urumqi 64.06 316 *e*P **P** **13 15 40.3 +4.0**
WMQ pmax pmax
comp=Z,10.0nm,0.5s
AKTO Aktyubinsk 65.04 340 P **P** **13 15 42.1 -0.4**
comp=Z,4.1nm,0.5s,baz=26,slow=6.8,SNR=14
WHN Wuhan 65.39 289 P **P** **13 15 41.0 -4.0**
ABKAR Akbulak array 65.86 338 *e*P **P** **13 15 46.9 -0.9**
AKASG Malin Array Be 67.12 360 P **P** **13 15 55.1 -0.7**
AKASG pP **pP** **13 16 18.9 -0.5**
comp=Z,2.0nm,0.4s,baz=0.6,slow=6.3,SNR=9.5
comp=Z,1.0nm,0.5s,baz=359,slow=6.2,SNR=2.1
KIEV Kiev 67.13 360 *e*P **P** **13 15 54.7 -1.1**
KIEV pmax pmax
comp=Z,13nm,1.2s
KIEV Kiev 67.13 360 *e*P **P** **13 15 54.7 -1.1**
comp=Z,13nm,1.2s
GERES GERESS Array B 68.33 11 P **P** **13 16 02.6 -0.9**
comp=Z,0.5nm,0.4s,baz=345,slow=4.6,SNR=5.9
TKM2 Tokmak 2 68.43 325 *e*P **P** **13 16 04.1 -0.3**
TKM2 pmax pmax
comp=Z,7.0nm,0.9s
TKM2 Tokmak 2 68.43 325 *e*P **P** **13 16 04.1 -0.3**
comp=Z,7.1nm,0.9s
KOLS Kolonicke sedl 68.77 5 *e*P **P** **13 16 10.5 +4.3**
KOLS pmax pmax
comp=Z,2.0nm,0.7s
KOLS Kolonicke sedl 68.77 5 *e*P **P** **13 16 10.5 +4.3**
KOLS *e* 13 16 12.5
AAK Ala-Archa 68.99 326 P **P** **13 16 08.1 +0.3**
comp=Z,5.2nm,0.8s,baz=12,slow=0.6,SNR=5.9
AAK Ala-Archa 68.99 326⇑ *e*P **P** **13 16 07.9 +0.1**
AAK pmax pmax
comp=Z,13nm,0.9s
AAK Ala-Archa 68.99 326 *e*P **P** **13 16 06.5 -1.3**
comp=Z,6.8nm,0.9s
KECS Kecovo 69.14 6 *e*P **P** **13 16 08.6 +0.1**
KECS pmax pmax
comp=Z,2.0nm,0.8s
KECS Kecovo 69.14 6 *e*P **P** **13 16 08.6 +0.1**
EKS2 Erkin-Say 69.15 326 *e*P **P** **13 16 08.5 -0.3**
EKS2 pmax pmax
comp=Z,10.0nm,0.8s
EKS2 Erkin-Say 69.15 326 *e*P **P** **13 16 08.5 -0.3**
comp=Z,10nm,0.8s
KKAR Karatay Array 69.55 329 *e*P **P** **13 16 10.8 -0.3**
KKAR Karatay Array 69.55 329 *e*P **P** **13 16 10.8 -0.3**
BUR08 Bucovina Ar. S 70.14 3 *e*P **P** **13 16 14.1 -0.7**
KSH Kashi 71.50 323 P **P** **13 16 26.1 +2.9**
KSH S **S** **13 25 35.4 +1.2**
KSH SKS **SKSac** **13 26 17.2 -0.5**
KSH pmax pmax
comp=Z,5.0nm,0.6s
KVAR Kislovodsk Arr 73.29 350 P **P** **13 16 34.6 +0.9**
comp=Z,6.9nm,0.6s,baz=23,slow=3.0,SNR=4.3
KIV Kislovodsk 73.29 350 *e*P **P** **13 16 33.7 0.0**
KIV pmax pmax
comp=Z,8.0nm,0.9s
KBZ Khabaz 73.50 349 P **P** **13 16 34.8 +0.1**
comp=Z,5.4nm,0.8s,baz=322,slow=2.6,SNR=10
KBZ LR LR 13 54 19.9
comp=Z,11nm,18.4s,baz=34,slow=40
ES19 SONSECA Array 74.77 26 *e*P **P** **13 16 41.6 -0.7**
ESDC Sonseca Array 74.78 26 P **P** **13 16 42.9 +0.5**
comp=Z,1.5nm,0.7s,baz=339,slow=5.0,SNR=7.8
GEYT Alibeck 77.16 337 P **P** **13 16 56.5 +0.7**
comp=Z,1.1nm,0.4s,baz=338,slow=11,SNR=4.7
BR231 Keskin MP Arra 77.93 357 *e*P **P** **13 17 00.2 -0.1**
BRTR Keskin Array B 78.03 356 P **P** **13 17 00.3 -0.5**
comp=Z,2.0nm,0.8s,baz=3.8,slow=3.7,SNR=7.2
CMAR Chiang Mai Arr 82.60 296 P **P** **13 17 25.2 -0.2**
comp=Z,1.8nm,0.7s,baz=8.0,slow=6.0,SNR=10
CMAR pP **pP** **13 17 50.0 +0.1**
comp=Z,0.8nm,0.6s,baz=8.9,slow=6.4,SNR=2.0
WRA Warramunga Arr 100.60 247 PKiKP **PKiKP** **13 23 14.7 -0.8**
comp=Z,0.6nm,1.0s,baz=27,slow=2.1,SNR=4.0
ASAR Alice Springs 104.08 246 PKiKP **PKiKP** **13 23 21.7 0.0**
comp=Z,0.2nm,0.7s,baz=27,slow=0.8,SNR=3.8
VNDA Vanda 142.74 195 PKhKP PKPpre 13 24 31.0
comp=Z,0.7nm,0.7s,baz=9.0,slow=1.8,SNR=3.9
BOSA Boshof 146.00 6 PKPbc **PKPbc** **13 24 41.5 +0.3**
comp=Z,1.9nm,0.7s,baz=359,slow=3.1,SNR=7.0
QSPA South Pole Qui 152.33 180 *e*PKPbc **PKPbc** **13 24 55.4 -0.6**

*ISK **05** 13:06:30.4, 39.82N×33.74E, h9km, MD2.6*
*CSEM **05** 13:06:31.3±0.2, 39.80N×33.74E, h5km, MD2.6, Error ellipse: s-maj=6.3km s-min=3.8km az=135.0*
*DDA **05** 13:06:31.4, 39.86N×33.69E, h7km, Md2.6*
ISC 05 13:06:31.3±1.1, **39.82N**±0.03×**33.74E**±0.03, **h5**km±11km, **n22**, σ0**52**/36, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAMT	**Kaman**	**0.45**	**183**	*e*PG	**Pg**	**13 06 40.3**	**+0.3**
KAMT				*e*SG	**Sg**	**13 06 46.2**	**+0.3**
KAMT	**Kaman**	**0.45**	**183**	*e*Pg	**Pg**	**13 06 40.3**	**+0.3**
KAMT				*e*Sg	**Sg**	**13 06 46.2**	**+0.3**
CDAG	**Cicekdag**	**0.52**	**112**	*i* P	**Pb**	**13 06 42.6**	**-0.5**
CDAG				*i* S	**Sb**	**13 06 51.7**	**+0.7**
CDAG	**Cicekdag**	**0.52**	**112**	P	**Pb**	**13 06 42.6**	**-0.5**
CDAG				S	**Sb**	**13 06 51.7**	**+0.7**
AFSR	**Afˇar-Bala (A**	**0.64**	**235**	*e*PG	**Pg**	**13 06 42.9**	**-0.7**
AFSR				*e*SG	**Sg**	**13 06 52.4**	**+0.6**
AFSR	**Afˇar-Bala (A**	**0.64**	**235**	*e*Pg	**Pg**	**13 06 42.9**	**-0.7**
AFSR				*e*Sg	**Sg**	**13 06 52.4**	**+0.6**
CORM	**Corum**	**0.77**	**62**	*e*PG	**Pg**	**13 06 45.6**	**-0.5**
CORM				*e*SG	**Sg**	**13 06 56.7**	**+0.6**
CORM	**Corum**	**0.77**	**62**	*e*Pg	**Pg**	**13 06 45.6**	**-0.5**
CORM				*e*Sg	**Sg**	**13 06 56.7**	**+0.6**
SERE	**Sereflikochisa**	**0.88**	**189**	*e*PG	**Pg**	**13 06 47.3**	**-0.9**
SERE	**Sereflikochisa**	**0.88**	**189**	*e*Pg	**Pg**	**13 06 47.3**	**-0.9**
KKUL	**Konya-Kulu**	**0.91**	**225**	*i* P	**Pg**	**13 06 48.9**	**+0.2**
KKUL	**Konya-Kulu**	**0.91**	**225**	P	**Pg**	**13 06 48.9**	**+0.2**
COAL	**Corum-Alaca**	**1.05**	**65**	*i* P	**Pb**	**13 06 51.9**	**-0.1**
COAL				*i* S	**Sn**	**13 07 07.5**	**-0.4**
COAL	**Corum-Alaca**	**1.05**	**65**	P	**Pb**	**13 06 51.9**	**-0.1**
COAL				S	**Sn**	**13 07 07.5**	**-0.4**
CTAK	**Corum_Osmancik**	**1.15**	**44**	*i* P	**Pg**	**13 06 53.3**	**-0.1**
CTAK	**Corum_Osmancik**	**1.15**	**44**	P	**Pg**	**13 06 53.3**	**-0.1**
YOZ	**Yozgat**	**1.23**	**98**	*e*PN	**Pg**	**13 06 54.3**	**-0.5**
YOZ	**Yozgat**	**1.23**	**98**	*e*Pn	**Pg**	**13 06 54.3**	**-0.5**
ILGA	**Ilgaz**	**1.23**	**359**	*i* P	**Pg**	**13 06 54.7**	**-0.2**
ILGA				*i* S	**Sn**	**13 07 13.2**	**+0.7**
BCAM	**Yenicaga**	**1.62**	**308**	*i* P	**Pn**	**13 07 00.6**	**-0.1**
BCAM				*i* S	**Sg**	**13 07 23.5**	**+0.1**
BCAM	**Yenicaga**	**1.62**	**308**	P	**Pn**	**13 07 00.6**	**-0.1**
BCAM				S	**Sg**	**13 07 23.5**	**+0.1**
BOYT	**Boyabat**	**1.83**	**29**	*i* P	**Pb**	**13 07 04.6**	**-0.6**
BOYT				*i* S	**Sb**	**13 07 29.1**	**+0.7**

*ISCJB **05** 13:07:19.0±0.6, 1.87S±0.05×128.02E±0.04, h33km, mb4.0/3, Error ellipse: s-maj=7.0km s-min=5.5km az=6.0*
*DJA **05** 13:07:18.7±0.6, 2.5S±3×12.8E±*, h106km±9km, M3.9/6, MLv3.9/6*
*IDC **05** 13:07:25.6±5.5, 2.03S×128.36E, h103km±62km, mb3.6/3, mb1 3.6/6, mb1mx3.3/47, mbtmp3.9/6, Error ellipse: s-maj=54.6km s-min=17.9km az=93.0*
ISC 05 13:07:19.5±0.8, **1.95S**±0.04×**128.02E**±0.04, **h33**km, **n13**, σ1**36**/20, **mb4.0**/3, **Halmahera**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LBMI	**Labuha**	**1.40**	**338**	P	**Pb**	**13 07 44.6**	**-0.5**
LBMI				S	**Sb**	**13 08 04.4**	**+1.8**
NLAI	**Namlea**	**1.58**	**216**	P	**Pb**	**13 07 47.7**	**-0.4**
NLAI				S	**Sn**	**13 08 05.8**	**+1.4**
MSAI	**Masohi**	**1.66**	**147**	P	**Pb**	**13 07 49.3**	**-0.2**
MSAI				S	**Sb**	**13 08 10.0**	**-0.1**
SANI	**Sanana**	**2.03**	**267**	P	**Pn**	**13 07 52.3**	**+0.9**
SANI				S	**Sn**	**13 08 15.7**	**+0.1**
BNDI	**Bandanaira**	**3.18**	**144**	P	**Pn**	**13 08 09.4**	**+2.2**
BNDI				S	**Sn**	**13 08 44.2**	**+0.2**
SIJI	**Sorong**	**3.42**	**72**	P	**Pn**	**13 08 13.0**	**+2.5**
	13nm,0.3s,baz=91,slow=23,SNR=7.3						
SIJI				S	**Sn**	**13 08 50.5**	**+0.5**
	22nm,0.3s,baz=270,slow=23,SNR=5.8						
FAKI	**Fak Fak**	**4.34**	**103**	P	**Pn**	**13 08 22.7**	**-0.4**
FAKI				S	**Sn**	**13 09 09.7**	**-2.9**
KMSI	**Cibinong**	**4.75**	**302**	P	**Pn**	**13 08 27.7**	**-1.1**
FITZ	**Fitzroy Crossi**	**16.22**	**188**	P	**P**	**13 11 07.4**	**-0.5**
	0.1nm,0.3s,baz=21,slow=12,SNR=5.2						
WRA	**Warramunga Arr**	**18.92**	**161**	P	**P**	**13 11 36.0**	**-1.8**
	0.5nm,0.3s,baz=342,slow=12,SNR=39						
ASAR	**Alice Springs**	**22.33**	**166**	P	**P**	**13 12 13.8**	**-0.9**
	2.5nm,0.5s,baz=344,slow=12,SNR=43						
MKAR	**Makanchi Array**	**62.95**	**326**	P	**P**	**13 17 43.0**	**+0.2**
	1.1nm,0.7s,baz=111,slow=8.4,SNR=4.8						
KURBB	**Kurchatov Arra**	**67.20**	**328**	P	**P**	**13 18 10.2**	**-0.1**
	0.8nm,0.6s,baz=125,slow=6.0,SNR=6.5						

KRSC 05 13:14:08.7±1.1, **49.90N**×**156.70E**, **h99**km±17km, **ML3.8, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**0.87**	**335**	*e*P	Pn	13 14 28.5	+1.0
SKR				*e*S	Sn	13 14 42.4	+0.7
PAU	**Pauzhetka**	**1.57**	**3**	*e*P	Pn	13 14 37.1	+1.4
PAU				*e*S	Sn	13 14 59.0	+2.8
ASAK	**Asacha**	**2.60**	**16**	*e*P	Pn	13 14 51.6	+2.6
RUS	**Russkaya**	**2.78**	**24**	*e*P	Pn	13 14 53.3	+1.9
RUS				*e*S	Sn	13 15 26.2	+2.0
DALK	**Dalny**	**3.39**	**21**	*e*P	Pn	13 15 01.8	+2.3
DALK				*e*S	Sn	13 15 40.2	+1.5
UGLR	**Uglovaya**	**3.57**	**21**	*e*P	Pn	13 15 05.0	+3.0
AVH	**Avacha**	**3.60**	**20**	*e*P	Pn	13 15 05.4	+3.0
KOK	**Koryaka**	**3.60**	**19**	*e*P	Pn	13 15 04.7	+2.2
KRER	**Koryakskii**	**3.64**	**20**	*e*P	Pn	13 15 05.4	+2.3
SDLR	**Sedlovina**	**3.65**	**21**	*e*P	Pn	13 15 05.3	+2.2
GNL	**Ganaly**	**3.88**	**11**	*e*P	Pn	13 15 07.5	+1.3
MKZ	**Mys Kozlova**	**5.59**	**32**	*e*P	Pn	13 15 31.0	+1.8

*THR **05** 13:28:04.2±0.4, 36.75N×52.87E, h17km±3km, ML3.6*
*CSEM **05** 13:28:04.3±0.2, 36.73N×52.88E, h2km, ML3.8, Error ellipse: s-maj=7.3km s-min=4.6km az=142.0*
*TEH **05** 13:28:05.5, 36.73N×52.86E, h6km, ML3.8*
*AZER **05** 13:28:06.2±99.0, 36.97N×52.31E, h4km±3km, Error ellipse: s-maj=63.7km s-min=4.0km az=311.0*
ISC 05 13:28:04.4±1.3, **36.76N**±0.04×**52.85E**±0.03, **h15**km±11km, **n74**, σ1**63**/95, **19C-19D**, **Northern and central Iran**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IALA	**Alasht**	**0.68**	**183**	*e*Pg	**Pg**	**13 28 17.4**	**-0.3**
IALA				*e*Sg	**Sg**	**13 28 26.5**	**-0.2**
IALA				*e*AMB	AMB	13 28 27.9	
	comp=Z,57μm,0.1s						
IALA	**Alasht**	**0.68**	**183**	*e*Pg	**Pg**	**13 28 17.4**	**-0.3**
IGLO	**Ghaloghah**	**0.83**	**108**	*e*Pg	**Pb**	**13 28 19.7**	**-1.0**
IGLO				*e*Sg	**Sb**	**13 28 31.4**	**-0.4**
IGLO				*e*AMB	AMB	13 28 34.1	
	comp=Z,65μm,0.1s						
ISHM	**Shahmirzad**	**1.02**	**159**	*e*Pg	**Pb**	**13 28 23.2**	**-0.7**
ISHM				*e*Sg	**Sb**	**13 28 36.6**	**-0.6**
ISHM				*e*AMB	AMB	13 28 37.0	
	comp=Z,65μm,0.1s						
IFIR	**Firoozkooh**	**1.12**	**184**	*e*Pg	**Pn**	**13 28 24.6**	**-1.2**
IFIR				*e*AMB	AMB	13 28 41.5	
	comp=Z,80μm,0.2s						
IFIR	**Firoozkooh**	**1.12**	**184**	*e*Pg	**Pn**	**13 28 24.6**	**-1.2**
IAFJ	**Afjeh**	**1.29**	**226**	*e*Pn	**Pn**	**13 28 28.6**	**+0.4**
IAFJ				*e*AMB	AMB	13 28 49.7	
	comp=Z,33μm,0.1s						
IAFJ	**Afjeh**	**1.29**	**226**	*e*Pn	**Pn**	**13 28 28.6**	**+0.4**
DAMV	**Damavand**	**1.33**	**212**	*e*Pg	**Pn**	**13 28 29.1**	**+0.3**
DAMV	**Damavand**	**1.33**	**212**	*e*Pg	**Pn**	**13 28 29.1**	**+0.3**
IDMV	**Damavand**	**1.35**	**209**	*e*Pg	**Pn**	**13 28 29.5**	**+0.4**
IDMV				*e*AMB	AMB	13 28 51.5	
	comp=Z,19μm,0.1s						
IDMV	**Damavand**	**1.35**	**209**	*e*Pg	**Pn**	**13 28 29.5**	**+0.4**
ILAS	**Lasjerd**	**1.38**	**176**	*e*Pn	**Pn**	**13 28 30.3**	**+0.9**
ILAS				*e*AMB	AMB	13 28 49.9	
	comp=E,64μm,0.1s						
ILAS	**Lasjerd**	**1.38**	**176**	*e*Pn	**Pn**	**13 28 30.3**	**+0.9**
IANJ	**Anjilo**	**1.55**	**146**	*e*Pg	**Pn**	**13 28 32.3**	**+0.5**
IANJ				*e*AMB	AMB	13 28 56.3	
	comp=Z,15μm,0.1s						
IANJ	**Anjilo**	**1.55**	**146**	*e*Pg	**Pn**	**13 28 32.3**	**+0.5**
CHTH	**Charan**	**1.63**	**239**	*e*Pg	**Pb**	**13 28 34.3**	**-0.1**
CHTH				*e*Sg	**Sg**	**13 28 56.5**	**-0.5**
CHTH				AML	AML	13 29 00.2	
	comp=E,577nm,0.5s						
CHTH				AML	AML	13 29 00.2	
	comp=N,436nm,0.2s						
CHTH	**Charan**	**1.63**	**239**	*e*Pn	**Pb**	**13 28 34.3**	**-0.1**
CHTH				*e*Sg	**Sg**	**13 28 56.5**	**-0.5**
THKV	**Tehran--Karaj**	**1.80**	**243**	*e*Pg	**Pb**	**13 28 37.5**	**+0.2**
THKV				*e*Sg	**Sg**	**13 29 01.7**	**-0.7**
THKV	**Tehran--Karaj**	**1.80**	**243**	*e*Pn	**Pb**	**13 28 37.3**	**+0.1**
THKV				*e*Sg	**Sg**	**13 29 01.7**	**-0.7**
IVRN	**Varamin**	**1.98**	**208**	*e*Pn	**Pn**	**13 28 39.0**	**+1.5**
IVRN				*e*AMB	AMB	13 29 11.2	
	comp=Z,10μm,0.1s						
IVRN	**Varamin**	**1.98**	**208**	*e*Pn	**Pn**	**13 28 39.0**	**+1.5**
IMHD	**Mahdasht**	**2.07**	**239**	*e*Pn	**Pb**	**13 28 41.2**	**-0.5**
IMHD				*e*AMB	AMB	13 28 43.9	
	comp=Z,9μm,0.1s						
IMHD	**Mahdasht**	**2.07**	**239**	*e*Pn	**Pb**	**13 28 41.2**	**-0.5**
GHVR	**GHOM**	**2.60**	**210**	*e*Pn	**Pn**	**13 28 47.8**	**+1.7**
GHVR				AML	AML	13 29 34.6	
	comp=E,261nm,0.4s						
GHVR				AML	AML	13 29 35.2	
	comp=N,253nm,0.4s						
GHVR	**GHOM**	**2.60**	**210**	*e*Pn	**Pn**	**13 28 47.8**	**+1.7**
SHRO	**Shahrood**	**2.66**	**106**	*e*Pn	**Pn**	**13 28 48.2**	**+1.3**
SHRO				AML	AML	13 29 36.7	
	comp=E,200nm,0.6s						
SHRO				AML	AML	13 29 37.0	
	comp=N,198nm,0.7s						
SHRO	**Shahrood**	**2.66**	**106**	*e*Pn	**Pn**	**13 28 48.2**	**+1.3**
IRAZ	**Razeghan**	**2.73**	**241**	*e*Pn	**Pn**	**13 28 50.1**	**+2.2**
IRAZ				*e*AMB	AMB	13 29 35.3	
	comp=Z,4μm,0.4s						
IRAZ	**Razeghan**	**2.73**	**241**	*e*Pn	**Pn**	**13 28 50.1**	**+2.2**
MRVT	**Maraveh tapeh**	**2.74**	**70**	AML	AML	13 29 33.7	
	comp=N,250nm,0.2s						
MRVT				AML	AML	13 29 39.4	
	comp=E,219nm,0.2s						
ASAO	**Ashtian**	**3.19**	**227**	*e*Pn	**Pn**	**13 28 56.1**	**+1.8**
ASAO	**Ashtian**	**3.19**	**227**	*e*Pn	**Pn**	**13 28 56.1**	**+1.8**
QAM	**Ghamsar**	**3.21**	**201**	*e*Pn	**Pn**	**13 28 55.3**	**+0.8**
QAM				*e*AMB	AMB	13 29 35.7	
	comp=Z,5μm,0.2s						
IKLH	**Kolahrood**	**3.59**	**197**	*e*Pn	**Pn**	**13 29 00.8**	**+1.0**
IKLH				*e*AMB	AMB	13 29 12.1	
	comp=Z,2μm,0.2s						
IKLH	**Kolahrood**	**3.59**	**197**	*e*Pn	**Pn**	**13 29 00.8**	**+1.0**
ASTR	**Astara**	**3.69**	**300**	⇓P	**Pn**	**13 29 01.3**	**+0.5**
ASTR				⇑S	**Sn**	**13 29 43.1**	**-1.0**
LKRN	**Lenkeran, Azer**	**3.77**	**302**	⇑P	**Pn**	**13 29 02.1**	**+0.1**
	SNR=4.8						
LKRN				⇓S	**Sn**	**13 29 45.5**	**-0.6**
KHMZ	**Khomeyn**	**3.83**	**219**	*e*Pn	**Pn**	**13 29 04.6**	**+1.5**
KHMZ	**Khomeyn**	**3.83**	**219**	*e*Pn	**Pn**	**13 29 04.6**	**+1.5**
IZEF	**Zefreh**	**3.88**	**186**	*e*Pn	**Pn**	**13 29 04.5**	**+0.7**
IZEF				*e*AMB	AMB	13 30 19.9	
	comp=Z,1μm,0.3s						
IZEF	**Zefreh**	**3.88**	**186**	*e*Pn	**Pn**	**13 29 04.5**	**+0.7**
NASN	**Na'in**	**3.95**	**181**	AML	AML	13 30 17.7	
	comp=N,94nm,0.5s						
LRK	**Lerik**	**4.04**	**299**	⇓P	**Pn**	**13 29 05.7**	**-0.1**
	SNR=3.3						
LRK				⇓S	**Sn**	**13 29 51.4**	**-1.7**
ISFR	**Sfrayin**	**4.14**	**84**	*e*Pn	**Pn**	**13 29 09.1**	**+1.8**
ISFR				*e*AMB	AMB	13 30 15.3	
	comp=Z,1μm,0.3s						
ISFR	**Sfrayin**	**4.14**	**84**	*e*Pn	**Pn**	**13 29 09.1**	**+1.8**
GLBA	**Clilabad**	**4.30**	**306**	⇓P	**Pn**	**13 29 08.9**	**-0.4**
GLBA				⇓S	**Sn**	**13 29 56.7**	**-2.6**
IPIR	**Pirpir**	**4.38**	**202**	*e*Pn	**Pn**	**13 29 14.2**	**+3.6**
IPIR				*e*AMB	AMB	13 29 42.4	
	comp=Z,623nm,0.2s						
IPIR	**Pirpir**	**4.38**	**202**	*e*Pn	**Pn**	**13 29 14.2**	**+3.6**
ALIB	**Äli-Bayra**	**4.39**	**318**	⇓P	**Pn**	**13 29 12.3**	**+1.7**
ALIB				⇓S	**Sn**	**13 29 60.0**	**-1.6**
IGAR	**Gharneh**	**4.40**	**189**	*e*Pn	**Pn**	**13 29 12.9**	**+2.0**
IGAR				*e*AMB	AMB	13 29 14.0	
	comp=Z,415nm,0.1s						
IEMG	**Emamgholi**	**4.68**	**80**	*e*Pn	**Pn**	**13 29 16.8**	**+1.9**
IEMG				*e*AMB	AMB	13 30 15.8	
	comp=Z,767nm,0.3s						
IEMG	**Emamgholi**	**4.68**	**80**	*e*Pn	**Pn**	**13 29 16.8**	**+1.9**
IAKL	**Akhelmad**	**4.75**	**90**	*e*Pn	**Pn**	**13 29 17.2**	**+1.4**
IAKL				*e*AMB	AMB	13 29 23.1	
	comp=Z,330nm,0.1s						
IRAM	**Ramesheh**	**4.96**	**185**	*e*Pn	**Pn**	**13 29 20.1**	**+1.6**
IRAM				*e*AMB	AMB	13 30 46.1	
	comp=Z,271nm,0.2s						
IRAM	**Ramesheh**	**4.96**	**185**	*e*Pn	**Pn**	**13 29 20.1**	**+1.6**
ATGJ	**Altiaghaj**	**5.11**	**324**	⇑P	**Pn**	**13 29 21.8**	**+1.3**
ATGJ				⇑S	**Sn**	**13 30 18.3**	**-1.0**
PQL	**Pirkuli**	**5.22**	**322**	⇑P	**Pn**	**13 29 23.3**	**+1.3**
PQL				⇓S	**Sn**	**13 30 22.0**	**-0.1**
SIZA	**Siyzn**	**5.30**	**326**	⇓P	**Pn**	**13 29 24.4**	**+1.3**
SIZA				⇑S	**Sn**	**13 30 22.3**	**-1.6**
IML	**Ismayilli**	**5.43**	**319**	⇓P	**Pn**	**13 29 25.1**	**+0.2**
IML				⇑S	**Sn**	**13 30 23.3**	**-3.9**
QUBA	**Quba, Azerbaij**	**5.70**	**325**	⇑P	**Pn**	**13 29 28.5**	**-0.1**
QUBA				⇓S	**Sn**	**13 30 30.9**	**-3.0**
QBL	**Gabala**	**5.72**	**318**	⇓S	**Sn**	**13 30 30.0**	**-4.4**
XNQ	**Khinaliq**	**5.73**	**322**	⇓P	**Pn**	**13 29 30.4**	**+1.2**
XNQ				⇑S	**Sn**	**13 30 32.1**	**-2.7**
QSAR	**Qusar**	**5.94**	**324**	⇓S	**Sn**	**13 30 37.6**	**-2.0**
SEKA	**Sheki**	**6.25**	**317**	⇑P	**Pn**	**13 29 36.6**	**+0.4**
SEKA				⇓S	**Sn**	**13 30 45.5**	**-2.4**
GANJ	**Ganja**	**6.41**	**309**	⇑P	**Pn**	**13 29 38.1**	**-0.3**
GANJ				⇑S	**Sn**	**13 30 48.1**	**-3.1**
GDB	**GEDABAY**	**6.81**	**308**	⇑P	**Pn**	**13 29 44.7**	**+0.7**
GDB				⇓S	**Sn**	**13 30 57.1**	**-4.2**
ZKTA	**Zakatala**	**6.86**	**317**	⇑P	**Pn**	**13 29 45.6**	**+1.1**
ZKTA				⇑S	**Sn**	**13 30 59.6**	**-2.8**
QZX	**Qazax, Azerbai**	**7.24**	**309**	⇑P	**Pn**	**13 29 49.5**	**-0.2**
QZX				⇓S	**Sn**	**13 31 09.9**	**-1.8**
AB31	**Akbulak array**	**13.51**	**20**	⇑Pn	**Pn**	**13 31 15.4**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=196,slow=13,SNR=4.3						
AB31				⇑Sn	Sn	13 33 31.5	-14
	comp=Z,1.1nm,0.5s,baz=197,slow=26,SNR=5.8						
AB31	**Akbulak array**	**13.51**	**20**	Pn	**Pn**	**13 31 15.4**	**-0.1**
	comp=Z,0.1nm,0.3s,SNR=4.3						
AB31				Sn	Sn	13 33 31.5	-14
	comp=Z,1.1nm,0.5s,SNR=5.8						
AKTO	**Aktyubinsk**	**14.17**	**14**	⇑Pn	**Pn**	**13 31 26.3**	**+1.9**
	comp=Z,0.4nm,0.3s						
AKTO				⇓Sn	Sn	13 33 51.0	-10
	comp=Z,1.6nm,0.5s						
AKTO	**Aktyubinsk**	**14.17**	**14**	Pn	**Pn**	**13 31 26.3**	**+1.9**
	comp=Z,0.4nm,0.3s						
AKTO				Sn	Sn	13 33 51.0	-10
	comp=Z,1.6nm,0.5s						
CRVS	**Cervenica-Dubn**	**25.83**	**308**	*e*P	**P**	**13 33 38.3**	**+3.2**

*ISK **05** 13:28:57.8, 38.50N×33.87E, h25km, MD2.5*
*ISCJB **05** 13:28:58.6±0.6, 38.49N±0.03×33.85E±0.05, h7km±6km, Error ellipse: s-maj=6.9km s-min=5.3km az=19.1*
*CSEM **05** 13:28:58.4±0.3, 38.50N×33.84E, h10km, MD2.1, Error ellipse: s-maj=6.5km s-min=5.9km az=102.0*
*DDA **05** 13:29:00.8, 38.63N×33.69E, h7km, Md2.1*
ISC 05 13:28:58.4±1.0, **38.49N**±0.03×**33.82E**±0.04, **h9**km±8km, **n24**, σ0**65**/32, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKSY	**AKSARAY - Alti**	**0.17**	**345**	*i* P	**Pg**	**13 29 02.1**	**0.0**
AKSY				*i* S	**Sg**	**13 29 04.6**	**0.0**
AKSY	**AKSARAY - Alti**	**0.17**	**345**	P	**Pg**	**13 29 02.1**	**0.0**
AKSY				S	**Sg**	**13 29 04.6**	**0.0**
GULA	**Gulagac**	**0.36**	**113**	*e*PG	**Pg**	**13 29 05.6**	**0.0**
**

*ISCJB **05** 13:56:36.6±0.8, 7°.9S±0°.2×76°.6W±0°.2, h150km, mb3.2/3, Error ellipse: s-maj=38.6km s-min=9.9km az=31.3*
*IDC **05** 13:56:36.4±2.6, 7°.69S×76°.46W, h126km±31km, mb3.2/3, mb1 3.6/6, mb1mx3.4/25, mbtmp3.7/6, Error ellipse: s-maj=83.0km s-min=18.5km az=37.0*

ISC 05 13:56:38.0±0.9, **8°.0S**±0°.3×**76°.7W**±0°.2, **h150**km, **n10, σ1§28/11, mb3.4/3, Northern Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAH	**Atahualpa**	**1.87**	**296**	P	**Pn**	**13 57 11.5**	**-0.6**
	219nm,0.3s,baz=36,slow=4.1,SNR=456						
ATAH				S	**Sn**	**13 57 37.0**	**-1.2**
	115nm,0.3s,baz=69,slow=15,SNR=11						
LPAZ	**La Paz**	**11.77**	**135**	P	**Pn**	**13 59 21.5**	**-0.5**
	0.1nm,0.3s,baz=342,slow=20,SNR=3.0						
SIV	**San Ignacio**	**17.23**	**119**	P	**Pn**	**14 00 27.9**	**-2.0**
	0.5nm,0.3s,baz=318,slow=9.4,SNR=8.8						
TXAR	**Lajitas Array**	**45.27**	**326**	P	**P**	**14 04 41.6**	**+0.7**
	0.2nm,0.6s,baz=138,slow=8.2,SNR=4.2						
YKA	**Yellowknife Ar**	**76.05**	**343**	P	**P**	**14 08 07.9**	**-0.6**
	0.4nm,0.5s,baz=136,slow=5.9,SNR=3.7						
ILAR	**Eielson Array**	**88.88**	**336**	P	**P**	**14 09 15.1**	**+0.2**
	0.5nm,0.8s,baz=137,slow=4.2,SNR=5.5						
ZALV	**Zalesovo Beam**	**131.78**	**15**	PKP	**PKPdf**	**14 15 34.0**	**+0.7**
	0.6nm,0.4s,baz=262,slow=2.3,SNR=4.0						
ASAR	**Alice Springs**	**136.62**	**223**	PKP	**PKPdf**	**14 15 45.0**	**+1.6**
	0.3nm,0.7s,baz=118,slow=1.9,SNR=5.2						
MKAR	**Makanchi Array**	**137.33**	**21**	PKP	**PKPdf**	**14 15 44.8**	**+0.9**
	0.2nm,0.4s,baz=2.1,slow=4.9,SNR=3.3						
WRA	**Warramunga Arr**	**138.74**	**227**	PKP	**PKPdf**	**14 15 48.7**	**+1.4**
	0.4nm,0.4s,baz=123,slow=1.9,SNR=9.6						

DJA 05 13:56:59.6±0.3, **2°.S**±3°×**12°.0E**±°, **h10**km, **M3.6/7, MLv3.6/7, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCI	**Palu**	**0.84**	**354**	P	Pb	13 57 16.4	0.0
TTSI	**Tana Toraja**	**1.29**	**185**	P	Pn	13 57 20.9	-2.8
SPSI	**Sidrap Palu**	**2.21**	**184**	P	Pn	13 57 36.4	+0.1
MRSI	**Marisa**	**2.99**	**42**	P	Pn	13 57 46.2	-0.9
MRSI				S	Sn	13 58 24.3	+1.3

IDC 05 13:59:27.5±2.5, **6°.54S**×**130°.25E**, **h154**km±30km, **mb3.2**/1, **mb1 3.2**/5, **mb1mx3.1**/27, **mbtmp3.7**/5, **Error ellipse: s-maj=39.8km s-min=17.4km az=82.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**5.72**	**10**	P	Pn	14 00 49.7	-0.9
	27nm,0.3s,baz=192,slow=0.7,SNR=2.8						
SIJI				S	Sn	14 01 46.4	-9.3
	25nm,0.3s,baz=270,slow=24,SNR=5.6						
FITZ	**Fitzroy Crossi**	**12.35**	**201**	P	Pn	14 02 17.9	-0.4
	0.3nm,0.3s,baz=23,slow=12,SNR=15						
FITZ				S	Sn	14 04 27.9	-7.0
	0.6nm,0.3s,baz=338,slow=19,SNR=6.5						
WRA	**Warramunga Arr**	**13.90**	**164**	P	Pn	14 02 39.1	+0.9
	0.2nm,0.3s,baz=349,slow=13,SNR=18						
WRA				S	Sn	14 05 05.7	-6.7
	0.7nm,0.3s,baz=338,slow=19,SNR=10						
PMG	**Port Moresby**	**16.98**	**101**	P	Pn	14 03 17.4	+1.3
	0.4nm,0.3s,baz=285,slow=16,SNR=3.3						
ASAR	**Alice Springs**	**17.39**	**169**	P	Pn	14 03 21.4	+0.4
	0.0nm,0.3s,baz=346,slow=10,SNR=2.8						
ASAR				S	S	14 06 31.1	-2.2
	0.1nm,0.3s,baz=355,slow=28,SNR=5.9						
MKAR	**Makanchi Array**	**67.98**	**327**	P	P	14 10 09.9	0.0
	0.3nm,0.3s,baz=134,slow=6.2,SNR=4.3						

MEX 05 13:59:31.9±0.5, **16°.69N**×**94°.80W**, **h109**km±11km, **MD3.5, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.56**	**234**	*e*P	Pn	13 59 58.1	-1.2
HUIG				*e*S	Sn	14 00 18.7	-1.6
TGIG		**1.60**	**87**	*e*P	Pn	13 59 59.0	-1.0
TGIG				*e*S	Sn	14 00 19.4	-2.0
VHO	**Vista Hermosa**	**1.89**	**282**	*e*P	Pn	14 00 02.7	-1.0
VHO				*e*S	Sn	14 00 26.3	-1.7
CCIG	**Comitan**	**2.58**	**99**	*e*P	Pn	14 00 11.1	-1.4
CCIG				*e*S	Sn	14 00 42.6	-1.1
PNIG	**Pinotepa**	**3.21**	**265**	*e*P	Pn	14 00 18.3	-2.4
PNIG				*i* S	Sn	14 00 56.0	-2.4

*ISCJB **05** 14:23:02.5±1.4, 32°.61S±0°.05×71°.4W±0°.1, h55km±12km, Error ellipse: s-maj=19.1km s-min=7.1km az=166.8*
*GUC **05** 14:23:02.9±0.6, 32°.53S×71°.08W, h53km±4km, ML3.3*
*SJA **05** 14:23:02.7±0.7, 32°.41S×71°.11W, h12km±5km, ML3.4, MW3.5*

ISC 05 14:23:02.3±2.1, **32°.63S**±0°.05×**71°.5W**±0°.1, **h50**km±18km, **n17, σ0§91/26, 1C, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**0.51**	**133**	*e*P	**Pn**	**14 23 14.2**	**+0.2**
ROC1				*e*S	**Sn**	**14 23 22.9**	**+0.6**
ROCH	**El Roble**	**0.51**	**132**	↑*i*P	**Pn**	**14 23 14.1**	**+0.2**
ROCH				*i* S	**Sn**	**14 23 22.6**	**+0.3**
ROCH				IAML		14 23 23.0	
	comp=E,2µm,0.4s						
PEL	**Peldehue**	**0.83**	**128**	*i* P	**Pn**	**14 23 17.1**	**-0.7**
PEL				*i* S	**Sn**	**14 23 27.5**	**-1.7**
PEL				IAML		14 23 29.0	
	comp=E,5µm,0.2s						
RCDM	**Rinconada Maip**	**1.02**	**147**	*i* P	**Pn**	**14 23 21.1**	**+0.7**
RCDM				*e*S	**Sn**	**14 23 33.7**	**+0.1**
RCDM				IAML		14 23 40.4	
	comp=N,1µm,0.1s						
CLCH	**Cerro Calan**	**1.09**	**135**	*i* P	**Pn**	**14 23 21.5**	**+0.2**
CLCH				*i* S	**Sn**	**14 23 34.6**	**-0.8**
CLCH				IAML		14 23 36.2	
	comp=N,2µm,0.3s						
ANTU	**Antumapu**	**1.17**	**144**	*i* P	**Pn**	**14 23 22.7**	**+0.4**
ANTU				*e*S	**Sn**	**14 23 37.5**	**+0.2**
ANTU				IAML		14 23 41.5	
	comp=E,1µm,0.3s						
FCH	**Farellones**	**1.21**	**126**	*i* P	**Pn**	**14 23 22.5**	**-0.7**
FCH				*i* S	**Sn**	**14 23 37.2**	**-1.4**
FCH				IAML		14 23 38.4	
	comp=E,980nm,0.2s						
YECH	**El Yeso**	**1.55**	**132**	*i* P	**Pn**	**14 23 27.6**	**-0.2**
YECH				*i* S	**Sn**	**14 23 46.0**	**-0.9**
AUSP	**Uspallata**	**1.80**	**78**	*e*P	**Pn**	**14 23 31.1**	**-0.1**
RTLS	**Leoncito**	**2.01**	**66**	*e*P	**Pn**	**14 23 34.0**	**-0.1**
ARCO	**CERRO ARCO**	**2.14**	**96**	*e*P	**Pn**	**14 23 37.1**	**+1.3**
ARCO				IAML		14 23 38.5	
	comp=Z,166nm,0.3s						
ASAL	**Salagasta**	**2.22**	**90**	*e*P	**Pn**	**14 23 37.9**	**+1.2**
AAGR	**Agrelo**	**2.26**	**102**	*e*P	**Pn**	**14 23 38.9**	**+1.5**
TLL	**Tololo Astrono**	**2.52**	**13**	*i* P	**Pn**	**14 23 40.7**	**-0.3**
TLL				*i* S	**Sn**	**14 24 09.7**	**-0.9**
TLL				IAML		14 24 23.8	
	comp=E,448nm,0.8s						
RTCV	**Cerro Valdivia**	**2.59**	**74**	*e*P	**Pn**	**14 23 42.2**	**+0.4**
RTLL	**Cerro Villicun**	**2.85**	**64**	*e*P	**Pn**	**14 23 45.1**	**-0.3**
VCA	**Vinchina**	**4.79**	**37**	*e*P	**Pn**	**14 24 13.7**	**+1.7**
VCA				IAML		14 25 15.9	
	comp=Z,74nm,0.4s						

*DDA **05** 14:33:11.4, 37°.07N×28°.52E, h7km, Md2.8*
*ISK **05** 14:33:11.9, 37°.04N×28°.50E, h9km, MD2.7*
*CSEM **05** 14:33:11.9±0.3, 37°.06N×28°.51E, h10km, MD2.7, Error ellipse: s-maj=8.1km s-min=6.0km az=9.0*
*ISCJB **05** 14:33:12.3±0.6, 37°.08N±0°.04×28°.52E±0°.04, h8km±8km, Error ellipse: s-maj=6.2km s-min=5.0km az=7.4*

ISC 05 14:33:12.6±0.9, **37°.10N**±0°.03×**28°.52E**±0°.03, **h15**km±7km, **n19, σ1§42/30, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.19**	**281**	*e*PG	**Pg**	**14 33 16.5**	**-0.7**
YER				*e*SG	**Sg**	**14 33 19.9**	**-0.4**
YER	**Yerkesik**	**0.19**	**281**	*e*Pg	**Pg**	**14 33 16.5**	**-0.7**
YER				*e*Sg	**Sg**	**14 33 19.9**	**-0.4**
TURN	**Turunc**	**0.23**	**163**	*i* P	**Pg**	**14 33 18.9**	**+1.1**
TURN				*i* S	**Sg**	**14 33 24.9**	**+3.6**
DALY	**Dalyan (Mu˘la**	**0.30**	**159**	*e*PG	**Pg**	**14 33 17.3**	**-1.6**
DALY				*e*SG	**Sg**	**14 33 21.7**	**-1.6**
DALY	**Dalyan (Mu˘la**	**0.30**	**159**	*e*Pg	**Pg**	**14 33 17.3**	**-1.6**
DALY				*e*Sg	**Sg**	**14 33 21.7**	**-1.6**
DNZL	**Cakiroluk**	**0.72**	**35**	*i* P	**Pg**	**14 33 25.9**	**-0.9**
DNZL				*i* S	**Sb**	**14 33 37.4**	**+0.6**
DNZL	**Cakiroluk**	**0.72**	**35**	P	**Pg**	**14 33 25.9**	**-0.9**
DNZL				S	**Sb**	**14 33 37.4**	**+0.6**
GOLH	**Golhisar**	**0.84**	**80**	*i* P	**Pg**	**14 33 26.8**	**-2.2**
GOLH				*i* S	**Sn**	**14 33 42.2**	**+0.1**
GOLH	**Golhisar**	**0.84**	**80**	P	**Pg**	**14 33 26.8**	**-2.2**
GOLH				S	**Sn**	**14 33 42.2**	**+0.1**
BDRM	**Kayabasi**	**0.86**	**268**	*i* P	**Pg**	**14 33 27.2**	**-2.1**
BDRM				*i* S	**Sn**	**14 33 43.8**	**+1.4**
BDRM	**Kayabasi**	**0.86**	**268**	P	**Pg**	**14 33 27.2**	**-2.1**
BDRM				S	**Sn**	**14 33 43.8**	**+1.4**
BODT	**Bodrum**	**0.97**	**268**	*e*PG	**Pb**	**14 33 30.7**	**-0.3**
BODT	**Bodrum**	**0.97**	**268**	*e*Pg	**Pb**	**14 33 30.7**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**330**	*e*PG	**Pb**	**14 33 31.9**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**330**	*e*Pg	**Pb**	**14 33 31.9**	**+0.5**
ELL	**Elmali**	**1.17**	**107**	*e*PN	**Pn**	**14 33 35.1**	**+0.6**
ELL	**Elmali**	**1.17**	**107**	*e*Pn	**Pn**	**14 33 35.1**	**+0.6**
KULA	**Kula-Manisa**	**1.42**	**4**	*e*PN	**Pb**	**14 33 39.3**	**+0.5**
KULA	**Kula-Manisa**	**1.42**	**4**	*e*Pn	**Pb**	**14 33 39.3**	**+0.5**

*ISCJB **05** 14:37:39.8±0.6, 36°.09N±0°.04×140°.02E±0°.06, h81km±5km, mb3.4/3, Error ellipse: s-maj=8.5km s-min=5.8km az=21.8*
*IDC **05** 14:37:39.3±1.1, 35°.14N×137°.58E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.4/44, mbtmp3.6/4, ML4.0/1, Error ellipse: s-maj=27.1km s-min=13.0km az=100.0*
*JMA **05** 14:37:41.6±0.1, 36°.12N×139°.98E, h67km±1km, M3.3 Broadband fault plane solution: P waves. NP1: ϕ±215.00000°, δ89.00000°, λ149.00000°. NP2: ϕ±306.00000°, δ59.00000°, λ1.00000°. Principal axes: T Plg22.0000°, Azm166.0000°; N Plg59.0000°, Azm34.0000°; P Plg21.0000°, Azm265.0000°;*
JMA Felt I J1.

ISC 05 14:37:40.6±1.0, **36°.10N**±0°.04×**140°.01E**±0°.05, **h74**km±8km, **n17, σ0§66/27, mb3.4/3, 5C-4D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.20**	**50**	↓↓P	**Pn**	**14 37 52.0**	**+0.3**
JYT				S	**Sn**	**14 37 59.7**	**-0.1**
JAG	**Ashikaga**	**0.55**	**306**	↑↑P	**Pn**	**14 37 54.4**	**+0.1**
JAG				S	**Sn**	**14 38 04.1**	**-0.3**
JRY	**Ryogami san**	**0.90**	**265**	↓↓P	**Pn**	**14 37 58.6**	**+0.4**
JRY				*e*S	**Sn**	**14 38 11.3**	**+0.1**
JKT	**Katashina**	**0.90**	**318**	↑↑P	**Pn**	**14 37 58.3**	**0.0**
JKT				*e*S	**Sn**	**14 38 11.4**	**0.0**
JOD2	**Odawara 2**	**1.12**	**222**	↓↓P	**Pn**	**14 38 01.3**	**+0.4**
JOD2				*e*S	**Sn**	**14 38 15.1**	**-0.9**
JFY	**Yanaizu**	**1.33**	**350**	↑↑P	**Pn**	**14 38 03.9**	**+0.4**
JFY				*e*S	**Sn**	**14 38 21.9**	**+1.2**
JYN	**Shimob**	**1.33**	**244**	↓↓P	**Pn**	**14 38 04.4**	**+0.8**
JYN				*e*S	**Sn**	**14 38 21.9**	**+1.0**
JHK	**Hiroka**	**1.40**	**325**	↑↑P	**Pn**	**14 38 04.8**	**+0.4**
JFT	**Otama**	**1.44**	**10**	↑↑P	**Pn**	**14 38 05.7**	**+0.7**
JFK	**Kawauchi**	**1.44**	**29**	P	**Pn**	**14 38 05.3**	**+0.3**
JFK				*e*S	**Sn**	**14 38 23.7**	**+0.3**
MJAR	**Matsushiro Arr**	**1.52**	**287**	Pg	**Pn**	**14 38 05.3**	**-0.7**
	13nm,0.3s,baz=214,slow=24,SNR=99						
MJAR				Lg	Lg	14 38 26.9	
	11nm,0.3s,baz=215,slow=14,SNR=14						
MAT	**Matsushiro**	**1.52**	**287**	P	**Pn**	**14 38 06.6**	**+0.6**
MAT				S	**Sn**	**14 38 26.3**	**+1.1**
MAT	**Matsushiro**	**1.52**	**287**	P	**Pn**	**14 38 06.7**	**+0.7**
JHJ	**Hachijo jima 2**	**2.98**	**184**	Pn	**Pn**	**14 38 26.4**	**+0.8**
	55nm,0.3s,baz=143,slow=22,SNR=21						
JHJ				Sn	**Sn**	**14 39 01.0**	**+0.7**
	20nm,0.3s,baz=210,slow=23,SNR=3.8						
MKAR	**Makanchi Array**	**43.66**	**303**	P	**P**	**14 45 37.5**	**-0.5**
	0.1nm,0.3s,baz=98,slow=9.0,SNR=2.9						
WRA	**Warramunga Arr**	**55.99**	**186**	P	**P**	**14 47 10.8**	**-0.7**
	0.6nm,0.5s,baz=1.8,slow=7.5,SNR=26						
ASAR	**Alice Springs**	**59.72**	**186**	P	**P**	**14 47 37.2**	**-0.4**
	0.2nm,0.7s,baz=357,slow=5.6,SNR=5.8						

*ISK **05** 14:45:00.4, 37°.32N×42°.64E, h6km, MD2.5*
*ISCJB **05** 14:45:01.4±0.7, 37°.40N±0°.06×42°.70E±0°.03, h3km±7km, Error ellipse: s-maj=10.8km s-min=4.4km az=7.0*
*CSEM **05** 14:45:01.2±0.3, 37°.38N×42°.67E, h5km, MD2.8, Error ellipse: s-maj=8.4km s-min=3.1km az=11.0*
*DDA **05** 14:45:01.4, 37°.40N×42°.65E, h7km, Md2.8*

ISC 05 14:45:01.6±1.1, **37°.38N**±0°.05×**42°.67E**±0°.02, **h7**km±9km, **n17, σ0§58/28, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIRT	**Sirnak**	**0.22**	**303**	*e*PG	**Pg**	**14 45 05.8**	**-0.2**
SIRT				*e*SG	**Sg**	**14 45 09.7**	**+0.8**
SIRT	**Sirnak**	**0.22**	**303**	*e*Pg	**Pg**	**14 45 05.8**	**-0.2**
SIRT				*e*Sg	**Sg**	**14 45 09.7**	**+0.8**
SIRN	**S¨¯rnak**	**0.23**	**299**	*i* P	**Pg**	**14 45 05.7**	**-0.5**
SIRN				*i* S	**Sg**	**14 45 10.1**	**+0.7**
SIRN	**S¨¯rnak**	**0.23**	**299**	P	**Pg**	**14 45 05.7**	**-0.5**
SIRN				S	**Sg**	**14 45 10.1**	**+0.7**
CUKT	**Cukurca**	**0.76**	**100**	*e*PG	**Pg**	**14 45 15.7**	**-0.5**
CUKT				*e*SG	**Sg**	**14 45 26.9**	**+0.8**
CUKT	**Cukurca**	**0.76**	**100**	*e*Pg	**Pg**	**14 45 15.7**	**-0.5**
CUKT				*e*Sg	**Sg**	**14 45 26.9**	**+0.8**
HAKT	**HAKKARI**	**0.84**	**78**	*i* P	**Pb**	**14 45 18.4**	**-0.3**
HAKT	**HAKKARI**	**0.84**	**78**	P	**Pb**	**14 45 18.4**	**-0.3**
HKR	**Hakkari**	**0.88**	**77**	*e*PG	**Pg**	**14 45 18.3**	**-0.1**
HKR	**Hakkari**	**0.88**	**77**	*e*Pg	**Pg**	**14 45 18.3**	**-0.1**
GEVA	**Gevas**	**0.98**	**18**	*i* P	**Pg**	**14 45 19.9**	**-0.5**
GEVA				*i* S	**Sg**	**14 45 33.4**	**+0.2**
GEVA	**Gevas**	**0.98**	**18**	P	**Pg**	**14 45 19.9**	**-0.5**
GEVA				S	**Sg**	**14 45 33.3**	**+0.2**
BTMN	**Batman**	**1.22**	**295**	*i* P	**Pb**	**14 45 24.6**	**-0.4**
BTMN				*i* S	**Sn**	**14 45 42.7**	**+0.8**
BTMN	**Batman**	**1.22**	**295**	P	**Pb**	**14 45 24.6**	**-0.4**
BTMN				S	**Sn**	**14 45 42.7**	**+0.8**
SVAN	**Silvan-Diyarba**	**1.40**	**304**	*e*PN	**Pn**	**14 45 27.3**	**-0.2**
SVAN	**Silvan-Diyarba**	**1.40**	**304**	*e*Pn	**Pn**	**14 45 27.3**	**-0.2**
MARD	**Mardin**	**1.51**	**268**	*i* P	**Pb**	**14 45 29.1**	**-0.8**
MARD				*i* S	**Sg**	**14 45 50.6**	**+0.6**

*ISCJB **05** 14:45:55.3±0.5, 2°.15S±0°.05×74°.99E±0°.10, h10km, mb4.1/17, MS3.5/12, Error ellipse: s-maj=14.9km s-min=4.8km az=19.8*
*IDC **05** 14:45:56.7±0.8, 1°.96S×75°.02E, h0km, mb3.9/13, mb1 4.1/13, mb1mx3.8/43, mbtmp3.9/13, ML5.2/1, MS3.4/13, Ms1 3.4/13, ms1mx3.2/38, Error ellipse: s-maj=23.0km s-min=17.5km az=26.0*
*NEIC **05** 14:45:58.0±0.4, 2°.00S×75°.00E, h10km, mb4.5/3, Error ellipse: s-maj=12.1km s-min=8.5km az=119.0*

ISC 05 14:45:57.7±0.6, **2°.04S**±0°.07×**75°.0E**±0°.1, **h10**km, **n45, σ1§92/47, mb4.1/17, MS3.5/12, Maldive Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGAR	**Diego Garcia**	**5.90**	**205**	*e*Pn	**Pn**	**14 47 25.1**	**-0.1**
DGAR				*e*Sn	**Sn**	**14 48 28.8**	**-4.1**
H08S3	**Diego Garcia H**	**6.08**	**204**	T	T	14 53 57.8	
	baz=25,slow=74,SNR=5.6						
H08S2	**Diego Garcia H**	**6.09**	**204**	T	T	14 53 58.2	
	baz=25,slow=74,SNR=4.9						
H08S1	**Diego Garcia H**	**6.10**	**204**	T	T	14 53 58.9	
	baz=25,slow=74,SNR=6.2						
PALK	**Pallekele**	**10.87**	**32**	Pn	**Pn**	**14 48 31.6**	**-1.9**
	18nm,0.3s,baz=296,slow=2.5,SNR=83						
PALK				Sn	Sn	14 50 21.0	-14
	22nm,0.3s,baz=296,slow=22,SNR=12						
PALK				LR	LR	14 52 04.1	
	comp=Z,142nm,18.3s,baz=293,slow=34						
PALK	**Pallekele**	**10.87**	**32**	*e*Pn	**Pn**	**14 48 32.4**	**-1.1**
	66nm,0.6s						
PALK				*e*Sn	Sn	14 50 17.1	-18
SKHT	**Srikalahasti**	**16.36**	**17**	*e*Pn	**Pn**	**14 49 45.6**	**-2.1**
SKHT				*e*		14 52 32.4	
SKHT				Sn	**Sn**	**14 52 49.9**	**+0.4**
RCLA	**Racherla**	**17.82**	**13**	*e*P	**Pn**	**14 50 05.0**	**-1.0**
RCLA				*e*		14 53 09.5	
RCLA				*e*S	**Sn**	**14 53 24.3**	**-0.5**
SRLM	**Srisailam**	**18.43**	**12**	*e*Pn	**P**	**14 50 11.6**	**-1.9**
SRLM				*e*		14 53 20.8	
SRLM				Sn	**Sn**	**14 53 38.7**	**-1.0**
ADKI	**Addanki**	**18.44**	**15**	*e*Pn	**P**	**14 50 12.5**	**-1.0**
ADKI				*e*		14 53 24.3	
ADKI				Sn	**Sn**	**14 53 39.0**	**-0.8**
NJS	**Nagarjunasagar**	**18.96**	**13**	*e*P	**P**	**14 50 18.5**	**-0.8**
NJS				*e*		14 53 37.8	
NJS				*e*S	**Sn**	**14 53 51.9**	**-0.6**
HYB	**Hyderabad**	**19.65**	**10**	*i* P	**Pn**	**14 50 31.0**	**+2.8**
HYB				*e*		14 53 52.5	
HYB				*e*S	**S**	**14 54 06.5**	**-2.2**
HYBB	**Hyderabad (bro**	**19.65**	**10**	*e*P	**P**	**14 50 24.1**	**-2.8**
HYBB				*e*P	**sP**	**14 50 30.6**	**-0.4**
HYBB				*e*		14 53 52.6	
HYBB				*e*S	**S**	**14 54 04.9**	**-3.9**
KLRI	**Killari**	**20.05**	**4**	*e*P	**P**	**14 50 31.4**	**+0.3**
KLRI				*e*		14 54 12.4	
KLRI				*e*S	**S**	**14 54 17.1**	**+0.5**
PVM	**Polavaram**	**20.26**	**19**	*e*P	Pn	14 50 36.3	+1.0
PVM				*e*		14 54 01.9	
PVM				*e*S	**S**	**14 54 21.1**	**+0.4**
SRSP	**Sriramsagar**	**21.10**	**9**	*e*P	**P**	**14 50 40.9**	**-1.6**
SRSP				*e*		14 54 29.1	
SRSP				*e*S	**S**	**14 54 38.3**	**+0.9**
RPR	**Rampur**	**21.20**	**11**	*e*P	**P**	**14 50 43.3**	**-0.3**
RPR				*e*S	**S**	**14 54 39.1**	**-0.2**
VIS	**Vishakhapatnam**	**21.29**	**22**	*i* P	**P**	**14 50 51.4**	**+6.9**
VIS				*i* S	**S**	**14 54 37.0**	**-4.2**
VIS				*i* S	Sn	14 54 37.2	-11
CHLP	**Challavanipeta**	**22.29**	**23**	*e*P	**P**	**14 50 56.3**	**+1.0**
CHLP				*e*		14 54 48.7	
CHLP				*e*S	**S**	**14 54 57.2**	**-3.4**
CMAR	**Chiang Mai Arr**	**31.16**	**48**	P	**P**	**14 52 18.3**	**+1.2**
	0.5nm,0.7s,baz=237,slow=12,SNR=4.6						
KMBO	**Kilima Mbogo**	**37.72**	**271**	P	**P**	**14 53 16.1**	**+1.8**
	1.0nm,0.3s,baz=40,slow=9.1,SNR=4.7						
GEYT	**Alibeck**	**42.72**	**340**	P	**P**	**14 53 56.3**	**+1.1**
	1.3nm,0.6s,baz=173,slow=13,SNR=2.7						
GEYT				LR	LR	15 11 22.3	
	comp=Z,72nm,18.6s,baz=90,slow=36						
AAK	**Ala-Archa**	**44.47**	**359**	P	P	14 54 16.0	+6.7
	1.7nm,0.3s,baz=196,slow=10.0,SNR=4.3						
AAK				LR	LR	15 12 56.2	
	comp=Z,72nm,18.1s,baz=193,slow=36						
TKM2	**Tokmak 2**	**44.76**	**1**	P	**P**	**14 54 12.3**	**+0.6**
	6.1nm,1.0s						
KAPI	**Kappang**	**44.78**	**95**	LR	LR	15 13 49.1	
	comp=Z,48nm,18.1s,baz=355,slow=37						
LSZ	**Lusaka**	**47.96**	**251**	P	**P**	**14 54 38.4**	**+1.2**
	1.6nm,0.5s,baz=41,slow=15,SNR=6.6						
H01W3	**Cape Leeuwin H**	**48.91**	**136**	T	T	15 47 27.8	
	baz=301,slow=75,SNR=7.3						
H01W2	**Cape Leeuwin H**	**48.92**	**136**	T	T	15 47 34.2	
	baz=301,slow=75,SNR=9.5						
H01W1	**Cape Leeuwin H**	**48.93**	**136**	T	T	15 47 29.1	
	baz=301,slow=75,SNR=8.4						
MKAR	**Makanchi Array**	**49.05**	**7**	P	**P**	**14 54 44.7**	**-0.3**
	0.1nm,0.3s,baz=183,slow=7.2,SNR=2.4						
MKAR				LR	LR	15 14 34.3	
	comp=Z,26nm,20.5s,baz=176,slow=35						
KURK	**Kurchatov**	**52.65**	**3**	*e*P	**P**	**14 55 11.9**	**0.0**
	35nm,1.1s						
ABKAR	**Akbulak array**	**52.72**	**348**	*e*P	**P**	**14 55 12.1**	**-0.4**
	3.4nm,0.9s						
KBZ	**Khabaz**	**53.88**	**332**	P	**P**	**14 55 21.4**	**+0.3**
	2.8nm,0.8s,baz=144,slow=7.7,SNR=5.6						
KBZ				LR	LR	15 18 21.9	
	comp=Z,34nm,21.4s,baz=75,slow=36						
BRTR	**Keskin Array B**	**56.21**	**322**	P	**P**	**14 55 38.3**	**0.0**
	2.8nm,0.9s,baz=142,slow=9.0,SNR=13						
ZALV	**Zalesovo Beam**	**56.39**	**7**	P	**P**	**14 55 39.9**	**+0.8**
	0.4nm,0.3s,baz=182,slow=6.8,SNR=1.8						
ZALV				LR	LR	15 20 30.4	
	comp=Z,24nm,18.0s,baz=66,slow=37						
WRA	**Warramunga Arr**	**60.58**	**112**	P	**P**	**14 56 09.4**	**+0.4**
	1.8nm,0.7s,baz=286,slow=7.2,SNR=16						
ASAR	**Alice Springs**	**60.85**	**116**	P	**P**	**14 56 11.3**	**+0.4**
	0.9nm,0.7s,baz=286,slow=6.9,SNR=11						
ASAR				LR	LR	15 22 59.5	
	comp=Z,29nm,18.1s,baz=309,slow=36						
AKASG	**Malin Array Be**	**65.41**	**330**	P	**P**	**14 56 39.8**	**-0.7**
	0.3nm,0.4s,baz=134,slow=5.2,SNR=3.2						
STKA	**Stephens Creek**	**69.14**	**123**	LR	LR	15 24 21.6	
	comp=Z,86nm,20.7s,baz=208,slow=33						
GERES	**GERESS Array B**	**73.10**	**323**	LR	LR	15 31 28.8	
	comp=Z,17nm,19.0s,baz=348,slow=37						
FINES	**FINESS Array B**	**73.46**	**339**	P	**P

KSRS	**Korea Array**	**21.02**	**12**	P		**P**	**15 08 38.4**	**+1.0**
	0.7nm,0.6s,baz=200,slow=10,SNR=5.1							
CMAR	**Chiang Mai Arr**	**22.52**	**277**	LR		LR	15 18 21.1	
	comp=Z,16nm,18.2s,baz=170,slow=38							
USRK	**Ussuriysk Ar.**	**28.36**	**14**	P		**P**	**15 09 48.9**	**+1.3**
	0.9nm,0.7s,baz=206,slow=13,SNR=2.2							
WRA	**Warramunga Arr**	**38.41**	**162**	P		**P**	**15 11 13.8**	**-1.3**
	0.4nm,0.6s,baz=343,slow=9.0,SNR=5.3							
H11S3	**WAKE ISLAND Hy**	**42.03**	**81**	T		T	15 56 35.9	
	baz=276,slow=75,SNR=717							
H11S1	**WAKE ISLAND Hy**	**42.04**	**81**	T		T	15 56 35.0	
	baz=276,slow=75,SNR=606							
H11S2	**WAKE ISLAND Hy**	**42.04**	**81**	T		T	15 56 35.8	
	baz=276,slow=75,SNR=555							
H11N1	**WAKE ISLAND Hy**	**42.13**	**79**	T		T	15 56 44.3	
	baz=274,slow=74,SNR=267							
H11N2	**WAKE ISLAND Hy**	**42.13**	**79**	T		T	15 56 46.0	
	baz=274,slow=74,SNR=343							
H11N3	**WAKE ISLAND Hy**	**42.15**	**79**	T		T	15 56 45.1	
	baz=274,slow=74,SNR=266							
MKAR	**Makanchi Array**	**44.59**	**321**	P		**P**	**15 12 06.1**	**+0.4**
	0.3nm,0.6s,baz=121,slow=5.6,SNR=2.7							
KURBB	**Kurchatov Arra**	**48.59**	**324**	P		**P**	**15 12 36.8**	**0.0**
	3.2nm,0.2s,baz=124,slow=8.2,SNR=6.9							
NRIK	**Noril'sk**	**56.73**	**346**	P		**P**	**15 13 37.2**	**+0.4**
	0.9nm,0.3s,baz=138,slow=6.3,SNR=4.1							
ARCES	**ARCESS Array B**	**76.74**	**339**	P		**P**	**15 15 44.2**	**-0.2**
	1.4nm,0.8s,baz=93,slow=6.4,SNR=3.9							
FINES	**FINESS Array B**	**78.36**	**331**	P		**P**	**15 15 53.4**	**-0.1**
	1.5nm,0.5s,baz=63,slow=5.4,SNR=12							
AKASG	**Malin Array Be**	**79.17**	**320**	LR		LR	15 51 60.0	
	comp=Z,24nm,18.4s,baz=35,slow=36							
EIL	**Elat**	**79.77**	**298**	LR		LR	15 54 19.4	
	comp=Z,37nm,19.7s,baz=58,slow=38							
NB2	**NORSAR Subarra**	**85.23**	**333**	P		**P**	**15 16 29.3**	**-0.5**
	comp=Z,0.9nm,0.6s,baz=66,slow=4.8							
NOA	**NORSAR Array B**	**85.23**	**333**	P		**P**	**15 16 29.5**	**-0.3**
	comp=Z,1.3nm,0.6s,baz=65,slow=5.0,SNR=9.0							
YKA	**Yellowknife Ar**	**89.16**	**23**	P		**P**	**15 16 46.7**	**-1.9**
	comp=Z,0.3nm,0.5s,baz=309,slow=4.6,SNR=3.0							

WEL 05 15:07:12.5±0.1, 41.68S×174.19E, h20km±1km, ML3.5/42, 3C-5D, Error ellipse: s-maj=1.1km s-min=1.1km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMWZ	**Cape Campbell**	**0.07**	**164**	P*	Pb	15 07 14.9	-1.4
CMWZ				S*	Sb	15 07 16.9	-2.0
CMWZ				AML	AML	15 07 18.7	
BSWZ	**Blackbirch Sta**	**0.24**	**261**	↓P*	Pb	15 07 17.4	-1.1
BSWZ				S*	Sb	15 07 21.6	-1.0
BSWZ				AML	AML	15 07 22.3	
TUWZ	**Tuamarina**	**0.31**	**324**	↑P*	Pb	15 07 19.1	-0.2
TUWZ				S*	Sb	15 07 24.2	+0.2
TUWZ				AML	AML	15 07 24.6	
TCW	**Tory Channel**	**0.47**	**8**	↑P*	Pb	15 07 21.7	-0.4
TCW				AML	AML	15 07 29.6	
TCW				AML	AML	15 07 29.7	
WEL	**Wellington**	**0.59**	**48**	P*	Pb	15 07 24.0	-0.2
WEL				S*	Sb	15 07 32.4	+0.3
WEL				AML	AML	15 07 34.1	
WEL				AML	AML	15 07 36.6	
WEL				AML	AML	15 07 36.6	
NNZ	**Nelson**	**0.76**	**307**	↓P*	Pb	15 07 26.9	-0.1
NNZ				AML	AML	15 07 40.2	
NNZ				AML	AML	15 07 40.3	
NNZ				AML	AML	15 07 40.3	
NNZ				AML	AML	15 07 41.1	
PLWZ	**Palliser**	**0.81**	**82**	P*	Pb	15 07 28.2	+0.3
PLWZ				AML	AML	15 07 41.3	
PLWZ				AML	AML	15 07 45.8	
MSWZ	**Moikau Station**	**0.84**	**72**	P*	Pb	15 07 28.6	+0.2
MSWZ				AML	AML	15 07 43.3	
MSWZ				AML	AML	15 07 44.2	
CAW	**Cannon Point**	**0.87**	**49**	P*	Pb	15 07 28.9	-0.1
CAW				AML	AML	15 07 44.5	
CAW				AML	AML	15 07 45.0	
KHZ	**Kahutara**	**0.88**	**213**	P*	Pb	15 07 29.3	+0.2
KHZ				AML	AML	15 07 43.2	
KHZ				AML	AML	15 07 43.2	
KHZ				AML	AML	15 07 43.5	
KHZ				AML	AML	15 07 43.7	
THZ	**Tophouse**	**0.96**	**265**	P*	Pb	15 07 30.4	-0.1
THZ				AML	AML	15 07 49.9	
THZ				AML	AML	15 07 50.7	
PAWZ	**Paruwai Farm**	**0.98**	**73**	↓P*	Pb	15 07 30.5	-0.3
PAWZ				AML	AML	15 07 47.7	
PAWZ				AML	AML	15 07 49.0	
KIW	**Kapiti Island**	**0.98**	**34**	↑P*	Pb	15 07 30.7	-0.1
KIW				S*	Sn	15 07 45.1	+0.7
KIW				AML	AML	15 07 47.3	
MTW	**Mount Morrison**	**1.12**	**63**	↓P*	Pn	15 07 32.5	-0.5
MTW				AML	AML	15 07 52.2	
MTW				AML	AML	15 07 54.4	
OGWZ	**Otaki Gorge**	**1.14**	**41**	P*	Pb	15 07 33.5	0.0
OGWZ				AML	AML	15 07 52.7	
OGWZ				AML	AML	15 07 52.9	
TRWZ	**Traveller**	**1.16**	**76**	P*	Pn	15 07 32.8	-0.8
TRWZ				AML	AML	15 07 55.9	
TRWZ				AML	AML	15 07 57.0	
HOWZ	**Holdsworth Sta**	**1.27**	**52**	↓P*	Pn	15 07 34.8	-0.3
HOWZ				AML	AML	15 07 57.1	
HOWZ				AML	AML	15 08 00.0	
TMWZ	**Te Maipa**	**1.40**	**66**	P*	Pn	15 07 36.1	-0.8
TMWZ				AML	AML	15 08 06.6	
TMWZ				AML	AML	15 08 10.1	
MRZ	**Mangatainoka R**	**1.46**	**46**	PN	Pn	15 07 37.7	0.0
MRZ				AML	AML	15 08 02.2	
MRZ				AML	AML	15 08 06.0	
QRZ	**Quartz Range**	**1.51**	**304**	PN	Pb	15 07 40.0	+0.1
QRZ				AML	AML	15 08 03.5	
QRZ				AML	AML	15 08 03.6	
QRZ				AML	AML	15 08 03.7	
QRZ				AML	AML	15 08 03.7	
TIWZ	**Tintock**	**1.57**	**55**	PN	Pn	15 07 38.5	-0.7
TIWZ				AML	AML	15 08 07.5	
TIWZ				AML	AML	15 08 11.8	
PRWZ	**Pori Road**	**1.75**	**51**	PN	Pn	15 07 41.3	-0.4
PRWZ				AML	AML	15 08 15.5	
PRWZ				AML	AML	15 08 20.2	
POWZ	**Post Office Ro**	**1.76**	**43**	PN	Pn	15 07 41.7	-0.1
POWZ				AML	AML	15 08 15.8	
POWZ				AML	AML	15 08 16.7	
DSZ	**Denniston Nort**	**1.79**	**267**	PN	Pb	15 07 43.7	-0.8
DSZ				AML	AML	15 08 10.4	
DSZ				AML	AML	15 08 11.0	
LTZ	**Lake Taylor**	**1.80**	**232**	PN	Pn	15 07 42.2	-0.2
LTZ				AML	AML	15 08 17.4	
WAZ	**Wanganui**	**2.02**	**18**	AML	AML	15 08 25.7	
WAZ				AML	AML	15 08 27.6	
DVHZ	**Dannevirke**	**2.04**	**48**	PN	Pn	15 07 44.5	-1.2
DVHZ				AML	AML	15 08 27.4	
DVHZ				AML	AML	15 08 28.6	
TSZ	**Takapari Road**	**2.10**	**40**	PN	Pn	15 07 46.4	-0.2
TSZ				AML	AML	15 08 37.3	
ANWZ	**Angora Road**	**2.12**	**56**	PN	Pn	15 07 45.4	-1.2
ANWZ				AML	AML	15 08 38.6	
ANWZ				AML	AML	15 08 38.7	
OXZ	**Oxford**	**2.29**	**223**	*e*PN	Pn	15 07 47.5	-1.6
INZ	**Inchbonnie**	**2.29**	**242**	PN	Pn	15 07 49.1	0.0
MQZ	**McQueen's Vall**	**2.32**	**209**	PN	Pn	15 07 46.9	-2.5
MQZ				AML	AML	15 10 16.6	
PNHZ	**Pukenui**	**2.33**	**42**	PN	Pn	15 07 49.1	-0.7
PNHZ				AML	AML	15 08 32.7	
PNHZ				AML	AML	15 08 43.4	
KHEZ	**Kahui Hut**	**2.39**	**357**	*e*PN	Pb	15 07 54.2	-0.6
NWEZ	**Newall Road**	**2.42**	**354**	*e*PN	Pb	15 07 56.2	+1.0
MOVZ	**Moawhango**	**2.56**	**28**	*e*PN	Pb	15 07 57.0	-0.9
MOVZ				AML	AML	15 08 37.3	
MOVZ				AML	AML	15 08 42.4	
WNVZ	**Wahianoa**	**2.58**	**25**	*e*PN	Pn	15 07 54.1	+0.8
VRZ	**Vera Road**	**2.59**	**10**	PN	Pn	15 07 55.7	+2.4
VRZ				AML	AML	15 08 42.8	
VRZ				AML	AML	15 08 56.2	
TRVZ	**Turoa**	**2.59**	**24**	AML	AML	15 08 38.7	
TRVZ				AML	AML	15 08 39.7	
WHVZ	**Whangaehu Hut**	**2.62**	**24**	AML	AML	15 08 48.8	
KRHZ	**Kereru**	**2.63**	**40**	AML	AML	15 08 48.1	
KRHZ				AML	AML	15 08 51.8	
FWVZ	**Far West T-bar**	**2.64**	**24**	*e*PN	Pn	15 07 55.7	+1.6
FWVZ				AML	AML	15 08 43.2	
FWVZ				AML	AML	15 08 45.4	
OTVZ	**Oturere**	**2.75**	**25**	AML	AML	15 08 48.8	
OTVZ				AML	AML	15 08 53.0	
WTVZ	**West Tongariro**	**2.78**	**23**	AML	AML	15 08 47.3	
WTVZ				AML	AML	15 08 50.8	
KRVZ	**Karewarewa**	**2.81**	**24**	AML	AML	15 08 50.7	
KRVZ				AML	AML	15 08 55.6	
BKZ	**Black Stump Fm**	**3.07**	**36**	AML	AML	15 09 04.7	
BKZ				AML	AML	15 09 05.0	
HIZ	**Hauiti**	**3.21**	**9**	AML	AML	15 09 03.4	
ODZ	**Otahua Downs**	**4.24**	**216**	*e*PN	Pn	15 08 13.7	-2.2

*ISCJB **05** 15:13:43.8±0.5, 36.63N±0.02×36.01E±0.03, h3km±4km, Error ellipse: s-maj=4.0km s-min=3.1km az=151.3*
*ISK **05** 15:13:43.3, 36.63N×35.97E, h6km, MD2.9*
*DDA **05** 15:13:43.4, 36.58N×35.97E, h7km, Md3.0*
*CSEM **05** 15:13:44.0±0.2, 36.62N×35.99E, h10km, MD2.9, Error ellipse: s-maj=4.7km s-min=3.9km az=38.0*
*NSSC **05** 15:13:44.6±1.1, 36.88N×35.90E, h37km±999km, ML2.9*
ISC 05 15:13:44.0±1.1, 36.64N±0.02×35.97E±0.02, h3km±10km, n45, σ0s80/66, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TAHT	**Tahtakopru-Hat**	**0.31**	**146**	*e*PG	**Pg**	**15 13 50.3**	**+0.3**
TAHT				*e*SG	**Sg**	**15 13 54.4**	**+0.3**
TAHT	**Tahtakopru-Hat**	**0.31**	**146**	*e*Pg	**Pg**	**15 13 50.3**	**+0.3**
TAHT				*e*Sg	**Sg**	**15 13 54.4**	**+0.3**
YURE	**YUREGIR**	**0.33**	**305**	*i* P	**Pb**	**15 13 51.8**	**-0.9**
YURE	**YUREGIR**	**0.33**	**305**	P	**Pb**	**15 13 51.8**	**-0.9**
CEYT	**Ceyhan**	**0.41**	**335**	*e*PG	**Pg**	**15 13 52.2**	**+0.2**
CEYT				*e*SG	**Sg**	**15 13 57.9**	**+0.5**
CEYT	**Ceyhan**	**0.41**	**335**	*e*Pg	**Pg**	**15 13 52.2**	**+0.2**
CEYT				*e*Sg	**Sg**	**15 13 57.9**	**+0.5**
KRTS	**Karatas**	**0.48**	**263**	*e*PG	**Pg**	**15 13 53.4**	**+0.1**
KRTS	**Karatas**	**0.48**	**263**	*e*Pg	**Pg**	**15 13 53.4**	**+0.1**
YAYL	**Yayladag**	**0.61**	**169**	*i* P	**Pg**	**15 13 55.0**	**-0.7**
YAYL				*i* S	**Sg**	**15 14 04.4**	**+0.7**
YAYL	**Yayladag**	**0.61**	**169**	P	**Pg**	**15 13 55.0**	**-0.7**
YAYL				S	**Sg**	**15 14 04.4**	**+0.7**
KAMA	**Osmaniye**	**0.79**	**45**	*i* P	**Pg**	**15 13 58.2**	**-0.9**
KAMA				*i* S	**Sg**	**15 14 09.1**	**-0.2**
KOZT	**Kozan**	**0.85**	**352**	*e*PG	**Pg**	**15 14 00.0**	**-0.4**
KOZT	**Kozan**	**0.85**	**352**	*e*Pg	**Pg**	**15 14 00.0**	**-0.4**
KUZU	**Kuzuini**	**0.90**	**81**	*i* P	**Pg**	**15 14 00.8**	**-0.5**
KUZU				*i* S	**Sb**	**15 14 14.3**	**-0.5**
KUZU	**Kuzuini**	**0.90**	**81**	P	**Pg**	**15 14 00.8**	**-0.5**
KUZU				S	**Sb**	**15 14 14.3**	**-0.5**
AKO	**Adana**	**0.93**	**333**	*i* P	**Pb**	**15 14 03.0**	**+0.2**
AKO				*i* S	**Sb**	**15 14 16.2**	**+0.7**
DED	**Mersin**	**0.99**	**289**	*i* P	**Pg**	**15 14 02.4**	**-0.7**
DED				*i* S	**Sn**	**15 14 18.6**	**-0.9**
HCB	**Kahramanmara¯**	**1.03**	**46**	*i* P	**Pb**	**15 14 04.2**	**-0.4**
HCB				*i* S	**Sg**	**15 14 17.1**	**-0.2**
GAZ	**Gaziantep**	**1.13**	**61**	*e*PN	**Pg**	**15 14 05.3**	**-0.5**
GAZ	**Gaziantep**	**1.13**	**61**	*e*Pn	**Pg**	**15 14 05.3**	**-0.5**
KMRS	**Kahramanmaras**	**1.14**	**40**	*e*PN	**Pg**	**15 14 05.6**	**-0.4**
KMRS	**Kahramanmaras**	**1.14**	**40**	*e*Pn	**Pg**	**15 14 05.6**	**-0.4**
GULE	**Gulek**	**1.15**	**304**	*i* P	**Pn**	**15 14 08.4**	**+1.1**
GULE				*i* S	**Sn**	**15 14 25.5**	**+1.8**
GULE	**Gulek**	**1.15**	**304**	P	**Pn**	**15 14 08.4**	**+1.1**
GULE				S	**Sn**	**15 14 25.5**	**+1.8**
MERS	**Mersin**	**1.19**	**282**	*e*PN	**Pg**	**15 14 05.9**	**-0.8**
MERS	**Mersin**	**1.19**	**282**	*e*Pn	**Pg**	**15 14 05.9**	**-0.8**
KIZK	**Mersin**	**1.48**	**265**	*i* P	**Pn**	**15 14 10.7**	**-0.9**
KIZK				*i* S	**Sg**	**15 14 31.7**	**+0.2**
KIZK	**Mersin**	**1.48**	**265**	P	**Pn**	**15 14 10.7**	**-0.9**
KIZK				S	**Sg**	**15 14 31.7**	**+0.2**
BIDA	**Albida**	**1.64**	**170**	*e*P	**Pb**	**15 14 04.4**	**-0.6**
BIDA				*e*S	**Sb**	**15 14 35.9**	**-0.3**
BIDA				AML	AML	15 14 38.8	
	comp=E,1μm,0.6s						
BIDA				AML	AML	15 14 39.8	
	comp=N,664nm,0.3s						
KERG	**Konya-Eregli**	**1.67**	**298**	*i* P	**Pn**	**15 14 12.9**	**-1.4**
KERG				*i* S	**Sg**	**15 14 39.1**	**+1.5**
KERG	**Konya-Eregli**	**1.67**	**298**	P	**Pn**	**15 14 12.9**	**-1.4**
KERG				S	**Sg**	**15 14 39.1**	**+1.5**
SARI	**SarD1z-Kayseri**	**1.81**	**11**	*e*PN	**Pn**	**15 14 16.3**	**0.0**
NIG	**Nigde**	**1.83**	**324**	*e*PN	**Pn**	**15 14 16.7**	**0.0**
NIG	**Nigde**	**1.83**	**324**	*e*Pn	**Pn**	**15 14 16.7**	**0.0**
YESY	**Yesilyurt**	**2.11**	**303**	*e*PN	**Pn**	**15 14 20.0**	**-0.5**
YESY	**Yesilyurt**	**2.11**	**303**	*e*Pn	**Pn**	**15 14 20.0**	**-0.5**
BNN	**Bunyan**	**2.21**	**358**	*e*PN	**Pn**	**15 14 22.1**	**+0.2**
BNN	**Bunyan**	**2.21**	**358**	*e*Pn	**Pn**	**15 14 22.1**	**+0.2**
DARE	**Darende-Malaty**	**2.28**	**31**	*e*PN	**Pn**	**15 14 22.6**	**0.0**
DARE	**Darende-Malaty**	**2.28**	**31**	*e*Pn	**Pn**	**15 14 22.7**	**0.0**
LFK	**Lefkose**	**2.40**	**236**	*e*PN	**Pn**	**15 14 23.3**	**-0.9**
LFK	**Lefkose**	**2.40**	**236**	*e*Pn	**Pn**	**15 14 23.3**	**-0.9**
MARH	**Ras Al Marh**	**2.64**	**171**	*e*P	**Pn**	**15 14 28.6**	**+0.9**
MARH				AML	AML	15 15 15.2	
	comp=N,74nm,0.3s						
MARH				AML	AML	15 15 19.5	
	comp=E,43nm,0.4s						
ROOS	**tl_alroos**	**2.69**	**156**	*e*P	**Pn**	**15 14 30.1**	**+1.8**
ROOS				*e*S	**Sn**	**15 15 00.9**	**-0.4**
ROOS				AML	AML	15 15 14.3	
	comp=N,92nm,0.3s						
ROOS				AML	AML	15 15 22.7	
	comp=E,94nm,0.3s						
ZALF	**Zalf**	**3.87**	**163**	*e*P	**Pn**	**15 14 46.1**	**+1.6**
ZALF				*e*S	**Sn**	**15 15 30.6**	**0.0**
ZALF				AML	AML	15 15 52.3	
	comp=E,15nm,0.5s						
ZALF				AML	AML	15 15 53.6	
	comp=N,19nm,0.5s						

*DDA **05** 15:21:43.7, 40.15N×33.58E, h7km, Md2.8*
*ISK **05** 15:21:43.4, 40.12N×33.56E, h5km, MD2.8*
*CSEM **05** 15:21:43.6±0.1, 40.13N×33.57E, h2km, MD2.8, Error ellipse: s-maj=2.4km s-min=2.1km az=167.0*
ISC 05 15:21:43.1±1.2, 40.10N±0.03×33.56E±0.02, h2km±11km, n35, σ0s49/49, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ELDT	**Eldivan**	**0.40**	**345**	*i* P	**Pg**	**15 21 51.0**	**+0.2**
ELDT				*i* S	**Sg**	**15 21 56.6**	**+0.5**
ELDT	**Eldivan**	**0.40**	**345**	P	**Pg**	**15 21 51.0**	**+0.2**
ELDT				S	**Sg**	**15 21 56.6**	**+0.5**
LOD	**Lodumlu**	**0.65**	**251**	*e*PG	**Pb**	**15 21 56.6**	**-0.6**
LOD				*e*SG	**Sb**	**15 22 05.8**	**-0.9**
LOD	**Lodumlu**	**0.65**	**251**	*e*Pg	**Pb**	**15 21 56.6**	**-0.6**
LOD				*e*Sg	**Sb**	**15 22 05.8**	**-0.9**
KAMT	**Kaman**	**0.74**	**171**	*e*PG	**Pb**	**15 21 58.4**	**-0.4**
KAMT				*e*SG	**Sb**	**15 22 09.3**	**-0.1**
KAMT	**Kaman**	**0.74**	**171**	*e*Pg	**Pb**	**15 21 58.4**	**-0.4**
KAMT				*e*Sg	**Sb**	**15 22 09.3**	**-0.1**
AFSR	**Af˘ar-Bala (A**	**0.75**	**210**	*e*PG	**Pb**	**15 21 58.6**	**-0.4**
AFSR	**Af˘ar-Bala (A**	**0.75**	**210**	*e*Pg	**Pb**	**15 21 58.6**	**-0.4**
CDAG	**Cicekdag**	**0.79**	**127**	*i* P	**Pb**	**15 21 59.3**	**-0.2**
CDAG				*i* S	**Sg**	**15 22 08.0**	**-0.3**
CDAG	**Cicekdag**	**0.79**	**127**	P	**Pb**	**15 21 59.3**	**-0.2**
CDAG				S	**Sg**	**15 22 08.0**	**-0.3**
CORM	**Corum**	**0.82**	**84**	*e*PG	**Pb**	**15 21 59.8**	**-0.4**
CORM				*e*SG	**Sb**	**15 22 11.3**	**-0.5**
CORM	**Corum**	**0.82**	**84**	*e*Pg	**Pb**	**15 21 59.8**	**-0.4**
CORM				*e*Sg	**Sb**	**15 22 11.3**	**-0.5**
TOS	**Tosya**	**1.00**	**21**	*e*PG	**Pg**	**15 22 02.1**	**-0.1**
TOS	**Tosya**	**1.00**	**21**	*e*Pg	**Pg**	**15 22 02.1**	**-0.1**
KKUL	**Konya-Kulu**	**1.05**	**208**	*i* S	**Sn**	**15 22 21.3**	**+1.0**
CTAK	**Corum_Osmancik**	**1.09**	**59**	*i* P	**Pg**	**15 22 03.9**	**0.0**
CTAK	**Corum_Osmancik**	**1.09**	**59**	P	**Pg**	**15 22 03.9**	**0.0**
COAL	**Corum-Alaca**	**1.10**	**81**	*i* P	**Pb**	**15 22 04.4**	**-0.6**
COAL				*i* S	**Sb**	**15 22 19.9**	**0.0**
COAL	**Corum-Alaca**	**1.10**	**81**	P	**Pb**	**15 22 04.4**	**-0.6**
COAL				S	**Sb**	**15 22 19.9**	**0.0**
SERE	**Sereflikochisa**	**1.15**	**180**	*e*PN	**Pn**	**15 22 06.3**	**0.0**
SERE	**Sereflikochisa**	**1.15**	**180**	*e*Pn	**Pn**	**15 22 06.3**	**0.0**
BCAM	**Yenicaga**	**1.35**	**303**	*i* P	**Pb**	**15 22 09.0**	**-0.1**
BCAM				*i* S	**Sn**	**15 22 27.7**	**+0.1**
BCAM	**Yenicaga**	**1.35**	**303**	P	**Pb**	**15 22 09.0**	**-0.1**
BCAM				S	**Sn**	**15 22 27.7**	**+0.1**
YOZ	**Yozgat**	**1.43**	**108**	*e*PN	**Pg**	**15 22 11.1**	**+0.6**
YOZ	**Yozgat**	**1.43**	**108**	*e*Pn	**Pg**	**15 22 11.1**	**+0.6**
BYBT	**Boyabat**	**1.65**	**33**	*e*PN	**Pb**	**15 22 13.4**	**-0.7**
BYBT	**Boyabat**	**1.65**	**33**	*e*Pn	**Pb**	**15 22 13.4**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.70**	**248**	*e*PN	**Pb**	**15 22 14.6**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.70**	**248**	*e*Pn	**Pb**	**15 22 14.6**	**-0.5**
KIZT	**Kizilcal**	**1.78**	**227**	*e*PN	**Pb**	**15 22 15.7**	**-0.8**
KIZT	**Kizilcal**	**1.78**	**227**	*e*Pn	**Pb**	**15 22 15.7**	**-0.8**
MDUB	**Mudurnu**	**1.84**	**282**	*e*PN	**Pn**	**15 22 16.5**	**+0.6**
MDUB	**Mudurnu**	**1.84**	**282**	*e*Pn	**Pn**	**15 22 16.5**	**+0.6**
SULT	**Sultanhani-AKS**	**1.90**	**181**	*e*PN	**Pb**	**15 22 18.1**	**-0.4**
SULT	**Sultanhani-AKS**	**1.90**	**181**	*e*Pn	**Pb**	**15 22 18.1**	**-0.4**

*ISCJB **05** 15:23:57.7±0.9, 31.55S±0.08×179.5W±0.2, h150km, mb4.6/6, Error ellipse: s-maj=20.3km s-min=9.9km az=16.1*
*IDC **05** 15:23:58.5±1.7, 31.67S×179.12W, h166km±15km, mb4.0/3, mb1 4.1/5, mb1mx3.5/24, mbtmp4.4/5, Error ellipse: s-maj=33.6km s-min=16.2km az=127.0*
*NEIC **05** 15:24:01.4±1.2, 31.24S×179.27W, h185km±11km, mb4.7/2, Error ellipse: s-maj=23.7km s-min=15.3km az=165.0*
ISC 05 15:23:56.3±1.1, 31.49S±0.10×179.1W±0.2, h145km, n16, σ1s01/18, mb4.6/6, 1C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**2.46**	**25**	P	Pn	15 24 42.1	+5.5
	282nm,0.3s,baz=52,slow=19,SNR=3.4						
URZ	**Urewera**	**7.43**	**204**	P	**Pn**	**15 25 41.4**	**-0.6**
	0.5nm,0.3s,baz=270,slow=5.1,SNR=18						
URZ				S	**Sn**	**15 27 04.4**	**-0.6**
	1.8nm,0.3s,baz=74,slow=22,SNR=8.6						
URZ	**Urewera**	**7.43**	**204**	*e*Pn	**Pn**	**15 25 42.0**	**0.0**
URZ				S	**Sn**	**15 27 04.4**	**-0.6**
CTAO	**Charters Tower**	**33.05**	**282**	*e*P	**P**	**15 30 18.8**	**+0.6**
	31nm,1.0s						
STKA	**Stephens Creek**	**33.31**	**259**	P	**P**	**15 30 21.8**	**+1.4**
	1.5nm,0.5s,baz=96,slow=13,SNR=5.6						
ASAR	**Alice Springs**	**42.11**	**269**	P	**P**	**15 31 34.0**	**-0.3**
	4.4nm,0.8s,baz=106,slow=7.3,SNR=68						
ASAR				PcP	**PcP**	**15 33 25.4**	**-0.9**
	0.3nm,0.4s,baz=117,slow=3.8,SNR=7.6						
WRAB	**Tennant Creek**	**43.19**	**274**	*e*P	**P**	**15 31 42.4**	**-0.7**
	12nm,0.9s						
WRA	**Warramunga Arr**	**43.20**	**274**	P	**P**	**15 31 42.6**	**-0.5**
	7.6nm,0.5s,baz=113,slow=7.8,SNR=117						
QSPA	**South Pole Qui**	**58.62**	**180**	*e*P	**P**	**15 33 40.5**	**+2.6**
	59nm,1.3s						
SYO	**Syowa Base**	**75.84**	**193**	*e*P	**P**	**15 35 24.7**	**-1.3**
MKAR	**Makanchi Array**	**117.74**	**310**	PKP	**PKPdf**	**15 42 24.7**	**-0.3**
	0.2nm,0.2s,baz=54,slow=2.5,SNR=3.0						
FINES	**FINESS Array B**	**145.82**	**339**	PKPbc	**PKPbc**	**15 43 17.4**	**-0.3**
	4.1nm,0.5s,baz=61,slow=3.8,SNR=22						
NB2	**NORSAR Subarra**	**149.67**	**350**	PKP	**PKPbc**	**15 43 27.8**	**-0.3**
	comp=Z,2.0nm,0.6s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**149.67**	**350**	PKPbc	**PKPbc**	**15 43 28.1**	**0.0**
	comp=Z,2.0nm,0.6s,baz=16,slow=4.2,SNR=12						
AKASG	**Malin Array Be**	**151.56**	**321**	PKPbc	**PKPbc**	**15 43 32.6**	**-0.2**
	comp=Z,1.5nm,0.7s,baz=48,slow=1.4,SNR=4.2						
BRTR	**Keskin Array B**	**152.25**	**296**	PKPbc	**PKPbc**	**15 43 33.9**	**-1.1**
	comp=Z,0.5nm,0.5s,baz=174,slow=3.7,SNR=4.0						

MAN 05 15:29:29, 16.88N×122.72E, h22km, mb4.3, ML3.2, MS3.0, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAUP	**Cauayan**	**0.86**	**274**	*e*P	Pn	15 29 45.6	-0.2
CAUP				*e*S	Sn	15 29 58.7	+0.9
SGCP	**Mt. Cagua**	**1.50**	**335**	*e*P	Pn	15 29 54.7	+0.1
BALP	**Baler**	**1.58**	**224**	*e*P	Pb	15 29 56.8	-0.8
BALP				*e*S	Sb	15 30 16.3	-0.8
APYP	**Conner**	**1.72**	**305**	*e*P	Pn	15 29 57.6	0.0
APYP				*e*S	Sb	15 30 22.0	+1.0
ABRA	**Dolores**	**2.07**	**292**	*e*P	Pb	15 30 05.0	-0.9

BRG				SG		Sb	15 42 30.3	+0.1
	51nm,0.3s							
GOPC	**GO Pecny, Ondr**	**1.77**	**211**	*e*PG		**Pg**	15 42 14.9	0.0
GOPC				*e*SG		**Sg**	15 42 38.3	+0.5
	comp=Z,13nm,0.6s							
GOPC	**GO Pecny, Ondr**	**1.77**	**211**	Pg		**Pg**	15 42 14.9	0.0
GOPC				Sg		**Sg**	15 42 38.3	+0.5
	13nm,0.6s							
PRU	**Pruhonice**	**1.79**	**217**	*e*SG		**Sg**	15 42 38.9	+0.4
	comp=Z,20nm,0.3s							
PRU	**Pruhonice**	**1.79**	**217**	Sg		**Sg**	15 42 38.9	+0.4
	20nm,0.3s							
MORC	**Moravsky Berou**	**1.86**	**152**	*e*Pn		**Pn**	15 42 14.0	-0.2
MORC				*e*Sg		**Sg**	15 42 42.1	+1.3
CLL	**Collm**	**2.01**	**268**	*e*Pn		**Pn**	15 42 16.0	-0.2
CLL				*e*Pg		**Pb**	15 42 18.0	-0.4
CLL				*i* Sg		**Sb**	15 42 43.6	-0.4
	comp=Z,13nm,0.4s							
OKC	**Ostrava-Krasne**	**2.02**	**142**	*e*SG		**Sg**	15 42 46.7	+0.9
	comp=Z,7.6nm,0.6s							
OKC	**Ostrava-Krasne**	**2.02**	**142**	Sg		**Sg**	15 42 46.7	+0.9
	comp=Z,7.6nm,0.6s							
VRAC	**Vranov**	**2.14**	**173**	*e*Pn		**Pb**	15 42 19.4	-1.2
VRAC				*e*Sg		**Sg**	15 42 50.4	+0.7
OJC	**Ojcow**	**2.58**	**117**	*e*Pg		**Pg**	15 42 30.0	-0.4
OJC				*e*Sg		**Sg**	15 43 05.5	+1.6
OJC	**Ojcow**	**2.58**	**117**	*e*Pg		**Pg**	15 42 30.0	-0.4
OJC				*e*Sg		**Sg**	15 43 05.5	+1.6
OJC	**Ojcow**	**2.58**	**117**	*e*Pg		**Pg**	15 42 30.0	-0.4
OJC				*e*Sg		**Sg**	15 43 05.5	+1.6
NKC	**Novy Kostel**	**2.67**	**245**	*e*SG		**Sg**	15 43 07.4	+0.7
	comp=Z,27nm,0.3s							
NKC	**Novy Kostel**	**2.67**	**245**	Sg		**Sg**	15 43 07.4	+0.7
	comp=Z,27nm,0.3s							
KHC	**Kasperske Hory**	**2.85**	**217**	*e*PG		**Pb**	15 42 34.1	+1.3
KHC				*e*SN		**Sn**	15 43 01.8	-1.1
KHC				*e*SG		**Sg**	15 43 12.0	-0.7
	comp=Z,4.9nm,0.3s							
KHC	**Kasperske Hory**	**2.85**	**217**	Pg		**Pb**	15 42 34.1	+1.3
KHC				Sn		**Sn**	15 43 01.8	-1.1
KHC				Sg		**Sg**	15 43 12.0	-0.7
	comp=Z,4.9nm,0.3s							
LANS	**Liptovska Anna**	**3.10**	**136**	*e*Pg		**Pg**	15 42 39.0	-1.3
LANS				*e*Sg		**Sg**	15 43 18.5	-1.9
LANS	**Liptovska Anna**	**3.10**	**136**	*e*PG		**Pg**	15 42 39.0	-1.3
LANS				*e*SG		**Sg**	15 43 18.5	-1.9
CONA	**Conrad Observa**	**3.52**	**184**	Pn		**Pn**	15 42 38.6	+1.7
	comp=Z,0.2nm,0.1s							
CONA				Sg		**Sg**	15 43 32.5	-1.4
	comp=Z,2.1nm,0.2s							
MOA	**Molln**	**3.80**	**200**	Sg		**Sg**	15 43 42.6	-0.5
	comp=Z,2.3nm,0.2s							
ARSA	**Arzberg**	**4.21**	**186**	Sg		**Sg**	15 43 56.5	+0.3
	comp=Z,0.1nm,0.0s							

ISK ***05*** *15:43:53.8, 39˚.12N×29˚.07E, h5km, MD2.9*
ISCJB ***05*** *15:43:54.5±0.4, 39˚.12N±0˚.02×29˚.07E±0˚.02, h4km±4km, Error ellipse: s-maj=3.9km s-min=2.6km az=149.4*
CSEM ***05*** *15:43:54.8±0.1, 39˚.10N×29˚.08E, h2km, MD2.9, Error ellipse: s-maj=2.6km s-min=2.3km az=142.0*
DDA ***05*** *15:43:54.3, 39˚.13N×29˚.10E, h7km, Ml3.6*
THE ***05*** *15:43:54.4, 38˚.98N×29˚.29E, h13km±1km, ML3.5/6, Error ellipse: s-maj=2.1km s-min=0.6km az=123.0*

ISC 05 15:43:54.6±1.1, 39˚.11N±0˚.02×29˚.09E±0˚.02, h3km±9km, n130, σ1§08/165, 15C-1D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.26**	**105**	*e*PG	**Pb**	15 44 01.1	-0.9
GEDZ	**Gediz**	**0.26**	**105**	*e*Pg	**Pb**	15 44 01.1	-0.9
DEMI	**Demirci**	**0.30**	**256**	*i* P	**Pg**	15 44 01.1	+0.7
DEMI				*i* S	**Sg**	15 44 05.4	+1.1
DEMI	**Demirci**	**0.30**	**256**	P	**Pg**	15 44 01.0	+0.7
DEMI				S	**Sg**	15 44 05.4	+1.1
GDZ	**Gediz**	**0.31**	**94**	*i* P	**Pg**	15 44 00.7	+0.2
GDZ				*i* S	**Sg**	15 44 04.8	+0.2
GDZ	**Gediz**	**0.31**	**94**	P	**Pg**	15 44 00.7	+0.2
GDZ				S	**Sg**	15 44 04.8	+0.2
TVSB	**Tavsanli**	**0.44**	**41**	*e*PG	**Pg**	15 44 03.0	-0.1
TVSB	**Tavsanli**	**0.44**	**41**	*e*Pg	**Pg**	15 44 03.0	-0.1
KULA	**Kula-Manisa**	**0.69**	**209**	*e*PG	**Pg**	15 44 07.9	+0.2
KULA	**Kula-Manisa**	**0.69**	**209**	P	**Pg**	15 44 07.8	+0.1
KULA				S	**Sg**	15 44 17.0	+0.4
KULA	**Kula-Manisa**	**0.69**	**209**	*e*Pg	**Pg**	15 44 07.9	+0.2
KULA				S	**Sg**	15 44 17.0	+0.4
MANT	**Manisa**	**0.75**	**214**	*i* P	**Pg**	15 44 07.8	-1.1
MANT				*i* S	**Sg**	15 44 17.6	-1.0
MANT	**Manisa**	**0.75**	**214**	P	**Pg**	15 44 07.8	-1.1
MANT				S	**Sg**	15 44 17.6	-1.0
KHL	**Karahalli**	**0.86**	**157**	*e*PG	**Pg**	15 44 11.3	+0.3
KHL				*e*SG	**Sb**	15 44 24.8	+0.7
KHL	**Karahalli**	**0.86**	**157**	*e*Pg	**Pg**	15 44 11.3	+0.3
KHL				*e*Sg	**Sb**	15 44 24.8	+0.7
AKS	**Akhisar**	**1.02**	**257**	*e*PG	**Pb**	15 44 14.9	-0.1
AKS				*e*SG	**Sb**	15 44 29.4	+0.6
AKS	**Akhisar**	**1.02**	**257**	*e*Pg	**Pb**	15 44 14.9	-0.1
AKS				*e*Sg	**Sb**	15 44 29.4	+0.6
IGD	**Bursa**	**1.15**	**4**	*i* P	**Pg**	15 44 15.0	-1.7
IGD				*i* S	**Sb**	15 44 32.2	-0.3
CAVI	**Cavuskoy**	**1.23**	**28**	*e*PN	**Pg**	15 44 18.0	-0.2
CAVI				*e*SN	**Sn**	15 44 36.3	+0.3
CAVI	**Cavuskoy**	**1.23**	**28**	*e*Pn	**Pg**	15 44 18.0	-0.2
CAVI				*e*Sn	**Sn**	15 44 36.3	+0.3
IZI	**Iznik**	**1.26**	**13**	*e*PN	**Pb**	15 44 18.7	-0.3
IZI	**Iznik**	**1.26**	**13**	*e*Pn	**Pb**	15 44 18.7	-0.3
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*PN	**Pg**	15 44 18.7	-0.1
MDNY				*e*SN	**Sn**	15 44 37.1	+0.4
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*Pn	**Pg**	15 44 18.7	-0.1
MDNY				*e*Sn	**Sn**	15 44 37.1	+0.4
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pg**	15 44 19.0	-0.2
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pg**	15 44 19.0	-0.2
BALY	**Balya**	**1.30**	**299**	*i* P	**Pn**	15 44 19.4	-0.3
BALY	**Balya**	**1.30**	**299**	P	**Pn**	15 44 19.4	-0.3
BORA	**Eskisehir**	**1.30**	**54**	*i* P	**Pn**	15 44 19.0	-0.8
BORA				*i* S	**Sg**	15 44 35.5	-1.0
BORA	**Eskisehir**	**1.30**	**54**	P	**Pn**	15 44 19.0	-0.8
BORA				S	**Sg**	15 44 35.5	-1.0
GEMT	**Gemlik**	**1.32**	**3**	*e*PN	**Pg**	15 44 20.4	+0.4
GEMT	**Gemlik**	**1.32**	**3**	*e*Pn	**Pg**	15 44 20.4	+0.4
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pb**	15 44 21.4	-0.1
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pb**	15 44 21.5	-0.1
DNZL	**Cakiroluk**	**1.42**	**181**	*i* P	**Pb**	15 44 21.7	-0.2
DNZL				*i* S	**Sn**	15 44 42.2	+1.4
DNZL	**Cakiroluk**	**1.42**	**181**	P	**Pb**	15 44 21.7	-0.2
DNZL				S	**Sn**	15 44 42.2	+1.4
ESKT	**Eskisehir**	**1.43**	**73**	*e*PN	**Pb**	15 44 21.7	-0.2
ESKT	**Eskisehir**	**1.43**	**73**	*e*Pn	**Pb**	15 44 21.7	-0.2
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*PN	**Pn**	15 44 21.3	-0.2
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*Pn	**Pn**	15 44 21.3	-0.2
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	15 44 22.1	-0.4
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	15 44 22.1	-0.4
AYDB	**Zeytinkoy-Aydi**	**1.50**	**219**	*e*PN	**Pn**	15 44 22.6	+0.2
AYDB	**Zeytinkoy-Aydi**	**1.50**	**219**	*e*Pn	**Pn**	15 44 22.7	+0.2
BOLV	**Bolvadin**	**1.50**	**105**	*i* P	**Pb**	15 44 23.0	-0.3
BOLV	**Bolvadin**	**1.50**	**105**	P	**Pb**	15 44 23.0	-0.3
GPA	**Golpazari**	**1.50**	**38**	*e*PN	**Pg**	15 44 23.5	0.0
GPA	**Golpazari**	**1.50**	**38**	*e*Pn	**Pg**	15 44 23.5	0.0
EDC	**Edincik**	**1.55**	**323**	*e*PN	**Pn**	15 44 22.6	-0.5
EDC	**Edincik**	**1.55**	**323**	*e*Pn	**Pn**	15 44 22.6	-0.5
IZM	**Izmir**	**1.60**	**244**	*e*PN	**Pb**	15 44 24.3	-0.5
IZM	**Izmir**	**1.60**	**244**	*e*Pn	**Pb**	15 44 24.3	-0.5
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pb**	15 44 26.1	-0.7
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pb**	15 44 26.1	-0.7
HRT	**Hereke**	**1.76**	**14**	*e*PN	**Pb**	15 44 27.0	-0.6
HRT	**Hereke**	**1.76**	**14**	*e*Pn	**Pb**	15 44 27.0	-0.6
SPNC	**Sapanca-Adapaz**	**1.83**	**30**	*e*PN	**Pb**	15 44 28.1	-0.5
SPNC	**Sapanca-Adapaz**	**1.83**	**30**	*e*Pn	**Pb**	15 44 28.2	-0.5
MRMT	**Marmara Adasi**	**1.88**	**323**	*e*PN	**Pn**	15 44 27.5	-0.2
MRMT	**Marmara Adasi**	**1.88**	**323**	*e*Pn	**Pn**	15 44 27.5	-0.2
KRBG	**Karabiga-Canak**	**1.88**	**313**	*e*PN	**Pb**	15 44 28.7	-0.9
KRBG	**Karabiga-Canak**	**1.88**	**313**	*e*Pn	**Pb**	15 44 28.7	-0.9
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*PN	**Pb**	15 44 29.5	-0.8
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*Pn	**Pb**	15 44 29.5	-0.8
ISK	**Istanbul-Kandi**	**1.95**	**359**	*e*PN	**Pn**	15 44 29.3	+0.7
ISK	**Istanbul-Kandi**	**1.95**	**359**	P	**Pn**	15 44 27.5	-1.1
ISK				S	**Sn**	15 44 53.4	-0.2
ISK	**Istanbul-Kandi**	**1.95**	**359**	P	**Pn**	15 44 27.5	-1.1
ISK	**Istanbul-Kandi**	**1.95**	**359**	*e*Pn	**Pn**	15 44 29.3	+0.7
ISK				S	**Sn**	15 44 53.4	-0.2
DGB	**˜zmir**	**2.03**	**239**	*i* P	**Pb**	15 44 32.1	0.0
YER	**Yerkesik**	**2.08**	**198**	P	**Pn**	15 44 26.6	-3.8
YER	**Yerkesik**	**2.08**	**198**	P	**Pn**	15 44 26.6	-3.8
BGKT	**Bogazkoy**	**2.08**	**353**	*e*PN	**Pn**	15 44 31.1	+0.7
BGKT	**Bogazkoy**	**2.08**	**353**	*e*Pn	**Pn**	15 44 31.1	+0.7
SILT	**Sile**	**2.08**	**12**	*e*PN	**Pb**	15 44 31.6	-1.4
SILT	**Sile**	**2.08**	**12**	*e*Pn	**Pb**	15 44 31.6	-1.4
MDUB	**Mudurnu**	**2.12**	**49**	*e*PN	**Pn**	15 44 31.4	+0.4
MDUB	**Mudurnu**	**2.12**	**49**	*e*Pn	**Pn**	15 44 31.4	+0.4
KLYT	**Kilyos**	**2.14**	**359**	*e*PN	**Pn**	15 44 31.6	+0.4
KLYT	**Kilyos**	**2.14**	**359**	*e*Pn	**Pn**	15 44 31.6	+0.4
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*PN	**Pb**	15 44 32.7	-1.6
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*Pn	**Pb**	15 44 32.7	-1.6
KIZT	**Kizilcal**	**2.19**	**95**	*e*PN	**Pn**	15 44 32.2	+0.2
KIZT	**Kizilcal**	**2.19**	**95**	*e*Pn	**Pn**	15 44 32.2	+0.2
PRK	**Paraskevi**	**2.19**	**274**	P	**Pn**	15 44 31.8	-0.1
PRK				S	**Sb**	15 45 01.1	-1.4
PRK	**Paraskevi**	**2.19**	**274**	P	**Pn**	15 44 31.8	-0.1
PRK				S	**Sb**	15 45 01.1	-1.4
TKR	**Tekirdag**	**2.22**	**328**	*e*PN	**Pn**	15 44 33.0	+0.7
TKR	**Tekirdag**	**2.22**	**328**	*e*Pn	**Pn**	15 44 33.0	+0.7
EZN	**Ezine**	**2.25**	**289**	P	**Pn**	15 44 32.9	+0.1
EZN	**Ezine**	**2.25**	**289**	P	**Pn**	15 44 32.9	+0.1
SMG	**Samos**	**2.26**	**232**	P	**Pn**	15 44 30.9	-1.9
SMG				S	**Sn**	15 44 59.2	-2.0
SMG	**Samos**	**2.26**	**232**	P	**Pn**	15 44 30.9	-1.9
SMG				S	**Sn**	15 44 59.2	-2.0
CRLT	**Corlu**	**2.27**	**333**	*e*PN	**Pn**	15 44 34.1	+1.1
CRLT	**Corlu**	**2.27**	**333**	*e*Pn	**Pn**	15 44 34.1	+1.1
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*PN	**Pn**	15 44 36.0	+0.8
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*Pn	**Pn**	15 44 36.1	+0.8
CHOS	**Chios island**	**2.48**	**254**	P	**Pn**	15 44 35.4	-0.6
CHOS				S	**Sn**	15 45 06.6	-0.2
CHOS	**Chios island**	**2.48**	**254**	P	**Pn**	15 44 35.4	-0.6
CHOS				S	**Sn**	15 45 06.6	-0.2
BODT	**Bodrum**	**2.48**	**215**	P	**Pn**	15 44 33.0	-2.9
BODT	**Bodrum**	**2.48**	**215**	P	**Pn**	15 44 33.0	-2.9
SIGR	**SIGRI**	**2.52**	**273**	P	**Pn**	15 44 36.0	-0.4
SIGR				S	**Sn**	15 45 08.2	+0.7
SIGR	**SIGRI**	**2.52**	**273**	P	**Pn**	15 44 36.0	-0.4
SIGR				S	**Sn**	15 45 08.2	+0.7
GADA	**Gvkgeada**	**2.69**	**295**	P	**Pn**	15 44 39.1	+0.4
GADA				S	**Sn**	15 45 13.2	+1.4
GADA	**Gvkgeada**	**2.69**	**295**	P	**Pn**	15 44 39.1	+0.4
GADA				S	**Sn**	15 45 13.2	+1.4
ENEZ	**Enez**	**2.78**	**307**	P	**Pn**	15 44 40.3	+0.3
ENEZ	**Enez**	**2.78**	**307**	P	**Pn**	15 44 40.3	+0.3
ALN	**Alexandroupoli**	**2.94**	**308**	P	**Pn**	15 44 42.0	-0.2
ALN				S	**Sn**	15 45 19.0	+1.0
SMTH	**Samothraki Isl**	**3.06**	**297**	P	**Pn**	15 44 43.9	0.0
SMTH				S	**Sn**	15 45 22.6	+1.6
LIA	**Limnos Island**	**3.12**	**286**	P	**Pn**	15 44 45.0	+0.3
LIA	**Limnos Island**	**3.12**	**286**	P	**Pn**	15 44 45.0	+0.3
EDRB	**Edirne**	**3.26**	**328**	P	**Pn**	15 44 46.7	0.0
EDRB	**Edirne**	**3.26**	**328**	P	**Pn**	15 44 46.7	0.0
TLB	**Topalu**	**5.52**	**352**	⇑*i*P	**Pn**	15 45 20.9	+3.2
TLCR		**6.07**	**358**	⇑*i*P	**Pn**	15 45 28.9	+3.7
CFR	**Carcaliu**	**6.10**	**354**	⇑*i*P	**Pn**	15 45 28.7	+3.1
CFR	**Carcaliu**	**6.10**	**354**	⇑*i*P	**Pn**	15 45 28.7	+3.1
BARS	**Barje**	**6.63**	**306**	*e*Pn	**Pn**	15 45 33.7	+0.7
MLR	**Muntele Rosu**	**6.79**	**341**	⇑*i*P	**Pn**	15 45 35.9	+0.7
MLR	**Muntele Rosu**	**6.79**	**341**	⇑*i*P	**Pn**	15 45 35.9	+0.7
VRI	**Vrincioaia**	**6.97**	**346**	⇑*i*P	**Pn**	15 45 38.7	+1.1
VRI	**Vrincioaia**	**6.97**	**346**	⇑*i*P	**Pn**	15 45 38.7	+1.1
VOIR		**6.99**	**336**	⇑*i*P	**Pn**	15 45 38.7	+0.7
VOIR		**6.99**	**336**	⇑*i*P	**Pn**	15 45 38.7	+0.7
BOVS	**Bovan**	**7.16**	**312**	*e*Pn	**Pn**	15 45 41.2	+1.1
SELA	**Selova**	**7.28**	**307**	*e*Pn	**Pn**	15 45 42.2	+0.4
DOPR	**Dopca**	**7.37**	**339**	⇑*i*P	**Pn**	15 45 43.8	+0.7
DOPR	**Dopca**	**7.37**	**339**	⇑*i*P	**Pn**	15 45 43.8	+0.7
BURAR	**Bucovina Array**	**8.95**	**343**	⇑*i*P	**Pn**	15 46 05.3	+0.4
BURAR	**Bucovina Array**	**8.95**	**343**	⇑*i*P	**Pn**	15 46 05.3	+0.4
SORM	**Soroca**	**9.03**	**357**	⇑*i*P	**Pn**	15 46 08.4	+2.5
SORM	**Soroca**	**9.03**	**357**	⇑*i*P	**Pn**	15 46 08.4	+2.5

ISCJB ***05*** *15:48:46.8±4.9, 20˚.7S±0˚.4×178˚.0W±0˚.6, h495km, mb3.8/5, Error ellipse: s-maj=86.7km s-min=26.8km az=149.1*
IDC ***05*** *15:48:49.4±7.5, 20˚.85S×178˚.00W, h513km±73km, mb3.3/5, mb1 3.4/7, mb1mx3.1/37, mbtmp4.3/7, Error ellipse: s-maj=65.1km s-min=32.2km az=50.0*

ISC 05 15:48:47.1±2.4, 20˚.8S±0˚.3×177˚.9W±0˚.3, h495km, n8, σ0§57/8, mb4.0/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**14.68**	**262**	P	**P**	15 51 54.2	0.0
	0.2nm,0.3s,baz=86,slow=14,SNR=4.0						
URZ	**Urewera**	**17.97**	**193**	P	**P**	15 52 27.6	+0.4
	0.4nm,0.3s,baz=22,slow=11,SNR=2.6						
CTA	**Charters Tower**	**33.60**	**265**	P	**P**	15 54 46.0	+0.2
	3.9nm,0.8s,baz=84,slow=10.0,SNR=7.1						
STKA	**Stephens Creek**	**37.80**	**244**	P	**P**	15 55 20.4	-0.1
	4.0nm,1.1s,baz=86,slow=15,SNR=3.9						
JAY	**Jayapura**	**44.26**	**289**	P	**P**	15 56 13.0	+0.7
	0.8nm,0.8s,baz=86,slow=24,SNR=4.9						
ASAR	**Alice Springs**	**44.59**	**257**	P	**P**	15 56 14.3	-0.5
	3.8nm,0.5s,baz=95,slow=8.0,SNR=121						
WRA	**Warramunga Arr**	**44.70**	**262**	P	**P**	15 56 14.8	-0.8
	2.9nm,0.5s,baz=97,slow=7.5,SNR=67						
AKASG	**Malin Array Be**	**143.31**	**331**	PKP	**PKPdf**	16 07 24.1	-0.3
	1.0nm,0.5s,baz=43,slow=3.9,SNR=6.5						

ISCJB ***05*** *15:49:16.7±0.4, 37˚.02N±0˚.03×3˚.22E±0˚.04, h12km, Error ellipse: s-maj=4.4km s-min=3.7km az=168.4*
CSEM ***05*** *15:49:17.7±0.2, 36˚.87N×3˚.25E, h15km, ML4.0, Error ellipse: s-maj=6.3km s-min=5.3km az=52.0*
CRAAG ***05*** *15:49:17.2, 36˚.74N×3˚.17E, Ml4.0*
MDD ***05*** *15:49:17.1±0.4, 36˚.85N×3˚.30E, h0km, mb4.0/10, Error ellipse: s-maj=5.4km s-min=4.8km az=54.0, PRXIMO*

ISC 05 15:49:15.9±0.8, 36˚.86N±0˚.03×3˚.36E±0˚.03, h12km, n73, σ1§75/100, 1C, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABA	**Alger-Bouzarea**	**0.27**	**258**	P	**Pg**	15 49 21.3	-0.2
ABA	**Alger-Bouzarea**	**0.27**	**258**	P	**Pg**	15 49 21.3	-0.2
ABA	**Alger-Bouzarea**	**0.27**	**258**	P	**Pg**	15 49 21.3	-0.2
EMHD	**Djebel Mahouad**	**0.74**	**207**	P	**Pg**	15 49 30.0	-0.2
EMHD	**Djebel Mahouad**	**0.74**	**207**	P	**Pg**	15 49 30.0	-0.2
EMHD	**Djebel Mahouad**	**0.74**	**207**	P	**Pg**	15 49 30.0	-0.2
AKET	**Djebel Ketaf**	**0.91**	**153**	P	**Pg**	15 49 32.4	-1.2
AKET	**Djebel Ketaf**	**0.91**	**153**	P	**Pg**	15 49 32.4	-1.2
AKET	**Djebel Ketaf**	**0.91**	**153**	P	**Pg**	15 49 32.4	-1.2
EBNR	**Beni Rached**	**1.58**	**249**	P	**Pg**	15 49 46.8	+0.5
ECHA	**Ech Chlef**	**1.76**	**247**	P	**Pg**	15 49 49.0	+0.4
SET	**Setif**	**1.77**	**111**	P	**Pb**	15 49 49.0	+0.7
SET	**Setif**	**1.77**	**111**	P	**Pb**	15 49 49.0	+0.7
SET	**Setif**	**1.77**	**111**	P	**Pb**	15 49 49.0	+0.7
ECHF	**Ech Chlef**	**1.77**	**247**	P	**Pg**	15 49 50.0	0.0
ECHF	**Ech Chlef**	**1.77**	**247**	P	**Pg**	15 49 50.0	0.0
CKHR	**Kef el Ahmar**	**1.93**	**115**	P	**Pb**	15 49 51.9	+0.9
CKHR	**Kef el Ahmar**	**1.93**	**115**	P	**Pb**	15 49 51.9	+0.9
CKHR	**Kef el Ahmar**	**1.93**	**115**	P	**Pb**	15 49 51.9	+0.9
EANR	**'Ain N'Sour**	**2.04**	**244**	P	**Pg**	15 49 55.7	+0.7
EANR	**'Ain N'Sour**	**2.04**	**244**	P	**Pg**	15 49 55.7	+0.7
EANR	**'Ain N'Sour**	**2.04**	**244**	P	**Pg**	15 49 55.7	+0.7
DFRA	**Djebel Bou Aff**	**2.04**	**98**	P	**Pn**	15 49 52.3	+2.1
DFRA	**Djebel Bou Aff**	**2.04**	**98**	P	**Pn**	15 49 52.3	+2.1
DFRA	**Djebel Bou Aff**	**2.04**	**98**	P	**Pn**	15 49 52.3	+2.1
ETRT	**Tiaret**	**2.22**	**229**	P	**Pn**	15 49 54.2	+1.5
ETRT	**Tiaret**	**2.22**	**229**	P	**Pn**	15 49 54.2	+1.5
ETRT	**Tiaret**	**2.22**	**229**	P	**Pn**	15 49 54.2	+1.5
OKGL	**Djebel Kef Gue**	**2.34**	**250**	P	**Pn**	15 49 53.5	-0.7
	19nm,0.3s,SNR=7.9						
OKGL	**Djebel Kef Gue**	**2.34**	**250**	P	**Pn**	15 49 53.5	-0.7
	19nm,0.3s,SNR=7.9						
OJGS	**Djebel Guires**	**2.51**	**238**	P	**Sn**	15 50 28.0	+0.8
EIBI	**Ibiza**	**2.69**	**324**	P	**Pn**	15 49 59.8	+0.8
	4.6nm,0.2s,SNR=18						
EIBI				S	**Sn**	15 50 29.9	-1.6
	20nm,0.1s,SNR=8.9						
EIBI	**Ibiza**	**2.69**	**324**	P	**Pn**	15 49 59.8	+0.8
	4.6nm,0.2s,SNR=18						
EIBI				S	**Sn**	15 50 29.9	-1.6
	20nm,0.1s,SNR=8.9						
ETOS	**Mallorca**	**2.94**	**352**	⇑P	**Pn**	15 50 03.3	+0.9
	4.2nm,0.2s,SNR=18						
ETOS				S	**Sn**	15 50 37.3	-0.3
	9.0nm,0.4s,SNR=6.7						
ETOS	**Mallorca**	**2.94**	**352**	P	**Pn**	15 50 03.3	+0.9
	4.2nm,0.2s,SNR=18						
ETOS				S	**Sn**	15 50 37.3	-0.3
	9.0nm,0.4s,SNR=6.7						
ODJA	**Bouhanifia**	**3.23**	**243**	P	Pg	15 50 27.0	+9.2
CMAH	**Djebel Manchou**	**3.27**	**93**	P	**Pn**	15 50 09.4	+2.4
CMAH	**Djebel Manchou**	**3.27**	**93**	P	**Pn**	15 50 09.4	+2.4
CMAH	**Djebel Manchou**	**3.27**	**93**	P	**Pn**	15 50 09.4	+2.4
EMUR	**La Murta**	**3.80**	**286**	S	**Sn**	15 50 57.6	-1.3
	7.9nm,0.5s,SNR=4.0						
EMUR	**La Murta**	**3.80**	**286**	S	**Sn**	15 50 57.6	-1.3
	7.9nm,0.5s,SNR=4.0						
ETOB	**Tobarra**	**4.28**	**296**	P	**Pn**	15 50 22.4	+1.5
	3.7nm,0.3s,SNR=10						
ETOB				S	**Sn**	15 51 09.3	-1.5
	6.7nm,0.4s,SNR=4.9						
ETOB	**Tobarra**	**4.28**	**296**	P	**Pn**	15 50 22.4	+1.5
	3.7nm,0.3s,SNR=10						
ETOB				S	**Sn**	15 51 09.3	-1.5
	6.7nm,0.4s,SNR=4.9						
EMOS	**Mosqueruela**	**4.61**	**321**	P	**Pn**	15 50 26.3	+0.7
	2.2nm,0.3s,SNR=13						
EMOS				S	**Sn**	15 51 17.5	-1.6
	3.7nm,0.2s,SNR=5.9						
EMOS	**Mosqueruela**	**4.61**	**321**	P	**Pn**	15 50 26.3	+0.7
	2.2nm,0.3s,SNR=13						
EMOS				S	**Sn**	15 51 17.5	-1.6
	3.7nm,0.2s,SNR=5.9						
ERTA	**Horta de San J**	**4.72**	**331**	S	**Sn**	15 51 19.5	-2.2
	2.4nm,0.2s,SNR=7.9						

IZI	**Iznik**	**1.25**	**14**	*e*PN	**Pn**	**15 51 17.6**	**+0.3**
IZI	**Iznik**	**1.25**	**14**	*e*Pn	**Pn**	**15 51 17.6**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*PN	**Pn**	**15 51 18.2**	**+1.0**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*Pn	**Pn**	**15 51 18.2**	**+1.0**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pg**	**15 51 17.8**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pg**	**15 51 17.8**	**-0.4**
BALY	**Balya**	**1.30**	**299**	*i* P	**Pb**	**15 51 18.3**	**+0.2**
BALY				*i* S	**Sb**	**15 51 35.5**	**+0.7**
BALY	**Balya**	**1.30**	**299**	P	**Pb**	**15 51 18.3**	**+0.2**
BALY				S	**Sb**	**15 51 35.5**	**+0.7**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pg**	**15 51 20.5**	**-0.1**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pg**	**15 51 20.5**	**-0.1**
ESKT	**Eskisehir**	**1.43**	**73**	*e*PN	**Pg**	**15 51 20.8**	**-0.2**
ESKT	**Eskisehir**	**1.43**	**73**	*e*Pn	**Pg**	**15 51 20.8**	**-0.2**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*PN	**Pg**	**15 51 21.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*Pn	**Pg**	**15 51 21.1**	**+0.1**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pg**	**15 51 21.3**	**-0.3**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pg**	**15 51 21.3**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**219**	*e*PN	**Pb**	**15 51 21.6**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**219**	*e*Pn	**Pb**	**15 51 21.6**	**0.0**
GPA	**Golpazari**	**1.50**	**38**	*e*PN	**Pb**	**15 51 21.9**	**+0.3**
GPA	**Golpazari**	**1.50**	**38**	*e*Pn	**Pb**	**15 51 21.9**	**+0.3**
EDC	**Edincik**	**1.55**	**323**	*e*PN	**Pb**	**15 51 22.4**	**0.0**
EDC	**Edincik**	**1.55**	**323**	*e*Pn	**Pb**	**15 51 22.4**	**0.0**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pn**	**15 51 24.5**	**+1.0**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pn**	**15 51 24.5**	**+1.0**
SPNC	**Sapanca-Adapaz**	**1.83**	**31**	*e*PN	**Pb**	**15 51 26.6**	**-0.5**
SPNC	**Sapanca-Adapaz**	**1.83**	**31**	*e*Pn	**Pb**	**15 51 26.6**	**-0.5**
MRMT	**Marmara Adasi**	**1.88**	**323**	*e*PN	**Pb**	**15 51 27.8**	**-0.2**
MRMT	**Marmara Adasi**	**1.88**	**323**	*e*Pn	**Pb**	**15 51 27.8**	**-0.2**
KRBG	**Karabiga-Canak**	**1.88**	**313**	*e*PN	**Pb**	**15 51 27.5**	**-0.5**
KRBG	**Karabiga-Canak**	**1.88**	**313**	*e*Pn	**Pb**	**15 51 27.5**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*PN	**Pn**	**15 51 27.7**	**+1.3**
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*Pn	**Pn**	**15 51 27.7**	**+1.3**
ISK	**Istanbul-Kandi**	**1.95**	**359**	*e*PN	**Pb**	**15 51 28.5**	**-0.6**
ISK	**Istanbul-Kandi**	**1.95**	**359**	*e*Pn	**Pb**	**15 51 28.5**	**-0.6**
BGKT	**Bogazkoy**	**2.08**	**353**	*e*PN	**Pn**	**15 51 29.8**	**+1.4**
BGKT	**Bogazkoy**	**2.08**	**353**	*e*Pn	**Pn**	**15 51 29.8**	**+1.4**
MDUB	**Mudurnu**	**2.11**	**50**	*e*PN	**Pn**	**15 51 30.6**	**+1.5**
MDUB	**Mudurnu**	**2.11**	**50**	*e*Pn	**Pn**	**15 51 30.6**	**+1.5**
KLYT	**Kilyos**	**2.13**	**359**	*e*PN	**Pb**	**15 51 31.1**	**-1.1**
KLYT	**Kilyos**	**2.13**	**359**	*e*Pn	**Pb**	**15 51 31.2**	**-1.1**
RKY	**Sarkoy-Tekirda**	**2.15**	**317**	*e*PN	**Pb**	**15 51 31.4**	**-1.2**
RKY	**Sarkoy-Tekirda**	**2.15**	**317**	*e*Pn	**Pb**	**15 51 31.4**	**-1.2**
CTKS	**Kestanelik-??a**	**2.16**	**348**	*e*PN	**Pn**	**15 51 31.4**	**+1.8**
CTKS	**Kestanelik-??a**	**2.16**	**348**	*e*Pn	**Pn**	**15 51 31.4**	**+1.8**
CTYL	**Yalikoy Yolu**	**2.43**	**346**	*e*PN	**Pn**	**15 51 34.6**	**+1.3**
CTYL	**Yalikoy Yolu**	**2.43**	**346**	*e*Pn	**Pn**	**15 51 34.6**	**+1.3**

CSEM ***05*** *15:53:42.3, 39°.05N×29°.22E, h6km, MD2.6*
ISK 05 15:53:42.3, 39°.05N×29°.22E, h6km, MD2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.44**	**25**	*e*PG	Pb	15 53 51.7	-0.8
TVSB				*e*SG	Sg	15 53 57.4	+0.9
TVSB	**Tavsanli**	**0.44**	**25**	*e*Pg	Pb	15 53 51.7	-0.8
TVSB				*e*Sg	Sg	15 53 57.4	+0.9
KULA	**Kula-Manisa**	**0.69**	**219**	*e*PG	Pg	15 53 56.0	+0.3
KULA				*e*SG	Sb	15 54 06.2	-0.5
KULA	**Kula-Manisa**	**0.69**	**219**	*e*Pg	Pg	15 53 56.0	+0.3
KULA				*e*Sg	Sb	15 54 06.2	-0.5
KHL	**Karahalli**	**0.77**	**162**	*e*PG	Pg	15 53 57.4	+0.4
KHL	**Karahalli**	**0.77**	**162**	*e*Pg	Pg	15 53 57.4	+0.4
CAVI	**Cavuskoy**	**1.24**	**22**	*e*PN	Pn	15 54 06.9	+0.7
CAVI	**Cavuskoy**	**1.24**	**22**	*e*Pn	Pn	15 54 06.9	+0.7
KCTX	**Karacabey (Bur**	**1.38**	**331**	*e*PN	Pg	15 54 09.0	+0.2
KCTX	**Karacabey (Bur**	**1.38**	**331**	*e*Pn	Pg	15 54 09.0	+0.2
ARMT	**Armutlu**	**1.54**	**350**	*e*PN	Pb	15 54 10.9	-0.2
ARMT	**Armutlu**	**1.54**	**350**	*e*Pn	Pb	15 54 10.9	-0.3

MEX 05 15:55:07.3±0.7, 14°.02N×91°.84W, h18km±62km, MD3.5, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.27**	**353**	*e*P	Pn	15 55 41.2	-3.0
CCIG				*e*S	Sn	15 56 08.1	-3.7
TGIG		**3.01**	**336**	*e*P	Pn	15 55 52.3	-1.9
TGIG				*e*S	Sn	15 56 26.1	-3.9

KRNET ***05*** *15:56:27.9±0.1, 41°.94N×80°.78E, mb3.4*
NNC ***05*** *15:56:30.4±1.1, 41°.98N×80°.68E, h0km, mb3.7, mpv3.4, Error ellipse: s-maj=8.2km s-min=5.5km az=148.0*
SOME ***05*** *15:56:30.1, 41°.90N×80°.58E, h5km*
ISC 05 15:56:32.9±1.9, 42°.01N±0°.07×80°.63E±0°.06, h10km, n38, σ1℘39/67, 32C-13D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode** 167nm,0.1s	**1.27**	**335**	*e*P	**Pn**	**15 56 56.5**	**-0.4**
SHLS				*e*S	**Sn**	**15 57 15.6**	**+1.4**
PDGK	**Podgornoye** baz=326	**1.56**	**328**	⇑*i*P	**Pn**	**15 56 59.8**	**-0.9**
PDGK				⇑*i*S	**Sg**	**15 57 23.3**	**+0.2**
PDGK	**Podgornoye** 55nm,0.6s	**1.56**	**328**	⇓Pn	**Pn**	**15 57 00.2**	**-0.5**
PDGK				⇓Sn	**Sg**	**15 57 22.9**	**-0.2**
UZB	**Uzynbulak** 63nm,0.2s	**1.64**	**314**	*e*P	**Pn**	**15 57 01.4**	**-0.6**
UZB				*e*S	**Sb**	**15 57 24.3**	**+0.2**
PRZ	**Przheval'sk** baz=287	**1.72**	**287**	⇑*i*P	**Pn**	**15 57 02.8**	**-0.3**
PRZ				⇑*i*S	**Sg**	**15 57 27.7**	**-0.5**
SATY	**Saty** 67nm,0.1s	**1.95**	**303**	*e*P	**Pb**	**15 57 08.4**	**-0.2**
SATY				*e*S	**Sg**	**15 57 36.0**	**+0.5**
ZHN	**Zhinishke** 32nm,0.1s	**1.99**	**306**	*e*P	**Pb**	**15 57 07.8**	**-1.5**
ZHN				*e*S	**Sb**	**15 57 34.8**	**+0.7**
ANVS	**Anan'yevo** baz=291	**2.33**	**290**	⇑*i*P	**Pn**	**15 57 11.8**	**+0.4**
ANVS				⇑*i*S	**Sb**	**15 57 44.1**	**+0.2**
DJR	**Jarkent** 14nm,0.2s	**2.40**	**345**	*e*P	**Pb**	**15 57 15.3**	**-0.9**
DJR				*e*S	**Sb**	**15 57 47.5**	**+1.6**
KDJ	**Kajisay** baz=275	**2.57**	**274**	⇑*i*P	**Pn**	**15 57 14.2**	**-0.6**
KDJ				⇑*i*S	**Sb**	**15 57 49.6**	**-1.3**
MDOK	**Medeo** 18nm,0.4s	**2.88**	**295**	*e*P	**Pb**	**15 57 23.0**	**-1.6**
MDOK				*e*S	**Sb**	**15 58 00.8**	**+0.9**
TNSS	**Tian-Shan** 13nm,0.2s	**2.91**	**292**	*e*P	**Pb**	**15 57 24.1**	**-1.0**
TNSS				*e*S	**Sb**	**15 58 03.0**	**+2.0**
KNDC	**Almaty** 84nm,0.8s	**2.96**	**295**	⇑Lg	Lg	15 58 04.3	
AAA	**Alma-Ata** 64nm,0.3s	**2.99**	**296**	*e*P	**Pb**	**15 57 26.0**	**-0.4**
AAA				*e*S	**Sg**	**15 58 06.5**	**-2.5**
ARXS	**Arharly** 8.4nm,0.2s	**3.01**	**318**	*e*P	**Pb**	**15 57 26.0**	**-0.6**
ARXS				*e*S	**Sg**	**15 58 06.7**	**-2.8**
IZV	**Izvestkoviy** 31nm,0.2s	**3.14**	**290**	*e*P	**Pb**	**15 57 27.3**	**-1.6**
IZV				*e*S	**Sb**	**15 58 09.1**	**+1.8**
CHKK	**Chushkaly** 6.8nm,0.2s	**3.25**	**306**	*e*P	**Pb**	**15 57 30.3**	**-0.4**
CHKK				*e*S	**Sb**	**15 58 13.2**	**+3.0**
ULHL	**Ulahol** baz=276	**3.27**	**276**	⇑*i*P	**Pn**	**15 57 24.1**	**-0.3**
ULHL				⇑*i*S	**Sn**	**15 58 05.5**	**+2.0**
KTBS	**Karatobe**	**3.36**	**302**	*e*P	**Pb**	**15 57 32.5**	**-0.1**
KTBS				*e*S	**Sg**	**15 58 17.5**	**-3.3**
KAPS	**Kapalarasan** 7.5nm,0.5s	**3.40**	**345**	*e*P	**Pb**	**15 57 32.7**	**-0.6**
KAPS				*e*S	**Sb**	**15 58 18.0**	**+3.3**
BOOM	**Boomskoye usch** baz=280	**3.51**	**279**	⇓*i*P	**Pn**	**15 57 27.8**	**+0.1**
BOOM				⇓*e*S	**Sn**	**15 58 11.7**	**+2.3**
KST	**Kastek** 7.6nm,0.4s	**3.60**	**288**	*e*P	**Pb**	**15 57 35.8**	**-0.9**
KST				*e*S	**Sb**	**15 58 22.7**	**+2.2**
KUU	**Kurty** 13nm,0.3s	**3.67**	**302**	*e*P	**Pb**	**15 57 37.0**	**-0.7**
KUU				*e*S	**Sb**	**15 58 24.9**	**+2.6**
DGS	**Degeres** 8.3nm,0.2s	**3.79**	**291**	*e*P	**Pb**	**15 57 40.4**	**+0.5**
DGS				*e*S	**Sg**	**15 58 31.3**	**-3.3**
TKM2	**Tokmak 2** baz=286	**3.83**	**285**	⇑*i*P	**Pn**	**15 57 31.9**	**-0.2**
TKM2				⇑*i*S	**Sn**	**15 58 18.8**	**+1.5**
TKM2	**Tokmak 2** 3.7nm,0.4s	**3.83**	**285**	⇑Pn	**Pn**	**15 57 31.8**	**-0.3**
TKM2				⇑Pg	**Pb**	**15 57 42.5**	**+1.7**
TKM2				⇓Lg	Lg	15 58 33.2	
KZA	**Kyzart** baz=274	**4.01**	**273**	⇑*i*P	**Pn**	**15 57 34.2**	**-0.5**
KZA				⇑*i*S	**Sn**	**15 58 22.2**	**+0.3**
KBK	**Karagaybulak** baz=281	**4.26**	**281**	⇑*i*P	**Pn**	**15 57 37.6**	**-0.4**
KBK				⇑*i*S	**Sn**	**15 58 28.6**	**+0.7**
UCH	**Uchtor** baz=276	**4.55**	**275**	⇑*i*P	**Pn**	**15 57 42.2**	**-0.1**
UCH				⇑*i*S	**Sn**	**15 58 35.5**	**0.0**
AAK	**Ala-Archa** 3.3nm,0.6s	**4.59**	**280**	⇓Pg	**Pb**	**15 57 53.6**	**-0.1**
AAK				⇓Lg	Lg	15 58 56.3	
USP	**Ospenovka** baz=288	**4.69**	**288**	⇓*i*P	**Pn**	**15 57 43.1**	**-0.7**
USP				⇓*i*S	**Sn**	**15 58 39.0**	**+0.7**
ARLS	**Aral** baz=271	**4.71**	**270**	⇓*e*P	**Pn**	**15 57 44.0**	**-0.1**
ARLS				⇓*e*S	**Sn**	**15 58 40.1**	**+1.3**
MAKZ	**Makanchi** 4.0nm,0.5s	**4.89**	**11**	⇑Pn	**Pn**	**15 57 46.0**	**-0.5**
MAKZ				⇑Sn	**Sn**	**15 58 44.8**	**+1.6**
MAKZ	4.9nm,0.3s			⇑Lg	Lg	15 59 04.2	
MK31	**Makanchi Array** 0.9nm,0.3s,baz=50,slow=34,SNR=46	**4.93**	**13**	⇑Pn	**Pn**	**15 57 46.1**	**-0.9**
MK31				⇑Sn	**Sn**	**15 58 44.1**	**+0.1**
MK31	9.0nm,0.5s,baz=194,slow=22,SNR=14			⇑Lg	Lg	15 59 03.7	
MNAS	**Manas** 1.6nm,0.7s	**6.05**	**277**	⇑Pg	**Pb**	**15 58 19.3**	**+0.9**
MNAS				⇑Lg	Lg	15 59 42.2	
KK31	**Karatay Array** 0.3nm,0.3s,baz=93,slow=17,SNR=4.5	**7.55**	**282**	⇑Pg	Pg	15 58 50.4	-7.0
KK31	2.7nm,0.7s,baz=92,slow=27,SNR=10			⇑Lg	Lg	16 00 28.9	
OTUK	**Ortayu**	**8.55**	**320**	⇓Pn	**Pn**	**15 58 34.8**	**-1.9**
OTUK				⇓Lg	Lg	16 01 04.3	
KURBB	**Kurchatov Arra** 18nm,1.4s	**8.73**	**351**	⇓Lg	Lg	16 01 10.5	

NIED ***05*** *15:57:00, 36°.00N×141°.10E, h5km, Mw3.5 Best double couple: M0 2.30000×10^14 NP1:℘s36.00000°, δ21.00000°, λ-59.00000°. NP2:℘s183.00000°, δ72.00000°, λ-101.00000°.*
ISCJB ***05*** *15:57:49.9±1.1, 36°.01N±0°.05×141°.19E±0°.08, h27km±6km, mb3.3/3, Error ellipse: s-maj=10.7km s-min=7.5km az=170.8*
JMA ***05*** *15:57:51.2±0.1, 35°.99N×141°.10E, h21km±2km, M3.5*
JMA Felt I J1.
IDC ***05*** *15:57:54.0±2.8, 36°.19N×141°.17E, h45km±26km, mb3.1/3, mb1 3.4/6, mb1mx3.1/43, mbtmp3.4/6, ML2.9/3, MS2.4/2, Ms1 2.4/2, ms1mx2.1/17, Error ellipse: s-maj=28.0km s-min=21.5km az=50.0*
ISC 05 15:57:49.4±1.9, 36°.12N±0°.07×141°.15E±0°.08, h7km±13km, n18, σ1℘06/17, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.48**	**210**	P	**Pg**	**15 57 58.7**	**0.0**
CHOJ				S	**Sg**	**15 58 04.0**	**-1.0**
JHO	**Hitachi**	**0.68**	**316**	P	**Pn**	**15 58 05.5**	**0.0**
JHO				S	**Sn**	**15 58 15.6**	**-0.7**
JYT	**Yasato**	**0.78**	**278**	P	**Pb**	**15 58 05.6**	**+0.3**
JYT				S	**Sb**	**15 58 16.7**	**+0.5**
ONAJ	**Iwakimizuishiy**	**1.02**	**344**	P	**Pn**	**15 58 10.8**	**+0.6**
ONAJ				S	**Sn**	**15 58 25.1**	**+0.3**
MJAR	**Matsushiro Arr** 1.9nm,0.3s,baz=115,slow=8.1,SNR=17	**2.41**	**281**	P	**Pn**	**15 58 30.1**	**+0.8**
MJAR	3.5nm,0.3s,baz=310,slow=38,SNR=3.1			S	**Sn**	**15 58 59.3**	**+0.1**
MJAR	comp=Z,59nm,18.2s,baz=160,slow=44			LR	LR	15 59 37.7	
MAT	**Matsushiro**	**2.42**	**281**	P	**Pn**	**15 58 30.1**	**+0.7**
MAT				S	**Sn**	**15 58 57.8**	**-1.4**
JHJ	**Hachijo jima 2** 3.5nm,0.3s,baz=287,slow=21,SNR=1.3	**3.20**	**201**	P	**Pn**	**15 58 42.9**	**+2.7**
ASAJ	**Asahikawa** 0.2nm,0.3s,baz=127,slow=17,SNR=1.8	**8.06**	**7**	P	**Pn**	**15 59 47.8**	**+0.9**
JNU	**Nakatsue** comp=Z,27nm,19.8s,baz=121,slow=40	**8.98**	**254**	LR	LR	16 03 59.1	
H11N2	**WAKE ISLAND Hy 27.88** baz=311,slow=75,SNR=29	**119**		T	T	16 32 39.9	
H11N1	**WAKE ISLAND Hy 27.88** baz=311,slow=75,SNR=36	**119**		T	T	16 32 45.5	
H11N3	**WAKE ISLAND Hy 27.89** baz=311,slow=75,SNR=48	**119**		T	T	16 32 46.8	
H11S1	**WAKE ISLAND Hy 28.55** baz=314,slow=75,SNR=71	**121**		T	T	16 33 32.7	
H11S3	**WAKE ISLAND Hy 28.55** baz=314,slow=75,SNR=45	**121**		T	T	16 33 31.4	
H11S2	**WAKE ISLAND Hy 28.57** baz=314,slow=75,SNR=42	**121**		T	T	16 33 36.3	
MKAR	**Makanchi Array** 0.1nm,0.2s,baz=91,slow=9.2,SNR=2.0	**44.43**	**303**	P	**P**	**16 06 00.1**	**-0.7**
WRA	**Warramunga Arr** 0.2nm,0.6s,baz=6.2,slow=7.1,SNR=9.3	**56.13**	**188**	P	**P**	**16 07 29.1**	**-0.5**
ASAR	**Alice Springs** 0.3nm,0.8s,baz=17,slow=12,SNR=4.3	**59.86**	**188**	P	**P**	**16 07 55.8**	**+0.1**

IDC 05 15:59:36.1±2.0, 24°.21N×93°.36E, h0km, mb3.2/3, mb1 3.5/4, mb1mx3.2/51, mbtmp3.2/4, ML3.5/1, Error ellipse: s-maj=117.4km s-min=25.4km az=60.0, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr** 0.2nm,0.3s,baz=311,slow=13,SNR=7.2	**7.74**	**137**	Pn	Pn	16 01 30.6	+0.6
MKAR	**Makanchi Array** 0.1nm,0.3s,baz=131,slow=4.4,SNR=2.2	**24.22**	**341**	P	P	16 04 54.6	+0.1
WRA	**Warramunga Arr** 0.6nm,1.1s,baz=324,slow=7.2,SNR=4.2	**59.32**	**134**	P	P	16 09 39.7	-0.4
ASAR	**Alice Springs** 0.4nm,1.0s,baz=318,slow=6.8,SNR=11	**61.74**	**137**	P	P	16 09 56.8	+0.1

ISCJB ***05*** *16:07:07.4±0.5, 63°.51N±0°.03×22°.44E±0°.06, h0km, Error ellipse: s-maj=4.2km s-min=3.9km az=150.6*
CSEM ***05*** *16:07:08.9, 63°.50N×22°.46E, h0km, ML1.8, Mining explosion.*
HEL ***05*** *16:07:08.9±0.1, 63°.50N×22°.46E, h0km, ML1.8, Explosion*
IDC ***05*** *16:07:10.9±0.9, 63°.65N×23°.24E, h0km, mb1 2.7/3, mb1mx2.7/33, mbtmp2.6/3, ML2.3/3, Error ellipse: s-maj=15.5km s-min=9.8km az=79.0*
ISC 05 16:07:05.5±0.8, 63°.53N±0°.03×22°.37E±0°.03, h0km, n23, σ1℘05/44, Finland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAF	**Ylistaro**	**0.51**	**164**	*e*P	**Pb**	**16 07 16.8**	**-0.4**
VAF				*e*S	**Sg**	**16 07 22.9**	**+1.2**
VAF	**Ylistaro**	**0.51**	**164**	P	**Pb**	**16 07 16.8**	**-0.4**
VAF				S	**Sg**	**16 07 22.8**	**+1.2**
UMAU	**Umeaa**	**0.83**	**296**	*e*P	**Pn**	**16 07 24.6**	**+0.1**
UMAU				*e*S	**Sb**	**16 07 35.8**	**+1.2**
UMAU	**Umeaa**	**0.83**	**296**	P	**Pn**	**16 07 24.5**	**+0.1**
UMAU				S	**Sb**	**16 07 35.7**	**+1.2**
OUFX	**Oulainen**	**1.33**	**50**	*e*P	**Pb**	**16 07 32.3**	**+1.1**
OUFX				*e*S	**Sn**	**16 07 49.8**	**+0.1**
OUFX	**Oulainen**	**1.33**	**50**	P	**Pb**	**16 07 32.3**	**+1.1**
OUFX				S	**Sn**	**16 07 49.7**	**+0.1**
KEF	**Keuruu**	**1.78**	**139**	*e*P	**Pg**	**16 07 39.5**	**-0.1**
KEF				*e*S	**Sg**	**16 08 02.4**	**-0.3**
KEF	comp=Z,6.6nm,0.1s			MSG		16 08 07.2	
KEF	**Keuruu**	**1.78**	**139**	P	**Pg**	**16 07 39.5**	**-0.1**
KEF				S	**Sg**	**16 08 02.4**	**-0.3**
SUF	**Sumiainen**	**1.90**	**114**	*e*P	**Pb**	**16 07 40.8**	**-0.2**
SUF				*e*S	**Sb**	**16 08 04.9**	**-0.4**
SUF	comp=Z,4.1nm,0.1s			MSG		16 08 09.2	
SUF	**Sumiainen**	**1.90**	**114**	P	**Pb**	**16 07 40.7**	**-0.2**
SUF				S	**Sb**	**16 08 04.8**	**-0.4**
HEMU	**Hemsoen**	**2.15**	**248**	*e*P	**Pg**	**16 07 46.6**	**0.0**
HEMU				*e*S	**Sg**	**16 08 13.4**	**-1.0**
HEMU	**Hemsoen**	**2.15**	**248**	P	**Pg**	**16 07 46.5**	**0.0**
HEMU				S	**Sg**	**16 08 13.4**	**-1.0**
OUL	**Oulu**	**2.19**	**43**	*e*P	**Pb**	**16 07 46.1**	**+0.2**
OUL				*e*S	**Sb**	**16 08 14.1**	**+0.4**
OUL	**Oulu**	**2.19**	**43**	P	**Pb**	**16 07 46.1**	**+0.2**
OUL				S	**Sb**	**16 08 14.0**	**+0.4**
KJN	**Kajaani**	**2.44**	**74**	*e*P	**Pb**	**16 07 50.1**	**0.0**
KJN				*e*S	**Sb**	**16 08 18.8**	**-1.8**
KJN	**Kajaani**	**2.44**	**74**	P	**Pb**	**16 07 50.1**	**0.0**
KJN				S	**Sb**	**16 08 18.8**	**-1.8**
TOF	**Tornio**	**2.70**	**17**	*e*P	**Pb**	**16 07 54.1**	**-0.4**
TOF				*e*S	**Sb**	**16 08 26.1**	**-2.0**
TOF	**Tornio**	**2.70**	**17**	P	**Pb**	**16 07 54.1**	**-0.4**
TOF				S	**Sb**	**16 08 26.1**	**-2.0**
FIA0	**FINESS Array S**	**2.71**	**139**	*e*P	**Pb**	**16 07 53.3**	**-1.5**
FIA0				*e*S	**Sn**	**16 08 25.1**	**+1.5**
FIA0	**FINESS Array S**	**2.71**	**139**	P	**Pb**	**16 07 53.2**	**-1.5**
FIA0				S	**Sn**	**16 08 25.1**	**+1.5**
FINES	**FINESS Array B** comp=Z,0.5nm,0.3s,baz=325,slow=14,SNR=20	**2.71**	**139**	Pn	**Pb**	**16 07 54.4**	**-0.4**
FINES	comp=Z,2.0nm,0.3s,baz=327,slow=26,SNR=31			Sn	**Sb**	**16 08 28.0**	**-0.4**
FINES	comp=Z,1.3nm,0.4s,baz=323,slow=35,SNR=3.8			Rg	Rg	16 08 46.4	
NOA	**NORSAR Array B** comp=Z,0.1nm,0.3s,baz=55,slow=14,SNR=2.5	**5.77**	**249**	Pn	Pb	16 08 41.3	-5.7
ARCES	**ARCESS Array B** comp=Z,0.3nm,0.3s,baz=185,slow=12,SNR=8.0	**6.16**	**10**	Pn	**Pn**	**16 08 39.6**	**+2.0**
ARCES	comp=Z,0.3nm,0.3s,baz=194,slow=22,SNR=5.4			Sn	**Sn**	**16 09 46.1**	**-2.5**

IDC ***05*** *16:33:15.7±3.0, 9°.97S×161°.16E, h100km±21km, mb3.6/4, mb1 3.8/6, mb1mx3.4/32, mbtmp4.0/6, Error ellipse: s-maj=76.1km s-min=25.4km az=28.0*
ISC 05 16:33:16.5±1.6, 10°.4S±0°.1×160°.8E±0°.2, h67km, n9, σ2℘06/13, mb3.7/4, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara** 31nm,0.3s,baz=164,slow=6.4,SNR=20	**1.32**	**318**	P	**Pn**	**16 33 39.1**	**+0.1**
HNR	78nm,0.3s,baz=195,slow=22,SNR=19			S	**Sn**	**16 33 57.7**	**+1.9**
HNR	**Honiara**	**1.32**	**318**	*e*P	**Pn**	**16 33 37.0**	**-2.0**
HNR	**Honiara**	**1.32**	**318**	*e*P	**Sn**	**16 33 58.0**	**+2.2**
DZM	**Mont Dzumac** 0.2nm,0.3s,baz=285,slow=21,SNR=6.7	**12.77**	**156**	P	**Pn**	**16 36 17.2**	**+1.8**
DZM	0.1nm,0.3s,baz=294,slow=21,SNR=4.2			S	**Sn**	**16 38 36.0**	**+0.1**
CTA	**Charters Tower** 0.3nm,0.3s,baz=49,slow=16,SNR=6.3	**17.04**	**234**	P	**P**	**16 37 14.7**	**+3.3**
WRA	**Warramunga Arr** 1.9nm,0.7s,baz=75,slow=9.2,SNR=13	**27.24**	**247**	P	**P**	**16 38 55.1**	**+0.5**
WRA	1.4nm,0.9s,baz=76,slow=9.5,SNR=4.5			pP	**sP**	**16 39 16.1**	**-2.5**
ASAR	**Alice Springs** 0.8nm,0.9s,baz=66,slow=10,SNR=6.5	**28.86**	**239**	P	**P**	**16 39 08.4**	**-0.6**
ASAR	0.6nm,0.9s,baz=63,slow=9.8,SNR=2.7			pP	**sP**	**16 39 30.4**	**-2.6**
FITZ	**Fitzroy Crossi** 2.6nm,0.7s,baz=100,slow=7.4,SNR=8.7	**34.92**	**253**	P	**P**	**16 40 01.7**	**-0.4**
VNDA	**Vanda** 0.5nm,0.8s,baz=357,slow=9.5,SNR=3.0	**67.09**	**180**	P	**P**	**16 44 01.1**	**-1.4**

WEL 05 16:35:45.2±0.4, 37°.03S×177°.36E, h135km±3km, ML3.5/5, 1C-1D, Error ellipse: s-maj=5.9km s-min=4.6km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**0.80**	**155**	PN	Pn	16 36 06.9	+0.1
HAZ				AML	AML	16 36 15.7	
HAZ				SN	Sn	16 36 22.7	-0.6
HAZ				AML	AML	16 36 23.6	
HAZ				AML	AML	16 36 23.6	
URZ	**Urewera**	**1.25**	**189**	⇓PN	Pn	16 36 11.2	+0.3
URZ				SN	Sn	16 36 31.3	+0.7
PUZ	**Puketiti**	**1.26**	**146**	PN	Pn	16 36 11.1	0.0
PUZ				AML	AML	16 36 48.1	
MWZ	**Matawai**	**1.31**	**174**	PN	Pn	16 36 12.0	+0.3
MWZ				SN	Sn	16 36 32.1	+0.2
MWZ				AML	AML	16 36 32.3	
CNGZ	**Carnagh Statio**	**1.60**	**156**	PN	Pn	16 36 14.8	+0.1
SNGZ	**Shannon Statio**	**1.75**	**181**	PN	Pn	16 36 16.2	-0.3
WHHZ	**Waihua**	**2.05**	**183**	PN	Pn	16 36 19.7	-0.3
MCHZ	**McNeill Hill**	**2.47**	**192**	PN	Pn	16 36 24.6	-0.6
KWHZ	**Kaweka Forest**	**2.50**	**197**	PN	Pn	16 36 25.0	-0.7
KRHZ	**Kereru**	**2.73**	**196**	PN	Pn	16 36 27.0	-1.5
PNHZ	**Pukenui**	**3.02**	**197**	PN	Pn	16 36 30.4	-1.9
PXZ	**Pawanui**	**3.02**	**187**	⇑PN	Pn	16

KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pg**	**16**	**51**	**20.8**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pg**	**16**	**51**	**20.8**	**+0.1**
MANT	**Manisa**	**0.71**	**210**	*i* P	**Pg**	**16**	**51**	**20.5**	**-1.3**
MANT				*i* S	**Sg**	**16**	**51**	**29.5**	**-1.6**
MANT	**Manisa**	**0.71**	**210**	P	**Pg**	**16**	**51**	**20.5**	**-1.3**
MANT				S	**Sg**	**16**	**51**	**29.5**	**-1.6**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pb**	**16**	**51**	**25.1**	**-0.2**
KHL				*e*SG	**Sg**	**16**	**51**	**36.6**	**+0.1**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pb**	**16**	**51**	**25.1**	**-0.2**
KHL				*e*Sg	**Sg**	**16**	**51**	**36.6**	**+0.1**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pb**	**16**	**51**	**27.2**	**+0.6**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pb**	**16**	**51**	**27.2**	**+0.6**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pn**	**16**	**51**	**28.1**	**0.0**
BALB				*e*SG	**Sn**	**16**	**51**	**42.4**	**-0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pn**	**16**	**51**	**28.1**	**0.0**
BALB				*e*Sg	**Sn**	**16**	**51**	**42.4**	**-0.1**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pg**	**16**	**51**	**27.9**	**-2.4**
IGD				*i* S	**Sb**	**16**	**51**	**45.1**	**+0.2**
BALY	**Balya**	**1.25**	**301**	*i* P	**Pb**	**16**	**51**	**31.6**	**+0.1**
BALY				*i* S	**Sg**	**16**	**51**	**47.8**	**-0.3**
BALY	**Balya**	**1.25**	**301**	P	**Pb**	**16**	**51**	**31.6**	**+0.1**
BALY				S	**Sg**	**16**	**51**	**47.8**	**-0.3**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*PN	**Pn**	**16**	**51**	**32.4**	**+1.0**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*Pn	**Pn**	**16**	**51**	**32.4**	**+1.0**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*PN	**Pg**	**16**	**51**	**32.3**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*Pn	**Pg**	**16**	**51**	**32.3**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pn**	**16**	**51**	**32.5**	**+1.0**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pn**	**16**	**51**	**32.5**	**+1.0**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pg**	**16**	**51**	**34.2**	**-0.3**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn	**Pg**	**16**	**51**	**34.2**	**-0.3**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pb**	**16**	**51**	**34.4**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pb**	**16**	**51**	**34.4**	**-0.2**
EDC	**Edincik**	**1.52**	**325**	*e*PN	**Pb**	**16**	**51**	**36.0**	**-0.1**
EDC	**Edincik**	**1.52**	**325**	*e*Pn	**Pb**	**16**	**51**	**36.0**	**-0.1**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**16**	**51**	**39.2**	**+0.9**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**16**	**51**	**39.2**	**+0.9**

NNC 05 16:53:54.5±4.5, **36°84N×70°59E, h215**km±54km, **mb2.9, mpv3.9, 7C-5D, Error ellipse: s-maj=42.3km s-min=33.2km az=50.0, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAS	**Manas** 8.5nm,0.8s	**5.83**	**14**	⇓P	Pn	16 55 18.5	-1.4
MNAS	12nm,0.9s			⇑S	S	16 56 28.6	+1.1
THN	**Thein Dam**	**6.10**	**135**	*e*P	Pn	16 55 08.9	-14
THN				*e*S	S	16 56 24.0	-10
KK31	**Karatay Array** 2.4nm,0.3s	**6.26**	**359**	⇑P	Pn	16 55 25.3	+0.1
KK31	3.4nm,0.4s			⇓S	S	16 56 37.5	+0.3
AAK	**Ala-Archa** 6.4nm,0.4s	**6.53**	**26**	⇑P	Pn	16 55 28.6	-0.2
AAK	14nm,0.6s			⇑S	S	16 56 45.2	+1.6
TKM2	**Tokmak 2** 3.4nm,0.5s	**7.19**	**31**	⇑P	Pn	16 55 36.3	-1.1
TKM2	4.4nm,0.8s			⇑S	S	16 56 59.9	+0.6
AB31	**Akbulak array** 1.6nm,0.4s,baz=152,slow=12,SNR=77	**14.63**	**331**	⇓P	P	16 57 14.1	+2.0
AB31	0.8nm,0.6s,baz=150,slow=24,SNR=2.9			⇓S	S	16 59 54.4	+1.3
AKTO	**Aktyubinsk** 1.6nm,0.6s	**16.32**	**330**	⇓P	Pn	16 57 35.8	+4.0
AKTO	2.1nm,0.7s			⇑S	S	17 00 26.4	-4.4

*ISCJB **05** 17:03:22.3±0.6, 39°.13N±0°.05×29°.07E±0°.04, h2km±12km, Error ellipse: s-maj=8.8km s-min=4.5km az=156.1*
*DDA **05** 17:03:22.2, 39°.10N×29°.08E, h7km, Md2.3*
*ISK **05** 17:03:22.8, 39°.16N×29°.16E, h9km, MD2.7*
*CSEM **05** 17:03:22.4±0.2, 39°.15N×29°.07E, h2km, MD2.7, Error ellipse: s-maj=6.0km s-min=5.0km az=129.0*
ISC 05 17:03:22.5±1.0, **39°.13N**±0°.03×**29°.07E**±0°.02, **h5**km±14km, **n22**, σ**0°78/32, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.28**	**107**	*e*PG	**Pg**	**17 03 28.0**	**+0.1**
GEDZ				*e*SG	**Sg**	**17 03 31.7**	**+0.2**
GEDZ	**Gediz**	**0.28**	**107**	*e*Pg	**Pg**	**17 03 28.0**	**+0.1**
GEDZ				*e*Sg	**Sg**	**17 03 31.7**	**+0.2**
DEMI	**Demirci**	**0.29**	**253**	*i* P	**Pg**	**17 03 26.9**	**-1.2**
DEMI				*i* S	**Sg**	**17 03 33.8**	**+1.9**
DEMI	**Demirci**	**0.29**	**253**	P	**Pg**	**17 03 26.9**	**-1.2**
DEMI				S	**Sg**	**17 03 33.8**	**+1.9**
GDZ	**Gediz**	**0.32**	**97**	*i* P	**Pg**	**17 03 28.9**	**+0.1**
GDZ				*i* S	**Sg**	**17 03 33.3**	**+0.3**
GDZ	**Gediz**	**0.32**	**97**	P	**Pg**	**17 03 28.9**	**+0.1**
GDZ				S	**Sg**	**17 03 33.3**	**+0.3**
TVSB	**Tavsanli**	**0.44**	**43**	*e*PG	**Pg**	**17 03 30.7**	**-0.3**
TVSB				*e*SG	**Sg**	**17 03 36.2**	**-0.6**
TVSB	**Tavsanli**	**0.44**	**43**	*e*Pg	**Pg**	**17 03 30.7**	**-0.3**
TVSB				*e*Sg	**Sg**	**17 03 36.2**	**-0.6**
KULA	**Kula-Manisa**	**0.69**	**208**	*e*PG	**Pb**	**17 03 37.7**	**+0.7**
KULA	**Kula-Manisa**	**0.69**	**208**	*e*Pg	**Pb**	**17 03 37.7**	**+0.7**
MANT	**Manisa**	**0.75**	**212**	*i* P	**Pg**	**17 03 36.4**	**-0.5**
MANT				*i* S	**Sg**	**17 03 45.4**	**-1.3**
MANT	**Manisa**	**0.75**	**212**	P	**Pg**	**17 03 36.4**	**-0.5**
MANT				S	**Sg**	**17 03 45.4**	**-1.3**
KHL	**Karahalli**	**0.88**	**156**	*e*PG	**Pb**	**17 03 40.3**	**+0.1**
KHL	**Karahalli**	**0.88**	**156**	*e*Pg	**Pb**	**17 03 40.3**	**+0.1**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*PN	**Pb**	**17 03 45.6**	**-0.5**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*Pn	**Pb**	**17 03 45.6**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*PN	**Pn**	**17 03 46.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*Pn	**Pn**	**17 03 46.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*PN	**Pg**	**17 03 47.2**	**+0.6**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*Pn	**Pg**	**17 03 47.3**	**+0.6**
EDC	**Edincik**	**1.53**	**323**	*e*PN	**Pb**	**17 03 51.2**	**-0.1**
EDC	**Edincik**	**1.53**	**323**	*e*Pn	**Pb**	**17 03 51.2**	**-0.1**

*ISCJB **05** 17:04:35.0±0.5, 39°.11N±0°.03×29°.06E±0°.04, h13km±5km, Error ellipse: s-maj=5.9km s-min=4.3km az=140.6*
*ISK **05** 17:04:34.6, 39°.12N×29°.04E, h7km, MD2.5*
*DDA **05** 17:04:35.2, 39°.02N×29°.09E, h7km, Md2.4*
*CSEM **05** 17:04:35.1±0.1, 39°.11N×29°.04E, h10km, MD2.6, Error ellipse: s-maj=3.0km s-min=2.6km az=130.0*
ISC 05 17:04:35.2±0.8, **39°.11N**±0°.03×**29°.03E**±0°.03, **h12**km±7km, **n22**, σ**0°50/36, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**254**	*i* P	**Pb**	**17 04 41.3**	**-0.4**
DEMI				*i* S	**Sb**	**17 04 45.8**	**-0.4**
DEMI	**Demirci**	**0.26**	**254**	P	**Pb**	**17 04 41.3**	**-0.4**
DEMI				S	**Sb**	**17 04 45.8**	**-0.4**
GEDZ	**Gediz**	**0.30**	**103**	*e*PG	**Pg**	**17 04 41.2**	**-0.2**
GEDZ				*e*SG	**Sg**	**17 04 45.8**	**+0.2**
GEDZ	**Gediz**	**0.30**	**103**	*e*Pg	**Pg**	**17 04 41.2**	**-0.2**
GEDZ				*e*Sg	**Sg**	**17 04 45.8**	**+0.2**
GDZ	**Gediz**	**0.35**	**94**	*i* P	**Pg**	**17 04 42.0**	**-0.3**
GDZ				*i* S	**Sg**	**17 04 46.5**	**-0.6**
GDZ	**Gediz**	**0.35**	**94**	P	**Pg**	**17 04 42.0**	**-0.3**
GDZ				S	**Sg**	**17 04 46.5**	**-0.6**
TVSB	**Tavsanli**	**0.47**	**45**	*e*PG	**Pg**	**17 04 44.3**	**-0.2**
TVSB				*e*SG	**Sg**	**17 04 50.0**	**-0.9**
TVSB	**Tavsanli**	**0.47**	**45**	*e*Pg	**Pg**	**17 04 44.3**	**-0.2**
TVSB				*e*Sg	**Sg**	**17 04 50.0**	**-0.9**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**17 04 48.5**	**+0.4**
KULA				*e*SG	**Sb**	**17 04 57.6**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**17 04 48.5**	**+0.4**
KULA				*e*Sg	**Sb**	**17 04 57.6**	**-0.3**
MANT	**Manisa**	**0.72**	**211**	*i* P	**Pg**	**17 04 48.3**	**-0.9**
MANT				*i* S	**Sg**	**17 04 58.2**	**-0.6**
MANT	**Manisa**	**0.72**	**211**	P	**Pg**	**17 04 48.3**	**-0.9**
MANT				S	**Sg**	**17 04 58.2**	**-0.6**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pg**	**17 04 51.9**	**-0.2**
KHL				*e*SG	**Sb**	**17 05 04.5**	**+0.5**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pg**	**17 04 51.9**	**-0.2**
KHL				*e*Sg	**Sb**	**17 05 04.5**	**+0.5**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**17 04 55.0**	**-0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**17 04 55.0**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pn**	**17 04 58.7**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pn**	**17 04 58.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pn**	**17 04 59.0**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pn**	**17 04 59.0**	**+0.5**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pn**	**17 04 59.3**	**+0.7**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pn**	**17 04 59.3**	**+0.7**

*NIED **05** 17:04:00, 37°.80N×142°.40E, h29km, Mw3.5 Best double couple: M0 2.12000×10^14 NP1: φ=83.00000°, δ=31.00000°, λ=134.00000°. NP2: φ=215.00000°, δ=68.00000°, λ=67.00000°.*
JMA 05 17:04:36.3±0.2, **37°.76N×142°.39E, h32**km±4km, **M3.9, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.07**	**310**	P	Pn	17 04 55.4	+0.3
JIO				*e*S	Sn	17 05 08.7	-0.2
JFK	**Kawauchi**	**1.27**	**252**	P	Pn	17 04 58.1	+0.3
JFK				S	Sn	17 05 13.7	0.0
JMM	**Marumori**	**1.27**	**275**	P	Pn	17 04 58.3	+0.5
JMM				S	Sn	17 05 13.7	0.0
JOU	**Okura**	**1.49**	**294**	P	Pn	17 05 02.0	+1.1
JOU				*e*S	Sn	17 05 20.0	+0.8
JMK	**Ichinoseki**	**1.50**	**323**	P	Pn	17 05 01.9	+0.9
JFT	**Otama**	**1.65**	**262**	P	Pb	17 05 04.6	-1.4
JFT				S	Sb	17 05 24.9	-1.5
JYS	**Shirataka**	**1.89**	**285**	P	Pb	17 05 08.5	-1.7
JOM	**Ohasama**	**1.91**	**334**	P	Pn	17 05 07.8	+1.1
JYK	**Kaneyama**	**1.97**	**307**	P	Pn	17 05 09.0	+1.5
JRG	**Rokugo**	**2.14**	**320**	P	Pn	17 05 11.5	+1.8
JYA	**Atsumi**	**2.27**	**292**	P	Pn	17 05 13.4	+1.9
JYA				*e*S	Sb	17 05 41.9	-2.3

*IDC **05** 17:04:31.5±1.2, 21°.17S×169°.59E, h0km, mb4.0/8, mb1 4.1/10, mb1mx4.0/28, mbtmp4.0/10, ML3.9/2, MS3.6/8, Ms1 3.6/8, ms1mx3.3/22, Error ellipse: s-maj=34.1km s-min=23.0km az=135.0*
*ISCJB **05** 17:04:34.6±0.4, 21°.19S±0°.06×169°.42E±0°.05, h30km, mb4.5/26, MS3.5/5, Error ellipse: s-maj=8.4km s-min=6.4km az=32.3*
*NEIC **05** 17:04:36.7±1.2, 21°.17S×169°.41E, h33km±8km, mb4.9/22, Error ellipse: s-maj=10.8km s-min=7.5km az=224.0*
ISC 05 17:04:36.3±0.5, **21°.22S**±0°.08×**169°.43E**±0°.07, **h30**km, **n61**, σ**1°39/57, mb4.7/26, MS3.6/5, Southeast of Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac** 11nm,0.3s,baz=109,slow=10,SNR=164	**2.90**	**253**	Pn	**Pn**	**17 05 20.1**	**-0.5**
DZM	20nm,0.3s,baz=86,slow=24,SNR=6.0			Sn	**Sn**	**17 05 55.8**	**+1.2**
DZM	comp=Z,845nm,19.2s,baz=12,slow=37			LR	LR	17 06 26.2	
DZM	**Mont Dzumac**	**2.90**	**253**	*e*Pn	**Pn**	**17 05 19.0**	**-1.5**
DZM				*e*Sn	**Sn**	**17 05 54.9**	**+0.3**
MSVF	**Nonsavu**	**8.84**	**68**	*e*Pn	**Pn**	**17 06 44.8**	**+2.6**
OUZ	**Omahuta**	**14.42**	**166**	*e*Pn	**Pn**	**17 07 59.0**	**+0.8**
MXZ	**Matakaoa Point** 203nm,1.3s	**18.01**	**157**	*e*P	**Pn**	**17 08 44.0**	**-0.3**
URZ	**Urewera** 0.5nm,0.3s,baz=296,slow=8.9,SNR=3.7	**18.23**	**160**	P	**Pn**	**17 08 47.5**	**+0.5**
URZ	comp=Z,310nm,18.7s,baz=338,slow=34			LR	LR	17 14 59.6	
ARMA	**Armidale** 34nm,1.4s	**18.44**	**237**	*e*P	**P**	**17 08 48.7**	**-0.9**
BKZ	**Black Stump Fm** 121nm,1.7s	**18.88**	**163**	*e*P	**Pn**	**17 08 55.5**	**+0.5**
AFI	**Afiamalu** comp=Z,64nm,20.6s,baz=101,slow=31	**19.32**	**71**	LR	LR	17 14 27.7	
BFZ	**Birch Farm** 72nm,1.3s	**20.25**	**165**	*e*P	**P**	**17 09 09.2**	**+0.1**
THZ	**Tophouse** 54nm,1.4s	**20.69**	**173**	*e*P	Pn	17 09 15.9	-0.5
KHZ	**Kahutara** 123nm,1.7s	**21.41**	**172**	*e*P	**P**	**17 09 21.8**	**+0.1**
CTA	**Charters Tower** 4.8nm,0.6s,baz=110,slow=15,SNR=4.9	**21.71**	**269**	P	**P**	**17 09 28.0**	**+2.9**
CTAO	**Charters Tower**	**21.71**	**269**	*e*pP	pP	17 09 33.0	-0.3
RPZ	**Rata Peaks** comp=Z,298nm,21.5s,baz=338,slow=34	**22.47**	**177**	LR	LR	17 17 27.4	
CAN	**Canberra** 106nm,1.7s	**22.76**	**228**	*e*P	**P**	**17 09 39.0**	**+2.7**
LBZ	**Lake Benmore** 98nm,1.5s	**23.11**	**179**	*e*P	**P**	**17 09 41.3**	**+1.6**
MLZ	**Mavora Lakes** 150nm,1.8s	**24.11**	**182**	*e*P	**P**	**17 09 51.0**	**+1.7**
PMG	**Port Moresby** 126nm,1.9s	**24.44**	**295**	*e*P	**P**	**17 09 53.9**	**+1.3**
WHZ	**Wether Hill Ro** 159nm,1.8s	**24.64**	**182**	*e*P	**P**	**17 09 54.6**	**+0.5**
STKA	**Stephens Creek** 2.7nm,0.9s,baz=82,slow=7.1,SNR=2.0	**26.99**	**241**	P	**P**	**17 10 17.1**	**+1.4**
STKA	comp=Z,158nm,18.5s,baz=31,slow=36			LR	LR	17 20 46.5	
RAR	**Rarotonga** comp=Z,103nm,18.2s,baz=320,slow=34	**28.69**	**96**	LR	LR	17 20 57.3	
WB2	**Warramunga Arr**	**32.83**	**266**	*e*P	**P**	**17 11 06.0**	**-1.4**
WRAB	**Tennant Creek** 28nm,1.6s	**32.83**	**266**	*e*P	**P**	**17 11 07.1**	**-0.4**
AS01	**Alice Springs**	**32.83**	**259**	*e*P	**P**	**17 11 06.4**	**-1.1**
WR1	**Warramunga Arr** 8.1nm,1.1s	**32.84**	**266**	*e*P	**P**	**17 11 07.7**	**+0.2**
WRA	**Warramunga Arr** 0.5nm,0.7s,baz=96,slow=8.4,SNR=9.6	**32.84**	**266**	P	**P**	**17 11 07.7**	**+0.2**
AS31	**Alice Springs** 1.1nm,0.8s	**32.87**	**259**	*e*P	**P**	**17 11 07.6**	**-0.3**
ASAR	**Alice Springs** 0.9nm,0.6s,baz=89,slow=9.6,SNR=15	**32.88**	**259**	P	**P**	**17 11 07.7**	**-0.2**
ASAR	comp=Z,50nm,19.7s,baz=91,slow=35			LR	LR	17 23 43.1	
MTN	**Manton Dam** 28nm,1.5s	**37.48**	**277**	*e*P	**P**	**17 11 47.1**	**-0.4**
FAKI	**Fak Fak** 37nm,1.2s	**40.48**	**292**	*e*P	**P**	**17 12 14.1**	**+1.4**
FITZ	**Fitzroy Crossi** 35nm,1.9s	**41.26**	**266**	*e*P	**P**	**17 12 19.7**	**+0.7**
MYLDM	**Lahad Datu** 101nm,1.9s	**56.40**	**292**	*e*P	**P**	**17 14 14.8**	**-0.6**
VNDA	**Vanda** comp=Z,43nm,18.8s,baz=33,slow=32	**56.46**	**182**	LR	LR	17 34 47.2	
VNDA	**Vanda** 9.1nm,1.8s	**56.46**	**182**	*e*P	**P**	**17 14 10.7**	**-4.2**
SBA	**Scott Base** 8.2nm,1.0s	**56.69**	**181**	*e*P	**P**	**17 14 17.7**	**+1.2**
CASY	**Casey** 11nm,1.4s	**58.39**	**204**	*e*P	**P**	**17 14 27.2**	**-1.4**
JOW	**Kunigami** 6.1nm,1.6s	**62.22**	**318**	*e*P	**P**	**17 14 54.3**	**-1.0**
MJAR	**Matsushiro Arr** 2.0nm,0.8s,baz=157,slow=6.5,SNR=4.1	**64.58**	**332**	P	**P**	**17 15 10.0**	**-0.8**
QSPA	**South Pole Qui**	**68.84**	**180**	*e*P	**P**	**17 15 37.6**	**-0.2**
USRK	**Ussuriysk Ar.** 2.3nm,0.9s,baz=113,slow=5.0,SNR=4.2	**73.58**	**333**	P	**P**	**17 16 07.0**	**+0.7**
KLR	**Kul'dur** 1.1nm,0.5s,baz=41,slow=2.6,SNR=4.2	**77.75**	**336**	P	**P**	**17 16 31.1**	**+0.9**
CM01	**Chiang Mai Arr**	**79.45**	**294**	*e*P	**P**	**17 16 39.1**	**-1.2**
CMAR	**Chiang Mai Arr** 0.7nm,0.7s,baz=127,slow=5.7,SNR=3.5	**79.48**	**294**	P	**P**	**17 16 43.0**	**+2.5**
TPNV	**Topopah Spring** 3.0nm,0.8s	**90.77**	**50**	*e*P	**P**	**17 17 35.6**	**-1.2**
ARA0	**ARCESS Array S**	**127.02**	**345**	*e*PKPdf	**PKPdf**	**17 23 35.2**	**-1.5**
ARCES	**ARCESS Array B** 1.8nm,0.8s,baz=67,slow=1.6,SNR=9.7	**127.02**	**345**	PKP	**PKPdf**	**17 23 35.2**	**-1.5**
FIA0	**FINESS Array S**	**132.48**	**337**	*e*PKPdf	**PKPdf**	**17 23 46.0**	**-1.3**
FINES	**FINESS Array B** 0.6nm,0.5s,baz=243,slow=1.3,SNR=7.9	**132.48**	**337**	PKP	**PKPdf**	**17 23 46.0**	**-1.3**
PSZ	**Piszkesteto**	**143.83**	**325**	*e*Pdiff	**Pdif**	**17 21 34.8**	**+1.3**
CONA	**Conrad Observa** 0.9nm,0.4s	**145.92**	**328**	*i* PKPab	**PKPab**	**17 24 12.8**	**-0.6**
GERES	**GERESS Array B** 2.4nm,0.6s,baz=31,slow=2.9,SNR=24	**146.31**	**331**	PKPbc	**PKPbc**	**17 24 13.7**	**-0.4**
MOA	**Molln** 0.3nm,0.2s	**146.75**	**329**	*i* PKPbc	**PKPbc**	**17 24 14.1**	**-1.3**
KBA	**Koelnbreinsper** 2.5nm,0.6s	**147.74**	**329**	*i* PKPbc	**PKPbc**	**17 24 16.4**	**-1.9**
MYKA	**Terra Mystica** 1.3nm,0.3s	**147.91**	**328**	*i* PKPbc	**PKPbc**	**17 24 17.1**	**-1.5**
ABTA	**Abfaltersbach** 2.7nm,0.6s	**148.38**	**329**	*i* PKPbc	**PKPdf**	**17 24 17.3**	**+0.9**
WATA	**Walderalm** 1.4nm,0.3s	**148.39**	**331**	*i* PKPbc	**PKPbc**	**17 24 19.8**	**-0.1**
WTTA	**Wattenberg** 3.3nm,0.5s	**148.41**	**331**	*i* PKPbc	**PKPbc**	**17 24 18.2**	**-1.9**
MOTA	**Moosalm** 2.8nm,0.6s	**148.59**	**331**	*i* PKPbc	**PKPbc**	**17 24 19.7**	**-0.8**
FETA	**Feichten** 2.9nm,0.6s	**149.00**	**331**	*i* PKPbc	**PKPbc**	**17 24 20.1**	**-1.5**
DAVA	**Damuels** 2.1nm,0.4s	**149.18**	**332**	*i* PKPab	**PKPab**	**17 24 25.3**	**-1.1**

*ISCJB **05** 17:07:34.6±0.5, 39°.07N±0°.05×29°.13E±0°.04, h12km±5km, Error ellipse: s-maj=8.4km s-min=4.3km az=151.2*
*DDA **05** 17:07:34.8, 39°.05N×29°.11E, h7km, Md2.4*
*ISK **05** 17:07:34.3, 39°.10N×29°.14E, h8km, MD2.6*
*CSEM **05** 17:07:34.6±0.1, 39°.06N×29°.14E, h10km, MD2.6, Error ellipse: s-maj=4.6km s-min=2.6km az=142.0*
ISC 05 17:07:34.5±0.9, **39°.06N**±0°.04×**29°.16E**±0°.03, **h12**km±8km, **n22**, σ**0°45/32, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.20**	**94**	*e*PG	**Pg**	**17 07 39.5**	**+0.6**
GEDZ	**Gediz**	**0.20**	**94**	*e*Pg	**Pg**	**17 07 39.5**	**+0.6**
GDZ	**Gediz**	**0.25**	**83**	*i* P	**Pb**	**17 07 41.1**	**0.0**
GDZ				*i* S	**Sb**	**17 07 45.1**	**-0.4**
GDZ	**Gediz**	**0.25**	**83**	P	**Pb**	**17 07 41.1**	**0.0**
GDZ				S	**Sb**	**17 07 45.1**	**-0.4**
DEMI	**Demirci**	**0.34**	**267**	*i* P	**Pg**	**17 07 41.5**	**0.0**
DEMI				*i* S	**Sg**	**17 07 45.6**	**-0.6**
DEMI	**Demirci**	**0.34**	**267**	P	**Pg**	**17 07 41.5**	**0.0**
DEMI				S	**Sg**	**17 07 45.6**	**-0.6**
TVSB	**Tavsanli**	**0.46**	**31**	*e*PG	**Pg**	**17 07 43.3**	**-0.3**
TVSB				*e*SG	**Sg**	**17 07 49.2**	**-0.5**
TVSB	**Tavsanli**	**0.46**	**31**	*e*Pg	**Pg**	**17 07 43.3**	**-0.3**
TVSB				*e*Sg	**Sg**	**17 07 49.2**	**-0.5**
KULA	**Kula-Manisa**	**0.67**	**216**	*e*PG	**Pg**	**17 07 47.7**	**+0.2**
KULA	**Kula-Manisa**	**0.67**	**216**	*e*Pg	**Pg**	**17 07 47.7**	**+0.2**
MANT	**Manisa**	**0.74**	**220**	*i* P	**Pg**	**17 07 48.3**	**-0.5**
MANT				*i* S	**Sg**	**17 07 57.8**	**-0.7**
MANT	**Manisa**	**0.74**	**220**	P	**Pg**	**17 07 48.3**	**-0.5**
MANT				S	**Sg**	**17 07 57.8**	**-0.7**
AKS	**Akhisar**	**1.06**	**261**	*e*PG	**Pb**	**17 07 55.2**	**+0.4**
AKS				*e*SG	**Sn**	**17 08 10.2**	**+0.3**
AKS	**Akhisar**	**1.06**	**261**	*e*Pg	**Pb**	**17 07 55.2**	**+0.4**
AKS				*e*Sg	**Sn**	**17 08 10.2**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**25**	*e*PN	**Pn**	**17 07 57.8**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**25**	*e*Pn	**Pn**	**17 07 57.8**	**-0.1**
IZI	**Iznik**	**1.30**	**11**	*e*PN	**Pn**	**17 07 58.6**	**+0.1**
IZI	**Iznik**	**1.30**	**11**	*e*Pn	**Pn**	**17 07 58.6**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.33**	**351**	*e*PN	**Pn**	**17 07 59.4**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.33**	**351**	*e*Pn	**Pn**	**17 07 59.4**	**+0.6**
KCTX	**Karacabey (Bur**	**1.35**	**333**	*e*PN	**Pn**	**17 07 59.7**	**+0.5**
KCTX	**Karacabey (Bur**	**1.35**	**333**	*e*Pn	**Pn**	**17 07 59.7**	**+0.5**

*BEO **05** 17:19:41.9±0.7, 45°.02N×17°.08E, M2.4/1*
*CSEM **05** 17:19:42.4±0.1, 44°.98N×17°.14E, h5km, ML2.3, Error ellipse: s-maj=4.9km s-min=2.3km az=26.0*
*VIE **05** 17:19:44.6±0.7, 45°.54N×17°.18E, h6km, mb1.9/5, ML1.9/6, Error ellipse: s-maj=4.6km s-min=3.1km az=155.0*
ISC 05 17:19:42.0±1.0, **45°.00N**±0°.02×**17°.12E**±0°.02, **h9**km±8km, **n48**, σ**1°06/84, 2D, Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BLY	**Banja Luka**	**0.26**	**170**	⇓*i* Pg	**Pg**	**17 19 46.9**	**-0.2**
BLY				*e*Sg	**Sg**	**17 19 50.6**	**+0.1**
BLY	**Banja Luka**	**0.26**	**170**	⇓*i* Pg	**Pg**	**17 19 46.9**	**-0.2**
BLY				*e*Sg	**Sg**	**17 19 50.6**	**+0.1**
SISC	**Sisak**	**0.71**	**312**	*e*Pg	**Pn**	**17 19 57.7**	**-0.5**
SISC				Sg	**Sb**	**17 20 07.4**	**+1.0**
SISC	**Sisak**	**0.71**	**312**	*e*Pg	**Pn**	**17 19 57.6**	**-0.5**
SISC				Sg	**Sb**	**17 20 07.3**	**+1.0**
DOB	**Doboj**	**0.75**	**111**	*e*Pg	**Pg**	**17 19 55.9**	**-0.4**
DOB				*e*Sg	**Sg**	**17 20 05.8**	**-0.3**
UDBI	**Udbina**	**1.07**	**244**	*i* Pg	**Pg**	**17 20 02.0**	**-0.7**
UDBI				Sg	**Sg**	**17 20 15.1**	**-1.5**

mb1 3.5/3, mb1mx3.2/17, mbtmp4.0/3, Error ellipse: s-maj=84.4km s-min=21.0km az=101.0

ISC 05 17:27:38.8±1.5,**22°05S**±0°07×**67°8W**±0°2,**h213**km±18km, **n15**,σ0§58/23,**5C–4D**,**Chile-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB09	**IPOC Station P**	**1.34**	**280**⇑	*i*P	**Pn**	**17 28 12.2**	**-0.3**
PB09				IAML		17 28 43.1	
	comp=E,309nm,0.5s						
PB06	**IPOC Station P**	**1.75**	**248**⇓	*i*P	**Pn**	**17 28 15.3**	**-0.8**
PB06				*i* S	**S**	**17 28 45.0**	**+0.2**
PB06				IAML		17 28 46.2	
	comp=E,118nm,0.2s						
PB01	**IPOC Station P**	**1.84**	**302**⇓	*i*P	**Pn**	**17 28 16.9**	**0.0**
PB01				*i* S	**S**	**17 28 46.4**	**+0.2**
PB01				IAML		17 28 47.8	
	comp=E,297nm,0.3s						
PB07	**IPOC Station P**	**1.94**	**279**	*e*P	**Pn**	**17 28 17.9**	**0.0**
PB07				*i* S	**S**	**17 28 48.2**	**+0.2**
PB07				IAML		17 28 48.6	
	comp=N,298nm,0.3s						
PB04	**IPOC Station P**	**2.17**	**262**⇑	*i*P	**Pn**	**17 28 20.1**	**-0.1**
PB04				*i* S	**S**	**17 28 52.6**	**+0.4**
PB04				IAML		17 28 55.0	
	comp=N,196nm,0.2s						
PB08	**IPOC Station P**	**2.27**	**326**⇑	*i*P	**Pn**	**17 28 21.9**	**+0.4**
PB08				*i* S	**S**	**17 28 55.1**	**+0.7**
PB08				IAML		17 28 56.2	
	comp=N,75nm,0.3s						
HMBC	**Humberstone**	**2.61**	**312**⇑	*i*P	**Pn**	**17 28 24.5**	**-0.4**
HMBC				*i* S	**S**	**17 29 00.3**	**-0.2**
HMBC				IAML		17 29 01.2	
	comp=N,282nm,0.7s						
PB11	**IPOC Station P**	**2.85**	**323**⇓	*i*P	**Pn**	**17 28 27.3**	**-0.3**
PB11				*i* S	**S**	**17 29 05.4**	**+0.1**
PB10	**IPOC Station P**	**2.91**	**239**	IAML		17 29 06.1	
	comp=N,307nm,0.5s						
PSGC	**Pisagua**	**3.25**	**318**⇓	*i*P	**Pn**	**17 28 31.6**	**-0.6**
PSGC				*i* S	**S**	**17 29 12.9**	**-0.7**
PSGC				IAML		17 29 14.2	
	comp=E,58nm,0.3s						
MNMC	**Minye Minye**	**3.34**	**330**⇑	*i*P	**Pn**	**17 28 33.6**	**+0.1**
MNMC				*i* S	**S**	**17 29 16.2**	**+0.3**
MNMC				IAML		17 29 20.3	
	comp=E,212nm,0.3s						
LPAZ	**La Paz**	**5.73**	**357**	P	**Pn**	**17 29 03.8**	**+0.3**
	comp=E,0.9nm,0.3s,baz=155,slow=8.6,SNR=18						
LPAZ				S	**S**	**17 30 09.1**	**-1.2**
	comp=E,0.1nm,0.3s,baz=204,slow=24,SNR=1.4						
PLCA	**Paso Flores**	**18.77**	**186**	P	Pn	17 31 56.1	+11
	comp=E,0.2nm,0.3s,baz=352,slow=18,SNR=3.4						
TORD	**Torodi Ar. Bea**	**76.59**	**70**	P	**P**	**17 39 05.7**	**-0.6**
	comp=E,1.4nm,0.4s,baz=254,slow=5.1,SNR=7.8						
MKAR	**Makanchi Array**	**145.47**	**37**	PKP	**PKPab**	**17 46 53.6**	**+1.3**
	comp=E,0.1nm,0.5s,baz=321,slow=4.9,SNR=3.5						

*IDC **05** 17:40:46.1±1.3,2°.07S×100°.29E, h0km, mb3.9/7, mb1 4.0/7, mb1mx3.7/45, mbtmp3.9/7, Error ellipse: s-maj=66.0km s-min=16.5km az=52.0*

*ISCJB **05** 17:40:51.4±0.5,2°.10S±0°.04×100°.29E±0°.06, h56km, mb4.3/12, Error ellipse: s-maj=9.1km s-min=4.9km az=151.6*

*NEIC **05** 17:40:53.9±1.2,2°.07S×100°.31E, h62km±9km, mb4.5/10, Error ellipse: s-maj=19.3km s-min=6.5km az=54.0*

*DJA **05** 17:40:54.3±1.5,2°.5±3°×10°.0E±°, h28km±19km, M3.9/7, MLv3.9/7*

ISC 05 17:40:53.8±0.6,**1°.98S**±0°.04×**100°.34E**±0°.06,**h56**km,**n47**, σ1§43/48,**mb4.2**/12,**Southern Sumatera**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PPSI	**Pulau Pagai**	**0.84**	**203**	P	**Pn**	**17 41 10.2**	**+0.5**
PPSI				S	**Sn**	**17 41 24.1**	**+2.8**
PDSI	**Padang**	**1.07**	**6**	P	**Pn**	**17 41 12.5**	**-0.2**
PDSI				S	**Sn**	**17 41 26.9**	**+0.2**
SDSI	**Sungai Dareh**	**1.51**	**46**	P	**Pn**	**17 41 19.1**	**+0.6**
SDSI				S	**Sn**	**17 41 38.4**	**+1.3**
BKNI	**Bangkinang**	**2.40**	**17**	P	**Pn**	**17 41 30.5**	**-0.2**
BKNI	**Bangkinang**	**2.40**	**17**	*e*Pn	**Pn**	**17 41 33.9**	**+3.2**
MNSI	**Mandailing Nat**	**2.86**	**345**	P	**Pn**	**17 41 38.5**	**+1.4**
MNAI	**Manna**	**3.52**	**132**	P	**Pn**	**17 41 47.3**	**+1.2**
MNAI	**Manna**	**3.52**	**132**	*e*Pn	**Pn**	**17 41 48.1**	**+2.0**
MNAI				*e*Sn	**Sn**	**17 42 25.0**	**-1.5**
LHSI	**Lahat**	**3.67**	**120**	P	**Pn**	**17 41 51.4**	**+3.3**
GSI	**Gunungsitoli**	**4.28**	**320**	P	**Pn**	**17 41 56.0**	**-0.5**
GSI	**Gunungsitoli**	**4.28**	**320**	*e*Pn	**Pn**	**17 41 56.7**	**+0.3**
PSI	**Prapat**	**4.96**	**343**	*e*Pn	**Pn**	**17 42 02.9**	**-3.0**
MYKOM	**Kota Tinggi**	**5.13**	**43**	*e*Pn	**Pn**	**17 42 09.0**	**+0.8**
IPM	**Ipoh**	**6.46**	**6**	*e*Pn	**Pn**	**17 42 28.4**	**+2.0**
KULM	**Kulim**	**7.23**	**2**	*e*Pn	**Pn**	**17 42 39.0**	**+2.0**
JAGI	**Jajag, Banyuwa**	**15.18**	**116**	*e*Pn	**Pn**	**17 44 22.4**	**-2.5**
	32nm,1.2s						
KAPI	**Kappang**	**19.61**	**99**	*e*P	**Pn**	**17 45 19.7**	**+0.2**
	14nm,1.1s						
CM01	**Chiang Mai Arr**	**20.32**	**356**	*e*P	Pn	17 45 27.4	-0.5
CM31	**Chiang Mai Arr**	**20.36**	**356**	*e*P	**P**	**17 45 26.6**	**+0.8**
CMAR	**Chiang Mai Arr**	**20.36**	**356**	P	**P**	**17 45 24.4**	**-1.5**
	2.0nm,0.5s,baz=186,slow=10,SNR=30						
CHTO	**Chiang Mai**	**20.71**	**356**	*e*P	**P**	**17 45 31.2**	**+1.5**
	13nm,2.0s						
H08S2	**Diego Garcia H**	**28.30**	**258**	T	T	18 15 45.1	
	baz=81,slow=75,SNR=9.9						
H08S3	**Diego Garcia H**	**28.31**	**258**	T	T	18 15 46.2	
	baz=81,slow=75,SNR=7.3						
H08S1	**Diego Garcia H**	**28.32**	**258**	T	T	18 15 47.1	
	baz=81,slow=75,SNR=10						
FITZ	**Fitzroy Crossi**	**29.54**	**124**	P	**P**	**17 46 52.2**	**-1.1**
	1.0nm,0.9s,baz=347,slow=6.9,SNR=4.6						
FITZ	**Fitzroy Crossi**	**29.54**	**124**	*e*P	**P**	**17 46 52.0**	**-1.3**
	19nm,1.6s						
WRA	**Warramunga Arr**	**37.71**	**121**	P	**P**	**17 48 03.3**	**-1.0**
	0.7nm,0.3s,baz=305,slow=9.0,SNR=31						
WR1	**Warramunga Arr**	**37.71**	**121**	*e*P	**P**	**17 48 03.3**	**-1.0**
	19nm,1.5s						
WRAB	**Tennant Creek**	**37.71**	**121**	*e*P	**P**	**17 48 02.4**	**-2.0**
	11nm,0.9s						
WB2	**Warramunga Arr**	**37.72**	**121**	*e*P	**P**	**17 48 02.5**	**-1.9**
AS31	**Alice Springs**	**38.99**	**126**	*e*P	**P**	**17 48 14.8**	**-0.3**
	4.9nm,1.8s						
AS31				*e*PcP	**PcP**	**17 50 25.1**	**+0.4**
ASAR	**Alice Springs**	**38.99**	**126**	P	**P**	**17 48 14.9**	**-0.1**
	1.1nm,0.5s,baz=301,slow=7.8,SNR=32						
ASAR				PcP	**PcP**	**17 50 25.1**	**+0.4**
	0.4nm,0.7s,baz=300,slow=2.5,SNR=4.5						
AS01	**Alice Springs**	**39.02**	**126**	*e*P	**P**	**17 48 14.7**	**-0.6**
INCN	**Inchon**	**46.22**	**29**	*e*P	**P**	**17 49 11.7**	**-1.7**
	18nm,0.8s						
MK01	**Makanchi Array**	**51.08**	**344**	*e*P	**P**	**17 49 51.5**	**+0.9**
MK31	**Makanchi Array**	**51.11**	**344**	*e*P	**P**	**17 49 51.5**	**+0.7**
MK32	**Makanchi Array**	**51.11**	**344**	*e*P	**P**	**17 49 51.7**	**+0.9**
MKAR	**Makanchi Array**	**51.11**	**344**	P	**P**	**17 49 51.7**	**+0.9**
	1.2nm,0.6s,baz=150,slow=8.0,SNR=18						
MKAR	**Makanchi Array**	**51.11**	**344**	*e*P	**P**	**17 49 51.6**	**+0.7**
ZAA0	**Zalesovo Array**	**57.22**	**349**	*e*P	**P**	**17 50 34.5**	**-0.6**
ZALV	**Zalesovo Beam**	**57.22**	**349**	P	**P**	**17 50 35.5**	**+0.3**
	2.0nm,0.7s,baz=183,slow=6.0,SNR=13						
ZAA1	**Zalesovo Array**	**57.22**	**349**	*e*P	**P**	**17 50 35.5**	**+0.3**
ASAJ	**Asahikawa**	**59.41**	**34**	*e*P	**P**	**17 50 51.2**	**+0.5**
	39nm,1.3s						
VOSK	**Vostochnaya**	**59.84**	**340**	*e*P	**P**	**17 50 53.6**	**+0.2**
	5.2nm,1.6s						
BR101	**Keskin Array S**	**73.56**	**312**	*e*P	**P**	**17 52 21.3**	**-0.1**
BRTR	**Keskin Array B**	**73.56**	**312**	P	**P**	**17 52 21.3**	**-0.1**
	0.6nm,0.7s,baz=129,slow=6.8,SNR=3.1						
TXAR	**Lajitas Array**	**144.48**	**38**	PKP	PKPbc	18 00 23.7	+0.3
	0.5nm,0.5s,baz=187,slow=0.3,SNR=6.3						

*THR **05** 17:41:18.8±1.2,33°.92N×48°.87E, h14km±9km, ML3.5*

*ISCJB **05** 17:41:20.2±0.4,33°.79N±0°.03×48°.74E±0°.03, h11km, Error ellipse: s-maj=5.1km s-min=3.6km az=20.1*

*CSEM **05** 17:41:20.1±0.2,33°.83N×48°.79E, h2km, ML3.6, Error ellipse: s-maj=7.0km s-min=5.1km az=20.0*

*TEH **05** 17:41:21.4,33°.79N×48°.77E, h7km, ML3.6*

ISC 05 17:41:19.6±0.8,**33°.84N**±0°.03×**48°.79E**±0°.03,**h11**km,**n42**, σ1§55/46,**Western Iran**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IKFM	**Kafar-mosalman**	**0.85**	**249**	*e*Pg	**Pg**	**17 41 33.6**	**-2.4**
IKFM				*e*Sg	**Sg**	**17 41 46.7**	**-0.4**
KHMZ	**Khomeyn**	**0.97**	**96**	*e*Pg	**Pg**	**17 41 35.7**	**-2.8**
KHMZ	**Khomeyn**	**0.97**	**96**	*e*Pg	**Pg**	**17 41 35.7**	**-2.8**
IBZA	**Bozab**	**1.00**	**309**	*e*Sg	**Sg**	**17 41 52.6**	**+0.7**
IBZA	**Bozab**	**1.00**	**309**	*e*Sg	**Sg**	**17 41 52.6**	**+0.7**
IKOM	**Komasi**	**1.12**	**288**	*e*Pg	**Pb**	**17 41 39.3**	**-1.8**
IKOM				*e*Sg	**Sg**	**17 41 56.9**	**+1.2**
IKOM				*e*AMB	AMB	17 42 06.7	
	comp=Z,14μm,0.2s						
ASAO	**Ashtian**	**1.24**	**55**	AML	AML	17 42 03.7	
	comp=E,1μm,0.4s						
ASAO				AML	AML	17 42 03.8	
	comp=N,2μm,0.7s						
SHGR	**Shooshtar-Gavs**	**1.73**	**180**	*e*Pn	**Pb**	**17 41 51.4**	**+0.1**
SHGR				*e*Sg	**Sg**	**17 42 15.7**	**+0.6**
SHGR	**Shooshtar-Gavs**	**1.73**	**180**	*e*Pn	**Pb**	**17 41 51.4**	**+0.1**
SHGR				*e*Sg	**Sg**	**17 42 15.7**	**+0.6**
SNGE	**Sanandaj**	**1.73**	**317**	*e*Pn	**Pn**	**17 41 50.6**	**+0.8**
SNGE				*e*Sg	**Sn**	**17 42 13.2**	**+1.2**
SNGE				AML	AML	17 42 21.3	
	comp=N,451nm,0.6s						
SNGE				AML	AML	17 42 21.4	
	comp=E,422nm,0.6s						
SNGE	**Sanandaj**	**1.73**	**317**	*e*Pn	**Pn**	**17 41 50.7**	**+0.8**
SNGE				*e*Sg	**Sn**	**17 42 13.2**	**+1.2**
IVIS	**Veis**	**1.75**	**294**	*e*Pn	**Pn**	**17 41 51.4**	**+1.3**
IVIS				*e*AMB	AMB	17 42 25.6	
	comp=N,7μm,0.2s						
IVIS	**Veis**	**1.75**	**294**	*e*Pn	**Pn**	**17 41 51.4**	**+1.3**
IRAZ	**Razeghan**	**1.82**	**31**	*e*Pn	**Pn**	**17 41 51.9**	**+0.8**
IRAZ				*e*AMB	AMB	17 42 29.5	
	comp=Z,8μm,0.4s						
IRAZ	**Razeghan**	**1.82**	**31**	*e*Pn	**Pn**	**17 41 51.9**	**+0.8**
ILIN	**Lien**	**1.86**	**306**	*e*Pn	**Pb**	**17 41 54.1**	**+0.3**
ILIN				*e*AMB	AMB	17 42 27.1	
	comp=N,5μm,0.2s						
ILIN	**Lien**	**1.86**	**306**	*e*Pn	**Pb**	**17 41 54.1**	**+0.3**
IGHG	**Ghaleghazi**	**1.91**	**285**	*e*Pn	**Pb**	**17 41 54.7**	**+0.1**
IGHG				*e*AMB	AMB	17 41 57.5	
	comp=Z,5μm,0.1s						
IGHG	**Ghaleghazi**	**1.91**	**285**	*e*Pn	**Pb**	**17 41 54.7**	**+0.1**
IPIR	**Pirpir**	**2.10**	**123**	*e*Pn	**Pn**	**17 41 56.3**	**+1.3**
IPIR				*e*AMB	AMB	17 42 36.2	
	comp=Z,5μm,0.3s						
IPIR	**Pirpir**	**2.10**	**123**	*e*Pn	**Pn**	**17 41 56.3**	**+1.3**
IKLH	**Kolahrood**	**2.38**	**102**	*e*Pn	**Pn**	**17 42 01.2**	**+2.3**
IKLH				*e*AMB	AMB	17 42 46.2	
	comp=Z,3μm,0.3s						
IKLH	**Kolahrood**	**2.38**	**102**	*e*Pn	**Pn**	**17 42 01.2**	**+2.3**
IMHD	**Mahdasht**	**2.40**	**39**	*e*Pn	**Pb**	**17 42 02.3**	**-0.6**
IMHD				*e*AMB	AMB	17 42 35.3	
	comp=Z,5μm,0.1s						
IMHD	**Mahdasht**	**2.40**	**39**	*e*Pn	**Pb**	**17 42 02.3**	**-0.6**
IVRN	**Varamin**	**2.69**	**64**	*e*AMB	AMB	17 42 44.7	
	comp=Z,3μm,0.1s						
IVRN				*e*Pn	**Pn**	**17 42 05.2**	**+2.3**
CHTH	**Charan**	**2.82**	**42**	AML	AML	17 42 51.2	
	comp=N,133nm,0.6s						
IGAR	**Gharneh**	**3.08**	**117**	*e*Pn	**Pn**	**17 42 10.1**	**+1.7**
IGAR				*e*AMB	AMB	17 43 04.8	
	comp=Z,1μm,0.3s						
IZEF	**Zefreh**	**3.10**	**107**	*e*Pn	**Pn**	**17 42 11.1**	**+2.3**
IZEF				*e*AMB	AMB	17 43 01.7	
	comp=Z,850nm,0.2s						
IZEF	**Zefreh**	**3.10**	**107**	*e*Pn	**Pn**	**17 42 11.1**	**+2.3**
DAMV	**Damavand**	**3.17**	**55**	*e*Pn	**Pn**	**17 42 09.5**	**-0.2**
DAMV	**Damavand**	**3.17**	**55**	*e*Pn	**Pn**	**17 42 09.5**	**-0.2**
IDMV	**Damavand**	**3.18**	**56**	*e*Pn	**Pn**	**17 42 12.4**	**+2.5**
IDMV				*e*AMB	AMB	17 43 08.9	
	comp=Z,2μm,0.2s						
IDMV	**Damavand**	**3.18**	**56**	*e*Pn	**Pn**	**17 42 12.4**	**+2.5**
NASN	**Na'in**	**3.52**	**106**	*e*Pn	**Pn**	**17 42 15.2**	**+0.7**
NASN	**Na'in**	**3.52**	**106**	*e*Pn	**Pn**	**17 42 15.2**	**+0.7**
IRAM	**Ramesheh**	**3.64**	**123**	*e*Pn	**Pn**	**17 42 18.2**	**+2.1**
IRAM				*e*AMB	AMB	17 43 32.3	
	comp=Z,548nm,0.3s						
IRAM	**Ramesheh**	**3.64**	**123**	*e*Pn	**Pn**	**17 42 18.2**	**+2.1**
IFIR	**Firoozkooh**	**3.72**	**60**	*e*Pn	**Pn**	**17 42 19.5**	**+2.2**
IFIR				*e*AMB	AMB	17 42 30.2	
	comp=Z,1μm,0.1s						
IFIR	**Firoozkooh**	**3.72**	**60**	*e*Pn	**Pn**	**17 42 19.5**	**+2.2**
ISRV	**Sarvestan**	**5.77**	**139**	*e*Pn	**Pn**	**17 42 46.1**	**+0.6**
ISRV				*e*AMB	AMB	17 43 58.7	
	comp=Z,189nm,0.2s						
ISRV	**Sarvestan**	**5.77**	**139**	*e*Pn	**Pn**	**17 42 46.1**	**+0.6**

*NIED **05** 17:44:00,28°.10N×141°.00E, h150km, Mw4.7 Best double couple: M0 1.32000×10^16 NP1:φs208.00000°, δ61.00000°, λ29.00000°. NP2:φs103.00000°, δ65.0000°, λ147.00000°.*

*ISCJB **05** 17:44:41.2±0.3,27°.97N±0°.02×140°.45E±0°.02, h167km±2km, mb4.7/230, Error ellipse: s-maj=3.5km s-min=3.0km az=166.3*

*JMA **05** 17:44:42.9±0.1,28°.08N×141°.05E, h187km±4km, M5.0*

JMA Felt I J1.

*MOS **05** 17:44:42.7±0.9,28°.03N×140°.31E, h184km, mb4.8/66, Error ellipse: s-maj=7.7km s-min=4.5km az=95.1*

*NEIC **05** 17:44:43.8±0.1,27°.98N×140°.42E, mb4.8/186, Error ellipse: s-maj=3.1km s-min=2.7km az=114.0*

NEIC Recorded [1 JMA] in Tokyo.

*IDC **05** 17:44:44.5±0.6,28°.01N×140°.31E, h188km±4km, mb4.2/23, mb1 4.4/28, mb1mx4.3/35, mbtmp4.8/28, MS3.4/3, Ms1 3.5/3, ms1mx2.8/40, Error ellipse: s-maj=13.2km s-min=7.2km az=80.0*

*BJI **05** 17:44:44.4,28°.09N×140°.72E, h217km, mb4.8/39, mB4.8/26*

ISC 05 17:44:43.8±0.3,**28°.03N**±0°.03×**140°.55E**±0°.04,**h184**km±2km, **h183**km:**pP-P**,**n622**,σ1§59/726,**mb4.8**/230,**8C-8D**,**Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**1.72**	**122**	P	**Pn**	**17 45 14.8**	**-3.5**
CBIJ				S	**Sn**	**17 45 38.8**	**-6.1**
CBIJ	**Chichi jima**	**1.72**	**122**	*e*Pn	**Pn**	**17 45 16.0**	**-2.3**
CBIJ				*e*Sn	**Sn**	**17 45 38.1**	**-6.9**
JCJ	**Chichijima**	**1.72**	**122**	P	**Pn**	**17 45 15.1**	**-3.2**
	31nm,0.3s,baz=182,slow=23,SNR=58						
JCJ				S	**Sn**	**17 45 38.9**	**-6.1**
	46nm,0.3s,baz=180,slow=24,SNR=46						
JHHJ	**Haha-jima-NKT**	**2.01**	**134**	P	**Pn**	**17 45 17.9**	**-3.4**
JHHJ				S	**Sn**	**17 45 45.2**	**-5.1**
JHCJ	**Hachijojimakas**	**5.07**	**353**	P	**Pn**	**17 45 58.6**	**-0.1**
JHCJ				*e*S	**Sn**	**17 46 57.3**	**-0.4**
JHJ2	**Mitsune**	**5.11**	**353**	P	**Pn**	**17 45 59.8**	**+0.6**
JHJ2				*e*S	**Sn**	**17 46 56.8**	**-1.7**
JHJ2	**Mitsune**	**5.11**	**353**	*e*Pn	**Pn**	**17 45 59.4**	**+0.2**
JHJ2				*e*Sn	**Sn**	**17 46 53.8**	**-4.7**
JHJ	**Hachijo jima 2**	**5.12**	**353**	P	**Pn**	**17 45 59.6**	**+0.3**
	95nm,0.3s,baz=269,slow=14,SNR=85						
JHJ				S	**Sn**	**17 46 57.3**	**-1.5**
	221nm,0.3s,baz=63,slow=23,SNR=6.2						
JKO	**Kozu shima**	**6.26**	**349**	P	**Pn**	**17 46 14.4**	**+0.2**
JKO				S	**Sn**	**17 47 25.4**	**-0.2**
JNIO	**Niijimaoohara**	**6.40**	**350**	*e*S	**Sn**	**17 47 29.1**	**+0.2**
TTO1	**TONANKAI O.B.S**	**6.45**	**331**	P	**Pn**	**17 46 19.3**	**+2.9**
BSO1	**Boso 1**	**6.62**	**3**	P	**Pn**	**17 46 17.2**	**-1.2**
JWZ	**Kozaga**	**6.88**	**324**	P	**Pn**	**17 46 25.0**	**+2.6**
JKN2	**Miekihoku**	**7.20**	**330**	P	**Pn**	**17 46 28.5**	**+2.0**
JAA	**Atsumi**	**7.20**	**337**	P	**Pn**	**17 46 28.0**	**+1.5**
JOD2	**Odawara 2**	**7.32**	**351**	P	**Pn**	**17 46 28.0**	**-0.2**
JYZW	**Yoshizawa**	**7.35**	**342**	P	**Pn**	**17 46 28.8**	**+0.3**
JYN	**Shimoh**	**7.64**	**348**	P	**Pn**	**17 46 32.4**	**0.0**
JNY	**Yasuok**	**7.66**	**343**	P	**Pn**	**17 46 33.1**	**+0.5**
JAO	**Obara**	**7.74**	**340**	P	**Pn**	**17 46 34.7**	**+1.0**
JHE	**Heguri**	**7.80**	**329**	P	**Pn**	**17 46 37.3**	**+2.8**
INU	**Inuyama**	**7.89**	**338**	*e*Pn	**Pn**	**17 46 36.7**	**+1.0**
JRY	**Ryogami san**	**8.09**	**350**	P	**Pn**	**17 46 37.2**	**-1.0**
JTO	**Tosashimizu**	**8.24**	**308**	P	**Pn**	**17 46 44.0**	**+3.8**
JAG	**Ashikaga**	**8.42**	**354**	P	**Pn**	**17 46 39.9**	**-2.7**
JKS	**Kasai**	**8.47**	**326**	P	**Pn**	**17 46 46.0**	**+2.7**
JNG	**Nsakai**	**8.61**	**347**	P	**Pn**	**17 46 44.6**	**-0.5**
MJAR	**Matsushiro Arr**	**8.72**	**347**	P	**Pn**	**17 46 45.0**	**-1.5**
	15nm,0.3s,baz=161,slow=10,SNR=75						
MJAR				S	**Sn**	**17 48 24.7**	**+0.7**
	4.9nm,0.3s,baz=106,slow=18,SNR=5.3						
MAJO	**Matsushiro**	**8.72**	**347**	*e*P	**Pn**	**17 46 45.5**	**-1.0**
MAJO				*e*		17 48 22.5	
MAJO	**Matsushiro**	**8.72**	**347**	*e*Pn	**Pn**	**17 46 45.5**	**-1.0**
MAJO				*e*Sn	**Sn**	**17 48 22.5**	**-1.5**
MAT	**Matsushiro**	**8.72**	**347**	P	**Pn**	**17 46 45.5**	**-1.0**
MAT				S	**Sn**	**17 48 17.4**	**-6.6**
MJB9	**Matsu-Tunnel**	**8.72**	**347**	*e*Pn	**Pn**	**17 46 45.6**	**-1.0**
MJB9				*e*Sn	**Sn**	**17 48 22.8**	**-1.3**
JKT	**Katashina**	**8.78**	**353**	P	Pn	17 46 44.3	-3.1
JNAR	**Kushima--Naru**	**8.79**	**296**	P	Pn	17 46 52.3	+4.9
JJG	**Jouge**	**9.13**	**318**	P	**Pn**	**17 46 55.7**	**+3.7**
JFK	**Kawauchi**	**9.32**	**2**	P	**Pn**	**17 46 51.0**	**-3.4**
JHS	**Saijyo**	**9.41**	**319**	P	**Pn**	**17 46 59.1**	**+3.5**
JIU2	**Izumi 2**	**9.54**	**301**	P	Pn	17 47 02.4	+5.0
JNU	**Nakatsue**	**9.76**	**304**	P	**Pn**	**17 47 04.2**	**+4.0**
	2.6nm,0.3s,baz=130,slow=5.0,SNR=38						
JMM	**Marumori**	**9.81**	**1**	P	**Pn**	**17 46 57.9**	**-2.9**
JSJ	**Shimokoshiki**	**10.09**	**294**	P	**Pn**	**17 47 07.7**	**+3.3**
JSD	**Sado**	**10.16**	**350**	P	**Pn**	**17 47 02.7**	**-2.7**
JOI	**OKI**	**10.30**	**325**	P	**Pn**	**17 47 09.4**	**+2.2**
JYK	**Kaneyama**	**10.86**	**359**	P	**Pn**	**17 47 11.9**	**-2.5**
JMK	**Ichinoseki**	**10.91**	**3**	P	**Pn**	**17 47 12.9**	**-2.1**
JRG	**Rokugo**	**11.34**	**0**	P	**Pn**	**17 47 18.4**	**-2.2**
JTU	**Tsushima**	**11.53**	**307**	P	**P**	**17 47 28.0**	**-1.1**
JKZ	**Kuzumaki**	**11.94**	**3**	P	**Pn**	**17 47 26.0**	**-2.4**
SARN	**Sarigan**	**12.26**	**156**	*e*Pn	**Pn**	**17 47 31.1**	**-1.5**
ANA2	**Anatahan**	**12.57**	**157**	*e*Pn	**Pn**	**17 47 34.6**	**-1.9**
JOT	**Ohata**	**13.33**	**2**	P	**Pn**	**17 47 44.1**	**-1.8**
JKB	**Kayabe**	**13.83**	**2**	P	**Pn**	**17 47 50.3**	**-1.9**
JOSM	**Okushiri--Mats**	**14.05**	**357**	P	**Pn**	**17 47 53.0**	**-1.9**
ERM	**Erimo**	**14.12**	**8***c*	*e*P	**Pn**	**17 47 55.1**	**-0.7**
ERM				pmax	pmax		
	comp=Z,248nm,0.8s						
ERM	**Erimo**	**14.12**	**8**	*e*Pn	**Pn**	**17 47 55.0**	**-0.7**
KSRS	**Korea Array**	**14.18**	**315**	P	**P**	**17 48 00.2**	**+1.7**
	comp=Z,3.5nm,0.3s,baz=122,slow=13,SNR=57						
KSRS				ScP	**ScP**	**17 56 16.0**	**-1.5**
	comp=Z,0.1nm,0.3s,baz=151,slow=1.5,SNR=6.8						
KS15	**Wonju Array Si**	**14.19**	**315**	*e*P	**P**	**17 48 00.2**	**+1.4**
KSAR	**Wonju Array Be**	**14.19**	**315**	P	**P**	**17 48 00.2**	**+1.5**
KSAR	**Wonju Array Be**	**14.19**	**315**	P	**P**	**17 48 00.2**	**+1.5**
KSAR				ScP	**ScP**	**17 56 16.0**	**-1.5**
KS01	**Wonju Array Si**	**14.21**	**315**	*e*Pn	**P**	**17 47 58.2**	**-0.7**
KS01				*e*ScP	**ScP**	**17 56 14.9**	**-2.6**
GUMO	**Guam**	**14.92**	**163**	P	**P**	**17 48 08.4**	**+1.4**
	comp=Z,40nm,0.3s,baz=306,slow=2.3,SNR=25						
GUMO				S	**S**	**17 50 53.5**	**-0.1**
	comp=Z,3.6nm,0.3s,baz=142,slow=10,SNR=3.3						
GUMO	**Guam**	**14.92**	**163**	*e*P	**P**	**17 48 07.9**	**+0.9**
GUMO				*e*S	**S**	**17 50 53.5**	**-0.1**
GUMO	**Guam**	**14.92**	**163**	*e*Pn	**P**	**17 48 07.9**	**+0.9**
GUMO				*e*S	**S**	**17 50 53.5**	**-0.1**
INCN	**Inchon**	**15.02**	**312**	*e*Pn	**P**	**17 48 10.6**	**+2.6**
	comp=Z,240nm,1.6s						
ASAJ	**Asahikawa**	**16.14**	**5**	P	**Pn**	**17 48 21.1**	**+0.6**
	comp=Z,10.0nm,0.3s,baz=220,slow=9.8,SNR=78						
ASAJ				S	**S**	**17 51 13.4**	**-5.7**
ASAJ	**Asahikawa**	**16.14**	**5**	*e*P	**Pn**	**17 48 21.1**	**+0.6**
	comp=Z,90nm,0.7s						
ASAJ				S	**S**	**17 51 13.4**	**-5.7**
NACB	**Ninganchiao**	**17.45**	**262**	*e*P	**P**	**17 48 34.8**	**-0.1**
	comp=Z,32nm,1.1s						
YHNB	**Yeheng**	**17.51**	**263**	*e*P	**Pn**	**17 48 37.4**	**+0.3**
	comp=Z,66nm,0.7s						
USRK	**Ussuriysk Ar.**	**17.54**	**339**	P	**P**	**17 48 34.5**	**-

comp=Z,150nm,13.7s
HHC LR LR
comp=Z,120nm,10.3s
HHC LR LR
comp=Z,120nm,11.2s
ENH Enshi 27.18 282 *e*P **P** **17 50 10.9 +0.5**
comp=Z,13nm,0.7s
XAN Xi'an 27.69 290 P **P** **17 50 15.7 +0.8**
XAN pmax pmax
comp=Z,42nm,0.7s
XAN pmax pmax
comp=Z,43nm,5.4s
PEA0 Petropavlovsk- 28.09 22 *e*P **P** **17 50 18.9 +0.8**
PET Petropavlovsk 28.35 23 *e*P **P** **17 50 22.3 +1.9**
PET pmax pmax
comp=Z,7.0nm,1.1s
FAKI Fak Fak 31.79 196 *e*P **P** **17 50 51.3 +0.2**
comp=Z,27nm,1.1s
LZH Lanzhou 31.98 294 *e*P **P** **17 50 51.1 -1.8**
LZH pmax pmax
comp=Z,19nm,1.0s
MA2 Magadan 32.31 10 P **P** **17 50 56.5 +1.2**
comp=Z,27nm,0.8s,baz=203,slow=5.8,SNR=10
SONA0 Songino Array 33.04 316 *e*P **P** **17 51 02.0 +0.1**
comp=Z,3.2nm,0.9s
SONA0 *e*ScP **ScP** **17 57 05.4 -2.5**
SONA1 Songino Array 33.04 316 *e*P **P** **17 51 01.5 -0.4**
SONA1 *e*ScP **ScP** **17 57 04.9 -3.0**
SONM Songino Array 33.04 316 P **P** **17 51 02.0 +0.1**
comp=Z,1.2nm,0.4s,baz=124,slow=8.6,SNR=8.6
SONM ScP **ScP** **17 57 05.4 -2.5**
comp=Z,2.2nm,0.7s,baz=147,slow=3.9,SNR=8.6
YAK Yakutsk 34.76 351 *e*P **P** **17 51 16.5 +0.2**
YAK *e**PP **pP** **17 51 57.6 +2.9**
YAK *e* 17 52 44.2
YAK *e* 17 53 51.6
YAK *e*S **S** **17 56 32.0 -0.7**
YAK *e* 18 01 08.2
YAK pmax pmax
comp=Z,72nm,0.9s
YAK pmax pmax
comp=N,26nm,1.1s
YAK pmax pmax
comp=E,7.0nm,0.9s
YAK pmax pmax
comp=Z,41nm,1.7s
YAK pmax pmax
comp=N,55nm,2.3s
YAK pmax pmax
comp=E,40nm,2.8s
YAK smax smax
comp=N,187nm,2.7s
YAK smax smax
comp=E,134nm,3.2s
YAK Yakutsk 34.76 351 *e*P **P** **17 51 15.8 -0.5**
comp=E,72nm,0.8s
SMY Shemya 35.00 36 *e*P **P** **17 51 20.4 +1.9**
SMY pmax pmax
comp=Z,90nm,0.4s
SMY Shemya 35.00 36 *e*P **P** **17 51 20.4 +1.9**
comp=Z,90nm,0.4s
BOD Bodaibo 35.11 335 *e*P **P** **17 51 17.9 -1.5**
BOD pmax pmax
comp=Z,8.0nm,0.9s
GTA Gaotai 35.46 299 *e*P **P** **17 51 22.8 0.0**
NONG Nongkai 35.70 262 P **P** **17 51 26.9 +2.0**
comp=Z,60nm,0.7s
SEY Seymchan 35.76 9 P **P** **17 51 26.4 +1.6**
comp=Z,16nm,0.7s,baz=192,slow=8.0,SNR=33
SEY sP **sP** **17 52 21.4 -3.1**
comp=Z,4.7nm,0.8s,baz=120,slow=5.1,SNR=2.2
ZAK Zakamensk 35.96 319 *e*P **P** **17 51 25.6 -1.3**
ZAK pmax pmax
comp=Z,3.0nm,1.6s
TLY Talaya 36.30 321 *e*P P 17 51 34.5 +4.8
TLY pmax pmax
comp=Z,8.0nm,0.6s
UTTA Uttaradit 38.09 263 P **P** **17 51 46.8 +1.7**
comp=Z,3.3nm,0.8s
PBKT Sadao Pong 38.20 261 P **P** **17 51 48.0 +2.0**
comp=Z,16nm,0.9s
KAPI Kappang 38.49 215 *e*P **P** **17 51 48.2 -0.2**
comp=Z,22nm,1.1s
CMMT Chiang Mai 39.10 266 P **P** **17 51 54.9 +1.3**
comp=Z,8.4nm,1.4s,comp=Z,445nm
CHTO Chiang Mai 39.11 266 *e*P **P** **17 51 54.2 +0.6**
CHTO pmax pmax
comp=Z,14nm,1.4s
CHTO Chiang Mai 39.11 266 *e*P **P** **17 51 54.2 +0.6**
comp=Z,14nm,1.4s
KSM Kuching 39.16 233 *e*P **P** **17 51 54.5 +0.5**
comp=Z,8.8nm,1.2s
CM01 Chiang Mai Arr 39.24 265 *e*P **P** **17 51 55.4 +0.7**
CM01 *ep*P **pP** **17 52 32.5 -1.3**
CM31 Chiang Mai Arr 39.24 265 *e*P **P** **17 51 56.0 +1.3**
CM31 *ep*P **pP** **17 52 32.5 -1.3**
CMAR Chiang Mai Arr 39.24 265 P **P** **17 51 55.6 +0.9**
comp=Z,1.4nm,0.6s,baz=79,slow=4.9,SNR=16
CMAR pP **pP** **17 52 32.8 -1.0**
comp=Z,1.1nm,0.8s,baz=63,slow=6.6,SNR=3.2
CMAR LR LR 18 07 12.6
comp=Z,35nm,20.6s,baz=55,slow=34
MMRI Maumere 40.52 209 *e*P **P** **17 52 03.8 -1.4**
comp=Z,83nm,0.9s
MTN Manton Dam 41.64 194 *e*P **P** **17 52 13.7 -0.6**
comp=Z,56nm,0.7s
COEN Coen 41.81 176 *e*P **P** **17 52 15.2 -0.4**
comp=Z,21nm,0.6s
BILL Bilibino 42.89 14 *e*P **P** **17 52 24.9 +1.2**
BILL pmax pmax
comp=Z,12nm,1.2s
BILL Bilibino 42.89 14 *e*P **P** **17 52 25.1 +1.4**
comp=Z,58nm,2.0s
LSA Lhasa 43.03 285 *e*P **P** **17 52 27.4 +1.3**
LSA pmax pmax
comp=Z,20nm,1.8s
LSA Lhasa 43.03 285 *e*P **P** **17 52 27.4 +1.3**
comp=Z,20nm,1.8s
TIXI Tiksi 44.15 355‖ *e*P **P** **17 52 32.8 -0.9**
TIXI pmax pmax
comp=Z,8.0nm,0.6s
TIXI Tiksi 44.15 355 *e*P **P** **17 52 33.3 -0.4**
comp=Z,36nm,1.5s
JAGI Jajag, Banyuwa 44.36 219 *e*P **P** **17 52 35.7 -0.4**
comp=Z,29nm,1.0s
NIKH Nikolski High 44.63 42 *e*P **P** **17 52 38.1 +0.2**
comp=Z,57nm,1.0s
UNV Unalaska Valle 46.20 41 *e*P **P** **17 52 51.5 +1.4**
comp=Z,18nm,0.7s
AKUT Akutan 46.68 41 *e*P **P** **17 52 54.8 +1.0**
comp=Z,72nm,0.6s
PSI Prapat 46.95 245 *e*P **P** **17 52 57.2 +0.6**
PSI pmax pmax
comp=Z,6.0nm,0.5s
PSI Prapat 46.95 245 *e*P **P** **17 52 57.2 +0.6**
comp=Z,6.4nm,0.5s
JOHN Johnston Islan 47.22 93 *e*P **P** **17 52 58.9 +0.3**
comp=Z,233nm,1.1s
CISI Cisompet, Garu 47.45 227 *e*P **P** **17 52 58.6 -1.8**
comp=Z,174nm,1.6s
RAMN Ramite 47.54 282 *e*P **P** **17 52 59.6 -1.6**
comp=Z,38nm,0.5s
ZAA0 Zalesovo Array 47.84 319 *ep*P **pP** **17 53 45.2 +1.8**
ZAA0 *ep*P pP 17 53 46.2 +2.9
ZALV Zalesovo Beam 47.84 319 P **P** **17 53 01.9 -0.9**
comp=Z,2.5nm,0.4s,baz=86,slow=7.7,SNR=16
ZALV ScP **ScP** **17 58 02.9 -2.6**
comp=Z,2.9nm,0.7s,baz=111,slow=4.3,SNR=9.0
ZALV LR LR 18 12 36.4
comp=Z,49nm,19.5s,baz=70,slow=35
ZAA1 Zalesovo Array 47.84 319 *e*P **P** **17 53 01.9 -1.0**
ZAA1 *e*ScP **ScP** **17 58 02.9 -2.6**
GUN Gumba 47.93 283 *e*P **P** **17 53 06.1 +1.7**
comp=Z,33nm,0.4s
WRAB Tennant Creek 48.05 188 *e*P **P** **17 53 04.3 -0.5**
WRAB *e**PP **pP** **17 53 46.1 +0.7**
WRAB pmax pmax
comp=Z,81nm,0.9s
WRAB Tennant Creek 48.05 188 *e*P **P** **17 53 04.3 -0.5**
comp=Z,81nm,0.9s
WRAB *ep*P **pP** **17 53 46.1 +0.7**
WB2 Warramunga Arr 48.06 188 *e*P **P** **17 53 04.5 -0.4**
comp=Z,67nm,0.8s
WB2 *ep*P **pP** **17 53 44.7 -0.8**
WR1 Warramunga Arr 48.06 188 *e*P **P** **17 53 04.4 -0.5**
comp=Z,80nm,1.0s
WR1 *e*ScP **ScP** **17 58 03.9 -2.9**
WRA Warramunga Arr 48.06 188 P **P** **17 53 04.4 -0.5**
comp=Z,75nm,0.7s,baz=6.9,slow=7.8,SNR=224
WRA ScP **ScP** **17 58 03.9 -2.9**
comp=Z,2.2nm,0.8s,baz=4.3,slow=4.5,SNR=7.9
FITZ Fitzroy Crossi 48.08 199 *e*P **P** **17 53 05.0 0.0**
FITZ *ep*P **pP** **17 53 44.4 -1.2**
WC3 Warramunga Arr 48.08 188 *e*P **P** **17 53 04.4 -0.6**
comp=Z,66nm,0.6s
WC3 *ep*P **pP** **17 53 45.1 -0.5**
CTA Charters Tower 48.15 173 P **P** **17 53 05.7 +0.1**
CTA pmax pmax
comp=Z,15nm,1.3s
CTAO Charters Tower 48.15 173 *e*P **P** **17 53 05.1 -0.5**
CTAO pmax pmax
comp=Z,11nm,0.9s
CTAO Charters Tower 48.15 173 *e*P **P** **17 53 05.1 -0.5**
comp=Z,11nm,0.9s
PKIN Phulchoki 48.42 283 *e*P **P** **17 53 08.5 +0.4**
comp=Z,8.1nm,0.7s
KKN Kakani 48.47 283 *e*P **P** **17 53 09.3 +0.9**
MK01 Makanchi Array 48.76 309 *e*P **P** **17 53 09.4 -0.7**
MK01 *ep*P **pP** **17 53 49.4 -1.3**
MK31 Makanchi Array 48.76 309 *e*P **P** **17 53 09.3 -0.8**
MK31 *e**PP **pP** **17 53 49.1 -1.7**
MK31 Makanchi Array 48.76 309 *e*P **P** **17 53 09.3 -0.8**
MK31 *ep*P **pP** **17 53 49.1 -1.7**
MK32 Makanchi Array 48.76 309 *e*P **P** **17 53 09.4 -0.7**
MK32 *ep*P **pP** **17 53 49.4 -1.4**
MK32 *es*P **sP** **17 54 05.4 -5.8**
MK32 *e*ScP **ScP** **17 58 06.8 -2.8**
MKAR Makanchi Array 48.76 309 P **P** **17 53 09.4 -0.7**
comp=Z,0.8nm,0.3s,baz=85,slow=10,SNR=27
MKAR pP **pP** **17 53 49.4 -1.4**
comp=Z,2.2nm,0.7s,baz=92,slow=8.5,SNR=4.6
MKAR sP **sP** **17 54 05.4 -5.8**
comp=Z,1.6nm,0.5s,baz=84,slow=9.1,SNR=3.5
MKAR ScP **ScP** **17 58 06.8 -2.8**
comp=Z,2.5nm,0.5s,baz=79,slow=4.8,SNR=13
NVS Novosibirsk 48.90 320 *e*P **P** **17 53 11.0 +0.1**
NVS pmax pmax
comp=Z,14nm,1.5s
NVS pmax pmax
comp=E,9.0nm,1.2s
GKN Gorkha 48.97 284 *e*P **P** **17 53 13.2 +1.1**
MAKZ Makanchi 48.98 309 *e*P **P** **17 53 10.9 -0.8**
MAKZ *e**PP **pP** **17 53 50.6 -1.8**
MAKZ Makanchi 48.98 309 *e*P **P** **17 53 10.9 -0.8**
MAKZ *ep*P **pP** **17 53 50.6 -1.8**
SDPT Sand Point 49.91 40 *e*P **P** **17 53 18.7 +0.2**
comp=E,120nm,0.6s
PYUN Piuthan 50.36 284 *e*P **P** **17 53 23.9 +1.3**
comp=E,23nm,0.5s
PDGK Podgornoye 50.82 305 P **P** **17 53 25.0 -0.6**
PDGK pmax pmax
comp=Z,6.0nm,0.9s
CHGN Chignik 51.19 39 *e*P **P** **17 53 28.2 +0.1**
CHGN *ep*P **pP** **17 54 10.6 +1.4**
NRIK Noril'sk 51.26 339 P **P** **17 53 28.4 0.0**
comp=Z,19nm,0.7s,baz=111,slow=9.4,SNR=16
NRIK ScP **ScP** **17 58 16.9 -2.9**
comp=Z,2.8nm,0.5s,baz=123,slow=4.6,SNR=3.9
KURK Kurchatov 51.30 314 *e*P **P** **17 53 28.4 -0.6**
KURK Kurchatov 51.30 314 *e*P **P** **17 53 28.4 -0.6**
AS01 Alice Springs 51.78 188 *e*P **P** **17 53 32.2 -0.7**
AS01 *ep*P **pP** **17 54 14.4 +0.3**
AS31 Alice Springs 51.79 188 *e*P **P** **17 53 32.1 -0.8**
comp=Z,3.8nm,0.8s
AS31 *ep*P **pP** **17 54 13.4 -0.8**
AS31 *e*ScP **ScP** **17 58 19.9 -2.8**
AS31 *e*S **S** **18 00 41.3 +0.4**
ASAR Alice Springs 51.79 188 P **P** **17 53 32.2 -0.8**
comp=Z,7.0nm,0.6s,baz=7.0,slow=6.4,SNR=184
ASAR pP **pP** **17 54 17.6 +3.5**
comp=Z,3.5nm,0.6s,baz=15,slow=13,SNR=4.4
ASAR ScP **ScP** **17 58 19.9 -2.8**
comp=Z,0.9nm,0.6s,baz=4.9,slow=4.7,SNR=6.9
ASAR S **S** **18 00 41.3 +0.4**
comp=Z,1.5nm,0.8s,baz=20,slow=23,SNR=4.8
MBWA Marble Bar 52.88 205 *e*P **P** **17 53 41.3 +0.4**
comp=Z,23nm,0.6s
SVW2 Sparrevohn 53.29 33 *e*P **P** **17 53 45.6 +2.1**
comp=Z,10nm,0.6s
SVW2 *ep*P **pP** **17 54 27.0 +2.1**
TT01 Tatalina 53.37 31 *e*P **P** **17 53 45.5 +1.4**
TTA Tatalina 53.38 31 *e*P **P** **17 53 46.6 +2.4**
TTA pmax pmax
comp=Z,11nm,1.2s
TTA Tatalina 53.38 31 *e*P **P** **17 53 46.6 +2.4**
comp=Z,11nm,1.2s
TKM2 Tokmak 2 53.70 304 *e*P **P** **17 53 46.1 -0.9**
TKM2 pmax pmax
comp=Z,5.0nm,1.0s
TKM2 Tokmak 2 53.70 304 *e*P **P** **17 53 46.1 -0.9**
comp=Z,4.7nm,1.0s
KSH Kashi 53.86 300 *e*P **P** **17 53 52.0 +3.8**
KSH *ep*P pP 17 54 37.3 +7.7
KSH *e*PcP **PcP** **17 54 54.2 +2.8**
KSH *es*P sP 17 55 01.0 +11
KSH PcS **PcS** **17 58 52.4 +1.4**
KSH S **S** **18 01 10.1 +1.1**
KSH SS **SS** **18 04 54.1 +1.7**
KSH pmax pmax
comp=Z,31nm,5.0s
KSH LR LR
comp=Z,85nm,6.4s
KSH LR LR
comp=Z,90nm,6.8s
KSH LR LR
comp=Z,150nm,6.3s
EIDS Eidsvold 54.05 168 *e*P **P** **17 53 48.9 -0.5**
comp=Z,48nm,2.0s
OHAK Old Harbor 54.09 38 *e*P **P** **17 53 49.7 +0.4**
comp=Z,22nm,0.8s
KDAK Kodiak Island 54.49 37 *e*P **P** **17 53 53.2 +0.9**
KDAK pmax pmax
comp=Z,99nm,1.0s
KDAK Kodiak Island 54.49 37 *e*P **P** **17 53 53.2 +0.9**
comp=Z,99nm,1.0s
AAK Ala-Archa 54.53 304‖ *e*P **P** **17 53 52.3 -0.7**
AAK pmax pmax
comp=Z,16nm,2.5s
AAK Ala-Archa 54.53 304 *e*P **P** **17 53 50.9 -2.2**
comp=Z,2.7nm,0.6s
RSO Redoubt South 54.60 34 *e*P **P** **17 53 54.5 +1.3**
RSO *ep*P **pP** **17 54 34.7 0.0**
PPLA Purkeypile 55.11 31 *e*P **P** **17 53 58.6 +1.8**
comp=Z,15nm,0.8s
CAST Castle Rocks 55.21 30 *e*P **P** **17 53 59.5 +2.1**
comp=Z,29nm,0.8s
CNPM China Poot 55.29 35 *e*P **P** **17 53 58.5 +0.5**
comp=Z,20nm,0.8s
BRLK Bradley Lake 55.48 35 *e*P **P** **17 53 59.3 0.0**
comp=Z,17nm,0.9s
SUA Susitna One 55.66 33 *e*P **P** **17 54 01.7 +1.0**
comp=Z,14nm,0.9s
KIP Kipapa 55.70 82‖ *e*P **P** **17 54 02.9 +1.5**
DZM Mont Dzumac 55.73 151 *e*P **P** **17 54 00.5 -1.1**
comp=Z,25nm,0.9s
KTH Kantishna Hill 55.75 30 *e*P **P** **17 54 02.5 +1.3**
comp=Z,11nm,0.9s
BPAW Bear Paw Mtn. 55.77 30 *e*P **P** **17 54 03.1 +1.8**
comp=Z,9.3nm,0.6s
MLY Manley 55.98 29 *e*P **P** **17 54 04.9 +2.0**
comp=Z,13nm,0.8s
TRF Thorofare Moun 56.02 30 *e*P **P** **17 54 04.9 +1.6**
comp=Z,15nm,0.8s
VOSK Vostochnaya 56.03 317 *e*P **P** **17 54 02.7 -0.7**
VOSK pmax pmax
comp=Z,9.0nm,0.7s
VOSK Vostochnaya 56.03 317 *e*P **P** **17 54 02.7 -0.7**
comp=Z,9.3nm,0.7s
RC01 Rabbit Creek A 56.12 33 *e*P **P** **17 54 04.6 +0.8**
comp=Z,17nm,0.9s
CHKZ Chkalovo 56.21 318 P **P** **17 54 03.7 -0.9**
CHKZ pmax pmax
comp=Z,8.0nm,0.6s
SEW Seward 56.22 34 *e*P **P** **17 54 05.3 +0.8**
comp=Z,20nm,0.8s
BVA0 Borovoye Array 56.38 317 P **P** **17 54 05.4 -0.4**
BVA0 pmax pmax
comp=Z,10.0nm,0.6s
BVAR Borovoye Array 56.38 317 P **P** **17 54 05.4 -0.4**
comp=Z,12nm,0.5s,baz=94,slow=7.4,SNR=104
BVAR ScP **ScP** **17 58 39.8 -2.7**
comp=Z,1.7nm,0.7s,baz=97,slow=6.1,SNR=4.7
PMR Palmer 56.43 33 *e*P **P** **17 54 06.7 +0.7**
PMR pmax pmax
comp=Z,15nm,0.7s
PMR Palmer 56.43 33 *e*P **P** **17 54 06.7 +0.7**
comp=Z,16nm,0.7s
BRVK Borovoye 56.44 317 *c iP* **P** **17 54 06.1 -0.1**
BRVK pmax pmax
comp=Z,28nm,0.7s
BRVK Borovoye 56.44 317 *e*P **P** **17 54 06.3 0.0**
comp=Z,11nm,0.6s
BWN Browne 56.44 30 *e*P **P** **17 54 08.7 +2.6**
comp=Z,62nm,1.1s
COLD Coldfoot 56.46 26 *e*P **P** **17 54 08.0 +1.8**
comp=Z,10nm,1.3s
MCK McKinley 56.65 30 *e*P **P** **17 54 08.7 +1.1**
MCK pmax pmax
comp=Z,25nm,0.8s
MCK McKinley 56.65 30 *e*P **P** **17 54 08.7 +1.1**
comp=Z,25nm,0.8s
RND Reindeer 56.66 31 *e*P **P** **17 54 08.4 +0.7**
RND pmax pmax
comp=Z,17nm,0.6s
RND Reindeer 56.66 31 *e*P **P** **17 54 08.3 +0.7**
comp=Z,17nm,0.6s
SML Sawmill 56.82 32 *e*P **P** **17 54 09.1 +0.3**
SML pmax pmax
comp=Z,23nm,0.8s
SML Sawmill 56.82 32 *e*P **P** **17 54 09.1 +0.3**
comp=Z,23nm,0.8s
MDM Murphy Dome 57.03 29 *e*P **P** **17 54 11.8 +1.5**
comp=Z,9.5nm,0.6s
WRH Wood River Hil 57.06 29 *e*P **P** **17 54 11.7 +1.3**
comp=Z,4.9nm,0.8s
COLA College 57.19 29 *e*P **P** **17 54 13.7 +2.4**
COLA pmax pmax
comp=Z,7.0nm,0.9s
CCB Clear Creek Bu 57.20 29 *e*P **P** **17 54 12.7 +1.3**
comp=Z,3.8nm,0.8s
ZRNK Zerenda 57.22 317 *e*P **P** **17 54 11.3 -0.4**
ZRNK pmax pmax
comp=Z,8.0nm,0.6s
ZRNK Zerenda 57.22 317 *e*P **P** **17 54 11.3 -0.4**
comp=Z,7.8nm,0.6s
DHY Denali Highway 57.31 31 *e*P **P** **17 54 13.1 +0.7**
comp=Z,3.7nm,0.7s
KK31 Karatay Array 57.37 305 P **P** **17 54 12.8 -0.1**
KK31 pmax pmax
comp=Z,2.0nm,0.5s
KKAR Karatay Array 57.37 305 *e*P **P** **17 54 12.4 -0.5**
KKAR Karatay Array 57.37 305 *e*P **P** **17 54 12.4 -0.5**
HDA Harding Lake 57.55 29 *e*P **P** **17 54 14.4 +0.5**
comp=Z,9.1nm,0.6s
IL1 Eielson Array 57.60 29 *e*P **P** **17 54 14.0 -0.2**
ILAR Eielson Array 57.60 29 P **P** **17 54 14.5 +0.3**
comp=Z,2.4nm,0.6s,baz=262,slow=5.0,SNR=34
ILB Eielson Array 57.60 29 *e*P **P** **17 54 14.2 +0.1**
DIV Divide 58.04 33 *e*P **P** **17 54 16.6 -0.8**
comp=Z,25nm,1.4s
DIV *ep*P **pP** **17 55 00.7 +1.2**
PAX Paxson 58.18 31 *e*P **P** **17 54 20.0 +1.7**
PAX pmax pmax
comp=Z,22nm,0.6s
PAX Paxson 58.18 31 *e*P **P** **17 54 20.0 +1.7**
comp=Z,22nm,0.6s
MSVF Nonsavu 58.20 137‖ *e*P **P** **17 54 20.6 +1.6**
MSVF pmax pmax
comp=Z,62nm,2.3s
MSVF Nonsavu 58.20 137 *e*P **P** **17 54 20.4 +1.4**
comp=Z,25nm,0.7s
BMRM Bremner River 58.62 33 *e*P **P** **17 54 22.8 +1.4**
comp=Z,27nm,1.0s
DOT Dot Lake 58.81 30 *e*P **P** **17 54 23.2 +0.6**
comp=Z,18nm,0.8s
MENT Mentasta 58.98 31 *e*P **P** **17 54 25.8 +2.0**
comp=Z,8.8nm,0.6s
CRQM Cirque 59.34 34 *e*P **P** **17 54 28.8 +2.3**
comp=Z,19nm,0.7s
STKA Stephens Creek 59.58 179 P **P** **17 54 27.2 -1.0**
comp=Z,5.4nm,0.6s,baz=338,slow=8.3,SNR=19
STKA Stephens Creek 59.58 179 *e*P **P** **17 54 27.2 -1.0**
STKA pmax pmax
comp=Z,15nm,1.9s
STKA Stephens Creek 59.58 179 *e*P **P** **17 54 27.2 -1.0**
comp=Z,14nm,1.9s
FORT Forrest 59.68 192 *e*P **P** **17 54 28.8 -0.1**
BALM Baldy 59.71 33 *e*P **P** **17 54 30.5 +1.5**
BALM pmax pmax
comp=Z,8.0nm,0.7s
BALM Baldy 59.71 33 *e*P **P** **17 54 30.5 +1.5**
comp=Z,8.0nm,0.7s
EGAK Eagle 60.05 29 *e*P **P** **17 54 32.0 +1.0**
comp=Z,18nm,1.8s
DAWY Dawson 60.86 30 *e*P **P** **17 54 37.8 +1.2**
comp=Z,10.0nm,1.4s
SVE Sverdlovsk 61.60 322 *e*P **P** **17 54 41.5 -0.1**
SVE pmax pmax
comp=Z,15nm,0.8s
HYT Haines Junctio 62.08 33 *e*P **P** **17 54 47.5 +2.5**
INK Inuvik 62.79 25 *e*P **P** **17 54 49.9 +0.6**
INK pmax pmax
comp=Z,5.0nm,0.6s
INK Inuvik 62.79 25 *e*P **P** **17 54 49.9 +0.6**
comp=Z,5.1nm,0.6s
ARU Arti 62.80 322 *d iP* **P** **17 54 48.8 -0.8**
ARU 17 55 23.0
ARU *PP **pP** **17 55 32.9 +0.6**
ARU 17 57 06.7
ARU S **S** **18 03 03.6 -0.2**
ARU SS **SS** **18 07 05.4 -6.2**
ARU pmax pmax
comp=Z,17nm,0.7s
ARU Arti 62.80 322 *e*P **P** **17 54 48.9 -0.8**
comp=Z,18nm,0.8s
SOKR Solikamsk 63.17 325 *e*P **P** **17 54 49.5 -2.4**
SOKR pmax pmax
comp=Z,21nm,1.2s
AB31 Akbulak array 63.41 314 P **P** **17 54 52.4 -1.3**
AB31 pmax pmax
comp=Z,5.0nm,0.7s
ABKAR Akbulak array 63.41 314 *e*P **P** **17 54 52.7 -1.1**
ABKAR *ep*P **pP** **17 55 34.5 -2.0**
AKTO Aktyubinsk 64.35 315 P **P** **17 54 59.6 -0.3**
comp=Z,3.9nm,0.7s,baz=96,slow=8.8,SNR=15
KLMR Klimovskoe 71.05 329 *e*P **P** **17 55 39.4 -2.1**
KLMR *e* 17 55 58.2
KLMR *e* 17 58 18.8
KLMR pmax pmax
comp=Z,10.0nm,1.1s
YKA Yellowknife Ar 72.01 28 P **P** **17 55 47.8 +0.6**
comp=Z,4.2nm,0.5s,baz=297,slow=6.2,SNR=32
YKA *ep*P **pP** **17 56 33.8 +2.8**
comp=Z,2.0nm,0.7s,baz=295,slow=6.2,SNR=3.2
YKA PKKPbc **PKKPbc** **18 15 37.1 +3.3**
comp=Z,0.3nm,0.3s,baz=143,slow=3.6,SNR=5.6
YKB5 Yellowknife Ar 72.01 28 *e*P **P** **17 55 47.9 +0.6**
YKB5 *ep*P **pP** **17 56 33.8 +2.8**
ARA0 ARCESS Array S 72.18 340 *e*P **P** **17 55 48.4 +0.1**
ARCES ARCESS Array B 72.18 340 P **P** **17 55 48.4 +0.1**
comp=Z,4.3nm,0.5s,baz=73,slow=8.5,SNR=34
LLLB Lillooet 73.38 41 *e*P **P** **17 55 57.3 +1.7**
comp=Z,14nm,0.9s
NLWA Neilton Lookou 73.47 45 *e*P **P** **17 55 57.8 +1.6**
comp=Z,15nm,1.1s
NLWA *ep*P **pP** **17 56 38.8 -1.4**
A04D Lummi Island 73.65 43 P **P** **17 55 58.9 +1.8**
baz=294
B05A Bryant 74.21 44 P **P** **17 56 02.2 +1.9**
baz=294
JCW Jim Creek 74.34 44 *e*P **P** **17 56 03.1 +1.9**
G03D McMinnville, O 74.73 47 P **P** **17 56 05.5 +2.0**
baz=294
OBN Obninsk 74.94 325 *i* P **P** **17 56 04.2 -0.2**
OBN *i* *PP **pP** **17 56 47.5 -1.1**
OBN pmax pmax
comp=Z,15nm,0.8s
F04A Amboy 74.97 46 *e*P **P** **17 56 07.0 +2.1**
LON Longmire 75.01 45 *e*P **P** **17 56 04.8 -0.4**
LON pmax pmax
comp=Z,12nm,1.5s
LON Longmire 75.01 45 *e*P **P** **17 56 04.8 -0.4**
comp=Z,12nm,1.5s
I03D Drain, OR 75.31 48 P **P** **17 56 08.9 +2.1**
baz=295
VSR Storozhevoye 75.31 320 *e*P **P** **17 56 05.9 -0.7**
VSR pmax pmax

LTY Liberty 75.50 44 eP P 17 56 09.3 +1.3
comp=Z,9.5nm,0.5s
TBM Table Mountain 75.58 44 eP P
L02D Cave Junction, 75.78 50 P P 17 56 11.2 +1.7
baz=295
B08A Colville Reser 75.83 43 eP P 17 56 10.7 +0.9
comp=Z,19nm,0.8s
I04A Tendick Farm, 75.88 48 P P 17 56 11.6 +1.5
baz=295
G05D Wamic, OR 75.97 46 P P 17 56 12.4 +1.8
baz=296
KHMM Horse Mountain 76.24 51 eP P 17 56 13.8 +1.4
comp=Z,22nm,0.9s
KBZ Khabaz 76.31 312 P P 17 56 12.6 +0.1
comp=Z,8.0nm,0.8s,baz=87,slow=4.0,SNR=18
KBZ pP pP 17 56 54.9 -1.9
comp=Z,5.3nm,1.0s,baz=282,slow=1.4,SNR=2.9
I05D Terrebonne, OR 76.34 47 P P 17 56 14.4 +1.6
baz=296
KIV Kislovodsk 76.35 313 eP P 17 56 13.9 +1.0
KIV pmax pmax
comp=Z,9.0nm,1.1s
KIV MLR MLR
comp=Z,32nm,18.0s
G06A Carlson Farm, 76.40 46 eP P 17 56 14.1 +1.0
comp=Z,16nm,1.1s
FIA1 FINESS Array S 76.47 333 eP P 17 56 12.1 -0.9
FIA0 FINESS Array S 76.47 333 eP P 17 56 12.6 -0.5
FIA0 e*PP pP 17 57 01.5 +4.2
FIA0 FINESS Array S 76.47 333 eP P 17 56 12.6 -0.5
FIA0 epP pP 17 57 01.5 +4.2
FINES FINESS Array B 76.47 333 P P 17 56 12.6 -0.5
comp=Z,2.9nm,0.5s,baz=62,slow=5.9,SNR=32
FINES pP pP 17 57 01.5 +4.2
comp=Z,3.2nm,0.4s,baz=74,slow=5.1,SNR=3.0
VTHM Trough 76.47 46 P P 17 56 15.1 +1.6
YBH Yreka Blue Hor 76.56 50 eP P 17 56 15.8 +1.7
YBH pmax pmax
comp=Z,15nm,0.8s
YBH Yreka Blue Hor 76.56 50 eP P 17 56 15.8 +1.7
comp=Z,15nm,0.8s
M02C Callahan 76.61 50 P P 17 56 16.4 +2.0
baz=296,SNR=5.4
D08A Wollman Farm, 76.66 44 eP P 17 56 15.9 +1.4
comp=Z,14nm,0.8s
C09A Chrisman Ranch 76.72 43 eP P 17 56 16.4 +1.6
comp=Z,22nm,0.7s
K04D Chiloquin, OR 76.82 49 P P 17 56 17.3 +1.7
baz=296
KCPM Cahto Peak 76.84 52 eS S 18 05 51.4 +3.1
N02D Trinity Center 76.89 51 P P 17 56 17.9 +1.9
baz=296,SNR=5.1
EDM Edmonton 76.93 36 eP P 17 56 16.8 +0.9
EDM pmax pmax
comp=Z,34nm,1.1s
EDM Edmonton 76.93 36 eP P 17 56 16.8 +0.9
comp=Z,34nm,1.1s
M04C Macdoel 77.13 50 P P 17 56 18.9 +1.6
baz=296,SNR=6.2
WDC Whiskeytown Da 77.18 51 eP P 17 56 18.7 +1.2
WDC pmax pmax
comp=Z,11nm,1.0s
WDC Whiskeytown Da 77.18 51 eP P 17 56 18.6 +1.2
comp=Z,11nm,1.0s
NEW Newport 77.19 42 P P 17 56 18.9 +1.4
baz=298
NEW Newport 77.19 42 eP P 17 56 18.5 +1.1
NEW pmax pmax
comp=Z,20nm,0.9s
NEW Newport 77.19 42 eP P 17 56 18.5 +1.1
comp=Z,20nm,0.9s
K05A Summer Lake 77.34 48 eP P 17 56 20.0 +1.4
comp=Z,25nm,0.9s
G08A Pilot Rock 77.44 45 eP P 17 56 20.3 +1.4
comp=Z,28nm,1.7s
O03D Paynes Creek 77.81 51 P P 17 56 21.9 +0.8
baz=296,SNR=6.0
VSU Vasula 77.88 331 eP P 17 56 21.7 +0.8
VSU pmax pmax
comp=Z,39nm,1.3s
MOD Modoc Plateau 78.10 49 eP P 17 56 23.7 +0.9
comp=Z,8.1nm,0.6s
F10A Beach Ranch, E 78.20 44 eP P 17 56 24.0 +0.9
comp=Z,7.7nm,0.8s
ORV Oroville 78.35 51 eP P 17 56 24.3 +0.4
ORV pmax pmax
comp=Z,17nm,1.1s
ORV Oroville 78.35 51 eP P 17 56 24.3 +0.4
comp=Z,17nm,1.1s
WALA Waterton Lakes 78.68 40 eP P 17 56 27.0 +1.3
comp=Z,24nm,0.6s
BMO Blue Mountains 78.68 45 eP P 17 56 26.9 +1.1
comp=Z,18nm,0.9s
BSMT Bassoo Peak 78.77 42 eP P 17 56 27.9 +1.6
BLMT Blacktail Moun 78.94 41 eP P 17 56 28.7 +1.4
WVOR Wild Horse Val 78.96 48 eP P 17 56 28.6 +1.2
WVOR pmax pmax
comp=Z,7.0nm,0.8s
WVOR Wild Horse Val 78.96 48 eP P 17 56 28.6 +1.2
comp=Z,7.0nm,0.8s
AFDM Forest Hills D 78.99 52 eP P 17 56 28.1 +0.6
comp=Z,5.6nm,0.9s
JTMT Jette 79.11 42 eP P 17 56 29.6 +1.5
YBMT Yellow Bay 79.22 41 eP P 17 56 30.2 +1.5
SWMT Swartz Lake 79.40 42 eP P 17 56 30.9 +1.2
PAHR Pah Rah Range 79.73 51 eP P 17 56 33.0 +1.3
comp=Z,19nm,0.9s
MSO Missoula 79.77 42 P P 17 56 32.4 +0.7
baz=300
MSO Missoula 79.77 42 eP P 17 56 32.4 +0.7
comp=Z,4.0nm,0.7s
CMB Columbia Colle 79.81 52 eP P 17 56 33.0 +1.0
CMB e*PP pP 17 57 17.2 +0.6
CMB pmax pmax
comp=Z,16nm,0.9s
CMB Columbia Colle 79.81 52 eP P 17 56 33.0 +1.0
comp=Z,16nm,0.9s
CMB epP pP 17 57 17.2 +0.6
PNTR Pine Nut 79.87 51 eP P 17 56 34.5 +2.0
comp=Z,26nm,0.8s
CHMT Chamberlain Mo 80.14 42 eP P 17 56 34.5 +0.7
YERR Yerington 80.17 51 eP P 17 56 35.3 +1.3
comp=Z,29nm,1.0s
WAKR Walker 80.26 52 eP P 17 56 36.1 +1.5
comp=Z,15nm,0.9s
MFID Camas Ranch 80.30 46 eP P 17 56 35.8 +1.2
comp=Z,18nm,0.8s
BMN Battle Mountai 80.85 49 eP P 17 56 38.7 +1.1
BMN pmax pmax
comp=Z,18nm,1.3s
BMN Battle Mountai 80.85 49 eP P 17 56 38.7 +1.1
comp=Z,18nm,1.3s
PAGB Antelope Grade 80.98 54 eP P 17 56 39.8 +1.6
comp=Z,20nm,0.9s
AKASG Malin Array Be 81.01 323 P P 17 56 38.0 0.0
comp=Z,2.9nm,0.7s,baz=54,slow=6.6,SNR=5.0
AKBB Malin Array Si 81.01 323 eP P 17 56 37.6 -0.4
AKBB pmax pmax
comp=Z,5.0nm,0.6s
AKBB Malin Array Si 81.01 323 eP P 17 56 37.6 -0.4
comp=Z,5.4nm,0.6s
KIEV Kiev 81.02 323 eP P 17 56 37.8 -0.2
KIEV pmax pmax
comp=Z,4.0nm,0.6s
HLID Hailey 81.12 45 P P 17 56 40.5 +1.5
baz=300,SNR=14
HLID Hailey 81.12 45 eP P 17 56 40.4 +1.4
comp=Z,8.0nm,0.8s
LRM Limekiln Ridge 81.17 43 eP P 17 56 40.9 +1.6
DLMT Dillon 81.33 43 eP P 17 56 40.9 +0.9
comp=Z,9.0nm,0.9s
MCMT McKenzie Canyo 81.45 44 eP P 17 56 41.8 +1.0
EGMT Eagleton 81.58 40 P P 17 56 42.3 +1.1
baz=303,SNR=8.5
EGMT Eagleton 81.58 40 eP P 17 56 41.9 +0.7
comp=Z,17nm,0.8s
PKM Mcpherson Peak 81.69 55 P P 17 56 43.7 +1.5
baz=298,SNR=7.8
FFC Flin Flon 81.71 31 eP P 17 56 42.2 +0.6
FFC pmax pmax
comp=Z,12nm,0.9s
FFC Flin Flon 81.71 31 eP P 17 56 42.1 +0.6
comp=Z,12nm,0.9s
BOZ Bozeman (W) 81.76 42 P P 17 56 43.7 +1.4
baz=302,SNR=14
BOZ Bozeman (W) 81.76 42 eP P 17 56 43.7 +1.4
BOZ pmax pmax
comp=Z,6.0nm,0.6s
BOZ Bozeman (W) 81.76 42 eP P 17 56 43.7 +1.4
comp=Z,6.2nm,0.6s
TIN Tinemaha, Big 81.79 52 P P 17 56 44.0 +1.5
baz=299
SBC Santa Barbara 81.97 55 P P 17 56 44.5 +1.1
baz=298
NC405 NORSAR Array S 81.98 338 eP P 17 56 42.3 -0.6
ELK Elko 82.01 48 eP P 17 56 45.2 +1.4
ELK pmax pmax
comp=Z,12nm,1.1s
ELK Elko 82.01 48 eP P 17 56 45.2 +1.4
comp=Z,12nm,1.1s
CWC Cottonwood Cre 82.19 53 P P 17 56 45.5 +0.8
baz=299
NB2 NORSAR Subarra 82.21 338 P P 17 56 43.2 -0.9
comp=Z,5.4nm,1.1s,baz=46,slow=5.1
NB200 NORSAR Array S 82.21 338 eP P 17 56 43.3 -0.8
NB200 epP pP 17 57 33.0 +4.0
NOA NORSAR Array B 82.21 338 P P 17 56 43.3 -0.8
comp=Z,2.0nm,0.7s,baz=47,slow=5.0,SNR=10
NOA pP pP 17 57 33.0 +4.0
comp=Z,1.8nm,0.6s,baz=44,slow=5.0,SNR=2.9
SCZ2 Santa Cruz Isl 82.25 56 P P 17 56 45.8 +0.9
baz=299
ISA Isabella, Lake 82.28 54 P P 17 56 45.9 +0.8
baz=299
ISA Isabella, Lake 82.28 54 eP P 17 56 44.8 -0.3
ISA pmax pmax
comp=Z,5.0nm,0.6s
ISA Isabella, Lake 82.28 54 eP P 17 56 44.8 -0.3
comp=Z,5.2nm,0.6s
ARVC Arvin 82.29 54 P P 17 56 46.1 +1.1
baz=299
YHB Horse Butte 82.49 43 eP P 17 56 47.8 +1.6
comp=Z,20nm,0.9s
BLG Laguna Peak, P 82.61 55 P P 17 56 47.7 +1.0
baz=299
DAC Darwin (Calif) 82.61 53 eP P 17 56 47.7 +0.7
DAC pmax pmax
comp=Z,10.0nm,1.3s
DAC Darwin (Calif) 82.61 53 eP P 17 56 47.7 +0.7
comp=Z,10.0nm,1.3s
SNCC San Nicolas Is 82.68 56 P P 17 56 48.9 +1.8
baz=299
MPMC Manual Prospec 82.79 53 P P 17 56 49.0 +1.1
baz=300,SNR=11
GCMT Greycliff 82.84 42 eP P 17 56 48.0 +0.1
GCMT epP pP 17 57 32.2 -0.6
LRMC Laurel Mtn Rad 82.94 54 P P 17 56 49.5 +1.0
baz=299,SNR=14
R11A Troy Canyon, C 82.98 50 P P 17 56 50.3 +1.5
baz=300
R11A Troy Canyon, C 82.98 50 eP P 17 56 49.8 +1.0
comp=Z,16nm,1.1s
YPP Pitchstone Pla 82.98 43 eP P 17 56 50.8 +1.9
comp=Z,3.4nm,0.7s
EDW2 Edwards Air Fo 83.01 54 P P 17 56 50.2 +1.3
baz=299,SNR=16
FURC Furnace Creek, 83.03 52 P P 17 56 50.5 +1.7
baz=300
H17A Grant Village 83.06 43 P P 17 56 52.3 +3.1
baz=303
H17A Grant Village 83.06 43 eP P 17 56 52.2 +3.1
comp=Z,17nm,1.0s
HVU Hansel Valley 83.08 46 eP P 17 56 50.8 +1.6
HVU pmax pmax
comp=Z,13nm,0.7s
HVU Hansel Valley 83.08 46 eP P 17 56 50.8 +1.6
comp=Z,13nm,0.7s
IMW Indian Meadow 83.10 44 eP P 17 56 51.4 +1.9
comp=Z,11nm,0.8s
FLWY Flagg Ranch 83.15 43 eP P 17 56 52.1 +2.5
comp=Z,15nm,1.0s
TPNV Topopah Spring 83.22 52 P P 17 56 51.1 +1.1
baz=300
TPNV Topopah Spring 83.22 52 eP P 17 56 50.8 +0.8
TPNV pmax pmax
comp=Z,16nm,0.6s
TPNV Topopah Spring 83.22 52 eP P 17 56 50.8 +0.8
comp=Z,16nm,0.6s
MOOW Moose Ponds 83.30 44 eP P 17 56 52.0 +1.6
comp=Z,4.6nm,0.8s
TPAW Teton Pass 83.31 44 eP P 17 56 52.4 +1.9
comp=Z,8.1nm,0.8s
BGU Big Grassy Mou 83.36 47 eP P 17 56 51.9 +1.2
comp=Z,4.6nm,0.7s
CIS Catalina Islan 83.42 56 P P 17 56 51.8 +0.9
baz=299
RLMT Red Lodge 83.44 42 P P 17 56 52.9 +1.9
baz=304,SNR=8.7
RLMT Red Lodge 83.44 42 eP P 17 56 52.7 +1.6
comp=Z,15nm,0.6s
REDW Red Top Meadow 83.44 44 eP P 17 56 52.7 +1.6
comp=Z,14nm,1.3s
LOHW Long Hollow 83.46 44 eP P 17 56 52.6 +1.5
comp=Z,14nm,1.5s
SCI2 San Clemente I 83.53 56 P P 17 56 52.2 +0.8
baz=299
SPUT South Promonto 83.53 46 eP P 17 56 53.1 +1.6
comp=Z,10nm,0.9s
BFSC Mount Baldy Ra 83.56 55 P P 17 56 52.7 +1.0
baz=300
AHID Auburn Hatcher 83.61 45 eP P 17 56 53.3 +1.3
comp=Z,16nm,1.1s
AHID epP pP 17 57 38.8 +1.8
GSC Goldstone, Bar 83.65 53 P P 17 56 53.3 +1.2
baz=300,SNR=13
GSC Goldstone, Bar 83.65 53 eP P 17 56 53.1 +1.0
GSC pmax pmax
comp=Z,13nm,0.9s
GSC Goldstone, Bar 83.65 53 eP P 17 56 53.1 +1.0
comp=Z,13nm,0.9s
SHOC Shoshone, Teco 83.72 53 P P 17 56 54.3 +1.9
baz=300
DUG Dugway, Tooele 83.88 48 P P 17 56 54.9 +1.6
baz=302
DUG Dugway, Tooele 83.88 48 eP P 17 56 54.5 +1.2
DUG pmax pmax
comp=Z,31nm,1.1s
DUG Dugway, Tooele 83.88 48 eP P 17 56 54.5 +1.2
comp=Z,31nm,1.1s
HWUT Hardware Ranch 83.94 46 eP P 17 56 54.8 +1.2
comp=Z,31nm,0.8s
BBRC Big Bear Solar 84.08 54 P P 17 56 56.0 +1.5
baz=300
SHPR Sheep Range 84.20 52 eP P 17 56 56.9 +1.9
comp=Z,16nm,0.9s
TUQ Turquoise Moun 84.20 53 P P 17 56 56.3 +1.3
baz=300,SNR=20
MURC Murrieta 84.21 55 P P 17 56 56.3 +1.3
baz=300
HEC Hector,Ludlow 84.22 54 P P 17 56 56.2 +1.2
baz=300,SNR=13
TCUT Toone Canyon 84.30 46 eP P 17 56 56.9 +1.4
comp=Z,37nm,0.7s
BR101 Keskin Array S 84.31 312 eP P 17 56 55.4 0.0
BR101 epP pP 17 57 39.2 -1.3
CTU Camp Tracy 84.31 47 eP P 17 56 56.5 +1.1
comp=Z,46nm,0.8s
BR131 Keskin Array S 84.31 312 eP P 17 56 55.1 -0.4
BR131 epP pP 17 57 38.9 -1.7
BRTR Keskin Array B 84.31 312 P P 17 56 55.4 0.0
comp=Z,1.8nm,0.6s,baz=109,slow=3.7,SNR=11
BRTR pP pP 17 57 39.2 -1.3
comp=Z,3.8nm,0.9s,baz=100,slow=3.8,SNR=6.0
LAO LASA Array 84.31 39 P P 17 56 56.4 +1.2
baz=305
LAO LASA Array 84.31 39 eP P 17 56 54.7 -0.6
comp=Z,18nm,1.0s
NLU North Lily Min 84.49 47 eP P 17 56 57.6 +1.1
comp=Z,8.5nm,0.8s
JLU Jonelle 84.55 47 eP P 17 56 58.3 +1.5
comp=Z,18nm,0.8s
BW06 Boulder Array 84.56 44 P P 17 56 57.9 +1.1
baz=304
BW06 Boulder Array 84.56 44 eP P 17 56 57.3 +0.5
PD31 Pinedale Array 84.56 44 eP P 17 56 57.4 +0.6
PDAR Pinedale Array 84.56 44 P P 17 56 57.9 +1.1
comp=Z,10nm,1.0s,baz=264,slow=3.0,SNR=35
A25A Svangstu Ranch 84.67 36 P P 17 56 58.1 +1.1
baz=307
GMRC Granite Mounta 84.72 53 P P 17 56 58.9 +1.3
baz=301,SNR=24
PFO Pinyon Flats O 84.74 55 P P 17 56 58.8 +1.1
baz=300,SNR=20
PFO Pinyon Flats O 84.74 55 eP P 17 56 58.5 +0.8
PFO e*PP pP 17 57 45.5 +2.6
PFO pmax pmax
comp=Z,30nm,1.0s
PFO Pinyon Flats O 84.74 55 eP P 17 56 58.5 +0.8
comp=Z,30nm,1.0s
PFO epP pP 17 57 45.5 +2.6
MPU Maple Canyon 84.74 47 eP P 17 56 58.5 +0.7
comp=Z,14nm,0.8s
TPFO Pinon Flats 84.74 55 P P 17 56 58.8 +1.1
baz=300,SNR=20
BR231 Keskin MP Arra 84.81 313 eP P 17 56 56.0 -1.9
BR231 epP pP 17 57 40.1 -3.0
BELC Belle Mtn. Jos 84.87 54 P P 17 56 59.2 +0.8
baz=300,SNR=24
CCUT Cedar City 84.89 50 eP P 17 56 58.7 +0.1
comp=Z,9.7nm,0.8s
BAR Barrett 85.05 56 eP P 17 56 59.2 +0.1
comp=Z,14nm,1.0s
B25A Knox Farm, Ray 85.05 37 P P 17 56 59.8 +0.9
baz=307
SZCU Shurtz Canyon 85.06 50 eP P 17 57 00.6 +1.2
comp=Z,12nm,0.9s
MONP2 Monument Peak 85.12 55 P P 17 57 00.7 +1.0
baz=300,SNR=15
MSU Marysvale 85.18 49 eP P 17 57 01.6 +1.6
MSU Marysvale 85.18 49 eP P 17 57 01.6 +1.6
LCMT Little Creek M 85.26 50 eP P 17 57 01.3 +1.0
comp=Z,21nm,0.8s
A26A Wade Farm, Ken 85.26 36 P P 17 57 00.6 +0.8
baz=308
TMUT Trail Mountain 85.40 48 eP P 17 57 02.1 +1.0
comp=Z,9.1nm,1.0s
IRM Iron Mountain 85.40 54 P P 17 57 02.1 +1.2
baz=301,SNR=15
MTPU Mount Pierson 85.43 49 eP P 17 57 02.8 +1.4
comp=Z,16nm,0.8s
BC3 Big Chuckawall 85.44 54 P P 17 57 02.6 +1.4
baz=301,SNR=26
NEE2 Needles Airpor 85.47 53 P P 17 57 02.1 +1.0
baz=301
IKP In-Ko-Pah, Jac 85.47 55 P P 17 57 02.5 +1.2
baz=300,SNR=13
KNB Kanab 85.54 50 eP P 17 57 03.2 +1.5
KNB pmax pmax
comp=Z,40nm,0.8s
KNB Kanab 85.54 50 eP P 17 57 03.2 +1.5
comp=Z,40nm,0.8s
SWSC Sam W. Stewart 85.55 55 P P 17 57 02.8 +1.2
baz=301
P17A Butcher Ranch, 85.61 47 eP P 17 57 03.4 +1.4
comp=Z,22nm,0.8s
A27A Ledoux Ranch, 85.64 36 P P 17 57 03.0 +1.2
baz=309
W13A Hualapai Mount 85.81 52 eP P 17 57 04.0 +0.9
comp=Z,8.9nm,0.9s
SRU San Rafael Swe 85.95 48 eP P 17 57 04.7 +1.0
SRU pmax pmax
comp=Z,19nm,0.8s
SRU San Rafael Swe 85.95 48 eP P 17 57 04.7 +1.0
comp=Z,19nm,0.8s
PDMCI Parker Dam,Lak 86.04 53 P P 17 57 05.1 +1.1
baz=301,SNR=7.7
Y12C Blythe 86.06 54 P P 17 57 05.5 +1.5
baz=301
Y12C Blythe 86.06 54 eP P 17 57 05.4 +1.3
comp=Z,18nm,0.8s
A28A Rude Farm, Bot 86.16 35 P P 17 57 05.4 +1.0
baz=310
GLA Glamis 86.20 55 P P 17 57 06.4 +1.6
baz=301,SNR=22
GLA Glamis 86.20 55 eP P 17 57 06.1 +1.2
GLA pmax pmax
comp=Z,31nm,0.6s
GLA Glamis 86.20 55 eP P 17 57 06.1 +1.2
comp=Z,31nm,0.6s
D26A Manning 86.20 38 P P 17 57 05.5 +1.0
baz=308
U15A North Rim 86.21 51 eP P 17 57 06.3 +1.1
comp=Z,16nm,0.7s
B28A Dugan Ranch, T 86.41 36 P P 17 57 06.6 +1.1
baz=309
K22A Casper 86.47 43 P P 17 57 07.1 +1.0
baz=306
K22A Casper 86.47 43 eP P 17 57 07.0 +0.8
comp=Z,9.7nm,0.8s
A29A Manning Farm, 86.68 35 P P 17 57 08.0 +1.2
baz=310
B29A Wagenman Farm, 86.91 35 P P 17 57 09.1 +1.2
baz=310
H25A Fruitdale 87.02 40 P P 17 57 09.6 +1.0
baz=307
Y14A Wickenburg 87.04 53 eP P 17 57 10.2 +1.3
comp=Z,68nm,0.8s
RSSD Black Hills 87.07 41 P P 17 57 09.8 +0.7
baz=307
RSSD Black Hills 87.07 41 eP P 17 57 09.6 +0.5
RSSD pmax pmax
comp=Z,8.0nm,0.6s
RSSD Black Hills 87.07 41 eP P 17 57 09.6 +0.5
comp=Z,8.3nm,0.6s
113A Mohawk Valley, 87.11 54 eP P 17 57 10.2 +1.0
comp=Z,20nm,0.8s
A30A Hoffart Farm, 87.14 34 P P 17 57 10.1 +1.1
baz=311
PV09 Paradox Valley 87.19 47 eP P 17 57 10.8 +1.0
PV10 Paradox Valley 87.32 48 eP P 17 57 11.9 +1.4
WUAZ Wupatki 87.33 51 P P 17 57 11.7 +1.3
baz=303,SNR=8.2
WUAZ Wupatki 87.33 51 eP P 17 57 11.8 +1.3
comp=Z,16nm,1.3s
B30A Myrvik Farm, E 87.44 35 P P 17 57 11.5 +1.0
baz=311
ULM Lac du Bonnet 87.45 32 P P 17 57 10.5 +0.1
comp=Z,5.0nm,0.5s,baz=308,slow=5.5,SNR=8.3
PV05 Paradox Valley 87.45 48 eP P 17 57 12.3 +1.3
PV01 Paradox Valley 87.77 48 eP P 17 57 13.5 +1.0
B31A Greenbush Farm 87.80 35 P P 17 57 13.0 +0.9
baz=311
N23A Red Feather La 87.85 44 P P 17 57 14.7 +1.8
baz=306
N23A Red Feather La 87.85 44 eP P 17 57 14.3 +1.4
comp=Z,20nm,1.3s
C30A Mose, Pekin 87.86 35 P P 17 57 13.3 +0.8
baz=311
X16A Lo Mia Camp, P 87.88 52 eP P 17 57 14.6 +1.6
comp=Z,9.5nm,1.3s
PHWY Pilot Hill 87.91 44 eP P 17 57 14.3 +1.1
comp=Z,5.2nm,0.8s
A32A Rocking H Ranc 88.05 34 P P 17 57 13.8 +0.5
baz=312
C31A Landman Farms, 88.18 35 P P 17 57 14.7 +0.7
baz=311
214A Organ Pipe Nat 88.22 55 P P 17 57 16.2 +1.7
baz=302
F29A Eureka 88.35 37 P P 17 57 15.9 +1.0
baz=310
B32A Ashes, Strandq 88.38 34 P P 17 57 15.2 +0.3
baz=312
A33A Warroad 88.57 33 P P 17 57 16.4 +0.6
baz=313
D31A Mcclaflin, Tow 88.67 36 P P 17 57 16.9 +0.6
baz=311
ISCO Idaho Springs 88.69 45 P P 17 57 18.3 +1.3
baz=306
ISCO Idaho Springs 88.69 45 eP P 17 57 18.3 +1.3
ISCO pmax pmax
comp=Z,3.0nm,0.7s
ISCO Idaho Springs 88.69 45 eP P 17 57 18.3 +1.3
comp=Z,3.4nm,0.7s
G29A Hoven 88.71 38 P P 17 57 17.2 +0.7
baz=310
C32A Crookston 88.76 34 P P 17 57 17.2 +0.6
baz=312
AGMN Agassiz Nation 88.77 34 P P 17 57 17.1 +0.4
baz=313,SNR=5.6
AGMN Agassiz Nation 88.77 34 eP P 17 57 17.2 +0.5
comp=Z,10nm,0.9s
S22A 4UR Ranch, Cre 89.12 47 P P 17 57 19.6 +0.7
baz=306
S22A 4UR Ranch, Cre 89.12 47 eP P 17 57 20.2 +1.2
comp=Z,4.1nm,1.1s
F31A Hecla 89.18 37 P P 17 57 19.1 +0.4
baz=311
C33A Trail 89.18 34 P P 17 57 19.2 +0.5
baz=313
B34A Aery, Baudette 89.24 33 P P 17 57 19.3 +0.4
baz=314,SNR=5.1

Q24A	Divide	89.48	45	P		P	17 57 21.6 +0.9
	baz=306						
Q24A	Divide	89.48	45	*e*P		P	17 57 21.8 +1.2
	comp=Z,6.9nm,0.9s						
TUC	Tucson	89.48	53	P		P	17 57 21.8 +1.4
	baz=303						
D33A	AnnSam, Waubun	89.57	35	P		P	17 57 21.7 +1.2
	baz=313						
B35A	Bob, Littlefor	89.77	33	P		P	17 57 22.0 +0.6
	baz=314,SNR=5.6						
E33A	Westby DABS, E	89.92	35	P		P	17 57 23.1 +0.9
	baz=313						
D34A	Park Rapids	89.93	34	P		P	17 57 22.8 +0.6
	baz=313						
GERES	GERESS Array B	89.96	328	P		P	17 57 21.3 -1.1
	comp=Z,0.6nm,0.5s,baz=38,slow=5.0,SNR=6.4						
GERES				LR		LR	18 42 09.9
	comp=Z,30nm,18.1s,baz=40,slow=38						
SDCO	Great Sand Dun	89.97	46	P		P	17 57 24.3 +1.3
	baz=306,SNR=8.1						
SDCO	Great Sand Dun	89.97	46	*e*P		P	17 57 24.0 +1.1
	comp=Z,11nm,1.4s						
G32A	Webster	89.97	37	P		P	17 57 23.4 +1.0
	baz=312						
C35A	Jirik Farms, M	90.11	33	P		P	17 57 23.5 +0.5
	baz=314						
J30A	Dallas	90.15	39	P		P	17 57 24.3 +1.0
	baz=310						
F33A	5 Mile Ranch,	90.22	36	P		P	17 57 24.4 +0.9
	baz=312,SNR=5.5						
D35A	Remer	90.50	34	P		P	17 57 25.2 +0.3
	baz=314						
G33A	Ortonville	90.57	36	P		P	17 57 25.9 +0.7
	baz=312						
J31A	Geddes	90.59	39	P		P	17 57 26.3 +1.0
	baz=311						
C36A	Pine Crest Far	90.61	33	P		P	17 57 25.9 +0.5
	baz=315						
H33A	Prehn Over Nor	90.76	37	P		P	17 57 26.9 +0.8
	baz=312,SNR=5.8						
F34A	Alexandria	90.78	35	P		P	17 57 26.9 +0.7
	baz=313						
LAZ	Ladron	90.84	50	*e*P		P	17 57 28.5 +1.5
C37A	Embarrass	90.95	33	P		P	17 57 27.9 +1.0
	baz=315						
G34A	Benson	90.96	36	P		P	17 57 27.8 +0.8
	baz=313						
ANMO	Albuquerque	90.98	49	P		P	17 57 29.0 +1.4
	baz=306						
ANMO	Albuquerque	90.98	49	*c i*P		P	17 57 28.7 +1.1
ANMO				pmax		pmax	
	comp=Z,11nm,0.9s						
ANMO	Albuquerque	90.98	49	*e*P		P	17 57 29.0 +1.4
	comp=Z,9.0nm,0.8s						
T25A	Trinidad	91.03	46	P		P	17 57 29.2 +1.4
	baz=307,SNR=11						
T25A	Trinidad	91.03	46	*e*P		P	17 57 28.9 +1.1
	comp=Z,16nm,1.0s						
319A	Douglas	91.06	53	*e*P		P	17 57 29.4 +1.5
	comp=Z,16nm,0.8s						
F35A	Swanville	91.08	35	P		P	17 57 28.3 +0.8
	baz=314						
EYMN	Ely	91.12	32	P		P	17 57 28.9 +1.2
	baz=316						
LPM	Los Pinos Moun	91.23	50	*e*P		P	17 57 30.0 +1.3
D37A	Cotton	91.24	33	P		P	17 57 29.1 +0.9
	baz=315						
L31A	Butterfield Fa	91.26	40	P		P	17 57 29.5 +1.0
	baz=311						
H34A	Spellman Lake,	91.28	36	P		P	17 57 29.1 +0.7
	baz=313						
E36A	McGregor	91.28	34	P		P	17 57 29.0 +0.5
	baz=315						
BNM	Barren Site	91.33	50	*e*P		P	17 57 30.3 +1.1
C38A	Sawbill Land.	91.39	32	P		P	17 57 29.7 +0.8
	baz=316						
K32A	Verdigre	91.43	39	P		P	17 57 29.5 +0.3
	baz=311						
ECSD	EROS Data Cent	91.46	38	P		P	17 57 30.0 +0.6
	baz=312						
ECSD	EROS Data Cent	91.46	38	*e*P		P	17 57 28.9 -0.5
	comp=Z,8.6nm,1.1s						
121A	Cookes Peak, D	91.46	52	P		P	17 57 31.7 +1.9
	baz=305						
G35A	Watkins	91.57	35	P		P	17 57 30.9 +1.1
	baz=314						
F36A	Milaca	91.61	34	P		P	17 57 30.6 +0.6
	baz=314						
E37A	Wrenshall	91.67	33	P		P	17 57 31.2 +0.9
	baz=315						
M31A	Lambtecht Ranc	91.72	40	P		P	17 57 31.5 +0.9
	baz=310						
H35A	Sunnyside Ranc	91.75	36	P		P	17 57 31.6 +0.9
	baz=314,SNR=7.1						
G36A	St. Michael	91.93	35	P		P	17 57 32.5 +1.0
	baz=314						
J34A	George	92.11	38	P		P	17 57 32.5 +0.1
	baz=313						
I35A	Creekview Farm	92.25	37	P		P	17 57 33.4 +0.4
	baz=313						
L34A	Svendsen Farm,	92.77	39	P		P	17 57 36.0 +0.5
	baz=312						
H37A	Dierke Farm, C	92.81	35	P		P	17 57 36.6 +1.1
	baz=315						
J36A	Seneca 1, Swea	92.95	37	P		P	17 57 37.0 +0.8
	baz=314						
I37A	Lemond, Waseca	92.96	36	P		P	17 57 37.1 +0.9
	baz=314						
L35A	Bielow Farm, R	93.13	38	P		P	17 57 37.6 +0.5
	baz=313						
O33A	Hebron	93.34	41	P		P	17 57 38.9 +0.7
	baz=311						
J37A	Redenius Farm,	93.37	36	P		P	17 57 39.2 +1.0
	baz=314						
M35A	Neola	93.48	39	P		P	17 57 39.2 +0.5
	baz=313						
I38A	Scanlan Farm,	93.49	35	P		P	17 57 39.3 +0.6
	baz=315						
MNTX	Cornudas Mount	93.61	51	P		P	17 57 40.9 +1.4
	baz=306						
MNTX	Cornudas Mount	93.61	51	*e*P		P	17 57 41.0 +1.4
	comp=Z,8.3nm,1.0s						
K37A	Belmond	93.71	37	P		P	17 57 40.3 +0.6
	baz=314						
N35A	Tabor	93.92	39	P		P	17 57 41.5 +0.7
	baz=313						
J38A	Wedel Dairy, R	93.93	36	P		P	17 57 41.6 +0.9
	baz=315						
M36A	Felix, Anita	93.98	38	P		P	17 57 41.6 +0.5
	baz=313						
P34A	Walnut Farm, R	94.13	41	P		P	17 57 42.0 +0.2
	baz=312						
AMTX	Amarillo	94.16	47	P		P	17 57 43.2 +1.2
	baz=308						
AMTX	Amarillo	94.16	47	*e*P		P	17 57 43.3 +1.2
	comp=Z,18nm,1.1s						
R33A	Olander Ranch,	94.27	42	P		P	17 57 43.0 +0.5
	baz=311						
J39A	Decorah	94.31	35	P		P	17 57 42.7 +0.2
	baz=316						
N36A	Muff Farm, Cla	94.33	39	P		P	17 57 43.5 +0.8
	baz=313						
M37A	Trindle Farm,	94.43	38	P		P	17 57 43.8 +0.7
	baz=314						
T32A	Huddler Ranch,	94.44	44	P		P	17 57 44.2 +0.9
	baz=310						
K39A	Oelwein	94.67	36	P		P	17 57 44.6 +0.4
	baz=316						
R34A	Isabella, Hill	94.71	42	P		P	17 57 44.9 +0.5
	baz=312						
S33A	Kaszmaul Farm,	94.73	43	P		P	17 57 45.1 +0.5
	baz=311						
J40A	Soldiers Grove	94.76	35	P		P	17 57 44.7 +0.2
	baz=316						
L39A	Vinton	95.02	36	P		P	17 57 46.4 +0.7
	baz=315						
Q35A	Mercer Eighty,	95.05	41	P		P	17 57 46.9 +0.9
	baz=312						
O37A	Wolven Farm, M	95.23	39	P		P	17 57 47.8 +1.1
	baz=314						
K41A	Shullsburg	95.55	35	P		P	17 57 48.6 +0.4
	baz=317						
W32A	Sentinel	95.56	45	P		P	17 57 49.0 +0.7
	baz=310						
O38A	Galt	95.63	39	P		P	17 57 49.4 +0.8
	baz=314						
N39A	Derby Farms, D	95.64	38	P		P	17 57 49.2 +0.7
	baz=315						

TX31	Lajitas Ar. Si	96.19	52	*e*P		P	17 57 52.7 +1.2
LTX	Lajitas	96.19	52	*e*P		P	17 57 52.8 +1.3
LTX	Lajitas	96.19	52	*e*P		P	17 57 52.8 +1.3
TXAR	Lajitas Array	96.19	52	P		P	17 57 52.8 +1.3
	comp=Z,2.6nm,0.6s,baz=307,slow=2.5,SNR=28						
P41A	Barry, Barry	97.26	38	P		Pdif	17 57 56.1 +0.1
	baz=316						
T38A	Diamond	97.30	41	P		Pdif	17 57 57.1 +0.9
	baz=313						
V38A	Canehill	98.03	42	P		Pdif	17 58 01.0 +1.5
	baz=313						
333A	Richland Sprin	98.15	48	P		Pdif	17 58 01.3 +1.1
	baz=310						
U40A	Yellville	98.60	41	P		Pdif	17 58 02.8 +0.7
	baz=314						
434A	Burnet	98.95	48	P		Pdif	17 58 04.3 +0.6
	baz=310						
MIAR	Mount Ida	99.42	43	P		Pdif	17 58 06.6 +0.8
	baz=314						
Z43A	Armstrong Fami	101.74	42	P		Pdif	17 58 16.6 +0.5
	baz=315						
TOA1	Torodi Ar. Sit	122.88	310	*e*PKPdf		PKPdf	18 03 18.5 -0.3
TOA1				*e*SKPdf		SKPdf	18 06 35.1 -1.8
TORD	Torodi Ar. Bea	122.88	310	PKP		PKPdf	18 03 18.5 -0.3
	comp=Z,0.4nm,0.5s,baz=308,slow=0.7,SNR=5.2						
TORD				SKP			18 06 35.1
	comp=Z,0.7nm,0.8s,baz=20,slow=4.7,SNR=4.0						
TORD				PKKPbc		PKKPab	18 13 12.4 -1.2
	comp=Z,1.5nm,0.5s,baz=224,slow=3.6,SNR=10						
DBIC	Dimbokro	131.99	311	SKPbc		SKPbc	18 06 43.0 -2.3
	comp=Z,8.2nm,0.9s,baz=8.5,slow=4.4,SNR=8.2						
PTGA	Pitinga	146.49	39	*e*PKPdf		PKPdf	18 04 03.1 +0.6
PTGA				*e*PKPbc		PKPbc	18 04 04.6 +0.4
LPAZ	La Paz	151.06	72	PKP		PKPdf	18 04 09.5 -1.1
	comp=Z,1.7nm,1.1s,baz=351,slow=4.1,SNR=3.5						
LPAZ				PKPbc		PKiKP	18 04 17.4 +0.3
	comp=Z,12nm,0.7s,baz=349,slow=4.3,SNR=3.5						
LPAZ	La Paz	151.06	72	*e*PKPdf		PKPdf	18 04 11.7 +1.2
LPAZ				*e*PKPbc		PKiKP	18 04 17.3 +0.3
PLCA	Paso Flores	151.53	125	PKPbc		PKPbc	18 04 17.3 +1.0
	comp=Z,18nm,0.9s,baz=248,slow=3.1,SNR=27						
PLCA				PKPab		PKPab	18 04 27.3 +1.9
	comp=Z,13nm,0.8s,baz=264,slow=2.8,SNR=12						
PLCA				pPKPbc		pPKPbc	18 05 06.3 +2.4
	comp=Z,5.7nm,0.9s,baz=233,slow=5.1,SNR=2.8						
PLCA	Paso Flores	151.53	125	*e*PKPbc		PKPbc	18 04 16.9 +0.7
PLCA				*e*PKPab		PKPab	18 04 27.1 +1.6
PLCA				pPKPbc		pPKPbc	18 05 06.3 +2.4
PB01	IPOC Station P	151.85	82	*e*PKPbc		PKPbc	18 04 17.6 0.0
PB01				*e*PKPab		PKPab	18 04 28.6 +1.2
CPUP	Villa Florida	164.00	88	PKPab		PKPab	18 05 19.9 +0.3
	comp=Z,3.6nm,0.9s,baz=262,slow=6.9,SNR=4.7						

TAP 05 17:44:51.5, 23.22N×120.94E, h3km, ML1.3, B, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ELDTW	Lidau	0.08	112	*i*	P		Pg	17 44 54.0	+0.8
	baz=110								
ELDTW				*i*	S		Sg	17 44 55.4	+1.1
	baz=110								
STYT	Tauyuan	0.17	251	*i*	P		Pg	17 44 55.7	+0.8
	baz=251								
STYT				*i*	S		Sg	17 44 58.1	+1.0
	baz=251								
YUS	Yu-Shan	0.27	3	*e*P			Pg	17 44 57.7	+0.9
	baz=14								
YUS				*e*S			Sg	17 45 01.8	+1.5
	baz=14								
WTP	Ta-pu	0.30	275	*e*P			Pb	17 44 58.4	-1.0
	baz=276								
WTP				*e*S			Sb	17 45 03.5	-1.3
	baz=276								
WTP	Ta-pu	0.30	275	*e*P			Pg	17 44 58.2	+1.0
	baz=192								
WTP				*e*S			Sb	17 45 03.4	-1.3
	baz=192								
ALS	Alishan	0.31	337	*e*P			Pg	17 44 58.3	+0.7
	baz=340								
ALS				*e*S			Sg	17 45 03.4	+1.6
	baz=340								
ALS	Alishan	0.31	337	S			Pg	17 44 58.1	+0.6
	baz=80								
CHN4	Tsaushan	0.34	293	*e*P			Pb	17 44 59.4	-0.8
	baz=294								
CHN4				*e*S			Sb	17 45 05.1	-0.9
	baz=294								
TWF1	Yuli	0.36	68	*e*P			Pg	17 44 59.3	+0.9
	baz=68								
TWF1				*e*S			Sg	17 45 03.8	+0.8
	baz=68								
TWG	Pinlang	0.42	162	*e*P			Pb	17 45 01.4	0.0
	baz=150								
TWG				*e*S			Sg	17 45 05.1	+0.2
	baz=150								
CHN5	Tsauling	0.44	328	*e*P			Pb	17 45 01.4	-0.5
	baz=330								
CHN5				*e*S			Sb	17 45 08.6	-0.5
	baz=330								

TAP 05 17:44:53.4, 23.49N×120.71E, h5km±1km, ML1.0, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ALS	Alishan	0.10	75	*i*	P		Pg	17 44 56.4	+0.8
	baz=80								
CHN5	Tsauling	0.11	347	*i*	P		Pg	17 44 56.3	+0.5
	baz=345								
CHN5				*i*	S		Sg	17 44 58.4	+0.9
	baz=345								
WGK	Gukeng	0.24	327	*e*P			Pg	17 44 58.8	+0.7
	baz=327								

MEX 05 18:20:22.7±0.8, 17.15N×100.49W, h29km±6km, MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CAIG	El Cayaco	0.23	116	*e*P			Pb	18 20 27.4	-1.8
CAIG				*e*S			Sb	18 20 32.5	-1.1
ACP2	Acapulco	0.63	115	*e*P			Pb	18 20 33.2	-2.1
ACP2				*e*S			Sb	18 20 41.6	-2.4
ACX	Acapulco	0.66	115	*e*P			Pb	18 20 32.3	-3.5
ACX				*i*	S		Sb	18 20 41.8	-2.9
ZIIG	Zihuatanejo	1.04	296	*e*P			Pn	18 20 38.8	-2.5
ZIIG				*e*S			Sn	18 20 52.1	-2.7
MEIG	Mezcala	1.13	47	*e*P			Pn	18 20 40.2	-2.4
MEIG				*e*S			Sn	18 20 53.9	-3.4
ARIG	Puente Sto Nin	1.13	7	*e*P			Pn	18 20 39.7	-2.9
ARIG				*e*S			Sn	18 20 54.5	-2.8
TLIG	Tlapa	1.88	77	*e*P			Pn	18 20 51.5	-1.5
TLIG				*e*S			Sn	18 21 13.2	-2.6
PNIG	Pinotepa	2.38	108	*e*P			Pn	18 20 57.8	-2.0
PNIG				*e*S			Sn	18 21 25.9	-2.1

*IDC **05** 18:22:51.2±0.8, 37.24N×143.71E, h0km, mb3.9/10, mb1 4.1/15, mb1mx3.9/43, mbtmp3.9/15, ML3.8/3, MS3.0/7, Ms1 3.0/7, ms1mx2.7/57, Error ellipse: s-maj=19.5km s-min=16.0km az=115.0*

*ISCJB **05** 18:22:54.2±0.4, 37.18N±0.06×143.63E±0.05, h33km, mb4.4/26, MS3.2/3, Error ellipse: s-maj=8.8km s-min=4.8km az=155.6*

*NEIC **05** 18:22:56.5±0.3, 37.24N×143.61E, h35km, mb4.6/17, Error ellipse: s-maj=8.0km s-min=5.0km az=143.0*

ISC 05 18:22:55.6±0.7, 37.26N±0.06×143.72E±0.08, h35km, n54, σ1°92/59, mb4.4/26, MS3.1/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.48	262	Pn			Pn	18 24 00.6	-0.3
	11nm,0.3s,baz=89,slow=15,SNR=66								
MJAR						Sn	Sn	18 24 51.8	0.0
	1.8nm,0.3s,baz=85,slow=26,SNR=4.3								
MJAR						LR	LR	18 25 54.2	
	comp=Z,96nm,21.7s,baz=90,slow=41								
MAJO	Matsushiro	4.48	262	*e*Pn			Pn	18 24 00.8	-0.2
MAT	Matsushiro	4.48	262	P			Pn	18 24 01.0	0.0
MAT				S			Sn	18 24 51.7	-0.2
MJB9	Matsu-Tunnel	4.48	262	*e*Pn			Pn	18 24 00.6	-0.4
ERM	Erimo	4.77	355	*e*Pn			Pn	18 24 02.3	-2.5
ERM				*e*Sn			Sn	18 24 50.0	-8.8
JHJ2	Mitsune	5.23	219	*e*Pn			Pn	18 24 08.4	-2.9
JHJ2				*e*Sn			Sn	18 25 05.8	-4.7
JHJ	Hachijo jima 2	5.24	219	P			Pn	18 24 09.5	-1.9
	27nm,0.3s,baz=74,slow=23,SNR=14								
JHJ						Sn	Sn	18 25 04.5	-6.2
	31nm,0.3s,baz=90,slow=20,SNR=4.1								
INU	Inuyama	5.74	253	*e*Pn			Pn	18 24 17.8	-0.5
ASAJ	Asahikawa	6.90	353	Pn			Pn	18 24 32.3	-1.8
	baz=90,slow=9.3								
ASAJ						Sn	Sn	18 25 46.6	-4.8
	1.5nm,0.3s,baz=59,slow=30,SNR=6.7								
ASAJ	Asahikawa	6.90	353	*e*Pn			Pn	18 24 32.3	-1.8
ASAJ				*e*Sn			Sn	18 25 45.9	-5.5
YSS	Yuzh-Sakhalins	9.71	356	*e*Pn			Pn	18 25 12.3	-0.4
USRK	Ussuriysk Ar.	11.28	312	Pn			Pn	18 25 34.2	+0.1
	0.2nm,0.3s,baz=119,slow=15,SNR=4.5								
USRK						LR	LR	18 29 35.7	
	comp=Z,78nm,19.4s,baz=127,slow=36								
KSRS	Korea Array	12.58	276	Pn			Pn	18 25 52.4	+0.5
	0.1nm,0.3s,baz=85,slow=14,SNR=4.7								
KSRS						LR	LR	18 30 17.3	
	comp=Z,37nm,18.6s,baz=50,slow=35								
KSAR	Wonju Array Be	12.61	276	Pn			Pn	18 25 52.4	0.0
KLR	Kul'dur	14.78	328	LR			LR	18 31 50.6	
	comp=Z,50nm,20.1s,baz=154,slow=36								
YULB	Yu-li	23.71	241	*e*P			P	18 28 03.0	-1.4
	5.0nm,0.9s								
SONA1	Songino Array	29.19	303	*e*P			P	18 28 55.8	+2.0
SONA0	Songino Array	29.20	303	*e*P			P	18 28 55.2	+1.4
	3.0nm,1.0s								
SONM	Songino Array	29.20	303	P			P	18 28 55.2	+1.4
	0.6nm,0.4s,baz=111,slow=7.7,SNR=4.2								
TLY	Talaya	31.59	310	LR			LR	18 41 34.6	
	comp=Z,43nm,20.2s,baz=128,slow=36								
ZAA0	Zalesovo Array	43.13	312	*e*P			P	18 30 53.3	+1.0
ZAA1	Zalesovo Array	43.13	312	*e*P			P	18 30 52.8	+0.5
ZAA1						*e*PcP	PcP	18 32 42.1	+0.6
ZALV	Zalesovo Beam	43.13	312	P			P	18 30 52.8	+0.5
	0.4nm,0.4s,baz=86,slow=7.4,SNR=3.1								
ZALV						PcP	PcP	18 32 42.1	+0.6
	0.5nm,0.5s,baz=49,slow=4.4,SNR=1.8								
ZALV						LR	LR	18 49 34.7	
	comp=Z,22nm,18.2s,baz=68,slow=37								
CMAR	Chiang Mai Arr	43.34	257	P			P	18 30 55.8	+1.3
	0.8nm,0.7s,baz=40,slow=6.6,SNR=9.0								
NRIK	Noril'sk	43.84	335	LR			LR	18 50 20.4	
	comp=Z,39nm,18.0s,baz=118,slow=38								
SVW2	Sparrevohn	44.22	37	*e*P			P	18 31 01.6	+0.5
	11nm,1.4s								
OHAK	Old Harbor	45.33	43	*e*P			P	18 31 10.9	+1.0
	86nm,2.0s								
MK01	Makanchi Array	45.56	302	*e*P			P	18 31 11.8	-0.1
MK32	Makanchi Array	45.56	302	*e*P			P	18 31 12.2	+0.3
MKAR	Makanchi Array	45.56	302	P			P	18 31 12.2	+0.3
	0.5nm,0.5s,baz=88,slow=6.2,SNR=6.1								
KDAK	Kodiak Island	45.69	42	*e*P			P	18 31 14.3	+1.6
	57nm,1.8s								
CAST	Castle Rocks	46.00	34	*e*P			P	18 31 17.7	+2.6
	18nm,1.9s								
MLY	Manley	46.68	32	*e*P			P	18 31 22.7	+2.3
	12nm,1.8s								
KURK	Kurchatov	47.24	308	*e*P			P	18 31 25.3	+0.3
MDM	Murphy Dome	47.74	32	*e*P			P	18 31 31.0	+2.3
	3.9nm,0.9s								
WRH	Wood River Hil	47.79	33	*e*P			P	18 31 31.2	+2.1
	7.5nm,1.5s								
SCM	Sheep Creek Mo	48.19	36	*e*P			P	18 31 33.3	+1.0
	29nm,1.6s								
ILAR	Eielson Array	48.31	32	P			P	18 31 34.5	+1.4
	1.7nm,0.7s,baz=265,slow=6.6,SNR=21								
ILB	Eielson Array	48.31	32	*e*P			P	18 31 34.1	+1.0
IL1	Eielson Array	48.31	32	*e*P			P	18 31 34.9	+1.8
KLU	Klutina	48.88	37	*e*P			P	18 31 39.8	+2.2
	14nm,1.6s								
BMRM	Bremner River	49.56	37	*e*P			P	18 31 44.9	+2.1
	16nm,1.3s								
MTN	Manton Dam	51.23	196	*e*P			P	18 31 56.9	+1.1
	55nm,1.8s								
VOSK	Vostochnaya	51.50	312	*e*P			P	18 31 57.8	+0.3
	2.9nm,1.1s								
INK	Inuvik	53.34	27	P			P	18 32 12.7	+1.9
	1.2nm,0.6s,baz=285,slow=4.7,SNR=6.2								
INK	Inuvik	53.34	27	*e*P			P	18 32 12.7	+1.9
	14nm,2.0s								
WR1	Warramunga Arr	57.58	190	*e*P			P	18 32 42.5	+0.6
	19nm,1.6s								
WRA	Warramunga Arr	57.58	190	P			P	18 32 42.5	+0.6
	2.0nm,0.5s,baz=8.7,slow=7.3,SNR=43								
AS31	Alice Springs	61.30	190	*e*P			P	18 33 08.5	+1.0
	5.7nm,1.8s								
ASAR	Alice Springs	61.30	190	P			P	18 33 08.5	+0.9
	1.4nm,0.7s,baz=11,slow=7.5,SNR=18								
FIA0	FINESS Array S	69.46	333	*e*P			P	18 34 00.6	+0.7
FINES	FINESS Array B	69.46	333	P			P	18 34 00.5	+0.7
	1.8nm,0.7s,baz=67,slow=6.4,SNR=5.7								
LTX	Lajitas	88.51	54	*e*P			P	18 35 45.2	+0.4
TXAR	Lajitas Array	88.51	54	P			P	18 35 45.2	+0.4
	0.4nm,0.8s,baz=304,slow=2.9,SNR=5.5								

*ISCJB **05** 18:30:58.8±0.5, 37.03N±0.03×27.46E±0.04, h8km±5km, Error ellipse: s-maj=5.2km s-min=5.0km az=33.7*

*ATH **05** 18:30:58.4, 37.00N×27.40E, h31km±3km, ML2.2/2, Error ellipse: s-maj=6.1km s-min=1.0km az=235.0*

*ISK **05** 18:30:58.8, 37.05N×27.46E, h5km, MD2.7*

*CSEM **05** 18:30:59.0±0.2, 37.04N×27.46E, h10km, MD2.7, Error ellipse: s-maj=3.7km s-min=3.4km az=102.0*

ISC 05 18:30:58.6±0.9, 37.04N±0.03×27.45E±0.03, h13km±6km, n25, σ0°32/38, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BODT	Bodrum	0.11	279	*e*PG			Pg	18 31 01.8	0.0
BODT				*e*SG			Sg	18 31 04.0	-0.1
BODT	Bodrum	0.11	279	*e*Pg			Pg	18 31 01.8	0.0
BODT				*e*Sg			Sg	18 31 04.0	-0.1
NIS1	Nisyros Isl.	0.49	206	*e*PG			Pb	18 31 09.1	0.0
NIS1				*e*SG			Sb	18 31 16.5	+0.2
NIS1	Nisyros Isl.	0.49	206	P			Pg	18 31 08.5	+0.2
NIS1	Nisyros Isl.	0.49	206	*e*Pg			Pb	18 31 09.1	0.0
NIS1				S			Sg	18 31 15.7	+0.2
NIS1				*e*Sg			Sb	18 31 16.5	+0.2
NIS1	Nisyros Isl.	0.49	206	P			Pg	18 31 08.5	+0.2
NIS1				S			Sg	18 31 15.1	+0.2
NIS1						AML	AML	18 31 18.2	
	comp=N,1114μm,0.4s								
NIS1						AML	AML	18 31 18.7	
	comp=E,1820

region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**44.02**	**260**	P	P	18 43 13.4	-0.4
	0.3nm,0.5s,baz=96,slow=8.2,SNR=10						
ASAR	**Alice Springs**	**44.14**	**255**	P	P	18 43 14.9	+0.2
	1.0nm,0.6s,baz=86,slow=9.1,SNR=16						
BRTR	**Keskin Array B**	**144.76**	**314**	PKP	PKPbc	18 54 42.7	+0.3
	0.3nm,0.5s,baz=42,slow=2.3,SNR=2.4						

*CSEM **05** 18:44:15.5±0.1, 43.39N×18.91E, h2km, ML2.6, Error ellipse: s-maj=3.3km s-min=2.5km az=100.0*
*PDG **05** 18:44:15.4±0.3, 43.41N×18.88E, h10km, MD2.7/2, ML2.6/9, Error ellipse: s-maj=0.4km s-min=0.8km az=0.0*
*BEO **05** 18:44:16.1±0.3, 43.42N×18.90E, h3km±3km, M2.4/1*
ISC 05 18:44:15.0±1.0, 43.41N±0.02×18.87E±0.02, h15km±8km, n78, σ1.9/10/122, 13C-20D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLE	**Pljevlja**	**0.38**	**102**	⇓*i*Pg	**Pb**	**18 44 23.3**	**-0.2**
PLE				*e*Sg	**Sb**	**18 44 28.7**	**-0.6**
PLE	**Pljevlja**	**0.38**	**102**	⇓*i*Pg	**Pb**	**18 44 23.3**	**-0.2**
PLE				*e*Sg	**Sb**	**18 44 28.7**	**-0.6**
BRY	**Bratogost**	**0.56**	**206**	⇓*i*Pg	**Pg**	**18 44 25.4**	**-0.7**
BRY				*e*Sg	**Sb**	**18 44 35.1**	**+0.7**
BRY	**Bratogost**	**0.56**	**206**	⇓*i*Pg	**Pg**	**18 44 25.4**	**-0.7**
BRY				*e*Sg	**Sb**	**18 44 35.1**	**+0.7**
BBLS	**Lazići**	**0.60**	**40**	*e*Pg	**Pg**	**18 44 26.6**	**-0.2**
BBLS	**Lazići**	**0.60**	**40**	*e*Pg	**Pg**	**18 44 26.6**	**-0.2**
BBLS				*e*Sg	**Sb**	**18 44 35.5**	**0.0**
NKY	**Niksic**	**0.60**	**172**	⇓*i*Pg	**Pg**	**18 44 26.5**	**-0.3**
NKY				*e*Sg	**Sn**	**18 44 36.4**	**-2.1**
NKY	**Niksic**	**0.60**	**172**	⇓*i*Pg	**Pg**	**18 44 26.5**	**-0.3**
NKME	**Niksic**	**0.64**	**175**	⇓*i*Pg	**Pg**	**18 44 27.1**	**-0.5**
NKME				*e*Sg	**Sn**	**18 44 37.6**	**-1.9**
NKME	**Niksic**	**0.64**	**175**	⇓*i*Pg	**Pg**	**18 44 27.1**	**-0.5**
NKME				*e*Sg	**Sn**	**18 44 37.6**	**-1.9**
TREB	**Trebinje**	**0.79**	**209**	*e*Pg	**Pb**	**18 44 29.7**	**-0.7**
TREB				*e*Sg	**Sn**	**18 44 42.2**	**-0.8**
TREB	**Trebinje**	**0.79**	**209**	*e*Pg	**Pb**	**18 44 29.7**	**-0.7**
TREB				*e*Sg	**Sn**	**18 44 42.0**	**-1.0**
CEME	**Cevo**	**0.86**	**178**	⇓*i*Pg	**Pb**	**18 44 30.6**	**-1.0**
CEME				*e*Sg	**Sn**	**18 44 44.9**	**0.0**
CEME	**Cevo**	**0.86**	**178**	⇓*i*Pg	**Pb**	**18 44 30.6**	**-1.0**
BEY	**Berane**	**0.92**	**125**	P	**Pg**	**18 44 32.8**	**0.0**
BEY				*e*Sg	**Sn**	**18 44 46.5**	**+0.1**
IVA	**Berane**	**0.92**	**125**	⇑*i*Pg	**Pg**	**18 44 32.7**	**0.0**
IVA				*e*Sg	**Sn**	**18 44 46.5**	**+0.1**
IVAS	**Ivanjica**	**0.95**	**79**	*e*Pg	**Pb**	**18 44 32.6**	**-0.5**
IVAS				*e*Sg	**Sg**	**18 44 46.3**	**+0.6**
IVAS	**Ivanjica**	**0.95**	**79**	*e*Pg	**Pb**	**18 44 32.6**	**-0.5**
IVAS				*e*Sg	**Sg**	**18 44 46.3**	**+0.6**
HCY	**Herceg Novi**	**1.00**	**196**	⇑*i*Pg	**Pg**	**18 44 34.4**	**+0.1**
HCY				*e*Sg	**Sn**	**18 44 50.4**	**+2.2**
HCY	**Herceg Novi**	**1.00**	**196**	*e*Pg	**Pg**	**18 44 34.1**	**-0.2**
HCY				*e*Sg	**Sn**	**18 44 48.1**	**-0.1**
PDG	**Podgorica**	**1.02**	**164**	⇑*i*P	**Pn**	**18 44 34.0**	**-0.6**
PDG				S	**Sg**	**18 44 47.4**	**-0.5**
PDG	**Podgorica**	**1.02**	**164**	*e*Pg	**Pb**	**18 44 33.6**	**-0.6**
PDG				*e*Sg	**Sn**	**18 44 50.5**	**+1.9**
PDG	**Podgorica**	**1.02**	**164**	⇑*i*P	**Pn**	**18 44 34.0**	**-0.6**
PDG				S	**Sg**	**18 44 47.4**	**-0.5**
PDG				*e*Sg	**Sn**	**18 44 48.4**	**-0.2**
TTG	**Podgorica**	**1.02**	**164**	⇑*i*Pg	**Pb**	**18 44 33.8**	**-0.4**
TTG				*e*Sg	**Sn**	**18 44 50.4**	**+1.9**
DIVS	**Divibare**	**1.06**	**49**	*e*Pg	**Pn**	**18 44 35.4**	**0.0**
DIVS				*e*Sg	**Sb**	**18 44 48.9**	**0.0**
DIVS	**Divibare**	**1.06**	**49**	⇓*i*Pg	**Pn**	**18 44 35.5**	**0.0**
DIVS				*e*Sg	**Sn**	**18 44 49.8**	**-0.2**
BUM	**Brajici-Budva**	**1.11**	**179**	⇓*i*Pg	**Pg**	**18 44 36.2**	**-0.2**
BUM				*e*Sg	**Sg**	**18 44 53.9**	**+3.1**
BUM	**Brajici-Budva**	**1.11**	**179**	⇓*i*Pg	**Pg**	**18 44 36.2**	**-0.2**
PVY	**Plav**	**1.14**	**135**	⇑*i*Pg	**Pg**	**18 44 36.5**	**-0.5**
PVY				*e*Sg	**Sg**	**18 44 54.0**	**+2.2**
PVY	**Plav**	**1.14**	**135**	⇑*i*Pg	**Pg**	**18 44 36.5**	**-0.5**
TEKS	**Tekeris**	**1.23**	**22**	*e*Pg	**Pg**	**18 44 39.3**	**+0.5**
TEKS				*e*Sg	**Sg**	**18 44 54.9**	**0.0**
TEKS	**Tekeris**	**1.23**	**22**	*e*Pg	**Pg**	**18 44 39.3**	**+0.5**
TEKS				*e*Sg	**Sg**	**18 44 55.5**	**+0.6**
DRME	**Dracevica, Mon**	**1.24**	**169**	⇓*i*Pg	**Pg**	**18 44 38.2**	**0.0**
DRME				*e*Sg	**Sg**	**18 44 58.2**	**+3.1**
DRME	**Dracevica, Mon**	**1.24**	**169**	⇑*i*Pg	**Pg**	**18 44 38.5**	**-0.4**
DRME				*e*Sg	**Sg**	**18 44 55.9**	**+0.8**
PEJK	**Peje**	**1.28**	**126**	P	**Pg**	**18 44 39.7**	**0.0**
PEJK				S	**Sg**	**18 44 56.4**	**0.0**
TRUS	**Trudelj**	**1.38**	**53**	*e*Pn	**Pb**	**18 44 40.8**	**+0.4**
TRUS	**Trudelj**	**1.38**	**53**	*e*Pn	**Pb**	**18 44 40.8**	**+0.4**
GRUS	**Gruza**	**1.42**	**70**	*e*Pg	**Pb**	**18 44 41.5**	**+0.4**
GRUS				*e*Sg	**Sb**	**18 44 59.6**	**+0.6**
GRUS	**Gruza**	**1.42**	**70**	*e*Pg	**Pb**	**18 44 41.5**	**+0.4**
GRUS				*e*Sg	**Sb**	**18 44 59.6**	**+0.6**
DOB	**Doboj**	**1.44**	**337**	⇑*i*Pg	**Pb**	**18 44 42.0**	**+0.6**
DOB				*e*Sg	**Sg**	**18 45 01.4**	**+0.1**
ULC	**Ulcinj**	**1.47**	**169**	⇓*i*Pg	**Pg**	**18 44 42.8**	**-0.4**
ULC				*e*Sg	**Sg**	**18 45 04.9**	**+2.6**
ULC	**Ulcinj**	**1.47**	**169**	⇓*i*Pg	**Pg**	**18 44 42.8**	**-0.4**
ULC	**Ulcinj**	**1.47**	**169**	P	**Pg**	**18 44 43.2**	**0.0**
ZATK	**Zatriq**	**1.60**	**126**	P	**Pg**	**18 44 45.0**	**-0.8**
SELS	**Selova**	**1.65**	**96**	*e*Pn	**Pb**	**18 44 44.6**	**-0.5**
SELS				*e*Sg	**Sg**	**18 45 07.0**	**-1.1**
SELS	**Selova**	**1.65**	**96**	*e*Pn	**Pb**	**18 44 44.6**	**-0.5**
SELS				*e*Sg	**Sg**	**18 45 07.0**	**-1.1**
BLY	**Banja Luka**	**1.81**	**318**	*e*Pn	**Pb**	**18 44 47.7**	**-0.1**
BLY	**Banja Luka**	**1.81**	**318**	*e*Pn	**Pb**	**18 44 47.7**	**-0.1**
BLY				*e*Sn	**Sb**	**18 45 11.2**	**+0.9**
FGSL	**Fruska Gora**	**1.87**	**21**	*e*Pn	**Pg**	**18 44 50.4**	**-0.6**
FGSL				*e*Sg	**Sg**	**18 45 14.6**	**-0.7**
FRGS	**Fruska Gora**	**1.87**	**21**	*e*Pn	**Pg**	**18 44 50.4**	**-0.6**
FRGS				*e*Sg	**Sg**	**18 45 14.6**	**-0.7**
BOVS	**Bovan**	**2.07**	**83**	*e*Pn	**Pb**	**18 44 52.2**	**0.0**
BOVS	**Bovan**	**2.07**	**83**	*e*Pn	**Pb**	**18 44 52.2**	**0.0**
TIR	**Tirane**	**2.19**	**160**	⇓*i*P	**Pb**	**18 44 53.5**	**-0.7**
TIR	**Tirane**	**2.19**	**160**	⇓*i*P	**Pb**	**18 44 53.5**	**-0.7**
BARS	**Barje**	**2.23**	**104**	*e*Pn	**Pb**	**18 44 53.0**	**-2.0**
BARS	**Barje**	**2.23**	**104**	*e*Pn	**Pb**	**18 44 53.0**	**-2.0**
KUBS	**Kucevo**	**2.26**	**63**	*e*Pn	**Pb**	**18 44 54.3**	**-1.2**
KUBS	**Kucevo**	**2.26**	**63**	*e*Pn	**Pb**	**18 44 54.3**	**-1.2**
BOLS	**Boljevac**	**2.28**	**78**	*e*Pn	**Pb**	**18 44 55.8**	**+0.1**
BOLS	**Boljevac**	**2.28**	**78**	*e*Pn	**Pb**	**18 44 55.8**	**+0.1**
MDVR	**Moldovita**	**2.46**	**55**	⇑*i*P	**Pg**	**18 45 03.7**	**+1.5**
MDVR	**Moldovita**	**2.46**	**55**	S	**Sg**	**18 45 32.6**	**-1.6**
UDBI	**Udbina**	**2.51**	**298**	*e*Pn	**Pb**	**18 44 59.1**	**-0.7**
UDBI				Sn	**Sb**	**18 45 31.8**	**+1.4**
UDBI	**Udbina**	**2.51**	**298**	*e*Pn	**Pb**	**18 44 59.0**	**-0.7**
UDBI				Sn	**Sb**	**18 45 31.8**	**+1.4**
ZAPS	**Zavoj**	**2.75**	**92**	*e*Pn	**Pb**	**18 45 01.5**	**-2.3**
BZS	**Buzias**	**2.95**	**41**	⇑*i*P	**Pb**	**18 45 07.6**	**+0.3**
BZS	**Buzias**	**2.95**	**41**	S	**Sg**	**18 45 47.5**	**-2.4**
BZS	**Buzias**	**2.95**	**41**	*e*Pn	**Pn**	**18 45 01.8**	**+0.5**
BZS	**Buzias**	**2.95**	**41**	*e*Pn	**Pn**	**18 45 01.8**	**+0.5**
BZS	**Buzias**	**2.95**	**41**	⇑*i*P	**Pb**	**18 45 07.6**	**+0.3**
NVLJ	**Novalja**	**3.11**	**293**	*e*Pn	**Pb**	**18 45 08.0**	**-1.9**
NVLJ				Sn	**Sb**	**18 45 46.1**	**-1.5**
NVLJ	**Novalja**	**3.11**	**293**	*e*Pn	**Pb**	**18 45 08.0**	**-1.9**
NVLJ				Sn	**Sb**	**18 45 46.1**	**-1.5**
VTS	**Vitosha**	**3.28**	**103**	⇑*i*P	**Pb**	**18 45 14.5**	**+1.5**
VTS	**Vitosha**	**3.28**	**103**	*e*Pn	**Pn**	**18 45 07.7**	**+1.7**
VTS	**Vitosha**	**3.28**	**103**	*e*Pn	**Pn**	**18 45 07.7**	**+1.7**
GZR	**Gura Zlata**	**3.43**	**53**	⇓*i*P	**Pb**	**18 45 13.2**	**-2.2**
GZR	**Gura Zlata**	**3.43**	**53**	⇓*i*P	**Pb**	**18 45 13.2**	**-2.2**
CRES	**Cresnjev**	**3.43**	**316**	*e*Pn	**Pn**	**18 45 09.9**	**+2.0**

*IDC **05** 18:44:32.3±0.9, 24.54S×175.99W, h0km, mb4.1/11, mb1 4.3/11, mb1mx4.2/31, mbtmp4.1/11, MS3.8/3, Ms1 3.8/3, ms1mx3.3/43, Error ellipse: s-maj=32.5km s-min=24.7km az=138.0*
*NEIC **05** 18:44:43.2±2.6, 24.45S×176.15W, h79km±22km, mb4.7/15, Error ellipse: s-maj=16.9km s-min=12.6km az=131.0*
ISC 05 18:44:39.0±0.5, 24.30S±0.09×175.60W±0.09, h50km, n54, σ2.9/48/50, mb4.5/25, 1C, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**8.82**	**317**	*e*Pn	**Pn**	**18 46 45.9**	**+1.9**
AFI	**Afiamalu**	**10.95**	**20**	Pn	**Pn**	**18 47 09.1**	**-4.0**
	4.4nm,0.3s,baz=300,slow=20,SNR=3.0						
AFI				Sn	Sn	18 49 06.5	-7.8
	1.6nm,0.3s,baz=49,slow=20,SNR=2.1						
AFI				LR	LR	18 49 56.3	
	comp=Z,85nm,21.6s,baz=194,slow=29						
RAR	**Rarotonga**	**14.92**	**81**	Pn	**Pn**	**18 48 02.3**	**-4.6**
	3.0nm,0.3s,baz=261,slow=7.3,SNR=6.3						
RAR	**Rarotonga**	**14.92**	**81**	*e*Pn	**Pn**	**18 48 05.4**	**-1.5**
URZ	**Urewera**	**15.24**	**202**	Sn	Sn	18 50 39.2	-19
	0.2nm,0.3s,baz=142,slow=12,SNR=2.5						
DZM	**Mont Dzumac**	**16.66**	**274**	*e*P	**P**	**18 48 31.1**	**+0.2**
DZM	72nm,1.6s			*e*LR	LR	18 52 30.2	
	268nm,28.1s						
DZM	**Mont Dzumac**	**16.66**	**274**	*e*Pn	**P**	**18 48 31.1**	**+0.2**
	22nm,1.1s						
TBI	**Tubuai**	**23.92**	**93**	*e*LR	LR	18 55 28.1	
	250nm,26.8s						
PPT2	**Papeete2**	**25.18**	**80**	*e*LR	LR	18 56 04.1	
	379nm,25.5s						
AS01	**Alice Springs**	**45.89**	**260**	*e*P	**P**	**18 52 52.2**	**-4.7**
AS31	**Alice Springs**	**45.93**	**260**	*e*P	**P**	**18 52 53.0**	**-4.2**
	1.4nm,0.9s						
ASAR	**Alice Springs**	**45.93**	**260**	P	**P**	**18 52 53.5**	**-3.7**
	0.6nm,0.6s,baz=95,slow=7.2,SNR=17						
WB2	**Warramunga Arr**	**46.37**	**265**	*e*P	**P**	**18 52 55.9**	**-4.7**
WRAB	**Tennant Creek**	**46.38**	**265**	*e*P	**P**	**18 53 00.6**	**-0.1**
	14nm,1.3s						
WR1	**Warramunga Arr**	**46.38**	**265**	*e*P	**P**	**18 52 56.5**	**-4.2**
	8.9nm,1.2s						
WRA	**Warramunga Arr**	**46.38**	**265**	P	**P**	**18 52 56.5**	**-4.2**
	1.3nm,0.5s,baz=100,slow=8.4,SNR=33						
MTN	**Manton Dam**	**51.49**	**273**	*e*P	**P**	**18 53 36.9**	**-3.0**
	48nm,1.8s						
SBA	**Scott Base**	**54.26**	**185**	*e*P	**P**	**18 54 00.9**	**+1.5**
	19nm,1.7s						
VNDA	**Vanda**	**54.36**	**186**	P	**P**	**18 53 58.6**	**-1.6**
	1.4nm,0.9s,baz=3.4,slow=7.9,SNR=6.5						
FITZ	**Fitzroy Crossi**	**54.80**	**264**	*e*P	**P**	**18 54 01.2**	**-3.0**
	30nm,1.8s						
NWAO	**Narrogin (SRO)**	**58.72**	**245**	LR	LR	19 19 34.8	
	comp=Z,103nm,19.2s,slow=36						
CASY	**Casey**	**61.52**	**206**	*e*P	**P**	**18 54 49.7**	**-0.8**
	15nm,1.5s						
QSPA	**South Pole Qui**	**65.79**	**180**	*e*P	**P**	**18 55 19.3**	**+0.5**
MJAR	**Matsushiro Arr**	**74.57**	**323**	P	**P**	**18 56 12.2**	**-0.5**
	1.1nm,0.7s,baz=151,slow=5.7,SNR=3.6						
SSLB	**Suanglung**	**77.90**	**303**	*e*P	**P**	**18 56 28.3**	**-3.6**
	11nm,1.1s						
KMRM	**Mail Ridge**	**80.33**	**38**	*e*P	**P**	**18 56 41.9**	**-3.0**
	64nm,1.4s						
PETK	**Petropavlovsk-**	**80.50**	**344**	P	**P**	**18 56 46.9**	**+1.5**
	3.5nm,0.8s,baz=108,slow=9.7,SNR=4.8						
PEA1	**Petropavlovsk-**	**80.51**	**344**	*e*P	**P**	**18 56 46.9**	**+1.5**
USRK	**Ussuriysk Ar.**	**83.34**	**325**	P	**P**	**18 57 01.7**	**+1.2**
	4.1nm,0.9s,baz=97,slow=4.7,SNR=7.2						
SYO	**Syowa Base**	**83.51**	**192**	*e*P	**P**	**18 57 02.4**	**+1.3**
SNAA	**Sanae**	**84.16**	**178**	*e*P	**P**	**18 57 04.3**	**-0.2**
	6.2nm,1.1s						
CCUT	**Cedar City**	**84.87**	**45**	*e*P	**P**	**18 57 12.2**	**+3.4**
	3.8nm,1.1s						
U15A	**North Rim**	**84.92**	**46**	*e*P	**P**	**18 57 12.5**	**+3.4**
	7.1nm,1.3s						
KLR	**Kul'dur**	**86.91**	**329**	P	**P**	**18 57 20.6**	**+2.3**
	1.4nm,0.7s,baz=160,slow=1.9,SNR=4.5						
TX31	**Lajitas Ar. Si**	**87.27**	**56**	*e*P	**P**	**18 57 23.2**	**+2.5**
LTX	**Lajitas**	**87.27**	**56**	*e*P	**P**	**18 57 23.5**	**+2.8**
TXAR	**Lajitas Array**	**87.27**	**56**	P	**P**	**18 57 23.5**	**+2.8**
	0.9nm,0.9s,baz=215,slow=6.1,SNR=7.1						
CMIG	**Matias Romero**	**88.78**	**71**	LR	LR	19 27 11.2	
	comp=Z,204nm,20.6s,baz=177,slow=29						
TRF	**Thorofare Moun**	**89.71**	**11**	*e*P	**P**	**18 57 33.3**	**+1.9**
	5.2nm,0.8s						
PDAR	**Pinedale Array**	**90.23**	**42**	P	**P**	**18 57 35.2**	**+0.7**
	0.2nm,0.4s,baz=203,slow=6.6,SNR=3.0						
IL1	**Eielson Array**	**91.53**	**12**	*e*P	**P**	**18 57 41.0**	**+1.3**
ILAR	**Eielson Array**	**91.53**	**12**	P	**P**	**18 57 40.5**	**+0.9**
	0.5nm,0.8s,baz=216,slow=4.6,SNR=4.6						
ILB	**Eielson Array**	**91.53**	**12**	*e*P	**P**	**18 57 41.3**	**+1.6**
CM01	**Chiang Mai Arr**	**93.42**	**289**	*e*P	**P**	**18 57 50.9**	**+1.4**
CM31	**Chiang Mai Arr**	**93.45**	**289**	*e*P	**P**	**18 57 50.6**	**+0.9**
CMAR	**Chiang Mai Arr**	**93.45**	**289**	P	**P**	**18 57 50.5**	**+0.8**
	1.3nm,0.8s,baz=139,slow=3.1,SNR=14						
CHTO	**Chiang Mai**	**93.59**	**289**	*e*P	**P**	**18 57 51.1**	**+0.8**
	5.2nm,1.1s						
AKASG	**Malin Array Be**	**147.40**	**330**	PKPbc	**PKPab**	**19 04 17.2**	**-1.8**
	0.5nm,0.3s,baz=35,slow=3.4,SNR=4.4						
AKBB	**Malin Array Si**	**147.40**	**330**	*e*PKPbc	**PKPab**	**19 04 17.1**	**-1.9**
BR101	**Keskin Array S**	**150.99**	**309**	*e*PKPbc	**PKPbc**	**19 04 26.6**	**-0.1**
BRTR	**Keskin Array B**	**150.99**	**309**	PKPbc	**PKPbc**	**19 04 26.6**	**-0.1**
	0.4nm,0.5s,baz=86,slow=4.5,SNR=3.2						
MMAI	**Mount Meron Ar**	**151.52**	**295**	PKPbc	**PKPbc**	**19 04 29.1**	**+1.1**
	0.5nm,0.4s,baz=101,slow=2.9,SNR=2.7						
BR231	**Keskin MP Arra**	**151.55**	**310**	*e*PKPbc	**PKPbc**	**19 04 28.3**	**+0.4**
BR231				*e*PKPab	**PKPab**	**19 04 38.7**	**+2.1**
BRG	**Berggiesshubel**	**152.46**	**347**	*e*P	**PKPab**	**19 04 41.7**	**+2.0**
	2.4nm,0.7s						

*ISCJB **05** 18:49:04.3±0.7, 50.12N±0.04×18.37E±0.04, h0km, Error ellipse: s-maj=6.4km s-min=3.8km az=172.4*
*IPEC **05** 18:49:05.4±0.2, 50.08N×18.46E, h0km, ML1.2/3, Error ellipse: s-maj=2.0km s-min=1.1km az=160.0*
*PRU **05** 18:49:05.9, 50.06N×18.41E, h0km*
*CSEM **05** 18:49:05.0±0.3, 50.09N×18.40E, h1km, ML2.1/6, Error ellipse: s-maj=8.3km s-min=4.6km az=169.0*
ISC 05 18:49:05.5±1.0, 50.11N±0.04×18.41E±0.03, h0km, n18, σ0.92/32, 3D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.14**	**261**	*e*Pg	**Pg**	**18 49 09.4**	**+1.2**
RAC				*e*Sg	**Sg**	**18 49 12.8**	**+2.8**
OKC	**Ostrava-Krasne**	**0.32**	**212**	⇓*i*PG	**Pg**	**18 49 11.5**	**0.0**
OKC				*e*SG	**Sg**	**18 49 15.9**	**+0.3**
	comp=Z,23nm,0.5s						
OKC	**Ostrava-Krasne**	**0.32**	**212**	Pg	**Pg**	**18 49 11.5**	**0.0**
OKC				Sg	**Sg**	**18 49 15.9**	**+0.3**
	23nm,0.5s						
MORC	**Moravsky Berou**	**0.65**	**240**	*e*Pg	**Pg**	**18 49 18.1**	**+0.2**
MORC				*e*Sg	**Sg**	**18 49 26.6**	**+0.3**
	4.7nm,0.2s,baz=63						
OJC	**Ojcow**	**0.90**	**82**	*e*Pg	**Pg**	**18 49 22.2**	**-0.5**
OJC				*e*Sg	**Sg**	**18 49 35.1**	**+0.7**
OJC	**Ojcow**	**0.90**	**82**	*e*Pg	**Pg**	**18 49 22.2**	**-0.5**
OJC				*e*Sg	**Sg**	**18 49 35.1**	**+0.7**
KRLC	**Kraliky**	**1.05**	**269**	*e*PG	**Pg**	**18 49 25.0**	**-0.6**
KRLC				*e*SG	**Sg**	**18 49 38.6**	**-0.5**
KRLC	**Kraliky**	**1.05**	**269**	Pg	**Pg**	**18 49 25.0**	**-0.6**
KRLC				Sg	**Sg**	**18 49 38.6**	**-0.5**
DPC	**Dobruska-Polom**	**1.36**	**281**	*e*PG	**Pg**	**18 49 31.2**	**-0.4**
DPC				*e*SG	**Sg**	**18 49 49.6**	**+0.4**
	comp=Z,6.3nm,0.4s						
DPC	**Dobruska-Polom**	**1.36**	**281**	Pg	**Pg**	**18 49 31.2**	**-0.4**
DPC				Sg	**Sg**	**18 49 49.6**	**+0.4**
	6.3nm,0.4s						
VRAC	**Vranov**	**1.42**	**237**	*e*Pg	**Pn**	**18 49 31.7**	**-0.9**
VRAC				*e*Sg	**Sg**	**18 49 50.8**	**-0.4**
	3.3nm,0.2s,baz=57						
UPC	**Upice**	**1.59**	**286**	⇓*e*SG	**Sg**	**18 49 56.6**	**+0.1**
UPC	**Upice**	**1.59**	**286**	Sg	**Sg**	**18 49 56.6**	**+0.1**
KRUC	**Moravsky**	**1.68**	**232**	*e*Pg	**Pn**	**18 49 35.8**	**-0.3**
	baz=52						
KRUC				*e*Sg	**Sb**	**18 49 58.3**	**-0.5**
	2.9nm,0.4s,baz=52						
PRU	**Pruhonice**	**2.50**	**269**	⇓*e*SG	**Sg**	**18 50 24.6**	**-1.0**
PRU	**Pruhonice**	**2.50**	**269**	Sg	**Sg**	**18 50 24.6**	**-1.0**
KHC	**Kasperske Hory**	**3.29**	**255**	*e*PG	**Pb**	**18 50 05.9**	**+1.2**
KHC				*e*SG	**Sg**	**18 50 49.5**	**-1.6**
	comp=Z,1.4nm,0.5s						
KHC	**Kasperske Hory**	**3.29**	**255**	Pg	**Pb**	**18 50 05.9**	**+1.2**
KHC				Sg	**Sg**	**18 50 49.5**	**-1.6**
	1.4nm,0.5s						

*BJI **05** 18:52:24.2, 39.44N×73.01E, h7km, mb4.5/16, mB4.4/13, ML4.0/7, Ms3.6/4, Ms7 3.5/3*
*SOME **05** 18:52:27.3, 39.45N×73.28E, h5km, MS4.0*
*ISCJB **05** 18:52:28.1±0.2, 39.25N±0.02×73.26E±0.02, h33km, mb4.5/80, MS2.9/4, Error ellipse: s-maj=2.8km s-min=2.2km az=40.2*
*MOS **05** 18:52:28.4±0.9, 39.29N×73.32E, h33km, mb4.8/30, Error ellipse: s-maj=7.0km s-min=4.8km az=95.0*

*NEIC **05** 18:52:30.8±0.7, 39.41N×73.22E, h38km±6km, mb4.7/55, Error ellipse: s-maj=6.2km s-min=4.4km az=182.0*
*IDC **05** 18:52:30.8±2.2, 39.41N×73.25E, h37km±18km, mb4.0/24, mb1 4.1/31, mb1mx4.0/58, mbtmp4.2/31, ML3.6/7, MS3.1/6, Ms1 3.0/6, ms1mx2.7/47, Error ellipse: s-maj=15.4km s-min=9.2km az=2.0*
*KRNET **05** 18:52:30.5±0.1, 39.55N×73.10E, h30km, mb4.4*
*NNC **05** 18:52:31.7±1.6, 39.81N×73.07E, h0km, mb4.6, mpv4.3, Error ellipse: s-maj=14.6km s-min=10.3km az=10.0*
ISC 05 18:52:26.1±1.5, 39.25N±0.03×73.13E±0.03, h9km±9km, n276, σ1.9/90/319, mb4.5/80, MS2.9/4, 61C-31D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRK	**Karamyk**	**1.06**	**283**	⇑*i*P	**Pn**	**18 52 49.1**	**+1.8**
	baz=266						
DRK				⇑*i*S	**Sb**	**18 53 02.5**	**+1.7**
	baz=266						
BTK	**Batken**	**1.96**	**295**	⇑*i*P	**Pb**	**18 53 02.1**	**+0.1**
	baz=287						
BTK				⇑*i*S	**Sn**	**18 53 25.6**	**+1.3**
	baz=287						
ARSB	**Arslanbob**	**2.07**	**357**	⇑*i*P	**Pn**	**18 53 01.4**	**+0.2**
	baz=357						
ARSB				⇑*i*S	**Sn**	**18 53 24.3**	**-2.8**
	baz=357						
KSH	**Kashi**	**2.22**	**82**	Pn	**Pn**	**18 53 00.5**	**-2.6**
KSH				Sn	**Sn**	**18 53 28.5**	**-2.2**
KSH				smax	smax		
	comp=N,2μm,0.5s						
KSH				smax	smax		
	comp=E,2μm,0.7s						
KSH	**Kashi**	**2.22**	**82**	Pn	**Pn**	**18 53 00.3**	**-2.8**
KSH				Sn	**Sn**	**18 53 28.6**	**-2.2**
KSH				smax	smax		
	comp=E,2μm,0.5s						
KSH				smax	smax		
	comp=E,2μm,0.7s						
KSH				smax	smax		
	comp=E,2μm,0.7s						
ARK	**Arkit**	**2.69**	**341**	⇑*i*P	**Pn**	**18 53 10.5**	**+0.8**
	baz=339						
ARK				⇑*i*S	**Sn**	**18 53 39.0**	**-3.4**
	baz=339						
ARLS	**Aral**	**2.76**	**19**	⇑*i*P	**Pn**	**18 53 12.1**	**+1.5**
	baz=22						
ARLS				⇑*i*S	**Sn**	**18 53 43.7**	**-0.4**
	baz=22						
AML	**Almayashu**	**2.91**	**8**	⇑*i*P	**Pn**	**18 53 13.6**	**+0.7**
	baz=9.0						
AML				⇑*i*S	**Sn**	**18 53 47.6**	**-0.5**
	baz=9.0						
UCH	**Uchtor**	**3.15**	**19**	⇑*i*P	**Pn**	**18 53 16.8**	**+0.5**
	baz=21						
UCH				⇑*i*S	**Sn**	**18 53 53.2**	**-1.0**
	baz=21						
KZA	**Kyzart**	**3.25**	**29**	⇑*i*P	**Pn**	**18 53 18.0**	**+0.4**
	baz=32						
KZA				⇑*i*S	**Sn**	**18 53 55.4**	**-1.2**
	baz=32						
MNAS	**Manas**	**3.26**	**352**	⇑*i*P	**Pn**	**18 53 18.6**	**+1.0**
	baz=351						
MNAS			

KST eS Sb 18 54 37.6 +2.4
comp=N,276nm,0.3s
BRLS Borolday 4.39 325 eP Pb 18 53 45.0 +1.7
comp=N,36nm,0.5s
BRLS eS Sb 18 54 40.9 +4.5
comp=N,72nm,0.7s
DGS Degeres 4.45 26 eP Pb 18 53 46.1 +1.6
comp=N,129nm,0.7s
DGS eS Sb 18 54 42.9 +4.5
comp=N,408nm,0.6s
IZV Izvestkoviy 4.60 34 eP Pb 18 53 48.3 +1.3
comp=N,119nm,0.6s
IZV eS Sb 18 54 45.8 +3.2
comp=N,545nm,0.8s
MDOK Medeo 4.90 36 eP Pb 18 53 52.8 +0.7
comp=N,67nm,0.8s
MDOK eS Sb 18 54 54.4 +3.3
comp=N,183nm,1.1s
KNDC Almaty 4.90 35 ⇓Pn Pn 18 53 41.6 +1.6
comp=N,77nm,0.8s
KNDC ⇑Lg Lg 18 54 55.3
comp=N,433nm,0.8s
ANVS Anan'yevo 4.92 43 ⇑*i*P Pn 18 53 42.0 +1.7
baz=45
ANVS ⇑*i*S Sn 18 54 38.0 +0.6
baz=45
AAA Alma-Ata 4.94 34 ePN Pn 18 53 41.6 +1.1
AAA eS Sb 18 54 54.9 +2.7
AAA pmax pmax
comp=Z,129nm,0.7s
AAA smax smax
comp=N,393nm,0.5s
PRZ Przheval'sk 5.13 49 ⇑*i*P Pn 18 53 44.5 +1.2
baz=52
PRZ ⇑*i*S Sn 18 54 41.1 -1.6
baz=52
KTBS Karatobe 5.19 30 eP Pb 18 53 58.5 +1.5
KTBS eS Sb 18 55 04.7 +5.2
KUU Kurty 5.22 26 eP Pb 18 53 57.9 +0.4
comp=N,81nm,0.6s
KUU eS Sb 18 55 03.5 +3.1
comp=N,330nm,0.7s
CEP Cherat 5.51 191 P Pb 18 53 57.3 -5.2
CEP S Sb 18 55 04.0 -4.7
CHCP Chirah Chowk 5.59 179 P Pb 18 53 58.9 -4.9
KBL Kabul 5.73 216 ePN Pn 18 53 58.3 +6.8
KBL Kabul 5.73 216 ePn Pn 18 53 58.3 +6.8
PDGK Podgornoye 6.28 48 ⇑Pn Pn 18 53 59.5 +0.7
comp=N,19nm,0.6s
PDGK ⇓Pg Pb 18 54 20.5 +4.9
comp=N,34nm,0.8s
PDGK ⇓Lg Lg 18 55 41.3
comp=N,91nm,0.8s
THW Thamme Wali 6.54 190 P Pn 18 54 10.1 +7.6
THN Thein Dam 7.12 162 eP Pn 18 54 14.0 +3.6
THN eS Sn 18 55 39.0 +7.6
SDNR Sundarnagar 8.35 157 eP Pn 18 54 33.0 +5.7
SDNR eS Sn 18 56 04.0 +2.4
OTUK Ortayu 9.01 357 ⇓Pn Pn 18 54 35.9 -0.3
comp=N,6.8nm,0.6s
OTUK ⇑Lg Lg 18 57 01.4
comp=N,85nm,0.7s
OTUK Ortayu 9.01 357 P Pn 18 54 35.0 -1.2
MAKZ Makanchi 9.94 38 ⇓Pn Pn 18 54 50.6 +1.6
comp=N,3.5nm,0.6s
MAKZ ⇑Lg Lg 18 57 34.0
comp=N,18nm,1.4s
MAKZ Makanchi 9.94 38 eP Pn 18 54 50.4 +1.3
MAKZ Makanchi 9.94 38 ePn Pn 18 54 50.4 +1.3
MK01 Makanchi Array 10.07 39 ePn Pn 18 54 51.3 +0.5
MK31 Makanchi Array 10.08 39 ⇑Pn Pn 18 54 52.2 +1.2
comp=N,14nm,1.7s,baz=218,slow=15,SNR=20
MK31 ⇑Lg Lg 18 57 40.2
comp=N,6.5nm,0.7s,baz=222,slow=28,SNR=4.0
MK31 Makanchi Array 10.08 39 eP Pn 18 54 51.5 +0.5
MK31 Makanchi Array 10.08 39 ePn Pn 18 54 51.5 +0.5
MK32 Makanchi Array 10.08 39 ePn Pn 18 54 52.4 +1.4
MKAR Makanchi Array 10.08 39 Pn Pn 18 54 52.4 +1.4
comp=N,0.2nm,0.3s,baz=218,slow=14,SNR=20
MKAR Lg Lg 18 57 44.6
comp=N,0.5nm,0.3s,baz=218,slow=28,SNR=5.7
MKAR Makanchi Array 10.08 39 eP Pn 18 54 51.6 +0.6
MKAR Makanchi Array 10.08 39 ePn Pn 18 54 51.6 +0.6
MKAR Lg Lg 18 57 44.6
WMQ Urumqi 11.83 63 eP Pn 18 55 14.6 -0.3
WMQ pP 18 55 21.6
WMQ eS Sn 18 57 26.8 -0.2
WMQ pmax pmax
comp=N,10.0nm,0.5s
WMQ pmax pmax
comp=N,110nm,4.2s
WMQ LR LR
comp=N,370nm,9.5s
WMQ LR LR
comp=N,340nm,7.0s
WMQ LR LR
comp=N,430nm,14.2s
GEYT Alibeck 11.83 268 Pn Pn 18 55 15.4 +0.5
comp=N,1.4nm,0.3s,baz=93,slow=8.9,SNR=14
GEYT Sn Sn 18 57 26.6 -0.4
comp=N,1.1nm,0.3s,baz=92,slow=11,SNR=3.4
KURBB Kurchatov Arra 11.99 17 Pn Pn 18 55 16.4 -0.6
comp=N,0.2nm,0.3s,baz=205,slow=12,SNR=6.5
KURBB Lg Lg 18 58 38.9
comp=N,0.3nm,0.3s,baz=198,slow=28,SNR=11
KURK Kurchatov 12.10 17 ⇑Lg Lg 18 58 39.1
comp=N,78nm,1.1s
KURK Kurchatov 12.10 17 P Pn 18 55 16.4 -2.1
VOSK Vostochnaya 13.55 354 ⇓Pn Pn 18 55 34.8 -3.6
comp=N,5.8nm,0.8s
VOSK ⇑Lg Lg 18 59 26.7
comp=N,32nm,1.2s
VOSK Vostochnaya 13.55 354 eP Pn 18 55 35.1 -3.3
VOSK Vostochnaya 13.55 354 ePn Pn 18 55 35.1 -3.3
AB31 Akbulak array 13.74 321 Pn Pn 18 55 38.8 -2.1
comp=N,3.3nm,0.7s,baz=127,slow=13,SNR=69
AB31 ⇑Sn Sn 18 58 02.3 -11
comp=N,9.2nm,0.7s,baz=170,slow=18,SNR=5.1
ABKAR Akbulak array 13.74 321 ePn Pn 18 55 39.1 -1.8
PYUN Piuthan 13.81 141 eP Pn 18 55 41.5 -0.8
comp=N,29nm,0.5s
PYUN eS Sn 18 58 11.7 -4.2
BVA0 Borovoye Array 13.90 353 Pn Pn 18 55 40.1 -3.0
comp=N,15nm,0.8s,baz=160,slow=13,SNR=25
BVA0 ⇓Lg Lg 18 59 35.9
comp=N,32nm,1.1s
BVAR Borovoye Array 13.90 353 Pn Pn 18 55 40.4 -2.8
comp=N,0.7nm,0.3s,baz=165,slow=14,SNR=20
BVAR Lg Lg 18 59 38.0
comp=N,0.3nm,0.3s,baz=169,slow=32,SNR=3.6
BRVK Borovoye 13.95 353 eP Pn 18 55 41.0 -2.7
BRVK Borovoye 13.95 353 ePn Pn 18 55 41.0 -2.7
ZRNK Zerenda 13.99 350 ⇓Pn Pn 18 55 41.4 -2.9
comp=N,7.0nm,0.5s
ZRNK ⇓Lg Lg 18 59 38.7
comp=N,49nm,1.4s
ZRNK Zerenda 13.99 350 eP Pn 18 55 41.5 -2.9
ZRNK Zerenda 13.99 350 ePn Pn 18 55 41.5 -2.9
KOLN Koldanda 14.39 140 eS Sn 18 58 26.1 -3.8
CHKZ Chkalovo 14.53 354 ⇑Pn Pn 18 55 48.7 -3.0
comp=N,2.8nm,0.5s
CHKZ ⇑Lg Lg 18 59 55.9
comp=N,16nm,1.1s
GKN Gorkha 14.74 136 eP Pn 18 55 53.0 -1.9
comp=N,18nm,0.4s
KKN Kakani 15.26 135 eP Pn 18 55 59.5 -2.4
comp=N,15nm,0.5s
AKTO Aktyubinsk 15.45 321 Pn Pn 18 56 02.5 -1.7
comp=N,0.6nm,0.3s,baz=132,slow=14,SNR=9.5
AKTO Sn Sn 18 58 45.0 -10
comp=N,0.2nm,0.3s,baz=132,slow=14,SNR=4.3
AKTO LR LR 19 02 15.7
comp=N,79nm,18.6s,baz=108,slow=38
AKTO Aktyubinsk 15.45 321 ⇓Pn Pn 18 56 02.5 -1.7
comp=N,8.1nm,0.7s
AKTO ⇑Sn Sn 18 58 46.0 -9.3
comp=N,8.3nm,0.8s
PKIN Phulchoki 15.49 135 eP Pn 18 56 03.3 -1.7
comp=N,9.2nm,0.4s
ZAA0 Zalesovo Array 16.71 25 ePn Pn 18 56 17.2 -3.0
ZALV Zalesovo Beam 16.71 25 Pn Pn 18 56 18.1 -2.1
comp=N,0.7nm,0.3s,baz=205,slow=11,SNR=21
ZALV Lg Lg 19 01 11.6
comp=N,0.1nm,0.3s,baz=221,slow=26,SNR=3.1
ZAA1 Zalesovo Array 16.72 25 ePn Pn 18 56 18.1 -2.2
ZAA1 ePcP PcP 19 01 11.6 +2.7

NVS Novosibirsk 17.01 20 eP P 18 56 25.3 -0.6
LSA Lhasa 17.62 117 eP P 18 56 35.5 +2.2
LSA pmax pmax
comp=Z,4.0nm,1.1s
LSA Lhasa 17.62 117 ePn P 18 56 35.5 +2.2
comp=Z,3.9nm,1.1s
ARU Arti 19.70 336 P Pn 18 56 57.1 +0.2
comp=Z,0.0nm,0.3s,baz=138,slow=6.9,SNR=19
ARU Arti 19.70 336 *e*/P Pn 18 56 59.0 +2.1
ARU S Sn 19 00 39.0 +1.0
ARU pmax pmax
comp=Z,8.0nm,0.6s
ARU Arti 19.70 336 eP Pn 18 56 57.2 +0.4
comp=Z,9.5nm,0.6s
UOSS Minazif 20.18 230 eP P 18 57 01.9 +1.0
comp=Z,88nm,2.0s
GTA Gaotai 20.62 81 eP Pn 18 57 07.3 -0.7
GTA pP sP 18 57 11.7 +2.1
GTA sP pP 18 57 14.7 +6.3
GTA pmax pmax
comp=Z,18nm,0.9s
GNI Garni 21.83 281 P P 18 57 20.7 +1.9
comp=Z,1.1nm,0.7s,baz=75,slow=19,SNR=3.3
GNI Garni 21.83 281 eP P 18 57 20.1 +1.3
GNI pmax pmax
comp=Z,25nm,1.0s
GNI Garni 21.83 281 eP P 18 57 20.1 +1.3
comp=Z,25nm,1.0s
SOKR Solikamsk 22.84 338 eP P 18 57 29.8 +0.6
SOKR pmax pmax
comp=Z,25nm,1.2s
GOF Gofitskoye 22.97 294 ⇑eP P 18 57 37.1 +6.4
GOF pmax pmax
comp=Z,15nm,0.9s
KBZ Khabaz 23.02 291 P P 18 57 32.7 +1.5
comp=Z,1.9nm,0.6s,baz=109,slow=5.6,SNR=5.3
KBZ LR LR 19 08 32.2
comp=Z,32nm,19.6s,baz=44,slow=42
KVAR Kislovodsk Arr 23.17 292 P P 18 57 33.7 +0.8
comp=Z,5.5nm,0.8s,baz=128,slow=12,SNR=5.1
KVAR LR LR 19 07 00.0
comp=Z,28nm,21.5s,baz=18,slow=38
KIV Kislovodsk 23.17 292 eP P 18 57 34.9 +2.0
KIV pmax pmax
comp=Z,9.0nm,1.0s
KIV Kislovodsk 23.17 292 eP P 18 57 32.2 -0.7
comp=Z,14nm,0.8s
ZAK Zakamensk 23.94 52 eP P 18 57 37.3 -3.2
ZAK pmax pmax
comp=Z,3.0nm,1.7s
SONA0 Songino Array 25.43 59 eP P 18 57 54.1 0.0
comp=Z,18nm,1.5s
SONM Songino Array 25.43 59 P P 18 57 54.1 0.0
comp=Z,2.6nm,0.7s,baz=262,slow=9.3,SNR=13
SONM LR LR 19 08 46.8
comp=Z,51nm,19.1s,baz=49,slow=39
SONA1 Songino Array 25.44 59 eP P 18 57 54.2 +0.1
CD2 Chengdu 26.31 99 eP P 18 58 01.8 -0.4
OBN Obninsk 29.06 315 LR LR 19 10 58.2
comp=Z,52nm,19.8s,baz=90,slow=38
CHTO Chiang Mai 30.22 125 eP P 18 58 35.7 -1.4
CHTO pmax pmax
comp=Z,10.0nm,1.8s
CHTO Chiang Mai 30.22 125 eP P 18 58 35.7 -1.4
comp=Z,10nm,1.8s
BR101 Keskin Array S 30.32 284 eP P 18 58 40.1 +2.2
BR131 Keskin Array S 30.32 284 eP P 18 58 40.3 +2.4
BRTR Keskin Array B 30.32 284 P P 18 58 40.1 +2.2
comp=Z,3.4nm,0.7s,baz=69,slow=8.0,SNR=4.3
BRTR Keskin Array B 30.32 284 *ce*P P 18 58 40.5 +2.6
BRTR pmax pmax
comp=Z,4.0nm,0.7s
CMAR Chiang Mai Arr 30.48 125 P P 18 58 40.2 +0.8
comp=Z,0.3nm,0.5s,baz=310,slow=9.0,SNR=5.9
CMAR PcP PcP 19 01 38.9 +0.3
comp=Z,0.6nm,0.6s,baz=309,slow=4.1,SNR=5.1
ANTO Ankara 30.92 284 eP P 18 58 45.9 +2.7
ANTO pmax pmax
comp=Z,23nm,1.6s
ANTO Ankara 30.92 284 eP P 18 58 45.9 +2.7
comp=Z,23nm,1.6s
BR231 Keskin MP Arra 30.94 284 eP P 18 58 41.3 -2.1
ENH Enshi 31.01 96 eP P 18 58 45.4 +1.4
comp=Z,3.8nm,0.8s
BOD Bodaibo 32.16 41 eP P 18 58 51.8 -2.0
BOD pmax pmax
comp=Z,7.0nm,1.4s
AKASG Malin Array Be 32.64 305 P P 18 58 58.5 +0.5
comp=Z,4.2nm,0.5s,baz=80,slow=7.3,SNR=19
AKBB Malin Array Si 32.64 305 eP P 18 58 58.5 +0.5
AKBB pmax pmax
comp=Z,7.0nm,0.8s
AKBB Malin Array Si 32.64 305 eP P 18 58 58.5 +0.5
comp=Z,6.6nm,0.8s
KIEV Kiev 32.65 305 eP P 18 58 58.3 +0.2
KIEV pmax pmax
comp=Z,8.0nm,0.5s
KIEV Kiev 32.65 305 eP P 18 58 58.3 +0.2
comp=Z,7.6nm,0.5s
AK11 Malin Array Si 32.67 305 eP P 18 58 58.6 +0.3
TESR Tescani 34.41 298 ⇓/P P 18 59 15.4 +1.8
VRI Vrincioaia 34.42 296 ⇑/P P 18 59 16.4 +2.8
VRI Vrincioaia 34.42 296 ⇑P P 18 59 16.4 +2.8
PLOR Plostina 34.47 296 ⇓/P P 18 59 17.0 +2.9
PLOR Plostina 34.47 296 ⇓P P 18 59 17.0 +2.9
MLR Muntele Rosu 35.00 296 P P 18 59 21.3 +2.5
comp=Z,2.4nm,0.8s,baz=112,slow=3.3,SNR=13
MLR Muntele Rosu 35.00 296 ⇑/P P 18 59 22.4 +3.6
MLR Muntele Rosu 35.00 296 eP P 18 59 21.8 +3.0
MLR pmax pmax
comp=Z,9.0nm,0.7s
MLR Muntele Rosu 35.00 296 eP P 18 59 21.8 +3.0
comp=Z,8.9nm,0.7s
BURAR Bucovina Array 35.30 300 ⇓/P P 18 59 22.8 +1.5
BURAR Bucovina Array 35.30 300 ⇓P P 18 59 22.8 +1.5
BUR08 Bucovina Ar. S 35.31 300 eP P 18 59 22.8 +1.4
BUR08 eS S 19 04 45.8 -10
DOPR Dopca 35.34 297 ⇑/P P 18 59 12.5 -9.1
VOIR 35.64 296 ⇓/P P 18 59 26.1 +1.9
VOIR 35.64 296 ⇓P P 18 59 26.1 +1.9
FIA0 FINESS Array S 36.21 323 eP P 18 59 29.0 +0.2
FIA0 FINESS Array S 36.21 323 eP P 18 59 28.9 +0.2
FINES FINESS Array B 36.21 323 P P 18 59 28.9 +0.2
comp=Z,5.2nm,0.4s,baz=111,slow=9.3,SNR=75
FINES FINESS Array B 36.21 323 *i* P P 18 59 29.5 +0.7
FINES pmax pmax
comp=Z,5.0nm,0.4s
KARP Karpathos 36.41 279 eP P 18 59 32.2 +1.3
comp=Z,18nm,1.0s
LOT Lotru 36.53 296 ⇑/P P 18 59 34.5 +2.6
DRGR 37.08 299 ⇓/P P 18 59 38.8 +2.3
DRGR 37.08 299 ⇓P P 18 59 38.8 +2.3
KOLS Kolonicke sedl 37.16 302 eP P 18 59 38.6 +1.5
KOLS pmax pmax
comp=Z,2.0nm,0.8s
KOLS Kolonicke sedl 37.16 302 eP P 18 59 38.6 +1.5
KOLS ePP PnPn 19 01 03.3 +1.3
VTS Vitosha 37.43 292 eP P 18 59 41.4 +1.7
VTS pmax pmax
comp=Z,3.0nm,0.8s
VTS Vitosha 37.43 292 eP P 18 59 41.4 +1.7
comp=Z,3.2nm,0.8s
BZS Buzias 38.00 297 ⇓/P P 18 59 46.7 +2.5
BZS Buzias 38.00 297 ⇓P P 18 59 46.7 +2.5
MDVR Moldovita 38.07 295 ⇓/P P 18 59 47.3 +2.4
IDI Anoyia 38.24 280 eP P 18 59 47.6 +1.1
comp=Z,22nm,1.2s
OJC Ojcow 38.66 304 eP P 18 59 50.8 +1.0
OJC pmax pmax
comp=Z,7.0nm,0.8s
OJC Ojcow 38.66 304 eP P 18 59 50.8 +1.0
comp=Z,6.8nm,0.8s
PSZ Piszkesteto 38.84 301 eP P 18 59 52.0 +0.6
PSZ pmax pmax
comp=Z,3.0nm,0.9s
PSZ Piszkesteto 38.84 301 eP P 18 59 52.0 +0.6
comp=Z,3.4nm,0.9s
AGG Agios Georgios 38.97 286 eP P 18 59 54.3 +1.7
AGG pmax pmax
comp=Z,66nm,1.6s
AGG Agios Georgios 38.97 286 eP P 18 59 54.3 +1.7
comp=Z,66nm,1.6s
LANS Liptovska Anna 38.98 303 eP P 18 59 55.0 +2.5
LANS Liptovska Anna 38.98 303 eP P 18 59 55.0 +2.5
ARA0 ARCESS Array S 39.29 336 eP P 18 59 53.8 -1.0

ARCES ARCESS Array B 39.29 336 P P 18 59 53.8 -1.0
comp=Z,5.2nm,0.5s,baz=111,slow=8.5,SNR=56
ARE0 ARCESS Array S 39.29 336 eP P 18 59 55.7 +0.9
comp=Z,92nm,1.9s
VYHS Vyhne 39.47 302 eP P 18 59 57.4 +0.8
VYHS Vyhne 39.47 302 eP P 18 59 57.4 +0.8
MORC Moravsky Berou 40.16 304 eP P 19 00 02.9 +0.6
MORC pmax pmax
comp=Z,11nm,1.1s
MORC Moravsky Berou 40.16 304 eP P 19 00 02.9 +0.6
comp=Z,11nm,1.1s
YAK Yakutsk 40.75 37 P P 19 00 05.8 -1.1
comp=Z,10nm,0.6s,baz=127,slow=1.5,SNR=9.1
YAK Yakutsk 40.75 37 eP P 19 00 05.6 -1.4
YAK pmax pmax
comp=Z,17nm,1.0s
YAK pmax pmax
comp=N,3.0nm,1.0s
YAK pmax pmax
comp=E,11nm,1.4s
YAK Yakutsk 40.75 37 eP P 19 00 05.7 -1.2
comp=E,15nm,0.7s
KLR Kul'dur 42.19 56 P P 19 00 18.3 -0.6
comp=E,1.4nm,0.4s,baz=289,slow=8.3,SNR=7.8
KLR PcP PcP 19 02 12.7 -0.4
comp=E,1.0nm,0.5s,baz=207,slow=2.3,SNR=3.5
BRG Berggiesshubel 42.31 306 *e*(P) P 19 00 21.6 +1.7
comp=E,4.7nm,1.0s
BRG Berggiesshubel 42.31 306 eP P 19 00 21.6 +1.7
BRG pmax pmax
comp=Z,5.0nm,1.0s
KS01 Wonju Array Si 42.42 74 eP P 19 00 20.8 -0.1
KSAR Wonju Array Be 42.42 74 P P 19 00 20.7 -0.3
KSAR Wonju Array Be 42.42 74 eP P 19 00 20.6 -0.3
KSRS Korea Array 42.45 74 P P 19 00 20.6 -0.5
comp=Z,0.9nm,0.5s,baz=281,slow=6.5,SNR=5.3
TIXI Tiksi 42.59 23 eP P 19 00 20.9 -1.0
TIXI pmax pmax
comp=Z,6.0nm,0.5s
TIXI Tiksi 42.59 23 eP P 19 00 20.9 -1.0
comp=Z,6.2nm,0.5s
GEC2 GERESS Array S 42.78 303 eP P 19 00 25.3 +1.4
GEC2 pmax pmax
comp=Z,4.0nm,1.0s
GEC2 GERESS Array S 42.78 303 eP P 19 00 25.3 +1.4
comp=Z,3.7nm,1.0s
GERES GERESS Array B 42.78 303 P P 19 00 25.4 +1.4
comp=Z,1.0nm,0.6s,baz=65,slow=6.3,SNR=12
GEA0 GERESS Array S 42.78 303 eP P 19 00 25.3 +1.4
KHC Kasperske Hory 42.81 304 eP P 19 00 25.5 +1.5
KHC pmax pmax
comp=Z,1.0nm,0.9s
KHC Kasperske Hory 42.81 304 eP P 19 00 25.5 +1.5
comp=Z,1.1nm,0.9s
CLL Collm 42.83 307 eP P 19 00 24.3 +0.1
CLL pmax pmax
comp=Z,18nm,2.0s
CLL Collm 42.83 307 eP P 19 00 24.3 +0.1
comp=Z,18nm,2.0s
IPM Ipoh 42.86 137 eP P 19 00 25.5 +0.7
comp=Z,6.1nm,0.9s
YHNB Yeheng 42.95 95 eP P 19 00 25.7 +0.2
comp=Z,151nm,2.0s
SSLB Suanglung 43.09 96 eP P 19 00 25.3 -1.2
comp=Z,6.8nm,1.0s
FURI Furi 43.16 235 eP P 19 00 26.1 -1.5
comp=Z,31nm,1.6s
PSI Prapat 43.21 141 eP P 19 00 27.3 -0.4
PSI pmax pmax
comp=Z,6.0nm,1.0s
PSI Prapat 43.21 141 eP P 19 00 27.3 -0.4
comp=Z,5.5nm,1.0s
NB2 NORSAR Subarra 43.25 321 P P 19 00 27.2 -0.2
comp=Z,0.9nm,0.4s,baz=91,slow=8.6
NB200 NORSAR Array S 43.25 321 eP P 19 00 26.9 -0.5
NOA NORSAR Array B 43.25 321 P P 19 00 26.9 -0.5
baz=107,slow=7.8
USRK Ussuriysk Ar. 43.39 64 P P 19 00 28.6 -0.2
comp=Z,0.4nm,0.4s,baz=270,slow=8.6,SNR=4.2
CEL Celeste 44.00 288 eP P 19 00 34.0 +0.2
comp=Z,7.4nm,0.9s
KONO Kongsberg 44.06 319 eP P 19 00 33.4 -0.5
KONO pmax pmax
comp=Z,26nm,1.6s
KONO Kongsberg 44.06 319 eP P 19 00 33.4 -0.5
comp=Z,26nm,1.6s
SPITS Spitsbergen Ar 45.22 346 P P 19 00 43.1 +0.1
comp=Z,3.6nm,0.6s,baz=110,slow=14,SNR=9.2
TUE Stuetta 46.17 301 eP P 19 00 51.0 -0.1
comp=Z,3.4nm,0.9s
KBS Kingsbay 46.32 346 eP P 19 00 52.3 +0.7
KBS pmax pmax
comp=Z,42nm,1.4s
KBS Kingsbay 46.32 346 eP P 19 00 52.3 +0.7
comp=Z,42nm,1.4s
BFO Black Forest 46.37 303 eP P 19 00 50.2 -2.3
BFO pmax pmax
comp=Z,4.0nm,1.1s
BFO Black Forest 46.37 303 eP P 19 00 50.2 -2.3
comp=Z,4.4nm,1.1s
JOW Kunigami 47.20 88 eP P 19 00 58.6 -0.7
comp=Z,1.8nm,0.9s
SENIN Lac Senin/Sane 47.56 301 eP P 19 01 03.3 +1.2
comp=Z,18nm,1.8s
MJAR Matsushiro Arr 50.42 71 P P 19 01 22.9 -1.0
comp=Z,1.8nm,0.6s,baz=288,slow=9.2,SNR=6.0
KMBO Kilima Mbogo 51.93 228 P P 19 01 37.9 +2.3
comp=Z,2.9nm,0.6s,baz=47,slow=14,SNR=8.6
KMBO Kilima Mbogo 51.93 228 eP P 19 01 37.9 +2.3
KMBO pmax pmax
comp=Z,24nm,2.0s
KMBO Kilima Mbogo 51.93 228 eP P 19 01 37.9 +2.3
comp=Z,24nm,2.0s
MBAR Mbarara 55.47 235 eP P 19 02 02.5 +1.0
MBAR pmax pmax
comp=Z,15nm,1.6s
MBAR Mbarara 55.47 235 eP P 19 02 02.5 +1.0
comp=Z,15nm,1.6s
CISI Cisompet, Garu 56.59 137 eP P 19 02 07.5 -1.8
comp=Z,117nm,1.6s
PEA0 Petropavlovsk- 56.83 46 eP P 19 02 10.2 -0.4
PET Petropavlovsk 57.39 46 eP P 19 02 14.6 0.0
PET pmax pmax
comp=Z,35nm,1.7s
PET Petropavlovsk 57.39 46 eP P 19 02 14.6 0.0
comp=Z,35nm,1.7s
ES19 SONSECA Array 57.63 297 eP P 19 02 16.8 +0.2
ESDC Sonseca Array 57.69 297 P P 19 02 17.3 +0.3
comp=Z,1.5nm,0.6s,baz=58,slow=7.2,SNR=11
ESLA Sonseca Array 57.69 297 eP P 19 02 17.7 +0.8
comp=Z,15nm,1.8s
SUMG Summit 59.01 341 eP P 19 02 26.6 +0.5
SUMG pmax pmax
comp=Z,6.0nm,0.6s
SUMG Summit 59.01 341 eP P 19 02 26.6 +0.5
comp=Z,6.2nm,0.6s
TOA1 Torodi Ar. Sit 67.47 269 eP P 19 03 23.0 +0.5
TOA0 Torodi Ar. Sit 67.47 269 eP P 19 03 22.8 +0.3
TORD Torodi Ar. Bea 67.47 269 P P 19 03 23.0 +0.5
comp=Z,1.7nm,0.6s,baz=49,slow=5.1,SNR=11
LSZ Lusaka 68.57 227 eP P 19 03 31.4 +1.9
LSZ pmax pmax
comp=Z,5.0nm,0.8s
LSZ Lusaka 68.57 227 eP P 19 03 31.4 +1.9
comp=Z,4.6nm,0.8s
COLD Coldfoot 68.86 17 eP P 19 03 30.3 -0.1
comp=Z,19nm,1.8s
TTA Tatalina 70.85 21 eP P 19 03 41.5 -1.4
TTA pmax pmax
comp=Z,14nm,0.6s
TTA Tatalina 70.85 21 eP P 19 03 41.5 -1.4
comp=Z,14nm,0.6s
TT01 Tatalina 70.87 22 eP P 19 03 42.2 -0.6
INK Inuvik 70.91 10 P P 19 03 42.7 -0.3
comp=Z,2.1nm,0.3s,baz=350,slow=6.2,SNR=22
INK Inuvik 70.91 10 eP P 19 03 42.7 -0.3
INK pmax pmax
comp=Z,7.0nm,1.0s
INK Inuvik 70.91 10 eP P 19 03 42.7 -0.3
comp=Z,6.7nm,1.0s
MDM Murphy Dome 71.20 17 eP P 19 03 44.6 -0.3
comp=Z,21nm,2.0s
BPAW Bear Paw Mtn. 71.25 19 eP P 19 03 45.7 +0.4
comp=Z,17nm,1.7s
CAST Castle Rocks 71.53 20 eP P 19 03 46.4 -0.5
comp=Z,21nm,2.0s
ILAR Eielson Array 71.67 17 P P 19 03 46.7 -1.0

comp=Z,1.1nm,0.9s,baz=321,slow=5.0,SNR=13
ILB Eielson Array 71.67 17 *e*P **P** 19 03 47.0 **-0.7**
KTH Kantishna Hill 71.72 19 *e*P **P** 19 03 47.6 **-0.6**
comp=Z,22nm,1.8s
PPLA Purkeypile 71.93 20 *e*P **P** 19 03 48.7 **-0.8**
comp=Z,28nm,1.8s
DHY Denali Highway 73.00 18 *e*P **P** 19 03 54.7 **-1.2**
comp=Z,3.4nm,0.8s
RSO Redoubt South 73.76 22 *e*P **P** 19 04 00.3 **-0.1**
PMR Palmer 73.82 20 *e*P **P** 19 04 00.5 **0.0**
PMR pmax pmax
comp=Z,8.0nm,0.4s
PMR Palmer 73.82 20 *e*P **P** 19 04 00.5 **0.0**
comp=Z,8.2nm,0.4s
SML Sawmill 73.84 19 *e*P **P** 19 04 00.4 **-0.3**
SML pmax pmax
comp=Z,10.0nm,0.8s
SML Sawmill 73.84 19 *e*P **P** 19 04 00.4 **-0.3**
comp=Z,9.9nm,0.8s
DAWY Dawson 73.85 14 *e*P **P** 19 04 00.4 **-0.4**
comp=Z,20nm,1.9s
YKA Yellowknife Ar 78.41 4 P **P** 19 04 26.4 **-0.2**
comp=Z,2.4nm,0.4s,baz=349,slow=5.6,SNR=22
YKB5 Yellowknife Ar 78.41 4 *e*P **P** 19 04 26.4 **-0.2**
WRA Warramunga Arr 82.06 124 P **P** 19 04 47.3 **+0.4**
comp=Z,1.4nm,0.6s,baz=324,slow=4.9,SNR=18
WR1 Warramunga Arr 82.06 124 *e*P **P** 19 04 47.3 **+0.4**
comp=Z,45nm,2.0s
ASAR Alice Springs 84.49 126 P **P** 19 04 60.0 **+0.6**
comp=Z,0.7nm,0.7s,baz=316,slow=4.7,SNR=7.2
ASAR Alice Springs 84.49 126 P **P** 19 05 00.0 **+0.6**
BSMT Bassoo Peak 92.99 5 *e*P **P** 19 05 40.4 **+0.4**

*ISCJB **05** 18:55:59.8±0.4,39.°10N±0.°02×29.°00E±0.°02,h5km±4km, Error ellipse: s-maj=3.9km s-min=2.6km az=148.7*
*ISK **05** 18:55:59.2,39.°13N×29.°03E,h2km,ML3.3*
*DDA **05** 18:55:59.2,39.°12N×29.°02E,h7km,Ml3.8*
*CSEM **05** 18:56:00.1±0.1,39.°09N×29.°02E,h5km,ML3.8, Error ellipse: s-maj=2.2km s-min=1.8km az=150.0*
*THE **05** 18:56:01.8,39.°03N×28.°95E,h7km±3km,ML3.2/6, Error ellipse: s-maj=3.6km s-min=0.8km az=116.0*

ISC 05 18:56:00.2±0.9,**39.°10N**±0.°02×**29.°01E**±0.°02,**h8**km±8km, **n111**,σ0**°72**/153,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**256**	*i* P			**Pg**	**18 56 05.2**	**+0.2**
DEMI				*i* S			**Sg**	**18 56 08.8**	**+0.6**
DEMI	**Demirci**	**0.24**	**256**	P			**Pg**	**18 56 05.2**	**+0.2**
DEMI				S			**Sg**	**18 56 08.8**	**+0.6**
GEDZ	**Gediz**	**0.31**	**100**	*e*PG			**Pg**	**18 56 07.1**	**+0.7**
GEDZ				*e*SG			**Sg**	**18 56 10.7**	**+0.1**
GEDZ	**Gediz**	**0.31**	**100**	*e*Pg			**Pg**	**18 56 07.1**	**+0.7**
GEDZ				*e*Sg			**Sg**	**18 56 10.7**	**+0.1**
GDZ	**Gediz**	**0.36**	**92**	*i* P			**Pg**	**18 56 06.7**	**-0.6**
GDZ				*i* S			**Sg**	**18 56 11.7**	**-0.5**
GDZ	**Gediz**	**0.36**	**92**	P			**Pg**	**18 56 06.7**	**-0.6**
GDZ				S			**Sg**	**18 56 11.7**	**-0.5**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG			**Pg**	**18 56 08.8**	**-0.9**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg			**Pg**	**18 56 08.8**	**-0.9**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG			**Pg**	**18 56 12.5**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**205**	P			**Pg**	**18 56 12.5**	**-0.2**
KULA				S			**Sg**	**18 56 21.0**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**205**	P			**Pg**	**18 56 12.5**	**-0.2**
KULA				S			**Sg**	**18 56 21.0**	**-0.2**
MANT	**Manisa**	**0.71**	**210**	*i* P			**Pg**	**18 56 12.4**	**-1.4**
MANT				*i* S			**Sg**	**18 56 21.5**	**-1.6**
MANT	**Manisa**	**0.71**	**210**	P			**Pg**	**18 56 12.4**	**-1.4**
MANT				S			**Sg**	**18 56 21.5**	**-1.6**
KHL	**Karahalli**	**0.87**	**153**	*e*PG			**Pb**	**18 56 17.4**	**-0.2**
KHL	**Karahalli**	**0.87**	**153**	*e*Pg			**Pb**	**18 56 17.4**	**-0.2**
AKHS	**Akhisar**	**0.96**	**257**	*i* P			**Pg**	**18 56 18.7**	**+0.1**
AKHS				*i* S			**Sb**	**18 56 32.1**	**+0.2**
AKHS	**Akhisar**	**0.96**	**257**	P			**Pg**	**18 56 18.7**	**+0.1**
AKHS				S			**Sb**	**18 56 32.1**	**+0.2**
AKS	**Akhisar**	**0.96**	**257**	*e*PG			**Pb**	**18 56 19.0**	**-0.1**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg			**Pb**	**18 56 19.0**	**-0.1**
BALB	**Balikesir**	**1.03**	**302**	*e*PG			**Pn**	**18 56 20.7**	**-0.1**
BALB	**Balikesir**	**1.03**	**302**	*e*Pg			**Pn**	**18 56 20.7**	**-0.1**
IGD	**Bursa**	**1.17**	**7**	*i* P			**Pg**	**18 56 20.4**	**-2.2**
IGD				*i* S			**Sb**	**18 56 37.7**	**-0.2**
BALY	**Balya**	**1.25**	**301**	*i* P			**Pn**	**18 56 23.7**	**-0.3**
BALY	**Balya**	**1.25**	**301**	P			**Pn**	**18 56 23.7**	**-0.3**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn			**Pn**	**18 56 24.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn			**Pn**	**18 56 24.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*PN			**Pn**	**18 56 23.5**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*Pn			**Pn**	**18 56 23.5**	**-0.7**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN			**Pn**	**18 56 23.8**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn			**Pn**	**18 56 23.8**	**-0.4**
IZI	**Iznik**	**1.28**	**16**	*e*PN			**Pn**	**18 56 24.1**	**-0.3**
IZI	**Iznik**	**1.28**	**16**	*e*Pn			**Pn**	**18 56 24.2**	**-0.3**
GEMT	**Gemlik**	**1.34**	**6**	*e*PN			**Pn**	**18 56 25.0**	**-0.1**
GEMT	**Gemlik**	**1.34**	**6**	*e*Pn			**Pn**	**18 56 25.0**	**-0.1**
BORA	**Eskisehir**	**1.36**	**55**	*i* P			**Pn**	**18 56 24.8**	**-0.7**
BORA				*i* S			**Sb**	**18 56 43.4**	**0.0**
BORA	**Eskisehir**	**1.36**	**55**	P			**Pn**	**18 56 24.8**	**-0.7**
BORA				S			**Sb**	**18 56 43.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN			**Pn**	**18 56 26.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn			**Pn**	**18 56 26.1**	**+0.2**
DNZL	**Cakiroluk**	**1.41**	**179**	*i* P			**Pn**	**18 56 25.6**	**-0.7**
DNZL				*i* S			**Sg**	**18 56 46.8**	**+1.3**
DNZL	**Cakiroluk**	**1.41**	**179**	P			**Pn**	**18 56 25.6**	**-0.7**
DNZL				S			**Sg**	**18 56 46.8**	**+1.3**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN			**Pb**	**18 56 27.2**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn			**Pb**	**18 56 27.2**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*PN			**Pg**	**18 56 27.8**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*Pn			**Pg**	**18 56 27.8**	**-0.2**
ESKT	**Eskisehir**	**1.48**	**73**	*e*PN			**Pn**	**18 56 27.5**	**+0.3**
ESKT	**Eskisehir**	**1.48**	**73**	*e*Pn			**Pn**	**18 56 27.5**	**+0.3**
EDC	**Edincik**	**1.53**	**325**	*e*PN			**Pb**	**18 56 28.3**	**-0.4**
EDC	**Edincik**	**1.53**	**325**	*e*Pn			**Pb**	**18 56 28.3**	**-0.4**
IZM	**Izmir**	**1.54**	**243**	*e*PN			**Pb**	**18 56 29.2**	**+0.3**
IZM	**Izmir**	**1.54**	**243**	*e*Pn			**Pb**	**18 56 29.2**	**+0.3**
GPA	**Golpazari**	**1.55**	**40**	*e*PN			**Pb**	**18 56 29.1**	**0.0**
GPA	**Golpazari**	**1.55**	**40**	*e*Pn			**Pb**	**18 56 29.1**	**0.0**
KNL	**Bal¯kesir**	**1.64**	**316**	*i* P			**Pn**	**18 56 29.7**	**+0.5**
KNL				*i* S			**Sg**	**18 56 52.4**	**-0.4**
DKL	**Dikili**	**1.64**	**270**	*e*PN			**Pb**	**18 56 30.2**	**-0.4**
DKL	**Dikili**	**1.64**	**270**	*e*Pn			**Pb**	**18 56 30.2**	**-0.4**
GULT	**Gulveren**	**1.76**	**41**	*e*PN			**Pn**	**18 56 31.8**	**+0.8**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn			**Pn**	**18 56 31.8**	**+0.8**
HRT	**Hereke**	**1.79**	**16**	*e*PN			**Pn**	**18 56 31.9**	**+0.5**
HRT	**Hereke**	**1.79**	**16**	*e*Pn			**Pn**	**18 56 31.9**	**+0.5**
AYVA	**Ayvalik**	**1.82**	**277**	*i* P			**Pg**	**18 56 34.6**	**-0.3**
AYVA				*i* S			**Sg**	**18 56 58.8**	**+0.2**
KRBG	**Karabiga-Canak**	**1.85**	**315**	*e*PN			**Pb**	**18 56 33.3**	**-0.8**
KRBG	**Karabiga-Canak**	**1.85**	**315**	*e*Pn			**Pb**	**18 56 33.3**	**-0.8**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*PN			**Pn**	**18 56 32.1**	**-0.2**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*Pn			**Pn**	**18 56 32.1**	**-0.2**
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*PN			**Pn**	**18 56 33.0**	**+0.6**
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*Pn			**Pn**	**18 56 33.0**	**+0.6**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN			**Pn**	**18 56 34.1**	**+0.5**
ISK	**Istanbul-Kandi**	**1.96**	**1**	P			**Pb**	**18 56 35.3**	**-0.8**
ISK				S			**Sb**	**18 57 00.7**	**0.0**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn			**Pn**	**18 56 34.2**	**+0.5**
ISK	**Istanbul-Kandi**	**1.96**	**1**	P			**Pb**	**18 56 35.3**	**-0.8**
ISK				S			**Sb**	**18 57 00.7**	**0.0**
DGB	**¯zmir**	**1.97**	**239**	*i* P			**Pb**	**18 56 36.9**	**+0.6**
DGB				*i* S			**Sb**	**18 57 01.7**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN			**Pn**	**18 56 34.7**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn			**Pn**	**18 56 34.7**	**+0.7**
YER	**Yerkesik**	**2.05**	**197**	P			**Pn**	**18 56 34.6**	**-0.3**
YER	**Yerkesik**	**2.05**	**197**	P			**Pn**	**18 56 34.6**	**-0.3**
BGKT	**Bogazkoy**	**2.08**	**355**	*e*PN			**Pn**	**18 56 36.1**	**+0.8**
BGKT	**Bogazkoy**	**2.08**	**355**	*e*Pn			**Pn**	**18 56 36.1**	**+0.8**
SILT	**Sile**	**2.10**	**13**	*e*PN			**Pn**	**18 56 36.3**	**+0.7**
SILT	**Sile**	**2.10**	**13**	*e*Pn			**Pn**	**18 56 36.3**	**+0.7**
RKY	**Sarkoy-Tekirda**	**2.12**	**319**	*e*PN			**Pn**	**18 56 36.9**	**+1.0**
RKY	**Sarkoy-Tekirda**	**2.12**	**319**	*e*Pn			**Pn**	**18 56 36.9**	**+1.0**
PRK	**Paraskevi**	**2.14**	**275**	P			**Pn**	**18 56 36.3**	**+0.2**
PRK				S			**Sn**	**18 57 03.0**	**+0.3**
PRK	**Paraskevi**	**2.14**	**275**	P			**Pn**	**18 56 36.3**	**+0.2**
PRK				S			**Sn**	**18 57 03.0**	**+0.3**
KLYT	**Kilyos**	**2.15**	**1**	*e*PN			**Pn**	**18 56 37.3**	**+1.1**
KLYT	**Kilyos**	**2.15**	**1**	*e*Pn			**Pn**	**18 56 37.3**	**+1.1**
CTKS	**Kestanelik-??a**	**2.17**	**350**	*e*PN			**Pn**	**18 56 36.9**	**+0.4**
CTKS	**Kestanelik-??a**	**2.17**	**350**	*e*Pn			**Pn**	**18 56 36.9**	**+0.4**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN			**Pn**	**18 56 37.3**	**+0.7**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn			**Pn**	**18 56 37.3**	**+0.7**
EZN	**Ezine**	**2.20**	**290**	P			**Pn**	**18 56 37.1**	**+0.1**
EZN				S			**Sn**	**18 57 05.1**	**+0.7**
EZN	**Ezine**	**2.20**	**290**	P			**Pn**	**18 56 37.1**	**+0.1**
EZN				S			**Sn**	**18 57 05.1**	**+0.7**
SMG	**Samos**	**2.20**	**232**	P			**Pn**	**18 56 37.1**	**+0.1**
SMG				S			**Sn**	**18 57 03.0**	**-1.4**
SMG	**Samos**	**2.20**	**232**	P			**Pn**	**18 56 37.1**	**+0.1**
SMG				S			**Sn**	**18 57 03.0**	**-1.4**
KIZT	**Kizilcal**	**2.24**	**95**	*e*PN			**Pn**	**18 56 38.7**	**+1.0**
KIZT	**Kizilcal**	**2.24**	**95**	*e*Pn			**Pn**	**18 56 38.7**	**+1.0**
CHOS	**Chios island**	**2.42**	**254**	P			**Pn**	**18 56 39.9**	**-0.2**
CHOS				S			**Sn**	**18 57 08.3**	**-1.6**
CHOS	**Chios island**	**2.42**	**254**	P			**Pn**	**18 56 39.9**	**-0.2**
CHOS				S			**Sn**	**18 57 08.3**	**-1.6**
CTYL	**Yalikoy Yolu**	**2.43**	**347**	*e*PN			**Pn**	**18 56 41.1**	**+0.9**
CTYL	**Yalikoy Yolu**	**2.43**	**347**	*e*Pn			**Pn**	**18 56 41.1**	**+0.9**
SIGR	**SIGRI**	**2.46**	**274**	P			**Pn**	**18 56 40.8**	**+0.3**
SIGR				S			**Sn**	**18 57 10.6**	**-0.1**
SIGR	**SIGRI**	**2.46**	**274**	P			**Pn**	**18 56 40.8**	**+0.3**
SIGR				S			**Sn**	**18 57 10.6**	**-0.1**
GADA	**Gvkgeada**	**2.64**	**295**	P			**Pn**	**18 56 43.6**	**+0.6**
GADA				S			**Sn**	**18 57 14.7**	**-0.4**
GADA	**Gvkgeada**	**2.64**	**295**	P			**Pn**	**18 56 43.6**	**+0.6**
GADA				S			**Sn**	**18 57 14.7**	**-0.4**
ENEZ	**Enez**	**2.74**	**307**	P			**Pn**	**18 56 44.9**	**+0.6**
ENEZ				S			**Sn**	**18 57 19.4**	**+1.8**
ENEZ	**Enez**	**2.74**	**307**	P			**Pn**	**18 56 44.9**	**+0.6**
ENEZ				S			**Sn**	**18 57 19.4**	**+1.8**
ALN	**Alexandroupoli**	**2.90**	**309**	P			**Pn**	**18 56 46.7**	**+0.1**
ALN				S			**Sn**	**18 57 23.1**	**+1.5**
ALN	**Alexandroupoli**	**2.90**	**309**	P			**Pn**	**18 56 46.7**	**+0.1**
ALN				S			**Sn**	**18 57 23.1**	**+1.5**
SMTH	**Samothraki Isl**	**3.01**	**298**	P			**Pn**	**18 56 48.5**	**+0.4**
SMTH				S			**Sn**	**18 57 25.0**	**+0.6**
SMTH	**Samothraki Isl**	**3.01**	**298**	P			**Pn**	**18 56 48.5**	**+0.4**
SMTH				S			**Sn**	**18 57 25.0**	**+0.6**
EDRB	**Edirne**	**3.24**	**328**	P			**Pn**	**18 56 51.7**	**+0.4**
EDRB				S			**Sn**	**18 57 31.6**	**+1.6**
EDRB	**Edirne**	**3.24**	**328**	P			**Pn**	**18 56 51.7**	**+0.4**
EDRB				S			**Sn**	**18 57 31.6**	**+1.6**

*ISCJB **05** 19:02:35.4±0.1,14.°77S±0.°04×176.°06W±0.°03,h10km, mb5.2/259,MS5.3/210,Error ellipse: s-maj=5.9km s-min=3.2km az=150.2*
*IDC **05** 19:02:35.1±0.6,14.°87S×175.°99W,h0km,mb4.7/26, mb1 4.8/26,mb1mx4.8/35,mbtmp4.7/26,MS5.2/26, Ms1 5.2/26,ms1mx5.2/32,Error ellipse: s-maj=20.9km s-min=13.9km az=136.0*
*BJI **05** 19:02:37.3,14.°40S×176.°02W,h2km,mb5.1/47,mB5.5/38, Ms5.5/51,Ms7 5.3/50*
*NEIC **05** 19:02:38.8±0.8,14.°81S×176.°03W,h25km±5km,mb5.3/221, MS5.3/159,Error ellipse: s-maj=5.6km s-min=3.4km az=145.0*
NEIC Felt at Lambasa and Suva. Also felt at Mata'utu, Wallis and Futuna.
*MOS **05** 19:02:38.9±1.0,14.°82S×176.°03W,h33km,mb5.4/60, MS5.3/36,Error ellipse: s-maj=9.2km s-min=6.5km az=57.3*
*GCMT **05** 19:02:38.8±0.1,14.°79S×175.°67W,h12km,MW5.7/137, Moment Tensor Solution. s112,c216; s137,c364; Duration: 1ŝ7 Moment tensor: Scale 10^17^Nm; Mrr-1.00±.03; Mθθ4.20±.03; Mϕϕ-3.20±.03; Mrθ0.25±.09; Mθϕ1.97±.03; Mϕr-0.13±.09; Best double couple: Mo4.20200×10^17^ NP1:ϕs301.00000°,δ89.00000°, λ-4.00000°. NP2:ϕs31.00000°,δ86.00000°,λ-179.00000°. Principal axes: T 4.6990, Plg2.0000°, Azm346.0000°; N -0.9900, Plg86.0000°, Azm104.0000°; P -3.7050, Plg4.0000°, Azm256.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISC 05 19:02:38.3±0.8,**14.°82S**±0.°05×**175.°91W**±0.°05,**h19**km±4km, **n803**,σ1°**65**/669,**mb5.3**/259,**MS5.3**/211,**22C-12D,Samoa Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.11**	**78**	Pn			Pn	19 03 32.4	-7.7
	88nm,0.3s,baz=276,slow=23,SNR=43								
AFI					Sn		Sn	19 04 14.7	-13
	181nm,0.3s,baz=284,slow=18,SNR=9.3								
AFI					LR		LR	19 05 03.6	
	comp=Z,48μm,20.3s,baz=242,slow=35								
AFI	**Afiamalu**	**4.11**	**78**	*e*Pn			Pn	19 03 31.6	-8.5
AFI				*e*Sn			Sn	19 04 11.6	-16
MSVF	**Nonsavu**	**6.48**	**243**	*e*P			**Pn**	**19 04 11.7**	**-1.1**
MSVF	**Nonsavu**	**6.48**	**243**	*e*Pn			**Pn**	**19 04 11.7**	**-1.1**
NIUE	**Niue**	**7.12**	**127**	P			**Pn**	**19 04 18.9**	**-2.6**
	baz=7.1,SNR=6.6								
FUNA	**Funafuti**	**7.88**	**322**	*e*Pn			**Pn**	**19 04 29.3**	**-2.5**
RAO	**Raoul Island**	**14.48**	**187**	LR			LR	19 10 39.1	
	comp=Z,38μm,20.2s,baz=17,slow=34								
RAO	**Raoul Island**	**14.48**	**187**	*e*P			**Pn**	**19 06 00.7**	**-1.6**
RAO	**Raoul Island**	**14.48**	**187**	*e*Pn			**Pn**	**19 06 00.7**	**-1.6**
RAR	**Rarotonga**	**16.61**	**115**	Pn			**Pn**	**19 06 24.4**	**-5.7**
	0.5nm,0.3s,baz=319,slow=17,SNR=3.0								
RAR					LR		LR	19 11 26.1	
	comp=Z,6μm,19.2s,baz=286,slow=32								
DZM	**Mont Dzumac**	**18.22**	**244**	*e*P			**P**	**19 06 51.6**	**+1.1**
	628nm,1.6s								
DZM				*e*LR			LR	19 11 06.8	
	20μm,24.9s								
DZM	**Mont Dzumac**	**18.22**	**244**	Pn			**P**	**19 06 53.4**	**+2.9**
	0.7nm,0.3s,baz=80,slow=11,SNR=38								
DZM					LR		LR	19 12 47.1	
	comp=Z,15μm,18.9s,baz=73,slow=34								
DZM	**Mont Dzumac**	**18.22**	**244**	*e*Pn			**P**	**19 06 51.8**	**+1.3**
	1μm,1.8s								
TARA	**Tarawa**	**19.50**	**325**	*e*P			P	19 06 54.5	-10
	649nm,1.8s								
OUZ	**Omahuta**	**22.40**	**203**	*e*P			**P**	**19 07 41.7**	**+6.1**
	212nm,1.6s								
URZ	**Urewera**	**24.15**	**194**	P			**P**	**19 07 49.8**	**-3.4**
	19nm,0.9s,baz=60,slow=5.8,SNR=4.5								
URZ					LR		LR	19 15 57.7	
	comp=Z,22μm,20.9s,baz=38,slow=33								
HNR	**Honiara**	**24.19**	**280**	P			**P**	**19 07 54.2**	**+0.4**
	26nm,0.5s,baz=138,slow=4.0,SNR=3.6								
HNR					LR		LR	19 16 06.6	
	comp=Z,5μm,19.9s,baz=116,slow=34								
HNR	**Honiara**	**24.19**	**280**	*e*P			**P**	**19 07 54.0**	**+0.2**
HNR	**Honiara**	**24.19**	**280**	*e*P			**P**	**19 07 52.8**	**-1.0**
HNR					pmax		pmax		
	comp=Z,355nm,1.4s								
HNR	**Honiara**	**24.19**	**280**	*e*P			**P**	**19 07 52.8**	**-1.0**
	comp=Z,355nm,1.4s								
HIZ	**Hauiti**	**24.97**	**197**	*e*P			**P**	**19 08 00.5**	**-0.2**
	comp=Z,198nm,1.3s								
PAE	**Paea**	**25.43**	**100**	*e*T			T	19 33 59.9	
	comp=Z,9.0nm,0.2s								
PPT	**Papeete**	**25.43**	**100**	LR			LR	19 15 18.1	
	comp=Z,4μm,21.3s,baz=266,slow=30								
PPT2	**Papeete2**	**25.43**	**100**	*e*LQ			LQ	19 13 08.1	
	comp=Z,18μm,26.5s								
PPT2				*e*LR			LR	19 14 12.8	
	comp=Z,18μm,26.2s,baz=266								
PPT2	**Papeete2**	**25.43**	**100**	*e*T			T	19 33 57.0	
	comp=Z,13nm,0.2s								
TIAR	**Tiarei**	**25.65**	**100**	*e*T			T	19 34 17.4	
	comp=Z,11nm,0.3s								
TVO	**Taravao**	**25.75**	**100**	*e*T			T	19 34 24.8	
	comp=Z,8.0nm,0.3s								
TBI	**Tubuai**	**26.36**	**113**	*e*LQ			LQ	19 13 19.9	
	comp=Z,18μm,28.2s								
TBI				*e*LR			LR	19 14 45.0	
	comp=Z,16μm,26.8s,baz=288								
TBI	**Tubuai**	**26.36**	**113**	*e*T			T	19 35 12.6	
	comp=Z,14nm,0.2s								
SNZO	**South Karori**	**27.63**	**195**	PFAKE				19 08 40.0	+15
SNZO					LR		LR		
	comp=Z,8μm,20.0s								
KWAJ	**Kwajalein Atol**	**28.59**	**324**	*e*P			**P**	**19 08 31.6**	**-1.8**
KWAJ					pmax		pmax		
	comp=Z,395nm,1.4s								
KWAJ	**Kwajalein Atol**	**28.59**	**324**	*e*P			**P**	**19 08 31.6**	**-1.8**
	comp=Z,395nm,1.4s								
LTZ	**Lake Taylor**	**29.66**	**198**	*e*P			**P**	**19 08 41.9**	**-0.9**
	comp=Z,30nm,0.9s								
OXZ	**Oxford**	**30.23**	**198**	*e*P			**P**	**19 08 46.2**	**-1.5**
	comp=Z,93nm,1.5s								
JOHN	**Johnston Islan**	**31.98**	**12**	PFAKE				19 09 20.0	+17
JOHN					LR		LR		
	comp=Z,388nm,20.0s								
RABL	**Rabaul**	**33.16**	**285**	*e*P			**P**	**19 09 10.8**	**-3.0**
	comp=Z,32nm,0.6s								
MLZ	**Mavora Lakes**	**33.31**	**201**	*e*P			**P**	**19 09 15.5**	**+0.7**
	comp=Z,75nm,1.4s								
PATS	**Pohnpei**	**33.41**	**308**	*e*P			**P**	**19 09 12.1**	**-3.9**
	comp=Z,286nm,1.5s								
ARMA	**Armidale**	**33.59**	**237**	P			**P**	**19 09 17.9**	**+0.2**
	baz=34,SNR=9.5								
ARMA	**Armidale**	**33.59**	**237**	*e*P			**P**	**19 09 16.7**	**-0.9**
	comp=Z,28nm,1.1s								
WHZ	**Wether Hill Ro**	**33.83**	**200**	*e*P			**P**	**19 09 18.5**	**-0.8**
	comp=Z,67nm,1.0s								
RMQ	**Roma**	**34.92**	**245**	P			**P**	**19 09 31.6**	**+2.5**
	baz=35,SNR=4.4								
MGCD	**Mangrove Creek**	**35.04**	**233**	P			**P**	**19 09 30.9**	**+0.8**
	baz=35,SNR=5.8								
TAOE	**Nuku Hiva Isla**	**35.47**	**84**	*e*S			**S**	**19 15 05.5**	**-3.1**
	comp=Z,594nm,29.4s								
TAOE				*e*LR			LR	19 18 46.9	
	comp=Z,16μm,26.9s,baz=261								
TAOE	**Nuku Hiva Isla**	**35.47**	**84**	*e*T			T	19 46 32.5	
	comp=Z,49nm,0.2s								
CTA	**Charters Tower**	**36.42**	**256**	P			**P**	**19 09 41.9**	**-0.1**
CTA					pmax		pmax		
	comp=Z,58nm,1.7s								
CTAO	**Charters Tower**	**36.42**	**256**	*e*P			**P**	**19 09 41.1**	**-0.9**
CTAO					pmax		pmax		
	comp=Z,183nm,1.6s								
CTAO					MLR		MLR		
	comp=Z,4μm,21.0s								
CTAO	**Charters Tower**	**36.42**	**256**	*e*P			**P**	**19 09 41.1**	**-0.9**
	comp=Z,183nm,1.6s								
CTAO					LR		LR		
	comp=Z,4μm,21.0s								
PMG	**Port Moresby**	**36.47**	**274**	*e*P			**P**	**19 09 42.8**	**+0.3**
PMG					pmax		pmax		
	comp=Z,142nm,1.1s								
PMG					MLR		MLR		
	comp=Z,4μm,19.0s								
PMG	**Port Moresby**	**36.47**	**274**	*e*P			**P**	**19 09 42.8**	**+0.3**
	comp=Z,142nm,1.1s								
PMG					LR		LR		
	comp=Z,4μm,19.0s								
H11S2	**WAKE ISLAND Hy**	**37.27**	**332**	T			T	19 49 23.0	
	baz=153,slow=76,SNR=24								
H11S3	**WAKE ISLAND Hy**	**37.28**	**332**	T			T	19 49 25.8	
	baz=153,slow=76,SNR=27								
H11S1	**WAKE ISLAND Hy**	**37.28**	**332**	T			T	19 49 24.2	
	baz=153,slow=76,SNR=61								
CAN	**Canberra**	**37.49**	**231**	PFAKE				19 10 00.0	+9.0
CAN					LR		LR		
	comp=Z,5μm,19.0s								
MTSU	**Mount Surprise**	**38.23**	**259**	P			**P**	**19 09 57.4**	**0.0**
	baz=38,SNR=20								
H11N3	**WAKE ISLAND Hy**	**38.25**	**333**	T			T	19 50 36.1	
	baz=152,slow=76,SNR=133								
H11N1	**WAKE ISLAND Hy**	**38.26**	**333**	T			T	19 50 36.9	
	baz=152,slow=76,SNR=452	

comp=Z,4.4nm,0.6s,baz=124,slow=3.6,SNR=3.4
NWAO Narrogin (SRO) 62.79 240 *e*P **P** **19 13 03.8 +1.0**
NWAO pmax pmax
comp=Z,115nm,1.7s
NWAO MLR MLR
comp=Z,3µm,20.0s
NWAO Narrogin (SRO) 62.79 240 *e*P **P** **19 13 03.8 +1.0**
comp=Z,115nm,1.7s
NWAO LR LR
comp=Z,3µm,20.0s
SBA Scott Base 63.65 184 *e*P **P** **19 13 08.9 +1.2**
SBA pmax pmax
comp=Z,122nm,1.7s
SBA MLR MLR
comp=Z,2µm,19.0s
SBA Scott Base 63.65 184 *e*P **P** **19 13 08.9 +1.2**
comp=Z,122nm,1.7s
SBA LR LR
comp=Z,2µm,19.0s
VNDA Vanda 63.72 185 P **P** **19 13 08.1 -0.1**
comp=Z,14nm,1.0s,baz=3.8,slow=5.8,SNR=9.7
VNDA LR LR 19 36 53.7
comp=Z,463nm,19.8s,baz=30,slow=32
VNDA Vanda 63.72 185 *e*P **P** **19 13 08.4 +0.2**
VNDA pmax pmax
comp=Z,38nm,1.2s
VNDA Vanda 63.72 185 *e*P **P** **19 13 08.4 +0.2**
comp=Z,38nm,1.2s
KAPI Kappang 63.94 272 PFAKE 19 13 20.0 +9.3
KAPI LR LR
comp=Z,674nm,19.0s
MJAR Matsushiro Arr 66.95 321 P **P** **19 13 29.7 0.0**
comp=Z,4.7nm,0.9s,baz=155,slow=5.8,SNR=9.6
MJAR LR LR 19 37 07.5
comp=Z,2µm,21.9s,baz=125,slow=31
MAJO Matsushiro 66.95 321 *e*P **P** **19 13 29.6 -0.1**
MAJO pmax pmax
comp=Z,19nm,1.2s
MAJO MLR MLR
comp=Z,2µm,22.0s
MAJO Matsushiro 66.95 321 *e*P **P** **19 13 29.6 -0.1**
comp=Z,19nm,1.2s
MAJO LR LR
comp=Z,2µm,22.0s
MJB9 Matsu-Tunnel 66.95 321 *e*P **P** **19 13 29.9 +0.1**
comp=Z,5.1nm,1.2s
SMY Shemya 67.82 353 *e*P **P** **19 13 35.0 +0.2**
SMY pmax pmax
comp=Z,96nm,1.5s
SMY Shemya 67.82 353 *e*P **P** **19 13 35.0 +0.2**
comp=Z,96nm,1.5s
MYLDM Lahad Datu 67.95 282 *e*P **P** **19 13 37.9 +1.4**
comp=Z,83nm,1.0s
ERM Erimo 67.97 328 PFAKE 19 13 50.0 +14
ERM LR LR
comp=Z,3µm,22.0s
KUR Kuril'sk 68.19 333 *c i*P P 19 13 30.7 -6.6
KUR *i* S **S** **19 22 35.4 -1.2**
JAGI Jajag, Banyuwa 68.57 267 *e*P **P** **19 13 37.9 -2.6**
comp=Z,44nm,1.2s
TGY Tagaytay City 68.76 292 LR LR 19 39 14.8
comp=Z,2µm,21.5s,baz=136,slow=32
UNV Unalaska Valle 68.86 6 *e*P **P** **19 13 40.2 -1.1**
comp=Z,112nm,1.8s
AKUT Akutan 69.22 6 *e*P **P** **19 13 42.8 -0.7**
comp=Z,215nm,1.8s
JNU Nakatsue 69.64 314 P **P** **19 13 46.0 -0.7**
comp=Z,9.1nm,1.0s,baz=141,slow=5.5,SNR=3.9
JNU LR LR 19 39 02.6
comp=Z,1µm,20.9s,baz=119,slow=31
JNU Nakatsue 69.64 314 *e*P **P** **19 13 44.6 -2.1**
comp=Z,40nm,1.2s
CASY Casey 69.93 204 *e*P **P** **19 13 48.9 +1.0**
comp=Z,26nm,1.1s
CASY LR LR
comp=Z,356nm,21.0s
KKM Kota Kinabalu 70.38 282 PFAKE 19 14 00.0 +8.3
KKM LR LR
comp=Z,785nm,22.0s
PET Petropavlovsk 71.03 344 *c i*P **P** **19 13 53.8 -0.8**
PET *e*S **S** **19 23 02.2 -7.5**
PET pmax pmax
comp=Z,400nm,13.0s
PET pmax pmax
comp=Z,200nm,13.6s
PET pmax pmax
comp=Z,22nm,1.6s
PET Petropavlovsk 71.03 344 *e*P **P** **19 13 53.6 -1.1**
comp=Z,26nm,1.1s
PET LR LR
comp=Z,3µm,22.0s
SDPT Sand Point 71.10 9 *e*P **P** **19 13 55.4 +0.4**
comp=Z,225nm,1.9s
PEA0 Petropavlovsk- 71.36 344 *e*P **P** **19 13 56.1 -0.6**
PEA0B Petropavlovsk- 71.36 344 *e*P **P** **19 13 56.2 -0.5**
comp=Z,124nm,1.5s
PETK Petropavlovsk- 71.36 344 P **P** **19 13 56.5 -0.2**
comp=Z,17nm,0.9s,baz=127,slow=9.6,SNR=15
PETK LR LR 19 39 26.2
comp=Z,3µm,21.7s,baz=151,slow=31
PEA1 Petropavlovsk- 71.37 344 *e*P **P** **19 13 56.5 -0.2**
YSS Yuzh-Sakhalins 71.80 332 *e*P **P** **19 13 59.3 -0.1**
YSS *e* 19 14 06.2
YSS *e* 19 14 16.7
YSS *e*S **S** **19 23 20.9 +2.0**
YSS *e* 19 23 51.6
YSS *e*SS **SS** **19 27 55.2 -0.4**
YSS pmax pmax
comp=Z,30nm,1.3s
YSS Yuzh-Sakhalins 71.80 332 *e*P **P** **19 14 00.1 +0.6**
comp=Z,67nm,1.0s
YSS LR LR
comp=Z,936nm,22.0s
SNCC San Nicolas Is 71.94 47 *e*P **P** **19 14 03.2 +2.6**
comp=Z,91nm,1.5s
TWG Pinlang 72.13 300 *e*P **P** **19 14 00.7 -1.3**
comp=Z,93nm,1.2s
YULB Yu-li 72.18 301 *e*P **P** **19 13 60.0 -2.4**
comp=Z,41nm,1.4s
SCZ2 Santa Cruz Isl 72.26 47 P **P** **19 14 04.4 +1.8**
baz=238
NACB Ninganchiao 72.27 302 *e*P **P** **19 14 00.1 -2.7**
comp=Z,80nm,1.2s
CHGN Chignik 72.35 10 *e*P **P** **19 14 01.9 -0.7**
SCI2 San Clemente I 72.50 48 P **P** **19 14 05.7 +1.7**
baz=239
SAO San Andreas Ge 72.55 43 *e*P **P** **19 14 05.5 +1.3**
SAO pmax pmax
comp=Z,28nm,1.1s
SAO San Andreas Ge 72.55 43 *e*P **P** **19 14 05.5 +1.3**
comp=Z,28nm,1.1s
SSLB Suanglung 72.64 301 *e*P **P** **19 14 04.5 -0.5**
comp=Z,20nm,1.0s
YHNB Yeheng 72.67 302 PFAKE 19 14 20.0 +15
YHNB LR LR
comp=Z,1µm,19.0s
PMPB Monarch Peak 72.67 44 *e*P **P** **19 14 04.9 -0.1**
comp=Z,55nm,1.3s
TPUB Ta-pu 72.70 301 *e*P **P** **19 14 02.5 -2.9**
comp=Z,59nm,1.2s
PAGB Antelope Grade 72.78 45 *e*P **P** **19 14 05.5 -0.2**
comp=Z,59nm,1.6s
HOPS Hopland Field 72.78 41 *e*P **P** **19 14 07.5 +2.0**
comp=Z,148nm,1.8s
CIS Catalina Islan 72.81 48 P **P** **19 14 07.7 +1.8**
baz=239
GDXM Geysers 72.85 41 *e*P **P** **19 14 07.5 +1.5**
comp=Z,39nm,1.6s
KCPM Cahto Peak 72.88 40 *e*P **P** **19 14 07.4 +1.2**
comp=Z,12µm,0.6s
KCPM *e*S **S** **19 23 33.3 +1.5**
KMRM Mail Ridge 73.12 39 *e*P **P** **19 14 08.9 +1.3**
comp=Z,71nm,1.2s
JCC Jacoby Creek, 73.28 39 *e*P **P** **19 14 09.0 +0.5**
comp=Z,119nm,1.5s
PASC Pasadena Art C 73.38 47 *e*P **P** **19 14 10.2 +1.0**
comp=Z,13nm,0.6s
MWC Mount Wilson 73.49 47 *e*P **P** **19 14 11.5 +1.4**
MWC pmax pmax
comp=Z,25nm,1.3s
MWC Mount Wilson 73.49 47 *e*P **P** **19 14 11.5 +1.4**
comp=Z,25nm,1.3s
BAR Barrett 73.70 49 *e*P **P** **19 14 11.6 +0.4**
comp=Z,50nm,1.7s
BFSC Mount Baldy Ra 73.78 47 P **P** **19 14 12.4 +0.7**
baz=239
EDW2 Edwards Air Fo 73.88 46 P **P** **19 14 13.1 +0.8**
baz=238
CMB Columbia Colle 73.96 43 *e*P **P** **19 14 13.4 +0.8**
CMB pmax pmax
comp=Z,16nm,1.1s
CMB Columbia Colle 73.96 43 *e*P **P** **19 14 13.4 +0.8**
comp=Z,16nm,1.1s
ISA Isabella, Lake 73.96 46 *e*P **P** **19 14 13.4 +0.7**
ISA pmax pmax
comp=Z,35nm,1.4s
ISA Isabella, Lake 73.96 46 *e*P **P** **19 14 13.4 +0.7**
comp=Z,35nm,1.4s
MONP2 Monument Peak 73.99 49 P **P** **19 14 14.2 +1.1**
baz=240
WDC Whiskeytown Da 74.05 39 *e*P **P** **19 14 13.6 +0.6**
WDC pmax pmax
comp=Z,36nm,1.4s
WDC Whiskeytown Da 74.05 39 *e*P **P** **19 14 13.6 +0.6**
comp=Z,36nm,1.4s
KSRS Korea Array 74.06 317 P **P** **19 14 14.4 +1.3**
comp=Z,7.7nm,1.0s,baz=125,slow=6.6,SNR=18
KSRS LR LR 19 43 28.6
comp=Z,1µm,19.8s,baz=123,slow=33
KS15 Wonju Array Si 74.08 317 *e*P **P** **19 14 14.0 +0.8**
KSAR Wonju Array Be 74.08 317 P **P** **19 14 14.4 +1.2**
KSAR Wonju Array Be 74.08 317 P **P** **19 14 14.4 +1.2**
KS01 Wonju Array Si 74.09 317 *e*P **P** **19 14 13.8 +0.6**
AFDM Forest Hills D 74.09 42 *e*P **P** **19 14 13.9 +0.6**
comp=Z,15nm,1.1s
ORV Oroville 74.10 41 *e*P **P** **19 14 14.0 +0.7**
ORV pmax pmax
comp=Z,21nm,1.4s
ORV Oroville 74.10 41 *e*P **P** **19 14 14.0 +0.7**
comp=Z,21nm,1.4s
IKP In-Ko-Pah, Jac 74.10 49 P **P** **19 14 14.1 +0.6**
baz=240
N02D Trinity Center 74.18 39 P **P** **19 14 14.8 +0.9**
baz=234
PFO Pinyon Flats O 74.32 48 P **P** **19 14 15.8 +0.9**
baz=240
PFO Pinyon Flats O 74.32 48 *e*P **P** **19 14 15.5 +0.6**
PFO pmax pmax
comp=Z,30nm,1.5s
PFO MLR MLR
comp=Z,1µm,21.0s
PFO Pinyon Flats O 74.32 48 *e*P **P** **19 14 15.5 +0.6**
comp=Z,30nm,1.5s
PFO LR LR
comp=Z,1µm,21.0s
M02C Callahan 74.34 39 P **P** **19 14 16.5 +1.8**
baz=233
O03D Paynes Creek 74.34 40 P **P** **19 14 16.7 +1.9**
baz=234
LRMC Laurel Mtn Rad 74.41 46 P **P** **19 14 17.3 +1.9**
baz=239
SWSC Sam W. Stewart 74.47 49 P **P** **19 14 16.2 +0.6**
baz=240
SRIG Santa Rosalia 74.59 56 *e*P **P** **19 14 15.6 -0.8**
comp=Z,25nm,1.0s
YBH Yreka Blue Hor 74.63 38 *e*P **P** **19 14 16.6 +0.1**
YBH pmax pmax
comp=Z,49nm,1.1s
YBH Yreka Blue Hor 74.63 38 *e*P **P** **19 14 16.6 +0.1**
comp=Z,49nm,1.1s
KSM Kuching 74.72 276 *e*P **P** **19 14 16.9 -0.6**
comp=Z,34nm,1.3s
KSM LR LR
comp=Z,577nm,19.0s
TYV Tymovskoe 74.75 334 *e*P **P** **19 14 16.8 0.0**
TYV *e*S S 19 24 11.0 +19
TYV pmax pmax
comp=Z,92nm,1.4s
TYV pmax pmax
comp=Z,1µm,4.0s
TYV smax smax
comp=N,2µm,16.0s
WAKR Walker 74.84 43 *e*P **P** **19 14 18.2 +0.3**
comp=N,33nm,1.4s
MPMC Manual Prospec 74.84 46 P **P** **19 14 18.5 +0.5**
baz=239
BELC Belle Mtn. Jos 74.85 48 P **P** **19 14 19.2 +1.2**
baz=240
KDAK Kodiak Island 74.86 13 *e*P **P** **19 14 16.6 -0.7**
KDAK pmax pmax
comp=Z,280nm,1.6s
KDAK MLR MLR
comp=Z,1µm,22.0s
KDAK Kodiak Island 74.86 13 *e*P **P** **19 14 16.6 -0.7**
comp=Z,280nm,1.6s
KDAK LR LR
comp=Z,1µm,22.0s
CISI Cisompet, Garu 74.89 266 *e*P **P** **19 14 16.8 -1.8**
comp=Z,280nm,1.7s
DAC Darwin (Calif) 74.89 45 *e*P **P** **19 14 17.3 -0.9**
DAC pmax pmax
comp=Z,26nm,1.6s
DAC Darwin (Calif) 74.89 45 *e*P **P** **19 14 17.3 -0.9**
comp=Z,26nm,1.6s
GSC Goldstone, Bar 74.93 47 P **P** **19 14 20.2 +1.8**
baz=239
GSC Goldstone, Bar 74.93 47 *e*P **P** **19 14 18.8 +0.5**
GSC pmax pmax
comp=Z,31nm,1.4s
GSC Goldstone, Bar 74.93 47 *e*P **P** **19 14 18.8 +0.5**
comp=Z,30nm,1.4s
INCN Inchon 74.94 316 *e*P **P** **19 14 17.6 -0.7**
comp=Z,58nm,1.5s
INCN LR LR
comp=Z,1µm,20.0s
SLBS Sierra La Lagu 74.95 60 *e*P **P** **19 14 19.0 +0.3**
comp=Z,38nm,1.4s
HUMO Hull Mountain 75.00 38 *e*P **P** **19 14 19.8 +1.3**
comp=Z,31nm,1.4s
HEC Hector,Ludlow 75.02 47 P **P** **19 14 19.6 +0.7**
baz=240
PNTR Pine Nut 75.05 42 *e*P **P** **19 14 19.2 0.0**
QZH Quanzhou 75.07 301 *i*P **P** **19 14 22.0 +2.8**
QZH S **S** **19 23 53.0 -3.8**
QZH pmax pmax
comp=Z,80nm,0.9s
QZH pmax pmax
comp=Z,670nm,4.1s
QZH LR LR
comp=Z,2µm,14.8s
QZH LR LR
comp=Z,1µm,17.5s
QZH LR LR
comp=Z,2µm,16.5s
BC3 Big Chuckawall 75.07 49 P **P** **19 14 20.0 +0.7**
baz=240
TVH3 East Aurora ar 75.16 43 *e*P **P** **19 14 19.8 0.0**
comp=Z,41nm,1.8s
M04C Macdoel 75.18 39 P **P** **19 14 21.1 +1.3**
baz=234
QSPA South Pole Qui 75.22 180 *e*P **P** **19 14 19.3 -0.3**
comp=Z,105nm,1.1s
QSPA LR LR
comp=Z,1µm,19.0s
YERR Yerington 75.23 42 *e*P **P** **19 14 20.2 0.0**
comp=Z,39nm,1.4s
GLA Glamis 75.24 49 P **P** **19 14 21.5 +1.4**
baz=241
GLA Glamis 75.24 49 *e*P **P** **19 14 20.5 +0.4**
GLA pmax pmax
comp=Z,44nm,1.3s
GLA Glamis 75.24 49 *e*P **P** **19 14 20.5 +0.4**
comp=Z,44nm,1.3s
TVH1 TV Hill, Hawth 75.25 43 *e*P **P** **19 14 20.0 -0.5**
comp=Z,31nm,1.4s
GRAC Grapevine Rang 75.42 45 P **P** **19 14 23.3 +2.3**
baz=238
USRK Ussuriysk Ar. 75.48 324 P **P** **19 14 22.0 +0.9**
comp=Z,2.2nm,0.9s,baz=51,slow=15,SNR=5.6
GMRC Granite Mounta 75.48 48 P **P** **19 14 22.9 +1.3**
baz=240
PAHR Pah Rah Range 75.53 42 *e*P **P** **19 14 21.8 0.0**
IRM Iron Mountain 75.54 48 P **P** **19 14 23.1 +1.2**
baz=241
Y12C Blythe 75.80 49 P **P** **19 14 25.0 +1.7**
baz=241
Y12C Blythe 75.80 49 *e*P **P** **19 14 23.6 +0.3**
comp=Z,64nm,1.6s
113A Mohawk Valley, 75.89 50 *e*P **P** **19 14 23.8 +0.1**
comp=Z,52nm,1.6s
I04A Tendick Farm, 76.03 37 P **P** **19 14 26.5 +2.0**
baz=233
TPNV Topopah Spring 76.16 45 P **P** **19 14 27.0 +1.6**
baz=239
TPNV Topopah Spring 76.16 45 *e*P **P** **19 14 25.9 +0.4**
TPNV pmax pmax
comp=Z,33nm,1.4s
TPNV Topopah Spring 76.16 45 *e*P **P** **19 14 25.9 +0.4**
comp=Z,32nm,1.4s
MOD Modoc Plateau 76.19 39 *e*P **P** **19 14 25.3 -0.2**
comp=Z,29nm,1.1s
214A Organ Pipe Nat 76.22 51 P **P** **19 14 26.4 +0.6**
baz=243
K05A Summer Lake 76.30 38 *e*P **P** **19 14 26.1 -0.1**
comp=Z,41nm,1.2s
PDMCI Parker Dam,Lak 76.34 49 P **P** **19 14 27.4 +1.1**
baz=241
HSIG 76.36 55 *e*P **P** **19 14 25.9 -0.7**
comp=Z,22nm,1.2s
J05D Fort Rock, OR 76.42 38 P **P** **19 14 27.5 +0.7**
baz=234
HABR Khabarovsk 76.57 329 *e*P P 19 14 20.7 -6.6
HABR *e* 19 14 33.4
HABR *e*S S 19 24 01.9 -11
HABR *e* 19 24 34.1
HABR *e*SSS SSS 19 32 16.4
HABR pmax pmax
comp=Z,53nm,2.3s
HABR MLR MLR
comp=Z,765nm,18.0s
SHPR Sheep Range 76.69 46 *e*P **P** **19 14 28.6 +0.1**
CNPM China Poot 76.75 13 *e*P **P** **19 14 27.4 -0.6**
comp=Z,31nm,1.2s
W13A Hualapai Mount 76.91 48 *e*P **P** **19 14 29.8 0.0**
comp=Z,21nm,1.3s
MIR Mirnyy 76.96 204 *i* P P 19 14 34.5 +5.2
MIR pmax pmax
comp=Z,10.0nm,1.8s
Y14A Wickenburg 77.00 49 *e*P **P** **19 14 30.4 +0.2**
comp=Z,98nm,1.2s
BRLK Bradley Lake 77.04 13 *e*P **P** **19 14 28.9 -0.8**
comp=Z,81nm,1.5s
E03A Lebam 77.06 34 *e*P **P** **19 14 30.8 +0.7**
comp=Z,35nm,0.9s
MDJ Mudanjiang 77.10 323 P **P** **19 14 31.2 +0.8**
MDJ S **S** **19 24 20.4 +2.0**
MDJ ScS **ScS** **19 24 48.9 +2.2**
MDJ SS **SS** **19 29 17.9 +1.5**
MDJ pmax pmax
comp=Z,7.0nm,1.5s
MDJ LR LR
comp=Z,1µm,25.1s
MDJ LR LR
comp=Z,2µm,28.7s
MDJ LR LR
comp=Z,4µm,28.1s
MDJ Mudanjiang 77.10 323 PFAKE 19 14 40.0 +10
MDJ LR LR
comp=Z,3µm,20.0s
RSO Redoubt South 77.30 12 *e*P **P** **19 14 30.3 -1.1**
BMN Battle Mountai 77.32 42 *e*P **P** **19 14 31.6 -0.4**
BMN pmax pmax
comp=Z,18nm,1.0s
BMN Battle Mountai 77.32 42 *e*P **P** **19 14 31.6 -0.4**
comp=Z,18nm,1.0s
R11A Troy Canyon, C 77.32 44 P **P** **19 14 33.2 +1.2**
baz=239
R11A Troy Canyon, C 77.32 44 *e*P **P** **19 14 32.2 +0.2**
comp=Z,44nm,2.0s
SVW2 Sparrevohn 77.38 10 *e*P **P** **19 14 31.1 -0.6**
comp=Z,29nm,1.5s
NLWA Neilton Lookou 77.42 33 PFAKE 19 14 40.0 +7.8
NLWA LR LR
comp=Z,663nm,19.0s
WVOR Wild Horse Val 77.51 40 *e*P **P** **19 14 33.2 +0.3**
WVOR pmax pmax
comp=Z,15nm,1.0s
WVOR MLR MLR
comp=Z,990nm,19.0s
WVOR Wild Horse Val 77.51 40 *e*P **P** **19 14 33.1 +0.3**
comp=Z,15nm,1.0s
WVOR LR LR
comp=Z,990nm,19.0s
ERK Elk Rock 77.58 35 P **P** **19 14 36.8 +3.6**
SEW Seward 77.66 13 *e*P **P** **19 14 31.6 -1.5**
comp=Z,37nm,1.3s
NJ2 Nanjing 77.89 308 *e*P **P** **19 14 35.0 0.0**
NJ2 S **S** **19 24 31.0 +3.6**
NJ2 pmax pmax
comp=Z,25nm,0.6s
NJ2 pmax pmax
comp=Z,260nm,4.9s
NJ2 LR LR
comp=Z,610nm,15.7s
NJ2 LR LR
comp=Z,2µm,20.6s
NJ2 LR LR
comp=Z,840nm,14.1s
G06A Carlson Farm, 77.91 36 *e*P **P** **19 14 34.7 -0.2**
comp=Z,43nm,1.6s
TUC Tucson 77.92 52 P **P** **19 14 36.2 +0.9**
baz=244
TUC Tucson 77.92 52 P **P** **19 14 37.5 +2.1**
TUC pmax pmax
comp=Z,37nm,1.8s
TUC Tucson 77.92 52 PFAKE 19 14 50.0 +15
TUC LR LR
comp=Z,1µm,22.0s
SPU Mount Spurr 78.10 12 *e*P **P** **19 14 33.8 -1.8**
LON Longmire 78.14 35 *e*P **P** **19 14 36.3 0.0**
LON pmax pmax
comp=Z,28nm,1.6s
LON Longmire 78.14 35 *e*P **P** **19 14 36.3 0.0**
comp=Z,28nm,1.6s
LCMT Little Creek M 78.28 47 *e*P **P** **19 14 36.9 -0.4**
comp=Z,17nm,1.4s
D05A Enumclaw 78.31 34 *e*P **P** **19 14 38.5 +1.4**
comp=Z,88nm,1.4s
X16A Lo Mia Camp, P 78.37 50 *e*P **P** **19 14 38.7 +0.7**
comp=Z,29nm,1.1s
CCUT Cedar City 78.46 46 *e*P **P** **19 14 37.8 -0.7**
comp=Z,11nm,1.0s
RC01 Rabbit Creek A 78.48 13 *e*P **P** **19 14 36.6 -1.1**
comp=Z,57nm,1.3s
KNB Kanab 78.58 47 *e*P **P** **19 14 39.5 +0.5**
KNB pmax pmax
comp=Z,66nm,1.7s
KNB Kanab 78.58 47 *e*P **P** **19 14 39.5 +0.5**
comp=Z,66nm,1.7s
SUA Susitna One 78.61 12 *e*P **P** **19 14 37.7 -0.9**
comp=Z,20nm,0.9s
SZCU Shurtz Canyon 78.67 46 *e*P **P** **19 14 40.0 +0.4**
comp=Z,72nm,1.7s
319A Douglas 78.67 53 *e*P **P** **19 14 40.0 +0.4**
comp=Z,52nm,1.1s
U15A North Rim 78.68 47 *e*P **P** **19 14 40.5 +0.8**
comp=Z,34nm,1.3s
KLR Kul'dur 78.73 328 P **P** **19 14 39.6 +0.3**
comp=Z,1.0nm,0.5s,baz=143,slow=6.3,SNR=3.1
ELK Elko 78.77 42 *e*P **P** **19 14 40.9 +0.8**
ELK pmax pmax
comp=Z,13nm,1.1s
ELK Elko 78.77 42 *e*P **P** **19 14 40.9 +0.8**
comp=Z,13nm,1.1s
MA2 Magadan 78.90 343 LR LR 19 44 52.0
comp=Z,3µm,20.6s,baz=136,slow=32
MA2 Magadan 78.90 343 *e*P **P** **19 14 38.4 -1.6**
B05A Bryant 78.90 33 P **P** **19 14 41.3 +1.0**
baz=233
EYAK Cordova Ski Ar 78.91 15 *e*P **P** **19 14 39.4 -0.7**
comp=Z,68nm,1.8s
G08A Pilot Rock 78.91 37 *e*P **P** **19 14 41.0 +0.4**
comp=Z,29nm,1.1s
WUAZ Wupatki 78.92 49 P **P** **19 14 41.9 +1.0**
baz=243
WUAZ Wupatki 78.92 49 *e*P **P** **19 14 41.6 +0.6**
comp=Z,71nm,1.8s
WUAZ LR LR
comp=Z,740nm,19.0s
TT01 Tatalina 79.02 9 *e*P **P** **19 14 41.2 +0.5**
TTA Tatalina 79.04 9 *e*P **P** **19 14 41.4 +0.6**
TTA pmax pmax
comp=Z,67nm,1.4s
TTA Tatalina 79.04 9 *e*P **P** **19 14 41.4 +0.6**
comp=Z,67nm,1.4s
DL2 Dalian 79.05 315 P **P** **19 14 45.1 +3.8**
DL2 pmax pmax
comp=Z,39nm,1.0s
DL2 pmax pmax
comp=Z,300nm,6.3s
DL2 LR LR

comp=Z,790nm,17.5s
DL2 LR LR
comp=Z,640nm,15.9s
DL2 LR LR
comp=Z,580nm,16.3s
PMR Palmer 79.06 13 *e*P **P 19 14 40.3 -0.6**
PMR pmax pmax
comp=Z,55nm,1.4s
PMR Palmer 79.06 13 *e*P **P 19 14 40.3 -0.6**
comp=Z,55nm,1.4s
CN2 Changchun 79.10 321 *e*P **P 19 14 43.6 +2.1**
CN2 *es*P PcP 19 14 51.6 +1.7
CN2 *e*S **S 19 24 40.7 +0.8**
CN2 pmax pmax
comp=Z,10.0nm,0.8s
CN2 pmax pmax
comp=Z,300nm,6.0s
CN2 LR LR
comp=Z,900nm,16.0s
CN2 LR LR
comp=Z,2µm,16.0s
CN2 LR LR
comp=Z,2µm,18.0s
HAWA Hanford 79.21 36 *e*P **P 19 14 45.8 +3.7**
comp=Z,25nm,1.1s
HAWA LR LR
comp=Z,734nm,20.0s
SNY Shenyang 79.22 319 ǁP **P 19 14 43.5 +1.3**
SNY S S 19 24 50.8 +9.5
SNY pmax pmax
comp=Z,360nm,3.9s
SNY LR LR
comp=Z,500nm,18.2s
SNY LR LR
comp=Z,1µm,14.6s
SNY LR LR
comp=Z,1µm,16.7s
DIV Divide 79.41 14 *e*P **P 19 14 42.1 -0.8**
comp=Z,41nm,1.2s
SML Sawmill 79.43 13 *e*P **P 19 14 44.8 +1.9**
SML pmax pmax
comp=Z,28nm,0.6s
SML Sawmill 79.43 13 *e*P **P 19 14 44.8 +1.9**
comp=Z,28nm,0.6s
MTPU Mount Pierson 79.51 46 *e*P **P 19 14 45.3 +0.9**
comp=Z,27nm,1.5s
X18A Snowflake 79.52 50 *e*P **P 19 14 44.8 +0.5**
comp=Z,29nm,1.4s
BMRM Bremner River 79.56 15 *e*P **P 19 14 42.5 -1.2**
comp=Z,76nm,1.3s
BMO Blue Mountains 79.65 38 *e*P **P 19 14 44.8 +0.2**
comp=Z,19nm,1.3s
BMO LR LR
comp=Z,814nm,19.0s
SCM Sheep Creek Mo 79.67 13 *e*P **P 19 14 43.0 -1.3**
SCM pmax pmax
comp=Z,40nm,0.6s
SCM Sheep Creek Mo 79.67 13 *e*P **P 19 14 43.0 -1.3**
comp=Z,40nm,0.6s
KLU Klutina 79.69 14 *e*P **P 19 14 45.8 +1.3**
comp=Z,16nm,0.6s
MSU Marysvale 79.74 46 *e*P **P 19 14 46.2 +0.8**
MSU Marysvale 79.74 46 *e*P **P 19 14 46.2 +0.8**
WRAK Wrangell Islan 79.74 23 PFAKE 19 15 00.0 +15
WRAK LR LR
comp=Z,1µm,20.0s
CRQM Cirque 79.75 16 *e*P **P 19 14 46.1 +1.2**
comp=Z,41nm,1.2s
MFID Camas Ranch 79.78 40 *e*P **P 19 14 45.8 +0.4**
comp=Z,20nm,1.1s
HPIG 79.79 59 *e*P **P 19 14 45.3 -0.6**
comp=Z,51nm,1.6s
D08A Wollman Farm, 79.93 36 *e*P **P 19 14 46.6 +0.6**
comp=Z,25nm,1.1s
E09A Wood Farm, Sta 80.07 36 *e*P **P 19 14 47.0 +0.3**
comp=Z,45nm,1.4s
DUG Dugway, Tooele 80.11 44 P **P 19 14 48.1 +0.8**
baz=241
DUG Dugway, Tooele 80.11 44 *e*P **P 19 14 47.1 -0.1**
DUG pmax pmax
comp=Z,21nm,1.2s
DUG MLR MLR
comp=Z,690nm,22.0s
DUG Dugway, Tooele 80.11 44 *e*P **P 19 14 47.1 -0.1**
comp=Z,21nm,1.2s
DUG LR LR
comp=Z,690nm,22.0s
CAST Castle Rocks 80.15 11 *e*P **P 19 14 45.4 -1.5**
comp=Z,17nm,1.3s
BALM Baldy 80.20 16 *e*P **P 19 14 46.3 -0.9**
BALM pmax pmax
comp=Z,29nm,1.2s
BALM Baldy 80.20 16 *e*P **P 19 14 46.3 -0.9**
comp=Z,29nm,1.2s
F10A Beach Ranch, E 80.30 37 *e*P **P 19 14 47.8 -0.3**
comp=Z,35nm,1.3s
121A Cookes Peak, D 80.31 53 P **P 19 14 49.5 +0.9**
baz=246
BGU Big Grassy Mou 80.32 43 *e*P **P 19 14 48.3 -0.1**
comp=Z,33nm,1.7s
LLLB Lillooet 80.44 32 *e*P **P 19 14 52.0 +3.3**
QIZ Qiongzhong 80.44 293 PFAKE 19 15 00.0 +11
QIZ LR LR
comp=Z,894nm,21.0s
B08A Colville Reser 80.45 34 *e*P **P 19 14 48.0 -0.8**
comp=Z,32nm,1.4s
KTH Kantishna Hill 80.48 11 *e*P **P 19 14 47.6 -1.0**
comp=Z,31nm,1.1s
TRF Thorofare Moun 80.51 11 *e*P **P 19 14 47.8 -1.2**
comp=Z,38nm,1.2s
C09A Chrisman Ranch 80.72 35 *e*P **P 19 14 53.6 +3.4**
comp=Z,13nm,1.0s
HLID Hailey 80.74 40 P **P 19 14 51.3 +0.7**
baz=239
HLID Hailey 80.74 40 *e*P **P 19 14 50.6 0.0**
comp=Z,26nm,1.1s
HLID LR LR
comp=Z,616nm,21.0s
RND Reindeer 80.75 12 *e*P **P 19 14 50.2 +0.1**
RND pmax pmax
comp=Z,87nm,1.4s
RND Reindeer 80.75 12 *e*P **P 19 14 50.1 +0.1**
comp=Z,87nm,1.4s
DHY Denali Highway 80.76 13 *e*P **P 19 14 49.6 -0.7**
comp=Z,30nm,1.4s
WHN Wuhan 80.77 305 P **P 19 14 55.4 +4.6**
WHN S **S 19 25 05.6 +7.5**
WHN LR LR
comp=Z,1µm,14.7s
WHN LR LR
comp=Z,890nm,15.4s
WHN LR LR
comp=Z,2µm,20.1s
TMUT Trail Mountain 80.77 45 *e*P **P 19 14 51.5 +0.4**
comp=Z,28nm,1.1s
MPU Maple Canyon 80.82 44 *e*P **P 19 14 52.0 +0.8**
comp=Z,20nm,1.2s
SPUT South Promonto 80.89 43 *e*P **P 19 14 51.9 +0.4**
comp=Z,64nm,1.7s
HVU Hansel Valley 80.90 43 *e*P **P 19 14 51.5 0.0**
HVU pmax pmax
comp=Z,21nm,1.1s
HVU Hansel Valley 80.90 43 *e*P **P 19 14 51.5 0.0**
comp=Z,21nm,1.1s
ZAIG Zacatecas 80.91 64 *e*P **P 19 14 51.9 -0.2**
comp=Z,40nm,1.3s
BPAW Bear Paw Mtn. 80.97 11 *e*P **P 19 14 52.2 +1.0**
comp=Z,13nm,1.3s
SKAG Skagway 80.99 20 *e*P **P 19 14 51.7 +0.4**
comp=Z,29nm,1.0s
MCK McKinley 81.03 12 *e*P **P 19 14 50.6 -0.9**
MCK pmax pmax
comp=Z,34nm,1.1s
MCK McKinley 81.03 12 *e*P **P 19 14 50.6 -0.9**
comp=Z,34nm,1.1s
PAX Paxson 81.09 14 *e*P **P 19 14 52.0 +0.1**
PAX pmax pmax
comp=Z,40nm,0.6s
PAX Paxson 81.09 14 *e*P **P 19 14 52.0 +0.1**
comp=Z,40nm,0.6s
SRU San Rafael Swe 81.16 46 *e*P **P 19 14 53.5 +0.5**
SRU pmax pmax
comp=Z,13nm,1.1s
SRU San Rafael Swe 81.16 46 *e*P **P 19 14 53.5 +0.5**
comp=Z,13nm,1.1s
P17A Butcher Ranch, 81.17 45 *e*P **P 19 14 53.5 +0.4**
comp=Z,24nm,1.4s

JLU Jordanelle 81.22 44 *e*P **P 19 14 54.6 +1.3**
comp=Z,15nm,1.1s
BWN Browne 81.32 11 *e*P **P 19 14 53.5 +0.5**
comp=Z,200nm,1.5s
SEY Seymchan 81.35 346 P **P 19 14 52.5 -0.6**
comp=Z,15nm,1.2s,baz=143,slow=6.2,SNR=12
SEY LR LR 19 48 14.4
comp=Z,1µm,19.1s,baz=150,slow=34
SEY Seymchan 81.35 346ǁ*e*P **P 19 14 53.3 +0.1**
HYT Haines Junctio 81.38 18 *e*P **P 19 14 56.9 +3.3**
MENT Mentasta 81.47 14 *e*P **P 19 14 53.1 -0.8**
comp=Z,21nm,1.1s
TCUT Toone Canyon 81.48 44 *e*P **P 19 14 53.5 -1.3**
comp=Z,94nm,1.1s
LAZ Ladron 81.57 51 *e*P **P 19 14 56.5 +1.2**
HWUT Hardware Ranch 81.61 43 *e*P **P 19 14 51.3 -4.0**
comp=Z,12nm,1.0s
HWUT LR LR
comp=Z,702nm,19.0s
NEW Newport 81.62 35 P **P 19 14 56.5 +1.5**
comp=Z,5.9nm,1.0s,baz=261,slow=7.6,SNR=4.4
NEW Newport 81.62 35 *e*P **P 19 14 56.0 +1.0**
NEW pmax pmax
comp=Z,16nm,1.2s
NEW MLR MLR
comp=Z,643nm,20.0s
NEW Newport 81.62 35 *e*P **P 19 14 56.0 +1.0**
comp=Z,16nm,1.2s
NEW LR LR
comp=Z,643nm,20.0s
PV05 Paradox Valley 81.69 47 *e*P **P 19 14 56.7 +0.8**
MVCO Mesa Verde 81.75 48 PFAKE 19 15 10.0 +14
MVCO LR LR
comp=Z,713nm,20.0s
MNTX Cornudas Mount 81.84 54 P **P 19 14 57.2 +0.6**
baz=247
MNTX Cornudas Mount 81.84 54 *e*P **P 19 14 56.6 +0.1**
comp=Z,83nm,1.8s
MNTX LR LR
comp=Z,1µm,20.0s
BNM Barren Site 81.85 52 *e*P **P 19 14 57.0 +0.1**
PV09 Paradox Valley 81.86 47 *e*P **P 19 14 56.1 -0.8**
WRH Wood River Hil 81.86 12 *e*P **P 19 14 54.3 -1.5**
comp=Z,78nm,1.3s
MLY Manley 81.87 11 *e*P **P 19 14 54.9 -1.1**
comp=Z,28nm,1.2s
LPM Los Pinos Moun 81.92 51 *e*P **P 19 14 56.7 -0.4**
DOT Dot Lake 82.00 14 *e*P **P 19 14 55.6 -1.1**
comp=Z,95nm,1.3s
HDA Harding Lake 82.03 12 *e*P **P 19 14 56.2 -0.6**
comp=Z,43nm,1.3s
DLBC Dease Lake 82.07 22 P **P 19 14 59.3 +2.1**
comp=Z,8.1nm,1.1s,baz=206,slow=5.2,SNR=4.2
DLBC Dease Lake 82.07 22 *e*P **P 19 14 56.5 -0.7**
comp=Z,32nm,1.5s
CCB Clear Creek Bu 82.07 12 *e*P **P 19 14 56.1 -0.9**
comp=Z,33nm,1.1s
PV01 Paradox Valley 82.09 47 *e*P **P 19 14 57.8 -0.2**
COLA College 82.27 12 *e*P **P 19 14 57.2 -0.7**
COLA pmax pmax
comp=Z,55nm,0.3s
COLA MLR MLR
comp=Z,2µm,22.0s
COLA College 82.27 12 *e*P **P 19 14 57.2 -0.7**
comp=Z,55nm,0.3s
COLA LR LR
comp=Z,2µm,22.0s
MDM Murphy Dome 82.27 12 *e*P **P 19 14 56.9 -1.2**
comp=Z,47nm,1.3s
ANMO Albuquerque 82.30 51 P **P 19 14 59.6 +0.5**
baz=246
ANMO Albuquerque 82.30 51 *e*P **P 19 14 59.7 +0.6**
ANMO pmax pmax
comp=Z,27nm,1.1s
ANMO MLR MLR
comp=Z,1µm,19.0s
ANMO Albuquerque 82.30 51 *e*P **P 19 14 59.7 +0.6**
comp=Z,27nm,1.1s
ANMO LR LR
comp=Z,1µm,19.0s
LTX Lajitas 82.32 57 *e*P **P 19 15 00.1 +0.9**
LTX Lajitas 82.32 57 *e*P **P 19 15 00.1 +0.9**
TX31 Lajitas Ar. Si 82.32 57 *e*P **P 19 14 58.8 -0.4**
TXAR Lajitas Array 82.32 57 P **P 19 15 00.1 +0.8**
comp=Z,19nm,1.3s,baz=212,slow=4.4,SNR=26
TXAR LR LR 19 44 19.0
comp=Z,2µm,19.7s,baz=0.0,slow=30
MCMT McKenzie Canyo 82.34 40 *e*P **P 19 14 59.1 -0.1**
ILAR Eielson Array 82.37 12 P **P 19 14 58.0 -0.5**
comp=Z,14nm,1.1s,baz=224,slow=5.6,SNR=37
ILAR LR LR 19 44 34.2
comp=Z,1µm,22.0s,baz=220,slow=31
ILB Eielson Array 82.37 12 *e*P **P 19 14 57.4 -1.1**
AHID Auburn Hatcher 82.46 42 *e*P **P 19 15 00.8 +1.0**
comp=Z,53nm,1.4s
AHID LR LR
comp=Z,594nm,20.0s
MSO Missoula 82.69 38 P **P 19 15 01.9 +1.1**
baz=239
MSO Missoula 82.69 38 *e*P **P 19 15 03.5 +2.7**
comp=Z,32nm,1.3s
BSMT Bassoo Peak 82.72 36 *e*P **P 19 14 59.9 -1.1**
DLMT Dillon 82.76 39 *e*P **P 19 15 01.3 0.0**
comp=Z,33nm,1.2s
TLIG Tlapa 82.77 70 *e*P **P 19 15 00.8 -1.0**
comp=Z,20nm,1.1s
TPAW Teton Pass 82.90 42 *e*P **P 19 15 02.2 0.0**
comp=Z,35nm,1.1s
REDW Red Top Meadow 82.90 42 *e*P **P 19 15 01.7 -0.4**
comp=Z,61nm,1.2s
SNOW Snow King Moun 83.01 42 *e*P **P 19 15 02.2 -0.5**
comp=Z,92nm,1.5s
SNOW *e*PcP **pP 19 15 08.6 -0.5**
LRM Limekiln Ridge 83.08 39 *e*P **P 19 15 02.1 -0.9**
IMW Indian Meadow 83.10 41 *e*P **P 19 15 03.5 +0.3**
comp=Z,34nm,1.1s
CHMT Chamberlain Mo 83.14 38 *e*P **P 19 15 02.9 -0.3**
MOOW Moose Ponds 83.15 41 *e*P **P 19 15 03.5 +0.1**
comp=Z,21nm,1.4s
S22A 4UR Ranch, Cre 83.18 48 P **P 19 15 04.3 +0.5**
baz=246
S22A 4UR Ranch, Cre 83.18 48 *e*P **P 19 15 03.9 +0.2**
comp=Z,49nm,1.4s
LOHW Long Hollow 83.18 42 *e*P **P 19 15 03.2 -0.3**
comp=Z,58nm,1.8s
O20A White River Ci 83.19 46 *e*P **P 19 15 03.5 -0.1**
comp=Z,37nm,1.4s
QLMT Earthquake Lak 83.23 40 *e*P **P 19 15 02.8 -0.9**
BJT Baijiatuau 83.31 314 *e*P **P 19 15 05.4 +1.4**
BJT pmax pmax
comp=Z,31nm,0.7s
BJT MLR MLR
comp=Z,2µm,22.0s
BJT Baijiatuau 83.31 314 *e*P **P 19 15 05.3 +1.4**
comp=Z,31nm,0.7s
BJT LR LR
comp=Z,2µm,22.0s
BJI Beijing 83.32 314 P **P 19 15 05.1 +1.1**
BJI S **S 19 25 27.2 +3.3**
BJI pmax pmax
comp=Z,170nm,3.8s
BJI LR LR
comp=Z,1µm,16.0s
BJI LR LR
comp=Z,830nm,20.6s
BJI LR LR
comp=Z,2µm,24.2s
FLWY Flagg Ranch 83.34 41 *e*P **P 19 15 04.8 +0.5**
comp=Z,33nm,1.0s
YHB Horse Butte 83.34 40 *e*P **P 19 15 05.4 +1.0**
comp=Z,46nm,1.0s
YPP Pitchstone Pla 83.36 41 *e*P **P 19 15 04.1 -0.4**
comp=Z,37nm,1.6s
BW06 Boulder Array 83.47 43 P **P 19 15 05.5 +0.5**
baz=243
BW06 Boulder Array 83.47 43 *e*P **P 19 15 04.5 -0.6**
BW06 LR LR
comp=Z,693nm,19.0s
PD31 Pinedale Array 83.47 43 *e*P **P 19 15 05.1 0.0**
PDAR Pinedale Array 83.47 43 P **P 19 15 04.7 -0.4**
comp=Z,6.7nm,1.1s,baz=224,slow=4.1,SNR=17
DAWY Dawson 83.48 15 *e*P **P 19 15 04.4 +0.1**
comp=Z,34nm,1.3s
BOZ Bozeman (W) 83.50 40 P **P 19 15 05.2 +0.1**
baz=241
BOZ Bozeman (W) 83.50 40 *e*P **P 19 15 05.1 +0.1**
BOZ pmax pmax

comp=Z,23nm,1.2s
BOZ MLR MLR
comp=Z,711nm,19.0s
BOZ Bozeman (W) 83.50 40 *e*P **P 19 15 05.1 +0.1**
comp=Z,23nm,1.2s
BOZ LR LR
comp=Z,711nm,19.0s
H17A Grant Village 83.56 41 *e*P **P 19 15 06.9 +1.4**
comp=Z,16nm,0.9s
YHH Holmes Hill 83.57 41 *e*P **P 19 15 02.6 -3.1**
comp=Z,34nm,1.4s
BILL Bilibino 83.63 353 *e*P **P 19 15 04.5 -0.5**
BILL *i* S **S 19 25 20.0 -6.0**
BILL pmax pmax
comp=Z,9.0nm,1.0s
BILL Bilibino 83.63 353 *e*P **P 19 15 04.3 -0.7**
comp=Z,54nm,1.4s
BILL LR LR
comp=Z,4µm,21.0s
EGAK Eagle 83.64 14 *e*P **P 19 15 05.0 0.0**
comp=Z,37nm,1.2s
EGAK LR LR
comp=Z,2µm,21.0s
SMCO Snowmass 83.67 47 *e*P **P 19 15 05.1 -1.3**
comp=Z,67nm,1.6s
LKWY Lake 83.75 41 PFAKE 19 15 20.0 +14
LKWY LR LR
comp=Z,1µm,20.0s
WALA Waterton Lakes 83.84 36 *e*P **P 19 15 07.0 +0.4**
comp=Z,15nm,1.1s
HRY Holter Researc 83.89 38 *e*P **P 19 15 09.1 +2.1**
COLD Coldfoot 83.96 10 *e*P **P 19 15 06.9 +0.2**
comp=Z,44nm,1.2s
SDCO Great Sand Dun 84.14 49 P **P 19 15 09.7 +1.0**
baz=246
SDCO Great Sand Dun 84.14 49 *e*P **P 19 15 08.2 -0.4**
comp=Z,16nm,1.2s
SDCO LR LR
comp=Z,859nm,21.0s
COCO West Island 84.34 259 PFAKE 19 15 20.0 +10
COCO LR LR
comp=Z,2µm,19.0s
ENH Enshi 84.56 303 PFAKE 19 15 20.0 +9.3
ENH LR LR
comp=Z,757nm,21.0s
T25A Trinidad 84.69 50 *e*P **P 19 15 08.8 -2.7**
comp=Z,18nm,1.4s
RLMT Red Lodge 84.72 41 P **P 19 15 11.9 +0.6**
baz=243
RLMT Red Lodge 84.72 41 *e*P **P 19 15 10.8 -0.5**
comp=Z,30nm,1.1s
RLMT LR LR
comp=Z,475nm,21.0s
MSTX Muleshoe 84.73 53 *e*P **P 19 15 09.4 -2.1**
comp=Z,89nm,1.8s
GCMT Greycliff 84.78 40 *e*P **P 19 15 08.4 -3.1**
Q24A Divide 84.88 48 P **P 19 15 12.9 +0.5**
baz=246
ISCO Idaho Springs 84.89 47 P **P 19 15 14.0 +1.5**
baz=246
ISCO Idaho Springs 84.89 47 *e*P **P 19 15 13.4 +0.9**
ISCO pmax pmax
comp=Z,10.0nm,1.1s
ISCO MLR MLR
comp=Z,1µm,19.0s
ISCO Idaho Springs 84.89 47 *e*P **P 19 15 13.3 +0.9**
comp=Z,10.0nm,1.1s
ISCO LR LR
comp=Z,1µm,19.0s
832A Faith Ranch, C 84.98 59 P **P 19 15 12.9 +0.2**
baz=250
KULM Kulim 85.02 277 PFAKE 19 15 20.0 +6.7
KULM LR LR
comp=Z,506nm,20.0s
N23A Red Feather La 85.10 46 P **P 19 15 14.4 +1.0**
baz=246
N23A Red Feather La 85.10 46 *e*P **P 19 15 12.3 -1.1**
comp=Z,40nm,1.4s
SKNT Sakolnakorn 85.11 289 P P 19 15 20.9 +7.3
comp=Z,29nm,1.3s
HIA Hailar 85.28 324 PFAKE 19 15 20.0 +6.2
HIA LR LR
comp=Z,4µm,21.0s
933A Laredo 85.34 60 P **P 19 15 14.9 +0.3**
baz=251
K22A Casper 85.43 44 P **P 19 15 15.6 +0.6**
baz=245
K22A Casper 85.43 44 *e*P **P 19 15 13.0 -1.9**
comp=Z,35nm,1.4s
PAYG Puerto Ayora 85.60 90 PFAKE 19 15 30.0 +14
PAYG LR LR
comp=Z,1µm,20.0s
PHWY Pilot Hill 85.60 45 *e*P **P 19 15 16.0 0.0**
comp=Z,18nm,1.4s
GYA Guiyang 85.63 299 P **P 19 15 16.4 +0.2**
GYA PP **PP 19 18 36.4 +1.0**
GYA SKS **SKSac 19 25 38.0 -3.2**
GYA S **S 19 25 46.8 -1.1**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,6.2s
034A Hebbronville 85.66 61 P **P 19 15 17.3 +1.1**
baz=251
PMSA Palmer Station 85.68 156 PFAKE 19 15 30.0 +14
PMSA LR LR
comp=Z,2µm,20.0s
EGMT Eagleton 85.75 38 P **P 19 15 17.0 +0.7**
baz=242
EGMT Eagleton 85.75 38 *e*P **P 19 15 19.6 +3.4**
comp=Z,40nm,1.6s
EGMT LR LR
comp=Z,1µm,20.0s
JCT Junction City 85.86 57 P **P 19 15 16.3 -0.8**
baz=250
JCT Junction City 85.86 57 *e*P **P 19 15 18.0 +0.8**
JCT MLR MLR
comp=Z,1µm,20.0s
JCT Junction City 85.86 57 *e*P **P 19 15 18.0 +0.8**
JCT LR LR
comp=Z,1µm,20.0s
AMTX Amarillo 85.91 52 *e*P **P 19 15 16.6 -0.7**
comp=Z,38nm,1.7s
934A Benavides 85.97 60 P **P 19 15 18.3 +0.6**
baz=251
633A Saathoff Ranch 86.03 58 P **P 19 15 18.2 +0.2**
baz=251
035A Encino 86.11 61 P **P 19 15 19.7 +1.3**
baz=251
834A Tilden 86.11 60 P **P 19 15 19.2 +0.8**
baz=251
EDM Edmonton 86.28 32 *e*P **P 19 15 18.9 +0.2**
EDM pmax pmax
comp=Z,63nm,1.5s
EDM Edmonton 86.28 32 *e*P **P 19 15 18.9 +0.2**
comp=Z,63nm,1.5s
XAN Xi'an 86.33 306 P **P 19 15 23.4 +4.0**
XAN pmax pmax
comp=Z,13nm,1.2s
XAN pmax pmax
comp=Z,51nm,4.3s
533A Kerrville 86.35 58 P **P 19 15 19.1 -0.5**
baz=251
KVTX Kingsville 86.48 60 PFAKE 19 15 30.0 +10
KVTX LR LR
comp=Z,1µm,19.0s
433A Art 86.53 57 P **P 19 15 20.0 -0.5**
baz=251
ABTX Abilene, Hawle 86.71 55 P **P 19 15 21.4 +0.1**
baz=250
ABTX Abilene, Hawle 86.71 55 *e*P **P 19 15 21.3 0.0**
comp=Z,114nm,1.6s
534A Blanco 86.80 58 P **P 19 15 21.2 -0.6**
baz=251
333A Richland Sprin 86.81 57 P **P 19 15 22.7 +0.9**
baz=251
HHC Hu-ho-hao-te 86.86 314 *e*P **P 19 15 21.7 -0.2**
HHC S **S 19 25 57.8 -1.5**
HHC SS **SS 19 31 41.7 -0.4**
HHC pmax pmax
comp=Z,30nm,0.8s
HHC pmax pmax
comp=Z,320nm,7.2s
HHC LR LR
comp=Z,770nm,18.5s
HHC LR LR
comp=Z,640nm,18.5s

HHC LR LR
comp=Z,1μm,18.5s
233A Rising Star 87.10 56 P **P** **19 15 24.7 +1.4**
baz=251
635A Leesville 87.17 59 P **P** **19 15 23.3 -0.2**
baz=251
434A Burnet 87.22 57 P **P** **19 15 23.5 -0.3**
baz=251
LAO LASA Array 87.32 40 *e*P **P** **19 15 24.1 +0.1**
comp=Z,44nm,1.2s
LAO LR LR
comp=Z,599nm,22.0s
334A Lometa 87.41 57 P **P** **19 15 25.2 +0.5**
baz=251
MAW Mawson 87.56 199 P **P** **19 15 27.1 +2.4**
comp=Z,18nm,1.1s,baz=124,slow=5.3,SNR=16
MAW LR LR 19 52 01.4
comp=Z,2μm,20.5s,baz=109,slow=34
MAW Mawson 87.56 199 *e*P **P** **19 15 25.0 +0.3**
MAW pmax pmax
comp=Z,24nm,1.6s
MAW Mawson 87.56 199 *e*P **P** **19 15 25.0 +0.3**
comp=Z,24nm,1.6s
736A Circle Diamond 87.62 59 P **P** **19 15 26.6 +0.9**
baz=252
Z33A Whitaker Ranch 87.63 55 P **P** **19 15 27.9 +2.2**
baz=251
YAK Yakutsk 87.63 337 P **P** **19 15 26.0 +1.0**
comp=Z,4.0nm,0.3s,baz=338,slow=5.6,SNR=5.4
YAK Yakutsk 87.63 337 *e*P **P** **19 15 27.0 +2.0**
YAK pmax pmax
comp=Z,17nm,1.5s
YAK pmax pmax
comp=N,4.0nm,1.4s
YAK pmax pmax
comp=E,5.0nm,1.4s
YAK Yakutsk 87.63 337 *e*P **P** **19 15 24.1 -0.9**
comp=E,14nm,0.9s
YAK LR LR
comp=Z,1μm,22.0s
RSSD Black Hills 87.69 43 P **P** **19 15 26.7 +0.7**
baz=247
RSSD Black Hills 87.69 43 *e*P **P** **19 15 25.6 -0.4**
RSSD pmax pmax
comp=Z,9.0nm,1.1s
RSSD Black Hills 87.69 43 *e*P **P** **19 15 25.6 -0.4**
comp=Z,8.9nm,1.1s
234A Clairette 87.71 56 P **P** **19 15 25.8 -0.3**
baz=251
636A Smothers Creek 87.79 59 P **P** **19 15 27.1 +0.5**
baz=252
OGNE Ogallala 87.85 47 PFAKE 19 15 40.0 +13
OGNE LR LR
comp=Z,551nm,20.0s
BTO Baotou 87.86 313 *e*P **P** **19 15 26.7 0.0**
W32A Sentinel 87.86 53 P **P** **19 15 27.8 +1.0**
baz=250
335A Moody 88.05 57 P **P** **19 15 27.8 0.0**
baz=252
WMOK Wichita Mounta 88.09 53 *e*P **P** **19 15 27.8 -0.1**
WMOK pmax pmax
comp=Z,8.0nm,1.4s
WMOK MLR MLR
comp=Z,1μm,20.0s
WMOK Wichita Mounta 88.09 53 *e*P **P** **19 15 27.8 -0.1**
comp=Z,7.6nm,1.4s
WMOK LR LR
comp=Z,1μm,20.0s
INK Inuvik 88.30 15 P **P** **19 15 27.2 -0.8**
comp=Z,4.7nm,1.1s,baz=225,slow=1.1,SNR=7.3
INK LR LR 19 47 34.3
comp=Z,983nm,22.0s,baz=208,slow=30
INK Inuvik 88.30 15 *e*P **P** **19 15 27.8 -0.2**
INK pmax pmax
comp=Z,19nm,1.4s
INK Inuvik 88.30 15 *e*P **P** **19 15 27.8 -0.2**
comp=Z,19nm,1.4s
W33A Caddo, Fort Co 88.47 53 P **P** **19 15 30.6 +0.9**
baz=251
537A Green Hill Far 88.59 59 P **P** **19 15 31.1 +0.8**
baz=252
KMI Kunming 88.59 296 P **P** **19 15 31.8 +1.1**
KMI sP sP 19 15 38.1 -1.3
KMI SS SS 19 32 10.8 +2.6
KMI pmax pmax
comp=Z,12nm,1.2s
KMI LR LR
comp=Z,410nm,25.0s
KMI LR LR
comp=Z,980nm,23.3s
KMI LR LR
comp=Z,1μm,23.3s
CBKS Cedar Bluff 88.74 49 PFAKE 19 15 40.0 +9.1
CBKS LR LR
comp=Z,573nm,21.0s
DGMT Dagmar 89.30 39 *e*P **P** **19 15 37.1 +3.8**
DGMT LR LR
comp=Z,1μm,19.0s
CD2 Chengdu 89.44 302 *e*P **P** **19 15 34.0 -0.4**
CD2 PP **PP** **19 19 04.3 -1.6**
CD2 SKS **SKSac** **19 26 03.7 -0.3**
CD2 S **S** **19 26 24.1 -0.1**
CD2 sS ScS 19 26 29.2 +0.4
CD2 SS **SS** **19 32 19.6 -0.4**
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.4s
CD2 LR LR
comp=Z,1μm,20.1s
CD2 LR LR
comp=Z,1μm,15.5s
CD2 LR LR
comp=Z,1μm,18.7s
U34A Anderson Ranch 89.61 52 *e*P **P** **19 15 34.3 -0.7**
comp=Z,15nm,1.0s
CIT Chita 90.04 324 *e*P **P** **19 15 37.3 +0.6**
CIT pmax pmax
comp=Z,48nm,1.8s
CM31 Chiang Mai Arr 90.13 289 *e*P **P** **19 15 37.3 -0.5**
CMAR Chiang Mai Arr 90.13 289 P **P** **19 15 38.5 +0.7**
comp=Z,3.0nm,1.2s,baz=108,slow=2.9,SNR=2.7
CMAR LR LR 19 51 34.8
comp=Z,467nm,21.5s,baz=102,slow=33
CHTO Chiang Mai 90.22 289 *e*P P 19 15 45.1 +6.9
CHTO MLR MLR
comp=Z,659nm,22.0s
CHTO Chiang Mai 90.22 289 *e*pP **pP** **19 15 45.1 +0.5**
CHTO LR LR
comp=Z,659nm,22.0s
NATX Nacogdoches 90.45 57 PFAKE 19 15 50.0 +11
NATX LR LR
comp=Z,2μm,20.0s
YKA Yellowknife Ar 90.54 24 P **P** **19 15 38.2 -0.5**
comp=Z,1.0nm,0.8s,baz=241,slow=4.6,SNR=13
YKA LR LR 19 49 56.0
comp=Z,95nm,20.2s,baz=180,slow=31
YKB5 Yellowknife Ar 90.54 24 *e*P **P** **19 15 38.2 -0.5**
A26A Wade Farm, Ken 90.78 39 P **P** **19 15 40.8 +0.7**
baz=248
LZH Lanzhou 90.93 307 *e*P **P** **19 15 46.0 +4.6**
LZH pP sP 19 15 52.0 +1.9
LZH sP pP 19 15 54.9 +7.1
LZH PP **PP** **19 19 18.5 +0.7**
LZH S **S** **19 26 42.1 +4.1**
LZH sS sS 19 26 51.8 +3.2
LZH SS **SS** **19 32 43.1 +1.5**
LZH pmax pmax
comp=Z,19nm,1.0s
LZH pmax pmax
comp=Z,140nm,4.9s
LZH LR LR
comp=Z,490nm,15.4s
LZH LR LR
comp=Z,840nm,18.5s
LZH LR LR
comp=Z,960nm,19.0s
KSU1 Kansas State U 91.14 50 PFAKE 19 15 50.0 +7.9
KSU1 LR LR
comp=Z,924nm,19.0s
X38A Whitesboro 91.17 55 P **P** **19 15 43.9 +1.6**
baz=253
PLCA Paso Flores 91.69 133 P **P** **19 15 46.8 +2.0**
comp=Z,2.2nm,0.8s,baz=303,slow=9.9,SNR=5.1
PLCA LR LR 19 48 11.3
comp=Z,1μm,21.3s,baz=266,slow=30
PLCA Paso Flores 91.69 133 *e*P **P** **19 15 46.1 +1.3**
PLCA pmax pmax
comp=Z,25nm,1.7s
PLCA Paso Flores 91.69 133 *e*P **P** **19 15 46.1 +1.3**
comp=Z,25nm,1.7s
V38A Canehill 91.84 53 P **P** **19 15 47.4 +2.0**
baz=253
MIAR Mount Ida 92.12 55 PFAKE 19 16 00.0 +13
MIAR LR LR
comp=Z,2μm,20.0s
BOD Bodaibo 92.20 330 *e*P **P** **19 15 47.3 +0.8**
BOD pmax pmax
comp=Z,7.0nm,1.8s
ECSD EROS Data Cent 92.57 45 P **P** **19 15 49.7 +1.1**
baz=252
ECSD EROS Data Cent 92.57 45 *e*P **P** **19 15 49.8 +1.1**
comp=Z,12nm,1.4s
ECSD LR LR
comp=Z,692nm,20.0s
SYO Syowa Base 92.67 192⇑ *e*P **P** **19 15 48.0 -0.6**
SYO Syowa Base 92.67 192⇑ *i*PcP **PcP** **19 15 51.0 +1.7**
SYO Syowa Base 92.67 192⇑ *i*pP pP 19 15 55.3 +0.3
SONA1 Songino Array 92.80 319 *e*P **P** **19 15 46.1 -3.6**
SONA0 Songino Array 92.80 319 *e*P **P** **19 15 49.5 -0.2**
comp=Z,33nm,0.9s
SONM Songino Array 92.80 319 P **P** **19 15 49.5 -0.2**
comp=Z,0.6nm,0.7s,baz=134,slow=4.2,SNR=2.4
SONM LR LR 19 52 53.6
comp=Z,1μm,21.9s,baz=107,slow=32
TEIG Tepich 92.86 70 PFAKE 19 16 00.0 +10
TEIG LR LR
comp=Z,23nm,21.0s
FFC Flin Flon 92.97 34 *i*P **P** **19 15 53.4 +3.3**
FFC Flin Flon 92.97 34 PFAKE 19 16 00.0 +10
FFC LR LR
comp=Z,605nm,19.0s
U40A Yellville 93.19 53 P **P** **19 15 53.5 +1.9**
baz=254
S39A Bolivar 93.20 52 P **P** **19 15 53.2 +1.6**
baz=254
X301 Greenbrier Sit 93.24 55 *e*P **P** **19 15 47.9 -4.0**
comp=Z,32nm,1.5s
WHAR Wooly Hollow 93.34 55 *e*P **P** **19 15 50.5 -1.8**
comp=Z,78nm,1.9s
R39A Chumby, Stover 93.58 51 P **P** **19 15 55.2 +1.9**
baz=254
SNAA Sanae 93.59 178 P **P** **19 15 54.9 +2.0**
SNAA Sanae 93.59 178 *e*P **P** **19 15 53.0 +0.1**
SNAA pmax pmax
comp=Z,34nm,1.3s
SNAA Sanae 93.59 178 *e*P **P** **19 15 53.0 +0.1**
comp=Z,34nm,1.3s
T40A Mansfield 93.66 53 P **P** **19 15 55.7 +1.9**
baz=254
S40A Lebanon 93.80 52 P **P** **19 15 55.7 +1.3**
baz=254
TIXI Tiksi 93.80 345 P **P** **19 15 53.7 +0.1**
comp=Z,4.9nm,0.8s,baz=136,slow=3.7,SNR=3.2
TIXI LR LR 19 51 58.6
comp=Z,2μm,21.8s,baz=168,slow=32
TIXI Tiksi 93.80 345⇑ *e*P **P** **19 15 52.0 -1.6**
TIXI pmax pmax
comp=Z,24nm,1.7s
Q39A Willow Grove F 93.83 51 P **P** **19 15 56.9 +2.4**
baz=254
U41A Viola 93.91 54 P **P** **19 15 56.7 +1.8**
baz=255
P39B Salisbury 94.12 50 P **P** **19 15 57.3 +1.5**
baz=254
R40A Maddies Statio 94.16 52 P **P** **19 15 57.6 +1.6**
baz=254
T41A Mountain View 94.22 53 P **P** **19 15 56.6 +0.3**
baz=255
VNA1 Neumayer--Stat 94.32 176 P **P** **19 16 00.7 +4.5**
S41A Jillco Farms, 94.37 52 P **P** **19 15 59.2 +2.1**
baz=255
SCIA State Center 94.44 48 PFAKE 19 16 10.0 +13
SCIA LR LR
comp=Z,783nm,19.0s
U42A Revenden 94.44 54 P **P** **19 15 58.2 +0.9**
baz=255
AGMN Agassiz Nation 94.45 41 *e*P **P** **19 15 59.4 +2.3**
AGMN LR LR
comp=Z,597nm,20.0s
J37A Redenius Farm, 94.58 47 P **P** **19 15 59.3 +1.5**
baz=254
EFI East Falkland 94.73 146 PFAKE 19 16 10.0 +12
EFI LR LR
comp=Z,2μm,22.0s
GTA Gaotai 94.93 309 *e*P **P** **19 16 02.5 +2.8**
GTA pP sP 19 16 06.8 -1.6
GTA sP pP 19 16 10.2 +4.1
GTA S **S** **19 27 11.1 -2.2**
GTA sS ScS 19 27 17.5 +3.2
GTA SS **SS** **19 33 40.0 +1.3**
GTA pmax pmax
comp=Z,2.0nm,0.9s
GTA pmax pmax
comp=Z,74nm,6.7s
GTA LR LR
comp=Z,550nm,17.1s
GTA LR LR
comp=Z,1μm,23.8s
GTA LR LR
comp=Z,2μm,23.8s
ULM Lac du Bonnet 95.02 39 LR LR 19 52 32.1
comp=Z,576nm,21.0s,baz=265,slow=32
J38A Wedel Dairy, R 95.34 47 P **P** **19 16 02.9 +1.6**
baz=255
P41A Barry, Barry 95.43 51 P **P** **19 16 02.7 +0.9**
baz=255
OXF Oxford 95.43 56 *e*P **P** **19 15 59.8 -2.1**
OXF pmax pmax
comp=Z,45nm,1.1s
OXF Oxford 95.43 56 *e*P **P** **19 15 59.8 -2.1**
comp=Z,45nm,1.1s
ZAK Zakamensk 95.53 321 *e*P **P** **19 16 00.3 -1.8**
ZAK pmax pmax
comp=Z,3.0nm,2.2s
NNA Nana 95.55 104 PFAKE 19 16 10.0 +7.0
NNA LR LR
comp=Z,499nm,21.0s
K39A Oelwein 95.60 47 P **P** **19 16 03.9 +1.4**
baz=255
E36A McGregor 95.65 43 P **P** **19 16 03.5 +0.9**
baz=255
O41A Passleys Farm, 95.67 50 P **P** **19 16 03.5 +0.6**
baz=256
TLY Talaya 95.68 322 PFAKE 19 16 10.0 +7.3
TLY LR LR
comp=Z,2μm,20.0s
LCO Las Campanas 95.72 122 PFAKE 19 16 20.0 +16
LCO LR LR
comp=Z,1μm,22.0s
D36A Goodland 95.88 43 P **P** **19 16 04.4 +0.7**
baz=255
P42A Winchester 95.94 51 P **P** **19 16 05.7 +1.5**
baz=256
BRAL Brewton 96.57 60 PFAKE 19 16 20.0 +13
BRAL LR LR
comp=Z,654nm,19.0s
K41A Shullsburg 96.70 48 P **P** **19 16 08.4 +0.8**
baz=256
JFWS Jewell Farm 96.82 48 PFAKE 19 16 20.0 +12
JFWS LR LR
comp=Z,845nm,20.0s
HDIL Hopedale 96.96 50 PFAKE 19 16 20.0 +11
HDIL LR LR
comp=Z,731nm,19.0s
EYMN Ely 97.17 42 PFAKE 19 16 20.0 +10
EYMN LR LR
comp=Z,668nm,19.0s
OTAV Otavalo 97.28 92 PFAKE 19 16 20.0 +8.5
OTAV LR LR
comp=Z,740nm,19.0s
COWI Conover 98.32 45 PFAKE 19 16 30.0 +15
COWI LR LR
comp=Z,644nm,19.0s
TRQA Tornquist 98.84 133 PFAKE 19 16 30.0 +13
TRQA LR LR
comp=Z,775nm,20.0s
LVC Limon Verde 99.45 116 PFAKE 19 16 30.0 +9.1
LVC LR LR
comp=Z,973nm,19.0s
LSA Lhasa 99.69 298 PFAKE 19 16 30.0 +8.1
LSA LR LR
comp=Z,515nm,21.0s
GOGA Godfrey 100.01 58 PFAKE 19 16 30.0 +7.4
GOGA LR LR
comp=Z,1μm,20.0s
AAM Ann Arbor 101.46 49 PFAKE 19 16 40.0 +11
AAM LR LR
comp=Z,721nm,19.0s
ACSO Alum Creek Sta 101.62 51 PFAKE 19 16 40.0 +10
ACSO LR LR
comp=Z,1μm,20.0s
MTDJ Mount Denham 102.29 74 PFAKE 19 16 40.0 +6.8
MTDJ LR LR
comp=Z,727nm,19.0s
NHSC New Hope 102.67 59 PFAKE 19 16 50.0 +16
NHSC LR LR
comp=Z,1μm,21.0s
HOPE Hope Point 103.00 157 PFAKE 19 16 50.0 +15
HOPE LR LR
comp=Z,915nm,19.0s
BLA Blacksburg 103.12 55 PFAKE 19 16 50.0 +14
BLA LR LR
comp=Z,1μm,19.0s
WMQ Urumqi 104.67 312 *e*P **Pdif** **19 16 44.2 +1.0**
WMQ pP 19 16 51.4
WMQ Urumqi 104.67 312 SS SS 19 35 59.9 +5.4
WMQ pmax pmax
comp=Z,6.0nm,0.5s
WMQ pmax pmax
comp=Z,84nm,4.4s
WMQ LR LR
comp=N,700nm,17.7s
WMQ LR LR
comp=E,610nm,20.0s
WMQ LR LR
comp=Z,930nm,24.4s
CNNC Cliffs of the 104.86 57 PFAKE 19 17 00.0 +16
CNNC LR LR
comp=Z,2μm,20.0s
GTBY Guantanamo Bay 104.87 73 PFAKE 19 17 00.0 +16
GTBY LR LR
comp=Z,971nm,20.0s
CBN Corbin Frederi 105.64 54 PFAKE 19 21 10.0
CBN LR LR
comp=Z,1μm,20.0s
SDV Santo Domingo 106.91 85 PFAKE 19 21 20.0
SDV LR LR
comp=Z,825nm,20.0s
BINY Binghamton 107.09 50 PFAKE 19 21 10.0
BINY LR LR
comp=Z,1μm,19.0s
SDDR Presa de Saban 108.25 75 PFAKE 19 21 20.0
SDDR LR LR
comp=Z,2μm,20.0s
LONY Lake Ozonia 108.28 48 PFAKE 19 21 20.0
LONY LR LR
comp=Z,803nm,19.0s
GRTK Grand Turk 108.81 72 PFAKE 19 21 20.0
GRTK LR LR
comp=Z,832nm,20.0s
SAML Samuel 109.26 105 PFAKE 19 21 20.0
SAML LR LR
comp=Z,969nm,21.0s
KURK Kurchatov 111.11 319 PFAKE 19 21 20.0
KURK LR LR
comp=Z,3μm,20.0s
PKME Peaks-Kenny Pk 112.04 47 PFAKE 19 21 20.0
PKME LR LR
comp=Z,835nm,20.0s
SJG San Juan 112.93 76 PFAKE 19 21 30.0
SJG LR LR
comp=Z,466nm,19.0s
KSH Kashi 113.18 307 *e*PKP **PKiKP** **19 21 14.3 -0.7**
KSH PKS **PKSdf** **19 24 50.2 -1.6**
KSH SKS **SKSdf** **19 28 26.1 -0.3**
KSH AMB AMB
comp=Z,62nm,4.1s
KSH LR LR
comp=Z,260nm,15.1s
KSH LR LR
comp=Z,400nm,14.0s
KSH LR LR
comp=Z,790nm,18.5s
TKM2 Tokmak 2 113.44 311 PFAKE 19 21 30.0
TKM2 LR LR
comp=Z,1μm,22.0s
AAK Ala-Archa 114.26 310 PFAKE 19 21 30.0 +13
AAK LR LR
comp=Z,946nm,20.0s
EKS2 Erkin-Say 114.78 310 PFAKE 19 21 30.0 +12
EKS2 LR LR
comp=Z,794nm,20.0s
PTGA Pitinga 114.83 98 PFAKE 19 21 30.0 +11
PTGA LR LR
comp=Z,32μm,22.0s
BBSR BB Station 115.57 61 PFAKE 19 21 30.0 +10
BBSR LR LR
comp=Z,496nm,19.0s
KBS Kingsbay 115.76 358 PFAKE 19 21 30.0 +11
KBS LR LR
comp=Z,1μm,21.0s
BRVK Borovoye 115.99 322 PFAKE 19 21 30.0 +10
BRVK LR LR
comp=Z,900nm,20.0s
GRGR Grenville 116.21 84 PFAKE 19 21 30.0 +8.7
GRGR LR LR
comp=Z,927nm,22.0s
SPB Sao Paulo 116.81 126 PFAKE 19 21 30.0 +7.7
SPB LR LR
comp=Z,1μm,19.0s
SFJD Kangerlussuaq 116.95 21 PFAKE 19 21 30.0 +8.8
SFJD LR LR
comp=Z,979nm,19.0s
ANWB Willy Bob 116.97 78 PFAKE 19 21 30.0 +7.3
ANWB LR LR
comp=Z,596nm,21.0s
FDF Fort de France 117.14 81 PFAKE 19 21 30.0 +6.9
FDF LR LR
comp=Z,763nm,20.0s
ARU Arti 121.57 328 PFAKE 19 21 40.0 +10
ARU LR LR
comp=Z,3μm,20.0s
LVZ Lovozero 123.39 347 PFAKE 19 21 40.0 +6.3
LVZ LR LR
comp=Z,2μm,20.0s
ABPO Ambohimpanom 125.83 233 PFAKE 19 21 50.0 +10
ABPO LR LR
comp=Z,648nm,22.0s
BORG Borgarnes 127.18 13 PFAKE 19 21 50.0 +9.1
BORG LR LR
comp=Z,1μm,21.0s
KLMR Klimovskoe 127.40 339 *e*PKIKP **PKPdf** **19 21 41.6 +0.2**
KLMR *e* 19 23 37.8
KLMR pmax pmax
comp=Z,15nm,1.4s
SUR Sutherland 130.41 199 PFAKE 19 22 00.0 +12
SUR LR LR
comp=Z,2μm,19.0s
OBN Obninsk 132.59 335 PFAKE 19 22 00.0 +8.6
OBN LR LR
comp=Z,1μm,20.0s
KONO Kongsberg 135.06 356 PFAKE 19 22 10.0 +14
KONO LR LR
comp=Z,717nm,22.0s
RCBR Riachuelo 135.37 114 PFAKE 19 22 10.0 +12
RCBR LR LR
comp=Z,1μm,22.0s
KIV Kislovodsk 136.19 319 PFAKE 19 22 10.0 +11
KIV LR LR
comp=Z,956nm,19.0s
GNI Garni 136.52 313 PFAKE 19 22 10.0 +10
GNI LR LR
comp=Z,1μm,22.0s
KIEV Kiev 138.85 336 PFAKE 19 22 10.0 +6.7
KIEV LR LR
comp=Z,654nm,21.0s
ESK Eskdalemuir 139.19 6 PFAKE 19 22 20.0 +16
ESK LR LR
comp=Z,1μm,22.0s
LSZ Lusaka 141.77 220 *e*PKHKP PKPpre 19 22 00.5
LSZ MLR MLR
comp=Z,1μm,20.0s
LSZ Lusaka 141.77 220 *e*PKPpre PKPpre 19 22 00.5
LSZ *e*PKPdf **PKiKP** **19 22 15.3 +2.7**
LSZ LR LR
comp=Z,1μm,20.0s
KIS Kishinev 141.87 332 *e*PKP PKPdf 19 22 18.0 +9.2

KIS	**Kishinev**	**141.87**	**332**	*e*PP	PP	19 24 58.0	-15
KIS				*e*LR	LR	20 17 23.0	
	comp=Z,1μm,22.0s						
KIS	**Kishinev**	**141.87**	**332**	*e*PKIKP	PKPdf	19 22 18.0	+9.2
KIS				MLR	MLR		
	comp=N,600nm,20.0s						
KIS				MLR	MLR		
	comp=E,900nm,20.0s						
KIS				MLR	MLR		
	comp=Z,1μm,20.0s						
KIS				MLR	MLR		
	comp=Z,1μm,22.0s						
CLL	**Collm**	**142.90**	**351**	*e*PKPdf	**PKPdf**	**19 22 07.0**	**-3.6**
CLL				*i*		19 22 20.3	
	comp=Z,13nm,1.4s						
CLL				*e*SKKSac	SKKSac	19 32 12.0	+0.4
CLL				*e*		19 37 42.0	
CLL				*e*SS	SS	19 43 54.0	-1.2
CLL				*e*		19 44 48.0	
CLL				*e*SSS	SSS	19 49 06.0	
CLL				*e*SSSS		19 53 06.0	
CLL	**Collm**	**142.90**	**351**	*e*PKIKP	**PKPdf**	**19 22 07.0**	**-3.6**
CLL				*i*		19 22 20.3	
UZH	**Uzhgorod**	**143.10**	**340**	*e*PKIKP	PKPbc	19 22 07.4	-0.4
UZH				*e*		19 22 17.0	
UZH				*e*		19 22 19.6	
UZH				MLR	MLR		
	comp=N,700nm,26.0s						
UZH				MLR	MLR		
	comp=E,500nm,26.0s						
UZH				MLR	MLR		
	comp=Z,1μm,26.0s						
UPC	**Upice**	**143.11**	**347**	*e*PKP	**PKPdf**	**19 22 12.8**	**+1.8**
UPC				AMS	AMS	20 24 00.0	
	comp=Z,2μm,21.9s						
UPC	**Upice**	**143.11**	**347**	*e*PKIKP	**PKPdf**	**19 22 12.8**	**+1.8**
UPC				MLR	MLR		
	comp=Z,2μm,21.9s						
BRG	**Berggiesshubel**	**143.16**	**350**	SS	SS	19 44 08.0	+10
DPC	**Dobruska-Polom**	**143.19**	**347**	*e*PKP	**PKPdf**	**19 22 15.0**	**+3.8**
DPC				AMS	AMS	20 24 10.0	
	comp=Z,2μm,21.8s						
DPC	**Dobruska-Polom**	**143.19**	**347**	*e*PKIKP	**PKPdf**	**19 22 15.0**	**+3.8**
DPC				MLR	MLR		
	comp=Z,2μm,21.8s						
OKC	**Ostrava-Krasne**	**143.24**	**345**	AMS	AMS	20 22 40.0	
	comp=Z,2μm,21.5s						
PVCC	**Panska Ves**	**143.38**	**349**	*e*PKP	**PKPdf**	**19 22 15.3**	**+3.9**
PVCC				AMS	AMS	20 25 40.0	
	comp=Z,2μm,21.8s						
PVCC	**Panska Ves**	**143.38**	**349**	*e*PKIKP	**PKPdf**	**19 22 15.3**	**+3.9**
PVCC				MLR	MLR		
	comp=Z,2μm,21.8s						
TRPA	**Tarpa**	**143.45**	**339**	*e*PKPdf	**PKPdf**	**19 22 10.6**	**-1.0**
KMBO	**Kilima Mbogo**	**143.56**	**247**	PKP	PKPbc	19 22 10.8	+0.3
	comp=Z,2.0nm,0.5s,baz=58,slow=5.8,SNR=4.1						
KMBO	**Kilima Mbogo**	**143.56**	**247**	*e*PKPpre	PKPpre	19 22 06.5	
KMBO				LR	LR		
	comp=Z,722nm,19.0s						
TSUM	**Tsumeb**	**143.68**	**202**	PFAKE		19 22 20.0	+6.9
TSUM				LR	LR		
	comp=Z,1μm,20.0s						
DRWC	**Darouich**	**143.76**	**313**	*e*P	**PKPdf**	**19 22 13.4**	**+0.7**
PRU	**Pruhonice**	**143.90**	**349**	*e*PKP	**PKPdf**	**19 22 12.8**	**+0.4**
PRU				*e*SS	SS	19 44 13.9	+7.0
PRU				AMS	AMS	20 26 00.0	
	comp=Z,2μm,19.5s						
PRU	**Pruhonice**	**143.90**	**349**	*e*PKIKP	**PKPdf**	**19 22 12.8**	**+0.4**
PRU				*e*SS	SS	19 44 13.9	+7.0
PRU				MLR	MLR		
	comp=Z,2μm,19.5s						
GOPC	**GO Pecny, Ondr**	**143.93**	**348**	*e*PKP	**PKPdf**	**19 22 13.3**	**+0.8**
GOPC				AMS	AMS	20 26 10.0	
	comp=Z,2μm,19.7s						
GOPC	**GO Pecny, Ondr**	**143.93**	**348**	*e*PKIKP	**PKPdf**	**19 22 13.3**	**+0.8**
GOPC				MLR	MLR		
	comp=Z,2μm,19.7s						
TIRR	**Tirgusor**	**143.95**	**330**	⇑*i*P	PKPdf	19 22 29.1	+17
NKC	**Novy Kostel**	**144.03**	**351**	AMS	AMS	20 28 00.0	
	comp=Z,1μm,21.0s						
TLB	**Topalu**	**144.03**	**330**	⇓*i*P	PKPbc	19 22 11.7	+1.1
TLB	**Topalu**	**144.03**	**330**	⇓PKIKP	PKPbc	19 22 11.7	+1.1
VRAC	**Vranov**	**144.11**	**346**	⇑*i*P	**PKPdf**	**19 22 14.1**	**+1.3**
VRAC	**Vranov**	**144.11**	**346**	⇑PKIKP	**PKPdf**	**19 22 14.1**	**+1.3**
DOPR	**Dopca**	**144.16**	**334**	⇑*i*P	**PKPdf**	**19 22 14.2**	**+1.2**
BR101	**Keskin Array S**	**144.16**	**319**	*e*PKPdf	PKPbc	19 22 11.4	0.0
BR131	**Keskin Array S**	**144.16**	**319**	*e*PKPdf	**PKPab**	**19 22 06.9**	**-4.1**
BRTR	**Keskin Array B**	**144.16**	**319**	PKP	PKPbc	19 22 11.4	0.0
	comp=Z,7.4nm,0.9s,baz=85,slow=2.3,SNR=22						
BTCH	**Batrach**	**144.19**	**312**	*e*P	**PKPdf**	**19 22 14.6**	**+1.1**
MEM	**Membach**	**144.27**	**358**	PKP	**PKPdf**	**19 22 18.0**	**+5.0**
VYHS	**Vyhne**	**144.28**	**343**	*e*PKIKP	**PKPdf**	**19 22 14.7**	**+1.6**
VYHS	**Vyhne**	**144.28**	**343**	*e*PKP	**PKPdf**	**19 22 14.7**	**+1.6**
MLR	**Muntele Rosu**	**144.30**	**333**	⇑*i*P	**PKPdf**	**19 22 17.8**	**+4.4**
MLR	**Muntele Rosu**	**144.30**	**333**	*e*PKIKP	**PKPab**	**19 22 10.9**	**-0.4**
MLR				*e*		19 22 18.1	
MLR	**Muntele Rosu**	**144.30**	**333**	*e*PKPdf	**PKPab**	**19 22 10.9**	**-0.4**
MLR				*e*PKPdf	**PKiKP**	**19 22 18.1**	**+1.1**
ISR	**Istrita**	**144.32**	**332**	⇑*i*P	**PKPdf**	**19 22 20.6**	**+7.3**
ISR	**Istrita**	**144.32**	**332**	⇑PKIKP	**PKPdf**	**19 22 20.6**	**+7.3**
TREC	**Trest**	**144.37**	**347**	AMS	AMS	20 25 00.0	
	comp=Z,2μm,22.6s						
PSZ	**Piszkesteto**	**144.49**	**342**	⇓*i*P	PKPbc	19 22 12.6	+0.5
PSZ	**Piszkesteto**	**144.49**	**342**	*e*PKIKP	**PKPdf**	**19 22 13.1**	**-0.5**
PSZ				*e*		19 22 18.7	
PSZ				MLR	MLR		
	comp=Z,2μm,21.0s						
PSZ	**Piszkesteto**	**144.49**	**342**	*e*PKPdf	**PKPdf**	**19 22 13.1**	**-0.5**
PSZ				*e*PKPdf	**PKiKP**	**19 22 18.7**	**+1.5**
PSZ				LR	LR		
	comp=Z,2μm,21.0s						
PSZ	**Piszkesteto**	**144.49**	**342**	*e*PKPdf	**PKPdf**	**19 22 13.3**	**-0.3**
DRGR		**144.53**	**338**	⇓*i*P	**PKPdf**	**19 22 14.7**	**+1.0**
DRGR		**144.53**	**338**	⇓PKIKP	**PKPdf**	**19 22 14.7**	**+1.0**
ANTO	**Ankara**	**144.60**	**320**	*e*PKIKP	PKPbc	19 22 13.1	+0.4
ANTO				MLR	MLR		
	comp=Z,441nm,20.0s						
ANTO	**Ankara**	**144.60**	**320**	*e*PKPdf	PKPbc	19 22 13.1	+0.4
ANTO				LR	LR		
	comp=Z,441nm,20.0s						
BR231	**Keskin MP Arra**	**144.63**	**320**	*e*PKPdf	**PKPab**	**19 22 11.3**	**-1.4**
VOIR		**144.72**	**334**	⇓*i*P	**PKPdf**	**19 22 17.3**	**+3.2**
VOIR		**144.72**	**334**	⇓PKIKP	**PKPdf**	**19 22 17.3**	**+3.2**
BIDA	**Albida**	**144.75**	**311**	*e*P	**PKPdf**	**19 22 15.9**	**+1.4**
KHC	**Kasperske Hory**	**144.91**	**349**	*e*PKP	**PKPdf**	**19 22 16.6**	**+2.4**
KHC				*ex*	x	19 22 35.7	
KHC				AMS	AMS	20 22 10.0	
	comp=Z,2μm,24.6s						
KHC	**Kasperske Hory**	**144.91**	**349**	*e*PKIKP	**PKPdf**	**19 22 16.6**	**+2.4**
KHC				MLR	MLR		
	comp=Z,2μm,24.6s						
KHC	**Kasperske Hory**	**144.91**	**349**	*e*PKPdf	**PKPab**	**19 22 12.3**	**-1.0**
ARR	**Arges**	**144.95**	**334**	⇓*i*P	**PKPdf**	**19 22 18.3**	**+3.9**
BUD	**Budapest**	**145.14**	**342**	*e*PKPbc	**PKPdf**	**19 22 16.4**	**+1.8**
GERES	**GERESS Array B**	**145.16**	**349**	PKPbc	**PKPbc**	**19 22 13.6**	**-0.6**
	comp=Z,1.6nm,0.7s,baz=42,slow=4.2,SNR=3.6						
WLF	**Walferdange**	**145.21**	**358**	PKP	**PKPdf**	**19 22 14.9**	**+0.2**
WLF	**Walferdange**	**145.21**	**358**	*e*PKIKP	**PKPbc**	**19 22 12.9**	**-1.3**
WLF				MLR	MLR		
	comp=Z,2μm,21.0s						
WLF	**Walferdange**	**145.21**	**358**	*e*PKPbc	**PKPbc**	**19 22 12.9**	**-1.3**
WLF				LR	LR		
	comp=Z,2μm,21.0s						
CMLA	**Cha da Macela**	**145.22**	**43**	PFAKE		19 22 30.0	+15
CMLA				LR	LR		
	comp=Z,753nm,22.0s						
LOT	**Lotru**	**145.24**	**335**	⇑*i*P	**PKPdf**	**19 22 18.1**	**+3.1**
SIRR	**Siria**	**145.35**	**338**	⇓*i*P	**PKPdf**	**19 22 18.1**	**+3.1**
PRD	**Provadia**	**145.37**	**329**	*e*P	**PKPdf**	**19 22 17.0**	**+1.9**
SALA	**Sala**	**145.41**	**307**	*e*P	**PKPab**	**19 22 18.1**	**+2.1**
CONA	**Conrad Observa**	**145.57**	**346**	*i* PKPab	**PKPab**	**19 22 16.3**	**+0.5**
	comp=Z,7.5nm,0.7s,SNR=22						
FURI	**Furi**	**145.67**	**264**	*i* P	PKPab	19 22 33.0	+15
GZR	**Gura Zlata**	**145.68**	**336**	⇑*i*P	**PKPab**	**19 22 19.1**	**+2.8**
GZR	**Gura Zlata**	**145.68**	**336**	⇑PKP2	**PKPab**	**19 22 19.1**	**+2.8**
BZS	**Buzias**	**145.93**	**338**	⇑*i*P	**PKPdf**	**19 22 15.9**	**-0.1**
BZS	**Buzias**	**145.93**	**338**	⇑PKP2	**PKPdf**	**19 22 15.9**	**-0.1**
MOA	**Molln**	**146.00**	**348**	*i* PKiKP	**PKiKP**	**19 22 19.3**	**-1.0**
	comp=Z,7.9nm,0.9s						
SZH	**Strazhica**	**146.03**	**331**	*e*P	**PKPab**	**19 22 18.5**	**+0.9**
ARSA	**Arzberg**	**146.29**	**346**	*i* PKiKP	**PKPab**	**19 22 19.4**	**+0.9**
	comp=Z,7.4nm,0.8s						
WLS	**Welschbruch**	**146.39**	**356**	PKP	**PKPbc**	**19 22 18.6**	**+0.6**
BFO	**Black Forest**	**146.40**	**355**	*e*PKIKP	**PKPdf**	**19 22 15.9**	**-0.9**
BFO				MLR	MLR		
	comp=Z,666nm,20.0s						
BFO	**Black Forest**	**146.40**	**355**	*e*PKPdf	**PKPdf**	**19 22 15.9**	**-0.9**
BFO				LR	LR		
	comp=Z,666nm,20.0s						
ECH	**Echery**	**146.60**	**356**	PKP	**PKPdf**	**19 22 16.7**	**-0.4**
MDVR	**Moldovita**	**146.60**	**337**	⇑*i*P	**PKPab**	**19 22 20.5**	**+0.7**
THEF	**They Montfort**	**146.65**	**358**	PKP	**PKPdf**	**19 22 17.4**	**+0.2**
BEHE	**Becsehely**	**146.70**	**344**	*e*PKPdf	**PKPab**	**19 22 22.9**	**+2.8**
KBA	**Koelnbreinsper**	**146.92**	**348**	*i* PKPab	**PKPbc**	**19 22 19.4**	**-0.4**
	comp=Z,5.9nm,0.6s						
CSS	**Mathiatis**	**146.94**	**313**	*e*PKPdf	**PKPdf**	**19 22 17.4**	**-0.7**
CSS				*e*PKPdf	**PKiKP**	**19 22 23.1**	**+0.5**
CSS				LR	LR		
	comp=Z,209nm,20.0s						
SOKA	**Soboth**	**146.94**	**346**	*i* pPKPdf	pPKPdf	19 22 25.1	+0.7
	comp=Z,7.2nm,0.8s,SNR=12						
MPEP	**Malo Peshtene**	**146.95**	**333**	*e*P	**PKPbc**	**19 22 20.5**	**+0.7**
RETA	**Reutte**	**146.96**	**352**	*i* pPKPdf	**PKPab**	**19 22 24.2**	**+3.1**
	comp=Z,1.4nm,0.2s,SNR=5.2						
PERS	**Pernice**	**146.96**	**346**	*e*PKPbc	**PKPab**	**19 22 23.2**	**+2.1**
MOF	**Molkenrain**	**146.97**	**356**	PKP	**PKPdf**	**19 22 18.0**	**+0.2**
WATA	**Walderalm**	**146.98**	**351**	*i* pPKPdf	**PKPab**	**19 22 23.6**	**+2.3**
	comp=Z,3.2nm,0.2s						
WTTA	**Wattenberg**	**147.04**	**351**	*i* pPKPdf	**PKPab**	**19 22 23.7**	**+2.1**
	comp=Z,4.0nm,0.5s						
MOTA	**Moosalm**	**147.05**	**351**	*i* pPKPdf	**PKPab**	**19 22 23.4**	**+1.8**
	comp=Z,1.3nm,0.3s						
OBKA	**Obir**	**147.21**	**347**	*i* pPKPdf	**PKPab**	**19 22 24.1**	**+1.9**
	comp=Z,5.5nm,0.8s						
DAVA	**Damuels**	**147.27**	**353**	*i* pPKPdf	**PKPab**	**19 22 25.6**	**+3.1**
	comp=Z,46nm,1.6s						
MYKA	**Terra Mystica**	**147.29**	**348**	*i* PKiKP	**PKiKP**	**19 22 23.2**	**+0.2**
	comp=Z,4.2nm,0.5s,SNR=8.0						
ABTA	**Abfaltersbach**	**147.40**	**349**	*i* pPKPdf	**PKPab**	**19 22 25.1**	**+2.2**
	comp=Z,5.6nm,0.8s						
FETA	**Feichten**	**147.42**	**352**	*i* pPKPdf	**PKPab**	**19 22 24.4**	**+1.3**
	comp=Z,5.6nm,0.9s						
LOMF	**Lomont**	**147.48**	**357**	PKP	**PKPdf**	**19 22 19.1**	**+0.4**
LJU	**Ljubljana**	**147.66**	**346**	*e*PKPbc	**PKPab**	**19 22 26.4**	**+2.6**
VTS	**Vitosha**	**147.80**	**333**	⇑*i*P	**PKPab**	**19 22 26.4**	**+1.7**
VTS	**Vitosha**	**147.80**	**333**	*e*PKIKP	**PKPdf**	**19 22 19.9**	**+0.4**
VTS				*e*		19 22 24.1	
VTS	**Vitosha**	**147.80**	**333**	*e*P	**PKPab**	**19 22 24.0**	**-0.7**
VTS	**Vitosha**	**147.80**	**333**	*e*PKPdf	**PKPdf**	**19 22 19.9**	**+0.4**
VTS				*e*PKPbc	**PKiKP**	**19 22 24.1**	**-0.2**
FUORN	**Ofenpass-Fuorn**	**147.87**	**352**	*e*PKPdf	**PKPdf**	**19 22 18.1**	**-1.5**
FUORN				*e*PKPbc	**PKiKP**	**19 22 23.7**	**-0.7**
TUE	**Stuetta**	**148.13**	**353**	PFAKE		19 22 30.0	+4.0
TUE				LR	LR		
	comp=Z,1μm,21.0s						
MMB	**Musomiste**	**148.36**	**331**	*e*P	**PKPab**	**19 22 27.0**	**+0.2**
KKB	**Krupnik**	**148.43**	**332**	*e*P	**PKPab**	**19 22 27.0**	**-0.1**
SENIN	**Lac Senin/Sane**	**148.44**	**356**	*e*PKPbc	**PKPab**	**19 22 27.1**	**-0.1**
MBAR	**Mbarara**	**149.51**	**242**	PFAKE		19 22 30.0	+2.4
MBAR				LR	LR		
	comp=Z,1μm,21.0s						
PDG	**Podgorica**	**149.53**	**338**	⇑*i*P	**PKPab**	**19 22 29.4**	**-2.1**
SSB	**Saint Sauveur**	**149.63**	**359**	*e*PKIKP	**PKPdf**	**19 22 20.0**	**-2.2**
SSB				*e*		19 22 27.7	
SSB				MLR	MLR		
	comp=Z,839nm,21.0s						
SSB	**Saint Sauveur**	**149.63**	**359**	*e*PKPdf	**PKPdf**	**19 22 20.0**	**-2.2**
SSB				*e*PKPbc	**PKiKP**	**19 22 27.7**	**-0.1**
SSB				LR	LR		
	comp=Z,839nm,21.0s						
BNI	**Bardonecchia**	**149.78**	**356**	PFAKE		19 22 30.0	-2.6
BNI				LR	LR		
	comp=Z,1μm,22.0s						
TIR	**Tirane**	**150.23**	**336**	PFAKE		19 22 30.0	+1.7
TIR				LR	LR		
	comp=Z,2μm,22.0s						
VLC	**Villacollemand**	**150.27**	**351**	PFAKE		19 22 30.0	+1.6
VLC				LR	LR		
	comp=Z,751nm,22.0s						
PGAV	**Gavieira, Arco**	**150.91**	**19**	*e*PKPdf	**PKPdf**	**19 22 25.0**	**+0.6**
PGAV	**Gavieira, Arco**	**150.91**	**19**	*e*LR	LR	20 13 56.3	
	comp=Z,787nm,20.0s						
ASCN	**Ascension**	**150.92**	**140**	PFAKE		19 22 40.0	+2.0
ASCN				LR	LR		
	comp=Z,851nm,19.0s						
AGG	**Agios Georgios**	**151.03**	**330**	*e*PKIKP	**PKPbc**	**19 22 29.1**	**-1.3**
AGG	**Agios Georgios**	**151.03**	**330**	*e*PKPbc	**PKPbc**	**19 22 29.1**	**-1.3**
SANT	**Santorini**	**151.28**	**322**	PFAKE		19 22 40.0	+1.0
SANT				LR	LR		
	comp=Z,525nm,20.0s						
AQU	**L'Aquila**	**151.41**	**345**	PFAKE		19 22 40.0	+0.7
AQU				LR	LR		
	comp=Z,2μm,20.0s						
PBRG	**Braganca**	**151.52**	**17**	*e*PKPab	**PKPab**	**19 22 40.3**	**+0.5**
POLO	**Lamas de Olo**	**151.60**	**19**	*e*PKPab	**PKPab**	**19 22 37.3**	**-2.9**
PVRL	**Vila Real**	**151.71**	**19**	*e*PKPab	**PKPab**	**19 22 37.2**	**-3.4**
PVIS	**Viseu**	**152.16**	**20**	*e*PKPab	**PKPab**	**19 22 42.7**	**+0.2**
PCAS	**Casmilo, Conde**	**152.55**	**21**	*e*PKPdf	**PKPbc**	**19 22 34.1**	**+0.3**
PCAS	**Casmilo, Conde**	**152.55**	**21**	*e*PKPab	**PKPab**	**19 22 48.9**	**+4.8**
PCAS	**Casmilo, Conde**	**152.55**	**21**	*e*SS	SS	19 45 51.1	+6.6
CUC	**Castrocucco**	**152.90**	**340**	PFAKE		19 22 40.0	+5.4
CUC				LR	LR		
	comp=Z,1μm,21.0s						
PTOM	**Tomar**	**152.97**	**22**	*e*PKPdf	**PKPbc**	**19 22 40.2**	**+5.5**
PTOM	**Tomar**	**152.97**	**22**	*e*PKPab	**PKPab**	**19 22 46.4**	**+0.6**
PCBR	**Castelo Branco**	**153.09**	**20**	*e*PKPab	**PKPab**	**19 22 48.2**	**+1.9**
PMAFR	**Mafra**	**153.22**	**24**	*e*PKPdf	**PKPdf**	**19 22 27.6**	**-0.2**
PMAFR	**Mafra**	**153.22**	**24**	*e*SS	SS	19 45 57.7	+5.7
SACV	**Santiago Islan**	**153.24**	**86**	PFAKE		19 22 40.0	+4.0
SACV				LR	LR		
	comp=Z,401nm,20.0s						
TIP	**Timpagrande**	**153.29**	**338**	PFAKE		19 22 40.0	+4.5
TIP				LR	LR		
	comp=Z,1μm,21.0s						
PMRV	**Marv??o**	**153.49**	**20**	*e*PKPab	**PKPab**	**19 22 47.6**	**-0.4**
PMRV	**Marv??o**	**153.49**	**20**	*e*LR	LR	20 14 33.6	
	comp=Z,1μm,18.0s						
PMOZ	**Porto Moniz, M**	**153.62**	**43**	*e*LR	LR	20 14 50.4	
	comp=Z,374nm,22.0s						
EVO	**Evora**	**154.07**	**22**	*e*PKPdf	**PKPdf**	**19 22 28.6**	**-0.4**
EVO	**Evora**	**154.07**	**22**	*e*PKPab	**PKPab**	**19 22 55.2**	**+4.7**
ESDC	**Sonseca Array**	**154.25**	**14**	PKPab	**PKPab**	**19 22 51.4**	**+0.1**
	comp=Z,3.9nm,1.0s,baz=346,slow=4.2,SNR=6.6						
PNCL	**Nicolau / Gran**	**154.25**	**23**	*e*SS	SS	19 46 06.2	+3.1
PAB	**San Pablo**	**154.28**	**15**	PFAKE		19 22 40.0	+2.4
PAB				LR	LR		
	comp=Z,1μm,20.0s						
CEL	**Celeste**	**154.42**	**338**	PFAKE		19 22 40.0	+2.1
CEL				LR	LR		
	comp=Z,2μm,22.0s						
PBEJ	**Beja**	**154.57**	**22**	*e*PKPab	**PKPab**	**19 22 56.2**	**+3.5**
MESJ	**Messejana**	**154.60**	**23**	*e*PKPab	**PKPab**	**19 22 53.6**	**+0.8**
PBAR	**Barrancos**	**154.74**	**21**	*e*PKPab	**PKPab**	**19 22 53.3**	**0.0**
PCVE	**Castro Verde**	**154.86**	**23**	*e*SS	SS	19 46 16.5	+6.8
MORF	**Marmelete**	**154.90**	**24**	*e*PKPdf	**PKPdf**	**19 22 26.6**	**-3.7**
VSL	**Villasalto**	**154.98**	**350**	PFAKE		19 22 40.0	+1.0
VSL				LR	LR		
	comp=Z,2μm,22.0s						
PVAQ	**Vaqueiros**	**155.18**	**23**	*e*PKPab	**PKPab**	**19 22 58.9**	**+3.7**
PVAQ	**Vaqueiros**	**155.18**	**23**	*e*LR	LR	20 15 10.3	
	comp=Z,788nm,20.0s						
PBDV	**Barranco-do-Ve**	**155.24**	**23**	*e*SS	SS	19 46 28.6	+15
CLTB	**Caltabellotta**	**155.92**	**342**	PFAKE		19 22 40.0	+8.3
CLTB				LR	LR		
	comp=Z,1μm,21.0s						
WDD	**Wied Dalam**	**157.07**	**338**	PFAKE		19 22 40.0	+6.9
WDD				LR	LR		
	comp=Z,1μm,20.0s						
RTC	**Rabat Centre**	**158.50**	**25**	PFAKE		19 22 50.0	+15
RTC				LR	LR		
	comp=Z,3μm,20.0s						
TAM	**Tamanrasset**	**171.95**	**350**	*e*PKIKP	**PKPdf**	**19 22 45.4**	**-1.4**
TAM				MLR	MLR		
	comp=Z,1μm,22.0s						
TAM	**Tamanrasset**	**171.95**	**350**	*e*PKPdf	**PKPdf**	**19 22 45.4**	**-1.4**
TAM				*e*PKPab	**PKPab**	**19 24 11.3**	**+2.2**
TAM				LR	LR		
	comp=Z,1μm,22.0s						
TORD	**Torodi Ar. Bea**	**177.15**	**125**	PKPab	PKPab	19 24 31.2	-1.3
	comp=Z,1.2nm,0.9s,baz=214,slow=4.8,SNR=3.7						
TOA1	**Torodi Ar. Sit**	**177.15**	**125**	*e*PKPab	PKPab	19 24 31.2	-1.3

*BJI **05** 19:09:07.8, 1°.31N×97°.18E, h10km, mb5.0/65, mB5.1/45, Ms4.7/57, Ms7 4.6/52*
*IDC **05** 19:09:08.6±0.6, 1°.43N×97°.07E, h0km, mb4.8/33,*
mb1 4.8/35, mb1mx4.6/51, mbtmp4.8/35, ML4.0/2, MS4.2/3, Ms1 4.3/3, ms1mx3.6/37, Error ellipse: s-maj=18.2km s-min=11.0km az=45.0
*DJA **05** 19:09:11.4±1.0, 1°.N±3°×9°.7E±°, h13km±5km, M4.8/18, mb4.9/18, mB5.2/10, MLv5.0/18, Mw(mB)4.6/10*
*ISCJB **05** 19:09:12.3±0.5, 1°.45N±0°.03×97°.08E±0°.03, h35km±4km, mb4.9/126, MS4.7/21, Error ellipse: s-maj=6.0km s-min=3.5km az=141.0*
*NEIC **05** 19:09:12.5±1.2, 1°.40N×97°.06E, h27km±8km, mb5.0/63, Error ellipse: s-maj=5.1km s-min=3.2km az=53.0*
NEIC Felt [III] at Gunungsitoli.
*MOS **05** 19:09:13.4±0.9, 1°.53N×97°.15E, h42km, mb5.1/40, MS5.0/6, Error ellipse: s-maj=8.3km s-min=4.7km az=107.9*
*KLM **05** 19:09:16.5, 1°.43N×97°.14E, h43km, mb4.9, ML4.6, MS5.5*

ISC 05 19:09:12.5±0.5, 1°.38N±0°.04×96°.95E±0°.04, h27km±2km, h26km:pP-P, n378, σ1°60/403, mb5.0/131, MS4.7/21, 23C-25D, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GSI	**Gunungsitoli**	**0.62**	**97**	P	**Pb**	**19 09 24.9**	**0.0**
GSI				S	**Sb**	**19 09 33.7**	**+0.4**
GSI	**Gunungsitoli**	**0.62**	**97**	*e*Pg	**Pb**	**19 09 24.9**	**0.0**
GSI				*e*Sg	**Sb**	**19 09 32.4**	**-0.9**
TPTI		**1.89**	**7**	P	**Pn**	**19 09 41.6**	**-1.4**
KCSI	**Kotacane, Aceh**	**2.28**	**21**	P	**Pn**	**19 09 46.7**	**-1.8**
PSI	**Prapat**	**2.42**	**54**	*e*P	**Pn**	**19 09 49.0**	**-1.5**
PSI	**Prapat**	**2.42**	**54**	*e*Pn	**Pn**	**19 09 49.0**	**-1.5**
TSI	**Tuntungan**	**2.65**	**37**	P	**Pn**	**19 09 53.6**	**0.0**
MNSI	**Mandailing Nat**	**2.69**	**102**	P	**Pn**	**19 09 53.9**	**-0.1**
MLSI	**Meulaboh, Aceh**	**2.92**	**349**	P	**Pn**	**19 09 56.2**	**-1.1**
LHMI	**Lhok Sumawe**	**3.83**	**360**	P	**Pn**	**19 10 12.5**	**+2.8**
LHMI	**Lhok Sumawe**	**3.83**	**360**	*e*Pn	**Pn**	**19 10 09.3**	**-0.4**
PDSI	**Padang**	**4.18**	**123**	P	**Pn**	**19 10 15.2**	**+0.6**
BKNI	**Bangkinang**	**4.22**	**104**	P	**Pn**	**19 10 13.9**	**-1.2**
BKNI	**Bangkinang**	**4.22**	**104**	*e*Pn	Pn	19 10 10.1	-5.0
FRIM	**Kepong**	**5.02**	**68**	⇑P	**Pn**	**19 10 26.2**	**+0.1**
SDSI	**Sungai Dareh**	**5.03**	**117**	P	**Pn**	**19 10 27.5**	**+1.3**
IPM	**Ipoh**	**5.10**	**53**	⇓P	**Pn**	**19 10 27.5**	**+0.3**
IPM	**Ipoh**	**5.10**	**53**	*e*Pn	**Pn**	**19 10 26.8**	**-0.5**
PPSI	**Pulau Pagai**	**5.12**	**143**	P	**Pn**	**19 10 27.3**	**-0.2**
KULM	**Kulim**	**5.36**	**43**	⇓P	**Pn**	**19 10 30.7**	**0.0**
KULM	**Kulim**	**5.36**	**43**	*e*Pn	**Pn**	**19 10 29.5**	**-1.2**
KGM	**Kluang**	**6.39**	**84**	⇓P	**Pn**	**19 10 45.7**	**+0.7**
PKDT	**Phuket**	**6.62**	**12**	P	**Pn**	**19 10 46.2**	**-1.9**
	69nm,0.7s,990nm0.3nm						
SKLT	**Songkhla**	**6.82**	**32**	P	**Pn**	**19 10 50.4**	**-0.4**
	245nm,1.3s,2μm0.8nm						
MYKOM	**Kota Tinggi**	**6.91**	**86**	⇓P	**Pn**	**19 10 53.0**	**+1.0**
MYKOM	**Kota Tinggi**	**6.91**	**86**	*e*Pn	**Pn**	**19 10 51.9**	**-0.2**
TRTT	**Trang**	**6.97**	**23**	P	**Pn**	**19 10 51.2**	**-1.8**
	89nm,1.2s,1μm0.4nm						
KTGM	**Kuala Trenggan**	**7.31**	**57**	⇑P	**Pn**	**19 10 57.5**	**-0.2**
KSI	**Kapahiang**	**7.53**	**132**	P	**Pn**	**19 11 03.1**	**+2.4**
	139nm,0.9s,2μm0.7nm						

KMI sS sS 19 18 54.9 -3.2
KMI pmax pmax
comp=Z,75nm,1.2s
KMI LR LR
comp=Z,2μm,17.1s
KMI LR LR
comp=Z,1μm,13.5s
KMI LR LR
comp=Z,2μm,15.2s
SHL Shillong 24.54 349 *e*P **P 19 14 30.4 +0.1**
SHL IAmb IAmb 19 14 31.7
comp=Z,156nm,1.2s
SHL *ex* x 19 19 22.0
MRSI Marisa 25.00 92 P **P 19 14 33.9 -0.5**
H08S2 Diego Garcia H 25.99 249 T T 19 41 46.0
baz=70,slow=75,SNR=4983
H08S3 Diego Garcia H 26.00 250 T T 19 41 46.7
baz=70,slow=75,SNR=3729
H08S1 Diego Garcia H 26.01 249 T T 19 41 47.8
baz=70,slow=75,SNR=6500
GYA Guiyang 26.63 20 P **P 19 14 52.0 +2.8**
GYA pP pP 19 14 57.0 0.0
GYA PP **PnPn 19 15 36.0 +5.5**
GYA PcP **PcP 19 18 15.6 +2.6**
GYA S **S 19 19 25.5 +2.7**
GYA SS **SnSn 19 20 36.3 +10**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,540nm,17.6s
GYA LR LR
comp=Z,510nm,18.0s
GYA LR LR
comp=Z,500nm,17.8s
GOA Goa 26.78 303 *e*P **P 19 14 49.1 -1.4**
MMRI Maumere 27.09 112 *e*P **P 19 14 54.1 +0.7**
comp=Z,66nm,1.2s
RAMN Ramite 27.30 340 *e*P **P 19 14 57.6 +2.2**
PKIN Phulchoki 28.31 338 *e*P **P 19 15 05.5 +1.1**
comp=Z,83nm,1.6s
POO Poona 28.36 308 *e*P **P 19 15 02.4 -2.3**
POO IAmb IAmb 19 15 06.8
comp=Z,13nm,0.6s
GUN Gumba 28.43 339 *e*P **P 19 15 07.2 +1.6**
comp=Z,62nm,0.8s
DMN Daman 28.45 338 *e*P **P 19 15 06.9 +1.3**
KKN Kakani 28.55 338 *e*P **P 19 15 07.8 +1.4**
comp=Z,78nm,1.0s
LSA Lhasa 28.70 349 P **P 19 15 09.0 +0.9**
LSA pmax pmax
comp=Z,6.0nm,0.9s
LSA Lhasa 28.70 349 *e*P **P 19 15 08.7 +0.6**
LSA pmax pmax
comp=Z,12nm,0.9s
LSA Lhasa 28.70 349 *e*P **P 19 15 08.7 +0.6**
comp=Z,12nm,0.9s
BHPL Bhopal 28.84 320 *e*P **P 19 15 11.0 +2.1**
BHPL IAmb IAmb 19 15 19.3
comp=Z,10nm,0.5s
GKN Gorkha 28.98 337 *e*P **P 19 15 11.7 +1.5**
comp=Z,40nm,0.7s
KOLN Koldanda 29.20 335 *e*P **P 19 15 14.0 +1.8**
comp=Z,71nm,0.7s
SOEI Soe 29.36 113 *e*P **P 19 15 12.9 -0.9**
comp=Z,40nm,0.9s
PYUN Piuthan 29.74 335 *e*P **P 19 15 18.9 +1.8**
CD2 Chengdu 30.07 12 P **P 19 15 19.5 -0.2**
CD2 sP pP 19 15 26.4 -1.2
CD2 S **S 19 20 18.9 +2.1**
CD2 sS sS 19 20 27.3 -2.5
CD2 PcS **PcS 19 22 03.6 -1.3**
CD2 pmax pmax
comp=Z,30nm,0.6s
CD2 pmax pmax
comp=Z,220nm,5.2s
CD2 LR LR
comp=Z,790nm,14.9s
CD2 LR LR
comp=Z,2μm,11.3s
CD2 LR LR
comp=Z,1μm,13.5s
ENH Enshi 31.11 21 *e*P **P 19 15 27.5 -1.4**
comp=Z,79nm,0.9s
TPUB Ta-pu 31.66 45 *e*P **P 19 15 32.6 -1.2**
comp=Z,34nm,1.1s
TWG Pinlang 31.67 46 *e*P **P 19 15 31.4 -2.5**
comp=Z,56nm,1.2s
YULB Yu-li 32.19 45 *e*P **P 19 15 37.7 -0.8**
comp=Z,41nm,1.4s
SSLB Suanglung 32.20 44 *e*P **P 19 15 37.9 -0.7**
comp=Z,20nm,1.0s
NACB Ninganchiao 32.90 45 *e*P **P 19 15 44.8 +0.1**
comp=Z,16nm,0.8s
WHN Wuhan 33.37 28 ⇑P **P 19 15 48.1 -0.6**
WHN S **S 19 21 10.2 +2.0**
WHN pmax pmax
comp=Z,68nm,1.1s
WHN LR LR
comp=Z,1μm,12.5s
WHN LR LR
comp=Z,770nm,14.3s
WHN LR LR
comp=Z,2μm,14.3s
DDI Dehra Dun 33.92 330 *e*P **P 19 15 53.9 +0.3**
DDI IAmb IAmb 19 15 56.4
comp=Z,17nm,0.5s
FITZ Fitzroy Crossi 34.23 126 P **P 19 15 55.1 -1.3**
comp=Z,6.4nm,0.9s,baz=338,slow=8.4,SNR=8.4
FITZ Fitzroy Crossi 34.23 126 P **P 19 15 55.8 -0.5**
baz=34,SNR=4.8
FITZ Fitzroy Crossi 34.23 126 *e*P **P 19 15 55.2 -1.1**
comp=Z,50nm,1.9s
XAN Xi'an 34.37 18 P **P 19 15 55.9 -1.5**
XAN pP pP 19 15 59.9 -5.5
XAN sP sP 19 16 01.9 -6.7
XAN pmax pmax
comp=Z,62nm,1.0s
XAN pmax pmax
comp=Z,120nm,5.4s
XAN LR LR
comp=Z,620nm,17.4s
XAN LR LR
comp=Z,730nm,19.3s
XAN LR LR
comp=Z,820nm,22.1s
SMLA Simla 35.02 330 *e*P **P 19 16 03.8 +0.9**
SMLA IAmb IAmb 19 16 04.4
comp=Z,9.2nm,0.6s
LZH Lanzhou 35.12 10 ⇓P **P 19 16 04.1 +0.1**
LZH pP pP 19 16 10.7 -1.3
LZH sP sP 19 16 14.2 -1.1
LZH *eS* **S 19 21 34.0 -1.5**
LZH sS sS 19 21 47.7 -0.9
LZH SS **SnSn 19 23 50.2 -3.0**
LZH pmax pmax
comp=Z,37nm,1.0s
LZH pmax pmax
comp=Z,170nm,4.9s
LZH LR LR
comp=Z,530nm,12.8s
LZH LR LR
comp=Z,830nm,13.6s
LZH LR LR
comp=Z,930nm,14.0s
SAUI Saumlaki 35.49 106 *e*P **P 19 16 04.7 -2.6**
comp=Z,511nm,0.9s
MTN Manton Dam 36.74 114 P **P 19 16 16.3 -1.7**
baz=36,SNR=3.2
MTN Manton Dam 36.74 114 *e*P **P 19 16 15.9 -2.1**
comp=Z,13nm,0.9s
SSE Sheshan 37.41 35 P **P 19 16 23.7 +0.3**
SSE S **S 19 22 16.3 +6.1**
SSE pmax pmax
comp=Z,24nm,0.8s
SSE LR LR
comp=Z,730nm,26.7s
SSE LR LR
comp=Z,1μm,27.0s
SSE LR LR
comp=Z,2μm,26.5s
PALU Palau 37.86 80 P **P 19 16 25.0 -2.5**
baz=37
GTA Gaotai 37.95 4 *e*P **P 19 16 28.3 +0.3**
GTA pP pP 19 16 32.5 -3.5
GTA sP sP 19 16 35.5 -3.8
GTA S **S 19 22 21.9 +3.5**
GTA sS ScP 19 22 28.3 -1.4
GTA SS **SnSn 19 24 56.6 -4.7**
GTA pmax pmax
comp=Z,16nm,1.4s
GTA pmax pmax
comp=Z,110nm,6.2s
GTA LR LR
comp=Z,510nm,13.5s
GTA LR LR
comp=Z,490nm,13.5s
GTA LR LR
comp=Z,600nm,13.5s
H01W3 Cape Leeuwin H 39.50 158 T T 19 58 21.8
baz=333,slow=76,SNR=27
H01W2 Cape Leeuwin H 39.51 158 T T 19 58 22.7
baz=333,slow=76,SNR=26
H01W1 Cape Leeuwin H 39.52 158 T T 19 58 22.9
baz=333,slow=76,SNR=19
WRKA Warakurna 40.14 133 P **P 19 16 47.4 +0.9**
baz=40,SNR=8.0
HHC Hu-ho-hao-te 41.46 17 *e*P **P 19 16 59.3 +2.1**
HHC S **S 19 23 15.4 +4.3**
HHC SS **SS 19 26 14.2 -1.9**
HHC pmax pmax
comp=Z,32nm,1.2s
HHC pmax pmax
comp=Z,280nm,10.0s
HHC LR LR
comp=Z,890nm,12.7s
HHC LR LR
comp=Z,590nm,14.5s
HHC LR LR
comp=Z,760nm,14.8s
KBL Kabul 42.04 325 *e*P **P 19 17 01.8 -0.4**
KBL pmax pmax
comp=Z,5.0nm,1.0s
KBL Kabul 42.04 325 *e*P **P 19 17 01.8 -0.4**
comp=Z,5.4nm,1.0s
BJT Baijiatuau 42.25 22 *e*P **P 19 17 04.1 +0.6**
BJT pmax pmax
comp=Z,31nm,0.7s
BJT Baijiatuau 42.25 22 *e*P **P 19 17 04.1 +0.6**
comp=Z,31nm,0.7s
BJI Beijing 42.27 22 P **P 19 17 04.2 +0.5**
BJI S **S 19 23 27.5 +4.8**
BJI pmax pmax
comp=Z,40nm,0.8s
BJI pmax pmax
comp=Z,280nm,4.3s
BJI LR LR
comp=Z,580nm,28.2s
BJI LR LR
comp=Z,460nm,19.6s
BJI LR LR
comp=Z,320nm,25.4s
WRA Warramunga Arr 42.34 122 P **P 19 17 04.1 -0.6**
comp=Z,7.5nm,1.0s,baz=301,slow=9.2,SNR=28
WRA PcP **PcP 19 18 57.4 -0.6**
comp=Z,1.1nm,0.8s,baz=308,slow=3.5,SNR=3.1
WRA Warramunga Arr 42.34 122 *i* P **P 19 17 04.0 -0.6**
WRA pmax pmax
comp=Z,9.0nm,1.0s
WR1 Warramunga Arr 42.34 122 *e*P **P 19 17 04.1 -0.5**
comp=Z,10.0nm,0.8s
WR1 *e*PcP **PcP 19 18 57.4 -0.5**
WRAB Tennant Creek 42.34 122 *de*P **P 19 17 04.5 -0.1**
WRAB pmax pmax
comp=Z,32nm,1.0s
WRAB Tennant Creek 42.34 122 *e*P **P 19 17 04.1 -0.5**
comp=Z,13nm,0.8s
WB2 Warramunga Arr 42.35 122 *e*P **P 19 17 03.5 -1.1**
comp=Z,10nm,0.8s
KSH Kashi 42.51 336 *e*P **P 19 17 05.3 -0.6**
KSH *es*P pP 19 17 12.1 -1.8
KSH *e*PcP **PcP 19 19 00.9 +2.6**
KSH PcS **PcS 19 22 51.1 +0.7**
KSH S **S 19 23 24.7 -1.9**
KSH ScS **ScS 19 27 04.8 -1.2**
KSH pmax pmax
comp=Z,7.0nm,1.1s
KSH pmax pmax
comp=Z,62nm,4.7s
KSH LR LR
comp=Z,120nm,5.6s
KSH LR LR
comp=Z,190nm,7.6s
KSH LR LR
comp=Z,200nm,8.9s
WMQ Urumqi 43.06 350 ⇓*i*P **P 19 17 11.9 +1.7**
WMQ pP pP 19 17 16.9 -1.4
WMQ sP sP 19 17 19.8 -1.7
WMQ SS SS 19 26 41.7 -5.7
WMQ pmax pmax
comp=Z,38nm,1.2s
WMQ pmax pmax
comp=Z,110nm,3.8s
WMQ LR LR
comp=Z,410nm,16.6s
WMQ LR LR
comp=Z,180nm,12.6s
WMQ LR LR
comp=Z,410nm,23.2s
DL2 Dalian 43.64 28 P **P 19 17 15.1 +0.3**
DL2 S **S 19 23 41.3 -1.6**
DL2 pmax pmax
comp=Z,48nm,0.8s
DL2 pmax pmax
comp=Z,290nm,6.0s
DL2 LR LR
comp=Z,960nm,21.2s
DL2 LR LR
comp=Z,660nm,20.6s
DL2 LR LR
comp=Z,440nm,19.5s
AS31 Alice Springs 43.70 127 *e*P **P 19 17 15.3 -0.3**
comp=Z,2.3nm,0.9s
AS31 *e*ScP **ScP 19 22 55.1 +2.6**
ASAR Alice Springs 43.70 127 P **P 19 17 15.7 0.0**
comp=Z,7.9nm,0.9s,baz=303,slow=7.5,SNR=30
ASAR PcP **PcP 19 19 02.7 +0.1**
comp=Z,1.6nm,0.9s,baz=304,slow=5.5,SNR=3.6
ASAR ScP **ScP 19 22 55.1 +2.6**
comp=Z,0.8nm,1.1s,baz=344,slow=4.0,SNR=5.0
AS01 Alice Springs 43.73 127 *e*P **P 19 17 15.4 -0.5**
PDGK Podgornoye 44.59 342 P **P 19 17 23.7 +1.4**
PDGK pmax pmax
comp=Z,37nm,1.1s
JNU Nakatsue 44.84 42 P **P 19 17 23.9 -0.6**
comp=Z,34nm,0.9s,baz=182,slow=3.3,SNR=18
JNU Nakatsue 44.84 42 *e*P **P 19 17 23.6 -1.0**
comp=Z,42nm,0.9s
INCN Inchon 45.14 34 *e*P **P 19 17 25.7 -1.2**
comp=Z,104nm,1.8s
TKM2 Tokmak 2 45.56 338 *e*P **P 19 17 31.1 +0.7**
TKM2 pmax pmax
comp=Z,24nm,1.2s
TKM2 Tokmak 2 45.56 338 *e*P **P 19 17 31.1 +0.7**
comp=Z,24nm,1.2s
AAK Ala-Archa 45.74 337 P **P 19 17 32.9 +1.1**
comp=Z,4.3nm,0.8s,baz=161,slow=10,SNR=8.3
AAK Ala-Archa 45.74 337 *e*P **P 19 17 33.5 +1.7**
AAK pmax pmax
comp=Z,43nm,1.6s
AAK Ala-Archa 45.74 337 *e*P **P 19 17 33.5 +1.7**
comp=Z,43nm,1.6s
KS15 Wonju Array Si 45.81 35 *e*P **P 19 17 31.1 -1.1**
KSAR Wonju Array Be 45.81 35 P **P 19 17 31.7 -0.5**
KSAR Wonju Array Be 45.81 35 P **P 19 17 31.7 -0.5**
KS01 Wonju Array Si 45.84 35 *e*P **P 19 17 31.5 -0.9**
KSRS Korea Array 45.84 35 P **P 19 17 31.7 -0.7**
comp=Z,26nm,0.9s,baz=222,slow=9.1,SNR=92
FRU Bishkek 45.86 337 *e*P **P 19 17 34.0 +1.4**
FRU *e* 19 17 42.0
EKS2 Erkin-Say 46.05 336 *e*P **P 19 17 35.6 +1.4**
EKS2 pmax pmax
comp=Z,11nm,1.0s
EKS2 Erkin-Say 46.05 336 *e*P **P 19 17 35.6 +1.4**
comp=Z,11nm,1.0s
MNAS Manas 46.43 335 P **P 19 17 37.9 +0.7**
MNAS pmax pmax
comp=Z,11nm,1.1s
MK01 Makanchi Array 46.99 346 *e*P **P 19 17 41.9 +0.6**
SONA0 Songino Array 46.99 9 *e*P **P 19 17 41.9 +0.4**
comp=Z,33nm,0.9s
SONA0 *e*PcP **PcP 19 19 13.6 +0.1**
SONM Songino Array 46.99 9 P **P 19 17 41.9 +0.4**
comp=Z,31nm,0.9s,baz=191,slow=7.8,SNR=78
SONM PcP **PcP 19 19 13.6 +0.1**
comp=Z,3.0nm,0.8s,baz=190,slow=3.5,SNR=3.3
SONA1 Songino Array 47.01 9 *e*P **P 19 17 41.7 +0.1**
MK31 Makanchi Array 47.01 346 *i* P **P 19 17 42.2 +0.7**
MK31 pmax pmax
comp=Z,23nm,0.8s
MK31 Makanchi Array 47.01 346 *e*P **P 19 17 42.1 +0.6**
MK32 Makanchi Array 47.01 346 *e*P **P 19 17 42.4 +0.8**
MKAR Makanchi Array 47.01 346 P **P 19 17 42.4 +0.8**
comp=Z,28nm,0.9s,baz=159,slow=8.0,SNR=175
MKAR Makanchi Array 47.01 346 *e*P **P 19 17 42.1 +0.6**
MKAR Makanchi Array 47.01 346 *e*P **P 19 17 42.1 +0.6**
MAKZ Makanchi 47.10 346 *e*P **P 19 17 42.8 +0.6**
MAKZ pmax pmax
comp=Z,23nm,0.8s
MAKZ Makanchi 47.10 346 *e*P **P 19 17 42.8 +0.6**
comp=Z,23nm,0.8s
QIS Mount Isa 47.10 120 P **P 19 17 43.2 +0.6**
baz=47
KK31 Karatay Array 47.79 334 *i* P **P 19 17 48.7 +1.1**
KK31 pmax pmax
comp=Z,5.0nm,0.9s
KKAR Karatay Array 47.79 334 *e*P **P 19 17 48.3 +0.7**
KKAR Karatay Array 47.79 334 *e*P **P 19 17 48.3 +0.7**
COEN Coen 48.26 110 P **P 19 17 51.2 -0.5**
baz=48
COEN Coen 48.26 110 *e*P **P 19 17 50.4 -1.2**
comp=Z,64nm,1.7s
ZAK Zakamensk 49.12 5 *e*P **P 19 17 57.2 -0.7**
ZAK pmax pmax
comp=Z,7.0nm,1.1s
CN2 Changchun 49.26 27 *e*P **P 19 18 02.3 +3.4**
CN2 *es*P sP 19 18 09.0 -1.3
CN2 *e*S **S 19 25 07.0 +3.6**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 LR LR
comp=Z,400nm,17.0s
CN2 LR LR
comp=Z,700nm,17.0s
CN2 LR LR
comp=Z,800nm,18.0s
MOY Mondy 50.23 3 *e*P **P 19 18 06.9 +0.6**
TLY Talaya 50.44 5 P **P 19 18 08.3 +0.6**
comp=Z,8.3nm,0.8s,baz=216,slow=6.5,SNR=11
TLY Talaya 50.44 5 *e*P **P 19 18 08.6 +0.8**
TLY pmax pmax
comp=Z,13nm,0.8s
TLY MLR MLR
comp=Z,471nm,17.0s
TLY Talaya 50.44 5 *e*P **P 19 18 08.2 +0.4**
comp=Z,14nm,0.9s
MTSU Mount Surprise 50.46 115 P **P 19 18 09.8 +1.3**
baz=50,SNR=5.8
MANU Manus Island 50.52 94 *e*P **P 19 18 08.5 -0.5**
comp=Z,190nm,1.8s
GEYT Alibeck 50.92 320 P **P 19 18 12.8 +1.2**
comp=Z,4.7nm,0.8s,baz=151,slow=6.4,SNR=10.0
IRK Irkutsk 51.06 6 *e*P **P 19 18 09.7 -2.7**
IRK pmax pmax
comp=Z,75nm,2.1s
PMG Port Moresby 51.13 103 *e*P **P 19 18 12.4 -1.2**
PMG pmax pmax
comp=Z,37nm,1.3s
PMG Port Moresby 51.13 103 *e*P **P 19 18 12.4 -1.2**
comp=Z,37nm,1.3s
OTUK Ortayu 51.30 339 P **P 19 18 15.0 +0.7**
OTUK pmax pmax
comp=Z,16nm,1.0s
KURBB Kurchatov Arra 51.50 345 P **P 19 18 16.5 +0.8**
comp=Z,5.0nm,0.7s,baz=168,slow=7.1,SNR=60
HIA Hailar 51.55 19 ⇓*e*P **P 19 18 16.4 +0.2**
HIA pmax pmax
comp=Z,16nm,1.0s
HIA Hailar 51.55 19 *e*P **P 19 18 15.6 -0.6**
comp=Z,14nm,0.9s
KURK Kurchatov 51.56 345 *e*P **P 19 18 16.5 +0.3**
KURK Kurchatov 51.56 345 *e*P **P 19 18 16.5 +0.3**
MAJO Matsushiro 51.73 43 ⇓*e*P **P 19 18 16.7 -1.0**
MAJO pmax pmax
comp=Z,43nm,1.1s
MAJO Matsushiro 51.73 43 *e*P **P 19 18 16.0 -1.7**
comp=Z,14nm,1.3s
MJB9 Matsu-Tunnel 51.73 43 *e*P **P 19 18 15.7 -2.0**
comp=Z,3.4nm,1.3s
MJAR Matsushiro Arr 51.73 43 P **P 19 18 16.9 -0.8**
comp=Z,5.1nm,1.0s,baz=223,slow=6.7,SNR=11
MDJ Mudanjiang 51.83 29 P **P 19 18 18.5 +0.2**
MDJ pmax pmax
comp=Z,17nm,1.3s
MDJ pmax pmax
comp=Z,90nm,3.9s
MDJ Mudanjiang 51.83 29 *e*P **P 19 18 17.6 -0.8**
comp=Z,18nm,0.9s
VLA Vladivostok 51.95 32 ⇓*i*P **P 19 18 17.5 -1.7**
VLA pmax pmax
comp=Z,68nm,1.2s
CIT Chita 52.35 13 *e*P **P 19 18 22.9 +0.8**
CIT *e* 19 18 32.0
CIT pmax pmax
comp=Z,57nm,1.3s
USRK Ussuriysk Ar. 52.75 31 P **P 19 18 25.2 +0.1**
comp=Z,60nm,0.9s,baz=233,slow=5.4,SNR=66
CTA Charters Tower 52.80 117 P **P 19 18 26.3 +0.4**
baz=53
CTAO Charters Tower 52.80 117 *e*P **P 19 18 26.7 +0.8**
CTAO pmax pmax
comp=Z,16nm,1.2s
CTAO Charters Tower 52.80 117 *e*P **P 19 18 26.7 +0.8**
comp=Z,16nm,1.2s
ZAA0 Zalesovo Array 53.35 351 *e*P **P 19 18 29.4 0.0**
ZALV Zalesovo Beam 53.35 351 P **P 19 18 29.5 +0.2**
comp=Z,17nm,0.6s,baz=180,slow=7.0,SNR=74
ZAA1 Zalesovo Array 53.35 351 *e*P **P 19 18 29.5 +0.2**
QLP Quilpie 53.37 125 P **P 19 18 31.4 +1.4**
baz=53,SNR=9.4
STKA Stephens Creek 53.66 132 P **P 19 18 32.9 +0.8**
comp=Z,13nm,1.1s,baz=306,slow=8.5,SNR=9.4
STKA Stephens Creek 53.66 132 P **P 19 18 33.4 +1.3**
baz=54,SNR=6.1
STKA Stephens Creek 53.66 132 *e*P **P 19 18 32.7 +0.6**
STKA pmax pmax
comp=Z,7.0nm,1.3s
STKA Stephens Creek 53.66 132 *e*P **P 19 18 32.7 +0.6**
comp=Z,7.1nm,1.3s
NVS Novosibirsk 54.46 350 *e*P **P 19 18 37.4 -0.1**
NVS *e* 19 18 46.9
NVS *es*S **S 19 26 15.1 +0.6**
NVS pmax pmax
comp=Z,22nm,1.6s
NVS pmax pmax
comp=E,10.0nm,1.5s
NVS smax smax
comp=E,14nm,1.7s
VOSK Vostochnaya 55.56 341 P **P 19 18 45.1 -0.4**
VOSK pmax pmax
comp=Z,14nm,1.2s
VOSK Vostochnaya 55.56 341 *e*P **P 19 18 45.3 -0.2**
comp=Z,11nm,0.9s
BVA0 Borovoye Array 56.00 341 P **P 19 18 48.0 -0.7**
BVA0 pmax pmax
comp=Z,10.0nm,1.0s
BVAR Borovoye Array 56.00 341 P **P 19 18 49.1 +0.4**
comp=Z,6.3nm,0.8s,baz=134,slow=8.4,SNR=32
BRVK Borovoye 56.07 341 *c i*P **P 19 18 49.1 0.0**
BRVK pmax pmax
comp=Z,18nm,0.7s
BRVK Borovoye 56.07 341 *e*P **P 19 18 49.3 +0.2**
comp=Z,7.6nm,0.8s
KLR Kul'dur 56.21 27 P **P 19 18 50.2 +0.1**
comp=Z,38nm,1.0s,baz=240,slow=7.4,SNR=53
KLR Kul'dur 56.21 27 *c i*P **P 19 18 50.6 +0.4**
ZRNK Zerenda 56.40 340 P **P 19 18 51.1 -0.4**
ZRNK pmax pmax
comp=Z,10.0nm,1.1s
ZRNK Zerenda 56.40 340 *e*P **P 19 18 51.4 -0.1**
comp=Z,6.6nm,0.8s
CMSA Cobar Meteorol 56.59 130 P **P 19 18 55.2 +1.9**
baz=56,SNR=9.3
HABR Khabarovsk 57.22 29 *e*P **P 19 18 55.1 -2.3**
HABR *e**PP **pP 19 19 05.2 -0.5**
HABR *e**SP **sP 19 19 09.2 +0.3**
HABR *e* 19 19 49.0

HABR *e* 19 21 02.0
HABR *eS* **S** **19 26 49.0 -2.5**
HABR *e*SS* **sS** **19 27 05.9 +0.7**
HABR *e* 19 28 41.5
HABR *eSS* **SS** **19 30 39.4 -1.6**
HABR pmax pmax
comp=E,15nm,1.3s
HABR pmax pmax
comp=Z,20nm,1.3s
HABR pmax pmax
comp=N,4.0nm,0.8s
HABR MLR MLR
comp=Z,1μm,19.0s
AB31 Akbulak array 57.24 332 P **P** **19 18 58.0 +0.5**
AB31 pmax pmax
comp=Z,14nm,0.9s
ABKAR Akbulak array 57.24 332 *eP* **P** **19 18 57.6 0.0**
BOD Bodaibo 57.88 11 *eP* **P** **19 19 01.3 -0.6**
BOD pmax pmax
comp=Z,25nm,2.0s
ASAJ Asahikawa 58.67 37 P **P** **19 19 05.1 -2.5**
comp=Z,2.6nm,0.4s,baz=260,slow=6.1
ASAJ Asahikawa 58.67 37 *eP* **P** **19 19 08.7 +1.0**
comp=Z,46nm,1.4s
EIDS Eidsvold 58.68 121 P **P** **19 19 09.4 +1.3**
baz=58,SNR=6.5
EIDS Eidsvold 58.68 121 *eP* **P** **19 19 08.7 +0.6**
comp=Z,17nm,0.8s
AKTO Aktyubinsk 58.96 332 P **P** **19 19 09.1 -0.5**
comp=Z,5.2nm,0.8s,baz=122,slow=7.6,SNR=14
CLNS Chul'man 59.65 17 *eP* **P** **19 19 12.8 -1.4**
CLNS pmax pmax
comp=Z,15nm,0.8s
CLNS pmax pmax
comp=E,7.0nm,0.9s
CLNS pmax pmax
comp=N,9.0nm,0.8s
CLNS MLR MLR
comp=Z,930nm,16.0s
CLNS MLR MLR
comp=N,791nm,16.0s
CLNS MLR MLR
comp=E,516nm,17.0s
KMBO Kilima Mbogo 59.75 268 *eP* **P** **19 19 16.7 +0.7**
KMBO pmax pmax
comp=Z,36nm,2.0s
KMBO Kilima Mbogo 59.75 268 *eP* **P** **19 19 16.7 +0.7**
comp=Z,36nm,2.0s
YSS Yuzh-Sakhalins 60.34 34⇑ *eP* **P** **19 19 19.0 -0.1**
YSS *e* 19 19 28.5
YSS pmax pmax
comp=Z,70nm,1.0s
YSS Yuzh-Sakhalins 60.34 34 *eP* **P** **19 19 19.5 +0.4**
comp=Z,76nm,1.0s
SVE Sverdlovsk 62.44 338⇓ *eP* **P** **19 19 33.6 +0.5**
SVE pmax pmax
comp=Z,22nm,1.2s
ZEI Tsey 62.71 319 *eP* **P** **19 19 34.7 -0.8**
ARU Arti 62.93 337 *c iP* **P** **19 19 36.2 -0.2**
ARU 19 20 15.6
ARU 19 21 51.9
ARU S **S** **19 28 06.1 +1.6**
ARU pmax pmax
comp=Z,12nm,1.0s
ARU Arti 62.93 337 *eP* **P** **19 19 35.9 -0.4**
comp=Z,13nm,1.1s
KBZ Khabaz 63.78 319 P **P** **19 19 42.8 +0.6**
comp=Z,6.0nm,0.8s,baz=136,slow=5.4,SNR=14
KIV Kislovodsk 64.01 319 *eP* **P** **19 19 44.9 +0.9**
KIV pmax pmax
comp=Z,10.0nm,1.0s
KIV Kislovodsk 64.01 319 *eP* **P** **19 19 43.9 -0.1**
comp=Z,14nm,1.1s
YAK Yakutsk 65.32 16 P **P** **19 19 51.5 -0.5**
comp=Z,62nm,0.8s,baz=241,slow=0.4,SNR=35
YAK Yakutsk 65.32 16 *eP* **P** **19 19 51.2 -0.7**
YAK *e*PP* **pP** **19 19 58.6 -1.8**
YAK *e* 19 20 21.7
YAK *ePPP* PPP 19 23 45.8
YAK *eS* **S** **19 28 33.7 -0.3**
YAK *e*SS* **sS** **19 28 49.2 +1.4**
YAK pmax pmax
comp=Z,93nm,1.0s
YAK pmax pmax
comp=N,27nm,1.3s
YAK pmax pmax
comp=E,28nm,1.5s
YAK pmax pmax
comp=Z,157nm,4.7s
YAK pmax pmax
comp=N,81nm,3.0s
YAK pmax pmax
comp=E,147nm,4.2s
YAK smax smax
comp=N,86nm,3.0s
YAK smax smax
comp=E,52nm,3.8s
YAK MLR MLR
comp=Z,1μm,18.0s
YAK MLR MLR
comp=N,818nm,23.0s
YAK MLR MLR
comp=E,834nm,20.0s
YAK Yakutsk 65.32 16 *eP* **P** **19 19 51.4 -0.5**
comp=E,90nm,1.0s
SOKR Solikamsk 65.85 339 *eP* **P** **19 19 54.2 -1.2**
SOKR pmax pmax
comp=Z,16nm,0.6s
CSS Mathiatis 67.77 307 *eP* **P** **19 20 07.1 -1.1**
comp=Z,13nm,1.2s
NRIK Noril'sk 68.14 356 P **P** **19 20 09.6 -0.2**
comp=Z,12nm,0.8s,baz=176,slow=5.6,SNR=11
BR101 Keskin Array S 68.81 312 *eP* **P** **19 20 14.8 0.0**
BR131 Keskin Array S 68.81 312 *eP* **P** **19 20 14.3 -0.6**
BRTR Keskin Array B 68.81 312 P **P** **19 20 14.8 0.0**
comp=Z,2.2nm,0.8s,baz=128,slow=8.0,SNR=15
VSR Storozhevoye 69.28 325 *eP* **P** **19 20 16.5 -0.8**
VSR pmax pmax
comp=Z,10.0nm,0.8s
BR231 Keskin MP Arra 69.48 312 *eP* **P** **19 20 15.9 -3.1**
MA2 Magadan 71.28 26 P **P** **19 20 28.5 -0.8**
comp=Z,15nm,0.8s,baz=184,slow=9.0,SNR=5.7
PEA0 Petropavlovsk- 71.72 34 *eP* **P** **19 20 31.2 -1.0**
PETK Petropavlovsk- 71.72 34 P **P** **19 20 31.6 -0.6**
comp=Z,4.8nm,0.8s,baz=180,slow=4.4,SNR=5.8
PEA1 Petropavlovsk- 71.73 34 *eP* **P** **19 20 31.6 -0.6**
MOS Moscow 72.06 329 *eP* **P** **19 20 34.6 +0.5**
PET Petropavlovsk 72.22 34 *eP* **P** **19 20 34.6 -0.5**
PET pmax pmax
comp=Z,42nm,0.8s
PET Petropavlovsk 72.22 34 *eP* **P** **19 20 34.3 -0.8**
comp=Z,31nm,0.9s
OBN Obninsk 72.34 328 *c iP* **P** **19 20 36.2 +0.4**
OBN pmax pmax
comp=Z,13nm,1.0s
OBN Obninsk 72.34 328 *eP* **P** **19 20 35.8 +0.1**
comp=Z,28nm,0.4s
TIXI Tiksi 73.06 10 P **P** **19 20 39.0 -0.7**
comp=Z,6.6nm,0.8s,baz=192,slow=3.3,SNR=4.2
TIXI Tiksi 73.06 10 *deP* **P** **19 20 39.2 -0.5**
TIXI pmax pmax
comp=Z,25nm,1.7s
TIXI Tiksi 73.06 10 *eP* **P** **19 20 38.7 -1.0**
comp=Z,12nm,0.9s
KLMR Klimovskoe 73.49 335 *eP* **P** **19 20 41.2 -1.3**
KLMR pmax pmax
comp=Z,13nm,1.2s
SEY Seymchan 73.70 23 P **P** **19 20 43.4 -0.3**
comp=Z,11nm,0.8s,baz=226,slow=5.8,SNR=14
SEY Seymchan 73.70 23 *deP* **P** **19 20 43.9 +0.2**
CFR Carcaliu 74.19 317⇓ *iP* **P** **19 20 47.6 +0.6**
CFR Carcaliu 74.19 317⇓ *P* **P** **19 20 47.6 +0.6**
SORM Soroca 74.81 320⇑ *iP* **P** **19 20 50.8 +0.3**
SORM Soroca 74.81 320⇑ *P* **P** **19 20 50.8 +0.3**
AKASG Malin Array Be 74.97 322 P **P** **19 20 50.6 -0.7**
comp=Z,6.8nm,1.1s,baz=92,slow=4.4,SNR=13
AKASG Malin Array Be 74.97 322 *ceP* **P** **19 20 51.2 -0.1**
AKASG pmax pmax
comp=Z,7.0nm,0.9s
AKBB Malin Array Si 74.97 322 *eP* **P** **19 20 51.2 -0.1**
AKBB pmax pmax
comp=Z,6.0nm,0.8s
AKBB Malin Array Si 74.97 322 *eP* **P** **19 20 51.2 -0.1**
comp=Z,6.0nm,0.8s
KIEV Kiev 74.98 322⇓ *eP* **P** **19 20 51.6 +0.2**
KIEV pmax pmax
comp=Z,6.0nm,1.0s
KIEV Kiev 74.98 322 *eP* **P** **19 20 51.1 -0.3**
comp=Z,4.9nm,0.8s
VRI Vrincioaia 75.32 317⇓ *iP* **P** **19 20 55.3 +1.8**
VRI Vrincioaia 75.32 317⇓ *P* **P** **19 20 55.3 +1.8**
PLOR Plostina 75.37 317⇑ *iP* **P** **19 20 55.8 +1.9**
PLOR Plostina 75.37 317⇑ *P* **P** **19 20 55.8 +1.9**
TESR Tescani 75.53 318 *iP* **P** **19 20 55.5 +0.8**
MLR Muntele Rosu 75.77 317⇓ *iP* **P** **19 20 57.8 +1.5**
MLR Muntele Rosu 75.77 317 *eP* **P** **19 20 57.2 +0.9**
MLR pmax pmax
comp=Z,81nm,1.8s
MLR Muntele Rosu 75.77 317 *eP* **P** **19 20 57.2 +0.9**
comp=Z,81nm,1.8s
BURAR Bucovina Array 76.73 319⇑ *iP* **P** **19 20 59.1 -2.5**
BURAR Bucovina Array 76.73 319⇑ *P* **P** **19 20 59.1 -2.5**
BUR08 Bucovina Ar. S 76.75 319 *eP* **P** **19 21 02.7 +1.0**
DRGR 78.24 318⇑ *iP* **P** **19 21 10.6 +0.6**
DRGR 78.24 318⇑ *P* **P** **19 21 10.6 +0.6**
APA Apatity 78.88 340⇑ *iP* **P** **19 21 09.5 -3.5**
APA *i* PPP PPP 19 26 04.0
APA *i* S **S** **19 31 01.0 -8.3**
APA pmax pmax
comp=Z,7.0nm,1.0s
APA MLR MLR
comp=Z,1μm,16.0s
KOLS Kolonicke sedl 78.92 320 *eP* **P** **19 21 15.4 +1.7**
KOLS pmax pmax
comp=Z,9.0nm,1.1s
KOLS Kolonicke sedl 78.92 320 *eP* **P** **19 21 15.4 +1.7**
SUW Suwalki 79.39 325 *eP* **P** **19 21 16.6 +0.5**
SUW Suwalki 79.39 325 *eP* **P** **19 21 16.6 +0.5**
CRVS Cervenica-Dubn 79.44 319 *eP* **P** **19 21 19.2 +2.6**
CRVS Cervenica-Dubn 79.44 319 *eP* **P** **19 21 19.2 +2.6**
STHS Stebnicka Huta 79.68 320 *eP* **P** **19 21 20.0 +2.2**
STHS pmax pmax
comp=Z,4.0nm,1.1s
STHS Stebnicka Huta 79.68 320 *eP* **P** **19 21 20.0 +2.2**
FIA1 FINESS Array S 79.73 333 *eP* **P** **19 21 17.5 -0.3**
FIA0 FINESS Array S 79.73 333 *eP* **P** **19 21 18.0 +0.2**
FIA0 FINESS Array S 79.73 333 *eP* **P** **19 21 18.0 +0.2**
FINES FINESS Array B 79.73 333 *P* **P** **19 21 18.0 +0.2**
comp=Z,4.6nm,0.7s,baz=107,slow=6.4,SNR=17
FINES FINESS Array B 79.73 333 *iP* **P** **19 21 18.3 +0.5**
FINES pmax pmax
comp=Z,5.0nm,0.7s
KECS Kecovo 80.01 319 *eP* **P** **19 21 21.2 +1.6**
KECS pmax pmax
comp=Z,3.0nm,1.2s
KECS Kecovo 80.01 319 *eP* **P** **19 21 21.2 +1.6**
SYO Syowa Base 80.09 198⇑ *ePcP* **PcP** **19 21 29.4 +2.5**
NIE Niedzica 80.28 320 *eP* **P** **19 21 22.7 +1.6**
NIE Niedzica 80.28 320 *eP* **P** **19 21 22.7 +1.6**
PSZ Piszkesteto 80.31 318⇑ *iP* **P** **19 21 20.5 -0.9**
PSZ Piszkesteto 80.31 318 *eP* **P** **19 21 21.2 -0.2**
PSZ pmax pmax
comp=Z,52nm,1.5s
PSZ Piszkesteto 80.31 318 *eP* **P** **19 21 21.2 -0.2**
comp=Z,52nm,1.5s
BILL Bilibino 81.09 21 *i P* **P** **19 21 27.5 +2.5**
BILL pmax pmax
comp=Z,5.0nm,1.0s
VYHS Vyhne 81.10 319 *eP* **P** **19 21 26.5 +1.0**
VYHS pmax pmax
comp=Z,2.0nm,1.1s
VYHS Vyhne 81.10 319 *eP* **P** **19 21 26.5 +1.0**
SMY Shemya 81.13 37 *eP* **P** **19 21 24.7 -0.8**
SMY pmax pmax
comp=Z,30nm,0.9s
SMY Shemya 81.13 37 *eP* **P** **19 21 24.7 -0.8**
comp=Z,30nm,0.9s
OKC Ostrava-Krasne 81.73 320 *eP* **P** **19 21 30.0 +1.2**
OKC *epP* **sP** **19 21 40.0 -0.5**
OKC *ex* x 19 21 49.0
OKC Ostrava-Krasne 81.73 320 *eP* **P** **19 21 30.0 +1.2**
OKC *e* 19 21 40.0
OKC *e* 19 21 49.0
MORC Moravsky Berou 82.11 320⇑ *iP* **P** **19 21 32.0 +1.2**
MORC Moravsky Berou 82.11 320 *eP* **P** **19 21 31.6 +0.8**
MORC pmax pmax
comp=Z,68nm,1.6s
MORC Moravsky Berou 82.11 320 *eP* **P** **19 21 31.6 +0.8**
comp=Z,68nm,1.6s
ARA0 ARCESS Array S 82.29 340 *eP* **P** **19 21 31.7 +0.4**
ARCES ARCESS Array B 82.29 340 *P* **P** **19 21 31.7 +0.4**
comp=Z,7.3nm,0.8s,baz=94,slow=5.0,SNR=18
KRLC Kraliky 82.64 320 *eP* **P** **19 21 34.8 +1.2**
KRLC *ex* x 19 21 53.8
KRLC Kraliky 82.64 320 *eP* **P** **19 21 34.8 +1.2**
KRLC *e* 19 21 53.8
DPC Dobruska-Polom 82.96 320 *eP* **P** **19 21 36.7 +1.4**
DPC Dobruska-Polom 82.96 320 *eP* **P** **19 21 36.7 +1.4**
PRU Pruhonice 84.06 320 *eP* **P** **19 21 42.0 +1.1**
PRU *esP* **sP** **19 21 54.1 +1.5**
PRU Pruhonice 84.06 320 *eP* **P** **19 21 42.0 +1.1**
PRU *e* 19 21 54.1
BRG Berggiesshubel 84.52 321 *ePKP* **P** **19 21 44.3 +1.1**
comp=Z,4.0nm,1.0s
BRG *e* 19 21 55.9
comp=Z,3.0nm,0.7s
comp=N,1μm,22.0s
comp=E,706nm,27.8s
comp=Z,2μm,26.7s
BRG Berggiesshubel 84.52 321 *eP* **P** **19 21 44.3 +1.1**
BRG *e* 19 21 55.9
BRG pmax pmax
comp=Z,4.0nm,1.0s
BRG pmax pmax
comp=Z,3.0nm,0.7s
BRG MLR MLR
comp=N,1μm,22.0s
BRG MLR MLR
comp=E,706nm,27.8s
BRG MLR MLR
comp=Z,2μm,26.7s
GEA0 GERESS Array S 84.52 319 *eP* **P** **19 21 44.0 +0.7**
GEC2 GERESS Array S 84.52 319 *eP* **P** **19 21 44.6 +1.2**
GEC2 pmax pmax
comp=Z,63nm,1.6s
GEC2 GERESS Array S 84.52 319 *eP* **P** **19 21 44.6 +1.2**
comp=Z,63nm,1.6s
GERES GERESS Array B 84.52 319 *P* **P** **19 21 44.5 +1.2**
comp=Z,3.9nm,1.0s,baz=98,slow=5.5,SNR=25
KHC Kasperske Hory 84.62 319 *eP* **P** **19 21 44.9 +1.1**
KHC Kasperske Hory 84.62 319 *eP* **P** **19 21 44.9 +1.1**
CLL Collm 85.14 321 *iP* **P** **19 21 46.7 +0.4**
comp=Z,6.0nm,1.5s
CLL Collm 85.14 321 *iP* **P** **19 21 46.7 +0.4**
CLL pmax pmax
comp=Z,6.0nm,1.5s
NB2 NORSAR Subarra 86.73 331 *P* **P** **19 21 54.3 +0.3**
comp=Z,6.8nm,0.9s,baz=92,slow=6.2
NB200 NORSAR Array S 86.73 331 *eP* **P** **19 21 53.9 -0.2**
NOA NORSAR Array B 86.73 331 *P* **P** **19 21 53.9 -0.2**
baz=85,slow=4.8
BCLA Clavier 90.00 320 PKP P 19 22 14.8 +5.1
DOU Dourbes 90.47 320 PKP **P** **19 22 15.4 +3.5**
SNF Seneffe 90.65 320 PKP **P** **19 22 13.4 +0.6**
PLDF La Plantade 91.34 316 PKP **P** **19 22 20.9 +4.7**
LBL Lubilhac 91.65 315 PKP **P** **19 22 21.4 +3.8**
AGO Saint Agoulin 91.68 316 PKP **P** **19 22 21.1 +3.4**
ES19 SONSECA Array 97.47 310 *eP* **P** **19 22 41.2 -3.2**
CAST Castle Rocks 98.03 25 *eP* Pdif 19 22 46.5 +0.2
comp=Z,6.6nm,1.2s
ILAR Eielson Array 99.63 23 *P* **Pdif** **19 22 52.5 -0.9**
comp=Z,0.3nm,0.7s,baz=282,slow=5.3,SNR=3.7
INK Inuvik 102.38 17 *P* **Pdif** **19 23 04.2 -1.3**
comp=Z,1.1nm,0.8s,baz=343,slow=9.6,SNR=3.7
HONU Honeyville 129.84 28 *ePKPpre* PKPpre 19 28 07.3
LTX Lajitas 143.65 31 *ePKIKP* PKPbc 19 28 43.7 +0.4
LTX Lajitas 143.65 31 *ePKPdf* PKPbc 19 28 43.7 +0.4
TX31 Lajitas Ar. Si 143.65 31 *ePKPpre* PKPpre 19 28 40.7
TX31 *ePKPpre* PKPpre 19 28 41.4
TXAR Lajitas Array 143.65 31 PKP PKPbc 19 28 43.7 +0.4
comp=Z,1.0nm,0.8s,baz=318,slow=1.2,SNR=9.0
JCT Junction City 144.52 25 *ePKIKP* PKPbc 19 28 46.4 +0.5
JCT Junction City 144.52 25 *ePKPdf* PKPbc 19 28 46.4 +0.5
CPUP Villa Florida 144.97 223 PKPbc **PKPdf** **19 28 48.5 +0.3**
comp=Z,2.9nm,0.9s,baz=283,slow=0.8,SNR=3.8
CPUP Villa Florida 144.97 223 *ePKHKP* PKPbc 19 28 43.8 -3.6
CPUP Villa Florida 144.97 223 *ePKPbc* **PKPab** **19 28 43.8 -3.5**
GOGA Godfrey 145.40 1 *ePKIKP* **PKPab** **19 28 49.0 +0.3**
GOGA Godfrey 145.40 1 *ePKPbc* **PKPab** **19 28 49.0 +0.3**

NEIC 05 19:19:26.1±1.0,19°27N×108°39W,h10km,mb4.0/70,
Error ellipse: s-maj=14.7km s-min=6.8km az=200.0,
Revilla Gigedo Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	Time	ISC	Res ISC
SLBS	**Sierra La Lagu**	**4.63**	**342**	*ePn*	Pn	19 20 33.7	-2.5	
ZAIG	**Zacatecas**	**6.46**	**56**	*ePn*	Pn	19 21 01.9	+0.4	
HPIG		**8.03**	**18**	*ePn*	Pn	19 21 20.7	-2.3	
TLIG	**Tlapa**	**9.47**	**99**	*ePn*	Pn	19 21 44.5	+1.7	
HSIG		**9.98**	**347**	*ePn*	Pn	19 21 49.2	-0.4	
TX31	**Lajitas Ar. Si**	**10.90**	**22**	*ePn*	Pn	19 22 02.3	0.0	
319A	**Douglas**	**12.08**	**356**	*ePn*	Pn	19 22 20.7	+2.2	
MNTX	**Cornudas Mount**	**12.67**	**12**	*ePn*	Pn	19 22 28.6	+2.2	
TUC	**Tucson**	**13.16**	**351**	*ePn*	Pn	19 22 34.3	+1.0	
GLA	**Glamis**	**14.89**	**338**	*ePn*	Pn	19 22 57.5	+0.7	
BNM	**Barren Site**	**14.90**	**6**	*ePn*	Pn	19 22 58.4	+1.2	
LPM	**Los Pinos Moun**	**15.06**	**6**	*ePn*	Pn	19 22 57.8	-1.4	
LAZ	**Ladron**	**15.11**	**4**	*ePn*	Pn	19 22 57.8	-2.1	
Y14A	**Wickenburg** 21nm,1.0s	**15.18**	**345**	*ePn*	Pn	19 23 01.6	+1.0	
X18A	**Snowflake** 8.9nm,0.8s	**15.26**	**355**	*ePn*	Pn	19 23 02.6	+0.7	
BAR	**Barrett** 14nm,1.6s	**15.28**	**333**	*ePn*	Pn	19 23 01.8	-0.2	
X16A	**Lo Mia Camp, P** 5.4nm,1.1s	**15.33**	**350**	*ePn*	Pn	19 23 02.9	+0.1	
Y12C	**Blythe** 10nm,1.3s	**15.43**	**340**	*ePn*	Pn	19 23 03.7	-0.1	
ABTX	**Abilene, Hawle** 10nm,1.0s	**15.44**	**29**	*ePn*	Pn	19 23 03.3	-0.8	
ANMO	**Albuquerque** 3.0nm,0.9s	**15.71**	**6**	*ePn*	P	19 23 11.0	-0.8	
W18A	**Petrified Fore** 15nm,1.2s	**15.83**	**356**	*ePn*	Pn	19 23 10.8	+1.5	
PFO	**Pinyon Flats O** 7.7nm,1.3s	**16.00**	**335**	*ePn*	Pn	19 23 10.3	-1.1	
WUAZ	**Wupatki** 14nm,1.2s	**16.40**	**351**	*ePn*	Pn	19 23 17.1	+0.6	
W13A	**Hualapai Mount** 5.0nm,1.0s	**16.50**	**344**	*ePn*	Pn	19 23 18.3	+0.3	
LDFC	**Landfair** 12nm,0.4s	**16.84**	**341**	*ePn*	P	19 23 23.3	-0.9	
MWC	**Mount Wilson** 9.7nm,1.1s	**17.20**	**332**	*ePn*	Pn	19 23 26.8	+0.1	
U15A	**North Rim** 6.8nm,1.2s	**17.44**	**349**	*ePn*	Pn	19 23 29.9	+0.2	
GSC	**Goldstone, Bar** 9.9nm,1.4s	**17.62**	**337**	*ePn*	P	19 23 32.5	-0.3	
KNB	**Kanab** 11nm,1.2s	**18.11**	**349**	*ePn*	P	19 23 38.5	+0.2	
LCMT	**Little Creek M** 9.2nm,1.5s	**18.18**	**347**	*ePn*	P	19 23 40.0	+0.9	
S22A	**4UR Ranch, Cre** 3.0nm,1.1s	**18.46**	**4**	*eP*	P	19 23 38.8	-3.5	
SDCO	**Great Sand Dun** 12nm,1.9s	**18.58**	**7**	*eP*	Pn	19 23 46.8	+3.0	
ISA	**Isabella, Lake** 4.8nm,1.1s	**18.60**	**333**	*eP*	P	19 23 41.0	-2.6	
SZCU	**Shurtz Canyon** 5.0nm,1.0s	**18.72**	**348**	*eP*	Pn	19 23 45.5	+0.1	
CCUT	**Cedar City** 12nm,1.7s	**18.73**	**348**	*eP*	P	19 23 44.8	-0.4	
PV05	**Paradox Valley**	**18.75**	**358**	*eP*	P	19 23 43.9	-1.5	
DAC	**Darwin (Calif)** 4.7nm,1.0s	**18.78**	**336**	*eP*	Pn	19 23 46.3	+0.1	
TPNV	**Topopah Spring** 7.2nm,1.3s	**18.92**	**340**	*eP*	Pn	19 23 47.6	-0.2	
TEIG	**Tepich** 0.7nm,1.4s	**18.95**	**84**	*eP*	Pn	19 23 47.9	-0.3	
MTPU	**Mount Pierson** 6.9nm,1.1s	**19.00**	**351**	*eP*	Pn	19 23 49.5	+0.5	
PV10	**Paradox Valley**	**19.05**	**358**	*eP*	P	19 23 48.2	-0.5	
MSU	**Marysvale**	**19.46**	**351**	*eP*	Pn	19 23 53.8	-0.5	
PSUT	**Pine Spring** 13nm,1.0s	**19.78**	**347**	*eP*	P	19 23 57.1	+0.4	
SRU	**San Rafael Swe** 5.0nm,1.1s	**19.86**	**355**	*eP*	P	19 23 58.1	+0.5	
R11A	**Troy Canyon, C** 4.9nm,1.3s	**20.02**	**343**	*eP*	P	19 23 59.1	-0.2	
TMUT	**Trail Mountain** 4.6nm,1.1s	**20.11**	**354**	*eP*	P	19 24 01.0	+0.7	
PMPB	**Monarch Peak** 40nm,1.4s	**20.11**	**330**	*eP*	Pn	19 24 01.3	-0.6	
P17A	**Butcher Ranch,** 4.9nm,0.5s	**20.24**	**355**	*eP*	Pn	19 24 02.8	-0.7	
P18A	**Preston Nutter** 8.2nm,0.8s	**20.35**	**356**	*eP*	P	19 24 00.1	-2.9	
O20A	**White River Ci** 8.2nm,0.9s	**20.80**	**0**	*eP*	Pn	19 24 09.0	-1.1	
NLU	**North Lily Min** 35nm,1.3s	**20.86**	**352**	*eP*	Pn	19 24 12.1	+1.2	
SAO	**San Andreas Ge** 23nm,1.5s	**20.86**	**329**	*eP*	P	19 24 07.8	-0.4	
MPU	**Maple Canyon** 4.0nm,0.7s	**20.86**	**353**	*eP*	P	19 24 09.1	+0.7	
TVH3	**East Aurora ar** 4.0nm,0.9s	**21.07**	**337**	*eP*	P	19 24 10.7	0.0	
TVH1	**TV Hill, Hawth** 5.2nm,0.9s	**21.14**	**337**	*eP*	P	19 24 11.9	+0.2	
HHAR	**Hobbs** 5.8nm,1.2s	**21.18**	**34**	*eP*	P	19 24 11.9	+0.2	
DUG	**Dugway, Tooele** 13nm,1.2s	**21.20**	**351**	*eP*	P	19 24 12.7	+0.6	
X301	**Greenbrier Sit** 12nm,1.3s	**21.28**	**38**	*eP*	P	19 24 13.1	+0.4	
X201	**Greenbrier Sit** 16nm,1.3s	**21.34**	**38**	*eP*	P	19 24 13.9	+0.5	
WHAR	**Wooly Hollow** 9.9nm,1.0s	**21.38**	**38**	*eP*	P	19 24 13.5	-0.3	
JLU	**Jordanelle** 14nm,1.4s	**21.42**	**354**	*eP*	P	19 24 14.6	+0.1	
WAKR	**Walker** 7.8nm,1.0s	**21.44**	**336**	*eP*	P	19 24 15.5	+0.8	
CTU	**Camp Tracy** 23nm,1.1s	**21.55**	**353**	*eP*	P	19 24 15.3	-0.5	
N23A	**Red Feather La** 5.9nm,1.2s	**21.66**	**5**	*eP*	P	19 24 17.3	+0.3	
YERR	**Yerington** 11nm,1.2s	**21.78**	**337**	*eP*	P	19 24 18.5	+0.1	
TCUT	**Toone Canyon** 14nm,1.0s	**21.93**	**354**	*eP*	P	19 24 19.6	-0.3	
BGU	**Big Grassy Mou** 5.1nm,1.3s	**21.95**	**351**	*eP*	P	19 24 19.5	-0.5	
PHWY	**Pilot Hill** 4.1nm,1.1s	**22.10**	**6**	*eP*	P	19 24 21.7	-0.2	
ELK	**Elko** 2.3nm,0.9s	**22.20**	**346**	*eP*	P	19 24 21.9	-0.9	
SPUT	**South Promonto** 6.5nm,1.0s	**22.24**	**352**	*eP*	P	19 24 23.0	-0.2	
BMN	**Battle Mountai** 9.8nm,1.6s	**22.41**	**342**	*eP*	P	19 24 24.2	-0.8	
HWUT	**Hardware Ranch** 4.2nm,1.2s	**22.43**	**354**	*eP*	P	19 24 24.9	-0.3	
AFDM	**Forest Hills D** 5.5nm,1.1s	**22.44**	**334**	*eP*	P	19 24 26.0	+0.8	
PAHR	**Pah Rah Range** 12nm,1.2s	**22.47**	**337**	*eP*	P	19 24 26.6	+1.0	
HVU	**Hansel Valley** 9.8nm,1.7s	**22.75**	**351**	*eP*	P	19 24 27.8	-0.8	
ORV	**Oroville** 6.8nm,1.3s	**23.17**	**334**	*eP*	P	19 24 33.0	+0.2	
K22A	**Casper** 6.8nm,1.2s	**23.36**	**3**	*eP*	P	19 24 34.8	-0.2	
BW06	**Boulder Array**	**23.45**	**358**	*eP*	P	19 24 35.0	-0.8	
PD31	**Pinedale Array**	**23.45**	**358**	*eP*	P	19 24 36.1	+0.2	
LRAL	**Lakeview Retre**	**23.53**	**50**	*eP*	P	19 24 34.5	-1.9	
LRAL				*eSn*	S	19 28 57.2	+6.7	
REDW	**Red Top Meadow** 11nm,1.4s	**24.11**	**356**	*eP*	P	19 24 41.6	-0.6	
KCPM	**Cahto Peak** 12μm,0.6s	**24.20**	**330**	*eP*	P	19 24 41.2	-1.8	
KCPM				*eSn*	S	19 29 35.4	+34	
TPAW	**Teton Pass** 10nm,1.4s	**24.25**	**355**	*eP*	P	19 24 43.7	+0.1	
LOHW	**Long Hollow** 7.6nm,1.2s	**24.34**	**356**	*eP*	P	19 24 45.6	+1.3	
MOOW	**Moose Ponds** 7.0nm,1.4s	**24.49**	**356**	*eP*	P	19 24 42.9	-2.7	
IMW	**Indian Meadow** 15nm,1.8s	**24.65**	**356**	*eP*	P	19 24 45.1	-2.1	
WVOR	**Wild Horse Val** 7.2nm,1.0s	**24.67**	**342**	*eP*	P	19 24 46.6	-0.7	
MOD	**Modoc Plateau** 10.0nm,1.1s	**24.73**	**338**	*eP*	P	19 24 47.9	0.0	
HLID	**Hailey**	**24.75**	**349**	*eP*	P	19 24 47.9	0.0	

	2.7nm,0.9s							
YPP	**Pitchstone Pla**	**25.01**	**356**	*e*P	P	19 24 50.4	-0.1	
	3.0nm,1.0s							
RSSD	**Black Hills**	**25.05**	**7**	*e*P	P	19 24 51.2	+0.5	
	2.9nm,1.1s							
YPM	**Purple Mountai**	**25.40**	**356**	*e*P	P	19 24 49.0	-5.0	
MCMT	**McKenzie Canyo**	**25.76**	**353**	*e*P	P	19 24 57.2	0.0	
B201	**Coldwater, Mou**	**29.29**	**340**	*e*P	P	19 25 29.8	+1.2	

*KRNET **05** 19:37:55.4±0.1, 39°.49N×73°.16E, h21km, mb3.4*
*NNC **05** 19:37:58.2±1.4, 39°.57N×73°.24E, h0km, mb3.7, mpv3.4, Error ellipse: s-maj=12.2km s-min=8.2km az=11.0*
ISC 05 19:37:55.7±2.3, 39°.3N±0°.1×73°.18E±0°.05, h17km±17km, n23, σ0°80/42, 36C-11D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRK	**Karamyk**	**1.09**	**281**	⇑*e*P	**Pb**	**19 38 16.1**	**-0.3**
	baz=270						
DRK				⇑*i*S	**Sg**	**19 38 30.5**	**-0.7**
	baz=270						
BTK	**Batken**	**1.98**	**294**	⇑*i*P	**Pn**	**19 38 29.8**	**+1.1**
	baz=288						
BTK				⇑*i*S	**Sb**	**19 38 55.8**	**-0.2**
	baz=288						
ARSB	**Arslanbob**	**2.05**	**356**	⇑*e*P	**Pn**	**19 38 29.1**	**-0.5**
	baz=355						
ARSB				⇑*i*S	**Sn**	**19 38 54.4**	**-0.5**
	baz=355						
ARK	**Arkit**	**2.68**	**340**	⇑*i*P	**Pn**	**19 38 38.5**	**+0.2**
	baz=339						
ARK				⇑*i*S	**Sn**	**19 39 10.1**	**-0.4**
	baz=339						
ARLS	**Aral**	**2.72**	**18**	⇑*i*P	**Pn**	**19 38 39.0**	**+0.1**
	baz=20						
ARLS				⇑*i*S	**Sn**	**19 39 11.6**	**0.0**
	baz=20						
AML	**Almayashu**	**2.88**	**8**	⇓*i*P	**Pn**	**19 38 42.0**	**+0.8**
	baz=8.0						
AML				⇓*i*S	**Sn**	**19 39 16.0**	**+0.3**
	baz=8.0						
UCH	**Uchtor**	**3.12**	**19**	⇑*i*P	**Pn**	**19 38 45.3**	**+0.7**
	baz=20						
UCH				⇑*i*S	**Sn**	**19 39 21.7**	**+0.1**
	baz=20						
KZA	**Kyzart**	**3.21**	**29**	⇑*i*P	**Pn**	**19 38 46.7**	**+0.9**
	baz=31						
KZA				⇑*i*S	**Sn**	**19 39 23.7**	**-0.2**
	baz=31						
MNAS	**Manas**	**3.25**	**351**	⇓*i*P	**Pn**	**19 38 46.4**	**+0.3**
	baz=351						
MNAS				⇓*e*S	**Sn**	**19 39 24.1**	**-0.4**
	baz=351						
MNAS	**Manas**	**3.25**	**351**	⇑Pn	**Pn**	**19 38 46.8**	**+0.7**
	10nm,0.5s						
MNAS				⇓Lg	Lg	19 39 32.5	
	46nm,0.6s						
EKS2	**Erkin-Say**	**3.41**	**7**	⇑*i*P	**Pn**	**19 38 49.2**	**+0.9**
	baz=8.0						
EKS2				⇑*i*S	**Sn**	**19 39 28.5**	**0.0**
	baz=8.0						
AAK	**Ala-Archa**	**3.50**	**16**	⇑*i*P	**Pn**	**19 38 50.5**	**+1.0**
	baz=17						
AAK				⇑*i*S	**Sn**	**19 39 30.0**	**-0.6**
	baz=17						
AAK	**Ala-Archa**	**3.50**	**16**	⇓Pn	**Pn**	**19 38 50.9**	**+1.4**
	13nm,0.6s						
AAK				Lg	Lg	19 39 38.7	
	75nm,1.0s						
KBK	**Karagaybulak**	**3.63**	**21**	⇑*i*P	**Pn**	**19 38 52.0**	**+0.6**
	baz=23						
KBK				⇑*i*S	**Sn**	**19 39 33.4**	**-0.5**
	baz=23						
ULHL	**Ulahol**	**3.77**	**37**	⇑*i*P	**Pn**	**19 38 53.7**	**+0.4**
	baz=39						
ULHL				⇑*i*S	**Sn**	**19 39 35.9**	**-1.5**
	baz=39						
BOOM	**Boomskoye usch**	**3.83**	**32**	⇑*i*P	**Pn**	**19 38 54.9**	**+0.8**
	baz=34						
BOOM				⇑*i*S	**Sn**	**19 39 37.8**	**-1.1**
	baz=34						
CHMS	**Chumysh**	**3.90**	**17**	⇑*i*P	**Pn**	**19 38 55.7**	**+0.7**
	baz=18						
CHMS				⇑*i*S	**Sn**	**19 39 39.4**	**-1.0**
	baz=18						
TKM2	**Tokmak 2**	**4.07**	**26**	⇑*i*P	**Pn**	**19 38 58.1**	**+0.6**
	baz=27						
TKM2				⇑*i*S	**Sn**	**19 39 43.6**	**-1.3**
	baz=27						
TKM2	**Tokmak 2**	**4.07**	**26**	⇑Pn	**Pn**	**19 38 58.0**	**+0.5**
	1.1nm,0.3s						
TKM2				⇓Lg	Lg	19 39 58.8	
	27nm,0.8s						
USP	**Ospenovka**	**4.11**	**14**	⇑*i*P	**Pn**	**19 38 58.6**	**+0.8**
	baz=14						
USP				⇑*i*S	**Sn**	**19 39 44.3**	**-1.2**
	baz=14						
KK31	**Karatay Array**	**4.32**	**333**	⇑Pn	**Pn**	**19 39 01.7**	**+1.0**
	1.0nm,0.3s,baz=144,slow=13,SNR=52						
KK31				⇓Pg	**Pb**	**19 39 11.6**	**+0.3**
	2.9nm,0.3s,baz=139,slow=12,SNR=20						
KK31				⇓Sn	**Sn**	**19 39 52.1**	**+1.3**
	4.8nm,0.5s,baz=145,slow=21,SNR=4.0						
KK31				⇑Lg	Lg	19 40 09.3	
	13nm,0.5s,baz=111,slow=17,SNR=4.5						
KNDC	**Almaty**	**4.86**	**35**	⇑Pg	**Pb**	**19 39 21.3**	**+0.8**
	8.6nm,0.5s						
KNDC				⇓Lg	Lg	19 40 25.2	
	52nm,0.7s						
AB31	**Akbulak array**	**13.74**	**321**	⇑Pn	**Pn**	**19 41 09.2**	**-0.5**
	0.3nm,0.4s,baz=129,slow=13,SNR=7.6						
AB31				⇓Sn	Sn	19 43 31.6	-10
	1.4nm,0.8s						

IDC 05 19:38:40.7±3.4, 1°.83N×97°.88E, h0km, mb3.4/5, mb1 3.5/5, mb1mx3.3/47, mbtmp3.4/5, Error ellipse: s-maj=139.5km s-min=26.1km az=56.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	**Diego Garcia H**	**27.02**	**249**	T	T	20 11 15.1	
	baz=70,slow=75,SNR=435						
H08S3	**Diego Garcia H**	**27.02**	**249**	T	T	20 11 20.2	
	baz=70,slow=75,SNR=326						
H08S1	**Diego Carcia H**	**27.04**	**249**	T	T	20 11 16.4	
	baz=70,slow=75,SNR=497						
WRA	**Warramunga Arr**	**41.80**	**123**	P	P	19 46 32.2	-0.2
	0.4nm,0.8s,baz=305,slow=8.9,SNR=2.8						
SONM	**Songino Array**	**46.41**	**8**	P	P	19 47 09.6	+0.5
	0.5nm,0.7s,baz=202,slow=7.3,SNR=3.1						
MKAR	**Makanchi Array**	**46.80**	**345**	P	P	19 47 11.7	-0.4
	0.2nm,0.4s,baz=159,slow=8.4,SNR=3.8						
KURBB	**Kurchatov Arra**	**51.30**	**344**	P	P	19 47 46.6	+0.1
	0.1nm,0.5s,baz=159,slow=7.0,SNR=2.6						
ZALV	**Zalesovo Beam**	**53.05**	**350**	P	P	19 47 59.0	-0.5
	0.5nm,0.4s,baz=169,slow=8.2,SNR=2.9						

KRNET 05 19:38:57.1±0.1, 39°.49N×73°.13E, h16km, mb3.5, 5C-4D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRK	**Karamyk**	**1.02**	**270**	⇑*i*P	Pn	19 39 17.5	+0.4
	baz=270						
DRK				⇑*i*S	Sn	19 39 31.6	+0.3
	baz=270						
ARSB	**Arslanbob**	**1.84**	**357**	⇓*e*P	Pg	19 39 31.7	-0.7
	baz=356						
ARSB				⇓*i*S	Sg	19 39 56.7	+0.4
	baz=356						
BTK	**Batken**	**1.87**	**288**	⇑*i*P	Pg	19 39 32.1	-0.8
	baz=289						
ARK	**Arkit**	**2.47**	**339**	⇓*i*P	Pb	19 39 40.8	-0.4
	baz=340						
ARK				⇓*i*S	Sb	19 40 12.3	+0.9
	baz=340						
MNAS	**Manas**	**3.03**	**351**	⇑*i*P	Pb	19 39 48.8	-2.0
	baz=351						
MNAS				⇑*i*S	Sb	19 40 27.5	-0.1
	baz=351						

*KRNET **05** 19:39:03.4±0.1, 39°.45N×73°.20E, mb3.7*
*NNC **05** 19:39:14.0±17.0, 40°.27N×73°.45E, h0km, mb3.6, Error ellipse: s-maj=103.3km s-min=49.3km az=163.0*
ISC 05 19:39:05.9±2.2, 39°.6N±0°.1×73°.11E±0°.06, h33km, n20, σ1°80/29, 26C-8D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**1.81**	**284**	⇑*i*P	**Pn**	**19 39 34.9**	**0.0**
	baz=289						
BTK				⇑*i*S	**Sn**	**19 39 57.9**	**+1.0**
	baz=289						
BTK	**Batken**	**1.81**	**284**	⇑*i*S	**Sn**	**19 39 58.1**	**+1.2**
	baz=289						
ARLS	**Aral**	**2.40**	**22**	⇑*i*P	**Pn**	**19 39 43.6**	**+0.6**
	baz=19						
ARLS				⇑*i*S	**Sn**	**19 40 12.6**	**+1.3**
	baz=19						
AML	**Almayashu**	**2.52**	**10**	⇑*i*P	**Pn**	**19 39 45.5**	**+0.5**
	baz=8.0						
AML				⇑*i*S	**Sn**	**19 40 16.7**	**+1.9**
	baz=8.0						
UCH	**Uchtor**	**2.79**	**22**	⇑*i*P	**Pn**	**19 39 49.3**	**+0.6**
	baz=19						
UCH				⇑*i*S	**Sn**	**19 40 22.4**	**+1.0**
	baz=19						
MNAS	**Manas**	**2.88**	**351**	⇓*i*P	**Pn**	**19 39 51.0**	**+1.4**
	baz=350						
MNAS				⇓*i*S	**Sn**	**19 40 25.5**	**+2.4**
	baz=350						
MNAS	**Manas**	**2.88**	**351**	⇑Lg	Lg	19 40 29.1	
	54nm,0.6s						
KZA	**Kyzart**	**2.92**	**33**	⇑*i*P	**Pn**	**19 39 50.6**	**+0.2**
	baz=30						
KZA				⇑*i*S	**Sn**	**19 40 24.6**	**0.0**
	baz=30						
EKS2	**Erkin-Say**	**3.06**	**9**	⇓*i*P	**Pn**	**19 39 52.6**	**+0.6**
	baz=8.0						
EKS2				⇓*i*S	**Sn**	**19 40 28.8**	**+1.3**
	baz=8.0						
AAK	**Ala-Archa**	**3.17**	**19**	⇑*i*P	**Pn**	**19 39 53.7**	**+0.1**
	baz=17						
AAK				⇑*i*S	**Sn**	**19 40 31.0**	**+0.7**
	baz=17						
AAK	**Ala-Archa**	**3.17**	**19**	⇓Lg	Lg	19 40 34.3	
	29nm,0.6s						
KBK	**Karagaybulak**	**3.31**	**24**	⇓*i*P	**Pn**	**19 39 56.0**	**+0.4**
	baz=22						
KBK				⇓*i*S	**Sn**	**19 40 34.8**	**+0.9**
	baz=22						
ULHL	**Ulahol**	**3.52**	**41**	⇑*i*P	**Pn**	**19 39 58.0**	**-0.4**
	baz=39						
ULHL				⇑*i*S	**Sn**	**19 40 38.0**	**-1.0**
	baz=39						
CHMS	**Chumysh**	**3.57**	**20**	⇑*i*P	**Pn**	**19 39 59.6**	**+0.6**
	baz=18						
CHMS				⇑*i*S	**Sn**	**19 40 40.6**	**+0.5**
	baz=18						
USP	**Ospenovka**	**3.77**	**16**	⇑*i*P	**Pn**	**19 40 02.3**	**+0.6**
	baz=14						
USP				⇑*i*S	**Sn**	**19 40 45.3**	**+0.4**
	baz=14						
TKM2	**Tokmak 2**	**3.77**	**29**	⇑*i*P	**Pn**	**19 40 02.3**	**+0.4**
	baz=27						
TKM2				⇑*i*S	**Sn**	**19 40 45.2**	**-0.1**
	baz=27						
TKM2	**Tokmak 2**	**3.77**	**29**	⇑Lg	Lg	19 40 54.4	
	13nm,0.6s						
KK31	**Karatay Array**	**3.97**	**331**	⇑Lg	Lg	19 41 07.1	
	7.3nm,0.4s,baz=134,slow=28						
KNDC	**Almaty**	**4.60**	**38**	⇑Lg	Lg	19 41 22.8	
	62nm,0.8s						
AB31	**Akbulak array**	**13.43**	**320**	⇑Pn	**Pn**	**19 42 16.1**	**+2.0**
	0.7nm,0.7s,baz=132,slow=13						
AB31				⇓Sn	**Sn**	**19 44 34.5**	**-7.5**
	1.9nm,0.7s,baz=136,slow=21						

*ISCJB **05** 19:54:43.4±1.5, 38°.53N±0°.06×142°.1E±0°.1, h33km±7km, mb3.5/4, Error ellipse: s-maj=14.0km s-min=8.4km az=20.1*
*JMA **05** 19:54:45.4±0.1, 38°.56N×141°.95E, h37km±1km, M3.7*
JMA Felt I J1.
*IDC **05** 19:54:47.4±2.0, 39°.05N×140°.98E, h0km, mb3.6/4, mb1 3.6/5, mb1mx3.3/41, mbtmp3.5/5, ML2.6/1, Error ellipse: s-maj=48.8km s-min=25.5km az=87.0*
ISC 05 19:54:44.3±2.1, 38°.53N±0°.06×142°.0E±0°.1, h30km±11km, n20, σ0°76/19, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.50**	**262**	P	**Pn**	**19 54 55.5**	**+0.1**
JIO				S	**Sb**	**19 55 02.5**	**+0.7**
OFUJ	**Ofunato**	**0.60**	**337**	P	**Pb**	**19 54 56.8**	**+0.4**
OFUJ				S	**Sb**	**19 55 04.7**	**0.0**
JMK	**Ichinoseki**	**0.73**	**306**	P	**Pb**	**19 54 58.7**	**+0.2**
JMK				S	**Sn**	**19 55 08.2**	**-0.5**
JOU	**Okura**	**1.04**	**261**	P	**Pb**	**19 55 03.7**	**-0.1**
JOU				S	**Sn**	**19 55 17.3**	**+0.8**
JOM	**Ohasama**	**1.08**	**331**	P	**Pb**	**19 55 03.9**	**-0.6**
JOM				S	**Sn**	**19 55 17.5**	**0.0**
JMM	**Marumori**	**1.14**	**235**	P	**Pb**	**19 55 04.4**	**-1.1**
JYK	**Kaneyama**	**1.32**	**288**	P	**Pb**	**19 55 07.5**	**-1.0**
JRG	**Rokugo**	**1.36**	**310**	P	**Pb**	**19 55 08.0**	**-1.1**
MJAR	**Matsushiro Arr**	**3.59**	**238**	Pn	**Pn**	**19 55 39.2**	**+1.2**
	0.6nm,0.3s,baz=36,slow=13,SNR=5.2						
MJAR				Sn	**Sb**	**19 56 29.3**	**-1.0**
	0.5nm,0.3s,baz=276,slow=29,SNR=5.5						
ASAJ	**Asahikawa**	**5.60**	**5**	Pn	**Pn**	**19 56 05.4**	**-0.1**
	baz=270,slow=20						
H11N2	**WAKE ISLAND Hy**	**28.57**	**124**	T	T	20 30 54.2	
	baz=320						
H11N1	**WAKE ISLAND Hy**	**28.58**	**124**	T	T	20 30 54.2	
	baz=320						
H11N3	**WAKE ISLAND Hy**	**28.59**	**124**	T	T	20 30 57.7	
	baz=320						
H11S1	**WAKE ISLAND Hy**	**29.33**	**126**	T	T	20 31 49.1	
	baz=318						
H11S3	**WAKE ISLAND Hy**	**29.34**	**126**	T	T	20 31 50.0	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**29.35**	**126**	T	T	20 31 51.2	
	baz=318						
ZALV	**Zalesovo Beam**	**41.25**	**311**	P	**P**	**20 02 26.6**	**+0.2**
	0.3nm,0.3s,baz=69,slow=8.1,SNR=3.8						
MKAR	**Makanchi Array**	**43.72**	**301**	P	**P**	**20 02 47.3**	**+0.7**
	0.2nm,0.5s,baz=82,slow=10,SNR=4.8						
KURBB	**Kurchatov Arra**	**45.45**	**307**	P	**P**	**20 02 59.8**	**-0.5**
	1.2nm,0.5s,baz=82,slow=8.0,SNR=9.1						
WRA	**Warramunga Arr**	**58.60**	**188**	P	P	20 04 49.1	+11
	0.3nm,0.5s,baz=4.2,slow=7.1,SNR=4.1						

*JMA **05** 20:02:19.3±0.3, 22°.16N×121°.68E, h3km, M3.2*
*TAP **05** 20:02:19.3, 22°.00N×121°.44E, h8km, ML3.2, C*
ISC 05 20:02:19.0±1.1, 22°.05N±0°.04×121°.61E±0°.04, h14km±7km, n42, σ1°21/69, 1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.05**	**263**	⇓*i*P	**Pg**	**20 02 22.5**	**+0.9**
	baz=68						
TSEB	**Hengchuen, Pin**	**0.67**	**258**	*i* P	**Pg**	**20 02 32.0**	**-0.1**
	baz=282						
TSEB				S	**Sb**	**20 02 41.4**	**-0.3**
	baz=282						
TWK1	**Hengchun**	**0.75**	**262**	P	**Pg**	**20 02 32.2**	**-1.4**
	baz=285						
TWK1				S	**Sg**	**20 02 41.7**	**-1.7**
	baz=285						
EAST	**Anshuo**	**0.78**	**296**	*e*P	**Pg**	**20 02 33.0**	**-1.1**
	baz=308						
EAST				*e*S	**Sg**	**20 02 43.1**	**-1.3**
	baz=308						
HEN	**Hengchun**	**0.81**	**267**	P	**Pg**	**20 02 33.5**	**-1.1**
	baz=288						
HEN				S	**Sg**	**20 02 43.6**	**-1.7**
	baz=288						
ECL	**Taimali**	**0.82**	**312**	*e*P	**Pg**	**20 02 34.1**	**-0.8**
	baz=325						
TTN	**Taitung**	**0.82**	**329**	*e*P	**Pn**	**20 02 36.0**	**-0.1**
	baz=354						
TTN				S	**Sn**	**20 02 47.6**	**-0.6**
	baz=354						
TWG	**Pinlang**	**0.92**	**327**	*e*P	**Pb**	**20 02 37.2**	**+0.5**
	baz=323						
SCZT	**Fangliau**	**0.97**	**290**	*e*P	**Pg**	**20 02 36.8**	**-1.0**
	baz=311						
CHKT	**Chengkung**	**1.07**	**348**	*e*P	**Pg**	**20 02 38.8**	**-0.9**
	baz=12						
CHKT				*e*S	**Sb**	**20 02 53.1**	**-0.1**
	baz=12						
ELDTW	**Lidau**	**1.26**	**335**	*e*P	**Pg**	**20 02 42.3**	**-1.0**
	baz=346						
TWF1	**Yuli**	**1.33**	**348**	*e*P	**Pn**	**20 02 43.3**	**+0.1**
	baz=9.0						
TWM1	**Shoushan**	**1.34**	**305**	*e*P	**Pg**	**20 02 45.5**	**+0.7**
	baz=329						
STYT	**Tauyuan**	**1.36**	**325**	*e*P	**Pb**	**20 02 44.3**	**0.0**
	baz=344						
STYT				*e*S	**Sn**	**20 03 03.6**	**+2.0**
	baz=344						
SGST	**Jiashian**	**1.40**	**318**	*e*P	**Pg**	**20 02 45.4**	**-0.6**
	baz=343						
SGST				*e*S	**Sn**	**20 03 04.8**	**+2.4**
	baz=343						
EHY	**Hungye**	**1.48**	**350**	*e*P	**Pn**	**20 02 45.9**	**+0.7**
	baz=8.0						
WTP	**Ta-pu**	**1.51**	**323**	*e*P	**Pg**	**20 02 47.5**	**-0.5**
	baz=348						
WTP				*e*S	**Sg**	**20 03 07.6**	**0.0**
	baz=348						
CHN1	**Nanshi**	**1.51**	**319**	*e*P	**Pg**	**20 02 47.5**	**-0.5**
	baz=331						
CHN1				*e*S	**Sg**	**20 03 08.0**	**+0.3**
	baz=331						
YUS	**Yu-Shan**	**1.56**	**337**	*e*P	**Pg**	**20 02 48.4**	**-0.6**
	baz=347						
TWK	**Hsinying**	**1.60**	**320**	*e*P	**Pg**	**20 02 48.9**	**-0.8**
	baz=332						
TWK				*e*S	**Sg**	**20 03 09.2**	**-1.3**
	baz=332						
CHN4	**Tsaushan**	**1.60**	**324**	*e*P	**Pg**	**20 02 48.9**	**-0.9**
	baz=349						
CHN4				*e*S	**Sg**	**20 03 10.7**	**+0.1**
	baz=349						
ALS	**Alishan**	**1.64**	**333**	*e*P	**Pg**	**20 02 49.8**	**-0.7**
	baz=344						
ALS				*e*S	**Sg**	**20 03 12.6**	**+0.8**
	baz=344						
CHN5	**Tsauling**	**1.77**	**331**	*e*P	**Pg**	**20 02 51.8**	**-1.1**
	baz=342						
CHN5				*e*S	**Sg**	**20 03 15.4**	**-0.5**
	baz=342						
ESL	**Shilin**	**1.77**	**355**	*e*P	**Pn**	**20 02 49.1**	**-0.1**
	baz=14						
ESL				*e*S	**Sb**	**20 03 13.0**	**-0.2**
	baz=14						
WGK	**Gukeng**	**1.90**	**330**	*e*P	**Pb**	**20 02 53.0**	**-0.3**
	baz=342						
WGK				*e*S	**Sb**	**20 03 17.6**	**+0.7**
	baz=342						
SMLT	**Sun Moon Lake**	**1.94**	**341**	*e*P	**Pb**	**20 02 54.2**	**0.0**
	baz=352						
SMLT				*e*S	**Sg**	**20 03 19.7**	**-1.8**
	baz=352						
TYC	**Yuchr**	**1.98**	**340**	*e*P	**Pb**	**20 02 55.0**	**+0.2**
	baz=352						
TYC				*e*S	**Sg**	**20 03 20.8**	**-1.8**
	baz=352						
WNT	**Mingjian**	**2.01**	**335**	*e*P	**Pb**	**20 02 55.2**	**-0.1**
	baz=346						
TWT	**Tachien**	**2.23**	**350**	*e*P	**Pb**	**20 03 00.1**	**+0.8**
	baz=11						
TWT				*e*S	**Sb**	**20 03 26.0**	**-0.8**
	baz=11						
ENA	**Nanau**	**2.38**	**3**	*e*P	**Pb**	**20 03 01.2**	**-0.3**
	baz=11						
NNS	**Nan Shan**	**2.39**	**355**	*e*P	**Pb**	**20 03 01.6**	**-0.3**
	baz=12						
TWQ1	**Liyutan**	**2.42**	**342**	*e*P	**Pn**	**20 03 00.6**	**+2.4**
	baz=354						
TWQ1				*e*S	**Sb**	**20 03 31.6**	**-0.4**
	baz=354						
ENTT	**Nioudou**	**2.58**	**359**	*e*P	**Pn**	**20 03 02.8**	**+2.4**
	baz=9.0						
ENTT				*e*S	**Sb**	**20 03 35.0**	**-1.7**
	baz=9.0						
NSK	**Sanguang**	**2.63**	**355**	*e*P	**Pn**	**20 03 04.0**	**+2.9**
	baz=5.0						
NSK				*e*S	**Sn**	**20 03 35.6**	**+2.8**
	baz=5.0						
NSTT	**Nanjuang**	**2.63**	**348**	*e*P	**Pb**	**20 03 04.3**	**-1.7**
	baz=344						
NSTT				*e*S	**Sb**	**20 03 36.6**	**-1.6**
	baz=344						
TWE	**Neicheng**	**2.67**	**1**	*e*P	**Pn**	**20 03 04.4**	**+2.9**
	baz=358						
HATJ	**Hateruma jima**	**2.85**	**45**	*e*S	**Sn**	**20 03 38.3**	**+0.2**
IRIF	**Iriomote-Funau**	**3.00**	**40**	P	**Pn**	**20 03 07.5**	**+1.4**
JKRS	**Kuro-shima**	**3.11**	**45**	P	**Pn**	**20 03 08.8**	**+1.2**
JKRS				*e*S	**Sn**	**20 03 44.2**	**-0.3**
JIJ	**Ishigaki jima**	**3.28**	**45**	P	**Pn**	**20 03 10.7**	**+0.7**
JIJ				S	**Sn**	**20 03 48.3**	**-0.5**
JISG	**Ishigakijimahi**	**3.55**	**44**	P	**Pn**	**20 03 14.7**	**+1.1**
JISG				*e*S	**Sn**	**20 03 55.4**	**0.0**
JTJ	**Tarama**	**3.84**	**47**	P	**Pn**	**20 03 18.9**	**+1.2**
JTJ				S	**Sn**	**20 04 02.7**	**0.0**

*GUC **05** 20:13:41.1±0.5, 31°.41S×71°.66W, h65km±31km, ML3.5*
ISC 05 20:13:34.4±2.2, 31°.35S±0°.04×72°.1W±0°.1, h24km±24km, n15, σ1°91/20, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLL	**Tololo Astrono**	**1.61**	**43**	*i* P	**Pb**	**20 14 05.9**	**+2.3**
TLL				*i* S	**Sb**	**20 14 25.2**	**+1.6**
TLL				IAML		20 14 34.9	
	comp=E,1μm,0.3s						
ROCH	**El Roble**	**1.86**	**151**	*i* P	**Pb**	**20 14 08.8**	**+1.0**
ROCH				*e*S	**Sb**	**20 14 28.6**	**-2.1**
ROC1	**El Roble**	**1.86**	**151**	*e*P	**Pb**	**20 14 09.1**	**+1.2**
ROC1				*e*S	**Sb**	**20 14 34.4**	**+3.6**
PEL	**Peldehue**	**2.15**	**147**	*i* P	**Pb**	**20 14 12.5**	**-0.2**
PEL				*i* S	**Sb**	**20 14 35.6**	**-3.3**
PEL				IAML		20 14 43.9	
	comp=E,654nm,0.3s						
RTLS	**Leoncito**	**2.42**	**101**	*e*P	**Pb**	**20 14 18.9**	**+1.4**
AUSP	**Uspallata**	**2.46**	**112**	*e*P	**Pb**	**20 14 19.4**	**+1.3**
FCH	**Farellones**	**2.49**	**143**	*i* P	**Pb**	**20 14 17.2**	**-1.5**
FCH				*i* S	**Sn**	**20 14 44.3**	**+0.8**
FCH				IAML		20 14 51.5	
	comp=E,444nm,0.2s						
LCO	**Las Campanas**	**2.62**	**28**	*i* P	**Pb**	**20 14 20.9**	**+0.1**
LCO				*i* S	**Sb**	**20 14 51.3**	**-1.3**
LCO				IAML		20 14 59.7	
	comp=E,243nm,0.7s						
ASAL	**Salagasta**	**3.03**	**115**	*e*P	**Pb**	**20 14 28.5**	**+0.9**
ARCO	**CERRO ARCO**	**3.06**	**120**	IAML		20 15 14.0	
	comp=Z,104nm,0.4s						
RTCV	**Cerro Valdivia**	**3.07**	**101**	*e*P	**Pb**	**20 14 28.6**	**+0.3**
RTLL	**Cerro Villicun**	**3.09**	**91**	*e*P	**Pb**	**20 14 27.8**	**-0.9**
AMOG	**MOGNA**	**3.10**	**83**	*e*P	**Pb**	**20 14 28.7**	**-0.2**
AAGR	**Agrelo**	**3.26**	**123**	*e*P	**Pb**	**20 14 31.2**	**-0.4**
VCA	**Vinchina**	**4.25**	**53**	*e*P	**Pb**	**20 14 45.5**	**-3.0**
VCA				IAML		20 15 48.5	
	comp=Z,150nm,0.4s						

*ISCJB **05** 20:15:54.1±1.2, 37°.13N±0°.05×142°.7E±0°.1, h9km, mb3.5/3, Error ellipse: s-maj=12.9km s-min=7.6km az=178.2*
*JMA **05** 20:15:55.3±0.4, 37°.11N×142°.44E,

JYS	**Shirataka**	**2.22 299**	P		**Pn**	**20 16 34.0**	**+0.5**
JFY	**Yanaizu**	**2.26 277**	P		**Pn**	**20 16 34.3**	**+0.2**
JYK	**Kaneyama**	**2.45 316**	P		**Pn**	**20 16 36.9**	**+0.2**
JOM	**Ohasama**	**2.51 338**	S		**Sn**	**20 17 09.0**	**+0.9**
MJAR	**Matsushiro Arr**	**3.52 261**	Pn		**Pn**	**20 16 51.2**	**-0.2**
	3.6nm,0.3s,baz=88,slow=15,SNR=14						
MJAR			Sn		**Sb**	**20 17 40.4**	**-1.4**
	1.3nm,0.3s,baz=16,slow=40,SNR=1.5						
MAT	**Matsushiro**	**3.52 261**	P		**Pn**	**20 16 53.0**	**+1.6**
MAT			S		**Sn**	**20 17 36.5**	**+3.4**
MKAR	**Makanchi Array**	**44.81 302**	P		**P**	**20 24 11.0**	**+0.4**
	0.1nm,0.3s,baz=81,slow=8.9,SNR=1.3						
KURBB	**Kurchatov Arra**	**46.63 308**	P		**P**	**20 24 26.6**	**+1.7**
	0.6nm,0.6s,baz=81,slow=8.1,SNR=7.5						
WRA	**Warramunga Arr**	**57.31 189**	P		**P**	**20 25 43.7**	**-1.1**
	0.6nm,0.9s,baz=6.2,slow=6.8,SNR=10						

*ISCJB **05** 20:17:01.1±0.3,21°.80S±0°.04×68°.45W±0°.05, h124km±3km, mb4.3/18, Error ellipse: s-maj=8.0km s-min=5.1km az=151.5*
*NEIC **05** 20:17:01.3±0.6,21°.80S×68°.28W, h114km±5km, mb4.3/15, Error ellipse: s-maj=11.8km s-min=8.3km az=93.0*
*IDC **05** 20:17:01.3±1.1,21°.81S×68°.27W, h107km±11km, mb4.0/4, mb1 4.1/5, mb1mx3.8/26, mbtmp4.4/5, Error ellipse: s-maj=28.2km s-min=23.3km az=128.0*
*GUC **05** 20:17:02.9±0.5,21°.86S×68°.58W, h116km±4km, ML4.0*
*SJA **05** 20:17:26.3±0.9,22°.81S×66°.59W, h126km±16km, ML2.7, MW3.0*

ISC 05 20:17:02.0±0.7,**21°.86S**±0°.04×**68°.52W**±0°.05,**h123**km±6km, **n62**,σ1♀**42**/77,**mb4.2**/18,**6C, Chile-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB09	**IPOC Station P**	**0.68 275**	⇑	*i*P	**Pn**	**20 17 22.1**	**+0.4**
PB09				*i*S	**Sn**	**20 17 36.5**	**-0.1**
PB09				IAML		20 17 38.1	
	comp=N,10μm,0.3s						
LVC	**Limon Verde**	**0.83 206**		P	**Pn**	**20 17 23.4**	**+0.2**
	comp=N,6μm,0.3s,baz=342,slow=6.6,SNR=662						
LVC				S	**Sn**	**20 17 38.8**	**-0.4**
	comp=N,16μm,0.3s,baz=224,slow=20,SNR=23						
LVC	**Limon Verde**	**0.83 206**		*i*P	**Pn**	**20 17 23.9**	**+0.6**
LVC				*i*S	**Sn**	**20 17 39.1**	**-0.1**
LVC	**Limon Verde**	**0.83 206**		*e*Pn	**Pn**	**20 17 23.4**	**+0.2**
LVC				*e*Sn	**Sn**	**20 17 37.7**	**-1.6**
LVC				*e*Sn	Sn	20 17 38.8	-0.4
PB01	**IPOC Station P**	**1.22 312**		*i*P	**Pn**	**20 17 27.0**	**+0.3**
PB01				*i*S	**Sn**	**20 17 45.4**	**+0.1**
PB01				IAML		20 17 48.0	
	comp=N,3μm,0.3s						
PB01	**IPOC Station P**	**1.22 312**		*e*Pn	**Pn**	**20 17 26.9**	**+0.3**
PB01				*e*Sn	**Sn**	**20 17 46.0**	**+0.8**
PB07	**IPOC Station P**	**1.28 276**		*i*P	**Pn**	**20 17 27.9**	**+0.5**
PB07				*i*S	**Sn**	**20 17 46.6**	**0.0**
PB07				IAML		20 17 48.5	
	comp=E,4μm,0.5s						
PB06	**IPOC Station P**	**1.29 229**	⇑	*i*P	**Pn**	**20 17 28.1**	**+0.6**
PB06				*i*S	**Sn**	**20 17 47.0**	**+0.1**
PB06				IAML		20 17 48.4	
	comp=N,5μm,0.4s						
PB04	**IPOC Station P**	**1.59 252**	⇑	*i*P	**Pn**	**20 17 31.1**	**+0.3**
PB04				*i*S	**Sn**	**20 17 52.9**	**+0.1**
PB04				IAML		20 17 54.7	
	comp=E,2μm,0.3s						
PB04	**IPOC Station P**	**1.59 252**		*e*Pn	**Pn**	**20 17 31.2**	**+0.3**
PB04				*e*Sn	**Sn**	**20 17 53.5**	**+0.7**
PB08	**IPOC Station P**	**1.81 341**	⇑	*i*P	**Pn**	**20 17 35.0**	**+1.3**
PB08				*i*S	**Sn**	**20 17 59.1**	**+1.3**
PB08				IAML		20 18 02.1	
	comp=E,829nm,0.5s						
HMBC	**Humberstone**	**2.03 321**	⇑	*i*P	**Pn**	**20 17 36.0**	**-0.2**
HMBC				*i*S	**Sn**	**20 18 01.2**	**-1.0**
HMBC				IAML		20 18 04.0	
	comp=E,2μm,0.3s						
PB11	**IPOC Station P**	**2.34 333**	⇑	*i*P	**Pn**	**20 17 40.1**	**0.0**
PB11				*i*S	**Sn**	**20 18 09.1**	**-0.2**
PB11	**IPOC Station P**	**2.34 333**		*e*Pn	**Pn**	**20 17 40.1**	**0.0**
PB11				*e*Sn	**Sn**	**20 18 08.1**	**-1.2**
PB10	**IPOC Station P**	**2.50 228**		*i*P	**Pn**	**20 17 42.0**	**0.0**
PB10				*e*S	**Sn**	**20 18 07.0**	**-5.6**
PB10				IAML		20 18 24.4	
	comp=N,1μm,0.6s						
PB10	**IPOC Station P**	**2.50 228**		*e*Pn	**Pn**	**20 17 42.2**	**+0.3**
PB10				*e*Sn	**Sn**	**20 18 10.7**	**-2.0**
PSGC	**Pisagua**	**2.71 326**		*e*P	**Pn**	**20 17 43.6**	**-1.1**
PSGC				*e*S	**Sn**	**20 18 15.7**	**-1.8**
PSGC				IAML		20 18 17.4	
	comp=N,380nm,0.4s						
HJA	**Humahuaca**	**3.17 116**		*e*P	**Pn**	**20 17 52.2**	**+1.2**
HJA				IAML		20 17 53.9	
	comp=Z,148nm,0.4s						
HJA				*e*S	Sn	20 18 11.3	-17
AZAP	**Zapla**	**3.96 127**		*e*P	**Pn**	**20 18 02.0**	**+0.8**
AZAP				IAML		20 18 03.0	
	comp=Z,36nm,0.3s						
SLA	**San Lorenzo**	**3.97 136**		*e*P	**Pn**	**20 18 02.9**	**+1.5**
SLA				IAML		20 18 03.5	
	comp=Z,34nm,0.3s						
ASTB	**Santa Barbara**	**4.29 120**		*e*P	**Pn**	**20 18 05.1**	**-0.5**
ALOL	**LOMAS DE OLMED**	**4.61 116**		*e*P	**Pn**	**20 18 08.3**	**-1.6**
LPAZ	**La Paz**	**5.55 4**		P	**Pn**	**20 18 25.7**	**+2.6**
	comp=Z,1.0nm,0.3s,baz=158,slow=5.6,SNR=12						
LPAZ				S	Sn	20 19 15.2	-11
	comp=Z,0.2nm,0.3s,baz=191,slow=7.3,SNR=2.6						
LPAZ	**La Paz**	**5.55 4**		*e*Pn	**Pn**	**20 18 23.5**	**+0.5**
LPAZ				*e*Sn	Sn	20 19 16.1	-10
SIV	**San Ignacio**	**9.14 52**		P	**Pn**	**20 19 07.3**	**-3.7**
	comp=Z,7.7nm,0.3s,baz=244,slow=12,SNR=48						
SIV				S	Sn	20 20 41.7	-11
	baz=305,slow=22,SNR=1.3						
CPUP	**Villa Florida**	**11.14 116**		P	Pn	20 19 28.4	-9.4
	baz=214,slow=16,SNR=2.8						
CPUP	**Villa Florida**	**11.14 116**		*e*Pn	Pn	20 19 28.2	-10
SAML	**Samuel**	**13.82 23**		*e*Pn	**Pn**	**20 20 10.2**	**-2.7**
TRQA	**Tornquist**	**17.10 162**		*e*P	**P**	**20 20 52.2**	**-1.0**
	comp=Z,69nm,1.9s						
RUSC	**La Rusia**	**27.94 350**		*e*P	**P**	**20 22 40.2**	**-1.3**
	comp=Z,10nm,0.8s						
FDF	**Fort de France**	**37.08 12**		*e*P	**P**	**20 23 57.5**	**-3.0**
	comp=Z,80nm,1.2s						
CELP	**Cerrillos**	**39.73 3**		*e*P	**P**	**20 24 20.6**	**-2.1**
LTX	**Lajitas**	**61.13 325**		*e*P	**P**	**20 27 05.1**	**+1.6**
TXAR	**Lajitas Array**	**61.13 325**		P	**P**	**20 27 05.1**	**+1.6**
	comp=Z,0.1nm,0.4s,baz=155,slow=5.0,SNR=2.1						
WMOK	**Wichita Mounta**	**63.20 332**		*e*P	**P**	**20 27 16.2**	**-0.9**
	comp=Z,12nm,2.0s						
TRQ	**Mont Tremblant**	**67.98 355**		*e*P	**P**	**20 27 48.2**	**+0.6**
QSPA	**South Pole Qui**	**68.34 180**		*e*P	**P**	**20 27 51.3**	**+1.5**
DBIC	**Dimbokro**	**68.49 73**		P	**P**	**20 27 50.9**	**-0.6**
	comp=Z,2.4nm,0.5s,baz=232,slow=6.1,SNR=2.9						
DBIC	**Dimbokro**	**68.49 73**		*e*P	**P**	**20 27 50.8**	**-0.6**
	comp=Z,26nm,1.4s						
X16A	**Lo Mia Camp, P**	**69.26 323**		*e*P	**P**	**20 27 55.6**	**-0.5**
	comp=Z,1.8nm,0.9s						
S22A	**4UR Ranch, Cre**	**69.38 328**		*e*P	**P**	**20 27 54.6**	**-2.2**
	comp=Z,4.9nm,1.4s						
WUAZ	**Wupatki**	**70.03 324**		*e*P	**P**	**20 28 00.7**	**-0.1**
	comp=Z,3.6nm,0.8s						
PV01	**Paradox Valley**	**70.54 327**		*e*P	**P**	**20 28 05.7**	**+1.8**
KNB	**Kanab**	**71.93 324**		*e*P	**P**	**20 28 14.8**	**+2.6**
	comp=Z,4.1nm,1.0s						
P18A	**Preston Nutter**	**72.53 327**		*e*P	**P**	**20 28 16.7**	**+0.9**
	comp=Z,7.6nm,0.8s						
CCUT	**Cedar City**	**72.61 324**		*e*P	**P**	**20 28 18.1**	**+1.8**
	comp=Z,3.3nm,0.9s						
P17A	**Butcher Ranch,**	**72.66 327**		*e*P	**P**	**20 28 16.4**	**0.0**
	comp=Z,3.6nm,0.6s						
MSU	**Marysvale**	**72.68 325**		*e*P	**P**	**20 28 18.4**	**+1.7**
DAC	**Darwin (Calif)**	**74.12 321**		*e*P	**P**	**20 28 27.1**	**+1.9**
	comp=Z,13nm,2.0s						
DUG	**Dugway, Tooele**	**74.26 326**		*e*P	**P**	**20 28 26.5**	**+0.7**
	comp=Z,3.7nm,1.4s						
HWUT	**Hardware Ranch**	**74.68 328**		*e*P	**P**	**20 28 29.0**	**+0.8**
	comp=Z,5.6nm,0.4s						
BOSA	**Boshof**	**82.96 118**		P	**P**	**20 29 14.3**	**+0.4**
	comp=Z,4.1nm,1.1s,baz=35,slow=18,SNR=1.8						
MAW	**Mawson**	**83.88 163**		P	**P**	**20 29 18.8**	**+1.1**
	comp=Z,1.3nm,0.5s,baz=18,slow=4.7,SNR=2.2						
MAW	**Mawson**	**83.88 163**		*e*P	**P**	**20 29 18.0**	**+0.4**
	comp=Z,2.2nm,1.4s						
YKA	**Yellowknife Ar**	**91.64 340**		P	**P**	**20 29 55.8**	**+1.1**
	comp=Z,1.2nm,0.8s,baz=138,slow=5.0,SNR=7.4						
YKB5	**Yellowknife Ar**	**91.64 340**		*e*P	**P**	**20 29 55.2**	**+0.5**
ASAR	**Alice Springs**	**129.76 207**		PKP	**PKPdf**	**20 35 58.6**	**+1.0**
	comp=Z,0.6nm,0.8s,baz=115,slow=1.7,SNR=4.5						
WRA	**Warramunga Arr**	**132.83 210**		PKP	**PKPdf**	**20 36 04.4**	**+1.0**
	comp=Z,0.7nm,0.6s,baz=164,slow=2.0,SNR=4.1						
KURK	**Kurchatov**	**141.42 34**		PKP	**PKPdf**	**20 36 19.6**	**+1.3**
KURBB	**Kurchatov Arra**	**141.43 34**		PKP	**PKPdf**	**20 36 19.6**	**+1.3**
	comp=Z,0.2nm,0.5s,baz=299,slow=2.6,SNR=3.5						
ZALV	**Zalesovo Beam**	**142.12 26**		PKP	**PKPdf**	**20 36 20.1**	**+0.7**
	comp=Z,0.9nm,0.6s,baz=247,slow=3.1,SNR=3.9						
MKAR	**Makanchi Array**	**145.70 36**		PKPbc	**PKPdf**	**20 36 26.1**	**+0.2**
	comp=Z,0.4nm,0.6s,baz=282,slow=3.4,SNR=3.2						

*ISCJB **05** 20:21:35.7±0.9,40°.81S±0°.03×177°.09E±0°.07, h26km±5km, Error ellipse: s-maj=9.3km s-min=3.6km az=23.8*
*WEL **05** 20:21:38.5±0.3,40°.70S×176°.93E, h25km±2km, ML4.0/53, Error ellipse: s-maj=2.0km s-min=1.2km az=90.0*
WEL Felt from Hawke''s Bay to Wellington, maximum reported intensity MM 4.
*NEIC **05** 20:21:40.0,40°.64S×176°.88E, h44km, ML4.0(WEL), After WEL.*

ISC 05 20:21:33.9±1.5,**40°.75S**±0°.03×**177°.09E**±0°.04,**h7**km±9km, **n109**,σ1♀**35**/116,**7C-1D, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ANWZ	**Angora Road**	**0.55 302**	⇓	P*	**Pb**	**20 21 47.3**	**+1.3**
ANWZ				S*	**Sb**	**20 21 54.2**	**+0.2**
PRHZ	**Porangahau**	**0.60 324**		P*	**Pn**	**20 21 48.3**	**-0.5**
PRHZ				S*	**Sb**	**20 21 55.6**	**+0.3**
PRHZ	**Porangahau**	**0.60 324**	⇑	P*	**Pn**	**20 21 48.3**	**-0.5**
PRHZ				S*	**Sb**	**20 21 55.6**	**+0.3**
PRHZ				AML	AML	20 21 56.4	
BFZ	**Birch Farm**	**0.65 276**		*e*Pg	**Pn**	**20 21 49.7**	**+0.2**
BFZ	**Birch Farm**	**0.65 276**	⇑	P*	**Pn**	**20 21 49.7**	**+0.2**
BFZ				S*	**Sb**	**20 21 57.8**	**+1.0**
CPWZ	**Castlepoint**	**0.69 257**		P*	**Pn**	**20 21 51.8**	**+1.7**
CPWZ				S*	**Sn**	**20 22 02.1**	**+1.0**
CPWZ	**Castlepoint**	**0.69 257**		P*	**Pn**	**20 21 51.8**	**+1.7**
CPWZ				S*	**Sn**	**20 22 02.1**	**+1.0**
CPWZ				AML	AML	20 22 03.1	
PXZ	**Pawanui**	**0.74 346**		*e*Sg	**Sn**	**20 22 01.9**	**-0.3**
PXZ				*e*Sn	**Sb**	**20 22 07.4**	**+8.0**
PXZ	**Pawanui**	**0.74 346**	⇑	P*	**Pn**	**20 21 51.5**	**+0.8**
PXZ				AML	AML	20 22 01.9	
PXZ				AML	AML	20 22 04.7	
WPHZ	**Waipukurau**	**0.85 324**		P*	**Pn**	**20 21 52.4**	**+0.1**
WPHZ	**Waipukurau**	**0.85 324**	⇑	P*	**Pn**	**20 21 52.3**	**+0.1**
WPHZ				S*	**Sb**	**20 22 01.9**	**-0.7**
WPHZ				AML	AML	20 22 09.4	
PRWZ	**Pori Road**	**0.88 283**		P*	**Pn**	**20 21 53.1**	**+0.4**
PRWZ	**Pori Road**	**0.88 283**	⇑	P*	**Pn**	**20 21 53.0**	**+0.4**
TIWZ	**Tintock**	**0.92 268**		Pn	**Pn**	**20 21 53.9**	**+0.6**
TIWZ	**Tintock**	**0.92 268**		P*	**Pn**	**20 21 53.8**	**+0.6**
TIWZ				AML	AML	20 22 19.8	
TIWZ				AML	AML	20 22 20.8	
KAHZ	**Kahuranaki**	**0.97 350**	⇑	PN	**Pn**	**20 21 55.0**	**+1.1**
TMWZ	**Te Maipa**	**0.98 248**		Pn	**Pn**	**20 21 55.2**	**+1.1**
TMWZ	**Te Maipa**	**0.98 248**		P*	**Pn**	**20 21 55.2**	**+1.1**
TMWZ				AML	AML	20 22 22.6	
TMWZ				AML	AML	20 22 23.9	
POWZ	**Post Office Ro**	**1.07 289**		Pn	**Pn**	**20 21 55.7**	**+0.4**
POWZ	**Post Office Ro**	**1.07 289**		P*	**Pn**	**20 21 55.6**	**+0.8**
POWZ				AML	AML	20 22 13.8	
POWZ				AML	AML	20 22 14.5	
PNHZ	**Pukenui**	**1.08 320**		P*	**Pn**	**20 21 55.7**	**+0.2**
PNHZ				AML	AML	20 22 09.2	
PNHZ				AML	AML	20 22 10.1	
TSZ	**Takapari Road**	**1.11 308**		Pn	**Pb**	**20 21 55.7**	**+0.3**
TSZ	**Takapari Road**	**1.11 308**		P*	**Pn**	**20 21 55.9**	**0.0**
TSZ				S*	**Sg**	**20 22 08.5**	**-1.0**
TSZ				AML	AML	20 22 17.0	
MRZ	**Mangatainoka R**	**1.16 274**		*e*Pn	**Pb**	**20 21 56.8**	**+0.6**
MRZ	**Mangatainoka R**	**1.16 274**		P*	**Pb**	**20 21 56.8**	**+0.6**
MRZ				S*	**Sg**	**20 22 09.3**	**-1.7**
MRZ				AML	AML	20 22 25.6	
HOWZ	**Holdsworth Sta**	**1.21 263**		Pn	**Pg**	**20 21 57.7**	**+0.6**
HOWZ	**Holdsworth Sta**	**1.21 263**		P*	**Pg**	**20 21 57.7**	**+0.6**
HOWZ				AML	AML	20 22 27.2	
HOWZ				AML	AML	20 22 31.3	
KRHZ	**Kereru**	**1.24 333**		Pn	**Pn**	**20 21 58.0**	**+0.4**
KRHZ				AML	AML	20 22 25.3	
KRHZ				AML	AML	20 22 27.0	
TRWZ	**Traveller**	**1.24 238**		P*	**Pg**	**20 21 58.6**	**+0.8**
TRWZ				AML	AML	20 22 43.0	
TRWZ				AML	AML	20 22 54.3	
MTW	**Mount Morrison**	**1.27 251**		AML	AML	20 22 31.1	
MTW				AML	AML	20 22 39.4	
MCHZ	**McNeill Hill**	**1.34 347**		Pn	**Pn**	**20 22 00.3**	**+1.3**
MCHZ	**McNeill Hill**	**1.34 347**		PN	**Pn**	**20 22 00.3**	**+1.3**
MCHZ				SN	**Sn**	**20 22 16.4**	**-0.7**
MCHZ				AML	AML	20 22 27.4	
PAWZ	**Paruwai Farm**	**1.41 243**		AML	AML	20 22 50.7	
PAWZ				AML	AML	20 22 54.2	
KWHZ	**Kaweka Forest**	**1.42 339**		PN	**Pb**	**20 22 00.9**	**+0.1**
KWHZ				AML	AML	20 22 28.9	
KWHZ				AML	AML	20 22 36.7	
OGWZ	**Otaki Gorge**	**1.46 267**		P*	**Pn**	**20 22 32.7**	**+0.6**
OGWZ				AML	AML	20 22 27.2	
OGWZ				AML	AML	20 22 32.7	
OHWZ	**Ohakea**	**1.46 291**		P*	**Pg**	**20 22 02.0**	**+0.1**
BHHZ	**Black Hill Sta**	**1.49 328**		Pn	**Pb**	**20 22 01.8**	**-0.1**
BHHZ	**Black Hill Sta**	**1.49 328**		PN	**Pn**	**20 22 01.5**	**+0.4**
BHHZ				AML	AML	20 22 25.0	
BHHZ				AML	AML	20 22 33.8	
ARHZ	**Aropaoanui**	**1.49 357**		Pn	**Pg**	**20 22 02.5**	**0.0**
ARHZ	**Aropaoanui**	**1.49 357**		PN	**Pg**	**20 22 02.4**	**0.0**
ARHZ				AML	AML	20 22 21.8	
ARHZ				AML	AML	20 22 47.8	
MSWZ	**Moikau Station**	**1.54 244**		AML	AML	20 22 52.2	
MSWZ				AML	AML	20 22 52.5	
CAW	**Cannon Point**	**1.58 256**		PN	**Pn**	**20 22 03.3**	**+1.0**
PLWZ	**Palliser**	**1.61 239**		PN	**Pn**	**20 22 03.8**	**+1.0**
PLWZ				AML	AML	20 22 50.2	
PLWZ				AML	AML	20 22 53.6	
BKZ	**Black Stump Fm**	**1.65 344**		*e*Pn	**Pb**	**20 22 04.3**	**-0.3**
BKZ				*e*		20 22 42.7	
BKZ				*e*		20 22 45.6	
BKZ	**Black Stump Fm**	**1.65 344**	⇑	PN	**Pb**	**20 22 04.4**	**-0.3**
BKZ				AML	AML	20 22 42.7	
BKZ				AML	AML	20 22 45.6	
KIW	**Kapiti Island**	**1.66 266**		PN	**Pn**	**20 22 04.3**	**+0.9**
KIW				AML	AML	20 22 33.6	
KIW				AML	AML	20 22 38.0	
NMHZ	**Naumai**	**1.67 352**		Pn	**Pg**	**20 22 05.0**	**-0.9**
NMHZ	**Naumai**	**1.67 352**		PN	**Pg**	**20 22 05.0**	**-0.9**
NMHZ				AML	AML	20 22 41.5	
NMHZ				AML	AML	20 23 03.7	
WHHZ	**Waihua**	**1.68 4**		PN	**Pg**	**20 22 05.3**	**-0.7**
WHHZ				AML	AML	20 22 46.3	
WHHZ				AML	AML	20 22 58.8	
MOVZ	**Moawhango**	**1.69 322**		PN	**Pb**	**20 22 05.1**	**-0.3**
MOVZ				AML	AML	20 22 37.0	
MOVZ				AML	AML	20 22 42.2	
MHGZ	**Mahia Peninsul**	**1.71 22**		AML	AML	20 23 03.2	
MHGZ				AML	AML	20 23 18.5	
KNZ	**Kokohu**	**1.78 15**		*e*Pn	**Pb**	**20 22 06.5**	**-0.4**
KNZ				*e*		20 23 18.6	
KNZ				*e*		20 23 30.6	
KNZ	**Kokohu**	**1.78 15**		PN	**Pb**	**20 22 06.5**	**-0.4**
KNZ				AML	AML	20 23 18.6	
KNZ				AML	AML	20 23 30.6	
BHW	**Baring Head**	**1.80 248**		AML	AML	20 22 48.6	
BHW				AML	AML	20 22 50.3	
WNVZ	**Wahianoa**	**1.83 321**		*e*Pn	**Pb**	**20 22 07.5**	**-0.3**
WNVZ	**Wahianoa**	**1.83 321**		PN	**Pb**	**20 22 07.6**	**-0.2**
MTVZ	**Mangateitei**	**1.85 317**		AML	AML	20 22 45.6	
MTVZ				AML	AML	20 23 00.5	
WHVZ	**Whangaehu Hut**	**1.87 321**		Pn	**Pb**	**20 22 08.1**	**-0.4**
WHVZ	**Whangaehu Hut**	**1.87 321**		PN	**Pb**	**20 22 08.0**	**-0.4**
WHVZ				AML	AML	20 22 46.5	
WHVZ				AML	AML	20 22 47.5	
TRVZ	**Turoa**	**1.88 320**		PN	**Pb**	**20 22 08.4**	**-0.2**
TRVZ				AML	AML	20 22 42.8	
TRVZ				AML	AML	20 22 46.5	
SNZO	**South Karori**	**1.89 252**		*e*Pn	**Pn**	**20 22 06.8**	**+0.3**
WAZ	**Wanganui**	**1.90 301**		PN	**Pb**	**20 22 08.5**	**-0.3**
WAZ				AML	AML	20 22 40.4	
WAZ				AML	AML	20 22 41.9	
FWVZ	**Far West T-bar**	**1.91 321**		PN	**Pb**	**20 22 08.5**	**-0.7**
FWVZ				AML	AML	20 22 44.4	
FWVZ				AML	AML	20 22 49.1	
NGZ	**Ngauruhoe**	**1.95 323**		*e*Pn	**Pb**	**20 22 09.6**	**-0.2**
NGZ	**Ngauruhoe**	**1.95 323**		PN	**Pb**	**20 22 09.3**	**-0.5**
NGZ				AML	AML	20 22 51.8	
NGZ				AML	AML	20 22 58.2	
SNGZ	**Shannon Statio**	**1.98 6**		PN	**Pb**	**20 22 09.2**	**-1.0**
SNGZ				AML	AML	20 23 03.7	
SNGZ				AML	AML	20 23 16.9	
PKVZ	**Pokaka**	**1.98 317**		PN	**Pb**	**20 22 09.8**	**-0.6**
PKVZ				AML	AML	20 22 55.4	
PKVZ				AML	AML	20 22 57.0	
MRHZ	**Matea Rd**	**1.98 345**		PN	**Pb**	**20 22 09.4**	**-1.0**
MRHZ				AML	AML	20 22 53.9	
MRHZ				AML	AML	20 22 54.3	
KRVZ	**Karewarewa**	**2.00 326**		Pn	**Pb**	**20 22 10.6**	**0.0**
KRVZ	**Karewarewa**	**2.00 326**		PN	**Pb**	**20 22 10.6**	**0.0**
KRVZ				AML	AML	20 22 50.3	
KRVZ				AML	AML	20 22 58.8	
WTVZ	**West Tongariro**	**2.00 324**		PN	**Pb**	**20 22 10.3**	**-0.4**
WTVZ				AML	AML	20 22 48.1	
WTVZ				AML	AML	20 22 48.5	
TWVZ	**Taurewa**	**2.11 322**		*e*Pn	**Pb**	**20 22 11.3**	**-1.2**
TWVZ	**Taurewa**	**2.11 322**		PN	**Pb**	**20 22 11.2**	**-1.2**
TWVZ				AML	AML	20 22 47.3	
TWVZ				AML	AML	20 22 49.6	
RATZ	**Rangitukua**	**2.14 331**		PN	**Pb**	**20 22 12.2**	**-0.8**
RATZ				AML	AML	20 22 29.5	
RATZ				AML	AML	20 22 56.8	
TCW	**Tory Channel**	**2.18 257**		PN	**Pn**	**20 22 11.8**	**+0.5**
TCW				AML	AML	20 22 36.5	
TCW				AML	AML	20 22 37.7	
VRZ	**Vera Road**	**2.42 311**		PN	**Pn**	**20 22 16.0**	**+2.1**
VRZ				AML	AML	20 23 02.1	
VRZ				AML	AML	20 23 04.1	
CNGZ	**Carnagh Statio**	**2.42 21**		AML	AML	20 22 52.5	
CNGZ				AML	AML	20 23 25.8	
MWZ	**Matawai**	**2.44 8**		*e*Pn	**Pn**	**20 22 14.9**	**+0.7**
MWZ				*e*Lg	Lg	20 23 15.2	
MWZ	**Matawai**	**2.44 8**		PN	**Pn**	**20 22 14.8**	**+0.7**
MWZ				AML	AML	20 23 15.1	
MWZ				AML	AML	20 23 16.6	
TUWZ	**Tuamarina**	**2.48 253**		AML	AML	20 23 05.0	
TUWZ				AML	AML	20 23 06.1	
URZ	**Urewera**	**2.49 0**		*e*Pn	**Pn**	**20 22 15.5**	**+0.7**
URZ				*e*Sn	**Sb**	**20 22 49.9**	**+0.2**
URZ				*e*Lg	Lg	20 23 11.1	
URZ	**Urewera**	**2.49 0**		PN	**Pn**	**20 22 15.5**	**+0.7**
URZ				AML	AML	20 22 49.9	
URZ				AML	AML	20 23 11.1	
BSWZ	**Blackbirch Sta**	**2.61 247**		Pn	**Pn**	**20 22 16.9**	**+0.4**
BSWZ	**Blackbirch Sta**	**2.61 247**		PN	**Pn**	**20 22 16.9**	**+0.4**
BSWZ				AML	AML	20 23 15.6	
BSWZ				AML	AML	20 23 17.1	
HIZ	**Hauiti**	**2.83 322**		*e*Pn	**Pn**	**20 22 21.0**	**+1.5**
HIZ				*e*Sg	**Sg**	**20 23 04.4**	**-0.2**
HAZ	**Te Kaha**	**3.04 10**		PN	**Pn**	**20 22 23.1**	**+0.8**
HAZ				AML	AML	20 23 06.4	
HAZ				AML	AML	20 23 18.8	
KHZ	**Kahutara**	**3.14 237**		*e*Pn	**Pn**	**20 22 24.5**	**+0.7**
KHZ	**Kahutara**	**3.14 237**		PN	**Pn**	**20 22 24.3**	**+0.6**
KHZ				AML	AML	20 23 03.6	
THZ	**Tophouse**	**3.31 251**		*e*Pn	**Pn**	**20 22 26.8**	**+0.6**
MXZ	**Matakaoa Point**	**3.32 17**		*e*Pn	**Pn**	**20 22 26.1**	**-0.2**
QRZ	**Quartz Range**	**3.47 267**		PN	**Pn**	**20 22 28.3**	**+0.4**
QRZ				AML	AML	20 23 08.9	
LTZ	**Lake Taylor**	**4.14 239**		*e*Pn	**Pn**	**20 22 38.0**	**+0.5**
CRLZ	**Canterbury Las**	**4.36 228**		*e*Sn	**Sn**	**20 23 27.5**	**-4.0**
MQZ	**McQueen's Vall**	**4.42 227**		*e*Pn	**Pn**	**20 22 42.8**	**+1.4**
MQZ				*e*Sn	Sn	20 23 25.7	-7.4
OXZ	**Oxford**	**4.56 234**		*e*Pn	**Pn**	**20 22 44.6**	**+

comp=N,0.4nm,0.6s,baz=330,slow=7.7,SNR=5.4
ASAR Alice Springs 61.48 141 P **P** 20 32 52.9 **+0.5**
comp=N,0.2nm,0.3s,baz=329,slow=7.2,SNR=4.0
ILAR Eielson Array 76.15 23 P P 20 34 03.5 -20
comp=N,0.3nm,0.5s,baz=297,slow=4.1,SNR=4.7

WEL 05 20:42:28.8±0.2, 40°75'S×176°99'E, h12km, ML3.5/39, 11C-3D, Error ellipse: s-maj=2.3km s-min=1.4km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ANWZ	**Angora Road**	**0.49**	**306**	⇓PG	Pb	20 42 39.1	-0.2
ANWZ				SG	Sg	20 42 45.5	+0.7
ANWZ				AML	AML	20 42 46.6	
PRHZ	**Porangahau**	**0.55**	**330**	⇑PG	Pb	20 42 40.2	-0.1
PRHZ				SG	Sg	20 42 47.1	+0.3
PRHZ				AML	AML	20 42 48.8	
BFZ	**Birch Farm**	**0.57**	**276**	⇑PG	Pb	20 42 41.6	+0.9
BFZ				AML	AML	20 42 57.3	
BFZ				AML	AML	20 42 57.3	
BFZ				AML	AML	20 42 58.6	
BFZ				AML	AML	20 42 58.6	
PXZ	**Pawanui**	**0.72**	**352**	⇑P*	Pb	20 42 43.4	+0.2
PXZ				SG	Sb	20 42 53.0	-0.1
PXZ				SG	Sg	20 42 53.2	+1.0
PXZ				AML	AML	20 42 54.7	
PXZ				AML	AML	20 42 59.1	
DVHZ	**Dannevirke**	**0.77**	**305**	⇑P*	Pg	20 42 43.7	0.0
DVHZ				SG	Sg	20 42 53.5	-0.4
DVHZ				AML	AML	20 42 55.8	
PRWZ	**Pori Road**	**0.80**	**283**	⇑P*	Pb	20 42 45.0	+0.3
PRWZ				SG	Sb	20 42 55.8	+0.4
PRWZ				AML	AML	20 42 59.5	
WPHZ	**Waipukurau**	**0.80**	**328**	⇑P*	Pg	20 42 44.2	0.0
WPHZ				AML	AML	20 42 55.0	
WPHZ				AML	AML	20 42 57.5	
TIWZ	**Tintock**	**0.84**	**268**	⇓P*	Pb	20 42 45.9	+0.5
TIWZ				AML	AML	20 43 01.7	
TIWZ				AML	AML	20 43 07.7	
TMWZ	**Te Maipa**	**0.91**	**246**	P*	Pn	20 42 47.3	-0.1
TMWZ				AML	AML	20 43 14.4	
TMWZ				AML	AML	20 43 14.9	
KAHZ	**Kahuranaki**	**0.95**	**355**	⇑P*	Pg	20 42 47.0	-0.2
KAHZ				AML	AML	20 43 08.7	
KAHZ				AML	AML	20 43 09.2	
POWZ	**Post Office Ro**	**1.00**	**290**	P*	Pb	20 42 47.5	-0.5
POWZ				AML	AML	20 43 05.6	
POWZ				AML	AML	20 43 06.4	
PNHZ	**Pukenui**	**1.03**	**324**	⇑P*	Pb	20 42 47.6	-1.0
PNHZ				AML	AML	20 43 00.7	
PNHZ				AML	AML	20 43 00.9	
TSZ	**Takapari Road**	**1.05**	**311**	P*	Pb	20 42 47.7	-1.1
TSZ				AML	AML	20 43 01.0	
TSZ				AML	AML	20 43 03.1	
MRZ	**Mangatainoka R**	**1.08**	**274**	⇑P*	Pb	20 42 48.7	-0.7
MRZ				AML	AML	20 43 02.3	
MRZ				AML	AML	20 43 08.2	
HOWZ	**Holdsworth Sta**	**1.13**	**262**	P*	Pb	20 42 49.7	-0.6
HOWZ				AML	AML	20 43 16.7	
HOWZ				AML	AML	20 43 18.7	
KRHZ	**Kereru**	**1.20**	**336**	P*	Pn	20 42 49.9	-1.5
KRHZ				AML	AML	20 43 10.3	
KRHZ				AML	AML	20 43 14.5	
MCHZ	**McNeill Hill**	**1.32**	**350**	PN	Pn	20 42 52.2	-0.8
MCHZ				AML	AML	20 43 20.4	
MCHZ				AML	AML	20 43 27.6	
PAWZ	**Paruwai Farm**	**1.34**	**241**	AML	AML	20 43 31.4	
PAWZ				AML	AML	20 43 35.2	
OGWZ	**Otaki Gorge**	**1.39**	**266**	⇑P*	Pn	20 42 53.2	-0.7
OGWZ				AML	AML	20 43 20.1	
OGWZ				AML	AML	20 43 24.2	
OHWZ	**Ohakea**	**1.39**	**292**	P*	Pn	20 42 53.9	0.0
KWHZ	**Kaweka Forest**	**1.39**	**341**	PN	Pn	20 42 53.1	-0.9
KWHZ				AML	AML	20 43 20.2	
KWHZ				AML	AML	20 43 22.3	
BHHZ	**Black Hill Sta**	**1.44**	**330**	PN	Pn	20 42 53.7	-1.1
BHHZ				AML	AML	20 43 19.3	
BHHZ				AML	AML	20 43 23.7	
ARHZ	**Aropaoanui**	**1.48**	**0**	PN	Pn	20 42 54.4	-0.8
ARHZ				AML	AML	20 43 12.9	
ARHZ				AML	AML	20 43 13.0	
CAW	**Cannon Point**	**1.50**	**255**	P*	Pn	20 42 55.0	-0.5
CAW				AML	AML	20 43 27.1	
CAW				AML	AML	20 43 28.7	
KIW	**Kapiti Island**	**1.59**	**265**	⇓PN	Pn	20 42 56.3	-0.4
KIW				AML	AML	20 43 25.4	
KIW				AML	AML	20 43 28.2	
MOVZ	**Moawhango**	**1.64**	**324**	PN	Pn	20 42 56.9	-0.6
MOVZ				AML	AML	20 43 24.4	
MOVZ				AML	AML	20 43 27.1	
NMHZ	**Naumai**	**1.65**	**355**	⇑PN	Pn	20 42 56.9	-0.8
NMHZ				AML	AML	20 43 18.1	
NMHZ				AML	AML	20 43 35.8	
WHHZ	**Waihua**	**1.68**	**6**	PN	Pn	20 42 57.1	-0.9
WHHZ				AML	AML	20 43 24.0	
WHHZ				AML	AML	20 43 50.8	
WNVZ	**Wahianoa**	**1.78**	**322**	PN	Pn	20 42 59.4	-0.1
KNZ	**Kokohu**	**1.80**	**17**	PN	Pn	20 42 58.3	-1.3
WHVZ	**Whangaehu Hut**	**1.82**	**323**	PN	Pn	20 42 59.8	-0.2
WHVZ				AML	AML	20 43 37.0	
WHVZ				AML	AML	20 43 39.1	
TRVZ	**Turoa**	**1.82**	**322**	PN	Pn	20 43 00.5	+0.3
TRVZ				AML	AML	20 43 33.9	
TRVZ				AML	AML	20 43 34.5	
WAZ	**Wanganui**	**1.83**	**302**	PN	Pn	20 43 00.2	+0.2
WAZ				AML	AML	20 43 32.3	
WAZ				AML	AML	20 43 32.6	
FWVZ	**Far West T-bar**	**1.85**	**323**	PN	Pn	20 43 00.6	0.0
FWVZ				AML	AML	20 43 36.0	
FWVZ				AML	AML	20 43 38.4	
OTVZ	**Oturere**	**1.88**	**327**	PN	Pn	20 43 01.3	+0.4
OTVZ				AML	AML	20 43 43.7	
OTVZ				AML	AML	20 43 44.5	
NGZ	**Ngauruhoe**	**1.90**	**325**	PN	Pn	20 43 01.4	+0.3
NGZ				AML	AML	20 43 38.6	
NGZ				AML	AML	20 43 40.8	
PKVZ	**Pokaka**	**1.93**	**318**	AML	AML	20 43 36.2	
PKVZ				AML	AML	20 43 39.0	
KRVZ	**Karewarewa**	**1.95**	**327**	PN	Pn	20 43 02.3	+0.5
KRVZ				AML	AML	20 43 11.9	
WTVZ	**West Tongariro**	**1.95**	**326**	PN	Pn	20 43 01.8	0.0
WTVZ				AML	AML	20 43 40.0	
WTVZ				AML	AML	20 43 40.4	
MRHZ	**Matea Rd**	**1.96**	**347**	PN	Pn	20 43 01.2	-0.7
MRHZ				AML	AML	20 43 24.3	
MRHZ				AML	AML	20 43 25.3	
SNGZ	**Shannon Statio**	**1.98**	**8**	PN	Pn	20 43 00.7	-1.4
SNGZ				AML	AML	20 43 57.4	
SNGZ				AML	AML	20 44 01.7	
TCW	**Tory Channel**	**2.11**	**256**	PN	Pn	20 43 03.2	-0.7
TUWZ	**Tuamarina**	**2.41**	**253**	PN	Pn	20 43 06.8	-1.2
MWZ	**Matawai**	**2.44**	**10**	PN	Pn	20 43 06.7	-1.8
MWZ				AML	AML	20 44 08.6	
MWZ				AML	AML	20 44 12.8	
NNZ	**Nelson**	**2.78**	**259**	PN	Pn	20 43 12.6	-0.5
HAZ	**Te Kaha**	**3.05**	**12**	PN	Pn	20 43 15.6	-1.2
THZ	**Tophouse**	**3.25**	**250**	PN	Pn	20 43 18.0	-1.5
QRZ	**Quartz Range**	**3.39**	**267**	PN	Pn	20 43 20.6	-0.9

IDC 05 20:54:39.4±2.6, 4°27S×131°24E, h0km, mb3.8/1, mb1 3.6/4, mb1mx3.4/38, mbtmp3.5/4, ML3.2/3, Error ellipse: s-maj=130.5km s-min=27.2km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**14.80**	**201**	Pn	Pn	20 58 09.2	-0.9
	0.1nm,0.3s,baz=37,slow=8.3,SNR=8.9						
WRA	**Warramunga Arr**	**15.87**	**169**	Pn	Pn	20 58 22.2	-2.1
	0.1nm,0.3s,baz=352,slow=14,SNR=5.4						
WRA				Sn	Sn	21 01 09.9	-11
	0.1nm,0.3s,baz=356,slow=23,SNR=4.3						
ASAR	**Alice Springs**	**19.46**	**173**	P	Pn	20 59 09.0	+0.1
	0.1nm,0.3s,baz=350,slow=11,SNR=10.0						
MKAR	**Makanchi Array**	**66.66**	**326**	P	P	21 05 32.0	0.0
	0.8nm,0.7s,baz=118,slow=8.0,SNR=10						

IDC 05 20:58:38.2±2.4, 6°85S×128°28E, h0km, mb3.2/1, mb1 3.9/4, mb1mx3.5/34, mbtmp3.7/4, ML3.8/3, Error ellipse: s-maj=112.8km s-min=29.7km az=73.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.47**	**193**	Pn	Pn	21 01 23.3	-0.2
	1.0nm,0.3s,baz=14,slow=9.7,SNR=6.3						
FITZ				Sn	Sn	21 03 19.0	-13
	0.4nm,0.3s,baz=58,slow=23,SNR=2.0						
WRA	**Warramunga Arr**	**14.28**	**156**	Pn	Pn	21 02 01.8	-0.1
	0.3nm,0.3s,baz=320,slow=15,SNR=6.2						
WRA				Sn	Sn	21 04 25.3	-16
	0.9nm,0.3s,baz=334,slow=22,SNR=11						
ASAR	**Alice Springs**	**17.57**	**163**	P	Pn	21 02 44.9	+0.2
	0.3nm,0.3s,baz=343,slow=12,SNR=11						
ASAR				S	Sn	21 05 46.0	-15
	0.3nm,0.3s,baz=321,slow=20,SNR=4.1						
MKAR	**Makanchi Array**	**67.18**	**328**	P	P	21 09 34.2	0.0
	0.1nm,0.4s,baz=127,slow=6.0,SNR=2.2						

KRSC 05 21:15:02.5±2.6, 48°82N×156°69E, h6km±3km, ML4.0, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.90**	**349**	*e*P	Pn	21 15 34.9	-0.6
SKR				*e*S	Sn	21 15 57.9	-1.8
PAU	**Pauzhetka**	**2.65**	**2**	*e*P	Pb	21 15 48.5	-1.9
PAU				*e*S	Sb	21 16 21.3	-1.9
ASAK	**Asacha**	**3.65**	**12**	P	Pb	21 16 03.7	-3.8
RUS	**Russkaya**	**3.80**	**17**	*e*P	Pn	21 16 05.1	+3.5
RUS				*e*S	Sb	21 16 51.7	-4.5
DALK	**Dalny**	**4.42**	**16**	S	Sb	21 17 08.5	-5.4
UGLR	**Uglovaya**	**4.60**	**16**	P	Pn	21 16 17.5	+4.9
AVH	**Avacha**	**4.64**	**15**	P	Pn	21 16 18.4	+5.3
AVH				S	Sn	21 17 13.4	+6.1
SDLR	**Sedlovina**	**4.68**	**16**	P	Pn	21 16 17.4	+3.7
SDLR				S	Sn	21 17 13.7	+5.4
KRER	**Koryakskii**	**4.68**	**15**	P	Pn	21 16 18.7	+4.9
SPN	**Mys Shipunski**	**4.78**	**25**	S	Sn	21 17 14.9	+4.3
GNL	**Ganaly**	**4.95**	**9**	P	Pn	21 16 20.1	+2.7
MKZ	**Mys Kozlova**	**6.55**	**27**	P	Pn	21 16 42.6	+3.4

GUC 05 21:31:07.1±0.6, 21°35S×68°66W, h134km±4km, ML3.6, 5C-6D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB09	**IPOC Station P**	**0.70**	**231**	⇑*i*P	Pn	21 31 28.9	+0.8
PB09				*i* S	Sn	21 31 45.1	+1.0
PB09				IAML		21 31 45.9	
	comp=N,3μm,0.2s						
PB01	**IPOC Station P**	**0.83**	**292**	⇑*e*P	Pn	21 31 29.6	+0.6
PB01				*i* S	Sn	21 31 46.3	+0.7
PB01				IAML		21 31 47.2	
	comp=N,2μm,0.2s						
PB07	**IPOC Station P**	**1.20**	**252**	⇑*i*P	Pn	21 31 33.5	+1.0
PB07				*i* S	Sn	21 31 53.1	+1.3
PB07				IAML		21 31 54.3	
	comp=N,941nm,0.2s						
PB08	**IPOC Station P**	**1.29**	**339**	⇓*i*P	Pn	21 31 34.8	+1.1
PB08				*i* S	Sn	21 31 55.4	+1.5
PB08				IAML		21 31 58.5	
	comp=E,399nm,0.1s						
HMBC	**Humberstone**	**1.57**	**313**	⇓*i*P	Pn	21 31 37.3	+0.9
HMBC				*i* S	Sn	21 31 59.8	+1.1
HMBC				IAML		21 32 00.6	
	comp=N,2μm,0.6s						
PB06	**IPOC Station P**	**1.59**	**212**	⇑*i*P	Pn	21 31 37.3	+0.6
PB06				*i* S	Sn	21 31 60.0	+0.7
PB06				IAML		21 32 00.6	
	comp=E,652nm,0.2s						
PB04	**IPOC Station P**	**1.69**	**234**	⇑*e*P	Pn	21 31 38.6	+0.8
PB04				*i* S	Sn	21 32 02.9	+1.6
PB04				IAML		21 32 09.4	
	comp=N,283nm,0.2s						
PB11	**IPOC Station P**	**1.84**	**329**	⇓*i*P	Pn	21 31 40.2	+0.6
PB11				*i* S	Sn	21 32 05.5	+1.1
PSGC	**Pisagua**	**2.22**	**322**	⇓*i*P	Pn	21 31 44.3	+0.1
PSGC				*i* S	Sn	21 32 13.0	+0.5
PSGC				IAML		21 32 14.0	
	comp=N,252nm,0.4s						
MNMC	**Minye Minye**	**2.38**	**338**	⇓*i*P	Pn	21 31 47.1	+0.9
MNMC				*i* S	Sn	21 32 17.9	+1.6
MNMC				IAML		21 32 20.2	
	comp=N,498nm,0.3s						
PB13	**IPOC Station P**	**3.10**	**345**	⇓*i*P	Pn	21 31 57.0	+1.2

*IDC **05** 21:48:15.4±1.1, 5°09N×124°60E, h0km, mb3.6/5, mb1 3.7/6, mb1mx3.5/42, mbtmp3.7/6, ML4.2/1, Error ellipse: s-maj=51.1km s-min=19.4km az=76.0*

ISC 05 21:48:16.9±1.1, 5°07N±0°07×124°8E±0°2, h10km, n9, σ1s08/12, mb3.5/5, 1C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KCP	**Kidapawan**	**1.94**	**7**	⇓*e*P	**Pg**	**21 48 55.9**	**+1.6**
KCP				*e*S	**Sg**	**21 49 19.5**	**-0.1**
DMPH	**Davao City--Mi**	**2.11**	**18**	⇓*e*P	**Pg**	**21 48 57.0**	**-0.4**
DMPH				*e*S	**Sb**	**21 49 21.0**	**-0.6**
DAV	**Davao City (W)**	**2.12**	**20**	Pn	**Pn**	**21 48 53.6**	**+1.1**
	64nm,0.3s,baz=195,slow=7.0,SNR=1.9						
DAV				Sn	**Sn**	**21 49 18.9**	**-0.1**
	84nm,0.3s,baz=57,slow=13,SNR=3.1						
BIPH	**Bislig**	**3.45**	**26**	⇓*i*P	**Pn**	**21 49 10.4**	**-0.3**
BIPH				*i* S	Sn	21 49 42.9	-8.7
FITZ	**Fitzroy Crossi**	**23.04**	**178**	P	**P**	**21 53 22.8**	**+0.4**
	1.0nm,0.7s,baz=346,slow=12,SNR=1.6						
WRA	**Warramunga Arr**	**26.55**	**160**	P	**P**	**21 53 56.9**	**+1.7**
	0.5nm,0.5s,baz=339,slow=10.0,SNR=2.7						
ASAR	**Alice Springs**	**29.90**	**163**	P	**P**	**21 54 25.1**	**0.0**
	0.4nm,0.5s,baz=345,slow=7.0,SNR=3.3						
MKAR	**Makanchi Array**	**55.39**	**326**	P	**P**	**21 57 50.9**	**-0.5**
	0.7nm,0.4s,baz=116,slow=7.5,SNR=10						
KURBB	**Kurchatov Arra**	**59.60**	**328**	P	**P**	**21 58 19.4**	**-1.6**
	0.6nm,0.5s,baz=127,slow=7.0,SNR=7.9						

*TIF **05** 21:49:47.1, 39°69N×43°22E, h11km±2km*
*ISK **05** 21:49:48.8, 39°84N×43°40E, h5km, MD3.3*
*NSSP **05** 21:49:48.1, 38°83N×43°33E, h5km, Ms3.1*
*DDA **05** 21:49:49.9, 39°84N×43°32E, h5km, Ml3.2*
*ISCJB **05** 21:49:51.9±0.2, 39°81N±0°02×43°36E±0°02, h10km, Error ellipse: s-maj=2.6km s-min=2.0km az=43.7*
*CSEM **05** 21:49:51.3±0.1, 39°82N×43°34E, h2km, MD3.3, Error ellipse: s-maj=4.0km s-min=2.9km az=125.0*
*AZER **05** 21:49:52.1±1.1, 39°74N×43°40E, h5km, Error ellipse: s-maj=8.5km s-min=7.7km az=82.0*

ISC 05 21:49:51.1±0.7, 39°84N±0°01×43°36E±0°02, h10km, n91, σ1s37/145, 13C-13D, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DYDN	**Diyadin**	**0.39**	**140**	*i* P	**Pg**	**21 49 57.8**	**-1.1**
DYDN				*i* S	**Sg**	**21 50 03.8**	**-0.3**
DYDN	**Diyadin**	**0.39**	**140**	P	**Pg**	**21 49 57.8**	**-1.1**
DYDN				S	**Sg**	**21 50 03.8**	**-0.3**
AGRB	**Hanur-Agry**	**0.39**	**227**	*e*PG	**Pg**	**21 49 57.8**	**-1.1**
AGRB				*e*SG	**Sg**	**21 50 04.2**	**+0.1**
AGRB	**Hanur-Agry**	**0.39**	**227**	*e*Pg	**Pg**	**21 49 57.8**	**-1.1**
AGRB				*e*Sg	**Sg**	**21 50 04.2**	**+0.1**
DIGO	**Kars**	**0.57**	**1**	*i* P	**Pg**	**21 50 01.2**	**-1.1**
DIGO				*i* S	**Sb**	**21 50 11.0**	**-0.8**
DIGO	**Kars**	**0.57**	**1**	P	**Pg**	**21 50 01.2**	**-1.1**
DIGO				S	**Sb**	**21 50 11.0**	**-0.8**
TUTA	**Tutak**	**0.61**	**224**	*i* P	**Pg**	**21 50 02.0**	**-1.0**
TUTA				*i* S	**Sg**	**21 50 10.9**	**-0.2**
TUTA	**Tutak**	**0.61**	**224**	P	**Pg**	**21 50 02.0**	**-1.0**
TUTA				S	**Sg**	**21 50 10.9**	**-0.2**
KARS	**Kars**	**0.81**	**345**	*e*PG	**Pg**	**21 50 04.8**	**-2.1**
CLDR	**Caldiran**	**0.82**	**148**	*e*PG	**Pg**	**21 50 04.9**	**-2.0**
CLDR				*e*SG	**Sg**	**21 50 17.3**	**-0.3**
CLDR	**Caldiran**	**0.82**	**148**	*e*Pg	**Pg**	**21 50 04.9**	**-2.0**
CLDR				*e*Sg	**Sg**	**21 50 17.3**	**-0.3**
EAK	**Akyaka**	**0.86**	**12**	*i* P	**Pg**	**21 50 07.2**	**-0.7**
EAK				*i* S	**Sn**	**21 50 21.7**	**-0.6**
EAK	**Akyaka**	**0.86**	**12**	P	**Pg**	**21 50 07.2**	**-0.7**
EAK				S	**Sn**	**21 50 21.7**	**-0.6**
VMUR	**Van-Muradiye**	**0.87**	**169**	*i* P	**Pg**	**21 50 07.3**	**-0.6**
VMUR				*i* S	**Sb**	**21 50 19.8**	**-0.3**
VMUR	**Van-Muradiye**	**0.87**	**169**	P	**Pg**	**21 50 07.3**	**-0.6**
VMUR				S	**Sb**	**21 50 19.8**	**-0.3**
SENK	**Senkaya-Erzuru**	**1.06**	**313**	*e*PN	**Pg**	**21 50 10.3**	**-1.2**
GNI	**Garni**	**1.10**	**73**	⇑P	**Pg**	**21 50 10.1**	**-2.2**
GNI				S	**Sg**	**21 50 25.5**	**-1.2**
HOMI	**Horasan**	**1.14**	**281**	*i* P	**Pg**	**21 50 11.1**	**-2.0**
HOMI				*i* S	**Sn**	**21 50 30.6**	**+1.4**
VANB	**Van**	**1.25**	**179**	*e*PN	**Pn**	**21 50 14.2**	**-0.5**
VANB	**Van**	**1.25**	**179**	*e*Pn	**Pn**	**21 50 14.2**	**-0.5**
TVAN	**Van**	**1.31**	**179**	*i* P	**Pg**	**21 50 16.1**	**-0.2**
TVAN				*i* S	**Sn**	**21 50 35.0**	**+1.6**
TVAN	**Van**	**1.31**	**179**	P	**Pg**	**21 50 16.1**	**-0.2**
TVAN				S	**Sn**	**21 50 35.0**	**+1.6**
BGD	**Bogdanovka**	**1.43**	**7**	P	**Pn**	**21 50 16.6**	**-0.8**
BGD				S	**Sg**	**21 50 37.9**	**+0.6**
BGD	**Bogdanovka**	**1.43**	**7**	P	**Pn**	**21 50 16.6**	**-0.8**
BGD				S	**Sg**	**21 50 37.9**	**+0.6**
EZM	**Erzurum**	**1.54**	**273**	*e*PN	**Pb**	**21 50 19.4**	**-0.6**
GEVA	**Gevas**	**1.54**	**189**	*i* P	**Pn**	**21 50 18.8**	**-0.1**
GEVA				*i* S	**Sg**	**21 50 40.9**	**0.0**
GEVA	**Gevas**	**1.54**	**189**	P	**Pn**	**21 50 18.8**	**-0.1**
GEVA				S	**Sg**	**21 50 40.9**	**0.0**
AKH	**Akhalkalaki**	**1.57**	**4**	P	**Pn**	**21 50 19.5**	**+0.3**
AKH				S	**Sg**	**21 50 42.2**	**+0.5**
AKH	**Akhalkalaki**	**1.57**	**4**	P	**Pn**	**21 50 19.5**	**+0.3**
AKH				S	**Sg**	**21 50 42.2**	**+0.5**
TATV	**Tatvan**	**1.58**	**213**	*i* P	**Pb**	**21 50 19.7**	**-0.9**
TATV				*i* S	**Sg**	**21 50 41.6**	**-0.4**
TATV	**Tatvan**	**1.58**	**213**	P	**Pb**	**21 50 19.7**	**-0.9**
TATV				S	**Sg**	**21 50 41.6**	**-0.4**
DAGI	**Agillar**	**1.66**	**319**	*i* P	**Pn**	**21 50 20.6**	**+0.2**
NAX	**Nakhchivan**	**1.78**	**111**	⇑P	**Pb**	**21 50 23.4**	**-0.5**
NAX				⇓S	**Sb**	**21 50 46.3**	**+0.1**
NAX	**Nakhchivan**	**1.78**	**111**	P	**Pb**	**21 50 23.4**	**-0.5**
NAX				S	**Sb**	**21 50 46.3**	**+0.1**
BNGL	**BINGOL**	**1.93**	**243**	*i* P	**Pb**	**21 50 26.0**	**-0.6**
BNGL				*i* S	**Sg**	**21 50 52.8**	**-0.4**
QZX	**Qazax, Azerbai**	**1.96**	**51**	⇓P	**Pb**	**21 50 26.2**	**-0.7**
	SNR=7.6						
QZX				⇑S	**Sb**	**21 50 52.3**	**+0.9**
QZX	**Qazax, Azerbai**	**1.96**	**51**	P	**Pb**	**21 50 26.2**	**-0.7**
	SNR=7.6						
QZX				S	**Sb**	**21 50 52.3**	**+0.9**
GDB	**GEDABAY**	**2.03**	**64**	⇑P	**Pb**	**21 50 27.1**	**-1.1**
	SNR=13						
GDB				⇓S	**Sg**	**21 50 55.2**	**-1.2**
GDB	**GEDABAY**	**2.03**	**64**	P	**Pb**	**21 50 27.1**	**-1.1**
	SNR=13						
GDB				S	**Sg**	**21 50 55.2**	**-1.2**
TBLG	**Delisi**	**2.16**	**28**	P	**Pb**	**21 50 29.4**	**-0.9**
TBLG				S	**Sb**	**21 50 58.2**	**+1.0**
TBLG	**Delisi**	**2.16**	**28**	P	**Pb**	**21 50 29.4**	**-0.9**
TBLG				S	**Sb**	**21 50 58.8**	**+1.7**
YEDI	**Yedisu-Bingol**	**2.21**	**260**	*e*PN	**Pn**	**21 50 29.4**	**+1.3**
YEDI	**Yedisu-Bingol**	**2.21**	**260**	*e*Pn	**Pn**	**21 50 29.4**	**+1.3**
DGRG	**David-gareji**	**2.22**	**43**	P	**Pb**	**21 50 30.2**	**-1.2**
DGRG				S	**Sg**	**21 51 04.0**	**+1.5**
DGRG	**David-gareji**	**2.22**	**43**	P	**Pb**	**21 50 30.2**	**-1.2**
BNGB	**Bing¶l**	**2.25**	**249**	*e*PN	**Pn**	**21 50 29.4**	**+0.9**
BGOL	**Bingol**	**2.25**	**249**	*i* P	**Pb**	**21 50 32.1**	**+0.1**
BGOL				*i* S	**Sg**	**21 51 02.7**	**-0.9**
BGOL	**Bingol**	**2.25**	**249**	P	**Pb**	**21 50 32.1**	**+0.1**
HKR	**Hakkari**	**2.28**	**172**	*e*PN	**Pn**	**21 50 29.6**	**+0.6**
HKR	**Hakkari**	**2.28**	**172**	*e*Pn	**Pn**	**21 50 29.6**	**+0.6**
HAKT	**HAKKARI**	**2.30**	**173**	*i* P	**Pb**	**21 50 32.6**	**-0.2**
HAKT	**HAKKARI**	**2.30**	**173**	P	**Pb**	**21 50 32.6**	**-0.2**
SVAN	**Silvan-Diyarba**	**2.39**	**226**	*e*PN	**Pn**	**21 50 31.6**	**+1.3**
SVAN	**Silvan-Diyarba**	**2.39**	**226**	*e*Pn	**Pn**	**21 50 31.6**	**+1.3**
GANJ	**Ganja**	**2.40**	**70**	⇓P	**Pb**	**21 50 32.5**	**-2.0**
	SNR=5.7						
GANJ				⇑S	**Sb**	**21 51 04.7**	**+0.5**
GANJ	**Ganja**	**2.40**	**70**	P	**Pb**	**21 50 32.5**	**-2.0**
	SNR=5.7						
GANJ				S	**Sb**	**21 51 04.7**	**+0.5**
SIRT	**Sirnak**	**2.45**	**197**	*e*PN	**Pn**	**21 50 31.8**	**+0.6**
SIRT	**Sirnak**	**2.45**	**197**	*e*Pn	**Pn**	**21 50 31.8**	**+0.6**
BTMN	**Batman**	**2.54**	**221**	*i* P	**Pb**	**21 50 35.1**	**-1.8**
BTMN				*i* S	**Sg**	**21 51 11.1**	**-1.7**
BTMN	**Batman**	**2.54**	**221**	P	**Pb**	**21 50 35.1**	**-1.8**
CUKT	**Cukurca**	**2.60**	**176**	*e*PN	**Pn**	**21 50 33.8**	**+0.5**
CUKT	**Cukurca**	**2.60**	**176**	*e*Pn	**Pn**	**21 50 33.8**	**+0.5**
ONI	**Oni**	**2.75**	**1**	P	**Pg**	**21 50 42.2**	**-1.6**
ONI				S	**Sg**	**21 51 19.1**	**-0.3**
BRDA	**Brd**	**2.96**	**81**	⇑P	**Pn**	**21 50 40.0**	**+1.9**
	SNR=3.4						
BRDA				⇓S	**Sb**	**21 51 17.4**	**-2.7**
BRDA	**Brd**	**2.96**	**81**	P	**Pn**	**21 50 40.0**	**+1.9**
	SNR=3.4						
BRDA				S	**Sb**	**21 51 17.4**	**-2.7**
KTUT	**Trabzon**	**2.98**	**294**	*e*PN	**Pn**	**21 50 40.0**	**+1.7**
KTUT	**Trabzon**	**2.98**	**294**	*e*Pn	**Pn**	**

JIM2				*e*S		**Sn**	**22 06 32.0**	**-1.2**
JOD2	**Odawara 2**	**1.08**	**265**	P		**Pn**	**22 06 20.3**	**-0.1**
JOD2				S		**Sn**	**22 06 34.6**	**+0.2**
JAG	**Ashikaga**	**1.30**	**324**	P		**Pn**	**22 06 23.9**	**+0.4**
MJAR	**Matsushiro Arr**	**2.13**	**304**	Pn		**Pn**	**22 06 36.9**	**+2.0**
	7.3nm,0.3s,baz=135,slow=15,SNR=28							
MJAR				LR		LR	22 07 32.7	
	comp=Z,70nm,19.4s,baz=90,slow=43							
MAT	**Matsushiro**	**2.13**	**304**	P		**Pn**	**22 06 36.7**	**+1.8**
MAT				S		**Sn**	**22 07 01.1**	**+0.8**
JHJ	**Hachijo jima 2**	**2.31**	**193**	Pn		**Pn**	**22 06 37.5**	**+0.3**
	34nm,0.3s,baz=137,slow=23,SNR=22							
JHJ				Sn		**Sn**	**22 07 03.3**	**-1.3**
	64nm,0.3s,baz=82,slow=23,SNR=11							
H11N2	**WAKE ISLAND Hy**	**28.07**	**117**	T		T	22 41 12.0	
	baz=309,slow=75,SNR=27							
H11N1	**WAKE ISLAND Hy**	**28.07**	**117**	T		T	22 41 10.8	
	baz=309,slow=75,SNR=27							
SONM	**Songino Array**	**28.08**	**307**	LR		LR	22 22 08.5	
	comp=Z,29nm,20.9s,baz=338,slow=34							
H11N3	**WAKE ISLAND Hy**	**28.08**	**117**	T		T	22 41 07.8	
	baz=309,slow=75,SNR=23							
H11S3	**WAKE ISLAND Hy**	**28.71**	**119**	T		T	22 41 58.3	
	baz=312,slow=75,SNR=34							
H11S1	**WAKE ISLAND Hy**	**28.71**	**119**	T		T	22 41 55.1	
	baz=312,slow=75,SNR=58							
H11S2	**WAKE ISLAND Hy**	**28.72**	**119**	T		T	22 42 01.9	
	baz=312,slow=75,SNR=31							
ZALV	**Zalesovo Beam**	**42.45**	**314**	P		**P**	**22 13 53.2**	**0.0**
	0.5nm,0.4s,baz=111,slow=7.9,SNR=3.6							
MKAR	**Makanchi Array**	**44.33**	**303**	P		**P**	**22 14 09.2**	**+0.6**
	0.2nm,0.3s,baz=81,slow=9.1,SNR=3.6							
KURBB	**Kurchatov Arra**	**46.40**	**309**	P		**P**	**22 14 25.4**	**+0.6**
	1.2nm,0.5s,baz=86,slow=8.0,SNR=21							
ILAR	**Eielson Array**	**51.33**	**32**	P		**P**	**22 15 01.2**	**-1.3**
	0.1nm,0.5s,baz=240,slow=7.1,SNR=4.0							
WRA	**Warramunga Arr**	**55.31**	**187**	P		**P**	**22 15 32.4**	**+0.2**
	0.3nm,0.4s,baz=2.0,slow=7.5,SNR=7.6							

*ISK **05** 22:07:59.6,37.07N×28.58E,h4km,MD2.7*
*ISCJB **05** 22:08:00.7±0.5,37.09N±0.03×28.56E±0.03,h3km±6km, Error ellipse: s-maj=5.2km s-min=4.5km az=176.8*
*CSEM **05** 22:08:00.4±0.2,37.09N×28.60E,h8km,MD2.7,Error ellipse: s-maj=4.9km s-min=3.9km az=10.0*
*DDA **05** 22:08:00.3,37.07N×28.50E,h7km,Md2.8*

ISC 05 22:08:01.2±0.9,37.11N±0.03×28.55E±0.02,h10km±8km, n29,σ1s31/43,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.22**	**278**	*e*PG	**Pg**	**22 08 05.2**	**-0.5**
YER				*e*SG	**Sg**	**22 08 09.1**	**+0.4**
YER	**Yerkesik**	**0.22**	**278**	*e*Pg	**Pg**	**22 08 05.2**	**-0.5**
YER				*e*Sg	**Sg**	**22 08 09.1**	**+0.4**
TURN	**Turunc**	**0.23**	**170**	*i* P	**Pg**	**22 08 07.1**	**+1.1**
TURN				*i* S	**Sg**	**22 08 13.2**	**+4.0**
DALY	**Dalyan (Mu˘la**	**0.30**	**164**	*e*PG	**Pg**	**22 08 04.9**	**-2.2**
DALY				*e*SG	**Sg**	**22 08 09.9**	**-1.3**
DALY	**Dalyan (Mu˘la**	**0.30**	**164**	*e*Pg	**Pg**	**22 08 04.9**	**-2.2**
DALY				*e*Sg	**Sg**	**22 08 09.9**	**-1.3**
DNZL	**Cakiroluk**	**0.70**	**34**	*i* P	**Pg**	**22 08 14.5**	**-0.4**
DNZL				*i* S	**Sb**	**22 08 26.3**	**+0.7**
DNZL	**Cakiroluk**	**0.70**	**34**	P	**Pg**	**22 08 14.5**	**-0.4**
DNZL				S	**Sb**	**22 08 26.3**	**+0.7**
GLHS	**Glhisar (BURDU**	**0.76**	**86**	*e*PG	**Pg**	**22 08 14.4**	**-1.4**
GLHS	**Glhisar (BURDU**	**0.76**	**86**	*e*Pg	**Pg**	**22 08 14.4**	**-1.4**
GOLH	**Golhisar**	**0.82**	**80**	*i* P	**Pg**	**22 08 15.7**	**-1.3**
GOLH				*i* S	**Sn**	**22 08 30.4**	**-0.8**
GOLH	**Golhisar**	**0.82**	**80**	P	**Pg**	**22 08 15.7**	**-1.3**
GOLH				S	**Sn**	**22 08 30.4**	**-0.8**
BDRM	**Kayabasi**	**0.89**	**268**	*i* P	**Pb**	**22 08 18.6**	**-0.1**
BDRM				*i* S	**Sn**	**22 08 32.2**	**-0.5**
BDRM	**Kayabasi**	**0.89**	**268**	P	**Pb**	**22 08 18.6**	**-0.1**
BDRM				S	**Sn**	**22 08 32.2**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.99**	**328**	*e*PG	**Pg**	**22 08 19.9**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.99**	**328**	*e*Pg	**Pg**	**22 08 19.9**	**-0.3**
BODT	**Bodrum**	**0.99**	**268**	*e*PG	**Pg**	**22 08 19.9**	**-0.4**
BODT	**Bodrum**	**0.99**	**268**	*e*Pg	**Pg**	**22 08 19.9**	**-0.4**
ELL	**Elmali**	**1.15**	**108**	*e*PN	**Pg**	**22 08 21.6**	**-1.6**
ELL	**Elmali**	**1.15**	**108**	*e*Pn	**Pg**	**22 08 21.6**	**-1.6**
NIS1	**Nisyros Isl.**	**1.21**	**246**	*e*PN	**Pg**	**22 08 23.7**	**-0.7**
NIS1	**Nisyros Isl.**	**1.21**	**246**	*e*Pn	**Pg**	**22 08 23.7**	**-0.7**
AKAS	**Kas**	**1.22**	**135**	*i* P	**Pn**	**22 08 24.6**	**+0.2**
AKAS				*i* S	**Sn**	**22 08 44.1**	**+3.1**
AKAS	**Kas**	**1.22**	**135**	P	**Pn**	**22 08 24.6**	**+0.2**
MANT	**Manisa**	**1.38**	**0**	*i* P	**Pn**	**22 08 25.5**	**-1.3**
MANT				*i* S	**Sn**	**22 08 45.6**	**+0.4**
MANT	**Manisa**	**1.38**	**0**	P	**Pn**	**22 08 25.5**	**-1.3**
MANT				S	**Sn**	**22 08 45.7**	**+0.4**
KULA	**Kula-Manisa**	**1.41**	**4**	*e*PN	**Pn**	**22 08 27.1**	**+0.1**
KULA	**Kula-Manisa**	**1.41**	**4**	*e*Pn	**Pn**	**22 08 27.2**	**+0.1**
KORT	**Korkueli**	**1.44**	**94**	*i* P	**Pg**	**22 08 30.5**	**+1.6**
KORT	**Korkueli**	**1.44**	**94**	P	**Pg**	**22 08 30.5**	**+1.6**

*IDC **05** 22:30:55.5±1.1,52.61N×163.79W,h0km,mb4.1/15, mb1 4.3/16,mb1mx4.0/53,mbtmp4.1/16,ML4.0/1,MS3.5/5, Ms1 3.5/5,ms1mx2.9/47,Error ellipse: s-maj=30.3km s-min=15.6km az=8.0*
*NEIC **05** 22:30:57.6±1.8,52.71N×163.71W,h9km±11km,mb4.5/15, Error ellipse: s-maj=6.6km s-min=2.7km az=164.0*
*BJI **05** 22:30:58.1,52.80N×163.80W,h32km,mb4.7/9,mB4.7/7, Ms4.8/2,Ms7 4.7/1*

ISC 05 22:31:00.3±1.1,52.68N±0.08×163.77W±0.05,h27km±7km, n157,σ1s51/153,mb4.3/36,MS3.4/4,South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WESE	**West Dahl East**	**1.86**	**345**	*e*Pn	**Pn**	**22 31 29.7**	**-0.7**
AKUT	**Akutan**	**1.89**	**321**	*e*Pn	**Pn**	**22 31 30.7**	**+0.1**
AKUT				*e*Sn	**Sn**	**22 31 49.0**	**-4.6**
WESP	**Westdahl Peak**	**1.90**	**343**	P	**Pn**	**22 31 30.6**	**-0.3**
AKMO	**Akutan Morgan**	**1.95**	**317**	*e*Pn	**Pn**	**22 31 31.3**	**-0.3**
AKMO				*e*Sn	**Sn**	**22 31 55.9**	**+0.7**
WESN	**West Dahl Nort**	**1.95**	**346**	*e*Pn	**Pn**	**22 31 31.3**	**-0.3**
WESN				*e*Sn	**Sn**	**22 31 56.5**	**+1.3**
UNV	**Unalaska Valle**	**2.01**	**306**	*e*Pn	**Pn**	**22 31 31.9**	**-0.5**
UNV				*e*Sn	**Sn**	**22 31 56.5**	**-0.2**
SSLS	**Shishaldin Sou**	**2.04**	**356**	P	**Pn**	**22 31 32.2**	**-0.7**
SSLS				S	**Sn**	**22 31 58.7**	**+1.2**
SSLW	**Shishaldin Wes**	**2.10**	**354**	P	**Pn**	**22 31 33.3**	**-0.4**
SSLN	**Shishaldin Nor**	**2.14**	**356**	P	**Pn**	**22 31 34.0**	**-0.2**
MTBL	**Makushin Table**	**2.17**	**308**	*e*Pn	**Pn**	**22 31 34.5**	**-0.1**
MGOD	**Makushin Gods**	**2.17**	**302**	*e*Pn	**Pn**	**22 31 34.1**	**-0.6**
MCIR	**Makushin Cirqu**	**2.26**	**305**	P	**Pn**	**22 31 35.9**	**0.0**
DT1	**Dutton Round H**	**2.58**	**19**	*e*Pn	**Pn**	**22 31 38.6**	**-1.7**
DTNA	**Dutton South F**	**2.63**	**19**	*e*Pn	**Pn**	**22 31 39.4**	**-1.5**
OKTU	**Okmok Mt. Tuli**	**2.67**	**287**	P	**Pn**	**22 31 41.1**	**-0.4**
OKER	**Okmok East Rim**	**2.70**	**288**	P	**Pn**	**22 31 41.6**	**-0.3**
DOL	**Dolgoi Island**	**2.71**	**24**	P	**Pn**	**22 31 40.4**	**-1.7**
OKWR	**Okmok West Rim**	**2.78**	**287**	P	**Pn**	**22 31 43.1**	**0.0**
PS4A	**Pavlof South-4**	**2.90**	**22**	P	**Pn**	**22 31 43.9**	**-0.7**
OKAK	**Okmok**	**2.91**	**290**	*e*Pn	**Pn**	**22 31 43.6**	**-1.1**
NIKH	**Nikolski High**	**3.10**	**277**	*e*Pn	**Pn**	**22 31 45.6**	**-1.8**
NIKH				*e*Sn	**Sn**	**22 32 20.9**	**-2.5**
SDPT	**Sand Point**	**3.30**	**35**	*e*Pn	**Pn**	**22 31 48.9**	**-1.3**
SDPT				*e*Sn	**Sn**	**22 32 26.2**	**-2.2**
VNWF	**Veniaminof 8**	**4.26**	**34**	P	**Pn**	**22 32 02.9**	**-0.5**
VNHG	**Veniaminof 1**	**4.45**	**35**	P	**Pn**	**22 32 06.4**	**+0.4**
CHGN	**Chignik**	**4.78**	**39**	*e*Pn	**Pn**	**22 32 09.0**	**-1.4**
ANPB	**Aniakchak Plen**	**5.21**	**35**	P	**Pn**	**22 32 15.5**	**-0.8**
KOSE	**Korovin Southe**	**6.29**	**271**	P	**Pn**	**22 32 31.5**	**+0.3**
KOFP	**Korovin Flat P**	**6.33**	**270**	P	**Pn**	**22 32 32.0**	**+0.3**
KOKL	**Mount Kliuchef**	**6.38**	**271**	*e*Pn	**Pn**	**22 32 32.9**	**+0.4**
KELA	**Mount Kelaz**	**7.34**	**35**	P	**Pn**	**22 32 45.0**	**-0.7**
KABR	**Katmai Barrier**	**7.41**	**39**	P	**Pn**	**22 32 44.9**	**-1.6**
KVTA	**Katmai Vly 10**	**7.46**	**37**	P	**Pn**	**22 32 46.0**	**-1.2**
KAKN	**Katmai Knife C**	**7.49**	**38**	P	**Pn**	**22 32 47.5**	**-0.2**
GSTR	**Great Sitkin T**	**7.55**	**270**	*e*Pn	**Pn**	**22 32 50.0**	**+1.5**
GSMY	**Great Sitkin M**	**7.55**	**270**	*e*Pn	**Pn**	**22 32 47.7**	**-0.8**
OHAK	**Old Harbor**	**7.55**	**49**	*e*Pn	**Pn**	**22 32 45.7**	**-2.7**
GSTD	**Great Sitkin T**	**7.61**	**270**	*e*Pn	**Pn**	**22 32 48.6**	**-0.7**
KAWH	**Katmai**	**7.65**	**38**	P	**Pn**	**22 32 48.9**	**-0.9**
KAHC	**Katmai Hardscr**	**7.76**	**36**	P	**Pn**	**22 32 50.5**	**-0.9**
ETKA	**Kagalaska Isla**	**7.80**	**269**	*e*Pn	**Pn**	**22 32 51.2**	**-0.7**
ADAG	**Mount Adagdak**	**7.90**	**270**	*e*Pn	**Pn**	**22 32 53.5**	**+0.3**
KDAK	**Kodiak Island**	**8.18**	**47**	*e*Pn	**Pn**	**22 32 54.0**	**-3.0**
KIRH	**Kanaga Island**	**8.21**	**270**	*e*Pn	**Pn**	**22 32 57.1**	**-0.4**
FOPK	**Fourpeaked Vol**	**8.41**	**40**	P	**Pn**	**22 32 59.0**	**-1.2**
CDD	**Cape Douglas**	**8.46**	**38**	P	**Pn**	**22 32 59.9**	**-1.1**
OPT	**Oil Point**	**9.12**	**36**	*e*Pn	**Pn**	**22 33 10.1**	**+0.1**
SVW2	**Sparrevohn**	**9.54**	**25**	*e*Pn	**Pn**	**22 33 15.1**	**-0.6**
CNPM	**China Poot**	**9.79**	**41**	*e*Pn	**Pn**	**22 33 18.2**	**-0.9**
RDWB	**Redoubt West**	**9.86**	**33**	P	**Pn**	**22 33 19.7**	**-0.5**
RSO	**Redoubt South**	**9.87**	**34**	*e*Pn	**Pn**	**22 33 20.8**	**+0.3**
BRLK	**Bradley Lake**	**10.07**	**40**	*e*Pn	**Pn**	**22 33 20.5**	**-2.5**
SPU	**Mount Spurr**	**10.64**	**32**	*e*Pn	**Pn**	**22 33 30.2**	**-0.6**
SEW	**Seward**	**10.86**	**41**	*e*Pn	**Pn**	**22 33 31.4**	**-2.3**
TT01	**Tatalina**	**11.04**	**19**	*e*Pn	**Pn**	**22 33 35.1**	**-1.1**
TTA	**Tatalina**	**11.06**	**19**	*e*Pn	**Pn**	**22 33 35.8**	**-0.8**
SUA	**Susitna One**	**11.28**	**34**	*e*Pn	**Pn**	**22 33 37.6**	**-1.9**
RC01	**Rabbit Creek A**	**11.37**	**37**	*e*Pn	**Pn**	**22 33 37.8**	**-2.9**
PPLA	**Purkeypile**	**11.94**	**26**	*e*Pn	**Pn**	**22 33 49.0**	**+0.5**
CAST	**Castle Rocks**	**12.39**	**25**	*e*Pn	**Pn**	**22 33 50.2**	**-4.5**
SCM	**Sheep Creek Mo**	**12.74**	**38**	*e*Pn	**Pn**	**22 33 55.7**	**-3.7**
KTH	**Kantishna Hill**	**12.80**	**27**	*e*Pn	**Pn**	**22 34 00.2**	**-0.2**
TRF	**Thorofare Moun**	**12.90**	**28**	*e*Pn	**Pn**	**22 34 00.3**	**-1.5**
DIV	**Divide**	**12.93**	**42**	*e*Pn	**Pn**	**22 33 59.8**	**-2.3**
KLU	**Klutina**	**13.07**	**41**	*e*Pn	**Pn**	**22 34 01.0**	**-3.0**
BPAW	**Bear Paw Mtn.**	**13.23**	**25**	*e*Pn	**Pn**	**22 34 04.1**	**-2.0**
RND	**Reindeer**	**13.29**	**30**	*e*Pn	**Pn**	**22 34 03.2**	**-3.8**
BMRM	**Bremner River**	**13.33**	**44**	*e*Pn	**Pn**	**22 34 05.0**	**-2.6**
DHY	**Denali Highway**	**13.54**	**33**	*e*Pn	**Pn**	**22 34 05.8**	**-4.6**
MLY	**Manley**	**14.05**	**23**	*e*Pn	**Pn**	**22 34 16.5**	**-0.9**
WRH	**Wood River Hil**	**14.31**	**28**	*e*Pn	Pn	22 34 15.6	-5.3
BALM	**Baldy**	**14.34**	**46**	*e*Pn	**Pn**	**22 34 19.2**	**-2.1**
MDM	**Murphy Dome**	**14.64**	**27**	*e*Pn	Pn	22 34 19.1	-6.2
IL1	**Eielson Array**	**14.88**	**29**	*e*Pn	Pn	22 34 23.3	-5.3
ILAR	**Eielson Array**	**14.88**	**29**	Pn	Pn	22 34 22.6	-6.0
	0.4nm,0.3s,baz=220,slow=13,SNR=17						
ILAR				LR	LR	22 40 50.9	
	comp=Z,84nm,18.5s,baz=194,slow=40						
ILB	**Eielson Array**	**14.88**	**29**	*e*Pn	Pn	22 34 22.8	-5.8
DOT	**Dot Lake**	**15.04**	**35**	*e*Pn	**Pn**	**22 34 27.0**	**-3.8**
	56nm,0.7s						
COLD	**Coldfoot**	**16.03**	**19**	*e*Pn	**Pn**	**22 34 43.4**	**-0.1**
	12nm,0.8s						
HYT	**Haines Junctio**	**16.45**	**50**	*e*Pn	**P**	**22 34 53.8**	**+2.3**
EGAK	**Eagle**	**16.74**	**35**	*e*Pn	**Pn**	**22 34 49.1**	**-3.5**
DLBC	**Dease Lake**	**19.78**	**60**	P	**P**	**22 35 26.5**	**-1.7**
	0.2nm,0.3s,baz=260,slow=11,SNR=7.1						
DLBC	**Dease Lake**	**19.78**	**60**	*e*P	**Pn**	**22 35 29.8**	**0.0**
	55nm,1.8s						
INK	**Inuvik**	**21.25**	**31**	P	**P**	**22 35 42.3**	**-1.6**
	3.6nm,0.5s,baz=226,slow=14,SNR=12						
INK				LR	LR	22 44 20.5	
	comp=Z,73nm,18.0s,baz=161,slow=38						
INK	**Inuvik**	**21.25**	**31**	*e*P	**P**	**22 35 42.3**	**-1.6**
	13nm,0.7s						
PEA1	**Petropavlovsk-**	**23.07**	**287**	*e*P	**P**	**22 36 02.3**	**-1.1**
PETK	**Petropavlovsk-**	**23.07**	**287**	P	**P**	**22 36 02.3**	**-1.1**
	3.9nm,0.8s,baz=76,slow=14,SNR=3.5						
YKA	**Yellowknife Ar**	**27.44**	**50**	P	**P**	**22 36 43.3**	**-0.2**
	1.2nm,0.8s,baz=267,slow=8.6,SNR=6.2						
YKB5	**Yellowknife Ar**	**27.44**	**50**	*e*P	**P**	**22 36 43.3**	**-0.2**
NEW	**Newport**	**29.60**	**80**	P	**P**	**22 37 02.7**	**-0.2**
	13nm,0.8s,baz=292,slow=7.3,SNR=15						
NEW	**Newport**	**29.60**	**80**	*e*P	**P**	**22 37 03.0**	**+0.1**
MSO	**Missoula**	**32.18**	**80**	*e*P	**P**	**22 37 25.6**	**-0.1**
CHMT	**Chamberlain Mo**	**32.55**	**80**	*e*P	**P**	**22 37 28.4**	**-0.6**
HLID	**Hailey**	**33.59**	**86**	*e*P	**P**	**22 37 38.5**	**+0.4**
MCMT	**McKenzie Canyo**	**33.85**	**83**	*e*P	**P**	**22 37 40.7**	**+0.2**
MCMT				*e*pP	**pP**	**22 37 49.4**	**+1.0**
BOZ	**Bozeman (W)**	**34.16**	**81**	*e*P	**P**	**22 37 43.2**	**+0.2**
RES	**Resolute Bay**	**34.60**	**26**	LR	LR	22 53 27.2	
	comp=Z,52nm,18.1s,baz=69,slow=39						
YHH	**Holmes Hill**	**35.08**	**81**	*e*P	**P**	**22 37 51.3**	**+0.2**
	11nm,0.7s						
IMW	**Indian Meadow**	**35.51**	**83**	*e*P	**P**	**22 37 55.6**	**+0.7**
	4.1nm,0.8s						
RLMT	**Red Lodge**	**35.85**	**80**	*e*P	**P**	**22 37 58.0**	**+0.3**
OSI	**Osito Audit: C**	**36.55**	**101**	*e*P	**P**	**22 38 05.8**	**+2.3**
	19nm,0.6s						
BW06	**Boulder Array**	**36.97**	**83**	*e*P	**P**	**22 38 07.3**	**0.0**
BW06				*e*pP	**pP**	**22 38 15.9**	**+0.6**
PD31	**Pinedale Array**	**36.97**	**83**	*e*P	**P**	**22 38 07.0**	**-0.4**
PD31				*e*pP	**pP**	**22 38 16.4**	**+1.1**
PDAR	**Pinedale Array**	**36.97**	**83**	P	**P**	**22 38 07.0**	**-0.4**
	3.6nm,0.8s,baz=300,slow=6.3,SNR=19						
U15A	**North Rim**	**39.21**	**93**	*e*P	**P**	**22 38 26.7**	**+0.4**
	12nm,1.8s						
O20A	**White River Ci**	**39.33**	**86**	*e*P	**P**	**22 38 27.0**	**-0.1**
	8.4nm,0.9s						
H11N2	**WAKE ISLAND Hy**	**39.99**	**226**	T	T	23 22 50.7	
	baz=25,slow=76,SNR=14						
H11N3	**WAKE ISLAND Hy**	**39.99**	**226**	T	T	23 22 50.7	
	baz=25,slow=76,SNR=13						
H11N1	**WAKE ISLAND Hy**	**40.00**	**226**	T	T	23 22 50.7	
	baz=25,slow=76,SNR=13						
N23A	**Red Feather La**	**40.26**	**83**	*e*P	**P**	**22 38 34.9**	**0.0**
	13nm,1.4s						
ULM	**Lac du Bonnet**	**40.95**	**65**	P	**P**	**22 38 39.4**	**-0.8**
	6.1nm,0.5s,baz=307,slow=8.9,SNR=7.1						
H11S1	**WAKE ISLAND Hy**	**41.15**	**225**	T	T	23 24 27.0	
	baz=25,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**41.17**	**225**	T	T	23 24 21.9	
	baz=25,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy**	**41.17**	**225**	T	T	23 24 29.3	
	baz=25,slow=76,SNR=14						
AGMN	**Agassiz Nation**	**41.97**	**68**	*e*P	**P**	**22 38 46.9**	**-1.8**
T25A	**Trinidad**	**43.54**	**86**	*e*P	**P**	**22 39 02.1**	**+0.4**
	4.3nm,0.8s						
CN2	**Changchun**	**46.19**	**289**	*e*P	**P**	**22 39 24.0**	**+1.5**
WMOK	**Wichita Mounta**	**48.55**	**85**	*e*P	**P**	**22 39 40.2**	**-0.8**
	1.4nm,0.7s						
DAG	**Danmarks Havn**	**48.93**	**10**	*i* P	**P**	**22 39 43.9**	**+0.6**
	5.7nm,0.5s						
TX31	**Lajitas Ar. Si**	**49.33**	**94**	*e*P	**P**	**22 39 46.7**	**-0.4**
LTX	**Lajitas**	**49.33**	**94**	*e*P	**P**	**22 39 46.5**	**-0.7**
TXAR	**Lajitas Array**	**49.33**	**94**	P	**P**	**22 39 46.5**	**-0.7**
	1.4nm,0.5s,baz=298,slow=5.8,SNR=21						
SUMG	**Summit**	**49.42**	**19**	*i* P	**P**	**22 39 48.8**	**+1.2**
	11nm,0.9s						
SUMG	**Summit**	**49.42**	**19**	*e*P	**P**	**22 39 48.2**	**+0.6**
	11nm,0.9s						
HHC	**Hu-ho-hao-te**	**55.96**	**294**	*e*P	**P**	**22 40 35.7**	**-0.3**
HHC				pmax	pmax		
	comp=Z,19nm,0.8s						
HHC				pmax	pmax		
	comp=Z,89nm,8.2s						
ARA0	**ARCESS Array S**	**57.91**	**356**	*e*P	**P**	**22 40 49.2**	**0.0**
ARCES	**ARCESS Array B**	**57.91**	**356**	P	**P**	**22 40 49.2**	**0.0**
	1.2nm,0.7s,baz=6.1,slow=6.6,SNR=5.2						
ZAA1	**Zalesovo Array**	**59.43**	**320**	*e*P	**P**	**22 41 00.3**	**+0.3**
ZALV	**Zalesovo Beam**	**59.44**	**320**	P	**P**	**22 41 00.3**	**+0.3**
	0.4nm,0.3s,baz=31,slow=6.7,SNR=3.1						
ZRNK	**Zerenda**	**65.87**	**328**	*e*P	**P**	**22 41 44.3**	**+1.3**
FIA0	**FINESS Array S**	**65.95**	**355**	*e*P	**P**	**22 41 43.3**	**-0.1**
FINES	**FINESS Array B**	**65.95**	**355**	P	**P**	**22 41 43.3**	**-0.1**
	2.0nm,0.8s,baz=145,slow=30,SNR=5.6						
WMQ	**Urumqi**	**65.97**	**311**	*e*P	**P**	**22 41 45.0**	**+1.1**
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.5s						
MK32	**Makanchi Array**	**66.00**	**317**	*e*P	**P**	**22 41 43.9**	**-0.2**
MKAR	**Makanchi Array**	**66.00**	**317**	P	**P**	**22 41 43.9**	**-0.2**
	0.3nm,0.6s,baz=56,slow=9.0,SNR=4.5						
NB200	**NORSAR Array S**	**66.56**	**3**	*e*P	**P**	**22 41 47.1**	**-0.3**
NOA	**NORSAR Array B**	**66.56**	**3**	P	**P**	**22 41 47.1**	**-0.3**
	1.2nm,1.0s,baz=358,slow=6.2,SNR=2.9						
AFI	**Afiamalu**	**66.68**	**188**	LR	LR	23 08 08.9	
	comp=Z,26nm,19.6s,baz=114,slow=34						
KSH	**Kashi**	**74.61**	**316**	*e*P	**P**	**22 42 38.2**	**+1.3**
KSH				*es*P	PcP	22 42 52.2	+1.1
KSH				pmax	pmax		
	comp=Z,28nm,4.0s						
AKASG	**Malin Array Be**	**76.41**	**352**	P	**P**	**22 42 46.2**	**-0.6**
	1.2nm,0.8s,baz=12,slow=5.8,SNR=4.3						
AKBB	**Malin Array Si**	**76.41**	**352**	*e*P	**P**	**22 42 46.2**	**-0.6**
	17nm,1.7s						
DPC	**Dobruska-Polom**	**77.34**	**360**	*e*P	**P**	**22 42 53.0**	**+0.8**
PRU	**Pruhonice**	**77.69**	**1**	*e*P	**P**	**22 42 57.2**	**+3.1**
STHS	**Stebnicka Huta**	**78.19**	**357**	*e*P	**P**	**22 42 58.7**	**+1.9**
KHC	**Kasperske Hory**	**78.54**	**2**	*e*P	**P**	**22 43 00.8**	**+2.0**
KHC				*ex*	x	22 43 11.4	
GERES	**GERESS Array B**	**78.83**	**2**	P	**P**	**22 43 00.9**	**+0.4**
	0.1nm,0.3s,baz=343,slow=4.2,SNR=3.8						
CONA	**Conrad Observa**	**79.77**	**0**	*i* pP	**P**	**22 43 07.0**	**+1.4**
	2.3nm,0.9s						
MOA	**Molln**	**79.83**	**1**	*i* PcP	**PcP**	**22 43 15.8**	**+2.3**
	5.6nm,1.8s						
MOTA	**Moosalm**	**80.25**	**4**	*i* PcP	**PcP**	**22 43 15.0**	**-0.5**
	2.3nm,0.9s						
DAVA	**Damuels**	**80.26**	**4**	*i* PcP	**PcP**	**22 43 16.5**	**+0.9**
	5.6nm,1.1s						
FETA	**Feichten**	**80.56**	**4**	*i* sP	**P**	**22 43 13.6**	**+3.6**
	3.7nm,1.0s						
KBA	**Koelnbreinsper**	**80.59**	**2**	*i* sP	**P**	**22 43 11.9**	**+1.7**
	2.8nm,0.6s						
ABTA	**Abfaltersbach**	**80.90**	**3**	*i* pP	**P**	**22 43 13.1**	**+1.4**
	3.6nm,1.2s						
SOKA	**Soboth**	**81.01**	**1**	*i* pP	**P**	**22 43 13.6**	**+1.3**
	2.6nm,1.1s						
MYKA	**Terra Mystica**	**81.04**	**2**	*i* sP	**P**	**22 43 14.6**	**+2.1**
	2.8nm,1.0s						
OBKA	**Obir**	**81.18**	**1**	*i* pP	**P**	**22 43 14.3**	**+1.1**
	3.7nm,0.7s						
CTA	**Charters Tower**	**84.43**	**226**	LR	LR	23 16 37.9	
	comp=Z,171nm,20.2s,slow=32						
AS31	**Alice Springs**	**93.29**	**234**	*e*P	**P**	**22 44 10.7**	**-1.7**
	2.7nm,1.4s						
ASAR	**Alice Springs**	**93.29**	**234**	P	**P**	**22 44 10.7**	**-1.7**
	0.4nm,0.7s,baz=32,slow=5.5,SNR=3.5						

IDC 05 22:43:16.1±14.0,4.90N×127.43E,h317km±154km, mb3.3/8,mb1 3.4/8,mb1mx3.0/52,mbtmp3.9/8,Error ellipse: s-maj=42.9km s-min=28.9km az=55.0,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**22.93**	**184**	P	P	22 47 53.5	+0.2
	0.6nm,0.4s,baz=14,slow=14,SNR=1.1						
WRA	**Warramunga Arr**	**25.60**	**165**	P	P	22 48 17.4	-0.2
	0.8nm,0.5s,baz=344,slow=10,SNR=4.8						
PETK	**Petropavlovsk-**	**54.09**	**22**	P	P	22 52 08.8	0.0
	2.0nm,0.6s,baz=179,slow=7.3,SNR=2.9						
MKAR	**Makanchi Array**	**57.01**	**325**	P	P	22 52 29.4	-0.2
	1.1nm,0.4s,baz=114,slow=7.7,S

CRQM	**Cirque**	**4.19**	**131**	P	**Pn**	**23 28 48.5**	**-1.2**
CNPM	**China Poot**	**4.20**	**191**	P	**Pn**	**23 28 49.0**	**-0.7**
NICHA	**Nichawak Mount**	**4.33**	**139**	P	**Pn**	**23 28 50.7**	**-0.7**
KIAG	**Kiagna River**	**4.35**	**126**	P	**Pn**	**23 28 50.5**	**-1.3**
KHIT	**Khitrov Hills**	**4.39**	**134**	P	**Pn**	**23 28 51.3**	**-0.9**
BARN	**Barnard Glacie**	**4.52**	**121**	P	**Pn**	**23 28 54.6**	**+0.5**
DAWY	**Dawson**	**4.55**	**80**	P	**Pn**	**23 28 53.7**	**-0.6**
ISLE	**Juniper Island**	**4.58**	**128**	P	**Pn**	**23 28 53.3**	**-1.4**
BAGL	**Bagley Icefiel**	**4.75**	**128**	P	**Pn**	**23 28 55.6**	**-1.3**
MESA	**MESA**	**5.02**	**130**	P	**Pn**	**23 28 59.9**	**-0.8**
FOPK	**Fourpeaked Vol**	**5.24**	**203**	P	**Pn**	**23 29 02.4**	**-1.1**
KAKN	**Katmai Knife C**	**5.98**	**209**	P	**Pn**	**23 29 12.6**	**-0.9**
OHAK	**Old Harbor**	**6.69**	**197**	P	**Pn**	**23 29 21.4**	**-1.6**
INK	**Inuvik**	**8.05**	**47**	P	**Pn**	**23 29 41.6**	**+0.4**
YKA	**Yellowknife Ar**	**15.79**	**78**	P	**P**	**23 31 24.6**	**+0.8**
	0.2nm,0.3s,baz=296,slow=11,SNR=6.5						
PDAR	**Pinedale Array**	**31.02**	**113**	P	**P**	**23 33 53.6**	**+0.2**
	0.3nm,0.4s,baz=329,slow=1.1,SNR=4.7						
TXAR	**Lajitas Array**	**45.00**	**117**	P	**P**	**23 35 52.0**	**+1.5**
	0.4nm,0.5s,baz=328,slow=6.7,SNR=7.2						
FINES	**FINESS Array B**	**55.19**	**3**	P	**P**	**23 37 05.8**	**-0.9**
	1.0nm,0.6s,baz=343,slow=4.4,SNR=4.3						

IDC 05 23:30:02.7±1.4, 85°37N×25°40E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.3/39, mbtmp3.6/4, ML3.2/1, MS3.1/14, Ms1 3.1/14, ms1mx2.9/42, Error ellipse: s-maj=44.3km s-min=27.4km az=82.0, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARCES	**ARCESS Array B**	**15.93**	**180**	Pn	Pn	23 33 42.2	-5.6
	0.1nm,0.3s,baz=2.0,slow=8.7,SNR=7.2						
ARCES				LR	LR	23 39 54.4	
	comp=Z,34nm,18.8s,baz=314,slow=37						
NRIK	**Noril'sk**	**19.04**	**106**	LR	LR	23 42 23.7	
	comp=Z,31nm,20.0s,baz=162,slow=39						
FINES	**FINESS Array B**	**24.06**	**179**	LR	LR	23 43 49.7	
	comp=Z,29nm,20.2s,baz=22,slow=34						
NOA	**NORSAR Array B**	**24.63**	**197**	LR	LR	23 45 43.7	
	comp=Z,15nm,18.1s,baz=50,slow=38						
ILAR	**Eielson Array**	**30.00**	**353**	P	P	23 36 12.1	-0.2
	0.4nm,0.8s,baz=353,slow=6.4,SNR=4.1						
YKA	**Yellowknife Ar**	**31.37**	**325**	LR	LR	23 48 29.1	
	comp=Z,4.9nm,18.2s,baz=0.0,slow=35						
ZALV	**Zalesovo Beam**	**34.07**	**115**	LR	LR	23 54 14.3	
	comp=Z,27nm,18.6s,baz=68,slow=43						
AKASG	**Malin Array Be**	**34.84**	**176**	LR	LR	23 51 15.3	
	comp=Z,20nm,20.9s,baz=330,slow=36						
KURBB	**Kurchatov Arra**	**36.93**	**122**	P	P	23 37 12.7	0.0
	0.7nm,0.8s,baz=356,slow=7.8,SNR=10.0						
MKAR	**Makanchi Array**	**41.00**	**119**	LR	LR	23 57 13.1	
	comp=Z,34nm,20.9s,baz=356,slow=40						
BRTR	**Keskin Array B**	**45.86**	**171**	LR	LR	23 58 49.9	
	comp=Z,16nm,19.7s,baz=344,slow=38						
PDAR	**Pinedale Array**	**50.80**	**318**	LR	LR	23 59 08.5	
	comp=Z,34nm,20.1s,baz=243,slow=34						
CMAR	**Chiang Mai Arr**	**70.40**	**105**	LR	LR	00 15 13.3	
	comp=Z,29nm,19.1s,baz=190,slow=38						
SJG	**San Juan**	**72.19**	**273**	LR	LR	00 13 11.4	
	comp=Z,95nm,18.4s,baz=225,slow=36						
TORD	**Torodi Ar. Bea**	**72.68**	**204**	P	P	23 41 32.2	+0.3
	0.5nm,0.8s,baz=347,slow=5.8,SNR=7.2						
CMIG	**Matias Romero**	**75.41**	**301**	LR	LR	00 15 00.9	
	comp=Z,32nm,21.7s,baz=116,slow=36						
PCRV	**Puerto La Cruz**	**79.93**	**271**	LR	LR	00 15 22.9	
	comp=Z,77nm,20.4s,slow=34						

IDC 05 23:36:47.2±1.4, 0°94S×130°74E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.4/34, mbtmp3.5/3, ML3.6/1, MS3.2/1, Ms1 3.2/1, ms1mx2.3/30, Error ellipse: s-maj=26.4km s-min=10.7km az=170.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**0.53**	**83**	Pg	Pg	23 36 57.5	+0.1
	baz=90,slow=24,SNR=52						
SIJI				Lg	Lg	23 37 04.6	
	13nm,0.3s,baz=90,slow=24,SNR=29						
FITZ	**Fitzroy Crossi**	**17.78**	**196**	P	P	23 41 00.7	+3.5
	0.1nm,0.3s,baz=40,slow=16,SNR=2.7						
WRA	**Warramunga Arr**	**19.21**	**170**	P	P	23 41 11.9	-1.1
	0.2nm,0.3s,baz=351,slow=11,SNR=8.7						
ASAR	**Alice Springs**	**22.80**	**172**	P	P	23 41 52.2	+0.5
	0.4nm,0.3s,baz=358,slow=8.9,SNR=8.7						
HNR	**Honiara**	**30.26**	**107**	LR	LR	23 55 33.7	
	comp=Z,39nm,18.3s,baz=148,slow=37						
MKAR	**Makanchi Array**	**63.65**	**325**	P	P	23 47 20.3	0.0
	0.3nm,0.4s,baz=123,slow=5.3,SNR=6.5						

IDC 05 23:38:04.8±2.3, 36°73N×141°35E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/47, mbtmp3.4/4, ML2.9/1, MS2.1/1, Ms1 2.1/1, ms1mx1.9/41, Error ellipse: s-maj=47.6km s-min=34.1km az=44.0

ISCJB 05 23:38:05.8±1.5, 36°74N±0°06×141°39E±0°08, h19km±8km, mb3.4/3, Error ellipse: s-maj=11.7km s-min=9.1km az=23.3

JMA 05 23:38:07.9±0.1, 36°74N×141°22E, h36km±1km, M3.4

JMA Felt I J1.

ISC 05 23:38:06.3±2.3, 36°78N±0°07×141°4E±0°1, h11km±11km, n17, σ0°67/18, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.55**	**307**	P	**Pb**	**23 38 18.0**	**0.0**
ONAJ				S	**Sg**	**23 38 25.3**	**+1.0**
JHO	**Hitachi**	**0.65**	**255**	P	**Pg**	**23 38 18.7**	**-0.2**
JHO				S	**Sg**	**23 38 26.8**	**-0.6**
JFK	**Kawauchi**	**0.70**	**328**	P	**Pb**	**23 38 20.7**	**+0.1**
JFK				S	**Sb**	**23 38 30.0**	**-0.2**
JFT	**Otama**	**1.09**	**313**	P	**Pb**	**23 38 27.2**	**-0.1**
JFT				S	**Sb**	**23 38 41.0**	**-0.6**
JMM	**Marumori**	**1.17**	**338**	S	**Sb**	**23 38 43.2**	**-0.6**
JFY	**Yanaizu**	**1.46**	**296**	P	**Pn**	**23 38 32.6**	**0.0**
JFY				S	**Sn**	**23 38 50.5**	**-1.1**
MJAR	**Matsushiro Arr**	**2.53**	**266**	Pn	**Pn**	**23 38 47.1**	**-0.2**
	2.3nm,0.3s,baz=106,slow=11,SNR=6.0						
MJAR				Sn	**Sn**	**23 39 18.4**	**+0.2**
	4.0nm,0.3s,baz=92,slow=17,SNR=6.5						
MJAR				LR	LR	23 39 51.1	
	comp=Z,32nm,18.5s,baz=40,slow=42						
MAT	**Matsushiro**	**2.53**	**266**	P	**Pn**	**23 38 47.8**	**+0.4**
MAT				S	**Sn**	**23 39 19.7**	**+1.4**
H11N2	**WAKE ISLAND Hy**	**28.06**	**120**	T	T	00 13 23.1	
	baz=313,slow=75,SNR=54						
H11N1	**WAKE ISLAND Hy**	**28.07**	**120**	T	T	00 13 22.7	
	baz=313,slow=75,SNR=124						
H11N3	**WAKE ISLAND Hy**	**28.08**	**120**	T	T	00 13 18.7	
	baz=313,slow=75,SNR=83						
H11S1	**WAKE ISLAND Hy**	**28.77**	**122**	T	T	00 14 15.0	
	baz=315,slow=75,SNR=66						
H11S3	**WAKE ISLAND Hy**	**28.77**	**122**	T	T	00 14 13.9	
	baz=315,slow=75,SNR=62						
H11S2	**WAKE ISLAND Hy**	**28.78**	**122**	T	T	00 14 16.3	
	baz=315,slow=75,SNR=48						
ZALV	**Zalesovo Beam**	**42.05**	**313**	P	**P**	**23 45 58.2**	**+0.5**
	0.4nm,0.4s,baz=92,slow=7.6,SNR=2.3						
MKAR	**Makanchi Array**	**44.21**	**302**	P	**P**	**23 46 15.3**	**0.0**
	0.2nm,0.3s,baz=97,slow=9.2,SNR=2.6						
WRA	**Warramunga Arr**	**56.80**	**188**	P	**P**	**23 47 50.4**	**-0.2**
	0.7nm,1.0s,baz=6.3,slow=7.4,SNR=0.2						

ISCJB 05 23:47:22.7±5.0, 14°8S±0°2×167°3E±0°6, h129km, mb3.6/3, Error ellipse: s-maj=82.1km s-min=14.0km az=161.9

IDC 05 23:47:27.3±9.6, 15°04S×167°35E, h158km±87km, mb3.2/4, mb1 3.4/5, mb1mx3.2/36, mbtmp3.8/5, Error ellipse: s-maj=80.3km s-min=38.2km az=4.0

ISC 05 23:47:24.2±2.5, 14°9S±0°1×167°4E±0°3, h129km, n6, σ0°85/7, mb3.5/3, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.23**	**187**	P	**Pn**	**23 49 07.7**	**+0.2**
	2.8nm,0.3s,baz=24,slow=22,SNR=15						
DZM				S	**Sn**	**23 50 28.0**	**-0.2**
	0.8nm,0.3s,baz=305,slow=23,SNR=2.7						
CTA	**Charters Tower**	**20.79**	**252**	P	**P**	**23 51 56.6**	**+1.3**
	2.0nm,0.5s,baz=106,slow=16,SNR=3.6						
WRA	**Warramunga Arr**	**31.88**	**256**	P	**P**	**23 53 36.9**	**-0.6**
	0.5nm,0.9s,baz=85,slow=9.1,SNR=3.0						
ASAR	**Alice Springs**	**32.71**	**249**	P	**P**	**23 53 43.9**	**-0.9**
	0.4nm,0.4s,baz=77,slow=9.0,SNR=4.9						
FITZ	**Fitzroy Crossi**	**40.08**	**259**	P	**P**	**23 54 47.1**	**-0.2**
	4.8nm,1.1s,baz=135,slow=7.1,SNR=2.5						
ARCES	**ARCESS Array B**	**120.39**	**345**	PKP	**PKPdf**	**00 05 59.9**	**+0.2**
	3.1nm,1.0s,baz=54,slow=2.0,SNR=5.2						

ISK 05 23:54:33.6, 39°06N×29°14E, h5km, MD2.6

ISCJB 05 23:54:34.2±0.6, 39°06N±0°05×29°08E±0°05, h4km±11km, Error ellipse: s-maj=9.3km s-min=4.4km az=143.6

CSEM 05 23:54:34.3±0.2, 39°06N×29°08E, h5km, MD2.7, Error ellipse: s-maj=6.2km s-min=3.5km az=129.0

DDA 05 23:54:34.3, 39°08N×29°07E, h7km, Md2.7

ISC 05 23:54:34.4±1.0, 39°05N±0°03×29°08E±0°03, h12km±10km, n16, σ0°67/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**268**	*i* P	**Pg**	**23 54 40.1**	**-0.1**
DEMI				*i* S	**Sg**	**23 54 44.4**	**+0.3**
DEMI	**Demirci**	**0.28**	**268**	P	**Pg**	**23 54 40.1**	**-0.1**
DEMI				S	**Sg**	**23 54 44.4**	**+0.3**
GDZ	**Gediz**	**0.32**	**83**	*i* P	**Pg**	**23 54 41.0**	**+0.1**
GDZ				*i* S	**Sg**	**23 54 45.7**	**+0.5**
GDZ	**Gediz**	**0.32**	**83**	P	**Pg**	**23 54 41.0**	**+0.1**
GDZ				S	**Sg**	**23 54 45.7**	**+0.5**
TVSB	**Tavsanli**	**0.50**	**37**	*e*PG	**Pg**	**23 54 43.5**	**-0.7**
TVSB				*e*SG	**Sg**	**23 54 49.7**	**-1.1**
TVSB	**Tavsanli**	**0.50**	**37**	*e*Pg	**Pg**	**23 54 43.5**	**-0.7**
TVSB				*e*Sg	**Sg**	**23 54 49.7**	**-1.1**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*PG	**Pb**	**23 54 47.3**	**-0.1**
KULA				*e*SG	**Sg**	**23 54 55.7**	**+0.8**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*Pg	**Pb**	**23 54 47.3**	**-0.1**
KULA				*e*Sg	**Sg**	**23 54 55.7**	**+0.8**
MANT	**Manisa**	**0.69**	**216**	*i* P	**Pg**	**23 54 46.8**	**-1.1**
MANT				*i* S	**Sg**	**23 54 56.4**	**-0.6**
MANT	**Manisa**	**0.69**	**216**	P	**Pg**	**23 54 46.8**	**-1.1**
MANT				S	**Sg**	**23 54 56.4**	**-0.6**
BALB	**Balikesir**	**1.10**	**303**	*e*PN	**Pn**	**23 54 56.2**	**+0.5**
BALB	**Balikesir**	**1.10**	**303**	*e*Pn	**Pn**	**23 54 56.2**	**+0.5**
KCTX	**Karacabey (Bur**	**1.33**	**336**	*e*PN	**Pg**	**23 54 59.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.33**	**336**	*e*Pn	**Pg**	**23 54 59.9**	**-0.2**
ARMT	**Armutlu**	**1.52**	**354**	*e*PN	**Pn**	**23 55 02.2**	**+0.7**
ARMT	**Armutlu**	**1.52**	**354**	*e*Pn	**Pn**	**23 55 02.2**	**+0.7**

IDC 06 00:00:01.1±0.8, 3°74N×93°46E, h0km, mb4.0/13, mb1 4.2/15, mb1mx3.9/47, mbtmp4.0/15, ML3.9/2, MS3.2/4, Ms1 3.2/4, ms1mx2.8/47, Error ellipse: s-maj=33.6km s-min=15.4km az=47.0

ISCJB 06 00:00:02.2±0.4, 3°69N±0°05×93°45E±0°03, h19km, mb4.2/18, MS3.3/4, Error ellipse: s-maj=7.2km s-min=4.4km az=24.3

NEIC 06 00:00:06.1±1.0, 3°72N×93°45E, h35km±9km, mb4.8/6, Error ellipse: s-maj=12.5km s-min=7.4km az=219.0

DJA 06 00:00:10.2±0.7, 4°N±4°×94°E±°, h51km, M4.5/10, mb4.5/10, mB5.2/6, MLv4.5/9, Mw(mB)4.6/6

ISC 06 00:00:03.9±0.6, 3°72N±0°07×93°50E±0°06, h19km, n68, σ1°89/65, mb4.1/18, MS3.3/4, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLSI	**Meulaboh, Aceh**	**2.94**	**79**	P	**Pn**	**00 00 51.6**	**+1.9**
MLSI				S	**Sn**	**00 01 23.2**	**-1.4**
TPTI		**3.70**	**97**	P	**Pn**	**00 01 02.6**	**+2.6**
TPTI				S	**Sn**	**00 01 39.4**	**-3.7**
LHMI	**Lhok Sumawe**	**3.75**	**66**	P	**Pn**	**00 01 03.2**	**+2.5**
LHMI	**Lhok Sumawe**	**3.75**	**66**	*e*Pn	**Pn**	**00 01 03.5**	**+2.7**
LHMI				*e*Sn	**Sn**	**00 01 45.6**	**+1.3**
KCSI	**Kotacane, Aceh**	**4.26**	**92**	P	**Pn**	**00 01 11.3**	**+3.4**
KCSI				S	**Sn**	**00 01 53.9**	**-3.3**
GSI	**Gunungsitoli**	**4.72**	**120**	P	**Pn**	**00 01 15.4**	**+1.3**
GSI	**Gunungsitoli**	**4.72**	**120**	*e*Pn	**Pn**	**00 01 15.8**	**+1.7**
GSI				*e*Sn	**Sn**	**00 02 09.2**	**+0.8**
PSI	**Prapat**	**5.49**	**99**	*e*Pn	**Pn**	**00 01 27.8**	**+3.0**
PSI				*e*Sn	**Sn**	**00 02 28.5**	**+1.0**
PKDT	**Phuket**	**6.35**	**49**	P	**Pn**	**00 01 37.6**	**+1.1**
	108nm,0.7s,2μm						
MNSI	**Mandailing Nat**	**6.73**	**115**	P	**Pn**	**00 01 43.1**	**+1.4**
KULM	**Kulim**	**7.29**	**77**	*e*Pn	**Pn**	**00 01 51.8**	**+2.2**
KULM				*e*Sn	**Sn**	**00 03 06.4**	**-5.5**
TRTT	**Trang**	**7.39**	**56**	P	**Pn**	**00 01 51.9**	**+1.0**
	92nm,0.5s,1μm0.4nm						
SURT	**Suratani**	**7.40**	**45**	P	**Pn**	**00 01 52.1**	**+1.1**
	20nm,0.8s,0.1nm						
IPM	**Ipoh**	**7.54**	**84**	*e*Pn	**Pn**	**00 01 55.0**	**+2.1**
IPM				*e*Sn	**Sn**	**00 03 15.0**	**-3.0**
SKLT	**Songkhla**	**7.87**	**64**	P	**Pn**	**00 01 59.2**	**+1.8**
	36nm,0.7s,0.1nm						
PDSI	**Padang**	**8.34**	**123**	P	**Pn**	**00 02 05.6**	**+1.7**
	16nm,0.5s,3μm						
PHET	**Kaeng Krachan**	**10.96**	**33**	P	**Pn**	**00 02 42.9**	**+3.1**
	5.3nm,0.8s						
CHBT	**CHBT**	**12.52**	**44**	P	**Pn**	**00 03 04.0**	**+2.8**
	26nm,0.8s						
PALK	**Pallekele**	**13.22**	**286**	Pn	**Pn**	**00 03 10.1**	**-0.7**
	0.3nm,0.3s,baz=115,slow=18,SNR=3.8						
PALK				Sn	Sn	00 05 22.3	-15
	1.0nm,0.3s,baz=116,slow=11,SNR=4.2						
PALK				LR	LR	00 07 55.7	
	comp=Z,96nm,18.8s,baz=116,slow=36						
PBKT	**Sadao Pong**	**14.73**	**29**	P	**Pn**	**00 03 31.9**	**+0.5**
	19nm,1.3s,1μm						
KHON	**Khomkaen**	**15.53**	**35**	P	**P**	**00 03 47.7**	**+1.4**
	17nm,0.8s,1μm						
CM01	**Chiang Mai Arr**	**15.56**	**20**	*e*Pn	**Pn**	**00 03 41.9**	**-0.5**
UTTA	**Uttaradit**	**15.56**	**26**	P	**P**	**00 03 46.8**	**+0.2**
	11nm,0.8s,91nm						
CM31	**Chiang Mai Arr**	**15.59**	**20**	*e*Pn	**P**	**00 03 47.5**	**+0.6**
CMAR	**Chiang Mai Arr**	**15.59**	**20**	Pn	**Pn**	**00 03 41.8**	**-1.0**
	0.4nm,0.3s,baz=213,slow=14,SNR=20						
LAMP	**Lampang**	**15.89**	**22**	P	**P**	**00 03 50.7**	**+0.4**
	10nm,0.8s						
CHTO	**Chiang Mai**	**15.92**	**19**	P	**P**	**00 03 50.3**	**-0.3**
	82nm,1.1s,882nm						
CMMT	**Chiang Mai**	**15.92**	**19**	P	**P**	**00 03 50.2**	**-0.4**
	19nm,1.0s,310nm						
COCO	**West Island**	**16.14**	**168**	*e*Pn	Pn	00 03 41.3	-8.6
	554nm,1.6s						
UBPT	**Khong Chiam**	**16.46**	**45**	P	**Pn**	**00 03 55.3**	**+1.4**
	30nm,1.2s,741nm						
SKNT	**Sakolnakorn**	**16.71**	**37**	P	**Pn**	**00 03 57.6**	**+0.4**
	36nm,0.6s						
NONG	**Nongkai**	**17.10**	**33**	P	**Pn**	**00 04 02.3**	**+0.2**
H08S2	**Diego Garcia H**	**23.81**	**242**	T	T	00 30 04.6	
	baz=62,slow=76,SNR=776						
H08S3	**Diego Garcia H**	**23.81**	**242**	T	T	00 30 04.6	
	baz=62,slow=76,SNR=957						
H08S1	**Diego Garcia H**	**23.82**	**242**	T	T	00 30 05.8	
	baz=62,slow=76,SNR=918						
RAMN	**Ramite**	**24.03**	**345**	*e*P	P	00 05 26.4	+8.3
	24nm,0.6s						
PKIN	**Phulchoki**	**24.96**	**343**	*e*P	**P**	**00 05 30.3**	**+3.7**
	10nm,0.6s						
MYLDM	**Lahad Datu**	**24.96**	**86**	*e*P	**P**	**00 05 25.9**	**-0.6**
	40nm,1.2s						
KKN	**Kakani**	**25.19**	**343**	*e*P	**P**	**00 05 32.2**	**+3.5**
	16nm,0.9s						
GKN	**Gorkha**	**25.59**	**342**	*e*P	**P**	**00 05 33.6**	**+1.4**
	36nm,1.0s						
KOLN	**Koldanda**	**25.72**	**339**	*e*P	**P**	**00 05 31.5**	**-1.9**
	13nm,0.6s						
PYUN	**Piuthan**	**26.24**	**339**	*e*P	**P**	**00 05 34.0**	**-4.2**
	8.6nm,0.7s						
XAN	**Xi'an**	**33.41**	**24**	P	**P**	**00 06 40.7**	**-0.8**
XAN				pP	pP	00 06 49.0	+1.6
XAN				sP	sP	00 06 53.1	+3.3
XAN				pmax	pmax		
	comp=Z,10.0nm,0.9s						
XAN				pmax	pmax		
	comp=Z,55nm,6.9s						
XAN				LR	LR		
	comp=N,78nm,15.6s						
XAN				LR	LR		
	comp=E,75nm,18.6s						
XAN				LR	LR		
	comp=Z,80nm,14.6s						
FITZ	**Fitzroy Crossi**	**38.39**	**125**	P	**P**	**00 07 24.3**	**0.0**
	comp=Z,3.8nm,0.8s,baz=270,slow=6.1,SNR=6.0						
FITZ	**Fitzroy Crossi**	**38.39**	**125**	*e*P	**P**	**00 07 24.1**	**-0.2**
	comp=Z,34nm,1.8s						
KSH	**Kashi**	**39.02**	**338**	*e*P	P	00 07 40.5	+11
FAKI	**Fak Fak**	**39.28**	**99**	*e*P	**P**	**00 07 30.4**	**-1.5**
	comp=Z,60nm,1.6s						
AAK	**Ala-Archa**	**42.29**	**339**	LR	LR	00 27 38.3	
	comp=Z,26nm,20.0s,baz=74,slow=39						
MRIV	**Mauritius Mete**	**42.65**	**235**	*e*P	P	00 07 51.3	-8.3
H01W3	**Cape Leeuwin H**	**43.02**	**155**	T	T	00 54 10.7	
	baz=331,slow=76,SNR=47						
H01W2	**Cape Leeuwin H**	**43.03**	**155**	T	T	00 54 11.6	
	baz=331,slow=76,SNR=56						
H01W1	**Cape Leeuwin H**	**43.03**	**155**	T	T	00 53 55.9	
	baz=331,slow=76,SNR=34						
MKAR	**Makanchi Array**	**44.00**	**349**	P	**P**	**00 08 11.3**	**+1.2**
	comp=Z,1.7nm,0.6s,baz=170,slow=8.4,SNR=4.8						
KKAR	**Karatay Array**	**44.22**	**336**	*e*P	**P**	**00 08 11.9**	**0.0**
	comp=Z,2.0nm,0.8s						
SONM	**Songino Array**	**45.34**	**12**	P	**P**	**00 08 20.2**	**-0.7**
	comp=Z,1.1nm,0.7s,baz=190,slow=7.3,SNR=2.7						
WRA	**Warramunga Arr**	**46.49**	**122**	P	**P**	**00 08 31.2**	**+0.9**
	comp=Z,5.3nm,0.8s,baz=298,slow=8.9,SNR=29						
GEYT	**Alibeck**	**46.94**	**321**	P	**P**	**00 08 34.0**	**+0.4**
	comp=Z,3.1nm,0.6s,baz=134,slow=8.5,SNR=9.4						
ASAR	**Alice Springs**	**47.85**	**127**	P	**P**	**00 08 41.7**	**+0.8**
	comp=Z,1.6nm,0.7s,baz=301,slow=7.9,SNR=12						
KURBB	**Kurchatov Arra**	**48.42**	**347**	P	**P**	**00 08 45.7**	**+0.9**
	comp=Z,0.6nm,0.5s,baz=172,slow=7.6,SNR=5.2						
KURK	**Kurchatov**	**48.49**	**347**	P	**P**	**00 08 45.7**	**+0.4**
ZAA0	**Zalesovo Array**	**50.58**	**353**	*e*P	**P**	**00 09 02.0**	**+0.8**
ZALV	**Zalesovo Beam**	**50.58**	**353**	P	**P**	**00 09 01.4**	**+0.2**
	comp=Z,0.8nm,0.4s,baz=178,slow=8.3,SNR=6.6						
ZALV				LR	LR	00 35 11.2	
	comp=Z,15nm,18.4s,baz=70,slow=42						
ABKAR	**Akbulak array**	**53.60**	**333**	*e*P	**P**	**00 09 23.4**	**-0.3**
	comp=Z,1.3nm,0.6s						
BRTR	**Keskin Array B**	**64.70**	**312**	P	**P**	**00 10 40.4**	**-0.7**
	comp=Z,0.7nm,0.7s,baz=132,slow=7.4,SNR=5.6						
FINES	**FINESS Array B**	**76.08**	**333**	P	**P**	**00 11 49.2**	**-0.8**
	comp=Z,1.2nm,0.7s,baz=122,slow=7.2,SNR=4.3						
ARCES	**ARCESS Array B**	**78.95**	**341**	P	**P**	**00 12 05.5**	**-0.5**
	comp=Z,1.2nm,0.7s,baz=69,slow=7.9,SNR=4.9						
GERES	**GERESS Array B**	**80.50**	**319**	P	**P**	**00 12 14.9**	**-0.1**
	comp=Z,0.8nm,0.6s,baz=101,slow=5.6,SNR=10						
GERES				LR	LR	00 51 49.3	
	comp=Z,23nm,18.9s,baz=282,slow=39						
TORD	**Torodi Ar. Bea**	**90.92**	**283**	P	**P**	**00 13 07.9**	**+0.6**
	comp=Z,0.8nm,1.1s,baz=80,slow=4.2,SNR=3.4						

NIED 06 00:14:00, 38°40N×142°20E, h14km, Mw3.3 Best double couple: M0 8.60000×10^13 NP1:ϕs 181.00000°, δ36.00000°, λ-22.00000°. NP2:ϕs 289.00000°, δ77.00000°, λ-124.00000°.

JMA 06 00:14:04.2±0.1, 38°42N×142°15E, h29km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.63**	**273**	P	Pb	00 14 16.4	-0.3
JIO				S	Sb	00 14 24.7	-0.5
OFUJ	**Ofunato**	**0.76**	**330**	P	Pb	00 14 18.4	-0.5
OFUJ				S	Sb	00 14 28.4	-0.5
JMK	**Ichinoseki**	**0.90**	**306**	P	Pn	00 14 20.6	-0.3
JMK				S	Sb	00 14 32.8	-0.1
JOU	**Okura**	**1.17**	**268**	P	Pn	00 14 24.5	-0.1
JOU				S	Sn	00 14 39.8	+0.2
JOM	**Ohasama**	**1.25**	**328**	P	Pn	00 14 26.0	+0.3
JOM				S	Sb	00 14 42.2	-0.6
JYK	**Kaneyama**	**1.49**	**290**	P	Pn	00 14 29.9	+0.9

FUNV 06 00:24:11.9, 11°18N×61°30W, h47km, MW2.8

ISCJB 06 00:24:12.0±0.8, 11°17N±0°04×61°52W±0°05, h79km±8km, Error ellipse: s-maj=8.7km s-min=5.1km az=25.0

TRN 06 00:24:13.8, 11°27N×61°43W, h15km, MD2.8

ISC 06 00:24:10.8±1.5, 11°14N±0°04×61°47W±0°05, h93km±10km, n17, σ1°88/30, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRN	**Trinidad (W)**	**0.50**	**173**	*e*P	**Pn**	**00 24 26.0**	**+0.2**
TRN				*e*S	**Sn**	**00 24 34.9**	**-2.1**
TCE	**Chacachacare**	**0.53**	**212**	*e*P	**Pn**	**00 24 27.3**	**+1.2**
TCE				*e*S	**Sn**	**00 24 36.1**	**-1.3**
TBH	**Brigand Hill**	**0.76**	**149**	*e*P	**Pn**	**00 24 30.5**	**+2.3**
TPP	**Pointe-a-Pierr**	**0.82**	**179**	*e*S	**Sn**	**00 24 45.2**	**+3.0**
GUIV	**Guiria**	**0.89**	**236**	*e*P	**Pn**	**00 24 30.2**	**+0.7**
GUIV				*e*S	**Sn**	**00 24 42.7**	**-0.8**
TOSP	**

MJB9	**Matsu-Tunnel**	**3.76**	**257**	*e*Pn	**Pn**	**00 29 57.5**	**+0.2**
ERM	**Erimo**	**4.56**	**4**	*e*Pn	**Pn**	**00 30 06.5**	**-1.6**
JHJ2	**Mitsune**	**4.96**	**210**	*e*Pn	**Pn**	**00 30 11.6**	**-2.2**
JHJ2				*e*Sn	**Sn**	**00 31 09.8**	**-0.1**
JHJ	**Hachijo jima 2**	**4.97**	**210**	Pn	**Pn**	**00 30 11.8**	**-2.0**
	35nm,0.3s,baz=154,slow=23,SNR=12						
JHJ				Sn	**Sn**	**00 31 06.4**	**-3.7**
	81nm,0.3s,baz=93,slow=23,SNR=11						
INU	**Inuyama**	**5.09**	**247**	*e*Pn	**Pn**	**00 30 16.1**	**+0.5**
ASAJ	**Asahikawa**	**6.65**	**359**	Pn	**Pn**	**00 30 36.7**	**-0.1**
	baz=180,slow=13						
ASAJ				Sn	**Sn**	**00 31 48.4**	**-2.9**
	0.1nm,0.3s,baz=0.0,slow=20,SNR=2.8						
ASAJ	**Asahikawa**	**6.65**	**359**	*e*Pn	**Pn**	**00 30 35.7**	**-1.2**
	20nm,1.4s						
ASAJ				*e*Sn	**Sn**	**00 31 51.4**	**+0.1**
USRK	**Ussuriysk Ar.**	**10.57**	**313**	Pn	**Pn**	**00 31 31.9**	**+1.3**
	0.1nm,0.3s,baz=117,slow=15,SNR=2.2						
KSRS	**Korea Array**	**11.80**	**274**	Pn	**Pn**	**00 31 48.4**	**+1.0**
	0.1nm,0.3s,baz=99,slow=14,SNR=3.9						
KSAR	**Wonju Array Be**	**11.83**	**274**	Pn	**Pn**	**00 31 48.4**	**+0.6**
KLR	**Kul'dur**	**14.21**	**329**	LR	LR	00 37 48.3	
	comp=Z,99nm,19.3s,baz=162,slow=37						
HHC	**Hu-ho-hao-te**	**24.36**	**288**	*e*P	**P**	**00 34 15.5**	**-0.8**
HHC				PP	**PnPn**	**00 34 54.1**	**+6.6**
HHC				S	**S**	**00 38 30.8**	**-2.5**
HHC				SS	**SnSn**	**00 39 28.5**	**+10**
HHC				pmax	pmax		
	comp=Z,27nm,0.9s						
HHC				pmax	pmax		
	comp=Z,78nm,4.4s						
HHC				LR	LR		
	comp=N,110nm,8.7s						
HHC				LR	LR		
	comp=E,140nm,10.6s						
HHC				LR	LR		
	comp=Z,110nm,10.6s						
YAK	**Yakutsk**	**25.90**	**346**	LR	LR	00 46 16.2	
	comp=Z,38nm,19.1s,baz=156,slow=40						
H11N2	**WAKE ISLAND Hy**	**27.46**	**123**	T	T	01 03 32.9	
	baz=315,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy**	**27.47**	**123**	T	T	01 03 42.6	
	baz=315,slow=75,SNR=98						
H11N3	**WAKE ISLAND Hy**	**27.48**	**123**	T	T	01 03 44.4	
	baz=315,slow=76,SNR=96						
H11S1	**WAKE ISLAND Hy**	**28.21**	**125**	T	T	01 04 25.9	
	baz=317,slow=76,SNR=77						
H11S3	**WAKE ISLAND Hy**	**28.21**	**126**	T	T	01 04 25.6	
	baz=317,slow=76,SNR=65						
H11S2	**WAKE ISLAND Hy**	**28.22**	**125**	T	T	01 04 28.9	
	baz=317,slow=76,SNR=62						
SONM	**Songino Array**	**28.45**	**303**	P	**P**	**00 34 53.1**	**0.0**
	comp=Z,1.6nm,0.7s,baz=100,slow=8.5,SNR=5.2						
ZAA0	**Zalesovo Array**	**42.43**	**312**	*e*P	**P**	**00 36 52.3**	**-0.2**
ZALV	**Zalesovo Beam**	**42.43**	**312**	P	**P**	**00 36 51.9**	**-0.6**
	comp=Z,1.5nm,0.7s,baz=94,slow=8.2,SNR=9.1						
ZALV				PcP	**PcP**	**00 38 44.5**	**-0.5**
	comp=Z,1.1nm,0.7s,baz=90,slow=3.5,SNR=4.3						
MK01	**Makanchi Array**	**44.80**	**302**	*e*P	**P**	**00 37 11.2**	**-0.6**
MKAR	**Makanchi Array**	**44.81**	**302**	P	**P**	**00 37 11.3**	**-0.6**
	comp=Z,0.7nm,0.6s,baz=84,slow=10.0,SNR=6.7						
KURK	**Kurchatov**	**46.52**	**308**	*e*P	**P**	**00 37 24.7**	**-0.5**
	comp=Z,3.8nm,0.8s						
MDM	**Murphy Dome**	**47.98**	**32**	*e*P	**P**	**00 37 38.1**	**+1.6**
	comp=Z,26nm,2.0s						
IL1	**Eielson Array**	**48.55**	**33**	*e*P	**P**	**00 37 41.3**	**+0.4**
ILAR	**Eielson Array**	**48.55**	**33**	P	**P**	**00 37 41.0**	**+0.1**
	comp=Z,1.4nm,0.7s,baz=264,slow=6.6,SNR=14						
TKM2	**Tokmak 2**	**50.37**	**298**	*e*P	**P**	**00 37 56.8**	**+1.4**
	comp=Z,2.7nm,0.6s						
VOSK	**Vostochnaya**	**50.80**	**312**	*e*P	**P**	**00 37 57.9**	**-0.3**
	comp=Z,1.6nm,0.8s						
PSI	**Prapat**	**52.94**	**240**	*e*pP	pP	00 38 25.9	0.0
INK	**Inuvik**	**53.51**	**27**	P	**P**	**00 38 18.6**	**+0.6**
	comp=Z,0.8nm,0.6s,baz=304,slow=5.3,SNR=4.0						
WRA	**Warramunga Arr**	**57.65**	**189**	P	**P**	**00 38 47.4**	**-0.8**
	comp=Z,4.3nm,0.8s,baz=7.9,slow=7.4,SNR=23						
ABKAR	**Akbulak array**	**58.49**	**310**	*e*P	**P**	**00 38 53.6**	**-0.2**
ASAR	**Alice Springs**	**61.37**	**189**	P	**P**	**00 39 12.8**	**-1.0**
	comp=Z,1.6nm,0.8s,baz=14,slow=6.7,SNR=13						
YKA	**Yellowknife Ar**	**62.89**	**31**	P	**P**	**00 39 22.8**	**-0.8**
	comp=Z,0.6nm,0.7s,baz=302,slow=6.8,SNR=3.0						
ARCES	**ARCESS Array B**	**63.97**	**340**	P	**P**	**00 39 31.0**	**+0.3**
	comp=Z,3.7nm,1.0s,baz=46,slow=6.9,SNR=5.4						
ARCES				LR	LR	01 09 31.7	
	comp=Z,36nm,19.1s,baz=14,slow=38						
GEYT	**Alibeck**	**64.57**	**299**	P	**P**	**00 39 35.2**	**+0.1**
	comp=Z,1.3nm,0.6s,baz=41,slow=4.6,SNR=4.7						
FINES	**FINESS Array B**	**68.33**	**332**	P	**P**	**00 40 2.3**	**-0.2**
	comp=Z,2.4nm,0.6s,baz=32,slow=8.4,SNR=14						
KIV	**Kislovodsk**	**71.44**	**311**	*e*P	**P**	**00 40 19.9**	**+1.6**
	comp=Z,6.6nm,0.8s						
KBZ	**Khabaz**	**71.44**	**311**	P	**P**	**00 40 18.9**	**+0.8**
	comp=Z,1.7nm,0.6s,baz=37,slow=5.1,SNR=5.9						
NB2	**NORSAR Subarra**	**74.20**	**338**	P	**P**	**00 40 34.2**	**-0.1**
	comp=Z,2.3nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.20**	**338**	P	**P**	**00 40 34.5**	**+0.2**
	comp=Z,1.8nm,0.7s,baz=38,slow=5.8,SNR=13						
NOA				LR	LR	01 16 06.7	
	comp=Z,18nm,18.6s,baz=10.0,slow=38						
AKASG	**Malin Array Be**	**74.61**	**323**	P	**P**	**00 40 36.3**	**-0.5**
	comp=Z,1.8nm,0.5s,baz=43,slow=5.7,SNR=4.6						
PDAR	**Pinedale Array**	**76.59**	**46**	P	**P**	**00 40 48.7**	**0.0**
	comp=Z,0.5nm,0.6s,baz=318,slow=2.6,SNR=4.1						
BUR08	**Bucovina Ar. S**	**78.63**	**322**	*e*P	**P**	**00 41 00.4**	**+0.7**
BRTR	**Keskin Array B**	**79.37**	**312**	P	**P**	**00 41 04.3**	**+0.3**
	comp=Z,1.2nm,1.0s,baz=93,slow=3.0,SNR=5.7						
BR231	**Keskin MP Arra**	**79.80**	**313**	*e*P	**P**	**00 41 05.3**	**-1.0**
SMCO	**Snowmass**	**80.39**	**48**	*e*P	**P**	**00 41 09.8**	**0.0**
	comp=Z,12nm,0.7s						
CLL	**Collm**	**81.26**	**331**	*e*P	**P**	**00 41 13.0**	**-0.7**
GERES	**GERESS Array B**	**82.91**	**329**	P	**P**	**00 41 22.3**	**-0.3**
	comp=Z,0.2nm,0.6s,baz=20,slow=4.4,SNR=3.6						
TXAR	**Lajitas Array**	**89.00**	**53**	P	**P**	**00 41 53.6**	**+0.6**
	comp=Z,0.4nm,0.6s,baz=302,slow=3.4,SNR=7.0						

*ISCJB **06** 00:44:08.9±0.4, 39.06°N×0.03°×29.04°E±0.03°, h8km±5km, Error ellipse: s-maj=5.9km s-min=3.8km az=152.3*
*ISK **06** 00:44:08.3, 39.08°N×29.07°E, h6km, MD2.8*
*DDA **06** 00:44:09.1, 39.11°N×29.05°E, h7km, Md2.6*
*CSEM **06** 00:44:09.0±0.1, 39.07°N×29.05°E, h8km, MD2.8, Error ellipse: s-maj=2.5km s-min=1.9km az=143.0*

ISC 06 00:44:09.2±0.9, 39.08°N±0.03°×29.05°E±0.02°, h11km±8km, n39, σ0 s49/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**262**	*i* P	**Pg**	**00 44 14.8**	**+0.1**
DEMI				*i* S	**Sg**	**00 44 18.6**	**+0.3**
DEMI	**Demirci**	**0.26**	**262**	P	**Pg**	**00 44 14.8**	**+0.1**
DEMI				S	**Sg**	**00 44 18.6**	**+0.3**
GEDZ	**Gediz**	**0.28**	**97**	*e*PG	**Pg**	**00 44 14.3**	**-0.7**
GEDZ	**Gediz**	**0.28**	**97**	*e*Pg	**Pg**	**00 44 14.3**	**-0.7**
GDZ	**Gediz**	**0.34**	**88**	*i* P	**Pg**	**00 44 16.2**	**+0.2**
GDZ				*i* S	**Sg**	**00 44 21.2**	**+0.7**
GDZ	**Gediz**	**0.34**	**88**	P	**Pg**	**00 44 16.2**	**+0.2**
GDZ				S	**Sg**	**00 44 21.2**	**+0.7**
TVSB	**Tavsanli**	**0.49**	**41**	*e*PG	**Pg**	**00 44 18.6**	**-0.3**
TVSB				*e*SG	**Sg**	**00 44 24.7**	**-0.7**
TVSB	**Tavsanli**	**0.49**	**41**	*e*Pg	**Pg**	**00 44 18.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**00 44 24.7**	**-0.7**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*PG	**Pg**	**00 44 21.4**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*Pg	**Pg**	**00 44 21.4**	**-0.3**
MANT	**Manisa**	**0.70**	**213**	*i* P	**Pg**	**00 44 21.9**	**-0.9**
MANT				*i* S	**Sg**	**00 44 31.4**	**-0.7**
MANT	**Manisa**	**0.70**	**213**	P	**Pg**	**00 44 21.9**	**-0.9**
MANT				S	**Sg**	**00 44 31.4**	**-0.7**
KHL	**Karahalli**	**0.84**	**154**	*e*PG	**Pg**	**00 44 24.8**	**-0.6**
KHL				*e*SG	**Sg**	**00 44 36.9**	**+0.5**
KHL	**Karahalli**	**0.84**	**154**	*e*Pg	**Pg**	**00 44 24.8**	**-0.6**
KHL				*e*Sg	**Sg**	**00 44 36.9**	**+0.5**
AKHS	**Akhisar**	**0.98**	**259**	*i* P	**Pb**	**00 44 28.5**	**+0.2**
AKHS	**Akhisar**	**0.98**	**259**	P	**Pb**	**00 44 28.5**	**+0.2**
AKS	**Akhisar**	**0.98**	**259**	*e*PG	**Pg**	**00 44 28.0**	**-0.2**
AKS	**Akhisar**	**0.98**	**259**	*e*Pg	**Pg**	**00 44 28.0**	**-0.2**
BALB	**Balikesir**	**1.07**	**302**	*e*PN	**Pg**	**00 44 29.5**	**-0.3**
BALB				*e*SN	**Sn**	**00 44 44.7**	**-0.2**
BALB	**Balikesir**	**1.07**	**302**	*e*Pn	**Pg**	**00 44 29.5**	**-0.3**
BALB				*e*Sn	**Sn**	**00 44 44.7**	**-0.2**
IGD	**Bursa**	**1.19**	**6**	*i* P	**Pg**	**00 44 31.0**	**-1.1**
IGD				*i* S	**Sb**	**00 44 47.2**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*PN	**Pn**	**00 44 32.9**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*Pn	**Pn**	**00 44 32.9**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*PN	**Pb**	**00 44 33.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*Pn	**Pb**	**00 44 33.6**	**0.0**
IZI	**Iznik**	**1.30**	**14**	*e*PN	**Pn**	**00 44 33.5**	**+0.1**
IZI	**Iznik**	**1.30**	**14**	*e*Pn	**Pn**	**00 44 33.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pg**	**00 44 33.8**	**-0.4**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pg**	**00 44 33.8**	**-0.4**
BORA	**Eskisehir**	**1.35**	**53**	*i* P	**Pg**	**00 44 35.0**	**-0.2**
BORA				*i* S	**Sn**	**00 44 52.7**	**+0.7**
BORA	**Eskisehir**	**1.35**	**53**	P	**Pg**	**00 44 35.0**	**-0.2**
BORA				S	**Sn**	**00 44 52.7**	**+0.7**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	**Pb**	**00 44 35.7**	**-0.2**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn	**Pb**	**00 44 35.7**	**-0.2**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pn**	**00 44 36.5**	**+0.5**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pn**	**00 44 36.5**	**+0.5**
EDC	**Edincik**	**1.56**	**325**	*e*PN	**Pn**	**00 44 37.5**	**+0.6**
EDC	**Edincik**	**1.56**	**325**	*e*Pn	**Pn**	**00 44 37.5**	**+0.6**
GULT	**Gulveren**	**1.76**	**39**	*e*PN	**Pn**	**00 44 39.6**	**-0.1**
GULT	**Gulveren**	**1.76**	**39**	*e*Pn	**Pn**	**00 44 39.7**	**-0.1**

*ISCJB **06** 00:45:47.6±0.5, 39.08°N±0.04°×29.05°E±0.05°, h13km±6km, Error ellipse: s-maj=7.8km s-min=4.6km az=136.3*
*DDA **06** 00:45:47.8, 39.09°N×29.04°E, h7km, Md2.3*
*CSEM **06** 00:45:47.6±0.1, 39.08°N×29.03°E, h10km, MD2.3, Error ellipse: s-maj=3.2km s-min=2.1km az=120.0*
*ISK **06** 00:45:47.0, 39.10°N×29.04°E, h7km, MD2.6*

ISC 06 00:45:47.9±0.9, 39.08°N±0.04°×29.04°E±0.03°, h15km±9km, n18, σ0 s53/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**261**	*i* P	**Pg**	**00 45 53.5**	**0.0**
DEMI				*i* S	**Sg**	**00 45 57.4**	**+0.1**
DEMI	**Demirci**	**0.26**	**261**	P	**Pg**	**00 45 53.5**	**0.0**
DEMI				S	**Sg**	**00 45 57.4**	**+0.1**
GDZ	**Gediz**	**0.34**	**89**	*i* P	**Pg**	**00 45 55.0**	**0.0**
GDZ				*i* S	**Sg**	**00 45 59.9**	**+0.1**
GDZ	**Gediz**	**0.34**	**89**	P	**Pg**	**00 45 55.0**	**0.0**
GDZ				S	**Sg**	**00 45 59.9**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**42**	*e*PG	**Pg**	**00 45 57.2**	**-0.4**
TVSB				*e*SG	**Sg**	**00 46 03.3**	**-0.9**
TVSB	**Tavsanli**	**0.49**	**42**	*e*Pg	**Pg**	**00 45 57.2**	**-0.4**
TVSB				*e*Sg	**Sg**	**00 46 03.3**	**-0.9**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*PG	**Pg**	**00 46 00.4**	**-0.1**
KULA				*e*SG	**Sg**	**00 46 09.1**	**+0.1**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*Pg	**Pg**	**00 46 00.4**	**-0.1**
KULA				*e*Sg	**Sg**	**00 46 09.1**	**+0.1**
MANT	**Manisa**	**0.70**	**213**	*i* P	**Pg**	**00 46 00.8**	**-0.9**
MANT				*i* S	**Sg**	**00 46 10.1**	**-0.9**
MANT	**Manisa**	**0.70**	**213**	P	**Pg**	**00 46 00.8**	**-0.9**
MANT				S	**Sg**	**00 46 10.1**	**-0.9**
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pb**	**00 46 04.5**	**+0.1**
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pb**	**00 46 04.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pn**	**00 46 11.7**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pn**	**00 46 11.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pn**	**00 46 11.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pn**	**00 46 11.7**	**+0.2**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pn**	**00 46 14.9**	**+0.8**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pn**	**00 46 14.9**	**+0.8**

IDC 06 00:47:30.3±4.5, 7.74°S×127.27°E, h133km±43km, mb3.6/6, mb1 3.9/8, mb1mx3.6/34, mbtmp4.2/8, Error ellipse: s-maj=50.4km s-min=17.6km az=69.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.42**	**189**	P	Pn	00 49 55.2	-1.0
	2.8nm,0.3s,baz=25,slow=9.1,SNR=25						
FITZ				S	Sn	00 51 44.5	-6.8
	2.1nm,0.3s,baz=98,slow=12,SNR=6.7						
WRA	**Warramunga Arr**	**13.93**	**151**	P	Pn	00 50 38.0	-4.1
	5.5nm,0.3s,baz=323,slow=13,SNR=55						
WRA				S	Sn	00 53 01.4	-15
	3.6nm,0.3s,baz=333,slow=23,SNR=8.1						
ASAR	**Alice Springs**	**17.07**	**159**	P	P	00 51 20.6	0.0
	2.0nm,0.3s,baz=338,slow=10,SNR=81						
ASAR				S	Sn	00 54 20.1	-12
	0.4nm,0.3s,baz=322,slow=18,SNR=4.1						
STKA	**Stephens Creek**	**27.48**	**153**	P	P	00 53 04.0	0.0
	1.9nm,0.5s,baz=333,slow=9.8,SNR=4.0						
CMAR	**Chiang Mai Arr**	**38.19**	**313**	P	P	00 54 38.7	+1.4
	0.6nm,0.5s,baz=142,slow=7.5,SNR=5.1						
KSRS	**Korea Array**	**44.96**	**1**	P	Pn	00 55 32.6	+0.5
	0.6nm,0.4s,baz=170,slow=9.6,SNR=3.9						
MKAR	**Makanchi Array**	**67.39**	**328**	P	Pn	00 58 11.0	-0.3
	1.7nm,0.8s,baz=134,slow=7.6,SNR=12						
ZALV	**Zalesovo Beam**	**71.07**	**335**	P	P	00 58 32.7	-1.1
	1.7nm,0.5s,baz=129,slow=4.3,SNR=9.7						
VNDA	**Vanda**	**72.06**	**173**	P	P	00 58 40.5	+1.1
	0.7nm,0.7s,baz=313,slow=8.3,SNR=3.5						
TORD	**Torodi Ar. Bea**	**126.28**	**281**	PKP	PKPdf	01 06 17.6	-0.7
	1.8nm,0.8s,baz=83,slow=2.3,SNR=9.9						

NEIC 06 00:58:41.3, 60.21°N×153.21°W, h154km, MG3.3(AEIC), **After AEIC., Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ILW	**Iliamna West**	**0.15**	**166**	P	Pn	00 59 01.5	-0.8
ILS	**Iliamna Low So**	**0.26**	**164**	P	Pn	00 59 02.0	-0.4
RDWB	**Redoubt West**	**0.34**	**33**	P	Pn	00 59 01.8	-0.9
RDWB				S	Sn	00 59 17.2	-1.8
NCT	**North Crescent**	**0.38**	**21**	P	Pn	00 59 02.0	-0.7
RDJH	**Redoubt Jeurge**	**0.43**	**28**	P	Pn	00 59 02.1	-0.9
BGRM	**Barrier Glacie**	**0.68**	**35**	P	Pn	00 59 03.3	-0.9
AUL	**Augustine Lava**	**0.84**	**188**	P	Pn	00 59 04.7	-0.5
AUL				S	Sn	00 59 22.6	-0.9
AUE	**Augustine Isla**	**0.86**	**185**	P	Pn	00 59 04.7	-0.6
AUSE	**Augustine SEas**	**0.88**	**186**	P	Pn	00 59 04.8	-0.7
AUI	**Augustine Isla**	**0.88**	**187**	P	Pn	00 59 05.0	-0.6
AUI				S	Sn	00 59 22.6	-1.4
HOM	**Homer**	**0.96**	**124**	P	Pn	00 59 06.0	-0.1
CKL	**Chakachamna La**	**1.08**	**23**	P	Pn	00 59 06.9	-0.4
SPCR	**Spurr Chakacha**	**1.11**	**26**	P	Pn	00 59 06.9	-0.6
SPWE	**Spurr West**	**1.12**	**25**	P	Pn	00 59 07.2	-0.4
MCNL	**McNeil River**	**1.17**	**210**	P	Pn	00 59 07.2	-0.8
CNPM	**China Poot**	**1.21**	**124**	P	Pn	00 59 08.0	-0.3
CNPM				S	Sn	00 59 27.8	-1.2
BRLK	**Bradley Lake**	**1.25**	**110**	P	Pn	00 59 08.7	-0.1
BRLK				S	Sn	00 59 28.4	-1.4
CDD	**Cape Douglas**	**1.30**	**190**	P	Pn	00 59 08.6	-0.6
FOSS	**Fourpeaked Sta**	**1.43**	**190**	P	Pn	00 59 10.0	-0.6
FOPK	**Fourpeaked Vol**	**1.46**	**185**	P	Pn	00 59 10.0	-0.8
STLK	**Strandline Lak**	**1.46**	**27**	P	Pn	00 59 10.3	-0.5
SVW2	**Sparrevohn**	**1.47**	**308**	P	Pn	00 59 09.6	-1.2
SVW2				S	Sn	00 59 31.0	-2.6
SLKM	**Skilak Lake**	**1.52**	**77**	P	Pn	00 59 10.4	-1.0
VOGL	**Vogel Lake**	**1.58**	**59**	P	Pn	00 59 12.2	+0.3
KAPH	**Katmai Pasha**	**1.72**	**200**	P	Pn	00 59 12.9	-0.7
SUA	**Susitna One**	**1.75**	**43**	P	Pn	00 59 13.2	-0.7
SUA				S	Sn	00 59 38.3	-0.7
FIB	**Fire Island**	**1.78**	**56**	P	Pn	00 59 14.1	0.0
KAHC	**Katmai Hardscr**	**1.81**	**211**	P	Pn	00 59 13.7	-1.0
SEW	**Seward**	**1.89**	**92**	P	Pn	00 59 14.8	-0.5
SEW				S	Sn	00 59 39.1	-2.3
RC01	**Rabbit Creek A**	**1.93**	**61**	P	Pn	00 59 14.5	-1.3
RC01				S	Sn	00 59 40.7	-1.6
KAWH	**Katmai**	**2.00**	**205**	P	Pn	00 59 15.8	-1.0
KVTA	**Katmai Vly 10**	**2.12**	**211**	P	Pn	00 59 17.4	-0.7
KAKN	**Katmai Knife C**	**2.14**	**207**	P	Pn	00 59 17.6	-0.8
KELA	**Mount Kelaz**	**2.20**	**217**	P	Pn	00 59 18.2	-0.8
KABR	**Katmai Barrier**	**2.27**	**204**	P	Pn	00 59 19.0	-0.9
PMR	**Palmer**	**2.43**	**53**	P	Pn	00 59 19.8	-1.8
KDAK	**Kodiak Island**	**2.45**	**172**	P	Pn	00 59 20.1	-1.9
GHO	**Glory Hole Cre**	**2.61**	**51**	P	Pn	00 59 22.2	-1.9
CUT	**Chulitna**	**2.62**	**32**	P	Pn	00 59 23.2	-0.8
KNK	**Knik Glacier**	**2.62**	**61**	P	Pn	00 59 22.5	-1.6
PPLA	**Purkeypile**	**2.74**	**10**	P	Pn	00 59 25.6	-0.1
SML	**Sawmill**	**2.87**	**54**	P	Pn	00 59 25.3	-1.8
OHAK	**Old Harbor**	**3.00**	**181**	P	Pn	00 59 26.2	-2.5
TTO1	**Tatalina**	**3.02**	**335**	P	Pn	00 59 27.9	-1.1
HUR	**Hurricane**	**3.26**	**30**	P	Pn	00 59 31.8	-0.3
SCM	**Sheep Creek Mo**	**3.29**	**58**	P	Pn	00 59 31.0	-1.5
HIN	**Hinchinbrook I**	**3.34**	**84**	P	Pn	00 59 32.5	-0.7
VLZ	**Valdez**	**3.51**	**72**	P	Pn	00 59 33.9	-1.3
KTH	**Kantishna Hill**	**3.53**	**17**	P	Pn	00 59 34.7	-0.8
TRF	**Thorofare Moun**	**3.54**	**22**	P	Pn	00 59 35.1	-0.6
DIV	**Divide**	**3.78**	**73**	P	Pn	00 59 37.2	-1.6
KLU	**Klutina**	**3.79**	**67**	P	Pn	00 59 37.5	-1.5
RND	**Reindeer**	**3.82**	**31**	P	Pn	00 59 38.5	-0.8
BPAW	**Bear Paw Mtn.**	**4.04**	**14**	P	Pn	00 59 40.5	-1.6
MCK	**McKinley**	**4.07**	**28**	P	Pn	00 59 42.0	-0.5
ANNW	**Aniakchak Nort**	**4.17**	**221**	P	Pn	00 59 43.3	-0.6
BMRM	**Bremner River**	**4.31**	**76**	P	Pn	00 59 45.1	-0.6
PS10	**TAPS Pump St10**	**4.78**	**44**	P	Pn	00 59 51.9	+0.1
CHGN	**Chignik**	**4.78**	**217**	*e*Pn	Pn	00 59 50.5	-1.3
CHGN				*e*Sn	Sn	01 00 45.8	-1.0
WRH	**Wood River Hil**	**4.90**	**27**	P	Pn	00 59 51.9	-1.4
VRDI	**Verde Repeater**	**4.90**	**74**	P	Pn	00 59 52.5	-1.1
MLY	**Manley**	**4.97**	**12**	P	Pn	00 59 53.0	-1.3
CCB	**Clear Creek Bu**	**5.11**	**27**	P	Pn	00 59 54.7	-1.4
HDA	**Harding Lake**	**5.13**	**32**	P	Pn	00 59 55.5	-0.8
PS08	**TAPS Pump Stn8**	**5.27**	**32**	P	Pn	00 59 57.0	-1.1
MDM	**Murphy Dome**	**5.29**	**24**	P	Pn	00 59 57.5	-1.0
COLA	**College**	**5.30**	**26**	P	Pn	00 59 57.6	-1.0
KIAG	**Kiagna River**	**5.40**	**78**	P	Pn	00 59 59.3	-0.9
ILB	**Eielson Array**	**5.44**	**30**	P	Pn	00 59 59.0	-1.4
DOT	**Dot Lake**	**5.53**	**47**	P	Pn	01 00 00.8	-0.9
IM3	**Indian Mountai**	**5.80**	**358**	P	Pn	01 00 04.8	-0.5
PS06	**TAPS Pump Stn6**	**5.88**	**14**	P	Pn	01 00 05.8	-0.5
BCA3	**Beaver Creek A**	**6.15**	**57**	P	Pn	01 00 08.7	-1.3
COLD	**Coldfoot**	**7.17**	**9**	*e*Pn	Pn	01 00 22.3	-1.1
	7.9nm,0.7s						
EGAK	**Eagle**	**7.22**	**45**	*e*Pn	Pn	01 00 22.9	-1.2
	5.4nm,0.4s						
DAWY	**Dawson**	**7.54**	**53**	*e*Pn	Pn	01 00 28.0	-0.4
	3.2nm,0.4s						
DAWY				*e*Sn	Sn	01 01 51.3	-1.3
INK	**Inuvik**	**11.74**	**38**	*e*Pn	Pn	01 01 23.7	-0.1
	2.4nm,0.7s						

IDC 06 01:09:23.8±5.8, 20.97°S×170.46°E, h0km, mb3.3/2, mb1 3.6/3, mb1mx3.4/29, mbtmp3.4/3, ML3.3/1, Error ellipse: s-maj=266.4km s-min=39.0km az=153.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.90**	**253**	Pn	Pn	01 10 23.2	-1.8
	1.9nm,0.3s,baz=126,slow=11,SNR=20						
DZM				Sn	Sn	01 11 11.7	+0.2
	2.2nm,0.3s,baz=121,slow=18,SNR=3.5						
WRA	**War

JMM	**Marumori**	**2.41**	**294**	P	**Pn**	**01 27 17.5**	**-0.8**
JMM				S	**Sn**	**01 27 45.4**	**-1.2**
JFT	**Otama**	**2.65**	**284**	P	**Pn**	**01 27 21.9**	**+0.1**
JFT				*e*S	**Sn**	**01 27 52.2**	**-0.5**
JOU	**Okura**	**2.72**	**303**	P	**Pn**	**01 27 22.2**	**-0.5**
JOU				S	**Sn**	**01 27 53.4**	**-1.0**
JMK	**Ichinoseki**	**2.75**	**318**	P	**Pn**	**01 27 22.1**	**-0.9**
JMK				*e*S	**Sn**	**01 27 52.4**	**-2.6**
BSO1	**Boso 1**	**3.10**	**224**	P	**Pn**	**01 27 27.1**	**-0.3**
JOM	**Ohasama**	**3.11**	**325**	P	**Pn**	**01 27 26.8**	**-1.2**
JOM				S	**Sn**	**01 28 01.8**	**-2.2**
JYK	**Kaneyama**	**3.23**	**309**	P	**Pn**	**01 27 29.3**	**-0.3**
JYK				*e*S	**Sn**	**01 28 06.6**	**-0.2**
JAG	**Ashikaga**	**3.35**	**263**	P	**Pn**	**01 27 31.1**	**-0.3**
JRG	**Rokugo**	**3.38**	**318**	P	**Pn**	**01 27 32.0**	**+0.2**
JRG				*e*S	**Sn**	**01 28 10.7**	**0.0**
JANG	**Nango**	**3.80**	**335**	P	**Pn**	**01 27 36.3**	**-1.2**
JANG				*e*S	**Sn**	**01 28 16.4**	**-4.5**
JRY	**Ryogami san**	**3.88**	**258**	P	**Pn**	**01 27 38.0**	**-0.6**
JRY				*e*S	**Sn**	**01 28 20.7**	**-2.2**
JAH	**Hinai**	**3.99**	**326**	P	**Pn**	**01 27 39.8**	**-0.3**
JOD2	**Odawara 2**	**4.00**	**247**	*e*S	**Sn**	**01 28 24.6**	**-1.3**
JTM	**Tenmabayashi**	**4.32**	**334**	*e*S	**Sn**	**01 28 30.2**	**-3.6**
MJAR	**Matsushiro Arr**	**4.33**	**266**	Pn	**Pn**	**01 27 45.2**	**+0.4**
	4.5nm,0.3s,baz=91,slow=9.6,SNR=26						
MJAR				LR	LR	01 30 12.4	
	comp=Z,18nm,18.5s,baz=80,slow=49						
MAT	**Matsushiro**	**4.33**	**266**	P	**Pn**	**01 27 45.8**	**+1.0**
MAT				*e*S	**Sn**	**01 28 32.5**	**-1.6**
JOT	**Ohata**	**4.86**	**337**	P	**Pn**	**01 27 51.5**	**-0.6**
JHJ	**Hachijo jima 2**	**4.91**	**220**	Pn	**Pn**	**01 27 51.3**	**-1.6**
	12nm,0.3s,baz=40,slow=18,SNR=3.1						
JHJ				Sn	**Sn**	**01 28 44.7**	**-3.8**
	14nm,0.3s,baz=90,slow=20,SNR=3.6						
USRK	**Ussuriysk Ar.**	**11.41**	**313**	Pn	**Pn**	**01 29 23.1**	**+1.2**
	baz=107,slow=13,SNR=3.8						
KSRS	**Korea Array**	**12.50**	**277**	Pn	Pn	01 29 39.0	+2.3
	0.2nm,0.3s,baz=88,slow=14,SNR=7.3						
KLR	**Kul'dur**	**15.00**	**329**	Pn	**P**	**01 30 16.1**	**+0.3**
	0.2nm,0.3s,baz=132,slow=13,SNR=7.5						
SONM	**Songino Array**	**29.28**	**304**	P	P	01 32 44.7	+4.2
	1.1nm,0.5s,baz=111,slow=8.2,SNR=3.7						
ZALV	**Zalesovo Beam**	**43.26**	**312**	P	**P**	**01 34 40.3**	**+1.0**
	0.5nm,0.4s,baz=79,slow=7.7,SNR=4.2						
MKAR	**Makanchi Array**	**45.64**	**303**	P	**P**	**01 34 59.2**	**+0.7**
	0.6nm,0.7s,baz=73,slow=9.0,SNR=4.8						
ILAR	**Eielson Array**	**48.65**	**32**	P	**P**	**01 35 22.1**	**+0.5**
	0.5nm,0.8s,baz=267,slow=6.7,SNR=7.2						
WRA	**Warramunga Arr**	**57.23**	**190**	P	**P**	**01 36 24.3**	**-1.0**
	1.4nm,0.8s,baz=8.5,slow=7.1,SNR=13						
ASAR	**Alice Springs**	**60.96**	**190**	P	**P**	**01 36 51.2**	**+0.1**
	0.5nm,0.5s,baz=8.9,slow=7.6,SNR=5.0						
FINES	**FINESS Array B**	**69.70**	**333**	P	**P**	**01 37 47.7**	**+0.5**
	1.3nm,0.8s,baz=69,slow=10,SNR=4.3						
NB2	**NORSAR Subarra**	**74.94**	**338**	P	**P**	**01 38 19.5**	**+0.9**
	comp=Z,0.6nm,0.6s,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**74.94**	**339**	P	**P**	**01 38 19.7**	**+1.1**
	comp=Z,0.6nm,0.6s,baz=40,slow=5.8,SNR=5.7						
GERES	**GERESS Array B**	**83.70**	**329**	P	**P**	**01 39 07.4**	**+0.8**
	comp=Z,0.4nm,0.6s,baz=36,slow=7.0,SNR=4.6						
TXAR	**Lajitas Array**	**88.80**	**54**	P	**P**	**01 39 32.7**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=321,slow=3.2,SNR=5.1						

SJA 06 01:29:13.5±0.5,**24°82S**×**65°72W,h5**km±4km,**ML3.0, MW3.5,Salta Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**0.21**	**64**	*e*P	Pg	01 29 18.8	+1.0
SLA				*e*S	Sg	01 29 22.3	+1.7
SLA				IAML		01 29 22.7	
	comp=Z,3μm,0.2s						
AZAP	**Zapla**	**0.84**	**45**	*e*P	Pb	01 29 30.6	-0.1
AZAP				IAML		01 29 49.6	
	comp=Z,382nm,0.3s						
FSA	**Cafayete**	**1.31**	**190**	*e*P	Pb	01 29 39.3	+0.5
FSA				IAML		01 29 40.7	
	comp=Z,360nm,0.4s						
ASTB	**Santa Barbara**	**1.44**	**53**	*e*P	Pg	01 29 41.8	+0.7
HJA	**Humahuaca**	**1.62**	**10**	*e*P	Pg	01 29 45.3	+0.6
HJA				IAML		01 30 11.9	
	comp=Z,148nm,0.3s						
AHML	**Horco Molle**	**1.99**	**170**	*e*P	Pb	01 29 50.1	-0.2
AHML				IAML		01 30 23.8	
	comp=Z,165nm,0.4s						
CYA	**Choya**	**3.61**	**181**	IAML		01 31 08.9	
	comp=Z,23nm,0.3s						

*ISCJB **06** 01:46:04.4±0.3,8°.15S±0°.03×117°.84E±0°.03,h33km, mb4.2/11,MS3.4/4,Error ellipse: s-maj=4.4km s-min=4.0km az=151.5*
*DJA **06** 01:46:04.7±0.6,8°S±3°×11°8E±°,h18km±5km,M4.7/16, mb4.9/7,mB5.2/4,MLv4.6/16,Mw(mB)4.7/4*
*NEIC **06** 01:46:05.8±2.3,8.21S×117.82E,h30km±19km,mb4.2/5, Error ellipse: s-maj=9.1km s-min=7.1km az=219.0*
*IDC **06** 01:46:07.4±4.7,8.13S×117.97E,h41km±45km,mb3.9/7, mb1 4.0/10,mb1mx3.7/40,mbtmp4.0/10,ML3.7/3,MS3.2/6, Ms1 3.2/6,ms1mx2.9/42,Error ellipse: s-maj=40.8km s-min=15.0km az=78.0*

ISC 06 01:46:06.3±0.6,**8°20S**±0°.04×**117°85E**±0°.05,**h35**km,**n41,** σ0**99**/**44**,**mb4.2**/**11**,**MS3.1**/**4**,**Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	**Plampang**	**0.63**	**186**	P	**Pn**	**01 46 18.0**	**-0.8**
PLAI				S	**Sn**	**01 46 27.5**	**-0.1**
TWSI	**Taliwang, Sumb**	**1.09**	**241**	P	**Pn**	**01 46 23.9**	**-1.3**
TWSI				S	**Sn**	**01 46 39.6**	**+0.5**
WSI	**Waingapu**	**2.83**	**121**	P	**Pn**	**01 46 48.9**	**-0.2**
WSI				S	**Sn**	**01 47 23.9**	**+2.0**
BSSI	**Bau Bau, Buton**	**3.33**	**52**	P	**Pn**	**01 46 56.3**	**+0.4**
BASI	**Baing, Sumba**	**3.36**	**127**	P	**Pn**	**01 46 56.7**	**+0.3**
ABJI	**Asem Bagus**	**3.60**	**276**	P	**Pn**	**01 47 00.1**	**+0.4**
JAGI	**Jajag, Banyuwa**	**3.67**	**266**	P	**Pn**	**01 46 59.9**	**-0.7**
JAGI	**Jajag, Banyuwa**	**3.67**	**266**	*e*Pn	**Pn**	**01 46 59.7**	**-0.9**
KAPI	**Kappang**	**3.69**	**31**	P	**Pn**	**01 47 00.2**	**-0.7**
	22nm,0.3s,baz=210,slow=5.4,SNR=32						
KAPI				S	**Sn**	**01 47 41.5**	**-1.6**
	26nm,0.3s,baz=125,slow=18,SNR=6.8						
KAPI				LR	LR	01 48 31.9	
	comp=Z,172nm,21.6s,baz=220,slow=40						
KAPI	**Kappang**	**3.69**	**31**	*e*Pn	**Pn**	**01 47 00.2**	**-0.7**
KAPI				*e*Sn	**Sn**	**01 47 42.0**	**-1.2**
BLJI	**Banyuglugur**	**4.23**	**276**	P	**Pn**	**01 47 09.0**	**+0.6**
GMJI	**Gumukmas**	**4.36**	**269**	P	**Pn**	**01 47 10.2**	**+0.1**
SPSI	**Sidrap Palu**	**4.62**	**25**	P	**Pn**	**01 47 14.0**	**+0.3**
GRJI	**Gresik**	**5.47**	**283**	P	**Pn**	**01 47 25.6**	**+0.2**
	133nm,0.7s,2μm						
TTSI	**Tana Toraja**	**5.48**	**21**	P	**Pn**	**01 47 25.6**	**0.0**
BBKI	**Banjar Baru**	**5.57**	**327**	P	**Pn**	**01 47 26.3**	**-0.6**
	237nm,1.2s						
PWJI	**Pagerwojo**	**5.99**	**271**	P	**Pn**	**01 47 31.2**	**-1.3**
	49nm,0.7s						
SOEI	**Soe**	**6.53**	**104**	P	**Pn**	**01 47 41.3**	**+1.2**
	52nm,0.8s						
SOEI	**Soe**	**6.53**	**104**	*e*Pn	**Pn**	**01 47 40.3**	**+0.2**
	58nm,0.7s						
PCJI	**Pacitan**	**6.60**	**270**	P	**Pn**	**01 47 39.9**	**-1.0**
FITZ	**Fitzroy Crossi**	**12.42**	**143**	P	**Pn**	**01 49 00.7**	**-0.1**
	0.2nm,0.3s,baz=322,slow=12,SNR=6.0						
FITZ				S	**Sn**	**01 51 14.5**	**-3.6**
	0.2nm,0.3s,baz=186,slow=19,SNR=4.4						
FITZ				LR	LR	01 53 24.3	
	comp=Z,34nm,20.5s,baz=324,slow=35						
MBWA	**Marble Bar**	**13.01**	**172**	*e*Pn	**Pn**	**01 49 08.7**	**-0.1**
FAKI	**Fak Fak**	**15.26**	**71**	*e*Pn	**Pn**	**01 49 39.9**	**+0.6**
WRA	**Warramunga Arr**	**19.78**	**128**	P	**P**	**01 50 33.5**	**-0.2**
	0.3nm,0.3s,baz=303,slow=12,SNR=19						
WRAB	**Tennant Creek**	**19.78**	**128**	*e*P	**P**	**01 50 33.7**	**-0.1**
	15nm,1.2s						
ASAR	**Alice Springs**	**21.76**	**137**	P	**P**	**01 50 55.9**	**+0.8**
	2.3nm,0.6s,baz=308,slow=8.8,SNR=19						
KULM	**Kulim**	**21.77**	**307**	*e*P	**P**	**01 50 55.5**	**+0.4**
	3.2nm,0.4s						
NWAO	**Narrogin (SRO)**	**24.61**	**181**	LR	LR	02 01 36.2	
	comp=Z,46nm,18.2s,baz=338,slow=38						
CMAR	**Chiang Mai Arr**	**32.40**	**325**	P	**P**	**01 52 34.8**	**+1.8**
	1.2nm,0.3s,baz=145,slow=6.3,SNR=5.4						
CMAR				LR	LR	02 06 02.2	
	comp=Z,49nm,18.4s,baz=175,slow=37						
KSAR	**Wonju Array Be**	**46.36**	**11**	P	**P**	**01 54 29.6**	**+0.4**
KSRS	**Korea Array**	**46.38**	**11**	P	**P**	**01 54 29.6**	**+0.3**
	0.9nm,0.6s,baz=187,slow=8.6,SNR=4.7						
MJAR	**Matsushiro Arr**	**48.44**	**22**	LR	LR	02 15 40.2	
	comp=Z,16nm,19.3s,baz=145,slow=37						
SONM	**Songino Array**	**56.70**	**351**	P	**P**	**01 55 47.2**	**+0.7**
	2.4nm,0.8s,baz=152,slow=6.5,SNR=4.0						
MKAR	**Makanchi Array**	**63.23**	**333**	P	**P**	**01 56 31.1**	**-0.2**
	1.5nm,0.7s,baz=149,slow=7.1,SNR=12						
AAK	**Ala-Archa**	**64.18**	**326**	P	**P**	**01 56 38.2**	**+0.4**
	2.3nm,0.5s,baz=80,slow=4.7,SNR=4.5						
EKS2	**Erkin-Say**	**64.60**	**325**	*e*P	**P**	**01 56 39.4**	**-1.0**
	2.1nm,0.7s						
KURK	**Kurchatov**	**67.78**	**334**	*e*P	**P**	**01 57 01.4**	**+0.9**
ZALV	**Zalesovo Beam**	**67.89**	**340**	P	**P**	**01 57 00.5**	**-0.7**
	1.9nm,0.8s,baz=152,slow=5.4,SNR=6.6						
BRVK	**Borovoye**	**73.13**	**332**	*e*P	**P**	**01 57 32.0**	**-1.1**
	9.3nm,0.6s						
ABKAR	**Akbulak array**	**76.25**	**325**	*e*P	**P**	**01 57 50.7**	**-0.6**
	0.7nm,0.5s						
PPT	**Papeete**	**90.00**	**108**	LR	LR	02 38 56.6	
	comp=Z,78nm,18.1s,baz=112,slow=35						

*ISCJB **06** 01:46:28.7±0.5,39°.12N±0°.04×29°.10E±0°.05,h9km, Error ellipse: s-maj=7.0km s-min=4.1km az=144.9*
*DDA **06** 01:46:28.9,39°.11N×29°.09E,h7km,Md2.3*
*ISK **06** 01:46:28.4,39°.16N×29°.10E,h5km,MD2.5*
*CSEM **06** 01:46:28.7±0.2,39°.11N×29°.10E,h10km,MD2.3,Error ellipse: s-maj=6.4km s-min=3.6km az=126.0*

ISC 06 01:46:28.8±0.9,**39°11N**±0°.04×**29°10E**±0°.03,**h9**km,**n18,** σ0**66**/**25**,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**94**	*i* P	**Pg**	**01 46 35.4**	**+0.5**
GDZ				*i* S	**Sg**	**01 46 39.8**	**+0.9**
GDZ	**Gediz**	**0.30**	**94**	P	**Pg**	**01 46 35.4**	**+0.5**
GDZ				S	**Sg**	**01 46 39.8**	**+0.9**
DEMI	**Demirci**	**0.30**	**257**	*i* P	**Pg**	**01 46 35.8**	**+0.9**
DEMI				*i* S	**Sg**	**01 46 40.0**	**+1.0**
DEMI	**Demirci**	**0.30**	**257**	P	**Pg**	**01 46 35.8**	**+0.9**
DEMI				S	**Sg**	**01 46 40.0**	**+1.0**
TVSB	**Tavsanli**	**0.44**	**40**	*e*PG	**Pg**	**01 46 37.0**	**-0.5**
TVSB				*e*SG	**Sg**	**01 46 42.7**	**-0.6**
TVSB	**Tavsanli**	**0.44**	**40**	*e*Pg	**Pg**	**01 46 37.0**	**-0.5**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*PG	**Pb**	**01 46 42.9**	**-0.1**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*Pg	**Pb**	**01 46 42.9**	**-0.1**
MANT	**Manisa**	**0.75**	**214**	*i* P	**Pg**	**01 46 42.7**	**-0.6**
MANT				*i* S	**Sg**	**01 46 52.3**	**-0.8**
MANT	**Manisa**	**0.75**	**214**	P	**Pg**	**01 46 42.7**	**-0.6**
MANT				S	**Sg**	**01 46 52.3**	**-0.8**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pn**	**01 46 52.2**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pn**	**01 46 52.2**	**-0.5**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pn**	**01 46 52.7**	**-0.3**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pn**	**01 46 52.7**	**-0.3**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*PN	**Pn**	**01 46 54.9**	**+0.2**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*Pn	**Pn**	**01 46 54.9**	**+0.2**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pn**	**01 46 55.5**	**0.0**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pn**	**01 46 55.5**	**0.0**

*NEIC **06** 01:52:11.2,41°.37S×173°.56E,h71km,ML3.9(WEL),After WEL.*
NEIC Felt at Picton.

WEL 06 01:52:11.1±0.2,**41°38S**×**173°56E,h73**km±2km,**ML3.9**/25, **3C-10D,Error ellipse: s-maj=1.9km s-min=1.6km az=0.0, South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNZ	**Nelson**	**0.21**	**320**	Pn	Pn	01 52 21.4	-0.7
NNZ				Sn	Sn	01 52 29.0	-1.2
NNZ	**Nelson**	**0.21**	**320**	PN	Pn	01 52 21.4	-0.7
NNZ				SN	Sn	01 52 29.0	-1.2
TUWZ	**Tuamarina**	**0.29**	**100**	Pn	Pn	01 52 22.4	-0.2
TUWZ				Sn	Sn	01 52 30.3	-0.7
TUWZ	**Tuamarina**	**0.29**	**100**	PN	Pn	01 52 22.3	-0.2
TUWZ				SN	Sn	01 52 30.3	-0.7
TUWZ				AML	AML	01 52 31.1	
BSWZ	**Blackbirch Sta**	**0.41**	**145**	Pn	Pn	01 52 23.7	+0.2
BSWZ				Sn	Sn	01 52 32.4	-0.1
BSWZ	**Blackbirch Sta**	**0.41**	**145**	⇑PN	Pn	01 52 23.7	+0.2
BSWZ				SN	Sn	01 52 32.4	-0.1
BSWZ				AML	AML	01 52 32.6	
TCW	**Tory Channel**	**0.56**	**73**	⇓Pn	Pn	01 52 25.2	+0.4
TCW				Sn	Sn	01 52 34.6	-0.4
TCW	**Tory Channel**	**0.56**	**73**	⇓PN	Pn	01 52 25.2	+0.4
TCW				SN	Sn	01 52 34.6	-0.4
TCW				AML	AML	01 52 36.8	
CMWZ	**Cape Campbell**	**0.61**	**127**	*e*Pn	Pn	01 52 26.1	+0.7
CMWZ	**Cape Campbell**	**0.61**	**127**	*e*PN	Pn	01 52 26.0	+0.7
CMWZ				AML	AML	01 52 40.2	
CMWZ				AML	AML	01 52 44.2	
THZ	**Tophouse**	**0.62**	**232**	Pn	Pn	01 52 25.1	-0.4
THZ				Sn	Sn	01 52 35.4	-0.7
THZ	**Tophouse**	**0.62**	**232**	PN	Pn	01 52 25.1	-0.4
THZ				SN	Sn	01 52 35.4	-0.7
DUWZ	**D'Urville Isla**	**0.64**	**25**	PN	Pn	01 52 26.0	+0.4
SNZO	**South Karori**	**0.86**	**86**	*e*Pn	Pn	01 52 28.1	0.0
SNZO				*e*Sn	Sn	01 52 40.4	-0.3
WEL	**Wellington**	**0.91**	**84**	Pn	Pn	01 52 29.0	+0.3
WEL	**Wellington**	**0.91**	**84**	PN	Pn	01 52 29.0	+0.3
WEL				AML	AML	01 52 45.1	
WEL				AML	AML	01 52 48.1	
QRZ	**Quartz Range**	**0.96**	**305**	Pn	Pn	01 52 29.0	-0.2
QRZ	**Quartz Range**	**0.96**	**305**	PN	Pn	01 52 29.0	-0.3
BHW	**Baring Head**	**0.99**	**92**	Pn	Pn	01 52 29.4	-0.2
BHW	**Baring Head**	**0.99**	**92**	⇓PN	Pn	01 52 29.4	-0.2
BHW				AML	AML	01 52 46.3	
BHW				AML	AML	01 52 48.1	
KHZ	**Kahutara**	**1.03**	**181**	*e*Pn	Pn	01 52 30.2	0.0
KHZ				*e*Sn	Sn	01 52 43.8	-0.6
KHZ	**Kahutara**	**1.03**	**181**	PN	Pn	01 52 30.3	+0.1
KHZ				AML	AML	01 52 47.8	
KHZ				AML	AML	01 52 49.6	
KIW	**Kapiti Island**	**1.14**	**63**	Pn	Pn	01 52 30.0	+0.5
KIW	**Kapiti Island**	**1.14**	**63**	⇓PN	Pn	01 52 30.0	+0.5
KIW				AML	AML	01 52 53.3	
KIW				AML	AML	01 52 55.0	
CAW	**Cannon Point**	**1.17**	**77**	Pn	Pn	01 52 31.8	0.0
CAW	**Cannon Point**	**1.17**	**77**	⇓PN	Pn	01 52 31.8	0.0
CAW				AML	AML	01 52 53.7	
CAW				AML	AML	01 52 53.8	
MSWZ	**Moikau Station**	**1.27**	**92**	PN	Pn	01 52 32.6	-0.5
PLWZ	**Palliser**	**1.29**	**99**	Pn	Pn	01 52 32.8	-0.6
PLWZ	**Palliser**	**1.29**	**99**	⇓PN	Pn	01 52 32.8	-0.6
PLWZ				AML	AML	01 52 58.2	
PLWZ				AML	AML	01 52 59.0	
OGWZ	**Otaki Gorge**	**1.34**	**66**	Pn	Pn	01 52 34.2	+0.1
OGWZ	**Otaki Gorge**	**1.34**	**66**	PN	Pn	01 52 34.2	+0.1
OGWZ				AML	AML	01 52 57.9	
OGWZ				AML	AML	01 52 58.8	
DSZ	**Denniston Nort**	**1.37**	**254**	Pn	Pn	01 52 34.4	-0.1
DSZ	**Denniston Nort**	**1.37**	**254**	⇓PN	Pn	01 52 34.3	-0.1
PAWZ	**Paruwai Farm**	**1.40**	**91**	Pn	Pn	01 52 34.2	-0.8
PAWZ	**Paruwai Farm**	**1.40**	**91**	⇓PN	Pn	01 52 34.2	-0.8
PAWZ				AML	AML	01 52 59.7	
PAWZ				AML	AML	01 53 01.1	
MTW	**Mount Morrison**	**1.48**	**82**	Pn	Pn	01 52 35.2	-0.7
MTW	**Mount Morrison**	**1.48**	**82**	PN	Pn	01 52 35.2	-0.7
MTW				AML	AML	01 53 03.6	
MTW				AML	AML	01 53 04.0	
HOWZ	**Holdsworth Sta**	**1.55**	**73**	Pn	Pn	01 52 36.2	-0.6
HOWZ	**Holdsworth Sta**	**1.55**	**73**	⇓PN	Pn	01 52 36.2	-0.6
HOWZ				AML	AML	01 53 06.9	
HOWZ				AML	AML	01 53 08.9	
TRWZ	**Traveller**	**1.60**	**91**	Pn	Pn	01 52 36.6	-0.8
TRWZ	**Traveller**	**1.60**	**91**	PN	Pn	01 52 36.6	-0.8
TRWZ				AML	AML	01 53 10.3	
TRWZ				AML	AML	01 53 11.1	
MRZ	**Mangatainoka R**	**1.69**	**65**	Pn	Pn	01 52 37.7	-0.9
MRZ	**Mangatainoka R**	**1.69**	**65**	PN	Pn	01 52 37.7	-0.9
MRZ				AML	AML	01 53 08.7	
MRZ				AML	AML	01 53 09.3	
LTZ	**Lake Taylor**	**1.70**	**214**	Pn	Pn	01 52 38.6	-0.2
LTZ	**Lake Taylor**	**1.70**	**214**	⇑PN	Pn	01 52 38.6	-0.2
OHWZ	**Ohakea**	**1.77**	**49**	PN	Pn	01 52 40.6	+0.9
TMWZ	**Te Maipa**	**1.78**	**82**	Pn	Pn	01 52 38.8	-1.0
TMWZ	**Te Maipa**	**1.78**	**82**	PN	Pn	01 52 38.8	-1.0
TMWZ				AML	AML	01 53 15.1	
TMWZ				AML	AML	01 53 16.5	
TIWZ	**Tintock**	**1.86**	**72**	Pn	Pn	01 52 40.1	-0.9
TIWZ	**Tintock**	**1.86**	**72**	PN	Pn	01 52 40.1	-0.9
TIWZ				AML	AML	01 53 14.7	
TIWZ				AML	AML	01 53 15.4	
POWZ	**Post Office Ro**	**1.94**	**60**	Pn	Pn	01 52 42.0	-0.1
POWZ	**Post Office Ro**	**1.94**	**60**	PN	Pn	01 52 42.0	-0.1
POWZ				AML	AML	01 53 15.5	
POWZ				AML	AML	01 53 17.1	
WAZ	**Wanganui**	**1.95**	**34**	Pn	Pn	01 52 45.0	+2.8
WAZ	**Wanganui**	**1.95**	**34**	PN	Pn	01 52 45.0	+2.8
NMEZ	**Namu Road**	**1.98**	**7**	Pn	Pn	01 52 43.8	+1.3
NMEZ	**Namu Road**	**1.98**	**7**	PN	Pn	01 52 43.8	+1.3
PRWZ	**Pori Road**	**2.00**	**66**	Pn	Pn	01 52 42.1	-0.7
PRWZ	**Pori Road**	**2.00**	**66**	PN	Pn	01 52 42.1	-0.7
PRWZ				AML	AML	01 53 18.8	
PRWZ				AML	AML	01 53 19.8	
KHEZ	**Kahui Hut**	**2.11**	**10**	Pn	Pn	01 52 45.9	+1.5
KHEZ	**Kahui Hut**	**2.11**	**10**	PN	Pn	01 52 45.9	+1.5
NWEZ	**Newall Road**	**2.12**	**6**	PN	Pn	01 52 46.0	+1.6
NWEZ	**Newall Road**	**2.12**	**6**	PN	Pn	01 52 46.0	+1.6
BFZ	**Birch Farm**	**2.15**	**72**	PN	Pn	01 52 43.5	-1.3
BFZ	**Birch Farm**	**2.15**	**72**	PN	Pn	01 52 43.5	-1.3
BFZ				AML	AML	01 53 24.9	
BFZ				AML	AML	01 53 25.0	
OXZ	**Oxford**	**2.25**	**210**	Pn	Pn	01 52 44.9	-1.3
OXZ	**Oxford**	**2.25**	**210**	PN	Pn	01 52 44.9	-1.3
TSZ	**Takapari Road**	**2.25**	**55**	Pn	Pn	01 52 45.5	-0.7
TSZ	**Takapari Road**	**2.25**	**55**	⇓PN	Pn	01 52 45.5	-0.7
TSZ				AML	AML	01 53 24.2	
TSZ				AML	AML	01 53 25.7	
DVHZ	**Dannevirke**	**2.25**	**62**	Pn	Pn	01 52 44.9	-1.3
DVHZ	**Dannevirke**	**2.25**	**62**	PN	Pn	01 52 44.9	-1.3
DVHZ				AML	AML	01 53 25.6	
DVHZ				AML	AML	01 53 29.7	
MHEZ	**Mangahewa**	**2.38**	**14**	Pn	Pn	01 52 47.9	+0.1
MHEZ	**Mangahewa**	**2.38**	**14**	PN	Pn	01 52 47.9	+0.1
MQZ	**McQueen's Vall**	**2.42**	**196**	Pn	Pn	01 52 46.3	-2.1
MQZ	**McQueen's Vall**	**2.42**	**196**	PN	Pn	01 52 46.3	-2.1
VRZ	**Vera Road**	**2.43**	**23**	Pn	Pn	01 52 50.4	+1.7
VRZ	**Vera Road**	**2.43**	**23**	PN	Pn	01 52 50.4	+1.7
PNHZ	**Pukenui**	**2.49**	**55**	Pn	Pn	01 52 48.3	-1.1
PNHZ	**Pukenui**	**2.49**	**55**	PN	Pn	01 52 48.3	-1.1
PNHZ				AML	AML	01 53 30.3	
PNHZ				AML	AML	01 53 32.4	
TRVZ	**Turoa**	**2.58**	**37**	Pn	Pn	01 52 53.0	+2.2
WNVZ	**Wahianoa**	**2.58**	**38**	Pn	Pn	01 52 51.7	+1.0
MOVZ	**Moawhango**	**2.59**	**41**	Pn	Pn	01 52 50.9	+0.2
WHVZ	**Whangaehu Hut**	**2.61**	**37**	Pn	Pn	01 52 53.4	+2.2
WHVZ	**Whangaehu Hut**	**2.61**	**37**	PN	Pn	01 52 53.4	+2.2
FWVZ	**Far West T-bar**	**2.61**	**36**	Pn	Pn	01 52 53.0	+1.7
FWVZ	**Far West T-bar**	**2.61**	**36**	PN	Pn	01 52 53.0	+1.7
TUVZ	**Tukino**	**2.65**	**38**	Pn	Pn	01 52 55.4	+3.7
TUVZ	**Tukino**	**2.65**	**38**	PN	Pn	01 52 55.4	+3.7
BHHZ	**Black Hill Sta**	**2.69**	**46**	Pn	Pn	01 52 52.0	-0.1
BHHZ	**Black Hill Sta**	**2.69**	**46**	PN	Pn	01 52 52.0	-0.1
BHHZ				AML	AML	01 53 31.7	
BHHZ				AML	AML	01 53 38.3	
WVZ	**Waitaha Valley**	**2.69**	**230**	Pn	Pn	01 52 52.0	-0.2
WVZ	**Waitaha Valley**	**2.69**	**230**	PN	Pn	01 52 51.9	-0.2
OTVZ	**Oturere**	**2.74**	**37**	Pn	P

HELC				*e*S		**Sn**	02 24 12.2	-1.1
HELC				*i*			02 24 19.2	
	comp=Z,1μm,0.5s							
HELC	**Santa Helena**	**2.52**	**256**	*e*Pn		**Pn**	**02 23 41.1**	**+0.2**
HELC				*e*Sn		**Sn**	**02 24 11.3**	**-2.0**
VIGV	**El Vigia**	**2.62**	**40**	*e*P		**Pn**	**02 23 42.5**	**+0.8**
VIGV				*e*S		**Sn**	**02 24 13.9**	**-1.0**
SOCV	**Socops**	**2.63**	**56**	*e*P		**Pn**	**02 23 42.1**	**+0.3**
SOCV				*e*S		**Sn**	**02 24 14.4**	**-0.8**
VILC	**Villavicencio,**	**2.77**	**193**	*e*P		**Pn**	**02 23 43.3**	**-0.4**
VILC				*e*S		**Sn**	**02 24 17.3**	**-1.2**
VILC				*i*			02 24 27.9	
	comp=Z,510nm,0.4s							
GUYC	**Guyana, Colomb**	**2.81**	**236**	*e*P		**Pn**	**02 23 44.2**	**-0.2**
GUYC				*i*			02 24 25.8	
	comp=Z,673nm,0.4s							
DBBC	**Dabeiba**	**3.12**	**274**	*e*P		**Pn**	**02 23 48.1**	**0.0**
DBBC				*i*			02 24 33.8	
	comp=Z,144nm,0.5s							
TOLC	**Tolima**	**3.16**	**225**	*e*P		**Pn**	**02 23 49.1**	**+0.3**
SDV	**Santo Domingo**	**3.16**	**50**	P		**Pn**	**02 23 49.7**	**+1.0**
	comp=Z,80nm,0.3s,baz=201,slow=1.9,SNR=51							
SDV				S		**Sn**	**02 24 26.6**	**-0.7**
	comp=Z,107nm,0.3s,baz=254,slow=23,SNR=36							
SDV	**Santo Domingo**	**3.16**	**50**	*e*P		**Pn**	**02 23 49.5**	**+0.8**
ELOV	**Elorza**	**3.56**	**87**	*e*P		**Pn**	**02 23 54.4**	**+0.7**
ELOV				*e*S		**Sn**	**02 24 35.0**	**-1.1**
PRAC	**Prado**	**3.58**	**210**	*e*P		**Pn**	**02 23 53.6**	**-0.3**
PRAC				*e*S		**Sn**	**02 24 35.3**	**-1.5**
PRAC	**Prado**	**3.58**	**210**	*e*Pn		**Pn**	**02 23 53.6**	**-0.3**
PRAC				*e*Sn		**Sn**	**02 24 36.3**	**-0.5**
SJAC	**San Juan de Ar**	**3.64**	**194**	*e*P		**Pn**	**02 23 54.2**	**-0.5**
VIRV	**Villa del Rosa**	**3.71**	**10**	*e*P		**Pn**	**02 23 54.4**	**-1.2**
VIRV				*e*S		**Sn**	**02 24 35.2**	**-4.5**
QARV	**Quebrada Arrib**	**4.20**	**37**	*e*S		**Sn**	**02 24 47.6**	**-3.4**
GUVC	**San Jose del G**	**4.28**	**174**	*e*P		**Pn**	**02 24 03.2**	**+0.3**
SOLC	**Bahia Solano**	**4.35**	**262**	*e*P		**Pn**	**02 24 03.3**	**-0.6**
SANV	**Sanarito**	**4.39**	**53**	*e*P		**Pn**	**02 24 04.3**	**-0.2**
SANV				*e*S		**Sn**	**02 24 52.0**	**-3.7**
CURV	**Curarigua**	**4.41**	**44**	*e*P		**Pn**	**02 24 04.7**	**-0.1**
DABV	**Dabajuro**	**4.73**	**30**	*e*P		**Pn**	**02 24 08.5**	**-0.3**
TEPV	**Terepaima**	**4.94**	**51**	*e*P		**Pn**	**02 24 11.6**	**0.0**
SIQV	**Siquisique**	**4.98**	**40**	*e*P		**Pn**	**02 24 10.9**	**-1.2**
SIQV				*e*S		**Sn**	**02 25 04.4**	**-5.0**
MALC	**Bahia Malaga**	**5.08**	**237**	*e*P		**Pn**	**02 24 14.5**	**+1.0**
BAUV	**El Baul**	**5.41**	**67**	*e*P		**Pn**	**02 24 16.4**	**-1.3**
MAPV	**Macapo**	**5.45**	**56**	*e*P		**Pn**	**02 24 17.7**	**-0.6**
POPC	**Popayan, Colom**	**5.57**	**220**	*e*P		**Pn**	**02 24 19.6**	**-0.5**
MONV	**Montecano**	**5.94**	**31**	*e*P		**Pn**	**02 24 23.8**	**-1.0**
MERV	**Las Mercedes**	**7.12**	**70**	*e*P		**Pn**	**02 24 39.5**	**-1.1**
OTAV	**Otavalo**	**8.47**	**220**	*e*Pn		**Pn**	**02 24 58.1**	**-0.8**
OTAV				*e*Sn		**Sn**	**02 26 27.8**	**-5.7**
PCRV	**Puerto La Cruz**	**8.98**	**68**	P		**Pn**	**02 25 04.5**	**-0.8**
	comp=Z,1.5nm,0.3s,baz=266,slow=5.2,SNR=8.6							
SJG	**San Juan**	**13.09**	**30**	LR		LR	02 31 14.9	
	comp=Z,18nm,21.1s,baz=170,slow=38							
SAML	**Samuel**	**18.51**	**148**	*e*P		**P**	**02 27 03.6**	**+0.3**
	comp=Z,4.9nm,1.0s							
WVT	**Waverly**	**32.15**	**337**	*e*P		**P**	**02 29 13.1**	**+1.6**
	comp=Z,3.4nm,0.9s							
PBMO	**Poplar Bluff**	**33.76**	**334**	*e*P		**P**	**02 29 27.2**	**+1.6**
	comp=Z,5.8nm,0.8s							
TXAR	**Lajitas Array**	**36.50**	**312**	P		**P**	**02 29 50.0**	**+0.8**
	comp=Z,1.2nm,0.6s,baz=126,slow=9.1,SNR=18							
TXAR				PcP		**PcP**	**02 32 11.1**	**+1.3**
	comp=Z,0.4nm,0.6s,baz=127,slow=4.8,SNR=5.9							
TX31	**Lajitas Ar. Si**	**36.50**	**312**	*e*P		**P**	**02 29 50.3**	**+1.0**
WMOK	**Wichita Mounta**	**36.51**	**323**	*e*P		**P**	**02 29 48.5**	**-0.7**
	comp=Z,1.9nm,0.7s							
MNTX	**Cornudas Mount**	**39.01**	**314**	*e*P		**P**	**02 30 10.7**	**+0.5**
	comp=Z,4.2nm,0.8s							
ECSD	**EROS Data Cent**	**42.16**	**334**	*e*P		**P**	**02 30 36.1**	**+0.2**
SDCO	**Great Sand Dun**	**42.58**	**321**	*e*P		**P**	**02 30 40.8**	**+1.1**
	comp=Z,2.6nm,0.9s							
TUC	**Tucson**	**43.28**	**311**	*e*P		**P**	**02 30 46.1**	**+0.8**
	comp=Z,2.2nm,0.8s							
WUAZ	**Wupatki**	**45.25**	**315**	*e*P		**P**	**02 31 02.7**	**+1.8**
	comp=Z,5.8nm,0.9s							
RSSD	**Black Hills**	**45.96**	**329**	*e*P		**P**	**02 31 06.9**	**+0.5**
U15A	**North Rim**	**46.35**	**315**	*e*P		**P**	**02 31 11.8**	**+2.1**
	comp=Z,2.8nm,1.0s							
KNB	**Kanab**	**47.01**	**316**	*e*P		**P**	**02 31 15.8**	**+1.1**
	comp=Z,4.2nm,1.0s							
ULM	**Lac du Bonnet**	**47.30**	**340**	P		**P**	**02 31 16.0**	**-0.4**
	comp=Z,2.7nm,0.4s,baz=145,slow=9.2,SNR=5.1							
BW06	**Boulder Array**	**48.10**	**324**	*e*P		**P**	**02 31 23.1**	**0.0**
	comp=Z,5.6nm,1.2s							
PDAR	**Pinedale Array**	**48.10**	**324**	P		**P**	**02 31 23.4**	**+0.3**
	comp=Z,0.8nm,0.5s,baz=116,slow=12,SNR=7.2							
SCHQ	**Schefferville**	**48.13**	**5**	P		**P**	**02 31 23.7**	**+0.9**
	comp=Z,5.7nm,0.6s,baz=185,slow=8.1,SNR=10							
BGU	**Big Grassy Mou**	**49.17**	**320**	*e*P		**P**	**02 31 32.4**	**+1.2**
	comp=Z,2.9nm,0.7s							
REDW	**Red Top Meadow**	**49.22**	**324**	*e*P		**P**	**02 31 32.0**	**+0.4**
	comp=Z,3.6nm,0.6s							
TPAW	**Teton Pass**	**49.35**	**324**	*e*P		**P**	**02 31 33.2**	**+0.6**
	comp=Z,7.5nm,1.1s							
TPNV	**Topopah Spring**	**49.40**	**314**	*e*P		**P**	**02 31 34.8**	**+1.8**
	comp=Z,17nm,2.0s							
BOZ	**Bozeman (W)**	**51.04**	**326**	*e*P		**P**	**02 31 45.6**	**+0.5**
	comp=Z,1.8nm,0.8s							
HLID	**Hailey**	**51.46**	**322**	*e*P		**P**	**02 31 49.0**	**+0.7**
	comp=Z,3.8nm,1.3s							
WVOR	**Wild Horse Val**	**53.56**	**319**	*e*P		**P**	**02 32 04.4**	**+0.6**
	comp=Z,4.5nm,1.2s							
YKA	**Yellowknife Ar**	**63.28**	**340**	P		**P**	**02 33 10.5**	**0.0**
	comp=Z,2.3nm,0.6s,baz=133,slow=6.9,SNR=13							
INK	**Inuvik**	**73.04**	**340**	P		**P**	**02 34 11.8**	**+0.6**
	comp=Z,0.7nm,0.4s,baz=133,slow=5.4,SNR=4.0							
TORD	**Torodi Ar. Bea**	**73.69**	**78**	P		**P**	**02 34 14.6**	**-1.5**
	comp=Z,0.4nm,1.0s,baz=209,slow=5.0,SNR=6.5							
ILAR	**Eielson Array**	**76.98**	**335**			**P**	**02 34 34.2**	**+0.3**
	comp=Z,0.2nm,0.4s,baz=98,slow=4.2,SNR=3.8							
PPLA	**Purkeypile**	**79.00**	**333**	*e*P		**P**	**02 34 45.6**	**+0.3**
	comp=Z,2.8nm,0.5s							
NOA	**NORSAR Array B**	**81.30**	**29**	P		**P**	**02 34 58.2**	**+0.8**
	comp=Z,0.3nm,0.6s,baz=268,slow=5.3,SNR=3.1							
ASAR	**Alice Springs**	**149.16**	**234**	PKPbc		**PKPbc**	**02 42 28.9**	**-0.7**
	comp=Z,1.4nm,0.5s,baz=122,slow=3.5,SNR=17							
WRA	**Warramunga Arr**	**150.38**	**241**	PKPbc		**PKPbc**	**02 42 32.0**	**-0.6**
	comp=Z,1.4nm,0.4s,baz=108,slow=2.7,SNR=56							

*NSSP **06** 02:31:50.0,38°.97N×43°.48E,h10km,Ms3.0*
*ISCJB **06** 02:31:53.9±0.5,38°.96N±0°.02×43°.70E±0°.04,h11km±3km, Error ellipse: s-maj=5.8km s-min=3.8km az=14.8*
*DDA **06** 02:31:53.2,38°.92N×43°.69E,h14km, Ml3.3*
*ISK **06** 02:31:53.2,38°.96N×43°.66E,h5km,MD2.9*
*CSEM **06** 02:31:53.6±0.2,38°.95N×43°.67E,h10km,ML3.3, Error ellipse: s-maj=6.8km s-min=4.2km az=99.0*
ISC 06 02:31:53.6±0.9,38°.94N±0°.02×43°.68E±0°.03,h11km±6km, n35,σ0$71/55,1C-2D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VMUR	**Van-Muradiye**	**0.10**	**301**	*i* P	**Pg**	**02 31 56.0**	**-0.4**
VMUR				*i* S	**Sg**	**02 31 59.3**	**+0.8**
VMUR	**Van-Muradiye**	**0.10**	**301**	P	**Pg**	**02 31 56.0**	**-0.4**
VMUR				S	**Sg**	**02 31 59.3**	**+0.8**
CLDR	**Caldiran**	**0.28**	**43**	*e*PG	**Pg**	**02 31 58.4**	**-0.9**
CLDR				*e*SG	**Sg**	**02 32 03.5**	**+0.3**
CLDR	**Caldiran**	**0.28**	**43**	*e*Pg	**Pg**	**02 31 58.4**	**-0.9**
CLDR				*e*Sg	**Sg**	**02 32 03.5**	**+0.3**
VANB	**Van**	**0.41**	**213**	*e*PG	**Pb**	**02 32 03.1**	**+0.2**
VANB				*e*SG	**Sb**	**02 32 10.0**	**+0.8**
VANB	**Van**	**0.41**	**213**	*e*Pg	**Pb**	**02 32 03.1**	**+0.2**
VANB				*e*Sg	**Sb**	**02 32 10.0**	**+0.8**
TVAN	**Van**	**0.46**	**207**	*i* P	**Pg**	**02 32 02.6**	**-0.1**
TVAN				*i* S	**Sb**	**02 32 10.8**	**0.0**
TVAN	**Van**	**0.46**	**207**	P	**Pg**	**02 32 02.6**	**-0.1**
TVAN				S	**Sb**	**02 32 10.8**	**0.0**
DYDN	**Diyadin**	**0.60**	**1**	*i* P	**Pg**	**02 32 05.1**	**-0.2**
DYDN				*i* S	**Sb**	**02 32 15.1**	**+0.2**
DYDN	**Diyadin**	**0.60**	**1**	P	**Pg**	**02 32 05.1**	**-0.2**
DYDN				S	**Sb**	**02 32 15.1**	**+0.2**
GEVA	**Gevas**	**0.79**	**218**	*i* P	**Pg**	**02 32 08.0**	**-0.9**
GEVA				*i* S	**Sg**	**02 32 19.8**	**+0.5**
GEVA	**Gevas**	**0.79**	**218**	P	**Pg**	**02 32 08.0**	**-0.9**
GEVA				S	**Sg**	**02 32 19.8**	**+0.5**
TUTA	**Tutak**	**0.81**	**305**	*i* P	**Pg**	**02 32 08.9**	**-0.4**
TUTA				*i* S	**Sb**	**02 32 21.1**	**+0.1**
TUTA	**Tutak**	**0.81**	**305**	P	**Pg**	**02 32 08.9**	**-0.4**
TUTA				S	**Sb**	**02 32 21.1**	**+0.1**
AGRB	**Hanur-Agry**	**0.83**	**320**	*e*PG	**Pb**	**02 32 09.5**	**-0.6**
AGRB				*e*SG	**Sb**	**02 32 20.7**	**-0.6**
AGRB	**Hanur-Agry**	**0.83**	**320**	*e*Pg	**Pb**	**02 32 09.5**	**-0.6**
AGRB				*e*Sg	**Sb**	**02 32 20.7**	**-0.6**
BASK	**Baskale_VAN**	**0.92**	**164**	*i* P	**Pg**	**02 32 10.7**	**-0.7**
BASK	**Baskale_VAN**	**0.92**	**164**	P	**Pg**	**02 32 10.7**	**-0.7**
TATV	**Tatvan**	**1.18**	**249**	*i* P	**Pb**	**02 32 14.9**	**-1.2**
TATV				*i* S	**Sn**	**02 32 32.2**	**-0.2**
TATV	**Tatvan**	**1.18**	**249**	P	**Pb**	**02 32 14.9**	**-1.2**
TATV				S	**Sn**	**02 32 32.2**	**-0.2**
HKR	**Hakkari**	**1.36**	**178**	*e*PN	**Pg**	**02 32 20.2**	**+0.5**
HKR	**Hakkari**	**1.36**	**178**	*e*Pn	**Pg**	**02 32 20.2**	**+0.5**
HAKT	**HAKKARI**	**1.38**	**179**	*i* P	**Pn**	**02 32 17.8**	**-1.2**
HAKT	**HAKKARI**	**1.38**	**179**	P	**Pn**	**02 32 17.8**	**-1.2**
GNI	**Garni**	**1.46**	**34**	⇑*i* P	**Pg**	**02 32 21.2**	**-0.5**
GNI				⇑*i* S	**Sg**	**02 32 42.7**	**+2.0**
GNI	**Garni**	**1.46**	**34**	⇓P	**Pg**	**02 32 21.2**	**-0.5**
GNI				S	**Sg**	**02 32 42.7**	**+2.0**
CUKT	**Cukurca**	**1.69**	**182**	*e*PN	**Pb**	**02 32 24.7**	**-0.1**
CUKT	**Cukurca**	**1.69**	**182**	*e*Pn	**Pb**	**02 32 24.7**	**-0.1**
SIRT	**Sirnak**	**1.74**	**215**	*e*PN	**Pb**	**02 32 25.4**	**-0.1**
SIRT	**Sirnak**	**1.74**	**215**	*e*Pn	**Pb**	**02 32 25.4**	**-0.1**
SENK	**Senkaya-Erzuru**	**1.91**	**328**	*e*PN	**Pn**	**02 32 26.8**	**+0.5**
SENK	**Senkaya-Erzuru**	**1.91**	**328**	*e*Pn	**Pn**	**02 32 26.8**	**+0.5**
EZM	**Erzurum**	**2.04**	**299**	*e*PN	**Pn**	**02 32 28.6**	**+0.6**
BTMN	**Batman**	**2.16**	**242**	*i* P	**Pb**	**02 32 33.0**	**+0.3**
BTMN	**Batman**	**2.16**	**242**	P	**Pb**	**02 32 33.0**	**+0.3**

MEX 06 02:43:20.1±1.0,17°.25N×100°.50W,h41km±13km,MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CAIG	**El Cayaco**	**0.30**	**132**	*i* P	Pn	02 43 26.6	-1.9
CAIG				*i* S	Sn	02 43 32.7	-1.5
ACX	**Acapulco**	**0.72**	**121**	*e*P	Pn	02 43 30.1	-3.7
ACX				*e*S	Sn	02 43 39.2	-4.5
ZIIG	**Zihuatanejo**	**0.99**	**291**	*e*P	Pn	02 43 35.6	-1.9
ZIIG				*e*S	Sn	02 43 47.1	-1.3
ARIG	**Puente Sto Nin**	**1.04**	**8**	*e*P	Pn	02 43 36.0	-2.2
ARIG				*e*S	Sn	02 43 49.3	-2.3
MEIG	**Mezcala**	**1.08**	**51**	*e*P	Pn	02 43 37.3	-1.5
MEIG				*e*S	Sn	02 43 50.9	-1.7
TLIG	**Tlapa**	**1.87**	**80**	*i* P	Pn	02 43 48.9	-0.9
TLIG				*i* S	Sn	02 44 10.7	-1.5

*NEIC **06** 02:44:58.5,16°.03N×95°.76W,h16km,MD4.0(MEX),After MEX.*
MEX 06 02:44:58.5±0.7,16°.03N×95°.76W,h16km±11km,MD4.0, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.42**	**232**	*i* P	Pg	02 45 06.0	-1.1
HUIG				*e*S	Sg	02 45 11.5	-1.4
HUIG	**Huatulco**	**0.42**	**232**	*i* P	Pg	02 45 06.0	-1.1
HUIG				*e*S	Sg	02 45 11.5	-1.4
VHO	**Vista Hermosa**	**1.39**	**318**	*e*P	Pn	02 45 20.1	-3.4
VHO				*e*S	Sn	02 45 36.4	-5.3
VHO	**Vista Hermosa**	**1.39**	**318**	*e*P	Pn	02 45 20.1	-3.4
VHO				*e*S	Sn	02 45 36.4	-5.3
PNIG	**Pinotepa**	**2.30**	**279**	*e*P	Pn	02 45 31.9	-3.9
PNIG				*e*S	Sn	02 46 00.2	-3.7
PNIG	**Pinotepa**	**2.30**	**279**	*e*P	Pn	02 45 31.9	-3.9
PNIG				*e*S	Sn	02 46 00.2	-3.7
TGIG		**2.64**	**73**	*e*P	Pn	02 45 37.1	-3.5
TGIG				*i* S	Sn	02 46 07.9	-4.4
TGIG		**2.64**	**73**	*e*P	Pn	02 45 37.1	-3.5
TGIG				*i* S	Sn	02 46 07.9	-4.4
TLIG	**Tlapa**	**3.09**	**300**	*i* P	Pn	02 45 42.9	-3.9
TLIG				*e*S	Sn	02 46 20.8	-2.7

*IDC **06** 02:48:13.2±2.5,36°.90S×176°.85E,h299km±12km,mb3.4/2, mb1 3.6/3,mb1mx3.1/33,mbtmp4.1/3,Error ellipse: s-maj=62.1km s-min=30.6km az=44.0*
*NEIC **06** 02:48:15.1,36°.49S×176°.64E,h257km,MG4.3(WEL), After WEL.*
*WEL **06** 02:48:15.2±0.2,36°.48S×176°.66E,h257km±4km,ML4.3/46, Error ellipse: s-maj=6.4km s-min=5.9km az=0.0*
ISC 06 02:48:10.9±1.7,36°.7S±0°.1×176°.8E±0°.1,h311km±10km, n111,σ1$82/120,9C-2D,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HAZ	**Te Kaha**	**1.29**	**142**	PN	**Pn**	**02 48 54.6**	**+0.8**
HAZ				SN	**S**	**02 49 25.3**	**-2.6**
HAZ				AML	AML	02 49 26.4	
HAZ				AML	AML	02 49 29.0	
HAZ				AML	AML	02 49 29.0	
MXZ	**Matakaoa Point**	**1.47**	**124**	Pn	**Pn**	**02 48 55.8**	**+0.9**
MXZ				Sn	**S**	**02 49 27.6**	**-2.2**
MXZ	**Matakaoa Point**	**1.47**	**124**	PN	**Pn**	**02 48 55.7**	**+0.9**
MXZ				SN	**S**	**02 49 27.6**	**-2.2**
MXZ				AML	AML	02 49 30.3	
URZ	**Urewera**	**1.54**	**170**	P	**Pn**	**02 48 56.8**	**+1.5**
	3.1nm,0.3s,baz=269,slow=6.8,SNR=20						
URZ				S	**S**	**02 49 28.9**	**-1.7**
	14nm,0.3s,baz=174,slow=23,SNR=24						
URZ	**Urewera**	**1.54**	**170**	⇑PN	**Pn**	**02 48 56.8**	**+1.5**
URZ				SN	**S**	**02 49 29.2**	**-1.4**
URZ				AML	AML	02 49 33.6	
WMGZ	**Waiomatatini S**	**1.69**	**130**	Pn	**Pn**	**02 48 57.7**	**+1.4**
WMGZ				Sn	**S**	**02 49 30.9**	**-1.6**
WMGZ	**Waiomatatini S**	**1.69**	**130**	PN	**Pn**	**02 48 57.7**	**+1.4**
WMGZ				SN	**S**	**02 49 30.8**	**-1.6**
WMGZ				AML	AML	02 49 31.2	
MWZ	**Matawai**	**1.70**	**160**	Pn	**Pn**	**02 48 57.9**	**+1.6**
MWZ				Sn	**S**	**02 49 31.5**	**-1.2**
MWZ	**Matawai**	**1.70**	**160**	PN	**Pn**	**02 48 57.9**	**+1.6**
MWZ				SN	**S**	**02 49 31.5**	**-1.2**
MWZ				AML	AML	02 49 34.2	
MWZ				AML	AML	02 49 44.1	
TWGZ	**Tauwhareparae**	**1.72**	**147**	Pn	**Pn**	**02 48 58.5**	**+2.0**
TWGZ	**Tauwhareparae**	**1.72**	**147**	⇑PN	**Pn**	**02 48 58.5**	**+2.0**
TWGZ				AML	AML	02 49 35.5	
TWGZ				AML	AML	02 49 35.8	
PUZ	**Puketiti**	**1.77**	**139**	Pn	**Pn**	**02 48 58.2**	**+1.3**
PUZ				Sn	**S**	**02 49 31.5**	**-2.1**
PUZ	**Puketiti**	**1.77**	**139**	⇑PN	**Pn**	**02 48 58.2**	**+1.3**
PUZ				SN	**S**	**02 49 31.5**	**-2.1**
PUZ				AML	AML	02 49 33.0	
RAGZ	**Rawiri**	**1.82**	**164**	AML	AML	02 49 36.2	
RAGZ				AML	AML	02 49 37.5	
RTZ	**Ruatahuna**	**1.88**	**175**	PN	**Pn**	**02 48 59.4**	**+1.7**
TKGZ	**Te Karaka**	**1.89**	**154**	Pn	**Pn**	**02 48 59.5**	**+1.8**
TKGZ				Sn	**S**	**02 49 33.4**	**-1.6**
TKGZ	**Te Karaka**	**1.89**	**154**	⇑PN	**Pn**	**02 48 59.5**	**+1.8**
TKGZ				SN	**S**	**02 49 33.4**	**-1.6**
TKGZ				AML	AML	02 49 34.5	
CNGZ	**Carnagh Statio**	**2.08**	**147**	Pn	**Pn**	**02 49 01.3**	**+2.2**
CNGZ	**Carnagh Statio**	**2.08**	**147**	⇓PN	**Pn**	**02 49 01.3**	**+2.2**
CNGZ				AML	AML	02 49 47.1	
SNGZ	**Shannon Statio**	**2.08**	**168**	Pn	**Pn**	**02 49 01.4**	**+2.2**
SNGZ	**Shannon Statio**	**2.08**	**168**	⇑PN	**Pn**	**02 49 01.4**	**+2.2**
SNGZ				AML	AML	02 49 41.0	
SNGZ				AML	AML	02 49 42.8	
RIGZ	**Rimuhau**	**2.11**	**159**	PN	**Pn**	**02 49 01.6**	**+2.2**
RIGZ				SN	**S**	**02 49 37.8**	**-0.4**
RIGZ				AML	AML	02 49 42.1	
NMHZ	**Naumai**	**2.35**	**180**	Pn	**Pn**	**02 49 04.1**	**+2.7**
NMHZ	**Naumai**	**2.35**	**180**	⇓PN	**Pn**	**02 49 04.1**	**+2.7**
NMHZ				AML	AML	02 49 45.9	
NMHZ				AML	AML	02 49 47.8	
WHHZ	**Waihua**	**2.36**	**171**	PN	**Pn**	**02 49 03.7**	**+2.2**
WHHZ				AML	AML	02 49 46.0	
WHHZ				AML	AML	02 49 46.4	
KNZ	**Kokohu**	**2.38**	**163**	Pn	**Pn**	**02 49 03.4**	**+1.7**
KNZ	**Kokohu**	**2.38**	**163**	PN	**Pn**	**02 49 03.3**	**+1.7**
BKZ	**Black Stump Fm**	**2.43**	**185**	Pn	**Pn**	**02 49 04.0**	**+1.9**
BKZ	**Black Stump Fm**	**2.43**	**185**	⇑PN	**Pn**	**02 49 04.0**	**+1.9**
BKZ				AML	AML	02 49 45.4	
BKZ				AML	AML	02 49 46.7	
ARHZ	**Aropaoanui**	**2.52**	**176**	Pn	**Pn**	**02 49 04.9**	**+2.1**
ARHZ	**Aropaoanui**	**2.52**	**176**	PN	**Pn**	**02 49 04.9**	**+2.1**
ARHZ				AML	AML	02 49 46.2	
ARHZ				AML	AML	02 49 47.8	
MHGZ	**Mahia Peninsul**	**2.57**	**160**	Pn	**Pn**	**02 49 05.5**	**+2.2**
MHGZ	**Mahia Peninsul**	**2.57**	**160**	PN	**Pn**	**02 49 05.5**	**+2.2**
MHGZ				AML	AML	02 49 47.7	
MHGZ				AML	AML	02 49 56.0	
FWVZ	**Far West T-bar**	**2.69**	**201**	PN	**Pn**	**02 49 07.3**	**+2.7**
KWHZ	**Kaweka Forest**	**2.69**	**186**	PN	**Pn**	**02 49 06.5**	**+2.1**
KWHZ				AML	AML	02 49 50.1	
KWHZ				AML	AML	02 49 50.8	
MCHZ	**McNeill Hill**	**2.70**	**181**	Pn	**Pn**	**02 49 06.3**	**+1.8**
MCHZ	**McNeill Hill**	**2.70**	**181**	PN	**Pn**	**02 49 06.3**	**+1.8**
MCHZ				AML	AML	02 49 51.2	
MCHZ				AML	AML	02 49 53.3	
WHVZ	**Whangaehu Hut**	**2.71**	**200**	Pn	**Pn**	**02 49 07.2**	**+2.4**
WHVZ	**Whangaehu Hut**	**2.71**	**200**	PN	**Pn**	**02 49 07.2**	**+2.4**
WNVZ	**Wahianoa**	**2.75**	**200**	P	**Pn**	**02 49 07.5**	**+2.4**
WNVZ	**Wahianoa**	**2.75**	**200**	⇑PN	**Pn**	**02 49 07.5**	**+2.4**
MOVZ	**Moawhango**	**2.78**	**197**	Pn	**Pn**	**02 49 07.4**	**+2.1**
MOVZ	**Moawhango**	**2.78**	**197**	PN	**Pn**	**02 49 07.4**	**+2.1**
BHHZ	**Black Hill Sta**	**2.80**	**191**	Pn	**Pn**	**02 49 07.4**	**+1.9**
BHHZ	**Black Hill Sta**	**2.80**	**191**	PN	**Pn**	**02 49 07.4**	**+1.9**
BHHZ				AML	AML	02 49 52.6	
BHHZ				AML	AML	02 49 53.1	
CKHZ	**Cape Kidnapper**	**2.92**	**176**	PN	**Pn**	**02 49 08.7**	**+2.2**
CKHZ				AML	AML	02 49 54.3	
CKHZ				AML	AML	02 49 55.2	
KAHZ	**Kahuranaki**	**3.05**	**179**	Pn	**Pn**	**02 49 09.9**	**+2.1**
KAHZ	**Kahuranaki**	**3.05**	**179**	PN	**Pn**	**02 49 09.9**	**+2.1**
KAHZ				AML	AML	02 49 58.1	
KAHZ				AML	AML	02 49 58.9	
PNHZ	**Pukenui**	**3.20**	**188**	Pn	**Pn**	**02 49 10.8**	**+1.5**
PNHZ	**Pukenui**	**3.20**	**188**	PN	**Pn**	**02 49 10.8**	**+1.5**
PNHZ				AML	AML	02 49 58.0	
PNHZ				AML	AML	02 50 00.4	
WAZ	**Wanganui**	**3.32**	**205**	Pn	**Pn**	**02 49 13.4**	**+2.9**
WAZ	**Wanganui**	**3.32**	**205**	PN	**Pn**	**02 49 13.4**	**+2.9**
WPHZ	**Waipukurau**	**3.33**	**185**	AML	AML	02 50 00.3	
WPHZ				AML	AML	02 50 02.3	
TSZ	**Takapari Road**	**3.37**	**191**	Pn	**Pn**	**02 49 12.8**	**+1.8**
TSZ	**Takapari Road**	**3.37**	**191**	PN	**Pn**	**02 49 12.8**	**+1.8**
TSZ				AML	AML	02 50 01.4	
TSZ				AML	AML	02 50 01.7	
PRHZ	**Porangahau**	**3.52**	**182**	Pn	**Pn**	**02 49 14.7**	**+2.2**
PRHZ	**Porangahau**	**3.52**	**182**	PN	**Pn**	**02 49 14.7**	**+2.2**
PRHZ				AML	AML	02 50 05.0	
PRHZ				AML	AML	02 50 06.5	
DVHZ	**Dannevirke**	**3.58**	**188**	AML	AML	02 50 05.0	
DVHZ				AML	AML	02 50 07.8	
OHWZ	**Ohakea**	**3.65**	**198**	PN	**Pn**	**02 49 16.4**	**+2.7**
OHWZ				SN	**S**	**02 50 06.1**	**+1.9**
ANWZ	**Angora Road**	**3.72**	**184**	PN	**Pn**	**02 49 16.8**	**+2.2**
ANWZ				AML	AML	02 50 09.2	
ANWZ				AML	AML	02 50 10.0	
POWZ	**Post Office Ro**	**3.73**	**192**	Pn	**Pn**	**02 49 16.8**	**+2.1**
POWZ	**Post Office Ro**	**3.73**	**192**

STKA	Stephens Creek	35.66	159	P	P	02 58 56.8	+1.6
	5.1nm,0.8s,baz=320,slow=8.3,SNR=3.9						
MJAR	Matsushiro Arr	36.31	14	P	P	02 59 12.5	+12
	1.2nm,0.4s,baz=189,slow=8.8,SNR=4.1						
MKAR	Makanchi Array	59.95	326	P	P	03 02 00.8	-1.3
	0.3nm,0.4s,baz=124,slow=8.4,SNR=5.4						
TORD	Torodi Ar. Bea	124.45	287	PKP	PKPdf	03 10 52.9	-1.5
	0.4nm,0.9s,baz=68,slow=0.8,SNR=2.9						

CASC ***06*** *02:55:16.8±1.6,12˚.06N×88˚.49W,h12km±10km, MD4.0, ML3.4,mb4.4(NEIC)*

ISCJB ***06*** *02:55:19.5±0.6,12˚.15N±0˚.05×88˚.33W±0˚.04,h59km±3km, mb4.4/54,Error ellipse: s-maj=9.8km s-min=4.3km az=29.9*

NEIC ***06*** *02:55:22.0±1.2,12˚.30N×88˚.22W,h50km±10km,mb4.4/48, MD4.0(SNET),Error ellipse: s-maj=14.6km s-min=9.3km az=45.0*

NEIC Felt [I] at San Salvador, El Salvador.

IDC ***06*** *02:55:27.1±6.1,12˚.82N×88˚.32W,h72km±46km,mb3.9/7, mb1 4.2/8,mb1mx3.8/30,mbtmp4.2/8,ML3.0/2,Error ellipse: s-maj=44.2km s-min=32.5km az=2.0*

ISC 06 02:55:21.2±1.2,12.19N±0.07×88.40W±0.05,h49km±11km, n344,σ1s14/349,mb4.4/54,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LCY	Lacayo	1.23	5	eP	Pn	02 55 40.8	-1.5
LCY				eS	Sn	02 55 59.9	+2.1
BLLM	Bellamira	1.26	7	eP	Pn	02 55 41.2	-1.4
LFRS	El Faro	1.56	336	eP	Pn	02 55 44.8	-2.0
TEL3	Telica 3	1.57	76	eP	Pn	02 55 45.2	-1.5
CAHU	Cacacuatique	1.58	7	eP	Pn	02 55 46.2	-0.9
CAHU				eS	Sn	02 56 08.6	+2.0
LBRS	Las Brisas	1.66	338	eP	Pn	02 55 46.6	-1.5
CNGN	Cerro Negro	1.69	79	eP	Pn	02 55 47.8	-0.7
CNGN				AML	AML	02 56 20.7	
	comp=E,660nm,0.3s						
SNET	Serv Nac Est T	1.69	332	eP	Pn	02 55 47.6	-0.9
SNET				AML	AML	02 56 16.7	
	comp=Z,1µm,0.3s						
LFU	La Fuente	1.70	336	eP	Pn	02 55 47.1	-1.5
LFU				eS	Sn	02 56 10.9	+1.7
COLS	Colinas	1.71	329	eP	Pn	02 55 46.8	-1.9
BOQS	Boqueron	1.76	331	eP	Pn	02 55 48.1	-1.5
COPN	Copaltepe	1.77	90	eP	Pn	02 55 47.2	-2.2
COPN				eS	Sn	02 56 14.0	+3.2
SBLS	San Blas	2.03	324	eP	Pn	02 55 52.1	-1.1
XAVN	Gruta Xavier	2.03	91	eP	Pn	02 55 51.9	-1.1
MONT	Ecomontaæa	2.06	324	eP	Pn	02 55 52.3	-1.3
MONT				eS	Sn	02 56 19.3	+1.1
TISN	Laguna Tiscapa	2.08	91	eP	Pn	02 55 52.0	-1.8
RTR	El Retiro	2.09	325	eP	Pn	02 55 53.0	-1.0
MGAN	Managua	2.11	91	eP	Pn	02 55 52.3	-1.7
TGUH	Tegucigalpa,Un	2.16	30	eP	Pn	02 55 54.1	-0.6
TGUH				eP	Pn	02 55 54.3	-0.5
ESTN	Estel	2.18	65	eP	Pn	02 55 53.3	-1.9
CUS1	Cusmapa	2.28	319	eS	Sn	02 56 22.9	-0.5
RBDL	Robledal	2.29	327	eP	Pn	02 55 56.1	-0.6
BOAB	BOACO BROADBAN	2.69	84	eP	Pn	02 55 59.7	-2.3
ACON	Acoyapa	3.16	94	eP	Pn	02 56 06.8	-1.8
ACON				AML	AML	02 56 54.0	
	comp=N,36nm,0.7s						
CCIG	Comitan	5.45	319	ePn	Pn	02 56 40.9	+0.8
CMIG	Matias Romero	7.94	309	P	Pn	02 57 14.2	+0.1
	comp=N,0.8nm,0.3s,baz=104,slow=10,SNR=8.0						
CMIG				S	Sn	02 58 42.6	-0.1
	baz=52,slow=19,SNR=2.7						
TEIG	Tepich	7.99	1	P	Pn	02 57 16.6	+1.8
	comp=N,0.1nm,0.3s,baz=272,slow=24,SNR=2.7						
TLIG	Tlapa	11.18	300	ePn	Pn	02 58 00.5	+1.9
OTAV	Otavalo	15.44	140	ePn	Pn	02 58 56.5	0.0
035Z	Hargill	16.86	329	P	P	02 59 16.3	+0.9
	baz=145,SNR=5.3						
035A	Encino	17.27	330	P	P	02 59 20.7	+0.8
	baz=146						
034A	Hebbronville	17.67	328	P	P	02 59 25.2	+0.9
	baz=144,SNR=14						
835A	Beeville	18.28	333	P	Pn	02 59 31.8	+0.5
	baz=149						
933A	Laredo	18.42	328	P	Pn	02 59 34.2	+1.1
	baz=144						
834A	Tilden	18.48	331	P	Pn	02 59 34.1	+0.4
	baz=146,SNR=15						
636A	Smothers Creek	19.00	336	P	Pn	02 59 40.2	+0.2
	baz=153,SNR=8.1						
833A	Chaparral WMA,	19.06	329	P	Pn	02 59 40.8	0.0
	baz=145,SNR=19						
734A	La Parita Cree	19.09	332	P	Pn	02 59 40.9	-0.2
	baz=148						
346A	Big Creek Wild	19.13	357	P	P	02 59 40.9	+0.5
	baz=176						
635A	Leesville	19.21	334	P	Pn	02 59 42.2	-0.3
	baz=150						
537A	Green Hill Far	19.26	339	P	Pn	02 59 42.7	-0.4
	baz=155						
832A	Faith Ranch, C	19.32	328	P	P	02 59 43.2	+0.7
	baz=143,SNR=14						
733A	Divot King Ran	19.34	330	P	P	02 59 43.2	+0.6
	baz=146,SNR=33						
439A	Center Grove,	19.43	343	P	Pn	02 59 45.4	+0.2
	baz=160						
342A	Flagon Creek P	19.43	350	P	P	02 59 43.6	0.0
	baz=168						
634A	China Grove, S	19.45	333	P	Pn	02 59 45.3	-0.1
	baz=149						
341A	Kurthwood	19.55	348	P	Pn	02 59 46.8	+0.1
	baz=165						
TIGA	Tifton	19.67	12	P	P	02 59 46.8	+0.6
	baz=194						
535A	Dale	19.69	336	P	Pn	02 59 47.3	-0.9
	baz=152						
247A	Quitman	19.77	359	P	P	02 59 48.1	+0.8
	baz=179						
340A	Bronson	19.80	346	P	Pn	02 59 49.0	-0.5
	baz=163,SNR=5.1						
245A	Little AP, Sta	19.80	356	P	P	02 59 48.2	+0.6
	baz=175						
248A	Dixon Mills	19.82	2	P	P	02 59 47.9	+0.1
	baz=181						
244A	Avery, Jackson	19.87	354	P	Pn	02 59 49.4	-1.0
	baz=179						
339A	Huntington	19.88	344	P	Pn	02 59 50.4	-0.1
	baz=162						
437A	Phantom Ranch,	19.88	340	P	Pn	02 59 49.6	-0.9
	baz=157						
633A	Saathoff Ranch	19.89	331	P	P	02 59 48.4	-0.3
	baz=147,SNR=18						
534A	Blanco	20.07	334	P	P	02 59 50.0	-0.6
	baz=150,SNR=14						
242A	Grayson	20.08	351	P	Pn	02 59 51.8	-1.0
	baz=169						
338A	Crockett	20.11	343	P	P	02 59 51.3	+0.2
	baz=160						
241A	Mo Tay, Goldon	20.17	349	P	P	02 59 52.2	+0.5
	baz=167						
NATX	Nacogdoches	20.32	344	P	Pn	02 59 54.8	-0.8
	baz=162						
NATX	Nacogdoches	20.32	344	eP	P	02 59 53.8	+0.6
	comp=N,20nm,0.8s						
533A	Kerrville	20.35	333	P	P	02 59 53.4	-0.3
	baz=148,SNR=23						
146A	Union	20.36	358	P	P	02 59 54.5	+0.8
	baz=178						
435B	Jarrell	20.36	337	P	P	02 59 54.1	+0.3
	baz=153						
240A	Hunter Patters	20.36	347	P	Pn	02 59 55.4	-0.8
	baz=164						
145A	Houston Renfro	20.37	356	P	Pn	02 59 55.2	-1.0
	baz=175						
147A	Livingston	20.39	0	P	P	02 59 54.8	+0.8
	baz=180						
434A	Burnet	20.66	335	P	P	02 59 56.2	-0.9
	baz=151,SNR=6.8						
335A	Moody	20.75	338	P	P	02 59 58.8	+0.8
	baz=154						
LRAL	Lakeview Retre	20.79	3	eP	P	02 59 58.3	-0.1
	comp=N,6.0nm,0.9s						
Z47A	Carrollton	20.92	1	P	P	03 00 00.1	+0.4
	baz=180						
433A	Art	20.96	333	P	P	02 59 59.5	-0.7
	baz=149,SNR=19						
JCT	Junction City	21.05	332	P	P	03 00 00.4	-0.7
	baz=147,SNR=8.5						
JCT	Junction City	21.05	332	eP	P	03 00 01.3	+0.1
	comp=N,14nm,0.8s						
Z48A	Northport	21.11	2	P	P	03 00 01.9	+0.1
	baz=182						
334A	Lometa	21.11	336	P	P	03 00 00.8	-1.0
	baz=152,SNR=9.3						
138A	Matatall Enter	21.28	344	P	P	03 00 04.6	+0.9
	baz=161						
Z41A	Richland Creek	21.36	350	P	P	03 00 06.8	+2.4
	baz=168						
333A	Richland Sprin	21.40	334	P	P	03 00 04.1	-0.9
	baz=150,SNR=20						
137A	Heron Place, G	21.41	343	P	P	03 00 07.7	+2.8
	baz=160						
Z40A	Long Farm, Mag	21.47	348	P	P	03 00 06.6	+1.0
	baz=166						
136A	Ennis	21.53	341	P	P	03 00 07.1	+0.9
	baz=157						
Y46A	Houston	21.60	359	P	P	03 00 06.9	-0.1
	baz=178						
GOGA	Godfrey	21.60	11	eP	P	03 00 06.0	-1.1
	comp=N,5.2nm,0.8s						
Y47A	UCPARC, Winfie	21.62	1	P	P	03 00 07.6	+0.3
	baz=181						
234A	Clairette	21.66	337	P	P	03 00 07.3	-0.4
	baz=153,SNR=6.0						
Y42A	Garnett, Star	21.77	352	P	P	03 00 09.1	+0.2
	baz=171						
Z38A	Mt. Pleasant	21.81	345	P	P	03 00 10.1	+0.8
	baz=162						
WLAR	White Oak Lake	21.83	349	eP	P	03 00 10.6	+1.2
	comp=N,26nm,0.8s						
Y41A	Eaglette Beard	21.93	351	P	P	03 00 12.0	+1.4
	baz=168						
Z37A	Pogue Cattle C	21.93	344	P	P	03 00 11.4	+0.8
	baz=160						
233A	Rising Star	21.97	336	P	P	03 00 10.4	-0.7
	baz=151,SNR=10						
134A	White-Moore Ra	22.15	338	P	P	03 00 13.4	+0.5
	baz=154						
TXAR	Lajitas Array	22.20	323	P	P	03 00 14.1	+0.4
	comp=N,5.6nm,0.7s,baz=140,slow=10,SNR=55						
TXAR				PcP	PcP	03 04 11.5	+2.5
	comp=N,0.3nm,0.7s,baz=107,slow=3.0,SNR=3.6						
Z36A	Blue Ridge	22.24	342	P	P	03 00 13.7	-0.2
	baz=158						
Y39A	Lockesburg	22.27	347	P	P	03 00 14.0	-0.2
	baz=165						
133A	Hamilton Ranch	22.50	336	P	P	03 00 15.7	-1.0
	baz=152,SNR=12						
X41A	Kaden, Bauxite	22.52	351	P	P	03 00 16.5	-0.4
	baz=169,SNR=7.8						
Z35A	Perchaven, San	22.55	340	P	P	03 00 17.8	+0.6
	baz=156						
X40A	Basin Creek Fa	22.56	350	P	P	03 00 17.8	+0.4
	baz=168						
Y37A	Hugo	22.67	344	P	P	03 00 18.9	+0.4
	baz=161,SNR=8.8						
MIAR	Mount Ida	22.75	349	P	P	03 00 18.8	-0.5
	baz=166,SNR=17						
MIAR	Mount Ida	22.75	349	eP	P	03 00 19.2	-0.1
	comp=N,20nm,1.0s						
UALR	University of	22.77	352	eP	P	03 00 20.0	+0.5
	comp=N,14nm,0.6s						
Y36A	Durant	22.78	343	P	P	03 00 20.0	+0.4
	baz=159						
ABTX	Abilene, Hawle	22.81	335	P	P	03 00 18.6	-1.4
	baz=150,SNR=8.8						
ABTX	Abilene, Hawle	22.81	335	eP	P	03 00 18.5	-1.4
	comp=N,16nm,0.8s						
Z34A	Collier Ranch,	22.81	339	P	P	03 00 19.7	-0.3
	baz=155						
X39A	Fountain Ranch	22.82	348	P	P	03 00 20.1	0.0
	baz=165						
JSC	Jenkinsville	22.93	15	eP	P	03 00 20.5	-0.7
	comp=N,14nm,1.1s						
Y35A	Marietta	23.01	341	P	P	03 00 21.6	-0.4
	baz=158,SNR=8.8						
SWET	Sewanee	23.04	5	eP	P	03 00 21.6	-0.7
	comp=N,1.5nm,0.8s						
Z33A	Whitaker Ranch	23.04	337	P	P	03 00 21.4	-1.0
	baz=153,SNR=7.6						
X38A	Whitesboro	23.13	346	P	P	03 00 23.0	-0.2
	baz=163						
W41B	Gary Mavity, V	23.15	352	P	P	03 00 23.3	0.0
	baz=170,SNR=7.1						
X37A	Clayton	23.18	345	P	P	03 00 24.4	+0.6
	baz=162,SNR=7.1						
WHAR	Wooly Hollow	23.27	352	eP	P	03 00 24.7	+0.2
	comp=N,18nm,0.8s						
W40A	Ferguson Farm,	23.29	350	P	P	03 00 25.0	+0.2
	baz=163,SNR=6.7						
Y34A	Reagan Ranch,	23.29	340	P	P	03 00 24.8	0.0
	baz=156						
W39A	Magazine	23.42	349	P	P	03 00 26.2	+0.2
	baz=166,SNR=12						
X36A	Centrahoma	23.43	343	P	P	03 00 26.2	+0.1
	baz=160,SNR=14						
W38A	Poteau	23.45	347	P	P	03 00 26.3	0.0
	baz=164,SNR=7.4						
X35A	Drake	23.45	342	P	P	03 00 25.9	-0.4
	baz=158						
V45A	Humboldt	23.45	359	P	P	03 00 25.4	-0.9
	baz=178						
Y33A	Hilltop Ranch,	23.64	338	P	P	03 00 28.2	+0.1
	baz=154						
V42A	Cord	23.67	354	P	P	03 00 28.0	-0.3
	baz=172						
W37B	Quinton	23.72	346	P	P	03 00 28.8	0.0
	baz=162,SNR=22						
KMSC	Kings Mountain	23.73	15	P	P	03 00 28.0	-1.0
	baz=197						
KMSC	Kings Mountain	23.73	15	eP	P	03 00 27.9	-1.0
	comp=N,5.9nm,0.7s						
V41A	Mountainview	23.74	352	P	P	03 00 28.3	-0.7
	baz=170,SNR=5.7						
TKL	Tuckaleechee C	23.74	9	P	P	03 00 28.6	-0.4
	comp=N,7.6nm,0.9s,baz=186,slow=9.4,SNR=9.3						
V40A	Wits Springs	23.85	351	P	P	03 00 29.9	-0.2
	baz=169,SNR=13						
X34A	Smith Ranch, M	23.90	341	P	P	03 00 31.1	+0.6
	baz=156,SNR=17						
W36A	Wetumka	23.93	344	P	P	03 00 30.3	-0.4
	baz=160,SNR=5.1						
V39A	Pettigrew	24.02	349	P	P	03 00 31.8	+0.2
	baz=167,SNR=20						
X33A	Lawton	24.07	339	P	P	03 00 31.9	-0.2
	baz=155,SNR=18						
W35A	Tecumseh	24.12	343	P	P	03 00 31.9	-0.7
	baz=159						
V38A	Canehill	24.19	348	P	P	03 00 32.4	-0.7
	baz=165						
U42A	Revenden	24.19	354	P	P	03 00 32.2	-1.0
	baz=173						
X32A	Elmer	24.25	338	P	P	03 00 33.9	+0.2
	baz=153,SNR=15						
WMOK	Wichita Mounta	24.35	339	P	P	03 00 34.4	-0.3
	baz=154,SNR=7.6						
WMOK	Wichita Mounta	24.35	339	eP	P	03 00 34.3	-0.3
	comp=N,15nm,1.2s						
V37A	Hulbert	24.36	347	P	P	03 00 34.5	-0.3
	baz=163,SNR=16						
U40A	Yellville	24.40	351	P	P	03 00 34.5	-0.5
	baz=169,SNR=19						
V36A	Jenks	24.46	345	P	P	03 00 35.1	-0.6
	baz=162						
W34A	Bridge Creek,	24.47	341	P	P	03 00 35.7	0.0
	baz=157,SNR=18						
W34A	Bridge Creek,	24.47	341	eP	P	03 00 35.7	0.0
	comp=N,70nm,0.7s						
U39A	Green Forest	24.52	350	P	P	03 00 35.5	-0.7
	baz=168,SNR=9.8						
TUL1	Leonard	24.55	345	P	P	03 00 35.8	-0.6
	baz=162						
TUL1	Leonard	24.55	345	eP	P	03 00 35.8	-0.6
	comp=N,12nm,0.8s						
W33A	Caddo, Fort Co	24.62	340	P	P	03 00 36.9	-0.2
	baz=155						
V35A	Meyer Ranch, C	24.68	343	P	P	03 00 36.5	-1.1
	baz=160						
U37A	Salina	24.86	347	P	P	03 00 38.9	-0.4
	baz=164,SNR=13						
W32A	Sentinel	24.86	338	P	P	03 00 39.2	-0.1
	baz=154,SNR=18						
T41A	Mountain View	24.93	354	P	P	03 00 39.1	-0.8
	baz=172						
MNTX	Cornudas Mount	24.94	324	P	P	03 00 40.3	+0.3
	baz=137						
MNTX	Cornudas Mount	24.94	324	eP	P	03 00 39.9	-0.1
	comp=N,17nm,1.9s						
V34A	Guthrie	24.94	342	P	P	03 00 39.4	-0.6
	baz=158,SNR=13						
V34A	Guthrie	24.94	342	eP	P	03 00 39.1	-0.9
	comp=N,32nm,0.6s						
U36A	Oologah	24.99	346	P	P	03 00 39.7	-0.7
	baz=162						
T40A	Mansfield	25.13	352	P	P	03 00 41.1	-0.6
	baz=170,SNR=10						
T39A	Clever	25.13	351	P	P	03 00 41.0	-0.8
	baz=168,SNR=9.5						
V33A	Lossen Ranch,	25.17	341	P	P	03 00 41.8	-0.3
	baz=156,SNR=5.4						
U35A	Pawnee	25.22	344	P	P	03 00 42.2	-0.4
	baz=160,SNR=7.9						
T38A	Diamond	25.30	349	P	P	03 00 43.2	0.0
	baz=166,SNR=8.8						
S43A	Fulton Ridge,	25.32	357	P	P	03 00 42.0	-1.4
	baz=176						
V32A	Arapaho	25.33	339	P	P	03 00 43.5	0.0
	baz=155						
MSTX	Muleshoe	25.34	331	P	P	03 00 43.5	-0.2
	baz=145,SNR=7.7						
MSTX	Muleshoe	25.34	331	eP	P	03 00 43.6	-0.2
	comp=N,46nm,1.4s						
S41A	Jillco Farms,	25.47	354	P	P	03 00 43.7	-1.1
	baz=172						
U34A	Anderson Ranch	25.51	343	P	P	03 00 44.3	-0.8
	baz=158,SNR=10						
U34A	Anderson Ranch	25.51	343	eP	P	03 00 44.5	-0.6
	comp=N,26nm,0.7s						
T37A	Cheneyville 18	25.51	348	P	P	03 00 44.5	-0.6
	baz=165,SNR=8.4						
S40A	Lebanon	25.57	352	P	P	03 00 45.0	-0.7
	baz=170,SNR=9.8						
AMTX	Amarillo	25.61	334	P	P	03 00 46.3	+0.1
	baz=148						
AMTX	Amarillo	25.61	334	eP	P	03 00 45.7	-0.5
	comp=N,17nm,0.7s						
T36A	Boggs Farm, Ca	25.66	346	P	P	03 00 45.9	-0.6
	baz=162,SNR=10						
U33A	Lingo Farm, Me	25.68	342	P	P	03 00 45.7	-0.9
	baz=157						
T35A	Sooner Cattle	25.68	345	P	P	03 00 46.4	-0.3
	baz=161						
S39A	Bolivar	25.77	351	P	P	03 00 47.0	-0.6
	baz=168,SNR=23						
S38A	Stockton	25.81	350	P	P	03 00 47.2	-0.6
	baz=167,SNR=7.3						
U32A	Winter Ranch,	25.91	340	P	P	03 00 48.4	-0.4
	baz=155						
T34A	McClaskey Farm	25.96	344	P	P	03 00 48.6	-0.6
	baz=160						
R44A	Waltonville	25.96	359	P	P	03 00 48.7	-0.5
	baz=178						
S37A	Fort Scott	26.11	348	P	P	03 00 49.8	-0.7
	baz=165,SNR=5.1						
R40A	Maddies Statio	26.22	353	P	P	03 00 50.5	-1.1
	baz=171,SNR=8.1						
S36A	Lake Cedric, C	26.23	347	P	P	03 00 50.8	-0.9
	baz=164,SNR=8.8						
R39A	Chumby, Stover	26.34	352	P	P	03 00 51.7	-0.9
	baz=169,SNR=16						
R38A	Fenwick Farm,	26.35	350	P	P	03 00 51.8	-0.9
	baz=167,SNR=7.6						
S35A	Otter Creek Ra	26.36	346	P	P	03 00 52.2	-0.6
	baz=162						
Q44A	Meyer Farm, Va	26.61	359	P	P	03 00 54.1	-1.0
	baz=178						
T32A	Huddler Ranch,	26.62	341	P	P	03 00 54.6	-0.6
	baz=156						
S33A	Kaszmaul Farm,	26.72	343	P	P	03 00 55.5	-0.6
	baz=158						
R36A	Gordon, Harris	26.79	348	P	P	03 00 55.8	-0.9
	baz=164						
Q40A	Laux Farm, Aux	26.90	354	P	P	03 00 56.6	-1.0
	baz=172						
121A	Cookes Peak, D	26.95	322	eP	P	03 01 02.6	+4.2
	comp=N,6.2nm,1.0s						
Q39A	Willow Grove F	27.06	352	P	P	03 00 58.4	-0.7
	baz=170						
Q38A	Cooks Store, C	27.06	351	P	P	03 00 58.3	-0.8
	baz=168,SNR=8.2						
R34A	Isabella, Hill	27.18	345	P	P	03 00 59.2	-1.0
	baz=160						
R33A	Olander Ranch,	27.38	343	P	P	03 01 01.3	-0.7
	baz=159						
Q36A	Arnold C. Orve	27.39	348	P	P	03 01 00.7	-1.4
	baz=164						
P40A	Paris	27.42	354	P	P	03 01 01.2	-1.1
	baz=172,SNR=8.0						
BNM	Barrett Site	27.45	326	eP	P	03 01 04.9	+1.9
P39B	Salisbury	27.46	353	P	P	03 01 01.5	-1.2
	baz=170,SNR=5.9						
Q34A	Chapman	27.69	346	P	P	03 01 03.6	-1.2
	baz=161						
R32A	Long Quarter,	27.70	342	P	P	03 01 03.9	-1.0
	baz=158						
P38A	Dawn	27.70	351	P	P	03 01 03.8	-1.0
	baz=169,SNR=9.0						
P37A	Lathrop	27.79	350	P	P	03 01 04.2	-1.4
	baz=167						
ANMO	Albuquerque	27.96	327	eP	P	03 01 09.2	+1.8
	comp=N,0.9nm,0.6s						
P36A	Good Intent, A	27.98	349	P	P	03 01 07.1	-0.3
	baz=165						
Q33A	Connelly Farm,	27.99	344	P	P	03 01 06.7	-0.7
	baz=160						
O40A	La Belle	27.99	354	P	P	03 01 07.1	-0.4
	baz=172						
P35A	Duane Minner,	28.05	347	P	P	03 01 07.2	-0.8
	baz=164,SNR=5.8						
O39A	Kirksville	28.19	353	P	P	03 01 08.5	-0.7
	baz=171						
P34A	Walnut Farm, R	28.25	346	P	P	03 01 08.9	-0.9
	baz=162						
O37A	Wolven Farm, M	28.33	351	P	P	03 01 09.5	-1.0
	baz=168						
CBKS	Cedar Bluff	28.37	341	eP	P	03 01 11.0	+0.1
	comp=N,81nm,0.6s						
T25A	Trinidad	28.70	333	P	P	03 01 15.1	+1.1
	baz=146,SNR=5.4						
T25A	Trinidad	28.70	333	eP	P	03 01 16.3	+2.2
	comp=N,5.7nm,0.7s						
N39A	Derby Farms, D	28.80	354	P	P	03 01 13.4	-1.3
	baz=171,SNR=6.0						
O34A	Beatrice	28.83	347	P	P	03 01 13.9	-1.0
	baz=163,SNR=6.8						
N37A	Lee Faris, Mou	28.91	351	P	P	03 01 14.4	-1.2
	baz=168						
O33A	Hebron	28.94	345	P	P	03 01 15.1	-0.8
	baz=161,SNR=6.3						
M39A	Webster	29.36	354	P	P	03 01 19.0	-0.6
	baz=172						
N34A	Lincoln	29.41	347	P	P	03 01 19.4	-0.7
	baz=163						
M38A	Pleasantville	29.42	353	P	P	03 01 19.2	-0.9
	baz=170						
M37A	Trindle Farm,	29.52	351	P	P	03 01 20.3	-0.7
	baz=168						
N33A	J Bar K, Exete	29.53	346	P	P	03 01 21.1	0.0
	baz=162						
M36A	Felix, Anita	29.69	350	P	P	03 01 21.1	-1.4
	baz=167,SNR=6.2						
SDCO	Great Sand Dun	29.69	332	P	P	03 01 24.9	+1.9
	baz=144						
SDCO	Great Sand Dun	29.69	332	eP	P	03 01 25.0	+2.1
	comp=N,4.7nm,0.9s						
L41A	Preston	29.83	357	P	P	03 01 22.7	-1.1
	baz=176						
L39A	Vinton	29.99	355	P	P	03 01 24.5	-0.6
	baz=173						
L38A	Oak Wood Farm,	30.10	353	P	P	03 01 24.9	-1.3
	baz=171,SNR=5.3						
L36A	Harm Buss Farm	30.30	351	P	P	03 01 27.4	-0.4
	baz=167						
S22A	4UR Ranch, Cre	30.32	330	P	P

	baz=173							
K38A	**Parkersburg**	30.58	354	P		P	03 01 29.5	-0.9
	baz=171							
N59A	**State Game Lan**	30.69	19	P		P	03 01 30.8	-0.6
	baz=204							
K37A	**Belmond**	30.80	352	P		P	03 01 30.8	-1.5
	baz=170,SNR=16							
L32A	**Elgin**	30.86	346	P		P	03 01 32.1	-0.8
	baz=161							
K35A	**Storm Lake**	31.00	350	P		P	03 01 33.1	-0.9
	baz=167							
J41A	**Loganville**	31.10	358	P		P	03 01 34.3	-0.6
	baz=177							
J40A	**Soldiers Grove**	31.16	357	P		P	03 01 34.4	-1.0
	baz=175							
J39A	**Decorah**	31.17	355	P		P	03 01 34.5	-1.0
	baz=173							
J38A	**Wedel Dairy, R**	31.22	354	P		P	03 01 34.8	-1.2
	baz=172,SNR=5.5							
J37A	**Redenius Farm,**	31.33	353	P		P	03 01 35.9	-1.1
	baz=170,SNR=19							
ISCO	**Idaho Springs**	31.43	334	*e*P		P	03 01 38.3	0.0
	comp=N,2.4nm,0.9s							
J36A	**Seneca 1, Swea**	31.45	352	P		P	03 01 36.6	-1.5
	baz=168							
K32A	**Verdigre**	31.48	346	P		P	03 01 37.3	-1.0
	baz=162							
I38A	**Scanlan Farm,**	31.92	355	P		P	03 01 40.6	-1.6
	baz=172							
I37A	**Lemond, Waseca**	32.01	353	P		P	03 01 42.1	-0.8
	baz=170							
I35A	**Creekview Farm**	32.06	351	P		P	03 01 42.2	-1.2
	baz=168							
PDMCI	**Parker Dam,Lak**	32.14	317	P		P	03 01 45.5	+1.3
	baz=127							
ECSD	**EROS Data Cent**	32.22	349	P		P	03 01 43.6	-1.2
	baz=164,SNR=5.1							
ECSD	**EROS Data Cent**	32.22	349	*e*P		P	03 01 43.6	-1.2
	comp=N,5.6nm,1.0s							
I34A	**Hadley**	32.38	350	P		P	03 01 44.9	-1.3
	baz=166							
H37A	**Dierke Farm, C**	32.51	354	P		P	03 01 46.2	-1.2
	baz=171							
H36A	**Jessenland, He**	32.62	353	P		P	03 01 47.5	-0.8
	baz=170,SNR=14							
SAML	**Samuel**	32.70	129	*e*P		P	03 01 48.9	-0.4
	comp=N,3.0nm,0.8s							
H35A	**Sunnyside Ranc**	32.86	352	P		P	03 01 49.0	-1.4
	baz=168,SNR=12							
O20A	**White River Ci**	32.88	331	*e*P		P	03 01 53.6	+2.7
	comp=N,8.1nm,0.8s							
H34A	**Spellman Lake,**	32.98	350	P		P	03 01 50.3	-1.2
	baz=166							
I30A	**Oacoma**	33.01	345	P		P	03 01 50.7	-1.0
	baz=160							
H32A	**Carlson Farm,**	33.12	348	P		P	03 01 51.4	-1.4
	baz=163							
SPMN	**Marine on St.**	33.14	354	P		P	03 01 51.6	-1.2
	baz=172							
SPMN	**Marine on St.**	33.14	354	*e*P		P	03 01 50.9	-1.9
	comp=N,27nm,0.6s							
H33A	**Prehn Over Nor**	33.16	349	P		P	03 01 52.1	-0.9
	baz=165							
G36A	**St. Michael**	33.25	353	P		P	03 01 52.7	-1.0
	baz=170,SNR=5.1							
G34A	**Benson**	33.52	351	P		P	03 01 54.7	-1.4
	baz=167							
F36A	**Milaca**	33.84	354	P		P	03 01 57.3	-1.6
	baz=171,SNR=7.5							
G32A	**Webster**	33.86	348	P		P	03 01 57.9	-1.2
	baz=164							
F35A	**Swanville**	33.97	352	P		P	03 01 58.5	-1.5
	baz=169							
F34A	**Alexandria**	34.00	351	P		P	03 01 59.0	-1.3
	baz=168							
K22A	**Casper**	34.19	336	P		P	03 01 59.8	-2.4
	baz=147							
F33A	**5 Mile Ranch,**	34.20	350	P		P	03 02 00.3	-1.7
	baz=166,SNR=9.8							
E36A	**McGregor**	34.46	354	P		P	03 02 02.6	-1.7
	baz=171,SNR=8.4							
RSSD	**Black Hills**	34.55	340	*e*P		P	03 02 05.9	+0.6
	comp=N,1.8nm,0.5s							
E35A	**Pequot Lakes**	34.63	353	P		P	03 02 04.6	-1.1
	baz=169							
F29A	**Eureka**	34.91	346	P		P	03 02 07.1	-1.2
	baz=160							
D37A	**Cotton**	35.02	355	P		P	03 02 07.6	-1.5
	baz=173,SNR=7.0							
D35A	**Remer**	35.10	353	P		P	03 02 08.4	-1.4
	baz=170							
D36A	**Goodland**	35.11	354	P		P	03 02 08.1	-1.7
	baz=172,SNR=7.5							
D34A	**Park Rapids**	35.25	352	P		P	03 02 09.6	-1.5
	baz=168							
D33A	**AnnSam, Waubun**	35.40	351	P		P	03 02 10.7	-1.7
	baz=167,SNR=5.8							
C38A	**Sawbill Land.**	35.50	357	P		P	03 02 11.3	-1.9
	baz=175							
R11A	**Troy Canyon, C**	35.56	322	P		P	03 02 13.5	-0.7
	baz=130							
C37A	**Embarrass**	35.57	356	P		P	03 02 12.2	-1.6
	baz=173							
BW06	**Boulder Array**	35.57	333	*e*P		P	03 02 14.6	+0.4
	comp=N,1.2nm,0.6s							
PDAR	**Pinedale Array**	35.57	333	P		P	03 02 13.4	-0.8
	comp=N,0.4nm,0.5s,baz=128,slow=5.8,SNR=3.0							
PDAR				PcP		**PcP**	03 04 43.9	+1.5
	comp=N,0.6nm,0.5s,baz=142,slow=5.1,SNR=4.8							
HWUT	**Hardware Ranch**	35.62	330	*e*P		P	03 02 16.1	+1.5
	comp=N,1.9nm,0.7s							
D31A	**Mcclaflin, Tow**	35.62	349	P		P	03 02 12.6	-1.7
	baz=164							
C36A	**Pine Crest Far**	35.65	355	P		P	03 02 12.8	-1.7
	baz=172							
C35A	**Jirik Farms, M**	35.71	354	P		P	03 02 13.2	-1.8
	baz=170,SNR=8.7							
EYMN	**Ely**	35.74	356	P		P	03 02 13.6	-1.7
	baz=174							
C34A	**RKJ Ranch, Bem**	35.77	352	P		P	03 02 14.0	-1.5
	baz=169							
B35A	**Bob, Littlefor**	36.33	354	P		P	03 02 18.8	-1.5
	baz=171							
C31A	**Landman Farms,**	36.34	349	P		P	03 02 18.9	-1.5
	baz=164							
C30A	**Mose, Pekin**	36.40	349	P		P	03 02 19.8	-1.1
	baz=163							
AGMN	**Agassiz Nation**	36.53	352	P		P	03 02 20.7	-1.3
	baz=167,SNR=6.2							
AGMN	**Agassiz Nation**	36.53	352	*e*P		P	03 02 20.7	-1.3
	comp=N,17nm,0.9s							
B34A	**Aery, Baudette**	36.56	353	P		P	03 02 20.7	-1.6
	baz=169,SNR=10							
REDW	**Red Top Meadow**	36.62	332	*e*P		P	03 02 23.9	+0.8
	comp=N,7.7nm,0.8s							
SNOW	**Snow King Moun**	36.66	332	*e*P		P	03 02 24.5	+1.0
	comp=N,15nm,1.0s							
D26A	**Manning**	36.69	344	P		P	03 02 22.0	-1.5
	baz=156							
LOHW	**Long Hollow**	36.71	333	*e*P		P	03 02 24.4	+0.6
	comp=N,4.1nm,0.8s							
B32A	**Ashes, Strandq**	36.73	351	P		P	03 02 22.4	-1.3
	baz=166,SNR=7.0							
MDND	**Maddock**	36.77	347	P		P	03 02 22.9	-1.2
	baz=161							
TPAW	**Teton Pass**	36.77	332	*e*P		P	03 02 26.6	+2.1
	comp=N,4.1nm,0.7s							
B30A	**Myrvik Farm, E**	37.09	349	P		P	03 02 25.1	-1.6
	baz=164							
A33A	**Warroad**	37.09	352	P		P	03 02 25.5	-1.3
	baz=168,SNR=16							
A32A	**Rocking H Ranc**	37.23	351	P		P	03 02 26.4	-1.6
	baz=167							
B29A	**Wagenman Farm,**	37.30	348	P		P	03 02 27.1	-1.5
	baz=162,SNR=5.3							
A31A	**Linda, St. Vin**	37.35	350	P		P	03 02 27.3	-1.6
	baz=166							
B28A	**Dugan Ranch, T**	37.50	347	P		P	03 02 29.0	-1.3
	baz=160							
C25A	**Freed Ranch, W**	37.54	343	P		P	03 02 29.8	-0.9
	baz=155							
A29A	**Manning Farm,**	37.71	348	P		P	03 02 30.6	-1.5
	baz=162							
ULM	**Lac du Bonnet**	38.45	352	P		P	03 02 36.1	-2.0
	comp=N,12nm,0.6s,baz=162,slow=9.5,SNR=15							
HLID	**Hailey**	38.48	329	*e*P		P	03 02 41.9	+3.1
	comp=N,0.9nm,0.6s							
DGMT	**Dagmar**	38.49	343	*e*P		P	03 02 38.2	-0.5
	comp=N,34nm,0.3s							
MCMT	**McKenzie Canyo**	38.67	332	*e*P		P	03 02 42.1	+1.6
BOZ	**Bozeman (W)**	38.76	334	*e*P		P	03 02 41.7	+0.6
	comp=N,3.0nm,0.8s							
DLMT	**Dillon**	38.97	333	*e*P		P	03 02 44.6	+1.8
	comp=N,4.1nm,0.9s							
LRM	**Limekiln Ridge**	39.26	333	*e*P		P	03 02 48.0	+2.7
WVOR	**Wild Horse Val**	39.97	325	*e*P		P	03 02 52.7	+1.5
FFC	**Flin Flon**	43.76	349	*e*P		P	03 03 21.1	-0.8
	comp=N,3.4nm,0.6s							
EDM	**Edmonton**	45.52	339	*e*P		P	03 03 34.6	-1.3
	comp=N,13nm,1.0s							
SCHQ	**Schefferville**	45.80	17	P		P	03 03 35.8	-2.3
	comp=N,6.1nm,0.7s,baz=203,slow=7.4,SNR=5.5							
FCC	**Fort Churchill**	46.68	356	*e*P		P	03 03 43.1	-1.7
	comp=N,7.0nm,0.6s							
YKA	**Yellowknife Ar**	53.62	345	P		P	03 04 36.2	-1.2
	comp=N,2.1nm,0.8s,baz=137,slow=7.4,SNR=5.8							
INK	**Inuvik**	63.18	343	*e*P		P	03 05 43.1	-0.8
	comp=N,2.1nm,1.0s							
HDA	**Harding Lake**	65.76	336	*e*P		P	03 06 03.3	+2.5
	comp=N,28nm,1.4s							
IL1	**Eielson Array**	65.89	336	*e*P		P	03 06 00.8	-0.8
ILAR	**Eielson Array**	65.89	336	P		P	03 06 00.9	-0.7
	comp=N,1.4nm,1.0s,baz=129,slow=4.2,SNR=9.1							
WLF	**Walferdange**	83.74	41	*e*P		P	03 07 44.4	-0.8
	comp=N,8.1nm,0.9s							
TORD	**Torodi Ar. Bea**	87.37	77	P		P	03 08 06.4	+2.6
	baz=289,slow=4.4							
CMAR	**Chiang Mai Arr**	148.70	346	PKPbc		**PKPbc**	03 15 05.0	+0.9
	comp=N,1.0nm,0.3s,baz=3.7,slow=1.9,SNR=6.2							

*ISCJB **06** 02:57:40.9±0.7,49.°73S±0.°09×118.°2E±0.°3,h10km, mb4.1/6,MS3.5/8,Error ellipse: s-maj=30.7km s-min=11.4km az=12.5*

*NEIC **06** 02:57:42.7±0.5,49.°73S×118.°04E,h10km,mb4.1/3,Error ellipse: s-maj=23.1km s-min=9.0km az=103.0*

*IDC **06** 02:57:42.5±2.9,49.°64S×118.°46E,h0km,mb4.1/4, mb1 4.4/5,mb1mx4.1/19,mbtmp4.2/5,ML2.9/1,MS3.5/8, Ms1 3.5/8,ms1mx3.2/29,Error ellipse: s-maj=123.1km s-min=24.1km az=92.0*

ISC 06 02:57:42.8±0.8,49.°7S±0.°1×118.°0E±0.°2,h10km,n25, σ0s79/13,mb4.2/6,MS3.4/8,Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H01W2	**Cape Leeuwin H**	15.08	348	T	T	03 16 25.6	
	baz=170,slow=74,SNR=108						
H01W1	**Cape Leeuwin H**	15.08	348	T	T	03 16 27.5	
	baz=170,slow=74,SNR=113						
H01W3	**Cape Leeuwin H**	15.09	348	T	T	03 16 28.9	
	baz=170,slow=74,SNR=93						
NWAO	**Narrogin (SRO)**	16.79	358	Pn	**Pn**	03 01 38.6	+0.7
	2.0nm,0.3s,baz=47,slow=9.7,SNR=14						
CASY	**Casey**	17.05	190	*e*Pn	**Pn**	03 01 39.7	-1.2
	2.2nm,1.2s						
STKA	**Stephens Creek**	25.07	54	LR	LR	03 11 22.4	
	comp=Z,126nm,20.5s,baz=204,slow=33						
ASAR	**Alice Springs**	28.85	31	P	**P**	03 03 41.1	-0.2
	1.6nm,0.7s,baz=200,slow=8.1,SNR=12						
ASAR				LR	LR	03 13 53.4	
	comp=Z,167nm,20.5s,baz=194,slow=34						
FITZ	**Fitzroy Crossi**	32.14	14	P	**P**	03 04 09.9	-0.5
	2.1nm,0.8s,baz=204,slow=11,SNR=3.6						
FITZ				LR	LR	03 15 50.4	
	comp=Z,77nm,20.1s,baz=198,slow=34						
MAW	**Mawson**	32.33	216	LR	LR	03 15 02.5	
	comp=Z,77nm,18.2s,baz=63,slow=32						
VNDA	**Vanda**	32.40	164	P	**P**	03 04 13.2	+1.0
	2.7nm,0.8s,baz=316,slow=6.8,SNR=6.5						
WRA	**Warramunga Arr**	32.45	30	P	**P**	03 04 11.8	-1.4
	2.4nm,0.8s,baz=200,slow=8.7,SNR=7.6						
WRAB	**Tennant Creek**	32.47	30	*e*P	**P**	03 04 12.5	-0.8
	2.4nm,0.7s						
KAPI	**Kappang**	44.58	3	LR	LR	03 23 19.5	
	comp=Z,43nm,18.2s,baz=101,slow=35						
DZM	**Mont Dzumac**	46.89	72	LR	LR	03 23 14.4	
	comp=Z,91nm,19.0s,baz=248,slow=33						
PMG	**Port Moresby**	46.95	41	LR	LR	03 25 38.7	
	comp=Z,84nm,18.6s,baz=235,slow=36						
PMG	**Port Moresby**	46.95	41	*e*P	**P**	03 06 14.2	+0.5
H08S2	**Diego Garcia H**	56.52	302	T	T	04 07 56.1	
	baz=147,slow=76,SNR=9.5						
H08S1	**Diego Carcia H**	56.54	302	T	T	04 07 53.8	
	baz=147,slow=76,SNR=10						
H08S3	**Diego Garcia H**	56.55	302	T	T	04 08 00.3	
	baz=147,slow=76,SNR=10.0						
LSZ	**Lusaka**	78.38	260	*e*P	**P**	03 09 44.0	+0.3
	3.0nm,0.9s						
JNU	**Nakatsue**	83.27	11	LR	LR	03 50 27.9	
	comp=Z,13nm,19.6s,baz=122,slow=38						
COLA	**College**	135.08	37	*e*PKPdf	**PKPdf**	03 17 00.7	-0.2
WLF	**Walferdange**	137.31	297	*e*PKPdf	**PKPdf**	03 17 05.8	+0.3
INK	**Inuvik**	141.52	35	*e*PKPdf	**PKPdf**	03 17 12.1	-0.5
PDAR	**Pinedale Array**	146.86	84	PKPbc	**PKPbc**	03 17 25.0	0.0
	0.6nm,0.8s,baz=220,slow=2.4,SNR=3.5						

*NEIC **06** 03:03:57.0,19.°28N×64.°48W,h8km,MD3.6(RSPR),After RSPR.*

RSPR 06 03:03:57.0,19.°28N×64.°48W,h8km±2km,MD3.6/6,13C-4D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABV	**Anegada**	0.56	166	*e*S	Sg	03 04 15.8	+0.5
ABV	**Anegada**	0.56	166	*e*P	Pg	03 04 07.4	-0.6
ABVI	**Anegada Island**	0.56	166	*e*P	Pg	03 04 07.4	-0.6
ABVI				*e*S	Sg	03 04 15.8	+0.5
STVI	**Saint Thomas**	1.03	206	*e*P	Pg	03 04 14.0	-2.7
STVI	**Saint Thomas**	1.03	206	*e*P	Pg	03 04 14.0	-2.7
STVI				*e*S	Sg	03 04 28.2	-1.9
CDVI	**St. Croix**	1.54	190	*e*P	Pn	03 04 21.9	-2.8
CDVI	**St. Croix**	1.54	190	*e*P	Pn	03 04 21.9	-2.8
CDVI				*e*S	Sn	03 04 40.7	-4.3
HUMP	**Col San Antoni**	1.72	229	*e*P	Pn	03 04 24.1	-3.1
HUMP	**Col San Antoni**	1.72	229	*e*P	Pn	03 04 24.1	-3.1
HUMP				*e*S	Sn	03 04 45.0	-4.4
SJG	**San Juan**	1.96	234	*e*P	Pn	03 04 27.4	-3.1
SJG				*e*S	Sn	03 04 51.6	-3.8
SJG	**San Juan**	1.96	234	*e*Pn	Pn	03 04 27.0	-3.5
SJG				*e*S	Sn	03 04 49.5	-5.8
CELP	**Cerrillos**	2.32	239	*e*P	Pn	03 04 32.6	-2.9
CELP				*e*S	Sn	03 05 00.8	-3.5
CELP	**Cerrillos**	2.32	239	*e*P	Pn	03 04 32.6	-2.9
AOPR	**Arecibo Observ**	2.34	247	*e*P	Pn	03 04 32.9	-2.9
AOPR	**Arecibo Observ**	2.34	247	*e*P	Pn	03 04 32.9	-2.9
AOPR				*e*S	Sn	03 05 00.7	-4.2
OBIP	**Obispado Ponce**	2.36	239	*e*P	Pn	03 04 33.4	-2.6
OBIP	**Obispado Ponce**	2.36	239	*e*P	Pn	03 04 33.4	-2.6
OBIP				*e*S	Sn	03 05 00.9	-4.2
CRPR	**Cabo Rojo, PR**	2.80	243	*e*P	Pn	03 04 39.5	-2.5
CRPR	**Cabo Rojo, PR**	2.80	243	*e*P	Pn	03 04 39.5	-2.5
CRPR				*e*S	Sn	03 05 12.5	-3.4
ANWB	**Willy Bob**	3.02	122	*e*Pn	Pn	03 04 44.0	-1.0
SDDR	**Presa de Saban**	6.44	268	*e*Pn	Pn	03 05 30.3	-1.9
	76nm,0.6s						
SDDR				*e*S	Sn	03 06 41.9	-4.1
GRTK	**Grand Turk**	6.62	291	*e*Pn	Pn	03 05 30.0	-4.6
GRTK				*e*S	Sn	03 06 37.9	-12

*CSEM **06** 03:08:22.9±0.1,44.°79N×15.°15E,h5km,ML3.3/13,Error ellipse: s-maj=3.3km s-min=2.5km az=40.0*

*ROM **06** 03:08:23.6±0.1,44.°83N×15.°25E,h10km,Md3.2/15, Ml3.1/17,Error ellipse: s-maj=3.1km s-min=1.5km az=168.0*

*LDG **06** 03:08:23.9±0.3,44.°87N×15.°34E,h10km,Ml3.0/6,Error ellipse: s-maj=7.7km s-min=3.6km az=113.0*

*BEO **06** 03:08:24.8±0.4,44.°87N×15.°27E,h0km±4km,M2.9/1*

*PRU **06** 03:08:26.0,44.°93N×15.°36E,h1km*

ISC 06 03:08:23.1±1.0,44.°83N±0.°02×15.°21E±0.°02,h6km±9km, n204,σ1s52/297,2C,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NVLJ	**Novalja**	0.36	223	*i* Pg	**Pg**	03 08 29.6	-0.4
NVLJ				Sg	**Sg**	03 08 35.1	+0.5
UDBI	**Udbina**	0.49	127	*i* Pg	**Pg**	03 08 32.3	-0.3
UDBI				Sg	**Sg**	03 08 39.7	+0.6
UDBI	**Udbina**	0.49	127	*i* Pg	**Pg**	03 08 32.2	-0.3
UDBI				Sg	**Sg**	03 08 39.6	+0.6
BOJS	**Bojanci**	0.68	2	*i* Pg	**Pg**	03 08 35.6	-0.5
BOJS				*i* Sg	**Sg**	03 08 45.8	+0.8
	comp=Z,149nm,0.4s						
BOJS	**Bojanci**	0.68	2	*i* Pg	**Pg**	03 08 35.6	-0.5
BOJS				*i* Sg	**Sg**	03 08 45.8	+0.8
	comp=Z,149nm,0.4s						
RIY	**Rijeka**	0.72	314	*e*Pg	**Pg**	03 08 36.2	-0.7
RIY				*e*Sg	**Sb**	03 08 47.7	-0.5
GBRS	**Gornja Briga**	0.76	338	*i* Pg	**Pg**	03 08 37.5	-0.2
KNDS	**Knezji Dol**	0.92	320	*e*Pg	**Pg**	03 08 40.0	-0.7
KNDS				*e*Sg	**Sb**	03 08 54.7	+0.7
KNDS	**Knezji Dol**	0.92	320	*e*Pg	**Pg**	03 08 40.0	-0.7
KNDS				*e*Sg	**Sb**	03 08 54.7	+0.7
VISS	**Visnje**	1.01	345	*i* Pg	**Pg**	03 08 41.9	-0.6
VISS				*e*Sg	**Sb**	03 08 56.4	-0.3
	comp=Z,132nm,0.4s						
VISS	**Visnje**	1.01	345	*i* Pg	**Pg**	03 08 41.9	-0.6
VISS				*e*Sg	**Sb**	03 08 56.4	-0.3
	comp=Z,132nm,0.4s						
CRES	**Cresnjev**	1.01	10	*i* Pg	**Pg**	03 08 41.5	-1.1
CRES				*i* Sg	**Sg**	03 08 56.0	+0.2
	comp=Z,168nm,0.4s						
CRES	**Cresnjev**	1.01	10	*i* Pg	**Pg**	03 08 41.5	-1.1
CRES				*e*Sg	**Sb**	03 08 56.2	-0.5
SISC	**Sisak**	1.04	51	*e*Pg	**Pg**	03 08 43.1	0.0
SISC				Sg	**Sb**	03 08 57.1	-0.4
SISC	**Sisak**	1.04	51	*e*Pg	**Pg**	03 08 43.1	0.0
SISC				Sg	**Sb**	03 08 57.1	-0.4
CEY	**Cerknica**	1.07	329	*e*Pg	**Pg**	03 08 43.1	-0.5
CEY				*e*Sg	**Sn**	03 08 59.5	-0.4
CEY	**Cerknica**	1.07	329	*i* Pg	**Pg**	03 08 42.8	-0.8
	comp=Z,106nm,0.2s						
CEY	**Cerknica**	1.07	329	*i* Pg	**Pg**	03 08 42.8	-0.8
	comp=Z,106nm,0.2s						
CEY				*e*Sg	**Sn**	03 08 59.5	-0.4
GCIS	**Gornji Cirnik**	1.08	16	*i* Pg	**Pg**	03 08 43.5	-0.3
GCIS				*e*Sg	**Sb**	03 08 59.1	+0.5
	comp=Z,119nm,0.5s						
GCIS	**Gornji Cirnik**	1.08	16	*i* Pg	**Pg**	03 08 43.5	-0.3
GCIS				*e*Sg	**Sb**	03 08 59.2	+0.5
	comp=Z,119nm,0.5s						
SKDS	**Skadanscina**	1.11	311	*e*Pg	**Pb**	03 08 44.9	+0.1
SKDS				*e*Sg	**Sn**	03 09 01.2	+0.2
SKDS	**Skadanscina**	1.11	311	*i* Pg	**Pg**	03 08 43.6	-0.9
SKDS				*i*		03 08 45.2	
SKDS				*i* Sg	**Sn**	03 09 00.7	-0.3
	comp=Z,75nm,0.2s						
SKDS	**Skadanscina**	1.11	311	*e*Pg	**Pb**	03 08 44.9	+0.1
SKDS				*e*Sg	**Sn**	03 09 01.2	+0.2
ZAG	**Zagreb**	1.14	28	*e*Pg	**Pg**	03 08 44.7	-0.3
ZAG				*e*Sg	**Sb**	03 09 00.6	+0.3
CESS	**Cesta pri Krsk**	1.16	9	*i* Pg	**Pg**	03 08 45.0	-0.4
CESS	**Cesta pri Krsk**	1.16	9	*i* Pg	**Pg**	03 08 45.0	-0.4
GOLS	**Golise**	1.22	14	*i* Pg	**Pg**	03 08 46.4	-0.1
GOLS				*i*		03 08 47.2	
GOLS				*e*Sg	**Sn**	03 09 04.5	+0.9
	comp=Z,126nm,0.5s						
GOLS	**Golise**	1.22	14	*i* Pg	**Pg**	03 08 46.4	-0.1
GOLS				*e*Sg	**Sn**	03 09 04.5	+0.9
	comp=Z,126nm,0.5s						
GBAS	**Gorenja Brezov**	1.23	334	*i* Pg	**Pg**	03 08 46.3	-0.5
GBAS				*e*Sg	**Sn**	03 09 03.7	-0.3
GBAS	**Gorenja Brezov**	1.23	334	*i* Pg	**Pg**	03 08 46.3	-0.5
GBAS				*e*Sg	**Sn**	03 09 03.7	-0.3
PDKS	**Podkum**	1.25	353	*i* Pg	**Pg**	03 08 46.7	-0.3
PDKS				*i*		03 08 47.5	
PDKS	**Podkum**	1.25	353	*i* Pg	**Pg**	03 08 46.7	-0.3
LJU	**Ljubljana**	1.31	339	*e*Pg	**Pg**	03 08 48.5	+0.3
LJU	**Ljubljana**	1.31	339	*i* Pg	**Pn**	03 08 47.8	-0.2
LJU				*e*Sg	**Sn**	03 09 05.7	-0.2
LJU	**Ljubljana**	1.31	339	*e*Pg	**Pg**	03 08 48.5	+0.3
LJU				*e*Sg	**Sn**	03 09 06.3	+0.5
DOBS	**Dobrina**	1.34	8	*i* Pg	**Pb**	03 08 48.6	0.0
DOBS	**Dobrina**	1.34	8	*i* Pg	**Pb**	03 08 48.6	0.0
TRI	**Trieste**	1.35	311	*e*Pg	**Pg**	03 08 48.9	0.0
TRI				*e*Sg	**Sn**	03 09 09.5	+2.7
BLY	**Banja Luka**	1.41	92	*e*Sg	**Sn**	03 09 09.3	+1.2
BLY	**Banja Luka**	1.41	92	Pg	**Pn**	03 08 48.2	-1.1
BLY				Sg	**Sb**	03 09 07.5	-0.4
	comp=Z,158nm,0.8s						
BLY	**Banja Luka**	1.41	92	Pg	**Pn**	03 08 48.2	-1.1
BLY				*e*Sg	**Sb**	03 09 07.6	-0.4
CRNS	**Crni Vrh**	1.42	332	*i* Pg	**Pb**	03 08 50.0	-0.1
CRNS				*i*		03 08 50.9	
	comp=Z,213nm,0.4s						
CRNS	**Crni Vrh**	1.42	332	*i* Pg	**Pb**	03 08 50.0	-0.1
	comp=Z,213nm,0.4s						
VOJS	**Vojsko**	1.53	323	*e*Pg	**Pn**	03 08 50.9	-0.1
VOJS				*i*		03 08 52.2	
VOJS	**Vojsko**	1.53	323	*e*Pg	**Pn**	03 08 50.9	-0.1
MOZS	**Mozjanca**	1.56	340	*i* Pn	**Pb**	03 08 52.7	+0.2
	comp=Z,53nm,0.3s						
MOZS	**Mozjanca**	1.56	340	*i* Pn	**Pb**	03 08 52.7	+0.2

	comp=Z,56nm,0.6s						
FUSE	**Fusea**	**2.22**	**316**	*e*Pn	**Pn**	**03 09 01.1**	**+0.6**
SSFR	**Montelago di S**	**2.23**	**232**	Pg	**Pn**	**03 09 01.1**	**+0.4**
	comp=Z,90nm,0.2s						
SSFR	**Montelago di S**	**2.23**	**232**	Pg	**Pn**	**03 09 01.1**	**+0.4**
	comp=Z,90nm,0.2s						
POLC	**Polcenigo**	**2.26**	**303**	*e*Pn	**Pn**	**03 09 01.6**	**+0.7**
STAL	**STALIGIAL**	**2.27**	**310**	Pg	**Pn**	**03 09 01.5**	**+0.3**
	comp=Z,84nm,0.3s						
STAL	**STALIGIAL**	**2.27**	**310**	Pg	**Pn**	**03 09 01.5**	**+0.3**
	comp=Z,84nm,0.3s						
ZOU	**Zoufplan**	**2.34**	**319**	*e*Pn	**Pn**	**03 09 02.9**	**+0.7**
ATPC	**Poggio Castell**	**2.40**	**237**	Pg	**Pn**	**03 09 03.7**	**+0.8**
	comp=Z,145nm,0.9s						
ATPC	**Poggio Castell**	**2.40**	**237**	Pg	**Pn**	**03 09 03.7**	**+0.8**
	comp=Z,145nm,0.9s						
ARSA	**Arzberg**	**2.44**	**5**	Pn	**Pn**	**03 09 03.8**	**+0.4**
	comp=Z,0.8nm,0.2s						
ARSA				Sg	**Sg**	**03 09 42.8**	**+1.5**
	comp=Z,10.0nm,0.5s						
ARSA	**Arzberg**	**2.44**	**5**	*e*Pn	**Pn**	**03 09 04.0**	**+0.5**
ARSA	**Arzberg**	**2.44**	**5**	*e*Pn	**Pn**	**03 09 04.0**	**+0.5**
PARC	**Parchiule**	**2.44**	**242**	Pg	**Pn**	**03 09 03.9**	**+0.4**
	comp=Z,38nm,0.7s						
PARC	**Parchiule**	**2.44**	**242**	Pg	**Pn**	**03 09 03.9**	**+0.4**
	comp=Z,38nm,0.7s						
CIMO	**Cimolais**	**2.45**	**308**	*e*Pn	**Pn**	**03 09 04.8**	**+1.2**
ATCC	**AVT- Casa Cast**	**2.48**	**229**	Pg	**Pn**	**03 09 04.8**	**+0.8**
	comp=Z,79nm,0.4s						
ATCC	**AVT- Casa Cast**	**2.48**	**229**	Pg	**Pn**	**03 09 04.8**	**+0.8**
	comp=Z,79nm,0.4s						
MURB	**Monte Urbino**	**2.49**	**232**	Pg	**Pn**	**03 09 05.6**	**+1.4**
	comp=Z,98nm,0.3s						
MURB	**Monte Urbino**	**2.49**	**232**	Pg	**Pn**	**03 09 05.6**	**+1.4**
	comp=Z,98nm,0.3s						
SFI	**Santa Sofia**	**2.58**	**250**	Pg	**Pn**	**03 09 06.1**	**+0.6**
	comp=Z,33nm,0.7s						
SFI	**Santa Sofia**	**2.58**	**250**	Pg	**Pn**	**03 09 06.1**	**+0.6**
	comp=Z,33nm,0.7s						
KBA	**Koelnbreinsper**	**2.60**	**331**	*e*Pn	**Pb**	**03 09 08.5**	**-1.8**
	comp=Z,0.1nm,0.1s						
KBA				Sn	**Sb**	**03 09 41.5**	**-1.1**
KBA	**Koelnbreinsper**	**2.60**	**331**	Pn	**Pb**	**03 09 08.5**	**-1.8**
	comp=Z,0.1nm,0.1s						
KBA				Sn	**Sb**	**03 09 41.5**	**-1.1**
CGRP	**Cima Grappa**	**2.63**	**295**	*e*Pn	**Pn**	**03 09 06.6**	**+0.3**
RM32	**Poggio Cancell**	**2.65**	**212**	Pg	**Pn**	**03 09 07.0**	**+0.5**
	comp=Z,106nm,1.1s						
RM32	**Poggio Cancell**	**2.65**	**212**	Pg	**Pn**	**03 09 07.0**	**+0.5**
	comp=Z,106nm,1.1s						
ASQU	**Asqua**	**2.66**	**248**	Pg	**Pn**	**03 09 07.9**	**+1.3**
	comp=Z,50nm,0.8s						
ASQU	**Asqua**	**2.66**	**248**	Pg	**Pn**	**03 09 07.9**	**+1.3**
	comp=Z,50nm,0.8s						
RM29	**Verrico (Monte**	**2.69**	**213**	Pg	**Pn**	**03 09 07.5**	**+0.4**
	comp=Z,73nm,0.3s						
RM29	**Verrico (Monte**	**2.69**	**213**	Pg	**Pn**	**03 09 07.5**	**+0.4**
	comp=Z,73nm,0.3s						
ABTA	**Abfaltersbach**	**2.69**	**316**	*e*Pn	**Pn**	**03 09 07.4**	**+0.3**
	comp=Z,0.6nm,0.2s						
ABTA				Sg	**Sg**	**03 09 50.9**	**+1.3**
	comp=Z,43nm,0.5s						
ABTA	**Abfaltersbach**	**2.69**	**316**	Pn	**Pn**	**03 09 07.4**	**+0.3**
	comp=Z,0.6nm,0.2s						
FAGN	**Fagnano**	**2.82**	**205**	Pg	**Pn**	**03 09 09.6**	**+0.8**
	comp=Z,123nm,0.4s						
FAGN	**Fagnano**	**2.82**	**205**	Pg	**Pn**	**03 09 09.6**	**+0.8**
	comp=Z,123nm,0.4s						
MGAB	**Montegabbione**	**2.95**	**231**	Pg	**Pn**	**03 09 11.3**	**+0.8**
	comp=Z,53nm,0.4s						
MGAB	**Montegabbione**	**2.95**	**231**	Pg	**Pn**	**03 09 11.3**	**+0.8**
	comp=Z,53nm,0.4s						
DDS	**Dosso del Somm**	**3.03**	**292**	*e*Pn	**Pn**	**03 09 11.6**	**-0.1**
BRY	**Bratogost**	**3.08**	**127**	*e*Pn	**Pn**	**03 09 13.3**	**+0.9**
BRY				*e*Sn	**Sn**	**03 09 49.9**	**+0.3**
TEKS	**Tekeris**	**3.09**	**94**	*e*Pn	**Pn**	**03 09 12.9**	**+0.4**
TEKS	**Tekeris**	**3.09**	**94**	*e*Pn	**Pn**	**03 09 12.9**	**+0.4**
MOA	**Molln**	**3.10**	**348**	*e*Pn	**Pn**	**03 09 14.4**	**+1.9**
	comp=Z,3.3nm,0.3s						
MOA				Sn	**Sn**	**03 09 52.8**	**+2.9**
	comp=Z,10nm,0.4s						
MOA	**Molln**	**3.10**	**348**	Pn	**Pn**	**03 09 14.4**	**+1.9**
	comp=Z,3.3nm,0.3s						
MOA				Sg	**Sn**	**03 09 52.8**	**+2.9**
	comp=Z,10nm,0.4s						
TREB	**Trebinje**	**3.10**	**132**	*e*Pn	**Pb**	**03 09 16.6**	**-2.0**
TREB	**Trebinje**	**3.10**	**132**	*e*Pn	**Pn**	**03 09 12.7**	**+0.1**
TREB				*e*Sn	**Sn**	**03 09 49.8**	**-0.1**
UPM	**Unac-Piva**	**3.12**	**120**	*e*Pn	**Pn**	**03 09 13.6**	**+0.6**
CONA	**Conrad Observa**	**3.14**	**8**	*e*Pn	**Pn**	**03 09 14.4**	**+1.3**
	comp=Z,2.7nm,0.2s						
CONA				Sn	**Sn**	**03 09 51.9**	**+0.9**
	comp=Z,4.5nm,0.4s						
CONA	**Conrad Observa**	**3.14**	**8**	Pn	**Pn**	**03 09 14.4**	**+1.3**
	comp=Z,2.7nm,0.2s						
CONA				Sg	**Sn**	**03 09 51.9**	**+0.9**
	comp=Z,4.5nm,0.4s						
BBLS	**Lazići**	**3.16**	**106**	*e*Pn	**Pn**	**03 09 14.0**	**+0.6**
BBLS	**Lazići**	**3.16**	**106**	*e*Pn	**Pn**	**03 09 14.0**	**+0.6**
BBLS				*e*Sn	**Sn**	**03 09 51.4**	**0.0**
FGSL	**Fruska Gora**	**3.28**	**83**	*e*Pn	**Pn**	**03 09 16.4**	**+1.4**
FGSL				*e*Sn	**Sn**	**03 09 54.5**	**+0.1**
FRGS	**Fruska Gora**	**3.28**	**83**	*e*Pn	**Pn**	**03 09 16.4**	**+1.4**
FRGS				*e*Sn	**Sn**	**03 09 54.5**	**+0.1**
OZOL	**Ozolo**	**3.32**	**300**	*e*Pn	**Pn**	**03 09 16.2**	**+0.6**
ABSI	**Aberstueckl**	**3.32**	**306**	Pg	**Pn**	**03 09 17.0**	**+1.2**
	comp=Z,138nm,0.5s						
ABSI	**Aberstueckl**	**3.32**	**306**	Pg	**Pn**	**03 09 17.0**	**+1.2**
	comp=Z,138nm,0.5s						
HCY	**Herceg Novi**	**3.37**	**134**	*e*Pn	**Pn**	**03 09 16.9**	**+0.7**
WTTA	**Wattenberg**	**3.48**	**316**	*i* Pn	**Pn**	**03 09 19.4**	**+1.4**
	comp=Z,5.0nm,0.4s						
WTTA				*e*Sg	**Sb**	**03 10 09.5**	**+1.5**
	comp=Z,4.9nm,0.4s						
WTTA	**Wattenberg**	**3.48**	**316**	*e*PN	**Pn**	**03 09 21.1**	**+3.1**
WTTA	**Wattenberg**	**3.48**	**316**	Pn	**Pn**	**03 09 19.4**	**+1.4**
	comp=Z,5.0nm,0.4s						
DIVS	**Divibare**	**3.50**	**100**	*e*Pn	**Pn**	**03 09 20.3**	**+2.2**
DIVS				*e*Sn	**Sn**	**03 10 02.3**	**+2.4**
DIVS	**Divibare**	**3.50**	**100**	*e*Pn	**Pn**	**03 09 18.8**	**+0.7**
DIVS				*e*Sn	**Sn**	**03 09 58.7**	**-1.2**
WATA	**Walderalm**	**3.56**	**316**	*e*Pn	**Pn**	**03 09 20.3**	**+1.2**
WATA				*i* Sn	**Sn**	**03 10 04.8**	**+3.2**
	comp=Z,1.3nm,0.2s						
WATA	**Walderalm**	**3.56**	**316**	Pn	**Pn**	**03 09 20.3**	**+1.2**
WATA				Sn	**Sn**	**03 10 04.8**	**+3.2**
	comp=Z,1.3nm,0.2s						
TRUS	**Trudelj**	**3.76**	**97**	*e*Pn	**Pn**	**03 09 23.1**	**+1.4**
TRUS	**Trudelj**	**3.76**	**97**	*e*Pn	**Pn**	**03 09 23.1**	**+1.4**
IVAS	**Ivanjica**	**3.77**	**108**	*e*Pn	**Pn**	**03 09 23.4**	**+1.6**
IVAS	**Ivanjica**	**3.77**	**108**	*e*Pn	**Pn**	**03 09 23.4**	**+1.6**
PDG	**Podgorica**	**3.79**	**128**	*e*Pn	**Pn**	**03 09 24.5**	**+2.5**
PDG	**Podgorica**	**3.79**	**128**	*e*Pn	**Pn**	**03 09 22.6**	**+0.6**
PDG				*e*Sn	**Sn**	**03 10 06.1**	**-0.8**
MOTA	**Moosalm**	**3.81**	**313**	*e*Pn	**Pn**	**03 09 23.1**	**+0.6**
	comp=Z,1.9nm,0.4s						
MOTA				*e*Sn	**Sn**	**03 10 08.9**	**+1.2**
	comp=Z,1.1nm,0.2s						
MOTA	**Moosalm**	**3.81**	**313**	Pn	**Pn**	**03 09 23.1**	**+0.6**
	comp=Z,1.9nm,0.4s						
MOTA				Sn	**Sn**	**03 10 08.9**	**+1.2**
	comp=Z,1.1nm,0.2s						
FETA	**Feichten**	**3.82**	**307**	*e*Pn	**Pn**	**03 09 24.4**	**+1.8**
	comp=Z,1.6nm,0.3s						
FETA				*e*Sn	**Sn**	**03 10 12.7**	**+4.7**
	comp=Z,3.6nm,0.4s						
FETA	**Feichten**	**3.82**	**307**	Pn	**Pn**	**03 09 24.4**	**+1.8**
	comp=Z,1.6nm,0.3s						
FETA				Sn	**Sn**	**03 10 12.7**	**+4.7**
	comp=Z,3.6nm,0.4s						
DRME	**Dracevica, Mon**	**3.91**	**131**	*e*Pn	**Pn**	**03 09 24.6**	**+0.9**
DRME				*e*Sn	**Sn**	**03 10 08.9**	**-1.1**
SMOL	**Smolenice**	**3.99**	**22**	*e*Pn	**Pn**	**03 09 24.8**	**0.0**
SMOL	**Smolenice**	**3.99**	**22**	*e*PN	**Pn**	**03 09 24.8**	**0.0**
GRUS	**Gruza**	**4.06**	**101**	*e*Pn	**Pn**	**03 09 26.4**	**+0.7**
GRUS				*e*Sn	**Sn**	**03 10 15.8**	**+2.3**
GRUS	**Gruza**	**4.06**	**101**	*e*Pn	**Pn**	**03 09 26.4**	**+0.7**
GRUS				*e*Sn	**Sn**	**03 10 15.8**	**+2.3**
RETA	**Reutte**	**4.08**	**312**	*e*Pn	**Pn**	**03 09 28.0**	**+1.9**
	comp=Z,0.3nm,0.1s						
RETA				*e*Sn	**Sn**	**03 10 13.7**	**-0.5**
	comp=Z,4.7nm,0.4s						
RETA	**Reutte**	**4.08**	**312**	Pn	**Pn**	**03 09 28.0**	**+1.9**
	comp=Z,0.3nm,0.1s						
RETA				Sn	**Sn**	**03 10 13.7**	**-0.5**
	comp=Z,4.7nm,0.4s						

VYHS	**Vyhne**	**4.44**	**33**	*e*Pn	**Pn**	**03 09 30.9**	**0.0**
VYHS				*e*Sn	**Sn**	**03 10 19.7**	**-3.2**
VYHS	**Vyhne**	**4.44**	**33**	*e*PN	**Pn**	**03 09 30.9**	**0.0**
VYHS				*e*SN	**Sn**	**03 10 19.7**	**-3.2**
VYHS				*e*LG	Lg	03 10 26.8	
KHC	**Kasperske Hory**	**4.45**	**346**	*e*PN	**Pn**	**03 09 32.5**	**+1.3**
KHC				*e*SN	**Sn**	**03 10 24.1**	**+0.8**
KHC				*ex*	x	03 10 35.2	
KHC	**Kasperske Hory**	**4.45**	**346**	Pn	**Pn**	**03 09 32.5**	**+1.3**
KHC				Sn	**Sn**	**03 10 24.1**	**+0.8**
DAVA	**Damuels**	**4.45**	**305**	*e*Pn	**Pn**	**03 09 34.8**	**+3.5**
	comp=Z,0.4nm,0.2s						
DAVA				*e*Sn	**Sn**	**03 10 28.0**	**+4.4**
	comp=Z,4.0nm,0.4s						
DAVA	**Damuels**	**4.45**	**305**	Pn	**Pn**	**03 09 34.8**	**+3.5**
	comp=Z,0.4nm,0.2s						
DAVA				Sn	**Sn**	**03 10 28.0**	**+4.4**
	comp=Z,4.0nm,0.4s						
PSZ	**Piszkesteto**	**4.48**	**45**	*e*Sn	**Sn**	**03 10 24.0**	**-0.1**
PSZ	**Piszkesteto**	**4.48**	**45**	*ex*	**Sn**	**03 10 24.0**	**-0.1**
SELS	**Selova**	**4.55**	**109**	*e*Pn	**Pn**	**03 09 33.5**	**+1.0**
SELS	**Selova**	**4.55**	**109**	*e*Pn	**Pn**	**03 09 33.5**	**+1.0**
VRAC	**Vranov**	**4.58**	**11**	*e*Pn	**Pn**	**03 09 33.8**	**+0.9**
KUBS	**Kucevo**	**4.63**	**93**	*e*Pn	**Pn**	**03 09 33.6**	**0.0**
KUBS	**Kucevo**	**4.63**	**93**	*e*Pn	**Pn**	**03 09 33.6**	**0.0**
BOLS	**Boljevac**	**4.94**	**99**	*e*Pn	**Pn**	**03 09 38.0**	**+0.2**
BOLS	**Boljevac**	**4.94**	**99**	*e*Pn	**Pn**	**03 09 38.0**	**+0.2**
PGF	**Pioggiola**	**5.05**	**245**	*e*Pn	**Pn**	**03 09 39.1**	**-0.3**
PGF	**Pioggiola**	**5.05**	**245**	*e*Pn	**Pn**	**03 09 39.1**	**-0.3**
BARS	**Barje**	**5.18**	**110**	*e*Pn	**Pn**	**03 09 42.3**	**+1.1**
BARS				*e*Sn	**Sn**	**03 10 42.5**	**+1.2**
BARS	**Barje**	**5.18**	**110**	*e*Pn	**Pn**	**03 09 42.3**	**+1.1**
BARS				*e*Sn	**Sn**	**03 10 42.5**	**+1.2**
PRU	**Pruhonice**	**5.19**	**355**	*e*PN	**Pn**	**03 09 43.1**	**+1.9**
PRU				*e*SN	**Sn**	**03 10 40.0**	**-1.3**
PRU				*ex*	x	03 10 54.0	
PRU	**Pruhonice**	**5.19**	**355**	Pn	**Pn**	**03 09 43.1**	**+1.9**
PRU				Sn	**Sn**	**03 10 40.0**	**-1.3**
MORC	**Moravsky Berou**	**5.20**	**17**	*e*Pn	**Pn**	**03 09 42.9**	**+1.4**
KRLC	**Kraliky**	**5.36**	**11**	*e*SN	**Sn**	**03 10 44.3**	**-1.4**
KRLC	**Kraliky**	**5.36**	**11**	Sn	**Sn**	**03 10 44.3**	**-1.4**
ZAPS	**Zavoj**	**5.57**	**104**	*e*Pn	**Pn**	**03 09 48.1**	**+1.6**
SBF	**Sospel**	**5.66**	**263**	*e*Sn	**Sn**	**03 10 49.2**	**-4.0**
	comp=Z,1.0nm,0.2s						
SBF	**Sospel**	**5.66**	**263**	*e*Sn	**Sn**	**03 10 49.2**	**-4.0**
	comp=Z,0.5nm,0.2s						
MBDF	**Montbardon**	**6.01**	**272**	*e*Pn	**Pn**	**03 09 52.0**	**-0.7**
MBDF				*e*Sn	**Sn**	**03 10 57.9**	**-4.0**
	comp=Z,1.2nm,0.2s						
MBDF	**Montbardon**	**6.01**	**272**	*e*Pn	**Pn**	**03 09 52.0**	**-0.7**
MBDF				*e*Sn	**Sn**	**03 10 57.9**	**-4.0**
	comp=Z,0.6nm,0.2s						
LPL	**La Plagne**	**6.04**	**280**	*e*P	**Pn**	**03 09 57.4**	**+4.3**
LPL				*e*Sn	**Sn**	**03 10 58.3**	**-4.3**
	comp=Z,2.8nm,0.5s						
LPL	**La Plagne**	**6.04**	**280**	*e*P	**Pn**	**03 09 57.4**	**+4.3**
LPL				*e*Sn	**Sn**	**03 10 58.3**	**-4.3**
	comp=Z,1.4nm,0.5s						
BRG	**Berggiesshubel**	**6.11**	**352**	*e*	**Sn**	**03 11 03.3**	**-0.8**
BRG	**Berggiesshubel**	**6.11**	**352**	SG	**Sg**	**03 11 37.2**	**-2.0**
	comp=Z,2.5nm,0.2s						
FRF	**La Foret Royal**	**6.29**	**261**	*e*Pn	**Pn**	**03 09 55.7**	**-0.6**
FRF	**La Foret Royal**	**6.29**	**261**	*e*Pn	**Pn**	**03 09 55.7**	**-0.6**
LMR	**La Mourre**	**6.44**	**260**	*e*Pn	**Pn**	**03 09 57.7**	**-0.8**
LMR	**La Mourre**	**6.44**	**260**	*e*Pn	**Pn**	**03 09 57.7**	**-0.8**
HINF	**Hinteralfeld**	**6.52**	**300**	*e*Sn	**Sn**	**03 11 09.5**	**-4.7**
	comp=Z,4.8nm,0.5s						
HINF	**Hinteralfeld**	**6.52**	**300**	*e*Sn	**Sn**	**03 11 09.5**	**-4.7**
	comp=Z,2.4nm,0.5s						
ORIF	**Oris-en-Rattie**	**6.63**	**274**	*e*Pn	**Pn**	**03 10 00.4**	**-0.8**
ORIF				*e*Sn	**Sn**	**03 11 12.4**	**-4.7**
	comp=Z,4.5nm,0.5s						
ORIF	**Oris-en-Rattie**	**6.63**	**274**	*e*Pn	**Pn**	**03 10 00.4**	**-0.8**
ORIF				*e*Sn	**Sn**	**03 11 12.4**	**-4.7**
	comp=Z,2.2nm,0.5s						
HAU	**Haudompre**	**6.90**	**301**	*e*Pn	**Pn**	**03 10 03.8**	**-1.0**
HAU				*e*Sn	**Sn**	**03 11 18.7**	**-5.0**
	comp=Z,3.7nm,0.4s						
HAU	**Haudompre**	**6.90**	**301**	*e*Pn	**Pn**	**03 10 03.8**	**-1.0**
HAU				*e*Sn	**Sn**	**03 11 18.7**	**-5.0**
	comp=Z,1.9nm,0.4s						
VIVF	**Saint-Julien-l**	**7.49**	**274**	*e*Pn	**Pn**	**03 10 11.6**	**-1.3**
VIVF	**Saint-Julien-l**	**7.49**	**274**	*e*Pn	**Pn**	**03 10 11.6**	**-1.3**
SMF	**Signal de Mont**	**8.16**	**287**	*e*Pn	**Pn**	**03 10 20.9**	**-1.2**
SMF	**Signal de Mont**	**8.16**	**287**	*e*Pn	**Pn**	**03 10 20.9**	**-1.2**

CSEM ***06*** *03:10:41.6±0.1, 39.07N×29.04E, h5km, ML2.9, Error ellipse: s-maj=3.2km s-min=2.4km az=170.0*
ISK ***06*** *03:10:41.2, 39.09N×29.04E, h5km, MD2.9*
DDA ***06*** *03:10:41.4, 39.09N×29.07E, h7km, Ml2.9*
ISC 06 03:10:41.7±0.9, 39.08N±0.03×29.05E±0.02, h14km±7km, n47, σ1s15/65, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**261**	*i* P	**Pg**	**03 10 47.1**	**-0.1**
DEMI				*i* S	**Sg**	**03 10 51.0**	**-0.1**
DEMI	**Demirci**	**0.26**	**261**	P	**Pg**	**03 10 47.2**	**-0.1**
DEMI				S	**Sg**	**03 10 51.0**	**-0.1**
GEDZ	**Gediz**	**0.28**	**98**	*e*PG	**Pg**	**03 10 47.8**	**+0.1**
GEDZ				*e*SG	**Sg**	**03 10 51.9**	**+0.1**
GEDZ	**Gediz**	**0.28**	**98**	*e*Pg	**Pg**	**03 10 47.8**	**+0.1**
GEDZ				*e*Sg	**Sg**	**03 10 51.9**	**+0.1**
GDZ	**Gediz**	**0.34**	**89**	*i* P	**Pg**	**03 10 47.9**	**-0.8**
GDZ				*i* S	**Sg**	**03 10 52.3**	**-1.1**
GDZ	**Gediz**	**0.34**	**89**	P	**Pg**	**03 10 47.8**	**-0.8**
GDZ				S	**Sg**	**03 10 52.3**	**-1.1**
TVSB	**Tavsanli**	**0.49**	**41**	*e*PG	**Pg**	**03 10 50.6**	**-0.8**
TVSB	**Tavsanli**	**0.49**	**41**	*e*Pg	**Pg**	**03 10 50.6**	**-0.8**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*PG	**Pg**	**03 10 53.9**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*Pg	**Pg**	**03 10 53.9**	**-0.4**
MANT	**Manisa**	**0.70**	**213**	*i* P	**Pg**	**03 10 53.8**	**-1.7**
MANT				*i* S	**Sg**	**03 11 03.0**	**-1.8**
MANT	**Manisa**	**0.70**	**213**	P	**Pg**	**03 10 53.8**	**-1.7**
MANT				S	**Sg**	**03 11 03.0**	**-1.8**
KHL	**Karahalli**	**0.84**	**154**	*e*PG	**Pg**	**03 10 58.2**	**+0.1**
KHL	**Karahalli**	**0.84**	**154**	*e*Pg	**Pg**	**03 10 58.2**	**+0.1**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pg**	**03 11 00.3**	**-0.4**
AKS				*e*SG	**Sb**	**03 11 14.3**	**+0.9**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pg**	**03 11 00.3**	**-0.4**
AKS				*e*Sg	**Sb**	**03 11 14.3**	**+0.9**
BALB	**Balikesir**	**1.06**	**302**	*e*PG	**Pb**	**03 11 02.1**	**+0.2**
BALB				*e*SG	**Sb**	**03 11 16.9**	**+1.2**
BALB	**Balikesir**	**1.06**	**302**	*e*Pg	**Pb**	**03 11 02.1**	**+0.2**
BALB				*e*Sg	**Sb**	**03 11 16.9**	**+1.2**
IGD	**Bursa**	**1.19**	**6**	*i* P	**Pg**	**03 11 03.0**	**-1.6**
IGD				*i* S	**Sb**	**03 11 20.2**	**+1.0**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pg**	**03 11 05.8**	**-0.5**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pg**	**03 11 05.8**	**-0.5**
BALY	**Balya**	**1.29**	**301**	*i* P	**Pb**	**03 11 06.5**	**+0.7**
BALY				*i* S	**Sn**	**03 11 25.4**	**+3.0**
BALY	**Balya**	**1.29**	**301**	P	**Pb**	**03 11 06.5**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pb**	**03 11 06.6**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pb**	**03 11 06.6**	**+0.8**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pb**	**03 11 06.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pb**	**03 11 06.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pb**	**03 11 06.3**	**+0.4**
BORA	**Eskisehir**	**1.35**	**53**	*i* P	**Pn**	**03 11 06.2**	**-0.1**
BORA				*i* S	**Sb**	**03 11 24.9**	**+0.9**
BORA	**Eskisehir**	**1.35**	**53**	P	**Pn**	**03 11 06.2**	**-0.1**
BORA				S	**Sb**	**03 11 24.9**	**+0.9**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	**Pb**	**03 11 08.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn	**Pb**	**03 11 08.2**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*PN	**Pb**	**03 11 08.6**	**+0.1**
ESKT	**Eskisehir**	**1.47**	**72**	*e*PN	**Pb**	**03 11 09.3**	**+0.4**
ESKT	**Eskisehir**	**1.47**	**72**	*i* P	**Pg**	**03 11 09.7**	**-0.2**
ESKT				*i* S	**Sg**	**03 11 29.4**	**+0.4**
ESKT	**Eskisehir**	**1.47**	**72**	*e*Pn	**Pb**	**03 11 09.3**	**+0.4**
SEYT	**Eskypehyr**	**1.47**	**72**	P	**Pg**	**03 11 09.7**	**-0.2**
SEYT				S	**Sg**	**03 11 29.4**	**+0.4**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pn**	**03 11 09.1**	**+1.0**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pn**	**03 11 09.1**	**+1.0**
BOLV	**Bolvadin**	**1.53**	**103**	*i* P	**Pb**	**03 11 10.2**	**+0.3**
BOLV	**Bolvadin**	**1.53**	**103**	P	**Pb**	**03 11 10.2**	**+0.3**
EDC	**Edincik**	**1.56**	**324**	*e*PN	**Pn**	**03 11 10.1**	**+1.0**
EDC	**Edincik**	**1.56**	**324**	*e*Pn	**Pn**	**03 11 10.1**	**+1.0**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**03 11 13.0**	**+1.1**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**03 11 13.0**	**+1.1**
PLOR	**Plostina**	**6.99**	**346**	S	**Sn**	**03 13 39.0**	**-4.1**
VRI	**Vrincioaia**	**6.99**	**347**	S	**Sn**	**03 13 38.8**	**-4.2**

IDC 06 03:28:53.7±2.1, 30.95S×176.79W, h0km, mb4.1/3, mb1 4.3/3, mb1mx3.8/33, mbtmp4.1/3, MS3.3/1, Ms1 3.3/1, ms1mx2.7/21, Error ellipse: s-maj=78.6km s-min=45.5km az=10.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**35.38**	**257**	LR	LR	03 48 54.1	
	comp=Z,53nm,20.5s,baz=21,slow=34						
ASAR	**Alice Springs**	**44.12**	**267**	P	P	03 37 04.0	-0.2
	1.7nm,0.7s,baz=104,slow=7.4,SNR=6.3						
WRA	**Warramunga Arr**	**45.16**	**272**	P	P	03 37 12.0	-0.5
	1.8nm,0.5s,baz=113,slow=7.6,SNR=7.8						
FITZ	**Fitzroy Crossi**	**53.40**	**270**	P	P	03 38 15.8	+0.3
	1.3nm,0.6s,baz=150,slow=8.1,SNR=3.2						
FINES	**FINESS Array B**	**146.01**	**340**	PKPbc	PKPdf	03 48 33.9	0.0
	1.7nm,0.8s,baz=60,slow=3.7,SNR=4.5						
TORD	**Torodi Ar. Bea**	**162.23**	**175**	PKPab	PKPab	03 49 44.1	-0.5
	0.3nm,0.6s,baz=196,slow=5.7,SNR=3.2						

IDC ***06*** *03:31:02.5±1.0, 0.90S×137.28E, h0km, mb4.0/7, mb1 4.2/8, mb1mx3.9/34, mbtmp4.0/8, ML4.0/1, MS3.2/3, Ms1 3.2/3, ms1mx2.5/41, Error ellipse: s-maj=31.4km s-min=18.7km az=75.0*
ISCJB ***06*** *03:31:04.4±0.7, 0.98S±0.10×137.38E±0.08, h26km, mb3.9/5, MS3.1/3, Error ellipse: s-maj=15.5km s-min=9.7km az=30.5*
ISC 06 03:31:06.1±0.8, 0.9S±0.1×137.4E±0.1, h26km, n11, σ0s96/11, mb4.0/5, MS3.3/3, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**3.67**	**115**	Pn	**Pn**	**03 32 01.9**	**+0.7**
	0.3nm,0.3s,baz=271,slow=23,SNR=12						
JAY				Sn	**Sn**	**03 32 42.0**	**-1.7**
	0.4nm,0.3s,baz=88,slow=23,SNR=6.0						
WRA	**Warramunga Arr**	**19.12**	**189**	P	**P**	**03 35 27.5**	**+0.2**
	0.5nm,0.3s,baz=12,slow=11,SNR=41						
FITZ	**Fitzroy Crossi**	**20.59**	**

baz=314,slow=75,SNR=51
H11N3 WAKE ISLAND Hy 27.82 122 T T 04 08 51.0
baz=314,slow=75,SNR=67
SONM Songino Array 28.12 304 P **P** **03 39 39.2 +2.9**
0.9nm,0.5s,baz=100,slow=8.1,SNR=3.3
H11S1 WAKE ISLAND Hy 28.52 124 T T 04 09 19.0
baz=317,slow=76,SNR=60
H11S3 WAKE ISLAND Hy 28.52 124 T T 04 09 19.2
baz=317,slow=76,SNR=33
H11S2 WAKE ISLAND Hy 28.54 124 T T 04 09 21.6
baz=317,slow=76,SNR=36
CMAR Chiang Mai Arr 42.03 256 LR LR 03 59 34.9
comp=Z,24nm,19.3s,baz=20,slow=37
ZALV Zalesovo Beam 42.18 312 P **P** **03 41 38.3 +1.5**
0.4nm,0.3s,baz=80,slow=8.9,SNR=2.4
MKAR Makanchi Array 44.46 302 P **P** **03 41 57.6 +2.3**
1.4nm,0.6s,baz=80,slow=8.9,SNR=12
ILAR Eielson Array 49.09 32 P **P** **03 42 30.6 -0.7**
1.0nm,0.8s,baz=267,slow=6.8,SNR=16
WRA Warramunga Arr 57.29 189 P **P** **03 43 31.2 -0.8**
0.8nm,0.6s,baz=6.6,slow=7.3,SNR=11
ASAR Alice Springs 61.02 189 P **P** **03 43 57.4 -0.3**
0.7nm,0.8s,baz=12,slow=4.7,SNR=4.8
FINES FINESS Array B 68.91 332 P **P** **03 44 48.4 -0.3**
1.2nm,0.8s,baz=34,slow=10,SNR=3.7
NOA NORSAR Array B 74.24 339 P **P** **03 45 20.9 +0.1**
0.4nm,0.6s,baz=39,slow=5.6,SNR=2.4
PDAR Pinedale Array 77.19 46 P **P** **03 45 37.4 -1.0**
0.3nm,0.5s,baz=330,slow=5.2,SNR=2.7
MLR Muntele Rosu 79.59 320 LR LR 04 25 06.3
comp=Z,5.3nm,18.7s,baz=200,slow=39
MMAI Mount Meron Ar 82.29 306 LR LR 04 27 41.1
comp=Z,16nm,18.9s,baz=130,slow=39
TXAR Lajitas Array 89.62 53 P **P** **03 46 41.5 -0.9**
0.2nm,0.8s,baz=336,slow=2.0,SNR=3.4

NIED ***06*** *03:50:00,37°.20N×142°.30E,h23km,Mw3.8 Best double couple: M₀5.02000×10¹⁴ NP1:φ₀322.00000°,δ33.00000°, λ-86.00000°. NP2:φ₀137.00000°,δ57.00000°, λ-92.00000°.*

IDC ***06*** *03:50:20.2±1.2,37°.09N×142°.45E,h0km,mb3.7/6, mb1 3.8/9,mb1mx3.7/34,mbtmp3.7/9,ML3.7/3,Error ellipse: s-maj=33.6km s-min=19.6km az=106.0*

ISCJB ***06*** *03:50:22.2±1.5,37°.19N±0°.05×142°.40E±0°.06, h22km±11km,mb3.7/6,Error ellipse: s-maj=8.4km s-min=7.2km az=140.5*

JMA ***06*** *03:50:22.1±0.2,37°.21N×142°.31E,h11km±2km,M4.1*

ISC 06 03:50:20.6±2.1,37°20N±0°.05×142°37E±0°.06,h2km±12km, n27,σ1§48/32,mb3.7/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JFK	**Kawauchi**	**1.20**	**278**	P		**Pg**	**03 50 43.4**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.26**	**266**	P		**Pg**	**03 50 44.5**	**-0.2**
ONAJ				*e*S		**Sg**	**03 51 01.0**	**0.0**
JMM	**Marumori**	**1.42**	**298**	P		**Pn**	**03 50 47.1**	**-0.2**
JMM				*e*S		**Sb**	**03 51 05.1**	**-1.1**
JIO	**Ouri**	**1.49**	**328**	P		**Pn**	**03 50 48.5**	**+0.2**
JIO				*e*S		**Sn**	**03 51 06.8**	**-1.5**
JHO	**Hitachi**	**1.56**	**248**	P		**Pn**	**03 50 48.9**	**-0.4**
JHO				*e*S		**Sn**	**03 51 09.2**	**-0.8**
JFT	**Otama**	**1.65**	**282**	P		**Pn**	**03 50 50.9**	**+0.3**
JFT				*e*S		**Sn**	**03 51 11.5**	**-0.8**
JOU	**Okura**	**1.78**	**311**	P		**Pn**	**03 50 53.2**	**+0.8**
JOU				S		**Sn**	**03 51 14.1**	**-1.5**
JMK	**Ichinoseki**	**1.97**	**333**	P		**Pn**	**03 50 55.9**	**+0.9**
JSB	**Shiboa**	**1.97**	**264**	*e*S		**Sn**	**03 51 20.0**	**-0.3**
JYS	**Shirataka**	**2.09**	**300**	P		**Pn**	**03 50 58.1**	**+1.5**
JFY	**Yanaizu**	**2.13**	**276**	P		**Pn**	**03 50 58.3**	**+1.1**
JFY				*e*S		**Sn**	**03 51 22.9**	**-1.4**
MJAR	**Matsushiro Arr**	**3.40**	**260**	Pn		**Pn**	**03 51 16.6**	**+2.0**
	6.0nm,0.3s,baz=91,slow=15,SNR=24							
MJAR				Sn		**Sb**	**03 52 00.4**	**-2.9**
	3.5nm,0.3s,baz=81,slow=17,SNR=5.5							
MAT	**Matsushiro**	**3.40**	**260**	P		**Pn**	**03 51 16.9**	**+2.3**
MAT				S		**Sn**	**03 51 58.6**	**+3.1**
JHJ	**Hachijo jima 2**	**4.59**	**208**	Pn		**Pn**	**03 51 31.7**	**+0.7**
	15nm,0.3s,baz=341,slow=21,SNR=7.0							
JHJ				Sn		**Sn**	**03 52 22.2**	**-2.6**
	11nm,0.3s,baz=60,slow=20,SNR=4.0							
ASAJ	**Asahikawa**	**6.91**	**1**	Pn		**Pn**	**03 52 03.9**	**+1.0**
	1.1nm,0.3s,baz=262,slow=2.6,SNR=7.0							
ASAJ				Sn		**Sn**	**03 53 19.6**	**-2.4**
	0.3nm,0.3s,baz=162,slow=20,SNR=2.2							
H11N2	**WAKE ISLAND Hy 27.59 122**			T		T	04 25 07.1	
	baz=315,slow=75,SNR=30							
H11N1	**WAKE ISLAND Hy 27.59 122**			T		T	04 25 11.5	
	baz=315,slow=75,SNR=22							
H11N3	**WAKE ISLAND Hy 27.60 122**			T		T	04 25 07.9	
	baz=315,slow=75,SNR=27							
H11S1	**WAKE ISLAND Hy 28.32 124**			T		T	04 25 59.7	
	baz=317,slow=76,SNR=32							
H11S3	**WAKE ISLAND Hy 28.32 125**			T		T	04 25 58.1	
	baz=317,slow=76,SNR=32							
H11S2	**WAKE ISLAND Hy 28.33 125**			T		T	04 26 00.3	
	baz=317,slow=76,SNR=29							
MKAR	**Makanchi Array 44.67 302**			P		**P**	**03 58 35.0**	**+0.2**
	0.2nm,0.3s,baz=79,slow=9.2,SNR=2.7							
ILAR	**Eielson Array 48.95 32**			P		**P**	**03 59 09.2**	**+1.3**
	0.7nm,0.8s,baz=271,slow=6.1,SNR=6.5							
WRA	**Warramunga Arr 57.34 189**			P		**P**	**04 00 08.7**	**-1.4**
	0.4nm,0.6s,baz=6.4,slow=7.2,SNR=6.7							
FINES	**FINESS Array B 69.02 333**			P		**P**	**04 01 27.7**	**+0.5**
	0.9nm,0.6s,baz=64,slow=6.3,SNR=3.7							
AKASG	**Malin Array Be 74.63 323**			P		**P**	**04 02 01.3**	**+0.2**
	0.7nm,0.5s,baz=44,slow=5.7,SNR=3.6							
BRTR	**Keskin Array B 79.31 312**			P		**P**	**04 02 29.4**	**+1.4**
	0.3nm,0.4s,baz=29,slow=3.3,SNR=3.7							

MEX 06 03:57:35.7±0.4,18°.06N×103°.48W,h8km±8km,MD3.7, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
R15V		**1.20**	**336**	*e*P		Pg	03 57 55.4	-3.5
R15V				*e*S		Sg	03 58 10.1	-4.4
EZ5V		**1.42**	**355**	*e*P		Pn	03 57 58.2	-3.9
EZ5V				*e*S		Sb	03 58 16.2	-4.7
ZIIG	**Zihuatanejo**	**1.97**	**103**	*e*P		Pn	03 58 06.0	-3.4
ZIIG				*i* S		Sn	03 58 29.9	-4.4
ARIG	**Puente Sto Nin**	**2.98**	**85**	*e*P		Pn	03 58 20.3	-3.1
ARIG				*i* S		Sn	03 58 55.6	-3.9

NIED ***06*** *03:57:00,36°.30N×141°.90E,h20km,Mw3.8 Best double couple: M₀5.73000×10¹⁴ NP1:φ₀195.00000°,δ26.00000°, λ82.00000°. NP2:φ₀23.00000°,δ64.00000°,λ94.00000°.*

IDC ***06*** *03:57:46.6±1.1,36°.22N×141°.92E,h0km,mb3.8/9, mb1 3.9/12,mb1mx3.7/40,mbtmp3.8/12,ML3.6/3,MS2.9/5, Ms1 3.0/5,ms1mx2.7/34,Error ellipse: s-maj=26.0km s-min=21.2km az=106.0*

ISCJB ***06*** *03:57:47.8±0.6,36°.28N±0°.04×141°.99E±0°.06,h19km, mb3.7/9,MS3.4/1,Error ellipse: s-maj=7.0km s-min=5.5km az=24.7*

JMA ***06*** *03:57:49.7±0.2,36°.32N×141°.86E,h34km,M3.7*

ISC 06 03:57:49.6±0.8,36°29N±0°.05×141°83E±0°.07,h19km,n30, σ1§69/31,mb3.8/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**0.98**	**233**	P		**Pg**	**03 58 08.1**	**-0.6**
CHOJ				S		**Sn**	**03 58 21.9**	**+0.2**
JHO	**Hitachi**	**1.06**	**288**	*e*S		**Sn**	**03 58 23.0**	**-0.7**
ONAJ	**Iwakimizuishiy**	**1.16**	**315**	P		**Pn**	**03 58 09.9**	**-0.9**
JFK	**Kawauchi**	**1.32**	**325**	P		**Pn**	**03 58 12.4**	**-0.6**
JFT	**Otama**	**1.71**	**316**	P		**Pn**	**03 58 19.0**	**+0.6**
JMM	**Marumori**	**1.77**	**333**	P		**Pn**	**03 58 19.4**	**+0.2**
BSO1	**Boso 1**	**1.78**	**203**	P		**Pn**	**03 58 18.7**	**-0.1**
BSO1				S		**Sb**	**03 58 41.1**	**-1.8**
BSO3	**Boso 3**	**1.84**	**216**	P		**Pn**	**03 58 20.1**	**+0.3**
JAG	**Ashikaga**	**1.92**	**275**	P		**Pn**	**03 58 21.1**	**-0.2**
JFY	**Yanaizu**	**2.03**	**304**	P		**Pn**	**03 58 23.8**	**+1.0**
MJAR	**Matsushiro Arr**	**2.93**	**276**	Pn		**Pn**	**03 58 35.9**	**+0.8**
	10nm,0.3s,baz=104,slow=8.7,SNR=51							
MJAR				Sn		**Sb**	**03 59 12.9**	**-3.7**
	5.1nm,0.3s,baz=74,slow=16,SNR=7.2							
MJAR				LR		LR	03 59 49.6	
	comp=Z,99nm,21.0s,baz=140,slow=41							
MAT	**Matsushiro**	**2.93**	**276**	P		**Pn**	**03 58 36.2**	**+1.0**
MAT				S		**Sb**	**03 59 14.4**	**-2.3**
JHJ	**Hachijo jima 2**	**3.59**	**209**	Pn		**Pn**	**03 58 44.4**	**+0.2**
	29nm,0.3s,baz=338,slow=23,SNR=14							
JHJ				Sn		**Sn**	**03 59 23.6**	**-2.4**
	69nm,0.3s,baz=80,slow=22,SNR=7.1							
ASAJ	**Asahikawa 7.84 4**			Pn		**Pn**	**03 59 43.0**	**+0.6**
	0.6nm,0.3s,baz=192,slow=18,SNR=3.6							
ASAJ				Sn		**Sn**	**04 01 05.9**	**-4.7**
	0.2nm,0.3s,baz=75,slow=20,SNR=2.5							
JNU	**Nakatsue 9.55 254**			LR		LR	04 04 02.1	
	comp=Z,75nm,18.2s,baz=180,slow=39							
USRK	**Ussuriysk Ar. 10.90 319**			Pn		Pn	04 00 31.4	+7.0
	0.2nm,0.3s,baz=129,slow=13,SNR=7.0							
USRK				LR		LR	04 04 46.2	
	comp=Z,92nm,18.4s,baz=58,slow=38							
KSRS	**Korea Array 11.20 280**			Pn		**Pn**	**04 00 32.8**	**+4.2**
	baz=93,slow=14,SNR=4.4							
KSRS				LR		LR	04 04 23.1	
	comp=Z,40nm,20.0s,baz=86,slow=35							
H11N2	**WAKE ISLAND Hy 27.49 120**			T		T	04 32 54.8	
	baz=312,slow=75,SNR=8.8							
H11N1	**WAKE ISLAND Hy 27.49 120**			T		T	04 33 00.9	
	baz=312,slow=75,SNR=8.0							
H11N3	**WAKE ISLAND Hy 27.50 120**			T		T	04 33 07.5	
	baz=312,slow=75,SNR=6.9							
SONM	**Songino Array 28.48 305**			P		**P**	**04 03 44.9**	**+1.3**
	1.7nm,0.8s,baz=109,slow=11,SNR=3.7							
ZALV	**Zalesovo Beam 42.66 313**			P		**P**	**04 05 45.1**	**+0.4**
	1.1nm,0.5s,baz=95,slow=7.8,SNR=4.4							
MKAR	**Makanchi Array 44.80 303**			P		**P**	**04 06 02.1**	**+0.1**
	1.1nm,0.7s,baz=88,slow=9.5,SNR=8.2							
ILAR	**Eielson Array 49.94 32**			P		**P**	**04 06 42.5**	**+0.7**
	0.2nm,0.6s,baz=260,slow=5.4,SNR=3.5							
WRA	**Warramunga Arr 56.38 188**			P		**P**	**04 07 28.6**	**-1.0**
	0.3nm,0.5s,baz=6.1,slow=7.4,SNR=6.8							
FINES	**FINESS Array B 69.62 333**			P		**P**	**04 08 58.4**	**+1.2**
	1.3nm,0.8s,baz=19,slow=5.9,SNR=3.8							
NB2	**NORSAR Subarra 75.00 338**			P		**P**	**04 09 29.9**	**+0.5**
	comp=Z,0.4nm,0.6s,baz=40,slow=5.9							
NOA	**NORSAR Array B 75.00 338**			P		**P**	**04 09 29.9**	**+0.5**
	comp=Z,0.9nm,0.8s,baz=40,slow=5.8,SNR=5.0							
NOA				LR		LR	04 46 05.6	
	comp=Z,17nm,18.1s,baz=0.0,slow=39							
AKASG	**Malin Array Be 75.08 323**			P		**P**	**04 09 30.3**	**+0.3**
	comp=Z,1.2nm,0.6s,baz=47,slow=5.8,SNR=4.3							
BRTR	**Keskin Array B 79.59 312**			P		**P**	**04 09 56.6**	**+0.9**
	comp=Z,0.4nm,0.6s,baz=70,slow=4.7,SNR=2.9							

IDC 06 04:09:46.8±17.0,22°.10S×179°.82W,h630km±227km, mb3.2/5,mb1 3.4/5,mb1mx3.0/28,mbtmp4.3/5,Error ellipse: s-maj=104.3km s-min=80.1km az=143.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CTA	**Charters Tower**	**31.68**	**267**	P		P	04 15 22.0	+0.7
	2.7nm,0.3s,baz=77,slow=9.2,SNR=5.7							
STKA	**Stephens Creek**	**35.58**	**246**	P		P	04 15 53.8	+0.1
	2.3nm,0.5s,baz=95,slow=12,SNR=5.6							
ASAR	**Alice Springs**	**42.52**	**259**	P		P	04 16 49.2	-0.1
	4.1nm,0.7s,baz=100,slow=7.7,SNR=31							
WRA	**Warramunga Arr**	**42.72**	**264**	P		P	04 16 50.7	-0.3
	1.6nm,0.3s,baz=98,slow=7.8,SNR=90							
PDAR	**Pinedale Array**	**91.28**	**44**	P		P	04 21 46.9	0.0
	0.3nm,0.7s,baz=220,slow=5.2,SNR=3.0							

JMA ***06*** *04:15:31.9±0.1,24°.25N×121°.79E,h0km,M2.4*

ISCJB ***06*** *04:15:33.0±0.4,24°.24N±0°.02×121°.82E±0°.02,h7km±3km, Error ellipse: s-maj=3.5km s-min=2.4km az=39.2*

TAP ***06*** *04:15:32.7,24°.25N×121°.76E,h17km,ML3.3,B*

ISC 06 04:15:33.0±0.8,24°25N±0°.02×121°80E±0°.02,h16km±5km, n47,σ0§80/73,6C,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
EHP	**Heping Village**	**0.08**	**318**	P		**Pg**	**04 15 36.6**	**+0.3**
	baz=345							
EHP				*i* S		**Sg**	**04 15 38.9**	**+0.6**
	baz=345							
ENA	**Nanau**	**0.19**	**343**	⇑*i*P		**Pb**	**04 15 37.4**	**-0.7**
	baz=353							
ENA				*i* S		**Sg**	**04 15 40.6**	**0.0**
	baz=353							
TWD	**Chiawan**	**0.25**	**228**	*i* P		**Pg**	**04 15 38.0**	**-0.5**
	baz=230							
TWD				*i* S		**Sg**	**04 15 41.6**	**-0.7**
	baz=230							
HWA	**Hwalien**	**0.32**	**214**	*e*P		**Pg**	**04 15 40.0**	**+0.2**
	baz=218							
HWA				*e*S		**Sb**	**04 15 45.9**	**+0.4**
	baz=218							
TWC	**Suao**	**0.36**	**7**	⇑*i*P		**Pb**	**04 15 40.6**	**-0.5**
	baz=7.0							
TWC				S		**Sb**	**04 15 45.7**	**-0.9**
	baz=7.0							
NNS	**Nan Shan**	**0.44**	**296**	⇑*i*P		**Pg**	**04 15 41.5**	**-0.4**
	baz=298							
NNS				*i* S		**Sg**	**04 15 47.2**	**-0.6**
	baz=298							
ENTT	**Nioudou**	**0.45**	**331**	⇑*i*P		**Pb**	**04 15 42.0**	**-0.6**
	baz=333							
ENTT				*i* S		**Sb**	**04 15 47.8**	**-1.2**
	baz=333							
ESF	**Shoufeng Towns**	**0.46**	**216**	*e*P		**Pb**	**04 15 43.0**	**+0.2**
	baz=224							
TWE	**Neicheng**	**0.49**	**345**	P		**Pb**	**04 15 42.7**	**-0.6**
	baz=348							
TWE				S		**Sb**	**04 15 48.9**	**-1.3**
	baz=348							
WHF	**Hehuan Shan**	**0.50**	**258**	*e*P		**Pg**	**04 15 42.3**	**-0.8**
	baz=259							
WHF				*e*S		**Sg**	**04 15 49.0**	**-0.9**
	baz=259							
ESL	**Shilin**	**0.55**	**218**	*e*P		**Pg**	**04 15 43.2**	**-0.7**
	baz=224							
ESL				*e*S		**Sg**	**04 15 51.6**	**+0.4**
	baz=224							
TWT	**Tachien**	**0.57**	**271**	⇑P		**Pg**	**04 15 44.2**	**-0.2**
	baz=271							
TWT				*i* S		**Sg**	**04 15 51.4**	**-0.6**
	baz=271							
NSK	**Sanguang**	**0.59**	**317**	⇑*i*P		**Pb**	**04 15 44.4**	**-0.6**
	baz=318							
NSK				*i* S		**Sb**	**04 15 52.1**	**-1.1**
	baz=318							
EGS		**0.61**	**11**	*e*P		**Pb**	**04 15 45.7**	**+0.4**
	baz=19							
TWA	**Mucha**	**0.76**	**345**	*e*P		**Pb**	**04 15 48.0**	**+0.2**
	baz=347							
WDT	**Danda**	**0.78**	**231**	*e*P		**Pg**	**04 15 47.6**	**-0.8**
	baz=240							
WDT				*e*S		**Sg**	**04 15 58.7**	**-0.1**
	baz=240							
NWF	**Wu-fen Shan**	**0.82**	**359**	*e*P		**Pb**	**04 15 49.0**	**0.0**
	baz=351							
NWF				*e*S		**Sb**	**04 15 59.6**	**-0.2**
	baz=351							
NSTT	**Nanjuang**	**0.82**	**298**	*e*P		**Pb**	**04 15 48.9**	**-0.1**
	baz=299							
NSTT				*e*S		**Sb**	**04 15 59.9**	**0.0**
	baz=299							
EHY	**Hungye**	**0.86**	**211**	*e*P		**Pg**	**04 15 49.0**	**-0.8**
	baz=223							
SMLT	**Sun Moon Lake**	**0.90**	**246**	*e*P		**Pg**	**04 15 50.0**	**-0.6**
	baz=241							
SMLT				*e*S		**Sg**	**04 16 01.7**	**-0.7**
	baz=241							
NCU	**National Centr**	**0.91**	**322**	*e*P		**Pn**	**04 15 51.8**	**+0.6**
	baz=320							
TWS1	**Kuangyinshan**	**0.92**	**338**	*e*P		**Pn**	**04 15 51.5**	**+0.1**
	baz=336							
TWQ1	**Liyutan**	**0.94**	**276**	*e*P		**Pn**	**04 15 52.1**	**+0.4**
	baz=277							
TWQ1				*e*S		**Sn**	**04 16 05.2**	**+0.3**
	baz=277							
NSY	**Sanyi**	**0.96**	**280**	*e*P		**Pn**	**04 15 53.0**	**+1.0**
	baz=273							
NSY				*e*S		**Sn**	**04 16 05.8**	**+0.4**
	baz=273							
TWF1	**Yuli**	**1.00**	**208**	*e*P		**Pb**	**04 15 50.5**	**-1.5**
	baz=219							
TCU	**Taichung**	**1.03**	**265**	*e*P		**Pn**	**04 15 54.1**	**+1.2**
	baz=266							
TCU				*e*S		**Sn**	**04 16 09.2**	**+2.2**
	baz=266							
TWY	**Chenhua**	**1.04**	**350**	*e*P		**Pn**	**04 15 53.6**	**+0.7**
	baz=350							
JYNG	**Yonagunijimaku**	**1.06**	**79**	P		**Pb**	**04 15 52.8**	**-0.2**
JYNG				*e*S		**Sn**	**04 16 08.0**	**+0.3**
YUS	**Yu-Shan**	**1.08**	**226**	P		**Pg**	**04 15 53.2**	**-0.9**
	baz=228							
YUS				*e*S		**Sg**	**04 16 08.1**	**-0.3**
	baz=228							
WNT	**Mingjian**	**1.09**	**250**	*e*P		**Pg**	**04 15 53.8**	**-0.2**
	baz=243							
YOJ	**Yonaguni jima**	**1.12**	**79**	P		**Pg**	**04 15 54.4**	**-0.3**
YOJ				S		**Sn**	**04 16 09.6**	**+0.4**
YOJ	**Yonaguni jima**	**1.12**	**79**	*e*P		**Pg**	**04 15 54.7**	**0.0**
	baz=67							
ALS	**Alishan**	**1.17**	**231**	*e*P		**Pb**	**04 15 54.4**	**-0.7**
	baz=233							
CHKT	**Chengkung**	**1.21**	**199**	*e*P		**Pn**	**04 15 55.8**	**+0.5**
	baz=188							
CHN5	**Tsauling**	**1.22**	**238**	*e*P		**Pn**	**04 15 55.5**	**0.0**
	baz=225							
CHN5				S		**Sn**	**04 16 13.6**	**+1.9**
	baz=225							
ELDTW	**Lidau**	**1.28**	**214**	*e*P		**Pn**	**04 15 55.6**	**-0.7**
	baz=202							
CHN4	**Tsaushan**	**1.42**	**231**	*e*P		**Pn**	**04 15 58.9**	**+0.6**
	baz=235							
CHN4				*e*S		**Sg**	**04 16 19.2**	**+0.3**
	baz=235							
STYT	**Tauyuan**	**1.44**	**222**	*e*P		**Pn**	**04 15 59.6**	**+1.0**
	baz=225							
STYT				*e*S		**Sn**	**04 16 18.5**	**+1.2**
	baz=225							
WTP	**Ta-pu**	**1.48**	**228**	*e*P		**Pn**	**04 15 59.5**	**+0.5**
	baz=231							
WTP				*e*S		**Sg**	**04 16 21.2**	**+0.5**
	baz=231							
TWK	**Hsinying**	**1.55**	**231**	*e*P		**Pn**	**04 16 00.3**	**+0.3**
	baz=232							
TWG	**Pinlang**	**1.57**	**205**	*e*P		**Pn**	**04 15 58.2**	**-2.1**
	baz=192							
CHN1	**Nanshi**	**1.58**	**228**	*e*P		**Pb**	**04 16 02.5**	**+0.7**
	baz=230							
SGST	**Jiashian**	**1.61**	**224**	*e*P		**Pb**	**04 16 02.7**	**+0.3**
	baz=225							
IRIF	**Iriomote-Funau**	**1.76**	**87**	P		**Pb**	**04 16 04.2**	**-0.8**
JKRS	**Kuro-shima**	**2.01**	**90**	*e*S		**Sn**	**04 16 32.7**	**+1.4**
EAST	**Anshuo**	**2.05**	**205**	*e*P		**Pn**	**04 16 08.3**	**+1.3**
	baz=195							
JIJ	**Ishigaki jima**	**2.14**	**86**	*e*S		**Sn**	**04 16 35.3**	**+1.0**

ISCJB ***06*** *04:15:53.7±0.5,39°.12N±0°.04×29°.06E±0°.05,h9km,Error ellipse: s-maj=6.8km s-min=4.1km az=143.8*

ISK ***06*** *04:15:53.4,39°.16N×29°.05E,h8km,MD2.5*

CSEM ***06*** *04:15:53.8±0.2,39°.12N×29°.05E,h12km,MD2.5,Error ellipse: s-maj=5.1km s-min=3.2km az=121.0*

DDA ***06*** *04:15:54.2,39°.09N×29°.07E,h7km,Md2.5*

ISC 06 04:15:53.7±0.9,39°12N±0°.04×29°03E±0°.03,h9km,n18, σ0§65/26,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**252**	*i* P		**Pb**	**04 16 00.3**	**-0.3**
DEMI				*i* S		**Sg**	**04 16 04.2**	**+1.8**
DEMI	**Demirci**	**0.26**	**252**	P		**Pb**	**04 16 00.3**	**-0.3**
DEMI				S		**Sg**	**04 16 04.2**	**+1.8**
GDZ	**Gediz**	**0.35**	**95**	*i* P		**Pg**	**04 16 01.0**	**+0.4**
GDZ				*i* S		**Sg**	**04 16 05.7**	**+0.4**
GDZ	**Gediz**	**0.35**	**95**	P		**Pg**	**04 16 01.0**	**+0.4**
GDZ				S		**Sg**	**04 16 05.7**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**45**	*e*PG		**Pg**	**04 16 02.6**	**-0.2**
TVSB				*e*SG		**Sg**	**04 16 08.8**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**45**	*e*Pg		**Pg**	**04 16 02.6**	**-0.2**
TVSB				*e*Sg		**Sg**	**04 16 08.8**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG		**Pb**	**04 16 07.5**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg		**Pb**	**04 16 07.5**	**-0.1**
MANT	**Manisa**	**0.73**	**211**	*i* P		**Pg**	**04 16 07.5**	**-0.3**
MANT				*i* S		**Sg**	**04 16 16.5**	**-0.9**
MANT	**Manisa**	**0.73**	**211**	P		**Pg**	**04 16 07.5**	**-0.3**
MANT				S		**Sg**	**04 16 16.5**	**-0.9**
KHL	**Karahalli**	**0.89**	**154**	*e*PG		**Pb**	**04 16 11.5**	**+0.3**
KHL	**Karahalli**	**0.89**	**154**	*e*Pg		**Pb**	**04 16 11.5**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN		**Pn**	**04 16 17.2**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn		**Pn**	**04 16 17.2**	**-0.1**
IZI	**Iznik**	**1.26**	**15**	*e*PN		**Pn**	**04 16 17.0**	**-0.6**
IZI	**Iznik**	**1.26**	**15**	*e*Pn		**Pn**	**04 16 17.0**	**-0.6**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN		**Pn**	**04 16 20.2**	**+0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn		**Pn**	**04 16 20.2**	**+0.1**

ISCJB ***06*** *04:16:13.7±0.3,5°.67N±0°.02×76°.04W±0°.03,h78km±3km, mb4.6/134,Error ellipse: s-maj=4.2km s-min=3.6km az=176.1*

IDC ***06*** *04:16:14.9±1.9,5°.57N×76°.10W,h80km±17km,mb4.1/17, mb1 4.2/20,mb1mx4.2/28,mbtmp4.4/20,MS3.2/12, Ms1 3.2/12,ms1mx3.1/24,Error ellipse: s-maj=16.9km s-min=12.1km az=56.0*

NEIC ***06*** *04:16:15.0,5°.67N×76°.09W,h36km,mb4.7/112,After RSNC.*

NEIC Felt [II] at Medellin and Pereira. Felt widely in central Colombia.

RSNC ***06*** *04:16:15.4±1.0,5°.66N×76°.11W,h32km±13km,ML4.3*

ISC 06 04:16:14.0±0.7,5°65N±0°.03×76°09W±0°.04,h66km±6km, n484,σ1§09/502,mb4.7/134,1C-1D,Colombia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HELC	**Santa Helena**	**0.

SDV **Santo Domingo** 6.29 59 *e*Pn **Pn** 04 17 45.3 +0.9
SDV *e*Sn **Sn** 04 18 54.8 -0.3
PCRV Puerto La Cruz 12.20 68 P **Pn** 04 19 03.5 -1.6
comp=Z,1.7nm,0.3s,baz=278,slow=1.8,SNR=12
PCRV S **Sn** 04 21 13.3 -6.1
comp=Z,1.0nm,0.3s,baz=154,slow=18,SNR=3.5
ATAH Atahualpa 12.91 190 P **Pn** 04 19 15.8 +0.7
comp=Z,0.3nm,0.3s,baz=17,slow=11,SNR=3.8
ATAH LR LR 04 25 36.4
comp=Z,234nm,18.4s,baz=6.6,slow=44
TGUH Tegucigalpa,Un 13.82 308 *e*Pn **Pn** 04 19 29.0 +2.1
SDDR Presa de Saban 14.05 19 *e*Pn **Pn** 04 19 31.2 +1.2
SDDR *e*Sn **Sn** 04 22 01.7 -2.8
CELP Cerrillos 15.45 36 *e*Pn **Pn** 04 19 46.7 -1.4
SJG San Juan 15.73 37 P **Pn** 04 19 48.3 -3.4
comp=Z,3.1nm,0.3s,baz=233,slow=12,SNR=7.8
SJG LR LR 04 27 15.5
comp=Z,44nm,19.4s,baz=224,slow=42
PTGA Pitinga 17.30 111 P **Pn** 04 20 10.7 -0.6
comp=Z,1.2nm,0.3s,baz=296,slow=15,SNR=24
PTGA LR LR 04 28 00.3
comp=Z,26nm,20.0s,baz=302,slow=41
PTGA Pitinga 17.30 111 *e*Pn **P** 04 20 12.5 +0.6
NNA Nana 17.54 182 LR LR 04 28 24.4
comp=Z,290nm,20.1s,baz=349,slow=42
NNA Nana 17.54 182 *e*Pn **P** 04 20 15.5 +0.9
CCIG Comitan 18.95 305 *e*P **Pn** 04 20 31.1 -0.4
comp=Z,10nm,0.7s
SAML Samuel 19.39 138 *e*P **P** 04 20 33.6 -1.1
comp=Z,9.3nm,0.8s
CMIG Matias Romero 21.62 303 P **P** 04 20 57.9 -1.1
comp=Z,1.8nm,0.6s,baz=153,slow=5.7,SNR=4.5
CMIG LR LR 04 30 59.4
comp=Z,40nm,18.3s,baz=136,slow=41
TLIG Tlapa 24.96 300 *e*P **P** 04 21 35.0 +3.3
comp=Z,12nm,1.1s
SIV San Ignacio 26.14 146 P **P** 04 21 40.7 -1.6
comp=Z,6.3nm,0.5s,baz=329,slow=10,SNR=26
SIV LR LR 04 32 23.4
comp=Z,120nm,19.0s,baz=344,slow=37
TIGA Tifton 26.60 346 P **P** 04 21 47.7 +1.4
baz=163
TIGA Tifton 26.60 346 *e*P **P** 04 21 46.4 +0.1
comp=Z,15nm,0.9s
PB01 IPOC Station P 27.31 166 *e*P **P** 04 21 51.6 -1.2
comp=Z,19nm,0.9s
446A Poplarville 27.95 335 P **P** 04 22 00.3 +2.0
baz=151
347A Saraland 28.15 337 P **P** 04 22 02.2 +2.0
baz=153
248A Dixon Mills 28.48 339 P **P** 04 22 05.0 +2.0
baz=155,SNR=5.5
247A Quitman 28.76 337 P **P** 04 22 08.2 +2.7
baz=153
LVC Limon Verde 28.95 166 P **P** 04 22 06.7 -1.1
comp=Z,12nm,0.4s,baz=347,slow=5.8,SNR=8.2
LVC Limon Verde 28.95 166 *e*P **P** 04 22 07.0 -0.8
LRAL Lakeview Retre 29.08 341 *e*P **P** 04 22 10.4 +2.1
comp=Z,6.3nm,0.8s
147A Livingston 29.19 339 P **P** 04 22 11.0 +1.7
baz=155
245A Little AP, Sta 29.25 335 P **P** 04 22 11.7 +1.8
baz=151
Z48A Northport 29.58 340 P **P** 04 22 14.4 +1.6
baz=156
Z47A Carrollton 29.59 339 P **P** 04 22 14.5 +1.6
baz=155,SNR=8.3
244A Avery, Jackson 29.59 334 P **P** 04 22 13.8 +0.9
baz=150
035A Encino 29.80 318 P **P** 04 22 15.1 +0.2
baz=132
Z46A Louisville 29.90 338 P **P** 04 22 17.6 +1.9
baz=154
Y47A UCPARC, Winfie 30.16 340 P **P** 04 22 19.5 +1.6
baz=156,SNR=5.7
341A Kurthwood 30.16 330 P **P** 04 22 19.4 +1.5
baz=144
034A Hebbronville 30.28 317 P **P** 04 22 19.6 +0.5
baz=131,SNR=5.3
Y46A Houston 30.49 339 P **P** 04 22 22.0 +1.2
baz=154,SNR=15
736A Circle Diamond 30.52 322 P **P** 04 22 22.6 +1.4
baz=136,SNR=6.0
934A Benavides 30.52 318 P **P** 04 22 21.9 +0.7
baz=132
Y45A Yeager Farm, C 30.73 338 P **P** 04 22 24.6 +1.7
baz=153
636A Smothers Creek 30.89 323 P **P** 04 22 25.3 +0.9
baz=136
834A Tilden 30.89 319 P **P** 04 22 24.8 +0.4
baz=132,SNR=6.4
933A Laredo 31.03 317 P **P** 04 22 25.9 +0.2
baz=131,SNR=7.3
Y44A Strider, Charl 31.07 337 P **P** 04 22 27.0 +1.1
baz=152
X45A UM Field Stati 31.17 338 P **P** 04 22 27.6 +0.8
baz=154
635A Leesville 31.26 322 P **P** 04 22 27.7 0.0
baz=135
338A Crockett 31.29 327 P **P** 04 22 28.6 +0.7
baz=141
140A Cam and Jess, 31.42 331 P **P** 04 22 29.4 +0.4
baz=145
833A Chaparral WMA, 31.57 318 P **P** 04 22 30.4 -0.1
baz=131,SNR=12
Y42A Garnett, Star 31.61 335 P **P** 04 22 31.3 +0.6
baz=149
W45A Hickory Valley 31.75 339 P **P** 04 22 32.7 +0.7
baz=155
733A Divot King Ran 31.77 319 P **P** 04 22 32.3 +0.1
baz=132
Z40A Long Farm, Mag 31.84 332 P **P** 04 22 33.4 +0.7
baz=146
832A Faith Ranch, C 31.94 318 P **P** 04 22 33.4 -0.3
baz=130,SNR=8.4
Y41A Eaglette Beard 32.00 333 P **P** 04 22 34.7 +0.6
baz=148
336A Riesel 32.16 325 P **P** 04 22 36.0 +0.4
baz=139,SNR=6.1
633A Saathoff Ranch 32.19 320 P **P** 04 22 35.9 0.0
baz=133
WVT Waverly 32.19 342 *e*P **P** 04 22 36.8 +1.0
comp=Z,6.3nm,0.7s
335A Moody 32.41 324 P **P** 04 22 38.2 +0.4
baz=138
X41A Kaden, Bauxite 32.48 334 P **P** 04 22 39.0 +0.7
baz=148
137A Heron Place, G 32.49 328 P **P** 04 22 39.6 +1.2
baz=142
533A Kerrville 32.52 321 P **P** 04 22 38.5 -0.4
baz=134
434A Burnet 32.57 323 P **P** 04 22 38.6 -0.7
baz=136
Z38A Mt. Pleasant 32.61 330 P **P** 04 22 39.8 +0.3
baz=143
X40A Basin Creek Fa 32.61 334 P **P** 04 22 39.8 +0.3
baz=148
Y39A Lockesburg 32.73 332 P **P** 04 22 40.9 +0.4
baz=145
334A Lometa 32.93 324 P **P** 04 22 42.2 -0.2
baz=136,SNR=12
MIAR Mount Ida 32.99 333 P **P** 04 22 42.4 -0.5
baz=147
Y38A Idabel 33.03 331 P **P** 04 22 43.2 +0.1
baz=144
433A Art 33.03 322 P **P** 04 22 43.0 -0.2
baz=135,SNR=6.4
X201 Greenbrier Sit 33.10 335 *e*P **P** 04 22 44.2 +0.4
comp=Z,3.8nm,0.8s
V42A Cord 33.15 337 P **P** 04 22 44.1 0.0
baz=151,SNR=6.4
X39A Fountain Ranch 33.21 332 P **P** 04 22 45.2 +0.5
baz=146
W40A Ferguson Farm, 33.31 334 P **P** 04 22 45.7 +0.1
baz=148
234A Clairette 33.35 325 P **P** 04 22 46.2 +0.2
baz=137,SNR=6.5
333A Richland Sprin 33.37 323 P **P** 04 22 46.1 -0.1
baz=135,SNR=15
V41A Mountainview 33.44 336 P **P** 04 22 46.6 0.0
baz=150
Y37A Hugo 33.51 330 P **P** 04 22 47.9 +0.6
baz=143,SNR=5.1
U42A Revenden 33.57 338 P **P** 04 22 48.0 +0.2
baz=152,SNR=5.3
W39A Magazine 33.63 333 P **P** 04 22 48.7 +0.4
baz=147,SNR=6.0
PBMO Poplar Bluff 33.65 339 *e*P **P** 04 22 49.1 +0.6
comp=Z,8.4nm,0.8s
X38A Whitesboro 33.68 331 P **P** 04 22 49.1 +0.4
baz=145
V40A Witts Springs 33.73 335 P **P** 04 22 49.4 +0.1
baz=149,SNR=6.9
WCI Wyandotte Cave 33.73 345 *e*P **P** 04 22 50.3 +1.1
comp=Z,9.5nm,0.9s
134A White-Moore Ra 33.74 325 P **P** 04 22 49.5 +0.2
baz=138
233A Rising Star 33.81 324 P **P** 04 22 50.0 0.0
baz=136,SNR=13
U41A Viola 33.83 337 P **P** 04 22 50.3 +0.2
baz=151
USIN University of 33.85 343 *e*P **P** 04 22 51.6 +1.4
comp=Z,55nm,0.6s
Z35A Perchaven, San 33.85 327 P **P** 04 22 50.8 +0.5
baz=140
W38A Poteau 33.86 332 P **P** 04 22 50.9 +0.5
baz=146
X37A Clayton 33.87 331 P **P** 04 22 51.0 +0.5
baz=144,SNR=9.4
S44A Carbondale 34.08 341 P **P** 04 22 53.0 +0.8
baz=156,SNR=5.7
SIUC Southern Illin 34.09 341 *e*P **P** 04 22 52.7 +0.4
comp=Z,19nm,0.8s
V39A Pettigrew 34.11 334 P **P** 04 22 52.7 +0.1
baz=148,SNR=6.4
U40A Yellville 34.21 336 P **P** 04 22 53.4 0.0
baz=149,SNR=10
S43A Fulton Ridge, 34.24 340 P **P** 04 22 53.8 +0.2
baz=155
133A Hamilton Ranch 34.25 324 P **P** 04 22 52.9 -0.9
baz=137,SNR=9.6
X36A Centrahoma 34.34 330 P **P** 04 22 54.8 +0.2
baz=142,SNR=5.8
W37B Quinton 34.35 331 P **P** 04 22 54.4 -0.2
baz=144
T41A Mountain View 34.38 337 P **P** 04 22 54.6 -0.2
baz=152,SNR=8.9
V38A Canehill 34.47 333 P **P** 04 22 55.4 -0.2
baz=147,SNR=5.7
U39A Green Forest 34.50 335 P **P** 04 22 55.9 0.0
baz=148
R44A Waltonville 34.53 342 P **P** 04 22 56.9 +0.7
baz=157
O56A Blue Knob Stat 34.54 357 P **P** 04 22 58.2 +2.0
baz=176
Y34A Reagan Ranch, 34.60 327 P **P** 04 22 57.1 +0.3
baz=140
HHAR Hobbs 34.61 334 *e*P **P** 04 22 57.0 +0.1
comp=Z,5.8nm,0.8s
Z33A Whitaker Ranch 34.66 325 P **P** 04 22 57.5 +0.2
baz=138,SNR=8.4
BLO Bloomington 34.68 346 *e*P **P** 04 22 59.0 +1.6
comp=Z,18nm,0.7s
ABTX Abilene, Hawle 34.68 324 P **P** 04 22 57.7 +0.1
baz=136,SNR=9.0
ABTX Abilene, Hawle 34.68 324 *e*P **P** 04 22 57.4 -0.2
comp=Z,27nm,1.0s
OLIL Olney 34.69 343 *e*P **P** 04 22 58.5 +1.0
comp=Z,18nm,1.0s
W36A Wetumka 34.73 330 P **P** 04 22 57.1 -0.8
baz=143
T40A Mansfield 34.76 337 P **P** 04 22 58.3 +0.1
baz=150,SNR=12
V37A Hulbert 34.82 332 P **P** 04 22 58.0 -0.6
baz=145
S41A Jillco Farms, 34.85 338 P **P** 04 22 58.7 -0.2
baz=152
T39A Clever 35.00 335 P **P** 04 23 00.2 -0.1
baz=149
Y33A Hilltop Ranch, 35.11 326 P **P** 04 23 01.3 0.0
baz=139
N59A State Game Lan 35.11 0 P **P** 04 23 02.9 +1.7
baz=181
Q44A Meyer Farm, Va 35.11 342 P **P** 04 23 01.4 +0.3
baz=157
V36A Jenks 35.11 331 P **P** 04 23 01.3 +0.1
baz=144
TXAR Lajitas Array 35.12 315 P **P** 04 23 02.1 +0.7
comp=Z,1.7nm,0.6s,baz=139,slow=9.1,SNR=36
TXAR PcP **PcP** 04 25 32.7 +0.8
comp=Z,1.0nm,0.8s,baz=147,slow=5.5,SNR=6.7
TXAR LR LR 04 40 33.2
comp=Z,26nm,18.3s,baz=0.0,slow=42
TX31 Lajitas Ar. Si 35.12 315 *e*P **P** 04 23 02.5 +1.0
TX31 *e*PcP **PcP** 04 25 32.7 +0.8
X34A Smith Ranch, M 35.13 328 P **P** 04 23 01.6 +0.2
baz=140
TUL1 Leonard 35.14 332 P **P** 04 23 01.0 -0.5
baz=144,SNR=8.3
TUL1 Leonard 35.14 332 *e*P **P** 04 23 01.4 0.0
comp=Z,13nm,0.8s
S40A Lebanon 35.15 337 P **P** 04 23 00.8 -0.6
baz=151,SNR=13
U37A Salina 35.23 333 P **P** 04 23 02.0 -0.2
baz=146
HPIG 35.24 310 *e*P **P** 04 23 03.7 +1.0
comp=Z,9.3nm,0.8s
N54A Moraine State 35.33 355 P **P** 04 23 05.0 +2.0
baz=173
Q43A New Douglas 35.36 342 P **P** 04 23 03.3 +0.1
baz=156
T38A Diamond 35.40 334 P **P** 04 23 03.4 -0.2
baz=148
X33A Lawton 35.44 327 P **P** 04 23 03.8 -0.3
baz=139,SNR=6.4
U36A Oologah 35.51 332 P **P** 04 23 04.4 -0.1
baz=145
V35A Meyer Ranch, C 35.53 330 P **P** 04 23 04.5 -0.3
baz=143
S39A Bolivar 35.55 336 P **P** 04 23 04.6 -0.3
baz=150,SNR=7.5
W34A Bridge Creek, 35.59 329 P **P** 04 23 05.0 -0.3
baz=141
W34A Bridge Creek, 35.59 329 *e*P **P** 04 23 05.7 +0.4
comp=Z,52nm,1.5s
Q42A Golden Eagle 35.60 340 P **P** 04 23 04.9 -0.4
baz=155
R40A Maddies Statio 35.66 338 P **P** 04 23 05.4 -0.5
baz=152,SNR=6.2
S38A Stockton 35.74 335 P **P** 04 23 06.1 -0.4
baz=149
T37A Cheneyville 18 35.74 334 P **P** 04 23 06.1 -0.5
baz=147,SNR=6.1
WMOK Wichita Mounta 35.74 327 P **P** 04 23 05.8 -0.9
baz=139,SNR=8.3
WMOK Wichita Mounta 35.74 327 *e*P **P** 04 23 05.7 -1.0
comp=Z,5.2nm,0.8s
X32A Elmer 35.78 326 P **P** 04 23 07.3 +0.3
baz=138
M54A Oil Creek Stat 35.84 355 P **P** 04 23 09.5 +2.1
baz=174
W33A Caddo, Fort Co 35.89 328 P **P** 04 23 08.0 +0.1
baz=140
V34A Guthrie 35.92 330 P **P** 04 23 08.2 0.0
baz=142,SNR=9.5
V34A Guthrie 35.92 330 *e*P **P** 04 23 08.1 -0.1
comp=Z,22nm,0.8s
SFIN Lafayette 35.96 346 P **P** 04 23 08.4 0.0
baz=161,SNR=7.3
SFIN Lafayette 35.96 346 *e*P **P** 04 23 08.8 +0.4
comp=Z,12nm,0.5s
U35A Pawnee 35.96 331 P **P** 04 23 08.3 -0.2
baz=143,SNR=8.3
R39A Chumby, Stover 35.98 337 P **P** 04 23 08.2 -0.4
baz=150
T36A Boggs Farm, Ca 36.12 333 P **P** 04 23 09.1 -0.8
baz=145
P42A Winchester 36.15 341 P **P** 04 23 09.9 -0.1
baz=156,SNR=7.5
Q40A Laux Farm, Aux 36.21 339 P **P** 04 23 10.2 -0.4
baz=152,SNR=6.5
R38A Fenwick Farm, 36.21 336 P **P** 04 23 10.0 -0.6
baz=149,SNR=7.3
S37A Fort Scott 36.23 334 P **P** 04 23 10.3 -0.5
baz=147,SNR=5.6
W32A Sentinel 36.28 327 P **P** 04 23 11.6 +0.3
baz=139,SNR=14
T35A Sooner Cattle 36.30 332 P **P** 04 23 11.6 +0.3
baz=144,SNR=7.3
V33A Lossen Ranch, 36.31 329 P **P** 04 23 11.0 -0.4
baz=141
BINY Binghamton 36.39 0 *e*P **P** 04 23 14.6 +2.5
comp=Z,59nm,2.0s
U34A Anderson Ranch 36.41 330 P **P** 04 23 12.4 +0.1
baz=142,SNR=8.6
U34A Anderson Ranch 36.41 330 *e*P **P** 04 23 12.4 +0.1
comp=Z,26nm,0.8s
P41A Barry, Barry 36.47 340 P **P** 04 23 12.5 -0.2
baz=154,SNR=5.6
Q39A Willow Grove F 36.59 338 P **P** 04 23 13.2 -0.6
baz=151
O42A Bath 36.62 342 P **P** 04 23 13.6 -0.4
baz=156
CPUP Villa Florida 36.63 151 P **P** 04 23 10.6 -3.6
comp=Z,2.6nm,0.7s,baz=344,slow=8.7,SNR=8.9
CPUP LR LR 04 38 32.7
comp=Z,50nm,18.3s,baz=330,slow=37
P40A Paris 36.68 339 P **P** 04 23 13.8 -0.7
baz=153
U33A Lingo Farm, Me 36.69 330 P **P** 04 23 14.3 -0.4
baz=141,SNR=10
R37A Teagarden Farm 36.70 335 P **P** 04 23 14.2 -0.6
baz=148
T34A McClaskey Farm 36.70 331 P **P** 04 23 14.7 -0.1
baz=143
HDIL Hopedale 36.72 343 P **P** 04 23 14.7 -0.2
baz=158,SNR=7.1
HDIL Hopedale 36.72 343 *e*P **P** 04 23 14.9 +0.1
comp=Z,23nm,0.6s
Q38A Cooks Store, C 36.76 337 P **P** 04 23 15.1 -0.1
baz=150,SNR=6.7
O41A Passleys Farm, 36.80 341 P **P** 04 23 14.9 -0.7
baz=155
S35A Otter Creek Ra 36.83 333 P **P** 04 23 15.4 -0.5
baz=145,SNR=5.5
P39B Salisbury 36.89 338 P **P** 04 23 15.7 -0.6
baz=152
R36A Gordon, Harris 37.00 334 P **P** 04 23 16.5 -0.7
baz=147
Q37A Longview Farm, 37.02 336 P **P** 04 23 17.0 -0.4
baz=149
O40A La Belle 37.14 340 P **P** 04 23 18.3 -0.1
baz=153,SNR=5.1
S34A Willow Spring 37.21 332 P **P** 04 23 19.0 -0.1
baz=144
R35A Emporia Munici 37.30 333 P **P** 04 23 20.2 +0.4
baz=146
P38A Dawn 37.30 338 P **P** 04 23 19.8 0.0
baz=151
AMTX Amarillo 37.48 324 P **P** 04 23 21.7 +0.2
baz=135
AMTX Amarillo 37.48 324 *e*P **P** 04 23 22.0 +0.5
comp=Z,18nm,1.3s
O39A Kirksville 37.49 339 P **P** 04 23 21.2 -0.2
baz=152
MSTX Muleshoe 37.50 322 P **P** 04 23 22.1 +0.4
baz=133,SNR=16
MSTX Muleshoe 37.50 322 *e*P **P** 04 23 21.8 +0.1
comp=Z,30nm,1.1s
Q36A Arnold C. Orve 37.51 335 P **P** 04 23 21.2 -0.5
baz=147
S33A Kaszmaul Farm, 37.55 331 P **P** 04 23 21.9 -0.1
baz=143
P37A Lathrop 37.59 337 P **P** 04 23 21.7 -0.5
baz=149
Q35A Mercer Eighty, 37.67 334 P **P** 04 23 22.7 -0.3
baz=146
T32A Huddler Ranch, 37.68 330 P **P** 04 23 23.4 +0.3
baz=141
MNTX Cornudas Mount 37.72 317 P **P** 04 23 24.0 +0.5
baz=127,SNR=26
MNTX Cornudas Mount 37.72 317 *e*P **P** 04 23 24.1 +0.5
comp=Z,11nm,0.8s
R34A Isabella, Hill 37.76 332 P **P** 04 23 23.8 +0.1
baz=144
P36A Good Intent, A 37.96 336 P **P** 04 23 24.7 -0.7
baz=148,SNR=5.3
O37A Wolven Farm, M 38.01 337 P **P** 04 23 25.3 -0.5
baz=150
N39A Derby Farms, D 38.03 340 P **P** 04 23 25.5 -0.5
baz=153
R33A Olander Ranch, 38.11 332 P **P** 04 23 26.6 -0.1
baz=143
KSU1 Kansas State U 38.12 334 P **P** 04 23 26.1 -0.6
baz=146
KSU1 Kansas State U 38.12 334 *e*P **P** 04 23 25.5 -1.3
comp=Z,12nm,1.0s
Q34A Chapman 38.12 333 P **P** 04 23 26.9 +0.1
baz=145
N38A Joes South For 38.22 339 P **P** 04 23 26.9 -0.6
baz=152
P35A Duane Minner, 38.22 335 P **P** 04 23 26.8 -0.9
baz=147
O36A Bolckow 38.30 336 P **P** 04 23 27.5 -0.7
baz=149
M39A Webster 38.46 340 P **P** 04 23 28.9 -0.6
baz=154
L41A Preston 38.47 343 P **P** 04 23 28.6 -1.0
baz=157
N37A Lee Faris, Mou 38.55 338 P **P** 04 23 29.8 -0.5
baz=150
R32A Long Quarter, 38.55 331 P **P** 04 23 29.9 -0.5
baz=142
P34A Walnut Farm, R 38.59 334 P **P** 04 23 30.0 -0.6
baz=146
Q33A Connelly Farm, 38.59 332 P **P** 04 23 31.3 +0.6
baz=144,SNR=5.9
L40A Anamosa 38.68 342 P **P** 04 23 30.9 -0.4
baz=156,SNR=5.9
M38A Pleasantville 38.75 339 P **P** 04 23 31.2 -0.9
baz=152
O35A Humboldt 38.80 336 P **P** 04 23 30.9 -1.5
baz=148
K41A Shullsburg 38.90 343 P **P** 04 23 33.0 -0.3
baz=157
Q32A Meitler Ranch, 38.92 332 P **P** 04 23 33.3 -0.2
baz=143
L39A Vinton 38.98 341 P **P** 04 23 32.9 -0.9
baz=154
M37A Trindle Farm, 39.05 338 P **P** 04 23 33.6 -0.9
baz=151
SADO Sadowa 39.05 357 *e*P **P** 04 23 35.5 +1.0
comp=Z,11nm,0.8s
O34A Beatrice 39.06 335 P **P** 04 23 33.7 -0.9
baz=146
JFWS Jewell Farm 39.17 343 *e*P **P** 04 23 35.4 -0.1
comp=Z,21nm,0.6s
N35A Tabor 39.19 336 P **P** 04 23 35.0 -0.7
baz=148
K40A Colesburg 39.23 342 P **P** 04 23 35.3 -0.7
baz=156
O33A Hebron 39.35 334 P **P** 04 23 36.3 -0.8
baz=145
M36A Felix, Anita 39.37 338 P **P** 04 23 36.4 -0.8
baz=150
K39A Oelwein 39.47 342 P **P** 04 23 37.0 -0.9
baz=155
J41A Loganville 39.52 344 P **P** 04 23 38.1 -0.3
baz=158
K38A Parkersburg 39.70 341 P **P** 04 23 39.4 -0.5
baz=154
J40A Soldiers Grove 39.75 343 P **P** 04 23 39.9 -0.4
baz=157,SNR=9.3
O32A Brockman Farm, 39.81 333 P **P** 04 23 40.8 -0.1
baz=144
121A Cookes Peak, D 39.86 316 P **P** 04 23 43.5 +1.9
baz=125,SNR=16
121A Cookes Peak, D 39.86 316 *e*P **P** 04 23 43.3 +1.7
comp=Z,21nm,1.0s
J39A Decorah 39.98 342 P **P** 04 23 41.6 -0.7
baz=155,SNR=16
BNM Barren Site 40.05 319 *e*P **P** 04 23 44.6 +1.4
LPM Los Pinos Moun 40.15 319 *e*P **P** 04 23 46.2 +2.2
ANMO Albuquerque 40.43 320 P **P** 04 23 47.4 +1.0
baz=129
ANMO Albuquerque 40.43 320 *e*P **P** 04 23 47.7 +1.4
comp=Z,14nm,1.4s
LAZ Ladron 40.54 319 *e*P **P** 04 23 48.8 +1.6
K35A Storm Lake 40.63 338 P **P** 04 23 47.0 -0.6
baz=150
T25A Trinidad 40.63 324 *e*P **P** 04 23 50.2 +2.2
comp=Z,5.4nm,0.6s
I38A Scanlan Farm, 40.81 342 P **P** 04 23 48.5 -0.6
baz=155,SNR=7.5
J36A Seneca 1, Swea 40.84 340 P **P** 04 23 48.4 -0.9
baz=152
K34A Le Mars 40.92 337 P **P** 04 23 49.3 -0.7
baz=149
M31A Lambtecht Ranc 41.00 333 P **P** 04 23 50.5 -0.2
baz=144
L32A Elgin 41.12 335 P **P** 04 23 51.0 -0.7
baz=146
I37A Lemond, Waseca 41.13 341 P **P** 04 23 50.9 -0.7
baz=153

H37A **Dierke Farm, C** 41.48 342 P P 04 23 54.0 -0.6
baz=154
SDCO **Great Sand Dun** 41.68 324 P P 04 23 58.4 +1.7
baz=133,SNR=26
SDCO **Great Sand Dun** 41.68 324 *eP* P 04 23 58.2 +1.6
comp=Z,9.5nm,0.8s
TUC **Tucson** 41.85 314 P P 04 23 59.4 +1.5
baz=122
TUC **Tucson** 41.85 314 *eP* P 04 23 59.5 +1.6
comp=Z,19nm,0.8s
COWI **Conover** 41.85 346 *eP* P 04 23 57.5 -0.1
comp=Z,9.2nm,0.8s
K31A **O'Neill** 41.94 335 P P 04 23 57.7 -0.7
baz=145
I34A **Hadley** 42.00 339 P P 04 23 57.9 -0.9
baz=150
ECSD **EROS Data Cent** 42.01 338 P P 04 23 57.7 -1.2
baz=149
ECSD **EROS Data Cent** 42.01 338 *eP* P 04 23 57.1 -1.8
comp=Z,3.5nm,0.9s
SPMN **Marine on St.** 42.03 342 P P 04 23 59.6 +0.6
baz=155,SNR=5.8
SPMN **Marine on St.** 42.03 342 *eP* P 04 23 58.8 -0.2
comp=Z,10nm,0.4s
J32A **Parkston** 42.19 336 P P 04 23 59.1 -1.2
baz=147
H35A **Sunnyside Ranc** 42.21 340 P P 04 23 59.2 -1.3
baz=152
VLDQ **Val d'Or** 42.32 359 *eP* P 04 24 03.5 +2.2
comp=Z,5.8nm,0.9s
K30A **Basset** 42.35 334 P P 04 24 01.5 -0.2
baz=144,SNR=5.4
S22A **4UR Ranch, Cre** 42.47 323 P P 04 24 04.7 +1.7
baz=131,SNR=14
H34A **Spellman Lake,** 42.51 339 P P 04 24 02.0 -0.9
baz=150
W18A **Petrified Fore** 42.68 318 P P 04 24 06.6 +1.9
baz=126,SNR=6.4
W18A **Petrified Fore** 42.68 318 *eP* P 04 24 07.0 +2.3
comp=Z,23nm,0.8s
F36A **Milaca** 42.82 342 P P 04 24 04.9 -0.6
baz=154,SNR=8.4
J30A **Dallas** 42.83 335 P P 04 24 04.0 -1.6
baz=144
H32A **Carlson Farm,** 42.98 338 P P 04 24 05.7 -1.1
baz=148
MVCO **Mesa Verde** 43.14 321 P P 04 24 08.9 +0.5
baz=129
214A **Organ Pipe Nat** 43.15 312 P P 04 24 09.9 +1.5
baz=120
F35A **Swanville** 43.15 341 P P 04 24 07.3 -0.8
baz=153
ISCO **Idaho Springs** 43.16 326 P P 04 24 09.8 +1.1
baz=134,SNR=7.7
ISCO **Idaho Springs** 43.16 326 *eP* P 04 24 10.2 +1.6
comp=Z,4.2nm,0.7s
E36A **McGregor** 43.33 343 P P 04 24 09.6 0.0
baz=155,SNR=7.9
X16A **Lo Mia Camp, P** 43.44 316 *eP* P 04 24 13.1 +2.2
comp=Z,10nm,1.0s
SMCO **Snowmass** 43.50 325 *eP* P 04 24 13.2 +1.6
comp=Z,3.4nm,0.9s
G32A **Webster** 43.64 338 P P 04 24 11.2 -0.9
baz=148,SNR=5.5
D37A **Cotton** 43.68 344 P P 04 24 12.6 +0.3
baz=156,SNR=15
F33A **5 Mile Ranch,** 43.71 340 P P 04 24 11.3 -1.3
baz=150
PV01 **Paradox Valley** 43.77 322 *eP* P 04 24 14.8 +1.3
C38A **Sawbill Land.** 43.89 345 P P 04 24 13.5 -0.5
baz=158,SNR=6.3
D36A **Goodland** 43.90 343 P P 04 24 13.8 -0.4
baz=155,SNR=8.2
WUAZ **Wupatki** 44.01 317 P P 04 24 17.1 +1.7
baz=124,SNR=27
WUAZ **Wupatki** 44.01 317 *eP* P 04 24 17.3 +1.9
comp=Z,28nm,0.9s
D35A **Remer** 44.08 342 P P 04 24 14.8 -0.7
baz=154
N23A **Red Feather La** 44.10 327 P P 04 24 17.6 +1.4
baz=135,SNR=6.0
N23A **Red Feather La** 44.10 327 *eP* P 04 24 18.3 +2.1
comp=Z,9.9nm,1.1s
PHWY **Pilot Hill** 44.13 328 *eP* P 04 24 17.7 +1.3
comp=Z,6.6nm,1.0s
C37A **Embarrass** 44.13 344 P P 04 24 15.5 -0.5
baz=157
EYMN **Ely** 44.16 345 P P 04 24 16.0 -0.2
baz=158,SNR=13
EYMN **Ely** 44.16 345 *eP* P 04 24 16.0 -0.2
comp=Z,15nm,0.6s
113A **Mohawk Valley,** 44.25 312 *eP* P 04 24 18.6 +1.5
comp=Z,8.6nm,1.0s
Y14A **Wickenburg** 44.29 314 *eP* P 04 24 19.1 +1.6
comp=Z,128nm,1.7s
C36A **Pine Crest Far** 44.34 344 P P 04 24 17.8 +0.2
baz=156,SNR=7.6
F31A **Hecla** 44.44 338 P P 04 24 17.4 -1.0
baz=148
D34A **Park Rapids** 44.44 341 P P 04 24 17.4 -1.0
baz=152
C35A **Jirik Farms, M** 44.61 343 P P 04 24 19.6 -0.2
baz=154,SNR=6.0
D33A **AnnSam, Waubun** 44.69 341 P P 04 24 19.8 -0.7
baz=152
O20A **White River Ci** 44.87 325 P P 04 24 23.5 +1.3
baz=131,SNR=8.6
O20A **White River Ci** 44.87 325 *eP* P 04 24 23.5 +1.3
comp=Z,6.0nm,0.8s
U15A **North Rim** 45.13 318 *eP* P 04 24 26.4 +2.0
comp=Z,8.6nm,0.9s
B35A **Bob, Littlefor** 45.14 343 P P 04 24 23.7 -0.3
baz=155,SNR=8.1
GLA **Glamis** 45.17 312 P P 04 24 26.1 +1.6
baz=119
PDMCI **Parker Dam,Lak** 45.28 314 P P 04 24 26.6 +1.3
baz=120,SNR=5.3
Y12C **Blythe** 45.28 313 P P 04 24 26.4 +1.1
baz=120
TRQA **Tornquist** 45.42 164 *eP* P 04 24 25.9 -0.5
RSSD **Black Hills** 45.49 332 P P 04 24 28.0 +0.9
baz=139
RSSD **Black Hills** 45.49 332 *eP* P 04 24 27.4 +0.3
comp=Z,14nm,1.3s
W13A **Hualapai Mount** 45.51 315 *eP* P 04 24 29.2 +1.8
comp=Z,5.7nm,0.8s
B34A **Aery, Baudette** 45.52 343 P P 04 24 26.9 -0.1
baz=154,SNR=6.6
SRU **San Rafael Swe** 45.57 322 *eP* P 04 24 29.2 +1.4
comp=Z,12nm,0.8s
K22A **Casper** 45.65 328 P P 04 24 28.6 +0.3
baz=135
PKCU **Pink Cliffs** 45.72 319 *eP* P 04 24 31.2 +2.1
comp=Z,10nm,1.0s
AGMN **Agassiz Nation** 45.72 342 P P 04 24 28.3 -0.3
baz=152
AGMN **Agassiz Nation** 45.72 342 *eP* P 04 24 28.6 0.0
comp=Z,15nm,1.6s
KNB **Kanab** 45.81 318 *eP* P 04 24 31.9 +2.2
comp=Z,36nm,1.7s
SWSC **Sam W. Stewart** 45.84 312 P P 04 24 31.0 +1.2
baz=118
C31A **Landman Farms,** 45.90 340 P P 04 24 29.1 -0.8
baz=149
BC3 **Big Chuckawall** 45.92 313 P P 04 24 31.9 +1.3
baz=119,SNR=8.7
P17A **Butcher Ranch,** 45.92 322 *eP* P 04 24 32.1 +1.5
comp=Z,11nm,1.0s
IRM **Iron Mountain** 45.93 313 P P 04 24 32.3 +1.8
baz=119,SNR=12
IKP **In-Ko-Pah, Jac** 45.94 311 P P 04 24 31.5 +0.9
baz=117
MTPU **Mount Pierson** 45.98 320 *eP* P 04 24 32.7 +1.5
comp=Z,4.0nm,0.7s
B32A **Ashes, Strandq** 46.02 341 P P 04 24 30.9 0.0
baz=151
C30A **Mose, Pekin** 46.08 339 P P 04 24 30.7 -0.7
baz=148
LCMT **Little Creek M** 46.09 318 *eP* P 04 24 33.8 +2.0
comp=Z,8.3nm,1.1s
A33A **Warroad** 46.14 342 P P 04 24 31.6 -0.3
baz=153,SNR=5.5
MSU **Marysvale** 46.24 320 *eP* P 04 24 34.8 +1.6
MONP2 **Monument Peak** 46.28 311 P P 04 24 34.6 +1.1
baz=117
LDFC **Landfair** 46.36 314 *eP* P 04 24 36.4 +2.4
comp=Z,7.8nm,0.8s
PLCA **Paso Flores** 46.44 174 P P 04 24 33.2 -1.1
comp=Z,4.5nm,1.1s,baz=353,slow=8.6,SNR=4.3
A32A **Rocking H Ranc** 46.46 342 P P 04 24 34.1 -0.3
baz=152
CCUT **Cedar City** 46.47 318 *eP* P 04 24 35.9 +1.0
comp=Z,4.1nm,0.9s
BELC **Belle Mtn. Jos** 46.48 313 P P 04 24 36.5 +1.5
baz=118,SNR=15
MDND **Maddock** 46.61 338 P P 04 24 35.2 -0.4
baz=147
GMRC **Granite Mounta** 46.61 314 P P 04 24 37.2 +1.3
baz=119,SNR=5.8
TPFO **Pinon Flats** 46.63 312 P P 04 24 36.8 +0.7
baz=118
PFO **Pinyon Flats O** 46.64 312 P P 04 24 37.4 +1.2
baz=118
PFO **Pinyon Flats O** 46.64 312 *eP* P 04 24 38.1 +1.9
comp=Z,9.3nm,1.3s
B30A **Myrvik Farm, E** 46.66 340 P P 04 24 35.5 -0.5
baz=149
B29A **Wagenman Farm,** 47.04 339 P P 04 24 38.8 -0.1
baz=148
HEC **Hector,Ludlow** 47.12 314 P P 04 24 41.5 +1.6
baz=119,SNR=8.2
TUQ **Turquoise Moun** 47.12 314 P P 04 24 41.6 +1.6
baz=120
SHPR **Sheep Range** 47.12 316 *eP* P 04 24 41.9 +1.9
comp=Z,8.6nm,1.1s
MURC **Murrieta** 47.18 312 P P 04 24 41.6 +1.3
baz=117
CTU **Camp Tracy** 47.28 323 *eP* P 04 24 43.0 +1.8
comp=Z,14nm,0.8s
TCUT **Toone Canyon** 47.34 324 *eP* P 04 24 42.9 +1.2
comp=Z,32nm,0.7s
PD31 **Pinedale Array** 47.35 326 *eP* P 04 24 42.1 +0.4
PDAR **Pinedale Array** 47.35 326 P P 04 24 41.7 0.0
comp=Z,2.2nm,0.7s,baz=111,slow=8.1,SNR=20
PDAR PcP PcP 04 26 10.7 -0.9
comp=Z,0.7nm,0.8s,baz=134,slow=3.9,SNR=2.6
PDAR LR LR 04 48 39.2
comp=Z,18nm,18.5s,baz=124,slow=41
BW06 **Boulder Array** 47.35 326 P P 04 24 42.0 +0.3
baz=132,SNR=7.2
BW06 **Boulder Array** 47.35 326 *eP* P 04 24 42.1 +0.3
comp=Z,6.7nm,1.0s
A29A **Manning Farm,** 47.38 339 P P 04 24 41.2 -0.4
baz=148,SNR=5.1
ULM **Lac du Bonnet** 47.45 343 P P 04 24 41.0 -1.0
comp=Z,6.5nm,0.7s,baz=159,slow=7.7,SNR=7.5
SHOC **Shoshone, Teco** 47.59 315 P P 04 24 45.1 +1.7
baz=120
DUG **Dugway, Tooele** 47.63 322 P P 04 24 44.9 +1.1
baz=126,SNR=17
DUG **Dugway, Tooele** 47.63 322 *eP* P 04 24 45.1 +1.2
comp=Z,8.9nm,0.7s
GSC **Goldstone, Bar** 47.68 314 P P 04 24 45.8 +1.5
baz=119,SNR=9.3
GSC **Goldstone, Bar** 47.68 314 *eP* P 04 24 46.2 +1.9
comp=Z,6.9nm,0.9s
HWUT **Hardware Ranch** 47.74 324 *eP* P 04 24 45.2 +0.5
comp=Z,7.0nm,0.7s
BFSC **Mount Baldy Ra** 47.81 312 P P 04 24 46.6 +1.3
baz=117
TPNV **Topopah Spring** 48.10 316 P P 04 24 49.0 +1.5
baz=120,SNR=15
TPNV **Topopah Spring** 48.10 316 *eP* P 04 24 48.8 +1.2
comp=Z,7.1nm,0.8s
BGU **Big Grassy Mou** 48.20 322 *eP* P 04 24 49.1 +0.9
comp=Z,6.8nm,0.9s
FURC **Furnace Creek,** 48.29 315 P P 04 24 50.3 +1.6
baz=120,SNR=8.7
EDW2 **Edwards Air Fo** 48.35 313 P P 04 24 50.6 +1.3
baz=117,SNR=9.4
R11A **Troy Canyon, C** 48.38 318 P P 04 24 51.1 +1.4
baz=122,SNR=13
R11A **Troy Canyon, C** 48.38 318 *eP* P 04 24 51.0 +1.4
comp=Z,5.7nm,1.0s
LRMC **Laurel Mtn Rad** 48.40 314 P P 04 24 51.3 +1.4
baz=118,SNR=5.2
LAO **LASA Array** 48.44 332 *eP* P 04 24 50.2 +0.3
comp=Z,6.0nm,0.8s
REDW **Red Top Meadow** 48.46 326 *eP* P 04 24 51.0 +0.7
comp=Z,20nm,1.0s
SNOW **Snow King Moun** 48.47 326 *eP* P 04 24 51.1 +0.7
comp=Z,10nm,0.8s
LOHW **Long Hollow** 48.48 327 *eP* P 04 24 51.1 +0.7
comp=Z,9.7nm,1.0s
MPMC **Manual Prospec** 48.53 314 P P 04 24 51.8 +0.8
baz=119,SNR=6.3
TPAW **Teton Pass** 48.59 326 *eP* P 04 24 52.1 +0.7
comp=Z,6.6nm,0.9s
MOOW **Moe Ponds** 48.65 327 *eP* P 04 24 51.8 +0.1
comp=Z,8.8nm,1.1s
DAC **Darwin (Calif)** 48.71 315 *eP* P 04 24 53.7 +1.4
comp=Z,3.4nm,0.8s
RLMT **Red Lodge** 48.79 329 *eP* P 04 24 53.5 +0.7
comp=Z,6.0nm,1.0s
IMW **Indian Meadow** 48.85 327 *eP* P 04 24 54.3 +0.9
comp=Z,7.6nm,0.6s
H17A **Grant Village** 48.99 327 P P 04 24 55.0 +0.7
baz=132
ISA **Isabella, Lake** 49.05 313 P P 04 24 56.1 +1.3
baz=117
ARVC **Arvin** 49.07 313 P P 04 24 56.3 +1.5
baz=117
CWC **Cottonwood Cre** 49.13 314 P P 04 24 56.5 +1.0
baz=118
SCZ2 **Santa Cruz Isl** 49.17 311 P P 04 24 55.9 +0.3
baz=115
GCMT **Greycliff** 49.46 329 *eP* P 04 24 58.4 +0.6
VES **Vestal, Richgr** 49.58 313 P P 04 24 59.5 +0.9
baz=117
SCHQ **Schefferville** 49.60 7 P P 04 24 58.2 -0.3
comp=Z,4.9nm,0.8s,baz=187,slow=13,SNR=3.9
SCHQ LR LR 04 47 51.9
comp=Z,32nm,18.9s,baz=20,slow=38
PKM **Mcpherson Peak** 49.69 312 P P 04 24 59.3 -0.5
baz=116
RCTC **Rector, Farmer** 49.90 314 P P 04 25 01.9 +0.8
baz=117
BOZ **Bozeman (W)** 50.38 328 P P 04 25 05.3 +0.6
baz=131,SNR=13
BOZ **Bozeman (W)** 50.38 328 *eP* P 04 25 05.4 +0.6
comp=Z,9.3nm,1.1s
MCMT **McKenzie Canyo** 50.50 326 *eP* P 04 25 07.2 +1.3
BMN **Battle Mountai** 50.55 319 *eP* P 04 25 07.4 +1.2
comp=Z,5.5nm,0.8s
HLID **Hailey** 50.60 324 P P 04 25 07.5 +1.0
baz=117,SNR=12
HLID **Hailey** 50.60 324 *eP* P 04 25 07.3 +0.8
comp=Z,4.7nm,0.8s
DLMT **Dillon** 50.70 327 *eP* P 04 25 09.0 +1.8
comp=Z,6.3nm,1.0s
LRM **Limekiln Ridge** 50.92 328 *eP* P 04 25 09.6 +0.6
WAKR **Walker** 51.06 316 *eP* P 04 25 12.7 +2.5
comp=Z,9.4nm,1.0s
MFID **Camas Ranch** 51.34 323 *eP* P 04 25 13.3 +1.3
comp=Z,9.1nm,0.9s
PAHR **Pah Rah Range** 51.61 318 *eP* P 04 25 15.4 +1.3
comp=Z,4.8nm,0.9s
MSO **Missoula** 52.36 328 P P 04 25 19.8 +0.2
baz=130
MSO **Missoula** 52.36 328 *eP* P 04 25 20.4 +0.8
comp=Z,9.3nm,1.3s
WVOR **Wild Horse Val** 52.52 321 *eP* P 04 25 21.2 +0.4
comp=Z,12nm,0.9s
ORV **Oroville** 52.98 316 *eP* P 04 25 25.9 +1.8
comp=Z,12nm,1.1s
BMO **Blue Mountains** 53.04 324 *eP* P 04 25 24.0 -0.6
comp=Z,2.6nm,1.0s
FFC **Flin Flon** 53.20 342 *eP* P 04 25 24.9 -0.5
MOD **Modoc Plateau** 53.30 320 *eP* P 04 25 26.9 +0.3
comp=Z,3.7nm,0.8s
BSMT **Bassoo Peak** 53.46 328 *eP* P 04 25 28.6 +0.9
M04C **Macdoel** 54.25 319 P P 04 25 33.7 +0.2
baz=119
J05D **Fort Rock, OR** 54.59 321 P P 04 25 36.8 +0.8
baz=120,SNR=5.5
FCC **Fort Churchill** 54.78 349 *eP* P 04 25 36.6 -0.2
comp=Z,10.0nm,0.7s
NEW **Newport** 54.94 328 P P 04 25 38.2 -0.1
baz=127
I05D **Terrebonne, OR** 55.19 322 P P 04 25 40.0 -0.2
baz=121
G06A **Carlson Farm,** 55.23 323 *eP* P 04 25 42.2 +1.8
comp=Z,24nm,1.4s
I04A **Tendick Farm,** 55.59 321 P P 04 25 43.2 +0.1
baz=119
I03D **Drain, OR** 56.14 320 P P 04 25 47.4 +0.6
baz=118
B08A **Colville Reser** 56.19 327 *eP* P 04 25 47.6 +0.4
comp=Z,4.9nm,0.7s
EDM **Edmonton** 56.33 334 *eP* P 04 25 47.9 -0.3
comp=Z,12nm,1.0s
LON **Longmire** 56.72 324 *eP* P 04 25 52.0 +1.0
comp=Z,6.3nm,1.2s
YKA **Yellowknife Ar** 63.37 341 P P 04 26 35.5 -0.7
comp=Z,3.1nm,0.6s,baz=134,slow=6.6,SNR=11
PTOM **Tomar** 69.26 50 *eP* P 04 27 14.7 +0.4
comp=Z,24nm,1.4s
PVIS **Viseu** 69.84 49 *eP* P 04 27 18.2 +0.2
comp=Z,15nm,1.7s
POLO **Lamas de Olo** 70.03 48 *eP* P 04 27 19.5 +0.3
comp=Z,10nm,1.4s
PBAR **Barrancos** 70.08 52 *eP* P 04 27 19.5 +0.1
comp=Z,26nm,1.3s
TIC **Toumodi** 70.61 85 *eP* P 04 27 21.3 -1.8
LIC **Lamto** 70.63 85 *eP* P 04 27 22.5 -0.7
comp=Z,43nm,1.5s
SUMG **Summit** 70.69 11 *eP* P 04 27 22.7 -0.2
comp=Z,16nm,1.0s
SUMG *epP* *pP* 04 27 41.9 +1.2
DBIC **Dimbokro** 70.77 85 P P 04 27 23.2 -0.8
comp=Z,8.9nm,0.6s,baz=266,slow=6.5,SNR=26
KIC **Kosan Boka** 70.90 85 *eP* P 04 27 24.3 -0.6
comp=Z,20nm,0.7s
ESDC **Sonseca Array** 72.66 50 P P 04 27 34.8 -0.2
comp=Z,1.6nm,0.8s,baz=261,slow=6.0,SNR=7.8
ES19 **SONSECA Array** 72.72 50 *eP* P 04 27 35.9 +0.5
INK **Inuvik** 73.14 341 *eP* P 04 27 37.0 -0.2
comp=Z,2.5nm,0.6s
DOT **Dot Lake** 75.28 335 *eP* P 04 27 50.4 +0.6
comp=Z,19nm,0.8s
IL1 **Eielson Array** 76.78 335 *eP* P 04 27 57.5 -0.8
ILAR **Eielson Array** 76.78 335 P P 04 27 57.8 -0.5
comp=Z,1.9nm,0.8s,baz=114,slow=4.3,SNR=22
ILB **Eielson Array** 76.78 335 *eP* P 04 27 58.1 -0.1
TOA0 **Torodi Ar. Sit** 76.86 78 *eP* P 04 27 59.3 -0.4
TORD **Torodi Ar. Bea** 76.86 78 P P 04 27 59.0 -0.7
comp=Z,4.2nm,0.6s,baz=283,slow=5.7,SNR=123
TORD LR LR 05 00 06.4
comp=Z,12nm,20.8s,baz=300,slow=34
COLA **College** 77.21 335 *eP* P 04 27 59.8 -0.8
comp=Z,3.7nm,0.8s
RND **Reindeer** 77.29 334 *eP* P 04 28 01.8 +0.5
comp=Z,7.7nm,0.8s
MDM **Murphy Dome** 77.38 335 *eP* P 04 28 01.9 +0.2
comp=Z,6.9nm,1.1s
MCK **McKinley** 77.40 334 *eP* P 04 28 01.7 -0.1
comp=Z,4.1nm,0.7s
BPAW **Bear Paw Mtn.** 78.36 334 *eP* P 04 28 07.0 -0.2
comp=Z,9.7nm,0.9s
MLY **Manley** 78.44 335 *eP* P 04 28 07.6 0.0
comp=Z,3.8nm,0.8s
CAST **Castle Rocks** 78.71 334 *eP* P 04 28 08.5 -0.6
comp=Z,6.3nm,1.1s
TAM **Tamanrasset** 80.11 68 *eP* P 04 28 18.6 +0.9
comp=Z,2.0nm,0.8s
WLF **Walferdange** 80.69 41 *eP* P 04 28 20.5 +0.4
comp=Z,13nm,0.9s
NOA **NORSAR Array B** 83.78 29 P P 04 28 35.6 -0.4
comp=Z,1.4nm,1.0s,baz=269,slow=5.2,SNR=3.3
NOA LR LR 05 02 49.5
comp=Z,5.4nm,20.1s,baz=305,slow=33
KHC **Kasperske Hory** 85.55 41 *ex* x 04 29 13.3
GEA0 **GERESS Array S** 85.65 42 *eP* P 04 28 46.0 +0.2
GERES **GERESS Array B** 85.65 41 P P 04 28 46.2 +0.4
comp=Z,1.2nm,0.8s,baz=265,slow=3.3,SNR=9.4
ARCES **ARCESS Array B** 88.78 20 P P 04 29 00.6 +0.3
comp=Z,1.4nm,0.8s,baz=270,slow=2.7,SNR=5.9
SNAA **Sanae** 90.12 162 *eP* P 04 29 05.7 -0.8
FINES **FINESS Array B** 90.86 28 P P 04 29 10.4 +0.3
comp=Z,0.8nm,0.8s,baz=318,slow=11,SNR=4.5
ASAR **Alice Springs** 146.03 235 PKPbc PKPdf 04 35 46.0 -0.6
comp=Z,3.5nm,0.5s,baz=116,slow=3.5,SNR=44
WRAB **Tennant Creek** 147.19 242 *ePKPbc* PKPdf 04 35 49.6 +1.1
WRA **Warramunga Arr** 147.19 242 PKPbc PKPdf 04 35 47.9 -0.7
comp=Z,3.9nm,0.7s,baz=105,slow=2.3,SNR=23
CMAR **Chiang Mai Arr** 155.55 11 PKPab PKPab 04 36 26.9 -0.1
comp=Z,3.3nm,0.6s,baz=325,slow=5.4,SNR=11

JMA 06 04:17:15.3±0.2, 37.18N×142.36E, h15km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.20**	**279**	P	Pn	04 17 37.0	-0.6
JFK				*eS*	Sg	04 17 53.9	-0.2
ONAJ	**Iwakimizuishiy**	**1.25**	**267**	P	Pn	04 17 37.7	-0.6
ONAJ				S	Sb	04 17 54.3	-0.3
JMM	**Marumori**	**1.42**	**299**	P	Pn	04 17 40.2	-0.4
JMM				S	Sn	04 17 59.1	+0.1
JIO	**Ouri**	**1.50**	**328**	P	Pb	04 17 42.4	-0.5
JHO	**Hitachi**	**1.54**	**249**	P	Pn	04 17 42.1	-0.2
JFT	**Otama**	**1.65**	**282**	P	Pn	04 17 44.5	+0.8
JOU	**Okura**	**1.79**	**312**	*eS*	Sn	04 18 08.8	+0.6
MAT	**Matsushiro**	**3.39**	**260**	P	Pn	04 18 10.3	+2.6
MAT				*eS*	Sn	04 18 50.2	+2.5

*SOME **06** 04:28:22.6, 44.70N×82.15E, h20km*
*ISCJB **06** 04:28:23.3±1.5, 44.63N±0.07×82.2E±0.1, h10km, Error ellipse: s-maj=15.7km s-min=5.9km az=32.7*
ISC 06 04:28:23.2±1.7, 44.72N±0.06×82.14E±0.09, h10km, n7, σ1§13/14, 1C-2D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**1.72**	**258**	*eP*	**Pb**	**04 28 54.0**	**-1.0**
	2.7nm,0.1s						
DJR				*eS*	**Sb**	**04 29 16.8**	**+0.2**
	3.4nm,0.1s						
KAPS	**Kapalarasan**	**2.05**	**287**	*eP*	**Pb**	**04 28 59.1**	**-1.5**
	0.8nm,0.3s						
KAPS				*eS*	**Sb**	**04 29 25.8**	**-0.4**
	1.9nm,0.6s						
MK31	**Makanchi Array**	**2.08**	**3**	⇑Pn	**Pb**	**04 29 00.2**	**-0.9**
	2.2nm,0.3s,baz=192,slow=14,SNR=19						
MK31				Sn	**Sb**	**04 29 26.7**	**-0.3**
	1.6nm,0.5s,baz=186,slow=27,SNR=7.2						
MAKZ	**Makanchi**	**2.10**	**357**	⇓Pn	**Pn**	**04 28 59.5**	**+1.1**
	1.9nm,0.5s						
MAKZ				⇓Sn	**Sb**	**04 29 27.8**	**+0.4**
	2.1nm,0.5s						
SHLS	**Shalkode**	**2.25**	**227**	*eP*	**Pb**	**04 29 03.3**	**-0.8**
	2.9nm,0.2s						
SHLS				*eS*	**Sb**	**04 29 32.8**	**+0.8**
	7.1nm,0.2s						
UZB	**Uzynbulak**	**2.74**	**236**	*eP*	**Pb**	**04 29 10.8**	**-1.6**
	0.7nm,0.1s						
UZB				*eS*	**Sb**	**04 29 46.0**	**-0.1**
	1.8nm,0.2s						
ARXS	**Arharly**	**3.12**	**262**	*eP*	**Pb**	**04 29 18.5**	**-0.4**
	0.9nm,0.4s						
ARXS				*eS*	**Sb**	**04 29 59.2**	**+2.1**
	3.6nm,0.4s						

*CSEM **06** 04:28:34.6, 41.20N×43.85E, h0km, ML1.8*
TIF 06 04:28:34.6, 41.20N×43.85E, h18km, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BGD	**Bogdanovka**	**0.20**	**290**	P	Pg	04 28 39.3	-0.4
BGD				S	Sg	04 28 42.5	-0.6
BGD	**Bogdanovka**	**0.20**	**290**	P	Pg	04 28 39.3	-0.3
BGD				S	Sg	04 28 42.5	-0.6
AKH	**Akhalkalaki**	**0.34**	**309**	P	Pg	04 28 41.7	-0.2
AKH				S	Sg	04 28 46.9	+0.1
AKH	**Akhalkalaki**	**0.34**	**309**	P	Pg	04 28 41.7	-0.2
AKH				S	Sg	04 28 46.9	+0.1
TBLG	**Delisi**	**0.86**	**51**	P	Pg	04 28 51.5	+0.2
TBLG				S	Sn	04 29 04.1	+0.1
TBLG	**Delisi**	**0.86**	**51**	P	Pg	04 28 51.5	+0.2
TBLG				S	Sn	04 29 04.1	+0.2

*IDC **06** 04:30:06.9±1.4, 15.12N×120.42E, h0km, mb3.7/4, mb1 3.8/4, mb1mx3.4/39, mbtmp3.7/4, Error ellipse: s-maj=66.1km s-min=14.8km az=59.0*
*ISCJB **06** 04:30:10.2±1.0, 13.77N±0.07×120.31E±0.08, h70km, mb3.6/4, Error ellipse: s-maj=11.3km s-min=9.6km*

az=21.9

MAN ***06*** *04:30:11, 13.65N×120.61E, h87km, mb3.7, ML2.4, MS2.0*
ISC 06 04:30:10.6±1.1, 13.71N±0.06×120.32E±0.09, h70km, n11, σ2§30/12, mb3.7/4, 3C, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.65**	**109⇑**	*eP*	**Pn**	**04 30 25.0**	**+0.1**
PGP				*i* S	**Sn**	**04 30 37.4**	**+1.8**
TGY	**Tagaytay City**	**0.71**	**57**	Pg	Pn	04 30 27.8	+2.1
	256nm,0.3s,baz=292,slow=6.7,SNR=15						
TGY				Lg	Lg	04 30 40.8	
	443nm,0.3s,baz=316,slow=18,SNR=15						
TGY	**Tagaytay City**	**0.71**	**57⇑**	*eP*	**Pn**	**04 30 27.4**	**+1.7**
TGY				*i* S	**Sn**	**04 30 41.3**	**+4.4**
LQP	**Lukban**	**1.25**	**71⇑**	*eP*	**Pn**	**04 30 31.9**	**-0.6**
SJMP	**San Jose**	**1.47**	**148**	*eP*	**Pn**	**04 30 35.1**	**0.0**
SJMP				*eS*	**Sn**	**04 30 53.4**	**-0.2**
BOAC	**Boac**	**1.50**	**99**	*eP*	**Pn**	**04 30 34.0**	**-1.6**
BUSP	**Coron**	**1.70**	**184**	*eP*	**Pn**	**04 30 39.6**	**+1.4**
BUSP				*eS*	**Sn**	**04 31 01.6**	**+2.5**
CMAR	**Chiang Mai Arr**	**21.07**	**286**	P	**P**	**04 34 49.9**	**+0.7**
	1.4nm,0.6s,baz=92,slow=7.5,SNR=9.1						
ASAR	**Alice Springs**	**39.45**	**160**	P	P	04 37 51.2	+17
	0.3nm,0.8s,baz=338,slow=7.7,SNR=3.4						
MKAR	**Makanchi Array**	**45.80**	**324**	P	**P**	**04 38 22.2**	**-3.2**
	0.8nm,0.5s,baz=132,slow=8.5,SNR=8.2						
ZALV	**Zalesovo Beam**	**48.88**	**333**	P	P	04 38 44.3	-4.8
	0.8nm,0.3s,baz=148,slow=9.1,SNR=2.9						

JMA 06 04:33:01.2±0.2, 39.13N×144.31E, h0km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.98**	**284**	P	Pn	04 33 36.7	+0.7
MIYJ				S	Sb	04 34 02.6	-0.8
OFUJ	**Ofunato**	**2.06**	**269**	P	Pn	04 33 37.8	+0.8
OFUJ				S	Sn	04 34 04.3	+1.0
JTH	**Tanohata**	**2.06**	**294**	S	Sn	04 34 04.0	+0.6
JOM	**Ohasama**	**2.37**	**279**	P	Pn	04 33 42.5	+1.2
JOM				S	Sn	04 34 12.4	+1.4
JMK	**Ichinoseki**	**2.41**	**267**	P	Pn	04 33 43.1	+1.2
JMK				S	Sb	04 34 14.3	-1.5
JANG	**Nango**	**2.49**	**301**	P	Pn	04 33 44.4	+1.5

NIED ***06*** *04:40:00, 37.20N×142.30E, h20km, Mw3.7 Best double couple: M0 3.82000×10^14 NP1:φs=291.00000°, δ19.00000°, λ-143.00000°. NP2:φs=166.00000°, δ79.00000°, λ-74.00000°.*
ISCJB ***06*** *04:40:44.8±0.9, 37.26N±0.06×142.40E±0.07, h9km, mb3.6/2, MS3.2/1, Error ellipse: s-maj=8.6km s-min=8.4km az=40.1*
IDC ***06*** *04:40:45.2±1.6, 37.08N×142.52E, h0km, mb3.5/2, mb1 3.8/4, mb1mx3.5/33, mbtmp3.7/4, ML3.6/2, MS2.9/3, Ms1 2.9/3, ms1mx2.5/29, Error ellipse: s-maj=41.6km s-min=25.3km az=136.0*
JMA ***06*** *04:40:46.1±0.2, 37.23N×142.32E, h17km±3km, M4.0*
ISC 06 04:40:45.7±1.2, 37.22N±0.05×142.38E±0.09, h9km, n23, σ1§86/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.21**	**277**	P	**Pn**	**04 41 07.1**	**-1.7**
ONAJ	**Iwakimizuishiy**	**1.27**	**265**	P	**Pn**	**04 41 08.2**	**-1.5**
JMM	**Marumori**	**1.42**	**297**	P	**Pn**	**04 41 10.3**	**-1.3**
JIO	**Ouri**	**1.48**	**327**	P	**Pn**	**04 41 11.6**	**-0.9**
JHO	**Hitachi**	**1.58**	**248**	P	**Pn**	**04 41 12.5**	**-1.3**
JFT	**Otama**	**1.66**	**281**	P	**Pn**	**04 41 14.6**	**-0.3**
JOU	**Okura**	**1.78**	**311**	P	**Pn**	**04 41 16.5**	**-0.1**
JOU				S	**Sn**	**04 41 37.1**	**-2.2**
JMK	**Ichinoseki**	**1.96**	**332**	P	**Pn**	**04 41 19.3**	**+0.3**
JYS	**Shirataka**	**2.09**	**299**	P	**Pn**	**04 41 21.2**	**+0.3**
JYS				*eS*	**Sn**	**04 41 46.0**	**-1.1**
JFY	**Yanaizu**	**2.14**	**276**	*eS*	**Sn**	**04 41 46.7**	**-1.7**
MJAR	**Matsushiro Arr**	**3.41**	**260**	Pn	**Pn**	**04 41 40.7**	**+1.6**
	6.8nm,0.3s,baz=81,slow=14,SNR=22						
MJAR				Sn	**Sn**	**04 42 22.7**	**+3.0**
	3.9nm,0.3s,baz=68,slow=23,SNR=4.1						
MAT	**Matsushiro**	**3.42**	**260**	P	**Pn**	**04 41 41.0**	**+1.9**
MAT				*eS*	**Sn**	**04 42 22.3**	**+2.5**
JHJ	**Hachijo jima 2**	**4.61**	**208**	Pn	**Pn**	**04 41 56.3**	**+0.7**
	7.8nm,0.3s,baz=78,slow=20,SNR=6.4						
JHJ				Sn	**Sn**	**04 42 45.2**	**-4.1**
	15nm,0.3s,baz=127,slow=23,SNR=5.9						
JHJ				LR	LR	04 43 57.3	
	comp=Z,112nm,18.6s,baz=86,slow=42						
KSRS	**Korea Array**	**11.52**	**276**	LR	LR	04 47 36.9	
	comp=Z,34nm,21.2s,baz=68,slow=35						
H11N2	**WAKE ISLAND Hy**	**27.59**	**122**	T	T	05 15 48.8	
	baz=314,slow=75,SNR=34						
H11N1	**WAKE ISLAND Hy**	**27.59**	**122**	T	T	05 15 47.5	
	baz=314,slow=75,SNR=34						
H11N3	**WAKE ISLAND Hy**	**27.60**	**122**	T	T	05 15 50.9	
	baz=314,slow=75,SNR=27						
H11S1	**WAKE ISLAND Hy**	**28.32**	**125**	T	T	05 16 39.1	
	baz=316,slow=76,SNR=20						
H11S3	**WAKE ISLAND Hy**	**28.32**	**125**	T	T	05 16 23.0	
	baz=316,slow=76,SNR=18						
H11S2	**WAKE ISLAND Hy**	**28.34**	**125**	T	T	05 16 36.3	
	baz=316,slow=76,SNR=18						
ILAR	**Eielson Array**	**48.92**	**32**	P	**P**	**04 49 33.0**	**+1.4**
	0.3nm,0.7s,baz=275,slow=6.6,SNR=5.3						
WRA	**Warramunga Arr**	**57.36**	**189**	P	**P**	**04 50 33.9**	**-0.3**
	0.8nm,1.0s,baz=6.8,slow=7.2,SNR=5.0						
AKTO	**Aktyubinsk**	**59.12**	**312**	LR	LR	05 16 59.7	
	comp=Z,17nm,18.4s,baz=23,slow=37						

DDA ***06*** *04:54:32.4, 38.08N×25.82E, h16km, Md3.0, Suspected Mining explosion.*
ISCJB ***06*** *04:54:33.1±0.3, 38.04N±0.02×25.84E±0.03, h0km, Error ellipse: s-maj=3.7km s-min=2.8km az=150.6*
ATH ***06*** *04:54:33.7, 38.07N×25.88E, h26km±1km, ML2.3/6, Error ellipse: s-maj=2.1km s-min=0.8km az=94.0*
CSEM ***06*** *04:54:33.5±0.2, 38.06N×25.84E, h1km, ML2.3, Error ellipse: s-maj=4.2km s-min=3.4km az=142.0, Suspected Mining explosion.*
ISC 06 04:54:32.6±0.8, 38.07N±0.02×25.80E±0.03, h0km, n35, σ0§64/56, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOS	**Chios island**	**0.38**	**32**	P	**Pg**	**04 54 40.5**	**+0.6**
CHOS				S	**Sb**	**04 54 48.0**	**-0.7**
CHOS	**Chios island**	**0.38**	**32**	P	**Pg**	**04 54 40.5**	**+0.6**
CHOS				S	**Sb**	**04 54 48.0**	**-0.7**
CHOS				AML	AML	04 54 49.3	
	comp=E,1594μm,0.6s						
CHOS				AML	AML	04 54 51.9	
	comp=N,991μm,0.4s						
ZEY	**˜zmir**	**0.58**	**72**	*i* P	**Pg**	**04 54 43.6**	**-0.1**
ZEY				*i* S	**Sg**	**04 54 51.8**	**+0.5**
URLA	**Izmir**	**0.69**	**65**	*i* P	**Pg**	**04 54 45.8**	**-0.1**
URLA				*i* S	**Sg**	**04 54 55.8**	**+0.9**
URLA	**Izmir**	**0.69**	**65**	P	**Pg**	**04 54 45.8**	**-0.1**
URLA				S	**Sg**	**04 54 55.8**	**+0.9**
DGB	**˜zmir**	**0.85**	**91**	*i* P	**Pg**	**04 54 48.2**	**-0.7**
DGB				*i* S	**Sg**	**04 55 01.3**	**+1.3**
SMG	**Samos**	**0.89**	**113**	P	**Pg**	**04 54 49.7**	**0.0**
SMG				S	**Sg**	**04 55 02.6**	**+1.3**
SMG	**Samos**	**0.89**	**113**	P	**Pg**	**04 54 49.7**	**0.0**
SMG				S	**Sg**	**04 55 02.6**	**+1.3**
SMG				AML	AML	04 55 04.2	
	comp=N,281μm,0.4s						
SMG				AML	AML	04 55 05.1	
	comp=E,147μm,0.4s						
APE	**Apeiranthos**	**1.02**	**192**	P	**Pb**	**04 54 53.1**	**0.0**
APE				S	**Sn**	**04 55 09.1**	**-0.1**
APE	**Apeiranthos**	**1.02**	**192**	P	**Pb**	**04 54 53.1**	**0.0**
APE				S	**Sn**	**04 55 09.1**	**-0.1**
APE				AML	AML	04 55 10.2	
	comp=N,221μm,0.2s						
APE				AML	AML	04 55 11.0	
	comp=E,171μm,0.6s						
SIGR	**SIGRI**	**1.15**	**2**	P	**Pn**	**04 54 55.8**	**-0.1**
SIGR				S	**Sn**	**04 55 12.4**	**+0.1**
SIGR	**SIGRI**	**1.15**	**2**	P	**Pn**	**04 54 55.8**	**-0.1**
SIGR				S	**Sn**	**04 55 12.4**	**+0.1**
SIGR				AML	AML	04 55 14.4	
	comp=N,236μm,0.7s						
SIGR				AML	AML	04 55 14.8	
	comp=E,231μm,0.4s						
GCAM	**G?zelcaml?**	**1.19**	**107**	*i* P	**Pg**	**04 54 55.3**	**-0.1**
GCAM				*i* S	**Sg**	**04 55 10.7**	**-0.2**
GCAM	**G?zelcaml?**	**1.19**	**107**	P	**Pg**	**04 54 55.3**	**-0.1**
GCAM				S	**Sg**	**04 55 10.7**	**-0.2**
PRK	**Paraskevi**	**1.23**	**17**	P	**Pg**	**04 54 56.3**	**0.0**
PRK				S	**Sb**	**04 55 13.5**	**+0.2**
PRK	**Paraskevi**	**1.23**	**17**	P	**Pg**	**04 54 56.3**	**0.0**
PRK				S	**Sb**	**04 55 13.5**	**+0.2**
PRK				AML	AML	04 55 17.1	
	comp=E,223μm,0.7s						
PRK				AML	AML	04 55 19.2	
	comp=N,210μm,0.7s						
SERI	**Serifos**	**1.38**	**230**	P	**Pb**	**04 55 00.2**	**+0.9**
SERI				S	**Sn**	**04 55 19.0**	**+0.8**
SERI	**Serifos**	**1.38**	**230**	P	**Pb**	**04 55 00.1**	**+0.9**
SERI				S	**Sn**	**04 55 19.0**	**+0.8**
EREA	**Eretria**	**1.51**	**284**	P	**Pb**	**04 55 02.0**	**+0.4**
EREA	**Eretria**	**1.51**	**284**	P	**Pb**	**04 55 02.0**	**+0.4**
ATHU	**Athens Univers**	**1.59**	**267**	P	**Pg**	**04 55 02.8**	**-0.4**
ATHU	**Athens Univers**	**1.59**	**267**	P	**Pg**	**04 55 02.8**	**-0.4**
VLY	**Voula,Athens**	**1.60**	**263**	P	**Pn**	**04 55 01.8**	**-0.4**
VLY	**Voula,Athens**	**1.60**	**263**	P	**Pn**	**04 55 01.8**	**-0.4**
MHLO	**Agia Marina, M**	**1.77**	**219**	P	**Pb**	**04 55 05.4**	**-0.5**
MHLO				S	**Sn**	**04 55 27.3**	**-0.3**
MHLO	**Agia Marina, M**	**1.77**	**219**	P	**Pb**	**04 55 05.4**	**-0.5**
MHLO				S	**Sn**	**04 55 27.3**	**-0.3**
MHLO				AML	AML	04 55 32.9	
	comp=E,379μm,0.5s						
MHLO				AML	AML	04 55 35.4	
	comp=N,273μm,0.5s						
BOZC	**Bozcaada**	**1.78**	**6**	*i* P	**Pn**	**04 55 03.2**	**-1.5**
BOZC				*i* S	**Sg**	**04 55 31.4**	**+1.4**
AOS	**Alonnisos**	**1.86**	**307**	P	**Pb**	**04 55 06.9**	**-0.7**
AOS	**Alonnisos**	**1.86**	**307**	P	**Pb**	**04 55 06.9**	**-0.7**
VILL	**Villia**	**1.96**	**274**	P	**Pb**	**04 55 08.3**	**-0.9**
VIL2	**Platees**	**2.00**	**275**	P	**Pn**	**04 55 08.4**	**+0.7**
DID	**Didima**	**2.11**	**255**	P	**Pb**	**04 55 11.5**	**-0.2**
DID	**Didima**	**2.11**	**255**	P	**Pb**	**04 55 11.5**	**-0.2**
SKIA	**Skiathos**	**2.13**	**302**	P	**Pb**	**04 55 11.4**	**-0.7**
SKIA	**Skiathos**	**2.13**	**302**	P	**Pb**	**04 55 11.4**	**-0.7**

NIED ***06*** *05:04:00, 38.00N×142.30E, h32km, Mw4.3 Best double couple: M0 2.98000×10^15 NP1:φs=201.00000°, δ29.00000°, λ-47.00000°. NP2:φs=334.00000°, δ70.00000°, λ-110.00000°.*
ISCJB ***06*** *05:04:40.1±0.9, 37.95N±0.04×142.33E±0.07, h43km±7km, mb4.2/17, MS3.4/6, Error ellipse: s-maj=9.6km s-min=5.6km az=17.1*
JMA ***06*** *05:04:40.5±0.1, 37.98N×142.26E, h39km±2km, M4.3*
JMA Felt I J1.
IDC ***06*** *05:04:41.9±1.0, 37.92N×142.36E, h45km±7km, mb3.8/12, mb1 4.1/17, mb1mx3.8/47, mbtmp4.1/17, ML3.9/4, MS3.4/12, Ms1 3.4/12, ms1mx3.2/38, Error ellipse: s-maj=23.0km s-min=13.7km az=84.0*
NEIC ***06*** *05:04:42.8±1.1, 37.94N×142.30E, h49km±9km, mb4.3/2, Error ellipse: s-maj=12.5km s-min=8.8km az=115.0*
NEIC Recorded [1 JMA] in Fukushima and Miyagi.
ISC 06 05:04:42.0±0.9, 37.96N±0.05×142.31E±0.07, h41km±8km, n53, σ1§45/56, mb4.2/17, MS3.4/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.91**	**304**	P	**Pn**	**05 04 56.4**	**-1.9**
JIO				S	**Sn**	**05 05 07.4**	**-2.8**
JMM	**Marumori**	**1.20**	**266**	P	**Pn**	**05 05 00.7**	**-1.6**
JMM				*eS*	**Sn**	**05 05 15.3**	**-2.1**
JFK	**Kawauchi**	**1.28**	**243**	P	**Pn**	**05 05 01.6**	**-1.9**
JFK				*eS*	**Sn**	**05 05 17.5**	**-2.0**
JMK	**Ichinoseki**	**1.31**	**320**	P	**Pn**	**05 05 02.5**	**-1.3**
JMK				*eS*	**Sn**	**05 05 18.1**	**-2.0**
JOU	**Okura**	**1.36**	**288**	P	**Pn**	**05 05 03.3**	**-1.2**
JOU				*eS*	**Sn**	**05 05 21.0**	**-0.4**
JFT	**Otama**	**1.62**	**255**	P	**Pn**	**05 05 07.5**	**-0.6**
JFT				*eS*	**Sn**	**05 05 27.9**	**0.0**
JOM	**Ohasama**	**1.71**	**333**	P	**Pn**	**05 05 08.3**	**-1.0**
JYK	**Kaneyama**	**1.81**	**303**	P	**Pn**	**05 05 09.6**	**-1.1**
JYK				*eS*	**Sn**	**05 05 31.7**	**-0.7**
JRG	**Rokugo**	**1.95**	**318**	P	**Pn**	**05 05 12.3**	**-0.3**
JNS	**Sasagawa**	**2.37**	**268**	P	**Pn**	**05 05 19.1**	**+0.7**
JAW	**Awa shima**	**2.46**	**283**	P	**Pn**	**05 05 19.3**	**-0.3**
JANG	**Nango**	**2.49**	**346**	P	**Pn**	**05 05 19.8**	**-0.3**
JANG				*eS*	**Sn**	**05 05 48.4**	**-0.8**
MJAR	**Matsushiro Arr**	**3.56**	**248**	P	**Pn**	**05 05 34.7**	**-0.1**
	5.0nm,0.3s,baz=70,slow=12,SNR=46						
MJAR				S	**Sn**	**05 06 16.1**	**+0.4**
	4.6nm,0.3s,baz=92,slow=17,SNR=4.5						
MJAR				LR	LR	05 07 10.3	
	comp=Z,1μm,19.4s,baz=70,slow=42						
MAJO	**Matsushiro**	**3.56**	**248**	*eP*	**Pn**	**05 05 35.8**	**+0.9**
MAT	**Matsushiro**	**3.56**	**248**	P	**Pn**	**05 05 35.9**	**+1.1**
MAT				*eS*	**Sn**	**05 06 20.4**	**+4.7**
JHJ2	**Mitsune**	**5.24**	**204**	*ePn*	**Pn**	**05 05 57.3**	**-0.5**
JHJ	**Hachijo jima 2**	**5.25**	**204**	P	**Pn**	**05 05 56.7**	**-1.2**
	67nm,0.3s,baz=83,slow=14,SNR=20						
JHJ				S	**Sn**	**05 06 53.5**	**-3.6**
	40nm,0.3s,baz=73,slow=19,SNR=6.2						
JHJ				LR	LR	05 08 02.5	
	comp=Z,383nm,21.8s,baz=109,slow=38						
ASAJ	**Asahikawa**	**6.16**	**2**	P	**Pn**	**05 06 10.3**	**-0.1**
	2.3nm,0.3s,baz=207,slow=9.0,SNR=4.8						
USRK	**Ussuriysk Ar.**	**9.98**	**312**	P	**Pn**	**05 07 03.7**	**+1.0**
	0.6nm,0.3s,baz=137,slow=14,SNR=11						
USRK				LR	LR	05 10 45.8	
	comp=Z,171nm,19.0s,baz=116,slow=36						
JNU	**Nakatsue**	**10.49**	**246**	P	**Pn**	**05 07 10.7**	**+0.9**
	0.4nm,0.3s,baz=52,slow=12,SNR=3.8						
JNU				LR	LR	05 11 32.1	
	comp=Z,453nm,19.5s,baz=116,slow=39						
KSRS	**Korea Array**	**11.41**	**272**	P	**Pn**	**05 07 25.4**	**+3.1**
	0.3nm,0.3s,baz=86,slow=14,SNR=30						
KSRS				LR	LR	05 11 43.3	
	comp=Z,204nm,18.1s,baz=61,slow=37						
KSAR	**Wonju Array Be**	**11.44**	**272**	P	**Pn**	**05 07 25.4**	**+2.7**
PETK	**Petropavlovsk-**	**18.53**	**30**	LR	LR	05 15 44.4	
	comp=Z,77nm,21.9s,baz=215,slow=36						
SONM	**Songino Array**	**27.88**	**302**	P	**P**	**05 10 28.2**	**+0.3**
	2.4nm,0.8s,baz=95,slow=10,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**28.03**	**123**	T	T	05 39 55.3	
	baz=315						
H11N1	**WAKE ISLAND Hy**	**28.04**	**124**	T	T	05 39 44.3	
	baz=315						
H11N3	**WAKE ISLAND Hy**	**28.05**	**123**	T	T	05 39 56.6	
	baz=315						
ENH	**Enshi**	**28.13**	**264**	*eP*	**P**	**05 10 29.8**	**-0.4**
	34nm,1.0s						
H11S1	**WAKE ISLAND Hy**	**28.79**	**126**	T	T	05 40 57.2	
	baz=318,slow=74,SNR=94						
H11S3	**WAKE ISLAND Hy**	**28.79**	**126**	T	T	05 40 59.4	
	baz=318,SNR=99						
H11S2	**WAKE ISLAND Hy**	**28.80**	**126**	T	T	05 40 53.4	
	baz=318,slow=74,SNR=80						
DAV	**Davao City (W)**	**34.29**	**210**	LR	LR	05 24 01.7	
	comp=Z,28nm,20.2s,baz=1.0,slow=34						
ZALV	**Zalesovo Beam**	**41.83**	**312**	P	**P**	**05 12 27.0**	**-0.6**
	3.2nm,0.7s,baz=90,slow=7.4,SNR=13						
ZALV				pP	**pP**	**05 12 40.3**	**+1.2**
	3.2nm,0.8s,baz=87,slow=6.1,SNR=5.3						
ZALV				PcP	**PcP**	**05 14 22.6**	**-0.2**
	1.1nm,0.7s,baz=108,slow=4.7,SNR=3.8						
CMAR	**Chiang Mai Arr**	**42.42**	**255**	P	**P**	**05 12 33.2**	**+0.4**
	1.3nm,0.3s,baz=41,slow=5.8,SNR=5.6						
NRIK	**Noril'sk**	**42.73**	**335**	LR	LR	05 31 18.2	
	comp=Z,62nm,19.3s,baz=98,slow=37						
MKAR	**Makanchi Array**	**44.24**	**301**	P	**P**	**05 12 46.8**	**-0.4**
	1.4nm,0.7s,baz=88,slow=9.8,SNR=10						
MKAR				pP	**pP**	**05 12 59.5**	**+0.7**
	1.2nm,0.6s,baz=88,slow=11,SNR=4.5						
KURK	**Kurchatov**	**45.93**	**308**	*eP*	**P**	**05 12 60.0**	**-0.5**
	55nm,0.8s						
KAPI	**Kappang**	**47.62**	**211**	LR	LR	05 32 47.2	
	comp=Z,29nm,18.6s,baz=21,slow=35						
SML	**Sawmill**	**47.83**	**37**	P	**P**	**05 13 16.5**	**+1.2**
ILAR	**Eielson Array**	**48.34**	**33**	P	**P**	**05 13 19.2**	**+0.1**
	0.5nm,0.9s,baz=272,slow=8.2,SNR=5.5						
TKM2	**Tokmak 2**	**49.82**	**298**	*eP*	**P**	**05 13 31.6**	**+0.6**
	1.9nm,0.6s						
AAK	**Ala-Archa**	**50.69**	**298**	LR	LR	05 34 57.0	
	comp=Z,43nm,20.2s,baz=52,slow=36						
ABKAR	**Akbulak array**	**57.89**	**310**	*eP*	**P**	**05 14 28.9**	**-0.6**
	1.6nm,0.7s						
WRA	**Warramunga Arr**	**58.08**	**189**	P	**P**	**05 14 29.9**	**-1.1**
	6.1nm,0.9s,baz=6.1,slow=7.2,SNR=24						
AKTO	**Aktyubinsk**	**58.59**	**312**	P	**P**	**05 14 33.8**	**-0.7**
	2.0nm,0.9s,baz=76,slow=12,SNR=5.1						
ASAR	**Alice Springs**	**61.80**	**189**	P	**P**	**05 14 56.3**	**-0.3**
	1.4nm,0.8s,baz=10,slow=6.8,SNR=11						
ASAR				pP	**pP**	**05 15 08.2**	**-0.5**
	1.1nm,0.7s,baz=12,slow=6.2,SNR=5.1						
ARCES	**ARCESS Array B**	**63.39**	**339**	LR	LR	05 44 58.6	
	comp=Z,28nm,20.0s,baz=76,slow=38						
FINES	**FINESS Array B**	**68.33**	**332**	P	**P**	**05 15 38.4**	**-0.2**
	2.3nm,0.8s,baz=131,slow=7.8,SNR=5.0						
KBZ	**Khabaz**	**70.84**	**311**	P	**P**	**05 15 53.4**	**-1.0**
	1.7nm,0.8s,baz=14,slow=8.3,SNR=3.7						
NB2	**NORSAR Subarra**	**73.61**	**338**	P	**P**	**05 16 10.7**	**0.0**
	comp=Z,1.3nm,0.8s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**73.61**	**338**	P	**P**	**05 16 10.7**	**0.0**
	comp=Z,1.3nm,0.9s,baz=39,slow=5.9,SNR=4.1						
AKASG	**Malin Array Be**	**74.00**	**323**	P	**P**	**05 16 12.5**	**-0.6**
	comp=Z,1.5nm,0.8s,baz=50,slow=7.4,SNR=5.3						
AKASG				LR	LR	05 50 09.7	
	comp=Z,30nm,19.0s,baz=295,slow=37						
TXAR	**Lajitas Array**	**89.00**	**53**	P	**P**	**05 17 35.0**	**+2.2**
	comp=Z,0.1nm,0.6s,baz=297,slow=4.0,SNR=2.5						

MEX 06 05:18:29.6±0.8, 18.01N×100.16W, h60km±6km, MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARIG	**Puente Sto Nin**	**0.32**	**326**	*eP*	Pn	05 18 38.6	-1.3
ARIG				*i* S	Sn	05 18 45.8	-1.6
MEIG	**Mezcala**	**0.52**	**100**	*i* P	Pn	05 18 40.3	-1.6
MEIG				*i* S	Sn	05 18 48.7	-2.1
CAIG	**El Cayaco**	**0.97**	**186**	*eP*	Pn	05 18 45.7	-1.6
CAIG				*eS*	Sn	05 18 58.5	-1.7
ZIIG	**Zihuatanejo**	**1.31**	**252**	*eP*	Pn	05 18 49.8	-1.9
ZIIG				*eS*	Sn	05 19 05.8	-2.5
YAIG	**Yautepec**	**1.34**	**51**	*i* P	Pn	05 18 51.0	-1.3
YAIG				*eS*	Sn	05 19 06.9	-2.3
TLIG	**Tlapa**	**1.58**	**106**	*eP*	Pn	05 18 54.4	-1.1
TLIG				*i* S	Sn	05 19 13.4	-1.7
MOIG	**Morelia**	**1.92**	**330**	*i* P	Pn	05 18 59.0	-1.3
MOIG				*i* S	Sn	05 19 20.9	-2.5

NIED ***06*** *05:22:00, 24.20N×121.70E, h8km, Mw4.6 Best double couple: M0 7.95000×10^15 NP1:φs=261.00000°, δ23.00000°, λ110.00000°. NP2:φs=59.00000°, δ69.00000°, λ82.00000°.*
BJI ***06*** *05:22:56.3, 24.22N×121.88E, h8km, mb4.4/15, mB4.5/6, ML3.9/5, Ms4.1/11, Ms7 4.1/10*
JMA ***06*** *05:22:57.6±0.1, 24.20N×121.75E, h18km±2km, M3.9*
TAP ***06*** *05:22:58.0, 24.24N×121.78E, h16km, ML4.5, B*
ISCJB ***06*** *05:22:58.7±0.3, 24.25N±0.01×121.83E±0.02, h18km±3km, mb3.9/19, MS3.8/13, Error ellipse: s-maj=3.2km s-min=2.0km az=36.3*
IDC ***06*** *05:23:07.3±3.6, 24.28N×121.90E, h108km±34km, mb3.7/18, mb1 3.8/20, mb1mx3.7/35, mbtmp4.0/20, MS3.6/15, Ms1 3.6/15, ms1mx3.3/43, Error ellipse: s-maj=19.4km s-min=15.2km az=74.0*
ISC 06 05:22:57.8±0.8, 24.23N±0.02×121.83E±0.02, h18km±3km, n109, σ1§10/144, mb4.0/19, MS3.7/13, 15C-10D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.12**	**315**	*eP*	**Pg**	**05 23 01.8**	**+0.1**
	baz=338						
EHP				*eS*	**Sg**	**05 23 04.3**	**-0.1**
	baz=338						
ENA	**Nanau**	**0.22**	**337⇑**	*iP*	**Pb**	**05 23 02.6**	**-0.5**
	baz=351						
TWD	**Chiawan**	**0.26**	**236⇑**	*iP*	**Pg**	**05 23 03.3**	**-0.4**
	baz=232						
TWD				*i* S	**Sb**	**05 23 07.2**	**-0.7**
	baz=232						
HWA	**Hwalien**	**0.32**	**220**	*eP*	**Pb**	**05 23 05.4**	**+0.3**
	baz=219						
TWC	**Suao**	**0.38**	**2**	⇑P	**Pg**	**05 23 05.9**	**+0.1**
	baz=6.0						
TWC				S	**Sg**	**05 23 11.0**	**-0.2**
	baz=6.0						
ESF	**Shoufeng Towns**	**0.46**	**220**	*eP*	**Pb**	**05 23 07.8**	**+0.4**
	baz=224						
NNS	**Nan Shan**	**0.47**	**297⇑**	*iP*	**Pg**	**05 23 06.7**	**-0.8**
	baz=298						
NNS				S	**Sg**	**05 23 12.0**	**-1.9**
	baz=298						
ENTT	**Nioudou**	**0.48**	**329⇑**	*iP*	**Pg**	**05 23 07.2**	**-0.3**
	baz=334						
TWE	**Neicheng**	**0.52**	**343⇑**	*iP*	**Pb**	**05 23 08.1**	**-0.3**
	baz=348						
TWE				*i* S	**Sg**	**05 23 15.1**	**-0.1**
	baz=348						
ILA	**Ilan**	**0.54**	**352**	P	**Pb**	**05 23 08.9**	**+0.1**
	baz=350						
ILA				*e

TCU					*e*S		**Sb**	**05 23 31.8**	**+0.6**
	baz=267								
TWY	**Chenhua**	**1.07**	**349**	*e*P			**Pn**	**05 23 18.6**	**+0.7**
	baz=335								
YUS	**Yu-Shan**	**1.09**	**228**	⇓*i*P			**Pb**	**05 23 18.2**	**-0.2**
	baz=229								
YUS					*e*S		**Sb**	**05 23 32.5**	**+0.1**
	baz=229								
YOJ	**Yonaguni jima**	**1.10**	**77**	P			**Pg**	**05 23 19.5**	**+0.4**
YOJ					*e*S		**Sg**	**05 23 35.6**	**+2.0**
YOJ	**Yonaguni jima**	**1.10**	**77**	⇓*i*P			**Pg**	**05 23 19.5**	**+0.4**
	baz=65								
YOJ					*i* S		**Sg**	**05 23 36.0**	**+2.5**
	baz=65								
WNT	**Mingjian**	**1.11**	**252**	⇓*i*P			**Pb**	**05 23 19.1**	**+0.7**
	baz=249								
WNT					S		**Sg**	**05 23 34.7**	**+0.9**
	baz=249								
ALS	**Alishan**	**1.18**	**233**	⇓P			**Pn**	**05 23 19.8**	**+0.1**
	baz=222								
ALS					*e*S		**Sn**	**05 23 35.9**	**+0.4**
	baz=222								
CHKT	**Chengkung**	**1.20**	**201**	*e*P			**Pn**	**05 23 18.2**	**-1.4**
	baz=189								
CHN5	**Tsauling**	**1.23**	**240**	*e*P			**Pb**	**05 23 21.0**	**+0.5**
	baz=242								
CHN5					*e*S		**Sg**	**05 23 38.5**	**+0.8**
	baz=242								
ELDTW	**Lidau**	**1.27**	**216**	*e*P			**Pn**	**05 23 20.3**	**-0.5**
	baz=203								
WGK	**Gukeng**	**1.28**	**245**	*e*P			**Pb**	**05 23 21.7**	**+0.3**
	baz=247								
PCYT	**Pengchaiyu**	**1.41**	**9**	P			**Pb**	**05 23 23.6**	**0.0**
	baz=6.0								
PCYT					S		**Sg**	**05 23 44.3**	**+0.8**
	baz=6.0								
CHN2	**Minshiung**	**1.42**	**241**	*e*P			**Pb**	**05 23 24.5**	**+0.7**
	baz=245								
CHN2					*e*S		**Sg**	**05 23 44.4**	**+0.6**
	baz=245								
CHN4	**Tsaushan**	**1.43**	**233**	⇑P			**Pb**	**05 23 24.6**	**+0.7**
	baz=236								
CHN4					S		**Sg**	**05 23 44.8**	**+0.7**
	baz=236								
STYT	**Tauyuan**	**1.45**	**223**	⇓P			**Pn**	**05 23 23.5**	**+0.4**
	baz=226								
STYT					*e*S		**Sb**	**05 23 43.5**	**+1.1**
	baz=226								
WTCT	**Ta-ch'eng**	**1.46**	**256**	*e*P			**Pn**	**05 23 24.1**	**+0.8**
	baz=258								
WTCT					S		**Sb**	**05 23 44.6**	**+1.8**
	baz=258								
CHY	**Chiayi**	**1.48**	**241**	*e*P			**Pb**	**05 23 24.8**	**0.0**
	baz=244								
CHY					*e*S		**Sg**	**05 23 46.4**	**+0.8**
	baz=244								
WTP	**Ta-pu**	**1.48**	**229**	P			**Pb**	**05 23 24.8**	**-0.1**
	baz=232								
WTP					*e*S		**Sg**	**05 23 45.9**	**+0.1**
	baz=232								
TWK	**Hsinying**	**1.56**	**233**	*e*P			**Pb**	**05 23 26.0**	**-0.2**
	baz=234								
TWG	**Pinlang**	**1.56**	**207**	*e*P			**Pn**	**05 23 24.9**	**+0.2**
	baz=193								
CHN1	**Nanshi**	**1.58**	**229**	⇑*i*P			**Pb**	**05 23 27.0**	**+0.4**
	baz=233								
CHN1					*e*S		**Sb**	**05 23 47.6**	**+1.4**
	baz=233								
WSF	**Szhu**	**1.59**	**249**	*e*P			**Pb**	**05 23 26.2**	**-0.4**
	baz=241								
WSF					*e*S		**Sb**	**05 23 47.6**	**+1.3**
	baz=241								
TTN	**Taitung**	**1.59**	**203**	*e*P			**Pb**	**05 23 27.5**	**+0.8**
	baz=205								
SGST	**Jiashian**	**1.62**	**225**	⇓P			**Pb**	**05 23 26.9**	**-0.2**
	baz=228								
SGST					*e*S		**Sg**	**05 23 49.9**	**-0.1**
	baz=228								
CHN8	**Yiju**	**1.73**	**240**	*e*P			**Pb**	**05 23 28.6**	**-0.3**
	baz=242								
IRIF	**Iriomote-Funau**	**1.73**	**86**	P			**Pb**	**05 23 28.2**	**-0.9**
IRIF					S		**Sb**	**05 23 51.2**	**+0.6**
CHN3	**Shinhua**	**1.77**	**230**	*e*P			**Pb**	**05 23 30.6**	**+0.9**
	baz=232								
HATJ	**Hateruma jima**	**1.81**	**95**	P			**Pb**	**05 23 29.7**	**-0.7**
HATJ					S		**Sb**	**05 23 53.7**	**+1.0**
SCLT	**Jiali**	**1.83**	**235**	*e*P			**Pb**	**05 23 30.7**	**-0.1**
	baz=240								
SCLT					*e*S		**Sb**	**05 23 54.6**	**+1.3**
	baz=240								
TAI1	**Yung-k'ang**	**1.89**	**232**	*e*P			**Pb**	**05 23 31.7**	**0.0**
	baz=234								
TWM1	**Shoushan**	**1.90**	**223**	*e*P			**Pb**	**05 23 32.6**	**+0.6**
	baz=223								
JKRS	**Kuro-shima**	**1.99**	**89**	P			**Pb**	**05 23 32.3**	**-1.1**
EAST	**Anshuo**	**2.05**	**206**	*e*P			**Pn**	**05 23 32.8**	**+1.4**
	baz=197								
TAW	**Tawu**	**2.05**	**205**	*e*P			**Pb**	**05 23 33.1**	**-1.4**
	baz=196								
JIJ	**Ishigaki jima**	**2.11**	**86**	P			**Pn**	**05 23 33.5**	**+1.3**
JIJ					S		**Sb**	**05 23 59.9**	**-1.5**
SCZT	**Fangliau**	**2.16**	**211**	*e*P			**Pb**	**05 23 35.4**	**-1.0**
	baz=198								
PNG	**Penghu**	**2.19**	**253**	*e*P			**Pn**	**05 23 34.0**	**+0.7**
	baz=256								
LAY	**Lan-yu**	**2.19**	**187**	*e*P			**Pn**	**05 23 31.3**	**-2.0**
	baz=190								
WDGT	**Dungji**	**2.21**	**245**	*e*P			**Pn**	**05 23 34.2**	**+0.7**
	baz=248								
JISG	**Ishigakijimahi**	**2.29**	**80**	P			**Pn**	**05 23 36.2**	**+1.6**
JISG					S		**Sb**	**05 24 05.7**	**-0.8**
TWP	**Hsiaoliuchiu**	**2.31**	**216**	*e*P			**Pb**	**05 23 39.4**	**+0.5**
	baz=237								
HEN	**Hengchun**	**2.43**	**205**	*e*P			**Pb**	**05 23 39.3**	**-1.7**
	baz=197								
TWK1	**Hengchun**	**2.46**	**203**	*e*P			**Pn**	**05 23 38.6**	**+1.5**
	baz=207								
TWK1					*e*S		**Sn**	**05 24 08.8**	**+2.1**
	baz=207								
TSEB	**Hengchuen, Pin**	**2.47**	**201**	*e*P			**Pn**	**05 23 39.4**	**+2.3**
	baz=193								
JTJ	**Tarama**	**2.65**	**80**	P			**Pn**	**05 23 40.7**	**+1.1**
QZH	**Quanzhou**	**3.04**	**284**	⇑*i*Pn			Pn	05 23 35.4	-10
QZH					Sn		Sn	05 24 10.5	-10
QZH					smax		smax		
	comp=N,1μm,0.8s								
QZH					smax		smax		
	comp=E,1μm,0.8s								
QZH					LR		LR		
	comp=N,3μm,4.1s								
QZH					LR		LR		
	comp=E,4μm,9.0s								
QZH					LR		LR		
	comp=Z,4μm,14.1s								
KNM	**Kinmen**	**3.11**	**274**	*e*P			**Pn**	**05 23 47.7**	**+1.8**
	baz=274								
WHN	**Wuhan**	**9.15**	**315**	P			**Pn**	**05 25 09.2**	**+0.2**
WHN					S		**Sn**	**05 26 50.5**	**-1.0**
JNU	**Nakatsue**	**11.89**	**40**	P			Pn	05 25 52.0	+5.5
	comp=Z,0.2nm,0.3s,baz=168,slow=7.2,SNR=3.6								
JNU					LR		LR	05 30 50.8	
	comp=Z,127nm,19.3s,baz=297,slow=39								
GYA	**Guiyang**	**13.90**	**282**	⇑*i*P			**Pn**	**05 26 13.4**	**-0.6**
GYA					LR		LR		
	comp=Z,680nm,10.8s								
GYA					LR		LR		
	comp=Z,760nm,12.1s								
KSRS	**Korea Array**	**14.18**	**20**	P			**P**	**05 26 23.3**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=196,slow=12,SNR=17								
KSRS					LR		LR	05 32 13.1	
	comp=Z,77nm,19.7s,baz=208,slow=39								
XAN	**Xi'an**	**14.92**	**314**	P			**P**	**05 26 37.9**	**+4.5**
XAN					pmax		pmax		
	comp=Z,7.0nm,1.2s								
XAN					LR		LR		
	comp=N,230nm,8.0s								
XAN					LR		LR		
	comp=E,670nm,11.3s								
XAN					LR		LR		
	comp=Z,830nm,11.8s								
MJAR	**Matsushiro Arr**	**18.68**	**45**	LR			LR	05 35 11.4	
	comp=Z,129nm,20.4s,baz=205,slow=39								
LZH	**Lanzhou**	**19.50**	**311**	*e*P			**Pn**	**05 27 28.2**	**+2.7**
LZH					pP		sP	05 27 34.5	+2.8
LZH					sP		pP	05 27 38.5	+9.2
LZH					pmax		pmax		
	comp=Z,18nm,1.0s								

USRK	**Ussuriysk Ar.**	**21.59**	**20**	P			**P**	**05 27 48.2**	**+1.7**
	comp=Z,1.2nm,0.5s,baz=200,slow=8.7,SNR=3.1								
CMAR	**Chiang Mai Arr**	**22.07**	**259**	P			**P**	**05 27 53.5**	**+1.5**
	comp=Z,1.5nm,0.2s,baz=61,slow=8.0,SNR=8.6								
CMAR					LR		LR	05 36 55.7	
	comp=Z,117nm,20.1s,baz=80,slow=37								
GTA	**Gaotai**	**23.98**	**314**	*e*P			**P**	**05 28 11.9**	**+0.5**
GTA					pP		pP	05 28 15.8	-1.1
GTA					sP		sP	05 28 18.3	-0.9
GTA					S		**S**	**05 32 30.2**	**+2.7**
GTA					sS		sS	05 32 39.0	+2.5
GTA					pmax		pmax		
	comp=Z,3.0nm,1.1s								
GTA					pmax		pmax		
	comp=Z,49nm,6.2s								
GTA					LR		LR		
	comp=Z,210nm,11.4s								
GTA					LR		LR		
	comp=Z,400nm,12.8s								
GTA					LR		LR		
	comp=Z,470nm,12.4s								
KLR	**Kul'dur**	**26.14**	**15**	P			**P**	**05 28 31.2**	**+0.4**
	comp=Z,2.6nm,0.6s,baz=198,slow=5.8,SNR=8.5								
SONM	**Songino Array**	**26.56**	**336**	P			**P**	**05 28 34.6**	**-0.2**
	comp=Z,4.2nm,1.1s,baz=158,slow=9.3,SNR=6.1								
SONM					LR		LR	05 40 14.2	
	comp=Z,244nm,18.7s,baz=96,slow=39								
MKAR	**Makanchi Array**	**38.72**	**316**	P			**P**	**05 30 20.9**	**+0.1**
	comp=Z,3.2nm,1.0s,baz=109,slow=10,SNR=13								
MKAR					PcP		**PcP**	**05 32 31.4**	**-1.0**
	comp=Z,0.4nm,0.6s,baz=108,slow=4.7,SNR=3.0								
ZALV	**Zalesovo Beam**	**40.53**	**327**	P			**P**	**05 30 34.4**	**-1.3**
	comp=Z,0.9nm,0.5s,baz=109,slow=7.6,SNR=5.6								
ZALV					LR		LR	05 48 38.7	
	comp=Z,98nm,18.6s,baz=70,slow=38								
KURBB	**Kurchatov Arra**	**42.46**	**320**	P			**P**	**05 30 51.6**	**0.0**
	comp=Z,1.5nm,1.0s,baz=116,slow=7.4,SNR=8.6								
WRA	**Warramunga Ar**	**45.56**	**163**	P			**P**	**05 31 15.8**	**-1.0**
	comp=Z,0.8nm,0.6s,baz=344,slow=8.9,SNR=9.1								
ASAR	**Alice Springs**	**49.03**	**165**	P			**P**	**05 31 45.1**	**+1.4**
	comp=Z,0.5nm,0.7s,baz=337,slow=6.9,SNR=4.6								
GEYT	**Alibeck**	**55.29**	**300**	P			**P**	**05 32 31.7**	**+1.4**
	comp=Z,3.3nm,0.3s,baz=66,slow=3.5,SNR=4.0								
GEYT					LR		LR	06 00 30.9	
	comp=Z,45nm,18.8s,baz=230,slow=41								
DZM	**Mont Dzumac**	**63.23**	**133**	LR			LR	05 58 35.2	
	comp=Z,44nm,20.0s,baz=198,slow=34								
GNI	**Garni**	**65.27**	**305**	LR			LR	06 05 29.1	
	comp=Z,41nm,18.1s,baz=114,slow=39								
KBZ	**Khabaz**	**65.92**	**309**	P			**P**	**05 33 42.3**	**-0.3**
	comp=Z,3.7nm,0.8s,baz=170,slow=6.3,SNR=7.5								
KVAR	**Kislovodsk Arr**	**66.02**	**309**	LR			LR	06 05 55.4	
	comp=Z,26nm,20.6s,slow=39								
OBN	**Obninsk**	**67.83**	**322**	LR			LR	06 04 59.0	
	comp=Z,33nm,19.0s,baz=88,slow=37								
ILAR	**Eielson Array**	**68.90**	**27**	P			**P**	**05 33 58.6**	**-2.7**
	comp=Z,0.2nm,0.6s,baz=277,slow=7.4,SNR=3.6								
FINES	**FINESS Array B**	**71.71**	**330**	P			**P**	**05 34 17.4**	**-1.1**
	comp=Z,2.2nm,0.9s,baz=58,slow=4.7,SNR=3.5								
FINES					LR		LR	06 08 45.2	
	comp=Z,99nm,18.5s,baz=36,slow=38								
AKASG	**Malin Array Be**	**73.23**	**318**	P			**P**	**05 34 26.1**	**-1.7**
	comp=Z,2.4nm,1.0s,baz=60,slow=6.0,SNR=6.0								
BRTR	**Keskin Array B**	**73.62**	**307**	P			**P**	**05 34 29.1**	**-1.4**
	comp=Z,4.0nm,1.0s,baz=109,slow=6.7,SNR=15								
HFS	**Hagfors**	**77.82**	**331**	LR			LR	06 12 17.0	
	comp=Z,76nm,19.6s,baz=62,slow=38								
NOA	**NORSAR Array B**	**78.46**	**332**	P			**P**	**05 34 56.8**	**-0.7**
	comp=Z,0.6nm,0.7s,baz=58,slow=5.8,SNR=2.8								
NOA					LR		LR	06 12 57.3	
	comp=Z,86nm,18.0s,baz=210,slow=38								
VRAC	**Vranov**	**81.29**	**320**	LR			LR	06 13 42.0	
	comp=Z,30nm,19.2s,baz=60,slow=37								
YKA	**Yellowknife Ar**	**82.70**	**23**	P			**P**	**05 35 17.6**	**-2.5**
	comp=Z,0.8nm,0.7s,baz=314,slow=5.0,SNR=3.2								
GERES	**GERESS Array B**	**83.19**	**321**	P			**P**	**05 35 21.6**	**-1.4**
	comp=Z,0.3nm,0.2s,baz=31,slow=5.4,SNR=4.7								

*NSSP **06** 05:30:53.0,38.°87N×43.°58E,h7km,Ms3.0*
*CSEM **06** 05:30:54.9±0.3,38.°95N×43.°72E,h10km,MD2.8, Error ellipse: s-maj=7.7km s-min=4.7km az=99.0*
*ISK **06** 05:30:54.1,38.°93N×43.°72E,h14km,MD2.7*
*ISCJB **06** 05:30:55.3±0.7,38.°94N±0.°03×43.°73E±0.°06,h11km±5km, Error ellipse: s-maj=8.3km s-min=4.7km az=3.7*
*DDA **06** 05:30:55.4,38.°93N×43.°69E,h7km,Md2.8*

ISC 06 05:30:55.5±0.9,38.°94N±0.°02×43.°68E±0.°04,h11km±6km, n20,σ0.°94/33,3C,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
					Op	ISC	h	m	s	ISC
VMUR	**Van-Muradiye**	**0.10**	**300**	*i* P		**Pg**	**05**	**30**	**57.9**	**-0.4**
VMUR				*i* S		**Sg**	**05**	**31**	**01.2**	**+0.7**
VMUR	**Van-Muradiye**	**0.10**	**300**	P		**Pg**	**05**	**30**	**57.9**	**-0.4**
VMUR				S		**Sg**	**05**	**31**	**01.2**	**+0.7**
CLDR	**Caldiran**	**0.27**	**42**	*e*PG		**Pg**	**05**	**31**	**00.1**	**-1.1**
CLDR	**Caldiran**	**0.27**	**42**	*e*Pg		**Pg**	**05**	**31**	**00.1**	**-1.1**
VANB	**Van**	**0.41**	**213**	*e*PG		**Pb**	**05**	**31**	**04.2**	**-0.6**
VANB				*e*SG		**Sb**	**05**	**31**	**11.5**	**+0.3**
VANB	**Van**	**0.41**	**213**	*e*Pg		**Pb**	**05**	**31**	**04.2**	**-0.6**
VANB				*e*Sg		**Sb**	**05**	**31**	**11.5**	**+0.3**
TVAN	**Van**	**0.46**	**208**	*i* P		**Pg**	**05**	**31**	**04.3**	**-0.3**
TVAN				*i* S		**Sb**	**05**	**31**	**12.5**	**-0.2**
TVAN	**Van**	**0.46**	**208**	P		**Pg**	**05**	**31**	**04.3**	**-0.3**
TVAN				S		**Sb**	**05**	**31**	**12.5**	**-0.2**
DYDN	**Diyadin**	**0.60**	**1**	*i* P		**Pg**	**05**	**31**	**07.0**	**-0.2**
DYDN				*i* S		**Sb**	**05**	**31**	**17.1**	**+0.3**
DYDN	**Diyadin**	**0.60**	**1**	P		**Pg**	**05**	**31**	**07.0**	**-0.2**
TUTA	**Tutak**	**0.81**	**305**	*i* P		**Pg**	**05**	**31**	**10.9**	**-0.3**
TUTA				*i* S		**Sb**	**05**	**31**	**23.1**	**+0.2**
TUTA	**Tutak**	**0.81**	**305**	P		**Pg**	**05**	**31**	**10.9**	**-0.3**
TUTA				S		**Sb**	**05**	**31**	**23.1**	**+0.2**
AGRB	**Hanur-Agry**	**0.83**	**320**	*e*PG		**Pg**	**05**	**31**	**11.1**	**-0.4**
AGRB				*e*SG		**Sb**	**05**	**31**	**23.3**	**+0.1**
AGRB	**Hanur-Agry**	**0.83**	**320**	*e*Pg		**Pg**	**05**	**31**	**11.1**	**-0.4**
AGRB				*e*Sg		**Sb**	**05**	**31**	**23.3**	**+0.1**
HKR	**Hakkari**	**1.36**	**178**	*e*PN		**Pn**	**05**	**31**	**19.1**	**-1.5**
HKR	**Hakkari**	**1.36**	**178**	*e*Pn		**Pn**	**05**	**31**	**19.1**	**-1.5**
HAKT	**HAKKARI**	**1.38**	**179**	*i* P		**Pn**	**05**	**31**	**20.8**	**-0.1**
HAKT				*i* S		**Sg**	**05**	**31**	**43.2**	**+3.3**
HAKT	**HAKKARI**	**1.38**	**179**	P		**Pn**	**05**	**31**	**20.8**	**-0.1**
GNI	**Garni**	**1.46**	**34**	⇑*i*P		**Pb**	**05**	**31**	**22.8**	**0.0**
GNI				⇑*i*S		**Sg**	**05**	**31**	**44.7**	**+2.2**
GNI	**Garni**	**1.46**	**34**	⇑P		**Pb**	**05**	**31**	**22.8**	**0.0**

IDC 06 05:32:06.2±999.0,26.°30N×17.°31E,h0km,Error ellipse: s-maj=610.4km s-min=139.8km az=126.0,Libya

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
					Op	ISC	h	m	s	ISC
I48TN	**KESRA INFRASON**	**11.68**	**326**	*i*			06	47	00.0	
	baz=140,slow=319,SNR=0.6									
I11CV	**MAIO ISLAND IN**	**39.27**	**262**	*i*			09	47	50.0	
	baz=62,slow=313,SNR=0.4									
I42PT	**GRACIOSA ISLAN**	**39.82**	**300**	*i*			09	34	50.0	
	baz=95,slow=320,SNR=0.6									

*DDA **06** 05:40:06.1,39.°13N×29.°01E,h7km,Md3.0*
*ISK **06** 05:40:06.3,39.°08N×29.°01E,h6km,ML2.7*
*CSEM **06** 05:40:06.7±0.1,39.°08N×29.°01E,h5km,MD3.0,Error ellipse: s-maj=2.0km s-min=1.7km az=161.0*

ISC 06 05:40:06.7±0.9,39.°08N±0.°02×29.°01E±0.°02,h12km±7km, n54,σ0.°64/76,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
					Op	ISC	h	m	s	ISC
DEMI	**Demirci**	**0.23**	**261**	*i* P		**Pg**	**05**	**40**	**11.7**	**+0.1**
DEMI				*i* S		**Sg**	**05**	**40**	**15.0**	**+0.1**
DEMI	**Demirci**	**0.23**	**261**	P		**Pg**	**05**	**40**	**11.7**	**+0.1**
DEMI				S		**Sg**	**05**	**40**	**15.0**	**+0.1**
GEDZ	**Gediz**	**0.32**	**96**	*e*PG		**Pg**	**05**	**40**	**12.8**	**-0.3**
GEDZ				*e*SG		**Sg**	**05**	**40**	**17.7**	**+0.3**
GEDZ	**Gediz**	**0.32**	**96**	*e*Pg		**Pg**	**05**	**40**	**12.8**	**-0.3**
GEDZ				*e*Sg		**Sg**	**05**	**40**	**17.7**	**+0.3**
GDZ	**Gediz**	**0.37**	**89**	*i* P		**Pg**	**05**	**40**	**13.9**	**-0.2**
GDZ				*i* S		**Sg**	**05**	**40**	**19.1**	**0.0**
GDZ	**Gediz**	**0.37**	**89**	P		**Pg**	**05**	**40**	**13.9**	**-0.2**
GDZ				S		**Sg**	**05**	**40**	**19.1**	**0.0**
TVSB	**Tavsanli**	**0.51**	**44**	*e*PG		**Pg**	**05**	**40**	**16.5**	**-0.2**
TVSB	**Tavsanli**	**0.51**	**44**	*e*Pg		**Pg**	**05**	**40**	**16.5**	**-0.2**
KULA	**Kula-Manisa**	**0.63**	**206**	*e*PG		**Pb**	**05**	**40**	**19.2**	**-0.5**
KULA				*e*SG		**Sb**	**05**	**40**	**28.0**	**-0.4**
KULA	**Kula-Manisa**	**0.63**	**206**	*e*Pg		**Pb**	**05**	**40**	**19.2**	**-0.5**
KULA				*e*Sg		**Sb**	**05**	**40**	**28.0**	**-0.4**
MANT	**Manisa**	**0.69**	**211**	*i* P		**Pg**	**05**	**40**	**19.3**	**-0.7**
MANT				*i* S		**Sg**	**05**	**40**	**28.2**	**-0.9**
MANT	**Manisa**	**0.69**	**211**	P		**Pg**	**05**	**40**	**19.3**	**-0.7**
MANT				S		**Sg**	**05**	**40**	**28.2**	**-0.9**
KHL	**Karahalli**	**0.86**	**152**	*e*PG		**Pb**	**05**	**40**	**23.5**	**-0.1**
KHL				*e*SG		**Sb**	**05**	**40**	**35.6**	**+0.6**
KHL	**Karahalli**	**0.86**	**152**	*e*Pg		**Pb**	**05**	**40**	**23.5**	**-0.1**
KHL				*e*Sg		**Sb**	**05**	**40**	**35.7**	**+0.6**
AKS	**Akhisar**	**0.95**	**258**	*e*PG		**Pb**	**05**	**40**	**25.1**	**0.0**
AKS	**Akhisar**	**0.95**	**258**	*e*Pg		**Pb**	**05**	**40**	**25.1**	**0.0**
BALB	**Balikesir**	**1.04**	**303**	*e*PG		**Pb**	**05**	**40**	**26.8**	**+0.2**
BALB				*e*SG		**Sn**	**05**	**40**	**41.7**	**+0.1**
BALB	**Balikesir**	**1.04**	**303**	*e*Pg		**Pb**	**05**	**40**	**26.8**	**+0.2**
BALB				*e*Sg		**Sn**	**05**	**40**	**41.7**	**+0.1**
IGD	**Bursa**	**1.19**	**7**	*i* P		**Pg**	**05**	**40**	**26.9**	**-2.7**
IGD				*i* S		**Sg**	**05**	**40**	**42.3**	**-2.8**
BALY	**Balya**	**1.26**	**302**	*i* P		**Pg**	**05**	**40**	**30.4**	**-0.4**
BALY				*i* S		**Sn**	**05**	**40**	**47.5**	**+0.3**
BALY	**Balya**	**1.26**	**302**	P		**Pg**	**05**	**40**	**30.5**	**-0.4**
BALY				S		**Sn**	**05**	**40**	**47.5**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*PN		**Pg**	**05**	**40**	**31.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*Pn		**Pg**	**05**	**40**	**31.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**356**	*e*PN		**Pg**	**05**	**40**	**31.2**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**356**	*e*Pn		**Pg**	**05**	**40**	**31.2**	**-0.3**
CAVI	**Cavuskoy**	**1.29**	**30**	*e*PN		**Pg**	**05**	**40**	**31.4**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**30**	*e*Pn		**Pg**	**05**	**40**	**31.4**	**-0.1**
IZI	**Iznik**	**1.30**	**16**	*e*PN		**Pg**	**05**	**40**	**31.7**	**-0.1**
IZI	**Iznik**	**1.30**	**16**	*e*Pn		**Pg**	**05**	**40**	**31.7**	**-0.1**
GEMT	**Gemlik**	**1.36**	**6**	*e*PN		**Pg**	**05**	**40**	**32.3**	**-0.5**
GEMT	**Gemlik**	**1.36**	**6**	*e*Pn		**Pg**	**05**	**40**	**32.3**	**-0.5**
BORA	**Eskisehir**	**1.38**	**54**	*i* P		**Pn**	**05**	**40**	**31.8**	**0.0**
BORA				*i* S		**Sn**	**05**	**40**	**50.8**	**+0.8**
BORA	**Eskisehir**	**1.38**	**54**	P		**Pn**	**05**	**40**	**31.8**	**0.0**
BORA				S		**Sn**	**05**	**40**	**50.8**	**+0.8**
GONE	**Gonen-Balikesi**	**1.41**	**314**	*e*PN		**Pb**	**05**	**40**	**33.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.41**	**314**	*e*Pn		**Pb**	**05**	**40**	**33.1**	**+0.2**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*PN		**Pb**	**05**	**40**	**33.8**	**-0.1**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*Pn		**Pb**	**05**	**40**	**33.8**	**-0.1**
ARMT	**Armutlu**	**1.49**	**356**	*e*PN		**Pg**	**05**	**40**	**34.8**	**-0.4**
ARMT	**Armutlu**	**1.49**	**356**	*e*Pn		**Pg**	**05**	**40**	**34.8**	**-0.4**
ESKT	**Eskisehir**	**1.50**	**72**	*e*PN		**Pb**	**05**	**40**	**34.2**	**-0.3**
ESKT	**Eskisehir**	**1.50**	**72**	*i* P		**Pg**	**05**	**40**	**34.9**	**-0.5**
ESKT				*i* S		**Sg**	**05**	**40**	**54.5**	**-0.3**
ESKT	**Eskisehir**	**1.50**	**72**	*e*Pn		**Pb**	**05**	**40**	**34.2**	**-0.3**
SEYT	**Eskypehyr**	**1.50**	**72**	P		**Pg**	**05**	**40**	**34.9**	**-0.5**
SEYT				S		**Sg**	**05**	**40**	**54.5**	**-0.3**
GPA	**Golpazari**	**1.57**	**39**	*e*PN		**Pn**	**05**	**40**	**35.1**	**+0.7**
GPA	**Golpazari**	**1.57**	**39**	*e*Pn		**Pn**	**05**	**40**	**35.1**	**+0.7**
GULT	**Gulveren**	**1.78**	**40**	*e*PN		**Pb**	**05**	**40**	**38.7**	**-0.6**
GULT	**Gulveren**	**1.78**	**40**	*e*Pn		**Pb**	**05**	**40**	**38.7**	**-0.6**
HRT	**Hereke**	**1.81**	**16**	*e*PN		**Pb**	**05**	**40**	**39.5**	**-0.3**
HRT	**Hereke**	**1.81**	**16**	*e*Pn		**Pb**	**05**	**40**	**39.5**	**-0.3**
DGB	**˜zmir**	**1.96**	**239**	*i* P		**Pg**	**05**	**40**	**43.6**	**-0.6**
DGB				*i* S		**Sg**	**05**	**41**	**09.4**	**-0.1**
ISK	**Istanbul

GULT				*e*SG	**Sg**	06 21 35.3	+0.5	
GULT	**Gulveren**	**0.64**	**290**	*e*Pg	**Pg**	06 21 26.3	-0.1	
GULT				*e*Sg	**Sg**	06 21 35.3	+0.5	
SAHE	**Sakarya_HENDEK**	**0.72**	**332**	*i* P	**Pg**	06 21 27.6	-0.3	
SAHE				*i* S	**Sb**	06 21 39.3	0.0	
SAHE	**Sakarya_HENDEK**	**0.72**	**332**	P	**Pg**	06 21 27.6	-0.3	
SAHE				S	**Sb**	06 21 39.3	0.0	
BORA	**Eskisehir**	**0.74**	**243**	*i* P	**Pg**	06 21 27.7	-0.5	
BORA	**Eskisehir**	**0.74**	**243**	P	**Pg**	06 21 27.7	-0.5	
GPA	**Golpazari**	**0.77**	**276**	*e*PG	**Pg**	06 21 28.4	-0.3	
GPA	**Golpazari**	**0.77**	**276**	*e*Pg	**Pg**	06 21 28.5	-0.3	
ESKT	**Eskisehir**	**0.78**	**207**	*e*PG	**Pg**	06 21 28.4	-0.7	
ESKT				*e*SG	**Sg**	06 21 39.7	+0.5	
ESKT	**Eskisehir**	**0.78**	**207**	*i* P	**Pg**	06 21 28.9	-0.2	
ESKT				*i* S	**Sb**	06 21 41.0	-0.1	
ESKT	**Eskisehir**	**0.78**	**207**	*e*Pg	**Pg**	06 21 28.4	-0.7	
ESKT				*e*Sg	**Sg**	06 21 39.7	+0.5	
SEYT	**Eskypehyr**	**0.78**	**207**	P	**Pg**	06 21 28.9	-0.2	
SEYT				S	**Sb**	06 21 41.0	-0.1	
SVRH	**Sivrihisar-ESK**	**0.79**	**168**	*e*PG	**Pg**	06 21 28.8	-0.4	
SVRH	**Sivrihisar-ESK**	**0.79**	**168**	*e*Pg	**Pg**	06 21 28.8	-0.4	
BCAM	**Yenicaga**	**0.83**	**44**	*i* P	**Pg**	06 21 29.2	-0.9	
BCAM				*i* S	**Sb**	06 21 43.0	+0.4	
BCAM	**Yenicaga**	**0.83**	**44**	P	**Pg**	06 21 29.2	-0.9	
BCAM				S	**Sb**	06 21 43.0	+0.4	
SPNC	**Sapanca-Adapaz**	**0.89**	**302**	*e*PG	**Pg**	06 21 30.8	-0.4	
SPNC	**Sapanca-Adapaz**	**0.89**	**302**	*e*Pg	**Pg**	06 21 30.8	-0.4	
KDZE	**Karadeniz Ereo**	**1.10**	**5**	*e*PN	**Pg**	06 21 35.2	0.0	
KDZE	**Karadeniz Ereo**	**1.10**	**5**	*e*Pn	**Pg**	06 21 35.2	0.0	
CAVI	**Cavuskoy**	**1.12**	**270**	*e*PN	**Pg**	06 21 34.9	-0.7	
CAVI	**Cavuskoy**	**1.12**	**270**	*e*Pn	**Pg**	06 21 34.9	-0.7	
ADVT	**Abdulvahap**	**1.22**	**281**	*e*PN	**Pg**	06 21 36.5	-0.9	
ADVT	**Abdulvahap**	**1.22**	**281**	*e*Pn	**Pg**	06 21 36.5	-0.9	
KAND	**Kocaeli-Kandir**	**1.22**	**316**	*i* P	**Pg**	06 21 37.3	-0.2	
KAND				*i* S	**Sn**	06 21 55.6	+1.0	
KAND	**Kocaeli-Kandir**	**1.22**	**316**	P	**Pg**	06 21 37.3	-0.2	
KAND				S	**Sn**	06 21 55.6	+1.0	
HRT	**Hereke**	**1.39**	**296**	*e*PN	**Pn**	06 21 39.7	-0.4	
HRT	**Hereke**	**1.39**	**296**	*e*Pn	**Pn**	06 21 39.7	-0.4	
KIZT	**Kizilcal**	**1.41**	**161**	*e*PN	**Pn**	06 21 40.1	-0.4	
KIZT	**Kizilcal**	**1.41**	**161**	*e*Pn	**Pn**	06 21 40.1	-0.4	
SAFT	**Safranbolu**	**1.46**	**45**	*e*PN	**Pn**	06 21 40.5	-0.7	
SAFT	**Safranbolu**	**1.46**	**45**	*e*Pn	**Pn**	06 21 40.5	-0.7	
BOLV	**Bolvadin**	**1.52**	**191**	*i* P	**Pg**	06 21 43.5	+0.2	
BOLV				*i* S	**Sg**	06 22 03.7	+0.7	
BOLV	**Bolvadin**	**1.52**	**191**	P	**Pg**	06 21 43.5	+0.2	
BOLV				S	**Sg**	06 22 03.7	+0.7	
SILT	**Sile**	**1.57**	**307**	*e*PN	**Pn**	06 21 42.5	-0.1	
SILT	**Sile**	**1.57**	**307**	*e*Pn	**Pn**	06 21 42.5	-0.1	

*ISK **06** 06:22:22.6,39˚.12N×29˚.01E,h5km,MD3.1*
*DDA **06** 06:22:23.0,39˚.10N×29˚.01E,h9km,Md3.8*
*ISCJB **06** 06:22:23.3±0.4,39˚.11N±0˚.02×28˚.99E±0˚.02,h2km±4km, Error ellipse: s-maj=3.6km s-min=2.6km az=166.3*
*CSEM **06** 06:22:23.6±0.1,39˚.09N×29˚.01E,h2km,MD3.8,Error ellipse: s-maj=3.0km s-min=2.6km az=166.0*
*THE **06** 06:22:24.2,39˚.08N×29˚.02E,h4km±4km,ML3.4/3,Error ellipse: s-maj=5.8km s-min=1.2km az=123.0*

ISC 06 06:22:23.8±1.0,39˚.10N±0˚.02×29˚.01E±0˚.01,h8km±8km, n130,σ1s00/169,13C-10D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**256**	⇓*i*P	**Pg**	**06 22 28.6**	**+0.1**
DEMI				*i* S	**Sg**	06 22 31.7	0.0
DEMI	**Demirci**	**0.24**	**256**	P	**Pg**	06 22 28.6	+0.1
DEMI				S	**Sg**	06 22 31.7	0.0
GEDZ	**Gediz**	**0.32**	**100**	*e*PG	**Pg**	06 22 30.2	+0.2
GEDZ				*e*SG	**Sb**	06 22 35.7	-1.4
GEDZ	**Gediz**	**0.32**	**100**	*e*Pg	**Pg**	06 22 30.2	+0.2
GEDZ				*e*Sg	**Sb**	06 22 35.7	-1.4
GDZ	**Gediz**	**0.37**	**92**	⇓*i*P	**Pg**	06 22 30.8	-0.2
GDZ				*i* S	**Sg**	06 22 35.9	+0.1
GDZ	**Gediz**	**0.37**	**92**	P	**Pg**	06 22 30.8	-0.2
GDZ				S	**Sg**	06 22 35.9	+0.1
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Pg**	06 22 32.8	-0.6
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	06 22 32.8	-0.6
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG	**Pg**	06 22 36.2	0.0
KULA	**Kula-Manisa**	**0.65**	**205**	P	**Pg**	06 22 36.1	0.0
KULA				S	**Sg**	06 22 45.0	+0.4
KULA	**Kula-Manisa**	**0.65**	**205**	*e*Pg	**Pg**	06 22 36.2	0.0
KULA				S	**Sg**	06 22 45.0	+0.4
MANT	**Manisa**	**0.70**	**210**	⇑*i*P	**Pg**	06 22 36.0	-1.3
MANT				*i* S	**Sg**	06 22 44.8	-1.7
MANT	**Manisa**	**0.70**	**210**	P	**Pg**	06 22 36.0	-1.3
MANT				S	**Sg**	06 22 44.8	-1.7
KHL	**Karahalli**	**0.87**	**152**	*e*PG	**Pb**	06 22 40.9	-0.3
KHL	**Karahalli**	**0.87**	**152**	*e*Pg	**Pb**	06 22 40.9	-0.3
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pb**	06 22 42.4	-0.3
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pb**	06 22 42.4	-0.3
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pg**	06 22 43.4	-0.1
BALB				*e*SG	**Sb**	06 22 58.6	+1.1
BALB	**Balikesir**	**1.03**	**302**	*e*Pg	**Pg**	06 22 43.4	-0.1
BALB				*e*Sg	**Sb**	06 22 58.6	+1.1
ULDT	**Uludag**	**1.05**	**5**	*i* P	Pn	06 22 51.6	+6.6
IGD	**Bursa**	**1.17**	**7**	*i* P	**Pg**	06 22 44.0	-2.2
IGD				*i* S	**Sg**	06 23 01.3	-0.2
BALY	**Balya**	**1.25**	**301**	⇑*i*P	**Pg**	06 22 46.7	-1.1
BALY				*i* S	**Sg**	06 23 03.7	-0.4
BALY	**Balya**	**1.25**	**301**	P	**Pg**	06 22 46.7	-1.1
BALY				S	**Sg**	06 23 03.7	-0.4
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pg**	06 22 47.3	-0.8
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pg**	06 22 47.3	-0.8
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*PN	**Pg**	06 22 47.1	-1.1
MDNY				*e*SN	**Sn**	06 23 06.1	+1.0
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*Pn	**Pg**	06 22 47.1	-1.1
MDNY				*e*Sn	**Sn**	06 23 06.1	+1.0
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pb**	06 22 48.5	+0.4
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pb**	06 22 48.5	+0.4
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pg**	06 22 47.9	-0.6
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pg**	06 22 47.9	-0.6
GEMT	**Gemlik**	**1.34**	**6**	*e*PN	**Pn**	06 22 49.0	+0.2
GEMT	**Gemlik**	**1.34**	**6**	*e*Pn	**Pn**	06 22 49.0	+0.2
BORA	**Eskisehir**	**1.36**	**55**	*i* P	**Pn**	06 22 48.7	-0.5
BORA				*i* S	**Sn**	06 23 07.8	+0.3
BORA	**Eskisehir**	**1.36**	**55**	P	**Pn**	06 22 48.7	-0.5
BORA				S	**Sn**	06 23 07.8	+0.3
DNZL	**Cakiroluk**	**1.41**	**179**	⇑*i*P	**Pn**	06 22 49.3	-0.6
DNZL				*i* S	**Sn**	06 23 12.9	+4.1
DNZL	**Cakiroluk**	**1.41**	**179**	P	**Pn**	06 22 49.3	-0.6
ADVT	**Abdulvahap**	**1.45**	**23**	*e*PN	**Pb**	06 22 50.8	-0.2
ADVT	**Abdulvahap**	**1.45**	**23**	*e*Pn	**Pb**	06 22 50.8	-0.2
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*PN	**Pb**	06 22 51.1	0.0
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*Pn	**Pb**	06 22 51.1	0.0
ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pn**	06 22 51.1	+0.5
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn	**Pn**	06 22 51.1	+0.5
ESKT	**Eskisehir**	**1.49**	**73**	*e*PN	**Pn**	06 22 51.4	+0.4
ESKT	**Eskisehir**	**1.49**	**73**	*i* P	**Pn**	06 22 50.6	-0.4
ESKT				*i* S	**Sg**	06 23 11.7	+0.1
ESKT	**Eskisehir**	**1.49**	**73**	*e*Pn	**Pn**	06 22 51.4	+0.4
SEYT	**Eskypehyr**	**1.49**	**73**	P	**Pn**	06 22 50.6	-0.4
SEYT				S	**Sg**	06 23 11.7	+0.1
EDC	**Edincik**	**1.53**	**325**	*e*PN	**Pn**	06 22 52.0	+0.6
EDC	**Edincik**	**1.53**	**325**	*e*Pn	**Pn**	06 22 52.0	+0.6
IZM	**Izmir**	**1.54**	**243**	*e*PN	**Pb**	06 22 52.7	+0.2
IZM	**Izmir**	**1.54**	**243**	*e*Pn	**Pb**	06 22 52.7	+0.2
GPA	**Golpazari**	**1.55**	**40**	*e*PN	**Pg**	06 22 53.2	-0.4
GPA	**Golpazari**	**1.55**	**40**	*e*Pn	**Pg**	06 22 53.2	-0.4
BOLV	**Bolvadin**	**1.56**	**104**	*i* P	**Pn**	06 22 52.4	+0.4
BOLV				*i* S	**Sg**	06 23 13.4	-0.5
BOLV	**Bolvadin**	**1.56**	**104**	P	**Pn**	06 22 52.4	+0.4
BOLV				S	**Sg**	06 23 13.4	-0.5
KNL	**Bal˜–kesir**	**1.64**	**316**	⇓*i*P	**Pn**	06 22 53.5	+0.6
KNL				*i* S	**Sb**	06 23 15.3	+0.3
DKL	**Dikili**	**1.64**	**270**	*e*PN	**Pb**	06 22 54.0	-0.2
DKL	**Dikili**	**1.64**	**270**	*e*Pn	**Pb**	06 22 54.0	-0.2
GULT	**Gulveren**	**1.77**	**41**	*e*PN	**Pn**	06 22 55.2	+0.5
GULT	**Gulveren**	**1.77**	**41**	*e*Pn	**Pn**	06 22 55.2	+0.5
HRT	**Hereke**	**1.79**	**16**	*e*PN	**Pn**	06 22 55.9	+0.8
HRT	**Hereke**	**1.79**	**16**	*e*Pn	**Pn**	06 22 55.9	+0.8
AYVA	**Ayvalik**	**1.81**	**277**	*i* P	**Pg**	06 22 58.0	-0.6
AYVA				*i* S	**Sg**	06 23 21.9	-0.2
AYVA	**Ayvalik**	**1.81**	**277**	P	**Pg**	06 22 58.0	-0.6
AYVA				S	**Sg**	06 23 21.9	-0.2
KRBG	**Karabiga-Canak**	**1.85**	**315**	*e*PN	**Pn**	06 22 56.7	+0.9
KRBG	**Karabiga-Canak**	**1.85**	**315**	*e*Pn	**Pn**	06 22 56.7	+0.9
MRMT	**Marmara Adasi**	**1.85**	**325**	*e*PN	**Pn**	06 22 56.5	+0.6
MRMT	**Marmara Adasi**	**1.85**	**325**	*e*Pn	**Pn**	06 22 56.5	+0.6
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*PN	**Pn**	06 22 56.8	+0.7
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*Pn	**Pn**	06 22 56.8	+0.7
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN	**Pn**	06 22 58.2	+0.8
ISK	**Istanbul-Kandi**	**1.96**	**1**	P	**Pn**	06 22 56.5	-0.9
ISK				S	**Sn**	06 23 22.2	0.0
ISK	**Istanbul-Kandi**	**1.96**	**1**	P	**Pn**	06 22 56.5	-0.9
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn	**Pn**	06 22 58.2	+0.8
ISK				S	**Sn**	06 23 22.2	0.0
DGB	**˝zmir**	**1.97**	**239**	*i* P	**Pb**	06 23 00.4	+0.5
DGB				*i* S	**Sg**	06 23 26.0	-1.0
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN	**Pn**	06 22 58.8	+1.1
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn	**Pn**	06 22 58.8	+1.1
URLA	**Izmir**	**2.03**	**249**	*i* P	**Pg**	06 23 02.8	+0.2
URLA				*i* S	**Sg**	06 23 29.2	+0.3
YER	**Yerkesik**	**2.04**	**197**	P	**Pn**	06 22 58.7	+0.2
YER	**Yerkesik**	**2.04**	**197**	P	**Pn**	06 22 58.7	+0.2
BGKT	**Bogazkoy**	**2.09**	**355**	*e*PN	**Pn**	06 22 59.7	+0.7
BGKT	**Bogazkoy**	**2.09**	**355**	*e*Pn	**Pn**	06 22 59.7	+0.7
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pn**	06 22 59.5	+0.2
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pn**	06 22 59.5	+0.2
RKY	**Sarkoy-Tekirda**	**2.12**	**319**	*e*PN	**Pn**	06 23 00.8	+1.2
RKY	**Sarkoy-Tekirda**	**2.12**	**319**	*e*Pn	**Pn**	06 23 00.8	+1.2
PRK	**Paraskevi**	**2.13**	**275**	P	**Pn**	06 23 00.0	+0.3
PRK				S	**Sn**	06 23 25.9	-0.5
PRK	**Paraskevi**	**2.13**	**275**	P	**Pn**	06 23 00.0	+0.3
PRK				S	**Sn**	06 23 25.9	-0.5
KLYT	**Kilyos**	**2.15**	**1**	*e*PN	**Pn**	06 23 00.5	+0.5
KLYT	**Kilyos**	**2.15**	**1**	*e*Pn	**Pn**	06 23 00.5	+0.5
CTKS	**Kestanelik-??a**	**2.17**	**350**	*e*PN	**Pn**	06 23 00.1	-0.1
CTKS	**Kestanelik-??a**	**2.17**	**350**	*e*Pn	**Pn**	06 23 00.1	-0.1
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN	**Pn**	06 23 01.8	+1.4
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn	**Pn**	06 23 01.8	+1.4
SMG	**Samos**	**2.20**	**232**	P	**Pn**	06 22 59.8	-0.9
SMG	**Samos**	**2.20**	**232**	P	**Pn**	06 22 59.8	-0.9
KIZT	**Kizilcal**	**2.25**	**95**	*e*PN	**Pn**	06 23 02.1	+0.7
KIZT	**Kizilcal**	**2.25**	**95**	*e*Pn	**Pn**	06 23 02.1	+0.7
CHOS	**Chios island**	**2.42**	**254**	P	**Pn**	06 23 03.8	+0.1
CHOS				S	**Sn**	06 23 34.0	+0.5
CHOS	**Chios island**	**2.42**	**254**	P	**Pn**	06 23 03.8	+0.1
CHOS				S	**Sn**	06 23 34.0	+0.5
GADA	**Gvkgeada**	**2.64**	**295**	P	**Pn**	06 23 06.2	-0.4
GADA	**Gvkgeada**	**2.64**	**295**	P	**Pn**	06 23 06.2	-0.4
ENEZ	**Enez**	**2.74**	**308**	P	**Pn**	06 23 07.2	-0.8
ENEZ				S	**Sn**	06 23 41.6	+0.3
ENEZ	**Enez**	**2.74**	**308**	P	**Pn**	06 23 07.2	-0.8
ENEZ				S	**Sn**	06 23 41.6	+0.3
ALN	**Alexandroupoli**	**2.90**	**309**	P	**Pn**	06 23 10.3	+0.1
ALN				S	**Sn**	06 23 46.1	+0.8
ALN	**Alexandroupoli**	**2.90**	**309**	P	**Pn**	06 23 10.3	+0.1
ALN				S	**Sn**	06 23 46.1	+0.8
SMTH	**Samothraki Isl**	**3.01**	**298**	P	**Pn**	06 23 12.2	+0.4
SMTH	**Samothraki Isl**	**3.01**	**298**	P	**Pn**	06 23 12.2	+0.4
APE	**Apeiranthos**	**3.41**	**235**	⇓*i*P	**Pg**	06 23 28.3	-0.8
APE	**Apeiranthos**	**3.41**	**235**	S	**Sg**	06 24 14.3	+0.9
TIRR	**Tirgusor**	**5.37**	**355**	⇑*i*P	**Pn**	06 23 44.8	+0.6
TIRR	**Tirgusor**	**5.37**	**355**	⇑*i*P	**Pn**	06 23 44.8	+0.6
TIRR				S	**Sn**	06 24 43.3	-3.0
TLB	**Topalu**	**5.53**	**353**	⇑*i*P	**Pn**	06 23 47.0	+0.6
TLB	**Topalu**	**5.53**	**353**	⇑*i*P	**Pn**	06 23 47.0	+0.6
BARS	**Barje**	**6.59**	**307**	*e*Pn	**Pn**	06 24 02.0	+1.0
MLR	**Muntele Rosu**	**6.78**	**341**	⇑*i*P	**Pn**	06 24 05.7	+2.0
MLR	**Muntele Rosu**	**6.78**	**341**	⇑*i*P	**Pn**	06 24 05.7	+2.0
VRI	**Vrincioaia**	**6.97**	**347**	⇑*i*P	**Pn**	06 24 08.6	+2.4
VRI	**Vrincioaia**	**6.97**	**347**	⇑*i*P	**Pn**	06 24 08.6	+2.4
VOIR		**6.98**	**336**	⇑*i*P	**Pn**	06 24 08.6	+2.2
VOIR		**6.98**	**336**	⇑*i*P	**Pn**	06 24 08.6	+2.2
KUBS	**Kucevo**	**7.63**	**316**	*e*Pn	**Pn**	06 24 12.5	-1.7
GZR	**Gura Zlata**	**7.80**	**326**	⇓*i*P	**Pn**	06 24 19.5	+1.8
GZR	**Gura Zlata**	**7.80**	**326**	S	**Sn**	06 25 44.2	-2.0
GZR	**Gura Zlata**	**7.80**	**326**	⇓*i*P	**Pn**	06 24 19.5	+1.8
MDVR	**Moldovita**	**7.86**	**319**	⇓*i*P	**Pn**	06 24 20.9	+2.5
MDVR	**Moldovita**	**7.86**	**319**	S	**Sn**	06 25 44.7	-2.9
MDVR	**Moldovita**	**7.86**	**319**	⇓*i*P	**Pn**	06 24 20.9	+2.5
BURAR	**Bucovina Array**	**8.95**	**343**	⇓*i*P	**Pn**	06 24 35.4	+2.0
BURAR	**Bucovina Array**	**8.95**	**343**	⇓*i*P	**Pn**	06 24 35.4	+2.0

*NIED **06** 06:22:00,37˚.50N×142˚.70E,h17km,Mw3.9 Best double couple: M0 7.15000×10^14 NP1:φs12.00000°,δ40.00000°, λ-128.00000°. NP2:φs238.00000°,δ60.00000°, λ-63.00000°.*
*IDC **06** 06:22:58.8±0.8,37˚.38N×142˚.71E,h0km,mb3.9/10, mb1 4.1/12,mb1mx3.9/51,mbtmpg3.9/12,ML4.0/2,MS3.1/6, Ms1 3.1/6,ms1mx2.7/45,Error ellipse: s-maj=25.0km s-min=17.0km az=98.0*
*JMA **06** 06:22:59.9±0.3,37˚.47N×142˚.69E,h14km±5km,M4.0*
*NEIC **06** 06:23:03.8±0.7,37˚.43N×142˚.79E,h35km,mb4.3/1,Error ellipse: s-maj=14.4km s-min=9.6km az=125.0*

ISC 06 06:22:59.2±3.8,37˚.46N±0˚.05×142˚.67E±0˚.07,h3km±23km, n39,σ1s53/35,mb3.9/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.43**	**267**	P	**Pn**	**06 23 25.8**	**-0.2**
JFK				S	**Sn**	06 23 44.2	-1.1
JIO	**Ouri**	**1.44**	**314**	P	**Pn**	06 23 25.5	-0.7
JIO				S	**Sn**	06 23 44.0	-1.5
ONAJ	**Iwakimizuishiy**	**1.53**	**257**	P	**Pn**	06 23 27.7	+0.2
ONAJ				S	**Sn**	06 23 47.2	-0.7
JMM	**Marumori**	**1.54**	**286**	P	**Pn**	06 23 26.8	-0.7
JMM				S	**Sn**	06 23 47.3	-0.7
JOU	**Okura**	**1.82**	**300**	P	**Pn**	06 23 31.8	+0.3
JOU				*e*S	**Sn**	06 23 54.9	-0.2
JFT	**Otama**	**1.85**	**273**	P	**Pb**	06 23 32.8	-0.9
JFT				S	**Sb**	06 23 56.5	-0.8
JMK	**Ichinoseki**	**1.88**	**323**	P	**Pn**	06 23 32.6	+0.4
JOM	**Ohasama**	**2.28**	**332**	P	**Pn**	06 23 38.1	+0.3
JYK	**Kaneyama**	**2.33**	**309**	P	**Pn**	06 23 39.3	+0.9
MJAR	**Matsushiro Arr** 4.0nm,0.3s,baz=75,slow=11,SNR=13	**3.68**	**257**	Pn	**Pn**	**06 23 58.8**	**+1.8**
MAJO	**Matsushiro**	**3.68**	**257**	*e*Pn	**Pn**	**06 24 00.5**	**+3.4**
MAT	**Matsushiro**	**3.68**	**257**	P	**Pn**	06 23 59.2	+2.6
MAT				*e*S	**Sn**	06 24 45.0	+4.0
ERM	**Erimo**	**4.57**	**5**	*e*Pn	**Pn**	06 24 09.2	0.0
JHJ2	**Mitsune**	**4.92**	**209**	Pn	**Pn**	06 24 14.9	+0.9
JHJ	**Hachijo jima 2** 45nm,0.3s,baz=17,slow=13,SNR=12	**4.93**	**209**	Pn	**Pn**	**06 24 14.2**	**+0.1**
JHJ	43nm,0.3s,baz=49,slow=19,SNR=4.5			Sn	**Sn**	**06 25 07.4**	**-4.2**
USRK	**Ussuriysk Ar.** 0.4nm,0.3s,baz=98,slow=14,SNR=12	**10.52**	**313**	Pn	Pn	06 25 36.8	+6.0
USRK	comp=Z,122nm,21.1s,baz=123,slow=36			LR	LR	06 29 21.9	
KSRS	**Korea Array** 0.2nm,0.3s,baz=93,slow=14,SNR=3.9	**11.72**	**274**	Pn	Pn	06 25 52.5	+5.3
KSRS	comp=Z,77nm,18.2s,baz=99,slow=37			LR	LR	06 30 19.9	
KSAR	**Wonju Array Be**	**11.75**	**274**	Pn	Pn	06 25 52.5	+4.8
KLR	**Kul'dur** comp=Z,78nm,19.3s,baz=102,slow=37	**14.18**	**330**	LR	LR	06 31 50.1	
PETK	**Petropavlovsk-** comp=Z,21nm,20.3s,baz=216,slow=35	**18.83**	**29**	LR	LR	06 34 00.8	
SEY	**Seymchan** 1.5nm,0.6s,baz=180,slow=20,SNR=2.4	**26.19**	**10**	P	**P**	**06 28 35.6**	**+1.0**
H11N2	**WAKE ISLAND Hy** baz=315,slow=75,SNR=93	**27.52**	**123**	T	T	06 57 32.0	
H11N1	**WAKE ISLAND Hy** baz=315,slow=75,SNR=57	**27.53**	**123**	T	T	06 57 35.5	
H11N3	**WAKE ISLAND Hy** baz=315,slow=75,SNR=50	**27.54**	**123**	T	T	06 57 52.2	
H11S1	**WAKE ISLAND Hy** baz=317,slow=76,SNR=38	**28.27**	**125**	T	T	06 58 31.4	
H11S3	**WAKE ISLAND Hy** baz=317,slow=76,SNR=29	**28.27**	**125**	T	T	06 58 33.2	
H11S2	**WAKE ISLAND Hy** baz=317,slow=76,SNR=33	**28.29**	**125**	T	T	06 58 39.3	
SONM	**Songino Array** 1.7nm,0.7s,baz=100,slow=7.5,SNR=5.0	**28.39**	**303**	P	**P**	**06 28 54.9**	**+0.2**
ZALV	**Zalesovo Beam** 1.5nm,0.6s,baz=108,slow=9.5,SNR=5.7	**42.37**	**312**	P	**P**	**06 30 55.1**	**+0.7**
NRIK	**Noril'sk** comp=Z,53nm,18.2s,baz=125,slow=38	**43.30**	**335**	LR	LR	06 50 04.0	
MKAR	**Makanchi Array** 0.3nm,0.3s,baz=86,slow=7.7,SNR=5.2	**44.74**	**302**	P	**P**	**06 31 14.4**	**+0.7**
KURK	**Kurchatov** 31nm,0.8s	**46.46**	**308**	*e*P	**P**	**06 31 27.2**	**0.0**
ILAR	**Eielson Array** 0.3nm,0.8s,baz=260,slow=6.4,SNR=4.4	**48.60**	**33**	P	**P**	**06 31 45.0**	**+1.3**
WRA	**Warramunga Arr** 4.1nm,0.8s,baz=7.4,slow=7.2,SNR=21	**57.63**	**189**	P	**P**	**06 32 49.8**	**-0.8**
ABKAR	**Akbulak array**	**58.43**	**310**	*e*P	**P**	**06 32 54.5**	**-1.5**
	0.7nm,0.3s						
ASAR	**Alice Springs** 1.4nm,0.8s,baz=11,slow=7.1,SNR=10	**61.35**	**189**	P	**P**	**06 33 15.8**	**-0.5**
FINES	**FINESS Array B** 3.1nm,0.9s,baz=122,slow=7.2,SNR=5.5	**68.90**	**333**	P	**P**	**06 34 05.0**	**+0.1**
NOA	**NORSAR Array B** 0.6nm,0.7s,baz=39,slow=5.8,SNR=2.4	**74.18**	**338**	P	**P**	**06 34 37.3**	**+0.5**
NOA	comp=Z,15nm,18.0s,baz=10.0,slow=39			LR	LR	07 11 12.5	
TXAR	**Lajitas Array** 0.2nm,0.5s,baz=296,slow=2.9,SNR=5.5	**89.07**	**53**	P	**P**	**06 35 56.0**	**0.0**

WEL 06 06:28:58.4±0.1,43˚.60S×172˚.67E,h8km,ML3.7/17,5C-5D, Error ellipse: s-maj=0.7km s-min=0.5km az=90.0,South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.04**	**310**	⇓PG	Pg	06 29 00.0	-0.1
CRLZ				SG	Sg	06 29 01.1	-0.2
CRLZ				AML	AML	06 29 01.2	
CRLZ				AML	AML	06 29 01.3	
CRLZ				AML	AML	06 29 01.3	
MQZ	**McQueen's Vall**	**0.11**	**184**	⇑PG	Pg	06 29 01.1	+0.2
MQZ				SG	Sg	06 29 03.0	+0.3
MQZ				AML	AML	06 29 03.1	
MQZ				AML	AML	06 29 03.1	
OXZ	**Oxford**	**0.53**	**301**	⇓P*	Pg	06 29 08.7	0.0
OXZ				AML	AML	06 29 09.1	
OXZ				SG	Sg	06 29 15.9	+0.2
OXZ				AML	AML	06 29 18.9	
LTZ	**Lake Taylor**	**0.87**	**340**	P*	Pg	06 29 14.9	-0.2
LTZ				S*	Sg	06 29 26.9	+0.5
**RPZ

ARLS	**Aral**	**3.33**	**55**	⇑*e*P	**Pn**	**06 36 35.7**	**+0.8**
	baz=55							
ARLS				⇑*e*S	**Sn**	**06 37 14.5**	**-0.1**
	baz=55							
UCH	**Uchtor**	**3.65**	**51**	⇑*i*P	**Pn**	**06 36 40.2**	**+0.6**
	baz=51							
UCH				⇑*i*S	**Sn**	**06 37 23.1**	**+0.1**
	baz=51							
AAK	**Ala-Archa**	**3.90**	**46**	⇑Lg	Lg	06 37 43.0		
	3.3nm,0.5s							
TKM2	**Tokmak 2**	**4.71**	**50**	⇓Pn	**Pn**	**06 36 54.9**	**+1.0**
	1.4nm,0.5s							
TKM2				⇑Lg	Lg	06 38 11.5		
	2.4nm,0.7s							

ISCJB ***06*** *06:50:42.8±0.2,5.°66S±0.°03×148.°39E±0.°05,h163km, mb4.5/50, Error ellipse: s-maj=7.1km s-min=3.8km az=16.9*
NEIC ***06*** *06:50:45.2±0.2,5.°69S×148.°43E, mb4.7/33, Error ellipse: s-maj=7.4km s-min=4.3km az=107.0*
IDC ***06*** *06:50:45.2±0.8,5.°73S×148.°37E,h174km±7km, mb4.1/17, mb1 4.2/22, mb1mx4.1/38, mbtmp4.7/22, MS3.4/4, Ms1 3.3/4, ms1mx2.7/36, Error ellipse: s-maj=14.7km s-min=8.4km az=82.0*
DJA ***06*** *06:50:47.0±1.0,6.°5S×14.°8E±.°, h191km±12km, M4.7/9, mB5.2/1, mb4.7/9, Mw(mB)4.7/1*

ISC 06 06:50:44.6±0.4,**5.°73S**±0.°05×**148.°42E**±0.°06,**h163**km,**n106,** σ1**9**47/120,**mb4.6**/50,**New Britain region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MANU	**Manus Island**	**3.81**	**344**	*e*Pn	**Pn**	**06 51 45.6**	**+2.8**
PMG	**Port Moresby**	**3.87**	**199**	P	**Pn**	**06 51 44.1**	**+0.6**
	33nm,0.3s,baz=354,slow=5.6,SNR=56						
PMG				S	**Sn**	**06 52 28.9**	**-0.6**
	73nm,0.3s,baz=27,slow=18,SNR=13						
PMG	**Port Moresby**	**3.87**	**199**	*e*Pn	**Pn**	**06 51 44.5**	**+0.9**
PMG				S	**Sn**	**06 52 28.9**	**-0.6**
RABL	**Rabaul**	**4.03**	**68**	*e*Pn	**Pn**	**06 51 47.0**	**+1.3**
COEN	**Coen**	**9.67**	**212**	P	**Pn**	**06 53 03.1**	**+2.9**
	baz=9.7,SNR=8.9						
COEN	**Coen**	**9.67**	**212**	*e*Pn	**Pn**	**06 53 02.5**	**+2.2**
HNR	**Honiara**	**12.01**	**109**	P	**Pn**	**06 53 30.8**	**+0.1**
	38nm,0.3s,baz=203,slow=15,SNR=5.4						
MTSU	**Mount Surprise**	**12.97**	**198**	P	**Pn**	**06 53 45.1**	**+2.0**
	baz=13,SNR=23						
CTA	**Charters Tower**	**14.43**	**188**	P	**P**	**06 54 02.8**	**-1.0**
	1.6nm,0.3s,baz=17,slow=14,SNR=33						
CTA	**Charters Tower**	**14.43**	**188**	P	**P**	**06 54 03.1**	**-0.7**
	baz=14						
CTAO	**Charters Tower**	**14.43**	**188**	*e*Pn	**P**	**06 54 02.9**	**-0.8**
PATS	**Pohnpei**	**15.91**	**38**	P	**P**	**06 54 20.6**	**+0.4**
	baz=16						
QIS	**Mount Isa**	**17.05**	**209**	P	**Pn**	**06 54 33.9**	**+0.4**
	baz=17,SNR=76						
KDU	**Kakadu**	**17.19**	**245**	P	**Pn**	**06 54 34.9**	**-0.2**
	baz=17,SNR=10.0						
MTN	**Manton Dam**	**18.46**	**246**	P	**P**	**06 54 48.9**	**+0.7**
	baz=18,SNR=5.1						
MTN	**Manton Dam**	**18.46**	**246**	*e*P	**P**	**06 54 48.8**	**+0.7**
	24nm,0.8s						
GUMO	**Guam**	**19.51**	**350**	P	**P**	**06 54 59.8**	**+0.3**
	2.4nm,0.3s,baz=174,slow=18,SNR=3.2						
WRAB	**Tennant Creek**	**19.66**	**223**	*e*P	**P**	**06 55 01.5**	**+0.4**
	90nm,0.6s						
WB2	**Warramunga Arr**	**19.67**	**223**	*e*P	**P**	**06 55 01.7**	**+0.4**
	91nm,0.6s						
WRA	**Warramunga Arr**	**19.68**	**223**	P	**P**	**06 55 01.5**	**+0.2**
	14nm,0.3s,baz=48,slow=10.0,SNR=408						
WRA				S	**S**	**06 58 33.1**	**-1.4**
	baz=46,slow=20,SNR=13						
WRA				ScP	**ScP**	**07 02 31.1**	**-3.5**
	0.0nm,0.3s,baz=42,slow=2.9,SNR=5.1						
EIDS	**Eidsvold**	**19.70**	**173**	P	**P**	**06 55 02.3**	**+0.8**
	baz=20,SNR=21						
EIDS	**Eidsvold**	**19.70**	**173**	*e*P	**P**	**06 55 02.4**	**+0.9**
	69nm,0.9s						
RMQ	**Roma**	**20.65**	**179**	P	**P**	**06 55 12.6**	**+1.0**
	baz=21,SNR=27						
QLP	**Quilpie**	**21.12**	**190**	P	**P**	**06 55 17.1**	**+0.4**
	baz=21,SNR=29						
AS01	**Alice Springs**	**22.63**	**217**	*e*P	**P**	**06 55 32.0**	**0.0**
AS31	**Alice Springs**	**22.66**	**217**	*e*P	**P**	**06 55 32.6**	**+0.4**
	20nm,0.7s						
ASAR	**Alice Springs**	**22.66**	**217**	P	**P**	**06 55 32.6**	**+0.3**
	61nm,0.7s,baz=51,slow=9.0,SNR=405						
ASAR				S	**S**	**06 59 26.8**	**-1.4**
	3.3nm,0.9s,baz=27,slow=19,SNR=5.6						
ASAR				ScP	**ScP**	**07 02 39.8**	**-2.1**
	1.9nm,0.8s,baz=57,slow=3.8,SNR=5.2						
ASAR				LR	LR	07 04 26.2	
	comp=Z,111nm,20.1s,baz=66,slow=36						
DZM	**Mont Dzumac**	**23.83**	**135**	P	**P**	**06 55 42.5**	**-0.5**
	8.3nm,0.6s,baz=303,slow=9.4,SNR=14						
ARMA	**Armidale**	**24.75**	**173**	P	**P**	**06 55 51.7**	**+0.4**
	baz=25,SNR=20						
ARMA	**Armidale**	**24.75**	**173**	*e*P	**P**	**06 55 51.8**	**+0.5**
	22nm,0.8s						
FITZ	**Fitzroy Crossi**	**25.42**	**239**	P	**P**	**06 55 57.1**	**-0.2**
	72nm,0.5s,baz=58,slow=8.5,SNR=77						
FITZ				pP	**pP**	**06 56 32.3**	**+1.2**
	31nm,0.6s,baz=53,slow=7.4,SNR=5.4						
FITZ				LR	LR	07 05 41.3	
	comp=Z,123nm,18.2s,baz=71,slow=35						
FITZ	**Fitzroy Crossi**	**25.42**	**239**	P	**P**	**06 55 57.3**	**-0.2**
	baz=26,SNR=94						
FITZ	**Fitzroy Crossi**	**25.42**	**239**	*e*P	**P**	**06 55 57.2**	**-0.2**
	82nm,0.6s						
FITZ				pP	**pP**	**06 56 32.3**	**+1.2**
CMSA	**Cobar Meteorol**	**25.81**	**185**	P	**P**	**06 56 00.2**	**-0.5**
	baz=26,SNR=14						
STKA	**Stephens Creek**	**26.79**	**193**	P	**P**	**06 56 08.6**	**-1.0**
	6.5nm,0.6s,baz=4.9,slow=7.8,SNR=12						
STKA				LR	LR	07 07 02.9	
	comp=Z,52nm,18.9s,baz=28,slow=36						
STKA	**Stephens Creek**	**26.79**	**193**	P	**P**	**06 56 08.7**	**-0.8**
	baz=27,SNR=5.2						
WRKA	**Warakurna**	**27.22**	**223**	P	**P**	**06 56 13.2**	**-0.3**
	baz=27,SNR=32						
YNG	**Young**	**28.43**	**180**	P	**P**	**06 56 24.5**	**+0.3**
	baz=29,SNR=10						
HTT	**Hallett**	**28.95**	**197**	P	**P**	**06 56 28.6**	**-0.2**
	baz=29,SNR=5.1						
CAN	**Canberra**	**29.46**	**179**	P	**P**	**06 56 33.5**	**+0.3**
	baz=30						
FORT	**Forrest**	**31.42**	**215**	P	**P**	**06 56 50.3**	**-0.2**
	baz=32,SNR=12						
ARPS	**Mount Arapiles**	**31.48**	**190**	P	**P**	**06 56 51.5**	**+0.5**
	baz=32,SNR=5.5						
TOO	**Toolangi**	**31.81**	**184**	P	**P**	**06 56 54.3**	**+0.4**
	baz=32,SNR=5.2						
MEEK	**Meekatharra**	**35.21**	**230**	P	**P**	**06 57 23.4**	**-0.1**
	baz=35,SNR=8.4						
KMBL	**Kambalda**	**35.63**	**221**	P	**P**	**06 57 26.4**	**-0.5**
	baz=36,SNR=9.5						
MORW	**Morawa**	**38.41**	**229**	P	**P**	**06 57 50.1**	**-0.4**
	baz=38,SNR=3.1						
KLBR	**Kellerberrin**	**38.55**	**224**	P	**P**	**06 57 50.8**	**-0.8**
	baz=39,SNR=13						
BLDU	**Ballidu**	**38.74**	**226**	P	**P**	**06 57 52.6**	**-0.6**
	baz=39,SNR=7.0						
NWAO	**Narrogin (SRO)**	**39.69**	**223**	P	**P**	**06 58 00.1**	**-0.9**
	14nm,1.0s,baz=295,slow=7.1,SNR=5.2						
URZ	**Urewera**	**41.56**	**145**	P	**P**	**06 58 16.0**	**-0.2**
	24nm,1.1s,baz=287,slow=4.0,SNR=4.7						
RPZ	**Rata Peaks**	**42.76**	**156**	P	**P**	**06 58 25.7**	**-0.3**
	11nm,0.7s,baz=316,slow=3.4,SNR=6.9						
MJAR	**Matsushiro Arr**	**43.12**	**348**	P	**P**	**06 58 28.1**	**-0.8**
	7.1nm,0.8s,baz=166,slow=8.6,SNR=19						
MAJO	**Matsushiro**	**43.12**	**348**	*e*P	**P**	**06 58 28.7**	**-0.2**
	13nm,0.8s						
KSRS	**Korea Array**	**47.02**	**338**	P	**P**	**06 58 59.7**	**+0.1**
	9.5nm,0.8s,baz=152,slow=8.8,SNR=27						
KSAR	**Wonju Array Be**	**47.02**	**338**	P	**P**	**06 58 59.7**	**+0.1**
KS01	**Wonju Array Si**	**47.05**	**338**	*e*P	**P**	**06 58 59.6**	**-0.3**
GYA	**Guiyang**	**51.57**	**310**	*e*P	**P**	**06 59 36.5**	**+2.0**
GYA				pP	pP	07 00 16.8	+5.2
GYA				sP	sP	07 00 37.0	+7.4
GYA				PP	**PP**	**07 01 37.2**	**+3.5**
GYA				S	**S**	**07 06 42.0**	**-1.0**
GYA				sS	sS	07 07 52.4	+5.1
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
USRK	**Ussuriysk Ar.**	**51.86**	**345**	P	**P**	**06 59 36.5**	**+0.4**
	comp=Z,5.3nm,0.7s,baz=173,slow=7.1,SNR=10.0						

KMI	**Kunming**	**53.96**	**307**	P	**P**	06 59 57.4	+5.2
CM01	**Chiang Mai Arr**	**54.34**	**297**	*e*P	**P**	**06 59 53.8**	**-1.1**
CMAR	**Chiang Mai Arr**	**54.37**	**297**	P	**P**	**06 59 53.0**	**-2.0**
	comp=Z,0.9nm,0.3s,baz=120,slow=5.3,SNR=4.5						
CMAR				pP	**pP**	**07 00 37.0**	**+4.6**
	comp=Z,1.6nm,0.3s,baz=128,slow=5.8,SNR=3.2						
HHC	**Hu-ho-hao-te**	**57.35**	**327**	*e*P	**P**	**07 00 18.9**	**+2.9**
HHC				S	**S**	**07 07 56.5**	**-3.4**
HHC				pmax	pmax		
	comp=Z,21nm,0.9s						
HHC				pmax	pmax		
	comp=Z,76nm,4.3s						
HHC				LR	LR		
	comp=N,110nm,12.3s						
HHC				LR	LR		
	comp=E,150nm,14.8s						
HHC				LR	LR		
	comp=Z,70nm,16.0s						
PEA0	**Petropavlovsk-**	**59.13**	**7**	*e*P	**P**	**07 00 27.9**	**-0.1**
PEA0B	**Petropavlovsk-**	**59.13**	**7**	*e*P	**P**	**07 00 27.9**	**0.0**
	comp=Z,61nm,1.3s						
PETK	**Petropavlovsk-**	**59.13**	**7**	P	**P**	**07 00 28.4**	**+0.4**
	comp=Z,18nm,0.8s,baz=163,slow=5.4,SNR=14						
SMY	**Shemya**	**62.18**	**17**	*e*P	**P**	**07 00 48.8**	**+0.4**
	comp=Z,59nm,1.3s						
SONM	**Songino Array**	**64.86**	**330**	P	**P**	**07 01 06.1**	**-0.4**
	comp=Z,1.7nm,0.7s,baz=134,slow=8.5,SNR=6.5						
SONM				pP	**pP**	**07 01 46.6**	**+1.5**
	comp=Z,2.2nm,1.0s,baz=145,slow=5.4,SNR=3.3						
VNDA	**Vanda**	**72.11**	**177**	P	**P**	**07 01 50.2**	**-0.5**
	comp=Z,1.6nm,0.7s,baz=332,slow=6.7,SNR=11						
VNDA				pP	**pP**	**07 02 31.0**	**+0.9**
	comp=Z,1.6nm,0.7s,baz=335,slow=6.4,SNR=6.1						
WMQ	**Urumqi**	**73.51**	**319**	*e*P	**P**	**07 02 00.7**	**+1.0**
WMQ				pP	pP	07 02 36.1	-3.1
WMQ				pmax	pmax		
	comp=Z,11nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,130nm,4.9s						
MK01	**Makanchi Array**	**78.17**	**320**	*e*P	**P**	**07 02 24.1**	**-1.9**
MKAR	**Makanchi Array**	**78.19**	**320**	P	**P**	**07 02 24.3**	**-1.8**
	comp=Z,0.9nm,0.5s,baz=104,slow=6.8,SNR=8.8						
SVW2	**Sparrevohn**	**79.41**	**24**	*e*P	**P**	**07 02 33.0**	**+0.5**
	comp=Z,11nm,1.0s						
ZALV	**Zalesovo Beam**	**79.54**	**327**	P	**P**	**07 02 30.7**	**-2.5**
	comp=Z,1.6nm,0.4s,baz=106,slow=5.4,SNR=4.7						
KSH	**Kashi**	**80.25**	**312**	*e*P	**P**	**07 02 38.8**	**+1.2**
KSH				epP	pP	07 03 21.8	+4.0
KSH				esP	sP	07 03 57.1	+22
KSH				S	**S**	**07 12 27.1**	**-2.5**
KSH				SKS	**SKSac**	**07 12 35.1**	**-5.1**
KSH	**Kashi**	**80.25**	**312**	sS	sS	07 13 41.8	+2.5
KSH	**Kashi**	**80.25**	**312**	SS	SS	07 17 44.7	+0.2
KSH				pmax	pmax		
	comp=Z,66nm,5.7s						
KSH				LR	LR		
	comp=N,170nm,11.0s						
KSH				LR	LR		
	comp=E,100nm,11.2s						
KSH				LR	LR		
	comp=Z,86nm,9.7s						
CNPM	**China Poot**	**80.46**	**27**	*e*P	**P**	**07 02 38.3**	**+0.1**
	comp=Z,41nm,1.2s						
KURK	**Kurchatov**	**81.84**	**323**	P	**P**	**07 02 43.4**	**-2.1**
KURBB	**Kurchatov Arra**	**81.86**	**323**	P	**P**	**07 02 43.4**	**-2.3**
	comp=Z,0.5nm,0.7s,baz=115,slow=4.6,SNR=6.0						
CAST	**Castle Rocks**	**82.03**	**23**	*e*P	**P**	**07 02 44.8**	**-1.5**
	comp=Z,6.1nm,0.8s						
PMR	**Palmer**	**82.35**	**25**	*e*P	**P**	**07 02 47.2**	**-0.7**
	comp=Z,5.4nm,0.9s						
KTH	**Kantishna Hill**	**82.55**	**23**	*e*P	**P**	**07 02 47.8**	**-1.2**
	comp=Z,5.8nm,0.9s						
TRF	**Thorofare Moun**	**82.75**	**23**	*e*P	**P**	**07 02 48.9**	**-1.3**
	comp=Z,7.4nm,1.0s						
BPAW	**Bear Paw Mtn.**	**82.79**	**23**	*e*P	**P**	**07 02 49.7**	**-0.5**
	comp=Z,15nm,1.5s						
SML	**Sawmill**	**82.79**	**25**	*e*P	**P**	**07 02 49.6**	**-0.7**
	comp=Z,13nm,0.8s						
SCM	**Sheep Creek Mo**	**83.23**	**25**	*e*P	**P**	**07 02 51.9**	**-0.8**
	comp=Z,20nm,1.2s						
RND	**Reindeer**	**83.30**	**24**	*e*P	**P**	**07 02 50.9**	**-2.0**
	comp=Z,12nm,0.8s						
MLY	**Manley**	**83.33**	**22**	*e*P	**P**	**07 02 51.5**	**-1.6**
	comp=Z,7.3nm,0.8s						
MCK	**McKinley**	**83.41**	**23**	*e*P	**P**	**07 02 52.0**	**-1.4**
	comp=Z,15nm,1.0s						
DIV	**Divide**	**83.61**	**26**	*e*P	**P**	**07 02 54.7**	**+0.1**
	comp=Z,18nm,1.2s						
KLU	**Klutina**	**83.70**	**26**	*e*P	**P**	**07 02 54.8**	**-0.2**
	comp=Z,17nm,1.2s						
DHY	**Denali Highway**	**83.75**	**24**	*e*P	**P**	**07 02 54.1**	**-1.3**
	comp=Z,8.5nm,0.8s						
BMRM	**Bremner River**	**84.07**	**27**	*e*P	**P**	**07 02 56.8**	**-0.1**
	comp=Z,11nm,1.1s						
WRH	**Wood River Hil**	**84.08**	**23**	*e*P	**P**	**07 02 54.7**	**-2.1**
	comp=Z,8.2nm,1.0s						
CCB	**Clear Creek Bu**	**84.27**	**23**	*e*P	**P**	**07 02 55.0**	**-2.7**
	comp=Z,29nm,1.7s						
COLA	**College**	**84.35**	**23**	*e*P	**P**	**07 02 56.0**	**-2.1**
	comp=Z,8.9nm,0.8s						
COLD	**Coldfoot**	**84.59**	**20**	*e*P	**P**	**07 02 59.6**	**+0.4**
	comp=Z,4.7nm,0.9s						
ILAR	**Eielson Array**	**84.68**	**23**	P	**P**	**07 02 56.6**	**-3.1**
	comp=Z,7.0nm,0.7s,baz=252,slow=4.1,SNR=80						
ILAR				pP	**pP**	**07 03 41.7**	**+1.3**
	comp=Z,1.5nm,0.7s,baz=247,slow=4.8,SNR=3.0						
DOT	**Dot Lake**	**85.35**	**24**	*e*P	**P**	**07 03 01.4**	**-1.8**
	comp=Z,25nm,0.9s						
NRIK	**Norilʹsk**	**85.45**	**342**	P	**P**	**07 03 02.4**	**-1.1**
	comp=Z,1.0nm,0.3s,baz=148,slow=2.5,SNR=3.6						
EGAK	**Eagle**	**86.94**	**24**	*e*P	**P**	**07 03 09.5**	**-1.4**
	comp=Z,5.8nm,0.8s						
HYT	**Haines Junctio**	**87.28**	**28**	*e*P	**P**	**07 03 13.0**	**+0.2**
DAWY	**Dawson**	**87.43**	**25**	*e*P	**P**	**07 03 12.8**	**-0.5**
	comp=Z,12nm,1.2s						
AKTO	**Aktyubinsk**	**94.63**	**320**	LR	LR	07 47 39.3	
	comp=Z,10.0nm,19.1s,slow=36						
CPUP	**Villa Florida**	**139.52**	**143**	PKP	**PKPdf**	**07 09 52.5**	**-1.0**
	comp=Z,3.5nm,1.0s,baz=148,slow=2.4,SNR=3.6						
CPUP				PP	**PP**	**07 12 51.1**	**+2.2**
	comp=Z,2.8nm,1.0s,baz=203,slow=5.9,SNR=2.9						
TORD	**Torodi Ar. Bea**	**146.39**	**285**	PKPbc	**PKPdf**	**07 10 04.2**	**-1.8**
	comp=Z,1.6nm,0.4s,baz=58,slow=2.6,SNR=33						

ISCJB ***06*** *06:58:42.2±0.5,24.°21N±0.°02×121.°81E±0.°02, h2km±3km, Error ellipse: s-maj=4.0km s-min=2.7km az=33.4*
TAP ***06*** *06:58:42.2,24.°23N×121.°76E, h17km, ML3.4, B*
JMA ***06*** *06:58:42.1±0.2,24.°21N×121.°75E, h14km±3km, M2.3*

ISC 06 06:58:42.5±0.9,**24.°23N**±0.°02×**121.°79E**±0.°03,**h15**km±5km, **n43,** σ0**960/64,6C-2D,Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.09**	**334**	P	**Pg**	**06 58 46.1**	**+0.4**
	baz=349						
EHP				S	**Sg**	**06 58 48.5**	**+0.7**
	baz=349						
ENA	**Nanau**	**0.20**	**349**	⇑*i*P	**Pg**	**06 58 47.0**	**-0.3**
	baz=354						
ENA				S	**Sg**	**06 58 50.2**	**-0.2**
	baz=354						
TWD	**Chiawan**	**0.23**	**230**	⇓*i*P	**Pg**	**06 58 47.4**	**-0.2**
	baz=232						
TWD				*i* S	**Sg**	**06 58 51.1**	**+0.1**
	baz=232						
HWA	**Hwalien**	**0.30**	**214**	⇓*e*P	**Pb**	**06 58 49.6**	**0.0**
	baz=218						
TWC	**Suao**	**0.39**	**9**	⇑*i*P	**Pg**	**06 58 50.3**	**-0.1**
	baz=7.0						
TWC				S	**Sg**	**06 58 55.7**	**0.0**
	baz=7.0						
NNS	**Nan Shan**	**0.43**	**300**	⇑*i*P	**Pg**	**06 58 51.0**	**-0.3**
	baz=300						
NNS				*i* S	**Sg**	**06 58 56.7**	**-0.5**
	baz=300						
ESF	**Shoufeng Towns**	**0.44**	**216**	*e*P	**Pb**	**06 58 52.1**	**+0.2**
	baz=221						
ENTT	**Nioudou**	**0.46**	**334**	⇑*i*P	**Pg**	**06 58 51.6**	**-0.1**
	baz=334						
ENTT				*i* S	**Sg**	**06 58 57.8**	**-0.1**
	baz=334						
WHF	**Hehuan Shan**	**0.48**	**260**	⇑*i*P	**Pg**	**06 58 51.8**	**-0.5**
	baz=261						
WHF				*i* S	**Sg**	**06 58 58.3**	**-0.6**
	baz=261						
TWE	**Neicheng**	**0.50**	**348**	P	**Pg**	**06 58 52.5**	**-0.1**
	baz=348						
TWE				*i* S	**Sg**	**06 58 59.5**	**+0.2**
	baz=348						
ESL	**Shilin**	**0.52**	**218**	*e*P	**Pg**	**06 58 52.3**	**-0.6**
	baz=223						
TWT	**Tachien**	**0.56**	**273**	*e*P	**Pg**	**06 58 53.3**	**-0.3**
	baz=274						
TWT				*i* S	**Sb**	**06 59 01.2**	**-0.8**
	baz=274						
NSK	**Sanguang**	**0.59**	**319**	⇑*i*P	**Pg**	**06 58 54.0**	**-0.3**
	baz=319						
NSK				*i* S	**Sg**	**06 59 01.4**	**-0.8**
	baz=319						
EGS		**0.63**	**12**	*e*P	**Pg**	**06 58 53.9**	**-1.1**
	baz=18						
WDT	**Danda**	**0.76**	**232**	P	**Pg**	**06 58 56.8**	**-0.6**
	baz=241						
WDT				S	**Sb**	**06 59 07.4**	**-0.5**
	baz=241						
TWA	**Mucha**	**0.77**	**346**	*e*P	**Pg**	**06 58 57.4**	**-0.2**
	baz=347						
NSTT	**Nanjuang**	**0.82**	**300**	*e*P	**Pg**	**06 58 58.4**	**-0.1**
	baz=300						
EHY	**Hungye**	**0.83**	**211**	*e*P	**Pb**	**06 58 58.4**	**-0.4**
	baz=223						
NWF	**Wu-fen Shan**	**0.84**	**360**	*e*P	**Pg**	**06 58 59.0**	**+0.1**
	baz=359						
SMLT	**Sun Moon Lake**	**0.88**	**247**	P	**Pg**	**06 58 59.4**	**-0.2**
	baz=242						
SMLT				*e*S	**Sb**	**06 59 10.2**	**-1.0**
	baz=242						
NCU	**National Centr**	**0.92**	**324**	*e*P	**Pg**	**06 59 00.1**	**-0.3**
	baz=321						
TWQ1	**Liyutan**	**0.93**	**278**	*e*P	**Pn**	**06 59 01.1**	**0.0**
	baz=278						
TWQ1				*e*S	**Sn**	**06 59 13.8**	**-0.4**
	baz=278						
TWS1	**Kuangyinshan**	**0.93**	**339**	*e*P	**Pn**	**06 59 01.4**	**+0.3**
	baz=344						
TWS1				*e*S	**Sn**	**06 59 14.9**	**+0.7**
	baz=344						
NSY	**Sanyi**	**0.95**	**282**	*e*P	**Pn**	**06 59 02.5**	**+1.0**
	baz=282						
NSY				*e*S	**Sn**	**06 59 15.4**	**+0.6**
	baz=282						
TWF1	**Yuli**	**0.98**	**207**	*e*P	**Pb**	**06 59 00.2**	**-1.0**
	baz=220						
TCU	**Taichung**	**1.02**	**266**	*e*P	**Pg**	**06 59 03.5**	**+1.3**
	baz=267						
TCU				*e*S	**Sn**	**06 59 17.4**	**+1.0**
	baz=267						
TWY	**Chenhua**	**1.06**	**351**	*e*P	**Pg**	**06 59 04.1**	**+1.1**
	baz=350						
YUS	**Yu-Shan**	**1.06**	**226**	*e*P	**Pb**	**06 59 02.3**	**-0.6**
	baz=228						
YUS				*e*S	**Sn**	**06 59 17.7**	**-0.4**
	baz=228						
JYNG	**Yonagunjimaku**	**1.08**	**78**	P	**Pn**	**06 59 03.2**	**0.0**
YOJ	**Yonaguni jima**	**1.14**	**78**	P	**Pn**	**06 59 04.0**	**0.0**
YOJ				*e*S	**Sg**	**06 59 20.7**	**+1.2**
YOJ	**Yonaguni jima**	**1.14**	**78**	*e*P	**Pn**	**06 59 03.8**	**-0.2**
	baz=66						
ALS	**Alishan**	**1.15**	**232**	*e*P	**Pb**	**06 59 03.6**	**-0.7**
	baz=220						
CHN5	**Tsauling**	**1.19**	**238**	*e*P	**Pg**	**06 59 05.2**	**-0.3**
	baz=241						
CHN5				S	**Sg**	**06 59 23.0**	**+1.9**
	baz=241						
ELDTW	**Lidau**	**1.25**	**214**	*e*P	**Pb**	**06 59 05.7**	**-0.2**
	baz=202						
CHN4	**Tsaushan**	**1.40**	**232**	*e*P	**Pb**	**06 59 08.6**	**+0.2**
	baz=234						
CHN4				*e*S	**Sg**	**06 59 28.4**	**+0.7**
	baz=234						
STYT	**Tauyuan**	**1.42**	**222**	*e*P	**Pb**	**06 59 08.4**	**-0.4**
	baz=223						
WTP	**Ta-pu**	**1.45**	**228**	*e*P	**Pb**	**06 59 09.4**	**+0.1**
	baz=228						
TWG	**Pinlang**	**1.54**	**205**	*e*P	**Pn**	**06 59 10.0**	**+0.4**
	baz=191						
CHN1	**Nanshi**	**1.55**	**228**	*e*P	**Pb**	**06 59 11.2**	**+0.2**
	baz=231						
CHN1				*e*S	**Sg**	**06 59 33.4**	**+0.9**
	baz=231						
SGST	**Jiashian**	**1.58**	**224**	*e*P	**Pg**	**06 59 12.8**	**-0.2**
	baz=225						
EAST	**Anshuo**	**2.03**	**205**	*e*P	**Pn**	**06 59 16.6**	**+0.3**
	baz=194						
SCZT	**Fangliau**	**2.13**	**210**	*e*P	**Pb**	**06 59 20.8**	**-0.1**
	baz=195						
JIJ	**Ishigaki jima**	**2.16**	**86**	*e*S	**Sn**	**06 59 44.9**	**+0.4**

IDC 06 07:02:39.6±2.6,**53.°71N×86.°87E,h0**km,**mb1 2.9**/2, **mb1mx2.9**/45,**mbtmp2.9**/2,**ML2.5**/2,**Error ellipse: s-maj=23.7km s-min=14.4km az=68.0,Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.24**	**282**	*i*		07 10 47.9	
	baz=101,slow=315,SNR=1.0						
ZALV	**Zalesovo Beam**	**1.24**	**282**	Pg	Pg	07 03 02.0	-1.3
	0.9nm,0.3s,baz=101,slow=14,SNR=10						
ZALV				Lg	Lg	07 03 19.7	
	0.7nm,0.3s,baz=100,slow=26,SNR=11						
ZALV				Rg	Rg	07 03 27.3	
	5.6nm,0.8s,baz=92,slow=31,SNR=9.8						
KURBB	**Kurchatov Arra**	**5.99**	**242**	P

	1.2nm,0.6s							
GEYT	**Alibeck**	**80.12**	**307**	P	**P**	**07 21 56.9**	**+1.7**
	1.7nm,0.3s,baz=56,slow=5.4,SNR=3.4							
SPITS	**Spitsbergen Ar**	**82.96**	**351**	LR	LR	07 59 51.1		
	comp=Z,8.8nm,21.2s,baz=70,slow=36							
ARCES	**ARCESS Array B**	**86.36**	**343**	P	**P**	**07 22 26.4**	**-0.4**
	2.6nm,0.8s,baz=42,slow=5.7,SNR=3.6							
DUG	**Dugway, Tooele**	**87.93**	**49**	P	**P**	**07 22 35.0**	**-0.2**
DBIC	**Dimbokro**	**144.80**	**306**	PKP	**PKPdf**	**07 29 22.2**	**-0.6**
	3.9nm,0.7s,baz=52,slow=5.1,SNR=6.3							

*ISCJB **06** 07:10:21.5±0.4,24.°20N±0.°02×121.°82E±0.°02, h6km±3km, Error ellipse: s-maj=3.4km s-min=2.4km az=137.1*
*JMA **06** 07:10:21.4±0.1,24.°21N×121.°76E, h13km±2km, MI2.5*
*TAP **06** 07:10:21.6,24.°23N×121.°76E, h17km, MLI3.5,B*

ISC 06 07:10:21.9±0.8,24.°22N±0.°02×121.°78E±0.°02, h16km±5km, n52, σ0.°76/79, 7C-4D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.10**	**337**	*i* P	**Pg**	**07 10 25.7**	**+0.4**
	baz=350						
EHP				S	**Sg**	**07 10 28.1**	**+0.5**
	baz=350						
ENA	**Nanau**	**0.21**	**350**	⇑*i* P	**Pg**	**07 10 26.5**	**-0.3**
	baz=354						
ENA				S	**Sg**	**07 10 29.8**	**-0.4**
	baz=354						
TWD	**Chiawan**	**0.22**	**231**	⇓*i* P	**Pb**	**07 10 26.9**	**-0.6**
	baz=232						
TWD				*i* S	**Sb**	**07 10 30.5**	**-0.8**
	baz=232						
HWA	**Hwalien**	**0.29**	**214**	*e*P	**Pb**	**07 10 28.5**	**-0.2**
	baz=218						
TWC	**Suao**	**0.39**	**9**	⇑*i* P	**Pg**	**07 10 29.8**	**-0.1**
	baz=6.0						
TWC				S	**Sg**	**07 10 35.1**	**-0.3**
	baz=6.0						
NNS	**Nan Shan**	**0.43**	**300**	⇑*i* P	**Pb**	**07 10 30.5**	**-0.8**
	baz=300						
NNS				*i* S	**Sg**	**07 10 36.3**	**-0.4**
	baz=300						
ENTT	**Nioudou**	**0.46**	**335**	⇑*i* P	**Pg**	**07 10 31.0**	**-0.2**
	baz=334						
ENTT				*i* S	**Sg**	**07 10 37.3**	**-0.2**
	baz=334						
WHF	**Hehuan Shan**	**0.48**	**261**	⇑*i* P	**Pg**	**07 10 31.4**	**-0.3**
	baz=261						
WHF				S	**Sg**	**07 10 37.6**	**-0.6**
	baz=261						
TWE	**Neicheng**	**0.51**	**348**	P	**Pb**	**07 10 32.0**	**-0.5**
	baz=348						
TWE				S	**Sg**	**07 10 38.7**	**-0.2**
	baz=348						
ESL	**Shilin**	**0.52**	**218**	*e*P	**Pg**	**07 10 31.9**	**-0.3**
	baz=222						
TWT	**Tachien**	**0.55**	**274**	P	**Pb**	**07 10 33.1**	**-0.2**
	baz=274						
TWT				S	**Sb**	**07 10 40.5**	**-0.6**
	baz=274						
NSK	**Sanguang**	**0.60**	**320**	⇑*i* P	**Pb**	**07 10 33.5**	**-0.5**
	baz=319						
NSK				*i* S	**Sg**	**07 10 41.1**	**-0.5**
	baz=319						
EGS		**0.64**	**12**	*e*P	**Pb**	**07 10 34.4**	**-0.3**
	baz=18						
WDT	**Danda**	**0.75**	**232**	⇓*i* P	**Pb**	**07 10 36.5**	**-0.3**
	baz=240						
WDT				S	**Sb**	**07 10 46.7**	**-0.2**
	baz=240						
TWA	**Mucha**	**0.78**	**347**	*e*P	**Pb**	**07 10 37.3**	**+0.2**
	baz=346						
TWA				*e*S	**Sn**	**07 10 49.1**	**-0.5**
	baz=346						
NSTT	**Nanjuang**	**0.82**	**300**	⇓P	**Pb**	**07 10 38.0**	**+0.2**
	baz=299						
NSTT				S	**Sb**	**07 10 48.5**	**-0.1**
	baz=299						
EHY	**Hungye**	**0.83**	**211**	*e*P	**Pg**	**07 10 37.6**	**-0.4**
	baz=221						
NWF	**Wu-fen Shan**	**0.85**	**360**	*e*P	**Pb**	**07 10 38.3**	**0.0**
	baz=349						
TAP1	**Taipei**	**0.85**	**344**	*e*P	**Pg**	**07 10 37.1**	**-1.4**
	baz=334						
SMLT	**Sun Moon Lake**	**0.87**	**248**	P	**Pb**	**07 10 38.8**	**0.0**
	baz=241						
SMLT				*e*S	**Sn**	**07 10 50.9**	**-1.1**
	baz=241						
TYC	**Yuchr**	**0.90**	**250**	⇓*i* P	**Pb**	**07 10 39.0**	**-0.1**
	baz=244						
TYC				S	**Sb**	**07 10 50.9**	**0.0**
	baz=244						
NCU	**National Centr**	**0.92**	**324**	*e*P	**Pg**	**07 10 39.3**	**-0.5**
	baz=323						
TWQ1	**Liyutan**	**0.93**	**278**	*e*P	**Pn**	**07 10 40.4**	**+0.1**
	baz=278						
TWS1	**Kuangyinshan**	**0.94**	**339**	*e*P	**Pn**	**07 10 40.5**	**+0.2**
	baz=338						
TWS1				*e*S	**Sn**	**07 10 54.3**	**+0.8**
	baz=338						
HSN	**Hsinchu**	**0.94**	**308**	*e*P	**Pn**	**07 10 40.5**	**+0.1**
	baz=304						
HSN				*e*S	**Sn**	**07 10 54.7**	**+1.2**
	baz=304						
NSY	**Sanyi**	**0.95**	**282**	*e*P	**Pn**	**07 10 41.4**	**+0.8**
	baz=282						
NSY				*e*S	**Sn**	**07 10 54.6**	**+0.7**
	baz=282						
TWF1	**Yuli**	**0.97**	**207**	*e*P	**Pb**	**07 10 39.3**	**-1.1**
	baz=219						
TCU	**Taichung**	**1.01**	**266**	*e*P	**Pn**	**07 10 42.8**	**+1.4**
	baz=267						
TCU				*e*S	**Sn**	**07 10 57.2**	**+1.9**
	baz=267						
YUS	**Yu-Shan**	**1.05**	**226**	P	**Pb**	**07 10 41.7**	**-0.3**
	baz=227						
YUS				S	**Sn**	**07 10 56.9**	**-0.1**
	baz=227						
WNT	**Mingjian**	**1.06**	**251**	*e*P	**Pn**	**07 10 42.7**	**+0.7**
	baz=243						
TWY	**Chenhua**	**1.06**	**351**	*e*P	**Pn**	**07 10 42.3**	**+0.1**
	baz=335						
JYNG	**Yonagunijimaku**	**1.09**	**78**	P	**Pn**	**07 10 42.7**	**+0.3**
JYNG				S	**Sb**	**07 10 56.9**	**+0.7**
ALS	**Alishan**	**1.14**	**232**	*e*P	**Pb**	**07 10 42.5**	**-0.9**
	baz=220						
ALS				*e*S	**Sn**	**07 10 58.7**	**-0.2**
	baz=220						
YOJ	**Yonaguni jima**	**1.15**	**78**	P	**Pn**	**07 10 43.4**	**+0.1**
YOJ				S	**Sg**	**07 10 58.9**	**-0.1**
YOJ	**Yonaguni jima**	**1.15**	**78**	P	**Pn**	**07 10 43.4**	**+0.1**
	baz=67						
CHN5	**Tsauling**	**1.19**	**239**	*e*P	**Pg**	**07 10 44.4**	**-0.4**
	baz=224						
CHN5				*e*S	**Sn**	**07 11 02.5**	**+2.8**
	baz=224						
ELDTW	**Lidau**	**1.24**	**214**	*e*P	**Pn**	**07 10 43.8**	**-0.9**
	baz=201						
CHN4	**Tsaushan**	**1.39**	**232**	⇑P	**Pg**	**07 10 48.0**	**-0.7**
	baz=234						
CHN4				*e*S	**Sg**	**07 11 07.8**	**+1.0**
	baz=234						
STYT	**Tauyuan**	**1.41**	**222**	*e*P	**Pn**	**07 10 47.2**	**+0.2**
	baz=222						
CHY	**Chiayi**	**1.44**	**240**	*e*P	**Pg**	**07 10 49.2**	**-0.4**
	baz=227						
WTP	**Ta-pu**	**1.44**	**228**	*e*P	**Pb**	**07 10 48.2**	**-0.2**
	baz=230						
WTP				*e*S	**Sg**	**07 11 10.7**	**+2.1**
	baz=230						
TWK	**Hsinying**	**1.52**	**232**	*e*P	**Pg**	**07 10 50.5**	**-0.7**
	baz=232						
TWG	**Pinlang**	**1.54**	**205**	*e*P	**Pn**	**07 10 48.1**	**-0.6**
	baz=191						
CHN1	**Nanshi**	**1.54**	**228**	*e*P	**Pb**	**07 10 49.9**	**-0.3**
	baz=229						
SGST	**Jiashian**	**1.58**	**224**	*e*P	**Pb**	**07 10 50.6**	**-0.1**
	baz=224						
HATJ	**Hateruma jima**	**1.85**	**95**	*e*S	**Sn**	**07 11 17.5**	**+1.4**
EAST	**Anshuo**	**2.02**	**205**	*e*P	**Pn**	**07 10 56.3**	**+0.9**
	baz=193						
JKRS	**Kuro-shima**	**2.03**	**89**	P	**Pn**	**07 10 56.4**	**+0.9**
SCZT	**Fangliau**	**2.13**	**210**	*e*P	**Pb**	**07 10 58.5**	**-1.6**
	baz=194						
JIJ	**Ishigaki jima**	**2.16**	**86**	P	**Pn**	**07 10 57.4**	**+0.2**
JIJ				*e*S	**Sn**	**07 11 24.0**	**+0.4**
WDGT	**Dungji**	**2.17**	**244**	*e*P	**Pn**	**07 10 57.7**	**+0.4**
	baz=246						
JISG	**Ishigakijimahi**	**2.33**	**80**	*e*S	**Sn**	**07 11 27.9**	**0.0**

GUC 06 07:13:08.2±0.3,20.°73S×69.°16W, h103km±2km, ML3.6, 1C-4D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB01	**IPOC Station P**	**0.44**	**224**	⇓*e*P	Pn	07 13 24.4	+0.3
PB01				*e*S	Sn	07 13 36.5	+0.5
PB01				IAML		07 13 38.1	
	comp=E,4μm,0.2s						
PB08	**IPOC Station P**	**0.58**	**1**	⇓*e*P	Pn	07 13 25.9	+0.5
PB08				*e*S	Sn	07 13 39.4	+1.2
PB08				IAML		07 13 40.2	
	comp=E,2μm,0.1s						
HMBC	**Humberstone**	**0.81**	**303**	⇓*e*P	Pn	07 13 27.5	+0.4
HMBC				*e*S	Sn	07 13 42.2	+0.9
HMBC				IAML		07 13 44.4	
	comp=E,2μm,0.4s						
PB07	**IPOC Station P**	**1.20**	**214**	⇓*e*P	Pn	07 13 31.9	+0.6
PB07				*e*S	Sn	07 13 49.7	+0.9
PB07				IAML		07 13 50.3	
	comp=N,1μm,0.4s						
PSGC	**Pisagua**	**1.44**	**321**	*e*P	Pn	07 13 34.5	+0.4
PSGC				*e*S	Sn	07 13 54.6	+1.0
PSGC				IAML		07 13 56.9	
	comp=N,663nm,1.0s						
MNMC	**Minye Minye**	**1.64**	**345**	⇓*e*P	Pn	07 13 37.3	+0.6
MNMC				*e*S	Sn	07 13 59.1	+0.9
MNMC				IAML		07 14 03.4	
	comp=E,898nm,0.6s						
MNMC				IAML		07 14 05.4	
	comp=N,1μm,0.3s						

*IDC **06** 07:13:18.6±1.1, 33.°80S×72.°23W, h0km, mb3.7/3, mb1 3.9/4, mb1mx3.7/17, mbtmp3.7/4, ML4.3/1, MS2.5/1, Ms1 2.5/1, ms1mx2.4/20, Error ellipse: s-maj=44.1km s-min=33.5km az=66.0*
*ISCJB **06** 07:13:19.7±0.9, 33.°85S±0.°05×72.°52W±0.°07, h17km, mb3.6/3, Error ellipse: s-maj=9.2km s-min=6.5km az=23.0*
*GUC **06** 07:13:20.2±0.4, 33.°85S×72.°41W, h30km±4km, ML3.7*

ISC 06 07:13:21.1±0.9, 33.°94S±0.°05×72.°34W±0.°07, h17km, n26, σ1§12/30, mb4.0/3, 2C-1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.53**	**148**	⇓*e*P	**Pn**	**07 13 33.0**	**-0.9**
CHPI				*e*S	**Sn**	**07 13 42.7**	**+0.3**
CHPI				IAML		07 13 45.3	
	comp=E,4μm,0.7s						
RCDM	**Rinconada Maip**	**1.36**	**71**	⇑*e*P	**Pn**	**07 13 45.0**	**-0.3**
RCDM				*e*S	**Sg**	**07 14 04.1**	**-1.0**
NICH	**Los Niches**	**1.40**	**139**	*e*P	**Pb**	**07 13 47.1**	**+0.3**
ANTU	**Antumapu**	**1.47**	**76**	*e*P	**Pb**	**07 13 47.3**	**-0.7**
TALC	**Talca**	**1.56**	**158**	*e*P	**Pb**	**07 13 49.5**	**-0.1**
PEL	**Peldehue**	**1.60**	**60**	*e*P	**Pn**	**07 13 48.6**	**0.0**
PEL				*e*S	**Sb**	**07 14 10.2**	**+0.1**
PEL				IAML		07 14 20.9	
	comp=E,2μm,0.8s						
CLCH	**Cerro Calan**	**1.60**	**71**	⇑*e*P	**Pn**	**07 13 48.9**	**+0.1**
CLCH				*e*S	**Sb**	**07 14 11.0**	**+0.7**
CLCH				IAML		07 14 24.3	
	comp=N,2μm,1.4s						
AUSP	**Uspallata**	**3.02**	**56**	*e*P	**Pb**	**07 14 12.9**	**-1.7**
AUSP				*e*S	**Sg**	**07 14 57.6**	**-0.5**
AAGR	**Agrelo**	**3.06**	**75**	*e*P	**Pb**	**07 14 16.7**	**+1.6**
ARCO	**CERRO ARCO**	**3.06**	**70**	*e*P	**Pb**	**07 14 14.6**	**-0.6**
ARCO				IAML		07 14 20.3	
	comp=Z,247nm,0.5s						
ASAL	**Salagasta**	**3.23**	**66**	*e*P	**Pb**	**07 14 18.5**	**+0.4**
RTLS	**Leoncito**	**3.34**	**51**	*e*P	**Pn**	**07 14 15.8**	**+3.0**
RTCV	**Cerro Valdivia**	**3.81**	**58**	*e*P	**Pb**	**07 14 26.9**	**-1.1**
SJA	**San Juan**	**4.00**	**54**	*e*P	**Pb**	**07 14 30.7**	**-0.4**
RTLL	**Cerro Villicun**	**4.18**	**52**	*e*P	**Pn**	**07 14 25.7**	**+1.6**
AMOG	**MOGNA**	**4.42**	**48**	*e*P	**Pn**	**07 14 29.1**	**+1.5**
MRA	**San Martin**	**5.76**	**77**	*e*P	**Pn**	**07 14 47.5**	**+1.6**
MRA				IAML		07 16 34.0	
	comp=Z,36nm,0.6s						
VCA	**Vinchina**	**6.28**	**35**	IAML		07 16 51.3	
	comp=Z,40nm,0.7s						
PLCA	**Paso Flores**	**6.92**	**169**	Pn	**Pn**	**07 15 04.3**	**+2.4**
	comp=Z,1.3nm,0.3s,baz=5.8,slow=12,SNR=23						
PLCA				Lg	Lg	07 16 58.2	
	comp=Z,0.2nm,0.3s,baz=295,slow=19,SNR=3.0						
PLCA				LR	LR	07 17 01.8	
	comp=Z,40nm,21.9s,baz=22,slow=32						
TXAR	**Lajitas Array**	**69.56**	**331**	P	**P**	**07 24 29.4**	**+0.2**
	comp=Z,0.1nm,0.6s,baz=158,slow=7.8,SNR=2.6						
DBIC	**Dimbokro**	**75.40**	**71**	P	**P**	**07 25 04.1**	**-0.2**
	comp=Z,1.7nm,0.7s,baz=207,slow=6.8,SNR=3.7						
TORD	**Torodi Ar. Bea**	**84.43**	**70**	P	**P**	**07 25 52.5**	**-0.6**
	comp=Z,0.7nm,0.8s,baz=257,slow=4.3,SNR=4.2						
WRA	**Warramunga Arr**	**120.69**	**209**	PKP	**PKPdf**	**07 32 12.5**	**-0.2**
	comp=Z,0.3nm,0.6s,baz=158,slow=2.0,SNR=2.4						
KURBB	**Kurchatov Arra**	**153.00**	**43**	PKPbc	**PKPbc**	**07 33 16.5**	**-0.6**
	comp=Z,0.2nm,0.4s,baz=310,slow=2.8,SNR=3.7						
ZALV	**Zalesovo Beam**	**154.31**	**32**	PKPbc	**PKPbc**	**07 33 19.8**	**0.0**
	comp=Z,1.0nm,0.5s,baz=289,slow=3.5,SNR=3.8						
MKAR	**Makanchi Array**	**156.92**	**49**	PKPab	**PKPab**	**07 33 44.5**	**-0.9**
	comp=Z,0.4nm,0.6s,baz=299,slow=3.8,SNR=4.4						

*ISCJB **06** 07:18:50.8±0.7, 36.°58N±0.°03×121.°46W±0.°05, h19km±5km, Error ellipse: s-maj=6.5km s-min=4.8km az=166.0*
*NEIC **06** 07:18:52.4, 36.°67N×121.°29W, h7km, MW3.8(BRK), After NCEDC.*
NEIC Felt [II] at Gonzales, Hollister and Soledad. Also felt at Carmel Valley, Chualar, Marina, Paicines, Pacific Grove, Salinas and Seaside.

ISC 06 07:18:51.1±1.2, 36.°60N±0.°04×121.°44W±0.°08, h16km±9km, n45, σ1§02/62, Central California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SAO	**San Andreas Ge**	**0.16**	**358**	*e*Pg	**Pg**	**07 18 55.7**	**+0.4**
SAO				*e*Sg	**Sg**	**07 18 57.7**	**-0.4**
CMB	**Columbia Colle**	**1.66**	**30**	*e*Pn	**Pn**	**07 19 19.7**	**+0.1**
CMB				*e*Sn	**Sn**	**07 19 39.3**	**-1.3**
SMMC	**Simmler**	**1.74**	**137**	P	**Pn**	**07 19 21.1**	**+0.4**
	baz=322,SNR=171						
RCTC	**Rector, Farmer**	**1.80**	**99**	P	**Pn**	**07 19 20.5**	**-1.0**
	baz=283,SNR=65						
RCTC				S	**Sn**	**07 19 43.4**	**-0.5**
	baz=283						
MCCM	**Marconi Confer**	**1.92**	**324**	*e*Pn	**Pn**	**07 19 23.5**	**+0.4**
VES	**Vestal, Richgr**	**2.05**	**111**	P	**Pn**	**07 19 24.8**	**-0.2**
	baz=296,SNR=62						
VES				S	**Sn**	**07 19 49.3**	**-0.9**
	baz=296						
PKM	**Mcpherson Peak**	**2.17**	**142**	P	**Pn**	**07 19 26.9**	**+0.2**
	baz=326,SNR=94						
MLAC	**Mammoth, Mammo**	**2.32**	**63**	P	**Pn**	**07 19 30.4**	**+1.5**
	baz=244,SNR=26						
MLAC				S	**Sb**	**07 19 58.8**	**-2.5**
	baz=244						
SBC	**Santa Barbara**	**2.58**	**146**	P	**Pn**	**07 19 32.7**	**+0.5**
	baz=330						
ISA	**Isabella, Lake**	**2.58**	**110**	P	**Pn**	**07 19 33.0**	**+0.7**
	baz=295,SNR=70						
ISA				S	**Sn**	**07 20 04.1**	**+0.7**
	baz=295						
ARVC	**Arvin**	**2.58**	**124**	P	**Pn**	**07 19 32.4**	**+0.1**
	baz=308,SNR=31						
TIN	**Tinemaha, Big**	**2.62**	**79**	P	**Pn**	**07 19 34.6**	**+1.8**
	baz=262,SNR=49						
TIN				Sb	**Sb**	**07 20 10.0**	**+0.4**
	baz=262						
CWC	**Cottonwood Cre**	**2.71**	**92**	P	**Pn**	**07 19 35.3**	**+1.1**
	baz=276						
CWC				S	**Sn**	**07 20 07.3**	**+0.5**
	baz=276						
OSI	**Osito Audit: C**	**2.97**	**131**	P	**Pn**	**07 19 38.5**	**+0.7**
	baz=315,SNR=8.8						
SCZ2	**Santa Cruz Isl**	**3.00**	**150**	P	**Pn**	**07 19 38.6**	**+0.6**
	baz=334,SNR=10.0						
SCZ2				S	**Sn**	**07 20 14.4**	**+0.9**
	baz=334						
DAC	**Darwin (Calif)**	**3.12**	**95**	*e*Pn	**Pn**	**07 19 40.9**	**+1.0**
BLG	**Laguna Peak, P**	**3.16**	**141**	P	**Pn**	**07 19 40.3**	**+0.1**
	baz=325,SNR=7.5						
BLG				S	**Sn**	**07 20 17.4**	**-0.2**
	baz=325						
MPMC	**Manual Prospec**	**3.24**	**99**	P	**Pn**	**07 19 41.8**	**+0.4**
	baz=282,SNR=81						
MPMC				Sb	**Sb**	**07 20 27.8**	**+0.1**
	baz=282						
LRMC	**Laurel Mtn Rad**	**3.25**	**109**	P	**Pn**	**07 19 41.6**	**+0.1**
	baz=293,SNR=48						
LRMC				Sb	**Sb**	**07 20 26.2**	**-1.6**
	baz=293						
EDW2	**Edwards Air Fo**	**3.29**	**120**	P	**Pn**	**07 19 42.7**	**+0.6**
	baz=305,SNR=48						
EDW2				S	**Sn**	**07 20 21.3**	**+0.4**
	baz=305						
GRAC	**Grapevine Rang**	**3.29**	**82**	P	**Pn**	**07 19 43.7**	**+1.6**
	baz=265,SNR=17						
DECC	**Green Verdugo**	**3.46**	**132**	Pb	**Pb**	**07 19 51.2**	**-0.8**
	baz=316						
PASC	**Pasadena Art C**	**3.60**	**131**	*e*Pn	**Pn**	**07 19 48.0**	**+1.7**
FURC	**Furnace Creek,**	**3.69**	**91**	P	**Pn**	**07 19 48.4**	**+1.0**
	baz=274						
O03D	**Paynes Creek**	**3.69**	**356**	P	Pn	07 19 53.2	+5.5
	baz=174						
SNCC	**San Nicolas Is**	**3.70**	**154**	P	**Pn**	**07 19 48.3**	**+0.7**
	baz=338,SNR=5.3						
SNCC				S	**Sn**	**07 20 31.0**	**+0.1**
	baz=338						
BFSC	**Mount Baldy Ra**	**3.89**	**126**	P	**Pn**	**07 19 51.4**	**+1.0**
	baz=310						
BFSC				S	**Sn**	**07 20 36.2**	**+0.5**
	baz=310						
GSC	**Goldstone, Bar**	**3.98**	**108**	P	**Pn**	**07 19 51.8**	**+0.2**
	baz=292,SNR=39						
RRX	**Edison Barstow**	**4.01**	**114**	P	**Pn**	**07 19 52.2**	**+0.4**
	baz=298						
RRX				Sb	**Sb**	**07 20 49.4**	**-0.2**
	baz=298						
CIS	**Catalina Islan**	**4.05**	**141**	P	**Pn**	**07 19 53.0**	**+0.5**
	baz=325						
CIS				S	**Sn**	**07 20 38.4**	**-1.1**
	baz=325						
TPNV	**Topopah Spring**	**4.18**	**84**	P	**Pn**	**07 19 55.6**	**+1.1**
	baz=268,SNR=41						
SCI2	**San Clemente I**	**4.33**	**146**	P	**Pn**	**07 19 57.3**	**+1.0**
	baz=329,SNR=12						
SCI2				S	**Sn**	**07 20 47.2**	**+0.8**
	baz=329						
BBRC	**Big Bear Solar**	**4.37**	**121**	P	**Pn**	**07 19 58.4**	**+1.3**
	baz=305						
HEC	**Hector,Ludlow**	**4.52**	**112**	P	**Pn**	**07 19 59.5**	**+0.5**
	baz=296						
TUQ	**Turquoise Moun**	**4.62**	**103**	P	**Pn**	**07 20 00.7**	**+0.2**
	baz=287,SNR=18						
R11A	**Troy Canyon, C**	**4.97**	**68**	*e*Pn	**Pn**	**07 20 08.6**	**+3.2**
GMRC	**Granite Mounta**	**5.04**	**109**	P	**Pn**	**07 20 06.3**	**0.0**
	baz=294,SNR=25						
PFO	**Pinyon Flats O**	**5.06**	**125**	P	**Pn**	**07 20 07.4**	**+1.0**
	baz=309,SNR=12						
PFO	**Pinyon Flats O**	**5.06**	**125**	*e*Pn	**Pn**	**07 20 08.1**	**+1.6**
TPFO	**Pinon Flats**	**5.07**	**125**	P	**Pn**	**07 20 07.5**	**+0.9**
	baz=309,SNR=13						
109C	**Camp Elliot, M**	**5.15**	**135**	P	**Pn**	**07 20 08.2**	**+0.7**
	baz=319						
BELC	**Belle Mtn. Jos**	**5.15**	**119**	P	**Pn**	**07 20 08.2**	**+0.4**
	baz=303,SNR=9.6						
MONP2	**Monument Peak**	**5.55**	**130**	P	**Pn**	**07 20 13.8**	**+0.5**
	baz=315,SNR=6.3						
WUAZ	**Wupatki**	**8.23**	**95**	*e*Pn	**Pn**	**07 20 51.8**	**+1.8**
	4.7nm,0.8s						
HWUT	**Hardware Ranch**	**9.16**	**54**	*e*Pn	**Pn**	**07 21 02.9**	**+0.1**
	5.5nm,0.9s						

SJA 06 07:25:22.3±0.6, 31.°43S×69.°27W, h105km±4km, ML3.1, MW3.5, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RTLS	**Leoncito**	**0.37**	**184**	*e*P	Pn	07 25 39.2	+1.0
RTLS				*e*S	Sn	07 25 51.5	+1.4
SJA	**San Juan**	**0.61**	**99**	*e*P	Pn	07 25 40.6	+1.1
RTLL	**Cerro Villicun**	**0.68**	**82**	*e*P	Pn	07 25 40.6	+0.5
RTCV	**Cerro Valdivia**	**0.75**	**125**	*e*P	Pn	07 25 41.7	+0.9
AUSP	**Uspallata**	**0.80**	**187**	*e*P	Pn	07 25 42.5	+1.0
AMOG	**MOGNA**	**0.82**	**54**	*e*P	Pn	07 25 42.1	+0.7
ASAL	**Salagasta**	**1.21**	**163**	*e*P	Pn	07 25 46.6	+1.1
ARCO	**CERRO ARCO**	**1.43**	**169**	*e*P	Pn	07 25 49.4	+1.2
ARCO				IAML		07 26 12.0	
	comp=Z,234nm,0.2s						
AAGR	**Agrelo**	**1.69**	**167**	*e*P	Pn	07 25 52.2	+0.9
ACAN	**Cantantal**	**1.96**	**116**	*e*P	Pn	07 25 55.2	+0.7
AGUA	**GUANDACOL**	**2.05**	**19**	*e*P	Pn	07 25 56.9	+1.0
VCA	**Vinchina**	**2.84**	**19**	IAML		07 26 44.7	
	comp=Z,63nm,0.2s						
MRA	**San Martin**	**3.17**	**109**	IAML		07 26 11.0	
	comp=Z,50nm,0.3s						
TCA	**Tanti**	**3.99**	**90**	IAML		07 27 07.0	
	comp=Z,19nm,0.6s						

IDC 06 07:27:45.0±22.0, 20.°07S×178.°02W, h545km±202km, mb3.1/5, mb1 3.3/5, mb1mx3.0/30, mbtmp4.0/5, Error ellipse: s-maj=246.7km s-min=43.2km az=133.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**33.52**	**264**	P	P	07 33 40.2	+0.3
	2.7nm,0.4s,baz=83,slow=9.8,SNR=6.5						
ASAR	**Alice Springs**	**44.60**	**256**	P	P	07 35 08.9	-0.3
	2.3nm,0.6s,baz=97,slow=7.6,SNR=34						
ASAR				PcP	PcP	07 36 39.8	-0.6
	0.4nm,0.9s,baz=90,slow=5.0,SNR=3.1						
WRA	**Warramunga Arr**	**44.64**	**262**	P	P	07 35 09.1	-0.5
	0.8nm,0.3s,baz=97,slow=7.8,SNR=50						
FITZ	**Fitzroy Crossi**	**53.07**	**262**	P	P	07 36 12.1	+0.1
	1.0nm,0.5s,baz=76,slow=6.8,SNR=7.8						
ILAR	**Eielson Array**	**87.90**	**13**	P	P	07 39 36.2	0.0
	0.2nm,0.6s,baz=205,slow=3.9,SNR=3.7						

*ISK **06** 07:31:43.6, 38.°58N×39.°66E, h7km, MD2.5*
*ISCJB **06** 07:31:44.2±0.7, 38.°59N±0.°04×39.°63E±0.°05, h9km, Error ellipse: s-maj=6.4km s-min=4.7km az=34.1*
*CSEM **06** 07:31:44.4±0.3, 38.°63N×39.°44E, h30km, MD2.5, Error ellipse: s-maj=10.1km s-min=6.6km az=106.0*
*DDA **06** 07:31:45.3, 38.°78N×39.°24E, h38km, MlI2

SVRC	**Sivrice-ELAZID**	**0.30**	**230**	*e*PG	**Pg**	**07 40 57.2**	**-0.3**
SVRC				*e*SG	**Sg**	**07 41 02.3**	**+0.8**
SVRC	**Sivrice-ELAZID**	**0.30**	**230**	*e*Pg	**Pg**	**07 40 57.2**	**-0.3**
SVRC				*e*Sg	**Sg**	**07 41 02.3**	**+0.8**
PTK	**Pertek**	**0.36**	**333**	*e*PG	**Pg**	**07 40 58.2**	**-0.5**
PTK				*e*SG	**Sg**	**07 41 03.8**	**+0.3**
PTK	**Pertek**	**0.36**	**333**	*e*Pg	**Pg**	**07 40 58.2**	**-0.5**
PTK				*e*Sg	**Sg**	**07 41 03.8**	**+0.3**
ELZG	**Elazig**	**0.49**	**262**	*i* P	**Pg**	**07 41 00.8**	**-0.2**
ELZG				*i* S	**Sb**	**07 41 08.4**	**-1.2**
ELZG	**Elazig**	**0.49**	**262**	P	**Pg**	**07 41 00.8**	**-0.2**
ELZG				S	**Sb**	**07 41 08.4**	**-1.2**
TNCL	**Tunceli-Merkez**	**0.55**	**355**	*i* P	**Pg**	**07 41 02.3**	**+0.2**
TNCL				*i* S	**Sb**	**07 41 11.0**	**-0.2**
TNCL	**Tunceli-Merkez**	**0.55**	**355**	P	**Pg**	**07 41 02.3**	**+0.2**
TNCL				S	**Sb**	**07 41 11.0**	**-0.2**
DYBB	**Diyarbakir**	**0.75**	**145**	*e*PG	**Pb**	**07 41 06.6**	**-0.1**
DIY	**Diyarbakir**	**0.83**	**143**	*e*Pg	**Pg**	**07 41 06.6**	**-0.9**
ERZN	**Erzincan**	**1.02**	**5**	*e*PG	**Pg**	**07 41 10.5**	**-0.6**
KEMA	**Kemaliye**	**1.11**	**309**	*i* P	**Pg**	**07 41 11.2**	**-1.6**
KEMA				*i* S	**Sb**	**07 41 28.0**	**+0.6**
MAZI	**Mazidag**	**1.29**	**149**	*e*PN	**Pb**	**07 41 16.9**	**+0.9**
MAZI	**Mazidag**	**1.29**	**149**	*e*Pn	**Pb**	**07 41 16.9**	**+0.9**
AKCD	**Akcadag**	**1.34**	**259**	*i* P	**Pn**	**07 41 15.7**	**-0.8**
AKCD				*i* S	**Sn**	**07 41 35.9**	**+1.4**
AKCD	**Akcadag**	**1.34**	**259**	P	**Pn**	**07 41 15.7**	**-0.8**
AKCD				S	**Sn**	**07 41 35.9**	**+1.4**
KELT	**Kelkit**	**1.60**	**351**	*i* P	**Pb**	**07 41 21.6**	**+0.3**
KELT	**Kelkit**	**1.60**	**351**	P	**Pb**	**07 41 21.6**	**+0.3**

*SOME **06** 07:42:16.9, 44°.68N×82°.20E, h15km*
*NNC **06** 07:42:17.6±1.6, 44°.70N×81°.99E, h0km, mb3.1, mpv2.6, Error ellipse: s-maj=14.7km s-min=8.1km az=125.0*
*ISCJB **06** 07:42:20.3±1.6, 44°.75N±0°.07×82°.2E±0°.1, h10km, Error ellipse: s-maj=16.8km s-min=5.8km az=34.2*

ISC 06 07:42:15.4±1.9, 44°.73N±0°.06×82°.3E±0°.1, h10km, n9, σ0s86/16, 2C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.85**	**259**	*e*P	**Pb**	**07 42 49.0**	**-0.4**
	3.7nm,0.1s						
DJR				*e*S	**Sb**	**07 43 12.5**	**-0.3**
	7.7nm,0.1s						
MK31	**Makanchi Array**	**2.07**	**359**	⇓Pn	**Pg**	**07 42 54.7**	**-0.4**
	2.1nm,0.3s,baz=188,slow=15,SNR=97						
MK31				⇑Sn	**Sg**	**07 43 21.8**	**0.0**
	0.6nm,0.2s,baz=185,slow=26,SNR=13						
MAKZ	**Makanchi**	**2.10**	**353**	⇑Pn	**Pb**	**07 42 54.1**	**+0.6**
	1.9nm,0.5s						
MAKZ				⇓Sn	**Sg**	**07 43 22.4**	**-0.3**
	3.3nm,0.5s						
KAPS	**Kapalarasan**	**2.18**	**286**	*e*P	**Pb**	**07 42 54.3**	**-0.6**
	1.9nm,0.2s						
KAPS				*e*S	**Sb**	**07 43 21.3**	**-0.7**
	4.0nm,0.5s						
SHLS	**Shalkode**	**2.36**	**229**	*e*P	**Pb**	**07 42 58.1**	**0.0**
	4.3nm,0.3s						
SHLS				*e*S	**Sb**	**07 43 27.6**	**+0.2**
	14nm,0.2s						
PDGK	**Podgornoye**	**2.48**	**237**	⇓Lg	Lg	07 43 29.7	
	9.0nm,0.5s						
UZB	**Uzynbulak**	**2.86**	**238**	*e*P	**Pb**	**07 43 06.1**	**-0.5**
	1.4nm,0.3s						
UZB				*e*S	**Sb**	**07 43 41.5**	**-0.2**
	2.3nm,0.1s						
ARXS	**Arharly**	**3.26**	**263**	*e*P	**Pb**	**07 43 13.2**	**-0.1**
	0.9nm,0.4s						
ARXS				*e*S	**Sb**	**07 43 53.9**	**+0.7**
	5.1nm,0.6s						
CHKK	**Chushkaly**	**3.92**	**259**	*e*P	**Pb**	**07 43 25.3**	**+0.8**
	0.7nm,0.2s						
CHKK				*e*S	**Sb**	**07 44 14.5**	**+2.5**
	1.9nm,0.3s						

CASC 06 07:45:04.1±1.1, 13°.00N×89°.06W, h51km±20km, MD3.7, ML3.6, El Salvador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LFRS	**El Faro**	**0.62**	**360**	*e*P	Pn	07 45 16.9	-0.1
SNVI	**San Vicente**	**0.64**	**19**	*e*P	Pn	07 45 17.5	+0.2
SNET	**Serv Nac Est T**	**0.70**	**346**	*e*P	Pn	07 45 18.0	0.0
SNET				*e*S	Sn	07 45 28.3	+0.2
SNET				AML	AML	07 45 28.9	
	comp=Z,3μm,0.4s						
LBRS	**Las Brisas**	**0.73**	**1**	*e*P	Pn	07 45 18.8	+0.4
LFU	**La Fuente**	**0.74**	**356**	*e*P	Pn	07 45 18.7	+0.2
LFU				*e*S	Sn	07 45 29.6	+0.5
BOQS	**Boqueron**	**0.76**	**343**	*e*P	Pn	07 45 19.1	+0.2
BOQS				*e*S	Sn	07 45 30.1	+0.4
PACA	**Pacayal**	**0.85**	**57**	*e*P	Pn	07 45 20.5	+0.5
LCY	**Lacayo**	**0.85**	**60**	*e*P	Pn	07 45 20.6	+0.6
LCY				*e*S	Sn	07 45 32.5	+0.9
VSM	**San Miguel**	**0.87**	**61**	*e*P	Pn	07 45 20.9	+0.5
BLLM	**Bellamira**	**0.91**	**61**	*e*P	Pn	07 45 21.4	+0.6
SBLS	**San Blas**	**1.00**	**327**	*e*P	Pn	07 45 22.6	+0.5
SBLS				*e*S	Sn	07 45 35.9	+0.6
MONT	**Ecomontaæa**	**1.03**	**326**	*e*P	Pn	07 45 22.9	+0.5
RTR	**El Retiro**	**1.06**	**327**	*e*P	Pn	07 45 23.4	+0.6
CAHU	**Cacacuatique**	**1.12**	**47**	*e*P	Pn	07 45 23.8	0.0
CAHU				*e*S	Sn	07 45 38.8	+0.5
CNCH	**Conchagua**	**1.22**	**77**	*e*P	Pn	07 45 25.2	+0.2
RBDL	**Robledal**	**1.26**	**331**	*e*P	Pn	07 45 25.9	+0.3
RBDL				*e*S	Sn	07 45 42.2	+0.6
TGUH	**Tegucigalpa,Un**	**2.03**	**59**	*e*P	Pn	07 45 36.0	+0.2
CNGN	**Cerro Negro**	**2.35**	**102**	*e*P	Pn	07 45 40.3	-0.1
CNGN				*e*S	Sn	07 46 08.3	+0.2
CNGN				AML	AML	07 46 13.5	
	comp=E,334nm,0.3s						
MOMN	**Momotombo**	**2.53**	**103**	*e*P	Pn	07 45 42.5	-0.2
COPN	**Copaltepe**	**2.54**	**108**	*e*P	Pn	07 45 42.3	-0.6
ESTN	**Estel**	**2.62**	**88**	*e*P	Pn	07 45 44.0	-0.1
TISN	**Laguna Tiscapa**	**2.85**	**107**	*e*P	Pn	07 45 47.5	+0.3
BOAB	**BOACO BROADBAN**	**3.35**	**99**	*e*P	Pn	07 45 53.3	-0.7

IDC 06 07:54:39.8±2.1, 8°.37S×128°.84E, h0km, mb3.1/1, mb1 3.4/3, mb1mx3.3/30, mbtmp3.2/3, ML3.1/2, Error ellipse: s-maj=186.0km s-min=31.8km az=65.0, Timor Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.16**	**197**	Sn	Sn	07 58 59.8	-2.0
	baz=288,slow=20						
WRA	**Warramunga Arr**	**12.68**	**156**	Pn	Pn	07 57 41.8	+0.2
	0.1nm,0.3s,baz=335,slow=10.0,SNR=7.2						
WRA				Sn	Sn	08 00 01.5	-2.1
	0.2nm,0.3s,baz=329,slow=23,SNR=6.8						
ASAR	**Alice Springs**	**15.97**	**163**	Pn	Pn	07 58 25.8	-0.2
	0.1nm,0.3s,baz=342,slow=11,SNR=6.9						
MKAR	**Makanchi Array**	**68.75**	**328**	P	P	08 05 45.6	0.0
	0.1nm,0.4s,baz=127,slow=7.8,SNR=2.9						

*ISCJB **06** 07:59:59.4±1.0, 1°.68S±0°.02×138°.67E±0°.03, h9km±6km, mb5.0/127, MS4.2/41, Error ellipse: s-maj=4.6km s-min=3.8km az=144.1*
*IDC **06** 07:59:59.5±0.4, 1°.65S×138°.75E, h0km, mb4.8/24, mb1 4.9/25, mb1mx4.9/29, mbtmp4.8/25, ML4.9/2, MS4.1/30, Ms1 4.1/30, ms1mx4.1/39, Error ellipse: s-maj=17.3km s-min=9.6km az=76.0*
*BJI **06** 08:00:00.1, 1°.94S×138°.75E, h27km, mb5.0/67, mB5.1/50, Ms4.6/57, Ms7 4.4/55*
*NEIC **06** 08:00:02.0±2.5, 1°.67S×138°.68E, h15km±16km, mb5.2/49, Error ellipse: s-maj=5.0km s-min=4.0km az=217.0*
NEIC Felt [III] at Sarmi.
*GCMT **06** 08:00:02.0±0.2, 1°.58S×138°.76E, h14km, MW5.1/108, Moment Tensor Solution. s66,c88; s108,c160; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}4.86±.16; $M_{\theta\theta}$-3.22±.10; $M_{\phi\phi}$-1.64±.12; $M_{r\theta}$-3.49±.26; $M_{\phi\phi}$2.21±.07; $M_{\theta\phi}$2.26±.28; Best double couple: M_o6.36400×10^{16} NP1:ϕs304.00000°, δ65.00000°, λ89.00000°. NP2: ϕs127.00000°, δ25.00000°, λ93.00000°. Principal axes: T 6.4070, Plg70.0000°, Azm211.0000°; N -0.0860, Plg1.0000°, Azm304.0000°; P -6.3210, Plg20.0000°, Azm35.0000°; nsta1 refers to body waves, cutoff=40s.*

nsta2 refers to surface waves, cutoff=50s.
*MOS **06** 08:00:03.0±1.0, 1°.65S×138°.63E, h35km, mb5.3/58, MS4.2/12 Error ellipse: s-maj=9.9km s-min=5.1km az=111.3*
*DJA **06** 08:00:05.3±0.7, 2°.5±5°×13°.9E±°, h36km±8km, M4.9/12, mb5.2/12, mB5.4/8, Mw(mB)4.8/8*

ISC 06 08:00:03.6±0.6, 1°.74S±0°.03×138°.65E±0°.04, h27km±3km, n407, σ1s54/432, mb5.1/125, MS4.2/44, 22C-7D, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GENI	**Genyem**	**1.74**	**119**	P	**Pn**	**08 00 31.3**	**-0.7**
JAY	**Jayapura**	**2.19**	**111**	Pn	**Pn**	**08 00 36.0**	**-2.4**
	5.8nm,0.3s,baz=266,slow=21,SNR=56						
JAY				Sn	**Sn**	**08 01 02.3**	**-2.3**
	11nm,0.3s,baz=272,slow=24,SNR=9.3						
JAY				LR	LR	08 01 03.3	
	comp=Z,50nm,21.2s,baz=323,slow=30						
JAY	**Jayapura**	**2.19**	**111**	P	**Pn**	**08 00 36.1**	**-2.2**
FAKI	**Fak Fak**	**6.51**	**259**	P	**Pn**	**08 01 38.9**	**+1.3**
FAKI	**Fak Fak**	**6.51**	**259**	*e*Pn	**Pn**	**08 01 39.0**	**+1.4**
PALU	**Palau**	**9.94**	**335**	P	**Pn**	**08 02 24.7**	**-0.1**
	baz=10.0,SNR=7.1						
PMG	**Port Moresby**	**11.38**	**132**	Pn	**Pn**	**08 02 46.9**	**+2.3**
	1.0nm,0.3s,baz=317,slow=10,SNR=8.3						
PMG				LR	LR	08 08 13.8	
	comp=Z,2μm,19.3s,baz=19,slow=44						
PMG	**Port Moresby**	**11.38**	**132**	*e*Pn	**Pn**	**08 02 46.7**	**+2.1**
NLAI	**Namlea**	**11.64**	**262**	P	**Pn**	**08 02 50.9**	**+2.8**
KDU	**Kakadu**	**12.48**	**209**	P	**Pn**	**08 02 59.1**	**-0.5**
	baz=13,SNR=18						
SANI	**Sanana**	**12.66**	**268**	P	**Pn**	**08 03 01.5**	**-0.6**
COEN	**Coen**	**12.94**	**160**	P	**Pn**	**08 03 05.1**	**-0.8**
	baz=13,SNR=26						
COEN	**Coen**	**12.94**	**160**	*e*Pn	**Pn**	**08 03 05.1**	**-0.8**
MTN	**Manton Dam**	**13.31**	**214**	P	**Pn**	**08 03 11.7**	**+0.7**
	baz=13,SNR=3.3						
MTN	**Manton Dam**	**13.31**	**214**	*e*Pn	**Pn**	**08 03 10.8**	**-0.2**
MTN				*e*Sn	**Sn**	**08 05 36.1**	**-2.1**
KMSI	**Cibinong**	**14.85**	**279**	P	**P**	**08 03 36.3**	**-1.1**
DAV	**Davao City (W)**	**15.71**	**304**	LR	LR	08 10 09.8	
	comp=Z,331nm,19.0s,baz=134,slow=39						
KDI	**Kendari**	**16.16**	**262**	P	**P**	**08 03 53.5**	**+1.4**
	42nm,1.4s,852nm						
SOEI	**Soe**	**16.37**	**240**	P	**Pn**	**08 03 53.4**	**+1.6**
SOEI	**Soe**	**16.37**	**240**	*e*Pn	**Pn**	**08 03 52.3**	**+0.5**
	325nm,0.8s						
GUMO	**Guam**	**16.43**	**22**	LR	LR	08 09 27.3	
	comp=Z,665nm,21.3s,baz=198,slow=35						
MRSI	**Marisa**	**16.86**	**277**	P	**P**	**08 04 00.7**	**+1.0**
BATI	**Baumata**	**17.11**	**240**	P	**P**	**08 04 05.4**	**+2.8**
MTSU	**Mount Surprise**	**17.22**	**162**	P	**P**	**08 04 03.7**	**0.0**
	baz=17,SNR=30						
EDFI	**Ende, Flores**	**18.26**	**247**	P	**P**	**08 04 15.5**	**+0.1**
WRAB	**Tennant Creek**	**18.57**	**193**	*c* *i*P	**P**	**08 04 18.9**	**+0.2**
WRAB				pmax	pmax		
	comp=Z,392nm,0.8s						
WRAB	**Tennant Creek**	**18.57**	**193**	*e*P	**P**	**08 04 18.8**	**+0.2**
	comp=Z,142nm,0.8s						
WB2	**Warramunga Arr**	**18.58**	**193**	*e*P	**P**	**08 04 18.5**	**-0.3**
	comp=Z,130nm,0.8s						
WRA	**Warramunga Arr**	**18.58**	**193**	P	**P**	**08 04 18.4**	**-0.4**
	comp=Z,4.1nm,0.3s,baz=16,slow=12,SNR=163						
WRA				S	**Sn**	**08 07 37.0**	**-9.3**
	comp=Z,2.2nm,0.3s,baz=11,slow=22,SNR=5.9						
WRA				LR	LR	08 11 17.3	
	comp=Z,1μm,21.6s,baz=5.0,slow=36						
QIS	**Mount Isa**	**18.73**	**177**	P	**P**	**08 04 19.0**	**-1.4**
	baz=19,SNR=52						
PCI	**Palu**	**18.83**	**272**	P	**Pn**	**08 04 25.6**	**+3.4**
	comp=Z,213nm,1.1s,comp=Z,2μm						
TTSI	**Tana Toraja**	**18.86**	**266**	P	**Pn**	**08 04 26.3**	**+3.7**
KAPI	**Kappang**	**19.14**	**260**	P	**Pn**	**08 04 28.7**	**+2.7**
	comp=Z,0.9nm,0.3s,baz=103,slow=14,SNR=2.8						
KAPI				LR	LR	08 13 08.2	
	comp=Z,422nm,21.4s,baz=95,slow=41						
KAPI	**Kappang**	**19.14**	**260**	*e*P	**P**	**08 04 25.0**	**0.0**
	comp=Z,161nm,1.8s						
CTA	**Charters Tower**	**19.70**	**158**	P	**Pn**	**08 04 32.4**	**-0.2**
	comp=Z,2.1nm,0.3s,baz=332,slow=12,SNR=64						
CTA				LR	LR	08 13 05.9	
	comp=Z,2μm,18.2s,baz=341,slow=40						
CTAO	**Charters Tower**	**19.70**	**158**	*e*P	**Pn**	**08 04 32.6**	**0.0**
CTAO				pmax	pmax		
	comp=Z,51nm,0.8s						
CTAO	**Charters Tower**	**19.70**	**158**	*e*P	**Pn**	**08 04 32.6**	**0.0**
	comp=Z,51nm,0.8s						
RCP	**Roxas**	**20.61**	**310**	⇑*e*P	Pn	08 04 43.5	+0.2
FITZ	**Fitzroy Crossi**	**20.68**	**217**	P	**P**	**08 04 42.1**	**+0.4**
	comp=Z,50nm,0.9s,baz=47,slow=11,SNR=59						
FITZ				S	**S**	**08 08 23.6**	**-8.0**
	comp=Z,134nm,0.9s,baz=144,slow=19,SNR=17						
FITZ				LR	LR	08 13 43.7	
	comp=Z,866nm,18.3s,baz=40,slow=40						
FITZ	**Fitzroy Crossi**	**20.68**	**217**	P	**P**	**08 04 42.8**	**+1.1**
	baz=21,SNR=41						
FITZ	**Fitzroy Crossi**	**20.68**	**217**	*e*P	**P**	**08 04 42.9**	**+1.1**
	comp=Z,72nm,1.0s						
FITZ				S	**S**	**08 08 23.6**	**-8.0**
MYLDM	**Lahad Datu**	**21.27**	**289**	⇓P	**P**	**08 04 50.7**	**+2.5**
MYLDM	**Lahad Datu**	**21.27**	**289**	*e*P	**P**	**08 04 50.6**	**+2.5**
	comp=Z,155nm,1.2s						
PATS	**Pohnpei**	**21.39**	**66**	P	**P**	**08 04 49.9**	**+0.5**
	baz=21,SNR=3.5						
PATS	**Pohnpei**	**21.39**	**66**	*e*P	**P**	**08 04 49.8**	**+0.4**
	comp=Z,188nm,1.2s						
TSM	**Tawau**	**21.61**	**286**	⇑P	**P**	**08 04 52.4**	**+0.6**
PLAI	**Plampang**	**21.94**	**251**	P	**P**	**08 04 55.8**	**+0.5**
AS01	**Alice Springs**	**22.27**	**191**	*e*P	**P**	**08 04 59.7**	**+0.9**
AS31	**Alice Springs**	**22.28**	**192**	*e*P	**P**	**08 04 59.6**	**+0.7**
	comp=Z,66nm,0.8s						
ASAR	**Alice Springs**	**22.28**	**192**	P	**P**	**08 04 59.4**	**+0.5**
	comp=Z,172nm,0.8s,baz=24,slow=10.0,SNR=532						
ASAR				S	**S**	**08 09 02.5**	**-0.3**
	comp=Z,26nm,1.1s,baz=14,slow=24,SNR=8.7						
HNR	**Honiara**	**22.51**	**111**	LR	LR	08 13 55.9	
	comp=Z,544nm,18.9s,baz=310,slow=37						
SDKM	**Sandakan**	**22.65**	**289**	⇑P	**P**	**08 05 03.9**	**+0.9**
TWSI	**Taliwang, Sumb**	**22.76**	**251**	P	**P**	**08 05 02.8**	**-1.3**
TGY	**Tagaytay City**	**23.58**	**312**	P	**P**	**08 05 12.7**	**+0.3**
	comp=Z,160nm,0.3s,baz=133,slow=17,SNR=3.3						
TGY				LR	LR	08 14 38.0	
	comp=Z,460nm,19.2s,baz=102,slow=37						
KKM	**Kota Kinabalu**	**23.70**	**289**	⇑P	**P**	**08 05 13.9**	**+0.2**
KKM	**Kota Kinabalu**	**23.70**	**289**	*e*P	**P**	**08 05 13.8**	**+0.1**
	comp=Z,60nm,0.8s						
WRKA	**Warakurna**	**25.23**	**202**	P	**P**	**08 05 27.2**	**-0.3**
	baz=25,SNR=49						
QLP	**Quilpie**	**25.28**	**168**	P	**P**	**08 05 29.3**	**+1.5**
	baz=25,SNR=58						
JAGI	**Jajag, Banyuwa**	**25.29**	**254**	P	**P**	**08 05 26.0**	**-2.1**
JAGI	**Jajag, Banyuwa**	**25.29**	**254**	*e*P	**P**	**08 05 26.1**	**-2.1**
	comp=Z,42nm,0.9s						
BLJI	**Banyuglugur**	**25.66**	**256**	P	**P**	**08 05 31.7**	**+0.2**
BTM	**Bintulu**	**26.03**	**281**	⇓P	**P**	**08 05 36.9**	**+2.1**
EIDS	**Eidsvold**	**26.38**	**154**	P	**P**	**08 05 38.8**	**+1.0**
	baz=26,SNR=33						
EIDS	**Eidsvold**	**26.38**	**154**	*e*P	**P**	**08 05 38.9**	**+1.0**
	comp=Z,198nm,0.9s						
RMQ	**Roma**	**26.45**	**159**	P	**P**	**08 05 40.3**	**+1.7**
	baz=27,SNR=55						
MBWA	**Marble Bar**	**26.70**	**222**	*e*P	**P**	**08 05 42.2**	**+1.3**
	comp=Z,57nm,1.0s						
SBUM	**Sibu**	**26.75**	**279**	⇑P	**P**	**08 05 43.2**	**+1.8**
SBUM	**Sibu**	**26.75**	**279**	*e*P	**P**	**08 05 42.9**	**+1.5**
	comp=Z,30nm,1.0s						
PWJI	**Pagerwojo**	**27.46**	**256**	P	**P**	**08 05 45.9**	**-1.8**
KSM	**Kuching**	**28.52**	**276**	⇑P	**P**	**08 05 58.3**	**+1.1**
KSM	**Kuching**	**28.52**	**276**	*e*P	**P**	**08 05 58.1**	**+0.9**
	comp=Z,27nm,0.9s						
STKA	**Stephens Creek**	**30.11**	**175**	P	**P**	**08 06 11.2**	**+0.1**
	comp=Z,22nm,0.9s,baz=345,slow=8.7,SNR=16						
STKA				LR	LR	08 20 33.7	
	comp=Z,540nm,18.2s,baz=347,slow=41						
STKA	**Stephens Creek**	**30.11**	**175**	P	**P**	**08 06 11.5**	**+0.5**
	baz=30,SNR=12						
STKA	**Stephens Creek**	**30.11**	**175**	*e*P	**P**	**08 06 11.6**	**+0.5**
STKA				pmax	pmax		
	comp=Z,19nm,1.7s						
STKA	**Stephens Creek**	**30.11**	**175**	*e*P	**P**	**08 06 11.6**	**+0.5**
	comp=Z,19nm,1.7s						
YULB	**Yu-li**	**30.16**	**327**	*e*P	**P**	**08 06 11.0**	**-0.6**
	comp=Z,9.1nm,0.8s						
CMSA	**Cobar Meteorol**	**30.38**	**168**	P	**P**	**08 06 14.6**	**+1.2**
	baz=30,SNR=18						
FORT	**Forrest**	**30.58**	**198**	P	**P**	**08 06 16.8**	**+1.5**
	baz=31,SNR=8.4						
FORT	**Forrest**	**30.58**	**198**	*e*P	**P**	**08 06 16.8**	**+1.5**
	comp=Z,782nm,0.9s						
BBOO	**Buckleboo**	**31.01**	**184**	P	**P**	**08 06 19.5**	**+0.5**
	baz=31,SNR=7.5						
ARMA	**Armidale**	**31.07**	**158**	P	**P**	**08 06 20.9**	**+1.2**
	baz=31,SNR=13						
ARMA	**Armidale**	**31.07**	**158**	*e*P	**P**	**08 06 21.0**	**+1.3**
	comp=Z,43nm,1.0s						
MEEK	**Meekatharra**	**31.36**	**216**	P	**P**	**08 06 23.0**	**+0.8**
	baz=32,SNR=3.3						
HTT	**Hallett**	**31.53**	**180**	P	**P**	**08 06 24.6**	**+0.9**
	baz=32,SNR=15						
KMBL	**Kambalda**	**33.46**	**207**	P	**P**	**08 06 41.0**	**+0.4**
	baz=34,SNR=10						
YNG	**Young**	**33.65**	**165**	P	**P**	**08 06 43.5**	**+1.3**
	baz=34,SNR=6.4						
DZM	**Mont Dzumac**	**33.75**	**129**	P	**P**	**08 06 43.0**	**-0.4**
	comp=Z,6.3nm,0.8s,baz=239,slow=21,SNR=5.4						
DZM	**Mont Dzumac**	**33.75**	**129**	*e*P	P	08 06 50.4	+7.1
	comp=Z,44nm,1.3s						
DZM				*e*LR	LR	08 15 44.7	
	comp=Z,474nm,24.8s						
H11S3	**WAKE ISLAND Hy**	**34.13**	**53**	T	T	08 42 34.5	
	baz=236,slow=76,SNR=905						
H11S2	**WAKE ISLAND Hy**	**34.14**	**53**	T	T	08 42 37.7	
	baz=236,slow=76,SNR=1081						
H11S1	**WAKE ISLAND Hy**	**34.15**	**53**	T	T	08 42 35.9	
	baz=236,slow=76,SNR=690						
MORW	**Morawa**	**34.68**	**216**	P	**P**	**08 06 52.3**	**+1.1**
	baz=35,SNR=11						
CAN	**Canberra**	**34.77**	**165**	P	**P**	**08 06 55.4**	**+3.4**
CAN				pmax	pmax		
	comp=Z,54nm,1.2s						
CNB	**Canberra Magne**	**34.86**	**165**	P	**P**	**08 06 54.3**	**+1.5**
	baz=35,SNR=9.0						
H11N1	**WAKE ISLAND Hy**	**34.96**	**51**	T	T	08 43 44.1	
	baz=229,slow=76,SNR=230						
MYKOM	**Kota Tinggi**	**34.97**	**276**	⇑P	**P**	**08 06 53.9**	**0.0**
MYKOM	**Kota Tinggi**	**34.97**	**276**	*e*P	**P**	**08 06 55.1**	**+1.1**
	comp=Z,45nm,0.9s						
H11N2	**WAKE ISLAND Hy**	**34.98**	**51**	T	T	08 43 48.2	
	baz=229,slow=76,SNR=233						
H11N3	**WAKE ISLAND Hy**	**34.98**	**51**	T	T	08 43 57.7	
	baz=229,slow=76,SNR=136						
ARPS	**Mount Arapiles**	**34.98**	**176**	P	**P**	**08 06 54.7**	**+1.1**
	baz=35,SNR=15						
QIZ	**Qiongzhong**	**35.04**	**307**	P	**P**	**08 06 53.8**	**-0.6**
QIZ				S	**S**	**08 12 22.5**	**-2.8**
QIZ				pmax	pmax		
	comp=Z,21nm,1.1s						
QIZ				pmax	pmax		
	comp=Z,57nm,4.2s						
QIZ				LR	LR		
	comp=Z,340nm,24.1s						
QIZ				LR	LR		
	comp=Z,250nm,18.4s						
QIZ				LR	LR		
	comp=Z,340nm,15.3s						
QIZ	**Qiongzhong**	**35.04**	**307**	*e*P	**P**	**08 06 53.6**	**-0.7**
	comp=Z,11nm,0.8s						
JNU	**Nakatsue**	**35.44**	**349**	P	**P**	**08 06 56.5**	**-1.1**
	comp=Z,27nm,0.9s,baz=179,slow=2.4,SNR=2.7						
BLDU	**Ballidu**	**35.46**	**214**	P	**P**	**08 06 58.8**	**+0.9**
	baz=36,SNR=12						
KGM	**Kluang**	**35.52**	**276**	⇑P	**P**	**08 06 59.7**	**+1.0**
KLBR	**Kellerberrin**	**35.65**	**211**	P	**P**	**08 06 59.9**	**+0.4**
	baz=36,SNR=6.5						
KTGM	**Kuala Trenggan**	**36.17**	**281**	⇑P	**P**	**08 07 04.5**	**+0.3**
TOO	**Toolangi**	**36.21**	**171**	P	**P**	**08 07 06.0**	**+1.7**
	baz=36,SNR=7.4						
UBPT	**Khong Chiam**	**36.92**	**298**	P	**P**	**08 07 10.2**	**-0.4**
	comp=Z,47nm,1.0s,comp=Z,487nm						
NWAO	**Narrogin (SRO)**	**36.98**	**211**	P	**P**	**08 07 11.3**	**+0.5**
	comp=Z,26nm,0.9s,baz=350,slow=18,SNR=8.7						
NWAO				PcP	**PcP**	**08 09 32.7**	**+0.9**
	comp=Z,31nm,1.0s,baz=333,slow=4.2,SNR=5.1						
NWAO	**Narrogin (SRO)**	**36.98**	**211**	P	**P**	**08 07 11.8**	**+1.0**
	baz=37,SNR=5.1						
NWAO				P	**P**	**08 07 11.8**	**+1.0**
	baz=37,SNR=5.1						
FRIM	**Kepong**	**37.34**	**278**	⇓P	**P**	**08 07 15.1**	**+0.9**
MJAR	**Matsushiro Arr**	**38.08**	**359**	P	**P**	**08 07 17.9**	**-2.2**
	comp=Z,2.1nm,0.9s,baz=183,slow=9.0,SNR=4.2						
MJAR				PcP	**PcP**	**08 09 34.8**	**-0.3**
	comp=Z,0.7nm,0.3s,baz=180,slow=3.1,SNR=5.7						
MJAR	

SUKH **Sukhothai** 42.93 298 P **P** 08 08 00.9 +0.4
comp=Z,4.3nm,1.4s
UMPA **Umpang Tak** 43.15 296 P **P** 08 08 02.5 +0.1
comp=Z,9.5nm,1.1s,comp=Z,1µm
LAMP **Lampang** 43.34 299 P **P** 08 08 04.2 +0.4
comp=Z,14nm,0.8s,comp=Z,142nm
KMI **Kunming** 43.85 310 P **P** 08 08 08.9 +0.8
KMI pP pP 08 08 16.4 +0.2
KMI sP sP 08 08 21.0 +1.6
KMI PP **PcP** **08 09 55.8 +1.5**
KMI S **S** **08 14 38.5 +0.5**
KMI sS sS 08 14 52.7 +1.4
KMI pmax pmax
comp=Z,26nm,0.7s
KMI pmax pmax
comp=Z,78nm,3.1s
KMI LR LR
comp=Z,280nm,24.7s
KMI LR LR
comp=Z,210nm,26.0s
KMI LR LR
comp=Z,280nm,18.3s
CM01 **Chiang Mai Arr** 43.88 299 *e*P **P** 08 08 07.8 -0.4
CMAR **Chiang Mai Arr** 43.91 299 P **P** 08 08 08.8 +0.4
comp=Z,12nm,0.7s,baz=119,slow=6.5,SNR=56
CMAR PcP **PcP** **08 09 55.5 +1.2**
comp=Z,9.5nm,0.9s,baz=142,slow=2.0,SNR=10.0
CMAR LR LR 08 25 37.5
comp=Z,77nm,21.6s,baz=119,slow=35
CMMT **Chiang Mai** 44.05 299 P **P** 08 08 09.5 0.0
comp=Z,36nm,1.2s
CHTO **Chiang Mai** 44.05 299 P **P** 08 08 09.6 0.0
comp=Z,122nm,1.4s
CHTO **Chiang Mai** 44.05 299 *e*P **P** 08 08 10.0 +0.4
CHTO pmax pmax
comp=Z,22nm,1.0s
CHTO **Chiang Mai** 44.05 299 *e*P **P** 08 08 10.0 +0.4
comp=Z,22nm,1.0s
VLA **Vladivostok** 45.07 353⇑*i*P **P** 08 08 15.0 -2.2
VLA *i* *PP **pP** **08 08 24.5 -0.8**
VLA *e*SP **sP** **08 08 28.6 +0.1**
VLA *e* 08 09 54.3
VLA pmax pmax
comp=Z,9.0nm,0.6s
XAN **Xi'an** 45.25 325 P **P** 08 08 18.3 -0.7
XAN pP pP 08 08 26.5 -0.6
XAN sP sP 08 08 30.6 +0.3
XAN PP **PP** **08 10 08.6 +3.5**
XAN S **S** **08 14 57.0 -0.8**
XAN ScS **ScS** **08 18 09.4 -5.0**
XAN SS **SS** **08 18 14.3 -6.8**
XAN pmax pmax
comp=Z,22nm,1.3s
XAN pmax pmax
comp=Z,86nm,5.8s
XAN LR LR
comp=Z,210nm,18.6s
XAN LR LR
comp=Z,200nm,16.6s
SNY **Shenyang** 45.47 344 ⇑P **P** 08 08 24.9 +4.5
SNY S **S** **08 15 02.6 +2.2**
SNY SS **ScS** **08 18 17.9 +2.7**
SNY pmax pmax
comp=Z,15nm,0.9s
SNY pmax pmax
comp=Z,170nm,4.3s
SNY LR LR
comp=Z,200nm,23.9s
SNY LR LR
comp=Z,320nm,18.2s
SNY LR LR
comp=Z,500nm,16.5s
ASAJ **Asahikawa** 45.78 4 P **P** 08 08 23.1 +0.2
comp=Z,7.6nm,0.9s,baz=253,slow=12,SNR=4.4
USRK **Ussuriysk Ar.** 46.12 353 P **P** 08 08 25.6 0.0
comp=Z,4.6nm,0.9s,baz=181,slow=10,SNR=8.0
USRK PcP **PcP** **08 10 01.8 +0.4**
comp=Z,4.0nm,0.9s,baz=199,slow=4.0,SNR=3.8
USRK LR LR 08 24 25.3
comp=Z,591nm,22.0s,baz=161,slow=32
BJT **Baijiatuau** 46.37 336 *e*P **P** 08 08 27.4 -0.2
BJT pmax pmax
comp=Z,29nm,1.0s
BJT **Baijiatuau** 46.37 336 *e*P **P** 08 08 27.4 -0.2
comp=Z,29nm,1.0s
BJI **Beijing** 46.39 336 P **P** 08 08 27.2 -0.5
BJI S **S** **08 15 14.5 +0.8**
BJI pmax pmax
comp=Z,18nm,2.1s
BJI pmax pmax
comp=Z,140nm,3.5s
BJI LR LR
comp=Z,390nm,21.0s
BJI LR LR
comp=Z,220nm,15.3s
BJI LR LR
comp=Z,430nm,20.9s
CD2 **Chengdu** 46.43 317 P **P** 08 08 28.5 +0.2
CD2 pP sP 08 08 37.3 -2.4
CD2 sP pP 08 08 41.0 +4.6
CD2 PcS **PcS** **08 13 57.4 -0.3**
CD2 S **S** **08 15 15.5 +0.7**
CD2 sS sS 08 15 30.4 +2.2
CD2 pmax pmax
comp=Z,40nm,0.7s
CD2 pmax pmax
comp=Z,220nm,5.4s
CD2 LR LR
comp=Z,310nm,13.9s
CD2 LR LR
comp=Z,260nm,16.4s
CD2 LR LR
comp=Z,290nm,14.4s
MDJ **Mudanjiang** 46.85 351 P **P** 08 08 33.7 +2.4
MDJ S **S** **08 15 19.0 -1.3**
MDJ pmax pmax
comp=Z,8.0nm,0.9s
MDJ pmax pmax
comp=Z,76nm,5.1s
MDJ LR LR
comp=Z,290nm,17.3s
MDJ LR LR
comp=Z,100nm,18.7s
MDJ LR LR
comp=Z,400nm,17.3s
CN2 **Changchun** 46.85 347 *e*P **P** 08 08 30.9 -0.4
CN2 pmax pmax
comp=Z,10.0nm,0.8s
CN2 pmax pmax
comp=Z,100nm,6.0s
CN2 LR LR
comp=Z,300nm,18.0s
CN2 LR LR
comp=Z,400nm,18.0s
CN2 LR LR
comp=Z,400nm,20.0s
KUR **Kuril'sk** 47.48 9 P P 08 08 29.2 -6.9
KUR *e*S **S** **08 15 20.4 -8.7**
YSS **Yuzh-Sakhalins** 48.62 4 *i*P **P** **08 08 44.9 -0.1**
YSS pmax pmax
comp=Z,18nm,1.3s
HHC **Hu-ho-hao-te** 49.05 333 *e*P **P** **08 08 50.0 +1.5**
HHC sP sP 08 09 00.7 +0.8
HHC S **S** **08 15 50.3 -1.4**
HHC sS sS 08 16 06.4 +1.2
HHC SS **SS** **08 19 23.7 +0.5**
HHC pmax pmax
comp=Z,15nm,0.9s
HHC pmax pmax
comp=Z,120nm,3.7s
HHC LR LR
comp=Z,320nm,14.9s
HHC LR LR
comp=Z,230nm,15.7s
HHC LR LR
comp=Z,300nm,14.9s
LZH **Lanzhou** 49.68 323 *e*P **P** **08 08 54.6 +1.1**
LZH pP pP 08 08 59.4 -2.3
LZH sP sP 08 09 02.7 -2.2
LZH PP **PP** **08 10 50.7 +2.5**
LZH S **S** **08 16 02.2 +1.3**
LZH sS sS 08 16 13.0 -1.3
LZH pmax pmax
comp=Z,33nm,1.0s
LZH pmax pmax
comp=Z,130nm,4.2s
LZH LR LR
comp=Z,430nm,14.9s
LZH LR LR
comp=Z,520nm,16.0s
LZH LR LR
comp=Z,700nm,17.0s
URZ **Urewera** 50.60 141 P **P** 08 09 00.2 0.0
comp=Z,16nm,0.9s,baz=326,slow=15,SNR=2.9
URZ LR LR 08 29 25.9
comp=Z,296nm,21.6s,baz=1.0,slow=35
RPZ **Rata Peaks** 50.75 150 P **P** 08 09 00.7 -0.6
comp=Z,14nm,0.9s,baz=118,slow=2.7,SNR=4.1
HIA **Hailar** 53.37 345 *e*P **P** 08 09 20.3 -0.4
HIA pmax pmax
comp=Z,8.0nm,1.1s
GTA **Gaotai** 54.26 323 *e*P **P** 08 09 28.0 +0.5
GTA pP sP 08 09 37.4 -1.6
GTA sP pP 08 09 41.6 +5.8
GTA PcP **PcP** **08 10 32.3 +0.7**
GTA S **S** **08 17 03.8 +0.1**
GTA sS sS 08 17 19.0 +1.7
GTA SS **SS** **08 20 47.3 +1.3**
GTA pmax pmax
comp=Z,14nm,1.4s
GTA pmax pmax
comp=Z,110nm,4.8s
GTA LR LR
comp=Z,120nm,17.1s
GTA LR LR
comp=Z,120nm,20.0s
GTA LR LR
comp=Z,160nm,17.1s
LSA **Lhasa** 55.06 309 *e*P **P** 08 09 35.0 +1.0
LSA pmax pmax
comp=Z,13nm,0.7s
LSA **Lhasa** 55.06 309 *e*P **P** 08 09 35.0 +1.0
comp=Z,13nm,0.7s
SONM **Songino Aray** 56.82 335 P **P** 08 09 45.6 -0.2
comp=Z,2.5nm,0.7s,baz=149,slow=8.1,SNR=10
SONM LR LR 08 35 01.4
comp=Z,419nm,18.6s,baz=122,slow=37
SONM PKP2bc 08 39 52.7
comp=Z,1.2nm,0.9s,baz=328,slow=5.1,SNR=5.9
SONA1 **Songino Array** 56.83 335 *e*P **P** 08 09 45.8 0.0
PETK **Petropavlovsk-** 56.93 14 P **P** 08 09 46.3 0.0
comp=Z,1.6nm,0.4s,baz=181,slow=6.8,SNR=6.8
PETK LR LR 08 30 46.8
comp=Z,232nm,21.8s,baz=200,slow=32
PET **Petropavlovsk** 57.09 14 *e*P **P** 08 09 49.5 +2.1
PET *e*S **S** **08 17 41.1 +0.6**
PET *e*SS **SS** **08 21 33.9 +4.2**
PET pmax pmax
comp=Z,100nm,14.0s
RAMN **Ramite** 57.65 304 *e*P **P** 08 09 52.6 +0.4
comp=Z,28nm,0.7s
PALK **Pallekele** 58.51 280 P **P** 08 09 58.5 +0.3
comp=Z,9.9nm,0.9s,baz=113,slow=4.3,SNR=3.7
GUN **Gumba** 58.59 304 *e*P **P** 08 09 59.2 +0.3
comp=Z,50nm,0.8s
PKIN **Phulchoki** 58.87 304 *e*P **P** 08 10 00.7 0.0
PKIN **Phulchoki** 58.87 304 *e*P **P** 08 10 00.8 0.0
comp=Z,4.6nm,0.4s
KKN **Kakani** 59.05 304 *e*P **P** 08 10 02.1 +0.2
comp=Z,20nm,0.5s
DMN **Daman** 59.13 304 *e*P **P** 08 10 02.8 +0.3
comp=Z,71nm,1.1s
GKN **Gorkha** 59.65 304 *e*P **P** 08 10 06.2 +0.2
comp=Z,62nm,0.9s
ZAK **Zakamensk** 60.09 335 *e*P **P** 08 10 08.3 -0.2
ZAK pmax pmax
comp=Z,25nm,1.1s
KOLN **Koldanda** 60.44 303 *e*P **P** 08 10 11.8 +0.3
comp=Z,28nm,1.0s
TLY **Talaya** 60.91 336 *e*P **P** 08 10 14.4 +0.4
TLY *e*S **S** **08 18 30.8 +0.4**
TLY *e*SS **SS** **08 22 32.4 +2.4**
TLY pmax pmax
comp=Z,20nm,1.3s
TLY MLR MLR
comp=Z,149nm,16.0s
TLY **Talaya** 60.91 336 *e*P **P** 08 10 17.8 +3.8
comp=Z,111nm,0.8s
PYUN **Piuthan** 61.05 304 *e*P **P** 08 10 15.8 +0.1
comp=Z,105nm,0.8s
MOY **Mondy** 62.01 334 *e*P **P** 08 10 22.3 +0.7
MOY pmax pmax
comp=Z,38nm,1.5s
HYB **Hyderabad** 62.18 291 *i*P **P** 08 10 22.5 -0.7
BOD **Bodaibo** 62.56 345 *e*P **P** 08 10 24.5 -0.5
BOD pmax pmax
comp=Z,20nm,1.6s
RAR **Rarotonga** 62.95 113 LR LR 08 35 25.1
comp=Z,76nm,21.2s,baz=280,slow=34
YAK **Yakutsk** 63.96 355 *e*P **P** 08 10 34.2 +0.1
YAK pmax pmax
comp=Z,24nm,0.9s
WMQ **Urumqi** 64.22 321 P **P** 08 10 37.2 +0.9
WMQ PcP **PcP** **08 11 11.6 +0.5**
WMQ S **S** **08 19 14.7 +2.4**
WMQ ScS **SKSac** **08 20 25.2 -3.6**
WMQ pmax pmax
comp=Z,29nm,0.9s
WMQ pmax pmax
comp=Z,160nm,3.5s
WMQ LR LR
comp=Z,330nm,16.0s
WMQ LR LR
comp=Z,300nm,17.6s
WMQ LR LR
comp=Z,400nm,20.4s
SEY **Seymchan** 65.33 7 *e*P **P** 08 10 42.4 -0.7
CASY **Casey** 67.41 192 *e*P **P** 08 10 57.1 +0.8
comp=Z,17nm,1.0s
MK01 **Makanchi Array** 68.97 322 *e*P **P** 08 11 06.3 -0.3
MK31 **Makanchi Array** 68.99 322 *ce*P **P** 08 11 06.7 0.0
MK31 pmax pmax
comp=Z,34nm,1.0s
MK31 **Makanchi Array** 68.99 322 *e*P **P** 08 11 07.5 +0.7
MKAR **Makanchi Array** 68.99 322 P **P** 08 11 07.0 +0.3
comp=Z,20nm,0.8s,baz=116,slow=8.1,SNR=154
MKAR PKPPKP **P'P'df** 08 39 18.2 -0.7
comp=Z,1.0nm,0.8s,baz=308,slow=2.9,SNR=7.2
MKAR LR LR 08 41 38.6
comp=Z,53nm,21.6s,baz=107,slow=36
MKAR **Makanchi Array** 68.99 322 P **P** 08 11 07.0 +0.3
MKAR pmax pmax
comp=Z,20nm,0.8s
MKAR **Makanchi Array** 68.99 322 *e*P **P** 08 11 07.5 +0.7
MAKZ **Makanchi** 69.19 322 *i*P **P** 08 11 07.1 -0.8
MAKZ pmax pmax
comp=Z,40nm,0.9s
MAKZ **Makanchi** 69.19 322 *e*P **P** 08 11 08.1 +0.2
comp=Z,36nm,0.8s
PDGK **Podgornoye** 69.31 318 *i*P **P** 08 11 08.3 -0.4
PDGK pmax pmax
comp=Z,13nm,0.9s
KSH **Kashi** 70.38 313 P **P** **08 11 17.5 +1.9**
KSH *ep*P sP 08 11 27.5 +0.3
KSH *es*P PcP 08 11 30.4 -6.6
KSH S **S** **08 20 26.7 -0.1**
KSH ScS **SKSac** **08 21 14.7 -1.1**
KSH SS **SS** **08 25 01.2 +3.2**
KSH pmax pmax
comp=Z,34nm,1.2s
KSH pmax pmax
comp=Z,68nm,2.6s
KSH LR LR
comp=Z,150nm,5.5s
KSH LR LR
comp=Z,91nm,7.5s
KSH LR LR
comp=Z,170nm,10.0s
ZALV **Zalesovo Beam** 71.07 330 P **P** **08 11 18.5 -0.8**
comp=Z,16nm,0.7s,baz=113,slow=6.0,SNR=42
ZALV LR LR 08 42 20.5
comp=Z,121nm,20.5s,baz=70,slow=36
TKM2 **Tokmak 2** 71.80 316 *i*P **P** **08 11 24.0 -0.2**
TKM2 pmax pmax
comp=Z,14nm,0.8s
TKM2 **Tokmak 2** 71.80 316 *e*P **P** **08 11 24.6 +0.4**
comp=Z,14nm,0.8s
PPT **Papeete** 72.10 108 LR LR 08 40 45.5
comp=Z,106nm,18.3s,baz=292,slow=34
PPT2 **Papeete2** 72.10 108 *e*LR LR 08 33 38.8
comp=Z,200nm,25.2s
MIR **Mirnyy** 72.11 197 *e*P **P** **08 11 27.0 +1.8**
MIR pmax pmax
comp=Z,3.0nm,0.8s
BILL **Bilibino** 72.23 11⇑*e*P **P** **08 11 26.2 +0.2**
BILL *e* 08 11 33.2
BILL *e* 08 14 07.1
BILL pmax pmax
comp=Z,6.0nm,0.9s
BILL MLR MLR
comp=Z,186nm,19.0s
BILL **Bilibino** 72.23 11 *e*P **P** **08 11 26.1 +0.1**
comp=Z,19nm,0.4s
NVS **Novosibirsk** 72.33 330 *e*P **P** **08 11 26.6 -0.2**
NVS pmax pmax
comp=Z,23nm,1.0s
NVS pmax pmax
comp=N,10.0nm,1.1s
NVS pmax pmax
comp=E,14nm,1.0s
FRU **Bishkek** 72.45 316 *e*P **P** **08 11 27.0 -0.9**
FRU *e* 08 11 44.0
FRU pmax pmax
comp=Z,36nm,2.0s
AAK **Ala-Archa** 72.47 316 *i*P **P** **08 11 27.1 -1.1**
AAK pmax pmax
comp=Z,16nm,1.0s
AAK **Ala-Archa** 72.47 316 *e*P **P** **08 11 29.2 +1.0**
comp=Z,7.4nm,0.8s
TBI **Tubuai** 72.69 114 *e*LR LR 08 33 46.9
comp=Z,192nm,30.0s
KURK **Kurchatov** 72.89 325 *ci*P **P** **08 11 30.2 -0.1**
KURK pmax pmax
comp=Z,102nm,0.9s
KURK **Kurchatov** 72.89 325 *e*P **P** **08 11 30.1 -0.2**
comp=Z,34nm,0.8s
EKS2 **Erkin-Say** 72.98 316 *e*P **P** **08 11 32.0 +0.9**
EKS2 pmax pmax
comp=Z,16nm,0.8s
EKS2 **Erkin-Say** 72.98 316 *e*P **P** **08 11 32.0 +0.9**
comp=Z,16nm,0.8s
TIXI **Tiksi** 73.53 357⇑*i*P **P** **08 11 33.1 -0.5**
TIXI pmax pmax
comp=Z,9.0nm,1.0s
TIXI **Tiksi** 73.53 357 *e*P **P** **08 11 32.9 -0.8**
comp=Z,19nm,1.4s
TIXI *ep*P **pP** **08 11 36.5 -5.7**
MNAS **Manas** 73.82 315 *i*P **P** **08 11 35.9 -0.2**
MNAS pmax pmax
comp=Z,24nm,1.0s
KK31 **Karatay Array** 75.40 315 *ce*P **P** **08 11 44.3 -0.8**
KK31 pmax pmax
comp=Z,6.0nm,0.7s
KKAR **Karatay Array** 75.40 315 *e*P **P** **08 11 45.2 +0.1**
KKAR **Karatay Array** 75.40 315 *e*P **P** **08 11 45.2 +0.1**
DZET **Dzherino** 75.49 311 P **P** **08 11 45.6 -0.3**
DZET pmax pmax
comp=Z,28nm,1.0s
OTUK **Ortayu** 75.76 321 P **P** **08 11 46.2 -0.9**
OTUK pmax pmax
comp=Z,29nm,0.9s
VNDA **Vanda** 76.75 175 P **P** **08 11 52.6 +0.5**
comp=Z,5.7nm,0.7s,baz=334,slow=6.4,SNR=23
VNDA LR LR 08 44 22.2
comp=Z,312nm,20.9s,baz=352,slow=35
VNDA **Vanda** 76.75 175 *e*P **P** **08 11 52.9 +0.8**
comp=Z,5.8nm,0.8s
SBA **Scott Base** 77.52 174 *e*P **P** **08 11 58.1 +1.7**
SBA pmax pmax
comp=Z,16nm,1.4s
SBA **Scott Base** 77.52 174 *e*P **P** **08 11 58.1 +1.7**
comp=Z,16nm,1.4s
VOSK **Vostochnaya** 78.05 325 P **P** **08 11 58.8 -1.1**
VOSK pmax pmax
comp=Z,32nm,0.8s
VOSK **Vostochnaya** 78.05 325 *e*P **P** **08 11 59.5 -0.4**
comp=Z,31nm,0.8s
BVA0 **Borovoye Array** 78.49 325 *i*P **P** **08 12 01.5 -0.8**
BVA0 pmax pmax
comp=Z,53nm,0.8s
BRVK **Borovoye** 78.56 325 *e*P **P** **08 12 02.9 +0.2**
BRVK pmax pmax
comp=Z,58nm,0.8s
BRVK **Borovoye** 78.56 325 *e*P **P** **08 12 02.9 +0.2**
comp=Z,58nm,0.8s
CHKZ **Chkalovo** 78.57 326 *i*P **P** **08 12 01.1 -1.5**
CHKZ pmax pmax
comp=Z,44nm,1.0s
NRIK **Noril'sk** 78.78 344 P **P** **08 12 03.5 0.0**
comp=Z,18nm,1.0s,baz=121,slow=5.7,SNR=21
NRIK LR LR 08 47 23.7
comp=Z,146nm,21.1s,baz=132,slow=36
ZRNK **Zerenda** 79.26 325 *i*P **P** **08 12 06.1 -0.4**
ZRNK pmax pmax
comp=Z,50nm,1.0s
ZRNK **Zerenda** 79.26 325 *e*P **P** **08 12 06.5 +0.1**
comp=Z,42nm,0.9s
OHAK **Old Harbor** 79.75 31 *e*P **P** **08 12 09.4 +0.4**
comp=Z,98nm,1.8s
SVW2 **Sparrevohn** 80.04 27 *e*P **P** **08 12 11.3 +0.8**
comp=Z,22nm,1.1s
KDAK **Kodiak Island** 80.30 30 *i*P **P** **08 12 12.3 +0.3**
KDAK **Kodiak Island** 80.30 30 *e*P **P** **08 12 12.3 +0.3**
comp=Z,117nm,1.0s
TT01 **Tatalina** 80.54 25 *e*P **P** **08 12 13.4 +0.1**
TAOE **Nuku Hiva Isla** 81.04 99 *e*LR LR 08 37 44.4
comp=Z,208nm,25.3s
CNPM **China Poot** 81.52 29 *e*P **P** **08 12 18.9 +0.4**
BRLK **Bradley Lake** 81.77 29 *e*P **P** **08 12 20.6 +0.7**
PPLA **Purkeypile** 82.18 26 *e*P **P** **08 12 22.3 +0.2**
SUA **Susitna One** 82.36 27 *e*P **P** **08 12 22.6 -0.4**
CAST **Castle Rocks** 82.40 25 *e*P **P** **08 12 23.0 0.0**
SEW **Seward** 82.56 29 *e*P **P** **08 12 24.0 +0.1**
RC01 **Rabbit Creek A** 82.71 28 *e*P **P** **08 12 24.3 -0.4**
KTH **Kantishna Hill** 82.93 25 *e*P **P** **08 12 25.3 -0.7**
MAW **Mawson** 83.00 202 P **P** **08 12 27.2 +1.2**
comp=Z,8.3nm,0.7s,baz=104,slow=6.0,SNR=15
MAW LR LR 08 46 43.3
comp=Z,179nm,20.7s,baz=60,slow=34
MAW **Mawson** 83.00 202 P **P** **08 12 27.5 +1.4**
baz=83,SNR=6.7
PMR **Palmer** 83.13 27 *e*P **P** **08 12 26.2 -0.7**
PMR pmax pmax
comp=Z,15nm,1.0s
PMR **Palmer** 83.13 27 *e*P **P** **08 12 26.1 -0.7**
comp=Z,15nm,1.0s
TRF **Thorofare Moun** 83.17 25 *e*P **P** **08 12 28.4 +1.1**
MLY **Manley** 83.47 24 *e*P **P** **08 12 29.6 +1.0**
SML **Sawmill** 83.56 27 *e*P **P** **08 12 29.0 -0.1**
SML **Sawmill** 83.56 27 *e*P **P** **08 12 29.0 -0.1**
GEYT **Alibeck** 83.60 308 P **P** **08 12 31.1 +1.2**
comp=Z,5.6nm,0.7s,baz=186,slow=1.5,SNR=9.7
GEYT LR LR 08 51 47.7
comp=Z,112nm,21.9s,baz=110,slow=37
BWN **Browne** 83.74 25 *e*P **P** **08 12 30.6 +0.6**
RND **Reindeer** 83.77 26 *e*P **P** **08 12 29.5 -0.8**
RND **Reindeer** 83.77 26 *e*P **P** **08 12 29.5 -0.8**
MCK **McKinley** 83.83 25 *e*P **P** **08 12 30.3 -0.2**
MCK pmax pmax
comp=Z,23nm,1.2s
MCK **McKinley** 83.83 25 *e*P **P** **08 12 30.3 -0.2**
comp=Z,23nm,1.2s
AB31 **Akbulak array** 83.94 320 *ce*P **P** **08 12 30.8 -0.5**
AB31 pmax pmax
comp=Z,20nm,0.9s
ABKAR **Akbulak array** 83.94 320 *e*P **P** **08 12 31.5 +0.2**
SCM **Sheep Creek Mo** 84.03 27 *e*P **P** **08 12 31.6 0.0**
SCM **Sheep Creek Mo** 84.03 27 *e*P **P** **08 12 31.6 0.0**
DHY **Denali Highway** 84.33 26 *e*P **P** **08 12 33.6 +0.4**
COLD **Coldfoot** 84.37 22 *e*P **P** **08 12 35.2 +2.1**
COLD *ep*P **pP** **08 12 41.9 +0.1**
WRH **Wood River Hil** 84.40 25 *e*P **P** **08 12 32.9 -0.4**
CCB **Clear Creek Bu** 84.56 25 *e*P **P** **08 12 32.6 -1.5**
DIV **Divide** 84.58 28 *e*P **P** **08 12 34.8 +0.4**
KLU **Klutina** 84.59 28 *e*P **P** **08 12 34.8 +0.3**
COLA **College** 84.61 24 P **P** **08 12 33.4 -0.9**
COLA pmax pmax
comp=Z,15nm,1.4s
COLA **College** 84.61 24 *e*P **P** **08 12 33.4 -0.9**
comp=Z,15nm,1.4s
HDA **Harding Lake** 84.86 25 *e*P **P** **08 12 35.5 -0.2**
SVE **Sverdlovsk** 84.90 327 *e*P **P** **08 12 36.1 +0.1**
SVE pmax pmax
comp=Z,31nm,1.3s
ILAR **Eielson Array** 84.97 24 P **P** **08 12 34.5 -1.7**
comp=Z,8.3nm,1.1s,baz=257,slow=4.7,SNR=39
ILAR LR LR 08 45 12.7

	comp=Z,138nm,21.2s,baz=228,slow=32								
ILB	**Eielson Array**	**84.97**	**24**	*e*P		**P**	**08 12 35.0**	**-1.2**
IL1	**Eielson Array**	**84.98**	**24**	*e*P		**P**	**08 12 34.1**	**-2.1**
BMRM	**Bremner River**	**85.09**	**28**	*e*P		**P**	**08 12 37.0**	**+0.1**
AKTO	**Aktyubinsk**	**85.36**	**321**	*i* P		**P**	**08 12 37.8**	**-0.7**
AKTO					pmax	pmax			
	comp=Z,4.0nm,0.9s								
CRQM	**Cirque**	**85.75**	**29**	*e*P		**P**	**08 12 41.3**	**+0.9**
DOT	**Dot Lake**	**85.91**	**26**	*e*P		**P**	**08 12 40.7**	**-0.3**
ARU	**Arti**	**85.96**	**327**	LR		LR	08 53 53.2	
	comp=Z,99nm,18.8s,baz=110,slow=38								
ARU	**Arti**	**85.96**	**327**	*d i* P		**P**	**08 12 40.6**	**-0.7**
ARU							08 15 58.3		
ARU					S	S	08 23 03.4	-10	
ARU					SS	**SS**	**08 28 47.0**	**-4.2**
ARU					pmax	pmax			
	comp=Z,19nm,0.8s								
ARU	**Arti**	**85.96**	**327**	*e*P		**P**	**08 12 40.3**	**-1.0**
SOKR	**Solikamsk**	**87.36**	**330**	*e*P		**P**	**08 12 45.1**	**-2.9**
SOKR					pmax	pmax			
	comp=Z,9.0nm,0.6s								
EGAK	**Eagle**	**87.38**	**25**	*e*P		**P**	**08 12 47.7**	**-0.3**
DAWY	**Dawson**	**88.02**	**26**	*e*P		**P**	**08 12 52.0**	**+0.8**
HYT	**Haines Junctio**	**88.49**	**29**	*e*P		**P**	**08 12 54.5**	**+0.8**
INK	**Inuvik**	**90.79**	**22**	*e*P		**P**	**08 13 03.8**	**-0.3**
INK	**Inuvik**	**90.79**	**22**	*e*P		**P**	**08 13 03.8**	**-0.3**
SYO	**Syowa Base**	**91.64**	**201⇑**	*e*P		**P**	**08 13 07.7**	**-0.3**
SYO	**Syowa Base**	**91.64**	**201⇑**	*e*pP		pP	08 13 12.5	-4.2
KBZ	**Khabaz**	**95.36**	**314**	LR		LR	09 02 53.1	
	comp=Z,34nm,19.1s,baz=64,slow=40								
NEY	**Neytrino**	**95.51**	**313**	*e*P		**P**	**08 13 26.5**	**-0.1**
NEY					pmax	pmax			
	comp=Z,1.0nm,0.9s								
KLMR	**Klimovskoe**	**95.97**	**331**	*e*P		**P**	**08 13 24.5**	**-3.5**
KLMR				*e*			08 17 14.7		
KLMR					pmax	pmax			
	comp=Z,9.0nm,1.3s								
VSR	**Storozhevoye**	**97.30**	**321**	*e*P		**P**	**08 13 32.7**	**-1.6**
VSR					pmax	pmax			
	comp=Z,10.0nm,0.9s								
APA	**Apatity**	**97.39**	**338⇓**	*i* P		**P**	**08 13 32.6**	**-1.8**
APA				*i*			08 17 30.0		
APA				*i* S		S	08 24 47.0	-10	
APA					pmax	pmax			
	comp=Z,8.0nm,1.0s								
OBN	**Obninsk**	**98.33**	**325⇓**	*e*P		**P**	**08 13 35.6**	**-3.2**
OBN				*e*			08 17 45.4		
OBN				*e*S		**SKSac**	**08 24 15.4**	**+0.5**
OBN				*e*SS		**SS**	**08 31 50.0**	**+1.2**
OBN					pmax	pmax			
	comp=Z,10.0nm,1.3s								
OBN					MLR	MLR			
	comp=Z,145nm,20.0s								
YKA	**Yellowknife Ar**	**99.23**	**27**	P		**Pdif**	**08 13 42.7**	**+0.1**
	comp=Z,1.5nm,0.9s,baz=283,slow=4.4,SNR=6.1								
YKA					LR	LR	08 54 12.3		
	comp=Z,14nm,21.8s,baz=0.0,slow=33								
MSF	**Maaselka**	**99.51**	**337**	P		**Pdif**	**08 13 42.6**	**-1.3**
ARCES	**ARCESS Array B**	**99.58**	**341**	P		**Pdif**	**08 13 41.5**	**-2.7**
	comp=Z,5.9nm,0.8s,baz=51,slow=7.9,SNR=10								
ARCES					LR	LR	08 59 52.9		
	comp=Z,40nm,21.4s,baz=72,slow=36								
FINES	**FINESS Array B**	**102.17**	**333**	P		**Pdif**	**08 13 54.0**	**-1.8**
	comp=Z,1.5nm,0.9s,baz=75,slow=6.5,SNR=3.0								
FINES	**FINESS Array B**	**102.17**	**333**	P		**Pdif**	**08 13 54.0**	**-1.8**
FINES					pmax	pmax			
	comp=Z,2.0nm,0.9s								
AKASG	**Malin Array Be**	**103.57**	**322**	Pdiff		**Pdif**	**08 14 00.7**	**-1.6**
	comp=Z,0.8nm,0.6s,baz=60,slow=4.0,SNR=4.8								
PDAR	**Pinedale Array**	**107.07**	**46**	PKKPbc		PKKPbc	08 29 45.1	-1.1	
	comp=Z,0.8nm,0.7s,baz=104,slow=6.3,SNR=6.4								
NOA	**NORSAR Array B**	**108.78**	**336**	Pdiff		**Pdif**	**08 14 23.8**	**-1.6**
	comp=Z,1.1nm,0.8s,baz=58,slow=4.5,SNR=3.2								
ANMO	**Albuquerque**	**111.27**	**53**	*i* PKIKP		**PKiKP**	**08 18 36.1**	**+0.2**
GOPC	**GO Pecny, Ondr**	**112.52**	**324**	AMS		AMS	09 17 00.0		
	comp=Z,200nm,13.0s								
CLL	**Collm**	**112.90**	**326**	*e*PS		PS	08 28 59.0	-2.8	
CLL				*e*SS		SS	08 35 06.0	-1.5	
CLL				*e*SSS		SSS	08 39 30.0		
CLL					Lm	MLR	09 10 00.0		
	comp=N,100nm,19.1s								
CLL					Lm	MLR	09 10 00.0		
	comp=E,100nm,19.7s								
CLL					Lm	MLR	09 10 00.0		
	comp=Z,300nm,19.0s								
KHC	**Kasperske Hory**	**113.58**	**324**	AMS		AMS	09 12 10.0		
GERES	**GERESS Array B**	**113.63**	**324**	PKiKP		**PKiKP**	**08 18 39.5**	**-0.3**
	comp=Z,0.6nm,0.4s,baz=62,slow=3.2,SNR=8.3								
TXAR	**Lajitas Array**	**114.84**	**58**	PKP		PKPdf	08 18 42.9	+0.2	
	comp=Z,1.0nm,0.9s,baz=264,slow=1.3,SNR=9.4								
TXAR					PKKPbc	**PKKPbc**	**08 29 20.6**	**+0.5**	
	comp=Z,0.8nm,0.9s,baz=119,slow=6.8,SNR=4.1								
H35A	**Sunnyside Ranc**	**116.44**	**40**	P		**PKPdf**	**08 18 44.6**	**-0.6**	
	baz=296								
O33A	**Hebron**	**116.46**	**45**	P		**PKPdf**	**08 18 44.9**	**-0.5**	
	baz=292								
F36A	**Milaca**	**116.73**	**38**	P		**PKPdf**	**08 18 45.0**	**-0.7**	
	baz=298								
D37A	**Cotton**	**116.78**	**36**	P		**PKPdf**	**08 18 45.4**	**-0.3**	
	baz=300								
JCT	**Junction City**	**117.81**	**56**	P		**PKPdf**	**08 18 48.3**	**0.0**	
	baz=286								
333A	**Richland Sprin**	**118.26**	**55**	P		**PKPdf**	**08 18 49.0**	**-0.1**	
	baz=287								
433A	**Art**	**118.33**	**56**	P		**PKPdf**	**08 18 49.1**	**-0.2**	
	baz=286								
W35A	**Tecumseh**	**118.74**	**50**	P		**PKPdf**	**08 18 49.9**	**0.0**	
	baz=290								
234A	**Clairette**	**118.75**	**54**	P		**PKPdf**	**08 18 49.9**	**-0.1**	
	baz=288								
J39A	**Decorah**	**119.07**	**40**	P		**PKPdf**	**08 18 49.1**	**-1.2**	
	baz=298								
R37A	**Teagarden Farm**	**119.11**	**46**	P		**PKPdf**	**08 18 49.7**	**-0.8**	
	baz=293								
V36A	**Jenks**	**119.23**	**49**	P		**PKPdf**	**08 18 50.8**	**-0.1**	
	baz=291								
TUL1	**Leonard**	**119.30**	**49**	P		**PKPdf**	**08 18 50.8**	**-0.2**	
	baz=291								
S37A	**Fort Scott**	**119.33**	**47**	P		**PKPdf**	**08 18 50.5**	**-0.5**	
	baz=293								
X36A	**Centrahoma**	**119.34**	**51**	P		**PKPdf**	**08 18 51.1**	**0.0**	
	baz=290								
P38A	**Dawn**	**119.50**	**45**	P		**PKPdf**	**08 18 50.7**	**-0.5**	
	baz=295								
335A	**Moody**	**119.54**	**55**	P		**PKPdf**	**08 18 50.1**	**-1.5**	
	baz=288								
M39A	**Webster**	**119.62**	**42**	P		**PKPdf**	**08 18 50.0**	**-1.4**	
	baz=297								
Y36A	**Durant**	**119.62**	**52**	P		**PKPdf**	**08 18 51.8**	**+0.2**	
	baz=290								
V37A	**Hulbert**	**119.80**	**49**	P		**PKPdf**	**08 18 51.7**	**-0.3**	
	baz=292								
635A	**Leesville**	**119.81**	**57**	P		**PKPdf**	**08 18 52.8**	**+0.6**	
	baz=286								
R38A	**Fenwick Farm,**	**119.83**	**46**	P		**PKPdf**	**08 18 51.0**	**-0.9**	
	baz=294								
W37B	**Quinton**	**119.85**	**50**	P		**PKPdf**	**08 18 52.2**	**+0.1**	
	baz=291								
O39A	**Kirksville**	**119.92**	**43**	P		**PKPdf**	**08 18 51.7**	**-0.3**	
	baz=296								
T38A	**Diamond**	**120.00**	**48**	P		**PKPdf**	**08 18 51.9**	**-0.4**	
	baz=293								
S38A	**Stockton**	**120.05**	**47**	P		**PKPdf**	**08 18 51.6**	**-0.7**	
	baz=294								
P39B	**Salisbury**	**120.10**	**44**	P		**PKPdf**	**08 18 51.9**	**-0.5**	
	baz=296								
Y37A	**Hugo**	**120.11**	**51**	P		**PKPdf**	**08 18 52.6**	**0.0**	
	baz=290								
Q39A	**Willow Grove F**	**120.14**	**45**	P		**PKPdf**	**08 18 52.1**	**-0.4**	
	baz=295								
K41A	**Shullsburg**	**120.32**	**40**	P		**PKPdf**	**08 18 51.6**	**-1.1**	
	baz=299								
V38A	**Canehill**	**120.36**	**49**	P		**PKPdf**	**08 18 52.4**	**-0.7**	
	baz=292								
636A	**Smothers Creek**	**120.38**	**57**	P		**PKPdf**	**08 18 54.4**	**+1.2**	
	baz=287								
R39A	**Chumby, Stover**	**120.40**	**46**	P		**PKPdf**	**08 18 52.5**	**-0.5**	
	baz=295								
S39A	**Bolivar**	**120.45**	**46**	P		**PKPdf**	**08 18 52.6**	**-0.5**	
	baz=294								
X38A	**Whitesboro**	**120.48**	**50**	P		**PKPdf**	**08 18 53.6**	**+0.3**	
	baz=291								
W38A	**Poteau**	**120.58**	**50**	P		**PKPdf**	**08 18 53.1**	**-0.3**	
	baz=292								
T39A	**Clever**	**120.68**	**47**	P		**PKPdf**	**08 18 53.1**	**-0.5**	
	baz=294								
Q40A	**Laux Farm, Aux**	**120.79**	**45**	P		**PKPdf**	**08 18 53.5**	**-0.2**	
	baz=296								
U39A	**Green Forest**	**120.86**	**48**	P		**PKPdf**	**08 18 53.3**	**-0.7**	
	baz=293								
V39A	**Pettigrew**	**120.94**	**49**	P		**PKPdf**	**08 18 53.6**	**-0.6**	
	baz=293								
R40A	**Maddies Statio**	**120.96**	**45**	P		**PKPdf**	**08 18 53.4**	**-0.7**	
	baz=296								
S40A	**Lebanon**	**121.08**	**46**	P		**PKPdf**	**08 18 53.6**	**-0.8**	
	baz=295								
W39A	**Magazine**	**121.09**	**49**	P		**PKPdf**	**08 18 54.3**	**-0.2**	
	baz=292								
X39A	**Fountain Ranch**	**121.09**	**50**	P		**PKPdf**	**08 18 54.8**	**+0.3**	
	baz=292								
O41A	**Passleys Farm,**	**121.12**	**43**	P		**PKPdf**	**08 18 53.7**	**-0.7**	
	baz=298								
P41A	**Barry, Barry**	**121.19**	**43**	P		**PKPdf**	**08 18 54.3**	**-0.2**	
	baz=297								
T40A	**Mansfield**	**121.25**	**47**	P		**PKPdf**	**08 18 54.4**	**-0.3**	
	baz=294								
U40A	**Yellville**	**121.33**	**48**	P		**PKPdf**	**08 18 54.3**	**-0.6**	
	baz=294								
MIAR	**Mount Ida**	**121.49**	**50**	P		**PKPdf**	**08 18 55.7**	**+0.4**	
	baz=292								
V40A	**Witts Springs**	**121.57**	**48**	P		**PKPdf**	**08 18 55.1**	**-0.3**	
	baz=294								
S41A	**Jilco Farms,**	**121.63**	**46**	P		**PKPdf**	**08 18 55.0**	**-0.5**	
	baz=295								
P42A	**Winchester**	**121.73**	**43**	P		**PKPdf**	**08 18 55.6**	**+0.1**	
	baz=298								
T41A	**Mountain View**	**121.85**	**47**	P		**PKPdf**	**08 18 55.2**	**-0.7**	
	baz=295								
U41A	**Viola**	**122.02**	**47**	P		**PKPdf**	**08 18 55.4**	**-0.8**	
	baz=294								
V41A	**Mountainview**	**122.08**	**48**	P		**PKPdf**	**08 18 54.9**	**-1.5**	
	baz=294								
X41A	**Kaden, Bauxite**	**122.32**	**50**	P		**PKPdf**	**08 18 55.8**	**-1.0**	
	baz=293								
Y41A	**Eaglette Beard**	**122.48**	**50**	P		**PKPdf**	**08 18 57.1**	**0.0**	
	baz=293								
V42A	**Cord**	**122.64**	**48**	P		**PKPdf**	**08 18 56.4**	**-0.9**	
	baz=295								
141A	**Papa Simpson,**	**122.73**	**52**	P		**PKPdf**	**08 18 58.4**	**+0.8**	
	baz=292								
S43A	**Fulton Ridge,**	**122.83**	**45**	P		**PKPdf**	**08 18 56.0**	**-1.7**	
	baz=297								
Q44A	**Meyer Farm, Va**	**122.96**	**43**	P		**PKPdf**	**08 18 57.5**	**-0.4**	
	baz=298								
244A	**Avery, Jackson**	**124.68**	**52**	P		**PKPdf**	**08 19 01.4**	**0.0**	
	baz=293								
Y46A	**Houston**	**125.33**	**49**	P		**PKPdf**	**08 19 01.6**	**-1.0**	
	baz=296								
Y47A	**UCPARC, Winfie**	**126.08**	**48**	P		**PKPdf**	**08 19 03.1**	**-0.9**	
	baz=296								
M54A	**Oil Creek Stat**	**127.51**	**36**	P		**PKPdf**	**08 19 06.2**	**-0.4**	
	baz=309								
PLCA	**Paso Flores**	**130.05**	**151**	PKP		**PKPdf**	**08 19 12.7**	**+1.1**	
	comp=Z,5.3nm,0.9s,baz=224,slow=4.1,SNR=7.8								
TORD	**Torodi Ar. Bea**	**135.93**	**287**	PKhKP		PKPpre	08 19 09.3		
	comp=Z,0.5nm,0.6s,baz=68,slow=2.8,SNR=5.0								
TORD					PKP	**PKPdf**	**08 19 23.2**	**0.0**	
	comp=Z,4.7nm,0.9s,baz=54,slow=1.7,SNR=4.1								
KIC	**Kosan Boka**	**143.21**	**278**	*e*PKP1		PKPab	08 19 33.0	+0.8	
	comp=Z,36nm,0.8s								
DBIC	**Dimbokro**	**143.29**	**279**	PKhKP		PKPpre	08 19 33.2		
	comp=Z,225nm,0.8s,baz=68,slow=4.0,SNR=28								
TIC	**Toumodi**	**143.46**	**279**	*e*PKP1		PKPab	08 19 33.7	+0.5	
LIC	**Lamto**	**143.51**	**278**	*e*PKP1		PKPab	08 19 33.7	+0.4	
	comp=Z,30nm,1.0s								
CMBC	**Cumbal**	**143.52**	**91**	*e*P		PKPab	08 19 33.8	-0.2	
SJCC	**San Jacinto, C**	**145.41**	**75**	*e*P		**PKPbc**	**08 19 39.8**	**-0.5**	
GUYC	**Guyana, Colomb**	**145.85**	**83**	*e*P		**PKPdf**	**08 19 41.6**	**-0.1**	
NORC	**Norcasia**	**146.34**	**83**	*e*P		**PKPdf**	**08 19 42.2**	**+0.2**	
ROSC	**El Rosal**	**146.94**	**84**	PKPbc		**PKPbc**	**08 19 44.5**	**-0.9**	
	comp=Z,12nm,0.7s,baz=300,slow=16,SNR=11								
ROSC	**El Rosal**	**146.94**	**84**	*e*P		**PKPbc**	**08 19 44.6**	**-0.8**	
SJAC	**San Juan de Ar**	**147.39**	**87**	*e*P		**PKPdf**	**08 19 44.6**	**+0.8**	
RUSC	**La Rusia**	**148.07**	**82**	*e*P		**PKPdf**	**08 19 47.0**	**+1.6**	
GRMC	**Gramalote, San**	**148.11**	**78**	*e*P		**PKPbc**	**08 19 47.6**	**-0.7**	
CPUP	**Villa Florida**	**148.11**	**152**	PKPbc		**PKPbc**	**08 19 48.6**	**+0.9**	
	comp=Z,51nm,1.0s,baz=227,slow=2.7,SNR=45								

*DJA **06** 08:03:55.0±1.3,4°S±8°×12°9E±°, h305km±16km, M3.8/3, MLv3.8/3*
*ISCJB **06** 08:03:59.1±0.5,6.04S±0.04×130.84E±0.08, h86km, mb4.0/7, Error ellipse: s-maj=11.6km s-min=5.7km az=171.7*
*NEIC **06** 08:03:59.8±2.2,5.84S×130.79E, h85km±22km, mb4.8/1, Error ellipse: s-maj=15.7km s-min=13.4km az=50.0*
*IDC **06** 08:04:05.1±3.0,5.80S×130.92E, h131km±27km, mb3.8/8, mb1 4.0/10, mb1mx3.8/32, mbtmp4.3/10, Error ellipse: s-maj=32.8km s-min=14.8km az=70.0*

ISC 06 08:03:59.7±0.6, 6.04S±0.04×130.89E±0.09, h86km, n22, σ3°55/24, mb4.2/7, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BNDI	**Bandanaira**	**1.80**	**327**	P	Pn	08 04 35.4	+6.3
BNDI				S	**Sn**	**08 04 58.2**	**+6.7**
SAUI	**Saumlaki**	**1.97**	**168**	P	**Sn**	**08 05 02.9**	**+7.4**
MSAI	**Masohi**	**3.32**	**324**	P	Pn	08 04 34.9	-15
MSAI				S	**Sn**	**08 05 29.3**	**+1.5**
FAKI	**Fak Fak**	**3.39**	**24**	P	**Pn**	**08 04 55.0**	**+4.6**
FAKI				S	**Sn**	**08 05 30.7**	**+1.1**
SIJI	**Sorong**	**5.15**	**4**	P	**Pn**	**08 05 17.2**	**+2.8**
	20nm,0.3s,baz=90,slow=23,SNR=7.3						
SIJI				S	**Sn**	**08 06 08.0**	**-4.6**
	28nm,0.3s,baz=90,slow=24,SNR=27						
FITZ	**Fitzroy Crossi**	**13.03**	**203**	P	**Pn**	**08 07 03.0**	**+1.4**
	2.0nm,0.3s,baz=25,slow=9.4,SNR=11						
FITZ				S	**Sn**	**08 09 19.1**	**-5.7**
	7.8nm,0.3s,baz=122,slow=14,SNR=5.0						
WRAB	**Tennant Creek**	**14.21**	**167**	*e*Pn	P	08 07 26.6	+4.8
WRA	**Warramunga Arr**	**14.22**	**167**	P	**P**	**08 07 19.2**	**-2.6**
	0.9nm,0.3s,baz=356,slow=13,SNR=4.1						
WRA				S	**Sn**	**08 09 50.4**	**-3.2**
	4.3nm,0.3s,baz=338,slow=25,SNR=5.1						
PMG	**Port Moresby**	**16.46**	**103**	Pn	**P**	**08 07 47.5**	**+0.7**
ASAR	**Alice Springs**	**17.76**	**171**	P	**Pn**	**08 08 04.8**	**+3.4**
	1.2nm,0.3s,baz=352,slow=11,SNR=5.9						
ASAR				S	**Sn**	**08 11 13.4**	**-5.8**
	0.7nm,0.3s,baz=350,slow=25,SNR=2.8						
CTA	**Charters Tower**	**20.44**	**135**	P	Pn	08 08 34.2	+1.1
	7.3nm,0.7s,baz=275,slow=16,SNR=5.4						
CTAO	**Charters Tower**	**20.44**	**135**	P	Pn	08 08 32.7	-0.5
	34nm,0.7s						
CMAR	**Chiang Mai Arr**	**39.81**	**308**	P	**P**	**08 11 24.7**	**-0.1**
	1.6nm,0.5s,baz=136,slow=7.2,SNR=4.0						
MJAR	**Matsushiro Arr**	**42.91**	**9**	P	**P**	**08 11 48.7**	**-1.2**
	1.2nm,0.8s,baz=159,slow=7.2,SNR=4.2						
USRK	**Ussuriysk Ar.**	**50.02**	**1**	P	**P**	**08 12 45.0**	**-0.4**
	2.3nm,0.6s,baz=175,slow=6.5,SNR=5.1						
MKAR	**Makanchi Array**	**67.92**	**326**	P	**P**	**08 14 49.1**	**-0.1**
	2.9nm,0.5s,baz=113,slow=8.4,SNR=24						
ZALV	**Zalesovo Beam**	**71.13**	**333**	P	**P**	**08 15 07.0**	**-1.8**
	0.6nm,0.4s,baz=147,slow=4.1,SNR=2.5						
VNDA	**Vanda**	**73.29**	**173**	P	**P**	**08 15 23.1**	**+1.8**
	1.2nm,0.8s,baz=320,slow=8.1,SNR=2.6						
ILAR	**Eielson Array**	**92.11**	**25**	P	**P**	**08 16 56.9**	**-2.3**
	0.8nm,0.7s,baz=270,slow=4.1,SNR=10						
TXAR	**Lajitas Array**	**123.68**	**59**	PKP	**PKPdf**	**08 22 48.6**	**+0.4**
	0.3nm,0.9s,baz=177,slow=1.5,SNR=3.6						
TORD	**Torodi Ar. Bea**	**129.48**	**282**	PKP	**PKPdf**	**08 22 59.0**	**-0.5**
	0.5nm,0.8s,baz=105,slow=3.1,SNR=3.0						
CPUP	**Villa Florida**	**146.85**	**166**	PKPbc	**PKPab**	**08 23 33.4**	**-0.8**
	1.7nm,0.9s,baz=169,slow=5.2,SNR=2.9						

CSEM 06 08:17:20.2±0.3, 48.60N×20.77E, h1km, ML1.6, Error ellipse: s-maj=7.3km s-min=4.6km az=150.0, Suspected Mining explosion., Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KECS	**Kecovo**	**0.22**	**238**	*e*Pg	Pg	08 17 24.2	-0.3
KECS				*e*Sg	Sg	08 17 28.1	+0.8
KECS	**Kecovo**	**0.22**	**238**	*e*PG	Pg	08 17 24.1	-0.4
KECS				*e*SG	Sg	08 17 28.1	+0.8
KECS				eLG	Lg	08 17 28.7	
CRVS	**Cervenica-Dubn**	**0.55**	**56**	*e*Pg	Pg	08 17 30.9	+0.2
CRVS	**Cervenica-Dubn**	**0.55**	**56**	*e*PG	Pg	08 17 30.9	+0.2
PSZ	**Piszkesteto**	**0.90**	**221**	*e*Pg	Pg	08 17 37.9	+0.5
PSZ				*e*Sg	Sb	08 17 52.2	+1.1
PSZ	**Piszkesteto**	**0.90**	**221**	*e*Pg	Pg	08 17 37.9	+0.5
PSZ				*e*Sg	Sb	08 17 52.2	+1.1
LANS	**Liptovska Anna**	**1.02**	**303**	*e*Pg	Pg	08 17 39.7	0.0
LANS				*e*Sg	Sb	08 17 54.0	-0.6
LANS	**Liptovska Anna**	**1.02**	**303**	*e*PG	Pg	08 17 39.7	0.0
LANS				*e*SG	Sb	08 17 53.9	-0.7
VYHS	**Vyhne**	**1.29**	**266**	*e*Pg	Pg	08 17 44.3	-0.6
VYHS				*e*Sg	Sb	08 18 02.5	+0.2
VYHS	**Vyhne**	**1.29**	**266**	*e*PG	Pg	08 17 44.3	-0.6
VYHS				*e*SG	Sb	08 18 02.5	+0.2
VYHS				eLG	Lg	08 18 06.7	

*TRN **06** 08:22:35.6, 18.91N×64.26W, h77km*
*NEIC **06** 08:22:38.5, 18.98N×64.32W, h70km±4km, MD3.7(RSPR), After RSPR.*
*RSPR **06** 08:22:38.5, 18.98N×64.32W, h70km±4km, MD3.7/11*

ISC 06 08:22:38.7±4.1, 19.1N±0.1×64.4W±0.2, h58km±35km, n40, σ0°77/56, 27C-12D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ABV	**Anegada**	**0.35**	**171⇓**	*e*P	**Pn**	**08 22 48.7**	**-0.3**
ABV	**Anegada**	**0.35**	**171⇓**	*e*P	**Pn**	**08 22 48.7**	**-0.3**
ABV				*e*S	**Sn**	**08 22 57.0**	**+0.6**
ABVI	**Anegada Island**	**0.35**	**171⇓**	*e*P	**Pn**	**08 22 48.7**	**-0.3**
ABVI				*e*S	**Sn**	**08 22 57.0**	**+0.6**
STVI	**Saint Thomas**	**0.90**	**217⇓**	*e*P	**Pn**	**08 22 54.8**	**-0.5**
STVI	**Saint Thomas**	**0.90**	**217⇓**	*e*P	**Pn**	**08 22 54.8**	**-0.5**
STVI				*e*S	**Sn**	**08 23 07.2**	**-0.4**
STVI	**Saint Thomas**	**0.90**	**217⇓**	*e*P	**Pn**	**08 22 54.8**	**-0.5**
STVI				*e*S	**Sn**	**08 23 07.2**	**-0.4**
CBYP	**Canovanas**	**1.61**	**240⇑**	*e*P	**Pn**	**08 23 03.8**	**-1.0**
CBYP	**Canovanas**	**1.61**	**240⇑**	*e*P	**Pn**	**08 23 03.8**	**-1.0**
CBYP				*e*S	**Sn**	**08 23 24.6**	**+0.1**
CBYP	**Canovanas**	**1.61**	**240⇑**	*e*P	**Pn**	**08 23 03.8**	**-1.0**
CBYP				*e*S	**Sn**	**08 23 24.6**	**+0.1**
HUMP	**Col San Antoni**	**1.67**	**236⇑**	*e*P	**Pn**	**08 23 05.2**	**-0.4**
HUMP	**Col San Antoni**	**1.67**	**236⇑**	*e*P	**Pn**	**08 23 05.2**	**-0.4**
HUMP				*e*S	**Sn**	**08 23 26.5**	**+0.5**
HUMP	**Col San Antoni**	**1.67**	**236⇑**	*e*P	**Pn**	**08 23 05.2**	**-0.4**
HUMP				*e*S	**Sn**	**08 23 26.5**	**+0.5**
SJG	**San Juan**	**1.93**	**240⇑**	*e*P	**Pn**	**08 23 09.2**	**+0.1**
SJG				*e*S	**Sn**	**08 23 32.4**	**+0.1**
SJG	**San Juan**	**1.93**	**240⇑**	*e*P	**Pn**	**08 23 09.2**	**+0.1**
SJG				*e*S	**Sn**	**08 23 32.4**	**+0.1**
SJG	**San Juan**	**1.93**	**240⇑**	*e*P	**Pn**	**08 23 09.2**	**+0.1**
CELP	**Cerrillos**	**2.31**	**245⇓**	*e*P	**Pn**	**08 23 13.5**	**-0.8**
CELP	**Cerrillos**	**2.31**	**245⇓**	*e*P	**Pn**	**08 23 13.5**	**-0.8**
CELP	**Cerrillos**	**2.31**	**245⇓**	*e*P	**Pn**	**08 23 13.5**	**-0.8**
OBIP	**Obispado Ponce**	**2.34**	**244⇑**	*e*P	**Pn**	**08 23 14.4**	**-0.4**
OBIP	**Obispado Ponce**	**2.34**	**244⇑**	*e*P	**Pn**	**08 23 14.4**	**-0.4**
OBIP				*e*S	**Sn**	**08 23 42.4**	**0.0**
OBIP	**Obispado Ponce**	**2.34**	**244⇑**	*e*P	**Pn**	**08 23 14.4**	**-0.4**
OBIP				*e*S	**Sn**	**08 23 42.4**	**0.0**
AOPR	**Arecibo Observ**	**2.36**	**252⇑**	*e*P	**Pn**	**08 23 13.9**	**-1.2**
AOPR	**Arecibo Observ**	**2.36**	**252⇑**	*e*P	**Pn**	**08 23 13.9**	**-1.2**
AOPR	**Arecibo Observ**	**2.36**	**252⇑**	*e*P	**Pn**	**08 23 13.9**	**-1.2**
GBPR	**Guanica, Bosqu**	**2.61**	**246⇓**	*e*P	**Pn**	**08 23 19.8**	**+1.4**
GBPR	**Guanica, Bosqu**	**2.61**	**246⇓**	*e*P	**Pn**	**08 23 19.8**	**+1.4**
GBPR	**Guanica, Bosqu**	**2.61**	**246⇓**	*e*P	**Pn**	**08 23 19.8**	**+1.4**
AGPR	**Aguadilla, PR**	**2.65**	**257⇑**	*e*P	**Pn**	**08 23 17.7**	**-1.

SMQ				Trac			08 40 51.3	
	comp=Z,16nm,0.3s							
ICQ	**Pointe Anglais**	**12.20**	**206**	PN	**Pn**	**08 38 56.0**	**-2.5**
ICQ				SN	Sn	08 41 04.7	-10
ICQ				Trac		08 41 09.3	
	comp=Z,7.2nm,0.3s							
ILON	**Igloolik, Nuna**	**12.84**	**322**	PN	**Pn**	**08 39 04.7**	**-2.3**
ILON				SN	Sn	08 41 17.5	-12
NMSQ	**Nemaska Statio**	**13.07**	**234**	PN	**Pn**	**08 39 07.2**	**-3.0**
NMSQ				SN	Sn	08 41 22.5	-13
NMSQ				Trac		08 41 25.1	
	comp=Z,6.0nm,0.3s							
GIFN	**Gifford Fjord,**	**13.12**	**324**	PN	**Pn**	**08 39 08.2**	**-2.7**
GIFN				SN	Sn	08 41 21.6	-15
LAIN	**Lailor River,**	**13.24**	**319**	PN	**Pn**	**08 39 10.3**	**-2.3**
LAIN				SN	Sn	08 41 25.5	-14
AP3N	**Apex site 3 Nu**	**13.70**	**320**	PN	**Pn**	**08 39 16.1**	**-2.7**
AP3N				SN	Sn	08 41 36.9	-14
AP3N				Trac		08 41 41.9	
	comp=Z,3.6nm,0.1s							
SUMG	**Summit**	**14.26**	**25**	*i* P	**Pn**	**08 39 24.2**	**-2.6**
NUNN	**Nunuq Camp, NU**	**15.12**	**301**	SN	Sn	08 42 10.7	-15
KUGN	**Kugaaruk Camp,**	**15.13**	**312**	PN	**Pn**	**08 39 37.6**	**-0.6**
KUGN				SN	Sn	08 42 08.6	-17
VIMO	**Victor Mine**	**15.64**	**250**	PN	**Pn**	**08 39 42.2**	**-2.8**
VIMO				SN	Sn	08 42 20.3	-18
MCMN	**McManaman Lake**	**15.72**	**294**	PN	**Pn**	**08 39 43.5**	**-2.5**
BULN	**Bullion Camp,**	**16.04**	**305**	PN	**Pn**	**08 39 47.2**	**-2.9**
BULN				SN	Sn	08 42 32.6	-15
FCC	**Fort Churchill**	**17.66**	**279**	PN	**Pn**	**08 40 07.6**	**-2.9**
FCC				SN	Sn	08 43 09.8	-17
SADO	**Sadowa**	**19.99**	**226**	P	**Pn**	**08 40 38.8**	**0.0**
	2.2nm,0.4s,baz=43,slow=14,SNR=6.1							
SADO				LR	LR	08 47 12.9		
	comp=Z,60nm,19.4s,baz=43,slow=33							
ULM	**Lac du Bonnet**	**23.06**	**260**	P	**P**	**08 41 13.6**	**+3.5**
	2.3nm,0.7s,baz=42,slow=9.2,SNR=3.8							
YKA	**Yellowknife Ar**	**25.80**	**298**	P	**P**	**08 41 39.9**	**+4.4**
	0.7nm,0.9s,baz=67,slow=10.0,SNR=3.3							
PDAR	**Pinedale Array**	**35.01**	**262**	P	**P**	**08 42 59.7**	**+2.3**
	0.3nm,0.6s,baz=39,slow=4.6,SNR=3.8							
ILAR	**Eielson Array**	**37.36**	**315**	P	**P**	**08 43 19.8**	**+2.8**
	0.2nm,0.5s,baz=56,slow=7.1,SNR=5.3							
ILAR				PcP	**PcP**	**08 45 37.5**	**+1.9**
	0.7nm,0.6s,baz=24,slow=2.2,SNR=12							
TXAR	**Lajitas Array**	**43.16**	**244**	P	**P**	**08 44 08.3**	**+2.8**
	0.2nm,0.7s,baz=38,slow=6.3,SNR=3.9							
TXAR				PcP	**PcP**	**08 45 57.3**	**+2.4**
	0.1nm,0.4s,baz=46,slow=3.9,SNR=5.1							
KEST	**Kesra**	**49.16**	**88**	P	**P**	**08 44 54.5**	**+1.8**
	4.1nm,0.7s,baz=4.4,slow=13,SNR=5.0							
TORD	**Torodi Ar. Bea**	**64.47**	**110**	P	**P**	**08 46 41.9**	**+0.5**
	0.2nm,0.4s,baz=348,slow=6.3,SNR=3.6							
WRA	**Warramunga Arr**	**138.14**	**341**	PKP	**PKPdf**	**08 55 32.3**	**+2.6**
	0.3nm,0.6s,baz=350,slow=2.2,SNR=6.0							
ASAR	**Alice Springs**	**141.86**	**341**	PKhKP	PKPpre	08 55 32.8		
	0.7nm,0.6s,baz=8.5,slow=2.4,SNR=8.0							
ASAR				PKP	**PKiKP**	**08 55 40.3**	**+1.0**	
	0.6nm,0.6s,baz=359,slow=2.5,SNR=6.8							

MEX 06 08:38:23.4±0.9, 14°02'N × 92°24'W, h15km±999km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.25**	**2**	*i* P	Pn	08 38 57.8	-2.4
CCIG				*i* S	Sn	08 39 23.7	-4.0

JMA 06 08:40:30.0±0.2, 38°21'N × 144°52'E, h44km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.40**	**292**	P	Pn	08 41 08.0	+1.3
OFUJ				*e*S	Sn	08 41 36.4	+1.6
JIO	**Ouri**	**2.51**	**277**	P	Pn	08 41 09.6	+1.4
JIO				S	Sn	08 41 38.7	+1.2
MIYJ	**Miyakonagasawa**	**2.51**	**304**	P	Pn	08 41 09.5	+1.2
MIYJ				*e*S	Sn	08 41 38.8	+1.1
JMK	**Ichinoseki**	**2.69**	**287**	P	Pn	08 41 12.3	+1.6
JMK				*e*S	Sn	08 41 43.0	+0.9
JOM	**Ohasama**	**2.82**	**298**	P	Pn	08 41 14.4	+1.9
JOM				*e*S	Sn	08 41 47.1	+1.9
JANG	**Nango**	**3.18**	**314**	P	Pn	08 41 18.7	+1.2
JANG				*e*S	Sn	08 41 55.1	+1.0
JYK	**Kaneyama**	**3.34**	**284**	P	Pn	08 41 22.1	+2.4
JYK				*e*S	Sn	08 42 00.3	+2.3
JFT	**Otama**	**3.38**	**260**	P	Pn	08 41 22.3	+2.0
JFT				S	Sn	08 42 01.1	+1.9
JOT	**Ohata**	**4.14**	**321**	P	Pn	08 41 31.8	+1.1
JOT				*e*S	Sn	08 42 17.5	-0.4
JCH	**Churui**	**4.49**	**349**	P	Pn	08 41 34.7	-0.7
JCH				*e*S	Sn	08 42 25.1	-1.2
JRY	**Ryogami san**	**5.00**	**246**	P	Pn	08 41 43.6	+1.1
JRY				S	Sn	08 42 37.7	-1.2
NEM2	**Nemuro 2**	**5.23**	**10**	P	Pn	08 41 42.9	-2.7
NEM2				*e*S	Sn	08 42 38.0	-6.6
JOD2	**Odawara 2**	**5.26**	**238**	P	Pn	08 41 47.1	+1.0
JOD2				*e*S	Sn	08 42 43.7	-1.8
JOSM	**Okushiri--Mats**	**5.47**	**317**	P	Pn	08 41 51.1	+2.2
JTKR	**Abashiri--Toko**	**5.77**	**356**	P	Pn	08 41 52.5	-0.6
JTKR				*e*S	Sn	08 42 53.4	-4.6

*IDC **06** 08:41:52.6±2.9, 54°31'N × 86°79'E, h0km, mb1 3.3/2, mb1mx3.1/50, mbtmp3.3/2, ML2.8/2, Error ellipse: s-maj=22.9km s-min=15.3km az=56.0*
*NNC **06** 08:41:54.4±2.4, 54°19'N × 86°86'E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=23.5km s-min=18.8km az=91.0*
ISC 06 08:41:55.1±4.8, 54°5'N±0°2 × 86°7'E±0°2, h35km, n8, σ1°47/10, 4C-2D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.23**	**244**	*i*		08 50 04.3	
	baz=72,slow=314,SNR=4.1						
ZALV	**Zalesovo Beam**	**1.23**	**244**	Pg	**Pn**	**08 42 14.7**	**-1.1**
	2.0nm,0.3s,baz=72,slow=16,SNR=12						
ZALV				Lg	Lg	08 42 32.1	
	1.9nm,0.3s,baz=72,slow=23,SNR=12						
ZALV				Rg	Rg	08 42 35.5	
	19nm,0.7s,baz=77,slow=31,SNR=22						
KURK	**Kurchatov**	**6.21**	**236**	⇑Pn	**Pn**	**08 43 25.7**	**+1.5**
	2.5nm,1.1s						
KURK				⇓Lg	Lg	08 45 10.6	
	15nm,1.0s						
KURBB	**Kurchatov Arra**	**6.31**	**235**	Pn	**Pn**	**08 43 27.0**	**+1.4**
	0.2nm,0.3s,baz=54,slow=14,SNR=8.7						
KURBB				Sn	**Sn**	**08 44 37.8**	**+1.5**
	0.1nm,0.3s,baz=52,slow=25,SNR=5.8						
KURBB				Lg	Lg	08 45 12.0	
	0.1nm,0.3s,baz=52,slow=30,SNR=3.9						
KURBB	**Kurchatov Arra**	**6.31**	**235**	⇓Pn	**Pn**	**08 43 27.2**	**+1.6**
	2.5nm,0.7s						
KURBB				⇑Lg	Lg	08 45 12.3	
	24nm,1.3s						
MK31	**Makanchi Array**	**8.20**	**202**	⇑Pn	**Pn**	**08 43 52.1**	**+0.6**
	0.3nm,0.3s,baz=37,slow=13,SNR=6.9						
MK31				⇑Sn	**Sn**	**08 45 22.4**	**-0.5**
	4.0nm,1.3s						
MK31				Lg	Lg	08 46 07.7	
	5.1nm,0.8s,baz=24,slow=29,SNR=11						
MKAR	**Makanchi Array**	**8.20**	**202**	Pn	**Pn**	**08 43 51.9**	**+0.4**
	0.2nm,0.3s,baz=17,slow=12,SNR=5.6						
MKAR				Sn	**Sn**	**08 45 21.4**	**-1.5**
	0.1nm,0.3s,baz=22,slow=24,SNR=3.6						
MKAR				Lg	Lg	08 46 08.2	
	0.1nm,0.3s,baz=18,slow=29,SNR=9.9						
BVAR	**Borovoye Array**	**9.77**	**268**	Sn	**Sn**	**08 46 00.2**	**-1.2**
	0.1nm,0.3s,baz=72,slow=28,SNR=2.9						

*CSEM **06** 08:43:39.0±0.1, 39°65N × 27°77E, h16km±1km, MD2.8, Error ellipse: s-maj=4.8km s-min=2.8km az=61.0*
ISK 06 08:43:38.7, 39°65N × 27°79E, h18km, MD2.8, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.07**	**100**	*e*Pg	Pg	08 43 42.2	+0.1
BALB	**Balikesir**	**0.07**	**100**	*e*Pg	Pg	08 43 42.2	+0.1
KCTX	**Karacabey (Bur**	**0.75**	**35**	*e*PG	Pg	08 43 53.9	+0.4
KCTX	**Karacabey (Bur**	**0.75**	**35**	*e*Pg	Pg	08 43 53.9	+0.4
DEMI	**Demirci**	**0.94**	**130**	*i* P	Pn	08 43 57.6	+0.4
DEMI				*i* S	Sn	08 44 12.6	+2.4
DEMI	**Demirci**	**0.94**	**130**	P	Pn	08 43 57.6	+0.5
DEMI				S	Sn	08 44 12.6	+2.4
MRMT	**Marmara Adasi**	**0.96**	**351**	*e*PG	Pg	08 43 58.1	+0.7
MRMT				*e*SG	Sn	08 44 11.4	+0.8
MRMT	**Marmara Adasi**	**0.96**	**351**	*e*Pg	Pg	08 43 58.1	+0.7
MRMT				*e*Sg	Sn	08 44 11.4	+0.8
LPK	**Lapseki**	**1.07**	**313**	*e*PG	Pg	08 43 59.3	-0.1
LPK	**Lapseki**	**1.07**	**313**	*e*Pg	Pg	08 43 59.3	-0.1
RKY	**Sarkoy-Tekirda**	**1.13**	**336**	*e*PN	Pb	08 44 00.1	+0.3
RKY	**Sarkoy-Tekirda**	**1.13**	**336**	*e*Pn	Pb	08 44 00.1	+0.3
ARMT	**Armutlu**	**1.23**	**42**	*e*PN	Pb	08 44 01.6	+0.2
ARMT	**Armutlu**	**1.23**	**42**	*e*Pn	Pb	08 44 01.6	+0.2
TVSB	**Tavsanli**	**1.31**	**98**	*e*PN	Pb	08 44 02.6	-0.2
TVSB	**Tavsanli**	**1.31**	**98**	*e*Pn	Pb	08 44 02.6	-0.3
KULA	**Kula-Manisa**	**1.32**	**149**	*e*PN	Pb	08 44 02.8	-0.3
KULA	**Kula-Manisa**	**1.32**	**149**	*e*Pn	Pb	08 44 02.8	-0.3
AYDB	**Zeytinkoy-Aydi**	**1.71**	**177**	*e*PN	Pn	08 44 08.3	+0.7
AYDB	**Zeytinkoy-Aydi**	**1.71**	**177**	*e*Pn	Pn	08 44 08.3	+0.6

DDA 06 08:43:47.0, 37°66N × 29°10E, h28km, Md2.2, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DNZL	**Cakiroluk**	**0.05**	**302**	*i* P	Pb	08 43 51.8	-0.2
DNZL				*i* S	Sb	08 43 55.6	+0.1
GOLH	**Golhisar**	**0.56**	**139**	*i* P	Pn	08 43 59.1	-0.2
GOLH				*i* S	Sn	08 44 09.4	+1.6
MANT	**Manisa**	**0.93**	**333**	*i* P	Pn	08 44 04.0	-0.5
MANT				*i* S	Sn	08 44 19.4	+2.4

*CSEM **06** 08:54:24.4, 39°06N × 29°08E, h7km, MD2.7*
DDA 06 08:54:24.4, 39°06N × 29°08E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**267**	*i* P	Pg	08 54 30.4	+0.4
DEMI				*i* S	Sg	08 54 34.5	+0.6
DEMI	**Demirci**	**0.29**	**267**	P	Pg	08 54 30.5	+0.4
DEMI				S	Sg	08 54 34.5	+0.6
GDZ	**Gediz**	**0.31**	**84**	*i* P	Pg	08 54 30.8	+0.2
GDZ				*i* S	Sg	08 54 35.5	+0.8
MANT	**Manisa**	**0.70**	**216**	*i* P	Pg	08 54 38.0	+0.1
MANT				*i* S	Sg	08 54 47.4	+0.4
MANT	**Manisa**	**0.70**	**216**	P	Pg	08 54 38.0	+0.1
MANT				S	Sg	08 54 47.4	+0.3

*DDA **06** 08:56:29.5, 37°13N × 28°13E, h7km, Md2.7*
*ISK **06** 08:56:30.4, 37°26N × 28°19E, h5km, MD2.5*
*CSEM **06** 08:56:31.7±0.3, 37°25N × 28°16E, h2km, MD2.5, Error ellipse: s-maj=6.8km s-min=5.7km az=42.0*
ISC 06 08:56:30.9±1.4, 37°24N±0°04 × 28°16E±0°05, h7km±14km, n10, σ0°42/14, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.14**	**137**	*e*PG	**Pg**	**08 56 34.0**	**+0.1**
YER	**Yerkesik**	**0.14**	**137**	*e*Pg	**Pg**	**08 56 34.0**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.57**	**137**	*e*PG	**Pb**	**08 56 42.7**	**-0.6**
DALY				*e*SG	**Sb**	**08 56 51.8**	**+0.2**
DALY	**Dalyan (Mu¨la**	**0.57**	**137**	*e*Pg	**Pb**	**08 56 42.7**	**-0.6**
DALY				*e*Sg	**Sb**	**08 56 51.8**	**+0.2**
BODT	**Bodrum**	**0.70**	**256**	*e*PG	**Pb**	**08 56 45.6**	**+0.1**
BODT	**Bodrum**	**0.70**	**256**	*e*Pg	**Pb**	**08 56 45.6**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.74**	**343**	*e*PG	**Pb**	**08 56 45.6**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**0.74**	**343**	*e*Pg	**Pb**	**08 56 45.6**	**-0.6**
DNZL	**Cakiroluk**	**0.84**	**57**	*i* P	**Pb**	**08 56 48.0**	**+0.1**
DNZL				*i* S	**Sb**	**08 56 59.7**	**+0.3**
DNZL	**Cakiroluk**	**0.84**	**57**	P	**Pb**	**08 56 48.0**	**+0.1**
DNZL				S	**Sb**	**08 56 59.7**	**+0.3**

*BUC **06** 09:04:17.5±1.0, 47°92N × 23°61E, h13km±5km, MD2.5/2, Error ellipse: s-maj=9.0km s-min=3.6km az=337.0*
*SIGU **06** 09:04:18.7, 47°85N × 23°78E, h6km, mb2.1*
ISC 06 09:04:17.2±1.2, 47°86N±0°03 × 23°76E±0°03, h6km±10km, n18, σ1°71/25, 4C-4D, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BMR	**Baia Mare**	**0.26**	**223**	⇑*i*P	**Pg**	**09 04 22.9**	**+0.6**
BMR				S	**Sb**	**09 04 27.7**	**-1.3**
BMR	**Baia Mare**	**0.26**	**223**	⇑iP	**Pg**	**09 04 22.9**	**+0.6**
BMR				*i* S	**Sb**	**09 04 27.7**	**-1.3**
KORU	**Korolevo**	**0.51**	**305**	*e*Sg	**Sn**	**09 04 37.2**	**-3.0**
NSLU	**Nyzhne Selyshc**	**0.57**	**54**	*e*Pg	**Pg**	**09 04 27.3**	**-0.9**
NSLU				Pgm		09 04 29.4	
NSLU				*e*Sg	**Sg**	**09 04 33.4**	**-2.3**
NSLU				Sgm		09 04 36.6	
TRSU	**Trosnyk**	**0.59**	**294**	*e*Sg	**Sn**	**09 04 39.8**	**-2.2**
TRSU				Sgm		09 04 40.8	
MEZ	**Mezhgor'ye**	**0.67**	**346**	*e*Pg	**Pn**	**09 04 32.4**	**-0.9**
MEZ				Pgm		09 04 32.6	
MEZ				*e*Sg	**Sn**	**09 04 42.6**	**-1.5**
MEZ				Sgm		09 04 45.6	
BRIU	**Brid**	**0.69**	**314**	*e*Pg	**Pn**	**09 04 32.8**	**-0.7**
BRIU				Pgm		09 04 40.0	
BERU	**Beregovo**	**0.83**	**297**	*e*Sg	**Sn**	**09 04 48.0**	**-0.1**
MUKU	**Mukachevo**	**0.93**	**310**	*e*Pg	**Pn**	**09 04 37.5**	**+0.7**
MUKU				Pgm		09 04 38.9	
MUKU				*e*Sg	**Sn**	**09 04 51.3**	**+0.9**
MUKU				Sgm		09 04 53.7	
BURAR	**Bucovina Array**	**1.01**	**104**	⇓*i*P	**Pn**	**09 04 39.0**	**+1.0**
BURAR	**Bucovina Array**	**1.01**	**104**	⇓iP	**Pn**	**09 04 39.0**	**+1.0**
BURAR				*i* S	**Sn**	**09 04 54.7**	**+2.1**
CJR	**Cluj-Napoca**	**1.16**	**186**	⇓*i*P	**Pn**	**09 04 40.2**	**+0.3**
CJR	**Cluj-Napoca**	**1.16**	**186**	⇓iP	**Pn**	**09 04 40.2**	**+0.3**
ONO	**Onokovtsy**	**1.25**	**311**	*e*Sg	**Sn**	**09 05 01.8**	**+3.6**
MORS	**Morshin**	**1.27**	**4**	*e*Pg	**Pg**	**09 04 44.2**	**+2.6**
DRGR		**1.29**	**214**	⇑*i*P	**Pb**	**09 04 41.6**	**-0.3**
DRGR		**1.29**	**214**	⇑iP	**Pb**	**09 04 41.6**	**-0.3**
DRGR				*i* S	**Sg**	**09 04 58.9**	**+0.3**
STZU	**Stuzhytsa**	**1.38**	**327**	*e*Pg	**Pg**	**09 04 46.2**	**+2.5**
STZU				Pgm		09 04 46.6	

*IASPEI **06** 09:08:39.0±0.8, 38°04N±0°02 × 14°80E±0°02, h10km±5km, mb3.7/10, Error ellipse: s-maj=2.5km s-min=2.3km az=157.5, GT5 selection from ISC bulletin GT5 identified by Bond¨jr and McLaughlin (2009) selection criteria Bond¨jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*IDC **06** 09:08:38.5±0.7, 38°14N × 14°96E, h0km, mb3.8/10, mb1 3.9/16, mb1mx3.7/49, mbtmp3.8/16, ML3.4/6, MS2.9/4, Ms1 2.9/4, ms1mx2.5/47, Error ellipse: s-maj=19.3km s-min=7.7km az=123.0*
*ROM **06** 09:08:38.7±0.1, 38°05N × 14°78E, h8km±1km, Ml3.9/50, Error ellipse: s-maj=1.3km s-min=1.0km az=155.0*
*NEIC **06** 09:08:38.0, 38°02N × 14°80E, h8km, ML3.7(ROM), After ROM.*
NEIC Felt in the Acquedolci-Catania-Messina area.
*CSEM **06** 09:08:39.2±0.1, 38°04N × 14°79E, h12km, ML3.9, Error ellipse: s-maj=2.5km s-min=2.0km az=130.0*
*PDG **06** 09:08:39.5±0.6, 38°03N × 14°85E, h20km±1km, ML4.0/11, Error ellipse: s-maj=0.8km s-min=0.9km az=0.0*
*THE **06** 09:08:43.6, 37°84N × 15°08E, h30km±17km, ML4.0/12, Error ellipse: s-maj=20.9km s-min=1.5km az=254.0*
ISC 06 09:08:39.1±0.7, 38°03N±0°02 × 14°81E±0°01, h10km±4km, n242, σ1°23/347, mb3.7/10, 32C-23D, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUCR	**Ucria**	**0.05**	**78**	⇓*i*Pg	**Pg**	**09 08 41.4**	**+0.1**
MUCR				Sg	**Sg**	**09 08 43.3**	**+0.4**
	161µm,0.3s						
MUCR	**Ucria**	**0.05**	**78**	⇓iPg	**Pg**	**09 08 41.4**	**+0.1**
MUCR				Sg	**Sg**	**09 08 43.3**	**+0.4**
	161µm,0.3s						
MNO	**Monte Soro**	**0.13**	**222**	⇑*i*Pg	**Pg**	**09 08 42.0**	**-0.4**
MNO				Sg	**Sg**	**09 08 44.5**	**-0.2**
	110µm,0.6s						
MNO	**Monte Soro**	**0.13**	**222**	⇑iPg	**Pg**	**09 08 42.0**	**-0.4**
MNO				Sg	**Sg**	**09 08 44.5**	**-0.2**
	110µm,0.6s						
MSFR	**San Fratello**	**0.17**	**270**	⇑iPg	**Pg**	**09 08 42.6**	**-0.2**
MSFR				Sg	**Sg**	**09 08 45.1**	**-0.4**
	26µm,0.5s						
MSFR	**San Fratello**	**0.17**	**270**	⇑*i*Pg	**Pg**	**09 08 42.6**	**-0.2**
MSFR				Sg	**Sg**	**09 08 45.1**	**-0.4**
	26µm,0.5s						
NOV	**Novara**	**0.26**	**91**	⇑*i*Pg	**Pb**	**09 08 44.9**	**-1.0**
NOV				Sg	**Sb**	**09 08 49.8**	**-0.6**
	17µm,0.7s						
NOV	**Novara**	**0.26**	**91**	⇑iPg	**Pb**	**09 08 44.9**	**-1.0**
NOV				Sg	**Sb**	**09 08 49.8**	**-0.6**
	17µm,0.7s						
MCSR	**Castroreale**	**0.35**	**85**	⇑*i*Pg	**Pg**	**09 08 46.3**	**+0.2**
MCSR				Sg	**Sb**	**09 08 53.6**	**+0.6**
	32µm,0.3s						
MCSR	**Castroreale**	**0.35**	**85**	⇑iPg	**Pg**	**09 08 46.3**	**+0.2**
MCSR				Sg	**Sb**	**09 08 53.6**	**+0.6**
	32µm,0.3s						
ESLN	**Serra La Nave**	**0.36**	**159**	Pg	**Pb**	**09 08 47.4**	**-0.3**
ESLN				Sg	**Sb**	**09 08 53.9**	**+0.4**
	29µm,0.6s						
ESLN	**Serra La Nave**	**0.36**	**159**	Pg	**Pb**	**09 08 47.4**	**-0.3**
ESLN				Sg	**Sb**	**09 08 53.9**	**+0.4**
	29µm,0.6s						
MMME	**Mongiuffi-Meli**	**0.36**	**105**	⇑*i*Pg	**Pb**	**09 08 46.9**	**-0.8**
MMME				Sg	**Sb**	**09 08 53.2**	**-0.3**
	9µm,0.5s						
MMME	**Mongiuffi-Meli**	**0.36**	**105**	⇑iPg	**Pb**	**09 08 46.9**	**-0.8**
MMME				Sg	**Sb**	**09 08 53.2**	**-0.3**
	9µm,0.5s						
VPL	**Vulcano Piano**	**0.37**	**22**	⇑*i*Pg	**Pb**	**09 08 47.1**	**-0.7**
VPL				Sg	**Sb**	**09 08 53.9**	**+0.3**
	45µm,0.4s						
VPL	**Vulcano Piano**	**0.37**	**22**	⇑iPg	**Pb**	**09 08 47.1**	**-0.7**
VPL				Sg	**Sb**	**09 08 53.9**	**+0.3**
	45µm,0.4s						
GALF	**Gagliano Caste**	**0.37**	**211**	⇑*e*Pg	**Pg**	**09 08 46.7**	**+0.2**
	29µm,0.6s						
GALF	**Gagliano Caste**	**0.37**	**211**	⇑*e*Pg	**Pg**	**09 08 46.7**	**+0.2**
	29µm,0.6s						
MILZ	**Milazzo**	**0.41**	**54**	⇑*i*Pg	**Pb**	**09 08 47.7**	**-0.7**
MILZ				Sg	**Sb**	**09 08 54.0**	**-0.7**
	25µm,0.6s						
MILZ	**Milazzo**	**0.41**	**54**	⇑iPg	**Pb**	**09 08 47.7**	**-0.7**
MILZ				Sg	**Sb**	**09 08 54.0**	**-0.7**
	25µm,0.6s						
LLI	**Lipari**	**0.43**	**15**	Pg	**Pb**	**09 08 48.3**	**-0.4**
	37µm,0.6s						
LLI	**Lipari**	**0.43**	**15**	Pg	**Pb**	**09 08 48.3**	**-0.4**
	37µm,0.6s						
ECNV	**Catenanuova**	**0.44**	**190**	Pg	**Pb**	**09 08 48.9**	**-0.1**
	17µm,0.7s						
ECNV	**Catenanuova**	**0.44**	**190**	Pg	**Pb**	**09 08 48.9**	**-0.1**
	17µm,0.7s						
MPNC	**Port Mandanici**	**0.44**	**75**	Pg	**Pb**	**09 08 48.3**	**-0.7**
MPNC				Sg	**Sb**	**09 08 55.9**	**+0.2**
	15µm,0.4s						
MPNC	**Port Mandanici**	**0.44**	**75**	Pg	**Pb**	**09 08 48.3**	**-0.7**
MPNC				Sg	**Sb**	**09 08 55.9**	**+0.2**
	15µm,0.4s						
CAGR	**Agira**	**0.48**	**211**	Pg	**Pb**	**09 08 49.1**	**-0.4**
	22µm,0.7s						
CAGR	**Agira**	**0.48**	**211**	Pg	**Pb**	**09 08 49.1**	**-0.4**
	22µm,0.7s						
PLLN	**Pollina**	**0.53**	**266**	Pg	**Pg**	**09 08 48.9**	**-0.4**
PLLN				Sg	**Sb**	**09 08 57.6**	**-0.5**
	9µm,0.3s						
PLLN	**Pollina**	**0.53**	**266**	Pg	**Pg**	**09 08 48.9**	**-0.4**
PLLN				Sg	**Sb**	**09 08 57.6**	**-0.5**
	9µm,0.3s						
IFIL	**Filicudi I Eol**	**0.56**	**340**	Pg	**Pg**	**09 08 50.1**	**+0.1**
IFIL				Sg	**Sb**	**09 08 59.3**	**+0.2**
	804nm,0.3s						
IFIL	**Filicudi I Eol**	**0.56**	**340**	Pg	**Pg**	**09 08 50.1**	**+0.1**
IFIL				Sg	**Sb**	**09 08 59.3**	**+0.2**
	804nm,0.3s						
MSRU	**Castanea**	**0.60**	**67**	Pg	**Pb**	**09 08 51.1**	**-0.5**
MSRU				Sg	**Sb**	**09 09 00.9**	**+0.8**
	7µm,0.4s						
MSRU	**Castanea**	**0.60**	**67**	Pg	**Pb**	**09 08 51.1**	**-0.5**
MSRU				Sg	**Sb**	**09 09 00.9**	**+0.8**
	7µm,0.4s						
IACL	**Alicudi**	**0.61**	**325**	Pg	**Pg**	**09 08 50.9**	**-0.1**
IACL				Sg	**Sb**	**09 09 00.1**	**-0.5**
	20µm,0.5s						
IACL	**Alicudi**	**0.61**	**325**	Pg	**Pg**	**09 08 50.9**	**-0.1**
IACL				Sg	**Sb**	**09 09 00.1**	**-0.5**
	20µm,0.5s						
GIB	**Gibilmanna**	**0.62**	**266**	Pg	**Pg**	**09 08 50.4**	**-0.7**
GIB				Sg	**Sg**	**09 08 59.8**	**+0.5**
	15µm,0.5s						
GIB	**Gibilmanna**	**0.62**	**266**	Pg	**Pg**	**09 08 50.4**	**-0.7**
GIB				Sg	**Sg**	**09 08 59.8**	**+0.5**
	15µm,0.5s						
VAE	**Valguarnera**	**0.64**	**210**	Pg	**Pn**	**09 08 54.1**	**0.0**
	56nm,0.3s,baz=271,slow=0.8,SNR=32						
VAE				Lg	Lg	09 09 07.8	
	181nm,0.3s,baz=325,slow=12,SNR=17				

HMDC	Modica	1.07	181	Pg		Pg	09 08 58.6	-1.1
	5µm,0.4s								
HMDC	Modica	1.07	181	Pg		Pg	09 08 58.6	-1.1
	5µm,0.4s								
HAVL	Avola	1.10	167	Pg		Pb	09 08 59.2	-1.0
	5µm,0.5s								
HAVL	Avola	1.10	167	Pg		Pb	09 08 59.2	-1.0
	5µm,0.5s								
MPG	Monte Pellegri	1.15	277	Pg		Pb	09 08 58.9	-2.1
	509nm,0.4s								
MPG	Monte Pellegri	1.15	277	Pg		Pb	09 08 58.9	-2.1
	509nm,0.4s								
CLTB	Caltabellotta	1.34	251	Pg		Pg	09 09 04.9	+0.1
	4µm,0.5s								
CLTB	Caltabellotta	1.34	251	*e*Pn		Pg	09 09 04.8	0.0
CLTB				*e*Sn		Sg	09 09 26.0	+3.8
CLTB	Caltabellotta	1.34	251	*e*Pn		Pg	09 09 04.8	0.0
CLTB				*e*Sn		Sg	09 09 26.1	+3.8
PLAC	Placanica	1.35	72	Pg		Pn	09 09 03.5	-0.5
	2µm,0.8s								
PLAC	Placanica	1.35	72	Pg		Pn	09 09 03.5	-0.5
	2µm,0.8s								
USI	Ustica	1.45	298	Pg		Pn	09 09 02.9	-2.4
	1µm,0.7s								
USI	Ustica	1.45	298	Pg		Pn	09 09 02.9	-2.4
	1µm,0.7s								
CAR1	CAROLEI	1.64	42	Pg		Pn	09 09 06.5	-1.5
	2µm,0.5s								
CAR1	CAROLEI	1.64	42	Pg		Pn	09 09 06.5	-1.5
	2µm,0.5s								
SERS	Sersale	1.78	55	Pg		Pn	09 09 09.4	-0.6
	610nm,0.7s								
SERS	Sersale	1.78	55	Pg		Pn	09 09 09.4	-0.6
	610nm,0.7s								
TIP	Timpagrande	1.91	53	P		Pn	09 09 12.4	+0.7
TIP				S		Sn	09 09 35.4	-0.4
TIP	Timpagrande	1.91	53	Pg		Pn	09 09 11.1	-0.6
	2µm,1.9s								
TIP	Timpagrande	1.91	53	Pg		Pn	09 09 11.1	-0.6
	2µm,1.9s								
TIP	Timpagrande	1.91	53	P		Pn	09 09 11.8	+0.1
TIP				S		Sb	09 09 37.1	-0.8
TIP	Timpagrande	1.91	53	P		Pn	09 09 11.8	+0.1
TIP				S		Sb	09 09 37.1	-0.8
BULG	Bulgheria - Ca	2.09	12	Pg		Pn	09 09 12.8	-1.4
	387nm,0.4s								
BULG	Bulgheria - Ca	2.09	12	Pg		Pn	09 09 12.8	-1.4
	387nm,0.4s								
CUC	Castrocucco	2.11	22	Pg		Pn	09 09 13.3	-1.1
	249nm,0.6s								
CUC	Castrocucco	2.11	22	*e*Pn		Pn	09 09 13.4	-1.1
CUC	Castrocucco	2.11	22	*e*Pn		Pn	09 09 13.4	-1.1
SALB	San Lorenzo Be	2.20	33	Pg		Pn	09 09 15.1	-0.6
	732nm,1.0s								
SALB	San Lorenzo Be	2.20	33	Pg		Pn	09 09 15.1	-0.6
	732nm,1.0s								
WDD	Wied Dalam	2.20	186	*e*Pn		Pn	09 09 14.9	-0.7
WDD				Sn		Sn	09 09 39.7	-3.2
WDD	Wied Dalam	2.20	186	*e*Pn		Pn	09 09 14.9	-0.7
WDD				Sn		Sn	09 09 39.7	-3.2
CMPR	Campora	2.31	9	Pg		Pn	09 09 15.7	-1.6
	180nm,0.4s								
CMPR	Campora	2.31	9	Pg		Pn	09 09 15.7	-1.6
	180nm,0.4s								
SLCN	Sala Consilina	2.44	15	Pg		Pn	09 09 18.3	-0.7
	278nm,0.5s								
SLCN	Sala Consilina	2.44	15	Pg		Pn	09 09 18.3	-0.7
	278nm,0.5s								
CDRU	Civita di Ruta	2.48	9	Pg		Pn	09 09 18.2	-1.4
	79nm,0.4s								
CDRU	Civita di Ruta	2.48	9	Pg		Pn	09 09 18.2	-1.4
	79nm,0.4s								
MCRV	Calabrutti - M	2.76	6	Pg		Pn	09 09 23.2	-0.2
	62nm,0.5s								
MCRV	Calabrutti - M	2.76	6	Pg		Pn	09 09 23.2	-0.2
	62nm,0.5s								
MRLC	Muro Lucano	2.77	11	Pg		Pn	09 09 23.3	-0.2
	81nm,0.6s								
MRLC	Muro Lucano	2.77	11	Pg		Pn	09 09 23.3	-0.2
	81nm,0.6s								
ACER	Acerenza	2.89	17	Pg		Pn	09 09 25.8	+0.7
	228nm,0.7s								
ACER	Acerenza	2.89	17	Pg		Pn	09 09 25.8	+0.7
	228nm,0.7s								
TAR1	Taranto	3.15	37	*e*Pn		Pn	09 09 28.5	-0.1
SG1	Sgolgore (BA)	3.16	27	*i* Pn		Pn	09 09 29.0	+0.2
AMUR	Altamura	3.19	25	Pg		Pn	09 09 29.3	+0.1
	103nm,0.7s								
AMUR	Altamura	3.19	25	Pg		Pn	09 09 29.3	+0.1
	103nm,0.7s								
MRVN	Minervino Murg	3.21	19	Pg		Pn	09 09 29.5	0.0
	59nm,0.8s								
MRVN	Minervino Murg	3.21	19	Pg		Pn	09 09 29.5	0.0
	59nm,0.8s								
CDT	Castel del Mon	3.25	20	*i* Pn		Pn	09 09 30.8	+0.7
BAI	Bari	3.46	27	*e*Pn		Pn	09 09 33.1	+0.2
MS1	Monte Sant'Ang	3.77	13	*e*Pn		Pn	09 09 38.1	+0.8
KEK	Kerkira	4.24	65	P		Pn	09 09 44.2	+0.5
KEK				S		Sn	09 10 32.5	-0.7
KEK	Kerkira	4.24	65	P		Pn	09 09 44.2	+0.5
KEK				S		Sn	09 10 32.5	-0.7
KEK	Kerkira	4.24	65	P		Pn	09 09 44.2	+0.5
KEK				S		Sn	09 10 32.5	-0.7
AQU	L'Aquila	4.45	346	*e*Pn		Pn	09 09 48.0	+1.4
AQU	L'Aquila	4.45	346	*e*Pn		Pn	09 09 48.0	+1.4
VSL	Villasalto	4.49	291	*e*Pn		Pn	09 09 44.9	-2.2
VSL				*e*Sn		Sn	09 10 35.2	-4.2
VSL	Villasalto	4.49	291	*e*Pn		Pn	09 09 44.9	-2.2
VSL				*e*Sn		Sn	09 10 35.2	-4.2
SGD	Sagiada	4.52	68	P		Pn	09 09 48.9	+1.4
SGD				S		Sn	09 10 39.9	-0.2
SGD	Sagiada	4.52	68	P		Pn	09 09 48.9	+1.4
SGD				S		Sn	09 10 39.9	-0.2
VLS	Valsamata	4.56	86	P		Pn	09 09 47.8	-0.3
VLS				S		Sn	09 10 38.5	-2.7
VLS	Valsamata	4.56	86	P		Pn	09 09 47.8	-0.3
VLS				S		Sn	09 10 38.5	-2.7
VLS	Valsamata	4.56	86	P		Pn	09 09 47.8	-0.3
VLS				S		Sn	09 10 38.5	-2.7
LKD2	Lefkada island	4.66	79	P		Pn	09 09 50.6	+1.2
LKD2				S		Sn	09 10 41.2	-2.3
LKD2	Lefkada island	4.66	79	P		Pn	09 09 50.6	+1.2
LKD2				S		Sn	09 10 41.2	-2.3
LKD2	Lefkada island	4.66	79	P		Pn	09 09 50.6	+1.2
LKD2				S		Sn	09 10 41.2	-2.3
KFL	Anninata	4.72	87	P		Pn	09 09 49.6	-0.7
KFL				S		Sn	09 10 42.6	-2.4
KFL	Anninata	4.72	87	P		Pn	09 09 49.6	-0.7
KFL				S		Sn	09 10 42.6	-2.4
ZKS	Zakynthos	4.74	92	P		Pn	09 09 49.6	-1.0
ZKS				S		Sn	09 10 42.0	-3.6
ZKS	Zakynthos	4.74	92	P		Pn	09 09 49.6	-1.0
ZKS				S		Sn	09 10 42.0	-3.6
KEST	Kesra	4.94	244	Pn		Pn	09 09 55.6	+2.2
	3.4nm,0.3s,baz=8.1,slow=4.3,SNR=35								
KEST				Sn		Sn	09 10 54.5	+3.8
	3.4nm,0.3s,baz=78,slow=22,SNR=4.2								
KEST				LR		LR	09 12 25.9		
	comp=Z,76nm,21.4s,baz=348,slow=45								
PDO	Prodromos	5.04	82	P		Pn	09 09 55.6	+0.9
PDO				S		Sn	09 10 51.1	-1.9
PDO	Prodromos	5.04	82	P		Pn	09 09 55.6	+0.9
PDO				S		Sn	09 10 51.1	-1.9
DSL	Palaion Diasel	5.05	75	P		Pn	09 09 55.9	+1.1
DSL				S		Sn	09 10 51.6	-1.6
DSL	Palaion Diasel	5.05	75	P		Pn	09 09 55.9	+1.1
DSL				S		Sn	09 10 51.6	-1.6
DSL	Palaion Diasel	5.05	75	P		Pn	09 09 55.9	+1.1
DSL				S		Sn	09 10 51.6	-1.6
ULC	Ulcinj	5.20	40	⇑*i* Pn		Pn	09 09 56.9	+0.1
ULC				*e*Sn		Sn	09 10 56.4	-0.4
ULC	Ulcinj	5.20	40	⇑*i* Pn		Pn	09 09 56.9	+0.1
ULC				*e*Sn		Sn	09 10 56.4	-0.4
HCY	Herceg Novi	5.23	31	⇓*i* Pn		Pn	09 09 57.8	+0.5
HCY				*e*Sn		Sn	09 10 57.2	-0.5
HCY	Herceg Novi	5.23	31	⇓*i* Pn		Pn	09 09 57.8	+0.5
HCY				*e*Sn		Sn	09 10 57.2	-0.5
BUM	Brajici-Budva	5.29	35	⇑*i* Pn		Pn	09 09 57.5	-0.6
BUM				*e*Sn		Sn	09 10 58.2	-0.9
BUM	Brajici-Budva	5.29	35	⇑*i* Pn		Pn	09 09 57.5	-0.6
BUM				*e*Sn		Sn	09 10 58.2	-0.9
DRME	Dracevica, Mon	5.33	38	⇓*i* Pn		Pn	09 09 58.6	-0.1
DRME				*e*Sn		Sn	09 10 59.6	-0.6
DRME	Dracevica, Mon	5.33	38	⇓*i* Pn		Pn	09 09 58.6	-0.1
DRME				*e*Sn		Sn	09 10 59.6	-0.6
KPRO	Kipourio	5.46	67	P		Pn	09 10 02.4	+2.0
KPRO				S		Sn	09 11 03.7	+0.4
KPRO	Kipourio	5.46	67	P		Pn	09 10 02.4	+2.0
KPRO				S		Sn	09 11 03.7	+0.4
CEME	Cevo	5.50	34	⇓*i* Pn		Pn	09 10 00.1	-0.9
CEME				*e*Sn		Sn	09 11 03.6	-0.6
CEME	Cevo	5.50	34	⇓*i* Pn		Pn	09 10 00.1	-0.9
CEME				*e*Sn		Sn	09 11 03.6	-0.6
PDG	Podgorica	5.56	36	⇓*i* Pn		Pn	09 10 02.0	+0.3
PDG				*e*Sn		Sn	09 11 05.1	-0.5
TTG	Podgorica	5.56	36	⇓*i* Pn		Pn	09 10 02.0	+0.3
TTG				*e*Sn		Sn	09 11 05.1	-0.5
ANX	Ano Chora	5.62	82	P		Pn	09 10 04.2	+1.5
ANX				S		Sn	09 11 06.1	-1.3
ANX	Ano Chora	5.62	82	P		Pn	09 10 04.2	+1.5
ANX				S		Sn	09 11 06.1	-1.3
PYL	PYLOS	5.63	100	P		Pn	09 10 02.1	-0.7
PYL				S		Sn	09 11 04.7	-2.8
PYL	PYLOS	5.63	100	P		Pn	09 10 02.1	-0.7
PYL				S		Sn	09 11 04.7	-2.8
PYL	PYLOS	5.63	100	P		Pn	09 10 02.1	-0.7
BRY	Bratogost	5.63	29	⇓*i* Pn		Pn	09 10 03.2	+0.3
BRY				*e*Sn		Sn	09 11 06.8	-0.9
BRY	Bratogost	5.63	29	⇓*i* Pn		Pn	09 10 03.2	+0.3
BRY				*e*Sn		Sn	09 11 06.8	-0.9
NKME	Niksic	5.69	32	⇓*i* Pn		Pn	09 10 03.6	0.0
NKME				*e*Sn		Sn	09 11 08.3	-0.7
NKME	Niksic	5.69	32	⇓*i* Pn		Pn	09 10 03.6	0.0
NKME				*e*Sn		Sn	09 11 08.3	-0.7
ITM	Ithomi	5.72	96	P		Pn	09 10 03.9	-0.1
ITM				S		Sn	09 11 06.1	-3.5
ITM	Ithomi	5.72	96	P		Pn	09 10 03.9	-0.1
ITM				S		Sn	09 11 06.1	-3.5
ITM	Ithomi	5.72	96	P		Pn	09 10 03.9	-0.1
NKY	Niksic	5.74	32	*e*Pn		Pn	09 10 04.4	0.0
NKY				*e*Sn		Sn	09 11 09.5	-0.9
NKY	Niksic	5.74	32	*e*Pn		Pn	09 10 04.4	0.0
NKY				*e*Sn		Sn	09 11 09.5	-0.9
KLV	Kalavryta, Ach	5.80	88	P		Pn	09 10 05.4	+0.3
KLV				S		Sn	09 11 09.2	-2.4
KLV	Kalavryta, Ach	5.80	88	P		Pn	09 10 05.4	+0.3
KLV				S		Sn	09 11 09.2	-2.4
KLV	Kalavryta, Ach	5.80	88	P		Pn	09 10 05.4	+0.3
AGG	Agios Georgios	5.98	78	P		Pn	09 10 09.4	+1.8
AGG				S		Sn	09 11 15.0	-1.1
AGG	Agios Georgios	5.98	78	P		Pn	09 10 09.4	+1.8
AGG				S		Sn	09 11 15.0	-1.1
AGG	Agios Georgios	5.98	78	P		Pn	09 10 09.4	+1.8
AGG				S		Sn	09 11 15.0	-1.1
PVY	Plav	6.02	39	⇓*i* Pn		Pn	09 10 08.9	+0.7
PVY				*e*Sn		Sn	09 11 16.6	-0.6
UPM	Unac-Piva	6.03	30	⇑*i* Pn		Pn	09 10 08.8	+0.4
UPM				*e*Sn		Sn	09 11 16.3	-1.3
UPM	Unac-Piva	6.03	30	⇑*i* Pn		Pn	09 10 08.8	+0.4
UPM				*e*Sn		Sn	09 11 16.3	-1.3
BEY	Berane	6.20	37	⇓*i* Pn		Pn	09 10 11.9	+1.3
BEY				*e*Sn		Sn	09 11 20.9	-0.6
IVA	Berane	6.20	37	⇓*i* Pn		Pn	09 10 11.9	+1.3
IVA				*e*Sn		Sn	09 11 20.9	-0.6
PLE	Pljevlja	6.33	32	⇓*i* Pn		Pn	09 10 13.1	+0.6
PLE				*e*Sn		Sn	09 11 23.4	-1.5
PLE	Pljevlja	6.33	32	⇓*i* Pn		Pn	09 10 13.1	+0.6
PLE				*e*Sn		Sn	09 11 23.4	-1.5
NVLJ	Novalja	6.53	0	*e*Pn		Pn	09 10 15.2	+0.2
NVLJ	Novalja	6.53	0	*e*Pn		Pn	09 10 15.2	+0.2
VLI	Veliai	6.61	99	P		Pn	09 10 16.9	+0.7
VLI				S		Sn	09 11 28.6	-2.9
VLI	Veliai	6.61	99	P		Pn	09 10 16.9	+0.7
VLI				S		Sn	09 11 28.6	-2.9
VLI	Veliai	6.61	99	P		Pn	09 10 16.9	+0.7
VLI				S		Sn	09 11 28.6	-2.9
DID	Didima	6.70	92	P		Pn	09 10 18.1	+0.6
DID	Didima	6.70	92	P		Pn	09 10 18.1	+0.6
DID	Didima	6.70	92	P		Pn	09 10 18.1	+0.6
BBLS	Lazići	6.79	29	*e*Pn		Pn	09 10 17.8	-0.9
IVAS	Ivanjica	6.86	35	*e*Pn		Pn	09 10 19.9	+0.2
SELS	Selova	7.06	41	*e*Pn		Pn	09 10 21.5	-0.9
BARS	Barje	7.17	46	*e*Pn		Pn	09 10 22.8	-1.1
DIVS	Divibare	7.21	31	*e*Pn		Pn	09 10 22.9	-1.7
GRUS	Gruza	7.36	36	*e*Pn		Pn	09 10 26.6	+0.1
TEKS	Tekeris	7.42	27	*e*Pn		Pn	09 10 26.1	-1.2
BOVS	Bovan	7.66	41	*e*Pn		Pn	09 10 30.4	-0.2
ZAPS	Zavoj	7.92	46	*e*Pn		Pn	09 10 35.3	+1.0
KUBS	Kucevo	8.21	37	*e*Pn		Pn	09 10 37.3	-0.8
IDI	Anoyia	8.55	106	Pn		Pn	09 10 42.2	-0.8
	0.2nm,0.3s,baz=72,slow=9.6,SNR=2.4								
IDI				Sn		Sn	09 12 15.2	-4.3
	3.5nm,0.3s,baz=266,slow=23,SNR=12								
GZR	Gura Zlata	9.46	36	⇓*i* P		Pn	09 10 55.5	+0.1
GZR	Gura Zlata	9.46	36	⇓*i* P		Pn	09 10 55.5	+0.1
DAVOX	Davos/Dischmat	9.47	339	Pn		Pn	09 10 54.1	-1.5
	0.2nm,0.3s,baz=336,slow=20,SNR=1.9								
SIRR	Siria	9.67	30	⇑*i* P		Pn	09 10 58.5	+0.3
SIRR	Siria	9.67	30	⇑*i* P		Pn	09 10 58.5	+0.3
ARR	Arges	10.37	42	⇑*i* P		Pn	09 11 09.1	+1.3
ARR	Arges	10.37	42	⇑*i* P		Pn	09 11 09.1	+1.3
DRGR		10.52	31	⇑*i* P		Pn	09 11 09.2	-0.6
DRGR		10.52	31	⇑*i* P		Pn	09 11 09.2	-0.6
VOIR		10.64	43	⇑*i* P		Pn	09 11 13.1	+1.6
VOIR		10.64	43	⇑*i* P		Pn	09 11 13.1	+1.6
GERES	GERESS Array B	10.84	356	Pn		Pn	09 11 14.3	+0.1
	0.2nm,0.3s,baz=179,slow=12,SNR=6.0								
MLR	Muntele Rosu	11.16	45	Pn		Pn	09 11 19.7	+1.0
	0.1nm,0.3s,baz=247,slow=12,SNR=3.5								
MLR				LR		LR	09 16 33.5		
	comp=Z,18nm,19.4s,baz=42,slow=43								
MLR	Muntele Rosu	11.16	45	⇓*i* P		Pn	09 11 21.0	+2.3
MLR	Muntele Rosu	11.16	45	⇓*i* P		Pn	09 11 21.0	+2.3
MORC	Moravsky Berou	11.90	9	⇑*i* P		Pn	09 11 30.4	+1.6
MORC	Moravsky Berou	11.90	9	⇑*i* P		Pn	09 11 30.4	+1.6
BRTR	Keskin Array B	14.77	78	Pn		Pn	09 12 10.6	+2.6
	0.1nm,0.3s,baz=240,slow=13,SNR=2.3								
EKA	Eskdalemuir Ar	21.14	331	P		P	09 13 26.2	+2.3
	3.1nm,0.8s,baz=146,slow=11,SNR=4.7								
KBZ	Khabaz	21.93	66	P		P	09 13 32.2	-0.3
	0.8nm,0.4s,baz=248,slow=11,SNR=2.8								
HFS	Hagfors	22.13	359	P		P	09 13 34.8	+0.3
	5.7nm,0.6s,baz=163,slow=11,SNR=14								
NB2	NORSAR Subarra	23.13	356	P		P	09 13 44.8	-0.4
	comp=Z,4.6nm,1.1s,baz=167,slow=10								
NB2	NORSAR Subarra	23.14	356	P		P	09 13 44.8	-0.4
	comp=Z,4.6nm,1.1s,SNR=4.6								
NOA	NORSAR Array B	23.14	356	P		P	09 13 45.0	-0.2
	comp=Z,3.1nm,1.0s,baz=171,slow=11,SNR=4.4								
NOA				LR		LR	09 24 20.3		
	comp=Z,46nm,18.1s,baz=105,slow=41								
FINES	FINESS Array B	24.47	13	P		P	09 13 57.7	-0.1
	comp=Z,9.0nm,0.9s,baz=191,slow=8.9,SNR=14								
TORD	Torodi Ar. Bea	27.40	209	P		P	09 14 25.2	+0.4
	comp=Z,0.4nm,0.7s,baz=16,slow=7.9,SNR=3.8								
ARCES	ARCESS Array B	32.09	7	LR		LR	09 29 53.9		
	comp=Z,48nm,18.3s,baz=334,slow=40								
NRIK	Noril'sk	48.95	27	P		P	09 17 25.8	+0.8
	comp=Z,1.5nm,0.3s,baz=47,slow=3.3,SNR=3.7								
ZALV	Zalesovo Beam	49.12	47	P		P	09 17 25.4	-1.1
	comp=Z,0.3nm,0.3s,baz=282,slow=8.5,SNR=2.3								
MKAR	Makanchi Array	49.19	57	P		P	09 17 27.1	-0.1
	comp=Z,0.3nm,0.4s,baz=282,slow=7.0,SNR=6.7								
YKA	Yellowknife Ar	71.90	338	P		P	09 20 02.1	+0.2
	comp=Z,0.4nm,0.6s,baz=41,slow=5.5,SNR=3.9								

NIED ***06*** *09:10:00, 46°.70N×152°.80E, h11km, Mw3.7 Best double couple: M₀3.89000×10¹⁴ NP1:φs187.00000°, δ28.00000°, λ91.00000°. NP2:φs5.00000°, δ62.00000°, λ89.00000°.*

ISCJB ***06*** *09:10:42.7±0.7, 46°.55N±0°.07×152°.8E±0°.1, h52km, mb3.7/8, MS2.9/2, Error ellipse: s-maj=14.1km s-min=4.2km az=135.2*

JMA ***06*** *09:10:42.7±0.5, 46°.72N×152°.76E, h30km, M4.2*

MOS ***06*** *09:10:44.7±1.4, 46°.65N×152°.51E, h68km, mb4.0/7, Error ellipse: s-maj=19.7km s-min=10.4km az=53.9*

SKHL ***06*** *09:10:44.7±1.1, 46°.44N×152°.87E, h80km±9km, mb4.6/3*

IDC ***06*** *09:10:45.2±3.5, 46°.59N×152°.52E, h55km±31km, mb3.4/9, mb1 3.6/12, mb1mx3.4/52, mbtmp3.7/12, ML2.5/3, MS2.8/4, Ms1 2.8/4, ms1mx2.4/26, Error ellipse: s-maj=26.6km s-min=18.2km az=112.0*

ISC 06 09:10:44.5±0.8, 46°.53N±0°.09×152°.73E±0°.09, h52km, n51, σ2s01/50, mb3.6/8, 2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
KUR	Kuril'sk	3.64	251	*d* iPN		Pn	09 11 39.6	+1.4
KUR				*i* S		Sn	09 12 22.1	+2.3
KUR				pmax	pmax			
	comp=Z,65nm,0.4s							
KUR				pmax	pmax			
	comp=N,49nm,0.2s							
KUR				pmax	pmax			
	comp=E,40nm,0.2s							
KUR				smax	smax			
	comp=E,97nm,0.6s							
KUR				smax	smax			
	comp=N,159nm,0.4s							
KUR	Kuril'sk	3.64	251	*i* P		Pn	09 11 39.7	+1.5
KUR				AMB	AMB		09 11 40.8	
	comp=N,50nm,0.3s							
KUR				*i* S		Sn	09 12 20.9	+1.1
KUR				A	A		09 12 32.3	
	comp=N,220nm,0.6s							
KUR				A	A		09 12 32.3	
	comp=N,170nm,0.6s							
SKR	Severo-Kuril's	4.72	27	*e*PN		Pn	09 11 54.8	+1.7
SKR	Severo-Kuril's	4.72	27	*e*P		Pn	09 11 54.4	+1.3
SKR				*e*S		Sn	09 12 45.6	-0.9
SKR				A	A		09 12 48.6	
	comp=N,60nm,0.2s							
YUK	Yuzh-Kuril'sk	5.45	245	*d* iPN		Pn	09 12 05.0	+1.9
YUK				*e*S		Sn	09 13 08.4	+4.0
YUK				pmax	pmax			
	comp=Z,87nm,0.5s							
YUK				pmax	pmax			
	comp=E,50nm,0.6s							
YUK				pmax	pmax			
	comp=N,41nm,0.4s							
YUK				smax	smax			
	comp=N,80nm,0.5s							
YUK				smax	smax			
	comp=E,147nm,0.5s							
YUK	Yuzh-Kuril'sk	5.45	245	*i* P		Pn	09 12 05.0	+1.9
YUK				AMB	AMB		09 12 09.5	
	comp=E,70nm,0.5s							
YUK				*e*S		Sn	09 13 05.7	+1.3
YUK				A	A		09 13 20.6	
	comp=E,100nm,0.6s							
YUK				A	A		09 13 20.6	
	comp=E,180nm,0.6s							
PAU	Pauzhetka	5.62	27	*e*S		Sn	09 13 08.4	-0.2
NEM2	Nemuro 2	5.88	240	P		Pn	09 12 08.4	-0.6
NEM2				*e*S		Sn	09 13 11.9	-3.1
JRA	Rausu	5.96	247	P		Pn	09 12 13.0	+2.9
JNK	Nakash	6.39	245	P		Pn	09 12 17.5	+1.5
JAK	Akkeshi	6.72	241	P		Pn	09 12 20.0	-0.5
JAK				*e*S		Sn	09 13 32.6	-3.0
JTKR	Abashiri--Toko	6.73	251	P		Pn	09 12 23.1	+2.4
YSS	Yuzh-Sakhalins	6.87	277	*e*PN		Pn	09 12 23.6	+1.1
YSS	Yuzh-Sakhalins	6.87	277	*e*P		Pn	09 12 23.3	+0.8
YSS				AMB	AMB		09 12 24.2	
	comp=E,10.0nm,0.2s							
YSS				*e*S		Sn	09 13 37.3	-2.0
YSS				A	A		09 13 39.0	
	comp=E,20nm,0.2s							
YSS				A	A		09 13 39.0	
	comp=E,30nm,0.2s							
JMP	Maruseppu	7.08	253	P		Pn	09 12 28.3	+2.9
JAR	Ashorobuto	7.13	246	P		Pn	09 12 27.6	+1.4
PETK	Petropavlovsk-	7.33	24	P		Pn	09 12 29.4	+0.6
	comp=E,0.1nm,0.3s,baz=186,slow=12,SNR=2.5							
HRK	Horoka	7.46	249	*e*P		Pn	09 12 33.2	+2.5
JKK2	Kamakawa 2	7.54	253	P		Pn	09 12 34.5	+2.8
JCH	Churui	7.75	243	P		Pn	09 12 33.6	-1.0
JCH				*e*S		Sn	09 13 55.8	-5.1
ERM	Erimo	8.22	240	*e*PN		Pn	09 12 41.8	+0.8
ERM	Erimo	8.22	240	*e*P		Pn	09 12 41.8	+0.8
JNBK	Urakawa-nobuka	8.31	243	*e*S		Sn	09 14 09.1	-5.5
EKMR	Ekimchan	14.33	304	*e*P		Pn	09 14 05.0	+0.7
KLR	Kul'dur	14.33	289	LR	LR		09 18 49.8	
	comp=E,24nm,21.3s,baz=103,slow=34							
MJAR	Matsush

MJAR				Sn		**Sg**	**09 19 58.6**	**-0.9**
	0.4nm,0.3s,baz=94,slow=19,SNR=2.9							
JHJ	**Hachijo jima 2**	**5.23**	**208**	Pn		**Pn**	**09 19 16.6**	**+1.0**
	6.7nm,0.3s,baz=301,slow=14,SNR=4.1							
JHJ				Sn		**Sn**	**09 20 14.6**	**-1.0**
	9.8nm,0.3s,baz=90,slow=20,SNR=4.8							
USRK	**Ussuriysk Ar.**	**10.30**	**312**	Pn		Pn	09 20 33.8	+8.8
	0.1nm,0.3s,baz=125,slow=14,SNR=2.3							
H11N2	**WAKE ISLAND Hy**	**27.70**	**124**	T		T	09 52 42.7	
	baz=316,slow=75							
H11N1	**WAKE ISLAND Hy**	**27.71**	**124**	T		T	09 52 44.3	
	baz=316,slow=75							
H11N3	**WAKE ISLAND Hy**	**27.72**	**124**	T		T	09 52 44.7	
	baz=316,slow=75							
H11S1	**WAKE ISLAND Hy**	**28.46**	**126**	T		T	09 53 44.8	
	baz=318							
H11S3	**WAKE ISLAND Hy**	**28.46**	**126**	T		T	09 53 47.0	
	baz=318							
H11S2	**WAKE ISLAND Hy**	**28.48**	**126**	T		T	09 53 40.8	
	baz=318							
MKAR	**Makanchi Array**	**44.57**	**302**	P		P	09 26 16.7	+7.5
	0.3nm,0.7s,baz=86,slow=8.8,SNR=3.5							
WRA	**Warramunga Arr**	**57.97**	**189**	P		**P**	**09 27 49.8**	**+0.1**
	0.6nm,0.7s,baz=7.9,slow=7.4,SNR=5.9							

*ISCJB **06** 09:55:35.2±1.5, 19°.2S±0°.5×177°.8W±0°.3, h550km, mb3.9/6, Error ellipse: s-maj=78.1km s-min=10.2km az=148.2*
*IDC **06** 09:55:36.6±2.5, 19°.41S×177°.56W, h568km±22km, mb3.3/6, mb1 3.5/8, mb1mx3.2/38, mbtmp4.3/8, Error ellipse: s-maj=85.0km s-min=15.4km az=152.0*
ISC 06 09:55:35.7±1.5, 19°.2S±0°.5×177°.6W±0°.3, h550km, n14, σ1§43/15, mb4.1/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
AFI	**Afiamalu**	**7.69**	**48**	P		**P**	**09 57 31.9**	**+1.4**
	2.9nm,0.3s,baz=242,slow=20,SNR=5.4							
AFI				S		**S**	**09 59 03.4**	**-1.3**
	8.0nm,0.3s,baz=297,slow=24,SNR=8.5							
DZM	**Mont Dzumac**	**15.19**	**256**	P		**P**	**09 58 49.3**	**+2.1**
	1.2nm,0.3s,baz=112,slow=22,SNR=23							
CTA	**Charters Tower**	**33.99**	**262**	P		**P**	**10 01 34.9**	**+0.6**
	7.7nm,0.3s,baz=89,slow=10,SNR=22							
STKA	**Stephens Creek**	**38.68**	**243**	P		**P**	**10 02 12.0**	**-0.7**
	4.3nm,0.9s,baz=96,slow=12,SNR=3.0							
WRA	**Warramunga Arr**	**45.15**	**261**	P		**P**	**10 03 03.0**	**-0.9**
	3.0nm,0.4s,baz=97,slow=7.9,SNR=148							
ASAR	**Alice Springs**	**45.17**	**255**	P		**P**	**10 03 03.5**	**-0.5**
	6.7nm,0.7s,baz=90,slow=8.4,SNR=140							
TXAR	**Lajitas Array**	**86.06**	**57**	P		**P**	**10 07 19.8**	**+1.0**
	0.3nm,0.7s,baz=225,slow=8.3,SNR=4.8							
ILAR	**Eielson Array**	**86.99**	**13**	P		**P**	**10 07 22.4**	**+0.2**
	0.3nm,0.7s,baz=218,slow=5.7,SNR=3.5							
MKAR	**Makanchi Array**	**110.58**	**314**	PKiKP		**PKiKP**	**10 13 04.8**	**-1.1**
	0.2nm,0.5s,baz=53,slow=0.7,SNR=2.3							
KURBB	**Kurchatov Arra**	**113.35**	**318**	PKiKP		**PKiKP**	**10 13 08.6**	**-2.4**
	0.3nm,0.8s,baz=111,slow=2.1,SNR=3.9							
BVAR	**Borovoye Array**	**118.33**	**320**	PKP		**PKPdf**	**10 13 19.7**	**-0.8**
	0.6nm,0.4s,baz=72,slow=4.7,SNR=3.5							
ARCES	**ARCESS Array B**	**127.73**	**350**	PKP		**PKPdf**	**10 13 36.5**	**-1.7**
	1.6nm,0.8s,baz=35,slow=3.0,SNR=4.9							
BRTR	**Keskin Array B**	**146.23**	**314**	PKPbc		**PKPdf**	**10 14 14.8**	**+1.8**
	0.9nm,0.5s,baz=136,slow=4.3,SNR=5.1							
GERES	**GERESS Array B**	**149.06**	**345**	PKPbc		**PKPbc**	**10 14 22.0**	**-0.1**
	0.9nm,0.6s,baz=288,slow=1.3,SNR=5.9							

*IDC **06** 09:57:49.0±1.0, 8°.98N×140°.29E, h0km, mb3.8/11, mb1 4.0/12, mb1mx3.8/47, mbtmp3.9/12, ML4.8/1, MS3.2/11, Ms1 3.2/11, ms1mx3.0/38, Error ellipse: s-maj=30.9km s-min=18.7km az=97.0*
*ISCJB **06** 09:57:51.6±0.6, 9°.03N±0°.07×140°.44E±0°.10, h33km, mb3.9/11, MS3.2/10, Error ellipse: s-maj=14.8km s-min=8.6km az=28.3*
ISC 06 09:57:53.9±0.6, 8°.98N±0°.07×140°.4E±0°.1, h35km, n24, σ1§42/16, mb3.9/11, MS3.1/10, Western Caroline Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GUMO	**Guam**	**6.34**	**43**	Pn		**Pn**	**09 59 25.8**	**+0.9**
	21nm,0.3s,baz=220,slow=15,SNR=21							
GUMO				Sn		**Sn**	**10 00 34.3**	**-1.8**
	15nm,0.3s,baz=156,slow=20,SNR=5.0							
GUMO				LR		LR	10 02 49.5	
	comp=Z,148nm,18.6s,baz=224,slow=47							
JAY	**Jayapura**	**11.42**	**179**	Pn		**Pn**	**10 00 37.0**	**+2.3**
	0.4nm,0.3s,baz=86,slow=23,SNR=14							
JAY				Sn		**Sn**	**10 02 38.0**	**-3.2**
	0.0nm,0.3s,baz=90,slow=20,SNR=2.9							
H11S3	**WAKE ISLAND Hy**	**27.19**	**67**	T		T	10 32 00.3	
	baz=254,slow=75,SNR=4420							
H11S2	**WAKE ISLAND Hy**	**27.20**	**67**	T		T	10 32 04.6	
	baz=254,slow=75,SNR=3127							
H11S1	**WAKE ISLAND Hy**	**27.21**	**67**	T		T	10 32 08.4	
	baz=254,slow=75,SNR=918							
MJAR	**Matsushiro Arr**	**27.51**	**356**	LR		LR	10 14 30.8	
	comp=Z,41nm,18.3s,baz=180,slow=36							
H11N1	**WAKE ISLAND Hy**	**27.75**	**64**	T		T	10 32 56.4	
	baz=240,slow=78							
H11N2	**WAKE ISLAND Hy**	**27.76**	**64**	T		T	10 32 57.0	
	baz=240,slow=78							
H11N3	**WAKE ISLAND Hy**	**27.76**	**64**	T		T	10 32 33.7	
	baz=240,slow=78							
WRA	**Warramunga Arr**	**29.35**	**192**	P		**P**	**10 03 52.5**	**-1.3**
	1.9nm,0.9s,baz=8.6,slow=9.2,SNR=5.7							
WRA				LR		LR	10 16 35.5	
	comp=Z,37nm,21.8s,baz=215,slow=38							
KSRS	**Korea Array**	**30.52**	**340**	P		**P**	**10 04 02.6**	**-1.2**
	0.7nm,0.5s,baz=164,slow=10,SNR=3.8							
KSRS				LR		LR	10 14 56.6	
	comp=Z,38nm,19.7s,baz=141,slow=34							
ASAR	**Alice Springs**	**33.06**	**191**	P		**P**	**10 04 27.1**	**+0.7**
	0.6nm,0.7s,baz=18,slow=13,SNR=4.8							
ASAR				LR		LR	10 17 34.6	
	comp=Z,110nm,20.9s,baz=14,slow=36							
USRK	**Ussuriysk Ar.**	**35.85**	**350**	LR		LR	10 18 07.2	
	comp=Z,48nm,20.7s,baz=166,slow=34							
KLR	**Kul'dur**	**40.77**	**351**	P		**P**	**10 05 32.1**	**+0.4**
	1.9nm,0.6s,baz=359,slow=1.6,SNR=5.5							
KLR				LR		LR	10 19 20.4	
	comp=Z,49nm,20.4s,baz=180,slow=32							
CMAR	**Chiang Mai Arr**	**41.28**	**288**	P		**P**	**10 05 35.9**	**-0.4**
	0.7nm,0.3s,baz=89,slow=5.2,SNR=6.2							
CMAR				PcP		**PcP**	**10 07 36.1**	**+1.4**
	0.5nm,0.3s,baz=96,slow=2.7,SNR=4.6							
CMAR				LR		LR	10 21 09.4	
	comp=Z,18nm,20.8s,baz=305,slow=34							
PETK	**Petropavlovsk-**	**46.18**	**14**	LR		LR	10 24 26.6	
	comp=Z,27nm,19.9s,baz=141,slow=35							
SONM	**Songino Array**	**48.22**	**330**	P		**P**	**10 06 31.5**	**+0.1**
	0.5nm,0.5s,baz=142,slow=7.3,SNR=2.1							
SEY	**Seymchan**	**54.55**	**7**	P				
	2.6nm,0.9s,baz=178,slow=9.8,SNR=4.1							
MKAR	**Makanchi Array**	**61.89**	**319**	P		**P**	**10 08 09.7**	**-0.3**
	2.1nm,0.7s,baz=134,slow=5.2,SNR=6.7							
KURBB	**Kurchatov Arra**	**65.41**	**322**	P		**P**	**10 08 32.4**	**-0.6**
	1.0nm,1.0s,baz=104,slow=7.0,SNR=6.2							
NRIK	**Noril'sk**	**69.11**	**342**	LR		LR	10 38 10.5	
	comp=Z,24nm,20.4s,baz=120,slow=35							
BVAR	**Borovoye Array**	**70.89**	**323**	P		**P**	**10 09 07.1**	**-0.3**
	0.6nm,0.5s,baz=119,slow=9.0,SNR=4.2							
ILAR	**Eielson Array**	**74.58**	**25**	P		**P**	**10 09 29.5**	**+0.4**
	0.6nm,0.7s,baz=251,slow=6.3,SNR=8.1							
SPITS	**Spitsbergen Ar**	**87.84**	**350**	LR		LR	10 48 27.5	
	comp=Z,6.9nm,21.3s,baz=330,slow=35							

*ISCJB **06** 10:00:46.5±0.4, 24°.21N±0°.02×121°.83E±0°.02, h3km±3km, Error ellipse: s-maj=3.4km s-min=2.4km az=36.4*
*JMA **06** 10:00:46.7, 24°.23N×121°.74E, h11km±1km, M2.4*
*TAP **06** 10:00:46.7, 24°.23N×121°.76E, h16km, ML3.3, B*
ISC 06 10:00:47.1±0.8, 24°.23N±0°.02×121°.77E±0°.02, h16km±5km, n47, σ0§81/76, 8C-4D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
EHP	**Heping Village**	**0.08**	**342**	P		**Pg**	**10 00 50.6**	**+0.3**
	baz=350							
EHP				S		**Sg**	**10 00 53.0**	**+0.7**
	baz=350							
ENA	**Nanau**	**0.20**	**353**	⇑*i*	P	**Pg**	**10 00 51.5**	**-0.2**
	baz=355							
ENA				S		**Sg**	**10 00 54.5**	**-0.4**
	baz=355							
TWD	**Chiawan**	**0.22**	**226**	⇓*i*	P	**Pg**	**10 00 51.8**	**-0.3**
	baz=231							
TWD				*i*	S	**Sb**	**10 00 55.4**	**-1.1**
	baz=231							
HWA	**Hwalien**	**0.29**	**210**	⇓	P	**Pb**	**10 00 54.0**	**0.0**
	baz=219							
HWA				*e*	S	**Sb**	**10 00 59.8**	**+1.0**
	baz=219							
TWC	**Suao**	**0.38**	**11**	⇑*i*	P	**Pg**	**10 00 54.8**	**-0.1**
	baz=8.0							
TWC				*i*	S	**Sg**	**10 01 00.3**	**+0.1**
	baz=8.0							
NNS	**Nan Shan**	**0.41**	**300**	⇑*i*	P	**Pb**	**10 00 55.5**	**-0.7**
	baz=300							
NNS				*i*	S	**Sb**	**10 01 01.2**	**-1.1**
	baz=300							
ENTT	**Nioudou**	**0.45**	**336**	⇑*i*	P	**Pb**	**10 00 56.1**	**-0.6**
	baz=335							
ENTT				*i*	S	**Sb**	**10 01 02.3**	**-0.8**
	baz=335							
WHF	**Hehuan Shan**	**0.47**	**259**	⇑*i*	P	**Pb**	**10 00 56.4**	**-0.9**
	baz=261							
WHF				S		**Sg**	**10 01 02.5**	**-0.5**
	baz=261							
TWE	**Neicheng**	**0.49**	**349**	⇑*i*	P	**Pb**	**10 00 56.9**	**-0.5**
	baz=349							
TWE				*i*	S	**Sb**	**10 01 04.1**	**-0.4**
	baz=349							
ESL	**Shilin**	**0.52**	**216**	⇓	P	**Pb**	**10 00 57.4**	**-0.5**
	baz=223							
ESL				*e*	S	**Sb**	**10 01 04.5**	**-0.7**
	baz=223							
TWT	**Tachien**	**0.54**	**272**	⇑*i*	P	**Pb**	**10 00 58.2**	**-0.2**
	baz=273							
TWT				S		**Sb**	**10 01 05.5**	**-0.5**
	baz=273							
NSK	**Sanguang**	**0.58**	**320**	*i*	P	**Pb**	**10 00 58.4**	**-0.6**
	baz=320							
NSK				*e*	S	**Sg**	**10 01 05.8**	**-0.5**
	baz=320							
EGS		**0.63**	**14**	*e*	P	**Pg**	**10 00 59.0**	**-0.4**
	baz=19							
WDT	**Danda**	**0.75**	**231**	⇑	P	**Pb**	**10 01 01.4**	**-0.6**
	baz=240							
WDT				S		**Sb**	**10 01 11.8**	**-0.3**
	baz=240							
TWA	**Mucha**	**0.76**	**347**	*e*	P	**Pn**	**10 01 03.0**	**-0.3**
	baz=347							
NSTT	**Nanjuang**	**0.80**	**300**	⇓	P	**Pn**	**10 01 02.9**	**-0.9**
	baz=300							
NSTT				S		**Sb**	**10 01 13.8**	**+0.4**
	baz=300							
EHY	**Hungye**	**0.83**	**210**	*e*	P	**Pb**	**10 01 03.1**	**-0.2**
	baz=223							
NWF	**Wu-fen Shan**	**0.83**	**1**	*e*	P	**Pb**	**10 01 03.3**	**0.0**
	baz=359							
SMLT	**Sun Moon Lake**	**0.87**	**246**	P		**Pb**	**10 01 03.9**	**0.0**
	baz=241							
SMLT				*e*	S	**Sb**	**10 01 14.7**	**-0.6**
	baz=241							
TYC	**Yuchr**	**0.90**	**249**	*e*	P	**Pb**	**10 01 04.1**	**-0.2**
	baz=244							
TYC				*e*	S	**Sn**	**10 01 17.4**	**-0.3**
	baz=244							
NCU	**National Centr**	**0.90**	**324**	*e*	P	**Pn**	**10 01 05.8**	**+0.5**
	baz=323							
NCU				*e*	S	**Sn**	**10 01 19.0**	**+1.0**
	baz=323							
TWQ1	**Liyutan**	**0.92**	**277**	*e*	P	**Pn**	**10 01 05.4**	**0.0**
	baz=278							
TWS1	**Kuangyinshan**	**0.92**	**340**	*e*	P	**Pn**	**10 01 05.6**	**+0.1**
	baz=345							
TWS1				*e*	S	**Sn**	**10 01 19.5**	**+1.1**
	baz=345							
HSN	**Hsinchu**	**0.92**	**308**	*e*	P	**Pn**	**10 01 05.5**	**+0.1**
	baz=302							
HSN				*e*	S	**Sn**	**10 01 19.5**	**+1.1**
	baz=302							
NSY	**Sanyi**	**0.94**	**281**	*e*	P	**Pn**	**10 01 07.1**	**+1.4**
	baz=282							
NSY				*e*	S	**Sn**	**10 01 20.1**	**+1.3**
	baz=282							
TWF1	**Yuli**	**0.98**	**206**	*e*	P	**Pb**	**10 01 04.8**	**-1.0**
	baz=220							
TCU	**Taichung**	**1.00**	**265**	*e*	P	**Pn**	**10 01 08.1**	**+1.5**
	baz=268							
TCU				*e*	S	**Sn**	**10 01 22.7**	**+2.3**
	baz=268							
TWY	**Chenhua**	**1.05**	**352**	*e*	P	**Pn**	**10 01 07.2**	**-0.1**
	baz=335							
WNT	**Mingjian**	**1.05**	**251**	*e*	P	**Pn**	**10 01 07.5**	**+0.2**
	baz=243							
YUS	**Yu-Shan**	**1.05**	**225**	P		**Pg**	**10 01 07.0**	**-0.6**
	baz=228							
YUS				S		**Sn**	**10 01 21.6**	**-0.8**
	baz=228							
ALS	**Alishan**	**1.14**	**231**	*e*	P	**Pb**	**10 01 08.3**	**-0.4**
	baz=220							
YOJ	**Yonaguni jima**	**1.16**	**78**	P		**Pn**	**10 01 08.6**	**-0.1**
YOJ				*e*	S	**Sb**	**10 01 24.1**	**+0.5**
YOJ	**Yonaguni jima**	**1.16**	**78**	*e*	P	**Pn**	**10 01 08.6**	**-0.1**
	baz=66							
CHN5	**Tsauling**	**1.18**	**238**	*e*	P	**Pg**	**10 01 09.7**	**-0.2**
	baz=227							
CHN5				*e*	S	**Sn**	**10 01 27.1**	**+2.2**
	baz=227							
CHKT	**Chengkung**	**1.19**	**198**	*e*	P	**Pn**	**10 01 07.9**	**-1.2**
	baz=188							
ELDTW	**Lidau**	**1.25**	**214**	*e*	P	**Pb**	**10 01 10.2**	**-0.2**
	baz=203							
CHN4	**Tsaushan**	**1.39**	**231**	*e*	P	**Pb**	**10 01 12.1**	**-0.7**
	baz=235							
CHN4				*e*	S	**Sg**	**10 01 34.1**	**+2.1**
	baz=235							
STYT	**Tauyuan**	**1.41**	**221**	*e*	P	**Pg**	**10 01 13.8**	**-0.5**
	baz=223							
WTP	**Ta-pu**	**1.44**	**227**	*e*	P	**Pb**	**10 01 13.7**	**0.0**
	baz=231							
WTP				*e*	S	**Sg**	**10 01 34.3**	**+0.6**
	baz=231							
CHN1	**Nanshi**	**1.54**	**228**	*e*	P	**Pb**	**10 01 15.3**	**-0.1**
	baz=232							
CHN1				*e*	S	**Sg**	**10 01 36.5**	**-0.4**
	baz=232							
TWG	**Pinlang**	**1.54**	**205**	*e*	P	**Pb**	**10 01 14.9**	**-0.5**
	baz=193							
SGST	**Jiashian**	**1.58**	**224**	*e*	P	**Pg**	**10 01 16.8**	**-0.7**
	baz=226							
IRIF	**Iriomote-Funau**	**1.79**	**86**	*e*	S	**Sn**	**10 01 40.8**	**+0.9**
EAST	**Anshuo**	**2.03**	**205**	*e*	P	**Pn**	**10 01 21.4**	**+0.7**
	baz=196							
JKRS	**Kuro-shima**	**2.05**	**89**	P		**Pn**	**10 01 21.2**	**+0.3**
JKRS				S		**Sn**	**10 01 47.1**	**+0.9**
PNG	**Penghu**	**2.13**	**252**	*e*	P	**Pb**	**10 01 23.7**	**-1.7**
	baz=255							
JIJ	**Ishigaki jima**	**2.17**	**86**	P		**Pn**	**10 01 22.8**	**+0.1**
JIJ				*e*	S	**Sn**	**10 01 49.0**	**-0.3**

*ISK **06** 10:05:08.3, 39°.03N×29°.29E, h15km, MD2.6*
*ISCJB **06** 10:05:09.7±0.5, 39°.09N±0°.04×29°.10E±0°.05, h10km±6km, Error ellipse: s-maj=7.5km s-min=4.5km az=139.3*
*DDA **06** 10:05:09.8, 39°.13N×29°.06E, h7km, Md2.6*
*CSEM **06** 10:05:09.5±0.2, 39°.09N×29°.12E, h10km, MD2.6, Error ellipse: s-maj=7.2km s-min=4.5km az=131.0*
ISC 06 10:05:09.3±1.0, 39°.09N±0°.03×29°.14E±0°.03, h9km±11km, n20, σ0§54/32, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GDZ	**Gediz**	**0.27**	**89**	*i*	P	**Pb**	**10 05 16.7**	**+0.3**
GDZ				*i*	S	**Sb**	**10 05 21.5**	**+0.3**
GDZ	**Gediz**	**0.27**	**89**	P		**Pb**	**10 05 16.7**	**+0.3**
GDZ				S		**Sb**	**10 05 21.5**	**+0.3**
DEMI	**Demirci**	**0.33**	**263**	*i*	P	**Pg**	**10 05 15.8**	**0.0**
DEMI				*i*	S	**Sg**	**10 05 19.9**	**-0.3**
DEMI	**Demirci**	**0.33**	**263**	P		**Pg**	**10 05 15.8**	**0.0**
DEMI				S		**Sg**	**10 05 19.9**	**-0.3**
TVSB	**Tavsanli**	**0.44**	**35**	*e*	PG	**Pg**	**10 05 17.8**	**-0.2**
TVSB				*e*	SG	**Sg**	**10 05 24.3**	**+0.5**
TVSB	**Tavsanli**	**0.44**	**35**	*e*	Pg	**Pg**	**10 05 17.8**	**-0.2**
TVSB				*e*	Sg	**Sg**	**10 05 24.3**	**+0.5**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*	PG	**Pg**	**10 05 22.8**	**+0.4**
KULA				*e*	SG	**Sb**	**10 05 32.5**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*	Pg	**Pg**	**10 05 22.8**	**+0.4**
KULA				*e*	Sg	**Sb**	**10 05 32.5**	**-0.4**
MANT	**Manisa**	**0.75**	**218**	*i*	P	**Pg**	**10 05 23.4**	**-0.3**
MANT				*i*	S	**Sg**	**10 05 33.3**	**-0.2**
MANT	**Manisa**	**0.75**	**218**	P		**Pg**	**10 05 23.4**	**-0.3**
MANT				S		**Sg**	**10 05 33.3**	**-0.2**
BALB	**Balikesir**	**1.12**	**300**	*e*	PN	**Pn**	**10 05 32.5**	**+1.3**
BALB	**Balikesir**	**1.12**	**300**	*e*	Pn	**Pn**	**10 05 32.5**	**+1.3**
CAVI	**Cavuskoy**	**1.24**	**26**	*e*	PN	**Pn**	**10 05 31.8**	**-1.1**
CAVI	**Cavuskoy**	**1.24**	**26**	*e*	Pn	**Pn**	**10 05 31.8**	**-1.1**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*	PN	**Pb**	**10 05 34.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*	Pn	**Pb**	**10 05 34.4**	**0.0**
BALY	**Balya**	**1.35**	**300**	*i*	P	**Pn**	**10 05 34.1**	**-0.2**
BALY				*i*	S	**Sg**	**10 05 52.6**	**0.0**
BALY	**Balya**	**1.35**	**300**	P		**Pn**	**10 05 34.1**	**-0.2**
BALY				S		**Sg**	**10 05 52.6**	**0.0**
ARMT	**Armutlu**	**1.49**	**352**	*e*	PN	**Pn**	**10 05 36.2**	**-0.1**
ARMT	**Armutlu**	**1.49**	**352**	*e*	Pn	**Pn**	**10 05 36.2**	**-0.1**

GCMT 06 10:11:44.0±0.4, 14°.88S×175°.60W, h13km±3km, MW4.8/64, Moment Tensor Solution. s22,c25; s64,c90; Duration: 0 Moment tensor: Scale 10^{16}Nm; Mrr-0.30±.10; Mθθ1.55±.11; Mϕϕ-1.26±.09; Mrθ-0.14±.22; Mθϕ0.74±.09; Mϕr0.26±.23; **Best double couple:** M0 1.62300×10^{16} **NP1:**ϕs120.00000°,δ82.00000°, λ-11.00000°. **NP2:**ϕs212.00000°,δ79.00000°, λ-172.00000°. **Principal axes:** T 1.7370, Plg2.0000°, Azm166.0000°; N -0.2340, Plg77.0000°, Azm265.0000°; P -1.5100, Plg13.0000°, Azm76.0000°; **nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s. Samoa Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DZM	**Mont Dzumac**	**18.46**	**245**	*e*	LR	LR	10 20 56.5	
	708nm,25.1s							
PPT2	**Papeete2**	**25.12**	**100**	*e*	LQ	LQ	10 22 07.1	
	418nm,29.8s							
PPT2				*e*	LR	LR	10 23 12.4	
	566nm,26.5s,baz=260							
TBI	**Tubuai**	**26.06**	**113**	*e*	LR	LR	10 23 45.6	
	556nm,27.0s,baz=289							
TAOE	**Nuku Hiva Isla**	**35.17**	**84**	*e*	LR	LR	10 28 00.4	
	570nm,25.3s							
RKT	**Rikitea**	**39.17**	**108**	*e*	LR	LR	10 30 10.9	
	366nm,27.0s							

BUC 06 10:11:57.9±0.2, 45°.29N×25°.08E, h14km±2km, MD2.2/2, 2C-4D Error ellipse: s-maj=1.4km s-min=1.0km az=21.0, Romania

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MTUR	**Matau**	**0.06**	**192**	⇓	*i* P	Pg	10 12 00.9	+0.2
MTUR	**Matau**	**0.06**	**192**	⇓	*i* P	Pg	10 12 00.9	+0.2
VOIR		**0.15**	**352**	⇓	*i* P	Pg	10 12 01.9	+0.1
VOIR					S	Sg	10 12 05.1	+0.6
VOIR		**0.15**	**352**	⇓	*i* P	Pg	10 12 01.9	+0.1
VOIR					*i* S	Sg	10 12 05.1	+0.6
ARR	**Arges**	**0.33**	**285**		S	Sb	10 12 10.4	-0.3
ARR	**Arges**	**0.33**	**285**		*i* S	Sb	10 12 10.4	-0.3
MLR	**Muntele Rosu**	**0.64**	**71**	⇑	*i* P	Pb	10 12 11.3	+0.3
MLR					S	Sn	10 12 22.0	-0.8
MLR	**Muntele Rosu**	**0.64**	**71**	⇑	*i* P	Pb	10 12 11.3	+0.3
MLR					*i* S	Sn	10 12 22.0	-0.8

IDC 06 10:23:38.6±2.7, 53°.60N×86°.95E, h0km, mb1 2.6/2, mb1mx2.6/55, mbtmp2.6/2, ML2.3/2, Error ellipse: s-maj=24.7km s-min=15.4km az=70.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ZALV	**Zalesovo Beam**	**1.31**	**286**	Pg		Pg	10 24 02.4	-1.4
	0.6nm,0.3s,baz=101,slow=17,SNR=13							
ZALV				Lg		Lg	10 24 21.0	
	1.2nm,0.3s,baz=109,slow=29,SNR=11							
I46RU	**ZALESOVO INFRA**	**1.32**	**286**	*i*			10 32 00.0	
	baz=106,slow=317,SNR=4.3							
KURBB	**Kurchatov Arra**	**5.98**	**244**	Pn		Pn	10 25 09.5	+1.1
	0.1nm,0.3s,baz=62,slow=14,SNR=5.4							
KURBB				Lg		Lg	10 26 47.2	
	0.0nm,0.3s,baz=60,slow=31,SNR=3.5							
MKAR	**Makanchi Array**	**7.44**	**206**	Pn		Pn	10 25 29.7	+1.4
	0.1nm,0.3s,baz=28,slow=13,SNR=4.2							
MKAR				Lg		Lg	10 27 34.2	
	0.0nm,0.3s,baz=27,slow=36,SNR=2.8							

*IDC **06** 10:37:43.1±0.6, 21°.20S×33°.42E, h0km, mb4.3/21, mb1 4.5/27, mb1mx4.4/46, mbtmp4.4/27, ML4.7/6, MS3.8/16, Ms1 3.8/16, ms1mx3.6/33, Error ellipse: s-maj=17.1km s-min=14.7km az=80.0*
*ISCJB **06** 10:37:43.8±0.2, 21°.27S±0°.03×33°.20E±0°.04, h15km, mb4.5/44, MS3.8/11, Error ellipse: s-maj=5.6km s-min=3.3km az=35.2*
*MOS **06** 10:37:44.0±1.0, 21°.26S×33°.26E, h16km, mb4.7/35, Error ellipse: s-maj=12.4km s-min=6.9km az=80.5*
*NEIC **06** 10:37:45.6±0.3, 21°.20S×33°.33E, h10km, mb4.7/13, Error ellipse: s-maj=9.0km s-min=7.3km az=146.0*
*BUL **06** 10:37:46.8±0.9, 21°.21S×33°.12E, h10km, MD4.2*
*PRE **06** 10:37:46.1±1.6, 21°.26S×32°.89E, h5km, ML5.6*
*NAM **06** 10:38:06.6±1.4, 22°.02S×31°.39E, h15km*
*LSZ **06** 10:38:27.9±0.3, 20°.06S×29°.25E, h10km*
**ISC 06

BFSD Buffelsfontein 7.97 225 *e*P Pn 10 39 43.2 +2.2
BFSD eS Sn 10 41 08.2 -2.8
BFSD AML AML 10 42 04.2
comp=Z,740nm,0.6s
TLEK Tau Lekoa 8.11 225 *e*P Pn 10 39 44.4 +1.4
TLEK eS Sn 10 41 11.0 -3.6
TLEK AML AML 10 41 45.8
comp=Z,208nm,0.5s
SEK Senekal 8.56 214 *e*P Pn 10 39 51.0 +1.8
SEK eS Sn 10 41 23.1 -2.6
SEK AML AML 10 41 30.9
comp=Z,324nm,0.5s
SWZ Schweizer 9.16 229 *e*P Pn 10 40 00.2 +2.8
SWZ eS Sn 10 41 36.1 -4.3
SWZ AML AML 10 41 42.5
comp=Z,244nm,0.5s
KSD Kokstad 9.78 199 *e*P Pn 10 40 08.6 +2.7
KSD eS Sn 10 41 51.1 -4.5
KSD AML AML 10 41 58.2
comp=Z,41nm,0.6s
BOSA Boshof 10.15 222 *i*P Pn 10 40 09.5 -1.5
BOSA Boshof 10.15 222 *i*P Pn 10 40 13.2 +2.2
BOSA *i* 10 40 13.4
baz=49,slow=14
BOSA Boshof 10.15 222 Pn Pn 10 40 12.6 +1.6
comp=Z,12nm,0.3s,baz=51,slow=13,SNR=100
BOSA Sn Sn 10 42 02.0 -2.6
comp=Z,22nm,0.3s,baz=299,slow=9.9,SNR=6.8
BOSA Lg Lg 10 43 07.1
comp=Z,16nm,0.3s,baz=316,slow=18,SNR=4.2
BOSA LR LR 10 44 26.7
comp=Z,1µm,18.1s,baz=49,slow=39
KMZ Kasempa 10.38 317 *i*P Pn 10 40 14.6 +0.3
KMZ *i* 10 40 16.7
baz=154,slow=11
KMZ *i*Sg Sn 10 42 04.4 -6.1
UPI Upington 12.81 234 *e*P Pn 10 40 49.5 +2.2
UPI eS Sn 10 43 02.9 -6.9
UPI AML AML 10 43 23.8
comp=Z,104nm,0.5s
KEIM Keimoes 13.20 234 *e*P Pn 10 40 54.9 +2.3
KEIM eS Sn 10 43 12.3 -6.9
KEIM AML AML 10 43 17.9
comp=Z,87nm,0.4s
GRM Grahamstown 13.31 204 *i*P P 10 41 04.8 +1.0
GRM *i*S S 10 43 36.2 -10
ABPO Ambohimpanom 13.52 83 *e*P Pn 10 40 54.2 -3.0
ABPO Ambohimpanom 13.52 83 *e*Pn Pn 10 40 54.1 -3.0
ABPO eSn Sn 10 43 11.2 -16
OPO Ambohidratompo 13.58 81 *i*P Pn 10 40 52.0 -6.0
OPO Ambohidratompo 13.58 81 Pn Pn 10 40 51.3 -6.8
comp=Z,0.8nm,0.3s,baz=255,slow=16,SNR=5.8
OPO Sn Sn 10 43 11.4 -17
comp=Z,9.7nm,0.3s,baz=151,slow=18,SNR=7.6
OPO LR LR 10 46 02.7
comp=Z,394nm,19.0s,baz=233,slow=38
ARMS Ukamas 13.83 238 *i*P Pn 10 40 53.8 -7.5
TSUM Tsumeb 14.65 275 *i*P Pn 10 41 14.4 +1.8
TSUM Tsumeb 14.65 275 Pn Pn 10 41 12.8 +0.1
comp=Z,6.0nm,0.3s,baz=106,slow=10,SNR=32
TSUM Sn Sn 10 43 51.6 -3.3
comp=Z,1.8nm,0.3s,baz=26,slow=19,SNR=5.6
TSUM Lg Lg 10 45 30.0
comp=Z,4.4nm,0.3s,baz=194,slow=22,SNR=3.3
TSUM LR LR 10 47 07.2
comp=Z,681nm,18.5s,baz=146,slow=38
TSUM Tsumeb 14.65 275 *i*P Pn 10 41 07.8 -4.8
TSUM Tsumeb 14.65 275 *e*Pn Pn 10 41 12.7 +0.1
comp=Z,63nm,0.6s
TSUM Sn Sn 10 43 51.6 -3.3
TSUM *e*Sn Sn 10 43 56.3 +1.4
TSUM Lg Lg 10 45 30.0
BUFB Buffelsbos 14.76 208 *e*P Pn 10 41 16.6 +2.7
BUFB eS Sn 10 43 50.6 -6.7
BUFB AML AML 10 45 47.6
comp=Z,79nm,0.7s
SUR Sutherland 15.52 222 *i*P P 10 41 27.1 -1.5
SUR Sutherland 15.52 222 Pn Pn 10 41 26.2 +2.1
comp=Z,0.4nm,0.3s,baz=56,slow=15,SNR=56
SUR Sn Sn 10 44 10.8 -5.1
comp=Z,0.5nm,0.3s,baz=326,slow=22,SNR=6.2
SUR Lg Lg 10 46 00.8
comp=Z,0.3nm,0.3s,baz=320,slow=20,SNR=5.3
SUR LR LR 10 47 46.6
comp=Z,57nm,18.8s,baz=51,slow=38
SUR Sutherland 15.52 222 *e*Pn P 10 41 27.0 -1.5
comp=Z,106nm,0.8s
SUR Sn Sn 10 44 10.8 -5.1
SUR Lg Lg 10 46 00.8
CVNA Calvinia 15.63 227 *e*P Pn 10 41 27.7 +2.2
CVNA *e*S Sn 10 44 10.5 -8.0
CVNA AML AML 10 46 13.4
comp=Z,257nm,0.8s
KOMG Komaggas 16.38 236 *e*P P 10 41 38.1 +0.1
KOMG *e*S Sn 10 44 27.2 -10
KOMG AML AML 10 45 18.9
comp=Z,48nm,0.6s
KJAB KAMANJAB 17.12 272 *i*P Pn 10 41 39.8 -4.9
KMBO Kilima Mbogo 20.45 12 P P 10 42 20.0 -3.0
comp=Z,2.4nm,0.6s,baz=180,slow=13,SNR=8.0
KMBO LR LR 10 50 54.1
comp=Z,48nm,18.7s,baz=244,slow=39
KMBO Kilima Mbogo 20.45 12 *e*P P 10 42 22.8 -0.3
KMBO pmax pmax
comp=Z,56nm,1.9s
KMBO Kilima Mbogo 20.45 12 *e*P P 10 42 22.8 -0.3
comp=Z,56nm,1.9s
TOA0 Torodi Ar. Sit 46.02 315 *e*P P 10 46 10.3 +1.4
TORD Torodi Ar. Bea 46.02 315 P P 10 46 09.6 +0.7
comp=Z,4.1nm,0.6s,baz=125,slow=7.0,SNR=81
TORD LR LR 11 05 54.6
comp=Z,226nm,18.2s,baz=110,slow=37
KIC Kosan Boka 46.13 302 *e*P P 10 46 12.1 +2.3
comp=Z,26nm,1.0s
LIC Lamto 46.28 302 *e*P P 10 46 14.8 +3.8
DBIC Dimbokro 46.41 303 P P 10 46 13.7 +1.6
comp=Z,2.4nm,0.5s,baz=109,slow=7.4,SNR=7.2
DBIC LR LR 11 05 02.2
comp=Z,88nm,20.2s,baz=116,slow=35
TIC Toumodi 46.53 302 *e*P P 10 46 14.7 +1.8
SYO Syowa Base 47.90 177 *i*eX P 10 46 19.2 -3.6
MAW Mawson 49.96 166 P P 10 46 38.5 -0.2
comp=Z,6.9nm,0.7s,baz=328,slow=8.0,SNR=13
MAW Mawson 49.96 166 *e*P P 10 46 39.8 +1.1
comp=Z,1.6nm,0.7s
EIL Elat 50.69 2 P P 10 46 43.9 -0.8
comp=Z,6.2nm,0.8s,baz=94,slow=12,SNR=4.7
MMAI Mount Meron Ar 54.04 2 P P 10 47 09.3 -0.3
comp=Z,0.6nm,0.3s,baz=219,slow=5.2,SNR=4.2
SNAA Sanae 54.45 193 *e*P P 10 47 13.9 +1.7
SNAA pmax pmax
comp=Z,13nm,1.5s
SNAA Sanae 54.45 193 *e*P P 10 47 13.9 +1.7
comp=Z,13nm,1.5s
BRTR Keskin Array B 60.69 1 P P 10 47 56.8 +0.3
comp=Z,2.4nm,0.7s,baz=176,slow=9.4,SNR=12
BR231 Keskin MP Arra 60.81 360 *e*P P 10 47 58.0 +0.8
AGG Agios Georgios 60.82 350 *e*P P 10 47 59.0 +1.8
AGG Agios Georgios 60.82 350 *e*P P 10 47 59.0 +1.8
GNI Garni 62.08 10 *i*P P 10 48 06.5 +0.6
GNI pmax pmax
comp=Z,10.0nm,0.7s
GEYT Alibeck 63.45 22 LR LR 11 19 27.5
comp=Z,43nm,18.9s,baz=205,slow=40
ZEI Tsey 64.53 9 *e*P P 10 48 21.9 -0.3
ZEI pmax pmax
comp=Z,21nm,0.6s
NEY Neytrino 64.83 8 *e*P P 10 48 23.7 -0.3
NEY pmax pmax
comp=Z,1.0nm,1.0s
NCK Nalchik 65.18 8 *e*P P 10 48 26.8 +0.6
NCK pmax pmax
comp=Z,26nm,0.7s
KIV Kislovodsk 65.52 8 *e*P P 10 48 26.5 -1.9
KIV pmax pmax
comp=Z,13nm,1.1s
KIV MLR MLR
comp=Z,28nm,17.0s
ISR Istrita 66.34 355⇓*i*P P 10 48 42.6 +8.9
ISR Istrita 66.34 355⇓P P 10 48 42.6 +8.9
MLR Muntele Rosu 66.76 355⇓*i*P P 10 48 37.0 +0.6
MLR Muntele Rosu 66.76 355⇓P P 10 48 37.0 +0.6
ARR Arges 66.77 354⇓*i*P P 10 48 37.5 +1.1
VOIR 66.80 354⇓*i*P P 10 48 37.3 +0.7
VOIR 66.80 354⇓P P 10 48 37.3 +0.7

PLOR Plostina 67.06 355⇓*i*P P 10 48 38.9 +0.7
PLOR Plostina 67.06 355⇓P P 10 48 38.9 +0.7
VRI Vrincioaia 67.07 355⇓*i*P P 10 48 39.7 +1.5
VRI Vrincioaia 67.07 355⇓P P 10 48 39.7 +1.5
BZS Buzias 67.38 351⇑*i*P P 10 48 41.6 +1.4
BZS Buzias 67.38 351⇑P P 10 48 41.6 +1.4
DRGR 68.39 352⇓*i*P P 10 48 48.2 +1.6
DRGR 68.39 352⇓P P 10 48 48.2 +1.6
PYUN Piuthan 68.84 46 *e*P P 10 48 47.7 -2.3
comp=Z,30nm,0.7s
KOLN Koldanda 69.04 47 *e*P P 10 48 48.8 -2.5
comp=Z,15nm,0.6s
ES19 SONSECA Array 69.78 330 *e*P P 10 48 57.3 +1.9
ESDC Sonseca Array 69.79 330 P P 10 48 56.6 +1.1
comp=Z,2.5nm,0.6s,baz=145,slow=5.8,SNR=14
GKN Gorkha 69.90 48 *e*P P 10 48 54.0 -2.5
comp=Z,28nm,0.7s
DMN Daman 69.98 48 *e*P P 10 48 54.7 -2.4
comp=Z,14nm,0.7s
PKIN Phulchoki 70.16 48 *e*P P 10 48 55.4 -2.9
comp=Z,10nm,0.6s
KKN Kani 70.21 48 *e*P P 10 48 56.1 -2.4
comp=Z,18nm,0.6s
CRVS Cervenica-Dubn 70.63 352 *e*P P 10 49 03.6 +3.3
CRVS Cervenica-Dubn 70.63 352 *e*P P 10 49 03.6 +3.3
RAMN Ramite 70.63 50 *e*P P 10 48 59.0 -2.1
comp=Z,28nm,0.6s
GUN Gumba 70.70 48 *e*P P 10 48 59.5 -2.2
comp=Z,35nm,0.6s
LANS Liptovska Anna 71.15 351 *e*P P 10 49 04.8 +1.3
LANS Liptovska Anna 71.15 351 *e*P P 10 49 04.8 +1.3
KIEV Kiev 71.74 357 *e*P P 10 49 08.1 +1.2
KIEV pmax pmax
comp=Z,8.0nm,1.2s
AKASG Malin Array Be 71.74 357 P P 10 49 05.5 -1.5
comp=Z,1.8nm,0.8s,baz=179,slow=5.3,SNR=4.9
GEA0 GERESS Array S 71.91 347 *e*P P 10 49 09.1 +0.9
GEC2 GERESS Array S 71.91 347 *e*P P 10 49 09.4 +1.2
GEC2 pmax pmax
comp=Z,3.0nm,0.7s
GEC2 GERESS Array S 71.91 347 *e*P P 10 49 09.4 +1.2
comp=Z,3.1nm,0.7s
GERES GERESS Array B 71.91 347 P P 10 49 09.1 +0.8
comp=Z,2.2nm,0.7s,baz=150,slow=5.6,SNR=16
KSH Kashi 72.58 34 *e*P P 10 49 15.8 +3.4
KSH *e*sP PcP 10 49 26.7 -3.3
KSH S S 10 58 38.5 +1.8
KKAR Karatay Array 72.76 28 *e*P P 10 49 12.6 -0.7
KKAR Karatay Array 72.76 28 *e*P P 10 49 12.6 -0.7
MNAS Manas 73.16 29 P P 10 49 17.2 +1.3
MNAS pmax pmax
comp=Z,2.0nm,1.0s
ABKAR Akbulak array 74.20 18 *e*P P 10 49 20.7 -0.9
AAK Ala-Archa 74.20 31 *e*P P 10 49 21.2 -0.8
AAK pmax pmax
comp=Z,5.0nm,1.1s
CLL Collm 74.39 347 *e*P P 10 49 24.0 +1.4
CLL LmV 11 28 00.0
comp=Z,100nm,21.7s
CLL Collm 74.39 347 *e*P P 10 49 24.0 +1.4
AKTO Aktyubinsk 74.74 16 P P 10 49 23.3 -1.4
comp=Z,3.4nm,0.7s,baz=192,slow=6.3,SNR=9.9
TKM2 Tokmak 2 74.95 31 *e*P P 10 49 25.6 -0.8
TKM2 pmax pmax
comp=Z,12nm,1.2s
TKM2 Tokmak 2 74.95 31 *e*P P 10 49 25.6 -0.8
comp=Z,12nm,1.2s
CMAR Chiang Mai Arr 75.65 63 P P 10 49 27.9 -2.9
comp=Z,0.7nm,0.3s,baz=242,slow=6.8,SNR=7.0
CMAR LR LR 11 21 09.1
comp=Z,31nm,18.4s,baz=260,slow=35
OBN Obninsk 76.15 2 *e*P P 10 49 32.0 -0.6
OBN pmax pmax
comp=Z,5.0nm,0.8s
PBKT Sadao Pong 76.48 66 P P 10 49 34.2 -1.2
VNDA Vanda 77.00 170 P P 10 49 37.9 +0.5
comp=Z,2.8nm,1.0s,baz=257,slow=4.5,SNR=5.0
VNDA LR LR 11 22 32.2
comp=Z,64nm,19.1s,baz=230,slow=35
SBA Scott Base 77.52 171 *e*P P 10 49 43.1 +2.8
SBA pmax pmax
comp=Z,18nm,1.4s
SBA Scott Base 77.52 171 *e*P P 10 49 43.1 +2.8
comp=Z,18nm,1.4s
OTUK Ortayu 77.64 26 P P 10 49 41.4 +0.1
OTUK pmax pmax
comp=Z,4.0nm,1.2s
VSU Vasula 79.61 357 *i*P P 10 49 50.7 -1.2
VSU pmax pmax
comp=Z,41nm,1.7s
ZRNK Zerenda 80.25 21 *e*P P 10 49 54.7 -0.8
ZRNK pmax pmax
comp=Z,6.0nm,0.9s
ZRNK Zerenda 80.25 21 *e*P P 10 49 54.7 -0.8
comp=Z,6.1nm,0.9s
ARU Arti 80.36 14 *d*P P 10 49 53.7 -2.2
comp=Z,2.6nm,0.4s,baz=176,slow=5.3,SNR=8.8
ARU Arti 80.36 14 *d*P P 10 49 55.5 -0.4
ARU S S 11 00 00.6 -0.4
ARU SS SS 11 05 08.9 -4.4
ARU pmax pmax
comp=Z,13nm,1.2s
ARU Arti 80.36 14 *e*P P 10 49 55.6 -0.4
comp=Z,13nm,1.1s
VOSK Vostochnaya 80.74 22 *e*P P 10 49 57.2 -0.9
VOSK pmax pmax
comp=Z,5.0nm,1.0s
VOSK Vostochnaya 80.74 22 *e*P P 10 49 57.2 -0.9
comp=Z,5.0nm,1.0s
BRVK Borovoye 80.77 22 *i*P P 10 49 56.9 -1.4
BRVK pmax pmax
comp=Z,17nm,1.2s
BRVK Borovoye 80.77 22 *e*P P 10 49 57.7 -0.5
comp=Z,5.1nm,0.8s
BVAR Borovoye Array 80.78 22 P P 10 49 57.5 -0.9
comp=Z,8.1nm,0.8s,baz=222,slow=6.0,SNR=36
MAKZ Makanchi 80.88 32 *e*P P 10 49 57.7 -1.4
MAKZ pmax pmax
comp=Z,3.0nm,0.9s
MAKZ Makanchi 80.88 32 *e*P P 10 49 57.7 -1.4
comp=Z,3.2nm,0.9s
MK01 Makanchi Array 81.01 32 *e*P P 10 49 58.1 -1.6
MKAR Makanchi Array 81.02 32 P P 10 49 57.7 -2.1
comp=Z,1.6nm,0.7s,baz=220,slow=5.5,SNR=14
CPUP Villa Florida 81.15 245 LR LR 11 23 26.8
comp=Z,60nm,18.2s,baz=158,slow=34
WMQ Urumqi 81.87 37 *e*P P 10 50 05.1 +0.7
WMQ pP sP 10 50 15.3 +4.1
WMQ pmax pmax
comp=Z,8.0nm,0.7s
WMQ pmax pmax
comp=Z,100nm,5.6s
KMI Kunming 81.90 59 P P 10 50 10.0 +4.8
KMI pmax pmax
comp=Z,12nm,0.7s
KLMR Klimovskoe 82.01 3 *e*P P 10 50 03.7 -0.9
KLMR pmax pmax
comp=Z,9.0nm,1.4s
KURK Kurchatov 82.16 27⇓*i*P P 10 50 05.4 -0.3
FINES FINESS Array B 82.62 357 P P 10 50 08.1 +0.2
comp=Z,3.2nm,0.9s,baz=111,slow=8.4,SNR=6.5
SOKR Solikamsk 82.91 12 *e*P P 10 50 07.2 -2.1
SOKR pmax pmax
comp=Z,17nm,0.7s
NB2 NORSAR Subarra 83.91 350 P P 10 50 15.0 +0.5
comp=Z,6.9nm,1.2s,baz=159,slow=5.3
NOA NORSAR Array B 83.91 350 P P 10 50 15.1 +0.5
comp=Z,2.9nm,0.9s,baz=152,slow=4.8,SNR=5.5
NBO02 NORSAR Array S 83.98 349 *e*P P 10 50 15.7 +0.8
PLCA Paso Flores 86.10 228 LR LR 11 28 58.4
comp=Z,26nm,18.5s,baz=171,slow=36
NVS Novosibirsk 87.08 26 *i*P P 10 50 30.1 -0.3
ZALV Zalesovo Beam 87.14 28 P P 10 50 29.2 -1.5
comp=Z,1.2nm,0.5s,baz=237,slow=5.5,SNR=4.5
ASAR Alice Springs 90.99 116 P P 10 50 49.1 -0.7
comp=Z,1.9nm,0.6s,baz=239,slow=4.0,SNR=22
AS01 Alice Springs 91.03 116 *e*P P 10 50 49.2 -0.8
PTGA Pitinga 92.54 268 *e*P P 10 50 59.8 +2.7
comp=Z,13nm,1.2s
WRA Warramunga Arr 92.84 113 P P 10 50 57.0 -1.5
comp=Z,0.7nm,0.6s,baz=245,slow=2.7,SNR=9.1
WHN Wuhan 93.50 59 *e*P P 10 51 02.2 +1.1
HHC Hu-ho-hao-te 95.42 48 *e*P P 10 51 10.8 +1.0
HHC PP PP 10 54 59.7 -1.1
HHC Hu-ho-hao-te 95.42 48 S S 11 02 20.0 -5.8

HHC pmax pmax
comp=Z,18nm,1.0s
HHC pmax pmax
comp=Z,120nm,4.1s
HHC LR LR
comp=N,130nm,14.8s
HHC LR LR
comp=E,220nm,16.0s
HHC LR LR
comp=Z,90nm,14.8s
NRIK Noril'sk 98.35 17 LR LR 11 41 29.5
comp=Z,52nm,18.5s,baz=60,slow=39
EYMN Ely 128.50 315 P PKPdf 10 56 52.6 +0.7
baz=79
P42A Winchester 128.72 304 P PKPdf 10 56 53.3 +0.7
baz=86
D37A Cotton 129.27 314 P PKPdf 10 56 54.6 +1.1
baz=78
J39A Decorah 129.39 309 P PKPdf 10 56 54.9 +1.1
baz=82
L39A Vinton 129.75 308 P PKPdf 10 56 55.9 +1.4
baz=83
B35A Bob, Littlefor 129.88 316 P PKPdf 10 56 55.4 +0.9
baz=76
P40A Paris 130.04 304 P PKPdf 10 56 56.1 +1.0
baz=85
Q40A Laux Farm, Aux 130.10 304 P PKPdf 10 56 56.4 +1.1
baz=86
U41A Viola 130.12 300 P PKPdf 10 56 56.4 +1.1
baz=88
C35A Jirik Farms, M 130.19 315 P PKPdf 10 56 55.9 +0.8
baz=77
F36A Milaca 130.26 313 P PKPdf 10 56 56.3 +1.0
baz=79
R40A Maddies Statio 130.30 303 P PKPdf 10 56 56.8 +1.1
baz=86
V41A Mountainview 130.32 299 P PKPdf 10 56 56.3 +0.5
baz=88
W41B Gary Mavity, V 130.41 299 P PKPdf 10 56 57.0 +1.1
baz=89
S40A Lebanon 130.53 302 P PKPdf 10 56 57.3 +1.2
baz=86
T40A Mansfield 130.56 301 P PKPdf 10 56 57.4 +1.2
baz=87
V40A Witts Springs 130.86 299 P PKPdf 10 56 57.7 +0.9
baz=88
U40A Yellville 130.87 300 P PKPdf 10 56 57.7 +0.9
baz=87
R39A Chumby, Stover 130.90 303 P PKPdf 10 56 57.8 +1.0
baz=86
B33A Robert and Kas 131.10 316 P PKPdf 10 56 58.1 +1.2
baz=75
S39A Bolivar 131.17 302 P PKPdf 10 56 58.4 +1.1
baz=86
T39A Clever 131.25 301 P PKPdf 10 56 58.4 +0.9
baz=86
J36A Seneca 1, Swea 131.29 309 P PKPdf 10 56 58.5 +1.2
baz=80
R38A Fenwick Farm, 131.59 303 P PKPdf 10 56 58.6 +0.5
baz=85
S38A Stockton 131.64 302 P PKPdf 10 56 58.9 +0.7
baz=86
S37A Fort Scott 132.35 302 P PKPdf 10 57 00.9 +1.3
baz=85
X38A Whitesboro 132.54 298 P PKPdf 10 57 01.3 +1.2
baz=88
C31A Landman Farms, 132.62 316 P PKPdf 10 57 00.7 +0.9
baz=73
V37A Hulbert 132.74 300 P PKPdf 10 57 01.0 +0.6
baz=86
D31A Mcclaflin, Tow 132.82 315 P PKPdf 10 57 00.7 +0.6
baz=74
ECSD EROS Data Cent 132.84 310 P PKPdf 10 57 00.8 +0.5
baz=78
438A Sam Houston St 133.12 293 P PKPdf 10 57 01.1 -0.1
baz=91
Q35A Mercer Eighty, 133.19 304 P PKPdf 10 57 02.0 +0.9
baz=83
T36A Boggs Farm, Ca 133.25 301 P PKPdf 10 57 01.9 +0.6
baz=85
H32A Carlson Farm, 133.25 312 P PKPdf 10 57 01.9 +0.8
baz=76
YKA Yellowknife Ar 133.26 340 PKP PKPdf 10 57 01.1 +0.6
comp=Z,1.0nm,0.6s,baz=41,slow=2.2,SNR=15
I32A Karley and Nic 133.38 311 P PKPdf 10 57 02.4 +1.1
baz=77
334A Lometa 135.49 293 P PKPdf 10 57 06.0 +0.3
baz=89
ILAR Eielson Array 136.53 360 PKP PKPdf 10 57 05.7 -0.9
comp=Z,0.9nm,0.9s,baz=337,slow=3.9,SNR=6.7
TXAR Lajitas Array 140.22 291 PKhKP PKPpre 10 57 08.4
comp=Z,0.5nm,0.7s,baz=91,slow=3.9,SNR=7.3
TX31 Lajitas Ar. Si 140.22 291 *e*PKPpre PKPpre 10 57 11.0
S22A 4UR Ranch, Cre 141.74 304 P PKPdf 10 57 14.9 -2.4
baz=76
HPIG 142.01 287 *e*PKPpre PKPpre 10 57 15.3
PDAR Pinedale Array 142.15 313 PKP PKPdf 10 57 17.1 -0.7
comp=Z,0.4nm,0.5s,baz=72,slow=2.9,SNR=3.9
BOZ Bozeman (W) 142.27 318 P PKPdf 10 57 16.5 -1.3
baz=61
PV01 Paradox Valley 142.97 306 *e*PKPdf PKPdf 10 57 18.4 -1.0
MSO Missoula 143.06 321 P PKPdf 10 57 17.8 -1.4
baz=57
MVCO Mesa Verde 143.16 304 P PKPdf 10 57 18.9 -0.9
baz=75
MVCO Mesa Verde 143.16 304 *e*PKPdf PKPdf 10 57 18.8 -1.0
121A Cookes Peak, D 143.50 296 P PKPdf 10 57 19.6 -0.8
baz=82
HWUT Hardware Ranch 143.98 312 *e*PKPdf PKPdf 10 57 21.8 +0.8
SRU San Rafael Swe 144.14 308 *e*PKIKP PKPdf 10 57 21.3 0.0
SRU San Rafael Swe 144.14 308 *e*PKPdf PKPdf 10 57 21.3 0.0
W18A Petrified Fore 144.63 301 P PKPdf 10 57 22.9 +0.6
baz=77
319A Douglas 144.91 295 *e*PKPbc PKPdf 10 57 24.9 +2.1
X18A Snowflake 144.93 300 *e*PKPbc PKPdf 10 57 24.7 +1.9
HLID Hailey 145.01 317 P PKPdf 10 57 24.3 +1.5
baz=60
HLID Hailey 145.01 317 *e*PKPbc PKPdf 10 57 24.5 +1.8
B08A Colville Reser 145.08 327 *e*PKPbc PKPdf 10 57 24.0 +1.5
BGU Big Grassy Mou 145.26 312 *e*PKPdf PKPdf 10 57 24.8 +1.5
DUG Dugway, Tooele 145.40 311 P PKPab 10 57 25.5 +2.0
baz=67
DUG Dugway, Tooele 145.40 311 *e*PKIKP PKPab 10 57 25.2 +1.6
DUG Dugway, Tooele 145.40 311 *e*PKPdf PKPab 10 57 25.2 +1.6
MSU Marysvale 145.55 308 *e*PKP2 PKPab 10 57 26.6 +2.3
MSU Marysvale 145.55 308 *e*PKPdf PKPab 10 57 26.6 +2.3
MTPU Mount Pierson 145.72 307 *e*PKPdf PKPab 10 57 26.9 +1.9
WUAZ Wupatki 145.83 302 P PKPab 10 57 27.1 +1.8
baz=75,SNR=7.0
WUAZ Wupatki 145.83 302 *e*PKPdf PKPab 10 57 27.3 +1.9
MFID Camas Ranch 145.98 318 *e*PKPbc PKPab 10 57 27.2 +1.7
TUC Tucson 146.04 297 P PKPab 10 57 27.7 +1.6
baz=80
U15A North Rim 146.30 304 *e*PKPdf PKPab 10 57 28.5 +1.3
HAWA Hanford 146.45 325 *e*PKPbc PKPab 10 57 28.2 +1.1
B05A Bryant 146.50 329 P PKPab 10 57 27.3 +0.2
baz=45
CCUT Cedar City 146.76 307 *e*PKPdf PKPbc 10 57 28.1 +0.4
G08A Pilot Rock 146.81 323 *e*PKPdf PKPdf 10 57 24.9 -0.8
G08A *e*PKPbc PKPbc 10 57 28.1 +0.6
G08A *e*PKPab PKiKP 10 57 29.9 -0.2
ELK Elko 146.86 313 *e*PKP2 PKPab 10 57 29.9 +0.7
ELK Elko 146.86 313 *e*PKPbc PKPab 10 57 29.9 +0.7
Y14A Wickenburg 147.53 300 *e*PKPbc PKPab 10 57 32.1 +0.3
214A Organ Pipe Nat 147.79 296 P PKPab 10 57 32.1 -0.8
baz=79
R11A Troy Canyon, C 148.10 309 P PKPbc 10 57 32.4 +1.0
baz=66
R11A Troy Canyon, C 148.10 309 *e*PKPbc PKPab 10 57 33.1 -1.1
G05D Wamic, OR 148.14 325 P PKPab 10 57 32.5 -1.4
baz=49
WVOR Wild Horse Val 148.25 318 *e*PKIKP PKPdf 10 57 27.2 -0.9
WVOR *e* 10 57 33.1
WVOR Wild Horse Val 148.25 318 *e*PKPdf PKPdf 10 57 27.2 -0.9
WVOR *e*PKPbc PKiKP 10 57 33.1 -0.1
SHPR Sheep Range 148.47 306 *e*PKPbc PKPab 10 57 35.3 -0.3
I05D Terrebonne, OR 148.73 323 P PKPbc 10 57 34.2 +1.6
baz=50
Y12C Blythe 148.80 300 P PKPab 10 57 35.3 -1.5
baz=74
Y12C Blythe 148.80 300 *e*PKPbc PKPab 10 57 35.1 -1.7
TPNV Topopah Spring 149.13 307 P PKPbc 10 57 35.7 +1.7
baz=68,SNR=5.2
TPNV Topopah Spring 149.13 307 *e*PKP2 PKPab 10 57 36.2 -2.1
TPNV Topopah Spring 149.13 307 *e*PKPbc PKPab 10 57 36.2 -2.1
IRM Iron Mountain 149.18 301 P PKPbc 10 57 36.2 +2.1

	baz=73,SNR=6.0						
GLA	**Glamis**	**149.22**	**299**	P	**PKPbc**	**10 57 35.9**	**+1.7**
	baz=75						
J05D	**Fort Rock, OR**	**149.32**	**322**	P	**PKPbc**	**10 57 35.9**	**+1.7**
	baz=52						
GMRC	**Granite Mounta**	**149.41**	**303**	P	**PKPbc**	**10 57 36.3**	**+1.6**
	baz=72,SNR=5.5						
K05A	**Summer Lake**	**149.46**	**320**	*e*PKPbc	**PKPbc**	**10 57 36.9**	**+2.2**
BC3	**Big Chuckawall**	**149.57**	**301**	P	**PKPbc**	**10 57 37.1**	**+2.1**
	baz=74						
MOD	**Modoc Plateau**	**149.57**	**319**	*e*PKPdf	**PKPdf**	**10 57 31.7**	**+1.4**
MOD				*e*PKPbc	**PKiKP**	**10 57 36.6**	**+0.7**
MOD				*e*PKPab	**PKPab**	**10 57 40.8**	**+0.9**
I04A	**Tendick Farm,**	**149.67**	**323**	P	**PKPbc**	**10 57 36.0**	**+1.1**
	baz=50						
FURC	**Furnace Creek,**	**149.76**	**307**	P	**PKPbc**	**10 57 37.8**	**+2.5**
	baz=68						
BELC	**Belle Mtn. Jos**	**149.91**	**302**	P	**PKPbc**	**10 57 38.2**	**+2.2**
	baz=73						
HEC	**Hector,Ludlow**	**149.92**	**303**	P	**PKPbc**	**10 57 38.5**	**+2.7**
	baz=71						
GRAC	**Grapevine Rang**	**149.93**	**308**	P	**PKPbc**	**10 57 38.5**	**+2.6**
	baz=66,SNR=6.5						
GSC	**Goldstone, Bar**	**150.13**	**304**	P	**PKPbc**	**10 57 38.0**	**+1.6**
	baz=70,SNR=5.1						
GSC	**Goldstone, Bar**	**150.13**	**304**	*e*PKIKP	**PKPbc**	**10 57 38.8**	**+2.4**
GSC	**Goldstone, Bar**	**150.13**	**304**	*e*PKPbc	**PKPbc**	**10 57 38.8**	**+2.4**
I03D	**Drain, OR**	**150.25**	**324**	P	**PKPbc**	**10 57 37.8**	**+1.6**
	baz=48						
MPMC	**Manual Prospec**	**150.38**	**306**	P	**PKPbc**	**10 57 39.6**	**+2.5**
	baz=68,SNR=12						
TPFO	**Pinon Flats**	**150.38**	**301**	P	**PKPbc**	**10 57 39.0**	**+1.9**
	baz=73						
PFO	**Pinyon Flats O**	**150.39**	**301**	P	**PKPbc**	**10 57 38.7**	**+1.6**
	baz=73						
MONP2	**Monument Peak**	**150.56**	**300**	P	**PKPbc**	**10 57 39.6**	**+1.9**
	baz=74						
BBRC	**Big Bear Solar**	**150.56**	**302**	P	**PKPbc**	**10 57 39.2**	**+1.5**
	baz=71						
M04C	**Macdoel**	**150.58**	**320**	P	**PKPbc**	**10 57 38.6**	**+1.3**
	baz=53						
CWC	**Cottonwood Cre**	**150.68**	**307**	P	**PKPbc**	**10 57 40.2**	**+2.4**
	baz=66						
LRMC	**Laurel Mtn Rad**	**150.74**	**305**	P	**PKPbc**	**10 57 40.0**	**+2.1**
	baz=68						
WAKR	**Walker**	**150.76**	**312**	*e*PKPbc	**PKPbc**	**10 57 40.8**	**+2.8**
BFSC	**Mount Baldy Ra**	**151.15**	**303**	P	**PKPbc**	**10 57 40.5**	**+1.7**
	baz=70						
EDW2	**Edwards Air Fo**	**151.19**	**304**	P	**PKPbc**	**10 57 40.8**	**+2.0**
	baz=69						
ISA	**Isabella, Lake**	**151.27**	**306**	P	**PKPbc**	**10 57 41.2**	**+2.1**
	baz=67						
L02D	**Cave Junction,**	**151.39**	**322**	P	**PKPbc**	**10 57 40.6**	**+1.5**
	baz=50						
O03D	**Paynes Creek**	**151.41**	**317**	P	**PKPbc**	**10 57 40.9**	**+1.7**
	baz=55						
N02D	**Trinity Center**	**151.58**	**319**	P	**PKPbc**	**10 57 41.0**	**+1.4**
	baz=53						
AFDM	**Forest Hills D**	**151.59**	**314**	*e*PKPdf	**PKPdf**	**10 57 35.4**	**+2.0**
AFDM				*e*PKPbc	**PKiKP**	**10 57 41.4**	**+1.3**
VES	**Vestal, Richgr**	**151.66**	**307**	P	**PKPbc**	**10 57 41.7**	**+1.8**
	baz=66						
CIS	**Catalina Islan**	**152.01**	**302**	P	**PKPbc**	**10 57 43.8**	**+3.1**
	baz=71						
SCI2	**San Clemente I**	**152.24**	**301**	P	**PKPbc**	**10 57 44.6**	**+3.3**
	baz=72						
BLG	**Laguna Peak, P**	**152.29**	**303**	P	**PKPbc**	**10 57 44.1**	**+2.8**
	baz=69						
PKM	**Mcpherson Peak**	**152.58**	**305**	P	**PKPbc**	**10 57 44.6**	**+2.4**
	baz=67						

*MDD **06** 10:51:58.3±1.8,37˚.17N×13˚.96W,h0km,mb4.3/7,Error ellipse: s-maj=16.6km s-min=15.3km az=14.0,PRXIMO*
*IGIL **06** 10:51:59.6,37˚.22N×14˚.08W,h19km,ML3.0*
*INMG **06** 10:52:00.0±2.0,37˚.01N×14˚.33W,h10km,ML3.1,Error ellipse: s-maj=7.2km s-min=4.5km az=122.0*
*CSEM **06** 10:52:02.4±0.3,37˚.35N×13˚.62W,h10km,ML3.7/7,Error ellipse: s-maj=6.0km s-min=5.6km az=39.0*

ISC 06 10:51:53.5±1.9,37.06N±0.06×14.23W±0.09,h22km,n109,
σ2s89/183,2C,Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMST	**Lisbon--Monsan**	**4.32**	**66**	↑*e*Pn	**Pn**	**10 53 01.2**	**+3.3**
PMST				*e*Sn	**Sn**	**10 53 46.5**	**-1.2**
PMST				A	A	10 53 51.9	
	31nm,0.1s						
PMST	**Lisbon--Monsan**	**4.32**	**66**	↑*e*Pn	**Pn**	**10 53 01.2**	**+3.3**
PMST				*e*Sn	**Sn**	**10 53 46.5**	**-1.2**
	31nm,0.1s						
PMAFR	**Mafra**	**4.34**	**63**	*e*Pn	**Pn**	**10 53 01.4**	**+3.3**
PMAFR				*e*Sn	**Sn**	**10 53 47.9**	**-0.1**
PMAFR				A	A	10 53 51.1	
	63nm,0.3s						
PMAFR	**Mafra**	**4.34**	**63**	P	**Pn**	**10 53 01.4**	**+3.3**
	16nm,0.2s,SNR=18						
PMAFR				S	**Sn**	**10 53 47.7**	**-0.3**
	20nm,0.1s,SNR=7.9						
PMAFR	**Mafra**	**4.34**	**63**	P	**Pn**	**10 53 01.4**	**+3.3**
	16nm,0.2s,SNR=18						
PMAFR				S	**Sn**	**10 53 47.7**	**-0.3**
	20nm,0.1s,SNR=7.9						
LIS	**Lisbon**	**4.34**	**66**	*e*Sn	**Sn**	**10 53 47.6**	**-0.5**
LIS	**Lisbon**	**4.34**	**66**	S	**Sn**	**10 53 47.6**	**-0.5**
LIS	**Lisbon**	**4.34**	**66**	*e*Sn	**Sn**	**10 53 47.6**	**-0.5**
PMPS	**Porto Santo**	**4.36**	**204**	*e*Pn	Pn	10 52 47.9	-10
PMPS				*e*Sn	**Sn**	**10 53 42.8**	**-5.7**
PMPS				A	A	10 53 45.9	
	38nm,0.4s						
PMPS	**Porto Santo**	**4.36**	**204**	P	Pn	10 52 47.9	-10
PMPS				S	**Sn**	**10 53 42.8**	**-5.7**
	19nm,0.4s						
PMPS	**Porto Santo**	**4.36**	**204**	P	Pn	10 52 47.9	-10
PMPS				S	**Sn**	**10 53 42.8**	**-5.7**
	19nm,0.4s						
PTEO	**Sao Teotonio**	**4.41**	**82**	*e*Pn	**Pn**	**10 53 02.2**	**+3.0**
PTEO				*e*Sn	**Sn**	**10 53 47.7**	**-2.1**
PTEO				A	A	10 53 53.2	
	20nm,0.4s						
PTEO	**Sao Teotonio**	**4.41**	**82**	P	**Pn**	**10 53 02.2**	**+3.0**
PTEO				S	**Sn**	**10 53 47.7**	**-2.1**
	10.0nm,0.4s						
PTEO	**Sao Teotonio**	**4.41**	**82**	P	**Pn**	**10 53 02.2**	**+3.0**
PTEO				S	**Sn**	**10 53 47.7**	**-2.1**
	10.0nm,0.4s						
MORF	**Marmelete**	**4.46**	**85**	*e*P	**Pn**	**10 53 02.8**	**+2.9**
MORF				*e*S	**Sn**	**10 53 48.9**	**-2.2**
MORF				AML	AML	10 53 51.5	
	comp=N,39nm,0.1s						
MORF	**Marmelete**	**4.46**	**85**	*e*Pn	**Pn**	**10 53 03.1**	**+3.3**
MORF				*e*Sn	**Sn**	**10 53 48.4**	**-2.7**
MORF				A	A	10 53 52.7	
	comp=N,18nm,0.3s						
MORF	**Marmelete**	**4.46**	**85**	P	**Pn**	**10 53 03.1**	**+3.3**
MORF				S	**Sn**	**10 53 48.4**	**-2.7**
	comp=N,18nm,0.3s						
MORF	**Marmelete**	**4.46**	**85**	P	**Pn**	**10 53 03.1**	**+3.3**
MORF				*e*Sn	**Sn**	**10 53 48.4**	**-2.7**
	comp=N,18nm,0.3s						
PNCL	**Nicolau / Gran**	**4.64**	**75**	*e*Pn	**Pn**	**10 53 05.1**	**+2.8**
PNCL				*e*Sn	**Sn**	**10 53 53.9**	**-1.6**
PNCL				A	A	10 53 58.3	
	comp=N,12nm,0.1s						
PNCL	**Nicolau / Gran**	**4.64**	**75**	*e*Pn	**Pn**	**10 53 05.1**	**+2.8**
PNCL				*e*Sn	**Sn**	**10 53 53.9**	**-1.6**
	comp=N,12nm,0.1s						
MESJ	**Messejana**	**4.84**	**79**	*e*P	**Pn**	**10 53 07.9**	**+2.9**
MESJ				*e*S	**Sn**	**10 53 57.8**	**-2.6**
MESJ				AML	AML	10 54 02.2	
	comp=N,22nm,0.3s						
MESJ	**Messejana**	**4.84**	**79**	*e*Pn	**Pn**	**10 53 08.1**	**+3.1**
MESJ				*e*Sn	**Sn**	**10 53 59.5**	**-0.9**
MESJ				A	A	10 54 05.7	
	comp=N,14nm,0.4s						
MESJ	**Messejana**	**4.84**	**79**	P	**Pn**	**10 53 08.1**	**+3.1**
MESJ				S	**Sn**	**10 53 59.5**	**-0.9**
	comp=N,14nm,0.4s						
MESJ	**Messejana**	**4.84**	**79**	P	**Pn**	**10 53 08.1**	**+3.1**
MESJ				S	**Sn**	**10 53 59.5**	**-0.9**
	comp=N,14nm,0.4s						
PCVE	**Castro Verde**	**4.96**	**82**	*e*Pn	**Pn**	**10 53 09.6**	**+2.9**
PCVE				*e*Sn	**Sn**	**10 54 01.0**	**-2.4**
PCVE				A	A	10 54 06.5	
	comp=N,12nm,0.5s						
PCVE	**Castro Verde**	**4.96**	**82**	P	**Pn**	**10 53 09.6**	**+2.9**
PCVE				S	**Sn**	**10 54 01.0**	**-2.4**
	comp=N,12nm,0.5s						
PBDV	**Barranco-do-Ve**	**5.03**	**86**	*e*Pn	**Pn**	**10 53 11.3**	**+3.6**
PBDV				*e*Sn	**Sn**	**10 54 03.6**	**-1.6**
PBDV				A	A	10 54 10.3	
	comp=N,12nm,0.6s						
PBDV	**Barranco-do-Ve**	**5.03**	**86**	P	**Pn**	**10 53 11.3**	**+3.6**
PBDV				S	**Sn**	**10 54 03.6**	**-1.6**
	comp=N,12nm,0.6s						
PBDV	**Barranco-do-Ve**	**5.03**	**86**	P	**Pn**	**10 53 11.3**	**+3.6**
PBDV				S	**Sn**	**10 54 03.6**	**-1.6**
	comp=N,12nm,0.6s						
EVO	**Evora**	**5.13**	**72**	*e*Pn	**Pn**	**10 53 12.1**	**+3.0**
EVO				*e*Sn	**Sn**	**10 54 06.1**	**-1.5**
EVO				A	A	10 54 09.8	
	comp=N,24nm,0.2s						
EVO	**Evora**	**5.13**	**72**	P	**Pn**	**10 53 12.1**	**+3.0**
EVO				S	**Sn**	**10 54 06.1**	**-1.5**
	comp=N,24nm,0.2s						
EVO	**Evora**	**5.13**	**72**	P	**Pn**	**10 53 12.1**	**+3.0**
EVO				S	**Sn**	**10 54 06.1**	**-1.5**
	comp=N,24nm,0.2s						
PBEJ	**Beja**	**5.14**	**77**	*e*Sn	**Sn**	**10 54 06.1**	**-1.8**
PBEJ				A	A	10 54 09.9	
	comp=N,13nm,0.2s						
PBEJ	**Beja**	**5.14**	**77**	S	**Sn**	**10 54 06.1**	**-1.8**
	comp=N,6.4nm,0.2s						
PBEJ	**Beja**	**5.14**	**77**	S	**Sn**	**10 54 06.1**	**-1.8**
	comp=N,6.4nm,0.2s						
PVAQ	**Vaqueiros**	**5.20**	**84**	*e*Pn	**Pn**	**10 53 13.3**	**+3.2**
PVAQ				*e*Sn	**Sn**	**10 54 07.3**	**-2.1**
PVAQ				A	A	10 54 14.6	
	comp=N,16nm,0.6s						
PVAQ	**Vaqueiros**	**5.20**	**84**	P	**Pn**	**10 53 13.3**	**+3.2**
PVAQ				S	**Sn**	**10 54 07.3**	**-2.1**
	comp=N,16nm,0.6s						
PVAQ	**Vaqueiros**	**5.20**	**84**	P	**Pn**	**10 53 13.3**	**+3.2**
PVAQ				S	**Sn**	**10 54 07.3**	**-2.1**
	comp=N,16nm,0.6s						
PTOM	**Tomar**	**5.23**	**59**	*e*Sn	**Sn**	**10 54 09.3**	**-0.8**
PTOM				A	A	10 54 12.5	
	comp=N,21nm,0.2s						
PTOM	**Tomar**	**5.23**	**59**	S	**Sn**	**10 54 09.3**	**-0.8**
	comp=N,11nm,0.2s						
PTOM	**Tomar**	**5.23**	**59**	S	**Sn**	**10 54 09.3**	**-0.8**
	comp=N,11nm,0.2s						
PCAS	**Casmilo, Conde**	**5.39**	**55**	*e*Sn	**Sn**	**10 54 13.4**	**-0.6**
PCAS				A	A	10 54 17.7	
	comp=N,12nm,0.4s						
PCAS	**Casmilo, Conde**	**5.39**	**55**	*e*Sn	**Sn**	**10 54 13.4**	**-0.6**
	comp=N,12nm,0.4s						
EGRO	**El Granado**	**5.39**	**83**	P	Pn	**10 53 15.7**	**+3.0**
	comp=N,0.9nm,0.1s,SNR=4.6						
EGRO				S	**Sn**	**10 54 12.6**	**-1.5**
	comp=N,6.3nm,0.2s,SNR=6.2						
EGRO	**El Granado**	**5.39**	**83**	P	Pn	**10 53 15.7**	**+3.0**
	comp=N,0.9nm,0.1s,SNR=4.6						
EGRO				S	**Sn**	**10 54 12.6**	**-1.5**
	comp=N,6.3nm,0.2s,SNR=6.2						
PESTR	**Estremoz**	**5.54**	**69**	*e*Sn	**Sn**	**10 54 15.8**	**-2.0**
PESTR				A	A	10 54 19.7	
	comp=N,14nm,0.7s						
PESTR	**Estremoz**	**5.54**	**69**	*e*Sn	**Sn**	**10 54 15.8**	**-2.0**
	comp=N,14nm,0.7s						
PBAR	**Barrancos**	**5.81**	**77**	*e*Pn	**Pn**	**10 53 22.0**	**+3.6**
PBAR				*e*Sn	**Sn**	**10 54 22.5**	**-1.8**
PBAR				A	A	10 54 36.3	
	comp=N,13nm,0.4s						
PBAR	**Barrancos**	**5.81**	**77**	P	**Pn**	**10 53 22.0**	**+3.6**
PBAR				S	**Sn**	**10 54 22.5**	**-1.8**
	comp=N,13nm,0.4s						
PBAR	**Barrancos**	**5.81**	**77**	P	**Pn**	**10 53 22.0**	**+3.6**
PBAR				S	**Sn**	**10 54 22.5**	**-1.8**
	comp=N,13nm,0.4s						
PMRV	**Marv??o**	**5.87**	**64**	*e*Sn	**Sn**	**10 54 23.5**	**-2.4**
PMRV				A	A	10 54 27.5	
	comp=N,21nm,0.3s						
PMRV	**Marv??o**	**5.87**	**64**	S	**Sn**	**10 54 23.5**	**-2.4**
	comp=N,21nm,0.3s						
PMRV	**Marv??o**	**5.87**	**64**	S	**Sn**	**10 54 23.5**	**-2.4**
	comp=N,21nm,0.3s						
EBAD	**Badajoz**	**5.95**	**71**	P	Pn	**10 53 23.3**	**+3.1**
	comp=N,0.7nm,0.1s,SNR=16						
EBAD				S	**Sn**	**10 54 25.0**	**-2.7**
	comp=N,5.0nm,0.1s,SNR=7.5						
EBAD	**Badajoz**	**5.95**	**71**	P	Pn	**10 53 23.3**	**+3.1**
	comp=N,0.7nm,0.1s,SNR=16						
EBAD				S	**Sn**	**10 54 25.0**	**-2.7**
	comp=N,5.0nm,0.1s,SNR=7.5						
PCBR	**Castelo Branco**	**5.98**	**60**	*e*Sn	**Sn**	**10 54 26.6**	**-1.8**
PCBR				A	A	10 54 29.8	
	comp=N,4.6nm,0.1s						
PCBR	**Castelo Branco**	**5.98**	**60**	S	**Sn**	**10 54 26.6**	**-1.8**
	comp=N,2.3nm,0.1s						
PCBR	**Castelo Branco**	**5.98**	**60**	S	**Sn**	**10 54 26.6**	**-1.8**
	comp=N,2.3nm,0.1s						
EMIN	**Mina Concepcio**	**6.05**	**81**	P	Pn	**10 53 24.4**	**+2.7**
	comp=N,1.2nm,0.2s,SNR=10						
EMIN				S	**Sn**	**10 54 27.6**	**-2.7**
	comp=N,4.3nm,0.2s,SNR=6.8						
EMIN	**Mina Concepcio**	**6.05**	**81**	P	Pn	**10 53 24.4**	**+2.7**
	comp=N,1.2nm,0.2s,SNR=10						
EMIN				S	**Sn**	**10 54 27.6**	**-2.7**
	comp=N,4.3nm,0.2s,SNR=6.8						
PVIS	**Viseu**	**6.14**	**52**	*e*Sn	**Sn**	**10 54 31.0**	**-1.5**
PVIS	**Viseu**	**6.14**	**52**	S	**Sn**	**10 54 31.0**	**-1.5**
PVIS	**Viseu**	**6.14**	**52**	S	**Sn**	**10 54 31.0**	**-1.5**
MTE	**Manteigas**	**6.19**	**55**	*e*Sn	**Sn**	**10 54 33.0**	**-0.9**
MTE				A	A	10 54 35.9	
	comp=N,8.9nm,0.3s						
MTE	**Manteigas**	**6.19**	**55**	S	**Sn**	**10 54 33.0**	**-0.9**
	comp=N,4.4nm,0.3s						
MTE	**Manteigas**	**6.19**	**55**	S	**Sn**	**10 54 33.0**	**-0.9**
	comp=N,4.4nm,0.3s						
PVRL	**Vila Real**	**6.58**	**48**	*e*Sn	**Sn**	**10 54 42.9**	**-0.3**
PVRL	**Vila Real**	**6.58**	**48**	S	**Sn**	**10 54 42.9**	**-0.3**
PVRL	**Vila Real**	**6.58**	**48**	*e*Sn	**Sn**	**10 54 42.9**	**-0.3**
POLO	**Lamas de Olo**	**6.59**	**47**	*e*Pn	**Pn**	**10 53 32.0**	**+2.8**
POLO				*e*Sn	**Sn**	**10 54 40.8**	**-2.9**
POLO				A	A	10 54 44.2	
	comp=N,1.7nm,0.3s						
POLO	**Lamas de Olo**	**6.59**	**47**	*e*Pn	**Pn**	**10 53 32.0**	**+2.8**
POLO				*e*Sn	**Sn**	**10 54 40.8**	**-2.9**
	comp=N,1.7nm,0.3s						
PGAV	**Gavieira, Arco**	**6.72**	**41**	*e*Pn	**Pn**	**10 53 34.0**	**+3.1**
PGAV				*e*Sn	**Sn**	**10 54 44.1**	**-2.7**
PGAV				A	A	10 54 51.7	
	comp=N,11nm,0.5s						
PGAV	**Gavieira, Arco**	**6.72**	**41**	*e*Pn	**Pn**	**10 53 34.0**	**+3.1**
PGAV				*e*Sn	**Sn**	**10 54 44.1**	**-2.7**
	comp=N,11nm,0.5s						
ELOB	**Lobios**	**6.76**	**43**	P	Pn	**10 53 34.3**	**+2.8**
	comp=N,1.8nm,0.1s,SNR=17						
ELOB				S	**Sn**	**10 54 45.3**	**-2.6**
	comp=N,3.0nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**6.76**	**43**	P	Pn	**10 53 34.3**	**+2.8**
	comp=N,1.8nm,0.1s,SNR=17						
ELOB				S	**Sn**	**10 54 45.3**	**-2.6**
	comp=N,3.0nm,0.1s,SNR=7.9						
EPLA	**Plasencia**	**7.05**	**62**	P	Pn	**10 53 38.6**	**+3.2**
	comp=N,0.5nm,0.1s,SNR=7.9						
EPLA				S	**Sn**	**10 54 52.7**	**-2.2**
	comp=N,2.6nm,0.1s,SNR=7.9						
EPLA	**Plasencia**	**7.05**	**62**	P	Pn	**10 53 38.6**	**+3.2**
	comp=N,0.5nm,0.1s,SNR=7.9						
EPLA				S	**Sn**	**10 54 52.7**	**-2.2**
	comp=N,2.6nm,0.1s,SNR=7.9						
ECAB	**El Cabril**	**7.07**	**79**	P	Pn	**10 53 38.6**	**+2.9**
	comp=N,0.4nm,0.1s,SNR=15						
ECAB				S	**Sn**	**10 54 52.1**	**-3.2**
	comp=N,2.8nm,0.2s,SNR=7.9						
ECAB	**El Cabril**	**7.07**	**79**	P	Pn	**10 53 38.6**	**+2.9**
	comp=N,0.4nm,0.1s,SNR=15						
ECAB				S	**Sn**	**10 54 52.1**	**-3.2**
	comp=N,2.8nm,0.2s,SNR=7.9						
EMAZ	**Mazaricos**	**7.12**	**33**	P	Pn	**10 53 39.1**	**+2.7**
	comp=N,0.6nm,0.1s,SNR=4.0						
EMAZ				S	**Sn**	**10 54 53.5**	**-3.2**
	comp=N,6.1nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**7.12**	**33**	P	Pn	**10 53 39.1**	**+2.7**
	comp=N,0.6nm,0.1s,SNR=4.0						
EMAZ				S	**Sn**	**10 54 53.5**	**-3.2**
	comp=N,6.1nm,0.1s,SNR=7.9						
PBRG	**Braganca**	**7.48**	**48**	*e*Pn	**Pn**	**10 53 44.0**	**+2.7**
PBRG				*e*Sn	**Sn**	**10 55 01.9**	**-3.6**
PBRG				A	A	10 55 08.3	
	comp=N,4.8nm,0.4s						
PBRG	**Braganca**	**7.48**	**48**	P	**Pn**	**10 53 44.0**	**+2.7**
PBRG				S	**Sn**	**10 55 01.9**	**-3.6**
	comp=N,2.4nm,0.4s						
PBRG	**Braganca**	**7.48**	**48**	P	**Pn**	**10 53 44.0**	**+2.7**
PBRG				S	**Sn**	**10 55 01.9**	**-3.6**
	comp=N,2.4nm,0.4s						
ECAL	**Calabor**	**7.56**	**48**	P	Pn	**10 53 45.3**	**+2.8**
	comp=N,0.9nm,0.1s,SNR=10						
ECAL				S	**Sn**	**10 55 04.3**	**-3.3**
	comp=N,7.0nm,0.2s,SNR=4.0						
ECAL	**Calabor**	**7.56**	**48**	P	Pn	**10 53 45.3**	**+2.8**
	comp=N,0.9nm,0.1s,SNR=10						
ECAL				S	**Sn**	**10 55 04.3**	**-3.3**
	comp=N,7.0nm,0.2s,SNR=4.0						
EADA	**Adamuz**	**7.74**	**79**	P	Pn	**10 53 48.0**	**+3.1**
	comp=N,1.7nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**10 55 07.9**	**-3.9**
	comp=N,2.3nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**7.74**	**79**	P	Pn	**10 53 48.0**	**+3.1**
	comp=N,1.7nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**10 55 07.9**	**-3.9**
	comp=N,2.3nm,0.2s,SNR=7.9						
EPON	**Pontenova**	**8.27**	**39**	P	Pn	**10 53 53.8**	**+1.6**
	comp=N,0.3nm,0.1s,SNR=6.3						
EPON				S	**Sn**	**10 55 19.2**	**-5.7**
	comp=N,0.6nm,0.1s,SNR=4.0						
EPON	**Pontenova**	**8.27**	**39**	P	Pn	**10 53 53.8**	**+1.6**
	comp=N,0.3nm,0.1s,SNR=6.3						
EPON				S	**Sn**	**10 55 19.2**	**-5.7**
	comp=N,0.6nm,0.1s,SNR=4.0						
ESDC	**Sonseca Array**	**8.47**	**69**	P	Pn	**10 53 57.5**	**+2.5**
	comp=N,2.7nm,0.3s,baz=255,slow=13,SNR=16						
ESDC				S	**Sn**	**10 55 25.4**	**-4.5**
	baz=254,slow=23,SNR=7.9						
ESDC	**Sonseca Array**	**8.47**	**69**	P	Pn	**10 53 57.5**	**+2.5**
	comp=N,2.7nm,0.3s,SNR=16						
ESDC				S	**Sn**	**10 55 25.4**	**-4.5**
	SNR=7.9						
GUD	**Guadarrama**	**8.63**	**62**	P	Pn	**10 54 00.1**	**+2.9**
	comp=N,0.5nm,0.1s,SNR=7.9						
GUD				S	**Sn**	**10 55 30.3**	**-3.6**
	comp=N,0.3nm,0.1s,SNR=7.9						
GUD	**Guadarrama**	**8.63**	**62**	P	Pn	**10 54 00.1**	**+2.9**
	comp=N,0.5nm,0.1s,SNR=7.9						
GUD				S	**Sn**	**10 55 30.3**	**-3.6**
	comp=N,0.3nm,0.1s,SNR=7.9						
EQES	**Quesada**	**8.90**	**82**	P	Pn	**10 54 03.8**	**+2.9**
	comp=N,0.9nm,0.2s,SNR=7.9						
EQES				S	**Sn**	**10 55 37.8**	**-2.8**
	comp=N,1.4nm,0.3s,SNR=7.9						
EQES	**Quesada**	**8.90**	**82**	P	Pn	**10 54 03.8**	**+2.9**
	comp=N,0.9nm,0.2s,SNR=7.9						
EQES				S	**Sn**	**10 55 37.8**	**-2.8**
	comp=N,1.4nm,0.3s,SNR=7.9						
EARI	**Arriondas**	**9.29**	**45**	P	Pn	**10 54 09.3**	**+3.1**
	comp=N,1.4nm,0.2s,SNR=11						
EARI				S	**Sn**	**10 55 45.1**	**-4.9**
	comp=N,0.4nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**9.29**	**45**	P	Pn	**10 54 09.3**	**+3.1**
	comp=N,1.4nm,0.2s,SNR=11						
EARI				S	**Sn**	**10 55 45.1**	**-4.9**
	comp=N,0.4nm,0.2s,SNR=7.9						
EVIA	**Vianos**	**9.40**	**77**	P	Pn	**10 54 10.8**	**+3.0**
	comp=N,1.5nm,0.2s,SNR=7.9						
EVIA				S	**Sn**	**10 55 48.4**	**-4.5**
	comp=N,1.5nm,0.2s,SNR=7.9						
EVIA	**Vianos**	**9.40**	**77**	P	Pn	**10 54 10.8**	**+3.0**
	comp=N,1.5nm,0.2s,SNR=7.9						
EVIA				S	**Sn**	**10 55 48.4**	**-4.5**
	comp=N,1.5nm,0.2s,SNR=7.9						
ELAN	**Lanestosa**	**10.30**	**50**	P	Pn	**10 54 22.8**	**+2.8**
	comp=N,0.7nm,0.2s,SNR=4.0						
ELAN	**Lanestosa**	**10.30**	**50**	P	Pn	**10 54 22.8**	**+2.8**
	comp=N,0.7nm,0.2s,SNR=4.0						
EMOS	**Mosqueruela**	**11.24**	**69**	P	Pn	**10 54 36.5**	**+3.5**
	comp=N,0.3nm,0.2s,SNR=4.0						
EMOS				S	**Sn**	**10 56 33.7**	**-4.3**
	comp=N,1.5nm,0.3s,SNR=7.9						
EMOS	**Mosqueruela**	**11.24**	**69**	P	Pn	**10 54 36.5**	**+3.5**
	comp=N,0.3nm,0.2s,SNR=4.0						
EMOS				S	**Sn**	**10 56 33.7**	**-4.3**
	comp=N,1.5nm,0.3s,SNR=7.9						
IELO	**Elcoad**	**11.51**	**56**	P	Pn	**10 54 40.3**	**+3.7**
	comp=N,0.4nm,0.2s,SNR=7.9						
IELO				S	**Sn**	**10 56 40.8**	**-3.7**
	comp=N,1.0nm,0.3s,SNR=7.9						
IELO	**Elcoad**	**11.51**	**56**	P	Pn	**10 54 40.3**	**+3.7**
	comp=N,0.4nm,0.2s,SNR=7.9						
IELO				S	**Sn**	**10 56 40.8**	**-3.7**
	comp=N,1.0nm,0.3s,SNR=7.9						
YASP

MRKS					*e*S	**Sg**	**10 55 48.0**	**+0.9**	
	77nm,0.3s								
ULHL	**Ulahol**	**3.31**	**37**	⇑	*i*P	**Pn**	**10 55 00.5**	**+1.6**	
	baz=36								
ULHL				⇑	*i*S	**Sn**	**10 55 40.9**	**+2.5**	
	baz=36								
BOOM	**Boomskoye usch**	**3.38**	**32**	⇑	*i*P	**Pb**	**10 55 02.8**	**-4.0**	
	baz=31								
BOOM				⇑	*e*S	**Sb**	**10 55 44.2**	**-3.9**	
	baz=31								
TKM2	**Tokmak 2**	**3.63**	**24**	⇓	Pn	**Pn**	**10 55 06.3**	**+3.1**	
	2.1nm,0.5s								
TKM2				⇑	Pg	**Pg**	**10 55 13.6**	**-2.7**	
	2.8nm,0.4s								
TKM2				⇓	Lg	Lg	10 56 03.0		
	20nm,0.8s								
IUG	**Iuzhnay**	**3.67**	**314**		*e*P	**Pb**	**10 55 12.0**	**+0.3**	
	40nm,0.5s								
IUG					*e*S	**Sg**	**10 56 03.5**	**-1.0**	
	48nm,0.7s								
DZET	**Dzherino**	**3.76**	**259**	⇑	Pn	**Pn**	**10 55 05.4**	**+0.4**	
	2.7nm,0.4s								
DZET				⇓	Pg	**Pg**	**10 55 15.5**	**-3.3**	
	18nm,0.5s								
DZET				⇑	Lg	Lg	10 56 07.7		
	135nm,0.6s								
KST	**Kastek**	**3.86**	**27**		*e*P	**Pb**	**10 55 16.4**	**+1.3**	
	2.0nm,0.1s								
KST					*e*S	**Sg**	**10 56 11.0**	**+0.2**	
	38nm,0.5s								
DGS	**Degeres**	**3.98**	**24**		*e*P	**Pb**	**10 55 19.1**	**+2.1**	
	6.0nm,0.8s								
DGS					*e*S	**Sg**	**10 56 15.5**	**+1.1**	
	30nm,0.5s								
IZV	**Izvestkoviy**	**4.11**	**33**		*e*P	**Pb**	**10 55 20.3**	**+1.0**	
	8.3nm,0.6s								
IZV					*e*S	**Sg**	**10 56 17.8**	**-0.9**	
	45nm,0.9s								
KK31	**Karatay Array**	**4.16**	**328**		Pn	**Pn**	**10 55 13.8**	**+3.5**	
	1.0nm,0.4s,baz=125,slow=13,SNR=7.7								
KK31				⇑	Pg	**Pg**	**10 55 23.7**	**-2.7**	
	1.5nm,0.3s,baz=134,slow=14,SNR=6.8								
KK31				⇑	Sn	**Sn**	**10 56 03.8**	**+4.9**	
	2.3nm,0.3s,baz=148,slow=25,SNR=4.5								
KK31				⇓	Lg	Lg	10 56 21.3		
	3.1nm,0.3s,baz=134,slow=29,SNR=4.1								
TNSS	**Tian-Shan**	**4.26**	**36**		*e*P	**Pb**	**10 55 22.6**	**+0.7**	
	13nm,0.5s								
TNSS					*e*S	**Sg**	**10 56 21.7**	**-1.8**	
	20nm,0.7s								
BRLS	**Borolday**	**4.30**	**318**		*e*P	**Pb**	**10 55 25.3**	**+2.9**	
	0.9nm,0.4s								
BRLS					*e*S	**Sg**	**10 56 26.0**	**+1.3**	
	16nm,0.4s								
MDOK	**Medeo**	**4.40**	**36**		*e*P	**Pb**	**10 55 25.5**	**+1.2**	
	7.2nm,0.5s								
MDOK					*e*S	**Sg**	**10 56 26.4**	**-1.7**	
	23nm,0.7s								
KOTS	**Kotyrbulak**	**4.49**	**35**		*e*P	**Pb**	**10 55 28.4**	**+2.7**	
KOTS					*e*S	**Sg**	**10 56 31.6**	**+0.9**	
KTBS	**Karatobe**	**4.70**	**29**		*e*P	**Pb**	**10 55 31.7**	**+2.4**	
KTBS					*e*S	**Sg**	**10 56 36.9**	**-0.9**	
KUU	**Kurty**	**4.74**	**25**		*e*P	**Pb**	**10 55 32.2**	**+2.2**	
	4.9nm,0.5s								
KUU					*e*S	**Sg**	**10 56 38.2**	**-0.8**	
	13nm,0.5s								
CHKK	**Chushkaly**	**4.96**	**30**		*e*P	**Pb**	**10 55 35.6**	**+1.9**	
	3.5nm,0.4s								
CHKK					*e*S	**Sg**	**10 56 43.4**	**-2.5**	
	17nm,0.5s								
KURS	**Kuram**	**5.18**	**40**		*e*P	**Pb**	**10 55 40.2**	**+2.7**	
	0.9nm,0.5s								
KURS					*e*S	**Sg**	**10 56 51.7**	**-1.3**	
	3.3nm,1.1s								
UZB	**Uzynbulak**	**5.41**	**48**		*e*P	**Pb**	**10 55 44.8**	**+3.4**	
	3.7nm,0.5s								
UZB					*e*S	**Sg**	**10 56 59.9**	**-0.5**	
	9.1nm,0.6s								
BTLS	**Baital**	**5.42**	**4**		*e*P	**Pg**	**10 55 46.0**	**-4.5**	
	1.6nm,0.3s								
BTLS					*e*S	**Sg**	**10 57 00.9**	**+0.2**	
	5.9nm,0.5s								
PDGK	**Podgornoye**	**5.79**	**48**	⇑	Pg	**Pg**	**10 55 53.6**	**-3.9**	
	2.7nm,0.7s								
PDGK				⇓	Lg	Lg	10 57 12.8		
	19nm,0.9s								
SHLS	**Shalkode**	**5.92**	**51**		*e*P	**Pb**	**10 55 53.7**	**+3.5**	
	4.9nm,0.5s								
SHLS					*e*S	**Sg**	**10 57 14.4**	**-2.5**	
	14nm,0.5s								
DJR	**Jarkent**	**6.61**	**43**		*e*P	**Pb**	**10 56 05.5**	**+3.7**	
	3.2nm,0.5s								
DJR					*e*S	**Sg**	**10 57 34.1**	**-4.7**	
	7.0nm,1.1s								
KAPS	**Kapalarasan**	**7.09**	**35**		*e*P	**Pg**	**10 56 18.6**	**-4.0**	
	1.4nm,0.4s								
KAPS					*e*S	**Sg**	**10 57 57.2**	**+2.8**	
	4.4nm,0.3s								
OTUK	**Ortayu**	**8.66**	**355**	⇑	Lg	Lg	10 58 44.3		
	13nm,1.3s								

*ISCJB **06** 11:02:38.0±0.7, 39°.63N±0°.03×26°.37E±0°.05, h6^{km}±6^{km}, Error ellipse: s-maj=7.2km s-min=4.7km az=151.9*
*ISK **06** 11:02:37.2, 39°.63N×26°.31E, h7^{km}, MD2.6*
*CSEM **06** 11:02:37.8±0.2, 39°.63N×26°.30E, h10^{km}, MD2.6, Error ellipse: s-maj=4.6km s-min=2.9km az=70.0*
*DDA **06** 11:02:38.7, 39°.64N×26°.42E, h7^{km}, Md2.6*
ISC 06 11:02:38.0±1.1, **39°.65N**±0°.03×**26°.34E**±0°.03, **h7**^{km}±11^{km}, **n27**, σ0°**41**/40, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
BOZC	**Bozcaada**	**0.30**	**312**		*i*P	**Pb**	**11 02 46.6**	**+0.9**
BOZC					*i*S	**Sb**	**11 02 50.7**	**-0.2**
AYVA	**Ayvalik**	**0.43**	**141**		*i*P	**Pg**	**11 02 46.7**	**+0.3**
AYVA					*i*S	**Sg**	**11 02 52.0**	**-0.1**
AYVA	**Ayvalik**	**0.43**	**141**		P	**Pg**	**11 02 46.7**	**+0.3**
AYVA					S	**Sg**	**11 02 52.0**	**-0.1**
GADA	**Gvkgeada**	**0.64**	**328**		*e*PG	**Pg**	**11 02 49.8**	**-0.6**
GADA					*e*SG	**Sg**	**11 02 59.4**	**+0.6**
GADA	**Gvkgeada**	**0.64**	**328**		*e*Pg	**Pg**	**11 02 49.8**	**-0.6**
GADA					*e*Sg	**Sg**	**11 02 59.4**	**+0.6**
GELI	**Tayfur-Gelibol**	**0.76**	**8**		*e*PG	**Pg**	**11 02 52.5**	**-0.1**
GELI					*e*SG	**Sb**	**11 03 03.8**	**-0.4**
GELI	**Tayfur-Gelibol**	**0.76**	**8**		*e*Pg	**Pg**	**11 02 52.6**	**-0.1**
GELI					*e*Sg	**Sb**	**11 03 03.8**	**-0.4**
LPK	**Lapseki**	**0.80**	**24**		*e*PG	**Pg**	**11 02 53.7**	**+0.4**
LPK					*e*SG	**Sb**	**11 03 05.1**	**-0.1**
LPK	**Lapseki**	**0.80**	**24**		*e*Pg	**Pg**	**11 02 53.7**	**+0.4**
LPK					*e*Sg	**Sb**	**11 03 05.1**	**-0.1**
BALY	**Balya**	**0.99**	**84**		*i*P	**Pb**	**11 02 57.8**	**+0.2**
BALY					*i*S	**Sg**	**11 03 09.4**	**-0.5**
BALY	**Balya**	**0.99**	**84**		P	**Pb**	**11 02 57.8**	**+0.2**
BALY					S	**Sg**	**11 03 09.4**	**-0.5**
ERIK	**Erikli-Kesan**	**1.03**	**7**		*e*PG	**Pg**	**11 02 57.6**	**-0.2**
ERIK	**Erikli-Kesan**	**1.03**	**7**		*e*Pg	**Pg**	**11 02 57.6**	**-0.2**
KRBG	**Karabiga-Canak**	**1.05**	**44**		*e*PG	**Pg**	**11 02 58.0**	**-0.1**
KRBG	**Karabiga-Canak**	**1.05**	**44**		*e*Pg	**Pg**	**11 02 58.0**	**-0.1**
ENEZ	**Enez**	**1.10**	**353**		*e*PN	**Pg**	**11 02 58.7**	**-0.4**
ENEZ	**Enez**	**1.10**	**353**		*e*Pn	**Pg**	**11 02 58.7**	**-0.4**
RKY	**Sarkoy-Tekirda**	**1.22**	**31**		*e*PN	**Pb**	**11 03 01.5**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.22**	**31**		*e*Pn	**Pb**	**11 03 01.5**	**-0.1**
SART	**Tekirdag**	**1.23**	**31**		*i*P	**Pg**	**11 03 01.9**	**+0.4**
SART					*i*S	**Sn**	**11 03 19.2**	**+0.6**
SART	**Tekirdag**	**1.23**	**31**		P	**Pg**	**11 03 01.9**	**+0.4**
SART					S	**Sn**	**11 03 19.2**	**+0.6**
ALN	**Alexandroupoli**	**1.27**	**350**		*e*PN	**Pg**	**11 03 02.3**	**-0.1**
ALN	**Alexandroupoli**	**1.27**	**350**		*e*Pn	**Pg**	**11 03 02.3**	**-0.1**
CHOS	**Chios island**	**1.28**	**190**		*e*PN	**Pn**	**11 03 01.9**	**-0.5**
CHOS	**Chios island**	**1.28**	**190**		*e*Pn	**Pn**	**11 03 01.9**	**-0.5**
MRMT	**Marmara Adasi**	**1.36**	**45**		*e*PN	**Pn**	**11 03 03.3**	**-0.2**
MRMT	**Marmara Adasi**	**1.36**	**45**		*e*Pn	**Pn**	**11 03 03.3**	**-0.2**

*ISCJB **06** 11:06:28.4±0.3, 24°.38N±0°.02×121°.99E±0°.02, h28^{km}±3^{km}, Error ellipse: s-maj=4.1km s-min=2.8km az=156.7*
*TAP **06** 11:06:28.1, 24°.39N×121°.94E, h32^{km}, ML2.8, D*
*JMA **06** 11:06:28.1, 24°.40N×121°.96E, h28^{km}±4^{km}, M1.8*
ISC 06 11:06:28.5±0.9, **24°.38N**±0°.03×**121°.96E**±0°.02, **h32**^{km}±7^{km}, **n32**, σ0°**63**/60, **1C, Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ENA	**Nanau**	**0.20**	**285**		*i*P	**Pn**	**11 06 34.7**	**-0.6**
	baz=282							
ENA					*i*S	**Sb**	**11 06 39.6**	**+0.2**
	baz=282							
EHP	**Heping Village**	**0.21**	**251**		*e*P	**Pn**	**11 06 34.9**	**-0.5**
	baz=245							
EHP					*e*S	**Sb**	**11 06 40.9**	**+1.3**
	baz=245							
TWC	**Suao**	**0.25**	**337**		*i*P	**Pn**	**11 06 35.2**	**-0.8**
	baz=341							
TWC					*i*S	**Sb**	**11 06 40.4**	**0.0**
	baz=341							
TWE	**Neicheng**	**0.43**	**323**		*i*P	**Pb**	**11 06 37.6**	**-0.4**
	baz=324							
TWE					*i*S	**Sb**	**11 06 44.7**	**+0.2**
	baz=324							
ENTT	**Nioudou**	**0.44**	**307**		*i*P	**Pb**	**11 06 37.7**	**-0.5**
	baz=306							
ENTT					S	**Sb**	**11 06 45.0**	**+0.2**
	baz=306							
TWD	**Chiawan**	**0.44**	**228**		P	**Pb**	**11 06 37.8**	**-0.3**
	baz=224							
TWD					*e*S	**Sn**	**11 06 45.7**	**+0.3**
	baz=224							
EGS		**0.47**	**357**		*e*P	**Pb**	**11 06 38.5**	**0.0**
EGS					*e*S	**Sb**	**11 06 45.5**	**+0.1**
NNS	**Nan Shan**	**0.53**	**277**		P	**Pb**	**11 06 39.1**	**-0.6**
	baz=275							
NNS					*e*S	**Sb**	**11 06 47.4**	**0.0**
	baz=275							
NSK	**Sanguang**	**0.62**	**299**		*i*P	**Pn**	**11 06 40.4**	**-0.7**
	baz=298							
NSK					*i*S	**Sb**	**11 06 49.2**	**-0.4**
	baz=298							
WHF	**Hehuan Shan**	**0.67**	**250**		*e*P	**Pn**	**11 06 41.2**	**-0.9**
	baz=248							
WHF					*e*S	**Sb**	**11 06 51.2**	**-0.1**
	baz=248							
TWA	**Mucha**	**0.69**	**331**		*e*P	**Pn**	**11 06 41.7**	**-0.3**
	baz=331							
TWA					*e*S	**Sn**	**11 06 51.9**	**+0.3**
	baz=331							
NWF	**Wu-fen Shan**	**0.71**	**347**	⇑	P	**Pb**	**11 06 42.6**	**+0.1**
	baz=348							
NWF					S	**Sb**	**11 06 52.7**	**+0.6**
	baz=348							
TWT	**Tachien**	**0.72**	**260**		*e*P	**Pn**	**11 06 42.3**	**-0.2**
	baz=258							
TWT					S	**Sb**	**11 06 52.7**	**+0.1**
	baz=258							
ESL	**Shilin**	**0.74**	**221**		*e*P	**Pn**	**11 06 42.1**	**-0.6**
	baz=218							
ESL					*e*S	**Sb**	**11 06 52.9**	**+0.2**
	baz=218							
TWS1	**Kuangyinshan**	**0.87**	**326**		*e*S	**Sb**	**11 06 58.0**	**+1.4**
	baz=326							
NSTT	**Nanjuang**	**0.91**	**286**		*e*P	**Pn**	**11 06 44.8**	**-0.1**
	baz=285							
NSTT					*e*S	**Sb**	**11 06 57.4**	**-0.2**
	baz=285							
JYNG	**Yonagunijimaku**	**0.91**	**85**		P	**Pn**	**11 06 44.7**	**-0.2**
JYNG					S	**Sb**	**11 06 57.2**	**-0.3**
TWY	**Chenhua**	**0.95**	**340**		*e*P	**Pn**	**11 06 45.2**	**-0.4**
	baz=341							
TWY					*e*S	**Sb**	**11 06 59.5**	**+0.6**
	baz=341							
YOJ	**Yonaguni jima**	**0.97**	**85**		P	**Pn**	**11 06 45.6**	**-0.2**
YOJ					*e*S	**Sb**	**11 06 58.7**	**-0.5**
WDT	**Danda**	**0.97**	**231**		*e*P	**Pn**	**11 06 46.0**	**-0.2**
	baz=229							
WDT					*e*S	**Sn**	**11 06 58.9**	**-0.1**
	baz=229							
TWQ1	**Liyutan**	**1.08**	**269**		*e*P	**Pn**	**11 06 47.6**	**+0.2**
	baz=267							
TWQ1					*e*S	**Sb**	**11 07 03.0**	**+0.5**
	baz=267							
SMLT	**Sun Moon Lake**	**1.08**	**243**		*e*P	**Pn**	**11 06 47.7**	**+0.2**
	baz=241							
NSY	**Sanyi**	**1.09**	**272**		*e*S	**Sb**	**11 07 03.5**	**+0.7**
	baz=271							
TYC	**Yuchr**	**1.11**	**245**		*e*P	**Pn**	**11 06 47.9**	**+0.2**
	baz=243							
TYC					*e*S	**Sb**	**11 07 05.4**	**+2.1**
	baz=243							
TWF1	**Yuli**	**1.19**	**211**		*e*P	**Pn**	**11 06 49.1**	**+0.3**
	baz=209							
TWF1					*e*S	**Sb**	**11 07 04.8**	**-0.6**
	baz=209							
ALS	**Alishan**	**1.36**	**231**		*e*P	**Pn**	**11 06 51.7**	**+0.2**
	baz=229							
ALS					*e*S	**Sb**	**11 07 11.9**	**+1.2**
	baz=229							
CHN5	**Tsauling**	**1.40**	**237**		*e*P	**Pb**	**11 06 53.5**	**-0.7**
	baz=235							
CHN5					*e*S	**Sb**	**11 07 12.6**	**+0.9**
	baz=235							
CHN4	**Tsaushan**	**1.61**	**231**		*e*P	**Pb**	**11 06 56.5**	**-1.2**
	baz=230							
CHN4					*e*S	**Sb**	**11 07 17.8**	**+0.2**
	baz=230							
IRIF	**Iriomote-Funau**	**1.62**	**91**		P	**Pn**	**11 06 55.1**	**+0.3**
IRIF					S	**Sn**	**11 07 15.0**	**+0.5**
CHN1	**Nanshi**	**1.77**	**228**		*e*P	**Pn**	**11 06 57.5**	**+0.6**
	baz=227							
JKRS	**Kuro-shima**	**1.88**	**94**		P	**Pn**	**11 06 58.4**	**+0.1**
JKRS					S	**Sn**	**11 07 22.3**	**+1.4**
JIJ	**Ishigaki jima**	**2.00**	**90**		P	**Pn**	**11 06 59.3**	**-0.6**
JIJ					S	**Sn**	**11 07 23.6**	**-0.2**

*NIED **06** 11:10:00, 37°.30N×142°.20E, h11^{km}, Mw3.6 Best double couple: M$_0$3.26000×10^{14} NP1:φ$_s$134.00000°, δ58.00000°, λ155.00000°. NP2:φ$_s$238.00000°, δ69.00000°, λ35.00000°.*
*ISCJB **06** 11:10:52.0±0.7, 37°.14N±0°.04×142°.29E±0°.06, h19^{km}, mb3.7/6, MS3.4/1, Error ellipse: s-maj=7.5km s-min=6.2km az=161.3*
*IDC **06** 11:10:51.6±1.0, 36°.93N×142°.69E, h0^{km}, mb3.6/6, mb1 3.8/10, mb1mx3.6/40, mbtmp3.7/10, ML2.9/4, MS2.8/4, Ms1 2.8/4, ms1mx2.5/36, Error ellipse: s-maj=23.1km s-min=20.8km az=87.0*
*JMA **06** 11:10:52.9±0.2, 37°.28N×142°.20E, h8^{km}±2^{km}, M3.7*
ISC 06 11:10:54.0±0.9, **37°.17N**±0°.05×**142°.10E**±0°.06, **h19**^{km}, **n27**, σ1°**34**/22, **mb3.8/6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.00**	**282**		P	**Pb**	**11 11 13.0**	**+0.3**
JFK					*e*S	**Sg**	**11 11 27.2**	**+0.6**
JMM	**Marumori**	**1.25**	**304**		P	**Pn**	**11 11 16.2**	**-0.3**
JIO	**Ouri**	**1.42**	**335**		P	**Pn**	**11 11 17.7**	**-1.1**
JIO					*e*S	**Sn**	**11 11 35.2**	**-1.7**
JFT	**Otama**	**1.45**	**285**		P	**Pb**	**11 11 20.3**	**-0.1**
JFT					*e*S	**Sg**	**11 11 40.1**	**-0.8**
JOU	**Okura**	**1.65**	**317**		P	**Pn**	**11 11 22.3**	**+0.3**
JOU					*e*S	**Sb**	**11 11 43.8**	**-0.5**
JMK	**Ichinoseki**	**1.91**	**339**		P	**Pn**	**11 11 26.0**	**+0.4**
JYK	**Kaneyama**	**2.23**	**322**		P	**Pn**	**11 11 30.3**	**+0.4**
MJAR	**Matsushiro Arr**	**3.18**	**260**		Pn	**Pb**	**11 11 47.4**	**-2.5**
	1.4nm,0.3s,baz=84,slow=16,SNR=4.7							
MJAR					LR	LR	11 13 12.9	
	comp=Z,70nm,20.4s,baz=80,slow=39							
MAT	**Matsushiro**	**3.19**	**260**		P	**Pb**	**11 11 47.4**	**-2.6**
MAT					*e*S	**Sb**	**11 12 29.6**	**+1.2**
JHJ	**Hachijo jima 2**	**4.46**	**206**		Pn	**Pn**	**11 12 00.5**	**-0.1**
	3.2nm,0.3s,baz=225,slow=19,SNR=4.4							
JHJ					Sn	**Sn**	**11 12 52.1**	**0.0**
	16nm,0.3s,baz=70,slow=23,SNR=6.2							
ASAJ	**Asahikawa**	**6.95**	**3**		Pn	**Pn**	**11 12 34.5**	**-0.3**
	0.8nm,0.3s,baz=209,slow=14,SNR=10							
JNU	**Nakatsue**	**10.04**	**250**		LR	LR	11 18 05.3	
	comp=Z,40nm,19.1s,baz=297,slow=42							
USRK	**Ussuriysk Ar.**	**10.40**	**316**		Pn	Pn	11 13 28.4	+6.3
	0.1nm,0.3s,baz=125,slow=11,SNR=4.8							
KSRS	**Korea Array**	**11.30**	**276**		Pn	Pn	11 13 42.2	+7.9
	0.2nm,0.3s,baz=76,slow=14,SNR=2.7							
KSRS					LR	LR	11 17 54.1	
	comp=Z,40nm,19.0s,baz=126,slow=36							
H11N2	**WAKE ISLAND Hy**	**27.75**	**122**		T	T	11 45 36.8	
	baz=315,slow=75,SNR=32							
H11N1	**WAKE ISLAND Hy**	**27.75**	**122**		T	T	11 45 35.6	
	baz=315,slow=75,SNR=26							
H11N3	**WAKE ISLAND Hy**	**27.76**	**122**		T	T	11 45 30.8	
	baz=315,slow=75,SNR=24							
SONM	**Songino Array**	**28.17**	**304**		P	**P**	**11 16 48.7**	**+3.5**
	2.1nm,0.9s,baz=93,slow=8.8,SNR=2.9							
H11S1	**WAKE ISLAND Hy**	**28.47**	**124**		T	T	11 46 24.6	
	baz=316,slow=76,SNR=41							
H11S3	**WAKE ISLAND Hy**	**28.47**	**124**		T	T	11 46 27.7	
	baz=316,slow=76,SNR=46							
H11S2	**WAKE ISLAND Hy**	**28.49**	**124**		T	T	11 46 28.2	
	baz=316,slow=76,SNR=10							
MKAR	**Makanchi Array**	**44.52**	**302**		P	P	11 19 10.7	+6.4
	1.4nm,0.7s,baz=87,slow=9.5,SNR=11							
ILAR	**Eielson Array**	**49.09**	**32**		P	**P**	**11 19 39.2**	**-0.5**
	0.3nm,0.8s,baz=267,slow=7.3,SNR=4.0							
WRA	**Warramunga Arr**	**57.27**	**189**		P	**P**	**11 20 39.5**	**-0.8**
	0.7nm,0.6s,baz=7.6,slow=7.5,SNR=14							
ASAR	**Alice Springs**	**61.00**	**189**		P	**P**	**11 21 06.1**	**-0.1**
	0.4nm,0.6s,baz=11,slow=13,SNR=4.9							
PDAR	**Pinedale Array**	**77.18**	**46**		LR	LR	11 57 26.1	
	comp=Z,16nm,18.5s,baz=66,slow=36							
TXAR	**Lajitas Array**	**89.60**	**53**		P	**P**	**11 23 50.8**	**+0.1**
	0.1nm,0.5s,baz=308,slow=4.4,SNR=2.6							

MEX 06 11:14:05.9±0.7, **18°.50N**×**101°.35W**, **h72**^{km}±10^{km}, **MD3.6, Guerrero**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.89**	**187**		*e*P	**Pn**	**11 14 21.6**	**-1.6**
ZIIG					*e*S	**Sn**	**11 14 34.6**	**-1.4**
ARIG	**Puente Sto Nin**	**0.98**	**103**		*e*P	**Pn**	**11 14 22.4**	**-1.9**
ARIG					*i*S	**Sn**	**11 14 35.8**	**-2.2**
MOIG	**Morelia**	**1.18**	**8**		*e*P	**Pn**	**11 14 25.4**	**-1.7**
MOIG					*e*S	**Sn**	**11 14 41.5**	**-1.4**
MEIG	**Mezcala**	**1.74**	**109**		*e*P	**Pn**	**11 14 33.3**	**-1.0**
MEIG					*e*S	**Sn**	**11 14 54.0**	**-1.7**
CAIG	**El Cayaco**	**1.77**	**144**		*e*P	**Pn**	**11 14 33.4**	**-1.2**
CAIG					*e*S	**Sn**	**11 14 55.2**	**-1.1**
YAIG	**Yautepec**	**2.20**	**80**		*e*P	**Pn**	**11 14 38.8**	**-1.6**
YAIG					*i*S	**Sn**	**11 15 06.0**	**-0.7**
TLIG	**Tlapa**	**2.81**	**109**		*i*P	**Pn**	**11 14 48.2**	**-0.4**
TLIG					*i*S	**Sn**	**11 15 19.4**	**-2.2**

*ISCJB **06** 11:39:15.6±0.7, 53°.7N±0°.2×166°.4W±0°.2, h83^{km}±8^{km}, mb3.1/3, Error ellipse: s-maj=37.0km s-min=5.2km az=151.0*
*NEIC **06** 11:39:17.0, 53°.49N×166°.22W, h54^{km}, ML3.2(AEIC), After AEIC.*
*IDC **06** 11:39:31.2±22.0, 54°.14N×166°.57W, h229^{km}±147^{km}, mb2.7/3, mb1 3.0/4, mb1mx2.7/46, mbtmp3.3/4, Error ellipse: s-maj=273.6km s-min=78.7km az=77.0*
ISC 06 11:39:16.4±1.3, **53°.5N**±0°.2×**166°.27W**±0°.10, **h65**^{km}±13^{km}, **n26**, σ0°**89**/34, **mb3.2**/3, **Fox Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
UNV	**Unalaska Valle**	**0.34**	**336**		P	**Pn**	**11 39 26.8**	**-0.5**
UNV					S	**Sn**	**11 39 35.1**	**-0.2**
MNAT	**Makushin Natee**	**0.43**	**325**		P	**Pn**	**11 39 27.4**	**-0.7**
MGOD	**Makushin Gods**	**0.44**	**306**		P	**Pn**	**11 39 27.7**	**-0.6**
MGOD					S	**Sn**	**11 39 37.0**	**0.0**
MTBL	**Makushin Table**	**0.50**	**331**		P	**Pn**	**11 39 28.1**	**-0.8**
MCIR	**Makushin Cirqu**	**0.56**	**319**		P	**Pn**	**11 39 28.9**	**-0.6**
AKMO	**Akutan Morgan**	**0.58**	**15**		P	**Pn**	**11 39 29.2**	**-0.4**
AKMO					S	**Sn**	**11 39 39.5**	**+0.3**
AKRB	**Akutan Reef Bi**	**0.61**	**11**		P	**Pn**	**11 39 29.6**	**-0.3**
AKRB					S	**Sn**	**11 39 40.6**	**+0.8**
AKUT	**Akutan**	**0.67**	**26**		P	**Pn**	**11 39 30.1**	**-0.5**
AKUT					S	**Sn**	**11 39 41.5**	**+0.5**
AKSA	**Akutan Strait**	**0.69**	**29**		P	**Pn**	**11 39 31.0**	**+0.2**
OKER	**Okmok East Rim**	**1.07**	**266**		P	**Pn**	**11 39 35.7**	**+0.1**
OKTU	**Okmok Mt. Tuli**	**1.07**	**263**		P	**Pn**	**11 39 35.8**	**+0.2**
OKWR	**Okmok West Rim**	**1.16**	**266**		P	**Pn**	**11 39 36.9**	**+0.1**
OKAK	**Okmok**	**1.25**	**273**		P	**Pn**	**11 39 37.8**	**0.0**
WESP	**Westdahl Peak**	**1.32**	**43**		P	**Pn**	**11 39 38.8**	**-0.2**
WESP					S	**Sn**	**11 39 56.1**	**+0.3**
WESE	**West Dahl East**	**1.37**	**46**		P	**Pn**	**11 39 39.0**	**-0.5**
WESN	**West Dahl Nort**	**1.44**	**43**		P	**Pn**	**11 39 40.1**	**-0.3**
NIKH	**Nikolski High**	**1.65**	**251**		P	**Pn**	**11 39 43.1**	**-0.1**
NIKH					S	**Sn**	**11 40 04.1**	**+0.6**
SSLS	**Shishaldin Sou**	**1.78**	**48**		P	**Pn**	**11 39 44.8**	**-0.2**
SSLS					S	**Sn**	**11 40 07.0**	**+0.3**
SSLN	**Shishaldin Nor**	**1.85**	**45**		P	**Pn**	**11 39 46.2**	**+0.3**
DTT	**Dutton Round H**	**2.82**	**54**		P	**Pn**	**11 39 59.0**	**0.0**
DTNA	**Dutton South F**	**2.85**	**54**		P	**Pn**	**11 39 59.4**	**0.1**
SDPT	**Sand Point**	**3.84**	**59**

CNGN			AML	AML	11 49 25.7
	comp=N,432nm,0.4s				
ESTN	**Estel**	**1.47 96**	*e*P	Pn	11 48 57.5 -0.8
ESTN			*e*S	Sb	11 49 17.5 -0.4
MOMN	**Momotombo**	**1.55 123**	*e*P	Pn	11 48 58.5 -0.9
COPN	**Copaltepe**	**1.65 131**	*e*P	Pn	11 48 59.8 -0.8
COPN			*e*S	Sb	11 49 23.2 +0.1
TISN	**Laguna Tiscapa**	**1.92 125**	*e*P	Pn	11 49 03.6 -0.8

NIED ***06*** *11:58:00,24.10N×121.70E,h8km,Mw4.7 Best double couple: M₀1.23000×10¹⁶ NP1:φ=256.00000°,δ27.00000°, λ110.00000°. NP2:φ=53.00000°,δ65.00000°,λ80.00000°.*
TAP ***06*** *11:58:59.7,24.23N×121.79E,h18km,ML4.9,B*
NEIC ***06*** *11:58:59.2±0.7,24.20N×121.82E,h15km±4km,mb4.8/42, ML4.6(TAP),Error ellipse: s-maj=5.9km s-min=4.5km az=113.0*
NEIC Felt at Taipei and Zhonghe. Recorded [4 TAP] in Hualien; [3 TAP] in Nantou and Yilan; [2 TAP] at Taichung; [1 TAP] in Changhua.
JMA ***06*** *11:58:59.1,24.14N×121.70E,h22km,M4.5*
BJI ***06*** *11:58:59.4,24.35N×121.70E,h10km,mb4.3/53,mB4.6/41, ML4.4/9,Ms4.5/48,Ms7 4.3/49*
ISCJB ***06*** *11:59:00.2±0.2,24.26N±0.01×121.83E±0.01,h28km±1km, mb4.6/87,MS3.8/20,Error ellipse: s-maj=2.6km s-min=1.8km az=40.8*
MOS ***06*** *11:59:01.1±0.9,24.24N×121.91E,h46km,mb4.8/52,Error ellipse: s-maj=8.7km s-min=5.5km az=116.3*
IDC ***06*** *11:59:03.0±3.3,24.26N×121.96E,h49km±32km, mb4.1/25, mb1 4.2/27,mb1mx4.1/52,mbtmp4.3/27,ML3.3/2,MS3.7/19, Ms1 3.7/19,ms1mx3.5/47,Error ellipse: s-maj=15.6km s-min=12.9km az=69.0*
ISC 06 11:58:59.4±0.8,24.21N±0.02×121.80E±0.02,h14km±4km, n297,σ1$44/364,mb4.6/88,MS3.9/21,40C-29D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.12**	**332**	⇓P			**Pb**	**11 59 04.0**	**+0.5**
	baz=333								
EHP				*e*S			**Sb**	**11 59 06.5**	**+0.3**
	baz=333								
NACB	**Ninganchiao**	**0.19**	**260**	*e*Pg			**Pg**	**11 59 04.2**	**+0.4**
NACB				*e*Sg			**Sg**	**11 59 06.3**	**-0.5**
TWD	**Chiawan**	**0.23**	**236**	⇑*i*P			**Pb**	**11 59 05.3**	**0.0**
	baz=238								
TWD				*e*S			**Sb**	**11 59 09.4**	**+0.1**
	baz=238								
ENA	**Nanau**	**0.23**	**346**	⇑*i*P			**Pg**	**11 59 04.7**	**+0.3**
	baz=348								
HWA	**Hwalien**	**0.29**	**218**	*e*P			**Pb**	**11 59 07.4**	**+0.9**
	baz=222								
TWC	**Suao**	**0.40**	**6**	⇑*i*P			**Pg**	**11 59 08.0**	**+0.5**
	baz=3.0								
TWC				*e*S			**Sg**	**11 59 12.5**	**-0.5**
	baz=3.0								
ESF	**Shoufeng Towns**	**0.43**	**219**	*e*P			**Pb**	**11 59 09.9**	**+1.1**
	baz=226								
NNS	**Nan Shan**	**0.46**	**301**	⇑*i*P			**Pg**	**11 59 08.8**	**+0.3**
	baz=299								
ENTT	**Nioudou**	**0.48**	**334**	⇑*i*P			**Pg**	**11 59 09.3**	**+0.3**
	baz=333								
WHF	**Hehuan Shan**	**0.49**	**263**	⇑*i*P			**Pg**	**11 59 09.8**	**+0.5**
	baz=261								
ESL	**Shilin**	**0.52**	**221**	⇑P			**Pb**	**11 59 10.4**	**+0.2**
	baz=226								
ESL				*e*S			**Sb**	**11 59 18.5**	**+0.9**
	baz=226								
TWE	**Neicheng**	**0.53**	**347**	⇑*i*P			**Pg**	**11 59 10.1**	**+0.3**
	baz=345								
TWE				*i* S			**Sb**	**11 59 17.4**	**-0.5**
	baz=345								
TEGC	**Jichi Village**	**0.55**	**206**	*e*P			**Pn**	**11 59 12.4**	**-0.5**
	baz=198								
TEGC				*e*S			**Sn**	**11 59 22.1**	**+0.3**
	baz=198								
ILA	**Ilan**	**0.56**	**355**	*e*P			**Pb**	**11 59 10.9**	**-0.1**
	baz=348								
ILA				S			**Sb**	**11 59 19.3**	**+0.4**
	baz=348								
TWT	**Tachien**	**0.57**	**275**	⇑*i*P			**Pb**	**11 59 11.7**	**+0.3**
	baz=273								
TWT				*e*S			**Sb**	**11 59 19.7**	**+0.2**
	baz=273								
YHNB	**Yeheng**	**0.60**	**320**	*e*Pg			**Pg**	**11 59 11.3**	**+0.1**
YHNB				*e*Sg			**Sg**	**11 59 19.2**	**0.0**
NSK	**Sanguang**	**0.62**	**319**	⇑*i*P			**Pg**	**11 59 11.7**	**+0.2**
	baz=318								
NSK				*i* S			**Sg**	**11 59 19.8**	**0.0**
	baz=318								
EGS		**0.65**	**11**	⇑P			**Pb**	**11 59 12.6**	**+0.1**
	baz=11								
WDT	**Danda**	**0.76**	**234**	⇓*i*P			**Pb**	**11 59 15.0**	**+0.4**
	baz=240								
TWA	**Mucha**	**0.80**	**346**	⇑P			**Pg**	**11 59 14.9**	**+0.1**
	baz=344								
TWA				*e*S			**Sn**	**11 59 27.0**	**-1.0**
	baz=344								
TATO	**Taipei**	**0.82**	**340**	*e*Pg			**Pg**	**11 59 15.1**	**-0.2**
TATO				*e*Sg			**Sb**	**11 59 26.9**	**+0.6**
EHY	**Hungye**	**0.82**	**212**	*e*P			**Pb**	**11 59 15.8**	**+0.3**
	baz=212								
NSTT	**Nanjuang**	**0.84**	**300**	⇑P			**Pg**	**11 59 16.1**	**+0.4**
	baz=299								
NSTT				*i* S			**Sb**	**11 59 27.3**	**+0.2**
	baz=299								
NWF	**Wu-fen Shan**	**0.86**	**359**	⇑*i*P			**Pg**	**11 59 16.5**	**+0.4**
	baz=347								
TAP1	**Taipei**	**0.87**	**343**	*e*P			**Pg**	**11 59 16.3**	**+0.1**
	baz=332								
TAP	**Taipei**	**0.87**	**342**	*e*P			**Pn**	**11 59 17.0**	**-0.3**
	baz=340								
TAP				*e*S			**Sb**	**11 59 27.2**	**-0.7**
	baz=340								
SSLB	**Suanglung**	**0.88**	**242**	*e*Pn			**Pb**	**11 59 16.4**	**-0.1**
SSLB				*e*Sg			**Sb**	**11 59 28.2**	**0.0**
SMLT	**Sun Moon Lake**	**0.89**	**249**	⇓*i*P			**Pg**	**11 59 17.0**	**+0.5**
	baz=249								
SMLT				*e*S			**Sg**	**11 59 29.1**	**+0.9**
	baz=249								
TYC	**Yuchr**	**0.92**	**251**	⇓*i*P			**Pg**	**11 59 17.4**	**+0.3**
	baz=245								
TYC				S			**Sb**	**11 59 29.3**	**+0.2**
	baz=245								
YULB	**Yu-li**	**0.93**	**210**	*e*Pg			**Pb**	**11 59 16.2**	**-1.1**
YULB				*e*Sn			**Sg**	**11 59 30.7**	**+1.1**
NCU	**National Centr**	**0.94**	**324**	⇑*e*P			**Pn**	**11 59 18.4**	**+0.1**
	baz=321								
NCU				*i* S			**Sn**	**11 59 32.4**	**+0.8**
	baz=321								
TWQ1	**Liyutan**	**0.95**	**279**	⇑*i*P			**Pn**	**11 59 18.7**	**+0.3**
	baz=278								
TWQ1				S			**Sn**	**11 59 32.0**	**+0.2**
	baz=278								
TWS1	**Kuangyinshan**	**0.96**	**339**	⇑*i*P			**Pn**	**11 59 18.6**	**+0.1**
	baz=337								
TWS1				*e*S			**Sn**	**11 59 32.9**	**+0.9**
	baz=337								
HSN	**Hsinchu**	**0.96**	**308**	*e*P			**Pn**	**11 59 18.9**	**+0.3**
	baz=303								
HSN				*e*S			**Sn**	**11 59 33.3**	**+1.2**
	baz=303								
TWF1	**Yuli**	**0.97**	**209**	⇓*e*P			**Pb**	**11 59 17.0**	**-1.0**
	baz=222								
NSY	**Sanyi**	**0.97**	**283**	⇑P			**Pn**	**11 59 19.5**	**+0.8**
	baz=282								
NSY				S			**Sn**	**11 59 33.2**	**+0.9**
	baz=282								
TCU	**Taichung**	**1.03**	**267**	⇓*i*P			**Pg**	**11 59 20.8**	**+1.5**
	baz=267								
TCU				*i* S			**Sn**	**11 59 35.6**	**+1.8**
	baz=267								
YUS	**Yu-Shan**	**1.06**	**228**	⇓*i*P			**Pg**	**11 59 20.3**	**+0.4**
	baz=227								
JYNG	**Yonagunijimaku**	**1.07**	**77**	P			**Pg**	**11 59 20.5**	**+0.4**
JYNG				*e*S			**Sg**	**11 59 34.1**	**0.0**
WNT	**Mingjian**	**1.07**	**253**	⇓*i*P			**Pg**	**11 59 21.2**	**+1.1**
	baz=250								
WNT				S			**Sn**	**11 59 36.1**	**+1.3**
	baz=250								
TWY	**Chenhua**	**1.08**	**350**	⇑P			**Pg**	**11 59 20.4**	**+0.1**
	baz=333								
TWY				*e*S			**Sn**	**11 59 36.1**	**+1.1**
	baz=333								
YOJ	**Yonaguni jima**	**1.13**	**77**	P			**Pg**	**11 59 21.4**	**+0.2**
YOJ				S			**Sg**	**11 59 37.5**	**+1.5**
YOJ	**Yonaguni jima**	**1.13**	**77**	⇓*i*P			**Pg**	**11 59 21.5**	**+0.2**
	baz=67								
YOJ				S			**Sg**	**11 59 37.1**	**+1.1**
	baz=67								
YOJ	**Yonaguni jima**	**1.13**	**77**	*e*P			**Pg**	**11 59 21.5**	**+0.2**
YOJ				*e*				11 59 39.4	
YOJ	**Yonaguni jima**	**1.13**	**77**	*e*Pn			**Pg**	**11 59 21.5**	**+0.2**
YOJ				*e*Sn			**Sg**	**11 59 39.4**	**+3.4**
ALS	**Alishan**	**1.15**	**233**	⇓*i*P			**Pn**	**11 59 21.7**	**+0.3**
	baz=234								
ALS				*e*S			**Sn**	**11 59 37.5**	**+0.5**
	baz=234								
CHKT	**Chengkung**	**1.17**	**200**	*e*P			**Pn**	**11 59 20.6**	**-0.8**
	baz=190								
CHN5	**Tsauling**	**1.19**	**240**	⇓P			**Pg**	**11 59 22.8**	**+0.4**
	baz=239								
ELDTW	**Lidau**	**1.24**	**216**	*e*P			**Pn**	**11 59 21.9**	**-0.7**
	baz=203								
WGK	**Gukeng**	**1.25**	**246**	⇑*e*P			**Pg**	**11 59 24.1**	**+0.7**
	baz=246								
WGK				*e*S			**Sg**	**11 59 42.0**	**+2.4**
	baz=246								
CHN2	**Minshiung**	**1.39**	**241**	*e*P			**Pg**	**11 59 26.5**	**+0.4**
	baz=242								
CHN2				*e*S			**Sg**	**11 59 46.0**	**+1.9**
	baz=242								
CHN4	**Tsaushan**	**1.40**	**233**	⇓P			**Pb**	**11 59 26.1**	**+0.8**
	baz=234								
CHN4				*e*S			**Sg**	**11 59 47.4**	**+2.9**
	baz=234								
TPUB	**Ta-pu**	**1.40**	**230**	*e*Pn			**Pb**	**11 59 25.6**	**+0.2**
TPUB				*e*Sn			**Sg**	**11 59 47.2**	**+2.6**
STYT	**Tauyuan**	**1.41**	**223**	⇓*i*P			**Pb**	**11 59 25.6**	**0.0**
	baz=224								
STYT				S			**Sg**	**11 59 45.3**	**+0.3**
	baz=224								
WTCT	**Ta-ch'eng**	**1.43**	**257**	*e*P			**Pb**	**11 59 26.1**	**+0.2**
	baz=258								
WTCT				S			**Sg**	**11 59 46.9**	**+1.3**
	baz=258								
PCYT	**Pengchaiyu**	**1.44**	**10**	⇓P			**Pb**	**11 59 25.8**	**-0.2**
	baz=7.0								
CHY	**Chiayi**	**1.45**	**241**	⇓*i*P			**Pg**	**11 59 27.3**	**+0.1**
	baz=242								
CHY				S			**Sg**	**11 59 46.8**	**+0.8**
	baz=242								
WTP	**Ta-pu**	**1.45**	**229**	⇓*i*P			**Pb**	**11 59 26.7**	**+0.5**
	baz=230								
WTP				*e*S			**Sg**	**11 59 47.0**	**+0.9**
	baz=230								
TWK	**Hsinying**	**1.52**	**232**	*e*P			**Pb**	**11 59 27.6**	**+0.1**
	baz=231								
TWG	**Pinlang**	**1.53**	**206**	*e*P			**Pn**	**11 59 25.6**	**-0.8**
	baz=206								
TWG	**Pinlang**	**1.53**	**206**	*e*Pn			**Pn**	**11 59 24.2**	**-2.2**
TWG				*e*Sn			**Sn**	**11 59 44.6**	**-1.5**
CHN1	**Nanshi**	**1.55**	**229**	⇓*i*P			**Pb**	**11 59 28.1**	**+0.2**
	baz=230								
CHN1				*e*S			**Sg**	**11 59 51.4**	**+2.1**
	baz=230								
WSF	**Szhu**	**1.55**	**249**	⇓*i*P			**Pb**	**11 59 28.3**	**+0.3**
	baz=250								
WSF				*e*S			**Sg**	**11 59 49.3**	**-0.2**
	baz=250								
TTN	**Taitung**	**1.57**	**203**	*e*P			**Pn**	**11 59 27.7**	**+0.9**
	baz=202								
SGST	**Jiashian**	**1.58**	**225**	⇓*i*P			**Pb**	**11 59 28.9**	**+0.4**
	baz=227								
SGST				*e*S			**Sg**	**11 59 51.0**	**+0.7**
	baz=227								
CHN8	**Yiju**	**1.69**	**240**	*e*P			**Pb**	**11 59 29.8**	**-0.5**
	baz=226								
CHN8				*e*S			**Sg**	**11 59 53.5**	**-0.3**
	baz=226								
CHN3	**Shinhua**	**1.73**	**230**	*e*P			**Pb**	**11 59 31.8**	**+0.8**
	baz=230								
CHN3				*e*S			**Sg**	**11 59 57.1**	**+1.9**
	baz=230								
IRIF	**Iriomote-Funau**	**1.76**	**85**	P			**Pn**	**11 59 30.0**	**+0.4**
IRIF				S			**Sb**	**11 59 53.7**	**+0.1**
ECL	**Taimali**	**1.78**	**206**	*e*P			**Pn**	**11 59 29.1**	**-0.7**
	baz=194								
SCLT	**Jiali**	**1.80**	**235**	*e*P			**Pn**	**11 59 31.0**	**+1.0**
	baz=236								
SCLT				*e*S			**Sg**	**11 59 56.5**	**-0.7**
	baz=236								
HATJ	**Hateruma jima**	**1.84**	**94**	P			**Pn**	**11 59 31.7**	**+1.2**
HATJ				*e*S			**Sn**	**11 59 54.2**	**+0.6**
TAI1	**Yung-k'ang**	**1.85**	**232**	*e*P			**Pb**	**11 59 33.2**	**+0.2**
	baz=230								
TWM1	**Shoushan**	**1.87**	**223**	*e*P			**Pb**	**11 59 34.1**	**+0.7**
	baz=222								
SGLT	**Jiouru**	**1.90**	**219**	*e*P			**Pb**	**11 59 34.5**	**+0.6**
	baz=203								
JKRS	**Kuro-shima**	**2.02**	**89**	P			**Pn**	**11 59 34.1**	**+1.1**
EAST	**Anshuo**	**2.02**	**206**	*e*P			**Pn**	**11 59 32.2**	**-0.9**
	baz=195								
TAW	**Tawu**	**2.02**	**205**	*e*P			**Pb**	**11 59 35.0**	**-1.0**
	baz=206								
TAW				*e*S			**Sn**	**11 59 57.7**	**-0.5**
	baz=206								
SCZT	**Fangliau**	**2.12**	**211**	*e*P			**Pn**	**11 59 36.2**	**+1.6**
	baz=194								
KAU	**Kaohsiung**	**2.13**	**220**	*e*P			**Pb**	**11 59 39.0**	**+1.2**
	baz=237								
JIJ	**Ishigaki jima**	**2.14**	**85**	P			**Pn**	**11 59 35.1**	**+0.3**
JIJ				S			**Sn**	**12 00 01.2**	**0.0**
PNG	**Penghu**	**2.15**	**253**	⇓*i*P			**Pn**	**11 59 35.4**	**+0.5**
	baz=254								
PNG				*e*S			**Sn**	**12 00 03.0**	**+1.5**
	baz=254								
LAY	**Lan-yu**	**2.17**	**186**	⇑*e*P			**Pn**	**11 59 33.5**	**-1.7**
	baz=190								
WDGT	**Dungji**	**2.18**	**245**	⇓*i*P			**Pn**	**11 59 36.3**	**+1.1**
	baz=246								
WDGT				*e*S			**Sb**	**12 00 04.4**	**-1.1**
	baz=246								
TWP	**Hsiaoliuchiu**	**2.28**	**216**	*e*P			**Pb**	**11 59 39.0**	**-1.4**
	baz=232								
JISG	**Ishigakijimahi**	**2.32**	**80**	P			**Pn**	**11 59 37.9**	**+0.7**
JISG				S			**Sn**	**12 00 06.6**	**+1.1**
HEN	**Hengchun**	**2.40**	**204**	*e*P			**Pn**	**11 59 40.4**	**+2.1**
	baz=195								
TWK1	**Hengchun**	**2.43**	**202**	*e*P			**Pn**	**11 59 39.2**	**+0.5**
	baz=192								
TSEB	**Hengchuen, Pin**	**2.44**	**200**	*e*P			**Pn**	**11 59 40.3**	**+1.5**
	baz=192								
JTJ	**Tarama**	**2.68**	**80**	P			**Pn**	**11 59 43.0**	**+0.9**
QZH	**Quanzhou**	**3.01**	**285**	⇑*i*Pn			Pn	11 59 37.7	-9.0
QZH						Sn	Sn	12 00 11.5	-11
QZH						smax	smax		
	comp=N,2μm,0.8s								
QZH						smax	smax		
	comp=E,2μm,1.1s								
QZH						LR	LR		
	comp=N,6μm,10.0s								
QZH						LR	LR		
	comp=E,8μm,14.8s								
QZH						LR	LR		
	comp=Z,7μm,12.8s								
KNM	**Kinmen**	**3.08**	**275**	⇓*e*P			**Pn**	**11 59 49.2**	**+1.5**
	baz=273								
JIRB	**Irabujima**	**3.13**	**78**	P			**Pn**	**11 59 49.3**	**+0.9**
JIRB				S			**Sn**	**12 00 27.0**	**+1.4**
JIKM	**Ikemajima**	**3.22**	**76**	P			**Pn**	**11 59 51.0**	**+1.4**
JIKM				*e*S			**Sn**	**12 00 29.9**	**+2.2**
JMJ	**Miyako jima 2**	**3.24**	**78**	*e*S			**Sn**	**12 00 30.3**	**+2.1**
JKE	**Kume jima 2**	**4.98**	**64**	P			**Pn**	**12 00 15.6**	**+1.8**
JOW	**Kunigami**	**5.41**	**65**	P			**Pn**	**12 00 33.2**	**-0.2**
GZH	**Guangzhou**	**7.83**	**264**	P			Pn	12 00 48.1	-4.9
GZH				S			Sn	12 02 08.6	-13
GZH						smax	smax		
	comp=N,20nm,0.7s								
GZH						smax	smax		
	comp=E,580nm,1.1s								
NJ2	**Nanjing**	**8.24**	**342**	*e*P			**Pn**	**12 00 57.2**	**-1.3**
NJ2						pP	pP	12 01 02.4	
NJ2						S	**Sn**	**12 02 30.6**	**-0.8**
NJ2						pmax	pmax		
	comp=E,19nm,0.6s								
NJ2						smax	smax		
	comp=E,180nm,1.1s								
NJ2						smax	smax		
	comp=E,220nm,1.0s								
NJ2						LR	LR		
	comp=E,2μm,9.0s								
NJ2						LR	LR		
	comp=E,890nm,6.5s								
NJ2						LR	LR		
	comp=E,2μm,11.7s								
WHN	**Wuhan**	**9.15**	**315**	⇓P			**Pn**	**12 01 11.1**	**+0.1**
WHN						S	**Sn**	**12 02 51.3**	**-2.5**
WHN						LR	LR		
	comp=E,4μm,10.1s								
WHN						LR	LR		
	comp=E,4μm,7.5s								
WHN						LR	LR		
	comp=E,6μm,11.0s								
JNU	**Nakatsue**	**11.93**	**40**			LR	LR	12 07 10.4	
	comp=E,304nm,18.0s,baz=310,slow=41								
QIZ	**Qiongzhong**	**12.26**	**247**			P	**Pn**	**12 01 52.9**	**-0.8**
QIZ						S	**Sn**	**12 04 05.7**	**-4.5**
GYA	**Guiyang**	**13.87**	**282**	⇓*i*P			**Pn**	**12 02 16.2**	**+0.4**
GYA						S	**Sn**	**12 04 51.2**	**+1.4**
GYA						SS	**S**	**12 05 07.3**	**-4.6**
GYA						pmax	pmax		
	comp=E,30nm,0.8s								
GYA						pmax	pmax		
	comp=E,120nm,5.6s								
GYA						LR	LR		
	comp=E,520nm,9.2s								
GYA						LR	LR		
	comp=E,1μm,11.3s								
GYA						LR	LR		
	comp=E,1μm,10.1s								
KS15	**Wonju Array Si**	**14.18**	**20**	*e*P			**P**	**12 02 28.4**	**+1.1**
KSAR	**Wonju Array Be**	**14.18**	**20**	P			**Pn**	**12 02 20.7**	**+0.8**
KSAR	**Wonju Array Be**	**14.18**	**20**	P			**Pn**	**12 02 20.7**	**+0.8**
KSRS	**Korea Array**	**14.21**	**20**	P			**Pn**	**12 02 20.7**	**+0.5**
	comp=E,0.1nm,0.3s,baz=198,slow=11,SNR=3.3								
KSRS						LR	LR	12 08 43.8	
	comp=E,196nm,20.9s,baz=203,slow=41								
KS01	**Wonju Array Si**	**14.22**	**20**	*e*Pn			**Pn**	**12 02 22.6**	**+2.2**
DL2	**Dalian**	**14.66**	**359**	P			**P**	**12 02 35.2**	**+2.6**
DL2				*e*S			**S**	**12 05 27.2**	**-0.4**
DL2						pmax	pmax		
	comp=Z,32nm,1.1s								
DL2						pmax	pmax		
	comp=Z,790nm,13.3s								
DL2						LR	LR		
	comp=Z,1μm,13.1s								
XAN	**Xi'an**	**14.91**	**314**			P	**Pn**	**12 02 30.6**	**+0.7**
XAN						pP	pP	12 02 34.6	
XAN						pmax	pmax		
	comp=Z,7.0nm,1.1s								
XAN						LR	LR		
	comp=Z,320nm,7.5s								
XAN						LR	LR		
	comp=Z,1μm,11.5s								
XAN						LR	LR		
	comp=Z,1μm,12.0s								
TIY	**Taiyuan**	**15.66**	**331**	*e*P			**P**	**12 02 49.3**	**+5.4**
TIY						S	**Sn**	**12 05 36.2**	**+2.9**
TIY						pmax	pmax		
	comp=Z,140nm,6.2s								
TIY						LR	LR		
	comp=N,880nm,11.1s								
TIY						LR	LR		
	comp=E,390nm,8.9s								
TIY						LR	LR		
	comp=Z,760nm,10.7s								
BJI	**Beijing**	**16.48**	**345**			P	**Pn**	**12 02 50.7**	**+0.4**
BJI						S	**Sn**	**12 05 54.6**	**+1.6**
BJI						pmax	pmax		
	comp=Z,8.0nm,0.6s								
BJI						pmax	pmax		
	comp=Z,120nm,4.6s								
BJI						LR	LR		
	comp=Z,680nm,12.7s								
BJI						LR	LR		
	comp=Z,320nm,12.7s								
BJI						LR	LR		
	comp=Z,310nm,16.7s								
CD2	**Chengdu**	**17.33**	**297**			P	**Pn**	**12 03 00.1**	**-0.9**
CD2						pP	pP	12 03 05.1	-1.1
CD2						sP	sP	12 03 06.8	-1.2
CD2						S	**Sn**	**12 06 13.3**	**-0.4**
CD2						pmax	pmax		
	comp=Z,50nm,0.5s								
CD2						pmax	pmax		
	comp=Z,140nm,4.4s								
CD2						LR	LR		
	comp=Z,840nm,7.4s								
CD2						LR	LR		
	comp=Z,680nm,7.4s								
CD2						LR	LR		
	comp=Z,1μm,7.8s								
KMI	**Kunming**	**17.35**	**277**			P	**Pn**	**12 03 02.2**	**+0.6**
KMI						pP	sP	12 03 09.5	+1.0
KMI						sP	pP	12 03 12.1	+5.3
KMI						S	**Sn**	**12 06 15.7**	**+1.0**
KMI						SS	**SnSn**	**12 06 34.0**	**+6.0**
KMI						pmax	pmax		
	comp=Z,12nm,1.1s								
KMI						pmax	pmax		
	comp=Z,56nm,4.0s								
KMI						LR	LR		
	comp=Z,370nm,8.6s								
KMI						LR	LR		
	comp=Z,2μm,11.2s								
KMI						LR	LR		
	comp=Z,2μm,10.9s								
DAV	**Davao City (W)**	**17.42**	**167**			LR	LR	12 09 39.4	
	comp=Z,115nm,18.6s,baz=300,slow=36								
JHJ	**Hachijo jima 2**	**18.09**	**57**			LR	LR	12 09 58.1	
	comp=Z,180nm,20.1s,baz=254,slow=36								
NONG	**Nongkai**	**18.44**	**254**			P	Pn	12 03 23.0	+8.3
	comp=Z,44nm,1.8s,comp=Z,2μm								
HHC	**Hu-ho-hao-te**	**18.68**	**335**	*e*P			**P**	**12 03 14.0**	**-3.3**
HHC						PP	**PnPn**	**12 03 28.5**	**-1.2**
HHC						S	Sn	12 06 31.3	-15
HHC						SS	**SnSn**	**12 07 05.2**	**+4.7**
HHC						pmax	pmax		
	comp=Z,24nm,0.9s								
HHC						pmax	pmax		
	comp=Z,64nm,4.1s								
HHC						LR	LR		
	comp=Z,620nm,10.9s								
HHC						LR	LR		
	comp=Z,370nm,10.2s								
HHC						LR	LR		
	comp=Z,580nm,14.1s								
MJAR	**Matsushiro Arr**	**18.72**	**45**			P	**P**	**12 03 17.1**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=237,slow=10,SNR=3.1								
MJAR						LR	LR	12 10 51.9	
	comp=Z,230nm,21.5s,baz=220,slow=38								
LZH	**Lanzhou**	**19.49**	**312**	*e*P			**Pn**	**12 03 29.2**	**+1.7**
LZH						pP	sP	12 03 34.0	+2.0
LZH						sP	pP	12 03 37.3	+7.1
LZH						PP	**PnPn**	**12 03 46.2**	**+5.3**
LZH						pmax	pmax		
	comp=Z,29nm,1.0s								
LZH						pmax	pmax		
	comp=Z,110nm,4.2s						

MDJ	**Mudanjiang**	**21.33**	**15**	*e*P		**P**	**12 03 46.2**	**+0.3**
	comp=Z,24nm,1.2s								
LAMP	**Lampang**	**21.40**	**259**	P		**P**	**12 03 49.5**	**+2.6**
	comp=Z,6.0nm,0.9s								
USRK	**Ussuriysk Ar.**	**21.62**	**20**	P		**P**	**12 03 48.2**	**-0.8**
	comp=Z,2.2nm,0.7s,baz=209,slow=13,SNR=5.8								
SUKH	**Sukhothai**	**21.76**	**256**	P		**P**	**12 03 54.0**	**+3.2**
	comp=Z,3.6nm,1.1s								
CMMT	**Chiang Mai**	**21.92**	**260**	P		**P**	**12 03 54.5**	**+2.0**
	comp=Z,18nm,0.9s								
CHTO	**Chiang Mai**	**21.92**	**260**	P		**P**	**12 03 54.6**	**+2.0**
	comp=Z,53nm,1.0s								
CHTO	**Chiang Mai**	**21.92**	**260**	*e*P		**P**	**12 03 53.2**	**+0.6**
CHTO				pmax	pmax				
	comp=Z,10.0nm,0.9s								
CHTO	**Chiang Mai**	**21.92**	**260**	*e*P		**P**	**12 03 53.2**	**+0.6**
	comp=Z,9.7nm,0.9s								
CM01	**Chiang Mai Arr**	**22.03**	**259**	*e*P		**P**	**12 03 55.7**	**+1.9**
CMAR	**Chiang Mai Arr**	**22.04**	**259**	P		**P**	**12 03 55.0**	**+1.2**
	comp=Z,6.0nm,1.0s,baz=58,slow=8.1,SNR=25								
CMAR				LR	LR		12 13 49.2		
	comp=Z,202nm,18.1s,baz=71,slow=40								
CMAR	**Chiang Mai Arr**	**22.04**	**259**	P		**P**	**12 03 55.0**	**+1.2**
CMAR				pmax	pmax				
	comp=Z,4.0nm,0.8s								
CMAR				MLR	MLR				
	comp=Z,202nm,18.1s								
SBUM	**Sibu**	**23.53**	**205**	*e*P		**P**	**12 04 08.8**	**-0.5**
	comp=Z,16nm,0.8s								
GTA	**Gaotai**	**23.97**	**314**	*e*P		**P**	**12 04 13.6**	**0.0**
GTA				pP	pP		12 04 17.6	-0.2	
GTA				sP	sP		12 04 20.8	+1.3	
GTA				S	**S**		**12 08 33.1**	**+3.0**	
GTA				sS	sS		12 08 40.4	+3.5	
GTA				pmax	pmax				
	comp=Z,8.0nm,1.4s								
GTA				pmax	pmax				
	comp=Z,92nm,6.2s								
GTA				LR	LR				
	comp=Z,280nm,11.9s								
GTA				LR	LR				
	comp=Z,730nm,12.8s								
GTA				LR	LR				
	comp=Z,820nm,12.4s								
GUMO	**Guam**	**24.21**	**112**	LR		LR	12 13 54.0		
	comp=Z,104nm,19.2s,baz=284,slow=37								
HIA	**Hailar**	**25.07**	**357**	*e*P		**P**	**12 04 22.8**	**-0.6**	
HIA				pmax	pmax				
	comp=Z,16nm,1.0s								
HIA	**Hailar**	**25.07**	**357**	*e*P		**P**	**12 04 22.7**	**-0.6**	
	comp=Z,17nm,1.0s								
KSM	**Kuching**	**25.19**	**208**	*e*P		**P**	**12 04 25.0**	**+0.3**	
	comp=Z,18nm,0.9s								
LBMI	**Labuha**	**25.31**	**167**	P		**P**	**12 04 22.4**	**-3.4**	
MTKI	**Muara Teweh, K**	**25.88**	**196**	P		P	12 04 22.7	-8.3	
KLR	**Kul'dur**	**26.17**	**15**	P		**P**	**12 04 32.0**	**-1.3**	
	comp=Z,6.6nm,0.6s,baz=205,slow=6.2,SNR=24								
KLR				LR		LR	12 15 51.5		
	comp=Z,156nm,18.6s,baz=196,slow=39								
SONM	**Songino Array**	**26.57**	**336**	P		**P**	**12 04 36.5**	**-0.6**	
	comp=Z,6.3nm,0.9s,baz=148,slow=8.8,SNR=17								
SONM				LR		LR	12 16 15.3		
	comp=Z,492nm,18.3s,baz=136,slow=39								
SONA1	**Songino Array**	**26.58**	**336**	*e*P		**P**	**12 04 36.4**	**-0.8**	
LSA	**Lhasa**	**27.82**	**288**	*e*P		**P**	**12 04 48.4**	**-0.5**	
LSA				pmax	pmax				
	comp=Z,8.0nm,0.6s								
LSA	**Lhasa**	**27.82**	**288**	*e*P		**P**	**12 04 48.4**	**-0.5**	
	comp=Z,8.3nm,0.6s								
KAPI	**Kappang**	**29.11**	**184**	LR		LR	12 17 26.6		
	comp=Z,58nm,19.3s,baz=17,slow=38								
WMQ	**Urumqi**	**34.05**	**314**	*e*P		**P**	**12 05 43.2**	**-0.1**	
WMQ				pP		sP	12 05 50.4	+1.2	
WMQ				S		**S**	**12 11 12.2**	**+3.7**	
WMQ				pmax	pmax				
	comp=Z,15nm,0.6s								
WMQ				pmax	pmax				
	comp=Z,100nm,6.4s								
WMQ				LR	LR				
	comp=Z,360nm,10.4s								
WMQ				LR	LR				
	comp=Z,560nm,12.0s								
WMQ				LR	LR				
	comp=Z,520nm,12.6s								
YAK	**Yakutsk**	**38.19**	**6**	*e*P		**P**	**12 06 18.1**	**-0.2**	
YAK				pmax	pmax				
	comp=Z,6.0nm,0.8s								
MK01	**Makanchi Array**	**38.70**	**316**	*e*P		**P**	**12 06 22.6**	**-0.4**	
MK31	**Makanchi Array**	**38.72**	**316**	*e*P		**P**	**12 06 23.3**	**+0.3**	
MK31	**Makanchi Array**	**38.72**	**316**	*e*P		**P**	**12 06 23.3**	**+0.3**	
MKAR	**Makanchi Array**	**38.72**	**316**	P		**P**	**12 06 22.8**	**-0.3**	
	comp=Z,6.6nm,0.9s,baz=110,slow=9.7,SNR=31								
MKAR				LR		LR	12 23 39.8		
	comp=Z,202nm,18.1s,baz=100,slow=38								
MKAR	**Makanchi Array**	**38.72**	**316**	*e*P		**P**	**12 06 23.7**	**+0.6**	
MAKZ	**Makanchi**	**38.92**	**316**	*e*P		**P**	**12 06 24.6**	**-0.2**	
MAKZ				pmax	pmax				
	comp=Z,12nm,1.1s								
MAKZ	**Makanchi**	**38.92**	**316**	*e*P		**P**	**12 06 24.6**	**-0.2**	
	comp=Z,12nm,1.1s								
PDGK	**Podgornoye**	**39.51**	**309**	P		**P**	**12 06 30.3**	**+0.6**	
PDGK				pmax	pmax				
	comp=Z,13nm,0.9s								
PETK	**Petropavlovsk-**	**39.53**	**34**	LR		LR	12 22 37.4		
	comp=Z,76nm,20.7s,baz=231,slow=36								
ZAA0	**Zalesovo Array**	**40.53**	**327**	*e*P		**P**	**12 06 37.5**	**-0.5**	
ZALV	**Zalesovo Beam**	**40.53**	**327**	P		**P**	**12 06 36.9**	**-1.2**	
	comp=Z,4.4nm,0.6s,baz=115,slow=8.2,SNR=13								
ZALV				LR		LR	12 24 49.8		
	comp=Z,130nm,20.9s,baz=68,slow=38								
KSH	**Kashi**	**41.36**	**303**	*e*P		**P**	**12 06 49.1**	**+3.9**	
KSH				epP		sP	12 06 53.4	+2.2	
KSH				esP		pP	12 06 56.2	+6.7	
KSH				*e*PcP		**PcP**	**12 08 45.8**	**+2.3**	
KSH				PcS		**PcS**	**12 12 36.6**	**+1.8**	
KSH				S		**S**	**12 13 05.9**	**+6.2**	
KSH				ScS		**ScS**	**12 16 49.4**	**+0.1**	
KSH				pmax	pmax				
	comp=Z,41nm,3.0s								
KSH				LR	LR				
	comp=Z,140nm,9.0s								
KSH				LR	LR				
	comp=Z,140nm,7.5s								
KSH				LR	LR				
	comp=Z,350nm,16.8s								
NVS	**Novosibirsk**	**41.79**	**327**	*e*P		**P**	**12 06 48.6**	**+0.2**	
TKM2	**Tokmak 2**	**42.20**	**308**	*e*P		**P**	**12 06 53.2**	**+1.1**	
TKM2				pmax	pmax				
	comp=Z,10.0nm,1.1s								
TKM2	**Tokmak 2**	**42.20**	**308**	*e*P		**P**	**12 06 53.2**	**+1.1**	
	comp=Z,10nm,1.1s								
KURK	**Kurchatov**	**42.44**	**320**	*e*P		**P**	**12 06 53.4**	**-0.3**	
KURK				pmax	pmax				
	comp=Z,8.0nm,1.0s								
KURK	**Kurchatov**	**42.44**	**320**	*e*P		**P**	**12 06 53.4**	**-0.3**	
	comp=Z,8.2nm,1.0s								
AAK	**Ala-Archa**	**42.94**	**307**	*e*P		**P**	**12 06 56.8**	**-1.4**	
AAK				pmax	pmax				
	comp=Z,7.0nm,1.0s								
COEN	**Coen**	**43.30**	**149**	*e*P		**P**	**12 07 01.7**	**+0.6**	
	comp=Z,37nm,1.4s								
SEY	**Seymchan**	**43.77**	**20**	P		**P**	**12 07 01.4**	**-2.9**	
	comp=Z,3.4nm,1.1s,baz=273,slow=19,SNR=2.7								
SEY				PcP		**PcP**	**12 08 50.5**	**-0.2**	
	comp=Z,3.6nm,0.7s,baz=178,slow=5.2,SNR=11								
MNAS	**Manas**	**44.37**	**307**	P		**P**	**12 07 11.5**	**+1.9**	
MNAS				pmax	pmax				
	comp=Z,6.0nm,1.2s								
WRA	**Warramunga Arr**	**45.55**	**163**	P		**P**	**12 07 17.5**	**-1.5**	
	comp=Z,1.9nm,0.6s,baz=344,slow=8.5,SNR=16								
OTUK	**Ortayu**	**45.58**	**315**	P		**P**	**12 07 19.3**	**+0.3**	
OTUK				pmax	pmax				
	comp=Z,8.0nm,0.9s								
KKAR	**Karatay Array**	**45.91**	**307**	*e*P		**P**	**12 07 22.8**	**+1.1**	
KKAR	**Karatay Array**	**45.91**	**307**	*e*P		**P**	**12 07 22.8**	**+1.1**	
KBL	**Kabul**	**46.66**	**295**	*e*P		**P**	**12 07 29.6**	**+1.6**	
KBL				pmax	pmax				
	comp=Z,16nm,1.1s								
KBL	**Kabul**	**46.66**	**295**	*e*P		**P**	**12 07 29.6**	**+1.6**	
	comp=Z,16nm,1.1s								
VOSK	**Vostochnaya**	**47.59**	**320**	*e*P		**P**	**12 07 34.4**	**-0.3**	
VOSK				pmax	pmax				
	comp=Z,3.0nm,0.9s								
VOSK	**Vostochnaya**	**47.59**	**320**	*e*P		**P**	**12 07 34.4**	**-0.3**	
	comp=Z,3.4nm,0.9s								
TIXI	**Tiksi**	**47.64**	**3**	*e*P		**P**	**12 07 33.0**	**-1.8**	
TIXI				pmax	pmax				
	comp=Z,15nm,1.1s								
TIXI	**Tiksi**	**47.64**	**3**	*e*P		**P**	**12 07 33.6**	**-1.2**	
	comp=Z,19nm,1.1s								
BVAR	**Borovoye Array**	**48.01**	**321**	P		**P**	**12 07 37.1**	**-0.9**	
	comp=Z,2.8nm,0.7s,baz=112,slow=11,SNR=13								
BVAR				PcP		**PcP**	**12 09 04.4**	**-1.5**	
	comp=Z,1.8nm,0.8s,baz=116,slow=3.4,SNR=4.0								
BRVK	**Borovoye**	**48.09**	**321**	*i* P		**P**	**12 07 38.1**	**-0.4**	
BRVK				pmax	pmax				
	comp=Z,17nm,0.8s								
BRVK	**Borovoye**	**48.09**	**321**	*e*P		**P**	**12 07 38.4**	**-0.1**	
	comp=Z,8.2nm,1.0s								
ZRNK	**Zerenda**	**48.80**	**320**	*e*P		**P**	**12 07 43.3**	**-0.7**	
ZRNK				pmax	pmax				
	comp=Z,8.0nm,0.9s								
ZRNK	**Zerenda**	**48.80**	**320**	*e*P		**P**	**12 07 43.3**	**-0.7**	
	comp=Z,8.3nm,0.9s								
ASAR	**Alice Springs**	**49.02**	**165**	P		**P**	**12 07 45.0**	**-0.9**	
	comp=Z,1.8nm,0.8s,baz=338,slow=6.2,SNR=15								
AS01	**Alice Springs**	**49.02**	**165**	*e*P		**P**	**12 07 47.1**	**+1.0**	
NRIK	**Noril'sk**	**49.53**	**345**	LR		LR	12 30 30.3		
	comp=Z,113nm,18.6s,baz=114,slow=38								
CTA	**Charters Tower**	**50.06**	**150**	P		**P**	**12 07 52.9**	**-1.1**	
	comp=Z,2.8nm,0.9s,baz=335,slow=9.4,SNR=5.4								
ABKAR	**Akbulak array**	**53.83**	**314**	*e*P		**P**	**12 08 21.9**	**+0.1**	
SVE	**Sverdlovsk**	**54.36**	**324**	*e*P		**P**	**12 08 25.1**	**-0.4**	
SVE				pmax	pmax				
	comp=Z,17nm,1.0s								
AKTO	**Aktyubinsk**	**55.15**	**316**	P		**P**	**12 08 30.4**	**-1.1**	
	comp=Z,5.7nm,1.1s,baz=86,slow=6.5,SNR=13								
GEYT	**Alibeck**	**55.27**	**300**	P		**P**	**12 08 33.5**	**+1.0**	
	comp=Z,14nm,1.0s,baz=90,slow=0.1,SNR=14								
ARU	**Arti**	**55.43**	**323**	*d i* P		**P**	**12 08 32.6**	**-0.7**	
ARU							12 09 30.0		
ARU							12 10 35.7		
ARU				S		**S**	**12 16 19.9**	**+2.4**	
ARU				SS		**SS**	**12 19 56.9**	**-5.0**	
ARU				pmax	pmax				
	comp=Z,17nm,1.7s								
ARU	**Arti**	**55.43**	**323**	*e*P		**P**	**12 08 32.2**	**-1.1**	
	comp=Z,11nm,1.1s								
ZEI	**Tsey**	**65.36**	**308**	*e*P		**P**	**12 09 39.9**	**-1.9**	
ZEI				pmax	pmax				
	comp=Z,47nm,0.8s								
KLMR	**Klimovskoe**	**65.45**	**328**	*e*P		**P**	**12 09 38.6**	**-3.0**	
KLMR				*e*			12 10 09.9		
KLMR				pmax	pmax				
	comp=Z,22nm,1.4s								
KBZ	**Khabaz**	**65.91**	**309**	P		**P**	**12 09 45.0**	**+0.1**	
	comp=Z,10nm,0.9s,baz=91,slow=5.9,SNR=23								
KBZ	**Khabaz**	**65.91**	**309**	P		**P**	**12 09 45.0**	**+0.1**	
KBZ				pmax	pmax				
	comp=Z,10.0nm,0.9s								
KIV	**Kislovodsk**	**66.01**	**309**	*e*P		**P**	**12 09 44.6**	**-1.2**	
KIV				pmax	pmax				
	comp=Z,23nm,1.0s								
KIV				MLR	MLR				
	comp=Z,48nm,17.0s								
KIV	**Kislovodsk**	**66.01**	**309**	*e*P		**P**	**12 09 46.4**	**+0.6**	
	comp=Z,37nm,1.3s								
NEY	**Neytrino**	**66.12**	**308**	*e*P		**P**	**12 09 46.0**	**-0.6**	
NEY				pmax	pmax				
	comp=Z,2.0nm,0.8s								
VSR	**Storozhevoye**	**67.01**	**317**	*e*P		**P**	**12 09 51.2**	**-0.7**	
VSR				pmax	pmax				
	comp=Z,10.0nm,0.9s								
MLY	**Manley**	**67.27**	**27**	*e*P		**P**	**12 09 53.6**	**+0.2**	
	comp=Z,5.7nm,1.1s								
OBN	**Obninsk**	**67.83**	**322**	⇓*e*P		**P**	**12 09 54.9**	**-2.1**	
OBN				pmax	pmax				
	comp=Z,9.0nm,0.5s								
OBN				MLR	MLR				
	comp=Z,66nm,17.0s								
MDM	**Murphy Dome**	**68.33**	**27**	*e*P		**P**	**12 09 60.0**	**-0.1**	
	comp=Z,7.2nm,0.9s								
RND	**Reindeer**	**68.36**	**29**	*e*P		**P**	**12 09 59.4**	**-0.9**	
RND				pmax	pmax				
	comp=Z,9.0nm,0.8s								
RND	**Reindeer**	**68.36**	**29**	*e*P		**P**	**12 09 59.4**	**-0.9**	
	comp=Z,9.2nm,0.8s								
SML	**Sawmill**	**68.91**	**31**	*e*P		**P**	**12 10 04.0**	**+0.3**	
SML				pmax	pmax				
	comp=Z,26nm,1.6s								
SML	**Sawmill**	**68.91**	**31**	*e*P		**P**	**12 10 04.0**	**+0.3**	
	comp=Z,26nm,1.6s								
IL1	**Eielson Array**	**68.94**	**27**	*e*P		**P**	**12 10 01.9**	**-1.9**	
ILAR	**Eielson Array**	**68.94**	**27**	P		**P**	**12 10 01.8**	**-2.0**	
	comp=Z,0.4nm,0.5s,baz=265,slow=4.8,SNR=9.7								
JOF	**Joensuu**	**68.96**	**331**	P		**P**	**12 10 04.2**	**+0.3**	
JOF				pmax	pmax				
	comp=Z,9.0nm,1.1s								
SCM	**Sheep Creek Mo**	**69.37**	**30**	*e*P		**P**	**12 10 06.2**	**-0.4**	
SCM				pmax	pmax				
	comp=Z,65nm,2.0s								
SCM	**Sheep Creek Mo**	**69.37**	**30**	*e*P		**P**	**12 10 06.2**	**-0.4**	
	comp=Z,65nm,2.0s								
ANN	**Anapa**	**69.51**	**311**	*e*P		**P**	**12 10 06.4**	**-1.2**	
ANN				pmax	pmax				
	comp=Z,35nm,0.9s								
ARCES	**ARCESS Array B**	**69.73**	**338**	LR		LR	12 44 04.4		
	comp=Z,40nm,18.1s,baz=58,slow=39								
DOT	**Dot Lake**	**70.40**	**28**	*e*P		**P**	**12 10 11.9**	**-0.9**	
	comp=Z,41nm,1.8s								
MENT	**Mentasta**	**70.73**	**29**	*e*P		**P**	**12 10 14.6**	**-0.3**	
	comp=Z,7.0nm,0.9s								
BMRM	**Bremner River**	**70.85**	**31**	*e*P		**P**	**12 10 15.8**	**+0.1**	
	comp=Z,14nm,1.0s								
EGAK	**Eagle**	**71.31**	**27**	*e*P		**P**	**12 10 17.7**	**-0.6**	
	comp=Z,3.9nm,0.9s								
FIA1	**FINESS Array S**	**71.71**	**330**	*e*P		**P**	**12 10 19.8**	**-1.0**	
FINES	**FINESS Array B**	**71.71**	**330**	P		**P**	**12 10 19.8**	**-1.0**	
	comp=Z,4.7nm,0.8s,baz=98,slow=7.9,SNR=10								
DAWY	**Dawson**	**72.26**	**27**	*e*P		**P**	**12 10 23.8**	**-0.4**	
	comp=Z,4.3nm,0.8s								
INK	**Inuvik**	**72.99**	**22**	P		**P**	**12 10 26.7**	**-1.6**	
	comp=Z,3.3nm,0.9s,baz=283,slow=6.9,SNR=9.9								
INK	**Inuvik**	**72.99**	**22**	*e*P		**P**	**12 10 27.1**	**-1.2**	
	comp=Z,3.8nm,0.8s								
AKASG	**Malin Array Be**	**73.23**	**318**	P		**P**	**12 10 28.1**	**-1.9**	
	comp=Z,7.0nm,0.9s,baz=59,slow=6.2,SNR=18								
AKASG				LR		LR	12 46 23.8		
	comp=Z,60nm,18.0s,baz=65,slow=39								
KIEV	**Kiev**	**73.24**	**318**	⇓*i* P		**P**	**12 10 27.7**	**-2.4**	
KIEV				pmax	pmax				
	comp=Z,7.0nm,1.0s								
KIEV	**Kiev**	**73.24**	**318**	*e*P		**P**	**12 10 29.8**	**-0.3**	
	comp=Z,6.8nm,1.0s								
AK11	**Malin Array Si**	**73.27**	**318**	*e*P		**P**	**12 10 28.9**	**-1.4**	
NACGM	**Naroch**	**73.34**	**323**	*e*		**P**	**12 10 31.0**	**+0.4**	
BR131	**Keskin Array S**	**73.61**	**307**	*e*P		**P**	**12 10 32.6**	**-0.2**	
BRTR	**Keskin Array B**	**73.61**	**307**	P		**P**	**12 10 32.5**	**-0.2**	
	comp=Z,9.3nm,0.9s,baz=103,slow=5.3,SNR=40								
BRTR				LR		LR	12 47 42.3		
	comp=Z,14nm,20.6s,baz=75,slow=40								
ANTO	**Ankara**	**74.19**	**307**	*e*P		**P**	**12 10 36.0**	**0.0**	
ANTO				pmax	pmax				
	comp=Z,102nm,1.0s								
ANTO	**Ankara**	**74.19**	**307**	*e*P		**P**	**12 10 36.0**	**0.0**	
	comp=Z,102nm,1.0s								
BR231	**Keskin MP Arra**	**74.21**	**307**	*e*P		**P**	**12 10 33.1**	**-3.1**	
SORM	**Soroca**	**74.58**	**316**	⇑*i*P		**P**	**12 10 37.9**	**-0.1**	
SORM	**Soroca**	**74.58**	**316**	⇑P		**P**	**12 10 37.9**	**-0.1**	
SUW	**Suwalki**	**75.62**	**323**	*e*P		**P**	**12 10 43.0**	**-0.9**	
SUW	**Suwalki**	**75.62**	**323**	*e*P		**P**	**12 10 43.0**	**-0.9**	
SKAG	**Skagway**	**75.72**	**31**	*e*P		**P**	**12 10 43.2**	**-1.2**	
	comp=Z,17nm,1.2s								
TIRR	**Tirgusor**	**75.76**	**312**	⇓*i*P		**P**	**12 10 44.6**	**-0.3**	
TIRR	**Tirgusor**	**75.76**	**312**	*e*P		**P**	**12 10 44.5**	**-0.3**	
TIRR				pmax	pmax				
	comp=Z,8.0nm,1.0s								
TIRR	**Tirgusor**	**75.76**	**312**	*e*P		**P**	**12 10 44.5**	**-0.4**	
	comp=Z,7.8nm,1.0s								
TLB	**Topalu**	**75.97**	**313**	⇑*i*P		**P**	**12 10 45.6**	**-0.4**	
TLB	**Topalu**	**75.97**	**313**	⇑P		**P**	**12 10 45.6**	**-0.4**	
TESR	**Tesceani**	**76.22**	**315**	⇑*i*P		**P**	**12 10 47.2**	**-0.3**	
VRI	**Vrincioaia**	**76.39**	**314**	⇑*i*P		**P**	**12 10 49.0**	**+0.5**	
VRI	**Vrincioaia**	**76.39**	**314**	⇑P		**P**	**12 10 49.0**	**+0.5**	
BUR08	**Bucovina Ar. S**	**76.74**	**316**	*e*P		**P**	**12 10 50.1**	**-0.4**	
BURAR	**Bucovina Array**	**76.74**	**316**	⇑*i*P		**P**	**12 10 45.9**	**-4.6**	
BURAR	**Bucovina Array**	**76.74**	**316**	⇑P		**P**	**12 10 45.9**	**-4.6**	
MLR	**Muntele Rosu**	**77.04**	**314**	P		**P**	**12 10 51.4**	**-0.9**	
	comp=Z,1.7nm,0.9s,baz=73,slow=6.6,SNR=7.9								
MLR	**Muntele Rosu**	**77.04**	**314**	⇑*i*P		**P**	**12 10 52.2**	**-0.1**	
MLR	**Muntele Rosu**	**77.04**	**314**	*e*P		**P**	**12 10 52.2**	**-0.1**	
	comp=Z,7.2nm,0.9s								
HFS	**Hagfors**	**77.82**	**331**	P		**P**	**12 10 54.5**	**-1.7**	
	comp=Z,2.6nm,0.8s,baz=80,slow=3.3,SNR=5.9								
ARR	**Arges**	**77.94**	**314**	⇑*i*P		**P**	**12 10 54.0**	**-3.3**	
KOLS	**Kolonicke sedl**	**78.06**	**318**	*e*P		**P**	**12 10 56.8**	**-1.0**	
KOLS				pmax	pmax				
	comp=Z,5.0nm,1.2s								
KOLS	**Kolonicke sedl**	**78.06**	**318**	*e*P		**P**	**12 10 56.8**	**-1.0**	
NC405	**NORSAR Array S**	**78.22**	**332**	*e*P		**P**	**12 10 57.7**	**-0.8**	
NB2	**NORSAR Subarra**	**78.47**	**332**	P		**P**	**12 10 58.3**	**-1.5**	
	comp=Z,1.2nm,0.8s,baz=59,slow=5.6								
NOA	**NORSAR Array B**	**78.47**	**332**	P		**P**	**12 10 58.3**	**-1.5**	
	comp=Z,2.1nm,0.8s,baz=60,slow=5.5,SNR=6.8								
NOA				LR		LR	12 48 58.6		
	comp=Z,134nm,18.2s,baz=65,slow=38								
STHS	**Stebnicka Huta**	**78.49**	**319**	*e*P		**P**	**12 11 00.3**	**+0.1**	
STHS				pmax	pmax				
	comp=Z,7.0nm,1.6s								
STHS	**Stebnicka Huta**	**78.49**	**319**	*e*P		**P**	**12 11 00.3**	**+0.1**	
DRGR		**78.63**	**316**	⇑*i*P		**P**	**12 11 00.8**	**-0.3**	
DRGR		**78.63**	**316**	⇑P		**P**	**12 11 00.8**	**-0.3**	
OJC	**Ojcow**	**79.02**	**320**	*e*P		**P**	**12 11 02.3**	**-0.8**	
OJC	**Ojcow**	**79.02**	**320**	*e*P		**P**	**12 11 02.3**	**-0.8**	
OJC	**Ojcow**	**79.02**	**320**	*e*P		**P**	**12 11 02.2**	**-0.8**	
	comp=Z,13nm,1.0s								
VTS	**Vitosha**	**79.97**	**312**	⇑*i*P		**P**	**12 11 08.7**	**+0.1**	
VTS	**Vitosha**	**79.97**	**312**	*e*P		**P**	**12 11 08.1**	**-0.5**	
VTS				pmax	pmax				
	comp=Z,10.0nm,1.1s								
VTS	**Vitosha**	**79.97**	**312**	*e*P		**P**	**12 11 08.1**	**-0.5**	
	comp=Z,10.0nm,1.1s								
VYHS	**Vyhne**	**80.32**	**319**	*e*P		**P**	**12 11 09.7**	**-0.5**	
VYHS				pmax	pmax				
	comp=Z,7.0nm,1.2s								
VYHS	**Vyhne**	**80.32**	**319**	*e*P		**P**	**12 11 09.7**	**-0.5**	
MORC	**Moravsky Berou**	**80.52**	**320**	⇑*i*P		**P**	**12 11 08.8**	**-2.5**	
MORC	**Moravsky Berou**	**80.52**	**320**	*e*P		**P**	**12 11 09.2**	**-2.1**	
MORC				pmax	pmax				
	comp=Z,14nm,0.9s								
MORC	**Moravsky Berou**	**80.52**	**320**	*e*P		**P**	**12 11 09.2**	**-2.1**	
	comp=Z,14nm,0.9s								
VRAC	**Vranov**	**81.29**	**320**	⇑*i*P		P	12 11 09.8	-5.5	
VRAC	**Vranov**	**81.29**	**320**	⇑P		P	12 11 09.8	-5.5	
LAST	**Lasithi**	**81.30**	**305**	*e*P		**P**	**12 11 16.5**	**+0.7**	
	comp=Z,18nm,1.0s								
CLL	**Collm**	**82.37**	**323**	*e*P		**P**	**12 11 19.0**	**-2.0**	
CLL				Lm		MLR	12 52 00.0		
	comp=Z,100nm,18.1s								
CLL	**Collm**	**82.37**	**323**	*e*P		**P**	**12 11 19.0**	**-2.0**	
YKA	**Yellowknife Ar**	**82.73**	**23**	P		**P**	**12 11 20.9**	**-1.6**	
	comp=Z,3.0nm,0.8s,baz=312,slow=5.2,SNR=28								
KHC	**Kasperske Hory**	**83.11**	**321**	*e*P		**P**	**12 11 24.3**	**-0.6**	
KHC				pmax	pmax				
	comp=Z,2.0nm,0.7s								
KHC	**Kasperske Hory**	**83.11**	**321**	*e*P		**P**	**12 11 24.3**	**-0.6**	
	comp=Z,2.1nm,0.7s								
GERES	**GERESS Array B**	**83.18**	**321**	P		**P**	**12 11 24.1**	**-1.2**	
	comp=Z,2.0nm,0.8s,baz=57,slow=4.9,SNR=8.8								
GERES				LR		LR	12 51 51.2		
	comp=Z,56nm,18.1s,baz=52,slow=38								
KMBO	**Kilima Mbogo**	**85.48**	**267**	P		**P**	**12 11 37.6**	**-0.2**	
	comp=Z,3.1nm,0.2s,baz=2.4,slow=5.4,SNR=3.6								
B08A	**Colville Reser**	**89.44**	**36**	*e*P		**P**	**12 11 56.2**	**+0.2**	
	comp=Z,6.6nm,0.8s								
WALA	**Waterton Lakes**	**91.79**	**33**	*e*P		**P**	**12 12 07.9**	**+0.8**	
	comp=Z,14nm,1.5s								
WDC	**Whiskeytown Da**	**92.12**	**43**	*e*P		**P**	**12 12 10.0**	**+1.4**	
WDC				pmax	pmax				
	comp=Z,20nm,1.5s								
WDC	**Whiskeytown Da**	**92.12**	**43**	*e*P		**P**	**12 12 10.0**	**+1.4**	
	comp=Z,20nm,1.5s								
BMO	**Blue Mountains**	**92.69**	**38**	*e*P		**P**	**12 12 11.8**	**+0.5**	
BMO				pmax	pmax				
	comp=Z,2.0nm,0.8s								
BMO	**Blue Mountains**	**92.69**	**38**	*e*P		**P**	**12 12 11.8**	**+0.5**	
	comp=Z,1.9nm,0.8s								
HLID	**Hailey**	**95.

baz=318,slow=76,SNR=46
H11N3 WAKE ISLAND Hy 28.65 126 T T 12 42 00.5
baz=318,slow=76,SNR=40
H11S1 WAKE ISLAND Hy 29.42 128 T T 12 42 56.6
baz=320,slow=76,SNR=7.8
H11S3 WAKE ISLAND Hy 29.42 128 T T 12 42 53.0
baz=320,slow=76,SNR=12
H11S2 WAKE ISLAND Hy 29.44 128 T T 12 42 59.2
baz=320,slow=76,SNR=10
ILAR Eielson Array 47.26 33 P **P 12 14 03.4 +1.3**
0.2nm,0.7s,baz=277,slow=7.5,SNR=4.2
WRA Warramunga Arr 59.29 189 P **P 12 15 30.4 -0.6**
0.2nm,0.5s,baz=7.1,slow=7.1,SNR=6.6
ASAR Alice Springs 63.02 189 P **P 12 15 56.8 +0.5**
0.5nm,0.9s,baz=8.7,slow=6.7,SNR=3.3

*CSEM **06** 12:09:06.5, 43.31N×12.56E, h7km, MD1.6/5*
ROM 06 12:09:06.5±0.3, 43.31N×12.56E, h7km±3km, Md1.6/5, Ml1.1/4, Error ellipse: s-maj=1.5km s-min=1.0km az=71.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MURB	**Monte Urbino**	**0.05**	**207**	Pg	Pg	12 09 08.2	0.0
MURB				Sg	Sg	12 09 09.6	+0.2
	256nm,0.2s						
MURB	**Monte Urbino**	**0.05**	**207**	Pg	Pg	12 09 08.2	0.0
MURB				Sg	Sg	12 09 09.6	+0.2
	256nm,0.2s						
ATVO	**AVT- Monte Val**	**0.13**	**304**	Pg	Pg	12 09 09.6	+0.3
ATVO				Sg	Sg	12 09 12.2	+0.9
	69nm,0.2s						
ATVO	**AVT- Monte Val**	**0.13**	**304**	Pg	Pg	12 09 09.6	+0.3
ATVO				Sg	Sg	12 09 12.2	+0.9
	69nm,0.2s						
ATCC	**AVT- Casa Cast**	**0.14**	**153**	Pg	Pg	12 09 09.9	+0.5
ATCC				Sg	Sg	12 09 12.8	+1.4
	29nm,0.2s						
ATCC	**AVT- Casa Cast**	**0.14**	**153**	Pg	Pg	12 09 09.9	+0.5
ATCC				Sg	Sg	12 09 12.8	+1.4
	29nm,0.2s						
ATPC	**Poggio Castell**	**0.19**	**337**	Pg	Pg	12 09 11.0	+0.7
ATPC				Sg	Sg	12 09 14.6	+1.7
	25nm,0.2s						
ATPC	**Poggio Castell**	**0.19**	**337**	Pg	Pg	12 09 11.0	+0.7
ATPC				Sg	Sg	12 09 14.6	+1.7
	25nm,0.2s						
SSFR	**Montelago di S**	**0.21**	**52**	Pg	Pg	12 09 11.2	+0.5
SSFR				Sg	Sg	12 09 14.9	+1.3
	32nm,0.2s						
SSFR	**Montelago di S**	**0.21**	**52**	Pg	Pg	12 09 11.2	+0.5
SSFR				Sg	Sg	12 09 14.9	+1.3
	32nm,0.2s						

TAP 06 12:15:35.9, 24.26N×121.77E, h16km, ML2.4, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.06**	**336**	P	Pg	12 15 40.1	+1.0
	baz=341						
EHP				S	Sg	12 15 42.7	+1.6
	baz=341						
ENA	**Nanau**	**0.17**	**352**	*i* P	Pb	12 15 40.8	0.0
	baz=354						
ENA				*i* S	Sb	12 15 44.0	+0.1
	baz=354						
TWD	**Chiawan**	**0.23**	**222**	*i* P	Pb	12 15 41.6	-0.1
	baz=220						
TWD				S	Sb	12 15 45.3	-0.4
	baz=220						
HWA	**Hwalien**	**0.32**	**208**	*e*P	Pb	12 15 43.3	+0.2
	baz=206						
HWA				*e*S	Sb	12 15 48.2	+0.2
	baz=206						
TWC	**Suao**	**0.36**	**12**	P	Pb	12 15 44.1	+0.1
	baz=13						
TWC				S	Sb	12 15 49.4	+0.1
	baz=13						
NNS	**Nan Shan**	**0.40**	**297**	P	Pb	12 15 44.9	+0.2
	baz=297						
ENTT	**Nioudou**	**0.42**	**334**	*i* P	Pb	12 15 45.4	+0.4
	baz=335						
TWE	**Neicheng**	**0.47**	**349**	P	Pb	12 15 46.2	+0.4
	baz=350						
TWE				S	Sb	12 15 52.9	+0.3
	baz=350						
ESL	**Shilin**	**0.54**	**215**	P	Pb	12 15 46.9	0.0
	baz=213						
ESL				S	Sb	12 15 55.2	+0.8
	baz=213						
TWT	**Tachien**	**0.54**	**270**	*e*P	Pb	12 15 47.4	+0.3
	baz=269						
TWT				*i* S	Sb	12 15 55.6	+0.9
	baz=269						
NSK	**Sanguang**	**0.56**	**318**	*e*P	Pb	12 15 47.6	+0.2
	baz=318						
NSK				*e*S	Sb	12 15 55.7	+0.6
	baz=318						
EGS		**0.60**	**14**	*e*P	Pb	12 15 48.1	0.0
	baz=15						
EGS				*e*S	Sb	12 15 57.2	+0.8
	baz=15						
WDT	**Danda**	**0.76**	**229**	P	Pb	12 15 51.2	+0.2
	baz=228						
WDT				S	Sb	12 16 01.7	+0.5
	baz=228						
NSTT	**Nanjuang**	**0.79**	**298**	*e*P	Pg	12 15 51.5	+0.2
	baz=298						
NSTT				*e*S	Sn	12 16 03.1	-0.7
	baz=298						
EHY	**Hungye**	**0.85**	**209**	*e*P	Pb	12 15 51.3	-1.0
	baz=208						
EHY				*e*S	Sb	12 16 03.5	0.0
	baz=208						
SMLT	**Sun Moon Lake**	**0.88**	**245**	*e*P	Pg	12 15 53.0	+0.1
	baz=244						
SMLT				S	Sn	12 16 05.4	-0.7
	baz=244						
TYC	**Yuchr**	**0.90**	**247**	*e*P	Pg	12 15 53.4	-0.1
	baz=246						
TYC				S	Sn	12 16 06.0	-0.5
	baz=246						
TWF1	**Yuli**	**1.00**	**206**	*e*P	Pb	12 15 54.0	-0.8
	baz=205						
TWF1				*e*S	Sn	12 16 08.8	-0.2
	baz=205						
YUS	**Yu-Shan**	**1.07**	**225**	*e*P	Pg	12 15 57.4	+0.8
	baz=224						
YUS				*e*S	Sn	12 16 12.0	+0.6
	baz=224						
CHN5	**Tsauling**	**1.19**	**237**	*e*P	Pb	12 15 58.4	+0.2
	baz=236						
CHN5				*e*S	Sg	12 16 15.7	+1.1
	baz=236						
ELDTW	**Lidau**	**1.27**	**213**	*e*P	Pb	12 15 59.3	-0.1
	baz=212						
ELDTW				*e*S	Sn	12 16 16.1	+0.4
	baz=212						
CHN4	**Tsaushan**	**1.40**	**230**	*e*P	Pb	12 16 01.4	-0.3
	baz=230						

TAP 06 12:15:42.2, 24.25N×121.75E, h16km±1km, ML2.4, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.06**	**351**	*i* P	Pg	12 15 46.0	+0.7
	baz=358						
EHP				*i* S	Sg	12 15 48.5	+1.0
	baz=358						
ENA	**Nanau**	**0.18**	**357**	*i* P	Pg	12 15 46.6	0.0
	baz=359						
ENA				S	Sb	12 15 50.1	-0.3
	baz=359						
TWD	**Chiawan**	**0.22**	**220**	P	Pb	12 15 47.8	0.0
	baz=218						
TWD				*i* S	Sb	12 15 51.5	0.0
	baz=218						
NNS	**Nan Shan**	**0.39**	**299**	P	Pb	12 15 50.8	-0.1
	baz=299						
NNS				*i* S	Sb	12 15 56.9	+0.2
	baz=299						
NNS	**Nan Shan**	**0.39**	**299**	S	Pb	12 15 50.9	0.0
	baz=297						
ENTT	**Nioudou**	**0.42**	**337**	P	Pb	12 15 51.5	+0.1
	baz=337						
ENTT				*i* S	Sb	12 15 57.8	+0.3
	baz=337						
ENTT	**Nioudou**	**0.42**	**337**	*i* S	Pb	12 15 51.5	+0.2
	baz=335						
TWE	**Neicheng**	**0.47**	**351**	*e*P	Pb	12 15 52.0	-0.2
	baz=352						
TWE				S	Sb	12 15 59.4	+0.5
	baz=352						
TWT	**Tachien**	**0.53**	**270**	S	Sb	12 16 01.7	+1.1
	baz=269						
NSK	**Sanguang**	**0.56**	**320**	*e*P	Pb	12 15 54.5	+0.9
	baz=320						
NSK				S	Sb	12 16 01.9	+0.6
	baz=320						
EGS		**0.61**	**16**	*e*P	Pb	12 15 54.9	+0.3
	baz=16						
EGS				*e*S	Sb	12 16 04.0	+1.1
	baz=16						
WDT	**Danda**	**0.75**	**229**	*e*S	Sn	12 16 08.5	-1.0
	baz=228						
NSTT	**Nanjuang**	**0.78**	**299**	*e*P	Pb	12 15 57.4	0.0
	baz=299						
NSTT				*e*S	Sg	12 16 08.8	+1.0
	baz=299						

*IDC **06** 12:21:55.6±2.5, 36.85N×141.82E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.3/42, mbtmp3.4/3, ML3.2/1, MS2.5/1, Ms1 2.5/1, ms1mx2.1/38, Error ellipse: s-maj=54.0km s-min=31.5km az=41.0*
*JMA **06** 12:21:55.7±0.2, 36.26N×141.88E, h68km±4km, M3.1*
ISC 06 12:22:00.7±1.4, 36.41N±0.06×141.41E±0.09, h26km, n9, σ2968/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.84**	**213**	P	**Pb**	**12 22 14.2**	**-2.4**
CHOJ				*e*S	**Sn**	**12 22 28.6**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.85**	**325**	P	**Pn**	**12 22 16.8**	**-0.3**
JYT	**Yasato**	**1.00**	**260**	P	**Pb**	**12 22 19.1**	**-0.3**
JFK	**Kawauchi**	**1.05**	**336**	P	**Pb**	**12 22 19.1**	**-1.1**
MJAR	**Matsushiro Arr**	**2.59**	**274**	Pn	**Pb**	**12 22 42.3**	**-4.1**
	3.5nm,0.3s,baz=90,slow=15,SNR=22						
MJAR				Sn	**Sb**	**12 23 20.5**	**+2.8**
	1.7nm,0.3s,baz=110,slow=25,SNR=5.4						
MAT	**Matsushiro**	**2.59**	**274**	P	**Pb**	**12 22 43.0**	**-3.4**
MAT				S	**Sb**	**12 23 20.6**	**+2.8**
KSRS	**Korea Array**	**10.85**	**280**	LR	LR	12 28 51.5	
	comp=Z,21nm,18.2s,baz=150,slow=37						
MKAR	**Makanchi Array**	**44.45**	**303**	P	**P**	**12 30 08.5**	**-0.9**
	0.5nm,0.8s,baz=81,slow=9.0,SNR=3.3						
WRA	**Warramunga Arr**	**56.44**	**188**	P	**P**	**12 31 42.5**	**+2.3**
	0.2nm,0.3s,baz=6.5,slow=7.3,SNR=10						

*ISCJB **06** 12:26:25.3±0.7, 50.27N±0.04×18.86E±0.04, h0km, Error ellipse: s-maj=6.1km s-min=3.1km az=16.9*
*PRU **06** 12:26:26.9, 50.25N×18.85E, h0km*
*CSEM **06** 12:26:26.2±0.3, 50.26N×18.87E, h1km, ML2.6/4, Error ellipse: s-maj=6.9km s-min=3.6km az=13.0*
ISC 06 12:26:26.4±0.9, 50.18N±0.05×18.86E±0.02, h0km, n26, σ0956/40, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.57**	**233**	*e*PG	**Pb**	**12 26 39.6**	**+0.3**
OKC				*e*SG	**Sb**	**12 26 48.3**	**+0.3**
	comp=Z,7.8nm,0.2s						
OKC	**Ostrava-Krasne**	**0.57**	**233**	Pg	**Pb**	**12 26 39.6**	**+0.3**
OKC				Sg	**Sb**	**12 26 48.3**	**+0.3**
	7.8nm,0.2s						
OJC	**Ojcow**	**0.61**	**86**	*e*Pg	**Pg**	**12 26 37.7**	**-0.3**
OJC				*e*Sg	**Sg**	**12 26 45.6**	**-0.3**
OJC	**Ojcow**	**0.61**	**86**	*e*Pg	**Pg**	**12 26 37.7**	**-0.3**
OJC				*e*Sg	**Sg**	**12 26 45.6**	**-0.3**
MORC	**Moravsky Berou**	**0.94**	**245**	*e*Pg	**Pb**	**12 26 45.4**	**-0.3**
MORC				*e*Sg	**Sb**	**12 26 58.6**	**-0.1**
LANS	**Liptovska Anna**	**1.10**	**159**	*e*Pg	**Pb**	**12 26 48.8**	**+0.4**
LANS				*e*Sg	**Sn**	**12 27 05.2**	**0.0**
LANS	**Liptovska Anna**	**1.10**	**159**	*e*PG	**Pb**	**12 26 48.8**	**+0.4**
LANS				*e*SG	**Sn**	**12 27 05.1**	**-0.1**
KRLC	**Kraliky**	**1.34**	**266**	*e*SG	**Sb**	**12 27 10.2**	**0.0**
KRLC	**Kraliky**	**1.34**	**266**	Sg	**Sb**	**12 27 10.2**	**0.0**
DPC	**Dobruska-Polom**	**1.64**	**277**	*e*PG	**Pb**	**12 26 57.3**	**-0.2**
DPC				*e*SG	**Sg**	**12 27 19.1**	**+0.1**
	comp=Z,12nm,0.4s						
DPC	**Dobruska-Polom**	**1.64**	**277**	Pg	**Pb**	**12 26 57.3**	**-0.2**
DPC				Sg	**Sg**	**12 27 19.1**	**+0.1**
	12nm,0.4s						
VYHS	**Vyhne**	**1.69**	**180**	*e*Pn	**Pn**	**12 26 57.3**	**+0.1**
VYHS				*e*Sn	**Sb**	**12 27 20.7**	**+0.5**
VYHS	**Vyhne**	**1.69**	**180**	*e*PN	**Pn**	**12 26 57.3**	**+0.1**
VYHS				*e*SN	**Sb**	**12 27 20.7**	**+0.5**
VYHS				*e*LG	Lg	12 27 26.4	
VRAC	**Vranov**	**1.71**	**240**	*e*Pn	**Pb**	**12 26 58.8**	**+0.1**
VRAC				*e*Sg	**Sn**	**12 27 20.7**	**+0.7**
KSP	**Ksiaz**	**1.77**	**293**	*e*Pg	**Pg**	**12 26 59.7**	**-0.6**
KSP				*e*Sg	**Sg**	**12 27 23.7**	**+0.5**
KSP	**Ksiaz**	**1.77**	**293**	*e*Pg	**Pg**	**12 26 59.7**	**-0.6**
KSP				*e*Sg	**Sg**	**12 27 23.7**	**+0.5**
UPC	**Upice**	**1.85**	**281**	*e*SG	**Sg**	**12 27 25.8**	**-0.1**
UPC	**Upice**	**1.85**	**281**	Sg	**Sg**	**12 27 25.8**	**-0.1**
KECS	**Kecovo**	**2.00**	**147**	*e*Sn	**Sn**	**12 27 27.0**	**-0.3**
KECS	**Kecovo**	**2.00**	**147**	*e*SN	**Sn**	**12 27 27.0**	**-0.3**
GOPC	**GO Pecny, Ondr**	**2.64**	**266**	*e*SG	**Sb**	**12 27 49.1**	**+1.6**
GOPC	**GO Pecny, Ondr**	**2.64**	**266**	Sg	**Sb**	**12 27 49.1**	**+1.6**
PRU	**Pruhonice**	**2.79**	**268**	*e*SG	**Sg**	**12 27 55.6**	**-0.3**
	comp=Z,1.9nm,0.2s						
PRU	**Pruhonice**	**2.79**	**268**	Sg	**Sg**	**12 27 55.6**	**-0.3**
	1.9nm,0.2s						
KHC	**Kasperske Hory**	**3.59**	**255**	*e*SG	**Sg**	**12 28 20.5**	**-1.2**
	comp=Z,3.6nm,0.4s						
KHC	**Kasperske Hory**	**3.59**	**255**	Sg	**Sg**	**12 28 20.5**	**-1.2**
	3.6nm,0.4s						

MAN 06 12:28:44, 9.32N×125.28E, h85km, mb4.4, ML3.3, MS3.2, 2C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGP	**Cagayan de Oro**	**1.03**	**214⇑**	*e*P	Pn	12 29 04.5	+0.7
CGP				*e*S	Sn	12 29 21.0	+2.4
BUKP	**Musuan**	**1.44**	**189**	*e*P	Pn	12 29 09.7	+0.8
BUKP				*e*S	Sn	12 29 32.1	+4.5
BIPH	**Bislig**	**1.55**	**136⇑**	*i*P	Pn	12 29 10.9	+0.7
BIPH				*e*S	Sn	12 29 29.2	-0.8
PLP	**Palo**	**1.86**	**351⇓**	*e*P	Pn	12 29 15.8	+1.5
PLP				*e*S	Sn	12 29 41.8	+4.6
MATI	**Mati**	**2.54**	**158**	*e*P	Pn	12 29 26.4	+3.1
MATI				*e*S	Sn	12 29 58.8	+5.3

*IDC **06** 12:30:57.0±0.9, 0.26N×126.18E, h0km, mb3.9/7, mb1 4.0/8, mb1mx3.7/49, mbtmp3.8/8, ML3.3/1, MS3.1/1, Ms1 3.1/1, ms1mx2.4/40, Error ellipse: s-maj=50.4km s-min=16.4km az=79.0*
*ISCJB **06** 12:31:00.9±0.7, 0.23N±0.09×126.2E±0.3, h44km, mb3.9/7, MS3.1/1, Error ellipse: s-maj=44.8km s-min=12.1km az=172.8*
ISC 06 12:31:02.9±1.1, 0.2N±0.1×126.3E±0.4, h44km, n9, σ0882/8, mb3.9/7, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.24**	**182**	P	**P**	**12 35 12.3**	**-0.4**
	0.1nm,0.3s,baz=1.2,slow=7.2,SNR=3.0						
WRA	**Warramunga Arr**	**21.55**	**159**	P	**P**	**12 35 48.0**	**-0.7**
	2.6nm,0.5s,baz=337,slow=11,SNR=34						
ASAR	**Alice Springs**	**24.89**	**163**	P	**P**	**12 36 22.9**	**+1.0**
	2.7nm,0.5s,baz=344,slow=12,SNR=32						
KSRS	**Korea Array**	**37.06**	**2**	P	**P**	**12 38 09.0**	**+0.3**
	0.6nm,0.5s,baz=175,slow=9.3,SNR=3.7						
MJAR	**Matsushiro Arr**	**37.77**	**16**	P	**P**	**12 38 14.1**	**-0.7**
	0.5nm,0.5s,baz=195,slow=9.1,SNR=3.5						
USRK	**Ussuriysk Ar.**	**44.06**	**6**	P	**P**	**12 39 07.3**	**+0.9**
	1.2nm,0.6s,baz=202,slow=5.9,SNR=4.1						
TLY	**Talaya**	**54.70**	**343**	LR	LR	13 05 27.5	
	comp=Z,17nm,18.5s,slow=38						
MKAR	**Makanchi Array**	**60.18**	**327**	P	**P**	**12 41 06.0**	**-0.4**
	0.7nm,0.3s,baz=125,slow=7.3,SNR=13						
KURBB	**Kurchatov Arra**	**64.44**	**328**	P	**P**	**12 41 34.5**	**-0.2**
	0.9nm,0.5s,baz=129,slow=6.2,SNR=7.8						

*ISCJB **06** 12:31:23.9±0.4, 24.23N±0.02×121.81E±0.02, h6km±3km, Error ellipse: s-maj=3.8km s-min=2.5km az=38.1*
*JMA **06** 12:31:23.5±0.1, 24.21N×121.74E, h17km±2km, M2.2*
*TAP **06** 12:31:23.7, 24.24N×121.77E, h16km, ML3.2, B*
ISC 06 12:31:24.0±0.9, 24.24N±0.02×121.79E±0.02, h18km±3km, n44, σ0966/70, 8C-1D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.08**	**327**	P	**Pg**	**12 31 27.6**	**+0.1**
	baz=342						
EHP				*i* S	**Sg**	**12 31 30.2**	**+0.3**
	baz=342						
ENA	**Nanau**	**0.19**	**347⇑**	*i*P	**Pb**	**12 31 28.4**	**-0.4**
	baz=352						
ENA				*i* S	**Sb**	**12 31 31.7**	**-0.2**
	baz=352						
TWD	**Chiawan**	**0.24**	**228**	⇓P	**Pb**	**12 31 28.9**	**-0.8**
	baz=231						
TWD				*i* S	**Sb**	**12 31 32.9**	**-0.6**
	baz=231						
HWA	**Hwalien**	**0.31**	**213**	*e*P	**Pb**	**12 31 31.3**	**+0.2**
	baz=218						
TWC	**Suao**	**0.37**	**8⇑**	*i*P	**Pg**	**12 31 31.7**	**-0.1**
	baz=7.0						
TWC				S	**Sg**	**12 31 36.3**	**-0.7**
	baz=7.0						
NNS	**Nan Shan**	**0.43**	**298⇑**	*i*P	**Pg**	**12 31 32.5**	**-0.4**
	baz=299						
NNS				*i* S	**Sg**	**12 31 38.4**	**-0.4**
	baz=299						
ENTT	**Nioudou**	**0.45**	**333⇑**	*i*P	**Pg**	**12 31 33.0**	**-0.2**
	baz=333						
ENTT				*i* S	**Sg**	**12 31 39.2**	**-0.1**
	baz=333						
WHF	**Hehuan Shan**	**0.49**	**259⇑**	*i*P	**Pg**	**12 31 33.5**	**-0.6**
	baz=260						
WHF				*e*S	**Sg**	**12 31 40.1**	**-0.7**
	baz=260						
TWE	**Neicheng**	**0.49**	**347⇑**	*i*P	**Pb**	**12 31 33.9**	**-0.2**
	baz=348						
TWE				*i* S	**Sg**	**12 31 40.2**	**-0.4**
	baz=348						
ESL	**Shilin**	**0.54**	**218**	*e*P	**Pb**	**12 31 34.2**	**-0.7**
	baz=224						
ESL				*e*S	**Sb**	**12 31 41.6**	**-0.7**
	baz=224						
TWT	**Tachien**	**0.56**	**271**	*e*P	**Pb**	**12 31 35.1**	**-0.3**
	baz=272						
TWT				S	**Sg**	**12 31 42.8**	**0.0**
	baz=272						
NSK	**Sanguang**	**0.58**	**318⇑**	*i*P	**Pb**	**12 31 35.4**	**-0.4**
	baz=318						
NSK				*i* S	**Sb**	**12 31 43.2**	**-0.5**
	baz=318						
EGS		**0.61**	**12**	⇑P	**Pb**	**12 31 36.4**	**+0.1**
	baz=18						
TWA	**Mucha**	**0.76**	**346**	*e*P	**Pb**	**12 31 38.1**	**-0.6**
	baz=346						
WDT	**Danda**	**0.77**	**231**	*e*P	**Pb**	**12 31 38.6**	**-0.5**
	baz=240						
WDT				*e*S	**Sg**	**12 31 49.5**	**0.0**
	baz=240						
NSTT	**Nanjuang**	**0.82**	**299**	*e*P	**Pb**	**12 31 39.8**	**+0.1**
	baz=299						
NSTT				*e*S	**Sg**	**12 31 50.7**	**-0.1**
	baz=299						
NWF	**Wu-fen Shan**	**0.83**	**359**	*e*P	**Pb**	**12 31 40.1**	**+0.2**
	baz=351						
NWF				*e*S	**Sg**	**12 31 52.2**	**+1.0**
	baz=351						
EHY	**Hungye**	**0.85**	**210**	*e*P	**Pb**	**12 31 40.1**	**-0.1**
	baz=223						
SMLT	**Sun Moon Lake**	**0.89**	**246**	*e*P	**Pb**	**12 31 40.4**	**-0.5**
	baz=241						
SMLT				*e*S	**Sb**	**12 31 52.3**	**-0.2**
	baz=241						
TYC	**Yuchr**	**0.92**	**249**	*e*P	**Pb**	**12 31 40.8**	**-0.6**
	baz=244						
TYC				*e*S	**Sb**	**12 31 52.7**	**-0.5**
	baz=244						
TWS1	**Kuangyinshan**	**0.92**	**339**	*e*P	**Pn**	**12 31 41.9**	**-0.2**
	baz=338						
TWQ1	**Liyutan**	**0.93**	**277**	*e*P	**Pg**	**12 31 42.8**	**+0.6**
	baz=278						
TWQ1				*e*S	**Sn**	**12 31 56.4**	**+1.1**
	baz=278						
NSY	**Sanyi**	**0.95**	**281**	*e*P	**Pg**	**12 31 43.8**	**+1.2**
	baz=281						
TWF1	**Yuli**	**0.99**	**207**	*e*P	**Pb**	**12 31 41.9**	**-0.9**
	baz=220						
TCU	**Taichung**	**1.02**	**265**	*e*P	**Pg**	**12 31 44.7**	**+0.8**
	baz=266						
TWY	**Chenhua**	**1.04**	**351**	*e*P	**Pg**	**12 31 44.8**	**+0.5**
	baz=343						
TWY				*e*S	**Sn**	**12 31 58.1**	**+0.2**
	baz=343						
YUS	**Yu-Shan**	**1.07**	**226**	*e*P	**Pb**	**12 31 43.7**	**-0.6**
	baz=229						
YUS				*e*S	**Sb**	**12 31 58.2**	**0.0**
	baz=229						
WNT	**Mingjian**	**1.07**	**251**	*e*P	**Pg**	**12 31 45.1**	**+0.3**
	baz=250						
WNT				*e*S	**Sg**	**12 32 01.0**	**+2.0**
	baz=250						
JYNG	**Yonagunijimaku**	**1.07**	**79**	P	**Pb**	**12 31 44.6**	**+0.5**
YOJ	**Yonaguni jima**	**1.14**	**79**	P	**Pb**	**12 31 45.3**	**+0.2**
YOJ				*e*S	**Sg**	**12 32 01.1**	**+0.2**
YOJ	**Yonaguni jima**	**1.14**	**79**	*e*P	**Pn**	**12 31 45.1**	**0.0**
	baz=66						
ALS	**Alishan**	**1.16**	**231**	*e*P	**Pb**	**12 31 45.7**	**0.0**
	baz=233						
CHN5	**Tsauling**	**1.20**	**238**	*e*P	**Pg**	**12 31 47.0**	**-0.3**
	baz=226						
CHN5				S	**Sg**	**12 32 04.5**	**+1.4**
	baz=226						
ELDTW	**Lidau**	**1.26**	**214**	*e*P	**Pn**	**12 31 46.7**	**-0.3**
	baz=203						
CHN4	**Tsaushan**	**1.41**	**231**	*e*P	**Pg**	**12 31 50.7**	**-0.5**
	baz=235						
CHN4				*e*S	**Sg**	**12 32 11.5**	**+1.9**
	baz=235						
STYT	**Tauyuan**	**1.43**	**222**	*e*P	**Pb**	**12 31 49.7**	**-0.5**
	baz=225						
STYT				*e*S	**Sg**	**12 32 10.4**	**+0.1**
	baz=225						
WTP	**Ta-pu**	**1.46**	**228**	*e*P	**Pb**	**12 31 51.2**	**+0.5**
	baz=231						
WTP				*e*S	**Sg**	**12 32 11.5**	**+0.1**
	baz=231						
TWG	**Pinlang**	**1.56**	**205**	*e*P	**Pb**	**12 31 52.3**	**-0.1**
	baz=193						
CHN1	**Nanshi**	**1.56**	**228**	*e*P	**Pg**	**12 31 53.9**	**-0.3**
	baz=232						
CHN1				*e*S	**Sg**	**12 32 15.0**	**+0.5**
	baz=232						
IRIF	**Iriomote-Funau**	**1.77**	**87**	P	**Pb**	**12 31 55.1**	**-0.9**
JKRS	**Kuro-shima**	**2.03**	**90**	*e*S	**Sb**	**12 32 24.4**	**-0.8**
EAST	**Anshuo**	**2.04**	**205**	*e*P	**Pn**	**12 31 58.1**	**+0.5**
	baz=196						
JIJ	**Ishigaki jima**	**2.15**	**86**	*e*S	**Sn**	**12 32 25.8**	**+0.5**
PNG	**Penghu**	**2.15**	**252**	*e*P	**Pb**	**12 32 00.9**	**-1.6**
	baz=255						

*NIED **06** 12:38:00, 46.70N×153.30E, h8km, Mw4.1 Best double couple: M0 1.48000×10^15 NP1: φ=204.00000°, δ=24.00000°, λ=114.00000° NP2: φ=358.00000°, δ=68.00000°, λ=79.00000°.*
*JMA **06** 12:38:38.0±0.8, 46.72N×153.34E, h30km, M4.4*
*SKHL **06** 12:38:40.4±1.3, 46.54N×153.19E, h62km±7km, mb4.7/9*
*ISCJB **06** 12:38:41.0±0.5, 46.73N±0.05×152.90E±0.07, h56km, mb4.1/20, MS3.3/13, Error ellipse: s-maj=9.7km s-min=3.6km az=139.8*
*MOS **06** 12:38:42.2±1.2, 46.77N×152.78E, h65km, mb4.4/11, Error ellipse: s-maj=10.1km s-min=7.9km az=71.5*
*IDC **06** 12:38:42.8±3.3, 46.82N×152.76E, h55

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.83**	**248**	*e*PN	**Pn**	**12 39 40.4**	**+1.3**
KUR				*e*S	**Sn**	**12 40 24.6**	**+1.8**
KUR	comp=Z,41nm,0.3s			pmax	pmax		
KUR	comp=E,34nm,0.4s			smax	smax		
KUR	comp=N,99nm,0.5s			smax	smax		
KUR	**Kuril'sk**	**3.83**	**248**	*i* P	**Pn**	**12 39 38.0**	**-1.1**
KUR	comp=N,20nm,0.3s			AMB	AMB	12 39 39.0	
KUR	comp=N,30nm,0.3s			AMB	AMB	12 39 39.0	
KUR	comp=N,80nm,0.3s			AMB	AMB	12 39 39.0	
KUR				*i* S	**Sn**	**12 40 22.5**	**-0.3**
KUR	comp=N,330nm,0.5s			A	A	12 40 36.3	
SKR	**Severo-Kuril's**	**4.46**	**27**	*e*PN	**Pn**	**12 39 48.9**	**+1.3**
SKR	comp=Z,101nm,0.9s			pmax	pmax		
SKR	**Severo-Kuril's**	**4.46**	**27**	*e*P	**Pn**	**12 39 47.7**	**+0.1**
SKR	comp=Z,100nm,0.9s			AMB	AMB	12 39 49.2	
SKR				*e*S	**Sn**	**12 40 37.1**	**-0.9**
SKR	comp=Z,230nm,0.6s			A	A	12 40 46.6	
SKR	comp=Z,310nm,0.6s			A	A	12 40 46.6	
PAU	**Pauzhetka**	**5.35**	**27**	*e*P	**Pn**	**12 40 00.7**	**+0.8**
PAU	comp=Z,230nm,1.0s			AMB	AMB	12 40 01.7	
PAU				*e*S	**Sn**	**12 40 57.8**	**-2.3**
PAU	comp=Z,200nm,0.6s			A	A	12 41 00.2	
YUK	**Yuzh-Kuril'sk**	**5.66**	**244**	*d i*PN	**Pn**	**12 40 05.6**	**+1.5**
YUK				*i* S	**Sn**	**12 41 11.0**	**+3.2**
YUK	comp=Z,117nm,0.5s			pmax	pmax		
YUK	comp=N,51nm,0.3s			pmax	pmax		
YUK	comp=E,68nm,0.4s			pmax	pmax		
YUK	comp=N,83nm,0.4s			smax	smax		
YUK	comp=E,235nm,0.6s			smax	smax		
YUK	**Yuzh-Kuril'sk**	**5.66**	**244**	*i* P	**Pn**	**12 40 04.3**	**+0.2**
YUK	comp=E,50nm,0.6s			AMB	AMB	12 40 06.4	
YUK	comp=E,70nm,0.6s			AMB	AMB	12 40 06.4	
YUK	comp=E,130nm,0.6s			AMB	AMB	12 40 06.4	
YUK				*i* S	**Sn**	**12 41 07.3**	**-0.5**
YUK	comp=E,60nm,0.5s			A	A	12 41 28.7	
YUK	comp=E,240nm,0.5s			A	A	12 41 28.7	
NEM2	**Nemuro 2**	**6.11**	**239**	P	**Pn**	**12 40 08.9**	**-1.3**
NEM2				*e*S	**Sn**	**12 41 15.5**	**-3.2**
JRA	**Rausu**	**6.17**	**245**	P	**Pn**	**12 40 12.8**	**+1.7**
JNK	**Nakash**	**6.60**	**244**	P	**Pn**	**12 40 17.9**	**+0.9**
JNK				*e*S	**Sn**	**12 41 30.9**	**0.0**
JTKR	**Abashiri--Toko**	**6.93**	**249**	P	**Pn**	**12 40 23.2**	**+1.8**
JAK	**Akkeshi**	**6.94**	**240**	P	**Pn**	**12 40 20.5**	**-1.2**
JAK				*e*S	**Sn**	**12 41 35.6**	**-3.6**
YSS	**Yuzh-Sakhalins**	**6.96**	**275**⇑	*e*PN	**Pn**	**12 40 26.2**	**+4.3**
YSS	comp=Z,10.0nm,0.5s			pmax	pmax		
YSS	comp=Z,300nm,12.0s			MLR	MLR		
YSS	**Yuzh-Sakhalins**	**6.96**	**275**	*e*P	**Pn**	**12 40 25.4**	**+3.5**
YSS	comp=Z,40nm,0.7s			AMB	AMB	12 40 27.3	
PETK	**Petropavlovsk-**	**7.06**	**24**	P	**Pn**	**12 40 24.0**	**+0.8**
PETK	comp=Z,0.3nm,0.3s,baz=181,slow=12,SNR=9.3 **Petropavlovsk-**	**7.06**	**24**	PN	**Pn**	**12 40 24.0**	**+0.8**
JMP	**Maruseppu**	**7.26**	**251**	P	**Pn**	**12 40 28.7**	**+2.6**
PET	**Petropavlovsk**	**7.28**	**29**	*e*PN	Pn	12 40 29.9	+3.7
PET	comp=Z,100nm,14.0s			MLR	MLR		
PET	**Petropavlovsk**	**7.28**	**29**	*e*P	**Pn**	**12 40 25.4**	**-0.8**
PET				*e*S	**Sn**	**12 41 43.0**	**-4.2**
PET	comp=Z,60nm,0.8s			A	A	12 42 12.2	
JAR	**Ashorobuto**	**7.34**	**245**	P	**Pn**	**12 40 28.1**	**+0.9**
JAR				*e*S	**Sn**	**12 41 48.9**	**-0.2**
JOB	**Onbets**	**7.52**	**242**	*e*S	**Sn**	**12 41 51.3**	**-2.0**
UGL	**Uglegorsk**	**7.64**	**292**	*e*PN	**Pn**	**12 40 29.3**	**-1.8**
UGL	**Uglegorsk**	**7.64**	**292**	*e*P	**Pn**	**12 40 33.7**	**+2.6**
UGL	comp=Z,44nm,0.5s			AMB	AMB	12 40 37.0	
HRK	**Horoka**	**7.66**	**248**	*e*P	**Pn**	**12 40 33.3**	**+1.7**
ASAJ	**Asahikawa**	**7.72**	**254**	P	**Pn**	**12 40 35.4**	**+3.1**
JKK2	**Kamakawa 2**	**7.72**	**252**	P	**Pn**	**12 40 34.7**	**+2.3**
TYV	**Tymovskoe**	**7.90**	**305**	*e*PN	**Pn**	**12 40 37.0**	**+2.2**
TYV	comp=Z,22nm,1.0s			pmax	pmax		
TYV	**Tymovskoe**	**7.90**	**305**	*e*P	**Pn**	**12 40 37.0**	**+2.2**
TYV	comp=Z,20nm,1.0s			AMB	AMB	12 40 40.8	
JCH	**Churui**	**7.97**	**242**	*e*S	**Sn**	**12 42 00.7**	**-3.6**
MYR	**Moyori**	**8.20**	**240**	*e*S	**Sn**	**12 42 05.1**	**-5.0**
ERM	**Erimo**	**8.44**	**239**	*e*PN	**Pn**	**12 40 41.9**	**-0.3**
JEM	**Erimo**	**8.44**	**239**	*e*S	**Sn**	**12 42 10.6**	**-5.4**
JBT2	**Biratori 2**	**8.49**	**246**	P	**Pn**	**12 40 43.4**	**+0.5**
JNBK	**Urakawa-nobuka**	**8.53**	**242**	*e*S	**Sn**	**12 42 13.5**	**-4.6**
JKB	**Kayabe**	**9.80**	**244**	P	**Pn**	**12 40 58.9**	**-1.9**
JKB				*e*S	Sn	12 42 43.3	-6.0
JTM	**Tenmabayashi**	**10.44**	**239**	*e*S	Sn	12 42 56.0	-8.8
JANG	**Nango**	**10.44**	**236**	*e*S	Sn	12 42 53.2	-12
GRNR	**Gornyy**	**11.58**	**296**	*e*P	**Pn**	**12 41 27.4**	**+2.3**
GRNR	comp=Z,20nm,1.0s			AMB	AMB	12 41 31.0	
HABR	**Khabarovsk**	**12.17**	**285**	*e*PN	**Pn**	**12 41 31.4**	**-1.6**
HABR	comp=N,6.0nm,0.8s			pmax	pmax		
HABR	comp=E,2.0nm,0.4s			pmax	pmax		
HABR	comp=S,5.0nm,0.8s			pmax	pmax		
HABR	comp=Z,108nm,14.0s			MLR	MLR		
HABR	**Khabarovsk**	**12.17**	**285**	*e*P	**Pn**	**12 41 31.4**	**-1.6**
MA2	**Magadan**	**12.89**	**355**	LR	LR	12 46 19.5	
EKMR	comp=Z,73nm,21.2s,baz=114,slow=36 **Ekimchan**	**14.29**	**303**	*e*P	**Pn**	**12 42 01.9**	**+0.1**
EKMR	comp=Z,4.0nm,0.6s			AMB	AMB	12 42 12.0	
KLR	**Kul'dur**	**14.37**	**288**	LR	LR	12 47 38.0	
KLR	comp=Z,136nm,19.6s,baz=114,slow=38 **Kul'dur**	**14.37**	**288**	*i* P	**Pn**	**12 42 02.4**	**-0.4**
KLR	**Kul'dur**	**14.37**	**288**	*e*P	**Pn**	**12 42 02.4**	**-0.4**
USRK	**Ussuriysk Ar.**	**14.89**	**268**	P	**Pn**	**12 42 10.2**	**+0.5**
USRK	comp=Z,0.2nm,0.3s,baz=74,slow=8.8,SNR=5.8			LR	LR	12 47 56.2	
MJAR	comp=Z,88nm,19.2s,baz=62,slow=37 **Matsushiro Arr**	**14.98**	**232**	P	**Pn**	**12 42 09.3**	**-1.6**
MJAR	comp=Z,0.2nm,0.3s,baz=41,slow=8.1,SNR=4.4			LR	LR	12 48 19.0	
MAJO	comp=Z,29nm,21.0s,baz=40,slow=39 **Matsushiro**	**14.98**	**232**	*i* P	**Pn**	**12 42 11.0**	**+0.1**
BMKR	**Bomnak**	**17.11**	**306**	*e*P	**Pn**	**12 42 35.5**	**-2.2**
BMKR	comp=Z,4.0nm,0.9s			AMB	AMB	12 42 42.9	
KROS	**Kirovskiy**	**18.08**	**305**	*e*P	**Pn**	**12 42 51.2**	**+1.6**
KROS	comp=Z,5.0nm,0.8s			AMB	AMB	12 42 54.5	
YAK	**Yakutsk**	**20.23**	**327**	LR	LR	12 50 58.6	
YAK	comp=Z,72nm,18.5s,baz=122,slow=36 **Yakutsk**	**20.23**	**327**	*i* P	Pn	12 43 15.7	+0.7
YAK	comp=Z,14nm,1.4s			pmax	pmax		
YAK	**Yakutsk**	**20.23**	**327**	*e*P	Pn	12 43 15.7	+0.7
KSRS	**Korea Array**	**20.67**	**252**	P	**P**	**12 43 16.8**	**-0.9**
KSRS	comp=Z,1.2nm,0.8s,baz=58,slow=9.7,SNR=9.6			LR	LR	12 50 40.2	
KSRS	comp=Z,41nm,18.1s,baz=41,slow=35 **Korea Array**	**20.67**	**252**	*e*P	**P**	**12 43 19.5**	**+1.8**
H11N2	**WAKE ISLAND Hy**	**29.30**	**152**	T	T	13 16 00.1	
H11N1	baz=340,slow=76,SNR=677 **WAKE ISLAND Hy**	**29.32**	**152**	T	T	13 16 01.6	
H11N3	baz=340,slow=76,SNR=436 **WAKE ISLAND Hy**	**29.32**	**152**	T	T	13 16 31.3	
HHC	baz=340,slow=76,SNR=309 **Hu-ho-hao-te**	**30.15**	**274**	*e*P	**P**	**12 44 47.9**	**+0.7**
HHC	comp=Z,15nm,0.9s			pmax	pmax		
HHC	comp=Z,68nm,4.6s			pmax	pmax		
H11S1	**WAKE ISLAND Hy**	**30.39**	**153**	T	T	13 17 31.5	
H11S3	baz=341,slow=76,SNR=475 **WAKE ISLAND Hy**	**30.40**	**153**	T	T	13 17 31.2	
H11S2	baz=341,slow=76,SNR=564 **WAKE ISLAND Hy**	**30.41**	**153**	T	T	13 17 29.7	
SONM	baz=341,slow=76,SNR=368 **Songino Array**	**31.19**	**289**	LR	LR	12 58 42.1	
COLA	comp=Z,64nm,18.3s,baz=68,slow=39 **College**	**36.21**	**38**	*e*P	**P**	**12 45 40.2**	**+0.7**
ILAR	**Eielson Array**	**36.62**	**39**	P	**P**	**12 45 42.5**	**-0.6**
ILAR	comp=Z,1.3nm,1.1s,baz=283,slow=8.3,SNR=7.6			pmax	pmax		
ILAR	**Eielson Array**	**36.62**	**39**	*e*P	**P**	**12 45 43.4**	**+0.3**
ILAR	comp=Z,1.0nm,1.1s			pmax	pmax		
ILAR	**Eielson Array**	**36.62**	**39**	*e*P	**P**	**12 45 43.4**	**+0.3**
INK	**Inuvik**	**41.71**	**32**	P	**P**	**12 46 26.7**	**+1.2**
ZALV	comp=Z,2.9nm,0.8s,baz=291,slow=7.0,SNR=8.9 **Zalesovo Beam**	**42.48**	**306**	LR	LR	13 05 29.7	
MKAR	comp=Z,97nm,18.9s,baz=68,slow=38 **Makanchi Array**	**46.80**	**297**	P	**P**	**12 47 06.0**	**-0.5**
MKAR	comp=Z,0.4nm,0.6s,baz=75,slow=9.2,SNR=4.7 **Makanchi Array**	**46.80**	**297**	*e*P	**P**	**12 47 07.0**	**+0.5**
MKAR	**Makanchi Array**	**46.80**	**297**	*e*P	**P**	**12 47 07.0**	**+0.5**
KURK	**Kurchatov**	**47.23**	**304**	P	**P**	**12 47 08.3**	**-1.4**
KURK	comp=Z,1.0nm,0.7s			pmax	pmax		
KURBB	**Kurchatov Arra**	**47.32**	**303**	P	**P**	**12 47 08.3**	**-2.1**
RES	comp=Z,0.6nm,0.7s,baz=66,slow=8.4,SNR=5.1 **Resolute Bay**	**50.86**	**18**	LR	LR	13 09 58.7	
YKA	comp=Z,19nm,21.1s,baz=46,slow=37 **Yellowknife Ar**	**50.99**	**37**	P	**P**	**12 47 38.9**	**+0.7**
YKA	comp=Z,1.4nm,0.8s,baz=298,slow=7.1,SNR=9.6 **Yellowknife Ar**	**50.99**	**37**	*e*P	**P**	**12 47 39.1**	**+0.8**
YKA	comp=Z,1.0nm,0.8s			pmax	pmax		
YKA	**Yellowknife Ar**	**50.99**	**37**	*e*P	**P**	**12 47 39.1**	**+0.8**
CMAR	**Chiang Mai Arr**	**52.23**	**256**	P	**P**	**12 47 48.9**	**+0.7**
CMAR	comp=Z,1.7nm,0.8s,baz=30,slow=8.2,SNR=9.7			LR	LR	13 12 47.0	
CMAR	comp=Z,14nm,19.8s,baz=190,slow=39 **Chiang Mai Arr**	**52.23**	**256**	*e*P	**P**	**12 47 49.9**	**+1.8**
CMAR	comp=Z,2.0nm,0.9s			pmax	pmax		
CMAR	**Chiang Mai Arr**	**52.23**	**256**	*e*P	**P**	**12 47 49.9**	**+1.8**
ARU	**Arti**	**54.90**	**317**	LR	LR	13 14 50.0	
NEW	comp=Z,37nm,18.1s,baz=89,slow=40 **Newport**	**57.28**	**53**	LR	LR	13 13 43.5	
ARCES	comp=Z,13nm,18.2s,slow=37 **ARCESS Array B**	**57.78**	**341**	LR	LR	13 16 39.5	
AKTO	comp=Z,27nm,19.5s,baz=52,slow=40 **Aktyubinsk**	**58.60**	**312**	LR	LR	13 15 24.8	
SUMG	comp=Z,57nm,20.4s,slow=38 **Summit**	**60.69**	**4**	*i* P	**P**	**12 48 48.6**	**+0.7**
SUMG	comp=Z,9.4nm,0.9s **Summit**	**60.69**	**4**	*i* P	**P**	**12 48 48.6**	**+0.7**
SUMG	comp=Z,9.0nm,0.9s			pmax	pmax		
FINES	**FINESS Array B**	**63.96**	**335**	P	**P**	**12 49 09.2**	**-0.2**
PDAR	comp=Z,2.8nm,0.7s,baz=43,slow=6.5,SNR=13 **Pinedale Array**	**64.85**	**54**	P	**P**	**12 49 16.2**	**+0.3**
OBN	comp=Z,1.0nm,0.8s,baz=239,slow=2.6,SNR=7.0 **Obninsk**	**65.21**	**325**	LR	LR	13 19 54.7	
NB2	comp=Z,33nm,18.2s,baz=194,slow=38 **NORSAR Subarra**	**68.16**	**341**	P	**P**	**12 49 36.1**	**-0.4**
NOA	comp=Z,4.9nm,0.8s,baz=28,slow=6.5 **NORSAR Array B**	**68.16**	**341**	P	**P**	**12 49 36.0**	**-0.4**
NOA	comp=Z,3.5nm,0.8s,baz=29,slow=6.3,SNR=12			LR	LR	13 23 46.9	
NOA	comp=Z,14nm,18.5s,baz=30,slow=40 **NORSAR Array B**	**68.16**	**341**	*e*P	**P**	**12 49 36.5**	**0.0**
NOA	comp=Z,4.0nm,0.8s			pmax	pmax		
NOA	**NORSAR Array B**	**68.16**	**341**	*e*P	**P**	**12 49 36.5**	**0.0**
HFS	**Hagfors**	**68.39**	**339**	P	**P**	**12 49 37.6**	**-0.2**
WRA	comp=Z,3.0nm,0.5s,baz=55,slow=6.2,SNR=16 **Warramunga Arr**	**68.49**	**199**	P	**P**	**12 49 38.4**	**-0.5**
AKASG	comp=Z,0.7nm,0.9s,baz=26,slow=7.0,SNR=3.6 **Malin Array Be**	**71.45**	**326**	P	**P**	**12 49 56.4**	**-0.3**
AKASG	comp=Z,1.4nm,0.3s,baz=34,slow=6.4,SNR=7.3			LR	LR	13 22 58.4	
ASAR	comp=Z,27nm,20.5s,baz=15,slow=37 **Alice Springs**	**72.18**	**198**	P	**P**	**12 50 02.5**	**+1.1**
CLL	comp=Z,0.7nm,0.7s,baz=9.0,slow=4.7,SNR=11 **Collm**	**76.39**	**335**	*i* P	**P**	**12 50 25.2**	**-0.4**
CLL	comp=Z,6.0nm,1.1s **Collm**	**76.39**	**335**	*i* P	**P**	**12 50 25.2**	**-0.4**
CLL	comp=Z,6.0nm,1.1s			pmax	pmax		
TXAR	**Lajitas Array**	**77.61**	**60**	P	**P**	**12 50 33.8**	**+0.8**
TXAR	comp=Z,0.5nm,0.5s,baz=304,slow=16,SNR=4.2 **Lajitas Array**	**77.61**	**60**	*e*P	P	12 50 38.3	+5.3
TXAR	comp=Z,1.0nm,0.5s			pmax	pmax		
BRTR	**Keskin Array B**	**78.27**	**317**	P	**P**	**12 50 37.4**	**+0.8**
GERES	comp=Z,1.0nm,0.7s,baz=87,slow=5.3,SNR=5.8 **GERESS Array B**	**78.37**	**334**	P	**P**	**12 50 36.5**	**-0.4**
	comp=Z,0.8nm,0.3s,baz=46,slow=5.6,SNR=3.7						

NNC 06 12:45:33.7±2.2, 37°41N×71°18E, h0km, mb3.9, mpv3.5, 3C-7D, Error ellipse: s-maj=18.5km s-min=8.3km az=166.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.32**	**308**	⇓P	Pn	12 46 13.2	-0.1
DZET	30nm,0.4s			⇓S	Sn	12 46 44.1	+1.5
TWC	55nm,0.5s			⇓S	Sn	12 46 44.1	+1.5
MNAS	**Manas**	**5.17**	**11**	⇑S	Sn	12 47 54.1	+1.1
KK31	2.1nm,0.3s **Karatay Array**	**5.71**	**355**	⇓P	Pn	12 47 00.8	+1.0
KK31	0.9nm,0.3s,baz=175,slow=12,SNR=37			⇓S	Sn	12 48 06.8	+0.7
AAK	1.2nm,0.3s,baz=189,slow=26,SNR=6.9 **Ala-Archa**	**5.81**	**25**	⇑P	Pn	12 47 02.4	+1.1
AAK	2.6nm,0.4s			⇓S	Sn	12 48 10.0	+1.3
TKM2	3.9nm,0.7s **Tokmak 2**	**6.46**	**30**	⇓P	Pn	12 47 10.2	-0.1
AB31	1.3nm,0.5s **Akbulak array**	**14.37**	**329**	⇓P	Pn	12 48 54.1	-4.2
AKTO	0.4nm,0.5s **Aktyubinsk**	**16.08**	**328**	⇑P	Pn	12 49 19.7	-1.3
	2.2nm,0.7s						

IDC 06 12:49:53.0±1.9, 10°41S×124°15E, h0km, mb3.6/1, mb1 3.4/4, mb1mx3.2/40, mbtmp3.2/4, ML2.9/3, MS3.4/1, Ms1 3.4/1, ms1mx2.5/31, Error ellipse: s-maj=109.1km s-min=28.4km az=62.0, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**7.78**	**169**	Pn	Pn	12 51 48.1	+0.6
FITZ	0.1nm,0.3s,baz=351,slow=8.1,SNR=11			Sn	Sn	12 53 10.4	-6.0
WRA	0.7nm,0.3s,baz=269,slow=20,SNR=8.9 **Warramunga Arr**	**13.65**	**135**	Pn	Pn	12 53 06.9	-1.0
WRA	0.1nm,0.3s,baz=312,slow=13,SNR=6.0			Sn	Sn	12 55 33.8	-6.6
ASAR	0.1nm,0.3s,baz=310,slow=26,SNR=6.4 **Alice Springs**	**16.13**	**146**	Pn	Pn	12 53 41.5	+0.1
ASAR	0.0nm,0.3s,baz=317,slow=12,SNR=4.0			Sn	Sn	12 56 32.7	-8.3
TGY	0.0nm,0.3s,baz=316,slow=21,SNR=3.0 **Tagaytay City**	**24.56**	**352**	LR	LR	13 05 09.2	
MKAR	comp=Z,72nm,18.4s,baz=121,slow=37 **Makanchi Array**	**68.10**	**330**	P	P	13 00 54.7	0.0
	0.3nm,0.5s,baz=136,slow=7.5,SNR=3.8						

*RSPR **06** 12:58:25.1, 18°53N×68°66W, h165km±2km, MD4.1/19*
*ISCJB **06** 12:58:26.6±0.4, 18°59N±0°06×68°66W±0°03, h143km, Error ellipse: s-maj=8.4km s-min=3.9km az=179.9*
ISC 06 12:58:27.2±1.0, 18°51N±0°10×68°65W±0°04, h143km, n44, σ1§13/46, 18C-8D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DR12	**Loma Pena Alta**	**0.75**	**292**⇓	*i*P	**Pn**	**12 58 48.8**	**-0.6**
IMPR	**Mona Island, P**	**0.81**	**122**⇑	*e*P	**Pn**	**12 58 49.2**	**-0.4**
IDE	**Isla Desecheo**	**1.12**	**96**⇑	*e*P	**Pn**	**12 58 52.2**	**-0.2**
IDE	**Isla Desecheo**	**1.12**	**96**	*e*S	**Sn**	**12 59 13.1**	**+1.5**
DR08	**Loma La Naviza**	**1.38**	**289**⇓	*i*P	**Pn**	**12 58 55.1**	**+0.1**
DR08				*e*S	**Sn**	**12 59 16.7**	**+0.6**
AGPR	**Aguadilla, PR**	**1.46**	**91**⇑	*e*P	**Pn**	**12 58 56.2**	**+0.5**
AGPR	**Aguadilla, PR**	**1.46**	**91**	*e*S	**Sn**	**12 59 19.1**	**+1.4**
MPR	**Mayaguez**	**1.47**	**101**⇑	*e*P	**Pn**	**12 58 56.6**	**+0.8**
MPR	**Mayaguez**	**1.47**	**101**⇑	*e*P	**Pn**	**12 58 56.6**	**+0.8**
MPR	**Mayaguez**	**1.47**	**101**	*e*S	**Sn**	**12 59 19.6**	**+1.9**
LSP	**Las Mesas**	**1.52**	**102**⇑	*e*P	**Pn**	**12 58 56.3**	**-0.2**
LSP	**Las Mesas**	**1.52**	**102**	*e*S	**Sn**	**12 59 20.9**	**+2.0**
CRPR	**Cabo Rojo, PR**	**1.55**	**109**⇑	*e*P	**Pn**	**12 58 56.3**	**-0.4**
CRPR	**Cabo Rojo, PR**	**1.55**	**109**	*e*S	**Sn**	**12 59 20.0**	**+0.8**
GBPR	**Guanica, Bosqu**	**1.77**	**107**⇑	*e*P	**Pn**	**12 58 59.1**	**0.0**
GBPR	**Guanica, Bosqu**	**1.77**	**107**	*e*S	**Sn**	**12 59 25.2**	**+1.7**
AOPR	**Arecibo Observ**	**1.81**	**95**⇓	*e*P	**Pn**	**12 58 59.3**	**-0.4**
AOPR	**Arecibo Observ**	**1.81**	**95**⇑	*e*P	**Pn**	**12 58 59.4**	**-0.2**
AOPR	**Arecibo Observ**	**1.81**	**95**	*e*S	**Sn**	**12 59 26.3**	**+1.8**
OBIP	**Obispado Ponce**	**2.00**	**103**⇑	*e*P	**Pn**	**12 59 01.7**	**-0.2**
OBIP	**Obispado Ponce**	**2.00**	**103**	*e*S	**Sn**	**12 59 30.4**	**+2.0**
CELP	**Cerrillos**	**2.02**	**102**⇑	*e*P	**Pn**	**12 59 02.0**	**-0.1**
CELP				*e*S	**Sn**	**12 59 29.6**	**+0.8**
ICMP	**Isla Caja de M**	**2.11**	**107**⇑	*e*P	**Pn**	**12 59 01.9**	**-1.2**
ICMP	**Isla Caja de M**	**2.11**	**107**	*e*S	**Sn**	**12 59 32.3**	**+1.4**
SJG	**San Juan**	**2.41**	**99**⇑	*e*P	**Pn**	**12 59 06.0**	**-0.8**
SDDR	**Presa de Saban**	**2.54**	**281**⇑	*e*P	**Pn**	**12 59 09.6**	**+1.1**
CBYP	**Canovanas**	**2.66**	**95**⇑	*e*P	**Pn**	**12 59 08.7**	**-1.3**
CBYP	**Canovanas**	**2.66**	**95**⇑	*e*P	**Pn**	**12 59 08.8**	**-1.3**
HUMP	**Col San Antoni**	**2.69**	**97**⇑	*e*P	**Pn**	**12 59 09.4**	**-0.8**
HUMP	**Col San Antoni**	**2.69**	**97**⇓	*e*P	**Pn**	**12 59 09.6**	**-0.7**
CULB	**Culebra**	**3.19**	**93**⇓	*e*P	**Pn**	**12 59 15.0**	**-1.7**
STVI	**Saint Thomas**	**3.51**	**92**⇑	*e*P	**Pn**	**12 59 19.5**	**-1.4**
STVI	**Saint Thomas**	**3.51**	**92**⇓	*e*P	**Pn**	**12 59 19.8**	**-1.1**
GRTK	**Grand Turk**	**3.79**	**322**⇓	*e*P	**Pn**	**12 59 23.7**	**-0.8**
ABV	**Anegada**	**4.10**	**86**⇑	*e*P	**Pn**	**12 59 27.9**	**-0.7**
CBRI	**Barrientos, No**	**11.46**	**201**	*e*P	**Pn**	**13 01 07.3**	**+0.5**
GRMC	**Gramalote, San**	**11.46**	**201**	*e*P	**Pn**	**13 01 03.9**	**-2.9**
PAMC	**Pamplona, Colo**	**11.78**	**200**	*e*P	**Pn**	**13 01 11.7**	**+0.4**
BRRC	**Barranca, Sant**	**12.36**	**204**	*e*P	**Pn**	**13 01 18.2**	**-0.2**
BARC	**Barichara**	**12.64**	**201**	*e*P	**Pn**	**13 01 21.5**	**-0.8**
RUSC	**La Rusia**	**13.26**	**200**	*e*P	**Pn**	**13 01 31.1**	**+0.5**
HELC	**Santa Helena**	**13.96**	**210**	*e*P	**P**	**13 01 41.3**	**-1.5**
NORC	**Norcasia**	**14.22**	**206**	*e*P	**P**	**13 01 45.8**	**+0.4**
CHIC	**Chingaza**	**14.66**	**200**	*e*P	**P**	**13 01 50.3**	**-0.3**

*ISCJB **06** 13:21:53.1±0.6, 19°67S±0°09×175°8W±0°1, h219km, mb3.5/7, Error ellipse: s-maj=21.3km s-min=10.0km az=27.2*
*IDC **06** 13:21:53.3±2.4, 19°58S×175°92W, h207km±23km, mb3.4/7, mb1 3.7/9, mb1mx3.5/36, mbtmp4.0/9, Error ellipse: s-maj=25.7km s-min=13.8km az=125.0*
ISC 06 13:21:54.2±0.7, 19°7S±0°1×175°7W±0°2, h219km, n12, σ1§55/14, mb3.5/7, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**6.91**	**34**	P	**Pn**	**13 23 32.1**	**-1.4**
AFI	10nm,0.3s,baz=307,slow=0.2,SNR=18			S	S	13 24 42.9	-10
DZM	22nm,0.3s,baz=63,slow=23,SNR=12 **Mont Dzumac**	**16.84**	**259**	P	**Pn**	**13 25 39.3**	**+1.5**
URZ	0.4nm,0.3s,baz=90,slow=22,SNR=6.1 **Urewera**	**19.49**	**197**	P	**P**	**13 26 05.4**	**+0.7**
URZ	1.6nm,0.3s,baz=264,slow=3.0,SNR=10			S	**S**	**13 29 29.4**	**-3.5**
ASAR	1.0nm,0.3s,baz=97,slow=19,SNR=7.0 **Alice Springs**	**46.79**	**256**	P	**P**	**13 30 01.5**	**-0.8**
ASAR	1.8nm,0.7s,baz=92,slow=7.7,SNR=14			PcP	**PcP**	**13 31 30.7**	**-1.1**
WRA	0.9nm,0.7s,baz=99,slow=4.2,SNR=5.8 **Warramunga Arr**	**46.85**	**261**	P	**P**	**13 30 01.5**	**-1.2**
VNDA	0.5nm,0.3s,baz=97,slow=7.4,SNR=37 **Vanda**	**58.87**	**186**	P	**P**	**13 31 31.1**	**+1.6**
PETK	0.3nm,0.4s,baz=25,slow=6.2,SNR=3.6 **Petropavlovsk-**	**76.11**	**344**	P	**P**	**13 33 17.6**	**+0.1**
TXAR	2.8nm,0.7s,baz=106,slow=5.0,SNR=4.5 **Lajitas Array**	**84.83**	**57**	P	**P**	**13 34 05.8**	**+1.2**
ILAR	1.2nm,0.9s,baz=212,slow=8.5,SNR=9.9 **Eielson Array**	**87.11**	**12**	P	**P**	**13 34 14.3**	**-0.4**
YKA	0.4nm,0.5s,baz=213,slow=5.2,SNR=13 **Yellowknife Ar**	**94.93**	**24**	P	**P**	**13 34 51.1**	**+0.1**
BRTR	0.2nm,0.7s,baz=243,slow=4.1,SNR=3.4 **Keskin Array B**	**147.88**	**315**	PKPbc	**PKPdf**	**13 41 11.9**	**+1.3**
GERES	1.0nm,0.6s,baz=123,slow=4.6,SNR=5.4 **GERESS Array B**	**149.98**	**348**	PKPbc	**PKPbc**	**13 41 18.7**	**0.0**
	1.0nm,0.6s,baz=29,slow=3.0,SNR=8.8						

*ISCJB **06** 13:23:16.4±0.5, 24°79N±0°02×122°09E±0°02, h3km±4km, Error ellipse: s-maj=4.3km s-min=2.8km az=154.2*
*TAP **06** 13:23:16.7, 24°79N×122°02E, h6km, ML2.8, D*
*JMA **06** 13:23:16.6±0.1, 24°84N×121°98E, h26km, M2.4*
ISC 06 13:23:16.4±0.9, 24°82N±0°02×122°02E±0°02, h12km±6km, n32, σ0§67/63, 1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EGS		**0.09**	**290**⇓	*i*P	**Pg**	**13 23 19.2**	**+0.1**
EGS	baz=305			*i* S	**Sg**	**13 23 20.8**	**-0.3**
ILA	baz=305 **Ilan**	**0.26**	**259**	*e*P	**Pb**	**13 23 22.3**	**-0.6**
ILA	baz=263			*e*S	**Sb**	**13 23 26.2**	**-1.0**
TWC	baz=263 **Suao**	**0.26**	**218**	*i* P	**Pg**	**13 23 21.9**	**+0.1**
TWC	baz=218			*i* S

TWT	**Tachien**	**0.95**	**234**	*e*P	**Pn**	**13 23 35.8**	**+0.1**
	baz=235								
TWT				*e*S	**Sn**	**13 23 49.0**	**-0.3**
	baz=235								
YOJ	**Yonaguni jima**	**0.96**	**111**	P	**Pg**	**13 23 35.3**	**+0.3**
YOJ				*e*S	**Sg**	**13 23 48.3**	**+0.7**
ESL	**Shilin**	**1.13**	**209**	*e*P	**Pg**	**13 23 38.1**	**-0.1**
	baz=208								
ESL				*e*S	**Sn**	**13 23 54.8**	**+1.3**
	baz=208								
TWQ1	**Liyutan**	**1.23**	**248**	*e*P	**Pg**	**13 23 40.3**	**+0.2**
	baz=248								
TWQ1				*e*S	**Sg**	**13 23 58.0**	**+1.9**
	baz=248								
WDT	**Danda**	**1.33**	**218**	*e*P	**Pb**	**13 23 41.2**	**-0.2**
	baz=217								
WDT				*e*S	**Sg**	**13 24 00.3**	**+0.9**
	baz=217								
SMLT	**Sun Moon Lake**	**1.38**	**228**	*e*P	**Pg**	**13 23 42.8**	**-0.1**
	baz=228								
SMLT				*e*S	**Sg**	**13 24 01.6**	**+0.7**
	baz=228								
TYC	**Yuchr**	**1.40**	**230**	*e*P	**Pn**	**13 23 41.9**	**+0.2**
	baz=229								
TYC				*e*S	**Sg**	**13 24 02.1**	**+0.7**
	baz=229								
EHY	**Hungye**	**1.45**	**206**	*e*P	**Pg**	**13 23 43.9**	**-0.4**
	baz=206								
EHY				*e*S	**Sg**	**13 24 03.6**	**+0.4**
	baz=206								
TWF1	**Yuli**	**1.60**	**205**	*e*P	**Pb**	**13 23 45.8**	**-0.1**
	baz=204								
TWF1				*e*S	**Sg**	**13 24 07.5**	**-0.4**
	baz=204								
IRIF	**Iriomote-Funau**	**1.62**	**107**	P	**Pn**	**13 23 44.5**	**-0.2**
IRIF				S	**Sn**	**13 24 05.0**	**-0.6**
YUS	**Yu-Shan**	**1.64**	**217**	*e*P	**Pg**	**13 23 48.0**	**+0.1**
	baz=216								
YUS				*e*S	**Sg**	**13 24 08.6**	**-0.8**
	baz=216								
CHN5	**Tsauling**	**1.73**	**226**	*e*P	**Pb**	**13 23 47.7**	**-0.3**
	baz=225								
CHN5				*e*S	**Sb**	**13 24 10.4**	**+0.7**
	baz=225								
HATJ	**Hateruma jima**	**1.79**	**115**	*e*S	**Sn**	**13 24 09.5**	**-0.2**
JKRS	**Kuro-shima**	**1.90**	**107**	P	**Pn**	**13 23 49.0**	**+0.5**
JKRS				S	**Sn**	**13 24 11.4**	**-0.9**
JIJ	**Ishigaki jima**	**1.98**	**103**	P	**Pn**	**13 23 50.1**	**+0.5**
JIJ				S	**Sn**	**13 24 13.8**	**-0.6**
STYT	**Tauyuan**	**2.01**	**215**	*e*P	**Pb**	**13 23 51.7**	**-1.2**
	baz=215								
STYT				*e*S	**Sb**	**13 24 17.7**	**-0.2**
	baz=215								

*ISCJB **06** 13:43:20.0±0.9,31°.23S±0°.04×69°.09W±0°.05, h110km±12km, Error ellipse: s-maj=7.8km s-min=6.2km az=176.5*

*SJA **06** 13:43:20.0±0.8,31°.25S×69°.01W, h107km±6km, ML3.5, MW3.7*

*GUC **06** 13:43:20.9±0.3,31°.35S×69°.36W, h12km±8km, ML3.5*

ISC 06 13:43:20.3±1.6,**31°.22S**±0°.04×**69°.07W**±0°.06, **h107**km±13km,**n20**,σ1§**29**/25,**San Juan Province**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.52**	**102**	*e*P		**Pn**	**13 43 36.7**	**-0.4**
AMOG	**MOGNA**	**0.57**	**61**	*e*P		**Pn**	**13 43 37.5**	**+0.1**
RTLS	**Leoncito**	**0.60**	**198**	*e*P		**Pn**	**13 43 38.3**	**+0.3**
RTCV	**Cerro Valdivia**	**0.78**	**145**	*e*P		**Pn**	**13 43 39.3**	**+0.1**
RTCV				*e*S		**Sn**	**13 43 53.3**	**-0.1**
AUSP	**Uspallata**	**1.03**	**195**	*e*P		**Pn**	**13 43 42.5**	**+0.5**
ASAL	**Salagasta**	**1.38**	**172**	*e*P		**Pn**	**13 43 46.3**	**+0.7**
ARCO	**CERRO ARCO**	**1.62**	**176**	IAML			13 44 14.6	
	comp=Z,353nm,0.3s							
AGUA	**GUANDACOL**	**1.80**	**16**	*e*P		**Pn**	**13 43 51.8**	**+1.0**
TLL	**Tololo Astrono**	**1.82**	**305**	*i* P		**Pn**	**13 43 51.6**	**+0.4**
TLL				*i* S		**Sn**	**13 44 14.8**	**+0.1**
TLL				IAML			13 44 17.6	
	comp=E,563nm,0.6s							
AAGR	**Agrelo**	**1.87**	**174**	*e*P		**Pn**	**13 43 52.1**	**+0.5**
ACAN	**Cantantal**	**1.92**	**124**	*e*P		**Pn**	**13 43 52.4**	**+0.3**
FCH	**Farellones**	**2.34**	**206**	*e*P		**Pn**	**13 43 59.7**	**+1.9**
FCH				*e*S		**Sn**	**13 44 29.8**	**+3.3**
FCH				IAML			13 44 34.5	
	comp=E,417nm,0.4s							
PEL	**Peldehue**	**2.35**	**215**	*i* P		**Pn**	**13 43 57.5**	**-0.2**
PEL				*i* S		**Sn**	**13 44 25.2**	**-1.2**
PEL				IAML			13 44 29.8	
	comp=E,373nm,0.3s							
ROCH	**El Roble**	**2.40**	**223**	*i* P		**Pn**	**13 43 58.6**	**+0.1**
ROCH				*i* S		**Sn**	**13 44 27.2**	**-0.6**
ROCH				IAML			13 44 33.1	
	comp=N,504nm,0.4s							
CLCH	**Cerro Calan**	**2.50**	**209**	*i* P		**Pn**	**13 44 00.1**	**+0.4**
CLCH				*i* S		**Sn**	**13 44 30.0**	**+0.2**
CLCH				IAML			13 44 35.1	
	comp=N,567nm,0.5s							
VCA	**Vinchina**	**2.59**	**17**	IAML			13 44 36.9	
	comp=Z,174nm,0.3s							
LCO	**Las Campanas**	**2.62**	**327**	*e*P		**Pn**	**13 44 01.5**	**+0.1**
LCO				*e*S		**Sn**	**13 44 32.3**	**-0.6**
LCO				IAML			13 44 33.9	
	comp=E,335nm,0.3s							
RCDM	**Rinconada Maip**	**2.69**	**213**	*e*P		**Pn**	**13 44 01.8**	**-0.4**
RCDM				*e*S		**Sn**	**13 44 30.5**	**-3.9**
RCDM				IAML			13 44 32.0	
	comp=E,478nm,0.1s							
MRA	**San Martin**	**3.10**	**114**	*e*P		**Pn**	**13 44 07.2**	**-0.4**
SUCO	**SUCO**	**4.13**	**122**	IAML			13 45 07.1	
	comp=Z,51nm,0.1s							

*ISCJB **06** 13:44:01.8±0.3,16°.41S±0°.07×177°.57W±0°.06,h10km, mb4.8/61,MS4.7/30,Error ellipse: s-maj=11.3km s-min=6.3km az=145.3*

*BJI **06** 13:44:02.0,16°.62S×177°.64W,h9km,mb4.8/19,mB5.2/14, Ms5.0/13,Ms7 4.7/13*

*IDC **06** 13:44:02.1±0.8,16°.43S×177°.45W,h0km,mb4.2/16, mb1 4.4/16,mb1mx4.3/39,mbtmp4.2/16,MS4.6/25, Ms1 4.6/25,ms1mx4.6/28,Error ellipse: s-maj=27.9km s-min=16.6km az=134.0*

*NEIC **06** 13:44:03.1±0.2,16°.43S×177°.49W,h10km,mb4.9/39, Error ellipse: s-maj=9.9km s-min=5.0km az=145.0*

*GCMT **06** 13:44:03.1±0.1,16°.32S×177°.52W,h16km,MW5.3/120, Moment Tensor Solution. s81,c141; s120,c219; Duration: 1s1 Moment tensor: Scale 10^17 Nm; Mrr0.08±.02; Mθθ-0.91±.02; Mφφ0.82±.02; Mrθ-0.02±.04; Mθφ0.72±.02; Mrφ0.23±.05; Best double couple: M0 1.15400×10^17 NP1:φs334.00000°,δ85.00000°, λ169.00000°. NP2:φ65.00000°,δ79.00000°,λ5.00000°. Principal axes: T 1.1300, Plg11.0000°, Azm289.0000°; N 0.0490, Plg78.0000°, Azm132.0000°; P -1.1790, Plg4.0000°, Azm20.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 06 13:44:03.1±0.4,**16°.44S**±0°.09×**177°.43W**±0°.07,**h10**km, **n135**,σ1§**40**/128,**mb4.8**/61,**MS4.7**/31,**2C-4D**,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.51**	**253**	*e*Pn		**Pn**	**13 45 08.8**	**-2.8**
AFI	**Afiamalu**	**6.01**	**66**	*e*Pn		**Pn**	**13 45 31.2**	**-1.0**
RAO	**Raoul Island**	**12.76**	**182**	LR		LR	13 51 14.4	
	comp=Z,4μm,21.4s,baz=0.5,slow=34							
DZM	**Mont Dzumac**	**16.22**	**247**	Pn		**P**	**13 47 56.0**	**+1.6**
	0.3nm,0.3s,baz=67,slow=17,SNR=7.9							
DZM				LR		LR	13 52 46.6	
	comp=Z,1μm,19.5s,baz=79,slow=32							
DZM	**Mont Dzumac**	**16.22**	**247**	*e*P		**P**	**13 48 00.3**	**+5.9**
	62nm,1.4s							
DZM				*e*LQ		LQ	13 51 08.7	
	16μm,28.6s							
DZM				*e*LR		LR	13 51 47.0	
	2μm,24.6s							
RAR	**Rarotonga**	**17.38**	**109**	LR		LR	13 53 16.0	
	comp=Z,2μm,20.8s,baz=285,slow=32							
URZ	**Urewera**	**22.26**	**191**	P		**P**	**13 49 00.7**	**+0.5**
	29nm,0.9s,baz=9.2,slow=8.6,SNR=4.6							
URZ				LR		LR	13 56 08.6	
	comp=Z,3μm,20.0s,baz=61,slow=33							
HNR	**Honiara**	**23.11**	**285**	LR		LR	13 56 42.5	
	comp=Z,6μm,19.4s,baz=132,slow=33							
BFZ	**Birch Farm**	**24.77**	**192**	*e*P		**P**	**13 49 23.9**	**-1.1**
	278nm,1.8s							
SNZO	**South Karori**	**25.70**	**194**	*e*P		**P**	**13 49 30.9**	**-2.4**
	517nm,1.8s							
PPT2	**Papeete2**	**26.65**	**97**	*e*LQ		LQ	13 54 52.6	
	2μm,32.0s							
PPT2				*e*LR		LR	13 56 22.3	
	4μm,27.0s,baz=262							
PPT	**Papeete**	**26.66**	**96**	LR		LR	13 57 19.7	
	comp=Z,1μm,21.9s,baz=260,slow=30							
TBI	**Tubuai**	**27.16**	**109**	*e*LR		LR	13 56 44.4	
	6μm,28.8s,baz=284							
TBI	**Tubuai**	**27.16**	**109**	*e*T		T	14 18 00.8	
	5.8nm,0.2s							
RPZ	**Rata Peaks**	**28.90**	**197**	*e*P		**P**	**13 49 57.7**	**-4.4**
	134nm,1.7s							
CTA	**Charters Tower**	**34.63**	**258**	P		**P**	**13 50 53.0**	**+0.2**
	7.5nm,0.8s,baz=91,slow=10,SNR=14							
CTAO	**Charters Tower**	**34.63**	**258**	*e*P		**P**	**13 50 52.2**	**-0.6**
	22nm,1.1s							
TAOE	**Nuku Hiva Isla**	**37.10**	**83**	*e*LR		LR	14 01 22.0	
	3μm,25.3s							
STKA	**Stephens Creek**	**40.16**	**240**	P		**P**	**13 51 41.0**	**+1.4**
	6.0nm,0.8s,baz=89,slow=6.8,SNR=6.1							
STKA				LR		LR	14 06 16.3	
	comp=Z,839nm,21.9s,baz=67,slow=33							
RKT	**Rikitea**	**40.40**	**106**	*e*LR		LR	14 02 48.8	
	3μm,28.5s							
RKT	**Rikitea**	**40.40**	**106**	*e*T		T	14 34 31.9	
	2.7nm,0.2s							
WRA	**Warramunga Arr**	**45.83**	**258**	P		**P**	**13 52 24.8**	**-0.9**
	3.3nm,1.1s,baz=87,slow=6.9,SNR=20							
WRA				LR		LR	14 10 21.4	
	comp=Z,597nm,18.8s,baz=90,slow=34							
AS01	**Alice Springs**	**46.06**	**253**	*e*P		**P**	**13 52 26.0**	**-1.5**
AS31	**Alice Springs**	**46.10**	**253**	*e*P		**P**	**13 52 26.1**	**-1.7**
	4.1nm,0.7s							
ASAR	**Alice Springs**	**46.10**	**253**	P		**P**	**13 52 27.0**	**-0.8**
	11nm,0.7s,baz=85,slow=8.2,SNR=88							
ASAR				LR		LR	14 10 39.0	
	comp=Z,2μm,19.1s,baz=96,slow=35							
MTN	**Manton Dam**	**49.79**	**267**	*e*P		**P**	**13 52 55.4**	**-1.0**
	23nm,1.3s							
FAKI	**Fak Fak**	**51.23**	**280**	*e*P		**P**	**13 53 05.7**	**-1.7**
	78nm,1.5s							
FITZ	**Fitzroy Crossi**	**54.20**	**259**	P		**P**	**13 53 29.3**	**0.0**
	4.8nm,1.0s,baz=162,slow=6.9,SNR=10							
FITZ	**Fitzroy Crossi**	**54.20**	**259**	*e*P		**P**	**13 53 29.2**	**-0.1**
	16nm,1.3s							
SOEI	**Soe**	**57.02**	**269**	*e*P		**P**	**13 53 49.5**	**-0.2**
	118nm,1.3s							
VNDA	**Vanda**	**61.98**	**185**	LR		LR	14 16 43.3	
	comp=Z,322nm,20.4s,baz=30,slow=32							
MJAR	**Matsushiro Arr**	**67.30**	**322**	P		**P**	**13 54 57.6**	**-0.6**
	2.0nm,1.0s,baz=158,slow=5.8,SNR=4.5							
MJAR				LR		LR	14 18 35.7	
	comp=Z,219nm,21.5s,baz=140,slow=31							
MAT	**Matsushiro**	**67.31**	**322**	P		P	13 55 04.2	+6.0
MAT				S		**S**	**14 03 53.4**	**-0.2**
CASY	**Casey**	**67.86**	**205**	*e*P		**P**	**13 55 02.8**	**+1.5**
	13nm,0.6s							
PETK	**Petropavlovsk-**	**72.51**	**345**	P		**P**	**13 55 30.5**	**+0.7**
	3.0nm,0.8s,baz=126,slow=9.7,SNR=3.3							
PETK				LR		LR	14 22 54.2	
	comp=Z,203nm,20.1s,baz=160,slow=32							
QSPA	**South Pole Qui**	**73.61**	**180**	*e*P		**P**	**13 55 37.6**	**+1.1**
	7.1nm,0.9s							
KSRS	**Korea Array**	**74.24**	**318**	P		**P**	**13 55 42.3**	**+1.9**
	0.4nm,0.4s,baz=141,slow=7.9,SNR=3.5							
KSRS				LR		LR	14 22 46.6	
	comp=Z,262nm,21.2s,baz=120,slow=31							
KSAR	**Wonju Array Be**	**74.26**	**318**	P		**P**	**13 55 42.3**	**+1.8**
KS01	**Wonju Array Si**	**74.27**	**318**	*e*P		**P**	**13 55 39.9**	**-0.7**
USRK	**Ussuriysk Ar.**	**75.94**	**325**	P		**P**	**13 55 51.6**	**+1.6**
	1.2nm,0.9s,baz=110,slow=1.7,SNR=3.5							
USRK				LR		LR	14 24 51.2	
	comp=Z,124nm,18.8s,baz=130,slow=32							
PFO	**Pinyon Flats O**	**76.49**	**49**	LR		LR	14 21 13.5	
	comp=Z,417nm,21.5s,baz=220,slow=29							
DAC	**Darwin (Calif)**	**77.06**	**46**	*e*P		**P**	**13 55 57.6**	**+0.7**
	3.2nm,0.9s							
GSC	**Goldstone, Bar**	**77.10**	**47**	*e*P		**P**	**13 55 57.9**	**+0.9**
	6.0nm,1.3s							
TPNV	**Topopah Spring**	**78.33**	**46**	*e*P		**P**	**13 56 04.7**	**+0.8**
	9.9nm,1.4s							
R11A	**Troy Canyon, C**	**79.50**	**45**	*e*P		**P**	**13 56 10.9**	**+0.6**
	2.6nm,1.1s							
QIZ	**Qiongzhong**	**79.72**	**293**	P		**P**	**13 56 11.1**	**-0.6**
QIZ				pP		**pP**	**13 56 14.2**	**-0.8**
QIZ				PP		**PP**	**13 59 14.0**	**+1.0**
QIZ				S		**S**	**14 06 14.3**	**-0.5**
QIZ				pmax		pmax		
	comp=Z,33nm,4.2s							
QIZ				LR		LR		
	comp=E,260nm,20.2s							
QIZ				LR		LR		
	comp=Z,480nm,25.4s							
X16A	**Lo Mia Camp, P**	**80.53**	**50**	*e*P		**P**	**13 56 16.1**	**+0.1**
	3.9nm,0.9s							
U15A	**North Rim**	**80.84**	**48**	*e*P		**P**	**13 56 17.8**	**+0.1**
	12nm,1.6s							
TT01	**Tatalina**	**80.85**	**10**	*e*P		**P**	**13 56 17.3**	**+0.5**
BMO	**Blue Mountains**	**81.82**	**39**	*e*P		**P**	**13 56 22.7**	**+0.2**
	8.5nm,1.4s							
TRF	**Thorofare Moun**	**82.39**	**12**	*e*P		**P**	**13 56 24.4**	**-0.7**
	43nm,1.8s							
RND	**Reindeer**	**82.64**	**13**	*e*P		**P**	**13 56 26.2**	**-0.1**
	11nm,1.1s							
HLID	**Hailey**	**82.91**	**41**	*e*P		**P**	**13 56 28.4**	**0.0**
	5.8nm,1.1s							
TMUT	**Trail Mountain**	**82.94**	**46**	*e*P		**P**	**13 56 29.1**	**+0.3**
	6.7nm,0.9s							
IPM	**Ipoh**	**83.17**	**277**	*e*P		**P**	**13 56 32.7**	**+2.5**
	9.2nm,0.7s							
SRU	**San Rafael Swe**	**83.33**	**46**	*e*P		**P**	**13 56 31.0**	**+0.4**
	5.5nm,1.0s							
BJI	**Beijing**	**83.41**	**315**	P		**P**	**13 56 31.1**	**+0.4**
BJI				pmax		pmax		
	comp=Z,8.0nm,0.6s							
TCUT	**Toone Canyon**	**83.66**	**44**	*e*P		**P**	**13 56 32.1**	**-0.3**
	13nm,0.8s							
MLY	**Manley**	**83.72**	**11**	*e*P		**P**	**13 56 31.1**	**-0.8**
	26nm,1.8s							
WRH	**Wood River Hil**	**83.74**	**12**	*e*P		**P**	**13 56 31.6**	**-0.3**
	16nm,1.2s							
KULM	**Kulim**	**83.77**	**277**	*e*P		**P**	**13 56 32.6**	**-0.6**
HWUT	**Hardware Ranch**	**83.79**	**44**	*e*P		**P**	**13 56 32.8**	**-0.1**
	2.8nm,0.8s							
DOT	**Dot Lake**	**83.92**	**14**	*e*P		**P**	**13 56 32.5**	**-0.4**
	16nm,1.0s							
CCB	**Clear Creek Bu**	**83.95**	**12**	*e*P		**P**	**13 56 32.4**	**-0.5**
	8.2nm,1.0s							
MNTX	**Cornudas Mount**	**83.97**	**55**	*e*P		**P**	**13 56 34.0**	**+0.2**
	4.0nm,1.0s							
BNM	**Barren Site**	**84.00**	**52**	*e*P		**P**	**13 56 33.7**	**-0.6**
PV09	**Paradox Valley**	**84.03**	**47**	*e*P		**P**	**13 56 35.1**	**+0.7**
PV10	**Paradox Valley**	**84.04**	**47**	*e*P		**P**	**13 56 34.9**	**+0.5**
MDM	**Murphy Dome**	**84.14**	**12**	*e*P		**P**	**13 56 33.3**	**-0.7**
	22nm,1.4s							
COLA	**College**	**84.14**	**12**	*e*P		**P**	**13 56 33.7**	**-0.2**
	14nm,0.8s							
ILAR	**Eielson Array**	**84.25**	**13**	P		**P**	**13 56 34.0**	**-0.5**
	5.5nm,1.0s,baz=228,slow=6.3,SNR=24							
ILAR				LR		LR	14 27 18.8	
	comp=Z,328nm,21.0s,baz=222,slow=31							
ILB	**Eielson Array**	**84.25**	**13**	*e*P		**P**	**13 56 33.5**	**-1.0**
IL1	**Eielson Array**	**84.25**	**13**	*e*P		**P**	**13 56 33.5**	**-1.0**
PV01	**Paradox Valley**	**84.26**	**48**	*e*P		**P**	**13 56 36.3**	**+0.8**
	360nm,0.9s							
TX31	**Lajitas Ar. Si**	**84.42**	**57**	*e*P		**P**	**13 56 36.2**	**-0.2**
TXAR	**Lajitas Array**	**84.42**	**57**	P		**P**	**13 56 36.8**	**+0.5**
	1.3nm,0.9s,baz=209,slow=3.1,SNR=8.7							
TXAR				LR		LR	14 26 46.2	
	comp=Z,322nm,19.8s,baz=0.0,slow=30							
ANMO	**Albuquerque**	**84.45**	**51**	*e*P		**P**	**13 56 37.3**	**+0.8**
	6.9nm,1.3s							
MCMT	**McKenzie Canyo**	**84.52**	**40**	*e*P		**P**	**13 56 36.9**	**+0.3**
DLMT	**Dillon**	**84.94**	**40**	*e*P		**P**	**13 56 39.4**	**+0.8**
	7.7nm,1.3s							
REDW	**Red Top Meadow**	**85.08**	**42**	*e*P		**P**	**13 56 40.1**	**+0.6**
	7.1nm,1.0s							
GYA	**Guiyang**	**85.13**	**299**	P		**P**	**13 56 40.0**	**0.0**
GYA				pmax		pmax		
	comp=Z,10.0nm,1.0s							
S22A	**4UR Ranch, Cre**	**85.34**	**49**	*e*P		**P**	**13 56 41.0**	**0.0**
	8.9nm,1.3s							
DAWY	**Dawson**	**85.42**	**16**	*e*P		**P**	**13 56 40.8**	**+0.3**
	7.1nm,0.9s							
MAW	**Mawson**	**85.55**	**200**	P		**P**	**13 56 42.7**	**+1.6**
	4.6nm,1.0s,baz=152,slow=6.6,SNR=4.5							
MAW				LR		LR	14 32 28.9	
	comp=Z,835nm,19.3s,baz=78,slow=34							
EGAK	**Eagle**	**85.56**	**15**	*e*P		**P**	**13 56 41.4**	**+0.3**
	8.6nm,1.1s							
BW06	**Boulder Array**	**85.65**	**43**	*e*P		**P**	**13 56 42.0**	**-0.3**
PDAR	**Pinedale Array**	**85.65**	**43**	P		**P**	**13 56 42.5**	**+0.1**
	0.8nm,0.8s,baz=298,slow=3.2,SNR=4.7							
PDAR				LR		LR	14 27 22.6	
	comp=Z,210nm,21.1s,baz=254,slow=30							
COLD	**Coldfoot**	**85.81**	**10**	*e*P		**P**	**13 56 43.5**	**+1.2**
	14nm,1.5s							
HHC	**Hu-ho-hao-te**	**86.92**	**314**	*e*P		**P**	**13 56 47.6**	**-0.9**
HHC				S		**S**	**14 07 25.4**	**-1.7**
HHC				SS		**SS**	**14 13 11.6**	**+1.5**
HHC				pmax		pmax		
	comp=Z,28nm,1.0s							
HHC				pmax		pmax		
	comp=Z,96nm,3.7s							
HHC				LR		LR		
	comp=N,220nm,17.3s							
HHC				LR		LR		
	comp=E,570nm,14.8s							
HHC				LR		LR		
	comp=Z,190nm,14.8s							
CMIG	**Matias Romero**	**87.89**	**72**	LR		LR	14 27 37.8	
	comp=Z,319nm,19.6s,baz=246,slow=30							
KMI	**Kunming**	**88.00**	**297**	P		**P**	**13 56 51.9**	**-2.3**
KMI				pmax		pmax		
	comp=Z,12nm,1.4s							
KMI				LR		LR		
	comp=N,190nm,23.9s							
KMI				LR		LR		
	comp=E,340nm,20.9s							
KMI				LR		LR		
	comp=Z,420nm,20.0s							
CD2	**Chengdu**	**89.06**	**303**	*e*P		**P**	**13 56 59.4**	**+0.5**
CD2				pP		pP	13 57 01.2	-1.0
CD2				SKS		**SKSac**	**14 07 29.8**	**+0.7**
CD2				S		**S**	**14 07 49.6**	**+1.7**
CD2				sS		ScS	14 07 52.7	-0.3
CD2				SS		**SS**	**14 13 44.0**	**+2.3**
CD2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
CD2				pmax		pmax		
	comp=Z,120nm,5.2s							
CMAR	**Chiang Mai Arr**	**89.28**	**289**	P		**P**	**13 57 01.6**	**+1.6**
	0.2nm,0.4s,baz=111,slow=2.6,SNR=2.9							
CMAR				LR		LR	14 34 38.9	
	comp=Z,186nm,19.8s,baz=116,slow=34							
LZH	**Lanzhou**	**90.74**	**307**	*e*P		**P**	**13 57 05.2**	**-1.6**
LZH				pP		pP	13 57 09.3	-0.8
LZH				sP		sP	13 57 12.0	+0.7
LZH				pmax		pmax		
	comp=Z,16nm,1.0s							
SYO	**Syowa Base**	**90.79**	**193**	*e*P		**P**	**13 57 06.8**	**+0.6**
PLCA	**Paso Flores**	**91.66**	**133**	LR		LR	14 28 57.4	
	comp=Z,206nm,21.8s,baz=310,slow=29							
YKA	**Yellowknife Ar**	**92.61**	**24**	P		**P**	**13 57 14.4**	**-0.2**
	0.3nm,0.8s,baz=246,slow=5.1,SNR=4.3							
YKA				LR		LR	14 32 56.0	
	comp=Z,101nm,19.8s,baz=180,slow=32							
SONM	**Songino Array**	**93.05**	**319**	LR		LR	14 34 56.4	
	comp=Z,142nm,21.0s,baz=86,slow=33							
ULM	**Lac du Bonnet**	**97.19**	**40**	LR		LR	14 34 46.7	
	comp=Z,526nm,20.8s,baz=260,slow=31							
KSH	**Kashi**	**112.97**	**306**	*e*PKP		**PKiKP**	**14 02 41.1**	**+0.2**
KSH				*e*PP		**PP**	**14 03 31.9**	**+2.1**
KSH				SKS		**SKSdf**	**14 09 52.4**	**-1.0**
KSH				SKKS		**SKKSac**	**14 10 24.8**	**-7.4**
KSH				LR		LR		
	comp=N,57nm,6.8s							
KSH				LR		LR		
	comp=E,64nm,6.1s							
KSH				LR		LR		
	comp=Z,110nm,5.7s							
KOLS	**Kolonicke sedl**	**143.82**	**338**	*e*PKP		**PKPdf**	**14 03 37.7**	**-0.9**
CRVS	**Cervenica-Dubn**	**144.14**	**339**	*e*PKP		**PKPdf**	**14 03 40.2**	**+1.0**
OKC	**Ostrava-Krasne**	**144.37**	**343**	AMS		AMS	15 11 30.0	
	comp=Z,300nm,19.0s							
BR131	**Keskin Array S**	**144.38**	**317**	*e*PKPdf		**PKPdf**	**14 03 39.4**	**-0.7**
BRTR	**Keskin Array B**	**144.38**	**317**	PKP		**PKPdf**	**14 03 40.1**	**+0.1**
	2.4nm,0.9s,baz=96,slow=1.2,SNR=8.4							
TRPA	**Tarpa**	**144.39**	**337**	*e*PP		**PKPdf**	**14 03 44.4**	**+4.8**
DPC	**Dobruska-Polom**	**144.40**	**345**	*e*PKP		**PKPdf**	**14 03 40.7**	**+1.1**
DPC				AMS		AMS	15 07 10.0	
	comp=Z,200nm,18.4s							
PVCC	**Panska Ves**	**144.65**	**347**	AMS		AMS	15 12 20.0	
	comp=Z,200nm,12.8s							
KECS	**Kecovo**	**144.83**	**339**	*e*PKP		**PKPdf**	**14 03 40.2**	**-0.2**
BR231	**Keskin MP Arra**	**144.88**	**318**	*e*PKPdf		**PKPab**	**14 03 39.9**	**-0.1**
MLR	**Muntele Rosu**	**145.03**	**331**	*e*PKPdf		**PKPbc**	**14 03 40.3**	**0.0**
PRU	**Pruhonice**	**145.16**	**346**	*e*PKP		**PKPdf**	**14 03 41.4**	**+0.5**
GOPC	**GO Pecny, Ondr**	**145.17**	**346**	*e*PKP		**PKPdf**	**14 03 40.8**	**-0.1**
GOPC				AMS		AMS	15 17 00.0	
	comp=Z,200nm,16.2s							
ASF	**Jabal al Asfar**	**145.19**	**303**	PKPbc		**PKPdf**	**14 03 41.5**	**-0.1**
	0.9nm,0.3s,baz=250,slow=12,SNR=2.1							
**VR

GCAM	**G?zelcaml?**	**0.70**	**293**	*i* P		**Pb**	**13 47 20.5**	**+0.1**
GCAM				*i* S		**Sb**	**13 47 30.3**	**+0.2**
GCAM	**G?zelcaml?**	**0.70**	**293**	P		**Pb**	**13 47 20.5**	**+0.1**
GCAM				S		**Sb**	**13 47 30.3**	**+0.2**
DALY	**Dalyan (Mu˘la**	**0.78**	**142**	*e*PG		**Pg**	**13 47 21.1**	**-0.2**
DALY	**Dalyan (Mu˘la**	**0.78**	**142**	*e*Pg		**Pg**	**13 47 21.1**	**-0.2**
DNZL	**Cakiroluk**	**0.83**	**72**	*i* P		**Pb**	**13 47 22.6**	**-0.2**
DNZL				*i* S		**Sg**	**13 47 32.9**	**-0.3**
DNZL	**Cakiroluk**	**0.83**	**72**	P		**Pb**	**13 47 22.6**	**-0.2**
DNZL				S		**Sg**	**13 47 32.9**	**-0.3**
MANT	**Manisa**	**1.13**	**21**	*i* P		**Pb**	**13 47 27.4**	**-0.6**
MANT				*i* S		**Sb**	**13 47 43.0**	**+0.2**
MANT	**Manisa**	**1.13**	**21**	P		**Pb**	**13 47 27.4**	**-0.6**
MANT				S		**Sb**	**13 47 43.0**	**+0.2**
IZM	**Izmir**	**1.15**	**327**	*e*PN		**Pb**	**13 47 28.0**	**-0.1**
IZM	**Izmir**	**1.15**	**327**	*e*Pn		**Pb**	**13 47 28.0**	**-0.1**
GOLH	**Golhisar**	**1.22**	**99**	*i* P		**Pb**	**13 47 29.4**	**0.0**
GOLH	**Golhisar**	**1.22**	**99**	P		**Pb**	**13 47 29.4**	**0.0**

*IDC **06** 13:48:31.1±1.1, 1°.34N×97°.02E, h0km, mb4.1/13, mb1 4.2/14, mb1mx4.0/48, mbtmp4.1/14, ML4.3/1, MS3.4/1, Ms1 3.6/1, ms1mx2.8/45, Error ellipse: s-maj=32.4km s-min=19.0km az=51.0*

*ISCJB **06** 13:48:33.3±0.5, 1°.33N±0°.05×96°.97E±0°.05, h28km, mb4.2/20, MS4.0/3, Error ellipse: s-maj=8.7km s-min=5.0km az=36.9*

*DJA **06** 13:48:33.0±1.3, 1°.N±9′×9′.7E±′, h13km±4km, M4.4/9, mb4.6/3, mB4.6/3, MLv4.4/9, Mw(mB)3.8/3*

*NEIC **06** 13:48:36.7±1.5, 1°.42N×97°.14E, h38km±11km, mb4.5/3, Error ellipse: s-maj=17.4km s-min=8.0km az=55.0*

NEIC Felt [III] at Gunungsitoli.

ISC 06 13:48:35.1±0.7, 1°.32N±0°.06×97°.02E±0°.06, h28km, n65, σ1s66/63, mb4.5/20, MS3.9/3, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**0.56**	**92**	P	**Pb**	**13 48 46.7**	**+0.3**
GSI				S	**Sn**	**13 48 55.1**	**-0.5**
GSI	**Gunungsitoli**	**0.56**	**92**	*e*Pn	**Pb**	**13 48 46.7**	**+0.3**
TPTI		**1.94**	**5**	P	**Pn**	**13 49 04.5**	**-1.6**
TPTI				S	Sn	13 49 13.6	-16
PSI	**Prapat**	**2.41**	**52**	*e*Pn	**Pn**	**13 49 11.1**	**-1.6**
MNSI	**Mandailing Nat**	**2.62**	**101**	P	**Pn**	**13 49 16.1**	**+0.6**
TSI	**Tuntungan**	**2.66**	**36**	P	**Pn**	**13 49 16.7**	**+0.6**
TSI				S	**Sb**	**13 49 53.7**	**-0.7**
MLSI	**Meulaboh, Aceh**	**2.99**	**348**	P	**Pn**	**13 49 18.9**	**-1.8**
MLSI				S	**Sn**	**13 49 55.9**	**+0.3**
LHMI	**Lhok Sumawe**	**3.88**	**359**	P	**Pn**	**13 49 34.0**	**+1.1**
LHMI	**Lhok Sumawe**	**3.88**	**359**	*e*Pn	**Pn**	**13 49 33.6**	**+0.6**
PDSI	**Padang**	**4.10**	**123**	P	**Pn**	**13 49 35.1**	**-0.8**
BKNI	**Bangkinang**	**4.14**	**104**	P	**Pn**	**13 49 37.3**	**+0.8**
IPM	**Ipoh**	**5.09**	**52**	*e*Pn	**Pn**	**13 49 49.2**	**-0.3**
KULM	**Kulim**	**5.36**	**43**	*e*Pn	**Pn**	**13 49 52.4**	**-0.9**
SKLT	**Songkhla**	**6.83**	**32**	P	**Pn**	**13 50 12.9**	**-0.6**
MYKOM	**Kota Tinggi**	**6.85**	**86**	*e*Pn	**Pn**	**13 50 11.8**	**-1.9**
TRTT	**Trang**	**7.00**	**22**	P	**Pn**	**13 50 14.9**	**-0.9**
PBKT	**Sadao Pong** 11nm,0.8s	**15.65**	**14**	P	**P**	**13 52 17.1**	**-0.5**
UBPT	**Khong Chiam** 14nm,0.9s	**16.19**	**31**	P	**P**	**13 52 23.4**	**-0.2**
SUKH	**Sukhothai** 2.7nm,0.8s	**16.27**	**9**	P	**P**	**13 52 25.0**	**+0.5**
LOEI	**Loei** 6.3nm,0.9s,1μm	**16.62**	**14**	P	**P**	**13 52 30.6**	**+2.1**
CM01	**Chiang Mai Arr**	**17.10**	**6**	*e*Pn	**Pn**	**13 52 31.3**	**-1.0**
CM31	**Chiang Mai Arr**	**17.14**	**6**	*e*Pn	**Pn**	**13 52 31.4**	**-1.3**
CMAR	**Chiang Mai Arr** 0.4nm,0.3s,baz=199,slow=12,SNR=20	**17.14**	**6**	P	**Pn**	**13 52 31.7**	**-1.0**
CMAR				LR	LR	13 59 07.1	
	comp=Z,112nm,18.5s,baz=175,slow=37						
NONG	**Nongkai**	**17.70**	**20**	P	**P**	**13 52 40.7**	**+0.4**
KMI	**Kunming**	**24.30**	**13**	P	**P**	**13 53 52.2**	**+1.6**
KMI				pP	pP	13 54 00.0	+1.2
KMI				sP	sP	13 54 02.7	+0.5
KMI				S	**S**	**13 58 06.9**	**-1.3**
KMI				SS	**SnSn**	**13 59 02.3**	**+10**
KMI				pmax	pmax		
	comp=Z,16nm,0.9s						
KMI				pmax	pmax		
	comp=Z,61nm,3.7s						
KMI				LR	LR		
	comp=N,250nm,16.6s						
KMI				LR	LR		
	comp=E,190nm,13.3s						
KMI				LR	LR		
	comp=Z,290nm,16.6s						
H08S2	**Diego Garcia H** baz=70,slow=76,SNR=3286	**26.03**	**250**	T	T	14 21 12.7	
H08S3	**Diego Garcia H** baz=70,slow=76,SNR=1926	**26.03**	**250**	T	T	14 21 07.3	
H08S1	**Diego Garcia H** baz=70,slow=76,SNR=1937	**26.05**	**250**	T	T	14 21 12.3	
RAMN	**Ramite** comp=Z,9.7nm,0.5s	**27.38**	**339**	*e*P	**P**	**13 54 19.1**	**+0.7**
GUN	**Gumba** comp=Z,12nm,0.4s	**28.51**	**339**	*e*P	**P**	**13 54 26.6**	**-2.1**
KKN	**Kakani** comp=Z,17nm,0.7s	**28.62**	**338**	*e*P	**P**	**13 54 29.0**	**-0.5**
GKN	**Gorkha** comp=Z,9.6nm,0.5s	**29.06**	**337**	*e*P	**P**	**13 54 33.5**	**+0.2**
KOLN	**Koldanda** comp=Z,14nm,0.6s	**29.27**	**335**	*e*P	**P**	**13 54 37.1**	**+1.8**
PYUN	**Piuthan**	**29.82**	**334**	*e*P	**P**	**13 54 41.8**	**+1.7**
ENH	**Enshi** comp=Z,12nm,0.7s	**31.14**	**21**	*e*P	**P**	**13 54 49.6**	**-1.9**
XAN	**Xi'an**	**34.41**	**18**	P	**P**	**13 55 18.7**	**-1.4**
XAN				pP	pP	13 55 25.7	-2.7
XAN				pmax	pmax		
	comp=Z,10.0nm,0.7s						
XAN				LR	LR		
	comp=E,150nm,21.5s						
XAN				LR	LR		
	comp=Z,200nm,18.6s						
GTA	**Gaotai**	**38.00**	**4**	*e*P	P	13 55 59.0	+8.2
GTA				pP	sP	13 56 06.2	+3.6
GTA				sP	pP	13 56 09.6	+10
GTA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
H01W3	**Cape Leeuwin H** baz=333	**39.42**	**158**	T	T	14 37 38.1	
H01W2	**Cape Leeuwin H** baz=333	**39.44**	**158**	T	T	14 37 40.8	
H01W1	**Cape Leeuwin H** baz=333	**39.44**	**158**	T	T	14 37 43.6	
HHC	**Hu-ho-hao-te**	**41.50**	**17**	*e*P	**P**	**13 56 21.4**	**+1.5**
HHC				S	**S**	**14 02 35.1**	**+1.2**
HHC				pmax	pmax		
	comp=Z,20nm,1.0s						
HHC				pmax	pmax		
	comp=Z,83nm,4.9s						
HHC				LR	LR		
	comp=N,180nm,14.8s						
HHC				LR	LR		
	comp=E,400nm,14.8s						
HHC				LR	LR		
	comp=Z,120nm,12.3s						
WRA	**Warramunga Arr** comp=Z,1.6nm,1.1s,baz=306,slow=8.7,SNR=16	**42.25**	**122**	P	**P**	**13 56 26.3**	**0.0**
ASAR	**Alice Springs** comp=Z,0.3nm,0.4s,baz=304,slow=7.8,SNR=5.5	**43.61**	**127**	P	**P**	**13 56 38.2**	**+0.9**
KSAR	**Wonju Array Be**	**45.83**	**35**	*e*P	**P**	**13 56 54.5**	**-0.2**
KS01	**Wonju Array Si**	**45.85**	**35**	*e*P	**P**	**13 56 53.2**	**-1.7**
KSRS	**Korea Array** comp=Z,4.5nm,0.9s,baz=222,slow=8.9,SNR=19	**45.86**	**35**	P	**P**	**13 56 54.5**	**-0.5**
SONM	**Songino Array** comp=Z,3.8nm,0.6s,baz=195,slow=8.0,SNR=9.6	**47.04**	**9**	P	**P**	**13 57 03.4**	**-0.8**
SONA1	**Songino Array**	**47.05**	**9**	*e*P	**P**	**13 57 03.6**	**-0.8**
MK01	**Makanchi Array**	**47.06**	**346**	*e*P	**P**	**13 57 04.7**	**+0.4**
MK31	**Makanchi Array**	**47.08**	**346**	*e*P	**P**	**13 57 05.0**	**+0.6**
MKAR	**Makanchi Array** comp=Z,3.1nm,0.6s,baz=158,slow=8.8,SNR=38	**47.08**	**346**	P	**P**	**13 57 05.5**	**+1.0**
MKAR	**Makanchi Array**	**47.08**	**346**	*e*P	**P**	**13 57 05.0**	**+0.6**
MAKZ	**Makanchi** comp=Z,3.2nm,0.6s	**47.17**	**346**	*e*P	**P**	**13 57 05.3**	**+0.2**
KKAR	**Karatay Array**	**47.87**	**334**	P	**P**	**13 57 08.1**	**-2.5**
USRK	**Ussuriysk Ar.** comp=Z,5.5nm,0.8s,baz=249,slow=6.1,SNR=8.3	**52.76**	**31**	P	**P**	**13 57 47.9**	**+0.3**
ZALV	**Zalesovo Beam** comp=Z,2.4nm,0.4s,baz=172,slow=6.9,SNR=12	**53.41**	**351**	P	**P**	**13 57 52.8**	**+0.6**
VOSK	**Vostochnaya** comp=Z,2.7nm,0.9s	**55.63**	**341**	*e*P	**P**	**13 58 08.1**	**-0.3**
KLR	**Kul'dur**	**56.23**	**27**	P	**P**	**13 58 13.2**	**+0.5**
	comp=Z,5.4nm,0.8s,baz=248,slow=4.5,SNR=10						
ABKAR	**Akbulak array**	**57.32**	**332**	*e*P	**P**	**13 58 20.6**	**+0.2**
BRTR	**Keskin Array B** comp=Z,0.5nm,0.7s,baz=120,slow=8.5,SNR=3.1	**68.89**	**312**	P	**P**	**13 59 37.6**	**-0.1**
SEY	**Seymchan** comp=Z,1.5nm,0.7s,baz=209,slow=18,SNR=4.1	**73.72**	**23**	P	**P**	**14 00 06.3**	**0.0**
FINES	**FINESS Array B** comp=Z,0.6nm,0.4s,baz=116,slow=8.7,SNR=6.5	**79.81**	**333**	P	**P**	**14 00 40.8**	**+0.2**
ARCES	**ARCESS Array B** comp=Z,0.6nm,0.4s,baz=100,slow=4.5,SNR=11	**82.36**	**340**	P	**P**	**14 00 54.9**	**+0.8**
NOA	**NORSAR Array B** comp=Z,0.5nm,0.7s,baz=94,slow=5.2,SNR=2.7	**86.81**	**331**	P	**P**	**14 01 17.6**	**+0.8**
TXAR	**Lajitas Array** comp=Z,0.1nm,0.3s,baz=297,slow=4.0,SNR=3.0	**143.66**	**31**	PKP	PKPbc	14 08 06.6	+0.9

*CSEM **06** 14:02:46.9±0.2, 34°.75N×29°.11E, h40km, ML2.8, Error ellipse: s-maj=5.5km s-min=4.7km az=47.0*

*DDA **06** 14:02:46.6, 34°.97N×28°.89E, h28km, Md3.8*

*ATH **06** 14:02:49.7, 35°.05N×28°.88E, h82km±5km, ML2.8/2, Error ellipse: s-maj=6.1km s-min=2.9km az=355.0*

*HLW **06** 14:02:50.3, 34°.37N×29°.07E, h33km±19km, Md3.0*

ISC 06 14:02:42.1±1.4, 34°.76N±0°.04×29°.06E±0°.03, h11km±10km, n40, σ1s78/60, 2D, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKAS	**Kas**	**1.53**	**17**	*i* P	**Pg**	**14 03 12.1**	**+0.5**
AKAS				*i* S	**Sg**	**14 03 31.3**	**-0.3**
AKAS	**Kas**	**1.53**	**17**	P	**Pg**	**14 03 12.1**	**+0.5**
AKAS				S	**Sg**	**14 03 31.3**	**-0.3**
ARG	**Arkhangelos**	**1.64**	**333**	P	**Pg**	**14 03 13.2**	**-0.5**
ARG				S	**Sb**	**14 03 32.4**	**-0.7**
KARP	**Karpathos**	**1.75**	**297**	P	**Pg**	**14 03 15.5**	**-0.1**
KARP	**Karpathos**	**1.75**	**297**	P	**Pg**	**14 03 15.5**	**-0.1**
KARP				S	**Sn**	**14 03 33.8**	**-0.7**
TURN	**Turunc**	**2.14**	**350**	*i* P	**Pb**	**14 03 20.1**	**-0.7**
TURN				*i* S	**Sn**	**14 03 43.7**	**-0.6**
ZKR	**Zakros**	**2.36**	**279**	P	**Pb**	**14 03 24.3**	**-0.4**
ZKR				S	**Sb**	**14 03 52.3**	**-1.6**
ZKR	**Zakros**	**2.36**	**279**	P	**Pb**	**14 03 24.3**	**-0.4**
ZKR				S	**Sb**	**14 03 52.3**	**-1.6**
ZKR				AML	AML	14 03 53.0	
	comp=E,206μm,0.6s						
ZKR				AML	AML	14 03 53.8	
	comp=N,215μm,0.6s						
KORT	**Korkueli**	**2.47**	**25**	*i* P	**Pb**	**14 03 25.5**	**-1.0**
KORT				*i* S	**Sb**	**14 03 55.9**	**-1.1**
KORT	**Korkueli**	**2.47**	**25**	P	**Pb**	**14 03 25.5**	**-1.0**
KORT				S	**Sb**	**14 03 55.9**	**-1.1**
GOLH	**Golhisar**	**2.50**	**9**	*i* P	**Pb**	**14 03 26.6**	**-0.6**
GOLH				*i* S	**Sb**	**14 03 56.4**	**-1.6**
GOLH	**Golhisar**	**2.50**	**9**	P	**Pb**	**14 03 26.6**	**-0.6**
BDRM	**Kayabasi**	**2.65**	**331**	*i* P	**Pn**	**14 03 26.7**	**+1.9**
BDRM				*i* S	**Sn**	**14 03 57.6**	**+0.7**
BDRM	**Kayabasi**	**2.65**	**331**	P	**Pn**	**14 03 26.7**	**+1.9**
BDRM				S	**Sn**	**14 03 57.6**	**+0.7**
NPS	**Neapolis**	**2.88**	**281**	P	**Pb**	**14 03 34.0**	**+0.5**
DNZL	**Cakiroluk**	**2.92**	**360**	*i* P	**Pn**	**14 03 31.2**	**+2.5**
DNZL				*i* S	**Sn**	**14 04 04.2**	**+0.3**
DNZL	**Cakiroluk**	**2.92**	**360**	P	**Pn**	**14 03 31.2**	**+2.5**
DNZL				S	**Sn**	**14 04 04.2**	**+0.3**
LAST	**Lasithi**	**2.97**	**279**	S	**Sn**	**14 04 07.5**	**+2.6**
LAST	**Lasithi**	**2.97**	**279**	P	**Pb**	**14 03 35.4**	**+0.3**
GAZI	**Gazipasa**	**3.04**	**60**	*i* P	**Pn**	**14 03 31.3**	**+1.3**
GAZI				*i* S	**Sn**	**14 04 04.8**	**-1.6**
GAZI	**Gazipasa**	**3.04**	**60**	P	**Pn**	**14 03 31.3**	**+1.3**
GAZI				S	**Sn**	**14 04 04.8**	**-1.6**
IDI	**Anoyia**	**3.46**	**280**	P	**Pn**	**14 03 39.2**	**+3.2**
IDI				S	**Sn**	**14 04 17.4**	**+0.4**
IDI	**Anoyia**	**3.46**	**280**	P	**Pn**	**14 03 39.2**	**+3.2**
IDI				S	**Sn**	**14 04 17.4**	**+0.4**
IDI				AML	AML	14 04 21.0	
	comp=E,101μm,0.4s						
IDI				AML	AML	14 04 21.7	
	comp=N,150μm,0.3s						
APE	**Apeiranthos**	**3.68**	**310**	⇓*i* P	**Pn**	**14 03 41.9**	**+3.0**
APE	**Apeiranthos**	**3.68**	**310**	⇓*i* P	**Pn**	**14 03 41.9**	**+3.0**
IMMV	**Iera Moni Meta**	**4.22**	**281**	P	**Pb**	**14 03 52.1**	**-4.3**
SLUM	**Salum** baz=230	**4.59**	**226**	P	**Pn**	**14 03 54.0**	**+2.6**
SLUM				S	**Sn**	**14 04 42.2**	**-2.5**
	baz=230						
SLUM	**Salum**	**4.59**	**226**	P	**Pn**	**14 03 54.0**	**+2.6**
SLUM				S	**Sn**	**14 04 42.2**	**-2.5**
ANKY	**Antikythira Is**	**4.84**	**285**	P	Pn	14 03 59.7	+4.8
ANKY	**Antikythira Is**	**4.84**	**285**	P	Pn	14 03 59.7	+4.8
ANKY				S	**Sn**	**14 04 48.7**	**-2.1**
VLI	**Veliai**	**5.35**	**293**	P	**Pn**	**14 04 03.2**	**+1.3**
VLI	**Veliai**	**5.35**	**293**	P	**Pn**	**14 04 03.2**	**+1.3**
VLI				S	**Sn**	**14 05 00.9**	**-2.6**
KOT	**Kottamia** baz=151	**5.36**	**153**	P	**Pn**	**14 04 03.3**	**+1.3**
KOT	**Kottamia**	**5.36**	**153**	P	**Pn**	**14 04 03.3**	**+1.3**
SUZ	**Suez** baz=143	**5.85**	**146**	P	**Pn**	**14 04 10.5**	**+1.7**
SUZ	**Suez**	**5.85**	**146**	P	**Pn**	**14 04 10.5**	**+1.7**
HNKL	**Nakhl** baz=135	**6.37**	**138**	P	**Pn**	**14 04 17.9**	**+2.0**
HNKL	**Nakhl**	**6.37**	**138**	P	**Pn**	**14 04 17.9**	**+2.0**
TR2	**Tor 2** baz=145	**7.50**	**147**	P	**Pn**	**14 04 33.6**	**+2.3**
TR2	**Tor 2**	**7.50**	**147**	P	**Pn**	**14 04 33.6**	**+2.3**

IDC 06 14:08:30.9±7.6, 17°.76S×177°.11W, h0km, mb4.2/3, mb1 4.4/3, mb1mx3.7/30, mbtmp4.2/3, Error ellipse: s-maj=337.3km s-min=35.2km az=144.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac** 2μm,28.2s	**16.05**	**252**	*e*LQ	LQ	14 15 40.3	
DZM				*e*LR	LR	14 16 19.0	
	1μm,25.9s						
DZM	**Mont Dzumac** 759nm,29.2s	**16.05**	**252**	*e*LQ	LQ	14 24 40.0	
DZM				*e*LR	LR	14 25 18.8	
	484nm,27.9s						
PPT2	**Papeete2** 702nm,27.2s,baz=254	**26.22**	**94**	*e*LR	LR	14 20 53.9	
TBI	**Tubuai** 732nm,28.2s	**26.45**	**107**	*e*LR	LR	14 21 14.0	
CTA	**Charters Tower** 4.5nm,0.8s,baz=92,slow=10,SNR=7.3	**34.69**	**260**	P	P	14 15 23.4	+0.6
TAOE	**Nuku Hiva Isla** 633nm,27.4s	**36.98**	**81**	*e*LR	LR	14 25 40.1	
RKT	**Rikitea** 517nm,30.2s	**39.74**	**105**	*e*LR	LR	14 27 19.3	
ASAR	**Alice Springs** 3.6nm,0.7s,baz=85,slow=8.6,SNR=33	**46.02**	**254**	P	P	14 16 55.9	-0.7
ILAR	**Eielson Array** 1.1nm,1.0s,baz=227,slow=5.7,SNR=5.4	**85.47**	**12**	P	P	14 21 09.9	-0.1
BRTR	**Keskin Array B** 1.3nm,1.0s,baz=100,slow=5.0,SNR=4.7	**145.55**	**316**	PKPbc	PKPdf	14 28 11.1	-0.5

IDC 06 14:10:47.7±5.9, 17°.63S×176°.73W, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.7/30, mbtmp3.9/4, Error ellipse: s-maj=254.3km s-min=32.5km az=144.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower** 2.3nm,0.8s,baz=96,slow=15,SNR=3.6	**35.07**	**260**	P	P	14 17 41.7	-1.1
WRA	**Warramunga Arr** 0.7nm,0.9s,baz=97,slow=7.2,SNR=4.2	**46.26**	**259**	P	P	14 19 16.3	+1.1
ASAR	**Alice Springs** 1.7nm,0.7s,baz=84,slow=8.5,SNR=11	**46.41**	**254**	P	P	14 19 15.6	-0.8
ILAR	**Eielson Array** 1.2nm,1.0s,baz=219,slow=6.1,SNR=6.6	**85.27**	**12**	P	P	14 23 24.9	-0.9
BRTR	**Keskin Array B** 0.4nm,0.6s,baz=0.0,slow=0.3,SNR=3.8	**145.71**	**316**	PKPbc	PKPab	14 30 29.7	+0.4

IDC 06 14:11:41.4±6.0, 16°.30S×177°.79W, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.8/30, mbtmp4.0/4, MS4.2/1, Ms1 4.2/1, ms1mx3.3/23, Error ellipse: s-maj=277.5km s-min=35.4km az=144.0, Fiji Islands region

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

AFI	**Afiamalu** comp=Z,2μm,19.0s,baz=241,slow=33	**6.28**	**69**	LR	LR	14 15 10.8		
DZM	**Mont Dzumac** 1μm,28.4s	**15.96**	**246**	*e*LQ	LQ	14 18 46.7		
DZM				*e*LR	LR	14 19 27.8		
	1μm,26.7s							
PPT2	**Papeete2** 776nm,28.0s	**27.01**	**97**	*e*LR	LR	14 24 00.7		
TBI	**Tubuai** 758nm,28.8s	**27.52**	**109**	*e*LR	LR	14 24 21.1		
CTA	**Charters Tower** 2.1nm,0.7s,baz=89,slow=15,SNR=3.7	**34.32**	**258**	P	P	14 18 31.1	+1.0	
TAOE	**Nuku Hiva Isla** 660nm,27.4s	**37.43**	**83**	*e*LR	LR	14 28 46.4		
RKT	**Rikitea** 551nm,27.8s	**40.76**	**107**	*e*LR	LR	14 30 26.4		
WRA	**Warramunga Arr** 0.7nm,0.9s,baz=87,slow=6.8,SNR=3.2	**45.52**	**258**	P	P	14 20 02.2	-1.0	
ASAR	**Alice Springs** 3.8nm,0.7s,baz=86,slow=8.7,SNR=8.3	**45.81**	**253**	P	P	14 20 05.4	-0.1	
ILAR	**Eielson Array** 0.9nm,1.0s,baz=227,slow=6.6,SNR=4.0	**84.20**	**13**	P	P	14 24 14.2	0.0	
BRTR	**Keskin Array B** 0.3nm,0.3s,baz=65,slow=3.8,SNR=3.9	**144.05**	**317**	PKP	PKPdf	14 31 19.4	-0.2	

CASC 06 14:11:51.1±0.9, 12°.34N×87°.68W, h22km±4km, MD3.9, ML3.6, 1C-2D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**0.94**	**351**	⇓*i* P	Pn	14 12 09.1	0.0
CNCH				*e*S	Sn	14 12 21.4	-0.5
CNGN	**Cerro Negro**	**0.97**	**81**	*e*P	Pb	14 12 08.9	-0.4
CNGN				*e*S	Sb	14 12 21.7	0.0
CNGN				AML	AML	14 12 26.6	
	comp=N,2μm,0.3s						
COPN	**Copaltepe**	**1.08**	**99**	*e*P	Pn	14 12 10.5	-0.4
MOMN	**Momotombo**	**1.12**	**87**	*e*P	Pn	14 12 11.1	-0.4
BLLM	**Bellamira**	**1.22**	**334**	*e*P	Pn	14 12 12.6	-0.4
LCY	**Lacayo**	**1.23**	**331**	*e*P	Pn	14 12 12.9	-0.2
PACA	**Pacayal**	**1.28**	**331**	*e*P	Pn	14 12 13.5	-0.3
XAVN	**Gruta Xavier**	**1.34**	**98**	*e*P	Pn	14 12 14.4	-0.1
TISN	**Laguna Tiscapa**	**1.39**	**98**	*e*P	Pn	14 12 15.2	-0.1
MGAN	**Managua**	**1.42**	**98**	*e*P	Pn	14 12 15.3	-0.3
ESTN	**Estel**	**1.48**	**59**	*e*P	Pn	14 12 16.6	0.0
CAHU	**Cacacuatique**	**1.51**	**340**	*e*P	Pn	14 12 17.1	0.0
CAHU				*e*S	Sb	14 12 37.1	-0.2
SNVI	**San Vicente**	**1.69**	**318**	*e*P	Pn	14 12 19.5	0.0
TGUH	**Tegucigalpa,Un**	**1.75**	**13**	*e*P	Pn	14 12 20.6	+0.5
TGUH				⇓*i*P	Pb	14 12 20.7	-1.8
LFRS	**El Faro**	**1.85**	**314**	⇓*e*P	Pn	14 12 21.2	-0.5
BOAB	**BOACO BROADBAN**	**1.97**	**87**	*e*P	Pn	14 12 22.6	-0.6
BOQS	**Boqueron**	**2.08**	**312**	*e*P	Pn	14 12 25.0	0.0

*ECX **06** 14:21:39.3±0.5, 31°.38N×115°.35W, h6km, MD2.6, ML2.8*

*NEIC **06** 14:21:39.3, 31°.38N×115°.35W, h6km, ML2.8(ECX), ML2.8(PAS), After ECX.*

*MEX **06** 14:21:40.8±0.5, 31°.26N×115°.26W, h10km, MD3.6*

ISC 06 14:21:35.9±1.6, 31°.26N±0°.04×115°.31W±0°.05, h16km±11km, n15, σ0s57/29, 2C-4D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPX	**San Pedro Mart**	**0.25**	**212**	⇓*e*P	**Pn**	**14 21 45.9**	**+0.5**
SPX				*e*S	**Sn**	**14 21 50.7**	**-0.4**
SPX	**San Pedro Mart**	**0.25**	**212**	*i* P	**Pn**	**14 21 45.9**	**+0.5**
SPX				*i* S	**Sn**	**14 21 50.4**	**-0.7**
SPIG	**San Pedro Mart**	**0.26**	**213**	*i* P	**Pn**	**14 21 45.8**	**+0.5**
SPIG				*i* S	**Sn**	**14 21 50.7**	**-0.4**
SPIG	**San Pedro Mart**	**0.26**	**213**	⇓*e*P	**Pn**	**14 21 45.8**	**+0.5**
SPIG				*e*S	**Sn**	**14 21 50.7**	**-0.4**
SPIG	**San Pedro Mart**	**0.26**	**213**	*i* P	**Pn**	**14 21 45.8**	**+0.5**
SPIG				*i* S	**Sn**	**14 21 50.7**	**-0.4**
ECBX	**El Chinero**	**0.30**	**46**	⇑*e*P	**Pn**	**14 21 44.3**	**-1.4**
ECBX				*e*S	**Sb**	**14 21 48.2**	**+0.5**
ECBX				⇓*e*		14 21 48.4	
ECBX				IAML		14 21 48.4	
	comp=E,1μm,0.2s						
ZAX	**El Zacaton**	**0.87**	**287**	⇑*e*P	**Pn**	**14 21 53.5**	**0.0**
ZAX				*e*S	**Sg**	**14 22 04.1**	**-0.2**
MBIG	**Mexicali**	**1.15**	**5**	*i* S	**Sn**	**14 22 13.0**	**+0.3**
CPBX	**Cerro Prieto**	**1.15**	**0**	*e*P	**Pg**	**14 21 59.4**	**+1.2**
CPBX				*e*S	**Sn**	**14 22 13.6**	**+0.7**
ECNX	**Esteban Cantu**	**1.17**	**290**	*e*P	**Pg**	**14 21 58.7**	**0.0**
ECNX				*e*S	**Sb**	**14 22 13.1**	**+0.2**
PBX	**Punta Banda**	**1.30**	**292**	*e*P	**Pg**	**14 22 00.8**	**-0.3**
PBX				*e*S	**Sb**	**14 22 16.9**	**+0.2**
CBX	**Cerro Bola**	**1.56**	**313**	*e*P	**Pg**	**14 22 05.6**	**-0.4**
CBX				*e*S	**Sb**	**14 22 24.1**	**0.0**
CBX	**Cerro Bola**	**1.56**	**313**	⇓*e*P	**Pg**	**14 22 05.9**	**-0.2**
CBX				*e*S	**Sn**	**14 22 23.6**	**+0.5**
CBX	**Cerro Bola**	**1.56**	**313**	*e*P	**Pg**	**14 22 05.6**	**-0.4**
CBX				*e*S	**Sb**	**14 22 24.1**	**0.0**
TJIG	**Tijuana**	**1.65**	**315**	*e*P	**Pg**	**14 22 06.9**	**-0.8**
TJIG				*e*S	**Sb**	**14 22 26.8**	**+0.3**

*IDC **06** 14:34:09.3±1.2, 33°.12S×68°.93W, h0km, mb3.8/4, mb1 3.9/7, mb1mx3.7/31, mbtmp3.8/7, ML3.6/2, MS3.7/2, Ms1 3.7/2, ms1mx3.2/23, Error ellipse: s-maj=39.1km s-min=21.1km az=102.0*

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PLCA				Lg	Lg	14 38 13.3	
	comp=Z,1.7nm,0.3s,baz=123,slow=21,SNR=3.5						
PLCA	**Paso Flores**	**7.72**	**189**	*e*Pn	**Pn**	**14 36 04.5**	**+0.7**
PLCA				Lg	Lg	14 38 13.3	
LVC	**Limon Verde**	**10.45**	**0**	Pn	**Pn**	**14 36 41.3**	**-0.2**
	comp=Z,46nm,0.3s,baz=174,slow=10,SNR=5.1						
LVC				Lg	Lg	14 39 45.7	
	comp=Z,73nm,0.3s,baz=274,slow=18,SNR=5.0						
LVC				LR	LR	14 40 59.9	
	comp=Z,1µm,19.6s,baz=184,slow=39						
CPUP	**Villa Florida**	**12.18**	**59**	Pn	Pn	14 37 10.1	+5.3
	comp=Z,0.5nm,0.3s,baz=234,slow=12,SNR=5.3						
CPUP				Lg	Lg	14 40 42.5	
	comp=Z,1.0nm,0.3s,baz=156,slow=20,SNR=2.8						
CPUP	**Villa Florida**	**12.18**	**59**	*e*Pn	**Pn**	**14 37 00.7**	**-4.1**
CPUP				Lg	Lg	14 40 42.5	
SIV	**San Ignacio**	**18.48**	**25**	P	**P**	**14 38 27.1**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=216,slow=14,SNR=7.8						
NNA	**Nana**	**22.21**	**339**	LR	LR	14 46 06.5	
	comp=Z,65nm,19.9s,baz=174,slow=32						
SAML	**Samuel**	**24.63**	**14**	*e*P	**P**	**14 39 30.7**	**-0.8**
	comp=Z,4.7nm,1.0s						
BDFB	**Brasilia**	**25.75**	**53**	P	**P**	**14 39 42.0**	**+0.2**
	comp=Z,1.7nm,0.6s,baz=163,slow=20,SNR=3.0						
PTGA	**Pitinga**	**33.30**	**17**	P	**P**	**14 40 48.0**	**-0.7**
	comp=Z,1.1nm,0.5s,baz=189,slow=18,SNR=4.7						
HELC	**Santa Helena**	**39.56**	**350**	*e*P	**P**	**14 41 42.7**	**+0.2**
HELC				*e*pP	**pP**	**14 41 49.9**	**-0.4**
QSPA	**South Pole Qui**	**57.14**	**180**	*e*P	**P**	**14 43 58.6**	**+1.3**
	comp=Z,13nm,1.6s						
TXAR	**Lajitas Array**	**70.25**	**328**	P	**P**	**14 45 24.8**	**+0.8**
	comp=Z,0.2nm,0.6s,baz=157,slow=7.4,SNR=3.7						
WVT	**Waverly**	**71.09**	**344**	*e*P	**P**	**14 45 28.5**	**-0.4**
	comp=Z,5.2nm,0.9s						
TORD	**Torodi Ar. Bea**	**81.52**	**68**	P	**P**	**14 46 28.6**	**0.0**
	comp=Z,0.4nm,0.7s,baz=244,slow=4.1,SNR=5.3						
ZAA0	**Zalesovo Array**	**152.09**	**34**	*e*PKPdf	**PKPdf**	**14 53 59.1**	**+0.2**
ZAA0				*e*PKPbc	**PKiKP**	**14 54 05.8**	**0.0**
ZAA0				*e*PKPab	**PKPab**	**14 54 15.4**	**+0.3**
ZALV	**Zalesovo Beam**	**152.09**	**34**	PKPbc	**PKPbc**	**14 54 05.9**	**+0.4**
	comp=Z,0.8nm,0.4s,baz=298,slow=3.6,SNR=3.8						

CASC 06 14:37:41.1±3.4**, 10°.29N×84°.30W, h67**km±50km**, MD4.0, 4C-1D, Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CGA2	**Cerro Gallo 2**	**0.32**	**211**⇑	*e*P	Pn	14 37 54.9	+2.6
URSC	**Urasca**	**0.69**	**131**⇓	*i*P	Pn	14 37 57.0	+1.1
QCR	**Quepos**	**0.87**	**171**⇑	*i*P	Pn	14 37 58.9	+0.9
QCR				*e*S	Sn	14 38 10.7	+0.4
BUS	**Buena Vista**	**0.91**	**144**⇑	*i*P	Pn	14 37 59.1	+0.3
BUS				*e*S	Sn	14 38 11.5	-0.3
JCR	**Jicaral**	**0.91**	**241**⇑	*i*P	Pn	14 37 59.3	+0.8
JCR				*e*S	Sn	14 38 11.6	+0.3
TBS2		**2.20**	**132**	*e*P	Pn	14 38 14.2	-1.4
TBS2				*e*S	Sn	14 38 43.3	+1.3

*ISCJB **06** 14:42:09.8±0.6, 39°.09N±0°.05×29°.04E±0°.05, h5km±8km, Error ellipse: s-maj=10.1km s-min=4.7km az=149.9*
*ISK **06** 14:42:09.9, 39°.09N×29°.12E, h8km, MD2.6*
*DDA **06** 14:42:09.8, 39°.10N×29°.02E, h7km, Md2.7*
*CSEM **06** 14:42:10.0±0.2, 39°.09N×29°.04E, h5km, MD2.7, Error ellipse: s-maj=6.4km s-min=3.3km az=128.0*
ISC 06 14:42:10.1±1.0**, 39°.08N**±0°.03×**29°.04E**±0°.03**, h9**km±10km**, n18, σ0s.52**/28**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**262**	*i* P	**Pg**	**14 42 15.3**	**+0.1**
DEMI				*i* S	**Sg**	**14 42 18.8**	**+0.1**
DEMI	**Demirci**	**0.25**	**262**	P	**Pg**	**14 42 15.3**	**+0.1**
DEMI				S	**Sg**	**14 42 18.8**	**+0.1**
GDZ	**Gediz**	**0.34**	**88**	*i* P	**Pg**	**14 42 17.1**	**+0.1**
GDZ				*i* S	**Sg**	**14 42 22.4**	**+0.9**
GDZ	**Gediz**	**0.34**	**88**	P	**Pg**	**14 42 17.1**	**+0.1**
GDZ				S	**Sg**	**14 42 22.4**	**+0.9**
TVSB	**Tavsanli**	**0.50**	**41**	*e*PG	**Pg**	**14 42 19.3**	**-0.4**
TVSB				*e*SG	**Sg**	**14 42 25.3**	**-1.0**
TVSB	**Tavsanli**	**0.50**	**41**	*e*Pg	**Pg**	**14 42 19.3**	**-0.4**
TVSB				*e*Sg	**Sg**	**14 42 25.3**	**-1.0**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*PG	**Pb**	**14 42 23.5**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*Pg	**Pb**	**14 42 23.5**	**+0.1**
MANT	**Manisa**	**0.69**	**213**	*i* P	**Pg**	**14 42 22.8**	**-0.7**
MANT				*i* S	**Sg**	**14 42 32.4**	**-0.3**
MANT	**Manisa**	**0.69**	**213**	P	**Pg**	**14 42 22.8**	**-0.7**
MANT				S	**Sg**	**14 42 32.3**	**-0.3**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pg**	**14 42 34.3**	**-0.4**
CAVI				*e*SN	**Sn**	**14 42 51.9**	**+0.3**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pg**	**14 42 34.3**	**-0.4**
CAVI				*e*Sn	**Sn**	**14 42 51.9**	**+0.3**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pg**	**14 42 35.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pg**	**14 42 35.4**	**+0.4**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pg**	**14 42 34.6**	**-0.5**
IZI	**Iznik**	**1.30**	**15**	*e*Pn	**Pg**	**14 42 34.6**	**-0.5**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pn**	**14 42 37.2**	**+0.1**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pn**	**14 42 37.2**	**+0.1**

*IDC **06** 14:46:36.3±0.5, 16°.55S×177°.33W, h0km, mb4.5/18, mb1 4.7/20, mb1mx4.5/34, mbtmp4.5/20, ML3.9/1, MS4.8/13, Ms1 4.8/13, ms1mx4.6/33, Error ellipse: s-maj=20.9km s-min=14.0km az=123.0*
*NEIC **06** 14:46:37.9±0.2, 16°.50S×177°.49W, h10km, mb5.0/50, Error ellipse: s-maj=8.3km s-min=4.6km az=144.0*
*BJI **06** 14:46:37.4, 16°.39S×177°.43W, h6km, mb4.9/32, mB5.3/19, Ms5.6/4, Ms7 5.5/5*
*GCMT **06** 14:46:37.9±0.1, 16°.30S×177°.45W, h12km, MW5.3/106, Moment Tensor Solution. s76,c116; s106,c179; Duration: 1s.1 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.04±.02; $M_{\theta\theta}$-1.11±.02; $M_{\phi\phi}$1.15±.02; $M_{r\theta}$0.01±.05; $M_{\theta\phi}$-0.15±.02; $M_{\phi r}$0.44±.05; Best double couple: $M_0$1.21300×10^{17} NP1:ϕ_s42.00000°,δ79.00000°, λ15.00000°. NP2:ϕ_s310.00000°,δ76.00000°,λ169.00000°. Principal axes: T 1.3040, Plg18.0000°, Azm266.0000°; N -0.1770, Plg72.0000°, Azm78.0000°; P -1.1220, Plg2.0000°, Azm176.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISCJB **06** 14:46:39.9±0.2, 16°.57S±0°.05×177°.50W±0°.05, h33km, mb4.9/80, MS5.0/11 Error ellipse: s-maj=8.7km s-min=4.9km az=143.4*
*MOS **06** 14:46:41.0±1.4, 16°.51S×177°.64W, h33km, mb5.1/14, Error ellipse: s-maj=14.4km s-min=10.5km az=154.7*
ISC 06 14:46:42.0±0.3**, 16°.60S**±0°.07×**177°.46W**±0°.06**, h35**km**, n210, σ1s.38**/205**, mb4.9**/80**, MS4.8**/11**, 1C-2D, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.44**	**255**	*e*P	**Pn**	**14 47 44.0**	**-2.9**
MSVF	**Nonsavu**	**4.44**	**255**	*e*Pn	**Pn**	**14 47 44.0**	**-2.9**
AFI	**Afiamalu**	**6.10**	**65**	Pn	Pn	14 48 04.4	-5.5
	3.3nm,0.3s,baz=270,slow=14,SNR=5.4						
AFI				LR	LR	14 49 56.8	
	comp=Z,13µm,20.0s,baz=245,slow=34						
AFI	**Afiamalu**	**6.10**	**65**	*e*P	**Pn**	**14 48 07.0**	**-2.8**
AFI	**Afiamalu**	**6.10**	**65**	*e*Pn	**Pn**	**14 48 07.0**	**-2.8**
RAO	**Raoul Island**	**12.60**	**182**	LR	LR	14 53 48.4	
	comp=Z,7µm,20.4s,baz=352,slow=34						
DZM	**Mont Dzumac**	**16.13**	**248**	Pn	**Pn**	**14 50 26.5**	**+0.2**
	baz=82,slow=11,SNR=5.3						
DZM				LR	LR	14 55 41.6	
	comp=Z,4µm,19.8s,baz=74,slow=34						
DZM	**Mont Dzumac**	**16.13**	**248**	*e*P	**Pn**	**14 50 25.6**	**-0.7**
	74nm,1.1s						
DZM				*e*LR	LR	14 54 07.1	
	9µm,25.9s						
DZM	**Mont Dzumac**	**16.13**	**248**	*e*Pn	**Pn**	**14 50 25.3**	**-1.0**
RAR	**Rarotonga**	**17.35**	**108**	LR	LR	14 55 48.4	
	comp=Z,2µm,20.1s,baz=294,slow=32						
URZ	**Urewera**	**22.10**	**191**	P	**P**	**14 51 35.3**	**+1.2**
	32nm,0.9s,baz=348,slow=3.7,SNR=6.4						
URZ				LR	LR	14 59 13.4	
	comp=Z,3µm,20.0s,baz=14,slow=34						
URZ	**Urewera**	**22.10**	**191**	*e*P	**P**	**14 51 34.8**	**+0.7**
	44nm,0.9s						
HNR	**Honiara**	**23.12**	**285**	LR	LR	14 59 16.5	
	comp=Z,5µm,20.0s,baz=110,slow=33						
PAE	**Paea**	**26.66**	**96**	*e*T	T	15 19 59.3	
	4.4nm,0.3s						
PPT2	**Papeete2**	**26.66**	**96**	*e*LQ	LQ	14 57 42.6	
	2µm,30.0s						
PPT2				*e*LR	LR	14 58 56.3	
	5µm,27.0s,baz=261						
PPT	**Papeete**	**26.66**	**96**	LR	LR	14 59 52.1	
	comp=Z,2µm,21.8s,baz=272,slow=30						
TBI	**Tubuai**	**27.13**	**109**	*e*LQ	LQ	14 57 59.0	
	4µm,31.8s						
TBI				*e*LR	LR	14 59 16.3	
	5µm,28.5s,baz=284						
TBI	**Tubuai**	**27.13**	**109**	*e*T	T	15 20 35.9	
	6.5nm,0.3s						
LTZ	**Lake Taylor**	**27.53**	**196**	*e*P	**P**	**14 52 26.2**	**+0.8**
	235nm,1.8s						
OXZ	**Oxford**	**28.10**	**196**	*e*P	**P**	**14 52 31.1**	**+0.7**
	87nm,1.1s						
RPZ	**Rata Peaks**	**28.73**	**197**	P	**P**	**14 52 36.1**	**0.0**
	13nm,1.0s,baz=164,slow=7.4,SNR=3.2						
FOZ	**Fox Glacier**	**28.94**	**199**	*e*P	**P**	**14 52 38.5**	**+0.6**
	217nm,1.5s						
LBZ	**Lake Benmore**	**29.60**	**198**	*e*P	**P**	**14 52 43.6**	**-0.2**
	130nm,1.5s						
EIDS	**Eidsvold**	**30.58**	**248**	*e*P	**P**	**14 52 51.9**	**-0.8**
	21nm,1.0s						
ARMA	**Armidale**	**31.39**	**238**	P	**P**	**14 53 00.7**	**+0.9**
	baz=32,SNR=4.2						
RMQ	**Roma**	**32.84**	**247**	P	**P**	**14 53 13.0**	**+0.5**
	baz=33,SNR=12						
CTA	**Charters Tower**	**34.57**	**259**	P	**P**	**14 53 27.7**	**0.0**
CTA				pmax	pmax		
	comp=Z,61nm,1.7s						
CTAO	**Charters Tower**	**34.57**	**259**	*e*P	**P**	**14 53 26.6**	**-1.1**
CTAO				pmax	pmax		
	comp=Z,53nm,1.0s						
CTAO	**Charters Tower**	**34.57**	**259**	*e*P	**P**	**14 53 26.6**	**-1.1**
	comp=Z,53nm,1.0s						
PMG	**Port Moresby**	**35.17**	**277**	P	**P**	**14 53 33.6**	**+0.8**
	comp=Z,30nm,1.1s,baz=18,slow=16,SNR=3.7						
PMG				LR	LR	15 05 28.8	
	comp=Z,979nm,20.1s,baz=84,slow=32						
MTSU	**Mount Surprise**	**36.47**	**262**	P	**P**	**14 53 43.9**	**-0.2**
	baz=36,SNR=16						
CMSA	**Cobar Meteorol**	**36.59**	**239**	P	**P**	**14 53 45.2**	**+0.4**
	baz=37,SNR=21						
QLP	**Quilpie**	**36.85**	**248**	P	**P**	**14 53 47.1**	**-0.1**
	baz=37,SNR=19						
TAOE	**Nuku Hiva Isla**	**37.15**	**83**	*e*S	**S**	**14 59 38.2**	**+3.7**
	comp=Z,339nm,26.6s						
TAOE				*e*LR	LR	15 03 42.3	
	comp=Z,5µm,28.1s,baz=255						
COEN	**Coen**	**38.02**	**268**	P	**P**	**14 53 57.6**	**+0.4**
	baz=38,SNR=7.7						
COEN	**Coen**	**38.02**	**268**	*e*P	**P**	**14 53 57.0**	**-0.3**
	comp=Z,25nm,0.9s						
STKA	**Stephens Creek**	**40.06**	**240**	P	**P**	**14 54 14.6**	**+0.5**
	comp=Z,26nm,0.9s,baz=72,slow=8.5,SNR=7.4						
STKA				LR	LR	15 09 06.6	
	comp=Z,830nm,20.8s,baz=73,slow=34						
STKA	**Stephens Creek**	**40.06**	**240**	P	**P**	**14 54 14.9**	**+0.8**
	baz=40,SNR=11						
STKA	**Stephens Creek**	**40.06**	**240**	*e*P	**P**	**14 54 14.2**	**+0.1**
STKA				pmax	pmax		
	comp=Z,11nm,1.1s						
STKA	**Stephens Creek**	**40.06**	**240**	*e*P	**P**	**14 54 14.2**	**+0.1**
	comp=Z,11nm,1.1s						
RKT	**Rikitea**	**40.38**	**106**	*e*LR	LR	15 05 23.0	
	comp=Z,3µm,27.5s,baz=288						
RKT	**Rikitea**	**40.38**	**106**	*e*T	T	15 37 03.7	
	comp=Z,2.6nm,0.2s						
HTT	**Hallett**	**42.59**	**238**	P	**P**	**14 54 34.9**	**0.0**
	baz=43,SNR=4.1						
WRAB	**Tennant Creek**	**45.76**	**258**	*e*P	**P**	**14 55 00.8**	**+0.3**
WRAB				pmax	pmax		
	comp=Z,31nm,1.2s						
WRAB	**Tennant Creek**	**45.76**	**258**	*e*P	**P**	**14 55 00.8**	**+0.3**
	comp=Z,31nm,1.2s						
WRA	**Warramunga Arr**	**45.77**	**258**	P	**P**	**14 54 59.0**	**-1.5**
	comp=Z,19nm,1.2s,baz=92,slow=6.7,SNR=15						
WRA				PcP	**PcP**	**14 56 37.6**	**-0.3**
	comp=Z,2.5nm,0.9s,baz=88,slow=3.4,SNR=2.9						
WRA				LR	LR	15 13 06.7	
	comp=Z,1µm,19.7s,baz=105,slow=35						
AS01	**Alice Springs**	**45.98**	**253**	*e*P	**P**	**14 55 00.4**	**-1.8**
AS31	**Alice Springs**	**46.03**	**253**	*e*P	**P**	**14 55 00.4**	**-2.1**
	comp=Z,12nm,0.8s						
ASAR	**Alice Springs**	**46.03**	**253**	P	**P**	**14 55 01.6**	**-0.9**
	comp=Z,31nm,0.7s,baz=86,slow=8.5,SNR=109						
ASAR				PcP	**PcP**	**14 56 38.9**	**+0.1**
	comp=Z,2.2nm,0.7s,baz=99,slow=4.2,SNR=5.3						
ASAR				LR	LR	15 12 55.4	
	comp=Z,3µm,20.2s,baz=98,slow=34						
MTN	**Manton Dam**	**49.76**	**267**	P	**P**	**14 55 31.4**	**-0.1**
	baz=50,SNR=11						
MTN	**Manton Dam**	**49.76**	**267**	*e*P	**P**	**14 55 30.1**	**-1.3**
	comp=Z,47nm,1.0s						
WRKA	**Warakurna**	**51.12**	**251**	P	**P**	**14 55 40.8**	**-0.9**
	baz=51,SNR=20						
FITZ	**Fitzroy Crossi**	**54.15**	**259**	P	**P**	**14 56 04.9**	**+0.7**
	baz=54,SNR=7.5						
FITZ	**Fitzroy Crossi**	**54.15**	**259**	*e*P	**P**	**14 56 04.0**	**-0.1**
	comp=Z,44nm,1.4s						
SOEI	**Soe**	**56.99**	**269**	*e*P	**P**	**14 56 25.4**	**+0.6**
	comp=Z,165nm,1.2s						
MBWA	**Marble Bar**	**59.28**	**255**	*e*P	**P**	**14 56 40.5**	**-0.1**
	comp=Z,21nm,0.9s						
SBA	**Scott Base**	**61.77**	**184**	*e*P	**P**	**14 56 58.3**	**+1.6**
SBA				pmax	pmax		
	comp=Z,14nm,1.2s						
SBA	**Scott Base**	**61.77**	**184**	*e*P	**P**	**14 56 58.3**	**+1.6**
	comp=Z,14nm,1.2s						
VNDA	**Vanda**	**61.82**	**185**	P	**P**	**14 56 56.7**	**-0.3**
	comp=Z,1.9nm,0.9s,baz=360,slow=8.0,SNR=6.1						
VNDA				LR	LR	15 19 26.9	
	comp=Z,383nm,19.8s,baz=50,slow=32						
VNDA	**Vanda**	**61.82**	**185**	*e*P	**P**	**14 56 59.3**	**+2.4**
VNDA				pmax	pmax		
	comp=Z,20nm,1.8s						
VNDA	**Vanda**	**61.82**	**185**	*e*P	**P**	**14 56 59.3**	**+2.4**
	comp=Z,20nm,1.8s						
MJAR	**Matsushiro Arr**	**67.42**	**322**	P	**P**	**14 57 33.1**	**-1.0**
	comp=Z,6.1nm,1.1s,baz=161,slow=5.6,SNR=8.5						
MAJO	**Matsushiro**	**67.42**	**322**	*e*P	**P**	**14 57 32.9**	**-1.2**
MAJO				pmax	pmax		
	comp=Z,14nm,1.2s						
MAJO	**Matsushiro**	**67.42**	**322**	*e*P	**P**	**14 57 32.9**	**-1.2**
	comp=Z,14nm,1.2s						
MJB9	**Matsu-Tunnel**	**67.42**	**322**	*e*P	**P**	**14 57 32.9**	**-1.3**
	comp=Z,3.3nm,1.1s						
CASY	**Casey**	**67.70**	**205**	*e*P	**P**	**14 57 35.5**	**0.0**
	comp=Z,18nm,0.9s						
SBUM	**Sibu**	**71.91**	**278**	*e*P	**P**	**14 58 02.3**	**0.0**
	comp=Z,15nm,1.1s						
TPUB	**Ta-pu**	**72.34**	**302**	*e*P	**P**	**14 58 03.5**	**-1.1**
	comp=Z,26nm,1.1s						
PET	**Petropavlovsk**	**72.34**	**345**	*e*P	**P**	**14 58 05.5**	**+1.5**
PET				*e*S	**S**	**15 07 26.2**	**+1.5**
PET				MLR	MLR		
	comp=Z,2µm,15.0s						
PETK	**Petropavlovsk-**	**72.66**	**345**	P	**P**	**14 58 05.0**	**-0.9**
	comp=Z,2.8nm,0.9s,baz=251,slow=2.6,SNR=3.1						
PETK	**Petropavlovsk-**	**72.66**	**345**	P	**P**	**14 58 05.0**	**-0.9**
YSS	**Yuzh-Sakhalins**	**72.67**	**333**⇑	*e*P	P	14 58 13.3	+7.3
YSS				pmax	pmax		
	comp=Z,10.0nm,1.5s						
YSS				MLR	MLR		
	comp=Z,9µm,14.0s						
YSS				MLR	MLR		
	comp=N,6µm,13.0s						
YSS				MLR	MLR		
	comp=E,4µm,15.0s						
KSM	**Kuching**	**73.43**	**277**	*e*P	**P**	**14 58 11.1**	**-0.2**
	comp=E,32nm,1.0s						
QSPA	**South Pole Qui**	**73.45**	**180**	*e*P	**P**	**14 58 11.6**	**+0.9**
	comp=E,11nm,1.0s						
KSRS	**Korea Array**	**74.34**	**318**	P	**P**	**14 58 17.3**	**+1.2**
	comp=E,2.8nm,0.9s,baz=128,slow=6.3,SNR=10						
KSAR	**Wonju Array Be**	**74.36**	**318**	P	**P**	**14 58 17.3**	**+1.1**
KSAR	**Wonju Array Be**	**74.36**	**318**	P	**P**	**14 58 17.3**	**+1.1**
KS01	**Wonju Array Si**	**74.37**	**318**	*e*P	**P**	**14 58 16.6**	**+0.3**
USRK	**Ussuriysk Ar.**	**76.06**	**325**	P	**P**	**14 58 27.0**	**+1.1**
	comp=E,5.2nm,1.0s,baz=159,slow=5.1,SNR=10						
AFDM	**Forest Hills D**	**76.41**	**42**	*e*P	**P**	**14 58 30.3**	**+2.3**
	comp=E,5.2nm,1.0s						
MDJ	**Mudanjiang**	**77.65**	**324**	P	**P**	**14 58 35.1**	**+0.3**
MDJ				pP	PcP	14 58 38.4	-6.5
MDJ				sP	pP	14 58 39.6	-6.2
MDJ				PP	**PP**	**15 01 29.5**	**-1.0**
MDJ				S	**S**	**15 08 27.9**	**+3.7**
MDJ				SS	**SS**	**15 13 23.5**	**-1.4**
MDJ				pmax	pmax		
	comp=E,6.0nm,1.1s						
MDJ				pmax	pmax		
	comp=E,92nm,4.9s						
113A	**Mohawk Valley,**	**78.17**	**51**	*e*P	**P**	**14 58 36.6**	**-1.3**
	comp=E,14nm,1.4s						
TPNV	**Topopah Spring**	**78.47**	**46**	*e*P	**P**	**14 58 39.5**	**-0.2**
TPNV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
TPNV	**Topopah Spring**	**78.47**	**46**	*e*P	**P**	**14 58 39.5**	**-0.2**
	comp=Z,5.5nm,1.0s						
K05A	**Summer Lake**	**78.62**	**39**	*e*P	**P**	**14 58 40.6**	**+0.1**
	comp=Z,63nm,1.9s						
Y14A	**Wickenburg**	**79.28**	**50**	*e*P	**P**	**14 58 43.9**	**-0.2**
	comp=Z,75nm,0.2s						
R11A	**Troy Canyon, C**	**79.63**	**45**	*e*P	**P**	**14 58 47.5**	**+1.3**
	comp=Z,14nm,2.0s						
TUC	**Tucson**	**80.19**	**52**	P	**P**	**14 58 49.6**	**+0.5**
TUC				pmax	pmax		
	comp=Z,17nm,1.4s						
TUC	**Tucson**	**80.19**	**52**	P	**P**	**14 58 49.6**	**+0.5**
	comp=Z,17nm,1.4s						
X16A	**Lo Mia Camp, P**	**80.65**	**50**	*e*P	**P**	**14 58 51.0**	**-0.8**
	comp=Z,8.7nm,1.3s						
CCUT	**Cedar City**	**80.76**	**46**	*e*P	**P**	**14 58 50.9**	**-1.4**
	comp=Z,3.3nm,1.0s						
U15A	**North Rim**	**80.97**	**48**	*e*P	**P**	**14 58 52.3**	**-1.2**
	comp=Z,6.5nm,1.1s						
EYAK	**Cordova Ski Ar**	**81.01**	**15**	*e*P	**P**	**14 58 52.8**	**0.0**
	comp=Z,47nm,0.4s						
MTPU	**Mount Pierson**	**81.81**	**46**	*e*P	**P**	**14 58 60.0**	**+1.9**
BMO	**Blue Mountains**	**81.96**	**39**	*e*P	**P**	**14 59 00.2**	**+1.9**
	comp=Z,16nm,1.6s						
MFID	**Camas Ranch**	**82.10**	**40**	*e*P	**P**	**14 58 58.7**	**-0.4**
SEY	**Seymchan**	**82.72**	**347**	P	**P**	**14 58 59.9**	**-1.8**
	comp=Z,4.5nm,1.0s,baz=17,slow=19,SNR=2.8						
HLID	**Hailey**	**83.05**	**41**	*e*P	**P**	**14 59 03.8**	**-0.4**
	comp=Z,9.2nm,1.3s						
IPM	**Ipoh**	**83.16**	**277**	*e*P	**P**	**14 59 04.0**	**-1.2**
	comp=Z,31nm,0.9s						
HVU	**Hansel Valley**	**83.21**	**43**	*e*P	**P**	**14 59 04.3**	**-0.7**
HVU				pmax	pmax		
	comp=Z,7.0nm,1.1s						
HVU	**Hansel Valley**	**83.21**	**43**	*e*P	**P**	**14 59 04.3**	**-0.7**
	comp=Z,6.6nm,1.1s						
SRU	**San Rafael Swe**	**83.46**	**46**	*e*P	**P**	**14 59 05.4**	**-1.0**
SRU				pmax	pmax		
	comp=Z,12nm,1.2s						
SRU	**San Rafael Swe**	**83.46**	**46**	*e*P	**P**	**14 59 05.4**	**-1.0**
	comp=Z,12nm,1.2s						
BJI	**Beijing**	**83.50**	**315**	P	**P**	**14 59 06.2**	**-0.1**
BJI				pmax	pmax		
	comp=Z,23nm,1.3s						
KULM	**Kulim**	**83.76**	**277**	*e*P	**P**	**14 59 08.7**	**+0.4**
	comp=Z,16nm,1.0s						
TCUT	**Toone Canyon**	**83.80**	**44**	*e*P	**P**	**14 59 07.2**	**-0.9**
	comp=Z,51nm,1.5s						
LAZ	**Ladron**	**83.84**	**52**	*e*P	**P**	**14 59 07.5**	**-0.9**
HWUT	**Hardware Ranch**	**83.92**	**44**	*e*P	**P**	**14 59 08.0**	**-0.7**
	comp=Z,3.9nm,0.8s						
PV05	**Paradox Valley**	**83.99**	**48**	*e*P	**P**	**14 59 08.5**	**-0.7**
MNTX	**Cornudas Mount**	**84.09**	**55**	*e*P	**P**	**14 59 08.4**	**-1.2**
	comp=Z,12nm,1.4s						
BNM	**Barren Site**	**84.12**	**52**	*e*P	**P**	**14 59 09.3**	**-0.6**
PV09	**Paradox Valley**	**84.16**	**47**	*e*P	**P**	**14 59 09.3**	**-0.8**
PV10	**Paradox Valley**	**84.17**	**47**	*e*P	**P**	**14 59 09.5**	**-0.6**
DLBC	**Dease Lake**	**84.28**	**23**	P	**P**	**14 59 07.9**	**-2.1**
	comp=Z,0.6nm,0.4s,baz=340,slow=9.0,SNR=3.0						
SKNT	**Sakolnakorn**	**84.28**	**289**	P	**P**	**14 59 14.7**	**+3.9**
	comp=Z,26nm,1.0s						
ENH	**Enshi**	**84.30**	**304**	*e*P	**P**	**14 59 10.0**	**-0.6**
	comp=Z,48nm,1.4s						
SKLT	**Songkhla**	**84.35**	**279**	P	P	14 59 16.2	+5.0
	comp=Z,24nm,1.4s,comp=Z,487nm						
ILAR	**Eielson Array**	**84.42**	**13**	P	**P**	**14 59 09.2**	**-1.2**
	comp=Z,7.2nm,0.9s,baz=225,slow=8.2,SNR=9.7						
TX31	**Lajitas Ar. Si**	**84.53**	**57**	*e*P	**P**	**14 59 11.4**	**-0.6**
TXAR	**Lajitas Array**	**84.53**	**57**	P	**P**	**14 59 12.3**	**+0.3**
	comp=Z,1.8nm,0.8s,baz=224,slow=3.5,SNR=12						
ANMO	**Albuquerque**	**84.58**	**51**	*e*P	**P**	**14 59 11.6**	**-0.6**
ANMO				pmax	pmax		
	comp=Z,9.0nm,1.4s						
ANMO	**Albuquerque**	**84.58**	**51**	*e*P	**P**	**14 59 11.6**	**-0.6**
	comp=Z,9.2nm,1.4s						
MCMT	**McKenzie Canyo**	**84.66**	**40**	*e*P	**P**	**14 59 11.4**	**-1.0**
PSI	**Prapat**	**84.68**	**274**	*e*P	**P**	**14 59 11.5**	**-1.6**
PSI				pmax	pmax		
	comp=Z,21nm,1.1s						
PSI	**Prapat**	**84.68**	**274**	*e*P	**P**	**14 59 11.5**	**-1.6**
	comp=Z,21nm,1.1s						
DLMT	**Dillon**	**85.08**	**40**	*e*P	**P**	**14 59 12.8**	**-1.6**
	comp=Z,17nm,1.5s						
GYA	**Guiyang**	**85.19**	**299**	P	**P**	**14 59 15.2**	**-0.1**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
MAW	**Mawson**	**85.39**	**200**	P	**P**	**14 59 14.9**	**-0.5**
	comp=Z,3.7nm,0.7s,baz=135,slow=10,SNR=3.9						
MAW				LR	LR	15 35 12.3	
	comp=Z,717nm,19.1s,baz=80,slow=34						
NONG	**Nongkai**	**85.39**	**290**	P	**P**	**14 59 20.5**	**+4.2**
	comp=Z,47nm,1.5s						
IMW	**Indian Meadow**	**85.41**	**42**	*e*P	**P**	**14 59 15.5**	**-0.8**
	comp=Z,7.7nm,1.1s						
TRTT	**Trang**	**85.42**	**280**	P	P	14 59 22.4	+5.8
	comp=Z,18nm,1.3s						
S22A	**4UR Ranch, Cre**	**85.47**	**49**	*e*P	**P**	**14 59 15.8**	**-0.9**
	comp=Z,11nm,1.4s						
BW06	**Boulder Array**	**85.78**	**43**	*e*P	**P**	**14 59 16.3**	**-1.8**
PDAR	**Pinedale Array**	**85.78**	**43**	P	**P**	**14 59 16.5**	**-1.6**
	comp=Z,0.8nm,0.7s,baz=222,slow=6.0,SNR=6.2						
PBKT	**Sadao Pong**	**86.89**	**288**	P	**P**	**14 59 28.5**	**+4.8**
	comp=Z,8.7nm,0.8s						
LOEI	**Loei**	**86.91**	**289**	P	**P**	**14 59 26.4**	**+2.5**
	comp=Z,28nm,1.3s						
HHC	**Hu-ho-hao-te**	**87.01**	**314**	*e*P	**P**	**14 59 25.1**	**+1.1**
HHC				pP	PcP	14 59 29.1	+2.9
HHC				sP	pP	14 59 32.6	-2.5
HHC				PP	**PP**	**15 02 50.1**	**+2.3**
HHC				S	**S**	**15 10 02.7**	**+2.1**
HHC				pmax	pmax		
	comp=Z,20nm,0.9s						
HHC				pmax	pmax		
	comp=Z,110nm,3.1s						
KMI	**Kunming**	**88.05**	**297**	P	**P**	**14 59 29.0**	**-0.5**
KMI				pP	PcP	14 59 34.8	+3.5
KMI				sP	pP	14 59 37.9	-2.7
KMI				pmax	pmax		
	comp=Z,5.0nm,1.3s						
ABTX	**Abilene, Hawle**	**88.95**	**56**	*e*P	**P**	**14 59 32.5**	**-0.8**
	comp=Z,6.8nm,0.6s						
CD2	**Chengdu**	**89.13**	**303**	*e*P	**P**	**14 59 34.4**	**+0.2**
CD2				SKS	**SKSac**	**15 10 04.8**	**+3.0**
CD2				S	**ScS**	**15 10 24.7**	**-1.2**
CD2				sS	S	15 10 27.9	+6.9
CD2				SS	**SS**	**15 16 19.3**	**+3.7**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.2s						
SYO	**Syowa Base**	**90.62**	**193**⇓	*e*P	**P**	**14 59 40.0**	**-0.4**
SYO	**Syowa Base**	**90.62**	**193**⇓	*e*sP	**P**	**14 59 45.0**	**+4.6**
SNAA	**Sanae**	**91.87**	**178**	*e*P	**P**	**14 59 45.4**	**-0.9**
SNAA	**Sanae**	**91.87**	**178**	*e*P	**P**	**14 59 45.4**	**-0.9**
	comp=Z,535nm,1.6s						
YKA	**Yellowknife Ar**	**92.77**	**24**	P	**P**	**14 59 49.6**	**-0.7**
	comp=Z,0.5nm,0.9s,baz=238,slow=3.5,SNR=4.1						
KSH	**Kashi**	**113.04**	**306**	*e*PKP	**PKiKP**	**15 05 15.6**	**-0.4**
KSH				PKS	**PKSdf**	**15 08 50.9**	**-1.8**
KSH				SKS	**SKSdf**	**15 12 27.1**	**+1.4**
KSH				AMB	AMB		
	comp=Z,51nm,3.6s						
BVAR	**Borovoye Array**	**116.40**	**321**	PKP	**PKPdf**	**15 05 20.9**	**-0.9**
	comp=Z,1.1nm,0.7s,baz=127,slow=3.9,SNR=5.9						
GEYT	**Alibeck**	**127.04**	**305**	PKP	**PKPdf**	**15 05 44.3**	**+1.5**
	comp=Z,4.3nm,0.9s,baz=263,slow=7.3,SNR=7.6						
HFS	**Hagfors**	**135.78**	**352**	PKP	**PKPdf**	**15 05 59.1**	**+0.6**
	comp=Z,1.7nm,0.8s,baz=291,slow=4.1,SNR=3.7						
KOLS	**Kolonicke sedl**	**143.96**	**338**	*e*PKIKP	**PKPdf**	**15 06 15.4**	**+1.6**
KOLS	**Kolonicke sedl**	**143.96**	**338**	*e*PKP	**PKPdf**	**15 06 15.4**	**+1.6**
UZH	**Uzhgorod**	**144.21**	**337**	*e*PKIKP	**PKPab**	**15 06 11.6**	**-0.3**
UZH				*i*		15 06 19.0	
CRVS	**Cervenica-Dubn**	**144.28**	**339**	*e*PKIKP	**PKPdf**	**15 06 13.7**	**-0.6**

CRVS	**Cervenica-Dubn**	**144.28 339**	*e*PKP	**PKPdf**	**15 06 13.7**	**-0.6**
BR131	**Keskin Array S**	**144.48 317**	*e*PKPdf	PKPbc	15 06 13.7	0.0
BRTR	**Keskin Array B**	**144.48 317**	PKP	PKPbc	15 06 14.2	+0.4
	comp=Z,8.0nm,1.0s,baz=128,slow=2.0,SNR=16					
TRPA	**Tarpa**	**144.53 337**	*e*PKPdf	PKPbc	15 06 13.8	+0.4
DPC	**Dobruska-Polom**	**144.55 345**	*e*PKP	**PKPdf**	**15 06 14.2**	**-0.6**
DPC			*ep*PKP	**PKiKP**	**15 06 16.9**	**-1.6**
DPC	**Dobruska-Polom**	**144.55 345**	*e*PKIKP	**PKPdf**	**15 06 14.2**	**-0.6**
BRG	**Berggiesshubel**	**144.61 348**	*e*PKP	**PKPdf**	**15 06 17.0**	**+2.2**
	comp=Z,4.1nm,1.0s					
BRG	**Berggiesshubel**	**144.61 348**	*e*PKIKP	**PKPdf**	**15 06 17.0**	**+2.2**
BRG			pmax	pmax		
	comp=Z,4.0nm,1.0s					
MORC	**Moravsky Berou**	**144.75 343**	*e*PKIKP	PKPbc	15 06 14.3	+0.2
MORC	**Moravsky Berou**	**144.75 343**	*e*PKPdf	PKPbc	15 06 14.3	+0.2
KECS	**Kecovo**	**144.97 339**	*e*PKIKP	PKPbc	15 06 14.9	+0.1
KECS			*e*		15 06 22.6	
KECS	**Kecovo**	**144.97 339**	*e*PKP	PKPbc	15 06 14.9	+0.1
KECS			*e*		15 06 18.6	
KECS			*e*		15 06 22.6	
BR231	**Keskin MP Arra**	**144.99 317**	*e*PKPdf	**PKPab**	**15 06 13.9**	**-1.4**
MLR	**Muntele Rosu**	**145.16 331**	PKPbc	**PKPdf**	**15 06 16.0**	**-0.1**
	comp=Z,2.4nm,0.9s,baz=64,slow=3.2,SNR=10					
MLR	**Muntele Rosu**	**145.16 331**	*e*PKIKP	**PKPdf**	**15 06 16.4**	**+0.3**
MLR	**Muntele Rosu**	**145.16 331**	*e*PKPbc	**PKPdf**	**15 06 16.4**	**+0.3**
ASF	**Jabal al Asfar**	**145.26 303**	PKPbc	**PKPdf**	**15 06 17.6**	**+0.9**
	comp=Z,6.3nm,0.8s,baz=96,slow=0.8,SNR=13					
PRU	**Pruhonice**	**145.31 346**	*e*PKP	**PKPdf**	**15 06 17.0**	**+0.9**
PRU			*ex*	x	15 06 23.1	
PRU	**Pruhonice**	**145.31 346**	*e*PKIKP	**PKPdf**	**15 06 17.0**	**+0.9**
PRU			*e*		15 06 23.1	
VRAC	**Vranov**	**145.43 344**	PKPbc	**PKPab**	**15 06 17.2**	**+0.7**
	comp=Z,21nm,1.0s,baz=60,slow=2.2,SNR=16					
VYHS	**Vyhne**	**145.51 341**	*e*PKIKP	**PKPdf**	**15 06 16.1**	**-0.4**
VYHS			*e*		15 06 24.0	
VYHS	**Vyhne**	**145.51 341**	*e*PKP	**PKPdf**	**15 06 16.1**	**-0.4**
VYHS			*e*		15 06 19.8	
VYHS			*e*		15 06 24.0	
PSZ	**Piszkesteto**	**145.66 339**	*e*PKP2	**PKPab**	**15 06 18.0**	**+0.5**
PSZ	**Piszkesteto**	**145.66 339**	*e*PKPdf	**PKPab**	**15 06 18.0**	**+0.5**
PSZ	**Piszkesteto**	**145.66 339**	*e*PKPbc	**PKPab**	**15 06 22.8**	**+5.3**
MEM	**Membach**	**145.96 356**	PKP	**PKPbc**	**15 06 18.1**	**+0.2**
MMAI	**Mount Meron Ar**	**146.17 305**	PKPbc	**PKPab**	**15 06 20.7**	**+0.8**
	comp=Z,9.4nm,0.7s,baz=68,slow=2.2,SNR=15					
BCLA	**Clavier**	**146.19 357**	PKP	**PKPdf**	**15 06 17.7**	**+0.2**
GRFO	**Grafenberg**	**146.25 350**	*e*PKP2	**PKPdf**	**15 06 18.0**	**+0.3**
GRFO	**Grafenberg**	**146.25 350**	*e*PKPdf	**PKPdf**	**15 06 18.0**	**+0.3**
KHC	**Kasperske Hory**	**146.33 347**	*e*PKP	**PKPab**	**15 06 20.0**	**+0.1**
KHC			*ep*PKP	**PKiKP**	**15 06 22.6**	**+0.4**
KHC			*ex*	x	15 06 27.2	
KHC	**Kasperske Hory**	**146.33 347**	*e*PKP2	**PKPab**	**15 06 20.0**	**+0.1**
KHC	**Kasperske Hory**	**146.33 347**	*e*PKPdf	**PKPbc**	**15 06 19.4**	**+0.3**
DOU	**Dourbes**	**146.55 358**	PKP	**PKPbc**	**15 06 18.9**	**-0.7**
GERES	**GERESS Array B**	**146.57 347**	PKPbc	**PKPdf**	**15 06 18.6**	**+0.2**
	comp=Z,2.3nm,0.7s,baz=27,slow=4.6,SNR=2.9					
GEA0	**GERESS Array S**	**146.58 347**	*e*PKPdf	**PKPdf**	**15 06 18.6**	**+0.2**
MOA	**Molln**	**147.38 345**	*i* sPKPdf	**PKPab**	**15 06 23.3**	**-0.7**
	comp=Z,19nm,1.6s					
LANF	**Langenberg**	**147.42 354**	PKP	**PKPab**	**15 06 23.4**	**-0.7**
EIL	**Elat**	**147.60 299**	PKPbc	**PKPbc**	**15 06 23.1**	**-0.2**
	comp=Z,7.8nm,0.8s,baz=144,slow=3.2,SNR=7.5					
BFO	**Black Forest**	**148.00 353**	*e*PKP2	**PKPbc**	**15 06 23.6**	**-0.2**
BFO	**Black Forest**	**148.00 353**	*e*PKPbc	**PKPbc**	**15 06 23.6**	**-0.2**
WLS	**Welschbruch**	**148.03 354**	PKP	**PKPbc**	**15 06 24.3**	**+0.4**
ECH	**Echery**	**148.25 354**	PKP	**PKPbc**	**15 06 22.9**	**-1.5**
SOKA	**Soboth**	**148.26 344**	*i* PKIKP	**PKPbc**	**15 06 25.1**	**+0.5**
	comp=Z,7.6nm,1.0s					
THEF	**They Montfort**	**148.33 356**	PKP	**PKPbc**	**15 06 24.7**	**+0.1**
RETA	**Reutte**	**148.46 349**	*e*PKiKP	**PKiKP**	**15 06 26.0**	**-0.6**
	comp=Z,14nm,1.1s					
MOTA	**Moosalm**	**148.54 349**	*i* PKPbc	**PKPbc**	**15 06 24.1**	**-1.3**
	comp=Z,1.7nm,0.3s					
MOF	**Molkenrain**	**148.61 354**	PKP	**PKPab**	**15 06 28.0**	**-1.0**
DAVA	**Damuels**	**148.81 350**	*i* pPKPbc	**PKPbc**	**15 06 27.4**	**+1.3**
	comp=Z,12nm,1.0s					
ABTA	**Abfaltersbach**	**148.82 347**	*i* sPKPdf	**PKPbc**	**15 06 25.9**	**-0.1**
	comp=Z,12nm,0.8s					
LOMF	**Lomont**	**149.13 354**	PKP	**PKPbc**	**15 06 28.7**	**+1.9**
DAVOX	**Davos/Dischmat**	**149.30 350**	PKPbc	**PKPbc**	**15 06 25.7**	**-1.7**
	comp=Z,1.8nm,0.4s,baz=9.4,slow=3.3,SNR=3.5					
FUORN	**Ofenpass-Fuorn**	**149.39 350**	*e*PKPbc	**PKPbc**	**15 06 26.6**	**-1.1**
TUE	**Stuetta**	**149.68 351**	*e*PKPbc	**PKPbc**	**15 06 29.2**	**+0.8**
SSB	**Saint Sauveur**	**151.36 357**	*e*PKIKP	**PKPbc**	**15 06 31.2**	**-1.0**
SSB	**Saint Sauveur**	**151.36 357**	*e*PKPbc	**PKPbc**	**15 06 31.2**	**-1.0**
TORD	**Torodi Ar. Bea**	**176.47 167**	PKP	**PKPdf**	**15 06 48.6**	**-0.9**
	comp=Z,1.6nm,1.0s,baz=22,slow=0.8,SNR=6.1					
TORD			PKPab	**PKPab**	**15 08 30.8**	**+0.3**
	comp=Z,1.0nm,1.1s,baz=194,slow=4.3,SNR=3.7					

*ISCJB **06** 14:48:43.7±0.6,37°.25N±0°.04×28°.21E±0°.04,h0km, Error ellipse: s-maj=6.3km s-min=3.8km az=17.0*
*ISK **06** 14:48:43.1,37°.26N×28°.22E,h5km,MD2.6*
*DDA **06** 14:48:43.6,37°.23N×28°.13E,h7km,Md2.7,Suspected Mining explosion.*
*CSEM **06** 14:48:44.1±0.3,37°.25N×28°.20E,h2km,MD2.6,Error ellipse: s-maj=6.8km s-min=4.7km az=3.0,Suspected Mining explosion.*

ISC 06 14:48:42.9±0.9,37°.30N×28°.13E±0°.04,h0km,n21, σ0s98/34,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.20**	**144**	*e*PG	**Pg**	**14 48 46.4**	**-0.4**
YER				*e*SG	**Sg**	**14 48 49.0**	**-0.4**
YER	**Yerkesik**	**0.20**	**144**	*e*Pg	**Pg**	**14 48 46.4**	**-0.4**
YER				*e*Sg	**Sg**	**14 48 49.0**	**-0.4**
TURN	**Turunc**	**0.57**	**138**	*i* P	**Pg**	**14 48 52.4**	**-1.4**
TURN				*i* S	**Sg**	**14 48 58.8**	**-2.3**
BDRM	**Kayabasi**	**0.60**	**247**	*i* P	**Pb**	**14 48 55.9**	**-0.4**
BDRM				*i* S	**Sb**	**14 49 05.4**	**+0.1**
BDRM	**Kayabasi**	**0.60**	**247**	P	**Pb**	**14 48 55.9**	**-0.4**
BDRM				S	**Sb**	**14 49 05.4**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.64**	**139**	*e*PG	**Pg**	**14 48 54.5**	**-0.6**
DALY				*e*SG	**Sg**	**14 49 02.8**	**-0.5**
DALY	**Dalyan (Mu¨la**	**0.64**	**139**	*e*Pg	**Pg**	**14 48 54.5**	**-0.6**
DALY				*e*Sg	**Sg**	**14 49 02.8**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.68**	**343**	*e*PG	**Pb**	**14 48 57.8**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.68**	**343**	*e*Pg	**Pb**	**14 48 57.8**	**+0.1**
BODT	**Bodrum**	**0.70**	**251**	*e*PG	**Pb**	**14 48 58.1**	**+0.1**
BODT				*e*SG	**Sb**	**14 49 09.1**	**+0.9**
BODT	**Bodrum**	**0.70**	**251**	*e*Pg	**Pb**	**14 48 58.1**	**+0.1**
BODT				*e*Sg	**Sb**	**14 49 09.1**	**+0.9**
DNZL	**Cakiroluk**	**0.82**	**61**	*i* P	**Pn**	**14 49 01.2**	**-0.8**
DNZL				*i* S	**Sn**	**14 49 16.2**	**+1.2**
DNZL	**Cakiroluk**	**0.82**	**61**	P	**Pn**	**14 49 01.2**	**-0.8**
NIS1	**Nisyros Isl.**	**1.03**	**228**	*e*PG	**Pn**	**14 49 04.2**	**-0.5**
NIS1	**Nisyros Isl.**	**1.03**	**228**	*e*Pg	**Pn**	**14 49 04.2**	**-0.5**
GOLH	**Golhisar**	**1.14**	**93**	*i* P	**Pg**	**14 49 03.8**	**-1.0**
GOLH				*i* S	**Sn**	**14 49 24.6**	**+1.9**
GOLH	**Golhisar**	**1.14**	**93**	P	**Pg**	**14 49 03.8**	**-1.0**
ELL	**Elmali**	**1.52**	**111**	*e*PN	**Pg**	**14 49 11.4**	**-0.6**
ELL	**Elmali**	**1.52**	**111**	*e*Pn	**Pg**	**14 49 11.5**	**-0.6**
AKAS	**Kas**	**1.59**	**132**	*i* P	**Pg**	**14 49 13.7**	**+0.3**
AKAS				*i* S	**Sg**	**14 49 36.1**	**+2.1**
AKAS	**Kas**	**1.59**	**132**	P	**Pg**	**14 49 13.7**	**+0.3**
AKAS				S	**Sg**	**14 49 36.1**	**+2.1**

GUC 06 14:51:32.1±0.4,22°.67S×66°.73W,h270km±9km,ML4.2,2C, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**2.02**	**271**	*i* S	S	14 52 54.0	+1.8
PB09	**IPOC Station P**	**2.49**	**290**	*i* P	Pn	14 52 23.0	+2.1
PB09				*i* S	S	14 53 02.0	+2.4
PB09				IAML		14 53 08.3	
	comp=N,272nm,0.2s						
PB06	**IPOC Station P**	**2.63**	**269**	*i* P	Pn	14 52 24.7	+2.4
PB06				*i* S	S	14 53 04.4	+2.4
PB06				IAML		14 53 07.4	
	comp=N,254nm,0.2s						
PB01	**IPOC Station P**	**3.03**	**302**	*e*P	Pn	14 52 27.3	+1.0
PB01				*e*S	S	14 53 10.1	+0.7
PB01				IAML		14 53 12.3	
	comp=N,304nm,0.3s						
PB07	**IPOC Station P**	**3.07**	**287**	⇑*i* P	Pn	14 52 28.7	+1.9
PB07				*e*S	S	14 53 11.3	+1.1
PB07				IAML		14 53 12.3	
	comp=N,211nm,0.3s						
PB04	**IPOC Station P**	**3.18**	**275**	*i* P	Pn	14 52 30.2	+2.3
PB04				*i* S	S	14 53 15.0	+2.7
PB04				IAML		14 53 17.5	
	comp=N,232nm,0.2s						
PB08	**IPOC Station P**	**3.38**	**318**	⇑*e*P	Pn	14 52 31.2	+0.9
PB08				*e*S	S	14 53 16.4	-0.2
PB08				IAML		14 53 18.5	
	comp=E,76nm,0.6s						
ANCH	**Antofagasta**	**3.54**	**253**	*i* P	Pn	14 52 34.6	+3.1
ANCH				*i* S	S	14 53 21.6	+2.7

DDA 06 14:54:33.1,40°.74N×41°.93E,h10km,Md2.6,Suspected Mining explosion.,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DDEM	**Demirkent**	**0.20**	**318**	*i* P	Pg	14 54 37.6	+0.2
DDEM				*i* S	Sg	14 54 41.0	+0.7
ARTV	**Artvin**	**0.44**	**0**	*i* P	Pg	14 54 42.1	+0.2
ARTV				*i* S	Sg	14 54 48.7	+0.9
DBOC	**Borcka**	**0.63**	**342**	*i* P	Pg	14 54 45.4	0.0
DBOC				*i* S	Sg	14 54 53.7	0.0

*ISCJB **06** 14:57:21.0±0.3,59°.79N±0°.03×153°.29W±0°.07, h140km±3km,mb3.8/5,Error ellipse: s-maj=6.5km s-min=3.9km az=38.6*
*NEIC **06** 14:57:23.0,59°.78N×153°.33W,h132km,MG3.3(AEIC), After AEIC.*
*IDC **06** 14:57:25.5±4.7,60°.16N×153°.45W,h142km±43km,mb3.5/5, mb1 3.5/9,mb1mx3.2/63,mbtmp3.9/9,Error ellipse: s-maj=39.8km s-min=29.9km az=22.0*

ISC 06 14:57:19.7±1.4,59°.76N±0°.07×153°.39W±0°.07, h146km±8km,n91,σ1s44/74,mb4.0/5,Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OPT	**Oil Point**	**0.13**	**143**	P	**Pn**	**14 57 40.5**	**+1.1**
ILS	**Iliamna Low So**	**0.26**	**38**	P	**Pn**	**14 57 40.6**	**+0.9**
IVE	**Iliamna Volcan**	**0.32**	**35**	P	**Pn**	**14 57 40.8**	**+0.8**
ILW	**Iliamna West**	**0.33**	**22**	P	**Pn**	**14 57 40.8**	**+0.7**
AUL	**Augustine Lava**	**0.38**	**184**	P	**Pn**	**14 57 41.4**	**+1.3**
AUL				S	**Sn**	**14 57 55.7**	**+0.3**
ILIM	**Iliamna**	**0.39**	**33**	P	**Pn**	**14 57 41.0**	**+0.9**
AUE	**Augustine Isla**	**0.40**	**179**	P	**Pn**	**14 57 41.3**	**+1.2**
AUSE	**Augustine SEas**	**0.42**	**181**	P	**Pn**	**14 57 41.5**	**+1.3**
AUI	**Augustine Isla**	**0.42**	**183**	P	**Pn**	**14 57 41.5**	**+1.2**
AUI				S	**Sn**	**14 57 55.5**	**-0.3**
MCNL	**McNeil River**	**0.75**	**221**	P	Pn	14 57 43.5	+1.4
RDWB	**Redoubt West**	**0.78**	**20**	P	**Pn**	**14 57 43.3**	**+0.8**
RDWB				S	**Sn**	**14 57 59.1**	**-0.9**
NCT	**North Crescent**	**0.84**	**16**	P	**Pn**	**14 57 43.9**	**+1.1**
CDD	**Cape Douglas**	**0.84**	**189**	P	Pn	14 57 44.2	+1.4
RDJH	**Redoubt Jeurge**	**0.89**	**19**	P	**Pn**	**14 57 44.3**	**+1.0**
RDJH				S	**Sn**	**14 58 01.3**	**0.0**
HOM	**Homer**	**0.89**	**96**	P	**Pn**	**14 57 44.4**	**+1.3**
FOSS	**Fourpeaked Sta**	**0.97**	**190**	P	Pn	14 57 45.5	+1.6
FOPK	**Fourpeaked Vol**	**1.00**	**183**	P	Pn	14 57 45.5	+1.3
BGRM	**Barrier Glacie**	**1.11**	**25**	P	**Pn**	**14 57 46.2**	**+1.1**
CNPM	**China Poot**	**1.12**	**101**	P	**Pn**	**14 57 46.2**	**+1.1**
CNPM				S	**Sn**	**14 58 04.3**	**-0.2**
BRLK	**Bradley Lake**	**1.27**	**89**	P	**Pn**	**14 57 47.6**	**+1.1**
KAHC	**Katmai Hardscr**	**1.39**	**218**	P	Pn	14 57 49.7	+1.8
CKL	**Chakachamna La**	**1.53**	**19**	P	**Pn**	**14 57 50.9**	**+1.6**
KAWH	**Katmai**	**1.56**	**209**	P	Pn	14 57 51.4	+1.8
SPCR	**Spurr Chakacha**	**1.56**	**21**	P	**Pn**	**14 57 51.0**	**+1.4**
SPWE	**Spurr West**	**1.58**	**15**	P	**Pn**	**14 57 51.6**	**+1.8**
KVTA	**Katmai Vly 10**	**1.70**	**216**	P	Pn	14 57 53.3	+2.2
KAKN	**Katmai Knife C**	**1.70**	**211**	P	Pn	14 57 53.2	+2.0
SVW2	**Sparrevohn**	**1.73**	**322**	P	**Pn**	**14 57 52.7**	**+1.3**
SLKM	**Skilak Lake**	**1.75**	**63**	P	**Pn**	**14 57 53.2**	**+1.5**
KABU	**Katmai Buttres**	**1.79**	**214**	P	Pn	14 57 54.5	+2.3
KELA	**Mount Kelaz**	**1.80**	**224**	P	Pn	14 57 54.3	+2.0
KABR	**Katmai Barrier**	**1.83**	**207**	P	Pn	14 57 54.4	+1.8
STLK	**Strandline Lak**	**1.91**	**23**	P	**Pn**	**14 57 55.2**	**+1.7**
SEW	**Seward**	**2.01**	**78**	P	**Pn**	**14 57 55.8**	**+1.2**
KDAK	**Kodiak Island**	**2.02**	**168**	P	Pn	14 57 55.8	+1.0
FIB	**Fire Island**	**2.13**	**47**	P	**Pn**	**14 57 58.2**	**+2.3**
SUA	**Susitna One**	**2.15**	**36**	P	**Pn**	**14 57 57.9**	**+1.5**
RC01	**Rabbit Creek A**	**2.25**	**52**	*e*Pn	**Pn**	**14 57 58.5**	**+1.1**
OHAK	**Old Harbor**	**2.54**	**179**	P	Pn	14 58 01.8	+0.7
PLK3	**Peulik 3**	**2.56**	**217**	P	Pn	14 58 04.3	+2.9
PMR	**Palmer**	**2.79**	**47**	P	**Pn**	**14 58 04.8**	**+0.8**
KNK	**Knik Glacier**	**2.94**	**54**	P	**Pn**	**14 58 06.8**	**+0.7**
PPLA	**Purkeypile**	**3.20**	**10**	P	**Pn**	**14 58 11.6**	**+2.1**
SML	**Sawmill**	**3.22**	**48**	P	**Pn**	**14 58 10.1**	**+0.5**
TT01	**Tatalina**	**3.41**	**339**	P	**Pn**	**14 58 13.4**	**+1.5**
HIN	**Hinchinbrook I**	**3.51**	**77**	P	**Pn**	**14 58 14.7**	**+1.4**
SCM	**Sheep Creek Mo**	**3.63**	**52**	P	**Pn**	**14 58 15.8**	**+0.9**
HUR	**Hurricane**	**3.70**	**28**	P	**Pn**	**14 58 17.5**	**+1.7**
VLZ	**Valdez**	**3.76**	**65**	P	**Pn**	**14 58 18.6**	**+2.1**
EYAK	**Cordova Ski Ar**	**3.90**	**75**	P	**Pn**	**14 58 20.0**	**+1.6**
KTH	**Kantishna Hill**	**3.99**	**16**	*e*Pn	**Pn**	**14 58 20.6**	**+1.0**
TRF	**Thorofare Moun**	**3.99**	**20**	P	**Pn**	**14 58 20.8**	**+1.1**
DIV	**Divide**	**4.01**	**67**	P	**Pn**	**14 58 21.4**	**+1.8**
KLU	**Kluina**	**4.07**	**61**	P	**Pn**	**14 58 21.6**	**+0.9**
RND	**Reindeer**	**4.25**	**29**	P	**Pn**	**14 58 24.0**	**+0.9**
BPAW	**Bear Paw Mtn.**	**4.50**	**14**	P	**Pn**	**14 58 27.5**	**+1.2**
MCK	**McKinley**	**4.51**	**26**	*e*Pn	**Pn**	**14 58 27.5**	**+1.0**
BMRM	**Bremner River**	**4.53**	**71**	P	**Pn**	**14 58 28.3**	**+1.6**
VRDI	**Verde Repeater**	**5.13**	**69**	P	**Pn**	**14 58 36.7**	**+2.0**
WRH	**Wood River Hil**	**5.34**	**25**	P	**Pn**	**14 58 38.1**	**+0.8**
MCARA	**McCarthy VSAT**	**5.37**	**68**	P	**Pn**	**14 58 39.4**	**+1.7**
KULT	**Kultieth River**	**5.38**	**80**	P	**Pn**	**14 58 40.0**	**+2.1**
MLY	**Manley**	**5.43**	**12**	P	**Pn**	**14 58 40.8**	**+2.2**
CCB	**Clear Creek Bu**	**5.56**	**26**	P	**Pn**	**14 58 40.8**	**+0.6**
HDA	**Harding Lake**	**5.56**	**30**	P	**Pn**	**14 58 41.5**	**+1.2**
KIAG	**Kiagna River**	**5.60**	**73**	P	**Pn**	**14 58 42.6**	**+1.6**
MENT	**Mentasta**	**5.64**	**51**	P	**Pn**	**14 58 42.7**	**+1.3**
BAGL	**Bagley Icefiel**	**5.70**	**78**	P	**Pn**	**14 58 44.4**	**+2.3**
PS08	**TAPS Pump Stn8**	**5.70**	**30**	P	**Pn**	**14 58 43.5**	**+1.3**
MDM	**Murphy Dome**	**5.74**	**22**	P	**Pn**	**14 58 43.5**	**+0.7**
COLA	**College**	**5.74**	**24**	P	**Pn**	**14 58 43.6**	**+0.9**
MESA	**MESA**	**5.76**	**81**	P	**Pn**	**14 58 42.8**	**-0.4**
IL1	**Eielson Array**	**5.87**	**28**	P	**Pn**	**14 58 45.0**	**+0.6**
ILAR	**Eielson Array**	**5.87**	**28**	P	**Pn**	**14 58 45.3**	**+0.9**
	4.9nm,0.3s,baz=216,slow=14,SNR=294						
ILAR				S	Sn	14 59 48.8	-1.9
	1.1nm,0.3s,baz=225,slow=7.2,SNR=4.0						
ILB	**Eielson Array**	**5.87**	**28**	P	**Pn**	**14 58 45.0**	**+0.6**
DOT	**Dot Lake**	**5.91**	**45**	*e*Pn	**Pn**	**14 58 46.0**	**+1.1**
	20nm,0.5s						
IM3	**Indian Mountai**	**6.25**	**359**	P	**Pn**	**14 58 51.6**	**+2.2**
BCA3	**Beaver Creek A**	**6.48**	**54**	P	**Pn**	**14 58 54.2**	**+1.7**
EGAK	**Eagle**	**7.60**	**43**	*e*Pn	**Pn**	**14 59 08.3**	**+0.8**
	17nm,1.0s						
COLD	**Coldfoot**	**7.63**	**9**	P	**Pn**	**14 59 09.5**	**+1.6**
DAWY	**Dawson**	**7.88**	**51**	*e*Pn	**Pn**	**14 59 13.8**	**+2.4**
	16nm,1.2s						
UNV	**Unalaska Valle**	**9.31**	**236**	*e*Pn	Pn	14 59 32.3	+1.9
DLBC	**Dease Lake**	**12.06**	**86**	P	P	15 00 13.8	+0.5
	0.6nm,0.3s,baz=265,slow=8.8,SNR=5.6						
INK	**Inuvik**	**12.15**	**37**	P	**P**	**15 00 10.4**	**-3.7**
	0.3nm,0.3s,baz=230,slow=7.2,SNR=4.9						
YKA	**Yellowknife Ar**	**18.73**	**65**	P	**Pn**	**15 01 30.5**	**+1.7**
	0.1nm,0.3s,baz=278,slow=11,SNR=10						
KSRS	**Korea Array**	**53.04**	**282**	P	P	15 06 26.2	+5.0
	0.9nm,0.7s,baz=44,slow=6.4,SNR=3.7						
KSAR	**Wonju Array Be**	**53.07**	**282**	P	P	15 06 26.2	+4.8
SONM	**Songino Array**	**54.77**	**306**	P	P	15 06 39.1	+5.3
	1.4nm,0.7s,baz=46,slow=8.3,SNR=5.0						
ZALV	**Zalesovo Beam**	**57.45**	**323**	P	P	15 06 56.8	+4.2
	1.3nm,0.5s,baz=26,slow=7.1,SNR=7.4						
BVAR	**Borovoye Array**	**62.19**	**332**	P	P	15 07 28.8	+3.9
	1.4nm,0.6s,baz=37,slow=6.9,SNR=7.3						
MKAR	**Makanchi Array**	**64.50**	**321**	P	P	15 07 43.6	+3.4
	0.3nm,0.5s,baz=22,slow=5.5,SNR=3.9						

JMA 06 15:13:43.1,33°.03N×130°.74E,h11km±1km,M0.8,Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNU	**Nakatsue**	**0.15**	**52**	P	Pg	15 13 46.8	+0.2
JNU				S	Sg	15 13 49.3	+0.3
JTA	**Tamana**	**0.19**	**249**	P	Pg	15 13 47.1	0.0
JTA				S	Sg	15 13 49.9	0.0

JMA 06 15:14:43.4,36°.95N×138°.57E,h8km±1km,M0.2,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MAT	**Matsushiro**	**0.50**	**216**	P	Pg	15 14 53.1	0.0

*ISCJB **06** 15:14:58.5±0.4,24°.20N±0°.02×121°.83E±0°.02,h4km±3km, Error ellipse: s-maj=3.1km s-min=2.1km az=143.7*
*TAP **06** 15:14:58.9,24°.23N×121°.76E,h16km,ML3.8,B*
*JMA **06** 15:14:58.5±0.1,24°.24N×121°.79E,h0km,M3.2*

ISC 06 15:14:58.9±0.8,24°.22N±0°.02×121°.80E±0°.02,h17km±5km, n64,σ0s83/101,11C-3D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.11**	**329**	*i* P	**Pg**	**15 15 03.0**	**+0.4**
	baz=349						
EHP				S	**Sg**	**15 15 05.5**	**+0.5**
	baz=349						
ENA	**Nanau**	**0.22**	**345**	⇑*i* P	**Pg**	**15 15 03.7**	**-0.3**
	baz=354						
ENA				*i* S	**Sg**	**15 15 07.1**	**-0.4**
	baz=354						
TWD	**Chiawan**	**0.23**	**235**	⇑P	**Pg**	**15 15 04.0**	**-0.2**
	baz=232						
TWD				*i* S	**Sg**	**15 15 07.7**	**-0.1**
	baz=232						
HWA	**Hwalien**	**0.30**	**217**	*e*P	**Pb**	**15 15 06.0**	**+0.2**
	baz=218						
TWC	**Suao**	**0.40**	**6**	⇑*i* P	**Pb**	**15 15 07.1**	**-0.4**
	baz=7.0						
TWC				S	**Sb**	**15 15 12.8**	**-0.4**
	baz=7.0						
ESF	**Shoufeng Towns**	**0.44**	**218**	*e*P	**Pb**	**15 15 08.6**	**+0.5**
	baz=224						
NNS	**Nan Shan**	**0.45**	**300**	⇑*i* P	**Pb**	**15 15 07.7**	**-0.8**
	baz=300						
NNS				*i* S	**Sg**	**15 15 13.5**	**-0.8**
	baz=300						
ENTT	**Nioudou**	**0.47**	**333**	⇑*i* P	**Pb**	**15 15 08.3**	**-0.5**
	baz=335						
ENTT				*i* S	**Sb**	**15 15 14.6**	**-1.0**
	baz=335						
WHF	**Hehuan Shan**	**0.50**	**262**	⇑*i* P	**Pb**	**15 15 08.5**	**-0.9**
	baz=261						
WHF				*i* S	**Sg**	**15 15 14.7**	**-1.1**
	baz=261						
TWE	**Neicheng**	**0.52**	**346**	⇑*i* P	**Pb**	**15 15 09.1**	**-0.4**
	baz=349						
TWE				S	**Sb**	**15 15 15.9**	**-0.9**
	baz=349						
ESL	**Shilin**	**0.52**	**220**	*e*P	**Pb**	**15 15 09.1**	**-0.5**
	baz=223						
ILA	**Ilan**	**0.55**	**355**	*e*P	**Pb**	**15 15 10.4**	**+0.3**
	baz=351						
ILA				*e*S	**Sb**	**15 15 17.7**	**0.0**
	baz=351						
TWT	**Tachien**	**0.57**	**274**	⇑*i* P	**Pb**	**15 15 10.3**	**-0.3**
	baz=273						
TWT				S	**Sg**	**15 15 17.2**	**-0.8**
	baz=273						
NSK	**Sanguang**	**0.61**	**319**	⇑*i* P	**Pb**	**15 15 10.7**	**-0

CHN1	**Nanshi**	**1.55**	**229**	*e*P		**Pb**	**15 15 27.1**	**-0.1**
	baz=232								
CHN1				*e*S		**Sg**	**15 15 49.4**	**+0.3**
	baz=232								
WSF	**Szhu**	**1.56**	**249**	*e*P		**Pb**	**15 15 27.0**	**-0.2**
	baz=261								
WSF				*e*S		**Sg**	**15 15 48.6**	**-0.5**
	baz=261								
SGST	**Jiashian**	**1.59**	**225**	*e*P		**Pn**	**15 15 26.8**	**+0.6**
	baz=227								
SGST				*e*S		**Sg**	**15 15 50.0**	**-0.1**
	baz=227								
CHN8	**Yiju**	**1.69**	**240**	*e*P		**Pn**	**15 15 27.6**	**0.0**
	baz=227								
CHN8				*e*S		**Sg**	**15 15 52.6**	**-0.9**
	baz=227								
IRIF	**Iriomote-Funau**	**1.76**	**86**	P		**Pn**	**15 15 29.0**	**+0.4**
IRIF				*e*S		**Sn**	**15 15 51.4**	**+0.7**
ECL	**Taimali**	**1.79**	**206**	*e*P		**Pn**	**15 15 29.4**	**+0.4**
	baz=195								
HATJ	**Hateruma jima**	**1.84**	**95**	S		**Sb**	**15 15 54.7**	**0.0**
TWM1	**Shoushan**	**1.88**	**223**	*e*P		**Pb**	**15 15 33.0**	**+0.2**
	baz=222								
JKRS	**Kuro-shima**	**2.01**	**89**	P		**Pb**	**15 15 33.8**	**-1.2**
JKRS				*e*S		**Sb**	**15 15 59.6**	**-0.2**
EAST	**Anshuo**	**2.02**	**206**	*e*P		**Pb**	**15 15 34.0**	**-1.2**
	baz=196								
JIJ	**Ishigaki jima**	**2.14**	**86**	P		**Pn**	**15 15 34.4**	**+0.6**
JIJ				S		**Sn**	**15 16 01.2**	**+1.2**
PNG	**Penghu**	**2.16**	**253**	*e*P		**Pn**	**15 15 34.0**	**0.0**
	baz=255								
WDGT	**Dungji**	**2.18**	**245**	*e*P		**Pn**	**15 15 34.4**	**0.0**
	baz=247								
JISG	**Ishigakijimahi**	**2.32**	**80**	*e*S		**Sn**	**15 16 05.3**	**+1.0**
TWK1	**Hengchun**	**2.44**	**202**	*e*P		**Pn**	**15 15 39.9**	**+1.9**
	baz=191								

BJI ***06*** *15:14:57.2, 36.39N×141.56E, h7km, mb5.9/77, mB5.8/72, Ms6.0/94, Ms7 5.9/90*

IDC ***06*** *15:14:57.3±0.4, 36.33N×141.78E, h0km, mb5.3/34, mb1 5.4/39, mb1mx5.4/40, mbtmp5.3/39, ML5.0/4, MS5.4/45, Ms1 5.4/45, ms1mx5.3/50, Error ellipse: s-maj=12.4km s-min=9.6km az=108.0*

MOS ***06*** *15:14:58.8±0.9, 36.49N×141.69E, h15km, mb5.9/151, MS5.9/58, Error ellipse: s-maj=5.8km s-min=3.3km az=109.3*

GCMT ***06*** *15:14:59.0±0.1, 36.33N×141.91E, h23km, MW5.7/135, Moment Tensor Solution. s113,c216; s135,c357; Duration: 18 Moment tensor: Scale 10^17 Nm; Mrr3.51±.05; Mθθ-0.49±.03; Mϕϕ-3.02±.04; Mrθ1.21±.06; Mθϕ-1.12±.02; Mrϕ3.07±.07; Best double couple: M04.79400×10^17 NP1:ϕs21.00000°,δ67.00000°, λ90.00000°. NP2:ϕs200.00000°,δ23.00000°,λ89.00000°. Principal axes: T 4.8270, Plg68.0000°, Azm292.0000°; N -0.0690, Plg0.0000°, Azm201.0000°; P -4.7610, Plg22.0000°, Azm111.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISCJB ***06*** *15:14:59.3±0.5, 36.36N±0.02×141.72E±0.02, h19km±3km, mb5.6/431, MS5.7/166 Error ellipse: s-maj=2.8km s-min=2.0km az=157.6*

NEIC ***06*** *15:14:59.0±0.1, 36.37N×141.62E, h10km, mb5.5/267, MS5.5/43, MW5.7, MW5.7, Error ellipse: s-maj=2.9km s-min=2.1km az=141.0, Moment Tensor Solution. s71 Moment tensor: Scale 10^17 Nm; Mrr2.64; Mθθ-0.65; Mϕϕ-1.98; Mrθ1.57; Mθϕ-0.53; Mrϕ2.84; Best double couple: M04.10000×10^17 NP1:ϕs196.00000°,δ19.00000°, λ79.00000°. NP2:ϕs27.00000°,δ72.00000°,λ93.00000°. Principal axes: T 4.2900, Plg63.0000°, Azm302.0000°; N -0.5000, Plg3.0000°, Azm206.0000°; P -3.7900, Plg27.0000°, Azm114.0000°;*

NEIC Felt at Kokubunji, Kunitachi, Oyama and Tokyo. Recorded [3 JMA] in Fukushima, Ibaraki and Tochigi.

NEIC ***06*** *15:14:59.0±0.0, 36.38N×142.11E, h13km, Moment Tensor Solution. s16 Moment tensor: Scale 10^17 Nm; Mrr2.82; Mθθ-1.30; Mϕϕ-1.52; Mrθ3.22; Mθϕ-1.12; Mrϕ1.90; Best double couple: M04.60000×10^17 NP1:ϕs56.00000°, δ72.00000°,λ97.00000°. NP2:ϕs213.00000°,δ19.00000°, λ69.00000°. Principal axes: T 4.8000, Plg61.0000°, Azm336.0000°; N -0.4200, Plg6.0000°, Azm233.0000°; P -4.3800, Plg27.0000°, Azm140.0000°;*

NIED ***06*** *15:15:00, 36.40N×141.80E, h20km, Mw5.7 Best double couple: M04.33000×10^17 NP1:ϕs201.00000°,δ20.00000°, λ89.00000°. NP2:ϕs22.00000°,δ70.00000°,λ90.00000°.*

JMA ***06*** *15:15:00.0±0.1, 36.37N×141.79E, h76km±3km, M5.9*

JMA Felt III J1.

ISC 06 15:15:01.1±0.5, 36.38N±0.03×141.77E±0.03, h23km±3km, n1520, σ1.962/1627, mb5.6/467, MS5.8/170, 117C-38D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
JHO	**Hitachi**	**0.99**	**284**	⇓P		**Pb**	**15 15 18.8**		**-0.8**
JHO				*e*S		**Sn**	**15 15 33.6**		**+0.7**
CHOJ	**Chosi**	**1.00**	**228**	⇑P		**Pn**	**15 15 19.4**		**-0.3**
CHOJ				*e*S		**Sn**	**15 15 33.5**		**+0.4**
ONAJ	**Iwakimizuishiy**	**1.06**	**313**	⇓P		**Pn**	**15 15 19.8**		**-0.8**
ONAJ				*e*S		**Sn**	**15 15 34.8**		**+0.2**
JFK	**Kawauchi**	**1.21**	**324**	⇑P		**Pn**	**15 15 22.3**		**-0.4**
JYT	**Yasato**	**1.28**	**263**	P		**Pn**	**15 15 22.7**		**-0.8**
JYT				*e*S		**Sn**	**15 15 40.0**		**0.0**
JFT	**Otama**	**1.61**	**315**	P		**Pn**	**15 15 27.9**		**-0.2**
JMM	**Marumori**	**1.67**	**333**	⇑P		**Pn**	**15 15 28.5**		**-0.4**
JMM				*e*S		**Sn**	**15 15 49.6**		**-0.1**
BSO1	**Boso 1**	**1.84**	**201**	P		**Pn**	**15 15 30.0**		**-0.8**
JAG	**Ashikaga**	**1.87**	**272**	⇓P		**Pn**	**15 15 31.2**		**-0.4**
BSO3	**Boso 3**	**1.88**	**213**	P		**Pn**	**15 15 31.2**		**-0.4**
JKT	**Katashina**	**2.06**	**281**	P		**Pn**	**15 15 35.0**		**+0.6**
JIO	**Ouri**	**2.09**	**351**	⇑P		**Pn**	**15 15 33.6**		**-1.1**
JOU	**Okura**	**2.16**	**336**	⇑P		**Pn**	**15 15 35.6**		**-0.1**
JRY	**Ryogami san**	**2.35**	**262**	P		**Pn**	**15 15 37.7**		**-0.6**
JRY				*e*S		**Sn**	**15 16 05.5**		**-0.9**
JHK	**Hiroka**	**2.37**	**292**	S		**Sb**	**15 16 13.0**		**+1.1**
JOD2	**Odawara 2**	**2.45**	**244**	⇑P		**Pn**	**15 15 39.9**		**+0.3**
JIM2	**Oshima 3**	**2.53**	**230**	*e*S		**Sn**	**15 16 09.8**		**-1.1**
JMK	**Ichinoseki**	**2.60**	**351**	P		**Pn**	**15 15 41.1**		**-0.6**
OFUJ	**Ofunato**	**2.69**	**358**	*e*S		**Sn**	**15 16 13.9**		**-1.0**
JYK	**Kaneyama**	**2.77**	**337**	⇑P		**Pn**	**15 15 43.7**		**-0.3**
MJAR	**Matsushiro Arr**	**2.87**	**274**	Pn		**Pn**	**15 15 43.6**		**-1.9**
	438nm,0.3s,baz=96,slow=9.3,SNR=1252								
MJAR				Sn		**Sb**	**15 16 24.1**		**-2.2**
	313nm,0.3s,baz=155,slow=24,SNR=6.1								
MJAR				LR		LR	15 17 02.4		
	comp=Z,75μm,20.9s,baz=110,slow=44								
MAJO	**Matsushiro**	**2.88**	**274**	*c i*P		**Pn**	**15 15 47.1**		**+1.6**
MAJO	**Matsushiro**	**2.88**	**274**	*e*Pn		**Pn**	**15 15 47.5**		**+1.9**
MJB9	**Matsu-Tunnel**	**2.88**	**274**	*e*Pn		**Pn**	**15 15 47.4**		**+1.8**
JNT	**Takato**	**2.98**	**261**	S		**Sb**	**15 16 27.8**		**-1.8**
JNY	**Yasuok**	**3.33**	**253**	⇑P		**Pn**	**15 15 53.7**		**+1.8**
JTT	**Ttatey**	**3.58**	**275**	⇑P		**Pn**	**15 15 57.9**		**+2.7**
JGN	**Niukaw**	**3.60**	**269**	⇑P		**Pn**	**15 15 57.7**		**+2.2**
JHJ2	**Mitsune**	**3.64**	**207**	*e*Pn		**Pn**	**15 15 55.2**		**-0.7**
JHJ	**Hachijo jima 2**	**3.64**	**207**	Pn		**Pn**	**15 15 53.8**		**-2.3**
	529nm,0.3s,baz=86,slow=21,SNR=146								
JHJ				Sn		**Sn**	**15 16 34.2**		**-4.2**
	664nm,0.3s,baz=246,slow=20,SNR=5.4								
JHJ				LR		LR	15 16 52.6		
	comp=Z,7μm,21.6s,baz=6.5,slow=32								
JSZ	**Suzu**	**3.69**	**288**	⇑P		**Pn**	**15 15 58.1**		**+1.5**
INU	**Inuyama**	**4.00**	**256**	*e*Pn		**Pn**	**15 16 02.5**		**+1.7**
ERM	**Erimo**	**5.72**	**10**	*i* P		**Pn**	**15 16 22.1**		**-2.5**
ERM				pmax		pmax			
	comp=Z,242nm,1.0s								
ERM	**Erimo**	**5.72**	**10**	*e*Pn		**Pn**	**15 16 22.1**		**-2.5**
ASAJ	**Asahikawa**	**7.75**	**4**	Pn		**Pn**	**15 16 50.5**		**-1.9**
	baz=217,slow=13								
ASAJ				Sn		**Sn**	**15 18 17.9**		**-1.5**
	comp=Z,14nm,0.3s,baz=120,slow=20,SNR=3.6								
YUK	**Yuzh-Kuril'sk**	**8.26**	**21**	*e*P		**Pn**	**15 16 57.0**		**-2.4**
YUK				*i* S		**Sn**	**15 18 24.5**		**-7.4**
YUK				MLR		MLR			
	comp=Z,22μm,17.0s								
CBIJ	**Chichi jima**	**9.27**	**178**	Pn		**Pn**	**15 17 10.1**		**-3.2**
CBIJ				Sn		Sn	15 18 43.4		-14
JCJ	**Chichijima**	**9.27**	**178**	Pn		**Pn**	**15 17 10.1**		**-3.2**
	comp=Z,25nm,0.3s,baz=0.0,slow=20,SNR=4.6								
JCJ				Sn		Sn	15 18 43.4		-14
	comp=Z,21nm,0.3s,baz=0.0,slow=20,SNR=1.8								
JNU	**Nakatsue**	**9.53**	**253**	Pn		**Pn**	**15 17 17.7**		**+0.7**
	comp=Z,6.2nm,0.3s,baz=70,slow=8.8,SNR=35								
JNU	**Nakatsue**	**9.53**	**253**	*e*Pn		**Pn**	**15 17 18.9**		**+2.0**
JNAR	**Kushima--Naru**	**9.97**	**244**	P		**Pn**	**15 17 26.3**		**+3.4**
KUR	**Kuril'sk**	**9.97**	**26**	*d i*P		**Pn**	**15 17 23.4**		**+0.5**
KUR				pmax		pmax			
	comp=N,35nm,0.5s								
KUR				pmax		pmax			
	comp=Z,120nm,0.5s								
KUR				pmax		pmax			
	comp=Z,632nm,3.5s								
KUR				MLR		MLR			
	comp=Z,6μm,10.0s								
KUR				MLR		MLR			
	comp=N,2μm,10.0s								
KUR				MLR		MLR			
	comp=E,5μm,10.0s								
VLA	**Vladivostok**	**10.15**	**315**	*de*P		**Pn**	**15 17 27.5**		**+2.2**
VLA				*e*S		**Sn**	**15 19 24.2**		**+5.8**
VLA				pmax		pmax			
	comp=Z,152nm,0.9s								
VLA				MLR		MLR			
	comp=E,693μm,17.0s								
MSHR	**Mys Shultsa**	**10.27**	**310**	*c i*P		**Pn**	**15 17 26.9**		**0.0**
YSS	**Yuzh-Sakhalins**	**10.59**	**4**	⇓P	*e*	**Pn**	**15 17 29.7**		**-1.6**
YSS				*e*S		**Sn**	**15 19 22.2**		**-6.8**
YSS				pmax		pmax			
	comp=Z,230nm,1.0s								
YSS				MLR		MLR			
	comp=Z,12μm,15.0s								
YSS				MLR		MLR			
	comp=N,16μm,16.0s								
YSS	**Yuzh-Sakhalins**	**10.59**	**4**	*e*Pn		**Pn**	**15 17 29.1**		**-2.2**
USRK	**Ussuriysk Ar.**	**10.80**	**319**	Pn		**Pn**	**15 17 36.0**		**+1.9**
	comp=N,2.7nm,0.3s,baz=134,slow=10,SNR=95								
USRK				LR		LR	15 21 39.4		
	comp=N,51μm,18.2s,baz=122,slow=37								
KSRS	**Korea Array**	**11.14**	**280**	Pn		**Pn**	**15 17 42.9**		**+4.0**
	comp=N,5.7nm,0.3s,baz=97,slow=13,SNR=200								
KSRS				LR		LR	15 21 56.0		
	comp=N,34μm,19.3s,baz=76,slow=37								
KS01	**Wonju Array Si**	**11.16**	**280**	*e*Pn		**Pn**	**15 17 41.6**		**+2.4**
KS15	**Wonju Array Si**	**11.17**	**280**	*e*Pn		**Pn**	**15 17 43.0**		**+3.7**
KSAR	**Wonju Array Be**	**11.17**	**280**	P		**Pn**	**15 17 42.9**		**+3.6**
KSAR	**Wonju Array Be**	**11.17**	**280**	Pn		**Pn**	**15 17 42.9**		**+3.6**
INCN	**Inchon**	**12.16**	**280**	P		**Pn**	**15 17 56.3**		**+3.4**
SNR=20									
INCN	**Inchon**	**12.16**	**280**	*e*Pn		**Pn**	**15 17 55.8**		**+2.8**
MDJ	**Mudanjiang**	**12.38**	**315**	P		**Pn**	**15 17 56.4**		**+0.6**
MDJ				S		**Sn**	**15 20 11.4**		**-1.6**
MDJ				PcP		**PcP**	**15 23 35.9**		**-0.1**
MDJ				ScP		**ScP**	**15 27 07.6**		**0.0**
MDJ				PcS		**PcS**	**15 27 11.2**		**+1.1**
MDJ				ScS		**ScS**	**15 30 45.0**		**+1.5**
MDJ				pmax		pmax			
	comp=N,3μm,9.8s								
MDJ				LR		LR			
	comp=N,23μm,18.1s								
MDJ				LR		LR			
	comp=N,21μm,18.7s								
MDJ				LR		LR			
	comp=N,43μm,17.8s								
MDJ	**Mudanjiang**	**12.38**	**315**	*e*Pn		**Pn**	**15 17 57.5**		**+1.7**
UGL	**Uglegorsk**	**12.69**	**1**	*e*P		**Pn**	**15 18 00.5**		**+0.5**
UGL				*e*S		**Sn**	**15 20 17.0**		**-3.5**
UGL				pmax		pmax			
	comp=Z,2μm,6.0s								
UGL				pmax		pmax			
	comp=Z,202nm,1.0s								
UGL				smax		smax			
	comp=N,2μm,12.0s								
UGL				smax		smax			
	comp=E,4μm,12.0s								
UGL				MLR		MLR			
	comp=N,23μm,19.0s								
UGL				MLR		MLR			
	comp=E,73μm,19.0s								
UGL				MLR		MLR			
	comp=Z,20μm,19.0s								
HABR	**Khabarovsk**	**13.05**	**340**	*c i*P		**Pn**	**15 18 01.0**		**-4.0**
HABR				*e*S		**Sn**	**15 20 24.7**		**-4.6**
HABR				pmax		pmax			
	comp=N,12nm,1.5s								
HABR				pmax		pmax			
	comp=E,5.0nm,0.7s								
HABR				pmax		pmax			
	comp=Z,15nm,1.5s								
HABR				MLR		MLR			
	comp=Z,25μm,14.0s								
TYV	**Tymovskoe**	**14.49**	**2**	*e*P		**Pn**	**15 18 22.5**		**-2.1**
TYV				pmax		pmax			
	comp=Z,143nm,0.8s								
TYV				pmax		pmax			
	comp=Z,2μm,6.0s								
CN2	**Changchun**	**14.51**	**306**	*e*P		**Pn**	**15 18 23.8**		**-1.1**
CN2				pmax		pmax			
	comp=Z,50nm,1.0s								
CN2				pmax		pmax			
	comp=Z,1μm,5.0s								
CN2				LR		LR			
	comp=Z,33μm,14.0s								
CN2				LR		LR			
	comp=Z,38μm,14.0s								
CN2				LR		LR			
	comp=Z,35μm,15.0s								
KLR	**Kul'dur**	**14.78**	**333**	Pn		**Pn**	**15 18 25.1**		**-3.4**
	comp=Z,2.1nm,0.3s,baz=144,slow=8.4,SNR=29								
KLR				LR		LR	15 24 07.0		
	comp=Z,23μm,19.4s,baz=144,slow=37								
SNY	**Shenyang**	**15.12**	**297**	⇑P		**Pn**	**15 18 32.9**		**-0.3**
SNY				pmax		pmax			
	comp=Z,99nm,1.1s								
SNY				pmax		pmax			
	comp=Z,5μm,12.0s								
SNY				LR		LR			
	comp=Z,26μm,14.7s								
SNY				LR		LR			
	comp=Z,53μm,16.3s								
SNY				LR		LR			
	comp=Z,72μm,16.9s								
DL2	**Dalian**	**16.15**	**285**	⇑ *i*P		**Pn**	**15 18 47.0**		**+0.5**
DL2				S		**Sn**	**15 21 49.5**		**+4.6**
DL2				pmax		pmax			
	comp=Z,160nm,0.9s								
DL2				pmax		pmax			
	comp=Z,4μm,8.2s								
DL2				LR		LR			
	comp=Z,18μm,12.6s								
DL2				LR		LR			
	comp=Z,48μm,15.1s								
DL2				LR		LR			
	comp=Z,60μm,15.9s								
NKL	**Nikolayevsk**	**16.78**	**358**	*e*P		**Pn**	**15 18 50.0**		**-4.4**
NKL				pmax		pmax			
	comp=N,60nm,1.2s								
NKL				pmax		pmax			
	comp=E,30nm,1.2s								
NKL				pmax		pmax			
	comp=Z,150nm,1.2s								
NKL				pmax		pmax			
	comp=N,1μm,7.0s								
NKL				pmax		pmax			
	comp=Z,2μm,8.0s								
NKL				MLR		MLR			
	comp=E,10μm,18.0s								
NKL				MLR		MLR			
	comp=N,14μm,15.0s								
NKL				MLR		MLR			
	comp=Z,30μm,15.0s								
OKH	**Okha**	**17.18**	**2**	*e*P		**P**	**15 19 04.0**		**+3.1**
OKH				*e*S		**Sn**	**15 22 06.0**		**-3.8**
OKH				pmax		pmax			
	comp=Z,5μm,9.0s								
OKH				smax		smax			
	comp=E,5μm,12.0s								
OKH				MLR		MLR			
	comp=Z,14μm,14.0s								
SKR	**Severo-Kuril's**	**17.63**	**31**	*e*P		**P**	**15 19 07.4**		**+1.5**
SKR				*e*S		**S**	**15 22 25.1**		**-2.7**
SKR				pmax		pmax			
	comp=Z,1μm,3.8s								
SKR				pmax		pmax			
	comp=Z,198nm,1.0s								
SKR				MLR		MLR			
	comp=Z,12μm,16.0s								
SKR				MLR		MLR			
	comp=Z,12μm,18.0s								
SSE	**Sheshan**	**17.90**	**259**	P		**Pn**	**15 19 07.6**		**-0.9**
SSE				S		**Sn**	**15 22 26.8**		**-0.7**
SSE				pmax		pmax			
	comp=Z,53nm,0.9s								
SSE				pmax		pmax			
	comp=Z,4μm,12.0s								
SSE				LR		LR			
	comp=Z,13μm,13.3s								
SSE				LR		LR			
	comp=Z,17μm,13.3s								
SSE				LR		LR			
	comp=Z,25μm,13.9s								
NJ2	**Nanjing**	**19.42**	**264**	*e*P		**P**	**15 19 24.8**		**-0.9**
NJ2				pmax		pmax			
	comp=Z,36nm,0.7s								
NJ2				LR		LR			
	comp=Z,20μm,14.9s								
NJ2				LR		LR			
	comp=Z,22μm,12.7s								
NJ2				LR		LR			
	comp=Z,20μm,14.4s								
TIA	**Tai'an**	**19.86**	**277**	⇑P		**P**	**15 19 28.2**		**-2.3**
TIA				pmax		pmax			
	comp=Z,120nm,1.3s								
TIA				pmax		pmax			
	comp=Z,3μm,7.3s								
TIA				LR		LR			
	comp=Z,21μm,14.1s								
TIA				LR		LR			
	comp=Z,23μm,14.2s								
TIA				LR		LR			
	comp=Z,18μm,13.9s								
SARN	**Sarigan**	**19.93**	**169**	*e*P		**Pn**	**15 19 37.3**		**+4.2**
YOJ	**Yonaguni jima**	**20.03**	**239**	*e*P		**P**	**15 19 29.2**		**-3.2**
YOJ				pmax		pmax			
	comp=Z,208nm,1.0s								
YOJ	**Yonaguni jima**	**20.03**	**239**	*e*P		**P**	**15 19 29.2**		**-3.2**
	comp=Z,208nm,1.0s								
PEA0	**Petropavlovsk-**	**20.11**	**29**	*e*P		**P**	**15 19 33.5**		**+0.4**
PEA0B	**Petropavlovsk-**	**20.11**	**29**	*e*P		**P**	**15 19 32.8**		**-0.3**
	comp=Z,257nm,1.2s								
PETK	**Petropavlovsk-**	**20.11**	**29**	P		**P**	**15 19 33.4**		**+0.3**
	comp=Z,10nm,0.8s,baz=228,slow=7.7,SNR=14								
PETK				LR		LR	15 27 24.0		
	comp=Z,6μm,20.9s,baz=214,slow=37								
ANA2	**Anatahan**	**20.27**	**169**	*e*P		**P**	**15 19 35.0**		**0.0**
BJI	**Beijing**	**20.41**	**288**	P		**P**	**15 19 34.8**		**-1.7**
BJI				S		**S**	**15 23 22.2**		**-1.9**
BJI				pmax		pmax			
	comp=Z,120nm,0.9s								
BJI				pmax		pmax			
	comp=Z,1μm,4.2s								
BJI				LR		LR			
	comp=Z,17μm,14.0s								
BJI				LR		LR			
	comp=Z,18μm,15.1s								
BJI				LR		LR			
	comp=Z,11μm,19.9s								
BJT	**Baijiatuao**	**20.42**	**288**	*e*P		**P**	**15 19 35.0**		**-1.5**
BJT	**Baijiatuao**	**20.42**	**288**	*e*P		**P**	**15 19 35.0**		**-1.5**
PET	**Petropavlovsk**	**20.43**	**30**	α *i*P		**P**	**15 19 37.4**		**+0.9**
PET				*e*S		**S**	**15 23 21.0**		**-3.1**
PET							15 23 47.4		
PET				pmax		pmax			
	comp=Z,200μm,1.2s								
PET				pmax		pmax			
	comp=Z,3μm,7.3s								
PET				pmax		pmax			
	comp=Z,2μm,12.5s								
PET				MLR		MLR			
	comp=Z,9μm,15.0s								
PET	**Petropavlovsk**	**20.43**	**30**	*e*P		**P**	**15 19 36.9**		**+0.4**
	comp=Z,252nm,1.2s								
HIA	**Hailar**	**20.57**	**316**	*e*P		**P**	**15 19 34.6**		**-3.5**
HIA	**Hailar**	**20.57**	**316**	*e*P		**P**	**15 19 34.6**		**-3.5**
TATO	**Taipei**	**20.78**	**242**	*e*P		**P**	**15 19 38.1**		**-2.4**
	comp=Z,156nm,1.2s								
YHNB	**Yeheng**	**21.05**	**242**	*e*P		**P**	**15 19 41.3**		**-2.2**
	comp=Z,95nm,0.8s								
NACB	**Ninganchiao**	**21.20**	**241**	*e*P		**P**	**15 19 41.5**		**-3.6**
	comp=Z,85nm,0.6s								
SSLB	**Suanglung**	**21.90**	**241**	*e*P		**P**	**15 19 48.7**		**-3.9**
	comp=Z,69nm,0.8s								
YULB	**Yu-li**	**21.91**	**239**	*e*P		**P**	**15 19 48.8**		**-4.0**
	comp=Z,47nm,0.8s								
TPUB	**Ta-pu**	**22.44**	**240**	*e*P		**P**	**15 19 54.3**		**-4.1**
	comp=Z,112nm,0.8s								
TWG	**Pinlang**	**22.44**	**239**	*e*P		**P**	**15 19 54.2**		**-4.2**
	comp=Z,499nm,0.9s								
GUMO	**Guam**	**22.87**	**172**	P		**P**	**15 20 01.4**		**-1.5**
	comp=Z,122nm,1.2s,baz=191,slow=9.0,SNR=4.2								
GUMO				LR		LR	15 27 39.8		
	comp=Z,4μm,21.8s,baz=14,slow=33								
GUMO	**Guam**	**22.87**	**172**	*e*P		**P**	**15 20 04.1**		**+1.1**
GUMO				pmax		pmax			
	comp=Z,1μm,1.5s								
GUMO	**Guam**	**22.87**	**172**	*e*P		**P**	**15 20 04.1**		**+1.1**
	comp=Z,1μm,1.5s								
CLNS	**Chul'man**	**23.39**	**336**	*e*P		**P**	**15 20 07.5**		**-0.5**
CLNS				*e**PP		**sP**	**15 20 17.2**		**-0.3**
CLNS				*e*			15 23 53.7		
CLNS				*e*S		**S**	**15 24 15.6**		**-4.0**
CLNS				*e*SS		SnSn	15 25 14.2		+19
CLNS				pmax		pmax			
	comp=Z,242nm,0.9s								
CLNS				pmax		pmax			
	comp=N,146nm,1.1s								
CLNS				pmax		pmax			
	comp=E,77nm,1.0s								
CLNS				pmax		pmax			
	comp=E,69nm,1.0s								
CLNS				pmax		pmax			
	comp=N,136nm,1.1s								
CLNS				pmax		pmax			
	comp=Z,76nm,0.9s								
CLNS				smax		smax			
	comp=E,2μm,13.4s								
CLNS				smax		smax			
	comp=N,4μm,14.2s								
CLNS				MLR		MLR			
	comp=Z,18μm,15.0s								
CLNS				MLR		MLR			
	comp=N,19μm,13.0s								
CLNS				MLR		MLR			
	comp=E,6μm,14.0s								
TIY	**Taiyuan**	**23.41**	**282**	*e*P		**P**	**15 20 09.4**		**+0.9**
TIY				S		**S**	**15 24 14.7**		**-5.7**
TIY				SS		**SnSn**	**15 25 00.4**		**+4.2**
TIY				pmax		pmax			
	comp=E,77nm,0.7s								
TIY				pmax		pmax			
	comp=E,2μm,6.4s								
TIY				LR		LR			
	comp=E,14μm,14.2s								
TIY				LR		LR			
	comp=E,36μm,13.6s								
TIY				LR		LR			
	comp=E,47μm,14.5s								
WHN	**Wuhan**	**23.56**	**264**	⇓ *i*P		**P**

CIT	**Chita**	**25.34**	**317**	*e*	P	**P**	**15**	**20**	**24.5 -1.7**
CIT				*e*			15	20	34.7
CIT				*e*			15	21	09.0
CIT				*e*			15	24	54.1
CIT					pmax	pmax			
	comp=Z,543nm,2.8s								
APYP	**Conner**	**25.87**	**230**	*e*	P	**P**	**15**	**20**	**28.3 -2.8**
CAUP	**Cauayan**	**26.22**	**228**	*e*	P	**P**	**15**	**20**	**38.0 +3.7**
ABRA	**Dolores**	**26.36**	**231**	*e*	P	**P**	**15**	**20**	**30.5 -5.1**
YAK	**Yakutsk**	**26.76**	**347**	P		**P**	**15**	**20**	**38.4 -0.3**
	comp=Z,484nm,0.8s,baz=153,slow=2.5,SNR=160								
YAK	**Yakutsk**	**26.76**	**347**	*c i*	P	**P**	**15**	**20**	**38.3 -0.5**
YAK				*e*	PPP	PPP	15	21	29.0
YAK				*e*			15	24	01.9
YAK				*e*	S	**S**	**15**	**25**	**13.0 -0.1**
YAK				*e*	SS	**SnSn**	**15**	**26**	**19.5 +1.9**
YAK				*e*	SSS	SSS	15	26	34.8
YAK				*e*			15	31	27.7
YAK					pmax	pmax			
	comp=Z,818nm,1.1s								
YAK					pmax	pmax			
	comp=N,391nm,1.2s								
YAK					pmax	pmax			
	comp=E,173nm,1.4s								
YAK					pmax	pmax			
	comp=N,564nm,1.6s								
YAK					pmax	pmax			
	comp=E,605nm,2.0s								
YAK					pmax	pmax			
	comp=Z,266nm,0.9s								
YAK					smax	smax			
	comp=N,2μm,4.2s								
YAK					smax	smax			
	comp=E,880nm,4.1s								
YAK					MLR	MLR			
	comp=Z,23μm,17.0s								
YAK					MLR	MLR			
	comp=N,19μm,15.0s								
YAK					MLR	MLR			
	comp=E,8μm,15.0s								
YAK	**Yakutsk**	**26.76**	**347**	*e*	P	**P**	**15**	**20**	**38.0 -0.8**
	comp=E,736nm,0.9s								
XAN	**Xi'an**	**26.87**	**275**	P		**P**	**15**	**20**	**39.3 -0.8**
XAN				pP		pP	15	20	45.3 -1.7
XAN				PP		**PnPn**	**15**	**21**	**26.0 +3.8**
XAN				S		**S**	**15**	**25**	**20.3 +4.8**
XAN				PcS		**PcS**	**15**	**27**	**39.0 -4.7**
XAN					pmax	pmax			
	comp=E,150nm,0.8s								
XAN					pmax	pmax			
	comp=E,2μm,9.2s								
XAN					LR	LR			
	comp=E,5μm,15.6s								
XAN					LR	LR			
	comp=E,14μm,13.7s								
XAN					LR	LR			
	comp=E,16μm,12.7s								
BALP	**Baler**	**27.31**	**226**	*e*	P	**P**	**15**	**20**	**43.3 -0.8**
SEY	**Seymchan**	**27.37**	**11**	P		**P**	**15**	**20**	**45.0 +0.7**
	comp=E,56nm,1.1s,baz=196,slow=8.0,SNR=24								
SEY	**Seymchan**	**27.37**	**11**	P		**P**	**15**	**20**	**45.0 +0.7**
SEY					pmax	pmax			
	comp=Z,57nm,1.1s								
ENH	**Enshi**	**27.57**	**267**	*e*	P	**P**	**15**	**20**	**45.2 -1.2**
	comp=Z,482nm,0.8s								
H11N2	**WAKE ISLAND Hy**	**27.57**	**120**		T	T	15	50	17.5
	baz=312,slow=74,SNR=424								
H11N1	**WAKE ISLAND Hy**	**27.58**	**120**		T	T	15	50	17.9
	baz=312,slow=74,SNR=599								
H11N3	**WAKE ISLAND Hy**	**27.59**	**120**		T	T	15	50	19.3
	baz=312,slow=74,SNR=121								
GZH	**Guangzhou**	**27.90**	**250**		P	**P**	**15**	**20**	**42.3 -7.0**
GZH					PP	**PnPn**	**15**	**21**	**31.0 -5.3**
GZH					S	S	15	25	17.1 -15
GZH					pmax	pmax			
	comp=Z,3μm,6.2s								
BOD	**Bodaibo**	**28.23**	**328**	*e*	P	**P**	**15**	**20**	**51.2 -0.8**
BOD					pmax	pmax			
	comp=Z,162nm,1.5s								
H11S1	**WAKE ISLAND Hy**	**28.27**	**122**		T	T	15	51	08.5
	baz=314,slow=75,SNR=398								
H11S3	**WAKE ISLAND Hy**	**28.27**	**122**		T	T	15	51	09.1
	baz=314,slow=75,SNR=476								
H11S2	**WAKE ISLAND Hy**	**28.29**	**122**		T	T	15	51	03.0
	baz=314,slow=75,SNR=198								
SONA1	**Songino Array**	**28.38**	**305**	*e*	P	**P**	**15**	**20**	**53.7 0.0**
SONM	**Songino Array**	**28.39**	**305**		P	**P**	**15**	**20**	**53.9 +0.2**
	comp=Z,246nm,0.8s,baz=105,slow=8.3,SNR=173								
SONM					LR	LR	15	32	38.4
	comp=Z,12μm,18.5s,baz=94,slow=37								
SONM	**Songino Array**	**28.39**	**305**		P	**P**	**15**	**20**	**53.9 +0.2**
SONM					pmax	pmax			
	comp=Z,248nm,0.9s								
SONM					MLR	MLR			
	comp=Z,12μm,18.5s								
TGY	**Tagaytay City**	**28.98**	**225**		P	**P**	**15**	**20**	**59.6 +0.5**
	comp=Z,157nm,0.3s,baz=7.8,slow=8.0,SNR=4.9								
TGY	**Tagaytay City**	**28.98**	**225**		P	**P**	**15**	**20**	**59.6 +0.5**
TGY					pmax	pmax			
	comp=Z,197nm,0.4s								
LZH	**Lanzhou**	**30.46**	**281**	⇑	P	**P**	**15**	**21**	**11.8 -0.5**
LZH					pP	pP	15	21	16.7 -2.4
LZH					sP	sP	15	21	18.6 -3.4
LZH					PcP	**PcP**	**15**	**24**	**12.5 +1.2**
LZH					S	**S**	**15**	**26**	**08.3 -3.9**
LZH					sS	sS	15	26	21.0 -2.6
LZH					SS	**ScP**	**15**	**27**	**53.4 +1.1**
LZH					pmax	pmax			
	comp=Z,130nm,1.0s								
LZH					pmax	pmax			
	comp=Z,1μm,4.4s								
LZH					LR	LR			
	comp=Z,19μm,14.3s								
LZH					LR	LR			
	comp=Z,22μm,15.2s								
LZH					LR	LR			
	comp=Z,31μm,15.9s								
IRK	**Irkutsk**	**30.75**	**313**	*e*	P	**P**	**15**	**21**	**13.9 -0.5**
IRK					pmax	pmax			
	comp=Z,220nm,2.7s								
ZAK	**Zakamensk**	**30.90**	**309**	*e*	P	**P**	**15**	**21**	**16.1 +0.2**
ZAK					pmax	pmax			
	comp=Z,138nm,1.2s								
TLY	**Talaya**	**30.97**	**312**	P		**P**	**15**	**21**	**17.1 +0.7**
	comp=Z,111nm,0.9s,baz=124,slow=6.1,SNR=46								
TLY					LR	LR	15	34	29.5
	comp=Z,22μm,18.1s,baz=104,slow=38								
TLY	**Talaya**	**30.97**	**312**	*c i*	P	**P**	**15**	**21**	**16.3 -0.1**
TLY				*e*			15	22	18.7
TLY				*e*	PPP	PPP	15	22	34.3
TLY				*e*	S	**S**	**15**	**26**	**25.7 +6.1**
TLY				*e*	SSS	SSS	15	28	17.8
TLY					pmax	pmax			
	comp=Z,160nm,0.9s								
TLY					MLR	MLR			
	comp=Z,22μm,15.0s								
TLY	**Talaya**	**30.97**	**312**	*e*	P	**P**	**15**	**21**	**16.6 +0.2**
	comp=Z,147nm,0.9s								
GYA	**Guiyang**	**31.40**	**262**	⇑	P	**P**	**15**	**21**	**19.4 -1.2**
GYA					PP	**PnPn**	**15**	**22**	**21.7 -1.8**
GYA					PcP	**PcP**	**15**	**24**	**15.0 +1.1**
GYA					S	**S**	**15**	**26**	**20.6 -6.4**
GYA					ScP	**ScP**	**15**	**27**	**57.4 +1.9**
GYA					SS	**SnSn**	**15**	**28**	**11.0 -0.5**
GYA					ScS	**ScS**	**15**	**31**	**53.8 +0.4**
GYA					pmax	pmax			
	comp=Z,420nm,1.0s								
GYA					pmax	pmax			
	comp=Z,980nm,8.4s								
GYA					LR	LR			
	comp=Z,6μm,14.3s								
GYA					LR	LR			
	comp=Z,14μm,16.2s								
GYA					LR	LR			
	comp=Z,21μm,15.9s								
CD2	**Chengdu**	**31.97**	**271**	⇑	P	**P**	**15**	**21**	**24.4 -1.0**
CD2					sP	pP	15	21	29.3 -3.0
CD2					S	**S**	**15**	**26**	**36.1 +0.5**
CD2					sS	sS	15	26	41.9 -5.1
CD2					pmax	pmax			
	comp=Z,300nm,0.7s								
CD2					pmax	pmax			
	comp=Z,2μm,5.2s								
CD2					LR	LR			
	comp=Z,16μm,16.4s								
CD2					LR	LR			
	comp=Z,16μm,14.9s								
CD2					LR	LR			
	comp=Z,18μm,12.4s								
MOY	**Mondy**	**32.58**	**311**	*e*	P	**P**	**15**	**21**	**30.7 +0.1**
MOY					pmax	pmax			
	comp=Z,187nm,1.9s								
QIZ	**Qiongzhong**	**32.93**	**247**		P	**P**	**15**	**21**	**32.9 -1.0**
QIZ					S	**S**	**15**	**26**	**52.0 +1.3**
QIZ					LR	LR			
	comp=Z,7μm,16.2s								
QIZ					LR	LR			
	comp=Z,6μm,15.9s								
QIZ					LR	LR			
	comp=Z,9μm,18.3s								
QIZ	**Qiongzhong**	**32.93**	**247**	*e*	P	**P**	**15**	**21**	**33.8 -0.1**
	comp=Z,38nm,1.1s								
GTA	**Gaotai**	**33.03**	**288**	⇑	P	**P**	**15**	**21**	**34.4 -0.4**
GTA					pP	pP	15	21	38.1 -3.6
GTA					sP	sP	15	21	40.9 -3.6
GTA					PP	**PnPn**	**15**	**22**	**45.8 +1.5**
GTA					PcP	**PcP**	**15**	**24**	**19.8 +1.7**
GTA					S	**S**	**15**	**26**	**53.8 +1.6**
GTA					sS	sS	15	27	01.6 -2.0
GTA					ScP	**ScP**	**15**	**28**	**02.9 +2.0**
GTA					PcS	**PcS**	**15**	**28**	**04.6 +1.0**
GTA					ScS	**ScS**	**15**	**32**	**00.0 -1.3**
GTA					pmax	pmax			
	comp=Z,1μm,6.7s								
GTA					LR	LR			
	comp=Z,6μm,19.5s								
GTA					LR	LR			
	comp=Z,14μm,16.6s								
GTA					LR	LR			
	comp=Z,14μm,17.6s								
PATS	**Pohnpei**	**33.08**	**149**	*e*	P	**P**	**15**	**21**	**35.8 +0.6**
	comp=Z,267nm,1.3s								
BILL	**Bilibino**	**34.57**	**16**	*c i*	P	**P**	**15**	**21**	**47.2 -0.4**
BILL				*e*			15	23	08.8
BILL				*i*	S	**S**	**15**	**27**	**12.1 -3.0**
BILL					pmax	pmax			
	comp=Z,50nm,1.0s								
BILL					MLR	MLR			
	comp=Z,6μm,15.0s								
BILL	**Bilibino**	**34.57**	**16**	*e*	P	**P**	**15**	**21**	**46.9 -0.7**
	comp=Z,157nm,1.5s								
KMI	**Kunming**	**35.15**	**262**	P		**P**	**15**	**21**	**52.8 -0.6**
KMI					pP	sP	15	22	02.3 -0.8
KMI					sP	pP	15	22	05.6 +5.3
KMI					PP	**PP**	**15**	**23**	**13.4 +0.1**
KMI					S	**S**	**15**	**27**	**25.8 +0.4**
KMI					sS	sS	15	27	38.2 +1.4
KMI					pmax	pmax			
	comp=Z,220nm,1.1s								
KMI					pmax	pmax			
	comp=Z,1μm,3.3s								
KMI					LR	LR			
	comp=Z,13μm,14.9s								
KMI					LR	LR			
	comp=Z,17μm,16.0s								
KMI					LR	LR			
	comp=Z,19μm,14.9s								
MIDW	**Midway**	**35.28**	**91**	*e*	P	**P**	**15**	**21**	**52.9 -1.3**
MIDW					LR	LR			
	comp=Z,6μm,20.0s								
TIXI	**Tiksi**	**35.97**	**353**		P	**P**	**15**	**21**	**59.4 -0.1**
	comp=Z,40nm,1.0s,baz=165,slow=8.8,SNR=16								
TIXI	**Tiksi**	**35.97**	**353**	*i*	P	**P**	**15**	**21**	**59.5 -0.1**
TIXI					pmax	pmax			
	comp=Z,64nm,1.0s								
TIXI	**Tiksi**	**35.97**	**353**	*e*	P	**P**	**15**	**21**	**59.6 +0.1**
	comp=Z,80nm,1.2s								
MYLDM	**Lahad Datu**	**37.69**	**220**	⇓	P	**P**	**15**	**22**	**15.6 +0.8**
MYLDM	**Lahad Datu**	**37.69**	**220**	*e*	P	**P**	**15**	**22**	**15.1 +0.3**
	comp=Z,86nm,0.9s								
SDKM	**Sandakan**	**38.00**	**222**	⇑	P	**P**	**15**	**22**	**18.1 +0.6**
KRAR	**Krasnoyarsk**	**38.13**	**317**	*c i*	P	**P**	**15**	**22**	**18.7 +0.6**
KKM	**Kota Kinabalu**	**38.20**	**224**	⇓	P	**P**	**15**	**22**	**19.6 +0.3**
KKM	**Kota Kinabalu**	**38.20**	**224**	*e*	P	**P**	**15**	**22**	**18.6 -0.7**
	comp=Z,79nm,1.3s								
UBPT	**Khong Chiam**	**38.52**	**247**		P	**P**	**15**	**22**	**22.4 +0.5**
	comp=Z,160nm,1.3s,comp=Z,3μm								
NONG	**Nongkai**	**38.58**	**252**		P	**P**	**15**	**22**	**22.6 +0.3**
	comp=Z,329nm,0.9s,comp=Z,4μm								
SKNT	**Sakolnakorn**	**38.59**	**250**		P	**P**	**15**	**22**	**22.7 +0.3**
	comp=Z,370nm,1.6s,comp=Z,5μm								
TSM	**Tawau**	**38.77**	**220**	⇑	P	**P**	**15**	**22**	**24.0 0.0**
GENI	**Genyem**	**38.80**	**183**		P	**P**	**15**	**22**	**26.3 +2.1**
LBMI	**Labuha**	**39.15**	**203**		P	**P**	**15**	**22**	**28.2 +1.1**
KMSI	**Cibinong**	**39.27**	**209**		P	**P**	**15**	**22**	**28.6 +0.5**
KHON	**Khomkaen**	**39.85**	**250**		P	**P**	**15**	**22**	**33.9 +0.9**
	comp=Z,73nm,1.0s,comp=Z,904nm								
FAKI	**Fak Fak**	**40.10**	**195**		P	**P**	**15**	**22**	**36.9 +1.9**
FAKI	**Fak Fak**	**40.10**	**195**	*e*	P	**P**	**15**	**22**	**35.3 +0.3**
	comp=Z,56nm,0.7s								
MRSI	**Marisa**	**40.18**	**212**		P	**P**	**15**	**22**	**36.5 +0.8**
LOEI	**Loei**	**40.35**	**253**		P	**P**	**15**	**22**	**33.9 -3.2**
	comp=Z,285nm,1.0s,comp=Z,2μm								
UTTA	**Uttaradit**	**40.76**	**254**		P	**P**	**15**	**22**	**40.4 -0.1**
	comp=Z,72nm,0.9s,comp=Z,584nm								
SANI	**Sanana**	**40.97**	**204**		P	**P**	**15**	**22**	**41.8 -0.4**
LAMP	**Lampang**	**41.04**	**256**		P	**P**	**15**	**22**	**43.3 +0.5**
	comp=Z,75nm,1.0s,comp=Z,686nm								
PBKT	**Sadao Pong**	**41.13**	**252**		P	**P**	**15**	**22**	**43.3 -0.2**
	comp=Z,276nm,1.0s,comp=Z,3μm								
MSAI	**Masohi**	**41.30**	**200**		P	**P**	**15**	**22**	**49.3 +4.4**
	comp=Z,56nm,1.4s,comp=Z,1μm								
WMQ	**Urumqi**	**41.39**	**298**		P	**P**	**15**	**22**	**46.8 +1.3**
WMQ					pP	pP	15	22	50.9 -1.6
WMQ					sP	sP	15	22	54.1 -1.2
WMQ					PcS	**PcS**	**15**	**28**	**33.5 -1.1**
WMQ					S	**S**	**15**	**29**	**02.7 +3.6**
WMQ					pmax	pmax			
	comp=Z,340nm,1.0s								
WMQ					pmax	pmax			
	comp=Z,4μm,4.8s								
WMQ					LR	LR			
	comp=Z,10μm,17.0s								
WMQ					LR	LR			
	comp=Z,13μm,15.2s								
WMQ					LR	LR			
	comp=Z,17μm,18.8s								
CMMT	**Chiang Mai**	**41.41**	**257**		P	**P**	**15**	**22**	**45.5 -0.4**
	comp=Z,170nm,0.9s,comp=Z,2μm								
CHTO	**Chiang Mai**	**41.41**	**257**		P	**P**	**15**	**22**	**45.6 -0.4**
	comp=Z,748nm,1.0s,comp=Z,1μm								
CHTO	**Chiang Mai**	**41.41**	**257**	*e*	P	**P**	**15**	**22**	**45.5 -0.4**
CHTO					pmax	pmax			
	comp=Z,121nm,0.9s								
CHTO	**Chiang Mai**	**41.41**	**257**		P	**P**	**15**	**22**	**45.9 -0.1**
	SNR=54								
CHTO	**Chiang Mai**	**41.41**	**257**	*e*	P	**P**	**15**	**22**	**45.5 -0.4**
	comp=Z,121nm,0.9s								
CM31	**Chiang Mai Arr**	**41.61**	**256**	*e*	P	**P**	**15**	**22**	**47.5 0.0**
CMAR	**Chiang Mai Arr**	**41.61**	**256**		P	**P**	**15**	**22**	**47.1 -0.4**
	comp=Z,50nm,0.8s,baz=46,slow=7.1,SNR=284								
CMAR					PcP	**PcP**	**15**	**24**	**46.0 +1.6**
	comp=Z,8.4nm,0.9s,baz=38,slow=2.2,SNR=4.0								
CMAR					LR	LR	15	40	29.9
	comp=Z,3μm,20.9s,baz=52,slow=37								
CM01	**Chiang Mai Arr**	**41.62**	**256**	*e*	P	**P**	**15**	**22**	**47.1 -0.6**
SUKH	**Sukhothai**	**41.63**	**255**		P	**P**	**15**	**22**	**48.1 +0.4**
	comp=Z,79nm,0.8s,comp=Z,598nm								
NLAI	**Namlea**	**41.73**	**202**		P	P	15	22	56.5 +8.1
BTM	**Bintulu**	**42.30**	**225**	⇓	P	**P**	**15**	**22**	**53.7 +0.5**
CHBT	**CHBT**	**42.47**	**247**		P	**P**	**15**	**22**	**53.3 -1.3**
	comp=Z,13μm,0.8s								
LSA	**Lhasa**	**42.56**	**276**		P	**P**	**15**	**22**	**57.0 +1.3**
LSA					S	**S**	**15**	**29**	**21.7 +4.3**
LSA					pmax	pmax			
	comp=Z,160nm,0.8s								
LSA					LR	LR			
	comp=Z,3μm,14.3s								
LSA					LR	LR			
	comp=Z,6μm,14.3s								
LSA					LR	LR			
	comp=Z,14μm,15.9s								
LSA	**Lhasa**	**42.56**	**276**	*e*	P	**P**	**15**	**22**	**56.4 +0.7**
LSA					pmax	pmax			
	comp=Z,128nm,0.9s								
LSA	**Lhasa**	**42.56**	**276**	*e*	P	**P**	**15**	**22**	**56.4 +0.7**
	comp=Z,128nm,0.9s								
ZAA0	**Zalesovo Array**	**42.56**	**313**	*e*	P	**P**	**15**	**22**	**54.3 -0.5**
ZALV	**Zalesovo Beam**	**42.56**	**313**		P	**P**	**15**	**22**	**54.8 -0.1**
	comp=Z,166nm,0.8s,baz=95,slow=6.9,SNR=277								
ZALV					PcP	**PcP**	**15**	**24**	**47.8 +0.8**
	comp=Z,18nm,0.7s,baz=82,slow=2.1,SNR=4.4								
ZALV					ScP	**ScP**	**15**	**28**	**36.8 +0.5**
	comp=Z,6.4nm,0.9s,baz=98,slow=6.0,SNR=3.6								
ZALV					LR	LR	15	41	19.7
	comp=Z,12μm,19.6s,baz=86,slow=37								
ZSN	**Zaisan**	**42.88**	**303**	*i*	P	P	15	23	07.7 +10
	comp=Z,2μm,1.0s								
ZSN					eS	S	15	29	34.5 +14
ZSN					LR	LR	15	41	05.7
	comp=Z,5μm,12.2s								
UMPA	**Umpang Tak**	**42.97**	**254**		P	**P**	**15**	**23**	**00.4 +1.7**
	comp=Z,73nm,1.0s,comp=Z,626nm								
SBUM	**Sibu**	**43.41**	**226**	⇓	P	**P**	**15**	**23**	**03.0 +0.9**
SBUM	**Sibu**	**43.41**	**226**	*e*	P	**P**	**15**	**23**	**01.9 -0.2**
	comp=Z,86nm,1.0s								
PATY	**Pattaya**	**43.45**	**248**		P	**P**	**15**	**23**	**04.1 +1.6**
	comp=Z,23nm,1.1s,comp=Z,2μm								
NVS	**Novosibirsk**	**43.49**	**314**	⇑	*i* P	**P**	**15**	**23**	**03.4 +1.0**
NVS					eS	**S**	**15**	**29**	**33.0 +3.4**
NVS					eSS	**ScS**	**15**	**32**	**59.5 -0.9**
NVS					pmax	pmax			
	comp=Z,183nm,1.0s								
NVS					pmax	pmax			
	comp=N,24nm,0.9s								
NVS					pmax	pmax			
	comp=E,93nm,0.8s								
NVS					smax	smax			
	comp=N,5.0nm,0.5s								
NVS					smax	smax			
	comp=E,23nm,1.2s								
SHL	**Shillong**	**43.69**	**270**	*e*	P	**P**	**15**	**23**	**05.0 +0.4**
SHL					IAmb	IAmb	15	23	08.9
	comp=Z,59nm,0.8s								
SHL				*ex*		x	15	29	37.5
SRDT	**SRDT**	**43.89**	**251**		P	**P**	**15**	**23**	**06.5 +0.5**
	comp=Z,489nm,1.3s,comp=Z,7μm								
KDI	**Kendari**	**43.94**	**208**		P	**P**	**15**	**23**	**08.3 +1.9**
NRIK	**Noril'sk**	**43.98**	**336**		P	**P**	**15**	**23**	**05.8 -0.3**
	comp=Z,26nm,0.6s,baz=121,slow=6.2,SNR=39								
NRIK					LR	LR	15	42	15.1
	comp=Z,7μm,18.0s,baz=96,slow=37								
NRIK	**Noril'sk**	**43.98**	**336**		P	**P**	**15**	**23**	**05.8 -0.3**
NRIK					pmax	pmax			
	comp=Z,26nm,0.6s								
NRIK					MLR	MLR			
	comp=Z,7μm,18.0s								
BKB	**Balikpapan**	**44.03**	**217**		P	**P**	**15**	**23**	**09.0 +1.9**
	comp=Z,505nm,1.1s,comp=Z,7μm								
TTSI	**Tana Toraja**	**44.25**	**212**		P	**P**	**15**	**23**	**09.0 +0.1**
MK01	**Makanchi Array**	**44.70**	**303**	*e*	P	**P**	**15**	**23**	**12.2 0.0**
MK31	**Makanchi Array**	**44.71**	**303**	*i*	P	**P**	**15**	**23**	**12.3 0.0**
MK31					pmax	pmax			
	comp=Z,115nm,0.8s								
MK31	**Makanchi Array**	**44.71**	**303**	*e*	P	**P**	**15**	**23**	**12.1 -0.2**
MKAR	**Makanchi Array**	**44.71**	**303**		P	**P**	**15**	**23**	**12.3 0.0**
	comp=Z,87nm,0.8s,baz=84,slow=7.9,SNR=326								
MKAR					LR	LR	15	42	37.0
	comp=Z,8μm,19.8s,baz=84,slow=37								
MKAR	**Makanchi Array**	**44.71**	**303**	*e*	P	**P**	**15**	**23**	**12.2 -0.1**
MTKI	**Muara Teweh, K**	**44.76**	**220**		P	**P**	**15**	**23**	**14.0 +1.1**
	comp=Z,109nm,1.1s,comp=Z,10μm								
MAKZ	**Makanchi**	**44.92**	**303**	*i*	P	**P**	**15**	**23**	**12.8 -1.2**
MAKZ					pmax	pmax			
	comp=Z,198nm,1.2s								
MAKZ	**Makanchi**	**44.92**	**303**	*e*	P	**P**	**15**	**23**	**13.8 -0.2**
	comp=Z,118nm,0.9s								
TARA	**Tarawa**	**45.23**	**133**	*e*	P	**P**	**15**	**23**	**15.1 -1.6**
	comp=Z,339nm,1.1s								
KSM	**Kuching**	**45.32**	**227**	*e*	P	**P**	**15**	**23**	**17.3 -0.1**
	comp=Z,117nm,0.8s								
SEM	**Semipalatinsk**	**45.56**	**308**	*i*	P	**P**	**15**	**23**	**17.6 -1.7**
	comp=Z,807nm,1.0s								
SEM					eS	**S**	**15**	**29**	**59.2 -1.0**
SEM					LR	LR	15	42	29.9
	comp=Z,5μm,13.5s								
STKI	**Sintang**	**45.78**	**225**		P	**P**	**15**	**23**	**22.1 +1.1**
	comp=Z,307nm,1.0s								
TT01	**Tatalina**	**45.79**	**34**	*e*	P	**P**	**15**	**23**	**20.2 -0.4**
PMG	**Port Moresby**	**45.83**	**173**	*i*	P	**P**	**15**	**23**	**21.9 +0.6**
PMG					pmax	pmax			
	comp=Z,531nm,1.2s								
PMG					MLR	MLR			
	comp=Z,5μm,17.0s								
PMG	**Port Moresby**	**45.83**	**173**	*e*	P	**P**	**15**	**23**	**21.6 +0.2**
	comp=Z,162nm,1.3s								
SVW2	**Sparrevohn**	**45.87**	**37**	*e*	P	**P**	**15**	**23**	**22.3 +1.0**
	comp=Z,38nm,1.0s								
KAPI	**Kappang**	**46.05**	**211**	*e*	P	**P**	**15**	**23**	**23.9 +0.7**
	comp=Z,468nm,1.2s								
KURK	**Kurchatov**	**46.56**	**309**	*c i*	P	**P**	**15**	**23**	**26.3 -0.5**
KURK					pmax	pmax			
	comp=Z,1μm,1.0s								
KURK					MLR	MLR			
	comp=Z,54μm,16.0s								
KURK	**Kurchatov**	**46.56**	**309**	*e*	P	**P**	**15**	**23**	**26.4 -0.5**
	comp=Z,261nm,0.8s								
KURBB	**Kurchatov Arra**	**46.63**	**309**		P	**P**	**15**	**23**	**27.2 -0.1**
	comp=Z,181nm,0.8s,baz=83,slow=8.1,SNR=318								
BBKI	**Banjar Baru**	**46.94**	**218**		P	**P**	**15**	**23**	**30.7 +0.5**
	comp=Z,372nm,1.2s,comp=Z,5μm								
OHAK	**Old Harbor**	**47.04**	**42**	*e*	P	**P**	**15**	**23**	**31.3 +0.8**
	comp=Z,56nm,1.2s								
JOHN	**Johnston Islan**	**47.21**	**101**		PFAKE		15	23	40.0 +7.7
JOHN					LR	LR			
	comp=Z,392nm,19.0s								
RSO	**Redoubt South**	**47.24**	**38**	*e*	P	**P**	**15**	**23**	**33.4 +1.2**
PDGK	**Podgornoye**	**47.33**	**299**	*i*	P	**P**	**15**	**23**	**31.9 -1.3**
PDGK					pmax	pmax			
	comp=Z,335nm,0.8s								
RAMN	**Ramite**	**47.34**	**275**	*e*	P	**P**	**15**	**23**	**33.7 +0.2**
	comp=Z,1μm,0.9s								
KDAK	**Kodiak Island**	**47.39**	**42**	*i*	P	**P**	**15**	**23**	**33.7 +0.5**
KDAK	**Kodiak Island

TRF	Thorofare Moun	48.41	34	eP		P	15 23 43.1	+1.8		
	comp=Z,66nm,1.6s									
GKN	Gorkha	48.46	277	eP		P	15 23 42.4	+0.3		
	comp=Z,922nm,1.0s									
COLD	Coldfoot	48.58	29	eP		P	15 23 43.4	+1.0		
	comp=Z,15nm,0.8s									
PKDT	Phuket	48.62	245	P		P	15 23 44.5	+1.3		
	comp=Z,270nm,1.3s,comp=Z,4µm									
HNR	Honiara	48.68	156	PFAKE					15 24 00.0	+16
HNR				LR		LR				
	comp=Z,4µm,20.0s									
RC01	Rabbit Creek A	48.70	37	eP		P	15 23 44.1	+0.8		
	comp=Z,45nm,1.0s									
KULM	Kulim	48.74	241	eP		P	15 23 43.5	-0.7		
	comp=Z,121nm,1.3s									
SOEI	Soe	48.76	203	P		P	15 23 45.7	+1.3		
	comp=Z,250nm,1.0s,comp=Z,3µm									
SOEI	Soe	48.76	203	eP		P	15 23 42.7	-1.7		
	comp=Z,293nm,0.9s									
BWN	Browne	48.78	33	eP		P	15 23 43.6	-0.3		
	comp=Z,325nm,1.7s									
SEW	Seward	48.89	38	eP		P	15 23 46.8	+2.0		
	comp=Z,84nm,1.3s									
PMR	Palmer	48.98	36	eP		P	15 23 45.7	+0.3		
PMR				pmax		pmax				
	comp=Z,38nm,1.0s									
PMR	Palmer	48.98	36	eP		P	15 23 45.7	+0.3		
	comp=Z,38nm,1.0s									
MCK	McKinley	49.02	33	eP		P	15 23 45.8	+0.1		
MCK				pmax		pmax				
	comp=Z,28nm,0.9s									
MCK	McKinley	49.02	33	eP		P	15 23 45.8	+0.1		
	comp=Z,28nm,0.9s									
IPM	Ipoh	49.05	239	eP		P	15 23 45.3	-1.3		
	comp=Z,156nm,1.1s									
RND	Reindeer	49.06	34	eP		P	15 23 46.1	0.0		
RND				pmax		pmax				
	comp=Z,103nm,1.7s									
RND	Reindeer	49.06	34	eP		P	15 23 46.1	0.0		
	comp=Z,103nm,1.7s									
MDOK	Medeo	49.10	299	⇓iP		P	15 23 47.6	+0.8		
	comp=Z,1µm,1.1s									
MDOK				eS		S	15 30 52.4	+1.7		
MDOK				LR		LR	15 44 27.2			
	comp=Z,5µm,13.1s									
MYKOM	Kota Tinggi	49.11	234	eP		P	15 23 47.2	+0.2		
	comp=Z,150nm,1.4s									
AAA	Alma-Ata	49.18	299	iP		P	15 23 48.5	+1.1		
AAA				pmax		pmax				
	comp=Z,2µm,5.6s									
AAA				MLR		MLR				
	comp=Z,36µm,18.0s									
AAA	Alma-Ata	49.18	299	eP		P	15 23 47.3	0.0		
	comp=Z,1µm,1.1s									
AAA				LR		LR	15 44 32.3			
	comp=Z,6µm,13.8s									
MDM	Murphy Dome	49.31	32	eP		P	15 23 49.1	+1.1		
	comp=Z,55nm,1.0s									
TPRI	Tanjung Pinang	49.33	233	P		P	15 23 50.5	+1.9		
	comp=Z,134nm,1.3s,comp=Z,4µm									
BOK	Bokaro	49.34	272	eP		P	15 23 48.8	+0.1		
SML	Sawmill	49.35	36	eP		P	15 23 48.9	+0.6		
SML				pmax		pmax				
	comp=Z,41nm,0.9s									
SML	Sawmill	49.35	36	eP		P	15 23 48.9	+0.6		
	comp=Z,42nm,0.9s									
DGPR	DIGLIPUR	49.37	255	eP		P	15 23 48.3	-0.7		
WRH	Wood River Hil	49.38	32	eP		P	15 23 48.8	+0.4		
	comp=Z,25nm,0.9s									
BATI	Baumata	49.38	204	P		P	15 23 52.3	+3.3		
KOLN	Koldanda	49.39	277	eP		P	15 23 49.8	+0.5		
	comp=Z,104nm,0.7s									
KUU	Kurty	49.41	300	⇑iP		P	15 23 49.0	0.0		
	comp=Z,2µm,1.3s									
KUU				eS		S	15 30 56.5	+1.8		
KUU				LR		LR	15 45 09.8			
	comp=Z,8µm,14.8s									
COLA	College	49.48	32	iP		P	15 23 48.3	-0.8		
COLA				pmax		pmax				
	comp=Z,10.0nm,1.0s									
COLA	College	49.48	32	PFAKE					15 24 00.0	+11
COLA				LR		LR				
	comp=Z,2µm,20.0s									
CCB	Clear Creek Bu	49.50	32	eP		P	15 23 49.7	+0.4		
	comp=Z,29nm,1.2s									
PYUN	Piuthan	49.74	278	eP		P	15 23 52.2	+0.2		
	comp=Z,718nm,0.9s									
SCM	Sheep Creek Mo	49.82	36	eP		P	15 23 52.4	+0.4		
SCM				pmax		pmax				
	comp=Z,62nm,1.0s									
SCM	Sheep Creek Mo	49.82	36	eP		P	15 23 52.4	+0.4		
	comp=Z,62nm,1.0s									
HDA	Harding Lake	49.87	33	eP		P	15 23 52.4	+0.2		
	comp=Z,25nm,1.0s									
IL1	Eielson Array	49.89	32	eP		P	15 23 52.2	-0.1		
ILAR	Eielson Array	49.89	32	P		P	15 23 52.7	+0.3		
	comp=Z,9.3nm,0.7s,baz=266,slow=5.7,SNR=95									
ILAR				LR		LR	15 47 11.5			
	comp=Z,2µm,18.9s,baz=282,slow=39									
ILB	Eielson Array	49.89	32	eP		P	15 23 52.4	0.0		
MTN	Manton Dam	49.98	194	eP		P	15 23 52.7	-0.8		
	comp=Z,364nm,1.5s									
COEN	Coen	50.09	178	eP		P	15 23 54.1	-0.2		
	comp=Z,121nm,1.1s									
TKM2	Tokmak 2	50.19	299	iP		P	15 23 54.8	-0.4		
TKM2				pmax		pmax				
	comp=Z,196nm,1.0s									
TKM2	Tokmak 2	50.19	299	eP		P	15 23 55.8	+0.5		
	comp=Z,302nm,1.3s									
PLAI	Plampang	50.31	211	P		P	15 23 55.5	-0.6		
BRZS	Berezniki	50.43	309	iP		P	15 23 55.5	-1.2		
	comp=Z,315nm,1.0s									
BRZS				eS		S	15 31 08.7	-0.1		
BRZS				LR		LR	15 45 51.3			
	comp=Z,304nm,14.7s									
PBA	Port Blair	50.44	254	eP		P	15 23 58.5	+1.4		
KLU	Klutina	50.52	36	eP		P	15 23 58.1	+0.8		
	comp=Z,39nm,1.1s									
TWSI	Taliwang, Sumb	50.62	213	P		P	15 23 58.2	-0.2		
DIV	Divide	50.62	37	eP		P	15 23 59.0	+1.0		
	comp=Z,55nm,1.0s									
EYAK	Cordova Ski Ar	50.69	38	eP		P	15 23 59.9	+1.4		
	comp=Z,38nm,1.1s									
BTLS	Baital	50.70	302	iP		P	15 23 57.7	-1.1		
	comp=Z,598nm,0.9s									
BTLS				eS		S	15 31 12.5	-0.1		
BTLS				LR		LR	15 46 02.9			
	comp=Z,5µm,14.2s									
PPBI	Pangkal Pinang	50.71	229	P		P	15 24 00.1	+1.0		
FRU	Bishkek	50.91	299	iP		P	15 24 00.0	-0.4		
FRU				e			15 25 20.0			
FRU				ePPP		PPP	15 27 00.0			
FRU				eS		S	15 31 16.0	+0.4		
FRU				eSS		SS	15 34 42.0	-8.2		
FRU				pmax		pmax				
	comp=Z,250nm,1.8s									
FRU				smax		smax				
	comp=E,240nm,3.0s									
VOSK	Vostochnaya	50.93	312	eP		P	15 23 59.8	-0.6		
VOSK				pmax		pmax				
	comp=Z,182nm,0.9s									
VOSK	Vostochnaya	50.93	312	eP		P	15 23 59.8	-0.6		
	comp=Z,182nm,0.9s									
KSH	Kashi	50.93	295	eP		P	15 24 04.9	+4.1		
KSH				epP		pP	15 24 09.0	+1.1		
KSH				esP		sP	15 24 11.5	+0.8		
KSH				ePP		PP	15 26 01.8	+4.7		
KSH				PcS		PcS	15 29 15.6	+1.0		
KSH				S		S	15 31 21.9	+5.7		
KSH				ScS		ScS	15 33 50.1	-0.1		
KSH				pmax		pmax				
	comp=Z,69nm,1.1s									
KSH				pmax		pmax				
	comp=Z,1µm,4.5s									
KSH				LR		LR				
	comp=Z,17µm,16.1s									
KSH				LR		LR				
	comp=Z,10µm,15.3s									
KSH				LR		LR				
	comp=Z,23µm,16.8s									
CHKZ	Chkalovo	50.96	314	iP		P	15 23 59.6	-1.0		
CHKZ				pmax		pmax				
	comp=Z,223nm,1.5s									
ABJI	Asem Bagus	50.99	216	P		P	15 24 03.2	+2.0		
	comp=Z,192nm,1.1s,comp=Z,4µm									
OTUK	Ortayu	51.04	306	P		P	15 24 00.3	-1.0		
OTUK				pmax		pmax				
	comp=Z,220nm,1.3s									
AAK	Ala-Archa	51.05	299	LR		LR	15 47 07.2			
	comp=Z,30µm,18.7s,baz=63,slow=38									
AAK	Ala-Archa	51.05	299	iP		P	15 24 01.3	-0.3		
AAK				pmax		pmax				
	comp=Z,133nm,1.0s									
AAK				MLR		MLR				
	comp=Z,65µm,18.0s									
AAK	Ala-Archa	51.05	299	P		P	15 24 02.1	+0.5		
	SNR=48									
AAK	Ala-Archa	51.05	299	eP		P	15 24 01.8	+0.1		
	comp=Z,75nm,0.7s									
BWNR	Bhubaneshwar	51.12	268	eP		P	15 24 02.8	+0.6		
DOT	Dot Lake	51.19	33	eP		P	15 24 02.5	+0.3		
	comp=Z,70nm,1.2s									
BMRM	Bremner River	51.20	37	eP		P	15 24 03.4	+1.0		
	comp=Z,43nm,0.8s									
BVA0	Borovoye Array	51.22	313	iP		P	15 24 01.5	-1.1		
BVA0				pmax		pmax				
	comp=Z,134nm,1.3s									
BVAR	Borovoye Array	51.22	313	LR		LR	15 45 14.8			
	comp=Z,2µm,20.9s,baz=77,slow=36									
BRVK	Borovoye	51.28	313	ciP		P	15 24 01.7	-1.3		
BRVK				pmax		pmax				
	comp=Z,101nm,0.9s									
BRVK				MLR		MLR				
	comp=Z,39µm,17.0s									
BRVK	Borovoye	51.28	313	eP		P	15 24 02.8	-0.2		
	comp=Z,116nm,1.0s									
BRVK				LR		LR				
	comp=Z,9µm,19.0s									
LGTI	Lohaghat	51.35	281	eP		P	15 24 08.4	+4.5		
MENT	Mentasta	51.41	34	eP		P	15 24 05.6	+1.8		
	comp=Z,68nm,1.4s									
LHMI	Lhok Sumawe	51.43	244	P		P	15 24 07.0	+2.5		
	comp=Z,274nm,1.1s,comp=Z,5µm									
LHMI	Lhok Sumawe	51.43	244	eP		P	15 24 05.6	+1.1		
	comp=Z,259nm,1.1s									
TSI	Tuntungan	51.47	241	P		P	15 24 06.2	+1.4		
	comp=Z,97nm,1.0s,comp=Z,2µm									
EKS2	Erkin-Say	51.55	299	eP		P	15 24 05.5	+0.1		
EKS2				pmax		pmax				
	comp=Z,61nm,0.8s									
EKS2	Erkin-Say	51.55	299	eP		P	15 24 05.5	+0.1		
	comp=Z,62nm,0.8s									
JAGI	Jajag, Banyuwa	51.62	216	P		P	15 24 09.1	+3.2		
	comp=Z,81nm,1.0s,comp=Z,2µm									
JAGI	Jajag, Banyuwa	51.62	216	eP		P	15 24 05.1	-0.8		
	comp=Z,66nm,0.9s									
PSI	Prapat	51.71	240	eP		P	15 24 06.1	-0.7		
PSI				pmax		pmax				
	comp=Z,65nm,1.1s									
PSI	Prapat	51.71	240	eP		P	15 24 06.1	-0.7		
	comp=Z,65nm,1.1s									
GMJI	Gumukmas	51.78	217	P		P	15 24 08.4	+1.3		
	comp=Z,72nm,1.1s,comp=Z,2µm									
CRQM	Cirque	51.94	37	eP		P	15 24 08.8	+0.7		
	comp=Z,86nm,1.1s									
NGJI	Ngawi	51.99	219	P		P	15 24 11.5	+2.8		
	comp=Z,194nm,1.0s,comp=Z,5µm									
ZRNK	Zerenda	52.05	313	iP		P	15 24 08.2	-0.6		
ZRNK				pmax		pmax				
	comp=Z,170nm,1.1s									
ZRNK	Zerenda	52.05	313	eP		P	15 24 08.7	-0.1		
	comp=Z,193nm,1.1s									
BKNI	Bangkinang	52.06	236	P		P	15 24 10.9	+1.6		
	comp=Z,529nm,1.1s,comp=Z,5µm									
BKNI	Bangkinang	52.06	236	eP		P	15 24 09.8	+0.6		
	comp=Z,389nm,0.9s									
BALM	Baldy	52.29	37	eP		P	15 24 11.5	+0.9		
BALM				pmax		pmax				
	comp=Z,29nm,1.1s									
BALM	Baldy	52.29	37	eP		P	15 24 11.4	+0.9		
	comp=Z,28nm,1.1s									
EGAK	Eagle	52.34	32	eP		P	15 24 12.2	+1.5		
	comp=Z,67nm,1.5s									
PWJI	Pagerwojo	52.38	219	P		P	15 24 10.8	-0.7		
CMBY	CAMPBELL BAY	52.47	248	eP		P	15 24 12.9	+0.7		
MLSI	Meulaboh, Aceh	52.48	243	P		P	15 24 12.3	-0.1		
	comp=Z,163nm,0.9s,comp=Z,4µm									
MNAS	Manas	52.50	299	iP		P	15 24 12.6	+0.2		
MNAS				pmax		pmax				
	comp=Z,204nm,0.9s									
TPTI		52.62	242	P		P	15 24 12.6	-0.8		
	comp=Z,18nm,0.7s,comp=Z,880nm									
MNSI	Mandailing Nat	52.70	238	P		P	15 24 14.1	+0.1		
	comp=Z,52nm,1.0s,comp=Z,1µm									
DDI	Dehra Dun	52.72	283	eP		P	15 24 15.3	+1.1		
SDSI	Sungai Dareh	52.74	234	P		P	15 24 15.2	+0.9		
UGM	Wanagama	52.94	220	P		P	15 24 15.9	+0.1		
	comp=Z,351nm,1.1s									
UGM	Wanagama	52.94	220	eP		P	15 24 15.2	-0.5		
	comp=Z,483nm,1.2s									
SMLA	Simla	53.09	284	eP		P	15 24 16.9	+0.2		
SMLA				IAmb		IAmb	15 24 18.4			
	comp=Z,2µm,0.1s									
SDNR	Sundarnagar	53.09	285	eP		P	15 24 16.0	-0.8		
DAWY	Dawson	53.19	33	eP		P	15 24 17.8	+0.7		
	comp=Z,18nm,1.1s									
DHRM	DHARAMSHALA	53.31	286	eP		P	15 24 18.7	+0.1		
CHLP	Challavanipeta	53.46	267	eP		P	15 24 20.0	+0.4		
CHLP				IAmb		IAmb	15 24 22.3			
	comp=Z,201nm,1.3s									
CHLP				eS		S	15 31 51.5	+0.4		
CHLP				IVMs_BB		IVMs_BB	15 46 27.5			
	comp=Z,1µm,21.6s									
KK31	Karatay Array	53.70	301	iP		P	15 24 21.0	-0.1		
KK31				pmax		pmax				
	comp=Z,41nm,0.9s									
KKAR	Karatay Array	53.70	301	eP		P	15 24 21.0	-0.1		
KKAR	Karatay Array	53.70	301	eP		P	15 24 21.0	-0.1		
GSI	Gunungsitoli	53.72	240	eP		P	15 24 20.6	-0.9		
	comp=Z,660nm,1.4s									
KIP	Kipapa	53.99	89	iP		P	15 24 24.0	+0.5		
KIP				pmax		pmax				
	comp=Z,637nm,1.7s									
KIP	Kipapa	53.99	89	PFAKE					15 24 40.0	+17
KIP				LR		LR				
	comp=Z,2µm,22.0s									
CISI	Cisompet, Garu	54.09	223	P		P	15 24 24.1	-0.2		
CISI	Cisompet, Garu	54.09	223	eP		P	15 24 22.0	-2.3		
	comp=Z,71nm,0.8s									
BRLS	Boroldoy	54.19	301	iP		P	15 24 25.4	+0.7		
	comp=Z,74nm,1.1s									
BRLS				eS		S	15 32 03.5	+3.0		
BRLS				LR		LR	15 48 06.2			
	comp=Z,419nm,14.6s									
IUG	luzhnay	54.34	300	iP		P	15 24 25.9	0.0		
	comp=Z,2µm,1.1s									
IUG				eS		S	15 32 03.7	+1.0		
IUG				LR		LR	15 47 45.7			
	comp=Z,4µm,15.7s									
VIS	Vishakhapatnam	54.46	266	eP		P	15 24 28.3	+1.4		
HYT	Haines Junctio	54.65	36	eP		P	15 24 29.3	+1.4		
	comp=Z,110nm,1.4s									
INK	Inuvik	54.84	27	P		P	15 24 29.8	+0.9		
	comp=Z,24nm,0.8s,baz=281,slow=7.1,SNR=40									
INK				LR		LR	15 49 39.8			
	comp=Z,2µm,20.0s,baz=274,slow=38									
INK	Inuvik	54.84	27	eP		P	15 24 29.6	+0.7		
INK				pmax		pmax				
	comp=Z,30nm,0.8s									
INK	Inuvik	54.84	27	eP		P	15 24 29.6	+0.7		
	comp=Z,30nm,0.8s									
SVE	Sverdlovsk	55.82	319	deP		P	15 24 36.6	+0.4		
SVE				ePPP		PPP	15 28 04.0			
SVE				eS		S	15 32 23.2	+1.3		
SVE				pmax		pmax				
	comp=Z,246nm,1.0s									
SVE				MLR		MLR				
	comp=Z,19µm,16.0s									
SVE				MLR		MLR				
	comp=E,14µm,16.0s									
SKAG	Skagway	56.03	38	eP		P	15 24 39.4	+1.7		
	comp=E,38nm,1.3s									
PVM	Polavaram	56.09	267	eP		P	15 24 39.0	+0.3		
PVM				IAmb		IAmb	15 24 40.9			
	comp=Z,54nm,0.8s									
PVM				eS		S	15 32 26.5	+0.1		
PVM				IVMs_BB		IVMs_BB	15 47 55.4			
	comp=Z,1µm,24.9s									
FITZ	Fitzroy Crossi	56.30	199	LR		LR	15 48 05.5			
	comp=Z,763nm,19.7s,slow=35									
FITZ	Fitzroy Crossi	56.30	199	eP		P	15 24 39.8	-0.2		
	comp=Z,40nm,0.8s									
CTA	Charters Tower	56.33	175	LR		LR	15 48 35.0			
	comp=Z,359nm,20.7s,baz=329,slow=36									
CTA	Charters Tower	56.33	175	P		P	15 24 41.7	+1.5		
CTA				pmax		pmax				
	comp=Z,26nm,2.4s									
CTAO	Charters Tower	56.33	175	eP		P	15 24 40.3	+0.1		
CTAO				pmax		pmax				
	comp=Z,90nm,1.8s									
CTAO				MLR		MLR				
	comp=Z,2µm,20.0s									
CTAO	Charters Tower	56.33	175	eP		P	15 24 40.3	+0.1		
	comp=Z,90nm,1.8s									
CTAO				LR		LR				
	comp=Z,2µm,20.0s									
BHPL	Bhopal	56.42	276	eP		P	15 24 39.8	-1.3		
WRAB	Tennant Creek	56.45	188	iP		P	15 24 39.8	-1.2		
WRAB				pmax		pmax				
	comp=Z,427nm,1.7s									
WRAB	Tennant Creek	56.45	188	eP		P	15 24 39.9	-1.1		
	comp=Z,153nm,1.1s									
WB2	Warramunga Arr	56.46	188	eP		P	15 24 40.2	-0.9		
	comp=Z,136nm,1.1s									
WRA	Warramunga Arr	56.46	188	P		P	15 24 39.5	-1.7		
	comp=Z,43nm,0.9s,baz=6.8,slow=7.5,SNR=83									
WRA				LR		LR	15 47 46.3			
	comp=Z,2µm,21.6s,baz=0.0,slow=35									
POHA	Pohakuloa	56.83	89	eP		P	15 24 44.0	-0.3		
	comp=Z,235nm,1.2s									
POHA				LR		LR				
	comp=Z,2µm,20.0s									
FUNA	Funafuti	56.85	134	PFAKE					15 25 00.0	+16
FUNA				LR		LR				
	comp=Z,5µm,21.0s									
SOKR	Solikamsk	57.01	323	ciP		P	15 24 43.4	-1.2		
SOKR							15 26 49.8			
SOKR				S		S	15 32 37.4	-0.1		
SOKR				pmax		pmax				
	comp=Z,125nm,1.2s									
SOKR				MLR		MLR				
	comp=Z,7µm,16.0s									
ARU	Arti	57.03	319	ciP		P	15 24 44.8	-0.1		
ARU							15 25 40.9			
ARU							15 26 50.3			
ARU				S		S	15 32 40.1	+2.2		
ARU							15 34 30.3			
ARU				SS		SS	15 36 24.6	-1.5		
ARU				pmax		pmax				
	comp=Z,252nm,1.0s									
ARU				MLR		MLR				
	comp=Z,14µm,17.0s									
ARU	Arti	57.03	319	eP		P	15 24 44.5	-0.4		
	comp=Z,228nm,1.0s									
ARU				LR		LR				
	comp=Z,12µm,19.0s									
RPR	Rampur	57.12	270	eP		P	15 24 45.8	-0.2		
RPR				IAmb		IAmb	15 24 47.9			
	comp=Z,70nm,0.9s									
RPR				eS		S	15 32 40.8	+0.8		
RPR				IVMs_BB		IVMs_BB	15 53 02.2			
	comp=Z,1µm,15.2s									
SRSP	Sriramsagar	57.85	271	eP		P	15 24 50.0	-1.1		
SRSP				IAmb		IAmb	15 24 53.0			
	comp=Z,169nm,1.0s									
SRSP				eS		S	15 32 49.1	-0.5		
SRSP				IVMs_BB		IVMs_BB	15 54 23.9			
	comp=Z,979nm,14.5s									
KBL	Kabul	57.92	292	eP		P	15 24 51.1	-0.6		
KBL				pmax		pmax				
	comp=Z,120nm,1.0s									
KBL	Kabul	57.92	292	eP		P	15 24 51.1	-0.6		
	comp=Z,120nm,1.0s									
ADKI	Addanki	58.18	267	eP		P	15 24 53.1	-0.4		
ADKI				IAmb		IAmb	15 24 55.9			
	comp=Z,52nm,1.0s									
ADKI				eS		S	15 32 55.5	+1.6		
ADKI				IVMs_BB		IVMs_BB	15 53 05.8			
	comp=Z,1µm,18.7s									
NJS	Nagarjunasagar	58.33	268	eP		P	15 24 54.4	-0.1		
NJS				IAmb		IAmb	15 24 56.4			
	comp=Z,59nm,1.0s									
NJS				eS		S	15 32 56.4	+0.5		
NJS				IVMs_BB		IVMs_BB	15 49 13.1			
	comp=Z,1µm,26.8s									
HYB	Hyderabad	58.47	269	iP		P	15 24 56.5	+0.9		
HYB				eS		S	15 33 00.0	+2.1		
HYB	Hyderabad	58.47	269	eP		P	15 24 56.1	+0.5		
HYBB	Hyderabad (bro	58.47	269	eP		P	15 24 55.3	-0.3		
HYBB				IAmb		IAmb	15 24 57.3			
	comp=Z,88nm,0.9s									
HYBB				eS		S	15 32 53.9	-4.0		
HYBB				IVMs_BB		IVMs_BB	15 55 11.9			
	comp=Z,991nm,20.0s									
AB31	Akbulak array	58.58	311	iP		P	15 24 54.9	-0.9		
AB31				pmax		pmax				
	comp=Z,67nm,0.8s									
ABKAR	Akbulak array	58.58	311	eP		P	15 24 55.3	-0.5		
SRLM	Srisailam	58.91	268	eP		P	15 24 58.0	-0.7		
SRLM				IAmb		IAmb	15 25 00.3			
	comp=Z,60nm,1.1s									
SRLM				eS		S	15 32 57.8	-5.8		
SRLM				IVMs_BB		IVMs_BB	15 49 16.4			
	comp=Z,1µm,24.2s									
DLBC	Dease Lake	58.96	38	P		P	15 25 00.2	+1.8		
	comp=Z,6.7nm,0.8s,baz=273,slow=6.5,SNR=11									
DLBC	Dease Lake	58.96	38	eP		P	15 25 00.7	+2.2		
RCLA	Racherla	59.21	267	eP		P	15 24 59.9	-0.7		
RCLA				IAmb		IAmb	15 25 02.6			
	comp=Z,100nm,1.0s									
RCLA				eS		S	15 33 03.2	-4.1		
RCLA				IVMs_BB		IVMs_BB	15 49 50.3			
	comp=Z,1µm,25.1s									
AKTO	Aktyubinsk	59.32	312	iP		P	15 25 00.1	-0.9		
AKTO				pmax		pmax				
	comp=Z,99nm,0.9s									
MDRS	Chennai	59.49	264	eP		P	15 25 04.6	+2.0		
SKHT	Srikalahasti	59.55	265	eP		P	15 25 02.8	-0.2		
SKHT				IAmb		IAmb	15 25 05.5			
	comp=Z,163nm,0.8s									
SKHT				eS		S	15 33 15.5	+3.7		
SKHT				IVMs_BB		IVMs_BB	15 53 38.3			
	comp=Z,1

DZM	**Mont Dzumac**	**62.64**	**154**	*e*	LR	LR	15 44 04.4		
	comp=Z,8µm,21.2s								
DZM	**Mont Dzumac**	**62.64**	**154**	*e*	P	**P**	**15 25 24.9**	**+1.0**	
	comp=Z,129nm,1.5s								
LVZ	**Lovozero**	**62.82**	**336**	*c*	*i* P	**P**	**15 25 24.7**	**+0.2**	
LVZ					pmax	pmax			
	comp=Z,61nm,1.0s								
LVZ					MLR	MLR			
	comp=Z,9µm,18.0s								
LVZ	**Lovozero**	**62.82**	**336**		*e*P	**P**	**15 25 25.0**	**+0.5**	
	comp=Z,78nm,1.1s								
RES	**Resolute Bay**	**63.16**	**14**		P	**P**	**15 25 25.9**	**-0.7**	
	comp=Z,58nm,0.9s,baz=310,slow=8.5,SNR=17								
RES	**Resolute Bay**	**63.16**	**14**		*e*P	**P**	**15 25 26.7**	**+0.2**	
RES					pmax	pmax			
	comp=Z,84nm,1.0s								
RES	**Resolute Bay**	**63.16**	**14**		*e*P	**P**	**15 25 26.7**	**+0.2**	
	comp=Z,84nm,1.0s								
GOA	**Goa**	**63.33**	**270**		*e*P	**P**	**15 25 29.7**	**+1.1**	
APA	**Apatity**	**63.40**	**336**	⇑	*i*P	**P**	**15 25 27.5**	**-0.7**	
APA					*i*		15 27 44.0		
APA					*i* PPP	PPP	15 29 26.0		
APA					*i* S	**S**	**15 33 58.0**	**-1.2**	
APA					*i*		15 35 16.0		
APA					pmax	pmax			
	comp=Z,68nm,0.8s								
APA					MLR	MLR			
	comp=Z,11µm,17.0s								
MSVF	**Nonsavu**	**63.82**	**141**		*e*P	**P**	**15 25 34.1**	**+2.4**	
MSVF					pmax	pmax			
	comp=Z,91nm,1.3s								
MSVF	**Nonsavu**	**63.82**	**141**		*e*P	**P**	**15 25 34.1**	**+2.4**	
	comp=Z,91nm,1.3s								
YKA	**Yellowknife Ar**	**64.23**	**30**		P	**P**	**15 25 33.2**	**-0.6**	
	comp=Z,18nm,0.9s,baz=301,slow=6.7,SNR=118								
YKA					LR	LR	15 53 51.9		
	comp=Z,105nm,21.7s,baz=0.0,slow=36								
YKA					PKP2bc		15 54 27.4		
	comp=Z,1.4nm,1.1s,baz=114,slow=2.7,SNR=5.7								
GEYT	**Alibeck**	**64.40**	**299**		P	**P**	**15 25 35.3**	**-0.1**	
	comp=Z,62nm,1.0s,baz=29,slow=3.4,SNR=75								
GEYT					LR	LR	15 55 38.2		
	comp=Z,5µm,19.8s,baz=75,slow=38								
KLMR	**Klimovskoe**	**64.46**	**328**		*e*P	**P**	**15 25 33.7**	**-1.6**	
KLMR					*e*		15 26 07.9		
KLMR					pmax	pmax			
	comp=Z,98nm,0.9s								
HAMF	**Hammerfest**	**64.52**	**341**		*e*P	**P**	**15 25 36.5**	**+1.0**	
HAMF					IAmb	IAmb	15 25 37.3		
	comp=Z,54nm,0.9s								
ARA0	**ARCESS Array S**	**64.70**	**340**		*e*P	**P**	**15 25 37.0**	**+0.2**	
ARCES	**ARCESS Array B**	**64.70**	**340**		P	**P**	**15 25 37.3**	**+0.4**	
	comp=Z,43nm,0.8s,baz=52,slow=7.9,SNR=60								
ARCES					PP	**PP**	**15 27 56.8**	**-1.9**	
	comp=Z,6.3nm,0.9s,baz=47,slow=6.6,SNR=2.7								
ARCES					LR	LR	16 00 09.2		
	comp=Z,7µm,18.3s,baz=32,slow=42								
ARE0	**ARCESS Array S**	**64.70**	**340**		*e*P	**P**	**15 25 37.3**	**+0.5**	
ARE0					IAmb	IAmb	15 25 39.0		
	comp=Z,78nm,1.0s								
ARE0	**ARCESS Array S**	**64.70**	**340**		*e*P	**P**	**15 25 37.3**	**+0.5**	
	comp=Z,82nm,1.0s								
TRD	**Trivandrum**	**64.75**	**262**		*e*P	**P**	**15 25 38.9**	**+1.0**	
SGF	**Sodankyl**	**65.66**	**337**		P	**P**	**15 25 46.2**	**+3.2**	
SGF					pmax	pmax			
	comp=Z,161nm,0.9s								
KTK1	**Kautokeino**	**65.66**	**340**		*e*P	**P**	**15 25 43.8**	**+0.7**	
KTK1					IAmb	IAmb	15 25 45.2		
	comp=Z,85nm,0.9s								
MSF	**Maaselka**	**65.76**	**335**		P	**P**	**15 25 44.4**	**+0.7**	
MSF					pmax	pmax			
	comp=Z,134nm,1.1s								
HEF	**Hetta**	**65.92**	**339**	⇑	*i*P	**P**	**15 25 44.7**	**0.0**	
KIF	**Kilpisjarvi**	**66.34**	**340**	⇑	*i*P	**P**	**15 25 46.4**	**-1.0**	
TRO	**Tromso**	**66.42**	**341**	⇑	*i*P	**P**	**15 25 48.7**	**+0.9**	
TRO					IAmb	IAmb	15 25 49.8		
	comp=Z,62nm,1.0s								
DAG	**Danmarks Havn**	**66.44**	**355**	⇑	*i*P	**P**	**15 25 47.5**	**-0.4**	
	comp=Z,69nm,1.1s								
DAG	**Danmarks Havn**	**66.44**	**355**	⇑	*i*P	**P**	**15 25 47.5**	**-0.4**	
DAG					pmax	pmax			
	comp=Z,88nm,1.1s								
AFI	**Afiamalu**	**66.50**	**130**		LR	LR	15 52 44.0		
	comp=Z,3µm,18.5s,baz=316,slow=34								
LLLB	**Lillooet**	**66.53**	**44**		*e*P	**P**	**15 25 49.7**	**+0.8**	
	comp=Z,32nm,1.1s								
JOF	**Joensuu**	**66.67**	**332**		P	**P**	**15 25 50.1**	**+0.5**	
JOF					pmax	pmax			
	comp=Z,139nm,1.1s								
NLWA	**Neilton Lookou**	**66.94**	**47**		*e*P	**P**	**15 25 53.8**	**+2.1**	
	comp=Z,79nm,1.0s								
ARMA	**Armidale**	**67.09**	**171**		*e*P	**P**	**15 25 53.9**	**+1.2**	
	comp=Z,105nm,1.4s								
E03A	**Lebam**	**67.54**	**48**		*e*P	**P**	**15 25 56.6**	**+1.3**	
	comp=Z,53nm,1.1s								
B05A	**Bryant**	**67.56**	**46**		P	**P**	**15 25 57.3**	**+1.8**	
	baz=300								
JCW	**Jim Creek**	**67.69**	**46**		P	**P**	**15 25 58.3**	**+1.9**	
STKA	**Stephens Creek**	**67.91**	**180**		P	**P**	**15 25 57.5**	**-0.2**	
	comp=Z,7.8nm,0.7s,baz=352,slow=6.4,SNR=11								
STKA					LR	LR	15 54 42.4		
	comp=Z,2µm,21.6s,baz=358,slow=35								
STKA	**Stephens Creek**	**67.91**	**180**		*e*P	**P**	**15 25 57.1**	**-0.6**	
	comp=Z,5.3nm,1.0s								
MOS	**Moscow**	**67.94**	**324**		*e*P	**P**	**15 25 55.7**	**-2.0**	
MOS					*e*		15 26 05.6		
MOS					*e*		15 26 22.0		
MOS					*e*		15 28 26.1		
MOS					*e*S	**S**	**15 34 55.4**	**+0.4**	
MOS					*e*		15 35 51.8		
MOS					pmax	pmax			
	comp=Z,275nm,1.2s								
MOS					pmax	pmax			
	comp=N,100nm,1.0s								
MOS					pmax	pmax			
	comp=E,111nm,1.0s								
MOS					pmax	pmax			
	comp=Z,600nm,1.6s								
MOS					MLR	MLR			
	comp=Z,8µm,15.0s								
MOS					MLR	MLR			
	comp=N,4µm,16.0s								
FORT	**Forrest**	**68.04**	**193**		*e*P	**P**	**15 25 57.8**	**-0.7**	
	comp=N,984nm,0.9s								
D05A	**Enumclaw**	**68.16**	**47**		*e*P	**P**	**15 26 00.8**	**+1.5**	
	comp=N,106nm,1.4s								
TDL	**Tradedollar La**	**68.44**	**48**		P	**P**	**15 26 03.2**	**+2.0**	
LON	**Longmire**	**68.48**	**47**		*e*P	**P**	**15 26 02.4**	**+1.0**	
LON					pmax	pmax			
	comp=Z,24nm,1.2s								
LON	**Longmire**	**68.48**	**47**		*e*P	**P**	**15 26 02.4**	**+1.0**	
	comp=Z,24nm,1.2s								
STEI	**Steigen**	**68.57**	**341**		*e*P	**P**	**15 26 02.9**	**+1.4**	
STEI					IAmb	IAmb	15 26 03.3		
	comp=Z,48nm,0.8s								
KULLO	**Kullorsuaq**	**68.60**	**5**	⇑	*i*P	**P**	**15 26 02.3**	**+0.8**	
	comp=Z,100nm,1.1s								
	comp=Z,3µm,16.0s								
KULLO	**Kullorsuaq**	**68.60**	**5**	⇑	*i*P	**P**	**15 26 02.3**	**+0.8**	
KULLO					pmax	pmax			
	comp=Z,100nm,1.1s								
KULLO					MLR	MLR			
	comp=Z,4µm,16.0s								
COR	**Corvallis**	**68.68**	**50**		P	**P**	**15 26 06.0**	**+3.5**	
COR					pmax	pmax			
	comp=Z,401nm,1.6s								
OBN	**Obninsk**	**68.79**	**324**	*c*	*i*P	**P**	**15 26 02.8**	**-0.2**	
OBN					*e*		15 26 10.7		
OBN					*e*		15 28 38.0		
OBN					*i* S	**S**	**15 35 04.6**	**-0.5**	
OBN					*i* SS	**SS**	**15 39 30.6**	**+1.3**	
OBN					pmax	pmax			
	comp=Z,166nm,1.1s								
OBN					MLR	MLR			
	comp=Z,11µm,16.0s								
OBN	**Obninsk**	**68.79**	**324**		*e*P	**P**	**15 26 03.1**	**+0.1**	
	comp=Z,172nm,1.0s								
LOF	**Lofoten**	**68.87**	**342**		*e*P	**P**	**15 26 05.1**	**+1.8**	
LOF					IAmb	IAmb	15 26 05.5		
	comp=Z,64nm,1.0s								
BBOO	**Buckleboo**	**69.04**	**185**		*e*P	**P**	**15 26 05.0**	**+0.2**	
	comp=Z,72nm,1.2s								
B08A	**Colville Reser**	**69.09**	**45**		*e*P	**P**	**15 26 05.7**	**+0.6**	
	comp=Z,33nm,1.0s								
I03D	**Drain, OR**	**69.10**	**51**		P	**P**	**15 26 07.7**	**+2.5**	
	baz=301								
VORR	**Voronezh**	**69.34**	**319**		*e*P	**P**	**15 26 05.0**	**-1.5**	
VORR					pmax	pmax			
	comp=Z,300nm,1.2s								
FIA1	**FINESS Array S**	**69.52**	**332**		*e*P	**P**	**15 26 07.0**	**-0.5**	
FINES	**FINESS Array B**	**69.52**	**332**		P	**P**	**15 26 07.4**	**-0.1**	
	comp=Z,101nm,0.9s,baz=57,slow=7.0,SNR=159								
FINES					LR	LR	15 58 52.3		
	comp=Z,5µm,20.1s,baz=30,slow=38								
VSR	**Storozhevoye**	**69.61**	**319**		*e*P	**P**	**15 26 08.7**	**+0.5**	
VSR					*e*		15 26 09.0		
VSR					*e*S	**S**	**15 35 12.6**	**-2.3**	
VSR					pmax	pmax			
	comp=Z,190nm,1.1s								
VSR					pmax	pmax			
	comp=Z,320nm,1.1s								
VSR					smax	smax			
	comp=E,660nm,7.4s								
VSR					MLR	MLR			
	comp=Z,24µm,23.0s								
I04A	**Tendick Farm,**	**69.63**	**50**		P	**P**	**15 26 10.7**	**+2.1**	
	baz=301								
EDM	**Edmonton**	**69.68**	**38**		*e*P	**P**	**15 26 08.8**	**+0.1**	
EDM					pmax	pmax			
	comp=Z,55nm,1.0s								
EDM	**Edmonton**	**69.68**	**38**		*e*P	**P**	**15 26 08.8**	**+0.1**	
	comp=Z,55nm,1.0s								
VAF	**Ylistaro**	**69.70**	**335**		P	**P**	**15 26 09.1**	**+0.5**	
VAF					pmax	pmax			
	comp=Z,135nm,1.0s								
G06A	**Carlson Farm,**	**69.97**	**48**		*e*P	**P**	**15 26 12.2**	**+1.6**	
	comp=Z,48nm,1.3s								
C09A	**Chrisman Ranch**	**69.99**	**45**		*e*P	**P**	**15 26 11.9**	**+1.2**	
	comp=Z,33nm,0.8s								
I05D	**Terrebonne, OR**	**70.01**	**49**		P	**P**	**15 26 12.8**	**+1.9**	
	baz=302								
HAWA	**Hanford**	**70.01**	**47**		*e*P	**P**	**15 26 12.1**	**+1.3**	
	comp=Z,23nm,1.0s								
D08A	**Wollman Farm,**	**70.02**	**46**		*e*P	**P**	**15 26 12.0**	**+1.1**	
	comp=Z,32nm,0.8s								
GROC	**Groznyy**	**70.03**	**309**		*e*P	**P**	**15 26 11.1**	**+0.1**	
GROC					pmax	pmax			
	comp=Z,47nm,0.9s								
VTHM	**Trough**	**70.04**	**48**		P	**P**	**15 26 13.0**	**+1.9**	
KONS	**Konsvik**	**70.19**	**341**		IAmb	IAmb	15 26 13.4		
	comp=Z,73nm,1.2s								
KONS					*e*P	**P**	**15 26 13.9**	**+2.4**	
NEW	**Newport**	**70.40**	**44**		P	**P**	**15 26 12.9**	**-0.2**	
	comp=Z,8.4nm,0.9s,baz=293,slow=8.3,SNR=8.1								
NEW	**Newport**	**70.40**	**44**		P	**P**	**15 26 14.8**	**+1.6**	
	baz=303								
NEW	**Newport**	**70.40**	**44**		*e*P	**P**	**15 26 13.7**	**+0.5**	
NEW					pmax	pmax			
	comp=Z,22nm,0.8s								
NEW	**Newport**	**70.40**	**44**		*e*P	**P**	**15 26 13.7**	**+0.5**	
	comp=Z,22nm,0.8s								
M02C	**Callahan**	**70.60**	**53**		P	**P**	**15 26 17.2**	**+2.6**	
	baz=302								
J05D	**Fort Rock, OR**	**70.63**	**50**		P	**P**	**15 26 17.1**	**+2.2**	
	baz=302								
GOF	**Gofitskoye**	**70.74**	**312**	⇑	*e*P	**P**	**15 26 16.8**	**+1.5**	
GOF					pmax	pmax			
	comp=Z,295nm,1.5s								
E09A	**Wood Farm, Sta**	**70.76**	**46**		*e*P	**P**	**15 26 16.7**	**+1.4**	
	comp=Z,48nm,1.0s								
G08A	**Pilot Rock**	**70.94**	**47**		*e*P	**P**	**15 26 18.3**	**+1.6**	
	comp=Z,24nm,1.1s								
K05A	**Summer Lake**	**71.14**	**51**		*e*P	**P**	**15 26 19.3**	**+1.3**	
	comp=Z,139nm,1.4s								
VSU	**Vasula**	**71.16**	**330**	*c*	*i*P	**P**	**15 26 17.4**	**-0.1**	
VSU					pmax	pmax			
	comp=Z,421nm,1.0s								
VSU					MLR	MLR			
	comp=Z,11µm,16.0s								
WDC	**Whiskeytown Da**	**71.23**	**53**		*e*P	**P**	**15 26 18.9**	**+0.6**	
WDC					pmax	pmax			
	comp=Z,48nm,1.2s								
WDC	**Whiskeytown Da**	**71.23**	**53**		*e*P	**P**	**15 26 18.9**	**+0.6**	
	comp=Z,48nm,1.2s								
NCK	**Nalchik**	**71.24**	**310**		*e*P	**P**	**15 26 18.6**	**+0.2**	
NCK					pmax	pmax			
	comp=Z,50nm,1.2s								
NCK					MLR	MLR			
	comp=Z,4µm,17.0s								
SUMG	**Summit**	**71.33**	**0**	⇑	*i*P	**P**	**15 26 19.4**	**+0.5**	
	comp=Z,91nm,1.0s								
	comp=Z,4µm,19.0s								
SUMG	**Summit**	**71.33**	**0**	⇑	*i*P	**P**	**15 26 19.4**	**+0.5**	
SUMG					pmax	pmax			
	comp=Z,91nm,1.0s								
SUMG					MLR	MLR			
	comp=Z,4µm,19.0s								
SUMG	**Summit**	**71.33**	**0**		*e*P	**P**	**15 26 19.2**	**+0.3**	
	comp=Z,96nm,1.0s								
ZEI	**Tsey**	**71.43**	**310**		*e*P	**P**	**15 26 17.8**	**-2.0**	
ZEI					pmax	pmax			
	comp=Z,112nm,1.0s								
ZEI					pmax	pmax			
	comp=N,78nm,0.9s								
ZEI					pmax	pmax			
	comp=E,75nm,0.8s								
TBLG	**Delisi**	**71.47**	**308**		P	**P**	**15 26 20.1**	**+0.2**	
TBLG	**Delisi**	**71.47**	**308**		*e*P	**P**	**15 26 20.0**	**+0.2**	
KBZ	**Khabaz**	**71.54**	**311**		P	**P**	**15 26 20.4**	**+0.3**	
	comp=E,76nm,0.9s,baz=55,slow=3.3,SNR=101								
KBZ					LR	LR	16 02 30.2		
	comp=E,7µm,18.0s,baz=51,slow=40								
KIV	**Kislovodsk**	**71.55**	**311**		*i* P	**P**	**15 26 20.8**	**+0.5**	
	SNR=47								
KIV	**Kislovodsk**	**71.55**	**311**		*e*P	**P**	**15 26 20.2**	**-0.1**	
KIV					*e*		15 28 58.9		
KIV					*e*S	**S**	**15 35 38.8**	**+0.8**	
KIV					*e*SS	**SS**	**15 40 09.8**	**-2.7**	
KIV					pmax	pmax			
	comp=Z,199nm,0.9s								
KIV					pmax	pmax			
	comp=Z,485nm,5.2s								
KIV					MLR	MLR			
	comp=Z,5µm,18.0s								
KIV	**Kislovodsk**	**71.55**	**311**		P	**P**	**15 26 20.4**	**0.0**	
	SNR=61								
KIV	**Kislovodsk**	**71.55**	**311**		*e*P	**P**	**15 26 20.6**	**+0.3**	
	comp=Z,209nm,1.0s								
BIDO	**Bidbid**	**71.55**	**286**		P	**P**	**15 26 21.2**	**+0.7**	
	SNR=7.2								
CAN	**Canberra**	**71.66**	**174**		PFAKE		15 26 30.0	+9.2	
CAN					LR	LR			
	comp=Z,2µm,21.0s								
BANOM	**Banah**	**71.69**	**289**		*i* P	**P**	**15 26 22.4**	**+1.1**	
	SNR=8.3								
WALA	**Waterton Lakes**	**71.73**	**42**		*e*P	**P**	**15 26 22.3**	**+0.9**	
	comp=Z,29nm,1.0s								
ONI	**Oni**	**71.82**	**310**		P	**P**	**15 26 22.6**	**+0.6**	
ONI	**Oni**	**71.82**	**310**		*e*P	**P**	**15 26 22.5**	**+0.6**	
SMDO	**Samad**	**71.86**	**286**		P	**P**	**15 26 23.8**	**+1.2**	
	SNR=11								
NEY	**Neytrino**	**71.91**	**311**	*d*	*i*P	**P**	**15 26 22.3**	**-0.3**	
NEY					pmax	pmax			
	comp=Z,5.0nm,1.0s								
NEY					MLR	MLR			
	comp=Z,2µm,15.0s								
BSMT	**Bassoo Peak**	**71.93**	**44**		P	**P**	**15 26 25.0**	**+2.3**	
MOD	**Modoc Plateau**	**71.95**	**51**		*e*P	**P**	**15 26 23.9**	**+1.1**	
	comp=Z,31nm,1.1s								
NSS	**Namsos**	**71.99**	**340**	⇑	*i*P	**P**	**15 26 23.0**	**+0.6**	
NSS					IAmb	IAmb	15 26 24.2		
	comp=Z,67nm,1.0s								
BLMT	**Blacktail Moun**	**72.07**	**43**		*e*P	**P**	**15 26 24.5**	**+1.0**	
HOQ	**Hoqain**	**72.15**	**286**		P	**P**	**15 26 25.5**	**+1.3**	
	SNR=9.5								
BMO	**Blue Mountains**	**72.16**	**47**		*e*P	**P**	**15 26 24.9**	**+0.9**	
	comp=Z,28nm,1.0s								
BMO					LR	LR			
	comp=Z,811nm,20.0s								
JTMT	**Jette**	**72.27**	**43**		*e*P	**P**	**15 26 26.3**	**+1.6**	
UOSS	**Minazif**	**72.28**	**288**		*e*P	**P**	**15 26 25.0**	**+0.1**	
	comp=Z,70nm,0.9s								
GNI	**Garni**	**72.32**	**307**		*i* P	**P**	**15 26 26.7**	**+1.5**	
	SNR=11								
GNI	**Garni**	**72.32**	**307**	*c*	*i*P	**P**	**15 26 25.0**	**-0.1**	
GNI					pmax	pmax			
	comp=Z,149nm,1.2s								
GNI					MLR	MLR			
	comp=Z,13µm,17.0s								
GNI	**Garni**	**72.32**	**307**		P	**P**	**15 26 26.0**	**+0.8**	
	SNR=14								
GNI	**Garni**	**72.32**	**307**		*e*P	**P**	**15 26 25.6**	**+0.5**	
	comp=Z,83nm,1.0s								
YBMT	**Yellow Bay**	**72.35**	**43**		*e*P	**P**	**15 26 25.7**	**+0.6**	
HATD	**Hatta, Dubai**	**72.40**	**288**		*i* P	**P**	**15 26 26.7**	**+1.0**	
	SNR=18								
AKH	**Akhalkalaki**	**72.43**	**309**	⇑	*i*P	**P**	**15 26 26.5**	**+0.8**	
AKH	**Akhalkalaki**	**72.43**	**309**		P	**P**	**15 26 26.6**	**+0.8**	
AKH	**Akhalkalaki**	**72.43**	**309**		*e*P	**P**	**15 26 26.6**	**+0.8**	
ORV	**Oroville**	**72.45**	**54**		*e*P	**P**	**15 26 26.3**	**+0.6**	
ORV					pmax	pmax			
	comp=Z,20nm,1.0s								
ORV	**Oroville**	**72.45**	**54**		*e*P	**P**	**15 26 26.3**	**+0.6**	
	comp=Z,20nm,1.0s								
ASHO	**Ashiyiah**	**72.53**	**288**		*i* P	**P**	**15 26 27.2**	**+0.7**	
	SNR=13								
ASHO	**Ashiyiah**	**72.53**	**288**		P	**P**	**15 26 25.8**	**-0.7**	
	SNR=5.4								
SWMT	**Swartz Lake**	**72.56**	**44**		*e*P	**P**	**15 26 26.4**	**0.0**	
NWAO	**Narrogin (SRO)**	**72.67**	**201**		LR	LR	15 59 43.3		
	comp=Z,282nm,19.5s,slow=37								
NWAO	**Narrogin (SRO)**	**72.67**	**201**		*e*P	**P**	**15 26 26.3**	**-0.5**	
NWAO					pmax	pmax			
	comp=Z,136nm,1.0s								
NWAO	**Narrogin (SRO)**	**72.67**	**201**		*e*P	**P**	**15 26 26.3**	**-0.5**	
	comp=Z,136nm,1.0s								
NAZ	**Nazwa, Dubai**	**72.67**	**288**		P	**P**	**15 26 27.5**	**+0.2**	
WVOR	**Wild Horse Val**	**72.69**	**50**		*e*P	**P**	**15 26 28.1**	**+0.8**	
WVOR					pmax	pmax			
	comp=Z,82nm,1.8s								
WVOR	**Wild Horse Val**	**72.69**	**50**		*e*P	**P**	**15 26 28.1**	**+0.8**	
	comp=Z,82nm,1.8s								
SCO	**Scoresbysund**	**72.79**	**354**	⇑	*i*P	**P**	**15 26 27.9**	**+0.8**	
	comp=Z,80nm,1.3s								
SCO	**Scoresbysund**	**72.79**	**354**	⇑	*i*P	**P**	**15 26 27.9**	**+0.8**	
SCO					pmax	pmax			
	comp=Z,80nm,1.3s								
FAQ	**Al Faqa, Dubai**	**72.86**	**288**		*i* P	**P**	**15 26 28.9**	**+0.6**	
	SNR=14								
EPOS	**Posof**	**72.86**	**309**		*i* P	**P**	**15 26 29.1**	**+0.8**	
ARQ	**Araqi**	**72.90**	**287**		P	**P**	**15 26 29.3**	**+0.7**	
	SNR=18								
MSO	**Missoula**	**72.98**	**44**		P	**P**	**15 26 29.7**	**+0.8**	
	baz=305								
MSO	**Missoula**	**72.98**	**44**		*e*P	**P**	**15 26 29.1**	**+0.3**	
	comp=Z,26nm,1.0s								
IZAR	**Zarasai**	**73.11**	**328**		*e*P	**P**	**15 26 29.9**	**+0.7**	
IZAR					IAmb	IAmb	15 26 32.3		
	comp=Z,87nm,1.1s								
AFDM	**Forest Hills D**	**73.13**	**54**		*e*P	**P**	**15 26 29.8**	**+0.1**	
	comp=Z,21nm,1.1s								
IDID	**Didziasalis**	**73.18**	**327**		*e*P	**P**	**15 26 30.3**	**+0.7**	
IDID					IAmb	IAmb	15 26 32.6		
	comp=Z,62nm,0.8s								
MICGM	**Minsk**	**73.19**	**326**	⇑	*e*P	**P**	**15 26 30.0**	**+0.2**	
MICGM				⇑	*e*P	**P**	**15 26 30.0**	**+0.2**	
MICGM					PM		15 26 31.0		
	comp=Z,0.4nm,1.0s								
MICGM					PM		15 26 32.0		
	comp=N,0.2nm,1.2s								
MICGM					*e*PcP	PcP	15 26 56.0	+10	
MICGM					*e*PP	**PP**	**15 29 10.0**	**-2.3**	
MICGM					*e*PPP	PPP	15 30 40.0		
MICGM					*e*S	**S**	**15 35 58.0**	**+1.8**	
MICGM					*e*PS	**PnS**	**15 36 44.0**	**+15**	
MICGM					*e*SS	**SS**	**15 40 28.0**	**-8.8**	
MICGM					*e*SSS	SSS	15 44 26.0		
MICGM					*e*LQ	LQ	15 55 08.0		
MICGM					LQM		15 59 00.0		
	comp=E,6.1nm,14.0s								
MICGM					*e*LR	LR	16 01 20.0		
MICGM					LRM	MLR	16 02 58.0		
	comp=Z,13nm,14.0s								
MICGM					LRM	MLR	16 03 04.0		
	comp=E,9.9nm,14.0s								
MNK	**Minsk**	**73.19**	**326**	*c*	*e*P	**P**	**15 26 30.0**	**+0.2**	
MNK					*e*		15 29 10.0		
MNK					*e*S	**S**	**15 35 58.0**	**+1.8**	
MNK					*e*PS	**PnS**	**15 36 44.0**	**+15**	
MNK					pmax	pmax			
	comp=Z,430nm,1.0s								
MNK					pmax	pmax			
	comp=N,170nm,1.2s								
MNK					MLR	MLR			
	comp=Z,13µm,14.0s								
MNK					MLR	MLR			
	comp=E,10µm,14.0s								
ISAL	**Salakas**	**73.28**	**328**		*e*P	**P**	**15 26 31.0**	**+0.7**	
ISAL					IAmb	IAmb	15 26 33.4		
	comp=Z,111nm,1.0s								
CHMT	**Chamberlain Mo**	**73.32**	**44**		*e*P	**P**	**15 26 31.4**	**+0.4**	
NACGM	**Naroch**	**73.42**	**327**		*e*P	**P**	**15 26 31.0**	**-0.1**	
NACGM					*e*P	**P**	**15 26 31.0**	**-0.1**	
NACGM					PM		15 26 33.0		
	comp=Z,0.5nm,1.0s								
NACGM					*e*PPP	PPP	15 31 02.0		
NACGM					*e*S	**SKiKP**	**15 36 06.0**	**+5.6**	
NACGM					*e*SS	**SS**	**15 40 40.0**	**-0.3**	
NACGM					*e*SSS	SSS	15 44 12.0		
NACGM					*e*LQ	LQ	15 52 20.0		
NACGM					*e*LR	LR	15 56 02.0		
NACGM					LRM	MLR	16 02 54.0		
	comp=Z,14nm,16.0s								
TBLU	**Trondheim**	**73.46**	**339**		*e*P	**P**	**15 26 31.4**	**+0.2**	
TBLU					IAmb	IAmb	15 26 32.3		
	comp=Z,92nm,0.9s								
ARTV	**Artvin**	**73.54**	**309**		*i* P	**P**	**15 26 32.9**	**+0.5**	
SOC	**Sochi**	**73.54**	**312**	*c*	*i*P	**P**	**15 26 31.1**	**-1.0**	
SOC					*e**SP	**pP**	**15 26 38.9**	**-0.6**	
SOC					*e*		15 29 15.0		
SOC					*i* PPP	PPP	15 30 57.3		
SOC					*e*S	**S**	**15 36 00.1**	**-0.5**	
SOC					pmax	pmax			
	comp=Z,83nm,0.9s								
SOC					MLR	MLR			
	comp=Z,7µm,19.0s								
DBOC	**Borcka**	**73.61**	**

EGMT **Eagleton** 74.57 41 P P 15 26 39.1 +0.9
baz=308
EGMT **Eagleton** 74.57 41 *e*P P 15 26 38.1 0.0
comp=Z,68nm,1.0s
DLMT **Dillon** 74.60 45 *e*P P 15 26 39.2 +0.7
comp=Z,46nm,0.9s
HLID **Hailey** 74.61 47 P P 15 26 40.2 +1.7
baz=306
HLID **Hailey** 74.61 47 *e*P P 15 26 40.5 +1.9
ERZM **Erzurum** 74.61 308 *i* P P 15 26 40.7 +1.9
NC405 **NORSAR Array S** 74.68 337 *e*P P 15 26 38.2 -0.2
BMN **Battle Mountai** 74.70 51 *e*P P 15 26 40.4 +1.3
BMN pmax pmax
comp=Z,82nm,1.5s
BMN **Battle Mountai** 74.70 51 *e*P P 15 26 40.4 +1.3
comp=Z,82nm,1.5s
NC303 **NORSAR Array S** 74.70 338 *e*P P 15 26 38.6 0.0
LCCM **Lewis and Clar** 74.72 44 P P 15 26 39.9 +0.7
MOL **Molde** 74.76 340⇑*i*P P 15 26 40.4 +1.6
MOL IAmb IAmb 15 26 41.2
comp=Z,56nm,0.9s
MCMT **McKenzie Canyo** 74.77 45 P P 15 26 41.1 +1.5
NC204 **NORSAR Array S** 74.85 338 *e*P P 15 26 39.7 +0.2
NB201 **NORSAR Array S** 74.86 337 *e*P P 15 26 39.5 0.0
NB2 **NORSAR Subarra** 74.89 337 P P 15 26 40.2 +0.5
comp=Z,145nm,0.9s,baz=38,slow=5.9
NB2 **NORSAR Subarra** 74.89 337 P P 15 26 40.2 +0.5
baz=38,slow=5.9
NOA **NORSAR Array B** 74.89 337 P P 15 26 39.6 -0.1
comp=Z,99nm,0.8s,baz=39,slow=5.8,SNR=203
NOA LR LR 16 01 53.7
comp=Z,7μm,21.9s,baz=10.0,slow=38
AKASG **Malin Array Be** 74.98 323 P P 15 26 40.0 -0.3
comp=Z,53nm,0.6s,baz=46,slow=5.9,SNR=189
AKASG LR LR 16 02 33.0
comp=Z,8μm,19.6s,baz=50,slow=38
AKASG **Malin Array Be** 74.98 323 P P 15 26 40.0 -0.3
AKASG pmax pmax
comp=Z,53nm,0.6s
AKASG MLR MLR
comp=Z,8μm,19.6s
KIEV **Kiev** 75.00 323*c* *i*P P 15 26 39.9 -0.5
KIEV pmax pmax
comp=Z,117nm,0.9s
KIEV MLR MLR
comp=Z,11μm,16.0s
KIEV **Kiev** 75.00 323 *e*P P 15 26 39.6 -0.7
comp=Z,125nm,0.8s
NBO02 **NORSAR Array S** 75.00 338 *e*P P 15 26 39.6 -0.6
BOZ **Bozeman (W)** 75.01 44 P P 15 26 41.9 +1.1
baz=307
BOZ **Bozeman (W)** 75.01 44 *e*P P 15 26 41.4 +0.6
BOZ pmax pmax
comp=Z,36nm,0.9s
BOZ MLR MLR
comp=Z,1μm,21.0s
BOZ **Bozeman (W)** 75.01 44 *e*P P 15 26 41.4 +0.6
comp=Z,36nm,0.9s
BOZ LR LR
comp=Z,1μm,21.0s
AK11 **Malin Array Si** 75.03 323 *e*P P 15 26 39.8 -0.7
NC602 **NORSAR Array S** 75.03 337 *e*P P 15 26 39.8 -0.6
NBO00 **NORSAR Array S** 75.04 338 *e*P P 15 26 40.2 -0.3
NAO01 **NORSAR Array S** 75.15 337 *e*P P 15 26 41.0 -0.1
RAO **Raoul Island** 75.49 144 LR LR 15 58 32.7
comp=Z,2μm,18.3s,baz=334,slow=35
QLMT **Earthquake Lak** 75.58 45 *e*P P 15 26 45.1 +0.9
SUW **Suwalki** 75.59 328 *e*P P 15 26 43.3 -0.4
SUW *e*S S 15 36 22.6 -0.5
SUW LMZ LR 16 02 41.0
comp=Z,10μm,18.5s
SUW **Suwalki** 75.59 328 *e*P P 15 26 43.3 -0.4
SUW *e*S S 15 36 22.6 -0.5
SUW MLR MLR
comp=Z,10μm,18.5s
ELK **Elko** 75.75 50 *e*P P 15 26 45.9 +0.7
ELK pmax pmax
comp=Z,23nm,1.3s
ELK **Elko** 75.75 50 *e*P P 15 26 45.9 +0.7
comp=Z,23nm,1.3s
YHH **Holmes Hill** 75.94 44 *e*P P 15 26 46.8 +0.5
comp=Z,25nm,1.1s
GCMT **Greycliff** 75.98 43 *e*P P 15 26 47.0 +0.6
SIM **Simferopol'** 75.99 316*c* *e*P P 15 26 46.3 +0.1
SIM *e*S S 15 36 27.7 -0.2
SIM pmax pmax
comp=Z,112nm,0.9s
SIM MLR MLR
comp=Z,7μm,17.0s
VES **Vestal, Richgr** 76.11 56 P P 15 26 48.7 +1.6
baz=305
PKM **Mcpherson Peak** 76.16 57 P P 15 26 50.2 +2.6
baz=305
YPP **Pitchstone Pla** 76.28 45 *e*P P 15 26 48.3 +0.1
comp=Z,60nm,1.6s
H17A **Grant Village** 76.33 45 P P 15 26 51.4 +2.9
baz=308
H17A **Grant Village** 76.33 45 *e*P P 15 26 50.8 +2.3
comp=Z,48nm,0.9s
IMW **Indian Meadow** 76.43 45 *e*P P 15 26 49.5 +0.4
comp=Z,30nm,1.0s
KLNR **Kaliningrad** 76.43 329 *e*P P 15 26 48.6 +0.1
KLNR pmax pmax
comp=Z,155nm,0.9s
KLNR MLR MLR
comp=Z,6μm,17.0s
CWC **Cottonwood Cre** 76.43 55 P P 15 26 50.8 +1.7
baz=305
FLWY **Flagg Ranch** 76.45 45 *e*P P 15 26 49.3 +0.1
comp=Z,37nm,1.0s
MARD **Mardin** 76.48 306 *i* P P 15 26 50.1 +0.8
KONO **Kongsberg** 76.49 337*c* *i*P P 15 26 48.7 0.0
KONO pmax pmax
comp=Z,308nm,1.0s
KONO MLR MLR
comp=Z,54μm,18.0s
KONO **Kongsberg** 76.49 337 *e*P P 15 26 48.6 -0.2
comp=Z,83nm,1.1s
KONO LR LR
comp=Z,7μm,20.0s
SFJD **Kangerlussuaq** 76.51 5 *i* P P 15 26 49.7 +1.0
comp=Z,65nm,1.1s
SFJD **Kangerlussuaq** 76.51 5 *e*P P 15 26 49.2 +0.5
SFJD pmax pmax
comp=Z,53nm,0.9s
SFJD **Kangerlussuaq** 76.51 5 *e*P P 15 26 49.2 +0.5
comp=Z,53nm,0.9s
RLMT **Red Lodge** 76.62 43 P P 15 26 51.4 +1.4
baz=308
RLMT **Red Lodge** 76.62 43 *e*P P 15 26 50.7 +0.6
comp=Z,20nm,0.9s
MOOW **Moose Ponds** 76.63 45 *e*P P 15 26 51.4 +1.2
comp=Z,100nm,1.9s
HVU **Hansel Valley** 76.63 48 *e*P P 15 26 51.8 +1.6
HVU pmax pmax
comp=Z,25nm,1.0s
HVU **Hansel Valley** 76.63 48 *e*P P 15 26 51.8 +1.6
comp=Z,25nm,1.0s
TPAW **Teton Pass** 76.67 46 *e*P P 15 26 51.6 +1.1
comp=Z,124nm,1.8s
KEMA **Kemaliye** 76.79 309 *i* P P 15 26 51.8 +0.8
LOHW **Long Hollow** 76.79 45 *e*P P 15 26 52.4 +1.2
comp=Z,78nm,1.9s
SNOW **Snow King Moun** 76.80 46 *e*P P 15 26 52.3 +1.1
comp=Z,37nm,1.2s
REDW **Red Top Meadow** 76.80 46 *e*P P 15 26 51.1 -0.1
comp=Z,26nm,1.0s
DAC **Darwin (Calif)** 76.85 55 *e*P P 15 26 51.8 +0.3
DAC pmax pmax
comp=Z,31nm,1.2s
DAC **Darwin (Calif)** 76.85 55 *e*P P 15 26 51.8 +0.3
comp=Z,31nm,1.2s
R11A **Troy Canyon, C** 76.94 52 P P 15 26 52.8 +0.9
baz=306
R11A **Troy Canyon, C** 76.94 52 *e*P P 15 26 52.9 +0.9
comp=Z,37nm,1.0s
BGU **Big Grassy Mou** 76.99 49 *e*P P 15 26 53.2 +1.0
comp=Z,33nm,1.1s
AHID **Auburn Hatcher** 77.03 46 PFAKE 15 27 00.0 +7.6
AHID LR LR
comp=Z,1μm,19.0s
MPMC **Manual Prospec** 77.04 55 P P 15 26 53.6 +1.0
baz=306
SORM **Soroca** 77.07 321⇑*i*P P 15 26 52.7 +0.4
DGMT **Dagmar** 77.17 39 *e*P P 15 26 53.3 +0.5
comp=Z,78nm,1.3s
FURC **Furnace Creek,** 77.22 54 P P 15 26 54.7 +1.5
baz=306
LRMC **Laurel Mtn Rad** 77.25 55 P P 15 26 55.3 +1.6
baz=306
LAO **LASA Array** 77.28 41 P P 15 26 54.5 +0.9
baz=310
LAO **LASA Array** 77.28 41 *e*P P 15 26 54.4 +0.9
comp=Z,56nm,1.1s
TPNV **Topopah Spring** 77.33 53 P P 15 26 54.8 +0.6
baz=306
TPNV **Topopah Spring** 77.33 53 *e*P P 15 26 54.5 +0.3
TPNV pmax pmax
comp=Z,30nm,1.0s
TPNV **Topopah Spring** 77.33 53 *e*P P 15 26 54.5 +0.3
comp=Z,30nm,1.0s
EDW2 **Edwards Air Fo** 77.39 56 P P 15 26 55.3 +0.9
baz=306
A25A **Svangstu Ranch** 77.40 38 P P 15 26 55.3 +1.1
baz=312
CUKAN **kangal_SIVAS** 77.40 310 *i* P P 15 26 55.1 +0.6
SFNV **Sufian** 77.43 306 *e*P P 15 26 56.9 +2.3
HWUT **Hardware Ranch** 77.46 47 *e*P P 15 26 55.1 +0.2
comp=Z,36nm,1.0s
DUG **Dugway, Tooele** 77.56 49 P P 15 26 56.8 +1.4
baz=307
DUG **Dugway, Tooele** 77.56 49 *e*P P 15 26 56.0 +0.6
DUG pmax pmax
comp=Z,57nm,1.2s
DUG **Dugway, Tooele** 77.56 49 *e*P P 15 26 56.0 +0.6
comp=Z,57nm,1.2s
KIS **Kishinev** 77.57 320⇑*i*P P 15 26 54.0 -1.1
comp=Z,200nm,1.0s
KIS **Kishinev** 77.57 320 *i* PcP PcP 15 27 08.0 +2.7
KIS **Kishinev** 77.57 320 *e*PP PP 15 29 50.0 +0.5
KIS *e*S S 15 36 43.0 -2.1
KIS *e*ScS SKSac 15 37 05.0 -2.0
KIS **Kishinev** 77.57 320*c* *i*P P 15 26 54.0 -1.1
KIS *i* 15 27 08.0
KIS *e* 15 29 50.0
KIS *e*S S 15 36 43.0 -2.1
KIS *e* 15 37 05.0
KIS *e*PS PnS 15 37 16.0 -10
KIS *e*SS SS 15 41 44.0 +0.4
KIS pmax pmax
comp=Z,200nm,1.0s
KIS pmax pmax
comp=Z,900nm,10.0s
KIS MLR MLR
comp=N,6μm,15.0s
KIS MLR MLR
comp=E,11μm,15.0s
KIS MLR MLR
comp=Z,16μm,15.0s
KIS MLR MLR
comp=Z,15μm,16.0s
BOYT **Boyabat** 77.69 313 *i* P P 15 26 57.0 +1.0
TCUT **Toone Canyon** 77.85 48 *e*P P 15 26 57.9 +0.8
comp=Z,57nm,0.9s
CTU **Camp Tracy** 77.91 48 *e*P P 15 26 58.4 +1.1
comp=Z,61nm,0.9s
BW06 **Boulder Array** 77.92 46 P P 15 26 58.3 +0.8
baz=309
BW06 **Boulder Array** 77.92 46 *e*P P 15 26 57.6 +0.1
comp=Z,50nm,1.7s
BW06 LR LR
comp=Z,1μm,19.0s
PD31 **Pinedale Array** 77.92 46 *e*P P 15 26 56.9 -0.6
PDAR **Pinedale Array** 77.92 46 P P 15 26 57.1 -0.3
comp=Z,2.5nm,0.5s,baz=298,slow=3.2,SNR=20
PDAR LR LR 15 56 48.5
comp=Z,470nm,21.6s,baz=340,slow=32
RBK **Rabkut** 77.92 283 P P 15 26 58.0 +0.4
SNR=5.7
GSC **Goldstone, Bar** 77.94 55 P P 15 26 58.9 +1.5
baz=306
GSC **Goldstone, Bar** 77.94 55 *e*P P 15 26 57.9 +0.4
GSC pmax pmax
comp=Z,19nm,1.1s
GSC **Goldstone, Bar** 77.94 55 *e*P P 15 26 57.9 +0.4
comp=Z,19nm,1.1s
DGAR **Diego Garcia** 78.05 252 PFAKE 15 27 10.0 +12
DGAR LR LR
comp=Z,2μm,20.0s
LVV **L'vov** 78.07 324⇓*i*P P 15 26 58.5 +0.7
LVV *i* S S 15 36 50.1 -0.3
LVV *e* 15 37 35.9
LVV pmax pmax
comp=Z,300nm,1.2s
LVV MLR MLR
comp=N,5μm,16.0s
LVV MLR MLR
comp=E,9μm,16.0s
LVV MLR MLR
comp=Z,10μm,16.0s
CUSAR **Sarkisla-SIVAS** 78.10 310 *i* P P 15 26 58.4 0.0
JLU **Jordanelle** 78.14 48 *e*P P 15 27 00.0 +1.3
comp=Z,31nm,1.2s
BEL **Belsk** 78.14 327 *e*P P 15 26 59.2 +1.0
BEL *e*S S 15 36 54.7 +3.6
BEL LMZ LR 16 04 21.1
comp=Z,6μm,17.4s
BEL **Belsk** 78.14 327 *e*P P 15 26 59.2 +1.0
BEL *e*S S 15 36 54.7 +3.6
BEL MLR MLR
comp=Z,6μm,17.4s
BSD **Bornholm Skovb** 78.15 332⇑*i*P P 15 26 58.0 -0.1
comp=Z,127nm,1.1s
comp=Z,5μm,16.0s
BSD **Bornholm Skovb** 78.15 332⇑*i*P P 15 26 58.0 -0.1
BSD pmax pmax
comp=Z,130nm,1.1s
BSD MLR MLR
comp=Z,5μm,16.0s
CTAK **Corum_Osmancik** 78.23 312 *i* P P 15 26 59.6 +0.4
SHPR **Sheep Range** 78.30 53 *e*P P 15 27 00.0 +0.4
comp=Z,38nm,1.2s
A27A **Ledoux Ranch,** 78.30 37 P P 15 26 59.9 +0.7
baz=313
BORG **Borgarnes** 78.33 353 *e*P P 15 27 00.4 +1.5
BORG pmax pmax
comp=Z,181nm,1.0s
BORG MLR MLR
comp=Z,1μm,20.0s
BORG **Borgarnes** 78.33 353 *e*P P 15 27 00.4 +1.5
comp=Z,181nm,1.0s
BORG LR LR
comp=Z,1μm,20.0s
COAL **Corum-Alaca** 78.36 312 *i* P P 15 27 00.3 +0.5
TUQ **Turquoise Moun** 78.44 55 P P 15 27 01.2 +0.9
baz=307
KSRV **Kasrt alli** 78.48 306 *e*P P 15 27 02.4 +2.0
HEC **Hector,Ludlow** 78.53 55 P P 15 27 01.7 +1.0
baz=306
GKP **Gorka Klasztor** 78.61 330 *e*P P 15 27 01.6 +0.9
GKP LMZ LR 16 04 36.5
comp=Z,8μm,17.4s
GKP **Gorka Klasztor** 78.61 330 *e*P P 15 27 01.6 +0.9
GKP MLR MLR
comp=Z,8μm,17.4s
COP **Copenhagen** 78.63 333⇑*i*P P 15 27 02.2 +1.4
comp=Z,80nm,0.9s
comp=Z,4μm,17.0s
COP **Copenhagen** 78.63 333⇑*i*P P 15 27 02.2 +1.4
COP pmax pmax
comp=Z,80nm,0.9s
COP MLR MLR
comp=Z,4μm,17.0s
TLCR 78.75 318⇑*i*P P 15 27 03.1 +1.4
A28A **Rude Farm, Bot** 78.80 36 P P 15 27 02.9 +1.0
baz=314
CCUT **Cedar City** 78.82 52 *e*P P 15 27 02.5 -0.1
comp=Z,52nm,1.3s
KWP **Kalwaria Pacla** 78.82 325 *e*P P 15 27 02.6 +0.6
KWP *e*S S 15 36 59.8 +1.3
KWP LMZ LR 16 05 23.6
comp=Z,14μm,17.3s
KWP **Kalwaria Pacla** 78.82 325 *e*P P 15 27 02.6 +0.6
KWP *e*S S 15 36 59.8 +1.3
KWP MLR MLR
comp=Z,14μm,17.3s
MSU **Marysvale** 78.98 50 *e*P P 15 27 03.9 +0.5
MSU **Marysvale** 78.98 50 *e*P P 15 27 03.9 +0.5
BUR08 **Bucovina Ar. S** 78.98 322 *e*P P 15 27 03.3 +0.2
BURAR **Bucovina Array** 79.00 322⇓*i*P P 15 27 03.8 +0.7
BURAR **Bucovina Array** 79.00 322 P P 15 27 03.8 +0.7
GMRC **Granite Mounta** 79.00 55 P P 15 27 04.1 +0.7
baz=307
TESR **Tescani** 79.02 320⇓*i*P P 15 27 03.9 +0.8
TMUT **Trail Mountain** 79.09 49 *e*P P 15 27 04.4 +0.3
comp=Z,37nm,1.3s
CDAG **Cicekdag** 79.12 311 *i* P P 15 27 03.6 -0.4
CFR **Carcaliu** 79.12 319⇑*i*P P 15 27 04.3 +0.6
ANDN **Andirin** 79.15 309 *i* P P 15 27 05.0 +0.8
MUD **Monsted U'grnd** 79.16 335 *i* P P 15 27 04.1 +0.4
comp=Z,86nm,1.1s
MUD **Monsted U'grnd** 79.16 335 *i* P P 15 27 04.1 +0.4
MUD pmax pmax
comp=Z,86nm,1.1s
PFO **Pinyon Flats O** 79.16 56 P P 15 27 05.7 +1.4
baz=307
PFO **Pinyon Flats O** 79.16 56 *e*P P 15 27 05.2 +0.9
PFO pmax pmax
comp=Z,61nm,1.4s
PFO **Pinyon Flats O** 79.16 56 *e*P P 15 27 05.2 +0.9
comp=Z,61nm,1.4s
TPFO **Pinon Flats** 79.17 56 P P 15 27 06.3 +1.9
baz=307
RGN **Rugen** 79.18 332 *e*P P 15 27 05.2 +1.4
comp=Z,198nm,1.1s
LDFC **Landfair** 79.19 54 *e*P P 15 27 05.2 +0.8
comp=Z,60nm,1.3s
KAMA **Osmaniye** 79.19 308 *i* P P 15 27 04.5 +0.2
LCMT **Little Creek M** 79.22 52 *e*P P 15 27 05.0 +0.3
comp=Z,37nm,1.0s
MTPU **Mount Pierson** 79.26 51 *e*P P 15 27 06.4 +1.3
comp=Z,61nm,1.4s
P17A **Butcher Ranch,** 79.27 49 *e*P P 15 27 06.1 +1.3
comp=Z,53nm,1.0s
A29A **Manning Farm,** 79.29 36 P P 15 27 05.2 +0.6
baz=314
ODBI **Odobesti** 79.30 320⇓*i*P P 15 27 07.4 +2.7
VRI **Vrincioaia** 79.41 320⇓*i*P P 15 27 07.5 +2.2
VRI **Vrincioaia** 79.41 320 P P 15 27 07.5 +2.2
VRI pmax pmax
comp=Z,544nm,1.2s
TIRR **Tirgusor** 79.45 318⇑*i*P P 15 27 06.4 +0.9
TIRR **Tirgusor** 79.45 318 *e*P P 15 27 05.1 -0.4
TIRR pmax pmax
comp=Z,57nm,1.2s
TIRR **Tirgusor** 79.45 318 *e*P P 15 27 05.1 -0.4
comp=Z,57nm,1.2s
PLOR **Plostina** 79.46 320⇑*i*P P 15 27 06.0 +0.4
PLOR **Plostina** 79.46 320 P P 15 27 06.0 +0.4
BR131 **Keskin Array S** 79.50 312 *e*P P 15 27 05.7 -0.4
BRTR **Keskin Array B** 79.50 312 P P 15 27 05.9 -0.2
comp=Z,64nm,1.0s,baz=67,slow=3.2,SNR=129
BRTR LR LR 16 06 58.3
comp=Z,2μm,18.3s,baz=44,slow=39
BRTR **Keskin Array B** 79.50 312 P P 15 27 05.9 -0.2
BRTR pmax pmax
comp=Z,62nm,1.0s
BRTR MLR MLR
comp=Z,2μm,18.3s
KOLS **Kolonicke sedl** 79.51 324 *e*P P 15 27 06.6 +0.8
KOLS pmax pmax
comp=Z,41nm,1.0s
KOLS **Kolonicke sedl** 79.51 324 *e*P P 15 27 06.6 +0.8
KOLS *e*PP PP 15 30 07.7 +2.0
KOLS *e*S S 15 37 04.6 -1.3
KOLS *e*L L 16 05 32.2
B29A **Wagenman Farm,** 79.55 36 P P 15 27 06.6 +0.6
baz=314
RAR **Rarotonga** 79.55 126 LR LR 16 01 12.2
comp=Z,3μm,18.2s,baz=310,slow=35
HARR **Harsova** 79.55 318⇑*i*P P 15 27 06.9 +0.9
TLB **Topalu** 79.56 318⇓*i*P P 15 27 07.1 +1.0
BAR **Barrett** 79.57 57 *e*P P 15 27 07.7 +1.3
comp=Z,39nm,1.3s
GRER 79.60 319⇑*i*P P 15 27 09.6 +3.3
MONP2 **Monument Peak** 79.61 57 P P 15 27 08.1 +1.2
baz=307
SRU **San Rafael Swe** 79.62 49 *e*P P 15 27 06.9 +0.1
SRU pmax pmax
comp=Z,35nm,0.7s
SRU **San Rafael Swe** 79.62 49 *e*P P 15 27 06.9 +0.1
comp=Z,35nm,0.7s
STHS **Stebnicka Huta** 79.65 325 *e*P P 15 27 08.1 +1.5
STHS pmax pmax
comp=Z,39nm,1.0s
STHS **Stebnicka Huta** 79.65 325 *e*P P 15 27 08.1 +1.5
IRM **Iron Mountain** 79.71 55 P P 15 27 08.3 +1.1
baz=307
A30A **Hoffart Farm,** 79.71 36 P P 15 27 07.4 +0.5
baz=315
UZH **Uzhgorod** 79.72 324 *e*P P 15 27 05.8 -1.1
UZH *i* 15 27 08.6
UZH *e* 15 30 11.2
UZH *e*PPP PPP 15 31 54.0
UZH *e*S S 15 37 03.6 -4.3
UZH *i* PS PnS 15 38 00.0 +7.0
UZH MLR MLR
comp=N,14μm,16.0s
UZH MLR MLR
comp=E,16μm,16.0s
UZH MLR MLR
comp=Z,14μm,16.0s
K22A **Casper** 79.72 44 P P 15 27 07.8 +0.6
baz=311
K22A **Casper** 79.72 44 *e*P P 15 27 08.0 +0.7
comp=Z,75nm,1.5s
OJC **Ojcow** 79.74 326 *e*P P 15 27 07.4 +0.4
OJC *e*PP PP 15 30 08.9 +1.4
OJC *e*S S 15 37 07.8 -0.3
OJC LMZ LR 16 05 25.6
comp=Z,6μm,17.3s
OJC **Ojcow** 79.74 326 *e*P P 15 27 07.4 +0.4
OJC *e* 15 30 08.9
OJC *e*S S 15 37 07.8 -0.3
OJC MLR MLR
comp=Z,6μm,17.3s
OJC **Ojcow** 79.74 326 *e*P P 15 27 07.0 0.0
comp=Z,132nm,1.0s
BCAM **Yenicaga** 79.74 313 *i* P P 15 27 07.6 +0.2
ARCR **ARCALIA** 79.79 322⇑*i*P P 15 27 09.4 +2.1
AKO **Adana** 79.79 309 *i* P P 15 27 08.1 +0.5
BMR **Baia Mare** 79.80 323⇑*i*P P 15 27 08.9 +1.5
BC3 **Big Chuckawall** 79.81 56 P P 15 27 08.7 +0.9
baz=307
MDND **Maddock** 79.86 37 P P 15 27 08.1 +0.4
baz=314
MDND **Maddock** 79.86 37 P P 15 27 07.7 0.0
comp=Z,102nm,1.1s
ULM **Lac du Bonnet** 79.89 33 P P 15 27 08.0 +0.2
comp=Z,4.7nm,0.5s,baz=314,slow=7.7,SNR=8.4
ULM LR LR 16 02 13.9
comp=Z,768nm,21.8s,baz=336,slow=36
ULM **Lac du Bonnet** 79.89 33 P P 15 27 08.0 +0.2
ULM pmax pmax
comp=Z,5.0nm,0.5s
ULM MLR MLR
comp=Z,768nm,21.8s
ANTO **Ankara** 79.91 312 *e*P P 15 27 05.2 -3.0
ANTO pmax pmax
comp=Z,114nm,0.8s
ANTO **Ankara** 79.91 312 P P 15 27 08.8 +0.5
SNR=17
ANTO **Ankara** 79.91 312 *e*P P 15 27 05.2 -3.0
comp=Z,114nm,0.8s
CRVS **Cervenica-Dubn** 79.92 325 *e*P P 15 27 08.8 +0.8
CRVS *e*S S 15 37 09.9 -0.2
CRVS *e*SS SS 15 42 21.8 +3.1
CRVS **Cervenica-Dubn** 79.92 325 *e*P P 15 27 08.8 +0.8
BR231 **Keskin MP Arra** 79.94 312 *e*P P 15 27 06.9 -1.5
TRPA **Tarpa** 79.95 324⇓*e*P P 15 27 08.8 +0.7
IKP **In-Ko-Pah, Jac** 79.97 57 P P 15 27 10.4 +1.8
baz=307
ISR **Istrita** 80.00 319⇓*i*P P 15 27 10.2 +1.6
BTCH **Batrach** 80.02 307 *e*P P 15 27 09.9 +1.0
DOPR **Dopca** 80.03 321⇑*i*P P 15 27 09.8 +1.1
B30A **Myrvik Farm, E** 80.05 36 P P 15 27 09.0 +0.3
baz=315
MLR **Muntele Rosu** 80.06 320⇓*i*P P 15 27 09.8 +0.8
MLR **Muntele Rosu** 80.06 320 *e*P P 15 27 09.2 +0.2
MLR pmax pmax
comp=Z,58nm,1.3s
MLR **Muntele Rosu** 80.06 320 *e*P P 15 27 09.2 +0.2
comp=Z,58nm,1.3s
YURE **YUREGIR** 80.06 309 *i* P P 15 27 10.4 +1.4
NIE **Niedzica** 80.08 326 *e*P P 15 27 09.7 +0.8
NIE *e*PP PP 15 30 11.1 +0.7
NIE LMZ LR 16 06 26.2

comp=Z,8µm,16.8s
NIE Niedzica 80.08 326 *e*P **P 15 27 09.7 +0.8**
NIE *e* 15 30 11.1
NIE MLR MLR
comp=Z,8µm,16.8s
AKSY AKSARAY - Alti 80.09 311 *i* P **P 15 27 09.0 -0.2**
RSSD Black Hills 80.12 42 P **P 15 27 09.8 +0.3**
baz=312
RSSD Black Hills 80.12 42 *e*P **P 15 27 09.7 +0.2**
RSSD pmax pmax
comp=Z,44nm,1.4s
RSSD Black Hills 80.12 42 *e*P **P 15 27 09.7 +0.2**
comp=Z,44nm,1.4s
U15A North Rim 80.19 52 *e*P **P 15 27 10.7 +0.6**
comp=Z,166nm,1.9s
YAYL Yayladag 80.25 308 *i* P **P 15 27 08.5 -1.6**
KKUL Konya-Kulu 80.28 312 *i* P **P 15 27 10.9 +0.6**
KFRA Kufra 80.31 307 *e*P **P 15 27 11.6 +1.2**
SECR 80.31 320⇑ *i*P **P 15 27 12.1 +1.9**
O20A White River Ci 80.34 47 P **P 15 27 11.6 +0.9**
baz=310
O20A White River Ci 80.34 47 *e*P **P 15 27 11.2 +0.5**
comp=Z,36nm,1.1s
Y12C Blythe 80.37 55 P **P 15 27 12.1 +1.4**
baz=308
Y12C Blythe 80.37 55 *e*P **P 15 27 11.3 +0.6**
comp=Z,53nm,1.3s
CJR Cluj-Napoca 80.42 322⇓ *i*P **P 15 27 12.5 +1.7**
ARNB Al Arnab 80.44 308 *e*P **P 15 27 12.1 +0.9**
C30A Mose, Pekin 80.50 36 P **P 15 27 11.7 +0.5**
baz=315
DED Mersin 80.50 309 *i* P **P 15 27 11.1 -0.3**
RAC Raciborz 80.55 327 *e*P **P 15 27 12.3 +1.0**
RAC *e*S **S 15 37 19.7 +3.1**
RAC MLR MLR
comp=Z,9µm,18.0s
VOIR 80.56 320⇑ *i*P **P 15 27 13.7 +2.1**
A32A Rocking H Ranc 80.57 35 P **P 15 27 11.9 +0.4**
baz=316
GLA Glamis 80.59 56 P **P 15 27 12.9 +0.9**
baz=308
GLA Glamis 80.59 56 *e*P **P 15 27 12.1 +0.1**
GLA pmax pmax
comp=Z,68nm,1.3s
GLA Glamis 80.59 56 *e*P **P 15 27 12.1 +0.1**
comp=Z,68nm,1.3s
ROOS tl_alroos 80.62 306 *e*P **P 15 27 12.3 +0.2**
KERG Konya-Eregli 80.64 310 *i* P **P 15 27 11.8 -0.4**
KAND Kocaeli-Kandir 80.65 315 *i* P **P 15 27 11.1 -0.9**
LANS Liptovska Anna 80.66 326 *e*P **P 15 27 13.9 +1.9**
LANS Liptovska Anna 80.66 326 *e*P **P 15 27 13.9 +1.9**
KECS Kecovo 80.67 325 *e*P **P 15 27 13.4 +1.4**
KECS pmax pmax
comp=Z,15nm,0.9s
KECS Kecovo 80.67 325 *e*P **P 15 27 13.4 +1.4**
KECS *e*PP **PP 15 30 16.3 +1.1**
BIDA Albida 80.74 307 *e*P **P 15 27 09.3 -3.5**
OKC Ostrava-Krasne 80.75 327 *e*P **P 15 27 12.7 +0.3**
OKC *e*S **S 15 37 19.1 +0.3**
OKC AMS AMS 16 06 10.0
comp=Z,8µm,17.5s
OKC Ostrava-Krasne 80.75 327 *e*P **P 15 27 12.7 +0.3**
OKC *e* 15 37 19.1
OKC MLR MLR
comp=Z,8µm,17.5s
C31A Landman Farms, 80.79 36 P **P 15 27 13.1 +0.3**
baz=315
DRGR 80.80 323⇓ *i*P **P 15 27 13.6 +0.7**
KSP Ksiaz 80.80 328 *e*P **P 15 27 13.1 +0.4**
KSP *e*S **S 15 37 20.4 +1.1**
KSP LMZ LR 16 06 57.0
comp=Z,7µm,18.3s
KSP Ksiaz 80.80 328 *e*P **P 15 27 13.1 +0.4**
KSP *e*S **S 15 37 20.4 +1.1**
KSP MLR MLR
comp=Z,7µm,18.3s
ARR Arges 80.82 321⇑ *i*P **P 15 27 15.0 +2.0**
PRD Provadia 80.83 318 P **P 15 27 13.0 +0.1**
PV09 Paradox Valley 80.85 49 *e*P **P 15 27 14.9 +1.3**
HAWK Haweek 80.99 306 *e*P **P 15 27 14.8 +0.7**
PV10 Paradox Valley 80.99 49 *e*P **P 15 27 16.1 +1.8**
A33A Warroad 81.06 34 P **P 15 27 14.6 +0.5**
baz=317
MORC Moravsky Berou 81.06 327⇑ *i*P **P 15 27 15.4 +1.3**
MORC Moravsky Berou 81.06 327 *e*P **P 15 27 14.5 +0.3**
MORC pmax pmax
comp=Z,281nm,1.0s
MORC Moravsky Berou 81.06 327 *e*P **P 15 27 14.5 +0.3**
comp=Z,281nm,1.0s
PV04 Paradox Valley 81.06 49 *e*P **P 15 27 15.6 +1.1**
PV05 Paradox Valley 81.14 49 *e*P **P 15 27 15.9 +0.9**
URZ Urewera 81.14 153 LR LR 15 58 28.9
comp=Z,2µm,21.3s,baz=356,slow=32
F29A Eureka 81.15 38 P **P 15 27 15.6 +0.9**
baz=314
DPC Dobruska-Polom 81.16 328 *e*P **P 15 27 15.3 +0.6**
DPC *e*PP **PP 15 30 20.8 +1.5**
DPC *e*S **S 15 37 22.7 -0.5**
DPC AMS AMS 16 08 20.0
comp=Z,6µm,14.9s
DPC Dobruska-Polom 81.16 328 *e*P **P 15 27 15.3 +0.6**
DPC *e* 15 30 20.8
DPC *e* 15 37 22.7
DPC MLR MLR
comp=Z,6µm,14.9s
KRLC Kraliky 81.17 328 *i* P **P 15 27 15.4 +0.7**
KRLC Kraliky 81.17 328 *i* P **P 15 27 15.4 +0.7**
UPC Upice 81.17 328⇓ *e*P **P 15 27 14.9 +0.2**
UPC *e*PP **PP 15 30 18.0 -1.3**
UPC *e*S **S 15 37 21.2 -2.0**
UPC AMS AMS 16 08 50.0
comp=Z,8µm,14.5s
UPC Upice 81.17 328 *e*P **P 15 27 14.9 +0.2**
UPC *e* 15 30 18.0
UPC *e* 15 37 21.2
UPC MLR MLR
comp=Z,8µm,14.5s
N23A Red Feather La 81.19 45 P **P 15 27 16.7 +1.3**
baz=311
N23A Red Feather La 81.19 45 *e*P **P 15 27 16.4 +1.1**
comp=Z,72nm,1.3s
PHWY Pilot Hill 81.20 45 *e*P **P 15 27 15.6 +0.2**
comp=Z,52nm,1.7s
LOT Lotru 81.21 321⇑ *i*P **P 15 27 14.5 -0.6**
KIZK Mersin 81.22 309 *i* P **P 15 27 15.6 +0.4**
BIGH Upper Bighouse 81.22 343 *e*P **P 15 27 15.9 +1.2**
BIGH AMS AMS 16 05 12.2
comp=Z,3µm,22.6s
MARH Ras Al Marh 81.24 306 *e*P **P 15 27 16.5 +0.8**
Y14A Wickenburg 81.26 54 *e*P **P 15 27 16.1 +0.5**
comp=Z,129nm,1.0s
AGMN Agassiz Nation 81.31 35 P **P 15 27 15.5 +0.1**
baz=317
AGMN Agassiz Nation 81.31 35 *e*P **P 15 27 15.7 +0.3**
D31A Mcclaflin, Tow 81.33 37 P **P 15 27 16.1 +0.6**
baz=316
WUAZ Wupatki 81.33 52 P **P 15 27 17.4 +1.4**
baz=309
WUAZ Wupatki 81.33 52 *e*P **P 15 27 16.6 +0.6**
comp=Z,32nm,1.0s
C32A Crookston 81.34 35 P **P 15 27 16.0 +0.4**
baz=316
PSZ Piszkesteto 81.35 325⇓ *i*P **P 15 27 17.9 +2.1**
PSZ Piszkesteto 81.35 325 *e*P **P 15 27 15.8 0.0**
PSZ pmax pmax
comp=Z,105nm,1.0s
PSZ Piszkesteto 81.35 325 *e*P **P 15 27 15.8 0.0**
comp=Z,105nm,1.0s
PSZ Piszkesteto 81.35 325⇑ *e*P **P 15 27 16.3 +0.5**
ZALF Zalf 81.36 305 *e*P **P 15 27 17.7 +1.6**
VYHS Vyhne 81.42 326 *e*P **P 15 27 17.0 +0.9**
VYHS pmax pmax
comp=Z,394nm,3.0s
VYHS Vyhne 81.42 326 *e*P **P 15 27 17.0 +0.9**
VYHS *e*PP **PP 15 30 21.8 +0.3**
VYHS *e*S **S 15 37 25.5 -0.4**
VYHS *e*SS **SS 15 42 47.5 +6.4**
VYHS *e*L L 16 07 21.8
PV01 Paradox Valley 81.43 49 *e*P **P 15 27 17.2 +0.6**
B33A Robert and Kas 81.45 35 P **P 15 27 16.6 +0.4**
baz=317
113A Mohawk Valley, 81.47 56 *e*P **P 15 27 17.5 +0.9**
comp=Z,45nm,1.4s
G29A Hoven 81.54 39 P **P 15 27 17.1 +0.3**
baz=314
F30A Leola 81.55 38 P **P 15 27 17.2 +0.4**
baz=315
SZH Strazhica 81.58 318 P **P 15 27 17.1 +0.1**
E31A Nome 81.60 37 P **P 15 27 17.4 +0.3**
baz=315
QASN Qassioun 81.68 306 *e*P **P 15 27 15.8 -2.0**
SIRR Siria 81.69 323⇑ *i*P **P 15 27 18.7 +1.2**
SMCO Snowmass 81.71 47 *e*P **P 15 27 20.6 +2.3**
B34A Aery, Baudette 81.72 34 P **P 15 27 17.7 +0.1**
baz=317
C33A Trail 81.74 35 P **P 15 27 18.2 +0.5**
baz=317
BOLV Bolvadin 81.75 312 *i* P **P 15 27 18.4 +0.3**
BRG Berggiesshubel 81.75 330 *i* P **P 15 27 18.8 +1.0**
comp=Z,48nm,1.0s
BRG PP **PP 15 30 21.0 -3.1**
BRG S **S 15 37 30.0 +0.8**
BRG SS **SS 15 42 36.0 -10**
BRG *e*PKKP **PKKPbc 15 45 50.7 +2.1**
comp=Z,5.6nm,1.4s
comp=N,3µm,13.1s
comp=E,3µm,14.1s
comp=Z,8µm,14.8s
BRG Berggiesshubel 81.75 330 *i* P **P 15 27 18.8 +1.0**
BRG 15 30 21.0
BRG S **S 15 37 30.0 +0.8**
BRG pmax pmax
comp=Z,48nm,1.0s
BRG MLR MLR
comp=N,3µm,13.1s
BRG MLR MLR
comp=E,3µm,14.1s
BRG MLR MLR
comp=Z,8µm,14.8s
PVCC Panska Ves 81.76 329⇓ *i*P **P 15 27 18.6 +0.8**
PVCC *e*S **S 15 37 29.9 +0.6**
PVCC AMS AMS 16 08 40.0
comp=Z,8µm,15.3s
PVCC Panska Ves 81.76 329 *i* P **P 15 27 18.6 +0.8**
PVCC *e* 15 37 29.9
PVCC MLR MLR
comp=Z,8µm,15.3s
CLL Collm 81.80 330⇓ *i*P **P 15 27 18.3 +0.3**
comp=Z,95nm,1.0s
CLL *e*Pmax 15 27 21.0
CLL *e*Pmax 15 27 21.0
CLL *i* 15 27 31.5
CLL *e*PP **PP 15 30 22.0 -2.5**
comp=Z,25nm,1.4s
CLL *e*S **S 15 37 29.0 -0.6**
CLL *e*SS **SS 15 42 48.0 +1.5**
CLL *e* 15 43 54.0
CLL *e*SSS SSS 15 45 54.0
CLL *e*Lmax 16 08 21.0
CLL *e*Lmax 16 08 21.0
CLL Collm 81.80 330⇓ *i*P **P 15 27 18.3 +0.3**
CLL *e*S **S 15 37 29.0 -0.6**
CLL pmax pmax
comp=Z,95nm,1.0s
CLL Collm 81.80 330 *e*P **P 15 27 17.7 -0.2**
comp=Z,80nm,0.9s
VRAC Vranov 81.82 327⇑ *i*P **P 15 27 19.6 +1.4**
ERMK Ermenek 81.88 310 *i* P **P 15 27 18.2 -0.8**
SALA Sala 81.88 305 *e*P **P 15 27 19.0 0.0**
F31A Hecla 81.91 38 P **P 15 27 18.8 +0.1**
baz=315
BRBR Barbar 81.97 306 *e*P **P 15 27 20.6 +1.1**
X16A Lo Mia Camp, P 81.98 53 *e*P **P 15 27 20.1 +0.6**
comp=Z,32nm,1.3s
SMOL Smolenice 82.04 326 *e*P **P 15 27 21.7 +2.4**
SMOL Smolenice 82.04 326 *e*P **P 15 27 21.7 +2.4**
MVCO Mesa Verde 82.06 49 P **P 15 27 21.0 +1.1**
baz=310
MVCO Mesa Verde 82.06 49 *e*P **P 15 27 20.5 +0.5**
comp=Z,121nm,1.6s
BUD Budapest 82.07 325⇓ *e*P **P 15 27 21.4 +1.9**
EDRB Edirne 82.09 317 P **P 15 27 18.6 -1.1**
EDRB Edirne 82.09 317 P **P 15 27 18.6 -1.1**
ISCO Idaho Springs 82.10 46 P **P 15 27 21.3 +1.1**
baz=311
ISCO Idaho Springs 82.10 46 *e*P **P 15 27 21.0 +0.8**
ISCO pmax pmax
comp=Z,15nm,0.9s
ISCO Idaho Springs 82.10 46 *e*P **P 15 27 20.9 +0.8**
comp=Z,15nm,0.9s
GOPC GO Pecny, Ondr 82.14 329 *e*PP PP 15 30 29.9 +2.6
GOPC AMS AMS 16 07 50.0
comp=Z,7µm,16.2s
BZS Buzias 82.17 322⇑ *i*P **P 15 27 20.8 +0.8**
PRU Pruhonice 82.18 329⇓ *i*P **P 15 27 20.7 +0.7**
PRU *ex* x 15 27 32.5
PRU *e*PP **PP 15 30 29.1 +1.4**
PRU *e*S **S 15 37 28.4 -5.2**
PRU AMS AMS 16 08 00.0
comp=Z,7µm,14.3s
PRU Pruhonice 82.18 329⇓ *i*P **P 15 27 20.7 +0.7**
PRU *e* 15 30 29.1
PRU *e* 15 37 28.4
PRU MLR MLR
comp=Z,7µm,14.3s
B35A Bob, Littlefor 82.23 34 P **P 15 27 20.5 +0.2**
baz=318
DRUM Mains of Drumt 82.26 341 AMS AMS 16 08 01.2
comp=Z,2µm,18.4s
TREC Trest 82.31 328⇓ *e*P **P 15 27 20.7 0.0**
TREC AMS AMS 16 08 30.0
comp=Z,8µm,14.5s
TREC Trest 82.31 328 *e*P **P 15 27 20.7 0.0**
TREC MLR MLR
comp=Z,8µm,14.5s
KAC Achnashellach 82.44 343⇑ *e*P **P 15 27 21.9 +0.6**
D34A Park Rapids 82.50 35 P **P 15 27 21.8 0.0**
baz=317
E33A Westby DABS, E 82.54 36 P **P 15 27 22.2 +0.2**
baz=317
SUSD Miller 82.56 39 P **P 15 27 22.5 +0.4**
baz=315
214A Organ Pipe Nat 82.61 56 *e*P **P 15 27 23.3 +0.7**
comp=Z,61nm,1.1s
C35A Jirik Farms, M 82.61 34 P **P 15 27 21.9 -0.4**
baz=318
KPL Plockton 82.67 343⇑ *e*P **P 15 27 23.9 +1.5**
KPL AMS AMS 16 13 14.3
comp=Z,2µm,19.1s
MPEP Malo Peshtene 82.68 320 P **P 15 27 22.7 0.0**
CSS Mathiatis 82.69 308 P **P 15 27 22.4 -0.6**
CSS Mathiatis 82.69 308 *e*P **P 15 27 23.2 +0.3**
comp=Z,15nm,0.9s
CSS LR LR
comp=Z,1µm,20.0s
G32A Webster 82.71 38 P **P 15 27 23.0 +0.1**
baz=316
MDVR Moldovita 82.72 322⇑ *i*P **P 15 27 23.6 +0.6**
EDU Dundee 82.72 341 *e*P **P 15 27 23.6 +0.9**
S22A 4UR Ranch, Cre 82.73 48 P **P 15 27 25.0 +1.5**
baz=311
S22A 4UR Ranch, Cre 82.73 48 *e*P **P 15 27 24.4 +0.9**
comp=Z,92nm,1.6s
KSB Sheil Bridge 82.73 343⇑ *e*P **P 15 27 24.0 +1.3**
KESN Edirne-Kesan 82.82 316 *i* P **P 15 27 24.1 +0.1**
DEMI Demirci 82.85 314 *i* P **P 15 27 24.1 +0.3**
NKC Novy Kostel 82.86 330 *i* P **P 15 27 24.2 +0.6**
NKC *ex* x 15 27 37.1
NKC *e*S **S 15 37 40.7 +0.1**
NKC AMS AMS 16 08 00.0
comp=Z,7µm,15.0s
NKC Novy Kostel 82.86 330 *i* P **P 15 27 24.2 +0.6**
NKC *e* 15 37 40.7
NKC MLR MLR
comp=Z,7µm,15.0s
MOX Moxa 82.87 331 P **P 15 27 24.4 +0.8**
MOX pmax pmax
comp=Z,48nm,1.2s
F33A 5 Mile Ranch, 82.88 37 P **P 15 27 24.2 +0.4**
baz=317
Q24A Divide 82.92 46 P **P 15 27 25.3 +0.8**
baz=312
Q24A Divide 82.92 46 *e*P **P 15 27 24.8 +0.3**
comp=Z,14nm,1.0s
KDZ Kurdzhali 82.96 317 P **P 15 27 25.0 +0.8**
PGB Panagyurishte 83.01 319 P **P 15 27 24.0 -0.6**
BALY Balya 83.02 315 *i* P **P 15 27 24.4 -0.3**
I31A Royce, Wessing 83.07 39 P **P 15 27 25.0 +0.2**
baz=315
J30A Dallas 83.07 40 P **P 15 27 25.4 +0.5**
baz=315
C36A Pine Crest Far 83.08 34 P **P 15 27 24.6 -0.2**
baz=319
ALN Alexandroupoli 83.12 317 P **P 15 27 24.9 -0.2**
ALN Alexandroupoli 83.12 317 P **P 15 27 24.9 -0.2**
ALN Alexandroupoli 83.12 317 P **P 15 27 24.9 -0.2**
ESY Stoneypath 83.17 341 *e*P **P 15 27 26.0 +0.9**
CONA Conrad Observa 83.18 327 *i* PcP **P 15 27 26.1 +0.8**
comp=Z,47nm,1.0s,SNR=38
CONA Conrad Observa 83.18 327 *i* pP **P 15 27 26.1 +0.8**
comp=Z,47nm,1.0s,SNR=38
KULA Kula-Manisa 83.23 313 P **P 15 27 25.7 -0.1**
KULA Kula-Manisa 83.23 313 P **P 15 27 25.7 -0.1**
KHC Kasperske Hory 83.24 329 *e*P **P 15 27 25.7 +0.1**
KHC *ex* x 15 27 34.5
KHC *e*PP **PP 15 30 32.0 -4.4**
KHC *e*S **S 15 37 42.1 -2.5**
KHC AMS AMS 16 11 20.0
comp=Z,7µm,14.6s
KHC Kasperske Hory 83.24 329 *e*P **P 15 27 25.7 +0.1**
KHC *e* 15 27 34.5
KHC *e* 15 30 32.0
KHC *e* 15 37 42.1
KHC MLR MLR
comp=Z,7µm,14.6s
KHC Kasperske Hory 83.24 329 *e*P **P 15 27 25.5 -0.1**
comp=Z,25nm,0.9s
H32A Carlson Farm, 83.28 38 P **P 15 27 26.0 +0.2**
baz=316
MANT Manisa 83.31 313 *i* P **P 15 27 24.8 -1.6**
RZN Rozhen 83.31 318 P **P 15 27 26.8 +0.5**
OGNE Ogallala 83.36 43 P **P 15 27 26.8 +0.3**
baz=313
EAB Aberfoyle 83.38 342⇑ *e*P **P 15 27 27.3 +1.2**
C37A Embarrass 83.39 33 P **P 15 27 26.0 -0.3**
baz=319
F34A Alexandria 83.41 36 P **P 15 27 26.7 +0.2**
baz=317
GEC2 GERESS Array S 83.41 328 *e*P **P 15 27 26.5 -0.1**
GEC2 pmax pmax
comp=Z,33nm,0.9s
GEC2 GERESS Array S 83.41 328 *e*P **P 15 27 26.5 -0.1**
comp=Z,32nm,0.9s
GERES GERESS Array B 83.41 328 P **P 15 27 26.1 -0.5**
comp=Z,25nm,0.8s,baz=39,slow=5.1,SNR=126
GERES PP **PP 15 30 36.5 -1.4**
comp=Z,4.1nm,1.0s,baz=46,slow=7.6,SNR=4.1
GERES LR LR 16 08 00.9
comp=Z,6µm,18.9s,baz=19,slow=38
GERES GERESS Array B 83.41 328 P **P 15 27 26.1 -0.5**
GERES 15 30 36.5
GERES pmax pmax
comp=Z,25nm,0.9s
GERES pmax pmax
comp=Z,4.0nm,1.0s
GERES MLR MLR
comp=Z,6µm,18.9s
GEA0 GERESS Array S 83.42 328 *e*P **P 15 27 25.8 -0.8**
K30A Basset 83.46 41 P **P 15 27 27.3 +0.4**
baz=315
VTS Vitosha 83.49 319 P **P 15 27 27.4 +0.2**
VTS Vitosha 83.49 319⇓ *i*P **P 15 27 28.5 +1.3**
VTS Vitosha 83.49 319 *e*P **P 15 27 27.1 0.0**
VTS pmax pmax
comp=Z,77nm,1.0s
VTS Vitosha 83.49 319 P **P 15 27 27.6 +0.4**
VTS Vitosha 83.49 319 *e*P **P 15 27 27.1 0.0**
comp=Z,77nm,1.0s
H33A Prehn Over Nor 83.50 38 P **P 15 27 27.3 +0.3**
baz=316
SDCO Great Sand Dun 83.52 47 P **P 15 27 28.8 +1.2**
baz=312
SDCO Great Sand Dun 83.52 47 *e*P **P 15 27 28.2 +0.7**
comp=Z,54nm,1.4s
EYMN Ely 83.53 33 P **P 15 27 27.2 +0.1**
baz=320
EYMN Ely 83.53 33 *e*P **P 15 27 26.9 -0.2**
comp=Z,23nm,1.0s
I32A Karley and Nic 83.61 39 P **P 15 27 27.7 +0.2**
baz=316
WTSB Winterswijk 83.62 334 *e*P **P 15 27 28.0 +0.6**
comp=Z,121nm,1.5s
G34A Benson 83.63 37 P **P 15 27 28.0 +0.3**
baz=317
SMTH Samothraki Isl 83.70 316 P **P 15 27 27.2 -0.9**
SMTH Samothraki Isl 83.70 316 *e*P **P 15 27 27.2 -0.9**
D37A Cotton 83.71 34 P **P 15 27 28.0 0.0**
baz=319
TUC Tucson 83.72 54 P **P 15 27 29.6 +1.2**
baz=309
TUC Tucson 83.72 54 *e*P **P 15 27 29.2 +0.7**
TUC pmax pmax
comp=Z,61nm,1.8s
TUC Tucson 83.72 54 *e*P **P 15 27 29.2 +0.7**
comp=Z,61nm,1.8s
PGBU Glenifferbraes 83.76 342 AMS AMS 16 09 52.0
comp=Z,2µm,15.2s
GRFO Grafenberg 83.78 330 *e*P **P 15 27 28.7 +0.4**
GRFO pmax pmax
comp=Z,102nm,1.0s
GRFO Grafenberg 83.78 330 *e*P **P 15 27 28.7 +0.4**
comp=Z,102nm,1.0s
C38A Sawbill Land. 83.80 33 P **P 15 27 28.4 0.0**
baz=320
E36A McGregor 83.81 35 P **P 15 27 28.3 -0.2**
baz=318
ARSA Arzberg 83.84 326 *e*PcP **P 15 27 29.1 +0.4**
comp=Z,38nm,1.4s,SNR=13
ARSA Arzberg 83.84 326 *e*pP **P 15 27 29.1 +0.4**
comp=Z,38nm,1.4s,SNR=13
BEHE Becsehely 83.86 325 *e*P **P 15 27 26.0 -2.8**
ESK Eskdalemuir 83.86 341 *e*P **P 15 27 29.4 +0.8**
ESK AMB AMB 15 27 31.3
comp=Z,43nm,1.7s
ESK AMS AMS 16 11 49.2
comp=Z,3µm,18.5s
ESK Eskdalemuir 83.86 341 *e*P **P 15 27 29.8 +1.2**
ESK pmax pmax
comp=Z,121nm,1.7s
ESK Eskdalemuir 83.86 341 *e*P **P 15 27 29.8 +1.2**
comp=Z,121nm,1.7s
KAVA Kavala 83.90 317 P **P 15 27 29.2 +0.1**
KAVA Kavala 83.90 317 *e*P **P 15 27 29.2 +0.1**
MMB Musomiste 83.91 318 P **P 15 27 29.4 +0.2**
I33A Coleman 83.93 38 P **P 15 27 29.7 +0.4**
baz=316
MOA Molln 83.94 327 *i* PcP **P 15 27 29.4 +0.3**
comp=Z,38nm,1.2s,SNR=15
MOA Molln 83.94 327 *i* pP **P 15 27 29.4 +0.3**
comp=Z,38nm,1.2s,SNR=15
K31A O'Neill 83.95 40 P **P 15 27 30.0 +0.6**
baz=315
ECK Cauldkaine Hil 83.96 341 *e*P **P 15 27 30.0 +0.9**
H34A Spellman Lake, 83.98 37 P **P 15 27 30.0 +0.5**
baz=316
NVR Nevrokopi 84.01 318 P **P 15 27 29.8 +0.1**
NVR Nevrokopi 84.01 318 P **P 15 27 29.8 +0.1**
RPZ Rata Peaks 84.05 159 LR LR 15 58 44.5
comp=Z,2µm,20.2s,baz=330,slow=31
DIVS Divibare 84.06 322 P **P 15 27 29.6 -0.4**
KKB Krupnik 84.06 319 P **P 15 27 30.4 +0.5**
PPT Papeete 84.09 117 LR LR 15 58 33.7
comp=Z,3µm,20.4s,baz=312,slow=31
PPT2 Papeete2 84.10 117 *e*S **S 15 37 51.4 -2.6**
comp=Z,3µm,33.0s
PPT2 Papeete2 84.10 117 *e*LR LR 15 53 49.6
comp=Z,5µm,21.8s,baz=310
PRK Paraskevi 84.12 315 P **P 15 27 30.6 +0.4**
PRK Paraskevi 84.12 315 P **P 15 27 30.6 +0.4**
PRK Paraskevi 84.12 315 P **P 15 27 30.6 +0.4**
AKAS Kas 84.18 311 *i* P **P 15 27 29.5 -1.2**
F36A Milaca 84.18 35 P **P 15 27 30.1 -0.3**
baz=318
G35A Watkins 84.20 36 P **P 15 27 31.1 +0.6**
baz=318
L31A Butterfield Fa 84.22 41 P **P 15 27 31.0 +0.2**
baz=315
ECSD EROS Data Cent 84.25 38 P **P 15 27 31.0 +0.2**
baz=316
ECSD EROS Data Cent 84.25 38 *e*P **P 15 27 30.6 -0.2**
comp=Z,36nm,1.4s
LIA Limnos Island 84.29 316 P **P 15 27 30.6 -0.5**
LIA Limnos Island 84.29 316 P **P 15 27 30.6 -0.5**
SRS Serrai 84.32 318 P **P 15 27 31.2 0.0**
SRS Serrai 84.32 318 *e*P **P 15 27 31.2 0.0**

SRS Serrai 84.32 318 eP P 15 27 31.2 0.0
KSCO Kaye Shedlock' 84.34 45 eP P 15 27 31.0 -0.5
comp=Z,121nm,1.5s
SIGR SIGRI 84.38 315 P P 15 27 31.2 -0.3
SIGR SIGRI 84.38 315 eP P 15 27 31.2 -0.3
BBO1 Bothel 84.39 340⇑ eP P 15 27 32.8 +1.5
I34A Hadley 84.40 38 P P 15 27 32.0 +0.4
baz=317
H35A Sunnyside Ranc 84.42 37 P P 15 27 32.1 +0.4
baz=318
GMK Mull of Kintyr 84.45 342⇑ eP P 15 27 32.8 +1.2
KESW Keswick, Cumbr 84.48 340 eP P 15 27 32.7 +1.0
KESW AMS AMS 16 08 31.6
comp=Z,4µm,18.0s
PERS Pernice 84.49 326 i P P 15 27 31.9 -0.2
PERS i PP PP 15 30 49.8 +3.2
PERS eS S 15 37 54.2 -3.0
PERS eSS SS 15 43 42.7 +16
SOKA Soboth 84.49 326 i pP P 15 27 32.1 +0.1
comp=Z,41nm,0.9s,SNR=42
SOKA Soboth 84.49 326 i pP P 15 27 32.1 +0.1
comp=Z,41nm,0.9s,SNR=42
T25A Trinidad 84.57 47 P P 15 27 33.8 +1.0
baz=312
T25A Trinidad 84.57 47 eP P 15 27 33.0 +0.1
comp=Z,35nm,0.9s
OUR Ouranopolis 84.65 317 P P 15 27 32.7 -0.2
OUR Ouranopolis 84.65 317 eP P 15 27 32.7 -0.2
OUR Ouranopolis 84.65 317 eP P 15 27 32.7 -0.2
SOH Sokhos 84.65 318 P P 15 27 32.3 -0.7
SOH Sokhos 84.65 318 eP P 15 27 32.3 -0.7
SOH Sokhos 84.65 318 eP P 15 27 32.3 -0.7
KNT Kendrikon 84.66 318 P P 15 27 31.5 -1.5
KNT Kendrikon 84.66 318 P P 15 27 31.5 -1.5
KNT Kendrikon 84.66 318 P P 15 27 31.5 -1.5
GAL1 Galloway 84.66 341⇑ eP P 15 27 33.5 +0.8
GAL1 AMB AMB 15 27 34.5
comp=Z,47nm,1.0s
GAL1 AMS AMS 16 08 58.3
comp=Z,1µm,23.0s
ZEY ˙zmir 84.67 314 i P P 15 27 32.9 -0.2
LAZ Ladron 84.72 51 eP P 15 27 36.2 +2.6
VAY Valandovo 84.72 319 P P 15 27 33.1 -0.1
VAY Valandovo 84.72 319 i P P 15 27 33.5 +0.3
VAY Valandovo 84.72 319 eP P 15 27 33.1 -0.1
VAY Valandovo 84.72 319 eP P 15 27 33.1 -0.1
ANMO Albuquerque 84.79 50 P P 15 27 35.2 +1.2
baz=311
ANMO Albuquerque 84.79 50 eP P 15 27 34.5 +0.5
ANMO pmax pmax
comp=Z,59nm,1.3s
ANMO MLR MLR
comp=Z,1µm,19.0s
ANMO Albuquerque 84.79 50 eP P 15 27 34.5 +0.5
comp=Z,59nm,1.3s
ANMO LR LR
comp=Z,1µm,19.0s
CHOS Chios island 84.83 315 P P 15 27 33.6 -0.3
CHOS Chios island 84.83 315 P P 15 27 33.6 -0.3
OBKA Obir 84.84 326 i PcP P 15 27 33.5 -0.3
comp=Z,11nm,0.8s,SNR=5.8
OBKA Obir 84.84 326 i P P 15 27 33.5 -0.3
comp=Z,11nm,0.8s,SNR=5.8
SMG Samos 84.84 314 P P 15 27 33.4 -0.5
SMG Samos 84.84 314 P P 15 27 33.4 -0.5
SKO Skopje 84.86 320 P P 15 27 35.5 +1.6
SKO Skopje 84.86 320 i P P 15 27 34.9 +1.0
SKO Skopje 84.86 320 eP P 15 27 35.5 +1.6
SKO Skopje 84.86 320 eP P 15 27 35.5 +1.6
HGN Heimansgroeve 84.92 334 eP P 15 27 34.7 +0.7
comp=Z,91nm,1.3s
HGN Heimansgroeve 84.92 334 eS S 15 38 02.6 +1.5
HGN eSS SS 15 44 14.6 +42
PLG Polygyros 84.92 318 P P 15 27 34.1 -0.2
PLG Polygyros 84.92 318 P P 15 27 34.1 -0.2
PLG Polygyros 84.92 318 P P 15 27 34.1 -0.2
BDRM Kayabasi 84.92 313 i P P 15 27 34.7 +0.4
PLE Pljevlja 84.92 322⇑ iP P 15 27 33.8 -0.6
KBA Koelnbreinsper 84.93 327 i PcP P 15 27 33.9 -0.5
comp=Z,21nm,0.9s,SNR=12
KBA Koelnbreinsper 84.93 327 i P P 15 27 33.9 -0.5
comp=Z,21nm,0.9s,SNR=12
HORT Hortiatis 84.95 318 P P 15 27 34.5 0.0
HORT Hortiatis 84.95 318 P P 15 27 34.5 0.0
I35A Creekview Farm 84.97 37 P P 15 27 34.6 +0.1
baz=318
BEBN Eben Emael 84.98 334 P P 15 27 35.4 +1.1
comp=Z,24nm,1.2s
SPMN Marine on St. 84.99 35 eP P 15 27 35.8 +1.3
IVA Berane 85.00 321⇑ iP P 15 27 34.7 0.0
MEM Membach 85.02 334 P P 15 27 35.1 +0.6
comp=Z,42nm,1.4s
MOZS Mozjanca 85.05 326 eP P 15 27 33.8 -1.0
GRG Griva 85.07 319 P P 15 27 34.8 -0.3
GRG Griva 85.07 319 eP P 15 27 34.8 -0.3
GRG Griva 85.07 319 eP P 15 27 34.8 -0.3
ARG Arkhangelos 85.08 312 P P 15 27 36.3 +1.2
ARG Arkhangelos 85.08 312 P P 15 27 36.3 +1.2
ARG Arkhangelos 85.08 312 P P 15 27 36.3 +1.2
LPM Los Pinos Moun 85.09 51 eP P 15 27 36.1 +0.6
PAIG Paliouri 85.10 317 P P 15 27 34.3 -0.9
PAIG Paliouri 85.10 317 eP P 15 27 34.3 -0.9
PAIG Paliouri 85.10 317 eP P 15 27 34.3 -0.9
BGNE Belgrade 85.13 41 P P 15 27 35.3 0.0
baz=316
MYKA Terra Mystica 85.14 327 i PcP P 15 27 35.3 -0.1
comp=Z,14nm,0.6s,SNR=8.7
MYKA Terra Mystica 85.14 327 i PcP P 15 27 35.3 -0.1
comp=Z,14nm,0.6s,SNR=8.7
PVY Plav 85.17 321⇑ iP P 15 27 35.6 0.0
LJU Ljubljana 85.20 326 i P P 15 27 34.4 -1.1
LJU ePP PP 15 30 55.0 +2.6
LJU eS S 15 37 57.7 -6.6
BNM Barren Site 85.20 51 eP P 15 27 35.0 -1.1
UPM Unac-Piva 85.26 322⇑ iP P 15 27 35.5 -0.6
WIM Isle of Man 85.30 341 eP P 15 27 37.3 +1.4
319A Douglas 85.31 54 eP P 15 27 36.7 +0.2
comp=Z,54nm,1.3s
STU Stuttgart 85.31 331 eP P 15 27 35.8 -0.2
STU pmax pmax
comp=Z,96nm,0.9s
STU Stuttgart 85.31 331 eP P 15 27 35.8 -0.2
comp=Z,96nm,0.9s
I36A Fitzsimmons Fa 85.32 37 P P 15 27 36.3 +0.1
baz=318
O31A Woolen Ranch, 85.39 42 P P 15 27 36.0 -0.7
baz=315
CADS Cadrg 85.41 327 i P P 15 27 34.6 -2.1
CADS ePP PP 15 30 56.4 +2.2
BCLA Clavier 85.43 334 P P 15 27 36.8 +0.3
comp=Z,43nm,1.4s
NKY Niksic 85.50 322⇑ iP P 15 27 37.1 -0.2
M33A Taylor Creek F 85.51 40 P P 15 27 37.0 -0.2
baz=316
WTTA Wattenberg 85.51 329 ePcP P 15 27 37.5 +0.1
comp=Z,8.8nm,0.7s
AOS Alonnisos 85.52 316 P P 15 27 36.6 -0.7
AOS Alonnisos 85.52 316 eP P 15 27 36.6 -0.7
121A Cookes Peak, D 85.53 53 P P 15 27 38.7 +1.0
baz=311
121A Cookes Peak, D 85.53 53 eP P 15 27 36.8 -0.9
comp=Z,57nm,1.4s
GMM Mts of Mourne 85.54 342⇑ eP P 15 27 38.0 +0.9
ABTA Abfaltersbach 85.55 328 i pP P 15 27 36.9 -0.5
comp=Z,30nm,1.1s,SNR=11
ABTA Abfaltersbach 85.55 328 i P P 15 27 36.9 -0.5
comp=Z,30nm,1.1s,SNR=11
NKME Niksic 85.55 322⇑ iP P 15 27 37.2 -0.2
I37A Lemond, Waseca 85.62 36 P P 15 27 38.3 +0.6
baz=319
LIT Litokhoron 85.63 318 P P 15 27 36.8 -1.0
LIT Litokhoron 85.63 318 eP P 15 27 36.8 -1.0
LIT Litokhoron 85.63 318 eP P 15 27 36.8 -1.0
PDG Podgorica 85.65 321 P P 15 27 38.0 +0.2
PDG Podgorica 85.65 321 ⇓ iP P 15 27 39.1 +1.3
TTG Podgorica 85.65 321⇑ iP P 15 27 37.9 +0.2
TTG Podgorica 85.65 321 P P 15 27 38.0 +0.2
TTG Podgorica 85.65 321 P P 15 27 38.0 +0.2
BRY Bratogost 85.66 322⇑ iP P 15 27 37.8 -0.3
J36A Seneca 1, Swea 85.67 37 P P 15 27 38.3 +0.3
baz=318
MOTA Moosalm 85.67 329 i PcP P 15 27 37.6 -0.5
comp=Z,31nm,1.2s,SNR=6.4
MOTA Moosalm 85.67 329 i P P 15 27 37.6 -0.5
comp=Z,31nm,1.2s,SNR=6.4
K35A Storm Lake 85.68 38 P P 15 27 38.0 0.0
baz=317
LANF Langenberg 85.68 332 eP P 15 27 37.7 -0.2
RETA Reutte 85.70 329 i PcP P 15 27 38.4 +0.2
comp=Z,59nm,1.1s,SNR=22
RETA Reutte 85.70 329 i PcP P 15 27 38.4 +0.2
comp=Z,59nm,1.1s,SNR=22
SNF Seneffe 85.71 334 P P 15 27 39.1 +1.1
CEME Cevo 85.73 321⇑ iP P 15 27 38.2 -0.2
TAOE Nuku Hiva Isla 85.74 104 eS S 15 38 07.8 -2.7
comp=Z,870nm,25.1s
TAOE Nuku Hiva Isla 85.74 104 eLR LR 15 54 42.2
comp=Z,5µm,22.3s,baz=316
FNA Florina 85.74 319 P P 15 27 37.5 -0.9
FNA Florina 85.74 319 P P 15 27 37.5 -0.9
FNA Florina 85.74 319 P P 15 27 37.5 -0.9
WLF Walferdange 85.74 333 P P 15 27 39.8 +1.6
comp=Z,49nm,1.8s
WLF Walferdange 85.74 333 eP P 15 27 38.5 +0.3
WLF pmax pmax
comp=Z,76nm,1.3s
WLF Walferdange 85.74 333 eP P 15 27 38.5 +0.3
comp=Z,76nm,1.3s
SKIA Skiathos 85.75 317 P P 15 27 37.7 -0.7
XOR Xorichti 85.76 317 P P 15 27 36.4 -2.1
XOR Xorichti 85.76 317 P P 15 27 36.4 -2.1
TRI Trieste 85.80 326 eP P 15 27 36.9 -1.6
TRI pmax pmax
comp=Z,29nm,1.0s
TRI Trieste 85.80 326 eP P 15 27 36.9 -1.6
comp=Z,29nm,1.0s
OHR Ohrid 85.81 319 i P P 15 27 38.7 -0.1
DRME Dracevica, Mon 85.86 321⇑ iP P 15 27 38.9 0.0
KZN Kozani 85.87 318 P P 15 27 38.2 -0.9
KZN Kozani 85.87 318 P P 15 27 38.2 -0.9
KZN Kozani 85.87 318 P P 15 27 38.2 -0.9
M34A Aspy Farms, Fr 85.88 40 P P 15 27 39.4 +0.3
baz=317
SCHQ Schefferville 85.88 16 P P 15 27 39.5 +0.7
comp=Z,16nm,0.9s,baz=315,slow=5.1,SNR=7.5
SCHQ LR LR 16 06 36.5
comp=Z,2µm,21.9s,baz=346,slow=36
WPM1 Penmaenmawr 85.88 340 eP P 15 27 40.0 +1.1
BUM Brajici-Budva 85.92 321⇑ iP P 15 27 39.2 -0.1
DOU Dourbes 85.95 334 P P 15 27 39.4 +0.2
L35A Bielow Farm, R 85.97 39 P P 15 27 39.5 +0.1
baz=317
COWI Conover 85.98 33 eP P 15 27 39.2 -0.3
comp=Z,28nm,1.3s
WLF1 Llynfaes 85.99 340 eP P 15 27 40.2 +0.9
WLF1 AMB AMB 15 27 41.6
comp=Z,157nm,1.3s
WLF1 AMS AMS 16 09 37.3
comp=Z,8µm,18.9s
ULC Ulcinj 85.99 321⇑ iP P 15 27 39.8 +0.2
BFO Black Forest 86.01 331 eP P 15 27 39.1 -0.5
BFO pmax pmax
comp=Z,97nm,1.1s
BFO MLR MLR
comp=Z,3µm,19.0s
BFO Black Forest 86.01 331 eP P 15 27 39.1 -0.5
comp=Z,96nm,1.1s
BFO LR LR
comp=Z,3µm,19.0s
EREA Eretria 86.01 316 P P 15 27 38.9 -0.9
FOEL Foel Wylfa 86.02 340⇑ eP P 15 27 40.4 +0.9
FOEL AMB AMB 15 27 41.5
comp=Z,147nm,1.0s
FOEL AMS AMS 16 09 14.5
comp=Z,3µm,20.4s
HCY Herceg Novi 86.02 322⇑ iP P 15 27 39.9 +0.2
APE Apeiranthos 86.03 314 P P 15 27 38.4 -1.5
APE Apeiranthos 86.03 314 ⇓ iP P 15 27 39.4 -0.5
APE Apeiranthos 86.03 314 c iP P 15 27 38.4 -1.5
APE pmax pmax
comp=Z,35nm,1.0s
APE Apeiranthos 86.03 314 eP P 15 27 38.4 -1.5
YLL Llanberis 86.06 340 eP P 15 27 41.1 +1.4
J37A Redenius Farm, 86.07 37 P P 15 27 40.2 +0.2
baz=318
FETA Feichten 86.09 329 i PcP P 15 27 40.4 +0.2
comp=Z,31nm,1.2s,SNR=9.8
FETA Feichten 86.09 329 i PcP P 15 27 40.4 +0.2
comp=Z,31nm,1.2s,SNR=9.8
SMIA Simia 86.09 317 P P 15 27 39.6 -0.6
CBKS Cedar Bluff 86.11 43 P P 15 27 40.1 -0.1
baz=315
CBKS Cedar Bluff 86.11 43 eP P 15 27 38.3 -1.9
CBKS pmax pmax
comp=Z,28nm,1.0s
CBKS MLR MLR
comp=Z,1µm,21.0s
CBKS Cedar Bluff 86.11 43 eP P 15 27 38.3 -1.9
comp=Z,28nm,1.0s
CBKS LR LR
comp=Z,1µm,21.0s
I38A Scanlan Farm, 86.11 36 P P 15 27 40.2 +0.1
baz=319
KARP Karpathos 86.11 312 eP P 15 27 39.7 -0.6
comp=Z,24nm,1.0s
TIR Tirane 86.12 320⇑ iP P 15 27 40.6 +0.4
TIR Tirane 86.12 320 eP P 15 27 39.4 -0.8
TIR pmax pmax
comp=Z,92nm,1.1s
TIR Tirane 86.12 320 eP P 15 27 39.4 -0.8
comp=Z,92nm,1.1s
P32A Huiting Farm, 86.16 42 P P 15 27 40.0 -0.5
baz=316
NEST Nestorio 86.18 319 P P 15 27 39.9 -0.8
DAVA Damuels 86.23 329 i PcP P 15 27 41.3 +0.4
comp=Z,52nm,0.9s,SNR=14
DAVA Damuels 86.23 329 i PcP P 15 27 41.3 +0.4
comp=Z,52nm,0.9s,SNR=14
HLM1 Long Mynd 86.25 339 eP P 15 27 41.6 +0.9
HLM1 AMS AMS 16 11 18.9
comp=Z,3µm,16.7s
THL Klokotos Trika 86.27 318 P P 15 27 39.0 -2.0
PENT Pentalofos 86.29 319 P P 15 27 39.1 -2.1
WLS Welschbruch 86.32 332 eP P 15 27 39.7 -1.4
ATAL Atalanti 86.33 317 P P 15 27 40.1 -1.2
ATAL Atalanti 86.33 317 eP P 15 27 40.1 -1.2
KPRO Kipourio 86.34 318 P P 15 27 41.4 0.0
CDF Champ du Feu 86.35 332 eP P 15 27 41.4 +0.1
CDF pmax pmax
comp=Z,71nm,1.0s
LKR Lokris 86.37 317 P P 15 27 40.4 -1.1
LKR Lokris 86.37 317 P P 15 27 40.4 -1.1
N34A Lincoln 86.40 40 P P 15 27 41.0 -0.6
baz=317
L36A Harm Buss Farm 86.42 38 P P 15 27 41.6 -0.1
baz=318
K37A Belmond 86.43 37 P P 15 27 42.0 +0.2
baz=318
AGG Agios Georgios 86.48 317 P P 15 27 39.9 -2.2
AGG Agios Georgios 86.48 317 eP P 15 27 39.9 -2.2
AGG Agios Georgios 86.48 317 eP P 15 27 39.9 -2.2
DSB Dublin 86.55 341 eP P 15 27 42.4 +0.3
ECH Echery 86.56 332 eP P 15 27 41.9 -0.4
SANT Santorini 86.56 314 eP P 15 27 41.5 -1.1
comp=Z,49nm,0.9s
FUORN Ofenpass-Fuorn 86.60 329 eP P 15 27 42.1 -0.7
comp=Z,45nm,0.9s
Q32A Meitler Ranch, 86.63 43 P P 15 27 42.5 -0.3
baz=316
HMNX Herstmonceux 86.73 337 AMS AMS 16 10 18.8
comp=Z,5µm,20.1s
MCH1 Michaelchurch 86.75 339⇑ eP P 15 27 43.8 +0.7
MCH1 AMS AMS 16 14 40.4
comp=Z,3µm,15.7s
O34A Beatrice 86.78 41 P P 15 27 43.1 -0.4
baz=317
P33A Williams Farm, 86.78 42 P P 15 27 43.1 -0.4
baz=316
SWN1 Swindon 86.83 338 eP P 15 27 44.7 +1.2
SWN1 AMB AMB 15 27 45.9
comp=Z,224nm,1.3s
SWN1 AMS AMS 16 08 18.0
comp=Z,4µm,19.2s
WOL Wolverton 86.83 338 eP P 15 27 43.7 +0.3
WOL AMB AMB 15 27 45.4
comp=Z,174nm,1.2s
WOL AMS AMS 16 10 49.0
comp=Z,4µm,16.5s
JAN Janina 86.83 318 P P 15 27 44.1 +0.3
JAN Janina 86.83 318 P P 15 27 44.1 +0.3
M36A Felix, Anita 86.83 39 P P 15 27 44.2 +0.5
baz=318
N35A Tabor 86.83 40 P P 15 27 44.7 +1.0
baz=317
MONM Monmouth 86.83 339 AMS AMS 16 14 41.8
comp=Z,4µm,15.6s
EVR Evrytania 86.84 317 P P 15 27 42.6 -1.3
EVR Evrytania 86.84 317 P P 15 27 42.6 -1.3
MOF Molkenrain 86.86 331 eP P 15 27 43.2 -0.7
MOF Molkenrain 86.86 331 P P 15 27 44.1 +0.2
J39A Decorah 86.94 36 P P 15 27 43.8 -0.4
baz=320
LPW Lampeter 86.95 340 eP P 15 27 44.7 +0.6
LPW AMB AMB 15 27 45.7
comp=Z,85nm,1.2s
LPW AMS AMS 16 09 54.2
comp=Z,3µm,18.6s
ZKR Zakros 86.97 312 P P 15 27 43.0 -1.5
ZKR Zakros 86.97 312 eP P 15 27 43.0 -1.5
THEF They Montfort 86.99 332 eP P 15 27 42.0 -2.4
ANX Ano Chora 87.01 317 P P 15 27 42.9 -1.9
Q33A Connelly Farm, 87.02 42 P P 15 27 44.4 -0.3
baz=316
DID Didima 87.05 316 P P 15 27 41.5 -3.4
DID Didima 87.05 316 eP P 15 27 41.5 -3.4
DSL Palaion Diasel 87.07 318 P P 15 27 44.5 -0.5
DSL Palaion Diasel 87.07 318 eP P 15 27 44.5 -0.5
TUE Stuetta 87.10 329 eP P 15 27 43.7 -1.5
comp=Z,23nm,1.0s
P34A Walnut Farm, R 87.17 41 P P 15 27 44.8 -0.6
baz=317
SGD Sagiada 87.19 319 P P 15 27 44.3 -1.2
PVO Paravola 87.21 317 P P 15 27 44.3 -1.3
LAKA Lakka 87.23 317 P P 15 27 44.8 -0.9
LAKA Lakka 87.23 317 eP P 15 27 44.8 -0.9
L38A Oak Wood Farm, 87.23 37 P P 15 27 46.2 +0.6
baz=319
KLV Kalavryta, Ach 87.27 317 P P 15 27 44.0 -2.0
KLV Kalavryta, Ach 87.27 317 eP P 15 27 44.0 -2.0
SCIA State Center 87.28 38 eP P 15 27 45.8 -0.1
comp=Z,77nm,1.1s
K39A Oelwein 87.33 36 P P 15 27 45.7 -0.4
baz=320
J40A Soldiers Grove 87.34 35 P P 15 27 46.1 -0.1
baz=320
KEK Kerkira 87.35 319 P P 15 27 45.3 -0.9
KEK Kerkira 87.35 319 P P 15 27 45.3 -0.9
LAST Lasithi 87.38 313 P P 15 27 41.0 -5.6
LAST Lasithi 87.38 313 eP P 15 27 46.0 -0.6
comp=Z,69nm,1.0s
LOMF Lomont 87.39 331 eP P 15 27 46.7 +0.3
Q34A Chapman 87.56 42 P P 15 27 47.8 +0.5
baz=317
DRO Drossia 87.58 317 P P 15 27 46.7 -0.7
KSU1 Kansas State U 87.61 42 P P 15 27 47.6 0.0
baz=317
KSU1 Kansas State U 87.61 42 eP P 15 27 47.3 -0.2
comp=Z,36nm,0.9s
MNTX Cornudas Mount 87.61 52 P P 15 27 48.1 +0.4
baz=312
MNTX Cornudas Mount 87.61 52 eP P 15 27 46.3 -1.4
comp=Z,30nm,1.4s
IDI Anoyia 87.64 313 P P 15 27 45.4 -2.4
IDI Anoyia 87.64 313 eP P 15 27 46.4 -1.5
comp=Z,32nm,1.0s
M38A Pleasantville 87.66 38 P P 15 27 48.5 +0.7
baz=319
K40A Colesburg 87.69 36 P P 15 27 47.8 0.0
baz=320
J41A Loganville 87.71 35 P P 15 27 47.9 0.0
baz=321
L39A Vinton 87.72 37 P P 15 27 48.2 +0.2
baz=320
O36A Bolckow 87.72 40 P P 15 27 48.2 +0.2
baz=318
AMTX Amarillo 87.72 47 P P 15 27 49.1 +0.8
baz=314
AMTX Amarillo 87.72 47 eP P 15 27 48.2 0.0
comp=Z,18nm,0.8s
R34A Isabella, Hill 87.84 42 P P 15 27 48.9 +0.2
baz=316
AMT Artemida-Makis 87.88 316 P P 15 27 48.1 -0.8
JFWS Jewell Farm 87.94 35 eP P 15 27 49.2 +0.1
JFWS pmax pmax
comp=Z,31nm,1.2s
JFWS Jewell Farm 87.94 35 eP P 15 27 49.2 +0.1
comp=Z,31nm,1.2s
TBI Tubuai 87.95 121 eS S 15 38 28.1 -3.1
comp=Z,2µm,28.2s
TBI Tubuai 87.95 121 eLR LR 15 55 44.7
comp=Z,6µm,23.2s,baz=313
VAM Vamos 87.96 314 P P 15 27 49.8 +0.5
VAM Vamos 87.96 314 P P 15 27 49.8 +0.5
VAM Vamos 87.96 314 P P 15 27 49.8 +0.5
P36A Good Intent, A 87.97 40 P P 15 27 49.3 0.0
baz=318
ITM Ithomi 88.01 316 P P 15 27 47.2 -2.3
ITM Ithomi 88.01 316 P P 15 27 47.2 -2.3
SENIN Lac Senin/Sane 88.02 330 eP P 15 27 49.6 0.0
comp=Z,94nm,2.0s
VLS Valsamata 88.03 318 P P 15 27 49.3 -0.3
VLS Valsamata 88.03 318 P P 15 27 49.3 -0.3
VLS Valsamata 88.03 318 P P 15 27 49.3 -0.3
IMMV Iera Moni Meta 88.05 314 P P 15 27 50.3 +0.6
HTL Hartland 88.07 339 AMS AMS 16 12 33.4
comp=Z,2µm,17.8s
Q35A Mercer Eighty, 88.09 41 P P 15 27 49.8 -0.1
baz=317
N38A Joes South For 88.11 38 P P 15 27 50.2 +0.3
baz=319
O37A Wolven Farm, M 88.11 39 P P 15 27 50.3 +0.4
baz=318
M39A Webster 88.12 37 P P 15 27 50.3 +0.3
baz=319
L40A Anamosa 88.14 37 P P 15 27 49.7 -0.2
baz=320
K41A Shullsburg 88.16 36 P P 15 27 50.3 +0.2
baz=321
ANKY Antikythira Is 88.16 314 P P 15 27 49.3 -0.9
ANKY Antikythira Is 88.16 314 eP P 15 27 49.3 -0.9
ZKS Zakynthos 88.27 317 P P 15 27 49.3 -1.4
PYL PYLOS 88.32 316 P P 15 27 48.3 -2.6
PYL PYLOS 88.32 316 eP P 15 27 48.3 -2.6
Q36A Arnold C. Orve 88.32 41 P P 15 27 50.9 0.0
baz=317
S34A Willow Spring 88.35 43 P P 15 27 51.3 +0.2
baz=316
R35A Emporia Munici 88.39 42 P P 15 27 51.9 +0.7
baz=317
DYA Yadsworthy 88.41 339 AMS AMS 16 17 12.2
comp=Z,3µm,15.9s
N39A Derby Farms, D 88.41 38 P P 15 27 51.9 +0.6
baz=319
L41A Preston 88.47 36 P P 15 27 51.4 -0.2
baz=320
O38A Galt 88.49 39 P P 15 27 51.8 +0.1
baz=319
AQU L'Aquila 88.56 324 eP P 15 27 52.5 +0.4
AQU pmax pmax
comp=Z,52nm,0.9s
AQU MLR MLR
comp=Z,4µm,19.0s
AQU L'Aquila 88.56 324 eP P 15 27 52.5 +0.4
comp=Z,52nm,0.9s
AQU LR LR
comp=Z,4µm,19.0s
VAL Valentia 88.70 343 eS S 15 38 41.2 +3.5
R36A Gordon, Harris 88.76 41 P P 15 27 53.3 +0.3
baz=317
S35A Otter Creek Ra 88.79 42 P P 15 27 53.7 +0.5
baz=317
T34A McClaskey Farm 88.79 43 P P 15 27 53.7 +0.5
baz=316
P38A Dawn 88.83 39 P P 15 27 53.9 +0.6
baz=319
LDF La Druitiere 88.84 336 eP P 15 27 54.6 +1.4
LDF pmax pmax
comp=Z,47nm,1.4s
O39A Kirksville 88.86 38 P P 15 27 53.9 +0.5
baz=319
VLDQ Val d'Or 88.89 25 eP P 15 27 52.5 -0.9
comp=Z,118nm,1.8s
SSF Saint Saulge 88.89 333 eP P 15 27 53.6 +0.2
SSF pmax pmax

comp=Z,34nm,1.2s
LPL La Plagne 88.94 330 eP P 15 27 53.9 -0.1
LPL pmax pmax
comp=Z,17nm,0.8s
W32A Sentinel 88.98 46 P P 15 27 55.1 +0.9
baz=315
U34A Anderson Ranch 89.02 44 P P 15 27 55.1 +0.8
baz=316
U34A Anderson Ranch 89.02 44 eP P 15 27 54.5 +0.2
comp=Z,53nm,1.3s
SMF Signal de Mont 89.12 333 eP P 15 27 55.7 +1.2
SMF pmax pmax
comp=Z,13nm,0.9s
R37A Teagarden Farm 89.13 41 P P 15 27 54.7 -0.1
baz=318
AVF Avril sur Loir 89.17 333 eP P 15 27 55.0 +0.2
AVF pmax pmax
comp=Z,60nm,1.1s
CUC Castrocucco 89.19 322 eP P 15 27 53.9 -1.2
comp=Z,17nm,1.2s
CUC LR LR
comp=Z,5μm,20.0s
T35A Sooner Cattle 89.24 43 P P 15 27 56.0 +0.7
baz=317
O40A La Belle 89.30 38 P P 15 27 55.8 +0.3
baz=320
TIP Timpagrande 89.33 320 P P 15 27 55.4 -0.3
TIP Timpagrande 89.33 320 eP P 15 27 55.6 -0.2
comp=Z,57nm,1.4s
P39B Salisbury 89.33 39 P P 15 27 56.0 +0.4
baz=319
BNI Bardonecchia 89.34 330 PFAKE 15 28 10.0 +14
BNI LR LR
comp=Z,4μm,20.0s
X32A Elmer 89.46 46 P P 15 27 56.9 +0.6
baz=315
T36A Boggs Farm, Ca 89.48 43 P P 15 27 57.0 +0.6
baz=317
WMOK Wichita Mounta 89.53 46 P P 15 27 57.2 +0.5
baz=316
WMOK Wichita Mounta 89.53 46 eP P 15 27 56.8 +0.1
WMOK pmax pmax
comp=Z,17nm,1.2s
WMOK Wichita Mounta 89.53 46 eP P 15 27 56.8 +0.1
comp=Z,17nm,1.2s
S37A Fort Scott 89.54 41 P P 15 27 57.0 +0.3
baz=318
Q39A Willow Grove F 89.55 39 P P 15 27 57.0 +0.4
baz=319
P40A Paris 89.66 39 P P 15 27 57.7 +0.5
baz=320
R38A Fenwick Farm, 89.71 41 P P 15 27 56.9 -0.6
baz=318
PLDF La Plantade 89.77 332 eP P 15 27 58.1 +0.4
SLBS Sierra La Lagu 89.78 61 eP P 15 27 58.2 0.0
comp=Z,45nm,1.6s
O41A Passleys Farm, 89.79 38 P P 15 27 58.3 +0.5
baz=320
AGO Saint Agoulin 89.88 333 eP P 15 27 59.3 +1.2
V35A Meyer Ranch, C 89.90 44 P P 15 27 58.9 +0.5
baz=317
T37A Cheneyville 18 89.96 42 P P 15 27 59.0 +0.3
baz=318
SSB Saint Sauveur 90.00 331 eP P 15 27 58.7 0.0
SSB pmax pmax
comp=Z,9.0nm,0.8s
SSB Saint Sauveur 90.00 331 eP P 15 27 58.7 0.0
comp=Z,9.0nm,0.8s
SBF Sospel 90.00 329 eP P 15 27 57.8 -1.0
SBF pmax pmax
comp=Z,25nm,0.9s
TCF Toulx Ste Croi 90.02 333 eP P 15 27 59.1 +0.3
TCF pmax pmax
comp=Z,34nm,1.2s
P41A Barry, Barry 90.04 38 P P 15 27 59.2 +0.3
baz=320
Q40A Laux Farm, Aux 90.05 39 P P 15 27 59.4 +0.3
baz=320
U36A Oologah 90.05 43 P P 15 27 59.6 +0.5
baz=317
R39A Chumby, Stover 90.07 40 P P 15 27 59.0 -0.2
baz=319
S38A Stockton 90.12 41 P P 15 27 59.0 -0.4
baz=318
Y33A Hilltop Ranch, 90.14 46 P P 15 28 00.0 +0.5
baz=316
X34A Smith Ranch, M 90.17 45 P P 15 28 00.8 +1.1
baz=316
HDIL Hopedale 90.22 36 P P 15 28 00.2 +0.4
baz=321
TX31 Lajitas Ar. Si 90.29 53 eP P 15 27 59.7 -0.8
TXAR Lajitas Array 90.29 53 P P 15 27 60.0 -0.5
comp=Z,6.2nm,0.8s,baz=292,slow=3.5,SNR=42
TXAR PKKPbc **PKKPbc 15 45 31.0 +2.8**
comp=Z,0.3nm,0.6s,baz=144,slow=4.9,SNR=3.5
TXAR LR LR 16 08 53.2
comp=Z,2μm,18.1s,baz=0.0,slow=36
TXAR Lajitas Array 90.29 53 P P 15 28 00.0 -0.5
TXAR pmax pmax
comp=Z,6.0nm,0.8s
TXAR MLR MLR
comp=Z,2μm,18.1s
W35A Tecumseh 90.32 44 P P 15 28 01.1 +0.8
baz=317
T38A Diamond 90.36 42 P P 15 28 00.8 +0.3
baz=318
TUL1 Leonard 90.37 43 P P 15 28 01.1 +0.5
baz=317
TUL1 Leonard 90.37 43 eP P 15 28 00.4 -0.2
comp=Z,32nm,1.3s
U37A Salina 90.38 43 P P 15 28 01.1 +0.4
baz=318
V36A Jenks 90.38 43 P P 15 28 01.0 +0.4
baz=317
S39A Bolivar 90.39 41 P P 15 28 00.2 -0.4
baz=319
PGF Pioggiola 90.40 327 eP P 15 28 00.2 -0.5
PGF pmax pmax
comp=Z,37nm,1.1s
CEL Celeste 90.46 320 eP P 15 27 59.3 -1.7
comp=Z,67nm,1.0s
CEL LR LR
comp=Z,6μm,21.0s
P42A Winchester 90.46 38 P P 15 28 01.3 +0.3
baz=321
R40A Maddies Statio 90.48 40 P P 15 28 01.3 +0.3
baz=319
ABTX Abilene, Hawle 90.51 48 P P 15 28 01.8 +0.5
baz=315
ABTX Abilene, Hawle 90.51 48 eP P 15 28 00.6 -0.8
comp=Z,41nm,1.3s
LBL Lubilhac 90.53 332 eP P 15 28 01.4 +0.1
FRF La Foret Royal 90.58 329 eP P 15 28 01.8 +0.4
FRF pmax pmax
comp=Z,43nm,1.2s
MFF Saint Martin d 90.58 335 eP P 15 28 01.9 +0.6
MFF pmax pmax
comp=Z,83nm,1.1s
HPIG 90.59 56 eP P 15 28 08.4 +6.3
Y34A Reagan Ranch, 90.67 46 P P 15 28 02.6 +0.6
baz=316
W36A Wetumka 90.69 44 P P 15 28 02.6 +0.5
baz=317
V37A Hulbert 90.75 43 P P 15 28 02.7 +0.3
baz=318
U38A Gravette 90.75 42 P P 15 28 02.8 +0.4
baz=318
X35A Drake 90.81 45 P P 15 28 02.7 0.0
baz=317
T39A Clever 90.86 41 P P 15 28 03.1 +0.3
baz=319
S40A Lebanon 90.89 40 P P 15 28 02.7 -0.3
baz=319
X36A Centrahoma 91.04 44 P P 15 28 04.2 +0.5
baz=317
HHAR Hobbs 91.11 42 eP P 15 28 03.4 -0.7
comp=Z,15nm,0.9s
W37B Quinton 91.14 44 P P 15 28 04.8 +0.7
baz=318
V38A Canehill 91.17 42 P P 15 28 04.3 0.0
baz=318
T40A Mansfield 91.22 40 P P 15 28 04.5 -0.1
baz=319
CAF Calviac 91.23 333 eP P 15 28 05.3 +0.8
CAF pmax pmax
comp=Z,52nm,1.1s
U39A Green Forest 91.28 42 P P 15 28 04.7 -0.1
baz=319
S41A Jillco Farms, 91.29 40 P P 15 28 04.7 -0.1
baz=320
233A Rising Star 91.39 48 P P 15 28 06.0 +0.6
baz=316
SFIN Lafayette 91.40 35 P P 15 28 05.5 +0.3
baz=323
SFIN Lafayette 91.40 35 eP P 15 28 05.2 -0.1
comp=Z,22nm,1.1s
Z35A Perchaven, San 91.42 46 P P 15 28 05.7 +0.2
baz=316
TRQ Mont Tremblant 91.51 24 eP P 15 28 05.2 -0.5
Y36A Durant 91.56 45 P P 15 28 06.5 +0.3
baz=317
X37A Clayton 91.57 44 P P 15 28 06.7 +0.5
baz=318
V39A Pettigrew 91.60 42 P P 15 28 06.3 -0.1
baz=319
U40A Yellville 91.64 41 P P 15 28 06.5 0.0
baz=319
T41A Mountain View 91.69 40 P P 15 28 06.7 0.0
baz=320
W38A Poteau 91.69 43 P P 15 28 07.5 +0.8
baz=318
LFF La Frestale 91.71 333 eP P 15 28 07.3 +0.7
LFF pmax pmax
comp=Z,69nm,1.1s
X38A Whitesboro 91.82 44 P P 15 28 07.8 +0.5
baz=318
333A Richland Sprin 91.83 48 P P 15 28 08.0 +0.5
baz=315
234A Clairette 91.85 47 P P 15 28 08.2 +0.6
baz=316
W39A Magazine 92.00 43 P P 15 28 08.8 +0.7
baz=318
V40A Witts Springs 92.07 42 P P 15 28 08.6 +0.1
baz=319
U41A Viola 92.14 41 P P 15 28 09.2 +0.4
baz=320
433A Art 92.16 49 P P 15 28 09.7 +0.6
baz=315
OLIL Olney 92.22 37 eP P 15 28 09.6 +0.5
comp=Z,38nm,1.2s
WHTX Lake Whitney, 92.26 47 P P 15 28 10.3 +0.9
baz=316
WHTX Lake Whitney, 92.26 47 eP P 15 28 09.9 +0.5
comp=Z,43nm,1.0s
334A Lometa 92.27 48 P P 15 28 10.0 +0.5
baz=316
X39A Fountain Ranch 92.33 43 P P 15 28 10.4 +0.7
baz=318
CLTB Caltabellotta 92.34 322 PFAKE 15 28 20.0 +10
CLTB LR LR
comp=Z,4μm,20.0s
V41A Mountainview 92.44 41 P P 15 28 09.9 -0.3
baz=320
PBMO Poplar Bluff 92.58 39 eP P 15 28 10.5 -0.3
comp=Z,35nm,1.1s
MIAR Mount Ida 92.60 43 P P 15 28 11.4 +0.5
baz=319
MIAR Mount Ida 92.60 43 eP P 15 28 10.8 -0.1
MIAR pmax pmax
comp=Z,40nm,1.1s
MIAR Mount Ida 92.60 43 eP P 15 28 10.8 -0.1
comp=Z,40nm,1.1s
X201 Greenbrier Sit 92.70 42 eP P 15 28 11.0 -0.4
comp=Z,53nm,1.3s
X301 Greenbrier Sit 92.72 42 eP P 15 28 10.5 -1.0
comp=Z,43nm,1.3s
WHAR Wooly Hollow 92.74 42 eP P 15 28 11.1 -0.5
comp=Z,69nm,1.3s
V42A Cord 92.83 41 P P 15 28 12.1 +0.2
baz=320
W41B Gary Mavity, V 92.85 42 P P 15 28 12.5 +0.5
baz=319
ACSO Alum Creek Sta 93.37 33 eP P 15 28 14.4 0.0
comp=Z,18nm,0.9s
M54A Oil Creek Stat 93.70 30 P P 15 28 16.3 +0.4
baz=328
BINY Binghamton 94.52 27 PFAKE 15 28 30.0 +10
BINY LR LR
comp=Z,2μm,19.0s
LMN Caledonia Moun 94.70 18 eP P 15 28 20.9 +0.5
comp=Z,16nm,0.9s
KEST Kesra 95.71 323 P P 15 28 25.4 +0.1
comp=Z,6.5nm,0.9s,baz=305,slow=4.4,SNR=5.5
KEST LR LR 16 16 54.0
comp=Z,4μm,18.4s,baz=345,slow=39
TZTN Tazewell 96.13 35 eP P 15 28 26.9 -0.2
comp=Z,8.8nm,1.3s
PBRG Braganca 97.02 337 eP Pdif 15 28 36.0 +4.8
PGAV Gavieira, Arco 97.35 338 eP Pdif 15 28 34.4 +1.7
PGAV Gavieira, Arco 97.35 338 eLR LR 16 07 37.2
comp=Z,5μm,20.0s
CBN Corbin Frederi 97.43 30 PFAKE 15 28 40.0 +7.0
CBN LR LR
comp=Z,2μm,21.0s
POLO Lamas de Olo 97.74 337 eP Pdif 15 28 40.0 +5.5
ES19 SONSECA Array 97.95 334 eP P 15 28 34.7 -0.7
ESDC Sonseca Array 98.00 334 P P 15 28 35.4 -0.2
comp=Z,3.2nm,0.8s,baz=26,slow=3.6,SNR=12
ESDC LR LR 16 17 22.4
comp=Z,4μm,20.4s,baz=25,slow=38
RKT Rikitea 98.24 113 eSS SS 15 46 50.4 +3.1
RKT Rikitea 98.24 113 eLR LR 16 00 29.3
comp=Z,894nm,29.5s
comp=Z,4μm,25.5s,baz=310
PAB San Pablo 98.25 334 PFAKE 15 28 50.0 +13
PAB LR LR
comp=Z,5μm,19.0s
MTE Manteigas 98.55 337 eP Pdif 15 28 42.1 +4.1
MTE Manteigas 98.55 337 eLR LR 16 08 44.9
comp=Z,3μm,18.0s
GOGA Godfrey 98.72 37 PFAKE 15 28 50.0 +11
GOGA LR LR
comp=Z,2μm,20.0s
PCAS Casmilo, Conde 99.17 337 eP Pdif 15 28 37.6 -3.1
PMRV Marv??o 99.38 336 eP Pdif 15 28 46.6 +4.9
PMRV Marv??o 99.38 336 eLR LR 16 09 16.3
comp=Z,4μm,18.0s
PESTR Estremoz 99.95 336 eP Pdif 15 28 49.0 +4.7
PBAR Barrancos 100.40 335 eP Pdif 15 28 52.8 +6.6
LIS Lisbon 100.59 337 eP Pdif 15 28 46.6 -0.4
LIS AMS AMS 16 16 51.4
comp=N,4μm,21.8s
LIS Lisbon 100.59 337 eP Pdif 15 28 46.7 -0.4
PNCL Nicolu / Gran 100.95 337 eP Pdif 15 28 49.8 +1.2
MESJ Messejana 101.09 336 eP Pdif 15 28 48.5 -0.8
MESJ AMS AMS 16 20 09.4
comp=Z,4μm,22.2s
MESJ Messejana 101.09 336 eP Pdif 15 28 54.0 +4.7
MESJ Messejana 101.09 336 eP Pdif 15 28 48.5 -0.8
PCVE Castro Verde 101.22 336 eP Pdif 15 28 43.7 -6.2
MORF Marmelete 101.72 336 eP Pdif 15 28 51.3 -0.9
MORF ePP PP **15 33 02.0 +0.3**
MORF AMS AMS 16 18 23.9
comp=E,3μm,14.5s
MORF Marmelete 101.72 336 eP Pdif 15 28 49.3 -2.9
MORF Marmelete 101.72 336 eP Pdif 15 28 51.3 -0.9
MORF e 15 33 02.0
KMBO Kilima Mbogo 102.34 278 P Pdif 15 28 55.4 -0.1
comp=E,1.8nm,0.7s,baz=258,slow=3.0,SNR=3.4
PTCN Pitcairn Islan 103.01 112 PFAKE 15 29 10.0 +12
PTCN LR LR
comp=Z,5μm,20.0s
ABPO Ambohimpanom 104.58 257 PFAKE 15 29 20.0 +15
ABPO LR LR
comp=Z,440nm,19.0s
CMLA Cha da Macela 105.29 350 PFAKE 15 33 30.0
CMLA LR LR
comp=Z,1μm,19.0s
BBSR BB Station 107.25 23 PFAKE 15 33 40.0
BBSR LR LR
comp=Z,1μm,19.0s
PMOZ Porto Moniz, M 108.39 341 eP Pdif 15 29 33.7 +12
PMOZ Porto Moniz, M 108.39 341 eLR LR 16 13 30.6
comp=Z,2μm,18.0s
VNDA Vanda 114.31 175 PKP PKPdf 15 33 37.9 +0.4
comp=Z,0.9nm,1.0s,baz=4.2,slow=4.7,SNR=3.2
TOA0 Torodi Ar. Sit 117.99 315 ePKPdf PKPdf 15 33 45.8 -0.7
TOA0 ePKPdf **PKiKP 15 33 46.2 -0.4**
TORD Torodi Ar. Bea 117.99 315 PKP PKPdf 15 33 45.6 -0.9
comp=Z,3.1nm,1.0s,baz=334,slow=1.6,SNR=8.8
TORD PP **PP 15 34 57.7 -2.4**
comp=Z,9.9nm,1.0s,baz=35,slow=7.6,SNR=11
TORD PKKPab **PKKPab 15 44 08.4 -2.8**
comp=Z,0.4nm,0.8s,baz=254,slow=10,SNR=3.5
MAW Mawson 119.08 205 PKP PKPdf 15 33 47.4 +0.5
comp=Z,0.8nm,0.3s,baz=21,slow=8.6,SNR=3.2
PAYG Puerto Ayora 120.20 66 PFAKE 15 34 00.0 +9.2
PAYG LR LR
comp=Z,1μm,20.0s
LBTB Lobatse 124.84 263 ePKIKP PKPdf 15 33 59.6 +0.2
LBTB Lobatse 124.84 263 ePKPdf PKPdf 15 33 59.6 +0.2
QSPA South Pole Qui 126.13 180 ePKPdf PKPdf 15 34 00.6 0.0
BOSA Boshof 126.73 259 PKP PKPdf 15 34 03.0 0.0
comp=Z,15nm,1.1s,baz=10,slow=2.3,SNR=6.2
BBGH Gun Hill 126.78 26 PFAKE 15 34 20.0 +17
BBGH LR LR
comp=Z,2μm,19.0s
ROSC El Rosal 126.89 47 PKP PKPdf 15 34 04.5 +0.4
comp=Z,4.0nm,0.3s,baz=314,slow=22,SNR=5.0
GRGR Grenville 126.93 29 PFAKE 15 34 20.0 +16
GRGR LR LR
comp=Z,1μm,20.0s
DBIC Dimbokro 126.96 317 PKP PKPdf 15 34 04.1 +0.4
comp=Z,4.3nm,0.7s,baz=46,slow=5.5,SNR=4.4
DBIC PP **PP 15 35 58.3 -2.5**
comp=Z,16nm,1.1s,baz=39,slow=8.5,SNR=4.1
DBIC Dimbokro 126.96 317 ePKPdf PKPdf 15 34 03.8 0.0
DBIC PP **PP 15 35 58.3 -2.5**
SYO Syowa Base 127.75 206 ↑eX PKiKP 15 34 01.6 -2.4
SYO Syowa Base 127.75 206 ↓epPKiKP PKPdf 15 34 09.2 +5.7
OTAV Otavalo 127.86 55 ePKPdf PKPdf 15 34 06.6 +0.6
PTGA Pitinga 139.20 35 PFAKE 15 34 40.0 +13
PTGA LR LR
comp=Z,46μm,20.0s
SNAA Sanae 140.21 197 PKP PKPdf 15 34 27.1 +0.2
SNAA Sanae 140.21 197 ePKHKP PKPpre 15 34 18.2
SNAA Sanae 140.21 197 ePKPpre PKPpre 15 34 18.2
VNA1 Neumayer--Stat 142.17 196 PKP PKPdf 15 34 26.9 -3.4
ASCN Ascension 144.28 317 PFAKE 15 34 50.0 +14
ASCN LR LR
comp=Z,1μm,21.0s
SAML Samuel 144.50 46 ePKPdf PKPbc 15 34 34.8 +0.1
SAML LR LR
comp=Z,696nm,19.0s
SHEL Horse Pasture 144.70 297 ePKIKP PKPdf 15 34 36.1 -0.3
SHEL Horse Pasture 144.70 297 ePKPdf PKPdf 15 34 36.1 -0.3
PMSA Palmer Station 147.66 160 PFAKE 15 34 50.0 +5.0
PMSA LR LR
comp=Z,1μm,19.0s
PB11 IPOC Station P 147.89 67 ePKPdf PKPdf 15 34 42.6 +0.7
PB01 IPOC Station P 148.78 69 ePKPdf PKPdf 15 34 44.2 +1.0
RCBR Riachuelo 149.51 355 PFAKE 15 35 00.0 +6.1
RCBR LR LR
comp=Z,922nm,21.0s
LVC Limon Verde 150.12 71 ePKPbc PKPbc 15 34 51.4 +0.6
LCO Las Campanas 151.80 84 ePKPbc PKPbc 15 34 53.5 -0.9
PLCA Paso Flores 154.44 110 PKPbc PKPbc 15 34 60.0 +0.4
comp=Z,2.9nm,0.9s,baz=263,slow=5.5,SNR=3.2
PLCA Paso Flores 154.44 110 PKIKP PKPbc 15 35 00.0 +0.4
PLCA pmax pmax
comp=Z,3.0nm,1.0s
BDFB Brasilia 157.58 25 PKPab PKPab 15 35 28.7 +0.8
comp=Z,5.4nm,0.6s,baz=169,slow=26,SNR=5.7
EFI East Falkland 159.20 143 PFAKE 15 35 10.0 +13
EFI LR LR
comp=Z,1μm,20.0s

JMA 06 15:15:26.6±0.1, 36.83N×138.60E, h8km±2km, M0.3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MAT	**Matsushiro**	**0.43**	**228**	P	Pg	15 15 34.8	-0.1
MAT				S	Sg	15 15 40.4	-0.1
MAT	**Matsushiro**	**0.43**	**228**	P	Pg	15 15 35.0	+0.1
MAT				S	Sg	15 15 40.4	-0.1

GUC 06 15:18:39.7±0.4, 23.72S×67.23W, h230km, ML3.9, 5C-2D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB06	**IPOC Station P**	**2.38**	**295**	↑*i* P	Pn	15 19 26.3	+1.8
PB06				*i* S	S	15 20 02.4	+3.0
PB06				IAML		15 20 03.1	
comp=N,165nm,0.5s							
PB09	**IPOC Station P**	**2.66**	**315**	↓*i* P	Pn	15 19 29.8	+2.2
PB09				IAML		15 20 12.8	
comp=E,233nm,0.6s							
PB04	**IPOC Station P**	**3.02**	**297**	↑*i* P	Pn	15 19 33.3	+1.9
PB04				*i* S	S	15 20 14.3	+2.4
PB04				IAML		15 20 24.1	
comp=N,113nm,0.3s							
PB10	**IPOC Station P**	**3.06**	**273**	↑*i* P	Pn	15 19 33.4	+1.8
PB10				*i* S	S	15 20 14.8	+2.5
PB10				IAML		15 20 17.4	
comp=E,272nm,0.3s							
PB07	**IPOC Station P**	**3.15**	**308**	↑*i* P	Pn	15 19 34.6	+1.7
PB07				*i* S	S	15 20 17.3	+2.7
PB07				IAML		15 20 19.3	
comp=N,95nm,0.2s							
PB01	**IPOC Station P**	**3.38**	**321**	↑*i* P	Pn	15 19 36.7	+1.2
PB01				*i* S	S	15 20 20.9	+1.7
PB01				IAML		15 20 24.9	
comp=N,59nm,0.3s							
PB08	**IPOC Station P**	**3.98**	**333**	↓*i* P	Pn	15 19 44.6	+1.8
PB08				*e*S	S	15 20 35.9	+3.4

TAP 06 15:18:44.4, 24.24N×121.74E, h12km, ML2.3, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.19**	**360**	*i* P	Pb	15 18 49.3	-0.4
baz=2.0							
ENA				*i* S	Sg	15 18 52.7	+1.3
baz=2.0							
TWD	**Chiawan**	**0.21**	**220**	P	Pg	15 18 49.5	+0.6
baz=218							
TWD				*i* S	Sg	15 18 53.1	+1.2
baz=218							
TWC	**Suao**	**0.38**	**15**	*e*P	Pb	15 18 52.7	-0.4
baz=16							
TWC				S	Sb	15 18 58.3	-0.6
baz=16							
NNS	**Nan Shan**	**0.39**	**301**	P	Pb	15 18 53.2	-0.1
baz=300							
NNS				*e*S	Sb	15 18 59.1	-0.3
baz=300							
ENTT	**Nioudou**	**0.43**	**338**	*i* P	Pb	15 18 53.9	0.0
baz=338							
ENTT				*i* S	Sb	15 19 00.1	-0.2
baz=338							
WHF	**Hehuan Shan**	**0.45**	**258**	P	Pb	15 18 54.0	-0.4
baz=257							
WHF				*e*S	Sb	15 19 00.4	-0.8
baz=257							
TWE	**Neicheng**	**0.48**	**352**	P	Pb	15 18 54.9	0.0
baz=353							
TWE				S	Sb	15 19 01.8	-0.1
baz=353							
ESL	**Shilin**	**0.51**	**214**	*e*P	Pb	15 18 55.4	+0.1
baz=212							
ESL				*e*S	Sb	15 19 02.6	-0.1
baz=212							
TWT	**Tachien**	**0.52**	**271**	P	Pb	15 18 55.9	+0.4
baz=270							
TWT				S	Sb	15 19 03.3	+0.3
baz=270							
NSK	**Sanguang**	**0.56**	**321**	P	Pb	15 18 56.2	+0.1
baz=321							
NSK				S	Sb	15 19 04.2	+0.1
baz=321							
EGS		**0.63**	**16**	*e*P	Pg	15 18 56.8	+0.2
baz=17							
EGS				*e*S	Sb	15 19 06.4	+0.4
baz=17							
NSTT	**Nanjuang**	**0.78**	**300**	*e*P	Pb	15 18 59.7	-0.1
baz=300							
NSTT				*e*S	Sb	15 19 10.7	+0.3
baz=300							
ALS	**Alishan**	**1.12**	**230**	*e*P	Pn	15 19 06.3	+0.1
baz=229							
ALS				*e*S	Sg	15 19 21.2	+0.5
baz=229							
CHN5	**Tsauling**	**1.17**	**237**	*e*P	Pg	15 19 07.0	+0.2
baz=236							
CHN5				*e*S	Sn	15 19 22.3	-0.2

*ISCJB **06** 15:30:15.8±0.6,6°.82N±0°.05×73°.07W±0°.05,h163km±5km, Error ellipse: s-maj=10.5km s-min=4.2km az=40.1*
*FUNV **06** 15:30:16.3,6°.71N×73°.12W,h165km, MW2.8*
*RSNC **06** 15:30:18.3±0.6,6°.77N×73°.09W,h148km±3km, ML2.7*

ISC 06 15:30:15.9±1.4,**6°.80N**±0°.05×**73°.05W**±0°.06,**h164**km±8km, **n22,σ0°94/37,1D,Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.24**	**213**	*iP*	**Pn**	**15 30 38.0**	**-0.2**
BARC				*eS*	**Sn**	**15 30 53.8**	**-1.5**
BARC				*i*		15 30 54.4	
	comp=Z,88nm,0.3s						
PAMC	**Pamplona, Colo**	**0.64**	**33**	*eP*	**Pn**	**15 30 40.9**	**+0.8**
PAMC				*eS*	**Sn**	**15 30 58.3**	**-0.4**
BRRC	**Barranca, Sant**	**0.72**	**295**	*eP*	**Pn**	**15 30 40.0**	**0.0**
BRRC				*eS*	**Sn**	**15 30 57.3**	**-1.1**
BRRC				*i*		15 31 01.6	
	comp=Z,104nm,0.1s						
RUSC	**La Rusia**	**0.90**	**182**	*eP*	**Pn**	**15 30 41.8**	**0.0**
RUSC				*eS*	**Sn**	**15 31 00.5**	**-1.1**
RUSC				*i*		15 31 02.1	
	comp=Z,61nm,0.5s						
CBRI	**Barrientos, No**	**0.95**	**15**	*iP*	**Pn**	**15 30 42.6**	**+0.8**
CBRI				*eS*	**Sn**	**15 31 01.2**	**-0.5**
CBRI				*i*		15 31 03.2	
	comp=Z,49nm,0.2s						
GRMC	**Gramalote, San**	**0.95**	**15**	*eP*	**Pn**	**15 30 43.8**	**+2.1**
GRMC				*eS*	**Sn**	**15 31 03.5**	**+1.8**
GRMC				*i*		15 31 06.4	
	comp=Z,70nm,0.3s						
CAPV	**Capacho**	**1.29**	**35**	*eP*	**Pn**	**15 30 45.8**	**+1.1**
CAPV				*eS*	**Sn**	**15 31 07.0**	**+0.1**
OCAC	**Ocana**	**1.46**	**350**	*eP*	**Pn**	**15 30 47.2**	**+0.9**
OCAC				*eS*	**Sn**	**15 31 09.1**	**-0.6**
OCAC				*i*		15 31 13.5	
	comp=Z,71nm,0.3s						
NORC	**Norcasia**	**2.18**	**236**	*eP*	**Pn**	**15 30 54.1**	**+0.1**
NORC				*eS*	**Sn**	**15 31 22.0**	**-1.4**
CHIC	**Chingaza**	**2.26**	**197**	*eP*	**Pn**	**15 30 56.0**	**+0.8**
CHIC				*i*		15 31 31.6	
	comp=Z,31nm,0.6s						
HELC	**Santa Helena**	**2.53**	**256**	*eP*	**Pn**	**15 30 59.5**	**+1.1**
HELC				*eS*	**Sn**	**15 31 31.0**	**-0.3**
HELC				*i*		15 31 36.8	
	comp=Z,42nm,0.4s						
VIGV	**El Vigia**	**2.63**	**39**	*eP*	**Pn**	**15 31 00.2**	**+0.9**
VIGV				*eS*	**Sn**	**15 31 31.9**	**-1.0**
SOCV	**Socops**	**2.63**	**56**	*eP*	**Pn**	**15 31 00.3**	**+1.0**
SOCV				*eS*	**Sn**	**15 31 32.4**	**-0.5**
TOLC	**Tolima**	**3.15**	**226**	*eP*	**Pn**	**15 31 07.3**	**+1.3**
TOLC				*eS*	**Sn**	**15 31 45.1**	**+0.2**
PRAC	**Prado**	**3.57**	**211**	*eP*	**Pn**	**15 31 11.6**	**+0.6**
PRAC				*eS*	**Sn**	**15 31 54.6**	**+0.7**
VIRV	**Villa del Rosa**	**3.74**	**10**	*eP*	**Pn**	**15 31 12.7**	**-0.4**
VIRV				*eS*	**Sn**	**15 31 56.5**	**-1.3**
SANV	**Sanarito**	**4.40**	**52**	*eP*	**Pn**	**15 31 22.4**	**+0.6**
CURV	**Curarigua**	**4.42**	**44**	*eP*	**Pn**	**15 31 22.5**	**+0.5**
TEPV	**Terepaima**	**4.95**	**50**	*eP*	**Pn**	**15 31 29.4**	**+0.5**
SIQV	**Siquisique**	**4.99**	**40**	*eP*	**Pn**	**15 31 28.9**	**-0.6**
BAUV	**El Baul**	**5.40**	**66**	*eP*	**Pn**	**15 31 34.8**	**-0.1**
MONV	**Montecano**	**5.96**	**30**	*eP*	**Pn**	**15 31 42.0**	**-0.2**

*SJA **06** 15:34:24.8±0.6,31°.05S×67°.48W,h96km±4km, ML3.5, MW3.6*
*ISCJB **06** 15:34:25.4±0.8,31°.05S±0°.05×67°.48W±0°.04, h101km±10km, Error ellipse: s-maj=7.7km s-min=5.2km az=13.3*
*GUC **06** 15:34:26.0±0.4,31°.05S×67°.70W,h160km±52km, ML3.7*

ISC 06 15:34:26.5±1.4,**31°.05S**±0°.05×**67°.48W**±0°.04,**h90**km±14km, **n14,σ0°52/23,1C,San Juan Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AMOG	**MOGNA**	**0.88**	**277**	*iP*	**Pn**	**15 34 44.5**	**-0.4**
AMOG				*iS*	**Sn**	**15 34 59.4**	**+0.7**
RTLL	**Cerro Villicun**	**0.90**	**252**	*iP*	**Pn**	**15 34 44.5**	**-0.6**
RTLL				*iS*	**Sn**	**15 34 59.4**	**+0.3**
RTCV	**Cerro Valdivia**	**1.22**	**228**	*iP*	**Pn**	**15 34 48.5**	**-0.2**
ACAN	**Cantantal**	**1.25**	**169**	*iP*	**Pn**	**15 34 48.5**	**-0.6**
ACAN				*iS*	**Sn**	**15 35 06.4**	**+0.1**
RTLS	**Leoncito**	**1.72**	**244**	*iP*	**Pn**	**15 34 55.8**	**+0.4**
AUSP	**Uspallata**	**2.00**	**234**	*iP*	**Pn**	**15 34 59.1**	**+0.1**
AUSP				*iS*	**Sn**	**15 35 24.6**	**+0.8**
MRA	**San Martin**	**2.03**	**133**	*iP*	**Pn**	**15 34 59.4**	**+0.2**
MRA				*iS*	**Sn**	**15 35 24.6**	**+0.5**
MRA				IAML		15 35 26.2	
	comp=Z,626nm,0.3s						
VCA	**Vinchina**	**2.39**	**345**	*iP*	**Pn**	**15 35 03.7**	**-0.3**
VCA				IAML		15 35 06.3	
	comp=Z,220nm,0.3s						
TCA	**Tanti**	**2.49**	**97**	*iP*	**Pn**	**15 35 05.0**	**-0.2**
TCA				*iS*	**Sn**	**15 35 35.0**	**0.0**
TCA				IAML		15 35 37.0	
	comp=Z,108nm,0.4s						
TLL	**Tololo Astrono**	**3.00**	**286**	*iS*	**Sn**	**15 35 47.6**	**+0.2**
TLL				IAML		15 35 53.0	
	comp=E,262nm,0.5s						
FCH	**Farellones**	**3.29**	**226**	*iS*	**Sn**	**15 35 55.5**	**+0.9**
FCH				IAML		15 36 05.5	
	comp=E,48nm,0.2s						
PEL	**Peldehue**	**3.43**	**232**	*iP*	**Pn**	**15 35 17.9**	**+0.1**
PEL				*iS*	**Sn**	**15 35 57.0**	**-0.5**
PEL				IAML		15 36 04.3	
	comp=N,57nm,0.4s						
LCO	**Las Campanas**	**3.45**	**305**	*eP*	**Pn**	**15 35 18.4**	**0.0**
LCO				*iS*	**Sn**	**15 35 58.6**	**+0.2**
LCO				IAML		15 36 01.8	
	comp=E,160nm,0.2s						
ROCH	**El Roble**	**3.56**	**236**	*i*↑*iP*	**Pn**	**15 35 19.1**	**-0.7**
ROCH				*iS*	**Sn**	**15 36 00.1**	**-0.8**

*ISCJB **06** 15:42:18.9±1.8,4°.75S±0°.2×151°.9E±0°.2,h150km, mb3.8/5, Error ellipse: s-maj=31.2km s-min=23.7km az=15.1*
*IDC **06** 15:42:23.4±4.9,4°.92S×151°.86E,h175km±41km,mb3.4/5, mb1 3.6/6,mb1mx3.2/43,mbtmp3.9/6,Error ellipse: s-maj=37.8km s-min=24.3km az=25.0*

ISC 06 15:42:21.6±1.7,**4°.9S**±0°.2×**151°.9E**±0°.2,**h150**km,**n7, σ1°90/7,mb3.9/5,New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.53**	**226**	P	**Pn**	**15 43 56.9**	**+1.5**
	1.2nm,0.3s,baz=249,slow=11,SNR=5.2						
DZM	**Mont Dzumac**	**22.16**	**142**	P	**P**	**15 47 05.0**	**-0.6**
	2.9nm,0.6s,baz=272,slow=6.5,SNR=8.3						
WRA	**Warramunga Arr**	**22.74**	**227**	P	**P**	**15 47 10.3**	**-0.9**
	6.2nm,0.7s,baz=48,slow=8.9,SNR=70						
ASAR	**Alice Springs**	**25.51**	**221**	P	**P**	**15 47 35.4**	**-1.0**
	0.4nm,0.3s,baz=53,slow=9.1,SNR=32						
FITZ	**Fitzroy Crossi**	**28.85**	**241**	P	**P**	**15 48 04.5**	**-1.7**
	1.1nm,0.5s,baz=44,slow=7.1,SNR=9.8						
CMAR	**Chiang Mai Arr**	**57.10**	**296**	P	**P**	**15 51 52.3**	**-0.5**
	0.9nm,0.8s,baz=97,slow=4.8,SNR=6.0						
TORD	**Torodi Ar. Bea**	**149.48**	**288**	PKPbc	**PKPdf**	**16 01 52.2**	**+2.6**
	1.1nm,0.8s,baz=68,slow=3.7,SNR=5.5						

*IDC **06** 15:42:45.5±1.3,52°.19N×172°.26W,h0km, mb3.8/8, mb1 4.0/9,mb1mx3.6/50,mbtmp3.7/9,ML3.9/1,Error ellipse: s-maj=33.7km s-min=26.4km az=157.0*
*NEIC **06** 15:42:50.5,51°.83N×171°.54W,h41km, mb3.6/1, ML3.6(AEIC),After AEIC.*

ISC 06 15:42:53.1±1.0,**52°.1N**±0°.2×**171°.66W**±0°.05,**h50**km,**n28, σ1°23/32,mb3.8/8,Fox Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**1.49**	**281**	P	**Pn**	**15 43 17.7**	**+0.3**
KOSE				S	**Sn**	**15 43 38.4**	**+2.6**
KOFP	**Korovin Flat P**	**1.51**	**278**	P	**Pn**	**15 43 17.5**	**-0.2**
KONE	**Korovin Northe**	**1.54**	**282**	P	**Pn**	**15 43 19.5**	**+1.4**
KOKL	**Mount Kliuchef**	**1.58**	**280**	P	**Pn**	**15 43 19.5**	**+0.8**
KOWE	**Korovin West**	**1.62**	**281**	P	**Pn**	**15 43 19.6**	**+0.5**
NIKH	**Nikolski High**	**1.93**	**62**	P	**Pn**	**15 43 22.6**	**-0.8**
NIKH				S	**Sn**	**15 43 46.6**	**+0.2**
OKWE	**Okmok W'ng Wal**	**2.50**	**55**	P	**Pn**	**15 43 31.1**	**-0.1**
OKER	**Okmok East Rim**	**2.58**	**57**	P	**Pn**	**15 43 32.4**	**0.0**
GSMY	**Great Sitkin M**	**2.71**	**271**	P	**Pn**	**15 43 33.5**	**-0.7**
GSTD	**Great Sitkin T**	**2.77**	**271**	P	**Pn**	**15 43 34.0**	**-0.9**
GSTD				S	**Sn**	**15 44 07.0**	**-0.1**
GSCK	**Great Sitkin C**	**2.78**	**270**	P	**Pn**	**15 43 34.7**	**-0.3**
ETKA	**Kagalaska Isla**	**2.94**	**267**	P	**Pn**	**15 43 36.4**	**-0.8**
ADAG	**Mount Adagdak**	**3.05**	**270**	P	**Pn**	**15 43 38.6**	**-0.2**
KIKV	**Kanaga Island**	**3.41**	**269**	P	**Pn**	**15 43 43.4**	**-0.3**
MTBL	**Makushin Table**	**3.55**	**56**	P	**Pn**	**15 43 46.2**	**+0.6**
UNV	**Unalaska Valle**	**3.58**	**59**	P	**Pn**	**15 43 46.2**	**+0.2**
UNV				S	**Sn**	**15 44 28.1**	**+1.1**
TAFP	**Tanaga Falls P**	**3.91**	**270**	P	**Pn**	**15 43 50.3**	**-0.3**
SEW	**Seward**	**14.71**	**48**	*eP*	**P**	**15 46 20.8**	**-2.0**
ILAR	**Eielson Array**	**17.39**	**36**	P	**Pn**	**15 46 58.6**	**-0.6**
	0.2nm,0.3s,baz=231,slow=9.5,SNR=11						
EGAK	**Eagle**	**20.14**	**39**	*eP*	**P**	**15 47 23.0**	**+0.4**
	1.3nm,0.4s						
DLBC	**Dease Lake**	**24.24**	**58**	P	**P**	**15 48 07.4**	**+2.5**
	1.8nm,0.4s,baz=275,slow=8.3,SNR=8.6						
INK	**Inuvik**	**24.36**	**34**	P	**P**	**15 48 06.0**	**+0.1**
	1.2nm,0.5s,baz=240,slow=6.6,SNR=3.3						
YKA	**Yellowknife Ar**	**31.48**	**48**	P	**P**	**15 49 09.7**	**+0.1**
	0.4nm,0.4s,baz=272,slow=8.1,SNR=8.4						
PDAR	**Pinedale Array**	**41.84**	**77**	P	**P**	**15 50 41.4**	**+3.3**
	0.3nm,0.5s,baz=283,slow=5.5,SNR=4.0						
TXAR	**Lajitas Array**	**54.17**	**87**	P	**P**	**15 52 13.3**	**0.0**
	0.2nm,0.5s,baz=327,slow=4.8,SNR=3.2						
ARCES	**ARCESS Array B**	**58.04**	**353**	P	**P**	**15 52 38.3**	**-1.9**
	2.3nm,0.9s,baz=28,slow=6.1,SNR=2.5						
FINES	**FINESS Array B**	**65.94**	**351**	P	**P**	**15 53 31.4**	**-1.9**
	0.9nm,0.8s,baz=348,slow=8.4,SNR=3.6						
ASAR	**Alice Springs**	**89.14**	**228**	P	**P**	**15 55 42.2**	**-0.7**
	0.6nm,0.9s,baz=27,slow=5.4,SNR=4.6						

*ISCJB **06** 15:43:41.9±0.8,7°.43N±0°.04×126°.96E±0°.07,h63km±8km, mb4.0/12,Error ellipse: s-maj=10.8km s-min=6.9km az=173.1*
*MAN **06** 15:43:43,7°.39N×126°.82E,h25km, mb5.1,ML4.0,MS4.2*
*IDC **06** 15:43:45.4±1.9,7°.43N×126°.95E,h78km±19km, mb3.7/12, mb1 3.9/14,mb1mx3.7/48,mbtmp4.1/14,Error ellipse: s-maj=20.8km s-min=11.5km az=85.0*

ISC 06 15:43:42.5±1.0,**7°.35N**±0°.05×**127°.04E**±0°.07,**h54**km±11km, **n31,σ2°02/44,mb3.9/12,3C-4D,Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.87**	**243**	*eP*	**Pn**	**15 43 56.8**	**-1.9**
MATI				*eS*	**Sn**	**15 44 08.2**	**-2.3**
BIPH	**Bislig**	**1.06**	**321**	*i*↓*eP*	**Pn**	**15 44 01.4**	**+0.1**
BIPH				*eS*	**Sn**	**15 44 12.5**	**-2.5**
DAV	**Davao City (W)**	**1.47**	**259**	P	**Pn**	**15 44 08.4**	**+1.6**
	290nm,0.3s,baz=255,slow=0.1,SNR=15						
DAV				S	**Sn**	**15 44 27.6**	**+2.7**
	288nm,0.3s,baz=260,slow=21,SNR=16						
KCP	**Kidapawan**	**1.96**	**260**	*i*↓*iP*	**Pn**	**15 44 13.3**	**-0.1**
KCP				*i*	**Sn**	**15 44 36.8**	**-0.1**
BUKP	**Musuan**	**2.03**	**285**	*eP*	**Pn**	**15 44 13.4**	**-0.9**
BUKP				*eS*	**Sn**	**15 44 41.3**	**+2.8**
CGP	**Cagayan de Oro**	**2.57**	**295**	*i*↑*eP*	**Pn**	**15 44 21.2**	**-0.5**
CGP				*eS*	**Sn**	**15 44 48.8**	**-2.9**
CTBH	**Cotabato--PC H**	**2.77**	**268**	*eP*	**Pn**	**15 44 24.0**	**-0.5**
CTBH				*i*	**Sn**	**15 44 55.3**	**-1.4**
PAGZ	**Pagadian**	**3.66**	**278**	*eP*	**Pn**	**15 44 37.0**	**+0.4**
LLP	**Lapu-Lapu**	**4.23**	**314**	*i*↓*eP*	**Pn**	**15 44 44.1**	**-0.4**
LLP				*eS*	**Sn**	**15 45 30.1**	**-2.6**
SNPH	**Sibulan**	**4.25**	**298**	*i*↓*eP*	**Pn**	**15 44 45.0**	**-0.8**
SNPH				*eS*	**Sn**	**15 45 38.2**	**+5.0**
PLP	**Palo**	**4.30**	**332**	*i*↓*eP*	**Pn**	**15 44 42.5**	**-3.0**
OCLP	**Ormoc**	**4.39**	**327**	*eP*	**Pn**	**15 44 49.2**	**+2.5**
OCLP				*eS*	**Sn**	**15 45 42.5**	**+5.9**
IPIL	**Ipil**	**4.45**	**276**	*eP*	**Pn**	**15 44 47.9**	**+0.4**
RCP	**Roxas**	**5.95**	**315**	*i*↑*eP*	**Pn**	**15 45 08.6**	**+0.5**
SIJI	**Sorong**	**9.19**	**153**	P	**Pn**	**15 45 54.9**	**+2.3**
	6.4nm,0.3s,baz=23,slow=7.7,SNR=2.3						
SIJI				S	**Sn**	**15 47 32.1**	**-2.5**
	21nm,0.3s,baz=0.0,slow=7.1,SNR=2.3						
KAPI	**Kappang**	**14.27**	**211**	P	**Pn**	**15 47 02.9**	**+1.1**
	1.0nm,0.3s,baz=82,slow=15,SNR=3.1						
FITZ	**Fitzroy Crossi**	**25.33**	**183**	P	**P**	**15 49 05.4**	**+1.0**
	2.0nm,0.4s,baz=8.5,slow=10,SNR=13						
WRA	**Warramunga Arr**	**28.06**	**165**	P	**P**	**15 49 30.1**	**+1.0**
	1.4nm,0.5s,baz=346,slow=10,SNR=14						
WRA				PcP	**PcP**	**15 52 43.7**	**+0.8**
	0.4nm,0.6s,baz=343,slow=2.6,SNR=3.4						
KSRS	**Korea Array**	**29.98**	**1**	P	**P**	**15 49 45.8**	**-0.1**
	1.0nm,0.6s,baz=179,slow=9.8,SNR=6.0						
MJAR	**Matsushiro Arr**	**30.80**	**18**	P	**P**	**15 49 51.9**	**-1.3**
	1.9nm,0.7s,baz=186,slow=9.5,SNR=6.6						
ASAR	**Alice Springs**	**31.55**	**168**	P	**P**	**15 50 01.2**	**+1.3**
	0.5nm,0.3s,baz=338,slow=7.3,SNR=24						
ASAR				PcP	**PcP**	**15 52 52.8**	**+0.9**
	0.7nm,0.5s,baz=346,slow=2.6,SNR=6.5						
USRK	**Ussuriysk Ar.**	**36.96**	**6**	P	**P**	**15 50 46.5**	**0.0**
	3.8nm,0.8s,baz=191,slow=7.8,SNR=14						
ASAJ	**Asahikawa**	**39.07**	**18**	P	**P**	**15 51 06.0**	**+1.6**
	baz=235,slow=8.9						
KLR	**Kul'tur**	**41.93**	**5**	P	**P**	**15 51 26.8**	**-1.0**
	1.2nm,0.5s,baz=156,slow=5.1,SNR=5.9						
PETK	**Petropavlovsk-**	**51.99**	**23**	P	**P**	**15 52 47.3**	**+1.0**
	1.3nm,0.5s,baz=211,slow=2.1,SNR=6.8						
MKAR	**Makanchi Array**	**54.80**	**324**	P	**P**	**15 53 04.9**	**-2.2**
	0.6nm,0.6s,baz=128,slow=7.5,SNR=11						
ILAR	**Eielson Array**	**81.72**	**26**	P	**P**	**15 55 54.6**	**-0.5**
	0.9nm,0.7s,baz=247,slow=5.2,SNR=8.6						
FINES	**FINESS Array B**	**88.81**	**332**	P	**P**	**15 56 28.5**	**-2.0**
	0.6nm,0.6s,baz=93,slow=8.4,SNR=3.6						
YKA	**Yellowknife Ar**	**96.09**	**24**	P	**P**	**15 57 04.6**	**+0.4**
	0.6nm,0.7s,baz=302,slow=4.6,SNR=7.0						
TXAR	**Lajitas Array**	**119.12**	**51**	PKP	**PKPdf**	**16 02 26.3**	**0.0**
	0.2nm,0.4s,baz=209,slow=1.7,SNR=4.2						
TORD	**Torodi Ar. Bea**	**122.02**	**290**	PKP	**PKPdf**	**16 02 31.1**	**-1.1**
	0.8nm,0.7s,baz=41,slow=1.7,SNR=3.6						

IDC 06 15:51:44.2±2.4,**0°.47S×127°.69E,h0km,mb3.3/3, mb1 3.5/3,mb1mx3.3/42,mbtmp3.4/3,Error ellipse: s-maj=222.1km s-min=24.4km az=67.0,Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**20.42**	**162**	P	P	15 56 23.9	+0.8
	0.4nm,0.5s,baz=341,slow=12,SNR=6.0						
ASAR	**Alice Springs**	**23.84**	**166**	P	P	15 56 58.8	-0.4
	0.2nm,0.4s,baz=344,slow=12,SNR=9.1						
MKAR	**Makanchi Array**	**61.54**	**326**	P	P	16 02 03.2	-0.1
	0.4nm,0.3s,baz=118,slow=7.9,SNR=14						

IDC 06 15:57:46.1±3.8,**12°.06S×167°.47E,h578km±40km,mb2.8/3, mb1 3.1/3,mb1mx2.7/35,mbtmp3.8/3,Error ellipse: s-maj=118.5km s-min=21.0km az=145.0,Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.75**	**252**	P	P	16 03 32.9	+0.2
	0.4nm,0.3s,baz=84,slow=8.7,SNR=20						
ASAR	**Alice Springs**	**33.88**	**245**	P	P	16 03 41.7	-0.5
	1.2nm,0.3s,baz=70,slow=10,SNR=123						
ASAR				PcP	PcP	16 06 03.7	-0.1
	0.4nm,0.8s,baz=97,slow=2.1,SNR=2.9						
ASAR				S	S	16 08 26.9	+0.2
	0.3nm,0.8s,baz=70,slow=14,SNR=3.8						
ILAR	**Eielson Array**	**83.94**	**18**	P	P	16 09 15.4	-0.2
	0.4nm,0.7s,baz=240,slow=6.5,SNR=5.1						

KRSC 06 16:20:13.2±1.6,**53°.60N×169°.98E,h40km±26km,ML3.6, Komandorsky Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**2.84**	**306**	*eP*	Pn	16 20 59.0	+3.0
BKI				*eS*	Sn	16 21 32.0	+3.1
MKZ	**Mys Kozlova**	**4.95**	**285**	*eP*	Pn	16 21 28.8	+3.9
MKZ				*eS*	Sn	16 22 25.2	+4.3
SDLR	**Sedlovina**	**6.64**	**272**	*eS*	Sn	16 23 07.3	+4.7
UGLR	**Uglovaya**	**6.68**	**271**	*eP*	Pn	16 21 55.3	+6.5
AVH	**Avacha**	**6.73**	**272**	*eP*	Pn	16 21 55.0	+5.6
AVH				*eS*	Sn	16 23 10.9	+6.2
DALK	**Dalny**	**6.75**	**270**	*eS*	Sn	16 23 09.2	+4.0
RUS	**Russkaya**	**7.02**	**265**	*eP*	Pn	16 21 57.9	+4.6

*ISCJB **06** 16:37:26.6±1.0,30°.76S±0°.09×179°.5W±0°.2,h350km, mb3.4/5,Error ellipse: s-maj=20.0km s-min=10.7km az=22.5*
*IDC **06** 16:37:29.4±1.4,30°.80S×179°.51W,h370km,14km, mb3.3/5, mb1 3.5/7,mb1mx3.2/34,mbtmp4.1/7,Error ellipse: s-maj=27.9km s-min=20.3km az=160.0*

ISC 06 16:37:28.6±0.9,**30°.9S**±0°.1×**179°.6W**±0°.1,**h350**km,**n11, σ2°05/14,mb3.6/5,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.15**	**42**	P	**Pn**	**16 38 23.4**	**+2.4**
	73nm,0.3s,baz=78,slow=20,SNR=2.6						
RAO				S	**S**	**16 38 59.1**	**-3.9**
	96nm,0.3s,baz=40,slow=18,SNR=2.7						
URZ	**Urewera**	**7.87**	**200**	P	**Pn**	**16 39 22.0**	**+1.0**
	4.2nm,0.3s,baz=270,slow=3.8,SNR=40						
URZ				S	**S**	**16 40 51.0**	**-1.7**
	8.1nm,0.3s,baz=80,slow=23,SNR=17						
CTA	**Charters Tower**	**32.57**	**281**	P	**P**	**16 43 28.6**	**0.0**
	1.3nm,0.4s,baz=127,slow=10,SNR=4.7						
STKA	**Stephens Creek**	**33.07**	**258**	P	**P**	**16 43 33.3**	**+0.6**
	4.9nm,1.1s,baz=112,slow=11,SNR=3.7						
ASAR	**Alice Springs**	**41.75**	**268**	P	**P**	**16 44 44.0**	**-1.1**
	0.5nm,0.6s,baz=106,slow=7.4,SNR=24						
ASAR				PcP	**PP**	**16 46 31.5**	**+1.4**
	0.5nm,1.0s,baz=109,slow=4.0,SNR=3.5						
WRA	**Warramunga Arr**	**42.79**	**273**	P	**P**	**16 44 52.2**	**-1.1**
	2.0nm,0.5s,baz=111,slow=8.0,SNR=46						
FITZ	**Fitzroy Crossi**	**51.03**	**271**	P	**P**	**16 45 55.5**	**-0.8**
	2.9nm,1.0s,baz=135,slow=7.1,SNR=3.6						
FINES	**FINESS Array B**	**145.11**	**339**	PKPbc	**PKPdf**	**16 56 21.6**	**-2.3**
	2.5nm,0.4s,baz=53,slow=4.1,SNR=24						
NB2	**NORSAR Subarra1**	**49.00**	**350**	PKP	**PKPdf**	**16 56 32.6**	**+2.1**
	comp=Z,0.6nm,0.6s,baz=16,slow=2.7						
NOA	**NORSAR Array B**	**149.00**	**350**	PKPbc	**PKPdf**	**16 56 33.0**	**+2.5**
	comp=Z,0.7nm,0.6s,baz=15,slow=4.2,SNR=4.4						
TORD	**Torodi Ar. Bea**	**162.32**	**184**	PKPab	**PKPab**	**16 57 38.1**	**-0.4**
	comp=Z,0.5nm,0.6s,baz=175,slow=4.5,SNR=2.9						

*IDC **06** 16:41:52.5±0.4,1°.68S×138°.81E,h0km,mb4.5/24, mb1 4.5/28,mb1mx4.5/38,mbtmp4.5/28,ML2.8/3,MS3.8/8, Ms1 3.8/8,ms1mx3.5/42,Error ellipse: s-maj=15.6km s-min=10.1km az=74.0*
*BJI **06** 16:41:55.8,1°.84S×138°.69E,h37km,mb4.7/38,mB5.0/18, Ms4.8/13,Ms7 4.5/13*
*DJA **06** 16:41:55.1±1.8,2°.5±5°×13°9E±°,h15km±12km,M4.9/27, mb4.9/27,mB5.2/4,MLv4.9/3,Mw(mB)4.6/4*
*MOS **06** 16:41:55.2±0.9,1°.74S×138°.65E,h30km,mb4.9/34,Error ellipse: s-maj=11.9km s-min=6.1km az=114.0*
*NEIC **06** 16:41:57.0±2.0,1°.71S×138°.69E,h31km±14km,mb4.8/35, Error ellipse: s-maj=6.1km s-min=4.7km az=215.0*
*ISCJB **06** 16:41:56.1±0.2,1°.70S±0°.03×138°.72E±0°.03,h36km, mb4.6/77,MS4.0/9,Error ellipse: s-maj=4.7km s-min=3.6km az=149.8*

ISC 06 16:41:57.7±0.3,**1°.77S**±0°.04×**138°.68E**±0°.05,**h36**km,**n183, σ1°57/194,mb4.8/75,MS4.0/9,2C-1D,Near north coast of Irian Jaya**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GENI	**Genyem**	**1.69**	**119**	P	**Pn**	**16 42 24.4**	**-0.4**
JAY	**Jayapura**	**2.15**	**110**	Pn	**Pn**	**16 42 29.2**	**-1.9**
	3.5nm,0.3s,baz=250,slow=22,SNR=108						
JAY				Sn	**Sn**	**16 42 54.1**	**-2.4**
	5.2nm,0.3s,baz=90,slow=20,SNR=8.3						
JAY				LR	LR	16 42 56.6	
	comp=Z,21nm,18.2s,baz=185,slow=31						
JAY	**Jayapura**	**2.15**	**110**	P	**Pn**	**16 42 29.1**	**-2.0**
FAKI	**Fak Fak**	**6.53**	**260**	P	**Pn**	**16 43 31.8**	**+0.5**
FAKI	**Fak Fak**	**6.53**	**260**	*e*Pn	**Pn**	**16 43 31.6**	**+0.3**
SIJI	**Sorong**	**7.47**	**277**	Pn	**Pn**	**16 43 46.2**	**+2.0**
	15nm,0.3s,baz=8.1,slow=7.1,SNR=2.1						
SWI	**Sorong**	**7.48**	**277**	P	**Pn**	**16 43 46.6**	**+2.3**
PMG	**Port Moresby**	**11.34**	**132**	Pn	**Pn**	**16 44 37.1**	**-0.1**
	1.3nm,0.3s,baz=241,slow=5.2,SNR=5.6						
PMG				LR	LR	16 50 27.3	
	comp=Z,439nm,19.3s,baz=12,slow=46						
PMG	**Port Moresby**	**11.34**	**132**	*e*P	**Pn**	**16 44 39.4**	**+2.1**
PMG	**Port Moresby**	**11.34**	**132**	*e*Pn	**Pn**	**16 44 39.4**	**+2.1**
KDU	**Kakadu**	**12.47**	**209**	P	**Pn**	**16 44 52.2**	**-0.5**
	baz=12,SNR=12						
SANI

KSM	**Kuching**	**28.55**	276	*eP*		**P**	16 47 50.1	-0.4
	comp=Z,8.9nm,0.9s							
CBIJ	**Chichi jima**	**28.90**	6	P		**P**	16 47 51.4	-1.9
JCJ	**Chichijima**	**28.90**	6	P		**P**	16 47 51.4	-1.9
	comp=Z,79nm,0.3s,baz=202,slow=5.4,SNR=3.2							
STKA	**Stephens Creek**	**30.07**	175	P		**P**	16 48 04.3	+0.6
	comp=Z,16nm,0.8s,baz=342,slow=8.8,SNR=16							
STKA	**Stephens Creek**	**30.07**	175	P		**P**	16 48 04.2	+0.5
STKA	**Stephens Creek**	**30.07**	175	*eP*		**P**	16 48 04.0	+0.3
	comp=Z,3.4nm,0.8s							
CMSA	**Cobar Meteorol**	**30.34**	168	P		**P**	16 48 08.2	+2.2
	baz=30,SNR=14							
ARMA	**Armidale**	**31.02**	158	P		**P**	16 48 15.1	+2.9
	baz=31,SNR=5.2							
MEEK	**Meekatharra**	**31.35**	216	P		**P**	16 48 16.4	+1.3
	baz=31,SNR=4.2							
HTT	**Hallett**	**31.49**	180	P		**P**	16 48 19.1	+2.8
	baz=32,SNR=12							
YNG	**Young**	**33.61**	165	P		**P**	16 48 38.0	+3.2
	baz=34,SNR=8.2							
CNB	**Canberra Magne**	**34.82**	165	P		**P**	16 48 47.3	+2.0
	baz=35,SNR=7.7							
ARPS	**Mount Arapiles**	**34.95**	176	P		**P**	16 48 48.1	+1.8
	baz=35,SNR=7.9							
LHSI	**Lahat**	**35.17**	266	P		**P**	16 48 50.7	+2.1
UBPT	**Khong Chiam**	**36.96**	298	P		**P**	16 49 06.0	+2.1
	comp=Z,18nm,0.8s							
MJAR	**Matsushiro Arr**	**38.12**	359	P		**P**	16 49 13.4	0.0
	comp=Z,0.8nm,0.7s,baz=196,slow=8.5,SNR=3.5							
IPM	**Ipoh**	**38.14**	279	*eP*		**P**	16 49 13.8	-0.1
	comp=Z,18nm,0.7s							
PDSI	**Padang**	**38.22**	271	P		**P**	16 49 14.1	-0.5
KULM	**Kulim**	**38.63**	281	*eP*		**P**	16 49 17.6	-0.5
	comp=Z,22nm,1.0s							
SKNT	**Sakolnakorn**	**38.97**	300	P		**P**	16 49 20.3	-0.5
	comp=Z,33nm,0.8s							
SKLT	**Songkhla**	**39.01**	284	P		**P**	16 49 21.5	+0.4
	comp=Z,19nm,1.1s							
WHN	**Wuhan**	**39.63**	326	*eP*		**P**	16 49 25.6	-0.5
TRTT	**Trang**	**40.04**	284	P		**P**	16 49 30.2	+0.4
	comp=Z,33nm,0.9s							
NONG	**Nongkai**	**40.16**	301	P		**P**	16 49 30.1	-0.6
	comp=Z,27nm,1.2s							
KSAR	**Wonju Array Be**	**40.28**	347	P		**P**	16 49 32.4	+1.0
KSAR	**Wonju Array Be**	**40.28**	347	P		**P**	16 49 32.4	+1.0
KSRS	**Korea Array**	**40.28**	347	P		**P**	16 49 32.4	+1.0
	comp=Z,0.5nm,0.4s,baz=164,slow=11,SNR=4.5							
GSI	**Gunungsitoli**	**41.22**	274	P		**P**	16 49 38.4	-1.1
GSI	**Gunungsitoli**	**41.22**	274	*eP*		**P**	16 49 38.0	-1.5
	comp=Z,30nm,0.7s							
PBKT	**Sadao Pong**	**41.45**	298	P		**P**	16 49 42.6	+1.3
	comp=Z,4.9nm,1.8s							
LOEI	**Loei**	**41.55**	299	P		**P**	16 49 39.0	-3.2
	comp=Z,23nm,1.2s							
GYA	**Guiyang**	**41.75**	314	P		**P**	16 49 45.0	+1.2
GYA				pmax		pmax		
	comp=Z,10.0nm,1.0s							
MSVF	**Nonsavu**	**41.77**	115	*eP*		**P**	16 49 46.4	+2.3
MSVF				pmax		pmax		
	comp=Z,91nm,1.6s							
MSVF	**Nonsavu**	**41.77**	115	*eP*		**P**	16 49 46.4	+2.3
	comp=Z,91nm,1.6s							
UTTA	**Uttaradit**	**42.27**	299	P		**P**	16 49 49.9	+1.9
	comp=Z,2.6nm,0.9s							
SRDT	**SRDT**	**42.33**	294	P		P	16 49 55.1	+6.5
	comp=Z,44nm,1.0s							
MLSI	**Meulaboh, Aceh**	**42.67**	278	P		**P**	16 49 50.6	-0.8
KMI	**Kunming**	**43.90**	310	P		**P**	16 50 02.6	+1.2
KMI				pmax		pmax		
	comp=Z,7.0nm,1.5s							
CM01	**Chiang Mai Arr**	**43.93**	299	*eP*		**P**	16 50 00.6	-0.9
CM31	**Chiang Mai Arr**	**43.96**	299	*eP*		**P**	16 50 01.4	-0.3
CMAR	**Chiang Mai Arr**	**43.96**	299	P		**P**	16 50 01.9	+0.2
	comp=Z,3.3nm,0.7s,baz=120,slow=6.6,SNR=32							
CMAR				PcP		**PcP**	16 51 49.0	+1.7
	comp=Z,3.2nm,1.0s,baz=141,slow=1.9,SNR=10.0							
CMMT	**Chiang Mai**	**44.09**	300	P		**P**	16 50 02.9	+0.1
	comp=Z,5.9nm,1.1s							
CHTO	**Chiang Mai**	**44.09**	300	P		**P**	16 50 03.0	+0.2
	comp=Z,27nm,1.0s							
CHTO	**Chiang Mai**	**44.09**	300	*eP*		**P**	16 50 02.2	-0.6
CHTO				pmax		pmax		
	comp=Z,5.0nm,0.9s							
CHTO	**Chiang Mai**	**44.09**	300	*eP*		**P**	16 50 02.2	-0.6
	comp=Z,4.7nm,0.9s							
USRK	**Ussuriysk Ar.**	**46.16**	353	P		**P**	16 50 18.1	-0.6
	comp=Z,0.6nm,0.6s,baz=179,slow=10,SNR=3.2							
CD2	**Chengdu**	**46.48**	317	*eP*		**P**	16 50 21.0	-0.6
YSS	**Yuzh-Sakhalins**	**48.66**	4	*eP*		**P**	16 50 35.5	-2.6
YSS				*eS*		**S**	16 57 35.8	-2.0
YSS				pmax		pmax		
	comp=Z,10.0nm,1.7s							
YSS				MLR		MLR		
	comp=Z,300nm,10.0s							
HHC	**Hu-ho-hao-te**	**49.09**	333	*eP*		**P**	16 50 43.4	+1.6
HHC				PP		**PP**	16 52 31.7	-4.0
HHC				S		**S**	16 57 44.7	+0.2
HHC				SS		**SS**	17 01 11.2	-4.9
HHC				pmax		pmax		
	comp=Z,12nm,1.3s							
HHC				pmax		pmax		
	comp=Z,170nm,6.9s							
HHC				LR		LR		
	comp=Z,210nm,12.3s							
HHC				LR		LR		
	comp=Z,220nm,13.6s							
HHC				LR		LR		
	comp=Z,160nm,14.8s							
HABR	**Khabarovsk**	**50.14**	357	*eP*		**P**	16 50 47.2	-2.2
HABR				*e**SP		**pP**	16 51 01.3	+1.1
HABR				*e*			16 52 06.1	
HABR				*e*			16 52 42.6	
HABR				*eS*		**S**	16 57 57.5	-1.1
HABR				*e**SS		**sS**	16 58 14.2	-2.1
HABR				*e*			17 00 35.2	
HABR				*eSS*		**SS**	17 01 32.5	+0.1
HABR				pmax		pmax		
	comp=N,28nm,2.2s							
HABR				pmax		pmax		
	comp=E,27nm,2.0s							
HABR				pmax		pmax		
	comp=Z,32nm,2.0s							
HABR				MLR		MLR		
	comp=Z,56nm,18.0s							
KLR	**Kul'dur**	**51.15**	354	P		**P**	16 50 56.8	-0.3
	comp=Z,2.0nm,0.5s,baz=168,slow=8.6,SNR=9.1							
GTA	**Gaotai**	**54.31**	323	*eP*		**P**	16 51 21.2	+0.4
GTA				pP		pP	16 51 28.6	-3.0
GTA				sP		sP	16 51 31.8	-4.0
GTA				PcP		**PcP**	16 52 25.4	+0.8
GTA				pmax		pmax		
	comp=Z,5.0nm,1.3s							
LSA	**Lhasa**	**55.11**	309	*eP*		**P**	16 51 26.5	-0.7
LSA				pmax		pmax		
	comp=Z,5.0nm,0.8s							
LSA	**Lhasa**	**55.11**	309	*eP*		**P**	16 51 26.5	-0.7
	comp=Z,4.5nm,0.8s							
SONM	**Songino Array**	**56.87**	335	P		**P**	16 51 39.8	+0.8
	comp=Z,0.9nm,0.5s,baz=145,slow=5.3,SNR=3.0							
SONA1	**Songino Array**	**56.87**	335	*eP*		**P**	16 51 38.9	-0.2
PETK	**Petropavlovsk-**	**56.96**	14	P		**P**	16 51 40.0	+0.6
	comp=Z,2.4nm,0.7s,baz=190,slow=5.6,SNR=3.6							
PETK				LR		LR	17 14 22.1	
	comp=Z,80nm,20.6s,baz=300,slow=34							
PETK	**Petropavlovsk-**	**56.96**	14	P		**P**	16 51 40.0	+0.6
PETK				pmax		pmax		
	comp=Z,2.0nm,0.7s							
PETK				MLR		MLR		
	comp=Z,80nm,20.6s							
ZAK	**Zakamensk**	**60.13**	335	*eP*		**P**	16 52 01.5	-0.2
ZAK				pmax		pmax		
	comp=Z,13nm,1.2s							
TLY	**Talaya**	**60.96**	336	P		**P**	16 52 07.6	+0.4
	comp=Z,3.2nm,0.4s,baz=142,slow=14,SNR=3.7							
TLY	**Talaya**	**60.96**	336	*eP*		**P**	16 52 07.9	+0.7
TLY				pmax		pmax		
	comp=Z,3.0nm,0.6s							
MOY	**Mondy**	**62.06**	334	*eP*		**P**	16 52 15.7	+0.9
YAK	**Yakutsk**	**64.00**	355	P		**P**	16 52 26.9	-0.3
	comp=Z,6.7nm,0.5s,baz=194,slow=0.7,SNR=6.9							
YAK				LR		LR	17 17 19.3	
	comp=Z,156nm,21.2s,baz=324,slow=33							
YAK	**Yakutsk**	**64.00**	355	*iP*		**P**	16 52 26.9	-0.3
YAK				pmax		pmax		
	comp=Z,14nm,1.0s							
YAK	**Yakutsk**	**64.00**	355	*eP*		**P**	16 52 26.0	-1.3
	comp=Z,12nm,0.8s							
WMQ	**Urumqi**	**64.27**	321	P		**P**	16 52 30.5	+1.0
WMQ				pP		pP	16 52 39.3	-1.2
WMQ				pmax		pmax		
	comp=Z,7.0nm,0.5s							
WMQ				pmax		pmax		
	comp=Z,91nm,3.5s							
SEY	**Seymchan**	**65.36**	7	P		**P**	16 52 36.0	-0.1
	comp=Z,1.2nm,0.6s,baz=253,slow=19,SNR=5.4							
MK01	**Makanchi Array**	**69.02**	322	*eP*		**P**	16 52 59.8	+0.1
MK31	**Makanchi Array**	**69.04**	322	*i* P		**P**	16 52 59.8	0.0
MK31				pmax		pmax		
	comp=Z,12nm,1.1s							
MK31	**Makanchi Array**	**69.04**	322	*eP*		**P**	16 52 59.6	-0.2
MKAR	**Makanchi Array**	**69.04**	322	P		**P**	16 53 00.2	+0.4
	comp=Z,7.8nm,0.9s,baz=113,slow=8.3,SNR=62							
MKAR	**Makanchi Array**	**69.04**	322	*eP*		**P**	16 52 59.7	-0.1
MAKZ	**Makanchi**	**69.23**	322	*eP*		**P**	16 53 01.4	+0.3
MAKZ				pmax		pmax		
	comp=Z,12nm,0.9s							
MAKZ	**Makanchi**	**69.23**	322	*eP*		**P**	16 53 01.4	+0.3
	comp=Z,12nm,0.9s							
KSH	**Kashi**	**70.43**	313	*eP*		**P**	16 53 10.5	+1.8
KSH				*es*P		sP	16 53 25.5	+1.5
KSH				*e*PP		**PP**	16 55 48.4	+3.4
KSH				S		**S**	17 02 19.3	0.0
KSH				SKS		**SKSac**	17 03 05.4	-2.6
KSH				SS		**SS**	17 06 52.7	+1.9
KSH				pmax		pmax		
	comp=Z,58nm,5.3s							
KSH				LR		LR		
	comp=Z,110nm,9.4s							
KSH				LR		LR		
	comp=Z,180nm,11.7s							
KSH				LR		LR		
	comp=Z,220nm,11.4s							
ZAA0	**Zalesovo Array**	**71.12**	330	*eP*		**P**	16 53 11.4	-1.0
ZALV	**Zalesovo Beam**	**71.12**	330	P		**P**	16 53 11.6	-0.8
	comp=Z,5.1nm,0.5s,baz=112,slow=6.2,SNR=34							
BILL	**Bilibino**	**72.26**	11	*eP*		**P**	16 53 20.1	+1.1
BILL				pmax		pmax		
	comp=Z,8.0nm,1.1s							
NVS	**Novosibirsk**	**72.37**	330	*i* P		**P**	16 53 19.9	0.0
AAK	**Ala-Archa**	**72.52**	316	*eP*		**P**	16 53 20.3	-1.0
AAK				pmax		pmax		
	comp=Z,9.0nm,1.2s							
KURK	**Kurchatov**	**72.94**	325	*c iP*		**P**	16 53 23.2	-0.2
KURK				pmax		pmax		
	comp=Z,51nm,1.2s							
KURK	**Kurchatov**	**72.94**	325	*eP*		**P**	16 53 22.7	-0.7
	comp=Z,9.3nm,0.8s							
KURBB	**Kurchatov Arra**	**72.95**	325	P		**P**	16 53 23.4	0.0
	comp=Z,6.8nm,0.7s,baz=113,slow=5.5,SNR=68							
EKS2	**Erkin-Say**	**73.03**	316	*eP*		**P**	16 53 24.7	+0.5
EKS2				pmax		pmax		
	comp=Z,5.0nm,0.8s							
EKS2	**Erkin-Say**	**73.03**	316	*eP*		**P**	16 53 24.7	+0.5
	comp=Z,4.6nm,0.8s							
MNAS	**Manas**	**73.86**	315	*i* P		**P**	16 53 29.2	0.0
MNAS				pmax		pmax		
	comp=Z,5.0nm,0.8s							
KK31	**Karatay Array**	**75.45**	315	*i* P		**P**	16 53 37.8	-0.4
KK31				pmax		pmax		
	comp=Z,2.0nm,0.7s							
KKAR	**Karatay Array**	**75.45**	315	*eP*		**P**	16 53 38.3	+0.1
KKAR	**Karatay Array**	**75.45**	315	*eP*		**P**	16 53 38.3	+0.1
OTUK	**Ortayu**	**75.81**	321	P		**P**	16 53 40.2	0.0
OTUK				pmax		pmax		
	comp=Z,9.0nm,1.0s							
VNDA	**Vanda**	**76.71**	175	P		**P**	16 53 45.5	+0.8
	comp=Z,1.8nm,0.8s,baz=319,slow=5.6,SNR=13							
VNDA	**Vanda**	**76.71**	175	*eP*		**P**	16 53 45.3	+0.6
VNDA				pmax		pmax		
	comp=Z,8.0nm,1.6s							
VNDA	**Vanda**	**76.71**	175	*eP*		**P**	16 53 45.3	+0.6
	comp=Z,7.8nm,1.6s							
VOSK	**Vostochnaya**	**78.10**	325	*eP*		**P**	16 53 52.5	-0.4
VOSK				pmax		pmax		
	comp=Z,9.0nm,0.8s							
VOSK	**Vostochnaya**	**78.10**	325	*eP*		**P**	16 53 52.5	-0.4
	comp=Z,9.2nm,0.8s							
BVA0	**Borovoye Array**	**78.53**	325	*i* P		**P**	16 53 55.3	0.0
BVA0				pmax		pmax		
	comp=Z,15nm,0.8s							
BVAR	**Borovoye Array**	**78.53**	325	P		**P**	16 53 55.7	+0.4
	comp=Z,15nm,0.6s,baz=114,slow=7.5,SNR=118							
BRVK	**Borovoye**	**78.60**	325	*eP*		**P**	16 53 55.6	-0.1
BRVK				pmax		pmax		
	comp=Z,19nm,0.7s							
BRVK	**Borovoye**	**78.60**	325	*eP*		**P**	16 53 55.6	-0.1
	comp=Z,19nm,0.7s							
NRIK	**Noril'sk**	**78.82**	344	P		**P**	16 53 56.5	0.0
	comp=Z,3.5nm,0.6s,baz=116,slow=6.8,SNR=6.6							
NRIK	**Noril'sk**	**78.82**	344	P		**P**	16 53 56.5	0.0
NRIK				pmax		pmax		
	comp=Z,3.0nm,0.6s							
ZRNK	**Zerenda**	**79.31**	325	*i* P		**P**	16 53 59.0	-0.6
ZRNK				pmax		pmax		
	comp=Z,19nm,1.3s							
ZRNK	**Zerenda**	**79.31**	325	*eP*		**P**	16 53 59.4	-0.2
	comp=Z,14nm,1.0s							
KDAK	**Kodiak Island**	**80.31**	30	*i* P		**P**	16 54 05.4	+0.5
MAW	**Mawson**	**82.98**	202	P		**P**	16 54 19.1	+0.3
	comp=Z,3.3nm,0.8s,baz=91,slow=5.2,SNR=5.4							
SML	**Sawmill**	**83.58**	27	*eP*		**P**	16 54 21.9	-0.2
SML				pmax		pmax		
	comp=Z,4.0nm,1.3s							
SML	**Sawmill**	**83.58**	27	*eP*		**P**	16 54 21.9	-0.2
	comp=Z,4.4nm,1.3s							
GEYT	**Alibeck**	**83.64**	308	P		**P**	16 54 23.4	+0.5
	comp=Z,1.7nm,0.6s,baz=177,slow=10,SNR=5.6							
RND	**Reindeer**	**83.79**	26	*eP*		**P**	16 54 22.4	-0.8
RND				pmax		pmax		
	comp=Z,7.0nm,1.0s							
RND	**Reindeer**	**83.79**	26	*eP*		**P**	16 54 22.4	-0.8
	comp=Z,7.4nm,1.0s							
ABKAR	**Akbulak array**	**83.99**	320	*eP*		**P**	16 54 23.6	-0.8
WRH	**Wood River Hil**	**84.42**	25	*eP*		**P**	16 54 25.8	-0.4
	comp=Z,10nm,1.4s							
CCB	**Clear Creek Bu**	**84.58**	24	*eP*		**P**	16 54 26.6	-0.5
	comp=Z,5.4nm,1.0s							
DIV	**Divide**	**84.59**	28	*eP*		**P**	16 54 27.2	-0.1
	comp=Z,13nm,0.9s							
IL1	**Eielson Array**	**85.00**	24	*eP*		**P**	16 54 27.6	-1.6
ILAR	**Eielson Array**	**85.00**	24	P		**P**	16 54 27.8	-1.4
	comp=Z,1.8nm,0.7s,baz=259,slow=4.9,SNR=15							
ILB	**Eielson Array**	**85.00**	24	*eP*		**P**	16 54 28.1	-1.1
DOT	**Dot Lake**	**85.93**	26	*eP*		**P**	16 54 33.5	-0.4
	comp=Z,12nm,1.1s							
ARU	**Arti**	**86.00**	327	*c iP*		**P**	16 54 33.6	-0.7
ARU							16 57 53.1	
ARU				S		S	17 04 56.5	-9.1
ARU				SS		**SS**	17 10 43.9	-0.1
ARU				pmax		pmax		
	comp=Z,6.0nm,1.0s							
ARU	**Arti**	**86.00**	327	*eP*		**P**	16 54 32.9	-1.4
	comp=Z,5.0nm,0.7s							
DAWY	**Dawson**	**88.04**	26	*eP*		**P**	16 54 44.4	+0.2
	comp=Z,5.2nm,0.8s							
KBZ	**Khabaz**	**95.41**	314	LR		LR	17 44 51.6	
	comp=Z,47nm,19.4s,baz=238,slow=40							
YKA	**Yellowknife Ar**	**99.25**	27	P		**Pdif**	16 55 34.1	-1.5
	comp=Z,0.5nm,0.8s,baz=286,slow=4.6,SNR=5.4							
ARCES	**ARCESS Array B**	**99.62**	341	P		**Pdif**	16 55 34.6	-2.5
	comp=Z,2.5nm,0.7s,baz=50,slow=6.5,SNR=5.2							
TXAR	**Lajitas Array**	**114.83**	58	PKP		PKPdf	17 00 36.0	+0.5
	comp=Z,0.2nm,0.6s,baz=158,slow=7.0,SNR=4.1							
VWCC	**Virginia Weste**	**129.89**	41	*e*PKPdf		**PKPdf**	17 01 02.9	-1.1
PLCA	**Paso Flores**	**130.00**	151	PKP		**PKPdf**	17 01 04.6	+0.4
	comp=Z,2.1nm,0.8s,baz=227,slow=4.5,SNR=3.3							
TORD	**Torodi Ar. Bea**	**135.96**	287	PKP		**PKPdf**	17 01 16.0	0.0
	comp=Z,1.2nm,0.7s,baz=51,slow=2.0,SNR=7.6							
TORD	**Torodi Ar. Bea**	**135.96**	287	PKP		**PKPdf**	17 01 16.0	0.0
KIC	**Kosan Boka**	**143.24**	278	*e*PKIKP		PKPbc	17 01 26.9	+0.6
	comp=Z,13nm,0.8s							
DBIC	**Dimbokro**	**143.33**	279	PKP		PKPbc	17 01 27.3	+0.8
	comp=Z,7.8nm,0.7s,baz=89,slow=4.1,SNR=8.6							
TIC	**Toumodi**	**143.49**	279	*e*PKIKP		PKPbc	17 01 27.1	+0.1
LIC	**Lamto**	**143.54**	278	*e*PKIKP		PKPbc	17 01 27.3	+0.1
	comp=Z,75nm,2.1s							
PRAC	**Prado**	**146.42**	86	*e*PKPdf		**PKPbc**	17 01 35.8	-0.4
CPUP	**Villa Florida**	**148.06**	152	PKPbc		**PKPbc**	17 01 41.4	+1.0
	comp=Z,17nm,0.9s,baz=242,slow=1.6,SNR=14							

NSSC ***06*** *16:45:23.1±1.1,33.83N×35.58E,h0km×5km,MD1.0,ML1.3*
ISCJB ***06*** *16:45:25.6±0.6,33.80N±0.03×35.71E±0.05,h5km×6km, Error ellipse: s-maj=7.6km s-min=4.4km az=0.9*
CSEM ***06*** *16:45:25.7,33.79N×35.78E,h3km,ML2.7*
GRAL ***06*** *16:45:25.7±0.3,33.79N×35.78E,h3km×6km,MD2.7*

ISC 06 16:45:25.5±1.1,33.79N±0.02×35.77E±0.03,h1km±13km,
n14,σ0.68/26,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.15**	321	*eP*		**Pg**	16 45 28.5	**+0.1**
BHL				*eS*		**Sg**	16 45 30.7	**+0.2**
BHL	**Bhannes**	**0.15**	321	*eP*		**Pg**	16 45 28.5	**+0.1**
BHL				*eS*		**Sg**	16 45 30.7	**+0.2**
DQRL	**Deir Qamar**	**0.18**	245	*eP*		**Pg**	16 45 29.3	**+0.3**
DQRL				*eS*		**Sg**	16 45 31.7	**+0.3**
DQRL	**Deir Qamar**	**0.18**	245	*eP*		**Pg**	16 45 29.3	**+0.3**
DQRL				*eS*		**Sg**	16 45 31.7	**+0.3**
RCY	**Rachaya**	**0.29**	169	*eP*		**Pg**	16 45 31.1	**0.0**
RCY				*eS*		**Sg**	16 45 35.0	**+0.1**
RCY	**Rachaya**	**0.29**	169	*eP*		**Pg**	16 45 31.1	**0.0**
RCY				*eS*		**Sg**	16 45 35.0	**+0.1**
BRBR	**Barbar**	**0.40**	158	*eP*		**Pg**	16 45 33.1	**-0.1**
BRBR				*eS*		**Sb**	16 45 40.9	**-1.4**
BRBR					AML	AML	16 45 41.6	
	comp=N,31nm,0.2s							
BRBR					AML	AML	16 45 44.6	
	comp=E,20nm,0.4s							
HWQ	**Hawqa**	**0.51**	17	*eP*		**Pg**	16 45 34.8	**-0.5**
HWQ	**Hawqa**	**0.51**	17	*eP*		**Pg**	16 45 34.8	**-0.5**
MARH	**Ras Al Marh**	**0.64**	68	*eP*		**Pg**	16 45 38.5	**+0.8**
MARH				*eS*		**Sb**	16 45 49.5	**+0.3**
MARH					AML	AML	16 45 54.3	
	comp=N,17nm,0.3s							
MARH					AML	AML	16 45 56.6	
	comp=E,35nm,0.3s							
HAWK	**Haweek**	**0.90**	35	*eP*		**Pg**	16 45 42.3	**-0.5**
HAWK				*eS*		**Sb**	16 45 55.8	**-0.8**
HAWK					AML	AML	16 46 06.1	
	comp=E,6.8nm,0.3s							
HAWK					AML	AML	16 46 07.9	
	comp=N,7.6nm,0.3s							
ROOS	**tl_alroos**	**1.32**	73	*eP*		**Pg**	16 45 50.9	**+0.1**
ROOS				*eS*		**Sn**	16 46 09.8	**+0.4**
ROOS					AML	AML	16 46 20.4	
	comp=E,11nm,0.3s							
ROOS					AML	AML	16 46 25.5	
	comp=Z,5.7nm,0.5s							
ROOS					AML	AML	16 46 26.4	
	comp=N,12nm,0.5s							
SALA	**Sala**	**1.34**	143	*eP*		**Pg**	16 45 49.9	**-1.3**
SALA				*eS*		**Sn**	16 46 11.3	**+1.3**
SALA					AML	AML	16 46 15.0	
	comp=E,0.8nm,0.4s							
SALA					AML	AML	16 46 23.6	
	comp=N,6.8nm,0.5s							
ZALF	**Zalf**	**1.57**	123	*eP*		**Pb**	16 45 54.9	**-0.4**
ZALF				*eS*		**Sg**	16 46 17.2	**+1.4**
ZALF					AML	AML	16 46 21.3	
	comp=E,3.2nm,0.4s							
ZALF					AML	AML	16 46 21.7	
	comp=N,5.0nm,0.9s							

SJA 06 16:49:28.4±1.1,30.70S×64.79W,h21km±12km,ML4.0,
MW4.2,Cordoba Province

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
TCA	**Tanti**	**0.65**	166	*eP*		Pb	16 49 41.6	+0.4
TCA				*eS*		Sb	16 49 50.8	+0.8
TCA				IAML			16 49 51.8	
	comp=Z,5μm,0.2s							
PIL	**Pilar**	**1.23**	141	*eP*		Pb	16 49 52.5	+1.4
MRA	**San Martin**	**1.89**	205	*eP*		Pb	16 50 01.9	-0.3
MRA				IAML			16 50 30.2	
	comp=Z,2μm,0.3s							
ACAN	**Cantantal**	**2.58**	232	*eP*		Pb	16 50 12.3	-1.7
SUCO	**SUCO**	**2.63**	182	*eP*		Pn	16 50 11.7	+2.0
SUCO				IAML			16 50 54.5	
	comp=Z,684nm,0.3s							
AGUA	**GUANDACOL**	**3.43**	290	*eP*		Pn	16 50 23.4	+2.7
VCA	**Vinchina**	**3.56**	303	*eP*		Pn	16 50 25.4	+2.8
AAGR	**Agrelo**	**4.18**	234	*eP*		Pn	16 50 34.8	+3.8

ISCJB ***06*** *16:59:11.1±0.4,23.71S±0.05×179.90W±0.08,h512km, mb4.5/23,Error ellipse: s-maj=10.3km s-min=6.6km az=1.8*
NEIC ***06*** *16:59:13.9±0.6,23.71S×179.87W,h539km,6km,mb4.7/7, Error ellipse: s-maj=9.9km s-min=8.2km az=105.0*
IDC ***06*** *16:59:14.2±1.1,23.72S×179.99W,h534km±11km, mb4.0/16,mb1 4.1/18,mb1mx3.8/36,mbtmp4.8/18,Error ellipse: s-maj=14.4km s-min=11.9km az=130.0*

ISC 06 16:59:11.2±0.4,23.77S±0.06×179.77W±0.08,h512km,
n120,σ1.932/142,mb4.5/23,17C-14D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**5.71**	164	P		P	17 00 50.6	+5.4
	97nm,0.3s,baz=54,slow=19,SNR=4.9							
RAO					S	**S**	**17 02

MAT	**Matsushiro**	**71.91 325**	P		**P**	17 09 41.7	**-0.6**
ASAJ	**Asahikawa**	**75.84 333**	P		**P**	17 10 06.2	**+1.8**
	10nm,0.8s,baz=90,slow=20						
ASAJ	**Asahikawa**	**75.84 333**	*e*P		**P**	17 10 06.0	**+1.6**
MAW	**Mawson**	**77.95 200**	P		**P**	17 10 16.6	**+0.9**
	5.4nm,0.9s,baz=307,slow=18,SNR=5.5						
KSRS	**Korea Array**	**78.28 320**	P		**P**	17 10 18.6	**+0.7**
	3.6nm,0.7s,baz=134,slow=5.7,SNR=16						
KSAR	**Wonju Array Be**	**78.30 320**	P		**P**	17 10 18.6	**+0.6**
PETK	**Petropavlovsk-**	**79.02 346**	P		**P**	17 10 21.7	**+0.3**
	9.7nm,0.7s,baz=125,slow=7.9,SNR=8.2						
USRK	**Ussuriysk Ar.**	**80.77 327**	P		**P**	17 10 32.0	**+1.1**
	7.3nm,0.9s,baz=106,slow=3.9,SNR=14						
SYO	**Syowa Base**	**83.19 193**ǁ	*e*P		**P**	17 10 41.6	**-1.3**
KLR	**Kul'dur**	**84.52 330**	P		**P**	17 10 50.5	**+0.8**
	2.6nm,0.9s,baz=118,slow=2.2,SNR=7.0						
SKNT	**Sakolnakorn**	**84.71 291**	P		**P**	17 10 51.9	**+0.5**
	42nm,0.9s						
NONG	**Nongkai**	**85.91 292**	P		**P**	17 10 58.2	**+1.1**
ENH	**Enshi**	**86.54 305**	*e*P		**P**	17 11 00.3	**+0.4**
	8.5nm,0.8s						
SEY	**Seymchan**	**89.18 348**	P		**P**	17 11 11.3	**-0.1**
	6.5nm,0.8s,baz=158,slow=5.3,SNR=18						
CMAR	**Chiang Mai Arr**	**89.68 290**	P		**P**	17 11 15.8	**+1.1**
	4.5nm,0.9s,baz=138,slow=3.3,SNR=32						
CHTO	**Chiang Mai**	**89.83 291**	*e*P		**P**	17 11 16.2	**+0.8**
	6.5nm,0.9s						
TXAR	**Lajitas Array**	**90.18 58**	P		**P**	17 11 19.8	**+2.8**
	0.5nm,0.6s,baz=216,slow=6.2,SNR=7.1						
ZALV	**Zalesovo Beam**	**111.98 321**	PKiKP		**PKiKP**	17 16 46.4	**-1.2**
	0.9nm,0.6s,baz=147,slow=2.9,SNR=5.8						
MKAR	**Makanchi Array**	**112.22 313**	PKiKP		**PKiKP**	17 16 47.4	**-1.0**
	1.0nm,0.6s,baz=114,slow=0.5,SNR=14						
KURK	**Kurchatov**	**115.25 316**	PKP		**PKPdf**	17 16 52.5	**-1.4**
KURK			*e*PKPdf		**PKiKP**	17 16 53.0	**-0.9**
KURBB	**Kurchatov Arra**	**115.29 316**	PKP		**PKPdf**	17 16 52.5	**-1.5**
	1.8nm,0.7s,baz=99,slow=1.9,SNR=27						
KKAR	**Karatay Array**	**119.95 307**	*e*PKPdf		**PKPdf**	17 17 02.1	**-1.2**
BVAR	**Borovoye Array**	**120.48 319**	PKP		**PKPdf**	17 17 03.0	**-0.9**
	2.1nm,0.4s,baz=114,slow=1.1,SNR=18						
SPITS	**Spitsbergen Ar**	**125.00 356**	PKP		**PKPdf**	17 17 11.4	**-0.6**
	2.8nm,0.6s,baz=38,slow=7.3,SNR=3.6						
ARU	**Arti**	**126.90 324**	PKP		**PKPdf**	17 17 16.4	**+0.2**
	4.4nm,0.5s,baz=334,slow=1.0,SNR=8.6						
ABKAR	**Akbulak array**	**127.26 315**	*e*PKPdf		**PKPdf**	17 17 16.7	**-0.3**
GEYT	**Alibeck**	**129.08 300**	PKP		**PKPdf**	17 17 21.3	**+0.4**
	2.8nm,0.7s,baz=151,slow=3.4,SNR=6.7						
ARCES	**ARCESS Array B**	**131.80 348**	PKP		**PKPdf**	17 17 24.8	**-0.4**
	2.7nm,0.7s,baz=68,slow=1.6,SNR=9.3						
ARCES			SKPbc		**SKPbc**	17 20 01.3	**-1.7**
	3.0nm,0.9s,baz=38,slow=4.6,SNR=3.9						
FINES	**FINESS Array B**	**138.39 342**	PKhKP		PKPpre	17 17 26.6	
	0.7nm,0.6s,baz=319,slow=5.5,SNR=4.0						
FINES			PKP		**PKPdf**	17 17 37.9	**+0.4**
	1.0nm,0.4s,baz=85,slow=3.7,SNR=11						
FINES			SKPbc		**SKPbc**	17 20 21.0	**-2.7**
	2.4nm,0.6s,baz=60,slow=4.6,SNR=7.9						
NB2	**NORSAR Subarra**	**141.98 351**	PKP		PKPpre	17 17 39.8	
	comp=Z,1.4nm,0.7s,baz=16,slow=3.2						
NOA	**NORSAR Array B**	**141.98 351**	PKhKP		PKPpre	17 17 39.9	
	comp=Z,3.6nm,0.8s,baz=16,slow=4.7,SNR=13						
NOA			SKPbc		**SKPbc**	17 20 31.2	**-2.0**
	comp=Z,1.2nm,0.7s,baz=15,slow=4.2,SNR=4.7						
SFNV	**Sufian**	**143.51 300**	*e*P		PKPbc	17 17 46.1	-0.1
AKASG	**Malin Array Be**	**144.97 328**	PKP		**PKPdf**	17 17 49.0	**-0.6**
	comp=Z,9.6nm,0.7s,baz=42,slow=4.3,SNR=40						
AKASG			SKPbc		**SKPbc**	17 20 38.6	**-2.0**
	comp=Z,2.3nm,0.7s,baz=45,slow=2.6,SNR=6.7						
KIEV	**Kiev**	**144.98 328**	*e*PKPdf		**PKPdf**	17 17 48.9	**-0.7**
SUW	**Suwalki**	**145.23 336**	*e*P		**PKPbc**	17 17 50.8	**-0.1**
ROOS	**tl_alroos**	**146.12 296**	*e*P		**PKPbc**	17 17 53.5	**-0.7**
RABH	**Abou Rabah**	**146.16 297**	*e*P		**PKPbc**	17 17 54.5	**+0.3**
KFRA	**Kufra**	**146.36 298**	*e*P		**PKPdf**	17 17 49.6	**-2.9**
SLNF	**Slenfeh**	**146.76 299**	*e*P		**PKPbc**	17 17 55.2	**-0.9**
SALA	**Sala**	**146.76 294**	*e*P		**PKPbc**	17 17 56.5	**+0.3**
BIDA	**Albida**	**146.78 298**	*e*P		**PKPbc**	17 17 56.0	**+0.1**
HAWK	**Haweek**	**146.79 297**	*e*P		**PKPbc**	17 17 56.2	**+0.1**
MARH	**Ras Al Marh**	**146.81 296**	*e*P		**PKPbc**	17 17 56.9	**+0.5**
SORM	**Soroca**	**147.01 325**ǁ	*i*P		**PKPbc**	17 17 55.2	**-0.8**
BRBR	**Barbar**	**147.33 295**	*e*P		**PKPbc**	17 17 58.7	**+1.0**
BRTR	**Keskin Array B**	**147.66 307**	PKP		**PKPdf**	17 17 54.8	**+0.1**
	comp=Z,3.5nm,0.7s,baz=143,slow=4.7,SNR=14						
BRTR			PKPbc		**PKPbc**	17 17 58.0	**-0.2**
	comp=Z,6.8nm,0.6s,baz=142,slow=4.0,SNR=14						
BRTR			PKPab		**PKPab**	17 18 02.1	**-0.2**
	comp=Z,7.5nm,0.6s,baz=91,slow=4.0,SNR=25						
BEL	**Belsk**	**147.84 336**	*e*P		**PKPbc**	17 17 58.5	**+0.4**
GKP	**Gorka Klasztor**	**147.85 341**	*e*P		**PKPbc**	17 17 58.3	**+0.2**
KWP	**Kalwaria Pacla**	**148.75 331**	*e*P		**PKPbc**	17 18 00.7	**+0.3**
CFR	**Carcaliu**	**148.87 320**ǁ	*i*P		**PKPbc**	17 18 00.3	**-0.5**
TESR	**Tescani**	**148.93 323**ǁ	*i*P		**PKPbc**	17 18 00.6	**-0.4**
BURAR	**Bucovina Array**	**148.98 326**⇑	*i*P		**PKPbc**	17 18 02.4	**+1.2**
TIRR	**Tirgusor**	**149.09 319**ǁ	*i*P		**PKPbc**	17 18 01.3	**-0.1**
TLB	**Topalu**	**149.25 319**ǁ	*i*P		**PKPbc**	17 18 01.5	**-0.3**
VRI	**Vrincioaia**	**149.27 322**⇑	*i*P		**PKPbc**	17 18 01.6	**-0.3**
KOLS	**Kolonicke sedl**	**149.46 331**	*e*		**PKPbc**	17 18 03.1	**+0.9**
OJC	**Ojcow**	**149.50 335**	*e*P		**PKPbc**	17 18 02.4	**+0.2**
STHS	**Stebnicka Huta**	**149.54 332**	*e*		**PKPbc**	17 18 03.2	**+0.8**
CRVS	**Cervenica-Dubn**	**149.84 332**	*e*		**PKPbc**	17 18 03.8	**+0.7**
MLR	**Muntele Rosu**	**149.94 322**ǁ	*i*P		**PKPbc**	17 18 03.3	**-0.3**
NIE	**Niedzica**	**149.94 333**	*e*P		**PKPbc**	17 18 04.0	**+0.7**
DOPR	**Dopca**	**149.95 324**ǁ	*i*P		**PKPbc**	17 18 03.9	**+0.4**
KSP	**Ksiaz**	**150.24 339**	*e*P		**PKPbc**	17 18 04.6	**+0.7**
CJR	**Cluj-Napoca**	**150.40 326**⇑	*i*P		**PKPbc**	17 18 04.6	**+0.1**
OKC	**Ostrava-Krasne**	**150.44 336**⇑	*e*PKP		**PKPbc**	17 18 04.5	**+0.1**
VOIR		**150.47 323**ǁ	*i*P		**PKPbc**	17 18 04.7	**-0.1**
KECS	**Kecovo**	**150.58 332**	*e*		**PKPab**	17 18 14.2	**+0.3**
UPC	**Upice**	**150.62 339**⇑	*e*PKP		**PKPbc**	17 18 05.3	**+0.5**
DPC	**Dobruska-Polom**	**150.65 339**⇑	*e*PKP		**PKPbc**	17 18 05.1	**+0.1**
DPC			*e*PKPAB		**PKPab**	17 18 14.8	**+0.7**
MORC	**Moravsky Berou**	**150.71 337**ǁ	*i*P		**PKPbc**	17 18 05.5	**+0.4**
KRLC	**Kraliky**	**150.73 338**⇑	*e*PKP		**PKPbc**	17 18 05.6	**+0.4**
KRLC			*e*PKPAB		**PKPab**	17 18 15.1	**+0.6**
ARR	**Arges**	**150.74 323**⇑	*i*P		**PKPbc**	17 18 06.3	**+0.9**
CLL	**Collm**	**150.79 343**ǁ	*i*PKPbc		**PKPbc**	17 18 05.3	**+0.1**
	comp=Z,21nm,0.8s						
CLL			⇑*i*PKPab		**PKPab**	17 18 14.7	**+0.1**
	comp=Z,8.0nm,0.7s						
CLL			*e*			17 20 15.0	
	comp=Z,9.0nm,1.3s						
CLL			LmV			17 49 00.0	
	comp=Z,100nm,19.8s						
DRGR		**150.79 327**ǁ	*i*P		**PKPbc**	17 18 05.4	**-0.1**
BRG	**Berggiesshubel**	**150.92 342**	*i* PKP		**PKPbc**	17 18 05.9	**+0.3**
	comp=Z,13nm,0.6s						
BRG			*i*			17 18 15.4	
	comp=Z,4.7nm,0.6s						
PVCC	**Panska Ves**	**151.05 341**⇑	*e*PKP		**PKPbc**	17 18 05.7	**-0.1**
LOT	**Lotru**	**151.15 324**ǁ	*i*P		**PKPbc**	17 18 04.4	**-2.0**
VYHS	**Vyhne**	**151.26 334**	*e*P		**PKPbc**	17 18 06.7	**+0.3**
VYHS			*e*			17 18 17.4	
PSZ	**Piszkesteto**	**151.27 332**ǁ	*i*P		**PKPbc**	17 18 06.5	**0.0**
PRU	**Pruhonice**	**151.53 340**⇑	*e*PKP		**PKPbc**	17 18 07.0	**+0.1**
PRU			*e*PKPAB		**PKPab**	17 18 18.4	**+0.6**
SIRR	**Siria**	**151.68 328**⇑	*i*P		**PKPbc**	17 18 07.2	**-0.2**
NKC	**Novy Kostel**	**151.91 343**⇑	*e*PKP		**PKPbc**	17 18 08.4	**+0.6**
BZS	**Buzias**	**152.15 327**⇑	*i*P		**PKPbc**	17 18 06.8	**-1.7**
KHC	**Kasperske Hory**	**152.59 341**⇑	*e*PKP		**PKPbc**	17 18 09.5	**+0.1**
KHC			*e*PKPAB		**PKPab**	17 18 22.8	**+0.5**
MDVR	**Moldovita**	**152.68 325**⇑	*i*P		**PKPbc**	17 18 08.7	**-1.0**
GERES	**GERESS Array B**	**152.80 340**	PKPbc		**PKPbc**	17 18 09.6	**-0.3**
	comp=Z,1.3nm,0.8s,baz=47,slow=2.4,SNR=9.4						
GERES			PKPab		**PKPab**	17 18 23.3	**0.0**
	comp=Z,0.9nm,0.6s,baz=29,slow=3.0,SNR=4.8						
CONA	**Conrad Observa**	**152.87 337**	*i* PKPab		**PKPab**	17 18 24.4	**+0.8**
	comp=Z,7.2nm,0.7s						
VTS	**Vitosha**	**153.27 320**⇑	*i*P		**PKPab**	17 18 25.6	**0.0**
SOKA	**Soboth**	**154.22 336**	*i* PKPab		**PKPab**	17 18 29.6	**+0.2**
	comp=Z,5.9nm,1.1s						
MYKA	**Terra Mystica**	**154.76 338**	*i* PKPab		**PKPab**	17 18 31.3	**-0.5**
	comp=Z,2.6nm,0.5s						
WATA	**Walderalm**	**154.79 342**	*i* PKPab		**PKPab**	17 18 32.1	**+0.1**
	comp=Z,2.8nm,0.5s						
RETA	**Reutte**	**154.88 343**	*i* PKPab		**PKPab**	17 18 32.6	**+0.4**
	comp=Z,6.1nm,1.0s						
ABTA	**Abfaltersbach**	**155.03 340**	*i* PKPab		**PKPab**	17 18 32.2	**-0.7**
	comp=Z,3.2nm,0.7s						
DAVA	**Damuels**	**155.29 344**	*i* PKPab		**PKPab**	17 18 33.9	**-0.3**
	comp=Z,6.0nm,0.7s						
ESDC	**Sonseca Array**	**163.75 12**	PKPab		**PKPab**	17 19 10.9	**-0.1**
	comp=Z,0.1nm,0.3s,baz=350,slow=3.4,SNR=4.5						
TORD	**Torodi Ar. Bea**	**169.35 188**	PKP		**PKPdf**	17 18 18.6	**-1.7**
	comp=Z,0.8nm,0.9s,baz=23,slow=0.9,SNR=3.9						
TORD			PKPab		**PKPab**	17 19 36.7	**+0.5**
	comp=Z,0.6nm,0.6s,baz=152,slow=5.4,SNR=4.3						

JMA 06 17:02:10.6±0.1, 35.89N×140.47E, h36km±1km, M1.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.37**	**120**	P	Pn	17 02 19.1	-0.1
CHOJ				S	Sn	17 02 24.9	-0.9
JYT	**Yasato**	**0.40**	**327**	P	Pn	17 02 19.8	+0.1
JYT				*e*S	Sn	17 02 26.1	-0.3

*NIED **06** 17:02:00, 36.40N×141.90E, h23km, Mw3.9 Best double couple: M0=9.30000×10^14 NP1:φ=228.00000°, δ=18.00000°, λ=106.00000°. NP2:φ=31.00000°, δ=73.00000°, λ=85.00000°.*
*ISCJB **06** 17:02:12.5±0.6, 36.32N±0.04×142.09E±0.06, h19km, mb4.0/17, Error ellipse: s-maj=7.8km s-min=5.6km az=36.1*
*JMA **06** 17:02:15.3±0.2, 36.36N×141.90E, h65km±4km, M3.6*
*IDC **06** 17:02:20.7±2.6, 36.20N×141.57E, h61km±22km, mb3.6/14, mb1 3.7/17, mb1mx3.5/63, mbtmp3.9/17, ML3.8/2, Error ellipse: s-maj=27.2km s-min=13.9km az=90.0*
*NEIC **06** 17:02:21.5±2.5, 36.26N×141.61E, h68km±17km, mb4.5/3, Error ellipse: s-maj=24.8km s-min=18.3km az=110.0*

ISC 06 17:02:14.8±0.8, 36.33N±0.05×142.00E±0.07, h19km, n44, σ1§65/44, mb4.0/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.12**	**236**	P	**Pn**	**17 02 34.8**	**-0.6**
CHOJ				*e*S	**Sb**	**17 02 49.9**	**+0.3**
JHO	**Hitachi**	**1.19**	**284**	P	**Pn**	**17 02 34.9**	**-1.5**
ONAJ	**Iwakimizuishiy**	**1.24**	**309**	P	**Pn**	**17 02 35.3**	**-1.9**
JFK	**Kawauchi**	**1.38**	**319**	P	**Pn**	**17 02 38.1**	**-0.9**
JFT	**Otama**	**1.79**	**312**	P	**Pn**	**17 02 44.3**	**-0.4**
JMM	**Marumori**	**1.81**	**328**	P	**Pn**	**17 02 44.1**	**-0.9**
BSO1	**Boso 1**	**1.87**	**207**	P	**Pn**	**17 02 45.2**	**-0.1**
BSO3	**Boso 3**	**1.95**	**219**	P	**Pn**	**17 02 46.6**	**0.0**
JAG	**Ashikaga**	**2.06**	**273**	P	**Pn**	**17 02 47.6**	**-0.8**
JAG				*e*S	**Sn**	**17 03 10.6**	**-3.0**
JFY	**Yanaizu**	**2.13**	**301**	P	**Pn**	**17 02 49.4**	**0.0**
JRY	**Ryogami san**	**2.53**	**264**	P	**Pn**	**17 02 54.0**	**-0.9**
JRY				*e*S	**Sn**	**17 03 23.1**	**-2.1**
JOD2	**Odawara 2**	**2.60**	**247**	P	**Pn**	**17 02 55.7**	**-0.1**
MJAR	**Matsushiro Arr**	**3.07**	**275**	P	**Pn**	**17 03 02.2**	**-0.1**
	13nm,0.3s,baz=111,slow=8.7,SNR=125						
MJAR				S	**Sn**	**17 03 39.4**	**+1.0**
	5.1nm,0.3s,baz=83,slow=11,SNR=5.5						
MAJO	**Matsushiro**	**3.07**	**275**	*e*P	**Pn**	**17 03 02.6**	**+0.4**
MAT	**Matsushiro**	**3.07**	**275**	P	**Pn**	**17 03 02.9**	**+0.6**
MAT				S	**Sn**	**17 03 39.1**	**+0.6**
JHJ	**Hachijo jima 2**	**3.69**	**210**	P	**Pn**	**17 03 09.9**	**-0.8**
	34nm,0.3s,baz=342,slow=23,SNR=32						
JHJ				S	**Sn**	**17 03 51.0**	**-2.7**
	65nm,0.3s,baz=259,slow=22,SNR=10						
ASAJ	**Asahikawa**	**7.79**	**3**	P	**Pn**	**17 04 05.5**	**-1.6**
	baz=207,slow=12						
ASAJ				S	**Sn**	**17 05 31.1**	**-3.7**
	baz=90,slow=20						
USRK	**Ussuriysk Ar.**	**10.96**	**319**	P	**Pn**	**17 04 53.8**	**+3.2**
	0.1nm,0.3s,baz=128,slow=11,SNR=2.7						
KSRS	**Korea Array**	**11.33**	**280**	P	**Pn**	**17 04 59.3**	**+3.6**
	0.2nm,0.3s,baz=93,slow=14,SNR=5.2						
KSAR	**Wonju Array Be**	**11.36**	**280**	P	**Pn**	**17 04 59.3**	**+3.2**
YAK	**Yakutsk**	**26.86**	**347**	P	**P**	**17 07 53.7**	**-0.2**
	5.9nm,0.6s,baz=158,slow=1.8,SNR=4.7						
H11N2	**WAKE ISLAND Hy**	**27.38**	**120**	T	T	17 36 41.1	
	baz=313,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**27.39**	**120**	T	T	17 36 42.8	
	baz=313,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**27.40**	**120**	T	T	17 36 42.4	
	baz=313,slow=75,SNR=13						
ENH	**Enshi**	**27.76**	**267**	*e*P	**P**	**17 08 01.6**	**-0.8**
	3.8nm,0.4s						
H11S1	**WAKE ISLAND Hy**	**28.08**	**123**	T	T	17 37 31.0	
	baz=315,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**28.08**	**123**	T	T	17 37 31.6	
	baz=315,slow=76,SNR=7.7						
H11S2	**WAKE ISLAND Hy**	**28.10**	**123**	T	T	17 37 31.1	
	baz=315,slow=76,SNR=6.0						
SONM	**Songino Array**	**28.57**	**305**	P	**P**	**17 08 07.7**	**-1.9**
	2.5nm,0.5s,baz=101,slow=8.4,SNR=5.5						
CMAR	**Chiang Mai Arr**	**41.78**	**257**	P	**P**	**17 10 01.8**	**-1.5**
	0.8nm,0.8s,baz=54,slow=5.4,SNR=7.5						
ZALV	**Zalesovo Beam**	**42.74**	**313**	P	**P**	**17 10 10.4**	**-0.2**
	0.9nm,0.4s,baz=97,slow=6.0,SNR=6.0						
NRIK	**Noril'sk**	**44.10**	**335**	P	**P**	**17 10 23.1**	**+1.7**
	3.3nm,0.5s,baz=101,slow=5.2,SNR=3.9						
MKAR	**Makanchi Array**	**44.90**	**303**	P	**P**	**17 10 28.2**	**+0.1**
	0.8nm,0.6s,baz=89,slow=10,SNR=12						
KURK	**Kurchatov**	**46.74**	**309**	*e*P	**P**	**17 10 42.1**	**-0.4**
	24nm,0.8s						
KURBB	**Kurchatov Arra**	**46.81**	**309**	P	**P**	**17 10 43.0**	**0.0**
	1.4nm,0.6s,baz=85,slow=8.0,SNR=19						
ILAR	**Eielson Array**	**49.84**	**32**	P	**P**	**17 11 10.6**	**+4.4**
	0.3nm,0.8s,baz=255,slow=6.5,SNR=3.0						
BVAR	**Borovoye Array**	**51.40**	**313**	P	**P**	**17 11 18.3**	**+0.2**
	0.4nm,0.5s,baz=78,slow=9.2,SNR=3.9						
WRAB	**Tennant Creek**	**56.42**	**189**	*e*P	P	17 12 01.2	+6.1
	3.1nm,0.8s						
WRA	**Warramunga Arr**	**56.43**	**189**	P	**P**	**17 11 54.8**	**-0.5**
	0.3nm,0.4s,baz=6.7,slow=7.1,SNR=5.9						
FINES	**FINESS Array B**	**69.66**	**333**	P	**P**	**17 13 22.7**	**+0.1**
	1.4nm,0.9s,baz=25,slow=8.3,SNR=3.1						
NB2	**NORSAR Subarra**	**75.02**	**338**	P	**P**	**17 13 55.1**	**+0.4**
	comp=Z,0.8nm,0.6s,baz=41,slow=6.2						
NOA	**NORSAR Array B**	**75.02**	**338**	P	**P**	**17 13 54.8**	**0.0**
	comp=Z,0.5nm,0.6s,baz=42,slow=6.4,SNR=4.2						
AKASG	**Malin Array Be**	**75.14**	**323**	P	**P**	**17 13 55.1**	**-0.4**
	comp=Z,0.8nm,0.5s,baz=46,slow=7.2,SNR=4.6						
BRTR	**Keskin Array B**	**79.67**	**312**	P	**P**	**17 14 20.5**	**-0.8**
	comp=Z,0.4nm,0.5s,baz=57,slow=5.3,SNR=2.9						

*ISCJB **06** 17:02:37.8±0.3, 67.08N±0.02×20.97E±0.07, h0km, Error ellipse: s-maj=4.1km s-min=3.0km az=14.9*
*UPP **06** 17:02:38.1±0.1, 67.07N×20.92E, h0km, ML2.1, Explosion*
*IDC **06** 17:02:38.6±1.0, 67.04N×21.10E, h0km, mb1 2.8/3, mb1mx2.7/62, mbtmp2.7/3, ML2.4/3, Error ellipse: s-maj=16.0km s-min=8.4km az=110.0*
*CSEM **06** 17:02:39.0±0.1, 67.08N×20.96E, h2km, ML2.1, Error ellipse: s-maj=4.1km s-min=3.5km az=94.0, Mining explosion.*
*NAO **06** 17:02:39.1±0.9, 67.07N×21.27E, ML2.4*
*HEL **06** 17:02:39.0±0.1, 67.07N×20.89E, h0km, ML2.1, ML2.1(UPP), Explosion*
*BER **06** 17:02:40.9±4.2, 67.07N×21.08E, h0km, ML1.7, ML2.4(NAO), Suspected explosion*

ISC 06 17:02:37.7±0.7, 67.07N±0.02×20.90E±0.02, h0km, n96, σ1§19/120, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MASU	**Masugnsbyn**	**0.58**	**47**	P	**Pg**	**17 02 49.0**	**+0.2**
MASU				S	**Sg**	**17 02 57.4**	**+1.1**
MASU	**Masugnsbyn**	**0.58**	**47**	*i* P	**Pg**	**17 02 49.0**	**+0.2**
MASU				*i* S	**Sg**	**17 02 57.4**	**+1.1**
MASU	**Masugnsbyn**	**0.58**	**47**	P	**Pg**	**17 02 49.0**	**+0.2**
MASU				S	**Sg**	**17 02 57.4**	**+1.1**
ERTU	**Ertsjaerv**	**0.72**	**135**	P	**Pg**	**17 02 51.5**	**0.0**
ERTU	**Ertsjaerv**	**0.72**	**135**	*i* P	**Pg**	**17 02 51.5**	**0.0**
ERTU	**Ertsjaerv**	**0.72**	**135**	P	**Pg**	**17 02 51.5**	**0.0**
SALU	**Saltoluokta**	**0.98**	**290**	P	**Pg**	**17 02 56.7**	**+0.1**
SALU	**Saltoluokta**	**0.98**	**290**	*e*P	**Pg**	**17 02 56.7**	**+0.1**
SALU	**Saltoluokta**	**0.98**	**290**	P	**Pg**	**17 02 56.7**	**+0.1**
LANU	**Lannavaara**	**1.07**	**22**	P	**Pg**	**17 02 57.8**	**-0.4**
LANU	**Lannavaara**	**1.07**	**22**	*e*P	**Pg**	**17 02 57.8**	**-0.4**
LANU				*e*S	**Sg**	**17 03 12.1**	**0.0**
LANU	**Lannavaara**	**1.07**	**22**	P	**Pg**	**17 02 57.8**	**-0.4**
LANU				S	**Sg**	**17 03 12.1**	**0.0**
NIKU	**Nikkaluokta**	**1.08**	**319**	P	**Pg**	**17 02 58.1**	**-0.3**
NIKU	**Nikkaluokta**	**1.08**	**319**	*e*P	**Pg**	**17 02 58.1**	**-0.3**
NIKU	**Nikkaluokta**	**1.08**	**319**	P	**Pg**	**17 02 58.1**	**-0.3**
SJUU	**Sjulsmark**	**1.59**	**169**	P	**Pn**	**17 03 07.3**	**+0.2**
SJUU	**Sjulsmark**	**1.59**	**169**	*e*P	**Pn**	**17 03 07.3**	**+0.2**
SJUU	**Sjulsmark**	**1.59**	**169**	P	**Pn**	**17 03 07.3**	**+0.2**
TOF	**Tornio**	**1.69**	**124**	*e*P	**Pb**	**17 03 09.2**	**-0.4**
TOF	**Tornio**	**1.69**	**124**	P	**Pb**	**17 03 09.2**	**-0.4**
HEF	**Hetta**	**1.71**	**37**	*e*P	**Pn**	**17 03 08.8**	**+0.1**
HEF	**Hetta**	**1.71**	**37**	*e*P	**Pn**	**17 03 08.8**	**+0.1**
HEF				*e*S	**Sn**	**17 03 30.9**	**-0.4**
HEF				MSG		17 03 34.9	
	comp=Z,11nm,0.1s						
HEF	**Hetta**	**1.71**	**37**	*e*P	**Pn**	**17 03 08.8**	**+0.1**
	SNR=50						
HEF				S	**Sn**	**17 03 30.9**	**-0.4**
LILU	**Lilltraesk**	**1.84**	**194**	P	**Pb**	**17 03 11.5**	**-0.7**
LILU	**Lilltraesk**	**1.84**	**194**	*e*P	**Pb**	**17 03 11.5**	**-0.7**
LILU	**Lilltraesk**	**1.84**	**194**	P	**Pb**	**17 03 11.5**	**-0.7**
KIF	**Kilpisjarvi**	**1.95**	**359**	Pn	**Pb**	**17 03 13.8**	**-0.2**
KIF				Lg	Lg	17 03 41.4	
KIF	**Kilpisjarvi**	**1.95**	**359**	Pn	**Pb**	**17 03 13.8**	**-0.2**
KIF				Lg	Lg	17 03 41.4	
KIF	**Kilpisjarvi**	**1.95**	**359**	*e*P	**Pg**	**17 03 14.6**	**-0.5**
KIF				*e*SG	**Sg**	**17 03 40.6**	**+0.3**
KIF				MSG		17 03 43.4	
	comp=Z,16nm,0.1s						
KIF	**Kilpisjarvi**	**1.95**	**359**	Pn	**Pb**	**17 03 13.8**	**-0.2**
	SNR=50						
KIF	**Kilpisjarvi**	**1.95**	**359**	P	**Pg**	**17 03 14.5**	**-0.5**
KIF				Sg	**Sg**	**17 03 40.6**	**+0.3**
KIF				Lg	Lg	17 03 41.4	
RNF	**Rovaniemi**	**2.07**	**100**	*e*P	**Pb**	**17 03 15.4**	**-0.8**
RNF				*e*SG	**Sg**	**17 03 43.6**	**-0.6**
RNF	**Rovaniemi**	**2.07**	**100**	P	**Pb**	**17 03 15.3**	**-0.8**
RNF				Sg	**Sg**	**17 03 43.6**	**-0.6**
KTK1	**Kautokeino**	**2.14**	**23**	*e*P	**Pb**	**17 03 16.6**	**-0.8**
KTK1				IAML		17 04 03.9	
	comp=Z,7.8nm,0.2s						
KTK1	**Kautokeino**	**2.14**	**23**	*e*P	**Pb**	**17 03 16.6**	**-0.8**
	SNR=50						
SGF	**Sodankyl**	**2.22**	**78**	*e*PG	**Pg**	**17 03 20.4**	**+0.2**
SGF	**Sodankyl**	**2.22**	**78**	Pg	**Pg**	**17 03 20.4**	**+0.2**
STEI	**Steigen**	**2.34**	**294**	*e*P	**Pb**	**17 03 20.4**	**-0.3**
STEI	**Steigen**	**2.34**	**294**	*e*P	**Pb**	**17 03 20.4**	**-0.3

mb3.1/2, Error ellipse: s-maj=8.8km s-min=3.9km az=41.7
*FUNV **06** 17:14:18.5, 6˚.81N×73˚.08W, h166km, MW3.7*
*IDC **06** 17:14:18.8±4.3, 6˚.66N×73˚.23W, h166km±28km, mb2.9/2, mb1 3.4/3, mb1mx3.0/26, mbtmp3.4/3, Error ellipse: s-maj=78.1km s-min=26.8km az=82.0*
*RSNC **06** 17:14:19.2±0.7, 6˚.77N×73˚.12W, h144km±3km, ML3.6*

ISC 06 17:14:17.0±0.9, **6.79N**±0˚.04×**73˚.05W**±0˚.05, **h159**km±5km, **n36**, σ1§**32**/55, **3D**, **Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.24**	**215**	*eP*			**Pn**	**17 14 38.5**	**-0.2**
BARC				*eS*			**Sn**	**17 14 53.4**	**-1.9**
BARC				*i*				17 14 54.8	
	comp=Z,845nm,0.2s								
BTLC	**Betulia, Santa**	**0.25**	**300**	*eP*			**Pn**	**17 14 38.7**	**0.0**
BTLC				*eS*			**Sn**	**17 14 53.5**	**-1.8**
GIRC	**Giron, Santand**	**0.32**	**333**	*eP*			**Pn**	**17 14 38.5**	**-0.3**
GIRC				*eS*			**Sn**	**17 14 54.1**	**-1.4**
PAMC	**Pamplona, Colo**	**0.65**	**32**	*eP*			**Pn**	**17 14 41.4**	**+0.7**
PAMC				*i*				17 14 41.8	
	comp=Z,605nm,0.2s								
PAMC				*eS*			**Sn**	**17 14 58.0**	**-0.8**
BRRC	**Barranca, Sant**	**0.73**	**296**	*eP*			**Pn**	**17 14 40.4**	**-0.2**
BRRC				*eS*			**Sn**	**17 14 57.1**	**-1.5**
BRRC				*i*				17 14 58.4	
	comp=Z,769nm,0.1s								
RUSC	**La Rusia**	**0.89**	**182**	*eP*			**Pn**	**17 14 42.4**	**+0.1**
RUSC				*eS*			**Sn**	**17 15 00.4**	**-1.3**
RUSC				*i*				17 15 02.4	
	comp=Z,298nm,0.4s								
CBRI	**Barrientos, No**	**0.95**	**15**	*eP*			**Pn**	**17 14 43.1**	**+0.7**
CBRI				*eS*			**Sn**	**17 15 01.2**	**-0.7**
CBRI				*i*				17 15 06.7	
	comp=Z,411nm,0.4s								
GRMC	**Gramalote, San**	**0.95**	**15**	*eP*			**Pn**	**17 14 44.4**	**+2.0**
GRMC				*i*				17 14 45.8	
	comp=Z,650nm,0.2s								
GRMC				*eS*			**Sn**	**17 15 04.0**	**+2.1**
CAPV	**Capacho**	**1.29**	**34**⇓	*iP*			**Pn**	**17 14 46.6**	**+1.2**
CAPV				*eS*			**Sn**	**17 15 08.0**	**+0.7**
OCAC	**Ocana**	**1.47**	**349**	*eP*			**Pn**	**17 14 47.2**	**+0.2**
OCAC				*eS*			**Sn**	**17 15 10.6**	**+0.5**
OCAC				*i*				17 15 15.2	
	comp=Z,738nm,0.4s								
NORC	**Norcasia**	**2.18**	**236**	*eP*			**Pn**	**17 14 55.0**	**+0.1**
NORC				*eS*			**Sn**	**17 15 22.1**	**-1.9**
CHIC	**Chingaza**	**2.25**	**198**	*eP*			**Pn**	**17 14 56.8**	**+0.8**
CHIC				*eS*			**Sn**	**17 15 26.1**	**+0.1**
CHIC				*i*				17 15 33.7	
	comp=Z,122nm,0.4s								
ROSC	**El Rosal**	**2.31**	**213**	P			**Pn**	**17 14 58.2**	**+1.5**
	comp=Z,19nm,0.3s,baz=128,slow=23,SNR=24								
ROSC				S			**Sn**	**17 15 25.5**	**-1.8**
	comp=Z,23nm,0.3s,baz=208,slow=21,SNR=8.7								
HELC	**Santa Helena**	**2.54**	**257**	*eP*			**Pn**	**17 14 58.7**	**-0.6**
HELC				*i*				17 15 37.5	
	comp=Z,500nm,0.3s								
SOCV	**Socops**	**2.63**	**56**⇓	*eP*			**Pn**	**17 15 00.9**	**+0.8**
SOCV				*eS*			**Sn**	**17 15 32.9**	**-0.6**
VIGV	**El Vigia**	**2.63**	**39**⇓	*iP*			**Pn**	**17 15 01.1**	**+1.0**
VIGV				*eS*			**Sn**	**17 15 32.7**	**-0.9**
GUYC	**Guyana, Colomb**	**2.80**	**236**	*eP*			**Pn**	**17 15 03.1**	**+0.4**
GUYC				*eS*			**Sn**	**17 15 36.7**	**-1.3**
GUYC				*i*				17 15 45.6	
	comp=Z,256nm,0.4s								
DBBC	**Dabeiba**	**3.15**	**274**	*eP*			**Pn**	**17 15 06.8**	**+0.1**
SDV	**Santo Domingo**	**3.17**	**49**	*eP*			**Pn**	**17 15 07.6**	**+0.6**
SDV				*eS*			**Sn**	**17 15 44.3**	**-1.5**
ELOV	**Elorza**	**3.54**	**86**	*eP*			**Pn**	**17 15 12.8**	**+1.2**
PRAC	**Prado**	**3.56**	**211**	*eP*			**Pn**	**17 15 12.7**	**+0.8**
VIRV	**Villa del Rosa**	**3.74**	**10**	*eP*			**Pn**	**17 15 13.9**	**-0.3**
VIRV				*eS*			**Sn**	**17 15 55.7**	**-3.0**
QARV	**Quebrada Arrib**	**4.21**	**36**	*eP*			**Pn**	**17 15 21.4**	**+1.1**
SANV	**Sanarito**	**4.40**	**52**	*eP*			**Pn**	**17 15 22.9**	**+0.2**
CURV	**Curarigua**	**4.42**	**43**	*eS*			**Sn**	**17 16 11.3**	**-3.3**
DABV	**Dabajuro**	**4.75**	**30**	*eP*			**Pn**	**17 15 28.0**	**+0.7**
TEPV	**Terepaima**	**4.95**	**50**	*eP*			**Pn**	**17 15 30.4**	**+0.4**
SIQV	**Siquisique**	**5.00**	**40**	*eP*			**Pn**	**17 15 30.0**	**-0.5**
BAUV	**El Baul**	**5.40**	**66**	*eP*			**Pn**	**17 15 35.3**	**-0.5**
BAUV				*eS*			**Sn**	**17 16 33.2**	**-4.3**
MAPV	**Macapo**	**5.45**	**56**	*eP*			**Pn**	**17 15 36.8**	**+0.2**
MONV	**Montecano**	**5.96**	**30**	*eP*			**Pn**	**17 15 43.1**	**-0.2**
TURV	**Turiamo**	**6.30**	**54**	*eP*			**Pn**	**17 15 47.9**	**+0.1**
TXAR	**Lajitas Array**	**36.54**	**312**	P			**P**	**17 21 08.9**	**+1.3**
	comp=Z,0.1nm,0.4s,baz=134,slow=10,SNR=3.5								
YKA	**Yellowknife Ar**	**63.32**	**340**	P			**P**	**17 24 29.1**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=136,slow=6.7,SNR=6.8								
ASAR	**Alice Springs**	**149.15**	**234**	PKPbc			**PKPbc**	**17 33 47.6**	**0.0**
	comp=Z,0.6nm,0.5s,baz=120,slow=3.2,SNR=17								
WRA	**Warramunga Arr**	**150.39**	**241**	PKPbc			**PKPbc**	**17 33 50.7**	**+0.1**
	comp=Z,0.6nm,0.5s,baz=109,slow=2.6,SNR=28								

*IDC **06** 17:39:04.5±0.7, 7˚.58S×107˚.97E, h0km, mb3.9/9, mb1 4.0/9, mb1mx3.7/40, mbtmp3.9/9, MS2.8/1, Ms1 2.8/1, ms1mx2.6/30, Error ellipse: s-maj=31.9km s-min=16.4km az=48.0*
*DJA **06** 17:39:11.5±1.0, 8˚S±6˚×10˚8E±˚, h18km±8km, M4.4/13, mb4.3/4, MLv4.4/13*
*ISCJB **06** 17:39:12.9±0.5, 7˚.8S±0˚.1×108˚.00E±0˚.06, h75km, mb3.8/9, Error ellipse: s-maj=16.9km s-min=5.8km az=19.1*
*NEIC **06** 17:39:13.6±0.9, 7˚.57S×108˚.07E, h70km±9km, mb4.1/1, Error ellipse: s-maj=26.7km s-min=12.6km az=223.0*

ISC 06 17:39:14.2±0.6, **7.7S**±0˚.2×**108˚.03E**±0˚.08, **h75**km, **n32**, σ1§**12**/27, **mb4.0**/9, **Jawa**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**0.23**	**295**	P			**Pn**	**17 39 24.7**	**-0.9**
CISI	**Cisompet, Garu**	**0.23**	**295**	*e*Pg			**Pn**	**17 39 24.5**	**-1.1**
CMJI	**Cimerak**	**0.44**	**107**	P			**Pn**	**17 39 25.9**	**-1.0**
LEM	**Lembang**	**0.92**	**334**	P			Pn	17 39 40.7	+8.6
CNJI	**Cibinong**	**0.95**	**291**	P			**Pn**	**17 39 31.9**	**-0.5**
SKJI	**Sukabumi**	**1.59**	**294**	P			**Pn**	**17 39 41.2**	**+0.6**
UGM	**Wanagama**	**2.49**	**96**	P			**Pn**	**17 39 52.7**	**+0.2**
CGJI	**Cibinong**	**2.54**	**294**	P			**Pn**	**17 39 54.0**	**+0.8**
UWJI	**Ujung Watu**	**3.15**	**67**	P			Pn	17 40 05.1	+3.6
PCJI	**Pacitan**	**3.17**	**100**	P			**Pn**	**17 40 01.9**	**+0.2**
PWJI	**Pagerwojo**	**3.76**	**96**	P			**Pn**	**17 40 10.4**	**+0.6**
KASI	**Kota Agung**	**4.10**	**301**	P			**Pn**	**17 40 16.8**	**+2.4**
GMJI	**Gumukmas**	**5.40**	**97**	P			**Pn**	**17 40 33.3**	**+1.1**
	24nm,1.1s								
JAGI	**Jajag, Banyuwa**	**6.12**	**98**	P			**Pn**	**17 40 42.8**	**+0.7**
	34nm,0.5s								
TWSI	**Taliwang, Sumb**	**8.83**	**98**	P			**Pn**	**17 41 20.6**	**+1.5**
KAPI	**Kappang**	**11.95**	**78**	LR			LR	17 47 13.3	
	comp=Z,47nm,19.4s,baz=225,slow=41								
EDFI	**Ende, Flores**	**13.57**	**96**	P			**Pn**	**17 42 21.0**	**-2.6**
FITZ	**Fitzroy Crossi**	**20.05**	**123**	P			**P**	**17 43 41.5**	**+0.2**
	1.9nm,0.8s,baz=283,slow=6.4,SNR=6.8								
FITZ				S			S	17 47 12.0	-11
	1.9nm,1.0s,baz=0.0,slow=20,SNR=2.7								
WRA	**Warramunga Arr**	**28.27**	**118**	P			**P**	**17 45 00.4**	**-0.3**
	0.5nm,0.5s,baz=293,slow=11,SNR=9.7								
ASAR	**Alice Springs**	**29.48**	**126**	P			**P**	**17 45 11.2**	**-0.3**
	0.4nm,0.9s,baz=304,slow=8.8,SNR=7.2								
ASAR				PcP			**PcP**	**17 48 15.8**	**+0.3**
	0.4nm,0.7s,baz=305,slow=2.6,SNR=4.0								
H08S2	**Diego Garcia H**	**35.21**	**268**	T			T	18 23 01.6	
	baz=93,slow=76,SNR=219								
H08S3	**Diego Garcia H**	**35.22**	**268**	T			T	18 23 02.2	
	baz=93,slow=76,SNR=160								
H08S1	**Diego Carcia H**	**35.23**	**268**	T			T	18 23 01.6	
	baz=93,slow=76,SNR=212								
STKA	**Stephens Creek**	**39.45**	**132**	P			**P**	**17 46 37.2**	**0.0**
	1.7nm,0.4s,baz=300,slow=8.7,SNR=6.1								
MKAR	**Makanchi Array**	**58.85**	**340**	P			**P**	**17 49 04.7**	**-0.3**
	1.1nm,0.6s,baz=150,slow=7.9,SNR=15								
ZALV	**Zalesovo Beam**	**64.42**	**345**	P			**P**	**17 49 41.3**	**-1.0**
	0.4nm,0.4s,baz=155,slow=6.1,SNR=2.4								
GEYT	**Alibeck**	**64.93**	**318**	P			**P**	**17 49 46.3**	**+0.3**
	0.9nm,0.4s,baz=145,slow=5.3,SNR=3.8								
MAW	**Mawson**	**67.04**	**197**	P			**P**	**17 50 00.4**	**+1.5**
	1.2nm,0.6s,baz=68,slow=5.4,SNR=2.7								
ABKAR	**Akbulak array**	**70.50**	**329**	*eP*			**P**	**17 50 21.1**	**+0.3**
	1.1nm,0.4s								
BOSA	**Boshof**	**80.05**	**242**	P			**P**	**17 51 15.6**	**-0.7**
	5.6nm,1.2s,baz=144,slow=3.6,SNR=4.3								
TXAR	**Lajitas Array**	**143.22**	**50**	PKP			**PKPdf**	**17 58 38.7**	**-1.8**
	0.1nm,0.6s,baz=238,slow=3.1,SNR=3.3								
JCT	**Junction City**	**145.44**	**45**	*e*PKPdf			**PKPab**	**17 58 46.0**	**+1.3**

*ISCJB **06** 17:42:05.3±0.4, 24˚.22N±0˚.01×121˚.85E±0˚.02, h2km±3km, mb3.4/4, Error ellipse: s-maj=2.8km s-min=2.0km az=137.5*
*TAP **06** 17:42:05.7, 24˚.25N×121˚.78E, h17km, ML4.0,B*
*JMA **06** 17:42:05.3±0.1, 24˚.21N×121˚.71E, h24km±1km, M3.2*
*IDC **06** 17:42:13.0±6.6, 24˚.05N×121˚.55E, h76km±68km, mb3.0/4, mb1 3.3/5, mb1mx3.1/38, mbtmp3.4/5, ML3.3/1, Error ellipse: s-maj=39.1km s-min=26.1km az=51.0*

ISC 06 17:42:05.9±0.9, **24˚.26N**±0˚.02×**121˚.80E**±0˚.02, **h18**km±4km, **n80**, σ1§**21**/123, **mb3.5**/4, **12C-5D**, **Taiwan**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.07**	**310**	P			**Pg**	**17 42 09.6**	**+0.2**
	baz=332								
EHP				*i* S			**Sg**	**17 42 12.0**	**+0.3**
	baz=332								
ENA	**Nanau**	**0.17**	**341**⇑	*i*P			**Pg**	**17 42 10.4**	**-0.1**
	baz=349								
TWD	**Chiawan**	**0.26**	**226**⇑	*i*P			**Pg**	**17 42 11.3**	**-0.5**
	baz=234								
TWD				*i* S			**Sg**	**17 42 15.4**	**-0.4**
	baz=234								
HWA	**Hwalien**	**0.34**	**212**	*e*P			**Pb**	**17 42 13.4**	**0.0**
	baz=220								
TWC	**Suao**	**0.35**	**7**⇑	*i*P			**Pb**	**17 42 13.6**	**0.0**
	baz=4.0								
TWC				S			**Sb**	**17 42 18.6**	**-0.2**
	baz=4.0								
NNS	**Nan Shan**	**0.43**	**294**⇑	*i*P			**Pb**	**17 42 14.6**	**-0.5**
	baz=297								
NNS				S			**Sb**	**17 42 20.2**	**-1.0**
	baz=297								
ENTT	**Nioudou**	**0.43**	**330**⇑	*i*P			**Pb**	**17 42 15.0**	**-0.1**
	baz=332								
ENTT				S			**Sb**	**17 42 21.0**	**-0.2**
	baz=332								
TWE	**Neicheng**	**0.47**	**345**⇑	*i*P			**Pn**	**17 42 15.9**	**-1.9**
	baz=346								
TWE				S			**Sb**	**17 42 22.6**	**+0.3**
	baz=346								
ESF	**Shoufeng Towns**	**0.47**	**215**	*e*P			**Pb**	**17 42 15.5**	**-0.2**
	baz=225								
ILA	**Ilan**	**0.50**	**354**	⇑P			**Pn**	**17 42 16.7**	**-1.5**
	baz=348								
ILA				*e*S			**Sb**	**17 42 24.6**	**+1.3**
	baz=348								
ESL	**Shilin**	**0.56**	**217**	⇓P			**Pg**	**17 42 16.4**	**-0.7**
	baz=225								
ESL				*e*S			**Sg**	**17 42 24.4**	**-0.3**
	baz=225								
TWT	**Tachien**	**0.57**	**269**⇑	*i*P			**Pb**	**17 42 17.5**	**0.0**
	baz=271								
TWT				S			**Sb**	**17 42 25.4**	**+0.1**
	baz=271								
NSK	**Sanguang**	**0.58**	**316**⇑	*i*P			**Pb**	**17 42 17.4**	**-0.1**
	baz=317								
NSK				S			**Sb**	**17 42 25.0**	**-0.4**
	baz=317								
EGS		**0.59**	**12**	*e*P			**Pn**	**17 42 18.6**	**-0.8**
	baz=17								
TEGC	**Jichi Village**	**0.60**	**203**	*e*P			**Pb**	**17 42 18.2**	**+0.4**
	baz=193								
TWA	**Mucha**	**0.74**	**345**	*e*P			**Pn**	**17 42 21.5**	**0.0**
	baz=345								
NWF	**Wu-fen Shan**	**0.80**	**359**	⇑P			**Pn**	**17 42 22.3**	**-0.1**
	baz=350								
NWF				*e*S			**Sn**	**17 42 33.2**	**-0.8**
	baz=350								
TAP1	**Taipei**	**0.81**	**342**	*e*P			**Pn**	**17 42 22.7**	**+0.3**
	baz=340								
TAP1				*e*S			**Sn**	**17 42 33.4**	**-0.6**
	baz=340								
NSTT	**Nanjuang**	**0.82**	**297**	P			**Pn**	**17 42 22.2**	**-0.4**
	baz=298								
NSTT				*i* S			**Sb**	**17 42 32.7**	**+0.4**
	baz=298								
TAP	**Taipei**	**0.82**	**341**	*e*P			**Pn**	**17 42 22.6**	**0.0**
	baz=340								
TAP				*e*S			**Sn**	**17 42 34.0**	**-0.2**
	baz=340								
EHY	**Hungye**	**0.87**	**210**	*e*P			**Pg**	**17 42 21.7**	**-1.2**
	baz=223								
NCU	**National Centr**	**0.90**	**322**	*e*P			**Pn**	**17 42 24.2**	**+0.6**
	baz=321								
NCU				S			**Sn**	**17 42 38.0**	**+1.8**
	baz=321								
TWS1	**Kuangyinshan**	**0.90**	**337**	*e*P			**Pn**	**17 42 24.4**	**+0.6**
	baz=337								
TWS1				*e*S			**Sn**	**17 42 38.4**	**+2.1**
	baz=337								
SMLT	**Sun Moon Lake**	**0.91**	**245**	⇓P			**Pb**	**17 42 23.1**	**-0.1**
	baz=242								
SMLT				S			**Sb**	**17 42 35.4**	**+0.4**
	baz=242								
HSN	**Hsinchu**	**0.93**	**305**	P			**Pn**	**17 42 24.8**	**+0.7**
	baz=308								
HSN				*e*S			**Sn**	**17 42 39.2**	**+2.3**
	baz=308								
TYC	**Yuchr**	**0.94**	**248**	P			**Pb**	**17 42 23.4**	**-0.2**
	baz=244								
TYC				S			**Sb**	**17 42 36.0**	**+0.3**
	baz=244								
TWQ1	**Liyutan**	**0.94**	**275**⇓	*i*P			**Pn**	**17 42 24.9**	**+0.6**
	baz=277								
TWQ1				*e*S			**Sn**	**17 42 38.4**	**+1.1**
	baz=277								
NSY	**Sanyi**	**0.96**	**279**	P			**Pn**	**17 42 25.4**	**+0.9**
	baz=273								
NSY				*e*S			**Sn**	**17 42 39.1**	**+1.3**
	baz=273								
TWF1	**Yuli**	**1.02**	**207**	*e*P			**Pg**	**17 42 23.2**	**-2.5**
	baz=220								
TWY	**Chenhua**	**1.02**	**350**	*e*P			**Pn**	**17 42 26.2**	**+0.9**
	baz=333								
TWY				*e*S			**Sn**	**17 42 42.8**	**+3.5**
	baz=333								
TCU	**Taichung**	**1.03**	**264**⇓	*i*P			**Pn**	**17 42 26.9**	**+1.4**
	baz=266								
TCU				*i* S			**Sn**	**17 42 41.6**	**+2.0**
	baz=266								
JYNG	**Yonaguni jima**	**1.06**	**80**	P			**Pn**	**17 42 26.4**	**+0.5**
JYNG				S			**Sn**	**17 42 41.5**	**+1.3**
WNT	**Mingjian**	**1.09**	**250**	P			**Pn**	**17 42 27.3**	**+1.0**
	baz=250								
WNT				*e*S			**Sn**	**17 42 43.5**	**+2.6**
	baz=250								
YUS	**Yu-Shan**	**1.09**	**225**	*e*P			**Pg**	**17 42 26.3**	**-1.0**
	baz=228								
YUS				*e*S			**Sg**	**17 42 40.9**	**-0.8**
	baz=228								
YOJ	**Yonaguni jima**	**1.12**	**80**	P			**Pn**	**17 42 27.2**	**+0.5**
YOJ				*e*S			**Sn**	**17 42 43.4**	**+1.7**
YOJ	**Yonaguni jima**	**1.12**	**80**⇓	*i*P			**Pn**	**17 42 27.4**	**+0.7**
	baz=67								
YOJ				*e*S			**Sn**	**17 42 44.0**	**+2.3**
	baz=67								
ALS	**Alishan**	**1.18**	**231**	*e*P			**Pb**	**17 42 27.9**	**0.0**
	baz=221								
ALS				*e*S			**Sb**	**17 42 43.7**	**+0.6**
	baz=221								
CHN5	**Tsauling**	**1.22**	**237**	*e*P			**Pn**	**17 42 28.8**	**+0.6**
	baz=225								
CHN5				*i* S			**Sn**	**17 42 46.7**	**+2.3**
	baz=225								
CHKT	**Chengkung**	**1.23**	**199**	*e*P			**Pg**	**17 42 25.8**	**-3.9**
	baz=189								
WGK	**Gukeng**	**1.27**	**243**	*e*P			**Pb**	**17 42 29.4**	**+0.1**
	baz=246								
WGK				S			**Sn**	**17 42 48.1**	**+2.7**
	baz=246								
ELDTW	**Lidau**	**1.29**	**214**	*e*P			**Pn**	**17 42 28.4**	**-0.7**
	baz=203								
PCYT	**Pengchaiyu**	**1.38**	**10**	*e*P			**Pg**	**17 42 31.3**	**-1.3**
	baz=8.0								
CHN2	**Minshiung**	**1.42**	**239**	*e*P			**Pg**	**17 42 32.8**	**-0.4**
	baz=227								
CHN4	**Tsaushan**	**1.43**	**231**	⇑P			**Pg**	**17 42 32.6**	**-0.9**
	baz=234								
CHN4				*e*S			**Sg**	**17 42 53.4**	**+1.1**
	baz=234								
WTCT	**Ta-ch'eng**	**1.45**	**254**	*e*P			**Pg**	**17 42 33.0**	**-0.8**
	baz=255								
STYT	**Tauyuan**	**1.46**	**221**	*e*P			**Pn**	**17 42 31.2**	**-0.1**
	baz=223								
CHY	**Chiayi**	**1.47**	**239**	*e*P			**Pg**	**17 42 33.2**	**-1.1**
	baz=242								
CHY				*e*S			**Sg**	**17 42 53.1**	**-0.5**
	baz=242								
WTP	**Ta-pu**	**1.49**	**227**⇑	P			**Pb**	**17 42 33.2**	**+0.1**
	baz=231								
WTP				S			**Sg**	**17 42 53.8**	**-0.2**
	baz=231								
TWK	**Hsinying**	**1.56**	**231**	*e*P			**Pg**	**17 42 34.6**	**-1.4**
	baz=232								
WSF	**Szhu**	**1.57**	**247**	*e*P			**Pb**	**17 42 34.3**	**-0.2**
	baz=259								
WSF				S			**Sg**	**17 42 56.3**	**-0.4**
	baz=259								
TWG	**Pinlang**	**1.58**	**205**	*e*P			**Pn**	**17 42 32.9**	**-0.2**
	baz=192								
CHN1	**Nanshi**	**1.59**	**228**	*e*P			**Pb**	**17 42 34.6**	**-0.2**
	baz=231								
CHN1				*e*S			**Sg**	**17 42 56.5**	**-0.7**
	baz=231								
SGST	**Jiashian**	**1.62**	**224**	*e*P			**Pb**	**17 42 35.0**	**-0.3**
	baz=227								
SGST				*e*S			**Sg**	**17 42 58.0**	**-0.3**
	baz=227								
CHN8	**Yiju**	**1.72**	**238**	*e*P			**Pn**	**17 42 35.7**	**+0.8**
	baz=226								
CHN8				*e*S			**Sg**	**17 43 01.3**	**-0.1**
	baz=226								
IRIF	**Iriomote-Funau**	**1.76**	**87**	P			**Pn**	**17 42 35.9**	**+0.4**
IRIF				*e*S			**Sn**	**17 42 59.9**	**+2.4**
CHN3	**Shinhua**	**1.77**	**228**	*e*P			**Pb**	**17 42 38.4**	**+0.5**
	baz=229								
ECL	**Taimali**	**1.83**	**205**	*e*P			**Pn**	**17 42 36.4**	**-0.1**
	baz=194								
HATJ	**Hateruma jima**	**1.84**	**96**	P			**Pn**	**17 42 36.8**	**+0.2**
TWM1	**Shoushan**	**1.91**	**222**	*e*P			**Pn**	**17 42 39.4**	**+1.7**
	baz=222								
JKRS	**Kuro-shima**	**2.02**	**90**	P			**Pn**	**17 42 40.2**	**+1.2**
JKRS				S			**Sn**	**17 43 06.2**	**+2.4**
EAST	**Anshuo**	**2.07**	**205**	*e*P			**Pn**	**17 42 41.2**	**+1.4**
	baz=196								
TAW	**Tawu**	**2.07**	**204**	*e*P			**Pn**	**17 42 41.8**	**+2.0**
	baz=194								
JIJ	**Ishigaki jima**	**2.14**	**87**	P			**Pn**	**17 42 41.3**	**+0.6**
JIJ				*e*S			**Sn**	**17 43 08.3**	**+1.5**
PNG	**Penghu**	**2.17**	**252**	*e*P			**Pn**	**17 42 41.3**	**+0.2**
	baz=253								
SCZT	**Fangliau**	**2.17**	**210**	*e*P			**Pn**	**17 42 41.9**	**+0.7**
	baz=194								
WDGT	**Dungji**	**2.20**	**243**	*e*P			**Pn**	**17 42 42.2**	**+0.7**
	baz=246								
WDGT				*e*S			**Sb**	**17 43 11.8**	**-0.3**
	baz=246								
LAY	**Lan-yu**	**2.23**	**186**	*e*P			**Pn**	**17 42 39.6**	**-2.4**
	baz=188								
JISG	**Ishigakijimahi**	**2.31**	**81**	P			**Pn**	**17 42 43.4**	**+0.3**
JISG				*e*S			**Sn**	**17 43 12.9**	**+1.9**
TWP	**Hsiaoliuchiu**	**2.32**	**215**	*e*P			**Pb**	**17 42 47.4**	**+0.1**
	baz=234								
HEN	**Hengchun**	**2.45**	**204**	*e*P			**Pn**	**17 42 47.8**	**+2.8**
	baz=195								
TWK1	**Hengchun**	**2.49**	**202**	*e*P			**Pn**	**17 42 46.9**	**+1.4**
	baz=191								
TSEB	**Hengchuen, Pin**	**2.50**	**200**	*e*P			**Pn**	**17 42 46.5**	**+0.9**
	baz=190								
JTJ	**Tarama**	**2.67**	**81**	P			**Pn**	**17 42 50.0**	**+2.0**
KNM	**Kinmen**	**3.08**	**274**	*e*P			**Pn**	**17 42 55.5**	**+1.9**
	baz=271								
JIRB	**Irabujima**	**3.12**	**79**	P			**Pn**	**17 42 55.5**	**+1.3**
KSRS	**Korea Array**	**14.15**	**20**	P			**P**	**17 45 33.3**	**+0.4**
	0.1nm,0.3s,baz=195,slow=12,SNR=5.9								
CMAR	**Chiang Mai Arr**	**22.05**	**259**	P			**P**	**17 46 58.7**	**-1.1**
	0.1nm,0.3s,baz=67,slow=9.1,SNR=3.2								
WRA	**Warramunga Arr**	**45.61**	**163**	P			**P**	**17 50 23.8**	**-1.5**
	0.5nm,0.7s,baz=346,slow=8.7,SNR=5.7								
ASAR	**Alice Springs**	**49.07**	**165**	P			**P**	**17 50 52.1**	**-0.1**
	0.4nm,0.9s,baz=342,slow=7.0,SNR=4.7								
BRTR	**Keskin Array B**	**73.58**	**307**	P			**P**	**17 53 37.8**	**-0.6**
	0.6nm,0.7s,baz=64,slow=5.3,SNR=4.1								

*NIED **06** 17:55:00, 24˚.20N×121˚.70E, h35km, Mw4.2 Best double couple: M0 2.05000×10^15 NP1:φs243.00000°, δ44.00000°, λ97.00000°. NP2:φs54.00000°, δ46.00000°, λ83.00000°.*
*BJI **06** 17:55:55.6±0.3, 24˚.22N±0˚.01×121˚.84E±0˚.02, h11km±2km, mb3.7/13, Error ellipse: s-maj=2.7km s-min=2.1km az=138.8*

TYC	**Yuchr**	**0.96**	**252**	P		**Pb**	**17 56 12.9**	**-0.3**
	baz=243							
TYC				*eS*		**Sb**	**17 56 25.4**	**-0.2**
	baz=243							
NCU	**National Centr**	**0.97**	**322**	*eP*		**Pn**	**17 56 14.4**	**+0.4**
	baz=322							
NCU				S		**Sn**	**17 56 28.0**	**+0.4**
	baz=322							
TWS1	**Kuangyinshan**	**0.97**	**336**	*eP*		**Pn**	**17 56 13.9**	**-0.1**
	baz=338							
TWS1				*eS*		**Sn**	**17 56 27.1**	**-0.5**
	baz=338							
TWF1	**Yuli**	**0.99**	**211**	*eP*		**Pb**	**17 56 12.7**	**-1.1**
	baz=219							
TWQ1	**Liyutan**	**0.99**	**278**	*eP*		**Pn**	**17 56 14.9**	**+0.6**
	baz=277							
HSN	**Hsinchu**	**1.00**	**307**	*eP*		**Pg**	**17 56 14.1**	**-0.1**
	baz=309							
HSN				*eS*		**Sn**	**17 56 29.2**	**+1.1**
	baz=309							
NSY	**Sanyi**	**1.01**	**282**	*eP*		**Pn**	**17 56 15.2**	**+0.5**
	baz=281							
NSY				*eS*		**Sn**	**17 56 28.6**	**-0.1**
	baz=281							
JYNG	**Yonagunijimaku**	**1.03**	**76**	P		**Pg**	**17 56 16.4**	**+1.7**
JYNG				S		**Sn**	**17 56 31.3**	**+2.4**
TCU	**Taichung**	**1.07**	**267**	⇓*iP*		**Pg**	**17 56 16.4**	**+0.8**
	baz=266							
TCU				S		**Sn**	**17 56 30.7**	**+0.6**
	baz=266							
TWY	**Chenhua**	**1.09**	**348**	*eP*		**Pg**	**17 56 16.1**	**+0.2**
	baz=334							
YOJ	**Yonaguni jima**	**1.09**	**76**	P		**Pg**	**17 56 17.1**	**+1.2**
YOJ				S		**Sn**	**17 56 32.8**	**+2.4**
YOJ	**Yonaguni jima**	**1.09**	**76**	⇓*iP*		**Pg**	**17 56 17.4**	**+1.5**
	baz=93							
YOJ				*eS*		**Sn**	**17 56 32.6**	**+2.2**
	baz=93							
YUS	**Yu-Shan**	**1.09**	**229**	⇓P		**Pb**	**17 56 15.6**	**-0.2**
	baz=226							
WNT	**Mingjian**	**1.12**	**253**	*eP*		**Pg**	**17 56 16.4**	**0.0**
	baz=251							
WNT				*eS*		**Sg**	**17 56 32.4**	**+1.4**
	baz=251							
ALS	**Alishan**	**1.18**	**234**	⇑P		**Pg**	**17 56 17.7**	**0.0**
	baz=232							
ALS				S		**Sg**	**17 56 33.5**	**+0.2**
	baz=232							
CHKT	**Chengkung**	**1.19**	**202**	*eP*		**Pn**	**17 56 16.2**	**-0.8**
	baz=187							
CHN5	**Tsauling**	**1.23**	**241**	*eP*		**Pg**	**17 56 18.6**	**-0.1**
	baz=224							
CHN5				*eS*		**Sg**	**17 56 35.7**	**+0.9**
	baz=224							
ELDTW	**Lidau**	**1.27**	**217**	*eP*		**Pn**	**17 56 16.9**	**-1.4**
	baz=201							
WGK	**Gukeng**	**1.29**	**246**	*eP*		**Pg**	**17 56 19.7**	**0.0**
	baz=244							
CHN2	**Minshiung**	**1.43**	**242**	*eP*		**Pb**	**17 56 21.5**	**+0.3**
	baz=241							
CHN2				*eS*		**Sg**	**17 56 42.8**	**+1.8**
	baz=241							
PCYT	**Pengchaiyu**	**1.43**	**8**	*eP*		**Pb**	**17 56 21.3**	**0.0**
	baz=9.0							
CHN4	**Tsaushan**	**1.43**	**234**	⇑*iP*		**Pg**	**17 56 22.1**	**-0.3**
	baz=232							
CHN4				*eS*		**Sg**	**17 56 42.7**	**+1.5**
	baz=232							
STYT	**Tauyuan**	**1.45**	**224**	P		**Pn**	**17 56 20.9**	**+0.3**
	baz=222							
STYT				*eS*		**Sg**	**17 56 41.1**	**-0.4**
	baz=222							
WTCT	**Ta-ch'eng**	**1.48**	**257**	*eP*		**Pb**	**17 56 22.2**	**+0.2**
	baz=256							
WTCT				*eS*		**Sg**	**17 56 42.1**	**-0.3**
	baz=256							
WTP	**Ta-pu**	**1.48**	**230**	⇓*iP*		**Pb**	**17 56 22.0**	**-0.2**
	baz=228							
WTP				*eS*		**Sg**	**17 56 44.2**	**+1.5**
	baz=228							
CHY	**Chiayi**	**1.48**	**242**	*eP*		**Pb**	**17 56 22.3**	**+0.1**
	baz=240							
CHY				*eS*		**Sg**	**17 56 43.3**	**+0.5**
	baz=240							
TWG	**Pinlang**	**1.56**	**208**	*eP*		**Pn**	**17 56 20.9**	**-1.1**
	baz=190							
TWK	**Hsinying**	**1.56**	**233**	*eP*		**Pb**	**17 56 23.9**	**+0.3**
	baz=230							
CHN1	**Nanshi**	**1.58**	**230**	*eP*		**Pb**	**17 56 24.4**	**+0.6**
	baz=227							
TTN	**Taitung**	**1.58**	**204**	*eP*		**Pn**	**17 56 22.2**	**-0.3**
	baz=201							
WSF	**Szhu**	**1.59**	**249**	*eP*		**Pb**	**17 56 23.6**	**-0.4**
	baz=248							
WSF				*eS*		**Sg**	**17 56 45.9**	**-0.4**
	baz=248							
SGST	**Jiashian**	**1.61**	**226**	*eP*		**Pb**	**17 56 24.6**	**+0.2**
	baz=224							
SGST				*eS*		**Sg**	**17 56 46.9**	**0.0**
	baz=224							
IRIF	**Iriomote-Funau**	**1.72**	**85**	P		**Pb**	**17 56 25.7**	**-0.5**
IRIF				S		**Sg**	**17 56 49.0**	**-1.3**
CHN8	**Yiju**	**1.73**	**241**	*eP*		**Pb**	**17 56 25.7**	**-0.7**
	baz=238							
CHN3	**Shinhua**	**1.77**	**231**	*eP*		**Pb**	**17 56 27.8**	**+0.8**
	baz=227							
HATJ	**Hateruma jima**	**1.79**	**94**	P		**Pb**	**17 56 27.3**	**-0.1**
ECL	**Taimali**	**1.80**	**207**	*eP*		**Pn**	**17 56 24.5**	**-1.0**
	baz=192							
TAI1	**Yung-k'ang**	**1.89**	**232**	*eP*		**Pb**	**17 56 29.3**	**+0.3**
	baz=229							
TWM1	**Shoushan**	**1.90**	**224**	*eP*		**Pb**	**17 56 29.9**	**+0.5**
	baz=221							
JKRS	**Kuro-shima**	**1.97**	**89**	P		**Pb**	**17 56 29.9**	**-0.6**
JKRS				*eS*		**Sb**	**17 56 55.4**	**+0.5**
EAST	**Anshuo**	**2.04**	**207**	*eP*		**Pn**	**17 56 29.3**	**+0.6**
	baz=193							
TAW	**Tawu**	**2.04**	**206**	*eP*		**Pb**	**17 56 30.5**	**-1.1**
	baz=192							
JIJ	**Ishigaki jima**	**2.10**	**85**	P		**Pn**	**17 56 30.9**	**+1.4**
JIJ				S		**Sb**	**17 56 57.4**	**-1.1**
SCZT	**Fangliau**	**2.15**	**212**	*eP*		**Pb**	**17 56 32.5**	**-1.1**
	baz=192							
LAY	**Lan-yu**	**2.18**	**187**	*eP*		**Pn**	**17 56 29.6**	**-1.0**
	baz=186							
PNG	**Penghu**	**2.20**	**254**	*eP*		**Pn**	**17 56 31.4**	**+0.6**
	baz=253							
WDGT	**Dungji**	**2.22**	**245**	*eP*		**Pn**	**17 56 30.3**	**-0.9**
	baz=244							
JISG	**Ishigakijimahi**	**2.27**	**80**	P		**Pn**	**17 56 33.2**	**+1.3**
JISG				S		**Sb**	**17 57 02.2**	**-1.4**
TWP	**Hsiaoliuchiu**	**2.30**	**217**	*eP*		**Pb**	**17 56 36.4**	**+0.2**
	baz=232							
HEN	**Hengchun**	**2.42**	**205**	*eP*		**Pn**	**17 56 34.5**	**+0.5**
	baz=193							
TWK1	**Hengchun**	**2.45**	**203**	*eP*		**Pn**	**17 56 35.3**	**+0.9**
	baz=188							
TSEB	**Hengchuen, Pin**	**2.46**	**201**	*eP*		**Pb**	**17 56 37.1**	**-1.7**
	baz=188							
JTJ	**Tarama**	**2.63**	**80**	P		**Pb**	**17 56 39.9**	**-1.9**
QZH	**Quanzhou**	**3.06**	**285**	Pn		Pn	17 56 33.6	-9.1
QZH				Sn		Sn	17 57 08.0	-11
QZH				smax		smax		
	comp=N,700nm,1.0s							
QZH				smax		smax		
	comp=E,540nm,1.0s							
QZH				LR		LR		
	comp=Z,2μm,8.4s							
JIRB	**Irabujima**	**3.09**	**78**	P		**Pb**	**17 56 47.0**	**-2.5**
JIRB				*eS*		**Sb**	**17 57 23.8**	**-3.3**
KNM	**Kinmen**	**3.12**	**275**	*eP*		**Pn**	**17 56 44.8**	**+1.2**
	baz=273							
KSRS	**Korea Array**	**14.19**	**20**	P		**Pn**	**17 59 14.6**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=211,slow=14,SNR=3.7							
CMAR	**Chiang Mai Arr**	**22.08**	**259**	P		**P**	**18 00 51.6**	**+2.0**
	comp=Z,0.6nm,0.8s,baz=58,slow=8.7,SNR=7.1							
GTA	**Gaotai**	**24.00**	**314**	*eP*		**P**	**18 01 09.4**	**+0.2**
GTA				pP		pP	18 01 14.2	+0.5
GTA				sP		sP	18 01 16.5	+1.0
GTA				pmax		pmax		
	comp=Z,3.0nm,1.1s							
KLR	**Kul'dur**	**26.16**	**15**	P		**P**	**18 01 28.2**	**-0.3**
	comp=Z,1.2nm,0.7s,baz=213,slow=6.1,SNR=6.3							
SONM	**Songino Array**	**26.59**	**336**	P		**P**	**18 01 32.6**	**0.0**
	comp=Z,1.4nm,0.9s,baz=155,slow=8.0,SNR=4.9							
MKAR	**Makanchi Array**	**38.74**	**316**	P		**P**	**18 03 18.0**	**-0.6**
	comp=Z,1.1nm,0.8s,baz=108,slow=7.3,SNR=12							

ZALV	**Zalesovo Beam**	**40.56**	**327**	P		**P**	**18 03 31.7**	**-1.9**
	comp=Z,0.6nm,0.3s,baz=121,slow=10,SNR=5.9							
WRA	**Warramunga Arr**	**45.54**	**163**	P		**P**	**18 04 13.7**	**-0.5**
	comp=Z,0.4nm,0.6s,baz=344,slow=8.6,SNR=4.6							
ASAR	**Alice Springs**	**49.01**	**165**	P		**P**	**18 04 44.0**	**+2.8**
	comp=Z,0.4nm,0.7s,baz=342,slow=7.0,SNR=6.0							
GEYT	**Alibeck**	**55.31**	**300**	P		**P**	**18 05 28.2**	**+0.1**
	comp=Z,1.9nm,0.8s,baz=72,slow=4.8,SNR=5.1							
KBZ	**Khabaz**	**65.94**	**309**	P		**P**	**18 06 40.4**	**-0.1**
	comp=Z,1.6nm,0.7s,baz=113,slow=7.2,SNR=4.7							
BRTR	**Keskin Array B**	**73.65**	**307**	P		**P**	**18 07 28.5**	**+0.3**
	comp=Z,1.8nm,0.9s,baz=95,slow=5.3,SNR=9.0							
YKA	**Yellowknife Ar**	**82.71**	**23**	P		**P**	**18 08 16.9**	**-0.8**
	comp=Z,0.3nm,0.5s,baz=315,slow=4.8,SNR=5.8							
GERES	**GERESS Array B**	**83.21**	**321**	P		**P**	**18 08 20.3**	**-0.5**
	comp=Z,0.5nm,0.8s,baz=71,slow=3.5,SNR=4.9							

TAP 06 17:56:05.2, 24.24N×121.72E, h17km±1km, ML4.3, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.07**	**15**	P		Pg	17 56 08.8	+0.3
	baz=20							
EHP				S		Sg	17 56 11.4	+0.8
	baz=20							
ENA	**Nanau**	**0.19**	**6**	*eP*		Pg	17 56 09.2	-0.6
	baz=7.0							
TWD	**Chiawan**	**0.20**	**215**	*eP*		Pb	17 56 10.6	+0.2
	baz=213							
TWD				*eS*		Sb	17 56 14.0	+0.1
	baz=213							
NNS	**Nan Shan**	**0.37**	**302**	*eP*		Pb	17 56 13.9	+0.5
	baz=302							
NNS				*eS*		Sb	17 56 19.3	+0.2
	baz=302							
ENTT	**Nioudou**	**0.42**	**340**	*eP*		Pb	17 56 14.1	-0.2
	baz=341							
ENTT				*eS*		Sb	17 56 20.6	+0.3
	baz=341							
NSK	**Sanguang**	**0.55**	**323**	*eP*		Pb	17 56 16.7	+0.3
	baz=323							

TRN ***06*** *18:16:23.4, 16.79N×61.20W, h27km, MD4.0*
TRN Felt St. Johns, Antigua, MMI II.
ISCJB ***06*** *18:16:24.4±0.5, 16.81N±0.03×61.13W±0.04, h59km±4km, mb3.9/7, MS3.4/1, Error ellipse: s-maj=7.4km s-min=2.8km az=145.9*
IDC ***06*** *18:16:24.9±1.2, 16.73N×61.19W, h46km±11km, mb3.6/7, mb1 4.0/10, mb1mx3.6/33, mbtmp4.0/10, ML4.2/3, MS3.3/2, Ms1 3.3/2, ms1mx2.8/28, Error ellipse: s-maj=25.0km s-min=12.6km az=44.0*

ISC 06 18:16:25.0±1.0, 16.78N±0.04×61.17W±0.05, h47km±8km, n76, σ1s24/101, mb3.9/7, 6C-10D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
H05N1	**Guadeloupe/Mar**	**0.48**	**167**	P		**Pn**	**18 16 36.0**	**+0.1**
H05N1				S		**Sn**	**18 16 43.7**	**+0.1**
DEG	**La Desirade**	**0.48**	**167**	⇑*iP*		**Pn**	**18 16 35.4**	**-0.6**
SFG	**Saint Francois**	**0.53**	**183**	⇓*iP*		**Pn**	**18 16 36.6**	**+0.1**
BPA	**Boggy Peak**	**0.71**	**292**	*eP*		**Pn**	**18 16 39.1**	**+0.3**
BPA				*eS*		**Sn**	**18 16 49.6**	**+0.9**
SSG	**Sans Toucher**	**0.85**	**215**	⇓*iP*		**Pn**	**18 16 40.8**	**0.0**
LZG	**Guadaloupe-1**	**0.86**	**222**	⇓*iP*		**Pn**	**18 16 40.7**	**-0.1**
CRG	**Carmichael**	**0.86**	**212**	⇓*iP*		**Pn**	**18 16 41.1**	**+0.1**
ECG	**Echelle**	**0.87**	**212**	⇓*iP*		**Pn**	**18 16 41.2**	**+0.1**
LKG	**Breislack**	**0.87**	**213**	⇓*eP*		**Pn**	**18 16 41.2**	**+0.1**
LKG				*eS*		**Sn**	**18 16 53.1**	**+0.3**
MGG	**Marie-Galante**	**0.87**	**189**	⇑*iP*		**Pn**	**18 16 41.6**	**+0.6**
SCG	**Saint Claude**	**0.90**	**213**	⇓*eP*		**Pn**	**18 16 41.3**	**0.0**
HMG	**Houelmont**	**0.94**	**213**	⇓*eP*		**Pn**	**18 16 42.2**	**+0.3**
MBRY		**0.94**	**265**	*eP*		**Pn**	**18 16 42.3**	**+0.3**
MBRY				*eS*		**Sn**	**18 16 56.4**	**+2.0**
MBLG		**0.95**	**267**	*eP*		**Pn**	**18 16 42.5**	**+0.5**
MBLG				*eS*		**Sn**	**18 16 56.6**	**+2.0**
MBWH		**0.98**	**268**	*eP*		**Pn**	**18 16 42.4**	**0.0**
MBWH				*eS*		**Sn**	**18 16 55.8**	**+0.6**
MLYT	**Lee's Yard**	**0.98**	**267**	*eP*		**Pn**	**18 16 42.6**	**+0.2**
MLYT	**Lee's Yard**	**0.98**	**267**	*iP*		**Pn**	**18 16 42.9**	**+0.4**
MLYT				*eS*		**Sn**	**18 16 56.7**	**+1.4**
MLYT				*eS*		**Sn**	**18 16 57.4**	**+2.1**
MBBY		**0.99**	**265**	*iP*		**Pn**	**18 16 42.8**	**+0.2**
MBBY				*eS*		**Sn**	**18 16 56.9**	**+1.4**
MBGB		**1.01**	**267**	*eP*		**Pn**	**18 16 43.0**	**+0.1**
MBGB				*eS*		**Sn**	**18 16 56.5**	**+0.5**
MBGB				*eS*		**Sn**	**18 16 57.3**	**+1.2**
TBG	**Guadaloupe-3**	**1.03**	**206**	⇓*iP*		**Pn**	**18 16 43.4**	**+0.2**
ANWB	**Willy Bob**	**1.06**	**326**	*eP*		**Pn**	**18 16 43.8**	**+0.3**
ANWB				*eS*		**Sn**	**18 16 57.9**	**+0.8**
DWS	**Wesley**	**1.22**	**186**	*eP*		**Pn**	**18 16 46.0**	**+0.4**
DWS				*eS*		**Sn**	**18 17 03.0**	**+2.0**
BBL	**Barber's Block**	**1.28**	**193**	*eP*		**Pn**	**18 16 47.3**	**+0.8**
NEV	**Hard Times**	**1.39**	**285**	⇑*iP*		**Pn**	**18 16 48.6**	**+0.6**
NEV				*eS*		**Sn**	**18 17 06.8**	**+1.6**
DLPL	**La Plaine**	**1.44**	**183**	*eP*		**Pn**	**18 16 49.4**	**+0.6**
DLPL				*eS*		**Sn**	**18 17 09.0**	**+2.5**
MDN	**Morne-Daniel**	**1.47**	**188**	*eP*		**Pn**	**18 16 49.8**	**+0.6**
MDN				*eS*		**Sn**	**18 17 09.8**	**+2.6**
DPMT	**Pointe Michel**	**1.53**	**188**	*eP*		**Pn**	**18 16 50.6**	**+0.7**
DPMT				*eS*		**Sn**	**18 17 10.8**	**+2.2**
DSHT	**Scott's Head**	**1.57**	**187**	*eP*		**Pn**	**18 16 51.1**	**+0.6**
DSHT				*eS*		**Sn**	**18 17 12.0**	**+2.3**
SEUS	**St. Eustatius**	**1.87**	**292**	*eP*		**Pn**	**18 16 55.9**	**+1.4**
SEUS				*eS*		**Sn**	**18 17 19.0**	**+2.0**
SVN	**Savane Anatole**	**1.93**	**180**	*eP*		**Pn**	**18 16 56.1**	**+0.7**
BAMF	**Morne Balai**	**1.96**	**179**	*eP*		**Pn**	**18 16 56.5**	**+0.7**
PCM	**Pelee Case Pet**	**1.96**	**181**	*eP*		**Pn**	**18 16 56.2**	**+0.4**
PCM	**Pelee Case Pet**	**1.96**	**181**	*eP*		**Pn**	**18 16 56.5**	**+0.6**
CXM	**Morne La Croix**	**1.96**	**180**	⇑*eP*		**Pn**	**18 16 56.8**	**+0.9**
GBMF	**Grand Be**	**1.98**	**180**	*eP*		**Pn**	**18 16 56.6**	**+0.5**
PML	**Morne Lenard**	**1.99**	**180**	*eP*		**Pn**	**18 16 56.9**	**+0.6**
FDF	**Fort de France**	**2.04**	**179**	⇑*iP*		**Pn**	**18 16 57.2**	**+0.3**
FDF				*eS*		**Sn**	**18 17 22.1**	**+0.8**
SABA	**Saba**	**2.15**	**293**	*eP*		**Pn**	**18 16 59.5**	**+1.0**
SABA				*eS*		**Sn**	**18 17 24.2**	**+0.4**
ZAM	**Aeronautique**	**2.20**	**176**	*eP*		**Pn**	**18 16 59.7**	**+0.6**
LPMF	**Morne Lapointe**	**2.21**	**175**	*eP*		**Pn**	**18 16 59.8**	**+0.6**
SMRT	**St. Maarten**	**2.21**	**305**	*eP*		**Pn**	**18 16 59.8**	**+0.5**
SMRT				*eS*		**Sn**	**18 17 26.2**	**+0.8**
MVM	**Montagne Vaucl**	**2.23**	**173**	⇑*eP*		**Pn**	**18 17 00.5**	**+0.9**
TRMF	**Trois Ilets**	**2.24**	**177**	*eP*		**Pn**	**18 17 00.6**	**+0.9**
BIM	**Bigot**	**2.25**	**178**	*eP*		**Pn**	**18 17 01.3**	**+1.3**
BIM				*eS*		**Sn**	**18 17 27.6**	**+1.0**
H05S1	**Guadeloupe/Mar**	**2.37**	**172**	P		**Pn**	**18 17 01.7**	**+0.3**
H05S1				S		**Sn**	**18 17 28.9**	**-0.3**
MCLT	**Moule a Chique**	**3.06**	**176**	*eP*		**Pn**	**18 17 12.7**	**+1.7**
MCLT				*eS*		**Sn**	**18 17 48.4**	**+2.0**
SVV	**Soufriere Volc**	**3.44**	**181**	⇓*eP*		**Pn**	**18 17 17.6**	**+1.4**
SVV				*eS*		**Sn**	**18 17 56.2**	**+0.4**
SVB	**Belmont**	**3.49**	**181**	*eP*		**Pn**	**18 17 18.4**	**+1.5**
SVB				*eS*		**Sn**	**18 17 58.8**	**+1.8**
FCV	**Fort Charlotte**	**3.61**	**181**	*eP*		**Pn**	**18 17 20.1**	**+1.6**
FCV				*eS*		**Sn**	**18 18 00.6**	**+0.8**
GRGR	**Grenville**	**4.65**	**186**	*eP*		**Pn**	**18 17 34.9**	**+2.2**
SJG	**San Juan**	**4.93**	**286**	*iP*		**Pn**	**18 17 38.1**	**+1.4**
	21nm,0.3s,baz=123,slow=8.3,SNR=28							
SJG				S		**Sn**	**18 18 32.3**	**-0.2**
	5.4nm,0.3s,baz=352,slow=19,SNR=1.7							
SJG				LR		LR	18 19 53.8	
	comp=Z,260nm,18.0s,baz=97,slow=42							
PCRV	**Puerto La Cruz**	**7.38**	**208**	P		**Pn**	**18 18 11.1**	**+0.8**
	3.7nm,0.3s,baz=9.4,slow=3.5,SNR=16							
PCRV				S		**Sn**	**18 19 29.2**	**-3.6**
	baz=299,slow=17,SNR=2.2							
CBRI	**Barrientos, No**	**14.49**	**233**	*eP*		**Pn**	**18 19 47.6**	**+0.1**
GRMC	**Gramalote, San**	**14.50**	**233**	*eP*		**Pn**	**18 19 45.9**	**-1.7**
OCAC	**Ocana**	**14.58**	**236**	*eP*		**Pn**	**18 19 50.5**	**+1.8**
SJCC	**San Jacinto, C**	**15.25**	**245**	*eP*		**Pn**	**18 19 52.4**	**-5.0**
BARC	**Barichara**	**15.51**	**231**	*eP*		**Pn**	**18 20 02.4**	**+1.4**
RUSC	**La Rusia**	**15.91**	**229**	*eP*		**P**	**18 20 08.6**	**-0.7**
MOTC	**Monteria, Cord**	**16.21**	**242**	*eP*		**Pn**	**18 20 10.3**	**+0.6**
PTGA	**Pitinga**	**17.44**	**176**	P		**Pn**	**18 20 24.0**	**-1.1**
	0.4nm,0.3s,baz=16,slow=5.7,SNR=5.6							
HELC	**Santa Helena**	**17.56**	**235**	*eP*		**P**	**18 20 27.2**	**-0.2**
DBBC	**Dabeiba**	**17.61**	**238**	*eP*		**P**	**18 20 28.4**	**+0.6**
TXAR	**Lajitas Array**	**40.83**	**296**	P		**P**	**18 24 01.5**	**-0.9**
	0.6nm,0.6s,baz=116,slow=8.1,SNR=10							
TXAR				PcP		**PcP**	**18 26 03.6**	**+0.9**
	0.1nm,0.4s,baz=96,slow=5.5,SNR=5.9							
TXAR				ScP		**ScP**	**18 29 48.4**	**-0.2**
	0.1nm,0.4s,baz=129,slow=2.4,SNR=3.2							
CPUP	**Villa Florida**	**43.02**	**175**	P		**P**	**18 24 18.6**	**-1.5**
	1.4nm,0.6s,baz=348,slow=11,SNR=3.3							
PDAR	**Pinedale Array**	**48.50**	**313**	P		**P**	**18 25 04.2**	**+0.7**
	1.7nm,0.6s,baz=99,slow=9.6,SNR=12							
H10N3	**ASCENSION HYDR**	**52.24**	**114**	T		T	19 22 09.3	
	baz=298,slow=75,SNR=70							
H10N2	**ASCENSION HYDR**	**52.24**	**114**	T		T	19 22 07.9	
	baz=298,slow=75,SNR=82							
H10N1	**ASCENSION HYDR**	**52.26**	**114**	T		T	19 22 06.8	
	baz=298,slow=75,SNR=66							
H10S3	**ASCENSION HYDR**	**52.63**	**116**	T		T	19 22 31.6	
	baz=299,slow=74,SNR=70							
H10S1	**ASCENSION HYDR**	**52.63**	**116**	T		T	19 22 32.1	
	baz=299,slow=74,SNR=59							
H10S2	**ASCENSION HYDR**	**52.64**	**116**	T		T	19 22 31.0	
	baz=299,slow=74,SNR=67							
PLCA	**Paso Flores**	**57.88**	**188**	P		**P**	**18 26 11.6**	**-0.6**
	1.4nm,0.6s,baz=37,slow=6.5,SNR=4.0							
YKA	**Yellowknife Ar**	**58.73**	**334**	P		**P**	**18 26 17.6**	**-0.1**
	0.6nm,0.6s,baz=108,slow=7.8,SNR=5.6							
TORD	**Torodi Ar. Bea**	**60.63**	**84**	LR		LR	18 49 14.7	
	comp=Z,26nm,19.1s,baz=175,slow=32							
ILAR	**Eielson Array**	**73.14**	**333**	P		**P**	**18 27 50.5**	**+0.1**
	1.0nm,0.8s,baz=86,slow=4.9,SNR=8.5							
FINES	**FINESS Array B**	**74.11**	**30**	P		**P**	**18 27 56.7**	**+0.7**
	0.9nm,0.7s,baz=222,slow=2.6,SNR=3.8							

MEX 06 18:18:42.2±0.8, 14.21N×92.16W, h16km±999km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.06**	**1**	*eP*		Pn	18 19 12.9	-3.5
CCIG				*eS*		Sn	18 19 37.8	-3.9

MAN 06 18:25:33, 18.41N×120.28E, h25km, mb4.2, ML3.0, MS2.8, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
PIP	**Pasuquin**	**0.34**	**105**	⇓*iP*		Pn	18 25 41.5	-0.8
ABRA	**Dolores**	**0.86**	**151**	*eP*		Pb	18 25 49.5	+0.1
ABRA				*eS*		Sn	18 26 01.7	+0.3
APYP	**Conner**	**1.07**	**121**	*eP*		Pn	18 25 51.6	-0.8
APYP				*eS*		Sn	18 26 06.8	+0.3
SGCP	**Mt. Cagua**	**1.69**	**95**	*eP*		Pn	18 26 01.6	+0.6
SGCP				*eS*		Sb	18 26 23.4	-0.9

ISCJB ***06*** *18:46:38.8±0.4, 52.04N±0.04×105.79E±0.03, h7km±3km, Error ellipse: s-maj=6.3km s-min=2.5km az=159.8*
MOS ***06*** *18:46:40.6±1.1, 52.07N×105.70E, h10km, mb4.3/1, Error ellipse: s-maj=26.1km s-min=13.6km az=156.7*
BYKL ***06*** *18:46:41.0±0.2, 52.07N×105.68E, h22km±3km*

ISC 06 18:46:40.5±1.0, 52.09N±0.03×105.67E±0.02, h14km±9km, n32, σ1s90/76, 10C-1D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
BGT	**Bolshoye Golou**	**0.17**	**254**	⇑*iPg*		**Pb**	**18 46 46.1**	**+0.5**
BGT				*eSg*		**Sb**	**18 46 49.5**	**+0.6**
BGT				Pmax				
	920nm,0.1s							
BGT				Smax				
	11μm,0.1s							
BGT	**Bolshoye Golou**	**0.17**	**254**	⇑*iPG*		**Pb**	**18 46 46.0**	**+0.5**
BGT				*e*			18 46 49.5	
BGT				pmax		pmax		
	comp=Z,946nm,0.1s							
BGT				smax		smax		
	comp=N,580nm,0.1s							
STDB	**Stepnoy Dvoret**	**0.43**	**80**	*ePg*		**Pb**	**18 46 50.7**	**+0.7**
STDB				*eSg*		**Sb**	**18 46 58.2**	**+1.8**
LSTR	**Listvyanka**	**0.57**	**247**	⇑*iPg*		**Pg**	**18 46 52.0**	**+0.3**
LSTR				*eSg*		**Sg**	**18 46 59.7**	**+0.5**
LSTR				Pmax				
	comp=N,102nm,0.1s							
LSTR				Smax				
	comp=N,860nm,0.1s							

	comp=Z,144nm,0.2s								
ARS	**Arshan**	**2.02**	**266**	*e*Pn		**Pb**	**18 47 15.9**	**-1.1**	
ARS				*e*Pg		**Pg**	**18 47 17.0**	**-2.2**	
ARS				*e*Sg		**Sb**	**18 47 43.0**	**+1.0**	
ARS				Pmax					
	comp=Z,90nm,0.1s								
ARS				Smax					
	comp=Z,1μm,0.4s								
ARS	**Arshan**	**2.02**	**266**	*e*PN		**Pb**	**18 47 16.8**	**-0.2**	
ARS				*e*			18 47 43.2		
ARS				pmax	pmax				
	comp=Z,89nm,0.2s								
ARS				smax	smax				
	comp=E,1μm,0.5s								
MXMB	**Maximikha**	**2.21**	**57**	*e*Pn		**Pn**	**18 47 18.0**	**+1.2**	
MXMB				*e*Pg		**Pb**	**18 47 21.6**	**+1.4**	
MXMB				*e*Sn		**Sn**	**18 47 44.0**	**+0.1**	
MXMB				*e*Sg		**Sg**	**18 47 50.2**	**-1.2**	
ZAK	**Zakamensk**	**2.28**	**222**	*e*Pn		**Pn**	**18 47 18.5**	**+0.6**	
ZAK				*e*Pg		**Pb**	**18 47 21.7**	**+0.1**	
ZAK				*e*Sg		**Sb**	**18 47 51.4**	**+1.7**	
ZAK				Pmax					
	comp=E,23nm,0.1s								
ZAK				Smax					
	comp=E,167nm,0.2s								
MOY	**Mondy**	**2.93**	**263**	*e*		**Pb**	**18 47 31.1**	**-1.6**	
MOY				*e*Pg		**Pg**	**18 47 33.9**	**-2.8**	
MOY				*e*			18 47 34.8		
MOY				*e*Sn		**Sn**	**18 47 59.3**	**-2.7**	
MOY				*e*Sg		**Sb**	**18 48 11.1**	**+2.7**	
MOY				max					
	comp=E,33nm,0.2s								
MOY				Smax					
	comp=E,366nm,0.5s								
MOY	**Mondy**	**2.93**	**263**	*e*PN		**Pb**	**18 47 31.0**	**-1.6**	
MOY				*e*			18 47 34.7		
MOY				*e*			18 48 09.2		
MOY				pmax	pmax				
	comp=Z,33nm,0.2s								
MOY				smax	smax				
	comp=E,364nm,0.6s								
SYVR	**Suvo**	**3.05**	**57**	*e*Pn		**Pn**	**18 47 28.1**	**-0.3**	
SYVR				*e*Pg		**Pb**	**18 47 35.7**	**+1.0**	
SYVR				*e*Sn		**Sn**	**18 48 04.7**	**-0.1**	
SYVR				*e*Sg		**Sg**	**18 48 16.6**	**-2.0**	
SYVR				Pmax					
	comp=E,10.0nm,0.3s								
SYVR				Smax					
	comp=E,36nm,0.4s								
ORL	**Orlik**	**3.63**	**279**	*e*Pn		**Pn**	**18 47 39.2**	**+2.8**	
ORL				*e*			18 47 45.4		
ORL				*e*Pg		**Pb**	**18 47 46.7**	**+2.2**	
ORL				*e*			18 48 21.5		
ORL				*e*Sg		**Sg**	**18 48 33.0**	**-3.9**	
ORL				Pmax					
	comp=E,27nm,0.5s								
ORL				Smax					
	comp=E,75nm,0.6s								
ORL	**Orlik**	**3.63**	**279**	*e*PN		**Pn**	**18 47 39.3**	**+2.8**	
ORL				*e*			18 47 45.3		
ORL				*e*S		**Sn**	**18 48 21.5**	**+2.4**	
ORL				*e*			18 48 33.9		
ORL				pmax	pmax				
	comp=Z,27nm,0.4s								
ORL				smax	smax				
	comp=N,70nm,0.9s								
YLYR	**Ulyunkhan**	**4.30**	**47**	*e*Pn		**Pn**	**18 47 46.4**	**+0.8**	
YLYR				*e*			18 47 55.0		
YLYR				*e*Pg		**Pb**	**18 47 58.3**	**+2.4**	
YLYR				*e*Sn		**Sn**	**18 48 34.4**	**-1.2**	
YLYR				*e*Sg		**Sg**	**18 48 54.1**	**-4.5**	
YLYR				Pmax					
	comp=N,5.0nm,0.3s								
YLYR				Smax					
	comp=N,23nm,0.5s								
NIZ	**Nizh Angarsk**	**4.34**	**30**	*e*Pn		**Pn**	**18 47 46.9**	**+0.8**	
NIZ				*e*Pg		**Pb**	**18 47 58.6**	**+2.1**	
NIZ				*e*			18 48 04.2		
NIZ				*e*Sn		**Sn**	**18 48 36.1**	**-0.3**	
NIZ				*e*Sg		**Sg**	**18 48 56.1**	**-3.6**	
NIZ				Pmax					
	comp=N,4.0nm,0.2s								
NIZ				Smax					
	comp=N,34nm,0.2s								
CIT	**Chita**	**4.86**	**88**	*e*Sg		**Sg**	**18 49 11.7**	**-4.8**	
CIT				Smax					
	comp=N,57nm,0.2s								
KPC	**Khapcheranga**	**4.87**	**117**	*e*Pn		**Pn**	**18 47 52.1**	**-1.4**	
KPC				*e*Pg		**Pb**	**18 48 06.7**	**+1.0**	
KPC				*e*Sn		**Sn**	**18 48 46.7**	**-3.0**	
KPC				*e*Sg		**Sb**	**18 49 10.4**	**+6.3**	
KPC				Pmax					
	comp=N,12nm,0.3s								
KPC				Smax					
	comp=N,61nm,1.1s								
KMO	**Kumora**	**5.01**	**38**	*e*Pn		**Pn**	**18 47 57.3**	**+2.0**	
KMO				*e*Pg		**Pb**	**18 48 09.7**	**+1.8**	
KMO				*e*Sg		**Sg**	**18 49 15.9**	**-5.2**	
KMO				Pmax					
	comp=N,6.0nm,0.6s								
KMO				Smax					
	comp=N,40nm,1.1s								
TUP	**Tupik**	**8.87**	**69**	*e*Sg		Sg	18 51 14.8	-10	
TUP				Smax					
	comp=N,36nm,1.5s								

*NIED **06** 18:50:00,36˚.80N×140˚.60E,h5km,Mw3.6 Best double couple: M₀2.42000×10¹⁴ NP1:φs330.00000°,δ24.00000°, λ-139.00000°. NP2:φs202.00000°,δ74.00000°, λ-71.00000°.*

*ISCJB **06** 18:50:47.4±0.6,36˚.78N±0˚.03×140˚.71E±0˚.06,h17km±5km, mb3.5/5,Error ellipse: s-maj=8.0km s-min=4.2km az=19.5*

*JMA **06** 18:50:48.2,36˚.82N×140˚.57E,h6km±1km,M3.6 Broadband fault plane solution: P waves. NP1: φs199.00000°,δ68.00000°,λ-82.00000°. NP2: φs359.00000°,δ23.00000°,λ-109.00000°. Principal axes: T Plg23.0000°, Azm283.0000°; N Plg7.0000°, Azm16.0000°; P Plg66.0000°, Azm123.0000°;*

JMA Felt I J1.

*IDC **06** 18:50:51.9±3.1,36˚.81N×140˚.65E,h38km±26km,mb3.2/4, mb1 3.4/7,mb1mx3.2/50,mbtmp3.5/7,ML3.2/1,MS2.3/1, Ms1 2.3/1,ms1mx2.1/64 Error ellipse: s-maj=32.4km s-min=16.5km az=75.0*

ISC 06 18:50:48.4±1.0,36˚.80N±0˚.03×140˚.63E±0˚.05,h9km±7km, n23,σ0s90/25,mb3.6/5,6C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.20**	**193**	↑P	**Pg**	**18 50 52.3**	**-0.1**
JHO				*e*S	**Sg**	**18 50 55.2**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.33**	**25**	↑P	**Pg**	**18 50 54.9**	**-0.1**
ONAJ				S	**Sg**	**18 50 59.7**	**+0.3**
JSB	**Shiboa**	**0.59**	**287**	↑P	**Pg**	**18 50 59.5**	**-0.4**
JSB				S	**Sg**	**18 51 07.5**	**-0.1**
JFK	**Kawauchi**	**0.60**	**19**	↑P	**Pg**	**18 50 59.5**	**-0.5**
JFK				S	**Sg**	**18 51 08.0**	**+0.1**
JYT	**Yasato**	**0.67**	**211**	↑P	**Pg**	**18 51 00.8**	**-0.5**
JYT				S	**Sg**	**18 51 09.6**	**-0.5**
JFT	**Otama**	**0.75**	**342**	↑P	**Pg**	**18 51 02.2**	**-0.7**
JFT				S	**Sg**	**18 51 12.0**	**-0.8**
MJAR	**Matsushiro Arr**	**1.96**	**263**	Pn	**Pn**	**18 51 22.0**	**+0.1**
	26nm,0.3s,baz=88,slow=15,SNR=243						
MJAR				Sn	**Sn**	**18 51 47.1**	**+0.4**
	14nm,0.3s,baz=78,slow=28,SNR=9.2						
MJAR				LR	LR	18 52 23.6	
	comp=Z,67nm,19.6s,baz=220,slow=47						
MAT	**Matsushiro**	**1.96**	**263**	P	**Pn**	**18 51 22.0**	**+0.1**
MAT				S	**Sn**	**18 51 47.7**	**+1.0**
JHJ	**Hachijo jima 2**	**3.74**	**191**	Pn	**Pn**	**18 51 47.6**	**+1.3**
	5.3nm,0.3s,baz=45,slow=20,SNR=3.6						
JHJ				Sn	**Sn**	**18 52 29.3**	**-1.2**
	3.3nm,0.3s,baz=349,slow=5.2,SNR=2.4						
ASAJ	**Asahikawa**	**7.46**	**11**	Pn	**Pn**	**18 52 37.1**	**-0.3**
	baz=180,slow=6.7						
USRK	**Ussuriysk Ar.**	**9.89**	**321**	Pn	**Pn**	**18 53 13.1**	**+2.3**
	baz=134,slow=12,SNR=2.3						
KSRS	**Korea Array**	**10.16**	**277**	Pn	Pn	18 53 20.2	+5.7
	0.2nm,0.3s,baz=92,slow=14,SNR=4.1						
KSRS				LR	LR	18 56 25.3	
	comp=Z,16nm,19.2s,baz=125,slow=33						

H11N2	**WAKE ISLAND Hy**	**28.58**	**119**	T		T	19 26 30.7		
	baz=312,slow=75,SNR=313								
H11N1	**WAKE ISLAND Hy**	**28.59**	**119**	T		T	19 26 31.2		
	baz=312,slow=75,SNR=313								
H11N3	**WAKE ISLAND Hy**	**28.60**	**119**	T		T	19 26 32.0		
	baz=312,slow=75,SNR=288								
H11S1	**WAKE ISLAND Hy**	**29.27**	**121**	T		T	19 27 21.8		
	baz=314,slow=75,SNR=1162								
H11S3	**WAKE ISLAND Hy**	**29.27**	**121**	T		T	19 27 21.9		
	baz=314,slow=75,SNR=747								
H11S2	**WAKE ISLAND Hy**	**29.29**	**121**	T		T	19 27 23.6		
	baz=314,slow=75,SNR=632								
ZALV	**Zalesovo Beam**	**41.61**	**313**	P		**P**	**18 58 36.5**	**0.0**	
	0.3nm,0.3s,baz=101,slow=6.5,SNR=2.6								
MKAR	**Makanchi Array**	**43.71**	**302**	P		**P**	**18 58 51.9**	**-1.9**	
	0.2nm,0.7s,baz=98,slow=6.0,SNR=3.3								
KURBB	**Kurchatov Arra**	**45.65**	**308**	P		**P**	**18 59 08.7**	**-0.4**	
	0.7nm,0.2s,baz=84,slow=8.0,SNR=3.4								
WRA	**Warramunga Arr**	**56.75**	**187**	P		**P**	**19 00 31.8**	**-1.0**	
	0.4nm,0.5s,baz=4.6,slow=7.2,SNR=15								
ASAR	**Alice Springs**	**60.48**	**187**	P		**P**	**19 00 58.4**	**-0.3**	
	0.4nm,0.9s,baz=11,slow=10,SNR=3.8								

*ISK **06** 18:56:50.5,39˚.12N×29˚.10E,h5km,ML3.6*

*DDA **06** 18:56:50.9,39˚.10N×29˚.09E,h7km,Ml3.8*

*CSEM **06** 18:56:51.5±0.1,39˚.09N×29˚.08E,h5km,ML3.6,Error ellipse: s-maj=2.7km s-min=2.3km az=128.0*

*ISCJB **06** 18:56:51.4±0.4,39˚.10N±0˚.02×29˚.08E±0˚.03,h12km±3km, Error ellipse: s-maj=3.8km s-min=3.0km az=38.8*

*THE **06** 18:56:53.1,39˚.04N×29˚.04E,h8km±2km,ML3.2/1,Error ellipse: s-maj=4.7km s-min=1.0km az=96.0*

*SOF **06** 18:56:58.3,39˚.68N×28˚.70E,h3km,MD3.4*

ISC 06 18:56:51.6±0.9,39˚.11N±0˚.02×29˚.08E±0˚.02,h11km±7km, n119,σ1s04/141,2C-8D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GEDZ	**Gediz**	**0.27**	**105**	*e*PG	**Pg**	**18 56 57.0**	**-0.2**
GEDZ				*e*SG	**Sg**	**18 57 01.1**	**+0.2**
GEDZ	**Gediz**	**0.27**	**105**	*e*Pg	**Pg**	**18 56 57.0**	**-0.2**
GEDZ				*e*Sg	**Sg**	**18 57 01.1**	**+0.2**
DEMI	**Demirci**	**0.29**	**256**	*i* P	**Pg**	**18 56 57.8**	**+0.2**
DEMI				*i* S	**Sg**	**18 57 01.8**	**+0.3**
DEMI	**Demirci**	**0.29**	**256**	P	**Pg**	**18 56 57.8**	**+0.2**
DEMI				S	**Sg**	**18 57 01.8**	**+0.3**
GDZ	**Gediz**	**0.32**	**94**	*i* P	**Pg**	**18 56 57.1**	**-1.0**
GDZ	**Gediz**	**0.32**	**94**	P	**Pg**	**18 56 57.1**	**-1.0**
TVSB	**Tavsanli**	**0.45**	**42**	*e*PG	**Pg**	**18 56 59.6**	**-0.9**
TVSB	**Tavsanli**	**0.45**	**42**	*e*Pg	**Pg**	**18 56 59.6**	**-0.9**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	**Pg**	**18 57 04.4**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**209**	P	**Pg**	**18 57 04.4**	**-0.4**
KULA				S	**Sg**	**18 57 13.5**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**209**	P	**Pg**	**18 57 04.4**	**-0.4**
KULA				S	**Sg**	**18 57 13.5**	**-0.3**
MANT	**Manisa**	**0.74**	**213**	*i* P	**Pg**	**18 57 04.4**	**-1.6**
MANT				*i* S	**Sg**	**18 57 14.2**	**-1.5**
MANT	**Manisa**	**0.74**	**213**	P	**Pg**	**18 57 04.4**	**-1.6**
MANT				S	**Sg**	**18 57 14.2**	**-1.5**
KHL	**Karahalli**	**0.86**	**156**	*e*PG	**Pg**	**18 57 07.9**	**-0.4**
KHL				*e*SG	**Sb**	**18 57 20.9**	**+0.7**
KHL	**Karahalli**	**0.86**	**156**	*e*Pg	**Pg**	**18 57 07.9**	**-0.4**
KHL				*e*Sg	**Sb**	**18 57 20.9**	**+0.7**
AKS	**Akhisar**	**1.01**	**257**	*e*PG	**Pb**	**18 57 11.5**	**+0.4**
AKS				*e*SG	**Sn**	**18 57 26.3**	**+0.3**
AKS	**Akhisar**	**1.01**	**257**	*e*Pg	**Pb**	**18 57 11.5**	**+0.4**
BALB	**Balikesir**	**1.07**	**300**	*e*PN	**Pb**	**18 57 12.4**	**+0.3**
BALB				*e*SN	**Sn**	**18 57 27.7**	**+0.4**
BALB	**Balikesir**	**1.07**	**300**	*e*Pn	**Pb**	**18 57 12.4**	**+0.3**
BALB				*e*Sn	**Sn**	**18 57 27.7**	**+0.4**
IGD	**Bursa**	**1.15**	**5**	*i* P	**Pg**	**18 57 11.7**	**-2.1**
IGD				*i* S	**Sn**	**18 57 31.0**	**+1.5**
IZI	**Iznik**	**1.26**	**14**	*e*PN	**Pg**	**18 57 15.7**	**-0.1**
IZI	**Iznik**	**1.26**	**14**	*e*Pn	**Pg**	**18 57 15.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*PN	**Pg**	**18 57 15.3**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*Pn	**Pg**	**18 57 15.3**	**-0.6**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pn**	**18 57 15.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pn**	**18 57 15.7**	**+0.2**
BALY	**Balya**	**1.29**	**300**	*i* P	**Pn**	**18 57 16.1**	**+0.5**
BALY	**Balya**	**1.29**	**300**	P	**Pn**	**18 57 16.1**	**+0.5**
GEMT	**Gemlik**	**1.32**	**4**	*e*PN	**Pn**	**18 57 16.8**	**+0.7**
GEMT	**Gemlik**	**1.32**	**4**	*e*Pn	**Pn**	**18 57 16.8**	**+0.7**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pn**	**18 57 18.1**	**+0.8**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pn**	**18 57 18.1**	**+0.8**
DNZL	**Cakiroluk**	**1.42**	**181**	*i* P	**Pn**	**18 57 17.7**	**+0.1**
DNZL				*i* S	**Sn**	**18 57 38.9**	**+2.5**
DNZL	**Cakiroluk**	**1.42**	**181**	P	**Pn**	**18 57 17.7**	**+0.1**
DNZL				S	**Sn**	**18 57 38.9**	**+2.5**
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*PN	**Pb**	**18 57 18.5**	**+0.3**
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*Pn	**Pb**	**18 57 18.5**	**+0.3**
ESKT	**Eskisehir**	**1.44**	**73**	*e*PN	**Pn**	**18 57 17.5**	**-0.2**
ESKT	**Eskisehir**	**1.44**	**73**	*e*Pn	**Pn**	**18 57 17.5**	**-0.2**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pn**	**18 57 18.0**	**0.0**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pn**	**18 57 18.0**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**219**	*e*PN	**Pb**	**18 57 19.8**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**219**	*e*Pn	**Pb**	**18 57 19.8**	**+0.4**
GPA	**Golpazari**	**1.51**	**39**	*e*PN	**Pb**	**18 57 19.8**	**+0.1**
GPA	**Golpazari**	**1.51**	**39**	*e*Pn	**Pb**	**18 57 19.8**	**+0.1**
EDC	**Edincik**	**1.55**	**323**	*e*PN	**Pb**	**18 57 20.4**	**+0.1**
EDC	**Edincik**	**1.55**	**323**	*e*Pn	**Pb**	**18 57 20.4**	**+0.1**
IZM	**Izmir**	**1.59**	**244**	*e*PN	**Pb**	**18 57 20.9**	**-0.1**
IZM	**Izmir**	**1.59**	**244**	*e*Pn	**Pb**	**18 57 20.9**	**-0.1**
KNL	**Bal¯–kesir**	**1.66**	**315**	*i* P	**Pn**	**18 57 21.6**	**+0.9**
KNL				*i* S	**Sb**	**18 57 43.8**	**+0.6**
DKL	**Dikili**	**1.69**	**269**	*e*PN	**Pb**	**18 57 22.4**	**-0.3**
DKL	**Dikili**	**1.69**	**269**	*e*Pn	**Pb**	**18 57 22.4**	**-0.3**
GULT	**Gulveren**	**1.72**	**40**	*e*PN	**Pn**	**18 57 22.8**	**+1.2**
GULT	**Gulveren**	**1.72**	**40**	*e*Pn	**Pn**	**18 57 22.8**	**+1.2**
HRT	**Hereke**	**1.77**	**15**	*e*PN	**Pn**	**18 57 23.0**	**+0.8**
HRT	**Hereke**	**1.77**	**15**	*e*Pn	**Pn**	**18 57 23.0**	**+0.8**
SPNC	**Sapanca-Adapaz**	**1.83**	**31**	*e*PN	**Pn**	**18 57 24.1**	**+1.0**
SPNC	**Sapanca-Adapaz**	**1.83**	**31**	*e*Pn	**Pn**	**18 57 24.1**	**+1.0**
KRBG	**Karabiga-Canak**	**1.87**	**314**	*e*PN	**Pn**	**18 57 25.3**	**+1.7**
KRBG	**Karabiga-Canak**	**1.87**	**314**	*e*Pn	**Pn**	**18 57 25.3**	**+1.7**
MRMT	**Marmara Adasi**	**1.87**	**323**	*e*PN	**Pb**	**18 57 25.5**	**-0.4**
MRMT	**Marmara Adasi**	**1.87**	**323**	*e*Pn	**Pb**	**18 57 25.5**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*PN	**Pn**	**18 57 25.3**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*Pn	**Pn**	**18 57 25.3**	**+0.8**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*PN	**Pn**	**18 57 28.1**	**+1.7**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*Pn	**Pn**	**18 57 28.1**	**+1.7**
MDUB	**Mudurnu**	**2.12**	**50**	*e*PN	**Pn**	**18 57 28.3**	**+1.1**
MDUB	**Mudurnu**	**2.12**	**50**	*e*Pn	**Pn**	**18 57 28.3**	**+1.1**
KLYT	**Kilyos**	**2.14**	**359**	*e*PN	**Pn**	**18 57 28.8**	**+1.6**
KLYT	**Kilyos**	**2.14**	**359**	*e*Pn	**Pn**	**18 57 28.8**	**+1.6**
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*PN	**Pn**	**18 57 28.8**	**+1.4**
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*Pn	**Pn**	**18 57 28.8**	**+1.4**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*PN	**Pn**	**18 57 28.9**	**+1.3**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*Pn	**Pn**	**18 57 28.9**	**+1.3**
PRK	**Paraskevi**	**2.18**	**274**	P	**Pn**	**18 57 28.4**	**+0.5**
KIZT	**Kizilcal**	**2.20**	**95**	*e*PN	**Pn**	**18 57 28.9**	**+0.8**
KIZT	**Kizilcal**	**2.20**	**95**	*e*Pn	**Pn**	**18 57 29.0**	**+0.8**
TKR	**Tekirdag**	**2.22**	**328**	*e*PN	**Pn**	**18 57 30.0**	**+1.7**
TKR	**Tekirdag**	**2.22**	**328**	*e*Pn	**Pn**	**18 57 30.0**	**+1.7**
EZN	**Ezine**	**2.24**	**289**	P	**Pn**	**18 57 29.0**	**+0.3**
EZN	**Ezine**	**2.24**	**289**	P	**Pn**	**18 57 29.0**	**+0.3**
SMG	**Samos**	**2.25**	**232**	P	**Pn**	**18 57 28.9**	**+0.1**
SMG				S	**Sn**	**18 57 55.8**	**-0.7**
SMG	**Samos**	**2.25**	**232**	P	**Pn**	**18 57 28.9**	**+0.1**
SMG				S	**Sn**	**18 57 55.8**	**-0.7**
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*PN	**Pn**	**18 57 32.8**	**+1.5**
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*Pn	**Pn**	**18 57 32.8**	**+1.5**
CHOS	**Chios island**	**2.47**	**254**	P	**Pn**	**18 57 32.1**	**+0.2**
CHOS	**Chios island**	**2.47**	**254**	P	**Pn**	**18 57 32.1**	**+0.2**
BODT	**Bodrum**	**2.48**	**215**	P	**Pn**	**18 57 31.5**	**-0.4**
BODT				S	**Sn**	**18 58 00.6**	**-1.5**
BODT	**Bodrum**	**2.48**	**215**	P	**Pn**	**18 57 31.5**	**-0.4**
BODT				S	**Sn**	**18 58 00.6**	**-1.5**
SIGR	**SIGRI**	**2.50**	**273**	P	**Pn**	**18 57 32.7**	**+0.4**
SIGR	**SIGRI**	**2.50**	**273**	P	**Pn**	**18 57 32.7**	**+0.4**
ENEZ	**Enez**	**2.77**	**307**	P	**Pn**	**18 57 36.9**	**+1.0**
ENEZ				S	**Sn**	**18 58 10.3**	**+0.9**
ALN	**Alexandroupoli**	**2.93**	**308**	P	**Pn**	**18 57 38.6**	**+0.5**
SMTH	**Samothraki Isl**	**3.05**	**298**	P	**Pn**	**18 57 40.8**	**+1.0**
SMTH	**Samothraki Isl**	**3.05**	**298**	P	**Pn**	**18 57 40.8**	**+1.0**
LIA	**Limnos Island**	**3.11**	**286**	P	**Pn**	**18 57 41.6**	**+1.0**
LIA	**Limnos Island**	**3.11**	**286**	P	**Pn**	**18 57 41.6**	**+1.0**
EDRB	**Edirne**	**3.26**	**328**	P	**Pn**	**18 57 43.3**	**+0.6**
EDRB	**Edirne**	**3.26**	**328**	P	**Pn**	**18 57 43.3**	**+0.6**
APE	**Apeiranthos**	**3.46**	**235**	*i* P	**Pg**	**18 57 56.8**	**-1.2**
APE	**Apeiranthos**	**3.46**	**235**	S	**Sg**	**18 58 43.0**	**+0.2**

JMB	**Yambol**	**3.85**	**331**	P		**Pn**	**18 57 51.4**	**+0.7**	
DIM	**Dimitrovgrad**	**3.98**	**319**	P		**Pn**	**18 57 53.4**	**+0.8**	
RZN	**Rozhen**	**4.21**	**309**	P		**Pn**	**18 57 56.7**	**+0.8**	
PRD	**Provadia**	**4.27**	**343**	P		**Pn**	**18 57 56.8**	**+0.2**	
PLD	**Plovdiv**	**4.47**	**313**	P		**Pn**	**18 57 59.3**	**0.0**	
MMB	**Musomiste**	**4.78**	**303**	P		**Pn**	**18 58 05.4**	**+1.9**	
SZH	**Strazhica**	**4.78**	**331**	P		**Pn**	**18 58 03.8**	**+0.2**	
TIRR	**Tirgusor**	**5.36**	**355**	↑*i* P		**Pn**	**18 58 11.9**	**+0.3**	
TIRR	**Tirgusor**	**5.36**	**355**	S		**Sn**	**18 59 08.0**	**-5.3**	
TLB	**Topalu**	**5.52**	**352**	↓*i* P		**Pn**	**18 58 14.0**	**+0.3**	
VTS	**Vitosha**	**5.64**	**310**	P		**Pn**	**18 58 17.5**	**+1.9**	
MPEP	**Malo Peshtene**	**5.84**	**318**	P		**Pn**	**18 58 20.5**	**+2.3**	
CFR	**Carcaliu**	**6.10**	**354**	↓*i* P		**Pn**	**18 58 21.6**	**-0.1**	
MLR	**Muntele Rosu**	**6.78**	**341**	↑*i* P		**Pn**	**18 58 31.9**	**+0.7**	
VRI	**Vrincioaia**	**6.97**	**346**	↓*i* P		**Pn**	**18 58 34.2**	**+0.6**	
VOIR		**6.99**	**336**	↓*i* P		**Pn**	**18 58 34.1**	**+0.1**	
DOPR	**Dopca**	**7.37**	**340**	↓*i* P		**Pn**	**18 58 39.9**	**+0.8**	
TESR	**Tescani**	**7.61**	**347**	↓*i* P		**Pn**	**18 58 42.9**	**+0.5**	
MDVR	**Moldovita**	**7.88**	**318**	↓*i* P		**Pn**	**18 58 46.4**	**+0.2**	

KRSC 06 18:58:44.3±0.9,54˚.03N×158˚.86E,h211km±7km,ML3.6, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GNL	**Ganaly**	**0.64**	**239**	*e*P	Pn	18 59 13.5	+0.1
GNL				*e*S	S	18 59 35.7	-0.2
KRER	**Koryakskii**	**0.73**	**185**	*e*P	Pn	18 59 15.3	+1.4
SDLR	**Sedlovina**	**0.75**	**179**	*e*P	Pn	18 59 15.0	+1.1
SDLR				*e*S	S	18 59 38.4	+1.5
AVH	**Avacha**	**0.77**	**185**	*e*P	Pn	18 59 15.1	+1.1
UGLR	**Uglovaya**	**0.82**	**181**	*e*P	Pn	18 59 15.5	+1.2
NLC	**Nalytchevo**	**0.91**	**161**	*e*P	Pn	18 59 15.4	+0.8
NLC				*e*S	S	18 59 38.9	+0.9
DALK	**Dalny**	**1.00**	**184**	*e*P	Pn	18 59 16.2	+1.0
DALK				*e*S	S	18 59 40.4	+1.4
SPN	**Mys Shipunski**	**1.16**	**143**	*e*P	Pn	18 59 16.8	+0.5
SPN				*e*S	S	18 59 40.6	-0.4
TUMR	**Tumrok**	**1.47**	**30**	*e*P	Pn	18 59 20.0	+1.3
RUS	**Russkaya**	**1.61**	**187**	*e*P	Pn	18 59 20.1	+0.2
RUS				*e*S	S	18 59 47.5	+0.2
MKZ	**Mys Kozlova**	**1.77**	**71**	*e*P	Pn	18 59 21.9	+0.7
MKZ				*e*S	S	18 59 50.1	+0.3
BDR	**Baidarnaya**	**2.88**	**27**	*e*P	Pn	18 59 34.5	+1.4
SRKR	**Sorokina**	**2.95**	**26**	*e*P	Pn	18 59 34.7	+0.9
SMKR	**Semkarok**	**2.96**	**29**	*e*P	Pn	18 59 35.8	+1.8
SMKR				*e*S	S	19 00 13.8	+1.1
KBG	**Krutoberegovo**	**3.14**	**43**	*e*S	S	19 00 16.6	+0.4
BKI	**Bering**	**4.30**	**71**	*e*S	S	19 00 41.1	-0.4

*ISCJB **06** 19:03:15.9±0.1,29˚.60S±0˚.02×176˚.28W±0˚.02,h10km, mb6.9/408,MS7.7/266,Error ellipse: s-maj=3.0km s-min=1.6km az=44.7*

*IDC **06** 19:03:16.3±0.3,29˚.27S×176˚.30W,h0km,mb6.2/32, mb1 6.3/32,mb1mx6.2/33,mbtmp6.2/32,M

RTZ Ruatahuna 10.85 209 PN Pn 19 05 48.1 -6.0
UTU Utuhina 10.85 213 PN Pn 19 05 53.3 -0.7
TOZ Tahuroa Road 10.85 217 PN Pn 19 05 51.9 -2.2
AWAZ Awhitu Peninsu 10.86 222 PN Pn 19 05 54.2 0.0
KNZ Kokohu 10.91 206 ePN Pn 19 05 47.4 -7.5
HSRZ Hossack Road 10.93 213 PN Pn 19 05 55.6 +0.4
MHGZ Mahia Peninsul 10.94 205 ePN Pn 19 05 47.7 -7.6
MHGZ SN Sn 19 07 49.9 -7.0
HRRZ Handcock Road 10.97 212 PN Pn 19 05 52.9 -2.9
PRRZ Plateau Road 11.01 212 ePN Pn 19 05 51.0 -5.3
GRRZ Galatos Road 11.02 213 PN Pn 19 05 53.0 -3.5
ALRZ Allen Road 11.08 212 PN Pn 19 05 52.0 -5.4
WHHZ Waihua 11.13 207 ePN Pn 19 05 51.8 -6.1
WPRZ Whakapapatarin 11.13 212 ePN Pn 19 05 52.3 -5.8
KUTZ Kaahu Road 11.27 214 ePN Pn 19 05 56.2 -3.7
MRHZ Matea Rd 11.27 211 ePN Pn 19 05 52.9 -7.1
TLZ Tolley Road 11.29 215 PN Pn 19 05 57.4 -2.7
NMHZ Naumai 11.32 209 PN Pn 19 05 54.3 -6.4
WHTZ Whakaora 11.35 213 PN Pn 19 05 56.9 -4.2
ARHZ Aropaoanui 11.39 208 ePN Pn 19 05 53.7 -7.7
WATZ Wairara 11.49 213 PN Pn 19 05 59.0 -3.9
BKZ Black Stump Fm 11.51 209 ePn Pn 19 05 56.4 -6.9
BKZ Black Stump Fm 11.51 209 ePN Pn 19 05 55.4 -7.9
RATZ Rangitukua 11.59 213 PN Pn 19 06 01.3 -3.1
RITZ Rihia Road 11.64 212 PN Pn 19 05 59.4 -5.6
MCHZ McNeill Hill 11.66 208 PN Pn 19 05 59.2 -6.0
CKHZ Cape Kidnapper 11.69 206 PN Pn 19 05 57.6 -8.1
KWHZ Kaweka Forest 11.76 209 PN Pn 19 05 59.8 -6.8
HIZ Hauiti 11.77 216 ePn Pn 19 06 05.6 -1.2
WTVZ West Tongariro 11.88 212 PN Pn 19 06 03.9 -4.5
OTVZ Oturere 11.88 212 PN Pn 19 06 04.3 -4.1
KAHZ Kahuranaki 11.89 207 PN Pn 19 05 59.1 -9.3
KAHZ SN Sn 19 08 12.1 -8.1
TWVZ Taurewa 11.91 213 PN Pn 19 06 05.9 -2.9
NGZ Ngauruhoe 11.92 212 PN Pn 19 06 03.4 -5.5
KRHZ Kereru 11.96 209 PN Pn 19 06 01.3 -8.1
BHHZ Black Hill Sta 11.97 210 ePN Pn 19 06 02.8 -6.7
FWVZ Far West T-bar 12.01 212 PN Pn 19 06 05.8 -4.3
WHVZ Whangaehu Hut 12.01 212 PN Pn 19 06 04.7 -5.6
MOVZ Moawhango 12.04 211 ePN Pn 19 06 03.0 -7.4
TRVZ Turoa 12.04 212 PN Pn 19 06 06.2 -4.5
WNVZ Wahianoa 12.04 212 ePN Pn 19 06 03.4 -7.2
PXZ Pawanui 12.10 206 ePN Pn 19 06 01.7 -9.5
PXZ eSN Sn 19 08 13.6 -12
PKVZ Pokaka 12.13 213 ePN Pn 19 06 07.1 -4.6
PNHZ Pukenui 12.26 208 PN Pn 19 06 05.9 -7.6
VRZ Vera Road 12.29 215 PN Pn 19 06 10.5 -3.3
WPHZ Waipukurau 12.29 207 ePN Pn 19 06 05.4 -8.4
PRHZ Porangahau 12.39 206 PN Pn 19 06 06.6 -8.6
PRHZ SN Sn 19 06 20.9 -12
TSZ Takapari Road 12.48 209 PN Pn 19 06 07.8 -8.7
ANWZ Angora Road 12.62 206 ePN Pn 19 06 10.3 -8.0
MSVF Nonsavu 12.64 334 eP Pn 19 06 18.8 0.0
MSVF Nonsavu 12.64 334 ePn Pn 19 06 18.8 0.0
WAZ Wanganui 12.67 212 PN Pn 19 06 13.5 -5.5
LREZ Lake Rotokare 12.72 215 PN Pn 19 06 18.9 -0.8
NEZ North Egmont 12.73 216 ePN Pn 19 06 17.7 -2.2
PKE Pukeiti 12.73 217 PN Pn 19 06 19.7 -0.2
PREZ Palmer Road 12.76 216 ePN Pn 19 06 19.4 -0.8
KHEZ Kahui Hut 12.79 216 PN Pn 19 06 18.6 -2.2
BFZ Birch Farm 12.90 206 ePn Pn 19 06 14.1 -8.0
BFZ Birch Farm 12.90 206 PN Pn 19 06 13.7 -8.5
PRWZ Pori Road 12.90 207 PN Pn 19 06 14.8 -7.4
CPWZ Castlepoint 13.11 206 PN Pn 19 06 16.6 -8.4
TIWZ Tintock 13.12 207 PN Pn 19 06 17.0 -8.2
MRZ Mangatainoka R 13.15 208 PN Pn 19 06 16.1 -9.4
MRZ SN Sn 19 08 38.1 -13
HOWZ Holdsworth Sta 13.37 208 ePN Pn 19 06 18.8 -10
TMWZ Te Maipa 13.40 206 ePN Pn 19 06 20.1 -8.9
OGWZ Otaki Gorge 13.45 209 ePN Pn 19 06 20.1 -10
KIW Kapiti Island 13.60 210 ePN Pn 19 06 21.4 -10
TRWZ Traveller 13.73 206 ePN Pn 19 06 24.0 -9.5
CAW Cannon Point 13.73 209 PN Pn 19 06 21.8 -12
NFK Norfolk Island 13.81 267 P Pn 19 06 35.5 +0.8
baz=14,SNR=9.1
PAWZ Paruwai Farm 13.82 207 PN Pn 19 06 26.9 -7.8
MSWZ Moikau Station 13.92 208 PN Pn 19 06 26.7 -9.3
PLWZ Palliser 14.04 207 PN Pn 19 06 28.7 -9.1
SNZO South Karori 14.05 209 ePn Pn 19 06 28.1 -10
BHW Baring Head 14.07 209 PN Pn 19 06 28.1 -10
TCW Tory Channel 14.16 210 ePN Pn 19 06 28.8 -11
CTZ Chatham Island 14.40 181 ePN Pn 19 06 36.8 -5.8
TUWZ Tuamarina 14.48 211 PN Pn 19 06 32.9 -11
NNZ Nelson 14.57 213 PN Pn 19 06 34.9 -10
I36NZ CHATHAM INFRAS 14.58 181 Pn Pn 19 06 45.0 0.0
I36NZ SN Sn 19 09 11.5 -14
QRZ Quartz Range 14.69 216 ePN Pn 19 06 37.5 -9.2
BSWZ Blackbirch Sta 14.74 210 ePN Pn 19 06 36.9 -10
THZ Tophouse 15.22 212 ePn Pn 19 06 45.7 -8.0
4µm,0.7s
THZ Tophouse 15.22 212 ePN Pn 19 06 43.8 -10
KHZ Kahutara 15.46 209 ePn Pn 19 06 47.6 -9.1
6µm,0.7s
KHZ Kahutara 15.46 209 ePN Pn 19 06 46.4 -10
DSZ Denniston Nort 15.74 215 ePN Pn 19 06 53.7 -6.8
AFI Afiamalu 15.88 16 Pn Pn 19 06 57.8 -4.6
38nm,0.3s,baz=2.5,slow=6.3,SNR=32
AFI SN Sn 19 09 44.3 -13
132nm,0.3s,baz=200,slow=21,SNR=2.9
AFI LR LR 19 12 48.2
comp=Z,700µm,21.9s,baz=189,slow=36
AFI Afiamalu 15.88 16 ePn Pn 19 06 55.8 -6.6
5µm,1.1s
AFI SN Sn 19 09 44.3 -13
LTZ Lake Taylor 16.31 211 ePn Pn 19 06 59.2 -8.6
2µm,0.9s
LTZ Lake Taylor 16.31 211 ePN Pn 19 06 59.1 -8.7
INZ Inchbonnie 16.66 213 ePN Pn 19 07 02.5 -10
CRLZ Canterbury Las 16.79 209 ePn Pn 19 07 05.1 -8.7
2µm,0.9s
CRLZ Canterbury Las 16.79 209 ePN Pn 19 07 04.6 -9.2
OXZ Oxford 16.85 211 ePn Pn 19 07 05.2 -9.4
5µm,0.9s
OXZ Oxford 16.85 211 PN Pn 19 07 05.2 -9.3
MQZ McQueen's Vall 16.89 209 ePn Pn 19 07 05.0 -10
1µm,0.9s
MQZ McQueen's Vall 16.89 209 ePN Pn 19 07 04.7 -10
RAR Rarotonga 16.94 65 Pn Pn 19 07 08.2 -7.6
16nm,0.3s,baz=240,slow=12,SNR=33
RAR SN Sn 19 10 03.2 -20
101nm,0.3s,baz=64,slow=16,SNR=8.8
RAR LR LR 19 13 51.4
comp=Z,2717µm,18.6s,baz=240,slow=38
RAR Rarotonga 16.94 65 eP Pn 19 07 08.4 -7.4
DZM Mont Dzumac 17.17 291 Pn P 19 07 22.0 +1.8
7.5nm,0.3s,baz=118,slow=13,SNR=72
DZM Mont Dzumac 17.17 291 eP P 19 07 20.8 +0.6
17µm,1.5s
DZM eLQ LQ 19 10 40.6
10445µm,30.7s
DZM eLR LR 19 11 19.0
5076µm,24.4s
DZM Mont Dzumac 17.17 291 ePn P 19 07 19.8 -0.4
12µm,1.5s
WVZ Waitaha Valley 17.26 214 ePN Pn 19 07 10.8 -8.9
RPZ Rata Peaks 17.60 212 P Pn 19 07 14.6 -9.3
6.1nm,0.3s,baz=48,slow=16,SNR=36
RPZ S Sn 19 10 21.7 -17
131nm,0.3s,baz=308,slow=22,SNR=8.9
RPZ Rata Peaks 17.60 212 ePn Pn 19 07 16.6 -7.3
2µm,0.7s
RPZ S Sn 19 10 21.7 -17
RPZ Rata Peaks 17.60 212 PN Pn 19 07 14.6 -9.2
FOZ Fox Glacier 18.05 214 ePn Pn 19 07 24.8 -4.6
1µm,0.9s
FOZ Fox Glacier 18.05 214 PN Pn 19 07 22.3 -7.2
LBZ Lake Benmore 18.51 212 eP P 19 07 28.2 -6.6
1µm,1.0s
LBZ Lake Benmore 18.51 212 PN P 19 07 26.8 -8.1
ODZ Otahua Downs 18.82 210 eP P 19 07 32.3 -5.9
4µm,1.1s
ODZ Otahua Downs 18.82 210 ePN P 19 07 30.2 -8.0
JCZ Jackson Bay 18.95 215 PN P 19 07 34.0 -5.8
HHSZ Highcliff Hill 19.51 208 ePN P 19 07 43.5 -2.2
EAZ Earnscleugh 19.56 212 ePN P 19 07 43.1 -3.3
MSZ Milford Sound 19.82 215 ePN P 19 07 47.2 -1.8
TUZ Tuapeka 19.98 210 ePN P 19 07 48.8 -2.0
MLZ Mavora Lakes 20.22 213 eP P 19 07 50.9 -2.7
1µm,0.8s
MLZ Mavora Lakes 20.22 213 ePN P 19 07 51.0 -2.5
SYZ Scrubby Hill 20.64 210 ePN P 19 07 57.1 -0.9
WHZ Wether Hill Ro 20.69 213 eP P 19 07 56.1 -2.5
1µm,0.8s
WHZ LR LR
comp=Z,695µm,19.0s
WHZ Wether Hill Ro 20.69 213 ePN P 19 07 55.5 -3.1
DCZ Deep Cove 20.76 215 eP P 19 07 56.5 -2.8
comp=Z,699nm,0.8s
DCZ LR LR
comp=Z,1078µm,18.0s
DCZ Deep Cove 20.76 215 PN P 19 07 58.9 -0.5
FUNA Funafuti 21.11 347 eP P 19 08 00.9 -2.4
comp=Z,9µm,1.4s
FUNA LR LR
comp=Z,1573µm,20.0s
APZ The Paps 21.38 211 PN P 19 08 06.6 +0.6
LHI Lord Howe Isla 21.39 258 eP P 19 08 09.4 +3.2
comp=Z,22µm,1.1s
TBI Tubuai 24.71 82 eP P 19 08 37.1 -2.6
comp=Z,9µm,1.3s
TBI eLQ LQ 19 13 26.0
comp=Z,2286µm,32.2s
TBI eLR LR 19 14 40.3
comp=Z,2454µm,36.2s,baz=251
TBI Tubuai 24.71 82 eT T 19 31 55.0
comp=Z,344nm,0.3s
PAE Paea 27.01 71 eP P 19 08 57.6 -2.9
comp=Z,2µm,1.4s
PAE Paea 27.01 71 eT T 19 34 50.4
comp=Z,216nm,0.3s
PPT2 Papeete2 27.05 70 eP P 19 08 58.3 -2.7
comp=Z,5µm,1.3s
PPT2 eLQ LQ 19 14 24.0
comp=Z,4074µm,26.0s
PPT2 eLR LR 19 15 40.9
comp=Z,2461µm,26.8s,baz=231
PPT2 Papeete2 27.05 70 eT T 19 34 47.7
comp=Z,123nm,0.3s
PPT Papeete 27.06 70 P P 19 09 01.0 0.0
comp=Z,2µm,1.3s,baz=294,slow=3.1,SNR=10
PPT LR LR 19 18 33.5
comp=Z,1444µm,19.0s,baz=242,slow=34
PPT Papeete 27.06 70 P P 19 09 01.0 0.0
PPT pmax pmax
comp=Z,565nm,1.1s
PPT MLR MLR
comp=Z,444µm,19.0s
PPT Papeete 27.06 70 eP P 19 08 59.2 -1.8
TVO Taravao 27.22 71 eP P 19 08 59.7 -2.8
comp=Z,1µm,1.4s
TVO Taravao 27.22 71 eT T 19 34 57.1
comp=Z,22nm,0.3s
TIAR Tiarei 27.25 71 eP P 19 08 59.9 -2.9
comp=Z,1µm,1.0s
TIAR Tiarei 27.25 71 eT T 19 34 55.7
comp=Z,23nm,0.2s
ARMA Armidale 27.82 260 P P 19 09 09.9 +2.0
baz=28,SNR=117
ARMA Armidale 27.82 260 eP P 19 09 11.0 +3.0
comp=Z,2µm,1.4s
ARMA LR LR
comp=Z,943µm,20.0s
MGCD Mangrove Creek 28.10 254 P P 19 09 12.8 +2.5
baz=28,SNR=76
MEH Mehetia 28.16 72 eP P 19 09 08.8 -2.1
comp=Z,709nm,1.2s
MEH Mehetia 28.16 72 eT T 19 36 16.3
comp=Z,115nm,0.3s
EIDS Eidsvold 29.22 270 P P 19 09 21.7 +1.4
baz=29,SNR=168
EIDS Eidsvold 29.22 270 PFAKE 19 09 30.0 +10
EIDS LR LR
comp=Z,830µm,18.0s
CNB Canberra Magne 29.57 249 P P 19 09 25.5 +2.1
baz=30,SNR=21
HNR Honiara 29.80 307 P P 19 09 22.3 -3.1
comp=Z,718nm,0.7s,baz=106,slow=1.1,SNR=34
HNR S S 19 14 21.7 +1.0
comp=Z,273nm,1.1s,baz=153,slow=17,SNR=2.0
HNR Honiara 29.80 307 eP P 19 09 23.0 -2.5
HNR eS S 19 14 39.0 +18
HNR Honiara 29.80 307 eP P 19 09 24.2 -1.3
HNR S S 19 14 21.7 +1.0
HNR pmax pmax
comp=Z,5µm,1.0s
HNR MLR MLR
comp=Z,593µm,18.0s
HNR Honiara 29.80 307 eP P 19 09 24.2 -1.3
comp=Z,5µm,1.0s
HNR S S 19 14 21.7 +1.0
HNR LR LR
comp=Z,593µm,18.0s
VAH Vaihoa 29.87 68 eP P 19 09 23.3 -2.7
comp=Z,2µm,1.2s
VAH Vaihoa 29.87 68 eT T 19 38 18.2
comp=Z,516nm,0.2s
CAN Canberra 29.87 249 eP P 19 09 27.6 +1.6
CAN pmax pmax
comp=Z,2µm,1.3s
CAN MLR MLR
comp=Z,429µm,19.0s
CAN Canberra 29.87 249 eP P 19 09 27.6 +1.6
comp=Z,2µm,1.3s
CAN LR LR
comp=Z,429µm,19.0s
YNG Young 30.35 251 P P 19 09 32.0 +1.7
baz=30,SNR=84
MCQ Macquarie Isla 30.90 208 P P 19 09 35.7 +1.0
baz=31,SNR=5.6
MCQ Macquarie Isla 30.90 208 eP P 19 09 35.5 +0.7
MCQ pmax pmax
comp=Z,2µm,1.4s
MCQ Macquarie Isla 30.90 208 eP P 19 09 35.5 +0.7
comp=Z,2µm,1.4s
RMQ Roma 30.98 267 P P 19 09 37.0 +1.1
baz=31,SNR=416
MOO Moorlands 32.14 236 P P 19 09 47.3 +1.4
baz=32,SNR=25
TAU Tasmania Unive 32.14 235 eP P 19 09 47.5 +1.6
TAU pmax pmax
comp=Z,2µm,1.3s
TAU MLR MLR
comp=Z,915µm,18.0s
TAU Tasmania Unive 32.14 235 eP P 19 09 47.5 +1.6
comp=Z,2µm,1.3s
TAU LR LR
comp=Z,915µm,18.0s
TARA Tarawa 32.20 339 eP P 19 09 45.7 -0.9
comp=Z,2µm,1.0s
TARA LR LR
comp=Z,1058µm,20.0s
CMSA Cobar Meteorol 32.78 256 P P 19 09 53.1 +1.5
baz=33,SNR=547
TOO Toolangi 32.79 245 P P 19 09 52.6 +0.9
baz=33,SNR=21
QLP Quilpie 34.90 265 P P 19 10 10.7 +0.6
baz=35,SNR=86
CTA Charters Tower 35.15 276 P P 19 10 12.3 0.0
comp=Z,188nm,0.6s,baz=102,slow=11,SNR=172
CTA S S 19 15 42.9 -1.2
comp=Z,28nm,1.1s,baz=278,slow=21,SNR=1.0
CTA LR LR 19 23 44.3
comp=Z,1210µm,21.2s,baz=106,slow=35
CTA P3KPbc 19 41 06.2
comp=Z,5.0nm,1.0s,baz=300,slow=5.9,SNR=4.2
CTA PKPPKP P'P'df 19 43 04.3 -20
comp=Z,8.7nm,1.1s,baz=2.4,slow=6.6,SNR=3.5
CTA PKP2ab 19 45 11.7
comp=Z,5.4nm,1.1s,baz=288,slow=5.6,SNR=3.2
CTA Charters Tower 35.15 276 P P 19 10 12.3 0.0
CTA S S 19 15 42.9 -1.2
CTA pmax pmax
comp=Z,188nm,0.6s
CTA smax smax
comp=N,28nm,1.1s
CTA MLR MLR
comp=Z,210µm,21.2s
CTAO Charters Tower 35.15 276 eP P 19 10 12.3 0.0
CTAO pmax pmax
comp=Z,1µm,1.1s
CTAO MLR MLR
comp=Z,1236µm,21.0s
CTAO Charters Tower 35.15 276 eP P 19 10 12.3 0.0
comp=Z,1µm,1.1s
CTAO LR LR
comp=Z,1236µm,21.0s
ARPS Mount Arapiles 35.69 247 P P 19 10 17.4 +0.7
baz=36,SNR=21
XMAS Kiritimati 36.01 33 eP P 19 10 19.8 +0.1
comp=Z,4µm,1.1s
XMAS LR LR
comp=Z,1320µm,19.0s
STKA Stephens Creek 36.21 255 P P 19 10 21.5 +0.2
comp=Z,263nm,0.6s,baz=101,slow=11,SNR=146
STKA S S 19 15 57.9 -2.2
comp=Z,31nm,0.8s,baz=9.3,slow=17,SNR=1.7
STKA ScS ScS 19 20 43.8 +6.7
comp=Z,16nm,1.1s,baz=65,slow=17,SNR=1.3
STKA LR LR 19 25 42.0
comp=Z,577µm,18.1s,baz=94,slow=37
STKA P3KPbc 19 41 01.7
comp=Z,9.7nm,0.9s,baz=250,slow=2.9,SNR=4.7
STKA PKPPKP P'P'df 19 42 59.0 -27
comp=Z,22nm,1.2s,baz=84,slow=2.0,SNR=4.3
STKA Stephens Creek 36.21 255 P P 19 10 21.8 +0.6
baz=36,SNR=382
STKA Stephens Creek 36.21 255 eP P 19 10 21.9 +0.6
STKA S S 19 15 57.9 -2.2
STKA pmax pmax
comp=Z,461nm,1.0s
STKA Stephens Creek 36.21 255 eP P 19 10 21.9 +0.6
comp=Z,460nm,1.0s
STKA S S 19 15 57.9 -2.2
STKA ScS ScS 19 20 43.8 +6.7
STKA e 19 41 01.7
STKA P'P' 19 42 59.0
RKT Rikitea 37.41 90 eP P 19 10 29.7 -1.8
comp=Z,948nm,1.3s
RKT eS S 19 16 12.6 -5.8
comp=Z,737µm,30.0s
RKT eLQ LQ 19 18 57.7
comp=Z,278µm,25.2s
RKT eLR LR 19 20 34.2
comp=Z,1517µm,34.5s,baz=253
RKT Rikitea 37.41 90 eT T 19 48 06.4
comp=Z,37nm,0.3s
MTSU Mount Surprise 37.61 278 P P 19 10 33.5 +0.1
baz=38,SNR=182
HTT Hallett 38.27 252 P P 19 10 39.1 +0.2
baz=38,SNR=192
RABL Rabaul 38.97 304 eP P 19 10 44.7 -0.1
comp=Z,2µm,0.6s
TAOE Nuku Hiva Isla 39.48 66 eP P 19 10 46.6 -2.6
comp=Z,2µm,1.6s
TAOE eS S 19 16 45.3 -4.9
comp=Z,629µm,27.6s
TAOE eLQ LQ 19 19 47.9
comp=Z,753µm,24.8s
TAOE eLR LR 19 21 29.6
comp=Z,1288µm,20.7s,baz=242
TAOE Nuku Hiva Isla 39.48 66 eP P 19 10 53.6 +4.4
comp=Z,878nm,1.2s
PMG Port Moresby 39.55 293 P P 19 10 48.1 -1.5
comp=Z,100nm,0.9s,baz=116,slow=6.8,SNR=10
PMG S S 19 16 53.5 +2.6
comp=Z,29nm,1.0s,baz=325,slow=9.0,SNR=1.4
PMG ScS ScS 19 21 07.8 +11
comp=Z,17nm,1.0s,baz=269,slow=21,SNR=1.7
PMG LR LR 19 24 30.8
comp=Z,1025µm,21.9s,baz=136,slow=32
PMG Port Moresby 39.55 293 eP P 19 10 50.6 +1.0
PMG S S 19 16 53.5 +2.6
PMG pmax pmax
comp=Z,486nm,0.9s
PMG Port Moresby 39.55 293 eP P 19 10 50.6 +1.0
comp=Z,486nm,0.9s
PMG S S 19 16 53.5 +2.6
PMG ScS ScS 19 21 07.8 +11
COEN Coen 40.46 283 P P 19 10 57.9 +0.7
baz=40,SNR=150
COEN Coen 40.46 283 eP P 19 10 57.9 +0.7
comp=Z,3µm,1.8s
BBOO Buckleboo 40.73 253 P P 19 10 58.7 -0.6
baz=41,SNR=190
BBOO Buckleboo 40.73 253 eP P 19 10 58.7 -0.6
comp=Z,2µm,1.0s
QIS Mount Isa 40.77 272 P P 19 10 58.4 -1.4
baz=41,SNR=36
KWAJ Kwajalein Atol 40.95 335 eP P 19 11 01.4 +0.2
KWAJ pmax pmax
comp=Z,6µm,1.7s
KWAJ Kwajalein Atol 40.95 335 eP P 19 11 01.4 +0.2
comp=Z,6µm,1.7s
PTCN Pitcairn Islan 41.08 95 eP P 19 11 03.5 +1.3
comp=Z,4µm,1.3s
PTCN LR LR
comp=Z,1339µm,19.0s
PATS Pohnpei 43.48 322 P P 19 11 22.0 +0.1
baz=44,SNR=25
PATS Pohnpei 43.48 322 eP P 19 11 21.9 +0.1
comp=Z,846nm,1.0s
MANU Manus Island 43.94 301 eP P 19 11 25.0 -0.6
comp=Z,3µm,1.1s
AS01 Alice Springs 44.66 265 eP P 19 11 30.0 -1.3
AS31 Alice Springs 44.69 265 eP P 19 11 30.7 -0.9
comp=Z,202nm,0.6s
ASAR Alice Springs 44.70 265 P P 19 11 29.6 -2.0
comp=Z,106nm,0.6s,baz=104,slow=6.1,SNR=509
ASAR S S 19 18 03.0 -3.9
comp=Z,17nm,0.9s,baz=185,slow=24,SNR=4.2
ASAR ScS ScS 19 21 30.8 +2.7
comp=Z,3.6nm,1.0s,baz=107,slow=36,SNR=1.4
ASAR LR LR 19 30 06.4
comp=Z,768µm,21.6s,baz=102,slow=36
ASAR P3KP 19 42 00.7
comp=Z,2.6nm,0.9s,baz=333,slow=0.9,SNR=4.8
ASAR PKPPKP P'P'df 19 43 09.3 -5.8
comp=Z,12nm,1.0s,baz=275,slow=2.0,SNR=6.2
ASAR P4KPbc 19 49 26.2
comp=Z,8.6nm,0.9s,baz=113,slow=4.3,SNR=21
WB2 Warramunga Arr 45.58 270 eP P 19 11 36.9 -1.8
comp=Z,1µm,0.8s
WRAB Tennant Creek 45.58 270 ceP P 19 11 36.9 -1.8
WRAB pmax pmax
comp=Z,728nm,0.8s
WRAB MLR MLR
comp=Z,1146µm,16.0s
WRAB Tennant Creek 45.58 270 eP P 19 11 36.9 -1.8
comp=Z,3µm,1.4s
WRAB LR LR
comp=Z,578µm,22.0s
WRA Warramunga Arr 45.59 270 P P 19 11 36.7 -2.1
comp=Z,241nm,0.7s,baz=110,slow=6.1,SNR=252
WRA PP PP 19 13 40.1 +14
comp=Z,299nm,1.1s,baz=104,slow=4.4,SNR=4.6
WRA S S 19 18 15.5 -4.4
comp=Z,44nm,0.8s,baz=107,slow=13,SNR=3.4
WRA ScS ScS 19 21 37.5 +3.7
comp=Z,8.6nm,1.1s,baz=1.4,slow=39,SNR=1.9
WRA LR LR 19 30 13.2
comp=Z,341µm,20.7s,baz=105,slow=36
WRA PKPPKP P'P'df 19 42 54.1 -19
comp=Z,11nm,1.2s,baz=349,slow=3.4,SNR=5.1
WRA P4KPbc 19 49 30.7
comp=Z,8.0nm,1.0s,baz=109,slow=4.3,SNR=12
JOHN Johnston Islan 46.23 9 eP P 19 11 43.8 +0.2
comp=Z,8µm,1.3s
JOHN LR LR
comp=Z,46µm,20.0s
FORT Forrest 47.80 254 P P 19 11 55.0 -0.9
baz=48,SNR=133
FORT Forrest 47.80 254 eP P 19 11 55.1 -0.9
comp=Z,12µm,0.7s
JAY Jayapura 48.78 295 P P 19 12 02.7 -0.9
comp=Z,15nm,0.8s,baz=270,slow=24,SNR=35
JAY S S 19 19 07.9 +2.5
comp=Z,3.7nm,1.1s,baz=92,slow=23,SNR=2.0
JAY LR LR 19 31 04.7
comp=Z,18µm,21.4s,baz=28,slow=34
JAY Jayapura 48.78 295 P P 19 12 03.3 -0.4
WRKA Warakurna 49.13 261 P P 19 12 04.5 -1.8
baz=49,SNR=492
GENI Genyem 49.16 294 P P 19 12 06.5 0.0
SBA Scott Base 49.24 185 eP P 19 12 09.2 +2.9
SBA pmax pmax
comp=Z,7µm,1.7s
SBA MLR MLR
comp=Z,295µm,19.0s
SBA Scott Base 49.24 185 eP P 19 12 09.2 +2.9
comp=Z,7µm,1.7s
SBA LR LR
comp=Z,295µm,19.0s
VNDA Vanda 49.34 186 P P 19 12 08.5 +1.5
comp=Z,163nm,0.9s,baz=2.5,slow=8.1,SNR=172
VNDA PKPPKP P'P'df 19 42 57.7 -14
comp=Z,10nm,1.3s,baz=159,slow=2.8,SNR=4.1
VNDA P4KPbc 19 49 44.5
comp=Z,2.8nm,1.0s,baz=338,slow=5.0,SNR=4.5

KDU **Kakadu** **50.24 278** P **P** **19 12 13.7 -1.1**
baz=50,SNR=19
H11S2 **WAKE ISLAND Hy 50.28 339** P **P** **19 12 14.6 -0.1**
baz=205,slow=5.3,SNR=32
H11S2 T T 20 11 31.5
baz=144,slow=76,SNR=8.7
H11S3 **WAKE ISLAND Hy 50.29 339** P **P** **19 12 14.9 +0.1**
baz=205,slow=5.3,SNR=32
H11S3 T T 20 11 40.5
baz=144,slow=76,SNR=6.2
H11S1 **WAKE ISLAND Hy 50.30 339** P **P** **19 12 15.4 +0.6**
baz=205,slow=5.3,SNR=72
H11S1 T T 20 11 27.1
baz=144,slow=76,SNR=9.6
MTN **Manton Dam** **51.33 277** P **P** **19 12 22.3 -0.7**
baz=51,SNR=28
MTN **Manton Dam** **51.33 277** *e*P **P** **19 12 21.2 -1.8**
comp=Z,690nm,0.9s
H11N3 **WAKE ISLAND Hy 51.37 340** P **P** **19 12 23.1 +0.3**
baz=182,slow=9.7,SNR=210
H11N3 T T 20 12 47.8
SNR=8.3
H11N1 **WAKE ISLAND Hy 51.38 340** P **P** **19 12 22.9 +0.1**
baz=182,slow=9.7,SNR=64
H11N1 T T 20 12 55.3
baz=146,slow=74,SNR=4.2
H11N2 **WAKE ISLAND Hy 51.39 340** P **P** **19 12 23.2 +0.2**
baz=182,slow=9.7,SNR=59
H11N2 T T 20 12 57.6
baz=248,slow=74,SNR=2.9
KKH **Kailua Kona** **52.45 24** *e*P **P** **19 12 33.8 +2.7**
KKH **Kailua Kona** **52.45 24** *e*P **P** **19 12 33.8 +2.7**
UWE **Uwekahuna** **52.50 25** *e*P **P** **19 12 34.9 +3.2**
comp=Z,4μm,1.4s
MLOA **Mauna Loa Obse** **52.50 25** *e*P **P** **19 12 34.5 +2.4**
POHA **Pohakuloa** **52.72 25** *e*P **P** **19 12 35.2 +1.8**
comp=Z,5μm,1.6s
POHA LR LR
comp=Z,549μm,19.0s
KMBL **Kambalda** **52.80 251** P **P** **19 12 33.3 -0.5**
baz=53,SNR=52
HPAH **Hawaii Prepara** **52.91 24** *e*P **P** **19 12 35.7 +1.1**
comp=Z,4μm,1.1s
HLK **Haleakala** **53.38 24** *e*P **P** **19 12 39.0 +0.6**
comp=Z,4μm,1.4s
KIP **Kipapa** **53.41 21** *d i*P **P** **19 12 39.4 +1.2**
KIP **Kipapa** **53.41 21** *e*P **P** **19 12 38.7 +0.5**
comp=Z,5μm,1.1s
KIP LR LR
comp=Z,459μm,19.0s
KEKH **Kekaha** **53.43 19** *e*P **P** **19 12 38.5 +0.2**
comp=Z,5μm,1.4s
SAUI **Saumlaki** **53.52 282** P P 19 12 48.1 +8.8
OPA **Opana** **53.66 21** *e*P **P** **19 12 40.3 +0.2**
OPA pmax pmax
comp=Z,2μm,1.2s
OPA **Opana** **53.66 21** *e*P **P** **19 12 40.3 +0.2**
comp=Z,2μm,1.2s
FITZ **Fitzroy Crossi** **53.89 268** S **S** **19 20 13.1 -2.8**
comp=Z,14nm,0.8s,baz=290,slow=21,SNR=1.4
FITZ LR LR 19 34 15.9
comp=Z,197μm,21.9s,baz=105,slow=34
FITZ P4KPbc 19 50 09.0
comp=Z,14nm,1.2s,baz=208,slow=7.1,SNR=4.6
FITZ **Fitzroy Crossi** **53.89 268** P **P** **19 12 40.4 -1.6**
baz=54,SNR=182
FITZ **Fitzroy Crossi** **53.89 268** *e*P **P** **19 12 40.4 -1.6**
comp=Z,1μm,1.1s
FITZ S **S** **19 20 13.1 -2.8**
FITZ *e* 19 50 09.0
FAKI **Fak Fak** **55.41 288** P **P** **19 12 51.9 -1.1**
FAKI **Fak Fak** **55.41 288** *e*P **P** **19 12 52.4 -0.6**
comp=Z,2μm,1.5s
RKGY **Rocky Gully** **55.98 246** P **P** **19 12 56.2 -0.6**
baz=56,SNR=21
KLBR **Kellerberrin** **56.14 250** P **P** **19 12 57.2 -0.9**
baz=56,SNR=88
NWAO **Narrogin (SRO)** **56.20 248** S **S** **19 20 47.1 +0.5**
comp=Z,23nm,1.0s,baz=189,slow=21,SNR=1.2
NWAO LR LR 19 35 56.4
comp=Z,160μm,18.9s,baz=340,slow=35
NWAO **Narrogin (SRO)** **56.20 248** P **P** **19 12 58.1 -0.4**
baz=56,SNR=16
NWAO P **P** **19 12 58.1 -0.4**
baz=56,SNR=16
NWAO **Narrogin (SRO)** **56.20 248** *e*P **P** **19 12 57.9 -0.6**
NWAO S **S** **19 20 47.1 +0.5**
NWAO pmax pmax
comp=Z,4μm,2.0s
NWAO **Narrogin (SRO)** **56.20 248** *e*P **P** **19 12 57.9 -0.6**
comp=Z,4μm,2.0s
NWAO S **S** **19 20 47.1 +0.5**
BNDI **Bandanaira** **56.50 285** P P 19 13 12.8 +12
GUMO **Guam** **56.81 313** P **P** **19 13 00.9 -2.0**
comp=Z,1μm,0.9s,baz=153,slow=10,SNR=49
GUMO S **S** **19 20 55.8 +1.1**
comp=Z,44nm,0.8s,baz=333,slow=19,SNR=2.3
GUMO LR LR 19 35 59.8
comp=Z,315μm,20.3s,baz=137,slow=35
GUMO **Guam** **56.81 313** *e*P **P** **19 13 01.6 -1.2**
GUMO S **S** **19 20 55.8 +1.1**
GUMO pmax pmax
comp=Z,4μm,1.1s
GUMO **Guam** **56.81 313** *e*P **P** **19 13 01.6 -1.2**
comp=Z,4μm,1.1s
GUMO S **S** **19 20 55.8 +1.1**
CASY **Casey** **56.81 208** *e*P **P** **19 13 02.3 0.0**
comp=Z,1μm,0.9s
CASY LR LR
comp=Z,25μm,19.0s
MEEK **Meekatharra** **56.91 256** P **P** **19 13 02.8 -0.9**
baz=57,SNR=51
MIDW **Midway** **57.21 359** *e*P **P** **19 13 05.8 +0.4**
comp=Z,4μm,1.8s
MIDW LR LR
comp=Z,702μm,20.0s
BLDU **Ballidu** **57.28 251** P **P** **19 13 04.5 -1.7**
baz=57,SNR=58
SWI **Sorong** **57.38 290** P **P** **19 13 05.7 -1.3**
MBWA **Marble Bar** **57.86 262** *e*P **P** **19 13 09.6 -0.8**
comp=Z,1μm,0.9s
MBWA LR LR
comp=Z,591μm,22.0s
MSAI **Masohi** **57.95 286** P **P** **19 13 11.5 +0.4**
H01W1 **Cape Leeuwin H** **58.15 245** P **P** **19 13 14.0 +2.1**
baz=111,slow=8.3,SNR=21
H01W2 **Cape Leeuwin H** **58.16 245** P **P** **19 13 12.5 +0.5**
baz=111,slow=8.3,SNR=19
H01W3 **Cape Leeuwin H** **58.17 245** P **P** **19 13 14.1 +2.0**
baz=111,slow=8.3,SNR=18
RPN **Rapa Nui** **58.27 105** *e*P **P** **19 13 12.7 -0.5**
RPN pmax pmax
comp=Z,4μm,1.4s
RPN MLR MLR
comp=Z,142μm,21.0s
RPN **Rapa Nui** **58.27 105** *e*P **P** **19 13 12.7 -0.5**
comp=Z,4μm,1.4s
RPN LR LR
comp=Z,142μm,21.0s
MORW **Morawa** **58.30 252** P **P** **19 13 11.9 -1.4**
baz=58,SNR=75
ANA2 **Anatahan** **58.38 316** *e*P **P** **19 13 14.3 +0.4**
SOEI **Soe** **58.72 277** P **P** **19 13 17.8 +1.2**
SOEI **Soe** **58.72 277** *e*P **P** **19 13 16.9 +0.4**
comp=Z,2μm,1.0s
BATI **Baumata** **59.03 276** P **P** **19 13 20.0 +1.3**
NLAI **Namlea** **59.55 285** P **P** **19 13 22.3 +0.1**
comp=Z,1μm,0.8s,comp=Z,48μmcomp=Z,538μm
PALU **Palau** **59.77 300** P **P** **19 13 22.9 -0.8**
baz=60,SNR=23
LBMI **Labuha** **60.61 287** P **P** **19 13 30.2 +0.7**
comp=Z,839nm,1.7s,comp=Z,49μmcomp=Z,445μm
QSPA **South Pole Qui** **60.80 180** *e*P **P** **19 13 31.0 +0.8**
comp=Z,13μm,1.2s
QSPA LR LR
comp=Z,500μm,19.0s
SANI **Sanana** **61.12 285** P **P** **19 13 32.2 -0.7**
comp=Z,1μm,2.2s,comp=Z,55μmcomp=Z,455μm
EDFI **Ende, Flores** **61.43 276** P **P** **19 13 34.4 -0.8**
comp=Z,530nm,1.1s,comp=Z,31μm
BASI **Baing, Sumba** **61.71 274** P **P** **19 13 40.0 +3.1**
comp=Z,2μm,1.2s,comp=Z,44μmcomp=Z,546μm
GIRL **Giralia** **62.04 258** P **P** **19 13 39.6 +0.6**
baz=62,SNR=34
WSI **Waingapu** **62.21 274** P **P** **19 13 41.2 +0.9**
comp=Z,3μm,0.9s,comp=Z,49μmcomp=Z,572μm
KDI **Kendari** **62.99 281** P **P** **19 13 44.9 -0.6**
comp=Z,634nm,0.9s,comp=Z,33μmcomp=Z,533μm
BSSI **Bau Bau, Buton** **63.73 278** P P 19 13 55.5 +5.1
comp=Z,426nm,1.9s,comp=Z,37μm
MIR **Mirnyy** **63.78 206** *d i*P **P** **19 13 52.0 +2.1**
MIR *i* S **S** **19 22 26.0 +3.1**
MIR pmax pmax
comp=Z,40μm,9.0s
MIR smax smax
comp=N,21μm,10.0s
MIR MLR MLR
comp=Z,240μm,20.0s
KMSI **Cibinong** **64.22 286** P **P** **19 13 55.3 +1.7**
comp=Z,2μm,1.0s,comp=Z,49μmcomp=Z,506μm
PLAI **Plampang** **64.80 274** P **P** **19 13 57.3 -0.1**
comp=Z,2μm,0.8s,comp=Z,41μmcomp=Z,524μm
KAPI **Kappang** **64.92 279** P **P** **19 13 56.9 -1.3**
comp=Z,72nm,0.7s,baz=118,slow=2.6,SNR=17
KAPI S **S** **19 22 34.9 -3.7**
comp=Z,5.4nm,0.8s,baz=282,slow=21,SNR=1.0
KAPI PKPPKP **P'P'df** **19 42 44.3 +0.4**
comp=Z,30nm,1.1s,baz=200,slow=4.2,SNR=6.9
KAPI LR LR 19 43 34.3
comp=Z,179μm,19.3s,baz=136,slow=37
KAPI **Kappang** **64.92 279** *e*P **P** **19 13 58.0 -0.3**
comp=Z,2μm,1.4s
KAPI S **S** **19 22 34.9 -3.7**
KAPI P'P' 19 42 44.3
TWSI **Taliwang, Sumb** **65.62 274** P **P** **19 14 02.6 -0.2**
comp=Z,739nm,0.9s,comp=Z,31μmcomp=Z,398μm
TTSI **Tana Toraja** **65.85 281** P **P** **19 14 04.5 +0.2**
comp=Z,964nm,0.9s,comp=Z,26μmcomp=Z,452μm
MRSI **Marisa** **65.88 285** P **P** **19 14 03.7 -0.7**
comp=Z,455nm,1.1s,comp=Z,27μm
MATI **Mati** **65.95 294** *e*P **P** **19 14 02.4 -2.4**
DAV **Davao City (W)** **66.56 293** S **S** **19 22 58.0 -0.6**
comp=Z,144nm,0.3s,baz=31,slow=14,SNR=2.0
DAV PKPPKP 19 42 51.4
comp=Z,98nm,0.4s,baz=53,slow=7.2,SNR=5.2
DAV **Davao City (W)** **66.56 293** *e*P **P** **19 14 06.4 -2.3**
DAV **Davao City (W)** **66.56 293** *e*P **P** **19 14 09.4 +0.6**
comp=Z,1μm,0.8s
DAV S **S** **19 22 58.0 -0.6**
DAV P'P' 19 42 51.4
DAV LR LR
comp=Z,104μm,20.0s
KCP **Kidapawan** **66.92 293** *e*P **P** **19 14 11.8 +0.7**
BUKP **Musuan** **67.45 294** *e*P **P** **19 14 13.7 -0.8**
CTBH **Cotabato--PC H** **67.72 293** *e*P **P** **19 14 14.5 -1.6**
CGP **Cagayan de Oro** **68.08 294** *e*P **P** **19 14 19.5 +1.1**
JAGI **Jajag, Banyuwa** **68.13 272** P **P** **19 14 18.1 -0.6**
comp=Z,1μm,1.0s,comp=Z,42μmcomp=Z,470μm
JAGI **Jajag, Banyuwa** **68.13 272** *e*P **P** **19 14 17.3 -1.4**
comp=Z,1μm,1.0s
ABJI **Asem Bagus** **68.37 273** P **P** **19 14 21.9 +1.6**
comp=Z,1μm,0.8s,comp=Z,57μmcomp=Z,456μm
GMJI **Gumukmas** **68.84 272** P **P** **19 14 23.0 -0.2**
comp=Z,1μm,0.9s,comp=Z,44μmcomp=Z,424μm
BLJI **Banyuglugur** **68.95 273** P **P** **19 14 24.2 +0.3**
comp=Z,1μm,0.8s,comp=Z,45μmcomp=Z,380μm
DCPH **Dipolog City** **69.23 293** *e*P **P** **19 14 26.4 +0.9**
BKB **Balikpapan** **69.27 281** P P 19 14 33.1 +7.3
comp=Z,960nm,1.6s,comp=Z,75μm
IPIL **Ipil** **69.41 292** *e*P **P** **19 14 26.4 -0.2**
PLP **Palo** **69.47 296** *e*P **P** **19 14 24.8 -2.2**
LLP **Lapu-Lapu** **69.76 295** *e*P **P** **19 14 27.4 -1.4**
LLP *e*S **S** **19 23 37.0 +0.3**
SNPH **Sibulan** **69.77 294** *e*P **P** **19 14 28.4 -0.6**
BBKI **Banjar Baru** **69.94 277** P **P** **19 14 32.2 +2.2**
comp=Z,877nm,1.4s,comp=Z,51μmcomp=Z,417μm
GRJI **Gresik** **70.32 273** P **P** **19 14 34.7 +2.4**
comp=Z,838nm,0.8s,comp=Z,10μm
PWJI **Pawojo** **70.39 272** P **P** **19 14 33.1 +0.4**
comp=Z,1μm,1.1s,comp=Z,47μmcomp=Z,398μm
PCJI **Pacitan** **70.85 271** P **P** **19 14 36.2 +0.6**
comp=Z,2μm,1.1s,comp=Z,51μmcomp=Z,375μm
NGJI **Ngawi** **70.99 272** P **P** **19 14 39.9 +3.5**
comp=Z,1μm,1.2s,comp=Z,75μmcomp=Z,465μm
MTKI **Muara Teweh, K** **71.15 280** P **P** **19 14 39.7 +2.3**
comp=Z,549nm,0.9s,comp=Z,36μmcomp=Z,328μm
MMPH **Masbate** **71.24 297** *e*P **P** **19 14 38.2 +0.4**
WOJI **Wonogiri, Jawa** **71.24 271** P **P** **19 14 39.0 +1.1**
comp=Z,1μm,1.0s,comp=Z,40μm
MYLDM **Lahad Datu** **71.30 287** *e*P **P** **19 14 39.1 +0.8**
comp=Z,2μm,1.4s
TSM **Tawau** **71.35 286** P **P** **19 14 38.2 -0.4**
RCP **Roxas** **71.46 295** *e*P **P** **19 14 38.5 -0.6**
UGM **Wanagama** **71.56 271** P **P** **19 14 42.1 +2.2**
comp=Z,1μm,0.8s,comp=Z,50μmcomp=Z,436μm
UGM **Wanagama** **71.56 271** *e*P **P** **19 14 40.6 +0.7**
comp=Z,1μm,1.0s
UWJI **Ujung Watu** **71.89 273** P P 19 14 46.7 +4.8
comp=Z,1μm,1.5s,comp=Z,40μmcomp=Z,284μm
PMSA **Palmer Station** **72.63 155** P **P** **19 14 44.9 -0.5**
comp=Z,102nm,0.8s,baz=248,slow=4.4,SNR=20
PMSA S **SKiKP** **19 24 13.0 -4.9**
comp=Z,5.0nm,0.4s,baz=357,slow=10,SNR=5.2
PMSA LR LR 19 42 04.8
comp=Z,266μm,18.2s,baz=239,slow=32
PMSA **Palmer Station** **72.63 155** *e*P **P** **19 14 44.9 -0.5**
comp=Z,3μm,1.9s
PMSA S **SKiKP** **19 24 13.0 -4.9**
SDKM **Sandakan** **72.64 287** P **P** **19 14 45.0 -1.3**
PBKI **Pangkalan Bun** **73.06 277** P **P** **19 14 49.8 +1.0**
comp=Z,3μm,1.0s,comp=Z,52μmcomp=Z,398μm
GQP **Guinayangan** **73.08 297** *e*P **P** **19 14 47.9 -0.9**
BOAC **Boac** **73.28 296** *e*P **P** **19 14 48.8 -1.2**
CMJI **Cimerak** **73.43 270** P **P** **19 14 52.5 +1.5**
comp=Z,1μm,1.0s,comp=Z,29μmcomp=Z,352μm
PPR **Puerto Princes** **73.65 291** *e*P **P** **19 14 53.4 +1.2**
KKM **Kota Kinabalu** **73.68 287** P **P** **19 14 52.3 -0.2**
KKM **Kota Kinabalu** **73.68 287** *e*P **P** **19 14 51.8 -0.8**
comp=Z,2μm,1.4s
KKM LR LR
comp=Z,140μm,21.0s
BUSP **Coron** **73.73 294** *e*P **P** **19 14 52.6 -0.1**
MAW **Mawson** **73.85 200** P **P** **19 14 53.3 +0.7**
comp=Z,783nm,1.1s,baz=108,slow=6.1,SNR=116
MAW S **S** **19 24 27.6 +5.3**
comp=Z,5.3nm,1.0s,baz=309,slow=19,SNR=1.4
MAW PKPPKP P'P'df 19 42 17.4 -15
comp=Z,23nm,1.1s,baz=293,slow=2.3,SNR=9.3
MAW LR LR 19 50 04.1
comp=Z,124μm,18.4s,baz=116,slow=38
MAW **Mawson** **73.85 200** P **P** **19 14 53.5 +0.9**
baz=74,SNR=160
BATP **Bataraza** **73.86 290** *e*P P 19 14 59.0 +5.5
LQP **Lukban** **73.91 297** *e*P **P** **19 14 55.7 +1.7**
PGP **Puerto Galera** **74.01 296** *e*P **P** **19 14 53.9 -0.4**
CISI **Cisompet, Garu** **74.09 270** P **P** **19 14 55.5 +0.5**
comp=Z,2μm,1.1s,comp=Z,37μmcomp=Z,396μm
CISI **Cisompet, Garu** **74.09 270** *e*P **P** **19 14 54.5 -0.4**
comp=Z,2μm,1.1s
TGY **Tagaytay City** **74.37 296** P **P** **19 14 56.4 -0.1**
comp=Z,357nm,0.6s,baz=164,slow=3.4,SNR=17
TGY S **S** **19 24 31.8 +2.1**
comp=Z,121nm,0.4s,baz=32,slow=9.9,SNR=2.4
TGY LR LR 19 46 12.7
comp=Z,50μm,20.1s,baz=115,slow=35
TGY **Tagaytay City** **74.37 296** *e*P P 19 15 02.0 +5.5
STKI **Sintang** **74.60 279** P **P** **19 14 58.1 +0.2**
comp=Z,1μm,0.9s,comp=Z,43μmcomp=Z,330μm
XMIS **Christmas Isla** **74.62 266** *e*P **P** **19 14 58.2 +0.3**
comp=Z,639nm,0.9s
JHJ2 **Mitsune** **74.74 323** *e*P **P** **19 14 58.1 0.0**
comp=Z,3μm,1.0s
JHJ **Hachijo jima 2** **74.77 323** P **P** **19 14 57.6 -0.7**
comp=Z,929nm,0.8s,baz=141,slow=5.9,SNR=16
JHJ S **S** **19 24 38.5 +5.2**
comp=Z,25nm,0.5s,baz=256,slow=23,SNR=1.1
JHJ LR LR 19 42 47.8
comp=Z,139μm,21.5s,baz=152,slow=32
CNJI **Cibinong** **74.80 270** P **P** **19 15 00.6 +1.6**
comp=Z,2μm,1.0s,comp=Z,35μmcomp=Z,338μm
BTM **Bintulu** **74.82 283** P **P** **19 14 59.7 +0.6**
BALP **Baler** **74.85 298** *e*P **P** **19 14 58.2 -0.9**
PCPH **Palayan** **75.11 298** *e*P **P** **19 15 02.8 +2.2**
SBUM **Sibu** **75.17 281** P **P** **19 15 01.3 +0.1**
SBUM **Sibu** **75.17 281** *e*P **P** **19 15 00.9 -0.2**
comp=Z,2μm,1.7s
SKJI **Sukabumi** **75.45 270** P **P** **19 15 03.9 +1.1**
comp=Z,2μm,1.2s,comp=Z,39μmcomp=Z,331μm
TNG **Tangerang** **75.76 271** P **pP** **19 15 08.2 -4.5**
comp=Z,5μm,1.0s,comp=Z,91μmcomp=Z,454μm
TNG P **P** **19 15 07.7 +3.1**
comp=Z,3μm,1.0s,comp=Z,57μmcomp=Z,357μm
CVP **Callao Caves** **75.84 300** *e*P **P** **19 15 06.5 +1.7**
USHA **Ushuaia** **75.96 145** P **P** **19 15 03.6 -1.4**
comp=Z,229nm,0.9s,baz=241,slow=5.3,SNR=19
USHA PKPPKP **P'P'df** **19 42 21.9 -6.4**
comp=Z,144nm,1.3s,baz=98,slow=2.3,SNR=3.8
USHA LR LR 19 43 09.6
comp=Z,1416μm,18.6s,baz=214,slow=32
SBJI **Serang** **76.24 271** P **P** **19 15 09.4 +2.1**
comp=Z,1μm,1.5s,comp=Z,30μmcomp=Z,268μm
KSM **Kuching** **76.32 280** P **P** **19 15 07.5 -0.2**
KSM **Kuching** **76.32 280** *e*P **P** **19 15 07.2 -0.6**
comp=Z,1μm,1.3s
KSM LR LR
comp=Z,120μm,20.0s
APYP **Conner** **76.37 300** *e*P **P** **19 15 06.1 -1.7**
BOLP **Bolinao** **76.51 298** *e*P **P** **19 15 08.7 0.0**
ABRA **Dolores** **76.65 299** *e*P **P** **19 15 08.5 -0.9**
PIP **Pasuquin** **77.12 300** P **P** **19 15 12.2 +0.1**
BLSI **Bandar Lampung** **77.37 271** P **P** **19 15 13.7 0.0**
comp=Z,1μm,0.6s,comp=Z,36μmcomp=Z,308μm
CHRN **Cochrane** **77.53 137** *e*P **P** **19 15 14.1 +0.1**
comp=Z,92nm,0.9s
INU **Inuyama** **77.94 323** *e*P **P** **19 15 16.1 -0.2**
comp=Z,498nm,0.9s
KASI **Kota Agung** **77.95 270** P **P** **19 15 16.3 -0.6**
comp=Z,1μm,0.9s,comp=Z,40μmcomp=Z,355μm
PPBI **Pangkal Pinang** **78.14 274** P **P** **19 15 18.5 +0.6**
comp=Z,498nm,1.0s,comp=Z,34μmcomp=Z,328μm
MJAR **Matsushiro Arr** **78.23 324** P **P** **19 15 16.9 -1.0**
comp=Z,139nm,1.0s,baz=160,slow=4.7,SNR=108
MJAR S **S** **19 25 11.6 +0.4**
comp=Z,1.9nm,1.0s,baz=55,slow=17,SNR=2.3
MJAR PKKPbc **PKKPbc** **19 34 19.6 +1.8**
comp=Z,1.9nm,0.8s,baz=280,slow=2.8,SNR=4.1
MJAR PKP2ab 19 42 09.6
comp=Z,2.1nm,0.9s,baz=273,slow=1.8,SNR=4.5
MJAR LR LR 19 45 34.5
comp=Z,188μm,21.9s,baz=125,slow=32
MAJO **Matsushiro** **78.23 324** *e*P **P** **19 15 17.3 -0.6**
MAJO pmax pmax
comp=Z,604nm,1.0s
MAJO MLR MLR
comp=Z,265μm,21.0s
MAJO **Matsushiro** **78.23 324** *e*P **P** **19 15 17.3 -0.6**
comp=Z,604nm,1.0s
MAJO LR LR
comp=Z,265μm,21.0s
MAT **Matsushiro** **78.23 324** P **P** **19 15 17.0 -0.9**
MAT S **S** **19 25 08.8 -2.4**
MJB9 **Matsu-Tunnel** **78.23 324** *e*P **P** **19 15 17.4 -0.6**
comp=Z,142nm,0.9s
SYO **Syowa Base** **78.51 192** *i*P **P** **19 15 17.2 -1.8**
SYO **Syowa Base** **78.51 192** *e*SH **S** **19 25 07.8 -5.6**
LWLI **Liwa** **78.57 271** P **P** **19 15 20.4 -0.1**
comp=Z,2μm,0.7s,comp=Z,40μmcomp=Z,265μm
PMBI **Palembang** **78.95 273** P P 19 15 29.7 +7.3
comp=Z,678nm,1.1s,comp=Z,33μm
H06S1 **SOCORRO T** **79.02 61** P **P** **19 15 26.1 +3.5**
SNR=20
H06S1 T T 20 43 15.4
SNR=18
H06E1 **SOCORRO T-PHAS** **79.08 61** P **P** **19 15 27.2 +4.2**
SNR=64
H06E1 T T 20 43 12.6
H06N1 **SOCORRO T-PHAS** **79.08 61** P **P** **19 15 27.1 +4.3**
SNR=41
H06N1 T T 20 43 38.9
SNR=12
YOJ **Yonaguni jima** **79.13 306** *e*P **P** **19 15 22.7 -0.4**
YOJ pmax pmax
comp=Z,6μm,1.4s
YOJ **Yonaguni jima** **79.13 306** *e*P **P** **19 15 22.7 -0.4**
comp=Z,6μm,1.4s
SNAA **Sanae** **79.19 178** P **P** **19 15 22.3 -0.6**
SNAA **Sanae** **79.19 178** *d i*P **P** **19 15 22.4 -0.5**
SNAA **Sanae** **79.19 178** *e*P **P** **19 15 22.1 -0.8**
comp=Z,2μm,1.3s
LHSI **Lahat** **79.61 271** P **P** **19 15 25.6 -0.4**
comp=Z,918nm,1.0s,comp=Z,41μmcomp=Z,324μm
YULB **Yu-li** **79.69 304** *e*P **P** **19 15 24.0 -2.2**
comp=Z,298nm,0.7s
JNU **Nakatsue** **79.77 317** P **P** **19 15 25.9 -0.5**
comp=Z,186nm,0.6s,baz=150,slow=2.4,SNR=57
JNU S **S** **19 25 30.8 +3.0**
comp=Z,14nm,1.0s,baz=337,slow=16,SNR=6.4
JNU PKPPKP P'P'df 19 42 25.5 +12
comp=Z,32nm,1.2s,baz=108,slow=1.3,SNR=7.3
JNU LR LR 19 45 51.5
comp=Z,126μm,21.9s,baz=114,slow=32
JNU **Nakatsue** **79.77 317** *e*P **P** **19 15 26.3 -0.2**
comp=Z,5μm,1.7s
JNU S **S** **19 25 30.8 +3.0**
JNU P'P' 19 42 25.5
MNAI **Manna** **79.85 271** P P 19 15 34.0 +6.6
comp=Z,1μm,1.3s,comp=Z,66μm
MNAI **Manna** **79.85 271** *e*P **P** **19 15 26.9 -0.5**
comp=Z,1μm,1.1s
VNA1 **Neumayer--Stat** **79.96 176** P **P** **19 15 26.8 -0.1**
NACB **Ninganchiao** **79.96 305** *e*P **P** **19 15 27.1 -0.5**
comp=Z,1μm,1.1s
NVL **N'lazarevskaya** **80.04 183** *i*P **P** **19 15 29.7 +2.3**
NVL *e* 19 18 31.6
NVL *e*S **S** **19 25 29.4 -0.2**
NVL smax smax
comp=N,25μm,12.7s
NVL MLR MLR
comp=Z,152μm,16.0s
TPUB **Ta-pu** **80.12 304** *e*P **P** **19 15 26.9 -1.6**
comp=Z,1μm,1.0s
SSLB **Suanglung** **80.18 304** *e*P **P** **19 15 27.3 -1.6**
comp=Z,708nm,0.9s
ERM **Erimo** **80.24 331** *e*P **P** **19 15 30.6 +1.9**
ERM pmax pmax
comp=Z,2μm,1.5s
ERM MLR MLR
comp=Z,887μm,20.0s
ERM **Erimo** **80.24 331** *e*P **P** **19 15 30.6 +1.9**
comp=Z,2μm,1.5s
ERM LR LR
comp=Z,887μm,20.0s
DSRI **Dabo** **80.31 275** P **P** **19 15 30.6 +0.8**
comp=Z,2μm,1.1s,comp=Z,108μm
YHNB **Yeheng** **80.42 305** *e*P **P** **19 15 29.7 -0.5**
comp=Z,1μm,1.1s
YHNB LR LR
comp=Z,224μm,21.0s
KSI **Kapahiang** **80.51 271** P **P** **19 15 30.6 -0.4**
comp=Z,2μm,0.7s,comp=Z,52μmcomp=Z,393μm
TATO **Taipei** **80.53 305** *e*P **P** **19 15 30.1 -0.5**
comp=Z,10μm,1.9s
TATO LR LR
comp=Z,62μm,19.0s
JMBI **JAMBI** **80.57 273** P P 19 15 36.8 +5.6
comp=Z,1μm,0.9s,comp=Z,81μm
YUK **Yuzh-Kuril'sk** **80.80 333** *i*P **P** **19 15 31.7 +0.1**
TPRI **Tanjung Pinang** **81.05 276** P **P** **19 15 35.0 +1.3**
comp=Z,988nm,1.0s,comp=Z,36μmcomp=Z,364μm
KUR **Kuril'sk** **81.06 335** *d i*P **P** **19 15 33.2 +0.2**
KUR *i* S **S** **19 25 44.8 +4.2**
KUR pmax pmax
comp=Z,35μm,9.5s
KUR pmax pmax
comp=N,376nm,1.5s
KUR pmax pmax
comp=E,463nm,1.5s
KUR pmax pmax
comp=Z,939nm,1.5s
COCO **West Island** **81.47 261** *e*P **P** **19 15 38.0 +2.0**
COCO pmax pmax
comp=Z,3μm,1.3s
COCO MLR MLR
comp=Z,266μm,19.0s
COCO **West Island** **81.47 261** *e*P **P** **19 15 38.0 +2.0**
comp=Z,3μm,1.3s
COCO LR LR
comp=Z,266μm,19.0s
PAF **Port-aux-Franc** **81.93 217** *e*P **P** **19 15 40.5 +2.7**
PAF pmax pmax
comp=Z,4μm,1.4s
PAF MLR MLR
comp=Z,262μm,19.0s
PAF **Port-aux-Franc** **81.93 217** *e*P **P** **19 15 40.5 +2.7**
comp=Z,4μm,1.4s
PAF LR LR
comp=Z,262μm,19.0s
MYKOM **Kota Tinggi** **82.06 277** P **P** **19 15 39.3 +0.2**
MYKOM **Kota Tinggi** **82.06 277** *e*P **P** **19 15 39.1 -0.1**
comp=Z,1μm,0.9s

SMY **Shemya** 82.12 354 *e*P **P** 19 15 37.8 -0.6
SMY pmax pmax
comp=Z,4µm,1.4s
SMY **Shemya** 82.12 354 *e*P **P** 19 15 37.8 -0.6
comp=Z,4µm,1.4s
PLCA **Paso Flores** 82.13 132⇓*e*P **P** 19 15 40.1 +0.9
PLCA **Paso Flores** 82.13 132 P **P** 19 15 38.8 -0.4
comp=Z,47nm,0.9s,baz=249,slow=5.4,SNR=57
PLCA PKKPbc **PKKPbc** 19 34 08.2 +0.8
comp=Z,6.9nm,0.9s,baz=78,slow=2.5,SNR=7.3
PLCA PKP2bc 19 42 03.6
comp=Z,4.4nm,0.9s,baz=45,slow=3.1,SNR=4.1
PLCA LR LR 19 44 40.4
comp=Z,146µm,20.2s,baz=278,slow=30
PLCA Paso Flores 82.13 132 *e*P **P** 19 15 38.9 -0.3
PLCA pmax pmax
comp=Z,2µm,1.4s
PLCA Paso Flores 82.13 132 *e*P **P** 19 15 38.9 -0.3
comp=Z,2µm,1.4s
PLCA PKKPbc **PKKPbc** 19 34 08.2 +0.8
PLCA ⇑*e* 19 42 03.6
NIKH Nikolski High 82.19 5 *e*P **P** 19 15 38.8 +0.1
comp=Z,3µm,1.1s
ASAJ Asahikawa 82.19 331 P **P** 19 15 40.1 +1.1
comp=Z,230nm,1.1s,baz=198,slow=5.7,SNR=67
ASAJ PKPPKP P'P'df 19 42 18.4 +11
comp=Z,13nm,1.1s,baz=286,slow=5.1,SNR=3.8
ASAJ Asahikawa 82.19 331 *e*P **P** 19 15 40.2 +1.1
comp=Z,937nm,1.2s
ASAJ P'P' 19 42 18.4
SNCC San Nicolas Is 82.20 45 P **P** 19 15 39.7 +0.4
baz=227
SNCC San Nicolas Is 82.20 45 *e*P **P** 19 15 39.8 +0.4
comp=Z,915nm,1.4s
QZH Quanzhou 82.59 304⇓*i*P P 19 15 33.7 -7.9
QZH sP **PcP** 19 15 45.1 -1.4
SCI2 San Clemente I 82.63 46 P **P** 19 15 41.8 +0.2
baz=228
KGM Kluang 82.64 276 ⇑P **P** 19 15 42.3 +0.1
SCZ2 Santa Cruz Isl 82.64 44 P **P** 19 15 42.0 +0.4
baz=227
LPIG La Paz 82.67 57 P **P** 19 15 42.2 +0.2
comp=Z,29nm,0.4s,baz=237,slow=5.4,SNR=14
LPIG PKPPKP **P'P'df** 19 42 09.4 -0.3
comp=Z,12nm,0.3s,baz=315,slow=23,SNR=4.7
SLBS Sierra La Lagu 82.70 58 *e*P **P** 19 15 42.1 -0.1
comp=Z,5µm,2.0s
SDSI Sungai Dareh 82.84 273 P **P** 19 15 42.8 -0.4
comp=Z,424nm,1.3s
EFI East Falkland 82.87 146 *d*i P **P** 19 15 41.1 -1.6
EFI pmax pmax
comp=Z,2µm,1.1s
EFI MLR MLR
comp=Z,153µm,17.0s
EFI East Falkland 82.87 146 *e*P **P** 19 15 42.0 -0.7
comp=Z,2µm,1.0s
EFI LR LR
comp=Z,230µm,19.0s
SBC Santa Barbara 82.89 44 P **P** 19 15 43.5 +0.6
baz=227,SNR=13
CIS Catalina Islan 82.99 46 P **P** 19 15 43.8 +0.3
baz=228
BLG Laguna Peak, P 83.06 45 P **P** 19 15 44.1 +0.2
baz=227
PKM Mcpherson Peak 83.13 44 P **P** 19 15 45.2 +0.8
baz=227
PPSI Pulau Pagai 83.19 271 P **P** 19 15 48.3 +3.3
comp=Z,2µm,1.2s,comp=Z,66µmcomp=Z,371µm
SRIG Santa Rosalia 83.22 54 *e*P **P** 19 15 45.2 +0.4
comp=Z,3µm,1.4s
UNV Unalaska Valle 83.24 6 *e*P **P** 19 15 43.8 -0.4
comp=Z,1µm,1.2s
FMP Fort Macarthur 83.27 45 P **P** 19 15 45.4 +0.5
baz=228
SKR Severo-Kuril's 83.31 343 *d*i P **P** 19 15 44.6 0.0
SKR *e*S **S** 19 26 01.2 -2.3
SKR *e*PS **PnS** 19 26 55.5 -1.9
SKR pmax pmax
comp=Z,493nm,1.3s
SKR pmax pmax
comp=Z,68µm,10.0s
SKR MLR MLR
comp=Z,142µm,20.0s
SKR MLR MLR
comp=Z,122µm,19.0s
SMMC Simmler 83.31 43 P **P** 19 15 45.9 +0.8
baz=227,SNR=27
SAO San Andreas Ge 83.46 41 *e*P **P** 19 15 46.2 +0.4
SAO pmax pmax
comp=Z,779nm,1.3s
SAO San Andreas Ge 83.46 41 *e*P **P** 19 15 46.2 +0.4
comp=Z,779nm,1.3s
109C Camp Elliot, M 83.48 47 P **P** 19 15 45.8 -0.2
baz=229,SNR=13
AKUT Akutan 83.59 6 *e*P **P** 19 15 46.1 +0.1
comp=Z,3µm,1.4s
DECC Green Verdugo 83.61 45 P **P** 19 15 46.5 -0.2
baz=228,SNR=15
OSI Osito Audit: C 83.61 44 P **P** 19 15 47.0 +0.3
baz=228
OSI Osito Audit: C 83.61 44 *e*P **P** 19 15 50.0 +3.3
comp=Z,4µm,2.0s
MCCM Marconi Confer 83.61 40 *e*P **P** 19 15 47.5 +1.0
comp=Z,2µm,1.5s
BAR Barrett 83.62 47 *e*P **P** 19 15 46.7 -0.1
comp=Z,1µm,1.6s
PASC Pasadena Art C 83.64 45 *e*P **P** 19 15 46.9 0.0
comp=Z,1µm,1.4s
PDSI Padang 83.69 272 P **P** 19 15 45.6 -2.0
comp=Z,425nm,1.3s,comp=Z,23µm
MWC Mount Wilson 83.76 45 *e*P **P** 19 15 47.6 0.0
MWC pmax pmax
comp=Z,2µm,1.5s
MWC Mount Wilson 83.76 45 *e*P **P** 19 15 47.6 0.0
comp=Z,2µm,1.5s
BKNI Bangkinang 83.79 274 P **P** 19 15 48.5 +0.4
comp=Z,2µm,1.1s,comp=Z,41µmcomp=Z,349µm
BKNI Bangkinang 83.79 274 *e*P **P** 19 15 47.6 -0.4
comp=Z,3µm,1.3s
MURC Murrieta 83.89 46 P **P** 19 15 48.4 +0.3
baz=229
ARVC Arvin 83.89 44 P **P** 19 15 48.4 +0.4
baz=228,SNR=42
MONP2 Monument Peak 83.91 47 P **P** 19 15 48.7 +0.2
baz=229
IKP In-Ko-Pah, Jac 83.96 47 P **P** 19 15 48.8 +0.3
baz=229
BFSC Mount Baldy Ra 84.02 45 P **P** 19 15 48.9 0.0
baz=228
HOPS Hopland Field 84.11 39 *e*P **P** 19 15 49.7 +0.6
comp=Z,2µm,1.3s
VES Vestal, Richgr 84.21 43 P **P** 19 15 49.9 +0.2
baz=227
EDW2 Edwards Air Fo 84.23 45 P **P** 19 15 50.3 +0.4
baz=228
HKC Hong Kong Obse 84.34 299 ⇑P **P** 19 15 52.0 +1.4
SWSC Sam W. Stewart 84.35 47 P **P** 19 15 50.9 +0.5
baz=230
TPFO Pinon Flats 84.36 46 P **P** 19 15 50.9 +0.2
baz=229
PFO Pinyon Flats O 84.36 46 P **P** 19 15 51.2 +0.6
comp=Z,196nm,1.0s,baz=235,slow=4.0,SNR=49
PFO PKKPbc **PKKPbc** 19 34 08.1 +4.6
comp=Z,4.8nm,0.9s,baz=153,slow=6.6,SNR=2.4
PFO PKPPKP **P'P'df** 19 42 06.1 +0.5
comp=Z,7.1nm,1.0s,baz=30,slow=5.3,SNR=5.8
PFO LR LR 19 47 29.1
comp=Z,607µm,19.4s,baz=242,slow=31
PFO Pinyon Flats O 84.36 46 P **P** 19 15 51.0 +0.3
baz=229
PFO Pinyon Flats O 84.36 46 *e*P **P** 19 15 50.9 +0.3
PFO pmax pmax
comp=Z,1µm,1.3s
PFO Pinyon Flats O 84.36 46 *e*P **P** 19 15 50.9 +0.3
comp=Z,1µm,1.3s
PFO PKKPbc **PKKPbc** 19 34 08.1 +4.6
PFO P'P' 19 42 06.1
RCTC Rector, Farmer 84.43 43 P **P** 19 15 50.7 0.0
baz=227,SNR=15
YSS Yuzh-Sakhalins 84.44 333⇓*i*P **P** 19 15 51.4 +0.9
YSS *e**SP **sP** 19 16 01.2 -0.5
YSS *i* S **S** 19 26 17.8 +2.7
YSS *e*PPS PPS 19 27 07.0
YSS *e*SS **SS** 19 31 47.0 +0.4
YSS smax smax
comp=N,32µm,15.0s
YSS smax smax
comp=E,36µm,17.0s
YSS Yuzh-Sakhalins 84.44 333 *e*P **P** 19 15 51.4 +0.9
comp=E,1µm,1.0s
YSS LR LR
comp=Z,354µm,21.0s
ISA Isabella, Lake 84.46 44 P **P** 19 15 51.7 +0.7
baz=228
ISA Isabella, Lake 84.46 44 *e*P **P** 19 15 51.4 +0.4
ISA pmax pmax
comp=Z,3µm,1.5s
ISA Isabella, Lake 84.46 44 *e*P **P** 19 15 51.4 +0.4
comp=Z,3µm,1.5s
BBRC Big Bear Solar 84.49 46 P **P** 19 15 52.0 +0.5
baz=229,SNR=10
KSRS Korea Array 84.52 319 P **P** 19 15 51.4 +0.2
comp=Z,86nm,1.0s,baz=139,slow=6.0,SNR=83
KSRS S **S** 19 26 17.0 +0.8
comp=Z,0.8nm,0.5s,baz=283,slow=3.0,SNR=1.1
KSRS PKKPbc **PKKPbc** 19 34 09.7 +6.5
comp=Z,2.6nm,1.0s,baz=306,slow=1.9,SNR=4.5
KSRS PKPPKP **P'P'df** 19 42 06.4 +1.8
comp=Z,1.3nm,0.8s,baz=290,slow=3.0,SNR=4.1
KSRS LR LR 19 52 13.9
comp=Z,105µm,18.7s,baz=117,slow=35
KS15 Wonju Array Si 84.53 319 *e*P **P** 19 15 51.9 +0.7
KSAR Wonju Array Be 84.53 319 P **P** 19 15 51.4 +0.2
KSAR S **S** 19 26 17.0 +0.6
KSAR Wonju Array Be 84.53 319 P **P** 19 15 51.4 +0.2
KSAR S **S** 19 26 17.0 +0.6
KSAR PKKPbc **PKKPbc** 19 34 09.7 +6.5
KSAR P'P' 19 42 06.4
KS01 Wonju Array Si 84.55 319 *e*P **P** 19 15 51.1 -0.2
SSE Sheshan 84.55 310 P **P** 19 15 52.0 +0.5
SSE S **S** 19 26 21.6 +4.8
SSE pmax pmax
comp=Z,670nm,1.2s
SSE pmax pmax
comp=Z,69µm,10.5s
SSE LR LR
comp=Z,340µm,38.6s
SSE LR LR
comp=Z,311µm,38.6s
SSE LR LR
comp=Z,258µm,22.1s
KMRM Mail Ridge 84.64 38 *e*P **P** 19 15 52.9 +1.1
comp=Z,3µm,1.3s
FRIM Kepong 84.71 277 ⇑P **P** 19 15 52.9 +0.2
LRMC Laurel Mtn Rad 84.82 44 P **P** 19 15 53.4 +0.4
baz=228
RRX Edison Barstow 84.84 45 P **P** 19 15 52.9 -0.1
baz=229,SNR=29
PET Petropavlovsk 84.85 345 *d*i P **P** 19 15 51.8 -0.6
PET *e* 19 19 12.4
PET *e*PPP PPP 19 21 03.5
PET *e*S **S** 19 26 18.9 0.0
PET *e*PS **PnS** 19 27 11.7 -4.5
PET *e*PPS PPS 19 27 45.9
PET pmax pmax
comp=Z,79µm,10.2s
PET pmax pmax
comp=Z,165nm,0.7s
PET pmax pmax
comp=Z,74µm,14.5s
PET pmax pmax
comp=Z,27µm,12.2s
PET smax smax
comp=N,39µm,13.2s
PET smax smax
comp=N,45µm,13.3s
PET Petropavlovsk 84.85 345 *e*P **P** 19 15 51.9 -0.5
comp=N,2µm,2.0s
PET LR LR
comp=Z,370µm,20.0s
JCC Jacoby Creek, 84.90 37 *e*P **P** 19 15 54.2 +1.3
comp=Z,3µm,1.5s
BELC Belle Mtn. Jos 84.90 46 P **P** 19 15 54.1 +0.7
baz=229
CMB Columbia Colle 84.94 41 *e*P **P** 19 15 53.4 0.0
CMB pmax pmax
comp=Z,2µm,1.4s
CMB Columbia Colle 84.94 41 *e*P **P** 19 15 53.4 0.0
comp=Z,2µm,1.4s
BC3 Big Chuckawall 85.02 47 P **P** 19 15 54.7 +0.7
baz=230
GLA Glamis 85.04 48 P **P** 19 15 54.8 +0.8
baz=230
GLA Glamis 85.04 48 *e*P **P** 19 15 54.6 +0.6
GLA pmax pmax
comp=Z,3µm,1.5s
GLA Glamis 85.04 48 *e*P **P** 19 15 54.6 +0.6
comp=Z,3µm,1.5s
KHMM Horse Mountain 85.10 37 *e*P **P** 19 15 55.2 +1.0
comp=Z,2µm,1.2s
PEA0 Petropavlovsk- 85.15 345 *e*P **P** 19 15 53.2 -0.8
PEA0B Petropavlovsk- 85.15 345 *e*P **P** 19 15 53.9 -0.1
comp=Z,2µm,1.4s
PETK Petropavlovsk- 85.15 345 P **P** 19 15 53.4 -0.6
comp=Z,78nm,0.6s,baz=107,slow=7.8,SNR=58
PETK PP **PP** 19 19 15.8 +3.8
comp=Z,55nm,1.0s,baz=145,slow=10,SNR=2.9
PETK PKKP **PKKPdf** 19 33 55.4 -0.5
comp=Z,6.2nm,0.9s,baz=198,slow=4.2,SNR=3.8
PETK PKKPbc **PKKPbc** 19 34 01.2 -1.3
comp=Z,10nm,1.0s,baz=173,slow=2.4,SNR=4.6
PETK PKPPKP P'P'df 19 42 16.6 +15
comp=Z,9.1nm,1.1s,baz=90,slow=4.4,SNR=4.7
PETK LR LR 19 50 09.0
comp=Z,462µm,19.9s,baz=156,slow=33
HSIG 85.15 53 *e*P **P** 19 15 54.3 -0.3
comp=Z,2µm,1.3s
CWC Cottonwood Cre 85.22 43 P **P** 19 15 55.5 +0.6
baz=228
HEC Hector,Ludlow 85.23 46 P **P** 19 15 55.3 +0.3
baz=229
AFDM Forest Hills D 85.24 40 *e*P **P** 19 15 54.9 +0.1
comp=Z,1µm,1.3s
GSC Goldstone, Bar 85.24 45 P **P** 19 15 55.6 +0.6
baz=229
GSC Goldstone, Bar 85.24 45 *e*P **P** 19 15 55.2 +0.2
GSC pmax pmax
comp=Z,2µm,1.4s
GSC Goldstone, Bar 85.24 45 *e*P **P** 19 15 55.2 +0.2
comp=Z,2µm,1.4s
INCN Inchon 85.28 318 *e*P **P** 19 15 57.1 +2.0
comp=Z,2µm,1.8s
INCN LR LR
comp=Z,127µm,21.0s
MNSI Mandailing Nat 85.29 274 P **P** 19 15 54.2 -1.5
comp=Z,831nm,0.9s,comp=Z,29µmcomp=Z,302µm
MPMC Manual Prospec 85.32 44 P **P** 19 15 56.2 +0.6
baz=228
ORV Oroville 85.37 39 *e*P **P** 19 15 55.5 +0.1
ORV pmax pmax
comp=Z,2µm,1.4s
ORV Oroville 85.37 39 *e*P **P** 19 15 55.5 +0.1
comp=Z,2µm,1.4s
SDPT Sand Point 85.39 9 *e*P **P** 19 15 55.0 -0.1
comp=Z,4µm,1.4s
DAC Darwin (Calif) 85.40 44 *e*P **P** 19 15 56.0 +0.1
DAC pmax pmax
comp=Z,997nm,1.5s
DAC Darwin (Calif) 85.40 44 *e*P **P** 19 15 56.0 +0.1
comp=Z,997nm,1.5s
GZH Guangzhou 85.42 300⇓*i*P **P** 19 15 56.7 +0.7
GZH PP **PP** 19 19 18.2 +3.5
GZH SKS **S** 19 26 19.0 -6.8
GZH S **SKKSac** 19 26 29.8 +3.4
GZH pmax pmax
comp=Z,20µm,7.0s
WDC Whiskeytown Da 85.52 38 *e*P **P** 19 15 56.5 +0.4
WDC pmax pmax
comp=Z,3µm,1.4s
WDC Whiskeytown Da 85.52 38 *e*P **P** 19 15 56.5 +0.4
comp=Z,3µm,1.4s
TIN Tinemaha, Big 85.54 43 P **P** 19 15 57.0 +0.5
baz=228
IRM Iron Mountain 85.54 47 P **P** 19 15 57.3 +0.8
baz=230
113A Mohawk Valley, 85.55 49 *e*P **P** 19 15 56.2 -0.3
comp=Z,1µm,1.4s
MLAC Mammoth, Mammo 85.57 42 P **P** 19 15 57.4 +0.6
baz=227,SNR=62
GMRC Granite Mounta 85.62 46 P **P** 19 15 57.5 +0.5
baz=230
214A Organ Pipe Nat 85.68 50 P **P** 19 15 57.8 +0.6
baz=231
214A Organ Pipe Nat 85.68 50 *e*P **P** 19 15 57.2 0.0
comp=Z,6µm,1.4s
Y12C Blythe 85.68 47 P **P** 19 15 57.8 +0.7
baz=230
Y12C Blythe 85.68 47 *e*P **P** 19 15 57.6 +0.5
comp=Z,2µm,1.6s
N02D Trinity Center 85.71 38 P **P** 19 15 58.4 +1.2
baz=225
O03D Paynes Creek 85.72 39 P **P** 19 15 57.4 +0.1
baz=225
WAKR Walker 85.81 41 *e*P **P** 19 15 58.4 +0.5
comp=Z,3µm,1.4s
IPM Ipoh 85.84 277 ⇑P **P** 19 15 58.3 -0.1
IPM Ipoh 85.84 277 *e*P **P** 19 15 57.8 -0.6
comp=Z,597nm,0.7s
TUQ Turquoise Moun 85.88 45 P **P** 19 15 59.1 +0.9
baz=229
QIZ Qiongzhong 85.91 294 P **P** 19 15 59.7 +1.1
QIZ S **S** 19 26 25.6 -5.2
QIZ sS **sS** 19 26 46.0 +1.5
QIZ LR LR
comp=Z,62µm,40.5s
QIZ LR LR
comp=Z,67µm,32.1s
QIZ LR LR
comp=Z,247µm,45.2s
QIZ Qiongzhong 85.91 294 *e*P **P** 19 15 59.6 +1.1
comp=Z,837nm,1.1s
QIZ LR LR
comp=Z,89µm,21.0s
M02C Callahan 85.93 37 P **P** 19 15 59.3 +1.1
baz=224
M02C S **S** 19 26 36.3 +6.0
baz=224
ROC1 El Roble 85.94 126 *e*P **P** 19 15 58.5 -0.5
ROC1 El Roble 85.94 126 *e*P **P** 19 15 58.2 -0.8
comp=Z,476nm,0.9s
ROCH El Roble 85.94 126⇓*i*P **P** 19 15 58.0 -1.0
SHOC Shoshone, Teco 85.96 45 P **P** 19 15 59.0 +0.6
baz=229
FURC Furnace Creek, 85.97 44 P **P** 19 15 59.1 +0.7
baz=229
GRAC Grapevine Rang 86.02 43 P **P** 19 15 59.7 +1.0
baz=228
CLCH Cerro Calan 86.05 126⇓*i*P **P** 19 15 58.2 -1.1
L02D Cave Junction, 86.08 36 P **P** 19 16 00.2 +1.3
baz=224,SNR=106
PEL Peldehue 86.08 126⇓*i*P **P** 19 15 58.6 -0.8
LDFC Landfair 86.16 46 *e*P **P** 19 16 00.5 +0.9
comp=Z,3µm,1.3s
PAYG Puerto Ayora 86.16 89 *e*P **P** 19 16 00.7 +0.7
comp=Z,4µm,1.9s
PAYG LR LR
comp=Z,580µm,20.0s
YBH Yreka Blue Hor 86.25 37 *e*P **P** 19 16 00.3 +0.5
YBH pmax pmax
comp=Z,2µm,1.1s
YBH Yreka Blue Hor 86.25 37 *e*P **P** 19 16 00.3 +0.5
comp=Z,2µm,1.1s
NEE2 Needles Airpor 86.27 47 P **P** 19 16 00.9 +0.9
baz=230,SNR=26
MSHR Mys Shultsa 86.35 324 *d*i P **P** 19 16 01.5 +1.3
KULM Kulim 86.56 278 ⇓P **P** 19 16 02.2 +0.2
KULM Kulim 86.56 278 *e*P **P** 19 16 01.9 -0.1
comp=Z,2µm,1.3s
KULM LR LR
comp=Z,156µm,20.0s
CHGN Chignik 86.61 10 *e*P **P** 19 16 01.4 +0.3
PAHR Pah Rah Range 86.66 40 *e*P **P** 19 16 01.9 0.0
comp=Z,2µm,1.4s
TPNV Topopah Spring 86.66 44 P **P** 19 16 03.0 +0.9
baz=229
TPNV Topopah Spring 86.66 44 *e*P **P** 19 16 02.5 +0.4
TPNV pmax pmax
comp=Z,2µm,1.4s
TPNV Topopah Spring 86.66 44 *e*P **P** 19 16 02.5 +0.4
comp=Z,2µm,1.4s
NJ2 Nanjing 86.70 310 ⇓P **P** 19 16 02.8 +0.6
NJ2 pP **pP** 19 16 10.1 -0.3
NJ2 sP **sP** 19 16 15.0 +1.6
NJ2 S **S** 19 26 40.4 +2.4
NJ2 SS **SS** 19 32 15.5 -4.9
NJ2 pmax pmax
comp=Z,540nm,1.0s
NJ2 pmax pmax
comp=Z,20µm,4.5s
NJ2 LR LR
comp=Z,181µm,20.0s
NJ2 LR LR
comp=Z,170µm,22.4s
NJ2 LR LR
comp=Z,295µm,22.0s
HUMO Hull Mountain 86.74 36 *e*P **P** 19 16 02.9 +0.8
comp=Z,3µm,1.5s
M04C Macdoel 86.74 38 P **P** 19 16 02.7 +0.3
baz=225,SNR=53
Y14A Wickenburg 86.78 48 *e*P **P** 19 16 03.2 +0.6
comp=Z,7µm,1.3s
PSI Prapat 86.84 275 *e*P **P** 19 16 02.0 -1.5
PSI pmax pmax
comp=Z,2µm,1.1s
PSI Prapat 86.84 275 *e*P **P** 19 16 02.0 -1.5
comp=Z,2µm,1.1s
W13A Hualapai Mount 86.94 47 *e*P **P** 19 16 04.1 +0.5
comp=Z,1µm,1.4s
DBO Dodson Butte 86.96 36 *e*P **P** 19 16 04.0 +0.7
SHPR Sheep Range 87.04 45 *e*P **P** 19 16 04.6 +0.7
comp=Z,2µm,1.5s
USRK Ussuriysk Ar. 87.10 326 P **P** 19 16 04.0 +0.2
comp=Z,191nm,0.9s,baz=146,slow=3.7,SNR=151
USRK S **S** 19 26 35.4 -5.9
comp=Z,1.5nm,0.7s,baz=173,slow=2.8,SNR=1.2
USRK PKKPbc **PKKPbc** 19 33 59.5 +2.2
comp=Z,7.6nm,0.9s,baz=239,slow=0.8,SNR=4.4
USRK PKPPKP **P'P'df** 19 42 03.5 +4.3
comp=Z,2.5nm,0.9s,baz=262,slow=5.8,SNR=5.1
USRK LR LR 19 50 46.2
comp=Z,387µm,20.6s,baz=130,slow=33
MOIG Morelia 87.19 66 *e*P **P** 19 16 05.2 +0.1
comp=Z,412nm,1.0s
TUC Tucson 87.25 50 P **P** 19 16 05.9 +1.0
baz=232
TUC Tucson 87.25 50 *e*P **P** 19 16 05.7 +0.7
TUC pmax pmax
comp=Z,2µm,1.3s
TUC MLR MLR
comp=Z,524µm,19.0s
TUC Tucson 87.25 50 *e*P **P** 19 16 05.7 +0.7
comp=Z,2µm,1.3s
TUC LR LR
comp=Z,524µm,19.0s
GSI Gunungsitoli 87.29 273 P **P** 19 16 06.0 +0.5
comp=Z,4µm,1.2s,comp=Z,73µmcomp=Z,355µm
GSI Gunungsitoli 87.29 273 *e*P **P** 19 16 06.0 +0.5
comp=Z,4µm,1.0s
I03D Drain, OR 87.32 35 P **P** 19 16 05.2 +0.4
baz=224
K04D Chiloquin, OR 87.38 37 P **P** 19 16 05.6 +0.2
baz=225,SNR=30
ARCO CERRO ARCO 87.48 126 *e*P **P** 19 16 07.5 +1.1
UBPT Khong Chiam 87.49 289 P **P** 19 16 07.3 +0.9
comp=Z,1µm,2.1s,comp=Z,55µm
UBPT Khong Chiam 87.49 289 PKP P'P'df 19 42 16.0 +13
TSI Tuntungan 87.49 275 P **P** 19 16 06.5 0.0
comp=Z,1µm,0.9s,comp=Z,41µmcomp=Z,285µm
AUSP Upsallata 87.50 126⇓*e*P **P** 19 16 06.8 +0.1
SKLT Songkhla 87.51 280 P **P** 19 16 07.0 +0.4
comp=Z,1µm,1.8s,comp=Z,42µm
MOD Modoc Plateau 87.65 38 *e*P **P** 19 16 06.6 -0.1
comp=Z,846nm,1.2s
TYV Tymovskoe 87.68 335 *e*P **P** 19 16 06.5 +0.1
TYV *e*S **S** 19 26 48.0 +1.4
TYV pmax pmax
comp=Z,3µm,1.8s
319A Douglas 87.72 52 *e*P **P** 19 16 07.8 +0.5
comp=Z,1µm,1.1s
HPIG 87.73 57 *e*P **P** 19 16 07.1 -0.4
comp=Z,766nm,1.2s
ZAIG Zacatecas 87.77 62 *e*P **P** 19 16 07.6 -0.3
comp=Z,305nm,1.2s
I04A Tendick Farm, 87.86 36 P **P** 19 16 07.7 +0.1
baz=225
K05A Summer Lake 87.90 37 *e*P **P** 19 16 08.4 +0.4
comp=Z,3µm,1.4s
R11A Troy Canyon, C 87.97 43 P **P** 19 16 08.6 +0.2
baz=229
R11A Troy Canyon, C 87.97 43 *e*P **P** 19 16 08.2 -0.2
comp=Z,934nm,1.8s

COR Corvallis 87.98 35 *e*P **P** **19 16 08.0 0.0**
COR pmax pmax
comp=Z,2µm,1.4s
COR Corvallis 87.98 35 *e*P **P** **19 16 08.0 0.0**
comp=Z,2µm,1.4s
X16A Lo Mia Camp, P 88.09 48 *e*P **P** **19 16 10.0 +0.9**
comp=Z,831nm,1.0s
J05D Fort Rock, OR 88.11 37 P **P** **19 16 09.5 +0.6**
baz=226,SNR=25
TLIG Tlapa 88.19 69 *e*P **P** **19 16 10.1 +0.3**
comp=Z,662nm,1.4s
LCO Las Campanas 88.29 122 *e*P **P** **19 16 09.3 -1.1**
comp=Z,1µm,1.5s
LCO LR LR
comp=Z,243µm,20.0s
RTCV Cerro Valdivia 88.30 126 *e*P **P** **19 16 10.8 +0.6**
OHAK Old Harbor 88.35 12 *e*P **P** **19 16 09.8 +0.4**
comp=Z,2µm,1.3s
WIFE Three Sisters- 88.36 36 *e*P **P** **19 16 10.6 +0.5**
BMN Battle Mountai 88.37 41 *e*P **P** **19 16 10.3 +0.1**
BMN pmax pmax
comp=Z,2µm,1.6s
BMN Battle Mountai 88.37 41 *e*P **P** **19 16 10.3 +0.1**
comp=Z,2µm,1.6s
G03D McMinnville, O 88.44 34 P **P** **19 16 10.8 +0.6**
baz=224,SNR=60
LCMT Little Creek M 88.55 46 *e*P **P** **19 16 11.8 +0.6**
comp=Z,709nm,1.2s
TPTI 88.58 275 P **P** **19 16 11.2 -0.5**
comp=Z,895nm,1.1s,comp=Z,36µm
MDJ Mudanjiang 88.60 325 P **P** **19 16 11.5 +0.5**
MDJ pP pP 19 16 18.0 -1.3
MDJ sP sP 19 16 20.7 -1.5
MDJ PP **PP** **19 19 42.0 +2.0**
MDJ S **S** **19 26 58.3 +2.7**
MDJ sS sS 19 27 11.1 +1.8
MDJ pmax pmax
comp=Z,310nm,1.2s
MDJ pmax pmax
comp=Z,66µm,13.9s
MDJ LR LR
comp=Z,203µm,21.1s
MDJ LR LR
comp=Z,222µm,20.1s
MDJ LR LR
comp=Z,455µm,20.1s
MDJ Mudanjiang 88.60 325 *e*P **P** **19 16 11.3 +0.3**
comp=Z,768nm,1.1s
MDJ LR LR
comp=Z,489µm,21.0s
UNM Universidad Na 88.61 67 *e*P **P** **19 16 16.7 +4.7**
UNM pmax pmax
comp=Z,3µm,1.7s
UNM Universidad Na 88.61 67 *e*P **P** **19 16 16.7 +4.7**
comp=Z,3µm,1.7s
RTLL Cerro Villicun 88.64 125⇓*e*P **P** **19 16 11.8 0.0**
TRTT Trang 88.64 280 P **P** **19 16 12.6 +0.7**
comp=Z,1µm,1.1s,comp=Z,38µm
U15A North Rim 88.78 46 *e*P **P** **19 16 12.8 +0.4**
comp=Z,1µm,1.1s
I05D Terrebonne, OR 88.80 36 P **P** **19 16 12.4 +0.5**
baz=226
WUAZ Wupatki 88.81 48 P **P** **19 16 13.3 +0.8**
baz=232
WUAZ Wupatki 88.81 48 *e*P **P** **19 16 13.2 +0.8**
comp=Z,2µm,1.3s
WUAZ LR LR
comp=Z,449µm,20.0s
CCUT Cedar City 88.81 45 *e*P **P** **19 16 12.3 -0.2**
comp=Z,1µm,1.4s
KNB Kanab 88.81 46 *e*P **P** **19 16 13.3 +0.9**
KNB pmax pmax
comp=Z,5µm,1.6s
KNB Kanab 88.81 46 *e*P **P** **19 16 13.3 +0.9**
comp=Z,5µm,1.6s
CHBT CHBT 88.83 285 P **P** **19 16 15.5 +2.8**
comp=Z,3µm,1.3s,comp=Z,64µm
CHBT CHBT 88.83 285 PKP P'P'df 19 42 10.2 +10
G04A Mulino 88.83 35 *e*P **P** **19 16 12.5 +0.4**
HABR Khabarovsk 88.84 330 *de*P **P** **19 16 11.7 -0.3**
HABR *e**SP **pP** **19 16 19.7 -0.6**
HABR *e* 19 19 39.6
HABR *e*PPP PPP 19 21 35.8
HABR *e*S **SKSac** **19 26 38.3 -1.2**
HABR *e*S **SKKSac** **19 26 47.2 -3.7**
HABR *e*SS **SS** **19 32 50.2 -0.8**
HABR *e*SSS SSS 19 36 24.5
HABR pmax pmax
comp=Z,50µm,7.9s
HABR MLR MLR
comp=Z,274µm,19.0s
WHN Wuhan 88.91 306⇓*i*P **P** **19 16 13.9 +1.1**
WHN pP **sP** **19 16 26.2 +2.2**
WHN S **S** **19 27 01.3 +2.1**
WHN pmax pmax
comp=Z,2µm,1.9s
WHN LR LR
comp=Z,469µm,23.4s
WHN LR LR
comp=Z,519µm,20.6s
WHN LR LR
comp=Z,837µm,22.0s
WVOR Wild Horse Val 88.92 39 *e*P **P** **19 16 12.8 +0.1**
WVOR pmax pmax
comp=Z,1µm,1.3s
WVOR MLR MLR
comp=Z,1123µm,20.0s
WVOR Wild Horse Val 88.92 39 *e*P **P** **19 16 12.8 +0.1**
comp=Z,1µm,1.3s
WVOR LR LR
comp=Z,1123µm,20.0s
KDAK Kodiak Island 89.01 12 *i*P **P** **19 16 13.0 +0.5**
KDAK Kodiak Island 89.01 12 *e*P **P** **19 16 13.0 +0.5**
comp=Z,8µm,1.4s
KDAK LR LR
comp=Z,235µm,20.0s
ACAN Cantantal 89.02 127 *e*P **P** **19 16 13.3 -0.3**
TRQA Tornquist 89.11 134 *e*P **P** **19 16 13.2 -0.7**
comp=Z,2µm,2.0s
TRQA LR LR
comp=Z,241µm,19.0s
PSUT Pine Spring 89.13 44 *e*P **P** **19 16 15.0 +1.1**
comp=Z,626nm,1.5s
X18A Snowflake 89.14 49 *e*P **P** **19 16 14.8 +0.8**
comp=Z,2µm,1.8s
DL2 Dalian 89.19 316 P **P** **19 16 14.5 +0.6**
DL2 pP **pP** **19 16 21.6 -0.6**
DL2 SKS **SKSac** **19 26 44.6 +2.6**
DL2 S **ScS** **19 27 08.6 +2.3**
DL2 pmax pmax
comp=Z,820nm,1.4s
DL2 pmax pmax
comp=Z,16µm,6.9s
DL2 LR LR
comp=Z,62µm,16.9s
DL2 LR LR
comp=Z,130µm,19.4s
DL2 LR LR
comp=Z,171µm,20.0s
F04D Rainier, OR 89.19 34 P **P** **19 16 15.1 +1.4**
baz=224,SNR=38
TDH Tom, Dick, Har 89.23 35 P **P** **19 16 14.1 0.0**
KRAB Krabi 89.26 280 P **P** **19 16 19.2 +4.4**
comp=Z,1µm,1.0s,comp=Z,8µm
E03A Lebam 89.26 33 *e*P **P** **19 16 14.3 +0.4**
comp=Z,4µm,1.1s
PKCU Pink Cliffs 89.40 46 *e*P **P** **19 16 16.9 +1.5**
comp=Z,2µm,1.5s
121A Cookes Peak, D 89.42 52 P **P** **19 16 16.3 +0.9**
baz=234
121A Cookes Peak, D 89.42 52 *e*P **P** **19 16 15.8 +0.4**
comp=Z,961nm,1.5s
G05D Wamic, OR 89.44 35 P **P** **19 16 15.2 +0.3**
baz=226
SKNT Sakolnakorn 89.58 290 P **P** **19 16 17.2 +0.9**
comp=Z,3µm,1.6s,comp=Z,65µm
SKNT Sakolnakorn 89.58 290 PKP **P'P'df** **19 41 59.6 +0.9**
W18A Petrified Fore 89.64 49 P **P** **19 16 17.0 +0.7**
baz=233
W18A Petrified Fore 89.64 49 *e*P **P** **19 16 17.0 +0.7**
comp=Z,2µm,1.4s
AGUA GUANDACOL 89.65 124 *e*P **P** **19 16 17.3 +0.6**
SWFL Southwest Flan 89.66 34 *e*P **P** **19 16 17.1 +0.9**
ERK Elk Rock 89.68 34 P **P** **19 16 16.8 +0.7**
STD Studebaker Rid 89.69 34 P **P** **19 16 16.9 +0.7**
ELK Elko 89.72 42 *e*P **P** **19 16 16.5 -0.2**
ELK pmax pmax
comp=Z,601nm,1.4s
ELK Elko 89.72 42 *e*P **P** **19 16 16.5 -0.2**
comp=Z,601nm,1.4s
NLWA Neilton Lookou 89.72 33 *e*P **P** **19 16 17.1 +0.8**
comp=Z,2µm,1.1s
NLWA LR LR
comp=Z,647µm,20.0s
LHMI Lhok Sumawe 89.74 276 P P 19 16 22.2 +5.1
comp=Z,2µm,1.0s,comp=Z,53µmcomp=Z,289µm
LHMI Lhok Sumawe 89.74 276 *e*P **P** **19 16 18.6 +1.6**
comp=Z,1µm,0.9s
MLSI Meulaboh, Aceh 89.75 275 P **P** **19 16 17.5 +0.4**
comp=Z,2µm,1.2s,comp=Z,36µmcomp=Z,245µm
TDL Tradedollar La 89.77 34 P **P** **19 16 17.2 +0.6**
VTHM Trough 89.78 36 P **P** **19 16 16.8 +0.2**
HOPE Hope Point 89.80 158 *e*P **P** **19 16 17.3 +0.7**
comp=Z,1µm,1.4s
HOPE LR LR
comp=Z,177µm,20.0s
C03A Quillayute Air 89.80 32 *e*P **P** **19 16 17.3 +0.8**
PKDT Phuket 89.84 279 P **P** **19 16 19.3 +1.8**
comp=Z,572nm,1.8s,comp=Z,35µm
MTPU Mount Pierson 89.85 45 *e*P **P** **19 16 18.7 +1.2**
comp=Z,2µm,1.6s
VGB Gordon Butte 89.90 35 P **P** **19 16 17.3 +0.2**
VGB Gordon Butte 89.90 35 P **P** **19 16 17.3 +0.2**
SNY Shenyang 89.93 320 P **P** **19 16 17.5 +0.2**
SNY SS SS 19 33 07.6 +0.5
SNY pmax pmax
comp=Z,490nm,1.3s
SNY pmax pmax
comp=Z,58µm,12.0s
SNY LR LR
comp=Z,129µm,19.4s
SNY LR LR
comp=Z,127µm,20.2s
SNY LR LR
comp=Z,275µm,19.6s
ASR Mount Adams--S 89.94 35 *e*P **P** **19 16 17.8 +0.4**
SURT Suratani 89.96 280 P **P** **19 16 19.3 +1.2**
comp=Z,520nm,1.8s,comp=Z,15µm
MRA San Martin 89.96 128 *e*P **P** **19 16 18.3 +0.3**
SUCO SUCO 90.00 129 *e*P **P** **19 16 18.0 -0.2**
OCP Olym-Cheeka Pk 90.03 32 *e*P **P** **19 16 18.8 +1.2**
MSU Marysvale 90.14 45 *e*P **P** **19 16 19.5 +0.8**
MSU Marysvale 90.14 45 *e*P **P** **19 16 19.5 +0.8**
PATY Pattaya 90.15 285 P **P** **19 16 21.4 +2.5**
comp=Z,504nm,0.9s,comp=Z,5µm
CN2 Changchun 90.20 322⇓P **P** **19 16 18.4 -0.1**
CN2 *e*S **S** **19 27 08.4 -2.2**
CN2 pmax pmax
comp=Z,480nm,1.3s
CN2 pmax pmax
comp=Z,11µm,6.0s
CN2 LR LR
comp=Z,12µm,20.0s
CN2 LR LR
comp=Z,11µm,20.0s
KHON Khomkaen 90.22 289 P **P** **19 16 20.9 +1.7**
comp=Z,825nm,1.1s,comp=Z,7µm
LON Longmire 90.25 34 *e*P **P** **19 16 18.8 0.0**
LON pmax pmax
comp=Z,788nm,1.2s
LON Longmire 90.25 34 *e*P **P** **19 16 18.8 0.0**
comp=Z,788nm,1.2s
NKL Nikolayevsk 90.25 336 *i*P **P** **19 16 18.0 -0.5**
NKL pmax pmax
comp=E,110nm,1.4s
NKL pmax pmax
comp=N,550nm,1.7s
NKL pmax pmax
comp=Z,3µm,1.7s
NKL pmax pmax
comp=E,10µm,13.0s
NKL pmax pmax
comp=N,6µm,10.0s
NKL pmax pmax
comp=Z,56µm,10.0s
VCA Vinchina 90.27 123 *e*P **P** **19 16 20.9 +1.2**
GNW Green Mountain 90.34 33 *e*P **P** **19 16 19.7 +0.7**
TIA Tai'an 90.35 312⇓P **P** **19 16 20.1 +0.7**
TIA pP **sP** **19 16 32.6 +1.9**
TIA SKS **SKSac** **19 26 50.5 +1.5**
TIA S **ScS** **19 27 18.3 +2.2**
TIA pmax pmax
comp=Z,18µm,5.6s
TIA LR LR
comp=Z,84µm,19.1s
TIA LR LR
comp=Z,111µm,20.1s
TIA LR LR
comp=Z,207µm,22.6s
OBSR Observation Ro 90.35 34 *e*P **P** **19 16 19.5 0.0**
B04A Port Angeles 90.37 32 *e*P **P** **19 16 21.2 +2.0**
D05A Enumclaw 90.47 34 *e*P **P** **19 16 20.6 +0.9**
comp=Z,9µm,1.3s
TX31 Lajitas Ar. Si 90.53 56 *e*P **P** **19 16 19.8 -0.8**
TXAR Lajitas Array 90.53 56 P **P** **19 16 20.3 -0.2**
comp=Z,111nm,1.0s,baz=210,slow=7.2,SNR=126
TXAR S **SKSac** **19 26 55.7 +5.1**
comp=Z,3.9nm,1.1s,baz=270,slow=0.6,SNR=1.8
TXAR PKPPbc **PKKPbc** **19 33 46.5 -1.7**
comp=Z,3.4nm,0.9s,baz=100,slow=4.8,SNR=4.6
TXAR PKPPKP **P'P'df** **19 41 55.3 -0.1**
comp=Z,4.2nm,1.0s,baz=101,slow=2.6,SNR=6.4
TXAR LR LR 19 50 59.6
comp=Z,474µm,19.1s,baz=0.0,slow=32
DIB Dawson Inlet, 90.55 25 *e*P **P** **19 16 20.9 +1.0**
comp=Z,1µm,1.1s
H02S1 DAWSON INLET T 90.56 25 P **P** **19 16 21.6 +1.7**
SNR=426
H02S1 T T 20 55 52.6
H02N1 VAN INLET T-PH 90.57 25 P **P** **19 16 22.2 +2.1**
SNR=82
H02N1 T T 20 55 49.4
MNTX Cornudas Mount 90.61 54 P **P** **19 16 20.7 -0.1**
baz=235
MNTX Cornudas Mount 90.61 54 *e*P **P** **19 16 20.5 -0.3**
comp=Z,665nm,1.3s
MNTX LR LR
comp=Z,223µm,19.0s
G08A Pilot Rock 90.68 36 *e*P **P** **19 16 20.9 +0.1**
NAC Naches 90.72 35 P **P** **19 16 21.4 +0.4**
DUG Dugway, Tooele 90.80 43 P **P** **19 16 21.9 +0.3**
baz=231
DUG Dugway, Tooele 90.80 43 *e*P **P** **19 16 21.4 -0.2**
DUG pmax pmax
comp=Z,290nm,1.1s
DUG MLR MLR
comp=Z,838µm,19.0s
DUG Dugway, Tooele 90.80 43 *e*P **P** **19 16 21.4 -0.2**
comp=Z,290nm,1.1s
DUG LR LR
comp=Z,838µm,19.0s
NONG Nongkai 90.82 290 P **P** **19 16 23.2 +1.2**
comp=Z,3µm,1.3s,comp=Z,45µm
NONG Nongkai 90.82 290 PKP **P'P'df** **19 42 03.4 +7.1**
KLR Kul'dur 90.87 329 P **P** **19 16 21.5 0.0**
comp=Z,81nm,1.0s,baz=130,slow=3.5,SNR=58
KLR S **SKSac** **19 26 50.0 -1.3**
comp=Z,1.1nm,0.5s,baz=172,slow=17,SNR=1.2
KLR PKKPbc **PKKPbc** **19 33 47.2 -0.9**
comp=Z,5.4nm,1.0s,baz=267,slow=4.8,SNR=3.9
KLR PKPPKP **P'P'df** **19 41 58.1 +6.2**
comp=Z,4.2nm,1.1s,baz=337,slow=2.3,SNR=6.7
KLR LR LR 19 54 32.6
comp=Z,392µm,19.8s,baz=136,slow=34
KLR Kul'dur 90.87 329 P **P** **19 16 21.5 0.0**
KLR S **SKSac** **19 26 50.0 -1.3**
KLR pmax pmax
comp=Z,62nm,0.8s
KLR smax smax
comp=N,1.0nm,0.5s
CNPM China Poot 90.89 12 *e*P **P** **19 16 21.8 +0.4**
comp=N,3µm,1.2s
Y22D IRIS PASSCAL I 90.90 51 P **P** **19 16 23.1 +0.8**
baz=235
HOM Homer 90.94 12 *e*P **P** **19 16 22.6 +1.1**
comp=N,5µm,1.1s
LAZ Ladron 90.94 51 *e*P **P** **19 16 23.0 +0.5**
CMIG Matias Romero 90.97 71 P **P** **19 16 22.8 +0.1**
comp=N,210nm,1.1s,baz=265,slow=4.0,SNR=32
CMIG PKKPbc **PKKPbc** **19 33 48.8 +2.4**
comp=N,6.8nm,1.1s,baz=63,slow=5.1,SNR=2.5
CMIG LR LR 19 49 23.2
comp=N,390µm,20.4s,baz=236,slow=30
TWW Teanaway 90.98 34 P **P** **19 16 22.9 +0.7**
MFID Camas Ranch 91.11 39 *e*P **P** **19 16 22.8 -0.1**
BGU Big Grassy Mou 91.13 43 *e*P **P** **19 16 23.1 -0.1**
comp=N,694nm,1.5s
HAWA Hanford 91.14 35 *e*P **P** **19 16 23.2 +0.4**
comp=N,2µm,1.3s
HAWA LR LR
comp=Z,942µm,20.0s
MDW Midway 91.17 35 P **P** **19 16 23.5 +0.5**
MDW Midway 91.17 35 P **P** **19 16 23.5 +0.5**
B05A Bryant 91.18 33 P **P** **19 16 23.7 +0.8**
baz=225
BRLK Bradley Lake 91.18 13 *e*P **P** **19 16 22.9 +0.2**
comp=Z,3µm,1.2s
JCW Jim Creek 91.21 33 *e*P **P** **19 16 23.5 +0.4**
A04D Lummi Island 91.22 32 P **P** **19 16 23.9 +0.8**
baz=224
TMUT Trail Mountain 91.22 45 *e*P **P** **19 16 24.5 +0.7**
comp=Z,891nm,1.0s
LPM Los Pinos Moun 91.23 51 *e*P **P** **19 16 23.9 +0.1**
BMO Blue Mountains 91.25 38 PFAKE 19 16 30.0 +6.5
BMO LR LR
comp=Z,698µm,20.0s
PB10 IPOC Station P 91.36 118 *e*P **P** **19 16 25.9 +1.3**
comp=Z,2µm,1.6s
TCA Tanti 91.37 127⇓*e*P **P** **19 16 24.1 -0.5**
BBB Bella Bella 91.43 27 *e*P **P** **19 16 24.8 +0.9**
comp=Z,1µm,1.1s
C06D Leavenworth 91.52 34 P **P** **19 16 24.9 +0.3**
baz=226
SRU San Rafael Swe 91.53 45 *e*P **P** **19 16 25.1 0.0**
SRU pmax pmax
comp=Z,968nm,1.2s
SRU San Rafael Swe 91.53 45 *e*P **P** **19 16 25.1 0.0**
comp=Z,968nm,1.2s
RPW Rockport 91.59 33 *e*P **P** **19 16 24.9 0.0**
P17A Butcher Ranch, 91.61 45 *e*P **P** **19 16 25.8 +0.4**
comp=Z,922nm,1.3s
SVW2 Sparrevohn 91.64 10 *e*P **P** **19 16 24.5 -0.3**
comp=Z,636nm,1.4s
MVCO Mesa Verde 91.68 48 P **P** **19 16 26.4 +0.5**
baz=234
MVCO Mesa Verde 91.68 48 *e*P **P** **19 16 26.0 +0.1**
comp=Z,1µm,1.6s
MVCO LR LR
comp=Z,508µm,19.0s
SPUT South Promonto 91.71 43 *e*P **P** **19 16 25.9 +0.1**
comp=Z,1µm,1.3s
ANMO Albuquerque 91.72 50 P **P** **19 16 26.6 +0.5**
baz=235
ANMO Albuquerque 91.72 50*d i*P **P** **19 16 26.0 0.0**
ANMO pmax pmax
comp=Z,808nm,2.5s
ANMO MLR MLR
comp=Z,241µm,17.0s
ANMO Albuquerque 91.72 50 PFAKE 19 16 40.0 +14
ANMO LR LR
comp=Z,598µm,19.0s
CTU Camp Tracy 91.75 43 *e*P **P** **19 16 26.1 +0.1**
comp=Z,942nm,1.1s
SEW Seward 91.78 13 *e*P **P** **19 16 25.2 -0.2**
comp=Z,2µm,1.3s
PV05 Paradox Valley 91.81 47 *e*P **P** **19 16 26.9 +0.4**
HVU Hansel Valley 91.81 42 *e*P **P** **19 16 26.4 +0.1**
HVU pmax pmax
comp=Z,2µm,1.3s
HVU Hansel Valley 91.81 42 *e*P **P** **19 16 26.4 +0.1**
comp=Z,2µm,1.3s
MID Middleton Isla 91.81 15 *e*P **P** **19 16 29.0 +3.5**
MID pmax pmax
comp=Z,2µm,1.3s
MID Middleton Isla 91.81 15 *e*P **P** **19 16 29.0 +3.5**
comp=Z,2µm,1.3s
JLU Jordanelle 91.87 44 *e*P **P** **19 16 26.9 +0.2**
comp=Z,1µm,1.9s
PBKT Sadao Pong 91.87 288 P **P** **19 16 28.2 +1.3**
comp=Z,1µm,1.3s,comp=Z,36µm
PBKT Sadao Pong 91.87 288 PKP **P'P'df** **19 42 00.9 +6.3**
D08A Wollman Farm, 91.90 35 *e*P **P** **19 16 26.8 +0.5**
comp=Z,2µm,1.1s
E09A Wood Farm, Sta 91.92 36 *e*P **P** **19 16 26.4 0.0**
comp=Z,2µm,1.2s
CLNB Carlsbad 91.99 54 *e*P **P** **19 16 27.3 0.0**
HLID Hailey 92.00 40 P **P** **19 16 27.6 +0.5**
baz=230
HLID Hailey 92.00 40 *e*P **P** **19 16 27.4 +0.3**
comp=Z,831nm,1.1s
HLID LR LR
comp=Z,497µm,20.0s
PV10 Paradox Valley 92.02 46 *e*P **P** **19 16 27.1 -0.3**
PV09 Paradox Valley 92.03 46 *e*P **P** **19 16 27.6 0.0**
LOEI Loei 92.09 289 P **P** **19 16 27.6 -0.3**
comp=Z,498nm,1.6s,comp=Z,25µm
LOEI Loei 92.09 289 PKP **P'P'df** **19 42 00.6 +6.5**
PV04 Paradox Valley 92.12 47 *e*P **P** **19 16 27.3 -0.5**
CRAG Craig 92.14 23 *e*P **P** **19 16 28.4 +1.2**
comp=Z,2µm,1.8s
PV01 Paradox Valley 92.18 47 *e*P **P** **19 16 27.9 -0.2**
CYA Choya 92.18 124⇓*e*P **P** **19 16 29.5 +1.2**
TCUT Toone Canyon 92.21 43 *e*P **P** **19 16 28.4 +0.2**
comp=Z,3µm,1.6s
ENH Enshi 92.25 304 *e*P **P** **19 16 29.1 +0.7**
comp=Z,6µm,1.4s
ENH LR LR
comp=Z,159µm,21.0s
NNA Nana 92.25 105 PKKPbc PKKPbc 19 33 50.3 +7.6
comp=Z,9.5nm,0.6s,baz=220,slow=3.6,SNR=3.7
NNA LR LR 19 49 57.6
comp=Z,259µm,20.4s,baz=237,slow=30
NNA Nana 92.25 105 *i*P **P** **19 16 29.2 +0.3**
NNA Nana 92.25 105 PFAKE 19 16 40.0 +11
NNA LR LR
comp=Z,150µm,20.0s
SPU Mount Spurr 92.29 11 *e*P **P** **19 16 27.0 -0.9**
PB04 IPOC Station P 92.31 117 *e*P **P** **19 16 29.1 -0.2**
comp=Z,1µm,1.2s
SRDT SRDT 92.33 285 P **P** **19 16 30.6 +1.6**
comp=Z,2µm,2.1s,comp=Z,89µm
GYA Guiyang 92.33 299⇓*i*P **P** **19 16 29.7 +0.7**
GYA pP pP 19 16 34.7 -2.6
GYA PP **PP** **19 20 11.0 +0.8**
GYA SKS **SKSac** **19 26 56.7 -4.3**
GYA S **S** **19 27 26.2 -4.9**
GYA SS **SS** **19 33 44.4 +1.8**
GYA pmax pmax
comp=Z,890nm,1.3s
GYA pmax pmax
comp=Z,42µm,14.6s
GYA LR LR
comp=Z,52µm,22.6s
GYA LR LR
comp=Z,81µm,21.9s
GYA LR LR
comp=Z,146µm,19.8s
HWUT Hardware Ranch 92.42 43 *e*P **P** **19 16 28.7 -0.4**
comp=Z,492nm,1.3s
HWUT LR LR
comp=Z,1016µm,20.0s
B08A Colville Reser 92.58 34 *e*P **P** **19 16 29.0 -0.5**
comp=Z,2µm,1.9s
RC01 Rabbit Creek A 92.63 13 *e*P **P** **19 16 29.4 +0.1**
comp=Z,3µm,1.4s
MA2 Magadan 92.65 344 P **P** **19 16 29.1 -0.4**
comp=Z,96nm,1.1s,baz=157,slow=7.3,SNR=6.8
MA2 PP **PP** **19 20 12.6 +0.7**
comp=Z,21nm,1.1s,baz=138,slow=14,SNR=2.8
MA2 LR LR 19 55 04.6
comp=Z,191µm,20.1s,baz=155,slow=34
832A Faith Ranch, C 92.69 59 P **P** **19 16 29.9 -0.6**
baz=238
C09A Chrisman Ranch 92.72 35 *e*P **P** **19 16 30.1 -0.1**
comp=Z,1µm,1.4s
SUA Susitna One 92.79 12 *e*P **P** **19 16 30.0 -0.3**
comp=Z,798nm,1.2s
UTTA Uttaradit 92.80 289 P **P** **19 16 32.7 +1.6**
comp=Z,148nm,1.3s,comp=Z,2µm
GAMB Gambell 92.84 2 *e*P **P** **19 16 32.4 +2.2**
comp=Z,640nm,1.2s
CCIG Comitan 92.85 73 *e*P **P** **19 16 32.3 +0.7**
comp=Z,622nm,1.3s
933A Laredo 92.86 60 P **P** **19 16 31.1 -0.1**
baz=238
LLLB Lillooet 92.94 31 *e*P **P** **19 16 31.3 +0.2**
comp=Z,404nm,1.0s
EYAK Cordova Ski Ar 92.95 15 *e*P **P** **19 16 31.2 +0.4**
comp=Z,732nm,1.1s

034A Hebbronville 93.03 61 P P 19 16 32.6 +0.6
baz=238
S22A 4UR Ranch, Cre 93.07 48 P P 19 16 32.7 +0.4
baz=235
S22A 4UR Ranch, Cre 93.07 48 eP P 19 16 28.0 -4.4
comp=Z,557nm,1.1s
PNT Penticton 93.09 33 eP P 19 16 32.1 +0.3
PNT Penticton 93.09 33 eP P 19 16 32.1 +0.3
LVC Limon Verde 93.12 118 SKKPbc SKKPbc 19 38 18.1 +62
comp=Z,12nm,0.8s,baz=254,slow=21,SNR=3.5
LVC PKPPKP 19 41 55.5
comp=Z,17nm,0.9s,baz=69,slow=4.1,SNR=3.1
LVC LR LR 19 50 20.6
comp=Z,1426µm,20.8s,baz=245,slow=30
LVC Limon Verde 93.12 118 eP P 19 16 33.5 +0.3
comp=Z,1µm,1.3s
LVC SKKPbc SKKPbc 19 38 18.1 +62
LVC P'P' 19 41 55.5
833A Chaparral WMA, 93.14 59 P P 19 16 31.8 -0.7
baz=238,SNR=24
WRAK Wrangell Islan 93.17 23 PFAKE 19 16 40.0 +8.1
WRAK LR LR
comp=Z,204µm,21.0s
035Z Hargill 93.19 61 P P 19 16 33.0 +0.2
baz=239
PMR Palmer 93.21 13 eP P 19 16 31.9 -0.1
PMR pmax pmax
comp=Z,3µm,1.8s
PMR Palmer 93.21 13 eP P 19 16 31.9 -0.1
comp=Z,3µm,1.8s
BJT Baijiatuau 93.21 315 eP P 19 16 33.6 +1.0
BJT pmax pmax
comp=Z,346nm,0.8s
BJT MLR MLR
comp=Z,165µm,20.0s
BJT Baijiatuau 93.21 315 eP P 19 16 33.6 +1.0
comp=Z,346nm,0.8s
BJT LR LR
comp=Z,165µm,20.0s
BJI Beijing 93.22 315 P P 19 16 32.6 0.0
BJI SKS SKSac 19 27 01.6 -3.4
BJI S S 19 27 38.4 +0.4
BJI SS SS 19 33 55.3 +0.7
BJI pmax pmax
comp=Z,290nm,1.1s
BJI pmax pmax
comp=Z,11µm,5.2s
BJI LR LR
comp=Z,118µm,22.1s
BJI LR LR
comp=Z,76µm,19.4s
BJI LR LR
comp=Z,121µm,21.5s
CMBY CAMPBELL BAY 93.23 276 eP P 19 16 32.8 -0.5
CMBY IAMs_20 IAMs_20 19 49 21.0
comp=Z,774µm,47.5s
TT01 Tatalina 93.31 9 eP P 19 16 32.7 +0.2
TTA Tatalina 93.33 9 eP P 19 16 33.4 +0.7
TTA pmax pmax
comp=Z,662nm,1.2s
TTA Tatalina 93.33 9 eP P 19 16 33.4 +0.7
comp=Z,662nm,1.2s
ATAH Atahualpa 93.35 100 PKKPbc PKKPbc 19 33 44.9 +4.6
comp=Z,8.0nm,0.8s,baz=60,slow=5.2,SNR=3.0
ATAH PKPPKP **P'P'df** 19 42 01.5 +6.5
comp=Z,2.9nm,0.4s,baz=142,slow=3.5,SNR=4.7
AHID Auburn Hatcher 93.40 42 eP P 19 16 33.7 +0.1
comp=Z,2µm,1.3s
AHID LR LR
comp=Z,777µm,19.0s
035A Encino 93.41 61 P P 19 16 34.2 +0.5
baz=239,SNR=30
733A Divot King Ran 93.43 59 P P 19 16 33.6 -0.2
baz=238
934A Benavides 93.43 60 P P 19 16 34.4 +0.5
baz=238
SUKH Sukhothai 93.43 288 P P 19 16 36.0 +1.9
comp=Z,128nm,0.9s,comp=Z,1µm
UMPA Umpang Tak 93.45 287 P P 19 16 35.9 +1.7
comp=Z,156nm,1.0s,comp=Z,1µm
DIV Divide 93.47 14 eP P 19 16 33.5 +0.2
comp=Z,668nm,1.2s
AHML Horco Molle 93.47 123 eP P 19 16 33.9 -0.5
PB01 IPOC Station P 93.53 116 eP P 19 16 34.5 -0.2
comp=Z,718nm,1.2s
O20A White River Ci 93.56 45 P P 19 16 34.1 -0.3
baz=234
O20A White River Ci 93.56 45 eP P 19 16 34.2 -0.3
comp=Z,671nm,1.3s
DHAK Deception Hill 93.56 19 eP P 19 16 36.2 +2.5
comp=Z,862nm,1.3s
SML Sawmill 93.56 13 eP P 19 16 33.6 -0.1
SML pmax pmax
comp=Z,566nm,1.2s
SML Sawmill 93.56 13 eP P 19 16 33.6 -0.1
comp=Z,566nm,1.2s
BMRM Bremner River 93.58 15 eP P 19 16 34.1 +0.3
comp=Z,2µm,1.4s
NEW Newport 93.61 35 P P 19 16 33.8 -0.4
baz=229
NEW Newport 93.61 35 eP P 19 16 33.6 -0.6
NEW pmax pmax
comp=Z,428nm,1.4s
NEW MLR MLR
comp=Z,929µm,20.0s
NEW Newport 93.61 35 eP P 19 16 33.6 -0.6
comp=Z,428nm,1.4s
NEW LR LR
comp=Z,929µm,20.0s
LPA La Plata 93.62 134 di P P 19 16 30.0 -4.8
LPA sP sP 19 17 02.0 +16
LPA pPP 19 20 33.0
LPA PPP PPP 19 22 16.0
LPA PKIKS 19 24 55.0
LPA SKS SKSac 19 27 03.0 -4.9
LPA S S 19 27 36.0 -6.2
comp=Z,132µm,21.0s
MCMT McKenzie Canyo 93.67 40 eP P 19 16 35.0 +0.1
834A Tilden 93.67 60 P P 19 16 35.1 +0.1
baz=238,SNR=30
MSTX Muleshoe 93.70 53 P P 19 16 34.4 -0.7
baz=237
MSTX Muleshoe 93.70 53 eP P 19 16 34.4 -0.7
comp=Z,686nm,0.9s
CRQM Cirque 93.73 16 eP P 19 16 35.6 +0.9
comp=Z,1µm,1.4s
KLU Klutina 93.77 14 eP P 19 16 34.9 +0.2
comp=Z,532nm,1.3s
SCM Sheep Creek Mo 93.78 13 eP P 19 16 35.1 +0.3
SCM pmax pmax
comp=Z,668nm,1.0s
SCM Sheep Creek Mo 93.78 13 eP P 19 16 35.1 +0.3
comp=Z,668nm,1.0s
SMCO Snowmass 93.80 47 eP P 19 16 34.7 -1.1
comp=Z,708nm,1.3s
PCA Pinnacle 93.86 17 eP P 19 16 37.1 +2.0
comp=Z,957nm,1.3s
KVTX Kingsville 93.88 61 PFAKE 19 16 50.0 +14
KVTX LR LR
comp=Z,302µm,19.0s
PPLA Purkeypile 93.88 11 eP P 19 16 34.0 -1.3
comp=Z,361nm,1.2s
633A Saathoff Ranch 93.90 58 P P 19 16 35.2 -0.8
baz=238,SNR=20
REDW Red Top Meadow 93.90 42 eP P 19 16 35.9 -0.1
comp=Z,2µm,1.3s
TPAW Teton Pass 93.92 42 eP P 19 16 36.1 0.0
comp=Z,1µm,1.3s
SDCO Great Sand Dun 93.94 49 P P 19 16 36.2 -0.2
baz=236
SDCO Great Sand Dun 93.94 49 eP P 19 16 35.9 -0.4
comp=Z,375nm,1.2s
SDCO LR LR
comp=Z,293µm,19.0s
LAMP Lampang 93.94 289 P P 19 16 38.3 +1.9
comp=Z,135nm,1.1s,comp=Z,1µm
JCT Junction City 93.97 57 P P 19 16 35.2 -1.1
baz=238
JCT Junction City 93.97 57 eP P 19 16 35.3 -1.1
JCT pmax pmax
comp=Z,545nm,1.1s
JCT MLR MLR
comp=Z,832µm,19.0s
JCT Junction City 93.97 57 eP P 19 16 35.2 -1.1
comp=Z,545nm,1.1s
JCT LR LR
comp=Z,832µm,19.0s
SNOW Snow King Moun 94.02 42 eP P 19 16 36.8 +0.2
comp=Z,2µm,1.2s
734A La Parita Cree 94.04 59 P P 19 16 36.6 -0.1
baz=238
PB11 IPOC Station P 94.09 115 eP P 19 16 36.8 -0.6
comp=Z,1µm,1.1s
DLMT Dillon 94.14 39 eP P 19 16 36.9 0.0
comp=Z,1µm,1.3s
BALM Baldy 94.16 16 eP P 19 16 37.0 +0.4
BALM pmax pmax
comp=Z,999nm,1.6s
BALM Baldy 94.16 16 eP P 19 16 37.0 +0.4
comp=Z,999nm,1.6s
IMW Indian Meadow 94.18 41 eP P 19 16 37.5 +0.1
comp=Z,627nm,1.1s
MOOW Moose Ponds 94.20 41 eP P 19 16 32.9 -4.4
comp=Z,769nm,1.5s
936A North Padre Is 94.26 61 P P 19 16 38.4 +0.7
baz=239
TIY Taiyuan 94.28 311 eP P 19 16 38.4 +0.7
TIY SKS SKSac 19 27 13.2 +2.1
TIY S S 19 27 46.6 -1.1
TIY pmax pmax
comp=Z,1µm,2.0s
TIY LR LR
comp=Z,80µm,19.3s
TIY LR LR
comp=Z,82µm,19.1s
TIY LR LR
comp=Z,151µm,20.6s
835A Beeville 94.31 60 P P 19 16 38.4 +0.5
baz=239
BW06 Boulder Array 94.31 43 P P 19 16 37.1 -0.7
baz=233
BW06 Boulder Array 94.31 43 eP P 19 16 35.5 -2.4
BW06 LR LR
comp=Z,855µm,19.0s
PD31 Pinedale Array 94.31 43 eP P 19 16 37.1 -0.7
PDAR Pinedale Array 94.31 43 P P 19 16 36.9 -0.9
comp=Z,85nm,1.0s,baz=202,slow=3.5,SNR=47
PDAR PP PP 19 20 23.1 -2.4
comp=Z,23nm,1.1s,baz=289,slow=4.5,SNR=3.9
PDAR S SKSac 19 27 20.2 +8.8
comp=Z,2.9nm,0.9s,baz=48,slow=2.2,SNR=2.3
PDAR PKKPbc PKKPbc 19 33 37.7 -1.4
comp=Z,15nm,0.8s,baz=79,slow=3.6,SNR=11
PDAR PKKPab SS 19 34 07.8 -2.7
comp=Z,19nm,0.9s,baz=72,slow=4.9,SNR=4.8
PDAR PKPPKP **P'P'df** 19 41 46.2 -0.8
comp=Z,2.3nm,0.9s,baz=96,slow=3.0,SNR=5.3
PDAR LR LR 19 54 42.5
comp=Z,653µm,19.0s,baz=250,slow=33
T25A Trinidad 94.32 50 P P 19 16 37.7 -0.3
baz=236
T25A Trinidad 94.32 50 eP P 19 16 37.8 -0.3
comp=Z,478nm,1.3s
533A Kerrville 94.32 58 P P 19 16 37.1 -0.9
baz=238
MSO Missoula 94.33 38 P P 19 16 36.9 -0.7
baz=231
MSO Missoula 94.33 38 eP P 19 16 36.8 -0.9
comp=Z,758nm,1.5s
CAST Castle Rocks 94.39 11 eP P 19 16 35.9 -1.5
comp=Z,767nm,1.4s
FLWY Flagg Ranch 94.43 41 eP P 19 16 38.6 +0.3
comp=Z,1µm,1.0s
CM01 Chiang Mai Arr 94.45 288 eP P 19 16 39.4 +0.7
QLMT Earthquake Lak 94.46 40 eP P 19 16 39.2 +0.7
634A China Grove, S 94.47 59 P P 19 16 38.2 -0.5
baz=239
CM31 Chiang Mai Arr 94.48 289 eP P 19 16 40.5 +1.6
CMAR Chiang Mai Arr 94.48 289 P P 19 16 40.0 +1.1
comp=Z,64nm,1.0s,baz=140,slow=3.3,SNR=84
CMAR PP PP 19 20 35.4 +8.5
comp=Z,16nm,1.0s,baz=135,slow=6.0,SNR=2.8
CMAR PKKPbc **PKKPbc** 19 33 38.3 +1.0
comp=Z,8.5nm,0.9s,baz=290,slow=4.4,SNR=8.2
CMAR SKKPbc SKKPbc 19 38 13.7 +58
comp=Z,6.1nm,1.1s,baz=306,slow=4.5,SNR=4.5
CMAR PKPPKP **P'P'df** 19 41 47.5 -2.1
comp=Z,1.9nm,1.0s,baz=287,slow=3.0,SNR=4.9
YPP Pitchstone Pla 94.48 41 eP P 19 16 39.4 +0.7
comp=Z,669nm,1.3s
LRM Limekiln Ridge 94.50 39 eP P 19 16 38.5 -0.2
BSMT Bassoo Peak 94.53 36 eP P 19 16 37.8 -0.9
YHB Horse Butte 94.55 40 eP P 19 16 39.6 +0.7
comp=Z,1µm,1.9s
YFT Old Faithful 94.57 41 eP P 19 16 40.6 +1.6
comp=Z,559nm,1.1s
735A Kenedy 94.61 60 P P 19 16 39.3 0.0
baz=239
433A Art 94.63 57 P P 19 16 38.4 -0.9
baz=238
CMMT Chiang Mai 94.65 289 P P 19 16 40.6 +0.9
comp=Z,442nm,1.8s,comp=Z,26µm
CHTO Chiang Mai 94.65 289 P P 19 16 40.6 +0.9
comp=Z,2µm,1.3s,comp=Z,117µm
CHTO Chiang Mai 94.65 289 eP P 19 16 40.9 +1.2
CHTO pmax pmax
comp=Z,494nm,1.2s
CHTO MLR MLR
comp=Z,113µm,22.0s
CHTO Chiang Mai 94.65 289 eP P 19 16 40.9 +1.2
comp=Z,494nm,1.2s
CHTO LR LR
comp=Z,113µm,22.0s
XAN Xi'an 94.67 306 P P 19 16 40.0 +0.5
XAN pP pP 19 16 48.9 +1.1
XAN PP PP 19 20 26.9 -1.4
XAN SKS SKSac 19 27 12.2 -1.1
XAN S S 19 27 44.5 -6.7
XAN pmax pmax
comp=Z,160nm,1.5s
XAN pmax pmax
comp=Z,42µm,12.5s
XAN LR LR
comp=Z,88µm,20.5s
XAN LR LR
comp=Z,175µm,21.5s
XAN LR LR
comp=Z,269µm,21.5s
H17A Grant Village 94.69 41 P P 19 16 40.6 +1.0
baz=233,SNR=50
H17A Grant Village 94.69 41 eP P 19 16 41.4 +1.8
comp=Z,648nm,1.4s
SKAG Skagway 94.69 20 eP P 19 16 40.0 +1.2
comp=Z,593nm,1.2s
KMI Kunming 94.69 296 iP P 19 16 41.5 +1.5
KMI pP sP 19 16 51.2 -0.1
KMI sP pP 19 16 55.0 +6.7
KMI PP PP 19 20 34.6 +5.8
KMI S S 19 27 47.9 -4.2
KMI sS sS 19 28 08.9 +3.0
KMI SS SS 19 34 17.6 +1.0
KMI pmax pmax
comp=Z,210nm,2.0s
KMI pmax pmax
comp=Z,6µm,6.9s
KMI LR LR
comp=Z,61µm,20.1s
KMI LR LR
comp=Z,137µm,20.4s
KMI LR LR
comp=Z,193µm,20.7s
KTH Kantishna Hill 94.70 11 eP P 19 16 37.8 -1.1
comp=Z,766nm,1.3s
534A Blanco 94.71 58 P P 19 16 38.9 -0.9
baz=239,SNR=30
TRF Thorofare Moun 94.72 11 eP P 19 16 38.4 -0.8
comp=Z,741nm,1.0s
SWMT Swartz Lake 94.72 37 eP P 19 16 38.2 -1.3
JTMT Jette 94.73 37 eP P 19 16 39.1 -0.4
CHMT Chamberlain Mo 94.75 38 eP P 19 16 39.0 -0.7
YHH Holmes Hill 94.77 41 eP P 19 16 41.1 +1.1
comp=Z,1µm,1.3s
Q24A Divide 94.85 48 P P 19 16 40.5 -0.1
baz=236
Q24A Divide 94.85 48 eP P 19 16 40.3 -0.3
comp=Z,545nm,1.4s
BOZ Bozeman (W) 94.85 40 P P 19 16 40.3 +0.1
baz=232
BOZ Bozeman (W) 94.85 40 eP P 19 16 40.1 -0.1
BOZ pmax pmax
comp=Z,2µm,1.6s
BOZ MLR MLR
comp=Z,566µm,20.0s
BOZ Bozeman (W) 94.85 40 eP P 19 16 40.1 -0.1
comp=Z,2µm,1.6s
BOZ LR LR
comp=Z,566µm,20.0s
BLMT Blacktail Moun 94.85 36 eP P 19 16 40.0 -0.2
LKWY Lake 94.89 41 PFAKE 19 16 50.0 +9.5
LKWY LR LR
comp=Z,1449µm,19.0s
DHY Denali Highway 94.90 13 eP P 19 16 40.2 +0.2
comp=Z,210nm,1.0s
635A Leesville 94.91 59 P P 19 16 40.2 -0.5
baz=239,SNR=6.6
RND Reindeer 94.93 12 eP P 19 16 39.9 -0.1
RND pmax pmax
comp=Z,2µm,1.4s
RND Reindeer 94.93 12 eP P 19 16 39.9 -0.1
comp=Z,2µm,1.4s
YBMT Yellow Bay 94.94 37 eP P 19 16 40.1 -0.4
AMTX Amarillo 94.95 53 P P 19 16 40.2 -0.6
baz=237
AMTX Amarillo 94.95 53 eP P 19 16 39.5 -1.4
comp=Z,1µm,1.8s
333A Richland Sprin 95.01 57 P P 19 16 40.1 -0.9
baz=238
ISCO Idaho Springs 95.02 47 P P 19 16 41.0 -0.3
baz=236
ISCO Idaho Springs 95.02 47 eP P 19 16 41.0 -0.3
ISCO pmax pmax
comp=Z,97nm,1.0s
ISCO MLR MLR
comp=Z,428µm,19.0s
ISCO Idaho Springs 95.02 47 eP P 19 16 41.0 -0.3
comp=Z,97nm,1.0s
ISCO LR LR
comp=Z,428µm,19.0s
BPAW Bear Paw Mtn. 95.20 11 eP P 19 16 39.7 -1.4
comp=Z,605nm,1.8s
ABTX Abilene, Hawle 95.20 56 P P 19 16 41.3 -0.6
baz=238
ABTX Abilene, Hawle 95.20 56 eP P 19 16 41.5 -0.4
comp=Z,491nm,1.2s
HYT Haines Junctio 95.21 18 eP P 19 16 42.0 +0.6
comp=Z,732nm,2.0s
MCK McKinley 95.21 12 eP P 19 16 40.8 -0.4
MCK pmax pmax
comp=Z,1µm,1.4s
MCK McKinley 95.21 12 eP P 19 16 40.8 -0.4
comp=Z,1µm,1.4s
736A Circle Diamond 95.22 60 P P 19 16 42.5 +0.5
baz=239,SNR=8.1
434A Burnet 95.27 58 P P 19 16 41.0 -1.3
baz=239,SNR=16
SEY Seymchan 95.27 346 P P 19 16 41.0 -0.4
comp=Z,102nm,1.0s,baz=156,slow=4.0,SNR=53
SEY PP PP 19 20 31.4 -0.9
comp=Z,16nm,1.0s,baz=137,slow=9.8,SNR=2.4
SEY PKKPbc **PKKPdf** 19 33 37.5 -0.3
comp=Z,6.0nm,0.7s,baz=354,slow=5.2,SNR=6.0
SEY PKPPKP P'P'df 19 42 01.5 +19
comp=Z,5.6nm,1.0s,baz=306,slow=5.9,SNR=5.9
SEY LR LR 19 56 00.5
comp=Z,370µm,20.7s,baz=158,slow=33
535A Dale 95.39 59 P P 19 16 42.1 -0.7
baz=239
HRY Holter Researc 95.39 39 eP P 19 16 43.2 +0.7
N23A Red Feather La 95.42 46 P P 19 16 43.1 +0.1
baz=236
N23A Red Feather La 95.42 46 eP P 19 16 42.9 -0.2
comp=Z,303nm,1.1s
233A Rising Star 95.43 56 P P 19 16 42.4 -0.6
baz=239
636A Smothers Creek 95.50 59 P P 19 16 43.3 0.0
baz=239,SNR=8.6
BWN Browne 95.52 11 eP P 19 16 42.7 +0.1
comp=Z,2µm,1.3s
MENT Mentasta 95.53 14 eP P 19 16 42.9 +0.2
comp=Z,271nm,1.1s
DLBC Dease Lake 95.53 22 P P 19 16 43.1 +0.3
comp=Z,95nm,1.2s,baz=215,slow=4.7,SNR=27
DLBC S SKSac 19 27 27.9 +11
comp=Z,8.8nm,0.9s,baz=160,slow=8.1,SNR=3.1
DLBC PKKPbc **PKKPbc** 19 33 36.2 -0.1
comp=Z,6.1nm,0.7s,baz=313,slow=1.2,SNR=3.7
DLBC Dease Lake 95.53 22 eP P 19 16 43.4 +0.6
comp=Z,526nm,1.5s
DLBC S SKSac 19 27 27.9 +11
DLBC PKKPbc **PKKPbc** 19 33 36.2 -0.1
334A Lometa 95.56 57 P P 19 16 42.6 -0.9
baz=239
737A Port Lavaca 95.60 60 P P 19 16 44.5 +0.7
baz=239
133A Hamilton Ranch 95.72 56 P P 19 16 43.4 -0.9
baz=239,SNR=13
WALA Waterton Lakes 95.75 36 eP P 19 16 43.7 -0.5
comp=Z,548nm,1.4s
435B Jarrell 95.76 58 P P 19 16 43.7 -0.8
baz=239
536A Bastrop 95.79 59 P P 19 16 44.1 -0.5
baz=239
RLMT Red Lodge 95.87 41 P P 19 16 45.2 +0.3
baz=234
RLMT Red Lodge 95.87 41 eP P 19 16 45.1 +0.2
comp=Z,663nm,1.3s
RLMT LR LR
comp=Z,834µm,19.0s
PHWY Pilot Hill 95.96 46 eP P 19 16 45.3 -0.2
comp=Z,497nm,1.9s
234A Clairette 95.97 57 P P 19 16 44.7 -0.8
baz=239
637A Eagle Lake 96.02 60 P P 19 16 45.5 -0.1
baz=240
GCMT Greycliff 96.03 40 eP P 19 16 45.7 +0.2
WRH Wood River Hil 96.04 12 eP P 19 16 44.4 -0.5
comp=Z,923nm,1.1s
K22A Casper 96.06 44 P P 19 16 45.5 -0.2
baz=235
K22A Casper 96.06 44 eP P 19 16 45.4 -0.4
comp=Z,577nm,1.0s
DOT Dot Lake 96.08 14 eP P 19 16 45.0 -0.2
comp=Z,676nm,1.0s
MLY Manley 96.11 11 eP P 19 16 44.2 -1.1
comp=Z,158nm,1.0s
335A Moody 96.13 58 P P 19 16 45.0 -1.2
baz=239
Z33A Whitaker Ranch 96.18 55 P P 19 16 45.6 -0.8
baz=239
HDA Harding Lake 96.19 12 eP P 19 16 45.2 -0.4
comp=Z,329nm,0.8s
738A Farr-Stevens R 96.24 61 P P 19 16 47.5 +0.8
baz=240
CCB Clear Creek Bu 96.25 12 eP P 19 16 44.9 -0.9
comp=Z,430nm,1.2s
134A White-Moore Ra 96.31 56 P P 19 16 45.8 -1.2
baz=239,SNR=14
436A Wall Ranch, Ga 96.34 58 P P 19 16 46.6 -0.5
baz=240
537A Green Hill Far 96.35 59 P P 19 16 47.4 +0.2
baz=240
X32A Elmer 96.39 54 P P 19 16 46.1 -1.2
baz=239,SNR=12
COLA College 96.45 12 eP P 19 16 46.7 0.0
COLA pmax pmax
comp=Z,519nm,1.0s
COLA MLR MLR
comp=Z,352µm,20.0s
COLA College 96.45 12 eP P 19 16 46.7 0.0
comp=Z,519nm,1.0s
COLA LR LR
comp=Z,352µm,20.0s
MDM Murphy Dome 96.46 12 eP P 19 16 46.0 -0.9
comp=Z,816nm,1.3s
WHTX Lake Whitney, 96.47 57 P P 19 16 46.6 -1.1
baz=239
WHTX Lake Whitney, 96.47 57 eP P 19 16 48.7 +1.0
comp=Z,577nm,1.8s
PBA Port Blair 96.47 280 eP P 19 16 46.4 -1.7
KSCO Kaye Shedlock' 96.52 49 P P 19 16 47.8 -0.2
baz=237
KSCO Kaye Shedlock' 96.52 49 eP P 19 16 48.3 +0.4
comp=Z,377nm,1.0s
IL1 Eielson Array 96.53 12 eP P 19 16 45.3 -1.8
ILAR Eielson Array 96.53 12 P P 19 16 46.2 -0.9
comp=Z,165nm,1.1s,baz=218,slow=5.6,SNR=107
ILAR PP PP 19 20 38.8 -3.2
comp=Z,36nm,1.1s,baz=206,slow=6.0,SNR=4.5
ILAR PKiKP **PKiKP** 19 21 31.0 +6.7
comp=Z,8.6nm,0.8s,baz=270,slow=2.0,SNR=3.2
ILAR S **SKSac** 19 27 21.5 -0.2
comp=Z,2.9nm,1.0s,baz=223,slow=4.1,SNR=1.9

ILAR PKKPbc **PKKPbc** **19 33 32.1 -1.5**
comp=Z,9.3nm,1.0s,baz=325,slow=1.2,SNR=5.8
ILAR PKKP **PKKPdf** **19 33 36.9 +1.3**
comp=Z,13nm,0.9s,baz=318,slow=3.0,SNR=7.7
ILAR PKPPKP **P'P'df** **19 41 46.5 +6.3**
comp=Z,5.9nm,1.1s,baz=18,slow=2.5,SNR=6.6
ILAR LR LR 19 53 35.4
comp=Z,163µm,22.0s,baz=218,slow=31
ILAR Eielson Array 96.53 12 P **P** **19 16 46.3 -0.9**
ILAR 19 20 38.8
ILAR pmax pmax
comp=Z,316nm,1.3s
ILAR pmax pmax
comp=Z,36nm,1.1s
ILB Eielson Array 96.53 12 *e*P **P** **19 16 46.6 -0.6**
HHC Hu-ho-hao-te 96.58 313 *e*P **P** **19 16 49.6 +1.5**
HHC pP sP 19 17 01.6 +2.2
HHC sP pP 19 17 08.3 +12
HHC PP **PP** **19 20 44.8 +1.8**
HHC SKS **SKSac** **19 27 17.0 -6.2**
HHC S **SKSac** **19 27 55.7 +6.7**
HHC SS **SS** **19 34 41.9 -0.7**
HHC pmax pmax
comp=Z,55nm,1.0s
HHC pmax pmax
comp=Z,28µm,8.1s
HHC LR LR
comp=Z,81µm,21.8s
HHC LR LR
comp=Z,156µm,22.2s
HHC LR LR
comp=Z,240µm,21.6s
336A Riesel 96.61 58 P **P** **19 16 47.1 -1.2**
baz=240
Y33A Hilltop Ranch, 96.64 55 P **P** **19 16 47.6 -0.9**
baz=239,SNR=8.6
638A Rosharon 96.68 60 P **P** **19 16 49.4 +0.7**
baz=240
HIA Hailar 96.73 324 *e*P **P** **19 16 48.2 -0.3**
HIA pmax pmax
comp=Z,316nm,1.8s
HIA MLR MLR
comp=Z,368µm,20.0s
HIA Hailar 96.73 324 *e*P **P** **19 16 48.2 -0.3**
comp=Z,316nm,1.8s
HIA LR LR
comp=Z,368µm,20.0s
W32A Sentinel 96.78 54 P **P** **19 16 48.5 -0.6**
baz=239,SNR=23
135A Vickery Place, 96.79 57 P **P** **19 16 48.1 -1.1**
baz=239
CD2 Chengdu 96.80 302 ||P **P** **19 16 50.4 +1.1**
CD2 PP **PP** **19 20 45.8 +0.9**
CD2 SKS **SKSac** **19 27 26.1 +1.4**
CD2 S **ScS** **19 28 14.2 +4.0**
CD2 pmax pmax
comp=Z,710nm,0.8s
CD2 pmax pmax
comp=Z,46µm,7.2s
CD2 LR LR
comp=Z,126µm,23.3s
CD2 LR LR
comp=Z,180µm,24.3s
CD2 LR LR
comp=Z,200µm,21.9s
Z34A Collier Ranch, 96.83 56 P **P** **19 16 48.5 -0.8**
baz=239
437A Phantom Ranch, 96.86 59 P **P** **19 16 49.1 -0.4**
baz=240
WMOK Wichita Mounta 96.91 54 P **P** **19 16 48.3 -1.4**
baz=239
WMOK Wichita Mounta 96.91 54 *e*P **P** **19 16 48.1 -1.6**
WMOK pmax pmax
comp=Z,142nm,1.4s
WMOK MLR MLR
comp=Z,283µm,19.0s
WMOK Wichita Mounta 96.91 54 *e*P **P** **19 16 48.1 -1.6**
comp=Z,142nm,1.4s
WMOK LR LR
comp=Z,283µm,19.0s
OTAV Otavalo 96.93 94 *e*P **P** **19 16 53.1 +2.3**
comp=Z,517nm,1.8s
OTAV LR LR
comp=Z,325µm,20.0s
X33A Lawton 97.01 54 P **P** **19 16 48.8 -1.2**
baz=239,SNR=9.0
DGPR DIGLIPUR 97.03 281 *e*P Pdif 19 16 50.9 +0.2
538A Harpers Horsep 97.04 59 P Pdif 19 16 50.9 +0.5
baz=240
V32A Arapaho 97.22 53 P **P** **19 16 50.8 -0.2**
baz=239,SNR=13
Y34A Reagan Ranch, 97.24 55 P **P** **19 16 49.8 -1.4**
baz=239,SNR=7.8
337A Centerville 97.29 58 P **P** **19 16 51.1 -0.3**
baz=240
Z35A Perchaven, San 97.29 56 P **P** **19 16 50.1 -1.3**
baz=240
EGMT Eagleton 97.31 38 P **P** **19 16 51.0 -0.2**
baz=234
EGMT Eagleton 97.31 38 *e*P **P** **19 16 50.5 -0.7**
comp=Z,6µm,0.4s
EGMT LR LR
comp=Z,1144µm,20.0s
438A Sam Houston St 97.31 59 P **P** **19 16 51.5 0.0**
baz=240
W33A Caddo, Fort Co 97.34 54 P **P** **19 16 51.5 -0.1**
baz=239,SNR=7.7
136A Ennis 97.39 57 P **P** **19 16 51.1 -0.7**
baz=240
BTO Baotou 97.43 313 *e*P **P** **19 16 51.2 -0.8**
DAWY Dawson 97.48 15 *e*P Pdif 19 16 51.7 +0.1
comp=Z,197nm,1.1s
X34A Smith Ranch, M 97.51 55 P **P** **19 16 52.1 -0.3**
baz=239
539A Cross D Ranch, 97.56 60 P Pdif 19 16 52.8 +0.1
baz=240
U32A Winter Ranch, 97.59 53 P **P** **19 16 52.2 -0.5**
baz=239,SNR=8.1
237A Washetta, Mont 97.68 58 P **P** **19 16 52.9 -0.2**
baz=240
EGAK Eagle 97.69 14 *e*P **P** **19 16 52.3 -0.1**
comp=Z,713nm,1.9s
EGAK LR LR
comp=Z,434µm,19.0s
Y35A Marietta 97.73 56 P **P** **19 16 52.8 -0.5**
baz=240
338A Crockett 97.74 58 P **P** **19 16 53.0 -0.4**
baz=240
V33A Lossen Ranch, 97.81 53 P **P** **19 16 53.2 -0.5**
baz=239
CMBC Cumbal 97.82 93 *e*P Pdif 19 16 58.0 +3.1
Z36A Blue Ridge 97.85 56 P **P** **19 16 53.1 -0.8**
baz=240,SNR=6.6
439A Center Grove, 97.87 59 P **P** **19 16 53.8 -0.2**
baz=240
W34A Bridge Creek, 97.87 54 P **P** **19 16 53.3 -0.6**
baz=240,SNR=7.1
W34A Bridge Creek, 97.87 54 *e*P Pdif 19 16 54.8 +0.8
comp=Z,306nm,1.0s
BILL Bilibino 97.92 353 *d i*P Pdif 19 16 53.8 +0.4
BILL pmax pmax
comp=Z,292nm,1.3s
BILL MLR MLR
comp=Z,235µm,19.0s
BILL Bilibino 97.92 353 *e*P **P** **19 16 53.4 0.0**
comp=Z,258nm,1.2s
BILL LR LR
comp=Z,432µm,20.0s
OGNE Ogallala 97.94 47 P **P** **19 16 53.5 -0.7**
baz=238,SNR=10
OGNE Ogallala 97.94 47 *e*P Pdif 19 16 57.2 +2.9
comp=Z,276nm,1.4s
OGNE LR LR
comp=Z,583µm,19.0s
TEIG Tepich 97.96 71 *e*P Pdif 19 16 56.8 +2.1
comp=Z,3.2nm,1.1s
TEIG LR LR
comp=Z,4µm,20.0s
137A Heron Place, G 98.02 57 P **P** **19 16 54.0 -0.6**
baz=240
X35A Drake 98.02 55 P **P** **19 16 54.0 -0.7**
baz=240,SNR=9.6
T32A Huddler Ranch, 98.05 52 P **P** **19 16 54.1 -0.7**
baz=239
540A Vidor 98.18 60 P Pdif 19 16 55.8 +0.4
baz=241
238A Jacksonville 98.19 58 P **P** **19 16 55.2 -0.3**
baz=240
COLD Coldfoot 98.23 10 *e*P Pdif 19 16 55.2 +0.4
comp=Z,176nm,1.1s
U33A Lingo Farm, Me 98.23 53 Pdiff **P** **19 16 54.7 -0.9**
baz=240
Y36A Durant 98.27 56 Pdiff **P** **19 16 54.6 -1.2**
baz=240
339A Huntington 98.29 59 Pdiff **P** **19 16 55.7 -0.2**
baz=241
S32A Newby Ranch, P 98.31 51 Pdiff **P** **19 16 55.3 -0.6**
baz=239
CBKS Cedar Bluff 98.33 50 Pdiff **P** **19 16 55.4 -0.6**
baz=239
CBKS Cedar Bluff 98.33 50 *e*P Pdif 19 16 59.0 +3.0
CBKS pmax pmax
comp=Z,208nm,1.1s
CBKS MLR MLR
comp=Z,587µm,19.0s
CBKS Cedar Bluff 98.33 50 *e*P Pdif 19 16 59.0 +2.9
comp=Z,208nm,1.1s
CBKS LR LR
comp=Z,587µm,19.0s
V34A Guthrie 98.35 54 Pdiff **P** **19 16 55.5 -0.7**
baz=240
RSSD Black Hills 98.38 44 Pdiff **P** **19 16 56.2 -0.1**
baz=237
RSSD Black Hills 98.38 44 *e*P **P** **19 16 55.8 -0.5**
RSSD pmax pmax
comp=Z,894nm,1.1s
RSSD Black Hills 98.38 44 *e*P **P** **19 16 55.8 -0.5**
comp=Z,894nm,1.1s
Z37A Pogue Cattle C 98.41 57 Pdiff **P** **19 16 55.9 -0.5**
baz=240
NATX Nacogdoches 98.42 58 Pdiff **P** **19 16 56.1 -0.4**
baz=241
NATX Nacogdoches 98.42 58 PFAKE 19 17 10.0 +14
NATX LR LR
comp=Z,641µm,20.0s
440A Kirbyville 98.45 60 Pdiff Pdif 19 16 56.7 0.0
baz=241
W35A Tecumseh 98.47 55 Pdiff **P** **19 16 55.7 -0.9**
baz=240
T33A Patterson Ranc 98.47 52 Pdiff **P** **19 16 56.0 -0.6**
baz=240
LAO LASA Array 98.51 41 Pdiff Pdif 19 16 57.0 +0.4
baz=236
LAO LASA Array 98.51 41 *e*P Pdif 19 16 57.2 +0.5
comp=Z,1µm,1.6s
LAO LR LR
comp=Z,525µm,19.0s
GRGC Isla de Gorgon 98.52 91 *e*P **P** **19 16 56.3 -1.1**
138A Matatall Enter 98.54 57 Pdiff Pdif 19 16 57.1 +0.1
baz=240
X36A Centrahoma 98.55 55 Pdiff **P** **19 16 55.9 -1.2**
baz=240
EDM Edmonton 98.62 33 *e*P Pdif 19 16 58.6 +1.7
EDM pmax pmax
comp=Z,696nm,1.4s
EDM Edmonton 98.62 33 *e*P Pdif 19 16 58.6 +1.7
comp=Z,696nm,1.4s
U34A Anderson Ranch 98.64 53 Pdiff **P** **19 16 56.7 -0.7**
baz=240
U34A Anderson Ranch 98.64 53 *e*P Pdif 19 17 01.4 +4.0
comp=Z,113nm,1.1s
239A Gary 98.68 58 Pdiff **P** **19 16 56.8 -0.8**
baz=241
541A Lake Charles 98.70 61 Pdiff Pdif 19 16 58.4 +0.6
baz=241
Y37A Hugo 98.79 56 Pdiff **P** **19 16 57.1 -1.0**
baz=240
V35A Meyer Ranch, C 98.80 54 Pdiff **P** **19 16 57.4 -0.7**
baz=240
340A Bronson 98.83 59 Pdiff **P** **19 16 57.7 -0.6**
baz=241
R32A Long Quarter, 98.83 51 Pdiff **P** **19 16 56.9 -1.3**
baz=239
S33A Kaszmaul Farm, 98.89 52 Pdiff **P** **19 16 58.3 -0.2**
baz=240
Z38A Mt. Pleasant 98.90 57 Pdiff **P** **19 16 58.5 -0.1**
baz=241
H25A Fruitdale 98.92 44 Pdiff Pdif 19 16 58.8 +0.3
baz=237
W36A Watumka 98.92 55 Pdiff **P** **19 16 58.0 -0.7**
baz=240
441A DeRidder 99.03 60 Pdiff **Pdif** **19 16 59.2 0.0**
baz=241
139A Bunkhouse Ranc 99.06 58 Pdiff **Pdif** **19 16 58.3 -1.0**
baz=241
CLNS Chul'man 99.12 332 *e*P **Pdif** **19 16 56.4 -2.7**
CLNS *e**PP **sP** **19 17 13.3 +3.0**
CLNS *e* 19 21 02.4
CLNS *e*S **SKSac** **19 27 27.9 -7.4**
CLNS pmax pmax
comp=Z,51nm,1.2s
CLNS pmax pmax
comp=N,45nm,1.7s
CLNS pmax pmax
comp=E,37nm,1.5s
CLNS smax smax
comp=N,17µm,13.0s
CLNS MLR MLR
comp=Z,128µm,20.0s
CLNS MLR MLR
comp=E,207µm,17.0s
CLNS MLR MLR
comp=N,142µm,16.0s
U35A Pawnee 99.17 54 Pdiff **Pdif** **19 16 58.9 -0.9**
baz=240
T34A McClaskey Farm 99.17 53 Pdiff **Pdif** **19 16 59.1 -0.7**
baz=240
Q32A Meitler Ranch, 99.22 50 Pdiff **Pdif** **19 16 58.7 -1.3**
baz=240
240A Hunter Patters 99.22 59 Pdiff **Pdif** **19 16 59.9 -0.2**
baz=241
542A Morse 99.22 61 Pdiff **Pdif** **19 17 01.4 +1.3**
baz=241
R33A Olander Ranch, 99.26 51 Pdiff **Pdif** **19 16 60.0 -0.2**
baz=240
X37A Clayton 99.27 56 Pdiff **Pdif** **19 16 59.2 -1.0**
baz=241
O31A Woolen Ranch, 99.29 49 Pdiff **Pdif** **19 16 59.7 -0.6**
baz=239
LZH Lanzhou 99.29 306 ||P **Pdif** **19 17 01.8 +1.3**
LZH pP pP 19 17 10.3 +1.5
LZH sP sP 19 17 15.3 +3.5
LZH S **S** **19 28 28.0 -3.0**
LZH sS sS 19 28 47.3 +2.4
LZH pmax pmax
comp=N,380nm,1.2s
LZH pmax pmax
comp=N,14µm,9.2s
LZH LR LR
comp=N,92µm,20.1s
LZH LR LR
comp=N,135µm,20.3s
LZH LR LR
comp=N,155µm,20.5s
341A Kurthwood 99.33 59 Pdiff **Pdif** **19 17 00.3 -0.2**
baz=241
Y38A Idabel 99.41 56 Pdiff **Pdif** **19 16 59.2 -1.7**
baz=241
V36A Jenks 99.44 54 Pdiff **Pdif** **19 17 00.0 -0.9**
baz=240
CPUP Villa Florida 99.46 127 P **Pdif** **19 17 00.7 -0.7**
comp=N,24nm,1.0s,baz=258,slow=5.3,SNR=14
CPUP PP **PP** **19 21 06.7 +2.3**
comp=N,36nm,1.4s,baz=261,slow=13,SNR=2.8
CPUP PKKPbc **PKKPbc** **19 33 20.2 -3.4**
comp=N,5.8nm,0.8s,baz=16,slow=5.0,SNR=3.3
CPUP PKKP **PKKPdf** **19 33 25.4 -1.4**
comp=N,10nm,0.8s,baz=54,slow=1.6,SNR=6.3
CPUP PKPPKP **P'P'df** **19 41 38.7 -5.4**
comp=N,6.0nm,1.0s,baz=20,slow=3.8,SNR=6.1
CPUP LR LR 19 55 19.0
comp=N,124µm,20.0s,baz=249,slow=31
CPUP Villa Florida 99.46 127 *e*P **Pdif** **19 17 01.2 -0.2**
CPUP PP **PP** **19 21 06.7 +2.3**
CPUP PKKPbc **PKKPbc** **19 33 20.2 -3.4**
CPUP PKKP **PKKPdf** **19 33 25.4 -1.4**
CPUP P'P' 19 41 38.7
Z39A Irene McRaven, 99.48 57 Pdiff **Pdif** **19 17 00.2 -1.0**
baz=241
W37B Quinton 99.49 55 Pdiff **Pdif** **19 17 00.5 -0.7**
baz=241
P32A Huiting Farm, 99.50 50 Pdiff **Pdif** **19 17 00.6 -0.6**
baz=240
S34A Willow Spring 99.56 52 Pdiff **Pdif** **19 17 00.2 -1.3**
baz=240
442A Mamou 99.59 60 Pdiff **Pdif** **19 17 01.9 +0.2**
baz=241
T35A Sooner Cattle 99.59 53 Pdiff **Pdif** **19 17 01.0 -0.7**
baz=240
POPC Popayan, Colom 99.59 92 *e*P **Pdif** **19 17 02.5 0.0**
TUL1 Leonard 99.61 54 Pdiff **Pdif** **19 17 01.5 -0.3**
baz=241
TUL1 Leonard 99.61 54 *e*P **Pdif** **19 17 05.2 +3.4**
comp=N,309nm,1.8s
140A Cam and Jess, 99.65 58 Pdiff **Pdif** **19 17 01.3 -0.6**
baz=241
X38A Whitesboro 99.70 56 Pdiff **Pdif** **19 17 01.4 -0.8**
baz=241
Q33A Connelly Farm, 99.71 51 Pdiff **Pdif** **19 17 02.2 +0.1**
baz=240
543A St. Martinvill 99.73 61 Pdiff **Pdif** **19 17 03.4 +1.1**
baz=242
R34A Isabella, Hill 99.76 52 Pdiff **Pdif** **19 17 02.0 -0.4**
baz=240
241A Mo Tay, Goldon 99.84 59 Pdiff **Pdif** **19 17 03.1 +0.3**
baz=241
N31A Bailey Ranch, 99.87 49 Pdiff **Pdif** **19 17 02.1 -0.8**
baz=240
Y39A Lockesburg 99.88 57 Pdiff **Pdif** **19 17 02.6 -0.3**
baz=241
U36A Oologah 99.89 54 Pdiff **Pdif** **19 17 02.2 -0.7**
baz=241
342A Flagon Creek P 99.98 60 Pdiff **Pdif** **19 17 03.7 +0.2**
baz=242
P33A Williams Farm, 100.02 50 Pdiff **Pdif** **19 17 03.3 -0.1**
baz=240
O32A Brockman Farm, 100.04 49 Pdiff **Pdif** **19 17 02.8 -0.8**
baz=240
V37A Hulbert 100.06 55 Pdiff **Pdif** **19 17 02.8 -0.9**
baz=241
Z40A Long Farm, Mag 100.07 58 Pdiff **Pdif** **19 17 03.7 -0.1**
baz=241
S35A Otter Creek Ra 100.10 53 Pdiff **Pdif** **19 17 03.9 0.0**
baz=241
T36A Boggs Farm, Ca 100.11 53 Pdiff **Pdif** **19 17 03.7 -0.2**
baz=241
443A Delano Plantat 100.11 60 Pdiff **Pdif** **19 17 04.4 +0.4**
baz=242
W38A Poteau 100.11 56 Pdiff **Pdif** **19 17 03.7 -0.3**
baz=241
M31A Lambtecht Ranc 100.12 48 Pdiff **Pdif** **19 17 03.8 -0.1**
baz=240
141A Papa Simpson, 100.13 58 Pdiff **Pdif** **19 17 03.9 -0.2**
baz=242
X39A Fountain Ranch 100.14 56 Pdiff **Pdif** **19 17 02.9 -1.2**
baz=241
544A White Castle 100.28 61 Pdiff **Pdif** **19 17 05.8 +1.1**
baz=242
N32A Stulken Farm, 100.28 49 Pdiff **Pdif** **19 17 04.1 -0.5**
baz=240
Q34A Chapman 100.28 51 Pdiff **Pdif** **19 17 04.5 -0.1**
baz=240
U37A Salina 100.33 54 Pdiff **Pdif** **19 17 04.6 -0.2**
baz=241
K30A Basset 100.38 47 Pdiff **Pdif** **19 17 04.8 -0.3**
baz=240
645A Chauvin 100.41 62 Pdiff **Pdif** **19 17 07.1 +1.7**
baz=242
O33A Hebron 100.41 50 Pdiff **Pdif** **19 17 04.9 -0.3**
baz=240
242A Grayson 100.43 59 Pdiff **Pdif** **19 17 05.5 0.0**
baz=242
343A Vidalia 100.47 60 Pdiff **Pdif** **19 17 06.1 +0.4**
baz=242
R35A Emporia Munici 100.49 52 Pdiff **Pdif** **19 17 05.6 0.0**
baz=241
Z41A Richland Creek 100.51 58 Pdiff **Pdif** **19 17 05.2 -0.6**
baz=242
Y40A Okolona 100.51 57 Pdiff **Pdif** **19 17 05.0 -0.8**
baz=242
MIAR Mount Ida 100.55 56 Pdiff **Pdif** **19 17 05.1 -0.8**
baz=242
MIAR Mount Ida 100.55 56 *e*P **Pdif** **19 17 08.0 +2.1**
MIAR MLR MLR
comp=Z,579µm,20.0s
MIAR Mount Ida 100.55 56 *e*Pdif **Pdif** **19 17 08.0 +2.1**
MIAR LR LR
comp=Z,579µm,20.0s
V38A Canehill 100.57 55 Pdiff **Pdif** **19 17 05.0 -1.0**
baz=241
KSU1 Kansas State U 100.59 51 Pdiff **Pdif** **19 17 05.9 -0.1**
baz=241
KSU1 Kansas State U 100.59 51 *e*Pdif **Pdif** **19 17 09.6 +3.6**
KSU1 LR LR
comp=Z,385µm,19.0s
L31A Butterfield Fa 100.62 48 Pdiff **Pdif** **19 17 05.8 -0.3**
baz=240
S36A Lake Cedric, C 100.62 53 Pdiff **Pdif** **19 17 05.8 -0.4**
baz=241
DGMT Dagmar 100.63 40 Pdiff **Pdif** **19 17 06.7 +0.7**
baz=238
DGMT Dagmar 100.63 40 *e*Pdif **Pdif** **19 17 08.0 +2.1**
DGMT LR LR
comp=Z,477µm,20.0s
P34A Walnut Farm, R 100.66 51 Pdiff **Pdif** **19 17 06.2 -0.1**
baz=241
BGNE Belgrade 100.69 49 Pdiff **Pdif** **19 17 06.4 -0.1**
baz=240
BGNE Belgrade 100.69 49 *e*P **Pdif** **19 17 07.3 +0.9**
comp=Z,151nm,0.9s
W39A Magazine 100.70 56 Pdiff **Pdif** **19 17 05.8 -0.8**
baz=242
545A Edgard 100.76 62 Pdiff **Pdif** **19 17 08.2 +1.3**
baz=242
C25A Freed Ranch, W 100.76 41 Pdiff **Pdif** **19 17 07.2 +0.6**
baz=238
J30A Dallas 100.78 46 Pdiff **Pdif** **19 17 06.3 -0.4**
baz=240
T37A Cheneyville 18 100.81 54 Pdiff **Pdif** **19 17 06.3 -0.7**
baz=241
142A Monroe 100.81 59 Pdiff **Pdif** **19 17 07.8 +0.7**
baz=242
N33A J Bar K, Exete 100.82 49 Pdiff **Pdif** **19 17 06.9 -0.1**
baz=240
YAK Yakutsk 100.83 337 P **Pdif** **19 17 05.8 -0.6**
comp=Z,33nm,1.1s,baz=117,slow=4.6,SNR=18
YAK PP **PP** **19 21 13.9 -0.9**
comp=Z,34nm,0.8s,baz=143,slow=5.1,SNR=4.2
YAK S **SKSac** **19 27 44.6 +1.3**
comp=Z,7.1nm,0.3s,baz=75,slow=3.8,SNR=1.0
YAK PKPPKP **P'P'df** **19 41 29.6 -3.1**
comp=Z,2.4nm,0.4s,baz=274,slow=4.5,SNR=2.8
YAK Yakutsk 100.83 337 *d i*P **Pdif** **19 17 04.8 -1.6**
YAK *e* 19 21 10.8
YAK *e*S **SKSac** **19 27 44.5 +1.3**
YAK *e*PS **PS** **19 30 13.1 -3.1**
YAK *e* 19 30 16.5
YAK *e*SS **SS** **19 35 38.2 -2.8**
YAK pmax pmax
comp=N,27nm,1.4s
YAK pmax pmax
comp=E,31nm,2.0s
YAK pmax pmax
comp=Z,51nm,0.9s
YAK pmax pmax
comp=E,11µm,8.4s
YAK pmax pmax
comp=Z,24µm,8.0s
YAK pmax pmax
comp=N,11µm,7.7s
YAK smax smax
comp=N,23µm,14.4s
YAK smax smax
comp=E,18µm,17.6s
YAK MLR MLR
comp=Z,171µm,20.0s
YAK MLR MLR
comp=E,80µm,19.0s
YAK Yakutsk 100.83 337 *e*Pdif **Pdif** **19 17 07.4 +1.0**
YAK PP **PP** **19 21 13.9 -0.9**
YAK S **SKSac** **19 27 44.5 +1.3**
YAK P'P' 19 41 29.6
YAK LR LR
comp=Z,181µm,21.0s
243A Waterproof 100.85 60 Pdiff **Pdif** **19 17 08.2 +0.9**
baz=242
U38A Gravette 100.86 54 Pdiff **Pdif** **19 17 06.3 -1.0**
baz=241
Q35A Mercer Eighty, 100.86 52 Pdiff **Pdif** **19 17 06.8 -0.4**
baz=241
444A Pine Grove 100.87 61 Pdiff **Pdif** **19 17 07.4 -0.1**
baz=242

D26A	**Manning**	100.88	42	Pdiff	**Pdif**		19 17 07.5	+0.4	
	baz=238								
K31A	**O'Neill**	100.90	47	Pdiff	**Pdif**		19 17 06.8	-0.5	
	baz=240								
Y41A	**Eaglette Beard**	100.94	57	Pdiff	**Pdif**		19 17 07.1	-0.6	
	baz=242								
R36A	**Gordon, Harris**	100.97	52	Pdiff	**Pdif**		19 17 06.9	-0.9	
	baz=241								
O34A	**Beatrice**	101.06	50	Pdiff	**Pdif**		19 17 07.3	-0.8	
	baz=241								
X40A	**Basin Creek Fa**	101.06	57	Pdiff	**Pdif**		19 17 06.7	-1.5	
	baz=242								
646A	**Port Sulphur**	101.06	62	Pdiff	**Pdif**		19 17 09.1	+0.8	
	baz=242								
L32A	**Elgin**	101.08	48	Pdiff	**Pdif**		19 17 07.6	-0.5	
	baz=240								
HHAR	**Hobbs**	101.10	55	*e*Pdif	**Pdif**		19 17 11.3	+2.9	
V39A	**Pettigrew**	101.11	55	Pdiff	**Pdif**		19 17 07.9	-0.6	
	baz=242								
B25A	**Knox Farm, Ray**	101.11	41	Pdiff	**Pdif**		19 17 08.3	+0.2	
	baz=238								
I30A	**Oacoma**	101.11	46	Pdiff	**Pdif**		19 17 07.6	-0.6	
	baz=240								
Z42A	**Norrel Spur, H**	101.15	58	Pdiff	**Pdif**		19 17 07.8	-0.8	
	baz=242								
S37A	**Fort Scott**	101.17	53	Pdiff	**Pdif**		19 17 08.4	-0.2	
	baz=241								
445A	**Amite**	101.19	61	Pdiff	**Pdif**		19 17 08.6	-0.3	
	baz=242								
P35A	**Duane Minner,**	101.20	51	Pdiff	**Pdif**		19 17 09.0	+0.3	
	baz=241								
T38A	**Diamond**	101.21	54	Pdiff	**Pdif**		19 17 08.3	-0.5	
	baz=242								
W40A	**Ferguson Farm,**	101.22	56	Pdiff	**Pdif**		19 17 07.7	-1.2	
	baz=242								
344A	**Westbrook Farm**	101.22	60	Pdiff	**Pdif**		19 17 08.9	0.0	
	baz=242								
J31A	**Geddes**	101.24	47	Pdiff	**Pdif**		19 17 08.4	-0.4	
	baz=240								
143A	**Socs Landing,**	101.29	59	Pdiff	**Pdif**		19 17 08.8	-0.4	
	baz=242								
X41A	**Kaden, Bauxite**	101.30	57	Pdiff	**Pdif**		19 17 08.0	-1.2	
	baz=242								
Q36A	**Arnold C. Orve**	101.31	52	Pdiff	**Pdif**		19 17 08.4	-0.8	
	baz=241								
M33A	**Taylor Creek F**	101.40	49	Pdiff	**Pdif**		19 17 09.3	-0.3	
	baz=241								
K32A	**Verdigre**	101.42	47	Pdiff	**Pdif**		19 17 08.9	-0.7	
	baz=240								
R37A	**Teagarden Farm**	101.44	53	Pdiff	**Pdif**		19 17 09.4	-0.4	
	baz=242								
546A	**Slidell**	101.44	62	Pdiff	**Pdif**		19 17 09.7	-0.3	
	baz=242								
G29A	**Hoven**	101.45	45	Pdiff	**Pdif**		19 17 08.9	-0.8	
	baz=240								
U39A	**Green Forest**	101.48	55	Pdiff	**Pdif**		19 17 08.8	-1.2	
	baz=242								
A25A	**Svangstu Ranch**	101.49	40	Pdiff	**Pdif**		19 17 09.6	-0.2	
	baz=238								
N34A	**Lincoln**	101.50	50	Pdiff	**Pdif**		19 17 09.0	-1.0	
	baz=241								
244A	**Avery, Jackson**	101.53	60	Pdiff	**Pdif**		19 17 09.4	-0.9	
	baz=242								
Y42A	**Garnett, Star**	101.53	58	Pdiff	**Pdif**		19 17 09.5	-0.8	
	baz=242								
CIT	**Chita**	101.54	324	*e*P	**Pdif**		19 17 11.2	+1.3	
CIT				*e*			19 21 24.2		
O35A	**Humboldt**	101.62	50	Pdiff	**Pdif**		19 17 10.0	-0.6	
	baz=241								
L33A	**Hoskins**	101.63	48	Pdiff	**Pdif**		19 17 10.1	-0.5	
	baz=241								
Z43A	**Armstrong Fami**	101.64	59	Pdiff	**Pdif**		19 17 09.7	-1.1	
	baz=242								
SUSD	**Miller**	101.67	46	Pdiff	**Pdif**		19 17 10.3	-0.4	
	baz=240								
V40A	**Witts Springs**	101.68	56	Pdiff	**Pdif**		19 17 10.4	-0.6	
	baz=242								
345A	**Thompson Farm,**	101.69	61	Pdiff	**Pdif**		19 17 11.5	+0.4	
	baz=243								
B26A	**Jensen Ranch,**	101.69	41	Pdiff	**Pdif**		19 17 10.7	0.0	
	baz=239								
PRAC	**Prado**	101.72	92	*e*P	**Pdif**		19 17 08.6	-3.2	
PRAC	**Prado**	101.72	92	*e*PP	**PP**		19 21 27.9	+5.4	
I31A	**Royce, Wessing**	101.73	46	Pdiff	**Pdif**		19 17 10.8	-0.2	
	baz=240								
S38A	**Stockton**	101.76	53	Pdiff	**Pdif**		19 17 10.1	-1.1	
	baz=242								
M34A	**Aspy Farms, Fr**	101.77	49	Pdiff	**Pdif**		19 17 10.7	-0.5	
	baz=241								
P36A	**Good Intent, A**	101.79	51	Pdiff	**Pdif**		19 17 10.3	-1.0	
	baz=242								
W41B	**Gary Mavity, V**	101.81	56	Pdiff	**Pdif**		19 17 10.9	-0.5	
	baz=242								
F29A	**Eureka**	101.82	44	Pdiff	**Pdif**		19 17 11.2	-0.1	
	baz=240								
WHAR	**Wooly Hollow**	101.83	56	*e*Pdif	**Pdif**		19 17 14.9	+3.3	
J32A	**Parkston**	101.85	47	Pdiff	**Pdif**		19 17 10.4	-1.1	
	baz=241								
T39A	**Clever**	101.85	54	Pdiff	**Pdif**		19 17 10.7	-0.9	
	baz=242								
U40A	**Yellville**	101.91	55	Pdiff	**Pdif**		19 17 11.0	-1.0	
	baz=242								
Q37A	**Longview Farm,**	101.96	52	Pdiff	**Pdif**		19 17 11.2	-0.9	
	baz=242								
446A	**Poplarville**	101.97	61	Pdiff	**Pdif**		19 17 12.7	+0.4	
	baz=243								
H31A	**Wolsey**	101.99	46	Pdiff	**Pdif**		19 17 11.0	-1.1	
	baz=241								
144A	**Alexander Plac**	101.99	59	Pdiff	**Pdif**		19 17 12.4	0.0	
	baz=243								
R38A	**Fenwick Farm,**	102.02	53	Pdiff	**Pdif**		19 17 11.5	-0.9	
	baz=242								
K33A	**Hardington**	102.02	48	Pdiff	**Pdif**		19 17 11.4	-0.9	
	baz=241								
A26A	**Wade Farm, Ken**	102.07	40	Pdiff	**Pdif**		19 17 12.1	-0.2	
	baz=239								
N35A	**Tabor**	102.08	50	Pdiff	**Pdif**		19 17 12.3	-0.3	
	baz=242								
245A	**Little AP, Sta**	102.12	60	Pdiff	**Pdif**		19 17 12.7	-0.2	
	baz=243								
L34A	**Svendsen Farm,**	102.12	49	Pdiff	**Pdif**		19 17 11.3	-1.4	
	baz=241								
V41A	**Mountainview**	102.15	56	Pdiff	**Pdif**		19 17 12.0	-1.0	
	baz=242								
346A	**Big Creek Wild**	102.16	61	Pdiff	**Pdif**		19 17 12.9	-0.3	
	baz=243								
S39A	**Bolivar**	102.20	54	Pdiff	**Pdif**		19 17 11.8	-1.4	
	baz=242								
O36A	**Bolckow**	102.20	51	Pdiff	**Pdif**		19 17 12.3	-0.8	
	baz=242								
Y43A	**Makayla and Ka**	102.20	58	Pdiff	**Pdif**		19 17 13.1	-0.2	
	baz=243								
Z44A	**Pea Ridge, Bel**	102.28	59	Pdiff	**Pdif**		19 17 12.3	-1.3	
	baz=243								
F30A	**Leola**	102.31	44	Pdiff	**Pdif**		19 17 12.9	-0.6	
	baz=240								
SJAC	**San Juan de Ar**	102.33	93	*e*P	**Pdif**		19 17 11.3	-3.2	
INK	**Inuvik**	102.33	15	P	**Pdif**		19 17 12.4	-0.5	
	comp=Z,99nm,1.3s,baz=219,slow=5.8,SNR=18								
INK				PP	**PP**		19 21 25.8	-0.3	
	comp=Z,14nm,1.0s,baz=212,slow=10,SNR=2.5								
INK				S	**SKSac**		19 27 51.6	+1.4	
	comp=Z,6.8nm,1.0s,baz=103,slow=10,SNR=4.9								
INK				PKKPbc	**PKKPbc**		19 33 12.3	-4.7	
	comp=Z,12nm,1.0s,baz=0.4,slow=3.2,SNR=4.5								
INK				PKPPKP	**P'P'df**		19 41 24.0	-5.5	
	comp=Z,7.5nm,1.1s,baz=45,slow=1.4,SNR=5.8								
INK	**Inuvik**	102.33	15	*e*Pdif	**Pdif**		19 17 13.3	+0.3	
INK				PP	**PP**		19 21 25.8	-0.3	
INK				S	**SKSac**		19 27 51.6	+1.4	
INK				PKKPbc	**PKKPbc**		19 33 12.3	-4.7	
INK				P'P'			19 41 24.0		
M35A	**Neola**	102.33	49	Pdiff	**Pdif**		19 17 12.7	-1.0	
	baz=242								
HELC	**Santa Helena**	102.35	90	*e*P	**Pdif**		19 17 14.4	-0.5	
145A	**Houston Renfro**	102.35	60	Pdiff	**Pdif**		19 17 13.8	-0.2	
	baz=243								
P37A	**Lathrop**	102.36	52	Pdiff	**Pdif**		19 17 12.1	-1.7	
	baz=242								
J33A	**Davis**	102.38	47	Pdiff	**Pdif**		19 17 12.3	-1.6	
	baz=241								
I32A	**Karley and Nic**	102.41	46	Pdiff	**Pdif**		19 17 12.6	-1.3	
	baz=241								
X43A	**Marvell**	102.51	57	Pdiff	**Pdif**		19 17 13.1	-1.5	
	baz=243								
447A	**Lucedale**	102.51	62	Pdiff	**Pdif**		19 17 14.6	-0.1	
	baz=243								
T40A	**Mansfield**	102.52	54	Pdiff	**Pdif**		19 17 13.4	-1.2	
	baz=242								
G31A	**Conde**	102.52	45	Pdiff	**Pdif**		19 17 13.6	-0.8	
	baz=241								
N36A	**Muff Farm, Cla**	102.52	50	Pdiff	**Pdif**		19 17 14.4	-0.1	
	baz=242								
A27A	**Ledoux Ranch,**	102.55	41	Pdiff	**Pdif**		19 17 14.6	+0.1	
	baz=240								
Q38A	**Cooks Store, C**	102.58	52	Pdiff	**Pdif**		19 17 13.7	-1.1	
	baz=242								
U41A	**Viola**	102.58	55	Pdiff	**Pdif**		19 17 14.1	-0.8	
	baz=243								
NORC	**Norcasia**	102.62	91	*e*P	**Pdif**		19 17 15.4	-0.4	
K34A	**Le Mars**	102.65	48	Pdiff	**Pdif**		19 17 14.1	-0.9	
	baz=242								
H32A	**Carlson Farm,**	102.65	46	Pdiff	**Pdif**		19 17 14.4	-0.7	
	baz=241								
R39A	**Chumby, Stover**	102.68	53	Pdiff	**Pdif**		19 17 14.7	-0.7	
	baz=242								
246A	**Jackson Lee, B**	102.69	60	Pdiff	**Pdif**		19 17 15.0	-0.5	
	baz=243								
V42A	**Cord**	102.72	56	Pdiff	**Pdif**		19 17 15.0	-0.5	
	baz=243								
S40A	**Lebanon**	102.73	54	Pdiff	**Pdif**		19 17 14.4	-1.2	
	baz=243								
L35A	**Bielow Farm, R**	102.74	49	Pdiff	**Pdif**		19 17 15.6	+0.2	
	baz=242								
Y44A	**Strider Q, Charl**	102.75	58	Pdiff	**Pdif**		19 17 15.1	-0.6	
	baz=243								
ROSC	**El Rosal**	102.76	92	P	**Pdif**		19 17 17.0	+0.3	
	comp=Z,5.8nm,0.4s,baz=278,slow=5.5,SNR=8.8								
ROSC				PP	**PKiKP**		19 21 34.7	-2.8	
	comp=Z,5.2nm,0.4s,baz=261,slow=9.5,SNR=2.8								
ROSC				PKKPab	PKKPdf		19 33 35.4	+13	
	comp=Z,19nm,0.7s,baz=52,slow=4.9,SNR=4.2								
ROSC	**El Rosal**	102.76	92	*e*P	**Pdif**		19 17 17.4	+0.6	
O37A	**Wolven Farm, M**	102.77	51	Pdiff	**Pdif**		19 17 14.6	-1.0	
	baz=242								
F31A	**Hecla**	102.80	45	Pdiff	**Pdif**		19 17 14.6	-1.0	
	baz=241								
B28A	**Dugan Ranch, T**	102.81	41	Pdiff	**Pdif**		19 17 15.2	-0.5	
	baz=240								
ECSD	**EROS Data Cent**	102.81	47	Pdiff	**Pdif**		19 17 15.1	-0.7	
	baz=242								
ECSD	**EROS Data Cent**	102.81	47	*e*Pdif	**Pdif**		19 17 16.0	+0.3	
ECSD				LR	LR				
	comp=Z,542µm,19.0s								
I33A	**Coleman**	102.84	47	Pdiff	**Pdif**		19 17 14.8	-1.1	
	baz=242								
347A	**Saraland**	102.87	61	Pdiff	**Pdif**		19 17 15.8	-0.5	
	baz=243								
Z45A	**Winona**	102.88	59	Pdiff	**Pdif**		19 17 15.4	-0.9	
	baz=243								
M36A	**Felix, Anita**	102.92	50	Pdiff	**Pdif**		19 17 15.5	-0.8	
	baz=242								
P38A	**Dawn**	102.94	52	Pdiff	**Pdif**		19 17 15.4	-1.1	
	baz=242								
SIV	**San Ignacio**	102.95	117	PKKPbc	PKKPbc		19 33 12.9	-0.5	
	comp=Z,5.6nm,0.9s,baz=41,slow=2.9,SNR=6.9								
SIV				PKKP	**PKKPdf**		19 33 22.1	+1.3	
	comp=Z,18nm,1.0s,baz=71,slow=5.1,SNR=7.3								
SIV				SKKPbc	SKKPbc		19 37 23.7	+32	
	comp=Z,3.7nm,1.1s,baz=250,slow=0.8,SNR=2.7								
SIV				PKPPKP	P'P'df		19 41 23.4	-14	
	comp=Z,1.9nm,0.9s,baz=61,slow=6.1,SNR=3.5								
MDND	**Maddock**	102.95	42	Pdiff	**Pdif**		19 17 16.0	-0.3	
	baz=240								
VILC	**Villavicencio,**	102.95	93	*e*P	**Pdif**		19 17 16.7	-0.6	
G32A	**Webster**	102.97	45	Pdiff	**Pdif**		19 17 15.8	-0.6	
	baz=241								
N37A	**Lee Faris, Mou**	103.00	51	Pdiff	**Pdif**		19 17 15.6	-1.0	
	baz=242								
T41A	**Mountain View**	103.01	55	Pdiff	**Pdif**		19 17 15.6	-1.2	
	baz=243								
J34A	**George**	103.02	48	Pdiff	**Pdif**		19 17 16.0	-0.7	
	baz=242								
146A	**Union**	103.03	60	Pdiff	**Pdif**		19 17 17.0	0.0	
	baz=243								
X44A	**Crenshaw**	103.04	58	Pdiff	**Pdif**		19 17 16.2	-0.8	
	baz=243								
Q39A	**Willow Grove F**	103.06	53	Pdiff	**Pdif**		19 17 15.9	-1.1	
	baz=243								
U42A	**Revenden**	103.07	56	Pdiff	**Pdif**		19 17 16.6	-0.5	
	baz=243								
A28A	**Rude Farm, Bot**	103.09	41	Pdiff	**Pdif**		19 17 16.6	-0.3	
	baz=240								
247A	**Quitman**	103.11	61	Pdiff	**Pdif**		19 17 17.3	0.0	
	baz=243								
CHIC	**Chingaza**	103.17	92	*e*P	**Pdif**		19 17 15.4	-3.2	
H33A	**Prehn Over Nor**	103.17	46	Pdiff	**Pdif**		19 17 16.3	-1.1	
	baz=242								
448A	**Bay Minette**	103.18	62	Pdiff	**Pdif**		19 17 17.2	-0.5	
	baz=243								
O38A	**Galt**	103.21	51	Pdiff	**Pdif**		19 17 16.6	-1.0	
	baz=243								
Y45A	**Yeager Farm, C**	103.21	59	Pdiff	**Pdif**		19 17 17.1	-0.6	
	baz=243								
R40A	**Maddies Statio**	103.21	53	Pdiff	**Pdif**		19 17 16.5	-1.1	
	baz=243								
K35A	**Storm Lake**	103.22	48	Pdiff	**Pdif**		19 17 17.1	-0.5	
	baz=242								
S41A	**Jillco Farms,**	103.26	54	Pdiff	**Pdif**		19 17 16.8	-1.2	
	baz=243								
L36A	**Harm Buss Farm**	103.31	49	Pdiff	**Pdif**		19 17 17.5	-0.5	
	baz=242								
E31A	**Nome**	103.35	44	Pdiff	**Pdif**		19 17 17.5	-0.6	
	baz=241								
SONM	**Songino Array**	103.36	317	Pdiff	**Pdif**		19 17 18.8	+0.6	
	comp=Z,9.4nm,1.1s,baz=141,slow=5.0,SNR=18								
SONM				PP	**PP**		19 21 32.0	-2.4	
	comp=Z,12nm,0.9s,baz=136,slow=6.2,SNR=3.4								
SONM				S	**SKSac**		19 27 59.4	+3.1	
	comp=Z,4.3nm,1.1s,baz=314,slow=1.9,SNR=1.7								
SONM				PKKPbc	**PKKPbc**		19 33 14.2	+0.7	
	comp=Z,8.6nm,0.8s,baz=281,slow=2.9,SNR=5.4								
SONM				PKKP	**PKKPdf**		19 33 23.6	+1.2	
	comp=Z,18nm,0.9s,baz=272,slow=3.3,SNR=8.3								
SONM				SKKPbc	SKKPbc		19 37 31.2	+35	
	comp=Z,5.8nm,1.1s,baz=304,slow=4.5,SNR=4.0								
SONM				PKPPKP	P'P'df		19 41 21.0	-8.9	
	comp=Z,7.6nm,1.2s,baz=284,slow=6.0,SNR=6.3								
SONA1	**Songino Array**	103.36	318	*e*Pdif	**Pdif**		19 17 18.1	-0.2	
Z46A	**Louisville**	103.36	59	Pdiff	**Pdif**		19 17 17.8	-0.7	
	baz=243								
348A	**Jackson**	103.36	61	Pdiff	**Pdif**		19 17 18.4	-0.1	
	baz=244								
M37A	**Trindle Farm,**	103.40	50	Pdiff	**Pdif**		19 17 18.1	-0.3	
	baz=243								
B29A	**Wagenman Farm,**	103.40	42	Pdiff	**Pdif**		19 17 17.8	-0.5	
	baz=241								
P39B	**Salisbury**	103.41	52	Pdiff	**Pdif**		19 17 17.7	-0.8	
	baz=243								
I34A	**Hadley**	103.43	47	Pdiff	**Pdif**		19 17 17.4	-1.1	
	baz=242								
MOTC	**Monteria, Cord**	103.45	87	*e*P	**Pdif**		19 17 17.9	-1.4	
F32A	**Veblen**	103.49	45	Pdiff	**Pdif**		19 17 18.2	-0.6	
	baz=242								
J35A	**Milford**	103.54	48	Pdiff	**Pdif**		19 17 18.1	-0.9	
	baz=242								
C30A	**Mose, Pekin**	103.55	43	Pdiff	**Pdif**		19 17 18.4	-0.5	
	baz=241								
X45A	**UM Field Stati**	103.56	58	Pdiff	**Pdif**		19 17 18.3	-1.1	
	baz=244								
W44A	**Shelby Farms P**	103.57	57	Pdiff	**Pdif**		19 17 18.5	-0.8	
	baz=244								
SHL	**Shillong**	103.57	292	*i* P	**Pdif**		19 17 20.0	+0.2	
SHL				IAmb	IAmb		19 17 29.6		
SHL				*ex*	x		19 28 09.0		
G33A	**Ortonville**	103.60	46	Pdiff	**Pdif**		19 17 18.2	-1.1	
	baz=242								
147A	**Livingston**	103.64	60	Pdiff	**Pdif**		19 17 19.0	-0.7	
	baz=244								
Q40A	**Laux Farm, Aux**	103.66	53	Pdiff	**Pdif**		19 17 19.4	-0.2	
	baz=243								
N38A	**Joes South For**	103.67	51	Pdiff	**Pdif**		19 17 19.1	-0.6	
	baz=243								
D31A	**Mcclaflin, Tow**	103.69	44	Pdiff	**Pdif**		19 17 19.0	-0.5	
	baz=242								
A29A	**Manning Farm,**	103.69	41	Pdiff	**Pdif**		19 17 19.3	-0.3	
	baz=241								
K36A	**Gilmore City**	103.70	49	Pdiff	**Pdif**		19 17 19.7	-0.1	
	baz=243								
Y46A	**Houston**	103.73	59	Pdiff	**Pdif**		19 17 19.8	-0.2	
	baz=244								
H34A	**Spellman Lake,**	103.78	46	Pdiff	**Pdif**		19 17 20.0	0.0	
	baz=242								
248A	**Dixon Mills**	103.79	61	Pdiff	**Pdif**		19 17 20.8	+0.4	
	baz=244								
V44A	**Blytheville**	103.81	57	Pdiff	**Pdif**		19 17 18.7	-1.7	
	baz=244								
YKA	**Yellowknife Ar**	103.81	25	Pdiff	**Pdif**		19 17 18.8	-0.9	
	comp=Z,12nm,1.1s,baz=233,slow=4.1,SNR=38								
YKA				PKiKP	**PKiKP**		19 21 37.4	0.0	
	comp=Z,12nm,1.0s,baz=226,slow=1.7,SNR=16								
YKA				PKKPbc	**PKKPbc**		19 33 11.5	-1.0	
	comp=Z,23nm,0.9s,baz=33,slow=2.9,SNR=12								
YKA				PKPPKP	**P'P'df**		19 41 34.7	+7.4	
	comp=Z,4.9nm,1.1s,baz=46,slow=1.7,SNR=8.6								
E32A	**Braaten, Kindr**	103.87	44	Pdiff	**Pdif**		19 17 19.8	-0.6	
	baz=242								
O39A	**Kirksville**	103.90	52	Pdiff	**Pdif**		19 17 20.3	-0.4	
	baz=243								
I35A	**Creekview Farm**	103.91	47	Pdiff	**Pdif**		19 17 19.5	-1.1	
	baz=243								
BRAL	**Brewton**	103.91	62	PFAKE			19 17 30.0	+9.1	
BRAL				LR	LR				
	comp=Z,195µm,20.0s								
P40A	**Paris**	103.92	52	Pdiff	**Pdif**		19 17 19.5	-1.3	
	baz=243								
L37A	**Phoenix Point,**	103.93	49	Pdiff	**Pdif**		19 17 20.0	-0.8	
	baz=243								
M38A	**Pleasantville**	103.98	50	Pdiff	**Pdif**		19 17 20.4	-0.6	
	baz=243								
B30A	**Myrvik Farm, E**	103.99	42	Pdiff	**Pdif**		19 17 20.4	-0.5	
	baz=242								
F33A	**5 Mile Ranch,**	103.99	45	Pdiff	**Pdif**		19 17 20.4	-0.6	
	baz=242								
Z47A	**Carrollton**	104.02	60	Pdiff	**Pdif**		19 17 21.1	-0.2	
	baz=244								
C31A	**Landman Farms,**	104.03	43	Pdiff	**Pdif**		19 17 20.3	-0.7	
	baz=242								
W45A	**Hickory Valley**	104.04	58	Pdiff	**Pdif**		19 17 20.8	-0.6	
	baz=244								
J36A	**Seneca 1, Swea**	104.09	48	Pdiff	**Pdif**		19 17 20.5	-0.9	
	baz=243								
G34A	**Benson**	104.13	46	Pdiff	**Pdif**		19 17 20.7	-0.8	
	baz=242								
D32A	**Dogwood Acres,**	104.15	44	Pdiff	**Pdif**		19 17 22.0	+0.4	
	baz=242								
SCIA	**State Center**	104.19	50	*e*PKiKP	**PKiKP**		19 21 42.2	+3.5	
SCIA				LR	LR				
	comp=Z,420µm,19.0s								
N39A	**Derby Farms, D**	104.21	51	Pdiff	**Pdif**		19 17 20.8	-1.3	
	baz=243								
A30A	**Hoffart Farm,**	104.24	42	Pdiff	**Pdif**		19 17 21.7	-0.3	
	baz=242								
K37A	**Belmond**	104.29	49	Pdiff	**Pdif**		19 17 22.1	-0.3	
	baz=243								
O40A	**La Belle**	104.30	52	Pdiff	**Pdif**		19 17 21.6	-0.8	
	baz=244								
RUSC	**La Rusia**	104.34	91	*e*P	**Pdif**		19 17 22.4	-1.5	
BRRC	**Barranca, Sant**	104.37	90	*e*P	**Pdif**		19 17 22.0	-1.4	
B31A	**Greenbush Farm**	104.38	42	Pdiff	**Pdif**		19 17 22.1	-0.5	
	baz=242								
SJCC	**San Jacinto, C**	104.39	87	*e*P	**Pdif**		19 17 23.2	-0.3	
H35A	**Sunnyside Ranc**	104.39	47	Pdiff	**Pdif**		19 17 22.1	-0.7	
	baz=243								
S43A	**Fulton Ridge,**	104.45	55	Pdiff	**Pdif**		19 17 22.4	-0.7	
	baz=244								
BOD	**Bodaibo**	104.45	329	*e*P	**Pdif**		19 17 19.4	-3.3	
BOD				pmax	pmax				
	comp=Z,36nm,1.8s								
V45A	**Humboldt**	104.46	57	Pdiff	**Pdif**		19 17 22.5	-0.8	
	baz=244								
L38A	**Oak Wood Farm,**	104.46	50	Pdiff	**Pdif**		19 17 22.6	-0.5	
	baz=243								
E33A	**Westby DABS, E**	104.48	45	Pdiff	**Pdif**		19 17 22.1	-1.0	
	baz=243								
Z48A	**Northport**	104.48	60	Pdiff	**Pdif**		19 17 22.7	-0.7	
	baz=244								
Y47A	**UCPARC, Winfie**	104.49	59	Pdiff	**Pdif**		19 17 22.8	-0.7	
	baz=244								
J37A	**Redenius Farm,**	104.59	48	Pdiff	**Pdif**		19 17 23.4	-0.3	
	baz=243								
DGAR	**Diego Garcia**	104.60	253	PFAKE			19 17 30.0	+5.5	
DGAR				LR	LR				
	comp=Z,160µm,20.0s								
I36A	**Fitzsimmons Fa**	104.61	48	Pdiff	**Pdif**		19

I38A Scanlan Farm, 105.71 48 Pdiff **Pdif** 19 17 27.7 -1.0
baz=244
F36A Milaca 105.73 46 Pdiff **Pdif** 19 17 28.9 +0.2
baz=244
Q44A Meyer Farm, Va 105.77 54 Pdiff **Pdif** 19 17 27.7 -1.3
baz=245
J39A Decorah 105.81 49 Pdiff **Pdif** 19 17 27.2 -2.0
baz=244
SPMN Marine on St. 105.91 47 Pdiff **Pdif** 19 17 28.8 -0.8
baz=244
SPMN Marine on St. 105.91 47 *e*Pdif **Pdif** 19 17 37.1 +7.6
K40A Colesburg 105.92 50 Pdiff **Pdif** 19 17 29.4 -0.1
baz=245
LSA Lhasa 105.93 295 *e*P **Pdif** 19 17 32.3 +1.7
LSA pmax pmax
comp=Z,74nm,1.0s
LSA MLR MLR
comp=Z,83µm,22.0s
LSA Lhasa 105.93 295 *e*P **Pdif** 19 17 32.3 +1.7
comp=Z,74nm,1.0s
LSA LR LR
comp=Z,83µm,22.0s
D35A Remer 105.94 45 Pdiff **Pdif** 19 17 28.8 -0.8
baz=244
A33A Warroad 105.94 43 Pdiff **Pdif** 19 17 28.1 -1.4
baz=244
L41A Preston 106.08 51 Pdiff **Pdif** 19 17 29.8 -0.6
baz=245
MTDJ Mount Denham 106.10 78 PFAKE 19 21 50.0
MTDJ LR LR
comp=Z,407µm,20.0s
E36A McGregor 106.19 46 Pdiff **Pdif** 19 17 30.7 0.0
baz=244
B34A Aery, Baudette 106.19 43 Pdiff **Pdif** 19 17 29.3 -1.4
baz=244
ULM Lac du Bonnet 106.24 41 Pdiff **Pdif** 19 17 32.6 +1.8
comp=Z,3.8nm,0.5s,baz=240,slow=4.9,SNR=4.7
ULM PP **PP** 19 21 54.9 -0.7
comp=Z,62nm,1.1s,baz=260,slow=9.0,SNR=6.9
ULM PKKPbc **PKKPbc** 19 33 05.8 +1.2
comp=Z,28nm,1.0s,baz=27,slow=2.2,SNR=7.0
ULM SKKPbc SKKPbc 19 37 06.0 +18
comp=Z,4.1nm,0.7s,baz=160,slow=3.5,SNR=2.5
ULM PKPPKP P'P'df 19 41 15.3 -8.8
comp=Z,1.9nm,0.3s,baz=46,slow=5.7,SNR=3.6
C35A Jirik Farms, M 106.25 44 Pdiff **Pdif** 19 17 29.4 -1.6
baz=244
HDIL Hopedale 106.27 52 Pdiff **Pdif** 19 17 30.1 -1.1
baz=245
HDIL Hopedale 106.27 52 PFAKE 19 21 50.0
HDIL LR LR
comp=Z,319µm,21.0s
BWNR Bhubaneshwar 106.33 284 *e*P **Pdif** 19 17 30.6 -1.3
ZAK Zakamensk 106.35 319 *e*P **Pdif** 19 17 31.9 +0.5
ZAK pmax pmax
comp=Z,38nm,1.3s
OLIL Olney 106.35 55 *e*PKiKP **PKiKP** 19 21 45.7 +2.9
K41A Shullsburg 106.44 50 Pdiff **Pdif** 19 17 31.1 -0.8
baz=245
J40A Soldiers Grove 106.48 49 Pdiff **Pdif** 19 17 30.5 -1.6
baz=245
SWET Sewanee 106.48 59 *e*Pdif **Pdif** 19 17 36.0 +3.7
D36A Goodland 106.52 45 Pdiff **Pdif** 19 17 32.0 -0.2
baz=245
JFWS Jewell Farm 106.60 50 *e*P **Pdif** 19 17 39.4 +6.7
JFWS MLR MLR
comp=Z,435µm,19.0s
JFWS Jewell Farm 106.60 50 *e*Pdif **Pdif** 19 17 39.4 +6.7
JFWS LR LR
comp=Z,435µm,19.0s
IRK Irkutsk 106.61 321 *e*P **Pdif** 19 17 37.0 +4.5
IRK pmax pmax
comp=Z,153nm,1.2s
B35A Bob, Littlefor 106.69 44 Pdiff **Pdif** 19 17 31.6 -1.3
baz=244
TIGA Tifton 106.71 63 Pdiff **Pdif** 19 17 32.9 -0.5
baz=245
TLY Talaya 106.71 320 Pdiff **Pdif** 19 17 37.1 +4.1
comp=Z,3.9nm,0.6s,baz=158,slow=5.1,SNR=8.8
TLY PKiKP **PKiKP** 19 21 41.2 -1.9
comp=Z,3.1nm,0.7s,baz=141,slow=6.5,SNR=3.6
TLY S **SKSac** 19 28 09.9 -1.2
comp=Z,4.2nm,0.6s,baz=233,slow=1.7,SNR=2.9
TLY PKKPbc **PKKPbc** 19 33 05.2 +1.9
comp=Z,6.0nm,0.8s,baz=260,slow=4.9,SNR=4.4
TLY PKKPab **PKKPdf** 19 33 16.7 +0.6
comp=Z,13nm,1.0s,baz=278,slow=4.5,SNR=4.1
TLY PKPPKP P'P'df 19 41 04.4 -19
comp=Z,0.8nm,0.3s,baz=332,slow=8.2,SNR=3.2
TLY Talaya 106.71 320 *d* *i*P **Pdif** 19 17 32.0 -0.9
TLY *e*PPS PPS 19 32 24.4
TLY *e*SS SS 19 36 55.6 -7.0
TLY pmax pmax
comp=Z,43nm,1.5s
TLY MLR MLR
comp=Z,183µm,18.0s
TLY Talaya 106.71 320 *e*Pdif **Pdif** 19 17 37.8 +4.8
TLY PKiKP **PKiKP** 19 21 41.2 -1.9
TLY S **SKSac** 19 28 09.9 -1.2
TLY PKKPbc **PKKPbc** 19 33 05.2 +1.9
TLY PKKPab **PKKPdf** 19 33 16.7 +0.6
TLY P'P' 19 41 04.4
TLY LR LR
comp=Z,212µm,20.0s
E37A Wrenshall 106.74 46 Pdiff **Pdif** 19 17 32.4 -0.8
baz=245
J41A Loganville 106.95 50 Pdiff **Pdif** 19 17 32.8 -1.3
baz=245
C36A Pine Crest Far 106.97 44 Pdiff **Pdif** 19 17 32.8 -1.3
baz=245
D37A Cotton 106.97 45 Pdiff **Pdif** 19 17 34.2 0.0
baz=245
CHLP Challavanipeta 107.04 282 *e*Pdif **Pdif** 19 17 30.9 -4.2
CHLP *e*SKSac **SKSac** 19 28 10.9 -3.1
CHLP *e*PKKPdf **PKKPdf** 19 33 11.9 -2.2
CHLP IVMs_BB IVMs_BB 19 57 18.3
comp=Z,88µm,42.1s
VIS Vishakhapatnam 107.33 281 *e*P **Pdif** 19 17 35.2 -1.2
C37A Embarrass 107.36 45 Pdiff **Pdif** 19 17 34.2 -1.6
baz=245
WCI Wyandotte Cave 107.44 56 *e*PKiKP **PKiKP** 19 21 46.5 +1.6
GOGA Godfrey 107.61 61 PFAKE 19 22 00.0
GOGA LR LR
comp=Z,347µm,20.0s
TIXI Tiksi 107.62 344 Pdiff **Pdif** 19 17 38.6 +2.2
comp=Z,4.6nm,0.9s,baz=92,slow=4.0,SNR=4.0
TIXI PKiKP **PKiKP** 19 21 43.8 -0.4
comp=Z,20nm,1.0s,baz=120,slow=3.6,SNR=6.1
TIXI PP **PP** 19 21 58.0 -7.2
comp=Z,24nm,0.8s,baz=96,slow=1.1,SNR=7.4
TIXI PKKP **PKKPdf** 19 33 15.0 +0.1
comp=Z,14nm,0.8s,baz=317,slow=5.2,SNR=5.1
TIXI PKPPKP P'P'df 19 40 56.5 -23
comp=Z,3.1nm,0.9s,baz=356,slow=5.5,SNR=3.0
TIXI Tiksi 107.62 344 *e*PKiKP PKiKP 19 21 52.1 +7.9
TIXI PP **PP** 19 21 58.0 -7.2
TIXI PKKP **PKKPdf** 19 33 15.0 +0.1
TIXI P'P' 19 40 56.5
TIXI LR LR
comp=Z,332µm,21.0s
SFIN Lafayette 107.73 53 Pdiff **Pdif** 19 17 35.6 -2.1
baz=246
EYMN Ely 107.87 45 Pdiff **Pdif** 19 17 37.3 -0.9
baz=246
EYMN Ely 107.87 45 *e*Pdif **Pdif** 19 17 42.4 +4.2
EYMN LR LR
comp=Z,606µm,19.0s
SDV Santo Domingo 107.89 90 PKKP **PKKPab** 19 33 16.0 +2.9
comp=Z,57nm,0.4s,baz=68,slow=2.4,SNR=4.3
SDV Santo Domingo 107.89 90 *e*P **Pdif** 19 17 38.7 -0.6
SDV Santo Domingo 107.89 90 PFAKE 19 22 00.0
SDV LR LR
comp=Z,216µm,20.0s
C38A Sawbill Land. 107.92 45 Pdiff **Pdif** 19 17 38.1 -0.3
baz=246
MDRS Chennai 107.94 275 *e*P **Pdif** 19 17 37.3 -1.9
SPB Sao Paulo 107.97 131 PFAKE 19 22 00.0
SPB LR LR
comp=Z,142µm,21.0s
URIC Uribia, Colomb 108.00 86 *e*P **Pdif** 19 17 38.6 -0.9
MOY Mondy 108.20 319 *e*P **Pdif** 19 17 41.3 +1.6
TKL Tuckaleechee C 108.27 59 SKKP **SKKPdf** 19 36 54.1 +7.8
comp=Z,4.2nm,0.6s,baz=138,slow=24,SNR=3.7
TKL Tuckaleechee C 108.27 59 *e*PKiKP **PKiKP** 19 21 48.8 +2.2
TKL SKKP 19 36 54.1
RAMN Ramite 108.45 291 *e*P **Pdif** 19 17 41.3 -0.3

MRIV Mauritius Mete 108.47 233 *e*Pdif **Pdif** 19 17 45.6 +4.0
PVM Polavaram 108.59 280 *e*Pdif **Pdif** 19 17 39.5 -2.6
PVM *e*SKSac **SKSac** 19 28 20.0 -0.6
PVM *e*SKSdf **SKSdf** 19 28 56.3 -1.9
PVM IVMs_BB IVMs_BB 19 57 26.6
comp=Z,66µm,42.7s
COWI Conover 108.62 47 PFAKE 19 22 00.0
COWI LR LR
comp=Z,422µm,20.0s
SKHT Srikalahasti 108.71 276 *e*Pdif **Pdif** 19 17 39.6 -3.0
SKHT *e*SKSac **SKSac** 19 28 22.5 +1.2
SKHT IVMs_BB IVMs_BB 20 05 55.6
comp=Z,64µm,21.9s
TRD Trivandrum 108.73 269 *e*P **Pdif** 19 17 39.7 -3.0
TZTN Tazewell 108.78 58 *e*Pdif **Pdif** 19 17 40.0 -2.5
GTBY Guantanamo Bay 108.90 77 PFAKE 19 22 00.0
GTBY LR LR
comp=Z,184µm,20.0s
RER Riviere de l'E 109.09 231 *e*Pdif **Pdif** 19 17 48.7 +4.3
RER LR LR
comp=Z,111µm,20.0s
ADKI Addanki 109.41 278 *e*Pdif **Pdif** 19 17 42.3 -3.4
ADKI *e*PP **PP** 19 22 17.4 -1.9
ADKI *e*SKSac **SKSac** 19 28 32.4 +8.3
ADKI *e*SKSdf **SKSdf** 19 28 57.0 -2.8
ADKI *e*PKKPab **PKKPab** 19 33 05.7 +0.1
ADKI IVMs_BB IVMs_BB 20 08 27.1
comp=Z,60µm,21.0s
GUN Gumba 109.42 292 *e*P **Pdif** 19 17 48.2 +2.2
GUN Gumba 109.42 292 *e*P **PKKPbc** 19 32 54.6 +0.3
PKIN Phulchoki 109.68 291 *e*P **Pdif** 19 17 48.0 +0.9
KKN Kakani 109.86 291 *e*P **Pdif** 19 17 49.2 +1.4
KKN Kakani 109.86 291 *e*P **PKKPbc** 19 32 53.7 +1.0
KMSC Kings Mountain 109.91 60 Pdiff **Pdif** 19 17 46.7 -0.9
baz=248
DMN Daman 109.93 291 *e*P **Pdif** 19 17 49.7 +1.6
DMN Daman 109.93 291 *e*P **PKKPbc** 19 32 54.1 +1.6
NHSC New Hope 110.02 63 PFAKE 19 22 00.0
NHSC LR LR
comp=Z,292µm,20.0s
RCLA Racherla 110.12 277 *e*Pdif **Pdif** 19 17 46.3 -2.6
RCLA *e*SKSac **SKSac** 19 28 27.2 0.0
RCLA IVMs_BB IVMs_BB 20 07 38.5
comp=Z,60µm,21.1s
NJS Nagarjunasagar 110.29 278 *e*Pdif **Pdif** 19 17 46.9 -2.7
NJS *e*SKSac **SKSac** 19 28 28.3 +0.4
NJS IVMs_BB IVMs_BB 19 58 39.1
comp=Z,46µm,43.6s
SRLM Srisailam 110.45 277 *e*Pdif **Pdif** 19 17 45.8 -4.6
SRLM *e*SKSac **SKSac** 19 28 25.0 -3.6
SRLM IVMs_BB IVMs_BB 20 11 52.5
comp=Z,46µm,18.6s
GKN Gorkha 110.47 291 *e*P **Pdif** 19 17 51.2 +0.8
GKN Gorkha 110.47 291 *e*P **PKKPbc** 19 32 51.5 +0.8
ACSO Alum Creek Sta 110.58 55 *e*PKiKP **PKiKP** 19 21 50.1 -0.7
ACSO LR LR
comp=Z,603µm,20.0s
FCC Fort Churchill 110.71 34 *e*PKiKP **PKiKP** 19 21 50.3 0.0
AAM Ann Arbor 110.85 52 PFAKE 19 22 00.0
AAM LR LR
comp=Z,286µm,19.0s
KOLN Koldanda 111.22 291 *e*P **Pdif** 19 17 55.0 +1.2
KOLN Koldanda 111.22 291 *e*P **PKKPbc** 19 32 50.9 +2.6
RPR Rampur 111.28 280 *e*Pdif **Pdif** 19 17 50.7 -3.2
RPR *e*SKSac **SKSac** 19 28 28.9 -2.9
RPR IVMs_BB IVMs_BB 19 58 40.6
comp=Z,65µm,45.4s
HYB Hyderabad 111.31 279 *i* Pdiff **Pdif** 19 17 56.0 +1.8
HYB *e*PP **PP** 19 22 33.0 -0.2
HYB *e*SKS **SKSac** 19 28 36.0 +3.9
HYB *e*SKKS **SKKSac** 19 29 37.0 +2.7
HYB *e*PKKP **PKKPab** 19 32 56.5 -0.8
HYB *e* 19 33 08.0
HYB LR LR
comp=Z,297nm,30.0s
HYBB Hyderabad (bro 111.31 279 *e*Pdif **Pdif** 19 17 53.9 -0.3
HYBB *e*SKSac **SKSac** 19 28 31.5 -0.6
HYBB IVMs_BB IVMs_BB 19 59 48.8
comp=Z,43µm,33.6s
BLA Blacksburg 111.36 59 *e*PKiKP **PKiKP** 19 21 54.0 +1.7
BLA LR LR
comp=Z,273µm,19.0s
SDDR Presa de Saban 111.77 80 PFAKE 19 22 00.0
SDDR LR LR
comp=Z,181µm,21.0s
PYUN Piuthan 111.85 291 *e*P **Pdif** 19 17 57.6 +1.0
PYUN Piuthan 111.85 291 *e*P **PKKPbc** 19 32 47.2 +1.0
SRSP Sriramsagar 112.12 280 *e*Pdif **Pdif** 19 17 53.7 -4.0
SRSP *e*SKSac **SKSac** 19 28 35.2 -0.1
SRSP IVMs_BB IVMs_BB 19 59 00.1
comp=Z,52µm,50.7s
TRIS Tristan da Cun 112.28 166 PFAKE 19 22 00.0
TRIS LR LR
comp=Z,57µm,20.0s
PTGA Pitinga 112.37 104 PKKPab PKKPab 19 32 53.7 -0.1
comp=Z,34nm,0.9s,baz=67,slow=3.3,SNR=13
PTGA SKKP 19 36 47.5
comp=Z,46nm,1.3s,baz=77,slow=7.2,SNR=4.2
PTGA Pitinga 112.37 104 PKKPab PKKPab 19 32 53.7 -0.1
PTGA SKKP 19 36 47.5
PTGA LR LR
comp=Z,40µm,22.0s
CNNC Cliffs of the 112.57 61 PFAKE 19 22 10.0
CNNC LR LR
comp=Z,255µm,19.0s
GRTK Grand Turk 112.94 77 PFAKE 19 22 10.0
GRTK LR LR
comp=Z,117µm,20.0s
N54A Moraine State 112.97 55 Pdiff **Pdif** 19 17 59.5 -1.5
baz=250
BDFB Brasilia 112.98 125 Pdiff **Pdif** 19 18 06.3 +4.5
comp=Z,2.8nm,0.8s,baz=284,slow=12,SNR=2.5
BDFB PKiKP **PKiKP** 19 21 57.6 +1.4
comp=Z,7.5nm,0.7s,baz=263,slow=8.1,SNR=4.7
BDFB PP **PP** 19 22 44.0 -0.5
comp=Z,6.9nm,0.7s,baz=257,slow=7.8,SNR=1.9
BDFB PKKPab **PKKPab** 19 32 48.2 -4.0
comp=Z,29nm,1.0s,baz=61,slow=4.4,SNR=9.7
BDFB SKKP 19 36 47.0
comp=Z,7.3nm,0.8s,baz=255,slow=2.5,SNR=2.8
BDFB Brasilia 112.98 125 Pdif **Pdif** 19 18 06.3 +4.5
BDFB PKiKP **PKiKP** 19 21 57.6 +1.4
BDFB *e*PP **PP** 19 22 46.6 +2.1
BDFB PKKPab **PKKPab** 19 32 48.2 -4.0
BDFB SKKP 19 36 47.0
KLRI Killari 113.27 278 *e*Pdif **Pdif** 19 18 01.9 -1.0
KLRI *e*SKSac **SKSac** 19 28 40.1 +0.1
KLRI IVMs_BB IVMs_BB 19 59 14.7
comp=Z,57µm,38.9s
M54A Oil Creek Stat 113.38 54 Pdiff **Pdif** 19 18 01.2 -1.6
baz=251
PCRV Puerto La Cruz 113.72 91 PKKPab PKKPab 19 32 44.9 -2.3
comp=Z,16nm,1.0s,baz=43,slow=5.0,SNR=2.7
PCRV SKKP 19 36 40.3
comp=Z,7.4nm,0.6s,baz=15,slow=7.4,SNR=3.2
WMQ Urumqi 113.74 308 *e*PKP **PKiKP** 19 21 57.1 +0.4
WMQ PP **PP** 19 22 56.3 +6.2
WMQ AMB AMB
comp=Z,22µm,9.6s
WMQ LR LR
comp=Z,62µm,18.2s
WMQ LR LR
comp=Z,133µm,21.2s
WMQ LR LR
comp=Z,172µm,24.3s
O56A Blue Knob Stat 113.77 56 Pdiff **Pdif** 19 18 05.2 +0.5
baz=251
CBN Corbin Frederi 113.97 58 PFAKE 19 22 10.0
CBN LR LR
comp=Z,292µm,19.0s
GRM Grahamstown 114.09 201 *i* P **PP** 19 22 46.5 -4.7
GRM **SP** 19 32 23.8 -2.0
SSPA Standing Stone 114.37 56 *e*PKiKP PKPdf 19 21 56.8 -1.1
GOA Goa 114.59 275 *e*P PKPdf 19 21 56.2 -2.8
BHPL Bhopal 114.63 284 *e*P PKPdf 19 21 57.5 -1.5
SDMD Soldier's Deli 114.75 57 *e*PKiKP PKPdf 19 21 57.9 -0.8
SADO Sadowa 114.76 51 SKKP **SKKPdf** 19 36 35.3 +1.0
comp=Z,9.1nm,0.8s,baz=93,slow=7.5,SNR=2.7
SADO Sadowa 114.76 51 *e*PKiKP PKPdf 19 21 57.3 -1.2
SADO SKKP 19 36 35.3
MMNY Mt. Morris Dam 115.01 54 *e*PKiKP **PKiKP** 19 21 59.5 +0.4
MVL Millersville 115.29 57 *e*PKiKP **PKPdf** 19 21 58.8 -0.9
RES Resolute Bay 115.76 17 PKKPab PKKPab 19 32 39.4 +4.8
comp=Z,25nm,1.1s,baz=110,slow=3.8,SNR=4.9

RES Resolute Bay 115.76 17 PKIKP **PKPdf** 19 22 00.5 +0.9
POO Poona 115.84 278 *e*P **PKPdf** 19 21 59.1 -2.3
SJG San Juan 115.85 83 PKKPab PKKPab 19 32 40.2 +3.0
comp=Z,20nm,0.6s,baz=358,slow=4.3,SNR=6.1
SJG SKKP 19 36 30.5
comp=Z,9.2nm,0.2s,baz=229,slow=14,SNR=2.4
SJG San Juan 115.85 83 *e*PKIKP **PKPdf** 19 22 00.2 -1.2
SJG 19 32 40.2
SJG MLR MLR
comp=Z,143µm,19.0s
SJG San Juan 115.85 83 *e*P **Pdif** 19 18 13.5 -0.8
SJG San Juan 115.85 83 *e*PKPdf **PKPdf** 19 22 00.2 -1.2
SJG PKKPab **PKKPab** 19 32 40.2 +3.0
SJG SKKP 19 36 30.5
SJG LR LR
comp=Z,143µm,19.0s
N59A State Game Lan 115.99 56 Pdiff **Pdif** 19 18 14.1 -0.3
baz=253
HUMP Col San Antoni 116.12 83 *e*PKPdf **PKPdf** 19 22 00.7 -1.2
LUPA Lehigh Univers 116.19 56 *e*PKPdf **PKPdf** 19 22 00.5 -0.9
BINY Binghamton 116.21 55 *e*PKPdf **PKPdf** 19 22 00.5 -1.0
BINY LR LR
comp=Z,456µm,20.0s
ABPO Ambohimpanom 116.22 227 *e*PKIKP **PKPdf** 19 22 06.5 +4.0
ABPO MLR MLR
comp=Z,44µm,19.0s
ABPO Ambohimpanom 116.22 227 *e*PKPdf **PKPdf** 19 22 06.5 +4.0
ABPO LR LR
comp=Z,44µm,19.0s
SUR Sutherland 116.55 196 PKP **PKPdf** 19 22 03.4 +0.6
comp=Z,5.6nm,1.0s,baz=181,slow=3.3,SNR=13
SUR PP **PP** 19 23 16.0 +7.4
comp=Z,6.8nm,1.0s,baz=176,slow=4.8,SNR=5.4
SUR PKKPbc **PKKPbc** 19 32 30.0 -0.5
comp=Z,1.2nm,0.7s,baz=324,slow=3.9,SNR=8.0
SUR PKKPab **PKKPab** 19 32 37.2 -0.5
comp=Z,3.7nm,0.9s,baz=334,slow=3.6,SNR=10.0
SUR SKKPbc SKKPbc 19 36 17.6 +5.2
comp=Z,1.6nm,1.0s,baz=55,slow=3.2,SNR=3.0
SUR Sutherland 116.55 196 *e*PKPdf **PKPdf** 19 22 03.9 +1.1
SUR PP **PP** 19 23 16.0 +7.4
SUR PKKPbc **PKKPbc** 19 32 30.0 -0.5
SUR PKKPab **PKKPab** 19 32 37.2 -0.5
SUR SKKPbc SKKPbc 19 36 17.6 +5.2
SUR LR LR
comp=Z,267µm,20.0s
OPO Ambohidratompo 116.57 227 Pdiff **Pdif** 19 18 18.7 +0.8
comp=Z,3.9nm,0.9s,baz=288,slow=8.7,SNR=2.7
OPO PKP **PKiKP** 19 22 03.0 -0.1
comp=Z,56nm,0.9s,baz=163,slow=1.5,SNR=18
OPO PP **PP** 19 23 14.3 +4.7
comp=Z,16nm,0.8s,baz=96,slow=8.8,SNR=3.5
OPO PKKPab **PKKPab** 19 32 36.1 -0.6
comp=Z,11nm,0.8s,baz=284,slow=4.4,SNR=7.4
DDI Dehra Dun 116.67 291 *e*P **PKPdf** 19 22 00.6 -2.1
DDI IAmb IAmb 19 22 12.3
BRNJ Basking Ridge 116.80 57 *e*PKPdf **PKPdf** 19 22 01.5 -1.1
VLDQ Val d'Or 116.81 48 *e*PKPdf **PKPdf** 19 22 00.7 -1.7
ODNJ Ogdensburg 116.88 56 *e*PKPdf **PKPdf** 19 22 01.8 -0.9
CDVI St. Croix 116.91 84 *e*PKPdf **PKPdf** 19 22 05.4 +2.0
GRGR Grenville 117.21 91 PFAKE 19 22 10.0 +5.8
GRGR LR LR
comp=Z,114µm,20.0s
CPNY Central Park 117.27 57 *e*PKPdf **PKPdf** 19 22 04.5 +1.1
PAL Palisades 117.37 56 *e*PKIKP **PKPdf** 19 22 02.9 -0.8
PAL Palisades 117.37 56 *e*PKPdf **PKPdf** 19 22 02.9 -0.8
SMLA Simla 117.66 292 *e*P **PKPdf** 19 22 03.7 -0.8
LONY Lake Ozonia 117.85 52 PFAKE 19 22 20.0 +15
LONY LR LR
comp=Z,361µm,19.0s
NCB Newcomb 117.93 53 *e*PKPdf **PKPdf** 19 22 03.9 -0.8
SDNR Sundarnagar 117.94 292 *e*P PKPdf 19 22 15.1 +10
TRY Troy 118.00 55 *e*PKPdf **PKPdf** 19 22 04.4 -0.4
YLE Yale 118.16 56 *e*PKPdf **PKPdf** 19 22 06.3 +1.2
ACCN Adirondack Com 118.17 54 *e*PKPdf **PKPdf** 19 22 04.3 -0.8
ZALV Zalesovo Beam 118.22 318 Pdiff **Pdif** 19 18 28.1 +4.0
comp=Z,2.2nm,0.7s,baz=90,slow=4.1,SNR=7.8
ZALV PKP **PKPdf** 19 22 03.1 -1.8
comp=Z,41nm,0.8s,baz=170,slow=1.7,SNR=22
ZALV SKKPbc SKKPbc 19 36 18.7 +6.7
comp=Z,7.7nm,1.1s,baz=278,slow=4.3,SNR=3.7
ZALV PKPPKP **SKKSdf** 19 40 06.3 +1.1
comp=Z,2.2nm,0.9s,baz=258,slow=4.3,SNR=4.1
ZALV P5KP 20 01 15.1
comp=Z,0.3nm,0.3s,baz=164,slow=11,SNR=2.7
MK31 Makanchi Array 118.23 310 *e*PKIKP **PKPdf** 19 22 04.1 -1.1
MK31 Makanchi Array 118.23 310 *e*PKPdf **PKPdf** 19 22 04.1 -1.1
MKAR Makanchi Array 118.23 310 Pdif **Pdif** 19 18 28.5 +4.2
comp=Z,2.0nm,0.6s,baz=96,slow=5.2,SNR=22
MKAR PKP **PKPdf** 19 22 03.8 -1.5
comp=Z,65nm,0.9s,baz=121,slow=0.8,SNR=27
MKAR PKKPbc **PKKPab** 19 32 25.9 +0.8
comp=Z,17nm,1.0s,baz=276,slow=4.5,SNR=7.9
MKAR PKPPKP **SKKSdf** 19 40 04.1 -0.9
comp=Z,3.8nm,1.1s,baz=345,slow=4.3,SNR=3.5
MKAR P5KP 20 01 06.4
comp=Z,0.6nm,1.0s,baz=93,slow=2.9,SNR=3.4
MKAR Makanchi Array 118.23 310 Pdif **Pdif** 19 18 28.5 +4.2
MKAR *e*PKPdf **PKPdf** 19 22 04.1 -1.1
MKAR PKKPbc **PKKPab** 19 32 25.9 +0.8
MKAR P'P' 19 40 04.1
MKAR P5KP 20 01 06.4
TRQ Mont Tremblant 118.26 51 *e*PKPdf **PKPdf** 19 22 05.7 +0.4
BHK Bhakra 118.36 292 *e*P **PKPdf** 19 22 02.4 -3.5
SMRT St. Maarten 118.50 84 *e*PKPdf **PKPdf** 19 22 05.2 -1.3
FRNY Flat Rock 118.59 52 *e*PKPdf **PKPdf** 19 22 05.4 -0.5
MDV Middlebury 118.67 53 *e*PKPdf **PKPdf** 19 22 05.2 -0.8
FDF Fort de France 118.79 89 PFAKE 19 22 20.0 +13
FDF LR LR
comp=Z,200µm,20.0s
QUA2 Belchertown 118.83 55 *e*PKPdf **PKPdf** 19 22 05.9 -0.5
BOSA Boshof 118.84 202 Pdiff **Pdif** 19 18 36.0 +8.2
comp=Z,7.8nm,1.0s,baz=188,slow=6.5,SNR=3.9
BOSA PKP **PKiKP** 19 22 07.5 +0.2
comp=Z,104nm,1.0s,baz=140,slow=2.4,SNR=23
BOSA PKKPbc **PKKPbc** 19 32 22.0 -0.1
comp=Z,10nm,0.6s,baz=340,slow=4.1,SNR=15
BOSA PKKPab **PKKPab** 19 32 27.1 -0.3
comp=Z,46nm,1.0s,baz=319,slow=5.2,SNR=9.8
BOSA SKKP 19 36 18.6
comp=Z,81nm,1.3s,baz=1.4,slow=4.4,SNR=4.2
GDHS Morne Mazeau, 118.91 87 *e*PKPdf **PKPdf** 19 22 08.0 +0.6
SHLS Shalkode 119.01 306 *e*PKPdf **Pdif** 19 18 25.3 -2.8
SHLS *i* PKP **PKPdf** 19 22 04.9 -2.2
SHLS *i* PP **PP** 19 23 24.4 -2.9
SHLS *i* PS **PS** 19 33 12.0 -3.2
SHLS *i* SS SS 19 39 45.1 -1.4
SHLS LRM MLR 20 13 45.9
comp=Z,9µm,20.9s
HNH Hanover 119.22 54 *e*PKPdf **PKPdf** 19 22 06.8 -0.4
NRIK Noril'sk 119.25 336 Pdiff **Pdif** 19 18 33.3 +5.0
comp=Z,0.9nm,0.3s,baz=75,slow=4.0,SNR=4.4
NRIK PKP **PKPdf** 19 22 06.0 -0.4
comp=Z,36nm,0.8s,baz=96,slow=2.1,SNR=13
NRIK PP **PP** 19 23 29.4 +1.6
comp=Z,76nm,1.1s,baz=98,slow=8.8,SNR=3.0
NRIK PKKPbc **PKKPbc** 19 32 21.9 +0.7
comp=Z,14nm,1.0s,baz=0.7,slow=0.7,SNR=3.8
NVS Novosibirsk 119.30 319 *e*PKIKP **PKPdf** 19 22 06.4 -0.5
NVS *i* 19 29 07.5
NVS pmax pmax
comp=N,91nm,1.1s
NVS pmax pmax
comp=E,162nm,1.1s
BRYW Bryant College 119.32 56 *e*PKPdf **PKPdf** 19 22 07.2 -0.3
HRV Adam Dziewonsk 119.45 55 *e*PKIKP **PKPdf** 19 22 07.0 -0.7
HRV Adam Dziewonsk 119.45 55 *e*PKPdf **PKPdf** 19 22 07.0 -0.7
ANWB Willy Bob 119.46 85 PFAKE 19 22 20.0 +12
ANWB LR LR
comp=Z,235µm,20.0s
BBGH Gun Hill 119.49 91 PFAKE 19 22 20.0 +11
BBGH LR LR
comp=Z,177µm,22.0s
WES Weston 119.59 55 *e*PKIKP **PKPdf** 19 22 07.7 -0.2
WES Weston 119.59 55 *e*PKPdf **PKPdf** 19 22 07.7 -0.2
UZB Uzynbulak 119.62 305 *e*PKP **PKPdf** 19 22 05.5 -2.7
UZB *i* PP **PP** 19 23 28.9 -2.5
UZB *i* PS **PS** 19 33 17.0 -3.6
UZB LRM MLR 20 14 10.2
comp=Z,17µm,20.7s
BCX Boston College 119.69 55 *e*PKPdf **PKPdf** 19 22 08.2 +0.2
SATY Saty 120.04 305 *e*Pdif **Pdif** 19 18 30.8 -1.8
SATY *i* PKP **PKPdf** 19 22 07.0 -1.9
SATY *i* PP **PP** 19 23 31.5 -2.7

SATY *i* PS **PS** **19 33 21.9 -2.4**
SATY LRM MLR 20 13 15.9
comp=Z,20µm,20.2s
ZHN Zhinishke 120.05 305 *e*Pdif **Pdif** **19 18 29.9 -2.7**
ZHN *i* PKP **PKPdf** **19 22 06.7 -2.2**
ZHN *i* PP **PP** **19 23 31.3 -2.9**
ZHN *i* SS SS 19 39 56.2 -3.4
ZHN LRM MLR 20 13 18.8
comp=Z,8µm,18.1s
SEM Semipalatinsk 120.31 314 *i* Pdif **Pdif** **19 18 30.6 -2.8**
SEM *i* PKP **PKPdf** **19 22 07.1 -1.9**
SEM *i* PP **PP** **19 23 32.4 -3.3**
SEM *i* PS **PS** **19 33 24.3 -1.7**
SEM *i* SS SS 19 39 57.1 -5.1
SEM LRM MLR 20 12 38.7
comp=Z,70µm,22.6s
KSH Kashi 120.99 301 *e*PKP **PKPdf** **19 22 11.6 +0.7**
KSH *es*PKP 19 22 25.9
KSH PKS **PKSdf** **19 25 47.0 -0.6**
KSH SKS **SKSdf** **19 29 19.3 -2.0**
KSH AMB AMB
comp=Z,5µm,5.6s
KSH LR LR
comp=Z,36µm,17.6s
KSH LR LR
comp=Z,92µm,20.2s
KSH LR LR
comp=Z,140µm,21.2s
MDOK Medeo 121.03 305 *i* Pdif **Pdif** **19 18 34.5 -2.5**
MDOK *i* PKP **PKPdf** **19 22 08.8 -2.1**
MDOK *i* PP **PP** **19 23 38.1 -2.9**
MDOK *i* PS **PS** **19 33 29.8 -3.4**
MDOK *i* SS SS 19 40 08.4 -3.9
MDOK LRM MLR 20 14 35.4
comp=Z,29µm,21.9s
AAA Alma-Ata 121.13 305 *e*P **Pdif** **19 18 40.7 +3.4**
AAA pmax pmax
comp=Z,5µm,13.0s
AAA MLR MLR
comp=Z,52µm,26.0s
AAA Alma-Ata 121.13 305 *e*Pdif **Pdif** **19 18 35.1 -2.2**
AAA *i* PKP **PKPdf** **19 22 09.1 -1.9**
AAA *i* PP **PP** **19 23 38.9 -2.7**
AAA *i* PS **PS** **19 33 31.3 -2.5**
AAA *i* SS SS 19 40 11.1 -2.2
AAA LRM MLR 20 14 43.4
comp=Z,20µm,21.3s
BHJ Bhuj 121.27 281 *e*P **PKPdf** **19 22 11.8 +0.1**
BHJ IAmb IAmb 19 22 21.7
comp=Z,3µm,2.6s
BHJ IAMs_20 IAMs_20 20 20 12.9
comp=Z,123µm,11.7s
LMQ La Malbaie 121.37 50 *e*PKPdf **PKPdf** **19 22 10.2 -1.1**
KURK Kurchatov 121.38 314 PKIKP **PKPdf** **19 22 10.0 -1.1**
KURK 19 23 46.3
KURK pmax pmax
comp=Z,69nm,0.7s
KURK pmax pmax
comp=Z,31nm,0.9s
KURK Kurchatov 121.38 314 Pdif **Pdif** **19 18 46.4 +8.2**
KURK *e*PKPdf **PKPdf** **19 22 10.4 -0.7**
KURK PP **PP** **19 23 46.3 +3.4**
KURK PKKPbc **PKKPbc** **19 32 14.0 +1.2**
KURK SKKPbc SKKPbc 19 36 02.6 +1.1
KURK LR LR
comp=Z,315µm,22.0s
KURBB Kurchatov Arra 121.43 314 Pdiff **Pdif** **19 18 46.4 +8.0**
comp=Z,0.6nm,0.6s,baz=102,slow=4.1,SNR=5.5
KURBB PKP **PKPdf** **19 22 10.0 -1.1**
comp=Z,92nm,0.9s,baz=109,slow=1.8,SNR=69
KURBB PP **PP** **19 23 46.3 +3.1**
comp=Z,31nm,0.8s,baz=102,slow=7.0,SNR=4.6
KURBB PKKPbc **PKKPbc** **19 32 14.0 +1.4**
comp=Z,6.6nm,0.9s,baz=269,slow=5.4,SNR=6.9
KURBB SKKPbc SKKPbc 19 36 02.6 +1.2
comp=Z,17nm,1.1s,baz=277,slow=6.2,SNR=5.1
PKME Peaks-Kenny Pk 121.65 53 *e*PKPdf **PKPdf** **19 22 11.0 -0.8**
PKME LR LR
comp=Z,379µm,20.0s
KUU Kurty 121.69 306 *i* Pdif **Pdif** **19 18 38.0 -1.8**
KUU *i* PKP **PKPdf** **19 22 10.3 -1.7**
KUU *i* PP **PP** **19 23 43.2 -2.2**
KUU *i* PS **PS** **19 33 36.9 -1.9**
KUU *i* SS SS 19 40 18.8 -1.7
KUU LRM MLR 20 14 35.1
comp=Z,41µm,23.5s
TKM2 Tokmak 2 122.02 305 *e*PKIKP **PKPdf** **19 22 11.9 -1.0**
TKM2 MLR MLR
comp=Z,134µm,20.0s
TKM2 Tokmak 2 122.02 305 *e*PKPdf **PKPdf** **19 22 11.9 -1.0**
TKM2 LR LR
comp=Z,134µm,20.0s
LBTB Lobatse 122.05 203 PKP **PKPdf** **19 22 13.5 +0.1**
comp=Z,52nm,1.1s,baz=134,slow=1.7,SNR=16
LBTB PP **PP** **19 23 52.5 +5.9**
comp=Z,49nm,0.9s,baz=153,slow=6.3,SNR=3.8
LBTB PKKPbc **PKKPbc** **19 32 10.8 +0.6**
comp=Z,84nm,1.1s,baz=349,slow=4.2,SNR=12
LBTB SKKPbc SKKPbc 19 35 55.0 +0.1
comp=Z,22nm,1.1s,baz=33,slow=6.1,SNR=3.8
BBSR BB Station 122.08 68 *e*PKPdf **PKPdf** **19 22 13.0 0.0**
BBSR LR LR
comp=Z,158µm,20.0s
FRU Bishkek 122.71 304 P **Pdif** **19 18 47.0 +2.7**
FRU *i* 19 22 13.0
FRU *e* 19 23 57.0
FRU *e* 19 29 26.5
FRU *i* PS **PS** **19 33 51.0 +3.1**
FRU pmax pmax
comp=Z,710nm,2.0s
FRU MLR MLR
comp=E,110µm,23.0s
AAK Ala-Archa 122.76 304 Pdiff **Pdif** **19 18 58.5 +14**
comp=E,1.1nm,0.3s,baz=107,slow=6.9,SNR=4.8
AAK PKP **PKPdf** **19 22 14.0 -0.2**
comp=E,37nm,0.8s,baz=141,slow=3.3,SNR=20
AAK PKKPbc **PKKPbc** **19 32 07.2 -0.3**
comp=E,32nm,1.0s,baz=250,slow=4.5,SNR=8.8
AAK SKKPbc SKKPbc 19 35 58.5 +1.9
comp=E,8.9nm,1.0s,baz=216,slow=5.7,SNR=2.7
AAK Ala-Archa 122.76 304 *e*PKPdf **PKPdf** **19 22 14.2 -0.1**
AAK PKKPbc **PKKPbc** **19 32 07.2 -0.3**
AAK SKKPbc SKKPbc 19 35 58.5 +1.9
AAK LR LR
comp=Z,142µm,21.0s
EKS2 Erkin-Say 123.28 304 PFAKE 19 22 30.0 +15
EKS2 LR LR
comp=Z,116µm,20.0s
GGN Saint George 123.33 53 *e*PKPdf **PKPdf** **19 22 14.2 -0.8**
SCHQ Schefferville 124.42 41 PKP **PKPdf** **19 22 15.8 -1.0**
comp=Z,86nm,1.0s,baz=349,slow=2.3,SNR=24
SCHQ PP PP 19 24 11.4 +8.0
comp=Z,127nm,1.2s,baz=271,slow=8.0,SNR=3.3
SCHQ SKKPbc SKKPbc 19 35 54.7 +3.0
comp=Z,20nm,1.0s,baz=70,slow=2.6,SNR=5.6
LMN Caledonia Moun 124.86 52 *e*PKPdf **PKPdf** **19 22 16.6 -1.3**
BRZS Berezniki 125.07 313 *e*PKP **PKPdf** **19 22 16.3 -1.9**
BRZS *e*PS **PS** **19 34 05.2 -3.2**
BRZS LRM MLR 20 17 38.2
comp=Z,983nm,18.7s
MATP Matopo 125.09 209 PKP **PKPdf** **19 22 19.6 +0.1**
comp=Z,165nm,1.1s,baz=171,slow=2.5,SNR=31
MATP PKKPbc **PKKPab** **19 31 59.2 -1.1**
comp=Z,41nm,1.2s,baz=355,slow=4.8,SNR=5.2
MATP SKKPbc SKKPbc 19 35 51.2 +6.3
comp=Z,41nm,1.2s,baz=294,slow=4.0,SNR=3.8
KBL Kabul 125.18 293 *e*PKIKP **PKPdf** **19 22 19.1 -0.1**
KBL Kabul 125.18 293 *e*PKPdf **PKPdf** **19 22 19.1 -0.1**
KULLO Kullorsuaq 125.64 17 ⇓*i*P **PKPdf** **19 22 17.5 -1.1**
KULLO *i* 19 24 03.7
comp=Z,270µm,22.0s
KULLO Kullorsuaq 125.64 17 ⇓*i*PKIKP **PKPdf** **19 22 17.5 -1.1**
KULLO MLR MLR
comp=Z,270µm,22.0s
IUG Iuzhnay 125.93 303 *e*Pdif **Pdif** **19 18 57.0 -1.7**
IUG *i* PKP **PKPdf** **19 22 19.6 -0.7**
IUG *i* PP **PP** **19 24 11.9 -2.1**
IUG *i* PS **PS** **19 34 13.6 -2.8**
IUG LRM MLR 20 16 20.0
comp=Z,17µm,20.4s
CHM Chimkent 126.27 303 *e*PKP **PKPdf** **19 22 18.7 -2.1**
CHM *e*PP **PP** **19 24 13.9 -2.3**
CHM *i* PS **PS** **19 34 16.5 -2.8**
CHM *i* SS SS 19 41 13.8 -4.6
CHM LRM MLR 20 17 44.3
comp=Z,24µm,22.2s
BRLS Borolday 126.28 304 *i* PKP **PKPdf** **19 22 18.8 -2.0**
BRLS LRM MLR 20 18 21.1
comp=Z,4µm,19.4s
BVAR Borovoye Array 126.67 316 Pdiff **Pdif** **19 19 10.6 +8.9**
comp=Z,0.8nm,0.7s,baz=91,slow=7.4,SNR=6.2
BVAR PKP **PKPdf** **19 22 20.3 -0.9**
comp=Z,105nm,0.8s,baz=129,slow=1.5,SNR=50
BVAR PP **PP** **19 24 22.6 +4.1**
comp=Z,39nm,0.9s,baz=116,slow=6.6,SNR=2.3
BVAR Borovoye Array 126.67 316 PKIKP **PKPdf** **19 22 20.3 -0.9**
BVAR 19 24 22.6
BVAR pmax pmax
comp=Z,106nm,0.9s
BVAR pmax pmax
comp=Z,39nm,1.0s
BRVK Borovoye 126.74 316*d* *i*PKIKP **PKPdf** **19 22 21.1 -0.2**
BRVK MLR MLR
comp=Z,370µm,20.0s
BRVK Borovoye 126.74 316 PFAKE 19 22 30.0 +8.7
BRVK LR LR
comp=Z,104µm,21.0s
RCBR Riachuelo 128.32 126 SKKPbc SKKPbc 19 35 34.7 +0.6
comp=Z,28nm,1.2s,baz=0.0,slow=0.0,SNR=4.3
RCBR Riachuelo 128.32 126 *e*PKPpre PKPpre 19 22 19.1
RCBR SKKPbc SKKPbc 19 35 34.7 +0.6
RCBR LR LR
comp=Z,216µm,21.0s
LSZ Lusaka 129.78 211 PKP **PKPdf** **19 22 29.5 +1.1**
comp=Z,105nm,1.0s,baz=158,slow=1.8,SNR=29
LSZ PP **PP** **19 24 37.9 -0.4**
comp=Z,104nm,1.2s,baz=158,slow=9.9,SNR=2.5
LSZ SKKPbc SKKPbc 19 35 34.6 +5.7
comp=Z,69nm,1.3s,baz=9.4,slow=6.3,SNR=4.9
LSZ Lusaka 129.78 211 *e*PKPdf **PKPdf** **19 22 29.7 +1.3**
LSZ PP **PP** **19 24 37.9 -0.4**
LSZ SKKPbc SKKPbc 19 35 34.6 +5.7
LSZ LR LR
comp=Z,139µm,19.0s
TSUM Tsumeb 129.96 197 PKP **PKPdf** **19 22 27.3 -1.4**
comp=Z,9.3nm,0.7s,baz=166,slow=0.7,SNR=18
TSUM PP **PP** **19 24 37.6 -1.5**
comp=Z,85nm,1.1s,baz=186,slow=9.3,SNR=2.5
TSUM SKKPbc SKKPbc 19 35 27.8 -0.4
comp=Z,31nm,1.3s,baz=357,slow=6.7,SNR=4.4
TSUM Tsumeb 129.96 197 *e*PKPdf **PKPdf** **19 22 27.6 -1.2**
TSUM PP **PP** **19 24 37.6 -1.5**
TSUM SKKPbc SKKPbc 19 35 27.8 -0.4
TSUM LR LR
comp=Z,282µm,20.0s
DRLN Deer Lake 130.03 49 *e*PKPdf **PKPdf** **19 22 26.5 -1.2**
KBS Kingsbay 130.16 358 *e*P **PKPdf** **19 22 26.7 -0.5**
KBS *e* 19 22 38.5
KBS *e*PP **PP** **19 24 41.5 +1.1**
KBS IVMs_BB IVMs_BB 20 13 52.4
comp=Z,72µm,21.3s
KBS Kingsbay 130.16 358 *e*PKIKP **PKPdf** **19 22 27.4 +0.3**
KBS MLR MLR
comp=Z,226µm,21.0s
KBS Kingsbay 130.16 358 *e*PKPdf **PKPdf** **19 22 27.4 +0.3**
KBS LR LR
comp=Z,226µm,21.0s
SFJD Kangerlussuaq 130.38 25 PKP **PKPdf** **19 22 26.8 -0.9**
comp=Z,31nm,0.6s,baz=304,slow=1.2,SNR=4.1
SFJD PP **PP** **19 24 39.9 -2.2**
comp=Z,107nm,1.2s,baz=295,slow=5.9,SNR=2.7
SFJD SKKPbc SKKPbc 19 35 24.6 -7.0
comp=Z,30nm,0.9s,baz=156,slow=3.9,SNR=4.1
SFJD Kangerlussuaq 130.38 25 *i* P **PKPdf** **19 22 25.5 -2.3**
SFJD Kangerlussuaq 130.38 25 PKP **PKPdf** **19 22 26.8 -0.9**
SFJD PP **PP** **19 24 39.9 -2.2**
SFJD SKKPbc SKKPbc 19 35 24.6 -7.0
SFJD LR LR
comp=Z,353µm,20.0s
SPA0 Spitsbergen Ar 130.71 357 *e*P **PKPdf** **19 22 28.4 +0.1**
SPA0 IVMs_BB IVMs_BB 20 14 06.0
comp=Z,82µm,21.5s
SPA0 Spitsbergen Ar 130.71 357 *e*PKPdf **PKPdf** **19 22 28.0 -0.3**
SPITS Spitsbergen Ar 130.71 357 PKhKP PKPpre 19 22 16.6
comp=Z,3.9nm,0.6s,baz=63,slow=3.8,SNR=7.8
SPITS PKP **PKPdf** **19 22 27.9 -0.4**
comp=Z,91nm,0.8s,baz=106,slow=2.7,SNR=32
SPITS SKKPbc SKKPbc 19 35 43.0 +12
comp=Z,22nm,1.0s,baz=309,slow=4.0,SNR=2.2
WSAR Wadi Sarin 130.78 276 PKP **PKPdf** **19 22 29.6 -0.3**
comp=Z,7.9nm,0.8s,baz=196,slow=3.3,SNR=3.6
SUMG Summit 131.25 16 ⇓*i*P **PKPdf** **19 22 29.5 -0.4**
SUMG *i* 19 24 44.0
SUMG Summit 131.25 16 ⇓*i*PKIKP **PKPdf** **19 22 29.5 -0.4**
SUMG Summit 131.25 16 *e*PKPdf **PKPdf** **19 22 27.1 -2.7**
DAG Danmarks Havn 131.29 7 ⇓*i*P **PKPdf** **19 22 28.0 -1.3**
DAG *i* 19 24 44.8
comp=Z,153µm,20.0s
DAG Danmarks Havn 131.29 7 ⇓*i*PKIKP **PKPdf** **19 22 28.0 -1.3**
DAG *i* 19 24 44.8
DAG MLR MLR
comp=Z,160µm,20.0s
HOPEN Hopen 131.64 353 *e*P **PKPdf** **19 22 29.9 -0.1**
HOPEN *e*PP **PP** **19 24 51.5 +1.5**
HOPEN *e*SP SP 19 35 03.8 +3.9
HOPEN IVMs_BB IVMs_BB 20 12 58.2
comp=Z,79µm,23.5s
HSPB Hornsund (broa 131.90 356 *e*PKPdf **PKPdf** **19 22 29.7 -0.8**
HSPB *e*PP **PP** **19 24 50.9 -0.7**
HSPB *e*SP SP 19 35 05.9 +3.8
HSPB IVMs_BB IVMs_BB 20 15 03.7
comp=Z,84µm,21.6s
HSPB Hornsund (broa 131.90 356 *e*PKIKP **PKPdf** **19 22 29.8 -0.7**
HSPB *e* 19 24 51.9
HSPB *e*PS **PS** **19 35 01.6 -5.3**
HSPB MLR MLR
comp=Z,305µm,21.9s
SVE Sverdlovsk 131.99 322*ce*P **Pdif** **19 19 21.5 -3.7**
SVE *i* 19 22 31.1
SVE *e* 19 24 48.6
SVE pmax pmax
comp=Z,466nm,2.0s
SVE pmax pmax
comp=Z,7µm,11.2s
SVE MLR MLR
comp=E,360µm,22.0s
SVE MLR MLR
comp=Z,462µm,22.0s
SVE MLR MLR
comp=N,120µm,21.0s
HOQ Hoqain 132.04 276 P **PKPdf** **19 22 31.7 -0.6**
SNR=30
KMZ Kasempa 132.44 210 ⇓*i*P **PKPdf** **19 22 34.0 +0.5**
KMZ *i* P **PKPdf** **19 22 34.3 +0.8**
KMZ *i* P **PKPdf** **19 22 34.8 +1.3**
KMZ *i* 19 22 34.9
baz=175,slow=2.3
KMZ *i* 19 22 43.0
KMZ *i* 19 23 02.0
RBK Rabkut 132.54 267 P **PKPdf** **19 22 35.0 +1.5**
SNR=13
ARQ Araqi 132.64 276 P **PKPdf** **19 22 33.6 +0.1**
SNR=24
DODT Dodoma, Tanzan 133.17 226 *i* P **PKPdf** **19 22 33.0 -1.9**
DODT 19 24 55.6
ARU Arti 133.20 321 PKhKP PKPpre 19 22 24.6
comp=N,15nm,0.9s,baz=132,slow=2.4,SNR=8.7
ARU PKP **PKPdf** **19 22 33.5 +0.1**
comp=N,58nm,0.6s,baz=62,slow=2.0,SNR=39
ARU PP **PP** **19 24 55.8 -4.8**
comp=N,36nm,0.8s,baz=91,slow=7.5,SNR=3.1
ARU SKP 19 26 05.9
comp=N,10nm,0.7s,baz=233,slow=23,SNR=6.8
ARU Arti 133.20 321 P **Pdif** **19 19 31.7 +1.1**
ARU *i* 19 22 32.0
ARU 19 24 57.7
ARU PPP PPP 19 27 53.0
ARU 19 29 38.3
ARU PS **PS** **19 35 05.2 -14**
ARU MLR MLR
comp=Z,470µm,22.0s
ARU Arti 133.20 321 *e*PKPpre PKPpre 19 22 24.8
ARU PKP **PKPdf** **19 22 33.5 +0.1**
ARU PP **PP** **19 24 55.8 -4.8**
ARU SKP 19 26 05.9
ARU LR LR
comp=Z,457µm,21.0s
ABKAR Akbulak array 133.33 312 *e*PKPpre PKPpre 19 22 23.6
SOKR Solikamsk 133.34 326 *d*P **Pdif** **19 19 20.9 -10**
SOKR *i* 19 22 30.6
SOKR *e* 19 24 58.5
SOKR *e* 19 35 22.7
SOKR 19 37 04.7
SOKR *e* 19 42 36.2
SOKR pmax pmax
comp=Z,478nm,2.0s
SOKR pmax pmax
comp=Z,4µm,3.3s
SOKR MLR MLR
comp=Z,370µm,22.0s
UOSS Minazif 133.42 278 *e*PKPdf PKPpre 19 22 29.4
HATD Hatta, Dubai 133.45 277 *i* P **PKPdf** **19 22 34.2 -0.7**
SNR=9.6
HATD Hatta, Dubai 133.45 277 *i* PKPdf **PKPdf** **19 22 34.2 -0.7**
SNR=9.6
ASHO Ashiyiah 133.47 277 *i* P **PKPdf** **19 22 34.3 -0.7**
SNR=7.1
ASHO Ashiyiah 133.47 277 *i* PKPdf **PKPdf** **19 22 34.3 -0.7**
SNR=7.1
ASHO Ashiyiah 133.47 277 P **PKPdf** **19 22 34.1 -0.9**
SNR=12
BANOM Banah 133.62 279 *i* P **PKPdf** **19 22 35.4 +0.1**
SNR=8.8
BANOM Banah 133.62 279 *i* PKPdf **PKPdf** **19 22 35.4 +0.1**
SNR=8.8
FAQ Al Faqa, Dubai 133.89 277 *i* P **PKPdf** **19 22 35.1 -0.7**
SNR=16
FAQ Al Faqa, Dubai 133.89 277 *i* PKPdf **PKPdf** **19 22 35.1 -0.7**
SNR=16
NAZ Nazwa, Dubai 133.90 278 *i* P **PKPdf** **19 22 34.7 -1.0**
SNR=12
NAZ Nazwa, Dubai 133.90 278 *i* PKPdf **PKPdf** **19 22 34.7 -1.0**
SNR=12
BJO Bjornoya 134.06 354 *e*P **PKPdf** **19 22 34.2 -0.4**
BJO *e*PP **PP** **19 25 05.6 +0.2**
SHEL Horse Pasture 134.07 167 *i* PKIKP PKPdf 19 22 47.1 +11
SHEL Horse Pasture 134.07 167 PFAKE 19 22 50.0 +14
SHEL LR LR
comp=Z,47µm,19.0s
GEYT Alibeck 134.46 296 PKhKP PKPpre 19 22 24.9
comp=Z,5.0nm,0.7s,baz=297,slow=1.0,SNR=6.4
GEYT PKP **PKiKP** **19 22 37.7 -0.2**
comp=Z,27nm,0.7s,baz=214,slow=1.4,SNR=13
GEYT SKP 19 26 18.8
comp=Z,69nm,1.0s,baz=264,slow=3.0,SNR=4.5
GEYT PKKP PKKPdf 19 32 33.3 +11
comp=Z,12nm,1.0s,baz=263,slow=3.9,SNR=3.8
GEYT SKKPbc SKKPbc 19 35 06.0 -8.8
comp=Z,26nm,1.2s,baz=269,slow=5.8,SNR=3.7
AKTO Aktyubinsk 134.47 313 PKhKP PKPpre 19 22 24.0
comp=Z,10nm,0.8s,baz=93,slow=5.9,SNR=7.3
AKTO PKP **PKPdf** **19 22 36.7 +0.6**
comp=Z,78nm,0.8s,baz=101,slow=4.0,SNR=33
AKTO SKP 19 26 11.8
comp=Z,44nm,1.1s,baz=117,slow=4.5,SNR=5.6
NRS Narsarsuaq 134.66 31 *i* P **PKPdf** **19 22 33.7 -2.3**
NRS *i* 19 25 08.6
comp=Z,245µm,20.0s
KMBO Kilima Mbogo 135.94 233 PKhKP PKPpre 19 22 32.8
comp=Z,11nm,1.0s,baz=59,slow=2.7,SNR=7.9
KMBO PKP **PKiKP** **19 22 41.4 -0.5**
comp=Z,70nm,1.0s,baz=118,slow=3.0,SNR=19
KMBO PP **PP** **19 25 18.5 -0.1**
comp=Z,11nm,1.1s,baz=76,slow=4.1,SNR=2.7
KMBO SKP 19 26 20.5
comp=Z,44nm,1.2s,baz=154,slow=7.5,SNR=2.1
KMBO Kilima Mbogo 135.94 233 *e*PKPpre PKPpre 19 22 33.5
KMBO PKP **PKiKP** **19 22 41.4 -0.5**
KMBO PP **PP** **19 25 18.5 -0.1**
KMBO SKP 19 26 20.5
KMBO LR LR
comp=Z,111µm,21.0s
SCO Scoresbysund 136.32 12 *i* P PKPpre 19 22 34.5
comp=Z,188µm,20.0s
HAMF Hammerfest 137.13 350 *e*P PKPpre 19 22 34.9
HAMF *e*PP **PP** **19 25 28.1 +3.3**
HAMF IVMs_BB IVMs_BB 20 17 20.9
comp=Z,83µm,22.3s
LVZ Lovozero 137.25 343*d* *i*PKIKP **PKPdf** **19 22 38.9 -1.9**
LVZ Lovozero 137.25 343 *e*PKPdf **PKPdf** **19 22 35.9 -4.9**
LVZ LR LR
comp=Z,194µm,22.0s
JMIC Jan Mayen 137.72 6 PKP **PKPdf** **19 22 41.4 -0.1**
comp=Z,82nm,0.9s,baz=2.8,slow=1.4,SNR=25
JMIC SKKPbc SKKPbc 19 34 32.8 -32
comp=Z,21nm,1.1s,baz=134,slow=6.1,SNR=3.3
JMIC Jan Mayen 137.72 6 *e*P PKPpre 19 22 32.4
JMIC *e*PP **PP** **19 25 30.8 +2.4**
JMIC IVMs_BB IVMs_BB 20 24 13.8
comp=Z,31µm,20.2s
APA Apatity 137.81 344 ⇑*i*PKIKP **PKPdf** **19 22 42.6 +0.9**
APA *i* 19 22 56.7
APA *i* 19 25 33.0
APA *i* PPP PPP 19 37 35.0
APA *i* SS SS 19 43 32.0 -4.7
APA MLR MLR
comp=Z,274µm,22.0s
ARA0 ARCESS Array S 137.83 349 *e*PKPpre PKPpre 19 22 33.4
ARCES ARCESS Array B 137.83 349 PKhKP PKPpre 19 22 33.6
comp=Z,31nm,0.9s,baz=350,slow=1.5,SNR=16
ARCES PKP **PKPdf** **19 22 41.4 -0.4**
comp=Z,80nm,0.8s,baz=22,slow=1.0,SNR=28
ARE0 ARCESS Array S 137.83 349 *e*P PKPpre 19 22 32.2
ARE0 *e*PP **PP** **19 25 32.2 +3.0**
ARE0 ARCESS Array S 137.83 349 *e*PKPpre PKPpre 19 22 33.8
H10S3 ASCENSION HYDR 138.03 152 T T 21 58 30.6
baz=204,slow=75,SNR=22
H10S2 ASCENSION HYDR 138.03 152 T T 21 58 30.6
baz=204,slow=75,SNR=23
H10S1 ASCENSION HYDR 138.04 152 T T 21 58 31.9
baz=204,slow=75,SNR=22
KTK1 Kautokeino 138.67 350 *e*P PKPpre 19 22 36.3
KTK1 *e*PP **PP** **19 25 41.6 +7.3**
TRO Tromso 138.70 352 *e*P PKPpre 19 22 35.1
TRO *e*PP **PP** **19 25 34.3 -0.2**
TRO *e*SS SS 19 43 51.6 +4.6
TRO IVMs_BB IVMs_BB 20 28 10.3
comp=Z,67µm,19.9s
ASCN Ascension 139.07 152 *e*PKPdf **PKPdf** **19 22 50.1 +4.4**
ASCN LR LR
comp=Z,83µm,19.0s
H10N3 ASCENSION HYDR 139.10 152 T T 21 59 45.6
baz=203,slow=74,SNR=33
H10N1 ASCENSION HYDR 139.10 152 T T 21 59 45.0
baz=203,slow=74,SNR=33
H10N2 ASCENSION HYDR 139.12 152 T T 21 59 46.9
baz=203,slow=74,SNR=28
ATD Arta Tunnel 139.55 252 PKhKP PKPpre 19 22 41.1
comp=Z,23nm,0.9s,baz=104,slow=3.2,SNR=3.3
DAMY Dhamar 139.76 258 *e*PKPdf **PKPdf** **19 22 45.2 -2.0**
KLMR Klimovskoe 140.49 333 *e*PKHKP PKPpre 19 22 39.0
KLMR pmax pmax
comp=Z,700nm,1.5s
LOF Lofoten 140.71 354 *e*P PKPpre 19 22 36.0
LOF *e*PP **PP** **19 25 46.1 -0.7**
LOF *e*SS SS 19 44 16.7 +6.1
LOF IVMs_BB IVMs_BB 20 34 28.9
comp=Z,42µm,19.3s
STEI Steigen 140.74 353 *e*P PKPpre 19 22 40.6
BORG Borgarnes 141.19 17 PKhKP PKPpre 19 22 41.4
comp=Z,7.8nm,0.7s,baz=120,slow=22,SNR=1.9
BORG PP **PP** **19 25 52.8 +2.9**
comp=Z,60nm,1.1s,baz=2.2,slow=3.3,SNR=3.3
BORG Borgarnes 141.19 17 PKPpre PKPpre 19 22 41.4
BORG *e*PKPdf **PKPdf** **19 22 47.4 -0.5**
BORG PP **PP** **19 25 52.8 +2.9**
BORG LR LR
comp=Z,160µm,20.0s
FURI Furi 141.47 245 *i* P **PKPdf** **19 22 51.9 +1.4**
FURI AML AML 19 46 21.5
comp=E,298µm,46.8s
KONS Konsvik 142.34 354 *e*P PKPpre 19 22 44.9
STOK Stokkvaagen 142.52 354 *e*P PKPpre 19 22 45.5
GROC Groznyy 143.75 304 *e*PKIKP PKPab 19 22 50.0 -0.1
GROC pmax pmax
comp=Z,2µm,1.6s
MOS Moscow 144.26 327k *i*PKIKP **PKPab** **19 22 50.7 -0.9**
MOS *e*SS SS 19 44 47.9 -4.7
MOS *e*SSS SSS 19 50 19.1
MOS pmax pmax
comp=Z,2µm,1.7s
MOS MLR MLR
comp=N,145µm,21.0s
MOS MLR MLR

comp=Z,168µm,21.0s
DGRG David-gareji 144.28 301 P PKPbc 19 22 52.6 0.0
DGRG David-gareji 144.28 301 *e*PKIKP PKPbc 19 22 52.5 -0.1
NSS Namsos 144.38 354 *e*P **PKPab 19 22 50.3 -1.4**
FIA1 FINESS Array S 144.61 342 *e*PKPdf **PKPab 19 22 51.0 -1.7**
FINES FINESS Array B 144.62 342 PKP **PKPab 19 22 51.7 -1.0**
comp=Z,432nm,0.8s,baz=62,slow=2.8,SNR=197
SEAG Tbilisi Sea 144.67 302 P **PKPdf 19 22 54.6 -0.3**
DUS Dusheti 144.70 302 P PKPdf 19 23 03.5 +8.5
DUS Dusheti 144.70 302 *e*PKIKP PKPdf 19 23 03.4 +8.4
GNI Garni 144.89 299 PKP **PKPdf 19 22 55.1 -0.4**
comp=Z,272nm,1.1s,baz=159,slow=1.3,SNR=80
GNI Garni 144.89 299 *i* P PKPbc 19 22 54.7 0.0
SNR=134
GNI Garni 144.89 299 *i* PKPbc PKPbc 19 22 54.7 0.0
SNR=134
GNI Garni 144.89 299 *d i*PKIKP PKPbc 19 22 54.9 +0.2
GNI Garni 144.89 299 *e*PKPdf **PKPdf 19 22 55.3 -0.2**
GNI LR LR
comp=Z,167µm,22.0s
KZR Kazreti 145.01 301 P **PKPdf 19 22 56.9 +1.4**
OBN Obninsk 145.11 327 PKPbc **PKPbc 19 22 53.9 -0.7**
comp=Z,1µm,1.0s,baz=61,slow=2.0,SNR=111
OBN Obninsk 145.11 327 *d i*PKP2 **PKPbc 19 22 53.1 -1.5**
OBN *i* 19 26 11.3
OBN *i* SS SS 19 45 05.6 +3.3
OBN pmax pmax
comp=Z,1µm,1.2s
OBN pmax pmax
comp=Z,41µm,5.1s
OBN MLR MLR
comp=Z,191µm,20.0s
OBN Obninsk 145.11 327 *e*PKPbc **PKPbc 19 22 54.0 -0.6**
OBN LR LR
comp=Z,197µm,20.0s
ZEI Tsey 145.18 304 *i* PKIKP **PKPbc 19 22 55.0 -0.6**
ZEI pmax pmax
comp=Z,3µm,0.9s
NCK Nalchik 145.28 305 *d i*PKIKP **PKPbc 19 22 55.3 -0.4**
GOF Gofitskoye 145.34 308⇑ *e*PKIKP **PKPbc 19 22 55.5 -0.3**
GOF pmax pmax
comp=Z,2µm,1.4s
VORR Voronezh 145.49 320⇓ *i*PKP2 **PKPdf 19 22 54.0 -1.9**
VORR pmax pmax
comp=Z,6µm,1.6s
ONI Oni 145.54 303 P **PKPab 19 22 57.3 +0.5**
ONI Oni 145.54 303 *e*PKIKP **PKPab 19 22 57.3 +0.5**
BGD Bogdanovka 145.63 301 P **PKPab 19 22 57.8 +0.4**
AKH Akhalkalaki 145.69 301⇑ *i*P **PKPbc 19 22 57.3 +0.1**
EAK Akyaka 145.70 300 *i* P **PKPab 19 22 57.7 0.0**
VSR Storozhevoye 145.72 320 *e*PKP2 **PKPab 19 22 57.1 0.0**
VSR *e*SS SS 19 45 06.0 -3.7
VSR *e*SSS SSS 19 50 38.8
VSR pmax pmax
comp=Z,3µm,2.0s
KBZ Khabaz 145.73 306 PKPbc **PKPdf 19 22 56.4 -0.1**
comp=Z,85nm,0.9s,baz=89,slow=4.4,SNR=57
DYDN Diyadin 145.75 298 *i* P **PKPbc 19 22 57.7 +0.1**
TBLU Trondheim 145.78 355 *e*P **PKPdf 19 22 54.7 -1.4**
KVAR Kislovodsk Arr 145.83 306 PKPbc **PKPdf 19 22 55.9 -1.0**
comp=Z,832nm,1.4s,baz=43,slow=2.8,SNR=83
KVAR PP **PP 19 26 15.8 -3.3**
comp=Z,90nm,1.0s,baz=46,slow=8.5,SNR=3.5
KIV Kislovodsk 145.84 306 *i* P **PKPbc 19 22 57.5 0.0**
SNR=457
KIV Kislovodsk 145.84 306 *i* PKPdf **PKPbc 19 22 57.5 0.0**
SNR=457
KIV Kislovodsk 145.84 306 *e*PKHKP PKPpre 19 22 51.8
KIV *i* 19 22 56.6
KIV *e* 19 26 14.8
KIV *e* 19 30 00.6
KIV *e*SS SS 19 45 08.0 -4.1
KIV *e*SSS SSS 19 50 37.0
KIV pmax pmax
comp=Z,610nm,1.0s
KIV Kislovodsk 145.84 306 *e*PKPdf **PKPdf 19 22 56.9 -0.1**
KIV LR LR
comp=Z,268µm,19.0s
HAKT HAKKARI 145.85 295 *i* P **PKPbc 19 22 57.7 -0.3**
VMUR Van-Muradiye 145.88 297 *i* P **PKPbc 19 22 57.7 -0.3**
NEY Neytrino 145.95 305⇓ *i*PKP2 **PKPdf 19 22 57.0 -0.2**
TVAN Van 146.04 296 *i* P **PKPdf 19 22 56.5 -1.1**
EPOS Posof 146.25 302 *i* P **PKPdf 19 22 57.7 -0.1**
GEVA Gevas 146.33 296 *i* P **PKPbc 19 22 58.8 -0.5**
SOFL Sornfelli, Far 146.48 9 *e*P **PKPdf 19 22 55.8 -1.6**
SOFL AMS AMS 20 29 55.8
comp=Z,183µm,19.6s
CHVG Ch'k'valeri 146.51 304 P **PKPab 19 23 00.1 -0.4**
MOL Molde 146.64 357 *e*P **PKPdf 19 22 57.0 -0.5**
SIRN S¯–rnak 146.88 295 *i* P **PKPdf 19 22 58.8 -0.1**
ARTV Artvin 146.89 301 *i* P **PKPbc 19 23 01.1 +0.2**
DAGI Agillar 146.92 301 *i* P **PKPbc 19 23 01.1 +0.2**
TATV Tatvan 146.94 296 *i* P **PKPab 19 23 02.2 -0.3**
AKN Aaknes 147.05 357 *e*P **PKPdf 19 22 57.9 -0.4**
DBOC Borcka 147.06 302 *i* P **PKPdf 19 22 58.8 -0.2**
HOMI Horasan 147.06 299 *i* P **PKPdf 19 22 59.9 +0.6**
DDEM Demirkent 147.07 301 *i* P **PKPab 19 23 03.3 +0.5**
DOMB Dombas 147.07 355 *e*P **PKPdf 19 22 57.8 -0.6**
ERZM Erzurum 147.49 299 *i* P **PKPbc 19 23 03.3 +0.7**
NC303 NORSAR Array S 147.68 353 *e*P **PKPdf 19 22 58.9 -0.5**
NC204 NORSAR Array S 147.69 354 *e*P **PKPdf 19 22 59.5 +0.1**
FOO Floro 147.69 359 *e*P **PKPdf 19 22 58.0 -1.3**
NC405 NORSAR Array S 147.75 353 *e*P **PKPdf 19 23 00.1 +0.6**
BTMN Batman 147.76 295 *i* P **PKPdf 19 23 01.1 +0.7**
BNGL BINGOL 147.77 297 *i* P **PKPbc 19 23 03.3 -0.1**
NB201 NORSAR Array S 147.86 353 *e*P **PKPdf 19 23 00.4 +0.7**
NB2 NORSAR Subarra 147.88 353 PKP **PKPbc 19 23 02.1 -0.6**
comp=Z,27µm,3.3s,baz=7.5,slow=2.8
NB2 NORSAR Subarra 147.88 353 PKP **PKPbc 19 23 02.1 -0.6**
baz=7.5,slow=2.8
NOA NORSAR Array B 147.88 353 PKP **PKPdf 19 22 58.4 -1.3**
comp=Z,14nm,0.8s,baz=6.3,slow=2.0,SNR=156
NOA PKPbc **PKPbc 19 23 02.2 -0.5**
comp=Z,262nm,0.9s,baz=12,slow=4.1,SNR=150
NBO02 NORSAR Array S 147.90 353 *e*P **PKPdf 19 22 58.5 -1.3**
NBO00 NORSAR Array S 147.93 354 *e*P **PKPdf 19 22 59.6 -0.1**
SOC Sochi 148.02 306 *d i*PKIKP **PKPdf 19 22 59.5 -0.9**
SOC *i* 19 23 04.7
SOC *e* 19 26 30.9
SOC *e*SS SS 19 45 31.4 -5.1
SOC pmax pmax
comp=Z,150nm,1.5s
SOC pmax pmax
comp=Z,1µm,1.3s
HYA Hoyanger 148.10 358 *e*P **PKPdf 19 23 00.6 +0.6**
NAO01 NORSAR Array S 148.10 353 *e*P **PKPdf 19 23 00.9 +0.8**
BGOL Bingol 148.13 298 *i* P **PKPbc 19 23 03.3 -0.9**
KOPT Kop Dagi 148.14 299 *i* P **PKPbc 19 23 05.6 +1.2**
NC602 NORSAR Array S 148.14 353 *e*P **PKPdf 19 22 58.3 -1.8**
NC602 NORSAR Array S 148.14 353 *e*P **PKPdf 19 22 59.1 -1.0**
MARD Mardin 148.19 294 *i* P **PKPdf 19 23 01.1 -0.1**
SUE Sulen 148.24 359 *e*P **PKPdf 19 22 58.8 -1.4**
MZRK Al-Mazaregh 148.35 292 *e*P **PKPab 19 23 06.4 -1.6**
HFS Hagfors 148.45 350 PKP **PKPdf 19 22 58.9 -1.7**
comp=Z,59nm,0.7s,baz=94,slow=1.9,SNR=33
HFS PKPbc **PKPbc 19 23 03.5 -0.6**
comp=Z,279nm,0.9s,baz=52,slow=2.4,SNR=89
DIYA Diyarbakir 148.67 296 *i* P **PKPbc 19 23 05.6 0.0**
SFNV Sufian 148.77 293 *e*P **PKPbc 19 23 04.4 -1.5**
EUZM Uzumlu 148.79 299 *i* P **PKPbc 19 23 06.7 +0.8**
ASK Askoy 148.81 359 *e*P **PKPdf 19 23 00.6 -0.6**
BER Bergen 148.91 358 *e*P **PKPdf 19 23 00.6 -0.7**
LRW Lerwick 148.99 5 *e*P **PKPdf 19 23 00.2 -1.2**
LRW AMS AMS 20 32 16.0
comp=Z,136µm,19.2s
OSL Oslo 149.01 353 *e*P **PKPdf 19 23 00.6 -0.9**
KELT Kelkit 149.06 300 *i* P **PKPdf 19 23 04.4 +1.9**
IZAR Zarasai 149.08 335 *e*P **PKPdf 19 23 01.8 0.0**
IZAR IAmb IAmb 19 23 24.1
comp=Z,580nm,1.1s
SAN1 Sandwick 149.11 5 *e*P **PKPdf 19 23 01.1 -0.6**
IDID Didziasalis 149.22 334 *e*P **PKPdf 19 23 01.8 -0.2**
IDID IAmb IAmb 19 23 24.3
comp=Z,341nm,0.9s
ANN Anapa 149.25 309 *e*PKIKP **PKPdf 19 23 00.9 -1.5**
ANN *e* 19 23 07.9
ANN *e* 19 26 43.6
ANN pmax pmax
comp=Z,1µm,1.1s
ANN pmax pmax
comp=N,371nm,1.0s
ANN pmax pmax
comp=E,367nm,1.0s
ANN pmax pmax
comp=Z,85µm,12.1s
ANN pmax pmax
comp=E,17µm,12.1s
ANN pmax pmax
comp=N,29µm,12.1s
ISAL Salakas 149.26 335 *e*P **PKPdf 19 23 01.9 -0.1**
ISAL IAmb IAmb 19 23 18.7
comp=Z,517nm,1.1s
ODD1 Odda 149.34 357 *e*P **PKPdf 19 23 01.1 -1.0**
MICGM Minsk 149.37 332⇓ *e*PKP **PKPdf 19 23 01.0 -1.3**
MICGM ⇓ *e*PKP **PKPdf 19 23 01.0 -1.3**
MICGM PKPM 19 23 05.0
comp=Z,2.0nm,1.8s
MICGM PKPM 19 23 06.0
comp=Z,16nm,4.0s
MICGM PKPM 19 23 07.0
comp=N,0.6nm,1.2s
MICGM PKPM 19 23 08.0
comp=E,1.0nm,1.4s
MICGM *e*PP **PP 19 26 46.0 +7.2**
MICGM PPM 19 26 47.0
comp=Z,4.8nm,8.0s
MICGM *e*PPP PPP 19 30 02.0
MICGM *e*SKS **SKSdf 19 30 04.0 -4.5**
MICGM *e*SKKS SKKSac 19 33 04.0 -24
MICGM *e*SKSP 19 36 48.0
MICGM *e*SS **SS 19 45 46.0 -4.1**
MICGM *e*SSS SSS 19 51 28.0
MICGM *e*LQ LQ 20 05 00.0
MICGM LQM 20 10 40.0
comp=E,354nm,40.0s
MICGM LQM 20 11 16.0
comp=N,134nm,32.0s
MICGM *e*LR LR 20 16 26.0
MICGM LRM MLR 20 28 04.0
comp=Z,207nm,22.0s
MICGM LRM MLR 20 28 04.0
comp=E,118nm,22.0s
MICGM LRM MLR 20 28 10.0
comp=N,57nm,22.0s
MNK Minsk 149.37 332 *de*PKHKP PKPpre 19 23 01.0
MNK *e* 19 23 01.0
MNK *e* 19 26 46.0
MNK *e*PPP PPP 19 30 02.0
MNK *e* 19 30 04.0
MNK *e*SS SS 19 45 46.0 -4.1
MNK *e*SSS SSS 19 51 28.0
MNK pmax pmax
comp=Z,2µm,1.8s
MNK pmax pmax
comp=Z,16µm,4.0s
MNK pmax pmax
comp=N,590nm,1.2s
MNK pmax pmax
comp=E,950nm,1.4s
MNK pmax pmax
comp=Z,5µm,8.0s
MNK MLR MLR
comp=E,118µm,22.0s
MNK MLR MLR
comp=Z,207µm,22.0s
MNK MLR MLR
comp=N,57µm,22.0s
KONO Kongsberg 149.40 354 *e*P **PKPdf 19 23 01.3 -0.8**
KONO Kongsberg 149.40 354 PFAKE 19 23 10.0 -1.4
KONO LR LR
comp=Z,201µm,22.0s
REFA Refahiye_ERZ¯ 149.55 299 *i* P **PKPdf 19 23 04.4 +1.1**
H07S1 FLORES T-PHASE 149.61 61 PKPbc **PKPbc 19 23 05.5 -2.4**
SNR=171
H07S1 FLORES T-PHASE 149.61 61 *e*PKP **PKPdf 19 23 02.3 -0.9**
H07S1 FLORES T-PHASE 149.61 61 *e*PP PP 19 26 42.7 +1.4
H07N1 FLORES T-PHASE 149.63 61 PKPbc **PKPbc 19 23 05.5 -2.4**
SNR=205
H07N1 FLORES T-PHASE 149.63 61 *e*PKP **PKPdf 19 23 02.3 -0.9**
GRSN GIRESUNGRSN 149.66 302 *i* P **PKPbc 19 23 05.6 -2.3**
KEMA Kemaliye 149.78 298 *i* P **PKPbc 19 23 06.7 -1.6**
BLS5 Blasjo 149.83 357 *e*P **PKPdf 19 23 02.4 -0.5**
SUSE Susehri 149.84 300 *i* P **PKPdf 19 23 04.4 +0.7**
ORDU Ordu-Boztepe 149.95 302 *i* P **PKPdf 19 23 05.6 +1.9**
KMY Karmoy 150.08 358 *e*P **PKPdf 19 23 02.9 -0.3**
ATAB Bozova 150.15 295 *i* P **PKPbc 19 23 11.2 +2.0**
BIGH Upper Bighouse 150.34 8 *e*P **PKPdf 19 22 59.6 -4.0**
BIGH AMS AMS 20 29 54.2
comp=Z,418µm,19.4s
STAV Stavanger 150.35 358 *e*P **PKPdf 19 23 03.4 -0.2**
RRH Rhenigidale 150.49 11 *e*P **PKPdf 19 23 03.3 -0.6**
CUKAN kangal_SIVAS 150.56 299 *i* P **PKPdf 19 23 06.7 +1.8**
MLA1 Latheron 150.59 8⇑ *e*P **PKPdf 19 23 04.2 +0.1**
RRR Ruha Reidh 150.69 10 *e*P **PKPdf 19 23 03.6 -0.6**
SCER sogukcermik 150.72 300 *i* P **PKPbc 19 23 08.9 -1.7**
HOMB Homborsund 150.86 355 *e*P **PKPdf 19 23 02.9 -1.6**
SNART Snartemo 150.88 356 *e*P **PKPdf 19 23 03.4 -1.1**
SACV Santiago Islan 151.02 114 *e*PKPdf **PKPdf 19 23 07.1 +1.0**
SACV LR LR
comp=Z,57µm,19.0s
ZALF Zalf 151.09 286 *e*P **PKPbc 19 23 09.1 -2.5**
CUALT Altinyayla-SIV 151.11 299 *i* P **PKPbc 19 23 11.2 -0.4**
KAC Achnashellach 151.12 10 *e*P **PKPdf 19 23 05.1 +0.2**
PKL Plockton 151.21 11 *e*P **PKPdf 19 23 02.2 -2.8**
KPL AMS AMS 20 36 04.5
comp=Z,128µm,18.7s
HCB Kahramanmara¯ 151.26 295 *i* P **PKPbc 19 23 11.2 -0.6**
AKASG Malin Array Be 151.31 325 PKP **PKPdf 19 23 03.5 -1.9**
comp=Z,16nm,0.9s,baz=49,slow=1.7,SNR=49
AKASG PKPbc **PKPbc 19 23 11.0 -0.5**
comp=Z,225nm,0.6s,baz=44,slow=2.8,SNR=194
AKASG PKKP 19 31 51.1
comp=Z,2.0nm,0.5s,baz=45,slow=3.1,SNR=4.1
AKBB Malin Array Si 151.31 325 *e*PKIKP **PKPdf 19 23 04.6 -0.8**
AKBB Malin Array Si 151.31 325 *e*P **PKPdf 19 23 04.6 -0.8**
MDO Dochfour 151.31 9⇑ *e*P **PKPdf 19 23 04.7 -0.6**
MCD Coleburn Disti 151.31 8⇑ *e*P **PKPdf 19 23 04.7 -0.5**
KIEV Kiev 151.32 325 *e*PKIKP **PKPdf 19 23 03.6 -1.8**
KIEV MLR MLR
comp=Z,183µm,21.0s
KIEV Kiev 151.32 325 *e*PKPdf **PKPdf 19 23 03.6 -1.8**
KIEV LR LR
comp=Z,183µm,21.0s
AK11 Malin Array Si 151.35 325 *e*P **PKPdf 19 23 04.0 -1.5**
KSB Sheil Bridge 151.38 10 *e*P **PKPdf 19 23 04.8 -0.5**
SIM Simferopol' 151.40 311 *d i*PKIKP **PKPdf 19 23 05.0 -0.8**
SIM 19 26 59.2
SIM pmax pmax
comp=Z,555nm,0.8s
SIM pmax pmax
comp=Z,44µm,17.0s
ASF Jabal al Asfar 151.42 284 PKP **PKPdf 19 23 05.7 -0.6**
comp=Z,12nm,1.0s,baz=120,slow=0.3,SNR=19
ASF PKPbc **PKiKP 19 23 13.4 +0.5**
comp=Z,186nm,0.8s,baz=94,slow=2.1,SNR=58
CUSAR Sarkisla-SIVAS 151.47 299 *i* P **PKPdf 19 23 08.9 +2.7**
HAVZ Havza 151.51 303 *i* P **PKPdf 19 23 08.9 +2.8**
KFRA Kufra 151.52 291 *e*P **PKPdf 19 23 07.3 +1.0**
DRWC Darouich 151.53 293 *e*P **PKPab 19 23 20.6 -0.5**
SUW Suwalki 151.55 336 *e*PKPdf **PKPdf 19 23 05.0 -0.7**
SUW *e*PP **PP 19 26 53.7 +2.4**
SUW *e*PSKS 19 37 09.1
SUW *e* 19 42 12.8
SUW *e*SS SS 19 46 18.7 +4.5
SUW *e*SSS SSS 19 52 47.8
SUW LMZ LR 20 30 54.2
comp=Z,285µm,22.0s
SUW Suwalki 151.55 336 *e*PKIKP **PKPdf 19 23 05.0 -0.7**
SUW *e* 19 26 53.7
SUW *e*SS SS 19 46 18.7 +4.5
SUW MLR MLR
comp=Z,285µm,22.0s
PCED Cedros 151.65 62 *e*PKP **PKPdf 19 23 05.6 -0.8**
ANDN Andirin 151.68 296 *i* P **PKPbc 19 23 10.1 -2.8**
HOR Horta 151.72 62 *e*PKP **PKPdf 19 23 05.6 -0.8**
MARH Ras Al Marh 151.81 288 *e*P **PKPdf 19 23 09.9 +2.7**
PCAN Candelaria 151.85 63 *e*PKP **PKPdf 19 23 06.0 -0.7**
TOTH TOTAH 151.86 287 *e*P **PKPbc 19 23 15.2 +1.8**
HAWK Haweek 151.87 289 *e*P **PKPdf 19 23 06.7 -0.2**
PICO Pico 151.89 62 *e*PKP **PKPdf 19 23 06.2 -0.6**
BIDA Albida 151.92 290 *e*P **PKPdf 19 23 07.9 +0.9**
ROSA Rosais 151.99 62 *e*PKP **PKPdf 19 23 06.0 -0.9**
ROSA Rosais 151.99 62 *e*PP PP 19 26 54.2 -0.8
ROSA Rosais 151.99 62 *e*PKPdf **PKPdf 19 23 08.8 +1.9**
BOYT Boyabat 152.01 304 *i* P **PKPbc 19 23 14.6 +1.2**
YAYL Yayladag 152.03 292 *i* P **PKPdf 19 23 06.7 -0.5**
DRUM Mains of Drumt 152.06 7 *e*P **PKPdf 19 23 04.3 -2.0**
DRUM AMS AMS 20 30 34.6
comp=Z,183µm,19.6s
PMAN Manadas 152.12 62 *e*PKP **PKPdf 19 23 08.9 +1.8**
PGRA Graciosa 152.14 61 *e*PKP **PKPdf 19 23 06.3 -0.8**
PGRA Graciosa 152.14 61 *e*PP PP 19 26 55.6 -0.2
HWQ Hawqa 152.25 289 *e*P **PKPdf 19 23 06.4 -1.1**
BRBR Barbar 152.26 287 *e*P **PKPbc 19 23 16.2 +1.8**
YURE YUREGIR 152.34 294 *i* P **PKPbc 19 23 12.3 -1.9**
EDU Dundee 152.35 8 *e*P **PKPdf 19 23 05.8 -1.0**
YAHY KAYSERI_Yahyal 152.38 297 *i* P **PKPdf 19 23 07.8 +0.2**
AKO Adana 152.40 295 *i* P **PKPbc 19 23 11.2 -3.2**
BHL Bhames 152.50 288 *e*P **PKPdf 19 23 07.1 -0.8**
EAB Aberfoyle 152.53 10 *e*P **PKPdf 19 23 06.4 -0.7**
MUD Monsted U'grnd 152.59 353⇓ *i*P **PKPdf 19 23 06.6 -0.5**
comp=Z,3µm,1.5s
MUD Monsted U'grnd 152.59 353⇓ *i*PKIKP **PKPdf 19 23 06.6 -0.5**
MUD pmax pmax
comp=Z,3µm,1.5s
BEYL Beirut 152.63 288 *e*P **PKPdf 19 23 07.2 -0.8**
MMAI Mount Meron Ar 152.71 286 PKP **PKPdf 19 23 08.4 +0.2**
comp=Z,8.3nm,1.0s,baz=92,slow=4.3,SNR=12
MMAI PKPbc **PKiKP 19 23 16.0 +0.5**
comp=Z,118nm,0.6s,baz=130,slow=2.3,SNR=72
ADH Angra Heroismo 152.78 62 *e*PKP **PKPdf 19 23 07.3 -0.7**
PGBU Glenifferbraes 152.87 10 *e*P **PKPdf 19 23 04.1 -3.4**
PGBU AMS AMS 20 32 08.7
comp=Z,121µm,20.6s
EIL Elat 152.87 279 PKP **PKPdf 19 23 08.0 -0.5**
comp=Z,32nm,1.1s,baz=22,slow=1.4,SNR=28
EIL PKPbc **PKiKP 19 23 16.4 +0.5**
comp=Z,114nm,0.8s,baz=11,slow=1.7,SNR=41
COP Copenhagen 152.91 349⇓ *i*P **PKPdf 19 23 07.4 -0.2**
comp=Z,512nm,1.0s
comp=Z,113µm,22.0s
COP Copenhagen 152.91 349⇓ *i*PKIKP **PKPdf 19 23 07.4 -0.2**
COP pmax pmax
comp=Z,510nm,1.0s
COP MLR MLR
comp=Z,110µm,22.0s
EDI Edinburgh 152.94 9 *e*P **PKPdf 19 23 03.9 -3.8**
EDI AMS AMS 20 28 13.7
comp=Z,150µm,20.7s
GULE Gulek 152.96 295 *i* P **PKPbc 19 23 13.5 -2.4**
BSD Bornholm Skovb 152.99 346 *i* P **PKPdf 19 23 07.4 -0.4**
comp=Z,3µm,1.8s
BSD Bornholm Skovb 152.99 346 *i* PKIKP **PKPdf 19 23 07.4 -0.4**
BSD pmax pmax
comp=Z,3µm,1.8s
IDGL Inch Island, C 153.01 14 *e*P **PKPdf 19 23 03.0 -4.8**
ESY Stoneypath 153.02 8 *e*P **PKPdf 19 23 05.0 -2.8**
GMK Mull of Kintyr 153.13 12 *e*P **PKPdf 19 23 07.1 -0.9**
LLD Lille Linde 153.29 349 *i* P **PKPdf 19 23 07.5 -0.7**
LLD *i* 19 23 17.0
LLD Lille Linde 153.29 349 *i* PKIKP **PKPdf 19 23 07.5 -0.7**
LLD *i* 19 23 17.0
SORM Soroca 153.32 322⇑ *i*P **PKPdf 19 23 06.5 -2.0**
SORM Soroca 153.32 322⇑ *i*PKIKP **PKPdf 19 23 06.5 -2.0**
BR131 Keskin Array S 153.38 301 *e*PKPdf **PKPdf 19 23 08.0 -1.1**
BRTR Keskin Array B 153.38 301 PKP **PKPdf 19 23 07.2 -1.9**
comp=Z,12nm,1.0s,baz=97,slow=1.4,SNR=26
BRTR PKPbc **PKPbc 19 23 16.5 -0.1**
comp=Z,88nm,1.0s,baz=131,slow=4.0,SNR=45
BRTR PP **PP 19 27 00.6 -2.3**
comp=Z,23nm,1.0s,baz=67,slow=3.7,SNR=2.3
AKSY AKSARAY - Alti 153.52 299 *i* P **PKPbc 19 23 16.9 -0.1**
EKA Eskdalemuir Ar 153.52 9 PKP **PKPdf 19 23 07.5 -1.1**
comp=Z,5.6nm,0.7s,baz=357,slow=0.5,SNR=16
EKA PKPbc **PKPbc 19 23 16.0 -0.2**
comp=Z,18nm,0.6s,baz=333,slow=1.1,SNR=33
EKA PP **PP 19 27 04.2 +2.0**
comp=Z,51nm,1.2s,baz=356,slow=3.1,SNR=5.3
ESK Eskdalemuir 153.53 9 *e*P **PKPdf 19 23 05.5 -3.0**
ESK AMS AMS 20 31 08.4
comp=Z,147µm,20.5s
ESK Eskdalemuir 153.53 9 *e*PKIKP **PKPdf 19 23 09.3 +0.7**
ESK MLR MLR
comp=Z,195µm,21.0s
ESK Eskdalemuir 153.53 9 *e*PKPdf **PKPdf 19 23 09.3 +0.7**
ESK LR LR
comp=Z,195µm,21.0s
ECK Cauldkaine Hil 153.67 9 *e*P **PKPdf 19 23 05.5 -3.2**
KIS Kishinev 153.70 319⇓ *i*PKP **PKPdf 19 23 07.0 -2.1**
KIS M M 19 23 11.0
comp=Z,4µm,4.0s
KIS Kishinev 153.70 319 *i* PP PP 19 27 13.0 +9.0
comp=Z,38µm,14.0s
KIS Kishinev 153.70 319 *i* PKKP 19 32 23.0
KIS *i* SKKS 19 34 26.0
KIS *i* SKSP 19 37 08.0
KIS Kishinev 153.70 319 *i* PS 19 40 14.0
KIS Kishinev 153.70 319⇑ *i*P **PKPdf 19 23 07.3 -1.8**
KIS Kishinev 153.70 319⇑ *i*PKIKP **PKPdf 19 23 07.3 -1.8**
GAL1 Galloway 153.74 11 *e*P **PKPdf 19 23 06.3 -2.5**
GAL1 AMS AMS 20 32 13.6
comp=Z,104µm,20.1s
BHH Howats Hill 153.75 9 *e*P **PKPdf 19 23 08.3 -0.5**
PHNC Paralimni 153.79 290 P **PKPdf 19 23 10.8 +1.2**
BBAL Bala 153.81 301 *i* P **PKPdf 19 23 07.8 -1.9**
RGN Rugen 153.84 347 *e*PKPbc **PKPbc 19 23 13.6 -3.3**
ANTO Ankara 153.97 302 *e*PKIKP **PKPdf 19 23 09.4 -0.4**
ANTO MLR MLR
comp=Z,126µm,22.0s
ANTO Ankara 153.97 302 *e*PKPdf **PKPdf 19 23 09.4 -0.4**
ANTO LR LR
comp=Z,126µm,22.0s
BR231 Keskin MP Arra 153.99 302 *e*PKPdf **PKPdf 19 23 08.8 -1.1**
IGLA Glengowla, Co 154.06 18 *e*P **PKPdf 19 23 06.6 -2.8**
GKP Gorka Klasztor 154.09 341 *e*PKPdf **PKPdf 19 23 09.1 -0.4**
GKP *e*PP PP 19 27 14.4 +8.9
GKP *e* 19 42 23.8
GKP *e*SS SS 19 46 48.9 +7.1
GKP *e*SSS SSS 19 52 45.6
GKP LMZ LR 20 28 30.3
comp=Z,428µm,23.4s
GKP Gorka Klasztor 154.09 341 *e*PKIKP **PKPdf 19 23 09.0 -0.4**
GKP *e* 19 27 14.4
GKP MLR MLR
comp=Z,428µm,23.4s
PSET Sete Cidades 154.10 63 *e*PKP **PKPdf 19 23 09.1 -0.9**
PSET Sete Cidades 154.10 63 *e*PP PP 19 27 05.2 -1.8
PDA Ponta Delgada 154.16 63 *e*PKP **PKPdf 19 23 09.4 -0.6**
BEL Belsk 154.16 335 *e*PKPdf **PKPdf 19 23 09.2 -0.3**
BEL *e*PP PP 19 27 15.2 +9.1
BEL *e*PPP PPP 19 30 41.3
BEL *e* 19 42 48.2
BEL *e*SS SS 19 46 45.0 +2.1
BEL *e*SSS SSS 19 52 45.3
BEL LMZ LR 20 29 52.9
comp=Z,309µm,22.3s
BEL Belsk 154.16 335 *e*PKIKP **PKPdf 19 23 09.3 -0.3**
BEL *e* 19 27 15.2
BEL *e*PPP PPP 19 30 41.3
BEL *e*SS SS 19 46 44.9 +2.0
BEL MLR MLR
comp=Z,309µm,22.3s
KESW Keswick, Cumbr 154.25 9 *e*P **PKPdf 19 23 05.8 -3.8**
KESW AMS AMS 20 34 04.3
comp=Z,161µm,19.9s
CMLA Cha da Macela 154.27 63 *e*PKIKP **PKPdf 19 23 11.4 +1.2**
CMLA MLR MLR
comp=Z,247µm,20.0s
CMLA Cha da Macela 154.27 63 *e*PKP **PKPdf 19 23 09.6 -0.6**
CMLA Cha da Macela 154.27 63 *e*PP PP 19 27 07.7 -0.2
CMLA Cha da Macela 154.27 63 *e*PKPdf **PKPdf 19 23 11.4 +1.2**
CMLA LR LR
comp=Z,247µm,20.0s
IAS Iasi 154.30 321⇑ *i*P **PKPbc 19 23 19.9 +1.7**
LEOM Leova 154.32 319⇓ *i*P **PKPdf 19 23 07.8 -2.1**
LEOM Leova 154.32 319⇓ *i*PKIKP **PKPdf 19 23 07.8 -2.1**
CSS Mathiatis 154.37 290 P **PKPdf 19 23 10.0 -0.5**
CSS Mathiatis 154.37 290 P **PKPdf 19 23 08.5 -2.0**
CSS Mathiatis 154.37 290 *e*PKPdf **PKPdf 19 23 10.6 +0.1**
CSS LR LR
comp=Z,48µm,22.0s
LVV L'vov 154.38 329⇓ *i*PKIKP **PKPdf 19 23 08.7 -1.3**
LVV *i* 19 27 11.3
LVV *i* 19 46 49.7
LVV MLR MLR
comp=Z,215µm,22.0s
LVV MLR MLR
comp=N,246µm,21.0s
LVV MLR MLR
comp=E,23µm,22.0s

WIM Isle of Man 154.43 12 eP PKPdf 19 23 08.7 -1.2
MAMC Mammari 154.45 291 P PKPdf 19 23 10.3 -0.2
BART Pico Bartolome 154.54 63 ePKP PKPdf 19 23 09.8 -0.9
TLCR 154.66 316⇑ iP PKPdf 19 23 11.4 +0.9
TLCR 154.66 316⇑ PKIKP PKPdf 19 23 11.4 +0.9
PSMA Santa Maria 154.71 65 ePKP PKPdf 19 23 10.2 -0.6
SZAC Souni 154.75 290 P PKPdf 19 23 10.5 -0.5
PSMN Pico do Norte, 154.76 65 ePKP PKPdf 19 23 10.0 -0.9
PSMN Pico do Norte, 154.76 65 ePP PP 19 27 10.0 -0.7
PRAR RASCA 154.93 322⇓ iP PKPdf 19 23 09.3 -1.5
ALFC Alefka 154.95 291 P PKPdf 19 23 11.0 -0.3
DSB Dublin 154.95 14 ePKPdf PKPdf 19 23 11.8 +1.2
CFR Carcaliu 155.08 316⇑ iP PKPdf 19 23 09.3 -1.7
CFR Carcaliu 155.08 316⇑ PKIKP PKPdf 19 23 09.3 -1.7
KWP Kalwaria Pacla 155.10 330 ePKPdf PKPdf 19 23 10.4 -0.6
KWP ePKS PKSdf 19 26 44.6 -0.3
KWP ePP PP 19 27 21.8 +10
KWP e 19 42 05.8
KWP eSS SS 19 46 59.2 +5.8
KWP eSSS SSS 19 52 49.3
KWP LMZ LR 20 32 31.2
comp=E,431µm,21.8s
KWP Kalwaria Pacla 155.10 330 ePKIKP PKPdf 19 23 10.4 -0.6
KWP eSSS SSS 19 52 49.3
KWP MLR MLR
comp=Z,431µm,21.8s
VAL Valentia 155.11 21 eP PKPdf 19 23 07.5 -3.3
VAL ePP PP 19 27 10.3 -1.0
WPS Cemaes, Angles 155.18 12 eP PKPdf 19 23 09.0 -1.9
WPS AMS AMS 20 30 38.8
comp=Z,184µm,20.3s
AKMC Akamas 155.19 291 P PKPdf 19 23 10.8 -0.8
PPCY Paphos 155.19 290 P PKPdf 19 23 10.8 -0.7
TESR Tescani 155.21 320⇑ iP PKPdf 19 23 09.9 -1.3
TIRR Tirgusor 155.27 314⇓ iP PKPdf 19 23 10.0 -1.3
TIRR Tirgusor 155.27 314 ⇓PKIKP PKPdf 19 23 10.0 -1.3
TIRR Tirgusor 155.27 314 ePKPdf PKPdf 19 23 10.7 -0.6
BUR08 Bucovina Ar. S 155.29 324 ePKPdf PKPdf 19 23 11.3 -0.1
BURAR Bucovina Array 155.30 324⇓ iP PKPdf 19 23 10.5 -0.9
BURAR Bucovina Array 155.30 324 ⇓PKIKP PKPdf 19 23 10.5 -0.9
WLF1 Llynfaes 155.30 12 eP PKPdf 19 23 07.3 -3.7
WLF1 AMS AMS 20 30 40.5
comp=Z,408µm,20.4s
YRC Rhoscolyn 155.31 12 eP PKPdf 19 23 12.4 +1.4
EFOR EFORIE 155.31 313⇓ iP PKPdf 19 23 18.7 +7.3
ODBI Odobesti 155.40 318⇑ iP PKPdf 19 23 22.2 +11
WPM1 Penmaenmawr 155.42 11 eP PKPdf 19 23 10.7 -0.6
TLB Topalu 155.44 315⇓ iP PKPdf 19 23 10.6 -0.9
TLB Topalu 155.44 315 ⇓PKIKP PKPdf 19 23 10.6 -0.9
HARR Harsova 155.45 315⇑ iP PKPdf 19 23 23.3 +12
MANR Mangalia 155.47 313⇓ iP PKPdf 19 23 19.8 +8.2
YLL Llanberis 155.49 12 eP PKPdf 19 23 12.4 +1.1
VRI Vrincioaia 155.53 319⇑ iP PKPdf 19 23 09.9 -1.8
VRI Vrincioaia 155.53 319⇑ PKIKP PKPdf 19 23 09.9 -1.8
CVDA Cernavoda 155.56 314⇑ iP PKPdf 19 23 22.4 +11
PLOR Plostina 155.59 319⇑ iP PKPdf 19 23 09.6 -2.2
PLOR Plostina 155.59 319⇑ PKIKP PKPdf 19 23 09.7 -2.1
LIC Lamto 155.59 158 eP PKPdf 19 23 12.8 +0.1
comp=Z,565nm,1.3s
LMK Market Rasen 155.69 6 eP PKPdf 19 23 09.0 -2.6
LMK AMS AMS 20 32 38.8
comp=Z,203µm,20.6s
KIC Kosan Boka 155.81 159 eP PKPdf 19 23 11.2 -1.8
comp=Z,984nm,1.0s
KOLS Kolonicke sedl 155.81 329 ePKIKP PKPdf 19 23 11.8 -0.2
KOLS e 19 27 17.6
KOLS eSS SS 19 47 01.8 +0.7
KOLS e 19 52 52.2
KOLS Kolonicke sedl 155.81 329 ePKP PKPdf 19 23 11.8 -0.2
KOLS ePP PP 19 27 17.6 +2.1
KOLS eSS SS 19 47 01.8 +0.7
KOLS e 19 52 52.2
STNC Stoke 155.84 9 eP PKPdf 19 23 09.9 -1.9
STNC AMS AMS 20 32 35.1
comp=Z,174µm,19.2s
OJC Ojcow 155.84 334 ePKPdf PKPdf 19 23 11.2 -0.8
OJC ePP PP 19 27 22.8 +7.2
OJC e 19 42 28.7
OJC eSS SS 19 47 04.3 +3.2
OJC eSSS SSS 19 53 01.9
OJC LMZ LR 20 30 54.1
comp=Z,261µm,22.6s
OJC Ojcow 155.84 334 ePKIKP PKPdf 19 23 11.2 -0.8
OJC e 19 27 22.8
OJC eSS SS 19 47 04.3 +3.2
OJC eSSS SSS 19 53 01.9
OJC MLR MLR
comp=Z,261µm,22.6s
OJC Ojcow 155.84 334 ePKPdf PKPdf 19 23 10.7 -1.2
AMRR Amara 155.86 316⇓ iP PKPdf 19 23 13.2 +1.1
AMRR Amara 155.86 316 ⇓PKIKP PKPdf 19 23 13.2 +1.1
FOEL Foel Wylfa 155.89 10 eP PKPdf 19 23 08.6 -3.3
FOEL AMS AMS 20 34 36.8
comp=Z,240µm,19.8s
STHS Stebnicka Huta 155.89 331 ePKIKP PKPdf 19 23 13.3 +1.2
STHS Stebnicka Huta 155.89 331 ePKP PKPdf 19 23 13.2 +1.2
TIC Toumodi 155.99 158 eP PKPdf 19 23 12.5 -0.8
UZH Uzhgorod 156.02 329 i PKIKP PKPdf 19 23 10.0 -2.2
UZH e 19 23 25.6
UZH i 19 23 37.6
UZH i 19 27 21.6
UZH i SSS SSS 19 47 08.4
UZH MLR MLR
comp=N,374µm,21.0s
UZH MLR MLR
comp=E,125µm,21.0s
UZH MLR MLR
comp=Z,460µm,21.0s
ISR Istrita 156.06 317⇓ iP PKPdf 19 23 11.3 -1.2
ISR Istrita 156.06 317 ⇓PKIKP PKPdf 19 23 11.3 -1.2
DBIC Dimbokro 156.07 159 PKP PKPdf 19 23 13.0 -0.3
comp=Z,80nm,1.0s,baz=143,slow=2.1,SNR=17
DBIC PP PP 19 27 20.1 +3.6
comp=Z,36nm,1.0s,baz=210,slow=8.1,SNR=1.7
ARCR ARCALIA 156.09 324⇓ iP PKPdf 19 23 11.6 -0.8
BMR Baia Mare 156.13 326⇑ iP PKPdf 19 23 11.6 -0.8
BMR Baia Mare 156.13 326⇑ PKIKP PKPdf 19 23 11.6 -0.8
CRVS Cervenica-Dubn 156.19 330 ePKIKP PKPdf 19 23 12.0 -0.5
CRVS e 19 27 20.9
CRVS eSS SS 19 47 05.8 +0.6
CRVS Cervenica-Dubn 156.19 330 ePKP PKPdf 19 23 12.0 -0.5
CRVS ePP PP 19 27 20.9 +3.3
CRVS eSS SS 19 47 05.8 +0.6
CRVS e 19 53 10.9
MLR Muntele Rosu 156.20 319 PKP PKPdf 19 23 11.0 -1.7
comp=Z,3.8nm,1.2s,baz=359,slow=2.0,SNR=27
MLR PKPab PKPab 19 23 41.6 +1.0
comp=Z,26nm,0.9s,baz=334,slow=2.9,SNR=10
MLR Muntele Rosu 156.20 319⇓ iP PKPdf 19 23 10.9 -1.9
MLR Muntele Rosu 156.20 319 ePKPdf PKPdf 19 23 10.1 -2.6
MLR PKPab PKPab 19 23 41.6 +1.0
DOPR Dopca 156.24 320⇑ iP PKPdf 19 23 12.2 -0.4
TRPA Tarpa 156.27 328⇓ ePKPdf PKPdf 19 23 11.7 -0.8
NIE Niedzica 156.28 332 ePKPdf PKPdf 19 23 12.3 -0.3
NIE ePP PP 19 27 25.0 +6.9
NIE ePPP PPP 19 30 53.8
NIE e 19 42 48.3
NIE eSS SS 19 47 13.4 +7.3
NIE eSSS SSS 19 53 11.3
NIE LMZ LR 20 29 19.9
comp=Z,192µm,24.4s
NIE Niedzica 156.28 332 ePKIKP PKPdf 19 23 12.3 -0.3
NIE e 19 27 25.0
NIE ePPP PPP 19 30 53.8
NIE MLR MLR
comp=Z,192µm,24.4s
HLM1 Long Mynd 156.30 10 eP PKPdf 19 23 07.1 -5.4
HLM1 AMS AMS 20 38 07.4
comp=Z,207µm,19.2s
SECR 156.39 318⇑ iP PKPdf 19 23 12.4 -0.5
SULR 156.47 317⇓ iP PKPdf 19 23 10.9 -2.0
KSP Ksiaz 156.51 340 ePKPdf PKPdf 19 23 12.2 -0.6
KSP ePP PP 19 27 29.0 +10
KSP ePSKS 19 37 52.8
KSP eSS SS 19 47 18.0 +10
KSP eSSS SSS 19 53 13.3
KSP LMZ LR 20 29 41.3
comp=Z,223µm,23.7s
KSP Ksiaz 156.51 340 ePKIKP PKPdf 19 23 12.2 -0.6
KSP e 19 27 29.0
KSP eSSS SSS 19 53 13.3
KSP MLR MLR
comp=Z,223µm,23.7s
PRD Provadia 156.52 313 i P PKPdf 19 23 12.0 -1.0
RAC Raciborz 156.54 336 ePKIKP PKPdf 19 23 12.9 +0.1
RAC e 19 27 17.9
RAC eSS SS 19 47 11.4 +2.9
RAC MLR MLR
comp=Z,220µm,20.0s
CJR Cluj-Napoca 156.73 324⇓ iP PKPdf 19 23 11.5 -1.8
CJR Cluj-Napoca 156.73 324 ⇓PKIKP PKPdf 19 23 11.5 -1.8
VOIR 156.74 320⇓ iP PKPdf 19 23 11.6 -1.8
VOIR 156.74 320 ⇓PKIKP PKPdf 19 23 11.6 -1.8
OKC Ostrava-Krasne 156.76 336⇓ iPKPDF PKPdf 19 23 12.2 -1.0
OKC ePKPAB PKPab 19 23 44.6 +1.9
OKC ePP PP 19 27 29.0 +8.4
OKC ex x 19 30 54.3
OKC ex x 19 47 28.8
OKC AMS AMS 20 35 30.0
comp=Z,184µm,20.8s
OKC Ostrava-Krasne 156.76 336⇓ iPKIKP PKPdf 19 23 12.2 -1.0
OKC e 19 27 29.0
OKC e 19 30 54.3
OKC MLR MLR
comp=Z,184µm,20.8s
MCH1 Michaelchurch 156.78 11 eP PKPdf 19 23 08.4 -4.7
MCH1 AMS AMS 20 32 31.5
comp=Z,172µm,19.5s
LANS Liptovska Anna 156.83 333 ePKIKP PKPdf 19 23 13.9 +0.6
LANS Liptovska Anna 156.83 333 ePKP PKPdf 19 23 13.9 +0.6
UPC Upice 156.89 340⇓ iPKPDF PKPdf 19 23 12.5 -0.8
UPC ePKPAB PKPab 19 23 45.1 +1.9
UPC ePP PP 19 27 14.3 -6.9
UPC ex x 19 30 57.1
UPC eSKKS 19 37 47.8
UPC eSS SS 19 47 22.2 +10
UPC AMS AMS 20 34 50.0
comp=Z,337µm,21.0s
UPC Upice 156.89 340⇓ iPKIKP PKPdf 19 23 12.5 -0.8
UPC e 19 30 57.1
UPC MLR MLR
comp=Z,337µm,21.0s
KECS Kecovo 156.93 331 ePKIKP PKPdf 19 23 13.9 +0.5
KECS e 19 27 26.5
KECS Kecovo 156.93 331 ePKP PKPdf 19 23 13.9 +0.5
KECS e 19 23 44.6
KECS ePP PP 19 27 26.5 +4.9
DPC Dobruska-Polom 156.93 339⇓ iPKPDF PKPdf 19 23 12.7 -0.7
DPC ePKPAB PKPab 19 23 45.7 +2.2
DPC ePP PP 19 27 21.3 -0.2
DPC ex x 19 37 50.5
DPC eSS SS 19 47 19.2 +6.5
DPC AMS AMS 20 34 20.0
comp=Z,152µm,20.9s
DPC Dobruska-Polom 156.93 339⇓ iPKIKP PKPdf 19 23 12.7 -0.7
DPC e 19 27 21.3
DPC MLR MLR
comp=Z,152µm,20.9s
CLL Collm 156.95 345 i PKPdf PKPdf 19 23 12.3 -1.0
comp=Z,1µm,2.5s
CLL i 19 23 21.5
CLL i PKPdiff PKPab 19 23 27.0 -16
comp=Z,857nm,1.7s
CLL e 19 23 36.0
CLL ePKPab PKPab 19 23 45.0 +1.6
comp=Z,456nm,1.2s
CLL i 19 23 50.9
comp=Z,672nm,1.4s
CLL i 19 23 58.7
CLL ePP PP 19 27 21.0 -0.4
CLL ePPIp 19 27 23.0
comp=Z,44µm,29.1s
CLL ePPP PPP 19 30 59.0
CLL ePPPP 19 33 19.0
CLL e 19 36 17.0
CLL ePSKS 19 37 43.0
CLL ePPS PPS 19 40 30.0
CLL e 19 42 06.0
CLL e 19 46 36.0
CLL eSS SS 19 47 12.0 -0.6
CLL e 19 49 36.0
CLL eSSS SSS 19 53 12.0
CLL e 19 54 06.0
CLL e(SSSS) 19 56 36.0
CLL LmV 20 35 00.0
comp=Z,239µm,21.7s
CLL LmH 20 37 00.0
comp=N,169µm,20.1s
CLL LmH 20 37 00.0
comp=E,80µm,21.8s
CLL LmH 20 37 00.0
comp=Z,200µm,20.1s
CLL Collm 156.95 345 i PKIKP PKPdf 19 23 12.3 -1.0
CLL i 19 23 21.5
CLL e 19 27 23.0
CLL pmax pmax
comp=Z,1µm,2.5s
CLL MLR MLR
comp=Z,239µm,21.7s
CLL Collm 156.95 345 ePKPdf PKPdf 19 23 11.8 -1.6
MONM Monmouth 156.97 10 eP PKPdf 19 23 10.3 -3.0
MONM AMS AMS 20 36 12.4
comp=Z,188µm,19.5s
SSW Stow on the Wo 156.98 9 eP PKPdf 19 23 13.4 0.0
ARR Arges 157.02 320⇓ iP PKPdf 19 23 12.9 -0.8
KRLC Kraliky 157.03 338⇓ iPKPDF PKPdf 19 23 12.8 -0.8
KRLC ex x 19 23 27.8
KRLC ePKPAB PKPab 19 23 46.2 +2.3
KRLC Kraliky 157.03 338⇓ iPKIKP PKPdf 19 23 12.8 -0.8
KRLC e 19 23 27.8
MORC Moravsky Berou 157.03 337⇓ iP PKPdf 19 23 12.8 -0.8
MORC Moravsky Berou 157.03 337 ePKIKP PKPdf 19 23 11.5 -2.1
MORC Moravsky Berou 157.03 337 ePKPdf PKPdf 19 23 11.5 -2.1
DRGR 157.13 325⇑ iP PKPdf 19 23 13.1 -0.7
DRGR 157.13 325⇑ PKIKP PKPdf 19 23 13.1 -0.7
BRG Berggiesshubel 157.13 343 i PKP PKPdf 19 23 12.8 -0.8
comp=Z,2µm,2.4s
BRG i 19 23 39.0
comp=Z,775nm,1.5s
BRG PP PP 19 27 18.0 -4.4
BRG SKKS 19 37 51.0
BRG SS SS 19 47 13.0 -1.6
comp=N,98µm,20.9s
comp=E,90µm,22.5s
comp=Z,179µm,22.5s
BRG Berggiesshubel 157.13 343 i PKIKP PKPdf 19 23 12.8 -0.8
BRG i 19 23 39.0
BRG 19 27 18.0
BRG SS SS 19 47 13.0 -1.6
BRG pmax pmax
comp=Z,2µm,2.4s
BRG pmax pmax
comp=Z,775nm,1.5s
BRG MLR MLR
comp=N,98µm,20.9s
BRG MLR MLR
comp=E,90µm,22.5s
BRG MLR MLR
comp=Z,179µm,22.5s
OLDB Oldbury-Upon-S 157.18 10 eP PKPdf 19 23 11.2 -2.4
OLDB AMS AMS 20 36 27.1
comp=Z,173µm,19.8s
WTSB Winterswijk 157.25 355 ePKPdf PKPdf 19 23 12.4 -1.3
comp=Z,3µm,2.9s
KSL Kastellorizon 157.25 294 P PKPdf 19 23 11.9 -2.3
KSL Kastellorizon 157.25 294 P PKPdf 19 23 11.9 -2.3
PVCC Panska Ves 157.28 342⇓ iPKPDF PKPdf 19 23 13.0 -0.8
PVCC ex x 19 23 30.8
PVCC ePP PP 19 27 29.3 +6.0
PVCC ex x 19 37 48.2
PVCC eSS SS 19 47 22.1 +5.8
PVCC AMS AMS 20 38 10.0
comp=Z,199µm,20.4s
PVCC Panska Ves 157.28 342⇓ iPKIKP PKPdf 19 23 13.0 -0.8
PVCC e 19 23 30.8
PVCC e 19 27 29.3
PVCC MLR MLR
comp=Z,199µm,20.4s
HUMR Humele 157.31 318⇑ iP PKPdf 19 23 14.1 +0.1
SZH Strazhica 157.42 314 i P PKPdf 19 23 12.9 -1.3
BATH Bath 157.43 10 eP PKPdf 19 23 11.7 -2.2
BATH AMS AMS 20 31 30.8
comp=Z,127µm,20.0s
KULA Kula-Manisa 157.43 301 P PKPdf 19 23 12.7 -1.8
KULA Kula-Manisa 157.43 301 P PKPdf 19 23 12.7 -1.8
SWN1 Swindon 157.43 9 eP PKPdf 19 23 09.1 -4.8
SWN1 AMS AMS 20 36 10.2
comp=Z,155µm,20.4s
LOT Lotru 157.45 321⇓ iP PKPdf 19 23 11.6 -2.7
HTL Hartland 157.47 14 eP PKPdf 19 23 12.2 -1.8
HTL AMS AMS 20 32 02.6
comp=Z,83µm,20.7s
ZIMR 157.56 316⇓ iP PKPdf 19 23 27.3 +13
EDRB Edirne 157.57 310 P PKPdf 19 23 11.8 -2.6
EDRB Edirne 157.57 310 P PKPdf 19 23 11.8 -2.6
VYHS Vyhne 157.60 333 ePKIKP PKPdf 19 23 13.3 -1.0
VYHS e 19 27 27.0
VYHS eSS SS 19 47 20.9 +0.8
VYHS e 19 53 23.4
VYHS Vyhne 157.60 333 ePKP PKPdf 19 23 13.3 -1.0
VYHS e 19 23 51.1
VYHS ePP PP 19 27 27.0 +1.7
VYHS eSS SS 19 47 20.9 +0.8
VYHS e 19 53 23.4
VYHS eL L 20 33 09.6
PSZ Piszkesteto 157.62 331⇓ iP PKPdf 19 23 12.9 -1.5
PSZ Piszkesteto 157.62 331 ePKIKP PKPdf 19 23 13.4 -1.0
PSZ MLR MLR
comp=Z,241µm,20.0s
PSZ Piszkesteto 157.62 331 ePKPdf PKPdf 19 23 13.4 -1.0
PSZ LR LR
comp=Z,241µm,20.0s
PSZ Piszkesteto 157.62 331⇓ ePKPdf PKPdf 19 23 13.4 -1.0
DEV Deva 157.64 323⇓ iP PKPdf 19 23 15.0 +0.6
DEV Deva 157.64 323 ⇓PKIKP PKPdf 19 23 15.0 +0.6
WOL Wolverton 157.71 8 eP PKPdf 19 23 08.3 -5.9
WOL AMS AMS 20 35 19.4
comp=Z,160µm,20.5s
VRAC Vranov 157.75 337 PKP PKPdf 19 23 13.4 -1.1
comp=Z,18nm,1.2s,baz=83,slow=0.5,SNR=34
VRAC PKPab PKPab 19 23 49.1 +2.1
comp=Z,114nm,1.0s,baz=22,slow=6.1,SNR=6.6
VRAC PP PP 19 27 28.1 +2.1
comp=Z,8.3nm,0.4s,baz=21,slow=7.2,SNR=2.3
VRAC Vranov 157.75 337⇓ iP PKPdf 19 23 13.5 -1.0
GOPC GO Pecny, Ondr 157.78 341⇓ iPKPDF PKPdf 19 23 13.2 -1.3
GOPC ePKPAB PKPab 19 23 49.2 +2.1
GOPC ePP PP 19 27 30.5 +4.4
GOPC ex x 19 37 59.7
GOPC eSS SS 19 47 32.5 +11
GOPC AMS AMS 20 37 20.0
comp=Z,267µm,20.4s
GOPC GO Pecny, Ondr 157.78 341⇓ iPKIKP PKPdf 19 23 13.2 -1.3
GOPC e 19 27 30.5
GOPC MLR MLR
comp=Z,267µm,20.4s
PRU Pruhonice 157.78 341⇓ iPKPDF PKPdf 19 23 13.0 -1.4
PRU ePKPAB PKPab 19 23 48.9 +1.9
PRU ePP PP 19 27 25.0 -1.0
PRU ex x 19 37 51.0
PRU eSS SS 19 47 26.3 +4.7
PRU AMS AMS 20 35 50.0
comp=Z,302µm,21.6s
PRU Pruhonice 157.78 341⇓ iPKIKP PKPdf 19 23 13.0 -1.4
PRU e 19 27 25.0
PRU eSS SS 19 47 26.3 +4.7
PRU MLR MLR
comp=Z,302µm,21.6s
BALY Balya 157.81 304 i P PKPab 19 23 50.7 +3.1
TURN Turunc 157.89 296 i P PKPdf 19 23 18.0 +3.0
SIRR Siria 158.01 325⇑ iP PKPdf 19 23 13.8 -1.1
CCA1 Carnmenellis 158.07 16 eP PKPdf 19 23 12.2 -2.6
CCA1 AMS AMS 20 32 13.2
comp=Z,228µm,19.5s
YER Yerkesik 158.08 297 P PKPdf 19 23 13.2 -2.1
YER Yerkesik 158.08 297 PKIKP PKPdf 19 23 13.2 -2.1
YER Yerkesik 158.08 297 P PKPdf 19 23 13.2 -2.1
NKC Novy Kostel 158.09 345⇓ iPKPDF PKPdf 19 23 13.4 -1.5
NKC ePKPAB PKPab 19 23 50.1 +1.7
NKC ePP PP 19 27 33.1 +5.4
NKC ex x 19 32 02.6
NKC ex x 19 37 55.0
NKC AMS AMS 20 40 00.0
comp=Z,190µm,20.1s
NKC Novy Kostel 158.09 345⇓ iPKIKP PKPdf 19 23 13.4 -1.5
NKC e 19 23 50.1
NKC e 19 27 33.1
NKC MLR MLR
comp=Z,190µm,20.1s
ELSH Elham, Standar 158.10 4 eP PKPdf 19 23 13.7 -1.0
ELSH AMS AMS 20 40 04.3
comp=Z,230µm,19.0s
DYA Yadsworthy 158.12 13 eP PKPdf 19 23 12.2 -2.6
DYA AMS AMS 20 33 02.1
comp=Z,182µm,20.2s
TREC Trest 158.12 339⇓ iPKPDF PKPdf 19 23 13.8 -1.1
TREC ePKPAB PKPab 19 23 50.0 +1.4
TREC ePP PP 19 27 28.6 +0.6
TREC AMS AMS 20 41 30.0
comp=Z,283µm,19.2s
TREC Trest 158.12 339⇓ iPKIKP PKPdf 19 23 13.8 -1.1
TREC e 19 23 50.0
TREC e 19 27 28.6
TREC MLR MLR
comp=Z,283µm,19.2s
SMOL Smolenice 158.13 335 ePKIKP PKPdf 19 23 16.2 +1.3
SMOL Smolenice 158.13 335 ePKP PKPdf 19 23 16.2 +1.3
SMOL e 19 23 51.4
SRE Strehaia 158.25 320⇑ iP PKPdf 19 23 14.2 -1.0
SRE Strehaia 158.25 320⇑ PKIKP PKPdf 19 23 14.2 -1.0
HMNX Herstmonceux 158.31 6 eP PKPdf 19 23 07.8 -7.2
HMNX AMS AMS 20 35 59.4
comp=Z,175µm,20.9s
BUD Budapest 158.33 331⇓ ePKPdf PKPdf 19 23 14.2 -1.0
ARG Arkhangelos 158.40 295 P PKPdf 19 23 14.4 -1.2
ARG Arkhangelos 158.40 295 PKIKP PKPdf 19 23 14.4 -1.2
ARG Arkhangelos 158.40 295 P PKPdf 19 23 14.4 -1.2
ENEZ Enez 158.46 308 P PKPdf 19 23 12.4 -3.1
ALN Alexandroupoli 158.46 308 P PKPdf 19 23 12.9 -2.6
ALN Alexandroupoli 158.46 308 PKIKP PKPdf 19 23 12.9 -2.6
ALN Alexandroupoli 158.46 308 P PKPdf 19 23 12.9 -2.6
BZS Buzias 158.48 324⇓ iP PKPdf 19 23 14.1 -1.3
BZS Buzias 158.48 324 ⇓PKIKP PKPdf 19 23 14.1 -1.3
BEBN Eben Emael 158.49 357 PKP PKPdf 19 23 16.3 +1.1
BEBN PKPab PKPab 19 23 51.3 +1.3
HGN Heimansgroeve 158.50 356 ePKPdf PKPdf 19 23 13.8 -1.5
comp=Z,2µm,3.2s
HGN ePP PP 19 27 39.4 +10
HGN ePPP PPP 19 31 21.1
UCC Uccle 158.53 359 PKP PKPdf 19 23 14.6 -0.7
KDZ Kurdzhali 158.55 311 i P PKPdf 19 23 14.0 -1.7
MEM Membach 158.65 356 PKP PKPdf 19 23 15.1 -0.4
MEM PKPab PKPab 19 23 52.5 +1.7
EZN Ezine 158.70 305 P PKPdf 19 23 13.7 -2.2
EZN Ezine 158.70 305 PKIKP PKPdf 19 23 13.7 -2.2
EZN Ezine 158.70 305 P PKPdf 19 23 13.7 -2.2
MPEP Malo Peshtene 158.72 317 i P PKPdf 19 23 14.9 -0.9
SNF Seneffe 158.82 359 PKP PKPdf 19 23 17.0 +1.3
SNF PKPab PKPab 19 23 52.5 +1.0
KHC Kasperske Hory 158.82 342⇓ iPKPDF PKPdf 19 23 14.5 -1.3
KHC ex x 19 23 29.5
KHC ePKPAB PKPab 19 23 53.8 +2.2
KHC ePP PP 19 27 32.4 +0.6
KHC ex x 19 37 59.1
KHC eSS SS 19 47 31.8 -1.0
KHC AMS AMS 20 35 50.0
comp=Z,289µm,21.3s
KHC Kasperske Hory 158.82 342⇓ iPKIKP PKPdf 19 23 14.5 -1.3
KHC e 19 23 29.5
KHC e 19 27 32.4
KHC eSS SS 19 47 31.8 -1.0
KHC MLR MLR
comp=Z,289µm,21.3s
KHC Kasperske Hory 158.82 342 ePKPdf PKPdf 19 23 13.3 -2.5
BODT Bodrum 158.85 298 P PKPdf 19 23 13.3 -2.9
BODT Bodrum 158.85 298 P PKPdf 19 23 13.3 -2.9
GADA Gvkgeada 158.86 307 P PKPdf 19 23 12.5 -3.5
GADA Gvkgeada 158.86 307 P PKPdf 19 23 12.5 -3.5
GRFO Grafenberg 158.86 346 ePKIKP PKPdf 19 23 15.0 -0.8
GRFO Grafenberg 158.86 346 ePKPdf PKPdf 19 23 15.0 -0.8
BCLA Clavier 158.88 357 PKP PKPdf 19 23 14.9 -0.9
BCLA PKPab PKPab 19 23 52.6 +0.8
BANR Banloc 158.89 324⇓ iP PKPdf 19 23 15.1 -0.8
PRK Paraskevi 158.96 304 P PKPdf 19 23 13.9 -2.3
PRK Paraskevi 158.96 304 PKIKP PKPdf 19 23 13.9 -2.3
PRK Paraskevi 158.96 304 P PKPdf 19 23 13.9 -2.3
RZN Rozhen 158.99 312 i P PKPdf 19 23 14.8 -1.6

MDVR	**Moldovita**	158.99	322	‖	*i* P	PKPdf	19 23 14.3	-1.9	
SMTH	**Samothraki Isl**	159.00	308		P	PKPdf	19 23 13.4	-2.8	
SMTH	**Samothraki Isl**	159.00	308		P	PKPdf	19 23 13.4	-2.8	
SMG	**Samos**	159.04	300		P	PKPdf	19 23 13.3	-3.1	
SMG	**Samos**	159.04	300		P	PKPdf	19 23 13.3	-3.1	
GEC2	**GERESS Array S**	159.05	341		*e*PKIKP	PKPdf	19 23 15.5	-0.7	
GEC2	**GERESS Array S**	159.05	341		*e*PKPdf	PKPdf	19 23 15.5	-0.7	
GERES	**GERESS Array B**	159.05	341		PKP	PKPdf	19 23 14.8	-1.4	
	comp=Z,4.8nm,0.8s,baz=48,slow=2.0,SNR=38								
GERES					PKPab	PKPab	19 23 54.6	+1.9	
	comp=Z,32nm,1.0s,baz=34,slow=3.3,SNR=6.7								
GERES					PP	PP	19 27 36.8	+3.7	
	comp=Z,9.6nm,0.9s,baz=38,slow=5.0,SNR=3.0								
GEA0	**GERESS Array S**	159.06	341		*e*P	PKPdf	19 23 14.2	-2.0	
NIS1	**Nisyros Isl.**	159.06	296		P	PKPab	19 24 00.3	+7.1	
NISR	**Nisiros**	159.10	296		P	PKPdf	19 23 13.4	-3.0	
NISR	**Nisiros**	159.10	296		P	PKPdf	19 23 13.4	-3.0	
CONA	**Conrad Observa**	159.18	337		*i* PKPdf	PKPdf	19 23 15.2	-1.2	
	comp=Z,12μm,5.9s,SNR=56								
CONA					*i* PP	PP	19 27 34.7	+0.8	
	comp=Z,37μm,8.1s								
DOU	**Dourbes**	159.23	358		PKP	PKPdf	19 23 15.6	-0.6	
DOU					PKPab	PKPab	19 23 54.3	+1.0	
SIGR	**SIGRI**	159.27	304		P	PKPdf	19 23 14.2	-2.4	
SIGR	**SIGRI**	159.27	304		P	PKPdf	19 23 14.2	-2.4	
KARP	**Karpathos**	159.30	294		P	PKPdf	19 23 13.9	-2.9	
KARP	**Karpathos**	159.30	294		*e*PKPdf	PKPdf	19 23 17.4	+0.6	
CHOS	**Chios island**	159.41	302		P	PKPdf	19 23 14.4	-2.5	
CHOS	**Chios island**	159.41	302		P	PKPdf	19 23 14.4	-2.5	
KAVA	**Kavala**	159.45	310		P	PKPdf	19 23 14.1	-2.6	
KAVA	**Kavala**	159.45	310		P	PKPdf	19 23 14.1	-2.6	
VTS	**Vitosha**	159.47	315		P	PKPdf	19 23 15.2	-1.7	
VTS	**Vitosha**	159.47	315	‖	*i* P	PKPdf	19 23 15.4	-1.5	
VTS	**Vitosha**	159.47	315		*e*PKIKP	PKPdf	19 23 15.6	-1.3	
VTS	**Vitosha**	159.47	315		*i* P	PKPdf	19 23 15.5	-1.5	
VTS	**Vitosha**	159.47	315		*e*PKPdf	PKPdf	19 23 15.6	-1.3	
LIA	**Limnos Island**	159.48	307		P	PKPdf	19 23 13.3	-3.5	
LIA	**Limnos Island**	159.48	307		P	PKPdf	19 23 13.3	-3.5	
WLF	**Walferdange**	159.59	356		PKP	PKPdf	19 23 17.1	+0.6	
WLF					PKPab	PKPab	19 23 56.8	+2.0	
WLF	**Walferdange**	159.59	356		*e*PKIKP	PKPdf	19 23 16.4	-0.2	
WLF					MLR	MLR			
	comp=Z,303μm,20.0s								
WLF	**Walferdange**	159.59	356		*e*PKPdf	PKPdf	19 23 16.4	-0.2	
WLF					LR	LR			
	comp=Z,303μm,20.0s								
JSA	**Saint Aubin**	159.64	11		*e*P	PKPdf	19 23 13.3	-3.3	
JSA					AMS	AMS	20 32 37.0		
	comp=Z,197μm,20.7s								
MMB	**Musomiste**	159.68	312		*i* P	PKPdf	19 23 15.4	-1.6	
NVR	**Nevrokopi**	159.71	312		P	PKPdf	19 23 14.0	-3.1	
NVR	**Nevrokopi**	159.71	312		P	PKPdf	19 23 14.0	-3.1	
MOA	**Molln**	159.78	339		*i* PKPdf	PKPdf	19 23 15.5	-1.4	
	comp=Z,12μm,6.3s,SNR=41								
MOA					*i* PP	PP	19 27 37.5	+0.5	
	comp=Z,47μm,8.6s								
ARSA	**Arzberg**	159.88	336		*i* PKPdf	PKPdf	19 23 15.2	-1.9	
	comp=Z,11μm,6.2s,SNR=68								
ARSA					*i* PP	PP	19 27 38.4	+0.7	
	comp=Z,52μm,10.5s								
KKB	**Krupnik**	159.94	314		*i* P	PKPdf	19 23 15.6	-1.7	
SRS	**Serrai**	160.00	311		P	PKPdf	19 23 13.5	-3.9	
SRS	**Serrai**	160.00	311		PKIKP	PKPdf	19 23 13.5	-3.9	
SRS	**Serrai**	160.00	311		P	PKPdf	19 23 13.5	-3.9	
BEHE	**Becsehely**	160.06	333	‖	*e*PKPdf	PKPdf	19 23 16.3	-0.9	
LANF	**Langenberg**	160.11	352		PKP	PKPdf	19 23 16.3	-0.9	
STU	**Stuttgart**	160.12	349		*e*PKIKP	PKPdf	19 23 18.0	+0.7	
STU	**Stuttgart**	160.12	349		*e*PKPdf	PKPdf	19 23 17.9	+0.7	
OUR	**Ouranopolis**	160.12	309		P	PKPdf	19 23 13.9	-3.6	
OUR	**Ouranopolis**	160.12	309		PKIKP	PKPdf	19 23 13.9	-3.6	
OUR	**Ouranopolis**	160.12	309		P	PKPdf	19 23 13.9	-3.6	
ZKR	**Zakros**	160.14	293		P	PKPdf	19 23 15.0	-2.7	
ZKR	**Zakros**	160.14	293		P	PKPdf	19 23 15.0	-2.7	
APE	**Apeiranthos**	160.22	299		P	PKPdf	19 23 14.2	-3.6	
APE	**Apeiranthos**	160.22	299	‖	*i* P	PKPdf	19 23 15.2	-2.6	
APE	**Apeiranthos**	160.22	299	‖	*e*PKIKP	PKPdf	19 23 15.2	-2.6	
APE	**Apeiranthos**	160.22	299		P	PKPdf	19 23 14.2	-3.6	
KOGS	**Kog**	160.29	334		*i* PKPdf	PKPdf	19 23 15.9	-1.6	
KOGS					*e*SS	SS	19 48 00.5	+12	
SOH	**Sokhos**	160.31	311		P	PKPdf	19 23 13.8	-4.0	
SOH	**Sokhos**	160.31	311		PKIKP	PKPdf	19 23 13.8	-4.0	
SOH	**Sokhos**	160.31	311		P	PKPdf	19 23 13.8	-4.0	
DIVS	**Divibare**	160.37	323		P	PKPdf	19 23 14.4	-3.4	
KNT	**Kendrikon**	160.43	312		P	PKPdf	19 23 15.1	-2.8	
KNT	**Kendrikon**	160.43	312		PKIKP	PKPdf	19 23 15.1	-2.8	
KNT	**Kendrikon**	160.43	312		P	PKPdf	19 23 15.1	-2.8	
THR8	**Santorini-Mono**	160.44	297		P	PKPdf	19 23 17.4	-0.6	
SANT	**Santorini**	160.46	297		P	PKPdf	19 23 14.8	-3.3	
SANT	**Santorini**	160.46	297		*e*PKPdf	PKPdf	19 23 17.0	-1.1	
SANT					LR	LR			
	comp=Z,119μm,21.0s								
PLG	**Polygyros**	160.46	310		P	PKPdf	19 23 14.2	-3.8	
PLG	**Polygyros**	160.46	310		PKIKP	PKPdf	19 23 14.2	-3.8	
PLG	**Polygyros**	160.46	310		P	PKPdf	19 23 14.2	-3.8	
CMBO	**Columbo, Santo**	160.48	297		P	PKPdf	19 23 15.4	-2.6	
THT1	**Athinios (Pele**	160.48	297		P	PKPdf	19 23 14.6	-3.4	
THR3	**Thira Island,**	160.50	297		P	PKPab	19 24 06.6	+7.2	
PAIG	**Paliouri**	160.51	308		P	PKPdf	19 23 14.2	-3.7	
PAIG	**Paliouri**	160.51	308		PKIKP	PKPdf	19 23 14.2	-3.7	
PAIG	**Paliouri**	160.51	308		P	PKPdf	19 23 14.2	-3.7	
LDF	**La Druitiere**	160.51	8		*e*PKIKP	PKPdf	19 23 18.1	+0.4	
LDF					pmax	pmax			
	comp=Z,828nm,2.2s								
THR6	**Thira Island,**	160.51	297		P	PKPdf	19 23 18.0	-0.1	
THR6	**Thira Island,**	160.51	297		P	PKPdf	19 23 18.0	-0.1	
THR5	**Thira Island,**	160.54	297		P	PKPdf	19 23 16.0	-2.1	
SOKA	**Soboth**	160.54	336		*i* PKPdf	PKPdf	19 23 16.6	-1.3	
	comp=Z,10μm,5.5s,SNR=50								
SOKA					*i* PP	PP	19 27 42.1	+0.8	
	comp=Z,47μm,11.6s								
PERS	**Pernice**	160.55	336		*i* PKPdf	PKPdf	19 23 16.2	-1.7	
PERS					*e*PP	PP	19 27 48.0	+6.7	
PERS					*e*SS	SS	19 48 04.3	+13	
VAY	**Valandovo**	160.56	313		P	PKPdf	19 23 15.1	-2.9	
VAY	**Valandovo**	160.56	313	‖	*i* PKP	PKPdf	19 23 16.1	-1.9	
VAY	**Valandovo**	160.56	313		PKIKP	PKPdf	19 23 15.1	-2.9	
VAY	**Valandovo**	160.56	313		P	PKPdf	19 23 15.1	-2.9	
HORT	**Hortiatis**	160.59	311		P	PKPdf	19 23 15.2	-2.9	
HORT	**Hortiatis**	160.59	311		P	PKPdf	19 23 15.2	-2.9	
NPS	**Neapolis**	160.60	293		P	PKPdf	19 23 15.0	-3.2	
NPS	**Neapolis**	160.60	293		PKIKP	PKPdf	19 23 15.0	-3.2	
NPS	**Neapolis**	160.60	293		P	PKPdf	19 23 15.0	-3.2	
THE	**Thessaloniki**	160.66	311		P	PKPdf	19 23 14.4	-3.7	
THE	**Thessaloniki**	160.66	311		PKIKP	PKPdf	19 23 14.4	-3.7	
THE	**Thessaloniki**	160.66	311		P	PKPdf	19 23 14.4	-3.7	
BFO	**Black Forest**	160.68	351		*e*PKIKP	PKPdf	19 23 16.9	-1.0	
BFO					MLR	MLR			
	comp=Z,174μm,19.0s								
BFO	**Black Forest**	160.68	351		*e*PKPdf	PKPdf	19 23 16.9	-1.0	
BFO					LR	LR			
	comp=Z,174μm,19.0s								
AOS	**Alonnisos**	160.70	306		P	PKPdf	19 23 14.6	-3.6	
AOS	**Alonnisos**	160.70	306		P	PKPdf	19 23 14.6	-3.6	
LAST	**Lasithi**	160.72	293		P	PKPdf	19 23 15.6	-2.9	
LAST	**Lasithi**	160.72	293		*e*PKPdf	PKPdf	19 23 18.3	-0.2	
CDF	**Champ du Feu**	160.73	353		*e*PKIKP	PKPdf	19 23 18.1	0.0	
CDF					pmax	pmax			
	comp=Z,518nm,2.2s								
KBA	**Koelnbreinsper**	160.75	340		*i* PKPdf	PKPdf	19 23 16.4	-1.8	
	comp=Z,8μm,5.3s,SNR=44								
KBA					*i* PP	PP	19 27 42.6	+0.2	
	comp=Z,35μm,7.8s								
OBKA	**Obir**	160.86	337		*i* PKPdf	PKPdf	19 23 16.5	-1.8	
	comp=Z,13μm,6.0s,SNR=33								
OBKA					*i* PP	PP	19 27 43.4	+0.4	
	comp=Z,31μm,9.4s								
GRG	**Griva**	160.86	312		P	PKPdf	19 23 15.6	-2.8	
GRG	**Griva**	160.86	312		PKIKP	PKPdf	19 23 15.6	-2.8	
GRG	**Griva**	160.86	312		P	PKPdf	19 23 15.6	-2.8	
SKO	**Skopje**	160.90	316		P	PKPdf	19 23 15.2	-3.1	
SKO	**Skopje**	160.90	316	‖	*i* PKP	PKPdf	19 23 17.0	-1.3	
SKO	**Skopje**	160.90	316		PKIKP	PKPdf	19 23 15.2	-3.1	
SKO	**Skopje**	160.90	316		P	PKPdf	19 23 15.2	-3.1	
ECH	**Echery**	160.94	353		PKP	PKPdf	19 23 15.3	-2.9	
EREA	**Eretria**	160.96	304		P	PKPdf	19 23 15.2	-3.3	
SKIA	**Skiathos**	160.99	306		P	PKPdf	19 23 15.7	-2.8	
WATA	**Walderalm**	161.00	343		*e*PKPdf	PKPdf	19 23 16.7	-1.7	
	comp=Z,585nm,1.8s								
THEF	**They Montfort**	161.03	355		PKP	PKPdf	19 23 17.4	-0.9	
RETA	**Reutte**	161.05	345		*i* PKPdf	PKPdf	19 23 17.1	-1.3	
	comp=Z,14μm,6.6s,SNR=34								
RETA					*i* PP	PP	19 27 43.8	0.0	
	comp=Z,46μm,8.9s								
WTTA	**Wattenberg**	161.05	343		*i* PKPdf	PKPdf	19 23 17.5	-1.0	
	comp=Z,4μm,3.6s,SNR=30								
WTTA					*i* PP	PP	19 27 44.1	+0.1	
	comp=Z,48μm,11.8s								
MYKA	**Terra Mystica**	161.06	339		*i* PKPdf	PKPdf	19 23 16.6	-1.8	
	comp=Z,11μm,6.2s,SNR=37								
MYKA					*i* PP	PP	19 27 45.6	+1.6	
	comp=Z,40μm,10.4s								
XOR	**Xorichti**	161.10	307		P	PKPdf	19 23 16.2	-2.5	
XOR	**Xorichti**	161.10	307		P	PKPdf	19 23 16.2	-2.5	
NEO	**Neokhori**	161.10	307		P	PKPdf	19 23 15.2	-3.5	
NEO	**Neokhori**	161.10	307		P	PKPdf	19 23 15.2	-3.5	
MOTA	**Moosalm**	161.10	344		*i* PKPdf	PKPdf	19 23 17.0	-1.6	
	comp=Z,141nm,1.3s,SNR=24								
PTL	**Penteli**	161.15	303		P	PKPdf	19 23 15.0	-3.8	
PTL	**Penteli**	161.15	303		P	PKPdf	19 23 15.0	-3.8	
IDI	**Anoyia**	161.17	294		PKP	PKPdf	19 23 18.1	-0.8	
	comp=Z,46nm,1.1s,baz=78,slow=2.1,SNR=31								
IDI					PKPab	PKPab	19 24 05.3	+2.8	
	comp=Z,262nm,1.1s,baz=68,slow=6.4,SNR=10								
IDI					PP	PP	19 27 50.0	+4.0	
	comp=Z,63nm,1.2s,baz=117,slow=4.5,SNR=2.4								
IDI					SKKPbc		19 33 31.3		
	comp=Z,76nm,1.4s,baz=287,slow=1.3,SNR=3.7								
IDI	**Anoyia**	161.17	294		P	PKPdf	19 23 16.1	-2.8	
IDI	**Anoyia**	161.17	294		*e*PKPdf	PKPdf	19 23 18.7	-0.2	
IDI					PKPab	PKPab	19 24 05.3	+2.8	
IDI					PP	PP	19 27 50.0	+4.0	
IDI					SKKPbc		19 33 31.3		
MHLO	**Agia Marina, M**	161.19	298		P	PKPdf	19 23 15.4	-3.4	
PLE	**Plјevlja**	161.21	322	‖	*i* PKP	PKPdf	19 23 16.8	-2.0	
LIT	**Litokhoron**	161.24	310		P	PKPdf	19 23 15.4	-3.4	
LIT	**Litokhoron**	161.24	310		PKIKP	PKPdf	19 23 15.4	-3.4	
LIT	**Litokhoron**	161.24	310		P	PKPdf	19 23 15.4	-3.4	
ATHU	**Athens Univers**	161.24	303		P	PKPdf	19 23 14.4	-4.4	
ATHU	**Athens Univers**	161.24	303		P	PKPdf	19 23 14.4	-4.4	
IVA	**Berane**	161.24	321		*e*PKP	PKPdf	19 23 16.8	-2.0	
FYTO	**Fytoko, Volos**	161.25	308		P	PKPdf	19 23 16.0	-2.8	
FYTO	**Fytoko, Volos**	161.25	308		P	PKPdf	19 23 16.0	-2.8	
LJU	**Ljubljana**	161.27	336		*i* PKPdf	PKPdf	19 23 17.5	-1.1	
LJU					*e*pPKPdf	pPKPdf	19 23 27.0	-0.1	
LJU					*e*PKPab	PKPab	19 24 03.9	+1.5	
LJU					*e*PP	PP	19 27 51.4	+6.3	
LJU					*e*		19 31 26.3		
LJU					*e*		19 38 54.4		
LJU					*e*SS	SS	19 48 11.0	+12	
LJU					*e*		19 54 15.1		
VLY	**Voula,Athens**	161.27	302		P	PKPdf	19 23 16.2	-2.7	
VLY	**Voula,Athens**	161.27	302		P	PKPdf	19 23 16.2	-2.7	
ATH	**Athens Observa**	161.28	303		P	PKPdf	19 23 16.3	-2.5	
ATH	**Athens Observa**	161.28	303		PKIKP	PKPdf	19 23 16.3	-2.5	
ATH	**Athens Observa**	161.28	303		P	PKPdf	19 23 16.3	-2.5	
SIVA	**Sivas**	161.29	293		P	PKPdf	19 23 17.5	-1.4	
SIVA	**Sivas**	161.29	293		P	PKPdf	19 23 17.5	-1.4	
ABTA	**Abfaltersbach**	161.29	341		*i* PKPdf	PKPdf	19 23 16.8	-1.9	
	comp=Z,11μm,6.5s,SNR=52								
ABTA					*i* PP	PP	19 27 45.9	+0.7	
	comp=Z,37μm,9.8s								
SMIA	**Simia**	161.29	306		P	PKPdf	19 23 15.9	-3.0	
MOF	**Molkenrain**	161.30	353		PKP	PKPdf	19 23 17.5	-1.2	
VISS	**Visnje**	161.36	335		*e*PKPdf	PKPdf	19 23 17.4	-1.3	
VISS					*e*PP	PP	19 27 44.4	-1.3	
VISS					*e*		19 38 15.0		
VISS					*e*SS	SS	19 48 05.1	+5.3	
VISS					*e*		19 54 11.1		
PVY	**Plav**	161.38	320		*e*PKP	PKPdf	19 23 17.0	-2.0	
DAVA	**Damuels**	161.43	347		*i* PKPdf	PKPdf	19 23 17.7	-1.2	
	comp=Z,14μm,6.8s,SNR=27								
DAVA					*i* PP	PP	19 27 46.3	+0.4	
	comp=Z,55μm,10.8s								
BOJS	**Bojanci**	161.46	334		*i* PKPdf	PKPdf	19 23 17.6	-1.2	
BOJS					*e*SS	SS	19 48 15.1	+14	
FETA	**Feichten**	161.50	345		*i* PKPdf	PKPdf	19 23 17.6	-1.5	
	comp=Z,11μm,5.5s,SNR=67								
FETA					*i* PP	PP	19 27 46.7	+0.3	
	comp=Z,44μm,9.3s								
ATAL	**Atalanti**	161.51	305		P	PKPdf	19 23 15.9	-3.2	
ATAL	**Atalanti**	161.51	305		P	PKPdf	19 23 15.9	-3.2	
VILL	**Villia**	161.51	304		P	PKPdf	19 23 15.6	-3.6	
LKR	**Lokris**	161.54	305		P	PKPdf	19 23 15.4	-3.7	
LKR	**Lokris**	161.54	305		P	PKPdf	19 23 15.4	-3.7	
UPM	**Unac-Piva**	161.55	323	‖	*i* PKP	PKPdf	19 23 16.8	-2.4	
KZN	**Kozani**	161.61	311		P	PKPdf	19 23 16.3	-2.9	
KZN	**Kozani**	161.61	311		PKIKP	PKPdf	19 23 16.3	-2.9	
KZN	**Kozani**	161.61	311		P	PKPdf	19 23 16.3	-2.9	
FNA	**Florina**	161.61	313		P	PKPdf	19 23 15.9	-3.3	
FNA	**Florina**	161.61	313		PKIKP	PKPdf	19 23 15.9	-3.3	
FNA	**Florina**	161.61	313		P	PKPdf	19 23 15.9	-3.3	
VAM	**Vamos**	161.69	295		P	PKPdf	19 23 18.0	-1.4	
VAM	**Vamos**	161.69	295		PKIKP	PKPdf	19 23 18.0	-1.4	
VAM	**Vamos**	161.69	295		P	PKPdf	19 23 18.0	-1.4	
PMOZ	**Porto Moniz, M**	161.72	74	‖	*e*PKPdf	PKPdf	19 23 20.6	+1.0	
PMOZ	**Porto Moniz, M**	161.72	74		*e*PKPab	PKPab	19 24 07.8	+2.7	
PMOZ	**Porto Moniz, M**	161.72	74		*e*PP	PP	19 28 09.5	+20	
PMOZ	**Porto Moniz, M**	161.72	74		*e*SS	SS	19 48 24.9	+18	
PMOZ	**Porto Moniz, M**	161.72	74		*e*LQ	LQ	20 09 17.9		
PMOZ					*e*LR	LR	20 18 00.7		
	comp=Z,206μm,20.0s								
NKY	**Niksic**	161.77	322	‖	*i* PKP	PKPdf	19 23 17.3	-2.1	
OHR	**Ohrid**	161.79	315	‖	*i* PKP	PKPdf	19 23 18.1	-1.3	
DID	**Didima**	161.81	302		P	PKPdf	19 23 16.0	-3.5	
DID	**Didima**	161.81	302		P	PKPdf	19 23 16.0	-3.5	
THL	**Klokotos Trika**	161.81	309		P	PKPdf	19 23 16.7	-2.6	
TRI	**Trieste**	161.82	337		*e*PKIKP	PKPdf	19 23 18.7	-0.5	
TRI	**Trieste**	161.82	337		*e*PKPdf	PKPdf	19 23 18.7	-0.5	
LOMF	**Lomont**	161.83	353		PKP	PKPdf	19 23 17.2	-2.0	
NKME	**Niksic**	161.83	322	‖	*i* PKP	PKPdf	19 23 17.5	-1.8	
AGG	**Agios Georgios**	161.85	307		P	PKPdf	19 23 16.3	-3.2	
AGG	**Agios Georgios**	161.85	307		*e*PKIKP	PKPdf	19 23 18.2	-1.3	
AGG	**Agios Georgios**	161.85	307		*e*PKPdf	PKPdf	19 23 18.2	-1.3	
IMMV	**Iera Moni Meta**	161.85	295		P	PKPdf	19 23 17.4	-2.1	
PDG	**Podgorica**	161.89	320		P	PKPdf	19 23 16.7	-2.6	
PDG	**Podgorica**	161.89	320	‖	*i* P	PKPdf	19 23 17.5	-1.8	
TTG	**Podgorica**	161.89	320	‖	*i* PKP	PKPdf	19 23 17.6	-1.8	
TTG	**Podgorica**	161.89	320		PKIKP	PKPdf	19 23 16.7	-2.6	
TTG	**Podgorica**	161.89	320		P	PKPdf	19 23 16.7	-2.6	
GVD	**Gavdhos**	161.91	293		P	PKPdf	19 23 18.2	-1.4	
GVD	**Gavdhos**	161.91	293		P	PKPdf	19 23 18.2	-1.4	
DAVOX	**Davos/Dischmat**	161.91	346		PKP	PKPdf	19 23 18.2	-1.3	
	comp=Z,29nm,1.0s,baz=10.0,slow=3.2,SNR=43								
DAVOX					PKPab	PKPab	19 24 07.5	+2.2	
	comp=Z,105nm,0.8s,baz=8.5,slow=2.8,SNR=4.1								
DAVOX					PP	PP	19 27 51.5	+2.9	
	comp=Z,51nm,1.2s,baz=236,slow=3.6,SNR=2.3								
KRND	**KRANIDI**	161.92	301		P	PKPdf	19 23 15.7	-3.8	
BRY	**Bratogost**	161.96	323		*e*PKP	PKPdf	19 23 17.5	-2.1	
DSF	**Desfina**	161.97	305		P	PKPdf	19 23 15.7	-3.9	
DSF	**Desfina**	161.97	305		P	PKPdf	19 23 15.7	-3.9	
CEME	**Cevo**	161.99	321	‖	*i* PKP	PKPdf	19 23 17.6	-1.9	
FUL	**Funchal**	162.00	74		*e*PKPdf	PKPdf	19 23 23.0	+3.3	
FUL	**Funchal**	162.00	74		*e*PKPab	PKPab	19 24 17.1	+11	
NEST	**Nestorio**	162.02	313		P	PKPdf	19 23 17.2	-2.5	
THAL	**Thalero**	162.03	304		P	PKPdf	19 23 16.0	-3.6	
KPRO	**Kipourio**	162.06	311		P	PKPdf	19 23 17.5	-2.2	
LOR	**Lormes**	162.07	360		*e*PKIKP	PKPdf	19 23 20.1	+0.7	
LOR					pmax	pmax			
	comp=Z,353nm,1.6s								
PENT	**Pentalofos**	162.08	312		P	PKPdf	19 23 17.1	-2.7	
DRME	**Dracevica, Mon**	162.09	320	‖	*i* PKP	PKPdf	19 23 17.8	-1.8	
BUM	**Brajici-Budva**	162.17	321	‖	*i* PKP	PKPdf	19 23 17.8	-1.9	
ULC	**Ulcinj**	162.20	319	‖	*i* PKP	PKPdf	19 23 17.8	-1.9	
TIR	**Tirane**	162.22	317	‖	*i* P	PKPdf	19 23 18.5	-1.2	
TIR	**Tirane**	162.22	317		*e*PKIKP	PKPdf	19 23 19.7	0.0	
TIR					MLR	MLR			
	comp=Z,188μm,19.0s								
TIR	**Tirane**	162.22	317		*e*PKPdf	PKPdf	19 23 19.7	0.0	
TIR					LR	LR			
	comp=Z,188μm,19.0s								
KALE	**Kalithea**	162.26	306		P	PKPdf	19 23 16.9	-3.0	
KALE	**Kalithea**	162.26	306		P	PKPdf	19 23 16.9	-3.0	
EVR	**Evrytania**	162.26	307		P	PKPdf	19 23 16.1	-3.9	
EVR	**Evrytania**	162.26	307		P	PKPdf	19 23 16.1	-3.9	
SSF	**Saint Saulge**	162.27	1		*e*PKIKP	PKPdf	19 23 18.5	-1.1	
SSF					pmax	pmax			
	comp=Z,493nm,1.8s								
ANKY	**Antikythira Is**	162.28	297		P	PKPdf	19 23 18.1	-1.8	
ANKY	**Antikythira Is**	162.28	297		P	PKPdf	19 23 18.1	-1.8	
HCY	**Herceg Novi**	162.29	322	‖	*i* PKP	PKPdf	19 23 17.9	-1.9	
VLI	**Veliai**	162.30	300		P	PKPdf	19 23 15.9	-4.0	
VLI	**Veliai**	162.30	300		P	PKPdf	19 23 15.9	-4.0	
SERG	**Sergoula**	162.31	306		P	PKPdf	19 23 16.3	-3.6	
TUE	**Stuetta**	162.31	347		*e*PKPdf	PKPdf	19 23 18.5	-1.4	
TUE					LR	LR			
	comp=Z,218μm,21.0s								
KLV	**Kalavryta, Ach**	162.40	304		P	PKPdf	19 23 17.4	-2.7	
KLV	**Kalavryta, Ach**	162.40	304		P	PKPdf	19 23 17.4	-2.7	
PMPS	**Porto Santo**	162.42	73		*e*PKPdf	PKPdf	19 23 21.8	+1.6	
PMPS	**Porto Santo**	162.42	73		*e*PP	PP	19 27 54.8	+2.1	
LAKA	**Lakka**	162.44	305		P	PKPdf	19 23 17.2	-2.9	
LAKA	**Lakka**	162.44	305		P	PKPdf	19 23 17.2	-2.9	
MFF	**Saint Martin d**	162.47	9		*e*PKIKP	PKPdf	19 23 20.4	+0.6	
MFF					pmax	pmax			
	comp=Z,2μm,2.5s								
VLX	**Vlachokerasia**	162.49	302		P	PKPdf	19 23 17.6	-2.7	
VLX	**Vlachokerasia**	162.49	302		P	PKPdf	19 23 17.6	-2.7	
AVF	**Avril sur Loir**	162.54	1		*e*PKIKP	PKPdf	19 23 20.3	+0.5	
AVF					pmax	pmax			
	comp=Z,350nm,2.0s								
JAN	**Janina**	162.55	311		P	PKPdf	19 23 19.3	-0.9	
JAN	**

LIS				AMS	AMS	20 34 56.3
	comp=Z,275μm,19.5s					
ATE	**Arette**	**165.79**	**13**	PKP	**PKPdf**	**19 23 22.4 -0.5**
REYF	**Montagne du Re**	**165.87**	**13**	PKP	**PKPdf**	**19 23 21.9 -1.2**
PCBR	**Castelo Branco**	**166.02**	**38**	*e*PKPdf	**PKPdf**	**19 23 23.8 +0.6**
PCBR	**Castelo Branco**	**166.02**	**38**	*e*PKPab	**PKPab**	**19 24 25.5 +2.1**
PCBR	**Castelo Branco**	**166.02**	**38**	*e*PP	PP	19 28 12.0 +1.5
VIEF	**Viey**	**166.12**	**11**	PKP	**PKPdf**	**19 23 23.9 +0.6**
MELF	**Melles**	**166.25**	**9**	PKP	**PKPdf**	**19 23 23.2 -0.2**
RESF	**Ens**	**166.25**	**11**	PKP	**PKPdf**	**19 23 24.0 +0.5**
PMRV	**Marv??o**	**166.36**	**39**	*e*PKPdf	**PKPdf**	**19 23 24.1 +0.6**
PMRV	**Marv??o**	**166.36**	**39**	*e*PKPab	**PKPab**	**19 24 26.4 +1.4**
PMRV	**Marv??o**	**166.36**	**39**	*e*PP	PP	19 28 12.1 -0.3
PMRV	**Marv??o**	**166.36**	**39**	*e*SS	SS	19 49 06.9 +15
PMRV	**Marv??o**	**166.36**	**39**	*e*LQ	LQ	20 10 44.1
PMRV	**Marv??o**	**166.36**	**39**	*e*LR	LR	20 24 17.2
	comp=Z,332μm,20.0s					
LRDF	**Laroque-de-Fa**	**166.36**	**4**	PKP	**PKPdf**	**19 23 22.9 -0.5**
SALF	**Salau**	**166.42**	**8**	PKP	**PKPdf**	**19 23 23.3 -0.2**
CEL	**Celeste**	**166.53**	**315**	*e*PKPdf	**PKPdf**	**19 23 24.8 +1.1**
CEL				LR	LR	
	comp=Z,192μm,21.0s					
PNCL	**Nicolau / Gran**	**166.54**	**46**	*e*PKPdf	**PKPdf**	**19 23 24.7 +1.1**
PNCL	**Nicolau / Gran**	**166.54**	**46**	*e*PKPab	**PKPab**	**19 24 27.6 +1.8**
PNCL	**Nicolau / Gran**	**166.54**	**46**	*e*PP	PP	19 28 14.8 +1.3
PNCL	**Nicolau / Gran**	**166.54**	**46**	*e*SS	SS	19 49 10.1 +16
CARF	**Carcanieres**	**166.55**	**5**	PKP	**PKPdf**	**19 23 23.0 -0.7**
EVO	**Evora**	**166.60**	**44**	*e*PKPdf	**PKPdf**	**19 23 24.4 +0.7**
EVO	**Evora**	**166.60**	**44**	*e*PKPab	**PKPab**	**19 24 27.3 +1.2**
EVO	**Evora**	**166.60**	**44**	*e*PP	PP	19 28 22.4 +8.7
FILF	**Fillols**	**166.74**	**4**	PKP	**PKPdf**	**19 23 23.2 -0.6**
PTEO	**Sao Teotonio**	**166.75**	**48**	*e*PKPdf	**PKPdf**	**19 23 24.7 +0.9**
PTEO	**Sao Teotonio**	**166.75**	**48**	*e*PKPab	**PKPab**	**19 24 27.7 +0.9**
PTEO	**Sao Teotonio**	**166.75**	**48**	*e*PP	PP	19 28 19.3 +4.7
SJAF	**Saint Jean de**	**166.83**	**3**	PKP	**PKPdf**	**19 23 21.5 -2.3**
VALF	**Valcebollere**	**166.86**	**6**	PKP	**PKPdf**	**19 23 23.9 -0.1**
MESJ	**Messejana**	**166.90**	**46**	*e*P	**PKPdf**	**19 23 22.5 -1.4**
MESJ				*e*PP	**PP**	**19 28 14.7 -0.6**
MESJ				AMS	AMS	20 34 53.2
	comp=Z,156μm,25.3s					
MESJ	**Messejana**	**166.90**	**46**	*e*PKPdf	**PKPdf**	**19 23 24.9 +1.0**
MESJ	**Messejana**	**166.90**	**46**	*e*PKPab	**PKPab**	**19 24 28.1 +0.7**
MESJ	**Messejana**	**166.90**	**46**	*e*PP	PP	19 28 28.9 +14
MORF	**Marmelete**	**166.93**	**49**	*e*P	**PKPdf**	**19 23 22.8 -1.3**
MORF				*e*PP	**PP**	**19 28 14.9 -0.8**
MORF				AMS	AMS	20 33 34.8
	comp=Z,197μm,24.0s					
MORF	**Marmelete**	**166.93**	**49**	*e*PKPdf	**PKPdf**	**19 23 24.9 +0.8**
MORF	**Marmelete**	**166.93**	**49**	*e*PKPab	**PKPab**	**19 24 29.1 +1.4**
MORF	**Marmelete**	**166.93**	**49**	*e*PP	PP	19 28 17.9 +2.2
MORF	**Marmelete**	**166.93**	**49**	*e*SS	SS	19 49 30.7 +32
PBEJ	**Beja**	**167.01**	**45**	*e*PKPdf	**PKPdf**	**19 23 24.8 +0.8**
PBEJ	**Beja**	**167.01**	**45**	*e*PKPab	**PKPab**	**19 24 27.6 -0.3**
PBEJ	**Beja**	**167.01**	**45**	*e*PP	PP	19 28 20.8 +4.9
PCVE	**Castro Verde**	**167.14**	**47**	*e*PKPdf	**PKPdf**	**19 23 25.3 +1.2**
PCVE	**Castro Verde**	**167.14**	**47**	*e*PKPab	**PKPab**	**19 24 25.9 -2.6**
PCVE	**Castro Verde**	**167.14**	**47**	*e*PP	PP	19 28 20.4 +3.8
PCVE	**Castro Verde**	**167.14**	**47**	*e*SS	SS	19 49 19.3 +19
PBAR	**Barrancos**	**167.41**	**43**	*e*PKPdf	**PKPdf**	**19 23 25.1 +0.8**
PBAR	**Barrancos**	**167.41**	**43**	*e*PKPab	**PKPab**	**19 24 29.1 -0.6**
PBAR	**Barrancos**	**167.41**	**43**	*e*PP	PP	19 28 29.8 +12
PBAR	**Barrancos**	**167.41**	**43**	*e*SS	SS	19 49 20.3 +17
PBDV	**Barranco-do-Ve**	**167.44**	**48**	*e*PKPdf	**PKPdf**	**19 23 25.5 +1.1**
PBDV	**Barranco-do-Ve**	**167.44**	**48**	*e*PKPab	**PKPab**	**19 24 31.5 +1.6**
PBDV	**Barranco-do-Ve**	**167.44**	**48**	*e*PP	PP	19 28 21.6 +3.4
PBDV	**Barranco-do-Ve**	**167.44**	**48**	*e*SS	SS	19 49 18.0 +14
PAB	**San Pablo**	**167.80**	**31**	*e*PKIKP	**PKPdf**	**19 23 25.2 +0.5**
PAB				MLR	MLR	
	comp=Z,278μm,20.0s					
PAB	**San Pablo**	**167.80**	**31**	*e*PKPdf	**PKPdf**	**19 23 25.2 +0.5**
PAB				LR	LR	
	comp=Z,278μm,20.0s					
ESDC	**Sonseca Array**	**167.87**	**30**	PKP	**PKPdf**	**19 23 24.8 +0.1**
	comp=Z,30nm,1.0s,baz=345,slow=1.7,SNR=48					
ESDC				PKPab	**PKPab**	**19 24 33.1 +1.4**
	comp=Z,113nm,1.0s,baz=314,slow=4.4,SNR=8.8					
ESDC				PP	**PP**	**19 28 21.9 +2.1**
	comp=Z,86nm,1.2s,baz=327,slow=4.3,SNR=7.3					
ESDC				SKKPbc		19 33 03.5
	comp=Z,32nm,1.1s,baz=151,slow=3.3,SNR=6.6					
ESLA	**Sonseca Array**	**167.87**	**30**	*e*PKPdf	**PKPdf**	**19 23 25.1 +0.4**
ES19	**SONSECA Array**	**167.87**	**29**	*e*PKPdf	**PKPdf**	**19 23 24.9 +0.2**
VAE	**Valguarnera**	**167.93**	**315**	PKP	**PKPdf**	**19 23 24.8 +0.1**
	comp=Z,37nm,1.0s,baz=40,slow=1.7,SNR=8.8					
VAE				PP	**PP**	**19 28 16.7 -4.0**
	comp=Z,25nm,0.9s,baz=94,slow=7.5,SNR=2.3					
CLTB	**Caltabellotta**	**168.58**	**319**	*e*PKPdf	**PKPdf**	**19 23 26.0 +0.8**
CLTB				LR	LR	
	comp=Z,104μm,20.0s					
WDD	**Wied Dalam**	**168.82**	**308**	PFAKE		19 23 40.0 +15
WDD				LR	LR	
	comp=Z,203μm,21.0s					
VSL	**Villasalto**	**168.82**	**337**	*e*PKPdf	**PKPdf**	**19 23 25.2 0.0**
VSL				LR	LR	
	comp=Z,208μm,21.0s					
RTC	**Rabat Centre**	**169.83**	**60**	PFAKE		19 23 40.0 +14
RTC				LR	LR	
	comp=Z,1060μm,22.0s					
MDT	**Midelt**	**172.03**	**62**	PKP	**PKPdf**	**19 23 28.1 +0.8**
	comp=Z,98nm,1.1s,baz=279,slow=0.8,SNR=52					
MDT				PKPab	**PKPab**	**19 24 52.6 +2.1**
	comp=Z,35nm,1.0s,baz=272,slow=5.7,SNR=1.7					
MDT				PP	**PP**	**19 28 39.2 -2.7**
	comp=Z,12nm,1.1s,baz=317,slow=4.2,SNR=1.9					
MDT				SKKPbc		19 32 45.1
	comp=Z,28nm,1.1s,baz=234,slow=3.1,SNR=4.5					
KEST	**Kesra**	**172.04**	**325**	PKP	**PKPdf**	**19 23 27.1 -0.2**
	comp=Z,12nm,0.9s,baz=63,slow=1.2,SNR=17					
KEST				PP	**PP**	**19 28 34.8 -6.2**
	comp=Z,16nm,0.9s,baz=343,slow=7.5,SNR=1.9					
KEST	**Kesra**	**172.04**	**325**	*e*PKPdf	**PKPdf**	**19 23 27.6 +0.4**
KEST				PP	**PP**	**19 28 34.8 -6.2**
CMAH	**Djebel Manchou**	**172.08**	**338**	P	PKPpre	19 23 20.0
CAEH	**'Ain El Ouahch**	**172.10**	**342**	P	**PKPdf**	**19 23 26.8 -0.3**
ABSA	**Djebel Ababsia**	**172.38**	**337**	P	**PKPdf**	**19 23 27.0 -0.4**
CKFL	**Kef-Lekhel**	**172.50**	**341**	P	**PKPdf**	**19 23 27.4 -0.1**
DFRA	**Djebel Bou Aff**	**172.56**	**347**	P	**PKPdf**	**19 23 28.4 +0.9**
OLHC	**Oulhaca**	**172.64**	**35**	P	PKPdf	19 23 40.0 +13
USTO	**Oran**	**172.64**	**28**	P	**PKPdf**	**19 23 31.0 +3.7**
CASM	**Ain Smara**	**172.69**	**342**	P	**PKPdf**	**19 23 29.0 +1.5**
EBNR	**Beni Rached**	**172.79**	**14**	P	**PKPdf**	**19 23 28.0 +0.5**
ECHA	**Ech Chlef**	**172.89**	**16**	P	**PKPdf**	**19 23 29.0 +1.6**
CTEI	**Djebel Teioual**	**172.90**	**342**	P	**PKPdf**	**19 23 28.8 +1.1**
OTSS	**Djebel Tessala**	**172.91**	**32**	P	**PKPdf**	**19 23 32.0 +4.3**
SET	**Setif**	**172.99**	**349**	P	**PKPdf**	**19 23 27.0 -0.7**
EANR	**'Ain N'Sour**	**173.01**	**18**	P	**PKPdf**	**19 23 28.0 +0.4**
CKHR	**Kef el Ahmar**	**173.15**	**348**	P	**PKPdf**	**19 23 29.6 +1.8**
ODJA	**Bouhanifia**	**173.15**	**28**	P	**PKPdf**	**19 23 31.0 +3.3**
TAM	**Tamanrasset**	**173.32**	**194**	*e*PKIKP	**PKPdf**	**19 23 28.5 +0.2**
TAM				MLR	MLR	
	comp=Z,264μm,20.0s					
TAM	**Tamanrasset**	**173.32**	**194**	*e*PKPdf	**PKPdf**	**19 23 28.5 +0.2**
TAM				LR	LR	
	comp=Z,264μm,20.0s					
ETRT	**Tiaret**	**173.59**	**18**	P	**PKPdf**	**19 23 28.0 +0.1**

IDC 06 19:06:03.9±3.1,1°.26N×96°.83E,h0km,mb3.7/4,mb1 3.7/5, mb1mx3.4/63,mbtmp3.6/5,ML3.4/1,Error ellipse: s-maj=77.6km s-min=25.9km az=122.0,Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**17.22**	**7**	P	Pn	19 10 06.0	0.0
	0.1nm,0.3s,baz=196,slow=12,SNR=3.6						
H08S2	**Diego Garcia H**	**25.84**	**250**	T	T	19 38 39.2	
	baz=70,slow=75,SNR=255						
H08S3	**Diego Garcia H**	**25.84**	**250**	T	T	19 38 39.7	
	baz=70,slow=75,SNR=181						
H08S1	**Diego Carcia H**	**25.85**	**250**	T	T	19 38 36.9	
	baz=70,slow=75,SNR=284						
MKAR	**Makanchi Array**	**47.10**	**346**	P	P	19 14 38.5	+0.8
	0.6nm,0.6s,baz=164,slow=7.8,SNR=7.6						
SONM	**Songino Array**	**47.13**	**9**	P	P	19 14 37.9	-0.1
	0.9nm,0.5s,baz=186,slow=9.1,SNR=5.7						
KURBB	**Kurchatov Arra**	**51.58**	**345**	P	P	19 15 10.7	-1.1
	0.2nm,0.2s,baz=164,slow=6.7,SNR=3.7						
ZALV	**Zalesovo Beam**	**53.45**	**351**	P	P	19 15 26.2	+0.5
	0.6nm,0.4s,baz=170,slow=6.4,SNR=3.8						

IDC 06 19:13:37.8±1.2,29°.64S×175°.86W,h0km,mb4.8/4,

mb1 4.9/4,mb1mx4.4/39,mbtmp4.8/4,Error ellipse: s-maj=58.5km s-min=19.9km az=173.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.84**	**282**	Pn	Pn	19 14 10.8	+0.2
	779nm,0.3s,baz=41,slow=18,SNR=3.6						
CTA	**Charters Tower**	**35.53**	**277**	P	P	19 20 36.7	0.0
	11nm,1.0s,baz=111,slow=2.7,SNR=1.6						
ASAR	**Alice Springs**	**45.01**	**265**	P	P	19 21 54.4	-0.9
	8.5nm,0.9s,baz=102,slow=7.2,SNR=4.1						
WRA	**Warramunga Arr**	**45.94**	**270**	P	P	19 22 02.7	0.0
	2.2nm,0.3s,baz=108,slow=7.9,SNR=10						
FITZ	**Fitzroy Crossi**	**54.23**	**268**	P	P	19 23 05.3	-0.3
	44nm,1.1s,baz=76,slow=12,SNR=2.0						
FINES	**FINESS Array B**	**145.04**	**342**	PKPbc	PKPbc	19 33 15.2	-0.6
	4.9nm,0.8s,baz=88,slow=4.3,SNR=2.9						
AKASG	**Malin Array Be**	**151.78**	**325**	PKPbc	PKPbc	19 33 33.8	-0.3
	1.7nm,0.5s,baz=47,slow=3.4,SNR=5.6						

IDC 06 19:13:49.6±3.2,30°.04S×175°.98W,h0km,mb4.7/2, mb1 4.9/2,mb1mx4.2/39,mbtmp4.7/2,Error ellipse: s-maj=157.4km s-min=23.9km az=162.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**35.48**	**277**	P	P	19 20 48.5	+0.4
	6.7nm,0.6s,baz=93,slow=11,SNR=4.0						
WRA	**Warramunga Arr**	**45.84**	**271**	P	P	19 22 13.5	-0.2
	7.0nm,0.7s,baz=110,slow=8.1,SNR=9.4						
FINES	**FINESS Array B**	**145.38**	**341**	PKPbc	PKPbc	19 33 27.6	-1.0
	11nm,0.9s,baz=64,slow=3.2,SNR=4.7						
AKASG	**Malin Array Be**	**152.05**	**325**	PKPbc	PKPbc	19 33 46.6	+0.1
	2.3nm,0.7s,baz=46,slow=3.2,SNR=4.5						

IDC 06 19:16:24.8±1.2,29°.38S×176°.12W,h0km,mb4.4/4, mb1 4.5/4,mb1mx4.1/39,mbtmp4.4/4,Error ellipse: s-maj=56.6km s-min=31.0km az=172.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**35.28**	**276**	P	P	19 23 21.9	+0.4
	5.8nm,0.7s,baz=111,slow=16,SNR=2.4						
STKA	**Stephens Creek**	**36.31**	**255**	P	P	19 23 30.8	+0.6
	8.2nm,0.9s,baz=146,slow=7.3,SNR=2.9						
ASAR	**Alice Springs**	**44.81**	**265**	P	P	19 24 39.6	-1.1
	2.0nm,0.7s,baz=103,slow=7.9,SNR=4.2						
WRA	**Warramunga Arr**	**45.71**	**270**	P	P	19 24 47.5	-0.4
	2.3nm,0.6s,baz=108,slow=8.0,SNR=7.9						
FINES	**FINESS Array B**	**144.72**	**342**	PKP	PKPab	19 36 01.1	-0.5
	2.5nm,0.6s,baz=64,slow=3.2,SNR=4.0						
HFS	**Hagfors**	**148.54**	**351**	PKPbc	PKPbc	19 36 12.3	-0.6
	2.1nm,0.7s,baz=347,slow=5.9,SNR=4.7						
AKASG	**Malin Array Be**	**151.44**	**325**	PKPbc	PKPbc	19 36 19.8	-0.5
	3.2nm,0.6s,baz=46,slow=3.1,SNR=8.0						
BRTR	**Keskin Array B**	**153.52**	**301**	PKPbc	PKPbc	19 36 26.5	+1.0
	1.0nm,0.8s,baz=82,slow=1.1,SNR=2.1						
TORD	**Torodi Ar. Bea**	**163.72**	**172**	PKPab	PKPab	19 37 21.7	-0.5
	3.2nm,1.1s,baz=182,slow=3.1,SNR=2.2						

IDC 06 19:19:53.3±5.6,28°.16S×176°.24W,h0km,mb4.2/3, mb1 4.4/3,mb1mx3.9/43,mbtmp4.2/3,Error ellipse: s-maj=133.1km s-min=56.9km az=126.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.84**	**233**	Pn	Pn	19 20 25.7	-0.5
	154nm,0.3s,baz=17,slow=19,SNR=2.3						
RAO				Sn	Sn	19 20 44.6	-5.5
	1μm,0.3s,baz=41,slow=22,SNR=9.6						
ASAR	**Alice Springs**	**44.82**	**264**	P	P	19 28 09.7	+0.3
	0.5nm,0.4s,baz=104,slow=7.6,SNR=5.0						
WRA	**Warramunga Arr**	**45.62**	**269**	P	P	19 28 16.6	+0.9
	10nm,0.9s,baz=109,slow=7.9,SNR=6.8						
FITZ	**Fitzroy Crossi**	**53.95**	**267**	P	P	19 29 17.7	-1.5
	2.7nm,0.8s,baz=96,slow=9.2,SNR=3.6						
FINES	**FINESS Array B**	**143.53**	**342**	PKP	PKPdf	19 39 28.6	-0.8
	1.4nm,1.0s,baz=79,slow=7.2,SNR=2.5						

*CSEM **06** 19:21:54.6,39°.13N×29°.14E,h5km,ML2.8*
ISK 06 19:21:54.6,39°.13N×29°.14E,h5km,ML2.8,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GEDZ	**Gediz**	**0.22**	**112**	*e*PG	Pg	19 21 59.6	+0.6
GEDZ				*e*SG	Sg	19 22 03.1	+1.2
GEDZ	**Gediz**	**0.22**	**112**	*e*Pg	Pg	19 21 59.6	+0.6
GEDZ				*e*Sg	Sg	19 22 03.1	+1.2
TVSB	**Tavsanli**	**0.41**	**37**	*e*PG	Pg	19 22 03.1	+0.7
TVSB				*e*SG	Sg	19 22 08.7	+0.9
TVSB	**Tavsanli**	**0.41**	**37**	*e*Pg	Pg	19 22 03.1	+0.6
TVSB				*e*Sg	Sg	19 22 08.7	+0.9
KULA	**Kula-Manisa**	**0.72**	**212**	*e*PG	Pg	19 22 09.0	+0.5
KULA	**Kula-Manisa**	**0.72**	**212**	*e*Pg	Pg	19 22 09.0	+0.6
AKS	**Akhisar**	**1.07**	**257**	*e*PG	Pb	19 22 15.4	-0.2
AKS	**Akhisar**	**1.07**	**257**	*e*Pg	Pb	19 22 15.4	-0.1
BALB	**Balikesir**	**1.10**	**298**	*e*PN	Pn	19 22 15.6	-0.1
BALB				*e*SN	Sn	19 22 32.2	-0.1
BALB	**Balikesir**	**1.10**	**298**	*e*Pn	Pn	19 22 16.7	0.0
BALB				*e*Sn	Sn	19 22 32.3	-0.1
CAVI	**Cavuskoy**	**1.20**	**26**	*e*PN	Pn	19 22 18.1	0.0
CAVI	**Cavuskoy**	**1.20**	**26**	*e*Pn	Pn	19 22 18.1	0.0
IZI	**Iznik**	**1.23**	**12**	*e*PN	Pn	19 22 19.1	+0.5
IZI	**Iznik**	**1.23**	**12**	*e*Pn	Pn	19 22 19.1	+0.5
MDNY	**Mudanya-Bursa**	**1.26**	**351**	*e*PN	Pn	19 22 19.4	+0.6
MDNY	**Mudanya-Bursa**	**1.26**	**351**	*e*Pn	Pn	19 22 19.4	+0.6
KCTX	**Karacabey (Bur**	**1.29**	**332**	*e*PN	Pn	19 22 19.3	0.0
KCTX	**Karacabey (Bur**	**1.29**	**332**	*e*Pn	Pn	19 22 19.3	0.0
ADVT	**Abdulvahap**	**1.38**	**19**	*e*PN	Pg	19 22 21.3	+0.2
ADVT	**Abdulvahap**	**1.38**	**19**	*e*Pn	Pg	19 22 21.3	+0.2
ARMT	**Armutlu**	**1.45**	**351**	*e*PN	Pg	19 22 22.4	0.0
ARMT	**Armutlu**	**1.45**	**351**	*e*Pn	Pg	19 22 22.4	0.0
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*PN	Pg	19 22 22.6	+0.2
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*Pn	Pg	19 22 22.7	+0.2
GULT	**Gulveren**	**1.68**	**39**	*e*PN	Pb	19 22 25.5	-0.5
GULT	**Gulveren**	**1.68**	**39**	*e*Pn	Pb	19 22 25.5	-0.5

*IDC **06** 19:24:06.7±1.2,29°.54S×176°.17W,h0km,mb4.0/4, mb1 4.2/4,mb1mx3.9/44,mbtmp4.0/4,Error ellipse: s-maj=54.5km s-min=24.7km az=5.0*
ISC 06 19:24:10.9±1.2,29°.7S±0°.1×176°.2W±0°.1,h28km,n10, σ0°.97/12,mb4.0/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.56**	**287**	Pn	**Pn**	**19 24 36.3**	**-0.4**
	156nm,0.3s,baz=61,slow=19,SNR=1.7						
RAO				Sn	**Sb**	**19 24 59.4**	**+0.9**
	451nm,0.3s,baz=117,slow=22,SNR=2.9						
URZ	**Urewera**	**10.17**	**211**	Sn	**Sn**	**19 28 27.7**	**-0.4**
	1.3nm,0.3s,baz=155,slow=23,SNR=1.5						
CTA	**Charters Tower**	**35.24**	**277**	P	**P**	**19 31 03.8**	**+0.6**
	1.1nm,0.6s,baz=96,slow=16,SNR=3.0						
STKA	**Stephens Creek**	**36.16**	**256**	P	**P**	**19 31 10.6**	**-0.3**
	6.8nm,1.0s,baz=79,slow=6.5,SNR=3.3						
ASAR	**Alice Springs**	**44.71**	**265**	P	**P**	**19 32 21.2**	**-0.6**
	0.7nm,0.5s,baz=96,slow=8.0,SNR=12						
WRA	**Warramunga Arr**	**45.64**	**271**	P	**P**	**19 32 28.9**	**-0.3**
	1.1nm,0.6s,baz=110,slow=7.7,SNR=5.1						
KURBB	**Kurchatov Arra**	**121.74**	**314**	PKP	**PKPdf**	**19 43 00.8**	**-0.9**
	0.4nm,0.8s,baz=116,slow=1.4,SNR=3.1						
FINES	**FINESS Array B**	**145.01**	**341**	PKP	**PKPbc**	**19 43 43.3**	**-0.8**
	0.4nm,0.5s,baz=76,slow=5.9,SNR=4.2						
AKASG	**Malin Array Be**	**151.66**	**325**	PKPbc	**PKPbc**	**19 44 03.0**	**+0.7**
	1.1nm,0.5s,baz=44,slow=2.8,SNR=5.6						
AKASG				PKPab	**PKPab**	**19 44 10.8**	**-0.2**
	0.9nm,0.5s,baz=41,slow=3.6,SNR=4.6						
TORD	**Torodi Ar. Bea**	**163.40**	**173**	PKPab	**PKPab**	**19 45 04.4**	**+2.1**
	1.1nm,0.7s,baz=183,slow=2.9,SNR=5.7						

*ISCJB **06** 19:24:43.4±0.4,24°.21N±0°.02×121°.85E±0°.02,h7km±2km, Error ellipse: s-maj=3.0km s-min=2.3km az=35.6*
*TAP **06** 19:24:43.7,24°.23N×121°.77E,h19km,ML3.6,B*
*JMA **06** 19:24:43.0,24°.18N×121°.73E,h20km±1km,M2.8*
ISC 06 19:24:42.9±0.9,24°.20N±0°.02×121°.89E±0°.02,h13km±7km,

n64,σ0°.90/94,10C-2D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.18**	**310**	*i* P	**Pg**	**19 24 47.9**	**+0.9**
	baz=344						
EHP				*i* S	**Sg**	**19 24 50.5**	**+0.7**
	baz=344						
ENA	**Nanau**	**0.27**	**329**	⇑*i* P	**Pb**	**19 24 48.7**	**-0.9**
	baz=352						
ENA				*e*S	**Sg**	**19 24 52.0**	**-0.4**
	baz=352						
TWD	**Chiawan**	**0.29**	**247**	⇑*i* P	**Pg**	**19 24 49.2**	**+0.2**
	baz=232						
TWD				*i* S	**Sg**	**19 24 52.9**	**-0.2**
	baz=232						
HWA	**Hwalien**	**0.34**	**230**	*e*P	**Pb**	**19 24 50.9**	**+0.1**
	baz=218						
TWC	**Suao**	**0.41**	**355**	⇑*i* P	**Pb**	**19 24 51.9**	**-0.2**
	baz=7.0						
TWC				S	**Sb**	**19 24 57.4**	**-0.8**
	baz=7.0						
ESF	**Shoufeng Towns**	**0.48**	**227**	*e*P	**Pb**	**19 24 53.3**	**+0.2**
	baz=223						
ENTT	**Nioudou**	**0.53**	**326**	⇑*i* P	**Pg**	**19 24 53.2**	**-0.1**
	baz=334						
ENTT				*i* S	**Sg**	**19 24 59.7**	**-0.8**
	baz=334						
NNS	**Nan Shan**	**0.53**	**297**	⇑*i* P	**Pg**	**19 24 52.7**	**-0.7**
	baz=299						
NNS				*i* S	**Sg**	**19 24 58.5**	**-2.0**
	baz=299						
TWE	**Neicheng**	**0.56**	**339**	⇑*i* P	**Pb**	**19 24 53.9**	**-0.7**
	baz=348						
TWE				*i* S	**Sg**	**19 25 00.5**	**-0.9**
	baz=348						
ESL	**Shilin**	**0.57**	**228**	*e*P	**Pg**	**19 24 54.2**	**+0.2**
	baz=222						
WHF	**Hehuan Shan**	**0.57**	**265**	⇑*i* P	**Pg**	**19 24 53.6**	**-0.6**
	baz=259						
TEGC	**Jichi Village**	**0.58**	**214**	*e*P	**Pb**	**19 24 56.0**	**+1.1**
	baz=194						
ILA	**Ilan**	**0.58**	**347**	*e*P	**Pb**	**19 24 55.2**	**+0.2**
	baz=349						
EGS		**0.65**	**3**	⇑*i* P	**Pb**	**19 24 56.6**	**+0.5**
	baz=19						
TWT	**Tachien**	**0.66**	**275**	⇑*i* P	**Pg**	**19 24 55.4**	**-0.3**
	baz=272						
TWT				*i* S	**Sg**	**19 25 02.9**	**-1.5**
	baz=272						
NSK	**Sanguang**	**0.68**	**315**	⇑*i* P	**Pg**	**19 24 55.5**	**-0.6**
	baz=319						
NSK				*i* S	**Sg**	**19 25 03.3**	**-1.9**
	baz=319						
TWA	**Mucha**	**0.83**	**340**	*e*P	**Pb**	**19 24 59.7**	**+0.5**
	baz=346						
EHY	**Hungye**	**0.86**	**217**	*e*P	**Pb**	**19 24 59.8**	**+0.1**
	baz=220						
NWF	**Wu-fen Shan**	**0.88**	**353**	*e*P	**Pb**	**19 24 60.0**	**0.0**
	baz=350						
NWF				*e*S	**Sb**	**19 25 11.3**	**-0.4**
	baz=350						
TAP1	**Taipei**	**0.90**	**338**	*e*P	**Pb**	**19 25 00.5**	**+0.1**
	baz=342						
TAP1				*e*S	**Sb**	**19 25 12.1**	**-0.3**
	baz=342						
TAP	**Taipei**	**0.91**	**337**	*e*P	**Pb**	**19 25 01.0**	**+0.4**
	baz=342						
TAP				*e*S	**Sb**	**19 25 12.6**	**0.0**
	baz=342						
NSTT	**Nanjuang**	**0.92**	**298**	⇓*i* P	**Pg**	**19 25 00.1**	**-0.6**
	baz=299						
NSTT				S	**Sg**	**19 25 10.5**	**-2.3**
	baz=299						
SMLT	**Sun Moon Lake**	**0

	baz=192						
JIJ	**Ishigaki jima**	**2.06**	**85**	P	**Pb**	**19 25 18.9**	**-1.3**
JIJ				*e*S	**Sb**	**19 25 45.9**	**+0.2**
SCZT	**Fangliau**	**2.16**	**213**	*e*P	**Pb**	**19 25 20.9**	**-0.9**
	baz=192						
LAY	**Lan-yu**	**2.17**	**188**	*e*P	**Pn**	**19 25 17.3**	**-1.4**
	baz=184						
PNG	**Penghu**	**2.23**	**254**	*e*P	**Pn**	**19 25 19.8**	**+0.3**
	baz=253						
JISG	**Ishigakijimahi**	**2.24**	**79**	P	**Pb**	**19 25 21.5**	**-1.7**
JISG				S	**Sb**	**19 25 50.0**	**-0.9**
WDGT	**Dungji**	**2.25**	**246**	*e*P	**Pn**	**19 25 19.3**	**-0.5**
	baz=245						

*IDC **06** 19:27:29.3±1.1,29˚.14S×176˚.13W, h0km, mb4.2/4, mb1 4.3/4, mb1mx3.9/41, mbtmp4.2/4, Error ellipse: s-maj=55.5km s-min=22.8km az=171.0*
*ISCJB **06** 19:27:30.2±1.7,29˚.66S±0˚.09×176˚.0W±0˚.1, h28km, mb4.2/5, Error ellipse: s-maj=18.8km s-min=13.0km az=165.9*
*NEIC **06** 19:27:30.3±0.8,29˚.50S×176˚.08W, h10km, mb4.5/1, Error ellipse: s-maj=18.5km s-min=11.1km az=121.0*

ISC 06 19:27:33.2±1.1,29˚.5S±0˚.1×176˚.1W±0˚.1, h28km, n15, σ0s92/16, mb4.3/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.63**	**278**	Pn	**Pn**	**19 27 59.6**	**-0.4**
	184nm,0.3s,baz=66,slow=20,SNR=1.7						
RAO				Sn	**Sn**	**19 28 21.1**	**+1.0**
	258nm,0.3s,baz=122,slow=22,SNR=2.3						
URZ	**Urewera**	**10.41**	**211**	Sn	**Sn**	**19 31 55.4**	**-0.8**
	1.0nm,0.3s,baz=124,slow=21,SNR=1.9						
CTA	**Charters Tower**	**35.33**	**277**	P	**P**	**19 34 25.9**	**-0.4**
	1.9nm,0.5s,baz=105,slow=12,SNR=3.4						
STKA	**Stephens Creek**	**36.31**	**255**	P	**P**	**19 34 35.8**	**+1.2**
	4.7nm,0.9s,baz=94,slow=8.1,SNR=3.6						
ASAR	**Alice Springs**	**44.84**	**265**	P	**P**	**19 35 44.5**	**-0.7**
	1.6nm,0.9s,baz=98,slow=7.4,SNR=9.8						
WRAB	**Tennant Creek**	**45.74**	**270**	P	**P**	**19 35 52.0**	**-0.4**
	1.9nm,0.4s						
WRA	**Warramunga Arr**	**45.75**	**270**	P	**P**	**19 35 51.1**	**-1.2**
	3.0nm,0.8s,baz=109,slow=7.7,SNR=7.8						
KURK	**Kurchatov**	**121.63**	**314**	PKP	**PKPdf**	**19 46 23.8**	**-0.1**
KURBB	**Kurchatov Arra**	**121.67**	**314**	PKP	**PKPdf**	**19 46 23.8**	**-0.2**
	0.4nm,0.6s,baz=109,slow=2.1,SNR=4.8						
FINES	**FINESS Array B**	**144.85**	**342**	PKP	**PKPab**	**19 47 05.5**	**-0.3**
	1.2nm,0.6s,baz=90,slow=3.8,SNR=8.1						
NB2	**NORSAR Subarra**	**148.09**	**353**	PKP	**PKPbc**	**19 47 15.1**	**-0.5**
	comp=Z,0.8nm,0.7s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**148.09**	**353**	PKPbc	**PKPbc**	**19 47 15.6**	**+0.1**
	comp=Z,1.7nm,0.8s,baz=12,slow=4.4,SNR=4.6						
HFS	**Hagfors**	**148.66**	**351**	PKPbc	**PKPbc**	**19 47 16.3**	**-0.8**
	comp=Z,2.2nm,0.8s,baz=336,slow=3.2,SNR=3.8						
AKASG	**Malin Array Be**	**151.56**	**325**	PKPbc	**PKPbc**	**19 47 24.2**	**-0.1**
	comp=Z,0.6nm,0.4s,baz=46,slow=2.7,SNR=6.6						
TORD	**Torodi Ar. Bea**	**163.60**	**172**	PKPab	**PKPab**	**19 48 27.6**	**+2.1**
	comp=Z,0.7nm,0.8s,baz=180,slow=3.2,SNR=2.6						

*ISCJB **06** 19:28:33.1±1.4,29˚.6S±0˚.1×176˚.1W±0˚.1, h21km, mb4.2/6, Error ellipse: s-maj=21.0km s-min=13.4km az=39.0*
*IDC **06** 19:28:33.3±1.2,29˚.35S×176˚.25W, h0km, mb4.1/4, mb1 4.4/5, mb1mx4.0/41, mbtmp4.2/5, ML4.1/1, Error ellipse: s-maj=37.5km s-min=24.8km az=177.0*
*NEIC **06** 19:28:34.5±0.8,29˚.43S×176˚.23W, h10km, mb4.2/2, Error ellipse: s-maj=16.8km s-min=15.0km az=122.0*

ISC 06 19:28:36.6±1.0,29˚.6S±0˚.1×176˚.28W±0˚.10, h21km, n14, σ1s25/16, mb4.2/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.47**	**283**	Pn	**Pb**	**19 29 02.8**	**-0.3**
	335nm,0.3s,baz=73,slow=19,SNR=3.8						
RAO				Sn	**Sb**	**19 29 22.4**	**+1.0**
	334nm,0.3s,baz=75,slow=19,SNR=2.3						
OUZ	**Omahuta**	**10.23**	**234**	P	**Pn**	**19 31 03.5**	**+1.3**
URZ	**Urewera**	**10.24**	**211**	Pn	**Pn**	**19 31 02.6**	**+0.4**
	1.4nm,0.3s,baz=6.7,slow=17,SNR=3.3						
URZ				Sn	**Sn**	**19 32 53.8**	**-2.5**
	1.8nm,0.3s,baz=277,slow=16,SNR=1.6						
STKA	**Stephens Creek**	**36.12**	**255**	P	**P**	**19 35 38.2**	**+1.0**
	3.6nm,0.8s,baz=99,slow=6.5,SNR=3.7						
ASAR	**Alice Springs**	**44.65**	**265**	P	**P**	**19 36 47.4**	**-0.6**
	0.9nm,0.6s,baz=100,slow=6.9,SNR=4.5						
WRAB	**Tennant Creek**	**45.56**	**270**	P	**P**	**19 36 54.2**	**-1.0**
	2.5nm,0.6s						
WRA	**Warramunga Arr**	**45.57**	**270**	P	**P**	**19 36 54.4**	**-1.0**
	3.5nm,0.7s,baz=109,slow=7.9,SNR=8.6						
SBA	**Scott Base**	**48.96**	**185**	P	**P**	**19 37 22.0**	**+1.1**
	1.8nm,0.9s						
MJAR	**Matsushiro Arr**	**78.44**	**324**	P	**P**	**19 40 34.2**	**-1.6**
	1.2nm,0.7s,baz=156,slow=6.8,SNR=4.5						
KURK	**Kurchatov**	**121.56**	**314**	PKP	**PKPdf**	**19 47 27.9**	**-0.4**
KURBB	**Kurchatov Arra**	**121.61**	**314**	PKP	**PKPdf**	**19 47 27.8**	**-0.5**
	0.4nm,0.7s,baz=106,slow=1.9,SNR=4.0						
FINES	**FINESS Array B**	**144.88**	**341**	PKP	**PKPab**	**19 48 10.2**	**-0.3**
	0.8nm,0.4s,baz=49,slow=4.2,SNR=7.0						
AKASG	**Malin Array Be**	**151.53**	**325**	PKPbc	**PKPbc**	**19 48 29.1**	**+0.4**
	1.6nm,0.4s,baz=45,slow=3.0,SNR=7.9						
TORD	**Torodi Ar. Bea**	**163.53**	**173**	PKPab	**PKPab**	**19 49 31.4**	**+1.7**
	2.6nm,0.8s,baz=191,slow=3.0,SNR=9.4						

*IDC **06** 19:30:03.6±1.3,29˚.67S×176˚.10W, h0km, mb4.2/3, mb1 4.5/5, mb1mx4.1/42, mbtmp4.4/5, ML4.7/2, Error ellipse: s-maj=33.6km s-min=25.2km az=11.0*
*NEIC **06** 19:30:04.5±0.8,29˚.80S×176˚.04W, h10km, mb4.9/2, Error ellipse: s-maj=17.6km s-min=14.3km az=69.0*
*ISCJB **06** 19:30:06.1±1.1,29˚.90S±0˚.08×176˚.1W±0˚.1, h33km, mb4.5/5, Error ellipse: s-maj=15.5km s-min=9.6km az=148.2*

ISC 06 19:30:08.1±0.9,29˚.8S±0˚.1×176˚.1W±0˚.1, h35km, n18, σ1s04/20, mb4.4/5, 1C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.71**	**289**	Pn	**Pn**	**19 30 34.8**	**-0.5**
	1µm,0.3s,baz=44,slow=10,SNR=7.9						
RAO				Sn	**Sn**	**19 30 55.6**	**-0.4**
	1µm,0.3s,baz=252,slow=22,SNR=5.1						
URZ	**Urewera**	**10.15**	**212**	Pn	**Pn**	**19 32 29.9**	**-1.3**
	3.7nm,0.3s,baz=310,slow=7.9,SNR=7.7						
URZ				Sn	**Sn**	**19 34 25.0**	**+1.2**
	20nm,0.3s,baz=90,slow=22,SNR=25						
RPZ	**Rata Peaks**	**17.26**	**213**	P	**Pn**	**19 34 06.0**	**-0.3**
	4.2nm,0.3s,baz=26,slow=1.2,SNR=11						
RPZ				S	Sn	19 37 05.4	-12
	2.7nm,0.3s,baz=319,slow=19,SNR=5.6						
STKA	**Stephens Creek**	**36.24**	**256**	P	**P**	**19 37 09.6**	**+1.7**
	4.7nm,0.8s,baz=103,slow=9.4,SNR=5.9						
ASAR	**Alice Springs**	**44.82**	**265**	P	**P**	**19 38 19.0**	**+0.1**
	0.9nm,0.5s,baz=105,slow=7.8,SNR=5.4						
WRAB	**Tennant Creek**	**45.75**	**271**	P	**P**	**19 38 26.0**	**-0.3**
	2.5nm,0.6s						
WRA	**Warramunga Arr**	**45.76**	**271**	P	**P**	**19 38 26.6**	**+0.3**
	3.0nm,0.6s,baz=109,slow=6.2,SNR=12						
SBA	**Scott Base**	**48.75**	**185**	*e*P	**P**	**19 38 48.1**	**-0.7**
	150nm,2.9s						
SYO	**Syowa Base**	**78.06**	**192**	*e*P	**P**	**19 42 01.2**	**-1.5**
SNAA	**Sanae**	**78.69**	**178**	P	**P**	**19 42 05.6**	**-0.7**
SNAA	**Sanae**	**78.69**	**178**	*e*P	**P**	**19 42 06.4**	**+0.2**
KURK	**Kurchatov**	**121.85**	**314**	PKP	**PKPdf**	**19 48 58.3**	**+0.2**
KURBB	**Kurchatov Arra**	**121.89**	**314**	PKP	**PKPdf**	**19 48 58.3**	**+0.1**
	0.6nm,0.8s,baz=95,slow=2.4,SNR=4.1						
FINES	**FINESS Array B**	**145.15**	**342**	PKPbc	**PKPbc**	**19 49 40.2**	**-0.5**
	2.1nm,0.6s,baz=29,slow=4.4,SNR=5.7						
NB2	**NORSAR Subarra**	**148.39**	**353**	PKP	**PKPbc**	**19 49 50.3**	**+0.1**
	comp=Z,3.4nm,1.4s,baz=17,slow=2.6						
AKASG	**Malin Array Be**	**151.82**	**325**	PKPbc	**PKPbc**	**19 49 59.0**	**+0.3**
	comp=Z,2.2nm,0.6s,baz=45,slow=2.9,SNR=5.0						
AKASG	**Malin Array Be**	**151.82**	**325**	PKPbc	**PKPbc**	**19 49 59.0**	**+0.3**
TORD	**Torodi Ar. Bea**	**163.29**	**172**	PKPab	**PKPab**	**19 51 00.8**	**+2.8**
	comp=Z,2.8nm,0.7s,baz=187,slow=3.8,SNR=8.9						

*IDC **06** 19:33:14.4±1.9,29˚.44S×176˚.01W, h0km, mb4.1/4, mb1 4.2/4, mb1mx3.9/39, mbtmp4.1/4, Error ellipse: s-maj=92.1km s-min=30.3km az=176.0*
*ISCJB **06** 19:33:16.2±2.0,29˚.84S±0˚.09×176˚.0W±0˚.2, h28km, mb4.1/4, Error ellipse: s-maj=21.6km s-min=12.8km az=165.0*

ISC 06 19:33:19.1±1.5,29˚.7S±0˚.1×176˚.1W±0˚.1, h28km, n8, σ0s78/9, mb4.1/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.62**	**284**	Pn	**Pn**	**19 33 46.3**	**+0.6**
	452nm,0.3s,baz=90,slow=16,SNR=4.3						
RAO				Sn	**Sb**	**19 34 07.9**	**-0.5**
	364nm,0.3s,baz=42,slow=21,SNR=2.4						
URZ	**Urewera**	**10.24**	**211**	Sn	**Sn**	**19 37 37.6**	**-0.4**
	2.7nm,0.3s,baz=104,slow=22,SNR=7.4						
CTA	**Charters Tower**	**35.31**	**277**	P	**P**	**19 40 11.5**	**-0.4**
	1.2nm,0.4s,baz=114,slow=10,SNR=5.1						
STKA	**Stephens Creek**	**36.23**	**256**	P	**P**	**19 40 21.0**	**+1.3**
	3.6nm,0.8s,baz=108,slow=10,SNR=4.2						
ASAR	**Alice Springs**	**44.78**	**265**	P	**P**	**19 41 30.6**	**0.0**
	0.9nm,0.5s,baz=105,slow=7.0,SNR=7.5						
WRA	**Warramunga Arr**	**45.71**	**270**	P	**P**	**19 41 37.1**	**-0.9**
	1.4nm,0.6s,baz=108,slow=8.1,SNR=8.3						
FINES	**FINESS Array B**	**144.99**	**342**	PKP	**PKPab**	**19 52 51.7**	**-0.6**
	0.5nm,0.5s,baz=64,slow=3.6,SNR=4.9						
AKASG	**Malin Array Be**	**151.67**	**325**	PKPbc	**PKPbc**	**19 53 10.5**	**0.0**
	1.2nm,0.5s,baz=47,slow=3.0,SNR=8.3						

*ATH **06** 19:33:21.7,38˚.58N×24˚.54E, h27km±1km, ML2.6/7, Error ellipse: s-maj=1.7km s-min=0.9km az=237.0*
*CSEM **06** 19:33:21.9±0.1,38˚.59N×24˚.55E, h10km, ML2.6, Error ellipse: s-maj=3.4km s-min=2.7km az=175.0*

ISC 06 19:33:22.0±1.1,38˚.56N±0˚.03×24˚.55E±0˚.02, h19km±3km, n38, σ0s49/61, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EREA	**Eretria**	**0.51**	**254**	P	**Pg**	**19 33 31.9**	**-0.4**
EREA				S	**Sb**	**19 33 39.3**	**+0.1**
EREA	**Eretria**	**0.51**	**254**	P	**Pg**	**19 33 31.9**	**-0.4**
EREA				S	**Sb**	**19 33 39.3**	**+0.1**
EREA				AML	AML	19 33 40.1	
	comp=N,2751µm,0.2s						
EREA				AML	AML	19 33 40.5	
	comp=E,2743µm,0.2s						
PTL	**Penteli**	**0.74**	**227**	P	**Pb**	**19 33 36.2**	**-0.1**
PTL				S	**Sg**	**19 33 46.6**	**+0.1**
PTL	**Penteli**	**0.74**	**227**	P	**Pb**	**19 33 36.2**	**-0.1**
PTL				S	**Sg**	**19 33 46.6**	**+0.1**
PTL				AML	AML	19 33 49.4	
	comp=E,626µm,0.5s						
PTL				AML	AML	19 33 49.9	
	comp=N,818µm,0.5s						
AOS	**Alonnisos**	**0.80**	**319**	P	**Pb**	**19 33 37.1**	**-0.2**
AOS				S	**Sb**	**19 33 47.6**	**-0.1**
AOS	**Alonnisos**	**0.80**	**319**	P	**Pb**	**19 33 37.1**	**-0.2**
AOS				S	**Sb**	**19 33 47.6**	**-0.1**
AOS				AML	AML	19 33 50.7	
	comp=E,288µm,0.3s						
AOS				AML	AML	19 33 50.7	
	comp=N,366µm,0.3s						
ATH	**Athens Observa**	**0.88**	**228**	P	**Pn**	**19 33 39.5**	**+0.2**
ATH				S	**Sg**	**19 33 50.9**	**0.0**
VLY	**Voula,Athens**	**0.93**	**220**	P	**Pn**	**19 33 40.0**	**+0.1**
VLY				S	**Sn**	**19 33 52.7**	**0.0**
VLY	**Voula,Athens**	**0.93**	**220**	P	**Pn**	**19 33 40.0**	**+0.1**
VLY				S	**Sn**	**19 33 52.7**	**0.0**
VLY				AML	AML	19 33 54.9	
	comp=N,687µm,0.3s						
VLY				AML	AML	19 33 55.3	
	comp=E,800µm,0.4s						
SKIA	**Skiathos**	**1.04**	**306**	P	**Pg**	**19 33 42.1**	**-0.1**
SKIA				S	**Sg**	**19 33 55.8**	**-0.1**
SKIA	**Skiathos**	**1.04**	**306**	P	**Pg**	**19 33 42.1**	**-0.1**
SKIA				S	**Sg**	**19 33 55.8**	**-0.1**
SKIA				AML	AML	19 33 56.8	
	comp=E,358µm,0.3s						
SKIA				AML	AML	19 33 57.8	
	comp=N,626µm,0.6s						
VILL	**Villia**	**1.05**	**248**	P	**Pg**	**19 33 42.3**	**-0.1**
VILL				S	**Sg**	**19 33 57.4**	**+1.1**
VIL2	**Platees**	**1.07**	**251**	P	**Pn**	**19 33 42.3**	**+0.4**
VIL2				S	**Sg**	**19 33 57.4**	**+0.6**
VIL2				AML	AML	19 33 57.9	
	comp=N,636µm,0.5s						
VIL2				AML	AML	19 33 58.3	
	comp=E,582µm,0.5s						
SMIA	**Simia**	**1.10**	**287**	P	**Pg**	**19 33 43.1**	**-0.2**
SMIA				S	**Sg**	**19 33 58.8**	**+1.1**
SMIA	**Simia**	**1.10**	**287**	P	**Pg**	**19 33 43.1**	**-0.2**
SMIA				S	**Sg**	**19 33 58.8**	**+1.1**
SMIA				AML	AML	19 34 01.6	
	comp=E,974µm,0.8s						
SMIA				AML	AML	19 34 03.2	
	comp=N,644µm,0.4s						
CHOS	**Chios island**	**1.19**	**98**	*e*PN	**Pg**	**19 33 44.6**	**-0.5**
CHOS				*e*SN	**Sg**	**19 34 00.4**	**-0.3**
CHOS	**Chios island**	**1.19**	**98**	*e*Pn	**Pg**	**19 33 44.6**	**-0.5**
CHOS	**Chios island**	**1.19**	**98**	P	**Pg**	**19 33 45.5**	**+0.4**
CHOS				*e*Sn	**Sg**	**19 34 00.4**	**-0.3**
CHOS	**Chios island**	**1.19**	**98**	P	**Pg**	**19 33 45.5**	**+0.4**
ATAL	**Atalanti**	**1.21**	**277**	P	**Pg**	**19 33 44.1**	**-0.1**
ATAL				S	**Sg**	**19 34 00.4**	**-0.7**
ATAL	**Atalanti**	**1.21**	**277**	P	**Pb**	**19 33 44.1**	**-0.1**
ATAL				S	**Sg**	**19 34 00.4**	**-0.7**
SIGR	**SIGRI**	**1.21**	**57**	*e*PN	**Pg**	**19 33 46.3**	**+0.9**
SIGR	**SIGRI**	**1.21**	**57**	P	**Pn**	**19 33 43.7**	**-0.1**
SIGR	**SIGRI**	**1.21**	**57**	*e*Pn	**Pg**	**19 33 46.3**	**+0.9**
SIGR	**SIGRI**	**1.21**	**57**	P	**Pn**	**19 33 43.6**	**-0.1**
LKR	**Lokris**	**1.22**	**275**	P	**Pb**	**19 33 44.3**	**-0.1**
LKR				S	**Sg**	**19 34 01.0**	**-0.6**
LKR	**Lokris**	**1.22**	**275**	P	**Pb**	**19 33 44.3**	**-0.1**
LKR				S	**Sg**	**19 34 01.0**	**-0.6**
NEO	**Neokhori**	**1.27**	**306**	P	**Pn**	**19 33 44.5**	**-0.3**
NEO	**Neokhori**	**1.27**	**306**	P	**Pn**	**19 33 44.5**	**-0.3**
XOR	**Xorichti**	**1.33**	**308**	P	**Pb**	**19 33 46.3**	**0.0**
XOR				S	**Sg**	**19 34 04.1**	**-1.0**
XOR	**Xorichti**	**1.33**	**308**	P	**Pb**	**19 33 46.3**	**0.0**
XOR				S	**Sg**	**19 34 04.1**	**-1.0**
PAIG	**Paliouri**	**1.52**	**334**	P	**Pn**	**19 33 48.2**	**+0.1**
PAIG	**Paliouri**	**1.52**	**334**	P	**Pn**	**19 33 48.2**	**+0.1**
THAL	**Thalero**	**1.58**	**251**	P	**Pn**	**19 33 49.6**	**+0.7**
THAL	**Thalero**	**1.58**	**251**	P	**Pn**	**19 33 49.6**	**+0.7**
APE	**Apeiranthos**	**1.68**	**152**	*e*PN	**Pb**	**19 33 51.7**	**-0.6**
APE	**Apeiranthos**	**1.68**	**152**	*e*Pn	**Pb**	**19 33 51.7**	**-0.6**
THL	**Klokotos Trika**	**2.21**	**298**	P	**Pn**	**19 33 58.3**	**+0.7**

*ISCJB **06** 19:36:18.8±2.3,30˚.11S±0˚.09×176˚.2W±0˚.2, h24km, mb4.0/3, Error ellipse: s-maj=26.0km s-min=11.2km az=165.6*
*IDC **06** 19:36:18.2±1.6,29˚.83S×176˚.38W, h0km, mb4.0/3, mb1 4.2/4, mb1mx3.8/38, mbtmp4.1/4, ML3.8/1, Error ellipse: s-maj=44.2km s-min=39.5km az=171.0*

ISC 06 19:36:21.7±1.4,30˚.0S±0˚.1×176˚.4W±0˚.1, h24km, n8, σ1s38/9, mb4.1/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.54**	**298**	Sn	**Sb**	**19 37 08.6**	**-0.1**
	1µm,0.3s,baz=55,slow=21,SNR=6.3						
URZ	**Urewera**	**9.88**	**212**	Pn	**Pn**	**19 38 40.8**	**-1.3**
	0.8nm,0.3s,baz=78,slow=20,SNR=3.6						
URZ				Sn	**Sn**	**19 40 32.8**	**+0.6**
	3.2nm,0.3s,baz=267,slow=18,SNR=9.6						
CTA	**Charters Tower**	**35.15**	**277**	P	**P**	**19 43 15.3**	**+1.6**
	7.2nm,1.0s,baz=120,slow=8.2,SNR=4.6						
ASAR	**Alice Springs**	**44.56**	**266**	P	**P**	**19 44 32.2**	**+0.2**
	0.5nm,0.8s,baz=103,slow=8.5,SNR=3.7						
WRA	**Warramunga Arr**	**45.52**	**271**	P	**P**	**19 44 38.4**	**-1.2**
	1.4nm,0.6s,baz=110,slow=8.0,SNR=8.8						
FINES	**FINESS Array B**	**145.22**	**341**	PKPbc	**PKPbc**	**19 55 55.1**	**-1.1**
	1.8nm,0.8s,baz=45,slow=3.5,SNR=6.5						
AKASG	**Malin Array Be**	**151.81**	**324**	PKPbc	**PKPbc**	**19 56 13.2**	**-0.7**
	0.5nm,0.5s,baz=44,slow=3.1,SNR=3.6						
TORD	**Torodi Ar. Bea**	**163.15**	**173**	PKPab	**PKPab**	**19 57 14.6**	**+2.0**
	1.7nm,1.0s,baz=198,slow=2.8,SNR=4.3						

*IDC **06** 19:36:34.1±0.6,29˚.45S×176˚.42W, h0km, mb4.3/5, mb1 4.6/5, mb1mx4.0/37, mbtmp4.3/5, Error ellipse: s-maj=32.1km s-min=11.6km az=171.0*

ISC 06 19:36:37.5±1.2,29˚.4S±0˚.4×176˚.4W±0˚.2, h21km, n8, σ1s01/8, mb4.3/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**35.03**	**277**	P	**P**	**19 43 29.3**	**+0.3**
	22nm,1.2s,baz=97,slow=8.1,SNR=4.8						
STKA	**Stephens Creek**	**36.05**	**255**	P	**P**	**19 43 38.5**	**+0.9**
	15nm,1.1s,baz=118,slow=9.7,SNR=4.1						
ASAR	**Alice Springs**	**44.55**	**265**	P	**P**	**19 44 48.2**	**0.0**
	1.2nm,0.9s,baz=104,slow=7.5,SNR=4.1						
WRA	**Warramunga Arr**	**45.45**	**270**	P	**P**	**19 44 53.4**	**-1.9**
	2.6nm,0.6s,baz=110,slow=7.8,SNR=6.9						
TXAR	**Lajitas Array**	**90.71**	**57**	P	**P**	**19 49 39.3**	**+0.2**
	0.9nm,1.1s,baz=243,slow=5.6,SNR=3.0						
FINES	**FINESS Array B**	**144.69**	**341**	PKP	**PKPab**	**19 56 10.9**	**+0.2**
	1.1nm,0.6s,baz=75,slow=1.6,SNR=4.2						
AKASG	**Malin Array Be**	**151.33**	**325**	PKPbc	**PKPbc**	**19 56 29.3**	**+0.1**
	0.6nm,0.4s,baz=46,slow=3.2,SNR=3.6						
TORD	**Torodi Ar. Bea**	**163.70**	**173**	PKPab	**PKPab**	**19 57 30.8**	**-0.6**
	1.0nm,0.7s,baz=188,slow=3.7,SNR=4.2						

IDC 06 19:40:57.3±2.2,28˚.56S×176˚.15W, h0km, mb3.9/2, mb1 4.1/2, mb1mx3.7/33, mbtmp3.9/2, Error ellipse: s-maj=67.7km s-min=33.8km az=174.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.70**	**246**	Pn	**Pn**	**19 41 28.0**	**-0.2**
	251nm,0.3s,baz=122,slow=19,SNR=3.8						
RAO				Sn	Sg	19 41 51.9	-0.1
	430nm,0.3s,baz=31,slow=19,SNR=3.2						
ASAR	**Alice Springs**	**44.86**	**264**	P	P	19 49 13.4	-0.3
	0.8nm,0.6s,baz=105,slow=7.9,SNR=7.4						
WRA	**Warramunga Arr**	**45.69**	**269**	P	P	19 49 20.4	+0.2
	1.8nm,0.9s,baz=109,slow=7.9,SNR=8.4						
TORD	**Torodi Ar. Bea**	**164.54**	**172**	PKPab	PKPab	20 01 57.9	-0.4
	0.3nm,0.7s,baz=196,slow=4.1,SNR=2.6						

*IDC **06** 19:43:36.0±1.2,37˚.34N×144˚.64E, h0km, mb3.6/5, mb1 3.8/8, mb1mx3.5/63, mbtmp3.7/8, ML3.7/2, Error ellipse: s-maj=32.0km s-min=21.5km az=96.0*
*ISCJB **06** 19:43:39.0±0.7,37˚.42N±0˚.04×144˚.43E±0˚.06, h33km, mb3.7/5, Error ellipse: s-maj=6.4km s-min=5.2km az=1.2*
*JMA **06** 19:43:40.5±0.2,37˚.55N×144˚.38E, h41km, M4.0*

ISC 06 19:43:40.6±1.0,37˚.48N±0˚.05×144˚.51E±0˚.08, h35km, n26, σ2s00/44, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.68**	**292**	P	**Pn**	**19 44 20.9**	**-0.3**
JIO				*e*S	**Sn**	**19 44 51.0**	**-1.4**
OFUJ	**Ofunato**	**2.75**	**307**	P	**Pn**	**19 44 21.8**	**-0.4**
JMK	**Ichinoseki**	**2.98**	**301**	P	**Pn**	**19 44 25.4**	**+0.1**
JMK				*e*S	**Sn**	**19 44 58.7**	**-1.1**
JOU	**Okura**	**3.17**	**287**	P	**Pn**	**19 44 28.6**	**+0.7**
JOM	**Ohasama**	**3.21**	**309**	P	**Pn**	**19 44 28.6**	**0.0**
JOM				*e*S	**Sn**	**19 45 04.8**	**-0.9**
JFT	**Otama**	**3.32**	**272**	P	**Pn**	**19 44 31.1**	**+1.1**
JFT				S	**Sn**	**19 45 07.3**	**-0.9**
JYK	**Kaneyama**	**3.57**	**295**	P	**Pn**	**19 44 34.1**	**+0.6**
JYK				S	**Sn**	**19 45 14.4**	**0.0**
JRG	**Rokugo**	**3.59**	**303**	P	**Pn**	**19 44 34.3**	**+0.5**
JRG				*e*S	**Sn**	**19 45 15.2**	**+0.2**
JANG	**Nango**	**3.72**	**322**	P	**Pn**	**19 44 35.4**	**-0.1**
JANG				S	**Sn**	**19 45 15.3**	**-2.7**
BSO1	**Boso 1**	**4.01**	**226**	P	**Pn**	**19 44 37.7**	**-1.4**
BSO1				S	**Sn**	**19 45 24.2**	**-0.4**
JAH	**Hinai**	**4.06**	**313**	P	**Pn**	**19 44 41.4**	**+1.2**
JAH				S	**Sn**	**19 45 26.8**	**+0.4**
JTM	**Tenmabayashi**	**4.25**	**322**	P	**Pn**	**19 44 43.9**	**+1.1**
JTM				S	**Sn**	**19 45 28.3**	**-2.9**
JOT	**Ohata**	**4.73**	**327**	P	**Pn**	**19 44 49.4**	**0.0**
JOT				S	**Sn**	**19 45 40.4**	**-2.6**
JRY	**Ryogami san**	**4.73**	**254**	P	**Pn**	**19 44 48.8**	**-0.7**
JRY				*e*S	**Sn**	**19 45 40.1**	**-3.0**
JOD2	**Odawara 2**	**4.90**	**245**	P	**Pn**	**19 44 51.6**	**-0.2**
JOD2				*e*S	**Sn**	**19 45 43.5**	**-3.7**
MJAR	**Matsushiro Arr**	**5.12**	**261**	Pn	**Pn**	**19 44 55.9**	**+1.0**
	2.0nm,0.3s,baz=88,slow=15,SNR=12						
MJAR				Sn	**Sn**	**19 45 52.7**	**-0.1**
	1.0nm,0.3s,baz=225,slow=34,

NEIC ***06*** *19:54:07.2±10.0, 29.50S×175.93W, h3km±60km, mb4.1/1, Error ellipse: s-maj=33.6km s-min=18.7km az=52.0*
IDC ***06*** *19:54:07.1±1.1, 29.47S×175.99W, h0km, mb4.0/5, mb1 4.1/6, mb1mx3.8/38, mbtmp4.0/6, ML3.5/1, Error ellipse: s-maj=41.9km s-min=23.0km az=174.0*
ISCJB ***06*** *19:54:09.7±1.6, 29.87S±0.08×176.0W±0.2, h28km, mb4.0/6, Error ellipse: s-maj=19.4km s-min=11.0km az=164.1*

ISC 06 19:54:11.4±1.1, 29.7S±0.1×176.0W±0.1, h28km, n16, σ1§07/18, mb4.1/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.72**	**284**	Pn	**Pn**	**19 54 38.7**	**-0.7**
	314nm,0.3s,baz=72,slow=18,SNR=4.5						
RAO				Sn	**Sn**	**19 55 01.3**	**+0.7**
	178nm,0.3s,baz=85,slow=23,SNR=1.7						
URZ	**Urewera**	**10.28**	**212**	Pn	**Pn**	**19 56 37.7**	**+0.7**
	0.4nm,0.3s,baz=51,slow=6.5,SNR=1.4						
URZ				Sn	**Sn**	**19 58 29.5**	**-1.7**
	1.6nm,0.3s,baz=143,slow=9.2,SNR=2.5						
CTA	**Charters Tower**	**35.41**	**277**	P	**P**	**20 01 05.7**	**+0.6**
	1.7nm,0.7s,baz=76,slow=4.2,SNR=1.9						
STKA	**Stephens Creek**	**36.33**	**256**	P	**P**	**20 01 14.2**	**+1.3**
	3.7nm,0.8s,baz=162,slow=3.2,SNR=2.9						
ASAR	**Alice Springs**	**44.88**	**265**	P	**P**	**20 02 22.6**	**-1.1**
	0.4nm,0.6s,baz=99,slow=7.7,SNR=7.4						
WRAB	**Tennant Creek**	**45.80**	**270**	P	**P**	**20 02 30.9**	**-0.1**
	1.7nm,0.8s						
WRA	**Warramunga Arr**	**45.81**	**270**	P	**P**	**20 02 30.7**	**-0.3**
	1.9nm,0.7s,baz=109,slow=7.8,SNR=26						
FITZ	**Fitzroy Crossi**	**54.10**	**268**	P	**P**	**20 03 34.3**	**+0.4**
	1.7nm,0.8s,baz=80,slow=6.1,SNR=2.8						
KURK	**Kurchatov**	**121.80**	**314**	PKP	**PKPdf**	**20 13 01.3**	**-1.1**
KURBB	**Kurchatov Arra**	**121.85**	**314**	PKP	**PKPdf**	**20 13 01.3**	**-1.2**
	0.2nm,0.7s,baz=115,slow=1.3,SNR=3.6						
BVAR	**Borovoye Array**	**127.10**	**316**	PKP	**PKPdf**	**20 13 13.2**	**+0.7**
	0.1nm,0.3s,baz=92,slow=4.3,SNR=2.5						
FINES	**FINESS Array B**	**145.04**	**342**	PKP	**PKPbc**	**20 13 43.4**	**-1.3**
	1.8nm,0.8s,baz=48,slow=2.8,SNR=6.0						
NOA	**NORSAR Array B**	**148.28**	**353**	PKPbc	**PKPbc**	**20 13 54.4**	**+0.1**
	1.0nm,0.9s,baz=18,slow=2.7,SNR=3.4						
HFS	**Hagfors**	**148.86**	**351**	PKPbc	**PKPbc**	**20 13 55.4**	**-0.3**
	1.2nm,0.8s,baz=29,slow=3.3,SNR=2.9						
AKASG	**Malin Array Be**	**151.75**	**325**	PKPbc	**PKPbc**	**20 14 01.9**	**-1.0**
	0.6nm,0.5s,baz=44,slow=2.7,SNR=4.6						
TORD	**Torodi Ar. Bea**	**163.40**	**172**	PKPab	**PKPab**	**20 15 04.6**	**+1.8**
	0.3nm,0.7s,baz=195,slow=5.4,SNR=2.1						

IDC 06 19:55:15.6±4.2, 28.85S×176.22W, h0km, mb3.8/3, mb1 4.0/4, mb1mx3.7/37, mbtmp3.9/4, ML3.8/1, Error ellipse: s-maj=85.3km s-min=57.9km az=102.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.54**	**254**	Sn	Sg	19 56 06.8	+1.8
	659nm,0.3s,baz=172,slow=21,SNR=4.3						
URZ	**Urewera**	**10.90**	**209**	Pn	Pn	19 57 52.8	-0.2
	0.7nm,0.3s,baz=32,slow=19,SNR=3.1						
URZ				Sn	Sn	19 59 44.8	-11
	0.6nm,0.3s,baz=341,slow=23,SNR=1.1						
ASAR	**Alice Springs**	**44.77**	**265**	P	P	20 03 30.1	-1.1
	0.5nm,0.5s,baz=104,slow=7.8,SNR=4.6						
WRA	**Warramunga Arr**	**45.62**	**270**	P	P	20 03 37.3	-0.8
	1.0nm,0.8s,baz=106,slow=8.4,SNR=5.1						
FITZ	**Fitzroy Crossi**	**53.94**	**268**	P	P	20 04 42.7	+1.4
	1.9nm,1.0s,baz=198,slow=13,SNR=2.8						
FINES	**FINESS Array B**	**144.19**	**342**	PKP	PKPbc	20 14 51.7	+0.8
	0.3nm,0.4s,baz=44,slow=4.6,SNR=2.3						

IDC 06 19:57:30.2±2.9, 28.06S×176.56W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.4/37, mbtmp3.5/2, Error ellipse: s-maj=89.3km s-min=29.9km az=129.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.69**	**225**	Pn	Pn	19 58 01.2	+0.2
	103nm,0.3s,baz=83,slow=19,SNR=1.8						
RAO				Sn	Sn	19 58 23.6	+0.3
	181nm,0.3s,baz=75,slow=21,SNR=2.6						
ASAR	**Alice Springs**	**44.55**	**264**	P	P	20 05 44.1	-0.1
	0.2nm,0.4s,baz=103,slow=8.1,SNR=4.7						
WRA	**Warramunga Arr**	**45.34**	**269**	P	P	20 05 50.5	0.0
	0.8nm,0.9s,baz=110,slow=8.0,SNR=5.1						
FINES	**FINESS Array B**	**143.35**	**342**	PKPbc	PKPbc	20 17 03.8	+0.8
	1.5nm,0.5s,baz=57,slow=3.0,SNR=15						
HFS	**Hagfors**	**147.18**	**351**	PKPbc	PKPbc	20 17 14.3	-0.5
	2.3nm,0.8s,baz=242,slow=3.1,SNR=4.1						

IDC 06 19:58:04.0±0.7, 28.36S×175.88W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.7/39, mbtmp3.9/3, Error ellipse: s-maj=39.9km s-min=13.6km az=166.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**2.00**	**243**	Sn	Sn	19 58 58.6	-6.2
	581nm,0.3s,baz=90,slow=20,SNR=4.0						
STKA	**Stephens Creek**	**36.78**	**254**	P	P	20 05 13.9	+0.3
	2.0nm,0.8s,baz=99,slow=7.7,SNR=3.7						
ASAR	**Alice Springs**	**45.12**	**264**	P	P	20 06 22.4	0.0
	0.6nm,0.4s,baz=103,slow=7.3,SNR=12						
WRA	**Warramunga Arr**	**45.93**	**269**	P	P	20 06 28.3	-0.6
	1.2nm,0.5s,baz=108,slow=7.9,SNR=8.1						
FINES	**FINESS Array B**	**143.82**	**342**	PKP	PKPdf	20 17 40.0	-0.5
	1.4nm,0.5s,baz=50,slow=4.3,SNR=11						
TORD	**Torodi Ar. Bea**	**164.69**	**171**	PKPab	PKPab	20 19 04.9	-0.8
	0.8nm,0.9s,baz=198,slow=4.4,SNR=3.2						

NEIC ***06*** *19:59:04.9±0.9, 29.51S×176.13W, h10km, mb4.3/1, Error ellipse: s-maj=47.3km s-min=12.9km az=189.0*

IDC 06 19:59:04.1±1.5, 29.43S×176.31W, h0km, mb4.2/4, mb1 4.3/4, mb1mx3.8/39, mbtmp4.2/4, Error ellipse: s-maj=68.9km s-min=35.9km az=177.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.42**	**277**	Sn	Sn	19 59 54.2	+3.7
	384nm,0.3s,baz=75,slow=18,SNR=2.4						
CTA	**Charters Tower**	**35.12**	**277**	P	P	20 06 01.4	+1.9
	2.0nm,0.4s,baz=96,slow=9.2,SNR=5.3						
CTAO	**Charters Tower**	**35.12**	**277**	P	P	20 06 00.8	+1.2
STKA	**Stephens Creek**	**36.14**	**255**	P	P	20 06 08.6	+0.4
	2.7nm,0.9s,baz=102,slow=8.9,SNR=4.7						
ASAR	**Alice Springs**	**44.64**	**265**	P	P	20 07 18.0	-0.7
	0.8nm,0.6s,baz=100,slow=6.7,SNR=4.7						
WRAB	**Tennant Creek**	**45.54**	**270**	*eP*	P	20 07 25.4	-0.5
	1.6nm,0.5s						
WRA	**Warramunga Arr**	**45.55**	**270**	P	P	20 07 24.2	-1.7
	3.0nm,0.7s,baz=112,slow=6.4,SNR=9.7						
KURK	**Kurchatov**	**121.44**	**314**	PKP	PKPdf	20 17 58.7	-0.3
KURBB	**Kurchatov Arra**	**121.48**	**314**	PKP	PKPdf	20 17 58.7	-0.4
	0.3nm,0.7s,baz=117,slow=2.7,SNR=3.7						
FINES	**FINESS Array B**	**144.72**	**342**	PKP	PKPab	20 18 40.9	0.0
	1.0nm,0.6s,baz=37,slow=3.5,SNR=3.6						
AKASG	**Malin Array Be**	**151.38**	**325**	PKPbc	PKPbc	20 18 59.5	+0.1
	0.6nm,0.3s,baz=45,slow=2.8,SNR=7.5						
TORD	**Torodi Ar. Bea**	**163.69**	**173**	PKPab	PKPab	20 20 01.3	0.0
	0.3nm,0.6s,baz=184,slow=3.5,SNR=2.6						

ISCJB ***06*** *20:00:18.6±0.4, 39.12N±0.02×28.98E±0.03, h5km±4km, Error ellipse: s-maj=4.1km s-min=2.7km az=144.2*
ISK ***06*** *20:00:18.6, 39.13N×29.01E, h6km, ML3.6*
DDA ***06*** *20:00:19.0, 39.08N×29.01E, h10km, Ml3.8*
CSEM ***06*** *20:00:19.0±0.1, 39.11N×28.99E, h5km, ML3.8, Error ellipse: s-maj=1.9km s-min=1.6km az=133.0*
THE ***06*** *20:00:20.1, 39.07N×28.93E, h0km±2km, ML3.4/2, Error ellipse: s-maj=5.5km s-min=1.1km az=69.0*

ISC 06 20:00:19.2±0.9, 39.13N±0.02×29.00E±0.02, h8km±8km, n117, σ0§88/143, 8C-8D, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.24**	**248**	*i* P	**Pg**	**20 00 24.1**	**+0.1**
DEMI				*i* S	**Sg**	**20 00 27.6**	**+0.3**
DEMI	**Demirci**	**0.24**	**248**	P	**Pg**	**20 00 24.1**	**+0.1**
DEMI				S	**Sg**	**20 00 27.5**	**+0.3**
GEDZ	**Gediz**	**0.33**	**105**	*e*PG	**Pg**	**20 00 25.8**	**+0.1**
GEDZ				*e*SG	**Sg**	**20 00 29.9**	**-0.2**
GEDZ	**Gediz**	**0.33**	**105**	*e*Pg	**Pg**	**20 00 25.8**	**+0.1**
GEDZ				*e*Sg	**Sg**	**20 00 29.9**	**-0.2**
GDZ	**Gediz**	**0.38**	**96**	*i* P	**Pg**	**20 00 26.5**	**-0.1**
GDZ				*i* S	**Sg**	**20 00 31.6**	**0.0**
GDZ	**Gediz**	**0.38**	**96**	P	**Pg**	**20 00 26.5**	**-0.1**
GDZ				S	**Sg**	**20 00 31.6**	**0.0**
TVSB	**Tavsanli**	**0.48**	**48**	*e*PG	**Pg**	**20 00 28.2**	**-0.3**
TVSB				*e*SG	**Sg**	**20 00 34.5**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**48**	*e*Pg	**Pg**	**20 00 28.2**	**-0.3**
TVSB				*e*Sg	**Sg**	**20 00 34.5**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*PG	**Pg**	**20 00 31.4**	**-0.7**
KULA	**Kula-Manisa**	**0.67**	**203**	P	**Pg**	**20 00 31.7**	**-0.4**
KULA				S	**Sg**	**20 00 40.6**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*Pg	**Pg**	**20 00 31.4**	**-0.7**
KULA	**Kula-Manisa**	**0.67**	**203**	P	**Pg**	**20 00 31.7**	**-0.4**
KULA				S	**Sg**	**20 00 40.6**	**-0.3**
MANT	**Manisa**	**0.73**	**209**	*i* P	**Pg**	**20 00 31.6**	**-1.7**
MANT				*i* S	**Sg**	**20 00 41.2**	**-1.5**
MANT	**Manisa**	**0.73**	**209**	P	**Pg**	**20 00 31.6**	**-1.7**
MANT				S	**Sg**	**20 00 41.2**	**-1.5**
KHL	**Karahalli**	**0.91**	**153**	*e*PG	**Pb**	**20 00 36.6**	**-0.6**
KHL	**Karahalli**	**0.91**	**153**	*e*Pg	**Pb**	**20 00 36.6**	**-0.6**
AKS	**Akhisar**	**0.96**	**255**	*e*PG	**Pb**	**20 00 37.8**	**-0.3**
AKS	**Akhisar**	**0.96**	**255**	*e*Pg	**Pb**	**20 00 37.8**	**-0.3**
BALB	**Balikesir**	**1.01**	**301**	*e*PG	**Pb**	**20 00 39.1**	**+0.3**
BALB	**Balikesir**	**1.01**	**301**	*e*Pg	**Pb**	**20 00 39.1**	**+0.3**
IGD	**Bursa**	**1.14**	**8**	*i* P	**Pg**	**20 00 39.4**	**-1.7**
IGD				*i* S	**Sb**	**20 00 56.7**	**+0.6**
BALY	**Balya**	**1.23**	**300**	*i* P	**Pg**	**20 00 42.6**	**-0.2**
BALY	**Balya**	**1.23**	**300**	P	**Pg**	**20 00 42.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pg**	**20 00 42.5**	**-0.3**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pg**	**20 00 42.5**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*PN	**Pn**	**20 00 42.2**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*Pn	**Pn**	**20 00 42.2**	**-0.6**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	**Pb**	**20 00 43.4**	**+0.3**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	**Pb**	**20 00 43.4**	**+0.3**
IZI	**Iznik**	**1.26**	**17**	*e*PN	**Pn**	**20 00 43.1**	**-0.1**
IZI	**Iznik**	**1.26**	**17**	*e*Pn	**Pn**	**20 00 43.1**	**-0.1**
GEMT	**Gemlik**	**1.31**	**6**	*e*PN	**Pn**	**20 00 44.0**	**+0.3**
GEMT	**Gemlik**	**1.31**	**6**	*e*Pn	**Pn**	**20 00 44.1**	**+0.3**
BORA	**Eskisehir**	**1.35**	**56**	*i* P	**Pn**	**20 00 44.0**	**-0.4**
BORA				*i* S	**Sn**	**20 01 03.1**	**+0.5**
BORA	**Eskisehir**	**1.35**	**56**	P	**Pn**	**20 00 44.0**	**-0.4**
BORA				S	**Sn**	**20 01 03.1**	**+0.5**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*PN	**Pn**	**20 00 44.8**	**+0.2**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*Pn	**Pn**	**20 00 44.8**	**+0.2**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*PN	**Pb**	**20 00 46.0**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*Pn	**Pb**	**20 00 46.0**	**+0.1**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pn**	**20 00 45.0**	**-0.5**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pn**	**20 00 45.0**	**-0.5**
DNZL	**Cakiroluk**	**1.44**	**179**	*i* P	**Pg**	**20 00 46.3**	**-0.6**
DNZL				*i* S	**Sg**	**20 01 10.1**	**+4.6**
DNZL	**Cakiroluk**	**1.44**	**179**	P	**Pg**	**20 00 46.3**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*PN	**Pb**	**20 00 46.5**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*Pn	**Pb**	**20 00 46.5**	**-0.4**
ESKT	**Eskisehir**	**1.49**	**74**	*e*PN	**Pn**	**20 00 46.6**	**+0.3**
ESKT	**Eskisehir**	**1.49**	**74**	*e*Pn	**Pn**	**20 00 46.6**	**+0.3**
EDC	**Edincik**	**1.50**	**324**	*e*PN	**Pb**	**20 00 47.2**	**0.0**
EDC	**Edincik**	**1.50**	**324**	*e*Pn	**Pb**	**20 00 47.3**	**0.0**
GPA	**Golpazari**	**1.53**	**41**	*e*PN	**Pb**	**20 00 47.9**	**0.0**
GPA	**Golpazari**	**1.53**	**41**	*e*Pn	**Pb**	**20 00 47.9**	**0.0**
IZM	**Izmir**	**1.54**	**242**	*e*PN	**Pn**	**20 00 47.2**	**+0.1**
IZM	**Izmir**	**1.54**	**242**	*e*Pn	**Pn**	**20 00 47.2**	**+0.1**
DKL	**Dikili**	**1.63**	**269**	*e*PN	**Pn**	**20 00 47.9**	**-0.3**
DKL	**Dikili**	**1.63**	**269**	*e*Pn	**Pn**	**20 00 47.9**	**-0.3**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**20 00 50.1**	**+0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**20 00 50.1**	**+0.2**
HRT	**Hereke**	**1.76**	**17**	*e*PN	**Pn**	**20 00 51.0**	**+0.9**
HRT	**Hereke**	**1.76**	**17**	*e*Pn	**Pn**	**20 00 51.0**	**+0.9**
KRBG	**Karabiga-Canak**	**1.82**	**314**	*e*PN	**Pn**	**20 00 51.7**	**+0.9**
KRBG	**Karabiga-Canak**	**1.82**	**314**	*e*Pn	**Pn**	**20 00 51.7**	**+0.9**
MRMT	**Marmara Adasi**	**1.82**	**324**	*e*PN	**Pn**	**20 00 51.0**	**+0.1**
MRMT	**Marmara Adasi**	**1.82**	**324**	*e*Pn	**Pn**	**20 00 51.0**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.85**	**33**	*e*PN	**Pn**	**20 00 52.4**	**+1.2**
SPNC	**Sapanca-Adapaz**	**1.85**	**33**	*e*Pn	**Pn**	**20 00 52.4**	**+1.2**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN	**Pn**	**20 00 53.1**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn	**Pn**	**20 00 53.1**	**0.0**
BGKT	**Bogazkoy**	**2.05**	**355**	*e*PN	**Pn**	**20 00 54.7**	**+0.7**
BGKT	**Bogazkoy**	**2.05**	**355**	*e*Pn	**Pn**	**20 00 54.7**	**+0.7**
YER	**Yerkesik**	**2.07**	**196**	P	**Pn**	**20 00 54.5**	**+0.1**
YER				S	**Sn**	**20 01 20.2**	**-0.2**
YER	**Yerkesik**	**2.07**	**196**	P	**Pn**	**20 00 54.5**	**+0.1**
YER				S	**Sn**	**20 01 20.2**	**-0.2**
RKY	**Sarkoy-Tekirda**	**2.09**	**319**	*e*PN	**Pn**	**20 00 55.9**	**+1.3**
RKY	**Sarkoy-Tekirda**	**2.09**	**319**	*e*Pn	**Pn**	**20 00 55.9**	**+1.3**
KLYT	**Kilyos**	**2.12**	**1**	*e*PN	**Pn**	**20 00 55.3**	**+0.4**
KLYT	**Kilyos**	**2.12**	**1**	*e*Pn	**Pn**	**20 00 55.3**	**+0.4**
PRK	**Paraskevi**	**2.12**	**274**	P	**Pn**	**20 00 54.9**	**-0.1**
PRK				S	**Sn**	**20 01 23.0**	**+1.5**
PRK	**Paraskevi**	**2.12**	**274**	P	**Pn**	**20 00 54.9**	**-0.1**
PRK				S	**Sn**	**20 01 23.0**	**+1.5**
CTKS	**Kestanelik-??a**	**2.13**	**350**	*e*PN	**Pn**	**20 00 55.9**	**+0.7**
CTKS	**Kestanelik-??a**	**2.13**	**350**	*e*Pn	**Pn**	**20 00 55.9**	**+0.7**
MDUB	**Mudurnu**	**2.16**	**51**	*e*PN	**Pn**	**20 00 56.2**	**+0.6**
MDUB	**Mudurnu**	**2.16**	**51**	*e*Pn	**Pn**	**20 00 56.2**	**+0.6**
TKR	**Tekirdag**	**2.17**	**329**	*e*PN	**Pn**	**20 00 56.7**	**+1.1**
TKR	**Tekirdag**	**2.17**	**329**	*e*Pn	**Pn**	**20 00 56.7**	**+1.1**
KIZT	**Kizilcal**	**2.26**	**96**	*e*PN	**Pn**	**20 00 58.2**	**+1.3**
KIZT	**Kizilcal**	**2.26**	**96**	*e*Pn	**Pn**	**20 00 58.2**	**+1.3**
CTYL	**Yalikoy Yolu**	**2.40**	**347**	*e*PN	**Pn**	**20 00 59.0**	**+0.2**
CTYL	**Yalikoy Yolu**	**2.40**	**347**	*e*Pn	**Pn**	**20 00 59.0**	**+0.2**
CHOS	**Chios island**	**2.42**	**253**	P	**Pn**	**20 00 58.8**	**-0.3**
CHOS				S	**Sn**	**20 01 29.1**	**+0.1**
CHOS	**Chios island**	**2.42**	**253**	P	**Pn**	**20 00 58.8**	**-0.3**
CHOS				S	**Sn**	**20 01 29.1**	**+0.1**
SIGR	**SIGRI**	**2.45**	**273**	P	**Pn**	**20 00 59.0**	**-0.4**
SIGR	**SIGRI**	**2.45**	**273**	P	**Pn**	**20 00 59.0**	**-0.4**
BODT	**Bodrum**	**2.46**	**213**	P	**Pn**	**20 00 59.3**	**-0.3**
BODT	**Bodrum**	**2.46**	**213**	P	**Pn**	**20 00 59.3**	**-0.3**
GADA	**Gvkgeada**	**2.62**	**295**	P	**Pn**	**20 01 02.4**	**+0.6**
GADA				S	**Sn**	**20 01 34.5**	**+0.8**
GADA	**Gvkgeada**	**2.62**	**295**	P	**Pn**	**20 01 02.4**	**+0.6**
GADA				S	**Sn**	**20 01 34.5**	**+0.8**
SMTH	**Samothraki Isl**	**2.99**	**298**	P	**Pn**	**20 01 07.0**	**+0.1**
SMTH	**Samothraki Isl**	**2.99**	**298**	P	**Pn**	**20 01 07.0**	**+0.1**
LIA	**Limnos Island**	**3.05**	**286**	P	**Pn**	**20 01 07.8**	**+0.1**
LIA	**Limnos Island**	**3.05**	**286**	P	**Pn**	**20 01 07.8**	**+0.1**
APE	**Apeiranthos**	**3.43**	**234**	‖*i*P	**Pg**	**20 01 25.7**	**+0.9**
APE	**Apeiranthos**	**3.43**	**234**	‖*i*P	**Pg**	**20 01 25.7**	**+0.9**
APE				S	**Sg**	**20 02 08.9**	**-0.3**
TIRR	**Tirgusor**	**5.34**	**355**	‖*i*P	**Pn**	**20 01 39.3**	**+0.1**
TIRR	**Tirgusor**	**5.34**	**355**	‖*i*P	**Pn**	**20 01 39.3**	**+0.1**
TIRR				S	**Sn**	**20 02 35.3**	**-5.5**
TLB	**Topalu**	**5.50**	**353**	‖*i*P	**Pn**	**20 01 41.3**	**0.0**
TLB	**Topalu**	**5.50**	**353**	‖*i*P	**Pn**	**20 01 41.3**	**0.0**
VTS	**Vitosha**	**5.59**	**310**	S	**Sn**	**20 02 46.3**	**-0.9**
VTS	**Vitosha**	**5.59**	**310**	S	**Sn**	**20 02 46.3**	**-0.9**
TLCR		**6.05**	**359**	‖*i*P	**Pn**	**20 01 49.8**	**+0.9**
TLCR		**6.05**	**359**	‖*i*P	**Pn**	**20 01 49.8**	**+0.9**
CFR	**Carcaliu**	**6.08**	**354**	‖*i*P	**Pn**	**20 01 49.3**	**0.0**
CFR	**Carcaliu**	**6.08**	**354**	‖*i*P	**Pn**	**20 01 49.3**	**0.0**
MLR	**Muntele Rosu**	**6.75**	**341**	‖*i*P	**Pn**	**20 01 59.5**	**+0.9**
MLR	**Muntele Rosu**	**6.75**	**341**	‖*i*P	**Pn**	**20 01 59.5**	**+0.9**
PLOR	**Plostina**	**6.94**	**346**	‖*i*P	**Pn**	**20 02 02.3**	**+1.2**
PLOR	**Plostina**	**6.94**	**346**	‖*i*P	**Pn**	**20 02 02.3**	**+1.2**
VRI	**Vrincioaia**	**6.94**	**347**	‖*i*P	**Pn**	**20 02 02.0**	**+0.9**
VRI	**Vrincioaia**	**6.94**	**347**	‖*i*P	**Pn**	**20 02 02.0**	**+0.9**

IDC 06 20:01:10.5±4.7, 27.67S×177.10W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.6/40, mbtmp3.8/3, Error ellipse: s-maj=199.2km s-min=55.2km az=150.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**35.95**	**253**	P	P	20 08 12.6	-0.3
	3.2nm,0.9s,baz=114,slow=12,SNR=2.7						
ASAR	**Alice Springs**	**44.12**	**264**	P	P	20 09 20.2	-0.7
	0.5nm,0.7s,baz=96,slow=6.4,SNR=5.3						
WRA	**Warramunga Arr**	**44.86**	**269**	P	P	20 09 27.6	+0.6
	2.1nm,0.8s,baz=109,slow=7.8,SNR=6.1						
AKASG	**Malin Array Be**	**149.54**	**326**	PKPbc	PKPbc	20 21 01.1	-0.4
	0.4nm,0.3s,baz=33,slow=2.3,SNR=4.6						

IDC ***06*** *20:01:45.4±1.1, 29.24S×176.20W, h10km, mb4.6/3, Error ellipse: s-maj=49.2km s-min=22.4km az=181.0*

ISC 06 20:01:49.5±1.2, 29.4S±0.4×176.2W±0.1, h36km, n12, σ1§35/13, mb4.4/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.51**	**275**	Pn	**Pn**	**20 02 14.5**	**+0.5**
	150nm,0.3s,baz=125,slow=16,SNR=2.3						
RAO				Sn	**Sn**	**20 02 33.4**	**+1.0**
	365nm,0.3s,baz=102,slow=23,SNR=2.3						
CTA	**Charters Tower**	**35.21**	**277**	P	**P**	**20 08 39.5**	**-1.0**
	2.6nm,0.7s,baz=93,slow=12,SNR=4.7						
CTAO	**Charters Tower**	**35.21**	**277**	*eP*	**P**	**20 08 38.8**	**-1.6**
	9.2nm,0.5s						
STKA	**Stephens Creek**	**36.24**	**255**	P	**P**	**20 08 49.7**	**+0.5**
	3.0nm,0.6s,baz=100,slow=9.8,SNR=4.4						
ASAR	**Alice Springs**	**44.74**	**265**	P	**P**	**20 09 57.9**	**-1.7**
	1.6nm,0.5s,baz=95,slow=6.9,SNR=20						
WRAB	**Tennant Creek**	**45.64**	**270**	*eP*	**P**	**20 10 06.2**	**-0.5**
	3.2nm,0.6s						
WRA	**Warramunga Arr**	**45.65**	**270**	P	**P**	**20 10 04.9**	**-1.9**
	2.7nm,0.6s,baz=109,slow=7.7,SNR=16						
FITZ	**Fitzroy Crossi**	**53.95**	**268**	P	**P**	**20 11 09.4**	**-0.4**
	3.5nm,0.9s,baz=134,slow=11,SNR=4.0						
ENH	**Enshi**	**92.34**	**304**	*eP*	**P**	**20 14 57.9**	**+1.7**
	1.4nm,0.5s						
FINES	**FINESS Array B**	**144.70**	**342**	PKP	**PKPdf**	**20 21 20.5**	**-1.1**
	1.3nm,0.7s,baz=45,slow=4.7,SNR=4.6						
AKASG	**Malin Array Be**	**151.40**	**325**	PKPbc	**PKPbc**	**20 21 39.5**	**+0.5**
	1.7nm,0.6s,baz=42,slow=2.9,SNR=5.8						
TORD	**Torodi Ar. Bea**	**163.73**	**173**	PKPab	**PKPab**	**20 22 42.5**	**+1.3**
	0.5nm,0.8s,baz=165,slow=6.0,SNR=2.6						

IDC ***06*** *20:09:14.2±1.3, 5.52N×126.00E, h107km±11km, mb4.0/30, mb1 4.1/31, mb1mx4.0/62, mbtmp4.4/31, MS5.5/1, Ms1 5.5/1, ms1mx4.0/55, Error ellipse: s-maj=20.5km s-min=8.2km az=67.0*
ISCJB ***06*** *20:09:15.6±0.5, 5.55N±0.04×126.14E±0.06, h134km±4km, mb4.3/38, Error ellipse: s-maj=9.6km s-min=6.0km az=162.0*
NEIC ***06*** *20:09:15.3±0.9, 5.62N×126.18E, h115km±8km, mb4.6/10, Error ellipse: s-maj=11.8km s-min=6.7km az=74.0*

ISC 06 20:09:15.0±0.7, 5.46N±0.05×126.17E±0.07, h113km±6km, n76, σ1§63/93, mb4.4/38, 8C, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res

14nm,0.7s

SONM	**Songino Array**	**45.49**	**341**	P	**P**	**20 17 22.5**	**-0.6**
	0.5nm,0.4s,baz=143,slow=7.5,SNR=2.9						
SONM				PcP	**PcP**	**20 19 00.1**	**-0.1**
	1.6nm,0.7s,baz=158,slow=4.3,SNR=4.7						
KOLN	**Koldanda**	**46.09**	**304**	*e*P	**P**	**20 17 28.0**	**-0.3**
	24nm,0.3s						
PYUN	**Piuthan**	**46.71**	**304**	*e*P	**P**	**20 17 33.1**	**0.0**
	41nm,0.7s						
DZM	**Mont Dzumac**	**47.99**	**126**	P	**P**	**20 17 43.2**	**+0.2**
	3.4nm,0.4s,baz=261,slow=9.7,SNR=10.0						
MKAR	**Makanchi Array**	**55.82**	**325**	P	**P**	**20 18 39.5**	**-1.1**
	4.7nm,0.5s,baz=120,slow=7.5,SNR=110						
MKAR				PcP	**PcP**	**20 19 36.8**	**-1.5**
	2.4nm,0.7s,baz=120,slow=4.0,SNR=5.6						
MKAR				ScP	**ScP**	**20 23 26.9**	**-0.1**
	0.5nm,0.7s,baz=117,slow=3.9,SNR=3.7						
YAK	**Yakutsk**	**56.51**	**2**	*e*P	**P**	**20 18 45.7**	**+0.6**
	15nm,0.8s						
ZALV	**Zalesovo Beam**	**58.80**	**333**	P	**P**	**20 18 59.3**	**-2.0**
	1.6nm,0.4s,baz=128,slow=6.8,SNR=12						
ZALV				PcP	**PcP**	**20 19 48.2**	**-1.5**
	1.4nm,0.7s,baz=203,slow=1.1,SNR=3.6						
EKS2	**Erkin-Say**	**59.20**	**317**	*e*P	**P**	**20 19 04.0**	**-0.5**
	6.5nm,1.0s						
KURBB	**Kurchatov Arra**	**59.99**	**327**	P	**P**	**20 19 08.2**	**-1.4**
	4.4nm,0.5s,baz=128,slow=6.5,SNR=93						
KURK	**Kurchatov**	**59.99**	**327**	*e*P	**P**	**20 19 08.0**	**-1.5**
	74nm,0.6s						
KKAR	**Karatay Array**	**61.59**	**317**	*e*P	**P**	**20 19 19.2**	**-1.4**
	5.8nm,0.9s						
RPZ	**Rata Peaks**	**63.49**	**145**	P	**P**	**20 19 35.6**	**+2.4**
	13nm,0.9s,baz=333,slow=2.3,SNR=2.9						
RPZ	**Rata Peaks**	**63.49**	**145**	*e*P	**P**	**20 19 35.0**	**+1.8**
BVAR	**Borovoye Array**	**65.57**	**327**	P	**P**	**20 19 45.4**	**-1.2**
	1.8nm,0.5s,baz=120,slow=8.7,SNR=16						
TIXI	**Tiksi**	**66.13**	**1**	P	**P**	**20 19 49.6**	**-0.2**
	3.7nm,0.5s,baz=223,slow=4.2,SNR=4.7						
NRIK	**Noril'sk**	**68.62**	**346**	P	**P**	**20 20 04.4**	**-1.1**
	2.0nm,0.4s,baz=118,slow=5.0,SNR=3.9						
AKTO	**Aktyubinsk**	**71.96**	**321**	P	**P**	**20 20 24.9**	**-1.4**
	6.9nm,0.7s,baz=103,slow=8.9,SNR=12						
ARU	**Arti**	**73.18**	**328**	P	**P**	**20 20 31.2**	**-2.1**
	3.0nm,0.4s,baz=84,slow=3.2,SNR=7.9						
KBZ	**Khabaz**	**81.39**	**313**	P	**P**	**20 21 18.7**	**-0.7**
	1.9nm,0.8s,baz=141,slow=7.2,SNR=4.5						
ILAR	**Eielson Array**	**83.79**	**25**	P	**P**	**20 21 30.4**	**-1.1**
	1.7nm,1.0s,baz=250,slow=5.6,SNR=11						
VNDA	**Vanda**	**85.20**	**173**	P	**P**	**20 21 38.8**	**+0.5**
	0.8nm,0.8s,baz=304,slow=3.9,SNR=4.1						
BRTR	**Keskin Array B**	**88.49**	**310**	P	**P**	**20 21 53.7**	**-1.5**
	0.5nm,0.5s,baz=126,slow=6.3,SNR=3.7						
ARCES	**ARCESS Array B**	**88.64**	**340**	P	**P**	**20 21 54.2**	**-0.9**
	3.0nm,0.8s,baz=85,slow=6.6,SNR=8.8						
SPITS	**Spitsbergen Ar**	**88.68**	**349**	P	**P**	**20 21 55.4**	**+0.2**
	1.8nm,0.5s,baz=118,slow=7.0,SNR=8.5						
FINES	**FINESS Array B**	**90.05**	**332**	P	**P**	**20 22 00.5**	**-1.4**
	2.2nm,0.6s,baz=33,slow=6.9,SNR=8.9						
SYO	**Syowa Base**	**93.83**	**201⇑**	*e*P	**P**	**20 22 19.0**	**-0.1**
SYO	**Syowa Base**	**93.83**	**201⇑**	*e*PcP	**PcP**	**20 22 21.0**	**+1.5**
HFS	**Hagfors**	**96.23**	**332**	P	**P**	**20 22 28.0**	**-2.3**
	1.0nm,0.6s,baz=86,slow=9.1,SNR=5.5						
NB2	**NORSAR Subarra**	**97.00**	**334**	P	**P**	**20 22 32.3**	**-1.5**
	comp=Z,1.5nm,0.8s,baz=36,slow=8.2						
NOA	**NORSAR Array B**	**97.00**	**334**	P	**P**	**20 22 31.2**	**-2.6**
	comp=Z,1.0nm,0.7s,baz=66,slow=4.5,SNR=4.5						
GERES	**GERESS Array B**	**100.39**	**322**	P	**Pdif**	**20 22 48.2**	**-1.2**
	comp=Z,0.3nm,0.7s,baz=60,slow=6.9,SNR=2.6						
TORD	**Torodi Ar. Bea**	**121.84**	**289**	PKP	**PKPdf**	**20 27 56.6**	**-0.3**
	comp=Z,1.2nm,0.4s,baz=72,slow=1.7,SNR=33						

*IDC **06** 20:12:19.7±1.3,29.02S×176.19W,h0km,mb4.2/4, mb1 4.4/4,mb1mx3.9/30,mbtmp4.2/4, Error ellipse: s-maj=57.8km s-min=31.8km az=174.0*
*NEIC **06** 20:12:20.6±0.9,28.89S×176.01W,h10km,mb4.8/2, Error ellipse: s-maj=41.3km s-min=17.8km az=169.0*

IDC 06 20:12:23.1±1.2,29.4S±0.1×175.9W±0.1,h28km,n15, σ1°40/16,mb4.3/5,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.78**	**275**	Pn	**Pn**	**20 12 52.5**	**+0.5**
	312nm,0.3s,baz=90,slow=20,SNR=4.5						
RAO				Sn	**Sn**	**20 13 15.0**	**+1.3**
	440nm,0.3s,baz=292,slow=20,SNR=4.8						
RAO	**Raoul Island**	**1.78**	**275**	Pn	**Pn**	**20 12 52.0**	**0.0**
RAO				Sn	**Sn**	**20 13 15.0**	**+1.3**
URZ	**Urewera**	**10.57**	**212**	Sn	**Sn**	**20 16 49.4**	**-0.6**
	1.3nm,0.3s,baz=14,slow=17,SNR=5.1						
CTA	**Charters Tower**	**35.48**	**276**	P	**P**	**20 19 16.8**	**-0.7**
	3.3nm,0.7s,baz=98,slow=13,SNR=6.3						
CTAO	**Charters Tower**	**35.48**	**276**	*e*P	**P**	**20 19 16.6**	**-0.9**
	27nm,0.8s						
STKA	**Stephens Creek**	**36.50**	**255**	P	**P**	**20 19 26.9**	**+0.9**
	1.4nm,0.5s,baz=104,slow=12,SNR=2.8						
ASAR	**Alice Springs**	**45.01**	**265**	P	**P**	**20 20 34.4**	**-2.0**
	1.6nm,0.5s,baz=105,slow=7.2,SNR=18						
WRAB	**Tennant Creek**	**45.91**	**270**	*e*P	**P**	**20 20 41.9**	**-1.7**
	2.8nm,0.6s						
WRA	**Warramunga Arr**	**45.91**	**270**	P	**P**	**20 20 41.3**	**-2.3**
	1.7nm,0.4s,baz=108,slow=7.9,SNR=16						
MKAR	**Makanchi Array**	**118.55**	**310**	PKP	**PKPdf**	**20 31 08.2**	**+0.2**
	0.3nm,0.8s,baz=239,slow=5.6,SNR=2.9						
FINES	**FINESS Array B**	**144.82**	**342**	PKP	PKPbc	20 31 55.6	-0.1
	3.1nm,0.6s,baz=45,slow=2.6,SNR=14						
NB2	**NORSAR Subarra**	**146.02**	**353**	PKP	**PKPbc**	**20 32 05.8**	**+0.5**
	comp=Z,0.6nm,0.5s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**148.02**	**353**	PKPbc	**PKPbc**	**20 32 05.2**	**-0.2**
	comp=Z,2.6nm,0.8s,baz=14,slow=4.4,SNR=6.7						
AKASG	**Malin Array Be**	**151.58**	**325**	PKPbc	**PKPbc**	**20 32 14.3**	**0.0**
	comp=Z,1.6nm,0.7s,baz=49,slow=2.6,SNR=4.9						
TORD	**Torodi Ar. Bea**	**163.66**	**172**	PKPab	**PKPab**	**20 33 18.4**	**+2.7**
	comp=Z,0.4nm,0.7s,baz=179,slow=7.2,SNR=2.8						

IDC 06 20:14:24.0±4.7,27.97S×176.68W,h0km,mb3.9/2, mb1 4.1/2,mb1mx3.7/29,mbtmp3.9/2,Error ellipse: s-maj=225.1km s-min=51.6km az=156.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.68**	**220**	Sn	Sn	20 15 14.5	-2.3
	252nm,0.3s,baz=42,slow=21,SNR=3.1						
ASAR	**Alice Springs**	**44.45**	**264**	P	P	20 22 36.8	-0.3
	0.6nm,0.5s,baz=103,slow=6.4,SNR=8.2						
WRA	**Warramunga Arr**	**45.23**	**269**	P	P	20 22 43.2	-0.1
	1.3nm,0.5s,baz=109,slow=7.9,SNR=7.8						
FINES	**FINESS Array B**	**143.24**	**342**	PKP	PKPbc	20 33 57.5	+1.1
	0.9nm,0.7s,baz=332,slow=4.7,SNR=3.2						
NOA	**NORSAR Array B**	**146.51**	**353**	PKPbc	PKPbc	20 34 06.4	-0.3
	0.7nm,0.6s,baz=13,slow=4.4,SNR=3.2						

IDC 06 20:18:19.1±5.9,29.33S×178.75W,h0km,mb3.5/2, mb1 3.8/2,mb1mx3.5/26,mbtmp3.5/2,Error ellipse: s-maj=300.4km s-min=62.0km az=160.0,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.73**	**84**	Sn	Sn	20 18 52.1	+3.5
	184nm,0.3s,baz=107,slow=19,SNR=2.6						
ASAR	**Alice Springs**	**42.52**	**266**	P	P	20 26 16.6	0.0
	0.4nm,0.6s,baz=96,slow=6.8,SNR=9.7						
WRA	**Warramunga Arr**	**43.41**	**271**	P	P	20 26 23.1	-0.7
	3.8nm,1.1s,baz=112,slow=6.4,SNR=6.2						
AKASG	**Malin Array Be**	**150.06**	**323**	PKPbc	PKPbc	20 38 11.3	0.0
	0.3nm,0.3s,baz=54,slow=1.6,SNR=4.6						

IDC 06 20:20:54.9±5.7,29.19S×175.11W,h0km,mb3.5/2, mb1 3.8/2,mb1mx3.5/25,mbtmp3.5/2,MS3.9/1,Ms1 3.9/1, ms1mx3.6/28,Error ellipse: s-maj=309.9km s-min=59.7km az=159.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**45.71**	**264**	P	P	20 29 17.6	-0.4
	0.3nm,0.5s,baz=100,slow=6.5,SNR=5.7						
WRA	**Warramunga Arr**	**46.60**	**269**	P	P	20 29 25.0	+0.1
	0.8nm,0.7s,baz=110,slow=8.0,SNR=7.0						
SIJI	**Sorong**	**58.28**	**289**	LR	LR	20 54 34.1	
	comp=Z,83nm,18.2s,baz=0.0,slow=35						
AKASG	**Malin Array Be**	**151.78**	**326**	PKPbc	PKPbc	20 40 51.0	-0.1
	0.2nm,0.4s,baz=64,slow=2.2,SNR=5.6						

*ISK **06** 20:24:44.5,39.13N×29.07E,h12km,MD2.1*
*CSEM **06** 20:24:45.1±0.2,39.11N×29.08E,h10km,MD2.1, Error ellipse: s-maj=7.5km s-min=3.5km az=145.0*
*DDA **06** 20:24:45.6,39.07N×29.10E,h7km,Md2.7*

ISC 06 20:24:45.0±1.0,39.12N±0.05×29.05E±0.05,h11km±16km, n12,σ0°36/24,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.27**	**253**	*i* P	**Pb**	**20 24 51.8**	**-0.1**
DEMI				*i* S	**Sb**	**20 24 57.0**	**+0.5**
DEMI	**Demirci**	**0.27**	**253**	P	**Pb**	**20 24 51.8**	**-0.1**
DEMI				S	**Sb**	**20 24 57.0**	**+0.5**
GEDZ	**Gediz**	**0.29**	**105**	*e*PG	**Pg**	**20 24 50.8**	**-0.2**
GEDZ				*e*SG	**Sg**	**20 24 55.2**	**+0.3**
GEDZ	**Gediz**	**0.29**	**105**	*e*Pg	**Pg**	**20 24 50.8**	**-0.2**
GEDZ				*e*Sg	**Sg**	**20 24 55.3**	**+0.3**
GDZ	**Gediz**	**0.34**	**95**	*i* P	**Pg**	**20 24 51.9**	**+0.1**
GDZ				*i* S	**Sg**	**20 24 56.4**	**0.0**
GDZ	**Gediz**	**0.34**	**95**	P	**Pg**	**20 24 51.9**	**+0.1**
GDZ				S	**Sg**	**20 24 56.4**	**0.0**
TVSB	**Tavsanli**	**0.46**	**44**	*e*PG	**Pg**	**20 24 53.9**	**-0.1**
TVSB				*e*SG	**Sg**	**20 25 00.2**	**0.0**
TVSB	**Tavsanli**	**0.46**	**44**	*e*Pg	**Pg**	**20 24 53.9**	**-0.1**
TVSB				*e*Sg	**Sg**	**20 25 00.2**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*PG	**Pg**	**20 24 58.5**	**+0.4**
KULA				*e*SG	**Sb**	**20 25 08.1**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*Pg	**Pg**	**20 24 58.5**	**+0.4**
KULA				*e*Sg	**Sb**	**20 25 08.1**	**-0.2**
MANT	**Manisa**	**0.74**	**212**	*i* P	**Pg**	**20 24 58.5**	**-0.8**
MANT				*i* S	**Sg**	**20 25 09.3**	**+0.3**
MANT	**Manisa**	**0.74**	**212**	P	**Pg**	**20 24 58.5**	**-0.8**
MANT				S	**Sg**	**20 25 09.3**	**+0.3**

IDC 06 20:25:19.7±1.3,29.87S×176.20W,h0km,mb3.6/3, mb1 4.0/3,mb1mx3.7/23,mbtmp3.6/3,Error ellipse: s-maj=51.9km s-min=23.9km az=15.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.62**	**292**	Pn	Pg	20 25 51.3	+0.5
	218nm,0.3s,baz=110,slow=11,SNR=3.9						
RAO				Sn	Sg	20 26 12.8	+1.1
	255nm,0.3s,baz=86,slow=21,SNR=4.2						
ASAR	**Alice Springs**	**44.70**	**266**	P	P	20 33 33.7	-1.0
	0.7nm,0.8s,baz=104,slow=7.8,SNR=3.8						
WRA	**Warramunga Arr**	**45.65**	**271**	P	P	20 33 41.1	-1.2
	0.7nm,0.5s,baz=111,slow=7.2,SNR=10						
TXAR	**Lajitas Array**	**90.79**	**56**	P	P	20 38 24.9	-0.2
	0.2nm,0.8s,baz=236,slow=4.2,SNR=1.9						
FINES	**FINESS Array B**	**145.16**	**341**	PKPbc	PKPbc	20 44 57.1	-0.9
	0.4nm,0.5s,baz=29,slow=4.4,SNR=7.4						
TORD	**Torodi Ar. Bea**	**163.25**	**173**	PKPab	PKPab	20 46 15.8	+0.8
	2.0nm,0.8s,baz=192,slow=4.4,SNR=7.8						

*DDA **06** 20:26:43.0,39.20N×29.08E,h7km,Md2.7*
*ISCJB **06** 20:26:43.2±1.6,39.10N±0.06×29.16E±0.06,h25km±16km, Error ellipse: s-maj=11.2km s-min=5.8km az=146.7*
*CSEM **06** 20:26:43.5±0.3,39.12N×29.06E,h10km,MD2.1, Error ellipse: s-maj=10.3km s-min=5.2km az=146.0*
*ISK **06** 20:26:43.2,39.12N×29.09E,h13km,MD2.1*

IDC 06 20:26:43.2±1.1,39.13N±0.05×29.06E±0.04,h14km±10km, n11,σ0°85/21,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.28**	**253**	*i* P	**Pg**	**20 26 49.0**	**-0.1**
DEMI				*i* S	**Sb**	**20 26 55.9**	**+1.1**
DEMI	**Demirci**	**0.28**	**253**	P	**Pg**	**20 26 49.0**	**-0.1**
DEMI				S	**Sb**	**20 26 55.8**	**+1.1**
GEDZ	**Gediz**	**0.28**	**107**	*e*PG	**Pg**	**20 26 49.2**	**0.0**
GEDZ				*e*SG	**Sg**	**20 26 53.5**	**+0.3**
GEDZ	**Gediz**	**0.28**	**107**	*e*Pg	**Pg**	**20 26 49.2**	**0.0**
GEDZ				*e*Sg	**Sg**	**20 26 53.5**	**+0.3**
GDZ	**Gediz**	**0.33**	**97**	*i* P	**Pb**	**20 26 50.6**	**-0.3**
GDZ				*i* S	**Sg**	**20 26 54.9**	**+0.3**
GDZ	**Gediz**	**0.33**	**97**	P	**Pb**	**20 26 50.6**	**-0.3**
GDZ				S	**Sg**	**20 26 54.9**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**44**	*e*PG	**Pg**	**20 26 52.5**	**+0.4**
TVSB				*e*SG	**Sb**	**20 26 58.9**	**-0.7**
TVSB	**Tavsanli**	**0.45**	**44**	*e*Pg	**Pg**	**20 26 52.5**	**+0.4**
TVSB				*e*Sg	**Sb**	**20 26 58.9**	**-0.7**
KULA	**Kula-Manisa**	**0.69**	**207**	*e*PG	**Pb**	**20 26 57.2**	**+0.2**
KULA				*e*SG	**Sb**	**20 27 07.0**	**+0.6**
KULA	**Kula-Manisa**	**0.69**	**207**	*e*Pg	**Pb**	**20 26 57.2**	**+0.2**
KULA				*e*Sg	**Sb**	**20 27 07.0**	**+0.6**
MANT	**Manisa**	**0.75**	**212**	*i* P	Pg	20 26 50.7	-7.1
MANT				*i* S	**Sg**	**20 27 04.9**	**-2.7**

*IDC **06** 20:26:55.1±1.4,29.52S×176.46W,h0km,mb4.3/5, mb1 4.4/5,mb1mx4.0/23,mbtmp4.3/5,Error ellipse: s-maj=51.7km s-min=32.8km az=165.0*
*ISCJB **06** 20:26:56.3±1.4,30.03S±0.07×176.2W±0.1,h33km, mb4.4/6,Error ellipse: s-maj=18.7km s-min=10.2km az=169.2*
*NEIC **06** 20:26:58.0±7.2,29.87S×176.34W,h23km±46km,mb4.9/2, Error ellipse: s-maj=33.0km s-min=18.6km az=67.0*

ISC 06 20:26:58.2±1.1,29.87S±0.1°×176.4W±0.1,h24km,n14, σ1°03/16,mb4.5/6,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.49**	**294**	Pn	**Pb**	**20 27 24.6**	**-0.6**
	193nm,0.3s,baz=90,slow=20,SNR=3.9						
RAO				Sn	**Sb**	**20 27 44.4**	**+0.8**
	606nm,0.3s,baz=258,slow=21,SNR=5.6						
URZ	**Urewera**	**9.96**	**211**	Pn	**Pn**	**20 29 18.8**	**-1.0**
	0.4nm,0.3s,baz=273,slow=18,SNR=3.0						
URZ				Sn	**Sn**	**20 31 10.8**	**0.0**
	1.6nm,0.3s,baz=14,slow=19,SNR=3.8						
CTA	**Charters Tower**	**35.12**	**277**	P	**P**	**20 33 50.5**	**+0.5**
	3.6nm,0.6s,baz=98,slow=11,SNR=6.9						
CTAO	**Charters Tower**	**35.12**	**277**	*e*P	**P**	**20 33 50.9**	**+0.9**
	49nm,1.0s						
STKA	**Stephens Creek**	**35.98**	**256**	P	**P**	**20 33 58.1**	**+0.8**
	6.4nm,0.7s,baz=94,slow=10,SNR=6.0						
ASAR	**Alice Springs**	**44.56**	**266**	P	**P**	**20 35 08.1**	**-0.4**
	1.0nm,0.7s,baz=99,slow=7.1,SNR=8.8						
WRAB	**Tennant Creek**	**45.50**	**271**	*e*P	**P**	**20 35 15.8**	**-0.1**
	4.3nm,0.7s						
WRA	**Warramunga Arr**	**45.50**	**271**	P	**P**	**20 35 14.9**	**-1.1**
	5.1nm,0.7s,baz=110,slow=7.8,SNR=16						
MJAR	**Matsushiro Arr**	**78.63**	**324**	P	**P**	**20 38 57.3**	**-0.6**
	1.3nm,0.7s,baz=156,slow=4.8,SNR=4.8						
KURK	**Kurchatov**	**121.71**	**314**	*e*P	**PKPdf**	**20 45 49.5**	**0.0**
FINES	**FINESS Array B**	**145.12**	**341**	PKP	**PKPbc**	**20 46 31.8**	**-0.6**
	1.8nm,0.7s,baz=29,slow=3.2,SNR=6.3						
NOA	**NORSAR Array B**	**148.42**	**353**	PKPbc	**PKPbc**	**20 46 41.1**	**-1.0**
	0.6nm,0.7s,baz=29,slow=0.1,SNR=3.4						
AKASG	**Malin Array Be**	**151.71**	**325**	PKPbc	**PKPbc**	**20 46 50.2**	**0.0**
	1.3nm,0.6s,baz=46,slow=3.1,SNR=6.7						
TORD	**Torodi Ar. Bea**	**163.26**	**173**	PKPab	**PKPab**	**20 47 52.3**	**+2.6**
	1.1nm,0.9s,baz=169,slow=3.8,SNR=3.2						

IDC 06 20:30:13.7±1.8,29.27S×176.34W,h0km,mb4.0/3, mb1 4.2/3,mb1mx3.7/23,mbtmp4.0/3,Error ellipse: s-maj=76.3km s-min=41.5km az=178.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.38**	**270**	Pn	Pb	20 30 43.8	+3.4
	19nm,0.3s,baz=90,slow=20,SNR=1.0						
RAO				Sn	Sg	20 30 56.0	-2.0
	486nm,0.3s,baz=71,slow=11,SNR=7.3						
RAO				LR	LR	20 31 18.3	
	comp=Z,23µm,21.8s,baz=33,slow=47						
STKA	**Stephens Creek**	**36.15**	**255**	P	P	20 37 19.1	+1.2
	6.1nm,1.1s,baz=95,slow=9.4,SNR=4.1						
ASAR	**Alice Springs**	**44.63**	**265**	P	P	20 38 27.7	-0.5
	0.6nm,0.6s,baz=98,slow=6.7,SNR=12						
WRA	**Warramunga Arr**	**45.52**	**270**	P	P	20 38 34.5	-0.8
	1.8nm,0.7s,baz=109,slow=7.8,SNR=9.1						
FINES	**FINESS Array B**	**144.56**	**342**	PKP	PKPbc	20 49 50.1	0.0
	12nm,1.4s,baz=57,slow=5.1,SNR=3.9						
AKASG	**Malin Array Be**	**151.24**	**325**	PKPbc	PKPbc	20 50 09.2	+0.5
	0.4nm,0.4s,baz=48,slow=3.3,SNR=4.4						

TORD	**Torodi Ar. Bea**	**163.85**	**173**	PKPab	PKPab	20 51 11.0	-0.8
	0.5nm,0.9s,baz=204,slow=5.7,SNR=2.6						

*ISCJB **06** 20:30:24.0±0.4,39.09N±0.03×29.03E±0.04,h10km±5km, Error ellipse: s-maj=5.4km s-min=4.2km az=143.2*
*DDA **06** 20:30:23.9,39.11N×29.01E,h11km,Md2.7*
*ISK **06** 20:30:23.7,39.10N×29.07E,h8km,MD2.7*
*CSEM **06** 20:30:24.2±0.1,39.08N×29.04E,h8km,MD2.7,Error ellipse: s-maj=2.6km s-min=2.4km az=138.0*

ISC 06 20:30:23.9±0.9,39.10N±0.02×29.05E±0.02,h10km±10km, n37,σ0°60/48,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.27**	**257**	*i* P	**Pg**	**20 30 29.5**	**+0.2**
DEMI				*i* S	**Sg**	**20 30 32.9**	**0.0**
DEMI	**Demirci**	**0.27**	**257**	P	**Pg**	**20 30 29.5**	**+0.2**
DEMI				S	**Sg**	**20 30 32.9**	**0.0**
GEDZ	**Gediz**	**0.29**	**102**	*e*PG	**Pg**	**20 30 29.8**	**+0.1**
GEDZ	**Gediz**	**0.29**	**102**	*e*Pg	**Pg**	**20 30 29.8**	**+0.1**
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pb**	**20 30 31.8**	**-0.3**
GDZ				*i* S	**Sb**	**20 30 37.1**	**-0.5**
GDZ	**Gediz**	**0.34**	**92**	P	**Pb**	**20 30 31.8**	**-0.3**
GDZ				S	**Sb**	**20 30 37.1**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**20 30 33.4**	**+0.3**
TVSB				*e*SG	**Sg**	**20 30 39.6**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**20 30 33.4**	**+0.3**
TVSB				*e*Sg	**Sg**	**20 30 39.6**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**20 30 36.9**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**20 30 36.9**	**+0.2**
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pg**	**20 30 46.5**	**-0.7**
MANT				*i* S	**Sg**	**20 30 46.5**	**-0.8**
MANT	**Manisa**	**0.72**	**212**	P	**Pg**	**20 30 37.1**	**-0.7**
MANT				S	**Sg**	**20 30 46.5**	**-0.8**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pg**	**20 30 40.7**	**+0.2**
KHL				*e*SG	**Sb**	**20 30 52.9**	**+0.3**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pg**	**20 30 40.7**	**+0.2**
KHL				*e*Sg	**Sb**	**20 30 52.9**	**+0.3**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pb**	**20 30 43.5**	**+0.4**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pb**	**20 30 43.5**	**+0.4**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pn**	**20 30 44.8**	**+0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pn**	**20 30 44.8**	**+0.1**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pg**	**20 30 44.9**	**-1.4**
IGD				*i* S	**Sg**	**20 30 58.7**	**-2.7**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pg**	**20 30 48.4**	**+0.4**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pg**	**20 30 48.4**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pn**	**20 30 48.0**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pn**	**20 30 48.0**	**+0.3**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**20 30 49.0**	**+0.6**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**20 30 49.0**	**+0.6**
BALY	**Balya**	**1.28**	**300**	*i* P	**Pg**	**20 30 48.5**	**+0.1**
BALY	**Balya**	**1.28**	**300**	P	**Pg**	**20 30 48.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pb**	**20 30 48.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pb**	**20 30 48.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	**Pb**	**20 30 50.5**	**+0.2**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	**Pb**	**20 30 50.5**	**+0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**20 31.3**	**0.0**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**20 30 51.3**	**0.0**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pb**	**20 30 52.9**	**+0.4**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pb**	**20 30 52.9**	**+0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**20 30 55.0**	**+0.7**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**20 30 55.0**	**+0.7**

**IDC 06 20:33:49.3±3.1,30.30S×177.22W,h0km,

PXZ **Pawanui** 11.92 207 *e*PN Pn 20 38 21.2 -7.2
ANWZ **Angora Road** 12.44 207 *e*PN Pn 20 38 31.0 -4.6
BFZ **Birch Farm** 12.72 207 *e*Pn Pn 20 38 34.5 -4.9
BFZ *e*Sn Sn 20 40 53.6 -7.6
MSVF **Nonsavu** 12.94 334 *e*P **Pn** **20 38 42.3 -0.3**
MSVF **Nonsavu** 12.94 334 *e*Pn **Pn** **20 38 42.3 -0.3**
OGWZ **Otaki Gorge** 13.28 210 PN Pn 20 38 41.7 -5.4
OGWZ SN Sn 20 41 03.3 -12
SNZO **South Karori** 13.89 210 *e*Pn Pn 20 38 47.0 -8.4
SNZO *e*Sn Sn 20 41 18.9 -11
TCW **Tory Channel** 14.00 211 PN Pn 20 38 48.8 -8.1
TCW SN Sn 20 41 20.7 -12
TUWZ **Tuamarina** 14.33 212 PN Pn 20 38 55.0 -6.4
THZ **Tophouse** 15.07 213 *e*Pn **Pn** **20 39 07.7 -3.8**
184nm,1.0s
KHZ **Kahutara** 15.29 210 *e*Pn Pn 20 39 07.2 -7.2
309nm,0.8s
AFI **Afiamalu** 16.09 15 Pn Pn 20 39 17.1 -7.9
2.5nm,0.3s,baz=49,slow=11,SNR=2.9
AFI Sn Sn 20 42 02.1 -22
4.7nm,0.3s,baz=323,slow=20,SNR=3.1
LTZ **Lake Taylor** 16.16 212 *e*Pn **Pn** **20 39 21.0 -4.7**
100nm,1.1s
LTZ **Lake Taylor** 16.16 212 PN **Pn** **20 39 21.0 -4.7**
OXZ **Oxford** 16.69 211 *e*Pn **Pn** **20 39 27.2 -5.2**
169nm,0.8s
MQZ **McQueen's Vall** 16.72 209 *e*Pn Pn 20 39 24.1 -8.7
67nm,1.0s
MQZ *e*Sn Sn 20 42 22.4 -16
RAR **Rarotonga** 16.93 64 Pn **Pn** **20 39 28.7 -6.9**
4.6nm,0.3s,baz=273,slow=10,SNR=8.7
RAR Sn Sn 20 42 17.9 -26
1.4nm,0.3s,baz=288,slow=19,SNR=3.4
RAR **Rarotonga** 16.93 64 P **P** **20 39 36.7 -0.8**
RAR pmax pmax
comp=Z,9µm,2.8s
RAR **Rarotonga** 16.93 64 *e*Pn **Pn** **20 39 29.4 -6.2**
comp=Z,308nm,1.4s
RAR Sn Sn 20 42 17.9 -26
RAR *e*Sn Sn 20 42 25.8 -18
DZM **Mont Dzumac** 17.38 291 P **P** **20 39 43.8 +1.1**
comp=Z,0.8nm,0.3s,baz=104,slow=16,SNR=17
RPZ **Rata Peaks** 17.44 213 P Pn 20 39 35.6 -6.3
comp=Z,9.2nm,0.3s,baz=36,slow=1.5,SNR=26
RPZ S Sn 20 42 38.8 -17
comp=Z,5.5nm,0.3s,baz=143,slow=20,SNR=8.9
RPZ **Rata Peaks** 17.44 213 *e*Pn Pn 20 39 35.7 -6.2
comp=Z,98nm,0.8s
RPZ S Sn 20 42 38.8 -17
LBZ **Lake Benmore** 18.36 213 *e*Pn **P** **20 39 51.9 -1.3**
comp=Z,122nm,1.3s
ODZ **Otahua Downs** 18.66 211 *e*P **P** **20 39 53.3 -3.2**
comp=Z,99nm,0.9s
ODZ *e*Sn Sn 20 43 08.5 -17
MLZ **Mavora Lakes** 20.07 214 *e*P **P** **20 40 12.6 +0.6**
comp=Z,80nm,0.9s
WHZ **Wether Hill Ro** 20.54 213 *e*P **P** **20 40 17.4 +0.3**
comp=Z,63nm,0.8s
LHI **Lord Howe Isla** 21.46 259 P **P** **20 40 30.5 +3.3**
baz=22,SNR=4.1
LHI **Lord Howe Isla** 21.46 259 *e*P **P** **20 40 30.6 +3.5**
comp=Z,295nm,0.9s
ARMA **Armidale** 27.91 260 P **P** **20 41 30.8 +1.9**
baz=28,SNR=8.0
EIDS **Eidsvold** 29.36 270 P **P** **20 41 42.0 +0.2**
baz=30,SNR=6.4
EIDS **Eidsvold** 29.36 270 *e*P **P** **20 41 42.6 +0.8**
comp=Z,30nm,0.9s
RMQ **Roma** 31.10 267 P **P** **20 41 59.0 +1.9**
baz=31,SNR=11
CMSA **Cobar Meteorol** 32.85 257 P **P** **20 42 13.7 +1.2**
baz=33,SNR=27
QLP **Quilpie** 35.01 265 P **P** **20 42 31.2 -0.1**
baz=35,SNR=5.5
CTA **Charters Tower** 35.31 277 P **P** **20 42 34.2 +0.2**
comp=Z,14nm,0.6s,baz=106,slow=13
CTAO **Charters Tower** 35.31 277 *e*P **P** **20 42 33.9 -0.1**
CTAO pmax pmax
comp=Z,21nm,0.7s
CTAO **Charters Tower** 35.31 277 *e*P **P** **20 42 33.9 -0.1**
comp=Z,21nm,0.7s
STKA **Stephens Creek** 36.27 255 P **P** **20 42 42.5 +0.4**
comp=Z,36nm,0.7s,baz=92,slow=10.0,SNR=42
STKA **Stephens Creek** 36.27 255 P **P** **20 42 42.6 +0.4**
baz=36,SNR=33
STKA **Stephens Creek** 36.27 255 *e*P **P** **20 42 42.5 +0.4**
comp=Z,8.2nm,0.8s
MTSU **Mount Surprise** 37.78 278 P **P** **20 42 54.9 -0.2**
baz=38,SNR=18
HTT **Hallett** 38.31 252 P **P** **20 42 59.6 +0.1**
baz=39,SNR=24
COEN **Coen** 40.65 284 P **P** **20 43 18.8 -0.3**
baz=41,SNR=5.8
BBOO **Buckleboo** 40.78 253 P **P** **20 43 19.7 -0.3**
baz=41,SNR=19
BBOO **Buckleboo** 40.78 253 *e*P **P** **20 43 19.7 -0.3**
comp=Z,61nm,0.8s
QIS **Mount Isa** 40.91 272 P **P** **20 43 21.1 -0.1**
baz=41,SNR=4.4
AS01 **Alice Springs** 44.76 265 *e*P **P** **20 43 50.6 -1.9**
AS31 **Alice Springs** 44.80 265 *e*P **P** **20 43 52.1 -0.7**
comp=Z,5.8nm,0.8s
ASAR **Alice Springs** 44.80 265 P **P** **20 43 51.5 -1.3**
comp=Z,6.4nm,0.6s,baz=105,slow=7.8,SNR=34
ASAR ScP **ScP** **20 49 28.4 +1.1**
comp=Z,1.4nm,1.0s,baz=124,slow=4.9,SNR=2.9
ASAR **Alice Springs** 44.80 265 P **P** **20 43 51.5 -1.3**
ASAR pmax pmax
comp=Z,7.0nm,0.7s
ASAR pmax pmax
comp=N,1.0nm,1.0s
WC3 **Warramunga Arr** 45.69 270 P **P** **20 43 58.2 -1.6**
baz=46
WB2 **Warramunga Arr** 45.71 270 *e*P **P** **20 43 58.4 -1.6**
comp=N,36nm,0.9s
WRAB **Tennant Creek** 45.72 270 *ce*P **P** **20 43 58.1 -2.0**
WRAB pmax pmax
comp=Z,149nm,1.7s
WRAB **Tennant Creek** 45.72 270 *e*P **P** **20 43 57.1 -2.9**
comp=Z,30nm,0.8s
WRA **Warramunga Ar** 45.72 270 P **P** **20 43 58.0 -2.1**
comp=Z,24nm,0.7s,baz=110,slow=7.8,SNR=76
WRA **Warramunga Arr** 45.72 270 P **P** **20 43 58.1 -2.1**
WRA pmax pmax
comp=Z,24nm,0.7s
SBA **Scott Base** 48.99 185 *e*P **P** **20 44 29.2 +4.5**
SBA pmax pmax
comp=Z,263nm,1.5s
SBA **Scott Base** 48.99 185 *e*P **P** **20 44 29.2 +4.5**
comp=Z,263nm,1.5s
VNDA **Vanda** 49.09 186 P **P** **20 44 29.1 +3.6**
comp=Z,18nm,1.1s,baz=5.7,slow=8.1,SNR=38
VNDA **Vanda** 49.09 186 *e*P **P** **20 44 29.3 +3.8**
VNDA pmax pmax
comp=Z,52nm,1.3s
VNDA **Vanda** 49.09 186 *e*P **P** **20 44 29.2 +3.8**
comp=Z,52nm,1.3s
WRKA **Warakurna** 49.22 261 P **P** **20 44 26.0 -1.4**
baz=49,SNR=6.2
MTN **Manton Dam** 51.49 277 P **P** **20 44 45.6 +1.0**
baz=52,SNR=5.5
KMBL **Kambalda** 52.84 251 P **P** **20 44 53.6 -0.9**
baz=53,SNR=7.5
KIP **Kipapa** 53.61 21 *ce*P **P** **20 45 01.1 +1.1**
KIP pmax pmax
comp=Z,408nm,1.2s
FITZ **Fitzroy Crossi** 54.02 268 P **P** **20 45 01.6 -1.6**
baz=54,SNR=20
FITZ **Fitzroy Crossi** 54.02 268 *e*P **P** **20 45 02.8 -0.4**
comp=Z,26nm,0.9s
KLBR **Kellerberrin** 56.17 250 P **P** **20 45 17.4 -1.2**
baz=56,SNR=12
CASY **Casey** 56.63 208 *e*P **P** **20 45 22.6 +1.2**
comp=Z,160nm,1.5s
BLDU **Ballidu** 57.31 251 P **P** **20 45 26.6 -0.2**
baz=58,SNR=4.9
RPN **Rapa Nui** 58.07 105 *i* P **P** **20 45 34.9 +2.8**
QSPA **South Pole Qui** 60.53 180 *e*P **P** **20 45 50.8 +2.0**
comp=Z,727nm,1.3s
MYLDM **Lahad Datu** 71.50 287 ⇑P **P** **20 46 59.6 -0.3**
TSM **Tawau** 71.55 286 ⇓P **P** **20 46 59.9 -0.3**
SDKM **Sandakan** 72.84 287 ⇓P **P** **20 47 07.6 -0.4**
MAW **Mawson** 73.65 200 P **P** **20 47 14.0 +2.3**
comp=Z,48nm,1.1s,baz=113,slow=7.4,SNR=33
MAW **Mawson** 73.65 200 P **P** **20 47 14.1 +2.3**
baz=74,SNR=24
MAW **Mawson** 73.65 200 *e*P **P** **20 47 14.2 +2.4**
comp=Z,33nm,1.4s
KKM **Kota Kinabalu** 73.88 287 ⇓P **P** **20 47 14.0 -0.2**
SBUM **Sibu** 75.36 281 ⇓P **P** **20 47 22.5 -0.1**
SBUM **Sibu** 75.36 281 *e*P **P** **20 47 22.2 -0.5**
comp=Z,15nm,1.2s
KSM **Kuching** 76.49 280 ⇓P **P** **20 47 28.5 -0.6**
KSM **Kuching** 76.49 280 *e*P **P** **20 47 28.2 -0.9**
comp=Z,17nm,1.0s
SYO **Syowa Base** 78.28 192 ⇑*i*P **P** **20 47 37.8 -0.4**
SYO **Syowa Base** 78.28 192 ⇓*i*pP pP 20 47 41.0 -0.5
MJAR **Matsushiro Arr** 78.52 324 P **P** **20 47 38.2 -1.7**
comp=Z,5.6nm,0.8s,baz=162,slow=5.8,SNR=13
MAJO **Matsushiro** 78.52 324 ⇑*i*P **P** **20 47 39.3 -0.7**
MAJO pmax pmax
comp=Z,100nm,1.4s
MAJO **Matsushiro** 78.52 324 *e*P P 20 47 42.8 +2.9
comp=Z,20nm,1.0s
MAT **Matsushiro** 78.52 324 P **P** **20 47 39.3 -0.7**
MAT *e*S **S** **20 57 32.4 -4.0**
MJB9 **Matsu-Tunnel** 78.53 324 *e*PcP **PcP** **20 47 46.0 -3.0**
SNAA **Sanae** 78.93 178 P **P** **20 47 42.6 +0.7**
SNAA **Sanae** 78.93 178 ⇑*i*P **P** **20 47 42.1 +0.2**
SNAA **Sanae** 78.93 178 *e*P **P** **20 47 42.7 +0.8**
comp=Z,134nm,1.4s
VNA1 **Neumayer--Stat** 79.68 176 P **P** **20 47 47.1 +1.3**
NVL **N'lazarevskaya** 79.78 183 *e*P **P** **20 47 49.7 +3.3**
JNU **Nakatsue** 80.05 317 P **P** **20 47 49.2 +0.7**
comp=Z,9.0nm,0.6s,baz=153,slow=4.5,SNR=2.9
TPUB **Ta-pu** 80.38 304 *e*P **P** **20 47 49.2 -1.2**
comp=Z,30nm,1.1s
SSLB **Suanglung** 80.44 304 *e*P **P** **20 47 48.6 -2.1**
comp=Z,17nm,0.8s
PLCA **Paso Flores** 81.86 132 P **P** **20 47 59.0 +0.8**
comp=Z,13nm,1.1s,baz=259,slow=5.4,SNR=12
PLCA **Paso Flores** 81.86 132 P **P** **20 47 59.0 +0.8**
PLCA pmax pmax
comp=Z,13nm,1.1s
MYKOM **Kota Tinggi** 82.22 276 ⇑P **P** **20 48 00.9 +0.5**
SMY **Shemya** 82.40 354 *e*P **P** **20 48 00.3 0.0**
SMY **Shemya** 82.40 354 *e*P **P** **20 48 00.3 0.0**
ASAJ **Asahikawa** 82.49 331 P **P** **20 48 01.4 +0.4**
comp=Z,6.7nm,0.8s,baz=251,slow=12
ASAJ **Asahikawa** 82.49 331 *e*P **P** **20 48 02.1 +1.1**
comp=Z,25nm,1.2s
EFI **East Falkland** 82.58 146 *e*P **P** **20 48 02.6 +1.0**
EFI pmax pmax
comp=Z,80nm,1.1s
EFI **East Falkland** 82.58 146 *e*P **P** **20 48 02.6 +1.0**
comp=Z,80nm,1.1s
SLBS **Sierra La Lagu** 82.72 58 *e*P **P** **20 48 03.8 +0.9**
comp=Z,218nm,2.0s
SCZ2 **Santa Cruz Isl** 82.73 44 P **P** **20 48 03.4 +0.8**
baz=227
KGM **Kluang** 82.80 276 ⇓P **P** **20 48 04.0 +0.5**
QZH **Quanzhou** 82.85 304 P P 20 47 54.9 -8.5
QZH pmax pmax
comp=Z,160nm,1.0s
CIS **Catalina Islan** 83.08 45 P **P** **20 48 05.1 +0.6**
baz=228
BLG **Laguna Peak, P** 83.16 45 P **P** **20 48 07.2 +2.4**
baz=227
PKM **Mcpherson Peak** 83.23 44 P **P** **20 48 06.2 +0.8**
baz=227
SRIG **Santa Rosalia** 83.27 54 *e*PP PP 20 51 18.6 +1.2
MWC **Mount Wilson** 83.85 45 *e*P **P** **20 48 09.3 +0.7**
MWC pmax pmax
comp=Z,38nm,1.1s
MWC **Mount Wilson** 83.85 45 *e*P **P** **20 48 09.3 +0.7**
comp=Z,38nm,1.1s
MURC **Murrieta** 83.97 46 P **P** **20 48 09.6 +0.6**
baz=228,SNR=6.6
MONP2 **Monument Peak** 84.00 47 P **P** **20 48 10.0 +0.6**
baz=229,SNR=13
IKP **In-Ko-Pah, Jac** 84.04 47 P **P** **20 48 10.1 +0.7**
baz=229,SNR=8.8
BFSC **Mount Baldy Ra** 84.11 45 P **P** **20 48 10.4 +0.5**
baz=228,SNR=12
VES **Vestal, Richgr** 84.32 43 P **P** **20 48 11.0 +0.4**
baz=227,SNR=9.4
EDW2 **Edwards Air Fo** 84.33 45 P **P** **20 48 11.4 +0.5**
baz=228,SNR=16
SWSC **Sam W. Stewart** 84.43 47 P **P** **20 48 12.0 +0.7**
baz=229,SNR=5.9
TPFO **Pinon Flats** 84.44 46 P **P** **20 48 12.0 +0.5**
baz=229,SNR=9.4
PFO **Pinyon Flats O** 84.44 46 P **P** **20 48 12.0 +0.5**
baz=229,SNR=8.3
PFO **Pinyon Flats O** 84.44 46 *e*P **P** **20 48 12.1 +0.5**
PFO pmax pmax
comp=Z,85nm,1.6s
PFO **Pinyon Flats O** 84.44 46 *e*P **P** **20 48 12.1 +0.5**
comp=Z,85nm,1.6s
ISA **Isabella, Lake** 84.56 44 P **P** **20 48 12.7 +0.6**
baz=228,SNR=8.5
ISA **Isabella, Lake** 84.56 44 *e*P **P** **20 48 13.3 +1.3**
ISA pmax pmax
comp=Z,159nm,1.8s
ISA **Isabella, Lake** 84.56 44 *e*P **P** **20 48 13.3 +1.3**
comp=Z,159nm,1.8s
KTGM **Kuala Trenggan** 84.61 279 ⇓P **P** **20 48 13.5 +0.8**
YSS **Yuzh-Sakhalins** 84.74 33 ⇓*e*P **P** **20 48 12.9 +0.4**
YSS pmax pmax
comp=Z,20nm,1.0s
KSRS **Korea Array** 84.80 319 P **P** **20 48 13.3 +0.3**
comp=Z,5.5nm,0.8s,baz=138,slow=5.6,SNR=19
KSAR **Wonju Array Be** 84.81 318 P **P** **20 48 13.3 +0.2**
KSAR **Wonju Array Be** 84.81 318 P **P** **20 48 13.3 +0.2**
KS01 **Wonju Array Si** 84.83 319 *e*P **P** **20 48 13.2 0.0**
FRIM **Kepong** 84.87 277 ⇓P **P** **20 48 14.3 +0.3**
LRMC **Laurel Mtn Rad** 84.92 44 P **P** **20 48 14.4 +0.5**
baz=228,SNR=13
BELC **Belle Mtn. Jos** 84.99 46 P **P** **20 48 15.2 +0.9**
baz=229,SNR=25
CMB **Columbia Colle** 85.06 41 *e*P **P** **20 48 15.3 +0.8**
CMB pmax pmax
comp=Z,32nm,1.1s
CMB **Columbia Colle** 85.06 41 *e*P **P** **20 48 15.2 +0.8**
comp=Z,32nm,1.1s
BC3 **Big Chuckawall** 85.11 47 P **P** **20 48 15.7 +0.8**
baz=230,SNR=27
GLA **Glamis** 85.12 48 P **P** **20 48 15.7 +0.8**
baz=230,SNR=8.9
GLA **Glamis** 85.12 48 *e*P **P** **20 48 16.5 +1.6**
GLA pmax pmax
comp=Z,110nm,1.5s
GLA **Glamis** 85.12 48 *e*P **P** **20 48 16.5 +1.6**
comp=Z,110nm,1.5s
HEC **Hector,Ludlow** 85.32 45 P **P** **20 48 16.4 +0.6**
baz=229,SNR=8.3
CWC **Cottonwood Cre** 85.32 43 P **P** **20 48 16.8 +0.8**
baz=228
GSC **Goldstone, Bar** 85.34 45 P **P** **20 48 16.5 +0.6**
baz=229,SNR=19
GSC **Goldstone, Bar** 85.34 45 *e*P **P** **20 48 16.7 +0.7**
GSC pmax pmax
comp=Z,223nm,2.0s
GSC **Goldstone, Bar** 85.34 45 *e*P **P** **20 48 16.7 +0.7**
comp=Z,223nm,2.0s
AFDM **Forest Hills D** 85.36 40 *e*P **P** **20 48 16.2 +0.3**
comp=Z,52nm,1.4s
MPMC **Manual Prospec** 85.42 44 P **P** **20 48 17.2 +0.7**
baz=228,SNR=12
PEA0 **Petropavlovsk-** 85.44 345 *e*P **P** **20 48 15.1 -0.8**
PETK **Petropavlovsk-** 85.44 345 P **P** **20 48 15.4 -0.5**
comp=Z,4.0nm,0.5s,baz=102,slow=9.7,SNR=9.4
ORV **Oroville** 85.49 39 *e*P **P** **20 48 16.9 +0.4**
ORV pmax pmax
comp=Z,26nm,1.1s
ORV **Oroville** 85.49 39 *e*P **P** **20 48 16.9 +0.4**
comp=Z,26nm,1.1s
DAC **Darwin (Calif)** 85.50 44 *e*P **P** **20 48 17.4 +0.5**
DAC pmax pmax
comp=Z,30nm,1.4s
DAC **Darwin (Calif)** 85.50 44 *e*P **P** **20 48 17.4 +0.5**
comp=Z,30nm,1.4s
113A **Mohawk Valley,** 85.63 48 *e*P **P** **20 48 18.5 +1.1**
comp=Z,124nm,1.8s
IRM **Iron Mountain** 85.63 47 P **P** **20 48 18.7 +1.3**
baz=230,SNR=44
TIN **Tinemaha, Big** 85.64 43 P **P** **20 48 18.0 +0.5**
baz=228
WDC **Whiskeytown Da** 85.65 38 *e*P **P** **20 48 18.2 +1.0**
WDC pmax pmax
comp=Z,61nm,1.1s
WDC **Whiskeytown Da** 85.65 38 *e*P **P** **20 48 18.2 +1.0**
comp=Z,61nm,1.1s
MLAC **Mammoth, Mammo** 85.67 42 P **P** **20 48 18.5 +0.7**
baz=227
GMRC **Granite Mounta** 85.71 46 P **P** **20 48 18.6 +0.7**
baz=229,SNR=20
214A **Organ Pipe Nat** 85.75 50 P **P** **20 48 18.8 +0.8**
baz=231
Y12C **Blythe** 85.76 47 P **P** **20 48 18.9 +0.9**
baz=230,SNR=9.7
Y12C **Blythe** 85.76 47 *e*P **P** **20 48 19.0 +0.9**
comp=Z,30nm,1.1s
N02D **Trinity Center** 85.84 38 P **P** **20 48 19.3 +1.0**
baz=224,SNR=11
O03D **Paynes Creek** 85.84 39 P **P** **20 48 19.0 +0.6**
baz=225,SNR=13
WAKR **Walker** 85.92 41 *e*P **P** **20 48 20.2 +1.2**
comp=Z,186nm,1.7s
TUQ **Turquoise Moun** 85.97 45 P **P** **20 48 20.0 +0.8**
baz=229
IPM **Ipoh** 86.00 277 *e*P **P** **20 48 19.6 -0.1**
comp=Z,130nm,2.0s
SHOC **Shoshone, Teco** 86.06 45 P **P** **20 48 20.4 +0.9**
baz=229,SNR=13
M02C **Callahan** 86.06 37 P **P** **20 48 20.1 +0.7**
baz=224,SNR=12
FURC **Furnace Creek,** 86.07 44 P **P** **20 48 20.0 +0.6**
baz=229
GRAC **Grapevine Rang** 86.12 43 P **P** **20 48 20.6 +0.9**
baz=228,SNR=6.1
QIZ **Qiongzhong** 86.14 294 P **P** **20 48 20.1 -0.1**
QIZ pmax pmax
comp=Z,14nm,2.1s
L02D **Cave Junction,** 86.22 36 P **P** **20 48 21.1 +1.1**
baz=224
NEE2 **Needles Airpor** 86.35 46 P **P** **20 48 21.8 +0.9**
baz=230
YBH **Yreka Blue Hor** 86.38 37 *e*P **P** **20 48 22.1 +1.1**
YBH pmax pmax
comp=Z,116nm,1.6s
YBH **Yreka Blue Hor** 86.38 37 *e*P **P** **20 48 22.1 +1.1**
comp=Z,116nm,1.6s
VLA **Vladivostok** 86.66 325 ⇑*i*P **P** **20 48 21.5 -0.7**
VLA *i* *SP **sP** **20 48 31.1 +4.4**
VLA *i* 20 51 42.8
VLA pmax pmax
comp=Z,10.0nm,0.7s
KULM **Kulim** 86.73 278 *e*P **P** **20 48 23.7 +0.5**
comp=Z,126nm,1.8s
TPNV **Topopah Spring** 86.76 44 P **P** **20 48 23.6 +0.5**
baz=229,SNR=29
TPNV **Topopah Spring** 86.76 44 *e*P **P** **20 48 23.8 +0.8**
TPNV pmax pmax
comp=Z,38nm,1.1s
TPNV **Topopah Spring** 86.76 44 *e*P **P** **20 48 23.8 +0.8**
comp=Z,38nm,1.1s
PAHR **Pah Rah Range** 86.77 40 *e*P **P** **20 48 23.3 +0.3**
comp=Z,93nm,1.7s
CHGN **Chignik** 86.85 10 *e*P **P** **20 48 23.3 +0.6**
Y14A **Wickenburg** 86.86 48 *e*P **P** **20 48 24.2 +0.8**
comp=Z,597nm,1.8s
M04C **Macdoel** 86.87 37 P **P** **20 48 24.1 +0.7**
baz=225
HUMO **Hull Mountain** 86.88 36 *e*P **P** **20 48 24.7 +1.4**
comp=Z,146nm,1.7s
NJ2 **Nanjing** 86.97 310 *e*P **P** **20 48 24.7 +0.7**
NJ2 pmax pmax
comp=Z,29nm,1.0s
PSI **Prapat** 86.99 275 *e*P **P** **20 48 23.8 -0.9**
PSI pmax pmax
comp=Z,58nm,1.2s
PSI **Prapat** 86.99 275 *e*P **P** **20 48 23.8 -0.9**
comp=Z,58nm,1.2s
W13A **Hualapai Mount** 87.03 47 *e*P **P** **20 48 25.2 +0.8**
comp=Z,137nm,2.0s
SHPR **Sheep Range** 87.13 45 *e*P **P** **20 48 26.4 +1.5**
comp=Z,141nm,1.9s
TUC **Tucson** 87.32 50 P **P** **20 48 27.3 +1.5**
baz=232
TUC **Tucson** 87.32 50 *e*P **P** **20 48 26.9 +1.1**
TUC pmax pmax
comp=Z,220nm,1.9s
TUC **Tucson** 87.32 50 *e*P **P** **20 48 26.9 +1.1**
comp=Z,220nm,1.9s
USRK **Ussuriysk Ar.** 87.40 325 P **P** **20 48 25.6 -0.1**
comp=Z,6.2nm,0.8s,baz=105,slow=3.0,SNR=17
GSI **Gunungsitoli** 87.43 273 *e*P **P** **20 48 27.4 +0.8**
comp=Z,215nm,1.5s
I03D **Drain, OR** 87.46 35 P **P** **20 48 26.9 +0.9**
baz=224
K04D **Chiloquin, OR** 87.51 37 P **P** **20 48 27.2 +0.7**
baz=225
SKLT **Songkhla** 87.69 280 P **P** **20 48 30.0 +2.1**
comp=Z,532nm,0.9s
UBPT **Khong Chiam** 87.70 289 P **P** **20 48 29.6 +1.8**
comp=Z,81nm,2.0s
HPIG 87.76 57 *e*P **P** **20 48 28.9 +0.7**
comp=Z,19nm,0.9s
ZAIG **Zacatecas** 87.77 62 *e*P **P** **20 48 29.5 +1.0**
comp=Z,45nm,1.5s
319A **Douglas** 87.77 52 *e*P **P** **20 48 29.6 +1.6**
comp=Z,32nm,1.0s
MOD **Modoc Plateau** 87.78 38 *e*P **P** **20 48 28.6 +0.7**
comp=Z,18nm,0.9s
I04A **Tendick Farm,** 88.00 36 P **P** **20 48 29.2 +0.4**
baz=225
K05A **Summer Lake** 88.03 37 *e*P **P** **20 48 30.1 +1.0**
comp=Z,56nm,1.3s
R11A **Troy Canyon, C** 88.07 43 P **P** **20 48 29.9 +0.5**
baz=229,SNR=6.8
R11A **Troy Canyon, C** 88.07 43 *e*P **P** **20 48 29.7 +0.3**
comp=Z,45nm,1.8s
TLIG **Tlapa** 88.16 69 *e*P **P** **20 48 31.9 +1.7**
comp=Z,101nm,1.7s
X16A **Lo Mia Camp, P** 88.17 48 *e*P **P** **20 48 31.2 +1.2**
comp=Z,46nm,1.2s
BMN **Battle Mountai** 88.48 41 *e*P **P** **20 48 32.1 +0.9**
BMN pmax pmax
comp=Z,26nm,1.0s
BMN **Battle Mountai** 88.48 41 *e*P **P** **20 48 32.1 +0.9**
comp=Z,26nm,1.0s
OHAK **Old Harbor** 88.58 12 *e*P **P** **20 48 31.9 +0.9**
comp=Z,75nm,1.2s
G03D **McMinnville, O** 88.59 34 P **P** **20 48 32.6 +1.3**
baz=224
LCMT **Little Creek M** 88.64 45 *e*P **P** **20 48 33.6 +1.6**
comp=Z,29nm,1.1s
TRTT **Trang** 88.82 280 P **P** **20 48 34.3 +1.1**
comp=Z,116nm,1.6s
TRQA **Tornquist** 88.83 134 *e*P **P** **20 48 33.7 +0.6**
comp=Z,65nm,1.5s
U15A **North Rim** 88.87 46 *e*P **P** **20 48 34.4 +1.1**
comp=Z,48nm,1.0s
WUAZ **Wupatki** 88.89 48 P **P** **20 48 34.8 +1.6**
baz=232
WUAZ **Wupatki** 88.89 48 *e*P **P** **20 48 34.9 +1.6**
comp=Z,83nm,1.4s
MDJ **Mudanjiang** 88.89 325 P **P** **20 48 33.4 +0.6**
MDJ pmax pmax
comp=Z,11nm,1.2s
KNB **Kanab** 88.91 46 *e*P **P** **20 48 34.4 +1.1**
KNB pmax pmax
comp=Z,53nm,1.1s
KNB **Kanab** 88.91 46 *e*P **P** **20 48 34.4 +1.1**
comp=Z,53nm,1.1s
CCUT **Cedar City** 88.91 45 *e*P **P** **20 48 33.7 +0.3**
comp=Z,29nm,1.2s
I05D **Terrebonne, OR** 88.93 36 P **P** **20 48 33.7 +0.6**
baz=225
CHBT **CHBT** 89.03 285 P **P** **20 48 36.1 +2.0**
comp=Z,264nm,1.0s
WVOR **Wild Horse Val** 89.04 39 *e*P **P** **20 48 34.6 +0.8**
WVOR pmax pmax
comp=Z,36nm,1.4s
WVOR **Wild Horse Val** 89.04 39 *e*P **P** **20 48 34.6 +0.8**
comp=Z,36nm,1.4s
HABR **Khabarovsk** 89.14 330 *e*P **P** **20 48 33.6 -0.3**
HABR *e**SP **sP** **20 48 41.5 +3.1**
HABR *e* 20 52 01.7
HABR *e*PPP PPP 20 53 57.8
HABR *e* 20 59 24.0
HABR *e*SS SS 21 05 13.5 -3.6
HABR *e*SSS SSS 21 08 47.1
HABR pmax pmax
comp=N,17nm,2.0s
HABR pmax pmax
comp=Z,62nm,2.0s
HABR pmax pmax
comp=E,11nm,0.8s

HABR MLR MLR
comp=Z,11µm,21.0s
WHN Wuhan 89.18 306 ⇑P P 20 48 35.8 +1.3
WHN pmax pmax
comp=Z,100nm,1.4s
X18A Snowflake 89.22 49 eP P 20 48 36.6 +1.7
comp=Z,35nm,1.1s
KDAK Kodiak Island 89.24 12 eP P 20 48 34.6 +0.5
KDAK pmax pmax
comp=Z,142nm,1.5s
KDAK Kodiak Island 89.24 12 eP P 20 48 34.6 +0.5
comp=Z,142nm,1.5s
F04D Rainier, OR 89.34 34 P P 20 48 36.1 +1.2
baz=224
E03A Lebam 89.41 33 eP P 20 48 36.6 +1.5
comp=Z,79nm,1.0s
121A Cookes Peak, D 89.48 52 P P 20 48 37.0 +0.9
baz=234
PKCU Pink Cliffs 89.49 46 eP P 20 48 38.7 +2.4
comp=Z,26nm,1.1s
G05D Wamic, OR 89.58 35 P P 20 48 36.7 +0.6
baz=225
W18A Petrified Fore 89.71 49 P P 20 48 38.2 +1.0
baz=233
W18A Petrified Fore 89.71 49 eP P 20 48 38.8 +1.6
comp=Z,124nm,1.5s
SKNT Sakolnakorn 89.80 290 P P 20 48 39.1 +1.4
comp=Z,91nm,1.2s
ERK Elk Rock 89.82 34 P P 20 48 38.6 +1.2
ELK Elko 89.83 42 eP P 20 48 38.2 +0.6
ELK pmax pmax
comp=Z,58nm,1.9s
ELK Elko 89.83 42 eP P 20 48 38.2 +0.6
comp=Z,58nm,1.9s
NLWA Neilton Lookou 89.87 32 eP P 20 48 39.0 +1.6
comp=Z,90nm,1.4s
OSR Olympics--Salm 89.91 32 P P 20 48 39.3 +1.7
TDL Tradedollar La 89.92 34 P P 20 48 39.0 +1.3
VTHM Trough 89.92 36 P P 20 48 38.5 +0.8
MTPU Mount Pierson 89.94 45 eP P 20 48 40.0 +1.6
SURT Suratani 90.14 280 P P 20 48 41.4 +2.0
comp=Z,212nm,1.6s
MSU Marysvale 90.24 45 eP P 20 48 40.9 +1.3
MSU Marysvale 90.24 45 eP P 20 48 40.9 +1.3
GL2 New Goldendale 90.33 35 P P 20 48 40.8 +1.2
LON Longmire 90.40 34 eP P 20 48 40.5 +0.6
LON pmax pmax
comp=Z,126nm,1.9s
LON Longmire 90.40 34 eP P 20 48 40.5 +0.6
comp=Z,126nm,1.9s
KHON Khomkaen 90.43 288 P P 20 48 42.7 +2.0
comp=Z,18nm,1.1s
HDW Hoodsport 90.44 33 P P 20 48 41.6 +1.5
CN2 Changchun 90.49 322 eP P 20 48 40.9 +0.6
CN2 pmax pmax
comp=Z,20nm,0.8s
TX31 Lajitas Ar. Si 90.56 56 eP P 20 48 40.7 -0.5
TXAR Lajitas Array 90.56 56 P P 20 48 41.6 +0.5
comp=Z,6.9nm,0.9s,baz=214,slow=6.0,SNR=61
TXAR PKKPbc **PKKPbc 21 06 11.1 +2.5**
comp=Z,0.4nm,0.9s,baz=119,slow=1.6,SNR=3.5
D05A Enumclaw 90.62 34 eP P 20 48 42.5 +1.6
comp=Z,179nm,1.2s
MNTX Cornudas Mount 90.67 54 P P 20 48 42.3 +0.8
baz=235
MNTX Cornudas Mount 90.67 54 eP P 20 48 41.7 +0.2
comp=Z,107nm,1.9s
TRW Toppenish Ridg 90.70 35 P P 20 48 42.5 +1.1
DIB Dawson Inlet, 90.74 25 eP P 20 48 42.5 +1.3
comp=Z,48nm,1.1s
G08A Pilot Rock 90.81 36 eP P 20 48 42.9 +0.9
comp=Z,99nm,1.4s
DUG Dugway, Tooele 90.90 43 P P 20 48 42.8 +0.2
baz=231
DUG Dugway, Tooele 90.90 43 eP P 20 48 43.2 +0.7
DUG pmax pmax
comp=Z,17nm,1.4s
DUG Dugway, Tooele 90.90 43 eP P 20 48 43.2 +0.7
comp=Z,17nm,1.4s
LAZ Ladron 91.01 51 eP P 20 48 44.4 +1.1
MXC Moxie City 91.02 35 P P 20 48 43.9 +1.1
NONG Nongkai 91.04 290 P P 20 48 45.0 +1.5
comp=Z,202nm,1.0s
CNPM China Poot 91.12 12 eP P 20 48 43.8 +0.9
comp=Z,110nm,1.2s
KLR Kul'dur 91.17 329 ⇑iP P 20 48 44.0 +0.7
BNM Barren Site 91.21 51 eP P 20 48 45.0 +0.7
BGU Big Grassy Mou 91.23 43 eP P 20 48 44.6 +0.5
comp=Z,18nm,1.3s
MFID Camas Ranch 91.23 39 eP P 20 48 44.7 +0.7
comp=Z,54nm,1.4s
HAWA Hanford 91.28 35 eP P 20 48 45.0 +1.0
comp=Z,92nm,1.3s
LPM Los Pinos Moun 91.30 51 eP P 20 48 45.4 +0.8
TMUT Trail Mountain 91.31 45 eP P 20 48 46.2 +1.5
comp=Z,25nm,1.0s
B05A Bryant 91.33 33 P P 20 48 45.2 +1.1
baz=225
A04D Lummi Island 91.37 32 P P 20 48 45.5 +1.3
baz=224
BMO Blue Mountains 91.38 37 eP P 20 48 45.0 +0.4
comp=Z,113nm,1.8s
BRLK Bradley Lake 91.41 12 eP P 20 48 44.9 +0.6
comp=Z,84nm,1.2s
BBB Bella Bella 91.60 27 eP P 20 48 46.8 +1.5
comp=Z,45nm,1.0s
SRU San Rafael Swe 91.62 45 eP P 20 48 46.9 +0.9
SRU pmax pmax
comp=Z,28nm,1.0s
SRU San Rafael Swe 91.62 45 eP P 20 48 46.9 +0.9
comp=Z,28nm,1.0s
MVCO Mesa Verde 91.76 48 P P 20 48 47.2 +0.5
baz=234
MVCO Mesa Verde 91.76 48 eP P 20 48 47.5 +0.8
comp=Z,15nm,1.1s
ANMO Albuquerque 91.78 50 P P 20 48 47.4 +0.6
baz=235
ANMO Albuquerque 91.78 50 eP P 20 48 47.2 +0.4
ANMO pmax pmax
comp=Z,108nm,1.9s
ANMO Albuquerque 91.78 50 eP P 20 48 47.2 +0.4
comp=Z,108nm,1.9s
SPUT South Promonto 91.81 42 eP P 20 48 47.6 +0.9
comp=Z,148nm,2.0s
PV05 Paradox Valley 91.89 47 eP P 20 48 48.2 +0.9
HVU Hansel Valley 91.92 42 eP P 20 48 48.1 +0.9
HVU pmax pmax
comp=Z,132nm,1.8s
HVU Hansel Valley 91.92 42 eP P 20 48 48.1 +0.9
comp=Z,132nm,1.8s
JLU Jordanelle 91.97 44 eP P 20 48 48.5 +0.9
comp=Z,30nm,1.4s
E09A Wood Farm, Sta 92.06 36 eP P 20 48 48.1 +0.6
comp=Z,88nm,1.4s
PBKT Sadao Pong 92.08 288 P P 20 48 50.1 +1.8
comp=Z,85nm,1.1s
PV10 Paradox Valley 92.11 46 eP P 20 48 48.8 +0.4
HLID Hailey 92.11 40 P P 20 48 49.0 +0.9
baz=230
HLID Hailey 92.11 40 eP P 20 48 48.7 +0.5
comp=Z,34nm,1.3s
PV09 Paradox Valley 92.12 46 eP P 20 48 49.5 +1.0
PV04 Paradox Valley 92.20 46 eP P 20 48 49.1 +0.4
PV01 Paradox Valley 92.26 47 eP P 20 48 49.6 +0.6
LOEI Loei 92.30 289 P P 20 48 50.1 +0.7
comp=Z,471nm,1.0s
TCUT Toone Canyon 92.31 43 eP P 20 48 50.3 +1.0
comp=Z,200nm,1.9s
ENH Enshi 92.50 303 eP P 20 48 51.3 +1.3
comp=Z,240nm,1.6s
HWUT Hardware Ranch 92.52 43 eP P 20 48 50.4 +0.4
comp=Z,15nm,1.2s
SRDT SRDT 92.52 285 P P 20 48 52.7 +2.3
comp=Z,204nm,0.9s
SPU Mount Spurr 92.53 11 eP P 20 48 49.1 -0.3
GYA Guiyang 92.58 299 ⇓iP P 20 48 51.3 +0.7
GYA PP PP 20 52 36.0 +3.6
GYA SKS SKSac 20 59 24.4 -0.2
GYA S ScS 20 59 54.8 -2.7
GYA SS SS 21 06 10.5 +2.6
GYA pmax pmax
comp=Z,30nm,1.0s
GYA LR LR
comp=Z,2µm,22.2s
GYA LR LR
comp=Z,2µm,21.6s
GYA LR LR
comp=Z,4µm,20.0s
RC01 Rabbit Creek A 92.86 12 eP P 20 48 51.4 +0.5
comp=Z,94nm,1.4s
C09A Chrisman Ranch 92.86 35 eP P 20 48 51.9 +0.6
comp=Z,75nm,1.5s
933A Laredo 92.88 60 P P 20 48 52.9 +1.0
baz=238
LVC Limon Verde 92.88 118 eP P 20 48 54.5 +1.9
comp=Z,87nm,1.4s
UTTA Uttaradit 93.01 289 P P 20 48 56.8 +4.2
comp=Z,2.5nm,1.2s
SUA Susitna One 93.02 12 eP P 20 48 51.9 +0.1
comp=Z,95nm,2.0s
034A Hebbronville 93.04 61 P P 20 48 53.8 +1.2
baz=238
S22A 4UR Ranch, Cre 93.15 48 P P 20 48 53.8 +0.5
baz=235
S22A 4UR Ranch, Cre 93.15 48 eP P 20 48 54.1 +0.9
comp=Z,50nm,1.6s
833A Chaparral WMA, 93.17 59 P P 20 48 53.7 +0.6
baz=238
WRAK Wrangell Islan 93.36 23 eP P 20 48 54.6 +1.4
comp=Z,62nm,1.5s
035A Encino 93.42 61 P P 20 48 55.7 +1.4
baz=238
934A Benavides 93.45 60 P P 20 48 55.9 +1.5
baz=238
AHID Auburn Hatcher 93.50 42 eP P 20 48 55.4 +0.8
comp=Z,41nm,1.2s
TT01 Tatalina 93.55 9 eP P 20 48 54.8 +0.8
TTA Tatalina 93.57 9 eP P 20 48 55.6 +1.3
TTA pmax pmax
comp=Z,21nm,1.0s
TTA Tatalina 93.57 9 eP P 20 48 55.6 +1.3
comp=Z,21nm,1.0s
SUKH Sukhothai 93.64 288 P P 20 48 59.5 +4.0
comp=Z,2.8nm,1.0s
DIV Divide 93.69 14 eP P 20 48 55.3 +0.5
comp=Z,22nm,1.1s
834A Tilden 93.69 60 P P 20 48 55.9 +0.4
baz=238
NEW Newport 93.75 35 P P 20 48 55.4 0.0
baz=228
MSTX Muleshoe 93.75 53 P P 20 48 55.8 0.0
baz=237
MSTX Muleshoe 93.75 53 eP P 20 48 56.0 +0.2
comp=Z,41nm,1.3s
MCMT McKenzie Canyo 93.79 40 P P 20 48 56.8 +0.9
SML Sawmill 93.79 13 eP P 20 48 56.5 +1.3
SML pmax pmax
comp=Z,24nm,1.2s
SML Sawmill 93.79 13 eP P 20 48 56.5 +1.3
comp=Z,24nm,1.2s
BMRM Bremner River 93.80 15 eP P 20 48 56.0 +0.7
comp=Z,21nm,0.9s
PB11 IPOC Station P 93.86 115 eP P 20 48 57.8 +1.0
comp=Z,74nm,1.2s
JCT Junction City 94.00 57 P P 20 48 57.0 0.0
baz=238
JCT Junction City 94.00 57 eP P 20 48 56.8 -0.2
JCT pmax pmax
comp=Z,26nm,1.3s
JCT Junction City 94.00 57 eP P 20 48 56.8 -0.2
comp=Z,26nm,1.3s
REDW Red Top Meadow 94.01 42 eP P 20 48 57.6 +0.7
comp=Z,93nm,1.6s
TPAW Teton Pass 94.03 41 eP P 20 48 57.9 +0.8
comp=Z,63nm,1.6s
LAMP Lampang 94.15 289 P P 20 49 05.8 +7.9
comp=Z,3.2nm,0.9s
DLMT Dillon 94.26 39 eP P 20 48 58.7 +0.8
comp=Z,70nm,1.6s
IMW Indian Meadow 94.29 41 eP P 20 48 59.2 +0.9
comp=Z,29nm,0.3s
LOHW Long Hollow 94.31 42 eP P 20 48 58.7 +0.4
comp=Z,51nm,1.7s
MOOW Moose Ponds 94.31 41 eP P 20 48 58.9 +0.6
comp=Z,14nm,0.6s
533A Kerrville 94.35 58 P P 20 48 58.5 -0.1
baz=238
T25A Trinidad 94.39 50 P P 20 48 59.0 +0.2
baz=236
BW06 Boulder Array 94.41 43 P P 20 48 58.7 -0.1
baz=233
BW06 Boulder Array 94.41 43 eP P 20 48 57.3 -1.5
PDAR Pinedale Array 94.41 43 P P 20 48 58.5 -0.3
comp=Z,2.5nm,0.8s,baz=213,slow=5.1,SNR=9.7
PDAR PKKPbc **PKKPdf 21 05 59.3 -0.2**
comp=Z,0.8nm,0.8s,baz=131,slow=2.5,SNR=4.3
MSO Missoula 94.46 38 P P 20 48 58.9 +0.1
baz=231
FLWY Flagg Ranch 94.54 41 eP P 20 49 00.5 +1.1
comp=Z,48nm,1.3s
QLMT Earthquake Lak 94.58 40 eP P 20 49 00.9 +1.4
YPP Pitchstone Pla 94.59 41 eP P 20 49 01.2 +1.5
comp=Z,56nm,1.9s
CAST Castle Rocks 94.62 11 eP P 20 48 58.0 -1.0
comp=Z,23nm,1.2s
LRM Limekiln Ridge 94.63 39 eP P 20 49 00.2 +0.5
CM01 Chiang Mai Arr 94.66 288 eP P 20 49 00.8 +0.6
433A Art 94.67 57 P P 20 49 00.0 0.0
baz=238
CM31 Chiang Mai Arr 94.69 288 eP P 20 49 02.8 +2.5
CMAR Chiang Mai Arr 94.69 288 P P 20 49 02.0 +1.6
comp=Z,2.5nm,0.9s,baz=139,slow=2.4,SNR=18
CMAR PKKP **PKKPdf 21 05 58.4 +0.9**
comp=Z,0.3nm,0.5s,baz=296,slow=4.5,SNR=4.1
CMAR Chiang Mai Arr 94.69 288 P P 20 49 02.0 +1.6
CMAR pmax pmax
comp=Z,2.0nm,0.9s
534A Blanco 94.74 58 P P 20 49 00.4 0.0
baz=239
YMR Madison River 94.74 41 eP P 20 49 01.9 +1.6
comp=Z,95nm,1.6s
CMMT Chiang Mai 94.86 289 P P 20 49 02.5 +1.4
comp=Z,160nm,1.4s
CHTO Chiang Mai 94.86 289 P P 20 49 02.5 +1.3
comp=Z,64nm,0.8s
CHMT Chamberlain Mo 94.88 38 eP P 20 49 00.9 +0.1
YHH Holmes Hill 94.88 40 eP P 20 49 03.0 +2.0
comp=Z,37nm,1.3s
KMI Kunming 94.93 296 P P 20 49 03.6 +2.0
KMI pP sP 20 49 13.9 +7.8
KMI S S 21 00 16.0 -0.3
KMI pmax pmax
comp=Z,14nm,1.9s
Q24A Divide 94.93 48 P P 20 49 01.8 +0.4
baz=236
KTH Kantishna Hill 94.94 11 eP P 20 48 59.7 -0.8
comp=Z,19nm,1.1s
BOZ Bozeman (W) 94.94 39 P P 20 49 01.7 +0.7
baz=232
BOZ Bozeman (W) 94.94 39 eP P 20 49 01.3 +0.2
BOZ pmax pmax
comp=Z,59nm,1.4s
BOZ Bozeman (W) 94.94 39 eP P 20 49 01.3 +0.2
comp=Z,59nm,1.4s
TRF Thorofare Moun 94.95 11 eP P 20 49 00.3 -0.4
comp=Z,13nm,0.8s
AMTX Amarillo 95.01 53 P P 20 49 01.2 -0.4
baz=237
AMTX Amarillo 95.01 53 eP P 20 49 01.3 -0.2
comp=Z,63nm,1.8s
333A Richland Sprin 95.04 57 P P 20 49 01.0 -0.7
baz=238
ISCO Idaho Springs 95.10 47 P P 20 49 01.5 -0.6
baz=236
DHY Denali Highway 95.13 13 eP P 20 49 02.3 +0.8
comp=Z,43nm,1.8s
RND Reindeer 95.16 12 eP P 20 49 01.5 0.0
RND pmax pmax
comp=Z,30nm,1.0s
RND Reindeer 95.16 12 eP P 20 49 01.5 0.0
comp=Z,30nm,1.0s
ABTX Abilene, Hawle 95.24 55 P P 20 49 02.1 -0.5
baz=238
434A Burnet 95.30 58 P P 20 49 02.1 -0.8
baz=239
BPAW Bear Paw Mtn. 95.44 11 eP P 20 49 01.7 -1.0
comp=Z,6.2nm,1.8s
MCK McKinley 95.44 12 eP P 20 49 02.8 0.0
MCK pmax pmax
comp=Z,72nm,1.7s
MCK McKinley 95.44 12 eP P 20 49 02.8 0.0
comp=Z,72nm,1.7s
233A Rising Star 95.46 56 P P 20 49 03.1 -0.5
baz=238
N23A Red Feather La 95.52 46 P P 20 49 04.3 +0.3
baz=235
SEY Seymchan 95.56 346 ceP P 20 49 03.8 +0.6
334A Lometa 95.59 57 P P 20 49 04.3 0.0
baz=239
MENT Mentasta 95.75 14 eP P 20 49 05.0 +0.8
comp=Z,5.9nm,1.0s
133A Hamilton Ranch 95.76 56 P P 20 49 05.1 +0.2
baz=239
RLMT Red Lodge 95.98 41 P P 20 49 06.4 +0.5
baz=234
234A Clairette 96.01 57 P P 20 49 06.2 +0.1
baz=239
GCMT Greycliff 96.15 40 eP P 20 49 07.6 +1.1
K22A Casper 96.16 44 P P 20 49 06.5 -0.2
baz=235
K22A Casper 96.16 44 eP P 20 49 06.8 +0.1
Z33A Whitaker Ranch 96.22 55 P P 20 49 06.8 -0.2
baz=239
WRH Wood River Hil 96.27 12 eP P 20 49 06.3 -0.1
comp=Z,26nm,1.0s
DOT Dot Lake 96.31 14 eP P 20 49 07.1 +0.4
comp=Z,24nm,0.9s
HDA Harding Lake 96.42 12 eP P 20 49 07.0 -0.2
comp=Z,12nm,0.8s
X32A Elmer 96.44 54 P P 20 49 08.3 +0.3
baz=238
CCB Clear Creek Bu 96.48 12 eP P 20 49 06.6 -0.8
comp=Z,12nm,0.9s
COLA College 96.68 12 eP P 20 49 08.3 0.0
COLA pmax pmax
comp=Z,14nm,0.9s
COLA College 96.68 12 eP P 20 49 08.3 0.0
comp=Z,14nm,0.9s
MDM Murphy Dome 96.69 12 eP P 20 49 08.0 -0.5
comp=Z,17nm,1.0s
IL1 Eielson Array 96.77 12 eP P 20 49 07.0 -1.7
ILAR Eielson Array 96.77 12 P P 20 49 08.1 -0.6
comp=Z,4.8nm,0.8s,baz=218,slow=5.6,SNR=46
ILAR PKKPbc **PKKPbc 21 05 53.8 +0.3**
comp=Z,0.5nm,0.9s,baz=65,slow=4.3,SNR=4.5
ILB Eielson Array 96.77 12 eP P 20 49 08.5 -0.2
135A Vickery Place, 96.82 57 P P 20 49 09.6 -0.2
baz=239
W32A Sentinel 96.83 54 P P 20 49 09.9 +0.2
baz=239
HHC Hu-ho-hao-te 96.85 313 eP P 20 49 10.4 +0.6
HHC PP PP 20 53 09.6 +4.1
HHC S S 21 00 26.1 -6.0
HHC SS SS 21 07 06.3 -2.1
HHC pmax pmax
comp=Z,19nm,1.0s
CD2 Chengdu 97.05 301 eP P 20 49 11.8 +0.9
CD2 sP sP 20 49 16.4 +1.0
CD2 PP PP 20 53 07.7 +0.6
CD2 SKS SKSac 20 59 48.8 +0.5
CD2 S ScS 21 00 35.0 +0.6
CD2 sS sS 21 00 40.8 +1.2
CD2 SS SS 21 07 13.6 +2.2
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,6.2s
X34A Smith Ranch, M 97.56 55 P Pdif 20 49 13.9 +0.7
baz=239
DAWY Dawson 97.70 15 eP Pdif 20 49 13.3 +0.2
comp=Z,3.0nm,0.8s
EGAK Eagle 97.92 14 eP Pdif 20 49 15.5 +1.6
comp=Z,7.9nm,1.2s
BILL Bilibino 98.20 353 ⇓eP Pdif 20 49 15.1 0.0
BILL pmax pmax
comp=Z,4.0nm,0.6s
BILL Bilibino 98.20 353 eP Pdif 20 49 21.0 +5.8
comp=Z,15nm,0.4s
RSSD Black Hills 98.48 44 Pdiff Pdif 20 49 17.6 +0.3
baz=237
RSSD Black Hills 98.48 44 eP Pdif 20 49 17.4 +0.1
RSSD pmax pmax
comp=Z,20nm,0.9s
RSSD Black Hills 98.48 44 eP Pdif 20 49 17.4 +0.2
comp=Z,20nm,0.9s
W35A Tecumseh 98.52 54 Pdiff Pdif 20 49 17.1 -0.2
baz=240
T33A Patterson Ranc 98.53 52 Pdiff Pdif 20 49 17.5 +0.1
baz=239
LAO LASA Array 98.62 41 Pdiff Pdif 20 49 19.0 +1.3
baz=236
LZH Lanzhou 99.56 306 eP Pdif 20 49 23.3 +1.1
LZH pP sP 20 49 28.2 +1.5
LZH sP pP 20 49 30.8 +5.3
LZH pmax pmax
comp=Z,19nm,1.1s
MET Memphis--Engin 103.51 57 ePP PP 20 53 57.2 +1.2
YKA Yellowknife Ar 104.00 25 PKiKP PKiKP 20 53 58.1 -0.1
comp=Z,0.4nm,0.7s,baz=259,slow=1.6,SNR=5.1
YKA PKKP **PKKPdf 21 05 43.1 +1.0**
comp=Z,0.4nm,0.7s,baz=30,slow=3.4,SNR=3.0
TZTN Tazewell 108.81 58 ePP PP 20 54 42.0 +6.8
BLA Blacksburg 111.38 59 ePP PP 20 54 52.5 -1.3
WMQ Urumqi 114.01 308 ePKP PKPdf 20 54 15.1 -2.7
MK01 Makanchi Array 118.49 310 ePKPdf PKPdf 20 54 25.1 -1.2
MK31 Makanchi Array 118.50 310 ePKPdf PKPdf 20 54 25.5 -0.8
MK31 Makanchi Array 118.50 310 ePKPdf PKPdf 20 54 25.5 -0.8
MKAR Makanchi Array 118.50 310 PKP PKPdf 20 54 25.3 -1.0
comp=Z,2.3nm,0.8s,baz=82,slow=1.4,SNR=23
MKAR PP **PP 20 55 43.2 -0.6**
comp=Z,1.4nm,1.0s,baz=72,slow=4.7,SNR=2.1
MKAR PKKPbc **PKKPbc 21 04 40.5 -3.4**
comp=Z,1.1nm,0.9s,baz=231,slow=6.9,SNR=7.2
MKAR PKKP **PKKPdf 21 05 11.4 -2.7**
comp=Z,0.3nm,0.8s,baz=304,slow=3.3,SNR=2.3
ZAA0 Zalesovo Array 118.51 318 ePKPdf PKPdf 20 54 24.5 -1.5
ZAA0 ePKPdf **PKiKP 20 54 25.2 -0.8**
ZALV Zalesovo Beam 118.51 318 PKP PKPdf 20 54 24.9 -1.1
comp=Z,2.3nm,0.9s,baz=270,slow=0.3,SNR=11
BOSA Boshof 118.64 201 PKP PKPdf 20 54 27.4 0.0
comp=Z,3.0nm,0.9s,baz=45,slow=4.3,SNR=2.7
MAKZ Makanchi 118.71 310 ePKIKP PKPdf 20 54 25.8 -0.9
MAKZ Makanchi 118.71 310 ePKPdf PKPdf 20 54 25.8 -0.9
NVS Novosibirsk 119.59 319 iPKIKP PKPdf 20 54 27.7 -0.3
KSH Kashi 121.23 301 ePKP PKPdf 20 54 32.4 +0.5
KSH ePP **PP 20 56 03.0 +0.1**
KURK Kurchatov 121.66 314 ciPKIKP PKPdf 20 54 31.4 -0.8
KURK pmax pmax
comp=Z,89nm,1.7s
KURK Kurchatov 121.66 314 ePKPdf PKPdf 20 54 30.9 -1.2
KURBB Kurchatov Arra 121.70 314 PKP PKPdf 20 54 31.1 -1.1
comp=Z,4.9nm,0.8s,baz=106,slow=1.9,SNR=40
FRU Bishkek 122.97 304 PKIKP PKPdf 20 54 34.5 -0.5
AAK Ala-Archa 123.02 304 PKP PKPdf 20 54 34.5 -0.7
comp=Z,1.8nm,0.4s,baz=77,slow=0.3,SNR=8.1
AAK PKKPbc **PKKPbc 21 04 26.8 -0.2**
comp=Z,2.7nm,0.3s,baz=208,slow=4.2,SNR=5.5
EKS2 Erkin-Say 123.54 304 ePKIKP PKPdf 20 54 36.3 +0.1
EKS2 Erkin-Say 123.54 304 ePKPdf PKPdf 20 54 36.3 +0.1
SCHQ Schefferville 124.53 42 PKP PKPdf 20 54 36.4 -1.2
comp=Z,5.0nm,0.6s,baz=261,slow=13,SNR=4.2
LMN Caledonia Moun 124.91 53 ePKPdf PKPdf 20 54 38.2 -0.4
KBL Kabul 125.41 293 ePKIKP PKPdf 20 54 40.7 +0.5
KBL Kabul 125.41 293 ePKPdf PKPdf 20 54 40.7 +0.5
KKAR Karatay Array 125.98 304 ePKIKP PKPdf 20 54 40.5 -0.3
KKAR Karatay Array 125.98 304 ePKPdf PKPdf 20 54 40.5 -0.3
BVAR Borovoye Array 126.96 316 PKP PKPdf 20 54 42.1 -0.2
comp=Z,4.6nm,0.8s,baz=90,slow=3.0,SNR=26
BVAR Borovoye Array 126.96 316 PKIKP PKPdf 20 54 42.1 -0.2
BVAR pmax pmax
comp=Z,4.0nm,0.8s
BRVK Borovoye 127.02 316 ciPKIKP PKPdf 20 54 41.5 -0.9
BRVK pmax pmax
comp=Z,44nm,1.2s
BRVK Borovoye 127.02 316 ePKPdf PKPdf 20 54 42.5 +0.1
ZRNK Zerenda 127.79 316 ePKIKP PKPdf 20 54 43.4 -0.4
ZRNK Zerenda 127.79 316 ePKPdf PKPdf 20 54 43.4 -0.4
LSZ Lusaka 129.62 211 ePKIKP PKPdf 20 54 49.8 +1.1
LSZ Lusaka 129.62 211 ePKPdf PKPdf 20 54 49.8 +1.1
SPITS Spitsbergen Ar 130.99 357 PKP PKPdf 20 54 49.7 +0.4
comp=Z,11nm,0.7s,baz=193,slow=3.4,SNR=7.0
SUMG Summit 131.47 16 iP PKPdf 20 54 51.7 +0.9
comp=Z,15nm,1.1s
SUMG Summit 131.47 16 iPKIKP PKPdf 20 54 51.7 +0.9
SUMG pmax pmax
comp=Z,15nm,1.1s
DAG Danmarks Havn 131.54 7 iP PKPdf 20 54 49.3 -1.0
comp=Z,8.6nm,0.9s

DAG **Danmarks Havn** **131.54** 7 *e*PKIKP **PKPdf** **20 54 49.3 -1.0**
DAG pmax pmax
comp=Z,7.0nm,0.9s
ARU **Arti** **133.49 321** PKP **PKPdf** **20 54 53.0 -1.6**
comp=Z,1.9nm,0.6s,baz=277,slow=3.9,SNR=6.8
ARU **Arti** **133.49 321** *i* PKIKP **PKPdf** **20 54 52.9 -1.6**
ARU 20 57 20.2
ARU SS SS 21 14 57.7 -10
ARU **Arti** **133.49 321** PKP **PKPdf** **20 54 53.0 -1.6**
GEYT **Alibeck** **134.69 296** PKP **PKPdf** **20 54 57.9 +0.4**
comp=Z,1.8nm,0.7s,baz=282,slow=2.7,SNR=5.4
AKTO **Aktyubinsk** **134.75 313** PKP **PKPdf** **20 54 56.9 -0.2**
comp=Z,3.2nm,0.9s,baz=105,slow=3.1,SNR=7.3
KMBO **Kilima Mbogo** **135.88 232** PKP **PKPdf** **20 55 01.2 +0.5**
comp=Z,1.0nm,0.3s,baz=0.0,slow=19,SNR=4.3
H10S3 **ASCENSION HYDR** **137.73 152** T T 23 30 41.0
baz=204,slow=75,SNR=10
H10S2 **ASCENSION HYDR** **137.73 152** T T 23 30 41.0
baz=204,slow=75,SNR=7.5
H10S1 **ASCENSION HYDR** **137.75 152** T T 23 30 42.2
baz=204,slow=75,SNR=12
ARA0 **ARCESS Array S** **138.12 349** *e*PKPdf **PKPdf** **20 55 02.6 -0.2**
ARCES **ARCESS Array B** **138.12 349** PKhKP PKPpre 20 54 57.7
comp=Z,5.7nm,0.9s,baz=22,slow=4.3,SNR=3.6
ARCES PKP **PKiKP** **20 55 02.7 -2.1**
comp=Z,3.4nm,0.7s,baz=11,slow=1.8,SNR=3.5
H10N3 **ASCENSION HYDR** **138.80 152** T T 23 32 06.6
baz=203,slow=74,SNR=15
H10N1 **ASCENSION HYDR** **138.81 152** T T 23 32 01.1
baz=203,slow=74,SNR=13
H10N2 **ASCENSION HYDR** **138.82 152** T T 23 32 05.9
baz=203,slow=74,SNR=15
KLMR **Klimovskoe** **140.79 333** *e*PKIKP **PKPdf** **20 55 05.0 -2.9**
KLMR pmax pmax
comp=Z,21nm,1.4s
GROC **Groznyy** **144.00 304** *e*PKIKP **PKPdf** **20 55 12.2 -2.0**
GROC pmax pmax
comp=Z,66nm,1.4s
MOS **Moscow** **144.56 327** *e*PKIKP PKPbc 20 55 12.3 -1.1
MOS pmax pmax
comp=Z,60nm,1.0s
FIA1 **FINESS Array S** **144.91 342** *e*PKPdf **PKPdf** **20 55 13.3 -1.9**
FINES **FINESS Array B** **144.91 342** PKP **PKPdf** **20 55 13.3 -1.9**
comp=Z,14nm,0.5s,baz=66,slow=2.8,SNR=75
TBLG **Delisi** **144.97 301** P **PKPdf** **20 55 16.2 +0.2**
TBLG **Delisi** **144.97 301** *e*PKIKP **PKPdf** **20 55 16.1 +0.2**
GNI **Garni** **145.13 299** PKPbc **PKPdf** **20 55 16.1 -0.3**
comp=Z,25nm,1.1s,baz=245,slow=1.5,SNR=23
GNI **Garni** **145.13 299***c**e*PKIKP **PKPdf** **20 55 15.6 -0.9**
GNI pmax pmax
comp=Z,316nm,1.7s
GNI **Garni** **145.13 299** *e*PKPbc **PKPdf** **20 55 16.5 +0.1**
OBN **Obninsk** **145.41 327** PKPbc **PKPdf** **20 55 15.7 -0.5**
comp=Z,43nm,0.5s,baz=61,slow=0.6,SNR=48
OBN **Obninsk** **145.41 327**⇓ *i* PKP2 **PKPbc** **20 55 13.1 -3.0**
OBN pmax pmax
comp=Z,328nm,1.8s
OBN **Obninsk** **145.41 327** *e*PKPbc **PKPdf** **20 55 16.0 -0.2**
ZEI **Tsey** **145.44 303** *i* PKP2 **PKPbc** **20 55 14.2 -2.8**
ZEI pmax pmax
comp=Z,184nm,1.4s
NCK **Nalchik** **145.54 305**⇑ *i* PKIKP **PKPab** **20 55 17.7 +0.4**
GOF **Gofitskoye** **145.61 308**⇑ *i* PKIKP **PKPab** **20 55 17.6 +0.1**
GOF pmax pmax
comp=Z,191nm,1.9s
ONI **Oni** **145.80 303** P **PKPab** **20 55 18.5 +0.2**
ONI **Oni** **145.80 303** *e*PKP2 **PKPab** **20 55 18.5 +0.2**
BGD **Bogdanovka** **145.88 301** P **PKPab** **20 55 19.6 +0.8**
AKH **Akhalkalaki** **145.94 301**⇓ *i* P **PKPab** **20 55 19.2 +0.1**
EAK **Akyaka** **145.94 300** *i* P **PKPab** **20 55 18.9 -0.2**
KBZ **Khabaz** **146.00 305** PKPbc **PKPab** **20 55 18.5 -0.4**
comp=Z,4.7nm,0.7s,baz=60,slow=3.1,SNR=24
VSR **Storozhevoye** **146.00 319** *e*PKP2 **PKPab** **20 55 17.9 -0.8**
VSR pmax pmax
comp=Z,70nm,0.8s
KIV **Kislovodsk** **146.10 306** *e*PKP2 **PKPab** **20 55 18.0 -1.5**
KIV pmax pmax
comp=Z,29nm,1.0s
KIV **Kislovodsk** **146.10 306** *e*PKPdf **PKPab** **20 55 18.7 -0.7**
EPOS **Posof** **146.50 301** *i* P **PKPab** **20 55 20.8 -0.3**
TUTA **Tutak** **146.68 298** *i* P **PKPab** **20 55 21.6 -0.4**
CHVG **Ch'k'valeri** **146.77 304** P **PKPab** **20 55 21.1 -0.9**
VSU **Vasula** **147.11 338***c**i* PKP2 **PKPab** **20 55 20.5 -2.2**
VSU pmax pmax
comp=Z,288nm,1.7s
ARTV **Artvin** **147.14 301** *i* P **PKPab** **20 55 22.8 -1.0**
HOMI **Horasan** **147.31 299** *i* P **PKPab** **20 55 23.4 -1.1**
DBOC **Borcka** **147.31 301** *i* P **PKPab** **20 55 22.6 -1.6**
ERZM **Erzurum** **147.74 299** *i* P **PKPab** **20 55 25.1 -1.1**
NC303 **NORSAR Array S** **147.96 353** *e*PKPdf **PKPbc** **20 55 22.5 -0.9**
NC204 **NORSAR Array S** **147.97 354** *e*PKPbc **PKPab** **20 55 23.6 -2.5**
BNGL **BINGOL** **148.00 297** *i* P **PKPab** **20 55 26.2 -1.0**
NC405 **NORSAR Array S** **148.03 353** *e*PKPdf **PKPab** **20 55 23.3 -3.1**
NB201 **NORSAR Array S** **148.14 353** *e*PKPdf **PKPbc** **20 55 23.2 -0.7**
NB2 **NORSAR Subarra** **148.15 353** PKP **PKPbc** **20 55 22.7 -1.3**
comp=Z,65nm,1.4s,baz=10,slow=3.2
NB2 **NORSAR Subarra** **148.15 353** PKP **PKPbc** **20 55 22.7 -1.3**
baz=10,slow=3.2
NOA **NORSAR Array B** **148.15 353** PKP **PKPdf** **20 55 20.3 -0.5**
comp=Z,18nm,0.8s,baz=14,slow=4.4,SNR=31
NOA PKPbc **PKiKP** **20 55 23.3 -2.4**
comp=Z,13nm,0.9s,baz=6.3,slow=4.0,SNR=30
NBO02 **NORSAR Array S** **148.18 354** *e*PKPdf **PKPdf** **20 55 20.4 -0.3**
NBO00 **NORSAR Array S** **148.21 354** *e*PKPdf **PKPbc** **20 55 23.1 -1.0**
NAO01 **NORSAR Array S** **148.38 353** *e*PKPdf **PKPbc** **20 55 23.3 -1.2**
KOPT **Kop Dagi** **148.38 299** *i* P **PKPab** **20 55 26.8 -2.0**
NC602 **NORSAR Array S** **148.42 353** *e*PKPdf **PKPbc** **20 55 23.6 -1.0**
TNCL **Tunceli-Merkez** **149.23 298** *i* P **PKPab** **20 55 29.4 -2.7**
KELT **Kelkit** **149.31 300** *i* P **PKPbc** **20 55 28.5 +0.7**
IZAR **Zarasai** **149.38 335** *e*P **PKPbc** **20 55 26.1 -1.1**
IZAR IAmb IAmb 20 55 28.4
comp=Z,52nm,1.6s
ANN **Anapa** **149.51 309** *e*PKIKP **PKPdf** **20 55 21.9 -1.4**
ANN pmax pmax
comp=Z,52nm,1.3s
IDID **Didziasalis** **149.52 334** *e*P **PKPbc** **20 55 26.3 -1.2**
IDID IAmb IAmb 20 55 28.6
comp=Z,39nm,1.5s
ISAL **Salakas** **149.56 335** *e*P **PKPbc** **20 55 26.9 -0.7**
ISAL IAmb IAmb 20 55 28.8
comp=Z,63nm,1.7s
MICGM **Minsk** **149.66 332** *e* **PKPdf** **20 55 23.0 -0.3**
MNK **Minsk** **149.66 332** *e*PKHKP **PKPdf** **20 55 23.0 -0.3**
KONO **Kongsberg** **149.68 354***c**i* PKP2 **PKPbc** **20 55 27.9 +0.1**
KONO pmax pmax
comp=Z,658nm,1.7s
KONO **Kongsberg** **149.68 354** *e*PKPbc **PKPbc** **20 55 27.4 -0.4**
NACGM **Naroch** **149.81 333** *e* **PKPbc** **20 55 27.0 -1.3**
KEMA **Kemaliye** **150.02 298** *i* P **PKPbc** **20 55 30.4 +0.9**
CUKAN **kangal_SIVAS** **150.80 298** *i* P **PKPbc** **20 55 32.1 +0.7**
HCB **Kahramanmara¯** **151.49 295** *i* P **PKPbc** **20 55 33.1 +0.2**
AKASG **Malin Array Be** **151.60 325** PKPbc **PKPbc** **20 55 32.0 -0.6**
comp=Z,17nm,0.6s,baz=46,slow=3.0,SNR=61
AKASG PP **PP** **20 59 08.2 -4.1**
comp=Z,1.0nm,0.4s,baz=51,slow=6.0,SNR=7.8
AKBB **Malin Array Si** **151.60 325** *e*PKIKP **PKPbc** **20 55 28.3 -4.3**
AKBB *e* 20 55 41.6
AKBB **Malin Array Si** **151.60 325** *e*PKPdf **PKPbc** **20 55 28.3 -4.3**
AKBB *e*PKPab **PKPab** **20 55 41.6 +0.4**
KIEV **Kiev** **151.61 325** *e*PKIKP **PKPbc** **20 55 31.6 -1.1**
KIEV **Kiev** **151.61 325** *e*PKPbc **PKPbc** **20 55 31.6 -1.1**
AK11 **Malin Array Si** **151.65 325** *e*PKPbc **PKPbc** **20 55 31.9 -0.8**
SIM **Simferopol'** **151.67 311** *i* PKIKP **PKPbc** **20 55 33.8 +0.8**
SIM pmax pmax
comp=Z,27nm,1.2s
CUSAR **Sarkisla-SIVAS** **151.72 299** *i* P **PKPbc** **20 55 34.1 +0.6**
SUW **Suwalki** **151.84 336** *e*PKP **PKPbc** **20 55 33.0 -0.1**
SUW **Suwalki** **151.84 336** *e*PKIKP **PKPbc** **20 55 33.0 -0.1**
ANDN **Andirin** **151.91 295** *i* P **PKPab** **20 55 34.4 +0.4**
BSD **Bornholm Skovb** **153.27 346** *i* P **PKPbc** **20 55 36.3 +0.1**
BSD **Bornholm Skovb** **153.27 346** *e*PKIKP **PKPbc** **20 55 36.3 +0.1**
SORM **Soroca** **153.61 321**⇓ P **PKPbc** **20 55 36.4 -0.8**
BR131 **Keskin Array S** **153.62 301** *e*PKPbc **PKPbc** **20 55 37.6 -0.2**
BRTR **Keskin Array B** **153.62 301** PKP **PKPdf** **20 55 28.5 -1.5**
comp=Z,3.4nm,1.3s,baz=260,slow=0.8,SNR=5.7
BRTR PKPbc **PKPbc** **20 55 37.6 -0.2**
comp=Z,2.8nm,0.9s,baz=144,slow=4.6,SNR=16
BRTR PP **PP** **20 59 21.0 -3.8**
comp=Z,0.9nm,0.9s,baz=113,slow=3.7,SNR=3.4
KIS **Kishinev** **153.99 319** *e*PKP **PKPbc** **20 55 36.0 -2.1**
KIS **Kishinev** **153.99 319** *e*PKIKP **PKPbc** **20 55 36.0 -2.1**
ANTO **Ankara** **154.22 301** *e*PKIKP **PKPbc** **20 55 40.0 +1.1**
ANTO **Ankara** **154.22 301** *e*PKPbc **PKPbc** **20 55 40.0 +1.1**
BR231 **Keskin MP Arra** **154.24 301** *e*PKPdf **PKPdf** **20 55 29.6 -1.2**

GKP **Gorka Klasztor** **154.38 341** *e*PKP **PKPdf** **20 55 30.9 +0.5**
GKP **Gorka Klasztor** **154.38 341** *e*PKIKP **PKPdf** **20 55 30.9 +0.5**
CSS **Mathiatis** **154.59 290** *e*PKPbc **PKPbc** **20 55 39.4 -0.4**
LVV **L'vov** **154.67 329** *e*PKIKP **PKPdf** **20 55 29.9 -1.0**
LIC **Lamto** **155.30 158** *e*P **PKPab** **20 55 58.5 +0.7**
comp=Z,44nm,1.6s
KWP **Kalwaria Pacla** **155.40 330** *e*PKP **PKPdf** **20 55 31.8 -0.2**
KWP **Kalwaria Pacla** **155.40 330** *e*PKIKP **PKPdf** **20 55 31.8 -0.2**
TESR **Tescani** **155.50 320**⇑ *i* P **PKPab** **20 55 57.7 -0.2**
KIC **Kosan Boka** **155.52 159** *e*P **PKPab** **20 55 58.0 -0.7**
comp=Z,77nm,1.3s
BUR08 **Bucovina Ar. S** **155.58 324** *e*PKPdf **PKPdf** **20 55 33.4 +1.0**
BUR08 *e*PKPab **PKPab** **20 55 58.8 +0.4**
BURAR **Bucovina Array** **155.59 323**⇓ *i* P **PKPdf** **20 55 35.1 +2.7**
TIC **Toumodi** **155.69 158** *e*P **PKPab** **20 56 00.0 +0.5**
TLB **Topalu** **155.72 315**⇓ *i* P **PKPdf** **20 55 36.3 +3.8**
KOLS **Kolonicke sedl** **156.11 329** *e*PKIKP **PKPdf** **20 55 33.3 +0.4**
KOLS *e* 20 55 59.9
KOLS **Kolonicke sedl** **156.11 329** *e*PKP **PKPdf** **20 55 33.3 +0.4**
KOLS *e* 20 55 59.9
KOLS *e* 21 24 09.8
OJC **Ojcow** **156.13 334** *e*PKP **PKPdf** **20 55 33.1 +0.2**
OJC **Ojcow** **156.13 334** *e*PKIKP **PKPdf** **20 55 33.1 +0.2**
STHS **Stebnicka Huta** **156.19 331** *e*PKIKP **PKPdf** **20 55 33.1 0.0**
STHS **Stebnicka Huta** **156.19 331** *e*PKP **PKPdf** **20 55 33.0 0.0**
UZH **Uzhgorod** **156.32 329** *e*PKIKP **PKPdf** **20 55 32.3 -0.9**
UZH *e* 20 55 41.3
UZH *e* 20 55 59.5
MLR **Muntele Rosu** **156.49 319**⇑ *i* P **PKPdf** **20 55 30.0 -3.7**
CRVS **Cervenica-Dubn** **156.49 330** *e*PKIKP **PKPdf** **20 55 33.5 +0.1**
CRVS **Cervenica-Dubn** **156.49 330** *e*PKP **PKPdf** **20 55 33.5 +0.1**
DOPR **Dopca** **156.52 320**⇓ *i* P **PKPab** **20 56 02.4 0.0**
NIE **Niedzica** **156.58 332** *e*PKP **PKPdf** **20 55 33.9 +0.3**
NIE **Niedzica** **156.58 332** *e*PKIKP **PKPdf** **20 55 33.9 +0.3**
KSP **Ksiaz** **156.80 340** *e*PKP **PKPdf** **20 55 32.9 -0.9**
KSP **Ksiaz** **156.80 340** *e*PKIKP **PKPdf** **20 55 32.9 -0.9**
VOIR **157.03 319**⇑ *i* P **PKPdf** **20 55 34.6 +0.3**
OKC **Ostrava-Krasne** **157.06 336** *e*PKPDF **PKPdf** **20 55 34.1 0.0**
OKC *e*PKPab **PKPab** **20 56 04.4 0.0**
OKC **Ostrava-Krasne** **157.06 336** *e*PKIKP **PKPdf** **20 55 34.1 0.0**
LANS **Liptovska Anna** **157.12 333** *e*PKIKP **PKPdf** **20 55 36.2 +1.9**
LANS **Liptovska Anna** **157.12 333** *e*PKP **PKPdf** **20 55 36.2 +1.9**
LANS *e* 20 56 04.9
UPC **Upice** **157.18 340** *e*PKPDF **PKPdf** **20 55 34.3 +0.1**
UPC *e*PKPAB **PKPab** **20 56 05.6 +0.6**
UPC **Upice** **157.18 340** *e*PKIKP **PKPdf** **20 55 34.3 +0.1**
DPC **Dobruska-Polom** **157.23 339** *e*PKPDF **PKPdf** **20 55 34.5 +0.1**
DPC *e*PKPAB **PKPab** **20 56 05.6 +0.4**
DPC **Dobruska-Polom** **157.23 339** *e*PKIKP **PKPdf** **20 55 34.5 +0.1**
CLL **Collm** **157.24 345** *e*PKPdf **PKPdf** **20 55 33.0 -1.3**
comp=Z,26nm,1.7s
CLL *ep*PKPdf **pPKPdf** **20 55 45.0 +7.3**
CLL ⇑ *i* PKPab **PKPab** **20 56 04.2 -1.0**
comp=Z,26nm,1.4s
CLL *e*PP **PP** **20 59 44.0 +0.5**
CLL **Collm** **157.24 345**⇑ *e*PKIKP **PKPdf** **20 55 33.0 -1.3**
CLL pmax pmax
comp=Z,26nm,1.7s
CLL pmax pmax
comp=Z,26nm,1.4s
KRLC **Kraliky** **157.32 338** *e*PKPDF **PKPdf** **20 55 34.1 -0.4**
KRLC *e*PKPAB **PKPab** **20 56 05.4 -0.2**
KRLC **Kraliky** **157.32 338** *e*PKIKP **PKPdf** **20 55 34.1 -0.4**
MORC **Moravsky Berou** **157.32 337** *e*PKIKP **PKPdf** **20 55 34.8 +0.3**
MORC **Moravsky Berou** **157.32 337** *e*PKPdf **PKPdf** **20 55 34.8 +0.3**
BRG **Berggiesshubel** **157.42 343** *e*PKP **PKPdf** **20 55 33.6 -0.9**
comp=Z,46nm,2.1s
BRG *i* 20 56 05.5
comp=Z,50nm,1.7s
BRG *e* 21 07 33.9
comp=Z,3.0nm,1.1s
BRG **Berggiesshubel** **157.42 343** *e*PKIKP **PKPdf** **20 55 33.6 -0.9**
BRG pmax pmax
comp=Z,46nm,2.1s
PVCC **Panska Ves** **157.58 342** *e*PKPDF **PKPdf** **20 55 34.4 -0.3**
PVCC *e*PKPAB **PKPab** **20 56 07.2 +0.6**
PVCC **Panska Ves** **157.58 342** *e*PKIKP **PKPdf** **20 55 34.4 -0.3**
VYHS **Vyhne** **157.90 333** *e*PKIKP **PKPdf** **20 55 34.8 -0.4**
VYHS *e* 20 56 07.6
VYHS *e* 20 59 47.9
VYHS **Vyhne** **157.90 333** *e*PKP **PKPdf** **20 55 34.8 -0.4**
VYHS *e* 20 56 07.6
VYHS *e*PP **PP** **20 59 47.9 +0.5**
VRAC **Vranov** **158.04 337**⇓ *i* P **PKPdf** **20 55 29.9 -5.5**
GOPC **GO Pecny, Ondr** **158.07 341** *e*PKPAB **PKPab** **20 56 08.2 -0.6**
GOPC **GO Pecny, Ondr** **158.07 341** *e*PKP2 **PKPab** **20 56 08.2 -0.6**
PRU **Pruhonice** **158.07 341** *e*PKPDF **PKPdf** **20 55 35.1 -0.3**
PRU *e*PKPAB **PKPab** **20 56 08.8 0.0**
PRU *ex* x 20 56 30.6
PRU **Pruhonice** **158.07 341** *e*PKIKP **PKPdf** **20 55 35.1 -0.3**
PRU *e* 20 56 08.8
NKC **Novy Kostel** **158.38 345** *e*PKPDF **PKPdf** **20 55 36.7 +0.9**
NKC *e*PKPAB **PKPab** **20 56 10.2 +0.1**
NKC **Novy Kostel** **158.38 345** *e*PKIKP **PKPdf** **20 55 36.7 +0.9**
NKC *e* 20 56 10.2
TREC **Trest** **158.41 339** *e*PKPDF **PKPdf** **20 55 35.5 -0.3**
TREC *e*PKPAB **PKPab** **20 56 09.9 -0.4**
TREC **Trest** **158.41 339** *e*PKIKP **PKPdf** **20 55 35.5 -0.3**
TREC *e* 20 56 09.9
BZS **Buzias** **158.78 324**⇓ *i* P **PKPdf** **20 55 36.0 -0.3**
MEM **Membach** **158.93 356** PKPab **PKPab** **20 56 12.6 +0.1**
SNF **Seneffe** **159.09 359** PKPab **PKPab** **20 56 19.9 +0.8**
KHC **Kasperske Hory** **159.12 342** *e*PKPDF **PKPdf** **20 55 35.3 -1.4**
KHC *e*PKPAB **PKPab** **20 56 13.5 +0.1**
KHC **Kasperske Hory** **159.12 342** *e*PKIKP **PKPdf** **20 55 35.3 -1.4**
KHC *e* 20 56 13.5
BCLA **Clavier** **159.15 357** PKPab **PKPab** **20 56 13.1 -0.3**
GERES **GERESS Array B** **159.34 341** PKP **PKPdf** **20 55 36.0 -1.0**
comp=Z,0.1nm,0.3s,baz=90,slow=1.3,SNR=5.3
GERES PKPab **PKPab** **20 56 14.6 +0.1**
comp=Z,0.9nm,0.8s,baz=20,slow=4.3,SNR=5.7
GERES PP **PP** **20 59 52.4 -2.7**
comp=Z,0.3nm,0.6s,baz=63,slow=4.8,SNR=2.9
GEA0 **GERESS Array S** **159.35 341** *e*PKPdf **PKPdf** **20 55 36.0 -1.1**
GEA0 *e*PKPab **PKPab** **20 56 14.2 -0.2**
CONA **Conrad Observa** **159.48 337** *i* PKPab **PKPab** **20 56 15.3 +0.2**
comp=Z,6.3nm,1.0s,SNR=6.4
DOU **Dourbes** **159.50 359** PKPab **PKPab** **20 56 14.7 -0.2**
VTS **Vitosha** **159.75 315** *e*PKP2 **PKPab** **20 56 17.0 +0.4**
VTS **Vitosha** **159.75 315** *e*PKPab **PKPab** **20 56 16.9 +0.4**
MOA **Molln** **160.07 339** *e*PKPdf **PKPdf** **20 55 36.6 -1.3**
comp=Z,5.6nm,1.3s
ARSA **Arzberg** **160.18 336** *i* PKPdf **PKPdf** **20 55 37.0 -1.0**
comp=Z,5.2nm,1.4s
SOKA **Soboth** **160.84 336** *i* PKPdf **PKPdf** **20 55 37.6 -1.2**
comp=Z,8.7nm,1.9s
SOKA *e*PKPab **PKPab** **20 56 20.5 -0.6**
comp=Z,14nm,1.6s,SNR=6.7
LAST **Lasithi** **160.95 293** *e*PKPab **PKPab** **20 56 22.7 +0.7**
KBA **Koelnbreinsper** **161.04 340** *i* PKPdf **PKPdf** **20 55 38.1 -1.1**
comp=Z,4.5nm,1.5s
OBKA **Obir** **161.16 337** *i* PKPdf **PKPdf** **20 55 38.3 -0.9**
comp=Z,2.8nm,0.9s
RETA **Reutte** **161.34 345** *i* PKPdf **PKPdf** **20 55 38.9 -0.4**
comp=Z,0.1nm,0.2s
WTTA **Wattenberg** **161.34 343** *i* PKPdf **PKPdf** **20 55 39.4 0.0**
comp=Z,8.3nm,1.1s
MYKA **Terra Mystica** **161.35 339** *e*PKPdf **PKPdf** **20 55 39.9 +0.6**
comp=Z,6.9nm,1.7s
MOTA **Moosalm** **161.40 344** *i* PKPdf **PKPdf** **20 55 39.7 +0.3**
comp=Z,7.6nm,1.1s
ABTA **Abfaltersbach** **161.58 341** *e*PKPdf **PKPdf** **20 55 38.3 -1.2**
comp=Z,8.2nm,1.6s
DAVA **Damuels** **161.71 347** *e*PKPdf **PKPdf** **20 55 39.5 -0.3**
comp=Z,10nm,1.1s
FETA **Feichten** **161.79 345** *e*PKPdf **PKPdf** **20 55 39.7 -0.2**
comp=Z,16nm,1.4s,SNR=6.5
FUORN **Ofenpass-Fuorn** **162.27 345** *e*PKPdf **PKPdf** **20 55 40.4 -0.1**
FUORN *e*PKPab **PKPab** **20 56 28.3 +0.8**
TUE **Stuetta** **162.60 347** *e*PKPdf **PKPdf** **20 55 40.5 -0.3**
TOA0 **Torodi Ar. Sit** **163.53 172** *e*PKPab **PKPab** **20 56 32.3 -1.1**
TORD **Torodi Ar. Bea** **163.53 172** PKP **PKPdf** **20 55 42.1 -0.2**
comp=Z,5.5nm,1.2s,baz=124,slow=0.4,SNR=7.7
TORD PKPab **PKPab** **20 56 34.1 +0.8**
comp=Z,28nm,1.1s,baz=185,slow=4.0,SNR=24
TORD PP **PP** **21 00 16.8 -0.5**
comp=Z,1.4nm,0.9s,baz=137,slow=11,SNR=2.8
PBRG **Braganca** **165.06 32** *e*PKPab **PKPab** **20 56 39.5 -0.2**
PVIS **Viseu** **165.30 38** *e*PKPab **PKPab** **20 56 41.0 +0.2**
PCBR **Castelo Branco** **166.14 39** *e*PKPab **PKPab** **20 56 43.7 -0.8**
PMRV **Marv??o** **166.47 40** *e*PKPab **PKPab** **20 56 45.3 -0.7**
EVO **Evora** **166.69 45** *e*PKPab PKPab 20 56 38.8 -8.2

PAB **San Pablo** **167.96 32** *e*PKIKP **PKPdf** **20 55 46.5 +1.2**
PAB **San Pablo** **167.96 32** *e*PKPdf **PKPdf** **20 55 46.5 +1.2**
ESDC **Sonseca Array** **168.03 31** PKP **PKPdf** **20 55 46.5 +1.2**
comp=Z,1.9nm,0.9s,baz=329,slow=1.7,SNR=11
ESDC PKPab **PKPab** **20 56 52.5 -0.3**
comp=Z,2.6nm,0.8s,baz=316,slow=4.9,SNR=9.8
ESDC PP **PP** **21 00 41.2 +0.1**
comp=Z,0.2nm,0.4s,baz=340,slow=8.1,SNR=4.2
ES19 **SONSECA Array** **168.04 30** *e*PKPdf **PKPdf** **20 55 46.5 +1.1**
ES19 *e*PKPab **PKPab** **20 56 52.6 -0.3**

IDC 06 20:44:10.5±2.9,28°.95S×176°.17W,h0km,mb3.5/2,
mb1 3.8/2,mb1mx3.5/30,mbtmp3.5/2,Error ellipse:
s-maj=115.8km s-min=49.6km az=19.0,Kermadec
Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.56**	**258**	Pn		Pg		20 44 43.0	+2.7
	92nm,0.3s,baz=120,slow=20,SNR=1.8								
RAO				Sn		Sg		20 45 04.4	+3.9
	126nm,0.3s,baz=90,slow=20,SNR=2.0								
ASAR	**Alice Springs**	**44.80**	**265**	P		P		20 52 25.7	-0.7
	0.3nm,0.5s,baz=101,slow=6.5,SNR=5.3								
WRA	**Warramunga Arr**	**45.66**	**270**	P		P		20 52 33.5	+0.3
	0.4nm,0.6s,baz=109,slow=7.9,SNR=5.9								
FINES	**FINESS Array B**	**144.30**	**342**	PKP		PKPdf		21 03 48.7	+0.9
	0.6nm,0.8s,baz=62,slow=3.6,SNR=3.9								
TORD	**Torodi Ar. Bea**	**164.15**	**172**	PKPab		PKPab		21 05 08.8	-1.0
	0.5nm,0.6s,baz=183,slow=4.3,SNR=2.7								

IDC 06 20:47:12.2±3.0,28°.05S×176°.87W,h0km,mb3.7/3,
mb1 3.9/3,mb1mx3.6/31,mbtmp3.7/3,Error ellipse:
s-maj=75.1km s-min=29.3km az=118.0,Kermadec
Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.52**	**217**	Pn		Pn		20 47 39.9	-0.8
	346nm,0.3s,baz=90,slow=11,SNR=7.5								
RAO				Sn		Sn		20 48 02.7	+1.6
	291nm,0.3s,baz=108,slow=19,SNR=2.5								
STKA	**Stephens Creek**	**36.03**	**254**	P		P		20 54 17.1	+1.6
	1.4nm,0.7s,baz=100,slow=12,SNR=3.1								
ASAR	**Alice Springs**	**44.28**	**264**	P		P		20 55 24.4	+0.4
	0.6nm,0.7s,baz=97,slow=7.9,SNR=7.1								
WRA	**Warramunga Arr**	**45.06**	**269**	P		P		20 55 28.5	-1.7
	0.7nm,0.3s,baz=109,slow=8.1,SNR=5.7								
FINES	**FINESS Array B**	**143.25**	**342**	PKP		PKPdf		21 06 47.7	-0.1
	0.5nm,0.5s,baz=27,slow=1.6,SNR=3.9								
AKASG	**Malin Array Be**	**149.97**	**326**	PKPbc		PKPbc		21 07 03.9	-0.4
	0.8nm,0.5s,baz=44,slow=3.5,SNR=2.7								

*NEIC **06** 20:52:16.5±0.5,28°.94S×176°.25W,h10km,mb4.9/5,Error*
ellipse: s-maj=15.8km s-min=13.0km az=174.0
*IDC **06** 20:52:23.4±3.3,29°.00S×176°.46W,h59km±26km,mb4.0/8,*
mb1 4.2/8,mb1mx3.9/31,mbtmp4.2/8,Error ellipse:
s-maj=31.4km s-min=25.9km az=175.0
ISC 06 20:52:20.7±0.7,29°.1S±0°.1×176°.17W±0°.09,h36km,n27,
σ1s53/26,mb4.4/13,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.54**	**262**	P		**Pn**		**20 52 45.2**	**-0.4**
	336nm,0.3s,baz=93,slow=8.9,SNR=9.0								
RAO				S		**Sn**		**20 53 07.3**	**+2.8**
	882nm,0.3s,baz=91,slow=23,SNR=8.0								
URZ	**Urewera**	**10.76**	**210**	P		Pn		20 54 46.4	-5.7
	1.1nm,0.3s,baz=335,slow=19,SNR=2.9								
URZ				S		Sn		20 56 40.4	-11
	6.2nm,0.3s,baz=342,slow=20,SNR=3.2								
DZM	**Mont Dzumac**	**17.15**	**290**	P		**P**		**20 56 20.8**	**+1.8**
	0.4nm,0.3s,baz=130,slow=17,SNR=3.9								
RPZ	**Rata Peaks**	**17.86**	**212**	P		Pn		20 56 19.7	-6.5
	0.6nm,0.3s,baz=45,slow=16,SNR=3.0								
CTA	**Charters Tower**	**35.20**	**276**	P		**P**		**20 59 09.3**	**-2.4**
	2.8nm,0.6s,baz=97,slow=9.3,SNR=6.2								
CTAO	**Charters Tower**	**35.20**	**276**	*e*P		**P**		**20 59 10.7**	**-0.9**
	15nm,0.7s								
STKA	**Stephens Creek**	**36.35**	**255**	P		**P**		**20 59 20.0**	**-1.4**
	5.8nm,0.8s,baz=98,slow=11,SNR=5.3								
ASAR	**Alice Springs**	**44.80**	**265**	P		**P**		**21 00 29.4**	**-1.9**
	2.7nm,0.6s,baz=101,slow=6.4,SNR=45								
WRAB	**Tennant Creek**	**45.66**	**270**	*e*P		**P**		**21 00 36.0**	**-2.1**
	7.2nm,0.8s								
WRA	**Warramunga Arr**	**45.67**	**270**	P		**P**		**21 00 36.4**	**-1.9**
	7.4nm,0.6s,baz=109,slow=7.9,SNR=38								
SBA	**Scott Base**	**49.51**	**185**	*e*P		**P**		**21 01 08.5**	**+1.3**
VNDA	**Vanda**	**49.60**	**186**	P		**P**		**21 01 08.7**	**+0.7**
	1.4nm,1.0s,baz=5.4,slow=7.0,SNR=5.9								
FITZ	**Fitzroy Crossi**	**53.98**	**268**	P		**P**		**21 01 39.4**	**-2.0**
	4.0nm,1.0s,baz=112,slow=11,SNR=6.9								
CASY	**Casey**	**57.07**	**207**	*e*P		**P**		**21 02 02.8**	**-0.1**
	1.3nm,0.7s								
QSPA	**South Pole Qui**	**61.06**	**180**	*e*P		**P**		**21 02 30.9**	**+0.1**
	63nm,1.7s								
TXAR	**Lajitas Array**	**90.32**	**56**	P		**P**		**21 05 18.2**	**-0.1**
	0.8nm,1.0s,baz=

CASY	Casey	56.74	208	*e*P		P	21 07 40.9	+0.6	
	1.5nm,0.9s								
QSPA	South Pole Qui	60.68	180	*e*P		P	21 08 09.2	+1.3	
	46nm,0.9s								
MAW	Mawson	73.77	200	P		P	21 09 32.0	+1.4	
	2.7nm,0.7s,baz=128,slow=12,SNR=4.5								
MJAR	Matsushiro Arr	78.37	324	P		P	21 09 56.9	-0.3	
	1.1nm,0.5s,baz=154,slow=5.6,SNR=7.0								
KSRS	Korea Array	84.66	319	P		P	21 10 31.6	+1.2	
	2.3nm,0.9s,baz=139,slow=5.8,SNR=7.1								
KSAR	Wonju Array Be	84.67	319	P		P	21 10 31.6	+1.1	
USRK	Ussuriysk Ar.	87.25	326	P		P	21 10 43.4	+0.4	
	1.9nm,0.9s,baz=150,slow=2.4,SNR=4.5								
TUC	Tucson	87.27	50	*e*P		P	21 10 44.0	+0.5	
	6.3nm,0.9s								
TXAR	Lajitas Array	90.53	56	P		P	21 10 59.0	-0.1	
	1.1nm,0.9s,baz=206,slow=8.3,SNR=12								
MNTX	Cornudas Mount	90.62	54	*e*P		P	21 10 59.2	-0.1	
	2.4nm,1.4s								
ANMO	Albuquerque	91.73	50	*e*P		P	21 11 04.7	+0.1	
	1.2nm,0.6s								
HLID	Hailey	92.04	40	*e*P		P	21 11 06.1	+0.3	
	3.0nm,0.2s								
ENH	Enshi	92.38	304	*e*P		P	21 11 09.2	+1.7	
	8.8nm,1.0s								
PDAR	Pinedale Array	94.34	43	P		P	21 11 15.8	-0.7	
	0.8nm,0.8s,baz=256,slow=3.1,SNR=4.3								
BOZ	Bozeman (W)	94.89	39	*e*P		P	21 11 18.7	-0.1	
	4.0nm,1.2s								
ILAR	Eielson Array	96.63	12	P		P	21 11 24.8	-1.3	
	0.8nm,0.8s,baz=212,slow=4.7,SNR=6.6								
ZALV	Zalesovo Beam	118.36	318	PKP		PKPdf	21 16 42.1	-1.5	
	0.3nm,0.4s,baz=72,slow=4.7,SNR=3.3								
MKAR	Makanchi Array	118.37	310	PKP		PKPdf	21 16 43.3	-0.7	
	0.7nm,0.8s,baz=90,slow=2.4,SNR=5.4								
KURK	Kurchatov	121.52	314	*e*PKPdf		PKPdf	21 16 48.9	-1.0	
FINES	FINESS Array B	144.75	342	PKP		PKPab	21 17 30.8	-0.9	
	4.9nm,0.9s,baz=71,slow=2.9,SNR=15								
NB2	NORSAR Subarra	148.00	353	PKP		PKPbc	21 17 40.4	-1.1	
	comp=Z,3.0nm,1.1s,baz=17,slow=2.6								
NOA	NORSAR Array B	148.00	353	PKPbc		PKPbc	21 17 41.0	-0.6	
	comp=Z,1.4nm,0.7s,baz=14,slow=4.3,SNR=7.4								
AKASG	Malin Array Be	151.45	325	PKPbc		PKPbc	21 17 49.9	-0.4	
	comp=Z,3.4nm,0.6s,baz=45,slow=2.8,SNR=8.9								
BRTR	Keskin Array B	153.50	301	PKPbc		PKPbc	21 17 56.0	+0.6	
	comp=Z,0.8nm,0.7s,baz=70,slow=1.7,SNR=5.2								
TORD	Torodi Ar. Bea	163.68	173	PKPab		PKPab	21 18 51.7	-0.3	
	comp=Z,2.6nm,0.8s,baz=189,slow=4.3,SNR=12								

IDC ***06*** *21:02:06.4±1.1,29.˚39S×176.˚20W,h0km,mb4.2/6, mb1 4.4/6,mb1mx4.0/31,mbtmp4.2/6,Error ellipse: s-maj=56.4km s-min=23.3km az=174.0*

NEIC ***06*** *21:02:07.7±0.6,29.˚18S×176.˚22W,h10km,mb4.4/3,Error ellipse: s-maj=18.6km s-min=12.6km az=172.0*

ISCJB ***06*** *21:02:08.7±0.9,29.˚45S±0.˚2×176.˚23W±0.˚10,h28km, mb4.4/9,Error ellipse: s-maj=23.1km s-min=11.7km az=7.4*

ISC 06 21:02:10.9±0.8,29.˚2S±0.˚2×176.˚33W±0.˚09,h28km,n21, σ0.˚73/22,mb4.4/9,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.39	269	Pn		Pn	Pb	21 02 36.6	+0.3
	60nm,0.3s,baz=72,slow=20,SNR=3.0								
RAO				Sn		Sn	Sb	21 02 53.2	-0.4
	190nm,0.3s,baz=107,slow=20,SNR=4.5								
HIZ	Hauiti	11.80	216	*e*Pn		Pn		21 04 57.7	+0.3
CTA	Charters Tower	35.08	276	P		P		21 09 02.9	+1.0
	3.6nm,0.7s,baz=93,slow=13,SNR=5.0								
STKA	Stephens Creek	36.17	255	P		P		21 09 11.1	0.0
	3.3nm,0.7s,baz=89,slow=12,SNR=4.1								
STKA	Stephens Creek	36.17	255	*e*P		P		21 09 11.1	0.0
	9.0nm,1.8s								
COEN	Coen	40.38	283	*e*P		P		21 09 45.1	-1.6
	58nm,1.7s								
AS01	Alice Springs	44.60	265	*e*P		P		21 10 20.2	-0.8
AS31	Alice Springs	44.64	265	*e*P		P		21 10 20.6	-0.7
	1.4nm,0.9s								
ASAR	Alice Springs	44.64	265	P		P		21 10 20.6	-0.7
	2.2nm,0.6s,baz=97,slow=7.7,SNR=18								
WB2	Warramunga Arr	45.52	270	*e*P		P		21 10 29.1	+0.8
WR1	Warramunga Arr	45.53	270	*e*P		P		21 10 28.0	-0.4
WRA	Warramunga Arr	45.53	270	P		P		21 10 28.0	-0.4
	3.5nm,0.6s,baz=108,slow=8.6,SNR=12								
FITZ	Fitzroy Crossi	53.83	268	P		P		21 11 32.7	+1.1
	3.4nm,0.8s,baz=111,slow=4.8,SNR=4.0								
FITZ	Fitzroy Crossi	53.83	268	*e*P		P		21 11 32.7	+1.1
	30nm,1.4s								
PMSA	Palmer Station	72.73	155	*e*P		P		21 13 35.7	-0.4
	37nm,1.2s								
TXAR	Lajitas Array	90.53	56	P		P		21 15 10.9	+0.3
	0.6nm,1.0s,baz=242,slow=1.9,SNR=3.8								
MKAR	Makanchi Array	118.13	310	PKP		PKPdf		21 20 54.4	-0.7
	0.5nm,0.8s,baz=64,slow=4.5,SNR=3.5								
FINES	FINESS Array B	144.52	342	PKP		PKPab		21 21 42.4	0.0
	1.3nm,0.7s,baz=81,slow=4.4,SNR=4.9								
NOA	NORSAR Array B	147.79	353	PKPbc		PKPbc		21 21 53.0	+0.5
	1.2nm,1.0s,baz=44,slow=8.6,SNR=2.9								
AKASG	Malin Array Be	151.21	325	PKPbc		PKPbc		21 22 01.8	+0.5
	1.2nm,0.4s,baz=47,slow=3.0,SNR=6.5								
TORD	Torodi Ar. Bea	163.90	173	PKPab		PKPab		21 23 04.1	-0.4
	2.2nm,1.0s,baz=176,slow=4.3,SNR=6.7								

NEIC ***06*** *21:04:01.5±0.2,29.˚43S×176.˚18W,h10km,mb5.3/89, Error ellipse: s-maj=7.6km s-min=4.5km az=144.0*

BJI ***06*** *21:04:01.7,29.˚26S×176.˚05W,h7km,mb5.2/29,mB5.8/3, Ms5.6/4,Ms7 5.3/4*

ISCJB ***06*** *21:04:03.8±0.2,29.˚69S±0.˚04×176.˚13W±0.˚04,h36km, mb5.3/112,Error ellipse: s-maj=6.6km s-min=3.6km az=143.5*

MOS ***06*** *21:04:04.2±1.4,29.˚22S×176.˚20W,h28km,mb5.4/26, Error ellipse: s-maj=10.6km s-min=10.3km az=72.5*

IDC ***06*** *21:04:05.7±6.5,29.˚24S×176.˚24W,h33km±46km,mb4.5/15, mb1 4.6/15,mb1mx4.5/27,mbtmp4.6/15,Error ellipse: s-maj=22.8km s-min=19.5km az=64.0*

ISC 06 21:04:05.0±0.4,29.˚49S±0.˚05×176.˚14W±0.˚05,h30km±2km, h30km:pP-P,n374,σ1s80/389,mb5.3/112,5C-11D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.57	278	Pn		Pn	Pn	21 04 30.3	-0.5
	4µm,0.3s,baz=96,slow=5.2,SNR=49								
RAO				Sn		Sn	Sb	21 04 52.9	0.0
	3µm,0.3s,baz=144,slow=22,SNR=9.4								
RAO	Raoul Island	1.57	278	*e*P		Pn	Pn	21 04 31.1	+0.3
RAO				*e*				21 04 46.3	
RAO	Raoul Island	1.57	278	*e*Pn		Pn	Pn	21 04 31.1	+0.3
RAO				*e*Sn		Sn	Sn	21 04 46.3	-3.8
URZ	Urewera	10.39	211	Pn		Pn	Pn	21 06 27.6	-4.3
	3.5nm,0.3s,baz=292,slow=3.5,SNR=7.8								
URZ				Sn		Sn	Sn	21 08 24.1	-3.1
	20nm,0.3s,baz=164,slow=15,SNR=13								
URZ	Urewera	10.39	211	*e*Pn		Pn	Pn	21 06 29.0	-2.9
URZ				*e*Sn		Sn	Sn	21 08 26.2	-1.0
OUZ	Omahuta	10.39	234	*e*Pn		Pn	Pn	21 06 36.7	+4.8
BKZ	Black Stump Fm	11.41	210	*e*Pn		Pn	Pn	21 06 41.6	-4.3
HIZ	Hauiti	11.69	217	*e*Pn		Pn	Pn	21 06 49.2	-0.6
BFZ	Birch Farm	12.78	207	*e*P		Pn	Pn	21 06 55.8	-8.8
BFZ				*e*Sn		Sn	Sn	21 09 21.4	-4.5
MSVF	Nonsavu	12.85	334	*e*P		Pn	Pn	21 07 02.4	-3.4
MSVF	Nonsavu	12.85	334	*e*Pn		Pn	Pn	21 07 02.4	-3.4
THZ	Tophouse	15.12	213	*e*Pn		Pn	Pn	21 07 33.2	-3.3
	67nm,0.8s								
KHZ	Kahutara	15.35	210	*e*Pn		Pn	Pn	21 07 34.7	-4.7
	97nm,0.7s								
AFI	Afiamalu	16.02	16	Sn		Sn	Sn	21 10 21.4	-24
	3.4nm,0.3s,baz=127,slow=20,SNR=2.7								
LTZ	Lake Taylor	16.21	212	*e*Pn		Pn	Pn	21 07 47.5	-3.1
	257nm,1.8s								
OXZ	Oxford	16.74	211	*e*Pn		Pn	Pn	21 07 54.2	-3.1
	88nm,0.7s								
OXZ				*e*Sn		Sn	Sn	21 10 51.1	-11
MQZ	McQueen's Vall	16.78	209	*e*Pn		Pn	Pn	21 07 53.9	-3.8
	206nm,1.8s								
RAR	Rarotonga	16.92	65	Pn		Pn	Pn	21 07 49.4	-10
	2.0nm,0.3s,baz=222,slow=15,SNR=4.0								
RAR				Sn		Sn	Sn	21 10 36.0	-31
	1.2nm,0.3s,baz=71,slow=14,SNR=2.6								
RAR	Rarotonga	16.92	65	*e*P		Pn	Pn	21 07 51.5	-8.1
RAR					pmax	pmax			
	comp=Z,366nm,1.8s								
RAR	Rarotonga	16.92	65	*e*Pn		Pn		21 07 51.5	-8.1
	comp=Z,366nm,1.8s								
DZM	Mont Dzumac	17.32	291	P		P		21 08 06.7	+0.8
	comp=Z,1.1nm,0.3s,baz=115,slow=16,SNR=11								
DZM	Mont Dzumac	17.32	291	*e*Pn		Pn		21 08 04.4	-0.4
	comp=Z,73nm,1.0s								
RPZ	Rata Peaks	17.50	212	P		Pn		21 08 00.3	-6.4
	comp=Z,4.3nm,0.3s,baz=50,slow=0.8,SNR=13								
RPZ				S		Sn		21 11 06.1	-14
	comp=Z,1.8nm,0.3s,baz=195,slow=20,SNR=5.6								
RPZ	Rata Peaks	17.50	212	*e*Pn		Pn		21 08 00.8	-5.9
RPZ				*e*Sn		Sn		21 11 06.1	-14
ODZ	Otahua Downs	18.71	210	*e*P		P		21 08 21.5	+0.5
	comp=Z,228nm,1.7s								
MLZ	Mavora Lakes	20.13	214	*e*P		Pn		21 08 37.9	-0.6
	comp=Z,199nm,1.8s								
ARMA	Armidale	27.89	260	*e*P		P		21 09 51.8	-0.7
	comp=Z,84nm,1.9s								
EIDS	Eidsvold	29.32	270	P		P		21 10 05.9	+0.8
	baz=29,SNR=4.8								
EIDS	Eidsvold	29.32	270	*e*P		P		21 10 04.9	-0.3
	comp=Z,30nm,0.9s								
RMQ	Roma	31.07	267	P		P		21 10 22.7	+2.1
	baz=31,SNR=4.6								
CMSA	Cobar Meteorol	32.84	257	P		P		21 10 37.7	+1.7
	baz=33,SNR=5.3								
QLP	Quilpie	34.98	265	P		P		21 10 54.9	+0.2
	baz=35,SNR=5.2								
CTA	Charters Tower	35.27	277	P		P		21 10 55.5	-1.8
	comp=Z,6.7nm,0.6s,baz=106,slow=12,SNR=10								
CTA	Charters Tower	35.27	277	P		P		21 10 55.5	-1.8
CTA					pmax	pmax			
	comp=Z,4.0nm,0.3s								
CTAO	Charters Tower	35.27	277	*e*P		P		21 10 57.6	+0.3
CTAO	Charters Tower	35.27	277	*e*P		P		21 10 57.6	+0.3
STKA	Stephens Creek	36.26	255	P		P		21 11 05.7	0.0
	comp=Z,8.8nm,0.5s,baz=99,slow=12,SNR=16								
STKA	Stephens Creek	36.26	255	P		P		21 11 05.9	+0.2
	baz=36,SNR=15								
MTSU	Mount Surprise	37.73	278	P		P		21 11 18.8	+0.5
	baz=37,SNR=9.2								
HTT	Hallett	38.31	252	P		P		21 11 23.1	0.0
	baz=38,SNR=19								
COEN	Coen	40.60	283	*e*P		P		21 11 42.4	+0.1
	comp=Z,15nm,0.8s								
BBOO	Buckleboo	40.77	253	P		P		21 11 43.4	-0.2
	baz=40,SNR=9.2								
BBOO	Buckleboo	40.77	253	*e*P		P		21 11 42.7	-0.9
	comp=Z,45nm,0.8s								
QIS	Mount Isa	40.87	272	P		P		21 11 44.8	+0.3
	baz=41,SNR=3.2								
PATS	Pohnpei	43.68	322	P		P		21 12 08.9	+1.6
	baz=44,SNR=3.2								
AS01	Alice Springs	44.74	265	*e*P		P		21 12 14.7	-1.2
AS31	Alice Springs	44.78	265	*e*P		P		21 12 15.4	-0.8
	comp=Z,6.4nm,0.6s								
ASAR	Alice Springs	44.78	265	P		P		21 12 15.0	-1.2
	comp=Z,5.6nm,0.5s,baz=100,slow=6.2,SNR=50								
ASAR	Alice Springs	44.78	265	P		P		21 12 15.0	-1.2
ASAR					pmax	pmax			
	comp=Z,6.0nm,0.5s								
WB2	Warramunga Arr	45.68	270	P		P		21 12 22.2	-1.2
	baz=45								
WB2	Warramunga Arr	45.68	270	*e*P		P		21 12 20.6	-2.7
	comp=Z,41nm,0.8s								
WRAB	Tennant Creek	45.69	270	*i* P		P		21 12 21.3	-2.1
WRAB					pmax	pmax			
	comp=Z,49nm,1.0s								
WRAB	Tennant Creek	45.69	270	*e*P		P		21 12 19.6	-3.8
	comp=Z,31nm,0.8s								
WR1	Warramunga Arr	45.69	270	*e*P		P		21 12 21.6	-1.8
	comp=Z,43nm,0.8s								
WRA	Warramunga Arr	45.69	270	P		P		21 12 21.6	-1.8
	comp=Z,6.6nm,0.4s,baz=109,slow=6.2,SNR=18								
FORT	Forrest	47.84	254	P		P		21 12 38.8	-1.3
	baz=48,SNR=7.0								
SBA	Scott Base	49.07	185	*e*P		P		21 12 52.3	+3.4
SBA					pmax	pmax			
	comp=Z,74nm,1.6s								
SBA	Scott Base	49.07	185	*e*P		P		21 12 52.3	+3.4
	comp=Z,74nm,1.6s								
VNDA	Vanda	49.17	186	P		P		21 12 53.3	+3.7
	comp=Z,4.0nm,1.0s,baz=351,slow=7.3,SNR=8.1								
WRKA	Warakurna	49.20	261	P		P		21 12 49.6	-1.2
	baz=49,SNR=5.4								
MTN	Manton Dam	51.45	277	*e*P		P		21 13 05.5	-2.3
	comp=Z,16nm,0.9s								
HPO	Honuapo	52.22	25	*e*P		P		21 13 09.9	-3.3
MLOA	Mauna Loa Obse	52.62	25	*e*P		P		21 13 13.6	-3.2
KEKH	Kekaha	53.56	19	*e*P		P		21 13 21.6	-1.6
	comp=Z,427nm,1.8s								
OPA	Opana	53.79	21	*e*P		P		21 13 22.3	-2.5
OPA					pmax	pmax			
	comp=Z,295nm,1.5s								
OPA	Opana	53.79	21	*e*P		P		21 13 22.3	-2.5
	comp=Z,295nm,1.5s								
FITZ	Fitzroy Crossi	53.99	268	P		P		21 13 25.7	-0.8
	comp=Z,7.5nm,0.8s,baz=164,slow=9.4,SNR=6.7								
FITZ	Fitzroy Crossi	53.99	268	P		P		21 13 27.4	+0.9
	baz=54,SNR=5.4								
FITZ	Fitzroy Crossi	53.99	268	*e*P		P		21 13 26.3	-0.2
	comp=Z,23nm,0.9s								
KLBR	Kellerberrin	56.17	250	P		P		21 13 41.7	-0.4
	baz=56,SNR=7.8								
CASY	Casey	56.69	208	*e*P		P		21 13 47.0	+1.7
	comp=Z,31nm,1.0s								
MEEK	Meekatharra	56.96	256	P		P		21 13 48.1	+0.2
	baz=57,SNR=4.2								
GUMO	Guam	57.00	313	P		P		21 13 48.5	+0.4
	comp=Z,43nm,0.8s,baz=177,slow=19,SNR=2.6								
MBWA	Marble Bar	57.94	262	*e*pP		pP		21 14 07.0	+2.9
MORW	Morawa	58.34	252	P		P		21 13 59.7	+2.2
	baz=58,SNR=3.3								
SOEI	Soe	58.84	277	*e*P		P		21 13 57.9	-3.4
	comp=Z,57nm,1.2s								
QSPA	South Pole Qui	60.62	180	*e*P		P		21 14 15.1	+2.3
	comp=Z,144nm,1.1s								
MIR	Mirnyy	63.66	207	*e*P		P		21 14 36.0	+3.0
MIR					pmax	pmax			
	comp=Z,6.0nm,2.0s								
UGM	Wanagama	71.66	271	*e*P		P		21 15 21.6	-2.8
	comp=Z,369nm,1.6s								
MAW	Mawson	73.72	200	P		P		21 15 38.4	+2.8
	comp=Z,8.3nm,1.0s,baz=151,slow=9.3,SNR=7.1								
MAW	Mawson	73.72	200	*e*P		P		21 15 38.0	+2.4
	comp=Z,6.9nm,1.3s								
KKM	Kota Kinabalu	73.83	287	*e*P		P		21 15 35.3	-1.9
	comp=Z,135nm,1.8s								
SYO	Syowa Base	78.36	192	‖ *i* P		P		21 16 02.0	0.0
SYO	Syowa Base	78.36	192	‖ *i* PcP		PcP		21 16 11.0	-0.2
MJAR	Matsushiro Arr	78.43	324	P		P		21 16 02.6	-0.2
	comp=Z,2.3nm,0.7s,baz=127,slow=42,SNR=6.6								
MAJO	Matsushiro	78.44	324	*i* P		P		21 16 02.1	-0.8
MAJO					pmax	pmax			
	comp=Z,51nm,1.4s								
SNAA	Sanae	79.01	178	P		P		21 16 06.6	+0.9
SNAA	Sanae	79.01	178	*i* P		P		21 16 05.6	-0.1
SNAA	Sanae	79.01	178	*e*P		P		21 16 06.5	+0.8
	comp=Z,12nm,1.3s								
VNA1	Neumayer--Stat	79.77	176	P		P		21 16 10.7	+0.9
YULB	Yu-li	79.88	304	*e*P		P		21 16 08.9	-2.1
	comp=Z,23nm,1.4s								
SSLB	Suanglung	80.37	304	*e*P		P		21 16 11.5	-2.2
	comp=Z,22nm,0.8s								
PLCA	Paso Flores	81.94	132	P		P		21 16 22.8	+0.8
	comp=Z,5.5nm,0.9s,baz=245,slow=5.0,SNR=8.4								
PLCA	Paso Flores	81.94	132	*e*P		P		21 16 22.3	+0.3
PLCA					pmax	pmax			
	comp=Z,33nm,1.5s								
PLCA	Paso Flores	81.94	132	*e*P		P		21 16 22.2	+0.3
	comp=Z,33nm,1.5s								
QZH	Quanzhou	82.78	304	‖ *i* P		P		21 16 31.1	+4.8
QZH					pmax	pmax			
	comp=Z,150nm,0.9s								
PKM	Mcpherson Peak	83.19	44	P		P		21 16 28.3	-0.3
	baz=227								
PAGB	Antelope Grade	83.51	43	*e*P		P		21 16 29.1	-0.8
	comp=Z,47nm,1.6s								
MURC	Murrieta	83.94	46	P		P		21 16 32.2	-0.1
	baz=229								
MONP2	Monument Peak	83.96	47	P		P		21 16 32.2	-0.4
	baz=229								
IKP	In-Ko-Pah, Jac	84.00	47	P		P		21 16 32.5	-0.2
	baz=229								
BFSC	Mount Baldy Ra	84.07	45	P		P		21 16 32.0	-1.0
	baz=228								
VES	Vestal, Richgr	84.28	43	P		P		21 16 33.6	-0.2
	baz=227								
EDW2	Edwards Air Fo	84.29	45	P		P		21 16 33.0	-1.0
	baz=228,SNR=5.5								
SWSC	Sam W. Stewart	84.39	47	P		P		21 16 34.2	-0.3
	baz=230								
TPFO	Pinon Flats	84.41	46	P		P		21 16 33.6	-1.1
	baz=229								
PFO	Pinyon Flats O	84.41	46	P		P		21 16 34.4	-0.4
	baz=229								
ISA	Isabella, Lake	84.52	44	P		P		21 16 35.0	-0.1
	baz=228								
ISA	Isabella, Lake	84.52	44	*e*P		P		21 16 35.4	+0.2
ISA					pmax	pmax			
	comp=Z,55nm,1.8s								
ISA	Isabella, Lake	84.52	44	*e*P		P		21 16 35.4	+0.2
	comp=Z,55nm,1.8s								
YSS	Yuzh-Sakhalins	84.65	333	*i* P		P		21 16 35.4	0.0
YSS					pmax	pmax			
	comp=Z,25nm,1.7s								
KSRS	Korea Array	84.72	319	P		P		21 16 37.5	+1.5
	comp=Z,4.0nm,1.0s,baz=137,slow=5.1,SNR=10								
KS15	Wonju Array Si	84.73	319	*e*P		P		21 16 37.5	+1.4
KSAR	Wonju Array Be	84.73	319	P		P		21 16 37.5	+1.4
KSAR	Wonju Array Be	84.73	319	P		P		21 16 37.5	+1.4
KS01	Wonju Array Si	84.75	319	*e*P		P		21 16 38.7	+2.6
LRMC	Laurel Mtn Rad	84.88	44	P		P		21 16 37.0	-0.1
	baz=228								
BELC	Belle Mtn. Jos	84.95	46	P		P		21 16 37.2	-0.3
	baz=229,SNR=9.6								
CMB	Columbia Colle	85.01	41	*e*P		P		21 16 36.9	-0.7
CMB					pmax	pmax			
	comp=Z,29nm,1.5s								
CMB	Columbia Colle	85.01	41	*e*P		P		21 16 36.9	-0.7
	comp=Z,29nm,1.5s								
BC3	Big Chuckawall	85.07	47	P		P		21 16 37.8	-0.2
	baz=230,SNR=12								
GLA	Glamis	85.09	48	P		P		21 16 37.8	-0.3
	baz=230								
CWC	Cottonwood Cre	85.28	43	P		P		21 16 38.8	-0.3
	baz=228								
HEC	Hector,Ludlow	85.28	46	P		P		21 16 38.7	-0.3
	baz=229,SNR=6.6								
GSC	Goldstone, Bar	85.30	45	P		P		21 16 38.7	-0.4
	baz=229,SNR=9.9								
GSC	Goldstone, Bar	85.30	45	*e*P		P		21 16 39.2	+0.1
GSC					pmax	pmax			
	comp=Z,38nm,1.5s								
GSC	Goldstone, Bar	85.30	45	*e*P		P		21 16 39.2	+0.1
	comp=Z,38nm,1.5s								
AFDM	Forest Hills D	85.31	40	*e*P		P		21 16 38.8	-0.2
	comp=Z,15nm,1.3s								
PETK	Petropavlovsk-	85.35	345	P		P		21 16 39.3	+0.5
	comp=Z,3.1nm,0.8s,baz=142,slow=7.3,SNR=2.8								
PEA1	Petropavlovsk-	85.36	345	*e*P		P		21 16 39.3	+0.5
MPMC	Manual Prospec	85.38	44	P		P		21 16 39.1	-0.5
	baz=228,SNR=6.5								
ORV	Oroville	85.44	39	*e*P		P		21 16 39.5	-0.1
ORV					pmax	pmax			
	comp=Z,30nm,1.6s								
ORV	Oroville	85.44	39	*e*P		P		21 16 39.5	-0.1
	comp=Z,30nm,1.6s								
IRM	Iron Mountain	85.59	47	P		P		21 16 40.6	+0.1
	baz=230,SNR=14								
113A	Mohawk Valley,	85.60	48	*e*P		P		21 16 39.9	-0.7
	comp=Z,38nm,1.6s								
WDC	Whiskeytown Da	85.60	38	*e*P		P		21 16 40.4	+0.1
WDC					pmax	pmax			
	comp=Z,47nm,1.5s								
WDC	Whiskeytown Da	85.60	38	*e*P		P		21 16 40.4	+0.1
	comp=Z,47nm,1.5s								
GMRC	Granite Mounta	85.67	46	P		P		21 16 40.8	-0.2
	baz=230,SNR=8.5								
Y12C	Blythe	85.73	47	P		P		21 16 41.0	-0.2
	baz=230								
Y12C	Blythe	85.73	47	*e*P		P		21 16 41.6	+0.5
	comp=Z,40nm,1.7s								
N02D	Trinity Center	85.79	38	P		P		21 16 41.2	-0.2
	baz=225,SNR=6.0								
O03D	Paynes Creek	85.80	39	P		P		21 16 41.0	-0.5
	baz=225								
WAKR	Walker	85.88

	comp=Z,52nm,1.6s								
WVOR	**Wild Horse Val**	**89.00**	**39**	*e*P		**P**	**21 16 56.6**	**-0.3**	
WVOR				pmax		pmax			
	comp=Z,15nm,1.4s								
WVOR	**Wild Horse Val**	**89.00**	**39**	*e*P		**P**	**21 16 56.6**	**-0.3**	
	comp=Z,15nm,1.4s								
SZCU	**Shurtz Canyon**	**89.07**	**45**	*e*P		**P**	**21 16 57.3**	**-0.1**	
	comp=Z,13nm,1.2s								
WHN	**Wuhan**	**89.10**	**306**	P		**P**	**21 17 00.5**	**+3.0**	
WHN				sP		**sP**	**21 17 12.0**	**+1.3**	
DL2	**Dalian**	**89.39**	**316**	P		**P**	**21 17 03.1**	**+4.5**	
DL2				pmax		pmax			
	comp=Z,17nm,1.1s								
121A	**Cookes Peak, D**	**89.45**	**52**	P		**P**	**21 16 59.0**	**-0.3**	
	baz=234								
SKNT	**Sakolnakorn**	**89.74**	**290**	P		**P**	**21 17 03.4**	**+2.6**	
	comp=Z,103nm,1.3s								
SKNT	**Sakolnakorn**	**89.74**	**290**	P		**P**	**21 17 03.4**	**+2.6**	
	comp=Z,103nm,1.3s								
SKNT	**Sakolnakorn**	**89.74**	**290**	P		**P**	**21 17 03.4**	**+2.6**	
	comp=Z,103nm,1.3s								
G06A	**Carlson Farm,**	**89.87**	**36**	*e*P		**P**	**21 17 00.7**	**-0.1**	
	comp=Z,107nm,1.9s								
MTPU	**Mount Pierson**	**89.90**	**45**	*e*P		**P**	**21 17 01.6**	**0.0**	
	comp=Z,61nm,1.9s								
KHON	**Khomkaen**	**90.37**	**288**	P		**P**	**21 17 08.1**	**+4.4**	
	comp=Z,20nm,1.0s								
KHON				P		**sP**	**21 17 18.8**	**+1.9**	
	comp=Z,20nm,1.0s								
KHON	**Khomkaen**	**90.37**	**288**	P		**P**	**21 17 08.1**	**+4.4**	
KHON	**Khomkaen**	**90.37**	**288**	P		**P**	**21 17 08.1**	**+4.4**	
	comp=Z,20nm,1.0s								
KHON				P		**sP**	**21 17 18.8**	**+1.9**	
	comp=Z,20nm,1.0s								
CN2	**Changchun**	**90.41**	**322**	*e*P		**P**	**21 17 01.2**	**-2.1**	
LTX	**Lajitas**	**90.54**	**56**	*e*P		**P**	**21 17 04.1**	**-0.3**	
LTX				*e*			21 20 43.7		
LTX	**Lajitas**	**90.54**	**56**	*e*P		**P**	**21 17 04.1**	**-0.3**	
LTX				*e*PP		**PP**	**21 20 43.7**	**+3.9**	
TX31	**Lajitas Ar. Si**	**90.54**	**56**	*e*P		**P**	**21 17 04.4**	**0.0**	
TXAR	**Lajitas Array**	**90.54**	**56**	P		**P**	**21 17 04.1**	**-0.3**	
	comp=Z,6.1nm,1.2s,baz=206,slow=5.4,SNR=22								
TXAR				PP		**PP**	**21 20 43.7**	**+3.9**	
	comp=Z,0.3nm,0.8s,baz=209,slow=7.2,SNR=3.9								
TXAR	**Lajitas Array**	**90.54**	**56**	P		**P**	**21 17 04.1**	**-0.3**	
TXAR							21 20 43.7		
TXAR				pmax		pmax			
	comp=Z,7.0nm,1.2s								
MNTX	**Cornudas Mount**	**90.64**	**54**	P		**P**	**21 17 04.4**	**-0.3**	
	baz=235								
MNTX	**Cornudas Mount**	**90.64**	**54**	*e*P		**P**	**21 17 04.6**	**-0.1**	
	comp=Z,13nm,1.2s								
G08A	**Pilot Rock**	**90.76**	**36**	*e*P		**P**	**21 17 05.0**	**-0.1**	
	comp=Z,36nm,1.4s								
NONG	**Nongkai**	**90.98**	**290**	P		**P**	**21 17 09.5**	**+3.0**	
	comp=Z,220nm,0.9s								
NONG	**Nongkai**	**90.98**	**290**	P		**P**	**21 17 09.5**	**+3.0**	
	comp=Z,220nm,0.9s								
KLR	**Kul'dur**	**91.08**	**329**	*i* P		**P**	**21 17 02.1**	**-4.2**	
BNM	**Barren Site**	**91.18**	**51**	*e*P		**P**	**21 17 07.1**	**-0.4**	
MFID	**Camas Ranch**	**91.19**	**39**	*e*P		**P**	**21 17 06.8**	**-0.3**	
	comp=Z,16nm,1.3s								
HAWA	**Hanford**	**91.22**	**35**	*e*P		**P**	**21 17 06.8**	**-0.2**	
	comp=Z,21nm,1.0s								
B05A	**Bryant**	**91.28**	**33**	P		**P**	**21 17 07.4**	**+0.2**	
	baz=225								
A04D	**Lummi Island**	**91.32**	**32**	P		**P**	**21 17 07.7**	**+0.3**	
	baz=224								
BMO	**Blue Mountains**	**91.34**	**38**	*e*P		**P**	**21 17 07.1**	**-0.7**	
	comp=Z,24nm,1.6s								
ANMO	**Albuquerque**	**91.75**	**50**	P		**P**	**21 17 09.8**	**-0.2**	
	baz=235								
ANMO	**Albuquerque**	**91.75**	**50**	*e*P		**P**	**21 17 10.1**	**+0.1**	
ANMO				*e**PP		**sP**	**21 17 22.4**	**-0.8**	
ANMO				pmax		pmax			
	comp=Z,32nm,1.8s								
ANMO	**Albuquerque**	**91.75**	**50**	*e*P		**P**	**21 17 10.1**	**+0.1**	
	comp=Z,32nm,1.8s								
ANMO				*e*pP		**sP**	**21 17 22.4**	**-0.8**	
SPUT	**South Promonto**	**91.77**	**43**	*e*P		**P**	**21 17 08.9**	**-1.1**	
	comp=Z,33nm,1.7s								
HVU	**Hansel Valley**	**91.88**	**42**	*e*P		**P**	**21 17 10.3**	**-0.1**	
HVU				pmax		pmax			
	comp=Z,47nm,1.9s								
HVU	**Hansel Valley**	**91.88**	**42**	*e*P		**P**	**21 17 10.3**	**-0.1**	
	comp=Z,47nm,1.9s								
PBKT	**Sadao Pong**	**92.02**	**288**	P		**P**	**21 17 15.3**	**+3.9**	
	comp=Z,136nm,0.7s								
PBKT	**Sadao Pong**	**92.02**	**288**	P		**P**	**21 17 15.3**	**+3.9**	
HLID	**Hailey**	**92.07**	**40**	P		**P**	**21 17 11.1**	**-0.2**	
	baz=230								
HLID	**Hailey**	**92.07**	**40**	*e*P		**P**	**21 17 11.2**	**0.0**	
HLID				*e*pP		**pP**	**21 17 21.2**	**+0.2**	
F10A	**Beach Ranch, E**	**92.12**	**37**	*e*P		**P**	**21 17 10.6**	**-0.8**	
	comp=Z,17nm,1.0s								
TCUT	**Toone Canyon**	**92.27**	**43**	*e*P		**P**	**21 17 11.5**	**-0.8**	
	comp=Z,48nm,1.7s								
ENH	**Enshi**	**92.43**	**304**	*e*P		**P**	**21 17 15.0**	**+1.9**	
	comp=Z,46nm,0.9s								
GYA	**Guiyang**	**92.51**	**299**	⇓ *i* P		**P**	**21 17 15.0**	**+1.4**	
GYA				PP		**PP**	**21 20 59.4**	**+3.9**	
GYA				SKS		**SKSac**	**21 27 46.8**	**+1.5**	
GYA				S		**S**	**21 28 16.5**	**+0.5**	
GYA				SS		**SS**	**21 34 32.0**	**+3.4**	
GYA				pmax		pmax			
	comp=Z,20nm,1.0s								
GYA				pmax		pmax			
	comp=Z,150nm,7.4s								
GYA				LR		LR			
	comp=Z,760nm,22.4s								
GYA				LR		LR			
	comp=Z,670nm,21.2s								
GYA				LR		LR			
	comp=Z,730nm,20.6s								
933A	**Laredo**	**92.87**	**60**	P		**P**	**21 17 15.2**	**+0.1**	
	baz=238								
LVC	**Limon Verde**	**92.95**	**118**	*e*P		**P**	**21 17 16.6**	**+0.4**	
	comp=Z,50nm,0.8s								
034A	**Hebbronville**	**93.03**	**61**	P		**P**	**21 17 16.1**	**+0.3**	
	baz=238								
S22A	**4UR Ranch, Cre**	**93.12**	**48**	P		**P**	**21 17 16.3**	**-0.1**	
	baz=235								
S22A	**4UR Ranch, Cre**	**93.12**	**48**	*e*P		**P**	**21 17 16.6**	**+0.2**	
	comp=Z,5.3nm,1.1s								
BJI	**Beijing**	**93.42**	**315**	P		**P**	**21 17 19.1**	**+1.8**	
BJI				pmax		pmax			
	comp=Z,7.0nm,1.0s								
O20A	**White River Ci**	**93.61**	**45**	*e*P		**P**	**21 17 17.9**	**-0.6**	
	comp=Z,9.4nm,0.6s								
MCMT	**McKenzie Canyo**	**93.74**	**40**	*e*P		**P**	**21 17 18.9**	**-0.1**	
REDW	**Red Top Meadow**	**93.97**	**42**	*e*P		**P**	**21 17 19.9**	**-0.2**	
	comp=Z,14nm,1.1s								
DLMT	**Dillon**	**94.22**	**39**	*e*P		**P**	**21 17 20.6**	**-0.5**	
	comp=Z,20nm,1.4s								
BW06	**Boulder Array**	**94.37**	**43**	P		**P**	**21 17 20.8**	**-1.1**	
	baz=233								
BW06	**Boulder Array**	**94.37**	**43**	*e*P		**P**	**21 17 19.2**	**-2.8**	
BW06				*e*pP		**pP**	**21 17 32.0**	**+0.3**	
PD31	**Pinedale Array**	**94.37**	**43**	*e*P		**P**	**21 17 20.2**	**-1.7**	
PDAR	**Pinedale Array**	**94.37**	**43**	P		**P**	**21 17 20.2**	**-1.7**	
	comp=Z,1.2nm,0.9s,baz=232,slow=4.9,SNR=5.9								
CM01	**Chiang Mai Arr**	**94.60**	**288**	*e*P		**P**	**21 17 24.1**	**+0.8**	
CM31	**Chiang Mai Arr**	**94.63**	**288**	*e*P		**P**	**21 17 26.1**	**+2.6**	
CMAR	**Chiang Mai Arr**	**94.63**	**288**	P		**P**	**21 17 26.1**	**+2.6**	
	comp=Z,1.5nm,0.9s,baz=146,slow=3.4,SNR=8.5								
433A	**Art**	**94.65**	**57**	P		**P**	**21 17 22.0**	**-1.2**	
	baz=238								
CMMT	**Chiang Mai**	**94.80**	**289**	P		**P**	**21 17 28.3**	**+4.1**	
	comp=Z,264nm,1.8s								
CHTO	**Chiang Mai**	**94.81**	**289**	P		**P**	**21 17 28.4**	**+4.2**	
	comp=Z,812nm,1.1s								
CHTO	**Chiang Mai**	**94.81**	**289**	*e*P		**P**	**21 17 27.4**	**+3.2**	
CHTO				*e**PP		**pP**	**21 17 35.4**	**+1.5**	
CHTO	**Chiang Mai**	**94.81**	**289**	*e*P		**P**	**21 17 27.4**	**+3.2**	
CHTO				*e*pP		**pP**	**21 17 35.4**	**+1.5**	
CHMT	**Chamberlain Mo**	**94.83**	**38**	*e*P		**P**	**21 17 22.9**	**-1.0**	
XAN	**Xi'an**	**94.86**	**306**	P		P	21 17 39.4	+15	
XAN				pP		sP	21 17 45.0	+7.6	
XAN				sP		pP	21 17 47.8	+14	
XAN				pmax		pmax			
	comp=Z,10.0nm,0.9s								
KMI	**Kunming**	**94.86**	**296**	P		**P**	**21 17 26.0**	**+1.4**	
KMI				pP		PcP	21 17 29.0	+4.0	
KMI				sP		pP	21 17 30.2	-4.1	
KMI				pmax		pmax			
	comp=Z,8.0nm,0.9s								
BOZ	**Bozeman (W)**	**94.92**	**39**	P		**P**	**21 17 23.8**	**-0.5**	
	baz=232								
BOZ	**Bozeman (W)**	**94.92**	**39**	*e*P		**P**	**21 17 24.0**	**-0.3**	
BOZ				pmax		pmax			
	comp=Z,8.0nm,0.9s								
BOZ	**Bozeman (W)**	**94.92**	**39**	*e*P		**P**	**21 17 24.0**	**-0.3**	
	comp=Z,8.4nm,0.9s								
WRH	**Wood River Hil**	**96.20**	**12**	*e*P		**P**	**21 17 28.6**	**-0.9**	
	comp=Z,12nm,0.9s								
IL1	**Eielson Array**	**96.69**	**12**	*e*P		**P**	**21 17 29.9**	**-1.8**	
ILAR	**Eielson Array**	**96.69**	**12**	P		**P**	**21 17 30.4**	**-1.2**	
	comp=Z,1.1nm,0.7s,baz=219,slow=5.2,SNR=11								
ILB	**Eielson Array**	**96.69**	**12**	*e*P		**P**	**21 17 30.4**	**-1.2**	
ILB				*e*pP		**sP**	**21 17 44.0**	**-0.8**	
CD2	**Chengdu**	**96.98**	**301**	*e*P		**P**	**21 17 34.4**	**+0.5**	
CD2				sP		pP	21 17 42.2	-1.4	
CD2				PP		**PP**	**21 21 30.3**	**+0.2**	
CD2				SKS		**SKSac**	**21 28 10.5**	**+1.5**	
CD2				S		**ScS**	**21 28 56.7**	**+1.7**	
CD2				sS		sS	21 29 06.3	-4.6	
CD2				SS		**SS**	**21 35 35.1**	**+3.1**	
CD2				pmax		pmax			
	comp=Z,10.0nm,0.5s								
CD2				pmax		pmax			
	comp=Z,120nm,6.2s								
RSSD	**Black Hills**	**98.44**	**44**	Pdiff		**P**	**21 17 39.5**	**-0.9**	
	baz=237								
RSSD	**Black Hills**	**98.44**	**44**	*e*P		**P**	**21 17 39.8**	**-0.6**	
RSSD				pmax		pmax			
	comp=Z,9.0nm,1.1s								
RSSD	**Black Hills**	**98.44**	**44**	*e*P		**P**	**21 17 39.8**	**-0.6**	
	comp=Z,9.4nm,1.1s								
LZH	**Lanzhou**	**99.48**	**306**	*e*P		**Pdif**	**21 17 47.7**	**+2.5**	
LZH				pP		pP	21 17 51.6	-3.3	
LZH				sP		sP	21 17 54.0	-4.4	
LZH				pmax		pmax			
	comp=Z,16nm,1.0s								
AGMN	**Agassiz Nation**	**105.44**	**43**	*e*Pdif		**Pdif**	**21 18 08.4**	**-2.7**	
WMQ	**Urumqi**	**113.93**	**308**	*e*PKP		**PKiKP**	**21 22 42.4**	**+1.5**	
MK01	**Makanchi Array**	**118.41**	**310**	*e*PKPdf		**PKPdf**	**21 22 48.0**	**-1.3**	
MK31	**Makanchi Array**	**118.42**	**310**	*e*PKiKP		**PKPdf**	**21 22 51.5**	**+2.1**	
MK31	**Makanchi Array**	**118.42**	**310**	*e*PKPdf		**PKPdf**	**21 22 51.5**	**+2.1**	
MK32	**Makanchi Array**	**118.42**	**310**	*e*PKPdf		**PKPdf**	**21 22 48.2**	**-1.2**	
MK32				*e*PKKPbc		**PKKPbc**	**21 33 05.5**	**-2.0**	
MKAR	**Makanchi Array**	**118.42**	**310**	PKP		**PKPdf**	**21 22 48.2**	**-1.2**	
	comp=Z,1.3nm,0.7s,baz=67,slow=3.2,SNR=9.7								
MKAR				PKKPbc		**PKKPbc**	**21 33 05.5**	**-2.0**	
	comp=Z,1.0nm,0.8s,baz=284,slow=5.8,SNR=4.0								
MKAR	**Makanchi Array**	**118.42**	**310**	*e*PKPdf		**PKPdf**	**21 22 49.8**	**+0.4**	
ZAA0	**Zalesovo Array**	**118.42**	**318**	*e*PKPdf		**PKPdf**	**21 22 48.7**	**-0.4**	
ZAA1	**Zalesovo Array**	**118.42**	**318**	*e*PKPdf		**PKPdf**	**21 22 48.0**	**-1.1**	
ZALV	**Zalesovo Beam**	**118.42**	**318**	PKP		**PKPdf**	**21 22 48.0**	**-1.1**	
	comp=Z,1.0nm,0.7s,baz=168,slow=2.8,SNR=5.9								
ZALV	**Zalesovo Beam**	**118.42**	**318**	PKiKP		**PKPdf**	**21 22 48.0**	**-1.1**	
ZALV				pmax		pmax			
	comp=Z,1.0nm,0.7s								
MAKZ	**Makanchi**	**118.64**	**310**	*e*PKiKP		**PKPdf**	**21 22 48.7**	**-1.1**	
MAKZ	**Makanchi**	**118.64**	**310**	*e*PKPdf		**PKPdf**	**21 22 48.7**	**-1.1**	
KSH	**Kashi**	**121.17**	**301**	*e*PKP		**PKPdf**	**21 22 55.4**	**+0.4**	
KSH				SKKS			21 31 25.4		
KURK	**Kurchatov**	**121.58**	**314**	*e*PKiKP		**PKPdf**	**21 22 54.7**	**-0.5**	
KURK	**Kurchatov**	**121.58**	**314**	*e*PKPdf		**PKPdf**	**21 22 54.7**	**-0.5**	
AAK	**Ala-Archa**	**122.95**	**304**	*i* PKiKP		**PKPdf**	**21 23 00.8**	**+2.4**	
BVAR	**Borovoye Array**	**126.87**	**316**	PKP		**PKPdf**	**21 23 05.0**	**-0.4**	
	comp=Z,2.0nm,0.8s,baz=42,slow=6.9,SNR=7.2								
BVAR	**Borovoye Array**	**126.87**	**316**	PKiKP		**PKPdf**	**21 23 05.0**	**-0.4**	
BVAR				pmax		pmax			
	comp=Z,2.0nm,0.8s								
BRVK	**Borovoye**	**126.94**	**316**	*i* PKiKP		**PKPdf**	**21 23 05.3**	**-0.2**	
ZRNK	**Zerenda**	**127.71**	**316**	*e*PKiKP		**PKPdf**	**21 23 06.6**	**-0.4**	
ZRNK	**Zerenda**	**127.71**	**316**	*e*PKPdf		**PKPdf**	**21 23 06.5**	**-0.4**	
ARU	**Arti**	**133.40**	**321**	*i* PKiKP		**PKPdf**	**21 23 18.1**	**+0.5**	
ARU							21 25 46.2		
GEYT	**Alibeck**	**134.63**	**296**	PKhKP		PKPpre	21 23 13.4		
	comp=Z,0.7nm,0.4s,baz=252,slow=0.9,SNR=2.9								
ARA0	**ARCESS Array S**	**138.03**	**349**	*e*PKPpre		PKPpre	21 23 19.0		
ARA0				*e*PKPdf		**PKPdf**	**21 23 25.6**	**-0.3**	
ARCES	**ARCESS Array B**	**138.03**	**349**	PKhKP		PKPpre	21 23 19.0		
	comp=Z,1.7nm,0.9s,baz=15,slow=3.7,SNR=3.4								
ARCES				PKP		**PKPdf**	**21 23 25.6**	**-0.3**	
	comp=Z,5.6nm,0.9s,baz=36,slow=1.7,SNR=6.2								
ARCES	**ARCESS Array B**	**138.03**	**349**	PKiKP		**PKPdf**	**21 23 25.6**	**-0.3**	
ARCES				pmax		pmax			
	comp=Z,5.0nm,0.9s								
KLMR	**Klimovskoe**	**140.70**	**333**	*e*PKiKP		**PKPdf**	**21 23 31.7**	**+0.7**	
KLMR				pmax		pmax			
	comp=Z,15nm,0.6s								
MOS	**Moscow**	**144.47**	**327**	*e*PKiKP		**PKPdf**	**21 23 38.7**	**+0.9**	
FIA1	**FINESS Array S**	**144.82**	**342**	*e*PKPdf		**PKPab**	**21 23 35.7**	**-1.6**	
FIA1				*e*PKPdf		PKPbc	21 23 36.2	-1.1	
FIA0	**FINESS Array S**	**144.82**	**342**	*e*PKiKP		**PKPab**	**21 23 36.1**	**-1.2**	
FIA0	**FINESS Array S**	**144.82**	**342**	*e*PKPdf		**PKPab**	**21 23 36.1**	**-1.2**	
FINES	**FINESS Array B**	**144.82**	**342**	PKP		**PKPab**	**21 23 36.1**	**-1.2**	
	comp=Z,11nm,0.8s,baz=63,slow=2.8,SNR=30								
OBN	**Obninsk**	**145.32**	**327**	*i* PKP2		**PKPbc**	**21 23 37.0**	**-2.1**	
OBN				pmax		pmax			
	comp=Z,8.0nm,0.9s								
ZEI	**Tsey**	**145.37**	**304**	*i* PKiKP		**PKPbc**	**21 23 39.5**	**-0.5**	
GOF	**Gofitskoye**	**145.53**	**308** ⇑	*e*PKiKP		**PKPab**	**21 23 41.1**	**+0.6**	
GOF				pmax		pmax			
	comp=Z,13nm,0.6s								
AKH	**Akhalkalaki**	**145.87**	**301** ⇑	*i* P		**PKPab**	**21 23 42.5**	**+0.4**	
VSR	**Storozhevoye**	**145.92**	**320**	*e*PKP2		**PKPbc**	**21 23 40.8**	**-0.4**	
VSR				pmax		pmax			
	comp=Z,10.0nm,0.7s								
KBZ	**Khabaz**	**145.92**	**305**	PKPbc		**PKPdf**	**21 23 40.8**	**+0.1**	
	comp=Z,1.2nm,0.5s,baz=82,slow=1.7,SNR=8.0								
KIV	**Kislovodsk**	**146.03**	**306**	*e*PKP2		**PKPab**	**21 23 42.4**	**-0.1**	
KIV				pmax		pmax			
	comp=Z,8.0nm,1.1s								
KIV	**Kislovodsk**	**146.03**	**306**	*e*PKPdf		**PKPab**	**21 23 42.9**	**+0.4**	
NC303	**NORSAR Array S**	**147.87**	**353**	*e*PKPbc		**PKPbc**	**21 23 45.9**	**-0.6**	
NC405	**NORSAR Array S**	**147.94**	**353**	*e*PKPbc		**PKPbc**	**21 23 46.8**	**+0.2**	
NB201	**NORSAR Array S**	**148.05**	**353**	*e*PKPbc		**PKPbc**	**21 23 46.3**	**-0.6**	
NB201				*e*pPKPab		**pPKPab**	**21 23 57.5**	**-2.0**	
NB2	**NORSAR Subarra**	**148.07**	**353**	PKP		**PKPbc**	**21 23 46.0**	**-1.0**	
	comp=Z,77nm,2.0s,baz=9.1,slow=2.9								
NB2	**NORSAR Subarra**	**148.07**	**353**	PKP		**PKPbc**	**21 23 46.0**	**-1.0**	
	baz=9.1,slow=2.9								
NB200	**NORSAR Array S**	**148.07**	**353**	*e*PKPbc		**PKPbc**	**21 23 46.0**	**-1.0**	
NOA	**NORSAR Array B**	**148.07**	**353**	PKPbc		**PKPbc**	**21 23 46.0**	**-1.0**	
	comp=Z,10nm,0.9s,baz=13,slow=4.4,SNR=17								
NBO02	**NORSAR Array S**	**148.09**	**354**	*e*PKPbc		**PKPbc**	**21 23 46.0**	**-1.0**	
NBO00	**NORSAR Array S**	**148.12**	**354**	*e*PKPbc		**PKPbc**	**21 23 46.6**	**-0.5**	
NAO01	**NORSAR Array S**	**148.29**	**353**	*e*PKPbc		**PKPbc**	**21 23 47.1**	**-0.5**	
NC602	**NORSAR Array S**	**148.33**	**353**	*e*PKPbc		**PKPbc**	**21 23 46.9**	**-0.8**	
ANN	**Anapa**	**149.44**	**309**	*e*PKP2		**PKPbc**	**21 23 51.8**	**+0.9**	
ANN				pmax		pmax			
	comp=Z,37nm,0.9s								
MIGM	**Minsk**	**149.57**	**332**	*e*		**PKPdf**	**21 23 43.0**	**-3.4**	
MNK	**Minsk**	**149.57**	**332**	*e*PKiKP		**PKPdf**	**21 23 43.0**	**-3.4**	
KONO	**Kongsberg**	**149.59**	**354**	*e*PKP2		**PKPbc**	**21 23 50.4**	**-0.5**	
KONO	**Kongsberg**	**149.59**	**354**	*e*PKPbc		**PKPbc**	**21 23 50.4**	**-0.5**	
KONO				*e*pPKPab		**pPKPab**	**21 24 01.8**	**-3.9**	
ZALF	**Zalf**	**151.23**	**285**	*e*P		**PKPab**	**21 24 00.5**	**-3.2**	
AKASG	**Malin Array Be**	**151.51**	**325**	PKPbc		**PKPbc**	**21 23 54.6**	**-1.1**	
	comp=Z,6.4nm,0.6s,baz=46,slow=3.0,SNR=11								
AKBB	**Malin Array Si**	**151.51**	**325**	*e*PKiKP		**PKPbc**	**21 23 54.7**	**-1.0**	
AKBB	**Malin Array Si**	**151.51**	**325**	*e*PKPbc		**PKPbc**	**21 23 54.6**	**-1.0**	
KIEV	**Kiev**	**151.53**	**325**	*e*PKiKP		**PKPbc**	**21 23 56.5**	**+0.8**	
KIEV	**Kiev**	**151.53**	**325**	*e*PKPbc		**PKPbc**	**21 23 56.5**	**+0.8**	
AK11	**Malin Array Si**	**151.56**	**325**	*e*PKPbc		**PKPbc**	**21 23 55.1**	**-0.7**	
SIM	**Simferopol'**	**151.59**	**311**	*i* PKiKP		**PKPbc**	**21 23 57.5**	**+1.4**	
SIM				pmax		pmax			
	comp=Z,18nm,0.8s								
KFRA	**Kufra**	**151.68**	**290**	*e*P		**PKPab**	**21 24 04.6**	**-1.0**	
DRWC	**Darcouich**	**151.69**	**293**	*e*P		**PKPab**	**21 24 09.3**	**+3.7**	
SALA	**Sala**	**151.73**	**285**	*e*P		**PKPbc**	**21 23 57.9**	**+0.8**	
MARH	**Ras Al Marh**	**151.96**	**288**	*e*P		**PKPbc**	**21 23 59.1**	**+1.4**	
HAWK	**Haweek**	**152.02**	**289**	*e*P		**PKPbc**	**21 23 58.3**	**+0.7**	
BIDA	**Albida**	**152.07**	**290**	*e*P		**PKPbc**	**21 23 58.5**	**+0.8**	
SORM	**Soroca**	**153.52**	**321**	⇓ *i*P		**PKPbc**	**21 23 59.6**	**-0.7**	
BR101	**Keskin Array S**	**153.55**	**301**	*e*PKPbc		**PKPbc**	**21 24 00.2**	**-0.7**	
BR131	**Keskin Array S**	**153.55**	**301**	*e*PKPbc		**PKPbc**	**21 24 03.0**	**+2.1**	
BRTR	**Keskin Array B**	**153.56**	**301**	PKPbc		**PKPbc**	**21 24 00.2**	**-0.7**	
	comp=Z,1.4nm,0.7s,baz=122,slow=4.1,SNR=8.2								
KIS	**Kishinev**	**153.91**	**319**	*e*PKP		**PKPbc**	**21 24 03.0**	**+1.9**	
KIS	**Kishinev**	**153.91**	**319**	*e*PKiKP		**PKPbc**	**21 24 03.0**	**+1.9**	
ANTO	**Ankara**	**154.15**	**301**	*e*PKPbc		**PKPab**	**21 24 09.3**	**-6.6**	
BR231	**Keskin MP Arra**	**154.17**	**301**	*e*PKPbc		**PKPbc**	**21 24 01.0**	**-1.1**	
CFR	**Carcaliu**	**155.28**	**316**	⇓ *i*P		**PKPdf**	**21 24 00.5**	**+5.4**	
TESR	**Tescani**	**155.41**	**320**	⇓ *i*P		PKPab	21 24 08.2	-13	
BUR08	**Bucovina Ar. S**	**155.50**	**324**	*e*PKPbc		**PKPab**	**21 24 14.5**	**-6.8**	
BURAR	**Bucovina Array**	**155.51**	**324**	⇓ *i*P		PKPdf	21 24 04.3	+8.8	
TLB	**Topalu**	**155.63**	**315**	⇑ *i*P		**PKPdf**	**21 23 55.3**	**-0.3**	
VRI	**Vrincioaia**	**155.74**	**319**	⇓ *i*P		PKPab	21 24 13.6	-8.7	
KOLS	**Kolonicke sedl**	**156.02**	**329**	*e*PKP		**PKPab**	**21 24 24.5**	**+1.1**	
CRVS	**Cervenica-Dubn**	**156.40**	**330**	*e*PKP2		**PKPab**	**21 24 25.7**	**+0.7**	
CRVS	**Cervenica-Dubn**	**156.40**	**330**	*e*PKP		**PKPab**	**21 24 25.7**	**+0.7**	
MLR	**Muntele Rosu**	**156.40**	**319**	⇑ *i*P		**PKPdf**	**21 24 00.9**	**+4.1**	
DPC	**Dobruska-Polom**	**157.14**	**339**	*e*PKPAB		PKPab	21 24 40.2	+12	
CLL	**Collm**	**157.16**	**345**	*e*PKPdf		**PKPdf**	**21 23 57.0**	**-0.4**	
CLL				*e*pPKPdf		**pPKPdf**	**21 24 09.0**	**+1.6**	
CLL				*e*PKPab		**PKPab**	**21 24 27.0**	**-1.1**	
CLL				*i* pPKPab		**pPKPab**	**21 24 39.7**	**+1.8**	
	comp=Z,49nm,2.0s								
CLL	**Collm**	**157.16**	**345**	*e*PKIKP		**PKPdf**	**21 23 57.0**	**-0.4**	
ARR	**Arges**	**157.22**	**320**	⇓ *i*P		PKPdf	21 24 10.9	+13	
DRGR		**157.33**	**325**	⇑ *i*P		PKPab	21 24 17.9	-11	
BRG	**Berggiesshubel**	**157.34**	**343**	*e*PKP		PKPdf	21 24 08.5	+11	
	comp=Z,50nm,2.4s								
BRG	**Berggiesshubel**	**157.34**	**343**	*e*PKIKP		PKPdf	21 24 08.5	+11	
BRG				pmax		pmax			
	comp=Z,50nm,2.4s								
VYHS	**Vyhne**	**157.81**	**333**	*e*PKP2		**PKPab**	**21 24 32.6**	**+1.5**	
VYHS	**Vyhne**	**157.81**	**333**	*e*PKP		**PKPab**	**21 24 32.6**	**+1.5**	
PRU	**Pruhonice**	**157.98**	**341**	*e*PKPAB		PKPab	21 24 41.7	+10	
PRU	**Pruhonice**	**157.98**	**341**	*e*PKP2		PKPab	21 24 41.7	+10	
KHC	**Kasperske Hory**	**159.03**	**342**	*e*PKPDF		PKPdf	21 24 13.0	+13	
KHC				*e*PKPAB		PKPab	21 24 47.4	+11	
KHC	**Kasperske Hory**	**159.03**	**342**	*e*PKP2		PKPab	21 24 47.4	+11	
VTS	**Vitosha**	**159.67**	**315**	*e*PKP2		**PKPab**	**21 24 40.6**	**+1.0**	
VTS	**Vitosha**	**159.67**	**315**	*e*PKPab		**PKPab**	**21 24 40.6**	**+1.0**	
TOA0	**Torodi Ar. Sit**	**163.62**	**173**	*e*PKPdf		**PKPdf**	**21 24 06.0**	**+0.4**	
TOA0				*e*PKPab		**PKPab**

1.6nm,0.8s,baz=161,slow=4.8,SNR=4.1
SYO Syowa Base 78.88 192 ||ePP P 21 36 05.0 -0.7
KSRS Korea Array 84.43 318 P P 21 36 34.8 -0.6
1.4nm,0.9s,baz=146,slow=6.9,SNR=4.1
KS15 Wonju Array Si 84.45 318 eP P 21 36 34.8 -0.7
KSAR Wonju Array Be 84.45 318 P P 21 36 34.8 -0.7
PETK Petropavlovsk- 84.90 344 P P 21 36 37.3 -0.1
7.2nm,0.9s,baz=117,slow=9.0,SNR=5.5
PEA1 Petropavlovsk- 84.91 344 eP P 21 36 37.3 -0.1
USRK Ussuriysk Ar. 86.97 325 P P 21 36 48.3 +0.4
3.3nm,0.8s,baz=148,slow=3.3,SNR=12
319A Douglas 87.32 52 eS S 21 47 26.8 -1.0
GSI Gunungsitoli 87.51 273 eP P 21 36 53.2 +1.9
37nm,1.1s
LTX Lajitas 90.14 56 eP P 21 37 05.0 +1.6
TX31 Lajitas Ar. Si 90.14 56 eP P 21 37 05.4 +2.0
TXAR Lajitas Array 90.14 56 P P 21 37 05.0 +1.6
0.6nm,0.9s,baz=220,slow=7.5,SNR=4.4
KLR Kul'dur 90.72 329 P P 21 37 06.3 +0.9
1.7nm,1.0s,baz=123,slow=3.9,SNR=4.2
ENH Enshi 92.27 303 eP P 21 37 13.2 0.0
7.2nm,0.9s
SEY Seymchan 95.02 346 P P 21 37 25.0 +0.1
3.2nm,0.7s,baz=123,slow=10,SNR=5.2
ZALV Zalesovo Beam 118.14 319 PKP PKPdf 21 42 48.8 -0.5
0.9nm,0.9s,baz=342,slow=3.6,SNR=3.8
ZAA1 Zalesovo Array 118.14 319 ePKPdf PKPdf 21 42 48.8 -0.5
MK32 Makanchi Array 118.20 310 ePKPdf PKPdf 21 42 49.4 -0.4
MKAR Makanchi Array 118.20 310 PKP PKPdf 21 42 49.4 -0.4
0.9nm,0.9s,baz=67,slow=4.8,SNR=5.9
KURK Kurchatov 121.33 314 ePKPdf PKPdf 21 42 55.6 +0.1
KURBB Kurchatov Arra 121.38 314 PKP PKPdf 21 42 55.6 0.0
0.9nm,0.8s,baz=109,slow=2.1,SNR=11
BVAR Borovoye Array 126.61 316 PKP PKPdf 21 43 05.8 +0.2
1.2nm,0.8s,baz=109,slow=3.6,SNR=6.0
FIA0 FINESS Array S 144.38 342 ePKPdf PKPab 21 43 36.5 +0.1
FINES FINESS Array B 144.38 342 PKP PKPab 21 43 36.5 +0.1
6.4nm,0.9s,baz=83,slow=6.0,SNR=18
AKH Akhalkalaki 145.73 302 ||iP PKPab 21 43 43.5 +1.1
KBZ Khabaz 145.74 306 PKPbc PKPab 21 43 42.3 +0.3
2.6nm,0.8s,baz=132,slow=6.6,SNR=6.1
NB2 NORSAR Subarra 147.58 353 PKP PKPbc 21 43 46.9 +0.4
comp=Z,12nm,1.4s,baz=17,slow=2.6
NB200 NORSAR Array S 147.58 353 ePKPbc PKPbc 21 43 46.9 +0.4
NOA NORSAR Array B 147.58 353 PKPbc PKPbc 21 43 46.9 +0.4
comp=Z,3.1nm,0.8s,baz=14,slow=2.7,SNR=11
AKASG Malin Array Be 151.18 326 PKPbc PKPbc 21 43 55.8 +0.1
comp=Z,5.2nm,0.8s,baz=47,slow=2.5,SNR=14
AKBB Malin Array Si 151.18 326 ePKPbc PKPbc 21 43 55.8 +0.1
BR101 Keskin Array S 153.41 302 ePKPbc PKPbc 21 44 01.6 +0.3
BRTR Keskin Array B 153.41 302 PKPbc PKPbc 21 44 01.6 +0.3
comp=Z,0.9nm,0.9s,baz=64,slow=3.7,SNR=5.8
GERES GERESS Array B 158.82 342 PKPab PKPab 21 44 35.3 -1.1
comp=Z,0.9nm,0.9s,baz=20,slow=4.3,SNR=5.5
VTS Vitosha 159.41 316 ||iP PKPab 21 44 40.0 +0.8
TORD Torodi Ar. Bea 164.10 172 PKPab PKPab 21 45 02.1 +2.1
comp=Z,1.1nm,1.0s,baz=191,slow=2.7,SNR=4.4
TOA1 Torodi Ar. Sit 164.10 172 ePKPab PKPab 21 45 02.1 +2.1

*IDC **06** 21:25:02.7±0.6,29.°02S×176.°27W,h0km,mb4.5/15, mb1 4.7/15,mb1mx4.5/33,mbtmp4.4/15,Error ellipse: s-maj=22.4km s-min=19.9km az=160.0*
*ISCJB **06** 21:25:05.2±0.4,29.°63S±0.°05×176.°19W±0.°08,h33km, mb4.9/35,Error ellipse: s-maj=10.7km s-min=5.8km az=23.6*
*NEIC **06** 21:25:06.8±1.6,29.°60S×176.°23W,h35km±14km,mb4.9/30, Error ellipse: s-maj=11.8km s-min=10.7km az=194.0*
ISC 06 21:25:06.1±0.4,29.°36S±0.°07×176.°18W±0.°06,h28km, n106,σ1§91/108,mb4.9/35,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.53**	**273**			Pn	**Pb**	**21 25 33.1**	**-0.6**
	869nm,0.3s,baz=106,slow=18,SNR=3.9								
RAO						Sn	**Sb**	**21 25 55.5**	**+2.8**
	3µm,0.3s,baz=319,slow=21,SNR=9.5								
OUZ	**Omahuta**	**10.44**	**233**	*e*	P	Pn		21 27 40.3	+6.3
URZ	**Urewera**	**10.49**	**210**		P	Pn	**Pn**	**21 27 32.6**	**-2.0**
	1.1nm,0.3s,baz=345,slow=20,SNR=2.0								
URZ						Sn	**Sn**	**21 29 30.2**	**-0.8**
	8.4nm,0.3s,baz=101,slow=17,SNR=6.9								
URZ	**Urewera**	**10.49**	**210**	*e*	P	Pn	**Pn**	**21 27 32.4**	**-2.2**
URZ						*e*Sn	**Sn**	**21 29 26.3**	**-4.8**
NIUE	**Niue**	**11.71**	**30**		P	Pn		21 27 40.7	-11
	baz=11								
MSVF	**Nonsavu**	**12.72**	**334**	*e*	P	Pn	**Pn**	**21 28 03.2**	**-2.1**
BFZ	**Birch Farm**	**12.89**	**207**	*e*	P	Pn	**Pn**	**21 28 05.6**	**-1.8**
SNZO	**South Karori**	**14.05**	**209**	*e*	P	Pn	**Pn**	**21 28 19.5**	**-3.7**
THZ	**Tophouse**	**15.22**	**213**	*e*	P	Pn	**Pn**	**21 28 35.9**	**-3.2**
	67nm,1.2s								
KHZ	**Kahutara**	**15.45**	**210**	*e*	P	Pn	**Pn**	**21 28 37.3**	**-4.8**
	96nm,1.2s								
LTZ	**Lake Taylor**	**16.31**	**212**	*e*	P	Pn	**Pn**	**21 28 48.1**	**-5.1**
	39nm,1.2s								
CRLZ	**Canterbury Las**	**16.79**	**209**	*e*	P	Pn	**Pn**	**21 28 54.5**	**-4.5**
	92nm,1.2s								
OXZ	**Oxford**	**16.84**	**211**	*e*	P	Pn	**Pn**	**21 28 55.5**	**-4.3**
	47nm,0.5s								
RAR	**Rarotonga**	**16.89**	**65**	*e*	P	Pn	**Pn**	**21 28 55.7**	**-4.9**
	88nm,1.1s								
RPZ	**Rata Peaks**	**17.59**	**212**		P	Pn	**Pn**	**21 29 06.0**	**-3.2**
	1.3nm,0.3s,baz=156,slow=20,SNR=3.5								
RPZ						S	Sn	21 32 09.0	-15
	0.4nm,0.3s,baz=328,slow=19,SNR=2.6								
RPZ	**Rata Peaks**	**17.59**	**212**	*e*	P	Pn	**Pn**	**21 29 06.0**	**-3.2**
	110nm,1.5s								
RPZ						*e*Sn	Sn	21 32 09.0	-15
FOZ	**Fox Glacier**	**18.05**	**215**	*e*	P	Pn	**Pn**	**21 29 13.0**	**-1.8**
	395nm,1.5s								
LBZ	**Lake Benmore**	**18.51**	**212**	*e*	P	Pn		**21 29 21.4**	**+1.0**
	100nm,1.5s								
ODZ	**Otahua Downs**	**18.81**	**210**	*e*	P	Pn		**21 29 24.0**	**-0.1**
	39nm,1.2s								
WKZ	**Wanaka**	**19.39**	**213**	*e*	P	Pn		**21 29 29.7**	**-0.2**
	130nm,1.5s								
EIDS	**Eidsvold**	**29.30**	**270**		P	P		**21 31 08.5**	**+2.2**
	baz=30,SNR=3.8								
EIDS	**Eidsvold**	**29.30**	**270**	*e*	P	P		**21 31 03.6**	**-2.6**
	10nm,0.8s								
RMQ	**Roma**	**31.05**	**267**		P	P		**21 31 24.6**	**+2.9**
	baz=32,SNR=4.9								
CMSA	**Cobar Meteorol**	**32.84**	**256**		P	P		**21 31 39.7**	**+2.2**
	baz=33,SNR=9.8								
QLP	**Quilpie**	**34.96**	**265**		P	P		**21 31 57.4**	**+1.5**
	baz=36,SNR=6.9								
CTA	**Charters Tower**	**35.23**	**276**		P	P		**21 31 58.4**	**+0.2**
	5.6nm,0.5s,baz=107,slow=10,SNR=8.6								
CTAO	**Charters Tower**	**35.23**	**276**	*e*	P	P		**21 31 58.2**	**-0.1**
	7.5nm,0.6s								
STKA	**Stephens Creek**	**36.27**	**255**		P	P		**21 32 08.2**	**+1.1**
	7.3nm,0.5s,baz=100,slow=13,SNR=22								
STKA	**Stephens Creek**	**36.27**	**255**		P	P		**21 32 08.0**	**+0.9**
	baz=37,SNR=17								
STKA	**Stephens Creek**	**36.27**	**255**	*e*	P	P		**21 32 05.6**	**-1.5**
	5.5nm,1.4s								
MTSU	**Mount Surprise**	**37.68**	**278**		P	P		**21 32 20.3**	**+1.0**
	baz=38,SNR=7.2								
HTT	**Hallett**	**38.32**	**252**		P	P		**21 32 25.7**	**+1.1**
	baz=39,SNR=16								
COEN	**Coen**	**40.54**	**283**		P	P		**21 32 43.3**	**+0.1**
	baz=41,SNR=6.2								
COEN	**Coen**	**40.54**	**283**	*e*	P	P		**21 32 43.8**	**+0.6**
	30nm,1.5s								
BBOO	**Buckleboo**	**40.78**	**253**		P	P		**21 32 46.2**	**+1.2**
	baz=41,SNR=5.6								
BBOO	**Buckleboo**	**40.78**	**253**	*e*	P	P		**21 32 44.6**	**-0.4**
	106nm,1.6s								
AS01	**Alice Springs**	**44.72**	**265**	*e*	P	P		**21 33 17.0**	**-0.1**
AS31	**Alice Springs**	**44.76**	**265**	*e*	P	P		**21 33 16.9**	**-0.6**
	3.3nm,0.5s								
ASAR	**Alice Springs**	**44.76**	**265**		P	P		**21 33 17.0**	**-0.5**
	8.2nm,0.5s,baz=105,slow=7.1,SNR=45								
WB2	**Warramunga Arr**	**45.65**	**270**		P	P		**21 33 23.8**	**-0.7**
	baz=46								
WB2	**Warramunga Arr**	**45.65**	**270**	*e*	P	P		**21 33 23.9**	**-0.7**
	18nm,0.6s								
WRAB	**Tennant Creek**	**45.66**	**270**	*e*	P	P		**21 33 23.4**	**-1.1**
	16nm,0.7s								
WR1	**Warramunga Arr**	**45.66**	**270**	*e*	P	P		**21 33 23.7**	**-0.9**
	20nm,0.6s								
WRA	**Warramunga Arr**	**45.66**	**270**		P	P		**21 33 23.7**	**-0.9**
	15nm,0.5s,baz=109,slow=7.9,SNR=47								
WRKA	**Warakurna**	**49.20**	**261**		P	P		**21 33 51.6**	**-0.5**
	baz=50,SNR=5.3								
VNDA	**Vanda**	**49.30**	**186**		P	P		**21 33 56.2**	**+4.2**
	2.1nm,1.0s,baz=349,slow=6.1,SNR=5.9								
VNDA	**Vanda**	**49.30**	**186**	*e*	P	P		**21 33 51.6**	**-0.5**
VNDA				*es*	P	P		**21 33 56.2**	**+4.2**
MTN	**Manton Dam**	**51.41**	**277**	*e*	P	P		**21 34 07.2**	**-1.6**
	35nm,1.5s								
FITZ	**Fitzroy Crossi**	**53.96**	**268**		P	P		**21 34 27.4**	**-0.3**
	baz=54,SNR=8.8								
FITZ	**Fitzroy Crossi**	**53.96**	**268**	*e*	P	P		**21 34 27.2**	**-0.5**
	6.3nm,0.7s								
CASY	**Casey**	**56.80**	**208**	*e*	P	P		**21 34 49.8**	**+2.4**
	13nm,0.6s								
MBWA	**Marble Bar**	**57.92**	**262**	*e*	P	P		**21 34 54.8**	**-1.3**
	34nm,1.4s								
UGM	**Wanagama**	**71.63**	**271**	*e*	P	P		**21 36 23.5**	**-2.1**
	224nm,1.5s								
KKM	**Kota Kinabalu**	**73.76**	**287**	*e*	P	P		**21 36 37.0**	**-1.2**
	23nm,1.2s								
MAW	**Mawson**	**73.83**	**200**		P	P		**21 36 41.2**	**+3.5**
	5.4nm,1.0s,baz=88,slow=4.4,SNR=5.3								
MAW	**Mawson**	**73.83**	**200**	*e*	P	P		**21 36 37.2**	**-0.5**
	4.0nm,1.4s								
CISI	**Cisompet, Garu**	**74.16**	**270**	*e*	P	P		**21 36 39.0**	**-1.6**
	60nm,1.2s								
MJAR	**Matsushiro Arr**	**78.31**	**324**		P	P		**21 37 02.5**	**-1.0**
	1.2nm,0.6s,baz=161,slow=5.4,SNR=3.1								
PLCA	**Paso Flores**	**82.05**	**132**		P	P		**21 37 26.2**	**+2.2**
	2.8nm,1.0s,baz=249,slow=7.8,SNR=4.0								
PLCA	**Paso Flores**	**82.05**	**132**	*e*	P	P		**21 37 26.2**	**+2.2**
	11nm,1.4s								
KCPM	**Cahto Peak**	**84.32**	**38**	*e*	P	P		**21 37 32.3**	**-3.2**
	26µm,0.6s								
KSRS	**Korea Array**	**84.60**	**319**		P	P		**21 37 38.0**	**+1.2**
	1.8nm,0.7s,baz=155,slow=6.7,SNR=3.6								
KS15	**Wonju Array Si**	**84.61**	**319**	*e*	P	P		**21 37 38.0**	**+1.1**
KSAR	**Wonju Array Be**	**84.61**	**319**		P	P		**21 37 38.0**	**+1.1**
PETK	**Petropavlovsk-**	**85.21**	**345**		P	P		**21 37 39.3**	**-0.3**
	3.1nm,0.5s,baz=108,slow=5.7,SNR=5.6								
PEA1	**Petropavlovsk-**	**85.22**	**345**	*e*	P	P		**21 37 39.3**	**-0.3**
IPM	**Ipoh**	**85.91**	**277**	*e*	P	P		**21 37 44.8**	**+0.8**
	11nm,0.7s								
USRK	**Ussuriysk Ar.**	**87.18**	**326**		P	P		**21 37 48.5**	**-1.0**
	2.5nm,0.8s,baz=81,slow=4.7,SNR=5.7								
GSI	**Gunungsitoli**	**87.36**	**273**	*e*	P	P		**21 37 52.3**	**+1.2**
	26nm,0.9s								
MSU	**Marysvale**	**90.13**	**45**	*e*	P	P		**21 38 05.0**	**+1.1**
LTX	**Lajitas**	**90.49**	**56**	*e*	P	P		**21 38 07.0**	**+1.4**
TX31	**Lajitas Ar. Si**	**90.49**	**56**	*e*	P	P		**21 38 05.7**	**+0.1**
TXAR	**Lajitas Array**	**90.49**			P	P		**21 38 07.0**	**+1.4**
	1.2nm,1.0s,baz=213,slow=6.0,SNR=6.4								
F10A	**Beach Ranch, E**	**92.03**	**37**	*e*	P	P		**21 38 13.0**	**+0.7**
	4.9nm,0.8s								
GYA	**Guiyang**	**92.42**	**299**		P	P		**21 38 15.0**	**+0.4**
GYA						PP	**PP**	**21 41 58.9**	**+2.8**
GYA	**Guiyang**	**92.42**	**299**		S	S		**21 49 16.0**	**-0.8**
GYA	**Guiyang**	**92.42**	**299**		SS	SS		21 55 33.8	+4.9
GYA					pmax	pmax			
	comp=Z,20nm,1.0s								
GYA					pmax	pmax			
	comp=Z,120nm,7.2s								
GYA					LR	LR			
	comp=N,560nm,22.0s								
GYA					LR	LR			
	comp=E,470nm,21.8s								
GYA					LR	LR			
	comp=Z,530nm,20.2s								
PD31	**Pinedale Array**	**94.29**	**43**	*e*	P	P		**21 38 23.4**	**+0.3**
PDAR	**Pinedale Array**	**94.29**	**43**		P	P		**21 38 23.4**	**+0.3**
	comp=Z,0.3nm,0.6s,baz=245,slow=11,SNR=3.4								
CM31	**Chiang Mai Ar**	**94.56**	**288**	*e*	P	P		**21 38 26.6**	**+2.1**
CMAR	**Chiang Mai Arr**	**94.56**	**288**		P	P		**21 38 26.6**	**+2.1**
	comp=Z,0.7nm,0.7s,baz=133,slow=3.1,SNR=4.4								
KMI	**Kunming**	**94.78**	**296**		P	P		**21 38 28.3**	**+2.6**
KMI					pmax	pmax			
	comp=Z,6.0nm,1.3s								
ILAR	**Eielson Array**	**96.56**	**12**		P	P		**21 38 32.0**	**-0.5**
	comp=Z,0.9nm,0.7s,baz=218,slow=5.7,SNR=4.0								
ILB	**Eielson Array**	**96.56**	**12**	*e*	P	P		**21 38 32.0**	**-0.5**
CD2	**Chengdu**	**96.88**	**301**	*e*	P	P		**21 38 35.0**	**+0.1**
ZALV	**Zalesovo Beam**	**118.31**	**318**	PKP		**PKPdf**		**21 43 49.8**	**-0.5**
	comp=Z,0.4nm,0.4s,baz=107,slow=7.7,SNR=3.3								
MKAR	**Makanchi Array**	**118.31**	**310**	PKP		**PKPdf**		**21 43 49.9**	**-0.7**
	comp=Z,1.0nm,0.7s,baz=119,slow=1.5,SNR=6.2								
KURK	**Kurchatov**	**121.47**	**314**	PKP		**PKPdf**		**21 43 56.6**	**+0.1**
KURBB	**Kurchatov Arra**	**121.51**	**314**	PKP		**PKPdf**		**21 43 56.6**	**0.0**
	comp=Z,1.4nm,0.7s,baz=108,slow=1.8,SNR=11								
BVAR	**Borovoye Array**	**126.76**	**316**	PKP		**PKPdf**		**21 44 07.2**	**+0.6**
	comp=Z,1.0nm,0.5s,baz=64,slow=3.4,SNR=5.8								
ARU	**Arti**	**133.28**	**321**	PKP		**PKPdf**		**21 44 19.3**	**+0.5**
	comp=Z,1.2nm,0.5s,baz=104,slow=2.9,SNR=3.8								
ARCES	**ARCESS Array B**	**137.88**	**349**	PKP		**PKPdf**		**21 44 29.3**	**+2.2**
	comp=Z,4.8nm,0.8s,baz=11,slow=1.2,SNR=9.0								
FIA1	**FINESS Array S**	**144.68**	**342**	*e*PKPdf		**PKPab**		**21 44 37.7**	**-0.5**
FINES	**FINESS Array B**	**144.68**	**342**	PKP		**PKPab**		**21 44 37.6**	**-0.6**
	comp=Z,7.1nm,0.8s,baz=64,slow=4.4,SNR=14								
KBZ	**Khabaz**	**145.82**	**306**	PKPbc		**PKPab**		**21 44 43.4**	**+0.4**
	comp=Z,2.6nm,0.8s,baz=72,slow=3.2,SNR=5.0								
NB201	**NORSAR Array S**	**147.91**	**353**	*e*PKPbc		**PKPbc**		**21 44 47.9**	**-0.1**
NB2	**NORSAR Subarra**	**147.93**	**353**	PKP		**PKPbc**		**21 44 47.7**	**-0.4**
	comp=Z,8.5nm,0.6s,baz=9.8,slow=2.9								
NOA	**NORSAR Array B**	**147.93**	**353**	PKPbc		**PKPbc**		**21 44 47.4**	**-0.7**
	comp=Z,1.9nm,0.5s,baz=59,slow=1.5,SNR=23								
NBO02	**NORSAR Array S**	**147.96**	**354**	*e*PKPbc		**PKPbc**		**21 44 47.5**	**-0.7**
KONO	**Kongsberg**	**149.46**	**354**	*e*PKPbc		**PKPbc**		**21 44 51.7**	**-0.2**
AKASG	**Malin Array Be**	**151.39**	**325**	PKPbc		**PKPbc**		**21 44 57.3**	**+0.5**
	comp=Z,2.8nm,0.5s,baz=42,slow=2.5,SNR=10								
AK11	**Malin Array Si**	**151.43**	**325**	*e*PKPbc		**PKPbc**		**21 44 56.7**	**-0.3**
BRTR	**Keskin Array B**	**153.46**	**301**	PKPbc		**PKPbc**		**21 45 02.6**	**+0.5**
	comp=Z,1.3nm,0.9s,baz=50,slow=1.9,SNR=3.9								
VYHS	**Vyhne**	**157.68**	**333**	*e*PKP		**PKPab**		**21 45 32.4**	**+0.5**
TORD	**Torodi Ar. Bea**	**163.75**	**173**	PKPab		**PKPab**		**21 45 59.9**	**+0.8**
	comp=Z,1.8nm,0.7s,baz=190,slow=4.1,SNR=6.1								
ESDC	**Sonseca Array**	**167.87**	**30**	PKP		**PKPdf**		**21 45 10.7**	**+0.8**
	comp=Z,0.5nm,0.8s,baz=200,slow=34,SNR=4.5								

IDC 06 21:26:46.8±2.3,28.°32S×176.°32W,h0km,mb4.1/3, mb1 4.3/3,mb1mx3.8/36,mbtmp4.1/3,Error ellipse: s-maj=93.0km s-min=26.5km az=145.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.68**	**236**			Pn	Pn	21 27 17.5	0.0
	baz=90,slow=20,SNR=0.8								
RAO						Sn	Sg	21 27 41.1	+0.1
	316nm,0.3s,baz=90,slow=20,SNR=2.3								
CTA	**Charters Tower**	**35.00**	**275**		P	P		21 33 41.5	+0.3
	1.2nm,0.3s,baz=90,slow=10.0,SNR=1.8								
ASAR	**Alice Springs**	**44.73**	**264**		P	P		21 35 01.9	-0.3
	1.0nm,0.7s,baz=103,slow=6.9,SNR=2.5								
WRA	**Warramunga Arr**	**45.34**	**269**		P	P		21 35 08.4	-0.2
	3.2nm,0.9s,baz=108,slow=7.8,SNR=4.4								
KURBB	**Kurchatov Arra**	**120.70**	**314**	PKP		PKPdf		21 45 39.0	-1.4
	0.4nm,0.8s,baz=117,slow=1.6,SNR=3.6								
FINES	**FINESS Array B**	**143.66**	**342**	PKP		PKPbc		21 46 21.0	+0.5
	3.4nm,0.7s,baz=48,slow=2.8,SNR=6.5								
NB2	**NORSAR Subarra**	**146.89**	**353**	PKP		PKPbc		21 46 30.8	+0.2
	comp=Z,1.4nm,0.6s,baz=9.1,slow=2.9								
NOA	**NORSAR Array B**	**146.89**	**353**	PKPbc		PKPbc		21 46 31.0	+0.4
	comp=Z,2.3nm,0.7s,baz=14,slow=4.5,SNR=5.0								
AKASG	**Malin Array Be**	**150.47**	**326**	PKPbc		PKPbc		21 46 39.9	-0.1
	comp=Z,0.3nm,0.3s,baz=46,slow=2.3,SNR=2.7								

*IDC **06** 21:28:30.7±1.2,29.°45S×176.°06W,h0km,mb3.8/2, mb1 4.1/3,mb1mx3.7/41,mbtmp3.9/3,Error ellipse: s-maj=42.2km s-min=29.7km az=176.0*
ISC 06 21:28:34.8±1.1,29.°6S±0.°1×176.°0W±0.°1,h28km,n10, σ0§82/12,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.69**	**282**			Pn	**Pn**	**21 29 02.6**	**+0.2**
	211nm,0.3s,baz=51,slow=23,SNR=3.4								
RAO						Sn	**Sb**	**21 29 26.6**	**+0.6**
	311nm,0.3s,baz=95,slow=23,SNR=4.0								
URZ	**Urewera**	**10.34**	**212**			Pn	**Pn**	**21 31 00.8**	**-0.4**
	baz=263,slow=6.0,SNR=1.9								
URZ						Sn	**Sn**	**21 32 56.2**	**+0.1**
	0.8nm,0.3s,baz=232,slow=17,SNR=4.8								
ASAR	**Alice Springs**	**44.87**	**265**		P	P		**21 36 46.5**	**-0.5**
	0.5nm,0.6s,baz=102,slow=7.0,SNR=4.2								
WRA	**Warramunga Arr**	**45.79**	**270**		P	P		**21 36 53.4**	**-0.9**
	1.1nm,0.6s,baz=109,slow=6.2,SNR=7.7								
KURBB	**Kurchatov Arra**	**121.78**	**314**	PKP		**PKPdf**		**21 47 25.6**	**-0.1**
	0.4nm,0.9s,baz=108,slow=2.2,SNR=4.3								
FINES	**FINESS Array B**	**144.96**	**342**	PKP		**PKPab**		**21 48 07.5**	**-0.4**
	1.7nm,0.8s,baz=94,slow=4.5,SNR=4.4								
NB2	**NORSAR Subarra**	**148.19**	**353**	PKP		**PKPbc**		**21 48 17.8**	**+0.3**
	comp=Z,1.4nm,0.8s,baz=12,slow=2.9								
NOA	**NORSAR Array B**	**148.19**	**353**	PKPbc		**PKPbc**		**21 48 17.3**	**-0.2**
	comp=Z,1.0nm,0.8s,baz=12,slow=4.4,SNR=4.4								
AKASG	**Malin Array Be**	**151.67**	**325**	PKPbc		**PKPbc**		**21 48 25.9**	**-0.3**
	comp=Z,1.8nm,0.6s,baz=44,slow=3.3,SNR=5.2								
TORD	**Torodi Ar. Bea**	**163.49**	**172**	PKPab		**PKPab**		**21 49 28.6**	**+2.0**
	comp=Z,0.5nm,0.8s,baz=147,slow=2.9,SNR=3.5								

*IDC **06** 21:34:25.2±1.2,29.°62S×176.°37W,h0km,mb4.2/6, mb1 4.3/6,mb1mx4.0/36,mbtmp4.2/6,Error ellipse: s-maj=47.4km s-min=30.3km az=162.0*
*NEIC **06** 21:34:26.7±0.9,29.°88S×176.°50W,h10km,mb4.4/3,Error ellipse: s-maj=20.8km s-min=12.0km az=112.0*
ISC 06 21:34:27.9±0.8,29.7S±0.°2×176.°2W±0.°1,h21km,n20, σ1§42/20,mb4.3/9,1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.52**	**286**			Sn	**Sn**	**21 35 15.4**	**+2.3**
	970nm,0.3s,baz=78,slow=23,SNR=8.6								
RAO	**Raoul Island**	**1.52**	**286**			Pn	**Pn**	**21 34 50.4**	**-3.5**
RAO						Sn	**Sn**	**21 35 15.4**	**+2.3**
URZ	**Urewera**	**10.18**	**211**			Sn	Sn	21 38 38.7	-7.6
	1.0nm,0.3s,baz=183,slow=19,SNR=2.7								
CTA	**Charters Tower**	**35.20**	**277**		P	P		**21 41 21.1**	**+0.2**
	2.3nm,0.2s,baz=112,slow=9.3,SNR=4.4								
STKA	**Stephens Creek**	**36.13**	**256**		P	P		**21 41 29.8**	**+1.1**
	4.8nm,0.7s,baz=97,slow=12,SNR=6.4								
ASAR	**Alice Springs**	**44.68**	**265**		P	P		**21 42 38.5**	**-1.0**
	0.7nm,0.5s,baz=101,slow=6.6,SNR=16								
WRAB	**Tennant Creek**	**45.60**	**271**	*e*	P	P		**21 42 45.5**	**-1.3**
	2.2nm,0.6s								
WRA	**Warramunga Arr**	**45.60**	**271**		P	P		**21 42 45.2**	**-1.7**
	2.8nm,0.6s,baz=110,slow=7.6,SNR=23								
FITZ	**Fitzroy Crossi**	**53.89**	**268**	*e*	P	P		**21 43 49.4**	**-0.6**
	1.4nm,0.7s								
SYO	**Syowa Base**	**78.15**	**192**	||*e*	PP	P	**21 46 25.2**	**+0.1**
MJAR	**Matsushiro Arr**	**78.53**	**324**		P	P	P	**21 46 27.8**	**+0.1**
	0.9nm,0.7s,baz=163,slow=5.5,SNR=3.6								
USRK	**Ussuriysk Ar.**	**87.41**	**326**		P	P		**21 47 14.7**	**+1.3**
	0.8nm,0.7s,baz=180,slow=7.1,SNR=4.1								
ENH	**Enshi**	**92.46**	**304**	*e*	P	P		**21 47 37.9**	**+0.4**
	3.0nm,0.4s								
KURK	**Kurchatov**	**121.65**	**314**	PKP		**PKPdf**		**21 53 19.2**	**-0.5**
KURBB	**Kurchatov Arra**	**121.69**	**314**	PKP		**PKPdf**		**21 53 19.2**	**-0.6**
	0.5nm,0.8s,baz=103,slow=1.7,SNR=6.5								
FINES	**FINESS Array B**	**144.97**	**341**	PKP		**PKPdf**		**21 54 02.3**	**-0.5**
	1.9nm,0.6s,baz=64,slow=4.4,SNR=9.5								
KBZ	**Khabaz**	**145.96**	**305**	PKPbc		**PKPab**		**21 54 06.6**	**+0.3**
	0.9nm,0.6s,baz=182,slow=1.5,SNR=3.0								
NOA	**NORSAR Array B**	**148.24**

GUMA	**Gualdo di Mace**	**0.77**	**39**	Pg		**Pg**	**21 35 04.3**	**-3.7**
GUMA				Sg		**Sg**	**21 35 14.2**	**-3.9**
	4µm,0.2s							
POFI	**Posta Fibreno**	**0.81**	**157**	Pg		**Pg**	**21 35 07.1**	**-1.7**
	790nm,0.8s							
POFI	**Posta Fibreno**	**0.81**	**157**	Pg		**Pg**	**21 35 07.1**	**-1.7**
	790nm,0.8s							
CAFR	**Castel Frentan**	**0.82**	**106**	Pg		**Pg**	**21 35 07.4**	**-1.6**
	1µm,0.5s							
CAFR	**Castel Frentan**	**0.82**	**106**	Pg		**Pg**	**21 35 07.4**	**-1.6**
	1µm,0.5s							
SNTG	**Esanatoglia**	**0.83**	**343**	Pg		**Pg**	**21 35 07.9**	**-1.2**
	709nm,0.2s							
SNTG	**Esanatoglia**	**0.83**	**343**	Pg		**Pg**	**21 35 07.9**	**-1.2**
	709nm,0.2s							
ATCC	**AVT- Casa Cast**	**0.86**	**327**	Pg		**Pg**	**21 35 08.6**	**-1.1**
	1µm,0.4s							
ATCC	**AVT- Casa Cast**	**0.86**	**327**	Pg		**Pg**	**21 35 08.6**	**-1.1**
	1µm,0.4s							
CING	**Cingoli**	**0.91**	**356**	Pg		**Pg**	**21 35 09.4**	**-1.3**
	1µm,0.5s							
CING	**Cingoli**	**0.91**	**356**	Pg		**Pg**	**21 35 09.4**	**-1.3**
	1µm,0.5s							
MGAB	**Montegabbione**	**0.97**	**298**	Pg		**Pg**	**21 35 10.6**	**-1.2**
	1µm,0.5s							
MGAB	**Montegabbione**	**0.97**	**298**	Pg		**Pg**	**21 35 10.6**	**-1.2**
	1µm,0.5s							
MURB	**Monte Urbino**	**0.97**	**325**	Pg		**Pg**	**21 35 10.9**	**-0.9**
	2µm,0.4s							
MURB	**Monte Urbino**	**0.97**	**325**	Pg		**Pg**	**21 35 10.9**	**-0.9**
	2µm,0.4s							
RNI2	**Rionero Sannit**	**1.00**	**139**	Pg		**Pg**	**21 35 10.9**	**-1.4**
	806nm,0.6s							
RNI2	**Rionero Sannit**	**1.00**	**139**	Pg		**Pg**	**21 35 10.9**	**-1.4**
	806nm,0.6s							
ATTE	**AVT- Monte Tez**	**1.00**	**317**	Pg		**Pg**	**21 35 11.7**	**-0.7**
	570nm,0.7s							
ATTE	**AVT- Monte Tez**	**1.00**	**317**	Pg		**Pg**	**21 35 11.7**	**-0.7**
	570nm,0.7s							
CERA	**Filignano**	**1.02**	**147**	Pg		**Pg**	**21 35 10.8**	**-2.0**
CERA	**Filignano**	**1.02**	**147**	Pg		**Pg**	**21 35 10.8**	**-2.0**
SSFR	**Montelago di S**	**1.04**	**340**	Pg		**Pg**	**21 35 11.7**	**-1.4**
	1µm,0.3s							
SSFR	**Montelago di S**	**1.04**	**340**	Pg		**Pg**	**21 35 11.7**	**-1.4**
	1µm,0.3s							
ARVD	**Arcevia**	**1.06**	**347**	Pg		**Pg**	**21 35 12.0**	**-1.5**
ARVD	**Arcevia**	**1.06**	**347**	Pg		**Pg**	**21 35 12.0**	**-1.5**
SACS	**San Casciano d**	**1.08**	**291**	Pg		**Pg**	**21 35 12.7**	**-1.2**
	598nm,1.0s							
MIDA	**Miranda**	**1.09**	**138**	Pg		**Pg**	**21 35 11.7**	**-2.4**
	343nm,0.5s							
MIDA	**Miranda**	**1.09**	**138**	Pg		**Pg**	**21 35 11.7**	**-2.4**
	343nm,0.5s							
LATE	**Laterza**	**1.10**	**278**	Pg		**Pg**	**21 35 13.1**	**-1.1**
	332nm,0.5s							
LATE	**Laterza**	**1.10**	**278**	Pg		**Pg**	**21 35 13.1**	**-1.1**
	332nm,0.5s							
AOI	**Ancona**	**1.11**	**12**	Pg		**Pg**	**21 35 13.1**	**-1.3**
	535nm,0.5s							
AOI	**Ancona**	**1.11**	**12**	Pg		**Pg**	**21 35 13.1**	**-1.3**
	535nm,0.5s							
FRON	**Frontone**	**1.13**	**339**	Pg		**Pg**	**21 35 13.2**	**-1.6**
FRON	**Frontone**	**1.13**	**339**	Pg		**Pg**	**21 35 13.2**	**-1.6**
ATPC	**Poggio Castell**	**1.18**	**330**	Pg		**Pg**	**21 35 14.4**	**-1.4**
	753nm,0.6s							
ATPC	**Poggio Castell**	**1.18**	**330**	Pg		**Pg**	**21 35 14.4**	**-1.4**
	753nm,0.6s							
MPAG	**Monte Paganucc**	**1.23**	**342**	Pg		**Pg**	**21 35 14.8**	**-1.8**
	481nm,0.5s							
MPAG	**Monte Paganucc**	**1.23**	**342**	Pg		**Pg**	**21 35 14.8**	**-1.8**
	481nm,0.5s							
ATMC	**Monte Cedrone**	**1.27**	**321**	Pg		**Pg**	**21 35 16.0**	**-1.4**
	429nm,0.6s							
ATMC	**Monte Cedrone**	**1.27**	**321**	Pg		**Pg**	**21 35 16.0**	**-1.4**
	429nm,0.6s							
FSSB	**Fossombrone**	**1.28**	**343**	Pg		**Pg**	**21 35 16.1**	**-1.6**
	2µm,0.4s							
FSSB	**Fossombrone**	**1.28**	**343**	Pg		**Pg**	**21 35 16.1**	**-1.6**
	2µm,0.4s							
BADI	**Badiali**	**1.29**	**324**	Pg		**Pg**	**21 35 16.5**	**-1.4**
	869nm,1.2s							
BADI	**Badiali**	**1.29**	**324**	Pg		**Pg**	**21 35 16.5**	**-1.4**
	869nm,1.2s							
CAFI	**Castiglion Fio**	**1.30**	**312**	Pg		**Pg**	**21 35 16.4**	**-1.6**
	282nm,0.8s							
CAFI	**Castiglion Fio**	**1.30**	**312**	Pg		**Pg**	**21 35 16.4**	**-1.6**
	282nm,0.8s							
MAON	**Monte Argentar**	**1.59**	**269**	Pg		**Pn**	**21 35 20.2**	**-0.1**
	90nm,0.7s							
MAON	**Monte Argentar**	**1.59**	**269**	Pg		**Pn**	**21 35 20.2**	**-0.1**
	90nm,0.7s							
MS1	**Monte Sant'Ang**	**2.12**	**110**	*e*Pn		**Pb**	**21 35 30.1**	**-0.9**
PTF	**Prato**	**2.20**	**314**	*e*P		**Pn**	**21 35 29.7**	**+0.9**
PTF	**Prato**	**2.20**	**314**	*e*P		**Pn**	**21 35 29.7**	**+0.9**
NVLJ	**Novalja**	**2.40**	**28**	*i* Pn		**Pn**	**21 35 32.2**	**+0.8**
NVLJ					Sn	**Sn**	**21 36 02.1**	**+1.7**
NVLJ	**Novalja**	**2.40**	**28**	*i* Pn		**Pn**	**21 35 32.2**	**+0.8**
NVLJ					Sn	**Sn**	**21 36 02.0**	**+1.7**
POPM	**Popiglio**	**2.43**	**311**	P		**Pn**	**21 35 32.9**	**+1.0**
MAIM	**Mastiano**	**2.50**	**306**	P		**Pn**	**21 35 34.2**	**+1.3**
CDT	**Castel del Mon**	**2.63**	**121**	*e*Pn		**Pn**	**21 35 35.8**	**+1.2**
SARO	**Sassorosso**	**2.72**	**310**	P		**Pn**	**21 35 36.2**	**+0.3**
UDBI	**Udbina**	**2.74**	**40**	*e*Pn		**Pn**	**21 35 38.0**	**+1.8**
UDBI					Sn	**Sn**	**21 36 08.9**	**-0.1**
UDBI	**Udbina**	**2.74**	**40**	*e*Pn		**Pn**	**21 35 38.0**	**+1.8**
UDBI					Sn	**Sn**	**21 36 08.9**	**-0.1**
RIY	**Rijeka**	**2.99**	**16**	*e*Pn		**Pn**	**21 35 40.4**	**+0.9**
BAI	**Bari**	**3.01**	**116**	*e*Pn		**Pn**	**21 35 41.4**	**+1.6**
SG1	**Sgolgore (BA)**	**3.02**	**121**	*e*Pn		**Pn**	**21 35 41.2**	**+1.2**
GRAM	**Graiana**	**3.10**	**312**	P		**Pn**	**21 35 41.2**	**+0.1**
SKDS	**Skadanscina**	**3.13**	**9**	*i* Pn		**Pn**	**21 35 41.9**	**+0.4**
SKDS	**Skadanscina**	**3.13**	**9**	Pn		**Pn**	**21 35 41.9**	**+0.4**
CODM	**Codolo**	**3.15**	**309**	P		**Pn**	**21 35 43.0**	**+1.1**
PGF	**Pioggiola**	**3.17**	**273**	*e*P		**Pn**	**21 35 43.4**	**+1.3**
PGF	**Pioggiola**	**3.17**	**273**	*e*P		**Pn**	**21 35 43.4**	**+1.3**
BOJS	**Bojanci**	**3.36**	**24**	*i* Pn		**Pn**	**21 35 46.0**	**+1.4**
BOJS	**Bojanci**	**3.36**	**24**	*i* Pn		**Pn**	**21 35 46.0**	**+1.4**
CEY	**Cerknica**	**3.38**	**14**	*e*Pn		**Pn**	**21 35 45.3**	**+0.4**
BLY	**Banja Luka**	**3.64**	**50**	*e*Pn		**Pn**	**21 35 51.0**	**+2.5**
LJU	**Ljubljana**	**3.69**	**14**	*e*Pn		**Pn**	**21 35 51.2**	**+2.0**
CRES	**Cresnjev**	**3.71**	**24**	*e*Pn		**Pn**	**21 35 50.2**	**+0.8**
TREB	**Trebinje**	**3.75**	**84**	*e*Pn		**Pn**	**21 35 51.3**	**+1.3**
HCY	**Herceg Novi**	**3.86**	**88**	*e*Pn		**Pn**	**21 35 52.2**	**+0.7**
BRY	**Bratogost**	**3.90**	**82**	*e*Pn		**Pn**	**21 35 53.6**	**+1.4**
OBKA	**Obir**	**4.14**	**12**	*i* Pn		**Pn**	**21 35 57.2**	**+1.7**
	6.2nm,0.4s							
OBKA	**Obir**	**4.14**	**12**	Pn		**Pn**	**21 35 57.2**	**+1.7**
	6.2nm,0.4s							
MYKA	**Terra Mystica**	**4.17**	**3**	*i* Pn		**Pn**	**21 35 57.5**	**+1.6**
	2.3nm,0.2s							
MYKA				*i* Sn		**Sn**	**21 36 46.2**	**+1.9**
	11nm,0.4s							
MYKA	**Terra Mystica**	**4.17**	**3**	Pn		**Pn**	**21 35 57.5**	**+1.6**
	2.3nm,0.2s							
MYKA				Sn		**Sn**	**21 36 46.2**	**+1.9**
	11nm,0.4s							
UPM	**Unac-Piva**	**4.20**	**78**	*e*Pn		**Pn**	**21 35 58.6**	**+2.2**
ABTA	**Abfaltersbach**	**4.32**	**353**	*i* Pn		**Pn**	**21 35 59.7**	**+1.8**
	6.2nm,0.3s							
ABTA				*i* Sn		**Sn**	**21 36 49.6**	**+1.7**
	7.6nm,0.3s							
ABTA	**Abfaltersbach**	**4.32**	**353**	Pn		**Pn**	**21 35 59.7**	**+1.8**
	6.2nm,0.3s							
ABTA				Sn		**Sn**	**21 36 49.6**	**+1.7**
	7.6nm,0.3s							
DRME	**Dracevica, Mon**	**4.39**	**92**	*e*Pn		**Pn**	**21 36 00.3**	**+1.6**
SOKA	**Soboth**	**4.40**	**16**	*i* Pn		**Pn**	**21 36 01.0**	**+2.0**
	1.9nm,0.3s							
SOKA	**Soboth**	**4.40**	**16**	Pn		**Pn**	**21 36 01.0**	**+2.0**
	1.9nm,0.3s							
PDG	**Podgorica**	**4.42**	**88**	‖*i*P		**Pn**	**21 36 01.4**	**+2.2**
PDG	**Podgorica**	**4.42**	**88**	*e*Pn		**Pn**	**21 36 00.8**	**+1.6**
PDG	**Podgorica**	**4.42**	**88**	‖*i*P		**Pn**	**21 36 01.4**	**+2.2**
PDG					S	**Sn**	**21 36 49.9**	**-0.4**
SBF	**Sospel**	**4.50**	**290**	*e*Pn		**Pn**	**21 35 58.1**	**-2.3**
SBF				*e*Sn		**Sn**	**21 36 48.6**	**-3.7**
	4.7nm,0.5s							
SBF	**Sospel**	**4.50**	**290**	*e*Pn		**Pn**	**21 35 58.1**	**-2.3**
KBA	**Koelnbreinsper**	**4.62**	**1**	*e*Pn		**Pn**	**21 36 03.7**	**+1.7**
	2.1nm,0.2s							
KBA				*i* Sn		**Sn**	**21 36 55.6**	**+0.3**
	17nm,0.5s							
KBA	**Koelnbreinsper**	**4.62**	**1**	Pn		**Pn**	**21 36 03.7**	**+1.7**
	2.1nm,0.2s							
KBA				Sn		**Sn**	**21 36 55.6**	**+0.3**
	17nm,0.5s							

BBLS	**Lazići**	**4.69**	**71**	*e*Pn		**Pn**	**21 36 04.9**	**+1.9**
FETA	**Feichten**	**4.91**	**339**	*i* Pn		**Pn**	**21 36 08.6**	**+2.6**
	1.5nm,0.2s							
FETA	**Feichten**	**4.91**	**339**	Pn		**Pn**	**21 36 08.6**	**+2.6**
	1.5nm,0.2s							
FRF	**La Foret Royal**	**4.99**	**285**	*e*Pn		**Pn**	**21 36 05.7**	**-1.3**
FRF	**La Foret Royal**	**4.99**	**285**	*e*Pn		**Pn**	**21 36 05.7**	**-1.3**
TEKS	**Tekeris**	**5.00**	**63**	*e*Pn		**Pn**	**21 36 06.9**	**-0.3**
TIR	**Tirane**	**5.04**	**101**	‖*i*P		**Pn**	**21 36 09.5**	**+1.8**
TIR	**Tirane**	**5.04**	**101**	‖*i*P		**Pn**	**21 36 09.5**	**+1.8**
TIR					S	**Sn**	**21 37 04.4**	**-1.1**
LMR	**La Mourre**	**5.05**	**282**	*e*Pn		**Pn**	**21 36 07.7**	**-0.2**
LMR	**La Mourre**	**5.05**	**282**	*e*Pn		**Pn**	**21 36 07.7**	**-0.2**
MOTA	**Moosalm**	**5.12**	**343**	*i* Pn		**Pn**	**21 36 12.5**	**+3.5**
	2.1nm,0.3s							
MOTA	**Moosalm**	**5.12**	**343**	Pn		**Pn**	**21 36 12.5**	**+3.5**
	2.1nm,0.3s							
IVAS	**Ivanjica**	**5.16**	**75**	*e*Pn		**Pn**	**21 36 10.9**	**+1.5**
DIVS	**Divibare**	**5.16**	**69**	*e*Pn		**Pn**	**21 36 09.2**	**-0.3**
MBDF	**Montbardon**	**5.24**	**298**	*e*P		**Pn**	**21 36 13.0**	**+2.4**
MBDF	**Montbardon**	**5.24**	**298**	*e*P		**Pn**	**21 36 13.0**	**+2.4**
RETA	**Reutte**	**5.33**	**341**	*i* Pn		**Pn**	**21 36 14.3**	**+2.5**
	1.8nm,0.3s							
RETA				*i* Sn		**Sn**	**21 37 15.5**	**+2.6**
	5.5nm,0.4s							
RETA	**Reutte**	**5.33**	**341**	Pn		**Pn**	**21 36 14.3**	**+2.5**
	1.8nm,0.3s							
RETA				Sn		**Sn**	**21 37 15.5**	**+2.6**
	5.5nm,0.4s							
DAVA	**Damuels**	**5.39**	**335**	*i* Pn		**Pn**	**21 36 15.5**	**+2.8**
	5.8nm,0.5s							
DAVA				*i* Sn		**Sn**	**21 37 16.8**	**+2.3**
	6.5nm,0.4s							
DAVA	**Damuels**	**5.39**	**335**	Pn		**Pn**	**21 36 15.5**	**+2.8**
	5.8nm,0.5s							
DAVA				Sn		**Sn**	**21 37 16.8**	**+2.3**
	6.5nm,0.4s							
MOA	**Molln**	**5.43**	**7**	*i* Pn		**Pn**	**21 36 15.1**	**+2.0**
	1.9nm,0.2s							
MOA				*i* Sn		**Sn**	**21 37 14.8**	**-0.4**
	8.9nm,0.4s							
MOA	**Molln**	**5.43**	**7**	Pn		**Pn**	**21 36 15.1**	**+2.0**
	1.9nm,0.2s							
TRUS	**Trudelj**	**5.49**	**69**	*e*Pn		**Pn**	**21 36 15.0**	**+1.1**
LPG	**La Plagne**	**5.60**	**305**	*e*P		**Pn**	**21 36 18.4**	**+2.7**
LPG	**La Plagne**	**5.60**	**305**	*e*P		**Pn**	**21 36 18.4**	**+2.7**
GRUS	**Gruza**	**5.62**	**73**	*e*Pn		**Pn**	**21 36 17.0**	**+1.3**
LPL	**La Plagne**	**5.62**	**305**	*e*Pn		**Pn**	**21 36 14.3**	**-1.7**
LPL				*e*Sn		**Sn**	**21 37 15.1**	**-5.2**
	2.3nm,0.4s							
CONA	**Conrad Observa**	**5.76**	**18**	*i* Pn		**Pn**	**21 36 18.6**	**+0.9**
	2.0nm,0.3s							
CONA				*i* Sn		**Sn**	**21 37 24.5**	**+1.1**
	2.5nm,0.3s							
CONA	**Conrad Observa**	**5.76**	**18**	Pn		**Pn**	**21 36 18.6**	**+0.9**
	2.0nm,0.3s							
CONA				Sn		**Sn**	**21 37 24.5**	**+1.1**
	2.5nm,0.3s							
SELS	**Selova**	**5.81**	**80**	*e*Pn		**Pn**	**21 36 19.4**	**+1.0**
SMRF	**Simiane la Rot**	**5.83**	**288**	*e*P		**Pn**	**21 36 20.8**	**+2.2**
SMRF	**Simiane la Rot**	**5.83**	**288**	*e*P		**Pn**	**21 36 20.8**	**+2.2**
ORIF	**Oris-en-Rattie**	**5.90**	**297**	*e*P		**Pn**	**21 36 22.6**	**+3.0**
ORIF	**Oris-en-Rattie**	**5.90**	**297**	*e*P		**Pn**	**21 36 22.6**	**+3.0**
BARS	**Barje**	**6.30**	**84**	‖*i*Pn		**Pn**	**21 36 26.3**	**+1.2**
GERES	**GERESS Array B**	**6.39**	**2**	Pn		**Pn**	**21 36 27.3**	**+0.9**
	0.5nm,0.3s,baz=172,slow=13,SNR=14							
GERES				Sn		**Sn**	**21 37 38.8**	**-0.2**
	1.5nm,0.3s,baz=168,slow=22,SNR=11							
BOLS	**Boljevac**	**6.49**	**75**	*e*Pn		**Pn**	**21 36 27.0**	**-0.6**
MDVR	**Moldovita**	**6.54**	**66**	‖*i*P		**Pn**	**21 36 29.7**	**+1.3**
MDVR	**Moldovita**	**6.54**	**66**	‖*i*P		**Pn**	**21 36 29.7**	**+1.3**
KHC	**Kasperske Hory**	**6.67**	**2**	*e*PN		**Pn**	**21 36 30.9**	**+0.7**
KHC				*e*SN		**Sn**	**21 37 42.2**	**-3.6**
KHC	**Kasperske Hory**	**6.67**	**2**	Pn		**Pn**	**21 36 30.9**	**+0.7**
BZS	**Buzias**	**6.78**	**59**	‖*i*P		**Pn**	**21 36 33.1**	**+1.4**
BZS	**Buzias**	**6.78**	**59**	‖*i*P		**Pn**	**21 36 33.1**	**+1.4**
ZAPS	**Zavoj**	**6.92**	**80**	*e*Pn		**Pn**	**21 36 36.0**	**+2.4**
HINF	**Hinteralfeld**	**7.02**	**322**	*e*Pn		**Pn**	**21 36 32.5**	**-2.5**
HINF				*e*Sn		**Sn**	**21 37 48.0**	**-6.4**
	3.4nm,0.4s							
CDF	**Champ du Feu**	**7.29**	**327**	*e*Pn		**Pn**	**21 36 36.7**	**-2.0**
CDF				*e*Sn		**Sn**	**21 37 55.2**	**-6.0**
	3.4nm,0.3s							
VTS	**Vitosha**	**7.33**	**86**	‖*i*P		**Pn**	**21 36 41.7**	**+2.3**
VTS	**Vitosha**	**7.33**	**86**	S		**Sn**	**21 38 00.1**	**-2.2**
VTS	**Vitosha**	**7.33**	**86**	‖*i*P		**Pn**	**21 36 41.7**	**+2.3**
HAU	**Haudompre**	**7.39**	**321**	*e*Pn		**Pn**	**21 36 37.7**	**-2.3**
HAU				*e*Sn		**Sn**	**21 37 57.2**	**-6.3**
	8.5nm,0.5s							
DRGR		**8.00**	**54**	‖*i*P		**Pn**	**21 36 51.7**	**+3.3**
DRGR		**8.00**	**54**	‖*i*P		**Pn**	**21 36 51.7**	**+3.3**
VOIR		**8.99**	**67**	‖*i*P		**Pn**	**21 37 04.8**	**+2.7**
VOIR		**8.99**	**67**	‖*i*P		**Pn**	**21 37 04.8**	**+2.7**
FINES	**FINESS Array B**	**20.51**	**18**	P		**P**	**21 39 30.6**	**+0.7**
	1.9nm,0.9s,baz=198,slow=8.5,SNR=2.1							
TORD	**Torodi Ar. Bea**	**30.89**	**202**	P		**P**	**21 41 09.9**	**+1.3**
	0.4nm,0.9s,baz=17,slow=9.0,SNR=2.5							
ARU	**Arti**	**31.95**	**48**	P		**P**	**21 41 18.3**	**+0.7**
	0.5nm,0.2s,baz=256,slow=12,SNR=4.3							

*ISCJB **06** 21:36:36.2±0.5,39.°08N±0.°04×29.°00E±0.°04,h11km±8km, Error ellipse: s-maj=7.9km s-min=4.4km az=152.8*
*DDA **06** 21:36:36.2,39.°04N×29.°00E,h7km,Md2.3*
*ISK **06** 21:36:36.3,39.°14N×29.°02E,h5km,MD2.5*
*CSEM **06** 21:36:36.2±0.2,39.°11N×28.°97E,h5km,MD2.3,Error ellipse: s-maj=5.2km s-min=4.0km az=132.0*

ISC 06 21:36:36.4±0.9,39.°10N±0.°03×28.°98E±0.°03,h14km±8km, n20,σ0s76/30,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.21**	**256**	*i* P		**Pg**	**21 36 41.2**	**0.0**
DEMI				*i* S		**Sg**	**21 36 44.5**	**0.0**
DEMI	**Demirci**	**0.21**	**256**	P		**Pg**	**21 36 41.2**	**0.0**
DEMI				S		**Sg**	**21 36 44.5**	**0.0**
GEDZ	**Gediz**	**0.34**	**99**	*e*PG		**Pg**	**21 36 43.3**	**-0.1**
GEDZ				*e*SG		**Sg**	**21 36 48.1**	**0.0**
GEDZ	**Gediz**	**0.34**	**99**	*e*Pg		**Pg**	**21 36 43.3**	**-0.1**
GEDZ				*e*Sg		**Sg**	**21 36 48.1**	**0.0**
GDZ	**Gediz**	**0.39**	**91**	*i* P		**Pg**	**21 36 43.8**	**-0.5**
GDZ				*i* S		**Sg**	**21 36 49.3**	**-0.4**
GDZ	**Gediz**	**0.39**	**91**	P		**Pg**	**21 36 43.8**	**-0.5**
GDZ				S		**Sg**	**21 36 49.3**	**-0.4**
TVSB	**Tavsanli**	**0.51**	**46**	*e*PG		**Pg**	**21 36 45.9**	**-0.7**
TVSB				*e*SG		**Sg**	**21 36 52.7**	**-0.8**
TVSB	**Tavsanli**	**0.51**	**46**	*e*Pg		**Pg**	**21 36 45.9**	**-0.7**
TVSB				*e*Sg		**Sg**	**21 36 52.7**	**-0.8**
KULA	**Kula-Manisa**	**0.63**	**203**	*e*PG		**Pb**	**21 36 49.8**	**+0.5**
KULA	**Kula-Manisa**	**0.63**	**203**	*e*Pg		**Pb**	**21 36 49.8**	**+0.5**
MANT	**Manisa**	**0.69**	**209**	*i* P		**Pg**	**21 36 48.5**	**-1.4**
MANT				*i* S		**Sg**	**21 36 58.0**	**-1.0**
MANT	**Manisa**	**0.69**	**209**	P		**Pg**	**21 36 48.5**	**-1.4**
MANT				S		**Sg**	**21 36 58.0**	**-1.0**
KHL	**Karahalli**	**0.88**	**151**	*e*PG		**Pb**	**21 36 54.0**	**+0.5**
KHL	**Karahalli**	**0.88**	**151**	*e*Pg		**Pb**	**21 36 54.0**	**+0.5**
KCTX	**Karacabey (Bur**	**1.26**	**338**	*e*PN		**Pn**	**21 37 00.7**	**+1.0**
KCTX	**Karacabey (Bur**	**1.26**	**338**	*e*Pn		**Pn**	**21 37 00.7**	**+1.0**
IZI	**Iznik**	**1.30**	**17**	*e*PN		**Pg**	**21 37 00.4**	**-1.0**
IZI	**Iznik**	**1.30**	**17**	*e*Pn		**Pg**	**21 37 00.4**	**-1.0**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN		**Pb**	**21 37 03.7**	**+0.1**
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn		**Pb**	**21 37 03.7**	**+0.1**

*IDC **06** 21:42:20.7±1.2,29.°21S×176.°15W,h0km,mb3.9/4, mb1 4.1/4,mb1mx3.8/24,mbtmp3.9/4,Error ellipse: s-maj=70.0km s-min=29.9km az=168.0*
*ISCJB **06** 21:42:23.5±1.3,29.°75S±0.°09×176.°2W±0.°1,h28km, mb3.9/4,Error ellipse: s-maj=14.4km s-min=12.7km az=162.7*

ISC 06 21:42:25.1±1.0,29.°6S±0.°1×176.°2W±0.°1,h28km,n10, σ1s27/11,mb3.9/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.56**	**282**	Pn		**Pn**	**21 42 52.0**	**+1.1**
	105nm,0.3s,baz=96,slow=19,SNR=2.6							
RAO				Sn		**Sn**	**21 43 08.6**	**-1.5**
	180nm,0.3s,baz=90,slow=20,SNR=4.0							
URZ	**Urewera**	**10.29**	**211**	Sn		**Sn**	**21 46 44.1**	**-1.1**
	1.2nm,0.3s,baz=241,slow=24,SNR=6.3							
STKA	**Stephens Creek**	**36.21**	**255**	P		**P**	**21 49 27.9**	**+2.3**
	2.0nm,0.6s,baz=84,slow=9.3,SNR=4.0							
ASAR	**Alice Springs**	**44.74**	**265**	P		**P**	**21 50 36.0**	**-0.3**
	0.8nm,0.6s,baz=99,slow=7.3,SNR=14							
WRA	**Warramunga Arr**	**45.66**	**270**	P		**P**	**21 50 42.7**	**-0.9**
	1.1nm,0.6s,baz=110,slow=8.1,SNR=11							
TXAR	**Lajitas Array**	**90.62**	**56**	P		**P**	**21 55 24.6**	**-0.6**
	0.3nm,0.9s,baz=203,slow=6.7,SNR=3.3							
MKAR	**Makanchi Array**	**118.46**	**310**	PKP		**PKPdf**	**22 01 09.3**	**-0.6**
	0.2nm,0.6s,baz=163,slow=2.4,SNR=2.9							
FINES	**FINESS Array B**	**144.90**	**342**	PKP		**PKPab**	**22 01 57.3**	**-0.7**
	2.1nm,0.9s,baz=35,slow=7.0,SNR=5.1							
AKASG	**Malin Array Be**	**151.58**	**325**	PKPbc		**PKPbc**	**22 02 15.9**	**-0.4**
	0.3nm,0.3s,baz=51,slow=2.6,SNR=4.3							
TORD	**Torodi Ar. Bea**	**163.52**	**173**	PKPab		**PKPab**	**22 03 17.9**	**+0.8**
	0.6nm,0.8s,baz=204,slow=3.2,SNR=3.4							

*ATH **06** 21:42:36.3,38.°80N×26.°30E,h14km±4km,ML1.4/3,Error ellipse: s-maj=4.3km s-min=0.9km az=292.0*
*CSEM **06** 21:42:36.5±0.2,38.°81N×26.°32E,h10km,ML1.4,Error ellipse: s-maj=6.5km s-min=3.2km az=84.0*
*DDA **06** 21:42:37.1,38.°79N×26.°36E,h7km,Md2.5*

ISC 06 21:42:36.2±1.1,38.°80N±0.°02×26.°34E±0.°05,h6km±11km, n20,σ1s02/33,1C-3D,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
PRK	**Paraskevi**	**0.45**	**353**	P		**Pg**	**21 42 44.6**	**-0.3**
PRK				S		**Sg**	**21 42 51.2**	**+0.4**
PRK	**Paraskevi**	**0.45**	**353**	P		**Pg**	**21 42 44.6**	**-0.3**
PRK				S		**Sg**	**21 42 51.2**	**+0.4**
PRK				AML		AML	21 42 55.2	
	comp=E,135µm,0.3s							
PRK				AML		AML	21 42 55.7	
	comp=N,90µm,0.2s							
CHOS	**Chios island**	**0.47**	**208**	P		**Pg**	**21 42 45.1**	**-0.1**
CHOS				S		**Sg**	**21 42 51.5**	**+0.1**
CHOS	**Chios island**	**0.47**	**208**	P		**Pg**	**21 42 45.1**	**-0.1**
CHOS				S		**Sg**	**21 42 51.5**	**+0.1**
CHOS				AML		AML	21 42 52.3	
	comp=E,97µm,0.2s							
CHOS				AML		AML	21 42 52.8	
	comp=N,92µm,0.3s							
URLA	**Izmir**	**0.48**	**155**	*i* P		**Pg**	**21 42 46.0**	**+0.5**
URLA				*i* S		**Sb**	**21 42 53.5**	**-1.0**
URLA	**Izmir**	**0.48**	**155**	P		**Pg**	**21 42 46.0**	**+0.5**
URLA				S		**Sb**	**21 42 53.5**	**-1.0**
SIGR	**SIGRI**	**0.56**	**318**	P		**

YUS	**Yu-Shan**	**1.67 217**	*e*P	**Pg**	**21 43 49.8**	**-0.5**
	baz=228						
YUS			*e*S	**Sb**	**21 44 10.5**	**+0.1**
	baz=228						
ALS	**Alishan**	**1.74 221**	*e*P	**Pg**	**21 43 52.0**	**+0.5**
	baz=221						
CHN5	**Tsauling**	**1.75 226**	P	**Pg**	**21 43 51.5**	**-0.3**
	baz=228						
CHN5			*e*S	**Sg**	**21 44 14.9**	**+0.3**
	baz=228						
HATJ	**Hateruma jima**	**1.78 115**	P	**Pn**	**21 43 49.0**	**+0.1**
CHKT	**Chengkung**	**1.83 200**	*e*P	**Pn**	**21 43 49.5**	**-0.1**
	baz=183						
CHKT			*e*S	**Sb**	**21 44 14.1**	**-0.6**
	baz=183						
JKRS	**Kuro-shima**	**1.89 108**	P	**Pn**	**21 43 50.5**	**+0.2**
JKRS			*e*S	**Sn**	**21 44 13.4**	**-0.7**
ELDTW	**Lidau**	**1.89 210**	*e*P	**Pb**	**21 43 52.6**	**-0.1**
	baz=197						
JIJ	**Ishigaki jima**	**1.97 103**	P	**Pn**	**21 43 51.8**	**+0.4**
CHN4	**Tsaushan**	**1.98 222**	*e*P	**Pb**	**21 43 54.6**	**+0.3**
	baz=225						
CHN4			*e*S	**Sb**	**21 44 19.7**	**+0.6**
	baz=225						
STYT	**Tauyuan**	**2.04 216**	*e*P	**Pb**	**21 43 56.0**	**+0.7**
	baz=218						
WTP	**Ta-pu**	**2.05 220**	*e*P	**Pb**	**21 43 56.3**	**+0.8**
	baz=209						
WTP			*e*S	**Sg**	**21 44 24.0**	**-0.2**
	baz=209						
TWK	**Hsinying**	**2.11 223**	*e*P	**Pb**	**21 43 55.2**	**-1.3**
	baz=225						
TWK			*e*S	**Sg**	**21 44 25.3**	**-0.8**
	baz=225						
CHN1	**Nanshi**	**2.15 220**	*e*P	**Pb**	**21 43 57.3**	**+0.2**
	baz=210						
CHN1			*e*S	**Sg**	**21 44 27.0**	**-0.2**
	baz=210						
SGST	**Jiashian**	**2.20 218**	*e*P	**Pb**	**21 43 58.5**	**+0.5**
	baz=208						
SGST			*e*S	**Sg**	**21 44 27.6**	**-1.2**
	baz=208						

*IDC **06** 21:45:03.6±1.8, 29°.92S×176°.22W, h0km, mb3.8/2, mb1 1.4/3, mb1mx3.7/22, mbtmp3.9/3, ML3.4/1, Error ellipse: s-maj=45.8km s-min=26.1km az=35.0*
*ISCJB **06** 21:45:05.0±2.4, 30°.13S±0°.09×176°.1W±0°.2, h33km, mb3.8/2, Error ellipse: s-maj=26.9km s-min=10.8km az=165.6*
ISC 06 21:45:08.1±1.7, **30°.0S**±0°.1×**176°.2W**±0°.2, **h35**km, **n6,** σ1=**56**/8, **Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.69 297**		Pn	**Pn**	**21 45 34.7**	**-0.4**
	145nm,0.3s,baz=90,slow=20,SNR=3.3						
RAO				Sn	**Sn**	**21 45 56.4**	**+0.8**
	299nm,0.3s,baz=270,slow=20,SNR=4.0						
URZ	**Urewera**	**9.91 212**		Pn	**Pn**	**21 47 26.3**	**-1.7**
	0.3nm,0.3s,baz=225,slow=19,SNR=2.6						
URZ				Sn	**Sn**	**21 49 19.1**	**+1.2**
	1.2nm,0.3s,baz=38,slow=18,SNR=3.6						
ASAR	**Alice Springs**	**44.70 266**		P	**P**	**21 53 17.9**	**-0.1**
	0.4nm,0.7s,baz=98,slow=7.4,SNR=4.1						
WRA	**Warramunga Arr**	**45.65 271**		P	**P**	**21 53 25.8**	**+0.2**
	1.6nm,0.6s,baz=110,slow=7.6,SNR=14						
FINES	**FINESS Array B**	**145.31 341**		PKPbc	**PKPbc**	**22 04 40.2**	**-1.0**
	1.9nm,1.0s,baz=17,slow=2.0,SNR=5.6						
TORD	**Torodi Ar. Bea**	**163.09 173**		PKPab	**PKPab**	**22 05 59.6**	**+2.5**
	2.0nm,0.8s,baz=197,slow=3.7,SNR=11						

*JMA **06** 21:50:36.3±0.4, 44°.23N×148°.42E, h0km, M3.9*
*SKHL **06** 21:50:36.8±0.0, 44°.63N×148°.64E, h35km±4km, mb4.6/2*
ISC 06 21:50:35.1±4.0, **44°.63N**±0°.08×**148°.8E**±0°.2, **h35**km, **n12,** σ1=**65**/18, **Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**0.89 313**		*i* P	**Pn**	**21 50 50.6**	**-0.5**
KUR				AMB	AMB	21 50 52.8	
	130nm,0.2s						
KUR				AMB	AMB	21 50 52.8	
	60nm,0.2s						
KUR				AMB	AMB	21 50 52.8	
	210nm,0.2s						
KUR				*i* S	**Sn**	**21 51 00.9**	**-1.9**
KUR				A	A	21 51 05.3	
	650nm,0.2s						
KUR				A	A	21 51 05.3	
	40nm,0.2s						
YUK	**Yuzh-Kuril'sk**	**2.19 255**		*e*P	**Pn**	**21 51 10.0**	**+1.1**
YUK				AMB	AMB	21 51 10.8	
	70nm,0.5s						
YUK				AMB	AMB	21 51 10.8	
	110nm,0.5s						
YUK				AMB	AMB	21 51 10.8	
	170nm,0.5s						
YUK				*i* S	**Sn**	**21 51 34.9**	**+0.2**
YUK				A	A	21 51 35.7	
	190nm,0.4s						
YUK				A	A	21 51 35.7	
	320nm,0.4s						
NEM2	**Nemuro 2**	**2.54 241**		P	**Pn**	**21 51 13.7**	**0.0**
NEM2				*e*S	**Sn**	**21 51 41.5**	**-1.8**
JRA	**Rausu**	**2.72 257**		P	**Pn**	**21 51 17.5**	**+1.2**
JRA				*e*S	**Sn**	**21 51 48.3**	**+0.3**
JNK	**Nakash**	**3.11 252**		P	**Pn**	**21 51 22.9**	**+1.3**
JNK				*e*S	**Sn**	**21 51 56.9**	**-0.7**
JAK	**Akkeshi**	**3.38 243**		P	**Pn**	**21 51 25.7**	**+0.4**
JAR	**Ashorobuto**	**3.86 252**		P	**Pn**	**21 51 34.4**	**+2.5**
JCH	**Churui**	**4.43 245**		P	**Pn**	**21 51 41.9**	**+2.2**
YSS	**Yuzh-Sakhalins**	**4.82 301**		*e*P	**Pn**	**21 51 47.2**	**+2.2**
JNBK	**Urakawa-nobuka**	**4.98 244**		P	**Pn**	**21 51 48.2**	**+0.9**
JKB	**Kayabe**	**6.29 247**		P	**Pn**	**21 52 06.1**	**+0.8**
JOT	**Ohata**	**6.54 243**		P	**Pn**	**21 52 08.7**	**0.0**
JOT				*e*S	**Sn**	**21 53 18.6**	**-3.4**

*IDC **06** 21:55:08.1±1.9, 29°.31S×175°.96W, h0km, mb4.0/3, mb1 4.2/4, mb1mx3.8/33, mbtmp4.1/4, ML3.5/1, Error ellipse: s-maj=55.5km s-min=30.6km az=169.0*
ISC 06 21:55:12.7±1.5, **29°.5S**±0°.1×**176°.0W**±0°.1, **h28**km, **n7,** σ0=**93**/9, **mb4.1**/3, **Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.69 277**		Pn	**Pn**	**21 55 40.9**	**+0.6**
	491nm,0.3s,baz=51,slow=3.9,SNR=9.2						
RAO				Sn	**Sb**	**21 56 04.0**	**0.0**
	346nm,0.3s,baz=270,slow=20,SNR=2.9						
URZ	**Urewera**	**10.48 211**		Pn	**Pn**	**21 57 41.9**	**+0.9**
	0.3nm,0.3s,baz=212,slow=19,SNR=1.7						
URZ				Sn	**Sn**	**21 59 36.6**	**-0.8**
	3.6nm,0.3s,baz=79,slow=23,SNR=8.3						
CTA	**Charters Tower**	**35.39 277**		P	**P**	**22 02 06.6**	**+0.3**
	1.0nm,0.4s,baz=119,slow=12,SNR=1.7						
ASAR	**Alice Springs**	**44.91 265**		P	**P**	**22 03 24.3**	**-0.9**
	0.9nm,0.5s,baz=104,slow=7.7,SNR=13						
WRA	**Warramunga Arr**	**45.82 270**		P	**P**	**22 03 30.9**	**-1.5**
	1.9nm,0.6s,baz=109,slow=7.9,SNR=24						
FINES	**FINESS Array B**	**144.83 342**		PKP	**PKPab**	**22 14 45.3**	**0.0**
	1.2nm,0.9s,baz=64,slow=3.2,SNR=9.1						
NOA	**NORSAR Array B**	**148.05 353**		PKPbc	**PKPbc**	**22 14 55.3**	**+0.3**
	0.7nm,0.7s,baz=15,slow=4.6,SNR=3.3						

*IDC **06** 21:57:41.3±1.9, 29°.45S×176°.26W, h0km, mb3.9/3, mb1 4.2/4, mb1mx3.8/36, mbtmp4.0/4, ML3.8/1, Error ellipse: s-maj=52.6km s-min=32.1km az=4.0*
*ISCJB **06** 21:57:42.5±2.0, 29°.72S±0°.09×176°.2W±0°.2, h21km, mb3.9/3, Error ellipse: s-maj=21.6km s-min=11.8km az=161.3*
ISC 06 21:57:44.5±1.6, **29°.6S**±0°.1×**176°.3W**±0°.1, **h21**km, **n7,** σ0=**58**/9, **mb4.0**/3, **Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.46 282**		Pn	**Pb**	**21 58 11.0**	**+0.1**
	345nm,0.3s,baz=102,slow=19,SNR=3.3						
RAO				Sn	**Sn**	**21 58 28.2**	**+0.1**
	854nm,0.3s,baz=88,slow=21,SNR=7.2						
URZ	**Urewera**	**10.26 211**		Pn	**Pn**	**22 00 10.8**	**+0.4**
	0.7nm,0.3s,baz=66,slow=9.5,SNR=2.8						
URZ				Sn	**Sn**	**22 02 04.4**	**-0.4**
	0.3nm,0.3s,baz=165,slow=20,SNR=1.6						
ASAR	**Alice Springs**	**44.65 265**		P	**P**	**22 05 55.7**	**-0.3**
	0.7nm,0.5s,baz=102,slow=6.6,SNR=8.8						
WRA	**Warramunga Arr**	**45.57 270**		P	**P**	**22 06 02.7**	**-0.5**
	1.2nm,0.6s,baz=109,slow=7.6,SNR=9.1						
FITZ	**Fitzroy Crossi**	**53.86 268**		P	**P**	**22 07 06.4**	**0.0**
	1.2nm,0.8s,baz=127,slow=5.1,SNR=1.1						
KURBB	**Kurchatov Arra**	**121.59 314**		PKP	**PKPdf**	**22 16 37.0**	**+0.9**
	0.1nm,0.4s,baz=90,slow=1.9,SNR=2.3						
FINES	**FINESS Array B**	**144.85 341**		PKP	**PKPdf**	**22 17 18.4**	**-0.8**
	1.2nm,0.7s,baz=64,slow=6.7,SNR=3.5						

IDC 06 21:59:12.4±4.9, **28°.27S**×**176°.53W, h0**km, **mb3.6**/2, **mb1 3.9**/2, **mb1mx3.6**/36, **mbtmp3.6**/2, **Error ellipse: s-maj=124.3km s-min=37.5km az=127.0, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.57 231**		Pn	**Pn**	**21 59 41.3**	**-0.2**
	baz=270,slow=20,SNR=0.9						
RAO				Sn	**Sn**	**22 00 02.1**	**-0.4**
	168nm,0.3s,baz=24,slow=20,SNR=1.3						
ASAR	**Alice Springs**	**44.55 264**		P	**P**	**22 07 26.0**	**-0.3**
	0.5nm,0.6s,baz=99,slow=8.0,SNR=5.2						
WRA	**Warramunga Arr**	**45.35 261**		P	**P**	**22 07 33.4**	**+0.7**
	1.0nm,1.0s,baz=108,slow=7.9,SNR=4.9						
FINES	**FINESS Array B**	**143.55 342**		PKP	**PKPbc**	**22 18 46.5**	**+0.8**
	3.1nm,1.1s,baz=180,slow=1.0,SNR=3.3						

*IDC **06** 22:04:05.7±0.9, 29°.76S×176°.37W, h0km, mb4.3/8, mb1 4.4/10, mb1mx4.1/37, mbtmp4.3/10, ML3.9/2, Error ellipse: s-maj=27.1km s-min=21.7km az=178.0*
*ISCJB **06** 22:04:06.9±0.9, 29°.95S±0°.06×176°.3W±0°.1, h24km, mb4.3/11, Error ellipse: s-maj=14.4km s-min=8.9km az=173.3*
*NEIC **06** 22:04:07.1±0.6, 29°.81S×176°.39W, h10km, mb4.5/5, Error ellipse: s-maj=13.7km s-min=11.5km az=87.0*
ISC 06 22:04:09.6±0.8, **29°.82S**±0°.09×**176°.41W**±0°.1, **h24**km, **n26,** σ1=**04**/29, **mb4.4**/11, **Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.43 293**		Pn	**Pn**	**22 04 32.9**	**-1.1**
	335nm,0.3s,baz=296,slow=24,SNR=5.7						
RAO				Sn	**Sb**	**22 04 54.8**	**+1.6**
	276nm,0.3s,baz=84,slow=24,SNR=5.9						
URZ	**Urewera**	**9.99 211**		Pn	**Pn**	**22 06 30.3**	**-1.2**
	0.6nm,0.3s,baz=139,slow=20,SNR=3.2						
URZ				Sn	**Sn**	**22 08 22.7**	**-0.1**
	0.9nm,0.3s,baz=72,slow=20,SNR=5.2						
RPZ	**Rata Peaks**	**17.10 212**		P	**Pn**	**22 08 05.4**	**-1.5**
	0.8nm,0.3s,baz=356,slow=14,SNR=3.5						
DZM	**Mont Dzumac**	**17.23 293**		Pn	**Pn**	**22 08 08.0**	**-0.7**
	8.8nm,0.8s						
CTA	**Charters Tower**	**35.08 277**		P	**P**	**22 11 02.7**	**+1.7**
	4.1nm,0.7s,baz=105,slow=9.1,SNR=7.0						
CTAO	**Charters Tower**	**35.08 277**		*e*P	**P**	**22 11 00.6**	**-0.4**
	17nm,0.6s						
STKA	**Stephens Creek**	**35.95 256**		P	**P**	**22 11 10.0**	**+1.6**
	3.3nm,0.6s,baz=88,slow=9.3,SNR=7.8						
ASAR	**Alice Springs**	**44.52 266**		P	**P**	**22 12 18.3**	**-1.2**
	0.7nm,0.6s,baz=97,slow=6.9,SNR=10						
WRAB	**Tennant Creek**	**45.45 271**		*e*P	**P**	**22 12 26.4**	**-0.5**
	4.2nm,0.7s						
WRA	**Warramunga Arr**	**45.46 271**		P	**P**	**22 12 26.1**	**-0.9**
	5.8nm,0.8s,baz=110,slow=7.7,SNR=27						
WRA				PcP	**PcP**	**22 14 05.9**	**0.0**
	2.0nm,1.1s,baz=101,slow=2.5,SNR=4.8						
FITZ	**Fitzroy Crossi**	**53.74 269**		P	**P**	**22 13 29.9**	**-0.2**
	3.9nm,0.9s,baz=134,slow=2.5,SNR=3.8						
CASY	**Casey**	**56.30 208**		*e*P	**P**	**22 13 47.6**	**-0.3**
	0.6nm,0.8s						
QSPA	**South Pole Qui**	**60.29 180**		*e*P	**P**	**22 14 18.1**	**+2.1**
	20nm,1.1s						
MJAR	**Matsushiro Arr**	**78.56 324**		P	**P**	**22 16 08.6**	**-0.3**
	2.0nm,0.7s,baz=154,slow=3.9,SNR=4.8						
KSRS	**Korea Array**	**84.81 319**		P	**P**	**22 16 41.4**	**-0.5**
	0.5nm,0.6s,baz=144,slow=4.5,SNR=2.7						
KSAR	**Wonju Array Be**	**84.82 319**		P	**P**	**22 16 41.4**	**-0.6**
USRK	**Ussuriysk Ar.**	**87.44 326**		P	**P**	**22 16 55.4**	**+0.7**
	2.1nm,0.8s,baz=123,slow=5.3,SNR=5.1						
MKAR	**Makanchi Array**	**118.45 310**		PKP	**PKPdf**	**22 22 54.0**	**-0.9**
	0.7nm,0.9s,baz=74,slow=5.1,SNR=4.0						
KURK	**Kurchatov**	**121.64 314**		PKP	**PKPdf**	**22 23 00.4**	**-0.4**
KURBB	**Kurchatov Arra**	**121.68 314**		PKP	**PKPdf**	**22 23 00.4**	**-0.5**
	baz=88,slow=1.9						
FINES	**FINESS Array B**	**145.05 341**		PKPbc	**PKPdf**	**22 23 42.9**	**-1.2**
	2.5nm,0.7s,baz=41,slow=6.1,SNR=7.5						
NB2	**NORSAR Subarra**	**148.36 353**		PKP	**PKPbc**	**22 23 52.8**	**-0.5**
	comp=2,1.1nm,0.8s,baz=16,slow=3.2						
NOA	**NORSAR Array B**	**148.36 353**		PKPbc	**PKPbc**	**22 23 52.7**	**-0.6**
	comp=Z,1.3nm,0.8s,baz=14,slow=4.3,SNR=3.9						
AKASG	**Malin Array Be**	**151.65 325**		PKPbc	**PKPbc**	**22 24 00.8**	**-0.7**
	comp=Z,2.8nm,0.7s,baz=42,slow=2.5,SNR=5.9						
BRTR	**Keskin Array B**	**153.51 300**		PKPbc	**PKPbc**	**22 24 07.0**	**+0.8**
	comp=Z,0.8nm,1.0s,baz=117,slow=1.6,SNR=3.0						
TORD	**Torodi Ar. Bea**	**163.32 174**		PKPab	**PKPab**	**22 25 02.7**	**+1.5**
	comp=Z,1.7nm,0.9s,baz=170,slow=3.3,SNR=7.0						

IDC 06 22:05:11.0±14.0, **1°.10N**×**97°.22E, h0**km, **mb3.7**/4, **mb1 3.8**/5, **mb1mx3.5**/60, **mbtmp3.7**/5, **ML3.8**/1, **Error ellipse: s-maj=365.1km s-min=107.7km az=122.0, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**17.33**	**6**	P	Pn	22 09 14.1	-0.4
	0.1nm,0.3s,baz=196,slow=12,SNR=15						
H08S2	**Diego Garcia H**	**26.15 250**		T	T	22 37 38.0	
	baz=69,slow=75,SNR=55						
H08S3	**Diego Garcia H**	**26.15 250**		T	T	22 37 37.1	
	baz=69,slow=75,SNR=33						
H08S1	**Diego Garcia H**	**26.16 250**		T	T	22 37 36.5	
	baz=69,slow=75,SNR=51						
MKAR	**Makanchi Array**	**47.34 346**		P	P	22 13 46.7	+0.1
	1.1nm,0.8s,baz=160,slow=7.2,SNR=8.6						
KURBB	**Kurchatov Arra**	**51.83 345**		P	P	22 14 20.6	-0.1
	0.4nm,0.7s,baz=168,slow=6.5,SNR=6.3						
ZALV	**Zalesovo Beam**	**53.66 351**		P	P	22 14 34.1	0.0
	1.4nm,0.7s,baz=173,slow=4.4,SNR=8.7						
BVAR	**Borovoye Array**	**56.35 341**		P	P	22 14 53.4	-0.3
	0.4nm,0.7s,baz=159,slow=4.5,SNR=2.6						

LJU 06 22:05:10.2, 46°.29N×13°.64E, h7km, **ML0.3, Austria**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CADS	**Cadrg**	**0.09 133**		*i* Pg	Pg	22 05 12.4	+0.1
CADS				*i* Sg	Sg	22 05 14.0	+0.2
	comp=Z,10.0nm,0.1s						
ROBS	**Robic**	**0.10 244**		*i* Pg	Pg	22 05 12.5	0.0
ROBS				*i* Sg	Sg	22 05 14.1	0.0
	comp=Z,1.0nm,0.0s						
GORS	**Gorjuse**	**0.25**	**83**	*i* Pg	Pg	22 05 15.2	+0.1
	comp=Z,1.0nm,0.1s						

*IDC **06** 22:09:22.1±0.6, 35°.88N×142°.38E, h0km, mb4.2/22, mb1 4.3/27, mb1mx4.2/58, mbtmp4.2/27, ML3.9/3, Error ellipse: s-maj=16.4km s-min=14.3km az=112.0*
*ISCJB **06** 22:09:25.0±1.1, 35°.93N±0°.03×142°.27E±0°.03, h27km±7km, mb4.5/52, Error ellipse: s-maj=5.0km s-min=4.5km az=139.4*
*JMA **06** 22:09:25.8±0.1, 35°.96N×142°.21E, h75km±3km, M3.8*
*MOS **06** 22:09:26.9±1.0, 36°.26N×142°.22E, h28km, mb4.7/33, Error ellipse: s-maj=9.6km s-min=6.0km az=119.3*
*NEIC **06** 22:09:27.8±0.8, 35°.79N×142°.29E, h38km±7km, mb4.8/24, Error ellipse: s-maj=6.6km s-min=5.9km az=107.0*
ISC 06 22:09:27.0±2.4, **35°.91N**±0°.04×**142°.31E**±0°.05, **h31**km±17km, **n154,** σ1=**59**/162, **mb4.5**/52, **5C-1D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.20 261**		P	**Pn**	**22 09 46.4**	**-1.2**
CHOJ				*e*S	**Sn**	**22 10 02.1**	**-0.7**
JHO	**Hitachi**	**1.57 297**		P	**Pn**	**22 09 50.7**	**-2.1**
BSO1	**Boso 1**	**1.66 221**		P	**Pn**	**22 09 53.3**	**-0.2**
BSO1				*e*S	**Sn**	**22 10 14.5**	**+1.1**
BSO3	**Boso 3**	**1.84 234**		P	**Pn**	**22 09 55.5**	**-0.7**
JFK	**Kawauchi**	**1.86 322**		P	**Pn**	**22 09 54.8**	**-2.0**
JFK				S	**Sn**	**22 10 16.0**	**-3.2**
JFT	**Otama**	**2.26 316**		P	**Pn**	**22 10 00.9**	**-1.3**
JFT				*e*S	**Sn**	**22 10 27.0**	**-2.1**
JMM	**Marumori**	**2.30 329**		P	**Pn**	**22 10 00.7**	**-2.1**
JMM				*e*S	**Sn**	**22 10 27.7**	**-2.4**
JAG	**Ashikaga**	**2.37 283**		P	**Pn**	**22 10 02.1**	**-1.6**
JAG				*e*S	**Sn**	**22 10 28.7**	**-3.1**
JFY	**Yanaizu**	**2.58 306**		P	**Pn**	**22 10 05.3**	**-1.3**
JKT	**Katashina**	**2.62 290**		P	**Pn**	**22 10 06.1**	**-1.1**
JKT				*e*S	**Sn**	**22 10 35.9**	**-2.1**
JOD2	**Odawara 2**	**2.70 257**		P	**Pn**	**22 10 07.3**	**-1.0**
JOD2				*e*S	**Sn**	**22 10 39.1**	**-0.9**
JRY	**Ryogami san**	**2.77 273**		P	**Pn**	**22 10 08.1**	**-1.1**
JRY				*e*S	**Sn**	**22 10 39.8**	**-1.8**
MJAR	**Matsushiro Arr**	**3.38 282**		Pn	**Pn**	**22 10 17.5**	**-0.1**
	13nm,0.3s,baz=93,slow=9.3,SNR=121						
MAJO	**Matsushiro**	**3.38 282**		*e*P	**Pn**	**22 10 17.8**	**+0.2**
MAJO				*e*		22 10 56.3	
MAJO	**Matsushiro**	**3.38 282**		*e*Pn	**Pn**	**22 10 17.8**	**+0.2**
MAJO				*e*Sn	**Sn**	**22 10 56.3**	**-0.4**
MAT	**Matsushiro**	**3.38 282**		P	**Pn**	**22 10 17.4**	**-0.2**
MAT				*e*S	**Sn**	**22 10 58.1**	**+1.4**
MJB9	**Matsu-Tunnel**	**3.38 282**		*e*Pn	**Pn**	**22 10 17.8**	**+0.2**
MJB9				*e*Sn	**Sn**	**22 10 56.5**	**-0.3**
JHJ2	**Mitsune**	**3.47 217**		*e*Pn	Pn	22 10 16.4	-2.4
JHJ2				*e*Sn	**Sn**	**22 10 56.4**	**-2.4**
JHJ	**Hachijo jima 2**	**3.48 218**		Pn	**Pn**	**22 10 18.1**	**-0.9**
	34nm,0.3s,baz=224,slow=8.7,SNR=14						
JHJ				Sn	**Sn**	**22 10 54.7**	**-4.3**
	78nm,0.3s,baz=65,slow=20,SNR=6.9						
INU	**Inuyama**	**4.35 264**		*e*Pn	**Pn**	**22 10 32.0**	**+1.0**
ERM	**Erimo**	**6.13**	**6**	*e*P	Pn	22 10 52.0	-3.4
ERM				*e*		22 12 02.7	
ERM	**Erimo**	**6.13**	**6**	*e*Pn	Pn	22 10 52.0	-3.4
ERM				*e*Sn	**Sn**	**22 12 02.7**	**-1.8**
ASAJ	**Asahikawa**	**8.20**	**1**	Pn	**Pn**	**22 11 21.2**	**-2.7**
	baz=264,slow=7.4						
ASAJ				Sn	**Sn**	**22 12 52.4**	**-3.0**
	baz=270,slow=20						
ASAJ	**Asahikawa**	**8.20**	**1**	*e*Pn	Pn	22 11 20.6	-3.2
ASAJ				*e*Sn	**Sn**	**22 12 52.4**	**-3.0**
YUK	**Yuzh-Kuril'sk**	**8.56**	**17**	*i* P	**Pn**	**22 11 28.5**	**-0.2**
JNU	**Nakatsue**	**9.83 257**		Pn	**Pn**	**22 11 46.3**	**+0.1**
	0.7nm,0.3s,baz=221,slow=11,SNR=2.3						
KUR	**Kuril'sk**	**10.23**	**23**	*e*P	**Pn**	**22 11 54.5**	**+3.0**
MSHR	**Mys Shultsa**	**10.91 311**		*ce*P	**Pn**	**22 12 00.2**	**-0.7**
YSS	**Yuzh-Sakhalins**	**11.04**	**2**	*e*P	**Pn**	**22 12 00.3**	**-2.4**
YSS				pmax	pmax		
	comp=Z,13nm,0.7s						
USRK	**Ussuriysk Ar.**	**11.44 319**		Pn	**Pn**	**22 12 08.1**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=124,slow=12,SNR=9.2						
KSRS	**Korea Array**	**11.66 282**		Pn	**Pn**	**22 12 13.5**	**+2.4**
	comp=Z,0.3nm,0.3s,baz=101,slow=13,SNR=25						
KS01	**Wonju Array Si**	**11.68 282**		*e*Sn	**Sn**	**22 14 28.4**	**+7.6**
KS15	**Wonju Array Si**	**11.69 282**		*e*Pn	**Pn**	**22 12 13.5**	**+1.9**
KSAR	**Wonju Array Be**	**11.69 282**		P	**Pn**	**22 12 13.5**	**+1.9**
KSAR	**Wonju Array Be**	**11.69 282**		Pn	**Pn**	**22 12 13.5**	**+1.9**
TYV	**Tymovskoe**	**14.95**	**1**	*e*P	**P**	**22 13 00.5**	**-0.7**
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
KLR	**Kul'dur**	**15.40 333**		Pn	**Pn**	**22 12 58.4**	**-3.5**
	comp=Z,0.2nm,0.3s,baz=143,slow=14,SNR=4.4						
H11N2	**WAKE ISLAND Hy**	**26.95 120**		T	T	22 43 09.5	
	baz=312,slow=75,SNR=75						
H11N1	**WAKE ISLAND Hy**	**26.96 120**		T	T	22 43 10.5	
	baz=312,slow=75,SNR=146						
H11N3	**WAKE ISLAND Hy**	**26.97 120**		T	T	22 43 12.5	
	baz=312,slow=75,SNR=61						
YAK	**Yakutsk**	**27.33 347**		*e*P	**P**	**22 15 09.0**	**+0.3**
YAK				pmax	pmax		
	comp=Z,18nm,0.9s						
H11S1	**WAKE ISLAND Hy**	**27.64 122**		T	T	22 43 57.7	
	baz=314,slow=75,SNR=176						
H11S3	**WAKE ISLAND Hy**	**27.64 122**		T	T	22 43 55.2	
	baz=314,slow=75,SNR=163						
H11S2	**WAKE ISLAND Hy**	**27.66 122**		T	T	22 43 55.8	
	baz=314,slow=75,SNR=151						
ENH	**Enshi**	**27.99 268**		*e*P	**P**	**22 15 14.6**	**-0.5**
	comp=Z,15nm,0.8s						
BOD	**Bodaibo**	**28.87 328**		*e*P	**P**	**22 15 21.7**	**-0.8**
BOD				pmax	pmax		
	comp=Z,17nm,1.2s						
SONA1	**Songino Array**	**29.02 305**		*e*P	**P**	**22 15 24.9**	**+0.7**
SONA0	**Songino Array**	**29.02 305**		*e*P	**P**	**22 15 24.7**	**+0.5**
	comp=Z,7.8nm,0.9s						
SONM	**Songino Array**	**29.02 305**		P	**P**	**22 15 24.7**	**+0.5**
	comp=Z,8.3nm,0.9s,baz=98,slow=9.4,SNR=14						
ZAK	**Zakamensk**	**31.54 310**		*e*P	**P**	**22 15 46.4**	**0.0**
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.3s						
TLY	**Talaya**	**31.62 312**		P	**P**	**22 15 47.0**	**+0.1**
	comp=Z,5.1nm,0.6s,ba

comp=Z,1.4nm,0.6s,baz=79,slow=8.0,SNR=8.2
BRVK Borovoye 51.92 313 *ce* P **P 22 18 32.8 +0.2**
BRVK pmax pmax
comp=Z,13nm,1.0s
ZRNK Zerenda 52.70 313 *e* P **P 22 18 38.9 +0.5**
ZRNK pmax pmax
comp=Z,4.0nm,0.7s
ZRNK Zerenda 52.70 313 *e* P **P 22 18 38.9 +0.5**
comp=Z,4.0nm,0.7s
GSI Gunungsitoli 53.86 241 *e* P **P 22 18 48.0 +0.6**
comp=Z,25nm,0.9s
KKAR Karatay Array 54.32 301 *e* P **P 22 18 50.8 +0.3**
KKAR pmax pmax
comp=Z,7.0nm,0.9s
KKAR Karatay Array 54.32 301 *e* P **P 22 18 50.8 +0.3**
comp=Z,6.9nm,0.9s
INK Inuvik 55.06 27 P **P 22 18 56.5 +1.1**
comp=Z,1.2nm,0.6s,baz=42,slow=3.1,SNR=3.5
INK Inuvik 55.06 27 *e* P **P 22 18 56.5 +1.1**
comp=Z,11nm,1.5s
FITZ Fitzroy Crossi 55.99 199 P **P 22 19 02.7 +0.1**
comp=Z,1.1nm,0.6s,baz=41,slow=11,SNR=3.6
FITZ Fitzroy Crossi 55.99 199 *e* P **P 22 19 02.7 +0.1**
comp=Z,37nm,1.8s
WRAB Tennant Creek 56.04 189 *e* P **P 22 19 01.2 -1.8**
WRAB pmax pmax
comp=Z,13nm,0.8s
WRAB Tennant Creek 56.04 189 *e* P **P 22 19 01.2 -1.8**
comp=Z,13nm,0.8s
WB2 Warramunga Arr 56.05 189 *e* P **P 22 19 02.3 -0.8**
WR1 Warramunga Arr 56.05 189 *e* P **P 22 19 02.2 -0.9**
comp=Z,34nm,1.8s
WRA Warramunga Arr 56.05 189 P **P 22 19 02.2 -0.9**
comp=Z,2.5nm,0.8s,baz=8.2,slow=7.6,SNR=17
SVE Sverdlovsk 56.47 319‖ *e* P **P 22 19 06.5 +0.8**
SVE pmax pmax
comp=Z,9.0nm,0.9s
ARU Arti 57.68 319 *c i* P **P 22 19 13.9 -0.4**
ARU 22 21 18.7
ARU S **S 22 27 06.4 -4.2**
ARU pmax pmax
comp=Z,9.0nm,1.0s
ARU Arti 57.68 319 *e* P **P 22 19 14.6 +0.3**
comp=Z,9.3nm,1.0s
AS31 Alice Springs 59.78 189 *e* P **P 22 19 27.9 -1.2**
comp=Z,1.4nm,0.6s
ASAR Alice Springs 59.78 189 P **P 22 19 27.9 -1.2**
comp=Z,0.5nm,0.8s,baz=5.4,slow=8.4,SNR=3.7
ASAR Alice Springs 59.78 189 P **P 22 19 28.0 -1.2**
ASAR pmax pmax
comp=Z,1.0nm,0.8s
YKA Yellowknife Ar 64.42 30 P **P 22 19 59.9 +0.1**
comp=Z,1.3nm,0.8s,baz=299,slow=6.4,SNR=7.9
YKB5 Yellowknife Ar 64.42 30 *e* P **P 22 19 59.9 +0.1**
KLMR Klimovskoe 65.09 328 *e* P **P 22 20 03.1 -1.2**
KLMR pmax pmax
comp=Z,9.0nm,1.5s
FIA0 FINESS Array S 70.15 333 *e* P **P 22 20 36.2 0.0**
FIA0 FINESS Array S 70.15 333 *e* P **P 22 20 36.1 0.0**
FINES FINESS Array B 70.15 333 P **P 22 20 36.1 +0.1**
comp=Z,2.5nm,0.8s,baz=62,slow=4.5,SNR=7.7
SUMG Summit 71.81 0 *e* P **P 22 20 48.2 +1.6**
SUMG pmax pmax
comp=Z,17nm,1.3s
SUMG Summit 71.81 0 *e* P **P 22 20 48.2 +1.6**
comp=Z,17nm,1.3s
KBZ Khabaz 72.19 311 P **P 22 20 49.2 +0.5**
comp=Z,4.0nm,0.8s,baz=104,slow=2.2,SNR=12
KBZ Khabaz 72.19 311 P **P 22 20 49.3 +0.5**
KBZ pmax pmax
comp=Z,5.0nm,0.9s
KIV Kislovodsk 72.19 312 *e* P **P 22 20 50.3 +1.3**
KIV pmax pmax
comp=Z,9.0nm,1.0s
KIV Kislovodsk 72.19 312 *e* P **P 22 20 50.1 +1.1**
comp=Z,7.1nm,0.7s
LRM Limekiln Ridge 74.44 44 *e* P **P 22 21 04.0 +1.6**
BOZ Bozeman (W) 75.01 44 *e* P **P 22 21 07.3 +1.7**
BOZ pmax pmax
comp=Z,4.0nm,1.0s
BOZ Bozeman (W) 75.01 44 *e* P **P 22 21 07.2 +1.7**
comp=Z,3.6nm,1.0s
NC204 NORSAR Array S 75.46 338 *e* P **P 22 21 09.4 +1.7**
NB2 NORSAR Subarra 75.50 338 P **P 22 21 08.2 +0.2**
comp=Z,6.0nm,1.0s,baz=39,slow=5.9
NB200 NORSAR Array S 75.50 338 *e* P **P 22 21 07.9 -0.1**
NOA NORSAR Array B 75.50 338 P **P 22 21 07.9 -0.1**
comp=Z,3.3nm,0.8s,baz=39,slow=5.7,SNR=14
NBO02 NORSAR Array S 75.60 338 *e* P **P 22 21 09.8 +1.2**
AKASG Malin Array Be 75.63 323 P **P 22 21 08.4 -0.4**
comp=Z,0.9nm,0.5s,baz=48,slow=7.5,SNR=5.2
AKBB Malin Array Si 75.63 323 *e* P **P 22 21 08.4 -0.4**
AKBB pmax pmax
comp=Z,21nm,0.6s
AKBB Malin Array Si 75.63 323 *e* P **P 22 21 08.4 -0.4**
comp=Z,21nm,0.6s
KIEV Kiev 75.64 323 *i* P **P 22 21 08.2 -0.7**
KIEV pmax pmax
comp=Z,3.0nm,0.9s
BW06 Boulder Array 77.94 46 *e* P **P 22 21 22.5 +0.2**
PD31 Pinedale Array 77.94 46 *e* P **P 22 21 22.5 +0.2**
PDAR Pinedale Array 77.94 46 P **P 22 21 22.5 +0.2**
comp=Z,1.1nm,0.7s,baz=236,slow=1.9,SNR=8.1
BR101 Keskin Array S 80.14 312 *e* P **P 22 21 35.2 +0.9**
BRTR Keskin Array B 80.14 312 P **P 22 21 35.2 +0.9**
comp=Z,1.2nm,0.9s,baz=109,slow=5.7,SNR=7.8
BR231 Keskin MP Arra 80.58 313 *e* P **P 22 21 35.7 -0.9**
PV10 Paradox Valley 80.97 49 *e* P **P 22 21 41.7 +2.7**
CLL Collm 82.43 331 *e* P **P 22 21 47.0 +1.0**
CLL *e* 22 21 56.0
comp=Z,4.0nm,0.9s
CLL *e* 22 22 07.0
CLL Collm 82.43 331 *e* P **P 22 21 47.0 +1.0**
CLL *e* 22 21 56.0
GERES GERESS Array B 84.05 329 P **P 22 21 53.0 -1.6**
comp=Z,0.2nm,0.3s,baz=36,slow=7.0,SNR=4.9
GERES GERESS Array B 84.05 329 P **P 22 21 53.0 -1.6**
LAZ Ladron 84.68 51 *e* P **P 22 22 01.5 +3.3**
ANMO Albuquerque 84.75 50 *ce* P **P 22 22 00.5 +1.9**
ANMO pmax pmax
comp=Z,10.0nm,2.5s
319A Douglas 85.23 55 *e* P **P 22 21 56.9 -4.0**
comp=Z,14nm,1.0s
LTX Lajitas 90.23 53 *e* P **P 22 22 25.9 +0.9**
LTX Lajitas 90.23 53 *e* P **P 22 22 25.9 +0.9**
TX31 Lajitas Ar. Si 90.23 53 *e* P **P 22 22 25.7 +0.7**
TXAR Lajitas Array 90.23 53 P **P 22 22 25.9 +0.9**
comp=Z,0.9nm,0.9s,baz=291,slow=2.8,SNR=9.1
TOA1 Torodi Ar. Sit 118.64 315 *e* PKPdf **PKPdf 22 28 13.6 +1.1**
TORD Torodi Ar. Bea 118.64 315 PKP **PKPdf 22 28 13.6 +1.1**
comp=Z,0.2nm,0.7s,baz=6.8,slow=2.4,SNR=2.5

MAN 06 22:09:35,19.21N×121.07E,h1km,mb4.5,ML3.3,MS3.2, 1C-1D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.98**	**206**‖	*i* P	Pb	22 09 54.4	-0.4
PIP				*e* S	Sb	22 10 08.1	-0.1
SGCP	**Mt. Cagua**	**1.33**	**136**	*e* P	Pb	22 10 01.0	+0.2
SGCP				*e* S	Sn	22 10 20.9	+1.8
APYP	**Conner**	**1.35**	**173**	*e* P	Pb	22 10 01.6	+0.5
APYP				*e* S	Sn	22 10 21.1	+1.6
ABRA	**Dolores**	**1.59**	**192**	*e* P	Pn	22 10 03.6	-0.7
ABRA				*e* S	Sg	22 10 27.4	+1.3
CVP	**Callao Caves**	**1.66**	**154**‖	*i* P	Pg	22 10 06.8	0.0
CVP				*i* S	Sg	22 10 28.7	+0.4
CAUP	**Cauayan**	**2.36**	**162**	*e* P	Pb	22 10 19.0	+0.6
CAUP				*e* S	Sg	22 11 03.6	+13

IDC 06 22:09:38.0±4.9,28.39S×176.76W,h0km,mb4.0/2, mb1 4.2/2,mb1mx3.7/30,mbtmp4.0/2,Error ellipse: s-maj=115.9km s-min=34.4km az=124.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.33**	**230**	Pn	Pb	22 10 04.3	+0.4
	350nm,0.3s,baz=91,slow=19,SNR=4.1						
RAO				Sn	Sb	22 10 21.8	+0.3
	740nm,0.3s,baz=80,slow=23,SNR=7.7						
ASAR	**Alice Springs**	**44.34**	**264**	P	P	22 17 50.2	0.0
	1.0nm,0.6s,baz=104,slow=7.1,SNR=12						
WRA	**Warramunga Arr**	**45.16**	**269**	P	P	22 17 56.7	0.0
	1.4nm,0.6s,baz=109,slow=7.7,SNR=10.0						
FINES	**FINESS Array B**	**143.61**	**342**	PKP	PKPbc	22 29 12.7	+1.1
	1.5nm,0.9s,baz=70,slow=1.6,SNR=3.3						

DDA ***06*** *22:09:57.7,39.11N×29.00E,h9km,Md3.0*
ISK ***06*** *22:09:57.7,39.11N×28.99E,h5km,MD3.0*
CSEM ***06*** *22:09:58.0±0.1,39.10N×28.99E,h2km,MD3.0,Error ellipse: s-maj=2.5km s-min=2.1km az=177.0*
ISC 06 22:09:58.2±0.9,39.11N±0.02×28.99E±0.02,h11km±7km, n72,σ0s70/96,1D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**253**	*i* P	**Pg**	**22 10 03.0**	**0.0**
DEMI				*i* S	**Sg**	**22 10 06.2**	**0.0**
DEMI	**Demirci**	**0.22**	**253**	P	**Pg**	**22 10 03.0**	**0.0**
DEMI				S	**Sg**	**22 10 06.2**	**0.0**
GEDZ	**Gediz**	**0.33**	**101**	*e* PG	**Pg**	**22 10 04.9**	**0.0**
GEDZ				*e* SG	**Sg**	**22 10 09.7**	**+0.3**
GEDZ	**Gediz**	**0.33**	**101**	*e* Pg	**Pg**	**22 10 04.9**	**0.0**
GEDZ				*e* Sg	**Sg**	**22 10 09.7**	**+0.3**
GDZ	**Gediz**	**0.38**	**93**	*i* P	**Pg**	**22 10 05.5**	**-0.5**
GDZ				*i* S	**Sg**	**22 10 10.9**	**-0.1**
GDZ	**Gediz**	**0.38**	**93**	P	**Pg**	**22 10 05.4**	**-0.5**
GDZ				S	**Sg**	**22 10 10.9**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**47**	*e* PG	**Pg**	**22 10 07.4**	**-0.6**
TVSB	**Tavsanli**	**0.50**	**47**	*e* Pg	**Pg**	**22 10 07.4**	**-0.6**
KULA	**Kula-Manisa**	**0.65**	**204**	*e* PG	**Pg**	**22 10 10.6**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**204**	*e* Pg	**Pg**	**22 10 10.6**	**-0.2**
MANT	**Manisa**	**0.70**	**209**	*i* P	**Pg**	**22 10 10.7**	**-1.3**
MANT				*i* S	**Sg**	**22 10 19.9**	**-1.3**
MANT	**Manisa**	**0.70**	**209**	P	**Pg**	**22 10 10.6**	**-1.3**
MANT				S	**Sg**	**22 10 19.9**	**-1.3**
KHL	**Karahalli**	**0.89**	**152**	*e* PG	**Pg**	**22 10 15.1**	**-0.3**
KHL				*e* SG	**Sb**	**22 10 27.8**	**+0.2**
KHL	**Karahalli**	**0.89**	**152**	*e* Pg	**Pg**	**22 10 15.1**	**-0.3**
KHL				*e* Sg	**Sb**	**22 10 27.8**	**+0.2**
AKS	**Akhisar**	**0.95**	**256**	*e* PG	**Pb**	**22 10 16.4**	**-0.2**
AKS	**Akhisar**	**0.95**	**256**	*e* Pg	**Pb**	**22 10 16.5**	**-0.2**
BALB	**Balikesir**	**1.01**	**302**	*e* PG	**Pb**	**22 10 17.8**	**0.0**
BALB				*e* SG	**Sb**	**22 10 31.7**	**+0.6**
BALB	**Balikesir**	**1.01**	**302**	*e* Pg	**Pb**	**22 10 17.8**	**0.0**
BALB				*e* Sg	**Sb**	**22 10 31.7**	**+0.6**
IGD	**Bursa**	**1.17**	**8**	*i* P	**Pg**	**22 10 19.1**	**-1.5**
IGD				*i* S	**Sb**	**22 10 35.7**	**+0.2**
BALY	**Balya**	**1.23**	**301**	*i* P	**Pn**	**22 10 22.1**	**+0.6**
BALY				*i* S	**Sn**	**22 10 38.5**	**+0.3**
BALY	**Balya**	**1.23**	**301**	P	**Pn**	**22 10 22.1**	**+0.6**
BALY				S	**Sn**	**22 10 38.5**	**+0.3**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e* PN	**Pg**	**22 10 21.8**	**-0.6**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e* Pn	**Pg**	**22 10 21.8**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e* PN	**Pn**	**22 10 22.4**	**+0.6**
CAVI	**Cavuskoy**	**1.27**	**31**	*e* PN	**Pb**	**22 10 22.5**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**31**	*e* Pn	**Pb**	**22 10 22.5**	**+0.2**
IZI	**Iznik**	**1.28**	**17**	*e* PN	**Pb**	**22 10 22.5**	**+0.1**
GEMT	**Gemlik**	**1.33**	**7**	*e* PN	**Pg**	**22 10 23.6**	**-0.3**
BORA	**Eskisehir**	**1.37**	**55**	*i* P	**Pn**	**22 10 23.2**	**-0.2**
BORA				*i* S	**Sn**	**22 10 42.1**	**+0.5**
BORA	**Eskisehir**	**1.37**	**55**	P	**Pn**	**22 10 23.2**	**-0.2**
BORA				S	**Sn**	**22 10 42.1**	**+0.5**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e* PN	**Pg**	**22 10 24.6**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**23**	*e* PN	**Pg**	**22 10 25.4**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e* PN	**Pb**	**22 10 25.1**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e* Pn	**Pb**	**22 10 25.1**	**-0.2**
ARMT	**Armutlu**	**1.46**	**356**	*e* PN	**Pn**	**22 10 25.0**	**+0.4**
ARMT	**Armutlu**	**1.46**	**356**	*e* Pn	**Pn**	**22 10 25.0**	**+0.4**
ESKT	**Eskisehir**	**1.50**	**74**	*e* PN	**Pb**	**22 10 26.3**	**+0.1**
ESKT	**Eskisehir**	**1.50**	**74**	*i* P	**Pg**	**22 10 26.9**	**-0.2**
ESKT	**Eskisehir**	**1.50**	**74**	*e* Pn	**Pb**	**22 10 26.3**	**+0.1**
SEYT	**Eskypehyr**	**1.50**	**74**	P	**Pg**	**22 10 26.9**	**-0.2**
EDC	**Edincik**	**1.51**	**325**	*e* PN	**Pb**	**22 10 26.1**	**-0.2**
EDC	**Edincik**	**1.51**	**325**	*e* Pn	**Pb**	**22 10 26.1**	**-0.2**
IZM	**Izmir**	**1.53**	**243**	*e* PN	**Pb**	**22 10 26.4**	**-0.2**
IZM	**Izmir**	**1.53**	**243**	*e* Pn	**Pb**	**22 10 26.4**	**-0.2**
GPA	**Golpazari**	**1.56**	**40**	*e* PN	**Pb**	**22 10 26.8**	**-0.3**
BOLV	**Bolvadin**	**1.58**	**104**	*i* P	**Pg**	**22 10 28.0**	**-0.5**
BOLV				*i* S	**Sg**	**22 10 48.9**	**-0.1**
BOLV	**Bolvadin**	**1.58**	**104**	P	**Pg**	**22 10 28.0**	**-0.5**
BOLV				S	**Sg**	**22 10 48.9**	**-0.1**
KNL	**Bal¯kesir**	**1.62**	**316**	*i* P	**Pn**	**22 10 27.5**	**+0.7**
KNL				*i* S	**Sg**	**22 10 50.1**	**-0.2**
GULT	**Gulveren**	**1.77**	**41**	*e* PN	**Pb**	**22 10 30.1**	**-0.6**
GULT	**Gulveren**	**1.77**	**41**	*e* Pn	**Pb**	**22 10 30.1**	**-0.6**
HRT	**Hereke**	**1.79**	**17**	*e* PN	**Pn**	**22 10 30.1**	**+0.9**
HRT	**Hereke**	**1.79**	**17**	*e* Pn	**Pn**	**22 10 30.1**	**+0.9**
KRBG	**Karabiga-Canak**	**1.83**	**315**	*e* PN	**Pn**	**22 10 30.5**	**+0.8**
KRBG	**Karabiga-Canak**	**1.83**	**315**	*e* Pn	**Pn**	**22 10 30.5**	**+0.8**
MRMT	**Marmara Adasi**	**1.84**	**325**	*e* PN	**Pn**	**22 10 30.7**	**+0.9**
MRMT	**Marmara Adasi**	**1.84**	**325**	*e* Pn	**Pn**	**22 10 30.7**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.99**	**79**	*e* PN	**Pn**	**22 10 32.8**	**+0.8**
BGKT	**Bogazkoy**	**2.08**	**355**	*e* PN	**Pn**	**22 10 34.1**	**+1.1**
BGKT	**Bogazkoy**	**2.08**	**355**	*e* Pn	**Pn**	**22 10 34.1**	**+1.1**
ELBA	**Catalca**	**2.08**	**348**	*i* P	**Pg**	**22 10 37.2**	**-1.0**
ELBA				*i* S	**Sb**	**22 11 03.3**	**+1.4**
SILT	**Sile**	**2.10**	**14**	*e* PN	**Pn**	**22 10 34.5**	**+1.1**
SILT	**Sile**	**2.10**	**14**	*e* Pn	**Pn**	**22 10 34.5**	**+1.1**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e* PN	**Pn**	**22 10 34.6**	**+1.1**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e* Pn	**Pn**	**22 10 34.6**	**+1.1**
SART	**Tekirdag**	**2.10**	**319**	*i* P	**Pb**	**22 10 37.1**	**+0.7**
SART				*i* S	**Sg**	**22 11 05.3**	**-0.6**
KLYT	**Kilyos**	**2.14**	**1**	*e* PN	**Pn**	**22 10 35.1**	**+1.2**
KLYT	**Kilyos**	**2.14**	**1**	*e* Pn	**Pn**	**22 10 35.1**	**+1.2**
MDUB	**Mudurnu**	**2.18**	**51**	*e* PN	**Pn**	**22 10 35.5**	**+1.0**
MDUB	**Mudurnu**	**2.18**	**51**	*e* Pn	**Pn**	**22 10 35.5**	**+1.0**
KAND	**Kocaeli-Kandir**	**2.19**	**25**	*i* P	**Pn**	**22 10 34.4**	**-0.2**
KAND				*i* S	**Sg**	**22 11 06.7**	**-1.8**
KAND	**Kocaeli-Kandir**	**2.19**	**25**	P	**Pn**	**22 10 34.4**	**-0.2**
TIRR	**Tirgusor**	**5.36**	**356**‖	*i* P	**Pn**	**22 11 18.3**	**+0.1**
TIRR				S	**Sn**	**22 12 18.0**	**-1.9**

IDC ***06*** *22:15:35.2±0.8,28.82S×176.70W,h0km,mb4.2/7, mb1 4.4/7,mb1mx4.2/27,mbtmp4.2/7,MS5.5/2,Ms1 5.5/2, ms1mx4.6/39,Error ellipse: s-maj=29.6km s-min=26.2km az=169.0*
NEIC ***06*** *22:15:36.3±0.5,28.71S×176.60W,h10km,mb4.9/3,Error ellipse: s-maj=18.4km s-min=13.8km az=165.0*
ISC 06 22:15:39.4±0.7,29.05S±0.1×176.57W±0.09,h29km,n26, σ1s85/29,mb4.4/11,1C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.20**	**260**	Pn	**Pb**	**22 16 02.3**	**+0.9**
	484nm,0.3s,baz=73,slow=15,SNR=7.1						
RAO				Sn	**Sb**	**22 16 19.6**	**+3.1**
	943nm,0.3s,baz=41,slow=21,SNR=8.8						
URZ	**Urewera**	**10.59**	**208**	Pn	**Pn**	**22 18 05.6**	**-3.5**
	0.9nm,0.3s,baz=119,slow=10,SNR=3.0						
URZ				Sn	Sn	22 19 58.8	-7.9
	0.8nm,0.3s,baz=90,slow=20,SNR=3.4						
RPZ	**Rata Peaks**	**17.68**	**211**	P	**Pn**	**22 19 37.6**	**-5.9**
	0.7nm,0.3s,baz=329,slow=5.9,SNR=3.4						
CTAO	**Charters Tower**	**34.84**	**276**	*e* P	**P**	**22 22 27.1**	**-1.0**
	25nm,0.6s						
STKA	**Stephens Creek**	**36.01**	**255**	P	**P**	**22 22 37.9**	**-0.2**
	4.0nm,0.8s,baz=92,slow=9.8,SNR=4.3						
ASAR	**Alice Springs**	**44.44**	**265**	P	**P**	**22 23 46.7**	**-1.4**
	2.7nm,0.5s,baz=101,slow=6.4,SNR=33						
ASAR				PcP	**PP**	**22 25 31.8**	**-0.1**
	0.6nm,0.6s,baz=108,slow=5.0,SNR=3.0						
WRAB	**Tennant Creek**	**45.31**	**270**	*e* P	**P**	**22 23 53.9**	**-1.0**
	3.8nm,0.5s						
WRA	**Warramunga Arr**	**45.31**	**270**	P	**P**	**22 23 54.0**	**-1.0**
	4.7nm,0.6s,baz=109,slow=7.7,SNR=35						
WRA				PcP	**PcP**	**22 25 34.8**	**+0.4**
	0.8nm,0.8s,baz=116,slow=3.5,SNR=4.5						
VNDA	**Vanda**	**49.57**	**186**	P	**P**	**22 24 29.6**	**+2.4**
	1.8nm,1.1s,baz=337,slow=5.5,SNR=5.5						
FITZ	**Fitzroy Crossi**	**53.62**	**268**	P	**P**	**22 24 57.8**	**-0.6**
	2.6nm,0.8s,baz=90,slow=3.0						
FITZ				LR	LR	22 47 55.6	
	comp=Z,4μm,19.0s,baz=145,slow=36						
MBWA	**Marble Bar**	**57.62**	**262**	*e* P	**P**	**22 25 25.3**	**-1.8**
	6.5nm,0.5s						
QSPA	**South Pole Qui**	**61.06**	**180**	*e* P	**P**	**22 25 52.3**	**+1.9**
	23nm,0.9s						
MAW	**Mawson**	**74.01**	**200**	P	**P**	**22 27 13.5**	**+1.7**
	2.9nm,0.7s,baz=128,slow=6.5,SNR=5.7						
SYO	**Syowa Base**	**78.71**	**193**‖	*e* pP	**P**	**22 27 41.4**	**+2.9**
TXAR	**Lajitas Array**	**90.61**	**57**	P	**P**	**22 28 39.0**	**-0.3**
	0.6nm,0.9s,baz=238,slow=6.9,SNR=3.1						
MA2	**Magadan**	**92.32**	**344**	LR	LR	23 07 51.0	
	comp=Z,2μm,18.8s,baz=162,slow=34						
MKAR	**Makanchi Array**	**117.85**	**310**	PKP	**PKPdf**	**22 34 22.9**	**+0.1**
	0.4nm,0.8s,baz=57,slow=5.3,SNR=3.2						
KURK	**Kurchatov**	**121.00**	**314**	PKP	**PKPdf**	**22 34 28.0**	**-0.7**
KURBB	**Kurchatov Arra**	**121.04**	**314**	PKP	**PKPdf**	**22 34 28.0**	**-0.8**
	0.3nm,0.5s,baz=118,slow=1.9,SNR=6.3						
FINES	**FINESS Array B**	**144.28**	**342**	PKP	**PKPab**	**22 35 09.6**	**-0.2**
	1.9nm,0.6s,baz=71,slow=3.0,SNR=18						
KBZ	**Khabaz**	**145.35**	**306**	PKPbc	**PKPdf**	**22 35 14.9**	**+0.6**
	2.1nm,0.8s,baz=94,slow=4.7,SNR=5.2						
NB2	**NORSAR Subarra**	**147.58**	**353**	PKP	**PKPbc**	**22 35 20.5**	**+0.2**
	comp=Z,5.2nm,1.4s,baz=16,slow=3.2						
NOA	**NORSAR Array B**	**147.58**	**353**	PKPbc	**PKPbc**	**22 35 20.3**	**0.0**
	comp=Z,1.2nm,0.8s,baz=13,slow=4.5,SNR=4.0						
AKASG	**Malin Array Be**	**150.93**	**325**	PKPbc	**PKPbc**	**22 35 28.6**	**-0.4**
	comp=Z,1.5nm,0.6s,baz=46,slow=3.0,SNR=5.8						
BRTR	**Keskin Array B**	**153.00**	**301**	PKPbc	**PKPbc**	**22 35 34.9**	**+0.7**
	comp=Z,1.2nm,0.9s,baz=152,slow=5.6,SNR=5.1						
BRTR				PKPab	**PKPab**	**22 35 45.2**	**-0.5**
	comp=Z,1.1nm,0.7s,baz=125,slow=5.2,SNR=6.9						
TORD	**Torodi Ar. Bea**	**164.10**	**174**	PKPab	**PKPab**	**22 36 34.1**	**+0.3**
	comp=Z,1.5nm,1.0s,baz=190,slow=4.6,SNR=6.1						

IDC 06 22:22:40.1±4.3,28.27S×177.72W,h0km,mb3.5/2, mb1 3.7/2,mb1mx3.5/36,mbtmp3.5/2,Error ellipse: s-maj=85.4km s-min=23.9km az=77.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.99**	**190**	Pn	Pn	22 23 02.0	+0.7
	196nm,0.3s,baz=90,slow=20,SNR=2.5						
RAO				Sn	Sn	22 23 15.4	-0.7
	345nm,0.3s,baz=43,slow=19,SNR=3.6						
ASAR	**Alice Springs**	**43.51**	**265**	P	P	22 30 45.8	+0.1
	0.9nm,0.9s,baz=108,slow=6.9,SNR=4.5						
WRA	**Warramunga Arr**	**44.30**	**270**	P	P	22 30 51.6	-0.4
	0.5nm,0.8s,baz=109,slow=7.6,SNR=3.2						
FINES	**FINESS Array B**	**143.22**	**341**	PKP	PKPdf	22 42 14.1	-1.4
	0.8nm,0.7s,baz=35,slow=5.1,SNR=3.1						

IDC ***06*** *22:24:57.0±1.4,28.28S×177.15W,h0km,mb3.9/3, mb1 4.3/3,mb1mx3.8/39,mbtmp3.9/3,Error ellipse: s-maj=42.6km s-min=24.0km az=131.0*
ISCJB ***06*** *22:25:02.5±1.4,28.25S±0.1×177.3W±0.3,h48km,mb3.9/3, Error ellipse: s-maj=36.4km s-min=13.7km az=24.9*
ISC 06 22:25:03.5±1.2,28.3S±0.2×177.2W±0.2,h48km,n6, σ0s98/7,mb3.9/3,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.10**	**215**	Pn	**Pn**	**22 25 21.7**	**-0.9**
	195nm,0.3s,baz=78,slow=20,SNR=4.0						
RAO				Sn	**Sn**	**22 25 37.7**	**+1.0**
	394nm,0.3s,baz=84,slow=22,SNR=4.5						
ASAR	**Alice Springs**	**43.96**	**264**	P	**P**	**22 33 05.6**	**-0.6**
	0.6nm,0.4s,baz=107,slow=7.9,SNR=7.0						
WRA	**Warramunga Arr**	**44.77**	**270**	P	**P**	**22 33 13.5**	**+0.9**
	1.4nm,0.8s,baz=110,slow=8.0,SNR=5.5						
TXAR	**Lajitas Array**	**90.69**	**57**	P	**P**	**22 38 01.9**	**+0.5**
	0.9nm,1.1s,baz=224,slow=5.2,SNR=4.3						
FINES	**FINESS Array B**	**143.44**	**341**	PKP	**PKPdf**	**22 44 31.2**	**-0.8**
	1.2nm,0.9s,baz=70,slow=1.6,SNR=3.1						
TORD	**Torodi Ar. Bea**	**164.84**	**176**	PKPab	**PKPab**	**22 45 58.9**	**+0.2**
	0.5nm,0.8s,baz=197,slow=4.5,SNR=2.5						

ISCJB ***06*** *22:26:14.5±0.6,39.08N±0.05×29.01E±0.05,h5km±8km, Error ellipse: s-maj=9.4km s-min=4.6km az=152.3*
ISK ***06*** *22:26:14.3,39.07N×29.12E,h10km,MD2.7*
CSEM ***06*** *22:26:14.6±0.1,39.08N×29.01E,h5km,MD2.4,Error ellipse: s-maj=5.3km s-min=2.8km az=131.0*
DDA ***06*** *22:26:14.4,39.10N×29.01E,h7km,Md2.4*
ISC 06 22:26:14.6±0.9,39.07N±0.03×29.01E±0.03,h11km±9km, n20,σ0s40/32,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**263**	*i* P	**Pg**	**22 26 19.7**	**+0.2**
DEMI				*i* S	**Sg**	**22 26 22.9**	**+0.1**
DEMI	**Demirci**	**0.23**	**263**	P	**Pg**	**22 26 19.7**	**+0.2**
DEMI				S	**Sg**	**22 26 22.9**	**+0.1**
GDZ	**Gediz**	**0.36**	**87**	*i* P	**Pg**	**22 26 22.1**	**+0.2**
GDZ				*i* S	**Sg**	**22 26 27.4**	**+0.6**
GDZ	**Gediz**	**0.36**	**87**	P	**Pg**	**22 26 22.1**	**+0.2**
GDZ				S	**Sg**	**22 26 27.4**	**+0.6**
TVSB	**Tavsanli**	**0.51**	**42**	*e* PG	**Pg**	**22 26 23.9**	**-0.7**
TVSB				*e* SG	**Sg**	**22 26 30.8**	**-0.7**
TVSB	**Tavsanli**	**0.51**	**42**	*e* Pg	**Pg**	**22 26 24.0**	**-0.7**
TVSB				*e* Sg	**Sg**	**22 26 30.8**	**-0.

comp=E,0.3nm,0.3s,baz=242,slow=9.1,SNR=9.9
PB11 IPOC Station P 18.67 12 *e*P **Pn 22 32 47.0 +0.4**
comp=E,52nm,0.9s
SIV San Ignacio 24.73 30 P **P 22 33 48.3 -1.0**
comp=E,2.6nm,0.8s,baz=243,slow=6.7,SNR=5.3
BDFB Brasilia 31.87 52 P **P 22 34 54.6 +1.4**
comp=E,1.2nm,0.4s,baz=166,slow=27,SNR=4.0
PTGA Pitinga 39.33 22 P **P 22 35 56.6 -0.5**
comp=E,3.3nm,0.7s,baz=192,slow=7.5,SNR=8.7
PTGA Pitinga 39.33 22 *e*P **P 22 35 56.6 -0.5**
PTGA *e* 22 35 56.8
SNAA Sanae 48.28 156 *e*P **P 22 37 08.8 +0.3**
comp=E,12nm,1.2s
QSPA South Pole Qui 52.08 180 *e*P **P 22 37 37.5 +0.1**
LRAL Lakeview Retre 71.91 348 *e*P **P 22 39 50.1 -0.5**
comp=E,6.9nm,1.0s
LTX Lajitas 72.76 333 *e*P **P 22 39 56.1 +0.1**
TX31 Lajitas Ar. Si 72.76 333 *e*P **P 22 39 56.0 0.0**
TXAR Lajitas Array 72.76 333 P **P 22 39 56.1 +0.1**
comp=E,2.0nm,0.7s,baz=153,slow=8.4,SNR=25
SWET Sewanee 73.89 350 *e*P **P 22 40 02.6 +0.2**
comp=E,5.0nm,0.8s
X301 Greenbrier Sit 75.06 344 *e*P **P 22 40 09.2 0.0**
comp=E,11nm,0.9s
WHAR Wooly Hollow 75.09 344 *e*P **P 22 40 09.3 -0.1**
comp=E,8.8nm,1.0s
X201 Greenbrier Sit 75.11 344 *e*P **P 22 40 09.4 0.0**
comp=E,13nm,0.9s
WMOK Wichita Mounta 76.18 339 *e*P **P 22 40 14.7 -1.0**
comp=E,19nm,2.0s
HHAR Hobbs 76.40 343 *e*P **P 22 40 16.6 -0.3**
comp=E,4.9nm,0.9s
AMTX Amarillo 77.17 337 *e*P **P 22 40 21.6 +0.2**
comp=E,8.3nm,1.1s
DBIC Dimbokro 77.78 71 P **P 22 40 26.0 +0.8**
comp=E,3.6nm,0.6s,baz=218,slow=10,SNR=5.8
DBIC Dimbokro 77.78 71 *e*P **P 22 40 26.0 +0.8**
comp=E,61nm,1.8s
BFZ Birch Farm 78.81 227 *e*P **P 22 40 30.9 +0.3**
comp=E,118nm,0.6s
BOSA Boshof 79.32 118 P **P 22 40 33.4 -0.4**
comp=E,6.2nm,0.9s,baz=293,slow=6.1,SNR=4.5
SDCO Great Sand Dun 81.03 335 *e*P **P 22 40 43.5 +0.9**
comp=E,2.3nm,1.1s
U15A North Rim 82.35 329 *e*P **P 22 40 50.7 +1.0**
comp=E,7.1nm,1.6s
KNB Kanab 83.07 329 *e*P **P 22 40 54.9 +1.7**
comp=E,4.6nm,1.0s
ECSD EROS Data Cent 84.12 344 *e*P **P 22 40 58.2 0.0**
comp=E,7.8nm,1.1s
DUG Dugway, Tooele 85.82 331 *e*P **P 22 41 08.3 +1.2**
comp=E,3.3nm,1.0s
TOA0 Torodi Ar. Sit 86.87 71 *e*P **P 22 41 13.5 +0.8**
TORD Torodi Ar. Bea 86.87 71 P **P 22 41 12.8 +0.1**
comp=E,2.5nm,0.9s,baz=210,slow=4.5,SNR=11
TOA1 Torodi Ar. Sit 86.88 71 *e*P **P 22 41 12.8 +0.1**
comp=E,18nm,1.8s
BW06 Boulder Array 86.89 334 *e*P **P 22 41 11.6 -0.8**
PD31 Pinedale Array 86.89 334 *e*P **P 22 41 12.2 -0.3**
PDAR Pinedale Array 86.89 334 P **P 22 41 12.2 -0.3**
comp=E,0.3nm,0.4s,baz=197,slow=3.1,SNR=5.2
GERES GERESS Array B 116.00 47 PKP **PKPdf 22 47 09.2 -0.9**
comp=E,0.4nm,0.8s,baz=105,slow=1.5,SNR=5.2
BR101 Keskin Array S 124.95 64 *e*PKPdf **PKPdf 22 47 27.5 -0.2**
BRTR Keskin Array B 124.95 64 PKP **PKPdf 22 47 27.5 -0.2**
comp=E,0.2nm,0.5s,baz=38,slow=2.2,SNR=4.8
BVAR Borovoye Array 151.17 47 PKPbc **PKPbc 22 48 20.9 +0.6**
comp=E,2.8nm,0.7s,baz=279,slow=2.9,SNR=15
AAK Ala-Archa 155.45 69 PKPab **PKPab 22 48 47.5 +0.6**
comp=E,1.9nm,0.4s,baz=247,slow=5.5,SNR=5.2
KURBB Kurchatov Arra 156.73 49 PKPab **PKPab 22 48 52.6 +0.8**
comp=E,2.0nm,0.9s,baz=290,slow=5.1,SNR=7.8
KURK Kurchatov 156.75 48 *e*PKPab **PKPab 22 48 52.6 +0.7**
ZAA1 Zalesovo Array 158.42 36 *e*PKPdf **PKPdf 22 48 23.2 -1.0**
ZAA1 *e*PKPab **PKPab 22 48 59.9 +0.9**
ZALV Zalesovo Beam 158.42 36 PKP **PKPdf 22 48 23.2 -1.0**
comp=E,0.3nm,0.4s,baz=241,slow=3.1,SNR=3.7
ZALV PKPab **PKPab 22 48 59.9 +0.9**
comp=E,2.3nm,0.8s,baz=302,slow=3.3,SNR=8.3
CM31 Chiang Mai Arr 159.34 160 *e*PKPab **PKPab 22 49 02.6 -1.3**
CMAR Chiang Mai Arr 159.34 160 PKPab **PKPab 22 49 02.6 -1.3**
comp=E,0.4nm,0.3s,baz=242,slow=1.9,SNR=2.8
MK32 Makanchi Array 160.36 56 *e*PKPdf **PKPdf 22 48 27.1 +0.2**
MK32 *e*PKPab **PKPab 22 49 08.3 +0.5**
MKAR Makanchi Array 160.36 56 PKP **PKPdf 22 48 27.1 +0.2**
comp=E,0.7nm,1.0s,baz=43,slow=4.1,SNR=4.4
MKAR PKPab **PKPab 22 49 08.3 +0.5**
comp=E,1.6nm,0.7s,baz=283,slow=4.1,SNR=11

IDC 06 22:28:42.8±5.2, 29.27°S×176.64°W, h63km±31km, mb3.3/2, mb1 3.6/2, mb1mx3.3/37, mbtmp3.6/2, Error ellipse: s-maj=101.6km s-min=45.1km az=13.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.12**	**270**	P	Pn	22 29 03.3	+0.9
	100nm,0.3s,baz=99,slow=19,SNR=2.6						
RAO				S	Sn	22 29 17.0	-0.1
	239nm,0.3s,baz=82,slow=17,SNR=5.4						
ASAR	**Alice Springs**	**44.37**	**265**	P	P	22 36 47.1	-0.1
	0.3nm,0.7s,baz=101,slow=6.5,SNR=3.4						
WRA	**Warramunga Arr**	**45.26**	**270**	P	P	22 36 54.7	+0.4
	1.1nm,0.6s,baz=110,slow=7.8,SNR=6.3						
FINES	**FINESS Array B**	**144.47**	**341**	PKP	PKPbc	22 48 10.4	+0.5
	0.4nm,0.5s,baz=8.5,slow=2.8,SNR=4.1						
TORD	**Torodi Ar. Bea**	**163.89**	**174**	PKPab	PKPab	22 49 30.9	-1.1
	0.5nm,0.8s,baz=194,slow=5.3,SNR=3.0						

IDC 06 22:30:36.2±8.0, 29.69°S×176.18°W, h0km, mb3.6/2, mb1 3.8/2, mb1mx3.5/37, mbtmp3.6/2, Error ellipse: s-maj=338.9km s-min=59.8km az=154.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**44.73**	**265**	P	P	22 38 51.0	-0.5
	0.2nm,0.3s,baz=108,slow=7.8,SNR=4.3						
WRA	**Warramunga Arr**	**45.66**	**270**	P	P	22 38 59.2	+0.3
	0.3nm,0.3s,baz=108,slow=8.0,SNR=5.8						
FINES	**FINESS Array B**	**145.00**	**342**	PKPbc	PKPbc	22 50 13.1	-0.9
	0.7nm,0.7s,baz=37,slow=3.4,SNR=5.1						

IDC 06 22:30:54.8±6.2, 28.07°S×176.93°W, h0km, mb4.1/2, mb1 4.4/2, mb1mx3.8/36, mbtmp4.1/2, Error ellipse: s-maj=270.1km s-min=97.0km az=162.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.46**	**216**	Sn	Sg	22 31 31.9	-10
	284nm,0.3s,baz=13,slow=22,SNR=5.7						
ASAR	**Alice Springs**	**44.23**	**264**	P	P	22 39 05.7	-0.4
	1.9nm,0.7s,baz=111,slow=8.0,SNR=14						
WRA	**Warramunga Arr**	**45.01**	**269**	P	P	22 39 12.4	+0.1
	3.0nm,0.9s,baz=110,slow=7.8,SNR=7.7						
FINES	**FINESS Array B**	**143.26**	**342**	PKP	PKPdf	22 50 29.9	-0.4
	0.6nm,0.6s,baz=85,slow=2.1,SNR=4.3						

JMA 06 22:31:14.8±0.1, 36.29N×141.09E, h41km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.53**	**307**	P	Pn	22 31 25.6	-0.4
CHOJ	**Chosi**	**0.61**	**198**	P	Pn	22 31 27.0	-0.1
CHOJ				S	Sn	22 31 35.5	-0.4
JYT	**Yasato**	**0.73**	**265**	P	Pn	22 31 28.7	+0.1
JYT				S	Sn	22 31 39.3	+0.8
MAT	**Matsushiro**	**2.34**	**277**	P	Pn	22 31 53.0	+2.2
MAT				*e*S	Sn	22 32 20.8	+2.5

IDC ***06*** *22:31:21.9±0.6, 28.90S×176.86W, h0km, mb4.4/15, mb1 4.6/16, mb1mx4.4/37, mbtmp4.4/16, ML4.2/1, Error ellipse: s-maj=21.4km s-min=19.2km az=146.0*
NEIC ***06*** *22:31:23.8±0.3, 29.07S×176.96W, h10km, mb4.9/28, Error ellipse: s-maj=10.8km s-min=6.4km az=124.0*
BJI ***06*** *22:31:25.7, 28.75S×176.54W, h22km, mb5.2/12, mB5.1/2, Ms5.3/5, Ms7 5.3/5*
ISCJB ***06*** *22:31:26.4±0.3, 29.18S±0.04×177.11W±0.07, h33km, mb4.7/41, Error ellipse: s-maj=9.0km s-min=5.4km az=28.8*
MOS ***06*** *22:31:26.1±1.3, 28.99S×177.07W, h33km, mb4.9/25, Error ellipse: s-maj=13.7km s-min=11.9km az=105.2*

ISC 06 22:31:29.4±1.3, 29.18S±0.06×176.95W±0.09, h49km±10km, n153, σ1976/156, mb4.8/41, 6C-1D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.84**	**265**	Pn	Pn	22 31 46.8	+1.8
	890nm,0.3s,baz=180,slow=12,SNR=6.4						
RAO				Sn	Sn	22 31 59.8	+3.4
	1μm,0.3s,baz=98,slow=22,SNR=5.9						
RAO	**Raoul Island**	**0.84**	**265**	P	Pn	22 31 46.8	+1.8
RAO						22 31 59.8	
RAO				pmax	pmax		
	comp=Z,890nm,0.3s						
MXZ	**Matakaoa Point**	**9.25**	**204**	*e*Pn	Pn	22 33 39.0	-1.0
OUZ	**Omahuta**	**10.01**	**231**	*e*Pn	Pn	22 33 48.1	-2.4
URZ	**Urewera**	**10.31**	**207**	Pn	Pn	22 33 54.9	+0.3
	comp=Z,2.0nm,0.3s,baz=306,slow=2.1,SNR=4.3						
URZ				Sn	Sn	22 35 45.9	-2.8
	comp=Z,2.9nm,0.3s,baz=292,slow=23,SNR=4.2						
URZ	**Urewera**	**10.31**	**207**	*e*Pn	Pn	22 33 53.7	-0.9
URZ				*e*Sn	Sn	22 35 45.9	-2.8
MSVF	**Nonsavu**	**12.28**	**337**	*e*P	Pn	22 34 20.3	-1.4
BFZ	**Birch Farm**	**12.75**	**204**	*e*Pn	Pn	22 34 26.7	-1.2
SNZO	**South Karori**	**13.88**	**207**	*e*Pn	Pn	22 34 42.0	-1.2
THZ	**Tophouse**	**15.01**	**211**	*e*Pn	Pn	22 34 54.9	-3.4
KHZ	**Kahutara**	**15.28**	**208**	*e*Pn	Pn	22 34 56.1	-5.6
	comp=Z,97nm,1.2s						
LTZ	**Lake Taylor**	**16.11**	**210**	*e*Pn	Pn	22 35 07.3	-5.2
	comp=Z,108nm,1.5s						
DZM	**Mont Dzumac**	**16.55**	**292**	*e*Pn	Pn	22 35 18.5	+0.3
	comp=Z,48nm,1.3s						
OXZ	**Oxford**	**16.65**	**209**	*e*Pn	Pn	22 35 19.4	+0.2
	comp=Z,350nm,2.0s						
MQZ	**McQueen's Vall**	**16.71**	**207**	*e*Pn	Pn	22 35 12.5	-7.4
	comp=Z,117nm,1.4s						
RPZ	**Rata Peaks**	**17.39**	**210**	P	Pn	22 35 27.7	-0.7
	comp=Z,0.8nm,0.3s,baz=31,slow=5.9,SNR=3.2						
RAR	**Rarotonga**	**17.44**	**67**	*e*P	Pn	22 35 19.8	-9.4
RAR				pmax	pmax		
	comp=Z,340nm,1.8s						
RAR	**Rarotonga**	**17.44**	**67**	*e*Pn	Pn	22 35 19.8	-9.4
	comp=Z,340nm,1.8s						
LBZ	**Lake Benmore**	**18.30**	**211**	*e*P	P	22 35 33.9	-5.3
	comp=Z,321nm,2.0s						
ARMA	**Armidale**	**27.25**	**260**	*e*P	P	22 37 07.5	-1.6
	comp=Z,61nm,1.6s						
CTA	**Charters Tower**	**34.53**	**277**	P	P	22 38 13.7	+0.5
	comp=Z,3.0nm,0.2s,baz=105,slow=14,SNR=7.8						
CTA	**Charters Tower**	**34.53**	**277**	P	P	22 38 13.7	+0.5
CTA				pmax	pmax		
	comp=Z,3.0nm,0.2s						
CTAO	**Charters Tower**	**34.53**	**277**	P	P	22 38 14.5	+1.3
CTAO				pmax	pmax		
	comp=Z,12nm,1.4s						
STKA	**Stephens Creek**	**35.65**	**255**	P	P	22 38 22.2	-0.6
	comp=Z,4.7nm,0.8s,baz=87,slow=11,SNR=4.1						
STKA	**Stephens Creek**	**35.65**	**255**	P	P	22 38 22.2	-0.6
STKA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
STKA	**Stephens Creek**	**35.65**	**255**	*e*P	P	22 38 22.2	-0.6
	comp=Z,3.8nm,1.4s						
AS31	**Alice Springs**	**44.10**	**265**	*e*P	P	22 39 32.9	-0.2
	comp=Z,2.5nm,0.9s						
AS31				*e*PP	PcP	22 41 18.1	+0.5
ASAR	**Alice Springs**	**44.10**	**265**	P	P	22 39 32.9	-0.2
	comp=Z,5.9nm,0.8s,baz=110,slow=7.9,SNR=16						
ASAR				PcP	PcP	22 41 18.1	+0.5
	comp=Z,0.9nm,0.6s,baz=114,slow=4.4,SNR=2.8						
ASAR	**Alice Springs**	**44.10**	**265**	P	P	22 39 32.9	-0.2
ASAR						22 41 18.1	
ASAR				pmax	pmax		
	comp=Z,6.0nm,0.8s						
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WRAB	**Tennant Creek**	**44.97**	**270**	*c*e P	P	22 39 37.1	-2.9
WRAB				pmax	pmax		
	comp=Z,50nm,1.7s						
WR1	**Warramunga Arr**	**44.98**	**270**	*e*P	P	22 39 39.8	-0.3
	comp=Z,13nm,0.9s						
WR1				*e*PcP	PcP	22 41 19.8	-0.9
WRA	**Warramunga Arr**	**44.98**	**270**	P	P	22 39 39.8	-0.3
	comp=Z,8.0nm,0.8s,baz=109,slow=7.8,SNR=19						
WRA				PcP	PcP	22 41 19.8	-0.9
	comp=Z,3.2nm,1.1s,baz=114,slow=3.1,SNR=3.9						
WRA	**Warramunga Arr**	**44.98**	**270**	P	P	22 39 39.8	-0.3
WRA						22 41 19.8	
WRA				pmax	pmax		
	comp=Z,8.0nm,0.8s						
WRA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
SBA	**Scott Base**	**49.31**	**184**	P	P	22 40 16.3	+3.3
SBA				pmax	pmax		
	comp=Z,13nm,1.0s						
VNDA	**Vanda**	**49.39**	**186**	P	P	22 40 16.2	+2.6
	comp=Z,2.7nm,1.0s,baz=358,slow=8.9,SNR=5.2						
VNDA	**Vanda**	**49.39**	**186**	P	P	22 40 16.2	+2.6
VNDA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
FITZ	**Fitzroy Crossi**	**53.28**	**268**	P	P	22 40 44.1	+0.6
	comp=Z,6.8nm,1.1s,baz=90,slow=4.2,SNR=4.3						
CASY	**Casey**	**56.63**	**208**	*e*P	P	22 41 07.2	+0.2
	comp=Z,27nm,1.1s						
QSPA	**South Pole Qui**	**60.92**	**180**	*e*P	P	22 41 39.0	+1.9
MIR	**Mirnyy**	**63.62**	**207**	*i* P	P	22 41 56.0	+1.2
MIR				pmax	pmax		
	comp=Z,4.0nm,1.2s						
MAW	**Mawson**	**73.76**	**200**	P	P	22 42 59.1	+1.2
	comp=Z,6.5nm,1.0s,baz=60,slow=8.6,SNR=4.5						
MAW	**Mawson**	**73.76**	**200**	P	P	22 42 59.1	+1.2
MAW				pmax	pmax		
	comp=Z,7.0nm,1.0s						
MAW	**Mawson**	**73.76**	**200**	*e*P	P	22 42 59.1	+1.2
	comp=Z,1.9nm,1.1s						
MJAR	**Matsushiro Arr**	**77.77**	**324**	P	P	22 43 20.2	-1.0
	comp=Z,3.7nm,0.8s,baz=171,slow=6.2,SNR=4.8						
MJAR	**Matsushiro Arr**	**77.77**	**324**	P	P	22 43 20.2	-1.0
MJAR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
MAJO	**Matsushiro**	**77.78**	**324**	*i* P	P	22 43 17.7	-3.6
MAJO				pmax	pmax		
	comp=Z,37nm,1.0s						
SNAA	**Sanae**	**79.34**	**178**	P	P	22 43 33.5	+3.9
SNAA	**Sanae**	**79.34**	**178**	*e*P	P	22 43 29.6	0.0
SNAA				pmax	pmax		
	comp=Z,15nm,1.1s						
SNAA	**Sanae**	**79.34**	**178**	*e*P	P	22 43 29.6	0.0
	comp=Z,15nm,1.1s						
ERM	**Erimo**	**79.83**	**331**	*e*P	P	22 43 32.2	-0.2
ERM				pmax	pmax		
	comp=Z,44nm,0.9s						
ERM	**Erimo**	**79.83**	**331**	*e*P	P	22 43 32.2	-0.2
	comp=Z,44nm,0.9s						
VNA1	**Neumayer--Stat**	**80.12**	**176**	P	P	22 43 37.6	+3.9
PLCA	**Paso Flores**	**82.66**	**133**	P	P	22 43 49.1	+1.2
	comp=Z,3.7nm,1.0s,baz=244,slow=6.6,SNR=3.8						
PLCA	**Paso Flores**	**82.66**	**133**	P	P	22 43 49.1	+1.2
PLCA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
PLCA	**Paso Flores**	**82.66**	**133**	*e*P	P	22 43 49.1	+1.2
	comp=Z,9.9nm,1.3s						
KSRS	**Korea Array**	**84.02**	**319**	P	P	22 43 53.6	-0.9
	comp=Z,1.3nm,0.9s,baz=130,slow=5.2,SNR=5.5						
KSRS	**Korea Array**	**84.02**	**319**	P	P	22 43 53.6	-0.9
KSRS				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KS15	**Wonju Array Si**	**84.03**	**319**	*e*P	P	22 43 53.6	-1.0
KSAR	**Wonju Array Be**	**84.03**	**319**	P	P	22 43 53.6	-1.0
KSAR	**Wonju Array Be**	**84.03**	**319**	P	P	22 43 53.6	-1.0
KS01	**Wonju Array Si**	**84.05**	**319**	*e*P	P	22 43 54.7	+0.1
YSS	**Yuzh-Sakhalins**	**84.06**	**334**	P	P	22 44 03.0	+8.6
KCPM	**Cahto Peak**	**84.61**	**38**	*e*P	P	22 43 55.3	-2.3
PFO	**Pinyon Flats O**	**84.72**	**47**	*i* P	P	22 44 01.7	+3.4
PETK	**Petropavlovsk-**	**84.87**	**345**	P	P	22 43 58.1	-0.3
	comp=Z,3.3nm,0.8s,baz=116,slow=6.6,SNR=3.4						
PETK	**Petropavlovsk-**	**84.87**	**345**	P	P	22 43 58.1	-0.3
PETK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
PEA1	**Petropavlovsk-**	**84.88**	**345**	*e*P	P	22 43 58.1	-0.4
TVH3	**East Aurora ar**	**86.38**	**42**	*e*P	P	22 44 07.3	+0.7
	comp=Z,9.1nm,1.3s						
USRK	**Ussuriysk Ar.**	**86.66**	**326**	P	P	22 44 05.2	-2.3
	comp=Z,1.2nm,0.7s,baz=132,slow=2.8,SNR=6.3						
TPNV	**Topopah Spring**	**87.00**	**44**	*e*P	P	22 44 10.0	+0.4
TPNV				pmax	pmax		
	comp=Z,13nm,1.3s						
TPNV	**Topopah Spring**	**87.00**	**44**	*e*P	P	22 44 10.0	+0.4
	comp=Z,13nm,1.3s						
SHPR	**Sheep Range**	**87.38**	**45**	*e*P	P	22 44 14.8	+3.4
	comp=Z,6.4nm,1.3s						
TUC	**Tucson**	**87.64**	**51**	*e*P	P	22 44 13.3	+0.6
TUC				pmax	pmax		
	comp=Z,15nm,1.3s						
TUC	**Tucson**	**87.64**	**51**	*e*P	P	22 44 13.3	+0.6
	comp=Z,15nm,1.3s						
MDJ	**Mudanjiang**	**88.15**	**325**	P	P	22 44 16.6	+1.9
MDJ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
X16A	**Lo Mia Camp, P**	**88.47**	**49**	*e*P	P	22 44 17.0	+0.3
	comp=Z,7.7nm,1.2s						
LCMT	**Little Creek M**	**88.90**	**46**	*e*P	P	22 44 20.5	+1.9
	comp=Z,5.6nm,1.1s						
U15A	**North Rim**	**89.14**	**47**	*e*P	P	22 44 20.4	+0.5
	comp=Z,12nm,1.3s						
WVOR	**Wild Horse Val**	**89.20**	**39**	*e*P	P	22 44 21.5	+1.6
WVOR	**Wild Horse Val**	**89.20**	**39**	*e*P	P	22 44 21.5	+1.6
TIA	**Tai'an**	**89.82**	**312**	*e*P	P	22 44 23.0	+0.3
TIA				pmax	pmax		
	comp=Z,20nm,1.1s						
KLR	**Kul'dur**	**90.45**	**329**	*i* P	P	22 44 22.0	-3.4
G08A	**Pilot Rock**	**90.94**	**37**	*e*P	P	22 44 30.7	+2.8
	comp=Z,8.3nm,1.0s						
TX31	**Lajitas Ar. Si**	**90.97**	**57**	*e*P	P	22 44 28.0	-0.4
LTX	**Lajitas**	**90.97**	**57**	*e*P	P	22 44 27.6	-0.8
LTX	**Lajitas**	**90.97**	**57**	*e*P	P	22 44 27.6	-0.8
TXAR	**Lajitas Array**	**90.97**	**57**	P	P	22 44 27.6	-0.8
	comp=Z,4.7nm,1.1s,baz=214,slow=6.0,SNR=19						
TXAR	**Lajitas Array**	**90.97**	**57**	P	P	22 44 27.6	-0.8
TXAR				pmax	pmax		
	comp=Z,5.0nm,1.1s						
ENH	**Enshi**	**91.67**	**304**	*e*P	P	22 44 32.5	+0.9
	comp=Z,34nm,1.2s						
GYA	**Guiyang**	**91.74**	**299**	P	P	22 44 34.0	+1.9
GYA				PP	PP	22 48 15.5	+3.8
GYA				SKS	SKSac	22 55 03.2	+2.1
GYA				S	ScS	22 55 31.0	-0.9
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,7.0s						
GYA				LR	LR		
	comp=Z,520nm,22.0s						
GYA				LR	LR		
	comp=Z,470nm,21.8s						
GYA				LR	LR		
	comp=Z,500nm,20.2s						
SPUT	**South Promonto**	**92.03**	**43**	*e*P	P	22 44 33.5	+0.4
	comp=Z,5.5nm,1.2s						
ANMO	**Albuquerque**	**92.11**	**51**	*c*e P	P	22 44 32.7	-1.0
ANMO				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KMI	**Kunming**	**94.09**	**296**	P	P	22 44 49.9	+6.8
KMI				pmax	pmax		
	comp=Z,9.0nm,1.0s						
SDCO	**Great Sand Dun**	**94.31**	**49**	*e*P	P	22 44 46.0	+2.0
PD31	**Pinedale Array**	**94.63**	**43**	*e*P	P	22 44 44.6	-0.5
PDAR	**Pinedale Array**	**94.63**	**43**	P	P	22 44 44.7	-0.5
	comp=Z,0.2nm,0.4s,baz=177,slow=4.5,SNR=3.6						
CD2	**Chengdu**	**96.22**	**302**	*e*P	P	22 44 53.5	+1.1
ILAR	**Eielson Array**	**96.55**	**12**	P	P	22 44 50.9	-2.1
	comp=Z,0.2nm,0.5s,baz=231,slow=5.7,SNR=3.1						
ILAR	**Eielson Array**	**96.55**	**12**	P	P	22 44 50.9	-2.1
ILB	**Eielson Array**	**96.55**	**12**	*e*P	P	22 44 50.9	-2.1
WMOK	**Wichita Mounta**	**97.33**	**54**	*e*P	P	22 44 56.4	-1.0
WMOK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMOK	**Wichita Mounta**	**97.33**	**54**	*e*P	P	22 44 56.4	-1.0
	comp=Z,2.6nm,0.6s						
RSSD	**Black Hills**	**98.72**	**44**	*e*P	Pdif	22 45 04.3	+0.7
RSSD				pmax	pmax		
	comp=Z,8.0nm,1.3s						
RSSD	**Black Hills**	**98.72**	**44**	*e*P	Pdif	22 45 04.3	+0.7
	comp=Z,7.8nm,1.3s						
WMQ	**Urumqi**	**113.19**	**308**	*e*PKP	**PKiKP**	**22 50 03.7**	**+2.3**
MK32	**Makanchi Array**	**117.69**	**310**	*e*PKPdf	**PKPdf**	**22 50 09.1**	**-0.7**
MKAR	**Makanchi Array**	**117.69**	**310**	PKP	**PKPdf**	**22 50 09.1**	**-0.7**
	comp=Z,0.6nm,0.7s,baz=140,slow=0.9,SNR=3.1						
MKAR	**Makanchi Array**	**117.69**	**310**	PKIKP	**PKPdf**	**22 50 09.1**	**-0.7**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
KSH	**Kashi**	**120.40**	**301**	*e*PKP	**PKPdf**	**22 50 16.1**	**+0.7**
KSH				*es*PKP		22 50 29.2	
KSH				*e*PP	PP	22 51 49.2	+6.4
KSH				PKS	**PKSdf**	**22 53 51.4**	**-0.8**
KSH				LR	LR		
	comp=Z,290nm,13.0s						
KSH				LR	LR		
	comp=Z,340nm,18.9s						
KURK	**Kurchatov**	**120.86**	**314**	*c i*PKIKP	**PKPdf**	**22 50 13.1**	**-2.7**
KURK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KURK	**Kurchatov**	**120.86**	**314**	*e*PKPdf	**PKPdf**	**22 50 14.2**	**-1.5**
KURBB	**Kurchatov Arra**	**120.90**	**314**	PKP	**PKPdf**	**22 50 14.2**	**-1.6**
	comp=Z,1.1nm,0.9s,baz=118,slow=1.4,SNR=5.3						
BVAR	**Borovoye Array**	**126.16**	**316**	PKP	**PKPdf**	**22 50 25.1**	**-0.8**
	comp=Z,0.4nm,0.4s,baz=37,slow=0.7,SNR=4.2						
BVAR	**Borovoye Array**	**126.16**	**316**	PKIKP	**PKPdf**	**22 50 25.1**	**-0.8**
BRVK	**Borovoye**	**126.23**	**316**	*c i*PKIKP	**PKPdf**	**22 50 24.0**	**-2.0**
BRVK				pmax	pmax		
	comp=Z,24nm,2.5s						
GNI	**Garni**	**144.30**	**299**	*c i*PKIKP	**PKPab**	**22 50 58.3**	**+0.1**
GNI				pmax	pmax		
	comp=Z,39nm,1.2s						
GNI	**Garni**	**144.30**	**299**	*e*PKPdf	PKPbc	22 50 59.3	+0.8
FIA1	**FINESS Array S**	**144.30**	**341**	*e*PKPdf	**PKPab**	**22 50 56.0**	**-1.3**
**

DPC	**Dobruska-Polom**	**156.60**	**338**	*e*PKP2	**PKPab**	**22 51 48.1**	**+0.3**
KHC	**Kasperske Hory**	**158.51**	**341**	*e*PKPAB	**PKPab**	**22 51 55.9**	**-0.2**
KHC	**Kasperske Hory**	**158.51**	**341**	*e*PKP2	**PKPab**	**22 51 55.9**	**-0.2**
TORD	**Torodi Ar. Bea**	**163.99**	**175**	PKPab	**PKPab**	**22 52 19.9**	**-0.8**
	comp=Z,6.3nm,1.0s,baz=182,slow=3.5,SNR=9.5						
TOA1	**Torodi Ar. Sit**	**164.00**	**175**	*e*PKPab	**PKPab**	**22 52 19.9**	**-0.9**

*IDC **06** 22:34:30.0±0.6,29°.26S×176°.09W,h0km,mb4.3/13, mb1 4.5/13,mb1mx4.4/34,mbtmp4.3/13,Error ellipse: s-maj=25.1km s-min=18.5km az=163.0*
*NEIC **06** 22:34:31.8±0.4,29°.56S×176°.24W,h10km,mb4.7/21, Error ellipse: s-maj=18.1km s-min=8.1km az=162.0*
*ISCJB **06** 22:34:33.4±0.3,29°.72S±0°.05×176°.34W±0°.05,h28km, mb4.6/30,Error ellipse: s-maj=8.6km s-min=5.7km az=145.7*

ISC 06 22:34:35.0±0.5,29°.56S±0°.07×176°.39W±0°.07,h28km,n70, σ1§87/77,mb4.6/30,1C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.37 283**		Pn	**Pb**	**22 35 00.0**	**0.0**
	832nm,0.3s,baz=87,slow=8.7,SNR=11						
RAO				Sn	**Sn**	22 35 15.8	+0.3
	958nm,0.3s,baz=77,slow=14,SNR=11						
URZ	**Urewera**	**10.22 210**		Pn	**Pn**	**22 36 56.6**	**-3.1**
	baz=133,slow=18,SNR=2.0						
URZ				Sn	**Sn**	**22 38 53.9**	**+0.6**
	4.4nm,0.3s,baz=284,slow=23,SNR=7.5						
URZ	**Urewera**	**10.22 210**		*e*Pn	**Pn**	**22 36 56.6**	**-3.1**
URZ				*e*Sn	**Sn**	**22 38 53.9**	**+0.6**
URZ				*e*Sn	Sn	22 38 55.8	+2.4
THZ	**Tophouse**	**14.95 213**		*e*Sn	**Sn**	**22 40 45.2**	**-3.9**
KHZ	**Kahutara**	**15.19 210**		*e*Pn	**P**	**22 38 17.4**	**+5.2**
KHZ				*e*Sn	**Sn**	**22 40 49.5**	**-5.1**
DZM	**Mont Dzumac**	**17.15 292**		*e*Pn	**Pn**	**22 38 32.0**	**-0.8**
	8.1nm,0.8s						
RPZ	**Rata Peaks**	**17.32 212**		P	**Pn**	**22 38 33.4**	**-1.3**
	1.6nm,0.3s,baz=73,slow=19,SNR=5.1						
RPZ				S	**Sn**	**22 41 38.6**	**-8.0**
	0.6nm,0.3s,baz=66,slow=10.0,SNR=3.5						
CTA	**Charters Tower**	**35.07 277**		P	**P**	**22 41 26.7**	**+0.9**
	2.8nm,0.4s,baz=101,slow=16,SNR=3.8						
STKA	**Stephens Creek**	**36.04 255**		P	**P**	**22 41 35.6**	**+1.6**
	5.6nm,0.7s,baz=97,slow=11,SNR=7.7						
AS31	**Alice Springs**	**44.56 265**		*e*P	**P**	**22 42 45.6**	**+0.9**
	1.8nm,0.9s						
ASAR	**Alice Springs**	**44.56 265**		P	**P**	**22 42 45.6**	**+0.9**
	2.3nm,0.7s,baz=98,slow=7.9,SNR=10						
WB2	**Warramunga Arr**	**45.47 270**		*e*P	**P**	**22 42 53.9**	**+2.0**
WRAB	**Tennant Creek**	**45.47 270**		*e*P	**P**	**22 42 52.9**	**+0.9**
	4.5nm,0.6s						
WR1	**Warramunga Arr**	**45.48 270**		*e*P	**P**	**22 42 52.6**	**+0.6**
	8.3nm,0.6s						
WRA	**Warramunga Arr**	**45.48 270**		P	**P**	**22 42 52.6**	**+0.6**
	4.9nm,0.6s,baz=110,slow=6.1,SNR=14						
VNDA	**Vanda**	**49.07 186**		P	**P**	**22 43 22.4**	**+3.2**
	2.2nm,0.9s,baz=355,slow=7.8,SNR=5.1						
FITZ	**Fitzroy Crossi**	**53.77 268**		P	**P**	**22 43 55.7**	**+0.5**
	3.1nm,0.8s,baz=162,slow=8.7,SNR=3.6						
FITZ	**Fitzroy Crossi**	**53.77 268**		*e*P	**P**	**22 43 55.7**	**+0.5**
	12nm,1.3s						
MBWA	**Marble Bar**	**57.72 262**		*e*P	**P**	**22 44 23.7**	**+0.2**
QSPA	**South Pole Qui**	**60.55 180**		*e*P	**P**	**22 44 45.9**	**+3.3**
MAW	**Mawson**	**73.58 200**		P	**P**	**22 46 07.5**	**+2.4**
	4.8nm,0.9s,baz=69,slow=4.9,SNR=4.1						
MAW	**Mawson**	**73.58 200**		*e*P	**P**	**22 46 07.5**	**+2.4**
	1.9nm,1.1s						
SYO	**Syowa Base**	**78.24 192**↑		*e*P	**P**	**22 46 31.2**	**-0.4**
MJAR	**Matsushiro Arr**	**78.37 324**		P	**P**	**22 46 33.5**	**+0.7**
	0.5nm,0.4s,baz=177,slow=5.5,SNR=3.4						
PANM	**San Antonio Re**	**83.35 42**		*e*P	**P**	**22 46 58.7**	**-0.7**
KSRS	**Korea Array**	**84.63 319**		P	**P**	**22 47 05.4**	**-0.4**
	0.4nm,0.3s,baz=138,slow=5.8,SNR=3.2						
KS15	**Wonju Array Si**	**84.64 319**		*e*P	**P**	**22 47 05.4**	**-0.5**
KSAR	**Wonju Array Be**	**84.64 319**		P	**P**	**22 47 05.4**	**-0.5**
GSC	**Goldstone, Bar**	**85.50 45**		*e*P	**P**	**22 47 10.9**	**+0.5**
	7.4nm,1.3s						
TPNV	**Topopah Spring**	**86.92 44**		*e*P	**P**	**22 47 17.6**	**+0.1**
	9.2nm,1.3s						
Y14A	**Wickenburg**	**87.03 48**		*e*P	**P**	**22 47 18.7**	**+0.7**
	22nm,1.0s						
LCMT	**Little Creek M**	**88.80 46**		*e*P	**P**	**22 47 27.3**	**+0.8**
	5.6nm,1.1s						
CCUT	**Cedar City**	**89.07 45**		*e*P	**P**	**22 47 27.9**	**+0.1**
	4.9nm,1.2s						
MTPU	**Mount Pierson**	**90.10 45**		*e*P	**P**	**22 47 33.5**	**+0.8**
	7.6nm,1.2s						
LTX	**Lajitas**	**90.76 56**		*e*P	**P**	**22 47 33.9**	**-1.8**
TX31	**Lajitas Ar. Si**	**90.76 56**		*e*P	**P**	**22 47 35.5**	**-0.2**
TXAR	**Lajitas Array**	**90.76 56**		P	**P**	**22 47 33.9**	**-1.8**
	2.1nm,1.1s,baz=201,slow=6.6,SNR=7.6						
MNTX	**Cornudas Mount**	**90.85 54**		*e*P	**P**	**22 47 36.1**	**+0.1**
	4.3nm,1.2s						
G08A	**Pilot Rock**	**90.95 37**		*e*P	**P**	**22 47 37.2**	**+1.0**
	8.3nm,1.0s						
ANMO	**Albuquerque**	**91.96 51**		*e*P	**P**	**22 47 41.4**	**+0.1**
	2.5nm,0.9s						
SPUT	**South Promonto**	**91.97 43**		*e*P	**P**	**22 47 41.5**	**+0.3**
	5.5nm,1.2s						
D08A	**Wolman Farm,**	**92.17 35**		*e*P	**P**	**22 47 42.0**	**+0.3**
	14nm,1.0s						
HLID	**Hailey**	**92.26 40**		*e*P	**P**	**22 47 43.0**	**+0.6**
	3.7nm,1.0s						
F10A	**Beach Ranch, E**	**92.31 37**		*e*P	**P**	**22 47 42.1**	**-0.4**
	5.2nm,0.9s						
MCMT	**McKenzie Canyo**	**93.93 40**		*e*P	**P**	**22 47 50.7**	**+0.5**
CM31	**Chiang Mai Arr**	**94.45 289**		*e*P	**P**	**22 47 54.7**	**+1.8**
CMAR	**Chiang Mai Arr**	**94.45 289**		P	**P**	**22 47 54.7**	**+1.8**
	0.5nm,0.3s,baz=116,slow=4.1,SNR=3.0						
PD31	**Pinedale Array**	**94.57 43**		*e*P	**P**	**22 47 51.4**	**-1.8**
PDAR	**Pinedale Array**	**94.57 43**		P	**P**	**22 47 51.4**	**-1.8**
	0.2nm,0.4s,baz=193,slow=6.1,SNR=4.7						
BOZ	**Bozeman (W)**	**95.12 40**		*e*P	**P**	**22 47 54.9**	**-0.6**
	4.4nm,1.0s						
ILAR	**Eielson Array**	**96.80 12**		P	**P**	**22 48 00.3**	**-2.2**
	0.7nm,0.8s,baz=220,slow=6.0,SNR=7.3						
ILB	**Eielson Array**	**96.80 12**		*e*P	**P**	**22 48 00.3**	**-2.2**
MK32	**Makanchi Array**	**118.31 310**		*e*PKPdf	**PKPdf**	**22 53 18.6**	**-0.9**
MKAR	**Makanchi Array**	**118.31 310**		PKP	**PKPdf**	**22 53 18.6**	**-0.9**
	0.8nm,0.8s,baz=79,slow=2.2,SNR=5.1						
ZALV	**Zalesovo Beam**	**118.34 318**		PKP	**PKPdf**	**22 53 18.4**	**-0.8**
	0.4nm,0.4s,baz=90,slow=4.3,SNR=3.1						
ZAA1	**Zalesovo Array**	**118.34 318**		*e*PKPdf	**PKPdf**	**22 53 18.4**	**-0.8**
KURK	**Kurchatov**	**121.48 314**		*e*PKPdf	**PKPdf**	**22 53 23.6**	**-1.7**
KURBB	**Kurchatov Arra**	**121.52 314**		PKP	**PKPdf**	**22 53 23.6**	**-1.8**
	1.3nm,0.8s,baz=106,slow=2.1,SNR=9.4						
BVAR	**Borovoye Array**	**126.78 316**		PKP	**PKPdf**	**22 53 35.3**	**-0.2**
	1.5nm,0.7s,baz=80,slow=3.6,SNR=5.6						
FIA0	**FINESS Array S**	**144.82 341**		*e*PKPdf	**PKPab**	**22 54 05.5**	**-2.1**
FINES	**FINESS Array B**	**144.82 341**		PKP	**PKPab**	**22 54 05.5**	**-2.1**
	3.4nm,0.8s,baz=56,slow=3.6,SNR=14						
KBZ	**Khabaz**	**145.79 305**		PKPbc	**PKPdf**	**22 54 10.1**	**-0.7**
	2.0nm,0.9s,baz=236,slow=3.6,SNR=2.1						
NB200	**NORSAR Array S**	**148.11 353**		*e*PKPdf	**PKPdf**	**22 54 14.5**	**+0.3**
NOA	**NORSAR Array B**	**148.11 353**		PKPbc	**PKPdf**	**22 54 14.5**	**+0.3**
	1.9nm,0.8s,baz=14,slow=2.5,SNR=8.7						
AKASG	**Malin Array Be**	**151.45 325**		PKPbc	**PKPbc**	**22 54 24.6**	**-1.2**
	4.8nm,0.7s,baz=45,slow=2.8,SNR=9.1						
AKBB	**Malin Array Si**	**151.45 325**		*e*PKPbc	**PKPbc**	**22 54 24.6**	**-1.2**
BR101	**Keskin Array S**	**153.41 300**		*e*PKPbc	**PKPbc**	**22 54 30.3**	**-0.5**
BRTR	**Keskin Array B**	**153.41 300**		PKPbc	**PKPbc**	**22 54 30.3**	**-0.5**
	1.0nm,0.8s,baz=130,slow=3.9,SNR=4.5						
TORD	**Torodi Ar. Bea**	**163.57 173**		PKP	**PKPdf**	**22 54 34.7**	**-1.1**
	0.4nm,0.8s,baz=202,slow=2.3,SNR=2.3						
TORD				PKPab	**PKPab**	**22 55 26.4**	**-0.7**
	1.8nm,0.8s,baz=180,slow=4.8,SNR=6.2						
TOA1	**Torodi Ar. Sit**	**163.58 173**		*e*PKPdf	**PKPdf**	**22 54 34.8**	**-1.1**
TOA1				*e*PKPab	**PKPab**	**22 55 26.4**	**-0.8**

*IDC **06** 22:36:28.6±2.3,35°.93N×141°.28E,h0km,mb3.5/3, mb1 3.6/5,mb1mx3.4/54,mbtmp3.6/5,ML3.4/2,MS4.3/1, Ms1 4.3/1,ms1mx3.7/62,Error ellipse: s-maj=51.5km s-min=24.5km az=60.0*
*ISCJB **06** 22:36:36.0±0.8,35°.72N±0°.04×140°.85E±0°.09,h60km±5km, mb3.5/3,Error ellipse: s-maj=12.1km s-min=6.1km az=169.8*
*JMA **06** 22:36:36.9±0.1,35°.75N×140°.70E,h49km±1km,M3.0*

ISC 06 22:36:37.1±1.1,35°.73N±0°.04×140°.83E±0°.08,h50km±8km, n14,σ1§38/21,mb3.5/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.04 141**		P	**Pn**	**22 36 44.5**	**-0.2**
CHOJ				*e*S	**Sn**	**22 36 51.2**	**+1.0**
JCN	**Nagara**	**0.60 239**		P	**Pn**	**22 36 49.0**	**-0.5**
JCN				S	**Sn**	**22 36 58.3**	**-0.2**
JYT	**Yasato**	**0.71 314**		P	**Pn**	**22 36 49.8**	**-1.2**
JYT				S	**Sn**	**22 36 59.5**	**-1.6**
BSO4	**Boso 4**	**0.84 208**		P	**Pn**	**22 36 52.7**	**+0.1**
JHO	**Hitachi**	**0.90 347**		P	**Pn**	**22 36 53.5**	**0.0**
JHO				S	**Sn**	**22 37 07.0**	**+1.5**
BSO3	**Boso 3**	**0.96 196**		P	**Pn**	**22 36 54.0**	**-0.1**
BSO3				*e*S	**Sn**	**22 37 08.6**	**+2.0**
BSO1	**Boso 1**	**1.08 173**		P	**Pn**	**22 36 56.1**	**+0.6**
MJAR	**Matsushiro Arr**	**2.27 292**		Pn	**Pn**	**22 37 12.2**	**0.0**
	6.6nm,0.3s,baz=96,slow=8.7,SNR=24						
MJAR				Sn	**Sn**	**22 37 42.8**	**+3.9**
	5.4nm,0.3s,baz=150,slow=19,SNR=7.7						
MAT	**Matsushiro**	**2.27 292**		P	**Pn**	**22 37 12.4**	**+0.2**
MAT				*e*S	**Sn**	**22 37 40.6**	**+1.7**
JHJ	**Hachijo jima 2**	**2.75 199**		Pn	**Pn**	**22 37 18.4**	**-0.3**
	12nm,0.3s,baz=257,slow=18,SNR=5.6						
JHJ				Sn	**Sn**	**22 37 49.4**	**-1.2**
	35nm,0.3s,baz=82,slow=22,SNR=5.8						
USRK	**Ussuriysk Ar.**	**10.83 324**		LR	LR	22 43 07.9	
	comp=Z,2µm,21.1s,baz=114,slow=37						
MKAR	**Makanchi Array**	**44.42 303**		P	**P**	**22 44 41.9**	**-1.0**
	0.4nm,0.6s,baz=84,slow=12,SNR=4.1						
KURBB	**Kurchatov Arra**	**46.44 309**		P	**P**	**22 44 58.4**	**-0.4**
	0.4nm,0.4s,baz=82,slow=8.1,SNR=6.4						
WRA	**Warramunga Arr**	**55.71 187**		P	**P**	**22 46 08.5**	**-0.1**
	0.2nm,0.4s,baz=1.8,slow=7.6,SNR=7.2						

*IDC **06** 22:38:02.3±0.9,29°.58S×176°.30W,h0km,mb4.1/7, mb1 4.3/7,mb1mx4.0/31,mbtmp4.0/7,Error ellipse: s-maj=43.5km s-min=22.4km az=173.0*
*NEIC **06** 22:38:03.7±0.6,29°.78S×176°.33W,h10km,mb4.6/2,Error ellipse: s-maj=16.7km s-min=14.5km az=158.0*
*ISCJB **06** 22:38:04.7±0.8,29°.95S±0°.07×176°.48W±0°.09,h24km, mb4.1/9,Error ellipse: s-maj=11.9km s-min=9.6km az=166.6*

ISC 06 22:38:06.1±0.7,29°.80S±0°.09×176°.45W±0°.09,h24km,n19, σ1§13/23,mb4.2/9,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.39 293**		Pn	**Pb**	**22 38 31.5**	**+0.1**
	284nm,0.3s,baz=17,slow=19,SNR=3.5						
RAO				Sn	**Sn**	**22 38 46.7**	**-0.9**
	386nm,0.3s,baz=90,slow=20,SNR=5.0						
URZ	**Urewera**	**9.99 211**		Pn	**Pn**	**22 40 26.3**	**-1.8**
	0.4nm,0.3s,baz=74,slow=19,SNR=3.5						
URZ				Sn	**Sn**	**22 42 18.4**	**-0.9**
	2.5nm,0.3s,baz=323,slow=16,SNR=5.5						
CTA	**Charters Tower**	**35.04 277**		P	**P**	**22 44 59.2**	**+2.0**
	2.0nm,0.2s,baz=106,slow=15,SNR=3.1						
STKA	**Stephens Creek**	**35.92 256**		P	**P**	**22 45 07.0**	**+2.3**
	3.2nm,0.7s,baz=77,slow=11,SNR=3.3						
ASAR	**Alice Springs**	**44.49 266**		P	**P**	**22 46 16.0**	**+0.1**
	0.5nm,0.5s,baz=106,slow=6.9,SNR=4.0						
ASAR				PcP	**PcP**	**22 47 57.9**	**-1.2**
	0.7nm,0.8s,baz=120,slow=4.2,SNR=3.4						
WRAB	**Tennant Creek**	**45.42 271**		*e*P	**P**	**22 46 23.0**	**-0.2**
	1.9nm,0.6s						
WRA	**Warramunga Arr**	**45.42 271**		P	**P**	**22 46 22.9**	**-0.4**
	1.7nm,0.5s,baz=110,slow=7.3,SNR=11						
WRA				PcP	**PcP**	**22 48 03.3**	**+1.0**
	0.5nm,0.9s,baz=121,slow=3.0,SNR=2.6						
QSPA	**South Pole Qui**	**60.31 180**		P	**P**	**22 48 14.2**	**+1.5**
	8.5nm,0.8s						
MJAR	**Matsushiro Arr**	**78.53 324**		P	**P**	**22 50 03.7**	**-1.6**
	0.8nm,0.4s,baz=142,slow=5.8,SNR=4.5						
TXAR	**Lajitas Array**	**90.94 57**		P	**P**	**22 51 08.6**	**+0.3**
	0.4nm,0.9s,baz=224,slow=7.6,SNR=2.9						
PDAR	**Pinedale Array**	**94.78 43**		P	**P**	**22 51 25.1**	**-0.7**
	0.1nm,0.3s,baz=256,slow=6.4,SNR=3.3						
KURK	**Kurchatov**	**121.60 314**		PKP	**PKPdf**	**22 56 57.2**	**-0.1**
KURBB	**Kurchatov Arra**	**121.64 314**		PKP	**PKPdf**	**22 56 57.2**	**-0.2**
	0.2nm,0.4s,baz=116,slow=2.2,SNR=4.0						
BVAR	**Borovoye Array**	**126.91 316**		PKP	**PKPdf**	**22 57 07.1**	**-0.4**
	0.4nm,0.6s,baz=180,slow=1.4,SNR=3.3						
FINES	**FINESS Array B**	**145.03 341**		PKP	**PKPbc**	**22 57 38.9**	**-1.1**
	2.4nm,0.6s,baz=73,slow=2.8,SNR=12						
KBZ	**Khabaz**	**145.88 305**		PKPbc	**PKPab**	**22 57 43.7**	**-0.1**
	1.5nm,0.7s,baz=135,slow=1.4,SNR=3.1						
NOA	**NORSAR Array B**	**148.34 353**		PKPbc	**PKPbc**	**22 57 48.6**	**-1.1**
	0.8nm,0.7s,baz=14,slow=4.4,SNR=3.7						
AKASG	**Malin Array Be**	**151.61 325**		PKPbc	**PKPbc**	**22 57 58.1**	**+0.1**
	1.3nm,0.5s,baz=40,slow=3.0,SNR=3.8						
TORD	**Torodi Ar. Bea**	**163.34 174**		PKPab	**PKPab**	**22 58 58.8**	**+0.9**
	1.5nm,0.7s,baz=192,slow=4.3,SNR=10.0						

JMA 06 22:41:42.3±0.1,38°.47N×142°.10E,h40km±1km,M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.59 269**		P	Pn	22 41 54.2	0.0
JIO				S	Sn	22 42 02.4	-0.3
OFUJ	**Ofunato**	**0.70 331**		P	Pn	22 41 55.7	0.0
OFUJ				S	Sn	22 42 05.1	-0.2
JMK	**Ichinoseki**	**0.84 305**		P	Pn	22 41 57.8	+0.1
JMK				S	Sn	22 42 08.7	-0.1
JOU	**Okura**	**1.13 265**		P	Pn	22 42 02.0	+0.3
JOU				S	Sn	22 42 16.6	+0.6
JOM	**Ohasama**	**1.18 328**		P	Pn	22 42 02.9	+0.5
JOM				S	Sn	22 42 18.3	+1.0
JMM	**Marumori**	**1.19 240**		P	Pn	22 42 02.1	-0.4
JYK	**Kaneyama**	**1.43 289**		P	Pn	22 42 06.5	+0.7
JYK				*e*S	Sn	22 42 25.0	+1.6
JFK	**Kawauchi**	**1.47 222**		P	Pn	22 42 05.8	-0.5
JFK				S	Sn	22 42 23.1	-1.2
JRG	**Rokugo**	**1.47 309**		P	Pn	22 42 07.3	+1.0
MAT	**Matsushiro**	**3.65 239**		P	Pn	22 42 39.6	+3.4
MAT				*e*S	Sn	22 43 25.7	+7.7

IDC 06 22:42:26.1±4.5,28°.53S×178°.25W,h0km,mb3.6/2, mb1 3.9/2,mb1mx3.6/27,mbtmp3.6/2,Error ellipse: s-maj=113.0km s-min=19.4km az=49.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.78 158**		Pn	Pn	22 42 44.4	0.0
	38nm,0.3s,baz=264,slow=19,SNR=3.0						
RAO				Sn	Sn	22 42 57.4	+0.5
	280nm,0.3s,baz=111,slow=18,SNR=7.1						
ASAR	**Alice Springs**	**43.02 265**		P	P	22 50 27.6	-0.1
	0.3nm,0.3s,baz=95,slow=6.4,SNR=5.0						
WRA	**Warramunga Arr**	**43.84 270**		P	P	22 50 34.0	-0.3
	0.8nm,0.8s,baz=110,slow=7.8,SNR=4.6						
TORD	**Torodi Ar. Bea**	**164.70 180**		PKPab	PKPab	23 03 27.8	0.0
	0.5nm,0.8s,baz=186,slow=4.7,SNR=2.8						

IDC 06 22:46:25.2±2.2,29°.71S×175°.82W,h0km,mb4.0/4, mb1 4.1/4,mb1mx3.8/28,mbtmp4.0/4,MS5.0/1,Ms1 5.0/1, ms1mx3.8/30,Error ellipse: s-maj=94.1km s-min=34.4km az=166.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.88 283**		Pn	Pn	22 46 59.3	+0.7
	127nm,0.3s,baz=47,slow=22,SNR=2.4						
RAO				Sn	Sn	22 47 19.4	-3.7
	263nm,0.3s,baz=39,slow=20,SNR=5.6						
HNR	**Honiara**	**30.34 307**		LR	LR	23 03 24.7	
	comp=Z,3µm,19.5s,baz=62,slow=34						
CTA	**Charters Tower**	**35.57 277**		P	P	22 53 24.9	+0.4
	1.2nm,0.3s,baz=104,slow=4.2,SNR=2.3						
STKA	**Stephens Creek**	**36.48 256**		P	P	22 53 33.9	+1.7
	2.1nm,0.7s,baz=79,slow=11,SNR=3.3						
ASAR	**Alice Springs**	**45.04 265**		P	P	22 54 42.0	-1.0
	0.7nm,0.6s,baz=101,slow=8.1,SNR=9.4						
WRA	**Warramunga Arr**	**45.97 270**		P	P	22 54 48.9	-1.4
	1.5nm,0.7s,baz=109,slow=6.2,SNR=7.0						
MKAR	**Makanchi Array**	**118.78 310**		PKP	PKPdf	23 05 14.7	-0.5
	0.3nm,0.7s,baz=103,slow=3.1,SNR=2.7						
FINES	**FINESS Array B**	**145.11 342**		PKPbc	PKPbc	23 06 02.9	-0.5
	0.7nm,0.7s,baz=356,slow=2.6,SNR=3.9						
NOA	**NORSAR Array B**	**148.32 353**		PKPbc	PKPbc	23 06 12.5	-0.4
	0.6nm,0.8s,baz=4.1,slow=2.3,SNR=3.5						

IDC 06 22:49:37.8±9.2,29°.27S×176°.52W,h0km,mb3.5/2, mb1 3.8/2,mb1mx3.5/36,mbtmp3.5/2,Error ellipse: s-maj=344.1km s-min=46.5km az=26.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**44.47 265**		P	P	22 57 51.0	-0.1
	0.6nm,0.8s,baz=103,slow=7.4,SNR=3.2						
WRA	**Warramunga Arr**	**45.36 270**		P	P	22 57 58.0	-0.2
	0.2nm,0.3s,baz=109,slow=8.1,SNR=4.9						
TORD	**Torodi Ar. Bea**	**163.87 174**		PKPab	PKPab	23 10 35.5	-0.4
	1.0nm,1.1s,baz=178,slow=4.8,SNR=3.2						

IDC 06 22:52:42.5±1.6,28°.62S×176°.68W,h0km,mb3.9/2, mb1 4.2/2,mb1mx3.6/38,mbtmp3.9/2,MS4.9/1,Ms1 4.9/1, ms1mx3.7/28,Error ellipse: s-maj=57.7km s-min=25.5km az=149.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.25 239**		Pn	Pn	22 53 08.5	+1.2
	380nm,0.3s,baz=273,slow=8.9,SNR=11						
RAO				Sn	Sn	22 53 25.0	+0.2
	563nm,0.3s,baz=67,slow=23,SNR=8.1						
ASAR	**Alice Springs**	**44.39 265**		P	P	23 00 54.8	-0.3
	0.8nm,0.5s,baz=106,slow=7.6,SNR=12						
ASAR				LR	LR	23 20 24.6	
	comp=Z,1µm,18.3s,baz=38,slow=37						
WRA	**Warramunga Arr**	**45.22 270**		P	P	23 01 00.8	-0.9
	1.5nm,0.7s,baz=110,slow=7.8,SNR=8.9						
FINES	**FINESS Array B**	**143.84 342**		PKP	PKPdf	23 12 19.5	+0.4
	0.8nm,0.6s,baz=45,slow=3.2,SNR=4.7						
AKASG	**Malin Array Be**	**150.53 326**		PKPbc	PKPbc	23 12 36.6	+0.8
	0.3nm,0.3s,baz=51,slow=2.6,SNR=4.7						
MMAI	**Mount Meron Ar**	**152.16 287**		PKPbc	PKPbc	23 12 39.6	-0.7
	1.2nm,0.6s,baz=74,slow=5.2,SNR=2.0						
TORD	**Torodi Ar. Bea**	**164.53 174**		PKPab	PKPab	23 13 42.2	-1.3
	0.5nm,1.0s,baz=165,slow=3.3,SNR=2.8						

*ISCJB **06** 22:54:41.3±0.9,29°.48S±0°.08×176°.6W±0°.2,h10km, mb4.4/11,Error ellipse: s-maj=20.1km s-min=10.4km az=17.3*
*IDC **06** 22:54:42.5±0.9,29°.16S×176°.68W,h0km,mb4.2/8, mb1 4.4/8,mb1mx4.1/39,mbtmp4.2/8,Error ellipse: s-maj=43.6km s-min=24.8km az=166.0*
*NEIC **06** 22:54:43.4±0.5,29°.27S×176°.62W,h10km,mb4.8/4,Error ellipse: s-maj=16.3km s-min=12.7km az=175.0*

ISC 06 22:54:42.7±0.7,29°.45S±0°.1×176°.45W±0°.09,h10km,n30, σ1§36/33,mb4.4/11,1C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.29 275**		Pn	**Pn**	**22 55 08.3**	**+1.6**
	455nm,0.3s,baz=90,slow=20,SNR=6.5						
RAO				Sn	**Sn**	**22 55 27.1**	**+3.1**
	902nm,0.3s,baz=114,slow=19,SNR=7.3						
URZ	**Urewera**	**10.34 209**		Pn	Pn	22 57 06.8	-4.3
	0.8nm,0.3s,baz=236,slow=14,SNR=3.8						
URZ				Sn	**Sn**	**22 59 05.8**	**-1.3**
	1.4nm,0.3s,baz=180,slow=20,SNR=4.1						
DZM	**Mont Dzumac**	**17.03 291**		*e*Pn	**Pn**	**22 58 38.5**	**-2.7**
	23nm,1.2s						
RPZ	**Rata Peaks**	**17.45 212**		P	**Pn**	**22 58 45.4**	**-0.7**
	0.9nm,0.3s,baz=48,slow=17,SNR=4.2						
CTA	**Charters Tower**	**34.99 277**		P	**P**	**23 01 35.1**	**-0.3**
	1.5nm,0.5s,baz=123,slow=12,SNR=6.3						
CTAO	**Charters Tower**	**34.99 277**		*e*P	**P**	**23 01 33.9**	**-1.6**
	26nm,0.6s						
STKA	**Stephens Creek**	**36.03 255**		P	**P

PCPH				*e*S		**Sb**	**22 59 50.6**	**+0.7**
BALP	**Baler**	**2.23**	**146**	*e*P		**Pb**	**22 59 22.2**	**-2.3**
BALP				*e*S		**Sb**	**22 59 53.4**	**+1.8**
TGY	**Tagaytay City**	**3.53**	**169**	P		**Pb**	**22 59 43.1**	**-3.6**
	110nm,0.3s,baz=225,slow=3.0,SNR=9.3							
TGY	**Tagaytay City**	**3.53**	**169**‖	*e*P		**Pb**	**22 59 49.5**	**+2.9**
LQP	**Lukban**	**3.67**	**160**‖	*e*P		**Pb**	**22 59 48.1**	**-1.0**
GQP	**Guinayangan**	**4.22**	**150**‖	*e*P		**Pn**	**22 59 48.3**	**+0.9**
SJMP	**San Jose**	**5.17**	**171**	*e*P		Pn	23 00 05.7	+5.3
TWG	**Pinlang**	**5.26**	**8**	*e*Pn		**Pn**	**23 00 02.7**	**+1.2**
TPUB	**Ta-pu**	**5.69**	**3**	*e*Pn		Pn	23 00 14.7	+7.2
YULB	**Yu-li**	**5.85**	**9**	*e*Pn		**Pn**	**23 00 10.2**	**+0.4**
SSLB	**Suanglung**	**6.20**	**6**	*e*Pn		**Pn**	**23 00 16.1**	**+1.5**
NACB	**Ninganchiao**	**6.67**	**10**	*e*Pn		**Pn**	**23 00 21.1**	**+0.2**
YHNB	**Yeheng**	**7.12**	**8**	*e*Pn		**Pn**	**23 00 28.8**	**+1.5**
YOJ	**Yonaguni jima**	**7.30**	**20**	*e*Pn		**Pn**	**23 00 30.2**	**+0.6**
TATO	**Taipei**	**7.43**	**9**	*e*Pn		**Pn**	**23 00 34.8**	**+3.4**
JNU	**Nakatsue**	**18.17**	**30**	P		**P**	**23 02 55.5**	**+0.2**
	0.9nm,0.3s,baz=169,slow=7.1,SNR=7.5							
JNU	**Nakatsue**	**18.17**	**30**	*e*P		**P**	**23 02 55.5**	**+0.2**
	27nm,0.9s							
CM01	**Chiang Mai Arr**	**20.29**	**276**	*e*P		Pn	23 03 24.6	+4.0
CM31	**Chiang Mai Arr**	**20.30**	**276**	*e*P		Pn	23 03 23.3	+2.5
CMAR	**Chiang Mai Arr**	**20.30**	**276**	P		Pn	23 03 23.3	+2.5
	1.6nm,0.8s,baz=92,slow=8.3,SNR=8.1							
KS15	**Wonju Array Si**	**20.88**	**17**	*e*P		**P**	**23 03 24.9**	**+0.2**
KSAR	**Wonju Array Be**	**20.88**	**17**	P		**P**	**23 03 24.9**	**+0.2**
KSRS	**Korea Array**	**20.90**	**17**	P		**P**	**23 03 24.9**	**-0.1**
	7.3nm,0.8s,baz=198,slow=12,SNR=30							
KS01	**Wonju Array Si**	**20.91**	**17**	*e*P		**P**	**23 03 24.6**	**-0.5**
BJT	**Baijiatuan**	**22.63**	**352**	*e*P		**P**	**23 03 46.1**	**+2.6**
USRK	**Ussuriysk Ar.**	**28.30**	**18**	P		**P**	**23 04 35.8**	**-0.1**
	1.5nm,0.8s,baz=192,slow=6.2,SNR=2.8							
KLR	**Kul'dur**	**32.90**	**14**	P		**P**	**23 05 17.3**	**+0.8**
	5.0nm,0.8s,baz=233,slow=6.2,SNR=21							
FITZ	**Fitzroy Crossi**	**35.86**	**171**	P		**P**	**23 05 40.4**	**-2.0**
	1.3nm,0.5s,baz=345,slow=12,SNR=3.7							
FITZ	**Fitzroy Crossi**	**35.86**	**171**	*e*P		**P**	**23 05 40.4**	**-2.0**
	29nm,1.9s							
WR1	**Warramunga Arr**	**39.78**	**159**	*e*P		**P**	**23 06 12.4**	**-3.1**
	30nm,1.8s							
WRA	**Warramunga Arr**	**39.78**	**159**	P		**P**	**23 06 12.4**	**-3.1**
	1.0nm,0.6s,baz=340,slow=9.2,SNR=11							
WRA				LR		LR	23 23 27.5	
	comp=Z,909nm,19.9s,baz=75,slow=37							
MK01	**Makanchi Array**	**42.69**	**321**	*e*P		**P**	**23 06 40.8**	**+1.5**
MK31	**Makanchi Array**	**42.71**	**321**	*e*P		**P**	**23 06 41.5**	**+2.1**
MK32	**Makanchi Array**	**42.71**	**321**	*e*P		**P**	**23 06 41.2**	**+1.9**
MKAR	**Makanchi Array**	**42.71**	**321**	P		**P**	**23 06 41.2**	**+1.9**
	4.7nm,0.9s,baz=113,slow=9.3,SNR=28							
MKAR	**Makanchi Array**	**42.71**	**321**	*e*P		**P**	**23 06 41.5**	**+2.1**
	44nm,0.9s							
MAKZ	**Makanchi**	**42.90**	**321**	*e*P		**P**	**23 06 43.0**	**+2.1**
	6.5nm,1.2s							
AS31	**Alice Springs**	**43.11**	**162**	*e*P		**P**	**23 06 40.6**	**-2.3**
	1.2nm,0.8s							
ASAR	**Alice Springs**	**43.11**	**162**	P		**P**	**23 06 40.6**	**-2.3**
	0.9nm,0.3s,baz=340,slow=6.9,SNR=12							
ZAA0	**Zalesovo Array**	**45.45**	**331**	*e*P		**P**	**23 07 02.0**	**+0.8**
ZALV	**Zalesovo Beam**	**45.45**	**331**	P		**P**	**23 07 02.0**	**+0.8**
	2.3nm,0.7s,baz=129,slow=8.2,SNR=13							
ZAA1	**Zalesovo Array**	**45.45**	**331**	*e*P		**P**	**23 07 02.0**	**+0.8**
PETK	**Petropavlovsk-**	**45.87**	**31**	P		**P**	**23 07 03.9**	**-0.6**
	3.4nm,0.8s,baz=224,slow=6.2,SNR=3.8							
PEA1	**Petropavlovsk-**	**45.87**	**31**	*e*P		**P**	**23 07 03.9**	**-0.6**
KURK	**Kurchatov**	**46.77**	**325**	*e*P		**P**	**23 07 13.2**	**+1.5**
KURBB	**Kurchatov Arra**	**46.77**	**325**	P		**P**	**23 07 12.7**	**+1.0**
	3.0nm,0.6s,baz=122,slow=7.9,SNR=16							
ZRNK	**Zerenda**	**53.11**	**324**	*e*P		**P**	**23 08 00.7**	**+0.9**
	2.1nm,0.7s							
STKA	**Stephens Creek**	**53.27**	**157**	P		**P**	**23 07 59.2**	**-1.9**
	2.8nm,0.6s,baz=303,slow=6.3,SNR=9.0							
STKA	**Stephens Creek**	**53.27**	**157**	*e*P		**P**	**23 07 59.2**	**-1.9**
	10nm,1.7s							
NRIK	**Noril'sk**	**55.55**	**347**	P		**P**	**23 08 17.6**	**+0.3**
	5.2nm,0.7s,baz=132,slow=7.6,SNR=12							
GEYT	**Ailbeck**	**57.58**	**304**	P		**P**	**23 08 33.6**	**+1.3**
	1.0nm,0.5s,baz=62,slow=3.5,SNR=4.1							
AKTO	**Aktyubinsk**	**59.01**	**319**	P		**P**	**23 08 42.3**	**+0.3**
	1.2nm,0.5s,baz=86,slow=10							
ARU	**Arti**	**59.94**	**326**	*e*P		**P**	**23 08 48.6**	**+0.2**
	4.0nm,0.5s							
KVAR	**Kislovodsk Arr**	**69.15**	**311**	P		**P**	**23 09 49.3**	**+0.4**
	2.5nm,0.7s,baz=153,slow=6.8,SNR=5.0							
KIV	**Kislovodsk**	**69.15**	**311**	*e*P		**P**	**23 09 49.3**	**+0.4**
ARA0	**ARCESS Array S**	**75.33**	**339**	*e*P		**P**	**23 10 25.3**	**+0.1**
ARCES	**ARCESS Array B**	**75.33**	**339**	P		**P**	**23 10 25.3**	**+0.1**
	1.3nm,0.7s,baz=68,slow=6.8,SNR=6.9							
FIA0	**FINESS Array S**	**76.71**	**331**	*e*P		**P**	**23 10 32.9**	**-0.3**
FINES	**FINESS Array B**	**76.71**	**331**	P		**P**	**23 10 32.9**	**-0.3**
	0.8nm,0.5s,baz=45,slow=5.7,SNR=11							
MLR	**Muntele Rosu**	**80.62**	**315**	P		**P**	**23 10 56.0**	**+0.8**
	0.3nm,0.7s,baz=103,slow=14,SNR=3.0							
MLR	**Muntele Rosu**	**80.62**	**315**	*e*P		**P**	**23 10 56.0**	**+0.8**
	7.1nm,1.4s							
HFS	**Hagfors**	**82.89**	**331**	P		**P**	**23 11 06.8**	**+0.1**
	2.9nm,1.0s,baz=86,slow=7.9,SNR=4.8							
NB200	**NORSAR Array S**	**83.64**	**332**	*e*P		**P**	**23 11 09.3**	**-1.3**
NOA	**NORSAR Array B**	**83.64**	**332**	P		**P**	**23 11 09.3**	**-1.3**
	0.9nm,0.8s,baz=65,slow=5.3,SNR=4.2							
YKA	**Yellowknife Ar**	**89.35**	**22**	P		**P**	**23 11 37.8**	**-0.7**
	0.3nm,0.6s,baz=311,slow=4.6,SNR=3.1							
YKB5	**Yellowknife Ar**	**89.35**	**22**	*e*P		**P**	**23 11 37.8**	**-0.7**

IDC 06 23:02:31.5±3.6, 27.87S×176.54W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/34, mbtmp3.7/2, Error ellipse: s-maj=139.9km s-min=45.9km az=21.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**44.59**	**264**	P	P	23 10 45.1	-0.5
	0.7nm,0.7s,baz=95,slow=6.5,SNR=8.8						
WRA	**Warramunga Arr**	**45.35**	**269**	P	P	23 10 52.1	+0.3
	1.1nm,1.0s,baz=110,slow=7.6,SNR=4.9						
FINES	**FINESS Array B**	**143.18**	**342**	PKP	PKPdf	23 22 07.0	+0.1
	0.8nm,0.7s,baz=298,slow=3.0,SNR=4.4						
TORD	**Torodi Ar. Bea**	**165.26**	**173**	PKPab	PKPab	23 23 35.2	-0.5
	0.8nm,1.1s,baz=216,slow=2.4,SNR=3.4						

*ISCJB **06** 23:03:28.8±0.4, 29.48S±0.05×176.42W±0.07, h10km, mb5.0/32, MS5.1/3, Error ellipse: s-maj=9.9km s-min=5.3km az=28.7*

*IDC **06** 23:03:28.7±0.7, 28.85S×176.30W, h0km, mb4.5/11, mb1 4.6/11, mb1mx4.4/31, mbtmp4.4/11, Error ellipse: s-maj=25.5km s-min=16.8km az=158.0*

*NEIC **06** 23:03:29.6±0.3, 29.43S×176.35W, h10km, mb5.0/30, Error ellipse: s-maj=11.6km s-min=6.5km az=125.0*

*BJI **06** 23:03:30.6, 29.63S×176.71W, h13km, mb5.3/11, mBS.3/3, Ms5.4/8, Ms7 5.2/8*

ISC 06 23:03:31.1±0.4, 29.35S±0.06×176.20W±0.06, h21km, n90, σ2s 40/108, mb4.9/32, MS5.0/3, 1C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.51**	**273**	Pn	**Pb**	**23 03 58.7**	**+0.3**
	687nm,0.3s,baz=82,slow=12,SNR=12						
RAO				Sn	**Sb**	**23 04 19.3**	**+2.3**
	1µm,0.3s,baz=93,slow=21,SNR=10						
RAO	**Raoul Island**	**1.51**	**273**	*e*Pn	**Pb**	**23 03 58.7**	**+0.3**
RAO				*e*Sn	**Sn**	**23 04 13.4**	**-2.5**
OUZ	**Omahuta**	**10.43**	**233**	*e*Pn	Pn	23 06 04.9	+5.5
URZ	**Urewera**	**10.48**	**210**	Pn	**Pn**	**23 05 57.5**	**-2.6**
	1.9nm,0.3s,baz=264,slow=4.3,SNR=9.6						
URZ	**Urewera**	**10.48**	**210**	*e*Pn	**Pn**	**23 05 57.8**	**-2.3**
URZ				*e*Sn	**Sn**	**23 07 58.2**	**+1.4**
BKZ	**Black Stump Fm**	**11.50**	**210**	*e*Pn	**Pn**	**23 06 16.4**	**+2.2**
HIZ	**Hauiti**	**11.77**	**217**	*e*Pn	**Pn**	**23 06 21.1**	**+3.3**
BFZ	**Birch Farm**	**12.88**	**207**	*e*Pn	**Pn**	**23 06 30.5**	**-2.4**
BFZ				*e*Sn	**Sn**	**23 08 55.2**	**-0.5**
SNZO	**South Karori**	**14.04**	**209**	*e*Pn	**Pn**	**23 06 45.9**	**-2.9**
SNZO				*e*Sn	**Sn**	**23 09 15.5**	**-8.5**
THZ	**Tophouse**	**15.21**	**213**	*e*Pn	**Pn**	**23 07 03.0**	**-1.7**
	364nm,2.0s						
THZ				*e*Sn	**Sn**	**23 09 44.9**	**-7.7**
KHZ	**Kahutara**	**15.45**	**210**	*e*Pn	**Pn**	**23 07 04.5**	**-3.2**
	66nm,0.9s						
LTZ	**Lake Taylor**	**16.30**	**212**	*e*Pn	**Pn**	**23 07 16.5**	**-2.3**
	241nm,2.0s						
OXZ	**Oxford**	**16.84**	**211**	*e*Pn	**Pn**	**23 07 23.2**	**-2.3**
	61nm,0.6s						
MQZ	**McQueen's Vall**	**16.87**	**209**	*e*Pn	**Pn**	**23 07 22.5**	**-3.4**
	181nm,1.8s						
RAR	**Rarotonga**	**16.91**	**65**	Pn	**Pn**	**23 07 21.3**	**-5.2**
	1.6nm,0.3s,baz=248,slow=16,SNR=3.1						
RAR	**Rarotonga**	**16.91**	**65**	*e*Pn	**Pn**	**23 07 21.3**	**-5.2**
	177nm,1.7s						
RPZ	**Rata Peaks**	**17.59**	**212**	P	**Pn**	**23 07 32.0**	**-2.9**
	4.4nm,0.3s,baz=27,slow=2.2,SNR=16						
RPZ	**Rata Peaks**	**17.59**	**212**	*e*Pn	**Pn**	**23 07 32.0**	**-2.9**
	260nm,1.9s						
FOZ	**Fox Glacier**	**18.05**	**215**	*e*Pn	**Pn**	**23 07 37.1**	**-3.4**
	526nm,1.7s						
LBZ	**Lake Benmore**	**18.51**	**212**	*e*P	**P**	**23 07 43.4**	**-2.5**
	157nm,1.6s						
ODZ	**Otahua Downs**	**18.81**	**210**	*e*P	**Pn**	**23 07 49.7**	**-0.1**
	246nm,2.0s						
MLZ	**Mavora Lakes**	**20.21**	**213**	*e*P	**P**	**23 08 05.4**	**+0.8**
	298nm,1.9s						
FUNA	**Funafuti**	**21.16**	**347**	*e*P	**P**	**23 08 11.4**	**-3.6**
	497nm,1.8s						
EIDS	**Eidsvold**	**29.28**	**270**	*e*P	**P**	**23 09 28.5**	**-3.5**
	5.8nm,1.0s						
CAN	**Canberra**	**29.90**	**249**	*e*P	**P**	**23 09 34.6**	**-2.9**
	115nm,1.9s						
CTA	**Charters Tower**	**35.21**	**277**	P	**P**	**23 10 24.3**	**+0.3**
	3.7nm,0.6s,baz=105,slow=11,SNR=7.3						
CTAO	**Charters Tower**	**35.21**	**277**	*e*P	**P**	**23 10 24.4**	**+0.4**
	36nm,1.9s						
STKA	**Stephens Creek**	**36.25**	**255**	P	**P**	**23 10 33.9**	**+1.0**
	15nm,0.7s,baz=96,slow=11,SNR=19						
STKA	**Stephens Creek**	**36.25**	**255**	*e*P	**P**	**23 10 33.8**	**+1.0**
	3.5nm,0.8s						
BBOO	**Buckleboo**	**40.77**	**253**	*e*P	**P**	**23 11 10.7**	**-0.2**
	165nm,1.8s						
AS01	**Alice Springs**	**44.70**	**265**	*e*P	**P**	**23 11 42.0**	**-0.9**
AS31	**Alice Springs**	**44.74**	**265**	*e*P	**P**	**23 11 42.5**	**-0.7**
	2.1nm,0.6s						
AS31				*e*PcP	**PcP**	**23 13 25.9**	**+0.5**
ASAR	**Alice Springs**	**44.74**	**265**	P	**P**	**23 11 42.4**	**-0.9**
	6.6nm,0.7s,baz=107,slow=7.7,SNR=36						
ASAR				PcP	**PcP**	**23 13 25.9**	**+0.5**
	0.8nm,0.7s,baz=108,slow=4.6,SNR=3.0						
WB2	**Warramunga Arr**	**45.63**	**270**	*e*P	**P**	**23 11 48.9**	**-1.4**
WR1	**Warramunga Arr**	**45.64**	**270**	*e*P	**P**	**23 11 49.5**	**-0.9**
	13nm,0.8s						
WRA	**Warramunga Arr**	**45.64**	**270**	P	**P**	**23 11 49.5**	**-0.9**
	5.9nm,1.8s,baz=109,slow=7.8,SNR=21						
FORT	**Forrest**	**47.84**	**254**	*e*P	**P**	**23 12 07.3**	**-0.2**
	244nm,0.6s						
SBA	**Scott Base**	**49.20**	**185**	*e*P	**P**	**23 12 18.6**	**+1.3**
	35nm,2.0s						
VNDA	**Vanda**	**49.30**	**186**	P	P	23 12 23.4	+5.4
	0.9nm,0.6s,baz=19,slow=8.4,SNR=6.2						
FITZ	**Fitzroy Crossi**	**53.94**	**268**	P	**P**	**23 12 52.9**	**-0.6**
	9.3nm,0.8s,baz=160,slow=6.7,SNR=10						
CASY	**Casey**	**56.79**	**208**	*e*P	**P**	**23 13 16.5**	**+3.1**
	16nm,0.6s						
QSPA	**South Pole Qui**	**60.76**	**180**	*e*P	**P**	**23 13 45.8**	**+4.6**
MAW	**Mawson**	**73.83**	**200**	P	**P**	**23 15 07.5**	**+3.9**
	6.0nm,0.9s,baz=91,slow=2.7,SNR=5.8						
MAW	**Mawson**	**73.83**	**200**	*e*P	**P**	**23 15 07.5**	**+3.9**
	3.6nm,1.3s						
MJAR	**Matsushiro Arr**	**78.30**	**324**	P	**P**	**23 15 28.1**	**-1.4**
	1.4nm,0.6s,baz=160,slow=4.7,SNR=5.4						
SYO	**Syowa Base**	**78.48**	**192**‖	*e*P	**P**	**23 15 31.4**	**+1.3**
KCPM	**Cerro Pedro Peak**	**84.33**	**38**	*e*P	**P**	**23 15 59.0**	**-2.6**
	12µm,0.6s						
GSI	**Gununguni**	**87.34**	**273**	*e*P	**P**	**23 16 17.2**	**+0.2**
	122nm,2.0s						
U15A	**North Rim**	**88.77**	**46**	*e*P	**P**	**23 16 26.4**	**+2.8**
	5.8nm,1.2s						
CCUT	**Cedar City**	**88.80**	**45**	*e*P	**P**	**23 16 26.8**	**+3.1**
	3.1nm,1.1s						
KNB	**Kanab**	**88.81**	**46**	*e*P	**P**	**23 16 26.0**	**+2.4**
	9.2nm,1.4s						
MTPU	**Mount Pierson**	**89.84**	**45**	*e*P	**P**	**23 16 30.8**	**+2.1**
	23nm,1.8s						
TX31	**Lajitas Ar. Si**	**90.50**	**56**	*e*P	**P**	**23 16 33.1**	**+1.4**
LTX	**Lajitas**	**90.50**	**56**	*e*P	**P**	**23 16 32.8**	**+1.2**
TXAR	**Lajitas Array**	**90.50**	**56**	P	**P**	**23 16 32.8**	**+1.2**
	1.0nm,0.9s,baz=220,slow=7.6,SNR=8.6						
MNTX	**Cornudas Mount**	**90.60**	**54**	*e*P	**P**	**23 16 33.4**	**+1.5**
	2.6nm,1.0s						
Q16A	**Castle Valley**	**91.00**	**45**	*e*P	**P**	**23 16 36.4**	**+2.5**
	5.7nm,1.0s						
F10A	**Beach Ranch, E**	**92.04**	**37**	*e*P	**P**	**23 16 39.3**	**+0.9**
	3.9nm,0.8s						
GYA	**Guiyang**	**92.40**	**299**	P	**P**	**23 16 42.0**	**+1.4**
GYA				pP	sP	23 16 50.5	+0.4
GYA				SKS	**SKSac**	**23 27 12.0**	**-1.1**
GYA				S	**S**	**23 27 41.4**	**-2.0**
GYA				SS	**SS**	**23 33 56.2**	**+1.0**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,7.0s						
GYA				LR	LR		
	comp=N,540nm,22.0s						
GYA				LR	LR		
	comp=E,470nm,21.8s						
GYA				LR	LR		
	comp=Z,500nm,20.2s						
CM31	**Chiang Mai Arr**	**94.55**	**288**	*e*P	**P**	**23 16 51.1**	**+0.6**
CMAR	**Chiang Mai Arr**	**94.55**	**288**	P	**P**	**23 16 51.1**	**+0.6**
	0.8nm,0.4s,baz=144,slow=4.1,SNR=6.2						
KMI	**Kunming**	**94.76**	**296**	P	**P**	**23 16 55.1**	**+3.5**
KMI				pmax	pmax		
	comp=Z,10.0nm,0.5s						
ILAR	**Eielson Array**	**96.56**	**12**	P	**P**	**23 16 57.5**	**-1.0**
	0.7nm,0.7s,baz=214,slow=5.7,SNR=6.9						
ILB	**Eielson Array**	**96.56**	**12**	*e*P	**P**	**23 16 57.5**	**-1.0**
HHC	**Hu-ho-hao-te**	**96.64**	**313**	*e*P	**P**	**23 17 01.3**	**+1.6**
HHC				PP	**PP**	**23 20 57.2**	**+2.4**
HHC				SKS	**SKSac**	**23 27 32.2**	**-3.1**
HHC				S	**S**	**23 28 15.4**	**-4.4**
HHC				SS	**SS**	**23 34 57.2**	**+2.0**
HHC				pmax	pmax		
	comp=Z,32nm,1.0s						
HHC				LR	LR		
	comp=N,320nm,17.3s						
HHC				LR	LR		
	comp=E,230nm,14.8s						
HHC				LR	LR		
	comp=Z,160nm,13.6s						
CD2	**Chengdu**	**96.87**	**301**	*e*P	**P**	**23 17 00.8**	**0.0**
WMQ	**Urumqi**	**113.81**	**308**	*e*PKP	**PKiKP**	**23 22 07.5**	**-0.6**
ZAA1	**Zalesovo Array**	**118.29**	**318**	*e*PKPdf	**PKPdf**	**23 22 15.7**	**-0.6**
ZALV	**Zalesovo Beam**	**118.29**	**318**	PKP	**PKPdf**	**23 22 15.7**	**-0.6**
	0.4nm,0.2s,baz=0.0,slow=3.0,SNR=2.8						
MK32	**Makanchi Array**	**118.30**	**310**	*e*PKPdf	**PKPdf**	**23 22 16.2**	**-0.4**
MKAR	**Makanchi Array**	**118.30**	**310**	PKP	**PKPdf**	**23 22 16.2**	**-0.4**
	0.9nm,0.8s,baz=72,slow=1.2,SNR=6.4						
KSH	**Kashi**	**121.05**	**301**	*e*PKP	**PKPdf**	**23 22 23.4**	**+1.1**
KSH				*e*PP	PP	23 24 00.5	+8.0
KSH				PKS	**PKSdf**	**23 25 59.2**	**+0.2**
KSH				SKS	**SKSdf**	**23 29 30.3**	**-2.9**
KSH				SKKS	**SKKSac**	**23 30 48.4**	**-2.2**
KSH				SS	**SS**	**23 40 31.0**	**+6.6**
KSH				AMB	AMB		
	comp=Z,43nm,6.3s						
KSH				LR	LR		
	comp=N,160nm,9.8s						
KSH				LR	LR		
	comp=E,190nm,9.6s						
KSH				LR	LR		
	comp=Z,750nm,16.9s						
FIA0	**FINESS Array S**	**144.67**	**342**	*e*PKPdf	**PKPab**	**23 23 03.9**	**-0.3**
FINES	**FINESS Array B**	**144.67**	**342**	PKP	**PKPab**	**23 23 03.9**	**-0.3**
	2.9nm,0.6s,baz=64,slow=2.8,SNR=20						
KBZ	**Khabaz**	**145.80**	**306**	PKPbc	**PKPdf**	**23 23 08.6**	**+0.7**
	1.7nm,0.7s,baz=288,slow=2.4,SNR=3.8						
NC303	**NORSAR Array S**	**147.73**	**353**	*e*PKPbc	**PKPbc**	**23 23 13.7**	**+0.1**
NB2	**NORSAR Subarra**	**147.93**	**353**	PKP	**PKPbc**	**23 23 13.7**	**-0.4**
	comp=Z,3.4nm,0.7s,baz=11,slow=2.9						
NB200	**NORSAR Array S**	**147.93**	**353**	*e*PKPbc	**PKPbc**	**23 23 14.1**	**0.0**
NOA	**NORSAR Array B**	**147.93**	**353**	PKPbc	**PKPbc**	**23 23 14.1**	**0.0**
	comp=Z,3.2nm,0.8s,baz=14,slow=4.5,SNR=11						
HFS	**Hagfors**	**148.50**	**351**	PKPbc	**PKPbc**	**23 23 15.2**	**-0.4**
	comp=Z,3.1nm,0.7s,baz=79,slow=3.2,SNR=12						
AKASG	**Malin Array Be**	**151.38**	**325**	PKPbc	**PKPbc**	**23 23 22.4**	**-0.5**
	comp=Z,1.8nm,0.5s,baz=45,slow=3.0,SNR=7.3						
AKBB	**Malin Array Si**	**151.38**	**325**	*e*PKPbc	**PKPbc**	**23 23 22.4**	**-0.5**
AK11	**Malin Array Si**	**151.42**	**325**	*e*PKPbc	**PKPbc**	**23 23 23.4**	**+0.4**
AK11				*e*PKPab	**PKPab**	**23 23 31.1**	**-0.2**
BR101	**Keskin Array S**	**153.44**	**301**	*e*PKPbc	**PKPbc**	**23 23 28.4**	**+0.3**
BR131	**Keskin Array S**	**153.44**	**301**	*e*PKPbc	**PKPbc**	**23 23 28.3**	**+0.2**
BRTR	**Keskin Array B**	**153.44**	**301**	PKPbc	**PKPbc**	**23 23 28.4**	**+0.3**
	comp=Z,0.6nm,0.8s,baz=108,slow=4.0,SNR=4.3						
BR231	**Keskin MP Arra**	**154.06**	**302**	*e*PKPbc	**PKPbc**	**23 23 29.3**	**0.0**
TOA0	**Torodi Ar. Sit**	**163.76**	**173**	*e*PKPab	**PKPab**	**23 24 27.5**	**+2.4**
TORD	**Torodi Ar. Bea**	**163.76**	**173**	PKPab	**PKPab**	**23 24 26.9**	**+1.8**
	comp=Z,2.4nm,0.8s,baz=183,slow=3.0,SNR=16						
TOA1	**Torodi Ar. Sit**	**163.76**	**173**	*e*PKPab	**PKPab**	**23 24 26.9**	**+1.8**

*ISCJB **06** 23:04:58.6±0.5, 39.10N±0.03×28.99E±0.02, h5km±6km, Error ellipse: s-maj=5.5km s-min=3.2km az=2.3*

*ISK **06** 23:04:58.3, 39.11N×28.99E, h6km, MD2.9*

*CSEM **06** 23:04:58.8±0.1, 39.09N×28.98E, h5km, ML3.1, Error ellipse: s-maj=2.3km s-min=2.0km az=171.0*

*DDA **06** 23:04:58.5, 39.12N×29.00E, h7km, Ml3.1*

ISC 06 23:04:58.9±0.9, 39.10N±0.02×28.99E±0.02, h11km±8km, n66, σ0s 63/84, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.22**	**256**	*i* P	**Pg**	**23 05 03.8**	**+0.2**
DEMI				*i* S	**Sg**	**23 05 07.1**	**+0.3**
DEMI	**Demirci**	**0.22**	**256**	P	**Pg**	**23 05 03.8**	**+0.2**
DEMI				S	**Sg**	**23 05 07.1**	**+0.3**
GEDZ	**Gediz**	**0.33**	**99**	*e*PG	**Pg**	**23 05 05.2**	**-0.4**
GEDZ				*e*SG	**Sg**	**23 05 10.1**	**0.0**
GEDZ	**Gediz**	**0.33**	**99**	*e*Pg	**Pg**	**23 05 05.2**	**-0.4**
GEDZ				*e*Sg	**Sg**	**23 05 10.1**	**0.0**
GDZ	**Gediz**	**0.38**	**91**	*i* P	**Pg**	**23 05 06.2**	**-0.3**
GDZ				*i* S	**Sg**	**23 05 11.4**	**-0.3**
GDZ	**Gediz**	**0.38**	**91**	P	**Pg**	**23 05 06.2**	**-0.3**
GDZ				S	**Sg**	**23 05 11.4**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**204**	*e*PG	**Pg**	**23 05 11.5**	**+0.3**
KULA	**Kula-Manisa**	**0.64**	**204**	*e*Pg	**Pg**	**23 05 11.5**	**+0.2**
MANT	**Manisa**	**0.69**	**209**	*i* P	**Pg**	**23 05 11.4**	**-0.9**
MANT				*i* S	**Sg**	**23 05 20.5**	**-1.0**
MANT	**Manisa**	**0.69**	**209**	P	**Pg**	**23 05 11.4**	**-0.9**
MANT				S	**Sg**	**23 05 20.5**	**-1.0**
KHL	**Karahalli**	**0.88**	**151**	*e*PG	**Pg**	**23 05 15.8**	**0.0**
KHL				*e*SG	**Sb**	**23 05 28.1**	**+0.2**
KHL	**Karahalli**	**0.88**	**151**	*e*Pg	**Pg**	**23 05 15.8**	**0.0**
KHL				*e*Sg	**Sb**	**23 05 28.1**	**+0.2**
AKS	**Akhisar**	**0.94**	**257**	*e*PG	**Pg**	**23 05 17.1**	**0.0**
AKS				*e*SG	**Sb**	**23 05 30.5**	**+0.8**
AKS	**Akhisar**	**0.94**	**257**	*e*Pg	**Pg**	**23 05 17.1**	**0.0**
AKS				*e*Sg	**Sb**	**23 05 30.5**	**+0.8**
BALB	**Balikesir**	**1.02**	**303**	*e*PG	**Pg**	**23 05 18.2**	**-0.2**
BALB				*e*SG	**Sb**	**23 05 32.5**	**+0.7**
BALB	**Balikesir**	**1.02**	**303**	*e*Pg	**Pg**	**23 05 18.3**	**-0.2**
BALB				*e*Sg	**Sb**	**23 05 32.5**	**+0.7**

*NIC **06** 23:08:52.9±0.2,34.°99N×29.°34E,h39km,mb4.1,ML3.7*
*GII **06** 23:08:53.9±0.0,34.°45N×29.°36E,h30km,mb4.1/1,*
MD3.6/3
ISC 06 23:08:46.6±1.6,**34.79N**±0.°03×**29.11E**±0.°02,**h14**km±11km,
n224,σ1°**87**/322,**mb3.5**/3,**Eastern Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSL	**Kastellorizon**	**1.41**	**16**	P	**Pb**	**23 09 13.2**	**+0.6**
KSL				S	**Sb**	**23 09 29.6**	**-0.8**
KSL	**Kastellorizon**	**1.41**	**16**	P	**Pn**	**23 09 12.4**	**+0.7**
KSL				S	**Sb**	**23 09 29.8**	**-0.6**
KSL				AML	AML	23 09 45.8	
	comp=N,334µm,0.7s						
KSL				AML	AML	23 09 49.5	
	comp=E,332µm,0.9s						
AKAS	**Kas**	**1.49**	**16**	*i* P	**Pg**	**23 09 15.0**	**-0.3**
AKAS				*i* S	**Sb**	**23 09 33.1**	**+0.1**
AKAS	**Kas**	**1.49**	**16**	P	**Pg**	**23 09 15.0**	**-0.3**
AKAS				S	**Sb**	**23 09 33.1**	**+0.1**
ARG	**Arkhangelos**	**1.63**	**331**	P	**Pn**	**23 09 15.3**	**+0.5**
ARG				S	**Sn**	**23 09 35.4**	**-0.2**
ARG	**Arkhangelos**	**1.63**	**331**	P	**Pn**	**23 09 15.4**	**+0.6**
ARG				S	**Sn**	**23 09 35.4**	**-0.2**
KARP	**Karpathos**	**1.76**	**296**	*e*PN	**Pb**	**23 09 18.3**	**-0.4**
KARP				*e*SN	**Sn**	**23 09 39.2**	**+0.3**
KARP	**Karpathos**	**1.76**	**296**	P	**Pb**	**23 09 18.4**	**-0.3**
KARP	**Karpathos**	**1.76**	**296**	*e*Pn	**Pb**	**23 09 18.3**	**-0.4**
KARP				S	**Sn**	**23 09 37.3**	**-1.6**
KARP				*e*Sn	**Sn**	**23 09 39.2**	**+0.3**
KARP	**Karpathos**	**1.76**	**296**	P	**Pb**	**23 09 19.2**	**+0.5**
KARP				S	**Sn**	**23 09 37.4**	**-1.6**
KARP				AML	AML	23 09 41.5	
	comp=N,661µm,0.5s						
KARP				AML	AML	23 09 41.5	
	comp=E,434µm,0.4s						
DALY	**Dalyan (Mu¨la**	**2.05**	**350**	*e*PN	**Pn**	**23 09 21.5**	**+0.9**
DALY				*e*SN	**Sn**	**23 09 44.9**	**-1.1**
DALY	**Dalyan (Mu¨la**	**2.05**	**350**	*e*Pn	**Pn**	**23 09 21.5**	**+0.9**
DALY				*e*Sn	**Sn**	**23 09 44.9**	**-1.1**
ELL	**Elmali**	**2.06**	**18**	*e*PN	**Pb**	**23 09 23.1**	**-0.7**
ELL	**Elmali**	**2.06**	**18**	*e*Pn	**Pb**	**23 09 23.1**	**-0.7**
TURN	**Turunc**	**2.12**	**349**	*i* P	**Pb**	**23 09 23.3**	**-1.4**
GLHS	**Glhisar (BURDU**	**2.38**	**8**	*e*PN	**Pn**	**23 09 26.7**	**+1.5**
GLHS	**Glhisar (BURDU**	**2.38**	**8**	*e*Pn	**Pn**	**23 09 26.7**	**+1.5**
NIS1	**Nisyros Isl.**	**2.39**	**320**	*e*PN	**Pn**	**23 09 26.0**	**+0.6**
NIS1	**Nisyros Isl.**	**2.39**	**320**	*e*Pn	**Pn**	**23 09 26.0**	**+0.6**
ZKR	**Zakros**	**2.40**	**278**	P	**Pn**	**23 09 26.8**	**+1.4**
ZKR				S	**Sn**	**23 09 55.6**	**+1.0**
ZKR	**Zakros**	**2.40**	**278**	P	**Pn**	**23 09 26.8**	**+1.4**
ZKR				S	**Sn**	**23 09 55.5**	**+1.0**
ZKR	**Zakros**	**2.40**	**278**	P	**Pn**	**23 09 27.0**	**+1.6**
ZKR				S	**Sn**	**23 09 55.5**	**+1.0**
ZKR				AML	AML	23 09 55.9	
	comp=E,510µm,0.8s						
ZKR				AML	AML	23 09 56.8	
	comp=N,613µm,0.7s						
KORT	**Korkueli**	**2.42**	**24**	*i* P	**Pn**	**23 09 28.5**	**+2.6**
KORT				*i* S	**Sb**	**23 09 58.5**	**-1.2**
KORT	**Korkueli**	**2.42**	**24**	P	**Pn**	**23 09 28.5**	**+2.6**
KORT				S	**Sb**	**23 09 58.5**	**-1.2**
YER	**Yerkesik**	**2.43**	**344**	*e*PN	**Pn**	**23 09 27.4**	**+1.6**
YER	**Yerkesik**	**2.43**	**344**	P	**Pn**	**23 09 27.8**	**+1.9**
YER				S	**Sn**	**23 09 55.8**	**+0.4**
YER	**Yerkesik**	**2.43**	**344**	*e*Pn	**Pn**	**23 09 27.5**	**+1.6**
YER	**Yerkesik**	**2.43**	**344**	P	**Pn**	**23 09 27.8**	**+1.9**
YER				S	**Sn**	**23 09 55.8**	**+0.4**
ANTB	**Antalya**	**2.45**	**30**	*e*PN	**Pn**	**23 09 28.6**	**+2.6**
ANTB	**Antalya**	**2.45**	**30**	*e*Pn	**Pn**	**23 09 28.7**	**+2.6**
GOLH	**Golhisar**	**2.46**	**8**	*i* P	**Pb**	**23 09 29.6**	**-1.2**
GOLH				*i* S	**Sb**	**23 09 59.0**	**-2.0**
GOLH	**Golhisar**	**2.46**	**8**	P	**Pb**	**23 09 29.5**	**-1.2**
GOLH				S	**Sb**	**23 09 59.0**	**-2.0**
BDRM	**Kayabasi**	**2.64**	**330**	*i* P	**Pn**	**23 09 29.9**	**+1.2**
BDRM	**Kayabasi**	**2.64**	**330**	P	**Pn**	**23 09 29.9**	**+1.2**
AKMC	**Akamas**	**2.66**	**84**	P	**Pn**	**23 09 30.7**	**+1.7**
	baz=269						
AKMC	**Akamas**	**2.66**	**84**	P	**Pn**	**23 09 30.7**	**+1.7**
PPCY	**Paphos**	**2.66**	**87**	P	**Pn**	**23 09 30.9**	**+1.9**
	baz=273						
PPCY	**Paphos**	**2.66**	**87**	P	**Pn**	**23 09 30.9**	**+1.9**
BODT	**Bodrum**	**2.69**	**328**	*e*PN	**Pn**	**23 09 30.2**	**+0.7**
BODT	**Bodrum**	**2.69**	**328**	P	**Pn**	**23 09 30.3**	**+0.8**
BODT				S	**Sn**	**23 10 01.6**	**-0.3**
BODT	**Bodrum**	**2.69**	**328**	P	**Pn**	**23 09 30.3**	**+0.8**
BODT				S	**Sn**	**23 10 01.6**	**-0.3**
ALFC	**Alefka**	**2.89**	**82**	P	**Pn**	**23 09 34.0**	**+1.8**
	baz=267						
ALFC				S	**Sn**	**23 10 06.0**	**-0.7**
ALFC	**Alefka**	**2.89**	**82**	P	**Pn**	**23 09 34.0**	**+1.8**
ALFC				S	**Sn**	**23 10 06.0**	**-0.7**
DNZL	**Cakiroluk**	**2.89**	**359**	*i* P	**Pn**	**23 09 34.3**	**+1.9**
DNZL				*i* S	**Sn**	**23 10 07.6**	**+0.6**
DNZL	**Cakiroluk**	**2.89**	**359**	P	**Pn**	**23 09 34.3**	**+1.9**
DNZL				S	**Sn**	**23 10 07.6**	**+0.6**
NPS	**Neapolis**	**2.91**	**280**	P	**Pn**	**23 09 34.2**	**+1.8**
NPS				S	**Sn**	**23 10 07.4**	**+0.3**
NPS	**Neapolis**	**2.91**	**280**	P	**Pn**	**23 09 34.2**	**+1.8**
NPS				S	**Sn**	**23 10 07.4**	**+0.3**
GAZI	**Gazipasa**	**2.98**	**60**	*i* P	**Pn**	**23 09 34.4**	**+0.9**
GAZI				*i* S	**Sn**	**23 10 07.6**	**-1.5**
GAZI	**Gazipasa**	**2.98**	**60**	P	**Pn**	**23 09 34.4**	**+0.9**
GAZI				S	**Sn**	**23 10 07.6**	**-1.5**
LAST	**Lasithi**	**3.00**	**278**	P	**Pn**	**23 09 35.4**	**+1.6**
LAST				S	**Sn**	**23 10 10.0**	**+0.4**
LAST	**Lasithi**	**3.00**	**278**	P	**Pn**	**23 09 35.4**	**+1.6**
LAST				S	**Sn**	**23 10 10.0**	**+0.4**
LAST	**Lasithi**	**3.00**	**278**	P	**Pn**	**23 09 35.8**	**+2.0**
SUTC	**Sutluce-Ispart**	**3.08**	**29**	*e*PN	**Pn**	**23 09 38.2**	**+3.2**
SUTC	**Sutluce-Ispart**	**3.08**	**29**	*e*Pn	**Pn**	**23 09 38.2**	**+3.2**
SZAC	**Souni**	**3.11**	**90**	P	**Pn**	**23 09 37.6**	**+2.4**
	baz=275						
SZAC				S	**Sn**	**23 10 12.1**	**0.0**
SZAC	**Souni**	**3.11**	**90**	P	**Pn**	**23 09 37.6**	**+2.4**
SZAC				S	**Sn**	**23 10 12.1**	**0.0**
GCAM	**G?zelcaml?**	**3.27**	**333**	*i* P	**Pn**	**23 09 39.9**	**+2.5**
GCAM				*i* S	**Sn**	**23 10 14.7**	**-1.4**
GCAM	**G?zelcaml?**	**3.27**	**333**	P	**Pn**	**23 09 39.9**	**+2.5**
GCAM				S	**Sn**	**23 10 14.7**	**-1.4**
AYDB	**Zeytinkoy-Aydi**	**3.30**	**343**	*e*PN	**Pn**	**23 09 38.9**	**+1.0**
AYDB	**Zeytinkoy-Aydi**	**3.30**	**343**	*e*Pn	**Pn**	**23 09 38.9**	**+1.0**
SANT	**Santorini**	**3.37**	**299**	P	**Pn**	**23 09 40.0**	**+1.3**
SANT				S	**Sn**	**23 10 18.0**	**-0.5**
SANT	**Santorini**	**3.37**	**299**	P	**Pn**	**23 09 40.3**	**+1.6**
SANT				S	**Sn**	**23 10 18.0**	**-0.5**
SANT	**Santorini**	**3.37**	**299**	P	**Pn**	**23 09 40.3**	**+1.6**
SANT				S	**Sn**	**23 10 16.5**	**-2.0**
THT1	**Athinios (Pele**	**3.39**	**299**	P	**Pn**	**23 09 40.2**	**+1.1**
THT6	**Athinios (Pele**	**3.39**	**299**	P	**Pn**	**23 09 40.2**	**+1.1**
THR6	**Thira Island,**	**3.40**	**298**	P	**Pn**	**23 09 40.5**	**+1.3**
THR6	**Thira Island,**	**3.40**	**298**	P	**Pn**	**23 09 40.5**	**+1.3**
SAP1	**Santorini-Akro**	**3.41**	**298**	P	**Pn**	**23 09 40.6**	**+1.4**
SAP1	**Santorini-Akro**	**3.41**	**298**	P	**Pn**	**23 09 40.6**	**+1.4**
THR2	**Thira island,**	**3.42**	**300**	P	**Pn**	**23 09 40.4**	**+1.0**
THR2	**Thira island,**	**3.42**	**300**	P	**Pn**	**23 09 40.4**	**+1.0**
THR3	**Thira Island,**	**3.42**	**299**	P	**Pn**	**23 09 40.6**	**+1.1**
THR3	**Thira Island,**	**3.42**	**299**	P	**Pn**	**23 09 40.6**	**+1.1**
SMG	**Samos**	**3.44**	**328**	P	**Pn**	**23 09 41.4**	**+1.7**
SMG	**Samos**	**3.44**	**328**	P	**Pn**	**23 09 41.4**	**+1.7**
SMG				S	**Sn**	**23 10 18.1**	**-2.1**
SMG				AML	AML	23 10 22.6	
	comp=N,171µm,0.5s						
SMG				AML	AML	23 10 23.0	
	comp=E,171µm,0.4s						
CMBO	**Columbo, Santo**	**3.45**	**300**	P	**Pn**	**23 09 40.9**	**+1.1**
CMBO	**Columbo, Santo**	**3.45**	**300**	P	**Pn**	**23 09 40.9**	**+1.1**
THR5	**Thira Island,**	**3.47**	**299**	*e*PN	**Pn**	**23 09 42.3**	**+2.2**
THR5	**Thira Island,**	**3.47**	**299**	P	**Pn**	**23 09 41.6**	**+1.5**
THR5	**Thira Island,**	**3.47**	**299**	P	**Pn**	**23 09 41.6**	**+1.5**
THR5	**Thira Island,**	**3.47**	**299**	*e*Pn	**Pn**	**23 09 42.3**	**+2.2**
CSS	**Mathiatis**	**3.48**	**86**	P	**Pn**	**23 09 42.7**	**+2.5**
	baz=271						
CSS				S	**Sn**	**23 10 21.1**	**-0.1**
CSS	**Mathiatis**	**3.48**	**86**	P	**Pn**	**23 09 41.1**	**+0.9**
CSS				S	**Sn**	**23 10 20.2**	**-1.0**
CSS	**Mathiatis**	**3.48**	**86**	Pn	**Pn**	**23 09 41.7**	**+1.5**
CSS				Sn	**Sn**	**23 10 21.8**	**+0.6**
CSS	**Mathiatis**	**3.48**	**86**	P	**Pn**	**23 09 41.1**	**+0.9**
CSS	**Mathiatis**	**3.48**	**86**	Pn	**Pn**	**23 09 41.7**	**+1.5**
CSS				S	**Sn**	**23 10 21.1**	**-0.1**
IDI	**Anoyia**	**3.50**	**279**	Pn	**Pn**	**23 09 42.9**	**+2.4**
	comp=E,4.6nm,0.3s,baz=69,slow=9.4,SNR=48						
IDI				Sn	**Sn**	**23 10 22.3**	**+0.5**
	comp=E,9.3nm,0.3s,baz=17,slow=15,SNR=17						
IDI	**Anoyia**	**3.50**	**279**	P	**Pn**	**23 09 42.4**	**+1.8**
IDI				S	**Sn**	**23 10 21.0**	**-0.7**
IDI	**Anoyia**	**3.50**	**279**	P	**Pn**	**23 09 42.4**	**+1.8**
IDI				S	**Sn**	**23 10 21.0**	**-0.7**
IDI	**Anoyia**	**3.50**	**279**	P	**Pn**	**23 09 42.7**	**+2.1**
IDI				S	**Sn**	**23 10 20.8**	**-1.0**
IDI				AML	AML	23 10 24.0	
	comp=E,316µm,0.4s						
IDI				AML	AML	23 10 24.7	
	comp=N,387µm,0.4s						
KHL	**Karahalli**	**3.54**	**5**	*e*PN	**Pn**	**23 09 43.0**	**+1.9**
KHL	**Karahalli**	**3.54**	**5**	*e*Pn	**Pn**	**23 09 43.0**	**+1.9**
SIVA	**Sivas**	**3.54**	**275**	P	**Pn**	**23 09 42.5**	**+1.4**
SIVA				S	**Sn**	**23 10 22.9**	**+0.2**
SIVA	**Sivas**	**3.54**	**275**	P	**Pn**	**23 09 42.5**	**+1.4**
SIVA				S	**Sn**	**23 10 22.9**	**+0.2**
SIVA	**Sivas**	**3.54**	**275**	P	**Pn**	**23 09 43.8**	**+2.7**
SIVA				S	**Sn**	**23 10 23.8**	**+1.1**
ERMK	**Ermenek**	**3.60**	**58**	*i* P	**Pn**	**23 09 45.6**	**+3.5**
ERMK				*i* S	**Sn**	**23 10 29.1**	**+4.5**
ERMK	**Ermenek**	**3.60**	**58**	P	**Pn**	**23 09 45.7**	**+3.5**
ERMK				S	**Sn**	**23 10 29.1**	**+4.5**
APE	**Apeiranthos**	**3.69**	**309**	*e*PN	**Pn**	**23 09 44.8**	**+1.7**
APE	**Apeiranthos**	**3.69**	**309**	P	**Pn**	**23 09 44.4**	**+1.3**
APE				S	**Sn**	**23 10 24.7**	**-1.7**
APE	**Apeiranthos**	**3.69**	**309**	P	**Pn**	**23 09 44.4**	**+1.3**
APE	**Apeiranthos**	**3.69**	**309**	*e*Pn	**Pn**	**23 09 44.8**	**+1.7**
APE				S	**Sn**	**23 10 24.7**	**-1.7**
APE	**Apeiranthos**	**3.69**	**309**	P	**Pn**	**23 09 44.3**	**+1.2**
DGB	**¨zmir**	**3.71**	**332**	*i* P	**Pn**	**23 09 45.0**	**+1.6**
DGB				*i* S	**Sn**	**23 10 24.6**	**-2.4**
KULA	**Kula-Manisa**	**3.73**	**355**	*e*PN	**Pn**	**23 09 45.7**	**+1.9**
KULA	**Kula-Manisa**	**3.73**	**355**	P	**Pn**	**23 09 44.3**	**+0.5**
KULA				S	**Sn**	**23 10 26.7**	**-0.8**
KULA	**Kula-Manisa**	**3.73**	**355**	P	**Pn**	**23 09 44.3**	**+0.5**
KULA	**Kula-Manisa**	**3.73**	**355**	*e*Pn	**Pn**	**23 09 45.7**	**+1.9**
KULA				S	**Sn**	**23 10 26.7**	**-0.8**
IZM	**Izmir**	**3.89**	**338**	*e*PN	**Pn**	**23 09 47.4**	**+1.4**
IZM	**Izmir**	**3.89**	**338**	*e*Pn	**Pn**	**23 09 47.4**	**+1.4**
VAM	**Vamos**	**4.07**	**280**	P	**Pn**	**23 09 50.1**	**+1.7**
VAM				S	**Sn**	**23 10 35.1**	**-0.7**
VAM	**Vamos**	**4.07**	**280**	P	**Pn**	**23 09 50.1**	**+1.7**
VAM				S	**Sn**	**23 10 35.1**	**-0.7**
KONT	**Konya--Tatoy**	**4.09**	**39**	*e*PN	**Pn**	**23 09 52.6**	**+3.9**
KONT	**Konya--Tatoy**	**4.09**	**39**	*e*Pn	**Pn**	**23 09 52.7**	**+3.9**
GVD	**Gavdhos**	**4.13**	**272**	P	**Pn**	**23 09 52.2**	**+3.0**
GVD	**Gavdhos**	**4.13**	**272**	P	**Pn**	**23 09 52.2**	**+3.0**
IMMV	**Iera Moni Meta**	**4.25**	**280**	P	**Pn**	**23 09 52.7**	**+1.8**
IMMV	**Iera Moni Meta**	**4.25**	**280**	P	**Pn**	**23 09 52.7**	**+1.8**
IMMV	**Iera Moni Meta**	**4.25**	**280**	P	**Pn**	**23 09 53.0**	**+2.0**
IMMV				AML	AML	23 10 42.2	
	comp=E,340µm,0.4s						
IMMV				AML	AML	23 10 42.9	
	comp=N,317µm,0.4s						
LADK	**Ladik-KONYA**	**4.29**	**37**	*e*PN	**Pn**	**23 09 55.4**	**+3.8**
LADK	**Ladik-KONYA**	**4.29**	**37**	*e*Pn	**Pn**	**23 09 55.4**	**+3.8**
CHOS	**Chios island**	**4.35**	**326**	*e*PN	**Pn**	**23 09 54.0**	**+1.7**
CHOS	**Chios island**	**4.35**	**326**	P	**Pn**	**23 09 53.6**	**+1.4**
CHOS	**Chios island**	**4.35**	**326**	*e*Pn	**Pn**	**23 09 54.0**	**+1.7**
CHOS	**Chios island**	**4.35**	**326**	P	**Pn**	**23 09 53.6**	**+1.4**
KIZK	**Mersin**	**4.43**	**66**	*i* P	**Pn**	**23 09 52.3**	**-1.1**
KIZK				*i* S	**Sn**	**23 10 44.4**	**-0.4**
KIZK	**Mersin**	**4.43**	**66**	P	**Pn**	**23 09 52.3**	**-1.1**
KIZK				S	**Sn**	**23 10 44.3**	**-0.4**
KDHN	**Kadinhani**	**4.44**	**32**	*i* P	**Pn**	**23 09 55.9**	**+2.3**
KDHN				*i* S	**Sn**	**23 10 45.6**	**+0.6**
KDHN	**Kadinhani**	**4.44**	**32**	P	**Pn**	**23 09 55.8**	**+2.3**
KDHN				S	**Sn**	**23 10 45.6**	**+0.6**
SLUM	**Salum**	**4.64**	**226**	P	**Pn**	**23 09 55.3**	**-0.9**
	baz=228						
SLUM	**Salum**	**4.64**	**226**	P	**Pn**	**23 09 55.3**	**-0.9**
KIZT	**Kizilcal**	**4.64**	**28**	*e*PN	**Pn**	**23 09 59.9**	**+3.5**
KIZT	**Kizilcal**	**4.64**	**28**	*e*Pn	**Pn**	**23 09 59.9**	**+3.5**
KERG	**Konya-Eregli**	**4.83**	**56**	*i* P	**Pn**	**23 10 01.1**	**+2.2**
KERG				*i* S	**Sn**	**23 10 54.9**	**+0.1**
KERG	**Konya-Eregli**	**4.83**	**56**	P	**Pn**	**23 10 01.1**	**+2.2**
KERG				S	**Sn**	**23 10 54.9**	**+0.1**
ANKY	**Antikythira Is**	**4.87**	**284**	P	**Pn**	**23 10 00.4**	**+1.1**
ANKY				S	**Sn**	**23 10 56.0**	**+0.6**
ANKY	**Antikythira Is**	**4.87**	**284**	P	**Pn**	**23 10 00.4**	**+1.1**
ANKY				S	**Sn**	**23 10 56.0**	**+0.6**
ANKY	**Antikythira Is**	**4.87**	**284**	P	**Pn**	**23 09 59.5**	**+0.1**
SIGR	**SIGRI**	**5.12**	**330**	P	**Pn**	**23 10 04.2**	**+1.4**
SIGR	**SIGRI**	**5.12**	**330**	P	**Pn**	**23 10 04.2**	**+1.4**
VLY	**Voula,Athens**	**5.26**	**307**	P	**Pn**	**23 10 07.0**	**+2.2**
VLY	**Voula,Athens**	**5.26**	**307**	P	**Pn**	**23 10 07.0**	**+2.2**
HNTI	**Hanita**	**5.32**	**107**	Pn	**Pn**	**23 10 06.9**	**+1.3**
HNTI	**Hanita**	**5.32**	**107**	Pn	**Pn**	**23 10 06.9**	**+1.3**
KOT	**Kottamia**	**5.37**	**154**	P	**Pn**	**23 10 05.2**	**-1.1**
	baz=152						
KOT	**Kottamia**	**5.37**	**154**	P	**Pn**	**23 10 05.2**	**-1.1**
VLI	**Veliai**	**5.37**	**293**	P	**Pn**	**23 10 07.2**	**+0.9**
VLI	**Veliai**	**5.37**	**293**	P	**Pn**	**23 10 07.2**	**+0.9**
VLI	**Veliai**	**5.37**	**293**	P	**Pn**	**23 10 05.5**	**-0.8**
VLI				AML	AML	23 11 06.4	
	comp=E,229µm,0.6s						
VLI				AML	AML	23 11 07.1	
	comp=N,298µm,0.6s						
HHAG	**Hagoal**	**5.45**	**152**	P	**Pn**	**23 10 06.1**	**-1.3**
	baz=150						
HHAG	**Hagoal**	**5.45**	**152**	P	**Pn**	**23 10 06.1**	**-1.3**
DID	**Didima**	**5.47**	**301**	P	**Pn**	**23 10 08.6**	**+1.0**
DID				S	**Sn**	**23 11 10.1**	**-0.2**
DID	**Didima**	**5.47**	**301**	P	**Pn**	**23 10 08.6**	**+1.0**
DID				S	**Sn**	**23 11 10.1**	**-0.2**
DID	**Didima**	**5.47**	**301**	P	**Pn**	**23 10 09.9**	**+2.3**
KRND	**KRANIDI**	**5.47**	**300**	P	**Pn**	**23 10 10.1**	**+2.4**
KRND	**KRANIDI**	**5.47**	**300**	P	**Pn**	**23 10 10.1**	**+2.4**
MMAO	**Mount Meron ar**	**5.53**	**107**	Pn	**Pn**	**23 10 09.8**	**+1.3**
MMA0B				Sn	**Sn**	**23 11 10.5**	**-1.3**
MMAO	**Mount Meron ar**	**5.53**	**107**	Pn	**Pn**	**23 10 09.8**	**+1.3**
MMA0B				Sn	**Sn**	**23 11 10.5**	**-1.3**
MMAI	**Mount Meron Ar**	**5.53**	**107**	Pn	**Pn**	**23 10 09.7**	**+1.2**
	comp=N,2.1nm,0.3s,baz=304,slow=12,SNR=10						
MMAI				Sn	**Sn**	**23 11 11.8**	**0.0**
	comp=N,7.7nm,0.3s,baz=316,slow=25,SNR=9.6						
SLTI	**Sal'it**	**5.57**	**116**	Pn	**Pn**	**23 10 09.8**	**+0.8**
SLTI				Sn	**Sn**	**23 11 10.5**	**-2.3**
SLTI	**Sal'it**	**5.57**	**116**	Pn	**Pn**	**23 10 09.8**	**+0.8**
SLTI				Sn	**Sn**	**23 11 10.5**	**-2.3**
VILL	**Villia**	**5.75**	**307**	P	**Pn**	**23 10 13.7**	**+2.1**
MMLI	**Mount Malkishu**	**5.77**	**112**	Pn	**Pn**	**23 10 12.7**	**+0.9**
MMLI				Sn	**Sn**	**23 11 14.8**	**-2.9**
MMLI	**Mount Malkishu**	**5.77**	**112**	Pn	**Pn**	**23 10 12.7**	**+0.9**
VIL2	**Platees**	**5.81**	**308**	P	**Pn**	**23 10 13.7**	**+1.4**
BRBR	**Barbar**	**5.84**	**102**	*e*P	**Pn**	**23 10 14.7**	**+1.7**
BRBR				*e*S	**Sn**	**23 11 15.2**	**-4.6**
BRBR				AML	AML	23 11 22.0	
	comp=N,28nm,0.7s						
BRBR				AML	AML	23 11 23.1	
	comp=E,12nm,0.4s						
AMAZ	**Amatzia**	**5.86**	**122**	Pn	**Pn**	**23 10 13.9**	**+0.9**
AMAZ				Sn	**Sn**	**23 11 16.5**	**-3.4**
AMAZ	**Amatzia**	**5.86**	**122**	Pn	**Pn**	**23 10 13.9**	**+0.9**
SUZ	**Suez**	**5.86**	**146**	P	**Pn**	**23 10 12.6**	**-0.4**
	baz=144						
SUZ	**Suez**	**5.86**	**146**	P	**Pn**	**23 10 12.6**	**-0.4**
KSHT	**Keshet**	**5.86**	**106**	Pn	**Pn**	**23 10 14.7**	**+1.7**
KSHT	**Keshet**	**5.86**	**106**	Pn	**Pn**	**23 10 14.7**	**+1.7**
KZIT	**Kziot**	**5.90**	**130**	Pn	**Pn**	**23 10 14.3**	**+0.7**
KZIT				Sn	**Sn**	**23 11 16.5**	**-4.5**
KZIT	**Kziot**	**5.90**	**130**	Pn	**Pn**	**23 10 14.3**	**+0.7**
LTK	**Loutraki**	**5.91**	**305**	P	**Pn**	**23 10 16.4**	**+2.7**
LTK	**Loutraki**	**5.91**	**305**	P	**Pn**	**23 10 16.4**	**+2.7**
HMDT	**Nahal Hemdat**	**5.93**	**114**	Pn	**Pn**	**23 10 14.9**	**+1.0**
HMDT				Sn	**Sn**	**23 11 19.4**	**-2.2**
HMDT	**Nahal Hemdat**	**5.93**	**114**	Pn	**Pn**	**23 10 14.9**	**+1.0**
HMDT				Sn	**Sn**	**23 11 19.4**	**-2.2**
HAWK	**Haweek**	**6.02**	**91**	*e*P	**Pn**	**23 10 16.7**	**+1.4**
HAWK				*e*S	**Sn**	**23 11 18.6**	**-5.4**
HAWK				AML	AML	23 11 24.6	
	comp=E,20nm,0.4s						
HAWK				AML	AML	23 11 24.9	
	comp=N,25nm,0.4s						
VLX	**Vlachokerasia**	**6.03**	**297**	P	**Pn**	**23 10 17.1**	**+1.8**
VLX	**Vlachokerasia**	**6.03**	**297**	P	**Pn**	**23 10 17.1**	**+1.8**
BRTR	**Keskin Array B**	**6.10**	**35**	Pn	**Pn**	**23 10 18.1**	**+1.6**
	comp=N,0.4nm,0.3s,baz=225,slow=16,SNR=9.9						
BRTR				Sn	**Sn**	**23 11 25.6**	**-0.5**
	comp=N,0.5nm,0.3s,baz=210,slow=24,SNR=10.0						
MARH	**Ras Al Marh**	**6.14**	**95**	*e*P	**Pn**	**23 10 19.2**	**+2.0**
MARH				*e*S	**Sn**	**23 11 23.3**	**-4.1**
MARH				AML	AML	23 11 32.5	
	comp=N,16nm,0.3s						
MARH				AML	AML	23 11 34.5	
	comp=E,21nm,0.4s						
DSI	**Dead Sea**	**6.16**	**120**	Pn	**Pn**	**23 10 18.2**	**+1.1**
DSI				Sn	**Sn**	**23 11 24.6**	**-2.8**
DSI	**Dead Sea**	**6.16**	**120**	Pn	**Pn**	**23 10 18.2**	**+1.1**
DSI				Sn	**Sn**	**23 11 24.6**	**-2.8**
ITM	**Ithomi**	**6.29**	**294**	P	**Pn**	**23 10 19.4**	**+0.5**
ITM	**Ithomi**	**6.29**	**294**	P	**Pn**	**23 10 19.4**	**+0.5**
GUR	**Goura**	**6.29**	**302**	P	**Pn**	**23 10 20.8**	**+1.7**
GUR	**Goura**	**6.29**	**302**	P	**Pn**	**23 10 20.8**	**+1.7**
MZDA	**Masada**	**6.30**	**122**	Pn	**Pn**	**23 10 20.0**	**+1.1**
MZDA				Sn	**Sn**	**23 11 27.2**	**-3.4**
MZDA	**Masada**	**6.30**	**122**	Pn	**Pn**	**23 10 20.0**	**+1.1**
PYL	**PYLOS**	**6.34**	**291**	P	**Pn**	**23 10 18.3**	**-1.3**
SWA2		**6.34**	**210**	P	**Pn**	**23 10 18.4**	**-1.2**
	baz=212						
SWA2		**6.34**	**210**	P	**Pn**	**23 10 18.4**	**-1.2**
AWBH		**6.46**	**182**	P	**Pn**	**23 10 19.8**	**-1.4**
	baz=182						
AWBH		**6.46**	**182**	P	**Pn**	**23 10 19.8**	**-1.4**
ZFRI	**Zfri**	**6.64**	**128**	Pn	**Pn**	**23 10 23.8**	**+0.2**
ZFRI				Sn	**Sn**	**23 11 35.2**	**-3.8**
ZFRI	**Zfri**	**6.64**	**128**	Pn	**Pn**	**23 10 23.8**	**+0.2**
PRNI	**Paran**	**6.66**	**130**	Pn	**Pn**	**23 10 24.0**	**0.0**
PRNI				Sn	**Sn**	**23 11 34.8**	**-4.9**
PRNI	**Paran**	**6.66**	**130**	Pn	**Pn**	**23 10 24.0**	**0.0**
SALA	**Sala**	**6.68**	**106**	*e*P	**Pn**	**23 10 26.7**	**+2.2**
SALA				*e*S	**Sn**	**23 11 35.4**	**-5.0**
SALA				AML	AML	23 11 47.6	
	comp=E,1.3nm,0.5s						
SALA				AML	AML	23 11 49.8	
	comp=N,12nm,0.4s						
RABH	**Abou Rabah**	**6.69**	**91**	*e*P	**Pn**	**23 10 27.1**	**+2.7**
RABH				*e*S	**Sn**	**23 11 35.2**	**-5.1**
RABH				AML	AML	23 11 41.4	
	comp=E,11nm,0.4s						
RABH				AML	AML	23 11 42.3	
	comp=N,15nm,0.4s						
DRO	**Drossia**	**6.75**	**300**	P	**Pn**	**23 10 27.6**	**+2.4**
DRO	**Drossia**	**6.75**

SYO	Syowa Base	78.37	192	eP		P	23 21 54.0	-2.3
WAKR	Walker	85.88	41	eP		P	23 22 37.0	+0.7
	12nm,1.3s							
TPNV	Topopah Spring	86.72	44	eP		P	23 22 41.2	+0.8
	9.8nm,1.4s							
PSI	Prapat	86.93	275	eP		P	23 22 42.2	+0.2
	9.0nm,0.9s							
USRK	Ussuriysk Ar.	87.28	326	P		P	23 22 42.3	-0.5
	1.8nm,0.8s,baz=91,slow=5.6,SNR=3.9							
U15A	North Rim	88.84	46	eP		P	23 22 51.9	+1.2
	6.3nm,1.1s							
CCUT	Cedar City	88.87	45	eP		P	23 22 51.2	+0.4
	4.7nm,1.3s							
KNB	Kanab	88.87	46	eP		P	23 22 52.0	+1.2
	6.6nm,1.2s							
MTPU	Mount Pierson	89.90	45	eP		P	23 22 57.3	+1.5
	12nm,1.6s							
TX31	Lajitas Ar. Si	90.55	56	eP		P	23 22 59.5	+0.8
LTX	Lajitas	90.55	56	eP		P	23 22 58.7	0.0
TXAR	Lajitas Array	90.55	56	P		P	23 22 58.7	0.0
	2.0nm,1.1s,baz=219,slow=5.8,SNR=12							
HLID	Hailey	92.07	40	eP		P	23 23 06.1	+0.6
	4.6nm,1.2s							
F10A	Beach Ranch, E	92.12	37	eP		P	23 23 05.3	-0.2
	6.5nm,0.9s							
PD31	Pinedale Array	94.37	43	eP		P	23 23 15.3	-0.9
PDAR	Pinedale Array	94.37	43	P		P	23 23 15.3	-0.9
	0.3nm,0.4s,baz=204,slow=3.3,SNR=3.4							
ILAR	Eielson Array	96.67	12	P		P	23 23 25.1	-0.7
	0.9nm,0.9s,baz=223,slow=5.4,SNR=8.1							
ILB	Eielson Array	96.67	12	eP		P	23 23 25.1	-0.7
MK32	Makanchi Array	118.39	310	ePKPdf		PKPdf	23 28 41.9	-1.7
MKAR	Makanchi Array	118.39	310	PKP		PKPdf	23 28 41.9	-1.7
	0.8nm,0.8s,baz=67,slow=1.6,SNR=6.5							
ZALV	Zalesovo Beam	118.39	318	PKP		PKPdf	23 28 42.0	-1.2
	0.5nm,0.6s,baz=207,slow=1.6,SNR=3.3							
ZAA1	Zalesovo Array	118.40	318	ePKPdf		PKPdf	23 28 42.0	-1.2
KURK	Kurchatov	121.55	314	ePKPdf		PKPdf	23 28 48.5	-0.9
KURBB	Kurchatov Arra	121.59	314	PKP		PKPdf	23 28 48.5	-1.0
	5.9nm,0.2s,baz=101,slow=2.1,SNR=8.3							
BVAR	Borovoye Array	126.84	316	PKP		PKPdf	23 28 59.5	-0.1
	1.7nm,0.8s,baz=129,slow=2.1,SNR=6.8							
SPITS	Spitsbergen Ar	130.88	357	PKP		PKPdf	23 29 05.9	-0.7
	11nm,1.0s,baz=17,slow=5.3,SNR=3.7							
GEYT	Alibeck	134.60	296	PKP		PKPdf	23 29 16.3	+1.5
	0.9nm,0.5s,baz=108,slow=4.7,SNR=3.2							
AKTO	Aktyubinsk	134.64	313	PKP		PKPdf	23 29 14.8	+0.4
	0.8nm,0.7s,baz=188,slow=3.9,SNR=4.0							
FIA0	FINESS Array S	144.79	342	ePKPdf		PKPab	23 29 30.4	-0.9
FINES	FINESS Array B	144.79	342	PKP		PKPab	23 29 30.4	-0.9
	3.5nm,0.5s,baz=71,slow=2.5,SNR=38							
NB2	NORSAR Subarra	148.04	353	PKP		PKPbc	23 29 40.4	-0.8
	comp=Z,2.4nm,0.8s,baz=17,slow=2.6							
NB200	NORSAR Array S	148.04	353	ePKPbc		PKPbc	23 29 40.1	-1.1
NOA	NORSAR Array B	148.04	353	PKPbc		PKPbc	23 29 40.1	-1.1
	comp=Z,4.6nm,0.8s,baz=13,slow=4.5,SNR=13							
HFS	Hagfors	148.62	351	PKPbc		PKPbc	23 29 41.7	-1.0
	comp=Z,5.1nm,0.7s,baz=0.0,slow=0.1,SNR=12							
AKASG	Malin Array Be	151.49	325	PKPbc		PKPbc	23 29 49.1	-0.8
	comp=Z,3.0nm,0.5s,baz=45,slow=2.8,SNR=12							
AKBB	Malin Array Si	151.49	325	ePKPbc		PKPbc	23 29 49.1	-0.8
MMAI	Mount Meron Ar	152.83	286	PKPbc		PKPbc	23 29 55.0	+1.3
	comp=Z,2.2nm,0.6s,baz=85,slow=10,SNR=5.2							
BR101	Keskin Array S	153.53	301	ePKPbc		PKPbc	23 29 54.4	-0.6
BRTR	Keskin Array B	153.53	301	PKPbc		PKPbc	23 29 54.4	-0.6
	comp=Z,1.4nm,1.0s,baz=192,slow=2.3,SNR=5.2							
EKA	Eskdalemuir Ar	153.67	9	PKPbc		PKPbc	23 29 53.7	-0.9
	comp=Z,1.7nm,0.9s,baz=348,slow=6.5,SNR=3.2							
TORD	Torodi Ar. Bea	163.64	173	PKP		PKPdf	23 30 00.1	+0.2
	comp=Z,1.2nm,1.2s,baz=295,slow=1.4,SNR=3.7							
TORD				PKPab		PKPab	23 30 52.1	+0.7
	comp=Z,2.5nm,0.9s,baz=192,slow=4.8,SNR=11							
TOA1	Torodi Ar. Sit	163.64	173	ePKPdf		PKPdf	23 30 00.1	+0.2
TOA1				ePKPab		PKPab	23 30 52.1	+0.6

*IDC **06** 23:13:47.0±1.4,28°.54S×176°.16W,h0km,mb4.2/3,*
mb1 4.4/3,mb1mx3.9/21,mbtmp4.2/3, Error ellipse:
s-maj=63.3km s-min=25.4km az=156.0
*ISCJB **06** 23:13:50.0±2.0,29°.59S±0°.10×176°.0W±0°.2,h36km,*
mb4.3/3,Error ellipse: s-maj=20.7km s-min=12.5km
az=159.3

ISC 06 23:13:52.8±1.2,29°.4S±0°.1×176°.1W±0°.1,h36km,n10,
σ1s40/12,mb4.2/3,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.64	276	Pn	Pn	23 14 19.5	+0.4
	299nm,0.3s,baz=84,slow=11,SNR=6.5						
RAO				Sn	Sn	23 14 39.5	+0.6
	814nm,0.3s,baz=38,slow=23,SNR=9.0						
URZ	Urewera	10.47	211	Pn	Pn	23 16 20.0	-0.3
	0.3nm,0.3s,baz=80,slow=12,SNR=3.8						
URZ				Sn	Sn	23 18 15.7	-0.6
	0.9nm,0.3s,baz=251,slow=3.9,SNR=6.6						
STKA	Stephens Creek	36.35	255	P	P	23 20 54.8	+1.4
	4.4nm,0.9s,baz=106,slow=13,SNR=3.6						
ASAR	Alice Springs	44.86	265	P	P	23 22 02.6	-1.2
	2.1nm,0.6s,baz=103,slow=8.1,SNR=18						
WRA	Warramunga Arr	45.77	270	P	P	23 22 09.1	-1.9
	2.2nm,0.7s,baz=109,slow=7.7,SNR=11						
MKAR	Makanchi Array	118.45	310	PKP	PKPdf	23 32 35.8	-0.5
	0.6nm,0.8s,baz=48,slow=2.4,SNR=2.9						
KURBB	Kurchatov Arra	121.31	314	PKP	PKPdf	23 32 41.0	-1.3
	0.2nm,0.2s,baz=157,slow=2.6,SNR=3.4						
FINES	FINESS Array B	144.79	342	PKP	PKPab	23 33 24.0	-0.1
	1.6nm,0.7s,baz=73,slow=4.7,SNR=6.2						
NOA	NORSAR Array B	148.03	353	PKPbc	PKPdf	23 33 30.3	-0.4
	0.6nm,0.5s,baz=13,slow=4.4,SNR=2.8						
TORD	Torodi Ar. Bea	163.66	172	PKPab	PKPab	23 34 47.0	+2.8
	0.4nm,0.8s,baz=202,slow=3.1,SNR=2.6						

IDC 06 23:24:52.9±2.8,29°.01S×176°.07W,h0km,mb3.6/2,
mb1 3.8/2,mb1mx3.6/22,mbtmp3.6/2,Error ellipse:
s-maj=116.4km s-min=44.3km az=19.0,Kermadec
Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	Alice Springs	44.89	265	P	P	23 33 09.3	-0.2
	0.5nm,0.5s,baz=96,slow=7.3,SNR=7.8						
WRA	Warramunga Arr	45.76	270	P	P	23 33 16.2	-0.2
	0.6nm,0.7s,baz=112,slow=6.1,SNR=3.3						
FINES	FINESS Array B	144.38	342	PKP	PKPdf	23 44 30.2	-0.2
	0.7nm,0.8s,baz=116,slow=3.2,SNR=2.9						
TORD	Torodi Ar. Bea	164.08	172	PKPab	PKPab	23 45 51.5	-0.5
	0.6nm,0.9s,baz=166,slow=3.3,SNR=3.1						

*NEIC **06** 23:29:36.9±0.7,29°.73S×176°.08W,h10km,mb4.5/3,Error*
ellipse: s-maj=20.7km s-min=14.7km az=161.0
*IDC **06** 23:29:36.5±0.9,29°.17S×176°.24W,h0km,mb4.2/6,*
mb1 4.4/6,mb1mx4.2/22,mbtmp4.1/6,Error ellipse:
s-maj=34.9km s-min=25.8km az=158.0

ISC 06 23:29:40.0±0.7,29°.61S±0°.09×176°.3W±0°.1,h21km,n22,
σ2s03/23,mb4.4/11,1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.44	284	Pn	Pb	23 30 07.5	+1.4
	487nm,0.3s,baz=279,slow=5.0,SNR=7.9						
URZ	Urewera	10.20	211	Pn	Pn	23 32 02.6	-2.5
	0.8nm,0.3s,baz=343,slow=20,SNR=4.9						
URZ				Sn	Sn	23 34 00.0	+1.1
	4.0nm,0.3s,baz=134,slow=20,SNR=9.1						
URZ	Urewera	10.20	211	ePn	Pn	23 31 59.4	-5.8
URZ				eSn	Sn	23 33 53.9	-5.0
RPZ	Rata Peaks	17.31	212	Pn	Pn	23 33 37.3	-3.0
	0.6nm,0.3s,baz=54,slow=16,SNR=3.6						
CTAO	Charters Tower	35.13	277	eP	P	23 36 31.6	-0.7
	15nm,0.5s						
STKA	Stephens Creek	36.08	256	P	P	23 36 42.3	+2.0
	4.4nm,0.7s,baz=109,slow=11,SNR=7.8						
ASAR	Alice Springs	44.61	265	P	P	23 37 51.8	+0.7
	1.8nm,0.6s,baz=98,slow=7.7,SNR=30						
WRAB	Tennant Creek	45.53	271	eP	P	23 37 58.6	+0.2
	2.9nm,0.6s						
WRA	Warramunga Arr	45.53	270	P	P	23 37 58.0	-0.5
	2.7nm,0.5s,baz=110,slow=8.0,SNR=25						
VNDA	Vanda	49.03	186	P	P	23 38 28.6	+3.8
	1.0nm,0.9s,baz=1.6,slow=7.0,SNR=5.2						
FITZ	Fitzroy Crossi	53.83	268	eP	P	23 39 01.7	+0.1
	3.2nm,0.7s						
MBWA	Marble Bar	57.77	262	eP	P	23 39 29.4	-0.5
	117nm,1.2s						
QSPA	South Pole Qui	60.50	180	eP	P	23 39 50.6	+2.3
	15nm,0.9s						
SYO	Syowa Base	78.20	192	ePP	P	23 41 39.0	+1.5
TXAR	Lajitas Array	90.74	56	P	P	23 42 40.8	-0.9
	0.3nm,0.6s,baz=284,slow=2.1,SNR=3.8						
ILAR	Eielson Array	96.84	12	P	P	23 43 07.2	-1.6
	0.5nm,0.8s,baz=222,slow=5.2,SNR=4.7						
MKAR	Makanchi Array	118.38	310	PKP	PKPdf	23 48 24.3	-1.4
	0.4nm,0.7s,baz=90,slow=1.4,SNR=3.6						
FINES	FINESS Array B	144.88	341	PKP	PKPab	23 49 12.7	-1.2
	1.5nm,0.5s,baz=50,slow=3.0,SNR=26						
NB2	NORSAR Subarra	148.17	353	PKP	PKPbc	23 49 22.5	-1.1
	comp=Z,1.0nm,0.6s,baz=9.8,slow=2.8						
NOA	NORSAR Array B	148.17	353	PKPbc	PKPbc	23 49 22.3	-1.3
	comp=Z,1.5nm,0.7s,baz=13,slow=4.4,SNR=4.2						
AKASG	Malin Array Be	151.53	325	PKPbc	PKPbc	23 49 31.0	-1.1
	comp=Z,1.9nm,0.5s,baz=44,slow=2.9,SNR=8.1						
TORD	Torodi Ar. Bea	163.51	173	PKPab	PKPab	23 50 33.4	+0.4
	comp=Z,0.9nm,0.8s,baz=194,slow=4.7,SNR=7.4						

*IDC **06** 23:30:24.1±1.1,29°.42S×176°.22W,h0km,mb4.2/5,*
mb1 4.4/5,mb1mx4.1/22,mbtmp4.1/5,Error ellipse:
s-maj=55.6km s-min=26.9km az=161.0

ISC 06 23:30:28.1±0.9,29°.55S±0°.3×176°.2W±0°.1,h28km,n12,
σ0s64/12,mb4.1/5,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.55	279	Sn	Sb	23 31 16.0	+0.6
	523nm,0.3s,baz=90,slow=20,SNR=2.8						
STKA	Stephens Creek	36.24	255	P	P	23 37 28.5	-0.3
	1.5nm,0.5s,baz=91,slow=11,SNR=4.2						
ASAR	Alice Springs	44.76	265	P	P	23 38 39.2	-0.3
	0.6nm,0.4s,baz=104,slow=7.8,SNR=7.6						
WRA	Warramunga Arr	45.67	270	P	P	23 38 46.8	+0.1
	2.9nm,0.7s,baz=109,slow=7.8,SNR=7.7						
TXAR	Lajitas Array	90.57	56	P	P	23 43 28.7	+0.7
	1.1nm,1.0s,baz=196,slow=8.7,SNR=4.9						
ILAR	Eielson Array	96.71	12	P	P	23 43 55.1	-0.1
	0.6nm,0.8s,baz=226,slow=6.5,SNR=4.8						
MKAR	Makanchi Array	118.42	310	PKP	PKPdf	23 49 11.9	-0.9
	0.7nm,0.9s,baz=70,slow=5.3,SNR=3.7						
FINES	FINESS Array B	144.83	342	PKP	PKPab	23 49 59.9	-0.9
	2.1nm,0.7s,baz=72,slow=6.2,SNR=6.9						
NB2	NORSAR Subarra	148.08	353	PKP	PKPbc	23 50 10.4	-0.1
	comp=Z,3.9nm,1.0s,baz=16,slow=2.8						
NOA	NORSAR Array B	148.08	353	PKPbc	PKPbc	23 50 11.1	+0.6
	comp=Z,1.7nm,0.8s,baz=13,slow=2.8,SNR=5.0						
AKASG	Malin Array Be	151.52	325	PKPbc	PKPbc	23 50 19.3	+0.2
	comp=Z,2.3nm,0.6s,baz=47,slow=2.9,SNR=7.5						
TORD	Torodi Ar. Bea	163.60	173	PKPab	PKPab	23 51 21.1	+0.7
	comp=Z,1.6nm,0.8s,baz=191,slow=4.4,SNR=6.7						

*TAP **06** 23:31:35.9,24°.24N×121°.76E,h17km,ML3.2,C*
*JMA **06** 23:31:35.8,24°.21N×121°.76E,h17km±1km,M2.5*
*ISCJB **06** 23:31:36.3±0.3,24°.22N±0°.02×121°.79E±0°.02,h16km±5km,*
Error ellipse: s-maj=4.3km s-min=2.9km az=39.1

ISC 06 23:31:35.9±0.8,24°.21N±0°.02×121°.78E±0°.02,h17km±5km,
n40,σ0s58/58,6C,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EHP	Heping Village	0.11	340	P	Pg	23 31 40.0	+0.5
	baz=350						
EHP				S	Sg	23 31 42.6	+0.7
	baz=350						
TWD	Chiawan	0.21	233	*i* P	Pg	23 31 41.1	+0.2
	baz=231						
TWD				*i* S	Sb	23 31 44.8	-0.1
	baz=231						
ENA	Nanau	0.22	351	↑*i* P	Pg	23 31 40.7	-0.3
	baz=354						
ENA				*i* S	Sg	23 31 44.2	-0.4
	baz=354						
HWA	Hwalien	0.28	215	*e*P	Pb	23 31 42.9	+0.4
	baz=218						
TWC	Suao	0.40	9	P	Pg	23 31 43.9	-0.3
	baz=7.0						
TWC				S	Sg	23 31 49.6	-0.2
	baz=7.0						
NNS	Nan Shan	0.44	302	↑*i* P	Pg	23 31 44.7	-0.2
	baz=300						
NNS				S	Sg	23 31 50.4	-0.5
	baz=300						
ENTT	Nioudou	0.47	336	↑*i* P	Pg	23 31 45.3	-0.1
	baz=334						
ENTT				*e*S	Sg	23 31 50.6	-1.2
	baz=334						
WHF	Hehuan Shan	0.47	262	↑*i* P	Pg	23 31 45.4	-0.2
	baz=260						
ESL	Shilin	0.51	219	*e*P	Pg	23 31 45.1	-1.0
	baz=223						
TWE	Neicheng	0.52	349	P	Pg	23 31 46.2	-0.1
	baz=348						
TWE				*e*S	Sg	23 31 52.5	-0.9
	baz=348						
TWT	Tachien	0.55	275	↑*i* P	Pb	23 31 47.4	0.0
	baz=273						
TWT				S	Sb	23 31 54.8	-0.3
	baz=273						
NSK	Sanguang	0.60	320	↑*i* P	Pg	23 31 47.5	-0.5
	baz=319						
NSK				*i* S	Sg	23 31 55.4	-0.6
	baz=319						
EGS		0.65	12	*e*P	Pb	23 31 48.8	0.0
	baz=19						
WDT	Danda	0.74	233	*e*P	Pg	23 31 50.4	-0.2
	baz=240						
WDT				*e*S	Sb	23 32 00.9	+0.3
	baz=240						
TWA	Mucha	0.79	347	*e*P	Pn	23 31 52.2	-0.1
	baz=346						
EHY	Hungye	0.82	211	*e*P	Pb	23 31 51.5	-0.1
	baz=223						
NSTT	Nanjuang	0.83	301	*e*P	Pg	23 31 52.2	+0.1
	baz=300						
NSTT				*e*S	Sg	23 32 02.6	-0.4
	baz=300						
NWF	Wu-fen Shan	0.86	0	*e*P	Pg	23 31 52.8	+0.1
	baz=351						
NWF				*e*S	Sb	23 32 03.6	-0.1
	baz=351						
SMLT	Sun Moon Lake	0.87	248	*e*P	Pb	23 31 52.6	-0.1
	baz=248						
TYC	Yuchr	0.90	250	*e*P	Pb	23 31 53.1	+0.1
	baz=244						
TYC				*e*S	Sg	23 32 05.2	+0.1
	baz=244						
TWQ1	Liyutan	0.93	279	P	Pn	23 31 55.0	+0.7
	baz=278						
TWQ1				*e*S	Sn	23 32 07.2	-0.1
	baz=278						
NCU	National Centr	0.93	325	*e*P	Pn	23 31 54.5	+0.2
	baz=321						
TWS1	Kuangyinshan	0.95	340	*e*P	Pg	23 31 54.3	0.0
	baz=337						
TWS1				*e*S	Sn	23 32 08.3	+0.7
	baz=337						
NSY	Sanyi	0.95	283	*e*P	Pn	23 31 55.6	+1.1
	baz=282						
TWF1	Yuli	0.96	208	*e*P	Pb	23 31 52.4	-1.8
	baz=219						
TCU	Taichung	1.01	267	*e*P	Pg	23 31 56.7	+1.2
	baz=267						
YUS	Yu-Shan	1.04	227	*e*P	Pb	23 31 55.6	-0.2
	baz=228						
YUS				*e*S	Sn	23 32 10.9	+0.2
	baz=228						
TWY	Chenhua	1.07	351	*e*P	Pn	23 31 56.1	-0.1
	baz=335						
ALS	Alishan	1.13	232	*e*P	Pb	23 31 57.1	-0.1
	baz=233						
YOJ	Yonaguni jima	1.15	77	P	Pn	23 31 57.1	-0.2
YOJ				*e*S	Sg	23 32 13.7	+0.5
YOJ	Yonaguni jima	1.15	77	*e*P	Pn	23 31 57.1	-0.2
	baz=66						
CHN5	Tsauling	1.18	239	*e*P	Pn	23 31 57.2	-0.6
	baz=240						
CHN4	Tsaushan	1.38	232	*e*P	Pn	23 32 00.4	0.0
	baz=233						
STYT	Tauyuan	1.40	222	*e*P	Pb	23 32 01.5	-0.2
	baz=223						
WTP	Ta-pu	1.44	228	*e*P	Pb	23 32 02.5	+0.2
	baz=229						
CHN1	Nanshi	1.54	229	*e*P	Pb	23 32 03.7	-0.3
	baz=229						
IRIF	Iriomote-Funau	1.78	86	*e*S	Sb	23 32 29.6	-0.7
JKRS	Kuro-shima	2.04	89	P	Pn	23 32 10.6	+1.2
JKRS				*e*S	Sn	23 32 36.1	+1.6
JIJ	Ishigaki jima	2.16	85	*e*S	Sn	23 32 37.6	0.0
JISG	Ishigakijimahi	2.34	80	*e*S	Sn	23 32 41.8	-0.1

*GUC **06** 23:32:17.8±0.5,32°.66S×71°.70W,h64km±15km,ML3.7*
*SJA **06** 23:32:21.5±1.7,32°.55S×71°.54W,h76km±19km,ML3.8,*
MW3.7

ISC 06 23:32:16.2±2.5,32°.69S±0°.06×71°.7W±0°.1,h11km±12km,
n21,σ1s34/25,1C,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PEL	Peldehue	1.00	118	↑*i* P	Pg	23 32 35.7	+0.3
PEL				*i* S	Sn	23 32 50.1	-0.3
PEL				IAML		23 32 51.1	
	comp=N,4μm,0.4s						
CLCH	Cerro Calan	1.23	125	*i* P	Pb	23 32 39.5	-0.1
CLCH				*i* S	Sn	23 32 55.8	-0.4
CLCH				IAML		23 33 02.7	
	comp=E,2μm,0.4s						
ANTU	Antumapu	1.28	134	*i* P	Pb	23 32 40.2	-0.2
ANTU				*i* S	Sn	23 32 57.2	-0.1
ANTU				IAML		23 33 01.7	
	comp=E,2μm,0.3s						
FSR	Penalolen	1.29	128	*e*P	Pb	23 32 35.5	-5.0
FSR				*e*S	Sg	23 32 56.9	-0.8
FCH	Farellones	1.38	118	*i* P	Pn	23 32 41.8	+0.1
FCH				*i* S	Sg	23 33 00.1	-0.5
FCH				IAML		23 33 01.9	
	comp=E,2μm,0.4s						
YECH	El Yeso	1.70	126	*e*P	Pg	23 32 55.2	+6.4
YECH				*e*S	Sg	23 33 10.8	0.0
AUSP	Uspallata	2.04	78	*e*P	Pb	23 32 52.8	-0.7
AUSP				*e*S	Sb	23 33 17.7	-1.4
RTLS	Leoncito	2.25	68	*e*P	Pn	23 32 55.5	+1.7
ARCO	CERRO ARCO	2.37	95	*e*P	Pb	23 32 58.7	-0.3
ARCO				IAML		23 33 38.3	
	comp=Z,479nm,0.5s						
ASAL	Salagasta	2.45	89	*e*P	Pb	23 33 00.2	-0.2
AAGR	Agrelo	2.48	100	*e*P	Pb	23 32 59.9	-1.1
TLL	Tololo Astrono	2.63	18	*i* P	Pn	23 32 58.6	-0.4
TLL				*i* S	Sn	23 33 29.5	-1.6
RTCV	Cerro Valdivia	2.83	74	*e*P	Pn	23 33 04.2	+2.7
RTLL	Cerro Villicun	3.08	65	*e*P	Pn	23 33 06.5	+1.5
AMOG	MOGNA	3.27	59	*e*P	Pn	23 33 09.0	+1.5
ACAN	Cantantal	3.87	85	*e*P	Pn	23 33 17.7	+2.0
AGUA	GUANDACOL	4.23	42	*e*P	Pn	23 33 22.5	+1.7
VCA	Vinchina	4.97	39	*e*P	Pn	23 33 33.9	+2.8
TCA	Tanti	6.21	79	*e*P	Pn	23 33 48.6	+0.6
CYA	Choya	6.64	52	IAML		23 33 57.4	
	comp=Z,32nm,0.4s						
FSA	Cafayete	8.25	39	IAML		23 36 02.4	
	comp=Z,7.6nm,0.6s						

*IDC **06** 23:48:06.6±0.8,29°.25S×176°.15W,h0km,mb4.4/10,*
mb1 4.6/11,mb1mx4.4/29,mbtmp4.4/11,ML4.1/1, Error
ellipse: s-maj=32.8km s-min=21.1km az=153.0
*NEIC **06** 23:48:07.4±0.5,29°.48S×176°.09W,h10km,mb4.8/5,Error*
ellipse: s-maj=13.4km s-min=10.8km az=120.0
*ISCJB **06** 23:48:08.7±0.7,29°.56S±0°.07×176°.2W±0°.1,h28km,*
mb4.5/12,Error ellipse: s-maj=13.3km s-min=8.9km
az=17.3

ISC 06 23:48:10.4±0.6,29°.44S±0°.08×176°.13W±0°.07,h28km,n37,
σ1s17/40,mb4.6/12,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.57	276	Pn	Pb	23 48 39.3	+0.5
	620nm,0.3s,baz=87,slow=11,SNR=19						
RAO				Sn	Sb	23 49 01.0	+2.6
	2μm,0.3s,baz=72,slow=20,SNR=12						
RAO	Raoul Island	1.57	276	ePn	Pb	23 48 38.2	-0.6
RAO				Sn	Sn	23 48 54.5	-1.4
URZ	Urewera	10.44	211	Pn	Pn	23 50 37.6	-0.6
	1.4nm,0.3s,baz=279,slow=5.7,SNR=9.0						
URZ				Sn	Sn	23 52 34.2	+0.1
	5.8nm,0.3s,baz=257,slow=6.5,SNR=11						
URZ	Urewera	10.44	211	ePn	Pn	23 50 37.1	-1.1
URZ				Sn	Sn	23 52 34.5	+0.4
KHZ	Kahutara	15.40	210	ePn	Pn	23 51 41.9	-3.8
DZM	Mont Dzumac	17.32	291	P	P	23 52 13.6	+2.1
	0.6nm,0.3s,baz=123,slow=20,SNR=6.4						
DZM	Mont Dzumac	17.32	291	ePn	Pn	23 52 08.2	-2.1
	30nm,1.2s						
RPZ	Rata Peaks	17.55	212	P	Pn	23 52 11.5	-1.5
	1.8nm,0.3s,baz=59,slow=2.1,SNR=8.2						
RPZ				S	Sn	23 55 15.6	-12
	0.7nm,0.3s,baz=18,slow=20,SNR=6.3						
CTA	Charters Tower	35.28	277	P	P	23 55 03.6	+0.6
	6.8nm,0.5s,baz=107,slow=11,SNR=16						
CTAO	Charters Tower	35.28	277	eP	P	23 55 03.0	0.0
	43nm,0.6s						
STKA	Stephens Creek	36.29	255	P	P	23 55 12.6	+1.0
	3.4nm,0.6s,baz=106,slow=11,SNR=7.8						
ASAR	Alice Springs	44.80	265	P	P	23 56 22.1	0.0
	2.9nm,0.4s,baz=104,slow=7.6,SNR=44						
ASAR				PcP	PP	23 58 05.5	-1.4
	0.6nm,0.5s,baz=104,slow=3.9

RAO	**Raoul Island**	**1.59**	**235**	Pn	Pn	23 55 28.7	-0.6
	160nm,0.3s,baz=16,slow=23,SNR=4.3						
ASAR	**Alice Springs**	**44.64**	**264**	P	P	00 03 14.5	+0.1
	0.3nm,0.5s,baz=95,slow=7.4,SNR=4.7						
WRA	**Warramunga Arr**	**45.44**	**269**	P	P	00 03 21.0	+0.2
	0.5nm,0.8s,baz=108,slow=8.0,SNR=4.6						
FINES	**FINESS Array B**	**143.65**	**342**	PKP	PKPdf	00 14 34.8	-1.2
	0.8nm,0.7s,baz=132,slow=2.8,SNR=4.8						

IDC 06 23:55:07.5±1.6,**29°44S**×**176°01W**,**h0**km,**mb3.7**/2, **mb1 4.0**/2,**mb1mx3.7**/20,**mbtmp3.7**/2,**Error ellipse: s-maj=78.6km s-min=27.8km az=7.0,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.67**	**276**	Pn	Pb	23 55 38.9	-0.3
	311nm,0.3s,baz=280,slow=23,SNR=6.3						
RAO				Sn	Sn	23 55 59.9	-0.4
	669nm,0.3s,baz=44,slow=19,SNR=7.7						
ASAR	**Alice Springs**	**44.90**	**265**	P	P	00 03 23.7	-0.5
	0.5nm,0.6s,baz=100,slow=6.9,SNR=6.1						
WRA	**Warramunga Arr**	**45.80**	**270**	P	P	00 03 31.4	0.0
	0.5nm,0.3s,baz=109,slow=8.1,SNR=8.1						
FINES	**FINESS Array B**	**144.81**	**342**	PKP	PKPab	00 14 44.1	-0.6
	1.3nm,0.8s,baz=48,slow=2.8,SNR=5.6						
AKASG	**Malin Array Be**	**151.54**	**325**	PKPbc	PKPbc	00 15 03.6	+0.3
	0.3nm,0.3s,baz=48,slow=2.9,SNR=4.9						
TORD	**Torodi Ar. Bea**	**163.65**	**172**	PKPab	PKPab	00 16 04.2	-0.5
	0.3nm,0.8s,baz=187,slow=4.8,SNR=2.8						

*ISCJB **06** 23:57:26.3±0.4,40°.40N±0°.02×26°.09E±0°.03,h13km±3km, Error ellipse: s-maj=4.3km s-min=3.3km az=36.2*
*DDA **06** 23:57:26.3,40°.39N×26°.13E,h7km,Md2.6*
*ATH **06** 23:57:26.0,40°.41N×26°.01E,h30km±2km,ML1.3/3,Error ellipse: s-maj=4.0km s-min=1.1km az=304.0*
*CSEM **06** 23:57:26.4±0.1,40°.39N×26°.10E,h15km,MD2.8,Error ellipse: s-maj=2.6km s-min=2.1km az=132.0*
*ISK **06** 23:57:26.1,40°.37N×26°.13E,h15km,MD2.8*
ISC 06 23:57:26.2±0.9,**40°.40N**±0°.02×**26°.11E**±0°.02,**h16**km±7km, **n42**,σ0**36**/62,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GADA	**Gvkgeada**	**0.26**	**218**	*e*Pg	**Pg**	**23 57 32.2**	**+0.3**
GADA				*e*Sg	**Sg**	**23 57 36.1**	**+0.3**
GADA	**Gvkgeada**	**0.26**	**218**	*e*Pg	**Pg**	**23 57 32.2**	**+0.3**
GADA				*e*Sg	**Sg**	**23 57 36.1**	**+0.3**
GELI	**Tayfur-Gelibol**	**0.28**	**89**	*e*PG	**Pb**	**23 57 32.7**	**-0.1**
GELI				*e*SG	**Sb**	**23 57 36.5**	**-0.7**
GELI	**Tayfur-Gelibol**	**0.28**	**89**	*e*Pg	**Pb**	**23 57 32.7**	**-0.1**
GELI				*e*Sg	**Sb**	**23 57 36.5**	**-0.7**
ENEZ	**Enez**	**0.34**	**6**	*e*PG	**Pb**	**23 57 33.9**	**0.0**
ENEZ				*e*SG	**Sb**	**23 57 39.7**	**+0.6**
ENEZ	**Enez**	**0.34**	**6**	*e*Pg	**Pb**	**23 57 33.9**	**0.0**
ENEZ				*e*Sg	**Sb**	**23 57 39.7**	**+0.6**
ERIK	**Erikli-Kesan**	**0.41**	**48**	*e*PG	**Pb**	**23 57 34.9**	**-0.2**
ERIK				*e*SG	**Sb**	**23 57 41.3**	**+0.2**
ERIK	**Erikli-Kesan**	**0.41**	**48**	*e*Pg	**Pb**	**23 57 34.9**	**-0.2**
ERIK				*e*Sg	**Sb**	**23 57 41.3**	**+0.2**
SMTH	**Samothraki Isl**	**0.45**	**280**	P	**Pg**	**23 57 35.0**	**-0.2**
SMTH				S	**Sg**	**23 57 40.3**	**-1.0**
SMTH	**Samothraki Isl**	**0.45**	**280**	P	**Pg**	**23 57 35.0**	**-0.2**
SMTH				S	**Sg**	**23 57 40.3**	**-1.0**
SMTH				AML	AML	23 57 41.0	
	comp=N,154μm,0.3s						
SMTH				AML	AML	23 57 41.1	
	comp=E,140μm,0.2s						
LPK	**Lapseki**	**0.50**	**92**	*e*PG	**Pb**	**23 57 36.3**	**-0.2**
LPK	**Lapseki**	**0.50**	**92**	*e*Pg	**Pb**	**23 57 36.3**	**-0.2**
ALN	**Alexandroupoli**	**0.50**	**355**	*e*PG	**Pb**	**23 57 37.0**	**+0.4**
ALN	**Alexandroupoli**	**0.50**	**355**	P	**Pg**	**23 57 36.6**	**+0.3**
ALN	**Alexandroupoli**	**0.50**	**355**	*e*Pg	**Pb**	**23 57 37.0**	**+0.4**
ALN				S	**Sg**	**23 57 42.7**	**-0.4**
ALN	**Alexandroupoli**	**0.50**	**355**	P	**Pg**	**23 57 36.6**	**+0.3**
ALN				S	**Sg**	**23 57 42.6**	**-0.4**
ALN				AML	AML	23 57 44.5	
	comp=E,30μm,0.2s						
ALN				AML	AML	23 57 44.7	
	comp=N,31μm,0.2s						
BOZC	**Bozcaada**	**0.55**	**184**	*i* P	**Pg**	**23 57 37.2**	**0.0**
BOZC				*i* S	**Sg**	**23 57 44.9**	**+0.4**
EZN	**Ezine**	**0.59**	**164**	*e*PG	**Pg**	**23 57 37.4**	**-0.5**
EZN	**Ezine**	**0.59**	**164**	*e*Pg	**Pg**	**23 57 37.4**	**-0.5**
KESN	**Edirne-Kesan**	**0.61**	**45**	*i* P	**Pb**	**23 57 38.8**	**+0.1**
KESN				*i* S	**Sg**	**23 57 46.5**	**-0.1**
KESN	**Edirne-Kesan**	**0.61**	**45**	P	**Pb**	**23 57 38.8**	**+0.1**
KESN				S	**Sg**	**23 57 46.5**	**-0.1**
RKY	**Sarkoy-Tekirda**	**0.86**	**70**	*e*PG	**Pg**	**23 57 43.0**	**0.0**
RKY	**Sarkoy-Tekirda**	**0.86**	**70**	*e*Pg	**Pg**	**23 57 43.0**	**0.0**
LIA	**Limnos Island**	**0.87**	**235**	P	**Pg**	**23 57 43.0**	**+0.2**
LIA				S	**Sb**	**23 57 54.0**	**-0.1**
KRBG	**Karabiga-Canak**	**0.91**	**90**	*e*PG	**Pb**	**23 57 43.5**	**0.0**
KRBG	**Karabiga-Canak**	**0.91**	**90**	*e*Pg	**Pb**	**23 57 43.5**	**0.0**
MRMT	**Marmara Adasi**	**1.15**	**79**	*e*PN	**Pn**	**23 57 48.0**	**+0.3**
MRMT	**Marmara Adasi**	**1.15**	**79**	*e*Pn	**Pn**	**23 57 48.0**	**+0.3**
PRK	**Paraskevi**	**1.15**	**174**	P	**Pg**	**23 57 48.8**	**+0.3**
PRK	**Paraskevi**	**1.15**	**174**	P	**Pg**	**23 57 48.8**	**+0.3**
SIGR	**SIGRI**	**1.20**	**189**	*e*PN	**Pn**	**23 57 48.4**	**+0.2**
SIGR	**SIGRI**	**1.20**	**189**	P	**Pn**	**23 57 48.2**	**0.0**
SIGR	**SIGRI**	**1.20**	**189**	*e*Pn	**Pn**	**23 57 48.4**	**+0.2**
SIGR				S	**Sn**	**23 58 04.3**	**+0.2**
SIGR	**SIGRI**	**1.20**	**189**	P	**Pn**	**23 57 48.2**	**0.0**
SIGR				S	**Sn**	**23 58 04.3**	**+0.2**
SIGR				AML	AML	23 58 06.7	
	comp=E,18μm,0.3s						
SIGR				AML	AML	23 58 06.9	
	comp=N,21μm,0.3s						
BALY	**Balya**	**1.33**	**119**	*i* P	**Pg**	**23 57 52.0**	**+0.2**
BALY				*i* S	**Sg**	**23 58 08.8**	**-0.4**
BALY	**Balya**	**1.33**	**119**	P	**Pg**	**23 57 52.0**	**+0.2**
BALY				S	**Sg**	**23 58 08.8**	**-0.4**
EDC	**Edincik**	**1.34**	**91**	*e*PN	**Pn**	**23 57 50.5**	**+0.3**
EDC	**Edincik**	**1.34**	**91**	*e*Pn	**Pn**	**23 57 50.5**	**+0.3**
KAVA	**Kavala**	**1.35**	**297**	P	**Pn**	**23 57 50.0**	**-0.4**
KAVA	**Kavala**	**1.35**	**297**	P	**Pn**	**23 57 50.0**	**-0.4**
EDRB	**Edirne**	**1.53**	**18**	*e*PN	**Pb**	**23 57 53.9**	**-0.2**
EDRB	**Edirne**	**1.53**	**18**	*e*Pn	**Pb**	**23 57 53.9**	**-0.2**

*GUC **07** 00:01:45.6±0.5,32°.57S×71°.67W,h32km±4km,ML3.6*
*SJA **07** 00:01:54.3±0.8,32°.34S×71°.23W,h50km±28km,ML3.6, MW4.0*
ISC 07 00:01:46.0±2.6,**32°.72S**±0°.06×**71°.8W**±0°.1,**h16**km±12km, **n18**,σ0**99**/24,**2C-3D**,**Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PEL	**Peldehue**	**0.99**	**115**	*i*P	**Pb**	**00 02 04.6**	**-0.2**
PEL				*i* S	**Sn**	**00 02 19.1**	**+0.2**
PEL				IAML		00 02 20.7	
	comp=E,4μm,0.1s						
RCDM	**Rinconada Maip**	**1.10**	**134**	*i*P	**Pb**	**00 02 05.7**	**-0.9**
RCDM				*i* S	**Sn**	**00 02 22.1**	**+0.5**
CLCH	**Cerro Calan**	**1.22**	**124**	*e*P	**Pn**	**00 02 08.3**	**-0.2**
CLCH				*i* S	**Sg**	**00 02 26.1**	**+0.7**
CLCH				IAML		00 02 31.1	
	comp=E,1μm,0.4s						
ANTU	**Antumapu**	**1.26**	**132**	*i*P	**Pg**	**00 02 09.8**	**-0.5**
ANTU				*e*S	**Sg**	**00 02 27.7**	**+1.0**
ANTU				IAML		00 02 32.6	
	comp=E,2μm,0.2s						
FSR	**Penalolen**	**1.27**	**127**	*e*P	**Pb**	**00 02 09.7**	**+0.1**
FSR				*i* S	**Sg**	**00 02 27.7**	**+0.6**
FCH	**Farellones**	**1.36**	**117**	*i*P	**Pn**	**00 02 10.7**	**0.0**
FCH				*i* S	**Sg**	**00 02 29.8**	**-0.3**
FCH				IAML		00 02 31.5	
	comp=E,1μm,0.2s						
AUSP	**Uspallata**	**2.06**	**77**	*e*P	**Pn**	**00 02 21.3**	**+1.2**
RTLS	**Leoncito**	**2.27**	**67**	*e*P	**Pn**	**00 02 24.1**	**+1.0**
ARCO	**CERRO ARCO**	**2.38**	**94**	*e*P	**Pb**	**00 02 27.5**	**-1.0**
ARCO				*e*S	**Sn**	**00 02 52.3**	**-1.0**
ARCO				IAML		00 03 07.3	
	comp=Z,266nm,0.7s						
ASAL	**Salagasta**	**2.46**	**88**	*e*P	**Pb**	**00 02 28.4**	**-1.5**
AAGR	**Agrelo**	**2.48**	**99**	*e*P	**Pb**	**00 02 29.9**	**-0.4**
TLL	**Tololo Astrono**	**2.67**	**18**	*i* S	**Sn**	**00 02 59.6**	**-1.1**
TLL				IAML		00 03 05.9	
	comp=N,823nm,0.7s						
RTCV	**Cerro Valdivia**	**2.85**	**73**	*e*P	**Pn**	**00 02 32.8**	**+2.0**
SJA	**San Juan**	**2.96**	**67**	IAML		00 03 24.3	
	comp=Z,153nm,0.4s						
RTLL	**Cerro Villicun**	**3.11**	**64**	*e*P	**Pn**	**00 02 35.0**	**+0.6**
AMOG	**MOGNA**	**3.29**	**58**	*e*P	**Pn**	**00 02 37.8**	**+0.9**
ACAN	**Cantantal**	**3.88**	**85**	*e*P	**Pn**	**00 02 46.0**	**+1.0**
VCA	**Vinchina**	**5.01**	**38**	*e*P	**Pn**	**00 03 02.0**	**+1.3**
VCA				IAML		00 04 09.7	
	comp=Z,86nm,0.6s						

IDC 07 00:03:00.4±2.7,**29°.10S**×**175°.97W**,**h0**km,**mb3.7**/2, **mb1 4.0**/2,**mb1mx3.7**/31,**mbtmp3.7**/2,**Error ellipse: s-maj=92.6km s-min=32.2km az=10.0,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.71**	**264**	Pn	Pn	00 03 32.1	+0.6
	102nm,0.3s,baz=90,slow=20,SNR=3.3						
RAO				Sn	Sn	00 03 54.5	+0.4
	174nm,0.3s,baz=90,slow=20,SNR=4.4						
ASAR	**Alice Springs**	**44.97**	**265**	P	P	00 11 17.1	-0.5
	0.3nm,0.3s,baz=104,slow=8.2,SNR=4.3						
WRA	**Warramunga Arr**	**45.84**	**270**	P	P	00 11 24.4	-0.2
	1.1nm,0.7s,baz=112,slow=6.6,SNR=8.4						
TORD	**Torodi Ar. Bea**	**163.98**	**172**	PKPab	PKPab	00 23 58.9	-0.1
	0.8nm,1.2s,baz=189,slow=4.8,SNR=4.3						

IDC 07 00:04:40.6±1.5,**29°.22S**×**176°.13W**,**h0**km,**mb4.0**/3, **mb1 4.1**/3,**mb1mx3.8**/32,**mbtmp4.0**/3,**Error ellipse: s-maj=70.3km s-min=26.5km az=2.0,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.56**	**268**	Pn	Pg	00 05 11.8	+1.3
	353nm,0.3s,baz=80,slow=16,SNR=5.1						
RAO				Sn	Sg	00 05 30.7	0.0
	305nm,0.3s,baz=74,slow=19,SNR=3.0						
STKA	**Stephens Creek**	**36.34**	**255**	P	P	00 11 47.1	+0.8
	1.7nm,0.6s,baz=104,slow=8.3,SNR=3.5						
ASAR	**Alice Springs**	**44.81**	**265**	P	P	00 12 54.9	-1.7
	0.5nm,0.6s,baz=102,slow=8.1,SNR=5.2						
WRA	**Warramunga Arr**	**45.70**	**270**	P	P	00 13 02.5	-1.1
	0.7nm,0.3s,baz=108,slow=7.9,SNR=10						
FINES	**FINESS Array B**	**144.57**	**342**	PKP	PKPdf	00 24 18.1	-0.3
	1.2nm,0.7s,baz=48,slow=2.8,SNR=5.9						
AKASG	**Malin Array Be**	**151.30**	**325**	PKPbc	PKPbc	00 24 36.0	+0.3
	0.9nm,0.4s,baz=47,slow=3.2,SNR=4.8						
TORD	**Torodi Ar. Bea**	**163.88**	**172**	PKPab	PKPab	00 25 38.4	-0.3
	0.6nm,0.8s,baz=182,slow=6.0,SNR=3.3						

*ISK **07** 00:09:24.9,39°.10N×29°.09E,h5km,MD2.7*
*ISCJB **07** 00:09:25.5±0.5,39°.08N±0°.04×29°.10E±0°.04,h12km±5km, Error ellipse: s-maj=8.0km s-min=4.9km az=151.7*
*CSEM **07** 00:09:25.5±0.1,39°.07N×29°.10E,h10km,MD2.7,Error ellipse: s-maj=3.5km s-min=2.3km az=144.0*
*DDA **07** 00:09:25.7,39°.09N×29°.10E,h7km,Md2.9*
ISC 07 00:09:25.8±1.0,**39°.08N**±0°.04×**29°.10E**±0°.03,**h15**km±9km, **n20**,σ0**63**/30,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.24**	**98**	*e*PG	**Pg**	**00 09 30.4**	**-0.7**
GEDZ				*e*SG	**Sg**	**00 09 34.9**	**+0.2**
GEDZ	**Gediz**	**0.24**	**98**	*e*Pg	**Pg**	**00 09 30.4**	**-0.7**
GEDZ				*e*Sg	**Sg**	**00 09 34.9**	**+0.2**
GDZ	**Gediz**	**0.29**	**88**	*i* P	**Pg**	**00 09 32.1**	**0.0**
GDZ				*i* S	**Sg**	**00 09 36.4**	**+0.1**
GDZ	**Gediz**	**0.29**	**88**	P	**Pg**	**00 09 32.1**	**0.0**
GDZ				S	**Sg**	**00 09 36.4**	**+0.1**
DEMI	**Demirci**	**0.30**	**264**	*i* P	**Pg**	**00 09 32.3**	**+0.1**
DEMI				*i* S	**Sg**	**00 09 36.9**	**+0.4**
DEMI	**Demirci**	**0.30**	**264**	P	**Pg**	**00 09 32.3**	**+0.1**
DEMI				S	**Sg**	**00 09 36.9**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**37**	*e*PG	**Pg**	**00 09 34.6**	**-0.5**
TVSB				*e*SG	**Sg**	**00 09 40.3**	**-1.1**
TVSB	**Tavsanli**	**0.46**	**37**	*e*Pg	**Pg**	**00 09 34.6**	**-0.5**
TVSB				*e*Sg	**Sg**	**00 09 40.3**	**-1.1**
KULA	**Kula-Manisa**	**0.66**	**212**	*e*PG	**Pg**	**00 09 38.2**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**212**	*e*Pg	**Pg**	**00 09 38.2**	**-0.5**
MANT	**Manisa**	**0.72**	**216**	*i* P	**Pg**	**00 09 39.2**	**-0.7**
MANT				*i* S	**Sg**	**00 09 48.9**	**-0.6**
MANT	**Manisa**	**0.72**	**216**	P	**Pg**	**00 09 39.2**	**-0.7**
MANT				S	**Sg**	**00 09 48.9**	**-0.6**
BALB	**Balikesir**	**1.10**	**301**	*e*PN	**Pg**	**00 09 46.4**	**-0.7**
BALB	**Balikesir**	**1.10**	**301**	*e*Pn	**Pg**	**00 09 46.4**	**-0.7**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*PN	**Pn**	**00 09 50.1**	**+0.4**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*Pn	**Pn**	**00 09 50.1**	**+0.4**
ARMT	**Armutlu**	**1.50**	**353**	*e*PN	**Pn**	**00 09 52.9**	**+0.7**
ARMT	**Armutlu**	**1.50**	**353**	*e*Pn	**Pn**	**00 09 52.9**	**+0.7**
GULT	**Gulveren**	**1.74**	**38**	*e*PN	**Pn**	**00 09 56.5**	**+0.9**
GULT	**Gulveren**	**1.74**	**38**	*e*Pn	**Pn**	**00 09 56.5**	**+0.9**

*IDC **07** 00:10:42.5±0.7,28°.92S×176°.74W,h0km,mb4.4/13, mb1 4.5/13,mb1mx4.3/38,mbtmp4.4/13,Error ellipse: s-maj=24.2km s-min=15.6km az=151.0*
*ISCJB **07** 00:10:43.6±0.4,29°.42S±0°.05×176°.88W±0°.08,h21km, mb4.7/25,Error ellipse: s-maj=11.4km s-min=6.4km az=26.2*
*NEIC **07** 00:10:43.1±0.4,29°.29S×176°.78W,h10km,mb4.9/23, Error ellipse: s-maj=12.6km s-min=8.4km az=136.0*
ISC 07 00:10:45.5±0.4,**29°.34S**±0°.06×**176°.73W**±0°.07,**h21**km, **n106**,σ2**07**/105,**mb4.7**/25,**3C-7D**,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.04**	**274**	Pn	**Pb**	**00 11 06.3**	**+1.4**
	1μm,0.3s,baz=261,slow=19,SNR=21						
RAO				Sn	**Sn**	**00 11 23.3**	**+4.5**
	4μm,0.3s,baz=107,slow=19,SNR=15						
OUZ	**Omahuta**	**10.07**	**232**	*e*Pn	Pn	00 13 13.9	+5.0
URZ	**Urewera**	**10.27**	**208**	Pn	**Pn**	**00 13 08.6**	**-2.9**
	1.4nm,0.3s,baz=72,slow=12,SNR=4.3						
URZ				Sn	**Sn**	**00 15 06.6**	**+0.6**
	11nm,0.3s,baz=179,slow=16,SNR=8.8						
URZ	**Urewera**	**10.27**	**208**	*e*Pn	**Pn**	**00 13 09.2**	**-2.3**
URZ				*e*Sn	**Sn**	**00 15 08.8**	**+2.8**
HIZ	**Hauiti**	**11.51**	**215**	*e*Pn	Pn	00 13 34.3	+5.7
MSVF	**Nonsavu**	**12.50**	**336**	*e*Pn	**Pn**	**00 13 44.8**	**+2.5**
SNZO	**South Karori**	**13.83**	**208**	*e*Pn	**Pn**	**00 14 00.6**	**+0.4**
THZ	**Tophouse**	**14.98**	**211**	*e*Pn	**Pn**	**00 14 13.4**	**-2.6**
KHZ	**Kahutara**	**15.23**	**208**	*e*Pn	Pn	00 14 12.4	-6.9
	167nm,1.6s						
OXZ	**Oxford**	**16.61**	**210**	*e*Pn	**P**	**00 14 39.0**	**-0.5**
	337nm,2.0s						
OXZ				*e*Sn	**Sn**	**00 17 31.2**	**-10**
DZM	**Mont Dzumac**	**16.79**	**292**	*e*Pn	**P**	**00 14 43.0**	**+1.4**
	26nm,1.0s						
RPZ	**Rata Peaks**	**17.36**	**211**	P	**Pn**	**00 14 43.7**	**-2.7**
	0.7nm,0.3s,baz=24,slow=10.0,SNR=5.4						
RPZ				S	Sn	00 17 46.8	-12
	0.9nm,0.3s,baz=104,slow=16,SNR=3.7						
RPZ	**Rata Peaks**	**17.36**	**211**	*e*Pn	**Pn**	**00 14 43.6**	**-2.7**
	106nm,1.5s						
RPZ				*e*Sn	Sn	00 17 46.8	-12
LBZ	**Lake Benmore**	**18.27**	**211**	*e*P	**Pn**	**00 14 55.0**	**-2.7**
	168nm,1.7s						
ODZ	**Otahua Downs**	**18.59**	**209**	*e*P	**P**	**00 14 58.8**	**-2.4**
	241nm,2.0s						
WKZ	**Wanaka**	**19.15**	**212**	*e*P	**P**	**00 15 05.0**	**-2.4**
	267nm,1.6s						
ARMA	**Armidale**	**27.42**	**260**	*e*P	**P**	**00 16 27.2**	**-2.7**
	81nm,1.9s						
CAN	**Canberra**	**29.47**	**249**	*e*P	**P**	**00 16 47.6**	**-0.5**
	97nm,1.7s						
CTA	**Charters Tower**	**34.74**	**277**	P	**P**	**00 17 34.2**	**-0.3**
	8.8nm,0.7s,baz=100,slow=12,SNR=12						
CTAO	**Charters Tower**	**34.74**	**277**	*e*P	**P**	**00 17 35.1**	**+0.6**
	10nm,0.8s						
STKA	**Stephens Creek**	**35.81**	**255**	P	**P**	**00 17 45.6**	**+2.2**
	4.2nm,0.8s,baz=110,slow=11,SNR=7.0						
STKA	**Stephens Creek**	**35.81**	**255**	*e*P	**P**	**00 17 44.2**	**+0.8**
	8.6nm,1.5s						
COEN	**Coen**	**40.07**	**284**	*e*P	**P**	**00 18 16.8**	**-2.8**
	94nm,2.0s						
BBOO	**Buckleboo**	**40.33**	**253**	*e*P	**P**	**00 18 20.9**	**-0.7**
	145nm,1.8s						
AS01	**Alice Springs**	**44.24**	**265**	*e*P	**P**	**00 18 52.4**	**-1.3**
AS31	**Alice Springs**	**44.28**	**265**	*e*P	**P**	**00 18 53.1**	**-0.9**
	3.7nm,1.0s						
ASAR	**Alice Springs**	**44.28**	**265**	P	**P**	**00 18 53.1**	**-0.9**
	6.8nm,0.8s,baz=106,slow=7.5,SNR=46						
WB2	**Warramunga Arr**	**45.17**	**270**	*e*P	**P**	**00 19 00.2**	**-0.8**
WR1	**Warramunga Arr**	**45.18**	**270**	*e*P	**P**	**00 18 59.9**	**-1.2**
	15nm,0.8s						
WRA	**Warramunga Arr**	**45.18**	**270**	P	**P**	**00 18 59.9**	**-1.2**
	12nm,0.8s,baz=109,slow=7.8,SNR=31						
VNDA	**Vanda**	**49.26**	**186**	P	**P**	**00 19 35.9**	**+3.7**
	1.4nm,0.9s,baz=13,slow=7.2,SNR=6.9						
FITZ	**Fitzroy Crossi**	**53.48**	**268**	P	**P**	**00 20 03.2**	**-1.4**
	3.4nm,0.7s,baz=107,slow=7.2,SNR=7.1						
FITZ	**Fitzroy Crossi**	**53.48**	**268**	*e*P	**P**	**00 20 03.1**	**-1.4**
	13nm,1.0s						
CASY	**Casey**	**56.59**	**208**	*e*P	**P**	**00 20 28.0**	**+1.7**
	20nm,1.2s						
MBWA	**Marble Bar**	**57.45**	**262**	*e*P	**P**	**00 20 31.3**	**-1.9**
	92nm,1.8s						
ANA2	**Anatahan**	**58.11**	**316**	*e*P	**P**	**00 20 34.4**	**-3.3**
QSPA	**South Pole Qui**	**60.77**	**180**	*e*P	**P**	**00 20 60.0**	**+4.3**
MAW	**Mawson**	**73.69**	**200**	P	**P**	**00 22 20.3**	**+3.1**
	2.3nm,0.7s,baz=142,slow=7.9,SNR=4.2						
MAW	**Mawson**	**73.69**	**200**	*e*P	**P**	**00 22 20.3**	**+3.1**
	7.7nm,1.8s						
SYO	**Syowa Base**	**78.39**	**193**	*e*P	**P**	**00 22 42.0**	**-2.0**
SYO	**Syowa Base**	**78.39**	**193**	*e*pP	**P**	**00 22 45.0**	**+1.0**
SYO	**Syowa Base**	**78.39**	**193**	*e*PcP	**PcP**	**00 22 51.0**	**-2.2**
SNAA	**Sanae**	**79.18**	**178**	P	**P**	**00 22 49.9**	**+1.5**
SNAA	**Sanae**	**79.18**	**178**	*e*P	**P**	**00 22 48.7**	**+0.2**
	12nm,1.5s						
VNA1	**Neumayer--Stat**	**79.96**	**176**	P	**P**	**00 22 55.1**	**+2.6**
KSRS	**Korea Array**	**84.27**	**319**	P	**P**	**00 23 14.7**	**-0.8**
	0.8nm,0.4s,baz=138,slow=6.4,SNR=7.2						
KS15	**Wonju Array Si**	**84.28**	**319**	*e*P	**P**	**00 23 14.7**	**-0.9**
KSAR	**Wonju Array Be**	**84.28**	**319**	P	**P**	**00 23 14.7**	**-0.9**
PETK	**Petropavlovsk-**	**85.07**	**345**	P	**P**	**00 23 17.5**	**-1.7**
	4.7nm,0.8s,baz=108,slow=8.0,SNR=5.8						
PEA1	**Petropavlovsk-**	**85.07**	**345**	*e*P	**P**	**00 23 17.5**	**-1.7**
USRK	**Ussuriysk Ar.**	**86.90**	**326**	P	**P**	**00 23 28.4**	**-0.1**
	1.8nm,0.8s,baz=90,slow=3.8,SNR=8.4						
TPNV	**Topopah Spring**	**86.97**	**44**	*e*P	**P**	**00 23 29.4**	**+0.2**
	4.9nm,1.2s						
X16A	**Lo Mia Camp, P**	**88.42**	**49**	*e*P	**P**	**00 23 37.2**	**+0.9**
	2.4nm,0.6s						
KLR	**Kul'dur**	**90.69**	**329**	P	**P**	**00 23 45.9**	**-0.4**
	1.2nm,0.8s,baz=198,slow=3.2,SNR=4.0						
LTX	**Lajitas**	**90.88**	**57**	*e*P	**P**	**00 23 47.7**	**-0.2**
TX31	**Lajitas Ar. Si**	**90.88**	**57**	*e*P	**P**	**00 23 47.4**	**-0.4**
TXAR	**Lajitas Array**	**90.88**	**57**	P	**P**	**00 23 47.7**	**-0.2**
	1.2nm,1.0s,baz=206,slow=5.4,SNR=7.2						
LAZ	**Ladron**	**91.28**	**51**	*e*P	**P**	**00 23 50.0**	**+0.2**
ENH	**Enshi**	**91.92**	**304**	*e*P	**P**	**00 23 53.9**	**+1.3**
	22nm,0.9s						
BGMT	**Barton Gulch**	**94.65**	**40**	*e*P	**P**	**00 24 07.7**	**+2.7**
GCMT	**Greycliff**	**96.32**	**40**	*e*P	**P**	**00 24 12.1**	**-0.4**
ILAR	**Eielson Array**	**96.65**	**12**	P	**P**	**00 24 11.9**	**-1.4**
	0.3nm,0.8s,baz=216,slow=4.5,SNR=2.6						
ILB	**Eielson Array**	**96.65**	**12**	*e*P	**P**	**00 24 11.9**	**-1.4**
MK32	**Makanchi Array**	**117.93**	**310**	*e*PKPdf	**PKPdf**	**00 29 29.8**	**-0.6**
MKAR	**Makanchi Array**	**117.93**	**310**	PKP	**PKPdf**	**00 29 29.8**	**-0.6**
	0.9nm,0.9s,baz=159,slow=1.2,SNR=4.1						
BVAR	**Borovoye Array**	**126.41**	**316**	PKP	**PKPdf**	**00 29 46.3**	**0.0**
	0.4nm,0.3s,baz=130,slow=2.3,SNR=6.2						
GEYT	**Alibeck**	**134.10**	**296**	PKP	**PKPdf**	**00 30 01.9**	**+0.4**
	1.4nm,0.6s,baz=90,slow=1.4,SNR=3.5						
FIA0	**FINESS Array S**	**144.51**	**341**	*e*PKP

*ISCJB **07** 00:14:15.1±0.2,29.°99S×0.°05×176.°20W±0.°05,h10km, mb4.9/43,Error ellipse: s-maj=8.2km s-min=5.3km az=150.6*

*NEIC **07** 00:14:20.4±1.4,29.°91S×176.°26W,h36km±12km,mb5.0/32, Error ellipse: s-maj=10.9km s-min=8.0km az=155.0*

ISC 07 00:14:16.1±0.5,29.°82S±0.°07×176.°21W±0.°07,h10km, n110,σ1§03/112,mb4.9/43,1C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.59**	**290**	Pn	**Pg**	**00 14 45.7**	**-0.9**
	552nm,0.3s,baz=78,slow=20,SNR=3.7						
RAO				Sn	**Sg**	**00 15 07.0**	**-0.4**
	2μm,0.3s,baz=32,slow=20,SNR=7.2						
URZ	**Urewera**	**10.08**	**212**	Pn	**Pn**	**00 16 40.3**	**-0.5**
	1.7nm,0.3s,baz=310,slow=3.4,SNR=5.9						
URZ				Sn	**Sn**	**00 18 33.8**	**-0.1**
	5.8nm,0.3s,baz=262,slow=7.8,SNR=9.1						
URZ	**Urewera**	**10.08**	**212**	*e*Pn	**Pn**	**00 16 40.3**	**-0.5**
URZ				*e*Sn	**Sn**	**00 18 33.8**	**-0.1**
URZ				*e*Sn	Sn	00 18 34.5	+0.6
KHZ	**Kahutara**	**15.04**	**211**	*e*Pn	**Pn**	**00 17 48.6**	**0.0**
RPZ	**Rata Peaks**	**17.19**	**213**	S	Sn	00 21 16.0	-11
	0.6nm,0.3s,baz=118,slow=23,SNR=7.3						
CTA	**Charters Tower**	**35.25**	**277**	P	**P**	**00 21 12.4**	**+1.4**
	4.9nm,0.4s,baz=104,slow=12,SNR=9.6						
CTAO	**Charters Tower**	**35.25**	**277**	*e*P	**P**	**00 21 13.3**	**+2.2**
STKA	**Stephens Creek**	**36.12**	**256**	P	**P**	**00 21 19.9**	**+1.4**
	9.2nm,0.7s,baz=96,slow=9.3,SNR=9.4						
STKA	**Stephens Creek**	**36.12**	**256**	*e*P	**P**	**00 21 19.9**	**+1.4**
	2.9nm,0.8s						
BBOO	**Buckleboo**	**40.62**	**253**	*e*P	**P**	**00 21 57.2**	**+0.9**
	128nm,1.8s						
AS01	**Alice Springs**	**44.66**	**266**	*e*P	**P**	**00 22 31.3**	**+2.1**
AS31	**Alice Springs**	**44.70**	**266**	*e*P	**P**	**00 22 29.2**	**-0.3**
	1.4nm,0.8s						
AS31				*e*PcP	**PP**	**00 24 13.4**	**-0.5**
ASAR	**Alice Springs**	**44.70**	**266**	P	**P**	**00 22 29.2**	**-0.3**
	2.1nm,0.5s,baz=107,slow=8.5,SNR=5.9						
ASAR				PcP	**PP**	**00 24 13.4**	**-0.5**
	1.3nm,0.7s,baz=109,slow=3.8,SNR=4.6						
WB2	**Warramunga Arr**	**45.62**	**271**	*e*P	**P**	**00 22 37.3**	**+0.4**
	15nm,0.8s						
WR1	**Warramunga Arr**	**45.63**	**271**	*e*P	**P**	**00 22 36.2**	**-0.8**
	16nm,0.8s						
WRA	**Warramunga Arr**	**45.63**	**271**	P	**P**	**00 22 36.2**	**-0.8**
	8.7nm,0.7s,baz=113,slow=6.4,SNR=22						
SBA	**Scott Base**	**48.74**	**185**	*e*P	**P**	**00 22 58.6**	**-1.8**
	12nm,1.2s						
FITZ	**Fitzroy Crossi**	**53.92**	**269**	P	**P**	**00 23 40.1**	**0.0**
	6.0nm,0.8s,baz=174,slow=6.0,SNR=7.2						
FITZ	**Fitzroy Crossi**	**53.92**	**269**	*e*P	**P**	**00 23 40.0**	**0.0**
	7.0nm,0.8s						
CASY	**Casey**	**56.38**	**208**	*e*P	**P**	**00 23 57.2**	**+0.1**
	15nm,0.8s						
SYO	**Syowa Base**	**78.02**	**192**	*e*P	**P**	**00 26 14.4**	**+0.1**
MJAR	**Matsushiro Arr**	**78.67**	**324**	P	**P**	**00 26 17.4**	**-0.9**
	2.2nm,0.7s,baz=167,slow=5.4,SNR=5.3						
SNAA	**Sanae**	**78.68**	**178**	*e*P	**P**	**00 26 18.8**	**+0.7**
	11nm,1.2s						
MONP2	**Monument Peak**	**84.23**	**47**	P	**P**	**00 26 49.1**	**+1.0**
	baz=229						
EDW2	**Edwards Air Fo**	**84.57**	**45**	P	**P**	**00 26 50.6**	**+1.0**
	baz=228						
TPFO	**Pinon Flats**	**84.68**	**46**	P	**P**	**00 26 51.0**	**+0.7**
	baz=229						
PFO	**Pinyon Flats O**	**84.68**	**46**	P	**P**	**00 26 50.9**	**+0.6**
	baz=229						
KSRS	**Korea Array**	**84.93**	**319**	P	**P**	**00 26 52.0**	**+0.8**
	1.7nm,0.7s,baz=124,slow=5.5,SNR=5.3						
KS15	**Wonju Array Si**	**84.94**	**319**	*e*P	**P**	**00 26 52.0**	**+0.7**
KSAR	**Wonju Array Be**	**84.94**	**319**	P	**P**	**00 26 52.0**	**+0.7**
BELC	**Belle Mtn. Jos**	**85.22**	**46**	P	**P**	**00 26 53.6**	**+0.6**
	baz=229						
CMB	**Columbia Colle**	**85.30**	**41**	*e*P	**P**	**00 26 54.0**	**+0.8**
	5.0nm,1.0s						
BC3	**Big Chuckawall**	**85.34**	**47**	P	**P**	**00 26 54.9**	**+1.3**
	baz=229						
GSC	**Goldstone, Bar**	**85.57**	**45**	P	**P**	**00 26 55.5**	**+0.8**
	baz=228						
GSC	**Goldstone, Bar**	**85.57**	**45**	*e*P	**P**	**00 26 55.7**	**+1.0**
	22nm,1.6s						
GSC				*e*pP	sP	00 27 08.2	+9.0
AFDM	**Forest Hills D**	**85.60**	**40**	*e*P	**P**	**00 26 55.3**	**+0.6**
	7.9nm,1.2s						
MPMC	**Manual Prospec**	**85.66**	**44**	P	**P**	**00 26 55.8**	**+0.6**
	baz=228						
IRM	**Iron Mountain**	**85.86**	**47**	P	**P**	**00 26 57.1**	**+1.0**
	baz=230						
WDC	**Whiskeytown Da**	**85.89**	**38**	*e*P	**P**	**00 26 57.1**	**+1.1**
	10nm,1.1s						
GMRC	**Granite Mounta**	**85.94**	**46**	P	**P**	**00 26 57.3**	**+0.7**
	baz=229						
N02D	**Trinity Center**	**86.09**	**38**	P	**P**	**00 26 58.6**	**+1.5**
	baz=224						
O03D	**Paynes Creek**	**86.09**	**39**	P	**P**	**00 26 58.1**	**+1.0**
	baz=225						
WAKR	**Walker**	**86.16**	**41**	*e*P	**P**	**00 26 59.0**	**+1.3**
	20nm,1.4s						
TUQ	**Turquoise Moun**	**86.20**	**45**	P	**P**	**00 26 59.1**	**+1.2**
	baz=229						
M02C	**Callahan**	**86.31**	**37**	P	**P**	**00 26 59.3**	**+1.2**
	baz=224						
GRAC	**Grapevine Rang**	**86.36**	**43**	P	**P**	**00 26 59.4**	**+1.0**
	baz=228						
TVH1	**TV Hill, Hawth**	**86.52**	**42**	*e*P	P	00 27 02.5	+2.9
	11nm,0.5s						
TPNV	**Topopah Spring**	**87.00**	**44**	P	**P**	**00 27 02.5**	**+0.8**
	baz=229						
TPNV	**Topopah Spring**	**87.00**	**44**	*e*P	**P**	**00 27 02.6**	**+0.8**
	4.1nm,1.0s						
Y14A	**Wickenburg**	**87.09**	**48**	*e*P	**P**	**00 27 03.4**	**+1.3**
	34nm,1.0s						
TUC	**Tucson**	**87.54**	**50**	P	**P**	**00 27 05.3**	**+0.9**
	baz=232						
USRK	**Usuriysk Ar.**	**87.55**	**326**	P	**P**	**00 27 04.3**	**+0.3**
	2.9nm,0.8s,baz=108,slow=3.2,SNR=6.4						
LCMT	**Little Creek M**	**88.87**	**45**	*e*P	**P**	**00 27 12.2**	**+1.5**
	6.6nm,1.1s						
U15A	**North Rim**	**89.10**	**46**	*e*P	**P**	**00 27 13.7**	**+1.7**
	9.6nm,0.9s						
WUAZ	**Wupatki**	**89.12**	**48**	P	**P**	**00 27 12.8**	**+0.9**
	baz=232						
WUAZ	**Wupatki**	**89.12**	**48**	*e*P	**P**	**00 27 13.2**	**+1.3**
	9.9nm,1.0s						
KNB	**Kanab**	**89.14**	**46**	*e*P	**P**	**00 27 13.6**	**+1.6**
	9.1nm,1.0s						
121A	**Cookes Peak, D**	**89.70**	**52**	P	**P**	**00 27 14.8**	**+0.1**
	baz=234						
MTPU	**Mount Pierson**	**90.18**	**45**	*e*P	**P**	**00 27 19.1**	**+2.0**
	8.1nm,1.1s						
MSU	**Marysvale**	**90.47**	**45**	*e*P	**P**	**00 27 19.8**	**+1.6**
LTX	**Lajitas**	**90.77**	**56**	*e*P	**P**	**00 27 19.5**	**-0.2**
TXAR	**Lajitas Array**	**90.77**	**56**	P	**P**	**00 27 19.5**	**-0.2**
	2.4nm,1.1s,baz=211,slow=7.0,SNR=10						
MNTX	**Cornudas Mount**	**90.88**	**54**	P	**P**	**00 27 20.6**	**+0.5**
	baz=235						
MNTX	**Cornudas Mount**	**90.88**	**54**	*e*P	**P**	**00 27 20.9**	**+0.8**
	4.5nm,1.1s						
MFID	**Camas Ranch**	**91.48**	**39**	*e*P	**P**	**00 27 23.4**	**+0.7**
	5.7nm,1.0s						
A04D	**Lummi Island**	**91.63**	**32**	P	**P**	**00 27 23.6**	**+0.6**
	baz=224						
BMO	**Blue Mountains**	**91.63**	**38**	*e*P	**P**	**00 27 23.7**	**+0.3**
	15nm,1.9s						
SRU	**San Rafael Swe**	**91.86**	**45**	*e*P	**P**	**00 27 25.5**	**+0.8**
	5.7nm,1.0s						
ANMO	**Albuquerque**	**92.01**	**50**	P	**P**	**00 27 25.9**	**+0.4**
	baz=234						
ANMO	**Albuquerque**	**92.01**	**50**	*e*P	**P**	**00 27 26.0**	**+0.5**
	4.9nm,1.1s						
SPUT	**South Promonto**	**92.06**	**43**	*e*P	**P**	**00 27 26.2**	**+0.7**
	5.9nm,1.1s						
HLID	**Hailey**	**92.36**	**40**	P	**P**	**00 27 27.5**	**+0.7**
	baz=230						
HLID	**Hailey**	**92.36**	**40**	*e*P	**P**	**00 27 27.8**	**+0.9**
	4.9nm,1.1s						
F10A	**Beach Ranch, E**	**92.42**	**37**	*e*P	**P**	**00 27 26.9**	**0.0**
	8.8nm,0.9s						
ENH	**Enshi**	**92.57**	**304**	*e*P	**P**	**00 27 29.8**	**+1.9**
	18nm,1.0s						
S22A	**4UR Ranch, Cre**	**93.38**	**48**	P	**P**	**00 27 32.6**	**+0.7**
	baz=234						
MSTX	**Muleshoe**	**93.97**	**53**	P	**P**	**00 27 34.5**	**+0.1**
	baz=236						
MCMT	**McKenzie Canyo**	**94.03**	**40**	*e*P	**P**	**00 27 35.4**	**+0.8**
SMCO	**Snowmass**	**94.12**	**47**	*e*P	P	00 27 38.7	+3.4
	16nm,0.9s						
PD31	**Pinedale Array**	**94.65**	**43**	*e*P	**P**	**00 27 36.1**	**-1.4**
PDAR	**Pinedale Array**	**94.65**	**43**	P	**P**	**00 27 36.1**	**-1.4**
	0.3nm,0.7s,baz=101,slow=1.5,SNR=4.5						
CM31	**Chiang Mai Arr**	**94.68**	**288**	*e*P	**P**	**00 27 39.0**	**+1.1**
CMAR	**Chiang Mai Arr**	**94.68**	**288**	P	**P**	**00 27 39.0**	**+1.1**
	2.9nm,0.3s,baz=152,slow=2.9,SNR=4.3						
CMAR	**Chiang Mai Arr**	**94.68**	**288**	P	**P**	**00 27 39.0**	**+1.1**
433A	**Art**	**94.87**	**57**	P	**P**	**00 27 38.4**	**-0.1**
	baz=238						
BOZ	**Bozeman (W)**	**95.19**	**40**	P	**P**	**00 27 40.2**	**+0.4**
	baz=232						
BOZ	**Bozeman (W)**	**95.19**	**40**	*e*P	**P**	**00 27 39.9**	**+0.1**
	6.0nm,1.0s						
RND	**Reindeer**	**95.42**	**12**	*e*P	**P**	**00 27 40.8**	**+0.6**
	30nm,0.4s						
MK32	**Makanchi Array**	**118.59**	**310**	*e*PKPdf	**PKPdf**	**00 33 03.1**	**-0.9**
MKAR	**Makanchi Array**	**118.59**	**310**	PKP	**PKPdf**	**00 33 03.1**	**-0.9**
	0.7nm,0.8s,baz=107,slow=1.3,SNR=4.3						
ZALV	**Zalesovo Beam**	**118.63**	**318**	PKP	**PKPdf**	**00 33 02.9**	**-0.9**
	0.7nm,0.7s,baz=207,slow=0.6,SNR=3.9						
ZAA1	**Zalesovo Array**	**118.63**	**318**	*e*PKPdf	**PKPdf**	**00 33 02.9**	**-0.9**
VOSK	**Vostochnaya**	**126.70**	**316**	*e*PKPdf	**PKPdf**	**00 33 19.5**	**+0.2**
BVAR	**Borovoye Array**	**127.07**	**316**	PKP	**PKPdf**	**00 33 17.9**	**-2.1**
	1.6nm,0.8s,baz=132,slow=2.2,SNR=7.3						
FIA1	**FINESS Array S**	**145.11**	**341**	*e*PKPbc	**PKPdf**	**00 33 51.7**	**-1.4**
FIA0	**FINESS Array S**	**145.11**	**341**	*e*PKPbc	**PKPdf**	**00 33 51.7**	**-1.4**
FINES	**FINESS Array B**	**145.11**	**341**	PKPbc	**PKPdf**	**00 33 51.7**	**-1.3**
	11nm,0.9s,baz=58,slow=4.7,SNR=15						
OBN	**Obninsk**	**145.56**	**327**	*e*PKPdf	**PKPab**	**00 33 54.4**	**-0.1**
KBZ	**Khabaz**	**146.06**	**305**	PKPbc	**PKPab**	**00 33 55.7**	**-1.0**
	2.7nm,0.8s,baz=148,slow=2.9,SNR=5.4						
NB2	**NORSAR Subarra**	**148.39**	**353**	PKP	**PKPbc**	**00 34 01.4**	**-0.8**
	comp=Z,6.5nm,0.8s,baz=11,slow=2.9						
NB200	**NORSAR Array S**	**148.39**	**353**	*e*PKPbc	**PKPbc**	**00 34 01.1**	**-1.0**
NOA	**NORSAR Array B**	**148.39**	**353**	PKPbc	**PKPbc**	**00 34 01.1**	**-1.0**
	comp=Z,5.0nm,0.9s,baz=14,slow=4.4,SNR=7.6						
NBO02	**NORSAR Array S**	**148.41**	**353**	*e*PKPbc	**PKPab**	**00 34 01.9**	**-3.5**
AKASG	**Malin Array Be**	**151.75**	**325**	PKPbc	**PKPbc**	**00 34 10.2**	**-0.4**
	comp=Z,7.3nm,0.8s,baz=46,slow=3.0,SNR=12						
AKBB	**Malin Array Si**	**151.75**	**325**	*e*PKPbc	**PKPbc**	**00 34 10.2**	**-0.4**
AK11	**Malin Array Si**	**151.79**	**325**	*e*PKPbc	**PKPbc**	**00 34 10.6**	**-0.1**
BR101	**Keskin Array S**	**153.67**	**300**	*e*PKPbc	**PKPbc**	**00 34 15.9**	**+0.5**
BRTR	**Keskin Array B**	**153.67**	**300**	PKPbc	**PKPbc**	**00 34 15.9**	**+0.5**
	comp=Z,0.9nm,1.0s,baz=127,slow=2.1,SNR=4.0						
TORD	**Torodi Ar. Bea**	**163.30**	**173**	PKPab	**PKPab**	**00 35 10.8**	**+0.9**
	comp=Z,4.1nm,0.9s,baz=186,slow=4.0,SNR=12						
TOA1	**Torodi Ar. Sit**	**163.30**	**173**	*e*PKPab	**PKPab**	**00 35 10.8**	**+0.9**

IDC 07 00:18:36.2±4.9,28.°17S×176.°59W,h0km,mb4.0/2, mb1 4.3/2,mb1mx3.7/41,mbtmp4.0/2,Error ellipse: s-maj=113.1km s-min=35.5km az=121.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.58**	**227**	Pn	Pn	00 19 05.6	+0.1
	198nm,0.3s,baz=60,slow=20,SNR=3.3						
RAO				Sn	Sb	00 19 26.9	-0.1
	328nm,0.3s,baz=72,slow=20,SNR=5.8						
ASAR	**Alice Springs**	**44.51**	**264**	P	P	00 26 49.5	-0.3
	1.2nm,0.6s,baz=101,slow=6.5,SNR=7.7						
WRA	**Warramunga Arr**	**45.30**	**269**	P	P	00 26 56.4	+0.3
	2.8nm,0.9s,baz=108,slow=7.9,SNR=7.2						
FINES	**FINESS Array B**	**143.45**	**342**	PKP	PKPdf	00 38 11.0	-1.1
	0.8nm,0.6s,baz=80,slow=3.2,SNR=5.8						

IDC 07 00:19:01.4±3.6,28.°66S×176.°32W,h0km,mb4.4/4, mb1 4.6/4,mb1mx4.0/39,mbtmp4.4/4,Error ellipse: s-maj=174.0km s-min=43.8km az=160.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.52**	**247**	Sn	Sn	00 19 51.1	+0.7
	920nm,0.3s,baz=266,slow=24,SNR=6.4						
CTA	**Charters Tower**	**35.03**	**276**	P	P	00 25 57.5	+1.5
	2.2nm,0.4s,baz=108,slow=11,SNR=5.2						
ASAR	**Alice Springs**	**44.70**	**264**	P	P	00 27 15.6	-0.9
	3.0nm,0.7s,baz=96,slow=7.7,SNR=12						
WRA	**Warramunga Arr**	**45.54**	**270**	P	P	00 27 22.2	-1.0
	6.7nm,0.8s,baz=108,slow=7.8,SNR=11						
FITZ	**Fitzroy Crossi**	**53.86**	**268**	P	P	00 28 26.5	-0.1
	6.2nm,1.1s,baz=112,slow=5.4,SNR=3.5						
FINES	**FINESS Array B**	**143.99**	**342**	PKP	PKPbc	00 38 36.9	+0.9
	1.1nm,0.6s,baz=52,slow=2.3,SNR=6.2						
NB2	**NORSAR Subarra**	**147.23**	**353**	PKP	PKPbc	00 38 46.7	+0.6
	comp=Z,0.6nm,0.7s,baz=17,slow=2.6						
AKASG	**Malin Array Be**	**150.75**	**326**	PKPbc	PKPbc	00 38 54.5	-0.8
	comp=Z,0.9nm,0.6s,baz=46,slow=3.5,SNR=3.1						
BRTR	**Keskin Array B**	**152.99**	**302**	PKPab	PKPab	00 39 13.4	+1.1
	comp=Z,0.9nm,0.8s,baz=83,slow=4.6,SNR=2.7						

IDC 07 00:24:52.9±4.9,28.°35S×176.°47W,h0km,mb4.0/2, mb1 4.3/2,mb1mx3.7/41,mbtmp4.0/2,Error ellipse: s-maj=130.5km s-min=36.7km az=132.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.56**	**234**	Pn	Pb	00 25 22.3	-0.3
	186nm,0.3s,baz=76,slow=12,SNR=5.7						
RAO				Sn	Sg	00 25 43.1	0.0
	383nm,0.3s,baz=84,slow=22,SNR=6.2						
ASAR	**Alice Springs**	**44.60**	**264**	P	P	00 33 07.0	-0.2
	1.3nm,0.5s,baz=98,slow=7.0,SNR=18						
WRA	**Warramunga Arr**	**45.41**	**269**	P	P	00 33 13.5	-0.1
	1.8nm,0.8s,baz=108,slow=8.0,SNR=8.6						
FINES	**FINESS Array B**	**143.65**	**342**	PKP	PKPdf	00 44 28.4	-0.7
	0.7nm,0.6s,baz=56,slow=3.5,SNR=7.4						

*ISCJB **07** 00:26:43.8±0.5,60.°18N±0.°04×152.°83W±0.°06, h125km±4km,mb4.1/2,Error ellipse: s-maj=6.2km s-min=4.9km az=18.1*

*NEIC **07** 00:26:45.3,60.°09N×153.°02W,h125km,MG3.1(AEIC), After AEIC.*

*IDC **07** 00:26:46.8±8.3,60.°38N×152.°96W,h131km±69km,mb3.6/2, mb1 3.6/4,mb1mx3.0/60,mbtmp3.9/4,Error ellipse: s-maj=71.1km s-min=37.1km az=16.0*

ISC 07 00:26:44.3±1.6,60.°16N±0.°07×152.°94W±0.°05, h124km±12km,n41,σ1§36/50,Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RSO	**Redoubt South**	**0.32**	**17**	*e*Pn	Pn	00 27 02.7	+0.7
RSO				*e*Sn	Sn	00 27 12.9	-2.5
HOM	**Homer**	**0.82**	**127**	*e*Pn	**Pn**	**00 27 06.0**	**+1.0**
HOM				*e*Sn	Sn	00 27 15.1	-5.5
CNPM	**China Poot**	**1.07**	**126**	*e*Pn	**Pn**	**00 27 07.9**	**+0.6**
CNPM				*e*Sn	**Sn**	**00 27 23.2**	**-1.6**
BRLK	**Bradley Lake**	**1.10**	**110**	*e*Pn	**Pn**	**00 27 08.4**	**+0.7**
BRLK				*e*Sn	**Sn**	**00 27 24.4**	**-1.0**
SPU	**Mount Spurr**	**1.12**	**23**	*e*Pn	**Pn**	**00 27 09.0**	**+1.2**
SPU				*e*Sn	Sn	00 27 26.1	+0.4
SVW2	**Sparrevohn**	**1.61**	**307**	*e*Pn	**Pn**	**00 27 13.2**	**0.0**
SVW2				*e*Sn	**Sn**	**00 27 35.0**	**-0.2**
SUA	**Susitna One**	**1.69**	**38**	*e*Pn	**Pn**	**00 27 15.9**	**+1.6**
SEW	**Seward**	**1.75**	**90**	*e*Sn	**Sn**	**00 27 36.4**	**-1.7**
RC01	**Rabbit Creek A**	**1.83**	**58**	*e*Sn	**Sn**	**00 27 40.3**	**+0.4**
PMR	**Palmer**	**2.35**	**51**	*e*Sn	**Sn**	**00 27 51.6**	**+0.2**
KDAK	**Kodiak Island**	**2.39**	**175**	*e*Pn	Pn	00 27 21.3	-1.5
KDAK				*e*Sn	Sn	00 27 47.3	-4.9
PPLA	**Purkeypile**	**2.77**	**7**	*e*Sn	**Sn**	**00 27 58.9**	**-2.4**
SML	**Sawmill**	**2.79**	**52**	*e*Sn	**Sn**	**00 27 58.7**	**-2.8**
OHAK	**Old Harbor**	**2.95**	**184**	*e*Sn	Sn	00 27 59.4	-5.7
TT01	**Tatalina**	**3.13**	**333**	*e*Pn	**Pn**	**00 27 32.8**	**+0.5**
TT01				*e*Sn	**Sn**	**00 28 08.8**	**-0.5**
TTA	**Tatalina**	**3.15**	**333**	*e*Pn	**Pn**	**00 27 33.6**	**+1.0**
TTA				*e*Sn	**Sn**	**00 28 06.2**	**-3.7**
SCM	**Sheep Creek Mo**	**3.21**	**56**	*e*Pn	**Pn**	**00 27 33.6**	**+0.2**
SCM				*e*Sn	Sn	00 28 01.6	-10
CAST	**Castle Rocks**	**3.30**	**7**	*e*Pn	**Pn**	**00 27 35.8**	**+1.2**
EYAK	**Cordova Ski Ar**	**3.59**	**81**	*e*Pn	**Pn**	**00 27 38.2**	**-0.2**
EYAK				*e*Sn	**Sn**	**00 28 18.2**	**-2.0**
DIV	**Divide**	**3.66**	**71**	*e*Pn	**Pn**	**00 27 40.6**	**+1.2**
DIV				*e*Sn	**Sn**	**00 28 20.6**	**-1.4**
KLU	**Klutina**	**3.69**	**66**	*e*Pn	**Pn**	**00 27 40.0**	**+0.3**
KLU				*e*Sn	**Sn**	**00 28 21.3**	**-1.3**
RND	**Reindeer**	**3.79**	**29**	*e*Pn	**Pn**	**00 27 41.4**	**+0.3**
RND				*e*Sn	**Sn**	**00 28 23.1**	**-2.0**
DHY	**Denali Highway**	**3.95**	**40**	*e*Pn	**Pn**	**00 27 43.9**	**+0.6**
DHY				*e*Sn	**Sn**	**00 28 29.5**	**+0.5**
BMRM	**Bremner River**	**4.19**	**75**	*e*Pn	**Pn**	**00 27 44.7**	**-1.7**
BMRM				*e*Sn	**Sn**	**00 28 34.2**	**-0.4**
BWN	**Browne**	**4.34**	**21**	*e*Pn	**Pn**	**00 27 50.2**	**+1.8**
WRH	**Wood River Hil**	**4.88**	**25**	*e*Pn	**Pn**	**00 27 56.2**	**+0.7**
MLY	**Manley**	**5.00**	**11**	*e*Pn	**Pn**	**00 27 57.6**	**+0.5**
CCB	**Clear Creek Bu**	**5.10**	**26**	*e*Pn	**Pn**	**00 27 58.7**	**+0.3**
HDA	**Harding Lake**	**5.10**	**31**	*e*Pn	**Pn**	**00 27 59.1**	**+0.6**
MENT	**Mentasta**	**5.21**	**54**	*e*Pn	**Pn**	**00 28 02.2**	**+2.1**
COLA	**College**	**5.29**	**24**	*e*Pn	**Pn**	**00 28 02.1**	**+1.2**
MDM	**Murphy Dome**	**5.29**	**22**	*e*Pn	**Pn**	**00 28 01.7**	**+0.7**
BALM	**Baldy**	**5.29**	**76**	*e*Pn	**Pn**	**00 28 02.5**	**+1.3**
BALM				*e*Sn	**Sn**	**00 28 59.1**	**-2.0**
IL1	**Eielson Array**	**5.41**	**29**	*e*Pn	**Pn**	**00 28 02.4**	**-0.2**
ILAR	**Eielson Array**	**5.41**	**29**	P	**Pn**	**00 28 02.9**	**+0.2**
	6.5nm,0.3s,baz=214,slow=14,SNR=278						
ILAR				S	**Sn**	**00 29 02.2**	**-1.5**
	0.6nm,0.3s,baz=214,slow=24,SNR=3.8						
ILB	**Eielson Array**	**5.41**	**29**	*e*Pn	**Pn**	**00 28 02.9**	**+0.2**
ILB				*e*Sn	**Sn**	**00 29 02.2**	**-1.5**
DOT	**Dot Lake**	**5.46**	**46**	*e*Sn	**Sn**	**00 29 04.2**	**-0.8**
EGAK	**Eagle**	**7.16**	**45**	*e*Pn	**Pn**	**00 28 26.4**	**+0.4**
YKA	**Yellowknife Ar**	**18.36**	**66**	P	**P**	**00 30 50.4**	**+1.5**
	0.2nm,0.3s,baz=279,slow=10.0,SNR=9.9						
SONM	**Songino Array**	**54.72**	**306**	P	P	00 36 01.2	+0.7
	1.0nm,0.4s,baz=57,slow=5.3,SNR=3.4						
ZALV	**Zalesovo Beam**	**57.27**	**324**	P	P	00 36 18.6	+0.4
	0.6nm,0.4s,baz=40,slow=6.7,SNR=3.8						

*IDC **07** 00:33:32.3±0.5,28.°74S×176.°49W,h0km,mb4.6/15, mb1 4.8/15,mb1mx4.7/28,mbtmp4.6/15,MS4.7/4, Ms1 4.7/4,ms1mx4.0/34,Error ellipse: s-maj=20.5km s-min=15.9km az=148.0*

*NEIC **07** 00:33:33.9±0.2,29.°02S×176.°64W,h10km,mb5.2/60, Error ellipse: s-maj=9.1km s-min=5.4km az=141.0*

*BJI **07** 00:33:34.8,29.°03S×176.°72W,h22km,mb5.2/26, mB5.7/25,Ms5.2/18,Ms7 5.0/19*

*ISCJB **07** 00:33:36.6±0.2,29.°08S±0.°05×176.°71W±0.°05,h36km, mb5.1/85,MS4.8/9,Error ellipse: s-maj=8.0km s-min=4.9km az=143.1*

*MOS **07** 00:33:36.7±1.1,28.°88S×176.°70W,h33km,mb5.2/29, Error ellipse: s-maj=11.3km s-min=10.7km az=48.9*

ISC 07 00:33:37.8±0.3,29.°10S±0.°05×176.°55W±0.°06,h36km, n316,σ1§75/333,mb5.2/85,MS4.9/9,23C-10D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.21**	**263**	Pn	**Pn**	**00 33 58.4**	**+0.3**
	175nm,0.3s,baz=320,slow=1.5,SNR=13						
RAO				Sn	**Sn**	**00 34 19.4**	**+6.1**
	719nm,0.3s,baz=52,slow=19,SNR=13						
RAO	**Raoul Island**	**1.21**	**263**	*e*Pn	**Pn**	**00 33 58.4**	**+0.3**
RAO				*e*Sn	**Sn**	**00 34 14.0**	**+0.8**
OUZ	**Omahuta**	**10.34**	**231**	*e*Pn	**Pn**	**00 36 03.6**	**0.0**
URZ	**Urewera**	**10.55**	**208**	Pn	**Pn**	**00 36 05.5**	**-0.8**
	1.3nm,0.3s,baz=197,slow=5.8,SNR=5.2						
URZ				Sn	**Sn**	**00 38 00.2**	**-3.0**
	2.4nm,0.3s,baz=179,slow=23,SNR=8.5						
MSVF	**Nonsavu**	**12.35**	**335**	*e*P	**Pn**	**00 36 30.4**	**-0.8**
MSVF	**Nonsavu**	**12.35**	**335**	*e*Pn	**Pn**	**00 36 30.4**	**-0.8**
BFZ	**Birch Farm**	**12.97**	**205**	*e*Pn	**Pn**	**00 36 35.5**	**-4.0**
**

MJAR **Matsushiro Arr** 77.91 324 P P 00 45 30.0 -2.0
MJAR pmax pmax
comp=Z,2.0nm,0.7s
MAJO **Matsushiro** 77.92 324 *i* P P 00 45 32.8 +0.8
MAJO pmax pmax
comp=Z,23nm,0.4s
SYO **Syowa Base** 78.66 193⇑ *e*P P 00 45 35.4 -0.2
SYO **Syowa Base** 78.66 193⇑ *es*P P 00 45 40.3 +4.7
SYO **Syowa Base** 78.66 193⇑ *e*PcP PcP 00 45 44.0 -0.5
SNAA **Sanae** 79.41 178 P P 00 45 40.7 +0.8
SNAA **Sanae** 79.41 178 ⇓ *i*P P 00 45 40.1 +0.3
SNAA **Sanae** 79.41 178 *e*P P 00 45 40.5 +0.6
comp=Z,15nm,1.2s
VNA1 **Neumayer--Stat** 80.18 176 P P 00 45 44.2 +0.3
PLCA **Paso Flores** 82.46 133 P P 00 45 56.9 +0.2
comp=Z,9.0nm,1.1s,baz=231,slow=6.9,SNR=8.6
PLCA **Paso Flores** 82.46 133 *e*P P 00 45 56.9 +0.2
comp=Z,17nm,1.1s
SRIG **Santa Rosalia** 83.30 54 *e*P P 00 46 04.7 +3.7
comp=Z,61nm,1.6s
PAGB **Antelope Grade** 83.47 43 *e*P P 00 46 04.8 +3.1
comp=Z,49nm,1.8s
YSS **Yuzh-Sakhalins** 84.14 333 *i* P P 00 46 06.2 +1.4
YSS pmax pmax
comp=Z,32nm,1.3s
KSRS **Korea Array** 84.19 319 P P 00 46 03.9 -1.4
comp=Z,2.3nm,0.7s,baz=133,slow=5.7,SNR=7.1
KS15 **Wonju Array Si** 84.21 319 *e*P P 00 46 03.9 -1.5
KSAR **Wonju Array Be** 84.21 319 P P 00 46 03.9 -1.5
KSAR **Wonju Array Be** 84.21 319 P P 00 46 03.9 -1.5
VES **Vestal, Richgr** 84.24 44 P P 00 46 06.2 +0.6
baz=228
EDW2 **Edwards Air Fo** 84.27 45 P P 00 46 06.5 +0.6
baz=229
KCPM **Cahto Peak** 84.32 38 *e*P P 00 46 07.7 +1.6
comp=Z,12μm,0.6s
PFO **Pinyon Flats O** 84.40 47 P P 00 46 07.7 +1.1
PFO pmax pmax
comp=Z,8.0nm,2.3s
LRMC **Laurel Mtn Rad** 84.85 45 P P 00 46 09.9 +1.0
baz=229
PETK **Petropavlovsk-** 84.89 345 P P 00 46 07.1 -1.4
comp=Z,4.6nm,0.7s,baz=117,slow=8.5,SNR=5.3
PEA1 **Petropavlovsk-** 84.89 345 *e*P P 00 46 07.1 -1.4
CMB **Columbia Colle** 84.96 41 *e*P P 00 46 09.9 +0.7
CMB pmax pmax
comp=Z,21nm,1.5s
CMB **Columbia Colle** 84.96 41 *e*P P 00 46 09.9 +0.7
comp=Z,21nm,1.5s
AFDM **Forest Hills D** 85.25 40 *e*P P 00 46 10.0 -0.6
comp=Z,14nm,1.4s
HEC **Hector,Ludlow** 85.27 46 P P 00 46 11.2 +0.3
baz=230
GSC **Goldstone, Bar** 85.28 45 P P 00 46 10.7 -0.3
baz=229
GSC **Goldstone, Bar** 85.28 45 *e*P P 00 46 07.7 -3.3
GSC pmax pmax
comp=Z,37nm,1.8s
GSC **Goldstone, Bar** 85.28 45 *e*P P 00 46 07.7 -3.3
comp=Z,37nm,1.8s
MPMC **Manual Prospec** 85.35 44 P P 00 46 11.4 -0.1
baz=229
ORV **Oroville** 85.37 39 *e*P P 00 46 11.7 +0.5
ORV pmax pmax
comp=Z,23nm,1.4s
ORV **Oroville** 85.37 39 *e*P P 00 46 11.7 +0.5
comp=Z,22nm,1.4s
WDC **Whiskeytown Da** 85.52 38 *e*P P 00 46 13.2 +1.3
WDC pmax pmax
comp=Z,24nm,1.3s
WDC **Whiskeytown Da** 85.52 38 *e*P P 00 46 13.2 +1.3
comp=Z,24nm,1.3s
IRM **Iron Mountain** 85.59 47 P P 00 46 13.8 +1.3
baz=230
O03D **Paynes Creek** 85.72 39 P P 00 46 13.7 +0.7
baz=226
WAKR **Walker** 85.82 41 *e*P P 00 46 14.9 +1.1
comp=Z,42nm,1.7s
GRAC **Grapevine Rang** 86.04 44 P P 00 46 14.7 0.0
baz=229
L02D **Cave Junction,** 86.07 36 P P 00 46 13.7 -0.9
baz=224
PNTR **Pine Nut** 86.12 41 *e*P P 00 46 16.4 +1.1
TVH2 **Borealis Mine** 86.13 42 *e*P P 00 46 16.6 +1.2
comp=Z,12nm,1.4s
KULM **Kulim** 86.28 278 *e*P P 00 46 16.4 0.0
comp=Z,46nm,1.5s
NJ2 **Nanjing** 86.38 310 *e*P P 00 46 14.6 -1.7
NJ2 pmax pmax
comp=Z,23nm,1.0s
PSI **Prapat** 86.57 275 *e*P P 00 46 16.0 -2.0
PSI *e*'PP pP 00 46 26.8 -2.5
PSI **Prapat** 86.57 275 *e*P P 00 46 16.0 -2.0
PSI *ep*P pP 00 46 26.8 -2.5
PAHR **Pah Rah Range** 86.67 40 *e*P P 00 46 19.4 +1.6
TPNV **Topopah Spring** 86.69 44 P P 00 46 18.0 0.0
baz=230
TPNV **Topopah Spring** 86.69 44 *e*P P 00 46 18.5 +0.5
TPNV pmax pmax
comp=Z,19nm,1.4s
TPNV **Topopah Spring** 86.69 44 *e*P P 00 46 18.4 +0.5
comp=Z,18nm,1.4s
USRK **Uesuriysk Ar.** 86.79 326 P P 00 46 17.2 -0.9
comp=Z,3.9nm,0.9s,baz=143,slow=3.1,SNR=9.8
GSI **Gunungsitoli** 87.02 273 *e*P P 00 46 17.4 -2.6
comp=Z,156nm,1.8s
TUC **Tucson** 87.32 51 P P 00 46 22.6 +1.5
baz=233
TUC **Tucson** 87.32 51 *e*P P 00 46 21.4 +0.3
TUC pmax pmax
comp=Z,23nm,1.4s
TUC **Tucson** 87.32 51 *e*P P 00 46 21.4 +0.3
comp=Z,23nm,1.4s
R11A **Troy Canyon, C** 87.99 43 P P 00 46 22.3 -2.0
baz=230
R11A **Troy Canyon, C** 87.99 43 *e*P P 00 46 25.9 +1.6
comp=Z,13nm,1.9s
MDJ **Mudanjiang** 88.29 325 P P 00 46 26.0 +0.7
MDJ pmax pmax
comp=Z,8.0nm,0.9s
MDJ pmax pmax
comp=Z,330nm,7.5s
TRTT **Trang** 88.36 280 P P 00 46 29.3 +2.9
comp=Z,22nm,1.6s
CHBT **CHBT** 88.53 285 P P 00 46 20.5 -6.6
WHN **Wuhan** 88.59 306 P P 00 46 27.0 0.0
WHN pmax pmax
comp=Z,42nm,0.9s
WHN LR LR
comp=Z,590nm,21.4s
U15A **North Rim** 88.83 47 *e*P P 00 46 29.9 +1.5
comp=Z,41nm,1.8s
WVOR **Wild Horse Val** 88.92 39 *e*P P 00 46 29.6 +1.1
WVOR pmax pmax
comp=Z,7.0nm,1.2s
WVOR **Wild Horse Val** 88.92 39 *e*P P 00 46 29.6 +1.1
comp=Z,7.1nm,1.2s
SKNT **Sakolnakorn** 89.28 290 P P 00 46 31.8 +1.2
comp=Z,34nm,1.1s
MTPU **Mount Pierson** 89.88 45 *e*P P 00 46 34.1 +0.7
comp=Z,33nm,1.7s
CN2 **Changchun** 89.89 322 *e*P P 00 46 34.7 +1.9
CN2 pmax pmax
comp=Z,20nm,0.7s
KHON **Khomkaen** 89.91 289 P P 00 46 37.5 +3.9
comp=Z,15nm,0.9s
NONG **Nongkai** 90.51 290 P P 00 46 37.4 +1.1
comp=Z,31nm,1.4s,comp=Z,6μm
KLR **Kul'dur** 90.56 329 P P 00 46 35.4 -0.5
comp=Z,0.6nm,0.4s,baz=120,slow=8.1,SNR=4.5
TX31 **Lajitas Ar. Si** 90.62 57 *e*P P 00 46 35.9 -0.9
LTX **Lajitas** 90.62 57 *e*P P 00 46 36.1 -0.7
LTX **Lajitas** 90.62 57 *e*P P 00 46 36.1 -0.7
TXAR **Lajitas Array** 90.62 57 P P 00 46 36.1 -0.7
comp=Z,4.6nm,1.2s,baz=209,slow=7.2,SNR=11
G08A **Pilot Rock** 90.67 37 *e*P P 00 46 37.1 +0.6
comp=Z,36nm,1.8s
MNTX **Cornudas Mount** 90.70 54 P P 00 46 37.3 +0.3
baz=236
MNTX **Cornudas Mount** 90.70 54 *e*P P 00 46 38.6 +1.7
comp=Z,9.2nm,1.4s
LAZ **Ladron** 91.01 51 *e*P P 00 46 39.5 +0.9
MFID **Camas Ranch** 91.12 39 *e*P P 00 46 40.4 +1.7
comp=Z,15nm,1.5s
BGU **Big Grassy Mou** 91.15 43 *e*P P 00 46 40.6 +1.6
comp=Z,11nm,1.7s

BNM **Barren Site** 91.22 51 *e*P P 00 46 41.8 +2.3
BMO **Blue Mountains** 91.25 38 *e*P P 00 46 39.1 -0.1
comp=Z,8.4nm,1.3s
SRU **San Rafael Swe** 91.57 45 *e*P P 00 46 42.8 +1.8
SRU pmax pmax
comp=Z,17nm,1.6s
SRU **San Rafael Swe** 91.57 45 *e*P P 00 46 42.8 +1.8
comp=Z,17nm,1.6s
PBKT **Sadao Pong** 91.57 288 P P 00 46 43.2 +2.0
comp=Z,16nm,1.6s,comp=Z,1μm
SPUT **South Promonto** 91.73 43 *e*P P 00 46 41.8 +0.1
comp=Z,15nm,1.4s
ANMO **Albuquerque** 91.78 51 P P 00 46 41.5 -0.6
baz=235
ANMO **Albuquerque** 91.78 51 *e*P P 00 46 41.9 -0.2
ANMO pmax pmax
comp=Z,17nm,1.6s
ANMO **Albuquerque** 91.78 51 *e*P P 00 46 41.9 -0.2
comp=Z,17nm,1.6s
LOEI **Loei** 91.79 289 P P 00 46 42.5 +0.2
comp=Z,8.6nm,1.0s,comp=Z,622nm
HVU **Hansel Valley** 91.83 42 *e*P P 00 46 42.7 +0.6
HVU pmax pmax
comp=Z,15nm,1.3s
HVU **Hansel Valley** 91.83 42 *e*P P 00 46 42.7 +0.6
comp=Z,15nm,1.3s
ENH **Enshi** 91.92 304 *e*P P 00 46 43.4 +0.7
comp=Z,92nm,1.3s
HLID **Hailey** 92.00 40 P P 00 46 43.0 +0.1
baz=231
HLID **Hailey** 92.00 40 *e*P P 00 46 43.7 +0.8
comp=Z,15nm,1.6s
GYA **Guiyang** 92.01 299 P P 00 46 44.2 +0.9
GYA pP pP 00 46 53.0 -1.7
GYA SKS **SKSac** 00 57 14.4 +0.5
GYA S **S** 00 57 41.2 -1.7
GYA SS **SS** 01 03 54.8 +1.8
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,7.0s
GYA LR LR
comp=Z,560nm,22.2s
GYA LR LR
comp=Z,490nm,21.6s
GYA LR LR
comp=Z,540nm,20.5s
F10A **Beach Ranch, E** 92.03 37 *e*P P 00 46 43.2 +0.4
comp=Z,24nm,1.6s
TCUT **Tcone Canyon** 92.23 43 *e*P P 00 46 45.3 +1.2
comp=Z,62nm,1.8s
S22A **4UR Ranch, Cre** 93.12 48 P P 00 46 48.9 +0.5
baz=235
S22A **4UR Ranch, Cre** 93.12 48 *e*P P 00 46 49.3 +0.9
comp=Z,11nm,1.5s
LVC **Limon Verde** 93.44 118 *e*P P 00 46 49.1 -1.3
comp=Z,21nm,1.4s
MCMT **McKenzie Canyo** 93.67 40 *e*P P 00 46 49.6 -1.1
MSTX **Muleshoe** 93.78 53 P P 00 46 49.9 -1.3
baz=237
MSTX **Muleshoe** 93.78 53 *e*P P 00 46 50.1 -1.2
comp=Z,5.2nm,0.8s
SDCO **Great Sand Dun** 93.99 49 P P 00 46 51.9 -0.5
baz=236
SDCO **Great Sand Dun** 93.99 49 *e*P P 00 46 52.9 +0.5
comp=Z,5.8nm,1.4s
CM31 **Chiang Mai Arr** 94.17 289 *e*P P 00 46 53.4 +0.1
CMAR **Chiang Mai Arr** 94.17 289 P P 00 46 53.4 +0.1
comp=Z,1.1nm,0.3s,baz=137,slow=3.0,SNR=16
BW06 **Boulder Array** 94.33 43 *e*P P 00 46 52.9 -0.8
PD31 **Pinedale Array** 94.33 43 *e*P P 00 46 52.1 -1.6
PDAR **Pinedale Array** 94.33 43 P P 00 46 52.1 -1.6
comp=Z,0.4nm,0.4s,baz=116,slow=2.1,SNR=4.6
CHTO **Chiang Mai** 94.35 289 P P 00 46 55.7 +1.6
CHTO **Chiang Mai** 94.35 289 *e*P P 00 46 52.6 -1.5
CHTO pmax pmax
comp=Z,19nm,1.6s
CHTO **Chiang Mai** 94.35 289 *e*P P 00 46 52.6 -1.5
comp=Z,19nm,1.6s
XAN **Xi'an** 94.35 307 SKS **SKSac** 00 57 31.0 +4.8
XAN **Xi'an** 94.35 307 S **S** 00 58 11.6 +8.5
XAN pmax pmax
comp=Z,8.0nm,1.5s
XAN LR LR
comp=E,250nm,23.3s
XAN LR LR
comp=Z,290nm,22.3s
FLWY **Flagg Ranch** 94.44 41 *e*P P 00 46 54.6 +0.4
comp=Z,17nm,1.3s
433A **Art** 94.74 57 P P 00 46 54.3 -1.4
baz=239
BOZ **Bozeman (W)** 94.82 40 P P 00 46 55.6 -0.2
baz=233
BOZ **Bozeman (W)** 94.82 40 *e*P P 00 46 56.4 +0.6
BOZ pmax pmax
comp=Z,13nm,1.4s
BOZ **Bozeman (W)** 94.82 40 *e*P P 00 46 56.4 +0.6
comp=Z,13nm,1.4s
WRH **Wood River Hil** 95.89 12 *e*P P 00 47 00.1 0.0
comp=Z,13nm,1.4s
HHC **Hu-ho-hao-te** 96.25 314 *e*P P 00 47 02.4 0.0
HHC PP **PP** 00 50 55.4 -1.0
HHC SKS **SKSac** 00 57 36.8 +0.6
HHC S **S** 00 58 18.7 -0.8
HHC sS sS 00 58 32.3 -6.2
HHC SS **SS** 01 04 46.2 -6.8
HHC pmax pmax
comp=Z,19nm,0.7s
HHC pmax pmax
comp=Z,180nm,5.9s
HHC LR LR
comp=Z,78nm,11.1s
HHC LR LR
comp=Z,120nm,11.1s
HHC LR LR
comp=Z,170nm,18.5s
MDM **Murphy Dome** 96.31 12 *e*P P 00 46 59.9 -2.1
comp=Z,27nm,1.8s
IL1 **Eielson Array** 96.39 12 *e*P P 00 47 00.4 -1.9
ILAR **Eielson Array** 96.39 12 P P 00 47 00.1 -2.2
comp=Z,1.1nm,0.9s,baz=214,slow=4.4,SNR=8.8
ILB **Eielson Array** 96.39 12 *e*P P 00 47 00.1 -2.2
CD2 **Chengdu** 96.47 302 *e*P P 00 47 04.0 +0.4
CD2 pP pP 00 47 12.6 -2.4
CD2 PP **PP** 00 50 57.9 -0.4
CD2 SKS **SKSac** 00 57 38.6 +0.9
CD2 S **ScS** 00 58 22.6 +0.4
CD2 sS sS 00 58 37.4 -3.4
CD2 SS **SS** 01 04 57.7 +1.3
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,6.0s
LPAZ **La Paz** 97.51 113 LR LR 01 23 28.0
comp=Z,138nm,20.2s,baz=312,slow=31
RSSD **Black Hills** 98.41 44 *e*P P 00 47 09.4 -2.8
RSSD pmax pmax
comp=Z,8.0nm,1.3s
RSSD **Black Hills** 98.41 44 *e*P P 00 47 09.4 -2.8
comp=Z,7.5nm,1.3s
CPUP **Villa Florida** 99.78 127 LR LR 01 27 45.2
comp=Z,362nm,18.2s,baz=277,slow=32
WMQ **Urumqi** 113.42 308 *e*PKP **PKiKP** 00 52 11.6 -0.2
MK01 **Makanchi Array** 117.89 310 *e*PKPdf **PKPdf** 00 52 19.8 -0.5
ZALV **Zalesovo Beam** 117.90 319 PKP **PKPdf** 00 52 19.4 -0.6
comp=Z,0.5nm,0.7s,baz=151,slow=3.3,SNR=4.6
ZAA1 **Zalesovo Array** 117.90 319 *e*PKPdf **PKPdf** 00 52 19.4 -0.6
MK32 **Makanchi Array** 117.90 310 *e*PKPdf **PKPdf** 00 52 20.1 -0.2
MKAR **Makanchi Array** 117.90 310 PKP **PKPdf** 00 52 20.1 -0.2
comp=Z,1.0nm,0.9s,baz=93,slow=2.9,SNR=5.2
KSH **Kashi** 120.66 301 *e*PKP **PKPdf** 00 52 26.1 +0.1
KSH *es*PKP 00 52 40.0
KSH *e*PP **PP** 00 53 59.3 +4.9
KSH SKS **SKSdf** 00 59 32.7 -2.6
KSH SKKS **SKKSac** 01 00 47.1 -3.9
KSH AMB AMB
comp=Z,78nm,4.4s
KSH LR LR
comp=Z,250nm,8.1s
KSH LR LR
comp=Z,200nm,10.8s
KSH LR LR
comp=Z,160nm,10.3s
KURK **Kurchatov** 121.06 314 PKIKP **PKPdf** 00 52 25.6 -0.6
KURK pmax pmax
comp=Z,1.0nm,0.8s

KURK **Kurchatov** 121.06 314 *e*PKPdf **PKPdf** 00 52 25.6 -0.6
KURBB **Kurchatov Arra** 121.10 314 PKP **PKPdf** 00 52 25.6 -0.6
comp=Z,1.0nm,0.9s,baz=92,slow=1.9,SNR=8.5
AAK **Ala-Archa** 122.44 304 *i* PKIKP **PKPdf** 00 52 28.8 -0.5
VOSK **Vostochnaya** 125.98 316 *e*PKIKP **PKPdf** 00 52 35.0 -0.6
VOSK **Vostochnaya** 125.98 316 *e*PKPdf **PKPdf** 00 52 35.0 -0.6
BVAR **Borovoye Array** 126.35 316 PKP **PKPdf** 00 52 35.9 -0.4
comp=Z,0.9nm,0.7s,baz=64,slow=3.7,SNR=7.1
BRVK **Borovoye** 126.41 316 *i* PKIKP **PKPdf** 00 52 38.1 +1.7
ZRNK **Zerenda** 127.19 316 *e*PKIKP **PKPdf** 00 52 36.1 -1.8
ZRNK **Zerenda** 127.19 316 *e*PKPdf **PKPdf** 00 52 36.1 -1.8
KLMR **Klimovskoe** 140.19 333 *e*PKIKP **PKPdf** 00 53 01.3 -0.7
KLMR pmax pmax
comp=Z,9.0nm,1.3s
FIA1 **FINESS Array S** 144.34 342 *e*PKPdf **PKPab** 00 53 06.6 -0.8
FIA0 **FINESS Array S** 144.34 342 *e*PKIKP **PKPab** 00 53 06.2 -1.2
FIA0 **FINESS Array S** 144.34 342 *e*PKPdf **PKPab** 00 53 06.2 -1.2
FINES **FINESS Array B** 144.34 342 PKP **PKPab** 00 53 06.2 -1.2
comp=Z,4.0nm,0.8s,baz=49,slow=3.5,SNR=15
TBLG **Delisi** 144.40 302 P PKPbc 00 53 08.8 +0.1
TBLG **Delisi** 144.40 302 *e*PKIKP PKPbc 00 53 08.7 0.0
GNI **Garni** 144.57 299 PKP **PKPdf** 00 53 10.0 -0.6
comp=Z,5.1nm,0.9s,baz=178,slow=3.6,SNR=7.9
OBN **Obninsk** 144.80 327 *i* PKIKP **PKPab** 00 53 08.1 -1.2
OBN pmax pmax
comp=Z,21nm,1.1s
OBN **Obninsk** 144.80 327 *e*PKPdf **PKPdf** 00 53 09.8 -0.5
ZEI **Tsey** 144.86 304 *i* PKIKP **PKPab** 00 53 09.4 -0.9
ZEI pmax pmax
comp=Z,49nm,1.0s
GOF **Gofitskoye** 145.02 308⇑ *e*PKIKP **PKPdf** 00 53 11.4 +0.3
GOF pmax pmax
comp=Z,25nm,0.9s
ONI **Oni** 145.22 304 P **PKPdf** 00 53 11.6 -0.1
ONI **Oni** 145.22 304 *e*PKIKP **PKPdf** 00 53 11.5 -0.1
BGD **Bogdanovka** 145.31 301 P **PKPab** 00 53 12.5 +0.5
AKH **Akhalkalaki** 145.37 302 ⇓ *i*P **PKPab** 00 53 12.5 +0.3
AKH **Akhalkalaki** 145.37 302 P **PKPab** 00 53 12.8 +0.6
AKH **Akhalkalaki** 145.37 302 *e*PKIKP **PKPab** 00 53 12.7 +0.6
VSR **Storozhevoye** 145.40 320 *e*PKP2 **PKPbc** 00 53 09.5 -2.0
VSR pmax pmax
comp=Z,30nm,1.2s
KBZ **Khabaz** 145.41 306 PKPbc **PKPdf** 00 53 10.9 -0.8
comp=Z,8.0nm,1.1s,baz=75,slow=3.9,SNR=11
KVAR **Kislovodsk Arr** 145.50 306 PKPbc **PKPbc** 00 53 12.1 -0.1
comp=Z,18nm,1.1s,baz=343,slow=3.7,SNR=15
KIV **Kislovodsk** 145.51 306 *e*PKIKP **PKPbc** 00 53 12.1 -0.1
KIV **Kislovodsk** 145.51 306 *e*PKPdf **PKPbc** 00 53 12.1 -0.1
CHVG **Ch'k'valeri** 146.19 304 P **PKPab** 00 53 14.9 -0.1
NC303 **NORSAR Array S** 147.44 353 *e*PKPbc **PKPbc** 00 53 17.2 0.0
NB2 **NORSAR Subarra** 147.64 353 PKP **PKPbc** 00 53 17.2 -0.6
comp=Z,12nm,1.1s,baz=13,slow=2.9
NB200 **NORSAR Array S** 147.64 353 *e*PKPdf **PKPdf** 00 53 16.3 +1.3
NOA **NORSAR Array B** 147.64 353 PKPbc **PKPdf** 00 53 16.3 +1.3
comp=Z,3.0nm,0.9s,baz=16,slow=2.8,SNR=8.0
NBO02 **NORSAR Array S** 147.67 353 *e*PKPdf **PKPbc** 00 53 16.9 -1.0
MZRK **Al-Mazaregh** 148.04 292 *e*P **PKPab** 00 53 24.7 +2.2
KBSD **Kabsdagh** 148.08 294 *e*P **PKPbc** 00 53 20.4 +0.6
SFNV **Sufian** 148.46 293 *e*P **PKPab** 00 53 25.0 +0.7
ANN **Anapa** 148.92 310 *i* PKIKP **PKPdf** 00 53 18.8 +1.2
ANN *e* 00 53 25.3
ANN pmax pmax
comp=Z,40nm,1.4s
MICGM **Minsk** 149.07 332 *e* **PKPbc** 00 53 22.0 +0.4
MNK **Minsk** 149.07 332 *e*PKP2 **PKPbc** 00 53 22.0 +0.4
KSRV **Kasrt alli** 149.38 292 *e*P PKPab 00 53 48.8 +21
ZALF **Zalf** 150.79 286 *e*P **PKPab** 00 53 34.1 +0.3
ROOS **tl_alroos** 150.84 289 *e*P **PKPbc** 00 53 26.5 -0.2
RABH **Abou Rabah** 150.90 289 *e*P **PKPbc** 00 53 26.5 -0.3
AKASG **Malin Array Be** 151.00 325 PKPbc **PKPbc** 00 53 25.7 -0.8
comp=Z,0.6nm,0.4s,baz=47,slow=3.0,SNR=5.1
AKBB **Malin Array Si** 151.00 325 *e*PKIKP **PKPbc** 00 53 25.7 -0.7
AKBB **Malin Array Si** 151.00 325 *e*PKPbc **PKPbc** 00 53 25.7 -0.7
AK11 **Malin Array Si** 151.04 325 *e*PKPbc **PKPbc** 00 53 26.1 -0.4
SIM **Simferopol'** 151.07 312 *i* PKIKP **PKPbc** 00 53 27.8 +1.0
SIM pmax pmax
comp=Z,12nm,0.8s
ASF **Jabal al Asfar** 151.13 285 PKPbc **PKPbc** 00 53 28.2 +0.7
comp=Z,2.3nm,0.6s,baz=334,slow=1.4,SNR=7.0
KFRA **Kufra** 151.21 291 *e*P **PKPab** 00 53 35.7 +0.1
DRWC **Darouich** 151.21 294 *e*P **PKPab** 00 53 42.4 +6.8
SALA **Sala** 151.29 286 *e*P **PKPbc** 00 53 28.6 +0.7
BTCH **Batrach** 151.43 293 *e*P **PKPbc** 00 53 27.4 -0.6
MARH **Ras Al Marh** 151.51 288 *e*P **PKPbc** 00 53 27.7 -0.9
HAWK **Haweek** 151.56 289 *e*P **PKPbc** 00 53 28.9 +0.5
BIDA **Albida** 151.61 290 *e*P **PKPdf** 00 53 23.4 +1.2
ARNB **Al Arnab** 151.84 292 *e*P **PKPdf** 00 53 17.6 -4.9
TCHB **Talchebab** 151.93 286 *e*P **PKPab** 00 53 42.4 +3.8
BRBR **Barbar** 151.95 287 *e*P **PKPab** 00 53 37.8 -1.1
MMAI **Mount Meron Ar** 152.41 286 PKPbc **PKPbc** 00 53 31.4 +1.1
comp=Z,8.2nm,1.0s,baz=38,slow=4.2,SNR=8.0
EIL **Elat** 152.59 279 PKPbc **PKPbc** 00 53 31.6 +0.9
comp=Z,4.6nm,0.8s,baz=59,slow=4.5,SNR=4.7
SORM **Soroca** 153.00 322 ⇑ *i*P **PKPbc** 00 53 30.6 -0.4
SORM **Soroca** 153.00 322 ⇑ PKIKP **PKPbc** 00 53 30.6 -0.4
BR101 **Keskin Array S** 153.05 301 *e*PKPbc **PKPbc** 00 53 31.6 -0.1
BR101 *e*PKPab **PKPab** 00 53 44.1 +0.8
BR131 **Keskin Array S** 153.05 301 *e*PKPbc **PKPbc** 00 53 32.3 +0.6
BRTR **Keskin Array B** 153.05 301 PKPbc **PKPbc** 00 53 31.6 -0.1
comp=Z,2.9nm,1.1s,baz=90,slow=0.4,SNR=11
BRTR PKPab **PKPab** 00 53 44.1 +0.8
comp=Z,6.1nm,0.9s,baz=127,slow=4.3,SNR=8.1
ANTO **Ankara** 153.65 302 *e*PKP2 **PKPab** 00 53 47.8 +2.2
ANTO **Ankara** 153.65 302 *e*PKPab **PKPab** 00 53 47.8 +2.2
BR231 **Keskin MP Arra** 153.67 302 *e*PKPbc **PKPbc** 00 53 32.2 -0.8
CFR **Carcaliu** 154.75 316 ⇑ *i*P **PKPbc** 00 53 35.0 +0.1
CFR **Carcaliu** 154.75 316 ⇑ PKIKP **PKPbc** 00 53 35.0 +0.1
TESR **Tescani** 154.89 320 ⇑ *i*P **PKPab** 00 53 50.2 -0.4
BURAR **Bucovina Array** 154.99 324 ⇑ *i*P **PKPab** 00 53 50.1 -1.0
BURAR **Bucovina Array** 154.99 324 ⇑ PKP2 **PKPab** 00 53 50.1 -1.0
VRI **Vrincioaia** 155.21 319 ⇓ *i*P **PKPab** 00 53 51.8 -0.2
VRI **Vrincioaia** 155.21 319 ⇓ PKP2 **PKPab** 00 53 51.8 -0.2
PLOR **Plostina** 155.27 319 ⇑ *i*P **PKPab** 00 53 52.0 -0.3
PLOR **Plostina** 155.27 319 ⇑ PKP2 **PKPab** 00 53 52.0 -0.3
KOLS **Kolonicke sedl** 155.51 329 *e*PKP2 **PKPab** 00 53 53.7 +0.6
KOLS **Kolonicke sedl** 155.51 329 *e*PKP **PKPab** 00 53 53.7 +0.6
MLR **Muntele Rosu** 155.88 319 PKPab **PKPab** 00 53 54.9 -0.1
comp=Z,0.3nm,0.4s,baz=349,slow=4.8,SNR=4.1
CRVS **Cervenica-Dubn** 155.89 330 *e*PKP2 **PKPab** 00 53 55.0 +0.2
CRVS **Cervenica-Dubn** 155.89 330 *e*PKP **PKPab** 00 53 55.0 +0.2
DOPR **Dopca** 155.91 320 ⇑ *i*P **PKPab** 00 53 56.2 +1.2
VOIR 156.42 320 ⇓ *i*P **PKPab** 00 53 59.3 +2.0
VOIR 156.42 320 ⇓ PKP2 **PKPab** 00 53 59.3 +2.0
OKC **Ostrava-Krasne** 156.47 336 *e*PKPAB **PKPab** 00 53 55.6 -1.6
OKC **Ostrava-Krasne** 156.47 336 *e*PKP2 **PKPab** 00 53 55.6 -1.6
KECS **Kecovo** 156.63 331 *e*PKIKP **PKPdf** 00 53 28.4 -0.4
KECS **Kecovo** 156.63 331 *e*PKP **PKPdf** 00 53 28.4 -0.4
KECS *e* 00 54 09.6
DPC **Dobruska-Polom** 156.65 339 *ex* x 00 53 47.0
DPC *e*PKPAB **PKPab** 00 53 57.5 -0.5
CLL **Collm** 156.69 345 ⇑ *i*PKPab **PKPab** 00 53 57.1 -1.0
comp=Z,14nm,1.6s
CLL *ep*PKPab **pPKPab** 00 54 07.0 -2.5
CLL **Collm** 156.69 345 ⇑ *i*PKP2 **PKPab** 00 53 57.1 -1.0
CLL pmax pmax
comp=Z,14nm,1.6s
ARR **Arges** 156.70 320 ⇑ *i*P **PKPab** 00 53 59.9 +1.4
DRGR 156.81 325 ⇑ *i*P **PKPab** 00 53 59.2 +0.3
DRGR 156.81 325 ⇑ PKP2 **PKPab** 00 53 59.2 +0.3
BRG **Berggiesshubel** 156.86 343 *e*P **PKPab** 00 53 59.2 +0.4
comp=Z,9.9nm,1.3s
BRG *e* 00 54 11.3
comp=Z,10nm,1.2s
PVCC **Panska Ves** 157.01 342 *e*PKPAB **PKPab** 00 53 58.5 -1.0
PVCC **Panska Ves** 157.01 342 *e*PKP2 **PKPab** 00 53 58.5 -1.0
VYHS **Vyhne** 157.31 333 *e*PKP2 **PKPab** 00 53 59.4 -1.5
VYHS *e* 00 57 42.4
VYHS **Vyhne** 157.31 333 *e*PKP **PKPab** 00 53 59.4 -1.5
VYHS *e*PP **PP** 00 57 42.4 +2.9
PRU **Pruhonice** 157.50 341 *e*PKPAB **PKPab** 00 54 01.0 -0.6
PRU *ex* x 00 54 14.8
PRU **Pruhonice** 157.50 341 *e*PKP2 **PKPab** 00 54 01.0 -0.6
GZR **Gura Zlata** 157.71 322 ⇑ *i*P **PKPab** 00 54 03.8 +1.0
GZR **Gura Zlata** 157.71 322 ⇑ PKP2 **PKPab** 00 54 03.8 +1.0
NKC **Novy Kostel** 157.82 345 *e*PKPAB **PKPab** 00 54 02.9 -0.1
NKC *ex* x 00 54 15.8
NKC **Novy Kostel** 157.82 345 *e*PKP2 **PKPab** 00 54 02.9 -0.1
BZS **Buzias** 158.17 324 ⇓ *i*P **PKPab** 00 54 02.7 -2.0
BZS **Buzias** 158.17 324 ⇓ PKP2 **PKPab** 00 54 02.7 -2.0
KHC **Kasperske Hory** 158.55 342 ⇑ *e*PKP PKPdf 00 53 41.0 +10
KHC *e*PKPAB **PKPab** 00 54 06.8 +0.6
KHC *ex* x 00 54 17.7

KHC	**Kasperske Hory**	**158.55**	**342**	*e*PKIKP	PKPdf	00 53 41.0 +10
MDVR	**Moldovita**	**158.68**	**322**	ǁ *i*P	**PKPab**	**00 54 07.3 +0.3**
VTS	**Vitosha**	**159.15**	**315**	ǁ *i*P	**PKPab**	**00 54 08.2 -1.1**
VTS	**Vitosha**	**159.15**	**315**	ǁ PKP2	**PKPab**	**00 54 08.2 -1.1**
VTS	**Vitosha**	**159.15**	**315**	*e*PKPab	**PKPab**	**00 54 09.2 0.0**
LAST	**Lasithi**	**160.41**	**294**	*e*PKPab	**PKPab**	**00 54 15.1 +0.2**
FUORN	**Ofenpass-Fuorn**	**161.72**	**345**	*e*PKPab	**PKPab**	**00 54 20.2 -0.2**
TOA0	**Torodi Ar. Sit**	**164.04**	**174**	*e*PKPdf	**PKPdf**	**00 53 39.0 +1.0**
TOA0				*e*PKPab	**PKPab**	**00 54 31.7 +0.8**
TORD	**Torodi Ar. Bea**	**164.04**	**174**	PKP	**PKPdf**	**00 53 38.3 +0.4**
	comp=Z,1.8nm,1.1s,baz=217,slow=1.6,SNR=3.6					
TORD				PKPab	**PKPab**	**00 54 31.5 +0.6**
	comp=Z,2.0nm,0.9s,baz=184,slow=3.9,SNR=7.1					
TOA1	**Torodi Ar. Sit**	**164.04**	**174**	*e*PKPdf	**PKPdf**	**00 53 38.3 +0.4**
TOA1				*e*PKPab	**PKPab**	**00 54 31.5 +0.6**

*ISCJB **07** 00:42:11.8±0.5,39°.09N±0'.04×29°.12E±0'.04,h12km±5km, Error ellipse: s-maj=8.0km s-min=4.8km az=148.4*
*CSEM **07** 00:42:11.8±0.1,39°.09N×29°.12E,h10km,MD2.7, Error ellipse: s-maj=3.5km s-min=2.2km az=136.0*
*ISK **07** 00:42:11.7,39°.12N×29°.14E,h9km,MD2.7*
*DDA **07** 00:42:11.7,39°.09N×29°.11E,h7km,Md2.8*

ISC 07 00:42:11.9±0.9,39°.09N±0'.04×29°.12E±0'.03,h14km±9km, n20,σ0§52/30,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.23**	**101**	*e*PG	**Pg**	**00 42 16.8**	**-0.3**
GEDZ				*e*SG	**Sg**	**00 42 20.5**	**-0.1**
GEDZ	**Gediz**	**0.23**	**101**	*e*Pg	**Pg**	**00 42 16.8**	**-0.3**
GEDZ				*e*Sg	**Sg**	**00 42 20.5**	**-0.1**
GDZ	**Gediz**	**0.28**	**90**	*i* P	**Pg**	**00 42 17.8**	**-0.2**
GDZ				*i* S	**Sg**	**00 42 22.3**	**+0.3**
GDZ	**Gediz**	**0.28**	**90**	P	**Pg**	**00 42 17.8**	**-0.2**
GDZ				S	**Sg**	**00 42 22.3**	**+0.3**
DEMI	**Demirci**	**0.31**	**262**	*i* P	**Pg**	**00 42 18.6**	**+0.1**
DEMI				*i* S	**Sg**	**00 42 22.9**	**0.0**
DEMI	**Demirci**	**0.31**	**262**	P	**Pg**	**00 42 18.6**	**+0.1**
DEMI				S	**Sg**	**00 42 22.9**	**0.0**
TVSB	**Tavsanli**	**0.45**	**37**	*e*PG	**Pg**	**00 42 20.6**	**-0.3**
TVSB				*e*SG	**Sg**	**00 42 26.2**	**-0.8**
TVSB	**Tavsanli**	**0.45**	**37**	*e*Pg	**Pg**	**00 42 20.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**00 42 26.2**	**-0.8**
KULA	**Kula-Manisa**	**0.67**	**212**	*e*PG	**Pb**	**00 42 25.8**	**+0.3**
KULA	**Kula-Manisa**	**0.67**	**212**	*e*Pg	**Pb**	**00 42 25.8**	**+0.3**
MANT	**Manisa**	**0.74**	**216**	*i* P	**Pg**	**00 42 26.0**	**-0.3**
MANT				*i* S	**Sg**	**00 42 34.8**	**-1.3**
MANT	**Manisa**	**0.74**	**216**	P	**Pg**	**00 42 26.0**	**-0.3**
MANT				S	**Sg**	**00 42 34.8**	**-1.3**
IZI	**Iznik**	**1.28**	**12**	*e*PN	**Pg**	**00 42 36.0**	**-0.5**
IZI	**Iznik**	**1.28**	**12**	*e*Pn	**Pg**	**00 42 36.1**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.29**	**352**	*e*PN	**Pn**	**00 42 36.0**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.29**	**352**	*e*Pn	**Pn**	**00 42 36.0**	**+0.4**
ARMT	**Armutlu**	**1.49**	**353**	*e*PN	**Pn**	**00 42 38.7**	**+0.4**
ARMT	**Armutlu**	**1.49**	**353**	*e*Pn	**Pn**	**00 42 38.7**	**+0.4**
GULT	**Gulveren**	**1.72**	**38**	*e*PN	**Pn**	**00 42 42.0**	**+0.4**
GULT	**Gulveren**	**1.72**	**38**	*e*Pn	**Pn**	**00 42 42.0**	**+0.4**

*MDD **07** 00:48:28.6±0.9,37°.14N×13°.35W,h30km,mb3.5/3, Error ellipse: s-maj=6.9km s-min=5.9km az=55.0,PRXIMO*
*INMG **07** 00:48:29.3±0.6,37°.00N×13°.47W,h10km,ML2.1, Error ellipse: s-maj=9.7km s-min=6.2km az=68.0*
*CSEM **07** 00:48:30.5±0.6,37°.28N×12°.84W,h10km,mb3.5, Error ellipse: s-maj=11.7km s-min=9.6km az=127.0*

ISC 07 00:48:27.5±3.9,37°.3N±0'.1×13°.1W±0'.2,h10km,n42, σ1§51/59,Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**3.46**	**85**	*e*Sn	**Sn**	**00 50 01.8**	**-0.7**
PTEO				A	A	00 50 04.8	
	6.4nm,0.8s						
PTEO	**Sao Teotonio**	**3.46**	**85**	S	**Sn**	**00 50 01.8**	**-0.7**
	3.2nm,0.8s						
PTEO	**Sao Teotonio**	**3.46**	**85**	S	**Sn**	**00 50 01.8**	**-0.7**
	3.2nm,0.8s						
PNCL	**Nicolau / Gran**	**3.68**	**76**	*e*Pn	**Pn**	**00 49 25.6**	**+1.1**
PNCL				*e*Sn	**Sn**	**00 50 08.2**	**+0.2**
PNCL				A	A	00 50 11.5	
	1.3nm,0.2s						
PNCL	**Nicolau / Gran**	**3.68**	**76**	*e*Pn	**Pn**	**00 49 25.6**	**+1.1**
PNCL				*e*Sn	**Sn**	**00 50 08.2**	**+0.2**
	1.3nm,0.2s						
MESJ	**Messejana**	**3.88**	**81**	*e*Sn	**Sn**	**00 50 12.3**	**-0.6**
MESJ				A	A	00 50 31.7	
	2.3nm,0.6s						
MESJ	**Messejana**	**3.88**	**81**	S	**Sn**	**00 50 12.3**	**-0.6**
	2.3nm,0.6s						
MESJ	**Messejana**	**3.88**	**81**	S	**Sn**	**00 50 12.3**	**-0.6**
	2.3nm,0.6s						
PCVE	**Castro Verde**	**4.01**	**84**	*e*Pn	**Pn**	**00 49 29.6**	**+0.6**
PCVE				*e*Sn	**Sn**	**00 50 14.9**	**-1.2**
PCVE				A	A	00 50 21.8	
	1.1nm,0.3s						
PCVE	**Castro Verde**	**4.01**	**84**	P	**Pn**	**00 49 29.6**	**+0.6**
PCVE				S	**Sn**	**00 50 14.9**	**-1.2**
	1.1nm,0.3s						
PCVE	**Castro Verde**	**4.01**	**84**	P	**Pn**	**00 49 29.6**	**+0.6**
PCVE				S	**Sn**	**00 50 14.9**	**-1.2**
	1.1nm,0.3s						
PBDV	**Barranco-do-Ve**	**4.10**	**90**	*e*Pn	**Pn**	**00 49 30.6**	**+0.4**
PBDV				*e*Sn	**Sn**	**00 50 19.8**	**+1.6**
PBDV	**Barranco-do-Ve**	**4.10**	**90**	P	**Pn**	**00 49 30.6**	**+0.4**
PBDV				S	**Sn**	**00 50 19.8**	**+1.6**
PBDV	**Barranco-do-Ve**	**4.10**	**90**	P	**Pn**	**00 49 30.6**	**+0.4**
PBDV				*e*Sn	**Sn**	**00 50 19.8**	**+1.6**
EVO	**Evora**	**4.17**	**72**	*e*Pn	**Pn**	**00 49 32.7**	**+1.5**
EVO				*e*Sn	**Sn**	**00 50 18.0**	**-2.1**
EVO				A	A	00 50 20.7	
	2.0nm,0.4s						
EVO	**Evora**	**4.17**	**72**	P	**Pn**	**00 49 32.7**	**+1.5**
EVO				S	**Sn**	**00 50 18.0**	**-2.1**
	2.0nm,0.4s						
EVO	**Evora**	**4.17**	**72**	P	**Pn**	**00 49 32.7**	**+1.5**
EVO				S	**Sn**	**00 50 18.0**	**-2.1**
	2.0nm,0.4s						
PESTR	**Estremoz**	**4.59**	**69**	*e*Sn	**Sn**	**00 50 29.9**	**-0.4**
PESTR				A	A	00 50 51.6	
	1.9nm,0.7s						
PESTR	**Estremoz**	**4.59**	**69**	*e*Sn	**Sn**	**00 50 29.9**	**-0.4**
	1.9nm,0.7s						
PBAR	**Barrancos**	**4.85**	**78**	*e*Sn	**Sn**	**00 50 36.1**	**-0.7**
PBAR				A	A	00 50 44.3	
	1.4nm,0.3s						
PBAR	**Barrancos**	**4.85**	**78**	S	**Sn**	**00 50 36.1**	**-0.7**
	1.4nm,0.3s						
PBAR	**Barrancos**	**4.85**	**78**	S	**Sn**	**00 50 36.1**	**-0.7**
	1.4nm,0.3s						
EBAD	**Badajoz**	**4.99**	**72**	P	**Pn**	**00 49 43.9**	**+1.5**
	0.3nm,0.1s,SNR=7.9						
EBAD				S	**Sn**	**00 50 39.2**	**-1.0**
	0.5nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**4.99**	**72**	P	**Pn**	**00 49 43.9**	**+1.5**
	0.3nm,0.1s,SNR=7.9						
EBAD				S	**Sn**	**00 50 39.2**	**-1.0**
	0.5nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**5.10**	**83**	P	**Pn**	**00 49 43.6**	**-0.4**
	0.4nm,0.1s,SNR=7.9						
EMIN				S	**Sn**	**00 50 40.9**	**-2.1**
	SNR=7.9						
EMIN	**Mina Concepcio**	**5.10**	**83**	P	**Pn**	**00 49 43.6**	**-0.4**
	0.4nm,0.1s,SNR=7.9						
EMIN				S	**Sn**	**00 50 40.9**	**-2.1**
	SNR=7.9						
MTE	**Manteigas**	**5.29**	**53**	*e*Sn	**Sn**	**00 50 49.9**	**+2.2**
MTE	**Manteigas**	**5.29**	**53**	S	**Sn**	**00 50 49.9**	**+2.2**
MTE	**Manteigas**	**5.29**	**53**	*e*Sn	**Sn**	**00 50 49.9**	**+2.2**
POLO	**Lamas de Olo**	**5.75**	**44**	*e*Sn	**Sn**	**00 51 00.6**	**+1.6**
POLO	**Lamas de Olo**	**5.75**	**44**	*e*Sn	**Sn**	**00 51 00.6**	**+1.6**
ESPR	**Espera**	**5.78**	**92**	S	**Sn**	**00 51 00.7**	**+1.0**
	1.3nm,0.3s,SNR=7.9						
PGAV	**Gavieira, Arco**	**5.93**	**37**	*e*Sn	**Sn**	**00 51 03.3**	**-0.2**
PGAV				A	A	00 51 03.9	
	4.2nm,0.8s						
PGAV	**Gavieira, Arco**	**5.93**	**37**	*e*Sn	**Sn**	**00 51 03.3**	**-0.2**
	4.2nm,0.8s						
ELOB	**Lobios**	**5.96**	**39**	S	**Sn**	**00 51 03.9**	**-0.3**
	0.0nm,0.3s,SNR=7.9						
ELOB	**Lobios**	**5.96**	**39**	S	**Sn**	**00 51 03.9**	**-0.3**
	SNR=7.9						
ECAB	**El Cabril**	**6.11**	**81**	P	**Pn**	**00 49 58.3**	**+0.4**
	0.1nm,0.2s,SNR=7.9						
ECAB				S	**Sn**	**00 51 05.7**	**-2.2**
	0.2nm,0.2s,SNR=7.9						
ECAB	**El Cabril**	**6.11**	**81**	P	**Pn**	**00 49 58.3**	**+0.4**
	0.1nm,0.2s,SNR=7.9						
ECAB				S	**Sn**	**00 51 05.7**	**-2.2**
	0.2nm,0.2s,SNR=7.9						
EMAZ	**Mazaricos**	**6.43**	**28**	S	**Sn**	**00 51 10.9**	**-4.9**
	0.2nm,0.2s,SNR=7.9						
EAGO	**Agolada(Pontev**	**6.67**	**33**	S	**Sn**	**00 51 18.3**	**-3.3**
	0.7nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**6.78**	**80**	S	**Sn**	**00 51 22.3**	**-2.0**
	0.3nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**6.78**	**80**	S	**Sn**	**00 51 22.3**	**-2.0**
	0.3nm,0.1s,SNR=7.9						

*IDC **07** 00:50:60.0±0.9,28°.86S×176°.16W,h0km,mb4.5/9, mb1 4.7/9,mb1mx4.4/22,mbtmp4.5/9, Error ellipse: s-maj=37.1km s-min=21.6km az=158.0*
*NEIC **07** 00:51:00.8±0.3,29°.22S×176°.16W,h10km,mb5.0/26, Error ellipse: s-maj=11.6km s-min=6.4km az=127.0*
*ISCJB **07** 00:51:03.3±0.4,29°.37S±0'.05×176°.19W±0'.06,h38km, mb5.0/27,MS4.7/2, Error ellipse: s-maj=8.8km s-min=5.8km az=33.6*
*BJI **07** 00:51:04.6,28°.90S×176°.30W,h26km,mb5.1/5,mB5.3/6, Ms5.2/6,Ms7 4.9/6*

ISC 07 00:51:05.8±0.4,29°.17S±0'.07×176°.24W±0'.07,h38km, n108,σ1§80/123,mb4.9/27,4C-1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.47**	**266**	Pn	**Pn**	**00 51 31.4**	**+1.6**
	389nm,0.3s,baz=16,slow=21,SNR=6.4						
RAO				Sn	**Sn**	**00 51 46.6**	**-1.1**
	670nm,0.3s,baz=191,slow=16,SNR=7.1						
URZ	**Urewera**	**10.62**	**210**	Pn	**Pn**	**00 53 33.3**	**-2.0**
	1.1nm,0.3s,baz=216,slow=19,SNR=4.3						
URZ				Sn	**Sn**	**00 55 32.5**	**-0.4**
	7.6nm,0.3s,baz=111,slow=23,SNR=14						
URZ	**Urewera**	**10.62**	**210**	*e*Pn	**Pn**	**00 53 33.3**	**-2.0**
URZ				*e*Sn	**Sn**	**00 55 32.5**	**-0.4**
URZ				*e*Sn	Sn	00 55 33.8	+0.8
BFZ	**Birch Farm**	**13.03**	**206**	*e*Pn	**Pn**	**00 54 06.0**	**-2.2**
THZ	**Tophouse**	**15.35**	**212**	*e*Pn	**Pn**	**00 54 35.8**	**-3.8**
	241nm,2.0s						
KHZ	**Kahutara**	**15.59**	**209**	*e*Pn	**Pn**	**00 54 38.4**	**-4.2**
	41nm,0.7s						
LTZ	**Lake Taylor**	**16.44**	**211**	*e*Pn	**Pn**	**00 54 51.5**	**-2.1**
	84nm,1.5s						
OXZ	**Oxford**	**16.98**	**211**	*e*Pn	**Pn**	**00 54 55.3**	**-4.9**
	46nm,1.1s						
MQZ	**McQueen's Vall**	**17.02**	**209**	*e*Pn	**Pn**	**00 54 56.9**	**-3.9**
	110nm,1.6s						
DZM	**Mont Dzumac**	**17.13**	**290**	P	**P**	**00 55 05.8**	**+2.0**
	0.8nm,0.3s,baz=96,slow=15,SNR=9.8						
DZM	**Mont Dzumac**	**17.13**	**290**	*e*Pn	**P**	**00 55 05.0**	**+1.2**
	54nm,1.4s						
RPZ	**Rata Peaks**	**17.72**	**212**	P	**Pn**	**00 55 07.9**	**-1.6**
	0.9nm,0.3s,baz=38,slow=6.0,SNR=3.1						
RPZ				S	Sn	00 58 13.6	-12
	1.2nm,0.3s,baz=128,slow=19,SNR=5.5						
RPZ	**Rata Peaks**	**17.72**	**212**	*e*Pn	**Pn**	**00 55 07.9**	**-1.6**
	179nm,1.9s						
RPZ				*e*Sn	Sn	00 58 13.6	-12
ODZ	**Otahua Downs**	**18.95**	**210**	*e*P	**Pn**	**00 55 28.4**	**+4.0**
	222nm,1.9s						
WKZ	**Wanaka**	**19.52**	**213**	*e*P	**P**	**00 55 27.3**	**-2.5**
	259nm,1.7s						
MLZ	**Mavora Lakes**	**20.35**	**213**	*e*P	**P**	**00 55 39.0**	**+0.2**
	215nm,2.0s						
EIDS	**Eidsvold**	**29.24**	**270**	*e*P	**P**	**00 57 01.0**	**-3.2**
	27nm,1.6s						
CTAO	**Charters Tower**	**35.15**	**276**	*e*P	**P**	**00 57 56.2**	**+0.1**
STKA	**Stephens Creek**	**36.26**	**255**	P	**P**	**00 58 06.6**	**+1.1**
	5.8nm,0.9s,baz=108,slow=9.6,SNR=3.7						
STKA	**Stephens Creek**	**36.26**	**255**	*e*P	**P**	**00 58 06.0**	**+0.6**
	9.3nm,1.8s						
BBOO	**Buckleboo**	**40.79**	**252**	*e*P	**P**	**00 58 44.1**	**+0.7**
	81nm,1.5s						
AS01	**Alice Springs**	**44.69**	**265**	*e*P	**P**	**00 59 14.6**	**-0.6**
AS31	**Alice Springs**	**44.72**	**265**	*e*P	**P**	**00 59 14.9**	**-0.6**
	2.6nm,0.5s						
ASAR	**Alice Springs**	**44.73**	**265**	P	**P**	**00 59 14.9**	**-0.6**
	6.9nm,0.7s,baz=106,slow=7.9,SNR=40						
WB2	**Warramunga Arr**	**45.60**	**270**	*e*P	**P**	**00 59 20.3**	**-2.2**
WRAB	**Tennant Creek**	**45.60**	**270**	*e*P	**P**	**00 59 20.7**	**-1.8**
	20nm,0.8s						
WR1	**Warramunga Arr**	**45.61**	**270**	*e*P	**P**	**00 59 21.6**	**-1.0**
	10nm,0.9s						
WRA	**Warramunga Arr**	**45.61**	**270**	P	**P**	**00 59 21.6**	**-1.0**
	4.0nm,0.5s,baz=109,slow=7.9,SNR=19						
FITZ	**Fitzroy Crossi**	**53.91**	**268**	*e*P	**P**	**01 00 23.8**	**-1.9**
	36nm,1.9s						
CASY	**Casey**	**56.94**	**208**	*e*P	**P**	**01 00 49.2**	**+2.4**
	12nm,0.7s						
QSPA	**South Pole Qui**	**60.94**	**180**	*e*P	**P**	**01 01 18.3**	**+3.6**
SBUM	**Sibu**	**75.17**	**281**	*e*P	**P**	**01 02 45.2**	**+0.6**
	14nm,0.9s						
KSM	**Kuching**	**76.31**	**280**	*e*P	**P**	**01 02 51.7**	**+0.5**
	21nm,0.7s						
MJAR	**Matsushiro Arr**	**78.13**	**324**	P	**P**	**01 02 59.5**	**-1.3**
	1.4nm,0.6s,baz=172,slow=5.0,SNR=4.6						
SYO	**Syowa Base**	**78.65**	**192**	ǁ *e*P	**P**	**01 03 01.0**	**-2.3**
SYO	**Syowa Base**	**78.65**	**192**	ǁ *e*pP	**P**	**01 03 06.9**	**+3.6**
JELB	**Ellicott, Sant**	**83.23**	**41**	*e*P	**P**	**01 03 28.1**	**-0.1**
PEV	**Pleasant Valle**	**83.27**	**41**	*e*P	**P**	**01 03 25.6**	**-2.7**
KCPM	**Cahto Peak**	**84.20**	**38**	*e*P	**P**	**01 03 28.7**	**-4.5**
	12µm,0.6s						
KSRS	**Korea Array**	**84.42**	**319**	P	**P**	**01 03 33.5**	**-0.6**
	3.1nm,1.0s,baz=142,slow=5.9,SNR=3.7						
KS15	**Wonju Array Si**	**84.44**	**319**	*e*P	**P**	**01 03 33.5**	**-0.7**
KSAR	**Wonju Array Be**	**84.44**	**319**	P	**P**	**01 03 33.5**	**-0.7**
KS01	**Wonju Array Si**	**84.45**	**319**	*e*P	**P**	**01 03 33.7**	**-0.7**
PEA0	**Petropavlovsk-**	**85.02**	**345**	*e*P	**P**	**01 03 35.6**	**-1.2**
PETK	**Petropavlovsk-**	**85.02**	**345**	P	**P**	**01 03 35.7**	**-1.1**
	7.9nm,0.9s,baz=132,slow=6.9,SNR=7.2						
PEA1	**Petropavlovsk-**	**85.03**	**345**	*e*P	**P**	**01 03 35.7**	**-1.1**
IPM	**Ipoh**	**85.84**	**277**	*e*P	**P**	**01 03 42.1**	**+0.2**
	17nm,0.7s						
TPNV	**Topopah Spring**	**86.55**	**44**	*e*P	**P**	**01 03 44.8**	**-0.2**
	8.6nm,1.5s						
KULM	**Kulim**	**86.56**	**278**	*e*P	**P**	**01 03 46.1**	**+0.7**
	21nm,1.1s						
USRK	**Ussuriysk Ar.**	**87.00**	**326**	P	**P**	**01 03 46.6**	**-0.2**
	1.9nm,0.7s,baz=129,slow=4.1,SNR=5.2						
GSI	**Gunungsitoli**	**87.30**	**273**	*e*P	**P**	**01 03 50.8**	**+1.7**
	42nm,0.8s						
319A	**Douglas**	**87.62**	**52**	*e*P	**P**	**01 03 50.1**	**-0.2**
	4.6nm,0.7s						
LTX	**Lajitas**	**90.43**	**56**	*e*P	**P**	**01 04 03.2**	**-0.4**
TX31	**Lajitas Ar. Si**	**90.43**	**56**	*e*P	**P**	**01 04 03.9**	**+0.3**
TXAR	**Lajitas Array**	**90.43**	**56**	P	**P**	**01 04 03.2**	**-0.4**
	1.6nm,1.0s,baz=227,slow=5.0,SNR=7.0						
F10A	**Beach Ranch, E**	**91.92**	**37**	*e*P	**P**	**01 04 08.8**	**-1.3**
	5.4nm,1.1s						
GYA	**Guiyang**	**92.28**	**299**	P	**P**	**01 04 14.2**	**+1.9**
GYA				pP	pP	01 04 22.0	-2.1
GYA				PP	**PP**	**01 07 56.8**	**+3.3**
GYA				SKS	**SKSac**	**01 14 44.0**	**+1.1**
GYA				S	**S**	**01 15 12.3**	**-0.6**
GYA				SS	**SS**	**01 21 26.6**	**+2.2**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,7.4s						
GYA				LR	LR		
	comp=N,560nm,22.4s						
GYA				LR	LR		
	comp=E,490nm,21.8s						
GYA				LR	LR		
	comp=Z,540nm,20.6s						
CM31	**Chiang Mai Arr**	**94.45**	**289**	*e*P	**P**	**01 04 23.6**	**+1.3**
CMAR	**Chiang Mai Arr**	**94.45**	**289**	P	**P**	**01 04 23.6**	**+1.3**
	1.7nm,0.5s,baz=144,slow=3.3,SNR=5.4						
SLMT	**Seeley Lake**	**94.70**	**37**	*e*P	**P**	**01 04 25.1**	**+2.2**
HHC	**Hu-ho-hao-te**	**96.49**	**313**	*e*P	**P**	**01 04 30.2**	**-1.0**
HHC				PP	**PP**	**01 08 26.8**	**+0.8**
HHC				S	**S**	**01 15 45.7**	**-3.4**
HHC				pmax	pmax		
	comp=Z,9.0nm,0.9s						
HHC				LR	LR		
	comp=N,130nm,17.3s						
HHC				LR	LR		
	comp=E,110nm,13.6s						
HHC				LR	LR		
	comp=Z,55nm,14.8s						
CD2	**Chengdu**	**96.74**	**302**	*e*P	**P**	**01 04 32.4**	**-0.1**
WMQ	**Urumqi**	**113.67**	**308**	*e*PKP	**PKiKP**	**01 09 38.8**	**-1.2**
ZALV	**Zalesovo Beam**	**118.13**	**319**	PKP	**PKPdf**	**01 09 46.9**	**-1.3**
	0.5nm,0.6s,baz=101,slow=0.7,SNR=3.6						
ZAA1	**Zalesovo Array**	**118.13**	**319**	*e*PKPdf	**PKPdf**	**01 09 46.9**	**-1.3**
MK01	**Makanchi Array**	**118.14**	**310**	*e*PKPdf	**PKPdf**	**01 09 47.7**	**-0.8**
MK32	**Makanchi Array**	**118.15**	**310**	*e*PKPdf	**PKPdf**	**01 09 47.4**	**-1.1**
MKAR	**Makanchi Array**	**118.15**	**310**	PKP	**PKPdf**	**01 09 47.4**	**-1.1**
	0.9nm,0.7s,baz=351,slow=0.5,SNR=8.1						
KSH	**Kashi**	**120.93**	**301**	*e*PKP	**PKPdf**	**01 09 54.1**	**-0.1**
KSH				*es*PKP		01 10 07.9	
KSH				*e*PP	**PP**	**01 11 28.4**	**+4.4**
KSH				PKS	**PKSdf**	**01 13 29.3**	**-1.6**
KSH				SKS	**SKSdf**	**01 17 01.4**	**-2.0**
KSH				SKKS	**SKKSac**	**01 18 15.5**	**-4.8**
KSH				AMB	AMB		
	comp=Z,19nm,4.3s						
KSH				LR	LR		
	comp=E,140nm,9.7s						
KSH				LR	LR		
	comp=Z,130nm,7.8s						
VOSK	**Vostochnaya**	**126.22**	**316**	*e*PKPdf	**PKPdf**	**01 10 03.2**	**-0.5**
ZRNK	**Zerenda**	**127.42**	**316**	*e*PKPdf	**PKPdf**	**01 10 05.5**	**-0.5**
LVZ	**Lovozero**	**137.13**	**343**	*e*PKPdf	**PKPdf**	**01 10 29.5**	**+5.5**
ARA0	**ARCESS Array S**	**137.70**	**349**	*e*PKPdf	**PKPdf**	**01 10 24.1**	**-0.9**
ARCES	**ARCESS Array B**	**137.70**	**349**	PKP	**PKPdf**	**01 10 24.1**	**-0.9**
	2.2nm,0.6s,baz=5.7,slow=0.9,SNR=12						
FIA1	**FINESS Array S**	**144.49**	**342**	*e*PKPdf	**PKPab**	**01 10 34.9**	**-0.8**
FIA1				*e*PKPdf	PKPbc	01 10 35.0	-0.9
FIA0	**FINESS Array S**	**144.49**	**342**	*e*PKPdf	**PKPab**	**01 10 34.9**	**-0.8**
FINES	**FINESS Array B**	**144.49**	**342**	PKP	**PKPab**	**01 10 34.9**	**-0.8**
	4.5nm,0.6s,baz=52,slow=3.2,SNR=24						
ONI	**Oni**	**145.48**	**304**	P	**PKPab**	**01 10 40.3**	**+0.2**
BGD	**Bogdanovka**	**145.57**	**301**	P	**PKPab**	**01 10 41.3**	**+0.6**
KBZ	**Khabaz**	**145.67**	**306**	PKPbc	**PKPdf**	**01 10 40.0**	**+0.1**
	2.9nm,0.8s,baz=132,slow=2.3,SNR=7.2						
CHVG	**Ch'k'valeri**	**146.45**	**304**	P	**PKPbc**	**01 10 43.1**	**+0.3**
NC303	**NORSAR Array S**	**147.54**	**353**	*e*PKPbc	**PKPbc**	**01 10 44.7**	**-0.5**
NC405	**NORSAR Array S**	**147.62**	**353**	*e*PKPbc	**PKPbc**	**01 10 45.1**	**-0.3**
NB201	**NORSAR Array S**	**147.72**	**353**	*e*PKPbc	**PKPbc**	**01 10 45.0**	**-0.7**
NB2	**NORSAR Subarra**	**147.74**	**353**	PKP	**PKPbc**	**01 10 44.5**	**-1.3**
	comp=Z,4.7nm,0.6s,baz=9.8,slow=2.9						
NB200	**NORSAR Array S**	**147.74**	**353**	*e*PKPbc	**PKPbc**	**01 10 44.7**	**-1.1**
NOA	**NORSAR Array B**	**147.74**	**353**	PKPbc	**PKPbc**	**01 10 44.7**	**-1.1**
	comp=Z,6.0nm,0.7s,baz=13,slow=4.4,SNR=20						
NBO02	**NORSAR Array S**	**147.77**	**354**	*e*PKPdf	**PKPdf**	**01 10 44.3**	**+1.3**
NAO01	**NORSAR Array S**	**147.97**	**353**	*e*PKPbc	**PKPbc**	**01 10 45.6**	**-0.8**
AKASG	**Malin Array Be**	**151.21**	**325**	*e*PKPbc	**PKPbc**	**01 10 54.2**	**-0.5**
	comp=Z,6.0nm,0.6s,baz=45,slow=2.6,SNR=16						
AKBB	**Malin Array Si**	**151.21**	**325**	*e*PKPbc	**PKPbc**	**01 10 54.1**	**-0.5**
AK11	**Malin Array Si**	**151.25**	**325**	*e*PKPbc	**PKPbc**	**01 10 54.4**	**-0.3**
BR101	**Keskin Array S**	**153.32**	**301**	*e*PKPbc	**PKPbc**	**01 10 59.5**	**-0.5**
BRTR	**Keskin Array B**	**153.32**	**301**	PKPbc	**PKPbc**	**01 10 59.5**	**-0.5**
	comp=Z,1.1nm,0.9s,baz=118,slow=2.1,SNR=5.6						
BR231	**Keskin MP Arra**	**153.93**	**302**	*e*PKPbc	**PKPbc**	**01 10 59.1**	**-2.1**
CSS	**Mathiatis**	**154.34**	**291**	*e*PKPbc	**PKPbc**	**01 11 02.4**	**+0.2**
TESR	**Tescani**	**155.11**	**320**	ǁ *i*P	**PKPab**	**01 11 18.5**	**-0.8**
BURAR	**Bucovina Array**	**155.20**	**324**	ǁ *i*P	**PKPab**	**01 11 19.4**	**-0.3**
STHS	**Stebnicka Huta**	**155.78**	**331**

KURBB	**Kurchatov Arra**	**121.77**	**314**	PKP		**PKPdf**	**01 17 31.0 +0.3**
	0.9nm,0.6s,baz=108,slow=2.3,SNR=10						
FINES	**FINESS Array B**	**145.12**	**341**	PKP		**PKPdf**	**01 18 13.4 -0.4**
	5.7nm,0.6s,baz=58,slow=2.9,SNR=28						
KBZ	**Khabaz**	**146.01**	**305**	PKPbc		**PKPab**	**01 18 16.8 -0.6**
	2.5nm,0.9s,baz=242,slow=3.2,SNR=5.2						
NB2	**NORSAR Subarra1**	**148.42**	**353**	PKP		**PKPbc**	**01 18 23.0 0.0**
	comp=Z,3.1nm,0.8s,baz=11,slow=2.9						
NOA	**NORSAR Array B**	**148.42**	**353**	PKPbc		**PKPbc**	**01 18 22.9 -0.1**
	comp=Z,2.1nm,0.7s,baz=14,slow=4.3,SNR=7.5						
AKASG	**Malin Array Be**	**151.73**	**325**	PKPbc		**PKPbc**	**01 18 31.5 +0.2**
	comp=Z,3.4nm,0.5s,baz=45,slow=2.8,SNR=9.4						
TORD	**Torodi Ar. Bea**	**163.27**	**173**	PKPab		**PKPab**	**01 19 32.7 +2.1**
	comp=Z,4.5nm,0.9s,baz=194,slow=3.6,SNR=19						

*CSEM **07** 01:01:15.3±0.1,38.°04N×14.°79E,h10km,ML3.7/9,Error ellipse: s-maj=2.4km s-min=1.8km az=142.0*
ROM 07 01:01:15.0±0.1,38.°04N×14.°79E,h8km,MI3.1/34,12C-2D, Error ellipse: s-maj=1.1km s-min=0.8km az=166.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUCR	**Ucria**	**0.07**	**88** ⇓	*i*Pg	Pg	01 01 17.6	+0.6
MUCR				Sg	Sg	01 01 19.5	+1.0
	46μm,0.3s						
MUCR	**Ucria**	**0.07**	**88** ⇓	*i*Pg	Pg	01 01 17.6	+0.6
MUCR				Sg	Sg	01 01 19.5	+1.0
	46μm,0.3s						
MNO	**Monte Soro**	**0.13**	**215** ⇑	*i*Pg	Pg	01 01 18.3	+0.3
MNO				Sg	Sg	01 01 20.7	+0.6
	3μm,0.1s						
MNO	**Monte Soro**	**0.13**	**215** ⇑	*i*Pg	Pg	01 01 18.3	+0.3
MNO				Sg	Sg	01 01 20.7	+0.6
	3μm,0.1s						
MSFR	**San Fratello**	**0.16**	**267** ⇑	*i*Pg	Pg	01 01 18.7	+0.4
MSFR				Sg	Sg	01 01 21.3	+0.7
	2μm,0.5s						
MSFR	**San Fratello**	**0.16**	**267** ⇑	*i*Pg	Pg	01 01 18.7	+0.4
MSFR				Sg	Sg	01 01 21.3	+0.7
	2μm,0.5s						
NOV	**Novara**	**0.28**	**93**	Pg	Pg	01 01 21.1	+0.6
NOV				Sg	Sb	01 01 25.7	-1.4
	2μm,0.3s						
NOV	**Novara**	**0.28**	**93**	Pg	Pg	01 01 21.1	+0.6
NOV				Sg	Sb	01 01 25.7	-1.4
	2μm,0.3s						
MCSR	**Castroreale**	**0.36**	**86**	Pg	Pg	01 01 22.5	+0.3
MCSR				Sg	Sb	01 01 28.7	-1.0
	5μm,0.3s						
MCSR	**Castroreale**	**0.36**	**86**	Pg	Pg	01 01 22.5	+0.3
MCSR				Sg	Sb	01 01 28.7	-1.0
	5μm,0.3s						
VPL	**Vulcano Piano**	**0.37**	**24** ⇑	*i*Pg	Pb	01 01 23.4	-0.5
VPL				Sg	Sb	01 01 29.5	-0.3
	7μm,0.4s						
VPL	**Vulcano Piano**	**0.37**	**24** ⇑	*i*Pg	Pb	01 01 23.4	-0.5
VPL				Sg	Sb	01 01 29.5	-0.3
	7μm,0.4s						
GALF	**Gagliano Caste**	**0.37**	**208**	Pg	Pg	01 01 22.9	+0.6
	2μm,0.6s						
GALF	**Gagliano Caste**	**0.37**	**208**	Pg	Pg	01 01 22.9	+0.6
	2μm,0.6s						
ESLN	**Serra La Nave**	**0.38**	**157**	Pg	Pg	01 01 23.7	-0.4
	3μm,0.6s						
ESLN	**Serra La Nave**	**0.38**	**157**	Pg	Pg	01 01 23.7	-0.4
	3μm,0.6s						
MMME	**Mongiuffi-Meli**	**0.38**	**106** ⇑	*i*Pg	Pg	01 01 23.1	+0.6
MMME				Sg	Sb	01 01 29.2	-1.0
	1μm,0.5s						
MMME	**Mongiuffi-Meli**	**0.38**	**106** ⇑	*i*Pg	Pg	01 01 23.1	+0.6
MMME				Sg	Sb	01 01 29.2	-1.0
	1μm,0.5s						
MILZ	**Milazzo**	**0.42**	**56** ⇑	*i*Pg	Pb	01 01 23.9	-0.7
MILZ				Sg	Sb	01 01 30.2	-0.9
	3μm,0.4s						
MILZ	**Milazzo**	**0.42**	**56** ⇑	*i*Pg	Pb	01 01 23.9	-0.7
MILZ				Sg	Sb	01 01 30.2	-0.9
	3μm,0.4s						
LLI	**Lipari**	**0.42**	**17**	Pg	Pb	01 01 24.5	-0.2
	5μm,0.4s						
LLI	**Lipari**	**0.42**	**17**	Pg	Pb	01 01 24.5	-0.2
	5μm,0.4s						
ECNV	**Catenanuova**	**0.45**	**188**	Pg	Pb	01 01 25.1	-0.1
	2μm,0.6s						
ECNV	**Catenanuova**	**0.45**	**188**	Pg	Pb	01 01 25.1	-0.1
	2μm,0.6s						
MPNC	**Port Mandanici**	**0.46**	**77**	Pg	Pg	01 01 24.5	+0.6
MPNC				Sg	Sb	01 01 31.5	-0.8
	3μm,0.4s						
MPNC	**Port Mandanici**	**0.46**	**77**	Pg	Pg	01 01 24.5	+0.6
MPNC				Sg	Sb	01 01 31.5	-0.8
	3μm,0.4s						
CAGR	**Agira**	**0.48**	**209**	Pg	Pb	01 01 25.7	0.0
	2μm,0.7s						
CAGR	**Agira**	**0.48**	**209**	Pg	Pb	01 01 25.7	0.0
	2μm,0.7s						
PLLN	**Pollina**	**0.51**	**265**	Pg	Pg	01 01 25.5	+0.6
	446nm,0.3s						
PLLN	**Pollina**	**0.51**	**265**	Pg	Pg	01 01 25.5	+0.6
	446nm,0.3s						
ATN	**Antennamare**	**0.55**	**77**	Pg	Pg	01 01 26.0	+0.4
	1μm,0.3s						
ATN	**Antennamare**	**0.55**	**77**	Pg	Pg	01 01 26.0	+0.4
	1μm,0.3s						
IFIL	**Filicudi I Eol**	**0.55**	**341**	Pg	Pb	01 01 26.3	-0.6
	121nm,0.3s						
IFIL	**Filicudi I Eol**	**0.55**	**341**	Pg	Pb	01 01 26.3	-0.6
	121nm,0.3s						
IACL	**Alicudi**	**0.60**	**325**	Pg	Pg	01 01 27.1	+0.5
	2μm,0.3s						
IACL	**Alicudi**	**0.60**	**325**	Pg	Pg	01 01 27.1	+0.5
	2μm,0.3s						
GIB	**Gibilmanna**	**0.60**	**265**	Pg	Pg	01 01 26.8	+0.1
	844nm,0.5s						
GIB	**Gibilmanna**	**0.60**	**265**	Pg	Pg	01 01 26.8	+0.1
	844nm,0.5s						
MSRU	**Castanea**	**0.61**	**68**	Pg	Pg	01 01 27.2	+0.4
	1μm,0.4s						
MSRU	**Castanea**	**0.61**	**68**	Pg	Pg	01 01 27.2	+0.4
	1μm,0.4s						
HLNI	**Lentini**	**0.69**	**175** ⇑	*i*Pg	Pb	01 01 29.0	-0.3
	647nm,0.5s						
HLNI	**Lentini**	**0.69**	**175** ⇑	*i*Pg	Pb	01 01 29.0	-0.3
	647nm,0.5s						
RESU	**Resuttano**	**0.70**	**236**	Pg	Pb	01 01 29.7	+0.2
	465nm,0.6s						
RESU	**Resuttano**	**0.70**	**236**	Pg	Pb	01 01 29.7	+0.2
	465nm,0.6s						
HCRL	**Carlentini**	**0.78**	**166**	Pg	Pg	01 01 30.3	+0.3
	935nm,0.3s						
HCRL	**Carlentini**	**0.78**	**166**	Pg	Pg	01 01 30.3	+0.3
	935nm,0.3s						
HAGA	**Augusta**	**0.81**	**159**	Pg	Pg	01 01 30.7	+0.2
	649nm,0.8s						
HAGA	**Augusta**	**0.81**	**159**	Pg	Pg	01 01 30.7	+0.2
	649nm,0.8s						
MSCL	**Scilla**	**0.81**	**76**	Pg	Pg	01 01 30.6	0.0
	1μm,0.7s						
MSCL	**Scilla**	**0.81**	**76**	Pg	Pg	01 01 30.6	0.0
	1μm,0.7s						
GMB	**Gambarie**	**0.83**	**81**	Pg	Pg	01 01 31.0	0.0
	1μm,0.4s						
GMB	**Gambarie**	**0.83**	**81**	Pg	Pg	01 01 31.0	0.0
	1μm,0.4s						
AGST	**Augusta-Monte**	**0.86**	**156**	Pg	Pg	01 01 31.4	-0.1
	570nm,0.7s						
AGST	**Augusta-Monte**	**0.86**	**156**	Pg	Pg	01 01 31.4	-0.1
	570nm,0.7s						
HVZN	**Vizzini**	**0.86**	**184**	Pg	Pg	01 01 31.8	+0.2
	906nm,0.5s						
HVZN	**Vizzini**	**0.86**	**184**	Pg	Pg	01 01 31.8	+0.2
	906nm,0.5s						
ALJA	**Alia**	**0.87**	**251**	Pg	Pb	01 01 32.5	+0.1
	569nm,0.9s						
ALJA	**Alia**	**0.87**	**251**	Pg	Pb	01 01 32.5	+0.1
	569nm,0.9s						
RAFF	**Raffo Rosso**	**0.88**	**203**	Pg	Pb	01 01 33.0	+0.4
	542nm,0.8s						
RAFF	**Raffo Rosso**	**0.88**	**203**	Pg	Pb	01 01 33.0	+0.4
	542nm,0.8s						
CEL	**Celeste**	**0.90**	**76**	Pg	Pg	01 01 32.2	-0.1
	259nm,0.4s						
CEL	**Celeste**	**0.90**	**76**	Pg	Pg	01 01 32.2	-0.1
	259nm,0.4s						
SSY	**Sortino**	**0.91**	**166**	Pg	Pg	01 01 32.5	-0.1
	766nm,0.5s						
SSY	**Sortino**	**0.91**	**166**	Pg	Pg	01 01 32.5	-0.1
	766nm,0.5s						
MPAZ	**Palizzi**	**0.97**	**95**	Pg	Pg	01 01 33.4	-0.2
	450nm,0.5s						
MPAZ	**Palizzi**	**0.97**	**95**	Pg	Pg	01 01 33.4	-0.2
	450nm,0.5s						
SOI	**Samo**	**1.00**	**88**	Pg	Pg	01 01 33.7	-0.5
	280nm,0.5s						
SOI	**Samo**	**1.00**	**88**	Pg	Pg	01 01 33.7	-0.5
	280nm,0.5s						
JOPP	**Joppolo**	**1.03**	**56**	Pg	Pg	01 01 34.1	-0.7
	168nm,0.5s						
JOPP	**Joppolo**	**1.03**	**56**	Pg	Pg	01 01 34.1	-0.7
	168nm,0.5s						
HMDC	**Modica**	**1.08**	**180**	Pg	Pg	01 01 35.3	-0.5
	489nm,0.4s						
HMDC	**Modica**	**1.08**	**180**	Pg	Pg	01 01 35.3	-0.5
	489nm,0.4s						
HAVL	**Avola**	**1.11**	**166**	Pg	Pg	01 01 35.4	-0.9
	374nm,0.4s						
HAVL	**Avola**	**1.11**	**166**	Pg	Pg	01 01 35.4	-0.9
	374nm,0.4s						
MPG	**Monte Pellegri**	**1.13**	**277**	Pg	Pg	01 01 35.6	-1.2
	93nm,1.1s						
MPG	**Monte Pellegri**	**1.13**	**277**	Pg	Pg	01 01 35.6	-1.2
	93nm,1.1s						
TAR1	**Taranto**	**3.15**	**37**	*e*Pn	Pn	01 02 04.8	0.0
SG1	**Sgolgore (BA)**	**3.15**	**27**	*i* Pn	Pn	01 02 05.3	+0.3
CDT	**Castel del Mon**	**3.25**	**20**	*e*Pn	Pn	01 02 07.3	+1.0

IDC 07 01:02:20.6±4.7,28.°43S×176.°95W,h0km,mb3.9/2, mb1 4.2/2,mb1mx3.7/27,mbtmp3.9/2,MS3.9/1,Ms1 3.9/1, ms1mx3.4/24,Error ellipse: s-maj=106.8km s-min=31.5km az=118.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.19**	**226**	Pn	Pn	01 02 44.8	+0.3
	238nm,0.3s,baz=76,slow=19,SNR=5.4						
RAO				Sn	Sn	01 03 00.9	-0.4
	640nm,0.3s,baz=7.1,slow=21,SNR=5.6						
HNR	**Honiara**	**28.79**	**306**	LR	LR	01 17 20.2	
	comp=Z,257nm,20.7s,baz=293,slow=31						
ASAR	**Alice Springs**	**44.17**	**264**	P	P	01 10 31.0	-0.5
	0.9nm,0.5s,baz=102,slow=6.5,SNR=8.8						
WRA	**Warramunga Arr**	**44.98**	**270**	P	P	01 10 37.9	-0.2
	1.7nm,0.8s,baz=108,slow=7.8,SNR=5.3						
FITZ	**Fitzroy Crossi**	**53.31**	**268**	P	P	01 11 42.4	+0.6
	baz=108,slow=6.4						
FINES	**FINESS Array B**	**143.59**	**342**	PKP	PKPbc	01 21 55.2	+1.1
	1.1nm,0.7s,baz=64,slow=3.2,SNR=3.8						

IDC 07 01:04:48.5±2.9,28.°18S×176.°57W,h0km,mb4.1/2, mb1 4.3/2,mb1mx3.8/26,mbtmp4.1/2,Error ellipse: s-maj=88.4km s-min=28.5km az=131.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.59**	**228**	Pn	Pn	01 05 18.0	0.0
	242nm,0.3s,baz=118,slow=1.0,SNR=8.8						
RAO				Sn	Sn	01 05 39.0	-0.3
	932nm,0.3s,baz=58,slow=21,SNR=11						
ASAR	**Alice Springs**	**44.53**	**264**	P	P	01 13 02.2	-0.1
	1.4nm,0.5s,baz=98,slow=6.7,SNR=22						
WRA	**Warramunga Arr**	**45.32**	**269**	P	P	01 13 08.8	+0.2
	1.2nm,0.4s,baz=109,slow=8.0,SNR=9.0						
FINES	**FINESS Array B**	**143.46**	**342**	PKP	PKPdf	01 24 23.4	-1.0
	1.3nm,0.7s,baz=66,slow=2.5,SNR=8.9						
AKASG	**Malin Array Be**	**150.23**	**326**	PKPbc	PKPbc	01 24 40.7	-0.5
	0.3nm,0.3s,baz=46,slow=2.7,SNR=2.9						

IDC 07 01:07:17.0±1.8,29.°43S×178.°30W,h0km,mb3.8/2, mb1 4.1/2,mb1mx3.6/27,mbtmp3.8/2,Error ellipse: s-maj=69.1km s-min=43.2km az=8.0,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.90**	**266**	P	P	01 15 16.9	-0.6
	0.3nm,0.3s,baz=101,slow=7.8,SNR=4.2						
WRA	**Warramunga Arr**	**43.80**	**271**	P	P	01 15 25.1	+0.3
	1.1nm,0.3s,baz=110,slow=8.1,SNR=16						
FINES	**FINESS Array B**	**144.15**	**340**	PKP	PKPab	01 26 51.4	-0.3
	3.2nm,0.5s,baz=35,slow=3.4,SNR=37						
NOA	**NORSAR Array B**	**147.76**	**351**	PKPbc	PKPbc	01 27 03.2	+0.1
	0.4nm,0.5s,baz=25,slow=3.4,SNR=3.5						
TORD	**Torodi Ar. Bea**	**163.79**	**180**	PKPab	PKPab	01 28 14.5	-0.2
	0.4nm,0.6s,baz=160,slow=5.0,SNR=2.8						

*ISCJB **07** 01:13:33.6±0.6,6.°81N±0.°05×73.°03W±0.°05,h160km±6km, Error ellipse: s-maj=10.0km s-min=4.5km az=42.2*
*FUNV **07** 01:13:34.4,6.°70N×73.°13W,h157km,MW3.0*
*RSNC **07** 01:13:35.6±0.9,6.°77N×73.°07W,h149km±6km,ML2.8*
ISC 07 01:13:33.5±1.4,6.79N±0.°05×73.°03W±0.°05,h161km±8km, n20,σ1°§03/34,2D,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.25**	**219** ⇓	*i*P	Pn	**01 13 55.8**	**+0.2**
BARC				*e*S	Sn	**01 14 11.3**	**-1.0**
BARC				*i*		01 14 12.2	
	comp=Z,254nm,0.2s						
GIRC	**Giron, Santand**	**0.34**	**330**	*e*P	Pn	**01 13 55.8**	**+0.1**
PAMC	**Pamplona, Colo**	**0.64**	**30**	*e*P	Pn	**01 13 58.5**	**+1.1**
PAMC				*i*		01 13 58.9	
	comp=Z,40nm,0.2s						
PAMC				*e*S	Sn	**01 14 15.4**	**-0.3**
BRRC	**Barranca, Sant**	**0.75**	**295**	*e*P	Pn	**01 13 57.6**	**+0.1**
BRRC				*e*S	Sn	**01 14 14.8**	**-1.1**
BRRC				*i*		01 14 17.2	
	comp=Z,129nm,0.2s						
RUSC	**La Rusia**	**0.89**	**184**	*e*P	Pn	**01 13 59.6**	**+0.5**
RUSC				*e*S	Sn	**01 14 17.6**	**-1.1**
RUSC				*i*		01 14 19.4	
	comp=Z,53nm,0.3s						
CBRI	**Barrientos, No**	**0.95**	**14**	*e*P	Pn	**01 14 00.3**	**+1.1**
CBRI				*e*S	Sn	**01 14 19.0**	**+0.1**
CBRI				*i*		01 14 23.8	
	comp=Z,54nm,0.5s						
CAPV	**Capacho**	**1.28**	**33** ⇓	*i*P	Pn	**01 14 03.7**	**+1.6**
CAPV				*e*S	Sn	**01 14 24.1**	**+0.1**
OCAC	**Ocana**	**1.47**	**349**	*e*P	Pn	**01 14 03.7**	**-0.2**
OCAC				*e*S	Sn	**01 14 26.9**	**-0.3**
OCAC				*i*		01 14 29.5	
	comp=Z,76nm,0.2s						
NORC	**Norcasia**	**2.20**	**237**	*e*P	Pn	**01 14 11.6**	**-0.1**
CHIC	**Chingaza**	**2.25**	**198**	*e*P	Pn	**01 14 13.2**	**+0.5**
CHIC				*i*		01 14 48.8	
	comp=Z,26nm,0.4s						
HELC	**Santa Helena**	**2.56**	**257**	*e*P	Pn	**01 14 16.7**	**+0.5**
HELC				*e*S	Sn	**01 14 49.3**	**+0.1**
HELC				*i*		01 14 54.3	
	comp=Z,48nm,0.4s						
SOCV	**Socops**	**2.62**	**55**	*e*P	Pn	**01 14 18.1**	**+1.4**
SOCV				*e*S	Sn	**01 14 49.5**	**-0.5**
VIGV	**El Vigia**	**2.62**	**39**	*e*P	Pn	**01 14 18.1**	**+1.4**
VIGV				*e*S	Sn	**01 14 50.3**	**+0.1**
TOLC	**Tolima**	**3.16**	**226**	*e*P	Pn	**01 14 25.3**	**+1.7**
DBBC	**Dabeiba**	**3.17**	**274**	*e*P	Pn	**01 14 24.1**	**+0.5**
PRAC	**Prado**	**3.57**	**211**	*e*P	Pn	**01 14 28.6**	**0.0**
PRAC				*e*S	Sn	**01 15 11.8**	**+0.3**
PRAC				*i*		01 15 14.8	
	comp=Z,79nm,0.2s						
VIRV	**Villa del Rosa**	**3.75**	**9**	*e*P	Pn	**01 14 31.3**	**+0.5**
VIRV				*e*S	Sn	**01 15 13.5**	**-2.0**
CURV	**Curarigua**	**4.41**	**43**	*e*P	Pn	**01 14 40.8**	**+1.3**
CURV				*e*S	Sn	**01 15 29.9**	**-1.1**
BAUV	**El Baul**	**5.38**	**66**	*e*P	Pn	**01 14 51.8**	**-0.4**
BAUV				*e*S	Sn	**01 15 51.1**	**-2.6**
MAPV	**Macapo**	**5.44**	**56**	*e*P	Pn	**01 14 53.8**	**+0.8**

*IDC **07** 01:15:57.3±0.6,29.°60S×176.°39W,h0km,mb4.7/11, mb1 4.8/11,mb1mx4.6/23,mbtmp4.6/11,Error ellipse: s-maj=20.8km s-min=19.1km az=36.0*
*NEIC **07** 01:15:58.4±0.2,29.°82S×176.°47W,h10km,mb4.8/35, Error ellipse: s-maj=8.0km s-min=5.3km az=138.0*
*ISCJB **07** 01:15:59.0±0.3,29.°99S±0.°05×176.°51W±0.°05,h24km, mb4.8/49,MS5.0/1,Error ellipse: s-maj=7.6km s-min=5.5km az=42.8*
*MOS **07** 01:16:01.6±0.9,29.°62S×176.°53W,h33km,mb5.0/26, Error ellipse: s-maj=14.1km s-min=11.2km az=4.0*
ISC 07 01:16:00.8±0.4,29.°88S±0.°06×176.°53W±0.°06,h24km, n177,σ1°§68/185,mb4.8/49,8C-12D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.36**	**297**	Pn	**Pb**	**01 16 25.5**	**-0.1**
	475nm,0.3s,baz=108,slow=13,SNR=7.9						
RAO				Sn	**Sb**	**01 16 44.1**	**+1.4**
	890nm,0.3s,baz=52,slow=16,SNR=9.9						
RAO	**Raoul Island**	**1.36**	**297**	*e*Pn	**Pn**	**01 16 24.4**	**0.0**
RAO				*e*Sn	**Sn**	**01 16 39.0**	**-2.7**
URZ	**Urewera**	**9.88**	**211**	Pn	**Pn**	**01 18 19.2**	**-2.1**
	4.1nm,0.3s,baz=290,slow=4.2,SNR=13						
URZ				Sn	**Sn**	**01 20 11.5**	**+0.1**
	13nm,0.3s,baz=95,slow=23,SNR=15						
URZ	**Urewera**	**9.88**	**211**	*e*Pn	**Pn**	**01 18 21.6**	**+0.3**
URZ				Sn	**Sn**	**01 20 11.5**	**+0.1**
SNZO	**South Karori**	**13.44**	**210**	*e*Pn	**Pn**	**01 19 13.1**	**+3.1**
THZ	**Tophouse**	**14.62**	**213**	*e*Pn	**Pn**	**01 19 25.3**	**-0.8**
THZ				*e*Sn	**Sn**	**01 22 01.7**	**-5.6**
KHZ	**Kahutara**	**14.85**	**210**	*e*Pn	**Pn**	**01 19 27.1**	**-2.0**
	77nm,0.6s						
KHZ				*e*Sn	**Sn**	**01 22 04.8**	**-8.0**
OXZ	**Oxford**	**16.24**	**211**	*e*Pn	**Pn**	**01 19 45.5**	**-1.8**
	90nm,1.0s						
OXZ				*e*Sn	Sn	01 22 34.8	-12
RPZ	**Rata Peaks**	**16.99**	**212**	P	**Pn**	**01 19 54.3**	**-2.5**
	2.6nm,0.3s,baz=65,slow=4.8,SNR=9.8						
RPZ				S	Sn	01 22 52.7	-12
	1.2nm,0.3s,baz=311,slow=21,SNR=6.4						
DZM	**Mont Dzumac**	**17.16**	**293**	*e*Pn	**P**	**01 20 04.1**	**+3.4**
	50nm,1.4s						
RAR	**Rarotonga**	**17.39**	**64**	P	**Pn**	**01 20 02.0**	**+0.1**
RAR				pmax	pmax		
	comp=Z,133nm,2.3s						
EIDS	**Eidsvold**	**28.99**	**271**	*e*P	**P**	**01 22 01.1**	**+2.3**
	comp=Z,40nm,1.6s						
CTA	**Charters Tower**	**34.99**	**277**	P	**P**	**01 22 53.6**	**+2.2**
CTA				pmax	pmax		
	comp=Z,19nm,0.7s						
CTAO	**Charters Tower**	**34.99**	**277**	*e*P	**P**	**01 22 53.0**	**+1.6**
CTAO				pmax	pmax		
	comp=Z,13nm,0.6s						
CTAO	**Charters Tower**	**34.99**	**277**	*e*P	**P**	**01 22 53.0**	**+1.6**
	comp=Z,13nm,0.6s						
STKA	**Stephens Creek**	**35.84**	**256**	P	**P**	**01 23 00.2**	**+1.6**
	comp=Z,18nm,0.7s,baz=99,slow=10,SNR=32						
STKA	**Stephens Creek**	**35.84**	**256**	*e*P	**P**	**01 23 00.1**	**+1.4**
	comp=Z,3.4nm,0.7s						
PMG	**Port Moresby**	**39.55**	**293**	*e*P	**P**	**01 23 29.9**	**-0.3**
PMG				pmax	pmax		
	comp=Z,12nm,0.7s						
PMG	**Port Moresby**	**39.55**	**293**	*e*P	**P**	**01 23 29.9**	**-0.3**
	comp=Z,12nm,0.7s						
COEN	**Coen**	**40.37**	**284**	*e*P	**P**	**01 23 37.3**	**+0.3**
	comp=Z,6.4nm,0.8s						
AS01	**Alice Springs**	**44.38**	**266**	*e*P	**P**	**01 24 08.9**	**-0.7**
AS31	**Alice Springs**	**44.41**	**266**	*e*P	**P**	**01 24 09.9**	**0.0**
	comp=Z,1.1nm,0.9s						
ASAR	**Alice Springs**	**44.42**	**266**	P	**P**	**01 24 09.7**	**-0.3**
	comp=Z,3.9nm,0.6s,baz=102,slow=8.0,SNR=43						
ASAR				PcP	**PP**	**01 25 54.2**	**+0.6**
	comp=Z,2.5nm,0.8s,baz=112,slow=3.8,SNR=7.8						
WB2	**Warramunga Arr**	**45.35**	**271**	*e*P	**P**	**01 24 17.0**	**-0.4**
	comp=Z,20nm,0.6s						
WRAB	**Tennant Creek**	**45.35**	**271**	*e*P	**P**	**01 24 16.3**	**-1.1**
WRAB				pmax	pmax		
	comp=Z,17nm,0.6s						
WRAB	**Tennant Creek**	**45.35**	**271**	*e*P	**P**	**01 24 16.3**	**-1.1**
	comp=Z,17nm,0.6s						
WRA	**Warramunga Arr**	**45.36**	**271**	P	**P**	**01 24 16.9**	**-0.6**
	comp=Z,21nm,0.7s,baz=110,slow=7.7,SNR=102						
WRA				PcP	**PcP**	**01 25 57.1**	**+0.4**
	comp=Z,2.5nm,0.6s,baz=112,slow=3.3,SNR=6.7						
FORT	**Forrest**	**47.41**	**254**	*e*P	**P**	**01 24 33.3**	**-0.2**
	comp=Z,234nm,0.8s						
SBA	**Scott Base**	**48.65**	**185**	*e*P	**P**	**01 24 46.8**	**+4.5**
SBA				pmax	pmax		
	comp=Z,9.0nm,1.0s						
SBA	**Scott Base**	**48.65**	**185**	*e*P	**P**	**01 24 46.8**	**+4.5**
	comp=Z,9.3nm,1.0s						
VNDA	**Vanda**	**48.74**	**186**	P	**P**	**01 24 47.0**	**+3.9**
	comp=Z,2.2nm,0.8s,baz=13,slow=6.5,SNR=12						
VNDA	**Vanda**	**48.74**	**186**	P	**P**	**01 24 47.0**	**+3.9**
VNDA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
FITZ	**Fitzroy Crossi**	**53.64**	**269**	*e*P	**P**	**01 25 20.3**	**-0.3**
	comp=Z,9.3nm,0.8s						
CASY	**Casey**	**56.19**	**208**	*e*P	**P**	**01 25 39.9**	**+1.5**
	comp=Z,13nm,0.8s						
MBWA	**Marble Bar**	**57.55**	**263**	*e*P	**P**	**01 25 47.8**	**-0.9**
	comp=Z,115nm,1.2s						
MAW	**Mawson**	**73.24**	**200**	P	**P**	**01 27 31.7**	**+2.2**
	comp=Z,7.1nm,0.7s,baz=128,slow=9.5,SNR=12						
KKM	**Kota Kinabalu**	**73.62**	**287**	*e*P	**P**	**01 27 31.5**	**-1.2**
	comp=Z,8.3nm,0.7s						
SYO	**Syowa Base**	**77.90**	**193** ⇓	*e*P	**P**	**01 27 54.0**	**-2.2**
SYO	**Syowa Base**	**77.90**	**193** ⇓	*e*pP	**P**	**01 27 56.6**	**+0.4**
MJAR	**Matsushiro Arr**	**78.55**	**324**	P	**P**	**01 27 59.6**	**-0.6**
	comp=Z,7.7nm,0.7s,baz=159,slow=5.5,SNR=24						
MAJO	**Matsushiro**	**78.56**

MTPU	Mount Pierson	90.42	45	eP		P	01 29 01.5	+0.8
	comp=Z,2.2nm,1.0s							
CN2	Changchun	90.51	322	eP		P	01 29 01.0	+0.6
CN2				pmax		pmax		
	comp=Z,10.0nm,0.6s							
TIA	Tai'an	90.56	312	⇓P		P	01 29 01.9	+1.0
TIA				pmax		pmax		
	comp=Z,10.0nm,0.7s							
MNTX	Cornudas Mount	91.14	54	eP		P	01 29 02.6	-1.2
	comp=Z,1.0nm,0.7s							
ANMO	Albuquerque	92.26	51	eP		P	01 29 08.3	-0.8
ANMO				pmax		pmax		
	comp=Z,1.0nm,0.9s							
ANMO	Albuquerque	92.26	51	eP		P	01 29 08.3	-0.8
	comp=Z,1.3nm,0.9s							
ENH	Enshi	92.37	304	eP		P	01 29 10.4	+0.9
	comp=Z,81nm,1.3s							
GYA	Guiyang	92.41	299	P		P	01 29 11.0	+1.1
GYA				pP		pP	01 29 18.8	+1.1
GYA				PP		PP	01 32 55.2	+3.9
GYA	Guiyang	92.41	299	SKS		SKSac	01 39 42.0	-0.1
GYA	Guiyang	92.41	299	S		S	01 40 12.6	+0.2
GYA	Guiyang	92.41	299	SS		SS	01 46 27.7	+3.4
GYA				pmax		pmax		
	comp=Z,20nm,1.0s							
GYA				pmax		pmax		
	comp=Z,120nm,7.4s							
GYA				LR		LR		
	comp=N,520nm,22.4s							
GYA				LR		LR		
	comp=E,480nm,21.8s							
GYA				LR		LR		
	comp=Z,510nm,20.6s							
HLID	Hailey	92.58	40	eP		P	01 29 09.7	-0.6
	comp=Z,1.6nm,1.0s							
LVC	Limon Verde	93.06	118	eP		P	01 29 13.8	+0.4
	comp=Z,6.3nm,1.1s							
CMAR	Chiang Mai Arr	94.44	289	P		P	01 29 20.2	+0.9
	comp=Z,0.9nm,0.4s,baz=146,slow=3.5,SNR=3.7							
TPAW	Teton Pass	94.50	42	eP		P	01 29 18.2	-1.2
BOZ	Bozeman (W)	95.41	40	eP		P	01 29 22.6	-0.7
BOZ				pmax		pmax		
	comp=Z,4.0nm,1.1s							
BOZ	Bozeman (W)	95.41	40	eP		P	01 29 22.6	-0.7
	comp=Z,3.6nm,1.1s							
CD2	Chengdu	96.90	302	eP		P	01 29 30.2	0.0
ILAR	Eielson Array	97.14	12	P		P	01 29 28.9	-1.6
	comp=Z,0.5nm,0.8s,baz=216,slow=4.9,SNR=5.9							
MK01	Makanchi Array	118.41	310	ePKPdf		PKPdf	01 34 45.0	-1.0
MKAR	Makanchi Array	118.42	310	PKP		PKPdf	01 34 45.4	-0.7
	comp=Z,1.7nm,0.7s,baz=108,slow=1.9,SNR=11							
ZALV	Zalesovo Beam	118.49	318	PKP		PKPdf	01 34 45.0	-1.0
	comp=Z,1.3nm,0.7s,baz=178,slow=1.9,SNR=6.2							
ZALV	Zalesovo Beam	118.49	318	PKIKP		PKPdf	01 34 45.0	-1.0
ZALV				pmax		pmax		
	comp=Z,1.0nm,0.7s							
KSH	Kashi	121.08	301	ePKP		PKPdf	01 34 50.3	-1.3
KSH				esPKP			01 35 04.1	
KSH				ePP		PP	01 36 23.8	+1.9
KSH				SKS		SKSdf	01 41 56.7	-5.5
KSH				SKKS		SKKSac	01 43 12.4	-7.3
KSH				AMB		AMB		
	comp=Z,49nm,4.8s							
KSH				LR		LR		
	comp=N,120nm,8.1s							
KSH				LR		LR		
	comp=E,120nm,8.9s							
KSH				LR		LR		
	comp=Z,130nm,8.3s							
KURK	Kurchatov	121.61	314	ePKIKP		PKPdf	01 34 51.6	-0.4
KURK	Kurchatov	121.61	314	ePKPdf		PKPdf	01 34 51.6	-0.4
TKM2	Tokmak 2	122.15	304	ePKIKP		PKPdf	01 34 52.9	-0.7
TKM2	Tokmak 2	122.15	304	ePKPdf		PKPdf	01 34 52.9	-0.7
EKS2	Erkin-Say	123.41	304	ePKIKP		PKPdf	01 34 56.1	+0.2
EKS2	Erkin-Say	123.41	304	ePKPdf		PKPdf	01 34 56.1	+0.2
MNAS	Manas	124.30	303	PKIKP		PKPdf	01 34 58.0	+0.3
OTUK	Ortayu	125.31	310	PKIKP		PKPdf	01 34 59.6	+0.3
KKAR	Karatay Array	125.85	304	ePKIKP		PKPdf	01 35 00.4	-0.1
KKAR	Karatay Array	125.85	304	ePKPdf		PKPdf	01 35 00.4	-0.1
BRVK	Borovoye	126.99	316	ePKIKP		PKPdf	01 35 02.2	-0.1
BRVK	Borovoye	126.99	316	ePKPdf		PKPdf	01 35 02.2	-0.1
ZRNK	Zerenda	127.76	316	ePKIKP		PKPdf	01 35 03.6	-0.2
ZRNK	Zerenda	127.76	316	ePKPdf		PKPdf	01 35 03.6	-0.2
ARU	Arti	133.50	321	ePKIKP		PKPdf	01 35 13.9	-0.6
ARU	Arti	133.50	321	ePKPdf		PKPdf	01 35 13.9	-0.6
ABKAR	Akbulak array	133.53	311	ePKPdf		PKPdf	01 35 15.2	+0.3
GEYT	Alibeck	134.49	295	PKP		PKPdf	01 35 18.4	+1.3
	comp=Z,2.5nm,0.7s,baz=38,slow=2.6,SNR=6.5							
ARCES	ARCESS Array B	138.34	349	PKP		PKPdf	01 35 22.6	-0.6
	comp=Z,3.8nm,1.0s,baz=270,slow=0.9,SNR=3.2							
VRH	Novokhopyorsk	144.53	318	ePKIKP		PKPab	01 35 32.9	-0.3
VRH				pmax		pmax		
	comp=Z,10.0nm,0.6s							
GNI	Garni	144.96	298	ePKIKP		PKPdf	01 35 36.2	+0.1
GNI	Garni	144.96	298	ePKPdf		PKPdf	01 35 36.2	+0.1
FIA1	FINESS Array S	145.08	341	ePKPdf		PKPbc	01 35 34.2	-0.7
FINES	FINESS Array B	145.08	341	PKIKP		PKPbc	01 35 34.0	-0.9
	comp=Z,15nm,0.6s,baz=63,slow=2.8,SNR=120							
FINES	FINESS Array B	145.08	341	PKIKP		PKPbc	01 35 34.0	-0.9
FINES				pmax		pmax		
	comp=Z,15nm,0.6s							
ZEI	Tsey	145.30	303	*i* PKIKP		PKPbc	01 35 36.2	-0.3
ZEI				pmax		pmax		
	comp=Z,59nm,0.7s							
OBN	Obninsk	145.46	326	PKIKP		PKPdf	01 35 35.5	-0.7
OBN	Obninsk	145.46	326	ePKPbc		PKPdf	01 35 35.9	-0.4
AKH	Akhalkalaki	145.78	301	⇓*i* P		PKPab	01 35 39.4	+0.9
KBZ	Khabaz	145.87	305	PKPbc		PKPbc	01 35 38.2	+0.3
	comp=Z,4.7nm,0.8s,baz=88,slow=4.5,SNR=13							
VSR	Storozhevoye	146.00	319	ePKP2		PKPdf	01 35 37.3	0.0
VSR				pmax		pmax		
	comp=Z,50nm,0.9s							
KBSD	Kabsdagh	148.41	293	eP		PKPdf	01 35 35.2	-6.7
KBSD				eP		PKPbc	01 35 35.7	-10
NB2	NORSAR Subarra	148.41	353	PKP		PKPbc	01 35 43.7	-1.0
	comp=Z,6.5nm,0.8s,baz=8.7,slow=2.8							
NOA	NORSAR Array B	148.41	353	PKPbc		PKPbc	01 35 43.6	-1.0
	comp=Z,4.8nm,0.7s,baz=14,slow=4.4,SNR=17							
KSRV	Kasrt alli	149.68	291	eP		PKPbc	01 35 51.1	+2.5
ZALF	Zalf	151.01	285	eP		PKPdf	01 35 39.9	-6.2
ROOS	tl_alroos	151.09	287	eP		PKPbc	01 35 52.7	+0.6
SIM	Simferopol'	151.60	310	*i* PKIKP		PKPbc	01 35 53.5	+0.7
SIM				pmax		pmax		
	comp=Z,14nm,0.6s							
AKASG	Malin Array Ba	151.64	324	PKPbc		PKPbc	01 35 52.5	-0.2
	comp=Z,14nm,0.7s,baz=46,slow=3.0,SNR=46							
KIEV	Kiev	151.65	324	ePKIKP		PKPbc	01 35 52.4	-0.3
KIEV	Kiev	151.65	324	ePKPbc		PKPbc	01 35 52.4	-0.3
BTCH	Batrach	151.74	291	eP		PKPbc	01 35 53.6	+0.1
MARH	Ras Al Marh	151.76	287	eP		PKPbc	01 35 55.1	+1.2
HAWK	Haweek	151.83	288	eP		PKPbc	01 35 54.5	+0.6
BIDA	Albida	151.89	289	eP		PKPbc	01 35 54.3	+0.4
SUW	Suwalki	151.97	335	ePKP		PKPbc	01 35 53.0	-0.3
SUW	Suwalki	151.97	335	ePKIKP		PKPbc	01 35 53.0	-0.3
BR131	Keskin Array S	153.46	300	ePKPbc		PKPbc	01 35 57.5	+0.2
BRTR	Keskin Array B	153.46	300	PKPbc		PKPbc	01 35 57.5	+0.1
	comp=Z,1.3nm,0.7s,baz=116,slow=3.4,SNR=8.3							
BRTR				PKPab		PKPab	01 36 10.7	+1.0
	comp=Z,2.7nm,0.8s,baz=131,slow=3.4,SNR=11							
SORM	Soroca	153.62	321	⇑*i* P		PKPbc	01 35 56.5	-0.7
SORM	Soroca	153.62	321	⇑PKIKP		PKPbc	01 35 56.5	-0.7
CSS	Mathiatis	154.34	289	ePKPdf		PKPdf	01 35 50.3	-0.6
CSS				ePKPbc		PKPbc	01 35 59.3	0.0
CSS				ePKPab		PKPab	01 36 14.4	+0.9
CFR	Carcaliu	155.32	315	⇓*i* P		PKPdf	01 36 00.1	+8.2
CFR	Carcaliu	155.32	315	⇓PKIKP		PKPdf	01 36 00.1	+8.2
KWP	Kalwaria Pacla	155.48	329	ePKP		PKPab	01 36 15.5	-2.2
KWP	Kalwaria Pacla	155.48	329	ePKP2		PKPab	01 36 15.5	-2.2
TESR	Tescani	155.49	319	⇑*i* P		PKPab	01 36 16.7	-1.2
BURAR	Bucovina Array	155.62	323	⇓*i* P		PKPdf	01 36 02.4	+10
BURAR	Bucovina Array	155.62	323	⇓PKIKP		PKPdf	01 36 02.4	+10
TLB	Topalu	155.67	314	⇑*i* P		PKPab	01 36 19.0	+0.3
TLB	Topalu	155.67	314	⇑PKP2		PKPab	01 36 19.0	+0.3
VRI	Vrincioaia	155.81	318	⇑*i* P		PKPab	01 36 19.9	+0.6
VRI	Vrincioaia	155.81	318	⇑PKP2		PKPab	01 36 19.9	+0.6
KOLS	Kolonicke sedl	156.18	328	ePKP2		PKPab	01 36 20.4	-0.4
KOLS	Kolonicke sedl	156.18	328	ePKP		PKPab	01 36 20.4	-0.4
ARR	Arges	157.30	319	⇑*i* P		PKPdf	01 36 06.4	+12
DRGR		157.45	324	⇓*i* P		PKPdf	01 36 10.3	+16
BRG	Berggiesshubel	157.61	342	ePKP		PKPab	01 36 26.2	-0.6
	comp=Z,4.0nm,0.8s							
LOT	Lotru	157.74	320	⇓*i* P		PKPdf	01 36 06.1	+11
VYHS	Vyhne	158.00	332	ePKP2		PKPab	01 36 28.7	+0.1
VYHS	Vyhne	158.00	332	ePKP		PKPab	01 36 28.7	+0.1
SMOL	Smolenice	158.54	334	ePKP2		PKPab	01 36 31.1	+0.1
SMOL	Smolenice	158.54	334	ePKP		PKPab	01 36 31.0	+0.1
KHC	Kasperske Hory	159.29	341	ePKPAB		PKPab	01 36 33.5	-0.7
KHC	Kasperske Hory	159.29	341	ePKP2		PKPab	01 36 33.5	-0.7
GERES	GERESS Array B	159.51	340	PKPab		PKPab	01 36 34.8	-0.4
	comp=Z,0.7nm,0.7s,baz=20,slow=4.4,SNR=5.2							
VTS	Vitosha	159.71	314	⇓*i* P		PKPab	01 36 36.6	+0.2
VTS	Vitosha	159.71	314	⇓PKP2		PKPab	01 36 36.6	+0.2
TORD	Torodi Ar. Bea	163.27	174	PKP		PKPdf	01 36 01.2	-0.9
	comp=Z,1.2nm,1.0s,baz=315,slow=0.8,SNR=4.5							
TORD				PKPab		PKPab	01 36 53.3	+1.0
	comp=Z,7.1nm,0.9s,baz=190,slow=3.8,SNR=24							
TIP	Timpagrande	165.66	314	ePKPab		PKPab	01 37 01.3	-1.3
TAM	Tamanrasset	172.71	195	ePKIKP		PKPdf	01 36 09.5	+1.0
TAM	Tamanrasset	172.71	195	ePKPdf		PKPdf	01 36 09.5	+1.0

IDC 07 01:24:25.9±5.5, 27.91S×176.83W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.7/25, mbtmp3.7/2, Error ellipse: s-maj=272.3km s-min=52.4km az=156.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.65	215	Sn	Sn	01 25 14.7	-3.2
	303nm,0.3s,baz=85,slow=21,SNR=6.4						
ASAR	Alice Springs	44.33	264	P	P	01 32 37.6	-0.5
	0.5nm,0.4s,baz=105,slow=7.8,SNR=10						
WRA	Warramunga Arr	45.10	269	P	P	01 32 44.5	+0.4
	0.4nm,0.3s,baz=108,slow=7.8						
FINES	FINESS Array B	143.13	342	PKP	PKPbc	01 43 58.2	+0.1
	0.5nm,0.5s,baz=48,slow=2.8,SNR=6.0						
NOA	NORSAR Array B	146.43	353	PKPbc	PKPbc	01 44 08.2	-0.2
	1.0nm,0.6s,baz=12,slow=4.5,SNR=3.5						

*IDC **07** 01:26:33.9±0.8, 29.47S×176.02W, h0km, mb4.4/10, mb1 4.6/10, mb1mx4.4/26, mbtmp4.3/10, MS4.2/11, Ms1 4.2/11, ms1mx3.9/35, Error ellipse: s-maj=37.1km s-min=17.3km az=169.0*

*NEIC **07** 01:26:36.4±0.2, 29.51S×176.20W, h10km, mb5.1/63, Error ellipse: s-maj=8.6km s-min=4.8km az=151.0*

*BJI **07** 01:26:37.3, 29.27S×176.01W, h16km, mb5.1/17, mB5.6/13, Ms5.1/8, Ms7 5.0/8*

*ISCJB **07** 01:26:38.0±0.2, 29.82S±0.05×176.15W±0.04, h33km, mb5.1/77, MS4.2/13, Error ellipse: s-maj=8.0km s-min=4.6km az=155.3*

*MOS **07** 01:26:39.3±1.0, 29.25S×176.30W, h33km, mb5.3/22, Error ellipse: s-maj=12.4km s-min=11.1km az=174.3*

ISC 07 01:26:39.6±0.4, 29.79S±0.06×176.16W±0.06, h35km, n244, σ1§56/244, mb5.1/77, MS4.3/13, 3C-1D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.62	289	Pn	Pn	01 27 05.4	-0.3
	881nm,0.3s,baz=81,slow=14,SNR=15						
RAO				Sn	Sn	01 27 27.2	+1.9
	1µm,0.3s,baz=114,slow=20,SNR=7.3						
URZ	Urewera	10.12	212	Pn	Pn	01 28 54.7	-7.7
	0.8nm,0.3s,baz=100,slow=23,SNR=4.2						
URZ				Sn	Sn	01 30 55.9	+1.2
	5.1nm,0.3s,baz=115,slow=20,SNR=13						
URZ	Urewera	10.12	212	ePn	Pn	01 29 00.9	-1.5
URZ				Sn	Sn	01 30 55.9	+1.2
MSVF	Nonsavu	13.11	335	eP	Pn	01 29 39.4	-4.1
MSVF	Nonsavu	13.11	335	ePn	Pn	01 29 39.4	-4.1
THZ	Tophouse	14.87	214	ePn	P	01 30 10.2	-2.4
	307nm,1.9s						
THZ				eSn	Sn	01 32 45.6	-5.0
KHZ	Kahutara	15.09	211	ePn	Pn	01 30 09.5	-0.5
	86nm,0.8s						
KHZ				eSn	Sn	01 32 47.5	-8.3
OXZ	Oxford	16.48	212	ePn	P	01 30 32.8	+2.5
	55nm,1.1s						
OXZ				eSn	Sn	01 33 20.1	-10
RAR	Rarotonga	17.07	64	Sn	Sn	01 33 16.9	-27
	0.7nm,0.3s,baz=276,slow=23,SNR=3.5						
RAR				LR	LR	01 35 11.7	
	comp=Z,612nm,21.9s,baz=280,slow=31						
RPZ	Rata Peaks	17.24	213	P	Pn	01 30 36.1	-1.4
	1.7nm,0.3s,baz=32,slow=2.9,SNR=7.1						
RPZ				S	Sn	01 33 35.6	-13
	0.5nm,0.3s,baz=225,slow=11,SNR=5.1						
DZM	Mont Dzumac	17.42	292	ePn	P	01 30 41.0	0.0
	84nm,1.3s						
DZM				eLR	LR	01 34 45.0	
	3µm,27.6s						
DZM	Mont Dzumac	17.42	292	ePn	P	01 30 41.5	+0.5
	55nm,1.4s						
TBI	Tubuai	24.70	81	eLR	LR	01 37 47.8	
	2µm,29.0s						
PPT2	Papeete2	27.13	69	eLR	LR	01 38 49.0	
	2µm,26.8s						
PPT	Papeete	27.14	69	LR	LR	01 42 17.9	
	comp=Z,533nm,18.6s,baz=262,slow=35						
CTA	Charters Tower	35.29	277	P	P	01 33 32.2	+0.9
	2.0nm,0.4s,baz=101,slow=11,SNR=4.8						
CTA				LR	LR	01 47 08.7	
	comp=Z,793nm,18.8s,baz=117,slow=35						
CTAO	Charters Tower	35.29	277	eP	P	01 33 30.6	-0.7
CTAO				pmax	pmax		
	comp=Z,34nm,0.7s						
CTAO	Charters Tower	35.29	277	eP	P	01 33 30.6	-0.7
	comp=Z,34nm,0.7s						
STKA	Stephens Creek	36.17	256	P	P	01 33 40.4	+1.6
	comp=Z,9.6nm,0.9s,baz=96,slow=11,SNR=9.2						
STKA				LR	LR	01 47 42.9	
	comp=Z,594nm,18.1s,baz=82,slow=35						
RKT	Rikitea	37.32	90	eLR	LR	01 43 40.0	
	comp=Z,919nm,28.0s						
TAOE	Nuku Hiva Isla	39.60	66	eLR	LR	01 44 17.0	
	comp=Z,812nm,28.9s						
PMG	Port Moresby	39.81	293	eP	P	01 34 08.3	-1.3
PMG				pmax	pmax		
	comp=Z,11nm,0.5s						
PMG	Port Moresby	39.81	293	eP	P	01 34 08.3	-1.3
	comp=Z,11nm,0.5s						
AS01	Alice Springs	44.70	266	eP	P	01 34 52.0	+2.6
ASAR	Alice Springs	44.74	265	P	P	01 34 49.2	-0.6
	comp=Z,1.0nm,0.4s,baz=102,slow=7.2,SNR=14						
ASAR				LR	LR	01 52 07.5	
	comp=Z,572nm,21.3s,baz=125,slow=34						
WB2	Warramunga Arr	45.66	271	eP	P	01 34 57.2	+0.1
	comp=Z,29nm,1.4s						
WRAB	Tennant Creek	45.67	271	eP	P	01 34 57.1	-0.1
WRAB				pmax	pmax		
	comp=Z,15nm,1.0s						
WRAB	Tennant Creek	45.67	271	eP	P	01 34 57.0	-0.2
	comp=Z,9.6nm,0.7s						
WRA	Warramunga Arr	45.67	271	P	P	01 34 56.6	-0.7
	comp=Z,4.8nm,0.7s,baz=109,slow=7.8,SNR=0.1						
WRA				LR	LR	01 53 09.9	
	comp=Z,302nm,18.4s,baz=205,slow=35						
FORT	Forrest	47.74	254	eP	P	01 35 15.3	+2.1
	comp=Z,172nm,0.8s						
SBA	Scott Base	48.77	185	eP	P	01 35 27.1	+6.6
SBA				pmax	pmax		
	comp=Z,30nm,1.6s						
SBA	Scott Base	48.77	185	eP	P	01 35 27.1	+6.6
	comp=Z,30nm,1.6s						
JAY	Jayapura	49.05	295	LR	LR	01 54 13.6	
	comp=Z,6.8nm,19.4s,baz=150,slow=34						
FITZ	Fitzroy Crossi	53.96	269	LR	LR	01 58 08.4	
	comp=Z,98nm,19.0s,slow=35						
FITZ	Fitzroy Crossi	53.96	269	eP	P	01 36 00.2	0.0
	comp=Z,5.0nm,0.9s						
CASY	Casey	56.42	208	eP	P	01 36 19.5	+2.3
	comp=Z,1.6nm,0.8s						
GUMO	Guam	57.20	313	LR	LR	02 01 32.4	
	comp=Z,134nm,18.1s,baz=152,slow=37						
KAPI	Kappang	65.08	279	LR	LR	02 06 57.0	
	comp=Z,133nm,18.2s,baz=125,slow=37						
KKM	Kota Kinabalu	73.89	287	eP	P	01 38 12.1	+0.6
	comp=Z,20nm,1.1s						
SYO	Syowa Base	78.06	192	⇑eP	P	01 38 35.0	+0.8
SYO	Syowa Base	78.06	192	⇑esP	P	01 38 40.8	+6.6
SYO	Syowa Base	78.06	192	⇑ePcP	PcP	01 38 45.2	+1.4
MJAR	Matsushiro Arr	78.67	324	P	P	01 38 36.2	-1.7
	comp=Z,1.0nm,0.3s,baz=167,slow=6.0,SNR=4.3						
MAJO	Matsushiro	78.67	324	eP	P	01 38 35.7	-2.3
MAJO				pmax	pmax		
	comp=Z,28nm,0.9s						
MAJO	Matsushiro	78.67	324	eP	P	01 38 36.4	-1.5
SNAA	Sanae	78.71	178	eP	P	01 38 40.2	+2.3
SNAA				pmax	pmax		
	comp=Z,18nm,1.3s						
SNAA	Sanae	78.71	178	eP	P	01 38 40.2	+2.3
	comp=Z,18nm,1.3s						
PLCA	Paso Flores	81.75	132	LR	LR	02 08 55.4	
	comp=Z,170nm,18.0s,baz=315,slow=31						
PKM	Mcpherson Peak	83.42	44	P	P	01 39 03.6	+0.1
	baz=227						
SKR	Severo-Kuril's	83.79	343	eP	P	01 39 02.4	-2.4
MURC	Murrieta	84.16	46	P	P	01 39 07.4	+0.2
	baz=229						
MONP2	Monument Peak	84.18	47	P	P	01 39 07.4	-0.1
	baz=229						
IKP	In-Ko-Pah, Jac	84.22	47	P	P	01 39 07.6	0.0
	baz=229						
BFSC	Mount Baldy Ra	84.29	45	P	P	01 39 07.7	-0.3
	baz=228						
VES	Vestal, Richgr	84.51	43	P	P	01 39 08.8	0.0
	baz=227						
EDW2	Edwards Air Fo	84.52	45	P	P	01 39 09.0	0.0
	baz=228						
SWSC	Sam W. Stewart	84.61	47	P	P	01 39 09.3	-0.1
	baz=230						
TPFO	Pinon Flats	84.63	46	P	P	01 39 09.5	-0.1
	baz=229						
PFO	Pinyon Flats O	84.63	46	P	P	01 39 09.7	0.0
	baz=229						
PFO	Pinyon Flats O	84.63	46	eP	P	01 39 09.9	+0.2
PFO				pmax	pmax		
	comp=Z,15nm,1.3s						
PFO	Pinyon Flats O	84.63	46	eP	P	01 39 09.9	+0.2
	comp=Z,15nm,1.3s						
ISA	Isabella, Lake	84.75	44	P	P	01 39 10.4	+0.2
	baz=228						
KSRS	Korea Array	84.93	319	P	P	01 39 10.6	-0.3
	comp=Z,1.2nm,0.8s,baz=132,slow=4.7,SNR=3.8						
KSAR	Wonju Array Be	84.94	319	P	P	01 39 10.6	-0.4
KSAR	Wonju Array Be	84.94	319	P	P	01 39 10.6	-0.4
KS01	Wonju Array Si	84.96	319	eP	P	01 39 10.3	-0.8
LRMC	Laurel Mtn Rad	85.11	44	P	P	01 39 12.2	+0.1
	baz=228						
RRX	Edison Barstow	85.12	45	P	P	01 39 12.2	+0.1
	baz=229						
BELC	Belle Mtn. Jos	85.17	46	P	P	01 39 12.2	-0.3
	baz=229,SNR=7.2						
CMB	Columbia Colle	85.25	41	eP	P	01 39 12.5	-0.1
CMB				pmax	pmax		
	comp=Z,8.0nm,1.1s						
CMB	Columbia Colle	85.25	41	eP	P	01 39 12.5	-0.1
	comp=Z,8.3nm,1.1s						
BC3	Big Chuckawall	85.29	47	P	P	01 39 13.2	+0.3
	baz=230,SNR=7.0						
GLA	Glamis	85.30	48	P	P	01 39 13.3	+0.3
	baz=230,SNR=6.3						
HEC	Hector,Ludlow	85.50	46	P	P	01 39 13.4	-0.6
	baz=229						
CWC	Cottonwood Cre	85.51	43	P	P	01 39 13.7	-0.4
	baz=228						
GSC	Goldstone, Bar	85.52	45	P	P	01 39 13.2	-0.9
	baz=229,SNR=8.1						
GSC	Goldstone, Bar	85.52	45	eP	P	01 39 14.0	-0.1
GSC				pmax	pmax		
	comp=Z,31nm,1.5s						
GSC	Goldstone, Bar	85.52	45	eP	P	01 39 14.0	-0.1
	comp=Z,30nm,1.5s						
AFDM	Forest Hills D	85.56	40	eP	P	01 39 14.1	0.0
	comp=Z,12nm,1.2s						
MPMC	Manual Prospec	85.61	44	P	P	01 39 14.4	-0.2
	baz=228,SNR=9.8						
DAC	Darwin (Calif)	85.69	44	eP	P	01 39 15.2	+0.2
DAC				pmax	pmax		
	comp=Z,6.0nm,1.2s						
DAC	Darwin (Calif)	85.69	44	eP	P	01 39 15.2	+0.2
	comp=Z,6.0nm,1.2s						
IRM	Iron Mountain	85.81	47	P	P	01 39 15.7	+0.2
	baz=230,SNR=14						
TIN	Tinemaha, Big	85.83	43	P	P	01 39 15.5	-0.1
	baz=228						
WDC	Whiskeytown Da	85.85	38	eP	P	01 39 15.6	+0.2
WDC				pmax	pmax		
	comp=Z,20nm,1.3s						
WDC	Whiskeytown Da	85.85	38	eP	P	01 39 15.6	+0.2
	comp=Z,20nm,1.3s						
GMRC	Granite Mounta	85.89	46	P	P	01 39 15.9	-0.1
	229,SNR=6.0						
214A	Organ Pipe Nat	85.92	50	P	P	01 39 15.9	-0.1
	baz=231						
214A	Organ Pipe Nat	85.92	50	eP	P	01 39 16.0	-0.1
	comp=Z,200nm,2.0s						
Y12C	Blythe	85.94	47	P	P	01 39 16.1	0.0
	baz=230						
Y12C	Blythe	85.94	47	eP	P	01 39 16.8	+0.7
	comp=Z,38nm,1.8s						
N02D	Trinity Center	86.04	38	P	P	01 39 16.4	-0.1
	baz=224						

E03A	**Lebam**	**89.61**	**33**	*e*P		**P**	**01 39 33.9**	**+0.6**
	comp=Z,52nm,1.3s								
121A	**Cookes Peak, D**	**89.65**	**52**	P		**P**	**01 39 34.3**	**+0.1**
	baz=234								
NLWA	**Neilton Lookou**	**90.08**	**33**	*e*P		**P**	**01 39 35.9**	**+0.3**
	comp=Z,16nm,1.1s								
MTPU	**Mount Pierson**	**90.13**	**45**	*e*P		**P**	**01 39 37.8**	**+1.3**
	comp=Z,45nm,1.9s								
CN2	**Changchun**	**90.63**	**322**	*e*P		**P**	**01 39 40.7**	**+2.5**
TX31	**Lajitas Ar. Si**	**90.72**	**56**	*e*P		**P**	**01 39 39.4**	**+0.3**
TXAR	**Lajitas Array**	**90.72**	**56**	P		**P**	**01 39 37.7**	**-1.4**
	comp=Z,2.5nm,1.0s,baz=215,slow=6.1,SNR=13								
D05A	**Enumclaw**	**90.83**	**34**	*e*P		**P**	**01 39 40.3**	**+1.3**
	comp=Z,47nm,1.2s								
MNTX	**Cornudas Mount**	**90.83**	**54**	P		**P**	**01 39 39.0**	**-0.4**
	baz=235								
MNTX	**Cornudas Mount**	**90.83**	**54**	*e*P		**P**	**01 39 39.1**	**-0.4**
	comp=Z,21nm,1.8s								
G08A	**Pilot Rock**	**91.02**	**36**	*e*P		**P**	**01 39 40.1**	**+0.1**
	comp=Z,22nm,1.2s								
DUG	**Dugway, Tooele**	**91.09**	**43**	P		**P**	**01 39 39.9**	**-0.7**
	baz=231								
LAZ	**Ladron**	**91.19**	**51**	*e*P		**P**	**01 39 41.9**	**+0.6**
KLR	**Kul'dur**	**91.32**	**329**	*e*P		**P**	**01 39 39.7**	**-1.5**
BNM	**Barren Site**	**91.38**	**51**	*e*P		**P**	**01 39 42.3**	**+0.1**
BGU	**Big Grassy Mou**	**91.42**	**43**	*e*P		**P**	**01 39 42.7**	**+0.6**
	comp=Z,12nm,1.8s								
MFID	**Camas Ranch**	**91.43**	**39**	*e*P		**P**	**01 39 42.6**	**+0.6**
	comp=Z,8.8nm,1.1s								
TMUT	**Trail Mountain**	**91.50**	**45**	*e*P		**P**	**01 39 43.4**	**+0.7**
	comp=Z,7.4nm,1.0s								
B05A	**Bryant**	**91.54**	**33**	P		**P**	**01 39 43.6**	**+1.4**
	baz=225								
BMO	**Blue Mountains**	**91.58**	**38**	*e*P		**P**	**01 39 42.3**	**-0.4**
	comp=Z,12nm,1.4s								
SRU	**San Rafael Swe**	**91.81**	**45**	*e*P		**P**	**01 39 44.3**	**+0.3**
SRU				pmax	pmax				
	comp=Z,9.0nm,1.1s								
SRU	**San Rafael Swe**	**91.81**	**45**	*e*P		**P**	**01 39 44.2**	**+0.3**
	comp=Z,8.8nm,1.1s								
ANMO	**Albuquerque**	**91.96**	**50**	P		**P**	**01 39 44.8**	**0.0**
	baz=235								
ANMO	**Albuquerque**	**91.96**	**50**	*e*P		**P**	**01 39 44.4**	**-0.4**
ANMO				pmax	pmax				
	comp=Z,52nm,2.4s								
ANMO	**Albuquerque**	**91.96**	**50**	*e*P		**P**	**01 39 44.4**	**-0.4**
	comp=Z,52nm,2.4s								
SPUT	**South Promonto**	**92.01**	**43**	*e*P		**P**	**01 39 44.8**	**0.0**
	comp=Z,13nm,1.3s								
HVU	**Hansel Valley**	**92.11**	**42**	*e*P		**P**	**01 39 45.3**	**0.0**
HVU				pmax	pmax				
	comp=Z,21nm,1.5s								
HVU	**Hansel Valley**	**92.11**	**42**	*e*P		**P**	**01 39 45.3**	**0.0**
	comp=Z,21nm,1.5s								
D08A	**Wollman Farm,**	**92.24**	**35**	*e*P		**P**	**01 39 45.8**	**+0.3**
	comp=Z,18nm,1.0s								
HLID	**Hailey**	**92.31**	**40**	P		**P**	**01 39 46.2**	**0.0**
	baz=230								
HLID	**Hailey**	**92.31**	**40**	*e*P		**P**	**01 39 45.6**	**-0.6**
	comp=Z,8.8nm,1.2s								
TCUT	**Toone Canyon**	**92.50**	**43**	*e*P		**P**	**01 39 48.8**	**+1.5**
	comp=Z,18nm,1.6s								
ENH	**Enshi**	**92.58**	**304**	*e*P		**P**	**01 39 47.5**	**-0.1**
	comp=Z,84nm,1.7s								
GYA	**Guiyang**	**92.64**	**299**	P		**P**	**01 39 50.0**	**+1.9**
GYA				pP		pP	01 39 57.0	-2.2
GYA				PP		**PP**	**01 43 34.2**	**+3.8**
GYA				SKS		**SKSac**	**01 50 21.8**	**+2.5**
GYA				S		**S**	**01 50 50.4**	**-0.1**
GYA				SS		**SS**	**01 57 06.2**	**+2.3**
GYA				pmax	pmax				
	comp=Z,20nm,1.0s								
GYA				pmax	pmax				
	comp=Z,120nm,7.4s								
GYA				LR	LR				
	comp=Z,520nm,22.2s								
GYA				LR	LR				
	comp=Z,480nm,21.6s								
GYA				LR	LR				
	comp=Z,510nm,20.8s								
LVC	**Limon Verde**	**92.83**	**118**	*e*P		**P**	**01 39 50.5**	**+1.0**
	comp=Z,6.2nm,1.0s								
933A	**Laredo**	**93.03**	**60**	P		**P**	**01 39 50.3**	**+0.6**
	baz=238								
034A	**Hebbronville**	**93.19**	**61**	P		**P**	**01 39 51.1**	**+0.6**
	baz=238								
S22A	**4UR Ranch, Cre**	**93.33**	**48**	P		**P**	**01 39 51.1**	**-0.1**
	baz=235								
S22A	**4UR Ranch, Cre**	**93.33**	**48**	*e*P		**P**	**01 39 51.4**	**+0.2**
	comp=Z,3.3nm,1.0s								
BJI	**Beijing**	**93.62**	**315**	P		**P**	**01 39 54.2**	**+2.1**
BJI				pmax	pmax				
	comp=Z,8.0nm,0.8s								
O20A	**White River Ci**	**93.83**	**45**	P		**P**	**01 39 52.8**	**-0.6**
	baz=234								
MSTX	**Muleshoe**	**93.92**	**53**	P		**P**	**01 39 52.9**	**-0.9**
	baz=237								
MSTX	**Muleshoe**	**93.92**	**53**	*e*P		**P**	**01 39 53.3**	**-0.5**
	comp=Z,4.3nm,0.9s								
MCMT	**McKenzie Canyo**	**93.98**	**40**	*e*P		**P**	**01 39 54.1**	**+0.1**
SDCO	**Great Sand Dun**	**94.19**	**49**	P		**P**	**01 39 54.8**	**-0.4**
	baz=235								
REDW	**Red Top Meadow**	**94.21**	**42**	*e*P		**P**	**01 39 54.3**	**-0.7**
	comp=Z,18nm,1.4s								
TPAW	**Teton Pass**	**94.23**	**41**	*e*P		**P**	**01 39 53.4**	**-1.8**
	comp=Z,8.3nm,1.2s								
DLMT	**Dillon**	**94.46**	**39**	*e*P		**P**	**01 39 56.1**	**+0.1**
	comp=Z,14nm,1.4s								
BW06	**Boulder Array**	**94.60**	**43**	*e*P		**P**	**01 39 55.5**	**-1.3**
PDAR	**Pinedale Array**	**94.60**	**43**	P		**P**	**01 39 55.2**	**-1.7**
	comp=Z,0.6nm,0.8s,baz=224,slow=4.1,SNR=4.7								
FLWY	**Flagg Ranch**	**94.73**	**41**	*e*P		**P**	**01 39 57.9**	**+0.4**
	comp=Z,16nm,1.3s								
433A	**Art**	**94.82**	**57**	P		**P**	**01 39 57.0**	**-0.9**
	baz=238								
CHMT	**Chamberlain Mo**	**95.08**	**38**	*e*P		**P**	**01 39 58.9**	**0.0**
Q24A	**Divide**	**95.11**	**48**	P		**P**	**01 39 58.7**	**-0.7**
	baz=236								
BOZ	**Bozeman (W)**	**95.17**	**39**	P		**P**	**01 39 59.2**	**-0.1**
	baz=232								
BOZ	**Bozeman (W)**	**95.17**	**39**	*e*P		**P**	**01 39 58.5**	**-0.8**
BOZ				pmax	pmax				
	comp=Z,17nm,1.4s								
BOZ	**Bozeman (W)**	**95.17**	**39**	*e*P		**P**	**01 39 58.5**	**-0.8**
	comp=Z,16nm,1.4s								
DLBC	**Dease Lake**	**95.94**	**22**	LR		LR	02 17 56.5		
	comp=Z,59nm,18.6s,baz=338,slow=32								
WRH	**Wood River Hil**	**96.49**	**12**	*e*P		**P**	**01 40 03.8**	**-0.9**
	comp=Z,8.5nm,1.1s								
DOT	**Dot Lake**	**96.53**	**14**	*e*P		**P**	**01 40 03.6**	**-1.3**
	comp=Z,7.4nm,1.1s								
CCB	**Clear Creek Bu**	**96.70**	**12**	*e*P		**P**	**01 40 04.5**	**-1.1**
	comp=Z,5.3nm,1.1s								
COLA	**College**	**96.90**	**12**	*e*P		**P**	**01 40 04.4**	**-2.0**
COLA				pmax	pmax				
	comp=Z,5.0nm,1.0s								
HHC	**Hu-ho-hao-te**	**96.97**	**313**	*e*P		**P**	**01 40 09.1**	**+1.6**
HHC				PP		**PP**	**01 44 10.8**	**+7.0**
HHC				S		**S**	**01 51 21.2**	**-6.4**
HHC				SS		**SS**	**01 58 05.1**	**+0.1**
HHC				pmax	pmax				
	comp=Z,29nm,1.0s								
HHC				pmax	pmax				
	comp=Z,70nm,4.7s								
HHC				LR	LR				
	comp=Z,120nm,14.8s								
HHC				LR	LR				
	comp=Z,210nm,14.8s								
HHC				LR	LR				
	comp=Z,210nm,13.6s								
ILAR	**Eielson Array**	**96.98**	**12**	P		**P**	**01 40 04.7**	**-2.2**
	comp=Z,1.9nm,1.0s,baz=212,slow=5.7,SNR=13								
IL1	**Eielson Array**	**96.99**	**12**	*e*P		**P**	**01 40 05.3**	**-1.6**
CD2	**Chengdu**	**97.12**	**301**	*e*P		Pdif	01 40 08.5	0.0
CD2				pP		pP	01 40 15.1	-4.4
CD2				PP		**PP**	**01 44 04.2**	**-0.9**
CD2				SKS		**SKSac**	**01 50 44.2**	**+1.2**
CD2				S		**ScS**	**01 51 30.2**	**+0.7**
CD2				sS		sS	01 51 41.5	-6.3
CD2				SS		**SS**	**01 58 08.4**	**+1.0**
CD2				pmax	pmax				
	comp=Z,10.0nm,0.5s								
CD2				pmax	pmax				
	comp=Z,120nm,6.2s								
RSSD	**Black Hills**	**98.67**	**44**	Pdiff		**P**	**01 40 14.8**	**-0.5**
	baz=237								
RSSD	**Black Hills**	**98.67**	**44**	*e*P		**P**	**01 40 14.7**	**-0.5**
RSSD				pmax	pmax				
	comp=Z,8.0nm,1.2s								
RSSD	**Black Hills**	**98.67**	**44**	*e*P		**P**	**01 40 14.7**	**-0.5**
	comp=Z,8.1nm,1.2s								
WMQ	**Urumqi**	**114.10**	**308**	*e*PKP		PKPdf	01 45 15.0	0.0
KSH	**Kashi**	**121.30**	**300**	*e*PKP		**PKPdf**	**01 45 29.6**	**+0.5**
KSH				*e*PP		**PP**	**01 47 06.4**	**+5.7**
KSH				PKS		**PKSdf**	**01 49 05.4**	**-0.4**
KSH				SKS		**SKSdf**	**01 52 36.3**	**-2.2**
KSH				SKKS		**SKKSac**	**01 53 54.3**	**-2.8**
KSH				AMB	AMB				
	comp=Z,60nm,6.2s								
KSH				LR	LR				
	comp=Z,140nm,8.2s								
KSH				LR	LR				
	comp=Z,130nm,9.8s								
KSH				LR	LR				
	comp=Z,110nm,6.2s								
KURK	**Kurchatov**	**121.78**	**314**	*e*PKIKP		**PKPdf**	**01 45 28.8**	**-0.6**
KURK	**Kurchatov**	**121.78**	**314**	*e*PKPdf		**PKPdf**	**01 45 28.8**	**-0.6**
BRVK	**Borovoye**	**127.14**	**316**	*e*PKIKP		**PKPdf**	**01 45 40.7**	**+1.1**
BRVK	**Borovoye**	**127.14**	**316**	*e*PKPdf		**PKPdf**	**01 45 40.7**	**+1.1**
ARU	**Arti**	**133.62**	**321**	*e*PKIKP		**PKPdf**	**01 45 51.3**	**-0.5**
ARU	**Arti**	**133.62**	**321**	*e*PKPdf		**PKPdf**	**01 45 51.3**	**-0.5**
ARCES	**ARCESS Array B**	**138.32**	**349**	PKP		**PKPdf**	**01 45 58.5**	**-1.7**
	comp=Z,1.2nm,0.8s,baz=318,slow=1.2,SNR=4.1								
DGRG	**David-gareji**	**144.60**	**301**	P		**PKPdf**	**01 46 12.2**	**-0.2**
DGRG	**David-gareji**	**144.60**	**301**	*e*PKIKP		**PKPdf**	**01 46 12.2**	**-0.2**
VRH	**Novokhopyorsk**	**144.67**	**318**	*e*PKIKP		**PKPdf**	**01 46 14.6**	**+2.5**
VRH				pmax	pmax				
	comp=Z,8.0nm,0.5s								
FINES	**FINESS Array B**	**145.10**	**341**	PKP		**PKPbc**	**01 46 10.5**	**-1.5**
	comp=Z,3.7nm,0.6s,baz=84,slow=2.9,SNR=20								
GNI	**Garni**	**145.19**	**298**	*e*PKIKP		**PKPdf**	**01 46 13.9**	**+0.3**
GNI	**Garni**	**145.19**	**298**	*e*PKPbc		**PKPdf**	**01 46 13.9**	**+0.3**
ZEI	**Tsey**	**145.52**	**303**	*i* PKIKP		**PKPdf**	**01 46 13.6**	**-0.6**
OBN	**Obninsk**	**145.56**	**327**	*d i* PKIKP		**PKPdf**	**01 46 12.6**	**-0.9**
OBN				*i*			01 46 24.0		
OBN				*i*			01 49 29.6		
OBN				pmax	pmax				
	comp=Z,14nm,0.9s								
OBN	**Obninsk**	**145.56**	**327**	*e*PKPbc		**PKPdf**	**01 46 13.0**	**-0.5**
NCK	**Nalchik**	**145.62**	**304**	*i* PKIKP		**PKPdf**	**01 46 13.5**	**-0.6**
ONI	**Oni**	**145.88**	**303**	P		**PKPab**	**01 46 16.3**	**+0.5**
ONI	**Oni**	**145.88**	**303**	*e*PKIKP		**PKPab**	**01 46 16.2**	**+0.5**
AKH	**Akhalkalaki**	**146.01**	**301**	P		**PKPab**	**01 46 17.3**	**+0.9**
AKH	**Akhalkalaki**	**146.01**	**301**	*e*PKP2		**PKPab**	**01 46 17.3**	**+0.9**
KBZ	**Khabaz**	**146.08**	**305**	PKPbc		**PKPdf**	**01 46 15.2**	**+0.4**
	comp=Z,0.8nm,0.6s,baz=37,slow=5.1,SNR=4.7								
VSR	**Storozhevoye**	**146.13**	**319**	*e*PKP2		**PKPdf**	**01 46 14.4**	**-0.2**
VSR				pmax	pmax				
	comp=Z,20nm,1.0s								
NEY	**Neytrino**	**146.29**	**304**	*i* PKP2		**PKPab**	**01 46 18.9**	**+1.4**
CHVG	**Ch'k'valeri**	**146.85**	**303**	P		PKPab	01 46 30.3	+11
NB2	**NORSAR Subarra**	**148.36**	**353**	PKP		**PKPbc**	**01 46 20.3**	**-1.3**
	comp=Z,37nm,2.0s,baz=17,slow=2.6								
NOA	**NORSAR Array B**	**148.36**	**353**	PKPbc		**PKPbc**	**01 46 20.4**	**-1.2**
	comp=Z,5.5nm,1.0s,baz=14,slow=4.3,SNR=8.0								
AKASG	**Malin Array Be**	**151.75**	**325**	PKPbc		**PKPbc**	**01 46 29.6**	**-0.5**
	comp=Z,4.0nm,0.6s,baz=46,slow=2.9,SNR=16								
KIEV	**Kiev**	**151.76**	**325**	*e*PKIKP		**PKPbc**	**01 46 29.4**	**-0.7**
KIEV	**Kiev**	**151.76**	**325**	*e*PKPbc		**PKPbc**	**01 46 29.4**	**-0.7**
BRTR	**Keskin Array B**	**153.69**	**300**	PKPbc		**PKPbc**	**01 46 34.9**	**-0.1**
	comp=Z,0.8nm,1.0s,baz=126,slow=1.7,SNR=5.0								
KOLS	**Kolonicke sedl**	**156.26**	**329**	*e*PKIKP		**PKPdf**	**01 46 30.8**	**+0.6**
KOLS	**Kolonicke sedl**	**156.26**	**329**	*e*PKP		**PKPdf**	**01 46 30.8**	**+0.6**
KECS	**Kecovo**	**157.39**	**330**	*e*PKIKP		**PKPdf**	**01 46 32.7**	**+1.1**
KECS	**Kecovo**	**157.39**	**330**	*e*PKP		**PKPdf**	**01 46 32.7**	**+1.1**
KECS				*e*			01 47 01.9		
DPC	**Dobruska-Polom**	**157.41**	**339**	*e*PKPAB		**PKPab**	**01 47 03.3**	**+0.1**
DPC				*ex*		x	01 47 18.7		
DPC	**Dobruska-Polom**	**157.41**	**339**	*e*PKP2		**PKPab**	**01 47 03.3**	**+0.1**
CLL	**Collm**	**157.44**	**345**	*e*PKPab		**PKPab**	**01 47 01.0**	**-2.2**
	comp=Z,4.0nm,1.0s								
CLL	**Collm**	**157.44**	**345**	*e*PKP2		**PKPab**	**01 47 01.0**	**-2.2**
CLL				pmax	pmax				
	comp=Z,4.0nm,1.0s								
BRG	**Berggiesshubel**	**157.62**	**343**	*e*P		PKPab	01 47 14.9	+11
	comp=Z,4.6nm,1.2s								
VYHS	**Vyhne**	**158.07**	**333**	*e*PKP2		**PKPab**	**01 47 06.3**	**+0.3**
VYHS	**Vyhne**	**158.07**	**333**	*e*PKP		**PKPab**	**01 47 06.3**	**+0.3**
KHC	**Kasperske Hory**	**159.30**	**342**	*e*PKPAB		**PKPab**	**01 47 11.2**	**-0.2**
KHC				*ex*		x	01 47 22.6		
KHC	**Kasperske Hory**	**159.30**	**342**	*e*PKP2		**PKPab**	**01 47 11.2**	**-0.2**
TORD	**Torodi Ar. Bea**	**163.32**	**173**	PKPab		**PKPab**	**01 47 30.7**	**+1.1**
	comp=Z,4.2nm,0.8s,baz=188,slow=4.0,SNR=16								
ESDC	**Sonseca Array**	**168.24**	**31**	PKPab		**PKPab**	**01 47 49.5**	**-1.5**
	comp=Z,1.0nm,0.9s,baz=304,slow=3.2,SNR=5.5								

MOS ***07*** *01:41:23.7±0.9, 48.°12N×155.°10E, h25km, mb4.5/15, Error ellipse: s-maj=8.4km s-min=4.4km az=78.0*

KRSC ***07*** *01:41:24.8±1.6, 48.°13N×156.°72E, h9km±38km, ML4.5*

ISCJB ***07*** *01:41:24.4±0.4, 48.°08N±0.°05×155.°06E±0.°07, h33km, mb4.3/29, MS3.9/1, Error ellipse: s-maj=9.4km s-min=2.7km az=43.1*

SKHL ***07*** *01:41:25.0±0.4, 47.°98N×155.°32E, h46km±2km, mb4.6/6*

IDC ***07*** *01:41:28.9±2.9, 48.°19N×154.°88E, h52km±25km, mb3.8/18, mb1 4.0/21, mb1mx3.8/53, mbtmp4.1/21, ML3.2/2, MS3.5/2, Ms1 3.5/2, ms1mx2.9/58, Error ellipse: s-maj=18.9km s-min=13.1km az=131.0*

NEIC ***07*** *01:41:29.7±0.9, 48.°22N×154.°92E, h60km±7km, mb4.3/2, Error ellipse: s-maj=12.2km s-min=6.1km az=138.0*

ISC 07 01:41:25.1±0.6, 48.°01N±0.°06×155.°06E±0.°06, h33km, n194,
σ2s 07/213, mb4.3/29, 16C-24D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.76**	**14**	*e*PN		**Pn**	**01 42 07.0**		**0.0**
SKR				*e*S		**Sb**	**01 42 46.3**		**-0.9**
SKR				pmax	pmax				
	comp=Z,100nm,0.6s								
SKR				smax	smax				
	comp=N,873nm,0.8s								
SKR				smax	smax				
	comp=E,876nm,0.8s								
SKR				MLR	MLR				
	comp=Z,800nm,13.0s								
SKR	**Severo-Kuril's**	**2.76**	**14**	*e*P		**Pn**	**01 42 07.0**		**0.0**
SKR				*e*S		**Sn**	**01 42 39.4**		**+0.2**
SKR	**Severo-Kuril's**	**2.76**	**14**	*e*P		**Pn**	**01 42 07.0**		**0.0**
SKR				AMB	AMB		01 42 08.6		
	comp=Z,100nm,0.6s								
SKR				*e*S		**Sn**	**01 42 38.2**		**-1.0**
SKR				A	A		01 42 56.4		
	comp=Z,870nm,0.8s								
SKR				A	A		01 42 56.4		
	comp=Z,880nm,0.8s								
SKR				AMS	AMS		01 43 23.8		
	comp=Z,800nm,13.0s								
PAU	**Pauzhetka**	**3.64**	**17**	PN		**Pn**	**01 42 19.2**		**+0.1**
PAU				S		**Sn**	**01 43 00.1**		**-0.8**
PAU	**Pauzhetka**	**3.64**	**17**	*e*P		**Pn**	**01 42 19.2**		**+0.1**
PAU				*e*S		**Sn**	**01 43 00.1**		**-0.8**
PAU	**Pauzhetka**	**3.64**	**17**	*e*P		**Pn**	**01 42 18.4**		**-0.7**
PAU				AMB	AMB		01 42 22.9		
	comp=Z,300nm,0.8s								
PAU				*e*S		**Sn**	**01 42 58.7**		**-2.2**
PAU				A	A		01 43 08.6		
	comp=Z,300nm,0.3s								
ASAK	**Asacha**	**4.74**	**22**	PN		**Pn**	**01 42 34.1**		**-0.2**
ASAK	**Asacha**	**4.74**	**22**	*e*P		**Pn**	**01 42 34.1**		**-0.2**
RUS	**Russkaya**	**4.95**	**25**	PN		**Pn**	**01 42 35.6**		**-1.5**
RUS	**Russkaya**	**4.95**	**25**	*e*P		**Pn**	**01 42 35.6**		**-1.5**
RUS				*e*S		**Sn**	**01 43 29.8**		**-3.3**
KRMR	**Karymshinskiy**	**5.21**	**21**	PN		**Pn**	**01 42 41.3**		**+0.7**
KRMR	**Karymshinskiy**	**5.21**	**21**	*e*P		**Pn**	**01 42 41.3**		**+0.7**
KRMR				*e*S		**Sn**	**01 43 38.5**		**-1.0**
PETK	**Petropavlovsk-**	**5.37**	**17**	P		**Pn**	**01 42 44.1**		**+1.1**
	comp=Z,5.5nm,0.3s,baz=178,slow=11,SNR=23								
PETK				LR	LR		01 45 17.5		
	comp=Z,474nm,18.3s,baz=175,slow=44								
PET	**Petropavlovsk**	**5.52**	**23**	PN		**Pn**	**01 42 46.5**		**+1.7**
PET	**Petropavlovsk**	**5.52**	**23**	*e*Pn		**Pn**	**01 42 46.7**		**+1.9**
	comp=Z,30nm,0.4s								
PET				*e*S		**Sn**	**01 43 45.5**		**-1.5**
PET	**Petropavlovsk**	**5.52**	**23**	*e*P		**Pn**	**01 42 46.5**		**+1.7**
PET				*e*S		**Sn**	**01 43 45.2**		**-1.8**
PET	**Petropavlovsk**	**5.52**	**23**	*e*P		**Pn**	**01 42 46.7**		**+1.9**
PET				AMB	AMB		01 42 54.2		
	comp=Z,40nm,0.6s								
PET				*e*S		**Sn**	**01 43 45.7**		**-1.3**
PET				A	A		01 43 59.6		
	comp=Z,660nm,0.6s								
PET				A	A		01 43 59.6		
	comp=Z,600nm,0.6s								
DALK	**Dalny**	**5.55**	**24**	PN		**Pn**	**01 42 45.0**		**-0.3**
DALK	**Dalny**	**5.55**	**24**	*e*P		**Pn**	**01 42 45.0**		**-0.3**
DALK				*e*S		**Sn**	**01 43 44.7**		**-3.2**
KUR	**Kuril'sk**	**5.68**	**243**	*i* PN		**Pn**	**01 42 50.8**		**+3.6**
KUR	**Kuril'sk**	**5.68**	**243**	*e*P		**Pn**	**01 42 50.8**		**+3.6**
KUR				AMB	AMB		01 42 52.0		
	comp=Z,30nm,0.5s								
KUR				*e*S		**Sn**	**01 43 54.0**		**+2.8**
KUR				A	A		01 44 00.4		
	comp=Z,80nm,0.1s								
UGLR	**Uglovaya**	**5.73**	**23**	PN		**Pn**	**01 42 47.8**		**-0.1**
UGLR	**Uglovaya**	**5.73**	**23**	*e*P		**Pn**	**01 42 47.8**		**-0.1**
AVH	**Avacha**	**5.76**	**23**	PN		**Pn**	**01 42 48.7**		**+0.5**
AVH	**Avacha**	**5.76**	**23**	*e*P		**Pn**	**01 42 48.7**		**+0.5**
AVH	**Avacha**	**5.76**	**23**	*e*P		**Pn**	**01 42 48.7**		**+0.5**
SMAR	**Somma**	**5.77**	**23**	PN		**Pn**	**01 42 48.2**		**-0.4**
SMAR	**Somma**	**5.77**	**23**	P		**Pn**	**01 42 48.2**		**-0.4**
KRER	**Koryakskii**	**5.79**	**22**	PN		**Pn**	**01 42 48.4**		**-0.5**
KRER	**Koryakskii**	**5.79**	**22**	*e*P		**Pn**	**01 42 48.4**		**-0.5**
SDLR	**Sedlovina**	**5.81**	**23**	PN		**Pn**	**01 42 48.3**		**-0.7**
SDLR	**Sedlovina**	**5.81**	**23**	*e*P		**Pn**	**01 42 48.3**		**-0.7**
KRX	**Arik**	**5.82**	**22**	PN		**Pn**	**01 42 49.4**		**+0.2**
KRX	**Arik**	**5.82**	**22**	*e*P		**Pn**	**01 42 49.4**		**+0.2**
GNL	**Ganaly**	**5.97**	**17**	PN		**Pn**	**01 42 52.8**		**+1.5**
GNL	**Ganaly**	**5.97**	**17**	*e*P		**Pn**	**01 42 52.8**		**+1.5**
SPN	**Mys Shipunski**	**5.99**	**30**	PN		**Pn**	**01 42 50.8**		**-0.6**
SPN	**Mys Shipunski**	**5.99**	**30**	P		**Pn**	**01 42 50.8**		**-0.6**
SPN				S		**Sn**	**01 43 53.1**		**-5.7**
YUK	**Yuzh-Kuril'sk**	**7.54**	**242**	*i* PN		**Pn**	**01 43 14.7**		**+2.1**
YUK	**Yuzh-Kuril'sk**	**7.54**	**242**	*e*P		**Pn**	**01 43 14.8**		**+2.1**
YUK				AMB	AMB		01 43 15.8		
	comp=Z,20nm,0.2s								
MKZ	**Mys Kozlova**	**7.77**	**30**	PN		**Pn**	**01 43 13.8**		**-2.0**
MKZ	**Mys Kozlova**	**7.77**	**30**	*e*P		**Pn**	**01 43 13.8**		**-2.0**
MKZ				*e*S		**Sn**	**01 44 34.6**		**-7.9**
NEM2	**Nemuro 2**	**8.01**	**238**	P		**Pn**	**01 43 18.6**		**-0.5**
NEM2				*e*S		**Sn**	**01 44 44.4**		**-4.0**
YSS	**Yuzh-Sakhalins**	**8.41**	**267**	*i* PN		Pn	01 43 29.7		+5.2
YSS				pmax	pmax				
	comp=Z,37nm,0.7s								
YSS	**Yuzh-Sakhalins**	**8.41**	**267**	*e*Pn		**Pn**	**01 43 29.3**		**+4.8**
	comp=Z,25nm,0.6s								
YSS	**Yuzh-Sakhalins**	**8.41**	**267**	*e*P		**Pn**	**01 43 28.4**		**+3.9**
JNK	**Nakash**	**8.47**	**242**	P		**Pn**	**01 43 26.9**		**+1.4**
TYV	**Tymovskoe**	**8.57**	**294**	*e*PN		**Pn**	**01 43 29.0**		**+2.2**
TYV				pmax	pmax				
	comp=Z,15nm,0.8s								
TYV	**Tymovskoe**	**8.57**	**294**	*e*P		**Pn**	**01 43 31.0**		**+4.2**
TYV				AMB	AMB		01 43 32.7		
	comp=Z,10.0nm,0.5s								
UGL	**Uglegorsk**	**8.69**	**282**	*e*PN		**Pn**	**01 43 29.3**		**+0.9**
UGL	**Uglegorsk**	**8.69**	**282**	*e*P		**Pn**	**01 43 30.8**		**+2.4**
JTKR	**Abashiri--Toko**	**8.75**	**247**	P		**Pn**	**01 43 32.0**		**+2.7**
JAK	**Akkeshi**	**8.84**	**239**	P		**Pn**	**01 43 29.8**		**-0.6**
JAK				*e*S		**Sn**	**01 45 03.8**		**-5.0**
JAR	**Ashorobuto**	**9.21**	**243**	P

ZALV	**Zalesovo Beam**	**42.96**	**305**	P		**P**	**01 49 19.8**	**-0.8**
	comp=Z,1.5nm,0.3s,baz=75,slow=7.1,SNR=4.0							
ZALV				PcP		**PcP**	**01 51 11.5**	**+0.9**
	comp=Z,0.6nm,0.3s,baz=69,slow=4.8,SNR=3.8							
MKAR	**Makanchi Array**	**47.54**	**297**	P		**P**	**01 49 56.9**	**-0.3**
	comp=Z,4.0nm,0.7s,baz=65,slow=8.1,SNR=30							
KURK	**Kurchatov**	**47.77**	**303**	*e*P		**P**	**01 49 58.3**	**-0.5**
KURK	**Kurchatov**	**47.77**	**303**	*e*P		**P**	**01 49 58.3**	**-0.5**
	comp=Z,80nm,0.7s							
YKA	**Yellowknife Ar**	**49.12**	**38**	P		**P**	**01 50 09.9**	**+0.9**
	comp=Z,0.9nm,0.6s,baz=296,slow=7.7,SNR=6.3							
YKA	**Yellowknife Ar**	**49.12**	**38**	*e*P		**P**	**01 50 10.3**	**+1.3**
BRVK	**Borovoye**	**51.12**	**309**	⇑*e*P		**P**	**01 50 23.9**	**-0.4**
BRVK				pmax	pmax			
	comp=Z,7.0nm,0.6s							
CMAR	**Chiang Mai Arr**	**53.95**	**257**	P		**P**	**01 50 46.1**	**+0.5**
	comp=Z,1.1nm,0.4s,baz=27,slow=7.6,SNR=6.2							
CMAR	**Chiang Mai Arr**	**53.95**	**257**	*e*P		**P**	**01 50 48.1**	**+2.4**
CMAR				pmax	pmax			
	comp=Z,1.0nm,0.4s							
CMAR	**Chiang Mai Arr**	**53.95**	**257**	*e*P		**P**	**01 50 48.1**	**+2.4**
AAK	**Ala-Archa**	**54.46**	**297**	⇓*e*P		**P**	**01 50 49.9**	**+0.6**
AAK				pmax	pmax			
	comp=Z,7.0nm,0.8s							
AAK	**Ala-Archa**	**54.46**	**297**	*e*P		**P**	**01 50 49.9**	**+0.6**
ARU	**Arti**	**54.98**	**318**	*d* i P		**P**	**01 50 52.2**	**-0.4**
ARU							01 51 52.7	
ARU							01 52 56.0	
ARU				S		**S**	**01 58 31.4**	**-0.6**
ARU				SS		**SS**	**02 02 11.3**	**-3.8**
ARU				pmax	pmax			
	comp=Z,8.0nm,1.7s							
KSH	**Kashi**	**55.39**	**293**	*e*P		P	01 51 01.7	+5.6
KSH				*ep*P		sP	01 51 25.6	+16
KSH				*es*P		PcP	01 51 36.7	-19
KSH				*e*ScP		**ScP**	**01 55 48.7**	**-3.6**
KSH				S		**S**	**01 58 34.0**	**-4.3**
KSH				ScS		**ScS**	**02 00 35.1**	**-7.6**
KSH				pmax	pmax			
	comp=Z,74nm,5.5s							
KSH				LR		LR		
	comp=N,160nm,7.1s							
KSH				LR		LR		
	comp=E,140nm,5.5s							
KSH				LR		LR		
	comp=Z,210nm,7.7s							
GUN	**Gumba**	**56.20**	**275**	*e*P		**P**	**01 51 03.6**	**+1.3**
	comp=Z,7.4nm,0.3s							
KKN	**Kakani**	**56.68**	**276**	*e*P		**P**	**01 51 07.2**	**+1.6**
	comp=Z,2.7nm,0.2s							
GKN	**Gorkha**	**56.97**	**276**	*e*P		**P**	**01 51 09.0**	**+1.4**
	comp=Z,11nm,0.4s							
ARCES	**ARCESS Array B**	**57.09**	**341**	P		**P**	**01 51 08.1**	**+0.4**
	comp=Z,2.7nm,0.8s,baz=35,slow=6.5,SNR=3.5							
KOLN	**Koldanda**	**57.82**	**277**	*e*P		**P**	**01 51 15.0**	**+1.4**
	comp=Z,7.3nm,0.4s							
PYUN	**Piuthan**	**58.01**	**278**	*e*P		**P**	**01 51 16.6**	**+1.7**
	comp=Z,6.1nm,0.4s							
ABKAR	**Akbulak array**	**58.63**	**310**	*e*P		**P**	**01 51 18.4**	**-0.3**
	comp=Z,2.2nm,0.6s							
SUMG	**Summit**	**59.34**	**5**	*i* P		**P**	**01 51 24.6**	**+0.9**
	comp=Z,14nm,1.0s							
SUMG	**Summit**	**59.34**	**5**	*i* P		**P**	**01 51 24.6**	**+0.9**
SUMG				pmax	pmax			
	comp=Z,14nm,1.0s							
SUMG	**Summit**	**59.34**	**5**	*e*P		**P**	**01 51 24.4**	**+0.7**
	comp=Z,12nm,0.9s							
PDAR	**Pinedale Array**	**62.94**	**55**	P		**P**	**01 51 50.0**	**+1.7**
	comp=Z,0.4nm,0.6s,baz=321,slow=2.1,SNR=3.9							
FINES	**FINESS Array B**	**63.45**	**335**	P		**P**	**01 51 51.1**	**-0.1**
	comp=Z,0.9nm,0.3s,baz=40,slow=7.5,SNR=17							
FINES	**FINESS Array B**	**63.45**	**335**	*e*P		**P**	**01 51 51.8**	**+0.6**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.3s							
FINES	**FINESS Array B**	**63.45**	**335**	*e*P		**P**	**01 51 51.8**	**+0.6**
GEYT	**Alibeck**	**67.08**	**302**	P		**P**	**01 52 15.6**	**+0.5**
	comp=Z,2.2nm,0.6s,baz=52,slow=2.4,SNR=4.8							
NB2	**NORSAR Subarra**	**67.45**	**342**	P		**P**	**01 52 17.8**	**+0.7**
	comp=Z,1.8nm,0.7s,baz=30,slow=6.5							
NOA	**NORSAR Array B**	**67.45**	**342**	P		**P**	**01 52 17.3**	**+0.2**
	comp=Z,1.3nm,0.7s,baz=30,slow=6.6,SNR=7.1							
NOA	**NORSAR Array B**	**67.45**	**342**	*e*P		**P**	**01 52 17.8**	**+0.7**
NOA				pmax	pmax			
	comp=Z,1.0nm,0.7s							
WRA	**Warramunga Arr**	**70.15**	**201**	P		**P**	**01 52 36.6**	**+2.4**
	comp=Z,0.3nm,0.6s,baz=16,slow=6.6,SNR=2.9							
FITZ	**Fitzroy Crossi**	**70.89**	**210**	P		**P**	**01 52 41.1**	**+2.4**
	comp=Z,2.5nm,0.8s,baz=349,slow=9.2,SNR=4.3							
AKASG	**Malin Array Be**	**71.22**	**327**	P		**P**	**01 52 40.8**	**+0.3**
	comp=Z,0.7nm,0.4s,baz=32,slow=4.6,SNR=7.0							
KIEV	**Kiev**	**71.23**	**327**	⇑*e*P		**P**	**01 52 40.9**	**+0.3**
KIEV				pmax	pmax			
	comp=Z,8.0nm,2.4s							
GNI	**Garni**	**72.71**	**311**	⇓*e*P		**P**	**01 52 50.7**	**+0.9**
SORM	**Soroca**	**73.66**	**326**	⇑*i*P		**P**	**01 52 54.9**	**-0.2**
SORM	**Soroca**	**73.66**	**326**	⇑P		**P**	**01 52 54.9**	**-0.2**
ASAR	**Alice Springs**	**73.84**	**200**	P		**P**	**01 52 58.4**	**+2.1**
	comp=Z,0.3nm,0.5s,baz=16,slow=4.8,SNR=3.4							
BURAR	**Bucovina Array**	**75.25**	**328**	⇑*i*P		**P**	**01 53 05.1**	**+0.6**
BURAR	**Bucovina Array**	**75.25**	**328**	⇑P		**P**	**01 53 05.1**	**+0.6**
TESR	**Tescani**	**75.65**	**326**	⇓*i*P		**P**	**01 53 07.1**	**+0.4**
TXAR	**Lajitas Array**	**75.72**	**62**	P		**P**	**01 53 08.8**	**+1.4**
	comp=Z,0.8nm,0.5s,baz=293,slow=4.6,SNR=8.4							
TXAR	**Lajitas Array**	**75.72**	**62**	*e*P		**P**	**01 53 09.0**	**+1.5**
TXAR				pmax	pmax			
	comp=Z,1.0nm,0.5s							
TXAR	**Lajitas Array**	**75.72**	**62**	*e*P		**P**	**01 53 09.0**	**+1.5**
UPC	**Upice**	**75.73**	**334**	*e*P		**P**	**01 53 08.5**	**+1.4**
UPC	**Upice**	**75.73**	**334**	*e*P		**P**	**01 53 08.5**	**+1.4**
DPC	**Dobruska-Polom**	**75.78**	**334**	*e*P		**P**	**01 53 08.8**	**+1.4**
DPC	**Dobruska-Polom**	**75.78**	**334**	*e*P		**P**	**01 53 08.8**	**+1.4**
CLL	**Collm**	**75.85**	**337**	⇓*i*P		**P**	**01 53 08.7**	**+1.0**
	comp=Z,9.0nm,1.0s							
CLL	**Collm**	**75.85**	**337**	⇓*i*P		**P**	**01 53 08.7**	**+1.0**
CLL				pmax	pmax			
	comp=Z,9.0nm,1.0s							
MORC	**Moravsky Berou**	**75.93**	**333**	⇓*i*P		**P**	**01 53 09.6**	**+1.4**
MORC	**Moravsky Berou**	**75.93**	**333**	⇓P		**P**	**01 53 09.7**	**+1.5**
PVCC	**Panska Ves**	**76.12**	**335**	*e*P		**P**	**01 53 10.8**	**+1.5**
PVCC	**Panska Ves**	**76.12**	**335**	*e*P		**P**	**01 53 10.8**	**+1.5**
CFR	**Carcaliu**	**76.20**	**324**	⇓*i*P		**P**	**01 53 10.3**	**+0.5**
CFR	**Carcaliu**	**76.20**	**324**	⇓P		**P**	**01 53 10.3**	**+0.5**
GOPC	**GO Pecny, Ondr**	**76.61**	**335**	*e*P		**P**	**01 53 13.7**	**+1.6**
GOPC	**GO Pecny, Ondr**	**76.61**	**335**	*e*P		**P**	**01 53 13.7**	**+1.6**
PRU	**Pruhonice**	**76.62**	**335**	*e*P		**P**	**01 53 13.7**	**+1.6**
PRU				*e*PCP		**pP**	**01 53 20.7**	**-1.7**
PRU	**Pruhonice**	**76.62**	**335**	*e*P		**P**	**01 53 13.7**	**+1.6**
PRU				*e*			01 53 20.7	
VRAC	**Vranov**	**76.63**	**334**	⇓*i*P		**P**	**01 53 13.3**	**+1.1**
VRAC	**Vranov**	**76.63**	**334**	⇓P		**P**	**01 53 13.3**	**+1.1**
TLB	**Topalu**	**76.73**	**324**	⇑*i*P		**P**	**01 53 13.9**	**+1.1**
TLB	**Topalu**	**76.73**	**324**	⇑P		**P**	**01 53 13.9**	**+1.1**
MLR	**Muntele Rosu**	**76.78**	**326**	⇓*i*P		**P**	**01 53 14.2**	**+0.9**
MLR	**Muntele Rosu**	**76.78**	**326**	⇓P		**P**	**01 53 14.2**	**+0.9**
DRGR		**76.84**	**329**	⇓*i*P		**P**	**01 53 14.5**	**+1.0**
DRGR		**76.84**	**329**	⇓P		**P**	**01 53 14.5**	**+1.0**
TREC	**Trest**	**76.97**	**334**	*e*P		**P**	**01 53 15.7**	**+1.6**
TREC	**Trest**	**76.97**	**334**	*e*P		**P**	**01 53 15.7**	**+1.6**
NKC	**Novy Kostel**	**76.97**	**336**	*e*P		**P**	**01 53 15.5**	**+1.4**
NKC	**Novy Kostel**	**76.97**	**336**	*e*P		**P**	**01 53 15.5**	**+1.4**
VOIR		**77.16**	**326**	⇓*i*P		**P**	**01 53 16.6**	**+1.3**
VOIR		**77.16**	**326**	⇓P		**P**	**01 53 16.6**	**+1.3**
ARR	**Arges**	**77.37**	**327**	⇓*i*P		**P**	**01 53 18.9**	**+2.4**
LOT	**Lotru**	**77.62**	**327**	⇓*i*P		**P**	**01 53 16.0**	**-2.0**
KHC	**Kasperske Hory**	**77.66**	**335**	*e*P		**P**	**01 53 19.8**	**+1.8**
KHC	**Kasperske Hory**	**77.66**	**335**	*e*P		**P**	**01 53 19.6**	**+1.6**
KHC				pmax	pmax			
	comp=Z,2.0nm,0.7s							
KHC	**Kasperske Hory**	**77.66**	**335**	*e*P		**P**	**01 53 19.6**	**+1.6**
	comp=Z,1.5nm,0.7s							
KHC	**Kasperske Hory**	**77.66**	**335**	*e*P		**P**	**01 53 19.6**	**+1.6**
GERES	**GERESS Array B**	**77.89**	**335**	P		**P**	**01 53 20.2**	**+0.8**
	comp=Z,1.4nm,0.6s,baz=36,slow=6.1,SNR=19							
GZR	**Gura Zlata**	**78.03**	**328**	⇓*i*P		**P**	**01 53 20.1**	**0.0**
GZR	**Gura Zlata**	**78.03**	**328**	⇓P		**P**	**01 53 20.1**	**0.0**
BZS	**Buzias**	**78.24**	**329**	⇑*i*P		**P**	**01 53 21.7**	**+0.5**
BZS	**Buzias**	**78.24**	**329**	⇑P		**P**	**01 53 21.7**	**+0.5**
BRTR	**Keskin Array B**	**78.36**	**318**	P		**P**	**01 53 22.7**	**+0.5**
	comp=Z,2.1nm,0.8s,baz=77,slow=3.8,SNR=14							
BRTR	**Keskin Array B**	**78.36**	**318**	*e*P		**P**	**01 53 23.2**	**+1.0**
BRTR				pmax	pmax			
	comp=Z,3.0nm,1.0s							
MDVR	**Moldovita**	**78.93**	**328**	⇑*i*P		**P**	**01 53 25.7**	**+0.6**
VTS	**Vitosha**	**80.28**	**326**	⇓*i*P		**P**	**01 53 33.1**	**+0.5**

*ISCJB **07** 01:42:42.7±1.4,20.5°S×0.2°×178.4°W±0.2°,h587km,mb3.7/7, Error ellipse: s-maj=34.0km s-min=27.2km az=151.5*
*IDC **07** 01:42:47.1±8.4,20.4°S×178.4°W,h626km±96km,mb3.1/7, mb1 3.3/7,mb1mx3.0/39,mbtmp4.1/7,Error ellipse: s-maj=52.5km s-min=29.0km az=57.0*

ISC 07 01:42:43.5±1.3,20.4°S±0.2°×178.3°W±0.2°,h587km,n9, σ0°82°/9,mb3.7/7,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.18**	**264**	P		**P**	**01 48 33.5**	**+0.4**
	3.4nm,0.5s,baz=96,slow=10,SNR=7.2							
STKA	**Stephens Creek**	**37.54**	**244**	P		**P**	**01 49 09.0**	**0.0**
	1.0nm,0.5s,baz=90,slow=6.1,SNR=4.3							
ASAR	**Alice Springs**	**44.23**	**257**	P		**P**	**01 50 02.0**	**0.0**
	3.7nm,0.5s,baz=95,slow=7.4,SNR=57							
WRA	**Warramunga Arr**	**44.30**	**262**	P		**P**	**01 50 02.2**	**-0.4**
	1.6nm,0.3s,baz=96,slow=7.5,SNR=27							
FITZ	**Fitzroy Crossi**	**52.72**	**262**	P		**P**	**01 51 05.3**	**+0.4**
	1.7nm,0.5s,baz=95,slow=6.2,SNR=16							
VNDA	**Vanda**	**57.97**	**185**	P		**P**	**01 51 40.5**	**+0.2**
	0.3nm,0.6s,baz=360,slow=6.9,SNR=6.0							
ILAR	**Eielson Array**	**88.30**	**13**	P		**P**	**01 54 33.7**	**+0.9**
	0.3nm,0.4s,baz=214,slow=5.3,SNR=5.1							
AKASG	**Malin Array Be**	**142.78**	**331**	PKP		**PKPdf**	**02 01 09.1**	**-1.5**
	2.1nm,0.4s,baz=44,slow=4.4,SNR=13							
BRTR	**Keskin Array B**	**146.54**	**312**	PKPbc		**PKPbc**	**02 01 19.6**	**-0.7**
	0.6nm,0.6s,baz=129,slow=3.8,SNR=4.3							

IDC 07 01:45:43.3±3.1,28.31S×176.70W,h0km,mb4.2/3, mb1 4.4/3,mb1mx3.8/34,mbtmp4.2/3,Error ellipse: s-maj=93.0km s-min=28.3km az=131.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.42**	**228**	Pn		Pb	01 46 10.8	+0.1
	165nm,0.3s,baz=70,slow=15,SNR=6.1							
RAO				Sn		Sb	01 46 29.5	+0.1
	526nm,0.3s,baz=108,slow=22,SNR=12							
STKA	**Stephens Creek**	**36.10**	**254**	P		P	01 52 47.3	+0.3
	4.5nm,0.9s,baz=95,slow=12,SNR=3.7							
ASAR	**Alice Springs**	**44.40**	**264**	P		P	01 53 55.6	-0.4
	1.6nm,0.8s,baz=106,slow=6.9,SNR=6.3							
WRA	**Warramunga Arr**	**45.20**	**269**	P		P	01 54 02.5	+0.1
	3.9nm,1.0s,baz=109,slow=7.8,SNR=6.4							
FINES	**FINESS Array B**	**143.55**	**342**	PKP		PKPbc	02 05 18.0	+1.3
	0.8nm,0.6s,baz=75,slow=1.6,SNR=6.0							
AKASG	**Malin Array Be**	**150.27**	**326**	PKPbc		PKPbc	02 05 35.7	-0.4
	0.4nm,0.3s,baz=50,slow=2.1,SNR=4.7							

*ISCJB **07** 01:47:52.9±0.9,35.68°N±0.05°×141.11°E±0.09°,h40km±7km, mb3.7/7,Error ellipse: s-maj=12.5km s-min=7.7km az=170.9*
*JMA **07** 01:47:54.3±0.1,35.74°N×140.99°E,h35km±1km,M3.5 JMA Felt I J1.*
*IDC **07** 01:47:55.4±2.1,35.63°N×141.00°E,h44km±19km,mb3.5/7, mb1 3.7/11,mb1mx3.5/49,mbtmp3.8/11,ML2.9/3,MS3.3/2, Ms1 3.3/2,ms1mx2.8/47,Error ellipse: s-maj=22.3km s-min=9.5km az=75.0*

ISC 07 01:47:53.9±1.3,35.66N±0.06°×141.09E±0.09°,h31km±7km, n25,σ0°80°/22,mb3.9/7,1C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.20**	**282**	⇑P		**Pb**	**01 48 00.2**	**0.0**
CHOJ				*e*S		**Sb**	**01 48 04.3**	**-0.2**
JCN	**Nagara**	**0.77**	**252**	P		**Pb**	**01 48 08.7**	**-0.1**
JYT	**Yasato**	**0.92**	**308**	P		**Pn**	**01 48 09.1**	**-1.5**
BSO3	**Boso 3**	**0.98**	**209**	P		**Pn**	**01 48 11.3**	**0.0**
JHO	**Hitachi**	**1.04**	**336**	P		**Pn**	**01 48 11.1**	**-1.1**
MJAR	**Matsushiro Arr**	**2.49**	**291**	P		**Pn**	**01 48 32.5**	**+0.2**
	10nm,0.3s,baz=94,slow=12,SNR=42							
MJAR				S		**Sn**	**01 49 01.2**	**-0.5**
	6.3nm,0.3s,baz=193,slow=19,SNR=5.3							
MJAR				LR		LR	01 49 35.5	
	comp=Z,372nm,20.6s,baz=110,slow=42							
MAT	**Matsushiro**	**2.50**	**291**	P		**Pn**	**01 48 32.9**	**+0.6**
MAT				S		**Sn**	**01 49 01.3**	**-0.4**
JHJ	**Hachijo jima 2**	**2.76**	**203**	P		**Pn**	**01 48 36.9**	**+0.9**
	9.1nm,0.3s,baz=72,slow=20,SNR=5.0							
JHJ				S		**Sn**	**01 49 07.9**	**-0.3**
	59nm,0.3s,baz=290,slow=20,SNR=7.2							
ASAJ	**Asahikawa**	**8.52**	**7**	P		**Pn**	**01 49 55.3**	**+0.3**
	baz=270,slow=20							
JNU	**Nakatsue**	**8.81**	**256**	LR		LR	01 53 43.1	
	comp=Z,263nm,19.2s,baz=300,slow=40							
USRK	**Ussuriysk Ar.**	**11.02**	**323**	P		**Pn**	**01 50 30.8**	**+1.5**
	0.2nm,0.3s,baz=133,slow=15,SNR=6.7							
H11N2	**WAKE ISLAND Hy**	**27.70**	**118**	T		T	02 22 38.1	
	baz=311,slow=75,SNR=29							
H11N1	**WAKE ISLAND Hy**	**27.71**	**118**	T		T	02 22 37.9	
	baz=311,slow=75,SNR=25							
H11N3	**WAKE ISLAND Hy**	**27.72**	**118**	T		T	02 22 38.7	
	baz=311,slow=75,SNR=37							
H11S1	**WAKE ISLAND Hy**	**28.36**	**120**	T		T	02 23 32.5	
	baz=312,slow=75,SNR=17							
H11S3	**WAKE ISLAND Hy**	**28.36**	**120**	T		T	02 23 28.8	
	baz=312,slow=75,SNR=21							
H11S2	**WAKE ISLAND Hy**	**28.38**	**120**	T		T	02 23 30.7	
	baz=312,slow=75,SNR=18							
ZALV	**Zalesovo Beam**	**42.66**	**313**	P		**P**	**01 55 46.9**	**-0.4**
	1.4nm,0.5s,baz=93,slow=9.5,SNR=2.4							
MKAR	**Makanchi Array**	**44.64**	**303**	P		**P**	**01 56 02.8**	**-0.6**
	1.2nm,0.7s,baz=93,slow=9.7,SNR=9.4							
ILAR	**Eielson Array**	**50.79**	**32**	P		**P**	**01 56 51.8**	**+1.0**
	0.4nm,0.9s,baz=280,slow=6.3,SNR=4.8							
WRA	**Warramunga Arr**	**55.67**	**188**	P		**P**	**01 57 26.7**	**-0.4**
	1.2nm,0.9s,baz=0.1,slow=7.5,SNR=5.1							
ASAR	**Alice Springs**	**59.40**	**188**	P		**P**	**01 57 52.6**	**-0.8**
	0.5nm,0.8s,baz=12,slow=11,SNR=2.9							
AKASG	**Malin Array Be**	**75.22**	**322**	P		**P**	**01 59 32.7**	**-0.6**
	0.3nm,0.3s,baz=49,slow=6.2,SNR=2.8							
NOA	**NORSAR Array B**	**75.35**	**337**	P		**P**	**01 59 33.7**	**-0.2**
	0.7nm,0.6s,baz=40,slow=5.7,SNR=2.9							
TORD	**Torodi Ar. Bea**	**118.10**	**314**	PKP		**PKPdf**	**02 06 39.2**	**+0.9**
	0.9nm,0.9s,baz=183,slow=3.6,SNR=4.6							

IDC 07 01:48:05.5±1.4,0.44N×126.51E,h0km,mb4.1/4, mb1 4.3/4,mb1mx3.8/44,mbtmp4.1/4,Error ellipse: s-maj=157.9km s-min=20.9km az=67.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.66**	**160**	P		P	01 52 57.4	-0.4
	4.7nm,0.5s,baz=338,slow=11,SNR=32							
ASAR	**Alice Springs**	**25.02**	**164**	P		P	01 53 31.7	+0.3
	4.7nm,0.6s,baz=346,slow=12,SNR=44							
MKAR	**Makanchi Array**	**60.14**	**326**	P		P	01 58 14.7	-0.2
	0.9nm,0.6s,baz=126,slow=7.7,SNR=6.9							
ZALV	**Zalesovo Beam**	**63.41**	**334**	P		P	01 58 36.9	+0.1
	0.5nm,0.3s,baz=129,slow=4.6,SNR=2.1							

IDC 07 01:50:04.3±4.8,4.45S×145.20E,h0km,mb3.6/2, mb1 4.0/4,mb1mx3.7/40,mbtmp3.9/4,ML3.0/2,Error ellipse: s-maj=72.6km s-min=51.6km az=32.0,Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.29**	**159**	Pn		Pn	01 51 25.3	+0.7
	4.3nm,0.3s,baz=294,slow=12,SNR=4.0							
PMG				Sn		Sn	01 52 19.5	-6.9
	3.7nm,0.3s,baz=124,slow=23,SNR=14							
WRA	**Warramunga Arr**	**18.68**	**214**	P		P	01 54 23.2	-1.1
	0.2nm,0.3s,baz=40,slow=11,SNR=7.4							
ASAR	**Alice Springs**	**21.99**	**209**	P		P	01 55 00.1	-0.2
	0.9nm,0.4s,baz=36,slow=12,SNR=6.4							
FITZ	**Fitzroy Crossi**	**23.46**	**233**	P		P	01 55 15.9	+0.3
	2.3nm,0.6s,baz=52,slow=11,SNR=9.2							
TORD	**Torodi Ar. Bea**	**142.96**	**286**	PKP		PKPdf	02 09 41.1	-0.1
	0.2nm,0.6s,baz=87,slow=3.1,SNR=3.0							

*IDC **07** 02:01:59.3±0.6,38.06°N×142.42E,h0km,mb4.2/27, mb1 4.3/31,mb1mx4.2/65,mbtmp4.2/31,ML3.6/3,MS3.5/2, Ms1 3.5/2,ms1mx3.0/42,Error ellipse: s-maj=16.2km s-min=14.1km az=121.0*
*NIED **07** 02:02:00,38.00N×142.50E,h17km,Mw4.1 Best double couple: Mo1.69000×10¹⁵ NP1:φ₁106.00000°,δ13.00000°, λ-162.00000°. NP2:φ₂359.00000°,δ86.00000°, λ-78.00000°.*
*ISCJB **07** 02:02:01.7±1.2,38.08N±0.04°×142.49E±0.05,h28km±8km, mb4.3/37,MS3.6/1,Error ellipse: s-maj=7.2km s-min=4.6km az=135.2*
*MOS **07** 02:02:02.8±1.3,38.11N×142.52E,h36km,mb4.4/28,Error ellipse: s-maj=9.3km s-min=6.5km az=98.5*
*JMA **07** 02:02:03.0±0.2,38.11N×142.40E,h34km±2km,M4.3 JMA Felt I J1.*
*NEIC **07** 02:02:05.1±1.0,38.12N×142.48E,h40km±7km,mb4.6/5, Error ellipse: s-maj=10.8km s-min=6.6km az=129.0*
NEIC Recorded [1 JMA] in Iwate and Miyagi.

ISC 07 02:02:01.9±1.6,38.10N±0.05°×142.41E±0.05,h16km±9km, n93,σ1°53/99,mb4.3/37,3C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.90**	**293**	P		**Pb**	**02 02 19.5**	**+0.3**
JIO				S		**Sb**	**02 02 31.0**	**0.0**
OFUJ	**Ofunato**	**1.13**	**330**	P		**Pn**	**02 02 22.6**	**-0.6**
JMK	**Ichinoseki**	**1.26**	**313**	P		**Pg**	**02 02 25.0**	**-1.1**
JMK				*e*S		**Sg**	**02 02 41.2**	**-1.4**
JMM	**Marumori**	**1.30**	**260**	P		**Pn**	**02 02 24.7**	**-0.7**
JMM				*e*S		**Sn**	**02 02 40.7**	**-1.7**
JOU	**Okura**	**1.40**	**281**	P		**Pn**	**02 02 27.2**	**+0.4**
JOU				*e*S		**Sn**	**02 02 44.5**	**-0.4**
JFK	**Kawauchi**	**1.42**	**239**	P		**Pn**	**02 02 26.0**	**-1.1**
JOM	**Ohasama**	**1.62**	**328**	P		**Pb**	**02 02 30.2**	**-1.3**
JFT	**Otama**	**1.74**	**251**	P		**Pn**	**02 02 32.0**	**+0.5**
JFT				S		**Sn**	**02 02 52.9**	**-0.5**
JYK	**Kaneyama**	**1.80**	**297**	P		**Pn**	**02 02 33.1**	**+0.8**
JYS	**Shirataka**	**1.85**	**274**	P		**Pn**	**02 02 33.8**	**+0.8**
JRG	**Rokugo**	**1.89**	**314**	P		**Pb**	**02 02 34.6**	**-1.5**
MJAR	**Matsushiro Arr**	**3.69**	**246**	Pn		**Pn**	**02 03 00.9**	**+2.5**
	9.6nm,0.3s,baz=62,slow=11,SNR=37							
MAJO	**Matsushiro**	**3.69**	**246**	*e*P		**Pn**	**02 03 00.8**	**+2.4**
MAJO				*e*S		**Sb**	**02 03 50.5**	**-0.8**
MAJO	**Matsushiro**	**3.69**	**246**	*e*Pn		**Pn**	**02 03 00.8**	**+2.4**
MAJO				*e*S		**Sb**	**02 03 50.5**	**-0.8**
MAT	**Matsushiro**	**3.69**	**246**	P		**Pn**	**02 03 00.8**	**+2.4**
MAT				S		**Sn**	**02 03 44.4**	**+2.8**
ERM	**Erimo**	**3.95**	**8**	*e*P		**Pn**	**02 03 01.9**	**0.0**
ERM				*e*S		**Sn**	**02 03 49.9**	**+2.1**
ERM	**Erimo**	**3.95**	**8**	*e*Pn		**Pn**	**02 03 01.9**	**0.0**
ERM				*e*S		**Sn**	**02 03 49.9**	**+2.1**
JHJ	**Hachijo jima 2**	**5.41**	**204**	Pn		**Pn**	**02 03 21.3**	**-0.7**
	35nm,0.3s,baz=2.6,slow=8.1,SNR=8.7							
JHJ				Sn		**Sn**	**02 04 20.9**	**-3.1**
	38nm,0.3s,baz=253,slow=19,SNR=3.5							
ASAJ	**Asahikawa**	**6.01**	**1**	Pn		**Pn**	**02 03 31.4**	**+1.3**
	baz=175,slow=12							
ASAJ				Sn		**Sn**	**02 04 38.0**	**-0.6**
	2.0nm,0.3s,baz=52,slow=19,SNR=4.3							
ASAJ	**Asahikawa**	**6.01**	**1**	*e*Pn		**Pn**	**02 03 31.2**	**+1.0**
	5.4nm,0.4s							
ASAJ				*e*S		**Sn**	**02 04 38.2**	**-0.4**
KUR	**Kuril'sk**	**8.21**	**28**	*e*P		**Pn**	**02 03 59.7**	**-0.6**
YSS	**Yuzh-Sakhalins**	**8.85**	**2**	*e*P		**Pn**	**02 04 11.4**	**+2.3**
YSS				pmax	pm

ARU						pmax		pmax		
	comp=Z,5.0nm,1.0s									
DLBC	**Dease Lake**	**57.30**	**39**	P		**P**			**02 11 48.5**	**-0.2**
	comp=Z,2.3nm,0.7s,baz=264,slow=13,SNR=5.6									
ABKAR	**Akbulak array**	**57.86**	**310**	*e*P		**P**			**02 11 52.2**	**-0.5**
	comp=Z,3.0nm,0.5s									
WRAB	**Tennant Creek**	**58.22**	**189**	*e*P		**P**			**02 11 53.8**	**-1.7**
WRAB						pmax		pmax		
	comp=Z,3.0nm,0.8s									
WRAB	**Tennant Creek**	**58.22**	**189**	*e*P		**P**			**02 11 53.8**	**-1.7**
	comp=Z,2.6nm,0.8s									
WRA	**Warramunga Arr**	**58.23**	**189**	P		**P**			**02 11 54.6**	**-0.9**
	comp=Z,1.3nm,0.6s,baz=6.1,slow=7.3,SNR=11									
AKTO	**Aktyubinsk**	**58.55**	**312**	P		**P**			**02 11 57.1**	**-0.4**
	comp=Z,2.4nm,0.7s,baz=68,slow=9.3,SNR=7.4									
ASAR	**Alice Springs**	**61.96**	**189**	P		**P**			**02 12 20.6**	**-0.5**
	comp=Z,0.8nm,0.7s,baz=7.8,slow=5.8,SNR=7.4									
YKA	**Yellowknife Ar**	**62.49**	**31**	P		**P**			**02 12 23.8**	**-0.4**
	comp=Z,1.1nm,0.6s,baz=304,slow=6.3,SNR=8.0									
ARCES	**ARCESS Array B**	**63.27**	**339**	P		**P**			**02 12 29.1**	**-0.2**
	comp=Z,1.3nm,0.8s,baz=44,slow=3.7,SNR=4.4									
GEYT	**Alibeck**	**64.01**	**299**	P		**P**			**02 12 35.2**	**+0.4**
	comp=Z,2.2nm,0.4s,baz=22,slow=5.3,SNR=4.7									
FINES	**FINESS Array B**	**68.23**	**332**	P		**P**			**02 13 01.5**	**+0.1**
	comp=Z,2.1nm,0.6s,baz=42,slow=6.7,SNR=12									
NEW	**Newport**	**68.81**	**45**	P		**P**			**02 13 04.7**	**-0.6**
	comp=Z,2.3nm,0.8s,baz=110,slow=2.9,SNR=3.0									
KBZ	**Khabaz**	**70.80**	**311**	P		**P**			**02 13 18.3**	**+0.7**
	comp=Z,1.7nm,0.8s,baz=345,slow=4.4,SNR=5.2									
HFS	**Hagfors**	**73.44**	**336**	P		**P**			**02 13 33.4**	**+0.3**
	comp=Z,0.9nm,0.5s,baz=57,slow=5.5,SNR=6.8									
NB2	**NORSAR Subarra**	**73.50**	**338**	P		**P**			**02 13 33.7**	**+0.2**
	comp=Z,2.1nm,0.8s,baz=41,slow=6.2									
NOA	**NORSAR Array B**	**73.50**	**338**	P		**P**			**02 13 33.8**	**+0.2**
	comp=Z,1.4nm,0.8s,baz=40,slow=5.8,SNR=5.5									
AKASG	**Malin Array Be**	**73.93**	**323**	P		**P**			**02 13 36.0**	**-0.2**
	comp=Z,0.6nm,0.4s,baz=46,slow=5.4,SNR=6.4									
AKASG	**Malin Array Be**	**73.93**	**323**	P		**P**			**02 13 36.0**	**-0.2**
AKASG						pmax		pmax		
	comp=Z,1.0nm,0.4s									
KIEV	**Kiev**	**73.94**	**323**	*i* P		**P**			**02 13 36.4**	**+0.2**
KIEV						pmax		pmax		
	comp=Z,2.0nm,0.6s									
PDAR	**Pinedale Array**	**76.36**	**46**	P		**P**			**02 13 51.0**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=279,slow=2.9,SNR=5.4									
BRTR	**Keskin Array B**	**78.73**	**312**	P		**P**			**02 14 04.8**	**+1.0**
	comp=Z,0.3nm,0.5s,baz=83,slow=4.1,SNR=3.2									
CLL	**Collm**	**80.56**	**331**	*e*P		**P**			**02 14 15.0**	**+1.7**
CLL				*e*					02 14 25.0	
CLL	**Collm**	**80.56**	**331**	*e*P		**P**			**02 14 15.0**	**+1.7**
CLL				*e*					02 14 25.0	
GERES	**GERESS Array B**	**82.21**	**329**	P		**P**			**02 14 22.9**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=45,slow=5.7,SNR=2.3									
ANMO	**Albuquerque**	**83.30**	**50**	*ce*P		**P**			**02 14 29.4**	**+1.1**
ANMO						pmax		pmax		
	comp=Z,5.0nm,2.5s									
TXAR	**Lajitas Array**	**88.85**	**53**	P		**P**			**02 14 56.1**	**+0.5**
	comp=Z,0.4nm,0.7s,baz=290,slow=2.6,SNR=2.9									

JMA 07 02:08:19.5±0.3, 37°45N×142°40E, h12^{km}±4^{km}, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.22**	**267**	P	Pn	02 08 42.3	-0.1
JIO	**Ouri**	**1.30**	**321**	P	Pn	02 08 43.2	-0.3
JIO				*e*S	Sb	02 09 00.5	-0.1
ONAJ	**Iwakimizuishiy**	**1.32**	**255**	P	Pn	02 08 43.5	-0.4
JMM	**Marumori**	**1.34**	**289**	P	Pn	02 08 44.2	+0.2
JFT	**Otama**	**1.64**	**273**	P	Pb	02 08 49.5	-0.2
JOU	**Okura**	**1.65**	**304**	P	Pb	02 08 49.2	-0.6
JMK	**Ichinoseki**	**1.76**	**329**	P	Pn	02 08 50.7	+0.8
JOM	**Ohasama**	**2.20**	**337**	P	Pn	02 08 56.7	+0.9

BJI ***07*** *02:10:19.5, 28°.85S×176°.58W, h16^{km}, mb5.3/25, mB5.6/19, Ms5.0/13, Ms7 4.9/12*

ISCJB ***07*** *02:10:21.3±0.2, 29°.18S±0°.04×176°.83W±0°.04, h33^{km}, mb5.0/71, MS4.8/12, Error ellipse: s-maj=6.8km s-min=4.2km az=140.3*

MOS ***07*** *02:10:21.7±1.1, 28°.97S×176°.84W, h33^{km}, mb5.3/25, Error ellipse: s-maj=11.0km s-min=10.6km az=85.1*

NEIC ***07*** *02:10:22.5±2.1, 29°.12S×176°.82W, h32^{km}±15^{km}, mb5.0/50, Error ellipse: s-maj=7.0km s-min=6.5km az=132.0*

IDC ***07*** *02:10:24.4±1.8, 28°.86S×176°.81W, h48^{km}±15^{km}, mb4.3/17, mb1 4.5/17, mb1mx4.4/30, mbtmp4.5/17, MS4.7/11, Ms1 4.7/11, ms1mx4.4/29, Error ellipse: s-maj=19.0km s-min=13.9km az=170.0*

ISC 07 02:10:20.4±0.3, 29°.25S±0°.05×176°.55W±0°.05, h21^{km}, n253, σ1^{s}86/279, mb5.0/71, MS4.9/13, 2C-1D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.19**	**270**	P	**Pb**	**02 10 42.8**	**+0.6**
	777nm,0.3s,baz=89,slow=7.6,SNR=19						
RAO				S	**Sn**	**02 11 01.5**	**+4.1**
	5μm,0.3s,baz=270,slow=20,SNR=27						
RAO				LR	LR	02 11 10.5	
	comp=Z,17μm,21.8s,baz=170,slow=44						
RAO	**Raoul Island**	**1.19**	**270**	*e*P	**Pn**	**02 10 41.5**	**-0.3**
RAO				*e*		02 10 52.2	
RAO	**Raoul Island**	**1.19**	**270**	*e*Pn	**Pn**	**02 10 41.5**	**-0.3**
RAO				*e*Sn	**Sb**	**02 10 52.2**	**-5.1**
OUZ	**Omahuta**	**10.24**	**232**	*e*Pn	**Pn**	**02 12 50.6**	**+4.5**
URZ	**Urewera**	**10.41**	**209**	P	**Pn**	**02 12 45.7**	**-2.8**
	1.2nm,0.3s,baz=266,slow=3.1,SNR=8.5						
URZ				S	**Sn**	**02 14 41.6**	**-2.8**
	5.9nm,0.3s,baz=196,slow=19,SNR=8.6						
URZ	**Urewera**	**10.41**	**209**	*e*Pn	**Pn**	**02 12 46.0**	**-2.4**
URZ				*e*Sn	**Sn**	**02 14 43.7**	**-0.7**
MSVF	**Nonsavu**	**12.48**	**336**	*e*P	**Pn**	**02 13 15.2**	**-1.8**
MSVF	**Nonsavu**	**12.48**	**336**	*e*Pn	**Pn**	**02 13 13.8**	**-3.1**
BFZ	**Birch Farm**	**12.83**	**205**	*e*Pn	**Pn**	**02 13 23.1**	**+1.6**
BFZ				*e*Sn	**Sn**	**02 15 47.9**	**+4.1**
SNZO	**South Karori**	**13.98**	**208**	*e*Pn	**Pn**	**02 13 37.2**	**+0.1**
THZ	**Tophouse**	**15.13**	**212**	*e*Pn	**Pn**	**02 13 52.2**	**-0.7**
	54nm,0.6s						
THZ				*e*Sn	**Sn**	**02 16 32.0**	**-7.9**
KHZ	**Kahutara**	**15.38**	**209**	*e*Pn	**Pn**	**02 13 55.0**	**-1.1**
KHZ				*e*Sn	**Sn**	**02 16 37.7**	**-8.1**
LTZ	**Lake Taylor**	**16.23**	**211**	*e*Pn	**Pn**	**02 14 08.6**	**+1.5**
	66nm,1.2s						
OXZ	**Oxford**	**16.76**	**210**	*e*Pn	**P**	**02 14 15.2**	**-0.8**
	80nm,0.9s						
OXZ				*e*Sn	Sn	02 17 07.5	-12
DZM	**Mont Dzumac**	**16.90**	**291**	P	**P**	**02 14 18.6**	**+0.9**
	0.4nm,0.3s,baz=126,slow=11,SNR=14						
DZM				LR	LR	02 19 40.2	
	comp=Z,8μm,18.2s,baz=122,slow=34						
DZM	**Mont Dzumac**	**16.90**	**291**	*e*Pn	**P**	**02 14 19.0**	**+1.3**
	269nm,1.5s						
DZM				*e*LR	LR	02 18 17.3	
	7μm,25.1s						
DZM	**Mont Dzumac**	**16.90**	**291**	*e*Pn	**Pn**	**02 14 14.8**	**-1.0**
	204nm,1.5s						
RAR	**Rarotonga**	**17.15**	**66**	P	**Pn**	**02 14 13.7**	**-5.1**
	0.7nm,0.3s,baz=75,slow=12,SNR=2.3						
RAR				S	Sn	02 17 07.1	-22
	1.1nm,0.3s,baz=252,slow=16,SNR=2.1						
RAR				LR	LR	02 21 26.5	
	comp=Z,2μm,18.8s,baz=248,slow=38						
RPZ	**Rata Peaks**	**17.51**	**211**	P	**Pn**	**02 14 21.0**	**-2.1**
	1.0nm,0.3s,baz=33,slow=4.1,SNR=4.4						
RPZ				S	Sn	02 17 23.9	-14
	1.1nm,0.3s,baz=299,slow=19,SNR=4.1						
RPZ				LR	LR	02 22 01.3	
	comp=Z,5μm,18.8s,baz=34,slow=39						
RPZ	**Rata Peaks**	**17.51**	**211**	*e*Pn	**P**	**02 14 24.6**	**+0.4**
RPZ				S	Sn	02 17 23.9	-14
ODZ	**Otahua Downs**	**18.74**	**209**	*e*P	**P**	**02 14 35.0**	**-2.7**
	46nm,0.8s						
TBI	**Tubuai**	**24.96**	**83**	*e*LQ	LQ	02 20 24.4	
	1μm,29.0s						
TBI				*e*LR	LR	02 21 43.4	
	3μm,29.8s,baz=252						
PPT2	**Papeete2**	**27.27**	**71**	*e*LQ	LQ	02 21 19.3	
	2μm,24.2s						
PPT2				*e*LR	LR	02 22 46.1	
	3μm,26.2s,baz=236						
PPT	**Papeete**	**27.28**	**71**	LR	LR	02 24 57.2	
	comp=Z,875nm,18.3s,baz=250,slow=32						
EIDS	**Eidsvold**	**28.97**	**270**	*e*P	**P**	**02 16 19.0**	**+0.5**
	16nm,1.0s						
CTA	**Charters Tower**	**34.89**	**277**	P	**P**	**02 17 09.7**	**-0.9**
	12nm,0.8s,baz=95,slow=12,SNR=16						
CTAO	**Charters Tower**	**34.89**	**277**	*e*P	**P**	**02 17 10.5**	**-0.1**
CTAO				pmax	pmax		
	comp=Z,28nm,1.0s						
CTAO	**Charters Tower**	**34.89**	**277**	*e*P	**P**	**02 17 10.5**	**-0.1**
	comp=Z,28nm,1.0s						
STKA	**Stephens Creek**	**35.97**	**255**	P	**P**	**02 17 19.6**	**-0.2**
	comp=Z,8.8nm,0.9s,baz=96,slow=10,SNR=7.0						
STKA				LR	LR	02 31 23.6	
	comp=Z,3μm,18.1s,baz=89,slow=35						
STKA	**Stephens Creek**	**35.97**	**255**	*e*P	**P**	**02 17 18.8**	**-1.0**
STKA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
STKA	**Stephens Creek**	**35.97**	**255**	*e*P	**P**	**02 17 18.8**	**-1.0**
	comp=Z,3.2nm,0.8s						
RKT	**Rikitea**	**37.66**	**91**	*e*LR	LR	02 27 40.1	
	comp=Z,1μm,28.8s						
PMG	**Port Moresby**	**39.29**	**293**	*e*P	**P**	**02 17 47.7**	**-0.2**
PMG				pmax	pmax		
	comp=Z,29nm,1.1s						
PMG	**Port Moresby**	**39.29**	**293**	*e*P	**P**	**02 17 47.7**	**-0.2**
	comp=Z,29nm,1.1s						
TAOE	**Nuku Hiva Isla**	**39.70**	**67**	*e*LR	LR	02 28 29.4	
	comp=Z,1μm,24.0s						
COEN	**Coen**	**40.20**	**284**	*e*P	**P**	**02 17 55.2**	**-0.3**
	comp=Z,17nm,1.0s						
AS01	**Alice Springs**	**44.40**	**265**	*e*P	**P**	**02 18 28.0**	**-1.8**
AS31	**Alice Springs**	**44.44**	**265**	*e*P	**P**	**02 18 29.0**	**-1.1**
	comp=Z,3.6nm,0.7s						
ASAR	**Alice Springs**	**44.44**	**265**	P	**P**	**02 18 28.0**	**-2.1**
	comp=Z,14nm,0.9s,baz=115,slow=7.6,SNR=53						
ASAR				PcP	**PP**	**02 20 16.9**	**+3.0**
	comp=Z,4.5nm,0.9s,baz=112,slow=4.4,SNR=3.9						
ASAR				S	**S**	**02 25 04.2**	**+0.1**
	comp=Z,1.2nm,1.0s,baz=92,slow=15,SNR=4.2						
WB2	**Warramunga Arr**	**45.32**	**270**	*e*P	**P**	**02 18 35.1**	**-2.0**
	comp=Z,25nm,0.9s						
WRAB	**Tennant Creek**	**45.32**	**270**	*e*P	**P**	**02 18 35.5**	**-1.6**
WRAB				pmax	pmax		
	comp=Z,33nm,1.0s						
WRAB	**Tennant Creek**	**45.32**	**270**	*e*P	**P**	**02 18 35.5**	**-1.6**
	comp=Z,33nm,1.0s						
WRA	**Warramunga Arr**	**45.33**	**270**	P	**P**	**02 18 34.9**	**-2.3**
	comp=Z,19nm,0.9s,baz=109,slow=7.8,SNR=45						
WRA				PcP	**PcP**	**02 20 17.4**	**+0.7**
	comp=Z,9.8nm,1.0s,baz=107,slow=3.7,SNR=5.2						
WRA				S	**S**	**02 25 12.7**	**-4.3**
	comp=Z,357nm,0.3s,baz=282,slow=26,SNR=58						
FORT	**Forrest**	**47.56**	**254**	*e*P	**P**	**02 18 52.9**	**-1.7**
	comp=Z,231nm,0.8s						
SBA	**Scott Base**	**49.27**	**185**	*e*P	**P**	**02 19 09.7**	**+2.6**
SBA				pmax	pmax		
	comp=Z,38nm,1.0s						
SBA	**Scott Base**	**49.27**	**185**	*e*P	**P**	**02 19 09.7**	**+2.6**
	comp=Z,38nm,1.0s						
VNDA	**Vanda**	**49.36**	**186**	P	**P**	**02 19 11.7**	**+3.9**
	comp=Z,4.0nm,1.0s,baz=4.8,slow=8.1,SNR=14						
VNDA				LR	LR	02 37 04.3	
	comp=Z,646nm,20.3s,baz=13,slow=32						
FITZ	**Fitzroy Crossi**	**53.63**	**268**	*e*P	**P**	**02 19 39.6**	**-0.9**
	comp=Z,32nm,1.3s						
CASY	**Casey**	**56.74**	**208**	*e*P	**P**	**02 20 04.0**	**+1.8**
	comp=Z,62nm,1.1s						
MBWA	**Male Bar**	**57.61**	**262**	*e*P	**P**	**02 20 06.9**	**-2.2**
	comp=Z,139nm,1.0s						
MIR	**Mirnyy**	**63.71**	**207**	*i* P	**P**	**02 20 54.0**	**+4.0**
MIR				pmax	pmax		
	comp=Z,5.0nm,1.3s						
KKM	**Kota Kinabalu**	**73.41**	**287**	*e*P	**P**	**02 21 50.1**	**-1.4**
	comp=Z,12nm,0.9s						
MAW	**Mawson**	**73.82**	**200**	P	**P**		
	comp=Z,10.0nm,1.0s,baz=98,slow=6.7,SNR=8.6						
MAW				LR	LR	02 54 51.4	
	comp=Z,1μm,18.4s,baz=95,slow=36						
MJAR	**Matsushiro Arr**	**78.03**	**324**	P	**P**	**02 22 15.0**	**-2.3**
	comp=Z,4.7nm,0.9s,baz=160,slow=5.0,SNR=7.1						
MJAR				LR	LR	02 52 49.9	
	comp=Z,109nm,20.6s,baz=125,slow=33						
MAJO	**Matsushiro**	**78.03**	**324**	*e*P	**P**	**02 22 15.9**	**-1.4**
MAJO				pmax	pmax		
	comp=Z,59nm,1.1s						
MAJO	**Matsushiro**	**78.03**	**324**	*e*P	**P**	**02 22 16.6**	**-0.7**
	comp=Z,6.9nm,0.5s						
SYO	**Syowa Base**	**78.51**	**193**	*i*eP	**P**	**02 22 19.8**	**+0.3**
SYO	**Syowa Base**	**78.51**	**193**	*i*ePcP	**PcP**	**02 22 26.3**	**-2.3**
SNAA	**Sanae**	**79.26**	**178**	P	**P**	**02 22 24.2**	**+0.4**
SNAA	**Sanae**	**79.26**	**178**	*e*P	**P**	**02 22 24.2**	**+0.4**
SNAA	**Sanae**	**79.26**	**178**	*e*P	**P**	**02 22 24.2**	**+0.4**
	comp=Z,914nm,1.0s						
VNA1	**Neumayer--Stat**	**80.03**	**176**	P	**P**	**02 22 27.7**	**-0.1**
ERM	**Erimo**	**80.06**	**331**	*e*P	**P**	**02 22 28.4**	**+0.1**
ERM				pmax	pmax		
	comp=Z,10.0nm,1.2s						
NVL	**N'lazarevskaya**	**80.08**	**183**	*e*P	P	02 22 43.1	+15
ASAJ	**Asahikawa**	**82.02**	**332**	*e*P	**P**	**02 22 39.7**	**+1.1**
	comp=Z,29nm,1.0s						
PLCA	**Paso Flores**	**82.36**	**133**	P	**P**	**02 22 42.2**	**+1.3**
	comp=Z,5.7nm,1.1s,baz=269,slow=5.9,SNR=4.3						
PLCA				LR	LR	02 53 12.7	
	comp=Z,342nm,18.4s,baz=304,slow=31						
PLCA	**Paso Flores**	**82.36**	**133**	P	**P**	**02 22 42.3**	**+1.3**
PLCA				pmax	pmax		
	comp=Z,18nm,1.4s						
PLCA	**Paso Flores**	**82.36**	**133**	P	**P**	**02 22 42.2**	**+1.3**
	comp=Z,18nm,1.4s						
YSS	**Yuzh-Sakhalins**	**84.28**	**333**	*e*P	**P**	**02 22 49.4**	**-0.8**
YSS				pmax	pmax		
	comp=Z,15nm,0.9s						
YSS	**Yuzh-Sakhalins**	**84.28**	**333**	*e*P	**P**	**02 22 50.0**	**-0.2**
	comp=Z,22nm,0.7s						
KSRS	**Korea Array**	**84.30**	**319**	P	**P**	**02 22 50.2**	**-0.4**
	comp=Z,2.5nm,0.8s,baz=148,slow=6.3,SNR=9.4						
KSAR	**Wonju Array Be**	**84.32**	**319**	P	**P**	**02 22 50.2**	**-0.5**
KSAR	**Wonju Array Be**	**84.32**	**319**	P	**P**	**02 22 50.2**	**-0.5**
KS01	**Wonju Array Si**	**84.33**	**319**	*e*P	**P**	**02 22 50.3**	**-0.4**
EDW2	**Edwards Air Fo**	**84.38**	**45**	P	**P**	**02 22 51.6**	**+0.5**
	baz=229						
PFO	**Pinyon Flats O**	**84.51**	**47**	P	**P**	**02 22 52.1**	**+0.1**
	comp=Z,2.0nm,1.0s,baz=234,slow=4.8,SNR=4.6						
PFO	**Pinyon Flats O**	**84.51**	**47**	P	**P**	**02 22 52.8**	**+0.9**
	baz=230						
TPFO	**Pinon Flats**	**84.51**	**47**	P	**P**	**02 22 52.9**	**+1.0**
	baz=230						
LRMC	**Laurel Mtn Rad**	**84.96**	**45**	P	**P**	**02 22 54.8**	**+0.6**
	baz=229						
PEA0	**Petropavlovsk-**	**85.03**	**345**	*e*P	**P**	**02 22 54.0**	**+0.1**
PETK	**Petropavlovsk-**	**85.03**	**345**	P	**P**	**02 22 52.0**	**-1.9**
	comp=Z,7.3nm,0.9s,baz=102,slow=6.4,SNR=6.4						
PETK	**Petropavlovsk-**	**85.03**	**345**	P	**P**	**02 22 52.0**	**-1.9**
CMB	**Columbia Colle**	**85.07**	**41**	*e*P	**P**	**02 22 52.6**	**-2.0**
CMB				pmax	pmax		
	comp=Z,66nm,1.2s						
CMB	**Columbia Colle**	**85.07**	**41**	*e*P	**P**	**02 22 52.5**	**-2.0**
	comp=Z,66nm,1.2s						
BC3	**Big Chuckawall**	**85.18**	**47**	P	**P**	**02 22 57.0**	**+1.7**
	baz=230						
AFDM	**Forest Hills D**	**85.36**	**40**	*e*P	**P**	**02 22 57.3**	**+1.3**
	comp=Z,8.2nm,1.2s						
HEC	**Hector,Ludlow**	**85.37**	**46**	P	**P**	**02 22 56.6**	**+0.4**
	baz=230						
GSC	**Goldstone, Bar**	**85.39**	**45**	P	**P**	**02 22 57.3**	**+1.1**
	baz=229						
GSC	**Goldstone, Bar**	**85.39**	**45**	*e*P	**P**	**02 22 57.4**	**+1.1**
GSC				pmax	pmax		
	comp=Z,29nm,1.8s						
GSC	**Goldstone, Bar**	**85.39**	**45**	*e*P	**P**	**02 22 57.4**	**+1.1**
	comp=Z,29nm,1.8s						
MPMC	**Manual Prospec**	**85.46**	**44**	P	**P**	**02 22 57.3**	**+0.6**
	baz=229						
IPM	**Ipoh**	**85.57**	**278**	*e*P	**P**	**02 22 58.2**	**+0.6**
	comp=Z,9.6nm,0.8s						
WDC	**Whiskeytown Da**	**85.64**	**38**	*e*P	**P**	**02 22 58.3**	**+1.0**
WDC				pmax	pmax		
	comp=Z,17nm,1.3s						
WDC	**Whiskeytown Da**	**85.64**	**38**	*e*P	**P**	**02 22 58.3**	**+1.0**
	comp=Z,17nm,1.3s						
IRM	**Iron Mountain**	**85.69**	**47**	P	**P**	**02 22 58.9**	**+1.2**
	baz=230						
GMRC	**Granite Mounta**	**85.77**	**46**	P	**P**	**02 22 59.4**	**+1.1**
	baz=230						
Y12C	**Blythe**	**85.83**	**48**	P	**P**	**02 22 60.0**	**+1.6**
	baz=231						
O03D	**Paynes Creek**	**85.84**	**39**	P	**P**	**02 22 59.7**	**+1.3**
	baz=226						
WAKR	**Walker**	**85.94**	**41**	*e*P	**P**	**02 23 00.8**	**+1.7**
	comp=Z,11nm,0.9s						
HHC				pmax	pmax		
	comp=Z,120nm,4.7s						
TUQ	**Turquoise Moun**	**86.02**	**46**	P	**P**	**02 23 00.1**	**+0.6**
	baz=230						
SHOC	**Shoshone, Teco**	**86.10**	**45**	P	**P**	**02 23 00.8**	**+1.0**
	baz=230						
KULM	**Kulim**	**86.30**	**278**	*e*P	**P**	**02 23 00.5**	**-0.7**
	comp=Z,10nm,0.9s						
NJ2	**Nanjing**	**86.47**	**310**	*e*P	**P**	**02 23 04.3**	**+2.8**
NJ2				pmax	pmax		
	comp=Z,25nm,0.6s						
PSI	**Prapat**	**86.58**	**275**	*e*P	**P**	**02 23 01.6**	**-1.1**
PSI				pmax	pmax		
	comp=Z,19nm,1.1s						
PSI	**Prapat**	**86.58**	**275**	*e*P	**P**	**02 23 01.6**	**-1.1**
	comp=Z,19nm,1.1s						
TPNV	**Topopah Spring**	**86.80**	**44**	P	**P**	**02 23 04.0**	**+0.7**
	baz=230						
TPNV	**Topopah Spring**	**86.80**	**44**	*e*P	**P**	**02 23 04.4**	**+1.1**
TPNV				pmax	pmax		
	comp=Z,8.0nm,1.0s						
TPNV	**Topopah Spring**	**86.80**	**44**	*e*P	**P**	**02 23 04.4**	**+1.1**
	comp=Z,8.0nm,1.0s						
USRK	**Ussuriysk Ar.**	**86.91**	**326**	P	**P**	**02 23 01.2**	**-2.2**
	comp=Z,4.4nm,0.9s,baz=170,slow=4.8,SNR=10						
Y14A	**Wickenburg**	**86.94**	**48**	*e*P	**P**	**02 23 05.4**	**+1.5**
	comp=Z,45nm,1.3s						
GSI	**Gununguitoli**	**87.02**	**273**	*e*P	**P**	**02 23 05.2**	**+0.4**
	comp=Z,17nm,0.6s						
W13A	**Hualapai Mount**	**87.09**	**47**	*e*P	**P**	**02 23 05.8**	**+1.0**
	comp=Z,14nm,1.6s						
SHPR	**Sheep Range**	**87.18**	**45**	*e*P	**P**	**02 23 07.3**	**+2.1**
	comp=Z,20nm,1.8s						
TUC	**Tucson**	**87.42**	**51**	P	**P**	**02 23 07.3**	**+1.0**
	baz=233						
TUC	**Tucson**	**87.42**	**51**	*e*P	**P**	**02 23 07.7**	**+1.4**
TUC				pmax	pmax		
	comp=Z,35nm,1.9s						
TUC	**Tucson**	**87.42**	**51**	*e*P	**P**	**02 23 07.7**	**+1.4**
	comp=Z,35nm,1.9s						
WHN	**Wuhan**	**88.67**	**306**	P	P	02 23 21.9	+10
WHN	**Wuhan**	**88.67**	**306**	S	S	02 33 46.4	-11
WHN				LR	LR		
	comp=N,2μm,25.9s						
WHN				LR	LR		
	comp=E,460nm,14.5s						
WHN				LR	LR		
	comp=Z,850nm,20.4s						
LCMT	**Little Creek M**	**88.69**	**46**	*e*P	**P**	**02 23 13.8**	**+1.5**
	comp=Z,7.7nm,1.2s						
U15A	**North Rim**	**88.93**	**47**	*e*P	**P**	**02 23 14.0**	**+0.4**
CCUT	**Cedar City**	**88.96**	**45**	*e*P	**P**	**02 23 14.2**	**+0.5**
	comp=Z,8.8nm,1.4s						
KNB	**Kanab**	**88.96**	**46**	*e*P	**P**	**02 23 15.2**	**+1.5**
KNB				pmax	pmax		
	comp=Z,14nm,1.3s						
KNB	**Kanab**	**88.96**	**46**	*e*P	**P**	**02 23 15.2**	**+1.5**
	comp=Z,14nm,1.3s						
WUAZ	**Wupatki**	**88.96**	**48**	P	**P**	**02 23 14.5**	**+0.8**
	baz=233						
WUAZ	**Wupatki**	**88.96**	**48**	*e*P	**P**	**02 23 14.4**	**+0.8**
	comp=Z,16nm,1.3s						
WVOR	**Wild Horse Val**	**89.04**	**39**	*e*P	**P**	**02 23 15.1**	**+1.3**
WVOR				pmax	pmax		
	comp=Z,6.0nm,1.2s						
WVOR	**Wild Horse Val**	**89.04**	**39**	*e*P	**P**	**02 23 15.1**	**+1.3**
	comp=Z,5.6nm,1.2s						
X18A	**Snowflake**	**89.30**	**49**	*e*P	**P**	**02 23 17.6**	**+2.3**
MTPU	**Mount Pierson**	**89.99**	**45**	*e*P	**P**	**02 23 20.8**	**+2.1**
	comp=Z,30nm,1.7s						
CN2	**Changchun**	**90.00**	**322**	*e*P	**P**	**02 23 16.7**	**-1.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
TIA	**Tai'an**	**90.12**	**312**	*e*P	**P**	**02 23 22.7**	**+3.8**
TIA				pmax	pmax		
	comp=Z,30nm,1.0s						
KLR	**Kul'dur**	**90.69**	**329**	*e*P	**P**	**02 23 20.0**	**-1.2**
TX31	**Lajitas Ar. Si**	**90.71**	**57**	*e*P	**P**	**02 23 23.0**	**+1.1**
TXAR	**Lajitas Array**	**90.71**	**57**	P	**P**	**02 23 22.1**	**+0.2**
	comp=Z,3.4nm,1.1s,baz=218,slow=7.3,SN

HHC LR LR
comp=Z,200nm,13.6s
HHC LR LR
comp=Z,260nm,14.8s
HHC LR LR
comp=Z,230nm,12.3s
COLA College 96.45 12 *e*P **P 02 23 46.7 -0.6**
COLA pmax pmax
comp=Z,4.0nm,0.9s
ILAR Eielson Array 96.53 12 P **P 02 23 45.8 -2.0**
comp=Z,0.5nm,0.8s,baz=221,slow=6.0,SNR=4.7
CD2 Chengdu 96.55 302 *e*P **P 02 23 49.2 +0.5**
CD2 sP sP 02 23 58.2 0.0
CD2 SKS **SKSac 02 34 24.6 +0.2**
CD2 S **S 02 35 08.8 +0.2**
CD2 sS sS 02 35 20.0 -0.3
CD2 SS **SS 02 41 44.0 +0.7**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.8s
WMQ Urumqi 113.50 308 *e*PKP **PKiKP 02 28 55.2 -1.6**
MKAR Makanchi Array 118.00 310 PKP **PKPdf 02 29 03.9 -1.5**
comp=Z,1.9nm,1.0s,baz=54,slow=6.2,SNR=7.6
ZALV Zalesovo Beam 118.01 319 PKP **PKPdf 02 29 03.8 -1.3**
comp=Z,0.8nm,0.4s,baz=270,slow=1.4,SNR=3.1
KSH Kashi 120.73 301 *e*PKP **PKPdf 02 29 10.7 -0.3**
KSH *e*PP **PP 02 30 45.0 +5.4**
KSH PKS **PKSdf 02 32 46.3 -1.4**
KSH SKS **SKSdf 02 36 17.4 -4.5**
KSH SKKS **SKKSac 02 37 33.5 -4.3**
KSH SS **SS 02 47 14.7 +5.1**
KSH AMB AMB
comp=Z,60nm,4.6s
KSH LR LR
comp=Z,140nm,7.9s
KSH LR LR
comp=Z,130nm,9.4s
KSH LR LR
comp=Z,140nm,7.0s
KURK Kurchatov 121.16 314 *i* PKIKP **PKPdf 02 29 10.5 -0.7**
KURK pmax pmax
comp=Z,18nm,1.7s
KURK Kurchatov 121.16 314 *e*PKPdf **PKPdf 02 29 10.5 -0.7**
TKM2 Tokmak 2 121.78 305 *e*PKIKP **PKPdf 02 29 13.0 0.0**
TKM2 Tokmak 2 121.78 305 *e*PKPdf **PKPdf 02 29 13.0 0.0**
AAK Ala-Archa 122.52 304 *i* PKIKP **PKPdf 02 29 14.3 0.0**
EKS2 Erkin-Say 123.04 304 *e*PKIKP **PKPdf 02 29 15.4 +0.1**
EKS2 Erkin-Say 123.04 304 *e*PKPdf **PKPdf 02 29 15.4 +0.1**
KKAR Karatay Array 125.48 304 *e*PKIKP **PKPdf 02 29 19.4 -0.4**
KKAR Karatay Array 125.48 304 *e*PKPdf **PKPdf 02 29 19.4 -0.4**
BVAR Borovoye Array 126.45 316 PKP **PKPdf 02 29 20.2 -1.2**
comp=Z,2.6nm,1.0s,baz=116,slow=3.4,SNR=10.0
BRVK Borovoye 126.52 316 *i* PKIKP **PKPdf 02 29 20.9 -0.5**
BRVK pmax pmax
comp=Z,18nm,1.7s
BRVK Borovoye 126.52 316 *e*PKPdf **PKPdf 02 29 21.4 -0.1**
ARU Arti 132.99 321 PKP **PKPdf 02 29 34.9 +1.3**
comp=Z,1.3nm,0.2s,baz=226,slow=3.6,SNR=2.6
ARU Arti 132.99 321 *i* PKIKP **PKPdf 02 29 32.9 -0.7**
ARU 02 31 57.0
ARU Arti 132.99 321 *e*PKPdf **PKPdf 02 29 34.5 +0.9**
ARU PKP **PKPdf 02 29 34.9 +1.3**
ABKAR Akbulak array 133.10 312 *e*PKPdf **PKPdf 02 29 34.8 +0.8**
SOKR Solikamsk 133.15 326 *e*PKHKP PKPpre 02 29 08.9
SOKR pmax pmax
comp=Z,11nm,0.4s
KLMR Klimovskoe 140.33 333 *e*PKIKP **PKPdf 02 29 44.3 -2.7**
KLMR *e* 02 32 42.1
KLMR pmax pmax
comp=Z,11nm,1.4s
DGRG David-gareji 144.03 301 P **PKPdf 02 29 54.4 0.0**
DGRG David-gareji 144.03 301 *e*PKIKP **PKPdf 02 29 54.4 0.0**
TBLG Delisi 144.47 302 P PKPbc 02 29 54.0 +0.3
TBLG Delisi 144.47 302 *e*PKIKP **PKPab 02 29 53.9 +0.5**
FINES FINESS Array B 144.48 341 PKP **PKPab 02 29 51.1 -1.7**
comp=Z,3.4nm,0.7s,baz=66,slow=6.7,SNR=11
GNI Garni 144.63 299 *i* PKIKP **PKPab 02 29 54.7 +0.4**
GNI Garni 144.63 299 *e*PKPdf **PKPab 02 29 54.5 +0.2**
OBN Obninsk 144.92 327 *e*PKIKP **PKPab 02 29 53.2 -1.4**
OBN pmax pmax
comp=Z,28nm,1.1s
OBN Obninsk 144.92 327 *e*PKPdf **PKPab 02 29 54.5 -0.1**
ZEI Tsey 144.94 304 *i* PKIKP **PKPab 02 29 53.5 -1.9**
ZEI pmax pmax
comp=Z,51nm,0.8s
NCK Nalchik 145.04 305 *i* PKIKP **PKPbc 02 29 55.3 -0.1**
GOF Gofitskoye 145.11 308 *e*PKIKP **PKPdf 02 29 56.4 +0.4**
ONI Oni 145.30 304 P **PKPbc 02 29 56.5 +0.1**
ONI Oni 145.30 304 *e*PKIKP **PKPbc 02 29 56.4 +0.1**
BGD Bogdanovka 145.38 301 P **PKPab 02 29 57.9 +0.8**
AKH Akhalkalaki 145.44 301 P **PKPab 02 29 57.5 +0.3**
AKH Akhalkalaki 145.44 301 *e*PKIKP **PKPab 02 29 57.5 +0.3**
KBZ Khabaz 145.49 306 PKPbc **PKPdf 02 29 56.4 -0.4**
comp=Z,6.9nm,1.0s,baz=52,slow=3.0,SNR=16
VSR Storozhevoye 145.51 320 *e*PKP2 **PKPdf 02 29 54.7 -1.8**
VSR pmax pmax
comp=Z,30nm,1.1s
NEY Neytrino 145.71 305 *i* PKIKP **PKPdf 02 29 57.3 -0.1**
CHVG Ch'k'valeri 146.27 304 P **PKPbc 02 29 59.8 +0.5**
NB2 NORSAR Subarra147.79 353 PKP **PKPdf 02 30 01.8 +1.7**
comp=Z,26nm,1.4s,baz=17,slow=2.6
NOA NORSAR Array B147.79 353 PKPbc **PKPdf 02 30 01.6 +1.4**
comp=Z,3.1nm,0.9s,baz=13,slow=4.5,SNR=6.3
SFNV Sufian 148.51 293 *e*P **PKPdf 02 29 57.1 -5.1**
ANN Anapa 149.01 309 *i* PKP2 **PKPbc 02 30 05.6 -1.0**
ANN pmax pmax
comp=Z,57nm,1.6s
MICGM Minsk 149.20 332 *e* **PKPdf 02 30 03.0 +0.5**
MNK Minsk 149.20 332 *e*PKIKP **PKPdf 02 30 03.0 +0.5**
KONO Kongsberg 149.32 354 *e*PKP2 **PKPbc 02 30 06.1 -0.8**
KONO Kongsberg 149.32 354 *e*PKPbc **PKPbc 02 30 06.1 -0.8**
ZALF Zalf 150.82 286 *e*P **PKPbc 02 30 13.3 +1.8**
AKASG Malin Array Be 151.12 325 PKPbc **PKPbc 02 30 11.2 -0.4**
comp=Z,3.6nm,0.6s,baz=46,slow=3.1,SNR=28
KIEV Kiev 151.13 325 *e*PKIKP **PKPbc 02 30 10.6 -0.9**
KIEV Kiev 151.13 325 *e*PKPbc **PKPbc 02 30 10.6 -0.9**
SIM Simferopol' 151.17 311 *i* PKIKP **PKPbc 02 30 13.1 +1.2**
SIM pmax pmax
comp=Z,28nm,0.9s
BTCH Batrach 151.48 292 *e*P **PKPbc 02 30 12.5 -0.5**
MARH Ras Al Marh 151.55 288 *e*P **PKPbc 02 30 14.2 +0.6**
HAWK Haweek 151.60 289 *e*P **PKPbc 02 30 13.9 +0.6**
BIDA Albida 151.66 290 *e*P **PKPbc 02 30 11.7 -1.8**
BRBR Barbar 151.99 287 *e*P **PKPbc 02 30 16.6 +2.2**
BRTR Keskin Array B 153.12 301 PKPbc **PKPbc 02 30 16.8 +0.1**
comp=Z,3.1nm,0.9s,baz=111,slow=2.8,SNR=14
BRTR PKPab **PKPab 02 30 26.1 -2.2**
comp=Z,7.1nm,1.1s,baz=128,slow=2.0,SNR=10
ANTO Ankara 153.72 302 *e*PKIKP **PKPbc 02 30 18.0 +0.1**
ANTO *e* 02 30 29.9
ANTO Ankara 153.72 302 *e*PKPbc **PKPbc 02 30 18.0 +0.1**
ANTO *e*PKPab **PKPab 02 30 29.9 -0.8**
CSS Mathiatis 154.11 290 *e*PKPbc **PKPbc 02 30 19.3 +0.5**
CSS *e*PKPab **PKPab 02 30 32.4 -0.1**
CRVS Cervenica-Dubn 156.01 330 *e*PKP2 **PKPab 02 30 38.9 -1.2**
CRVS Cervenica-Dubn 156.01 330 *e*PKP **PKPab 02 30 38.9 -1.2**
LANS Liptovska Anna 156.66 333 *e*PKP2 **PKPab 02 30 43.1 +0.2**
LANS Liptovska Anna 156.66 333 *e*PKP **PKPab 02 30 43.1 +0.2**
UPC Upice 156.75 339 *e*PKPAB **PKPab 02 30 42.3 -0.8**
UPC *e*pPKP **pPKPab 02 30 54.2 +4.0**
UPC Upice 156.75 339 *e*PKP2 **PKPab 02 30 42.3 -0.8**
KECS Kecovo 156.76 330 *e*PKP2 **PKPab 02 30 42.4 -0.9**
KECS Kecovo 156.76 330 *e*PKP **PKPab 02 30 42.4 -0.9**
DPC Dobruska-Polom 156.79 339 *e*sPKP **sPKPdf 02 30 30.8 +7.3**
DPC *e*PKPAB **PKPab 02 30 42.3 -1.1**
DPC *e*pPKP pPKPab 02 30 53.8 +3.4
CLL Collm 156.83 345 *e*PKPab **PKPab 02 30 44.0 +0.6**
comp=Z,6.0nm,1.0s
CLL Collm 156.83 345 *e*PKP2 **PKPab 02 30 44.0 +0.6**
CLL pmax pmax
comp=Z,6.0nm,1.0s
BRG Berggiesshubel 157.00 343 *e*PKP **PKPab 02 30 40.6 -3.6**
comp=Z,16nm,1.5s
PVCC Panska Ves 157.15 342 *e*PKPAB **PKPab 02 30 46.1 +1.2**
PVCC Panska Ves 157.15 342 *e*PKP2 **PKPab 02 30 46.1 +1.2**
VYHS Vyhne 157.44 333 *e*PKP2 **PKPab 02 30 45.2 -1.0**
VYHS Vyhne 157.44 333 *e*PKP **PKPab 02 30 45.2 -1.0**
PRU Pruhonice 157.64 341 *e*PKPAB **PKPab 02 30 47.9 +0.9**
PRU AMS AMS 03 47 40.0
comp=Z,300nm,21.0s
PRU Pruhonice 157.64 341 *e*PKP2 **PKPab 02 30 47.9 +0.9**
PRU MLR MLR
comp=Z,300nm,21.0s
KHC Kasperske Hory 158.69 341 *e*PKIKP **PKPdf 02 30 16.6 +0.4**
KHC *e* 02 30 50.5
KHC Kasperske Hory 158.69 341 *e*PKPdf **PKPdf 02 30 16.6 +0.4**
KHC *e*PKPab **PKPab 02 30 50.5 -1.2**
TORD Torodi Ar. Bea 163.89 174 PKP **PKPdf 02 30 22.4 -0.3**
comp=Z,1.9nm,1.2s,baz=227,slow=3.3,SNR=4.1
TORD PKPab **PKPab 02 31 16.9 +1.9**
comp=Z,5.9nm,1.0s,baz=193,slow=2.1,SNR=11
TAM Tamanrasset 173.30 197 *e*PKP2 **PKPab 02 31 57.4 +0.7**
TAM Tamanrasset 173.30 197 *e*PKPab **PKPab 02 31 57.4 +0.7**

*ISCJB **07** 02:33:29.1±1.4,29.6°S×0.3×176.5°W±0.1°,1,h21km,mb4.1/4, Error ellipse: s-maj=42.6km s-min=13.7km az=16.2*
*IDC **07** 02:33:35.3±4.4,29.47°S×176.52°W,h59km±31km,mb3.8/4, mb1 3.9/4,mb1mx3.5/28,mbtmp4.1/4,Error ellipse: s-maj=49.2km s-min=34.7km az=143.0*
ISC 07 02:33:30.1±1.0,29.5°S±0.3×176.4°W±0.1,h21km,n12, σ1°01/14,mb4.2/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.36**	**279**	P	**Pb**	**02 33 56.0**	**+1.3**
	184nm,0.3s,baz=266,slow=18,SNR=4.1						
RAO				S	**Sn**	**02 34 09.6**	**-1.5**
	228nm,0.3s,baz=264,slow=22,SNR=4.1						
STKA	**Stephens Creek**	**36.07**	**255**	P	**P**	**02 40 31.1**	**+0.8**
	1.9nm,0.6s,baz=121,slow=13,SNR=3.8						
STKA				PP	**PnPn**	**02 41 50.9**	**-0.6**
	4.2nm,0.8s,baz=95,slow=7.8,SNR=4.6						
ASAR	**Alice Springs**	**44.58**	**265**	P	**P**	**02 41 40.7**	**-0.2**
	0.8nm,0.6s,baz=102,slow=7.1,SNR=12						
WRA	**Warramunga Arr**	**45.48**	**270**	P	**P**	**02 41 47.3**	**-0.8**
	1.9nm,0.6s,baz=110,slow=7.5,SNR=14						
PETK	**Petropavlovsk-**	**85.27**	**345**	P	**P**	**02 46 06.0**	**+1.2**
	1.4nm,0.5s,baz=151,slow=3.3,SNR=3.0						
KURBB	**Kurchatov Arra**	**121.46**	**314**	PKP	**PKPdf**	**02 52 20.4**	**-1.0**
	0.5nm,0.7s,baz=100,slow=1.8,SNR=6.2						
BVAR	**Borovoye Array**	**126.71**	**316**	PKP	**PKPdf**	**02 52 31.9**	**+0.4**
	0.5nm,0.6s,baz=22,slow=1.6,SNR=3.1						
FINES	**FINESS Array B**	**144.73**	**341**	PKP	**PKPab**	**02 53 03.0**	**-0.3**
	2.1nm,0.6s,baz=51,slow=2.3,SNR=9.2						
NB2	**NORSAR Subarra148.02 353**			PKPbc	**PKPbc**	**02 53 12.3**	**-1.0**
	comp=Z,0.9nm,0.7s,baz=8.9,slow=2.9						
NOA	**NORSAR Array B148.02 353**			PKPbc	**PKPbc**	**02 53 12.0**	**-1.3**
	comp=Z,1.0nm,0.6s,baz=13,slow=4.4,SNR=4.6						
AKASG	**Malin Array Be**	**151.38**	**325**	PKPbc	**PKPbc**	**02 53 21.7**	**-0.1**
	comp=Z,3.1nm,0.6s,baz=45,slow=2.9,SNR=9.7						
TORD	**Torodi Ar. Bea**	**163.67**	**173**	PKPab	**PKPab**	**02 54 23.9**	**+0.2**
	comp=Z,1.2nm,1.0s,baz=184,slow=3.6,SNR=6.4						

*ISCJB **07** 02:47:12.9±2.0,29.53°S±0.10×176.1°W±0.2,h36km, mb4.1/3,Error ellipse: s-maj=20.6km s-min=12.9km az=159.1*
*IDC **07** 02:47:20.1±3.8,28.90°S×176.56°W,h68km±26km,mb3.8/3, mb1 4.0/3,mb1mx3.3/29,mbtmp4.1/3,Error ellipse: s-maj=56.2km s-min=35.3km az=174.0*
ISC 07 02:47:15.2±1.2,29.4°S±0.1×176.2°W±0.1,h36km,n10, σ1°48/12,mb4.1/3,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.52**	**275**	P	**Pn**	**02 47 41.6**	**+1.7**
	125nm,0.3s,baz=164,slow=23,SNR=5.2						
RAO				S	**Sn**	**02 47 57.6**	**-0.8**
	413nm,0.3s,baz=197,slow=22,SNR=11						
URZ	**Urewera**	**10.45**	**210**	P	**Pn**	**02 49 41.3**	**-1.2**
	0.5nm,0.3s,baz=21,slow=18,SNR=2.2						
URZ				S	**Sn**	**02 51 38.5**	**+0.1**
	1.8nm,0.3s,baz=135,slow=10.0,SNR=6.6						
STKA	**Stephens Creek**	**36.25**	**255**	P	**P**	**02 54 16.2**	**+1.2**
	1.3nm,0.6s,baz=80,slow=9.8,SNR=2.8						
ASAR	**Alice Springs**	**44.75**	**265**	P	**P**	**02 55 24.6**	**-0.8**
	1.9nm,0.7s,baz=107,slow=7.4,SNR=15						
WRA	**Warramunga Arr**	**45.65**	**270**	P	**P**	**02 55 31.0**	**-1.6**
	1.8nm,0.6s,baz=108,slow=8.0,SNR=16						
FINES	**FINESS Array B**	**144.71**	**342**	PKP	**PKPab**	**03 06 45.5**	**-0.7**
	1.4nm,0.6s,baz=38,slow=2.6,SNR=9.1						
NB2	**NORSAR Subarra147.97 353**			PKP	**PKPbc**	**03 06 55.6**	**-0.5**
	comp=Z,0.9nm,0.6s,baz=8.2,slow=2.8						
NOA	**NORSAR Array B147.97 353**			PKPbc	**PKPbc**	**03 06 55.9**	**-0.2**
	comp=Z,1.9nm,0.8s,baz=15,slow=4.5,SNR=5.6						
AKASG	**Malin Array Be**	**151.41**	**325**	PKPbc	**PKPbc**	**03 07 03.7**	**-1.1**
	comp=Z,0.4nm,0.3s,baz=46,slow=2.8,SNR=4.1						
TORD	**Torodi Ar. Bea**	**163.72**	**173**	PKPab	**PKPab**	**03 08 09.7**	**+2.8**
	comp=Z,0.7nm,0.8s,baz=204,slow=2.7,SNR=3.6						

*NEIC **07** 02:48:44.9±0.6,29.63S×175.82W,h10km,mb4.4/4,Error ellipse: s-maj=15.4km s-min=11.5km az=138.0*
*IDC **07** 02:48:44.6±0.8,29.19S×176.06W,h0km,mb4.4/8, mb1 4.4/8,mb1mx4.2/30,mbtmp4.3/8,MS4.0/1,Ms1 3.9/1, ms1mx2.9/29,Error ellipse: s-maj=28.1km s-min=20.0km az=160.0*
*ISCJB **07** 02:48:46.8±0.8,29.69S±0.07×175.88W±0.09,h33km, mb4.4/13,Error ellipse: s-maj=11.8km s-min=9.7km az=17.0*
ISC 07 02:48:48.7±0.6,29.41S±0.10×175.99W±0.09,h28km,n32, σ1°32/36,mb4.6/13,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.69**	**275**	Pn	**Pn**	**02 49 16.6**	**+0.1**
	701nm,0.3s,baz=82,slow=4.3,SNR=8.3						
RAO				Sn	**Sn**	**02 49 38.7**	**+1.5**
	1µm,0.3s,baz=26,slow=20,SNR=11						
RAO	**Raoul Island**	**1.69**	**275**	*e*Pn	**Pn**	**02 49 17.0**	**+0.6**
RAO				*e*S	Sn	02 49 27.4	-10
URZ	**Urewera**	**10.52**	**211**	Pn	Pn	02 51 13.4	-4.2
	1.0nm,0.3s,baz=219,slow=13,SNR=3.8						
URZ				Sn	**Sn**	**02 53 11.7**	**-2.9**
	13nm,0.3s,baz=237,slow=23,SNR=13						
DZM	**Mont Dzumac**	**17.43**	**291**	Pn	**P**	**02 52 52.6**	**+1.6**
	0.3nm,0.3s,baz=118,slow=16,SNR=6.7						
RPZ	**Rata Peaks**	**17.64**	**212**	P	**Pn**	**02 52 50.6**	**-1.7**
	1.1nm,0.3s,baz=45,slow=14,SNR=4.2						
RPZ				S	Sn	02 55 51.2	-17
	0.5nm,0.3s,baz=60,slow=20,SNR=4.3						
EIDS	**Eidsvold**	**29.46**	**270**	*e*P	**P**	**02 54 50.9**	**+0.6**
	1.5nm,0.6s						
CTAO	**Charters Tower**	**35.40**	**276**	*e*P	**P**	**02 55 41.8**	**-0.6**
	61nm,0.7s						
STKA	**Stephens Creek**	**36.41**	**255**	P	**P**	**02 55 51.2**	**+0.3**
	4.6nm,0.5s,baz=98,slow=11,SNR=9.3						
STKA				LR	LR	03 08 55.5	
	comp=Z,214nm,19.3s,baz=35,slow=33						
ASAR	**Alice Springs**	**44.92**	**265**	P	**P**	**02 56 59.7**	**-1.6**
	3.0nm,0.6s,baz=100,slow=6.8,SNR=18						
WRAB	**Tennant Creek**	**45.82**	**270**	*e*P	**P**	**02 57 06.7**	**-1.8**
	11nm,0.9s						
WRA	**Warramunga Arr**	**45.83**	**270**	P	**P**	**02 57 06.6**	**-1.9**
	6.0nm,0.7s,baz=108,slow=7.8,SNR=16						
VNDA	**Vanda**	**49.26**	**186**	P	**P**	**02 57 37.5**	**+3.2**
	0.6nm,0.9s,baz=350,slow=5.5,SNR=3.7						
CASY	**Casey**	**56.83**	**208**	*e*P	**P**	**02 58 32.2**	**+2.0**
	0.6nm,0.6s						
MBWA	**Marble Bar**	**58.08**	**262**	*e*P	**P**	**02 58 40.3**	**+0.5**
ASAJ	**Asahikawa**	**82.39**	**331**	P	**P**	**03 01 08.6**	**+0.6**
	1.8nm,0.3s,baz=270,slow=20						
PETK	**Petropavlovsk-**	**85.31**	**344**	P	**P**	**03 01 22.7**	**0.0**
	2.3nm,0.6s,baz=120,slow=8.8,SNR=4.4						
KULM	**Kulim**	**86.81**	**278**	*e*P	**P**	**03 01 31.5**	**+0.5**
	3.5nm,0.6s						
USRK	**Ussuriysk Ar.**	**87.32**	**325**	P	**P**	**03 01 32.5**	**-0.2**
	1.9nm,0.7s,baz=82,slow=3.1,SNR=5.4						
ILAR	**Eielson Array**	**96.58**	**12**	P	**P**	**03 02 14.8**	**-0.4**
	0.3nm,0.8s,baz=223,slow=5.2,SNR=5.0						
ZALV	**Zalesovo Beam**	**118.46**	**318**	PKP	**PKPdf**	**03 07 31.8**	**-1.4**
	0.3nm,0.3s,baz=186,slow=2.9,SNR=2.8						
MKAR	**Makanchi Array**	**118.48**	**310**	PKP	**PKPdf**	**03 07 31.6**	**-1.9**
	0.8nm,0.7s,baz=66,slow=2.9,SNR=7.6						
KKAR	**Karatay Array**	**125.98**	**304**	*e*PKPdf	**PKPdf**	**03 07 48.4**	**+0.3**
ARCES	**ARCESS Array B**	**137.98**	**349**	PKhKP	PKPpre	03 08 03.0	
	1.5nm,0.9s,baz=112,slow=1.3,SNR=5.1						
ARCES				PKP	**PKPdf**	**03 08 08.9**	**-0.9**
	1.5nm,0.7s,baz=325,slow=1.9,SNR=5.5						
FINES	**FINESS Array B**	**144.79**	**342**	PKP	**PKPab**	**03 08 20.7**	**-0.5**
	12nm,0.7s,baz=62,slow=4.5,SNR=41						
KBZ	**Khabaz**	**145.99**	**306**	PKPbc	**PKPab**	**03 08 26.2**	**+0.1**
	1.9nm,0.8s,baz=178,slow=2.6,SNR=3.4						
NB2	**NORSAR Subarra148.01 353**			PKP	**PKPbc**	**03 08 30.4**	**-0.5**
	comp=Z,6.9nm,0.6s,baz=8.8,slow=2.9						
NOA	**NORSAR Array B148.01 353**			PKPbc	**PKPbc**	**03 08 30.8**	**-0.1**
	comp=Z,9.0nm,0.8s,baz=13,slow=4.5,SNR=23						
AKASG	**Malin Array Be**	**151.53**	**325**	PKPbc	**PKPbc**	**03 08 39.7**	**-0.1**
	comp=Z,4.9nm,0.6s,baz=46,slow=2.9,SNR=14						
AKASG				PKPab	**PKPab**	**03 08 48.3**	**0.0**
	comp=Z,4.5nm,0.6s,baz=45,slow=3.1,SNR=9.1						
KIEV	**Kiev**	**151.54**	**325**	*e*PKPbc	**PKPbc**	**03 08 39.7**	**-0.1**
BRTR	**Keskin Array B**	**153.63**	**301**	PKPbc	**PKPbc**	**03 08 44.2**	**-0.9**
	comp=Z,1.7nm,1.0s,baz=155,slow=4.1,SNR=7.1						
BRTR				PKPab	**PKPab**	**03 08 55.4**	**-2.4**
	comp=Z,1.1nm,0.8s,baz=101,slow=4.0,SNR=5.3						
BRG	**Berggiesshubel**	**157.30**	**344**	*e*P	**PKPab**	**03 09 12.3**	**-0.4**
	comp=Z,11nm,1.5s						
TORD	**Torodi Ar. Bea**	**163.67**	**172**	PKP	**PKPdf**	**03 08 49.9**	**+0.2**
	comp=Z,0.8nm,0.8s,baz=244,slow=0.3,SNR=4.2						
TORD				PKPab	**PKPab**	**03 09 42.9**	**+1.5**
	comp=Z,0.8nm,0.6s,baz=200,slow=4.1,SNR=7.5						

JMA 07 02:49:17.3±0.2,37.49N×144.25E,h25km,M3.9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.49**	**294**	P	Pn	02 49 57.7	+1.5
JIO				S	Sn	02 50 27.1	+1.9
OFUJ	**Ofunato**	**2.58**	**309**	P	Pn	02 49 58.6	+1.2
OFUJ				S	Sn	02 50 29.4	+1.4
JFK	**Kawauchi**	**2.69**	**268**	P	Pn	02 50 00.2	+1.2
JFK				S	Sn	02 50 32.0	+1.2
JMK	**Ichinoseki**	**2.80**	**302**	P	Pn	02 50 02.2	+1.8
JMK				S	Sn	02 50 35.5	+2.1
JOU	**Okura**	**2.97**	**288**	P	Pn	02 50 05.3	+2.5
JOU				S	Sn	02 50 40.1	+2.5
JOM	**Ohasama**	**3.05**	**311**	P	Pn	02 50 06.3	+2.4
JOM				S	Sn	02 50 41.6	+2.0
JFT	**Otama**	**3.11**	**272**	P	Pn	02 50 07.3	+2.5
JFT				S	Sn	02 50 43.9	+2.7
JYK	**Kaneyama**	**3.38**	**296**	P	Pn	02 50 11.1	+2.6
JYK				S	Sn	02 50 51.0	+3.2
JRG	**Rokugo**	**3.42**	**305**	P	Pn	02 50 11.8	+2.8
JRG				S	Sn	02 50 51.3	+2.6
JAH	**Hinai**	**3.90**	**315**	*e*S	Sn	02 51 03.5	+2.9
JTM	**Tenmabayashi**	**4.12**	**324**	S	Sn	02 51 05.4	-0.5
JRY	**Ryogami san**	**4.54**	**253**	P	Pn	02 50 25.1	+0.7
JRY				S	Sn	02 51 16.2	-0.2
JOT	**Ohata**	**4.61**	**328**	P	Pn	02 50 27.3	+2.0
JOD2	**Odawara 2**	**4.72**	**243**	P	Pn	02 50 27.1	+0.2
JKB	**Kayabe**	**5.04**	**332**	P	Pn	02 50 31.0	-0.3
JCH	**Churui**	**5.16**	**353**	P	Pn	02 50 31.8	-1.1
JCH				*e*S	Sn	02 51 28.0	-3.7
NEM2	**Nemuro 2**	**5.98**	**11**	S	Sn	02 51 44.1	-7.6
JTKR	**Abashiri--Toko**	**6.48**	**358**	*e*S	Sn	02 51 58.1	-6.0

*ISK **07** 02:50:08.9,37.45N×36.30E,h10km,MD2.7*
*ISCJB **07** 02:50:09.6±0.5,37.48N±0.03×36.29E±0.03,h3km±6km, Error ellipse: s-maj=5.7km s-min=3.8km az=6.1*
*CSEM **07** 02:50:09.4±0.3,37.50N×36.27E,h5km,MD2.8,Error ellipse: s-maj=9.0km s-min=5.2km az=1.0*
*DDA **07** 02:50:09.8,37.49N×36.33E,h5km,Md2.8*
ISC 07 02:50:09.7±0.9,37.49N±0.03×36.29E±0.02,h7km±8km, n24,σ0°48/37,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ANDN	**Andirin**	**0.10**	**26**	*i* P	**Pg**	**02 50 11.9**	**-0.2**
ANDN				*i* S	**Sg**	**02 50 13.8**	**0.0**
ANDN	**Andirin**	**0.10**	**26**	P	**Pg**	**02 50 11.9**	**-0.2**
ANDN				S	**Sg**	**02 50 13.8**	**0.0**
KOZT	**Kozan**	**0.37**	**268**	*e*PG	**Pg**	**02 50 16.9**	**-0.1**
KOZT				*e*SG	**Sg**	**02 50 22.4**	**+0.6**
KOZT	**Kozan**	**0.37**	**268**	*e*Pg	**Pg**	**02 50 16.9**	**-0.1**
KOZT				*e*Sg	**Sg**	**02 50 22.5**	**+0.6**
KAMA	**Osmaniye**	**0.43**	**135**	*i* P	**Pg**	**02 50 17.7**	**-0.3**
KAMA				*i* S	**Sg**	**02 50 24.1**	**+0.4**
KMRS	**Kahramanmaras**	**0.48**	**88**	*e*PG	**Pg**	**02 50 18.8**	**-0.3**
KMRS				*e*SG	**Sg**	**02 50 25.3**	**-0.1**
KMRS	**Kahramanmaras**	**0.48**	**88**	*e*Pg	**Pg**	**02 50 18.8**	**-0.3**
KMRS				*e*Sg	**Sg**	**02 50 25.3**	**-0.1**
HCB	**Kahramanmara¯**	**0.51**	**107**	*i* P	**Pg**	**02 50 19.8**	**+0.1**
HCB				*i* S	**Sg**	**02 50 26.7**	**+0.3**
AKO	**Adana**	**0.67**	**268**	*i* P	**Pg**	**02 50 22.9**	**+0.2**
AKO				*i* S	**Sb**	**02 50 34.1**	**+0.8**
GAZ	**Gaziantep**	**0.80**	**113**	*e*PG	**Pg**	**02 50 24.8**	**-0.3**
GAZ	**Gaziantep**	**0.80**	**113**	*e*Pg	**Pg**	**02 50 24.8**	**-0.3**
SARI	**SarD1z-Kayseri**	**0.92**	**6**	*e*PG	**Pb**	**02 50 28.0**	**-0.1**
KUZU	**Kuzuini**	**0.95**	**139**	*i* P	**Pn**	**02 50 29.9**	**+0.4**
KUZU				*i* S	**Sb**	**02 50 41.7**	**+0.4**
KUZU	**Kuzuini**	**0.95**	**139**	P	**Pn**	**02 50 29.9**	**+0.4**
KUZU				S	**Sb**	**02 50 41.7**	**+0.4**
KARA	**Karaisali**	**1.01**	**257**	*e*PG	**Pg**	**02 50 28.5**	**-0.6**
KARA	**Karaisali**	**1.01**	**257**	*e*Pg	**Pg**	**02 50 28.5**	**-0.6**
TAHT	**Tahtakopru-Hat**	**1.12**	**184**	*e*PN	**Pg**	**02 50 30.1**	**-1.0**
TAHT	**Tahtakopru-Hat**	**1.12**	**184**	*e*Pn	**Pg**	**02 50 30.1**	**-1.0**
DARE	**Darende-Malaty**	**1.43**	**41**	*e*PN	**Pn**	**02 50 35.9**	**-0.2**
DARE	**Darende-Malaty**	**1.43**	**41**	*e*Pn	**Pn**	**02 50 35.9**	**-0.2**
NIG	**Nigde**	**1.47**	**295**	*e*PN	**Pn**	**02 50

JOD2	**Odawara 2**	**1.06 215**	P		Pn	03 01 09.2	+0.8
MAT	**Matsushiro**	**1.38 288**	P		Pn	03 01 13.0	+0.2
MAT			S		Sn	03 01 26.7	-3.3

*SJA **07** 03:09:51.9±0.9,34.7′17S×70.7′90W,h162km±23km,ML3.3, MW3.5*
*ISCJB **07** 03:10:04.8±1.9,33.5′5S±0.1′×70.2′W±0.1′,h113km±12km, Error ellipse: s-maj=25.0km s-min=19.0km az=153.8*
*GUC **07** 03:10:05.0±0.4,33.4′15S×70.7′11W,h106km±3km,ML3.9*
ISC 07 03:10:05.0±3.6,33.6S±0.2×70.2W±0.1,h111km±21km,n16, σ0≋45/19,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FCH	**Farellones**	**0.24**	**348**	*eP*	**Pn**	**03 10 20.9**	**-0.2**
FCH				*eS*	**Sn**	**03 10 32.7**	**-0.4**
FSR	**Penalolen**	**0.26**	**289**	*eP*	**Pn**	**03 10 21.1**	**+0.3**
FSR				*eS*	**Sn**	**03 10 33.0**	**+0.4**
CLCH	**Cerro Calan**	**0.31**	**304**	*eP*	**Pn**	**03 10 20.9**	**-0.1**
CLCH				*eS*	**Sn**	**03 10 32.9**	**-0.1**
ANTU	**Antumapu**	**0.34**	**270**	*eP*	**Pn**	**03 10 21.3**	**+0.2**
ANTU				*eS*	**Sn**	**03 10 33.7**	**+0.6**
ANTU				IAML		03 10 34.2	
	comp=E,5μm,0.4s						
PEL	**Peldehue**	**0.57**	**318**	*eP*	**Pn**	**03 10 21.9**	**-0.6**
PEL				*eS*	**Sn**	**03 10 35.1**	**-0.5**
PEL				IAML		03 10 36.3	
	comp=N,6μm,0.3s						
AAGR	**Agrelo**	**1.27**	**68**	*eP*	**Pn**	**03 10 29.3**	**0.0**
ARCO	**CERRO ARCO**	**1.31**	**57**	*eP*	**Pn**	**03 10 29.9**	**+0.2**
ARCO				IAML		03 10 50.7	
	comp=Z,145nm,0.5s						
ARCO				*eS*	Sn	03 10 58.1	+10
AUSP	**Uspallata**	**1.52**	**28**	*eP*	**Pn**	**03 10 32.4**	**0.0**
ASAL	**Salagasta**	**1.52**	**51**	*eP*	**Pn**	**03 10 32.6**	**+0.3**
RTLS	**Leoncito**	**1.93**	**24**	*eP*	**Pn**	**03 10 38.5**	**+1.1**
RTCV	**Cerro Valdivia**	**2.22**	**40**	*eP*	**Pn**	**03 10 40.6**	**-0.3**
RTLL	**Cerro Villicun**	**2.68**	**34**	*eP*	**Pn**	**03 10 46.8**	**0.0**
ACAN	**Cantantal**	**2.87**	**64**	*eP*	**Pn**	**03 10 48.8**	**-0.5**
AMOG	**MOGNA**	**3.01**	**30**	*eP*	**Pn**	**03 10 51.1**	**-0.1**
VCA	**Vinchina**	**5.12**	**20**	IAML		03 12 22.9	
	comp=Z,10.0nm,0.8s						
TCA	**Tanti**	**5.26**	**67**	IAML		03 11 19.8	
	comp=Z,6.3nm,0.2s						

IDC 07 03:14:16.3±2.7,28.10S×177.11W,h0km,mb3.8/2, mb1 4.1/2,mb1mx3.3/25,mbtmp3.8/2,Error ellipse: s-maj=67.0km s-min=35.1km az=111.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.35**	**212**	Pn	Pn	03 14 42.3	-0.1
	58nm,0.3s,baz=17,slow=20,SNR=3.4						
RAO				Sn	Sg	03 14 56.4	-3.3
	246nm,0.3s,baz=101,slow=12,SNR=11						
ASAR	**Alice Springs**	**44.06**	**264**	P	P	03 22 25.3	-1.0
	0.3nm,0.6s,baz=99,slow=8.1,SNR=4.4						
WRA	**Warramunga Arr**	**44.84**	**269**	P	P	03 22 33.0	+0.4
	1.9nm,0.6s,baz=109,slow=7.7,SNR=11						
FINES	**FINESS Array B**	**143.24**	**342**	PKP	PKPbc	03 33 49.5	+0.8
	1.1nm,0.6s,baz=66,slow=3.5,SNR=5.4						
AKASG	**Malin Array Be**	**149.89**	**326**	PKPbc	PKPbc	03 34 08.2	+0.1
	0.4nm,0.3s,baz=55,slow=2.2,SNR=5.4						

JMA 07 03:15:25.2±0.1,28.21N×141.91E,h55km,M4.2,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**1.14**	**168**	P	Pn	03 15 45.1	+0.2
CBIJ				S	Sn	03 15 59.7	+0.2
JHHJ	**Haha-jima-NKT**	**1.59**	**171**	P	Pn	03 15 51.4	+0.3
JHHJ				*eS*	Sn	03 16 11.1	+0.6
BSO1	**Boso 1**	**6.47**	**353**	P	Pn	03 16 57.7	+0.3
BSO1				S	Sn	03 18 09.2	-0.4
JOD2	**Odawara 2**	**7.43**	**342**	P	Pn	03 17 12.6	+1.6
JHU	**Hanno**	**7.94**	**344**	P	Pn	03 17 19.8	+1.9
JHU				*eS*	Sn	03 18 45.6	-0.7
JRY	**Ryogami san**	**8.19**	**343**	P	Pn	03 17 22.7	+1.3
JAG	**Ashikaga**	**8.45**	**346**	P	Pn	03 17 25.6	+0.7
JHO	**Hitachi**	**8.45**	**353**	P	Pn	03 17 24.4	-0.6
MAT	**Matsushiro**	**8.88**	**340**	P	Pn	03 17 32.7	+1.9
MAT				S	Sn	03 19 12.1	+2.7

*ISCJB **07** 03:32:14.4±0.4,23.96N±0.02×122.52E±0.02,h18km±4km, Error ellipse: s-maj=4.0km s-min=2.3km az=169.4*
*JMA **07** 03:32:14.3±0.2,23.97N×122.49E,h27km±4km,M2.9*
*TAP **07** 03:32:15.4,24.02N×122.45E,h24km,ML3.4,C*
ISC 07 03:32:14.1±1.1,23.95N±0.03×122.51E±0.02,h22km±6km, n47,σ0≋68/85,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.64**	**39**	P	**Pb**	**03 32 26.5**	**-0.1**
JYNG				S	**Sb**	**03 32 34.5**	**-0.6**
YOJ	**Yonaguni jima**	**0.68**	**42**	P	**Pb**	**03 32 27.4**	**0.0**
YOJ				S	**Sb**	**03 32 36.0**	**-0.4**
TWD	**Chiawan**	**0.84**	**279**	*eP*	**Pn**	**03 32 31.3**	**+0.7**
	baz=273						
TWD				*eS*	**Sb**	**03 32 40.8**	**-0.1**
	baz=273						
ENA	**Nanau**	**0.84**	**304**	*eP*	**Pb**	**03 32 30.0**	**-0.1**
	baz=308						
TWC	**Suao**	**0.89**	**318**	*i* P	**Pb**	**03 32 30.4**	**-0.4**
	baz=317						
TWC				*i* S	**Sb**	**03 32 41.3**	**-0.9**
	baz=317						
EGS		**1.03**	**330**	P	**Pb**	**03 32 33.3**	**+0.1**
	baz=321						
EGS				S	**Sn**	**03 32 46.8**	**-0.2**
	baz=321						
ILA	**Ilan**	**1.06**	**320**	*eP*	**Pb**	**03 32 34.2**	**+0.3**
	baz=310						
ILA				*eS*	**Sn**	**03 32 48.1**	**+0.3**
	baz=310						
TWE	**Neicheng**	**1.08**	**315**	P	**Pb**	**03 32 34.0**	**-0.1**
	baz=314						
TWE				S	**Sn**	**03 32 48.4**	**+0.1**
	baz=314						
ENTT	**Nioudou**	**1.10**	**309**	*eP*	**Pb**	**03 32 34.3**	**-0.1**
	baz=307						
ENTT				S	**Sn**	**03 32 49.0**	**+0.3**
	baz=307						
NNS	**Nan Shan**	**1.14**	**295**	*eP*	**Pb**	**03 32 34.8**	**-0.5**
	baz=292						
NNS				*eS*	**Sn**	**03 32 49.6**	**-0.4**
	baz=292						
EHY	**Hungye**	**1.17**	**248**	*eP*	**Pb**	**03 32 36.0**	**+0.3**
	baz=242						
EHY				*eS*	**Sn**	**03 32 49.7**	**-0.9**
	baz=242						
IRIF	**Iriomote-Funau**	**1.18**	**71**	P	**Pb**	**03 32 35.6**	**-0.2**
IRIF				S	**Sb**	**03 32 51.5**	**+0.9**
HATJ	**Hateruma jima**	**1.19**	**85**	P	**Pb**	**03 32 35.7**	**-0.3**
HATJ				S	**Sb**	**03 32 51.0**	**+0.1**
TWT	**Tachien**	**1.25**	**284**	*eP*	**Pb**	**03 32 37.7**	**+0.6**
	baz=268						
TWT				*eS*	**Sb**	**03 32 53.3**	**+0.4**
	baz=268						
TWF1	**Yuli**	**1.26**	**242**	*eP*	**Pn**	**03 32 36.3**	**-0.1**
	baz=236						
TWF1				*eS*	**Sn**	**03 32 52.3**	**-0.4**
	baz=236						
NSK	**Sanguang**	**1.27**	**305**	*eP*	**Pn**	**03 32 36.6**	**0.0**
	baz=288						
NSK				*eS*	**Sb**	**03 32 54.6**	**+1.3**
	baz=288						
WDT	**Danda**	**1.27**	**261**	*eP*	**Pn**	**03 32 36.9**	**+0.1**
	baz=256						
WDT				*eS*	**Sn**	**03 32 51.8**	**-1.7**
	baz=256						
NWF	**Wu-fen Shan**	**1.29**	**329**	*eP*	**Pb**	**03 32 37.3**	**-0.5**
	baz=330						
NWF				S	**Sb**	**03 32 54.2**	**+0.2**
	baz=330						
TWA	**Mucha**	**1.32**	**321**	*eP*	**Pb**	**03 32 38.2**	**0.0**
	baz=320						
TWA				*eS*	**Sb**	**03 32 55.4**	**+0.5**
	baz=320						
CHKT	**Chengkung**	**1.35**	**231**	*eP*	**Pb**	**03 32 40.2**	**+1.5**
	baz=226						
JKRS	**Kuro-shima**	**1.40**	**78**	P	**Pb**	**03 32 38.8**	**-0.7**
JKRS				S	**Sb**	**03 32 57.6**	**+0.6**
TAP1	**Taipei**	**1.41**	**321**	*eP*	**Pb**	**03 32 40.5**	**+0.9**
	baz=319						
TAP1				*eS*	**Sb**	**03 32 57.3**	**+0.2**
	baz=319						
SMLT	**Sun Moon Lake**	**1.47**	**268**	*eP*	**Pb**	**03 32 41.4**	**+0.6**
	baz=252						
SMLT				*eS*	**Sb**	**03 32 59.8**	**+0.6**
	baz=252						
YUS	**Yu-Shan**	**1.50**	**252**	*eP*	**Pn**	**03 32 40.7**	**+0.6**
	baz=247						
YUS				*eS*	**Sn**	**03 32 58.6**	**-0.7**
	baz=247						
TYC	**Yuchr**	**1.51**	**268**	*eP*	**Pb**	**03 32 42.1**	**+0.7**
	baz=263						
TYC				*eS*	**Sn**	**03 32 59.1**	**+0.3**
	baz=263						
TWS1	**Kuangyinshan**	**1.51**	**319**	*eP*	**Pb**	**03 32 41.4**	**-0.1**
	baz=318						
TWS1				*eS*	**Sb**	**03 33 00.4**	**+0.1**
	baz=318						
JIJ	**Ishigaki jima**	**1.55**	**74**	P	**Pn**	**03 32 40.5**	**+0.2**
JIJ				*eS*	**Sn**	**03 32 59.7**	**-0.1**
TWY	**Chenhua**	**1.56**	**328**	*eP*	**Pb**	**03 32 41.5**	**-0.6**
	baz=328						
TWY				*eS*	**Sb**	**03 33 01.2**	**-0.2**
	baz=328						
ELDTW	**Lidau**	**1.56**	**241**	*eP*	**Pn**	**03 32 40.0**	**-0.6**
	baz=237						
ALS	**Alishan**	**1.62**	**255**	*eP*	**Pb**	**03 32 43.7**	**+0.3**
	baz=249						
ALS				*eS*	**Sn**	**03 33 02.5**	**+0.6**
	baz=249						
TWQ1	**Liyutan**	**1.63**	**284**	*eP*	**Pb**	**03 32 43.1**	**-0.4**
	baz=267						
TWQ1				*eS*	**Sb**	**03 33 02.6**	**-1.0**
	baz=267						
TCU	**Taichung**	**1.69**	**277**	*eP*	**Pb**	**03 32 46.6**	**+2.2**
	baz=272						
TCU				*eS*	**Sb**	**03 33 05.9**	**+0.7**
	baz=272						
CHN5	**Tsauling**	**1.71**	**258**	*eP*	**Pb**	**03 32 45.6**	**+0.7**
	baz=242						
CHN5				*eS*	**Sb**	**03 33 05.3**	**-0.8**
	baz=242						
PCYT	**Pengchaiyu**	**1.72**	**347**	*eP*	**Pn**	**03 32 41.9**	**-0.8**
	baz=348						
TWG	**Pinlang**	**1.73**	**230**	*eP*	**Pb**	**03 32 45.2**	**-0.1**
	baz=216						
TWG				*eS*	**Sn**	**03 33 02.7**	**-1.6**
	baz=216						
JISG	**Ishigakijimahi**	**1.76**	**69**	P	**Pn**	**03 32 43.3**	**0.0**
JISG				S	**Sn**	**03 33 05.1**	**0.0**
STYT	**Tauyuan**	**1.79**	**244**	*eP*	**Pb**	**03 32 45.0**	**-1.2**
	baz=229						
STYT				*eS*	**Sn**	**03 33 07.0**	**+1.2**
	baz=229						
CHN4	**Tsaushan**	**1.85**	**252**	*eP*	**Pb**	**03 32 47.1**	**-0.2**
	baz=246						
CHN4				*eS*	**Sb**	**03 33 10.7**	**+0.6**
	baz=246						
WTP	**Ta-pu**	**1.87**	**248**	*eP*	**Pb**	**03 32 47.2**	**-0.4**
	baz=232						
WTP				*eS*	**Sb**	**03 33 10.2**	**-0.4**
	baz=232						
SGST	**Jiashian**	**1.97**	**244**	*eP*	**Pb**	**03 32 49.5**	**+0.3**
	baz=229						
SGST				*eS*	**Sb**	**03 33 13.1**	**-0.2**
	baz=229						
CHN1	**Nanshi**	**1.97**	**248**	*eP*	**Pb**	**03 32 48.8**	**-0.5**
	baz=242						
CHN1				*eS*	**Sb**	**03 33 13.3**	**-0.1**
	baz=242						
TWK	**Hsinying**	**1.97**	**250**	*eP*	**Pb**	**03 32 49.4**	**0.0**
	baz=245						
TWK				*eS*	**Sb**	**03 33 13.2**	**-0.3**
	baz=245						
LAY	**Lan-yu**	**2.10**	**205**	*eP*	**Pn**	**03 32 47.9**	**-0.1**
	baz=202						
JTJ	**Tarama**	**2.12**	**71**	S	**Sn**	**03 33 14.4**	**+0.6**
EAST	**Anshuo**	**2.19**	**225**	*eP*	**Pn**	**03 32 50.1**	**+0.9**
	baz=221						
SCZT	**Fangliau**	**2.34**	**228**	*eP*	**Pb**	**03 32 54.5**	**-1.1**
	baz=224						
JIRB	**Irabujima**	**2.58**	**70**	*eS*	**Sn**	**03 33 26.8**	**+1.5**

*IDC **07** 03:41:36.4±0.5,29.55S×176.28W,h0km,mb4.6/14, mb1 4.7/16,mb1mx4.6/25,mbtmp4.5/16,ML3.8/2,MS4.0/10, Ms1 4.0/10,ms1mx3.7/26,Error ellipse: s-maj=18.7km s-min=16.0km az=5.0*
*ISCJB **07** 03:41:38.0±0.2,30.08S±0.03×176.34W±0.04,h24km, mb4.9/71,MS4.0/9,Error ellipse: s-maj=5.8km s-min=2.8km az=37.4*
*BJI **07** 03:41:37.6,29.51S×175.86W,h19km,mb5.2/17, mB5.3/13,Ms5.1/8,Ms7 4.9/8*
*NEIC **07** 03:41:39.4±2.5,29.93S×176.33W,h22km±17km,mb5.0/58, Error ellipse: s-maj=9.2km s-min=5.5km az=172.0*
*MOS **07** 03:41:41.2±0.9,29.59S×176.39W,h37km,mb5.2/20, Error ellipse: s-maj=13.4km s-min=10.5km az=154.8*
ISC 07 03:41:39.8±0.3,29.87S±0.05×176.29W±0.06,h24km, n283,σ1≋70/294,mb5.0/71,MS3.9/9,2C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.55**	**293**	Pn	**Pn**	**03 42 05.9**	**-0.1**
	622nm,0.3s,baz=140,slow=17,SNR=17						
RAO				Sn	**Sn**	**03 42 24.9**	**-0.4**
	4μm,0.3s,baz=90,slow=20,SNR=14						
RAO	**Raoul Island**	**1.55**	**293**	*eP*	**Pn**	**03 42 05.8**	**-0.1**
RAO				*e*		03 42 23.6	
RAO	**Raoul Island**	**1.55**	**293**	*ePn*	**Pn**	**03 42 05.8**	**-0.1**
RAO				*eSn*	**Sn**	**03 42 23.6**	**-1.8**
WMGZ	**Waiomatatini S**	**9.07**	**208**	PN	**Pn**	**03 43 46.7**	**-2.5**
WMGZ				SN	**Sn**	**03 45 26.3**	**-4.2**
HAZ	**Te Kaha**	**9.28**	**211**	PN	**Pn**	**03 43 49.7**	**-2.4**
HAZ				SN	**Sn**	**03 45 35.1**	**-0.6**
PUZ	**Puketiti**	**9.35**	**208**	PN	**Pn**	**03 43 49.7**	**-3.4**
PUZ				SN	**Sn**	**03 45 34.6**	**-2.9**
CNGZ	**Carnagh Statio**	**9.72**	**206**	PN	**Pn**	**03 43 55.2**	**-3.0**
MWZ	**Matawai**	**9.87**	**210**	PN	**Pn**	**03 43 56.8**	**-3.5**
MWZ				SN	**Sn**	**03 45 49.6**	**-0.8**
URZ	**Urewera**	**10.00**	**211**	Pn	**Pn**	**03 43 58.9**	**-3.0**
	1.8nm,0.3s,baz=270,slow=4.7,SNR=12						
URZ				Sn	**Sn**	**03 45 50.0**	**-3.3**
	9.1nm,0.3s,baz=78,slow=21,SNR=14						
URZ	**Urewera**	**10.00**	**211**	*ePn*	**Pn**	**03 44 00.4**	**-1.6**
URZ				*eSn*	**Sn**	**03 45 52.7**	**-0.6**
URZ	**Urewera**	**10.00**	**211**	*ePN*	**Pn**	**03 43 58.3**	**-3.6**
URZ				SN	**Sn**	**03 45 50.6**	**-2.7**
OUZ	**Omahuta**	**10.06**	**235**	*ePn*	Pn	03 44 08.4	+5.5
SNGZ	**Shannon Statio**	**10.33**	**209**	PN	**Pn**	**03 44 04.9**	**-1.6**
SNGZ				SN	**Sn**	**03 45 58.7**	**-2.8**
KNZ	**Kokohu**	**10.40**	**207**	PN	**Pn**	**03 44 03.5**	**-3.9**
MHGZ	**Mahia Peninsul**	**10.42**	**206**	PN	**Pn**	**03 44 06.7**	**-1.0**
BKZ	**Black Stump Fm**	**11.02**	**211**	*ePn*	**Pn**	**03 44 13.2**	**-2.8**
BKZ				*eSn*	**Sn**	**03 46 18.0**	**-0.4**
KAHZ	**Kahuranaki**	**11.38**	**208**	PN	Pn	03 44 15.7	-5.2
PXZ	**Pawanui**	**11.59**	**207**	PN	Pn	03 44 18.5	-5.2
NIUE	**Niue**	**12.20**	**30**	P	Pn	03 44 23.2	-9.1
	baz=12,SNR=3.2						
SNZO	**South Karori**	**13.55**	**210**	*ePn*	**Pn**	**03 44 49.0**	**-1.6**
THZ	**Tophouse**	**14.74**	**213**	*ePn*	**Pn**	**03 45 05.1**	**-1.7**
THZ				*eSn*	**Sn**	**03 47 42.2**	**-7.2**
KHZ	**Kahutara**	**14.96**	**210**	*ePn*	**Pn**	**03 45 08.0**	**-1.7**
KHZ				*eSn*	Sn	03 47 44.0	-11
OXZ	**Oxford**	**16.35**	**212**	*ePn*	**Pn**	**03 45 24.5**	**-3.3**
	70nm,0.8s						
OXZ				*eSn*	**Sn**	**03 48 18.1**	**-10**
AFI	**Afiamalu**	**16.42**	**16**	Pn	**Pn**	**03 45 22.9**	**-6.0**
	1.3nm,0.3s,baz=219,slow=19,SNR=3.0						
AFI				Sn	Sn	03 48 03.9	-27
	2.1nm,0.3s,baz=131,slow=20,SNR=3.6						
RPZ	**Rata Peaks**	**17.11**	**213**	P	**Pn**	**03 45 33.4**	**-3.9**
	3.4nm,0.3s,baz=29,slow=2.1,SNR=10						
RPZ				S	Sn	03 48 33.3	-14
	1.1nm,0.3s,baz=217,slow=20,SNR=5.7						
RPZ	**Rata Peaks**	**17.11**	**213**	*ePn*	**Pn**	**03 45 33.8**	**-3.5**
RPZ				S	Sn	03 48 33.3	-14
RAR	**Rarotonga**	**17.20**	**64**	P	Pn	03 45 28.9	-10
	1.6nm,0.3s,baz=212,slow=19,SNR=3.6						
RAR				S	Sn	03 48 24.4	-25
	1.7nm,0.3s,baz=90,slow=17,SNR=3.0						
RAR				LR	LR	03 52 15.1	
	comp=Z,472nm,18.3s,baz=268,slow=38						
RAR	**Rarotonga**	**17.20**	**64**	*eP*	**Pn**	**03 45 37.3**	**-1.3**
RAR	**Rarotonga**	**17.20**	**64**	*ePn*	**Pn**	**03 45 37.2**	**-1.3**
RAR				S	Sn	03 48 24.4	-25
DZM	**Mont Dzumac**	**17.35**	**293**	P	**Pn**	**03 45 39.6**	**-1.0**
	0.1nm,0.3s,baz=108,slow=16,SNR=2.7						
DZM				LR	LR	03 51 44.3	
	comp=Z,770nm,19.1s,baz=118,slow=35						
DZM	**Mont Dzumac**	**17.35**	**293**	*ePn*	**Pn**	**03 45 40.5**	**0.0**
	57nm,1.4s						
PPT	**Papeete**	**27.27**	**69**	LR	LR	03 56 57.6	
	comp=Z,285nm,19.1s,baz=260,slow=34						
EIDS	**Eidsvold**	**29.20**	**271**	*eP*	**P**	**03 47 41.0**	**+1.3**
	27nm,1.4s						
HNR	**Honiara**	**30.12**	**308**	LR	LR	03 58 36.2	
	comp=Z,130nm,18.7s,baz=152,slow=34						
CMSA	**Cobar Meteorol**	**32.63**	**257**	P	**P**	**03 48 11.6**	**+1.7**
	baz=33,SNR=5.3						
CTA	**Charters Tower**	**35.19**	**277**	P	**P**	**03 48 31.9**	**-0.3**
	6.5nm,0.7s,baz=101,slow=12,SNR=10						
CTAO	**Charters Tower**	**35.19**	**277**	*eP*	**P**	**03 48 33.2**	**+0.9**
CTAO				pmax	pmax		
	comp=Z,14nm,0.7s						
CTAO	**Charters Tower**	**35.19**	**277**	*eP*	**P**	**03 48 33.2**	**+0.9**
	comp=Z,14nm,0.7s						
STKA	**Stephens Creek**	**36.05**	**256**	P	**P**	**03 48 40.0**	**+0.6**
	comp=Z,15nm,0.8s,baz=93,slow=10,SNR=15						
STKA				LR	LR	04 02 40.6	
	comp=Z,374nm,19.3s,baz=97,slow=35						
STKA	**Stephens Creek**	**36.05**	**256**	P	**P**	**03 48 40.3**	**+0.9**
	baz=36,SNR=12						
STKA	**Stephens Creek**	**36.05**	**256**	*eP*	**P**	**03 48 40.2**	**+0.7**
STKA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
STKA	**Stephens Creek**	**36.05**	**256**	*eP*	**P**	**03 48 40.2**	**+0.7**
	comp=Z,4.6nm,0.8s						
MTSU	**Mount Surprise**	**37.67**	**279**	P	**P**	**03 48 53.6**	**+0.1**
	baz=38,SNR=6.7						
HTT	**Hallett**	**38.08**	**253**	P	**P**	**03 48 57.1**	**+0.3**
	baz=38,SNR=10						
PMG	**Port Moresby**	**39.74**	**293**	LR	LR	04 04 16.0	
	comp=Z,173nm,18.4s,baz=148,slow=34						
BBOO	**Buckleboo**	**40.54**	**253**	P	**P**	**03 49 16.9**	**-0.4**
	baz=41,SNR=6.3						
COEN	**Coen**	**40.57**	**284**	*eP*	**P**	**03 49 17.6**	**-0.1**
	comp=Z,12nm,1.0s						
AS01	**Alice Springs**	**44.59**	**266**	*eP*	**P**	**03 49 49.7**	**-0.6**
AS31	**Alice Springs**	**44.62**	**266**	*eP*	**P**	**03 49 52.5**	**+1.8**
	comp=Z,2.9nm,1.0s						
ASAR	**Alice Springs**	**44.62**	**266**	P	**P**	**03 49 49.5**	**-1.1**
	comp=Z,3.0nm,0.7s,baz=105,slow=7.8,SNR=18						
ASAR				PcP	**PP**	**03 51 34.7**	**-0.2**
	comp=Z,1.5nm,0.8s,baz=100,slow=4.7,SNR=3.2						
ASAR				LR	LR	04 08 20.6	
	comp=Z,468nm,18.7s,baz=110,slow=36						
WR9	**Warramunga Arr**	**45.41**	**271**	P	**P**	**03 49 55.9**	**-1.0**
	baz=46						
WB2	**Warramunga Arr**	**45.56**	**271**	*eP*	**P**	**03 49 57.1**	**-1.0**
	comp=Z,14nm,0.8s						
WRAB	**Tennant Creek**	**45.56**	**271**	*eP*	**P**	**03 49 57.2**	**-0.9**
WRAB				pmax	pmax		
	comp=Z,25nm,0.8s						
WRAB	**Tennant Creek**	**45.56**	**271**	*eP*	**P**	**03 49 57.0**	**-1.1**
	comp=Z,13nm,0.7s						
WRA	**Warramunga Arr**	**45.57**	**271**	P	**P**	**03 49 56.5**	**-1.7**
	comp=Z,14nm,0.7s,baz=110,slow=7.6,SNR=53						
WRA				LR	LR	04 08 26.8	
	comp=Z,183nm,18.9s,baz=100,slow=35						
FORT	**Forrest**	**47.62**	**254**	*eP*	**P**	**03 50 13.4**	**-0.6**
	comp=Z,271nm,0.9s						
SBA	**Scott Base**	**48.68**	**185**	*eP*	**P**	**03 50 25.9**	**+4.3**
SBA				pmax	pmax		
	comp=Z,23nm,1.1s						
SBA	**Scott Base**	**48.68**	**185**	*eP*	**P**	**03 50 25.9**	**+4.3**
	comp=Z,23nm,1.1s						
VNDA	**Vanda**	**48.77**	**186**	P	**P**	**03 50 25.8**	**+3.5**
	comp=Z,4.2nm,0.8s,baz=357,slow=7.6,SNR=16						
VNDA				LR	LR	04 07 03.5	
	comp=Z,74nm,20.2s,baz=3.5,slow=31						
VNDA	**Vanda**	**48.77**	**186**	P	**P**	**03 50 25.8**	**+3.5**
VNDA				pmax	pmax		
	comp=Z,8.0nm,1.1s						
VNDA	**Vanda**	**48.77**	**186**	P	**P**	**03 50 25.8**	**+3.5**
	comp=Z,7.9nm,1.1s						
WRKA	**Warakurna**	**49.02**	**262**	P	**P**	**03 50 24.7**	**-0.3**
	baz=49,SNR=8.3						
FITZ	**Fitzroy Crossi**	**53.85**	**269**	LR	LR	04 14 24.1	
	comp=Z,47nm,18.8s,slow=36						
FITZ	**Fitzroy Crossi**	**53.85**	**269**	P	**P**	**03 51 00.9**	**-0.3**
	baz=54,SNR=4.9						
FITZ	**Fitzroy Crossi**	**53.85**	**269**	*eP*	**P**	**03 51 00.3**	**-0.9**
	comp=Z,12nm,0.9s						
CASY	**Casey**	**56.30**	**208**	*eP*	**P**	**03 51 20.3**	**+2.1**
	comp=Z,26nm,1.0s						
MEEK	**Meekatharra**	**56.75**	**256**	P	**P**	**03 51 22.0**	**-0.1**
	baz=57						
QSPA	**South Pole Qui**	**60.24**	**180**	*eP*	**P**	**03 51 49.3**	**+3.4**
MAW	**Mawson**	**73.32**	**200**	P	**P**	**03 53 11.6**	**+2.7**
	comp=Z,11nm,0.8s,baz=123,slow=5.8,SNR=13						
MAW	**Mawson**	**73.32**	**200**	P	**P**	**03 53 12.1**	**+3.2**
	baz=74,SNR=7.8						
MAW	**Mawson**	**73.32**	**200**	*eP*	**P**	**03 53 12.2**	**+3.2**
MAW				pmax	pmax		
	comp=Z,4.0nm,1.0s						
MAW	**Mawson**	**73.32**	**200**	*eP*	**P**	**03 53 12.2**	**+3.2**
	comp=Z,3.5nm,1.0s						
KKM	**Kota Kinabalu**	**73.82**	**287**	*eP*	**P**	**03 53 11.6**	**-1.4**
	comp=Z,8.5nm,0.7s						
SYO	**Syowa Base**	**77.96**	**192**	*eP*	**P**	**03 53 35.8**	**+0.3**
SNAA	**Sanae**	**78.63**	**178**	P	**P**	**03 53 41.0**	**+1.6**
SNAA	**Sanae**	**78.63**	**178**	*eP*	**P**	**03 53 40.9**	**+1.5**
SNAA				pmax	pmax		
	comp=Z

baz=229,SNR=16
CMB **Columbia Colle** **85.38** **41** *e*P **P** 03 54 14.8 -0.3
CMB pmax pmax
comp=Z,12nm,1.0s
CMB **Columbia Colle** **85.38** **41** *e*P **P** 03 54 14.8 -0.3
comp=Z,12nm,1.0s
BC3 **Big Chuckawall** **85.43** **47** P **P** 03 54 16.1 +0.5
baz=229,SNR=11
GLA **Glamis** **85.44** **48** P **P** 03 54 16.1 +0.6
baz=230
HEC **Hector,Ludlow** **85.64** **46** P **P** 03 54 16.5 0.0
baz=229,SNR=7.1
CWC **Cottonwood Cre** **85.64** **43** P **P** 03 54 16.7 0.0
baz=228
GSC **Goldstone, Bar** **85.66** **45** P **P** 03 54 16.8 +0.2
baz=228,SNR=8.3
GSC **Goldstone, Bar** **85.66** **45** *e*P **P** 03 54 17.3 +0.6
GSC pmax pmax
comp=Z,10.0nm,1.0s
GSC **Goldstone, Bar** **85.66** **45** *e*P **P** 03 54 17.3 +0.6
comp=Z,10.0nm,1.0s
AFDM **Forest Hills D** **85.69** **40** *e*P **P** 03 54 16.8 +0.2
comp=Z,8.6nm,1.1s
MPMC **Manual Prospec** **85.74** **44** P **P** 03 54 17.4 +0.2
baz=228,SNR=14
ORV **Oroville** **85.82** **39** *e*P **P** 03 54 17.1 -0.1
ORV **Oroville** **85.82** **39** *e*P **P** 03 54 17.1 -0.1
IRM **Iron Mountain** **85.95** **47** P **P** 03 54 18.6 +0.6
baz=230,SNR=13
GMRC **Granite Mounta** **86.03** **46** P **P** 03 54 18.9 +0.3
baz=229
214A **Organ Pipe Nat** **86.06** **50** P **P** 03 54 18.9 +0.3
baz=231
Y12C **Blythe** **86.08** **47** P **P** 03 54 19.0 +0.3
baz=230
Y12C **Blythe** **86.08** **47** *e*P **P** 03 54 19.6 +1.0
comp=Z,9.6nm,1.1s
N02D **Trinity Center** **86.17** **38** P **P** 03 54 19.7 +0.6
baz=224
O03D **Paynes Creek** **86.17** **39** P **P** 03 54 18.9 -0.2
baz=225
WAKR **Walker** **86.25** **41** *e*P **P** 03 54 20.4 +0.8
comp=Z,19nm,1.2s
TUQ **Turquoise Moun** **86.29** **45** P **P** 03 54 20.2 +0.3
baz=229,SNR=5.0
SHOC **Shoshone, Teco** **86.38** **45** P **P** 03 54 20.8 +0.8
baz=229
FURC **Furnace Creek,** **86.39** **44** P **P** 03 54 20.8 +0.7
baz=228
GRAC **Grapevine Rang** **86.44** **43** P **P** 03 54 21.1 +0.7
baz=228
LDFC **Landfair** **86.56** **46** *e*P **P** 03 54 22.2 +1.1
comp=Z,28nm,1.0s
KULM **Kulim** **86.61** **278** *e*P **P** 03 54 21.9 +0.1
comp=Z,6.5nm,0.8s
TPNV **Topopah Spring** **87.08** **44** P **P** 03 54 23.8 +0.1
baz=229,SNR=17
TPNV **Topopah Spring** **87.08** **44** *e*P **P** 03 54 24.0 +0.3
TPNV pmax pmax
comp=Z,10.0nm,0.9s
TPNV **Topopah Spring** **87.08** **44** *e*P **P** 03 54 24.0 +0.3
comp=Z,10nm,0.9s
PAHR **Pah Rah Range** **87.10** **40** *e*P **P** 03 54 23.8 +0.1
comp=Z,6.9nm,1.0s
Y14A **Wickenburg** **87.17** **48** *e*P **P** 03 54 24.6 +0.5
GSI **Gunungsitoli** **87.29** **273** *e*P **P** 03 54 25.7 +0.6
comp=Z,17nm,0.8s
W13A **Hualapai Mount** **87.34** **47** *e*P **P** 03 54 26.0 +0.9
comp=Z,6.1nm,1.0s
SHPR **Sheep Range** **87.45** **45** *e*P **P** 03 54 26.1 +0.6
comp=Z,12nm,1.4s
USRK **Ussuriysk Ar.** **87.55** **326** P **P** 03 54 23.9 -1.7
comp=Z,2.9nm,0.7s,baz=152,slow=5.8,SNR=6.7
TUC **Tucson** **87.63** **50** P **P** 03 54 27.1 +0.8
baz=232
TUC **Tucson** **87.63** **50** *e*P **P** 03 54 26.8 +0.5
TUC pmax pmax
comp=Z,7.0nm,1.0s
TUC **Tucson** **87.63** **50** *e*P **P** 03 54 26.8 +0.5
comp=Z,7.2nm,1.0s
I04A **Tendick Farm,** **88.33** **36** P **P** 03 54 29.7 +0.3
baz=224
R11A **Troy Canyon, C** **88.39** **43** P **P** 03 54 30.0 +0.1
baz=229
R11A **Troy Canyon, C** **88.39** **43** *e*P **P** 03 54 30.1 +0.1
comp=Z,10nm,1.9s
X16A **Lo Mia Camp, P** **88.49** **48** *e*P **P** 03 54 31.4 +0.9
J05D **Fort Rock, OR** **88.58** **37** P **P** 03 54 31.3 +0.6
baz=225
BMN **Battle Mountai** **88.81** **41** *e*P **P** 03 54 31.3 -0.6
BMN pmax pmax
comp=Z,6.0nm,1.0s
BMN **Battle Mountai** **88.81** **41** *e*P **P** 03 54 31.3 -0.6
comp=Z,6.3nm,1.0s
G03D **McMinnville, O** **88.92** **34** P **P** 03 54 33.1 +1.1
baz=224
LCMT **Little Creek M** **88.96** **46** *e*P **P** 03 54 33.7 +1.1
comp=Z,32nm,1.0s
U15A **North Rim** **89.19** **46** *e*P **P** 03 54 34.8 +0.9
WUAZ **Wupatki** **89.21** **48** P **P** 03 54 34.7 +0.9
baz=232
WUAZ **Wupatki** **89.21** **48** *e*P **P** 03 54 34.8 +0.9
comp=Z,13nm,1.0s
KNB **Kanab** **89.22** **46** *e*P **P** 03 54 35.1 +1.2
KNB pmax pmax
comp=Z,15nm,1.0s
KNB **Kanab** **89.22** **46** *e*P **P** 03 54 35.1 +1.2
comp=Z,15nm,1.0s
CCUT **Cedar City** **89.23** **45** *e*P **P** 03 54 34.0 +0.1
comp=Z,6.4nm,1.1s
I05D **Terrebonne, OR** **89.27** **36** P **P** 03 54 34.2 +0.4
baz=225
X18A **Snowflake** **89.53** **49** *e*P **P** 03 54 36.5 +1.1
MTPU **Mount Pierson** **90.26** **45** *e*P **P** 03 54 40.1 +1.1
comp=Z,7.3nm,0.9s
MSU **Marysvale** **90.56** **45** *e*P **P** 03 54 41.3 +1.1
MSU **Marysvale** **90.56** **45** *e*P **P** 03 54 41.3 +1.1
CN2 **Changchun** **90.63** **322** *e*P **P** 03 54 40.4 +0.3
CN2 pmax pmax
comp=Z,10.0nm,0.6s
TX31 **Lajitas Ar. Si** **90.86** **56** *e*P **P** 03 54 42.0 +0.4
TXAR **Lajitas Array** **90.86** **56** P **P** 03 54 41.3 -0.3
comp=Z,1.3nm,0.9s,baz=216,slow=6.4,SNR=10
MNTX **Cornudas Mount** **90.97** **54** P **P** 03 54 41.8 -0.2
baz=235
MNTX **Cornudas Mount** **90.97** **54** *e*P **P** 03 54 41.4 -0.6
comp=Z,2.5nm,0.9s
G08A **Pilot Rock** **91.15** **36** *e*P **P** 03 54 42.9 +0.3
comp=Z,11nm,1.0s
KLR **Kul'dur** **91.34** **329** P **P** 03 54 43.6 +0.4
comp=Z,1.3nm,0.8s,baz=314,slow=2.6,SNR=4.4
MFID **Camas Ranch** **91.56** **39** *e*P **P** 03 54 44.6 +0.1
comp=Z,6.7nm,0.9s
TMUT **Trail Mountain** **91.64** **45** *e*P **P** 03 54 46.2 +0.9
comp=Z,6.9nm,0.9s
BMO **Blue Mountains** **91.72** **38** *e*P **P** 03 54 45.1 -0.1
comp=Z,16nm,1.9s
SRU **San Rafael Swe** **91.94** **45** *e*P **P** 03 54 46.8 +0.3
SRU pmax pmax
comp=Z,6.0nm,0.9s
SRU **San Rafael Swe** **91.94** **45** *e*P **P** 03 54 46.8 +0.3
comp=Z,6.4nm,0.9s
ANMO **Albuquerque** **92.09** **50** P **P** 03 54 47.6 +0.2
baz=234
ANMO **Albuquerque** **92.09** **50** *e*P **P** 03 54 47.3 -0.1
ANMO pmax pmax
comp=Z,4.0nm,1.0s
ANMO **Albuquerque** **92.09** **50** *e*P **P** 03 54 47.2 -0.1
comp=Z,3.6nm,1.0s
SPUT **South Promonto** **92.14** **43** *e*P **P** 03 54 47.6 +0.2
comp=Z,5.8nm,1.0s
HVU **Hansel Valley** **92.24** **42** *e*P **P** 03 54 48.0 +0.2
HVU pmax pmax
comp=Z,8.0nm,1.1s
HVU **Hansel Valley** **92.24** **42** *e*P **P** 03 54 48.0 +0.2
comp=Z,8.1nm,1.1s
HLID **Hailey** **92.44** **40** P **P** 03 54 49.3 +0.5
baz=230
HLID **Hailey** **92.44** **40** *e*P **P** 03 54 48.8 0.0
comp=Z,5.5nm,0.9s
GYA **Guiyang** **92.59** **299** P **P** 03 54 52.0 +2.3
GYA pP pP 03 54 58.2 +0.6
GYA PP **PP** 03 58 37.0 +5.3
GYA SKS **SKSac** **04 05 23.3 +1.2**
GYA S **ScS** **04 05 54.2 -0.9**
GYA SS **SS** **04 12 11.0 +5.1**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,7.4s
GYA LR LR
comp=Z,510nm,22.0s
GYA LR LR
comp=Z,480nm,21.5s
GYA LR LR
comp=Z,500nm,20.4s
LVC **Limon Verde** **92.88** **118** *e*P **P** 03 54 49.6 -2.0
comp=Z,4.3nm,0.9s
S22A **4UR Ranch, Cre** **93.47** **48** P **P** 03 54 54.3 +0.5
baz=234
S22A **4UR Ranch, Cre** **93.47** **48** *e*P **P** 03 54 54.2 +0.5
comp=Z,4.1nm,1.1s
O20A **White River Ci** **93.97** **45** P **P** 03 54 55.6 -0.2
baz=234
MSTX **Muleshoe** **94.06** **53** P **P** 03 54 55.8 -0.6
baz=236
MCMT **McKenzie Canyo** **94.11** **40** *e*P **P** 03 54 56.8 +0.2
SDCO **Great Sand Dun** **94.33** **49** P **P** 03 54 57.5 -0.2
baz=235
REDW **Red Top Meadow** **94.34** **42** *e*P **P** 03 54 57.8 +0.2
comp=Z,5.7nm,1.0s
TPAW **Teton Pass** **94.36** **42** *e*P **P** 03 54 57.4 -0.3
comp=Z,1.7nm,0.5s
SNOW **Snow King Moun** **94.46** **42** *e*P **P** 03 54 58.3 +0.1
comp=Z,10nm,1.0s
DLMT **Dillon** **94.59** **39** *e*P **P** 03 54 58.1 -0.5
comp=Z,4.7nm,1.0s
CMAR **Chiang Mai Arr** **94.64** **288** P **P** 03 55 00.1 +0.9
comp=Z,1.8nm,0.3s,baz=140,slow=3.9,SNR=4.2
T25A **Trinidad** **94.70** **50** P **P** 03 54 59.3 -0.1
baz=236
BW06 **Boulder Array** **94.73** **43** *e*P **P** 03 54 58.1 -1.2
PDAR **Pinedale Array** **94.73** **43** P **P** 03 54 58.2 -1.2
comp=Z,1.3nm,1.0s,baz=225,slow=4.0,SNR=5.7
FLWY **Flagg Ranch** **94.87** **41** *e*P **P** 03 55 00.9 +1.0
comp=Z,10nm,1.1s
BOZ **Bozeman (W)** **95.30** **40** P **P** 03 55 01.7 -0.1
baz=232
BOZ **Bozeman (W)** **95.30** **40** *e*P **P** 03 55 01.8 0.0
BOZ pmax pmax
comp=Z,8.0nm,1.1s
BOZ **Bozeman (W)** **95.30** **40** *e*P **P** 03 55 01.8 0.0
comp=Z,7.6nm,1.1s
K22A **Casper** **96.48** **44** P **P** 03 55 06.9 -0.3
baz=235
COLA **College** **97.01** **12** *e*P **P** 03 55 08.8 0.0
COLA pmax pmax
comp=Z,3.0nm,0.9s
CD2 **Chengdu** **97.07** **301** *e*P Pdif 03 55 10.8 +0.6
CD2 sP sP 03 55 20.1 -0.7
CD2 SKS **SKSac** **04 05 46.7 +0.9**
CD2 S **ScS** **04 06 33.6 +1.5**
CD2 sS sS 04 06 45.1 +0.2
CD2 SS **SS** **04 13 13.3 +3.8**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.8s
ILAR **Eielson Array** **97.09** **12** P **P** 03 55 08.2 -1.0
comp=Z,1.0nm,0.9s,baz=213,slow=7.7,SNR=6.1
RSSD **Black Hills** **98.81** **44** *e*P **P** 03 55 17.5 -0.3
RSSD pmax pmax
comp=Z,6.0nm,1.1s
RSSD **Black Hills** **98.81** **44** *e*P **P** 03 55 17.5 -0.3
comp=Z,5.7nm,1.1s
WMQ **Urumqi** **114.07** **308** *e*PKP **PKiKP** **04 00 15.6 -1.3**
BOSA **Boshof** **118.31** **202** PKP **PKPdf** **04 00 26.1 +0.3**
comp=Z,3.7nm,0.9s,baz=158,slow=12,SNR=3.3
MKAR **Makanchi Array** **118.57** **310** PKP **PKPdf** **04 00 24.6 -0.8**
comp=Z,1.9nm,0.9s,baz=85,slow=2.6,SNR=12
ZALV **Zalesovo Beam** **118.63** **318** PKP **PKPdf** **04 00 23.7 -1.5**
comp=Z,0.5nm,0.3s,baz=158,slow=1.6,SNR=3.8
KSH **Kashi** **121.25** **300** *e*PKP **PKPdf** **04 00 30.2 -0.8**
KSH *es*PKP 04 00 43.9
KSH *e*PP **PP** **04 02 06.9 +4.7**
KSH PKS **PKSdf** **04 04 05.7 -2.0**
KSH SKS **SKSdf** **04 07 36.7 -4.9**
KSH SKKS **SKKSac** **04 08 55.2 -4.6**
KSH SS **SS** **04 18 37.7 +2.7**
KSH AMB AMB
comp=Z,34nm,3.6s
KSH LR LR
comp=Z,75nm,6.6s
KSH LR LR
comp=Z,85nm,7.6s
KSH LR LR
comp=Z,110nm,8.2s
KURK **Kurchatov** **121.76** **314** *c i*PKIKP **PKPdf** **04 00 30.3 -1.1**
KURK **Kurchatov** **121.76** **314** *e*PKPdf **PKPdf** **04 00 30.3 -1.1**
TKM2 **Tokmak 2** **122.32** **304** *e*PKIKP **PKPdf** **04 00 31.9 -1.1**
TKM2 **Tokmak 2** **122.32** **304** *e*PKPdf **PKPdf** **04 00 31.9 -1.1**
AAK **Ala-Archa** **123.06** **304** *i* PKIKP **PKPdf** **04 00 33.6 -0.8**
EKS2 **Erkin-Say** **123.58** **304** *e*PKIKP **PKPdf** **04 00 35.2 -0.1**
EKS2 **Erkin-Say** **123.58** **304** *e*PKPdf **PKPdf** **04 00 35.1 -0.1**
KKAR **Karatay Array** **126.02** **304** *e*PKIKP **PKPdf** **04 00 39.2 -0.6**
KKAR **Karatay Array** **126.02** **304** *e*PKPdf **PKPdf** **04 00 39.2 -0.6**
BRVK **Borovoye** **127.13** **316** *e*PKIKP **PKPdf** **04 00 41.3 -0.3**
BRVK **Borovoye** **127.13** **316** *e*PKPdf **PKPdf** **04 00 41.3 -0.3**
ARU **Arti** **133.62** **321** *i* PKIKP **PKPdf** **04 00 52.6 -1.2**
ARU 04 03 18.8
ABKAR **Akbulak array** **133.69** **311** *e*PKPdf **PKPdf** **04 00 54.8 +0.6**
H10S3 **ASCENSION HYDR** **137.54** **153** T T 06 36 36.6
baz=204,slow=74,SNR=8.9
H10S2 **ASCENSION HYDR** **137.54** **153** T T 06 36 42.1
baz=16,slow=74,SNR=7.4
ARCES **ARCESS Array B** **138.38** **349** PKP **PKPdf** **04 01 02.2 -0.1**
comp=Z,2.8nm,0.9s,baz=20,slow=4.0,SNR=3.6
H10N3 **ASCENSION HYDR** **138.62** **152** T T 06 37 14.2
baz=203,slow=75,SNR=13
H10N1 **ASCENSION HYDR** **138.62** **152** T T 06 37 12.5
baz=203,slow=75,SNR=7.6
H10N2 **ASCENSION HYDR** **138.63** **152** T T 06 37 13.4
baz=203,slow=75,SNR=11
VRH **Novokhopyorsk** **144.66** **318** *e*PKIKP **PKPab** **04 01 12.4 -0.4**
VRH pmax pmax
comp=Z,10.0nm,0.6s
TBLG **Delisi** **145.00** **301** P PKPbc 04 01 14.6 +0.2
TBLG **Delisi** **145.00** **301** *e*PKIKP PKPbc 04 01 14.6 +0.2
GNI **Garni** **145.14** **298** *e*PKIKP **PKPbc** **04 01 15.0 -0.1**
GNI **Garni** **145.14** **298** *e*PKPbc **PKPbc** **04 01 15.0 -0.1**
FINES **FINESS Array B** **145.14** **341** PKP **PKPbc** **04 01 12.9 -1.2**
comp=Z,12nm,0.7s,baz=64,slow=4.4,SNR=52
ZEI **Tsey** **145.47** **303** *i* PKIKP **PKPdf** **04 01 15.5 -0.5**
ZEI pmax pmax
comp=Z,75nm,1.0s
OBN **Obninsk** **145.57** **327** *i* PKIKP **PKPdf** **04 01 14.4 -1.1**
OBN pmax pmax
comp=Z,32nm,0.8s
OBN **Obninsk** **145.57** **327** *e*PKPbc **PKPdf** **04 01 15.0 -0.5**
NCK **Nalchik** **145.58** **304** *i* PKIKP **PKPdf** **04 01 15.9 -0.1**
ONI **Oni** **145.83** **303** P **PKPab** **04 01 17.8 +0.3**
ONI **Oni** **145.83** **303** *e*PKP2 **PKPab** **04 01 17.8 +0.3**
KBZ **Khabaz** **146.04** **305** PKPbc **PKPbc** **04 01 17.6 +0.1**
comp=Z,6.1nm,0.9s,baz=211,slow=0.7,SNR=14
VSR **Storozhevoye** **146.13** **319** *e*PKP2 **PKPdf** **04 01 16.1 -0.5**
VSR pmax pmax
comp=Z,40nm,0.9s
NEY **Neytrino** **146.25** **304** *i* PKIKP **PKPdf** **04 01 16.8 -0.5**
NB2 **NORSAR Subarra** **148.43** **353** PKP **PKPbc** **04 01 22.4 -1.3**
comp=Z,7.6nm,0.8s,baz=8.7,slow=2.9
NOA **NORSAR Array B** **148.43** **353** PKPbc **PKPbc** **04 01 22.8 -1.0**
comp=Z,6.1nm,0.8s,baz=14,slow=4.4,SNR=20
KONO **Kongsberg** **149.96** **354** *e*PKP2 **PKPbc** **04 01 26.4 -1.1**
KONO **Kongsberg** **149.96** **354** *e*PKPbc **PKPbc** **04 01 26.4 -1.1**
ZALF **Zalf** **151.21** **285** *e*P **PKPdf** **04 01 28.3 +2.8**
ROOS **tl_alroos** **151.29** **287** *e*P **PKPbc** **04 01 32.7 +1.1**
RABH **Abou Rabah** **151.36** **288** *e*P **PKPbc** **04 01 29.3 -2.4**
SALA **Sala** **151.71** **284** *e*P **PKPdf** **04 01 26.6 +0.2**
AKASG **Malin Array Be** **151.76** **325** PKPbc **PKPbc** **04 01 31.4 -0.6**
comp=Z,10nm,0.7s,baz=46,slow=2.9,SNR=28
KIEV **Kiev** **151.77** **325** *e*PKIKP **PKPbc** **04 01 31.5 -0.6**
KIEV **Kiev** **151.77** **325** *e*PKPbc **PKPbc** **04 01 31.4 -0.6**
BTCH **Batrach** **151.93** **291** *e*P **PKPbc** **04 01 32.7 -0.3**
MARH **Ras Al Marh** **151.96** **287** *e*P **PKPbc** **04 01 33.0 -0.5**
HAWK **Haweek** **152.02** **288** *e*P **PKPbc** **04 01 33.2 -0.2**
BIDA **Albida** **152.08** **289** *e*P **PKPbc** **04 01 33.6 +0.2**
BRBR **Barbar** **152.39** **286** *e*P **PKPab** **04 01 41.0 -3.5**
BRTR **Keskin Array B** **153.64** **300** PKPbc **PKPbc** **04 01 36.5 -0.3**
comp=Z,1.2nm,0.7s,baz=143,slow=3.0,SNR=7.6
BRTR PKPab **PKPab** **04 01 49.9 +0.4**
comp=Z,2.1nm,0.7s,baz=104,slow=3.2,SNR=8.4
LIC **Lamto** **155.08** **159** *e*PKP2 **PKPab** **04 01 56.9 +1.0**
comp=Z,24nm,1.1s
KIC **Kosan Boka** **155.29** **160** *e*PKP2 **PKPab** **04 01 58.0 +1.2**
comp=Z,139nm,1.6s
TIC **Toumodi** **155.47** **159** *e*PKP2 **PKPab** **04 01 58.5 +0.9**
DBIC **Dimbokro** **155.55** **159** PKPab **PKPab** **04 01 58.8 +0.9**
comp=Z,6.1nm,1.0s,baz=192,slow=4.1,SNR=4.9
KOLS **Kolonicke sedl** **156.28** **329** *e*PKIKP **PKPdf** **04 01 31.9 -0.3**
KOLS *e* 04 01 59.4
KOLS **Kolonicke sedl** **156.28** **329** *e*PKP **PKPdf** **04 01 31.9 -0.3**
KOLS *e* 04 01 59.4
STHS **Stebnicka Huta** **156.37** **331** *e*PKP2 **PKPab** **04 02 00.1 -0.5**
STHS **Stebnicka Huta** **156.37** **331** *e*PKP **PKPab** **04 02 00.1 -0.5**
CRVS **Cervenica-Dubn** **156.67** **329** *e*PKP2 **PKPab** **04 02 01.0 -0.9**
CRVS **Cervenica-Dubn** **156.67** **329** *e*PKP **PKPab** **04 02 01.0 -0.9**
KECS **Kecovo** **157.41** **330** *e*PKP2 **PKPab** **04 02 04.6 -0.5**
KECS **Kecovo** **157.41** **330** *e*PKP **PKPab** **04 02 04.6 -0.5**
CLL **Collm** **157.49** **345** *e*PKPab **PKPab** **04 02 05.0 -0.3**
CLL **Collm** **157.49** **345** *e*PKP2 **PKPab** **04 02 05.0 -0.3**
VYHS **Vyhne** **158.09** **332** *e*PKP2 **PKPab** **04 02 06.3 -1.8**
VYHS **Vyhne** **158.09** **332** *e*PKP **PKPab** **04 02 06.3 -1.8**
GERES **GERESS Array B** **159.57** **341** PKPab **PKPab** **04 02 14.3 -0.2**
comp=Z,0.2nm,0.3s,baz=21,slow=7.7,SNR=4.3
TORD **Torodi Ar. Bea** **163.25** **173** PKP **PKPdf** **04 01 41.8 +0.7**
comp=Z,3.0nm,1.2s,baz=321,slow=1.0,SNR=4.9
TORD PKPab **PKPab** **04 02 32.7 +1.5**
comp=Z,19nm,0.8s,baz=188,slow=4.1,SNR=24
TIP **Timpagrande** **165.81** **314** *e*PKPab **PKPab** **04 02 42.3 +0.1**

IDC 07 03:49:47.7±2.0, 28.80S×176.03W, h0km, mb3.6/2, mb1 3.8/2, mb1mx3.3/25, mbtmp3.6/2, Error ellipse: s-maj=53.8km s-min=30.5km az=1.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.72**	**254**	Pn	Pg	03 50 20.6	0.0
	198nm,0.3s,baz=77,slow=22,SNR=6.6						
RAO				Sn	Sn	03 50 40.9	-0.5
	519nm,0.3s,baz=298,slow=22,SNR=6.3						
ASAR	**Alice Springs**	**44.94**	**264**	P	P	03 58 03.9	-0.8
	0.4nm,0.6s,baz=99,slow=6.5,SNR=5.0						
WRA	**Warramunga Arr**	**45.79**	**270**	P	P	03 58 10.9	-0.6
	1.0nm,0.9s,baz=110,slow=7.5,SNR=4.6						
FINES	**FINESS Array B**	**144.19**	**342**	PKP	PKPdf	04 09 25.4	+0.5
	1.1nm,0.8s,baz=132,slow=2.8,SNR=4.3						
TORD	**Torodi Ar. Bea**	**164.29**	**172**	PKPab	PKPab	04 10 47.1	-0.5
	0.8nm,1.0s,baz=167,slow=4.3,SNR=3.2						

IDC 07 03:56:23.5±2.7, 29.18S×176.34W, h0km, mb3.8/2, mb1 4.0/2, mb1mx3.4/29, mbtmp3.8/2, Error ellipse: s-maj=109.1km s-min=47.7km az=19.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**44.63**	**265**	P	P	04 04 37.5	-0.5
	0.3nm,0.5s,baz=98,slow=7.9,SNR=4.5						
WRA	**Warramunga Arr**	**45.51**	**270**	P	P	04 04 45.2	+0.2
	1.6nm,0.6s,baz=110,slow=7.8,SNR=7.1						
FINES	**FINESS Array B**	**144.47**	**342**	PKP	PKPdf	04 16 01.4	+0.3
	1.8nm,0.8s,baz=101,slow=4.4,SNR=3.0						
TORD	**Torodi Ar. Bea**	**163.94**	**173**	PKPab	PKPab	04 17 21.1	-0.8
	0.7nm,0.8s,baz=188,slow=3.5,SNR=4.1						

*NIED **07** 04:02:00,38.00N×142.40E,h32km,Mw4.7 Best double couple: M0 1.23000×10^16 NP1:φs205.00000°,δ36.00000°, λ-101.00000°. NP2:φs38.00000°,δ55.00000°, λ-82.00000°.*
*BJI **07** 04:02:01.3,37.84N×142.41E,h34km,mb4.9/62,mB4.9/38, Ms4.3/56,Ms7 4.2/52*
*JMA **07** 04:02:03.7±0.1,38.02N×142.30E,h38km±2km,M4.7*
JMA Felt II J1.
*ISCJB **07** 04:02:04.5±0.4,38.03N±0.02×142.21E±0.02,h40km±3km, mb4.8/256,MS4.2/43,Error ellipse: s-maj=4.3km s-min=3.0km az=152.7*
*MOS **07** 04:02:04.0±0.9,38.18N×142.19E,h33km,mb5.1/108, MS4.1/18,Error ellipse: s-maj=6.0km s-min=4.0km az=98.5*
*IDC **07** 04:02:06.0±1.9,38.03N×142.26E,h43km±17km,mb4.6/28, mb1 4.7/35,mb1mx4.6/42,mbtmp4.8/35,ML3.8/6,MS4.0/29, Ms1 4.0/29,ms1mx3.8/57,Error ellipse: s-maj=14.1km s-min=11.0km az=104.0*
*NEIC **07** 04:02:06.6±0.4,38.05N×142.14E,h45km±3km,mb4.9/176, Error ellipse: s-maj=3.7km s-min=2.4km az=145.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.

ISC 07 04:02:03.6±0.7, 38.01N±0.03×142.27E±0.03, h26km±4km, n540, σ1≥35/566, mb4.9/256, MS4.2/44, 21C-29D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.85**	**301**	P	**Pn**	**04 02 19.7**	**-0.2**
JIO				S	**Sn**	**04 02 31.2**	**-0.3**
OFUJ	**Ofunato**	**1.16**	**336**	P	**Pb**	**04 02 24.0**	**-1.1**
OFUJ				*e*S	**Sn**	**04 02 38.9**	**-0.4**
JMM	**Marumori**	**1.18**	**263**	P	**Pn**	**04 02 24.1**	**-0.3**
JMK	**Ichinoseki**	**1.25**	**319**	P	**Pb**	**04 02 25.7**	**-0.8**
JFK	**Kawauchi**	**1.28**	**240**	P	**Pn**	**04 02 25.4**	**-0.5**
JFK				S	**Sn**	**04 02 40.9**	**-1.4**
JOU	**Okura**	**1.31**	**286**	P	**Pb**	**04 02 27.0**	**-0.6**
JOU				*e*S	**Sb**	**04 02 43.9**	**-0.2**
JFT	**Otama**	**1.61**	**253**	P	**Pb**	**04 02 31.4**	**-1.3**
JFT				S	**Sb**	**04 02 51.1**	**-1.5**
JOM	**Ohasama**	**1.65**	**333**	P	**Pb**	**04 02 31.5**	**-1.8**
JOM				*e*S	**Sb**	**04 02 51.4**	**-2.2**
JYK	**Kaneyama**	**1.75**	**302**	P	**Pb**	**04 02 33.1**	**-2.0**
JYS	**Shirataka**	**1.75**	**277**	P	**Pn**	**04 02 32.7**	**+0.4**
JRG	**Rokugo**	**1.88**	**318**	P	**Pn**	**04 02 34.8**	**+0.7**
JYA	**Atsumi**	**2.09**	**287**	P	**Pn**	**04 02 38.0**	**+1.0**
JYA				*e*S	**Sb**	**04 03 04.1**	**-2.4**
MJAR	**Matsushiro Arr**	**3.56**	**247**	P	**Pn**	**04 02 59.3**	**+2.1**
	8.9nm,0.3s,baz=70,slow=12,SNR=53						
MJAR				LR	LR	04 04 41.1	
	comp=Z,3μm,18.3s,baz=65,slow=44						
MAJO	**Matsushiro**	**3.56**	**247**	*e*P	**Pn**	**04 02 59.1**	**+1.9**
MAJO	**Matsushiro**	**3.56**	**247**	*e*Pn	**Pn**	**04 02 58.9**	**+1.7**
MAT	**Matsushiro**	**3.56**	**247**	P	**Pn**	**04 03 00.0**	**+2.8**
MAT				S	**Sb**	**04 03 45.3**	**-3.3**
MJB9	**Matsu-Tunnel**	**3.56**	**247**	*e*Pn	**Pn**	**04 02 59.9**	**+2.7**
ERM	**Erimo**	**4.05**	**9**	*e*P	**Pn**	**04 03 03.6**	**-0.4**
ERM				*e*		04 03 49.5	
ERM	**Erimo**	**4.05**	**9**	*e*Pn	**Pn**	**04 03 03.5**	**-0.4**
ERM				*e*Sn	**Sn**	**04 03 49.5**	**-1.0**
INU	**Inuyama**	**4.99**	**239**	*e*Pn	**Pn**	**04 03 19.7**	**+2.9**
JHJ2	**Mitsune**	**5.29**	**203**	*e*Pn	**Pn**	**04 03 21.2**	**+0.3**
JHJ2				*e*Sn	**Sn**	**04 04 17.0**	**-3.9**
JHJ	**Hachijo jima 2**	**5.29**	**203**	P	**Pn**	**04 03 20.8**	**-0.2**
	46nm,0.3s,baz=143,slow=23,SNR=19						
JHJ				S	**Sn**	**04 04 19.1**	**-1.9**
	93nm,0.3s,baz=95,slow=20,SNR=8.5						
JHJ				LR	LR	04 05 43.5	
	comp=Z,1μm,22.0s,baz=37,slow=41						
ASAJ	**Asahikawa**	**6.10**	**2**	*e*Pn	**Pn**	**04 03 32.3**	**+0.2**
ASAJ				*e*Sn	**Sn**	**04 04 38.5**	**-2.6**
YUK	**Yuzh-Kuril'sk**	**6.60**	**23**	*e*P	**Pn**	**04 03 37.9**	**-1.0**
KUR	**Kuril'sk**	**8.34**	**28**	*e*P	**Pn**	**04 04 01.1**	**-1.7**
KUR				*i* S	**Sn**	**04 05 29.5**	**-6.5**
KUR				pmax	pmax		
	comp=Z,47nm,0.6s						
KUR				smax	smax		
	comp=N,80nm,0.5s						
KUR				smax	smax		
	comp=E,187nm,0.5s						
YSS	**Yuzh-Sakhalins**	**8.94**	**2**	*ce*P	**Pn**	**04 04 12.4**	**+1.4**
YSS				*e*S	**Sn**	**04 05 50.0**	**-0.8**
YSS				pmax	pmax		
	comp=Z,140nm,0.7s						
YSS				MLR	MLR		
	comp=Z,500nm,15.0s						
YSS	**Yuzh-Sakhalins**	**8.94**	**2**	*e*Pn	**Pn**	**04 04 12.6**	**+1.6**
MSHR	**Mys Shultsa**	**9.63**	**302**	*i* P	**Pn**	**04 04 21.1**	**+0.6**
USRK	**Ussuriysk Ar.**	**9.91**	**312**	P	**Pn**	**04 04 26.4**	**+2.0**
	comp=Z,1.8nm,0.3s,baz=128,slow=14,SNR=73						
USRK				LR	LR	04 08 09.7	
	comp=Z,1μm,18.2s,baz=115,slow=37						
JNU	**Nakatsue**	**10.48**	**246**	P	**Pn**	**04 04 35.5**	**+3.2**
	comp=Z,0.9nm,0.3s,baz=129,slow=4.5,SNR=7.8						
JNU				LR	LR	04 09 03.0	

comp=Z,1µm,19.5s,baz=110,slow=40
JNU Nakatsue 10.48 246 *e*Pn **Pn 04 04 34.2 +2.0**
CBIJ Chichi jima 10.89 180 P **Pn 04 04 36.0 -1.8**
JCJ Chichijima 10.89 180 P **Pn 04 04 36.0 -1.8**
comp=Z,16nm,0.3s,baz=264,slow=5.1,SNR=2.1
KSRS Korea Array 11.38 272 P **Pn 04 04 47.9 +3.5**
comp=Z,0.4nm,0.3s,baz=86,slow=14,SNR=51
KSRS LR LR 04 08 54.6
comp=Z,667nm,20.3s,baz=80,slow=36
KS01 Wonju Array Si 11.40 272 *e*Pn Pn 04 04 49.5 +4.8
KS15 Wonju Array Si 11.41 272 *e*Pn Pn 04 04 50.8 +6.0
KSAR Wonju Array Be 11.41 272 P **Pn 04 04 47.9 +3.0**
KSAR Wonju Array Be 11.41 272 P **Pn 04 04 47.9 +3.0**
MDJ Mudanjiang 11.59 309 P Pn 04 04 53.7 +6.5
MDJ S Sn 04 07 04.8 +9.1
MDJ pmax pmax
comp=Z,37nm,1.0s
MDJ pmax pmax
comp=Z,140nm,6.0s
MDJ LR LR
comp=Z,380nm,24.1s
MDJ LR LR
comp=Z,460nm,23.0s
MDJ LR LR
comp=Z,940nm,17.5s
MDJ Mudanjiang 11.59 309 *e*Pn **Pn 04 04 46.1 -1.1**
comp=Z,27nm,0.9s
HABR Khabarovsk 11.70 336 *e*P **Pn 04 04 47.1 -1.6**
HABR *e*S **Sn 04 06 57.2 -1.1**
HABR pmax pmax
comp=N,20nm,1.3s
HABR pmax pmax
comp=E,26nm,1.3s
HABR pmax pmax
comp=Z,36nm,1.3s
HABR MLR MLR
comp=Z,593nm,13.0s
TYV Tymovskoe 12.85 1 *e*P **Pn 04 05 04.0 -0.5**
TYV pmax pmax
comp=Z,20nm,0.8s
TYV MLR MLR
comp=N,500nm,18.0s
TYV MLR MLR
comp=Z,1µm,18.0s
KLR Kul'dur 13.54 329 P **Pn 04 05 13.6 -0.3**
comp=Z,0.5nm,0.3s,baz=130,slow=12,SNR=17
KLR LR LR 04 10 27.8
comp=Z,1µm,18.7s,baz=141,slow=37
CN2 Changchun 13.97 300 *e*P **P 04 05 24.6 -2.9**
CN2 *e*S **Sn 04 07 59.8 +5.9**
CN2 pmax pmax
comp=Z,10.0nm,0.5s
CN2 LR LR
comp=Z,400nm,17.0s
CN2 LR LR
comp=Z,700nm,17.0s
CN2 LR LR
comp=Z,600nm,18.0s
SNY Shenyang 14.84 291 ⇑P Pn 04 05 20.6 -11
SNY S **Sn 04 08 16.8 +1.7**
SNY pmax pmax
comp=Z,19nm,1.7s
SNY AMB AMB
comp=Z,100nm,2.5s
SNY LR LR
comp=N,510nm,13.1s
SNY LR LR
comp=E,1µm,17.9s
SNY LR LR
comp=Z,2µm,17.5s
SKR Severo-Kuril's 16.04 33 *e*P **Pn 04 05 47.5 +0.2**
DL2 Dalian 16.20 280 P **P 04 05 51.3 -1.0**
DL2 S **Sn 04 08 52.2 +4.1**
DL2 pmax pmax
comp=Z,56nm,1.1s
DL2 pmax pmax
comp=Z,220nm,7.1s
DL2 LR LR
comp=Z,320nm,16.5s
DL2 LR LR
comp=Z,500nm,17.1s
DL2 LR LR
comp=Z,520nm,19.4s
PEA0 Petropavlovsk- 18.50 30 *e*P **Pn 04 06 18.9 +1.0**
PEA0B Petropavlovsk- 18.50 30 *e*P **Pn 04 06 19.4 +1.5**
comp=Z,53nm,1.1s
PETK Petropavlovsk- 18.50 30 P **P 04 06 17.0 -0.6**
baz=209,slow=8.5,SNR=8.9
PETK LR LR 04 14 05.5
comp=Z,271nm,18.1s,baz=226,slow=39
PET Petropavlovsk 18.83 32 *i* P **Pn 04 06 21.7 -0.1**
PET pmax pmax
comp=Z,18nm,0.8s
HIA Hailar 19.73 312 *i* P **Pn 04 06 32.3 -0.5**
HIA pmax pmax
comp=Z,19nm,0.9s
TIA Tai'an 20.12 273 ⇑P **P 04 06 34.5 -1.0**
TIA pmax pmax
comp=Z,20nm,0.8s
TIA LR LR
comp=Z,180nm,10.4s
TIA LR LR
comp=Z,430nm,16.0s
TIA LR LR
comp=Z,420nm,14.5s
BJI Beijing 20.35 284 P **P 04 06 36.5 -1.5**
BJI S **S 04 10 21.7 -3.1**
BJI pmax pmax
comp=Z,10.0nm,1.1s
BJI LR LR
comp=Z,260nm,12.9s
BJI LR LR
comp=Z,210nm,18.9s
BJI LR LR
comp=Z,270nm,25.2s
BJT Baijiatuan 20.36 284 *e*P **P 04 06 36.6 -1.5**
BJT pmax pmax
comp=Z,35nm,0.8s
BJT Baijiatuan 20.36 284 *e*P **P 04 06 36.6 -1.5**
comp=Z,35nm,0.8s
CLNS Chul'man 22.08 334 *e*P **P 04 06 55.5 -1.0**
CLNS pmax pmax
comp=N,11nm,1.0s
CLNS pmax pmax
comp=Z,25nm,1.1s
CLNS pmax pmax
comp=E,22nm,1.2s
CLNS MLR MLR
comp=N,429nm,14.0s
CLNS MLR MLR
comp=Z,464nm,12.0s
CLNS MLR MLR
comp=E,227nm,15.0s
MA2 Magadan 22.26 11 P **P 04 06 58.9 +0.6**
comp=E,31nm,0.6s,baz=216,slow=10,SNR=10
MA2 LR LR 04 16 33.8
comp=E,190nm,18.5s,baz=174,slow=39
SSLB Suanglung 23.07 238 *e*P **P 04 07 07.2 -0.1**
comp=E,12nm,0.7s
YULB Yu-li 23.11 237 *e*P **P 04 07 08.2 +0.5**
comp=E,12nm,1.0s
TPUB Ta-pu 23.62 238 *e*P **P 04 07 12.4 -0.3**
comp=E,24nm,1.0s
HHC Hu-ho-hao-te 23.83 286 *e*P P 04 07 07.1 -7.5
HHC pP pP 04 07 12.9 -9.3
HHC S S 04 11 13.5 -15
HHC SS **SnSn 04 11 59.7 -8.8**
HHC pmax pmax
comp=Z,38nm,0.6s
HHC pmax pmax
comp=Z,82nm,5.3s
HHC LR LR
comp=N,210nm,14.4s
HHC LR LR
comp=E,340nm,14.1s
HHC LR LR
comp=Z,370nm,15.9s
WHN Wuhan 24.18 260 P **P 04 07 18.1 +0.2**
WHN S **S 04 11 27.1 -7.4**
WHN LR LR
comp=Z,500nm,13.0s
WHN LR LR
comp=Z,1µm,15.3s
WHN LR LR
comp=Z,1µm,17.3s
GUMO Guam 24.44 174 LR LR 04 16 45.1
comp=Z,151nm,21.4s,baz=78,slow=36

CIT Chita 24.46 314 *e*P **P 04 07 20.6 +0.3**
CIT *e* 04 07 28.8
CIT pmax pmax
comp=Z,303nm,1.2s
YAK Yakutsk 25.27 346 P **P 04 07 26.8 -0.6**
comp=Z,92nm,0.7s,baz=351,slow=6.6,SNR=18
YAK LR LR 04 17 48.2
comp=Z,394nm,19.2s,baz=166,slow=37
YAK Yakutsk 25.27 346 *e*P **P 04 07 27.0 -0.4**
YAK *e**PP **sP 04 07 38.6 +0.3**
YAK *e* 04 08 01.1
YAK *e* 04 11 00.0
YAK *e*S **S 04 11 49.1 -2.3**
YAK *e**SS sS 04 12 09.1 +5.0
YAK *e* 04 18 22.1
YAK pmax pmax
comp=Z,21nm,0.6s
YAK pmax pmax
comp=N,41nm,1.4s
YAK pmax pmax
comp=E,12nm,0.9s
YAK pmax pmax
comp=Z,191nm,3.3s
YAK pmax pmax
comp=N,215nm,3.8s
YAK pmax pmax
comp=E,117nm,3.8s
YAK smax smax
comp=N,83nm,2.9s
YAK smax smax
comp=E,65nm,2.6s
YAK Yakutsk 25.27 346 *e*P **P 04 07 27.3 -0.2**
SEY Seymchan 25.70 11 P **P 04 07 32.9 +1.6**
comp=E,62nm,0.9s,baz=193,slow=5.7,SNR=105
BOD Bodaibo 27.08 326 *e*P **P 04 07 43.0 -0.8**
BOD pmax pmax
comp=Z,23nm,1.2s
XAN Xi'an 27.18 272 P **P 04 07 45.5 +0.5**
XAN pP sP 04 07 55.1 -0.8
XAN S **S 04 12 27.4 +5.2**
XAN pmax pmax
comp=Z,15nm,0.8s
XAN pmax pmax
comp=Z,57nm,6.7s
XAN LR LR
comp=Z,160nm,16.2s
XAN LR LR
comp=Z,190nm,18.3s
XAN LR LR
comp=Z,200nm,15.2s
SONA1 Songino Array 27.82 302 *e*P **P 04 07 51.0 +0.2**
SONM Songino Array 27.82 302 P **P 04 07 51.2 +0.4**
comp=Z,14nm,0.8s,baz=104,slow=9.2,SNR=19
SONM LR LR 04 19 15.8
comp=Z,360nm,19.3s,baz=22,slow=37
SONM Songino Array 27.82 302 P **P 04 07 51.2 +0.4**
SONM pmax pmax
comp=Z,13nm,0.8s
SONM MLR MLR
comp=Z,360nm,19.3s
ENH Enshi 28.10 264 *e*P **P 04 07 53.3 -0.1**
comp=Z,45nm,0.8s
H11S1 WAKE ISLAND Hy 28.85 126 T T 04 38 10.2
baz=318,slow=74
H11S3 WAKE ISLAND Hy 28.85 126 T T 04 38 08.3
baz=318,slow=74
H11S2 WAKE ISLAND Hy 28.86 126 T T 04 38 13.9
baz=318
ZAK Zakamensk 30.21 307 *e*P **P 04 08 10.9 -1.1**
ZAK pmax pmax
comp=Z,12nm,0.9s
TLY Talaya 30.22 309 P **P 04 08 12.7 +0.9**
comp=Z,7.0nm,0.8s,baz=115,slow=7.4,SNR=9.0
TLY LR LR 04 21 04.3
comp=Z,514nm,18.3s,baz=122,slow=38
TLY Talaya 30.22 309 *e*P **P 04 08 12.8 +0.9**
TLY pmax pmax
comp=Z,13nm,0.9s
TLY MLR MLR
comp=Z,386nm,15.0s
TLY Talaya 30.22 309 *e*P **P 04 08 12.5 +0.6**
comp=Z,12nm,0.9s
LZH Lanzhou 30.59 278 *e*P **P 04 08 16.4 +0.9**
LZH pP sP 04 08 24.1 -2.3
LZH sP pP 04 08 28.2 +5.0
LZH PP **PnPn 04 09 19.1 +4.1**
LZH S **S 04 13 14.0 -2.0**
LZH sS sS 04 13 31.0 +2.3
LZH pmax pmax
comp=Z,24nm,1.0s
LZH pmax pmax
comp=Z,130nm,5.2s
LZH LR LR
comp=Z,550nm,15.0s
LZH LR LR
comp=Z,710nm,15.2s
LZH LR LR
comp=Z,780nm,16.8s
GYA Guiyang 32.06 259 P **P 04 08 30.0 +1.5**
GYA pP sP 04 08 38.8 -0.6
GYA PP **PnPn 04 09 37.0 +2.7**
GYA PcP **PcP 04 11 19.4 +1.7**
GYA S **S 04 13 38.2 -1.0**
GYA sS sS 04 13 55.8 +3.9
GYA SS **SnSn 04 15 31.2 +1.5**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,520nm,17.0s
GYA LR LR
comp=Z,480nm,17.5s
GYA LR LR
comp=Z,500nm,17.4s
CD2 Chengdu 32.36 269 *e*P **P 04 08 30.8 -0.2**
CD2 pP sP 04 08 40.4 -1.5
CD2 sP pP 04 08 44.8 +6.1
CD2 S **S 04 13 42.8 -0.8**
CD2 sS sS 04 13 59.4 +3.0
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.2s
CD2 LR LR
comp=Z,460nm,11.9s
CD2 LR LR
comp=Z,330nm,11.9s
CD2 LR LR
comp=Z,410nm,8.4s
BILL Bilibino 32.90 16 *i* P **P 04 08 35.6 +0.4**
BILL *i* S S 04 13 42.2 -8.8
BILL pmax pmax
comp=Z,24nm,1.0s
BILL Bilibino 32.90 16 *e*P **P 04 08 35.7 +0.4**
comp=Z,35nm,1.2s
GTA Gaotai 32.94 286 *e*P **P 04 08 35.5 -0.6**
GTA pP sP 04 08 48.4 +1.4
GTA sP pP 04 08 53.4 +10
GTA PcP **PcP 04 11 21.0 +1.1**
GTA S **S 04 13 51.4 -1.2**
GTA sS sS 04 14 09.9 +4.5
GTA SS **SnSn 04 15 55.6 +4.9**
GTA pmax pmax
comp=Z,11nm,1.6s
GTA pmax pmax
comp=Z,60nm,5.7s
GTA LR LR
comp=Z,190nm,21.4s
GTA LR LR
comp=Z,420nm,20.4s
GTA LR LR
comp=Z,570nm,19.5s
QIZ Qiongzhong 33.95 245 P **P 04 08 42.5 -2.4**
QIZ S **S 04 14 12.8 +4.4**
QIZ pmax pmax
comp=Z,17nm,2.0s
QIZ LR LR
comp=Z,190nm,21.0s
QIZ LR LR
comp=Z,160nm,17.9s
QIZ LR LR
comp=Z,340nm,14.4s
DAV Davao City (W) 34.32 210 LR LR 04 21 10.5
comp=Z,137nm,21.1s,baz=6.5,slow=33
TIXI Tiksi 34.40 353 P **P 04 08 47.6 -0.6**
comp=Z,4.2nm,0.6s,baz=132,slow=9.8,SNR=3.1
TIXI Tiksi 34.40 353 *e*P **P 04 08 49.3 +1.1**
TIXI pmax pmax
comp=Z,12nm,1.1s
KMI Kunming 35.79 261 P **P 04 09 00.9 -0.1**
KMI pP sP 04 09 13.5 +1.5
KMI pmax pmax
comp=Z,18nm,1.0s
KMI LR LR
comp=Z,220nm,13.3s
KMI LR LR
comp=Z,210nm,13.4s
KMI LR LR
comp=Z,200nm,11.9s
WMQ Urumqi 41.02 296 P **P 04 09 45.8 +1.2**
WMQ pP sP 04 09 55.4 -0.2
WMQ sP pP 04 09 58.2 +5.8
WMQ S **S 04 15 54.5 -0.8**
WMQ pmax pmax
comp=Z,52nm,0.8s
WMQ pmax pmax
comp=Z,170nm,3.7s
WMQ LR LR
comp=Z,250nm,15.4s
WMQ LR LR
comp=Z,280nm,14.4s
WMQ LR LR
comp=Z,340nm,22.8s
LOEI Loei 41.22 252 P P 04 09 51.3 +4.9
comp=Z,8.2nm,1.0s
ZAA0 Zalesovo Array 41.77 312 *e*P **P 04 09 50.5 0.0**
ZALV Zalesovo Beam 41.77 312 P **P 04 09 50.1 -0.4**
comp=Z,34nm,0.8s,baz=87,slow=7.1,SNR=95
ZALV PcP **PcP 04 11 46.4 0.0**
comp=Z,10nm,0.7s,baz=84,slow=2.7,SNR=8.3
ZALV LR LR 04 27 51.6
comp=Z,334nm,18.6s,baz=90,slow=37
LAMP Lampang 41.84 254 P **P 04 09 53.4 +1.9**
comp=Z,5.1nm,0.9s,comp=Z,142nm
CMMT Chiang Mai 42.19 255 P **P 04 09 54.8 +0.4**
comp=Z,8.0nm,1.2s
CHTO Chiang Mai 42.20 255 P **P 04 09 54.8 +0.4**
comp=Z,35nm,1.2s
CHTO Chiang Mai 42.20 255 *e*P **P 04 09 53.7 -0.7**
CHTO pmax pmax
comp=Z,3.0nm,0.5s
CHTO Chiang Mai 42.20 255 *e*P **P 04 09 53.7 -0.7**
comp=Z,3.2nm,0.5s
CMAR Chiang Mai Arr 42.41 255 P **P 04 09 56.5 +0.3**
comp=Z,2.9nm,0.3s,baz=46,slow=5.7,SNR=14
CMAR LR LR 04 30 23.4
comp=Z,94nm,19.8s,baz=56,slow=40
SUKH Sukhothai 42.47 253 P **P 04 09 57.6 +1.0**
comp=Z,3.8nm,0.9s
NVS Novosibirsk 42.66 313 ⇑*i*P **P 04 09 58.3 +0.5**
NVS pmax pmax
comp=Z,22nm,0.9s
NVS pmax pmax
comp=N,2.0nm,0.3s
NVS pmax pmax
comp=E,6.0nm,0.4s
NRIK Noril'sk 42.67 335 P **P 04 09 57.4 -0.2**
comp=E,7.0nm,0.5s,baz=110,slow=9.3,SNR=9.3
NRIK PcP **PcP 04 11 49.7 +0.6**
comp=E,6.9nm,0.8s,baz=25,slow=4.3,SNR=4.1
LSA Lhasa 42.80 275 *e*P **P 04 10 00.1 +0.3**
LSA pmax pmax
comp=Z,10.0nm,0.8s
LSA Lhasa 42.80 275 *e*P **P 04 10 00.1 +0.3**
comp=Z,9.6nm,0.8s
MK01 Makanchi Array 44.18 301 *e*P **P 04 10 10.1 -0.1**
MK31 Makanchi Array 44.18 301 *ce*P **P 04 10 10.3 +0.1**
MK31 pmax pmax
comp=Z,11nm,0.7s
MK31 Makanchi Array 44.18 301 *e*P **P 04 10 09.9 -0.3**
MKAR Makanchi Array 44.18 301 P **P 04 10 10.2 0.0**
comp=Z,9.7nm,0.7s,baz=82,slow=9.2,SNR=60
MKAR PcP **PcP 04 11 55.1 +0.4**
comp=Z,2.6nm,0.8s,baz=70,slow=4.7,SNR=2.7
MKAR LR LR 04 29 13.2
comp=Z,95nm,18.5s,baz=84,slow=37
TTA Tatalina 44.23 35 *e*P **P 04 10 12.3 +1.9**
TTA pmax pmax
comp=Z,38nm,1.9s
TTA Tatalina 44.23 35 *e*P **P 04 10 12.3 +1.9**
comp=Z,38nm,1.9s
SVW2 Sparrevohn 44.33 38 *e*P **P 04 10 13.3 +2.2**
comp=Z,24nm,1.0s
MAKZ Makanchi 44.39 301 *e*P **P 04 10 12.1 +0.2**
MAKZ pmax pmax
comp=Z,11nm,0.7s
MAKZ Makanchi 44.39 301 *e*P **P 04 10 12.1 +0.2**
comp=Z,10nm,0.7s
OHAK Old Harbor 45.58 43 *e*P **P 04 10 21.5 +0.5**
comp=Z,30nm,0.9s
KURK Kurchatov 45.87 307 *d i*P **P 04 10 23.3 -0.2**
KURK Kurchatov 45.87 307 *e*P **P 04 10 23.4 -0.1**
comp=Z,69nm,0.6s
KDAK Kodiak Island 45.92 43 *e*P **P 04 10 24.4 +0.7**
KDAK pmax pmax
comp=Z,110nm,0.7s
KDAK Kodiak Island 45.92 43 *e*P **P 04 10 24.4 +0.7**
comp=Z,110nm,0.7s
PPLA Purkeypile 45.98 35 *e*P **P 04 10 26.6 +2.2**
comp=Z,42nm,1.4s
CAST Castle Rocks 46.03 35 *e*P **P 04 10 26.2 +1.6**
comp=Z,11nm,1.1s
SPU Mount Spurr 46.04 38 *e*P **P 04 10 26.5 +1.7**
BPAW Bear Paw Mtn. 46.53 34 *e*P **P 04 10 30.2 +1.6**
comp=Z,16nm,1.3s
KTH Kantishna Hill 46.55 35 *e*P **P 04 10 30.5 +1.7**
comp=Z,23nm,1.0s
MLY Manley 46.66 32 *e*P **P 04 10 31.1 +1.5**
comp=Z,21nm,1.0s
TRF Thorofare Moun 46.84 35 *e*P **P 04 10 31.8 +0.7**
comp=Z,13nm,1.0s
PDGK Podgornoye 46.92 297 *i* P **P 04 10 31.2 -0.9**
PDGK pmax pmax
comp=Z,17nm,0.9s
COLD Coldfoot 46.97 29 *e*P **P 04 10 33.0 +1.1**
comp=Z,7.7nm,1.1s
BWN Browne 47.20 34 *e*P **P 04 10 36.1 +2.3**
comp=Z,69nm,1.1s
PMR Palmer 47.43 37 *e*P **P 04 10 35.3 -0.3**
PMR pmax pmax
comp=Z,23nm,1.3s
PMR Palmer 47.43 37 *e*P **P 04 10 35.3 -0.3**
comp=Z,23nm,1.3s
MCK McKinley 47.44 34 *e*P **P 04 10 36.7 +1.0**
MCK pmax pmax
comp=Z,20nm,0.3s
MCK McKinley 47.44 34 *e*P **P 04 10 36.6 +1.0**
comp=Z,20nm,0.3s
RND Reindeer 47.49 35 *e*P **P 04 10 36.9 +0.8**
RND pmax pmax
comp=Z,14nm,0.9s
RND Reindeer 47.49 35 *e*P **P 04 10 36.9 +0.8**
comp=Z,14nm,0.9s
RAMN Ramite 47.62 274 *e*P **P 04 10 37.9 +0.1**
comp=Z,48nm,0.9s
KAPI Kappang 47.65 211 LR LR 04 29 20.6
comp=Z,47nm,19.4s,baz=51,slow=34
MDM Murphy Dome 47.72 33 *e*P **P 04 10 39.2 +1.3**
comp=Z,29nm,0.9s
GUN Gumba 47.74 275 *e*P **P 04 10 39.4 +0.5**
WRH Wood River Hil 47.79 33 *e*P **P 04 10 39.4 +1.1**
comp=Z,14nm,1.0s
SML Sawmill 47.80 37 *e*P **P 04 10 38.9 +0.4**
SML pmax pmax
comp=Z,17nm,0.8s
SML Sawmill 47.80 37 *e*P **P 04 10 38.9 +0.4**
comp=Z,16nm,0.8s
COLA College 47.89 33 *e*P **P 04 10 39.2 +0.2**
COLA pmax pmax
comp=Z,10.0nm,0.8s
COLA College 47.89 33 *e*P **P 04 10 39.2 +0.2**
comp=Z,10nm,0.8s
CCB Clear Creek Bu 47.91 33 *e*P **P 04 10 40.1 +0.9**
comp=Z,11nm,1.3s
DHY Denali Highway 48.17 35 *e*P **P 04 10 42.3 +0.8**
comp=Z,28nm,0.3s
KKN Kakani 48.27 275 *e*P **P 04 10 43.0 +0.2**
comp=Z,29nm,0.6s
PKIN Phulchoki 48.27 275 *e*P **P 04 10 43.2 +0.3**
comp=Z,14nm,0.7s
SCM Sheep Creek Mo 48.27 37 *e*P **P 04 10 43.5 +1.3**
SCM pmax pmax

comp=Z,21nm,0.9s
SCM Sheep Creek Mo 48.27 37 *e*P **P 04 10 43.5 +1.3**
comp=Z,21nm,0.9s
IL1 Eielson Array 48.30 33 *e*P **P 04 10 41.6 -0.7**
ILAR Eielson Array 48.30 33 P **P 04 10 42.3 0.0**
comp=Z,12nm,0.8s,baz=268,slow=6.4,SNR=144
ILB Eielson Array 48.30 33 *e*P **P 04 10 42.9 +0.6**
GKN Gorkha 48.67 276 *e*P **P 04 10 46.0 +0.1**
comp=Z,98nm,0.9s
KLU Klutina 48.97 37 *e*P **P 04 10 49.0 +1.4**
comp=Z,11nm,0.6s
DIV Divide 49.08 38 *e*P **P 04 10 49.5 +1.0**
comp=Z,26nm,1.0s
KOLN Koldanda 49.60 276 *e*P **P 04 10 53.0 0.0**
DOT Dot Lake 49.61 34 *e*P **P 04 10 52.6 +0.2**
comp=Z,16nm,0.8s
BMRM Bremner River 49.67 38 *e*P **P 04 10 54.5 +1.6**
comp=Z,12nm,0.8s
TKM2 Tokmak 2 49.77 298 *e*P **P 04 10 55.0 +0.9**
TKM2 pmax pmax
comp=Z,21nm,0.9s
TKM2 Tokmak 2 49.77 298 *e*P **P 04 10 55.0 +0.9**
comp=Z,21nm,0.9s
MENT Mentasta 49.84 35 *e*P **P 04 10 55.5 +1.4**
comp=Z,34nm,1.4s
KULM Kulim 49.90 240 *e*P **P 04 10 55.8 +0.7**
comp=Z,16nm,1.1s
PYUN Piuthan 49.92 277 *e*P **P 04 10 55.9 +0.4**
comp=Z,135nm,1.1s
HNR Honiara 50.01 157 LR LR 04 30 50.0
comp=Z,176nm,21.0s,baz=338,slow=34
VOSK Vostochnaya 50.14 311 *e*P **P 04 10 56.3 -0.2**
VOSK pmax pmax
comp=Z,21nm,0.9s
VOSK Vostochnaya 50.14 311 *e*P **P 04 10 56.3 -0.2**
comp=Z,21nm,0.9s
CHKZ Chkalovo 50.15 313 *i*P **P 04 10 55.7 -0.8**
CHKZ pmax pmax
comp=Z,14nm,0.7s
IPM Ipoh 50.23 239 *e*P **P 04 10 56.9 -0.8**
comp=Z,18nm,0.8s
OTUK Ortayu 50.41 305 P **P 04 10 58.3 -0.4**
OTUK pmax pmax
comp=Z,17nm,0.9s
BVA0 Borovoye Array 50.42 312 P **P 04 10 58.4 -0.3**
BVA0 pmax pmax
comp=Z,11nm,0.8s
BRVK Borovoye 50.48 312 *e*P **P 04 10 59.1 +0.1**
BRVK *e* 04 12 16.3
BRVK pmax pmax
comp=Z,15nm,0.9s
BRVK Borovoye 50.48 312 *e*P **P 04 10 59.1 +0.1**
comp=Z,15nm,0.9s
BRVK *e*PcP **PcP 04 12 16.3 -0.6**
AAK Ala-Archa 50.63 298*c i*P **P 04 11 01.1 +0.5**
AAK pmax pmax
comp=Z,13nm,0.9s
AAK Ala-Archa 50.63 298 *e*P **P 04 10 60.0 -0.6**
comp=Z,5.5nm,0.8s
KSH Kashi 50.63 294 *e*P **P 04 11 04.7 +4.1**
KSH *e*pP sP 04 11 14.7 +2.9
KSH *es*P pP 04 11 18.7 +10
KSH *e*PcP **PcP 04 12 21.7 +3.8**
KSH S **S 04 18 16.1 +2.2**
KSH SS **SS 04 21 49.5 +1.6**
KSH pmax pmax
comp=Z,17nm,1.1s
KSH LR LR
comp=Z,130nm,11.2s
KSH LR LR
comp=Z,460nm,16.9s
KSH LR LR
comp=Z,280nm,11.7s
BALM Baldy 50.75 37 *e*P **P 04 11 02.5 +1.4**
BALM pmax pmax
comp=Z,11nm,0.9s
BALM Baldy 50.75 37 *e*P **P 04 11 02.5 +1.4**
comp=Z,11nm,0.9s
EGAK Eagle 50.75 33 *e*P **P 04 11 01.3 +0.4**
comp=Z,4.4nm,0.8s
EKS2 Erkin-Say 51.12 298 *e*P **P 04 11 04.4 +0.1**
EKS2 pmax pmax
comp=Z,5.0nm,0.8s
EKS2 Erkin-Say 51.12 298 *e*P **P 04 11 04.4 +0.1**
comp=Z,5.0nm,0.8s
ZRNK Zerenda 51.25 312 *e*P **P 04 11 05.1 +0.2**
ZRNK pmax pmax
comp=Z,23nm,0.8s
ZRNK Zerenda 51.25 312 *e*P **P 04 11 05.1 +0.2**
comp=Z,23nm,0.8s
DAWY Dawson 51.61 33 *e*P **P 04 11 08.6 +1.1**
comp=Z,5.5nm,1.0s
COEN Coen 51.70 179 *e*P **P 04 11 09.3 +0.7**
comp=Z,12nm,1.0s
MNAS Manas 52.06 298 *i*P **P 04 11 11.6 +0.3**
MNAS pmax pmax
comp=Z,15nm,0.8s
PSI Prapat 52.88 239 *e*P **P 04 11 18.0 +0.4**
PSI pmax pmax
comp=Z,11nm,0.8s
PSI Prapat 52.88 239 *e*P **P 04 11 18.0 +0.4**
comp=Z,11nm,0.8s
JAGI Jajag, Banyuwa 53.17 216 *e*P **P 04 11 18.4 -1.1**
INK Inuvik 53.20 28 *e*P **P 04 11 20.0 +0.9**
INK pmax pmax
comp=Z,9.0nm,0.8s
INK Inuvik 53.20 28 *e*P **P 04 11 20.0 +0.9**
comp=Z,9.2nm,0.8s
KKAR Karatay Array 53.23 300 *e*P **P 04 11 20.0 +0.2**
KKAR pmax pmax
comp=Z,13nm,0.8s
KKAR Karatay Array 53.23 300 *e*P **P 04 11 20.0 +0.2**
comp=Z,13nm,0.8s
SVE Sverdlovsk 54.87 318*ce*P **P 04 11 31.8 +0.4**
SVE pmax pmax
comp=Z,51nm,0.9s
GSI Gunungsitoli 54.89 239 *e*P **P 04 11 32.4 +0.3**
comp=Z,41nm,1.0s
SOKR Solikamsk 55.97 322 *e*P **P 04 11 37.7 -1.5**
SOKR pmax pmax
comp=Z,15nm,0.8s
ARU Arti 56.08 318*d i*P **P 04 11 40.1 -0.1**
ARU 04 12 32.7
ARU 04 13 41.9
ARU S **S 04 19 28.5 +1.4**
ARU SS **SS 04 23 11.4 -1.5**
ARU pmax pmax
comp=Z,68nm,1.7s
ARU MLR MLR
comp=Z,407nm,19.0s
ARU Arti 56.08 318 *e*P **P 04 11 40.3 +0.1**
comp=Z,34nm,0.9s
DLBC Dease Lake 57.44 39 *e*P **P 04 11 52.0 +2.1**
comp=Z,19nm,1.1s
KBL Kabul 57.70 291 *e*P **P 04 11 52.0 -0.3**
KBL pmax pmax
comp=Z,22nm,0.8s
KBL Kabul 57.70 291 *e*P **P 04 11 52.0 -0.3**
comp=Z,22nm,0.8s
ABKAR Akbulak array 57.83 310 *e*P **P 04 11 52.5 -0.3**
comp=Z,14nm,0.7s
FITZ Fitzroy Crossi 57.97 199 *e*P **P 04 11 54.0 +0.1**
comp=Z,16nm,1.3s
WRAB Tennant Creek 58.12 189 *e*P **P 04 11 54.3 -0.6**
WRAB pmax pmax
comp=Z,9.0nm,1.1s
WRAB Tennant Creek 58.12 189 *e*P **P 04 11 54.3 -0.6**
comp=Z,9.2nm,1.1s
WB2 Warramunga Arr 58.13 189 *e*P **P 04 11 54.3 -0.7**
comp=Z,15nm,1.0s
WRA Warramunga Arr 58.13 189 P **P 04 11 54.3 -0.7**
comp=Z,11nm,0.8s,baz=6.8,slow=7.0,SNR=78
SPITS Spitsbergen Ar 59.70 349 LR LR 04 40 18.9
comp=Z,95nm,19.2s,baz=300,slow=38
RES Resolute Bay 61.48 15 *e*P **P 04 12 17.6 +0.2**
RES pmax pmax
comp=Z,24nm,0.9s
RES Resolute Bay 61.48 15 *e*P **P 04 12 17.6 +0.2**
comp=Z,24nm,0.9s
AS01 Alice Springs 61.85 189 *e*P **P 04 12 20.1 -0.4**
AS31 Alice Springs 61.85 189 *e*P **P 04 12 21.0 +0.5**
comp=Z,1nm,0.9s
ASAR Alice Springs 61.85 189 P **P 04 12 20.5 -0.1**
comp=Z,4.6nm,0.8s,baz=10,slow=6.3,SNR=33
APA Apatity 62.08 336‖ *i*P **P 04 12 20.0 -1.5**
APA *i* 04 12 33.0
APA pmax pmax
comp=Z,16nm,0.8s
APA MLR MLR
comp=Z,400nm,22.0s
YKA Yellowknife Ar 62.62 31 P **P 04 12 24.4 -0.8**
comp=Z,5.5nm,0.7s,baz=303,slow=6.8,SNR=42
YKA PcP **PcP 04 13 04.7 +0.7**
comp=Z,2.2nm,0.9s,baz=294,slow=4.0,SNR=5.4
KLMR Klimovskoe 63.29 328 *e*P **P 04 12 28.5 -1.2**
KLMR *e* 04 13 04.7
KLMR *e* 04 14 47.5
KLMR pmax pmax
comp=Z,16nm,1.0s
ARCES ARCESS Array B 63.32 339 P **P 04 12 30.1 +0.3**
comp=Z,5.9nm,0.8s,baz=55,slow=6.4,SNR=25
GEYT Alibeck 63.96 299 P **P 04 12 34.4 -0.2**
comp=Z,5.1nm,0.4s,baz=48,slow=2.2,SNR=5.6
MSVF Nonsavu 64.84 142 *e*P **P 04 12 41.0 +0.5**
MSVF pmax pmax
comp=Z,20nm,1.4s
DAG Danmarks Havn 64.86 355 *i*P **P 04 12 39.3 -0.5**
comp=Z,19nm,0.9s
DAG Danmarks Havn 64.86 355 *i*P **P 04 12 39.3 -0.5**
DAG pmax pmax
comp=Z,16nm,0.9s
LLLB Lillooet 65.08 44 *e*P **P 04 12 43.0 +1.3**
comp=Z,10nm,0.9s
NLWA Neilton Lookou 65.55 48 *e*P **P 04 12 47.0 +2.1**
comp=Z,18nm,1.1s
VRH Novokhopyorsk 67.31 318 *e*P **P 04 12 54.7 -1.2**
VRH pmax pmax
comp=Z,10.0nm,0.7s
B08A Colville Reser 67.66 46 *e*P **P 04 12 59.5 +1.1**
comp=Z,14nm,1.3s
OBN Obninsk 67.72 323 *i*P **P 04 12 57.9 -0.5**
OBN *i* 04 15 27.2
OBN pmax pmax
comp=Z,10.0nm,0.9s
OBN MLR MLR
comp=Z,214nm,15.0s
EDM Edmonton 68.16 39 *e*P **P 04 13 02.1 +0.8**
EDM pmax pmax
comp=Z,18nm,0.9s
EDM Edmonton 68.16 39 *e*P **P 04 13 02.1 +0.8**
comp=Z,18nm,0.9s
FIA1 FINESS Array S 68.26 332 *e*P **P 04 13 01.7 0.0**
comp=Z,26nm,0.8s
FINES FINESS Array B 68.27 332 P **P 04 13 01.9 +0.2**
comp=Z,17nm,0.7s,baz=56,slow=7.4,SNR=74
FINES LR LR 04 44 15.5
comp=Z,139nm,22.0s,baz=50,slow=37
VSR Storozhevoye 68.64 319 *e*P **P 04 13 03.6 -0.7**
VSR pmax pmax
comp=Z,10.0nm,0.8s
NEW Newport 68.95 45 *e*P **P 04 13 07.5 +1.1**
NEW pmax pmax
comp=Z,11nm,1.1s
NEW Newport 68.95 45 *e*P **P 04 13 07.5 +1.1**
comp=Z,11nm,1.1s
JMIC Jan Mayen 69.30 350 LR LR 04 45 27.3
comp=Z,36nm,18.6s,baz=70,slow=38
STKA Stephens Creek 69.53 181 P **P 04 13 10.2 +0.4**
comp=Z,0.9nm,0.4s,baz=292,slow=8.0,SNR=3.7
SUMG Summit 69.70 0 *i*P **P 04 13 11.7 +0.7**
comp=Z,25nm,0.9s
SUMG Summit 69.70 0 *e*P **P 04 13 11.7 +0.7**
SUMG pmax pmax
comp=Z,24nm,0.8s
SUMG Summit 69.70 0 *e*P **P 04 13 11.7 +0.7**
comp=Z,24nm,0.8s
K05A Summer Lake 69.80 51 *e*P **P 04 13 13.8 +1.9**
comp=Z,21nm,1.0s
VSU Vasula 69.95 330 *i*P **P 04 13 12.0 -0.3**
VSU pmax pmax
comp=Z,59nm,1.2s
WALA Waterton Lakes 70.25 43 *e*P **P 04 13 15.6 +1.1**
comp=Z,7.5nm,0.8s
NCK Nalchik 70.49 310 *e*P **P 04 13 16.0 +0.1**
NCK pmax pmax
comp=Z,9.0nm,1.0s
MOD Modoc Plateau 70.62 52 *e*P **P 04 13 17.1 +0.2**
comp=Z,3.7nm,0.7s
BMO Blue Mountains 70.77 48 *e*P **P 04 13 18.6 +0.9**
comp=Z,7.7nm,1.2s
KBZ Khabaz 70.78 311 P **P 04 13 18.1 +0.5**
comp=Z,11nm,0.8s,baz=46,slow=3.1,SNR=23
YBMT Yellow Bay 70.90 44 *e*P **P 04 13 19.7 +1.3**
SWMT Swartz Lake 71.11 44 *e*P **P 04 13 20.9 +1.2**
NEY Neytrino 71.16 310 *e*P **P 04 13 20.0 -0.2**
NEY pmax pmax
comp=Z,1.0nm,0.8s
SCO Scoresbysund 71.21 354 *i*P **P 04 13 20.1 +0.4**
comp=Z,16nm,1.2s
SCO Scoresbysund 71.21 354 *i*P **P 04 13 20.1 +0.4**
SCO pmax pmax
comp=Z,16nm,1.2s
WVOR Wild Horse Val 71.34 50 *e*P **P 04 13 21.7 +0.5**
WVOR pmax pmax
comp=Z,5.0nm,0.9s
WVOR Wild Horse Val 71.34 50 *e*P **P 04 13 21.7 +0.5**
comp=Z,4.6nm,0.9s
MSO Missoula 71.54 45 *e*P **P 04 13 23.1 +0.8**
comp=Z,5.7nm,1.3s
GNI Garni 71.67 307 *i*P **P 04 13 23.4 +0.1**
GNI pmax pmax
comp=Z,38nm,1.2s
GNI Garni 71.67 307 *e*P **P 04 13 23.4 +0.1**
comp=Z,62nm,0.9s
AKH Akhalkalaki 71.73 308‖ *i*P **P 04 13 24.7 +1.0**
PAHR Pah Rah Range 72.43 53 *e*P **P 04 13 29.0 +1.1**
comp=Z,9.8nm,1.3s
MFID Camas Ranch 72.46 48 *e*P **P 04 13 28.8 +0.9**
comp=Z,5.3nm,0.8s
FFC Flin Flon 72.51 33 *e*P **P 04 13 28.3 +0.4**
FFC pmax pmax
comp=Z,22nm,0.8s
FFC Flin Flon 72.51 33 *e*P **P 04 13 28.3 +0.4**
comp=Z,22nm,0.8s
CMB Columbia Colle 72.75 55 *e*P **P 04 13 30.8 +1.2**
CMB pmax pmax
comp=Z,8.0nm,1.1s
CMB Columbia Colle 72.75 55 *e*P **P 04 13 30.8 +1.2**
comp=Z,7.7nm,1.1s
FCC Fort Churchill 72.82 27 *e*P **P 04 13 30.1 +0.5**
FCC pmax pmax
comp=Z,42nm,1.4s
FCC Fort Churchill 72.82 27 *e*P **P 04 13 30.1 +0.5**
comp=Z,42nm,1.4s
LRM Limekiln Ridge 72.97 45 *e*P **P 04 13 31.8 +0.7**
EGMT Eagleton 73.09 42 *e*P **P 04 13 31.4 -0.1**
comp=Z,14nm,1.1s
DLMT Dillon 73.17 45 *e*P **P 04 13 33.1 +1.0**
comp=Z,8.0nm,0.8s
HLID Hailey 73.21 48 *e*P **P 04 13 33.4 +0.9**
comp=Z,5.3nm,1.0s
ANN Anapa 73.34 314 *e*P P 04 13 27.7 -5.2
ANN *e**PP pP 04 13 37.5 -3.7
ANN *e* 04 13 45.8
ANN *eS* **S 04 22 52.5 -7.5**
ANN pmax pmax
comp=Z,21nm,1.2s
NC303 NORSAR Array S 73.35 338 *e*P **P 04 13 33.2 +0.5**
BMN Battle Mountai 73.37 52 *e*P **P 04 13 35.0 +1.6**
BMN pmax pmax
comp=Z,4.0nm,0.8s
BMN Battle Mountai 73.37 52 *e*P **P 04 13 35.0 +1.6**
comp=Z,4.4nm,0.8s
HFS Hagfors 73.47 336 LR LR 04 48 51.8
comp=Z,369nm,18.6s,baz=42,slow=38
NC204 NORSAR Array S 73.49 338 *e*P **P 04 13 34.3 +0.7**
NB201 NORSAR Array S 73.51 337 *e*P **P 04 13 33.8 +0.1**
NB2 NORSAR Subarra 73.55 338 P **P 04 13 33.9 0.0**
comp=Z,20nm,0.9s,baz=38,slow=5.9
NB2 NORSAR Subarra 73.55 338 P **P 04 13 33.9 0.0**
baz=38,slow=5.9
NOA NORSAR Array B 73.55 338 P **P 04 13 34.0 0.0**
comp=Z,13nm,0.8s,baz=39,slow=5.9,SNR=48
NOA LR LR 04 48 35.7
comp=Z,163nm,20.9s,baz=45,slow=38
NOA NORSAR Array B 73.55 338 P **P 04 13 34.0 0.0**
NOA pmax pmax
comp=Z,13nm,0.8s
NOA MLR MLR
comp=Z,163nm,20.9s
BOZ Bozeman (W) 73.56 45 *e*P **P 04 13 35.3 +0.8**
BOZ pmax pmax
comp=Z,7.0nm,0.8s
BOZ Bozeman (W) 73.56 45 *e*P **P 04 13 35.3 +0.8**
comp=Z,6.7nm,0.8s
NBO02 NORSAR Array S 73.64 338 *e*P **P 04 13 34.4 0.0**
NBO00 NORSAR Array S 73.68 338 *e*P **P 04 13 35.0 +0.3**
NAO01 NORSAR Array S 73.80 338 *e*P **P 04 13 35.5 +0.1**
AKASG Malin Array Be 73.94 322 P **P 04 13 36.0 -0.3**
comp=Z,10.0nm,0.6s,baz=46,slow=6.1,SNR=50
AKASG PP **PP 04 16 21.2 +0.4**
comp=Z,0.6nm,0.5s,baz=43,slow=8.8,SNR=4.1
AKASG LR LR 04 48 48.0
comp=Z,191nm,19.3s,baz=65,slow=38
KIEV Kiev 73.95 322 *e*P **P 04 13 35.9 -0.5**
KIEV pmax pmax
comp=Z,18nm,0.8s
KIEV Kiev 73.95 322 *e*P **P 04 13 35.9 -0.5**
comp=Z,18nm,0.8s
AK11 Malin Array Si 73.98 322 *e*P **P 04 13 36.4 -0.2**
YHB Horse Butte 74.33 45 *e*P **P 04 13 40.4 +1.4**
comp=Z,8.1nm,0.8s
SUW Suwalki 74.43 328 *e*P **P 04 13 38.8 -0.3**
SUW Suwalki 74.43 328 *e*P **P 04 13 38.8 -0.3**
GCMT Greycliff 74.53 44 *e*P **P 04 13 41.4 +1.4**
SFJD Kangerlussuaq 74.85 5 *i*P **P 04 13 41.8 +0.5**
comp=Z,18nm,0.8s
SFJD Kangerlussuaq 74.85 5 *i*P **P 04 13 41.8 +0.5**
SFJD pmax pmax
comp=Z,18nm,0.8s
H17A Grant Village 74.89 45 *e*P **P 04 13 45.1 +2.7**
comp=Z,16nm,0.9s
IMW Indian Meadow 75.00 46 *e*P **P 04 13 44.8 +1.7**
comp=Z,9.5nm,0.8s
MOOW Moose Ponds 75.20 46 *e*P **P 04 13 46.0 +1.9**
comp=Z,6.8nm,0.9s
TPAW Teton Pass 75.25 46 *e*P **P 04 13 46.3 +1.8**
comp=Z,6.0nm,0.7s
HVU Hansel Valley 75.25 48 *e*P **P 04 13 45.9 +1.6**
HVU pmax pmax
comp=Z,7.0nm,1.0s
HVU Hansel Valley 75.25 48 *e*P **P 04 13 45.9 +1.6**
comp=Z,7.3nm,1.0s
REDW Red Top Meadow 75.38 46 *e*P **P 04 13 46.5 +1.3**
comp=Z,6.7nm,0.9s
BGU Big Grassy Mou 75.62 49 *e*P **P 04 13 47.8 +1.3**
comp=Z,4.7nm,0.3s
R11A Troy Canyon, C 75.62 53 *e*P **P 04 13 47.4 +0.8**
comp=Z,8.6nm,1.3s
FRB Frobisher Bay 75.66 14 LR LR 04 47 15.5
comp=Z,40nm,20.5s,baz=14,slow=36
SPUT South Promonto 75.73 49 *e*P **P 04 13 48.6 +1.5**
comp=Z,11nm,1.4s
LAO LASA Array 75.79 41 *e*P **P 04 13 48.5 +1.3**
comp=Z,18nm,0.9s
TPNV Topopah Spring 76.05 54 *e*P **P 04 13 49.8 +0.8**
TPNV pmax pmax
comp=Z,7.0nm,1.0s
TPNV Topopah Spring 76.05 54 *e*P **P 04 13 49.8 +0.8**
comp=Z,7.2nm,1.0s
SORM Soroca 76.06 321‖ *i*P **P 04 13 48.6 0.0**
HWUT Hardware Ranch 76.07 48 *e*P **P 04 13 50.5 +1.4**
comp=Z,25nm,1.5s
DUG Dugway, Tooele 76.20 50 *e*P **P 04 13 50.3 +0.5**
DUG pmax pmax
comp=Z,8.0nm,1.0s
DUG Dugway, Tooele 76.20 50 *e*P **P 04 13 50.3 +0.5**
comp=Z,8.1nm,1.0s
TCUT Toone Canyon 76.46 48 *e*P **P 04 13 52.8 +1.4**
comp=Z,32nm,1.5s
BW06 Boulder Array 76.50 46 *e*P **P 04 13 51.4 -0.1**
comp=Z,5.5nm,0.8s
PD31 Pinedale Array 76.50 46 *e*P **P 04 13 52.1 +0.6**
PDAR Pinedale Array 76.50 46 P **P 04 13 51.8 +0.2**
comp=Z,4.3nm,0.6s,baz=268,slow=2.2,SNR=42
GSC Goldstone, Bar 76.68 56 *e*P **P 04 13 53.2 +0.7**
GSC pmax pmax
comp=Z,5.0nm,1.1s
GSC Goldstone, Bar 76.68 56 *e*P **P 04 13 53.2 +0.7**
comp=Z,4.6nm,1.1s
BSD Bornholm Skovb 76.90 332 *i*P **P 04 13 53.0 -0.2**
comp=Z,21nm,0.9s
BSD Bornholm Skovb 76.90 332 *i*P **P 04 13 53.0 -0.2**
BSD pmax pmax
comp=Z,21nm,0.9s
LVV L'vov 76.99 324 *e*P **P 04 13 53.9 0.0**
BEL Belsk 77.00 327 *e*P **P 04 13 54.9 +1.1**
BEL Belsk 77.00 327 *e*P **P 04 13 54.9 +1.1**
SHPR Sheep Range 77.01 54 *e*P **P 04 13 55.9 +1.4**
comp=Z,5.9nm,1.0s
CCUT Cedar City 77.50 52 *e*P **P 04 13 57.7 +0.4**
comp=Z,8.8nm,1.3s
MSU Marysvale 77.63 51 *e*P **P 04 13 59.5 +1.5**
MSU Marysvale 77.63 51 *e*P **P 04 13 59.5 +1.5**
TMUT Trail Mountain 77.73 50 *e*P **P 04 13 59.9 +1.3**
comp=Z,6.8nm,1.2s
KWP Kalwaria Pacla 77.73 325 *e*P **P 04 13 58.8 +0.8**
KWP Kalwaria Pacla 77.73 325 *e*P **P 04 13 58.8 +0.8**
LCMT Little Creek M 77.91 52 *e*P **P 04 14 01.1 +1.6**
comp=Z,6.4nm,0.9s
LDFC Landfair 77.92 55 *e*P **P 04 13 59.9 +0.4**
comp=Z,9.7nm,1.0s
MTPU Mount Pierson 77.92 51 *e*P **P 04 14 01.6 +1.9**
comp=Z,5.8nm,0.9s
PFO Pinyon Flats O 77.93 57 *e*P **P 04 13 59.2 -0.4**
PFO pmax pmax
comp=Z,8.0nm,1.4s
PFO Pinyon Flats O 77.93 57 *e*P **P 04 13 59.2 -0.4**
comp=Z,8.4nm,1.4s
BUR08 Bucovina Ar. S 77.95 322 *e*P **P 04 14 00.1 +0.7**
BURAR Bucovina Array 77.96 322‖ *i*P **P 04 13 59.9 +0.4**
TESR Tescani 78.02 320‖ *i*P **P 04 14 00.1 +0.4**
CFR Carcaliu 78.16 319‖ *i*P **P 04 14 00.9 +0.4**
CFR Carcaliu 78.16 319 P **P 04 14 00.8 +0.3**
KNB Kanab 78.17 52 *e*P **P 04 14 02.8 +1.8**
KNB pmax pmax
comp=Z,13nm,1.3s
KNB Kanab 78.17 52 *e*P **P 04 14 02.8 +1.8**
comp=Z,13nm,1.3s
SRU San Rafael Swe 78.26 49 *e*P **P 04 14 02.6 +1.2**
SRU pmax pmax
comp=Z,10.0nm,0.7s
SRU San Rafael Swe 78.26 49 *e*P **P 04 14 02.5 +1.2**
comp=Z,9.5nm,0.7s
K22A Casper 78.27 45 *e*P **P 04 14 01.6 +0.2**
comp=Z,13nm,1.2s
ULM Lac du Bonnet 78.31 34 P **P 04 14 01.3 +0.1**
comp=Z,7.6nm,0.8s,baz=309,slow=7.2,SNR=7.9
MDND Maddock 78.32 37 *e*P **P 04 14 02.0 +0.7**
comp=Z,37nm,1.0s
VRI Vrincioaia 78.42 320‖ *i*P **P 04 14 02.6 +0.7**
KOLS Kolonicke sedl 78.43 324 *e*P **P 04 14 01.9 0.0**
KOLS pmax pmax
comp=Z,10.0nm,1.1s
KOLS Kolonicke sedl 78.43 324 *e*P **P 04 14 01.9 0.0**
PLOR Plostina 78.47 320‖ *i*P **P 04 14 03.1 +0.9**
TIRR Tirgusor 78.50 318‖ *i*P **P 04 14 02.3 -0.1**
STHS Stebnicka Huta 78.55 325 *e*P **P 04 14 03.5 +0.9**
STHS pmax pmax
comp=Z,7.0nm,0.8s
STHS Stebnicka Huta 78.55 325 *e*P **P 04 14 03.5 +0.9**
OJC Ojcow 78.60 326 *e*P **P 04 14 03.2 +0.4**
OJC Ojcow 78.60 326 *e*P **P 04 14 02.7 -0.2**
OJC pmax pmax
comp=Z,29nm,1.0s
OJC Ojcow 78.60 326 *e*P **P 04 14 02.7 -0.2**
comp=Z,29nm,1.0s
TLB Topalu 78.61 318‖ *i*P **P 04 14 03.8 +0.8**
RSSD Black Hills 78.64 42 *e*P **P 04 14 03.0 -0.5**
RSSD pmax pmax
comp=Z,7.0nm,0.9s
RSSD Black Hills 78.64 42 *e*P **P 04 14 03.0 -0.5**
comp=Z,7.4nm,0.9s
W13A Hualapai Mount 78.69 54 *e*P **P 04 14 04.8 +0.9**
comp=Z,2.5nm,1.0s
BR131 Keskin Array S 78.71 312 *e*P **P 04 14 04.2 +0.4**
BRTR Keskin Array B 78.71 312 P **P 04 14 04.2 +0.4**
comp=Z,2.2nm,0.6s,baz=94,slow=3.7,SNR=16
BRTR LR LR 04 52 24.9
comp=Z,41nm,20.1s,baz=48,slow=38
CRVS Cervenica-Dubn 78.82 325 *e*P **P 04 14 04.9 +0.8**
CRVS Cervenica-Dubn 78.82 325 *e*P **P 04 14 04.9 +0.8**
TRPA Tarpa 78.88 324‖ *e*P **P 04 14 04.8 +0.4**
O20A White River Ci 78.94 47 *e*P **P 04 14 06.0 +0.8**
comp=Z,7.8nm,1.0s
NIE Niedzica 78.97 326 *e*P **P 04 14 05.7 +0.8**
NIE Niedzica 78.97 326 *e*P **P 04 14 05.7 +0.8**
MLR Muntele Rosu 79.08 320 *e*P **P 04 14 06.2 +0.5**

MLR pmax pmax
comp=Z,8.0nm,1.1s
MLR Muntele Rosu 79.08 320 *eP* **P 04 14 06.2 +0.5**
comp=Z,7.7nm,1.1s
BR231 Keskin MP Arra 79.14 312 *eP* **P 04 14 04.5 -1.7**
SECR 79.33 320⇓*iP* **P 04 14 06.9 0.0**
BTCH Batrach 79.35 307 *eP* **P 04 14 07.1 -0.2**
PV09 Paradox Valley 79.48 49 *eP* **P 04 14 09.5 +1.2**
LANS Liptovska Anna 79.54 326 *eP* **P 04 14 09.3 +1.3**
LANS Liptovska Anna 79.54 326 *eP* **P 04 14 09.3 +1.3**
VOIR 79.56 320⇑*iP* **P 04 14 09.0 +0.7**
VOIR 79.56 320 P **P 04 14 09.0 +0.7**
KECS Kecovo 79.57 325 *eP* **P 04 14 09.0 +0.8**
KECS pmax pmax
comp=Z,3.0nm,1.0s
KECS Kecovo 79.57 325 *eP* **P 04 14 09.0 +0.8**
OKC Ostrava-Krasne 79.60 327⇓*eP* **P 04 14 09.2 +0.9**
OKC AMS AMS 04 52 00.0
comp=Z,200nm,15.4s
OKC Ostrava-Krasne 79.60 327 *eP* **P 04 14 09.2 +0.9**
OKC MLR MLR
comp=Z,200nm,15.4s
PV10 Paradox Valley 79.62 49 *eP* **P 04 14 10.5 +1.5**
KSP Ksiaz 79.62 329 *eP* **P 04 14 08.9 +0.5**
KSP Ksiaz 79.62 329 *eP* **P 04 14 08.9 +0.5**
KFRA Kufra 79.66 307 *eP* **P 04 14 13.2 +4.3**
PV04 Paradox Valley 79.69 49 *eP* **P 04 14 10.1 +0.8**
AGMN Agassiz Nation 79.74 35 *eP* **P 04 14 09.0 -0.1**
comp=Z,9.1nm,0.9s
DRGR 79.75 323⇑*iP* **P 04 14 10.0 +0.6**
DRGR 79.75 323 P **P 04 14 09.9 +0.6**
N23A Red Feather La 79.76 46 *eP* **P 04 14 11.2 +1.4**
comp=Z,11nm,1.0s
PV05 Paradox Valley 79.77 49 *eP* **P 04 14 10.9 +1.1**
ARR Arges 79.82 321⇓*iP* **P 04 14 11.0 +1.3**
RABH Abou Rabah 79.89 306 *eP* **P 04 14 08.8 -1.4**
MORC Moravsky Berou 79.91 327⇑*iP* **P 04 14 10.9 +0.9**
MORC Moravsky Berou 79.91 327 *eP* **P 04 14 10.5 +0.4**
MORC pmax pmax
comp=Z,62nm,0.9s
MORC Moravsky Berou 79.91 327 *eP* **P 04 14 10.5 +0.4**
comp=Z,62nm,0.9s
Y14A Wickenburg 79.98 55 *eP* **P 04 14 11.5 +0.7**
DPC Dobruska-Polom 79.99 328⇓*iP* **P 04 14 11.5 +1.0**
DPC Dobruska-Polom 79.99 328⇓*iP* **P 04 14 11.5 +1.0**
UPC Upice 80.00 328 ⇓AMS AMS 04 52 20.0
comp=Z,300nm,15.6s
KRLC Kraliky 80.00 328⇓*iP* **P 04 14 11.1 +0.5**
KRLC Kraliky 80.00 328⇓*iP* **P 04 14 11.1 +0.5**
ROOS tl alroos 80.00 306 *eP* **P 04 14 10.9 0.0**
WUAZ Wupatki 80.02 53 *eP* **P 04 14 12.4 +1.3**
comp=Z,8.3nm,1.0s
PV01 Paradox Valley 80.05 49 *eP* **P 04 14 11.6 +0.3**
BIDA Albida 80.09 307 *eP* **P 04 14 07.6 -3.7**
LOT Lotru 80.20 321⇑*iP* **P 04 14 12.2 +0.4**
PSZ Piszkesteto 80.25 325⇓*iP* **P 04 14 12.7 +0.7**
PSZ Piszkesteto 80.25 325 *eP* **P 04 14 13.0 +1.0**
PSZ pmax pmax
comp=Z,20nm,1.0s
PSZ Piszkesteto 80.25 325 *eP* **P 04 14 13.0 +1.0**
comp=Z,20nm,1.0s
PSZ Piszkesteto 80.25 325⇓*eP* **P 04 14 12.4 +0.4**
VYHS Vyhne 80.30 326 *eP* **P 04 14 12.8 +0.6**
VYHS pmax pmax
comp=Z,5.0nm,0.9s
VYHS Vyhne 80.30 326 *eP* **P 04 14 12.8 +0.6**
VYHS *e*PP **PP 04 17 10.7 -3.6**
SMCO Snowmass 80.31 48 *eP* **P 04 14 13.6 +0.7**
comp=Z,3.7nm,1.0s
HAWK Haweek 80.35 306 *eP* **P 04 14 12.5 -0.3**
BRG Berggiesshubel 80.55 330 *eP* **P 04 14 13.7 +0.2**
comp=Z,10nm,1.0s
PVCC Panska Ves 80.57 329⇓*eP* **P 04 14 14.6 +1.1**
PVCC Panska Ves 80.57 329 *eP* **P 04 14 14.6 +1.1**
CLL Collm 80.58 330⇓*iP* **P 04 14 13.6 0.0**
comp=Z,20nm,1.0s
CLL Collm 80.58 330⇓*iP* **P 04 14 13.6 0.0**
CLL pmax pmax
comp=Z,20nm,1.0s
CLL Collm 80.58 330 *eP* **P 04 14 13.6 0.0**
comp=Z,17nm,0.9s
MARH Ras Al Marh 80.61 306 *eP* **P 04 14 14.9 +0.5**
SIRR Siria 80.64 323⇑*iP* **P 04 14 14.8 +0.8**
VRAC Vranov 80.67 327⇑*iP* **P 04 14 15.3 +1.2**
ISCO Idaho Springs 80.68 46 *eP* **P 04 14 16.1 +1.3**
ISCO pmax pmax
comp=Z,9.0nm,1.6s
ISCO Idaho Springs 80.68 46 *eP* **P 04 14 16.1 +1.3**
comp=Z,9.4nm,1.6s
X16A Lo Mia Camp, P 80.68 54 *eP* **P 04 14 15.8 +1.1**
MVCO Mesa Verde 80.70 50 *eP* **P 04 14 15.9 +1.1**
comp=Z,9.9nm,1.1s
GZR Gura Zlata 80.72 322⇓*iP* **P 04 14 14.9 +0.3**
GOPC GO Pecny, Ondr 80.96 329⇓*eP* **P 04 14 16.2 +0.6**
GOPC AMS AMS 04 53 00.0
comp=Z,200nm,19.2s
GOPC GO Pecny, Ondr 80.96 329 *eP* **P 04 14 16.2 +0.6**
GOPC MLR MLR
comp=Z,200nm,19.2s
PRU Pruhonice 81.00 329⇓*iP* **P 04 14 16.3 +0.5**
PRU AMS AMS 04 52 00.0
comp=Z,200nm,17.8s
PRU Pruhonice 81.00 329⇓*iP* **P 04 14 16.3 +0.5**
PRU MLR MLR
comp=Z,200nm,17.8s
BZS Buzias 81.13 322⇓*iP* **P 04 14 16.5 -0.1**
TREC Trest 81.14 328⇓*eP* **P 04 14 17.4 +0.7**
TREC Trest 81.14 328 *eP* **P 04 14 17.4 +0.7**
SALA Sala 81.29 305 *eP* **P 04 14 17.6 -0.4**
S22A 4UR Ranch, Cre 81.34 49 *eP* **P 04 14 19.9 +1.6**
comp=Z,4.8nm,0.9s
214A Organ Pipe Nat 81.36 56 *eP* **P 04 14 18.2 0.0**
comp=Z,19nm,1.0s
X18A Snowflake 81.55 53 *eP* **P 04 14 20.6 +1.3**
MDVR Moldovita 81.69 322⇑*iP* **P 04 14 19.9 +0.2**
EYMN Ely 81.94 33 *eP* **P 04 14 20.8 -0.2**
comp=Z,11nm,0.8s
CSS Mathiatis 81.99 308 *eP* **P 04 14 21.2 -0.2**
comp=Z,3.3nm,0.6s
CONA Conrad Observa 82.03 327 *i* P **P 04 14 22.1 +0.6**
comp=Z,12nm,0.8s,SNR=7.5
KHC Kasperske Hory 82.06 329⇓*eP* **P 04 14 21.8 +0.3**
KHC AMS AMS 04 53 10.0
comp=Z,300nm,21.8s
KHC Kasperske Hory 82.06 329 *eP* **P 04 14 21.9 +0.4**
KHC pmax pmax
comp=Z,5.0nm,0.9s
KHC Kasperske Hory 82.06 329 *eP* **P 04 14 21.9 +0.4**
comp=Z,5.4nm,0.9s
SDCO Great Sand Dun 82.13 48 *eP* **P 04 14 22.8 +0.4**
comp=Z,3.0nm,1.0s
GEC2 GERESS Array S 82.23 329 *eP* **P 04 14 22.8 +0.3**
GEC2 pmax pmax
comp=Z,10.0nm,1.1s
GEC2 GERESS Array S 82.23 329 *eP* **P 04 14 22.8 +0.3**
comp=Z,9.7nm,1.1s
GERES GERESS Array B 82.23 329 P **P 04 14 22.1 -0.4**
comp=Z,3.9nm,0.7s,baz=35,slow=4.9,SNR=33
GERES LR LR 04 55 49.7
comp=Z,182nm,19.0s,baz=48,slow=39
GEA0 GERESS Array S 82.24 329 *eP* **P 04 14 22.3 -0.3**
TUC Tucson 82.45 55 *eP* **P 04 14 23.8 -0.1**
TUC pmax pmax
comp=Z,3.0nm,0.9s
TUC Tucson 82.45 55 *eP* **P 04 14 23.8 -0.1**
comp=Z,2.7nm,0.9s
VTS Vitosha 82.52 319⇓*iP* **P 04 14 24.9 +0.7**
VTS Vitosha 82.52 319 *eP* **P 04 14 24.8 +0.6**
VTS pmax pmax
comp=Z,16nm,0.8s
VTS Vitosha 82.52 319 *eP* **P 04 14 24.8 +0.6**
comp=Z,16nm,0.8s
GRFO Grafenberg 82.56 330 *eP* **P 04 14 23.8 -0.3**
GRFO pmax pmax
comp=Z,18nm,0.9s
GRFO Grafenberg 82.56 330 *eP* **P 04 14 23.8 -0.3**
comp=Z,18nm,0.9s
ARSA Arzberg 82.70 327 *i* P **P 04 14 25.0 +0.1**
comp=Z,3.8nm,0.7s
ECSD EROS Data Cent 82.73 39 *eP* **P 04 14 25.0 -0.1**
comp=Z,10.0nm,0.8s
MOA Molln 82.78 328 *i* P **P 04 14 25.7 +0.4**
comp=Z,7.6nm,1.0s
T25A Trinidad 83.17 48 *eP* **P 04 14 28.6 +0.9**
comp=Z,7.3nm,0.8s
PERS Pernice 83.35 326 *i* P **P 04 14 28.4 +0.1**
SOKA Soboth 83.36 327 *i* P **P 04 14 28.4 +0.1**
comp=Z,14nm,0.7s,SNR=13
LAZ Ladron 83.38 51 *eP* **P 04 14 30.4 +1.5**
SPMN Marine on St. 83.44 36 *eP* **P 04 14 28.9 +0.2**
comp=Z,9.8nm,1.0s
ANMO Albuquerque 83.44 50*d* *iP* **P 04 14 28.0 -1.1**
ANMO pmax pmax
comp=Z,9.0nm,1.2s
ANMO Albuquerque 83.44 50 *eP* **P 04 14 30.5 +1.4**
comp=Z,7.4nm,1.0s
OBKA Obir 83.70 327 *i* P **P 04 14 29.9 -0.3**
comp=Z,3.7nm,0.6s
KBA Koelnbreinsper 83.77 328 *i* P **P 04 14 30.4 -0.2**
comp=Z,11nm,0.8s,SNR=8.8
MYKA Terra Mystica 84.00 327 *i* P **P 04 14 30.9 -0.7**
comp=Z,8.7nm,0.7s,SNR=7.1
319A Douglas 84.03 55 *eP* **P 04 14 33.4 +1.2**
comp=Z,10nm,0.9s
SCHQ Schefferville 84.21 16 P **P 04 14 32.9 +0.5**
comp=Z,11nm,0.8s,baz=357,slow=5.5,SNR=12
SCHQ Schefferville 84.21 16 *eP* **P 04 14 33.0 +0.5**
comp=Z,14nm,0.8s
121A Cookes Peak, D 84.22 53 *eP* **P 04 14 34.0 +0.9**
comp=Z,11nm,1.0s
CADS Cadrg 84.27 327 *i* P **P 04 14 31.8 -1.2**
JAVS Javornik 84.39 327 *i* P **P 04 14 32.6 -1.1**
COWI Conover 84.40 33 *eP* **P 04 14 33.1 -0.5**
comp=Z,6.7nm,0.8s
MOTA Mosalm 84.49 329 *i* P **P 04 14 33.9 -0.3**
comp=Z,9.1nm,0.8s,SNR=5.6
RETA Reutte 84.51 329 *i* P **P 04 14 34.4 +0.1**
comp=Z,12nm,0.7s,SNR=6.9
PDG Podgorica 84.63 321⇓*iP* **P 04 14 34.9 +0.1**
SRIG Santa Rosalia 84.70 59 *eP* **P 04 14 34.7 -0.7**
comp=Z,19nm,0.3s
BFO Black Forest 84.78 331 *eP* **P 04 14 35.5 0.0**
BFO pmax pmax
comp=Z,16nm,0.9s
BFO Black Forest 84.78 331 *eP* **P 04 14 35.5 0.0**
comp=Z,16nm,0.9s
DAVA Damuels 85.03 330 *i* P **P 04 14 36.8 -0.1**
comp=Z,14nm,0.8s,SNR=9.1
KARP Karpathos 85.32 312 *eP* **P 04 14 38.0 -0.5**
comp=Z,11nm,0.9s
FUORN Ofenpass-Fuorn 85.41 329 *eP* **P 04 14 39.2 +0.2**
comp=Z,24nm,0.7s
AGG Agios Georgios 85.56 317 *eP* **P 04 14 38.6 -1.0**
AGG pmax pmax
comp=Z,13nm,0.7s
AGG Agios Georgios 85.56 317 *eP* **P 04 14 38.6 -1.0**
comp=Z,13nm,0.7s
TUE Stuetta 85.90 330 *eP* **P 04 14 40.8 -0.6**
comp=Z,7.6nm,0.9s
MNTX Cornudas Mount 86.29 52 *eP* **P 04 14 44.1 +0.8**
comp=Z,4.6nm,1.0s
MSTX Muleshoe 86.32 49 *eP* **P 04 14 44.1 +0.5**
comp=Z,6.1nm,1.1s
AMTX Amarillo 86.33 48 *eP* **P 04 14 44.4 +0.8**
comp=Z,14nm,0.9s
JFWS Jewell Farm 86.39 36 *eP* **P 04 14 43.4 -0.2**
JFWS pmax pmax
comp=Z,10.0nm,1.0s
JFWS Jewell Farm 86.39 36 *eP* **P 04 14 43.4 -0.2**
comp=Z,10nm,1.0s
LAST Lasithi 86.57 313 *eP* **P 04 14 44.8 +0.1**
comp=Z,22nm,0.8s
SENIN Senin/Sane 86.80 331 *eP* **P 04 14 45.7 -0.1**
comp=Z,14nm,1.4s
IDI Anoyia 86.82 313 *eP* **P 04 14 44.0 -1.9**
comp=Z,10nm,0.7s
VLDQ Val d'Or 87.25 25 *eP* **P 04 14 47.0 -0.7**
comp=Z,19nm,1.1s
WMOK Wichita Mounta 88.11 46 *eP* **P 04 14 52.6 +0.5**
WMOK pmax pmax
comp=Z,6.0nm,0.9s
WMOK Wichita Mounta 88.11 46 *eP* **P 04 14 52.6 +0.5**
comp=Z,5.5nm,0.9s
TIP Timpagrande 88.32 321 *eP* **P 04 14 51.9 -1.2**
comp=Z,7.2nm,0.8s
HDIL Hopedale 88.68 37 *eP* **P 04 14 55.2 +0.6**
comp=Z,27nm,1.0s
TX31 Lajitas Ar. Si 88.98 53 *eP* **P 04 14 56.8 +0.4**
TXAR Lajitas Array 88.98 53 P **P 04 14 57.0 +0.6**
comp=Z,2.9nm,0.8s,baz=294,slow=3.2,SNR=38
TXAR Lajitas Array 88.98 53 P **P 04 14 57.0 +0.6**
TXAR pmax pmax
comp=Z,3.0nm,0.8s
CEL Celeste 89.46 321 *eP* **P 04 14 57.8 -0.6**
comp=Z,18nm,0.8s
HHAR Hobbs 89.63 42 *eP* **P 04 14 59.3 +0.1**
comp=Z,5.2nm,0.9s
TRQ Mont Tremblant 89.86 25 *eP* **P 04 15 00.3 +0.2**
JCT Junction City 90.56 50 *eP* **P 04 15 03.4 -0.3**
JCT pmax pmax
comp=Z,5.0nm,0.7s
JCT Junction City 90.56 50 *eP* **P 04 15 03.4 -0.3**
comp=Z,4.8nm,0.7s
OLIL Olney 90.68 37 *eP* **P 04 15 05.2 +1.2**
comp=Z,22nm,1.1s
PBMO Poplar Bluff 91.07 40 *eP* **P 04 15 06.4 +0.6**
comp=Z,9.9nm,0.9s
MIAR Mount Ida 91.14 43 *eP* **P 04 15 06.7 +0.5**
MIAR pmax pmax
comp=Z,10.0nm,0.8s
MIAR Mount Ida 91.14 43 *eP* **P 04 15 06.7 +0.5**
comp=Z,9.9nm,0.8s
X201 Greenbrier Sit 91.22 42 *eP* **P 04 15 06.7 +0.1**
comp=Z,11nm,0.9s
X301 Greenbrier Sit 91.24 42 *eP* **P 04 15 06.8 +0.1**
comp=Z,18nm,1.6s
WHAR Wooly Hollow 91.26 42 *eP* **P 04 15 07.0 +0.2**
comp=Z,15nm,0.8s
MMNY Mt. Morris Dam 91.72 28 *eP* **P 04 15 09.7 +0.9**
WLAR White Oak Lake 92.04 43 *eP* **P 04 15 11.4 +1.0**
comp=Z,19nm,1.0s
SWET Sewanee 94.53 38 *eP* **P 04 15 22.2 +0.2**
comp=Z,1.8nm,0.9s
TKL Tuckaleechee C 95.19 36 LR LR 05 03 16.9
comp=Z,37nm,18.1s,slow=39
ES19 SONSECA Array 96.66 334 *eP* **P 04 15 31.9 +0.3**
ESDC Sonseca Array 96.71 334 P **P 04 15 31.5 -0.3**
comp=Z,0.4nm,0.5s,baz=17,slow=4.4,SNR=5.2
ESDC LR LR 05 04 11.8
comp=Z,113nm,19.9s,baz=45,slow=38
TORD Torodi Ar. Bea 117.11 316 PKP **PKPdf 04 20 45.1 -1.8**
comp=Z,0.4nm,0.7s,baz=42,slow=2.0,SNR=7.3
LSZ Lusaka 118.14 272 *e*PKIKP **PKPdf 04 20 48.5 -0.4**
LSZ Lusaka 118.14 272 *e*PKPdf **PKPdf 04 20 48.5 -0.4**
SNAA Sanae 141.88 197 PKP PKPpre 04 21 26.4
SNAA Sanae 141.88 197 *e*PKHKP PKPpre 04 21 26.3
SNAA Sanae 141.88 197 *e*PKPpre PKPpre 04 21 26.3
LVC Limon Verde 149.19 69 *e*PKPbc **PKPbc 04 21 51.0 +0.6**
LCO Las Campanas 151.20 82 *e*PKPbc **PKPbc 04 21 55.0 0.0**
PLCA Paso Flores 154.56 106 PKPab **PKPab 04 22 18.3 +1.7**
comp=Z,3.4nm,0.9s,baz=275,slow=6.7,SNR=4.5
BDFB Brasilia 155.93 25 PKPab **PKPab 04 22 25.0 +2.1**

*ISK **07** 04:07:36.5,37˚.38N×36˚.37E, h8km, MD2.7*
*DDA **07** 04:07:36.1,37˚.59N×36˚.33E, h6km, Ml2.2*
*ISCJB **07** 04:07:37.8±0.6,37˚.52N±0˚.05×36˚.36E±0˚.04, h10km, Error ellipse: s-maj=7.2km s-min=4.0km az=20.7*
*CSEM **07** 04:07:37.1±0.1,37˚.38N×36˚.37E, h10km, ML2.2, Error ellipse: s-maj=3.1km s-min=2.2km az=172.0*
ISC 07 04:07:35.7±0.9,**37.46N**±0.03×**36.36E**±0.03,**h10**km,**n17,**
σ1°**27**/25,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
ANDN	**Andirin**	**0.12**	**354**	*i* P	**Pg**		**04 07 37.4**	**-1.3**
ANDN				*i* S	**Sg**		**04 07 38.2**	**-2.7**
ANDN	**Andirin**	**0.12**	**354**	P	**Pg**		**04 07 37.4**	**-1.3**
ANDN				S	**Sg**		**04 07 38.2**	**-2.7**
KAMA	**Osmaniye**	**0.36**	**138**	*i* P	**Pn**		**04 07 46.6**	**-0.5**
KAMA				*i* S	**Sb**		**04 07 52.5**	**+2.4**
KOZT	**Kozan**	**0.43**	**273**	*e*PG	**Pb**		**04 07 45.6**	**+0.3**
KOZT				*e*SG	**Sb**		**04 07 52.4**	**+0.6**
KOZT	**Kozan**	**0.43**	**273**	*e*Pg	**Pb**		**04 07 45.6**	**+0.3**
KOZT				*e*Sg	**Sb**		**04 07 52.4**	**+0.6**
KMRS	**Kahramanmaras**	**0.43**	**83**	*e*PG	**Pb**		**04 07 45.6**	**+0.2**
KMRS				*e*SG	**Sb**		**04 07 52.1**	**+0.1**
KMRS	**Kahramanmaras**	**0.43**	**83**	*e*Pg	**Pb**		**04 07 45.6**	**+0.2**
KMRS				*e*Sg	**Sb**		**04 07 52.1**	**+0.1**
HCB	**Kahramanmara¯**	**0.45**	**104**	*i* P	**Pn**		**04 07 47.2**	**-1.0**
HCB				*i* S	**Sb**		**04 07 53.9**	**+1.4**
SARI	**SarD1z-Kayseri**	**0.95**	**3**	*e*PG	**Pn**		**04 07 56.8**	**+1.5**
TAHT	**Tahtakopru-Hat**	**1.09**	**188**	*e*PG	**Pg**		**04 07 56.6**	**0.0**
TAHT	**Tahtakopru-Hat**	**1.09**	**188**	*e*Pg	**Pg**		**04 07 56.6**	**0.0**
DARE	**Darende-Malaty**	**1.42**	**38**	*e*PN	**Pg**		**04 08 04.0**	**+1.0**
DARE	**Darende-Malaty**	**1.42**	**38**	*e*Pn	**Pg**		**04 08 04.0**	**+1.0**
BNN	**Bunyan**	**1.45**	**344**	*e*PN	**Pg**		**04 08 04.8**	**+1.3**
BNN	**Bunyan**	**1.45**	**344**	*e*Pn	**Pg**		**04 08 04.8**	**+1.3**
NIG	**Nigde**	**1.53**	**296**	*e*PN	**Pg**		**04 08 05.4**	**+0.3**
NIG	**Nigde**	**1.53**	**296**	*e*Pn	**Pg**		**04 08 05.4**	**+0.3**

*IDC **07** 04:19:59.6±0.6,29˚.25S×176˚.18W, h0km, mb4.5/13, mb1 4.7/14, mb1mx4.5/26, mbtmp4.4/14, ML3.6/1, MS3.5/1, Ms1 3.5/1, ms1mx2.9/25, Error ellipse: s-maj=22.1km s-min=16.1km az=168.0*
*ISCJB **07** 04:20:01.7±0.3,29˚.54S±0˚.06×176˚.38W±0˚.06, h21km, mb4.8/43, MS4.4/3, Error ellipse: s-maj=9.1km s-min=6.6km az=149.2*
*NEIC **07** 04:20:01.3±0.2,29˚.32S×176˚.30W, h10km, mb4.9/30, Error ellipse: s-maj=9.8km s-min=6.8km az=153.0*
ISC 07 04:20:03.1±0.4,**29˚.57S**±0˚.06×**176˚.30W**±0˚.06,**h21**km,**n89,**
σ2**°08**/95,**mb4.8**/43,**MS4.7**/3,**2D, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.45**	**282**		Pn		**Pb**	**04 20 29.8**	**+0.5**
	273nm,0.3s,baz=110,slow=6.7,SNR=16							
RAO					Sn		**Sb**	**04 20 50.8**	**+3.5**
	948nm,0.3s,baz=93,slow=22,SNR=19							
RAO	**Raoul Island**	**1.45**	**282**		*e*Pn		**Pn**	**04 20 27.9**	**-0.1**
RAO					*e*Sn		**Sn**	**04 20 42.4**	**-3.9**
URZ	**Urewera**	**10.25**	**211**		Pn		**Pn**	**04 22 25.7**	**-3.2**
	1.0nm,0.3s,baz=266,slow=3.8,SNR=8.7							
URZ					Sn		**Sn**	**04 24 22.3**	**-0.8**
	2.6nm,0.3s,baz=244,slow=23,SNR=9.8							
URZ	**Urewera**	**10.25**	**211**		*e*Pn		**Pn**	**04 22 26.2**	**-2.7**
URZ					*e*Sn		**Sn**	**04 24 22.6**	**-0.5**
KHZ	**Kahutara**	**15.22**	**210**		*e*Pn		**Pn**	**04 23 38.2**	**+1.7**
	125nm,0.9s							
KHZ					*e*S		**Sn**	**04 26 15.3**	**-9.1**
OXZ	**Oxford**	**16.61**	**211**		*e*Pn		**P**	**04 23 57.9**	**+1.1**
	39nm,0.6s							
DZM	**Mont Dzumac**	**17.23**	**292**		P		**Pn**	**04 24 02.7**	**+0.1**
	0.2nm,0.3s,baz=175,slow=9.3,SNR=2.5							
RPZ	**Rata Peaks**	**17.36**	**212**		P		**Pn**	**04 24 01.6**	**-2.4**
	1.3nm,0.3s,baz=59,slow=2.6,SNR=5.5							
PPT	**Papeete**	**27.18**	**70**		LR		LR	04 35 33.7	
	comp=Z,103nm,18.6s,baz=239,slow=35							
EIDS	**Eidsvold**	**29.19**	**270**		*e*P		**P**	**04 26 04.6**	**+1.4**
	24nm,1.4s							
CTA	**Charters Tower**	**35.14**	**277**		P		**P**	**04 26 55.5**	**+0.1**
	4.5nm,0.6s,baz=104,slow=12,SNR=8.4							
CTAO	**Charters Tower**	**35.14**	**277**		*e*P		**P**	**04 26 55.5**	**+0.1**
	36nm,0.7s							
STKA	**Stephens Creek**	**36.11**	**255**		P		**P**	**04 27 04.7**	**+1.0**
	12nm,0.8s,baz=103,slow=8.9,SNR=15							
STKA	**Stephens Creek**	**36.11**	**255**		*e*P		**P**	**04 27 04.8**	**+1.2**
COEN	**Coen**	**40.49**	**284**		*e*P		**P**	**04 27 40.6**	**0.0**
	9.2nm,0.8s							
AS01	**Alice Springs**	**44.60**	**265**		*e*P		**P**	**04 28 13.0**	**-1.0**
ASAR	**Alice Springs**	**44.64**	**265**		P		**P**	**04 28 13.3**	**-1.1**
	3.2nm,0.6s,baz=98,slow=7.7,SNR=43							
WB2	**Warramunga Arr**	**45.54**	**270**		*e*P		**P**	**04 28 21.1**	**-0.5**
	12nm,0.8s							
WRAB	**Tennant Creek**	**45.55**	**270**		*e*P		**P**	**04 28 20.4**	**-1.2**
	9.9nm,0.8s							
WRA	**Warramunga Arr**	**45.55**	**270**		P		**P**	**04 28 20.4**	**-1.3**
	10nm,0.9s,baz=109,slow=7.8,SNR=29							
SBA	**Scott Base**	**48.98**	**185**		*e*P		**P**	**04 28 50.6**	**+3.0**
	7.6nm,1.0s							
VNDA	**Vanda**	**49.07**	**186**		P		**P**	**04 28 51.7**	**+3.5**
	2.7nm,0.9s,baz=9.6,slow=7.0,SNR=14							
FITZ	**Fitzroy Crossi**	**53.85**	**268**		*e*P		**P**	**04 29 24.6**	**-0.2**
CASY	**Casey**	**56.56**	**208**		*e*P		**P**	**04 29 44.7**	**+1.0**
	11nm,0.8s							
QSPA	**South Pole Qui**	**60.54**	**180**		*e*P		**P**	**04 30 13.7**	**+2.1**
	12nm,0.9s							
MAW	**Mawson**	**73.60**	**200**		P		**P**	**04 31 37.0**	**+2.7**
	4.0nm,0.7s,baz=130,slow=5.4,SNR=5.2							
KKM	**Kota Kinabalu**	**73.72**	**287**		*e*P		**P**	**04 31 35.7**	**-0.3**
	5.9nm,0.6s							
SYO	**Syowa Base**	**78.25**	**192**⇓		*e*P		**P**	**04 32 00.6**	**-0.2**
SYO	**Syowa Base**	**78.25**	**192**⇓		*e*pP		**P**	**04 32 04.6**	**+3.8**
MJAR	**Matsushiro Arr**	**78.42**	**324**		P		**P**	**04 32 00.6**	**-1.6**
	0.8nm,0.3s,baz=178,slow=5.0,SNR=3.4							
SNAA	**Sanae**	**78.94**	**178**		*e*P		**P**	**04 32 04.9**	**+0.2**
	230nm,1.0s							
SSLB	**Suanglung**	**80.30**	**304**		*e*P		**P**	**04 32 11.1**	**-1.6**
	13nm,0.6s							
KSRS	**Korea Array**	**84.69**	**319**		P		**P**	**04 32 36.2**	**+1.0**
	3.6nm,0.9s,baz=138,slow=5.5,SNR=9.3							
KSAR	**Wonju Array Be**	**84.70**	**319**		P		**P**	**04 32 36.2**	**+1.0**
KS01	**Wonju Array Si**	**84.72**	**319**		*e*P		**P**	**04 32 36.2**	**+0.8**
CMB	**Columbia Colle**	**85.16**	**41**		*e*P		**P**	**04 32 37.5**	**-0.3**
	39nm,1.2s							
AFDM	**Forest Hills D**	**85.46**	**40**		*e*P		**P**	**04 32 40.5**	**+1.3**
	2.6nm,0.9s							
IPM	**Ipoh**	**85.83**	**277**		*e*P		**P**	**04 32 40.9**	**-0.7**
	13nm,0.9s							
LDFC	**Landfair**	**86.36**	**46**		*e*P		**P**	**04 32 44.3**	**+0.5**
	29nm,1.5s							
KULM	**Kulim**	**86.56**	**278**		*e*P		**P**	**04 32 44.5**	**-0.7**
	12nm,1.0s							
PSI	**Prapat**	**86.83**	**275**		*e*P		**P**	**04 32 45.1**	**-1.6**
	15nm,1.0s							
Y14A	**Wickenburg**	**86.98**	**48**		*e*P		**P**	**04 32 46.8**	**0.0**
GSI	**Gunungsitoli**	**87.26**	**273**		*e*P		**P**	**04 32 48.9**	**+0.3**
	33nm,0.9s							
USRK	**Ussuriysk Ar.**	**87.30**	**326**		P		**P**	**04 32 47.7**	**-0.2**
	3.0nm,0.8s,baz=107,slow=3.2,SNR=9.3							
TUC	**Tucson**	**87.44**	**50**		*e*P		**P**	**04 32 48.6**	**-0.5**
	9.4nm,1.2s							
X16A	**Lo Mia Camp, P**	**88.29**	**48**		*e*P		**P**	**04 32 53.7**	**+0.5**
	3.8nm,0.8s							
U15A	**North Rim**	**88.99**	**46**		*e*P		**P**	**04 32 57.0**	**+0.3**
WUAZ	**Wupatki**	**89.01**	**48**		*e*P		**P**	**04 32 56.9**	**+0.3**
	4.8nm,1.0s							
KNB	**Kanab**	**89.02**	**46**		*e*P		**P**	**04 32 57.2**	**+0.6**
	3.8nm,0.9s							
MTPU	**Mount Pierson**	**90.06**	**45**		*e*P		**P**	**04 33 02.3**	**+0.6**
	5.8nm,1.1s							
CN2	**Changchun**	**90.38**	**322**		*e*P		P	04 33 15.2	+13
TXAR	**Lajitas Array**	**90.70**	**56**		P		**P**	**04 33 03.6**	**-1.0**
	0.6nm,0.8s,baz=217,slow=8.4,SNR=7.5							
MNTX	**Cornudas Mount**	**90.80**	**54**		*e*P		**P**	**04 33 03.5**	**-1.3**
	1.7nm,0.9s							
ANMO	**Albuquerque**	**91.91**	**50**		*e*P		**P**	**04 33 09.6**	**-0.6**
	2.6nm,1.0s							
ENH	**Enshi**	**92.36**	**304**		*e*P		**P**	**04 33 12.7**	**+0.6**
	7.5nm,0.8s							
GYA	**Guiyang**	**92.43**	**299**		P		**P**	**04 33 14.0**	**+1.3**
GYA					pP		pP	04 33 20.0	+0.3
GYA					PP		**PP**	**04 36 57.2**	**+3.1**
GYA	**Guiyang**	**92.43**	**299**		SKS		**SKSac**	**04 43 45.8**	**+0.6**
GYA	**Guiyang**	**92.43**	**299**		S		**S**	**04 44 14.1**	**-1.5**
GYA	**Guiyang**	**92.43**	**299**		SS		SS	04 50 28.6	+1.1
GYA					pmax		pmax		
	comp=Z,20nm,1.0s								
GYA					pmax		pmax		
	comp=Z,120nm,7.2s								
GYA					LR		LR		
	comp=N,510nm,22.0s								
GYA					LR		LR		
	comp=E,480nm,21.5s								
GYA					LR		LR		
	comp=

comp=Z,78nm,4.8s
HHC LR LR
comp=N,100nm,12.3s
HHC LR LR
comp=E,250nm,13.6s
HHC LR LR
comp=Z,110nm,17.3s
IL1 Eielson Array 96.80 12 *e*P **P 04 33 29.7 -1.9**
ILAR Eielson Array 96.80 12 P **P 04 33 30.1 -1.5**
comp=Z,1.5nm,0.9s,baz=217,slow=5.7,SNR=13
CD2 Chengdu 96.90 302 *e*P **P 04 33 32.8 -0.2**
MKAR Makanchi Array 118.37 310 PKP **PKPdf 04 38 47.4 -1.3**
comp=Z,1.4nm,0.8s,baz=72,slow=4.0,SNR=8.3
ZALV Zalesovo Beam 118.39 318 PKP **PKPdf 04 38 46.5 -2.0**
comp=Z,0.7nm,0.5s,baz=114,slow=1.8,SNR=3.7
KSH Kashi 121.09 301 *e*PKP **PKPdf 04 38 54.8 +0.5**
KSH *es*PKP 04 39 08.6
KSH *e*PP **PP 04 40 31.7 +7.0**
KSH SKS **SKSdf 04 46 01.9 -3.3**
KSH SKKS **SKKSac 04 47 20.8 -1.9**
KSH Kashi 121.09 301 SS SS 04 57 03.3 +6.6
KSH AMB AMB
comp=Z,61nm,7.4s
KSH LR LR
comp=N,140nm,8.8s
KSH LR LR
comp=E,120nm,6.0s
KSH LR LR
comp=Z,96nm,6.8s
KURK Kurchatov 121.54 314 *e*PKPdf **PKPdf 04 38 52.8 -1.8**
EKS2 Erkin-Say 123.40 304 *e*PKPdf **PKPdf 04 38 57.7 -0.9**
FRB Frobisher Bay 123.91 31 PKP **PKPdf 04 38 57.2 -1.5**
comp=Z,5.6nm,0.8s,baz=40,slow=3.7,SNR=3.1
KKAR Karatay Array 125.84 304 *e*PKPdf **PKPdf 04 39 01.5 -1.6**
BRVK Borovoye 126.90 316 *e*PKPdf **PKPdf 04 39 04.1 -0.8**
FINES FINESS Array B 144.85 341 PKP **PKPab 04 39 35.5 -1.3**
comp=Z,6.3nm,0.8s,baz=60,slow=4.6,SNR=23
KBZ Khabaz 145.85 305 PKPbc **PKPdf 04 39 40.5 +0.5**
comp=Z,2.2nm,0.6s,baz=50,slow=6.3,SNR=7.8
NB2 NORSAR Subarra148.13 353 PKP **PKPdf 04 39 44.8 +1.4**
comp=Z,3.4nm,0.9s,baz=15,slow=2.6
NOA NORSAR Array B148.13 353 PKPbc **PKPbc 04 39 45.4 -1.2**
comp=Z,5.1nm,0.8s,baz=14,slow=4.4,SNR=14
HFS Hagfors 148.70 350 PKP **PKPdf 04 39 43.7 -0.5**
comp=Z,6.9nm,0.8s,baz=298,slow=3.2,SNR=14
HFS PKPbc **PKPbc 04 39 46.7 -1.4**
comp=Z,6.9nm,0.8s,baz=22,slow=1.6,SNR=14
KONO Kongsberg 149.65 354 *e*PKPbc **PKPbc 04 39 49.2 -1.2**
AKASG Malin Array Be 151.50 325 PKPbc **PKPbc 04 39 54.1 -1.0**
comp=Z,11nm,0.8s,baz=46,slow=3.0,SNR=26
KIEV Kiev 151.51 325 *e*PKPbc **PKPbc 04 39 53.7 -1.4**
BRTR Keskin Array B 153.48 300 PKPbc **PKPbc 04 39 59.5 -0.6**
comp=Z,1.7nm,1.0s,baz=189,slow=3.1,SNR=7.1
TORD Torodi Ar. Bea 163.56 173 PKPab **PKPab 04 40 56.6 +0.4**
comp=Z,2.0nm,0.7s,baz=189,slow=4.1,SNR=11

*IDC **07** 04:25:49.3±0.9,29.°60S×176.°84W, h0km, mb4.2/4, mb1 4.3/6, mb1mx4.0/19, mbtmp4.2/6, ML3.7/2, MS3.8/1, Ms1 3.8/1, ms1mx3.0/23, Error ellipse: s-maj=25.3km s-min=20.4km az=5.0*
*ISCJB **07** 04:25:51.0±1.5,29.°74S±0.°07×176.°7W±0.°1, h31km, mb4.1/4, MS3.9/1, Error ellipse: s-maj=18.4km s-min=9.7km az=164.8*
ISC 07 04:25:53.3±0.9,29.°61S±0.°10×176.°8W±0.°1, h31km, n16, σ1§14/18, mb4.2/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.06**	**290**	Pn		**Pn**		**04 26 11.2**	**-0.9**
	674nm,0.3s,baz=40,slow=19,SNR=8.2								
RAO				Sn		**Sb**		**04 26 27.4**	**+0.7**
	2μm,0.3s,baz=140,slow=22,SNR=10								
RAO				LR		LR		04 26 37.6	
	comp=Z,950nm,20.4s,baz=112,slow=48								
URZ	**Urewera**	**10.01**	**209**	Pn		**Pn**		**04 28 13.3**	**-1.6**
	0.3nm,0.3s,baz=264,slow=5.4,SNR=2.5								
URZ				Sn		**Sn**		**04 30 06.4**	**+0.4**
	2.2nm,0.3s,baz=46,slow=24,SNR=6.9								
RPZ	**Rata Peaks**	**17.10**	**211**	P		**Pn**		**04 29 50.2**	**+0.3**
	0.5nm,0.3s,baz=254,slow=5.7,SNR=2.6								
STKA	**Stephens Creek**	**35.70**	**256**	P		**P**		**04 32 50.8**	**+1.8**
	2.1nm,0.7s,baz=58,slow=13,SNR=4.0								
ASAR	**Alice Springs**	**44.22**	**266**	P		**P**		**04 33 59.2**	**-0.7**
	1.5nm,0.6s,baz=103,slow=6.4,SNR=13								
WRA	**Warramunga Arr**	**45.14**	**271**	P		**P**		**04 34 05.8**	**-1.4**
	2.2nm,0.6s,baz=110,slow=8.1,SNR=29								
PMSA	**Palmer Station**	**72.54**	**156**	LR		LR		05 03 36.1	
	comp=Z,65nm,21.3s,baz=50,slow=31								
USRK	**Ussuriysk Ar.**	**87.10**	**326**	P		**P**		**04 38 36.3**	**+0.5**
	1.1nm,0.7s,baz=151,slow=5.5,SNR=4.0								
MKAR	**Makanchi Array**	**118.08**	**310**	PKP		**PKPdf**		**04 44 36.7**	**-0.2**
	0.2nm,0.5s,baz=64,slow=5.1,SNR=2.4								
FINES	**FINESS Array B**	**144.76**	**341**	PKP		**PKPab**		**04 45 24.6**	**-0.6**
	2.9nm,0.7s,baz=58,slow=4.7,SNR=11								
KBZ	**Khabaz**	**145.54**	**305**	PKPbc		**PKPab**		**04 45 29.6**	**+0.9**
	1.2nm,0.6s,baz=289,slow=1.5,SNR=4.3								
NB2	**NORSAR Subarra148.12**		**353**	PKP		**PKPbc**		**04 45 34.3**	**-1.0**
	comp=Z,2.9nm,1.2s,baz=12,slow=3.3								
NOA	**NORSAR Array B148.12**		**353**	PKPbc		**PKPbc**		**04 45 34.7**	**-0.7**
	comp=Z,0.7nm,0.8s,baz=36,slow=18,SNR=2.8								
HFS	**Hagfors**	**148.67**	**350**	PKP		**PKPbc**		**04 45 35.1**	**-1.6**
	comp=Z,1.6nm,0.9s,baz=279,slow=39,SNR=4.8								
HFS				PKPbc		**PKiKP**		**04 45 39.0**	**+0.9**
	comp=Z,1.3nm,0.5s,baz=45,slow=4.4,SNR=9.1								
AKASG	**Malin Array Be**	**151.30**	**325**	PKPbc		**PKPbc**		**04 45 43.2**	**-0.2**
	comp=Z,1.0nm,0.4s,baz=45,slow=3.1,SNR=8.6								
TORD	**Torodi Ar. Bea**	**163.55**	**175**	PKPab		**PKPab**		**04 46 46.8**	**+1.8**
	comp=Z,0.3nm,0.9s,baz=150,slow=1.2,SNR=2.9								

IDC 07 04:36:40.4±2.8, 29.°29S×175.°86W, h0km, mb3.6/2, mb1 3.8/2, mb1mx3.6/28, mbtmp3.6/2, Error ellipse: s-maj=220.4km s-min=40.1km az=176.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.80**	**271**	Pn		Pb		04 37 13.8	-0.5
	134nm,0.3s,baz=54,slow=22,SNR=2.6								
RAO				Sn		Sn		04 37 35.7	-0.5
	195nm,0.3s,baz=167,slow=23,SNR=2.7								
ASAR	**Alice Springs**	**45.04**	**265**	P		P		04 44 58.0	-0.2
	0.2nm,0.3s,baz=109,slow=7.9,SNR=3.3								
WRA	**Warramunga Arr**	**45.94**	**270**	P		P		04 45 05.1	-0.3
	0.4nm,0.2s,baz=109,slow=8.0,SNR=6.0								
FINES	**FINESS Array B**	**144.71**	**342**	PKP		PKPbc		04 56 17.7	+0.4
	2.3nm,0.9s,baz=48,slow=2.8,SNR=5.0								

*ISCJB **07** 04:38:32.3±0.8,30.°1S±0.°1×176.°5W±0.°1, h21km, mb4.0/6, Error ellipse: s-maj=17.1km s-min=11.6km az=25.6*
*IDC **07** 04:38:36.2±7.8,29.°76S×176.°40W, h33km±55km, mb3.8/6, mb1 4.1/6, mb1mx3.8/28, mbtmp4.0/6, Error ellipse: s-maj=41.5km s-min=25.0km az=160.0*
ISC 07 04:38:33.8±0.8,29.°9S±0.°1×176.°45W±0.°09, h21km, n14, σ1§29/15, mb4.1/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.43**	**296**	Pn		**Pb**		**04 39 00.7**	**+1.0**
	340nm,0.3s,baz=60,slow=5.7,SNR=9.4								
RAO				Sn		**Sb**		**04 39 15.6**	**-1.8**
	408nm,0.3s,baz=137,slow=21,SNR=8.9								
URZ	**Urewera**	**9.90**	**211**	Pn		**Pn**		**04 40 53.1**	**-1.7**
	0.7nm,0.3s,baz=272,slow=5.4,SNR=3.8								
STKA	**Stephens Creek**	**35.90**	**256**	P		**P**		**04 45 34.5**	**+2.0**
	2.7nm,0.6s,baz=94,slow=11,SNR=5.6								
ASAR	**Alice Springs**	**44.48**	**266**	P		**P**		**04 46 44.4**	**+0.6**
	0.7nm,0.5s,baz=100,slow=6.5,SNR=11								
WRA	**Warramunga Arr**	**45.42**	**271**	P		**P**		**04 46 51.8**	**+0.5**
	2.8nm,0.6s,baz=110,slow=7.5,SNR=21								
PFO	**Pinyon Flats O**	**84.89**	**47**	P		**P**		**04 51 07.6**	**+0.3**
	2.3nm,0.9s,baz=224,slow=5.4,SNR=4.0								
TXAR	**Lajitas Array**	**90.99**	**57**	P		**P**		**04 51 36.2**	**-0.4**
	0.3nm,0.9s,baz=211,slow=6.3,SNR=3.4								
PDAR	**Pinedale Array**	**94.85**	**43**	P		**P**		**04 51 54.1**	**-0.2**
	0.2nm,0.5s,baz=216,slow=7.2,SNR=2.8								
FINES	**FINESS Array B**	**145.13**	**341**	PKPbc		**PKPdf**		**04 58 07.6**	**-1.3**
	1.9nm,0.5s,baz=72,slow=3.1,SNR=16								
KBZ	**Khabaz**	**145.93**	**305**	PKPbc		**PKPab**		**04 58 11.8**	**-0.2**
	0.7nm,0.4s,baz=9.7,slow=1.0,SNR=3.9								
NB2	**NORSAR Subarra148.44**		**353**	PKP		**PKPbc**		**04 58 17.1**	**-1.0**
	comp=Z,0.9nm,0.7s,baz=9.8,slow=2.9								
NOA	**NORSAR Array B148.44**		**353**	PKPbc		**PKPbc**		**04 58 17.1**	**-1.0**
	comp=Z,1.1nm,0.7s,baz=13,slow=4.4,SNR=4.4								
AKASG	**Malin Array Be**	**151.69**	**324**	PKPbc		**PKPbc**		**04 58 25.8**	**-0.5**
	comp=Z,1.7nm,0.5s,baz=46,slow=3.1,SNR=10								
TORD	**Torodi Ar. Bea**	**163.24**	**174**	PKPab		**PKPab**		**04 59 27.6**	**+2.0**
	comp=Z,2.5nm,0.9s,baz=198,slow=2.6,SNR=11								

*BJI **07** 04:40:14.2,29.°31S×175.°74W, h14km, mb5.4/42, mB5.6/33, Ms5.3/31, Ms7 4.9/29*
*NEIC **07** 04:40:15.1±2.0,29.°89S×176.°34W, h12km±12km, mb5.4/155, MS4.7/129, Error ellipse: s-maj=6.0km s-min=3.9km az=160.0*
*GCMT **07** 04:40:15.1±0.5,29.°43S×175.°85W, h28km, MW5.5/66, Moment Tensor Solution. s24,c27; s66,c92; Duration: 1§3 Moment tensor: Scale 10^17 Nm; Mrr-2.54±.17; Mθθ 0.97±.10; Mφφ 1.57±.10; Mrθ 0.41±.18; Mrφ 0.21±.05; Mθφ 0.00±.17; Best double couple: Mo2.11300×10^17 NP1: φs 205.00000°, δ 47.00000°, λ -81.00000°. NP2: φs 12.00000°, δ 44.00000°, λ -99.00000°. Principal axes: T 1.6410, Plg2.0000°, Azm288.0000°; N 0.9460, Plg6.0000°, Azm19.0000°; P -2.5860, Plg83.0000°, Azm183.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISCJB **07** 04:40:15.5±0.1,29.°97S±0.°04×176.°31W±0.°03, h24km, mb5.4/193, MS4.7/148 Error ellipse: s-maj=5.9km s-min=3.1km az=149.7*
*MOS **07** 04:40:17.0±0.9,29.°53S×176.°40W, h26km, mb5.5/53, MS4.7/19, Error ellipse: s-maj=10.0km s-min=8.4km az=61.9*
*IDC **07** 04:40:20.5±2.8,29.°60S×176.°42W, h44km±24km, mb4.8/20, mb1 4.9/20, mb1mx4.8/28, mbtmp5.0/20, MS4.2/12, Ms1 4.2/12, ms1mx4.1/19, Error ellipse: s-maj=17.0km s-min=15.1km az=77.0*
ISC 07 04:40:17.3±0.2, 29.°75S±0.°05×176.°31W±0.°04, h24km, n706, σ1§49/650, mb5.5/192, MS4.7/150, 26C-18D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.48**	**289**	P		**Pn**		**04 40 43.1**	**+0.6**
	735nm,0.3s,baz=154,slow=8.8,SNR=15								
RAO				S		**Sb**		**04 41 04.1**	**+1.5**
	3μm,0.3s,baz=74,slow=18,SNR=16								
RAO				LR		LR		04 41 28.7	
	comp=Z,10μm,19.8s,baz=154,slow=50								
RAO	**Raoul Island**	**1.48**	**289**	*e*P		**Pn**		**04 40 42.3**	**-0.2**
RAO				*e*				04 40 59.8	
RAO	**Raoul Island**	**1.48**	**289**	*e*Pn		**Pn**		**04 40 42.3**	**-0.2**
RAO				*e*Sn		**Sn**		**04 40 59.8**	**-1.3**
URZ	**Urewera**	**10.09**	**211**	P		**Pn**		**04 42 36.7**	**-3.9**
	3.8nm,0.3s,baz=254,slow=5.0,SNR=7.6								
URZ				S		**Sn**		**04 44 29.6**	**-3.5**
	17nm,0.3s,baz=119,slow=21,SNR=11								
URZ				LR		LR		04 46 43.9	
	comp=Z,1μm,19.9s,baz=28,slow=38								
URZ	**Urewera**	**10.09**	**211**	*e*Pn		**Pn**		**04 42 36.4**	**-4.2**
URZ				*e*Sn		**Sn**		**04 44 29.8**	**-3.3**
OUZ	**Omahuta**	**10.12**	**235**	*e*Pn		**Pn**		**04 42 40.0**	**-1.0**
BKZ	**Black Stump Fm**	**11.11**	**210**	*e*Pn		**Pn**		**04 42 53.0**	**-1.7**
BFZ	**Birch Farm**	**12.49**	**207**	*e*Pn		**Pn**		**04 43 11.5**	**-1.9**
BFZ				*e*Sn		**Sn**		**04 45 26.4**	**-5.3**
MSVF	**Nonsavu**	**13.02**	**335**	*e*P		**Pn**		**04 43 20.2**	**-0.7**
MSVF				pmax		pmax			
	comp=Z,55nm,1.0s								
MSVF	**Nonsavu**	**13.02**	**335**	*e*Pn		**Pn**		**04 43 20.0**	**-0.9**
SNZO	**South Karori**	**13.65**	**210**	*e*Pn		**Pn**		**04 43 26.5**	**-2.7**
SNZO				*e*Sn		**Sn**		**04 45 52.7**	**-7.4**
THZ	**Tophouse**	**14.83**	**213**	*e*Pn		**Pn**		**04 43 41.6**	**-3.8**
THZ				*e*Sn		**Sn**		**04 46 21.7**	**-7.3**
KHZ	**Kahutara**	**15.06**	**210**	*e*Pn		**Pn**		**04 43 44.1**	**-4.3**
KHZ				*e*Sn		Sn		04 46 21.8	-13
LTZ	**Lake Taylor**	**15.92**	**212**	*e*Pn		**Pn**		**04 43 56.8**	**-2.9**
	comp=Z,93nm,1.2s								
AFI	**Afiamalu**	**16.31**	**16**	P		**Pn**		**04 43 59.7**	**-5.2**
	comp=Z,2.6nm,0.3s,baz=236,slow=20,SNR=3.3								
AFI				LR		LR		04 52 39.8	
	comp=Z,119nm,18.8s,baz=182,slow=46								
OXZ	**Oxford**	**16.45**	**211**	*e*Pn		**Pn**		**04 44 03.0**	**-3.4**
	comp=Z,113nm,1.0s								
OXZ				*e*Sn		Sn		04 46 54.1	-14
RAR	**Rarotonga**	**17.17**	**64**	P		**Pn**		**04 44 12.3**	**-3.2**
	comp=Z,1.8nm,0.3s,baz=52,slow=18,SNR=5.8								
RAR				LR		LR		04 50 30.5	
	comp=Z,815nm,19.2s,baz=256,slow=36								
RAR	**Rarotonga**	**17.17**	**64**	*e*P		**Pn**		**04 44 14.7**	**-0.9**
RAR				pmax		pmax			
	comp=Z,167nm,1.2s								
RAR	**Rarotonga**	**17.17**	**64**	*e*Pn		**Pn**		**04 44 14.7**	**-0.9**
	comp=Z,167nm,1.2s								
RPZ	**Rata Peaks**	**17.20**	**212**	P		**Pn**		**04 44 10.9**	**-5.0**
	comp=Z,3.7nm,0.3s,baz=31,slow=3.4,SNR=9.8								
RPZ	**Rata Peaks**	**17.20**	**212**	*e*Pn		**Pn**		**04 44 11.3**	**-4.6**
DZM	**Mont Dzumac**	**17.28**	**292**	P		**P**		**04 44 20.9**	**+2.5**
	comp=Z,1.4nm,0.3s,baz=95,slow=14,SNR=10								
DZM				LR		LR		04 49 48.6	
	comp=Z,3μm,18.4s,baz=110,slow=33								
DZM	**Mont Dzumac**	**17.28**	**292**	*e*Pn		**P**		**04 44 19.7**	**+1.2**
	comp=Z,268nm,1.4s								
DZM				*e*LR		LR		04 48 30.9	
	comp=Z,7μm,26.9s								
DZM	**Mont Dzumac**	**17.28**	**292**	*e*Pn		**P**		**04 44 20.2**	**+1.8**
	comp=Z,476nm,2.0s								
ODZ	**Otahua Downs**	**18.42**	**210**	*e*P		**Pn**		**04 44 34.4**	**+3.5**
	comp=Z,116nm,1.2s								
FUNA	**Funafuti**	**21.53**	**348**	*e*P		**P**		**04 45 00.3**	**-4.4**
	comp=Z,176nm,1.0s								
TBI	**Tubuai**	**24.82**	**81**	*e*LQ		LQ		04 50 13.7	
	comp=Z,2μm,29.5s								
TBI				*e*LR		LR		04 51 30.4	
	comp=Z,3μm,28.2s,baz=251								
PPT2	**Papeete2**	**27.24**	**70**	*e*LQ		LQ		04 51 11.8	
	comp=Z,2μm,24.5s								
PPT2				*e*LR		LR		04 52 32.5	
	comp=Z,2μm,27.5s,baz=233								
PPT	**Papeete**	**27.25**	**70**	LR		LR		04 53 28.6	
	comp=Z,629nm,21.9s,baz=252,slow=29								
ARMA	**Armidale**	**27.70**	**260**	P		**P**		**04 46 06.7**	**+2.9**
	baz=28,SNR=5.6								
ARMA	**Armidale**	**27.70**	**260**	*e*P		**P**		**04 46 07.2**	**+3.4**
	comp=Z,61nm,1.5s								
MGCD	**Mangrove Creek**	**27.94**	**254**	P		**P**		**04 46 08.6**	**+2.8**
	baz=28								
EIDS	**Eidsvold**	**29.18**	**271**	P		**P**		**04 46 17.8**	**+0.9**
	baz=29,SNR=5.6								
EIDS	**Eidsvold**	**29.18**	**271**	*e*P		**P**		**04 46 17.1**	**+0.2**
	comp=Z,32nm,1.0s								
HNR	**Honiara**	**30.02**	**307**	LR		LR		04 57 44.3	
	comp=Z,398nm,19.6s,baz=150,slow=35								
RMQ	**Roma**	**30.91**	**267**	P		**P**		**04 46 34.6**	**+2.4**
	baz=31,SNR=7.4								
CMSA	**Cobar Meteorol**	**32.64**	**257**	P		**P**		**04 46 48.9**	**+1.6**
	baz=33,SNR=18								
QLP	**Quilpie**	**34.81**	**265**	P		**P**		**04 47 07.8**	**+1.5**
	baz=35,SNR=6.1								
CTA	**Charters Tower**	**35.16**	**277**	P		**P**		**04 47 10.0**	**+0.6**
	baz=35								
CTA	**Charters Tower**	**35.16**	**277**	P		**P**		**04 47 09.7**	**+0.3**
CTA				pmax		pmax			
	comp=Z,56nm,1.3s								
CTAO	**Charters Tower**	**35.16**	**277**	*e*P		**P**		**04 47 09.3**	**0.0**
CTAO				pmax		pmax			
	comp=Z,56nm,1.1s								
CTAO				MLR		MLR			
	comp=Z,2μm,20.0s								
CTAO	**Charters Tower**	**35.16**	**277**	*e*P		**P**		**04 47 09.3**	**0.0**
	comp=Z,56nm,1.1s								
CTAO				LR		LR			
	comp=Z,2μm,20.0s								
ARPS	**Mount Arapiles**	**35.47**	**247**	P		**P**		**04 47 13.3**	**+1.4**
	baz=36								
STKA	**Stephens Creek**	**36.05**	**256**	P		**P**		**04 47 17.5**	**+0.5**
	comp=Z,27nm,0.8s,baz=99,slow=11,SNR=24								
STKA				LR		LR		04 59 54.3	
	comp=Z,516nm,21.6s,baz=86,slow=33								
STKA	**Stephens Creek**	**36.05**	**256**	P		**P**		**04 47 17.6**	**+0.7**
	baz=36,SNR=22								
STKA	**Stephens Creek**	**36.05**	**256**	*e*P		**P**		**04 47 17.7**	**+0.7**
	comp=Z,7.1nm,1.0s								
RKT	**Rikitea**	**37.45**	**90**	*e*LR		LR		04 57 04.5	
	comp=Z,2μm,32.5s								
MTSU	**Mount Surprise**	**37.62**	**279**	P		**P**		**04 47 31.2**	**+0.7**
	baz=38,SNR=22								
HTT	**Hallett**	**38.09**	**253**	P		**P**		**04 47 35.2**	**+0.9**
	baz=38,SNR=9.2								
PMG	**Port Moresby**	**39.67**	**293**	PFAKE				**04 48 00.0**	**+12**
PMG				LR		LR			
	comp=Z,751nm,20.0s								
TAOE	**Nuku Hiva Isla**	**39.70**	**66**	*e*LR		LR		04 58 17.0	
	comp=Z,1μm,26.9s								
COEN	**Coen**	**40.52**	**284**	P		**P**		**04 47 54.4**	**-0.3**
	baz=41,SNR=9.7								
COEN	**Coen**	**40.52**	**284**	*e*P		**P**		**04 47 54.6**	**-0.1**
	comp=Z,20nm,0.9s								
BBOO	**Buckleboo**	**40.56**	**253**	P		**P**		**04 47 54.4**	**-0.4**
	baz=41,SNR=11								
QIS	**Mount Isa**	**40.74**	**273**	P		**P**		**04 47 57.2**	**+0.8**
	baz=41,SNR=4.4								
ASAR	**Alice Springs**	**44.61**	**266**	P		**P**		**04 48 26.6**	**-1.3**
	comp=Z,9.6nm,0.8s,baz=109,slow=7.9,SNR=26								
ASAR				PcP		**PP**		**04 50 11.5**	**-0.7**
	comp=Z,2.2nm,0.5s,baz=115,slow=3.5,SNR=4.8								
ASAR				LR		LR		05 05 54.3	
	comp=Z,1μm,20.8s,baz=114,slow=34								
WB2	**Warramunga Arr**	**45.53**	**271**	*e*P		**P**		**04 48 33.9**	**-1.4**
	comp=Z,161nm,1.9s								
WRAB	**Tennant Creek**	**45.54**	**271**	*i* P		**P**		**04 48 33.9**	**-1.4**
WRAB				pmax		pmax			
	comp=Z,212nm,2.5s								
WRAB	**Tennant Creek**	**45.54**	**271**	*e*P		**P**		**04 48 34.2**	**-1.1**
	comp=Z,24nm,0.8s								
WRAB				LR		LR			
	comp=Z,694nm,21.0s								
WRA	**Warramunga Arr**	**45.55**	**271**	P		**P**		**04 48 33.8**	**-1.6**
	comp=Z,21nm,0.6s,baz=110,slow=7.7,SNR=81								
FORT	**Forrest**	**47.63**	**254**	P		**P**		**04 48 50.8**	**-0.8**
	baz=48,SNR=13								
FORT	**Forrest**	**47.63**	**254**	*e*P		**P**		**04 48 50.1**	**-1.5**
	comp=Z,313nm,0.8s								
SBA	**Scott Base**	**48.80**	**185**	*e*P		**P**		**04 49 03.9**	**+3.9**
SBA				pmax		pmax			
	comp=Z,45nm,1.1s								
SBA				MLR		MLR			
	comp=Z,505nm,19.0s								
SBA	**Scott Base**	**48.80**	**185**	*e*P		**P**		**04 49 03.9**	**+3.9**
	comp=Z,45nm,1.1s								
SBA				LR		LR			
	comp=Z,505nm,19.0s								
VNDA	**Vanda**	**48.90**	**186**	P		**P**		**04 49 03.0**	**+2.4**
	comp=Z,11nm,1.2s,baz=5.3,slow=7.4,SNR=17								
VNDA				PcP		**PcP**		**04 50 26.5**	**+1.7**
	comp=Z,5.9nm,1.0s,baz=0.3,slow=5.4,SNR=2.5								
VNDA				LR		LR		05 06 08.3	
	comp=Z,152nm,21.0s,baz=28,slow=32								
VNDA	**Vanda**	**48.90**	**186**	*e*P		**P**		**04 49 03.5**	**+2.8**
VNDA								04 50 26.5	
VNDA				pmax		pmax			
	comp=Z,24nm,1.2s								
VNDA	**Vanda**	**48.90**	**186**	*e*P		**P**		**04 49 03.5**	**+2.8**
	comp=Z,24nm,1.2s								
VNDA				PcP		**PcP**		**04 50 26.5**	**+1.7**
WRKA	**Warakurna**	**49.02**	**261**	P		**P**		**04 49 01.6**	**-0.8**
	baz=49,SNR=5.1								
KNRA	**Kununurra**	**52.12**	**273**	P		**P**		**04 49 25.8**	**-0.1**
	baz=52								
KMBL	**Kambalda**	**52.62**	**252**	P		**P**		**04 49 28.3**	**-1.1**
	baz=53								
FITZ	**Fitzroy Crossi**	**53.83**	**269**	PKP2ab		**P'P'ab**		**05 20 31.1**	**-5.8**
	comp=Z,3.6nm,0.8s,baz=275,slow=8.1,SNR=3.5								
FITZ	**Fitzroy Crossi**	**53.83**	**269**	P		**P**		**04 49 37.8**	**-0.7**
	baz=54,SNR=17								
FITZ	**Fitzroy Crossi**	**53.83**	**269**	*e*P		**P**		**04 49 37.0**	**-1.5**
	comp=Z,27nm,0.9s								
FITZ				P'P'ab		**P'P'ab**		**05 20 31.1**	**-5.8**
KIP	**Kipapa**	**53.84**	**21**	*i* P		**P**		**04 49 37.4**	**-0.9**
KLBR	**Kellerberrin**	**55.95**	**250**	P		**P**		**04 49 52.3**	**-1.4**
	baz=56,SNR=6.9								
NWAO	**Narrogin (SRO)**	**56.00**	**248**	PFAKE				04 50 10.0	+16
NWAO				LR		LR			
	comp=Z,353nm,19.0s								
CASY	**Casey**	**56.40**	**208**	*e*P		**P**		**04 49 57.2**	**+0.9**
	comp=Z,44nm,1.1s								
MEEK	**Meekatharra**	**56.76**	**256**	P		**P**		**04 49 58.6**	**-1.0**
	baz=57,SNR=3.7								
GUMO	**Guam**	**57.07**	**313**	PFAKE				04 50 10.0	+8.3
GUMO				LR		LR			
	comp=Z,485nm,20.0s								
MIDW	**Midway**	**57.65**	**359**	PFAKE				04 50 20.0	+15
MIDW				LR		LR			
	comp=Z,342nm,22.0s								
MBWA	**Marble Bar**	**57.76**	**263**	*e*P		**P**		**04 50 04.9**	**-1.7**
	comp=Z,65nm,0.9s								
MBWA				LR		LR			
	comp=Z,726nm,21.0s								
MORW	**Morawa**	**58.12**	**252**	P		**P**		**04 50 07.5**	**-1.6**
	baz=58,SNR=4.8								
QSPA	**South Pole Qui**	**60.36**	**180**	*e*P		**P**		**04 50 25.

QZH **Quanzhou** 82.80 304 S **S** 05 02 48.9 -7.6
QZH pmax pmax
comp=Z,140nm,1.1s
QZH pmax pmax
comp=Z,650nm,2.9s
QZH LR LR
comp=N,680nm,16.5s
QZH LR LR
comp=E,270nm,11.2s
QZH LR LR
comp=Z,390nm,9.4s
LPIG **La Paz** 82.95 57 P **P** 04 52 42.6 +2.1
comp=Z,4.8nm,0.3s,baz=270,slow=18,SNR=4.1
SCI2 **San Clemente I** 82.97 46 P **P** 04 52 40.7 +0.4
baz=228
SLBS **Sierra La Lagu** 82.97 58 eP **P** 04 52 41.2 +0.5
comp=Z,98nm,1.8s
SCZ2 **Santa Cruz Isl** 82.98 44 P **P** 04 52 41.2 +0.8
baz=227
SBC **Santa Barbara** 83.24 44 P **P** 04 52 42.1 +0.5
baz=227
CIS **Catalina Islan** 83.33 46 P **P** 04 52 42.1 -0.1
baz=228
BLG **Laguna Peak, P** 83.40 45 P **P** 04 52 42.9 +0.3
baz=227
PKM **Mcpherson Peak** 83.48 44 P **P** 04 52 43.4 +0.2
baz=227,SNR=9.0
SRIG **Santa Rosalia** 83.51 54 eP **P** 04 52 43.0 -0.3
comp=Z,47nm,1.1s
FMP **Fort Macarthur** 83.61 45 P **P** 04 52 44.0 +0.4
baz=228
SMMC **Simmler** 83.66 43 P **P** 04 52 44.1 +0.2
baz=226
109C **Camp Elliot, M** 83.81 47 P **P** 04 52 44.8 +0.1
baz=228
SAO **San Andreas Ge** 83.81 41 eP **P** 04 52 45.3 +0.7
SAO pmax pmax
comp=Z,28nm,1.1s
SAO **San Andreas Ge** 83.81 41 eP **P** 04 52 45.3 +0.7
comp=Z,28nm,1.1s
BAR **Barrett** 83.95 47 eP **P** 04 52 45.7 +0.3
comp=Z,42nm,1.4s
DECC **Green Verdugo** 83.95 45 P **P** 04 52 45.3 -0.1
baz=228
OSI **Osito Audit: C** 83.95 44 P **P** 04 52 45.5 +0.1
baz=227
PASC **Pasadena Art C** 83.99 45 eP **P** 04 52 44.9 -0.6
comp=Z,28nm,1.0s
MWC **Mount Wilson** 84.10 45 eP **P** 04 52 46.6 +0.2
MWC pmax pmax
comp=Z,37nm,1.0s
MWC **Mount Wilson** 84.10 45 eP **P** 04 52 46.6 +0.2
comp=Z,37nm,1.0s
MURC **Murrieta** 84.22 46 P **P** 04 52 47.0 +0.2
baz=228,SNR=18
ARVC **Arvin** 84.23 44 P **P** 04 52 47.0 +0.2
baz=227
MONP2 **Monument Peak** 84.25 47 P **P** 04 52 47.5 +0.3
baz=229,SNR=19
IKP **In-Ko-Pah, Jac** 84.29 47 P **P** 04 52 47.4 +0.2
baz=229,SNR=12
BFSC **Mount Baldy Ra** 84.36 45 P **P** 04 52 47.6 0.0
baz=228,SNR=20
HOPS **Hopland Field** 84.48 39 eP **P** 04 52 48.8 +0.9
comp=Z,61nm,1.1s
VES **Vestal, Richgr** 84.56 43 P **P** 04 52 48.3 -0.2
baz=227,SNR=11
EDW2 **Edwards Air Fo** 84.58 45 P **P** 04 52 48.9 +0.3
baz=228,SNR=27
SWSC **Sam W. Stewart** 84.68 47 P **P** 04 52 49.3 +0.2
baz=229,SNR=8.6
TPFO **Pinon Flats** 84.69 46 P **P** 04 52 49.5 +0.2
baz=229,SNR=24
PFO **Pinyon Flats O** 84.69 46 P **P** 04 52 50.0 +0.6
comp=Z,24nm,1.0s,baz=260,slow=3.5,SNR=24
PFO **Pinyon Flats O** 84.69 46 P **P** 04 52 49.6 +0.3
baz=229,SNR=22
PFO **Pinyon Flats O** 84.69 46 eP **P** 04 52 49.9 +0.6
PFO pmax pmax
comp=Z,38nm,1.0s
PFO MLR MLR
comp=Z,423nm,20.0s
PFO **Pinyon Flats O** 84.69 46 eP **P** 04 52 49.9 +0.6
comp=Z,38nm,1.0s
PFO LR LR
comp=Z,423nm,20.0s
RCTC **Rector, Farmer** 84.78 43 P **P** 04 52 50.1 +0.6
baz=227
ISA **Isabella, Lake** 84.81 44 P **P** 04 52 50.2 +0.4
baz=228,SNR=7.9
ISA **Isabella, Lake** 84.81 44 eP **P** 04 52 50.7 +0.9
ISA pmax pmax
comp=Z,42nm,1.2s
ISA **Isabella, Lake** 84.81 44 eP **P** 04 52 50.7 +0.9
comp=Z,42nm,1.2s
YSS **Yuzh-Sakhalins** 84.81 333 i P **P** 04 52 48.6 -0.8
YSS pmax pmax
comp=Z,94nm,2.5s
YSS **Yuzh-Sakhalins** 84.81 333 PFAKE 04 53 00.0 +11
YSS LR LR
comp=Z,114nm,19.0s
KSRS **Korea Array** 84.81 319 P **P** 04 52 50.7 +1.1
comp=Z,6.2nm,0.9s,baz=143,slow=5.6,SNR=14
KSAR **Wonju Array Be** 84.83 319 P **P** 04 52 50.7 +1.0
KSAR **Wonju Array Be** 84.83 319 P **P** 04 52 50.7 +1.0
BBRC **Big Bear Solar** 84.83 46 P **P** 04 52 50.6 +0.4
baz=228
KS01 **Wonju Array Si** 84.84 319 eP **P** 04 52 50.2 +0.4
KMRM **Mail Ridge** 85.02 38 eP **P** 04 52 52.5 +1.7
comp=Z,74nm,1.1s
LRMC **Laurel Mtn Rad** 85.17 44 P **P** 04 52 52.0 +0.3
baz=228,SNR=15
BELC **Belle Mtn. Jos** 85.24 46 P **P** 04 52 52.4 +0.4
baz=229,SNR=33
PET **Petropavlovsk** 85.26 345 PFAKE 04 53 00.0 +8.5
PET LR LR
comp=Z,297nm,22.0s
CMB **Columbia Colle** 85.30 41 eP **P** 04 52 52.3 +0.1
CMB pmax pmax
comp=Z,31nm,0.9s
CMB **Columbia Colle** 85.30 41 eP **P** 04 52 52.3 +0.1
comp=Z,31nm,0.9s
BC3 **Big Chuckawall** 85.36 47 P **P** 04 52 53.4 +0.8
baz=229,SNR=31
GLA **Glamis** 85.37 48 P **P** 04 52 53.1 +0.5
baz=230,SNR=12
GLA **Glamis** 85.37 48 eP **P** 04 52 53.7 +1.1
GLA pmax pmax
comp=Z,49nm,1.1s
GLA **Glamis** 85.37 48 eP **P** 04 52 53.7 +1.1
comp=Z,49nm,1.1s
HSIG 85.45 53 eP **P** 04 52 53.2 +0.1
comp=Z,36nm,1.1s
KHMM **Horse Mountain** 85.47 37 eP **P** 04 52 54.8 +1.7
comp=Z,84nm,1.2s
PEA0 **Petropavlovsk-** 85.56 345 eP **P** 04 52 52.9 -0.1
PETK **Petropavlovsk-** 85.56 345 P **P** 04 52 52.9 -0.1
comp=Z,11nm,0.9s,baz=122,slow=7.7,SNR=7.0
PETK PKKPbc **PKKPbc** 05 10 56.6 -2.0
comp=Z,1.4nm,0.5s,baz=215,slow=5.8,SNR=4.7
HEC **Hector,Ludlow** 85.57 46 P **P** 04 52 53.7 +0.1
baz=229,SNR=33
CWC **Cottonwood Cre** 85.57 43 P **P** 04 52 53.9 +0.2
baz=228
INCN **Inchon** 85.58 318 PFAKE 04 53 00.0 +6.5
INCN LR LR
comp=Z,258nm,21.0s
GSC **Goldstone, Bar** 85.58 45 P **P** 04 52 54.0 +0.2
baz=228,SNR=28
GSC **Goldstone, Bar** 85.58 45 eP **P** 04 52 53.9 +0.2
GSC pmax pmax
comp=Z,40nm,1.0s
GSC **Goldstone, Bar** 85.58 45 eP **P** 04 52 53.9 +0.2
comp=Z,40nm,1.0s
AFDM **Forest Hills D** 85.61 40 eP **P** 04 52 53.9 +0.3
comp=Z,40nm,1.1s
MPMC **Manual Prospec** 85.67 44 P **P** 04 52 54.5 +0.3
baz=228,SNR=44
ORV **Oroville** 85.74 39 eP **P** 04 52 54.6 +0.4
ORV pmax pmax
comp=Z,24nm,1.1s
ORV **Oroville** 85.74 39 eP **P** 04 52 54.6 +0.4
comp=Z,24nm,1.1s
DAC **Darwin (Calif)** 85.75 44 eP **P** 04 52 54.8 +0.2
DAC pmax pmax
comp=Z,45nm,1.7s
DAC **Darwin (Calif)** 85.75 44 eP **P** 04 52 54.8 +0.2
comp=Z,45nm,1.7s
IPM **Ipoh** 85.85 278 eP **P** 04 52 55.1 -0.3
comp=Z,46nm,1.5s
113A **Mohawk Valley,** 85.88 49 eP **P** 04 52 55.3 +0.2
IRM **Iron Mountain** 85.88 47 P **P** 04 52 55.7 +0.6
baz=230,SNR=40
TIN **Tinemaha, Big** 85.89 43 P **P** 04 52 55.5 +0.3
baz=228
WDC **Whiskeytown Da** 85.89 38 eP **P** 04 52 55.3 +0.3
WDC pmax pmax
comp=Z,59nm,1.0s
WDC **Whiskeytown Da** 85.89 38 eP **P** 04 52 55.3 +0.3
comp=Z,59nm,1.0s
MLAC **Mammoth, Mammo** 85.92 42 P **P** 04 52 56.2 +0.6
baz=227
GMRC **Granite Mounta** 85.96 46 P **P** 04 52 55.9 +0.3
baz=229,SNR=22
214A **Organ Pipe Nat** 85.99 50 P **P** 04 52 56.1 +0.4
baz=231,SNR=12
214A **Organ Pipe Nat** 85.99 50 eP **P** 04 52 55.9 +0.1
comp=Z,950nm,2.3s
Y12C **Blythe** 86.01 47 P **P** 04 52 56.1 +0.4
baz=230,SNR=7.5
Y12C **Blythe** 86.01 47 eP **P** 04 52 56.4 +0.7
comp=Z,27nm,1.0s
QIZ **Qiongzhong** 86.05 294 PFAKE 04 53 10.0 +14
QIZ LR LR
comp=Z,133nm,19.0s
N02D **Trinity Center** 86.09 38 P **P** 04 52 56.5 +0.5
baz=224,SNR=11
O03D **Paynes Creek** 86.09 39 P **P** 04 52 55.8 -0.3
baz=225,SNR=15
WAKR **Walker** 86.17 41 eP **P** 04 52 57.4 +0.8
comp=Z,52nm,1.2s
PAYG **Puerto Ayora** 86.21 89 PFAKE 04 53 10.0 +13
PAYG LR LR
comp=Z,340nm,20.0s
TUQ **Turquoise Moun** 86.22 45 P **P** 04 52 57.1 +0.2
baz=229,SNR=12
SHOC **Shoshone, Teco** 86.30 45 P **P** 04 52 57.1 0.0
baz=229,SNR=9.2
M02C **Callahan** 86.31 37 P **P** 04 52 58.0 +0.9
baz=224,SNR=6.2
FURC **Furnace Creek,** 86.32 44 P **P** 04 52 57.3 +0.2
baz=228,SNR=10
GRAC **Grapevine Rang** 86.36 43 P **P** 04 52 57.9 +0.5
baz=228
L02D **Cave Junction,** 86.46 36 P **P** 04 52 58.3 +0.5
baz=224
LDFC **Landfair** 86.49 46 eP **P** 04 52 59.2 +1.0
comp=Z,121nm,1.0s
KULM **Kulim** 86.58 278 eP **P** 04 52 59.6 +0.6
comp=Z,33nm,1.2s
KULM LR LR
comp=Z,86nm,20.0s
NEE2 **Needles Airpor** 86.60 47 P **P** 04 52 59.0 +0.4
baz=230
YBH **Yreka Blue Hor** 86.62 37 eP **P** 04 52 59.5 +0.8
YBH pmax pmax
comp=Z,73nm,1.4s
YBH **Yreka Blue Hor** 86.62 37 eP **P** 04 52 59.5 +0.8
comp=Z,73nm,1.4s
MSHR **Mys Shultsa** 86.68 324 d iP **P** 04 52 57.6 -1.2
VLA **Vladivostok** 86.70 325 ⇓ iP **P** 04 52 57.4 -1.5
VLA e*PP **PcP** 04 53 03.6 +2.4
VLA i *SP **pP** 04 53 06.3 -0.4
VLA pmax pmax
comp=Z,11nm,0.6s
PSI **Prapat** 86.83 275 eP **P** 04 52 59.6 -0.8
PSI pmax pmax
comp=Z,33nm,1.1s
PSI **Prapat** 86.83 275 eP **P** 04 52 59.6 -0.8
comp=Z,32nm,1.1s
NJ2 **Nanjing** 86.94 310 eP **P** 04 53 02.4 +2.1
NJ2 pmax pmax
comp=Z,33nm,0.9s
TPNV **Topopah Spring** 87.00 44 P **P** 04 53 00.8 0.0
baz=229,SNR=32
TPNV **Topopah Spring** 87.00 44 eP **P** 04 53 01.1 +0.3
TPNV pmax pmax
comp=Z,29nm,0.9s
TPNV **Topopah Spring** 87.00 44 eP **P** 04 53 01.1 +0.3
comp=Z,29nm,0.9s
PAHR **Pah Rah Range** 87.02 40 eP **P** 04 53 00.6 -0.1
comp=Z,28nm,1.0s
Y14A **Wickenburg** 87.11 48 eP **P** 04 53 01.6 +0.4
M04C **Macdoel** 87.12 38 P **P** 04 53 01.1 -0.1
baz=225
HUMO **Hull Mountain** 87.12 36 eP **P** 04 53 02.0 +1.0
comp=Z,81nm,1.5s
GSI **Gunungsitoli** 87.26 273 eP **P** 04 53 03.2 +0.9
comp=Z,103nm,1.4s
SHPR **Sheep Range** 87.38 45 eP **P** 04 53 03.3 +0.7
comp=Z,40nm,1.4s
USRK **Ussuriysk Ar.** 87.44 326 P **P** 04 53 03.2 +0.8
comp=Z,12nm,0.9s,baz=144,slow=3.8,SNR=29
TUC **Tucson** 87.56 50 P **P** 04 53 04.1 +0.7
baz=232
TUC **Tucson** 87.56 50 eP **P** 04 53 04.2 +0.7
TUC pmax pmax
comp=Z,38nm,1.1s
TUC MLR MLR
comp=Z,321nm,19.0s
TUC **Tucson** 87.56 50 eP **P** 04 53 04.2 +0.7
comp=Z,38nm,1.1s
TUC LR LR
comp=Z,321nm,19.0s
I03D **Drain, OR** 87.70 35 P **P** 04 53 04.0 +0.3
baz=224
K04D **Chiloquin, OR** 87.76 37 P **P** 04 53 04.3 +0.2
baz=225
HPIG 88.00 57 eP **P** 04 53 05.4 -0.4
comp=Z,23nm,1.2s
ZAIG **Zacatecas** 88.01 62 eP **P** 04 53 06.7 +0.6
comp=Z,38nm,1.8s
319A **Douglas** 88.02 52 eP **P** 04 53 06.1 +0.4
MOD **Modoc Plateau** 88.02 38 eP **P** 04 53 05.7 +0.2
comp=Z,18nm,0.9s
LCO **Las Campanas** 88.10 122 PFAKE 04 53 20.0 +13
LCO LR LR
comp=Z,212nm,20.0s
I04A **Tendick Farm,** 88.25 36 P **P** 04 53 06.0 -0.3
baz=224,SNR=9.1
K05A **Summer Lake** 88.28 37 eP **P** 04 53 06.8 +0.1
comp=Z,61nm,1.1s
R11A **Troy Canyon, C** 88.32 43 P **P** 04 53 07.0 0.0
baz=229
R11A **Troy Canyon, C** 88.32 43 eP **P** 04 53 06.7 -0.3
comp=Z,9.4nm,1.2s
X16A **Lo Mia Camp, P** 88.42 48 eP **P** 04 53 08.5 +0.9
J05D **Fort Rock, OR** 88.49 37 P **P** 04 53 07.9 +0.2
baz=225,SNR=12
BMN **Battle Mountai** 88.73 41 eP **P** 04 53 08.8 -0.1
BMN pmax pmax
comp=Z,26nm,1.1s
BMN **Battle Mountai** 88.73 41 eP **P** 04 53 08.8 -0.1
comp=Z,26nm,1.1s
TRQA **Tornquist** 88.84 134 eP **P** 04 53 12.4 +2.8
comp=Z,46nm,1.7s
TRQA LR LR
comp=Z,593nm,20.0s
LCMT **Little Creek M** 88.89 46 eP **P** 04 53 10.3 +0.6
comp=Z,26nm,1.0s
MDJ **Mudanjiang** 88.93 325 P **P** 04 53 10.0 +0.5
MDJ pmax pmax
comp=Z,16nm,1.0s
MDJ pmax pmax
comp=Z,110nm,6.3s
MDJ **Mudanjiang** 88.93 325 eP **P** 04 53 10.1 +0.6
comp=Z,13nm,1.0s
MDJ LR LR
comp=Z,257nm,19.0s
H04A **Detroit Lake** 88.99 35 eP **P** 04 53 10.0 +0.1
comp=Z,34nm,1.0s
U15A **North Rim** 89.12 46 eP **P** 04 53 11.7 +0.7
WHN **Wuhan** 89.13 306 ⇑P **P** 04 53 12.6 +1.8
WHN S **S** 05 04 03.7 +5.3
WHN pmax pmax
comp=Z,120nm,1.3s
WHN LR LR
comp=Z,1μm,13.7s
WHN LR LR
comp=Z,580nm,14.3s
WHN LR LR
comp=Z,1μm,14.8s
WUAZ **Wupatki** 89.14 48 P **P** 04 53 11.4 +0.5
baz=232
WUAZ **Wupatki** 89.14 48 eP **P** 04 53 11.6 +0.7
comp=Z,40nm,1.1s
WUAZ LR LR
comp=Z,255nm,19.0s
KNB **Kanab** 89.15 46 eP **P** 04 53 11.9 +0.9
KNB pmax pmax
comp=Z,64nm,1.0s
KNB **Kanab** 89.15 46 eP **P** 04 53 11.8 +0.9
comp=Z,64nm,1.0s
CCUT **Cedar City** 89.15 45 eP **P** 04 53 11.0 -0.1
comp=Z,32nm,1.1s
I05D **Terrebonne, OR** 89.18 36 P **P** 04 53 10.9 +0.1
baz=225,SNR=8.4
WVOR **Wild Horse Val** 89.29 39 eP **P** 04 53 11.8 +0.4
WVOR pmax pmax
comp=Z,24nm,1.3s
WVOR MLR MLR
comp=Z,303nm,19.0s
WVOR **Wild Horse Val** 89.29 39 eP **P** 04 53 11.8 +0.4
comp=Z,24nm,1.3s
WVOR LR LR
comp=Z,303nm,19.0s
KDAK **Kodiak Island** 89.45 12 eP **P** 04 53 12.4 +0.9
KDAK pmax pmax
comp=Z,194nm,1.3s
KDAK MLR MLR
comp=Z,67nm,20.0s
KDAK **Kodiak Island** 89.45 12 eP **P** 04 53 12.4 +0.9
comp=Z,194nm,1.3s
KDAK LR LR
comp=Z,67nm,20.0s
X18A **Snowflake** 89.46 49 eP **P** 04 53 13.7 +1.1
DL2 **Dalian** 89.48 316 ⇓P **P** 04 53 13.1 +0.9
DL2 eS **S** 05 04 02.8 +1.6
DL2 pmax pmax
comp=Z,32nm,0.9s
DL2 pmax pmax
comp=Z,270nm,6.1s
DL2 LR LR
comp=Z,320nm,16.5s
DL2 LR LR
comp=Z,170nm,14.5s
DL2 LR LR
comp=Z,330nm,24.1s
F04D **Rainier, OR** 89.58 34 P **P** 04 53 13.3 +0.8
baz=224
E03A **Lebam** 89.65 33 eP **P** 04 53 13.9 +1.1
comp=Z,96nm,1.0s
SKNT **Sakolnakorn** 89.69 290 P **P** 04 53 15.4 +1.7
comp=Z,58nm,1.1s,comp=Z,6μm
121A **Cookes Peak, D** 89.73 52 P **P** 04 53 14.1 +0.3
baz=234
121A **Cookes Peak, D** 89.73 52 eP **P** 04 53 14.3 +0.5
comp=Z,35nm,1.5s
PKCU **Pink Cliffs** 89.74 46 eP **P** 04 53 15.7 +1.7
comp=Z,37nm,1.3s
CROR **Criterion Ridg** 89.81 36 P **P** 04 53 13.8 0.0
G05D **Wamic, OR** 89.82 35 P **P** 04 53 13.9 +0.2
baz=225,SNR=5.0
W18A **Petrified Fore** 89.96 49 P **P** 04 53 14.9 +0.1
baz=233
W18A **Petrified Fore** 89.96 49 eP **P** 04 53 15.8 +1.0
comp=Z,82nm,1.5s
ELK **Elko** 90.08 42 eP **P** 04 53 15.5 +0.2
ELK pmax pmax
comp=Z,9.0nm,1.1s
ELK **Elko** 90.08 42 eP **P** 04 53 15.5 +0.2
comp=Z,8.6nm,1.1s
NLWA **Neilton Lookou** 90.12 33 eP **P** 04 53 16.1 +1.1
comp=Z,40nm,1.2s
NLWA LR LR
comp=Z,212nm,20.0s
VTHM **Trough** 90.16 36 P **P** 04 53 15.8 +0.5
MTPU **Mount Pierson** 90.19 45 eP **P** 04 53 17.2 +1.1
comp=Z,29nm,1.0s
SNY **Shenyang** 90.23 320 ⇓P **P** 04 53 16.1 +0.4
SNY S **S** 05 04 15.6 +7.5
SNY pmax pmax
comp=Z,18nm,1.5s
SNY AMB AMB
comp=Z,220nm,6.3s
SNY LR LR
comp=Z,370nm,14.1s
SNY LR LR
comp=Z,690nm,14.4s
SNY LR LR
comp=Z,910nm,13.7s
KHON **Khomkaen** 90.31 289 P **P** 04 53 20.0 +3.4
comp=Z,17nm,1.1s
MSU **Marysvale** 90.48 45 eP **P** 04 53 18.5 +1.2
MSU **Marysvale** 90.48 45 eP **P** 04 53 18.5 +1.2
CN2 **Changchun** 90.52 322 ⇑P **P** 04 53 17.8 +0.8
CN2 esP sP 04 53 27.0 -0.6
CN2 eS **S** 05 04 10.0 -0.7
CN2 pmax pmax
comp=Z,30nm,1.0s
CN2 LR LR
comp=Z,300nm,12.0s
CN2 LR LR
comp=Z,500nm,12.0s
CN2 LR LR
comp=Z,300nm,14.0s
GL2 **New Goldendale** 90.57 35 P **P** 04 53 17.9 +0.6
TIA **Tai'an** 90.61 312 ⇓P **P** 04 53 18.9 +1.3
TIA pmax pmax
comp=Z,30nm,1.1s
LON **Longmire** 90.64 34 eP **P** 04 53 17.7 +0.1
LON pmax pmax
comp=Z,17nm,1.1s
LON **Longmire** 90.64 34 eP **P** 04 53 17.7 +0.1
comp=Z,17nm,1.1s
TX31 **Lajitas Ar. Si** 90.81 56 eP **P** 04 53 19.0 +0.2
TXAR **Lajitas Array** 90.81 56 P **P** 04 53 18.7 -0.1
comp=Z,7.1nm,1.1s,baz=206,slow=5.4,SNR=28
TXAR **Lajitas Array** 90.81 56 P **P** 04 53 18.7 -0.1
TXAR pmax pmax
comp=Z,6.0nm,1.1s
D05A **Enumclaw** 90.86 34 eP **P** 04 53 18.2 -0.2
comp=Z,158nm,1.4s
MNTX **Cornudas Mount** 90.91 54 P **P** 04 53 19.0 -0.1
baz=235
MNTX **Cornudas Mount** 90.91 54 eP **P** 04 53 18.9 -0.3
comp=Z,31nm,1.6s
MNTX LR LR
comp=Z,192nm,19.0s
NONG **Nongkai** 90.93 290 P **P** 04 53 21.3 +1.8
comp=Z,81nm,1.3s
DIB **Dawson Inlet,** 90.97 25 eP **P** 04 53 20.4 +1.6
comp=Z,68nm,1.2s
G08A **Pilot Rock** 91.06 36 eP **P** 04 53 20.1 +0.5
comp=Z,45nm,1.1s
NAC **Naches** 91.11 35 P **P** 04 53 20.1 +0.4
DUG **Dugway, Tooele** 91.15 43 P **P** 04 53 19.7 -0.5
baz=231
DUG **Dugway, Tooele** 91.15 43 eP **P** 04 53 20.4 +0.2
DUG pmax pmax
comp=Z,9.0nm,1.1s
DUG MLR MLR
comp=Z,207nm,19.0s
DUG **Dugway, Tooele** 91.15 43 eP **P** 04 53 20.4 +0.2
comp=Z,8.6nm,1.1s
DUG LR LR
comp=Z,207nm,19.0s
CMIG **Matias Romero** 91.16 71 P **P** 04 53 20.7 +0.2
comp=Z,7.1nm,1.0s,baz=248,slow=7.2,SNR=4.0
Y22D **IRIS PASSCAL I** 91.21 51 P **P** 04 53 20.9 +0.3
baz=234
PGC **Sidney** 91.22 32 eP **P** 04 53 20.7 +0.6
comp=Z,33nm,1.1s
LAZ **Ladron** 91.26 51 eP **P** 04 53 21.4 +0.5
CNPM **China Poot** 91.33 12 eP **P** 04 53 21.1 +0.7
comp=Z,61nm,1.2s
BNM **Barren Site** 91.46 51 eP **P** 04 53 22.3 +0.4
BGU **Big Grassy Mou** 91.48 43 eP **P** 04 53 21.7 0.0
comp=Z,6.3nm,1.0s
MFID **Camas Ranch** 91.48 39 eP **P** 04 53 21.9 +0.3
comp=Z,31nm,1.1s
BENWA **Benson Ranch** 91.51 35 P **P** 04 53 20.2 -1.4
HAWA **Hanford** 91.52 35 eP **P** 04 53 22.3 +0.7
comp=Z,38nm,1.0s
HAWA LR LR
comp=Z,344nm,20.0s
LPM **Los Pinos Moun** 91.55 51 eP **P** 04 53 22.9 +0.7
TMUT **Trail Mountain** 91.56 45 eP **P** 04 53 23.3 +1.0
comp=Z,32nm,1.0s
B05A **Bryant** 91.57 33 P **P** 04 53 22.2 +0.4
baz=225

A04D Lummi Island 91.61 32 P **P** 04 53 22.5 +0.6
baz=224
BRLK Bradley Lake 91.62 13 *eP* **P** 04 53 22.9 +1.2
comp=Z,36nm,1.1s
GBB Gable Butte 91.62 35 P **P** 04 53 20.7 -1.3
BMO Blue Mountains 91.63 38 *eP* **P** 04 53 21.8 -0.5
comp=Z,25nm,1.4s
BBB Bella Bella 91.84 27 P **P** 04 53 23.5 +0.6
comp=Z,23nm,1.0s,baz=218,slow=3.8,SNR=6.3
BBB Bella Bella 91.84 27 *eP* **P** 04 53 23.9 +1.1
comp=Z,63nm,1.3s
SRU San Rafael Swe 91.87 45 *eP* **P** 04 53 24.0 +0.4
SRU pmax pmax
comp=Z,27nm,1.1s
SRU San Rafael Swe 91.87 45 *eP* **P** 04 53 24.0 +0.4
comp=Z,27nm,1.1s
PBKT Sadao Pong 91.96 288 P **P** 04 53 26.5 +2.2
comp=Z,18nm,1.7s,comp=Z,2µm
MVCO Mesa Verde 92.01 48 P **P** 04 53 24.1 -0.2
baz=234
MVCO Mesa Verde 92.01 48 *eP* **P** 04 53 24.4 0.0
comp=Z,13nm,1.3s
MVCO LR LR
comp=Z,322nm,19.0s
ANMO Albuquerque 92.03 51 P **P** 04 53 24.6 +0.1
baz=235
ANMO Albuquerque 92.03 51 *eP* **P** 04 53 24.4 -0.1
ANMO pmax pmax
comp=Z,17nm,1.2s
ANMO MLR MLR
comp=Z,234nm,19.0s
ANMO Albuquerque 92.03 51 *eP* **P** 04 53 24.4 -0.1
comp=Z,17nm,1.2s
ANMO LR LR
comp=Z,234nm,19.0s
SPUT South Promonto 92.06 43 *eP* **P** 04 53 24.5 +0.1
comp=Z,27nm,1.1s
CTU Camp Tracy 92.09 43 *eP* **P** 04 53 25.5 +0.9
comp=Z,42nm,1.3s
PV05 Paradox Valley 92.14 47 *eP* **P** 04 53 24.9 -0.1
HVU Hansel Valley 92.17 42 *eP* **P** 04 53 25.0 +0.1
HVU pmax pmax
comp=Z,30nm,1.0s
HVU Hansel Valley 92.17 42 *eP* **P** 04 53 25.0 +0.1
comp=Z,30nm,1.0s
NNA Nana 92.18 105 PFAKE 04 53 40.0 +14
NNA LR LR
comp=Z,155nm,20.0s
LOEI Loei 92.19 289 P **P** 04 53 26.0 +0.6
comp=Z,8.8nm,1.9s,comp=Z,417nm
WTV Waterville 92.21 34 P **P** 04 53 24.8 -0.1
JLU Jordanelle 92.22 44 *eP* **P** 04 53 26.4 +1.1
comp=Z,39nm,1.9s
D08A Wollman Farm, 92.28 35 *eP* **P** 04 53 25.6 +0.5
comp=Z,42nm,0.9s
E09A Wood Farm, Sta 92.31 36 *eP* **P** 04 53 25.5 +0.3
comp=Z,41nm,1.0s
PV10 Paradox Valley 92.36 47 *eP* **P** 04 53 25.9 -0.1
HLID Hailey 92.36 40 P **P** 04 53 26.0 +0.2
baz=230
HLID Hailey 92.36 40 *eP* **P** 04 53 25.8 0.0
comp=Z,21nm,1.1s
HLID LR LR
comp=Z,163nm,19.0s
PV09 Paradox Valley 92.37 46 *eP* **P** 04 53 26.3 +0.2
ENH Enshi 92.45 304 *eP* **P** 04 53 27.6 +1.2
comp=Z,147nm,1.3s
ENH LR LR
comp=Z,198nm,19.0s
GYA Guiyang 92.51 299 *iP* **P** 04 53 28.1 +1.3
GYA pP pP 04 53 34.0 -0.7
GYA PP **PP** 04 57 12.1 +3.6
GYA SKS **SKSac** 05 03 59.8 +0.7
GYA S **S** 05 04 29.3 -0.4
GYA SS **SS** 05 10 45.0 +2.8
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,7.2s
GYA LR LR
comp=Z,710nm,22.4s
GYA LR LR
comp=Z,680nm,21.8s
GYA LR LR
comp=Z,600nm,20.6s
PV01 Paradox Valley 92.51 47 *eP* **P** 04 53 26.6 0.0
TCUT Toone Canyon 92.56 43 *eP* **P** 04 53 27.3 +0.5
comp=Z,28nm,1.2s
HWUT Hardware Ranch 92.77 43 *eP* **P** 04 53 27.6 -0.2
comp=Z,8.5nm,1.0s
HWUT LR LR
comp=Z,364nm,19.0s
UTTA Uttaradit 92.89 289 P **P** 04 53 31.3 +2.7
comp=Z,2.5nm,1.2s
832A Faith Ranch, C 92.95 59 P **P** 04 53 28.1 -0.6
baz=238
LVC Limon Verde 92.96 118 P **P** 04 53 30.9 +1.5
comp=Z,17nm,0.9s,baz=260,slow=9.6,SNR=2.9
LVC Limon Verde 92.96 118 *eP* **P** 04 53 28.7 -0.7
comp=Z,11nm,1.2s
LVC LR LR
comp=Z,271nm,20.0s
B08A Colville Reser 92.96 34 *eP* **P** 04 53 27.6 -0.6
comp=Z,27nm,1.7s
MA2 Magadan 93.06 344 PFAKE 04 53 40.0 +12
MA2 LR LR
comp=Z,2µm,21.0s
C09A Chrisman Ranch 93.11 35 *eP* **P** 04 53 29.7 +0.8
933A Laredo 93.12 60 P **P** 04 53 29.3 -0.1
baz=238
034A Hebbronville 93.28 61 P **P** 04 53 30.4 +0.2
baz=238
S22A 4UR Ranch, Cre 93.40 48 P **P** 04 53 31.0 +0.2
baz=234
S22A 4UR Ranch, Cre 93.40 48 *eP* **P** 04 53 31.4 +0.5
comp=Z,15nm,1.1s
833A Chaparral WMA, 93.41 59 P **P** 04 53 30.4 -0.3
baz=238
BJT Baijiatuau 93.49 315 PFAKE 04 53 40.0 +9.2
BJT LR LR
comp=Z,206nm,20.0s
BJI Beijing 93.50 315 P **P** 04 53 31.8 +1.0
BJI S **S** 05 04 43.1 +5.5
BJI SS **SS** 05 10 58.4 +2.8
BJI pmax pmax
comp=Z,9.0nm,1.7s
BJI LR LR
comp=Z,280nm,19.3s
BJI LR LR
comp=Z,300nm,41.4s
SUKH Sukhothai 93.52 288 P **P** 04 53 34.9 +3.4
comp=Z,2.7nm,1.0s
UMPA Umpang Tak 93.53 287 P P 04 53 38.7 +7.1
comp=Z,3.9nm,1.0s
WRAK Wrangell Islan 93.59 23 *eP* **P** 04 53 31.8 +1.0
comp=Z,26nm,1.1s
WRAK LR LR
comp=Z,159nm,19.0s
035A Encino 93.66 61 P **P** 04 53 32.1 +0.2
baz=238
934A Benavides 93.69 60 P **P** 04 53 31.7 -0.4
baz=238
733A Divot King Ran 93.69 59 P **P** 04 53 32.2 +0.2
baz=238
TT01 Tatalina 93.75 9 *eP* **P** 04 53 31.6 +0.1
AHID Auburn Hatcher 93.75 42 *eP* **P** 04 53 32.8 +0.5
comp=Z,20nm,0.9s
AHID LR LR
comp=Z,230nm,19.0s
O20A White River Ci 93.89 45 P **P** 04 53 32.2 -0.8
baz=234
O20A White River Ci 93.89 45 *eP* **P** 04 53 32.8 -0.1
comp=Z,8.1nm,1.0s
DIV Divide 93.91 14 *eP* **P** 04 53 33.3 +1.0
comp=Z,14nm,1.1s
834A Tilden 93.94 60 P **P** 04 53 33.8 +0.6
baz=238
NEW Newport 93.99 35 PFAKE 04 53 40.0 +7.0
NEW LR LR
comp=Z,364nm,20.0s
MSTX Muleshoe 94.00 53 P **P** 04 53 32.3 -1.2
baz=236
MSTX Muleshoe 94.00 53 *eP* **P** 04 53 33.0 -0.5
comp=Z,20nm,1.4s
BMRM Bremner River 94.02 15 *eP* **P** 04 53 33.2 +0.4
comp=Z,36nm,1.5s
MCMT McKenzie Canyo 94.03 40 *eP* **P** 04 53 33.9 +0.4

LAMP Lampang 94.04 289 P **P** 04 53 37.1 +3.2
comp=Z,4.3nm,1.0s
KVTX Kingsville 94.13 61 PFAKE 04 53 50.0 +16
KVTX LR LR
comp=Z,418nm,19.0s
SMCO Snowmass 94.13 47 *eP* **P** 04 53 33.8 -0.6
comp=Z,14nm,1.3s
SCM Sheep Creek Mo 94.22 13 *eP* **P** 04 53 34.6 +0.9
SCM pmax pmax
comp=Z,25nm,1.2s
SCM Sheep Creek Mo 94.22 13 *eP* **P** 04 53 34.6 +0.9
comp=Z,25nm,1.2s
JCT Junction City 94.24 57 P **P** 04 53 34.1 -0.5
baz=238
JCT Junction City 94.24 57 *eP* **P** 04 53 33.5 -1.1
JCT pmax pmax
comp=Z,16nm,1.4s
JCT MLR MLR
comp=Z,409nm,19.0s
JCT Junction City 94.24 57 *eP* **P** 04 53 33.5 -1.1
comp=Z,16nm,1.4s
JCT LR LR
comp=Z,409nm,19.0s
SDCO Great Sand Dun 94.26 49 P **P** 04 53 34.3 -0.5
baz=235
SDCO Great Sand Dun 94.26 49 *eP* **P** 04 53 34.7 -0.1
comp=Z,4.8nm,1.1s
SDCO LR LR
comp=Z,174nm,19.0s
DLMT Dillon 94.51 39 *eP* **P** 04 53 35.9 +0.3
comp=Z,23nm,1.1s
IMW Indian Meadow 94.54 41 *eP* **P** 04 53 36.4 +0.4
comp=Z,16nm,1.0s
CM01 Chiang Mai Arr 94.54 288 *eP* **P** 04 53 38.1 +1.9
LOHW Long Hollow 94.56 42 *eP* **P** 04 53 36.1 +0.1
comp=Z,19nm,1.2s
MOOW Moose Ponds 94.56 41 *eP* **P** 04 53 36.2 +0.2
comp=Z,16nm,1.5s
CMAR Chiang Mai Arr 94.58 289 P **P** 04 53 37.9 +1.5
comp=Z,3.6nm,0.8s,baz=135,slow=2.6,SNR=16
CMAR LR LR 05 37 39.8
comp=Z,55nm,19.6s,baz=150,slow=36
CMAR Chiang Mai Arr 94.58 289 P **P** 04 53 37.9 +1.5
CMAR pmax pmax
comp=Z,2.0nm,0.3s
CMAR MLR MLR
comp=Z,55nm,19.6s
533A Kerrville 94.59 58 P **P** 04 53 35.3 -0.9
baz=238
T25A Trinidad 94.64 50 P **P** 04 53 36.0 -0.4
baz=236
T25A Trinidad 94.64 50 *eP* **P** 04 53 36.2 -0.2
comp=Z,10nm,1.2s
BW06 Boulder Array 94.66 43 P **P** 04 53 36.1 -0.4
baz=233
BW06 Boulder Array 94.66 43 *eP* **P** 04 53 35.1 -1.4
comp=Z,7.0nm,1.1s
BW06 LR LR
comp=Z,236nm,19.0s
PD31 Pinedale Array 94.66 43 *eP* **P** 04 53 35.8 -0.6
PDAR Pinedale Array 94.66 43 P **P** 04 53 35.6 -0.9
comp=Z,3.6nm,0.9s,baz=204,slow=3.3,SNR=16
PDAR LR LR 05 33 21.6
comp=Z,160nm,18.0s,baz=248,slow=34
MSO Missoula 94.70 38 P **P** 04 53 36.1 -0.3
baz=230
MSO Missoula 94.70 38 *eP* **P** 04 53 36.4 0.0
comp=Z,16nm,1.4s
CMMT Chiang Mai 94.75 289 P **P** 04 53 39.3 +2.2
CHTO Chiang Mai 94.75 289 P **P** 04 53 39.4 +2.3
comp=Z,46nm,1.4s
CHTO Chiang Mai 94.75 289 PFAKE 04 53 50.0 +13
CHTO LR LR
comp=Z,145nm,20.0s
FLWY Flagg Ranch 94.79 41 *eP* **P** 04 53 37.6 +0.6
comp=Z,34nm,1.1s
CAST Castle Rocks 94.83 11 *eP* **P** 04 53 35.7 -0.7
comp=Z,9.3nm,1.1s
QLMT Earthquake Lak 94.83 40 *eP* **P** 04 53 38.2 +1.0
YPP Pitchstone Pla 94.84 41 *eP* **P** 04 53 38.2 +0.9
comp=Z,9.3nm,1.2s
LRM Limekiln Ridge 94.87 39 *eP* **P** 04 53 37.4 0.0
XAN Xi'an 94.89 306 P **P** 04 53 39.2 +1.7
XAN pP sP 04 53 49.1 +0.9
XAN S **S** 05 04 58.6 +8.4
XAN pmax pmax
comp=Z,9.0nm,1.5s
XAN pmax pmax
comp=Z,76nm,6.2s
XAN LR LR
comp=Z,130nm,15.2s
XAN LR LR
comp=Z,260nm,16.2s
XAN LR LR
comp=Z,290nm,13.2s
433A Art 94.91 57 P **P** 04 53 37.0 -0.6
baz=238
YHB Horse Butte 94.91 40 *eP* **P** 04 53 38.5 +0.9
comp=Z,17nm,1.0s
534A Blanco 94.98 58 P **P** 04 53 37.1 -0.9
baz=238
YMR Madison River 94.99 41 *eP* **P** 04 53 39.0 +1.1
comp=Z,31nm,1.2s
H17A Grant Village 95.05 41 P **P** 04 53 38.6 +0.4
baz=233
H17A Grant Village 95.05 41 *eP* **P** 04 53 39.8 +1.5
comp=Z,20nm,1.1s
CHMT Chamberlain Mo 95.12 38 *eP* **P** 04 53 38.0 -0.4
TRF Thorofare Moun 95.15 11 *eP* **P** 04 53 37.0 -1.2
comp=Z,18nm,1.2s
BOZ Bozeman (W) 95.22 40 P **P** 04 53 39.1 +0.2
baz=232
BOZ Bozeman (W) 95.22 40 *eP* **P** 04 53 39.0 +0.2
BOZ pmax pmax
comp=Z,28nm,1.1s
BOZ MLR MLR
comp=Z,187nm,19.0s
BOZ Bozeman (W) 95.22 40 *eP* **P** 04 53 39.0 +0.2
comp=Z,28nm,1.1s
BOZ LR LR
comp=Z,187nm,19.0s
LKWY Lake 95.25 41 PFAKE 04 53 50.0 +11
LKWY LR LR
comp=Z,449nm,19.0s
333A Richland Sprin 95.28 57 P **P** 04 53 38.5 -0.8
baz=238
ISCO Idaho Springs 95.35 47 PFAKE 04 53 50.0 +10
ISCO LR LR
comp=Z,258nm,20.0s
RND Reindeer 95.36 12 *eP* **P** 04 53 39.0 +0.1
RND pmax pmax
comp=Z,15nm,1.1s
RND Reindeer 95.36 12 *eP* **P** 04 53 39.0 +0.1
comp=Z,15nm,1.1s
ABTX Abilene, Hawle 95.49 56 P **P** 04 53 39.7 -0.5
baz=238
434A Burnet 95.54 58 P **P** 04 53 39.5 -1.0
baz=238
HYT Haines Junctio 95.64 18 *eP* **P** 04 53 36.5 -3.9
MCK McKinley 95.65 12 *eP* **P** 04 53 40.7 +0.5
MCK pmax pmax
comp=Z,17nm,1.0s
MCK McKinley 95.65 12 *eP* **P** 04 53 40.7 +0.5
comp=Z,17nm,1.0s
535A Dale 95.65 59 P **P** 04 53 40.5 -0.5
baz=239
233A Rising Star 95.71 56 P **P** 04 53 40.8 -0.5
baz=238
N23A Red Feather La 95.76 46 P **P** 04 53 41.0 -0.6
baz=235
133A Hamilton Ranch 96.00 56 P **P** 04 53 42.6 +0.1
baz=238
WALA Waterton Lakes 96.13 36 *eP* **P** 04 53 42.0 -0.8
comp=Z,8.9nm,1.0s
RLMT Red Lodge 96.23 41 P **P** 04 53 43.9 +0.4
baz=234
RLMT Red Lodge 96.23 41 *eP* **P** 04 53 43.0 -0.5
comp=Z,8.8nm,1.0s
RLMT LR LR
comp=Z,192nm,19.0s
GCMT Greycliff 96.40 40 *eP* **P** 04 53 44.8 +0.6
K22A Casper 96.41 44 P **P** 04 53 44.3 0.0
baz=235
K22A Casper 96.41 44 *eP* **P** 04 53 44.6 +0.3
comp=Z,13nm,1.0s
Z33A Whitaker Ranch 96.46 55 P **P** 04 53 44.5 -0.2
baz=238

WRH Wood River Hil 96.48 12 *eP* **P** 04 53 43.7 -0.2
comp=Z,23nm,1.3s
DOT Dot Lake 96.52 14 *eP* **P** 04 53 44.9 +0.7
comp=Z,68nm,1.9s
MLY Manley 96.55 11 *eP* **P** 04 53 44.1 -0.1
comp=Z,24nm,1.9s
134A White-Moore Ra 96.59 56 P **P** 04 53 44.3 -0.9
baz=239
HDA Harding Lake 96.63 12 *eP* **P** 04 53 44.8 +0.2
comp=Z,45nm,1.3s
CCB Clear Creek Bu 96.69 12 *eP* **P** 04 53 44.3 -0.5
comp=Z,8.7nm,1.1s
HHC Hu-ho-hao-te 96.84 313 *eP* **P** 04 53 45.2 -1.1
HHC PP **PP** 04 57 41.8 -0.3
HHC S **S** 05 05 01.9 -5.0
HHC pmax pmax
comp=Z,16nm,0.9s
HHC pmax pmax
comp=Z,160nm,3.8s
HHC LR LR
comp=Z,210nm,14.8s
HHC LR LR
comp=Z,320nm,13.6s
HHC LR LR
comp=Z,280nm,13.6s
COLA College 96.89 12 *eP* **P** 04 53 45.0 -0.7
COLA pmax pmax
comp=Z,12nm,1.1s
COLA MLR MLR
comp=Z,165nm,19.0s
COLA College 96.89 12 *eP* **P** 04 53 45.0 -0.7
comp=Z,12nm,1.1s
COLA LR LR
comp=Z,165nm,19.0s
MDM Murphy Dome 96.90 12 *eP* **P** 04 53 45.3 -0.5
comp=Z,12nm,1.1s
OTAV Otavalo 96.95 94 PFAKE 04 54 00.0 +12
OTAV LR LR
comp=Z,213nm,22.0s
ILAR Eielson Array 96.97 12 P **P** 04 53 45.7 -0.4
comp=Z,3.9nm,1.0s,baz=222,slow=4.7,SNR=19
ILAR PP **PP** 04 57 36.3 -6.1
comp=Z,1.2nm,1.1s,baz=213,slow=4.3,SNR=4.7
ILAR PKKPbc **PKKPbc** 05 10 27.9 -1.5
comp=Z,0.9nm,1.1s,baz=11,slow=1.4,SNR=4.8
ILB Eielson Array 96.97 12 *eP* **P** 04 53 46.1 -0.1
IL1 Eielson Array 96.97 12 *eP* **P** 04 53 45.1 -1.0
CD2 Chengdu 96.99 302 *eP* **P** 04 53 47.8 +0.7
CD2 pP pP 04 53 54.3 -0.7
CD2 sP sP 04 53 56.8 -1.0
CD2 SKS **SKSac** 05 04 23.6 +0.8
CD2 S **ScS** 05 05 09.8 +0.9
CD2 sS sS 05 05 20.9 -0.7
CD2 SS **SS** 05 11 48.2 +2.5
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.8s
CD2 LR LR
comp=Z,350nm,15.4s
CD2 LR LR
comp=Z,360nm,12.4s
CD2 LR LR
comp=Z,310nm,12.4s
HIA Hailar 97.05 324 PFAKE 04 54 00.0 +13
HIA LR LR
comp=Z,198nm,21.0s
WMOK Wichita Mounta 97.20 54 PFAKE 04 54 00.0 +12
WMOK LR LR
comp=Z,304nm,20.0s
EGMT Eagleton 97.68 38 PFAKE 04 54 00.0 +10
EGMT LR LR
comp=Z,260nm,19.0s
DAWY Dawson 97.91 15 *eP* Pdif 04 53 50.9 +0.4
EGAK Eagle 98.13 14 PFAKE 04 54 00.0 +8.6
EGAK LR LR
comp=Z,168nm,19.0s
OGNE Ogallala 98.27 47 PFAKE 04 54 00.0 +7.3
OGNE LR LR
comp=Z,360nm,19.0s
BILL Bilibino 98.35 353 *eP* **P** 04 53 52.2 -0.1
BILL pmax pmax
comp=Z,3.0nm,0.9s
BILL Bilibino 98.35 353 PFAKE 04 54 00.0 +7.7
BILL LR LR
comp=Z,137nm,19.0s
CBKS Cedar Bluff 98.65 50 PFAKE 04 54 10.0 +16
CBKS LR LR
comp=Z,262nm,19.0s
NATX Nacogdoches 98.68 58 PFAKE 04 54 10.0 +15
NATX LR LR
comp=Z,374nm,19.0s
RSSD Black Hills 98.73 44 Pdiff **P** 04 53 54.8 -0.1
baz=237
RSSD Black Hills 98.73 44 *eP* **P** 04 53 54.6 -0.2
RSSD pmax pmax
comp=Z,17nm,1.0s
RSSD Black Hills 98.73 44 *eP* **P** 04 53 54.6 -0.2
comp=Z,17nm,1.0s
LAO LASA Array 98.87 41 Pdiff Pdif 04 53 55.6 +0.3
baz=236
LAO LASA Array 98.87 41 *eP* Pdif 04 53 56.0 +0.8
comp=Z,12nm,1.0s
LAO LR LR
comp=Z,184nm,22.0s
LZH Lanzhou 99.51 306 *eP* **Pdif** 04 54 00.4 +1.9
LZH pP sP 04 54 09.6 +0.4
LZH sP pP 04 54 13.3 +6.9
LZH pmax pmax
comp=Z,19nm,1.0s
MIAR Mount Ida 100.83 56 PFAKE 04 54 20.0 +16
MIAR LR LR
comp=Z,235nm,19.0s
KSU1 Kansas State U 100.90 51 PFAKE 04 54 20.0 +16
KSU1 LR LR
comp=Z,281nm,19.0s
DGMT Dagmar 100.99 40 PFAKE 04 54 20.0 +15
DGMT LR LR
comp=Z,226nm,19.0s
YAK Yakutsk 101.21 337 PFAKE 04 54 20.0 +15
YAK LR LR
comp=Z,212nm,21.0s
ECSD EROS Data Cent 103.14 47 PFAKE 04 54 30.0 +16
ECSD LR LR
comp=Z,248nm,19.0s
BRAL Brewton 104.16 62 PFAKE 04 54 30.0 +11
BRAL LR LR
comp=Z,192nm,20.0s
YKA Yellowknife Ar 104.23 25 PP PP 04 58 35.3 -2.0
comp=Z,0.9nm,1.0s,baz=232,slow=7.2,SNR=4.9
YKA PKKPbc **PKKPbc** 05 10 07.2 -0.9
comp=Z,0.4nm,0.6s,baz=39,slow=3.4,SNR=6.5
SCIA State Center 104.50 50 PFAKE 04 54 30.0 +10
SCIA LR LR
comp=Z,334nm,20.0s
SAML Samuel 105.14 110 PFAKE 04 58 50.0
SAML LR LR
comp=Z,311nm,19.0s
FFC Flin Flon 105.42 35 PFAKE 04 58 50.0
FFC LR LR
comp=Z,221nm,19.0s
AGMN Agassiz Nation 105.73 43 PFAKE 04 58 50.0
AGMN LR LR
comp=Z,182nm,20.0s
LSA Lhasa 106.07 295 PFAKE 04 58 50.0
LSA LR LR
comp=Z,159nm,21.0s
MTDJ Mount Denham 106.23 78 PFAKE 04 58 50.0
MTDJ LR LR
comp=Z,267nm,22.0s
HDIL Hopedale 106.57 53 PFAKE 04 58 50.0
HDIL LR LR
comp=Z,245nm,19.0s
JFWS Jewell Farm 106.92 50 PFAKE 04 58 50.0
JFWS LR LR
comp=Z,312nm,19.0s
TLY Talaya 107.02 320 PFAKE 04 58 50.0
TLY LR LR
comp=Z,201nm,20.0s
SPB Sao Paulo 107.72 131 PFAKE 04 58 50.0
SPB LR LR
comp=Z,244nm,19.0s
GOGA Godfrey 107.86 61 PFAKE 04 58 50.0
GOGA LR LR
comp=Z,193nm,20.0s
SDV Santo Domingo 107.94 90 PFAKE 04 59 00.0

SDV LR LR
comp=Z,129nm,20.0s
TIXI Tiksi 108.03 344 PFAKE 04 58 50.0
TIXI LR LR
comp=Z,229nm,20.0s
EYMN Ely 108.22 45 PFAKE 04 58 50.0
EYMN LR LR
comp=Z,228nm,22.0s
COWI Conover 108.95 47 PFAKE 04 59 00.0
COWI LR LR
comp=Z,359nm,20.0s
GTBY Guantanamo Bay 109.04 78 PFAKE 04 59 00.0
GTBY LR LR
comp=Z,267nm,21.0s
NHSC New Hope 110.26 63 PFAKE 04 59 00.0
NHSC LR LR
comp=Z,186nm,21.0s
ACSO Alum Creek Sta 110.87 55 PFAKE 04 59 00.0
ACSO LR LR
comp=Z,245nm,19.0s
AAM Ann Arbor 111.16 53 PFAKE 04 59 00.0
AAM LR LR
comp=Z,212nm,20.0s
BLA Blacksburg 111.62 59 PFAKE 04 59 00.0
BLA LR LR
comp=Z,216nm,19.0s
SDDR Presa de Saban 111.90 80 PFAKE 04 59 00.0
SDDR LR LR
comp=Z,244nm,20.0s
CNNC Cliffs of the 112.82 61 PFAKE 04 59 00.0
CNNC LR LR
comp=Z,250nm,19.0s
GRTK Grand Turk 113.08 78 PFAKE 04 59 00.0
GRTK LR LR
comp=Z,290nm,21.0s
WMQ Urumqi 113.97 308 *e*PKP **PKiKP 04 58 53.3 -0.9**
WMQ PP **PP 04 59 51.6 +2.8**
WMQ SKS **SKSdf 05 06 01.0 -3.7**
WMQ SS **SS 05 15 34.4 -3.1**
WMQ AMB AMB
comp=Z,100nm,5.6s
WMQ LR LR
comp=Z,560nm,22.0s
WMQ LR LR
comp=Z,350nm,20.0s
WMQ LR LR
comp=Z,340nm,24.0s
CBN Corbin Frederi 114.23 59 PFAKE 04 59 10.0 +15
CBN LR LR
comp=Z,257nm,19.0s
SJG San Juan 115.95 83 PFAKE 04 59 10.0 +11
SJG LR LR
comp=Z,181nm,22.0s
SUR Sutherland 116.11 196 PFAKE 04 59 10.0 +11
SUR LR LR
comp=Z,2µm,21.0s
BINY Binghamton 116.50 55 PFAKE 04 59 10.0 +11
BINY LR LR
comp=Z,395nm,19.0s
GRGR Grenville 117.25 91 PFAKE 04 59 10.0 +8.8
GRGR LR LR
comp=Z,175nm,22.0s
LONY Lake Ozonia 118.15 52 PFAKE 04 59 10.0 +7.9
LONY LR LR
comp=Z,238nm,20.0s
BOSA Boshof 118.42 202 PKP **PKPdf 04 59 04.0 +0.6**
comp=Z,9.2nm,1.0s,baz=351,slow=3.6,SNR=4.3
BOSA Boshof 118.42 202 PKIKP **PKPdf 04 59 04.0 +0.6**
BOSA pmax pmax
comp=Z,9.0nm,1.0s
MKAR Makanchi Array 118.47 310 PKP **PKPdf 04 59 01.8 -0.9**
comp=Z,5.6nm,1.0s,baz=82,slow=2.6,SNR=22
MKAR PKKPab **PKKPab 05 09 24.1 +3.1**
comp=Z,0.4nm,0.7s,baz=268,slow=5.7,SNR=3.9
ZALV Zalesovo Beam 118.52 318 PKP **PKPdf 04 59 01.6 -0.8**
comp=Z,1.7nm,0.6s,baz=215,slow=1.8,SNR=6.9
FDF Fort de France 118.85 89 PFAKE 04 59 20.0 +16
FDF LR LR
comp=Z,205nm,19.0s
NVS Novosibirsk 119.60 319 *e*PKIKP **PKPdf 04 59 04.3 -0.2**
KSH Kashi 121.17 301 *e*PKP **PKPdf 04 59 08.9 +0.7**
KSH PKS **PKSdf 05 02 43.8 -1.1**
KSH SKS **SKSdf 05 06 15.9 -2.9**
KSH SKKS **SKKSac 05 07 38.1 +1.4**
KSH AMB AMB
comp=Z,45nm,6.3s
KSH LR LR
comp=Z,120nm,8.3s
KSH LR LR
comp=Z,92nm,6.9s
KSH LR LR
comp=Z,130nm,12.7s
KURK Kurchatov 121.65 314 *e*PKIKP **PKPdf 04 59 06.8 -1.8**
KURK MLR MLR
comp=Z,301nm,19.0s
KURK Kurchatov 121.65 314 *e*PKPdf **PKPdf 04 59 06.8 -1.8**
KURK LR LR
comp=Z,301nm,19.0s
PKME Peaks-Kenny Pk 121.96 53 PFAKE 04 59 20.0 +11
PKME LR LR
comp=Z,284nm,19.0s
TKM2 Tokmak 2 122.23 304 PFAKE 04 59 20.0 +10
TKM2 LR LR
comp=Z,157nm,19.0s
BBSR BB Station 122.28 69 PFAKE 04 59 20.0 +10
BBSR LR LR
comp=Z,207nm,21.0s
AAK Ala-Archa 122.97 304 *e*PKIKP **PKPdf 04 59 09.4 -2.2**
AAK MLR MLR
comp=Z,129nm,19.0s
AAK Ala-Archa 122.97 304 *e*PKPdf **PKPdf 04 59 09.3 -2.2**
AAK LR LR
comp=Z,129nm,19.0s
EKS2 Erkin-Say 123.49 304 *e*PKIKP **PKPdf 04 59 12.7 +0.1**
EKS2 MLR MLR
comp=Z,145nm,20.0s
EKS2 Erkin-Say 123.49 304 *e*PKPdf **PKPdf 04 59 12.7 +0.1**
EKS2 LR LR
comp=Z,145nm,20.0s
KKAR Karatay Array 125.93 304 *e*PKIKP **PKPdf 04 59 16.6 -0.5**
KKAR Karatay Array 125.93 304 *e*PKPdf **PKPdf 04 59 16.6 -0.5**
BRVK Borovoye 127.02 316 *e*PKIKP **PKPdf 04 59 18.1 -0.7**
BRVK MLR MLR
comp=Z,170nm,22.0s
BRVK Borovoye 127.02 316 *e*PKPdf **PKPdf 04 59 18.1 -0.7**
BRVK LR LR
comp=Z,170nm,22.0s
RCBR Riachuelo 128.09 126 PFAKE 04 59 30.0 +7.8
RCBR LR LR
comp=Z,344nm,19.0s
LSZ Lusaka 129.38 211 PFAKE 04 59 40.0 +15
LSZ LR LR
comp=Z,240nm,21.0s
TSUM Tsumeb 129.53 197 PFAKE 04 59 40.0 +15
TSUM LR LR
comp=Z,216nm,20.0s
KBS Kingsbay 130.60 358 PFAKE 04 59 40.0 +15
KBS LR LR
comp=Z,141nm,20.0s
SUMG Summit 131.68 16 *i* P **PP 05 01 44.1 -3.7**
comp=Z,13nm,1.1s
ARU Arti 133.51 321 *i* PKIKP **PKPdf 04 59 30.6 -0.4**
ARU 05 01 57.3
ARU Arti 133.51 321 *e*PKPdf **PKPdf 04 59 31.6 +0.6**
ARU LR LR
comp=Z,162nm,20.0s
ABKAR Akbulak array 133.59 311 *e*PKPdf **PKPdf 04 59 30.9 -0.4**
GEYT Alibeck 134.61 295 PKP **PKPdf 04 59 35.1 +1.4**
comp=Z,2.7nm,0.4s,baz=280,slow=8.9,SNR=5.3
KMBO Kilima Mbogo 135.63 232 PKP **PKPdf 04 59 37.1 +0.4**
comp=Z,2.3nm,0.9s,baz=78,slow=12.7,SNR=3.2
KMBO Kilima Mbogo 135.63 232 PKP **PKPdf 04 59 37.1 +0.4**
KMBO LR LR
comp=Z,218nm,21.0s
LVZ Lovozero 137.66 343 PFAKE 04 59 50.0 +12
LVZ LR LR
comp=Z,191nm,19.0s
APA Apatity 138.22 343 *e*PKHKP PKPpre 04 59 20.0
APA pmax pmax
comp=Z,6.0nm,0.9s
APA MLR MLR
comp=Z,400nm,19.0s
ARCES ARCESS Array B 138.25 349 PKhKP PKPpre 04 59 34.4
comp=Z,1.7nm,0.7s,baz=0.0,slow=2.4,SNR=6.0
ASCN Ascension 138.71 152 PFAKE 04 59 50.0 +7.9
ASCN LR LR
comp=Z,1µm,22.0s
MBAR Mbarara 140.29 225 PFAKE 05 00 00.0 +15
MBAR LR LR
comp=Z,921nm,22.0s
KLMR Klimovskoe 140.86 333 *e*PKIKP **PKPdf 04 59 45.6 +1.2**
KLMR pmax pmax
comp=Z,14nm,1.1s
DGRG David-gareji 144.47 301 P **PKPdf 04 59 51.2 -0.3**
DGRG David-gareji 144.47 301 *e*PKIKP **PKPdf 04 59 51.2 -0.3**
MOS Moscow 144.60 327 *e*PKIKP **PKPab 04 59 49.1 -0.7**
MOS *e* 04 59 59.4
MOS *e* 05 03 05.9
MOS pmax pmax
comp=Z,43nm,1.1s
MOS pmax pmax
comp=Z,200nm,1.5s
TBLG Delisi 144.91 301 P **PKPdf 04 59 52.2 -0.1**
TBLG Delisi 144.91 301 *e*PKIKP **PKPdf 04 59 52.1 -0.1**
FINES FINESS Array B 145.01 341 PKP **PKPbc 04 59 50.3 -0.8**
comp=Z,24nm,0.9s,baz=57,slow=7.0,SNR=49
GNI Garni 145.06 298 *e*PKIKP **PKPdf 04 59 53.2 +0.4**
GNI MLR MLR
comp=Z,137nm,20.0s
GNI Garni 145.06 298 *e*PKPbc **PKPdf 04 59 53.2 +0.4**
GNI LR LR
comp=Z,137nm,20.0s
ZEI Tsey 145.39 303 *i* PKP2 **PKPbc 04 59 51.8 -1.5**
ZEI pmax pmax
comp=Z,146nm,1.1s
OBN Obninsk 145.45 327 *d i*PKIKP **PKPdf 04 59 52.4 -0.2**
OBN *i* 05 00 02.6
OBN pmax pmax
comp=Z,118nm,1.2s
OBN Obninsk 145.45 327 *e*PKPbc **PKPdf 04 59 52.5 -0.2**
OBN LR LR
comp=Z,158nm,19.0s
NCK Nalchik 145.49 305 *i* PKIKP **PKPab 04 59 53.9 +0.3**
GOF Gofitskoye 145.57 307 ⇑*e*PKIKP **PKPab 04 59 54.5 +0.7**
GOF pmax pmax
comp=Z,138nm,1.2s
GOF pmax pmax
comp=E,72nm,1.1s
AKH Akhalkalaki 145.88 301 ⇓*i*P **PKPab 04 59 56.1 +0.8**
AKH Akhalkalaki 145.88 301 P **PKPab 04 59 56.3 +1.0**
AKH Akhalkalaki 145.88 301 *e*PKP2 **PKPab 04 59 56.3 +1.0**
KBZ Khabaz 145.95 305 PKPbc **PKPbc 04 59 54.8 +0.1**
comp=E,11nm,0.9s,baz=70,slow=2.2,SNR=21
VSR Storozhevoye 146.02 319 *e*PKP2 **PKPdf 04 59 54.0 +0.2**
VSR pmax pmax
comp=Z,140nm,1.1s
KIV Kislovodsk 146.06 306 *i* PKP2 **PKPab 04 59 56.6 +0.8**
KIV pmax pmax
comp=Z,31nm,1.1s
KIV Kislovodsk 146.06 306 PFAKE 05 00 10.0 +14
KIV LR LR
comp=Z,163nm,22.0s
NEY Neytrino 146.16 304 *c i*PKP2 **PKPab 04 59 57.1 +0.8**
SOC Sochi 148.24 306 *e*PKIKP **PKPdf 04 59 58.0 +0.2**
SOC *e* 05 00 02.2
SOC *e* 05 03 37.1
SOC *e*PPP PPP 05 06 46.9
SOC *e*SS SS 05 22 28.7 -7.4
SOC pmax pmax
comp=Z,6.0nm,0.3s
SOC pmax pmax
comp=Z,9.0nm,0.4s
NB2 NORSAR Subarra 148.30 353 PKP **PKPbc 05 00 00.0 -0.8**
comp=Z,32nm,1.4s,baz=17,slow=2.6
NOA NORSAR Array B 148.30 353 PKP **PKPdf 04 59 56.9 -0.5**
comp=Z,13nm,1.0s,baz=15,slow=4.4,SNR=13
NOA PKPbc **PKPbc 05 00 00.1 -0.8**
comp=Z,17nm,1.1s,baz=15,slow=4.4,SNR=15
IZAR Zarasai 149.46 335 *e*P **PKPbc 05 00 04.2 +0.4**
ANN Anapa 149.49 309 *i* PKHKP PKPpre 05 00 02.0
ANN *e* 05 00 09.6
ANN *e* 05 03 37.1
ANN pmax pmax
comp=Z,58nm,1.2s
IDID Didziasalis 149.60 334 *e*P **PKPbc 05 00 04.3 +0.1**
IDID IAmb IAmb 05 00 05.3
comp=Z,17nm,1.2s
ISAL Salakas 149.64 335 *e*P **PKPbc 05 00 04.3 +0.1**
ISAL IAmb IAmb 05 00 05.5
comp=Z,21nm,1.3s
MICGM Minsk 149.73 332 *e*P **PKPbc 05 00 05.0 +0.5**
MNK Minsk 149.73 332 *e*PKP2 **PKPbc 05 00 05.0 +0.5**
KSRV Kasrt alli 149.81 291 *e*P **PKPbc 05 00 06.6 +1.3**
KONO Kongsberg 149.83 354 *c i*PKP2 **PKPbc 05 00 04.9 +0.3**
KONO pmax pmax
comp=Z,211nm,1.7s
KONO Kongsberg 149.83 354 *e*PKPbc **PKPbc 05 00 04.3 -0.4**
KONO LR LR
comp=Z,142nm,20.0s
NACGM Naroch 149.88 333 *e* **PKPbc 05 00 03.0 -1.9**
SACV Santiago Islan 150.88 114 PFAKE 05 00 10.0 +1.5
SACV LR LR
comp=Z,167nm,22.0s
ZALF Zalf 151.16 285 *e*P **PKPbc 05 00 10.9 +2.1**
ROOS tl_alroos 151.23 288 *e*P **PKPbc 05 00 09.9 +1.0**
AKASG Malin Array Be 151.64 325 PKP **PKPdf 05 00 01.6 -1.2**
comp=Z,0.4nm,0.5s,baz=45,slow=2.7,SNR=4.5
AKASG PKPbc **PKPbc 05 00 09.0 -0.2**
comp=Z,31nm,1.1s,baz=45,slow=2.7,SNR=54
AKASG Malin Array Be 151.64 325 PKIKP **PKPdf 05 00 01.7 -1.2**
AKASG 05 00 09.0
AKASG pmax pmax
comp=Z,22nm,1.0s
AKASG pmax pmax
comp=Z,31nm,1.1s
SIM Simferopol' 151.65 311 *de*PKIKP **PKPbc 05 00 10.0 +0.6**
SIM *e*PKP **PKPab 05 00 19.0 +0.8**
SIM pmax pmax
comp=Z,20nm,0.9s
SALA Sala 151.65 284 *e*P **PKPbc 05 00 10.5 +0.4**
KIEV Kiev 151.65 325 *e*PKIKP **PKPbc 05 00 08.6 -0.6**
KIEV *e* 05 00 17.7
KIEV MLR MLR
comp=Z,162nm,21.0s
KIEV Kiev 151.65 325 *e*PKPbc **PKPbc 05 00 08.6 -0.6**
KIEV *e*PKPab **PKPab 05 00 17.7 -0.3**
KIEV LR LR
comp=Z,162nm,21.0s
BTCH Batrach 151.86 292 *e*P **PKPbc 05 00 10.8 +0.5**
MARH Ras Al Marh 151.90 287 *e*P **PKPbc 05 00 11.6 +0.8**
SUW Suwalki 151.93 335 *e*PKP **PKPbc 05 00 09.6 -0.1**
SUW Suwalki 151.93 335 *e*PKIKP **PKPbc 05 00 09.6 -0.1**
HAWK Haweek 151.96 288 *e*P **PKPbc 05 00 11.5 +0.9**
BIDA Albida 152.02 289 *e*P **PKPbc 05 00 11.4 +0.7**
ARNB Al Arnab 152.27 291 *e*P **PKPbc 05 00 11.7 +0.4**
MUD Monsted U'grnd 153.02 353 *i* P **PKPab 05 00 23.4 0.0**
comp=Z,32nm,1.1s
BRTR Keskin Array B 153.56 300 PKP **PKPdf 05 00 05.6 -0.7**
comp=Z,1.1nm,1.1s,baz=101,slow=4.0,SNR=3.1
BRTR PKPbc **PKPbc 05 00 13.8 -0.3**
comp=Z,4.9nm,1.1s,baz=106,slow=2.7,SNR=13
BRTR PP **PP 05 04 04.2 +3.2**
comp=Z,1.3nm,0.9s,baz=119,slow=1.5,SNR=3.9
SORM Soroca 153.63 321 ⇑*i*P **PKPbc 05 00 13.6 -0.1**
SORM Soroca 153.63 321 ⇑PKIKP **PKPbc 05 00 13.6 -0.1**
ANTO Ankara 154.16 301 *e*PKIKP **PKPbc 05 00 15.3 0.0**
ANTO *e* 05 00 27.4
ANTO MLR MLR
comp=Z,127nm,20.0s
ANTO Ankara 154.16 301 *e*PKPbc **PKPbc 05 00 15.2 0.0**
ANTO *e*PKPab **PKPab 05 00 27.4 -1.7**
ANTO LR LR
comp=Z,127nm,20.0s
CSS Mathiatis 154.48 289 *e*PKPdf **PKPdf 05 00 07.6 0.0**
CSS *e*PKPab **PKPab 05 00 30.3 -0.2**
CSS LR LR
comp=Z,35nm,20.0s
CMLA Cha da Macela 154.50 64 PFAKE 05 00 20.0 +4.0
CMLA LR LR
comp=Z,482nm,22.0s
KWP Kalwaria Pacla 155.46 329 *e*PKP **PKPab 05 00 34.4 +0.2**
KWP Kalwaria Pacla 155.46 329 *e*PKP2 **PKPab 05 00 34.3 +0.2**
TESR Tescani 155.51 319 ⇓*i*P **PKPab 05 00 34.9 +0.4**
TIRR Tirgusor 155.54 314 ⇓*i*P **PKPab 05 00 34.9 +0.3**
TIRR Tirgusor 155.54 314 ⇓PKP2 **PKPab 05 00 34.9 +0.3**
BURAR Bucovina Array 155.62 323 ⇑*i*P **PKPab 05 00 35.6 +0.6**
BURAR Bucovina Array 155.62 323 ⇑PKP2 **PKPab 05 00 35.6 +0.6**
DBIC Dimbokro 155.68 159 PKPab **PKPab 05 00 36.1 +0.3**
comp=Z,5.2nm,0.9s,baz=119,slow=3.3,SNR=3.7
TLB Topalu 155.71 314 ⇑*i*P **PKPab 05 00 36.3 +1.0**
TLB Topalu 155.71 314 ⇑PKP2 **PKPab 05 00 36.3 +1.0**
VRI Vrincioaia 155.83 318 ⇑*i*P **PKPab 05 00 35.8 -0.1**
VRI Vrincioaia 155.83 318 ⇑PKP2 **PKPab 05 00 35.8 -0.1**
PLOR Plostina 155.88 318 ⇑*i*P **PKPab 05 00 36.8 +0.7**
PLOR Plostina 155.88 318 ⇑PKP2 **PKPab 05 00 36.8 +0.7**
KOLS Kolonicke sedl 156.16 329 *e*PKIKP **PKPdf 05 00 09.7 +0.3**
KOLS *e* 05 00 36.4
KOLS Kolonicke sedl 156.16 329 *e*PKP **PKPdf 05 00 09.7 +0.3**
KOLS *e* 05 00 36.4
OJC Ojcow 156.21 334 *e*PKP **PKPdf 05 00 09.6 +0.2**
OJC Ojcow 156.21 334 *e*PKIKP **PKPdf 05 00 09.6 +0.2**
STHS Stebnicka Huta 156.25 331 *e*PKP2 **PKPab 05 00 36.9 -0.6**
STHS Stebnicka Huta 156.25 331 *e*PKP **PKPab 05 00 36.9 -0.6**
MLR Muntele Rosu 156.50 318 ⇑*i*P **PKPab 05 00 39.2 +0.3**
MLR Muntele Rosu 156.50 318 ⇑PKP2 **PKPab 05 00 39.2 +0.3**
DOPR Dopca 156.54 320 ⇑*i*P **PKPab 05 00 40.1 +1.2**
CRVS Cervenica-Dubn 156.55 330 *e*PKP2 **PKPab 05 00 38.8 0.0**
CRVS Cervenica-Dubn 156.55 330 *e*PKP **PKPab 05 00 38.8 0.0**
NIE Niedzica 156.65 332 *e*PKP **PKPdf 05 00 10.9 +0.8**
NIE Niedzica 156.65 332 *e*PKIKP **PKPdf 05 00 10.9 +0.8**
VOIR 157.04 319 ⇑*i*P **PKPab 05 00 43.3 +2.1**
VOIR 157.04 319 ⇑PKP2 **PKPab 05 00 43.3 +2.1**
OKC Ostrava-Krasne 157.14 335 *e*PKPAB **PKPab 05 00 41.2 -0.1**
OKC Ostrava-Krasne 157.14 335 *e*PKP2 **PKPab 05 00 41.2 -0.1**
UPC Upice 157.28 339 *e*PKPAB **PKPab 05 00 42.3 +0.4**
UPC Upice 157.28 339 *e*PKP2 **PKPab 05 00 42.3 +0.4**
KECS Kecovo 157.29 330 *e*PKP2 **PKPab 05 00 42.3 +0.3**
KECS Kecovo 157.29 330 *e*PKP **PKPab 05 00 42.3 +0.3**
ARR Arges 157.32 319 ⇑*i*P **PKPab 05 00 43.7 +1.3**
DPC Dobruska-Polom 157.32 339 *e*PKPAB **PKPab 05 00 42.6 +0.5**
DPC epPKP 05 00 48.0
DPC Dobruska-Polom 157.32 339 *e*PKP2 **PKPab 05 00 42.6 +0.5**
CLL Collm 157.36 345 *e*PKPdf **PKPdf 05 00 11.0 +0.2**
CLL *e* 05 00 32.0
comp=Z,6.0nm,0.9s
CLL ⇑*i*PKPab **PKPab 05 00 41.6 -0.6**
comp=Z,15nm,0.9s
CLL *i* pPKPab **pPKPab 05 00 45.4 -4.7**
CLL *i* 05 00 52.3
CLL Collm 157.36 345 ⇑*e*PKIKP **PKPdf 05 00 11.0 +0.2**
CLL pmax pmax
comp=Z,15nm,0.9s
KRLC Kraliky 157.41 338 *e*PKPAB **PKPab 05 00 42.7 +0.2**
KRLC Kraliky 157.41 338 *e*PKP2 **PKPab 05 00 42.7 +0.2**
DRGR 157.46 324 ⇓*i*P **PKPab 05 00 43.3 +0.4**
DRGR 157.46 324 ⇓PKP2 **PKPab 05 00 43.3 +0.4**
BRG Berggiesshubel 157.54 343 *e*P PKPdf 05 00 20.4 +9.3
comp=Z,3.7nm,0.7s
BRG *e* 05 00 42.5
comp=Z,19nm,1.3s
PVCC Panska Ves 157.68 342 *e*PKPAB **PKPab 05 00 44.1 +0.5**
PVCC Panska Ves 157.68 342 *e*PKP2 **PKPab 05 00 44.1 +0.5**
VYHS Vyhne 157.97 332 *e*PKP2 **PKPab 05 00 44.9 -0.1**
VYHS Vyhne 157.97 332 *e*PKP **PKPab 05 00 44.9 -0.1**
PSZ Piszkesteto 157.97 330 PFAKE 05 00 20.0 +8.2
PSZ LR LR
comp=Z,207nm,21.0s
GOPC GO Pecny, Ondr 158.17 340 *e*PKPAB **PKPab 05 00 45.9 +0.1**
GOPC GO Pecny, Ondr 158.17 340 *e*PKP2 **PKPab 05 00 45.9 +0.1**
PRU Pruhonice 158.18 341 *e*PKPAB **PKPab 05 00 45.6 -0.1**
PRU *ex* x 05 00 57.8
PRU Pruhonice 158.18 341 *e*PKP2 **PKPab 05 00 45.6 -0.1**
NKC Novy Kostel 158.50 345 *e*PKPAB **PKPab 05 00 47.1 0.0**
NKC Novy Kostel 158.50 345 *e*PKP2 **PKPab 05 00 47.1 0.0**
TREC Trest 158.51 339 *e*PKPAB **PKPab 05 00 47.8 +0.5**
TREC Trest 158.51 339 *e*PKP2 **PKPab 05 00 47.8 +0.5**
KHC Kasperske Hory 159.22 341 *e*PKPDF **PKPdf 05 00 12.0 -1.3**
KHC *e*PKPAB **PKPab 05 00 50.5 +0.1**
KHC *ep*PKP pPKP 05 00 57.4
KHC *ex* x 05 01 10.5
KHC Kasperske Hory 159.22 341 *e*PKIKP **PKPdf 05 00 12.0 -1.3**
KHC *e* 05 00 50.5
MDVR Moldovita 159.31 321 ⇑*i*P **PKPab 05 00 51.1 +0.1**
GERES GERESS Array B 159.45 341 PKP **PKPdf 05 00 12.2 -1.4**
comp=Z,0.3nm,0.6s,baz=145,slow=3.6,SNR=4.1
GERES PKPab **PKPab 05 00 51.2 -0.2**
comp=Z,1.3nm,0.9s,baz=35,slow=4.9,SNR=6.8
CONA Conrad Observa 159.56 336 *i* PKPab **PKPab 05 00 52.6 +0.6**
comp=Z,13nm,1.3s
VTS Vitosha 159.75 315 ⇑*i*P **PKPab 05 00 54.2 +1.1**
VTS Vitosha 159.75 315 ⇑PKP2 **PKPab 05 00 54.2 +1.1**
WLF Walferdange 160.02 355 PFAKE 05 00 20.0 +5.9
WLF LR LR
comp=Z,208nm,19.0s
MOA Molln 160.17 339 *i* PKPab **PKPab 05 00 54.9 +0.4**
comp=Z,8.8nm,1.2s
ARSA Arzberg 160.26 336 *i* PKPab **PKPab 05 00 55.2 +0.3**
comp=Z,7.7nm,1.2s
SANT Santorini 160.61 296 PFAKE 05 00 30.0 +15
SANT LR LR
comp=Z,133nm,20.0s
BFO Black Forest 161.10 350 PFAKE 05 00 30.0 +15
BFO LR LR
comp=Z,206nm,20.0s
IDI Anoyia 161.30 293 *e*PKPdf **PKPdf 05 00 15.7 -0.4**
IDI *e*PKPab **PKPab 05 01 00.4 +0.4**
RETA Reutte 161.46 345 *i* PKPab **PKPab 05 01 00.1 -0.1**
comp=Z,11nm,1.2s
MOTA Moosalm 161.51 344 *i* PKPab **PKPab 05 01 01.1 +0.6**
comp=Z,12nm,1.2s
ABTA Abfaltersbach 161.69 340 *i* PKPab **PKPab 05 01 00.2 -1.1**
comp=Z,7.2nm,0.8s
PDG Podgorica 162.19 319 ⇓*i*P **PKPab 05 01 03.9 +0.4**
TIR Tirane 162.50 316 PFAKE 05 00 30.0 +13
TIR LR LR
comp=Z,189nm,21.0s
TUE Stuetta 162.73 347 PFAKE 05 00 30.0 +13
TUE LR LR
comp=Z,224nm,20.0s
TORD Torodi Ar. Bea 163.38 173 PKP **PKPdf 05 00 18.3 -0.3**
comp=Z,5.9nm,1.2s,baz=221,slow=0.9,SNR=10
TORD PKPab **PKPab 05 01 09.6 +0.4**
comp=Z,23nm,0.9s,baz=190,slow=2.5,SNR=46
SSB Saint Sauveur 164.48 358 PFAKE 05 00 30.0 +11
SSB LR LR
comp=Z,187nm,19.0s
BNI Bardonecchia 164.54 352 PFAKE 05 00 30.0 +11
BNI LR LR
comp=Z,182nm,20.0s
VLC Villacollemand 164.66 342 PFAKE 05 00 30.0 +11
VLC LR LR
comp=Z,120nm,21.0s
AQU L'Aquila 165.18 331 PFAKE 05 00 30.0 +11
AQU LR LR
comp=Z,172nm,20.0s
TIP Timpagrande 165.71 315 *e*PKPdf **PKPdf 05 00 20.1 0.0**
TIP *e*PKPab **PKPab 05 01 19.2 0.0**
TIP LR LR
comp=Z,201nm,21.0s
CUC Castrocucco 165.75 319 PFAKE 05 00 30.0 +10
CUC LR LR
comp=Z,133nm,20.0s
MTE Manteigas 165.96 38 PFAKE 05 00 30.0 +10
MTE LR LR
comp=Z,239nm,21.0s
CEL Celeste 166.80 313 PFAKE 05 00 30.0 +9.1
CEL LR LR
comp=Z,203nm,22.0s
PAB San Pablo 168.20 32 PFAKE 05 00 30.0 +8.1
PAB LR LR
comp=Z,288nm,19.0s
ESDC Sonseca Array 168.27 30 PKP **PKPdf 05 00 22.3 +0.4**
comp=Z,0.1nm,0.3s,baz=242,slow=30,SNR=3.4
ESDC PKPab **PKPab 05 01 29.4 -1.1**
comp=Z,0.8nm,0.6s,baz=321,slow=3.6,SNR=6.6
ESDC PP **PP 05 05 20.8 +1.9**
comp=Z,0.2nm,0.3s,baz=325,slow=4.2,SNR=4.5
CLTB Caltabellotta 168.87 317 PFAKE 05 00 30.0 +7.6
CLTB LR LR
comp=Z,95nm,19.0s
WDD Wied Dalam 169.05 306 PFAKE 05 00 30.0 +7.6
WDD LR LR
comp=Z,224nm,20.0s
VSL Villasalto 169.21 336 PFAKE 05 00 30.0 +7.5
VSL LR LR
comp=Z,180nm,19.0s
RTC Rabat Centre 170.09 62 PFAKE 05 00 30.0 +6.9
RTC LR LR
comp=Z,1µm,22.0s
KEST Kesra 172.36 323 PKPab **PKPab 05 01 48.3 -0.4**
comp=Z,2.6nm,0.9s,baz=256,slow=15,SNR=2.9
TAM Tamanrasset 172.88 194 *e*PKIKP **PKPdf 05 00 25.5 +0.4**

TAM *e* 05 01 50.8
TAM MLR MLR
comp=Z,138nm,20.0s
TAM Tamanrasset 172.88 194 *e*PKPdf **PKPdf 05 00 25.5 +0.4**
TAM *e*PKPab **PKPab 05 01 50.8 -0.5**
TAM LR LR
comp=Z,138nm,20.0s

IDC 07 04:45:51.9±2.8, 29°.08S×176°.06W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.6/26, mbtmp3.6/2, Error ellipse: s-maj=110.3km s-min=44.5km az=20.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**44.89**	**265**	P	P	04 54 08.8	+0.3
	0.3nm,0.5s,baz=106,slow=6.8,SNR=3.1						
WRA	**Warramunga Arr**	**45.76**	**270**	P	P	04 54 14.8	-0.6
	0.6nm,0.5s,baz=110,slow=8.0,SNR=6.3						
FINES	**FINESS Array B**	**144.46**	**342**	PKP	PKPdf	05 05 29.8	+0.3
	0.5nm,0.5s,baz=79,slow=4.1,SNR=5.5						
TORD	**Torodi Ar. Bea**	**164.01**	**172**	PKPab	PKPab	05 06 49.8	-0.8
	0.4nm,0.7s,baz=196,slow=3.4,SNR=2.4						

IDC 07 04:53:36.5±2.9, 28°.93S×178°.48W, h0km, mb3.5/2, mb1 3.9/3, mb1mx3.7/21, mbtmp3.8/3, ML4.1/1, Error ellipse: s-maj=61.0km s-min=38.8km az=64.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**10.00**	**200**	Pn	Pn	04 56 02.1	+0.7
	1.5nm,0.3s,baz=275,slow=5.1,SNR=8.7						
URZ				Sn	Sn	04 57 54.3	-0.1
	4.0nm,0.3s,baz=157,slow=21,SNR=12						
ASAR	**Alice Springs**	**42.79**	**266**	P	P	05 01 35.8	-0.4
	0.4nm,0.5s,baz=105,slow=6.5,SNR=5.2						
WRA	**Warramunga Arr**	**43.64**	**271**	P	P	05 01 43.1	0.0
	0.3nm,0.3s,baz=109,slow=8.0,SNR=4.6						
TORD	**Torodi Ar. Bea**	**164.29**	**181**	PKPab	PKPab	05 14 36.1	-0.4
	0.6nm,1.0s,baz=184,slow=5.8,SNR=2.4						

NIED ***07*** *05:10:00, 37°.60N×142°.00E, h11km, Mw4.5 Best double couple: M0 7.29000×10^15 NP1:φs344.00000°, δ46.00000°, λ-63.00000°. NP2:φs127.00000°, δ50.00000°, λ-116.00000°.*
IDC ***07*** *05:10:03.5±0.3, 37°.60N×141°.96E, h0km, mb4.8/47, mb1 4.8/54, mb1mx4.8/72, mbtmp4.7/54, ML3.6/5, Error ellipse: s-maj=12.0km s-min=8.5km az=86.0*
JMA ***07*** *05:10:05.3±0.1, 37°.58N×142°.03E, h29km±3km, M4.7*
JMA Felt II J1.
BJI ***07*** *05:10:05.1, 37°.53N×142°.15E, h34km, mb4.8/59, mB4.9/38, Ms4.3/50, Ms7 4.1/45*
ISCJB ***07*** *05:10:06.0±0.6, 37°.62N±0°.02×141°.94E±0°.02, h23km±3km, mb4.8/229, MS4.2/16, Error ellipse: s-maj=3.7km s-min=2.7km az=164.7*
MOS ***07*** *05:10:06.3±0.9, 37°.68N×141°.88E, h25km, mb5.1/104, MS4.2/7, Error ellipse: s-maj=6.4km s-min=4.1km az=103.6*
NEIC ***07*** *05:10:09.4±0.3, 37°.62N×141°.88E, h37km±2km, mb4.9/139, Error ellipse: s-maj=3.5km s-min=2.4km az=153.0*
NEIC Recorded [2 JMA] in Fukushima and Miyagi.

ISC 07 05:10:08.1±0.5, 37°.60N±0°.03×142°.00E±0°.04, h30km±3km, h30km:pP-P, n834, σ1s09/882, mb4.9/231, MS4.2/16, 16C-20D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.93**	**256**	P	**Pn**	**05 10 22.5**	**-2.5**
JMM	**Marumori**	**0.99**	**286**	P	**Pn**	**05 10 23.6**	**-2.3**
JMM				S	**Sn**	**05 10 36.5**	**-2.4**
JIO	**Ouri**	**0.99**	**329**	P	**Pn**	**05 10 23.6**	**-2.3**
JIO				*e*S	**Sn**	**05 10 36.9**	**-2.0**
ONAJ	**Iwakimizuishiy**	**1.08**	**243**	P	**Pn**	**05 10 24.5**	**-2.7**
ONAJ				S	**Sn**	**05 10 38.5**	**-2.7**
JOU	**Okura**	**1.30**	**306**	P	**Pn**	**05 10 28.8**	**-1.4**
JOU				S	**Sn**	**05 10 45.6**	**-1.0**
JFT	**Otama**	**1.32**	**267**	P	**Pn**	**05 10 29.4**	**-1.1**
JFT				S	**Sn**	**05 10 46.5**	**-0.6**
JMK	**Ichinoseki**	**1.48**	**336**	P	**Pn**	**05 10 30.9**	**-1.7**
JYS	**Shirataka**	**1.65**	**293**	P	**Pn**	**05 10 34.0**	**-1.0**
JYS				S	**Sn**	**05 10 55.9**	**+0.8**
JFY	**Yanaizu**	**1.84**	**265**	P	**Pn**	**05 10 37.1**	**-0.4**
JFY				S	**Sn**	**05 10 59.9**	**+0.1**
JYK	**Kaneyama**	**1.84**	**316**	P	**Pn**	**05 10 36.3**	**-1.3**
JOM	**Ohasama**	**1.95**	**344**	P	**Pn**	**05 10 37.7**	**-1.4**
JOM				*e*S	**Sn**	**05 11 01.9**	**-0.6**
JYA	**Atsumi**	**2.06**	**299**	P	**Pn**	**05 10 39.6**	**-0.9**
JRG	**Rokugo**	**2.09**	**330**	P	**Pn**	**05 10 40.2**	**-0.8**
JRG				*e*S	**Sn**	**05 11 05.8**	**-0.1**
MJAR	**Matsushiro Arr**	**3.21**	**252**	Pn	**Pn**	**05 10 56.2**	**-0.2**
	13nm,0.3s,baz=85,slow=15,SNR=29						
MAJO	**Matsushiro**	**3.21**	**252**	*e*P	**Pn**	**05 10 57.0**	**+0.5**
MAJO	**Matsushiro**	**3.21**	**252**	*e*Pn	**Pn**	**05 10 56.9**	**+0.5**
MAT	**Matsushiro**	**3.21**	**252**	P	**Pn**	**05 10 56.9**	**+0.4**
MAT				S	**Sn**	**05 11 35.9**	**+2.2**
MJB9	**Matsu-Tunnel**	**3.21**	**252**	*e*Pn	**Pn**	**05 10 57.0**	**+0.5**
ERM	**Erimo**	**4.50**	**11**	*e*P	**Pn**	**05 11 12.9**	**-1.2**
ERM				*e*		05 12 04.7	
ERM	**Erimo**	**4.50**	**11**	*e*Pn	**Pn**	**05 11 12.8**	**-1.2**
ERM				*e*Sn	**Sn**	**05 12 04.7**	**-0.6**
INU	**Inuyama**	**4.60**	**242**	*e*Pn	**Pn**	**05 11 15.9**	**+0.4**
JHJ2	**Mitsune**	**4.82**	**202**	*e*Pn	**Pn**	**05 11 17.3**	**-1.3**
JHJ2				*e*Sn	**Sn**	**05 12 10.1**	**-3.3**
JHJ	**Hachijo jima 2**	**4.83**	**203**	Pn	**Pn**	**05 11 16.9**	**-1.8**
	75nm,0.3s,baz=332,slow=15,SNR=21						
JHJ				Sn	**Sn**	**05 12 11.8**	**-1.7**
	181nm,0.3s,baz=89,slow=23,SNR=7.4						
ASAJ	**Asahikawa**	**6.52**	**4**	Pn	**Pn**	**05 11 41.4**	**-0.5**
ASAJ				Sn	**Sn**	**05 12 56.5**	**+1.3**
	15nm,0.3s,baz=151,slow=25,SNR=4.0						
ASAJ	**Asahikawa**	**6.52**	**4**	*e*Pn	**Pn**	**05 11 40.7**	**-1.2**
ASAJ				*e*Sn	**Sn**	**05 12 55.4**	**+0.2**
KUR	**Kuril'sk**	**8.80**	**28**	*i* P	**Pn**	**05 12 14.1**	**+1.0**
YSS	**Yuzh-Sakhalins**	**9.36**	**3**	*e*P	**Pn**	**05 12 20.9**	**+0.1**
YSS	**Yuzh-Sakhalins**	**9.36**	**3**	*e*Pn	**Pn**	**05 12 22.0**	**+1.2**
VLA	**Vladivostok**	**9.48**	**309**	*c i*P	**Pn**	**05 12 24.1**	**+1.6**
VLA				*e*S	**Sn**	**05 14 10.5**	**+2.6**
VLA				pmax	pmax		
	comp=Z,65nm,1.1s						
MSHR	**Mys Shultsa**	**9.68**	**304**	*i* P	**Pn**	**05 12 22.1**	**-3.1**
USRK	**Ussuriysk Ar.**	**10.04**	**314**	Pn	**Pn**	**05 12 29.0**	**-1.1**
	comp=Z,1.8nm,0.3s,baz=118,slow=13,SNR=17						
JNU	**Nakatsue**	**10.12**	**247**	Pn	**Pn**	**05 12 34.8**	**+3.5**
	comp=Z,0.6nm,0.3s,baz=85,slow=21,SNR=7.4						
JNU	**Nakatsue**	**10.12**	**247**	*e*Pn	**Pn**	**05 12 33.9**	**+2.5**
CBIJ	**Chichi jima**	**10.48**	**179**	Pn	**Pn**	**05 12 34.0**	**-2.3**
JCJ	**Chichijima**	**10.48**	**179**	Pn	**Pn**	**05 12 34.0**	**-2.3**
	comp=Z,22nm,0.3s,baz=257,slow=7.2,SNR=3.1						
KSRS	**Korea Array**	**11.18**	**274**	Pn	**Pn**	**05 12 49.5**	**+3.7**
	comp=Z,0.5nm,0.3s,baz=86,slow=14,SNR=9.7						
KS15	**Wonju Array Si**	**11.21**	**273**	*e*Pn	**Pn**	**05 12 47.8**	**+1.6**
KSAR	**Wonju Array Be**	**11.21**	**273**	P	**Pn**	**05 12 49.5**	**+3.3**
KSAR	**Wonju Array Be**	**11.21**	**273**	Pn	**Pn**	**05 12 49.5**	**+3.3**
MDJ	**Mudanjiang**	**11.68**	**311**	P	**Pn**	**05 12 56.2**	**+3.6**
MDJ				pmax	pmax		
	comp=Z,13nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,89nm,7.0s						
MDJ	**Mudanjiang**	**11.68**	**311**	*e*Pn	**Pn**	**05 12 53.0**	**+0.4**
	comp=Z,50nm,1.0s						
TYV	**Tymovskoe**	**13.27**	**2**	*e*P	**Pn**	**05 13 11.5**	**-2.7**
TYV				pmax	pmax		
	comp=Z,8.0nm,0.6s						
KLR	**Kul'dur**	**13.79**	**331**	Pn	**Pn**	**05 13 21.5**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=131,slow=13,SNR=9.9						
DL2	**Dalian**	**16.06**	**281**	P	**P**	**05 13 53.7**	**-1.0**
DL2				*e*S	**Sn**	**05 16 50.5**	**+1.9**
DL2				pmax	pmax		
	comp=Z,33nm,0.8s						
DL2				LR	LR		
	comp=Z,470nm,16.1s						
DL2				LR	LR		
	comp=Z,360nm,16.6s						
SKR	**Severo-Kuril's**	**16.50**	**33**	*e*P	**Pn**	**05 13 58.1**	**+1.0**
PEA0	**Petropavlovsk-**	**18.96**	**30**	*e*P	**P**	**05 14 26.7**	**+0.1**
PEA0B	**Petropavlovsk-**	**18.96**	**30**	*e*sP	sP	05 14 42.2	+3.6
PETK	**Petropavlovsk-**	**18.96**	**30**	P	**P**	**05 14 26.6**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=197,slow=11,SNR=9.5						
PET	**Petropavlovsk**	**19.29**	**32**	*e*P	**Pn**	**05 14 33.1**	**+1.8**
PET				*e*S	**Sn**	**05 18 02.6**	**-3.9**
PET				pmax	pmax		
	comp=Z,23nm,0.9s						
PET				MLR	MLR		
	comp=Z,200nm,16.0s						
PET				MLR	MLR		
	comp=Z,200nm,15.0s						
HIA	**Hailar**	**19.85**	**313**	*e*P	**Pn**	**05 14 37.7**	**-0.4**
HIA				pmax	pmax		
	comp=Z,3.0nm,0.6s						
BJI	**Beijing**	**20.25**	**285**	P	**P**	**05 14 39.1**	**-1.7**
BJI				S	**S**	**05 18 25.6**	**-0.7**
BJI				pmax	pmax		
	comp=Z,9.0nm,0.8s						
BJI				LR	LR		
	comp=Z,250nm,13.8s						
BJI				LR	LR		
	comp=Z,130nm,11.6s						
BJT	**Baijiatuau**	**20.25**	**285**	*e*P	**P**	**05 14 39.1**	**-1.7**
BJT				pmax	pmax		
	comp=Z,13nm,0.6s						
BJT	**Baijiatuau**	**20.25**	**285**	*e*P	**P**	**05 14 39.1**	**-1.7**
	comp=Z,13nm,0.6s						
MA2	**Magadan**	**22.70**	**12**	P	**P**	**05 15 08.1**	**+1.1**
	comp=Z,27nm,0.8s,baz=181,slow=7.0,SNR=8.2						
TWG	**Pinlang**	**23.25**	**237**	*e*P	**P**	**05 15 13.8**	**+0.8**
	comp=Z,54nm,0.5s						
HHC	**Hu-ho-hao-te**	**23.74**	**287**	*e*P	**P**	**05 15 17.4**	**-0.3**
HHC				PP	**PnPn**	**05 15 54.1**	**+8.4**
HHC				S	**S**	**05 19 27.0**	**-4.1**
HHC				sS	sS	05 19 44.4	-1.1
HHC				SS	**SnSn**	**05 20 16.8**	**+6.6**
HHC				pmax	pmax		
	comp=Z,28nm,1.4s						
HHC				pmax	pmax		
	comp=Z,47nm,3.2s						
HHC				LR	LR		
	comp=Z,250nm,13.7s						
HHC				LR	LR		
	comp=Z,290nm,13.7s						
HHC				LR	LR		
	comp=Z,280nm,13.7s						
CIT	**Chita**	**24.60**	**315**	*e*P	**P**	**05 15 25.0**	**-0.4**
CIT				*e*		05 15 31.7	
CIT				pmax	pmax		
	comp=Z,145nm,1.2s						
YAK	**Yakutsk**	**25.62**	**347**	P	**P**	**05 15 33.6**	**-0.9**
	comp=Z,50nm,0.5s,baz=106,slow=0.7,SNR=10						
YAK	**Yakutsk**	**25.62**	**347**	*e*P	**P**	**05 15 33.4**	**-1.1**
YAK				*e*PP	**pP**	**05 15 40.8**	**-2.4**
YAK				*e*PPP	PPP	05 16 18.5	
YAK				*e*		05 19 02.3	
YAK				*e*S	**S**	**05 19 59.1**	**-1.3**
YAK				*e*SSS	SSS	05 21 17.6	
YAK				pmax	pmax		
	comp=Z,37nm,0.8s						
YAK				pmax	pmax		
	comp=N,36nm,1.1s						
YAK				pmax	pmax		
	comp=E,12nm,0.9s						
YAK				pmax	pmax		
	comp=Z,156nm,3.2s						
YAK				pmax	pmax		
	comp=N,148nm,3.4s						
YAK				pmax	pmax		
	comp=E,145nm,3.3s						
YAK				smax	smax		
	comp=N,71nm,2.8s						
YAK				smax	smax		
	comp=E,65nm,4.2s						
YAK				MLR	MLR		
	comp=Z,514nm,12.0s						
YAK				MLR	MLR		
	comp=E,228nm,15.0s						
YAK				MLR	MLR		
	comp=N,407nm,13.0s						
YAK	**Yakutsk**	**25.62**	**347**	*e*P	**P**	**05 15 33.9**	**-0.5**
	comp=N,104nm,1.1s						
SEY	**Seymchan**	**26.14**	**11**	P	**P**	**05 15 40.1**	**+0.9**
	comp=N,17nm,0.8s,baz=190,slow=7.3,SNR=29						
XAN	**Xi'an**	**26.98**	**272**	P	**P**	**05 15 47.3**	**+0.2**
XAN				pP	pP	05 15 56.9	+1.0
XAN				pmax	pmax		
	comp=N,11nm,0.6s						
XAN				LR	LR		
	comp=N,210nm,14.2s						
XAN				LR	LR		
	comp=N,260nm,13.2s						
BOD	**Bodaibo**	**27.30**	**327**	*e*P	**P**	**05 15 48.2**	**-1.5**
BOD				pmax	pmax		
	comp=Z,25nm,0.9s						
SONA1	**Songino Array**	**27.86**	**303**	*e*P	**P**	**05 15 55.3**	**+0.3**
SONM	**Songino Array**	**27.86**	**303**	P	**P**	**05 15 54.8**	**-0.3**
	comp=Z,13nm,0.8s,baz=97,slow=9.1,SNR=25						
SONM				PcP	**PcP**	**05 19 10.9**	**+0.7**
	comp=Z,1.9nm,0.8s,baz=132,slow=2.1,SNR=3.4						
H11N2	**WAKE ISLAND Hy**	**28.05**	**122**	T	T	05 45 07.3	
	baz=315,slow=75,SNR=2223						
H11N1	**WAKE ISLAND Hy**	**28.06**	**123**	T	T	05 45 20.2	
	baz=315,slow=75,SNR=3132						
H11N3	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	05 45 13.1	
	baz=315,slow=75,SNR=2577						
H11S1	**WAKE ISLAND Hy**	**28.79**	**125**	T	T	05 46 07.1	
	baz=317,slow=76,SNR=2039						
H11S3	**WAKE ISLAND Hy**	**28.79**	**125**	T	T	05 46 00.9	
	baz=317,slow=76,SNR=2679						
H11S2	**WAKE ISLAND Hy**	**28.80**	**125**	T	T	05 46 11.2	
	baz=317,slow=76,SNR=2066						
ZAK	**Zakamensk**	**30.29**	**307**	*e*P	**P**	**05 16 15.6**	**-0.9**
ZAK				pmax	pmax		
	comp=Z,9.0nm,1.1s						
TLY	**Talaya**	**30.32**	**310**	P	**P**	**05 16 16.4**	**-0.3**
	comp=Z,4.7nm,0.7s,baz=122,slow=7.3,SNR=8.5						
TLY	**Talaya**	**30.32**	**310**	*e*P	**P**	**05 16 16.9**	**+0.3**
TLY				pmax	pmax		
	comp=Z,5.0nm,0.7s						
TLY				MLR	MLR		
	comp=Z,211nm,15.0s						
LZH	**Lanzhou**	**30.44**	**279**	*e*P	**P**	**05 16 17.6**	**-0.4**
LZH				pP	pP	05 16 26.3	-0.5
LZH				sP	sP	05 16 30.1	-0.4
LZH				PP	**PnPn**	**05 17 16.2**	**-0.8**
LZH				*e*S	**S**	**05 21 13.0**	**-4.2**
LZH				sS	sS	05 21 35.0	+3.3
LZH				pmax	pmax		
	comp=Z,21nm,1.0s						
LZH				pmax	pmax		
	comp=Z,110nm,4.2s						
LZH				LR	LR		
	comp=Z,350nm,13.2s						
LZH				LR	LR		
	comp=Z,580nm,13.0s						
LZH				LR	LR		
	comp=Z,630nm,14.6s						
GYA	**Guiyang**	**31.78**	**260**	P	**P**	**05 16 31.0**	**+1.1**
GYA				pP	pP	05 16 40.2	+1.5
GYA				PP	**PnPn**	**05 17 37.6**	**+3.0**
GYA				PcP	**PcP**	**05 19 23.8**	**+3.1**
GYA				S	**S**	**05 21 37.0**	**-1.2**
GYA				sS	sS	05 21 52.4	-0.4
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.2s						
GYA				LR	LR		
	comp=Z,520nm,17.2s						
GYA				LR	LR		
	comp=Z,480nm,17.0s						
GYA				LR	LR		
	comp=Z,500nm,17.0s						
CD2	**Chengdu**	**32.14**	**270**	P	**P**	**05 16 31.8**	**-1.2**
CD2				pP	pP	05 16 40.6	-1.2
CD2				sP	sP	05 16 44.6	-0.9
CD2				S	**S**	**05 21 42.2**	**-1.5**
CD2				sS	sS	05 21 57.4	-0.9
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.2s						
CD2				LR	LR		
	comp=Z,270nm,13.9s						
CD2				LR	LR		
	comp=Z,370nm,13.9s						
CD2				LR	LR		
	comp=Z,340nm,15.4s						
GTA	**Gaotai**	**32.85**	**286**	*e*P	**P**	**05 16 38.1**	**-1.1**
GTA				pP	pP	05 16 46.9	-1.1
GTA				sP	sP	05 16 50.9	-0.8
GTA				PcP	**PcP**	**05 19 24.5**	**+1.0**
GTA				S	**S**	**05 21 51.4**	**-3.3**
GTA				sS	sS	05 22 06.6	-2.7
GTA				SS	**SnSn**	**05 23 51.1**	**-1.2**
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,28nm,6.7s						
GTA				LR	LR		
	comp=Z,260nm,21.4s						
GTA				LR	LR		
	comp=Z,180nm,22.8s						
GTA				LR	LR		
	comp=Z,270nm,19.0s						
BILL	**Bilibino**	**33.35**	**16**	*i* P	**P**	**05 16 41.8**	**-1.2**
BILL				*i*		05 16 49.6	
BILL				pmax	pmax		
	comp=Z,9.0nm,1.2s						
BILL				MLR	MLR		
	comp=Z,248nm,22.0s						
TIXI	**Tiksi**	**34.78**	**353**	P	**P**	**05 16 54.7**	**-0.7**
	comp=Z,8.6nm,0.8s,baz=143,slow=3.1,SNR=3.8						
KRAR	**Krasnoyarsk**	**37.38**	**316**	*i* P	**P**	**05 17 17.3**	**-0.5**
MYLDM	**Lahad Datu**	**38.75**	**219**	*e*P	**P**	**05 17 28.6**	**-1.2**
MYLDM				*e*pP	**sP**	**05 17 41.1**	**-1.3**
WMQ	**Urumqi**	**41.00**	**296**	P	**P**	**05 17 49.3**	**+1.0**
WMQ				pP	pP	05 17 57.9	+0.6
WMQ				sP	sP	05 18 01.3	+0.3
WMQ				S	**S**	**05 23 52.4**	**-6.2**
WMQ				SS	**SS**	**05 27 02.3**	**+1.3**
WMQ				pmax	pmax		
	comp=Z,35nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,130nm,3.8s						
WMQ				LR	LR		
	comp=Z,790nm,15.7s						
WMQ				LR	LR		
	comp=Z,430nm,13.4s						
WMQ				LR	LR		
	comp=Z,410nm,20.8s						
ZAA0	**Zalesovo Array**	**41.88**	**312**	*e*P	**P**	**05 17 55.2**	**-0.1**
ZALV	**Zalesovo Beam**	**41.88**	**312**	P	**P**	**05 17 54.6**	**-0.6**
	comp=Z,20nm,0.7s,baz=89,slow=7.1,SNR=88						
ZALV				PcP	**PcP**	**05 19 50.6**	**+0.1**
	comp=Z,6.3nm,0.7s,baz=107,slow=2.8,SNR=7.1						
ZALV	**Zalesovo Beam**	**41.88**	**312**	P	**P**	**05 17 54.6**	**-0.6**
ZALV						05 19 50.6	
ZALV				pmax	pmax		
	comp=Z,26nm,0.8s						
ZALV				pmax	pmax		
	comp=Z,6.0nm,0.7s						
CMAR	**Chiang Mai Arr**	**42.09**	**255**	P	**P**	**05 17 56.9**	**-0.5**
	comp=Z,1.1nm,0.3s,baz=48,slow=6.2,SNR=6.4						
CMAR				PcP	**PcP**	**05 19 52.6**	**+0.8**
	comp=Z,0.7nm,0.3s,baz=12,slow=2.8,SNR=6.2						
LSA	**Lhasa**	**42.62**	**275**	*e*P	**P**	**05 18 03.1**	**+0.9**
LSA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
LSA	**Lhasa**	**42.62**	**275**	*e*P	**P**	**05 18 03.1**	**+0.9**
	comp=Z,10.0nm,0.8s						
NVS	**Novosibirsk**	**42.79**	**313**	*i* P	**P**	**05 18 02.8**	**+0.2**
NVS				pmax	pmax		
	comp=Z,16nm,0.9s						
NVS				pmax	pmax		
	comp=N,2.0nm,0.4s						
NVS				pmax	pmax		
	comp=E,9.0nm,0.5s						
NRIK	**Noril'sk**	**42.95**	**335**	P	**P**	**05 18 03.5**	**-0.2**
	comp=E,2.9nm,0.4s,baz=105,slow=6.8,SNR=7.0						
NRIK				PcP	**PcP**	**05 19 54.2**	**+0.4**
	comp=E,1.9nm,0.3s,baz=114,slow=4.7,SNR=4.2						
MK31	**Makanchi Array**	**44.22**	**302**	*i* P	**P**	**05 18 14.0**	**-0.3**
MK31				pmax	pmax		
	comp=Z,17nm,0.9s						
MK31	**Makanchi Array**	**44.22**	**302**	*e*P	**P**	**05 18 14.3**	**0.0**
MKAR	**Makanchi Array**	**44.22**	**302**	P	**P**	**05 18 14.0**	**-0.3**
	comp=Z,12nm,0.8s,baz=83,slow=9.9,SNR=81						
MKAR				PcP	**PcP**	**05 19 59.2**	**+0.6**
	comp=Z,2.4nm,0.8s,baz=100,slow=3.2,SNR=2.1						
MAKZ	**Makanchi**	**44.42**	**302**	*e*P	**P**	**05 18 16.0**	**0.0**
MAKZ				pmax	pmax		
	comp=Z,24nm,1.3s						
MAKZ	**Makanchi**	**44.42**	**302**	*e*P	**P**	**05 18 16.0**	**0.0**
	comp=Z,24nm,1.3s						
KURK	**Kurchatov**	**45.95**	**308**	*e*P	**P**	**05 18 27.6**	**-0.4**
KURK						05 20 04.3	
KURK				pmax	pmax		
	comp=Z,44nm,0.8s						
KURK	**Kurchatov**	**45.95**	**308**	*e*P	**P**	**05 18 27.6**	**-0.4**
	comp=Z,44nm,0.8s						
KURK				PcP	**PcP**	**05 20 04.3**	**-0.1**
KURBB	**Kurchatov Arra**	**46.02**	**308**	P	**P**	**05 18 28.2**	**-0.3**
	comp=Z,26nm,0.7s,baz=82,slow=8.0,SNR=259						
KURBB				PcP	**PcP**	**05 20 04.3**	**-0.4**
	comp=Z,3.6nm,0.7s,baz=88,slow=3.9,SNR=4.6						
KDAK	**Kodiak Island**	**46.36**	**42**	*e*P	**P**	**05 18 31.5**	**+0.4**
KDAK				pmax	pmax		
	comp=Z,54nm,0.7s						
KDAK	**Kodiak Island**	**46.36**	**42**	*e*P	**P**	**05 18 31.5**	**+0.4**
	comp=Z,54nm,0.7s						
CAST	**Castle Rocks**	**46.49**	**34**	*e*P	**P**	**05 18 32.8**	**+0.7**
	comp=Z,3.9nm,0.8s						
PDGK	**Podgornoye**	**46.93**	**298**	P	**P**	**05 18 35.3**	**-0.4**
PDGK				pmax	pmax		
	comp=Z,19nm,0.7s						
BPAW	**Bear Paw Mtn.**	**46.99**	**34**	*e*P	**P**	**05 18 36.9**	**+0.9**
	comp=Z,30nm,2.0s						
KTH	**Kantishna Hill**	**47.01**	**34**	*e*P	**P**	**05 18 37.3**	**+1.1**
	comp=Z,13nm,1.1s						
MLY	**Manley**	**47.12**	**32**	*e*P	**P**	**05 18 38.1**	**+1.0**
	comp=Z,10nm,1.0s						
KAPI	**Kappang**	**47.19**	**211**	P	**P**	**05 18 39.2**	**+1.2**
	comp=Z,3.2nm,0.5s,baz=58,slow=22,SNR=2.0						
KAPI	**Kappang**	**47.19**	**211**	*e*P	**P**	**05 18 38.8**	**+0.8**
KAPI				*e*pP	**sP**	**05 18 52.5**	**+1.7**
TRF	**Thorofare Moun**	**47.30**	**34**	*e*P	**P**	**05 18 40.0**	**+1.3**
	comp=Z,40nm,1.9s						
RAMN	**Ramite**	**47.43**	**274**	*e*P	**P**	**05 18 40.0**	**-0.2**
	comp=Z,56nm,0.8s						
GUN	**Gumba**	**47.57**	**275**	*e*P	**P**	**05 18 41.5**	**+0.1**
	comp=Z,99nm,1.0s						
PMR	**Palmer**	**47.89**	**37**	*e*P	**P**	**05 18 43.3**	**+0.3**
PMR				pmax	pmax		
	comp=Z,13nm,1.2s						
PMR	**Palmer**	**47.89**	**37**	*e*P	**P**	**05 18 43.3**	**+0.3**
	comp=Z,13nm,1.2s						
MCK	**McKinley**	**47.90**	**34**	*e*P	**P**	**05 18 43.1**	**0.0**
MCK				pmax	pmax		
	comp=Z,24nm,1.6s						
MCK	**McKinley**	**47.90**	**34**	*e*P	**P**	**05 18 43.1**	**0.0**
	comp=Z,24nm,1.6s						
KKN	**Kakani**	**48.09**	**276**	*e*P	**P**	**05 18 45.2**	**-0.1**
	comp=Z,60nm,0.8s						
PKIN	**Phulchoki**	**48.10**	**275**	*e*P	**P**	**05 18 45.0**	**-0.4**
MDM	**Murphy Dome**	**48.19**	**32**	*e*P	**P**	**05 18 46.2**	**+1

DIV **Divide** 49.54 37 *e*P P 05 18 56.8 +1.1
comp=Z,18nm,1.0s
PYUN **Piuthan** 49.76 277 *e*P P 05 18 58.0 -0.1
comp=Z,142nm,0.9s
TKM2 **Tokmak 2** 49.77 298 P P 05 18 58.4 +0.4
TKM2 pmax pmax
comp=Z,40nm,1.1s
TKM2 **Tokmak 2** 49.77 298 *e*P P 05 18 58.2 +0.3
comp=Z,40nm,1.0s
DOT **Dot Lake** 50.07 34 *e*P P 05 19 00.1 +0.3
comp=Z,10nm,0.8s
BMRM **Bremner River** 50.12 38 *e*P P 05 19 00.6 +0.4
comp=Z,13nm,0.9s
VOSK **Vostochnaya** 50.25 312 *e*P P 05 19 00.8 -0.4
VOSK pmax pmax
comp=Z,18nm,0.9s
VOSK **Vostochnaya** 50.25 312 *e*P P 05 19 00.8 -0.4
comp=Z,18nm,0.9s
CHKZ **Chkalovo** 50.27 313 P P 05 19 00.6 -0.7
CHKZ pmax pmax
comp=Z,28nm,1.9s
OTUK **Ortayu** 50.47 306 P P 05 19 02.7 -0.3
OTUK pmax pmax
comp=Z,32nm,0.9s
BVA0 **Borovoye Array** 50.54 312 P P 05 19 02.9 -0.5
BVA0 pmax pmax
comp=Z,9.0nm,0.8s
BVAR **Borovoye Array** 50.54 312 P P 05 19 02.9 -0.5
comp=Z,7.0nm,0.8s,baz=69,slow=8.4,SNR=33
BVAR PcP **PcP** 05 20 21.4 +0.5
comp=Z,6.9nm,0.7s,baz=83,slow=4.6,SNR=7.9
BRVK **Borovoye** 50.59 312 *d i*P P 05 19 03.1 -0.7
BRVK pmax pmax
comp=Z,33nm,1.0s
BRVK **Borovoye** 50.59 312 *e*P P 05 19 03.7 -0.1
comp=Z,10nm,0.8s
KSH **Kashi** 50.60 294 *e*P P 05 19 08.1 +3.9
KSH *e*pP sP 05 19 17.9 +0.9
KSH *e*PP **PP** 05 21 05.6 +5.5
KSH PcS **PcS** 05 24 21.6 +2.6
KSH S **S** 05 26 20.3 +3.4
KSH pmax pmax
comp=Z,13nm,1.0s
KSH pmax pmax
comp=Z,120nm,4.8s
KSH LR LR
comp=Z,130nm,6.0s
KSH LR LR
comp=Z,89nm,8.7s
KSH LR LR
comp=Z,180nm,14.0s
AAK **Ala-Archa** 50.63 298 *d i*P P 05 19 04.4 0.0
AAK pmax pmax
comp=Z,18nm,0.7s
AAK **Ala-Archa** 50.63 298 *e*P P 05 19 04.6 +0.1
comp=Z,7.4nm,0.6s
EKS2 **Erkin-Say** 51.13 298 *e*P P 05 19 08.2 +0.1
EKS2 pmax pmax
comp=Z,10.0nm,0.8s
EKS2 **Erkin-Say** 51.13 298 *e*P P 05 19 08.2 +0.1
comp=Z,10.0nm,0.8s
ZRNK **Zerenda** 51.37 312 *e*P P 05 19 09.4 -0.2
ZRNK pmax pmax
comp=Z,15nm,0.8s
ZRNK **Zerenda** 51.37 312 *e*P P 05 19 09.4 -0.2
comp=Z,15nm,0.8s
MNAS **Manas** 52.07 299 P P 05 19 15.4 +0.2
MNAS pmax pmax
comp=Z,23nm,0.8s
KK31 **Karatay Array** 53.24 300 *i*P P 05 19 23.6 -0.1
KK31 pmax pmax
comp=Z,15nm,1.1s
KKAR **Karatay Array** 53.24 300 *e*P P 05 19 23.8 +0.1
KKAR **Karatay Array** 53.24 300 *e*P P 05 19 23.8 +0.1
INK **Inuvik** 53.67 27 P P 05 19 27.3 +0.9
comp=Z,5.2nm,0.9s,baz=279,slow=8.6,SNR=6.5
INK **Inuvik** 53.67 27 *e*P P 05 19 26.8 +0.4
INK pmax pmax
comp=Z,9.0nm,1.0s
INK **Inuvik** 53.67 27 *e*P P 05 19 26.8 +0.4
comp=Z,8.7nm,1.0s
GSI **Gunungsitoli** 54.49 239 *e*P P 05 19 33.3 +0.2
comp=Z,57nm,1.5s
SVE **Sverdlovsk** 55.03 318‖ *e*P P 05 19 36.9 +0.4
SVE pmax pmax
comp=Z,70nm,1.0s
ARU **Arti** 56.24 318 P P 05 19 45.0 -0.3
comp=Z,27nm,0.7s
ARU **Arti** 56.24 318 *d i*P P 05 19 44.9 -0.3
ARU 05 20 43.0
ARU 05 21 47.8
ARU S **S** 05 27 34.0 +1.3
ARU SS **SS** 05 31 14.1 -4.9
ARU pmax pmax
comp=Z,58nm,1.0s
ARU **Arti** 56.24 318 *e*P P 05 19 45.1 -0.1
comp=Z,42nm,0.8s
FITZ **Fitzroy Crossi** 57.51 199 P P 05 19 55.9 +1.4
comp=Z,3.1nm,0.8s,baz=21,slow=11,SNR=3.8
CTA **Charters Tower** 57.52 175 P P 05 19 52.8 -1.8
comp=Z,2.2nm,0.6s,baz=264,slow=7.6,SNR=2.8
KBL **Kabul** 57.65 291 *e*P P 05 19 55.3 -0.5
KBL pmax pmax
comp=Z,14nm,0.8s
KBL **Kabul** 57.65 291 *e*P P 05 19 55.3 -0.5
comp=Z,14nm,0.8s
WRAB **Tennant Creek** 57.68 189 *c i*P P 05 19 55.5 -0.2
WRAB pmax pmax
comp=Z,31nm,1.2s
WRAB **Tennant Creek** 57.68 189 *e*P P 05 19 56.0 +0.3
comp=Z,9.0nm,0.9s
WB2 **Warramunga Arr** 57.69 189 *e*P P 05 19 55.0 -0.8
comp=Z,13nm,0.9s
WRA **Warramunga Arr** 57.69 189 P P 05 19 55.1 -0.6
comp=Z,9.2nm,0.9s,baz=6.3,slow=7.1,SNR=21
DLBC **Dease Lake** 57.89 38 *e*P P 05 19 59.3 +2.4
comp=Z,9.6nm,1.0s
AB31 **Akbulak array** 57.93 310 *i*P P 05 19 56.7 -0.5
AB31 pmax pmax
comp=Z,12nm,0.6s
ABKAR **Akbulak array** 57.93 310 *e*P P 05 19 56.9 -0.3
AS01 **Alice Springs** 61.41 188 *e*P P 05 20 20.7 -0.7
ASAR **Alice Springs** 61.42 188 P P 05 20 21.4 0.0
comp=Z,5.8nm,0.8s,baz=5.8,slow=5.7,SNR=27
LVZ **Lovozero** 61.78 336‖ *e*P P 05 20 24.3 +0.8
LVZ pmax pmax
comp=Z,12nm,1.5s
RES **Resolute Bay** 61.93 15 P P 05 20 24.3 0.0
comp=Z,9.8nm,0.9s,baz=299,slow=7.3,SNR=3.6
APA **Apatity** 62.36 336‖ *i*P P 05 20 26.5 -0.8
APA pmax pmax
comp=Z,8.0nm,0.8s
APA MLR MLR
comp=Z,300nm,18.0s
YKA **Yellowknife Ar** 63.08 30 P P 05 20 32.2 +0.1
comp=Z,4.8nm,0.7s,baz=303,slow=6.7,SNR=51
KLMR **Klimovskoe** 63.52 328 *e*P P 05 20 32.3 -2.8
KLMR *e* 05 22 52.2
KLMR pmax pmax
comp=Z,18nm,1.3s
ARCES **ARCESS Array B** 63.63 339 P P 05 20 35.7 0.0
comp=Z,2.9nm,0.8s,baz=57,slow=8.8,SNR=7.7
DZM **Mont Dzumac** 63.66 155 P P 05 20 36.6 +0.1
comp=Z,5.7nm,0.9s,baz=50,slow=4.1,SNR=3.0
GEYT **Alibeck** 63.97 299 P P 05 20 38.5 0.0
comp=Z,4.9nm,0.3s,baz=333,slow=5.8,SNR=4.4
JOF **Joensuu** 65.68 332 P P 05 20 49.3 +0.2
JOF pmax pmax
comp=Z,11nm,1.7s
VRH **Novokhopyorsk** 67.47 318 *e*P P 05 20 59.9 -0.9
VRH pmax pmax
comp=Z,30nm,0.8s
SUF **Sumiainen** 67.68 333 P P 05 21 01.8 -0.1
SUF pmax pmax
comp=Z,19nm,1.0s
OBN **Obninsk** 67.92 323 P P 05 21 03.2 -0.3
comp=Z,15nm,0.4s,baz=57,slow=23,SNR=4.0
OBN **Obninsk** 67.92 323 *i*P P 05 21 02.9 -0.6
OBN pmax pmax
comp=Z,14nm,1.1s
OBN MLR MLR
comp=Z,87nm,15.0s
B08A **Colville Reser** 68.11 45 *e*P P 05 21 05.5 +0.6
comp=Z,12nm,1.3s
I03D **Drain, OR** 68.19 51 P P 05 21 07.0 +1.6
baz=302
FIA1 **FINESS Array S** 68.53 332 *e*P P 05 21 07.1 -0.1
FINES **FINESS Array B** 68.53 332 P P 05 21 07.0 -0.2
comp=Z,11nm,0.7s,baz=46,slow=8.2,SNR=42
EDM **Edmonton** 68.61 39 *e*P P 05 21 08.3 +0.3
EDM pmax pmax
comp=Z,53nm,0.4s
EDM **Edmonton** 68.61 39 *e*P P 05 21 08.3 +0.3
comp=Z,53nm,0.4s
VAF **Ylistaro** 68.68 335 P P 05 21 08.5 +0.4
VAF pmax pmax
comp=Z,10.0nm,1.1s
I04A **Tendick Farm,** 68.71 51 P P 05 21 09.7 +0.9
baz=302
VSR **Storozhevoye** 68.81 319 *e*P P 05 21 08.0 -1.2
VSR pmax pmax
comp=Z,30nm,1.2s
I05D **Terrebonne, OR** 69.08 50 P P 05 21 11.6 +0.6
baz=302
STKA **Stephens Creek** 69.12 180 P P 05 21 11.6 +0.4
comp=Z,2.9nm,0.6s,baz=208,slow=1.9,SNR=4.8
NEW **Newport** 69.39 45 P P 05 21 13.6 +0.7
baz=304
J05D **Fort Rock, OR** 69.71 51 P P 05 21 16.5 +1.3
baz=303
M02C **Callahan** 69.72 53 P P 05 21 16.5 +1.4
baz=303
SUMG **Summit** 70.12 0 *i*P P 05 21 18.0 +0.6
comp=Z,16nm,1.0s
SUMG **Summit** 70.12 0 *e*P P 05 21 18.0 +0.6
SUMG pmax pmax
comp=Z,15nm,0.9s
SUMG **Summit** 70.12 0 *e*P P 05 21 18.0 +0.6
comp=Z,15nm,0.9s
M04C **Macdoel** 70.15 52 P P 05 21 18.5 +0.7
baz=303
VSU **Vasula** 70.20 330 *de*P P 05 21 17.7 +0.1
VSU pmax pmax
comp=Z,67nm,1.3s
K05A **Summer Lake** 70.22 51 *e*P P 05 21 17.1 -1.2
comp=Z,14nm,0.9s
WALA **Waterton Lakes** 70.70 43 *e*P P 05 21 22.1 +1.1
comp=Z,9.0nm,0.8s
ZEI **Tsey** 70.80 309 *e*P P 05 21 20.3 -1.6
ZEI pmax pmax
comp=Z,24nm,0.5s
KVAR **Kislovodsk Arr** 70.88 311 P P 05 21 22.6 +0.4
comp=Z,26nm,1.1s,baz=294,slow=5.3,SNR=14
KBZ **Khabaz** 70.89 311 P P 05 21 22.3 +0.2
comp=Z,13nm,0.9s,baz=39,slow=3.5,SNR=26
KIV **Kislovodsk** 70.89 311 *e*P P 05 21 22.5 +0.3
KIV pmax pmax
comp=Z,43nm,1.1s
KIV **Kislovodsk** 70.89 311 *e*P P 05 21 23.7 +1.5
comp=Z,30nm,0.8s
O03D **Paynes Creek** 70.98 54 P P 05 21 23.1 +0.2
baz=304
WSAR **Wadi Sarin** 71.17 285 P P 05 21 23.6 -0.5
comp=Z,3.0nm,0.6s,baz=52,slow=7.4,SNR=3.7
BMO **Blue Mountains** 71.20 48 *e*P P 05 21 24.5 +0.3
comp=Z,7.3nm,1.1s
NEY **Neytrino** 71.26 310‖ *i*P P 05 21 25.7 +1.1
NEY pmax pmax
comp=Z,1.0nm,0.7s
SWMT **Swartz Lake** 71.55 44 *e*P P 05 21 27.1 +0.9
ORV **Oroville** 71.58 54 *e*P P 05 21 26.9 +0.5
ORV pmax pmax
comp=Z,6.0nm,1.0s
ORV **Oroville** 71.58 54 *e*P P 05 21 26.9 +0.5
comp=Z,5.8nm,1.0s
SCO **Scoresbysund** 71.59 354 *i*P P 05 21 26.4 +0.5
comp=Z,7.2nm,0.9s
SCO **Scoresbysund** 71.59 354 *i*P P 05 21 26.4 +0.5
SCO pmax pmax
comp=Z,7.0nm,0.9s
WVOR **Wild Horse Val** 71.77 50 *e*P P 05 21 28.8 +1.1
WVOR pmax pmax
comp=Z,6.0nm,1.0s
WVOR **Wild Horse Val** 71.77 50 *e*P P 05 21 28.8 +1.1
comp=Z,5.5nm,1.0s
AKH **Akhalkalaki** 71.82 308‖ *i*P P 05 21 28.8 +0.8
AKH **Akhalkalaki** 71.82 308 P P 05 21 28.8 +0.8
MSO **Missoula** 71.98 44 P P 05 21 29.0 +0.1
baz=306
MSO **Missoula** 71.98 44 *e*P P 05 21 29.1 +0.3
comp=Z,4.6nm,1.0s
PAHR **Pah Rah Range** 72.85 53 *e*P P 05 21 35.4 +1.2
comp=Z,7.4nm,1.0s
MFID **Camas Ranch** 72.90 48 *e*P P 05 21 35.3 +1.0
comp=Z,8.6nm,0.9s
FFC **Flin Flon** 72.97 33 *e*P P 05 21 34.8 +0.4
FFC pmax pmax
comp=Z,14nm,0.8s
FFC **Flin Flon** 72.97 33 *e*P P 05 21 34.8 +0.4
comp=Z,14nm,0.8s
CMB **Columbia Colle** 73.16 55 *e*P P 05 21 37.2 +1.3
CMB pmax pmax
comp=Z,9.0nm,1.0s
CMB **Columbia Colle** 73.16 55 *e*P P 05 21 37.2 +1.3
comp=Z,8.8nm,1.0s
LRM **Limekiln Ridge** 73.41 45 *e*P P 05 21 38.3 +0.8
ANN **Anapa** 73.47 314 *e*P P 05 21 35.3 -2.2
ANN *e*PP **pP** 05 21 45.4 -1.6
ANN *e*S **S** 05 31 01.4 -3.5
ANN *e*SS **SS** 05 35 48.6 +1.7
ANN pmax pmax
comp=Z,21nm,1.0s
EGMT **Eagleton** 73.53 42 P P 05 21 38.4 +0.4
baz=308
DLMT **Dillon** 73.61 45 *e*P P 05 21 39.8 +1.2
comp=Z,12nm,0.9s
NC405 **NORSAR Array S** 73.63 337 *e*P P 05 21 38.4 +0.2
HLID **Hailey** 73.64 47 P P 05 21 39.7 +0.9
baz=307
HLID **Hailey** 73.64 47 *e*P P 05 21 40.0 +1.2
comp=Z,6.2nm,0.9s
NC303 **NORSAR Array S** 73.65 338 *e*P P 05 21 38.4 +0.1
HFS **Hagfors** 73.76 336 P P 05 21 38.2 -0.8
comp=Z,18nm,0.9s,baz=46,slow=4.3,SNR=34
BMN **Battle Mountai** 73.79 51 *e*P P 05 21 41.3 +1.6
BMN pmax pmax
comp=Z,9.0nm,0.9s
BMN **Battle Mountai** 73.79 51 *e*P P 05 21 41.3 +1.6
comp=Z,8.7nm,0.9s
NC204 **NORSAR Array S** 73.79 338 *e*P P 05 21 39.8 +0.6
NB201 **NORSAR Array S** 73.81 337 *e*P P 05 21 38.9 -0.4
NB2 **NORSAR Subarra** 73.84 337 P P 05 21 39.1 -0.4
comp=Z,16nm,0.8s,baz=37,slow=5.9
NB2 **NORSAR Subarra** 73.84 337 P P 05 21 39.1 -0.4
baz=37,slow=5.9
NOA **NORSAR Array B** 73.84 337 P P 05 21 39.2 -0.2
comp=Z,10nm,0.7s,baz=39,slow=5.9,SNR=49
NBO02 **NORSAR Array S** 73.94 338 *e*P P 05 21 40.0 -0.1
BOZ **Bozeman (W)** 73.98 44 P P 05 21 41.7 +1.0
baz=308
BOZ **Bozeman (W)** 73.98 44 *e*P P 05 21 41.8 +1.1
BOZ pmax pmax
comp=Z,10.0nm,0.9s
BOZ **Bozeman (W)** 73.98 44 *e*P P 05 21 41.8 +1.1
comp=Z,9.9nm,0.9s
NBO00 **NORSAR Array S** 73.98 338 *e*P P 05 21 40.6 +0.4
NAO01 **NORSAR Array S** 74.09 337 *e*P P 05 21 41.4 +0.5
AKASG **Malin Array Be** 74.13 322 P P 05 21 40.8 -0.5
comp=Z,9.5nm,0.6s,baz=45,slow=6.2,SNR=41
KIEV **Kiev** 74.14 322 *d i*P P 05 21 40.9 -0.4
KIEV pmax pmax
comp=Z,29nm,1.7s
KIEV **Kiev** 74.14 322 *e*P P 05 21 40.6 -0.7
comp=Z,12nm,0.7s
YHB **Horse Butte** 74.77 45 *e*P P 05 21 47.0 +1.5
comp=Z,13nm,0.9s
ELK **Elko** 74.83 50 *e*P P 05 21 47.4 +1.6
ELK pmax pmax
comp=Z,3.0nm,0.8s
ELK **Elko** 74.83 50 *e*P P 05 21 47.4 +1.6
comp=Z,2.9nm,0.8s
GCMT **Greycliff** 74.97 43 *e*P P 05 21 47.9 +1.4
VES **Vestal, Richgr** 75.27 56 P P 05 21 48.8 +0.6
baz=306
YPP **Pitchstone Pla** 75.28 45 *e*P P 05 21 51.0 +2.5
comp=Z,5.5nm,0.8s
H17A **Grant Village** 75.34 45 P P 05 21 51.5 +2.7
baz=309
H17A **Grant Village** 75.34 45 *e*P P 05 21 51.9 +3.2
comp=Z,19nm,0.8s
PKM **Mcpherson Peak** 75.34 57 P P 05 21 49.9 +1.1
baz=306
IMW **Indian Meadow** 75.44 46 *e*P P 05 21 51.5 +2.1
comp=Z,14nm,0.8s
FLWY **Flagg Ranch** 75.46 45 *e*P P 05 21 52.3 +2.9
comp=Z,7.5nm,0.8s
CWC **Cottonwood Cre** 75.58 55 P P 05 21 50.7 +0.6
baz=306
RLMT **Red Lodge** 75.61 44 P P 05 21 51.2 +1.0
baz=309
RLMT **Red Lodge** 75.61 44 *e*P P 05 21 51.8 +1.5
comp=Z,6.4nm,0.8s
MOOW **Moose Ponds** 75.64 46 *e*P P 05 21 52.0 +1.5
comp=Z,6.5nm,0.8s
TPAW **Teton Pass** 75.69 46 *e*P P 05 21 52.5 +1.7
comp=Z,9.4nm,0.8s
GRAC **Grapevine Rang** 75.72 54 P P 05 21 51.9 +1.1
baz=306
ISA **Isabella, Lake** 75.78 56 P P 05 21 51.8 +0.6
baz=306
ISA **Isabella, Lake** 75.78 56 *e*P P 05 21 51.6 +0.4
ISA pmax pmax
comp=Z,5.0nm,0.6s
ISA **Isabella, Lake** 75.78 56 *e*P P 05 21 51.6 +0.4
comp=Z,4.5nm,0.6s
LOHW **Long Hollow** 75.81 46 *e*P P 05 21 53.3 +1.9
comp=Z,4.3nm,0.8s
SNOW **Snow King Moun** 75.81 46 *e*P P 05 21 53.4 +1.9
comp=Z,9.7nm,0.8s
REDW **Red Top Meadow** 75.82 46 *e*P P 05 21 53.2 +1.7
comp=Z,9.3nm,0.9s
ARVC **Arvin** 75.86 57 P P 05 21 52.4 +0.9
baz=306
DAC **Darwin (Calif)** 75.99 55 *e*P P 05 21 53.5 +1.0
DAC pmax pmax
comp=Z,7.0nm,0.8s
DAC **Darwin (Calif)** 75.99 55 *e*P P 05 21 53.5 +1.0
comp=Z,7.3nm,0.8s
R11A **Troy Canyon, C** 76.04 52 P P 05 21 53.9 +1.0
baz=307
R11A **Troy Canyon, C** 76.04 52 *e*P P 05 21 53.8 +1.0
comp=Z,7.8nm,1.0s
BGU **Big Grassy Mou** 76.05 49 *e*P P 05 21 54.3 +1.5
comp=Z,4.0nm,0.8s
DGMT **Dagmar** 76.10 39 P P 05 21 53.4 +0.7
baz=312
DGMT **Dagmar** 76.10 39 *e*P P 05 21 53.7 +0.9
comp=Z,32nm,1.0s
SPUT **South Promonto** 76.16 48 *e*P P 05 21 54.9 +1.5
comp=Z,4.6nm,1.0s
MPMC **Manual Prospec** 76.19 55 P P 05 21 54.5 +0.8
baz=307
LAO **LASA Array** 76.24 41 P P 05 21 54.7 +1.1
baz=311
LAO **LASA Array** 76.24 41 *e*P P 05 21 55.0 +1.4
comp=Z,18nm,0.9s
A25A **Svangstu Ranch** 76.32 38 P P 05 21 54.7 +0.7
baz=312
FURC **Furnace Creek,** 76.35 54 P P 05 21 55.3 +1.0
baz=307
RAO **Raoul Island** 76.37 145 P P 05 21 54.5 +0.3
comp=Z,265nm,0.3s,baz=62,slow=23,SNR=2.6
LRMC **Laurel Mtn Rad** 76.41 56 P P 05 21 55.4 +0.5
baz=307
TPNV **Topopah Spring** 76.46 54 P P 05 21 56.1 +0.9
baz=307
TPNV **Topopah Spring** 76.46 54 *e*P P 05 21 56.0 +0.9
TPNV pmax pmax
comp=Z,14nm,0.9s
TPNV **Topopah Spring** 76.46 54 *e*P P 05 21 56.0 +0.9
comp=Z,14nm,0.9s
SNCC **San Nicolas Is** 76.50 58 P P 05 21 56.5 +1.3
baz=306
HWUT **Hardware Ranch** 76.50 48 *e*P P 05 21 56.6 +1.2
comp=Z,12nm,1.0s
EDW2 **Edwards Air Fo** 76.56 56 P P 05 21 56.5 +0.9
baz=307
DUG **Dugway, Tooele** 76.63 49 P P 05 21 57.2 +1.2
baz=308
DUG **Dugway, Tooele** 76.63 49 *e*P P 05 21 57.3 +1.2
DUG pmax pmax
comp=Z,12nm,0.8s
DUG **Dugway, Tooele** 76.63 49 *e*P P 05 21 57.3 +1.2
comp=Z,12nm,0.8s
B25A **Knox Farm, Ray** 76.75 39 P P 05 21 57.5 +1.1
baz=312
A26A **Wade Farm, Ken** 76.88 38 P P 05 21 57.5 +0.5
baz=313
TCUT **Toone Canyon** 76.90 48 *e*P P 05 21 59.2 +1.5
comp=Z,16nm,0.8s
BW06 **Boulder Array** 76.93 46 P P 05 21 58.3 +0.5
baz=310
BW06 **Boulder Array** 76.93 46 *e*P P 05 21 58.3 +0.5
PD31 **Pinedale Array** 76.93 46 *e*P P 05 21 58.4 +0.6
PDAR **Pinedale Array** 76.93 46 P P 05 21 58.3 +0.5
comp=Z,6.9nm,0.6s,baz=261,slow=2.4,SNR=60
CTU **Camp Tracy** 76.96 49 *e*P P 05 21 59.3 +1.4
comp=Z,19nm,0.8s
SHOC **Shoshone, Teco** 77.08 55 P P 05 21 59.2 +0.7
baz=307
C25A **Freed Ranch, W** 77.08 39 P P 05 21 59.2 +1.0
baz=312
GSC **Goldstone, Bar** 77.09 55 P P 05 21 59.5 +0.9
baz=307
GSC **Goldstone, Bar** 77.09 55 *e*P P 05 21 59.7 +1.0
GSC pmax pmax
comp=Z,7.0nm,0.9s
GSC **Goldstone, Bar** 77.09 55 *e*P P 05 21 59.7 +1.0
comp=Z,6.8nm,0.9s
B26A **Jensen Ranch,** 77.13 38 P P 05 21 59.8 +1.2
baz=313
BFSC **Mount Baldy Ra** 77.16 57 P P 05 22 00.0 +0.9
baz=307
BSD **Bornholm Skovb** 77.16 332 *i*P P 05 21 58.4 -0.1
comp=Z,20nm,0.9s
BSD **Bornholm Skovb** 77.16 332 *i*P P 05 21 58.4 -0.1
BSD pmax pmax
comp=Z,20nm,0.9s
LVV **L'vov** 77.19 324 *e*P P 05 21 58.7 -0.1
SCI2 **San Clemente I** 77.32 58 P P 05 22 00.6 +0.8
baz=307
SHPR **Sheep Range** 77.43 54 *e*P P 05 22 02.2 +1.6
comp=Z,11nm,0.9s
TUQ **Turquoise Moun** 77.58 55 P P 05 22 02.6 +1.1
baz=308
BBRC **Big Bear Solar** 77.64 56 P P 05 22 02.5 +0.6
baz=307
HEC **Hector,Ludlow** 77.68 56 P P 05 22 02.5 +0.6
baz=307
A28A **Rude Farm, Bot** 77.72 37 P P 05 22 02.4 +0.6
baz=314
MURC **Murrieta** 77.85 57 P P 05 22 03.5 +0.6
baz=307
CCUT **Cedar City** 77.92 52 *e*P P 05 22 04.0 +0.6
comp=Z,8.4nm,0.9s
KWP **Kalwaria Pacla** 77.94 325 *e*P P 05 22 03.8 +0.8
KWP **Kalwaria Pacla** 77.94 325 *e*P P 05 22 03.8 +0.8
D26A **Manning** 77.95 39 P P 05 22 03.5 +0.3
baz=313
B28A **Dugan Ranch, T** 77.99 37 P P 05 22 03.9 +0.6
baz=314
MSU **Marysvale** 78.06 50 *e*P P 05 22 05.7 +1.5
MSU **Marysvale** 78.06 50 *e*P P 05 22 05.7 +1.5
BUR08 **Bucovina Ar. S** 78.14 322 *e*P P 05 22 04.7 +0.4
GMRC **Granite Mounta** 78.15 55 P P 05 22 05.4 +0.7
BURAR **Bucovina Array** 78.15 322‖ *i*P P 05 22 04.6 +0.2
BURAR **Bucovina Array** 78.15 322 P P 05 22 04.5 +0.2
TMUT **Trail Mountain** 78.16 49 *e*P P 05 22 06.2 +1.4
comp=Z,21nm,1.7s
A29A **Manning Farm,** 78.19 36 P P 05 22 05.0 +0.6
baz=315
TESR **Tescani** 78.19 320‖ *i*P P 05 22 04.7 +0.2
P17A **Butcher Ranch,** 78.33 49 *e*P P 05 22 07.0 +1.4
comp=Z,18nm,0.7s
CFR **Carcaliu** 78.33 319‖ *i*P P 05 22 05.4 +0.2
LCMT **Little Creek M** 78.33 52 *e*P P 05 22 07.0 +1.4
comp=Z,13nm,0.9s
PFO **Pinyon Flats O** 78.33 57 P P 05 22 06.1 +0.4
baz=308
PFO **Pinyon Flats O** 78.33 57 *e*P P 05 22 06.5 +0.9
PFO pmax pmax
comp=Z,8.0nm,1.0s
PFO **Pinyon Flats O** 78.33 57 *e*P P 05 22 06.5 +0.9
comp=Z,7.6nm,1.0s
109C **Camp Elliot, M** 78.34 58 P P 05 22 06.3 +0.8
baz=307
TPFO **Pinon Flats** 78.34 57 P P 05 22 06.3 +0.6
baz=308

MTPU **Mount Pierson** 78.35 51 *e*P P 05 22 07.6 +1.6
comp=Z,12nm,0.8s
B29A **Wagenman Farm,** 78.46 37 P P 05 22 06.5 +0.6
baz=315
KNB **Kanab** 78.59 52 *e*P P 05 22 09.0 +1.9
KNB pmax pmax
comp=Z,13nm,1.0s
KNB **Kanab** 78.59 52 *e*P P 05 22 09.0 +1.9
comp=Z,13nm,1.0s
VRI **Vrincioaia** 78.59 320⇑*i*P P 05 22 07.7 +1.0
VRI **Vrincioaia** 78.59 320 P P 05 22 08.3 +1.6
VRI pmax pmax
comp=Z,90nm,1.6s
A30A **Hoffart Farm,** 78.62 36 P P 05 22 07.3 +0.5
baz=315
KOLS **Kolonicke sedl** 78.63 324 *e*P P 05 22 07.3 +0.4
KOLS pmax pmax
comp=Z,5.0nm,1.1s
KOLS **Kolonicke sedl** 78.63 324 *e*P P 05 22 07.3 +0.4
PLOR **Plostina** 78.64 320⇓*i*P P 05 22 08.0 +0.9
PLOR **Plostina** 78.64 320 P P 05 22 07.9 +0.9
TIRR **Tirgusor** 78.67 318⇑*i*P P 05 22 07.4 +0.3
TIRR **Tirgusor** 78.67 318 P P 05 22 07.3 +0.2
SRU **San Rafael Swe** 78.69 49 *e*P P 05 22 08.5 +0.9
SRU pmax pmax
comp=Z,17nm,0.7s
SRU **San Rafael Swe** 78.69 49 *e*P P 05 22 08.5 +0.9
comp=Z,17nm,0.7s
K22A **Casper** 78.72 44 P P 05 22 08.1 +0.4
baz=311
K22A **Casper** 78.72 44 *e*P P 05 22 08.4 +0.8
comp=Z,8.1nm,0.8s
BAR **Barrett** 78.76 57 *e*P P 05 22 08.8 +0.9
comp=Z,5.8nm,0.8s
STHS **Stebnicka Huta** 78.76 325 *e*P P 05 22 08.4 +0.8
STHS pmax pmax
comp=Z,5.0nm,0.8s
STHS **Stebnicka Huta** 78.76 325 *e*P P 05 22 08.4 +0.8
ULM **Lac du Bonnet** 78.77 34 P P 05 22 07.5 -0.1
comp=Z,6.1nm,0.8s,baz=295,slow=4.8,SNR=7.1
MDND **Maddock** 78.77 37 P P 05 22 08.2 +0.5
baz=315
MDND **Maddock** 78.77 37 *e*P P 05 22 08.4 +0.7
comp=Z,30nm,0.9s
TLB **Topalu** 78.78 318⇑*i*P P 05 22 07.8 +0.1
MMU **Miners Mountai** 78.80 50 *e*P P 05 22 09.8 +1.5
MONP2 **Monument Peak** 78.80 57 P P 05 22 08.8 +0.5
baz=308
BR131 **Keskin Array S** 78.82 312 *e*P P 05 22 08.7 +0.4
BRTR **Keskin Array B** 78.82 312 P P 05 22 08.2 -0.1
comp=Z,3.4nm,0.9s,baz=90,slow=4.2,SNR=14
OJC **Ojcow** 78.83 326 *e*P P 05 22 08.4 +0.5
OJC **Ojcow** 78.83 326 *e*P P 05 22 08.7 +0.8
OJC pmax pmax
comp=Z,24nm,1.1s
OJC **Ojcow** 78.83 326 *e*P P 05 22 08.7 +0.8
comp=Z,24nm,1.1s
IRM **Iron Mountain** 78.87 55 P P 05 22 09.3 +0.9
baz=308
B30A **Myrvik Farm, E** 78.95 36 P P 05 22 09.0 +0.4
baz=316
BC3 **Big Chuckawall** 78.97 56 P P 05 22 09.6 +0.5
baz=308
H25A **Fruitdale** 78.99 41 P P 05 22 09.4 +0.4
baz=313
CRVS **Cervenica-Dubn** 79.03 325 *e*P P 05 22 09.0 -0.1
CRVS **Cervenica-Dubn** 79.03 325 *e*P P 05 22 09.0 -0.1
TRPA **Tarpa** 79.08 324⇓*e*P P 05 22 10.0 +0.7
RSSD **Black Hills** 79.09 42 P P 05 22 10.0 +0.2
baz=312
RSSD **Black Hills** 79.09 42 *e*P P 05 22 10.0 +0.2
RSSD pmax pmax
comp=Z,9.0nm,0.9s
RSSD **Black Hills** 79.09 42 *e*P P 05 22 10.0 +0.2
comp=Z,8.8nm,0.9s
IKP **In-Ko-Pah, Jac** 79.15 57 P P 05 22 10.9 +0.8
baz=308
SWSC **Sam W. Stewart** 79.18 57 P P 05 22 10.4 +0.3
baz=308
NIE **Niedzica** 79.19 326 *e*P P 05 22 10.7 +0.8
NIE **Niedzica** 79.19 326 *e*P P 05 22 10.7 +0.8
MLR **Muntele Rosu** 79.25 320 P P 05 22 11.1 +0.7
comp=Z,0.7nm,0.5s,baz=359,slow=2.5,SNR=4.6
MLR **Muntele Rosu** 79.25 320⇑*i*P P 05 22 11.4 +0.9
BR231 **Keskin MP Arra** 79.26 312 *e*P P 05 22 08.5 -2.1
B31A **Greenbush Farm** 79.29 36 P P 05 22 10.8 +0.3
baz=316
U15A **North Rim** 79.29 52 *e*P P 05 22 12.5 +1.5
comp=Z,12nm,0.9s
O20A **White River Ci** 79.38 47 P P 05 22 11.8 +0.5
baz=311
O20A **White River Ci** 79.38 47 *e*P P 05 22 12.3 +0.9
comp=Z,9.3nm,0.9s
C30A **Mose, Pekin** 79.41 37 P P 05 22 11.4 +0.2
baz=316
A32A **Rocking H Ranc** 79.46 35 P P 05 22 11.1 -0.3
baz=317,SNR=6.0
Y12C **Blythe** 79.53 55 P P 05 22 12.9 +0.8
baz=308
Y12C **Blythe** 79.53 55 *e*P P 05 22 13.3 +1.3
comp=Z,9.7nm,0.8s
C31A **Landman Farms,** 79.70 36 P P 05 22 12.8 +0.1
baz=316
VOIR 79.74 320⇑*i*P P 05 22 14.3 +1.2
VOIR 79.74 320 P P 05 22 14.3 +1.2
LANS **Liptovska Anna** 79.75 326 *e*P P 05 22 13.9 +0.9
LANS **Liptovska Anna** 79.75 326 *e*P P 05 22 13.9 +0.9
GLA **Glamis** 79.76 56 P P 05 22 14.1 +0.8
baz=308
GLA **Glamis** 79.76 56 *e*P P 05 22 14.3 +1.0
GLA pmax pmax
comp=Z,11nm,0.8s
GLA **Glamis** 79.76 56 *e*P P 05 22 14.3 +1.0
comp=Z,11nm,0.8s
KECS **Kecovo** 79.78 325 *e*P P 05 22 14.1 +1.0
KECS pmax pmax
comp=Z,3.0nm,1.0s
KECS **Kecovo** 79.78 325 *e*P P 05 22 14.1 +1.0
B32A **Ashes, Strandq** 79.82 35 P P 05 22 13.0 -0.4
baz=317,SNR=12
OKC **Ostrava-Krasne** 79.83 327 *e*P P 05 22 14.7 +1.3
OKC AMS AMS 06 00 30.0
comp=Z,200nm,21.7s
OKC **Ostrava-Krasne** 79.83 327 *e*P P 05 22 14.7 +1.3
OKC MLR MLR
comp=Z,200nm,21.7s
KSP **Ksiaz** 79.86 328 *e*P P 05 22 14.1 +0.6
KSP **Ksiaz** 79.86 328 *e*P P 05 22 14.1 +0.6
PV09 **Paradox Valley** 79.91 49 *e*P P 05 22 15.8 +1.4
A33A **Warroad** 79.95 34 P P 05 22 13.9 -0.1
baz=317,SNR=13
DRGR 79.95 323⇑*i*P P 05 22 14.2 0.0
DRGR 79.95 323 P P 05 22 14.2 0.0
ARR **Arges** 80.00 321⇓*i*P P 05 22 16.1 +1.6
PV10 **Paradox Valley** 80.05 49 *e*P P 05 22 16.8 +1.7
F29A **Eureka** 80.08 39 P P 05 22 14.9 +0.1
baz=315
PV04 **Paradox Valley** 80.12 49 *e*P P 05 22 16.4 +1.0
MORC **Moravsky Berou** 80.14 327⇑*i*P P 05 22 16.1 +1.0
MORC **Moravsky Berou** 80.14 327 *e*P P 05 22 16.0 +1.0
MORC pmax pmax
comp=Z,46nm,1.0s
MORC **Moravsky Berou** 80.14 327 *e*P P 05 22 15.9 +0.9
comp=Z,46nm,1.0s
AGMN **Agassiz Nation** 80.20 35 P P 05 22 15.0 -0.5
baz=317,SNR=9.4
AGMN **Agassiz Nation** 80.20 35 *e*P P 05 22 15.4 -0.1
comp=Z,9.2nm,0.8s
N23A **Red Feather La** 80.20 45 P P 05 22 17.2 +1.3
baz=312
N23A **Red Feather La** 80.20 45 *e*P P 05 22 17.5 +1.6
comp=Z,12nm,0.9s
PV05 **Paradox Valley** 80.20 49 *e*P P 05 22 17.1 +1.2
PHWY **Pilot Hill** 80.20 45 *e*P P 05 22 16.5 +0.5
comp=Z,4.1nm,0.9s
DPC **Dobruska-Polom** 80.22 328 *e*P P 05 22 16.2 +0.6
DPC **Dobruska-Polom** 80.22 328 *e*P P 05 22 16.2 +0.6
KRLC **Kraliky** 80.24 328 *e*P P 05 22 16.1 +0.5
KRLC **Kraliky** 80.24 328 *e*P P 05 22 16.1 +0.5
C32A **Crookston** 80.24 36 P P 05 22 15.5 -0.1
baz=317
D31A **Mcclaflin, Tow** 80.24 37 P P 05 22 15.7 +0.1
baz=316
B33A **Robert and Kas** 80.34 35 P P 05 22 15.9 -0.3
baz=317
Y14A **Wickenburg** 80.40 55 *e*P P 05 22 17.8 +0.9

WUAZ **Wupatki** 80.44 52 P P 05 22 18.6 +1.4
baz=310
WUAZ **Wupatki** 80.44 52 *e*P P 05 22 18.4 +1.3
comp=Z,15nm,0.9s
PSZ **Piszkesteto** 80.46 325⇓*i*P P 05 22 17.7 +0.8
PSZ **Piszkesteto** 80.46 325 *e*P P 05 22 17.8 +0.8
PSZ pmax pmax
comp=Z,17nm,1.0s
PSZ **Piszkesteto** 80.46 325 *e*P P 05 22 17.8 +0.8
comp=Z,17nm,1.0s
PSZ **Piszkesteto** 80.46 325⇑*e*P P 05 22 17.9 +1.0
F30A **Leola** 80.48 38 P P 05 22 17.0 0.0
baz=315
G29A **Hoven** 80.48 39 P P 05 22 17.2 +0.2
baz=315
PV01 **Paradox Valley** 80.48 49 *e*P P 05 22 18.7 +1.2
D32A **Dogwood Acres,** 80.51 36 P P 05 22 17.0 -0.1
baz=316
E31A **Nome** 80.51 37 P P 05 22 17.2 +0.1
baz=316
VYHS **Vyhne** 80.52 326 *e*P P 05 22 17.8 +0.7
VYHS pmax pmax
comp=Z,5.0nm,1.2s
VYHS **Vyhne** 80.52 326 *e*P P 05 22 17.8 +0.7
B34A **Aery, Baudette** 80.61 34 P P 05 22 17.1 -0.5
baz=318,SNR=5.7
113A **Mohawk Valley,** 80.63 56 *e*P P 05 22 19.0 +1.0
C33A **Trail** 80.64 35 P P 05 22 17.5 -0.2
baz=317,SNR=7.5
SMCO **Snowmass** 80.75 47 *e*P P 05 22 20.1 +1.0
comp=Z,1.5nm,0.8s
BRG **Berggiesshubel** 80.80 330 *e*PKP P 05 22 19.0 +0.5
comp=Z,11nm,1.0s
PVCC **Panska Ves** 80.81 329 *e*P P 05 22 19.5 +0.9
PVCC **Panska Ves** 80.81 329 *e*P P 05 22 19.5 +0.9
CLL **Collm** 80.83 330⇓*i*P P 05 22 18.6 -0.1
comp=Z,19nm,0.9s
CLL **Collm** 80.83 330 *e*P P 05 22 18.8 0.0
CLL pmax pmax
comp=Z,19nm,0.9s
CLL **Collm** 80.83 330 *e*P P 05 22 18.8 0.0
comp=Z,19nm,0.9s
F31A **Hecla** 80.84 38 P P 05 22 19.0 +0.1
baz=316
E32A **Braaten, Kindr** 80.88 37 P P 05 22 18.9 -0.2
baz=317
VRAC **Vranov** 80.90 327 P P 05 22 19.8 +0.6
comp=Z,6.5nm,0.6s,baz=64,slow=5.3,SNR=10
VRAC **Vranov** 80.90 327⇓*i*P P 05 22 19.9 +0.8
GZR **Gura Zlata** 80.91 321⇓*i*P P 05 22 19.4 0.0
X16A **Lo Mia Camp, P** 81.10 53 *e*P P 05 22 22.2 +1.4
C34A **RKJ Ranch, Bem** 81.11 35 P P 05 22 20.0 -0.3
baz=318
B35A **Bob, Littlefor** 81.11 34 P P 05 22 20.0 -0.3
baz=318,SNR=14
ISCO **Idaho Springs** 81.12 46 P P 05 22 21.6 +0.7
baz=312
ISCO **Idaho Springs** 81.12 46 *e*P P 05 22 22.3 +1.4
ISCO pmax pmax
comp=Z,4.0nm,0.8s
ISCO **Idaho Springs** 81.12 46 *e*P P 05 22 22.3 +1.4
comp=Z,4.5nm,0.8s
MVCO **Mesa Verde** 81.13 50 P P 05 22 21.8 +1.0
baz=311
MVCO **Mesa Verde** 81.13 50 *e*P P 05 22 21.9 +1.0
comp=Z,10nm,0.8s
GOPC **GO Pecny, Ondr** 81.19 329 *e*P P 05 22 21.2 +0.5
GOPC **GO Pecny, Ondr** 81.19 329 *e*P P 05 22 21.2 +0.5
PRU **Pruhonice** 81.24 329 *e*P P 05 22 21.6 +0.7
PRU AMS AMS 06 06 20.0
comp=Z,200nm,23.7s
PRU **Pruhonice** 81.24 329 *e*P P 05 22 21.6 +0.7
PRU MLR MLR
comp=Z,200nm,23.7s
G31A **Conde** 81.31 38 P P 05 22 21.9 +0.4
baz=316
BZS **Buzias** 81.32 322⇓*i*P P 05 22 21.5 +0.1
F32A **Veblen** 81.38 37 P P 05 22 21.7 0.0
baz=317
TREC **Trest** 81.38 328 *e*P P 05 22 22.3 +0.6
TREC **Trest** 81.38 328 *e*P P 05 22 22.3 +0.6
D34A **Park Rapids** 81.40 36 P P 05 22 21.6 -0.3
baz=318,SNR=13
E33A **Westby DABS, E** 81.45 36 P P 05 22 22.4 +0.3
baz=317
C35A **Jirik Farms, M** 81.50 34 P P 05 22 21.8 -0.6
baz=318,SNR=14
SUSD **Miller** 81.50 39 P P 05 22 22.7 +0.3
baz=316
ASF **Jabal al Asfar** 81.58 304 P P 05 22 23.6 +0.4
comp=Z,3.3nm,0.7s
I30A **Oaoma** 81.64 40 P P 05 22 23.5 +0.3
baz=315
G32A **Webster** 81.64 38 P P 05 22 23.4 +0.3
baz=316
H31A **Wolsey** 81.71 39 P P 05 22 23.6 0.0
baz=316
214A **Organ Pipe Nat** 81.77 56 P P 05 22 25.2 +1.1
baz=309
S22A **4UR Ranch, Cre** 81.78 48 P P 05 22 25.6 +1.2
baz=312
S22A **4UR Ranch, Cre** 81.78 48 *e*P P 05 22 25.8 +1.4
comp=Z,8.0nm,0.9s
F33A **5 Mile Ranch,** 81.80 37 P P 05 22 24.2 +0.3
baz=317
MDVR **Moldovita** 81.88 322⇓*i*P P 05 22 24.4 -0.1
D35A **Remer** 81.92 35 P P 05 22 24.2 -0.4
baz=318
Q24A **Divide** 81.95 47 P P 05 22 25.9 +0.6
baz=312
C36A **Pine Crest Far** 81.96 34 P P 05 22 24.4 -0.3
baz=319,SNR=8.4
X18A **Snowflake** 81.97 52 *e*P P 05 22 26.4 +1.0
MMAI **Mount Meron Ar** 82.02 306 P P 05 22 26.1 +0.6
comp=Z,5.4nm,0.7s,baz=38,slow=7.3,SNR=5.8
J30A **Dallas** 82.02 40 P P 05 22 25.4 +0.2
baz=315
E35A **Pequot Lakes** 82.15 35 P P 05 22 25.6 -0.3
baz=318
G33A **Ortonville** 82.20 37 P P 05 22 26.3 +0.2
baz=317
H32A **Carlson Farm,** 82.21 38 P P 05 22 26.0 -0.2
baz=316
D36A **Goodland** 82.25 34 P P 05 22 25.6 -0.7
baz=319
CONA **Conrad Observa** 82.26 327 *i*P P 05 22 27.2 +0.7
comp=Z,12nm,1.1s,SNR=5.6
C37A **Embarrass** 82.27 34 P P 05 22 26.2 -0.2
baz=320,SNR=7.5
KHC **Kasperske Hory** 82.30 329 *e*P P 05 22 27.1 +0.5
KHC *e*pP pP 05 22 36.0 -0.2
KHC **Kasperske Hory** 82.30 329 *e*P P 05 22 27.2 +0.6
KHC pmax pmax
comp=Z,6.0nm,1.0s
KHC **Kasperske Hory** 82.30 329 *e*P P 05 22 27.2 +0.6
comp=Z,6.0nm,1.0s
F34A **Alexandria** 82.32 36 P P 05 22 26.8 0.0
baz=318
OGNE **Ogallala** 82.34 43 P P 05 22 27.2 +0.1
baz=314
OGNE **Ogallala** 82.34 43 *e*P P 05 22 27.7 +0.7
comp=Z,23nm,1.3s
EYMN **Ely** 82.41 33 P P 05 22 27.1 -0.1
baz=320
EYMN **Ely** 82.41 33 *e*P P 05 22 27.0 -0.1
comp=Z,13nm,0.8s
H33A **Prehn Over Nor** 82.42 38 P P 05 22 27.6 +0.2
baz=317
J31A **Geddes** 82.43 40 P P 05 22 27.4 0.0
baz=316
GEC2 **GERESS Array S** 82.47 328 *e*P P 05 22 27.9 +0.3
GEC2 pmax pmax
comp=Z,8.0nm,1.0s
GEC2 **GERESS Array S** 82.47 328 *e*P P 05 22 27.9 +0.3
comp=Z,8.1nm,1.0s
GERES **GERESS Array B** 82.47 328 P P 05 22 27.4 -0.1
comp=Z,2.4nm,0.5s,baz=36,slow=5.0,SNR=31
GEA0 **GERESS Array S** 82.48 328 *e*P P 05 22 27.4 -0.2
I32A **Karley and Nic** 82.55 39 P P 05 22 27.9 0.0
baz=317
G34A **Benson** 82.55 37 P P 05 22 28.1 +0.2
baz=318,SNR=7.3
SDCO **Great Sand Dun** 82.56 48 P P 05 22 29.1 +0.6
baz=312
SDCO **Great Sand Dun** 82.56 48 *e*P P 05 22 29.4 +0.9
comp=Z,4.9nm,0.9s
F35A **Swanville** 82.60 36 P P 05 22 28.1 0.0
baz=318
D37A **Cotton** 82.60 34 P P 05 22 27.7 -0.4
baz=320
C38A **Sawbill Land.** 82.68 33 P P 05 22 28.4 -0.2
baz=320
VTS **Vitosha** 82.69 319⇑*i*P P 05 22 29.9 +1.0
VTS **Vitosha** 82.69 319 *e*P P 05 22 29.5 +0.6
VTS pmax pmax
comp=Z,9.0nm,0.7s
VTS **Vitosha** 82.69 319 *e*P P 05 22 29.5 +0.6
comp=Z,9.0nm,0.7s
E36A **McGregor** 82.71 35 P P 05 22 28.5 -0.2
baz=319,SNR=8.6
J32A **Parkston** 82.83 39 P P 05 22 29.3 -0.1
baz=316
I33A **Coleman** 82.86 38 P P 05 22 29.8 +0.2
baz=317
TUC **Tucson** 82.87 55 P P 05 22 30.8 +0.8
baz=310
TUC **Tucson** 82.87 55 *e*P P 05 22 31.1 +1.2
TUC pmax pmax
comp=Z,4.0nm,0.8s
TUC **Tucson** 82.87 55 *e*P P 05 22 31.1 +1.2
comp=Z,4.1nm,0.8s
K31A **O'Neill** 82.90 40 P P 05 22 30.1 +0.3
baz=316
H34A **Spellman Lake,** 82.91 37 P P 05 22 29.9 +0.1
baz=318
MOA **Molln** 83.01 328 *i*P P 05 22 30.1 -0.2
comp=Z,5.2nm,1.0s
F36A **Milaca** 83.08 35 P P 05 22 30.5 -0.1
baz=319
G35A **Watkins** 83.11 36 P P 05 22 31.3 +0.5
baz=318
ECSD **EROS Data Cent** 83.18 39 P P 05 22 31.4 +0.1
baz=317
ECSD **EROS Data Cent** 83.18 39 *e*P P 05 22 31.3 +0.1
comp=Z,13nm,0.8s
K32A **Verdigre** 83.28 40 P P 05 22 31.5 -0.2
baz=316
J33A **Davis** 83.31 39 P P 05 22 31.7 -0.2
baz=317
I34A **Hadley** 83.33 38 P P 05 22 32.1 +0.1
baz=318
H35A **Sunnyside Ranc** 83.34 37 P P 05 22 32.5 +0.5
baz=318,SNR=31
G36A **St. Michael** 83.45 36 P P 05 22 32.6 0.0
baz=319
PERS **Pernice** 83.58 326 *i*P P 05 22 33.4 +0.2
SOKA **Soboth** 83.58 326 *i*P P 05 22 33.4 +0.1
comp=Z,11nm,0.8s,SNR=10
T25A **Trinidad** 83.61 47 P P 05 22 34.7 +0.9
baz=313
T25A **Trinidad** 83.61 47 *e*P P 05 22 34.8 +0.9
comp=Z,16nm,0.8s
L32A **Elgin** 83.73 40 P P 05 22 34.2 +0.1
baz=316
LAZ **Ladron** 83.81 51 *e*P P 05 22 36.4 +1.5
K33A **Hardington** 83.81 40 P P 05 22 34.9 +0.4
baz=317
H36A **Jessenland, He** 83.86 37 P P 05 22 35.1 +0.5
baz=319,SNR=10
ANMO **Albuquerque** 83.86 50 P P 05 22 36.3 +1.1
baz=312
ANMO **Albuquerque** 83.86 50 *e*P P 05 22 36.6 +1.4
ANMO pmax pmax
comp=Z,10.0nm,1.0s
ANMO **Albuquerque** 83.86 50 *e*P P 05 22 36.6 +1.4
comp=Z,10nm,1.0s
I35A **Creekview Farm** 83.89 38 P P 05 22 34.8 -0.1
baz=318
SPMN **Marine on St.** 83.89 36 P P 05 22 34.8 0.0
baz=319
SPMN **Marine on St.** 83.89 36 *e*P P 05 22 35.1 +0.2
comp=Z,8.1nm,0.9s
KBA **Koelnbreinsper** 84.00 328 *i*PcP P 05 22 36.2 +0.6
comp=Z,9.4nm,0.9s
BGNE **Belgrade** 84.09 41 P P 05 22 36.4 +0.5
baz=316
J35A **Milford** 84.14 38 P P 05 22 35.9 -0.3
baz=318,SNR=6.6
LPM **Los Pinos Moun** 84.18 51 *e*P P 05 22 38.0 +1.2
K34A **Le Mars** 84.20 39 P P 05 22 36.5 0.0
baz=318
MYKA **Terra Mystica** 84.22 327 *i*P P 05 22 35.9 -0.7
comp=Z,7.0nm,0.7s
I36A **Fitzsimmons Fa** 84.23 37 P P 05 22 36.9 +0.3
baz=319
BNM **Barren Site** 84.29 51 *e*P P 05 22 38.4 +1.0
H37A **Dierke Farm, C** 84.33 36 P P 05 22 37.5 +0.4
baz=319,SNR=5.4
O31A **Woolen Ranch,** 84.37 43 P P 05 22 37.1 -0.3
baz=316
319A **Douglas** 84.44 54 *e*P P 05 22 39.4 +1.3
EIL **Elat** 84.46 303 P P 05 22 38.5 +0.5
M33A **Taylor Creek F** 84.46 40 P P 05 22 37.7 -0.1
baz=317
I37A **Lemond, Waseca** 84.53 37 P P 05 22 38.8 +0.7
baz=319,SNR=15
J36A **Seneca 1, Swea** 84.59 38 P P 05 22 38.3 -0.2
baz=319,SNR=8.7
L34A **Svendsen Farm,** 84.59 40 P P 05 22 38.5 0.0
baz=317
K35A **Storm Lake** 84.61 38 P P 05 22 38.4 -0.2
baz=318
JAVS **Javornik** 84.61 326 *i*P P 05 22 37.6 -1.0
ABTA **Abfaltersbach** 84.61 328 *i*P P 05 22 37.6 -1.0
comp=Z,8.2nm,1.1s
121A **Cookes Peak, D** 84.64 53 P P 05 22 40.5 +1.4
baz=312
121A **Cookes Peak, D** 84.64 53 *e*P P 05 22 40.3 +1.2
comp=Z,13nm,0.9s
121A *e*pP sP 05 22 51.4 -0.9
SCHQ **Schefferville** 84.66 16 P P 05 22 39.0 +0.5
comp=Z,6.4nm,0.7s,baz=335,slow=6.7,SNR=8.1
RETA **Reutte** 84.75 329 *i*P P 05 22 39.5 +0.2
comp=Z,13nm,0.8s,SNR=6.5
PDG **Podgorica** 84.81 321⇓*i*P P 05 22 39.6 +0.1
M34A **Aspy Farms, Fr** 84.83 40 P P 05 22 39.5 -0.2
baz=317
COWI **Conover** 84.86 33 *e*P P 05 22 39.7 0.0
comp=Z,8.7nm,0.8s
L35A **Bielow Farm, R** 84.90 39 P P 05 22 39.7 -0.3
baz=318
J37A **Redenius Farm,** 84.99 37 P P 05 22 40.6 +0.2
baz=319
I38A **Scanlan Farm,** 85.01 36 P P 05 22 40.3 -0.2
baz=320,SNR=7.6
BFO **Black Forest** 85.03 331 *e*P P 05 22 40.9 +0.3
BFO pmax pmax
comp=Z,20nm,1.0s
BFO **Black Forest** 85.03 331 *e*P P 05 22 40.9 +0.3
comp=Z,20nm,1.0s
K36A **Gilmore City** 85.06 38 P P 05 22 40.8 0.0
baz=319,SNR=6.4
CBKS **Cedar Bluff** 85.09 44 P P 05 22 40.8 -0.3
baz=316
P32A **Huiting Farm,** 85.13 42 P P 05 22 40.7 -0.5
baz=316
FETA **Feichten** 85.14 329 *i*P P 05 22 41.2 -0.2
comp=Z,12nm,1.0s,SNR=6.5
DAVA **Damuels** 85.27 330 *i*PcP P 05 22 42.0 0.0
comp=Z,16nm,0.9s,SNR=7.6
M35A **Neola** 85.31 40 P P 05 22 42.1 0.0
baz=318,SNR=5.6
L36A **Harm Buss Farm** 85.35 39 P P 05 22 42.3 0.0
baz=318,SNR=5.7
K37A **Belmond** 85.35 38 P P 05 22 42.3 0.0
baz=319,SNR=14
N34A **Lincoln** 85.36 40 P P 05 22 41.9 -0.5
baz=317
KARP **Karpathos** 85.43 312 *e*P P 05 22 42.6 -0.3
comp=Z,8.3nm,0.7s
J38A **Wedel Dairy, R** 85.49 37 P P 05 22 42.9 -0.1
baz=320,SNR=6.7
Q32A **Meitler Ranch,** 85.61 43 P P 05 22 43.3 -0.4
baz=316
FUORN **Ofenpass-Fuorn** 85.65 329 *e*P P 05 22 44.2 +0.2
comp=Z,20nm,0.8s
DAVOX **Davos/Dischmat** 85.68 329 P P 05 22 44.3 +0.2
comp=Z,7.7nm,0.9s,baz=109,slow=3.4,SNR=8.9
O34A **Beatrice** 85.74 41 P P 05 22 43.7 -0.5
baz=317
P33A **Williams Farm,** 85.75 42 P P 05 22 44.1 -0.2
baz=317
M36A **Felix, Anita** 85.77 39 P P 05 22 44.5 +0.2
baz=318,SNR=7.8
N35A **Tabor** 85.78 40 P P 05 22 44.8 +0.4

baz=318
L37A Phoenix Point, 85.78 38 P P 05 22 44.6 +0.2
baz=319
J39A Decorah 85.84 36 P P 05 22 44.2 -0.5
baz=320,SNR=11
R32A Long Quarter, 85.94 43 P P 05 22 44.8 -0.5
baz=316
Q33A Connelly Farm, 86.00 42 P P 05 22 45.1 -0.5
baz=317
O35A Humboldt 86.08 41 P P 05 22 45.7 -0.2
baz=318
P34A Walnut Farm, R 86.13 42 P P 05 22 45.8 -0.4
baz=317
TUE Stuetta 86.14 329 eP P 05 22 46.0 -0.4
comp=Z,6.3nm,0.9s
L38A Oak Wood Farm, 86.16 38 P P 05 22 46.4 +0.1
baz=320
N36A Muff Farm, Cla 86.16 40 P P 05 22 46.7 +0.4
baz=318,SNR=8.9
M37A Trindle Farm, 86.17 39 P P 05 22 46.9 +0.5
baz=319
SCIA State Center 86.21 38 eP P 05 22 47.6 +1.0
comp=Z,19nm,0.8s
K39A Oelwein 86.24 37 P P 05 22 46.2 -0.5
baz=320,SNR=10
J40A Soldiers Grove 86.25 36 P P 05 22 46.5 -0.2
baz=321
S32A Newby Ranch, P 86.33 44 P P 05 22 47.3 0.0
baz=316
R33A Olander Ranch, 86.41 43 P P 05 22 47.4 -0.2
baz=317
Q34A Chapman 86.53 42 P P 05 22 48.1 -0.1
baz=317
P35A Duane Minner, 86.57 41 P P 05 22 48.1 -0.3
baz=318
KSU1 Kansas State U 86.57 42 P P 05 22 48.2 -0.2
baz=317
KSU1 Kansas State U 86.57 42 eP P 05 22 48.6 +0.2
comp=Z,21nm,0.7s
N37A Lee Faris, Mou 86.58 39 P P 05 22 48.8 +0.4
baz=319,SNR=9.6
M38A Pleasantville 86.59 38 P P 05 22 48.8 +0.4
baz=319,SNR=6.5
K40A Colesburg 86.60 36 P P 05 22 48.3 -0.1
baz=321,SNR=10
J41A Loganville 86.60 35 P P 05 22 48.4 0.0
baz=321
L39A Vinton 86.63 37 P P 05 22 48.8 +0.2
baz=320,SNR=9.3
O36A Bolckow 86.67 40 P P 05 22 49.0 +0.2
baz=318,SNR=9.9
LAST Lasithi 86.69 313 eP P 05 22 49.1 0.0
comp=Z,15nm,0.8s
MNTX Cornudas Mount 86.71 52 P P 05 22 49.8 +0.6
baz=313
MNTX Cornudas Mount 86.71 52 eP P 05 22 50.0 +0.8
comp=Z,3.2nm,0.8s
MSTX Muleshoe 86.75 49 eP P 05 22 50.0 +0.5
comp=Z,4.8nm,1.0s
AMTX Amarillo 86.76 48 P P 05 22 50.3 +0.8
baz=315
AMTX Amarillo 86.76 48 eP P 05 22 50.6 +1.1
comp=Z,20nm,0.8s
R34A Isabella, Hill 86.82 43 P P 05 22 49.7 +0.1
baz=317
JFWS Jewell Farm 86.85 36 eP P 05 22 49.7 +0.1
JFWS pmax pmax
comp=Z,12nm,1.0s
JFWS Jewell Farm 86.85 36 eP P 05 22 49.7 +0.1
comp=Z,12nm,1.0s
P36A Good Intent, A 86.92 41 P P 05 22 50.0 0.0
baz=318,SNR=6.7
IDI Anoyia 86.94 313 P P 05 22 49.7 -0.6
comp=Z,8.4nm,0.9s,baz=327,slow=9.7,SNR=5.9
IDI Anoyia 86.94 313 eP P 05 22 49.7 -0.6
comp=Z,9.4nm,0.9s
M39A Webster 87.04 38 P P 05 22 50.8 +0.2
baz=320,SNR=6.8
N38A Joes South For 87.04 39 P P 05 22 50.9 +0.3
baz=319,SNR=5.5
L40A Anamosa 87.05 37 P P 05 22 50.5 -0.1
baz=321,SNR=7.5
Q35A Mercer Eighty, 87.05 42 P P 05 22 50.6 -0.1
baz=318,SNR=9.2
O37A Wolven Farm, M 87.06 40 P P 05 22 51.2 +0.5
baz=319,SNR=8.3
K41A Shullsburg 87.06 36 P P 05 22 50.7 +0.1
baz=321
Q36A Arnold C. Orve 87.28 41 P P 05 22 51.6 -0.2
baz=318
S34A Willow Spring 87.33 43 P P 05 22 52.2 +0.1
baz=317
N39A Derby Farms, D 87.34 38 P P 05 22 52.4 +0.3
baz=320,SNR=7.4
R35A Emporia Munici 87.36 42 P P 05 22 52.6 +0.3
baz=318
L41A Preston 87.38 36 P P 05 22 52.2 -0.1
baz=321
P37A Lathrop 87.39 40 P P 05 22 52.1 -0.2
baz=319,SNR=11
V32A Arapaho 87.69 45 P P 05 22 54.8 +0.9
baz=316
U33A Lingo Farm, Me 87.70 44 P P 05 22 54.2 +0.3
baz=317
VLDQ Val d'Or 87.71 25 eP P 05 22 53.1 -0.5
R36A Gordon, Harris 87.73 42 P P 05 22 54.2 +0.2
baz=318,SNR=7.4
S35A Otter Creek Ra 87.77 43 P P 05 22 54.6 +0.4
baz=318
P38A Dawn 87.78 40 P P 05 22 54.5 +0.3
baz=319,SNR=13
T34A McClaskey Farm 87.78 43 P P 05 22 54.5 +0.2
baz=317
O39A Kirksville 87.79 39 P P 05 22 54.4 +0.1
baz=320
W32A Sentinel 88.00 46 P P 05 22 56.2 +0.8
baz=316
U34A Anderson Ranch 88.02 44 P P 05 22 55.9 +0.4
baz=317
V33A Lossen Ranch, 88.05 45 P P 05 22 55.9 +0.4
baz=317
R37A Teagarden Farm 88.09 41 P P 05 22 55.6 -0.1
baz=318
S36A Lake Cedric, C 88.13 42 P P 05 22 55.9 +0.1
baz=318
O40A La Belle 88.23 38 P P 05 22 56.6 +0.3
baz=320,SNR=7.8
T35A Sooner Cattle 88.23 43 P P 05 22 56.5 +0.1
baz=316
Q38A Cooks Store, C 88.23 40 P P 05 22 56.1 -0.3
baz=319,SNR=8.3
P39B Salisbury 88.27 39 P P 05 22 56.7 +0.2
baz=320
W33A Caddo, Fort Co 88.43 46 P P 05 22 58.3 +0.9
baz=316
T36A Boggs Farm, Ca 88.46 43 P P 05 22 57.7 +0.2
baz=318,SNR=5.7
V34A Guthrie 88.47 44 P P 05 22 58.1 +0.5
baz=317
V34A Guthrie 88.47 44 eP P 05 22 58.2 +0.7
X32A Elmer 88.48 46 P P 05 22 57.9 +0.2
baz=316
Q39A Willow Grove F 88.50 40 P P 05 22 57.8 +0.2
baz=320,SNR=17
S37A Fort Scott 88.50 42 P P 05 22 57.7 0.0
baz=318
U35A Pawnee 88.51 44 P P 05 22 58.1 +0.4
baz=317
WMOK Wichita Mounta 88.55 46 P P 05 22 58.2 +0.2
baz=316
WMOK Wichita Mounta 88.55 46 eP P 05 22 58.6 +0.6
WMOK pmax pmax
comp=Z,5.0nm,0.8s
WMOK Wichita Mounta 88.55 46 eP P 05 22 58.6 +0.6
comp=Z,4.7nm,0.8s
P40A Paris 88.59 39 P P 05 22 58.2 +0.2
baz=320,SNR=17
R38A Fenwick Farm, 88.67 41 P P 05 22 58.0 -0.5
baz=319
O41A Passleys Farm, 88.72 38 P P 05 22 58.7 +0.1
baz=321,SNR=8.2
X33A Lawton 88.85 46 P P 05 22 59.9 +0.5
baz=316
V35A Meyer Ranch, C 88.89 44 P P 05 22 59.7 +0.1
baz=317
T37A Cheneyville 18 88.93 42 P P 05 23 00.0 +0.3
baz=318
Q40A Laux Farm, Aux 88.99 39 P P 05 23 00.2 +0.3
baz=320,SNR=5.9
R39A Chumby, Stover 89.02 40 P P 05 22 60.0 -0.1
baz=320,SNR=7.4
U36A Oologah 89.04 43 P P 05 23 00.4 +0.2
baz=318
O42A Bath 89.04 37 P P 05 23 00.1 0.0
baz=321
S38A Stockton 89.08 41 P P 05 22 59.9 -0.5
baz=319,SNR=5.3
HDIL Hopedale 89.13 36 P P 05 23 00.8 +0.2
baz=322
HDIL Hopedale 89.13 36 eP P 05 23 01.3 +0.7
comp=Z,14nm,0.8s
Y33A Hilltop Ranch, 89.16 46 P P 05 23 00.9 +0.1
baz=316
X34A Smith Ranch, M 89.18 46 P P 05 23 01.4 +0.4
baz=317
W35A Tecumseh 89.32 45 P P 05 23 01.9 +0.4
baz=317,SNR=5.2
T38A Diamond 89.33 42 P P 05 23 01.6 0.0
baz=319,SNR=10
S39A Bolivar 89.34 41 P P 05 23 01.4 -0.3
baz=319,SNR=9.0
U37A Salina 89.36 43 P P 05 23 02.0 +0.3
baz=318
TUL1 Leonard 89.36 43 P P 05 23 02.1 +0.4
baz=318,SNR=6.4
TUL1 Leonard 89.36 43 eP P 05 23 02.5 +0.8
V36A Jenks 89.37 44 P P 05 23 02.2 +0.4
baz=318
P42A Winchester 89.39 38 P P 05 23 02.0 +0.2
baz=321
TX31 Lajitas Ar. Si 89.40 53 eP P 05 23 02.9 +0.7
TXAR Lajitas Array 89.40 53 P P 05 23 02.7 +0.5
comp=Z,5.9nm,0.7s,baz=302,slow=3.2,SNR=90
R40A Maddies Statio 89.43 40 P P 05 23 01.9 -0.1
baz=320,SNR=7.6
ABTX Abilene, Hawle 89.56 48 P P 05 23 03.2 +0.4
baz=316
ABTX Abilene, Hawle 89.56 48 eP P 05 23 03.6 +0.9
Z33A Whitaker Ranch 89.60 47 P P 05 23 03.2 +0.3
baz=316
W36A Wetumka 89.69 44 P P 05 23 03.6 +0.3
baz=318
Y34A Reagan Ranch, 89.69 46 P P 05 23 03.6 +0.3
baz=317
U38A Gravette 89.73 42 P P 05 23 03.3 -0.1
baz=319,SNR=8.2
V37A Hulbert 89.73 43 P P 05 23 03.8 +0.3
baz=318,SNR=8.5
HPIG 89.75 56 eP P 05 23 04.3 +0.3
Q42A Golden Eagle 89.82 38 P P 05 23 04.3 +0.5
baz=321
T39A Clever 89.82 41 P P 05 23 03.9 0.0
baz=319
S40A Lebanon 89.84 40 P P 05 23 03.9 0.0
baz=320,SNR=5.9
133A Hamilton Ranch 90.00 48 P P 05 23 05.2 +0.4
baz=316
Z34A Collier Ranch, 90.03 46 P P 05 23 04.9 0.0
baz=317
X36A Centrahoma 90.04 45 P P 05 23 05.4 +0.4
baz=318,SNR=9.0
HHAR Hobbs 90.08 42 eP P 05 23 05.3 +0.2
comp=Z,7.4nm,0.7s
W37B Quinton 90.13 44 P P 05 23 05.8 +0.5
baz=318,SNR=9.4
Y35A Marietta 90.14 45 P P 05 23 05.4 -0.1
baz=317
V38A Canehill 90.15 43 P P 05 23 05.6 +0.2
baz=319,SNR=15
T40A Mansfield 90.17 41 P P 05 23 05.3 -0.2
baz=320,SNR=7.0
Q43A New Douglas 90.20 38 P P 05 23 05.7 +0.1
baz=322
S41A Jillco Farms, 90.23 40 P P 05 23 05.8 +0.1
baz=320
U39A Green Forest 90.25 42 P P 05 23 05.9 0.0
baz=319,SNR=24
SFIN Lafayette 90.30 35 eP P 05 23 04.7 -1.4
TRQ Mont Tremblant 90.32 24 eP P 05 23 06.5 +0.4
233A Rising Star 90.43 48 P P 05 23 07.3 +0.4
baz=316,SNR=5.4
Z35A Ferchaven, San 90.44 46 P P 05 23 07.0 +0.2
baz=317,SNR=8.8
134A White-Moore Ra 90.51 47 P P 05 23 07.7 +0.5
baz=317,SNR=5.3
Q44A Meyer Farm, Va 90.56 37 P P 05 23 07.3 +0.1
baz=322
X37A Clayton 90.57 44 P P 05 23 07.5 +0.1
baz=318,SNR=5.1
Y36A Durant 90.57 45 P P 05 23 07.4 0.0
baz=318,SNR=5.8
V39A Pettigrew 90.57 42 P P 05 23 07.4 -0.1
baz=319
U40A Yellville 90.60 41 P P 05 23 07.5 -0.1
baz=320,SNR=28
T41A Mountain View 90.64 40 P P 05 23 07.7 0.0
baz=320,SNR=5.7
W38A Poteau 90.68 43 P P 05 23 07.9 0.0
baz=319,SNR=7.5
X38A Whitesboro 90.81 44 P P 05 23 08.9 +0.4
baz=318,SNR=7.8
333A Richland Sprin 90.88 48 P P 05 23 09.2 +0.2
baz=316,SNR=9.3
Y37A Hugo 90.88 45 P P 05 23 08.9 +0.1
baz=318
234A Clairette 90.89 47 P P 05 23 09.3 +0.3
baz=317,SNR=10
135A Vickery Place, 90.91 47 P P 05 23 09.5 +0.4
baz=317
Z36A Blue Ridge 90.95 46 P P 05 23 09.2 0.0
baz=318,SNR=5.3
W39A Magazine 90.98 43 P P 05 23 09.3 0.0
baz=319
JCT Junction City 90.99 50 P P 05 23 09.5 0.0
baz=316
JCT Junction City 90.99 50 eP P 05 23 09.7 +0.2
JCT pmax pmax
comp=Z,10.0nm,0.7s
JCT Junction City 90.99 50 eP P 05 23 09.7 +0.2
comp=Z,10nm,0.7s
V40A Witts Springs 91.03 42 P P 05 23 09.3 -0.3
baz=320,SNR=6.6
R44A Waltonville 91.05 38 P P 05 23 09.4 -0.1
baz=322
S43A Fulton Ridge, 91.08 39 P P 05 23 09.6 -0.1
baz=321
U41A Viola 91.09 41 P P 05 23 09.8 0.0
baz=320
433A Art 91.22 49 P P 05 23 10.7 +0.2
baz=316
WHTX Lake Whitney, 91.30 47 P P 05 23 11.5 +0.7
baz=317,SNR=7.3
WHTX Lake Whitney, 91.30 47 eP P 05 23 11.9 +1.1
334A Lometa 91.31 48 P P 05 23 11.2 +0.2
baz=317,SNR=15
X39A Fountain Ranch 91.32 43 P P 05 23 11.6 +0.7
baz=319,SNR=6.4
W40A Ferguson Farm, 91.37 42 P P 05 23 11.3 +0.3
baz=320,SNR=9.2
V41A Mountainview 91.40 41 P P 05 23 11.1 -0.2
baz=320,SNR=16
Y38A Idabel 91.42 44 P P 05 23 11.1 -0.2
baz=319
U42A Revenden 91.44 40 P P 05 23 11.3 -0.1
baz=321
Z37A Pogue Cattle C 91.46 45 P P 05 23 12.0 +0.4
baz=318
136A Ennis 91.48 46 P P 05 23 11.9 +0.3
baz=318
PBMO Poplar Bluff 91.52 40 eP P 05 23 12.3 +0.6
MIAR Mount Ida 91.58 43 P P 05 23 12.4 +0.3
baz=319,SNR=16
MIAR Mount Ida 91.58 43 eP P 05 23 12.6 +0.5
MIAR Mount Ida 91.58 43 eP P 05 23 12.6 +0.5
X201 Greenbrier Sit 91.67 42 eP P 05 23 12.8 +0.3
434A Burnet 91.67 48 P P 05 23 12.5 -0.1
baz=317
X301 Greenbrier Sit 91.69 42 eP P 05 23 12.8 +0.2
WHAR Wolly Hollow 91.71 42 eP P 05 23 13.0 +0.4
S45A Carrier Mills 91.74 38 P P 05 23 12.7 0.0
baz=322
533A Kerrville 91.75 49 P P 05 23 12.9 -0.1
baz=316
Y39A Lockesburg 91.76 44 P P 05 23 13.2 +0.3
baz=319,SNR=9.1
V42A Cord 91.78 41 P P 05 23 12.8 -0.1
baz=321
W41B Gary Mavity, V 91.82 42 P P 05 23 13.0 -0.1
baz=320,SNR=7.0
X40A Basin Creek Fa 92.03 43 P P 05 23 14.4 +0.2
baz=320
336A Riesel 92.09 47 P P 05 23 14.7 +0.2
baz=317
534A Blanco 92.11 49 P P 05 23 14.6 -0.1
baz=316,SNR=5.3
Y40A Okolona 92.15 43 P P 05 23 14.6 -0.1
baz=319
X41A Kaden, Bauxite 92.19 42 P P 05 23 15.8 +0.9
baz=320
Z39A Irene McRaven, 92.23 44 P P 05 23 16.1 +1.0
baz=319
237A Washetta, Mont 92.24 46 P P 05 23 16.2 +1.0
baz=318
WLAR White Oak Lake 92.48 43 eP P 05 23 17.4 +1.2
M54A Oil Creek Stat 92.55 30 P P 05 23 17.0 +0.5
baz=328
Z40A Long Farm, Mag 92.65 44 P P 05 23 18.0 +1.0
baz=319
833A Chaparral WMA, 92.78 51 P P 05 23 18.6 +0.9
baz=316
N54A Moraine State 92.88 30 P P 05 23 18.5 +0.5
baz=328
Y42A Garnett, Star 93.08 42 P P 05 23 20.0 +1.0
baz=320
WVT Waverly 93.33 38 eP P 05 23 20.6 +0.5
WVT Waverly 93.33 38 eP P 05 23 20.6 +0.5
933A Laredo 93.36 51 P P 05 23 21.6 +1.1
baz=316,SNR=5.5
W45A Hickory Valley 93.42 40 P P 05 23 20.7 +0.1
baz=322
X45A UM Field Stati 93.88 40 P P 05 23 23.0 +0.2
baz=322
O56A Blue Knob Stat 94.04 30 P P 05 23 23.8 +0.4
baz=329
034A Hebbronville 94.12 51 P P 05 23 25.5 +1.6
baz=316,SNR=5.9
ZAIG Zacatecas 94.65 57 eP P 05 23 28.4 +1.6
KEST Kesra 94.85 323 P P 05 23 27.1 -0.1
comp=Z,2.2nm,0.7s,baz=330,slow=10,SNR=3.6
VNDA Vanda 115.50 175 PKP PKPdf 05 28 45.2 -0.4
comp=Z,0.5nm,0.7s,baz=340,slow=5.0,SNR=3.8
TORD Torodi Ar. Bea 117.26 316 PKP PKPdf 05 28 50.1 -0.8
comp=Z,0.9nm,0.5s,baz=29,slow=1.1,SNR=13
DBIC Dimbokro 126.19 318 PKP PKPdf 05 29 07.9 -0.2
comp=Z,4.6nm,0.9s,baz=55,slow=2.5,SNR=4.2
BOSA Boshof 127.14 260 PKP PKPdf 05 29 09.1 -0.5
comp=Z,2.0nm,0.7s,baz=6.4,slow=2.6,SNR=3.7
SNAA Sanae 141.43 197 PKP PKPdf 05 29 29.3 -5.6
VNA1 Neumayer--Stat 143.39 196 PKP PKPab 05 29 33.8 -0.6
SAML Samuel 143.51 45 ePKPdf PKPdf 05 29 39.8 -0.4
PLCA Paso Flores 154.65 107 PKPbc PKPbc 05 30 07.0 +1.2
comp=Z,1.7nm,0.7s,baz=270,slow=3.3,SNR=2.9
PLCA PKPab 05 30 22.6 +1.9
comp=Z,1.5nm,0.7s,baz=266,slow=5.3,SNR=5.7

ISCJB ***07*** *05:16:37.2±2.3,29.°84S±0.°09×176.°2W±0.°2,h21km, mb3.7/2, Error ellipse: s-maj=24.6km s-min=11.5km az=161.9*
IDC ***07*** *05:16:42.8±4.9,29.°70S×176.°32W,h50km±35km,mb3.4/2, mb1 3.8/3,mb1mx3.5/27,mbtmp3.9/3,ML3.4/1, Error ellipse: s-maj=43.0km s-min=21.0km az=59.0*
ISC 07 05:16:38.9±1.4,29.°6S±0.°1×176.°3W±0.°1,h21km,n7, σ1°16/9,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.49**	**284**	P	**Pb**	**05 17 05.9**	**0.0**
	110nm,0.3s,baz=63,slow=19,SNR=6.0						
RAO				S	**Sb**	**05 17 25.0**	**+0.6**
	177nm,0.3s,baz=216,slow=22,SNR=8.9						
URZ	**Urewera**	**10.22**	**211**	P	**Pn**	**05 19 05.5**	**+1.2**
	0.3nm,0.3s,baz=283,slow=3.1,SNR=3.2						
URZ				S	**Sn**	**05 20 56.5**	**-1.6**
	1.2nm,0.3s,baz=230,slow=20,SNR=5.9						
ASAR	**Alice Springs**	**44.67**	**265**	P	**P**	**05 24 49.6**	**-0.8**
	0.4nm,0.6s,baz=106,slow=7.9,SNR=4.5						
WRA	**Warramunga Arr**	**45.59**	**270**	P	**P**	**05 24 57.6**	**-0.2**
	1.1nm,0.7s,baz=109,slow=7.7,SNR=6.9						
KURBB	**Kurchatov Arra**	**121.64**	**314**	PKP	**PKPdf**	**05 35 30.3**	**-0.4**
	0.1nm,0.3s,baz=135,slow=0.9,SNR=3.1						
FINES	**FINESS Array B**	**144.92**	**341**	PKP	**PKPab**	**05 36 11.8**	**-1.0**
	0.6nm,0.6s,baz=17,slow=1.9,SNR=2.4						
TORD	**Torodi Ar. Bea**	**163.49**	**173**	PKPab	**PKPab**	**05 37 33.1**	**+1.3**
	1.0nm,0.9s,baz=185,slow=5.8,SNR=3.9						

IDC 07 05:19:51.8±3.7,29.°66S×176.°83W,h72km±22km,mb3.3/2, mb1 3.7/3,mb1mx3.4/23,mbtmp3.8/3,Error ellipse: s-maj=51.6km s-min=29.9km az=80.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.03**	**293**	P	Pn	05 20 10.8	+0.1
	88nm,0.3s,baz=88,slow=21,SNR=1.6						
RAO				S	Sn	05 20 33.7	+8.8
	204nm,0.3s,baz=65,slow=20,SNR=3.1						
URZ	**Urewera**	**9.94**	**209**	P	Pn	05 22 11.1	-0.5
	baz=244,slow=4.5,SNR=1.9						
URZ				S	Sn	05 24 02.2	+0.7
	0.4nm,0.3s,baz=104,slow=22,SNR=2.4						
ASAR	**Alice Springs**	**44.17**	**266**	P	P	05 27 53.7	0.0
	0.3nm,0.3s,baz=105,slow=7.5,SNR=5.2						
WRA	**Warramunga Arr**	**45.09**	**271**	P	P	05 28 00.7	-0.3
	0.5nm,0.8s,baz=110,slow=7.9,SNR=4.6						
TORD	**Torodi Ar. Bea**	**163.51**	**175**	PKPab	PKPab	05 40 37.9	-0.4
	0.4nm,0.7s,baz=197,slow=4.7,SNR=2.7						

FUNV ***07*** *05:28:28.2,11.°34N×73.°50W,h16km,MW3.0*
RSNC ***07*** *05:28:28.8±0.7,11.°30N×73.°44W,h8km±14km,ML2.3*
ISC 07 05:28:29.7±1.7,11.°22N±0.°06×73.39W±0.04,h25km±16km, n21,σ1°28/34,Near north coast of Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VIRV	**Villa del Rosa**	**1.20**	**127**	eP	**Pb**	**05 28 51.7**	**-0.1**
VIRV				eS	**Sn**	**05 29 09.2**	**+2.8**
URIC	**Uribia, Colomb**	**1.45**	**71**	eP	**Pn**	**05 28 54.7**	**+0.3**
URIC				*i*		05 28 55.4	
	comp=Z,41nm,0.1s						
URIC				eS	**Sb**	**05 29 13.8**	**-0.2**
URIC	**Uribia, Colomb**	**1.45**	**71**	eP	**Pn**	**05 28 54.7**	**+0.3**
URIC				*i*		05 28 55.4	
	comp=Z,41nm,0.1s						
URIC				eS	**Sb**	**05 29 14.7**	**+0.7**
SJCC	**San Jacinto, C**	**2.20**	**233**	eP	**Pn**	**05 29 04.1**	**-0.6**
SJCC				*i*		05 29 05.4	
	comp=Z,14nm,0.1s						
SJCC				eS	**Sn**	**05 29 32.3**	**+1.1**
SJCC	**San Jacinto, C**	**2.20**	**233**	eS	**Sn**	**05 29 32.4**	**+1.1**
DABV	**Dabajuro**	**2.72**	**96**	eP	**Pn**	**05 29 12.4**	**+0.6**
DABV				eS	**Sn**	**05 29 45.0**	**+1.1**
OCAC	**Ocana**	**2.97**	**179**	eP	**Pn**	**05 29 14.8**	**-0.6**
OCAC				eS	**Sn**	**05 29 50.0**	**-0.3**
OCAC				*i*		05 29 54.1	
	comp=Z,20nm,0.3s						
VIGV	**El Vigia**	**3.09**	**140**	eP	**Pn**	**05 29 17.9**	**+0.8**
VIGV				eS	**Sn**	**05 29 54.2**	**+0.9**
MOTC	**Monteria, Cord**	**3.31**	**223**	eP	**Pn**	**05 29 20.0**	**+0.1**
MOTC	**Monteria, Cord**	**3.31**	**223**	eP	**Pn**	**05 29 19.9**	**-0.1**
MONV	**Montecano**	**3.42**	**77**	eP	**Pn**	**05 29 20.3**	**-1.3**
MONV				eS	**Sn**	**05 30 00.5**	**-0.9**
CBRI	**Barrientos, No**	**3.53**	**170**	eP	**Pn**	**05 29 23.4**	**+0.2**
CBRI				*i*		05 30 07.8	
	comp=Z,8.4nm,0.3s						
CBRI	**Barrientos, No**	**3.53**	**170**	eP	**Pn**	**05 29 22.4**	**-0.8**
CBRI				eS	**Sn**	**05 30 02.8**	**-1.5**
CBRI				*i*		05 30 13.3	
	comp=Z,9.7nm,0.4s						
SIQV	**Siquisique**	**3.56**	**99**	eP	**Pn**	**05 29 22.9**	**-0.5**
CURV	**Curarigua**	**3.58**	**109**	eP	**Pn**	**05 29 24.3**	**+0.6**
CURV				eS	**Sn**	**05 30 05.2**	**0.0**
SOCV	**Socops**	**3.84**	**139**	eP	**Pn**	**05 29 27.9**	**+0.6**
SOCV				eS	**Sn**	**05 30 12.1**	**+0.4**
PAMC	**Pamplona, Colo**	**3.92**	**170**	eS	**Sn**	**05 30 12.6**	**-1.6**
BRRC	**Barranca, Sant**	**4.10**	**185**	eS	**Sn**	**05 30 21.0**	**+2.9**
BRRC	**Barranca, Sant**	**4.10**	**185**	eP	**Pn**	**05 29 29.0**	**-1.9**
BRRC				*i*		05 29 36.5	
	comp=Z,3.6nm,0.1s						

SANV	**Sanarito**	**4.16**	**114**	*eP*	**Pn**	**05 29 32.5**	**+0.7**
SANV				*eS*	**Sn**	**05 30 19.5**	**-0.1**
BAUV	**El Baul**	**5.73**	**113**	*eP*	**Pn**	**05 29 53.1**	**-0.2**
BAUV				*eS*	**Sn**	**05 30 54.7**	**-3.5**

NEIC ***07*** *05:34:18.6, 17.07N×94.57W, h136km, MD4.2(MEX), After MEX.*

MEX 07 05:34:18.6±1.1, 17.07N×94.57W, h136km±11km, MD4.2, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUIG	**Tuzandepetl**	**0.97**	**9**	*i* P	Pn	05 34 40.2	-1.6
TUIG				*e*S	Sn	05 34 56.7	-2.8
TUIG	**Tuzandepetl**	**0.97**	**9**	*i* P	Pn	05 34 40.2	-1.6
TUIG				*e*S	Sn	05 34 56.7	-2.8
TGIG		**1.42**	**102**	*i* P	Pn	05 34 45.5	-0.9
TGIG				*i* S	Sn	05 35 05.5	-2.0
TGIG		**1.42**	**102**	*i* P	Pn	05 34 45.5	-0.9
TGIG				*i* S	Sn	05 35 05.5	-2.0
HUIG	**Huatulco**	**1.96**	**229**	*i* P	Pn	05 34 50.3	-2.2
HUIG				*i* S	Sn	05 35 17.5	-1.0
HUIG	**Huatulco**	**1.96**	**229**	*i* P	Pn	05 34 50.3	-2.2
HUIG				*i* S	Sn	05 35 17.5	-1.0
OXBJ	**Oaxaca**	**2.06**	**270**	*i* P	Pn	05 34 52.6	-1.3
OXBJ				*e*S	Sn	05 35 19.4	-1.3
VHO	**Vista Hermosa**	**2.06**	**270**	*e*P	Pn	05 34 52.9	-1.1
VHO				*e*S	Sn	05 35 19.3	-1.7
VHO	**Vista Hermosa**	**2.06**	**270**	*e*P	Pn	05 34 52.9	-1.1
VHO				*e*S	Sn	05 35 19.3	-1.7
TPIG	**Tehuac#an**	**2.98**	**297**	*e*P	Pn	05 35 04.7	-0.6
TPIG				*e*S	Sn	05 35 39.8	-1.5
TPIG	**Tehuac#an**	**2.98**	**297**	*e*P	Pn	05 35 04.7	-0.6
TPIG				*e*S	Sn	05 35 39.8	-1.5
PNIG	**Pinotepa**	**3.47**	**259**	*i* P	Pn	05 35 09.3	-2.3
PNIG				*i* S	Sn	05 35 50.7	-1.9
PNIG	**Pinotepa**	**3.47**	**259**	*i* P	Pn	05 35 09.3	-2.3
PNIG				*i* S	Sn	05 35 50.7	-1.9

NEIC ***07*** *05:50:28.3±0.6, 29.55S×176.55W, h10km, mb4.4/2, Error ellipse: s-maj=20.0km s-min=14.5km az=200.0*
IDC ***07*** *05:50:36.6±3.2, 29.72S×176.72W, h66km±23km, mb3.9/7, mb1 4.1/7, mb1mx3.8/31, mbtmp4.2/7, MS3.5/1, Ms1 3.5/1, ms1mx2.7/29, Error ellipse: s-maj=30.9km s-min=25.9km az=85.0*

ISC 07 05:50:31.2±0.9, 29.96S±0.08×176.7W±0.1, h21km, n23, σ1§96/24, mb4.5/10, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.29**	**303**	P	**Pb**	**05 50 56.3**	**+1.6**
	139nm,0.3s,baz=282,slow=12,SNR=3.8						
RAO				LR	LR	05 51 35.4	
	comp=Z,654nm,19.0s,baz=312,slow=51						
RAO	**Raoul Island**	**1.29**	**303**	*e*Pn	**Pn**	**05 50 51.4**	**-2.5**
URZ	**Urewera**	**9.74**	**210**	P	**Pn**	**05 52 48.2**	**-1.9**
	0.9nm,0.3s,baz=249,slow=8.2,SNR=4.6						
URZ				S	**Sn**	**05 54 38.6**	**-0.2**
	2.2nm,0.3s,baz=239,slow=21,SNR=7.0						
RPZ	**Rata Peaks**	**16.85**	**212**	P	**Pn**	**05 54 21.7**	**-4.0**
	0.4nm,0.3s,baz=222,slow=20,SNR=2.6						
RPZ				S	Sn	05 57 23.2	-9.2
	0.3nm,0.3s,baz=66,slow=10.0,SNR=2.8						
DZM	**Mont Dzumac**	**17.07**	**293**	P	**P**	**05 54 34.4**	**+4.0**
	0.2nm,0.3s,baz=86,slow=20,SNR=4.3						
DZM				LR	LR	05 59 51.8	
	comp=Z,153nm,19.5s,baz=80,slow=33						
ARMA	**Armidale**	**27.35**	**261**	*e*P	**P**	**05 56 14.7**	**-0.3**
	5.2nm,0.8s						
CTA	**Charters Tower**	**34.87**	**278**	P	**P**	**05 57 22.9**	**+1.8**
	2.5nm,0.4s,baz=110,slow=11,SNR=5.8						
STKA	**Stephens Creek**	**35.69**	**256**	P	**P**	**05 57 27.2**	**-0.9**
	4.4nm,0.8s,baz=110,slow=15,SNR=4.0						
ASAR	**Alice Springs**	**44.28**	**266**	P	**P**	**05 58 39.7**	**+0.1**
	1.6nm,0.7s,baz=102,slow=7.9,SNR=16						
WRAB	**Tennant Creek**	**45.22**	**271**	*e*P	**P**	**05 58 46.6**	**-0.5**
	3.7nm,0.6s						
WRA	**Warramunga Arr**	**45.23**	**271**	P	**P**	**05 58 46.6**	**-0.6**
	5.1nm,0.7s,baz=110,slow=7.7,SNR=36						
VNDA	**Vanda**	**48.65**	**186**	P	**P**	**05 59 16.2**	**+3.1**
	0.6nm,0.7s,baz=19,slow=4.3,SNR=3.3						
QSPA	**South Pole Qui**	**60.15**	**180**	*e*P	**P**	**06 00 39.4**	**+2.3**
	15nm,0.9s						
MJAR	**Matsushiro Arr**	**78.54**	**324**	P	**P**	**06 02 29.6**	**-1.3**
	2.0nm,0.5s,baz=141,slow=6.0,SNR=5.1						
USRK	**Ussuriysk Ar.**	**87.43**	**326**	P	**P**	**06 03 17.2**	**+0.4**
	2.1nm,0.7s,baz=139,slow=5.3,SNR=7.2						
MKAR	**Makanchi Array**	**118.37**	**310**	PKP	**PKPdf**	**06 09 15.2**	**-1.7**
	0.3nm,0.5s,baz=79,slow=0.7,SNR=4.2						
ZALV	**Zalesovo Beam**	**118.46**	**318**	PKP	**PKPdf**	**06 09 15.2**	**-1.5**
	4.5nm,0.4s,baz=329,slow=2.6,SNR=4.3						
FINES	**FINESS Array B**	**145.11**	**341**	PKP	**PKPbc**	**06 10 04.2**	**-1.6**
	2.5nm,0.4s,baz=59,slow=3.2,SNR=36						
NB2	**NORSAR Subarra**	**148.47**	**353**	PKP	**PKPbc**	**06 10 14.3**	**-1.3**
	comp=Z,1.0nm,0.8s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**148.47**	**353**	PKPbc	**PKPbc**	**06 10 13.8**	**-1.9**
	comp=Z,0.5nm,0.6s,baz=13,slow=4.4,SNR=2.3						
HFS	**Hagfors**	**149.03**	**350**	PKPbc	**PKPdf**	**06 10 13.7**	**+0.8**
	comp=Z,1.2nm,0.6s,baz=152,slow=9.9,SNR=2.4						
AKASG	**Malin Array Be**	**151.63**	**324**	PKPbc	**PKPbc**	**06 10 22.6**	**-0.9**
	comp=Z,3.1nm,0.6s,baz=45,slow=2.9,SNR=13						
TORD	**Torodi Ar. Bea**	**163.20**	**175**	PKPab	**PKPab**	**06 11 22.6**	**-0.2**
	comp=Z,0.8nm,0.7s,baz=193,slow=4.8,SNR=4.9						

GUC ***07*** *05:53:25.2±0.4, 34.09S×72.22W, h15km±3km, ML3.0*

ISC 07 05:53:25.7±4.7, 34.09S±0.05×72.2W±0.2, h9km±25km, n16, σ1§88/20, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.34**	**152**	*e*P	**Pb**	**05 53 32.8**	**-1.2**
CHPI				*e*S	**Sb**	**05 53 38.6**	**-1.0**
NICH	**Los Niches**	**1.21**	**139**	*e*P	**Pb**	**05 53 48.1**	**-0.7**
NICH				*e*S	**Sg**	**05 54 05.5**	**+0.6**
ANTU	**Antumapu**	**1.40**	**69**	*e*P	**Pb**	**05 53 51.7**	**-0.3**
ANTU				*e*S	**Sg**	**05 54 11.4**	**+0.7**
CLCH	**Cerro Calan**	**1.54**	**64**	*e*P	**Pb**	**05 53 53.7**	**-0.8**
CLCH				*e*S	**Sg**	**05 54 15.7**	**+0.4**
CLCH				IAML		05 54 24.0	
	comp=N,342nm,0.7s						
PEL	**Peldehue**	**1.57**	**54**	*e*P	**Pb**	**05 53 54.4**	**-0.6**
PEL				*e*S	**Sg**	**05 54 16.4**	**+0.2**
PEL				IAML		05 54 24.4	
	comp=N,398nm,0.7s						
FCH	**Farellones**	**1.76**	**65**	*e*P	**Pb**	**05 53 57.9**	**-0.5**
AAGR	**Agrelo**	**2.98**	**71**	*e*P	**Pb**	**05 54 20.6**	**+1.5**
ARCO	**CERRO ARCO**	**3.00**	**66**	*e*P	**Pb**	**05 54 20.3**	**+0.9**
ARCO				IAML		05 54 24.9	
	comp=Z,39nm,0.3s						
AUSP	**Uspallata**	**3.00**	**53**	*e*P	**Pb**	**05 54 19.6**	**+0.1**
AUSP				*e*S	**Sb**	**05 54 54.3**	**-2.0**
ASAL	**Salagasta**	**3.18**	**63**	*e*P	**Pb**	**05 54 22.0**	**-0.4**
RTCV	**Cerro Valdivia**	**3.79**	**55**	*e*P	**Pb**	**05 54 28.5**	**-4.3**
RTLL	**Cerro Villicun**	**4.17**	**50**	*e*P	**Pn**	**05 54 32.1**	**+2.5**
AMOG	**MOGNA**	**4.43**	**46**	*e*P	**Pn**	**05 54 34.8**	**+1.7**
ACAN	**Cantantal**	**4.57**	**68**	*e*P	**Pb**	**05 54 42.0**	**-4.1**
MRA	**San Martin**	**5.68**	**75**	IAML		05 56 34.9	
	comp=Z,6.7nm,0.5s						
VCA	**Vinchina**	**6.33**	**34**	IAML		05 56 57.0	
	comp=Z,6.2nm,0.6s						

ISCJB ***07*** *05:55:41.9±0.3, 39.132N±0.010×21.74E±0.02, h2km±2km, mb3.8/10, Error ellipse: s-maj=2.2km s-min=1.5km az=153.3*
TIR ***07*** *05:55:41.0, 39.22N×21.75E, h8km, ML3.3*
ATH ***07*** *05:55:42.3, 39.11N×21.74E, h21km, ML3.4/33, Error ellipse: s-maj=0.8km s-min=0.5km az=234.0*
THE ***07*** *05:55:42.7, 39.11N×21.73E, h2km±1km, ML3.5/23, Error ellipse: s-maj=1.5km s-min=0.3km az=206.0*
PDG ***07*** *05:55:42.8±0.6, 39.11N×21.77E, h10km±1km, ML3.6/10, Error ellipse: s-maj=0.6km s-min=0.8km az=0.0*
CSEM ***07*** *05:55:42.6±0.1, 39.11N×21.78E, h2km, ML3.4, Error ellipse: s-maj=2.3km s-min=1.6km az=67.0*
IDC ***07*** *05:55:47.6±1.7, 39.18N×21.65E, h46km±20km, mb3.6/10, mb1 3.7/14, mb1mx3.5/53, mbtmp3.7/14, ML3.3/4, Error ellipse: s-maj=19.4km s-min=11.9km az=81.0*

ISC 07 05:55:42.6±0.9, 39.11N±0.01×21.76E±0.01, h8km±6km, n275, σ1§24/407, mb3.9/10, 21C-21D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	**Evrytania**	**0.20**	**168**	P	**Pg**	**05 55 46.8**	**+0.2**
EVR				S	**Sg**	**05 55 50.0**	**+0.7**
EVR	**Evrytania**	**0.20**	**168**	P	**Pg**	**05 55 46.2**	**-0.4**
EVR				S	**Sg**	**05 55 49.8**	**+0.5**
EVR	**Evrytania**	**0.20**	**168**	P	**Pg**	**05 55 46.2**	**-0.4**
EVR				AML	AML	05 55 50.6	
	comp=N,57552μm,0.3s						
AGG	**Agios Georgios**	**0.46**	**101**	P	**Pg**	**05 55 52.1**	**+0.7**
AGG				S	**Sb**	**05 55 59.2**	**-0.6**
AGG	**Agios Georgios**	**0.46**	**101**	P	**Pg**	**05 55 52.1**	**+0.7**
AGG				S	**Sb**	**05 55 59.2**	**-0.6**
AGG	**Agios Georgios**	**0.46**	**101**	P	**Pb**	**05 55 52.7**	**-0.2**
AGG				AML	AML	05 56 01.0	
	comp=E,29375μm,0.3s						
AGG				S	**Sb**	**05 56 01.1**	**+1.2**
AGG				AML	AML	05 56 04.7	
	comp=N,18018μm,0.3s						
THL	**Klokotos Trika**	**0.50**	**24**	P	**Pg**	**05 55 52.5**	**+0.3**
THL				S	**Sb**	**05 56 00.1**	**-0.9**
THL	**Klokotos Trika**	**0.50**	**24**	P	**Pg**	**05 55 52.5**	**+0.3**
THL				S	**Sb**	**05 56 00.1**	**-0.9**
DSL	**Palaion Diasel**	**0.51**	**273**	P	**Pg**	**05 55 51.4**	**-1.1**
DSL				S	**Sg**	**05 55 59.4**	**+0.1**
DSL	**Palaion Diasel**	**0.51**	**273**	P	**Pg**	**05 55 51.4**	**-1.1**
DSL				S	**Sg**	**05 55 59.4**	**+0.1**
DSL				AML	AML	05 55 59.6	
	comp=N,17338μm,0.5s						
DSL				AML	AML	05 56 00.5	
	comp=E,15655μm,0.3s						
PVO	**Paravola**	**0.52**	**200**	P	**Pg**	**05 55 51.6**	**-1.1**
PVO				S	**Sg**	**05 55 59.9**	**+0.4**
PVO	**Paravola**	**0.52**	**200**	P	**Pg**	**05 55 51.6**	**-1.1**
PVO				S	**Sg**	**05 55 59.9**	**+0.4**
ANX	**Ano Chora**	**0.53**	**166**	P	**Pg**	**05 55 52.3**	**-0.6**
ANX				S	**Sg**	**05 56 00.0**	**+0.2**
ANX	**Ano Chora**	**0.53**	**166**	S	**Sg**	**05 55 60.0**	**+0.2**
ANX				AML	AML	05 56 04.2	
	comp=N,20698μm,0.4s						
ANX				AML	AML	05 56 05.8	
	comp=E,24200μm,0.5s						
PDO	**Prodromos**	**0.68**	**221**	P	**Pb**	**05 55 56.1**	**-0.6**
PDO				S	**Sg**	**05 56 03.4**	**-1.1**
PDO	**Prodromos**	**0.68**	**221**	P	**Pb**	**05 55 56.1**	**-0.6**
PDO				S	**Sg**	**05 56 03.4**	**-1.1**
PDO				AML	AML	05 56 07.2	
	comp=E,18492μm,0.4s						
PDO				AML	AML	05 56 08.7	
	comp=N,28633μm,0.5s						
KALE	**Kalithea**	**0.78**	**157**	P	**Pg**	**05 55 56.7**	**-0.8**
KALE				S	**Sb**	**05 56 09.0**	**-0.1**
KALE	**Kalithea**	**0.78**	**157**	P	**Pg**	**05 55 56.7**	**-0.8**
KALE				S	**Sb**	**05 56 09.0**	**-0.1**
KALE	**Kalithea**	**0.78**	**157**	P	**Pg**	**05 55 56.2**	**-1.3**
KALE				S	**Sb**	**05 56 09.0**	**-0.1**
KALE				AML	AML	05 56 10.9	
	comp=E,10105μm,0.4s						
KALE				AML	AML	05 56 13.3	
	comp=N,11057μm,0.3s						
TRIZ	**Trizonia**	**0.78**	**162**	P	**Pg**	**05 55 56.7**	**-0.9**
TRIZ				S	**Sb**	**05 56 09.0**	**-0.2**
TRIZ	**Trizonia**	**0.78**	**162**	S	**Sb**	**05 56 09.0**	**-0.2**
LAKA	**Lakka**	**0.89**	**169**	P	**Pg**	**05 55 59.1**	**-0.5**
LAKA				S	**Sb**	**05 56 12.7**	**+0.5**
LAKA	**Lakka**	**0.89**	**169**	P	**Pg**	**05 55 59.1**	**-0.5**
LAKA				S	**Sb**	**05 56 12.7**	**+0.5**
LAKA	**Lakka**	**0.89**	**169**	P	**Pg**	**05 55 59.0**	**-0.6**
LAKA				S	**Sn**	**05 56 13.4**	**-1.1**
LAKA				AML	AML	05 56 14.9	
	comp=N,2164μm,0.4s						
LAKA				AML	AML	05 56 19.4	
	comp=E,1958μm,0.6s						
JAN	**Janina**	**0.89**	**308**	P	**Pg**	**05 55 58.9**	**-0.8**
JAN				S	**Sb**	**05 56 12.0**	**-0.4**
JAN	**Janina**	**0.89**	**308**	P	**Pg**	**05 55 58.9**	**-0.8**
JAN				S	**Sb**	**05 56 12.0**	**-0.4**
JAN	**Janina**	**0.89**	**308**	AML	AML	05 56 20.1	
	comp=E,4391μm,0.5s						
KPRO	**Kipourio**	**0.90**	**340**	P	**Pg**	**05 55 58.8**	**-1.0**
KPRO				S	**Sb**	**05 56 12.7**	**+0.1**
KPRO	**Kipourio**	**0.90**	**340**	P	**Pg**	**05 55 58.8**	**-1.0**
KPRO				S	**Sb**	**05 56 12.7**	**+0.1**
KPRO	**Kipourio**	**0.90**	**340**	P	**Pg**	**05 55 58.8**	**-1.0**
KPRO				S	**Sn**	**05 56 14.3**	**-0.5**
KPRO				AML	AML	05 56 18.2	
	comp=N,4422μm,0.7s						
KPRO				AML	AML	05 56 23.8	
	comp=E,5559μm,0.5s						
LKD2	**Lefkada island**	**0.92**	**250**	P	**Pg**	**05 55 59.5**	**-0.6**
LKD2				S	**Sg**	**05 56 12.4**	**+0.4**
LKD2	**Lefkada island**	**0.92**	**250**	P	**Pg**	**05 55 59.5**	**-0.6**
LKD2				S	**Sg**	**05 56 12.4**	**+0.4**
LKD2	**Lefkada island**	**0.92**	**250**	P	**Pg**	**05 55 59.3**	**-0.9**
LKD2				S	**Sn**	**05 56 14.7**	**-0.5**
LKD2				AML	AML	05 56 20.5	
	comp=N,5358μm,0.4s						
LKD2				AML	AML	05 56 23.5	
	comp=E,5475μm,0.5s						
DSF	**Desfina**	**0.92**	**139**	P	**Pg**	**05 55 58.3**	**-2.0**
DSF				S	**Sg**	**05 56 12.3**	**+0.1**
DSF	**Desfina**	**0.92**	**139**	P	**Pg**	**05 55 58.3**	**-2.0**
DSF				S	**Sg**	**05 56 12.3**	**+0.1**
DSF				AML	AML	05 56 17.1	
	comp=E,3235μm,0.3s						
DSF				AML	AML	05 56 17.6	
	comp=N,4672μm,0.2s						
AXS	**Araxos**	**0.96**	**198**	P	**Pg**	**05 56 00.5**	**-0.5**
AXS				S	**Sb**	**05 56 15.0**	**+0.7**
AXS	**Araxos**	**0.96**	**198**	P	**Pg**	**05 56 00.5**	**-0.5**
AXS				S	**Sb**	**05 56 15.0**	**+0.7**
FYTO	**Fytoko, Volos**	**0.97**	**72**	P	**Pg**	**05 56 00.8**	**-0.3**
FYTO				S	**Sn**	**05 56 15.7**	**-0.7**
FYTO	**Fytoko, Volos**	**0.97**	**72**	P	**Pg**	**05 56 00.8**	**-0.3**
FYTO				S	**Sn**	**05 56 15.7**	**-0.7**
FYTO	**Fytoko, Volos**	**0.97**	**72**	P	**Pg**	**05 56 00.7**	**-0.4**
FYTO				S	**Sn**	**05 56 16.7**	**+0.3**
FYTO				AML	AML	05 56 19.2	
	comp=E,2004μm,0.5s						
FYTO				AML	AML	05 56 19.8	
	comp=N,3367μm,0.5s						
ATAL	**Atalanti**	**1.07**	**112**	P	**Pg**	**05 56 03.1**	**0.0**
ATAL				S	**Sn**	**05 56 19.4**	**+0.4**
ATAL	**Atalanti**	**1.07**	**112**	P	**Pg**	**05 56 03.1**	**0.0**
ATAL				S	**Sg**	**05 56 16.6**	**-0.4**
ATAL	**Atalanti**	**1.07**	**112**	P	**Pg**	**05 56 03.2**	**+0.1**
ATAL				S	**Sg**	**05 56 16.6**	**-0.4**
ATAL				AML	AML	05 56 27.9	
	comp=E,720μm,0.6s						
ATAL				AML	AML	05 56 30.1	
	comp=N,801μm,0.8s						
LKR	**Lokris**	**1.07**	**115**	P	**Pg**	**05 56 02.9**	**-0.2**
LKR				S	**Sn**	**05 56 18.5**	**-0.5**
LKR	**Lokris**	**1.07**	**115**	P	**Pg**	**05 56 02.9**	**-0.2**
LKR				S	**Sn**	**05 56 18.5**	**-0.5**
LKR	**Lokris**	**1.07**	**115**	P	**Pg**	**05 56 02.3**	**-0.8**
RLS	**Riolos of Patr**	**1.07**	**192**	P	**Pg**	**05 56 02.7**	**-0.4**
RLS				S	**Sb**	**05 56 18.0**	**+0.4**
RLS	**Riolos of Patr**	**1.07**	**192**	P	**Pg**	**05 56 02.8**	**-0.4**
RLS				S	**Sb**	**05 56 18.0**	**+0.4**
RLS	**Riolos of Patr**	**1.07**	**192**	S	**Sn**	**05 56 19.7**	**+0.6**
RLS				AML	AML	05 56 20.9	
	comp=E,3172μm,0.6s						
RLS				AML	AML	05 56 27.3	
	comp=N,3304μm,0.6s						
KLV	**Kalavryta, Ach**	**1.11**	**164**	P	**Pg**	**05 56 03.0**	**-0.8**
KLV				S	**Sn**	**05 56 20.1**	**+0.1**
KLV	**Kalavryta, Ach**	**1.11**	**164**	P	**Pg**	**05 56 03.0**	**-0.8**
KLV				S	**Sg**	**05 56 17.7**	**-0.5**
KLV	**Kalavryta, Ach**	**1.11**	**164**	P	**Pg**	**05 56 02.7**	**-1.1**
KLV				S	**Sg**	**05 56 17.7**	**-0.5**
KLV				AML	AML	05 56 20.7	
	comp=E,2386μm,0.6s						
KLV				AML	AML	05 56 24.7	
	comp=N,2143μm,0.6s						
LIT	**Litokhoron**	**1.14**	**30**	P	**Pg**	**05 56 03.8**	**-0.7**
LIT				S	**Sn**	**05 56 21.4**	**+0.6**
LIT	**Litokhoron**	**1.14**	**30**	P	**Pg**	**05 56 03.8**	**-0.7**
LIT				S	**Sn**	**05 56 21.4**	**+0.6**
LIT	**Litokhoron**	**1.14**	**30**	P	**Pg**	**05 56 03.5**	**-0.9**
LIT				S	**Sn**	**05 56 21.6**	**+0.8**
LIT				AML	AML	05 56 24.6	
	comp=N,7586μm,0.4s						
LIT				AML	AML	05 56 30.6	
	comp=E,6883μm,0.4s						
XOR	**Xorichti**	**1.14**	**77**	P	**Pg**	**05 56 04.1**	**-0.4**
XOR				S	**Sn**	**05 56 21.2**	**+0.4**
XOR	**Xorichti**	**1.14**	**77**	P	**Pg**	**05 56 04.1**	**-0.4**
XOR				S	**Sn**	**05 56 21.2**	**+0.4**
XOR	**Xorichti**	**1.14**	**77**	P	**Pg**	**05 56 03.9**	**-0.6**
XOR				S	**Sn**	**05 56 21.6**	**+0.7**
XOR				AML	AML	05 56 26.3	
	comp=E,2374μm,0.5s						
XOR				AML	AML	05 56 26.4	
	comp=N,3627μm,0.4s						
SMIA	**Simia**	**1.16**	**101**	P	**Pn**	**05 56 05.0**	**-0.1**
SMIA	**Simia**	**1.16**	**101**	P	**Pn**	**05 56 05.0**	**-0.1**
SMIA	**Simia**	**1.16**	**101**	P	**Pn**	**05 56 05.6**	**+0.5**
DRO	**Drossia**	**1.16**	**182**	P	**Pg**	**05 56 04.5**	**-0.3**
DRO				S	**Sn**	**05 56 21.7**	**+0.6**
DRO	**Drossia**	**1.16**	**182**	P	**Pg**	**05 56 04.5**	**-0.3**
DRO				S	**Sn**	**05 56 21.7**	**+0.6**
DRO				AML	AML	05 56 24.5	
	comp=E,6494μm,0.3s						
DRO				AML	AML	05 56 32.6	
	comp=N,6464μm,0.6s						
NEO	**Neokhori**	**1.16**	**80**	P	**Pg**	**05 56 04.5**	**-0.2**
NEO				S	**Sn**	**05 56 21.8**	**+0.6**
NEO	**Neokhori**	**1.16**	**80**	P	**Pg**	**05 56 04.6**	**-0.2**
NEO				S	**Sb**	**05 56 20.5**	**+0.5**
NEO	**Neokhori**	**1.16**	**80**	P	**Pg**	**05 56 04.6**	**-0.2**
NEO				S	**Sb**	**05 56 20.5**	**+0.5**
NEO				AML	AML	05 56 24.2	
	comp=N,3701μm,0.3s						
NEO				AML	AML	05 56 27.0	
	comp=E,2814μm,0.5s						
PENT	**Pentalofos**	**1.19**	**336**	P	**Pg**	**05 56 04.3**	**-1.0**
PENT				S	**Sn**	**05 56 22.1**	**+0.1**
PENT	**Pentalofos**	**1.19**	**336**	P	**Pg**	**05 56 04.3**	**-1.0**
PENT				S	**Sn**	**05 56 22.1**	**+0.1**
PENT	**Pentalofos**	**1.19**	**336**	P	**Pg**	**05 56 03.5**	**-1.8**
PENT				S	**Sb**	**05 56 21.1**	**+0.2**
PENT				AML	AML	05 56 31.4	
	comp=E,2176μm,0.4s						
PENT				AML	AML	05 56 32.9	
	comp=N,2918μm,0.7s						
KZN	**Kozani**	**1.20**	**1**	P	**Pb**	**05 56 04.4**	**-1.2**
KZN				S	**Sn**	**05 56 22.8**	**+0.6**
KZN	**Kozani**	**1.20**	**1**	P	**Pb**	**05 56 04.9**	**-0.7**
KZN				S	**Sn**	**05 56 22.8**	**+0.6**
PROD	**Prodromos**	**1.23**	**133**	P	**Pg**	**05 56 06.4**	**+0.2**
PROD	**Prodromos**	**1.23**	**133**	P	**Pg**	**05 56 06.4**	**+0.2**
KFL	**Anninata**	**1.25**	**218**	P	**Pn**	**05 56 04.7**	**-1.7**
KFL				S	**Sb**	**05 56 21.9**	**-0.9**
KFL	**Anninata**	**1.25**	**218**	P	**Pn**	**05 56 04.7**	**-1.7**
KFL				S	**Sb**	**05 56 21.9**	**-0.9**
GUR	**Goura**	**1.26**	**158**	P	**Pn**	**05 56 04.9**	**-1.7**
GUR	**Goura**	**1.26**	**158**	P	**Pn**	**05 56 04.9**	**-1.7**
GUR				S	**Sn**	**05 56 25.2**	**+1.4**
GUR				AML	AML	05 56 27.6	
	comp=N,5153μm,0.4s						
GUR				AML	AML	05 56 31.2	
	comp=E,4450μm,0.6s						
VTN	**Vitineika**	**1.27**	**201**	P	**Pg**	**05 56 08.1**	**+1.1**
VTN	**Vitineika**	**1.27**	**201**	P	**Pg**	**05 56 08.1**	**+1.1**
SGD	**Sagiada**	**1.28**	**294**	P	**Pg**	**05 56 07.5**	**+0.3**
SGD	**Sagiada**	**1.28**	**294**	P	**Pg**	**05 56 07.5**	**+0.3**
THAL	**Thalero**	**1.28**	**146**	P	**Pn**	**05 56 06.8**	**0.0**
THAL				S	**Sn**	**05 56 25.4**	**+1.2**
THAL	**Thalero**	**1.28**	**146**	P	**Pn**	**05 56 06.8**	**0.0**
THAL				S	**Sn**	**05 56 25.4**	**+1.2**
THAL	**Thalero**	**1.28**	**146**	P	**Pb**	**05 56 07.0**	**0.0**
THAL				S	**Sn**	**05 56 26.6**	**+2.3**
THAL				AML	AML	05 56 37.9	
	comp=E,5418μm,0.4s						
THAL				AML	AML	05 56 40.6	
	comp=N,4968μm,0.4s						
VLS	**Valsamata**	**1.30**	**225**	P	**Pn**	**05 56 05.9**	**-1.2**
VLS	**Valsamata**	**1.30**	**225**	P	**Pn**	**05 56 05.9**	**-1.2**
VLS				S	**Sn**	**05 56 25.5**	**+0.7**
SKIA	**Skiathos**	**1.33**	**87**	P	**Pn**	**05 56 07.5**	**0.0**
SKIA				S	**Sg**	**05 56 26.9**	**+1.6**
SKIA	**Skiathos**	**1.33**	**87**	P	**Pn**	**05 56 07.5**	**0.0**
SKIA				S	**Sg**	**05 56 26.9**	**+1.6**
SKIA	**Skiathos**	**1.33**	**87**	P	**Pn**	**05 56 06.9**	**-0.6**
SKIA				S	**Sg**	**05 56 27.1**	**+1.8**
SKIA				AML	AML	05 56 32.8	
	comp=N,1212μm,0.6s						
SKIA				AML	AML	05 56 32.9	
	comp=E,837μm,0.7s						
NEST	**Nestorio**	**1.41**	**338**	P	**Pn**	**05 56 08.7**	**0.0**
NEST				S	**Sg**	**05 56 28.8**	**+0.8**
NEST	**Nestorio**	**1.41**	**338**	P	**Pn**	**05 56 08.7**	**0.0**
NEST				S	**Sg**	**05 56 28.8**	**+0.8**
NEST	**Nestorio**	**1.41**	**338**	P	**Pn**	**05 56 08.3**	**-0.5**
NEST				S	**Sg**	**05 56 30.6**	**+2.5**
NEST				AML	AML	05 56 34.0	
	comp=E,2773μm,0.7s						
NEST				AML

EREA	**Eretria**	**1.83 111**	P	**Pn**	**05 56 15.0**	**+0.5**
EREA	**Eretria**	**1.83 111**	P	**Pn**	**05 56 14.9**	**+0.5**
GRG	**Griva**	**1.91 15**	P	**Pn**	**05 56 15.2**	**-0.3**
GRG	**Griva**	**1.91 15**	P	**Pn**	**05 56 15.2**	**-0.3**
GRG	**Griva**	**1.91 15**	P	**Pn**	**05 56 14.7**	**-0.8**
ATH	**Athens Observa**	**1.91 126**	P	**Pn**	**05 56 16.2**	**+0.8**
ATH			S	**Sn**	**05 56 39.1**	**-0.6**
ITM	**Ithomi**	**1.93 176**	P	**Pg**	**05 56 18.9**	**-0.7**
ITM	**Ithomi**	**1.93 176**	P	**Pg**	**05 56 18.9**	**-0.7**
ITM	**Ithomi**	**1.93 176**	P	**Pg**	**05 56 20.0**	**+0.4**
ATHU	**Athens Univers**	**1.96 125**	P	**Pn**	**05 56 16.6**	**+0.5**
ATHU	**Athens Univers**	**1.96 125**	P	**Pn**	**05 56 16.6**	**+0.5**
ATHU			AML	AML	05 56 47.8	
	comp=N,361µm,0.4s					
ATHU			AML	AML	05 56 52.1	
	comp=E,199µm,0.7s					
PTL	**Penteli**	**1.96 122**	P	**Pb**	**05 56 18.0**	**-0.6**
PTL	**Penteli**	**1.96 122**	P	**Pb**	**05 56 18.0**	**-0.6**
PTL			AML	AML	05 56 52.3	
	comp=E,590µm,0.5s					
PTL			AML	AML	05 56 58.5	
	comp=N,624µm,0.8s					
DID	**Didima**	**1.98 144**	P	**Pn**	**05 56 17.3**	**+0.9**
DID			S	**Sb**	**05 56 44.3**	**+0.6**
DID	**Didima**	**1.98 144**	P	**Pn**	**05 56 17.3**	**+0.9**
DID			S	**Sb**	**05 56 44.3**	**+0.6**
DID			AML	AML	05 56 50.6	
	comp=E,1158µm,0.4s					
DID			AML	AML	05 56 50.8	
	comp=N,1038µm,0.7s					
VLY	**Voula,Athens**	**2.03 128**	P	**Pn**	**05 56 18.0**	**+0.8**
VLY	**Voula,Athens**	**2.03 128**	P	**Pn**	**05 56 17.9**	**+0.8**
VLY			S	**Sn**	**05 56 41.5**	**-1.2**
VLY	**Voula,Athens**	**2.03 128**	P	**Pn**	**05 56 17.9**	**+0.8**
VLY			S	**Sn**	**05 56 41.5**	**-1.2**
VLY			AML	AML	05 56 50.8	
	comp=N,974µm,0.7s					
VLY			AML	AML	05 56 56.0	
	comp=E,839µm,0.7s					
KRND	**KRANIDI**	**2.04 147**	P	**Pn**	**05 56 18.1**	**+0.8**
KRND	**KRANIDI**	**2.04 147**	P	**Pn**	**05 56 17.9**	**+0.6**
KRND			S	**Sb**	**05 56 45.6**	**+0.1**
KRND	**KRANIDI**	**2.04 147**	P	**Pn**	**05 56 17.9**	**+0.6**
KRND			S	**Sb**	**05 56 45.6**	**+0.1**
KRND			AML	AML	05 56 52.1	
	comp=N,974µm,0.6s					
KRND			AML	AML	05 56 53.0	
	comp=E,951µm,0.7s					
SOH	**Sokhos**	**2.10 35**	P	**Pn**	**05 56 18.4**	**+0.2**
SOH	**Sokhos**	**2.10 35**	P	**Pn**	**05 56 18.9**	**+0.7**
SOH	**Sokhos**	**2.10 35**	P	**Pn**	**05 56 18.9**	**+0.7**
OUR	**Ouranopolis**	**2.11 54**	P	**Pn**	**05 56 18.2**	**+0.1**
OUR	**Ouranopolis**	**2.11 54**	P	**Pn**	**05 56 18.2**	**+0.1**
OUR	**Ouranopolis**	**2.11 54**	P	**Pn**	**05 56 17.6**	**-0.5**
OHR	**Ohrid**	**2.13 340**	*i* Pn	**Pb**	**05 56 22.3**	**+0.8**
OHR			*i* Sn	**Sg**	**05 56 50.8**	**-0.2**
OHR	**Ohrid**	**2.13 340**	*i* Pn	**Pb**	**05 56 22.3**	**+0.8**
OHR			*i* Sn	**Sg**	**05 56 50.7**	**-0.3**
PYL	**PYLOS**	**2.21 180**	P	**Pg**	**05 56 24.9**	**-0.1**
PYL			S	**Sn**	**05 56 45.9**	**-1.2**
KNT	**Kendrikon**	**2.23 23**	P	**Pn**	**05 56 20.2**	**+0.3**
KNT	**Kendrikon**	**2.23 23**	P	**Pn**	**05 56 20.2**	**+0.3**
KNT	**Kendrikon**	**2.23 23**	P	**Pn**	**05 56 19.9**	**+0.1**
VAY	**Valandovo**	**2.29 15**	*i* Pn	**Pn**	**05 56 21.6**	**+0.8**
VAY			*i* Sn	**Sn**	**05 56 50.2**	**+1.0**
VAY	**Valandovo**	**2.29 15**	*i* Pn	**Pn**	**05 56 21.6**	**+0.8**
VAY			*i* Sn	**Sn**	**05 56 50.2**	**+1.0**
SRS	**Serrai**	**2.45 34**	P	**Pn**	**05 56 22.8**	**-0.1**
SRS	**Serrai**	**2.45 34**	P	**Pn**	**05 56 22.8**	**-0.1**
SRS	**Serrai**	**2.45 34**	P	**Pn**	**05 56 22.5**	**-0.4**
VLI	**Veliai**	**2.56 158**	P	**Pn**	**05 56 25.3**	**+0.9**
VLI	**Veliai**	**2.56 158**	P	**Pn**	**05 56 25.3**	**+0.9**
VLI	**Veliai**	**2.56 158**	P	**Pn**	**05 56 24.5**	**+0.1**
TIR	**Tirane**	**2.66 328**	*i* PN	Pn	05 56 15.2	-11
TIR	**Tirane**	**2.66 328**	⇓*i*P	**Pb**	**05 56 28.9**	**-1.6**
TIR	**Tirane**	**2.66 328**	⇓*i*P	**Pb**	**05 56 28.9**	**-1.6**
NVR	**Nevrokopi**	**2.76 35**	P	**Pn**	**05 56 27.7**	**+0.6**
LIA	**Limnos Island**	**2.77 72**	P	**Pn**	**05 56 25.8**	**-1.4**
KAVA	**Kavala**	**2.83 47**	P	**Pn**	**05 56 27.6**	**-0.5**
KAVA	**Kavala**	**2.83 47**	P	**Pn**	**05 56 27.6**	**-0.5**
KAVA	**Kavala**	**2.83 47**	P	**Pn**	**05 56 26.2**	**-1.9**
SKO	**Skopje**	**2.87 355**	*i* Pn	**Pn**	**05 56 28.9**	**+0.2**
SKO			*i* Sn	**Sb**	**05 57 06.5**	**-2.8**
SKO	**Skopje**	**2.87 355**	*i* Pn	**Pn**	**05 56 28.8**	**+0.1**
SKO			*i* Sn	**Sb**	**05 57 06.5**	**-2.8**
SIGR	**SIGRI**	**3.19 87**	P	**Pn**	**05 56 32.6**	**-0.4**
SIGR	**SIGRI**	**3.19 87**	P	**Pn**	**05 56 32.6**	**-0.4**
MHLO	**Agia Marina, M**	**3.20 138**	P	**Pn**	**05 56 33.5**	**+0.4**
MHLO	**Agia Marina, M**	**3.20 138**	P	**Pn**	**05 56 33.5**	**+0.4**
SMTH	**Samothraki Isl**	**3.21 64**	P	**Pn**	**05 56 30.5**	**-2.9**
ULC	**Ulcinj**	**3.43 327**	*e*Pn	**Pn**	**05 56 38.1**	**+1.7**
ULC			*e*Sn	**Sn**	**05 57 20.1**	**+2.8**
ULC	**Ulcinj**	**3.43 327**	*e*Pn	**Pn**	**05 56 38.1**	**+1.7**
ULC			*e*Sn	**Sn**	**05 57 20.1**	**+2.8**
CHOS	**Chios island**	**3.44 101**	P	**Pn**	**05 56 37.2**	**+0.7**
CHOS	**Chios island**	**3.44 101**	P	**Pn**	**05 56 37.2**	**+0.7**
ANKY	**Antikythira Is**	**3.46 159**	P	**Pn**	**05 56 39.8**	**+3.0**
ANKY	**Antikythira Is**	**3.46 159**	P	**Pn**	**05 56 39.8**	**+3.0**
APE	**Apeiranthos**	**3.61 123** ⇑*i*P		**Pn**	**05 56 39.7**	**+0.9**
APE	**Apeiranthos**	**3.61 123**	S	**Sn**	**05 57 19.7**	**-2.0**
APE	**Apeiranthos**	**3.61 123**	P	**Pn**	**05 56 39.8**	**+1.0**
APE			S	**Sn**	**05 57 19.7**	**-2.0**
APE	**Apeiranthos**	**3.61 123**	P	**Pn**	**05 56 39.8**	**+1.0**
DRME	**Dracevica, Mon**	**3.64 328** ⇓*i*Pn		**Pn**	**05 56 41.5**	**+2.2**
DRME			*e*Sn	**Sn**	**05 57 25.0**	**+2.5**
DRME	**Dracevica, Mon**	**3.64 328** ⇓*i*Pn		**Pn**	**05 56 41.5**	**+2.2**
DRME			*e*Sn	**Sn**	**05 57 25.0**	**+2.5**
VTS	**Vitosha**	**3.65 17** ⇓*i*P		**Pn**	**05 56 40.5**	**+1.0**
VTS	**Vitosha**	**3.65 17** S		**Sn**	**05 57 23.1**	**+0.3**
VTS	**Vitosha**	**3.65 17** ⇓*i*P		**Pn**	**05 56 40.5**	**+1.0**
VTS			S	**Sn**	**05 57 23.1**	**+0.3**
BARS	**Barje**	**3.70 1** ⇓*i*Pn		**Pn**	**05 56 40.5**	**+0.4**
TAR1	**Taranto**	**3.72 294** *e*Pn		**Pn**	**05 56 42.8**	**+2.4**
PVY	**Plav**	**3.74 339** ⇓*i*Pn		**Pn**	**05 56 42.8**	**+2.1**
PVY			*e*Sn	**Sn**	**05 57 27.0**	**+2.0**
PVY	**Plav**	**3.74 339** ⇓*i*Pn		**Pn**	**05 56 42.8**	**+2.1**
PVY			*e*Sn	**Sn**	**05 57 27.0**	**+2.0**
ALN	**Alexandroupoli**	**3.75 60** P		**Pn**	**05 56 38.7**	**-1.9**
PDG	**Podgorica**	**3.82 331** ⇑*i*P		**Pn**	**05 56 44.1**	**+2.4**
PDG	**Podgorica**	**3.82 331** S		**Sn**	**05 57 30.5**	**+3.7**
PDG	**Podgorica**	**3.82 331** ⇑*i*Pn		**Pn**	**05 56 43.1**	**+1.4**
PDG	**Podgorica**	**3.82 331** ⇑*i*P		**Pn**	**05 56 44.1**	**+2.4**
PDG			*e*Sn	**Sn**	**05 57 29.8**	**+3.0**
PDG			S	**Sn**	**05 57 30.5**	**+3.7**
TTG	**Podgorica**	**3.82 331** ⇑*i*Pn		**Pn**	**05 56 43.1**	**+1.4**
TTG			*e*Sn	**Sn**	**05 57 29.8**	**+3.0**
BUM	**Brajici-Budva**	**3.86 327** ⇑*i*Pn		**Pn**	**05 56 44.0**	**+1.7**
BUM			*e*Sn	**Sn**	**05 57 30.1**	**+2.2**
BUM	**Brajici-Budva**	**3.86 327** ⇑*i*Pn		**Pn**	**05 56 44.0**	**+1.7**
BUM			*e*Sn	**Sn**	**05 57 30.1**	**+2.2**
BEY	**Berane**	**4.01 340** ⇓*i*Pn		**Pn**	**05 56 46.2**	**+1.7**
BEY			*e*Sn	**Sn**	**05 57 33.5**	**+1.8**
IVA	**Berane**	**4.01 340** ⇓*i*Pn		**Pn**	**05 56 46.2**	**+1.7**
IVA			*e*Sn	**Sn**	**05 57 33.5**	**+1.8**
IMMV	**Iera Moni Meta**	**4.05 153** P		**Pn**	**05 56 46.5**	**+1.6**
IMMV	**Iera Moni Meta**	**4.05 153** P		**Pn**	**05 56 46.5**	**+1.6**
CEME	**Cevo**	**4.05 329** ⇑*i*Pn		**Pn**	**05 56 46.7**	**+1.7**
CEME			*e*Sn	**Sn**	**05 57 35.1**	**+2.4**
CEME	**Cevo**	**4.05 329** ⇑*i*Pn		**Pn**	**05 56 46.7**	**+1.7**
CEME			*e*Sn	**Sn**	**05 57 35.1**	**+2.4**
HCY	**Herceg Novi**	**4.15 324** ⇑*i*Pn		**Pn**	**05 56 47.9**	**+1.6**
HCY			*e*Sn	**Sn**	**05 57 37.1**	**+2.1**
HCY	**Herceg Novi**	**4.15 324** ⇑*i*Pn		**Pn**	**05 56 47.9**	**+1.6**
HCY			*e*Sn	**Sn**	**05 57 37.1**	**+2.1**
NKME	**Niksic**	**4.23 331** ⇓*i*Pn		**Pn**	**05 56 48.4**	**+1.1**
NKME			*e*Sn	**Sn**	**05 57 39.1**	**+2.2**
NKME	**Niksic**	**4.23 331** ⇓*i*Pn		**Pn**	**05 56 48.4**	**+1.1**
NKME			*e*Sn	**Sn**	**05 57 39.1**	**+2.2**
NKY	**Niksic**	**4.25 331** ⇓*i*Pn		**Pn**	**05 56 49.8**	**+2.1**
NKY			*e*Sn	**Sn**	**05 57 39.6**	**+2.0**
NKY	**Niksic**	**4.25 331** ⇓*i*Pn		**Pn**	**05 56 49.8**	**+2.1**
NKY			*e*Sn	**Sn**	**05 57 39.6**	**+2.0**
SG1	**Sgolgore (BA)**	**4.27 295** *e*Pn		**Pn**	**05 56 49.3**	**+1.4**
SG1			Sn	**Sn**	**05 57 37.8**	**-0.1**
TREB	**Trebinje**	**4.43 325** *e*Pn		**Pn**	**05 56 51.0**	**+0.9**
BRY	**Bratogost**	**4.50 328** ⇑*i*Pn		**Pn**	**05 56 52.9**	**+1.7**
BRY			*e*Sn	**Sn**	**05 57 45.8**	**+1.9**
BRY	**Bratogost**	**4.50 328** ⇑*i*Pn		**Pn**	**05 56 52.9**	**+1.7**
BRY			*e*Sn	**Sn**	**05 57 45.8**	**+1.9**
IDI	**Anoyia**	**4.56 146** P		**Pn**	**05 56 55.4**	**+3.4**
	comp=E,0.5nm,0.3s,baz=339,slow=15,SNR=3.8					
IDI			S	**Sn**	**05 57 49.6**	**+4.4**
	comp=E,2.3nm,0.3s,baz=120,slow=22,SNR=6.1					
IDI	**Anoyia**	**4.56 146** P		**Pn**	**05 56 53.3**	**+1.3**
IDI	**Anoyia**	**4.56 146** P		**Pn**	**05 56 53.3**	**+1.3**
UPM	**Unac-Piva**	**4.62 333** ⇓*i*Pn		**Pn**	**05 56 55.2**	**+2.3**
UPM			*e*Sn	**Sn**	**05 57 48.5**	**+1.7**
UPM	**Unac-Piva**	**4.62 333** ⇓*i*Pn		**Pn**	**05 56 55.2**	**+2.3**
UPM			*e*Sn	**Sn**	**05 57 48.5**	**+1.7**
IVAS	**Ivanjica**	**4.62 345** *e*Pn		**Pn**	**05 56 54.0**	**+1.2**
CDT	**Castel del Mon**	**4.64 297** *e*Pn		**Pn**	**05 56 54.5**	**+1.5**
GRUS	**Gruza**	**4.84 351** ⇓*i*Pn		**Pn**	**05 56 56.2**	**+0.5**
LAST	**Lasithi**	**4.94 142** P		**Pn**	**05 57 01.6**	**+4.4**
BBLS	**Lazići**	**5.07 340** ⇓*i*Pn		**Pn**	**05 57 00.7**	**+1.8**
MS1	**Monte Sant'Ang**	**5.14 302** *e*Pn		**Pn**	**05 57 01.0**	**+1.1**
MS1			Sn	**Sn**	**05 57 56.9**	**-2.6**
DIVS	**Divibare**	**5.16 346** *e*Pn		**Pn**	**05 57 01.7**	**+1.5**
TRUS	**Trudelj**	**5.21 349** *i* Pn		**Pn**	**05 57 01.1**	**+0.3**
KUBS	**Kucevo**	**5.30 359** *i* Pn		**Pn**	**05 57 00.6**	**-1.4**
KARP	**Karpathos**	**5.58 128** P		**Pn**	**05 57 10.6**	**+4.6**
MDVR	**Moldovita**	**5.67 360** ⇓*i*P		**Pn**	**05 57 08.2**	**+1.1**
MDVR	**Moldovita**	**5.67 360** ⇓*i*P		**Pn**	**05 57 08.2**	**+1.1**
TEKS	**Tekeris**	**5.68 344** *e*Pn		**Pn**	**05 57 08.9**	**+1.6**
GZR	**Gura Zlata**	**6.33 7** ⇑*i*P		**Pn**	**05 57 17.3**	**+1.1**
GZR	**Gura Zlata**	**6.33 7** S		**Sn**	**05 58 25.2**	**-3.4**
GZR	**Gura Zlata**	**6.33 7** ⇑*i*P		**Pn**	**05 57 17.3**	**+1.1**
BLY	**Banja Luka**	**6.58 330** *e*Pn		**Pn**	**05 57 20.9**	**+1.2**
VOIR		**6.78 20** ⇑*i*P		**Pn**	**05 57 23.2**	**+0.8**
VOIR		**6.78 20** ⇑*i*P		**Pn**	**05 57 23.2**	**+0.8**
UDBI	**Udbina**	**7.02 322** *e*Pn		**Pn**	**05 57 27.4**	**+1.6**
UDBI			Sn	**Sn**	**05 58 45.1**	**-0.7**
UDBI	**Udbina**	**7.02 322** *e*Pn		**Pn**	**05 57 27.3**	**+1.6**
MLR	**Muntele Rosu**	**7.09 25** P		**Pn**	**05 57 29.1**	**+2.4**
	comp=E,0.3nm,0.3s,baz=5.9,slow=8.7,SNR=5.6					
MLR			S	**Sn**	**05 58 49.1**	**+1.6**
	baz=124,slow=10,SNR=1.5					
MLR	**Muntele Rosu**	**7.09 25** ⇑*i*P		**Pn**	**05 57 25.8**	**-1.0**
MLR	**Muntele Rosu**	**7.09 25** ⇑*i*P		**Pn**	**05 57 25.8**	**-1.0**
NVLJ	**Novalja**	**7.49 319** *e*Pn		**Pn**	**05 57 32.6**	**+0.5**
NVLJ			Sn	**Sn**	**05 58 55.5**	**-1.6**
NVLJ	**Novalja**	**7.49 319** *e*Pn		**Pn**	**05 57 32.5**	**+0.4**
PLOR	**Plostina**	**7.64 27** ⇑*i*P		**Pn**	**05 57 33.9**	**-0.4**
PLOR	**Plostina**	**7.64 27** ⇑*i*P		**Pn**	**05 57 33.9**	**-0.4**
CRES	**Cresnjev**	**8.17 327** *e*Pn		**Pn**	**05 57 40.9**	**-0.5**
CEY	**Cerknica**	**8.56 323** *e*Pn		**Pn**	**05 57 47.7**	**+0.9**
BRTR	**Keskin Array B**	**9.22 82** P		**Pn**	**05 57 57.8**	**+1.8**
	comp=E,0.1nm,0.3s,baz=262,slow=8.6,SNR=2.4					
KIS	**Kishinev**	**9.42 31** LRM		MLR	05 58 40.0	
	comp=E,400nm,20.0s					
GERES	**GERESS Array B**	**11.32 332** P		**Pn**	**05 58 25.2**	**+0.5**
	comp=E,0.1nm,0.3s,baz=157,slow=14,SNR=5.2					
HFS	**Hagfors**	**21.65 349** P		**P**	**06 00 33.6**	**+0.4**
	comp=E,1.6nm,0.5s,baz=153,slow=10.0,SNR=9.4					
FINES	**FINESS Array B**	**22.52 5** P		**P**	**06 00 41.5**	**-1.0**
	comp=E,0.9nm,0.7s,baz=173,slow=7.7,SNR=4.8					
NB2	**NORSAR Subarra**	**22.91 347** P		**P**	**06 00 46.0**	**-0.7**
	comp=Z,1.6nm,0.6s,baz=157,slow=9.3					
NB2	**NORSAR Subarra**	**22.91 347** P		**P**	**06 00 46.0**	**-0.7**
	comp=Z,1.6nm,0.6s,SNR=6.6					
NOA	**NORSAR Array B**	**22.91 347** P		**P**	**06 00 46.2**	**-0.5**
	comp=Z,0.6nm,0.5s,baz=157,slow=9.0,SNR=7.4					
EKA	**Eskdalemuir Ar**	**23.25 322** P		**P**	**06 00 49.5**	**-0.7**
	comp=Z,1.5nm,0.6s,baz=120,slow=9.9,SNR=4.5					
ARCES	**ARCESS Array B**	**30.55 3** P		**P**	**06 01 55.1**	**-1.1**
	comp=Z,1.8nm,0.9s,baz=186,slow=9.1,SNR=4.1					
TORD	**Torodi Ar. Bea**	**31.36 220** P		**P**	**06 02 03.7**	**-0.1**
	comp=Z,1.0nm,0.7s,baz=30,slow=9.7,SNR=14					
MKAR	**Makanchi Array**	**43.99 59** P		**P**	**06 03 50.5**	**+0.2**
	comp=Z,1.7nm,0.5s,baz=279,slow=7.1,SNR=29					
ZALV	**Zalesovo Beam**	**44.35 49** P		**P**	**06 03 53.0**	**-0.1**
	comp=Z,4.8nm,0.5s,baz=275,slow=8.6,SNR=19					
YKA	**Yellowknife Ar**	**72.84 340** P		**P**	**06 07 10.3**	**-1.2**
	comp=Z,0.6nm,0.6s,baz=35,slow=5.3,SNR=8.4					
TXAR	**Lajitas Array**	**95.02 314** P		**P**	**06 09 06.8**	**+0.5**
	comp=Z,0.4nm,0.8s,baz=35,slow=4.6,SNR=4.2					

*SCB **07** 06:00:28.1±0.7,22.1°×66.34W,h248km,Ml3.6/3, Error ellipse: s-maj=20.5km s-min=7.8km az=33.0*
*ISCJB **07** 06:00:29.7±0.4,22.33S±0.03°×66.25W±0.04,h251km, mb3.8/5, Error ellipse: s-maj=5.0km s-min=4.4km az=38.9*
*IDC **07** 06:00:29.4±0.9,22.33S×66.09W,h240km±10km,mb3.6/5, mb1 3.7/10,mb1mx3.5/32,mbtmp4.1/10, Error ellipse: s-maj=19.8km s-min=14.1km az=1.0*
*GUC **07** 06:00:30.4±0.4,22.22S×66.84W,h308km±7km, ML5.0*
*SJA **07** 06:00:51.4±0.8,23.63S×65.82W,h78km±45km,ML2.5, MW3.1*

ISC 07 06:00:30.1±0.7,**22.31S**±0.05×**66.23W**±0.05,**h251**km,**n35,** σ1§**72**/52,**mb4.1**/5,**2C-3D,Jujuy Province**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
HJA	**Humahuaca**	**1.17 140**		*e*P		**Pn**	**06 01 07.5**	**+0.7**
HJA				*e*S		S	06 01 19.1	-16
HJA				IAML			06 01 19.6	
	comp=Z,67nm,0.5s							
MOCB	**Mochara**	**1.19 28**		⇓*e*Pn		**Pn**	**06 01 07.1**	**+0.1**
MOCB				*e*Sn		**S**	**06 01 34.4**	**-1.5**
	comp=Z,118nm,0.4s							
ASTB	**Santa Barbara**	**2.31 135**		*e*P		**Pn**	**06 01 15.8**	**0.0**
LVC	**Limon Verde**	**2.50 263**		P		**Pn**	**06 01 18.6**	**+0.8**
	comp=Z,2µm,0.3s,baz=85,slow=5.8,SNR=526							
LVC				S		**S**	**06 01 55.4**	**0.0**
	comp=Z,902nm,0.3s,baz=275,slow=21,SNR=37							
PB09	**IPOC Station P**	**2.84 280**		*e*P		**Pn**	**06 01 22.0**	**+0.8**
PB09				*e*S		**S**	**06 02 01.1**	**-0.4**
PB09				IAML			06 02 04.9	
	comp=N,1µm,0.2s							
PB06	**IPOC Station P**	**3.12 262**		*e*P		**Pn**	**06 01 24.8**	**+0.7**
PB06				*e*S		**S**	**06 02 06.2**	**-0.6**
PB01	**IPOC Station P**	**3.28 292**		*e*P		**Pn**	**06 01 26.3**	**+0.4**
PB01				*e*S		**S**	**06 02 08.3**	**-1.7**
PB07	**IPOC Station P**	**3.44 279**		*e*P		**Pn**	**06 01 28.0**	**+0.2**
PB07				*e*S		**S**	**06 02 11.2**	**-2.2**
PB07				IAML			06 02 12.6	
	comp=N,1µm,0.1s							
PB08	**IPOC Station P**	**3.48 308**		*e*P		**Pn**	**06 01 29.4**	**+1.0**
PB08				*e*S		**S**	**06 02 14.0**	**-0.4**
PB08				IAML			06 02 16.6	
	comp=E,866nm,0.3s							
PB04	**IPOC Station P**	**3.63 269**		*e*P		**Pn**	**06 01 29.7**	**-0.1**
PB04				*e*S		**S**	**06 02 14.5**	**-2.7**
PB04				IAML			06 02 17.6	
	comp=N,1µm,0.2s							
FSA	**Cafayete**	**3.80 177**		*e*P		**Pn**	**06 01 32.2**	**+0.5**
FSA				IAML			06 01 33.6	
	comp=Z,49nm,0.9s							
HMBC	**Humberstone**	**3.96 300**		*e*P		**Pn**	**06 01 33.5**	**-0.2**
HMBC				*e*S		**S**	**06 02 21.4**	**-2.8**
PB10	**IPOC Station P**	**4.17 252**		*e*P		**Pn**	**06 01 35.6**	**-0.3**
PB10				*e*S		**S**	**06 02 24.0**	**-4.1**
MNMC	**Minye Minye**	**4.46 314**		*e*P		**Pn**	**06 01 40.3**	**+0.5**
MNMC				*e*S		**S**	**06 02 33.1**	**-2.0**
PB14	**IPOC Station P**	**4.48 238**		*e*P		**Pn**	**06 01 39.8**	**-0.1**
PB14				*e*S		**S**	**06 02 31.7**	**-3.7**
PSGC	**Pisagua**	**4.53 306**		*e*P		**Pn**	**06 01 39.3**	**-1.1**
PSGC				*e*S		**S**	**06 02 32.3**	**-4.0**
PSGC				IAML			06 02 35.3	
	comp=N,425nm,0.4s							
AHML	**Horco Molle**	**4.53 170**		*e*P		**Pn**	**06 01 40.3**	**0.0**
PB13	**IPOC Station P**	**5.00 322**		*e*P		**Pn**	**06 01 47.9**	**+1.3**
PB13				*e*S		**S**	**06 02 47.1**	**-0.4**
PB12	**IPOC Station P**	**5.32 313**		*e*P		**Pn**	**06 01 48.5**	**-1.5**
PB12				*e*S		**S**	**06 02 49.1**	**-4.6**
BBOJ	**La Paz, Jacaqu**	**5.62 340**		*e*Pn		**Pn**	**06 01 56.3**	**+2.2**
BBOE	**La Paz, Chanca**	**5.71 343**		⇓*i*Pn		**Pn**	**06 01 58.0**	**+0.7**
BBOD	**La Paz, Gloria**	**6.07 338**		⇑*i*Pn		**Pn**	**06 02 01.1**	**+1.4**
BBOD				*e*Sn		**S**	**06 03 09.5**	**-1.8**
	comp=N,24nm,0.6s							
BBOB	**La Paz, Bander**	**6.39 343**		⇑*i*Pn		**Pn**	**06 02 04.4**	**+0.7**
BBOB				*e*Sn		**S**	**06 03 16.0**	**-2.6**
	comp=N,50nm,0.8s							
SIV	**San Ignacio**	**7.95 39**		P		**Pn**	**06 02 21.5**	**-1.4**
	comp=N,3.7nm,0.3s,baz=233,slow=10,SNR=58							
SIV	**San Ignacio**	**7.95 39**		⇓*e*P		**Pn**	**06 02 20.4**	**-2.5**
CPUP	**Villa Florida**	**9.05 118**		P		**Pn**	**06 02 34.5**	**-2.2**
	comp=N,0.1nm,0.3s,baz=312,slow=13,SNR=5.0							
BDFB	**Brasilia**	**18.45 72**		P		**P**	**06 04 27.8**	**0.0**
PLCA	**Paso Flores**	**18.73 190**		P		**P**	**06 04 30.8**	**+0.3**
	comp=N,0.7nm,0.3s,baz=35,slow=12,SNR=19							
TXAR	**Lajitas Array**	**62.73 323**		P		**P**	**06 10 30.0**	**+1.0**
	comp=N,0.2nm,0.4s,baz=155,slow=8.2,SNR=4.9							

TORD	**Torodi Ar. Bea**	**75.30 69**	P	**P**	**06 11 45.0**	**-1.2**
	comp=N,1.3nm,0.3s,baz=261,slow=5.8,SNR=34					
PDAR	**Pinedale Array**	**76.07 329**	P	**P**	**06 11 51.8**	**+1.5**
	comp=N,0.3nm,0.4s,baz=118,slow=8.6,SNR=3.6					
ULM	**Lac du Bonnet**	**76.86 341**	P	**P**	**06 11 54.8**	**+0.6**
	comp=N,3.4nm,0.5s,baz=173,slow=4.7,SNR=5.0					
YKA	**Yellowknife Ar**	**92.79 340**	P	**P**	**06 13 14.7**	**+1.2**
	comp=N,1.0nm,0.5s,baz=129,slow=4.5,SNR=24					
WRA	**Warramunga Arr**	**133.45 207**	PKP	**PKPdf**	**06 19 17.9**	**+0.7**
	comp=N,0.3nm,0.3s,baz=153,slow=1.9,SNR=10					
MKAR	**Makanchi Array**	**144.77 38**	PKP	**PKPdf**	**06 19 37.7**	**+0.7**
	comp=N,0.6nm,0.5s,baz=318,slow=3.3,SNR=4.9					

*IDC **07** 06:05:17.1±0.8,29.49S×176.32W,h0km,mb4.5/11, mb1 4.7/12,mb1mx4.4/27,mbtmp4.5/12,ML4.3/1,MS3.7/7, Ms1 3.7/7,ms1mx3.3/27, Error ellipse: s-maj=27.1km s-min=17.2km az=161.0*
*ISCJB **07** 06:05:19.9±0.3,29.42S±0.07×176.43W±0.06,h21km, mb4.6/37,MS3.7/5, Error ellipse: s-maj=10.8km s-min=6.5km az=152.9*
*NEIC **07** 06:05:19.5±0.2,29.28S×176.46W,h10km,mb4.7/27, Error ellipse: s-maj=10.3km s-min=5.7km az=146.0*

ISC 07 06:05:21.0±0.5,**29.42S**±0.08×**176.32W**±0.07,**h21**km,**n74,** σ1§**61**/78,**mb4.6**/37,**MS3.7**/5,**1D,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.40 276**		Pn		**Pn**	**06 05 45.7**	**+0.5**
	372nm,0.3s,baz=138,slow=7.2,SNR=8.7							
RAO					Sn	**Sb**	**06 06 05.5**	**+1.7**
	1µm,0.3s,baz=104,slow=23,SNR=23							
RAO	**Raoul Island**	**1.40 276**		*e*Pn		**Pn**	**06 05 44.4**	**-0.9**
RAO				*e*Sn		**Sn**	**06 06 03.0**	**-0.2**
URZ	**Urewera**	**10.37 210**		Pn		**Pn**	**06 07 44.8**	**-3.6**
	2.4nm,0.3s,baz=267,slow=7.0,SNR=9.1							
URZ					Sn	**Sn**	**06 09 41.1**	**-2.8**
	2.0nm,0.3s,baz=354,slow=23,SNR=6.4							
SNZO	**South Karori**	**13.93 209**		*e*Pn		**Pn**	**06 08 38.6**	**+1.5**
KHZ	**Kahutara**	**

comp=Z,32nm,3.5s
EKS2 Erkin-Say 123.30 304 *e*PKPdf **PKPdf 06 24 16.2 -0.1**
KKAR Karatay Array 125.74 304 *e*PKPdf **PKPdf 06 24 20.3 -0.6**
ARCES ARCESS Array B 137.93 349 PKP **PKPdf 06 24 44.1 +1.0**
comp=Z,1.9nm,0.9s,baz=332,slow=4.7,SNR=4.4
FINES FINESS Array B 144.70 342 PKP **PKPab 06 24 53.0 -1.2**
comp=Z,4.6nm,0.7s,baz=59,slow=2.9,SNR=21
KBZ Khabaz 145.75 305 PKPbc **PKPdf 06 24 58.1 +0.3**
comp=Z,0.5nm,0.3s,baz=316,slow=5.1,SNR=3.4
NB2 NORSAR Subarra147.98 353 PKP **PKPbc 06 25 03.0 -1.1**
comp=Z,1.4nm,0.7s,baz=8.8,slow=2.9
NOA NORSAR Array B 147.98 353 PKPbc **PKPbc 06 25 03.0 -1.1**
comp=Z,2.1nm,0.8s,baz=13,slow=4.4,SNR=6.7
AKASG Malin Array Be 151.37 325 PKPbc **PKPbc 06 25 11.9 -0.8**
comp=Z,6.1nm,0.6s,baz=46,slow=2.9,SNR=20
KIEV Kiev 151.38 325 *e*PKPbc **PKPbc 06 25 11.8 -1.0**
KIEV *e*PKPab **PKPab 06 25 19.5 -1.5**
BRTR Keskin Array B 153.38 301 PKPbc **PKPbc 06 25 17.2 -0.6**
comp=Z,0.7nm,0.6s,baz=94,slow=4.3,SNR=3.4
TORD Torodi Ar. Bea 163.71 173 PKPab **PKPab 06 26 14.9 +0.1**
comp=Z,1.9nm,0.8s,baz=180,slow=4.6,SNR=11

*DDA **07** 06:08:37.3, 36.93N×28.00E, h7km, Md2.8*
*ISK **07** 06:08:38.5, 36.97N×28.23E, h8km, MD2.5*
*CSEM **07** 06:08:39.3±0.3, 36.97N×28.20E, h5km, MD2.5, Error ellipse: s-maj=6.9km s-min=5.2km az=12.0*
ISC 07 06:08:37.7±1.3, 36.96N±0.04×28.11E±0.04, h4km±12km, n15, σ1§64/26, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.23**	**38**	*e*PG	**Pg**	**06 08 42.1**	**0.0**
YER				*e*SG	**Sg**	**06 08 45.5**	**+0.5**
YER	**Yerkesik**	**0.23**	**38**	*e*Pg	**Pg**	**06 08 42.1**	**0.0**
YER				*e*Sg	**Sg**	**06 08 45.6**	**+0.5**
TURN	**Turunc**	**0.40**	**102**	*i* P	**Pg**	**06 08 43.0**	**-2.5**
TURN				*i* S	**Sg**	**06 08 46.4**	**-4.4**
DALY	**Dalyan (Mu¨la**	**0.46**	**108**	*e*PG	**Pg**	**06 08 46.1**	**-0.4**
DALY				*e*SG	**Sg**	**06 08 52.0**	**-0.5**
DALY	**Dalyan (Mu¨la**	**0.46**	**108**	*e*Pg	**Pg**	**06 08 46.1**	**-0.4**
DALY				*e*Sg	**Sg**	**06 08 52.0**	**-0.5**
BODT	**Bodrum**	**0.65**	**280**	*e*PG	**Pn**	**06 08 53.4**	**-0.4**
BODT				*e*SG	**Sn**	**06 09 04.0**	**-0.6**
BODT	**Bodrum**	**0.65**	**280**	*e*Pg	**Pn**	**06 08 53.4**	**-0.4**
BODT				*e*Sg	**Sn**	**06 09 04.0**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**350**	*e*PG	**Pn**	**06 08 58.5**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**350**	*e*Pg	**Pn**	**06 08 58.5**	**-0.3**
GOLH	**Golhisar**	**1.19**	**76**	*i* P	**Pg**	**06 09 02.3**	**+1.7**
GOLH				*i* S	**Sb**	**06 09 16.2**	**-0.7**
GOLH	**Golhisar**	**1.19**	**76**	P	**Pg**	**06 09 02.3**	**+1.7**
GOLH				S	**Sb**	**06 09 16.2**	**-0.7**
AKAS	**Kas**	**1.40**	**121**	*i* P	**Pb**	**06 09 05.1**	**+0.5**
AKAS				*i* S	**Sg**	**06 09 26.3**	**+3.5**
AKAS	**Kas**	**1.40**	**121**	P	**Pb**	**06 09 05.1**	**+0.5**
AKAS				S	**Sg**	**06 09 26.3**	**+3.5**
KARP	**Karpathos**	**1.60**	**209**	*e*PN	**Pg**	**06 09 08.7**	**+0.2**
KARP	**Karpathos**	**1.60**	**209**	*e*Pn	**Pg**	**06 09 08.7**	**+0.2**

*CASC **07** 06:11:49.6±1.4, 12.48N×88.18W, h35km±999km, ML3.8*
*IDC **07** 06:11:52.2±10.0, 12.96N×87.81W, h51km±76km, mb3.5/3, mb1 3.8/4, mb1mx3.4/35, mbtmp3.7/4, ML3.3/1, MS2.8/1, Ms1 2.8/1, ms1mx2.4/20, Error ellipse: s-maj=95.2km s-min=57.4km az=8.0*
ISC 07 06:11:47.6±1.2, 12.47N±0.09×88.18W±0.05, h22km±8km, n31, σ1§44/39, mb3.6/3, 2D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CNCH	**Conchagua**	**0.87**	**23**	‖ *i* P	**Pn**	**06 12 05.5**	**+0.8**
LCY	**Lacayo**	**0.96**	**353**	*i* P	**Pn**	**06 12 06.4**	**+0.6**
VSM	**San Miguel**	**0.96**	**355**	*e*P	**Pn**	**06 12 06.9**	**+0.9**
BLLM	**Bellamira**	**0.97**	**357**	*i* P	**Pn**	**06 12 06.6**	**+0.6**
BLLM				*e*S	**Sn**	**06 12 19.9**	**+0.8**
PACA	**Pacayal**	**1.01**	**352**	‖ *i* P	**Pn**	**06 12 07.1**	**+0.6**
CAHU	**Cacacuatique**	**1.30**	**359**	*e*P	**Pb**	**06 12 11.9**	**+0.5**
SNVI	**San Vicente**	**1.31**	**331**	*e*P	**Pb**	**06 12 11.3**	**-0.3**
SNVI				*e*S	**Sb**	**06 12 28.5**	**+0.5**
LFRS	**El Faro**	**1.43**	**323**	*i* P	**Pn**	**06 12 12.7**	**+0.3**
CNGN	**Cerro Negro**	**1.45**	**89**	*e*P	**Pn**	**06 12 13.1**	**+0.6**
CNGN				*e*S	**Sn**	**06 12 31.6**	**+0.7**
CNGN				AML	AML	06 12 39.2	
	comp=N,988nm,0.4s						
LBRS	**Las Brisas**	**1.52**	**327**	*i* P	**Pb**	**06 12 14.5**	**-0.7**
LFU	**La Fuente**	**1.56**	**325**	*i* P	**Pn**	**06 12 14.9**	**+0.7**
LFU				*e*S	**Sn**	**06 12 33.8**	**-0.1**
COPN	**Copaltepe**	**1.58**	**100**	*e*P	**Pn**	**06 12 14.9**	**+0.6**
COPN				*e*S	**Sn**	**06 12 34.2**	**+0.2**
SNET	**Serv Nac Est T**	**1.59**	**320**	*i* P	**Pn**	**06 12 15.1**	**+0.6**
SNET				*e*S	**Sn**	**06 12 33.8**	**-0.5**
SNET				AML	AML	06 12 42.0	
	comp=Z,2μm,0.3s						
MOMN	**Momotombo**	**1.60**	**92**	*e*P	**Pn**	**06 12 15.2**	**+0.6**
BOQS	**Boqueron**	**1.65**	**320**	*i* P	**Pn**	**06 12 16.4**	**+0.9**
BOQS				*e*S	**Sb**	**06 12 37.3**	**-0.7**
TGUH	**Tegucigalpa,Un**	**1.81**	**29**	*e*P	**Pn**	**06 12 19.0**	**+1.5**
XAVN	**Gruta Xavier**	**1.84**	**100**	*e*P	**Pn**	**06 12 19.7**	**+0.8**
MGAN	**Managua**	**1.92**	**99**	*e*P	**Pn**	**06 12 19.7**	**+0.8**
SBLS	**San Blas**	**1.96**	**314**	*e*P	**Pb**	**06 12 20.6**	**+0.9**
SNJE	**San Jose**	**1.97**	**315**	*e*P	**Pb**	**06 12 21.6**	**-1.2**
MONT	**Ecomontaæa**	**1.99**	**314**	*e*P	**Pb**	**06 12 21.2**	**+1.1**
RTR	**El Retiro**	**2.01**	**315**	*e*P	**Pb**	**06 12 22.7**	**-0.9**
RBDL	**Robledal**	**2.20**	**318**	*e*P	**Pn**	**06 12 24.7**	**+1.8**
CUS1	**Cusmapa**	**2.24**	**310**	*e*P	**Pn**	**06 12 24.4**	**+0.9**
CUS1				*e*S	**Sn**	**06 12 51.7**	**+1.2**
IXG	**Ixpaco**	**2.79**	**308**	*e*P	**Pn**	**06 12 31.7**	**+0.6**
CMIG	**Matias Romero**	**7.95**	**306**	P	**Pn**	**06 13 45.0**	**+3.1**
	comp=Z,0.4nm,0.3s,baz=336,slow=2.5,SNR=1.8						
CMIG				S	**Sn**	**06 15 15.2**	**+4.1**
	comp=Z,0.4nm,0.3s,baz=94,slow=22,SNR=2.1						
ROSC	**El Rosal**	**15.65**	**118**	LR	LR	06 21 57.6	
	comp=Z,35nm,19.3s,baz=266,slow=39						
TXAR	**Lajitas Array**	**22.11**	**322**	P	**P**	**06 16 42.5**	**+0.8**
	comp=Z,1.3nm,0.5s,baz=140,slow=10.0,SNR=27						
SCHQ	**Schefferville**	**45.47**	**17**	P	**P**	**06 20 01.9**	**-3.1**
	comp=Z,0.9nm,0.3s,baz=231,slow=6.7,SNR=3.5						
YKA	**Yellowknife Ar**	**53.41**	**345**	P	**P**	**06 21 03.0**	**-2.4**
	comp=Z,0.4nm,0.5s,baz=146,slow=6.3,SNR=11						
WRA	**Warramunga Arr**	**138.59**	**254**	PKP	**PKPdf**	**06 31 15.6**	**+2.9**
	comp=Z,0.9nm,1.2s,baz=334,slow=0.7,SNR=1.5						

IDC 07 06:17:57.6±4.2, 30.53S×138.24E, h0km, mb1 3.2/3, mb1mx3.2/31, mbtmp3.0/3, ML2.8/3, Error ellipse: s-maj=93.8km s-min=17.2km az=40.0, South Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**3.17**	**116**	Pn	Pn	06 18 49.3	+0.5
	0.4nm,0.3s,baz=300,slow=13,SNR=11						
STKA				Sn	Sn	06 19 27.3	0.0
	3.2nm,0.3s,baz=22,slow=3.9,SNR=7.7						
STKA				Lg	Lg	06 19 38.0	
	2.7nm,0.3s,baz=259,slow=9.3,SNR=5.8						
ASAR	**Alice Springs**	**7.85**	**329**	Pn	Pn	06 19 53.6	+0.5
	0.1nm,0.3s,baz=153,slow=12,SNR=5.8						
ASAR				Sn	Sn	06 21 21.9	-0.9
	0.1nm,0.3s,baz=155,slow=22,SNR=3.3						
WRA	**Warramunga Arr**	**11.12**	**341**	Pn	Pn	06 20 37.9	+0.1
	0.1nm,0.3s,baz=163,slow=12,SNR=5.7						

*ISCJB **07** 06:21:29.7±0.5, 39.08N±0.04×29.11E±0.05, h13km±6km, Error ellipse: s-maj=7.6km s-min=4.8km az=141.8*
*CSEM **07** 06:21:29.7±0.2, 39.10N×29.09E, h10km, MD1.9, Error ellipse: s-maj=5.2km s-min=3.0km az=144.0*
*DDA **07** 06:21:29.5, 39.10N×29.10E, h10km, Md3.0*
*ISK **07** 06:21:29.4, 39.14N×29.09E, h7km, MD1.9*
ISC 07 06:21:29.3±1.1, 39.12N±0.04×29.04E±0.05, h6km±14km, n15, σ0§28/26, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**252**	*i* P	**Pb**	**06 21 36.4**	**-0.1**
DEMI				*i* S	**Sb**	**06 21 41.0**	**-0.3**
DEMI	**Demirci**	**0.26**	**252**	P	**Pb**	**06 21 36.4**	**-0.1**
DEMI				S	**Sb**	**06 21 41.0**	**-0.3**
GEDZ	**Gediz**	**0.30**	**105**	*e*PG	**Pg**	**06 21 35.5**	**+0.3**
GEDZ				*e*SG	**Sg**	**06 21 39.4**	**+0.2**
GEDZ	**Gediz**	**0.30**	**105**	*e*Pg	**Pg**	**06 21 35.5**	**+0.3**
GEDZ				*e*Sg	**Sg**	**06 21 39.4**	**+0.2**
GDZ	**Gediz**	**0.35**	**95**	*i* P	**Pg**	**06 21 36.0**	**-0.1**
GDZ				*i* S	**Sg**	**06 21 40.3**	**-0.4**
GDZ	**Gediz**	**0.35**	**95**	P	**Pg**	**06 21 36.0**	**-0.1**
GDZ				S	**Sg**	**06 21 40.3**	**-0.4**
TVSB	**Tavsanli**	**0.46**	**45**	*e*PG	**Pg**	**06 21 38.6**	**+0.3**
TVSB				*e*SG	**Sg**	**06 21 44.2**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**45**	*e*Pg	**Pg**	**06 21 38.6**	**+0.3**
TVSB				*e*Sg	**Sg**	**06 21 44.2**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**206**	*e*PG	**Pb**	**06 21 43.3**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**206**	*e*Pg	**Pb**	**06 21 43.3**	**-0.2**
MANT	**Manisa**	**0.73**	**211**	*i* P	**Pg**	**06 21 43.4**	**0.0**
MANT				*i* S	**Sg**	**06 21 53.1**	**+0.1**
MANT	**Manisa**	**0.73**	**211**	P	**Pg**	**06 21 43.4**	**0.0**
MANT				S	**Sg**	**06 21 53.1**	**+0.1**
IGD	**Bursa**	**1.15**	**6**	*i* P	**Pb**	**06 21 51.0**	**-0.6**
IGD				*i* S	**Sn**	**06 22 08.1**	**+0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**06 21 56.4**	**+0.3**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**06 21 56.4**	**+0.3**

*ISCJB **07** 06:22:01.5±0.7, 52.2N±0.2×179.1W±0.1, h200km, mb3.7/6, Error ellipse: s-maj=28.5km s-min=9.6km az=5.1*
*IDC **07** 06:22:04.5±5.4, 52.15N×179.13W, h218km±50km, mb3.1/6, mb1 3.3/7, mb1mx3.1/53, mbtmp3.8/7, Error ellipse: s-maj=42.8km s-min=14.0km az=176.0*
ISC 07 06:22:03.1±1.3, 52.2N±0.3×179.12W±0.09, h200km, n118, σ0§64/112, mb3.8/6, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PETK	**Petropavlovsk-**	**14.10**	**283**	P	**Pn**	**06 25 14.5**	**+0.5**
	0.5nm,0.3s,baz=85,slow=16,SNR=4.7						
ILAR	**Eielson Array**	**20.76**	**40**	P	**P**	**06 26 28.4**	**+0.2**
	0.3nm,0.4s,baz=234,slow=7.4,SNR=9.0						
KLR	**Kul'dur**	**30.78**	**284**	P	**P**	**06 27 58.6**	**-1.0**
	2.5nm,0.5s,baz=74,slow=8.9,SNR=6.6						
H11N2	**WAKE ISLAND Hy**	**34.17**	**204**	T	T	07 04 06.9	
	baz=25,slow=76						
H11N3	**WAKE ISLAND Hy**	**34.18**	**204**	T	T	07 04 12.8	
	baz=25						
H11N1	**WAKE ISLAND Hy**	**34.19**	**204**	T	T	07 04 07.5	
	baz=25,slow=76						
YKA	**Yellowknife Ar**	**34.84**	**47**	P	**P**	**06 28 35.5**	**+0.9**
	0.4nm,0.4s,baz=283,slow=7.4,SNR=16						
H11S1	**WAKE ISLAND Hy**	**35.39**	**204**	T	T	07 05 54.2	
	baz=23,slow=76						
H11S2	**WAKE ISLAND Hy**	**35.41**	**204**	T	T	07 05 59.7	
	baz=23,slow=76						
H11S3	**WAKE ISLAND Hy**	**35.41**	**204**	T	T	07 05 49.1	
	baz=23,slow=76						
B05A	**Bryant**	**35.89**	**73**	P	**P**	**06 28 44.3**	**+0.6**
	baz=297						
G05D	**Wamic, OR**	**37.87**	**77**	P	**P**	**06 29 00.8**	**+0.3**
	baz=300						
I04A	**Tendick Farm,**	**37.99**	**80**	P	**P**	**06 29 01.9**	**+0.4**
	baz=302						
NEW	**Newport**	**38.80**	**70**	P	**P**	**06 29 08.1**	**-0.1**
	baz=298						
J05D	**Fort Rock, OR**	**38.98**	**79**	P	**P**	**06 29 10.7**	**+0.7**
	baz=303						
MSO	**Missoula**	**41.39**	**70**	P	**P**	**06 29 29.1**	**-0.5**
	baz=301						
HLID	**Hailey**	**42.92**	**75**	P	**P**	**06 29 41.0**	**-1.0**
	baz=304,SNR=7.5						
BOZ	**Bozeman (W)**	**43.38**	**71**	P	**P**	**06 29 45.4**	**-0.2**
	baz=303,SNR=6.7						
H17A	**Grant Village**	**44.70**	**72**	P	**P**	**06 29 57.5**	**+1.2**
	baz=304						
RLMT	**Red Lodge**	**45.04**	**70**	P	**P**	**06 29 59.9**	**+1.0**
	baz=304						
R11A	**Troy Canyon, C**	**45.36**	**82**	P	**P**	**06 30 01.2**	**-0.3**
	baz=308,SNR=7.0						
FURC	**Furnace Creek,**	**45.79**	**84**	P	**P**	**06 30 04.7**	**+0.1**
	baz=309						
TPNV	**Topopah Spring**	**45.85**	**84**	P	**P**	**06 30 05.0**	**-0.3**
	baz=309,SNR=9.0						
LAO	**LASA Array**	**45.88**	**66**	P	**P**	**06 30 06.5**	**+1.2**
	baz=304						
DUG	**Dugway, Tooele**	**45.89**	**78**	P	**P**	**06 30 05.7**	**+0.1**
	baz=307,SNR=5.9						
BW06	**Boulder Array**	**46.26**	**73**	P	**P**	**06 30 08.5**	**0.0**
	baz=306,SNR=12						
PDAR	**Pinedale Array**	**46.26**	**73**	P	**P**	**06 30 08.5**	**0.0**
	6.3nm,0.6s,baz=304,slow=3.7,SNR=55						
SHOC	**Shoshone, Teco**	**46.52**	**85**	P	**P**	**06 30 10.1**	**-0.2**
	baz=310						
GSC	**Goldstone, Bar**	**46.58**	**86**	P	**P**	**06 30 10.7**	**-0.3**
	baz=310						
HEC	**Hector,Ludlow**	**47.19**	**86**	P	**P**	**06 30 15.2**	**-0.4**
	baz=311						
K22A	**Casper**	**48.11**	**71**	P	**P**	**06 30 22.8**	**+0.1**
	baz=307						
O20A	**White River Ci**	**48.66**	**75**	P	**P**	**06 30 27.1**	**+0.1**
	baz=308						
WUAZ	**Wupatki**	**49.77**	**82**	P	**P**	**06 30 35.2**	**-0.2**
	baz=311						
MVCO	**Mesa Verde**	**50.39**	**78**	P	**P**	**06 30 40.1**	**0.0**
	baz=310						
ISCO	**Idaho Springs**	**50.43**	**73**	P	**P**	**06 30 41.4**	**+0.9**
	baz=309						
S22A	**4UR Ranch, Cre**	**51.04**	**76**	P	**P**	**06 30 46.0**	**+1.0**
	baz=310						
SDCO	**Great Sand Dun**	**51.83**	**75**	P	**P**	**06 30 51.7**	**+0.8**
	baz=310						
TUC	**Tucson**	**52.29**	**84**	P	**P**	**06 30 53.7**	**-0.4**
	baz=313						
T25A	**Trinidad**	**52.89**	**75**	P	**P**	**06 30 59.4**	**+0.9**
	baz=311						
121A	**Cookes Peak, D**	**53.97**	**82**	P	**P**	**06 31 06.2**	**-0.3**
	baz=313						
Q32A	**Meitler Ranch,**	**55.08**	**70**	P	**P**	**06 31 14.6**	**+0.4**
	baz=311						
O34A	**Beatrice**	**55.35**	**67**	P	**P**	**06 31 16.6**	**+0.5**
	baz=311						
N35A	**Tabor**	**55.49**	**66**	P	**P**	**06 31 17.9**	**+0.9**
	baz=311						
Q33A	**Connelly Farm,**	**55.50**	**69**	P	**P**	**06 31 17.2**	**+0.1**
	baz=311						
R33A	**Olander Ranch,**	**55.88**	**70**	P	**P**	**06 31 19.8**	**0.0**
	baz=312						
J39A	**Decorah**	**56.01**	**62**	P	**P**	**06 31 20.9**	**+0.2**
	baz=311						
MNTX	**Cornudas Mount**	**56.02**	**81**	P	**P**	**06 31 21.1**	**+0.2**
	baz=314						
Q34A	**Chapman**	**56.06**	**69**	P	**P**	**06 31 21.4**	**+0.3**
	baz=312						
T32A	**Huddler Ranch,**	**56.09**	**71**	P	**P**	**06 31 21.5**	**+0.1**
	baz=312						
R34A	**Isabella, Hill**	**56.31**	**69**	P	**P**	**06 31 23.7**	**+0.9**
	baz=312						
N38A	**Joes South For**	**56.89**	**65**	P	**P**	**06 31 27.1**	**+0.2**
	baz=312						
T34A	**McCluskey Farm**	**57.21**	**70**	P	**P**	**06 31 29.4**	**+0.2**
	baz=312						
R36A	**Gordon, Harris**	**57.29**	**68**	P	**P**	**06 31 29.8**	**+0.1**
	baz=312						
W32A	**Sentinel**	**57.32**	**73**	P	**P**	**06 31 31.4**	**+1.4**
	baz=313						
U34A	**Anderson Ranch**	**57.41**	**71**	P	**P**	**06 31 30.7**	**+0.1**
	baz=313						
T35A	**Sooner Cattle**	**57.68**	**70**	P	**P**	**06 31 32.5**	**0.0**
	baz=313						
WMOK	**Wichita Mounta**	**57.86**	**74**	P	**P**	**06 31 34.2**	**+0.4**
	baz=313						
U35A	**Pawnee**	**57.93**	**71**	P	**P**	**06 31 34.1**	**-0.1**
	baz=313						
P39B	**Salisbury**	**58.05**	**66**	P	**P**	**06 31 35.4**	**+0.4**
	baz=313						
S37A	**Fort Scott**	**58.07**	**68**	P	**P**	**06 31 34.9**	**-0.3**
	baz=313						
O40A	**La Belle**	**58.10**	**64**	P	**P**	**06 31 35.6**	**+0.3**
	baz=313						
Q39A	**Willow Grove F**	**58.23**	**66**	P	**P**	**06 31 35.9**	**-0.3**
	baz=313						
R38A	**Fenwick Farm,**	**58.30**	**67**	P	**P**	**06 31 36.2**	**-0.5**
	baz=313						
P40A	**Paris**	**58.42**	**65**	P	**P**	**06 31 37.8**	**+0.3**
	baz=313						
T37A	**Cheneyville 18**	**58.45**	**69**	P	**P**	**06 31 37.4**	**-0.4**
	baz=313						
S38A	**Stockton**	**58.68**	**68**	P	**P**	**06 31 38.8**	**-0.5**
	baz=313						
W35A	**Tecumseh**	**58.69**	**72**	P	**P**	**06 31 40.4**	**+0.9**
	baz=314						
TXAR	**Lajitas Array**	**58.73**	**81**	P	**P**	**06 31 39.6**	**-0.4**
	0.8nm,0.6s,baz=309,slow=5.7,SNR=16						
V36A	**Jenks**	**58.79**	**71**	P	**P**	**06 31 40.6**	**+0.4**
	baz=313						
TUL1	**Leonard**	**58.79**	**71**	P	**P**	**06 31 40.0**	**-0.2**
	baz=313						
U37A	**Salina**	**58.84**	**70**	P	**P**	**06 31 40.2**	**-0.3**
	baz=313						
T38A	**Diamond**	**58.88**	**69**	P	**P**	**06 31 40.2**	**-0.5**
	baz=313						
Y34A	**Reagan Ranch,**	**59.01**	**73**	P	**P**	**06 31 42.6**	**+0.9**
	baz=314						
W36A	**Wetumka**	**59.08**	**71**	P	**P**	**06 31 42.7**	**+0.5**
	baz=314						
V37A	**Hulbert**	**59.19**	**70**	P	**P**	**06 31 42.9**	**0.0**
	baz=314						
U38A	**Gravette**	**59.24**	**69**	P	**P**	**06 31 43.2**	**0.0**
	baz=314						
133A	**Hamilton Ranch**	**59.27**	**75**	P	**P**	**06 31 44.0**	**+0.5**
	baz=314						
MKAR	**Makanchi Array**	**59.39**	**308**	P	**P**	**06 31 45.0**	**+0.8**
	0.2nm,0.4s,baz=62,slow=5.7,SNR=2.5						
T39A	**Clever**	**59.41**	**68**	P	**P**	**06 31 43.8**	**-0.5**
	baz=314						
SCHQ	**Schefferville**	**59.51**	**38**	P	**P**	**06 31 42.6**	**-2.1**
	1.2nm,0.5s,baz=0.0,slow=5.1,SNR=3.0						
W37B	**Quinton**	**59.54**	**71**	P	**P**	**06 31 46.0**	**+0.7**
	baz=314						
V38A	**Canehill**	**59.63**	**70**	P	**P**	**06 31 46.3**	**+0.4**
	baz=314						
Q42A	**Golden Eagle**	**59.69**	**65**	P	**P**	**06 31 46.8**	**+0.6**
	baz=314						
233A	**Rising Star**	**59.70**	**76**	P	**P**	**06 31 47.0**	**+0.5**
	baz=314						
134A	**White-Moore Ra**	**59.80**	**75**	P	**P**	**06 31 47.4**	**+0.3**
	baz=314						
U39A	**Green Forest**	**59.80**	**69**	P	**P**	**06 31 46.4**	**-0.7**
	baz=314						
T40A	**Mansfield**	**59.81**	**67**	P	**P**	**06 31 46.9**	**-0.2**
	baz=314						
S41A	**Jillco Farms,**	**59.94**	**66**	P	**P**	**06 31 47.6**	**-0.4**
	baz=314						
X37A	**Clayton**	**59.97**	**71**	P	**P**	**06 31 48.0**	**-0.2**
	baz=314						
V39A	**Pettigrew**	**60.09**	**69**	P	**P**	**06 31 49.6**	**+0.5**
	baz=314						
W38A	**Poteau**	**60.12**	**70**	P	**P**	**06 31 49.9**	**+0.7**
	baz=314						
Q43A	**New Douglas**	**60.13**	**64**	P	**P**	**06 31 49.3**	**0.0**
	baz=314						
U40A	**Yellville**	**60.17**	**68**	P	**P**	**06 31 49.2**	**-0.4**
	baz=314						
X38A	**Whitesboro**	**60.23**	**71**	P	**P**	**06 31 49.5**	**-0.5**
	baz=314						
Z36A	**Blue Ridge**	**60.27**	**73**	P	**P**	**06 31 50.5**	**+0.2**
	baz=314						
W39A	**Magazine**	**60.46**	**70**	P	**P**	**06 31 52.0**	**+0.5**
	baz=314						
433A	**Art**	**60.48**	**77**	P	**P**	**06 31 52.0**	**+0.1**
	baz=315						
334A	**Lometa**	**60.58**	**76**	P	**P**	**06 31 52.9**	**+0.5**
	baz=315						
V40A	**Witts Springs**	**60.58**	**69**	P	**P**	**06 31 52.3**	**-0.1**
	baz=314						
U41A	**Viola**	**60.72**	**68**	P	**P**	**06 31 53.2**	**-0.1**
	baz=314						
X39A	**Fountain Ranch**	**60.75**	**71**	P	**P**	**06 31 54.3**	**+0.8**
	baz=314						
434A	**Burnet**	**60.93**	**76**	P	**P**	**06 31 55.5**	**+0.6**
	baz=315						
V41A	**Mountainview**	**60.98**	**68**	P	**P**	**06 31 55.2**	**+0.2**
	baz=314						
MIAR	**Mount Ida**	**61.04**	**70**	P	**P**	**06 31 56.5**	**+1.1**
	baz=314						
W41A	**Tony Mavity, V**	**61.36**	**69**	P	**P**	**06 31 57.7**	**+0.1**
	baz=315						
W41B	**Gary Mavity, V**	**61.36**	**69**	P	**P**	**06 31 57.7**	**+0.1**
	baz=315						
534A	**Blanco**	**61.37**	**77**	P	**P**	**06 31 58.4**	**+0.6**
	baz=315						
X40A	**Basin Creek Fa**	**61.51**	**70**	P	**P**	**06 31 59.2**	**+0.6**
	baz=315						
832A	**Faith Ranch, C**	**61.73**	**80**	P	**P**	**06 32 00.3**	**+0.1**
	baz=316						
736A	**Circle Diamond**	**62.99**	**77**	P	**P**	**06 32 10.6**	**+2.0**
	baz=316						
835A	**Beeville**	**63.02**	**78**	P	**P**	**06 32 10.6**	**+1.9**
	baz=316						
Y46A	**Houston**	**64.23**	**67**	P	**P**	**06 32 17.2**	**+0.7**
	baz=316						
Y47A	**UCPARC, Winfie**	**64.78**	**67**	P	**P**	**06 32 20.6**	**+0.4**
	baz=316						
Z47A	**Carrollton**	**65.17**	**67**	P	**P**	**06 32 23.2**	**+0.6**
	baz=316						
Z48A	**Northport**	**65.34**	**67**	P	**P**	**06 32 24.4**	**+0.7**
	baz=316						
147A	**Livingston**	**65.44**	**68**	P	**P**	**06 32 24.6**	**+0.2**
	baz=316						
347A	**Saraland**	**66.22**	**69**	P	**P**	**06 32 30.4**	**+1.1**
	baz=317						
KMSC	**Kings Mountain**	**67.48**	**62**	P	**P**	**06 32 38.3**	**+1.0**
	baz=318						

*ISCJB **07** 06:33:37.4±1.4, 33.78S±0.09×178.6W±0.2, h41km, mb4.5/8, MS3.7/1, Error ellipse: s-maj=25.0km s-min=12.0km az=9.6*
*NEIC **07** 06:33:37.8±0.8, 33.75S×178.44W, h35km, mb4.2/4, Error ellipse: s-maj=20.8km s-min=16.5km az=63.0*
*IDC **07** 06:33:41.3±6.5, 33.80S×178.68W, h62km±51km, m

IDC ***07*** *06:38:58.9±2.0, 43°.20S×172°.33E, h0km, mb3.8/2, mb1 4.0/3, mb1mx3.7/22, mbtmp3.8/3, ML3.7/1, MS3.6/1, Ms1 3.6/1, ms1mx2.8/31, Error ellipse: s-maj=49.3km s-min=13.1km az=142.0*

ISCJB ***07*** *06:39:00.7±0.3, 43°.22S±0°.03×172°.24E±0°.04, h29km±3km, mb3.7/2, MS3.7/1, Error ellipse: s-maj=5.6km s-min=3.5km az=40.9*

WEL ***07*** *06:39:01.9±0.1, 43°.20S×172°.22E, h10km±1km, ML4.4/56, Mw4.1, Error ellipse: s-maj=0.6km s-min=0.4km az=90.0*

WEL Felt in the Canterbury region, maximum reported intensity MM 5.

NEIC ***07*** *06:39:01.9, 43°.21S×172°.21E, h12km, ML4.4(WEL), After WEL.*

NEIC Felt in central Canterbury.

ISC 07 06:39:00.1±1.3, 43°.26S±0°.03×172°.30E±0°.04, h13km±10km, n81, σ0°79/69, 6C-5D, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OXZ	**Oxford**	**0.20**	**252**	*e*Pg	**Pb**	**06 39 05.7**	**+0.1**
OXZ				*e*Sg	**Sb**	**06 39 08.5**	**-0.8**
OXZ	**Oxford**	**0.20**	**252**↑	*e*P*	**Pb**	**06 39 05.7**	**+0.1**
OXZ				SG	**Sb**	**06 39 08.7**	**-0.5**
OXZ				SG	**Sb**	**06 39 08.8**	**-0.5**
OXZ				AML	AML	06 39 09.0	
OXZ				AML	AML	06 39 09.5	
CRLZ	**Canterbury Las**	**0.39**	**143**	*e*Pg	**Pn**	**06 39 11.1**	**-0.3**
CRLZ				*e*Sg	**Sn**	**06 39 11.7**	**-1.0**
CRLZ	**Canterbury Las**	**0.39**	**143**	P*	**Pn**	**06 39 11.1**	**-0.3**
CRLZ				AML	AML	06 39 18.5	
CRLZ				AML	AML	06 39 18.5	
CRLZ				AML	AML	06 39 19.8	
CRLZ				AML	AML	06 39 19.8	
LTZ	**Lake Taylor**	**0.48**	**358**	*e*Pg	**Pg**	**06 39 10.1**	**+0.4**
LTZ				*e*Sg	**Sg**	**06 39 15.2**	**-0.9**
LTZ	**Lake Taylor**	**0.48**	**358**	↑P*	**Pg**	**06 39 10.0**	**+0.4**
LTZ				S*	**Sg**	**06 39 16.0**	**0.0**
LTZ				AML	AML	06 39 16.3	
LTZ				AML	AML	06 39 16.4	
MQZ	**McQueen's Vall**	**0.51**	**150**	*e*Pg	**Pn**	**06 39 13.2**	**+0.1**
MQZ				*e*Sg	**Sn**	**06 39 21.6**	**0.0**
MQZ	**McQueen's Vall**	**0.51**	**150**	↓P*	**Pn**	**06 39 13.1**	**0.0**
MQZ				AML	AML	06 39 21.9	
MQZ				AML	AML	06 39 22.2	
INZ	**Inchbonnie**	**0.83**	**310**	P*	**Pb**	**06 39 15.7**	**-0.6**
RPZ	**Rata Peaks**	**1.01**	**243**	Pg	**Pb**	**06 39 19.8**	**+0.4**
	500nm,0.3s,baz=193,slow=3.0,SNR=1032						
RPZ				Lg	Lg	06 39 32.6	
	476nm,0.3s,baz=283,slow=4.2,SNR=12						
RPZ				LR	LR	06 39 52.3	
	comp=Z,646nm,21.1s,baz=8.0,slow=50						
RPZ	**Rata Peaks**	**1.01**	**243**	↓P*	**Pb**	**06 39 19.8**	**+0.4**
RPZ				AML	AML	06 39 35.4	
RPZ				AML	AML	06 39 36.4	
WVZ	**Waitaha Valley**	**1.16**	**279**	P*	**Pn**	**06 39 21.8**	**-0.1**
WVZ	**Waitaha Valley**	**1.16**	**279**	↓P*	**Pn**	**06 39 21.8**	**-0.1**
WVZ				AML	AML	06 39 38.9	
WVZ				AML	AML	06 39 40.7	
KHZ	**Kahutara**	**1.25**	**48**	*e*Pn	**Pn**	**06 39 23.6**	**+0.4**
KHZ	**Kahutara**	**1.25**	**48**	P*	**Pn**	**06 39 23.5**	**+0.4**
KHZ				AML	AML	06 39 43.1	
KHZ				AML	AML	06 39 50.5	
KHZ				AML	AML	06 39 50.5	
DSZ	**Denniston Nort**	**1.56**	**346**	PN	**Pn**	**06 39 27.5**	**0.0**
DSZ				AML	AML	06 39 49.6	
DSZ				AML	AML	06 39 49.6	
DSZ				AML	AML	06 39 50.4	
DSZ				AML	AML	06 39 50.5	
THZ	**Tophouse**	**1.57**	**17**	*e*Pn	**Pn**	**06 39 27.6**	**-0.1**
THZ	**Tophouse**	**1.57**	**17**	↑PN	**Pn**	**06 39 27.5**	**-0.1**
THZ				AML	AML	06 39 55.1	
THZ				AML	AML	06 39 55.2	
FOZ	**Fox Glacier**	**1.83**	**261**	*e*Pn	**Pb**	**06 39 32.7**	**-0.7**
FOZ	**Fox Glacier**	**1.83**	**261**	PN	**Pb**	**06 39 32.6**	**-0.7**
FOZ				AML	AML	06 40 01.9	
FOZ				AML	AML	06 40 02.0	
FOZ				AML	AML	06 40 04.6	
FOZ				AML	AML	06 40 05.1	
LBZ	**Lake Benmore**	**1.90**	**233**	*e*Pn	**Pn**	**06 39 32.6**	**+0.5**
LBZ	**Lake Benmore**	**1.90**	**233**	↑PN	**Pn**	**06 39 32.4**	**+0.2**
LBZ				AML	AML	06 40 02.9	
LBZ				AML	AML	06 40 02.9	
LBZ				AML	AML	06 40 03.9	
LBZ				AML	AML	06 40 03.9	
BSWZ	**Blackbirch Sta**	**1.94**	**38**	PN	**Pn**	**06 39 33.4**	**+0.7**
BSWZ				AML	AML	06 39 43.0	
BSWZ				AML	AML	06 40 15.6	
CMWZ	**Cape Campbell**	**2.07**	**44**	↓PN	**Pn**	**06 39 35.7**	**+1.2**
CMWZ				AML	AML	06 40 20.1	
CMWZ				AML	AML	06 40 21.6	
ODZ	**Otahua Downs**	**2.14**	**213**	*e*Pn	**Pn**	**06 39 35.7**	**+0.2**
ODZ	**Otahua Downs**	**2.14**	**213**	↑PN	**Pn**	**06 39 35.6**	**+0.1**
ODZ				AML	AML	06 39 43.0	
ODZ				AML	AML	06 39 43.0	
ODZ				AML	AML	06 40 12.1	
ODZ				AML	AML	06 40 13.7	
NNZ	**Nelson**	**2.20**	**22**	PN	**Pn**	**06 39 37.0**	**+0.8**
NNZ				AML	AML	06 40 19.8	
NNZ				AML	AML	06 40 19.8	
NNZ				AML	AML	06 40 22.0	
NNZ				AML	AML	06 40 22.0	
TUWZ	**Tuamarina**	**2.20**	**34**	PN	**Pn**	**06 39 36.6**	**+0.3**
TUWZ				AML	AML	06 40 23.6	
TUWZ				AML	AML	06 40 26.5	
QRZ	**Quartz Range**	**2.44**	**4**	PN	**Pn**	**06 39 39.4**	**-0.2**
QRZ				AML	AML	06 39 50.2	
QRZ				AML	AML	06 39 50.2	
QRZ				AML	AML	06 40 21.8	
QRZ				AML	AML	06 40 21.8	
TCW	**Tory Channel**	**2.52**	**36**	PN	**Pn**	**06 39 40.6**	**-0.1**
TCW				AML	AML	06 39 51.7	
TCW				AML	AML	06 39 52.6	
SNZO	**South Karori**	**2.65**	**43**	*e*Pn	**Pn**	**06 39 42.4**	**0.0**
BHW	**Baring Head**	**2.66**	**47**	AML	AML	06 40 43.3	
BHW				AML	AML	06 40 55.4	
JCZ	**Jackson Bay**	**2.67**	**251**	PN	**Pn**	**06 39 43.1**	**+0.2**
JCZ				AML	AML	06 40 34.2	
JCZ				AML	AML	06 40 36.6	
WEL	**Wellington**	**2.70**	**44**	AML	AML	06 40 20.3	
WEL				AML	AML	06 40 20.4	
WEL				AML	AML	06 40 20.5	
WEL				AML	AML	06 40 20.5	
DUWZ	**D'Urville Isla**	**2.74**	**27**	AML	AML	06 40 27.4	
DUWZ				AML	AML	06 40 31.2	
PLWZ	**Palliser**	**2.77**	**53**	PN	**Pn**	**06 39 43.6**	**-0.5**
PLWZ				AML	AML	06 40 18.6	
PLWZ				AML	AML	06 40 47.2	
WKZ	**Wanaka**	**2.83**	**235**	PN	**Pn**	**06 39 44.6**	**-0.4**
WKZ				AML	AML	06 40 38.6	
WKZ				AML	AML	06 40 39.8	
WKZ				AML	AML	06 40 47.9	
WKZ				AML	AML	06 40 48.0	
MSWZ	**Moikau Station**	**2.86**	**51**	PN	**Pn**	**06 39 44.8**	**-0.6**
MSWZ				AML	AML	06 40 20.9	
MSWZ				AML	AML	06 40 21.0	
HHSZ	**Highcliff Hill**	**2.89**	**204**	PN	**Pn**	**06 39 46.0**	**+0.3**
HHSZ				AML	AML	06 40 39.5	
HHSZ				AML	AML	06 40 47.6	
EAZ	**Earnscleugh**	**2.91**	**226**	PN	**Pn**	**06 39 45.8**	**-0.3**
EAZ				AML	AML	06 40 36.7	
EAZ				AML	AML	06 40 36.8	
EAZ				AML	AML	06 40 41.3	
EAZ				AML	AML	06 40 41.3	
CAW	**Cannon Point**	**2.98**	**45**	PN	**Pn**	**06 39 46.5**	**-0.5**
CAW				AML	AML	06 40 32.6	
CAW				AML	AML	06 40 53.3	
KIW	**Kapiti Island**	**3.09**	**40**	AML	AML	06 40 27.6	
KIW				AML	AML	06 40 43.5	
TRWZ	**Traveller**	**3.13**	**55**	PN	**Pn**	**06 39 48.5**	**-0.6**
TRWZ				AML	AML	06 40 27.8	
TRWZ				AML	AML	06 40 30.0	
MTW	**Mount Morrison**	**3.18**	**50**	PN	**Pn**	**06 39 50.2**	**+0.5**
MTW				AML	AML	06 40 09.9	
MTW				AML	AML	06 40 28.1	
OGWZ	**Otaki Gorge**	**3.25**	**42**	PN	**Pn**	**06 39 50.0**	**-0.7**
OGWZ				AML	AML	06 40 34.8	
OGWZ				AML	AML	06 41 01.8	
TUZ	**Tuapeka**	**3.30**	**214**	AML	AML	06 40 52.5	
TUZ				AML	AML	06 40 52.5	
TUZ				AML	AML	06 40 55.2	
TUZ				AML	AML	06 40 55.2	
HOWZ	**Holdsworth Sta**	**3.37**	**46**	AML	AML	06 40 33.9	
HOWZ				AML	AML	06 41 02.7	
MSZ	**Milford Sound**	**3.46**	**244**	PN	**Pn**	**06 39 52.8**	**-0.7**
MSZ				AML	AML	06 40 08.5	
MSZ				AML	AML	06 40 08.6	
MSZ				AML	AML	06 40 52.9	
MSZ				AML	AML	06 40 52.9	
MRZ	**Mangatainoka R**	**3.57**	**44**	↑PN	**Pn**	**06 39 54.0**	**-1.1**
MRZ				AML	AML	06 40 38.1	
MRZ				AML	AML	06 40 39.9	
MLZ	**Mavora Lakes**	**3.66**	**234**	AML	AML	06 41 03.6	
MLZ				AML	AML	06 41 11.4	
PRWZ	**Pori Road**	**3.85**	**47**	PN	**Pn**	**06 39 58.8**	**-0.2**
PRWZ				AML	AML	06 40 47.1	
PRWZ				AML	AML	06 40 50.5	
POWZ	**Post Office Ro**	**3.87**	**43**	AML	AML	06 41 20.4	
POWZ				AML	AML	06 41 25.9	
BFZ	**Birch Farm**	**3.91**	**50**	*e*Pn	**Pn**	**06 39 59.7**	**-0.1**
SYZ	**Scrubby Hill**	**3.97**	**213**	↓PN	**Pn**	**06 40 00.8**	**+0.2**
SYZ				AML	AML	06 41 18.6	
SYZ				AML	AML	06 41 18.7	
SYZ				AML	AML	06 41 20.1	
SYZ				AML	AML	06 41 20.1	
WAZ	**Wanganui**	**4.04**	**31**	AML	AML	06 41 07.4	
WAZ				AML	AML	06 41 23.2	
WHZ	**Wether Hill Ro**	**4.07**	**228**	*e*Pn	**Pn**	**06 40 00.5**	**-1.5**
WHZ	**Wether Hill Ro**	**4.07**	**228**	PN	**Pn**	**06 40 00.3**	**-1.7**
WHZ				AML	AML	06 41 24.6	
WHZ				AML	AML	06 41 26.8	
DVHZ	**Dannevirke**	**4.14**	**46**	AML	AML	06 40 34.6	
DVHZ				AML	AML	06 40 37.0	
PREZ	**Palmer Road**	**4.16**	**20**	AML	AML	06 41 03.3	
PREZ				AML	AML	06 41 07.8	
KHEZ	**Kahui Hut**	**4.17**	**19**	PN	**Pn**	**06 40 05.4**	**+1.9**
ANWZ	**Angora Road**	**4.19**	**49**	PN	**Pn**	**06 40 03.3**	**-0.4**
ANWZ				AML	AML	06 40 53.3	
ANWZ				AML	AML	06 40 55.9	
DCZ	**Deep Cove**	**4.29**	**237**	PN	**Pn**	**06 40 04.2**	**-0.8**
DCZ				AML	AML	06 40 24.2	
DCZ				AML	AML	06 41 24.3	
PRHZ	**Porangahau**	**4.41**	**49**	AML	AML	06 40 59.6	
PRHZ				AML	AML	06 41 04.7	
VRZ	**Vera Road**	**4.53**	**25**	AML	AML	06 41 33.3	
VRZ				AML	AML	06 41 49.0	
MOVZ	**Moawhango**	**4.65**	**35**	AML	AML	06 41 23.9	
MOVZ				AML	AML	06 41 43.6	
WHZ	**Wahianoa**	**4.65**	**33**	PN	**Pn**	**06 40 10.5**	**+0.4**
APZ	**The Paps**	**4.70**	**219**	PN	**Pn**	**06 40 09.4**	**-1.2**
APZ				AML	AML	06 41 39.6	
APZ				AML	AML	06 42 40.7	
FWVZ	**Far West T-bar**	**4.70**	**33**	PN	**Pn**	**06 40 11.3**	**+0.5**
FWVZ				AML	AML	06 41 39.9	
FWVZ				AML	AML	06 41 49.9	
PXZ	**Pawanui**	**4.70**	**48**	AML	AML	06 41 17.2	
BHHZ	**Black Hill Sta**	**4.72**	**38**	AML	AML	06 40 32.3	
BHHZ				AML	AML	06 40 34.1	
KRHZ	**Kereru**	**4.74**	**42**	AML	AML	06 41 36.1	
KRHZ				AML	AML	06 41 42.2	
HIZ	**Hauiti**	**5.13**	**23**	*e*Pn	**Pn**	**06 40 18.3**	**+1.8**
HIZ	**Hauiti**	**5.13**	**23**	AML	AML	06 41 28.4	
HIZ				AML	AML	06 41 52.9	
BKZ	**Black Stump Fm**	**5.17**	**39**	*e*Pn	**Pn**	**06 40 16.9**	**-0.3**
ARHZ	**Aropaoanui**	**5.34**	**43**	AML	AML	06 41 23.8	
ARHZ				AML	AML	06 41 27.4	
KNZ	**Kokohu**	**5.87**	**46**	PN	**Pn**	**06 40 25.1**	**-1.5**
URZ	**Urewera**	**6.19**	**38**	Pn	**Pn**	**06 40 29.4**	**-1.7**
	2.0nm,0.3s,baz=242,slow=5.2,SNR=6.5						
URZ				Sn	**Sn**	**06 41 39.7**	**-2.0**
	0.3nm,0.3s,baz=76,slow=20,SNR=1.5						
ASAR	**Alice Springs**	**37.10**	**289**	P	**P**	**06 46 12.0**	**+1.7**
	0.7nm,0.5s,baz=130,slow=7.8,SNR=9.8						
WRA	**Warramunga Arr**	**39.34**	**294**	P	**P**	**06 46 29.4**	**+0.4**
	0.8nm,0.7s,baz=132,slow=7.7,SNR=6.7						
KSRS	**Korea Array**	**89.89**	**326**	LR	LR	07 27 53.1	
	comp=Z,31nm,19.9s,baz=214,slow=33						
TORD	**Torodi Ar. Bea**	**148.91**	**198**	PKPbc	**PKPbc**	**06 58 48.8**	**+0.9**
	0.5nm,0.8s,baz=180,slow=1.4,SNR=4.2						

NIED ***07*** *06:48:00, 36°.70N×140°.70E, h5km, Mw3.5 Best double couple: Mo1.79000×10^14 NP1:φ5.00000°, δ38.00000°, λ-45.00000°. NP2:φ132.00000°, δ64.00000°, λ-119.00000°.*

ISCJB ***07*** *06:48:06.0±0.8, 36°.67N±0°.04×140°.73E±0°.06, h11km±4km, mb3.6/5, MS2.8/1, Error ellipse: s-maj=9.1km s-min=4.5km az=31.5*

IDC ***07*** *06:48:05.8±1.6, 36°.80N×140°.72E, h0km, mb3.7/5, mb1 3.8/6, mb1mx3.5/39, mbtmp3.6/6, ML3.5/1, MS2.8/2, Ms1 2.8/2, ms1mx2.5/63, Error ellipse: s-maj=38.6km s-min=21.6km az=58.0*

JMA ***07*** *06:48:07.2, 36°.70N×140°.64E, h6km±1km, M3.5 Broadband fault plane solution: P waves. NP1: φ±12.00000°, δ58.00000°, λ-62.00000°. NP2:φ148.00000°, δ41.00000°, λ-127.00000°. Principal axes: T Plg9.0000°, Azm83.0000°; N Plg23.0000°, Azm177.0000°; P Plg65.0000°, Azm333.0000°;*

JMA Felt II J1.

ISC 07 06:48:07.2±1.1, 36°.70N±0°.04×140°.64E±0°.05, h8km±7km, n22, σ0°54/23, mb3.8/5, 4C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.10**	**213**	↑P	**Pg**	**06 48 09.5**	**-0.1**
JHO				S	**Sg**	**06 48 11.1**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.42**	**17**	↑P	**Pg**	**06 48 15.4**	**0.0**
ONAJ				S	**Sg**	**06 48 21.0**	**0.0**
JYT	**Yasato**	**0.59**	**218**	↑P	**Pg**	**06 48 18.5**	**-0.1**
JYT				S	**Sg**	**06 48 26.8**	**+0.5**
JSB	**Shiboa**	**0.64**	**295**	P	**Pg**	**06 48 20.1**	**+0.6**
JSB				S	**Sg**	**06 48 28.6**	**+0.8**
JFK	**Kawauchi**	**0.69**	**16**	↓P	**Pg**	**06 48 20.2**	**-0.4**
JFK				S	**Sg**	**06 48 29.3**	**-0.3**
JFT	**Otama**	**0.85**	**344**	↓P	**Pg**	**06 48 23.4**	**-0.2**
JFT				S	**Sg**	**06 48 34.8**	**+0.1**
JAG	**Ashikaga**	**0.99**	**254**	↑P	**Pg**	**06 48 25.2**	**-1.0**
JAG				S	**Sg**	**06 48 38.5**	**-0.6**
MJAR	**Matsushiro Arr**	**1.96**	**266**	Pn	**Pn**	**06 48 41.3**	**+0.5**
	17nm,0.3s,baz=84,slow=9.7,SNR=66						
MJAR				Sn	**Sb**	**06 49 07.5**	**-0.3**
	30nm,0.3s,baz=107,slow=19,SNR=16						
MAT	**Matsushiro**	**1.96**	**266**	P	**Pn**	**06 48 41.3**	**+0.5**
MAT				S	**Sb**	**06 49 07.1**	**-0.8**
KSRS	**Korea Array**	**10.19**	**278**	LR	LR	06 54 28.3	
	comp=Z,30nm,18.5s,baz=185,slow=37						
YAK	**Yakutsk**	**26.27**	**348**	LR	LR	07 04 44.0	
	comp=Z,31nm,20.1s,baz=138,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.52**	**119**	T	T	07 23 46.3	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**28.52**	**119**	T	T	07 23 47.0	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**28.54**	**119**	T	T	07 23 47.8	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**29.21**	**121**	T	T	07 24 38.4	
	baz=317						
H11S3	**WAKE ISLAND Hy**	**29.21**	**121**	T	T	07 24 38.4	
	baz=317						
H11S2	**WAKE ISLAND Hy**	**29.22**	**121**	T	T	07 24 39.5	
	baz=317						
ZALV	**Zalesovo Beam**	**41.68**	**313**	P	**P**	**06 55 55.9**	**-0.2**
	0.8nm,0.4s,baz=94,slow=8.9,SNR=2.9						
MKAR	**Makanchi Array**	**43.77**	**302**	P	**P**	**06 56 12.9**	**-0.4**
	0.2nm,0.6s,baz=86,slow=4.5,SNR=2.0						
KURBB	**Kurchatov Arra**	**45.72**	**308**	P	**P**	**06 56 27.9**	**-0.7**
	0.8nm,0.3s						
WRA	**Warramunga Arr**	**56.65**	**187**	P	**P**	**06 57 51.3**	**+0.3**
	0.6nm,0.6s,baz=3.5,slow=7.3,SNR=9.1						
ASAR	**Alice Springs**	**60.37**	**187**	P	**P**	**06 58 17.6**	**+0.7**
	0.2nm,0.3s,baz=14,slow=7.8,SNR=3.2						

IDC 07 06:48:37.2±5.3, 29°.20S×176°.09W, h48km±39km, mb3.7/4, mb1 3.9/4, mb1mx3.6/21, mbtmp4.0/4, MS3.7/1, Ms1 3.7/1, ms1mx2.7/34, Error ellipse: s-maj=55.9km s-min=37.3km az=15.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.60**	**268**	P	Pn	06 49 02.6	-0.4
	213nm,0.3s,baz=90,slow=13,SNR=5.5						
RAO				S	Sn	06 49 22.6	+0.2
	216nm,0.3s,baz=270,slow=23,SNR=3.9						
CTA	**Charters Tower**	**35.28**	**276**	P	P	06 55 29.1	+1.5
	1.0nm,0.3s,baz=101,slow=16,SNR=2.8						
STKA	**Stephens Creek**	**36.38**	**255**	P	P	06 55 37.5	+0.6
	2.5nm,1.1s,baz=97,slow=13,SNR=3.4						
ASAR	**Alice Springs**	**44.85**	**265**	P	P	06 56 46.1	-0.8
	0.7nm,0.5s,baz=99,slow=6.2,SNR=9.5						
WRA	**Warramunga Arr**	**45.73**	**270**	P	P	06 56 52.4	-1.5
	1.4nm,0.7s,baz=109,slow=8.1,SNR=10						
JAY	**Jayapura**	**48.86**	**295**	LR	LR	07 15 13.5	
	comp=Z,74nm,20.2s,baz=186,slow=33						
KURBB	**Kurchatov Arra**	**121.46**	**314**	PKP	PKPdf	07 07 24.9	+0.1
	0.4nm,0.3s,baz=70,slow=1.1,SNR=2.4						
FINES	**FINESS Array B**	**144.56**	**342**	PKP	PKPbc	07 08 06.9	+0.6
	1.2nm,0.8s,baz=18,slow=2.4,SNR=4.8						
TORD	**Torodi Ar. Bea**	**163.89**	**172**	PKPab	PKPab	07 09 28.0	-0.2
	0.5nm,0.8s,baz=165,slow=4.8,SNR=2.7						

IDC 07 06:54:31.9±4.9, 28°.26S×176°.34W, h0km, mb3.8/2, mb1 4.0/2, mb1mx3.7/29, mbtmp3.8/2, Error ellipse: s-maj=129.8km s-min=38.4km az=131.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.70**	**234**	P	Pn	06 55 03.7	-0.4
	217nm,0.3s,baz=234,slow=20,SNR=4.5						
RAO				Sn	Sn	06 55 24.7	-0.6
	124nm,0.3s,baz=22,slow=23,SNR=2.1						
ASAR	**Alice Springs**	**44.72**	**264**	P	P	07 02 46.1	-1.0
	0.9nm,0.7s,baz=108,slow=7.8,SNR=5.6						
WRA	**Warramunga Arr**	**45.52**	**269**	P	P	07 02 53.6	+0.1
	1.0nm,0.6s,baz=109,slow=6.2,SNR=12						
FINES	**FINESS Array B**	**143.60**	**342**	PKP	PKPdf	07 14 08.9	+0.9
	1.2nm,0.8s,baz=270,slow=0.4,SNR=3.2						

ISCJB ***07*** *06:55:30.3±1.7, 29°.81S±0°.09×176°.1W±0°.2, h21km, mb4.2/5, Error ellipse: s-maj=20.4km s-min=11.4km az=163.4*

IDC ***07*** *06:55:40.2±4.4, 29°.14S×176°.47W, h71km±26km, mb3.9/5, mb1 4.1/5, mb1mx3.7/31, mbtmp4.2/5, Error ellipse: s-maj=66.1km s-min=36.6km az=14.0*

ISC 07 06:55:33.9±1.6, 29°.7S±0°.1×176°.3W±0°.1, h21km, n9, σ1°42/11, mb4.2/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.50**	**287**	P	**Pn**	**06 56 00.3**	**+0.8**
	228nm,0.3s,baz=250,slow=23,SNR=2.4						
RAO				S	**Sn**	**06 56 18.8**	**+0.4**
	937nm,0.3s,baz=116,slow=23,SNR=8.2						
URZ	**Urewera**	**10.14**	**211**	P	**Pn**	**06 57 57.2**	**-1.0**
	1.2nm,0.3s,baz=285,slow=6.0,SNR=9.2						
URZ				S	**Sn**	**06 59 51.9**	**+0.6**
	2.8nm,0.3s,baz=114,slow=19,SNR=6.7						
CTA	**Charters Tower**	**35.18**	**277**	P	**P**	**07 02 26.3**	**-0.2**
	1.1nm,0.3s,baz=92,slow=12,SNR=3.1						
STKA	**Stephens Creek**	**36.09**	**256**	P	**P**	**07 02 35.6**	**+1.3**
	2.2nm,0.6s,baz=106,slow=12,SNR=4.7						
ASAR	**Alice Springs**	**44.64**	**265**	P	**P**	**07 03 44.1**	**-1.1**
	1.7nm,0.7s,baz=98,slow=8.1,SNR=10						
WRA	**Warramunga Arr**	**45.57**	**271**	P	**P**	**07 03 50.9**	**-1.8**
	4.1nm,0.8s,baz=110,slow=8.1,SNR=10						
FITZ	**Fitzroy Crossi**	**53.86**	**269**	P	**P**	**07 04 54.4**	**-1.3**
	4.9nm,1.1s,baz=135,slow=10.0,SNR=2.8						
AKASG	**Malin Array Be**	**151.62**	**325**	PKPbc	**PKPbc**	**07 15 25.6**	**-0.6**
	0.9nm,0.6s,baz=45,slow=1.4,SNR=4.7						
TORD	**Torodi Ar. Bea**	**163.42**	**173**	PKPab	**PKPab**	**07 16 28.9**	**+2.4**
	0.4nm,0.7s,baz=204,slow=3.2,SNR=2.5						

GUC ***07*** *07:06:09.6±0.4, 34°.12S×72°.39W, h9km±1km, ML3.7*

ISC 07 07:06:09.4±2.5, 34°.18S±0°.05×72°.4W±0°.1, h12km±13km, n20, σ1°65/28, 2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.41**	**121**	*e*P	**Pg**	**07 06 18.4**	**+0.7**
CHPI				*e*S	**Sb**	**07 06 24.8**	**-0.2**
CHPI				IAML		07 06 25.4	
	comp=E,5μm,0.5s						
NICH	**Los Niches**	**1.29**	**130**	*e*P	**Pn**	**07 06 32.9**	**-0.4**
NICH				*e*S	**Sb**	**07 06 50.6**	**+0.5**
TALC	**Talca**	**1.38**	**152**	*e*P	**Pn**	**07 06 34.7**	**+0.1**
TALC				*e*S	**Sn**	**07 06 53.6**	**+0.9**
ANTU	**Antumapu**	**1.61**	**68**	*e*P	**Pn**	**07 06 37.1**	**-0.7**
ANTU				*e*S	**Sn**	**07 06 57.9**	**-0.6**
FSR	**Penalolen**	**1.73**	**67**	*e*P	**Pn**	**07 06 39.0**	**-0.4**
FSR				*e*S	**Sn**	**07 07 01.2**	**-0.3**
CLCH	**Cerro Calan**	**1.76**	**64**↓	*e*P	**Sn**	**07 06 39.3**	**-0.6**
CLCH				*e*S	**Sn**	**07 07 02.2**	**0.0**
CLCH				IAML		07 07 08.7	
	comp=E,2μm,0.7s						
PEL	**Peldehue**	**1.79**	**55**↓	*e*P	**Pn**	**07 06 39.6**	**-0.5**
PEL				*e*S	**Sn**	**07 07 02.2**	**-0.5**
PEL				IAML		07 07 10.4	
	comp=N,2μm,0.6s						
FCH	**Farellones**	**1.98**	**65**	*e*P	**Pn**	**07 06 43.3**	**+0.3**
AAGR	**Agrelo**	**3.20**	**71**	*e*P	**Pb**	**07 07 04.1**	**-2.2**
AUSP	**Uspallata**	**3.21**	**53**	*e*P	**Pb**	**07 07 04.8**	**-1.8**
ARCO	**CERRO ARCO**	**3.21**	**66**	*e*P	**Pb**	**07 07 05.6**	**-0.9**
ARCO				IAML		07 07 25.9	
	comp=Z,108nm,0.5s						
ARCO				*e*S	**Sb**	**07 07 46.4**	**+0.7**
ASAL	**Salagasta**	**3.40**	**63**	*e*P	**Pb**	**07 07 06.8**	**-2.8**
RTLS	**Leoncito**	**3.54**	**49**	*e*P	**Pn**	**07 07 07.9**	**+3.4**
RTCV	**

LLP	Lapu-Lapu	4.08	360	⇓	*e*	P	P	07 11 43.4	-1.1
LLP					*i*	S	S	07 12 50.7	-1.9
PLP	Palo	5.02	11	⇓	*e*	P	P	07 11 51.4	-0.4
PLP					*e*	S	S	07 13 03.5	-2.7
RCP	Roxas	5.46	347	⇑	*e*	P	P	07 11 53.8	-1.7
MYLDM	Lahad Datu	5.55	260	⇑	P	P	P	07 11 57.5	+1.1
MYLDM	Lahad Datu	5.55	260		*e*	P	P	07 11 57.1	+0.7
KMSI	Cibinong 2µm,1.0s,17µm5.2nm	5.59	180		P	P	P	07 11 56.4	-0.4
MRSI	Marisa 655nm,0.9s,6µm	6.05	200		P	P	P	07 12 00.3	-0.5
TSM	Tawau	6.38	253	⇓	P	P	P	07 12 02.9	-0.8
SDKM	Sandakan	6.78	266	⇓	P	P	P	07 12 06.3	-1.2
KDM	Kudat	7.14	276	⇓	P	P	P	07 12 09.7	-1.1
LBMI	Labuha 2µm,0.9s,19µm	7.65	153		P	P	P	07 12 15.3	-0.5
KKM	Kota Kinabalu	7.73	269	⇓	P	P	P	07 12 15.8	-0.9
KKM	Kota Kinabalu	7.73	269		*e*	P	P	07 12 15.4	-1.2
KKM					*e*	S	S	07 13 50.0	-1.4
GQP	Guinayangan	7.80	349	⇑	*e*	P	P	07 12 16.6	-0.5
PCI	Palu 1µm,0.9s,9µm	8.19	211		P	P	P	07 12 20.1	-1.0
PCI	Palu	8.19	211		P	P	P	07 12 20.0	-1.0
PCI	comp=Z,1µm,0.9s				pmax	pmax			
LQP	Lukban	8.21	343	⇑	*e*	P	P	07 12 20.8	-0.6
TGY	Tagaytay City comp=Z,47nm,0.3s,baz=237,slow=3.0,SNR=12	8.40	339		P	P	P	07 12 22.8	-0.3
SANI	Sanana comp=Z,1µm,0.8s,comp=Z,10µm	8.44	166		P	P	P	07 12 20.7	-2.8
NLAI	Namlea comp=Z,766nm,0.8s,comp=Z,6µm	9.89	162		P	P	P	07 12 39.2	+1.2
TTSI	Tana Toraja comp=Z,391nm,0.7s,comp=Z,3µm	10.09	204		P	P	P	07 12 39.2	-0.8
KDI	Kendari comp=Z,237nm,1.0s,comp=Z,3µm	10.19	188		P	P	P	07 12 39.4	-1.7
MSAI	Masohi comp=Z,175nm,0.8s,comp=Z,2µm	10.70	152		P	P	P	07 12 48.2	+2.0
BTM	Bintulu	11.27	255	⇑	P	P	P	07 12 51.6	-0.5
APYP	Conner	11.89	347		*e*	P	P	07 12 58.9	+0.5
KAPI	Kappang comp=Z,4.1nm,0.3s,baz=32,slow=11,SNR=19	11.92	201		P	P	P	07 12 57.8	-0.9
KAPI					S	S	S	07 15 08.5	-0.1
	comp=Z,0.9nm,0.3s,baz=215,slow=16,SNR=14								
KAPI	Kappang	11.92	201		*e*	P	P	07 12 57.6	-1.1
KAPI					*e*	S	S	07 15 10.5	+1.9
SGCP	Mt. Cagua	12.11	351		*e*	P	P	07 12 58.3	-2.3
FAKI	Fak Fak comp=Z,284nm,1.0s,comp=Z,2µm	12.26	137		P	P	P	07 13 02.7	+0.4
FAKI	Fak Fak	12.26	137		*e*	P	P	07 13 03.1	+0.8
SBUM	Sibu	12.31	253	⇓	P	P	P	07 13 03.0	+0.2
SBUM	Sibu	12.31	253		*e*	P	P	07 13 02.8	0.0
SBUM					*e*	S	S	07 15 16.6	+0.6
KSM	Kuching	14.43	252	⇓	P	P	P	07 13 24.0	-0.5
KSM	Kuching	14.43	252		*e*	P	P	07 13 23.6	-0.9
EDFI	Ende, Flores	15.03	189		P	P	P	07 13 29.6	-1.0
SOEI	Soe comp=Z,160nm,0.7s,comp=Z,2µm	15.86	179		P	P	P	07 13 39.1	+0.4
SOEI	Soe comp=Z,114nm,0.7s	15.86	179		*e*	P	P	07 13 37.3	-1.4
PLAI	Plampang comp=Z,298nm,0.9s,comp=Z,3µm	16.17	203		P	P	P	07 13 41.5	0.0
BATI	Baumata	16.31	181		P	P	P	07 13 42.1	-0.7
TWSI	Taliwang, Sumb comp=Z,171nm,1.1s,comp=Z,2µm	16.45	206		P	P	P	07 13 44.0	-0.1
TWG	Pinlang comp=Z,500nm,0.6s	16.75	351		*e*	P	P	07 13 44.6	-2.1
YULB	Yu-li comp=Z,105nm,0.6s	17.28	352		*e*	P	P	07 13 49.4	-2.1
YULB					*e*	S	S	07 16 42.5	-0.5
TPUB	Ta-pu comp=Z,655nm,0.7s	17.30	350		*e*	P	P	07 13 51.4	-0.2
JAGI	Jajag, Banyuwa comp=Z,223nm,1.0s,comp=Z,2µm	17.57	214		P	P	P	07 13 54.4	+0.2
JAGI	Jajag, Banyuwa comp=Z,209nm,1.0s	17.57	214		*e*	P	P	07 13 54.0	-0.2
SSLB	Suanglung comp=Z,220nm,1.1s	17.72	351		*e*	P	P	07 13 54.6	-0.9
SSLB					*e*	S	S	07 16 48.1	-2.1
GMJI	Gumukmas comp=Z,65nm,0.8s	17.82	216		P	P	P	07 13 57.1	+0.6
NACB	Ninganchiao comp=Z,65nm,0.5s	18.01	353		*e*	P	P	07 13 57.0	-1.1
YOJ	Yonaguni jima comp=Z,159nm,0.8s	18.18	357		*e*	P	P	07 14 00.1	+0.5
YOJ					pmax	pmax			
YOJ	Yonaguni jima comp=Z,159nm,0.8s	18.18	357		*e*	P	P	07 14 00.1	+0.5
YHNB	Yeheng comp=Z,205nm,0.6s	18.53	353		*e*	P	P	07 14 00.7	-2.3
PWJI	Pagerwojo comp=Z,70nm,1.1s	18.64	221		P	P	P	07 14 04.0	0.0
QIZ	Qiongzhong	18.76	314		P	P	P	07 14 04.5	-0.6
QIZ					S	S	S	07 17 07.2	+0.1
QIZ	comp=Z,18nm,1.5s				pmax	pmax			
QIZ	Qiongzhong comp=Z,34nm,0.8s	18.76	314		*e*	P	P	07 14 04.9	-0.2
TATO	Taipei comp=Z,203nm,0.9s	18.82	353		*e*	P	P	07 14 04.3	-1.1
PCJI	Pacitan comp=Z,86nm,1.4s	19.18	222		P	P	P	07 14 09.2	+0.3
QZH	Quanzhou	19.33	345	⇑	*i*	P	P	07 14 01.8	-8.3
QZH						S	S	07 17 02.9	-13
QZH	comp=Z,280nm,0.6s				pmax	pmax			
DSRI	Dabo comp=Z,212nm,1.1s,comp=Z,8µm	20.48	252		P	P	P	07 14 20.4	-0.3
MYKOM	Kota Tinggi	20.55	259	⇑	P	P	P	07 14 21.4	0.0
MYKOM	Kota Tinggi comp=Z,62nm,0.8s	20.55	259		*e*	P	P	07 14 21.0	-0.4
KTGM	Kuala Trenggan	20.76	269	⇓	P	P	P	07 14 23.3	0.0
CMJI	Cimerak comp=Z,46nm,0.7s	20.82	228		P	P	P	07 14 21.5	-2.2
KGM	Kluang	21.02	259	⇓	P	P	P	07 14 25.7	0.0
CISI	Cisompet, Garu comp=Z,54nm,0.8s	21.14	230		*e*	P	P	07 14 24.7	-2.1
CNJI	Cibinong	21.52	232		P	P	P	07 14 28.5	-1.5
CGJI	Cibinong	22.26	235		P	P	P	07 14 35.2	-1.5
SKNT	Sakolnakorn comp=Z,32nm,0.7s	22.30	300		P	P	P	07 14 37.1	+0.1
SKNT	Sakolnakorn comp=Z,32nm,0.7s	22.30	300		P	P	P	07 14 37.1	+0.1
FRIM	Kepong	22.48	263	⇓	P	P	P	07 14 38.4	-0.2
IPM	Ipoh	22.92	267	⇑	P	P	P	07 14 42.0	-0.7
IPM	Ipoh comp=Z,33nm,0.6s	22.92	267		*e*	P	P	07 14 42.0	-0.7
SKLT	Songkhla	23.23	274		P	P	P	07 14 45.2	-0.1
SKLT	Songkhla comp=Z,86nm,0.8s,comp=Z,822nm	23.23	274		P	P	P	07 14 45.2	-0.1
KULM	Kulim	23.23	269	⇓	P	P	P	07 14 44.5	-0.9
KULM	Kulim comp=Z,25nm,0.9s	23.23	269		*e*	P	P	07 14 45.1	-0.3
MNAI	Manna	23.47	244		P	P	P	07 14 46.8	-0.7
TRTT	Trang comp=Z,39nm,1.0s	24.16	275		P	P	P	07 14 53.9	+0.3
TRTT	Trang comp=Z,39nm,1.0s	24.16	275		P	P	P	07 14 53.9	+0.3
FITZ	Fitzroy Crossi comp=Z,4.5nm,0.4s,baz=9.0,slow=7.2,SNR=68	24.21	176		P	P	P	07 14 53.5	-0.4
FITZ	Fitzroy Crossi comp=Z,47nm,1.6s	24.21	176		*e*	P	P	07 14 53.6	-0.4
FITZ					*e*	S	S	07 18 29.8	-3.5
PBKT	Sadao Pong comp=Z,32nm,0.8s	24.77	297		P	P	P	07 14 59.4	+0.5
PBKT	Sadao Pong comp=Z,32nm,0.8s	24.77	297		P	P	P	07 14 59.4	+0.5
LOEI	Loei comp=Z,33nm,0.7s	24.88	299		P	P	P	07 14 57.2	-2.7
LOEI	Loei comp=Z,33nm,0.7s,comp=Z,843nm	24.88	299		P	P	P	07 14 57.2	-2.7
SURT	Suratani comp=Z,22nm,0.8s	25.11	278		P	P	P	07 15 01.9	-0.1
SURT	Suratani comp=Z,22nm,0.8s	25.11	278		P	P	P	07 15 01.9	-0.1
PSI	Prapat comp=Z,51nm,0.8s	25.21	263		*e*	P	P	07 15 02.9	-0.1
PSI					pmax	pmax			
PSI	Prapat comp=Z,51nm,0.8s	25.21	263		*e*	P	P	07 15 02.9	-0.1
PKDT	Phuket comp=Z,88nm,0.8s	25.51	275		P	P	P	07 15 06.1	+0.6
PKDT	Phuket comp=Z,88nm,0.8s	25.51	275		P	P	P	07 15 06.1	+0.6
UTTA	Uttaradit	25.59	299		P	P	P	07 15 07.1	+0.9
	comp=Z,3.7nm,0.8s								
UTTA	Uttaradit comp=Z,3.7nm,0.8s	25.59	299		P	P	P	07 15 07.1	+0.9
SRDT	SRDT comp=Z,140nm,0.7s	25.75	290		P	P	P	07 15 08.1	+0.5
SRDT	SRDT comp=Z,140nm,0.7s	25.75	290		P	P	P	07 15 08.1	+0.5
WHN	Wuhan	25.85	341	⇑	P	P	P	07 15 09.5	+1.3
WHN	comp=Z,150nm,0.6s				pmax	pmax			
GYA	Guiyang	26.05	323		P	P	P	07 15 12.0	+1.8
GYA					sP	sP	07 17 46.2	-0.5	
GYA					PcP	PcP	07 18 21.0	+2.0	
GYA					ScP	ScP	07 21 07.4	+1.8	
GYA					PcS	PcS	07 22 01.8	+1.0	
GYA					ScS	ScS	07 24 57.0	+0.3	
GYA	comp=Z,20nm,0.8s				pmax	pmax			
NJ2	Nanjing	26.16	350		*e*	P	P	07 15 11.9	+1.0
NJ2	comp=Z,43nm,0.5s				pmax	pmax			
SUKH	Sukhothai comp=Z,5.8nm,0.5s	26.30	297		P	P	P	07 15 13.0	+0.6
SUKH	Sukhothai comp=Z,5.8nm,0.5s,comp=Z,71nm	26.30	297		P	P	P	07 15 13.0	+0.6
UMPA	Umpang Tak comp=Z,10.0nm,0.9s	26.54	294		P	P	P	07 15 14.9	+0.3
UMPA	Umpang Tak comp=Z,10.0nm,0.9s,comp=Z,873nm	26.54	294		P	P	P	07 15 14.9	+0.3
LAMP	Lampang	26.70	299		P	P	P	07 15 18.4	+2.4
LAMP	Lampang comp=Z,4.0nm,1.2s	26.70	299		P	P	P	07 15 18.4	+2.4
GSI	Gunungsitoli	26.79	261		P	P	P	07 15 15.4	-1.4
GSI	Gunungsitoli comp=Z,165nm,0.7s	26.79	261		*e*	P	P	07 15 15.6	-1.3
PAYA	Payao	26.86	301		P	P	07 15 27.2	+10	
TPTI		26.87	265		P	P	P	07 15 15.4	-2.1
CM01	Chiang Mai Arr	27.25	299		*e*	P	P	07 15 21.6	+0.8
CM31	Chiang Mai Arr	27.28	299		*e*	P	P	07 15 22.2	+1.2
CMAR	Chiang Mai Arr comp=Z,7.8nm,0.5s,baz=106,slow=6.5,SNR=30	27.28	299		*e*	P	P	07 15 21.9	+0.8
CMAR						ScP	ScP	07 21 10.6	+1.3
	comp=Z,10nm,1.0s,baz=130,slow=1.4,SNR=25								
CHTO	Chiang Mai comp=Z,117nm,0.6s	27.42	299		P	P	P	07 15 22.6	+0.4
CHTO	Chiang Mai comp=Z,117nm,0.6s,comp=Z,1µm	27.42	299		P	P	P	07 15 22.6	+0.4
CHTO	Chiang Mai comp=Z,17nm,0.6s	27.42	299		*e*	P	P	07 15 22.7	+0.4
CHTO					pmax	pmax			
CHTO	Chiang Mai comp=Z,16nm,0.6s	27.42	299		*e*	P	P	07 15 22.7	+0.4
JNU	Nakatsue comp=Z,21nm,0.8s,baz=186,slow=3.1,SNR=8.5	27.54	13		P	P	P	07 15 22.2	-0.9
JNU	Nakatsue comp=Z,28nm,0.9s	27.54	13		*e*	P	P	07 15 22.7	-0.4
JNU					*e*	S	S	07 19 20.0	-5.2
ENH	Enshi comp=Z,99nm,0.8s	27.55	332		*e*	P	P	07 15 23.8	+0.5
WRAB	Tennant Creek	27.91	159		*c*	*i* P	P	07 15 25.6	-0.9
WRAB	comp=Z,68nm,1.3s				pmax	pmax			
WRA	Warramunga Arr comp=Z,6.3nm,0.3s,baz=342,slow=9.1,SNR=285	27.91	159		P	P	P	07 15 25.8	-0.7
WRA						S	S	07 19 27.7	-3.5
WRA	comp=Z,2.8nm,0.7s,baz=336,slow=16,SNR=5.0					ScP	ScP	07 21 10.7	-0.5
	comp=Z,3.6nm,0.8s,baz=346,slow=3.5,SNR=8.1								
WR1	Warramunga Arr comp=Z,17nm,0.7s	27.91	159		*e*	P	P	07 15 25.8	-0.7
WR1					*e*	S	S	07 19 27.7	-3.5
WB2	Warramunga Arr comp=Z,16nm,0.6s	27.92	159		*e*	P	P	07 15 25.9	-0.6
TIA	Tai'an	30.52	349	⇑	P	P	P	07 15 48.8	0.0
TIA	comp=Z,70nm,0.8s				pmax	pmax			
XAN	Xi'an	31.01	335		P	P	P	07 15 53.1	-0.1
XAN					pP	pP	07 17 24.1	-1.9	
XAN					S	S	07 20 16.6	-2.2	
XAN					ScP	ScP	07 21 20.4	-0.8	
XAN	comp=Z,100nm,0.8s				pmax	pmax			
CD2	Chengdu	31.05	325		*e*	P	P	07 15 53.8	+0.3
AS31	Alice Springs comp=Z,5.8nm,0.5s	31.23	162		*e*	P	P	07 15 55.4	+0.2
AS31					*e*	PcP	PcP	07 18 32.2	0.0
AS31					*e*	S	S	07 20 20.6	-1.8
ASAR	Alice Springs comp=Z,11nm,0.6s,baz=340,slow=7.2,SNR=104	31.23	162		P	P	P	07 15 55.4	+0.2
ASAR	comp=Z,4.5nm,0.7s,baz=337,slow=2.2,SNR=11					PcP	PcP	07 18 32.3	+0.1
ASAR	comp=Z,10.0nm,0.9s,baz=337,slow=12,SNR=25					S	S	07 20 20.7	-1.7
ASAR						ScP	ScP	07 21 21.6	-0.5
	comp=Z,2.8nm,0.8s,baz=340,slow=3.3,SNR=4.8								
AS01	Alice Springs	31.24	162		*e*	P	P	07 15 55.4	+0.1
AS01					*e*	S	S	07 20 20.7	-1.9
KS15	Wonju Array Si	31.29	6		*e*	P	P	07 15 56.3	+0.9
KSRS	Korea Array comp=Z,13nm,0.9s,baz=183,slow=9.9,SNR=39	31.31	6		P	P	P	07 15 56.2	+0.7
INU	Inuyama comp=Z,56nm,0.9s	31.39	21		*e*	P	P	07 15 56.3	0.0
DL2	Dalian	32.62	357		P	P	P	07 16 07.0	+0.3
DL2	comp=Z,91nm,0.9s				pmax	pmax			
MAJO	Matsushiro	32.88	21		*c*	*i* P	P	07 16 07.8	-1.2
MAJO	comp=Z,350nm,1.0s				pmax	pmax			
MAJO	Matsushiro comp=Z,47nm,0.9s	32.88	21		*e*	P	P	07 16 08.2	-0.8
MAT	Matsushiro	32.88	21		P	P	P	07 16 08.0	-1.0
MAT					S	S	07 21 05.0	+18	
MJAR	Matsushiro Arr comp=Z,34nm,0.8s,baz=196,slow=9.3,SNR=62	32.88	21		P	P	P	07 16 08.3	-0.6
MJAR						ScP	ScP	07 21 26.4	-1.1
	comp=Z,0.6nm,0.3s,baz=249,slow=3.8,SNR=5.1								
MJB9	Matsu-Tunnel comp=Z,12nm,0.9s	32.88	21		*e*	P	P	07 16 08.3	-0.7
TIY	Taiyuan	33.08	343		*e*	P	P	07 16 11.3	+0.6
TIY					S	S	07 20 51.7	+1.4	
TIY	comp=Z,81nm,0.8s				pmax	pmax			
TIY	comp=Z,160nm,4.2s				pmax	pmax			
CTA	Charters Tower comp=Z,4.5nm,0.7s,baz=304,slow=8.3,SNR=6.3	34.10	141		P	P	P	07 16 20.7	+1.3
CTA						ScP	ScP	07 21 32.4	+0.3
	comp=Z,7.4nm,1.1s,baz=46,slow=4.2,SNR=4.9								
BJT	Baijiatuan	34.39	349		*e*	P	P	07 16 21.8	+0.3
BJT	Baijiatuan	34.39	349		*e*	P	P	07 16 21.8	+0.3
BJI	Beijing	34.41	349		P	P	P	07 16 21.9	+0.2
BJI	comp=Z,76nm,0.7s				pmax	pmax			
LZH	Lanzhou	35.01	331	⇓	P	P	P	07 16 28.7	+1.7
LZH					sP	sP	07 19 03.6	-3.5	
LZH					S	S	07 21 20.2	+0.6	
LZH					SS	SS	07 24 24.4	-11	
LZH	comp=Z,98nm,1.2s				pmax	pmax			
LZH	comp=Z,170nm,4.9s				pmax	pmax			
MSHR	Mys Shultsa	36.78	9		*c*	*i* P	P	07 16 41.8	+0.6
FORT	Forrest comp=Z,680nm,0.9s	36.98	174		*e*	P	P	07 16 43.4	+0.3
VLA	Vladivostok	37.42	10	⇑	*i*	P	P	07 16 46.4	-0.1
VLA					*e*			07 18 28.8	
VLA	comp=Z,23nm,0.7s				pmax	pmax			
USRK	Ussuriysk Ar. comp=Z,14nm,0.8s,baz=196,slow=8.0,SNR=37	38.49	9		P	P	P	07 16 55.4	+0.3
USRK					PP	PP	07 18 38.3	-3.5	
	comp=Z,0.8nm,0.6s,baz=205,slow=8.4,SNR=4.5								
MDJ	Mudanjiang	38.57	6		P	P	P	07 16 56.4	+0.6
MDJ	comp=Z,27nm,0.6s				pmax	pmax			
MDJ	comp=Z,35nm,6.0s				pmax	pmax			
NWAO	Narrogin (SRO) comp=Z,48nm,0.9s,baz=242,slow=8.7,SNR=16	39.44	189		P	P	P	07 17 03.0	0.0
NWAO	Narrogin (SRO) comp=Z,56nm,0.9s	39.44	189		*e*	P	P	07 17 03.0	0.0
ERM	Erimo	39.52	23	⇑	*e*	P	P	07 17 04.8	+1.3
ERM	comp=Z,25nm,1.0s				pmax	pmax			
ERM	Erimo comp=Z,22nm,1.0s	39.52	23		*e*	P	P	07 17 04.0	+0.5
GTA	Gaotai	39.59	330	⇑	P	P	P	07 17 04.8	+0.5
GTA					pP	pP	07 18 44.2	+1.8	
GTA					sP	sP	07 19 42.5	-4.1	
GTA					S	S	07 22 28.2	+1.0	
GTA	comp=Z,36nm,1.1s				pmax	pmax			
GTA	comp=Z,70nm,5.2s				pmax	pmax			
EIDS	Eidsvold comp=Z,17nm,1.0s	40.98	141		*e*	P	P	07 17 15.9	+0.5
RAMN	Ramite comp=Z,12nm,0.3s	41.10	304		*e*	P	P	07 17 17.1	+0.4
ASAJ	Asahikawa comp=Z,49nm,0.8s	41.14	20		*e*	P	P	07 17 17.1	+0.8
STKA	Stephens Creek comp=Z,12nm,0.6s,baz=326,slow=8.0,SNR=21	41.43	157		P	P	P	07 17 19.6	+0.7
STKA						S	S	07 22 53.0	-0.8
	comp=Z,3.2nm,0.7s,baz=235,slow=22,SNR=5.2								
STKA	Stephens Creek comp=Z,4.2nm,0.8s	41.43	157		*e*	P	P	07 17 19.6	+0.7
STKA					*e*	S	S	07 22 53.0	-0.8
GUN	Gumba comp=Z,49nm,0.4s	42.07	305		*e*	P	P	07 17 24.5	+0.1
PKIN	Phulchoki comp=Z,6.7nm,0.3s	42.33	305		*e*	P	P	07 17 26.3	-0.1
KKN	Kakani comp=Z,21nm,0.3s	42.51	305		*e*	P	P	07 17 27.6	-0.1
DMN	Daman comp=Z,9.4nm,0.3s	42.58	305		*e*	P	P	07 17 28.6	+0.3
PALK	Pallekele comp=Z,9.8nm,0.7s,baz=114,slow=5.2,SNR=5.0	42.98	274		P	P	P	07 17 31.6	+0.2
PALK	Pallekele comp=Z,41nm,1.3s	42.98	274		*e*	P	P	07 17 31.6	+0.2
HIA	Hailar comp=Z,63nm,1.2s	43.06	356		*e*	P	P	07 17 32.2	+0.8
HIA					pmax	pmax			
HIA	Hailar comp=Z,63nm,1.2s	43.06	356		*e*	P	P	07 17 32.1	+0.8
GKN	Gorkha comp=Z,16nm,0.3s	43.11	305		*e*	P	P	07 17 32.0	-0.4
HABR	Khabarovsk	43.16	11		*e*	P	P	07 17 31.0	-1.1
HABR					*e*			07 19 06.5	
HABR					*e**	PP	pP	07 19 13.1	+0.5
HABR					*e*			07 19 24.0	
HABR					*e**	SP	sP	07 20 18.2	+2.1
HABR					*e*	S	S	07 23 17.0	-0.9
HABR					*e*			07 26 26.1	
HABR					*e*	SS	SS	07 26 49.0	+1.6
HABR	comp=E,19nm,0.9s				pmax	pmax			
HABR	comp=N,12nm,0.9s				pmax	pmax			
HABR	comp=Z,34nm,0.9s				pmax	pmax			
HABR	comp=Z,107nm,20.0s				MLR	MLR			
KLR	Kul'dur comp=Z,14nm,0.7s,baz=203,slow=4.6,SNR=67	43.38	7		P	P	P	07 17 33.6	-0.1
YSS	Yuzh-Sakhalins comp=Z,22nm,0.8s	43.69	19		*e*	P	P	07 17 37.1	+0.8
YSS					pmax	pmax			
YSS	Yuzh-Sakhalins comp=Z,21nm,0.9s	43.69	19		*e*	P	P	07 17 36.7	+0.4
KOLN	Koldanda comp=Z,44nm,0.3s	43.88	304		*e*	P	P	07 17 38.3	0.0
SONA0	Songino Array comp=Z,30nm,1.0s	44.12	343		*e*	P	P	07 17 40.4	+0.7
SONM	Songino Array comp=Z,18nm,0.9s,baz=163,slow=8.7,SNR=32	44.12	343		P	P	P	07 17 40.4	+0.7
SONA1	Songino Array	44.13	343		*e*	P	P	07 17 40.1	+0.2
PYUN	Puthao comp=Z,39nm,0.4s	44.50	304		*e*	P	P	07 17 43.5	+0.4
ZAK	Zakamensk comp=Z,6.0nm,1.5s	47.32	342		*e*	P	P	07 18 03.2	-0.8
ZAK					pmax	pmax			
TLY	Talaya comp=Z,12nm,0.7s,baz=181,slow=4.8,SNR=8.7	48.36	343		P	P	P	07 18 12.3	+0.7
TLY	Talaya comp=Z,21nm,0.9s	48.36	343		*e*	P	P	07 18 12.6	+1.0
TLY					pmax	pmax			
WMQ	Urumqi	49.14	326		P	P	P	07 18 18.6	+0.9
WMQ					PcP	PcP	07 19 30.3	-0.1	
WMQ					S	S	07 24 41.3	-0.3	
WMQ					ScS	ScS	07 27 13.6	+4.6	
WMQ	comp=Z,24nm,1.0s				pmax	pmax			
WMQ	comp=Z,80nm,6.4s				pmax	pmax			
MOY	Mondy comp=Z,30nm,1.6s	49.15	341		*e*	P	P	07 18 18.6	+1.0
MOY					pmax	pmax			
BOD	Bodaibo comp=Z,28nm,1.5s	52.07	353		*e*	P	P	07 18 38.6	+0.1
BOD					pmax	pmax			
PDGK	Podgornoye comp=Z,10.0nm,0.8s	53.78	321		*i*	P	P	07 18 50.9	0.0
PDGK					pmax	pmax			
MK01	Makanchi Array	53.96	326		*e*	P	P	07 18 52.3	+0.1
MK01					*e*	S	S	07 25 46.5	+0.7
MK31	Makanchi Array comp=Z,8.0nm,0.5s	53.98	326		*i*	P	P	07 18 52.6	+0.3
MK31					pmax	pmax			
MK31	Makanchi Array	53.98	326		*e*	P	P	07 18 52.7	+0.3
MK32	Makanchi Array	53.98	326		*e*	P	P	07 18 52.4	0.0
MK32					*e*	PcP	PcP	07 19 48.1	-0.4
MKAR	Makanchi Array comp=Z,9.6nm,0.3s,baz=120,slow=7.6,SNR=324	53.98	326		P	P	P	07 18 52.4	0.0
MKAR					PcP	PcP	07 19 48.1	-0.4	
	comp=Z,1.9nm,0.4s,baz=106,slow=3.9,SNR=5.8								
MKAR					PP	PP	07 20 56.9	-5.2	
	comp=Z,2.2nm,0.9s,baz=136,slow=7.6,SNR=4.2								
MKAR	Makanchi Array	53.98	326		*e*	P	P	07 18 52.8	+0.4
MAKZ	Makanchi comp=Z,14nm,0.6s	54.16	325		*e*	P	P	07 18 53.9	+0.2
MAKZ					*e*	S	S	07 25 49.8	+1.4
PEA0	Petropavlovsk-	54.25	24		*e*	P	P	07 18 55.1	+1.0
PEA0B	Petropavlovsk- comp=Z,45nm,1.0s	54.25	24		*e*	P	P	07 18 55.2	+1.1
PETK	Petropavlovsk- comp=Z,23nm,0.9s,baz=188,slow=4.5,SNR=16	54.25	24		P	P	P	07 18 55.1	+1.0
PEA1	Petropavlovsk-	54.25	24		*e*	P	P	07 18 55.1	+1.0
KSH	Kashi	54.37	315		*e*	P	P	07 18 58.0	+2.6
KSH					*e*	pP	pP	07 20 42.3	-0.7
KSH					*e*	PP	PP	07 21 09.9	+4.0
KSH					*e*	sP	sP	07 21 39.7	-4.6
KSH					*e*	S	S	07 25 53.6	+2.0
KSH	comp=Z,33nm,5

KURK **Kurchatov** **58.20 328** P **P** 07 19 21.2 -0.1
KURK 07 21 37.4
KURK pmax pmax
comp=E,11nm,0.5s
KURK pmax pmax
comp=E,2.0nm,0.8s
KURK **Kurchatov** **58.20 328** *eP* **P** **07 19 21.3 0.0**
KK31 **Karatay Array** **59.57 317** *i P* **P** **07 19 30.5 -0.2**
KK31 pmax pmax
comp=E,1.0nm,0.6s
KKAR **Karatay Array** **59.57 317** *eP* **P** **07 19 30.7 0.0**
KKAR **Karatay Array** **59.57 317** *eP* **P** **07 19 30.7 0.0**
SEY **Seymchan** **60.29 15** P **P** **07 19 35.6 +0.5**
comp=E,9.3nm,0.9s,baz=235,slow=7.8,SNR=14
OTUK **Ortayu** **60.51 323** P **P** **07 19 36.9 +0.1**
OTUK pmax pmax
comp=E,5.0nm,0.7s
VOSK **Vostochnaya** **63.31 327** *eP* **P** **07 19 54.3 -0.6**
VOSK pmax pmax
comp=E,7.0nm,0.7s
VOSK **Vostochnaya** **63.31 327** *eP* **P** **07 19 54.3 -0.6**
comp=E,7.2nm,0.7s
BVA0 **Borovoye Array** **63.77 327** *i P* **P** **07 19 57.2 -0.6**
BVA0 pmax pmax
comp=E,8.0nm,1.0s
BVAR **Borovoye Array** **63.77 327** P **P** **07 19 57.9 +0.1**
comp=E,4.4nm,0.6s,baz=126,slow=7.7,SNR=26
BVAR S **S** **07 27 47.6 -1.4**
comp=E,2.5nm,1.0s,baz=120,slow=14,SNR=7.0
BRVK **Borovoye** **63.84 327** *eP* **P** **07 19 58.1 -0.1**
BRVK *eS* **S** **07 27 49.5 -0.3**
BRVK pmax pmax
comp=E,10.0nm,0.9s
BRVK **Borovoye** **63.84 327** *eP* **P** **07 19 58.1 -0.1**
comp=E,10nm,0.9s
BRVK *eS* **S** **07 27 49.5 -0.3**
ZRNK **Zerenda** **64.49 327** *eP* **P** **07 20 02.0 -0.3**
ZRNK pmax pmax
comp=E,10.0nm,0.7s
ZRNK **Zerenda** **64.49 327** *eP* **P** **07 20 02.0 -0.3**
comp=E,9.9nm,0.7s
TIXI **Tiksi** **65.44 2** P **P** **07 20 07.6 -0.4**
comp=E,10nm,0.3s,baz=176,slow=3.8,SNR=21
TIXI **Tiksi** **65.44 2***c i*P **P** **07 20 07.3 -0.6**
TIXI pmax pmax
comp=E,26nm,1.1s
BFZ **Birch Farm** **66.86 139** *eP* **P** **07 20 16.6 -0.8**
comp=E,107nm,0.8s
GEYT **Alibeck** **67.22 308** P **P** **07 20 19.6 -0.1**
comp=E,4.6nm,0.7s,baz=184,slow=4.3,SNR=8.8
NRIK **Noril'sk** **67.40 347** P **P** **07 20 20.0 -0.1**
comp=E,13nm,0.7s,baz=131,slow=6.0,SNR=25
NRIK **Noril'sk** **67.40 347** P **P** **07 20 20.0 -0.1**
NRIK pmax pmax
comp=E,13nm,0.7s
BILL **Bilibino** **67.90 16** *eP* **P** **07 20 22.9 -0.3**
BILL *i* 07 20 38.7
BILL *i* *PP **pP** **07 22 21.3 +3.3**
BILL pmax pmax
comp=E,6.0nm,1.1s
AB31 **Akbulak array** **68.51 321** *i P* **P** **07 20 26.8 -0.5**
AB31 pmax pmax
comp=E,1.0nm,0.3s
ABKAR **Akbulak array** **68.51 321** *eP* **P** **07 20 26.9 -0.4**
AKTO **Aktyubinsk** **70.03 322** P **P** **07 20 35.8 -0.6**
comp=E,3.4nm,0.3s,baz=94,slow=8.1,SNR=16
ARU **Arti** **71.40 328** P **P** **07 20 43.3 -1.0**
comp=E,6.8nm,0.4s,baz=92,slow=3.7,SNR=8.9
ARU **Arti** **71.40 328***c i*P **P** **07 20 43.2 -1.0**
ARU 07 23 30.5
ARU S **S** **07 29 16.8 -0.7**
ARU pmax pmax
comp=E,10.0nm,1.0s
CASY **Casey** **72.97 186** *eP* **P** **07 20 53.3 +0.3**
comp=E,15nm,0.8s
GNI **Garni** **77.81 310**⇑ *eP* **P** **07 21 21.2 +0.4**
GNI pmax pmax
comp=E,18nm,0.7s
TT01 **Tatalina** **79.95 27** *eP* **P** **07 21 32.8 +1.4**
TTA **Tatalina** **79.95 27** *eP* **P** **07 21 33.2 +1.7**
TTA pmax pmax
comp=E,16nm,1.3s
TTA **Tatalina** **79.95 27** *eP* **P** **07 21 33.2 +1.7**
comp=E,16nm,1.3s
SVW2 **Sparrevohn** **79.97 29** *eP* **P** **07 21 32.7 +1.1**
comp=E,7.4nm,0.8s
KDAK **Kodiak Island** **81.28 33** *i P* **P** **07 21 39.3 +0.9**
CAST **Castle Rocks** **81.77 27** *eP* **P** **07 21 41.2 +0.4**
comp=E,10nm,1.0s
KLMR **Klimovskoe** **81.92 331** *eP* **P** **07 21 39.7 -1.9**
KLMR *e**PP **pP** **07 23 41.5 -0.8**
KLMR pmax pmax
comp=E,8.0nm,0.8s
BPAW **Bear Paw Mtn.** **82.28 26** *eP* **P** **07 21 44.5 +1.1**
comp=E,16nm,1.0s
KTH **Kantishna Hill** **82.29 27** *eP* **P** **07 21 44.6 +1.1**
comp=E,16nm,1.2s
MLY **Manley** **82.42 25** *eP* **P** **07 21 45.4 +1.3**
comp=E,14nm,0.8s
TRF **Thorofare Moun** **82.58 27** *eP* **P** **07 21 45.3 +0.2**
comp=E,15nm,1.2s
COLD **Coldfoot** **82.69 23** *eP* **P** **07 21 47.2 +1.8**
comp=E,14nm,1.0s
MCK **McKinley** **83.18 27** *eP* **P** **07 21 48.6 +0.7**
MCK pmax pmax
comp=E,12nm,0.8s
MCK **McKinley** **83.18 27** *eP* **P** **07 21 48.6 +0.7**
comp=E,12nm,0.8s
RND **Reindeer** **83.22 27** *eP* **P** **07 21 48.1 -0.1**
RND pmax pmax
comp=E,6.0nm,0.9s
RND **Reindeer** **83.22 27** *eP* **P** **07 21 48.1 -0.1**
comp=E,6.3nm,0.9s
OBN **Obninsk** **83.47 325** *i P* **P** **07 21 48.6 -0.9**
OBN pmax pmax
comp=E,7.0nm,1.0s
WRH **Wood River Hil** **83.55 26** *eP* **P** **07 21 50.2 +0.5**
comp=E,24nm,1.7s
CCB **Clear Creek Bu** **83.67 26** *eP* **P** **07 21 50.2 -0.1**
comp=E,10nm,1.5s
ILAR **Eielson Array** **84.06 26** P **P** **07 21 51.6 -0.6**
comp=E,0.4nm,0.5s,baz=238,slow=5.3,SNR=11
ILB **Eielson Array** **84.06 26** *eP* **P** **07 21 52.8 +0.6**
ASF **Jabal al Asfar** **84.27 302** P **P** **07 21 54.0 -0.1**
comp=E,6.0nm,0.7s,baz=65,slow=5.0,SNR=7.6
ASF **Jabal al Asfar** **84.27 302** P **P** **07 21 54.0 -0.1**
ASF pmax pmax
comp=E,8.0nm,0.9s
MAW **Mawson** **85.13 200** P **P** **07 21 57.1 -0.1**
comp=E,3.6nm,0.7s,baz=88,slow=7.3,SNR=6.4
MAW **Mawson** **85.13 200** *eP* **P** **07 21 57.2 -0.1**
MAW pmax pmax
comp=E,6.0nm,1.6s
MAW **Mawson** **85.13 200** *eP* **P** **07 21 57.2 -0.1**
comp=E,6.0nm,1.6s
VNDA **Vanda** **86.22 172** P **P** **07 22 02.7 +0.3**
comp=E,8.5nm,0.9s,baz=314,slow=6.1,SNR=37
BR101 **Keskin Array S** **86.34 309** *eP* **P** **07 22 02.9 -1.1**
BR131 **Keskin Array S** **86.34 309** *eP* **P** **07 22 02.9 -1.1**
BRTR **Keskin Array B** **86.34 309** P **P** **07 22 02.9 -1.1**
comp=E,2.8nm,0.7s,baz=120,slow=5.0,SNR=13
KMBO **Kilima Mbogo** **86.87 269** P **P** **07 22 08.1 +0.9**
comp=E,3.8nm,0.8s,baz=108,slow=6.0,SNR=7.5
KMBO **Kilima Mbogo** **86.87 269** *eP* **P** **07 22 08.1 +0.9**
comp=E,22nm,1.4s
BR231 **Keskin MP Arra** **87.00 310** *eP* **P** **07 22 03.6 -3.4**
SBA **Scott Base** **87.16 172** *eP* **P** **07 22 07.8 +1.0**
SBA pmax pmax
comp=E,9.0nm,1.2s
SBA **Scott Base** **87.16 172** *eP* **P** **07 22 07.8 +1.0**
comp=E,8.9nm,1.2s
ARA0 **ARCESS Array S** **87.19 340** *eP* **P** **07 22 06.6 -0.6**
ARCES **ARCESS Array B** **87.19 340** P **P** **07 22 06.6 -0.6**
comp=E,0.8nm,0.4s,baz=80,slow=5.5,SNR=13
SPITS **Spitsbergen Ar** **87.53 349** P **P** **07 22 08.0 -0.6**
comp=E,3.3nm,0.6s,baz=109,slow=7.1,SNR=16
SPITS **Spitsbergen Ar** **87.53 349** P **P** **07 22 08.0 -0.6**
SPITS pmax pmax
comp=E,3.0nm,0.6s
KIEV **Kiev** **88.27 321**⇓ *eP* **P** **07 22 12.3 -0.2**
KIEV pmax pmax
comp=E,6.0nm,2.1s
FIA0 **FINESS Array S** **88.37 332** *eP* **P** **07 22 11.5 -1.3**
FIA0 **FINESS Array S** **88.37 332** *eP* **P** **07 22 11.5 -1.3**
FINES **FINESS Array B** **88.37 332** P **P** **07 22 11.5 -1.3**
comp=E,1.1nm,0.4s,baz=63,slow=4.4,SNR=12

HFS **Hagfors** **94.56 332** P **P** **07 22 39.5 -1.8**
comp=E,0.5nm,0.4s,baz=123,slow=5.5,SNR=6.8
YKA **Yellowknife Ar** **98.36 24** P Pdif 07 22 58.3 0.0
comp=E,0.4nm,0.8s,baz=39,slow=4.5,SNR=5.3
TOA0 **Torodi Ar. Sit** **119.54 289** *e*PKPdf **PKPdf** **07 28 07.3 -0.5**
TORD **Torodi Ar. Bea** **119.54 289** PKP **PKPdf** **07 28 06.8 -1.0**
comp=E,2.2nm,0.6s,baz=67,slow=1.7,SNR=16
TOA1 **Torodi Ar. Sit** **119.55 289** *e*PKPdf **PKPdf** **07 28 06.8 -1.0**
LTX **Lajitas** **122.17 50** *e*PKiKP **PKPdf** **07 28 13.4 +0.7**
LTX **Lajitas** **122.17 50** *e*PKPdf **PKPdf** **07 28 13.4 +0.7**
TXAR **Lajitas Array** **122.17 50** PKP **PKPdf** **07 28 13.4 +0.7**
comp=E,2.0nm,0.8s,baz=27,slow=0.3,SNR=4.1
DBIC **Dimbokro** **127.37 283** PKP **PKPdf** **07 28 23.0 +0.1**
comp=E,2.9nm,0.8s,baz=175,slow=4.5,SNR=3.6
PLCA **Paso Flores** **143.24 161** PKP PKPbc 07 28 50.8 +0.8
comp=E,7.1nm,0.8s,baz=266,slow=2.3,SNR=11
TRQA **Tornquist** **147.84 171** *e*PKPbc **PKPbc** **07 29 03.5 +0.3**

IDC 07 07:11:49.0±2.7, 0.77N×126.50E, h0km, mb3.9/2, mb1 4.3/3, mb1mx3.6/62, mbtmp4.1/3, ML4.1/1, MS4.0/2, Ms1 3.9/2, ms1mx2.7/45, Error ellipse: s-maj=123.7km s-min=41.9km az=69.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**18.77**	**183**	P	Pn	07 16 10.6	+0.4
	0.4nm,0.3s,baz=10.0,slow=14,SNR=3.8						
WRA	**Warramunga Arr**	**21.97**	**160**	P	P	07 16 43.3	-1.4
	3.8nm,0.8s,baz=337,slow=12,SNR=3.3						
ASAR	**Alice Springs**	**25.33**	**164**	P	P	07 17 18.1	+0.5
	3.1nm,0.8s,baz=341,slow=11,SNR=8.1						
STKA	**Stephens Creek**	**35.48**	**158**	LR	LR	07 34 29.9	
	comp=E,86nm,18.4s,baz=11,slow=38						
DZM	**Mont Dzumac**	**45.08**	**123**	LR	LR	07 39 04.5	
	comp=E,460nm,19.9s,baz=148,slow=36						
TORD	**Torodi Ar. Bea**	**123.57**	**286**	PKP	PKPdf	07 30 49.3	-0.3
	2.0nm,1.2s,baz=98,slow=1.8,SNR=3.6						

*CSEM **07** 07:18:07.4, 37.23N×28.22E, h14km, MD2.4*
ISK 07 07:18:07.4, 37.23N×28.22E, h14km, MD2.4, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.11**	**151**	*e*PG	Pg	07 18 10.9	+0.2
YER				*e*SG	Sb	07 18 13.4	-0.5
YER	**Yerkesik**	**0.11**	**151**	*e*Pg	Pg	07 18 10.9	+0.2
YER				*e*Sg	Sb	07 18 13.4	-0.5
DALY	**Dalyan (Mu˘la**	**0.54**	**139**	*e*PG	Pb	07 18 18.4	-0.3
DALY				*e*SG	Sb	07 18 26.6	+0.3
DALY	**Dalyan (Mu˘la**	**0.54**	**139**	*e*Pg	Pb	07 18 18.4	-0.2
DALY				*e*Sg	Sb	07 18 26.6	+0.4
BODT	**Bodrum**	**0.74**	**257**	*e*PG	Pb	07 18 22.2	+0.1
BODT				*e*SG	Sb	07 18 33.1	+1.0
BODT	**Bodrum**	**0.74**	**257**	*e*Pg	Pb	07 18 22.2	+0.1
BODT				*e*Sg	Sb	07 18 33.1	+1.0
AYDB	**Zeytinkoy-Aydi**	**0.76**	**340**	*e*PG	Pb	07 18 22.6	+0.1
AYDB	**Zeytinkoy-Aydi**	**0.76**	**340**	*e*Pg	Pb	07 18 22.6	+0.1

DDA 07 07:18:53.3, 39.04N×28.79E, h8km, Md2.3, Suspected Mining explosion., Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.06**	**271**	*i* P	Pg	07 18 54.4	-0.8
DEMI				*i* S	Sg	07 18 57.9	+1.4
GDZ	**Gediz**	**0.54**	**85**	*i* P	Pg	07 19 03.7	-0.1
GDZ				*i* S	Sb	07 19 12.6	-0.5
MANT	**Manisa**	**0.58**	**198**	*i* P	Pg	07 19 03.2	-1.3
MANT				*i* S	Sb	07 19 13.2	-1.0

*ISCJB **07** 07:18:59.7±1.0, 6.92N±0.07×73.29W±0.06, h127km±7km, Error ellipse: s-maj=12.6km s-min=7.3km az=145.4*
*FUNV **07** 07:19:00.5, 6.77N×73.32W, h125km, MW2.5*
*RSNC **07** 07:19:01.5±0.9, 6.88N×73.33W, h118km±7km, ML2.0*
ISC 07 07:18:59.9±1.7, 6.87N±0.08×73.28W±0.06, h126km±10km, n11, σ0°76/19, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GIRC	**Giron, Santand**	**0.23**	**23**⇓	*i*P	**Pn**	**07 19 17.8**	**+0.2**
GIRC				*e*S	**Sn**	**07 19 29.8**	**-1.0**
BARC	**Barichara**	**0.29**	**160**	*e*P	**Pn**	**07 19 18.2**	**+0.3**
BARC				*e*S	**Sn**	**07 19 31.3**	**-0.1**
BARC				*i*		07 19 32.6	
	comp=Z,80nm,0.2s						
BRRC	**Barranca, Sant**	**0.49**	**299**	*e*P	**Pn**	**07 19 18.6**	**+0.1**
BRRC				*e*S	**Sn**	**07 19 32.2**	**-0.2**
BRRC				*i*		07 19 33.4	
	comp=E,61nm,0.1s						
CBRI	**Barrientos, No**	**0.97**	**30**	*e*P	**Pn**	**07 19 23.1**	**+0.7**
CBRI				*i*		07 19 44.0	
	comp=Z,9.8nm,0.3s						
OCAC	**Ocana**	**1.36**	**358**	*e*P	**Pn**	**07 19 26.6**	**+0.2**
OCAC				*i*		07 19 27.5	
	comp=E,15nm,0.2s						
OCAC				*e*S	**Sn**	**07 19 46.3**	**-0.2**
CAPV	**Capacho**	**1.38**	**44**	*e*P	**Pn**	**07 19 27.6**	**+1.0**
CAPV				*e*S	**Sn**	**07 19 47.9**	**+1.0**
HELC	**Santa Helena**	**2.33**	**253**	*e*P	**Pn**	**07 19 39.0**	**+0.9**
HELC				*e*S	**Sn**	**07 20 06.5**	**-0.9**
HELC				*i*		07 20 15.0	
	comp=E,3.0nm,0.3s						
SOCV	**Socops**	**2.79**	**60**	*e*P	**Pn**	**07 19 43.4**	**-0.2**
SOCV				*e*S	**Sn**	**07 20 16.5**	**-0.9**
VIRV	**Villa del Rosa**	**3.71**	**13**	*e*P	**Pn**	**07 19 56.2**	**+0.4**
VIRV				*e*S	**Sn**	**07 20 37.8**	**-1.3**
CURV	**Curarigua**	**4.53**	**46**	*e*P	**Pn**	**07 20 07.5**	**+0.7**
BAUV	**El Baul**	**5.58**	**68**	*e*P	**Pn**	**07 20 20.9**	**0.0**

IDC 07 07:20:19.3±8.9, 28.14S×177.58W, h0km, mb4.1/3, mb1 4.2/3, mb1mx3.8/24, mbtmp4.1/3, Error ellipse: s-maj=161.1km s-min=26.1km az=78.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.15**	**195**	Pn	Pn	07 20 42.8	+0.1
	308nm,0.3s,baz=330,slow=4.1,SNR=6.7						
RAO				Sn	Sn	07 20 59.6	+0.5
	362nm,0.3s,baz=303,slow=23,SNR=4.4						
STKA	**Stephens Creek**	**35.41**	**254**	P	P	07 27 17.6	+0.5
	3.3nm,0.7s,baz=117,slow=4.5,SNR=3.2						
ASAR	**Alice Springs**	**43.65**	**264**	P	P	07 28 25.4	-0.6
	1.2nm,0.8s,baz=99,slow=6.7,SNR=9.6						
WRA	**Warramunga Arr**	**44.43**	**270**	P	P	07 28 32.3	0.0
	1.9nm,0.8s,baz=110,slow=7.8,SNR=7.0						

IDC 07 07:24:23.8±4.6, 28.59S×177.05W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.6/21, mbtmp3.6/2, Error ellipse: s-maj=110.3km s-min=31.0km az=123.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.00**	**229**	Pn	Pn	07 24 45.4	+0.3
	152nm,0.3s,baz=120,slow=7.9,SNR=9.5						
RAO				Sn	Sn	07 25 00.5	+0.6
	514nm,0.3s,baz=61,slow=17,SNR=9.2						
ASAR	**Alice Springs**	**44.06**	**265**	P	P	07 32 33.6	-0.1
	0.6nm,0.8s,baz=108,slow=8.9,SNR=4.4						
WRA	**Warramunga Arr**	**44.89**	**270**	P	P	07 32 40.1	-0.3
	1.0nm,0.9s,baz=110,slow=8.1,SNR=6.5						
FINES	**FINESS Array B**	**143.72**	**341**	PKP	PKPdf	07 43 59.4	-0.7
	0.5nm,0.7s,baz=52,slow=2.3,SNR=3.7						

*IDC **07** 07:26:53.8±2.9, 53.61N×90.99E, h0km, mb1 3.3/4, mb1mx3.1/56, mbtmp3.3/4, ML2.8/4, Error ellipse: s-maj=26.3km s-min=20.3km az=77.0*
ISC 07 07:26:54.6±4.2, 53.7N±0.1×90.9E±0.2, h10km, n9, σ1°20/11, 4C-2D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**3.58**	**276**	*i*		07 48 09.2	
	baz=92,slow=318,SNR=7.6						
ZALV	**Zalesovo Beam**	**3.58**	**276**	Pn	**Pn**	**07 27 50.5**	**+0.4**
	1.1nm,0.3s,baz=88,slow=12,SNR=24						
ZALV				Pg	Pb	07 27 55.9	-2.0
	1.6nm,0.3s,baz=97,slow=16,SNR=35						
ZALV				Lg	Lg	07 28 45.5	
	2.0nm,0.3s,baz=90,slow=24,SNR=9.1						
TLY	**Talaya**	**8.04**	**100**	Lg	Lg	07 30 55.7	
	0.0nm,0.3s,baz=214,slow=23,SNR=7.8						
KURK	**Kurchatov**	**8.09**	**253**	⇑Pn	**Pn**	**07 28 51.3**	**-0.6**
	3.6nm,0.7s						
KURK				⇑Sn	**Sn**	**07 30 25.5**	**+2.1**
	9.7nm,0.9s						
KURK				⇓Lg	Lg	07 31 12.9	
	44nm,1.0s						
KURBB	**Kurchatov Arra**	**8.18**	**253**	Pn	**Pn**	**07 28 53.5**	**+0.2**
	0.2nm,0.3s,baz=65,slow=14,SNR=18						
KURBB				Sn	**Sn**	**07 30 26.4**	**+0.7**
	0.1nm,0.3s,baz=66,slow=25,SNR=9.3						
KURBB				Lg	Lg	07 31 13.6	
	0.1nm,0.3s,baz=68,slow=33,SNR=6.9						
MK31	**Makanchi Array**	**8.83**	**222**	⇑Pn	**Pn**	**07 29 01.9**	**-0.3**
	0.9nm,0.5s,baz=35,slow=12,SNR=14						
MK31				⇓Sn	**Sn**	**07 30 41.2**	**-0.5**
	2.9nm,0.7s,baz=40,slow=20,SNR=4.6						
MK31				⇑Lg	Lg	07 31 30.5	
	15nm,0.8s,baz=37,slow=27,SNR=4.4						
MKAR	**Makanchi Array**	**8.83**	**222**	Pn	**Pn**	**07 29 03.4**	**+1.2**
	0.2nm,0.3s,baz=40,slow=13,SNR=15						
MKAR				Sn	**Sn**	**07 30 41.9**	**+0.2**
	0.2nm,0.3s,baz=32,slow=22,SNR=7.1						
MKAR				Lg	Lg	07 31 30.9	
	0.2nm,0.3s,baz=45,slow=29,SNR=6.9						
SONM	**Songino Array**	**11.46**	**115**	Lg	Lg	07 32 49.1	
	0.3nm,0.3s,baz=302,slow=28,SNR=7.7						
BVAR	**Borovoye Array**	**12.24**	**275**	Pn	**Pn**	**07 29 49.2**	**+0.5**
	0.1nm,0.3s,baz=67,slow=11,SNR=2.8						
BVAR				Sn	**Sn**	**07 32 03.1**	**-2.0**
	0.2nm,0.3s,baz=72,slow=24,SNR=3.3						

*ISCJB **07** 07:33:41.8±0.6, 39.18N±0.04×28.97E±0.06, h13km±6km, Error ellipse: s-maj=9.2km s-min=4.8km az=43.3*
*DDA **07** 07:33:41.4, 39.24N×28.94E, h7km, Md2.7*
*CSEM **07** 07:33:42.0±0.2, 39.17N×28.95E, h8km, MD2.7, Error ellipse: s-maj=6.1km s-min=3.3km az=135.0*
ISC 07 07:33:41.3±1.1, 39.20N±0.04×28.95E±0.04, h18km±5km, n13, σ0°32/22, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.24**	**230**	*i* P	**Pg**	**07 33 47.4**	**+0.5**
DEMI				*i* S	**Sb**	**07 33 50.9**	**+0.1**
DEMI	**Demirci**	**0.24**	**230**	P	**Pg**	**07 33 47.4**	**+0.5**
DEMI				S	**Sb**	**07 33 50.9**	**+0.1**
GDZ	**Gediz**	**0.42**	**104**	*i* P	**Pb**	**07 33 50.6**	**+0.2**
GDZ				*i* S	**Sb**	**07 33 56.9**	**+0.3**
GDZ	**Gediz**	**0.42**	**104**	P	**Pb**	**07 33 50.6**	**+0.2**
GDZ				S	**Sb**	**07 33 56.9**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**57**	*e*PG	**Pg**	**07 33 50.9**	**0.0**
TVSB				*e*SG	**Sg**	**07 33 57.0**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**57**	*e*Pg	**Pg**	**07 33 50.9**	**0.0**
TVSB				*e*Sg	**Sg**	**07 33 57.0**	**-0.3**
KULA	**Kula-Manisa**	**0.72**	**199**	*e*PG	**Pg**	**07 33 55.7**	**+0.3**
KULA	**Kula-Manisa**	**0.72**	**199**	*e*Pg	**Pg**	**07 33 55.7**	**+0.3**
MANT	**Manisa**	**0.77**	**204**	*i* P	**Pb**	**07 33 56.2**	**-0.1**
MANT				*i* S	**Sb**	**07 34 06.1**	**-0.4**
MANT	**Manisa**	**0.77**	**204**	P	**Pb**	**07 33 56.2**	**-0.1**
MANT				S	**Sb**	**07 34 06.1**	**-0.4**
IGD	**Bursa**	**1.08**	**10**	*i* P	**Pn**	**07 34 01.3**	**-0.4**
IGD				*i* S	**Sn**	**07 34 16.5**	**+0.3**
ARMT	**Armutlu**	**1.37**	**357**	*e*PN	**Pg**	**07 34 08.1**	**+0.3**
ARMT	**Armutlu**	**1.37**	**357**	*e*Pn	**Pg**	**07 34 08.1**	**+0.3**

*IDC **07** 07:40:01.9±0.9, 29.96N×69.36E, h0km, mb3.9/11, mb1 4.1/13, mb1mx3.8/54, mbtmp3.9/13, ML3.7/2, MS3.1/2, Ms1 3.1/2, ms1mx2.5/40, Error ellipse: s-maj=23.4km s-min=17.6km az=48.0*
*ISCJB **07** 07:40:03.3±0.8, 30.13N±0.09×69.37E±0.07, h15km, mb3.8/11, MS3.2/1, Error ellipse: s-maj=13.7km s-min=7.9km az=10.2*
ISC 07 07:40:04.0±0.9, 30.0N±0.1×69.23E±0.06, h15km, n21, σ2°63/22, mb3.9/11, Pakistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THN	**Thein Dam**	**6.06**	**65**	*e*P	**Pn**	**07 41 29.0**	**-4.0**
THN				*e*S	**Sn**	**07 42 40.0**	**-2.1**
KUDL	**Kundal**	**6.63**	**105**	*e*P	Pb	07 41 52.3	-6.6
KUDL				*e*S	**Sb**	**07 43 21.3**	**+3.4**
KUDL				IAML		07 43 55.6	
	comp=E,13nm,1.2s						
KUDL				IAML		07 43 56.5	
	comp=N,28nm,0.8s						
SDNR	**Sundarnagar**	**6.83**	**76**	*e*P	**Pn**	**07 41 42.6**	**-1.0**
SDNR				*ex*	**Sg**	**07 43 49.0**	**+5.9**
BHGR	**Bahadurgarh**	**6.86**	**99**	*e*S	**Sb**	**07 43 21.4**	**-3.3**
SONA	**Sohna**	**7.10**	**102**	*e*S	**Sb**	**07 43 29.8**	**-1.7**
SONA				IAML		07 43 56.5	
	comp=N,18nm,0.3s						
SONA				IAML		07 43 57.9	
	comp=E,29nm,0.1s						
NDI	**New Delhi**	**7.10**	**99**	*e*P	**Pn**	**07 41 43.0**	**-4.4**
NDI				*e*S	**Sn**	**07 43 11.0**	**+3.1**
GEYT	**Alibeck**	**12.13**	**314**	LR	LR	07 48 35.9	
	comp=E,63nm,18.6s,baz=285,slow=42						
AAK	**Ala-Archa**	**13.29**	**17**	Pn	**Pn**	**07 43 11.0**	**-1.2**
	comp=E,0.6nm,0.3s,baz=179,slow=10.0,SNR=3.9						
MKAR	**Makanchi Array**	**19.59**	**28**	P	**P**	**07 44 30.2**	**-1.3**
	comp=E,0.1nm,0.3s,baz=204,slow=12,SNR=10						
KURBB	**Kurchatov Arra**	**21.74**	**16**	P	**P**	**07 44 54.2**	**-0.5**
	comp=E,2.5nm,0.7s,baz=208,slow=9.9,SNR=13						
AKTO	**Aktyubinsk**	**22.07**	**341**	P	**P**	**07 44 59.2**	**+1.0**
	comp=E,1.6nm,0.6s,baz=154,slow=8.4,SNR=6.7						
BVAR	**Borovoye Array**	**23.00**	**2**	P	**P**	**07 45 08.3**	**+0.2**
	comp=E,0.4nm,0.5s,baz=184,slow=8.9,SNR=4.5						
KBZ	**Khabaz**	**24.99**	**310**	P	**P**	**07 45 29.0**	**+2.0**
	comp=E,1.5nm,0.7s,baz=114,slow=11,SNR=2.3						
ZALV	**Zalesovo Beam**	**26.45**	**21**	P	**P**	**07 45 42.3**	**+2.1**
	comp=E,1.5nm,0.3s,baz=224,slow=10,SNR=7.2						
CMAR	**Chiang Mai Arr**	**29.35**	**106**	P	**P**	**07 46 06.2**	**-0.3**
	comp=E,1.1nm,0.3s,baz=292,slow=12,SNR=6.3						
BRTR	**Keskin Array B**	**30.59**	**298**	P	**P**	**07 46 20.1**	**+2.7**
	comp=E,1.1nm,0.6s,baz=119,slow=10,SNR=5.9						
FINES	**FINESS Array B**	**42.22**	**331**	LR	LR	08 08 32.8	
	comp=E,30nm,19.9s,baz=12,slow=40						
TORD	**Torodi Ar. Bea**	**64.19**	**271**	P	**P**	**07 50 38.0**	**-0.5**
	comp=E,1.5nm,1.0s,baz=58,slow=5.8,SNR=3.7						
WRA	**Warramunga Arr**	**79.94**	**120**	P	**P**	**07 52 12.2**	**-0.6**
	comp=E,0.9nm,0.7s,baz=323,slow=4.9,SNR=8.0						
ASAR	**Alice Springs**	**81.87**	**123**	P	**P**	**07 52 22.6**	**-0.4**
	0.2nm,0.8s,baz=303,slow=6.0,SNR=12						
YKA	**Yellowknife Ar**	**87.76**	**2**	P	**P**	**07 52 52.7**	**+0.7**
	comp=E,0.8nm,0.8s,baz=348,slow=4.9,SNR=9.8						

IDC 07 07:40:12.9±5.6, 28.01S×176.54W, h0km, mb4.0/2, mb1 4.3/2, mb1mx3.7/24, mbtmp4.0/2, MS3.6/1, Ms1 3.6/1, ms1mx2.7/23, Error ellipse: s-maj=115.3km s-min=50.6km az=111.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res

ASAR	**Alice Springs**	**40.22 266**	P	P	07 51 12.8	-0.4
	0.6nm,0.5s,baz=102,slow=7.1,SNR=9.6					
WRA	**Warramunga Arr**	**41.00 272**	P	P	07 51 18.9	-0.7
	0.3nm,0.3s,baz=110,slow=8.0,SNR=6.1					
FINES	**FINESS Array B**	**142.04 339**	PKP	PKPdf	08 03 08.4	+0.5
	0.3nm,0.3s,baz=2.9,slow=3.8,SNR=4.9					

ISK ***07*** *07:52:21.8, 39˚.22N×26˚.80E, h8km, MD2.8*
ATH ***07*** *07:52:22.3, 39˚.10N×26˚.89E, h12km±5km, ML2.0/3, Error ellipse: s-maj=6.9km s-min=1.4km az=238.0*
CSEM ***07*** *07:52:22.7±0.2, 39˚.17N×26˚.84E, h10km, MD2.8, Error ellipse: s-maj=5.6km s-min=4.8km az=101.0*
ISCJB ***07*** *07:52:22.7±0.4, 39˚.17N±0˚.02×26˚.86E±0˚.03, h11km±3km, Error ellipse: s-maj=4.6km s-min=3.2km az=171.1*
DDA ***07*** *07:52:23.6, 39˚.09N×26˚.77E, h8km, Md2.7*
THE ***07*** *07:52:24.5, 39˚.06N×26˚.73E, h0km±3km, ML2.1/3, Error ellipse: s-maj=4.0km s-min=0.9km az=68.0*

ISC 07 07:52:22.9±0.9, 39˚.15N±0˚.02×26˚.82E±0˚.02, h17km±7km, n53, σ0º90/78, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DKL	**Dikili**	**0.10**	**139**	*e*PG		**Pb**		**07 52 26.3**	**-0.1**
DKL	**Dikili**	**0.10**	**139**	*e*Pg		**Pb**		**07 52 26.3**	**-0.1**
AYVA	**Ayvalik**	**0.19**	**328**	*i* P		**Pb**		**07 52 28.8**	**+0.9**
AYVA				*i* S		**Sg**		**07 52 32.5**	**+1.8**
AYVA	**Ayvalik**	**0.19**	**328**	P		**Pb**		**07 52 28.8**	**+0.9**
AYVA				S		**Sg**		**07 52 32.5**	**+1.8**
PRK	**Paraskevi**	**0.44**	**283**	P		**Pb**		**07 52 32.9**	**+0.8**
PRK				S		**Sb**		**07 52 38.8**	**+0.4**
PRK	**Paraskevi**	**0.44**	**283**	P		**Pb**		**07 52 32.6**	**+0.5**
PRK				S		**Sb**		**07 52 38.8**	**+0.4**
PRK	**Paraskevi**	**0.44**	**283**	P		**Pb**		**07 52 32.6**	**+0.5**
PRK				S		**Sb**		**07 52 38.7**	**+0.3**
PRK				AML		AML		07 52 39.3	
	comp=E,282µm,0.5s								
PRK				AML		AML		07 52 39.6	
	comp=N,219µm,0.4s								
SIGR	**SIGRI**	**0.75**	**275**	*e*PG		**Pg**		**07 52 36.9**	**-0.7**
SIGR	**SIGRI**	**0.75**	**275**	P		**Pn**		**07 52 38.5**	**-0.2**
SIGR				S		**Sn**		**07 52 49.1**	**-0.6**
SIGR	**SIGRI**	**0.75**	**275**	*e*Pg		**Pg**		**07 52 36.9**	**-0.7**
SIGR	**SIGRI**	**0.75**	**275**	P		**Pn**		**07 52 38.5**	**-0.2**
SIGR				S		**Sn**		**07 52 49.1**	**-0.6**
SIGR	**SIGRI**	**0.75**	**275**	P		**Pb**		**07 52 37.5**	**0.0**
SIGR				S		**Sn**		**07 52 49.5**	**-0.1**
SIGR				AML		AML		07 52 51.0	
	comp=E,682µm,0.3s								
SIGR				AML		AML		07 52 51.2	
	comp=N,340µm,0.4s								
EZN	**Ezine**	**0.78**	**331**	*e*PG		**Pg**		**07 52 36.0**	**-2.1**
EZN				*e*SG		**Sg**		**07 52 46.3**	**-2.0**
EZN	**Ezine**	**0.78**	**331**	*e*Pg		**Pg**		**07 52 36.0**	**-2.1**
EZN				*e*Sg		**Sg**		**07 52 46.3**	**-2.0**
URLA	**Izmir**	**0.81**	**193**	*i* P		**Pg**		**07 52 37.2**	**-1.4**
URLA				*i* S		**Sb**		**07 52 50.4**	**+1.3**
URLA	**Izmir**	**0.81**	**193**	P		**Pg**		**07 52 37.2**	**-1.4**
URLA				S		**Sb**		**07 52 50.4**	**+1.3**
AKS	**Akhisar**	**0.82**	**109**	*e*PG		**Pb**		**07 52 39.3**	**+0.6**
AKS	**Akhisar**	**0.82**	**109**	*e*Pg		**Pb**		**07 52 39.3**	**+0.6**
IZM	**Izmir**	**0.83**	**155**	*e*PG		**Pb**		**07 52 38.9**	**+0.1**
IZM				*e*SG		**Sn**		**07 52 52.3**	**+0.7**
IZM	**Izmir**	**0.83**	**155**	*e*Pg		**Pb**		**07 52 38.9**	**+0.1**
BALY	**Balya**	**0.86**	**46**	*i* P		**Pn**		**07 52 41.3**	**+1.1**
BALY				*i* S		**Sn**		**07 52 53.3**	**+1.0**
BALY	**Balya**	**0.86**	**46**	P		**Pn**		**07 52 41.3**	**+1.1**
BALY				S		**Sn**		**07 52 53.3**	**+1.0**
BOZC	**Bozcaada**	**0.91**	**320**	*i* P		**Pn**		**07 52 41.6**	**+0.7**
BOZC				*i* S		**Sn**		**07 52 54.3**	**+0.7**
ZEY	**˙zmir**	**0.94**	**195**	*i* P		**Pg**		**07 52 39.6**	**-1.6**
ZEY				*i* S		**Sb**		**07 52 53.5**	**+0.6**
BALB	**Balikesir**	**0.96**	**59**	*e*PG		**Pg**		**07 52 40.1**	**-1.4**
BALB	**Balikesir**	**0.96**	**59**	*e*Pg		**Pg**		**07 52 40.1**	**-1.4**
CHOS	**Chios island**	**0.97**	**218**	*e*PG		**Pb**		**07 52 41.6**	**+0.4**
CHOS				*e*SG		**Sn**		**07 52 55.9**	**+0.8**
CHOS	**Chios island**	**0.97**	**218**	P		**Pg**		**07 52 40.6**	**-1.1**
CHOS				S		**Sb**		**07 52 54.2**	**+0.4**
CHOS	**Chios island**	**0.97**	**218**	P		**Pg**		**07 52 40.6**	**-1.1**
CHOS	**Chios island**	**0.97**	**218**	*e*Pg		**Pb**		**07 52 41.6**	**+0.4**
CHOS				S		**Sb**		**07 52 54.4**	**+0.6**
CHOS				*e*Sg		**Sn**		**07 52 55.9**	**+0.8**
CHOS	**Chios island**	**0.97**	**218**	P		**Pg**		**07 52 40.1**	**-1.6**
CHOS				S		**Sb**		**07 52 54.4**	**+0.6**
CHOS				AML		AML		07 52 54.9	
	comp=E,259µm,0.2s								
CHOS				AML		AML		07 52 56.1	
	comp=N,147µm,0.3s								
DGB	**˙zmir**	**1.10**	**177**	*i* P		**Pb**		**07 52 43.6**	**+0.2**
DGB				*i* S		**Sn**		**07 52 58.5**	**+0.3**
LPK	**Lapseki**	**1.22**	**358**	*e*PN		**Pn**		**07 52 44.2**	**-1.0**
LPK	**Lapseki**	**1.22**	**358**	*e*Pn		**Pn**		**07 52 44.2**	**-1.0**
KRBG	**Karabiga-Canak**	**1.29**	**16**	*e*PN		**Pn**		**07 52 45.8**	**-0.4**
KRBG	**Karabiga-Canak**	**1.29**	**16**	*e*Pn		**Pn**		**07 52 45.8**	**-0.4**
SMG	**Samos**	**1.44**	**179**	P		**Pg**		**07 52 49.8**	**-0.8**
SMG	**Samos**	**1.44**	**179**	P		**Pg**		**07 52 48.3**	**+0.1**
SMG				S		**Sg**		**07 53 09.3**	**0.0**
SMG	**Samos**	**1.44**	**179**	P		**Pn**		**07 52 48.3**	**+0.1**
SMG				S		**Sg**		**07 53 09.3**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**145**	*e*PN		**Pb**		**07 52 50.1**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**145**	*e*Pn		**Pb**		**07 52 50.1**	**+0.3**
ERIK	**Erikli-Kesan**	**1.54**	**351**	*e*PN		**Pn**		**07 52 49.3**	**-0.2**
ERIK	**Erikli-Kesan**	**1.54**	**351**	*e*Pn		**Pn**		**07 52 49.3**	**-0.2**
RKY	**Sarkoy-Tekirda**	**1.56**	**10**	*e*PN		**Pn**		**07 52 49.6**	**-0.3**
RKY	**Sarkoy-Tekirda**	**1.56**	**10**	*e*Pn		**Pn**		**07 52 49.6**	**-0.3**
MRMT	**Marmara Adasi**	**1.57**	**22**	*e*PN		**Pn**		**07 52 49.7**	**-0.3**
MRMT	**Marmara Adasi**	**1.57**	**22**	*e*Pn		**Pn**		**07 52 49.7**	**-0.3**
KCTX	**Karacabey (Bur**	**1.63**	**46**	*e*PN		**Pn**		**07 52 50.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.63**	**46**	*e*Pn		**Pn**		**07 52 50.6**	**-0.2**
SMTH	**Samothraki Isl**	**1.65**	**323**	P		**Pg**		**07 52 54.3**	**-0.4**
SMTH	**Samothraki Isl**	**1.65**	**323**	P		**Pg**		**07 52 54.3**	**-0.4**
ENEZ	**Enez**	**1.67**	**342**	*e*PN		**Pn**		**07 52 51.4**	**+0.1**
ENEZ	**Enez**	**1.67**	**342**	*e*Pn		**Pn**		**07 52 51.4**	**+0.1**

IDC 07 07:54:39.5±6.0, 28˚.02S×177˚.19W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/21, mbtmp3.7/2, Error ellipse: s-maj=233.5km s-min=97.1km az=161.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.39**	**207**	Sn			Sn	07 55 27.1	+1.8
	141nm,0.3s,baz=114,slow=21,SNR=1.6								
ASAR	**Alice Springs**	**44.00**	**264**	P		P		08 02 48.9	-0.2
	0.5nm,0.5s,baz=104,slow=7.2,SNR=6.6								
WRA	**Warramunga Arr**	**44.78**	**269**	P		P		08 02 55.2	0.0
	0.4nm,0.3s,baz=110,slow=8.0,SNR=10								
FINES	**FINESS Array B**	**143.13**	**342**	PKP		PKPdf		08 14 14.2	-0.7
	1.1nm,0.8s,baz=316,slow=5.8,SNR=2.4								

IDC 07 08:00:36.0±9.6, 28˚.21S×176˚.44W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/23, mbtmp3.7/3, Error ellipse: s-maj=212.5km s-min=43.5km az=120.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.67**	**231**	Pn			Pn	08 01 06.8	+0.3
	77nm,0.3s,baz=166,slow=22,SNR=1.5								
RAO				Sn			Sb	08 01 29.2	+0.1
	143nm,0.3s,baz=256,slow=23,SNR=2.1								
STKA	**Stephens Creek**	**36.35**	**254**	P		P		08 07 41.7	-0.2
	2.0nm,1.0s,baz=78,slow=8.1,SNR=1.5								
ASAR	**Alice Springs**	**44.64**	**264**	P		P		08 08 50.4	-0.3
	0.4nm,0.6s,baz=97,slow=6.6,SNR=3.5								
WRA	**Warramunga Arr**	**45.44**	**269**	P		P		08 08 57.0	0.0
	0.6nm,0.6s,baz=110,slow=7.6,SNR=3.9								

ISCJB ***07*** *08:01:22.0±0.2, 45˚.69N±0˚.01×10˚.86E±0˚.02, h10km±1km, Error ellipse: s-maj=2.3km s-min=2.0km az=159.0*
GEN ***07*** *08:01:22.9, 45˚.71N×10˚.96E, h1km, ML3.0*
ROM ***07*** *08:01:22.4±0.1, 45˚.67N×10˚.86E, h3km, Ml3.0/28, Error ellipse: s-maj=1.8km s-min=1.3km az=7.0*
CSEM ***07*** *08:01:22.7±0.1, 45˚.67N×10˚.87E, h5km, ML3.3/22, Error ellipse: s-maj=1.8km s-min=1.5km az=140.0*
IASPEI ***07*** *08:01:22.8±0.9, 45˚.67N±0˚.02×10˚.86E±0˚.02, h5km±5km, Error ellipse: s-maj=3.3km s-min=2.7km az=13.8, GT5*

selection from ISC bulletin GT5 identified by Bond˙¡r and McLaughlin (2009) selection criteria Bond˙¡r and McLaughlin, 'A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009
LDG ***07*** *08:01:23.8±0.1, 45˚.65N×10˚.95E, h2km, Md2.9/4, Ml3.2/15, Error ellipse: s-maj=2.4km s-min=1.4km az=168.0*
VIE ***07*** *08:01:24.3±0.5, 45˚.77N×10˚.94E, h8km, mb2.8/13, ML3.3/16, Error ellipse: s-maj=3.5km s-min=1.9km az=20.0*
PRU ***07*** *08:01:27.5, 45˚.78N×10˚.99E, h10km*
STR ***07*** *08:01:28.1±0.4, 45˚.66N×10˚.37E, h5km, Ml3.2, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
BGR ***07*** *08:01:28.2±0.5, 45˚.81N×10˚.96E, h10km, ML3.1/10, Error ellipse: s-maj=6.7km s-min=4.4km az=5.0*

ISC 07 08:01:22.8±0.8, 45˚.67N±0˚.01×10˚.87E±0˚.01, h5km±5km, n161, σ1º06/246, 5C-6D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BALD	**Monte Baldo**	**0.04**	**296**	*e*Pg		**Pg**		**08 01 24.0**	**-0.3**
BALD				*e*Sg		**Sg**		**08 01 25.1**	**-0.2**
BALD	**Monte Baldo**	**0.04**	**296**	*e*Pg		**Pg**		**08 01 24.0**	**-0.3**
BALD				*e*Sg		**Sg**		**08 01 25.1**	**-0.2**
ROVR	**Rover˚¤ Verone**	**0.14**	**98**	*i* Pg		**Pg**		**08 01 25.7**	**-0.1**
ROVR				Sg		**Sg**		**08 01 28.1**	**+0.3**
ROVR	**Rover˚¤ Verone**	**0.14**	**98**	*i* Pg		**Pg**		**08 01 25.7**	**-0.1**
ROVR				Sg		**Sg**		**08 01 28.1**	**+0.3**
MAGA	**Magasa**	**0.20**	**303**	*i* Pg		**Pg**		**08 01 26.6**	**-0.2**
MAGA				Sg		**Sg**		**08 01 29.7**	**+0.2**
	6µm,0.4s								
MAGA	**Magasa**	**0.20**	**303**	*i* Pg		**Pg**		**08 01 26.6**	**-0.2**
MAGA				Sg		**Sg**		**08 01 29.7**	**+0.2**
	6µm,0.4s								
MARN	**Marana (Italy)**	**0.24**	**97**	*e*Pg		**Pg**		**08 01 27.5**	**-0.1**
MARN				*e*Sg		**Sg**		**08 01 31.2**	**+0.4**
MARN	**Marana (Italy)**	**0.24**	**97**	*e*Pg		**Pg**		**08 01 27.5**	**-0.1**
MARN				*e*Sg		**Sg**		**08 01 31.2**	**+0.4**
SALO	**Salr**	**0.24**	**259**	Pg		**Pg**		**08 01 27.2**	**-0.4**
SALO				Sg		**Sg**		**08 01 32.0**	**+1.1**
	3µm,0.8s								
SALO	**Salr**	**0.24**	**259**	Pg		**Pg**		**08 01 27.2**	**-0.4**
SALO				Sg		**Sg**		**08 01 32.0**	**+1.1**
	3µm,0.8s								
DDS	**Dosso del Somm**	**0.31**	**46**	*e*Pg		**Pg**		**08 01 29.1**	**+0.2**
DDS				*e*Sg		**Sg**		**08 01 33.7**	**+0.6**
DDS	**Dosso del Somm**	**0.31**	**46**	*e*Pg		**Pg**		**08 01 29.1**	**+0.2**
DDS				*e*Sg		**Sg**		**08 01 33.7**	**+0.6**
RNI	**Roncone**	**0.36**	**332**	*e*Pg		**Pg**		**08 01 29.9**	**0.0**
RNI				*e*Sg		**Sg**		**08 01 36.2**	**+1.6**
RNI	**Roncone**	**0.36**	**332**	*e*Pg		**Pg**		**08 01 29.9**	**0.0**
RNI				*e*Sg		**Sg**		**08 01 36.2**	**+1.6**
MABI	**Malga Bissina**	**0.46**	**328**	Pg		**Pg**		**08 01 31.6**	**-0.1**
	358nm,0.3s								
MABI	**Malga Bissina**	**0.46**	**328**	Pg		**Pg**		**08 01 31.6**	**-0.1**
	358nm,0.3s								
PANI	**Panarotta**	**0.50**	**40**	*e*Pg		**Pg**		**08 01 32.7**	**+0.2**
PANI				*e*Sg		**Sg**		**08 01 39.7**	**+0.6**
CGRP	**Cima Grappa**	**0.69**	**72**	Pg		**Pg**		**08 01 35.9**	**-0.1**
	673nm,0.4s								
CGRP	**Cima Grappa**	**0.69**	**72**	*e*Pg		**Pg**		**08 01 36.0**	**-0.1**
CGRP				*e*Sg		**Sg**		**08 01 45.1**	**+0.1**
CGRP	**Cima Grappa**	**0.69**	**72**	Pg		**Pg**		**08 01 35.9**	**-0.1**
	673nm,0.4s								
CGRP				*e*Sg		**Sg**		**08 01 45.1**	**+0.1**
CARE	**Lago del Cares**	**0.77**	**351**	*e*Pg		**Pg**		**08 01 37.5**	**-0.1**
CARE	**Lago del Cares**	**0.77**	**351**	*e*P		**Pg**		**08 01 37.5**	**-0.1**
MDI	**Monti di Nese**	**0.82**	**278**	Pg		**Pg**		**08 01 37.9**	**-0.6**
	164nm,0.3s								
MDI	**Monti di Nese**	**0.82**	**278**	Pg		**Pg**		**08 01 37.9**	**-0.6**
	164nm,0.3s								
APPI	**Appiano**	**0.85**	**17**	Pg		**Pg**		**08 01 39.2**	**0.0**
	665nm,0.4s								
APPI	**Appiano**	**0.85**	**17**	Pg		**Pg**		**08 01 39.2**	**0.0**
	665nm,0.4s								
KOSI	**Kohlern**	**0.87**	**24**	Pg		**Pg**		**08 01 39.7**	**+0.1**
	227nm,0.3s								
KOSI	**Kohlern**	**0.87**	**24**	Pg		**Pg**		**08 01 39.7**	**+0.1**
	227nm,0.3s								
BRMO	**Bormio**	**0.88**	**337**	Pg		**Pg**		**08 01 40.4**	**+0.7**
	193nm,0.7s								
BRMO	**Bormio**	**0.88**	**337**	Pg		**Pg**		**08 01 40.4**	**+0.7**
	193nm,0.7s								
VARN	**Col Varnada, M**	**0.93**	**69**	*e*Pg		**Pg**		**08 01 40.7**	**+0.1**
VARN	**Col Varnada, M**	**0.93**	**69**	*e*P		**Pg**		**08 01 40.7**	**+0.1**
BERNI	**Berninapass**	**0.95**	**322**	Pg		**Pg**		**08 01 40.7**	**-0.4**
	147nm,0.5s								
BERNI	**Berninapass**	**0.95**	**322**	Pg		**Pg**		**08 01 40.7**	**-0.4**
	147nm,0.5s								
MOSI	**Grossmontoni**	**0.97**	**347**	Pg		**Pg**		**08 01 41.8**	**+0.2**
	772nm,0.5s								
MOSI	**Grossmontoni**	**0.97**	**347**	Pg		**Pg**		**08 01 41.8**	**+0.2**
	772nm,0.5s								
AGOR	**Agordo**	**1.03**	**53**	Pg		**Pg**		**08 01 42.5**	**-0.1**
	545nm,0.4s								
AGOR	**Agordo**	**1.03**	**53**	*e*Pg		**Pg**		**08 01 42.4**	**-0.1**
AGOR				*e*Sg		**Sn**		**08 01 58.6**	**-0.1**
FUORN	**Ofenpass-Fuorn**	**1.04**	**336**	Pg		**Pg**		**08 01 42.3**	**-0.5**
	243nm,0.5s								
FUORN	**Ofenpass-Fuorn**	**1.04**	**336**	Pg		**Pg**		**08 01 42.3**	**-0.5**
	243nm,0.5s								
ABSI	**Aberstueckl**	**1.11**	**16**	Pg		**Pg**		**08 01 43.9**	**-0.2**
	475nm,0.5s								
ABSI	**Aberstueckl**	**1.11**	**16**	Pg		**Pg**		**08 01 43.9**	**-0.2**
	475nm,0.5s								
ERBM	**Eremo**	**1.29**	**195**	Pg		**Pb**		**08 01 47.9**	**+0.3**
	220nm,1.1s								
ERBM	**Eremo**	**1.29**	**195**	Pg		**Pb**		**08 01 47.9**	**+0.3**
	220nm,1.1s								
MUGIO	**Muggio**	**1.30**	**282**	Pg		**Pn**		**08 01 47.2**	**-0.5**
	239nm,0.4s								
MUGIO	**Muggio**	**1.30**	**282**	Pg		**Pn**		**08 01 47.2**	**-0.5**
	239nm,0.4s								
GRAM	**Graiana**	**1.30**	**206**	P		**Pn**		**08 01 47.1**	**-0.6**
DAVOX	**Davos/Dischmat**	**1.31**	**329**	Pg		**Pg**		**08 01 47.8**	**-0.1**
	123nm,0.3s								
DAVOX	**Davos/Dischmat**	**1.31**	**329**	Pg		**Pg**		**08 01 47.8**	**-0.1**
	123nm,0.3s								
ROSI	**Rosskopf**	**1.32**	**16**	Pg		**Pn**		**08 01 47.8**	**-0.2**
	347nm,0.5s								
ROSI	**Rosskopf**	**1.32**	**16**	Pg		**Pn**		**08 01 47.8**	**-0.2**
	347nm,0.5s								
ZCCA	**Zocca**	**1.32**	**177**	Pg		**Pg**		**08 01 48.6**	**+0.5**
	189nm,0.8s								
ZCCA	**Zocca**	**1.32**	**177**	Pg		**Pg**		**08 01 48.6**	**+0.5**
	189nm,0.8s								
TUE	**Stuetta**	**1.33**	**308**	Pg		**Pn**		**08 01 47.9**	**-0.3**
	228nm,0.5s								
TUE	**Stuetta**	**1.33**	**308**	Pg		**Pn**		**08 01 47.9**	**-0.3**
	228nm,0.5s								
BOB	**Bobbio (Coli)**	**1.35**	**229**	Pg		**Pn**		**08 01 48.3**	**0.0**
	119nm,0.4s								
BOB	**Bobbio (Coli)**	**1.35**	**229**	Pg		**Pn**		**08 01 48.3**	**0.0**
	119nm,0.4s								
FETA	**Feichten**	**1.36**	**356**	Pg		**Pn**		**08 01 48.8**	**+0.2**
	46nm,0.4s,SNR=48								
FETA				Sg		**Sn**		**08 02 07.1**	**+0.1**
	36nm,0.2s								
MTRZ	**Monterenzio**	**1.36**	**162**	Pg		**Pg**		**08 01 50.3**	**+1.4**
	188nm,0.5s								
MTRZ	**Monterenzio**	**1.36**	**162**	Pg		**Pg**		**08 01 50.3**	**+1.4**
	188nm,0.5s								
STAL	**STALIGIAL**	**1.42**	**65**	Pg		**Pb**		**08 01 49.8**	**+0.1**
	685nm,0.4s								
STAL	**STALIGIAL**	**1.42**	**65**	Pg		**Pb**		**08 01 49.8**	**+0.1**
	685nm,0.4s								
CODM	**Codolo**	**1.47**	**210**	P		**Pb**		**08 01 50.5**	**-0.1**
FNVD	**Fontana Vidola**	**1.51**	**173**	Pg		**Pn**		**08 01 50.6**	**0.0**
	68nm,0.2s								
FNVD	**Fontana Vidola**	**1.51**	**173**	Pg		**Pn**		**08 01 50.6**	**0.0**
	68nm,0.2s								
SARO	**Sassorosso**	**1.52**	**193**	P		**Pn**		**08 01 51.2**	**+0.5**
RISI	**Rein**	**1.53**	**33**	Pg		**Pb**		**08 01 51.7**	**-0.1**
	668nm,0.3s								
RISI	**Rein**	**1.53**	**33**	Pg		**Pb**		**08 01 51.7**	**-0.1**
	668nm,0.3s								
SQTA	**Sankt Quirin**	**1.57**	**9**	Pg		**Pg**		**08 01 52.8**	**+0.4**
ABTA	**Abfaltersbach**	**1.57**	**46**	Pg		**Pg**		**08 01 53.3**	**+0.3**
	87nm,0.3s,SNR=25								
ABTA				Sg		**Sg**		**08 02 13.4**	**0.0**
	57nm,0.3s								
WTTA	**Wattenberg**	**1.68**	**18**	*e*PN		**Pb**		**08 01 54.4**	**0.0**
WTTA				*e*SG		**Sb**		**08 02 16.3**	**+0.4**
WTTA	**Wattenberg**	**1.68**	**18**	*e*Pn		**Pb**		**08 01 54.5**	**+0.1**
WTTA				*e*Pg		**Pg**		**08 01 56.8**	**+1.6**
WTTA				*e*Sg		**Sb**		**08 02 16.5**	**+0.6**
WTTA	**Wattenberg**	**1.68**	**18**	Pg		**Pb**		**08 01 54.3**	**-0.1**
	20nm,0.2s,SNR=25								
WTTA				Sg		**Sb**		**08 02 16.5**	**+0.6**
MOTA	**Moosalm**	**1.69**	**5**	Pg		**Pb**		**08 01 55.0**	**+0.6**
	27nm,0.3s,SNR=16								
WATA	**Walderalm**	**1.74**	**16**	Pg		**Pb**		**08 01 55.3**	**0.0**
	33nm,0.2s,SNR=28								
WATA				Sg		**Sg**		**08 02 18.4**	**-0.3**
	49nm,0.3s								
DAVA	**Damuels**	**1.76**	**338**	*e*Pn		**Pg**		**08 01 57.5**	**+1.0**
DAVA				*e*Sg		**Sg**		**08 02 22.2**	**+2.8**
DAVA	**Damuels**	**1.76**	**338**	Pg		**Pb**		**08 01 55.5**	**-0.1**
	24nm,0.3s,SNR=13								
DAVA	**Damuels**	**1.76**	**338**	Pn		**Pg**		**08 01 57.5**	**+1.0**
DAVA				Sg		**Sg**		**08 02 21.0**	**+1.7**
	71nm,0.3s								
RETA	**Reutte**	**1.82**	**358**	Pg		**Pg**		**08 01 57.9**	**+0.1**
	18nm,0.2s,SNR=9.9								
RETA				Sg		**Sg**		**08 02 22.3**	**+0.9**
	37nm,0.4s								
PTCC	**Patocco-Chiusa**	**1.88**	**66**	Pg		**Pn**		**08 01 56.5**	**+0.8**
	102nm,0.4s								
PTCC	**Patocco-Chiusa**	**1.88**	**66**	Pg		**Pn**		**08 01 56.5**	**+0.8**
	102nm,0.4s								
SFI	**Santa Sofia**	**1.90**	**158**	Pg		**Pn**		**08 01 55.3**	**-0.5**
	5µm,8.6s								
SABO	**M.te Sabotino**	**1.94**	**80**	Pg		**Pn**		**08 01 56.7**	**+0.3**
	277nm,0.3s								
ASQU	**Asqua**	**1.98**	**160**	Pg		**Pn**		**08 01 57.1**	**+0.1**
	49nm,0.7s								
PCP	**Piancastagn**	**1.99**	**236**	P		**Pn**		**08 01 57.6**	**+0.4**
MYKA	**Terra Mystica**	**2.16**	**62**	Pg		**Pb**		**08 02 03.1**	**+0.7**
	11nm,0.4s,SNR=8.8								
MYKA				Sg		**Sg**		**08 02 32.1**	**0.0**
	19nm,0.3s								
TRAV	**Traversella**	**2.20**	**267**	P		**Pn**		**08 02 00.4**	**+0.4**
TRAV				S		**Sn**		**08 02 25.9**	**-1.7**
KBA	**Koelnbreinsper**	**2.22**	**50**	*e*Pn		**Pb**		**08 02 03.7**	**+0.2**
KBA				*e*Sg		**Sg**		**08 02 33.7**	**-0.5**
KBA	**Koelnbreinsper**	**2.22**	**50**	Pg		**Pb**		**08 02 03.6**	**+0.1**
	15nm,0.2s,SNR=26								
KBA				Sg		**Sg**		**08 02 33.7**	**-0.5**
RJOB	**Jochberg**	**2.46**	**32**	*e*Pn		**Pb**		**08 02 07.0**	**-0.5**
RJOB				*e*Sg		**Sg**		**08 02 41.3**	**-0.5**
FUR	**Furstenfeldbru**	**2.52**	**6**	*e*Sg		**Sg**		**08 02 43.8**	**+0.2**
FUR	**Furstenfeldbru**	**2.52**	**6**	Sg		**Sg**		**08 02 43.8**	**+0.2**
OBKA	**Obir**	**2.70**	**70**	*e*Pn		**Pb**		**08 02 09.6**	**-2.0**
OBKA				*e*Sg		**Sg**		**08 02 50.9**	**+1.5**
OBKA	**Obir**	**2.70**	**70**	Pn		**Pn**		**08 02 08.3**	**+1.4**
	1.6nm,0.1s								
OBKA				Sg		**Sg**		**08 02 50.2**	**+0.8**
	35nm,0.3s								
IMI	**Imperia**	**2.75**	**231**	P		**Pn**		**08 02 06.6**	**-1.0**
IMI				S		**Sn**		**08 02 37.7**	**-3.5**
LPG	**La Plagne**	**2.90**	**268**	*e*Pn		**Pn**		**08 02 10.8**	**+1.0**
LPG				*e*Sn		**Sn**		**08 02 43.7**	**-1.4**
	15nm,0.3s								
LPG	**La Plagne**	**2.90**	**268**	*e*P

HAU				*e*Sg		**Sg**	**08 03 26.4**	**-1.1**
	9.8nm,0.4s,SNR=1.0							
LMR	**La Mourre**	**3.89**	**235**	*e*Pn		**Pn**	**08 02 23.4**	**+0.2**
	SNR=1.0							
LMR				*e*Sn		**Sn**	**08 03 07.1**	**-2.2**
	9.1nm,0.4s,SNR=1.0							
LMR	**La Mourre**	**3.89**	**235**	*e*Pn		**Pn**	**08 02 23.4**	**+0.2**
	SNR=1.0							
LMR				*e*Sn		**Sn**	**08 03 07.1**	**-2.2**
	4.6nm,0.4s,SNR=1.0							
KHC	**Kasperske Hory**	**3.92**	**27**	*e*PN		**Pn**	**08 02 24.1**	**+0.4**
KHC				*e*SN		**Sn**	**08 03 10.1**	**0.0**
KHC				*e*SG		**Sg**	**08 03 26.9**	**-1.9**
	comp=Z,17nm,0.5s							
GRA1	**Grafenberg Arr**	**4.04**	**3**	Pn		**Pn**	**08 02 25.1**	**-0.1**
GRA1				Sg		**Sg**	**08 03 33.8**	**+1.4**
GRF	**Grafenberg Arr**	**4.04**	**3**	*e*Pn		**Pn**	**08 02 25.1**	**-0.1**
GRF				*e*Sg		**Sg**	**08 03 33.8**	**+1.4**
KTD	**Kalmit**	**4.11**	**334**	Pn		**Pn**	**08 02 27.4**	**+1.1**
ROTZ	**Rotzenmuhle**	**4.20**	**12**	*e*Pn		**Pn**	**08 02 27.2**	**-0.3**
ROTZ				*e*Sg		**Sg**	**08 03 35.8**	**-1.9**
ROTZ	**Rotzenmuhle**	**4.20**	**12**	Pn		**Pn**	**08 02 27.2**	**-0.3**
ROTZ				Sg		**Sg**	**08 03 35.8**	**-1.9**
THEF	**They Montfort**	**4.21**	**309**	Pn		**Pn**	**08 02 28.0**	**+0.4**
THEF	**They Montfort**	**4.21**	**309**	Pn		**Pn**	**08 02 28.0**	**+0.4**
VIVF	**Saint-Julien-l**	**4.45**	**262**	*e*Pn		**Pn**	**08 02 31.5**	**+0.6**
	SNR=1.0							
VIVF	**Saint-Julien-l**	**4.45**	**262**	*e*Pn		**Pn**	**08 02 31.5**	**+0.6**
	SNR=1.0							
NKC	**Novy Kostel**	**4.69**	**13**	*e*SG		**Sg**	**08 03 52.2**	**-1.2**
	comp=Z,11nm,0.4s							
SMF	**Signal de Mont**	**4.98**	**284**	*e*Pn		**Pn**	**08 02 37.9**	**-0.3**
	SNR=1.0							
SMF				*e*Sn		**Sn**	**08 03 35.1**	**-1.0**
	7.3nm,0.3s,SNR=1.0							
SMF	**Signal de Mont**	**4.98**	**284**	*e*Pn		**Pn**	**08 02 37.9**	**-0.3**
	SNR=1.0							
SMF				*e*Sn		**Sn**	**08 03 35.1**	**-1.0**
	3.7nm,0.3s,SNR=1.0							
LOR	**Lormes**	**5.10**	**291**	*e*Pn		**Pn**	**08 02 39.5**	**-0.3**
	baz=114,SNR=1.0							
LOR				*e*Sn		**Sn**	**08 03 37.6**	**-1.5**
	8.3nm,0.3s,SNR=1.0							
LOR	**Lormes**	**5.10**	**291**	*e*Pn		**Pn**	**08 02 39.5**	**-0.3**
	SNR=1.0							
LOR				*e*Sn		**Sn**	**08 03 37.6**	**-1.5**
	4.2nm,0.3s,SNR=1.0							
SSF	**Saint Saulge**	**5.28**	**288**	*e*Pn		**Pn**	**08 02 42.1**	**-0.2**
	SNR=1.0							
SSF	**Saint Saulge**	**5.28**	**288**	*e*Pn		**Pn**	**08 02 42.1**	**-0.2**
	SNR=1.0							
AVF	**Avril sur Loir**	**5.33**	**285**	*e*Pn		**Pn**	**08 02 42.7**	**-0.3**
	SNR=1.0							
AVF	**Avril sur Loir**	**5.33**	**285**	*e*Pn		**Pn**	**08 02 42.7**	**-0.3**
	SNR=1.0							
BRG	**Berggiesshubel**	**5.60**	**20**	SN		**Sn**	**08 03 44.5**	**-6.9**
BRG				SG		**Sg**	**08 04 18.4**	**-4.1**
	6.1nm,0.9s							
BGF	**Bois d'Agland**	**5.65**	**282**	*e*Pn		**Pn**	**08 02 47.3**	**-0.1**
	SNR=1.0							
BGF	**Bois d'Agland**	**5.65**	**282**	*e*Pn		**Pn**	**08 02 47.3**	**-0.1**
	SNR=1.0							
CLL	**Collm**	**5.82**	**13**	*e*Pn		**Pn**	**08 02 50.0**	**+0.3**
CLL				*e*Sn		Sn	08 03 38.0	-19
CLL				*e*Sg		**Sg**	**08 04 29.0**	**-0.6**
	comp=Z,8.0nm,0.8s							
TCF	**Toulx Ste Croi**	**6.07**	**279**	*e*Sn		**Sn**	**08 04 00.5**	**-2.4**
	comp=Z,1.6nm,0.2s,SNR=1.0							

*CSEM **07** 08:01:58.9, 45°.97N × 14°.63E, h0km, ML1.3*
LJU 07 08:01:58.9, 45°.97N × 14°.63E, h8km, ML1.3, 4C-2D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LJU	**Ljubljana**	**0.10**	**316**	↑ *i* Pg	Pg	08 02 01.6	+0.3
LJU				*i* Sg	Sg	08 02 03.2	+0.3
	comp=Z,68nm,0.1s						
LJU	**Ljubljana**	**0.10**	**316**	↑ *i* Pg	Pg	08 02 01.6	+0.3
LJU				*i* Sg	Sg	08 02 03.2	+0.3
	comp=Z,68nm,0.1s						
GBAS	**Gorenja Brezov**	**0.14**	**255**	↑ *i* Pg	Pg	08 02 02.2	+0.3
GBAS				*i* Sg	Sg	08 02 04.1	+0.2
	comp=Z,22nm,0.1s						
GBAS	**Gorenja Brezov**	**0.14**	**255**	↑ *i* Pg	Pg	08 02 02.2	+0.4
GBAS				*i* Sg	Sg	08 02 04.1	+0.3
VNDS	**Vrh nad Dolski**	**0.14**	**21**	↓ *i* Pg	Pg	08 02 02.1	+0.2
VNDS				*i* Sg	Sg	08 02 04.1	+0.1
	comp=Z,40nm,0.1s						
VNDS	**Vrh nad Dolski**	**0.14**	**21**	↓ *i* Pg	Pg	08 02 02.2	+0.3
VNDS				*i* Sg	Sg	08 02 04.1	+0.1
	comp=Z,40nm,0.1s						
VISS	**Visnje**	**0.22**	**139**	*i* Pg	Pg	08 02 03.5	+0.1
VISS				*i* Sg	Sg	08 02 06.9	+0.6
	comp=Z,10.0nm,0.1s						
VISS	**Visnje**	**0.22**	**139**	*i* Pg	Pg	08 02 03.5	+0.1
VISS				*i* Sg	Sg	08 02 06.9	+0.5
	comp=Z,10.0nm,0.1s						
CEY	**Cerknica**	**0.27**	**211**	*i* Pg	Pg	08 02 04.6	+0.3
CEY				*i* Sg	Sg	08 02 08.3	+0.4
	comp=Z,11nm,0.1s						
CEY	**Cerknica**	**0.27**	**211**	*i* Pg	Pg	08 02 04.6	+0.3
CEY				*i* Sg	Sg	08 02 08.3	+0.4
	comp=Z,11nm,0.1s						
PDKS	**Podkum**	**0.27**	**71**	*i* Pg	Pg	08 02 04.8	+0.5
PDKS				*i* Sg	Sg	08 02 08.4	+0.5
	comp=Z,13nm,0.1s						
PDKS	**Podkum**	**0.27**	**71**	*i* Pg	Pg	08 02 04.8	+0.5
PDKS				*i* Sg	Sg	08 02 08.4	+0.4
	comp=Z,13nm,0.1s						
MOZS	**Mozjanca**	**0.35**	**338**	*i* Pg	Pg	08 02 06.2	+0.4
MOZS				*i* Sg	Sg	08 02 10.6	+0.2
MOZS	**Mozjanca**	**0.35**	**338**	*i* Pg	Pg	08 02 06.2	+0.4
MOZS				*i* Sg	Sg	08 02 10.6	+0.2
BOJS	**Bojanci**	**0.64**	**137**	*i* Pg	Pg	08 02 11.3	+0.1
BOJS	**Bojanci**	**0.64**	**137**	*i* Pg	Pg	08 02 11.3	+0.1

IDC 07 08:12:39.6±2.8, 28°.11S × 176°.98W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.8/19, mbtmp4.0/3, MS3.6/2, Ms1 3.6/2, ms1mx2.8/30, Error ellipse: s-maj=67.7km s-min=35.9km az=118.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.41**	**216**	Pn	Pn	08 13 06.4	-0.1
	123nm,0.3s,baz=128,slow=22,SNR=2.4						
RAO				Sn	Sg	08 13 19.3	-5.6
	422nm,0.3s,baz=76,slow=14,SNR=7.0						
STKA	**Stephens Creek**	**35.92**	**254**	P	P	08 19 41.7	-0.1
	1.9nm,0.6s,baz=98,slow=12,SNR=2.5						
ASAR	**Alice Springs**	**44.18**	**264**	P	P	08 20 50.3	-0.2
	0.9nm,0.6s,baz=99,slow=6.8,SNR=5.7						
ASAR				LR	LR	08 37 26.1	
	comp=Z,35nm,19.0s,baz=88,slow=34						
WRA	**Warramunga Arr**	**44.96**	**269**	P	P	08 20 56.6	-0.1
	2.0nm,0.7s,baz=109,slow=7.8,SNR=8.5						
DLBC	**Dease Lake**	**94.67**	**23**	LR	LR	09 02 20.2	
	comp=Z,52nm,18.9s,baz=123,slow=32						
FINES	**FINESS Array B**	**143.28**	**342**	PKP	PKPbc	08 32 13.0	+0.9
	0.7nm,0.5s,baz=66,slow=3.4,SNR=2.8						
AKASG	**Malin Array Be**	**149.97**	**326**	PKPbc	PKPbc	08 32 31.8	+0.1
	1.0nm,0.5s,baz=44,slow=3.0,SNR=2.5						

*IDC **07** 08:13:55.2±1.1, 34°.64N × 23°.93E, h0km, mb3.8/8, mb1 3.8/13, mb1mx3.7/49, mbtmp3.8/13, ML3.7/5, MS2.8/5, Ms1 2.8/5, ms1mx2.5/48, Error ellipse: s-maj=22.8km s-min=15.0km az=160.0*
*CSEM **07** 08:13:58.5±0.3, 34°.57N × 23°.96E, h10km, ML3.4, Error ellipse: s-maj=6.0km s-min=4.4km az=45.0*
*DDA **07** 08:13:58.3, 33°.90N × 24°.22E, h21km, Md3.9*
*HLW **07** 08:13:58.6, 34°.78N × 24°.20E, h33km±19km, Md3.7*
*ATH **07** 08:14:01.0, 34°.76N × 24°.03E, h26km±1km, ML3.2/1, Error ellipse: s-maj=5.3km s-min=1.6km az=205.0*
*THE **07** 08:14:03.2, 34°.83N × 24°.02E, h17km, ML3.4/7, Error ellipse: s-maj=1.9km s-min=0.8km az=200.0*
ISC 07 08:13:59.1±0.9, 34°.61N±0°.04 × 24°.03E±0°.03, h26km±6km, n99, σ2s03/132, mb3.8/8, Crete

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GVD	**Gavdhos**	**0.23**	**12**	P	**Pb**	**08 14 05.8**	**+0.5**
GVD				S	**Sb**	**08 14 09.0**	**-0.5**
GVD	**Gavdhos**	**0.23**	**12**	P	**Pb**	**08 14 05.0**	**-0.3**
GVD				S	**Sb**	**08 14 09.0**	**-0.5**
GVD	**Gavdhos**	**0.23**	**12**	P	**Pb**	**08 14 05.0**	**-0.3**
GVD				S	**Sb**	**08 14 10.6**	**+1.0**
SIVA	**Sivas**	**0.76**	**58**	P	**Pb**	**08 14 15.6**	**+1.9**
SIVA				S	**Sb**	**08 14 25.9**	**+2.2**
SIVA	**Sivas**	**0.76**	**58**	P	**Pb**	**08 14 15.6**	**+1.9**
SIVA				S	**Sb**	**08 14 25.9**	**+2.2**
SIVA	**Sivas**	**0.76**	**58**	P	**Pb**	**08 14 15.2**	**+1.5**
VAM	**Vamos**	**0.81**	**10**	P	**Pn**	**08 14 14.4**	**-0.4**
VAM				S	**Sn**	**08 14 24.4**	**-1.5**
VAM	**Vamos**	**0.81**	**10**	P	**Pn**	**08 14 14.4**	**-0.4**
VAM				S	**Sn**	**08 14 24.4**	**-1.5**
IMMV	**Iera Moni Meta**	**0.85**	**357**	P	**Pn**	**08 14 14.9**	**-0.4**
IMMV				S	**Sn**	**08 14 24.7**	**-2.2**
IMMV	**Iera Moni Meta**	**0.85**	**357**	P	**Pn**	**08 14 14.9**	**-0.4**
IMMV				S	**Sn**	**08 14 24.7**	**-2.2**
IMMV	**Iera Moni Meta**	**0.85**	**357**	P	**Pn**	**08 14 14.6**	**-0.8**
IDI	**Anoyia**	**0.98**	**46**	Pn	**Pn**	**08 14 17.8**	**+0.6**
	75nm,0.3s,baz=230,slow=15,SNR=226						
IDI				Sn	**Sb**	**08 14 34.7**	**+4.7**
	107nm,0.3s,baz=333,slow=22,SNR=20						
IDI	**Anoyia**	**0.98**	**46**	P	**Pn**	**08 14 18.3**	**+1.1**
IDI				S	**Sn**	**08 14 31.0**	**+0.8**
IDI	**Anoyia**	**0.98**	**46**	P	**Pn**	**08 14 18.3**	**+1.1**
IDI				S	**Sn**	**08 14 31.0**	**+0.8**
IDI	**Anoyia**	**0.98**	**46**	P	**Pn**	**08 14 18.1**	**+0.9**
IACM	**Heraklion**	**1.10**	**51**	P	**Pb**	**08 14 21.4**	**+1.9**
IACM				S	**Sb**	**08 14 35.3**	**+1.9**
IACM	**Heraklion**	**1.10**	**51**	P	**Pb**	**08 14 21.4**	**+1.9**
IACM				S	**Sb**	**08 14 35.3**	**+1.9**
LAST	**Lasithi**	**1.31**	**65**	P	**Pb**	**08 14 24.7**	**+1.6**
LAST	**Lasithi**	**1.31**	**65**	P	**Pb**	**08 14 24.7**	**+1.6**
LAST				S	**Sb**	**08 14 40.5**	**+0.9**
LAST	**Lasithi**	**1.31**	**65**	P	**Pb**	**08 14 24.1**	**+1.0**
ANKY	**Antikythira Is**	**1.39**	**335**	P	**Pn**	**08 14 24.2**	**+1.5**
ANKY				S	**Sn**	**08 14 39.7**	**-0.5**
ANKY	**Antikythira Is**	**1.39**	**335**	P	**Pn**	**08 14 24.2**	**+1.5**
ANKY				S	**Sn**	**08 14 39.7**	**-0.5**
ANKY	**Antikythira Is**	**1.39**	**335**	P	**Pn**	**08 14 24.8**	**+2.0**
ANKY				S	**Sn**	**08 14 43.2**	**+1.6**
NPS	**Neapolis**	**1.46**	**63**	P	**Pb**	**08 14 26.9**	**+1.4**
NPS	**Neapolis**	**1.46**	**63**	P	**Pb**	**08 14 26.9**	**+1.4**
NPS	**Neapolis**	**1.46**	**63**	P	**Pb**	**08 14 28.2**	**+2.7**
ZKR	**Zakros**	**1.87**	**74**	P	**Pb**	**08 14 33.4**	**+0.9**
ZKR				S	**Sb**	**08 14 55.2**	**-0.3**
ZKR	**Zakros**	**1.87**	**74**	P	**Pb**	**08 14 33.4**	**+0.9**
ZKR				S	**Sb**	**08 14 55.2**	**-0.3**
MHLO	**Agia Marina, M**	**2.10**	**8**	P	**Pn**	**08 14 34.2**	**+1.7**
MHLO	**Agia Marina, M**	**2.10**	**8**	P	**Pn**	**08 14 34.2**	**+1.7**
THR5	**Thira Island,**	**2.10**	**30**	P	**Pn**	**08 14 35.0**	**+2.5**
THR5	**Thira Island,**	**2.10**	**30**	P	**Pn**	**08 14 35.0**	**+2.5**
VLI	**Veliai**	**2.28**	**337**	P	**Pn**	**08 14 36.6**	**+1.6**
VLI				S	**Sn**	**08 15 01.2**	**-1.1**
VLI	**Veliai**	**2.28**	**337**	P	**Pn**	**08 14 36.6**	**+1.6**
VLI				S	**Sn**	**08 15 01.2**	**-1.1**
VLI	**Veliai**	**2.28**	**337**	P	**Pn**	**08 14 37.7**	**+2.7**
KARP	**Karpathos**	**2.73**	**69**	P	**Pn**	**08 14 44.7**	**+3.4**
KARP	**Karpathos**	**2.73**	**69**	P	**Pn**	**08 14 44.7**	**+3.4**
APE	**Apeiranthos**	**2.74**	**26**	P	**Pn**	**08 14 42.4**	**+1.0**
APE	**Apeiranthos**	**2.74**	**26**	P	**Pn**	**08 14 42.4**	**+1.0**
PYL	**PYLOS**	**2.94**	**321**	P	**Pn**	**08 14 46.6**	**+2.5**
PYL	**PYLOS**	**2.94**	**321**	P	**Pn**	**08 14 46.6**	**+2.5**
DID	**Didima**	**2.96**	**348**	P	**Pn**	**08 14 45.2**	**+0.8**
DID				S	**Sn**	**08 15 18.2**	**-0.9**
DID	**Didima**	**2.96**	**348**	P	**Pn**	**08 14 45.2**	**+0.8**
DID				S	**Sn**	**08 15 18.2**	**-0.9**
DID	**Didima**	**2.96**	**348**	P	**Pn**	**08 14 44.6**	**+0.3**
DID				S	**Sn**	**08 15 20.3**	**+1.3**
DID				AML	AML	08 15 23.1	
	comp=E,400μm,0.5s						
DID				AML	AML	08 15 25.9	
	comp=N,266μm,0.4s						
ITM	**Ithomi**	**3.08**	**327**	P	**Pn**	**08 14 48.3**	**+2.3**
ITM	**Ithomi**	**3.08**	**327**	P	**Pn**	**08 14 48.3**	**+2.3**
VLY	**Voula,Athens**	**3.24**	**357**	P	**Pn**	**08 14 49.4**	**+1.2**
VLY	**Voula,Athens**	**3.24**	**357**	P	**Pn**	**08 14 49.4**	**+1.2**
SLUM	**Salum**	**3.27**	**162**	P	**Pn**	**08 14 49.4**	**+0.8**
	baz=165						
SLUM				S	**Sn**	**08 15 27.5**	**+0.9**
	baz=165						
SLUM	**Salum**	**3.27**	**162**	P	**Pn**	**08 14 49.4**	**+0.8**
SLUM				S	**Sn**	**08 15 27.5**	**+0.9**
LTK	**Loutraki**	**3.51**	**346**	P	**Pn**	**08 14 52.9**	**+0.9**
LTK	**Loutraki**	**3.51**	**346**	P	**Pn**	**08 14 52.9**	**+0.9**
ARG	**Arkhangelos**	**3.71**	**63**	P	**Pn**	**08 14 57.4**	**+2.7**
ARG	**Arkhangelos**	**3.71**	**63**	P	**Pn**	**08 14 57.4**	**+2.7**
KLV	**Kalavryta, Ach**	**3.75**	**337**	P	**Pn**	**08 14 56.7**	**+1.5**
KLV	**Kalavryta, Ach**	**3.75**	**337**	P	**Pn**	**08 14 56.7**	**+1.5**
DRO	**Drossia**	**3.82**	**331**	P	**Pn**	**08 14 59.0**	**+2.7**
DRO	**Drossia**	**3.82**	**331**	P	**Pn**	**08 14 59.0**	**+2.7**
DSF	**Desfina**	**3.98**	**343**	P	**Pn**	**08 14 59.3**	**+0.9**
DSF	**Desfina**	**3.98**	**343**	P	**Pn**	**08 14 59.3**	**+0.9**
ANX	**Ano Chora**	**4.32**	**338**	P	**Pn**	**08 15 04.6**	**+1.4**
ANX	**Ano Chora**	**4.32**	**338**	P	**Pn**	**08 15 04.6**	**+1.4**
TURN	**Turunc**	**4.35**	**57**	*i* P	**Pn**	**08 15 01.8**	**-1.7**
TURN				*i* S	**Sn**	**08 15 45.2**	**-8.1**
AGG	**Agios Georgios**	**4.61**	**343**	P	**Pn**	**08 15 08.0**	**+1.0**
AGG	**Agios Georgios**	**4.61**	**343**	P	**Pn**	**08 15 08.0**	**+1.0**
AKAS	**Kas**	**4.83**	**69**	*i* P	**Pn**	**08 15 11.5**	**+1.3**
AKAS				*i* S	**Sn**	**08 16 01.4**	**-4.0**
AKAS	**Kas**	**4.83**	**69**	P	**Pn**	**08 15 11.5**	**+1.3**
GOLH	**Golhisar**	**5.20**	**58**	*i* P	**Pn**	**08 15 17.7**	**+2.5**
GOLH				*i* S	**Sn**	**08 16 10.3**	**-4.1**
GOLH	**Golhisar**	**5.20**	**58**	P	**Pn**	**08 15 17.7**	**+2.5**
SWA2		**5.49**	**167**	P	**Pn**	**08 15 20.0**	**+0.9**
	baz=168						
SWA2		**5.49**	**167**	P	**Pn**	**08 15 20.0**	**+0.9**
KORT	**Korkueli**	**5.66**	**63**	*i* P	**Pn**	**08 15 24.8**	**+3.1**
KORT				*i* S	**Sn**	**08 16 24.1**	**-1.8**
KORT	**Korkueli**	**5.66**	**63**	P	**Pn**	**08 15 24.8**	**+3.1**
GAZI	**Gazipasa**	**6.96**	**74**	*i* P	**Pn**	**08 15 38.6**	**-0.7**
GAZI				*i* S	**Sn**	**08 16 49.1**	**-8.4**
ERMK	**Ermenek**	**7.51**	**72**	*i* P	**Pn**	**08 15 46.4**	**-0.7**
ERMK				*i* S	**Sn**	**08 17 10.5**	**-1.1**
GLL	**Jalalah**	**8.22**	**126**	P	**Pn**	**08 15 56.6**	**-0.1**
	baz=127						
GLL	**Jalalah**	**8.22**	**126**	P	**Pn**	**08 15 56.6**	**-0.1**
KERG	**Konya-Eregli**	**8.64**	**68**	*i* P	**Pn**	**08 16 03.4**	**+0.8**
KERG	**Konya-Eregli**	**8.64**	**68**	P	**Pn**	**08 16 03.4**	**+0.8**
BRTR	**Keskin Array B**	**9.21**	**54**	Pn	**Pn**	**08 16 11.9**	**+1.6**
	comp=N,0.1nm,0.3s,baz=225,slow=12,SNR=7.4						
MMAI	**Mount Meron Ar**	**9.60**	**96**	Pn	**Pn**	**08 16 15.1**	**-0.6**
	comp=N,1.5nm,0.3s,baz=301,slow=13,SNR=3.6						
MMAI				Sn	**Sn**	**08 17 57.4**	**-5.2**
	comp=N,3.2nm,0.3s,baz=280,slow=19,SNR=4.6						
HNKL	**Nakhl**	**9.63**	**116**	P	**Pn**	**08 16 15.6**	**-0.4**
	baz=117						
HNKL	**Nakhl**	**9.63**	**116**	P	**Pn**	**08 16 15.6**	**-0.4**
EIL	**Elat**	**10.49**	**115**	Pn	**Pn**	**08 16 27.7**	**0.0**
	comp=N,0.8nm,0.3s,baz=258,slow=5.2,SNR=6.8						
EIL				Sn	**Sn**	**08 18 19.4**	**-4.9**
	comp=N,2.1nm,0.3s,baz=70,slow=3.4,SNR=9.2						
MLR	**Muntele Rosu**	**10.96**	**7**	LR	LR	08 21 25.3	
	comp=N,12nm,21.7s,baz=230,slow=41						
NVLJ	**Novalja**	**12.18**	**327**	*e* Pn	**Pn**	**08 16 50.1**	**-0.7**
GERES	**GERESS Array B**	**16.15**	**335**	Pn	**Pn**	**08 17 45.4**	**+1.1**
	comp=N,0.2nm,0.3s,baz=151,slow=12,SNR=3.2						
AKASG	**Malin Array Be**	**16.52**	**12**	Pn	**Pn**	**08 17 50.8**	**+2.0**
	comp=N,0.9nm,0.3s,baz=203,slow=10,SNR=3.2						
KBZ	**Khabaz**	**17.20**	**52**	P	**P**	**08 17 59.1**	**+0.3**
	comp=N,0.1nm,0.3s,baz=221,slow=11,SNR=3.1						
KBZ				LR	LR	08 26 22.3	
	comp=N,35nm,19.1s,baz=226,slow=43						
GNI	**Garni**	**17.35**	**65**	LR	LR	08 26 07.0	
	comp=N,72nm,21.0s,baz=250,slow=42						
ESDC	**Sonseca Array**	**22.83**	**291**	P	**P**	**08 19 00.1**	**-0.1**
	comp=N,0.6nm,0.5s,baz=81,slow=9.4,SNR=4.6						
HFS	**Hagfors**	**26.41**	**348**	P	**P**	**08 19 32.0**	**-1.2**
	comp=N,0.9nm,0.3s,baz=153,slow=10.0,SNR=10						
FINES	**FINESS Array B**	**26.88**	**2**	P	**P**	**08 19 35.7**	**-1.8**
	comp=N,0.2nm,0.4s,baz=156,slow=11,SNR=2.8						
FINES				LR	LR	08 31 09.2	
	comp=N,34nm,18.6s,baz=180,slow=38						
NB2	**NORSAR Subarra**	**27.70**	**347**	P	**P**	**08 19 43.5**	**-1.4**
	comp=Z,0.8nm,0.6s,baz=152,slow=11						
NOA	**NORSAR Array B**	**27.70**	**347**	P	**P**	**08 19 44.8**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=129,slow=5.7,SNR=3.9						
NOA				LR	LR	08 31 03.3	
	comp=Z,15nm,22.0s,baz=185,slow=37						
AKTO	**Aktyubinsk**	**29.30**	**47**	P	**P**	**08 19 58.7**	**-0.6**
	comp=Z,1.0nm,0.5s,baz=244,slow=8.3,SNR=3.8						
TORD	**Torodi Ar. Bea**	**29.43**	**229**	P	**P**	**08 20 00.6**	**0.0**
	comp=Z,1.9nm,0.5s,baz=36,slow=8.3,SNR=22						
MKAR	**Makanchi Array**	**44.85**	**56**	P	**P**	**08 22 11.6**	**+0.6**
	comp=Z,1.2nm,0.5s,baz=276,slow=6.9,SNR=17						
ZALV	**Zalesovo Beam**	**46.05**	**46**	P	**P**	**08 22 20.1**	**-0.3**
	comp=Z,1.5nm,0.4s,baz=266,slow=10,SNR=6.7						

*ATH **07** 08:34:08.4, 34°.76N × 24°.00E, h27km±1km, ML3.0/6, Error ellipse: s-maj=3.8km s-min=1.4km az=31.0*
*CSEM **07** 08:34:08.8±0.3, 34°.75N × 23°.99E, h12km, ML3.1, Error ellipse: s-maj=7.0km s-min=4.1km az=26.0*
*THE **07** 08:34:11.6, 34°.89N × 24°.14E, h0km±1km, ML3.1/5, Error ellipse: s-maj=1.4km s-min=0.4km az=225.0*
ISC 07 08:34:08.3±1.6, 34°.76N±0°.09 × 24°.07E±0°.05, h23km±6km, n42, σ2s11/58, Crete

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GVD	**Gavdhos**	**0.08**	**12**	P	**Pb**	**08 34 13.3**	**+0.8**
GVD				S	**Sb**	**08 34 14.9**	**-0.5**
GVD	**Gavdhos**	**0.08**	**12**	P	**Pb**	**08 34 13.0**	**+0.5**
GVD				S	**Sb**	**08 34 14.9**	**-0.5**
GVD	**Gavdhos**	**0.08**	**12**	P	**Pb**	**08 34 13.0**	**+0.5**
GVD				S	**Sb**	**08 34 17.5**	**+2.1**
GVD				AML	AML	08 34 18.7	
	comp=E,59658μm,0.4s						
GVD				AML	AML	08 34 19.3	
	comp=N,62981μm,0.4s						
VAM	**Vamos**	**0.65**	**9**	P	**Pb**	**08 34 22.2**	**+1.2**
VAM	**Vamos**	**0.65**	**9**	P	**Pb**	**08 34 22.2**	**+1.2**
VAM				S	**Sb**	**08 34 31.4**	**+1.7**
SIVA	**Sivas**	**0.66**	**67**	P	**Pb**	**08 34 22.9**	**+1.8**
SIVA				S	**Sb**	**08 34 31.6**	**+1.7**
SIVA	**Sivas**	**0.66**	**67**	P	**Pb**	**08 34 22.9**	**+1.8**
SIVA				S	**Sb**	**08 34 31.8**	**+1.9**
SIVA	**Sivas**	**0.66**	**67**	P	**Pb**	**08 34 23.0**	**+1.8**
SIVA				S	**Sb**	**08 34 31.8**	**+1.9**
SIVA				AML	AML	08 34 39.8	
	comp=N,5694μm,0.6s						
SIVA				AML	AML	08 34 40.9	
	comp=E,7589μm,0.7s						
IMMV	**Iera Moni Meta**	**0.70**	**354**	P	**Pb**	**08 34 22.6**	**+0.7**
IMMV				S	**Sb**	**08 34 32.6**	**+1.5**
IMMV	**Iera Moni Meta**	**0.70**	**354**	P	**Pb**	**08 34 22.6**	**+0.7**
IMMV				S	**Sb**	**08 34 32.6**	**+1.5**
IMMV	**Iera Moni Meta**	**0.70**	**354**	P	**Pb**	**08 34 22.5**	**+0.7**
IMMV				S	**Sn**	**08 34 33.4**	**+0.4**
IMMV				AML	AML	08 34 39.0	
	comp=N,3362μm,0.7s						
IMMV				AML	AML	08 34 42.2	
	comp=E,4705μm,0.4s						
IDI	**Anoyia**	**0.85**	**52**	P	**Pn**	**08 34 26.0**	**+1.0**
IDI				S	**Sb**	**08 34 37.2**	**+1.6**
IDI	**Anoyia**	**0.85**	**52**	P	**Pn**	**08 34 26.0**	**+1.0**
IDI				S	**Sb**	**08 34 37.2**	**+1.6**
IDI	**Anoyia**	**0.85**	**52**	P	**Pb**	**08 34 25.0**	**+0.5**
LAST	**Lasithi**	**1.23**	**71**	P	**Pb**	**08 34 32.4**	**+1.6**
LAST				S	**Sb**	**08 34 49.2**	**+3.0**
LAST	**Lasithi**	**1.23**	**71**	P	**Pb**	**08 34 32.4**	**+1.6**
LAST				S	**Sb**	**08 34 49.2**	**+3.0**
LAST	**Lasithi**	**1.23**	**71**	P	**Pb**	**08 34 32.0**	**+1.2**
ANKY	**Antikythira Is**	**1.27**	**331**	P	**Pb**	**08 34 33.8**	**+2.3**
**

PVF				S		Sn	08 45 41.1	-0.9	
VSU	**Vasula**	**1.53**	**132**	*e*PG		**Pg**	**08 45 28.8**	**-0.5**	
VSU				*e*S		**Sn**	**08 45 48.6**	**-0.5**	
VSU	**Vasula**	**1.53**	**132**	Pg		**Pg**	**08 45 28.8**	**-0.5**	
VSU	**Vasula**	**1.53**	**132**	*e*P		**Pg**	**08 45 29.3**	**0.0**	
	SNR=90								
VSU				*e*S		**Sn**	**08 45 49.1**	**0.0**	
	100nm,0.4s,SNR=90								
VJF	**Virojoki**	**1.83**	**54**	*e*P		**Pb**	**08 45 33.5**	**-1.0**	
VJF				MSG			08 45 56.4		
	comp=Z,15nm,0.2s								
VJF				*e*SG		**Sg**	**08 45 58.4**	**-0.6**	
VJF	**Virojoki**	**1.83**	**54**	P		**Pb**	**08 45 33.4**	**-1.0**	
VJF				Sg		**Sg**	**08 45 58.3**	**-0.6**	
FIA0	**FINESS Array S**	**2.10**	**20**	*e*PB		**Pb**	**08 45 38.0**	**-0.9**	
FIA0				*e*SB		**Sb**	**08 46 05.2**	**-0.2**	
FIA0	**FINESS Array S**	**2.10**	**20**	Pb		**Pb**	**08 45 38.0**	**-0.9**	
FIA0				Sb		**Sb**	**08 46 05.2**	**-0.2**	
FINES	**FINESS Array B**	**2.10**	**20**	Pn		**Pb**	**08 45 38.8**	**-0.2**	
	comp=Z,2.5nm,0.3s,baz=202,slow=15,SNR=121								
FINES				Sn		**Sb**	**08 46 05.8**	**+0.3**	
	comp=Z,3.4nm,0.3s,baz=199,slow=27,SNR=16								
SLIT	**Slitere, Latvi**	**2.21**	**213**	*e*P		**Pn**	**08 45 39.6**	**+1.6**	
	SNR=68								
SLIT				*e*S		**Sb**	**08 46 09.6**	**+0.8**	
	comp=Z,233nm,0.3s,SNR=68								
AAL	**Aland**	**2.41**	**289**	P		**Pn**	**08 45 41.4**	**+0.8**	
AAL				S		**Sb**	**08 46 14.1**	**-0.2**	
AAL	**Aland**	**2.41**	**289**	*e*P		**Pn**	**08 45 41.2**	**+0.6**	
AAL				*e*SB		**Sb**	**08 46 13.5**	**-0.8**	
AAL	**Aland**	**2.41**	**289**	P		**Pn**	**08 45 41.2**	**+0.6**	
AAL				S		**Sb**	**08 46 14.1**	**-0.2**	
KEF	**Keuruu**	**2.69**	**3**	*e*PB		**Pb**	**08 45 47.2**	**-1.8**	
KEF				MSG			08 46 19.9		
	comp=Z,5.2nm,0.2s								
KEF				*e*SG		**Sb**	**08 46 23.4**	**+1.0**	
NRTU	**Norrtaelje**	**3.02**	**276**	P		**Pn**	**08 45 49.7**	**+0.7**	
NRTU	**Norrtaelje**	**3.02**	**276**	*e*P		**Pn**	**08 45 49.7**	**+0.7**	
NRTU	**Norrtaelje**	**3.02**	**276**	P		**Pn**	**08 45 49.7**	**+0.7**	
GRAU	**Graesoe**	**3.15**	**288**	P		**Pn**	**08 45 50.8**	**0.0**	
GRAU	**Graesoe**	**3.15**	**288**	*e*P		**Pn**	**08 45 50.8**	**0.0**	
GRAU	**Graesoe**	**3.15**	**288**	P		**Pn**	**08 45 50.8**	**0.0**	
SUF	**Sumiainen**	**3.33**	**13**	*e*P		**Pn**	**08 45 56.1**	**+2.8**	
FORU	**Forsmark**	**3.33**	**288**	P		**Pn**	**08 45 53.7**	**+0.4**	
FORU	**Forsmark**	**3.33**	**288**	*e*P		**Pn**	**08 45 53.7**	**+0.4**	
FORU	**Forsmark**	**3.33**	**288**	P		**Pn**	**08 45 53.7**	**+0.4**	
NYNU	**Nynaeshamn**	**3.40**	**265**	P		**Pn**	**08 45 55.3**	**+1.0**	
NYNU	**Nynaeshamn**	**3.40**	**265**	*e*P		**Pn**	**08 45 55.3**	**+1.0**	
NYNU	**Nynaeshamn**	**3.40**	**265**	P		**Pn**	**08 45 55.3**	**+1.0**	
FLYU	**Flymyra**	**3.43**	**284**	P		**Pn**	**08 45 55.3**	**+0.6**	
FLYU	**Flymyra**	**3.43**	**284**	*e*P		**Pn**	**08 45 55.3**	**+0.6**	
FLYU	**Flymyra**	**3.43**	**284**	P		**Pn**	**08 45 55.3**	**+0.6**	
GOTU	**Gotland**	**3.62**	**243**	P		**Pn**	**08 45 58.7**	**+1.4**	
GOTU	**Gotland**	**3.62**	**243**	*e*P		**Pn**	**08 45 58.7**	**+1.4**	
GOTU	**Gotland**	**3.62**	**243**	P		**Pn**	**08 45 58.7**	**+1.4**	
FIBU	**Brunna**	**3.68**	**280**	P		**Pn**	**08 45 58.8**	**+0.8**	
BACU	**Backbrunna**	**3.80**	**279**	P		**Pn**	**08 46 00.3**	**+0.6**	
BACU	**Backbrunna**	**3.80**	**279**	*e*P		**Pn**	**08 46 00.3**	**+0.6**	
BACU	**Backbrunna**	**3.80**	**279**	P		**Pn**	**08 46 00.3**	**+0.6**	
OSTU	**Oestervaala**	**3.82**	**284**	P		**Pn**	**08 46 00.6**	**+0.6**	
OSTU	**Oestervaala**	**3.82**	**284**	*e*P		**Pn**	**08 46 00.6**	**+0.6**	
OSTU	**Oestervaala**	**3.82**	**284**	P		**Pn**	**08 46 00.6**	**+0.6**	
IGGU	**Iggoen**	**3.87**	**294**	P		**Pn**	**08 46 01.2**	**+0.5**	
IGGU	**Iggoen**	**3.87**	**294**	*e*P		**Pn**	**08 46 01.2**	**+0.5**	
IGGU	**Iggoen**	**3.87**	**294**	P		**Pn**	**08 46 01.2**	**+0.5**	
HEMU	**Hemsoen**	**4.50**	**318**	*e*P		**Pn**	**08 46 10.9**	**+1.6**	
HEMU	**Hemsoen**	**4.50**	**318**	P		**Pn**	**08 46 10.9**	**+1.6**	
JOF	**Joensuu**	**4.74**	**41**	MSG			08 47 31.3		
	comp=Z,1.8nm,0.2s								
UMAU	**Umeaa**	**4.78**	**339**	*e*P		**Pn**	**08 46 14.7**	**+1.6**	
UMAU				*e*S		**Sn**	**08 47 10.5**	**+1.4**	
UMAU	**Umeaa**	**4.78**	**339**	P		**Pn**	**08 46 14.7**	**+1.6**	
UMAU				S		**Sn**	**08 47 10.5**	**+1.4**	
HFS	**Hagfors**	**5.52**	**281**	Pn		**Pn**	**08 46 23.8**	**+0.4**	
	comp=Z,0.2nm,0.3s,baz=104,slow=15,SNR=11								
HFS				Sn		**Sn**	**08 47 27.4**	**-0.1**	
	comp=Z,0.4nm,0.3s,baz=100,slow=24,SNR=5.7								
HFS				Lg		Lg	08 47 50.4		
	comp=Z,0.5nm,0.3s,baz=89,slow=31,SNR=4.1								
NOA	**NORSAR Array B**	**6.82**	**289**	Pn		**Pn**	**08 46 40.0**	**-1.2**	
	comp=Z,0.2nm,0.3s,baz=227,slow=15,SNR=3.8								
NOA				Sn		**Sn**	**08 47 55.7**	**-3.7**	
	comp=Z,0.2nm,0.3s,baz=102,slow=20,SNR=2.6								
ARCES	**ARCESS Array B**	**10.09**	**2**	Pn		**Pn**	**08 47 25.7**	**-0.4**	
	comp=Z,0.1nm,0.3s,baz=169,slow=14,SNR=7.9								

*ISCJB **07** 08:49:32.9±0.9, 17.7°S×0.2°×178.6°W×0.1°, h579km, mb3.9/13, Error ellipse: s-maj=31.5km s-min=11.6km az=150.9*
*IDC **07** 08:49:34.0±1.8, 17.85°S×178.55°W, h588km±21km, mb3.5/13, mb1 3.7/15, mb1mx3.4/39, mbtmp4.4/15, Error ellipse: s-maj=31.9km s-min=12.5km az=148.0*

ISC 07 08:49:33.4±0.9, 17.8°S×0.2°×178.6°W×0.2°, h579km, n24, σ0°77/26, mb3.9/13, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.59**	**60**	P	**P**	**08 51 29.4**	**+1.1**
	2.6nm,0.3s,baz=37,slow=20,SNR=3.6						
DZM	**Mont Dzumac**	**14.72**	**251**	P	**P**	**08 52 39.9**	**+0.3**
	0.9nm,0.3s,baz=111,slow=23,SNR=6.2						
CTA	**Charters Tower**	**33.31**	**260**	P	**P**	**08 55 24.9**	**+0.4**
	2.1nm,0.4s,baz=95,slow=10,SNR=11						
STKA	**Stephens Creek**	**38.55**	**241**	P	**P**	**08 56 07.7**	**+0.2**
	2.7nm,0.6s,baz=100,slow=9.6,SNR=13						
WRA	**Warramunga Arr**	**44.50**	**259**	P	**P**	**08 56 54.0**	**-0.7**
	1.5nm,0.4s,baz=94,slow=7.2,SNR=68						
WRA				PcP	**PcP**	**08 58 24.5**	**-0.7**
	0.5nm,0.4s,baz=98,slow=3.2,SNR=4.3						
ASAR	**Alice Springs**	**44.67**	**254**	P	**P**	**08 56 56.0**	**0.0**
	8.4nm,0.5s,baz=87,slow=8.8,SNR=171						
ASAR				PcP	**PcP**	**08 58 25.1**	**-0.7**
	1.2nm,0.7s,baz=103,slow=3.8,SNR=5.8						
MJAR	**Matsushiro Arr**	**67.73**	**323**	P	**P**	**08 59 34.3**	**+0.2**
	2.7nm,0.6s,baz=163,slow=5.5,SNR=3.1						
MAT	**Matsushiro**	**67.73**	**323**	P	**P**	**08 59 34.6**	**+0.5**
PETK	**Petropavlovsk-**	**73.54**	**345**	P	**P**	**09 00 08.1**	**+0.3**
	2.6nm,0.6s,baz=103,slow=7.3,SNR=5.0						
KSRS	**Korea Array**	**74.52**	**318**	P	**P**	**09 00 15.1**	**+1.4**
	0.7nm,0.5s,baz=124,slow=6.0,SNR=4.2						
SEY	**Seymchan**	**83.64**	**347**	P	**P**	**09 01 00.9**	**-0.3**
	4.6nm,0.7s,baz=157,slow=5.2,SNR=13						
ILAR	**Eielson Array**	**85.82**	**13**	P	**P**	**09 01 10.8**	**-1.0**
	1.0nm,0.4s,baz=221,slow=5.1,SNR=30						
TXAR	**Lajitas Array**	**86.07**	**58**	P	**P**	**09 01 14.9**	**+0.9**
	1.6nm,0.7s,baz=217,slow=5.9,SNR=25						
PDAR	**Pinedale Array**	**87.38**	**43**	P	**P**	**09 01 19.6**	**-0.3**
	1.0nm,0.6s,baz=219,slow=4.5,SNR=8.5						
CMAR	**Chiang Mai Arr**	**88.71**	**290**	P	**P**	**09 01 27.6**	**+1.1**
	1.8nm,0.3s,baz=105,slow=1.7,SNR=4.7						
YKA	**Yellowknife Ar**	**94.30**	**25**	P	**P**	**09 01 50.1**	**-0.9**
	0.3nm,0.5s,baz=232,slow=4.6,SNR=8.6						
ARCES	**ARCESS Array B**	**126.18**	**350**	PKP	**PKPdf**	**09 07 29.0**	**-1.0**
	1.8nm,0.8s,baz=11,slow=0.6,SNR=4.7						
FINES	**FINESS Array B**	**133.04**	**344**	PKP	**PKPdf**	**09 07 42.8**	**-0.4**
	1.0nm,0.6s,baz=338,slow=4.1,SNR=4.0						
BRTR	**Keskin Array B**	**144.60**	**315**	PKP	**PKPdf**	**09 08 05.0**	**-0.1**
	1.3nm,0.4s,baz=108,slow=3.1,SNR=10						
BRG	**Berggiesshubel**	**145.53**	**346**	*e*PKP	**PKPbc**	**09 08 07.3**	**-0.3**
	4.3nm,0.6s						
GERES	**GERESS Array B**	**147.47**	**345**	PKPbc	**PKPbc**	**09 08 12.6**	**-0.5**
	3.2nm,0.7s,baz=25,slow=3.5,SNR=20						
CRNS	**Crni Vrh**	**149.86**	**342**	*i* PKPbc	**PKPbc**	**09 08 17.8**	**-1.1**
GBAS	**Gorenja Brezov**	**149.93**	**342**	*i* PKPbc	**PKPbc**	**09 08 18.1**	**-1.0**
BOJS	**Bojanci**	**150.07**	**340**	*i* PKPbc	**PKPbc**	**09 08 18.9**	**-0.4**

JMA 07 08:53:56.7±0.2, 37.49N×142.86E, h31km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.53**	**309**	P	Pn	08 54 22.9	+1.0
JIO				*e*S	Sn	08 54 42.1	+1.3
JFK	**Kawauchi**	**1.58**	**266**	P	Pn	08 54 23.6	+0.9
JFK				*e*S	Sn	08 54 43.3	+1.2
JMM	**Marumori**	**1.68**	**284**	P	Pn	08 54 24.5	+0.5
JMM				*e*S	Sn	08 54 45.2	+0.7
ONAJ	**Iwakimizuishiy**	**1.69**	**257**	P	Pn	08 54 25.3	+1.2
ONAJ				*e*S	Sn	08 54 45.6	+0.9
JOU	**Okura**	**1.94**	**297**	P	Pn	08 54 29.2	+1.6
JOU				S	Sn	08 54 52.7	+1.7
JMK	**Ichinoseki**	**1.95**	**319**	P	Pn	08 54 28.9	+1.3
JFT	**Otama**	**2.01**	**272**	P	Pn	08 54 30.2	+1.7
JFT				*e*S	Sn	08 54 54.8	+2.3
JOM	**Ohasama**	**2.33**	**329**	P	Pn	08 54 34.2	+1.3
JYK	**Kaneyama**	**2.43**	**307**	P	Pn	08 54 36.2	+1.9

*IDC **07** 09:00:40.3±1.6, 53.27°N×159.63°E, h0km, mb3.6/5, mb1 3.9/6, mb1mx3.5/70, mbtmp3.7/6, ML4.2/1, Error ellipse: s-maj=54.7km s-min=15.6km az=162.0*
*KRSC **07** 09:00:41.8±1.1, 52.67°N×159.71°E, h59km±13km, ML4.3*
*ISCJB **07** 09:00:43.7±0.5, 52.69°N×0.04°×159.66°E±0.07°, h56km±6km, mb3.5/5, Error ellipse: s-maj=8.3km s-min=4.1km az=42.8*
*MOS **07** 09:00:43.1±0.6, 52.68°N×159.64°E, h55km, mb4.0/2, Error ellipse: s-maj=12.4km s-min=5.8km az=88.4*

ISC 07 09:00:43.9±0.9, 52.69N±0.04°×159.64E±0.04, h48km±8km, n63, σ19°20/91, mb3.6/5, 1D, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.47**	**29**	PN	**Pn**	**09 00 55.4**	**+0.7**
SPN				S	**Sn**	**09 01 03.4**	**+1.0**
SPN	**Mys Shipunski**	**0.47**	**29**	*i* P	**Pn**	**09 00 55.4**	**+0.7**
SPN				*e*S	**Sn**	**09 01 03.4**	**+1.0**
DALK	**Dalny**	**0.64**	**303**	PN	**Pn**	**09 00 56.8**	**0.0**
DALK				S	**Sn**	**09 01 05.9**	**-0.1**
DALK	**Dalny**	**0.64**	**303**	*i* P	**Pn**	**09 00 56.8**	**0.0**
DALK				*e*S	**Sn**	**09 01 05.9**	**-0.1**
PET	**Petropavlovsk**	**0.69**	**300**	*i* PN	**Pn**	**09 00 56.8**	**-0.6**
PET				*e*S	**Sn**	**09 01 06.9**	**-0.2**
PET				pmax	pmax		
	comp=Z,3μm,0.4s						
PET				smax	smax		
	comp=E,8μm,0.4s						
PET				smax	smax		
	comp=E,7μm,0.3s						
PET				smax	smax		
	comp=N,6μm,0.3s						
PET				smax	smax		
	comp=N,7μm,0.4s						
PET	**Petropavlovsk**	**0.69**	**300**	*i* P	**Pn**	**09 00 57.5**	**+0.1**
PET				*i* S	**Sn**	**09 01 07.0**	**-0.2**
UGLR	**Uglovaya**	**0.72**	**317**	PN	**Pn**	**09 00 58.4**	**+0.5**
UGLR				S	**Sn**	**09 01 08.9**	**+0.8**
UGLR	**Uglovaya**	**0.72**	**317**	*e*P	**Pn**	**09 00 58.4**	**+0.5**
UGLR				*e*S	**Sn**	**09 01 08.9**	**+0.8**
RUS	**Russkaya**	**0.74**	**250**	PN	**Pn**	**09 00 58.0**	**0.0**
RUS				S	**Sn**	**09 01 08.1**	**-0.2**
RUS	**Russkaya**	**0.74**	**250**	*e*P	**Pn**	**09 00 58.0**	**0.0**
RUS				*e*S	**Sn**	**09 01 08.1**	**-0.2**
SDLR	**Sedlovina**	**0.75**	**322**	PN	**Pn**	**09 00 58.6**	**+0.3**
SDLR				S	**Sn**	**09 01 08.6**	**-0.2**
SDLR	**Sedlovina**	**0.75**	**322**	*e*P	**Pn**	**09 00 58.6**	**+0.3**
SDLR				*e*S	**Sn**	**09 01 08.6**	**-0.2**
SMAR	**Somma**	**0.77**	**319**	PN	**Pn**	**09 00 58.6**	**-0.1**
SMAR	**Somma**	**0.77**	**319**	*e*P	**Pn**	**09 00 58.6**	**-0.1**
AVH	**Avacha**	**0.79**	**317**	PN	**Pn**	**09 00 59.5**	**+0.6**
AVH				S	**Sn**	**09 01 11.2**	**+1.4**
AVH	**Avacha**	**0.79**	**317**	*i* P	**Pn**	**09 00 59.5**	**+0.6**
AVH				*e*S	**Sn**	**09 01 11.2**	**+1.4**
KRER	**Koryakskii**	**0.82**	**319**	PN	**Pn**	**09 00 59.8**	**+0.4**
KRER	**Koryakskii**	**0.82**	**319**	*i* P	**Pn**	**09 00 59.8**	**+0.4**
KOK	**Koryaka**	**0.86**	**315**	PN	**Pn**	**09 01 00.2**	**+0.4**
KOK	**Koryaka**	**0.86**	**315**	*i* P	**Pn**	**09 01 00.2**	**+0.4**
KRX	**Arik**	**0.90**	**319**	PN	**Pn**	**09 01 00.6**	**+0.2**
KRX				S	**Sn**	**09 01 12.4**	**0.0**
KRX	**Arik**	**0.90**	**319**	*i* P	**Pn**	**09 01 00.6**	**+0.2**
KRX				*e*S	**Sn**	**09 01 12.4**	**0.0**
ASAK	**Asacha**	**1.11**	**255**	PN	**Pn**	**09 01 04.0**	**+0.9**
ASAK				S	**Sn**	**09 01 18.7**	**+1.4**
ASAK	**Asacha**	**1.11**	**255**	*i* P	**Pn**	**09 01 04.0**	**+0.9**
ASAK				*e*S	**Sn**	**09 01 18.7**	**+1.4**
PETK	**Petropavlovsk-**	**1.25**	**290**	Pn	**Pn**	**09 01 05.2**	**+0.2**
	comp=N,222nm,0.3s,baz=103,slow=20,SNR=2380						
PETK				Sn	**Sn**	**09 01 21.3**	**+0.6**
	comp=N,93nm,0.3s,baz=83,slow=34,SNR=14						
PETK				LR	LR	09 01 30.0	
	comp=N,39nm,20.1s,baz=54,slow=42						
KII	**Karymskiy**	**1.35**	**355**	PN	**Pn**	**09 01 07.1**	**+0.6**
KII				S	**Sn**	**09 01 24.2**	**+0.9**
KII	**Karymskiy**	**1.35**	**355**	*e*P	**Pn**	**09 01 07.1**	**+0.6**
KII				*e*S	**Sn**	**09 01 24.2**	**+0.9**
GNL	**Ganaly**	**1.44**	**315**	PN	**Pn**	**09 01 08.1**	**+0.5**
GNL				S	**Sn**	**09 01 26.3**	**+0.9**
GNL	**Ganaly**	**1.44**	**315**	*e*P	**Pn**	**09 01 08.1**	**+0.5**
GNL				*e*S	**Sn**	**09 01 26.3**	**+0.9**
PAU	**Pauzhetka**	**2.13**	**236**	PN	**Pn**	**09 01 18.8**	**+1.8**
PAU				S	**Sn**	**09 01 44.1**	**+1.8**
PAU	**Pauzhetka**	**2.13**	**236**	*e*P	**Pn**	**09 01 18.8**	**+1.8**
PAU				*e*S	**Sn**	**09 01 44.1**	**+1.8**
MKZ	**Mys Kozlova**	**2.25**	**33**	PN	**Pn**	**09 01 18.5**	**0.0**
MKZ				S	**Sn**	**09 01 44.0**	**-1.0**
MKZ	**Mys Kozlova**	**2.25**	**33**	*e*P	**Pn**	**09 01 18.5**	**0.0**
MKZ				*e*S	**Sn**	**09 01 44.0**	**-1.0**
KZV	**Kizimen**	**2.46**	**9**	PN	**Pn**	**09 01 22.8**	**+1.2**
KZV				S	**Sn**	**09 01 51.9**	**+1.4**
KZV	**Kizimen**	**2.46**	**9**	*e*P	**Pn**	**09 01 22.8**	**+1.2**
KZV				*e*S	**Sn**	**09 01 51.9**	**+1.4**
SKR	**Severo-Kuril's**	**2.98**	**229**	PN	**Pn**	**09 01 30.1**	**+1.5**
SKR				S	**Sn**	**09 02 03.3**	**+0.3**
SKR	**Severo-Kuril's**	**2.98**	**229**	*e*P	**Pn**	**09 01 30.1**	**+1.5**
SKR				*e*S	**Sn**	**09 02 03.3**	**+0.3**
KMNR	**Kamenistaya**	**3.09**	**6**	PN	**Pn**	**09 01 32.5**	**+2.2**
KMNR	**Kamenistaya**	**3.09**	**6**	*e*P	**Pn**	**09 01 32.5**	**+2.2**
ESO	**Esso**	**3.29**	**351**	PN	**Pn**	**09 01 33.5**	**+0.6**
ESO	**Esso**	**3.29**	**351**	*e*P	**Pn**	**09 01 33.5**	**+0.6**
KIRR	**Kirishev**	**3.29**	**7**	PN	**Pn**	**09 01 35.1**	**+2.0**
KIRR	**Kirishev**	**3.29**	**7**	*e*P	**Pn**	**09 01 35.1**	**+2.0**
KOZ	**Kozyrevsk**	**3.38**	**2**	PN	**Pn**	**09 01 35.7**	**+1.6**
KOZ	**Kozyrevsk**	**3.38**	**2**	*e*P	**Pn**	**09 01 35.7**	**+1.6**
CIRR	**Tsirk**	**3.49**	**10**	PN	**Pn**	**09 01 36.9**	**+1.1**
CIRR	**Tsirk**	**3.49**	**10**	*e*P	**Pn**	**09 01 36.9**	**+1.1**
KBG	**Krutoberegovo**	**3.99**	**25**	PN	**Pn**	**09 01 44.6**	**+2.1**
KBG				S	**Sn**	**09 02 31.1**	**+3.1**
KBG	**Krutoberegovo**	**3.99**	**25**	*e*P	**Pn**	**09 01 44.6**	**+2.1**
KBG				*e*S	**Sn**	**09 02 31.1**	**+3.1**
BKI	**Bering**	**4.51**	**54**	PN	**Pn**	**09 01 50.1**	**+0.5**
BKI	**Bering**	**4.51**	**54**	*e*P	**Pn**	**09 01 50.1**	**+0.5**
BKI				*e*S	**Sn**	**09 02 36.7**	**-3.9**
ASAJ	**Asahikawa**	**14.18**	**240**	Pn	**P**	**09 04 06.5**	**-1.5**
	comp=N,1.5nm,0.3s,baz=80,slow=14,SNR=5.5						
ILAR	**Eielson Array**	**29.29**	**45**	P	**P**	**09 06 41.2**	**0.0**
	comp=N,0.5nm,0.7s,baz=266,slow=7.9,SNR=7.8						
H11N2	**WAKE ISLAND Hy**	**33.38**	**168**	T	T	09 43 04.2	
	baz=352,slow=76,SNR=103						
H11N3	**WAKE ISLAND Hy**	**33.39**	**167**	T	T	09 43 10.1	
	baz=352,slow=76,SNR=94						
H11N1	**WAKE ISLAND Hy**	**33.39**	**168**	T	T	09 43 07.4	
	baz=352,slow=76,SNR=104						
INK	**Inuvik**	**34.36**	**37**	P	**P**	**09 07 25.5**	**-0.1**
	comp=N,0.7nm,0.4s,baz=236,slow=3.6,SNR=4.3						
H11S1	**WAKE ISLAND Hy**	**34.56**	**168**	T	T	09 44 43.2	
	baz=352,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**34.57**	**168**	T	T	09 44 41.5	
	baz=352,slow=76,SNR=40						
H11S2	**WAKE ISLAND Hy**	**34.58**	**168**	T	T	09 44 43.7	
	baz=352,slow=76,SNR=4.7						
YKA	**Yellowknife Ar**	**43.65**	**42**	P	**P**	**09 08 43.3**	**+0.1**
	comp=N,0.3nm,0.7s,baz=295,slow=7.9,SNR=4.1						
FINES	**FINESS Array B**	**60.38**	**336**	P	**P**	**09 10 45.2**	**-2.3**
	comp=N,0.6nm,0.6s,baz=38,slow=7.0,SNR=1.9						
TXAR	**Lajitas Array**	**71.05**	**66**	P	**P**	**09 11 57.8**	**+0.9**
	comp=N,0.3nm,0.4s,baz=292,slow=5.0,SNR=13						

IDC 07 09:02:58.2±4.9, 28.26S×176.45W, h0km, mb3.8/2, mb1 4.1/2, mb1mx3.6/27, mbtmp3.8/2, Error ellipse: s-maj=125.7km s-min=37.1km az=129.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.62**	**232**	Pn	Pb	09 03 28.6	-0.4
	248nm,0.3s,baz=176,slow=23,SNR=4.4						
RAO				Sn	Sn	09 03 49.1	-0.6
	119nm,0.3s,baz=92,slow=22,SNR=3.5						
ASAR	**Alice Springs**	**44.62**	**264**	P	P	09 11 12.6	-0.2
	0.5nm,0.5s,baz=103,slow=6.4,SNR=7.4						
WRA	**Warramunga Arr**	**45.42**	**269**	P	P	09 11 19.1	0.0
	1.6nm,0.7s,baz=109,slow=7.6,SNR=6.6						
FINES	**FINESS Array B**	**143.57**	**342**	PKP	PKPdf	09 22 33.2	-1.1
	1.0nm,0.8s,baz=3.4,slow=7.0,SNR=3.3						

*ISCJB **07** 09:06:11.9±0.4, 8.24N×0.07°×38.13W±0.05, h10km, mb4.5/66, MS4.1/12, Error ellipse: s-maj=9.7km s-min=6.6km az=164.9*
*IDC **07** 09:06:11.2±0.6, 8.04N×38.10W, h0km, mb4.2/24, mb1 4.3/25, mb1mx4.2/63, mbtmp4.2/25, ML4.2/1, MS4.2/13, Ms1 4.2/13, ms1mx3.9/50, Error ellipse: s-maj=19.6km s-min=13.1km az=141.0*
*NEIC **07** 09:06:12.8±0.2, 7.99N×38.06W, h10km, mb4.8/40, Error ellipse: s-maj=6.7km s-min=6.1km az=150.0*
*GCMT **07** 09:06:12.8±0.5, 7.99N×37.93W, h12km±2km, MW5.0/65, Moment Tensor Solution. s18,c19; s65,c99; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-3.40±.37; Mθθ 0.16±.22; Mϕϕ 3.24±.26; Mrθ -1.68±.87; Mϕθ 0.20±.16; Mϕr-1.38±.60; Best double couple: Mo 3.93500×10^16 NP1: ϕs 25.00000°, δ 61.00000°, λ -70.00000°. NP2: ϕs 168.00000°, δ 35.00000°, λ -122.00000°. Principal axes: T 3.6050, Plg13.0000°, Azm100.0000°; N 0.6560, Plg18.0000°, Azm194.0000°; P -4.2650, Plg68.0000°, Azm335.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 07 09:06:13.6±0.5, 7.96N±0.08×38.04W±0.09, h16km, n348, σ0°86/334, mb4.7/66, MS4.2/12, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RCBR	**Riachuelo**	**13.86**	**171**	Pn	**Pn**	**09 09 28.6**	**-1.0**
	1.1nm,0.3s,baz=327,slow=12,SNR=8.0						
RCBR				LR	LR	09 13 31.6	
	comp=Z,420nm,20.1s,baz=347,slow=32						
H05S1	**Guadeloupe/Mar**	**23.25**	**288**	T	T	09 35 18.8	
	SNR=40						
PTGA	**Pitinga**	**23.50**	**249**	P	**P**	**09 11 22.8**	**-0.3**
	5.0nm,0.7s,baz=70,slow=10,SNR=10.0						
PTGA				LR	LR	09 20 03.6	
	comp=Z,588nm,21.9s,baz=62,slow=36						
H05N1	**Guadeloupe/Mar**	**23.96**	**292**	T	T	09 36 13.3	
	SNR=12						
BDFB	**Brasilia**	**25.44**	**203**	P	**P**	**09 11 42.8**	**+1.7**
	14nm,1.0s,baz=78,slow=7.4						
BDFB				LR	LR	09 21 14.0	
	comp=Z,195nm,20.1s,baz=168,slow=35						
PCRV	**Puerto La Cruz**	**26.35**	**277**	LR	LR	09 22 18.9	
	comp=Z,189nm,19.1s,baz=75,slow=37						
H10N3	**ASCENSION HYDR**	**28.23**	**123**	T	T	09 41 36.8	
	baz=304,slow=75,SNR=443						
H10N2	**ASCENSION HYDR**	**28.23**	**123**	T	T	09 41 40.6	
	baz=304,slow=75,SNR=434						
H10N1	**ASCENSION HYDR**	**28.25**	**123**	T	T	09 41 38.4	
	baz=304,slow=75,SNR=371						
H10S3	**ASCENSION HYDR**	**28.72**	**125**	T	T	09 42 19.9	
	baz=305,slow=75,SNR=275						
H10S1	**ASCENSION HYDR**	**28.72**	**125**	T	T	09 42 16.0	
	baz=305,slow=75,SNR=334						
H10S2	**ASCENSION HYDR**	**28.74**	**125**	T	T	09 42 18.7	
	baz=305,slow=75,SNR=238						
SJG	**San Juan**	**29.14**	**293**	LR	LR	09 21 23.0	
	comp=Z,672nm,21.6s,baz=92,slow=31						
SAML	**Samuel**	**30.16**	**237**	*e*P	**P**	**09 12 24.4**	**+1.2**
	17nm,1.

7.2nm,1.1s,baz=48,slow=12,SNR=4.2
V40A **Witts Springs** 57.02 308 P P 09 15 58.4 -0.6
baz=105
W40A **Ferguson Farm,** 57.05 307 P P 09 15 59.5 +0.3
baz=105
U40A **Yellville** 57.19 308 P P 09 15 59.5 -0.7
baz=106
L41A **Preston** 57.24 315 P P 09 16 00.1 -0.3
baz=111
S40A **Lebanon** 57.26 310 P P 09 16 00.5 -0.2
baz=107
R40A **Maddies Statio** 57.28 311 P P 09 16 00.7 -0.1
baz=107
MIAR **Mount Ida** 57.30 306 P P 09 16 01.2 +0.2
baz=104
K41A **Shullsburg** 57.30 316 P P 09 16 00.3 -0.5
baz=112
Q40A **Laux Farm, Aux** 57.35 311 P P 09 16 00.8 -0.4
baz=108
JFWS **Jewell Farm** 57.37 316 eP P 09 16 00.7 -0.6
8.1nm,0.6s
J41A **Loganville** 57.38 317 P P 09 16 00.9 -0.5
baz=112
P40A **Paris** 57.50 312 P P 09 16 01.3 -0.9
baz=108,SNR=5.3
O40A **La Belle** 57.55 313 P P 09 16 02.1 -0.6
baz=109
Y39A **Lockesburg** 57.57 305 P P 09 16 03.3 +0.5
baz=103
W39A **Magazine** 57.62 307 P P 09 16 02.0 -1.2
baz=104
X39A **Fountain Ranch** 57.72 306 P P 09 16 04.0 +0.1
baz=104
T39A **Clever** 57.77 309 P P 09 16 03.9 -0.4
baz=106
R39A **Chumby, Stover** 57.87 310 P P 09 16 04.5 -0.5
baz=107
J40A **Soldiers Grove** 57.88 317 P P 09 16 04.4 -0.5
baz=112
COWI **Conover** 57.89 320 eP P 09 16 04.5 -0.4
12nm,1.4s
K40A **Colesburg** 57.90 316 P P 09 16 04.4 -0.7
baz=111
S39A **Bolivar** 57.91 310 P P 09 16 04.1 -1.2
baz=106,SNR=6.1
P39B **Salisbury** 58.00 312 P P 09 16 04.8 -1.1
baz=108,SNR=5.6
Q39A **Willow Grove F** 58.03 311 P P 09 16 05.7 -0.4
baz=107
W38A **Poteau** 58.17 306 P P 09 16 07.1 0.0
baz=104
N39A **Derby Farms, D** 58.25 313 P P 09 16 06.5 -1.0
baz=109
V38A **Canehill** 58.27 307 P P 09 16 07.2 -0.6
baz=104
L39A **Vinton** 58.30 315 P P 09 16 06.9 -0.9
baz=110
X38A **Whitesboro** 58.33 306 P P 09 16 08.1 -0.2
baz=103
S38A **Stockton** 58.34 309 P P 09 16 07.1 -1.2
baz=106,SNR=8.4
U38A **Gravette** 58.40 308 P P 09 16 08.4 -0.3
baz=105
K39A **Oelwein** 58.42 316 P P 09 16 07.9 -0.9
baz=110
T38A **Diamond** 58.48 309 P P 09 16 08.8 -0.5
baz=105
Q38A **Cooks Store, C** 58.49 311 P P 09 16 08.7 -0.5
baz=107
R38A **Fenwick Farm,** 58.49 310 P P 09 16 08.8 -0.4
baz=106
J39A **Decorah** 58.52 316 P P 09 16 07.8 -1.6
baz=111,SNR=6.3
237A **Washetta, Mont** 58.58 303 P P 09 16 09.9 -0.1
baz=101
637A **Eagle Lake** 58.58 300 P P 09 16 10.8 +0.8
baz=99
537A **Green Hill Far** 58.66 300 P P 09 16 10.9 +0.3
baz=100
N38A **Joes South For** 58.75 313 P P 09 16 09.8 -1.3
baz=108
Y37A **Hugo** 58.82 305 P P 09 16 11.3 -0.3
baz=102
V37A **Hulbert** 58.86 307 P P 09 16 11.2 -0.7
baz=104
W37B **Quinton** 58.92 306 P P 09 16 12.2 -0.1
baz=103
U37A **Salina** 58.96 308 P P 09 16 12.0 -0.6
baz=104
T37A **Cheneyville 18** 58.98 309 P P 09 16 11.8 -1.0
baz=105,SNR=5.9
J38A **Wedel Dairy, R** 59.04 316 P P 09 16 12.1 -0.9
baz=110
S37A **Fort Scott** 59.08 309 P P 09 16 13.0 -0.4
baz=105
736A **Circle Diamond** 59.14 299 P P 09 16 15.0 +1.1
baz=98
I38A **Scanlan Farm,** 59.19 317 P P 09 16 13.4 -0.6
baz=111
636A **Smothers Creek** 59.21 300 P P 09 16 15.2 +0.8
baz=99
P37A **Lathrop** 59.21 312 P P 09 16 13.5 -0.8
baz=106
TUL1 **Leonard** 59.38 307 P P 09 16 15.2 -0.3
baz=103
TUL1 **Leonard** 59.38 307 eP P 09 16 14.8 -0.7
13nm,1.2s
GERES **GERESS Array B** 59.45 37 P P 09 16 17.4 +1.5
0.2nm,0.3s,baz=240,slow=8.9,SNR=3.5
N37A **Lee Faris, Mou** 59.45 313 P P 09 16 14.5 -1.4
baz=107,SNR=5.2
V36A **Jenks** 59.47 307 P P 09 16 15.5 -0.7
baz=103
M37A **Trindle Farm,** 59.53 314 P P 09 16 15.9 -0.5
baz=108
X36A **Centrahoma** 59.53 305 P P 09 16 15.8 -0.7
baz=102
L37A **Phoenix Point,** 59.54 315 P P 09 16 15.5 -0.9
baz=108
W36A **Wetumka** 59.55 306 P P 09 16 16.3 -0.5
baz=102
K37A **Belmond** 59.66 315 P P 09 16 15.8 -1.5
baz=109
H37A **Dierke Farm, C** 59.77 317 P P 09 16 17.6 -0.5
baz=110
J37A **Redenius Farm,** 59.78 316 P P 09 16 17.2 -0.9
baz=109
035A **Encino** 59.78 296 P P 09 16 19.1 +0.7
baz=97
635A **Leesville** 59.81 299 P P 09 16 18.7 +0.1
baz=98
P36A **Good Intent, A** 59.86 311 P P 09 16 17.7 -1.1
baz=106
Q36A **Arnold C. Orve** 59.87 311 P P 09 16 18.2 -0.6
baz=105
C38A **Sawbill Land.** 59.88 321 P P 09 16 17.4 -1.3
baz=114
SPMN **Marine on St.** 59.92 318 P P 09 16 17.6 -1.5
baz=111,SNR=7.4
SPMN **Marine on St.** 59.92 318 eP P 09 16 18.4 -0.6
9.4nm,0.6s
X35A **Drake** 60.00 305 P P 09 16 19.2 -0.6
baz=102
W35A **Tecumseh** 60.07 306 P P 09 16 20.1 -0.2
baz=102
M36A **Felix, Anita** 60.08 313 P P 09 16 19.1 -1.2
baz=107
EYMN **Ely** 60.11 321 P P 09 16 18.8 -1.6
baz=114
T35A **Sooner Cattle** 60.17 308 P P 09 16 20.7 -0.3
baz=103
K36A **Gilmore City** 60.19 315 P P 09 16 20.1 -0.8
baz=108
934A **Benavides** 60.23 297 P P 09 16 22.8 +1.4
baz=97
034A **Hebbronville** 60.31 297 P P 09 16 22.9 +0.9
baz=96
834A **Tilden** 60.32 298 P P 09 16 22.7 +0.6
baz=97
I36A **Fitzsimmons Fa** 60.32 317 P P 09 16 20.9 -1.0
baz=109
J36A **Seneca 1, Swea** 60.33 316 P P 09 16 20.5 -1.4
baz=108
D37A **Cotton** 60.39 320 P P 09 16 20.9 -1.3
baz=112,SNR=6.5
434A **Burnet** 60.45 301 P P 09 16 22.6 -0.4
baz=99
C37A **Embarrass** 60.45 321 P P 09 16 21.0 -1.7
baz=113,SNR=5.8

BRG **Berggiesshubel** 60.47 35 eP P 09 16 25.6 +2.8
7.5nm,1.3s
534A **Blanco** 60.51 300 P P 09 16 23.6 +0.2
baz=98
234A **Clairette** 60.52 302 P P 09 16 23.2 -0.2
baz=100
Y34A **Reagan Ranch,** 60.55 304 P P 09 16 23.1 -0.5
baz=101
G36A **St. Michael** 60.55 318 P P 09 16 22.9 -0.5
baz=110
134A **White-Moore Ra** 60.57 303 P P 09 16 23.2 -0.5
baz=100
F36A **Milaca** 60.62 319 P P 09 16 22.5 -1.4
baz=111
E36A **McGregor** 60.68 319 P P 09 16 22.9 -1.4
baz=111
T34A **McClaskey Farm** 60.73 308 P P 09 16 24.2 -0.6
baz=103
V34A **Guthrie** 60.73 307 P P 09 16 24.6 -0.2
baz=102
X34A **Smith Ranch, M** 60.73 305 P P 09 16 24.7 -0.1
baz=101
L35A **Bielow Farm, R** 60.80 314 P P 09 16 24.1 -1.1
baz=107
S34A **Willow Spring** 60.82 309 P P 09 16 24.6 -0.8
baz=103
D36A **Goodland** 60.86 320 P P 09 16 24.5 -1.0
baz=112,SNR=13
C36A **Pine Crest Far** 60.87 321 P P 09 16 24.6 -0.9
baz=112
933A **Laredo** 60.90 297 P P 09 16 26.9 +0.9
baz=96
I35A **Creekview Farm** 60.94 316 P P 09 16 25.2 -0.9
baz=108
Q34A **Chapman** 60.98 310 P P 09 16 25.8 -0.6
baz=104
533A **Kerrville** 60.99 300 P P 09 16 26.6 -0.1
baz=98
633A **Saathoff Ranch** 61.03 299 P P 09 16 27.3 +0.3
baz=98
G35A **Watkins** 61.04 318 P P 09 16 25.7 -1.0
baz=109,SNR=7.7
R34A **Isabella, Hill** 61.06 309 P P 09 16 26.2 -0.8
baz=104
833A **Chaparral WMA,** 61.08 298 P P 09 16 28.0 +0.7
baz=97
TSUM **Tsumeb** 61.08 117 LR LR 09 36 42.8
comp=Z,564nm,20.7s,baz=328,slow=30
H35A **Sunnyside Ranc** 61.10 317 P P 09 16 25.9 -1.2
baz=109,SNR=6.2
333A **Richland Sprin** 61.13 301 P P 09 16 26.6 -1.0
baz=99,SNR=7.4
N34A **Lincoln** 61.14 312 P P 09 16 26.6 -0.9
baz=106
233A **Rising Star** 61.16 302 P P 09 16 26.9 -1.0
baz=99
Z33A **Whitaker Ranch** 61.26 304 P P 09 16 27.9 -0.5
baz=100
Y33A **Hilltop Ranch,** 61.27 304 P P 09 16 28.2 -0.3
baz=100
133A **Hamilton Ranch** 61.27 303 P P 09 16 28.0 -0.6
baz=99
F35A **Swanville** 61.31 318 P P 09 16 26.9 -1.6
baz=110
U33A **Lingo Farm, Me** 61.33 307 P P 09 16 28.7 -0.1
baz=102
W33A **Caddo, Fort Co** 61.35 306 P P 09 16 28.4 -0.7
baz=101
L34A **Svendsen Farm,** 61.35 314 P P 09 16 28.0 -0.9
baz=106
VRAC **Vranov** 61.37 37 P P 09 16 30.5 +1.6
3.3nm,0.7s,baz=228,slow=16,SNR=4.0
VRAC LR LR 09 38 49.6
comp=Z,221nm,20.9s,baz=290,slow=32
D35A **Remer** 61.39 320 P P 09 16 27.6 -1.5
baz=111
WMOK **Wichita Mounta** 61.53 305 P P 09 16 29.7 -0.5
baz=101
WMOK **Wichita Mounta** 61.53 305 eP P 09 16 28.8 -1.5
4.2nm,1.0s
C35A **Jirik Farms, M** 61.56 320 P P 09 16 28.9 -1.3
baz=111
832A **Faith Ranch, C** 61.59 298 P P 09 16 31.1 +0.3
baz=96
R33A **Olander Ranch,** 61.63 309 P P 09 16 29.9 -0.9
baz=103
B35A **Bob, Littlefor** 61.65 321 P P 09 16 29.9 -0.9
baz=112
JCT **Junction City** 61.71 300 P P 09 16 31.2 -0.3
baz=98
JCT **Junction City** 61.71 300 eP P 09 16 31.1 -0.4
8.3nm,1.0s
H34A **Spellman Lake,** 61.73 317 P P 09 16 29.8 -1.6
baz=108,SNR=6.6
O33A **Hebron** 61.74 311 P P 09 16 30.3 -1.3
baz=104
G34A **Benson** 61.81 317 P P 09 16 30.7 -1.2
baz=108
ABTX **Abilene, Hawle** 61.88 303 P P 09 16 32.4 -0.3
baz=99
E34A **Wadena** 61.92 319 P P 09 16 31.5 -1.1
baz=110
W32A **Sentinel** 61.98 306 P P 09 16 33.2 -0.1
baz=100
ECSD **EROS Data Cent** 62.02 316 P P 09 16 31.7 -1.7
baz=107,SNR=6.6
ECSD **EROS Data Cent** 62.02 316 eP P 09 16 32.0 -1.4
7.3nm,1.0s
T32A **Hudeker Ranch,** 62.12 308 P P 09 16 33.5 -0.7
baz=102
D34A **Park Rapids** 62.13 320 P P 09 16 32.7 -1.4
baz=110
R32A **Long Quarter,** 62.21 309 P P 09 16 34.4 -0.4
baz=103
Q32A **Meitler Ranch,** 62.22 310 P P 09 16 34.6 -0.2
baz=103
I33A **Coleman** 62.24 316 P P 09 16 33.6 -1.2
baz=107
B34A **Aery, Baudette** 62.27 321 P P 09 16 33.8 -1.2
baz=111
O32A **Brockman Farm,** 62.30 311 P P 09 16 34.8 -0.6
baz=104
G33A **Ortonville** 62.34 317 P P 09 16 34.5 -1.0
baz=108
H33A **Prehn Over Nor** 62.39 317 P P 09 16 35.0 -0.9
baz=107
P32A **Huiting Farm,** 62.40 311 P P 09 16 34.7 -1.3
baz=103
N32A **Stulken Farm,** 62.44 312 P P 09 16 35.9 -0.4
baz=104
F33A **5 Mile Ranch,** 62.44 318 P P 09 16 35.2 -1.0
baz=108
BGNE **Belgrade** 62.49 313 P P 09 16 35.6 -1.0
baz=104
BGNE **Belgrade** 62.49 313 eP P 09 16 36.0 -0.6
20nm,0.6s
D33A **AnnSam, Waubun** 62.56 319 P P 09 16 35.6 -1.4
baz=109,SNR=7.1
K32A **Verdigre** 62.68 314 P P 09 16 36.6 -1.2
baz=105
C33A **Trail** 62.72 320 P P 09 16 36.9 -1.1
baz=110
J32A **Parkston** 62.78 315 P P 09 16 37.8 -0.7
baz=106
H32A **Carlson Farm,** 62.81 316 P P 09 16 38.3 -0.4
baz=107
A33A **Warroad** 62.89 321 P P 09 16 37.7 -1.4
baz=110
AGMN **Agassiz Nation** 62.96 321 P P 09 16 38.6 -0.9
baz=110
AGMN **Agassiz Nation** 62.96 321 eP P 09 16 38.3 -1.2
2.7nm,0.6s
G32A **Webster** 63.07 317 P P 09 16 39.3 -1.1
baz=107
CBKS **Cedar Bluff** 63.08 310 P P 09 16 40.1 -0.5
baz=102
L31A **Butterfield Fa** 63.18 313 P P 09 16 40.9 -0.3
baz=104
D32A **Dogwood Acres,** 63.32 319 P P 09 16 41.0 -0.9
baz=108
IDI **Anoyia** 63.40 55 P P 09 16 44.4 +1.6
3.8nm,0.7s,baz=265,slow=9.9,SNR=3.4
B32A **Ashes, Strandq** 63.42 321 P P 09 16 41.7 -0.9
baz=109
A32A **Rocking H Ranc** 63.56 321 P P 09 16 42.3 -1.3
baz=110
E31A **Nome** 63.71 318 P P 09 16 43.4 -1.2
baz=107

D31A **Mcclaflin, Tow** 63.75 319 P P 09 16 43.3 -1.6
baz=108
F31A **Hecla** 63.75 317 P P 09 16 43.7 -1.2
baz=107
SUSD **Miller** 63.84 316 P P 09 16 44.4 -1.1
baz=105
K30A **Basset** 63.86 314 P P 09 16 44.8 -0.8
baz=104
C31A **Landman Farms,** 63.99 320 P P 09 16 44.6 -1.8
baz=108,SNR=5.8
B31A **Greenbush Farm** 64.13 320 P P 09 16 46.1 -1.1
baz=108
CRVS **Cervenica-Dubn** 64.22 39 eP P 09 16 48.3 +0.4
NB2 **NORSAR Subarra** 64.23 24 P P 09 16 47.9 +0.1
comp=Z,30nm,1.4s,baz=238,slow=6.5
NB2 **NORSAR Subarra** 64.23 24 P P 09 16 47.9 +0.1
baz=238,slow=6.5
F30A **Leola** 64.27 317 P P 09 16 47.5 -0.7
baz=106
C30A **Mose, Pekin** 64.44 319 P P 09 16 48.1 -1.2
baz=107
SUMG **Summit** 64.56 360 i P P 09 16 49.3 -0.9
comp=Z,8.4nm,0.7s
SUMG **Summit** 64.56 360 eP P 09 16 49.9 -0.3
comp=Z,30nm,1.3s
B30A **Myrvik Farm, E** 64.57 320 P P 09 16 48.5 -1.7
baz=108,SNR=11
MSTX **Muleshoe** 64.67 304 P P 09 16 51.2 -0.1
baz=98
A30A **Hoffart Farm,** 64.70 321 P P 09 16 49.6 -1.4
baz=108
G29A **Hoven** 64.70 316 P P 09 16 49.8 -1.3
baz=105
HFS **Hagfors** 64.78 26 P P 09 16 52.2 +0.9
comp=Z,5.6nm,0.9s,baz=240,slow=12,SNR=4.7
F29A **Eureka** 64.80 317 P P 09 16 50.8 -1.0
baz=105
TXAR **Lajitas Array** 64.92 299 P P 09 16 52.7 -0.2
comp=Z,1.0nm,0.5s,baz=100,slow=5.7,SNR=26
MDND **Maddock** 65.21 319 P P 09 16 53.5 -0.8
baz=106
B29A **Wagenman Farm,** 65.22 320 P P 09 16 53.0 -1.4
baz=107
OGNE **Ogallala** 65.24 311 P P 09 16 53.6 -1.2
baz=101
A29A **Manning Farm,** 65.28 320 P P 09 16 52.9 -1.9
baz=107,SNR=9.6
KSCO **Kaye Shedlock'** 65.33 309 P P 09 16 54.8 -0.7
baz=100
KSCO **Kaye Shedlock'** 65.33 309 eP P 09 16 55.6 +0.1
comp=Z,42nm,1.6s
B28A **Dugan Ranch, T** 65.86 320 P P 09 16 57.5 -1.0
baz=106
A28A **Rude Farm, Bot** 65.93 320 P P 09 16 57.5 -1.6
baz=106,SNR=8.8
MLR **Muntele Rosu** 66.22 44 P P 09 17 00.9 -0.1
comp=Z,1.1nm,0.9s,baz=164,slow=1.8,SNR=4.6
T25A **Trinidad** 66.42 307 P P 09 17 02.3 -0.4
baz=98,SNR=5.8
MNTX **Cornudas Mount** 66.60 301 P P 09 17 03.1 -0.5
baz=95
MNTX **Cornudas Mount** 66.60 301 eP P 09 17 03.1 -0.5
comp=Z,6.0nm,1.2s
A26A **Wade Farm, Ken** 67.05 320 P P 09 17 05.7 -0.5
baz=105
SDCO **Great Sand Dun** 67.37 308 P P 09 17 09.0 +0.2
baz=98,SNR=9.4
SDCO **Great Sand Dun** 67.37 308 eP P 09 17 08.9 +0.2
comp=Z,4.2nm,1.0s
ISCO **Idaho Springs** 67.74 310 P P 09 17 10.6 -0.5
baz=98
ISCO **Idaho Springs** 67.74 310 eP P 09 17 11.6 +0.5
comp=Z,6.9nm,1.2s
ANMO **Albuquerque** 67.81 304 P P 09 17 11.2 -0.3
baz=96
N23A **Red Feather La** 68.15 311 P P 09 17 13.6 0.0
baz=99
DGMT **Dagmar** 68.34 319 eP P 09 17 14.7 +0.4
comp=Z,12nm,0.7s
S22A **4UR Ranch, Cre** 68.41 307 P P 09 17 15.1 -0.2
baz=97
FFC **Flin Flon** 68.63 326 eP P 09 17 15.3 -0.6
comp=Z,17nm,1.0s
121A **Cookes Peak, D** 68.70 302 P P 09 17 17.7 +0.6
baz=94
121A **Cookes Peak, D** 68.70 302 eP P 09 17 18.3 +1.2
comp=Z,5.3nm,1.2s
LAO **LASA Array** 69.32 317 P P 09 17 20.5 0.0
baz=101
LAO **LASA Array** 69.32 317 eP P 09 17 20.6 +0.1
comp=Z,9.2nm,1.4s
AKASG **Malin Array Be** 69.54 39 P P 09 17 21.0 -0.7
comp=Z,1.2nm,0.6s,baz=262,slow=5.5,SNR=5.8
O20A **White River Ci** 69.79 310 P P 09 17 23.7 0.0
baz=97
O20A **White River Ci** 69.79 310 eP P 09 17 24.1 +0.4
comp=Z,6.2nm,1.0s
W18A **Petrified Fore** 70.50 304 P P 09 17 28.7 +0.5
baz=94
W18A **Petrified Fore** 70.50 304 eP P 09 17 29.2 +1.0
comp=Z,14nm,1.2s
FINES **FINESS Array B** 70.83 27 P P 09 17 28.9 -0.5
comp=Z,0.7nm,0.5s,baz=222,slow=2.6,SNR=5.3
BRTR **Keskin Array B** 70.88 51 P P 09 17 29.7 -0.6
comp=Z,1.2nm,0.9s,baz=274,slow=6.1,SNR=4.0
PDAR **Pinedale Array** 71.08 312 P P 09 17 30.6 -1.1
comp=Z,1.4nm,1.1s,baz=61,slow=12,SNR=6.0
BW06 **Boulder Array** 71.08 312 P P 09 17 31.2 -0.4
baz=97
RLMT **Red Lodge** 71.17 315 P P 09 17 31.7 -0.4
baz=98
TUC **Tucson** 71.22 301 P P 09 17 32.8 +0.3
baz=92
WUAZ **Wupatki** 71.86 305 P P 09 17 36.7 +0.3
baz=93,SNR=7.7
WUAZ **Wupatki** 71.86 305 eP P 09 17 37.0 +0.6
comp=Z,8.6nm,1.0s
SNOW **Snow King Moun** 72.03 313 eP P 09 17 37.6 +0.2
comp=Z,26nm,1.7s
FLWY **Flagg Ranch** 72.06 314 eP P 09 17 38.0 +0.5
comp=Z,19nm,1.0s
REDW **Red Top Meadow** 72.09 313 eP P 09 17 37.2 -0.5
comp=Z,5.7nm,1.0s
TPAW **Teton Pass** 72.17 313 eP P 09 17 38.1 -0.1
comp=Z,9.2nm,1.1s
IMW **Indian Meadow** 72.21 313 eP P 09 17 38.4 -0.1
comp=Z,5.3nm,0.6s
HWUT **Hardware Ranch** 72.44 311 eP P 09 17 39.9 +0.1
comp=Z,16nm,1.0s
BOZ **Bozeman (W)** 72.88 315 P P 09 17 40.8 -1.4
baz=96
BOZ **Bozeman (W)** 72.88 315 eP P 09 17 42.1 -0.2
comp=Z,6.4nm,1.1s
DUG **Dugway, Tooele** 73.28 309 P P 09 17 44.2 -0.5
baz=94
DUG **Dugway, Tooele** 73.28 309 eP P 09 17 45.1 +0.4
comp=Z,14nm,1.6s
ARCES **ARCESS Array B** 73.51 19 P P 09 17 44.1 -1.2
comp=Z,1.0nm,0.6s,baz=246,slow=6.0,SNR=10
DLMT **Dillon** 73.53 315 eP P 09 17 46.4 +0.3
comp=Z,20nm,1.3s
Y12C **Blythe** 74.40 303 P P 09 17 51.7 +0.5
baz=91,SNR=6.3
MSO **Missoula** 74.59 316 P P 09 17 51.4 -0.8
baz=95
GLA **Glamis** 74.64 302 P P 09 17 53.8 +1.1
baz=90
HLID **Hailey** 74.69 313 P P 09 17 52.3 -0.7
baz=94,SNR=8.6
HLID **Hailey** 74.69 313 eP P 09 17 53.0 +0.1
comp=Z,5.1nm,1.1s
EDM **Edmonton** 74.88 323 eP P 09 17 52.9 -0.8
comp=Z,16nm,1.0s
IRM **Iron Mountain** 74.92 303 P P 09 17 55.2 +0.9
baz=90
ELK **Elko** 75.16 310 eP P 09 17 56.2 +0.4
comp=Z,8.0nm,1.4s
BC3 **Big Chuckawall** 75.17 303 P P 09 17 56.4 +0.5
baz=90
R11A **Troy Canyon, C** 75.35 307 P P 09 17 57.6 +0.7
baz=91
GMRC **Granite Mounta** 75.35 304 P P 09 17 57.4 +0.5
baz=90
TUQ **Turquoise Moun** 75.57 304 P P 09 17 58.8 +0.7
baz=90
BELC **Belle Mtn. Jos** 75.63 303 P P 09 17 59.0 +0.5
baz=90
IKP **In-Ko-Pah, Jac** 75.72 302 P P 09 17 59.5 +0.5

baz=90
TPNV **Topopah Spring** 75.85 306 P P 09 18 00.6 +0.9
baz=91
SHOC **Shoshone, Teco** 75.86 305 P P 09 18 00.5 +0.8
baz=90
HEC **Hector,Ludlow** 75.91 304 P P 09 18 01.0 +1.0
baz=90
MONP2 **Monument Peak** 75.99 302 P P 09 18 01.6 +0.9
baz=90
TPFO **Pinon Flats** 76.01 303 P P 09 18 01.0 +0.3
baz=90
PFO **Pinyon Flats O** 76.01 303 P P 09 18 01.0 +0.3
baz=90
GSC **Goldstone, Bar** 76.29 304 P P 09 18 03.0 +0.8
baz=90
FURC **Furnace Creek,** 76.34 306 P P 09 18 03.3 +1.0
baz=90
GRAC **Grapevine Rang** 76.75 306 P P 09 18 05.4 +0.7
baz=90
YKA **Yellowknife Ar** 76.78 332 P P 09 18 02.6 -1.6
comp=Z,2.8nm,0.8s,baz=101,slow=6.2,SNR=28
BMO **Blue Mountains** 76.83 314 eP P 09 18 05.1 +0.1
comp=Z,8.8nm,1.4s
NEW **Newport** 76.84 318 P P 09 18 04.5 -0.5
baz=93
MPMC **Manual Prospec** 76.85 305 P P 09 18 05.8 +0.4
baz=90
BFSC **Mount Baldy Ra** 77.00 303 P P 09 18 06.1 -0.2
baz=89
LRMC **Laurel Mtn Rad** 77.01 305 P P 09 18 06.7 +0.4
baz=89
EDW2 **Edwards Air Fo** 77.27 304 P P 09 18 08.5 +0.8
baz=89
WVOR **Wild Horse Val** 77.75 312 eP P 09 18 10.8 +0.5
comp=Z,5.7nm,1.1s
KBZ **Khabaz** 78.01 47 P P 09 18 12.1 +0.6
comp=Z,2.3nm,0.8s,baz=11,slow=2.5,SNR=5.1
RCTC **Rector, Farmer** 78.26 305 P P 09 18 13.2 +0.1
baz=89
J05D **Fort Rock, OR** 79.65 313 P P 09 18 19.9 -0.9
baz=89
I05D **Terrebonne, OR** 79.70 314 P P 09 18 21.0 0.0
baz=89
K04D **Chiloquin, OR** 80.05 312 P P 09 18 22.6 -0.3
baz=88
M04C **Macdoel** 80.14 311 P P 09 18 23.9 +0.5
baz=88
I04A **Tendick Farm,** 80.49 313 P P 09 18 25.2 0.0
baz=88
SNAA **Sanae** 82.78 169 eP P 09 18 36.6 0.0
INK **Inuvik** 84.69 338 P P 09 18 46.5 0.0
comp=Z,4.5nm,0.6s,baz=54,slow=3.6,SNR=14
AKTO **Aktyubinsk** 87.77 40 P P 09 19 02.1 +0.1
comp=Z,1.1nm,0.7s,baz=307,slow=3,SNR=3.9
ABKAR **Akbulak array** 89.22 40 eP P 09 19 09.3 +0.4
comp=Z,8.1nm,1.1s
ILAR **Eielson Array** 90.74 336 P P 09 19 15.2 -0.5
comp=Z,0.7nm,0.9s,baz=55,slow=3.4,SNR=6.3

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*IDC **07** 09:09:23.4±2.9,53.˚56N×87.˚65E,h0km,mb1 3.5/2, mb1mx3.2/61,mbtmp3.5/2,ML2.8/2,Error ellipse: s-maj=26.2km s-min=14.3km az=61.0*

ISC 07 09:09:28.1±4.1,53.˚6N±0.˚1×87.˚5E±0.˚2,h35km,n6,σ0s99/8, 6C,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.61**	**282**	*i*			09 19 10.0	
	baz=102,slow=321,SNR=6.1							
ZALV	**Zalesovo Beam**	**1.61**	**282**	Pg		**Pn**	**09 09 54.0**	**0.0**
	3.9nm,0.3s,baz=100,slow=14,SNR=53							
ZALV				Lg		Lg	09 10 18.1	
	2.5nm,0.3s,baz=106,slow=21,SNR=5.5							
KURK	**Kurchatov**	**6.18**	**245**	⇑Pn		**Pn**	**09 10 56.7**	**-0.1**
	2.4nm,0.8s							
KURK				⇑Sn		**Sn**	**09 12 05.9**	**-0.3**
	1.0nm,0.6s							
KURK				⇑Lg		Lg	09 12 39.1	
	13nm,0.9s							
KURBB	**Kurchatov Arra**	**6.28**	**245**	Pn		**Pn**	**09 10 58.7**	**+0.5**
	0.1nm,0.3s,baz=62,slow=14,SNR=14							
KURBB				Lg		Lg	09 12 44.9	
	0.1nm,0.3s,baz=63,slow=33,SNR=9.8							
MK31	**Makanchi Array**	**7.61**	**208**	⇑Pn		**Pn**	**09 11 16.4**	**-0.2**
	1.7nm,0.7s,baz=28,slow=11,SNR=13							
MK31				⇑Sn		**Sn**	**09 12 40.1**	**-1.4**
	0.6nm,0.5s,baz=25,slow=28,SNR=4.1							
MK31				⇑Lg		Lg	09 13 22.4	
	3.1nm,0.8s,baz=20,slow=25,SNR=6.8							
MKAR	**Makanchi Array**	**7.61**	**208**	Pn		**Pn**	**09 11 16.4**	**-0.1**
	0.2nm,0.3s,baz=24,slow=12,SNR=14							
MKAR				Sn		**Sn**	**09 12 43.1**	**+1.6**
	0.1nm,0.3s,baz=32,slow=24,SNR=6.1							
MKAR				Lg		Lg	09 13 22.6	
	0.1nm,0.3s,baz=36,slow=31,SNR=12							

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*IDC **07** 09:10:48.3±0.4,28.˚90S×176.˚64W,h0km,mb5.3/22, mb1 5.4/22,mb1mx5.2/37,mbtmp5.3/22,MS5.6/13, Ms1 5.6/13,ms1mx5.1/38,Error ellipse: s-maj=16.2km s-min=13.2km az=170.0*

*ISCJB **07** 09:10:49.0±0.1,28.˚97S±0.˚03×176.˚69W±0.˚03,h10km, mb5.6/248,MS5.7/61,Error ellipse: s-maj=4.9km s-min=2.9km az=153.8*

*NEIC **07** 09:10:50.2±0.1,28.˚98S×176.˚71W,h10km,mb5.6/196, MS5.6/7,Error ellipse: s-maj=5.7km s-min=3.4km az=147.0*

*GCMT **07** 09:10:50.2±0.1,28.˚90S×176.˚13W,h12km,MW5.7/136, Moment Tensor Solution. s107,c187; s136,c267; Duration: 1s7 Moment tensor: Scale 10^{17}Nm; M_{rr}2.93±.05; $M_{\theta\theta}$-0.17±.04; $M_{\phi\phi}$-2.76±.04; $M_{r\theta}$0.92±.12; $M_{\theta\phi}$-0.73±.03; $M_{r\phi}$3.04±.16; Best double couple: M_o4.32900×10^{17} NP1:ϕ_s16.00000°,δ69.00000°, λ91.00000°. NP2:ϕ_s193.00000°,δ21.00000°,λ87.00000°. Principal axes: T 4.3200, Plg66.0000°, Azm288.0000°; N 0.0140, Plg1.0000°, Azm196.0000°; P -4.3380, Plg24.0000°, Azm105.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*BJI **07** 09:10:51.8,28.˚80S×176.˚70W,h20km,mb5.7/54, mB6.0/63,Ms5.8/74,Ms7 5.5/67.*

*MOS **07** 09:10:55.0±1.2,28.˚80S×176.˚79W,h49km,mb5.8/69, MS5.7/27,Error ellipse: s-maj=8.8km s-min=7.0km az=76.4*

ISC 07 09:10:52.5±0.5,28.˚97S±0.˚04×176.˚54W±0.˚04,h27km±2km, h27km:pP-P,n834,σ1s74/884,mb5.6/246,MS5.7/63, 31C-30D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.24**	**256**	Pn		**Pb**	**09 11 15.4**	**+0.1**
	519nm,0.3s,baz=157,slow=1.2,SNR=52							
RAO				Sn		Sb	09 11 44.0	+13
	4µm,0.3s,baz=266,slow=23,SNR=7.0							
RAO	**Raoul Island**	**1.24**	**256**	eP		**Pb**	**09 11 15.5**	**+0.2**
OUZ	**Omahuta**	**10.43**	**231**	ePn		**Pn**	**09 13 20.3**	**0.0**
URZ	**Urewera**	**10.67**	**208**	Pn		Pn	09 13 17.0	-6.6
	2.7nm,0.3s,baz=291,slow=9.1,SNR=11							
URZ				Sn		**Sn**	**09 15 15.7**	**-6.4**
	9.7nm,0.3s,baz=20,slow=22,SNR=8.9							
URZ	**Urewera**	**10.67**	**208**	Pn		Pn	09 13 17.0	-6.6
URZ				ePn		Pn	09 13 22.2	-1.3
URZ				Sn		**Sn**	**09 15 15.7**	**-6.4**
BKZ	**Black Stump Fm**	**11.70**	**208**	ePn		**Pn**	**09 13 39.8**	**+2.1**
MSVF	**Nonsavu**	**12.23**	**335**	eP		**Pn**	**09 13 45.0**	**-0.1**
MSVF	**Nonsavu**	**12.23**	**335**	ePn		**Pn**	**09 13 45.0**	**-0.1**
BFZ	**Birch Farm**	**13.10**	**205**	ePn		**Pn**	**09 13 59.4**	**+2.6**
SNZO	**South Karori**	**14.24**	**208**	ePn		**Pn**	**09 14 10.7**	**-1.6**
THZ	**Tophouse**	**15.38**	**211**	ePn		**Pn**	**09 14 27.5**	**-0.2**
	266nm,1.0s							
AFI	**Afiamalu**	**15.62**	**17**	Pn		**Pn**	**09 14 24.0**	**-7.0**
	2.5nm,0.3s,baz=261,slow=12,SNR=4.6							
AFI				Sn		Sn	09 17 08.8	-15
	3.4nm,0.3s,baz=185,slow=23,SNR=5.1							
AFI	**Afiamalu**	**15.62**	**17**	eP		**Pn**	**09 14 30.7**	**-0.3**
AFI					pmax	pmax		
	comp=Z,211nm,1.1s							
AFI	**Afiamalu**	**15.62**	**17**	ePn		**Pn**	**09 14 30.7**	**-0.3**
	comp=Z,211nm,1.1s							
AFI				Sn		Sn	09 17 08.8	-15
KHZ	**Kahutara**	**15.64**	**208**	ePn		**Pn**	**09 14 27.1**	**-3.9**
	comp=Z,222nm,0.8s							
DZM	**Mont Dzumac**	**16.82**	**290**	Pn		**Pn**	**09 14 47.1**	**+0.9**
	comp=Z,1.9nm,0.3s,baz=91,slow=13,SNR=71							
DZM					LR	LR	09 19 58.2	
	comp=Z,17µm,19.2s,baz=120,slow=33							
DZM	**Mont Dzumac**	**16.82**	**290**	*e*Pn		**P**	**09 14 48.4**	**+0.2**
	comp=Z,1µm,1.5s							
DZM	**Mont Dzumac**	**16.82**	**290**	*e*Pn		**P**	**09 14 48.2**	**0.0**
	comp=Z,915nm,1.4s							
OXZ	**Oxford**	**17.02**	**210**	ePn		**Pn**	**09 14 45.5**	**-3.0**
	comp=Z,348nm,1.4s							
OXZ				*e*Sn		Sn	09 17 41.3	-16
RAR	**Rarotonga**	**17.02**	**67**	P		**Pn**	**09 14 42.0**	**-6.7**
	comp=Z,1.2nm,0.3s,baz=259,slow=7.9,SNR=3.7							
RAR					LR	LR	09 20 33.9	
	comp=Z,21µm,20.3s,baz=244,slow=34							
RAR	**Rarotonga**	**17.02**	**67**	*e*P		**Pn**	**09 14 44.1**	**-4.6**
RAR					pmax	pmax		
	comp=Z,536nm,1.7s							
RAR	**Rarotonga**	**17.02**	**67**	ePn		**Pn**	**09 14 44.1**	**-4.6**
	comp=Z,536nm,1.7s							
RPZ	**Rata Peaks**	**17.76**	**211**	P		**Pn**	**09 14 52.1**	**-5.6**
	comp=Z,2.5nm,0.3s,baz=49,slow=9.3,SNR=9.5							
RPZ					S	Sn	09 17 57.3	-18
	comp=Z,1.0nm,0.3s,baz=188,slow=17,SNR=5.5							
RPZ	**Rata Peaks**	**17.76**	**211**	P		**Pn**	**09 14 52.1**	**-5.6**
RPZ				*e*Pn		**P**	**09 14 57.7**	**-0.7**
RPZ					S	Sn	09 17 57.4	-18
ODZ	**Otahua Downs**	**19.00**	**209**	*e*P		**P**	**09 15 12.0**	**0.0**
	comp=Z,246nm,1.2s							
MLZ	**Mavora Lakes**	**20.38**	**212**	*e*P		**P**	**09 15 24.1**	**-2.9**
	comp=Z,120nm,1.2s							
MLZ					LR	LR		
	comp=Z,24µm,18.0s							
FUNA	**Funafuti**	**20.73**	**348**		PFAKE			
FUNA					LR	LR	09 15 40.0	+6.6
	comp=Z,25µm,19.0s							
WHZ	**Wether Hill Ro**	**20.85**	**212**	*e*P		**P**	**09 15 32.0**	**-0.1**
	comp=Z,224nm,1.5s							
DCZ	**Deep Cove**	**20.91**	**214**		PFAKE			
DCZ					LR	LR	09 15 40.0	+4.6
	comp=Z,27µm,18.0s							
LHI	**Lord Howe Isla**	**21.22**	**257**	*e*P		**P**	**09 15 36.6**	**+0.3**
	comp=Z,2µm,1.5s							
LHI					LR	LR		
	comp=Z,11µm,20.0s							
TBI	**Tubuai**	**24.91**	**83**	*e*LQ		LQ	09 20 51.6	
	comp=Z,11µm,28.2s							
TBI					eLR	LR	09 22 08.0	
	comp=Z,15µm,21.8s,baz=249							
TBI	**Tubuai**	**24.91**	**83**	*e*T		T	09 41 35.4	
	comp=Z,7.7nm,0.3s							
PAE	**Paea**	**27.13**	**71**	*e*P		**P**	**09 16 32.3**	**-1.1**
	comp=Z,69nm,1.4s							
PAE	**Paea**	**27.13**	**71**	*e*T		T	09 44 25.7	
	comp=Z,3.0nm,0.3s							
PPT2	**Papeete2**	**27.16**	**71**	*e*P		**P**	**09 16 33.2**	**-0.7**
	comp=Z,175nm,1.4s							
PPT2					eLQ	LQ	09 21 44.7	
	comp=Z,15µm,24.0s							
PPT2					eLR	LR	09 23 05.0	
	comp=Z,11µm,21.0s,baz=238							
PPT2	**Papeete2**	**27.16**	**71**	*e*T		T	09 44 35.8	
	comp=Z,2.3nm,0.3s							
PPT	**Papeete**	**27.18**	**71**	LR		LR	09 25 25.2	
	comp=Z,12µm,19.1s,baz=248,slow=32							
TVO	**Taravao**	**27.34**	**72**	*e*P		**P**	**09 16 34.6**	**-0.9**
	comp=Z,50nm,1.2s							
TIAR	**Tiarei**	**27.37**	**71**	*e*P		**P**	**09 16 34.9**	**-0.8**
	comp=Z,89nm,1.4s							
ARMA	**Armidale**	**27.65**	**259**	P		**P**	**09 16 37.8**	**-0.4**
	baz=28,SNR=22							
ARMA	**Armidale**	**27.65**	**259**	*e*P		**P**	**09 16 40.6**	**+2.4**
	comp=Z,161nm,1.5s							
ARMA					LR	LR		
	comp=Z,18µm,19.0s							
MEH	**Mehetia**	**28.29**	**73**	*e*P		**P**	**09 16 43.0**	**-0.9**
	comp=Z,89nm,1.3s							
EIDS	**Eidsvold**	**28.98**	**269**	P		**P**	**09 16 49.5**	**-0.4**
	baz=29,SNR=10							
EIDS	**Eidsvold**	**28.98**	**269**	*e*P		**P**	**09 16 50.5**	**+0.5**
	comp=Z,161nm,1.6s							
EIDS					LR	LR		
	comp=Z,13µm,19.0s							
HNR	**Honiara**	**29.40**	**307**	P		**P**	**09 16 52.7**	**-1.0**
	comp=Z,225nm,1.0s,baz=158,slow=3.1,SNR=7.5							
HNR	**Honiara**	**29.40**	**307**	*e*P		**P**	**09 16 52.9**	**-0.8**
HNR					pmax	pmax		
	comp=Z,399nm,1.1s							
HNR					MLR	MLR		
	comp=Z,8µm,18.0s							
HNR	**Honiara**	**29.40**	**307**	*e*P		**P**	**09 16 52.9**	**-0.8**
	comp=Z,400nm,1.1s							
HNR					LR	LR		
	comp=Z,8µm,18.0s							
CNB	**Canberra Magne**	**29.46**	**249**	P		**P**	**09 16 56.0**	**+1.8**
	baz=29,SNR=11							
CAN	**Canberra**	**29.76**	**249**	*e*P		**P**	**09 16 57.7**	**+0.9**
CAN					pmax	pmax		
	comp=Z,177nm,1.2s							
CAN	**Canberra**	**29.76**	**249**	*e*P		**P**	**09 16 57.7**	**+0.9**
	comp=Z,177nm,1.2s							
YNG	**Young**	**30.23**	**251**	P		**P**	**09 17 01.9**	**+0.9**
	baz=30,SNR=6.5							
TARA	**Tarawa**	**31.80**	**340**	*e*P		**P**	**09 17 14.9**	**0.0**
	comp=Z,163nm,1.2s							
MOO	**Moorlands**	**32.13**	**235**	P		**P**	**09 17 17.7**	**+0.1**
	baz=32,SNR=3.5							
CMSA	**Cobar Meteorol**	**32.62**	**256**	P		**P**	**09 17 22.4**	**+0.3**
	baz=33,SNR=14							
TOO	**Toolangi**	**32.71**	**245**	P		**P**	**09 17 23.3**	**+0.5**
	baz=33,SNR=7.5							
QLP	**Quilpie**	**34.69**	**264**	P		**P**	**09 17 40.8**	**+0.7**
	baz=35,SNR=18							
CTA	**Charters Tower**	**34.87**	**276**	P		**P**	**09 17 41.8**	**+0.1**
	comp=Z,123nm,1.2s,baz=97,slow=11,SNR=59							
CTA					LR	LR	09 31 37.5	
	comp=Z,21µm,18.3s,baz=110,slow=36							
CTAO	**Charters Tower**	**34.87**	**276**	*e*P		**P**	**09 17 41.8**	**+0.1**
CTAO					pmax	pmax		
	comp=Z,307nm,1.4s							
CTAO	**Charters Tower**	**34.87**	**276**	*e*P		**P**	**09 17 41.8**	**+0.1**
	comp=Z,307nm,1.4s							
ARPS	**Mount Arapiles**	**35.60**	**246**	P		**P**	**09 17 47.1**	**-0.7**
	baz=36,SNR=5.7							
STKA	**Stephens Creek**	**36.06**	**255**	P		**P**	**09 17 51.7**	**-0.2**
	comp=Z,49nm,1.0s,baz=86,slow=8.8,SNR=32							
STKA					LR	LR	09 32 25.9	
	comp=Z,15µm,18.4s,baz=94,slow=36							
STKA	**Stephens Creek**	**36.06**	**255**	P		**P**	**09 17 51.7**	**-0.2**
	baz=36,SNR=25							
STKA	**Stephens Creek**	**36.06**	**255**	P		**P**	**09 17 51.7**	**-0.2**
STKA					pmax	pmax		
	comp=Z,49nm,1.0s							
STKA					MLR	MLR		
	comp=Z,15µm,18.4s							
STKA	**Stephens Creek**	**36.06**	**255**	*e*P		**P**	**09 17 51.7**	**-0.2**
	comp=Z,29nm,1.3s							
MTSU	**Mount Surprise**	**37.32**	**278**	P		**P**	**09 18 01.9**	**-0.8**
	baz=37,SNR=29							
RKT	**Rikitea**	**37.65**	**91**	*e*S		**S**	**09 23 50.7**	**-3.1**
	comp=Z,2µm,25.8s							
RKT					eLR	LR	09 28 03.0	
	comp=Z,9µm,21.2s,baz=254							
HTT	**Hallett**	**38.14**	**252**	P		**P**	**09 18 09.1**	**-0.5**
	baz=38,SNR=13							
PMG	**Port Moresby**	**39.19**	**292**	P		**P**	**09 18 17.2**	**-1.2**
	comp=Z,19nm,0.9s,baz=341,slow=5.5,SNR=4.0							
PMG					LR	LR	09 32 11.1	
	comp=Z,6µm,20.6s,baz=119,slow=33							
PMG	**Port Moresby**	**39.19**	**292**	*c* *i*P		**P**	**09 18 18.0**	**-0.5**
PMG					pmax	pmax		
	comp=Z,202nm,1.2s							
TAOE	**Nuku Hiva Isla**	**39.57**	**67**	*e*S		**S**	**09 24 22.6**	**-0.6**
	comp=Z,1µm,23.9s							
TAOE					eLR	LR	09 28 51.5	
	comp=Z,10µm,21.1s,baz=242							
COEN	**Coen**	**40.15**	**283**	P		**P**	**09 18 25.6**	**-0.8**
	baz=40,SNR=12							
COEN	**Coen**	**40.15**	**283**	*e*P		**P**	**09 18 26.4**	**-0.1**
	comp=Z,86nm,1.0s							
QIS	**Mount Isa**	**40.51**	**272**	P		**P**	**09 18 28.7**	**-0.8**
	baz=40,SNR=15							
BBOO	**Buckleboo**	**40.60**	**252**	*e*P		**P**	**09 18 28.5**	**-1.5**
	comp=Z,274nm,1.4s							
MANU	**Manus Island**	**43.56**	**301**	*e*P		**P**	**09 18 53.6**	**-0.7**
	comp=Z,323nm,1.3s							
AS01	**Alice Springs**	**44.44**	**265**	*e*P		**P**	**09 19 00.1**	**-1.3**
AS31	**Alice Springs**	**44.48**	**265**	*e*P		**P**	**09 19 00.4**	**-1.3**
	comp=Z,34nm,1.2s							
ASAR	**Alice Springs**	**44.48**	**265**	P		**P**	**09 18 60.0**	**-1.8**
	comp=Z,68nm,1.0s,baz=117,slow=7.5,SNR=137							
ASAR					PcP	**PP**	**09 20 46.9**	**+1.2**
	comp=Z,11nm,1.0s,baz=114,slow=4.5,SNR=4.9							
ASAR					S	**S**	**09 25 31.7**	**-3.8**
	comp=Z,3.4nm,0.9s,baz=96,slow=16,SNR=4.5							
WB2	**Warramunga Arr**	**45.33**	**270**	*e*P		**P**	**09 19 06.7**	**-1.9**
	comp=Z,214nm,1.2s							
WRAB	**Tennant Creek**	**45.34**	**270**	*c* *i*P		**P**	**09 19 06.6**	**-2.0**
WRAB					pmax	pmax		
	comp=Z,519nm,1.2s							
WRAB	**Tennant Creek**	**45.34**	**270**	*e*P		**P**	**09 19 07.2**	**-1.4**
	comp=Z,204nm,1.2s							
WRA	**Warramunga Arr**	**45.34**	**270**	P		**P**	**09 19 06.8**	**-1.9**
	comp=Z,93nm,1.1s,baz=107,slow=7.8,SNR=93							
WRA					PcP	**PcP**	**09 20 49.1**	**+1.2**
	comp=Z,73nm,1.3s,baz=107,slow=3.8,SNR=9.4							
WRA					S	**S**	**09 25 48.3**	**+0.3**
	comp=Z,6.4nm,1.1s,baz=107,slow=16,SNR=4.6							
FORT	**Forrest**	**47.66**	**253**	P		**P**	**09 19 24.3**	**-2.3**
	baz=48,SNR=10							
FORT	**Forrest**	**47.66**	**253**	*e*P		**P**	**09 19 24.5**	**-2.1**
	comp=Z,1µm,1.0s							
WRKA	**Warakurna**	**48.94**	**261**	P		**P**	**09 19 34.5**	**-2.2**
	baz=49,SNR=58							
SBA	**Scott Base**	**49.56**	**185**	*e*P		**P**	**09 19 44.2**	**+3.6**
SBA					pmax	pmax		
	comp=Z,198nm,1.0s							
SBA	**Scott Base**	**49.56**	**185**	*e*P		**P**	**09 19 44.2**	**+3.6**
	comp=Z,198nm,1.0s							
VNDA	**Vanda**	**49.65**	**186**	P		**P**	**09 19 42.6**	**+1.4**
	comp=Z,6.1nm,1.0s,baz=18,slow=9.8,SNR=17							
VNDA					LR	LR	09 36 56.8	
	comp=Z,5µm,20.6s,baz=14,slow=32							
VNDA	**Vanda**	**49.65**	**186**	*e*P		**P**	**09 19 44.0**	**+2.8**
VNDA					pmax	pmax		
	comp=Z,90nm,1.5s							
VNDA	**Vanda**	**49.65**	**186**	*e*P		**P**	**09 19 44.0**	**+2.8**
	comp=Z,90nm,1.5s							
MTN	**Manton Dam**	**51.05**	**277**	*e*P		**P**	**09 19 51.6**	**-1.0**
	comp=Z,144nm,1.2s							
KMBL	**Kambalda**	**52.68**	**251**	P		**P**	**09 20 03.1**	**-1.6**
	baz=53,SNR=9.2							
FITZ	**Fitzroy Crossi**	**53.66**	**268**	LR		LR	09 42 47.9	
	comp=Z,3µm,19.1s,baz=114,slow=36							
FITZ	**Fitzroy Crossi**	**53.66**	**268**	P		**P**	**09 20 10.6**	**-1.4**
	baz=54,SNR=31							
FITZ	**Fitzroy Crossi**	**53.66**	**268**	*e*P		**P**	**09 20 11.0**	**-1.1**
	comp=Z,232nm,1.4s							
FAKI	**Fak Fak**	**55.07**	**288**	*e*P		**P**	**09 20 21.8**	**-0.6**
	comp=Z,109nm,1.2s							
KLBR	**Kellerberrin**	**56.03**	**250**	P		**P**	**09 20 27.4**	**-1.7**
	baz=56,SNR=7.3							
NWAO	**Narrogin (SRO)**	**56.10**	**248**	P		**P**	**09 20 28.3**	**-1.3**
	comp=Z,7.1nm,0.8s,baz=338,slow=9.9,SNR=5.0							
NWAO					LR	LR	09 40 57.7	
	comp=Z,3µm,21.7s,baz=326,slow=32							
NWAO	**Narrogin (SRO)**	**56.10**	**248**	*e*P		**P**	**09 20 28.7**	**-0.9**
NWAO					pmax	pmax		
	comp=Z,123nm,1.5s							
NWAO	**Narrogin (SRO)**	**56.10**	**248**	*e*P		**P**	**09 20 28.7**	**-0.9**
	comp=Z,123nm,1.5s							
MEEK	**Meekatharra**	**56.76**	**256**	P		**P**	**09 20 31.8**	**-2.6**
	baz=57,SNR=18							
CASY	**Casey**	**57.00**	**207**	*e*P		**P**	**09 20 35.2**	**-0.1**
	comp=Z,149nm,1.2s							
BLDU	**Ballidu**	**57.16**	**251**	P		**P**	**09 20 34.9**	**-2.3**
	baz=57,SNR=7.0							
MORW	**Morawa**	**58.17**	**252**	P		**P**	**09 20 42.1**	**-2.2**
	baz=58,SNR=9.5							
SOEI	**Soe**	**58.44**	**276**	P		**P**	**09 20 47.4**	**+1.0**
	comp=Z,146nm,1.0s,comp=Z,3µm							
SOEI	**Soe**	**58.44**	**276**	*e*P		**P**	**09 20 47.5**	**+1.1**
	comp=Z,140nm,1.0s							
QSPA	**South Pole Qui**	**61.14**	**180**	*e*P		**P**	**09 21 05.1**	**+0.8**
	comp=Z,836nm,1.0s							
EDFI	**Ende, Flores**	**61.15**	**276**	P		**P**	**09 21 04.8**	**-0.3**
	comp=Z,55nm,1.4s,comp=Z,2µm							
GIRL	**Giralia**	**61.87**	**258**	P		**P**	**09 21 09.2**	**-0.5**
	baz=62,SNR=4.7							
MIR	**Mirnyy**	**63.97**	**206**	⇓ *i*P		**P**	**09 21 23.0**	**0.0**
MIR				*i* S		**S**	**09 30 03.0**	**+6.1**
MIR					pmax	pmax		
	comp=Z,1µm,6.0s							
MIR					smax	smax		
	comp=N,5µm,11.0s							
MIR					MLR	MLR		
	comp=Z,6µm,14.0s							
PLAI	**Plampang**	**64.53**	**274**	P		**P**	**09 21 27.0**	**-0.5**
	comp=Z,124nm,1.1s,comp=Z,2µm							
KAPI	**Kappang**	**64.63**	**279**	*e*P		**P**	**09 21 28.0**	**-0.1**
	comp=Z,122nm,1.4s							
TWSI	**Taliwang, Sumb**	**65.35**	**274**	P		**P**	**09 21 32.6**	**-0.2**
	comp=Z,74nm,1.0s							
DAV	**Davao City (W)**	**66.21**	**293**	⇑ *i*P		**P**	**09 21 35.2**	**-3.0**
JAGI	**Jajag, Banyuwa**	**67.87**	**272**	P		**P**	**09 21 45.4**	**-3.5**
JAGI	**Jajag, Banyuwa**	**67.87**	**272**	*e*P		**P**	**09 21 48.2**	**-0.7**
	comp=Z,103nm,1.1s							
GMJI	**Gumukmas**	**68.58**	**272**	P		**P**	**09 21 53.7**	**+0.4**
BLJI	**Banyuglugur**	**68.69**	**273**	P		**P**	**09 21 57.0**	**+3.0**
MYLDM	**Lahad Datu**	**70.97**	**287**	*e*P		**P**	**09 22 09.5**	**+1.5**
	comp=Z,110nm,1.4s							
SDKM	**Sandakan**	**72.31**	**287**	⇑P		**P**	**09 22 15.8**	**-0.4**
KDM	**Kudat**	**73.29**	**288**	⇑P		**P**	**09 22 23.6**	**+1.6**
KKM	**Kota Kinabalu**	**73.34**	**287**	⇓P		**P**	**09 22 22.5**	**+0.1**
KKM	**Kota Kinabalu**	**73.34**	**287**	*e*P		**P**	**09 22 21.6**	**-0.8**
	comp=Z,213nm,1.6s							
MAW	**Mawson**	**74.09**	**200**	P		**P**	**09 22 27.1**	**+1.3**
	comp=Z,52nm,1.1s,baz=110,slow=6.7,SNR=20							
MAW	**Mawson**	**74.09**	**200**	P		**P**	**09 22 27.0**	**+1.3**
	baz=74,SNR=23							
MAW	**Mawson**	**74.09**	**200**	*e*P		**P**	**09 22 27.0**	**+1.3**
	comp=Z,40nm,1.5s							
SBUM	**Sibu**	**74.87**	**281**	⇓P		**P**	**09 22 31.3**	**+0.2**
SBUM	**Sibu**	**74.87**	**281**	*e*P		**P**	**09 22 30.0**	**-1.2**
	comp=Z,181nm,1.8s							
KSM	**Kuching**	**76.02**

comp=Z,93nm,1.5s
KUR MLR MLR
comp=N,1µm,17.0s
KUR MLR MLR
comp=E,993nm,17.0s
KUR MLR MLR
comp=Z,2µm,17.0s
SMY Shemya 81.76 354 *e*P **P 09 23 08.3 0.0**
SMY pmax pmax
comp=Z,187nm,1.5s
SMY Shemya 81.76 354 *e*P **P 09 23 08.3 0.0**
comp=Z,186nm,1.5s
ASAJ Asahikawa 81.78 332 *e*P **P 09 23 09.7 +1.1**
comp=Z,65nm,1.1s
MYKOM Kota Tinggi 81.78 277 ⇑P **P 09 23 09.4 0.0**
MYKOM Kota Tinggi 81.78 277 *e*P **P 09 23 09.2 -0.2**
comp=Z,77nm,1.2s
QZH Quanzhou 82.20 304 ⇑*i*P P 09 23 02.6 -8.7
QZH PP **PP 09 26 13.3 -6.9**
QZH Quanzhou 82.20 304 S **S 09 33 16.3 -8.6**
QZH pmax pmax
comp=Z,220nm,1.3s
QZH pmax pmax
comp=Z,2µm,6.3s
QZH LR LR
comp=N,2µm,18.6s
QZH LR LR
comp=E,1µm,15.1s
QZH LR LR
comp=Z,3µm,19.1s
KGM Kluang 82.35 277 ⇑P **P 09 23 12.9 +0.4**
PLCA Paso Flores 82.54 133 P **P 09 23 12.2 -1.0**
comp=Z,45nm,1.1s,base=253,slow=5.9,SNR=36
PLCA Paso Flores 82.54 133 *e*P **P 09 23 13.1 0.0**
PLCA pmax pmax
comp=Z,91nm,1.2s
PLCA Paso Flores 82.54 133 *e*P **P 09 23 13.1 0.0**
comp=Z,90nm,1.2s
SLBS Sierra La Lagu 82.72 58 *e*P **P 09 23 16.6 +2.4**
comp=Z,93nm,1.7s
PKM Mcpherson Peak 83.06 44 P **P 09 23 16.6 +0.8**
baz=228
SRIG Santa Rosalia 83.21 54 *e*P **P 09 23 18.4 +1.8**
comp=Z,135nm,1.6s
EFI East Falkland 83.29 147 *de*P **P 09 23 15.2 -1.4**
EFI pmax pmax
comp=Z,109nm,1.3s
EFI East Falkland 83.29 147 *e*P **P 09 23 17.6 +1.0**
comp=Z,85nm,1.1s
SAO San Andreas Ge 83.36 42 *e*P **P 09 23 18.5 +1.4**
SAO pmax pmax
comp=Z,26nm,1.2s
SAO San Andreas Ge 83.36 42 *e*P **P 09 23 18.5 +1.4**
comp=Z,26nm,1.2s
BAR Barrett 83.56 47 *e*P **P 09 23 20.9 +2.6**
comp=Z,37nm,1.5s
PASC Pasadena Art C 83.58 45 *e*P **P 09 23 19.9 +1.6**
comp=Z,98nm,2.0s
MWC Mount Wilson 83.69 45 *e*P **P 09 23 20.4 +1.3**
MWC pmax pmax
comp=Z,33nm,1.4s
MWC Mount Wilson 83.69 45 *e*P **P 09 23 20.4 +1.3**
comp=Z,32nm,1.4s
ARVC Arvin 83.81 44 P **P 09 23 20.1 +0.6**
baz=228
MURC Murrieta 83.83 46 P **P 09 23 20.5 +0.9**
baz=229,SNR=6.2
MONP2 Monument Peak 83.86 47 P **P 09 23 20.8 +0.8**
baz=230,SNR=11
IKP In-Ko-Pah, Jac 83.91 48 P **P 09 23 20.9 +0.8**
baz=230,SNR=5.5
BFSC Mount Baldy Ra 83.95 45 P **P 09 23 20.9 +0.5**
baz=229,SNR=9.0
HKC Hong Kong Obse 83.96 299 ⇓P **P 09 23 23.0 +2.5**
YSS Yuzh-Sakhalins 84.03 333 ⇑*e*P **P 09 23 20.6 +0.3**
YSS *e**SP **sP 09 23 31.7 -0.4**
YSS *e*SS SS 09 39 03.0 -9.1
YSS pmax pmax
comp=Z,50nm,1.1s
YSS pmax pmax
comp=Z,1µm,4.0s
YSS MLR MLR
comp=Z,2µm,18.0s
YSS MLR MLR
comp=N,2µm,20.0s
YSS MLR MLR
comp=E,1µm,16.0s
YSS Yuzh-Sakhalins 84.03 333 *e*P **P 09 23 20.5 +0.3**
comp=E,104nm,1.2s
KSRS Korea Array 84.10 319 P **P 09 23 21.0 +0.2**
comp=E,26nm,1.1s,baz=139,slow=5.1,SNR=24
KS15 Wonju Array Si 84.11 319 *e*P **P 09 23 22.8 +1.9**
KSAR Wonju Array Be 84.11 319 P **P 09 23 21.0 +0.1**
KSAR Wonju Array Be 84.11 319 P **P 09 23 21.0 +0.1**
KS01 Wonju Array Si 84.13 319 *e*P **P 09 23 21.6 +0.6**
VES Vestal, Richgr 84.14 44 P **P 09 23 21.7 +0.7**
baz=228,SNR=11
SSE Sheshan 84.14 310 P **P 09 23 20.9 -0.3**
SSE sP **pP 09 23 30.1 +0.2**
SSE S **S 09 33 47.3 +2.9**
SSE pmax pmax
comp=E,44nm,0.9s
SSE pmax pmax
comp=E,740nm,7.9s
SSE LR LR
comp=E,980nm,19.2s
SSE LR LR
comp=E,1µm,19.2s
SSE LR LR
comp=E,2µm,21.0s
EDW2 Edwards Air Fo 84.17 45 P **P 09 23 22.0 +0.6**
baz=229,SNR=15
SWSC Sam W. Stewart 84.30 47 P **P 09 23 22.4 +0.4**
baz=230
PFO Pinyon Flats O 84.30 47 P **P 09 23 22.8 +0.6**
comp=E,12nm,1.1s,baz=234,slow=6.8,SNR=10
PFO Pinyon Flats O 84.30 47 P **P 09 23 23.1 +1.0**
baz=230,SNR=11
PFO Pinyon Flats O 84.30 47 *e*P **P 09 23 23.4 +1.3**
PFO pmax pmax
comp=E,44nm,1.5s
PFO Pinyon Flats O 84.30 47 *e*P **P 09 23 23.4 +1.3**
comp=E,44nm,1.5s
TPFO Pinon Flats 84.30 47 P **P 09 23 22.5 +0.4**
baz=230,SNR=12
ISA Isabella, Lake 84.39 44 P **P 09 23 23.0 +0.5**
baz=228
ISA Isabella, Lake 84.39 44 *e*P **P 09 23 23.9 +1.4**
ISA pmax pmax
comp=E,61nm,1.5s
ISA Isabella, Lake 84.39 44 *e*P **P 09 23 23.9 +1.4**
comp=E,61nm,1.5s
FRIM Kepong 84.42 277 ⇓P **P 09 23 23.2 +0.1**
BBRC Big Bear Solar 84.43 46 P **P 09 23 23.2 +0.3**
baz=229
PET Petropavlovsk 84.46 345 *ce*P **P 09 23 21.5 -0.8**
PET *e* 09 26 34.1
PET *e*S **S 09 33 45.7 -0.9**
PET *e*PS **PnS 09 34 32.5 -11**
PET *e*PPS PPS 09 34 59.5
PET *e*SS **SS 09 39 15.3 -3.0**
PET pmax pmax
comp=Z,600nm,10.0s
PET pmax pmax
comp=Z,900nm,14.6s
PET MLR MLR
comp=Z,3µm,18.0s
PET MLR MLR
comp=Z,3µm,19.0s
LRMC Laurel Mtn Rad 84.75 45 P **P 09 23 24.9 +0.5**
baz=229,SNR=22
PEA0 Petropavlovsk- 84.76 345 *e*P **P 09 23 23.2 -0.5**
PEA0B Petropavlovsk- 84.76 345 *e*P **P 09 23 24.3 +0.5**
comp=Z,75nm,1.3s
PETK Petropavlovsk- 84.76 345 P **P 09 23 23.1 -0.7**
comp=Z,29nm,1.1s,baz=111,slow=8.1,SNR=12
PETK LR LR 09 57 24.9
comp=Z,4µm,19.9s,baz=159,slow=33
BELC Belle Mtn. Jos 84.84 47 P **P 09 23 25.4 +0.5**
baz=230,SNR=16
CMB Columbia Colle 84.85 41 *e*P **P 09 23 25.2 +0.5**
CMB pmax pmax
comp=Z,67nm,1.5s
CMB Columbia Colle 84.85 41 *e*P **P 09 23 25.2 +0.5**
comp=Z,66nm,1.5s
INCN Inchon 84.87 318 *e*P **P 09 23 26.2 +1.4**
comp=Z,120nm,1.5s

BC3 Big Chuckawall 84.97 47 P **P 09 23 26.2 +0.7**
baz=230,SNR=19
KHMM Horse Mountain 84.97 37 *e*P **P 09 23 27.1 +1.8**
comp=Z,104nm,1.4s
GLA Glamis 84.99 48 P **P 09 23 26.1 +0.5**
baz=231
GLA Glamis 84.99 48 *e*P **P 09 23 27.5 +2.0**
GLA pmax pmax
comp=Z,59nm,1.4s
GLA Glamis 84.99 48 *e*P **P 09 23 27.5 +2.0**
comp=Z,59nm,1.4s
GZH Guangzhou 85.03 300 ⇑*i*P **P 09 23 25.7 -0.2**
GZH PP **PP 09 26 43.7 +0.3**
GZH S **S 09 33 52.7 -0.9**
GZH pmax pmax
comp=Z,2µm,5.7s
AFDM Forest Hills D 85.14 40 *e*P **P 09 23 27.1 +0.9**
comp=Z,20nm,1.1s
CWC Cottonwood Cre 85.14 44 P **P 09 23 26.7 +0.4**
baz=228
HSIG 85.14 53 *e*P **P 09 23 28.3 +2.0**
comp=Z,39nm,1.2s
HEC Hector,Ludlow 85.16 46 P **P 09 23 26.8 +0.4**
baz=230,SNR=18
GSC Goldstone, Bar 85.18 45 P **P 09 23 27.4 +0.9**
baz=229,SNR=25
GSC Goldstone, Bar 85.18 45 *e*P **P 09 23 26.8 +0.3**
GSC pmax pmax
comp=Z,75nm,1.5s
GSC Goldstone, Bar 85.18 45 *e*P **P 09 23 26.8 +0.3**
comp=Z,75nm,1.5s
MPMC Manual Prospec 85.25 44 P **P 09 23 27.0 +0.1**
baz=229,SNR=40
ORV Oroville 85.26 39 *e*P **P 09 23 27.2 +0.5**
ORV pmax pmax
comp=Z,64nm,1.6s
ORV Oroville 85.26 39 *e*P **P 09 23 27.2 +0.5**
comp=Z,64nm,1.6s
DAC Darwin (Calif) 85.33 44 *e*P **P 09 23 27.9 +0.5**
DAC pmax pmax
comp=Z,62nm,1.8s
DAC Darwin (Calif) 85.33 44 *e*P **P 09 23 27.9 +0.5**
comp=Z,62nm,1.8s
WDC Whiskeytown Da 85.40 38 *e*P **P 09 23 28.5 +1.2**
WDC pmax pmax
comp=Z,55nm,1.3s
WDC Whiskeytown Da 85.40 38 *e*P **P 09 23 28.5 +1.2**
comp=Z,55nm,1.3s
TIN Tinemaha, Big 85.46 43 P **P 09 23 28.6 +0.7**
baz=228
IRM Iron Mountain 85.49 47 P **P 09 23 28.1 +0.1**
baz=230,SNR=27
113A Mohawk Valley, 85.51 49 *e*P **P 09 23 29.4 +1.4**
comp=Z,110nm,2.0s
QIZ Qiongzhong 85.55 294 P **P 09 23 26.5 -2.1**
QIZ S **S 09 33 57.1 -1.8**
QIZ pmax pmax
comp=Z,840nm,10.5s
QIZ LR LR
comp=Z,1µm,14.9s
QIZ LR LR
comp=Z,2µm,14.9s
QIZ LR LR
comp=Z,1µm,36.6s
QIZ Qiongzhong 85.55 294 *e*P **P 09 23 27.8 -0.8**
comp=Z,185nm,2.0s
IPM Ipoh 85.55 278 ⇑P **P 09 23 28.6 -0.2**
IPM Ipoh 85.55 278 *e*P **P 09 23 28.1 -0.7**
comp=Z,55nm,1.1s
GMRC Granite Mounta 85.56 46 P **P 09 23 28.8 +0.3**
baz=230,SNR=15
N02D Trinity Center 85.59 38 P **P 09 23 28.9 +0.5**
baz=225,SNR=8.6
O03D Paynes Creek 85.61 39 P **P 09 23 28.9 +0.4**
baz=226,SNR=12
Y12C Blythe 85.63 48 P **P 09 23 29.1 +0.5**
baz=231,SNR=5.4
Y12C Blythe 85.63 48 *e*P **P 09 23 30.4 +1.7**
comp=Z,68nm,1.6s
214A Organ Pipe Nat 85.64 50 P **P 09 23 28.9 +0.1**
baz=232,SNR=6.7
214A Organ Pipe Nat 85.64 50 *e*P **P 09 23 30.6 +1.8**
comp=Z,594nm,1.9s
WAKR Walker 85.72 41 *e*P **P 09 23 30.1 +0.9**
comp=Z,60nm,1.3s
M02C Callahan 85.81 37 P **P 09 23 30.6 +1.1**
baz=225,SNR=7.9
TUQ Turquoise Moun 85.81 46 P **P 09 23 30.2 +0.5**
baz=230,SNR=16
SHOC Shoshone, Teco 85.89 45 P **P 09 23 30.6 +0.6**
baz=230,SNR=26
FURC Furnace Creek, 85.90 44 P **P 09 23 30.4 +0.5**
baz=229,SNR=14
MSHR Mys Shultsa 85.93 324 *di*P **P 09 23 31.1 +1.2**
GRAC Grapevine Rang 85.94 44 P **P 09 23 30.7 +0.5**
baz=229,SNR=20
VLA Vladivostok 85.95 325 *di*P **P 09 23 28.7 -1.3**
VLA *i**SP **sP 09 23 44.3 +2.4**
VLA *i* 09 26 49.5
VLA *i*S **SKSac 09 33 51.4 -2.3**
VLA pmax pmax
comp=Z,23nm,0.7s
LDFC Landfair 86.09 46 *e*P **P 09 23 32.4 +1.3**
comp=Z,101nm,1.3s
YBH Yreka Blue Hor 86.12 37 *e*P **P 09 23 32.9 +1.9**
YBH pmax pmax
comp=Z,182nm,2.0s
YBH Yreka Blue Hor 86.12 37 *e*P **P 09 23 32.9 +1.9**
comp=Z,182nm,2.0s
KULM Kulim 86.27 278 ⇓P **P 09 23 33.0 +0.7**
KULM Kulim 86.27 278 *e*P **P 09 23 32.1 -0.2**
comp=Z,149nm,1.5s
NJ2 Nanjing 86.30 310 *e*P **P 09 23 32.3 +0.3**
NJ2 pP **pP 09 23 40.3 -0.4**
NJ2 SKS **SKSac 09 33 57.0 +0.6**
NJ2 S **SKKSac 09 34 03.2 -1.0**
NJ2 SS **SS 09 39 50.5 +4.4**
NJ2 pmax pmax
comp=Z,74nm,1.4s
NJ2 pmax pmax
comp=Z,1µm,9.2s
NJ2 LR LR
comp=Z,1µm,16.3s
NJ2 LR LR
comp=Z,1µm,18.4s
NJ2 LR LR
comp=Z,2µm,22.2s
PAHR Pah Rah Range 86.56 40 *e*P **P 09 23 34.1 +0.8**
comp=Z,36nm,1.3s
PSI Prapat 86.57 275 *e*P **P 09 23 32.2 -1.7**
PSI pmax pmax
comp=Z,119nm,1.3s
PSI Prapat 86.57 275 *e*P **P 09 23 32.2 -1.7**
comp=Z,119nm,1.3s
TPNV Topopah Spring 86.58 44 P **P 09 23 34.2 +0.7**
baz=230,SNR=37
TPNV Topopah Spring 86.58 44 *e*P **P 09 23 33.8 +0.3**
TPNV pmax pmax
comp=Z,68nm,1.4s
TPNV Topopah Spring 86.58 44 *e*P **P 09 23 33.8 +0.3**
comp=Z,68nm,1.4s
HUMO Hull Mountain 86.61 37 *e*P **P 09 23 35.2 +1.9**
comp=Z,138nm,2.0s
M04C Macdoel 86.62 38 P **P 09 23 34.2 +0.7**
baz=226
USRK Ussuriysk Ar. 86.69 326 P **P 09 23 34.1 +0.5**
comp=Z,24nm,1.1s,baz=137,slow=2.9,SNR=46
USRK LR LR 09 59 02.6
comp=Z,4µm,19.7s,baz=131,slow=33
Y14A Wickenburg 86.73 48 *e*P **P 09 23 35.2 +1.0**
comp=Z,172nm,1.3s
W13A Hualapai Mount 86.89 47 *e*P **P 09 23 36.1 +1.0**
comp=Z,41nm,1.4s
SHPR Sheep Range 86.97 45 *e*P **P 09 23 36.2 +0.8**
comp=Z,59nm,1.5s
GSI Gunungsitoli 87.02 273 *e*P **P 09 23 35.7 -0.3**
comp=Z,163nm,1.1s
UBPT Khong Chiam 87.15 289 P **P 09 23 37.6 +1.1**
comp=Z,153nm,0.9s,comp=Z,2µm
I03D Drain, OR 87.18 36 P **P 09 23 36.9 +0.9**
baz=225
SKLT Songkhla 87.22 280 P **P 09 23 38.9 +2.0**
comp=Z,53nm,0.8s,comp=Z,1µm
TUC Tucson 87.22 51 P **P 09 23 37.1 +0.5**
baz=233
TUC Tucson 87.22 51 *e*P **P 09 23 38.0 +1.4**
TUC pmax pmax
comp=Z,154nm,1.8s
TUC Tucson 87.22 51 *e*P **P 09 23 38.0 +1.4**
comp=Z,154nm,1.8s
K04D Chiloquin, OR 87.26 37 P **P 09 23 36.8 +0.2**
baz=226
TYV Tymovskoe 87.27 336 *e*P **P 09 23 36.0 -0.2**
TYV *e*S **SKSac 09 34 03.0 +1.5**
TYV pmax pmax
comp=Z,1µm,5.0s
TYV smax smax
comp=N,2µm,11.0s
MOD Modoc Plateau 87.54 38 *e*P **P 09 23 39.2 +1.2**
comp=N,19nm,1.1s
319A Douglas 87.70 52 *e*P **P 09 23 40.2 +1.3**
comp=N,58nm,1.2s
K05A Summer Lake 87.78 38 *e*P **P 09 23 40.9 +1.7**
comp=N,87nm,1.5s
AAGR Agrelo 87.82 127 *e*P **P 09 23 40.3 +0.6**
ZAIG Zacatecas 87.83 63 *e*P **P 09 23 42.3 +2.3**
comp=N,85nm,1.9s
ARCO CERRO ARCO 87.88 127 *e*P **P 09 23 41.6 +1.5**
R11A Troy Canyon, C 87.89 43 P **P 09 23 40.1 +0.3**
baz=230,SNR=11
R11A Troy Canyon, C 87.89 43 *e*P **P 09 23 40.6 +0.8**
comp=N,19nm,1.4s
AUSP Uspallata 87.90 126 ⇓*e*P **P 09 23 40.3 0.0**
J05D Fort Rock, OR 87.99 37 P **P 09 23 40.5 +0.4**
baz=226
X16A Lo Mia Camp, P 88.05 49 *e*P **P 09 23 41.7 +1.0**
comp=N,43nm,1.3s
OHAK Old Harbor 88.07 12 *e*P **P 09 23 40.7 +0.8**
comp=N,202nm,1.8s
ASAL Salagasta 88.09 126 *e*P **P 09 23 42.1 +1.1**
MDJ Mudanjiang 88.18 325 P **P 09 23 41.3 +0.5**
MDJ SS SS 09 40 15.7 +2.5
MDJ pmax pmax
comp=N,31nm,1.0s
MDJ pmax pmax
comp=N,810nm,7.0s
MDJ LR LR
comp=N,2µm,23.7s
MDJ LR LR
comp=N,1µm,23.7s
MDJ LR LR
comp=N,4µm,28.4s
MDJ Mudanjiang 88.18 325 *e*P **P 09 23 41.0 +0.2**
comp=N,32nm,1.0s
RTLS Leoncito 88.19 126 *e*P **P 09 23 42.4 +0.6**
BMN Battle Mountai 88.28 41 *e*P **P 09 23 41.9 +0.3**
BMN pmax pmax
comp=Z,34nm,1.3s
BMN Battle Mountai 88.28 41 *e*P **P 09 23 41.9 +0.3**
comp=Z,34nm,1.3s
TLIG Tlapa 88.30 69 *e*P **P 09 23 45.1 +3.0**
comp=Z,79nm,1.5s
TPTI 88.31 275 P **P 09 23 41.3 -0.9**
comp=Z,41nm,2.1s,comp=Z,954nm
TRTT Trang 88.34 280 P **P 09 23 43.2 +0.9**
comp=Z,92nm,0.8s,comp=Z,2µm
HABR Khabarovsk 88.43 330 *ce*P **P 09 23 41.1 -0.7**
HABR *e**SP **sP 09 23 55.7 +1.9**
HABR *e* 09 27 08.7
HABR *e*PPP PPP 09 29 04.7
HABR *e*S **SKSac 09 34 06.9 -1.7**
HABR *e* 09 34 29.6
HABR *e*SS **SS 09 40 15.6 -1.0**
HABR *e*SSS SSS 09 43 50.5
HABR pmax pmax
comp=Z,230nm,1.3s
HABR MLR MLR
comp=Z,2µm,20.0s
LCMT Little Creek M 88.48 46 *e*P **P 09 23 43.6 +1.0**
comp=Z,48nm,1.5s
WHN Wuhan 88.52 306 ⇓P **P 09 23 44.0 +1.3**
WHN pmax pmax
comp=Z,240nm,1.2s
WHN LR LR
comp=Z,1µm,10.0s
WHN LR LR
comp=Z,3µm,16.4s
WHN LR LR
comp=Z,4µm,20.1s
I05D Terrebonne, OR 88.66 36 P **P 09 23 43.7 +0.5**
baz=226
RTCV Cerro Valdivia 88.70 126 *e*P **P 09 23 41.9 -2.0**
U15A North Rim 88.73 47 *e*P **P 09 23 44.8 +0.8**
comp=Z,92nm,1.4s
KDAK Kodiak Island 88.73 13 *e*P **P 09 23 43.5 +0.5**
KDAK pmax pmax
comp=Z,288nm,1.5s
KDAK Kodiak Island 88.73 13 *e*P **P 09 23 43.5 +0.5**
comp=Z,288nm,1.5s
KNB Kanab 88.75 46 *e*P **P 09 23 44.8 +0.8**
KNB pmax pmax
comp=Z,49nm,1.1s
KNB Kanab 88.75 46 *e*P **P 09 23 44.8 +0.8**
comp=Z,49nm,1.1s
WUAZ Wupatki 88.76 48 P **P 09 23 44.3 +0.3**
baz=233
WUAZ Wupatki 88.76 48 *e*P **P 09 23 45.2 +1.2**
comp=Z,42nm,1.3s
DL2 Dalian 88.78 317 ⇑*i*P **P 09 23 43.8 +0.1**
DL2 SKS **SKSac 09 34 12.6 +1.4**
DL2 S **S 09 34 30.0 +0.9**
DL2 pmax pmax
comp=Z,63nm,1.3s
DL2 pmax pmax
comp=Z,880nm,6.0s
DL2 LR LR
comp=Z,1µm,18.4s
DL2 LR LR
comp=Z,2µm,18.1s
DL2 LR LR
comp=Z,2µm,18.5s
WVOR Wild Horse Val 88.81 39 *e*P **P 09 23 44.8 +0.8**
WVOR pmax pmax
comp=Z,43nm,1.4s
WVOR Wild Horse Val 88.81 39 *e*P **P 09 23 44.8 +0.8**
comp=Z,43nm,1.4s
SJA San Juan 88.87 126 *e*P **P 09 23 47.7 +3.1**
RTLL Cerro Vilicun 89.04 126 *e*P **P 09 23 42.4 -3.1**
X18A Snowflake 89.11 49 *e*P **P 09 23 47.5 +1.9**
comp=Z,79nm,1.6s
E03A Lebam 89.11 33 *e*P **P 09 23 47.0 +1.9**
comp=Z,83nm,1.2s
SKNT Sakolnakorn 89.24 290 P **P 09 23 47.2 +0.8**
comp=Z,224nm,1.2s,comp=Z,5µm
AMOG MOGNA 89.24 125 *e*P **P 09 23 47.7 +1.3**
G05D Wamic, OR 89.30 35 P **P 09 23 46.1 0.0**
baz=226
PKCU Pink Cliffs 89.34 46 *e*P **P 09 23 49.6 +2.8**
comp=Z,96nm,1.7s
121A Cookes Peak, D 89.40 52 P **P 09 23 47.4 +0.3**
baz=235
121A Cookes Peak, D 89.40 52 *e*P **P 09 23 48.1 +1.0**
comp=Z,95nm,1.8s
ACAN Cantantal 89.42 127 *e*P P 09 23 41.9 -5.4
SNY Shenyang 89.51 320 ⇓P **P 09 23 48.3 +1.2**
SNY pmax pmax
comp=Z,840nm,6.3s
SNY LR LR
comp=Z,3µm,14.2s
SNY LR LR
comp=Z,660nm,13.2s
SNY LR LR
comp=Z,2µm,15.7s
TRQA Tornquist 89.53 134 *e*P **P 09 23 48.6 +1.0**
comp=Z,87nm,1.4s
NLWA Neilton Lookou 89.57 33 *e*P **P 09 23 51.2 +4.0**
comp=Z,53nm,1.4s
W18A Petrified Fore 89.60 49 P **P 09 23 48.2 +0.2**
baz=234
W18A Petrified Fore 89.60 49 *e*P **P 09 23 49.5 +1.6**
comp=Z,51nm,1.3s
ELK Elko 89.63 42 *e*P **P 09 23 48.9 +0.9**
ELK pmax pmax
comp=Z,34nm,1.8s
ELK Elko 89.63 42 *e*P **P 09 23 48.9 +0.9**
comp=Z,34nm,1.8s
SURT Suratani 89.66 280 P **P 09 23 49.8 +1.3**
comp=Z,28nm,1.0s,comp=Z,650nm
MTPU Mount Pierson 89.78 45 *e*P **P 09 23 50.6 +1.6**
comp=Z,74nm,1.6s
CN2 Changchun 89.78 322 ⇑P P 09 23 43.3 -5.0
CN2 *es*P pP 09 23 56.4 -0.8
CN2 Changchun 89.78 322 *eS* **S 09 34 35.5 -2.9**

CN2 pmax pmax
comp=Z,50nm,1.3s
CN2 pmax pmax
comp=Z,800nm,4.0s
CN2 LR LR
comp=N,2µm,15.0s
CN2 LR LR
comp=E,900nm,15.0s
CN2 LR LR
comp=Z,2µm,20.0s
PATY Pattaya 89.83 285 P **P** 09 23 51.8 +2.6
comp=Z,30nm,1.1s,comp=Z,1µm
NKL Nikolayevsk 89.84 336 *e*P **P** 09 23 47.0 -1.3
NKL *e* 09 24 00.5
NKL *e*S **SKSac** 09 34 16.0 -0.7
NKL pmax pmax
comp=Z,800nm,6.0s
NKL pmax pmax
comp=Z,77nm,1.1s
NKL smax smax
comp=N,700nm,10.0s
KHON Khomkaen 89.88 289 P **P** 09 23 51.4 +2.0
comp=N,56nm,1.2s,comp=N,1µm
TIA Tai'an 89.94 312 ⇑P **P** 09 23 49.6 +0.3
TIA SKS **SKSac** 09 34 19.8 +1.6
TIA pmax pmax
comp=N,70nm,1.4s
TIA pmax pmax
comp=N,1µm,5.0s
TIA LR LR
comp=N,3µm,14.9s
TIA LR LR
comp=N,2µm,11.0s
AGUA GUANDACOL 90.04 124 *e*P **P** 09 23 51.8 +1.5
MSU Marysvale 90.08 45 *e*P **P** 09 23 51.6 +1.4
MSU Marysvale 90.08 45 *e*P **P** 09 23 51.6 +1.4
LON Longmire 90.11 34 *e*P **P** 09 23 51.3 +1.4
LON pmax pmax
comp=Z,68nm,1.9s
LON Longmire 90.11 34 *e*P **P** 09 23 51.3 +1.4
comp=Z,68nm,1.9s
D05A Enumclaw 90.33 34 *e*P **P** 09 23 53.0 +2.2
comp=Z,138nm,1.3s
MRA San Martin 90.36 128 *e*P **P** 09 23 53.6 +1.9
KLR Kul'dur 90.45 329 P **P** 09 23 51.5 +0.1
comp=Z,19nm,1.2s,baz=108,slow=4.3,SNR=22
NONG Nongkai 90.47 290 P **P** 09 23 53.3 +1.1
comp=Z,195nm,1.2s
TX31 Lajitas Ar. Si 90.54 57 *e*P **P** 09 23 51.9 -0.5
TX31 *e*P **P** 09 23 52.4 0.0
TXAR Lajitas Array 90.54 57 P **P** 09 23 52.3 -0.1
comp=Z,13nm,1.1s,baz=216,slow=6.2,SNR=42
G08A Pilot Rock 90.55 37 *e*P **P** 09 23 53.0 +0.9
comp=Z,43nm,1.2s
MNTX Cornudas Mount 90.61 54 P **P** 09 23 52.7 +0.2
baz=236
MNTX Cornudas Mount 90.61 54 *e*P **P** 09 23 53.0 +0.5
comp=Z,41nm,1.4s
CNPM China Poot 90.62 13 *e*P **P** 09 23 52.7 +0.8
comp=Z,158nm,1.6s
VCA Vinchina 90.66 124 *e*P **P** 09 23 54.6 +1.4
DUG Dugway, Tooele 90.72 43 P **P** 09 23 52.9 -0.1
baz=232,SNR=7.1
DUG Dugway, Tooele 90.72 43 *e*P **P** 09 23 53.8 +0.8
DUG pmax pmax
comp=Z,24nm,1.5s
DUG Dugway, Tooele 90.72 43 *e*P **P** 09 23 53.8 +0.8
comp=Z,24nm,1.5s
BRLK Bradley Lake 90.90 13 *e*P **P** 09 23 53.9 +0.6
comp=Z,87nm,1.3s
LAZ Ladron 90.92 51 *e*P **P** 09 23 55.3 +1.1
HAWA Hanford 91.00 35 *e*P **P** 09 23 55.2 +1.2
comp=Z,40nm,1.3s
MFID Camas Ranch 91.01 39 *e*P **P** 09 23 54.5 +0.3
comp=Z,31nm,1.4s
B05A Bryant 91.03 33 P **P** 09 23 55.0 +1.0
baz=226
BGU Big Grassy Mou 91.04 43 *e*P **P** 09 23 56.6 +2.1
comp=Z,43nm,2.0s
BNM Barren Site 91.12 51 *e*P **P** 09 23 56.6 +1.5
BMO Blue Mountains 91.13 38 *e*P **P** 09 23 55.2 +0.5
comp=Z,54nm,1.8s
TMUT Trail Mountain 91.15 45 *e*P **P** 09 23 56.0 +0.7
comp=Z,38nm,1.1s
LPM Los Pinos Moun 91.21 51 *e*P **P** 09 23 56.8 +1.3
RSO Redoubt South 91.21 12 *e*P **P** 09 23 55.3 +0.5
BBB Bella Bella 91.24 27 P **P** 09 23 58.4 +3.5
comp=Z,8.5nm,0.9s,baz=311,slow=8.4,SNR=3.6
SRU San Rafael Swe 91.46 45 *e*P **P** 09 23 57.5 +0.9
SRU pmax pmax
comp=Z,63nm,1.8s
SRU San Rafael Swe 91.46 45 *e*P **P** 09 23 57.5 +0.9
comp=Z,63nm,1.8s
PBKT Sadao Pong 91.53 288 P **P** 09 23 58.5 +1.4
comp=Z,70nm,1.5s,comp=Z,2µm
P17A Butcher Ranch, 91.55 45 *e*P **P** 09 23 58.1 +1.2
comp=Z,39nm,1.5s
SPUT South Promonto 91.62 43 *e*P **P** 09 23 57.3 +0.1
comp=Z,68nm,1.6s
MVCO Mesa Verde 91.63 48 P **P** 09 23 57.1 -0.3
baz=234
MVCO Mesa Verde 91.63 48 *e*P **P** 09 23 58.4 +1.0
comp=Z,24nm,1.4s
CTU Camp Tracy 91.67 43 *e*P **P** 09 23 58.8 +1.3
comp=Z,63nm,1.4s
ANMO Albuquerque 91.69 51 P **P** 09 23 57.7 0.0
baz=236
ANMO Albuquerque 91.69 51 *e*P **P** 09 23 57.7 0.0
ANMO pmax pmax
comp=Z,43nm,1.5s
ANMO Albuquerque 91.69 51 *e*P **P** 09 23 57.7 0.0
comp=Z,44nm,1.5s
HVU Hansel Valley 91.72 42 *e*P **P** 09 23 58.2 +0.6
HVU pmax pmax
comp=Z,44nm,1.4s
HVU Hansel Valley 91.72 42 *e*P **P** 09 23 58.2 +0.6
comp=Z,44nm,1.4s
LOEI Loei 91.75 289 P **P** 09 23 57.7 -0.4
comp=Z,41nm,1.5s,comp=Z,864nm
D08A Wollman Farm, 91.76 35 *e*P **P** 09 23 58.7 +1.2
comp=Z,46nm,1.3s
TCA Tanti 91.77 127 *e*P **P** 09 23 59.2 +1.0
E09A Wood Farm, Sta 91.79 36 *e*P **P** 09 23 59.6 +1.9
comp=Z,37nm,1.1s
JLU Jordanelle 91.79 44 *e*P **P** 09 24 00.9 +2.8
comp=Z,52nm,1.8s
ENH Enshi 91.86 304 *e*P **P** 09 23 59.0 +0.6
comp=Z,639nm,1.4s
HLID Hailey 91.89 40 P **P** 09 23 58.6 +0.2
baz=231
HLID Hailey 91.89 40 *e*P **P** 09 23 59.0 +0.6
comp=Z,32nm,1.4s
HLID *e*PP **PP** 09 27 41.8 +3.5
GYA Guiyang 91.96 299 ⇑*i*P **P** 09 23 59.2 +0.2
GYA pP pP 09 24 06.8 -1.1
GYA PP **PP** 09 27 42.2 +3.2
GYA SKS **SKSac** 09 34 30.0 -0.5
GYA S **S** 09 34 58.5 -0.8
GYA SS **SS** 09 41 10.0 +1.2
GYA pmax pmax
comp=Z,70nm,1.0s
GYA pmax pmax
comp=Z,280nm,8.2s
GYA LR LR
comp=Z,6µm,20.8s
GYA LR LR
comp=Z,4µm,21.0s
GYA LR LR
comp=Z,6µm,20.4s
SRDT SRDT 92.00 285 P **P** 09 24 01.2 +1.9
comp=Z,266nm,0.9s
SPU Mount Spurr 92.01 12 *e*P **P** 09 23 58.1 -0.2
TCUT Toone Canyon 92.13 43 *e*P **P** 09 24 01.3 +1.6
comp=Z,67nm,1.4s
HWUT Hardware Ranch 92.33 43 *e*P **P** 09 24 01.0 +0.5
comp=Z,13nm,1.1s
RC01 Rabbit Creek A 92.35 13 *e*P **P** 09 24 01.1 +1.3
comp=Z,90nm,1.5s
UTTA Uttaradit 92.46 289 P **P** 09 24 03.0 +1.7
comp=Z,7.7nm,1.2s,comp=Z,86nm
SUA Susitna One 92.51 12 *e*P **P** 09 24 01.1 +0.4
comp=Z,51nm,1.4s
CYA Choya 92.58 124 *e*P **P** 09 24 03.3 +1.3
PB04 IPOC Station P 92.69 117 *e*P **P** 09 24 03.6 +0.9
comp=Z,119nm,1.5s
832A Faith Ranch, C 92.72 59 P **P** 09 24 02.4 0.0
baz=238

BJT Baijiatuau 92.80 315 *e*P **P** 09 24 03.1 +0.7
BJT pmax pmax
comp=Z,66nm,1.4s
BJT Baijiatuau 92.80 315 *e*P **P** 09 24 03.1 +0.7
comp=Z,66nm,1.4s
BJI Beijing 92.81 315 P **P** 09 24 03.0 +0.5
BJI PP **PP** 09 27 43.2 -2.1
BJI SS SS 09 41 21.3 +1.0
BJI pmax pmax
comp=Z,7.0nm,1.1s
BJI pmax pmax
comp=Z,830nm,3.8s
BJI LR LR
comp=Z,4µm,12.5s
BJI LR LR
comp=Z,2µm,10.8s
BJI LR LR
comp=Z,1µm,34.2s
933A Laredo 92.91 60 P **P** 09 24 03.5 +0.2
baz=239,SNR=11
PMR Palmer 92.93 13 *e*P **P** 09 24 02.9 +0.4
PMR pmax pmax
comp=Z,44nm,1.4s
PMR Palmer 92.93 13 *e*P **P** 09 24 02.9 +0.4
comp=Z,44nm,1.4s
TT01 Tatalina 93.01 9 *e*P **P** 09 24 03.1 +0.2
S22A 4UR Ranch, Cre 93.03 48 P **P** 09 24 04.3 +0.3
baz=235,SNR=19
S22A 4UR Ranch, Cre 93.03 48 *e*P **P** 09 24 04.6 +0.6
comp=Z,27nm,1.4s
TTA Tatalina 93.04 9 *e*P **P** 09 24 03.7 +0.6
TTA pmax pmax
comp=Z,24nm,1.4s
TTA Tatalina 93.04 9 *e*P **P** 09 24 03.7 +0.6
comp=Z,24nm,1.4s
034A Hebbronville 93.08 61 P **P** 09 24 04.7 +0.7
baz=239,SNR=17
SUKH Sukhothai 93.10 288 P **P** 09 24 06.2 +1.9
comp=Z,11nm,1.2s,comp=Z,117nm
UMPA Umpang Tak 93.12 287 P **P** 09 24 06.2 +1.7
comp=Z,11nm,1.2s,comp=Z,787nm
833A Chaparral WMA, 93.18 59 P **P** 09 24 05.0 +0.5
baz=239
DIV Divide 93.20 14 *e*P **P** 09 24 04.5 +0.6
comp=Z,31nm,1.3s
AHID Auburn Hatcher 93.31 42 *e*P **P** 09 24 07.1 +2.1
comp=Z,34nm,1.3s
BMRM Bremner River 93.32 15 *e*P **P** 09 24 05.8 +1.4
comp=Z,30nm,1.2s
035A Encino 93.45 61 P **P** 09 24 06.1 +0.3
baz=239,SNR=5.3
733A Divot King Ran 93.46 59 P **P** 09 24 05.9 +0.1
baz=239
O20A White River Ci 93.49 46 P **P** 09 24 05.7 -0.2
baz=235
O20A White River Ci 93.49 46 *e*P **P** 09 24 06.9 +1.0
comp=Z,11nm,1.1s
LVC Limon Verde 93.50 118 *e*P **P** 09 24 08.8 +2.1
comp=Z,102nm,1.5s
SCM Sheep Creek Mo 93.51 13 *e*P **P** 09 24 05.8 +0.5
SCM pmax pmax
comp=Z,129nm,2.0s
SCM Sheep Creek Mo 93.51 13 *e*P **P** 09 24 05.8 +0.5
comp=Z,128nm,2.0s
MCMT McKenzie Canyo 93.56 40 *e*P **P** 09 24 07.2 +1.0
LAMP Lampang 93.60 289 P **P** 09 24 08.5 +1.9
comp=Z,19nm,1.1s,comp=Z,168nm
MSTX Muleshoe 93.69 53 P **P** 09 24 06.5 -0.3
baz=237,SNR=7.3
MSTX Muleshoe 93.69 53 *e*P **P** 09 24 06.7 -0.2
comp=Z,25nm,1.1s
834A Tilden 93.72 60 P **P** 09 24 06.7 -0.3
baz=239,SNR=6.4
SMCO Snowmass 93.75 47 *e*P **P** 09 24 08.0 +0.6
comp=Z,9.6nm,1.0s
REDW Red Top Meadow 93.81 42 *e*P **P** 09 24 07.6 +0.2
comp=Z,38nm,1.3s
TPAW Teton Pass 93.83 42 *e*P **P** 09 24 08.4 +0.9
comp=Z,27nm,1.4s
TIY Taiyuan 93.87 311 *e*P **P** 09 24 09.6 +2.0
TIY SKS **SKSac** 09 34 42.1 +1.6
TIY S **S** 09 35 14.3 -1.4
TIY pmax pmax
comp=Z,530nm,9.4s
TIY LR LR
comp=Z,830nm,15.7s
TIY LR LR
comp=Z,160nm,7.5s
TIY LR LR
comp=Z,1µm,16.5s
SDCO Great Sand Dun 93.90 49 P **P** 09 24 07.4 -0.6
baz=236,SNR=13
SDCO Great Sand Dun 93.90 49 *e*P **P** 09 24 08.1 +0.2
comp=Z,17nm,1.4s
PB01 IPOC Station P 93.90 116 *e*P **P** 09 24 09.8 +1.5
comp=Z,45nm,1.3s
BALM Baldy 93.90 16 *e*P **P** 09 24 08.7 +1.5
BALM pmax pmax
comp=Z,19nm,1.2s
BALM Baldy 93.90 16 *e*P **P** 09 24 08.7 +1.5
comp=Z,19nm,1.2s
633A Saathoff Ranch 93.93 59 P **P** 09 24 08.2 +0.2
baz=239
SNOW Snow King Moun 93.93 42 *e*P **P** 09 24 08.4 +0.5
comp=Z,26nm,1.1s
JCT Junction City 93.99 57 P **P** 09 24 08.3 +0.1
baz=239
JCT Junction City 93.99 57 *e*P **P** 09 24 08.7 +0.5
JCT pmax pmax
comp=Z,33nm,1.4s
JCT Junction City 93.99 57 *e*P **P** 09 24 08.7 +0.5
comp=Z,33nm,1.4s
DLMT Dillon 94.03 39 *e*P **P** 09 24 09.0 +0.8
comp=Z,27nm,1.4s
IMW Indian Meadow 94.08 41 *e*P **P** 09 24 09.8 +1.2
comp=Z,32nm,1.4s
CAST Castle Rocks 94.10 11 *e*P **P** 09 24 07.8 -0.1
comp=Z,18nm,1.0s
CAST *e*PP **PP** 09 27 54.5 -0.4
LOHW Long Hollow 94.11 42 *e*P **P** 09 24 10.0 +1.3
comp=Z,31nm,1.5s
MOOW Moose Ponds 94.11 42 *e*P **P** 09 24 10.7 +2.0
comp=Z,21nm,1.4s
CM01 Chiang Mai Arr 94.11 289 *e*P **P** 09 24 09.3 +0.3
CM31 Chiang Mai Arr 94.14 289 *e*P **P** 09 24 10.8 +1.6
CMAR Chiang Mai Arr 94.14 289 P **P** 09 24 09.9 +0.8
comp=Z,9.9nm,0.8s,baz=137,slow=3.1,SNR=61
CMAR PP **PP** 09 27 54.7 -1.4
comp=Z,1.1nm,0.3s,baz=137,slow=5.1,SNR=5.8
MSO Missoula 94.21 38 P **P** 09 24 09.7 +0.8
baz=231
MSO Missoula 94.21 38 *e*P **P** 09 24 11.3 +2.4
comp=Z,23nm,1.7s
BW06 Boulder Array 94.22 43 P **P** 09 24 09.8 +0.5
baz=234
BW06 Boulder Array 94.22 43 *e*P **P** 09 24 09.2 -0.1
BW06 *e*P **P** 09 24 09.9 +0.7
PD31 Pinedale Array 94.22 43 *e*P **P** 09 24 10.1 +0.9
PDAR Pinedale Array 94.22 43 P **P** 09 24 08.7 -0.6
comp=Z,2.3nm,1.0s,baz=199,slow=3.1,SNR=13
PDAR PP **PP** 09 27 56.0 -0.7
comp=Z,0.7nm,0.9s,baz=248,slow=6.1,SNR=4.3
PDAR LR LR 10 01 23.6
comp=Z,6µm,19.0s,baz=254,slow=32
XAN Xi'an 94.27 307 P **P** 09 24 11.6 +2.1
XAN pP sP 09 24 19.8 -1.6
XAN PP **PP** 09 28 00.9 +3.9
XAN SKS **SKSac** 09 34 45.9 +3.1
XAN S **ScS** 09 35 25.5 +4.9
XAN pmax pmax
comp=Z,33nm,1.4s
XAN pmax pmax
comp=Z,500nm,7.2s
XAN LR LR
comp=Z,1µm,18.3s
XAN LR LR
comp=Z,2µm,19.3s
T25A Trinidad 94.28 50 P **P** 09 24 09.9 +0.2
baz=237
T25A Trinidad 94.28 50 *e*P **P** 09 24 10.8 +1.1
comp=Z,21nm,1.4s
CMMT Chiang Mai 94.31 289 P **P** 09 24 11.0 +1.1
comp=Z,47nm,1.3s,comp=Z,834nm
CHTO Chiang Mai 94.31 289 P **P** 09 24 11.0 +1.1
comp=Z,211nm,1.3s,comp=Z,3µm
CHTO Chiang Mai 94.31 289 *e*P **P** 09 24 11.3 +1.4
CHTO pmax pmax
comp=Z,80nm,1.4s
CHTO Chiang Mai 94.31 289 *e*P **P** 09 24 11.3 +1.4
comp=Z,80nm,1.4s
KMI Kunming 94.32 296 P **P** 09 24 11.7 +1.6
KMI pP sP 09 24 23.7 +1.6
KMI PP **PP** 09 28 00.5 +2.7
KMI S **S** 09 35 17.9 -2.6
KMI pmax pmax
comp=Z,55nm,1.5s
KMI pmax pmax
comp=Z,490nm,7.2s
KMI LR LR
comp=Z,790nm,17.5s
KMI LR LR
comp=Z,1µm,18.7s
KMI LR LR
comp=Z,2µm,18.1s
FLWY Flagg Ranch 94.33 41 *e*P **P** 09 24 11.5 +1.8
comp=Z,31nm,1.1s
QLMT Earthquake Lak 94.36 40 *e*P **P** 09 24 12.0 +2.1
YPP Pitchstone Pla 94.38 41 *e*P **P** 09 24 10.6 +0.6
comp=Z,32nm,1.7s
LRM Limekiln Ridge 94.39 39 *e*P **P** 09 24 11.2 +1.2
KTH Kantishna Hill 94.42 11 *e*P **P** 09 24 09.2 -0.2
comp=Z,26nm,1.4s
TRF Thorofare Moun 94.43 11 *e*P **P** 09 24 09.3 -0.3
comp=Z,16nm,1.0s
YHB Horse Butte 94.45 41 *e*P **P** 09 24 12.2 +2.0
comp=Z,40nm,1.5s
SKAG Skagway 94.45 20 *e*P **P** 09 24 11.7 +2.2
comp=Z,33nm,1.6s
H17A Grant Village 94.59 41 P **P** 09 24 10.8 -0.1
baz=233
H17A Grant Village 94.59 41 *e*P **P** 09 24 13.0 +2.1
comp=Z,23nm,1.3s
CHMT Chamberlain Mo 94.63 38 *e*P **P** 09 24 11.8 +0.9
RND Reindeer 94.65 12 *e*P **P** 09 24 10.7 +0.2
RND pmax pmax
comp=Z,46nm,1.3s
RND Reindeer 94.65 12 *e*P **P** 09 24 10.7 +0.2
comp=Z,46nm,1.3s
433A Art 94.66 57 P **P** 09 24 11.0 -0.3
baz=239,SNR=24
YHH Holmes Hill 94.67 41 *e*P **P** 09 24 14.1 +2.8
comp=Z,28nm,1.2s
534A Blanco 94.74 58 P **P** 09 24 11.3 -0.4
baz=239
BOZ Bozeman (W) 94.74 40 P **P** 09 24 11.8 +0.3
baz=233
BOZ Bozeman (W) 94.74 40 *e*P **P** 09 24 11.8 +0.3
BOZ pmax pmax
comp=Z,26nm,1.3s
BOZ Bozeman (W) 94.74 40 *e*P **P** 09 24 11.8 +0.3
comp=Z,26nm,1.3s
Q24A Divide 94.80 48 P **P** 09 24 12.0 -0.1
baz=236
SEY Seymchan 94.88 346 P **P** 09 24 11.5 0.0
comp=Z,17nm,1.0s,baz=132,slow=2.9,SNR=16
BPAW Bear Paw Mtn. 94.91 11 *e*P **P** 09 24 11.4 -0.2
comp=Z,17nm,1.5s
MCK McKinley 94.93 12 *e*P **P** 09 24 11.7 0.0
MCK pmax pmax
comp=Z,29nm,1.3s
MCK McKinley 94.93 12 *e*P **P** 09 24 11.7 0.0
comp=Z,29nm,1.3s
ISCO Idaho Springs 94.97 47 *e*P **P** 09 24 15.5 +2.6
ISCO pmax pmax
comp=Z,6.0nm,1.4s
ISCO Idaho Springs 94.97 47 *e*P **P** 09 24 15.5 +2.6
comp=Z,5.8nm,1.4s
333A Richland Sprin 95.03 57 P **P** 09 24 12.6 -0.4
baz=239,SNR=7.1
ABTX Abilene, Hawle 95.21 56 P **P** 09 24 13.7 -0.1
baz=239
ABTX Abilene, Hawle 95.21 56 *e*P **P** 09 24 14.0 +0.2
comp=Z,52nm,1.6s
BWN Browne 95.24 12 *e*P **P** 09 24 14.5 +1.4
comp=Z,44nm,1.2s
N23A Red Feather La 95.36 46 P **P** 09 24 14.4 -0.1
baz=236
N23A Red Feather La 95.36 46 *e*P **P** 09 24 16.3 +1.7
comp=Z,16nm,1.4s
233A Rising Star 95.44 56 P **P** 09 24 14.8 0.0
baz=239
636A Smothers Creek 95.53 59 P **P** 09 24 15.3 +0.1
baz=240
334A Lometa 95.58 57 P **P** 09 24 15.4 0.0
baz=240
133A Hamilton Ranch 95.73 56 P **P** 09 24 16.4 +0.3
baz=239
WRH Wood River Hil 95.76 12 *e*P **P** 09 24 14.9 -0.5
comp=Z,34nm,1.2s
WRH *e*PP **PP** 09 28 01.5 -6.3
DOT Dot Lake 95.81 14 *e*P **P** 09 24 16.0 +0.3
comp=Z,20nm,1.0s
DOT *e*PP **PP** 09 28 10.2 +1.9
MLY Manley 95.82 11 *e*P **P** 09 24 15.7 0.0
comp=Z,7.9nm,1.2s
CCB Clear Creek Bu 95.97 12 *e*P **P** 09 24 15.6 -0.8
comp=Z,21nm,1.4s
K22A Casper 95.98 44 P **P** 09 24 17.5 +0.3
baz=236
234A Clairette 95.99 57 P **P** 09 24 17.7 +0.4
baz=240
HHC Hu-ho-hao-te 96.17 314 *e*P **P** 09 24 20.0 +2.0
HHC PP **PP** 09 28 16.4 +4.8
HHC SKS **SKSac** 09 34 55.4 +2.7
HHC S **ScS** 09 35 40.3 +4.1
HHC SS **SS** 09 42 10.7 +2.3
HHC pmax pmax
comp=Z,21nm,1.5s
HHC pmax pmax
comp=Z,360nm,4.8s
HHC LR LR
comp=Z,690nm,13.7s
HHC LR LR
comp=Z,940nm,14.9s
HHC LR LR
comp=Z,870nm,17.4s
COLA College 96.17 12 *e*P **P** 09 24 15.8 -1.4
COLA pmax pmax
comp=Z,20nm,1.1s
COLA College 96.17 12 *e*P **P** 09 24 15.8 -1.4
comp=Z,20nm,1.1s
MDM Murphy Dome 96.18 12 *e*P **P** 09 24 17.0 -0.4
comp=Z,31nm,1.4s
IL1 Eielson Array 96.25 12 *e*P **P** 09 24 16.4 -1.2
ILAR Eielson Array 96.25 12 P **P** 09 24 16.8 -0.9
comp=Z,4.6nm,1.1s,baz=219,slow=5.0,SNR=20
ILAR PP **PP** 09 28 16.1 +4.4
comp=Z,1.8nm,1.0s,baz=220,slow=7.3,SNR=4.4
ILAR LR LR 10 02 06.1
comp=Z,1µm,19.7s,baz=202,slow=32
ILB Eielson Array 96.25 12 *e*P **P** 09 24 16.9 -0.9
738A Farr-Stevens R 96.28 61 P **P** 09 24 19.0 +0.3
baz=240
134A White-Moore Ra 96.32 56 P **P** 09 24 19.0 +0.2
baz=240
X32A Elmer 96.39 54 P **P** 09 24 19.2 +0.2
baz=239
CD2 Chengdu 96.41 302 P **P** 09 24 19.5 +0.2
CD2 pP pP 09 24 26.2 -1.9
CD2 PP **PP** 09 28 13.2 -0.5
CD2 SKS **SKSac** 09 34 58.3 +4.0
CD2 S **ScS** 09 35 38.7 +0.1
CD2 sS sS 09 35 50.1 -2.6
CD2 SS **SS** 09 42 13.4 +1.2
CD2 pmax pmax
comp=Z,80nm,0.8s
CD2 pmax pmax
comp=Z,520nm,8.4s
CD2 LR LR
comp=Z,2µm,19.4s
CD2 LR LR
comp=Z,2µm,18.9s
CD2 LR LR
comp=Z,2µm,17.9s
W32A Sentinel 96.77 54 P **P** 09 24 20.5 -0.3
baz=239,SNR=5.2
OTAV Otavalo 97.19 94 *e*P **PP** 09 28 22.4 +2.1
EGAK Eagle 97.42 14 *e*P Pdif 09 24 23.6 +0.6
comp=Z,20nm,1.6s
X34A Smith Ranch, M 97.51 55 P Pdif 09 24 24.6 +0.4
baz=240
BILL Bilibino 97.56 354 *e*P **P** 09 24 22.0 -1.5
BILL *i* 09 28 19.0
BILL pmax pmax

comp=Z,12nm,1.3s
BILL MLR MLR
comp=Z,2µm,19.0s
238A Jacksonville 98.22 58 Pdiff Pdif 09 24 27.8 +0.3
baz=241
RSSD Black Hills 98.31 44 Pdiff Pdif 09 24 28.2 +0.4
baz=238
RSSD Black Hills 98.31 44 *e*P Pdif 09 24 28.1 +0.3
RSSD pmax pmax
comp=Z,23nm,1.2s
RSSD Black Hills 98.31 44 *e*P Pdif 09 24 28.1 +0.3
comp=Z,24nm,1.2s
LAO LASA Array 98.41 41 Pdiff Pdif 09 24 28.4 +0.5
baz=236
LAO LASA Array 98.41 41 *e*P Pdif 09 24 30.1 +2.1
comp=Z,35nm,1.5s
W35A Tecumseh 98.47 55 Pdiff Pdif 09 24 29.1 +0.7
baz=241
X36A Centrahoma 98.56 55 Pdiff Pdif 09 24 29.3 +0.4
baz=241
LZH Lanzhou 98.90 306 *e*P Pdif 09 24 32.4 +1.9
LZH pP pP 09 24 36.6 -2.8
LZH sP sP 09 24 39.9 -2.6
LZH PP **PP 09 28 37.6 +4.8**
LZH S **S 09 35 57.0 -2.3**
LZH sS sS 09 36 11.5 -2.5
LZH pmax pmax
comp=Z,60nm,1.3s
LZH pmax pmax
comp=Z,300nm,7.8s
LZH LR LR
comp=Z,900nm,16.0s
LZH LR LR
comp=Z,2µm,17.1s
LZH LR LR
comp=Z,3µm,18.9s
YAK Yakutsk 100.42 337 *e*P **Pdif 09 24 38.2 +1.8**
YAK pmax pmax
comp=Z,16nm,1.1s
INK Inuvik 102.07 15 *e*P **Pdif 09 24 44.1 +0.5**
INK *i* 09 29 04.2
INK Inuvik 102.07 15 *e*Pdif **Pdif 09 24 44.1 +0.5**
INK *e*PKiKP **PKiKP 09 29 04.2 -1.6**
SONM Songino Array 102.94 318 P **Pdif 09 24 53.6 +5.4**
comp=Z,3.0nm,1.0s,baz=134,slow=4.3,SNR=5.7
SONM PP **PP 09 28 57.5 -5.6**
comp=Z,1.7nm,0.9s,baz=174,slow=3.0,SNR=3.5
SONA1 Songino Array 102.94 318 *e*Pdif **Pdif 09 24 54.9 +6.7**
ROSC El Rosal 103.01 92 *e*P PKiKP 09 29 20.8 +11
CHIC Chingaza 103.43 92 *e*P **PP 09 29 03.6 -4.0**
YKA Yellowknife Ar 103.61 25 PP PP 09 29 14.4 +6.9
comp=Z,0.6nm,0.9s,baz=233,slow=7.0,SNR=3.9
RUSC La Rusia 104.59 91 *e*P **PKiKP 09 29 08.9 -3.9**
BARC Barichara 104.83 91 *e*P **PKiKP 09 29 11.5 -1.3**
ZAK Zakamensk 105.93 319 *e*P **Pdif 09 25 03.8 +2.4**
ZAK pmax pmax
comp=Z,3.0nm,1.6s
CHLP Challavanipeta 106.73 282 *e*Pdif **Pdif 09 25 05.0 -0.6**
CHLP *e*SKSac **SKSac 09 35 48.0 +3.9**
PVM Polavaram 108.29 280 *e*Pdif **Pdif 09 25 09.4 -3.0**
PVM *e*SKSac **SKSac 09 35 50.3 -0.7**
SKHT Srikalahasti 108.43 276 *e*Pdif **Pdif 09 25 13.2 0.0**
SKHT *e*SKSac **SKSac 09 35 51.2 -0.5**
ADKI Addanki 109.12 278 *e*Pdif **Pdif 09 25 15.3 -0.9**
ADKI *e*SKSac **SKSac 09 35 55.5 +1.0**
RCLA Racherla 109.83 277 *e*Pdif **Pdif 09 25 19.3 -0.1**
RCLA *e*SKSac **SKSac 09 35 54.4 -3.2**
NJS Nagarjunasagar 110.00 278 *e*Pdif **Pdif 09 25 19.6 -0.5**
NJS *e*SKSac **SKSac 09 36 01.4 +3.2**
SRLM Srisailam 110.16 278 *e*Pdif **Pdif 09 25 20.2 -0.7**
SRLM *e*SKSac **SKSac 09 35 59.7 +0.6**
RPR Rampur 110.97 280 *e*Pdif **Pdif 09 25 23.6 -0.8**
RPR *e*SKSac **SKSac 09 36 05.1 +2.9**
HYBB Hyderabad (bro 111.02 279 *e*Pdif **Pdif 09 25 22.4 -2.3**
HYBB *e*SKSac **SKSac 09 35 59.6 -3.0**
SRSP Sriramsagar 111.82 280 *e*Pdif **Pdif 09 25 28.1 0.0**
KLRI Killari 112.98 279 *e*Pdif **Pdif 09 25 33.3 -0.1**
KLRI *e*SKSac **SKSac 09 36 13.4 +3.0**
WMQ Urumqi 113.34 308 *e*PKP **PKiKP 09 29 28.5 +0.8**
WMQ sPKP 09 29 41.1
WMQ PP **PP 09 30 25.8 +6.7**
WMQ PKS **PKSdf 09 33 03.5 -0.9**
WMQ SKS **SKSdf 09 36 32.2 -5.8**
WMQ AMB AMB
comp=Z,180nm,6.0s
WMQ LR LR
comp=Z,2µm,17.3s
WMQ LR LR
comp=Z,2µm,17.1s
WMQ LR LR
comp=Z,2µm,21.4s
ZALV Zalesovo Beam 117.81 319 PKP **PKPdf 09 29 34.5 -1.3**
comp=Z,2.5nm,0.9s,baz=240,slow=2.9,SNR=5.2
ZALV PP **PP 09 30 50.0 0.0**
comp=Z,4.9nm,1.1s,baz=98,slow=3.0,SNR=4.1
MK01 Makanchi Array 117.81 310 *e*PKPdf **PKPdf 09 29 34.9 -1.3**
MK31 Makanchi Array 117.82 310 *e*PKiKP **PKPdf 09 29 35.9 -0.3**
MK31 Makanchi Array 117.82 310 *e*PKPdf **PKPdf 09 29 35.9 -0.3**
MKAR Makanchi Array 117.82 310 PKP **PKPdf 09 29 35.5 -0.7**
comp=Z,2.7nm,0.9s,baz=98,slow=2.5,SNR=14
MKAR PKKPbc **PKKPab 09 40 01.6 +3.0**
comp=Z,0.9nm,0.8s,baz=270,slow=3.6,SNR=6.1
MKAR Makanchi Array 117.82 310 *e*PKPdf **PKPdf 09 29 35.9 -0.3**
MAKZ Makanchi 118.03 310 *e*PKiKP **PKPdf 09 29 35.4 -1.2**
MAKZ Makanchi 118.03 310 *e*PKPdf **PKPdf 09 29 35.4 -1.2**
NRIK Noril'sk 118.85 336 PKP **PKPdf 09 29 37.5 0.0**
comp=Z,3.1nm,0.9s,baz=148,slow=9.5,SNR=2.4
NRIK PP **PP 09 30 53.8 -3.0**
comp=Z,6.5nm,1.0s,baz=103,slow=6.5,SNR=10
NVS Novosibirsk 118.88 319⇑ *i*PKiKP **PKPdf 09 29 37.0 -0.9**
NVS pmax pmax
comp=Z,15nm,1.3s
NVS pmax pmax
comp=N,2.0nm,0.5s
NVS pmax pmax
comp=E,3.0nm,0.5s
KSH Kashi 120.60 301 *e*PKP **PKPdf 09 29 42.6 +0.7**
KSH *es*PKP 09 29 55.7
KSH PKS **PKSdf 09 33 17.9 -0.8**
KSH SKS **SKSdf 09 36 49.3 -2.9**
KSH SKKS **SKKSac 09 38 08.0 +0.5**
KSH AMB AMB
comp=E,180nm,6.9s
KSH LR LR
comp=E,1µm,13.3s
KSH LR LR
comp=E,990nm,14.8s
KSH LR LR
comp=E,1µm,19.4s
KURK Kurchatov 120.97 314 PKiKP **PKPdf 09 29 41.0 -1.1**
KURK 09 31 13.5
KURK pmax pmax
comp=Z,6.0nm,1.0s
KURK pmax pmax
comp=Z,2.0nm,0.9s
KURK Kurchatov 120.97 314 *e*PKPdf **PKPdf 09 29 41.4 -0.7**
KURK PP **PP 09 31 13.5 +1.6**
KURBB Kurchatov Arra 121.01 314 PKP **PKPdf 09 29 41.0 -1.2**
comp=Z,6.0nm,1.0s,baz=107,slow=1.8,SNR=11
KURBB PP **PP 09 31 13.5 +1.3**
comp=Z,1.7nm,0.9s,baz=103,slow=6.3,SNR=4.6
TKM2 Tokmak 2 121.63 305 *e*PKiKP **PKPdf 09 29 43.5 -0.4**
TKM2 Tokmak 2 121.63 305 *e*PKPdf **PKPdf 09 29 43.5 -0.4**
AAK Ala-Archa 122.37 304⇑ *i*PKiKP **PKPdf 09 29 45.0 -0.3**
EKS2 Erkin-Say 122.89 304 *e*PKiKP **PKPdf 09 29 48.7 +2.5**
EKS2 Erkin-Say 122.89 304 *e*PKPdf **PKPdf 09 29 48.7 +2.5**
SCHQ Schefferville 124.33 41 PKP **PKPdf 09 29 50.2 +1.8**
comp=Z,4.7nm,0.8s,baz=221,slow=3.6,SNR=4.4
KBL Kabul 124.82 294 *e*PKiKP **PKPdf 09 29 52.0 +1.7**
KBL Kabul 124.82 294 *e*PKPdf **PKPdf 09 29 52.0 +1.7**
VOSK Vostochnaya 125.89 316 *e*PKiKP **PKPdf 09 29 50.4 -1.1**
VOSK Vostochnaya 125.89 316 *e*PKPdf **PKPdf 09 29 50.4 -1.1**
BVAR Borovoye Array 126.26 316 PKP **PKPdf 09 29 51.4 -0.8**
comp=Z,13nm,1.1s,baz=128,slow=2.4,SNR=14
BRVK Borovoye 126.32 316 *e*PKiKP **PKPdf 09 29 52.1 -0.2**
BRVK Borovoye 126.32 316 *e*PKPdf **PKPdf 09 29 52.1 -0.2**
LSZ Lusaka 129.94 212 PP PP 09 32 10.3 -0.8
comp=Z,5.8nm,0.9s,baz=224,slow=10,SNR=3.5
SUMG Summit 130.99 15 *i* P **PP 09 32 15.5 -2.6**
comp=Z,2µm,16.0s
SUMG Summit 130.99 15 *e*PKiKP **PKPdf 09 30 01.7 +0.6**
SUMG Summit 130.99 15 *e*PKPdf **PKPdf 09 30 01.7 +0.6**
SVE Sverdlovsk 131.58 322 *i* PKiKP **PKPdf 09 30 03.5 +1.4**
SVE pmax pmax
comp=Z,37nm,1.8s
SVE MLR MLR
comp=Z,2µm,19.0s
SVE MLR MLR
comp=E,2µm,19.0s
ARU Arti 132.78 322 PKP **PKPdf 09 30 05.7 +1.3**
comp=E,1.8nm,0.4s,baz=83,slow=0.5,SNR=4.3
ARU Arti 132.78 322 *i* PKiKP **PKPdf 09 30 05.0 +0.6**
ARU 09 32 27.4
ARU MLR MLR
comp=Z,2µm,20.0s
ARU Arti 132.78 322 *e*PKPdf **PKPdf 09 30 09.1 +4.7**
ABKAR Akbulak array 132.93 312 *e*PKPdf **PKPdf 09 30 06.1 +1.2**
AKTO Aktyubinsk 134.06 314 PKP **PKPdf 09 30 06.8 -0.2**
comp=Z,4.0nm,1.2s,baz=124,slow=5.3,SNR=5.2
GEYT Alibeck 134.09 296 PKP **PKPdf 09 30 08.8 +1.2**
comp=Z,4.8nm,0.7s,baz=18,slow=0.5,SNR=5.3
KMBO Kilima Mbogo 135.95 233 PKP **PKPdf 09 30 13.7 +1.7**
comp=Z,3.3nm,1.0s,baz=121,slow=5.8,SNR=3.4
KMBO Kilima Mbogo 135.95 233 *e*PKPdf **PKPdf 09 30 12.3 +0.2**
KMBO PKP **PKPdf 09 30 13.7 +1.7**
APA Apatity 137.42 344⇑ *i*PKiKP **PKPdf 09 30 12.7 -0.1**
APA *i* PPP PPP 09 36 01.0
APA *i* PPP PPP 09 43 10.0
APA pmax pmax
comp=Z,7.0nm,1.2s
APA MLR MLR
comp=Z,1µm,19.0s
ARCES ARCESS Array B 137.45 349 PKhKP PKPpre 09 30 08.7
comp=Z,5.9nm,1.1s,baz=336,slow=2.7,SNR=4.9
KLMR Klimovskoe 140.08 333 *e*PKiKP **PKPdf 09 30 14.0 -3.8**
KLMR pmax pmax
comp=Z,26nm,1.4s
VRH Novokhopyorsk 143.84 319 *e*PKHKP PKPpre 09 30 20.8
VRH pmax pmax
comp=Z,10.0nm,0.4s
MOS Moscow 143.84 327 *e*PKiKP PKPab 09 30 21.9 +0.1
MOS *e* 09 30 44.2
DGRG David-gareji 143.90 302 P PKPbc 09 30 23.4 +0.2
DGRG David-gareji 143.90 302 *e*PKiKP PKPbc 09 30 23.3 +0.1
FIA1 FINESS Array S 144.21 342 *e*PKPdf **PKPab 09 30 21.6 -1.3**
FIA1 *e*PKPdf PKPbc 09 30 22.2 -1.2
FINES FINESS Array B 144.22 342 PKP **PKPab 09 30 22.1 -0.9**
comp=Z,15nm,0.9s,baz=62,slow=4.5,SNR=37
SEAG Tbilisi Sea 144.28 302 P PKPbc 09 30 25.0 +0.7
TBLG Delisi 144.34 302 P PKPbc 09 30 24.3 -0.1
TBLG Delisi 144.34 302 *e*PKiKP **PKPab 09 30 24.3 +0.1**
GNI Garni 144.51 299 PKP **PKPab 09 30 24.6 -0.4**
comp=Z,29nm,0.9s,baz=155,slow=4.7,SNR=28
GNI Garni 144.51 299 PKP **PKPab 09 30 24.6 -0.4**
GNI *e*PKPdf PKPbc 09 30 25.7 +0.5
OBN Obninsk 144.69 327 PKP **PKPab 09 30 24.1 -0.9**
comp=Z,23nm,0.4s,baz=66,slow=5.6,SNR=27
OBN Obninsk 144.69 327*c i*PKiKP **PKPab 09 30 23.9 -1.0**
OBN *i* 09 30 36.3
OBN pmax pmax
comp=Z,122nm,1.5s
OBN Obninsk 144.69 327 *e*PKPdf PKPbc 09 30 25.1 0.0
ZEI Tsey 144.79 304 *i* PKiKP **PKPab 09 30 24.0 -2.1**
ZEI pmax pmax
comp=Z,223nm,1.2s
NCK Nalchik 144.89 305 *i* PKiKP **PKPdf 09 30 26.7 -0.3**
ONI Oni 145.15 304 P **PKPdf 09 30 27.4 -0.1**
ONI Oni 145.15 304 *e*PKiKP **PKPdf 09 30 27.4 -0.1**
BGD Bogdanovka 145.25 302 P **PKPab 09 30 27.8 0.0**
VSR Storozhevoye 145.30 320 *e*PKP2 **PKPbc 09 30 25.9 -1.3**
VSR pmax pmax
comp=Z,130nm,1.3s
VSR MLR MLR
comp=Z,1µm,18.0s
AKH Akhalkalaki 145.30 302⇓ *i*P **PKPdf 09 30 28.9 +0.9**
AKH Akhalkalaki 145.30 302 P **PKPdf 09 30 28.3 +0.3**
AKH Akhalkalaki 145.30 302 *e*PKiKP **PKPdf 09 30 28.2 +0.3**
KBZ Khabaz 145.34 306 PKPbc **PKPbc 09 30 27.1 -0.4**
comp=Z,30nm,1.2s,baz=59,slow=0.7,SNR=44
KIV Kislovodsk 145.44 306 *i* PKiKP **PKPbc 09 30 28.1 +0.1**
KIV pmax pmax
comp=Z,89nm,1.0s
KIV Kislovodsk 145.44 306 *e*PKPbc **PKPab 09 30 28.2 0.0**
CHVG Ch'k'valeri 146.12 304 P **PKPbc 09 30 30.3 +0.3**
VSU Vasula 146.41 338 *i* PKP2 **PKPbc 09 30 30.4 +0.1**
NB2 NORSAR Subarra147.51 353 PKP **PKPdf 09 30 31.8 +0.9**
comp=Z,69nm,1.1s,baz=20,slow=2.9
NB2 NORSAR Subarra147.51 353 PKP **PKPdf 09 30 31.8 +0.9**
baz=20,slow=2.9
NOA NORSAR Array B147.51 353 PKPbc **PKPbc 09 30 32.5 -0.9**
comp=Z,21nm,1.0s,baz=18,slow=4.2,SNR=21
SOC Sochi 147.62 307 *i* PKiKP **PKPdf 09 30 31.1 -0.5**
SOC pmax pmax
comp=Z,71nm,1.2s
HFS Hagfors 148.07 350 PKPbc **PKPbc 09 30 33.6 -1.4**
comp=Z,18nm,0.8s,baz=64,slow=3.4,SNR=20
IZAR Zarasai 148.67 335 *e*P **PKPbc 09 30 35.0 -1.6**
IZAR IAmb IAmb 09 30 59.1
comp=Z,51nm,1.0s
IDID Didziasalis 148.81 334 *e*P **PKPdf 09 30 34.7 +1.6**
IDID IAmb IAmb 09 30 59.4
comp=Z,21nm,1.0s
ANN Anapa 148.84 310 *i* PKP2 **PKPbc 09 30 36.9 -0.5**
ANN *e* 09 34 04.1
ANN pmax pmax
comp=Z,125nm,1.2s
ISAL Salakas 148.85 335 *e*P **PKPbc 09 30 35.9 -1.2**
ISAL IAmb IAmb 09 30 59.5
comp=Z,33nm,1.1s
MICGM Minsk 148.95 332 *e*PKP **PKPbc 09 30 36.0 -1.4**
MICGM *e*PP **PP 09 34 06.0 -2.2**
MICGM *e*PPP PPP 09 37 14.0
MICGM *es*SKKKS 09 41 10.0
MICGM *es*SKSP 09 44 20.0
MICGM *e*PS 09 44 45.0
MICGM *es*SS SS 09 53 16.0 -1.1
MICGM *e*LR LR 10 31 00.0
MICGM LRM MLR 10 39 08.0
comp=Z,3.4nm,18.0s
MNK Minsk 148.95 332 *e*PKP2 **PKPbc 09 30 36.0 -1.4**
MNK *e* 09 34 06.0
MNK *es*SS SS 09 53 16.0 -1.1
MNK MLR MLR
comp=Z,3µm,18.0s
KONO Kongsberg 149.04 354 *e*PKP2 **PKPbc 09 30 36.2 -1.3**
KONO Kongsberg 149.04 354 *e*PKPdf **PKPbc 09 30 36.2 -1.3**
NACGM Naroch 149.10 334 *e* **PKPdf 09 30 34.0 +0.4**
NACGM *e*LQ LQ 10 21 11.0
NACGM *e*LR LR 10 31 24.0
AKASG Malin Array Be 150.89 325 PKPbc **PKPbc 09 30 39.9 -2.3**
comp=Z,22nm,1.0s,baz=44,slow=2.7,SNR=10
KIEV Kiev 150.90 325 *e*PKiKP **PKPbc 09 30 41.1 -1.2**
KIEV Kiev 150.90 325 *e*PKPbc **PKPbc 09 30 41.1 -1.2**
SIM Simferopol' 150.99 312 *i* PKiKP **PKPbc 09 30 44.0 +1.3**
SIM pmax pmax
comp=Z,38nm,1.0s
ASF Jabal al Asfar 151.10 285 PKPbc **PKPbc 09 30 41.1 -2.3**
comp=Z,14nm,1.1s,baz=15,slow=0.5,SNR=21
SUW Suwalki 151.14 336 *e*PKP **PKPbc 09 30 40.8 -1.9**
SUW Suwalki 151.14 336 *e*PKiKP **PKPbc 09 30 40.8 -1.9**
KLNR Kaliningrad 151.65 339⇓ *i*PKiKP **PKPbc 09 30 43.6 -0.2**
MMAI Mount Meron Ar 152.38 287 PKPbc **PKPbc 09 30 46.7 +0.3**
comp=Z,28nm,0.9s,baz=90,slow=2.5,SNR=24
COP Copenhagen 152.53 349 *i* P **PKPdf 09 30 39.0 +0.2**
comp=Z,800nm,19.0s
COP Copenhagen 152.53 349 *e*PKiKP **PKPdf 09 30 39.0 +0.2**
COP MLR MLR
comp=Z,810nm,19.0s
EIL Elat 152.58 279 PKPbc **PKPbc 09 30 46.5 -0.2**
comp=Z,25nm,1.1s,baz=87,slow=0.7,SNR=19
BSD Bornholm Skovb 152.59 346 *i* P **PKPdf 09 30 39.0 0.0**
comp=Z,2µm,18.0s
BSD Bornholm Skovb 152.59 346 *e*PKiKP **PKPdf 09 30 39.0 0.0**
BSD MLR MLR
comp=Z,2µm,18.0s
SORM Soroca 152.90 322⇓ *i*P **PKPbc 09 30 48.2 +1.3**
BRTR Keskin Array B 152.99 301 PKP **PKPdf 09 30 39.8 -0.5**
comp=Z,0.6nm,0.8s,baz=129,slow=1.8,SNR=3.6
BRTR PKPbc **PKiKP 09 30 48.0 +0.2**
comp=Z,15nm,1.0s,baz=122,slow=1.6,SNR=22
EKA Eskdalemuir Ar 153.22 8 PKPbc **PKPbc 09 30 47.8 +0.4**
comp=Z,1.2nm,0.6s,baz=329,slow=2.2,SNR=3.9
KIS Kishinev 153.29 319 *e*PKP **PKPdf 09 30 33.0 -7.3**
KIS *e*SKP 09 34 20.0
KIS Kishinev 153.29 319 *e*PP PP 09 34 34.0 +0.6
KIS Kishinev 153.29 319 *e*PKKP 09 39 00.0
KIS *es*SKKS 09 41 27.0
KIS LRM MLR 10 42 04.0
comp=Z,2µm,22.0s
KIS Kishinev 153.29 319 *e*PKIKP **PKPdf 09 30 33.0 -7.3**
KIS *e* 09 34 34.0
ANTO Ankara 153.58 302 *e*PKIKP **PKPbc 09 30 49.3 +0.5**
ANTO Ankara 153.58 302 *e*PKPbc **PKPbc 09 30 49.3 +0.5**
BR231 Keskin MP Arra 153.60 302 *e*PKPdf **PKPdf 09 30 39.7 -1.4**
GKP Gorka Klasztor 153.69 341 *e*PKP **PKPdf 09 30 38.2 -2.4**
GKP Gorka Klasztor 153.69 341 *e*PKIKP **PKPdf 09 30 38.2 -2.4**
BEL Belsk 153.75 335 *e*PKP **PKPdf 09 30 43.6 +2.8**
BEL Belsk 153.75 335 *e*PKIKP **PKPdf 09 30 43.6 +2.8**
LVV L'vov 153.96 329 *e*PKIKP **PKPbc 09 30 49.3 +0.1**
CSS Mathiatis 154.02 291 P **PKPab 09 31 04.1 +0.7**
CSS Mathiatis 154.02 291 *e*PKPbc **PKPbc 09 30 51.7 +1.9**
KWP Kalwaria Pacla 154.69 330 *e*PKP **PKPab 09 31 06.4 +0.8**
KWP Kalwaria Pacla 154.69 330 *e*PKP2 **PKPab 09 31 06.4 +0.8**
TESR Tescani 154.79 320⇓ *i*P **PKPab 09 31 06.0 -0.2**
TIRR Tirgusor 154.86 315⇓ *i*P **PKPab 09 31 07.3 +0.8**
TIRR Tirgusor 154.86 315 *e*PKP2 **PKPab 09 31 03.9 -2.6**
TIRR Tirgusor 154.86 315 *e*PKPab **PKPab 09 31 03.9 -2.6**
BURAR Bucovina Array 154.88 324⇑ *i*P **PKPab 09 31 06.0 -0.7**
TLB Topalu 155.02 315⇑ *i*P **PKPab 09 31 06.5 -0.7**
VRI Vrincioaia 155.12 319⇑ *i*P **PKPab 09 31 07.8 +0.2**
PLOR Plostina 155.17 319⇓ *i*P **PKPab 09 31 07.4 -0.5**
KOLS Kolonicke sedl 155.39 329 *e*PKIKP **PKPdf 09 30 44.7 +1.5**
KOLS *e* 09 31 05.4
KOLS Kolonicke sedl 155.39 329 *e*PKP **PKPdf 09 30 44.7 +1.5**
KOLS *e* 09 31 05.4
KOLS *eL* L 09 40 53.3
OJC Ojcow 155.43 334 *e*PKP **PKPdf 09 30 42.1 -1.1**
OJC *e*PP **PP 09 34 43.9 -1.1**
OJC Ojcow 155.43 334 *e*PKIKP **PKPdf 09 30 42.1 -1.1**
OJC *e* 09 34 43.9
STHS Stebnicka Huta 155.48 331 *e*PKP2 **PKPab 09 31 10.2 +1.2**
STHS Stebnicka Huta 155.48 331 *e*PKP **PKPab 09 31 10.2 +1.2**
STHS *e* 09 50 02.9
UZH Uzhgorod 155.61 329 *e*PKIKP **PKPdf 09 30 46.4 +3.0**
UZH *e* 09 30 50.6
UZH *e* 09 30 55.6
ISR Istrita 155.65 318⇑ *i*P **PKPab 09 31 10.1 +0.1**
CRVS Cervenica-Dubn 155.78 330 *e*PKIKP **PKPdf 09 30 43.9 +0.2**
CRVS Cervenica-Dubn 155.78 330 *e*PKP **PKPdf 09 30 43.9 +0.2**
CRVS *e* 09 31 11.7
CRVS *e* 09 35 07.1
MLR Muntele Rosu 155.78 319 PKP **PKPdf 09 30 42.9 -1.0**
comp=Z,0.3nm,0.3s,baz=285,slow=4.4,SNR=3.3
MLR Muntele Rosu 155.78 319⇑ *i*P **PKPab 09 31 09.8 -0.8**
DOPR Dopca 155.82 321⇓ *i*P **PKPab 09 31 11.1 +0.5**
NIE Niedzica 155.87 332 *e*PKP **PKPdf 09 30 45.4 +1.6**
NIE *e*PP **PP 09 34 47.9 +0.3**
NIE Niedzica 155.87 332 *e*PKIKP **PKPdf 09 30 45.4 +1.6**
NIE *e* 09 34 47.9
KSP Ksiaz 156.10 340 *e*PKP **PKPdf 09 30 41.8 -2.3**
KSP Ksiaz 156.10 340 *e*PKIKP **PKPdf 09 30 41.8 -2.3**
PRD Provadia 156.11 313 *i* P **PKPdf 09 30 44.1 -0.2**
PRD Provadia 156.11 313 P **PKPdf 09 30 44.1 -0.2**
VOIR 156.32 320⇑ *i*P **PKPab 09 31 12.3 -0.6**
OKC Ostrava-Krasne 156.35 336 *e*PKPAB **PKPab 09 31 13.2 +0.5**
OKC *ex* x 09 31 25.4
OKC *e*PP **PP 09 34 47.0 -3.1**
OKC AMS AMS 11 01 30.0
comp=Z,2µm,17.5s
OKC Ostrava-Krasne 156.35 336 *e*PKP2 **PKPab 09 31 13.2 +0.5**
OKC *e* 09 34 47.0
OKC MLR MLR
comp=Z,2µm,17.5s
LANS Liptovska Anna 156.41 333 *e*PKIKP **PKPdf 09 30 46.2 +1.6**
LANS *e* 09 31 12.1
LANS Liptovska Anna 156.41 333 *e*PKP **PKPdf 09 30 46.1 +1.5**
LANS *e* 09 31 12.1
UPC Upice 156.49 340 *e*PKPAB **PKPab 09 31 14.2 +0.9**
UPC *ex* x 09 31 26.6
UPC *e*PP **PP 09 34 46.5 -4.2**
UPC AMS AMS 10 41 50.0
comp=Z,2µm,23.8s
UPC Upice 156.49 340 *e*PKP2 **PKPab 09 31 14.2 +0.9**
UPC *e* 09 34 46.5
UPC MLR MLR
comp=Z,2µm,23.8s
KECS Kecovo 156.51 331 *e*PKP2 **PKPab 09 31 13.0 -0.5**
KECS Kecovo 156.51 331 *e*PKP **PKPab 09 31 13.0 -0.5**
DPC Dobruska-Polom 156.53 339 *e*PKPAB **PKPab 09 31 13.7 +0.2**
DPC *ex* x 09 31 27.1
DPC *e*PP **PP 09 34 49.1 -1.9**
DPC AMS AMS 11 01 10.0
comp=Z,2µm,19.3s
DPC Dobruska-Polom 156.53 339 *e*PKP2 **PKPab 09 31 13.7 +0.2**
DPC *e* 09 34 49.1
DPC MLR MLR
comp=Z,2µm,19.3s
CLL Collm 156.56 345 *e*PKPdf **PKPdf 09 30 45.0 +0.4**
CLL *ep*PKPdf **pPKPdf 09 30 54.0 +0.3**
CLL *e*PKPdiff PKPab 09 31 03.0 -11
CLL ⇓*i*PKPab PKPab 09 31 13.5 0.0
comp=Z,42nm,1.4s
CLL *ep*PKPab **pPKPab 09 31 24.0 +1.6**
CLL *e* 09 31 36.0
CLL *e*PP **PP 09 34 50.0 -1.0**
CLL *e* 09 35 11.0
CLL *e*PPP PPP 09 38 24.0
CLL *es*SKKSac SKKSac 09 41 36.0 -2.9
CLL *e*PSKS 09 45 12.0
CLL *es*SS **SS 09 54 42.0 +2.0**
CLL *e* 09 55 00.0
CLL *es*SSS SSS 10 04 42.0
CLL *e* 10 05 18.0
CLL *e* 10 08 30.0
CLL LmH 10 49 00.0
comp=N,400nm,18.7s
CLL LmH 10 49 00.0
comp=E,1µm,19.8s
CLL LmV 10 52 00.0
comp=Z,2µm,19.3s
CLL Collm 156.56 345⇓ *e*PKIKP **PKPdf 09 30 45.0 +0.4**
CLL pmax pmax
comp=Z,42nm,1.4s
CLL MLR MLR
comp=Z,2µm,19.3s
ARR Arges 156.60 320⇓ *i*P **PKPab 09 31 14.4 +0.3**
MORC Moravsky Berou 156.62 337 *e*PKP2 **PKPab 09 31 14.2 +0.3**
MORC Moravsky Berou 156.62 337 *e*PKPab **PKPab 09 31 14.2 +0.3**
KRLC Kraliky 156.62 338 *e*PKPAB **PKPab 09 31 13.6 -0.3**
KRLC *ex* x 09 31 25.5
KRLC Kraliky 156.62 338 *e*PKP2 **PKPab 09 31 13.6 -0.3**
DRGR 156.71 325⇓ *i*P **PKPab 09 31 14.0 -0.5**
BRG Berggiesshubel 156.74 343 *e*PKP **PKPdf 09 30 46.2 +1.3**
comp=Z,14nm,1.7s
BRG *e* 09 31 13.1
comp=Z,52nm,1.6s
BRG *es*KSP 09 34 20.7
comp=Z,32nm,2.0s
BRG PP **PP 09 34 50.0 -2.0**
BRG SS SS 09 54 39.0 -3.0
comp=N,2µm,18.4s
comp=E,1µm,17.8s
comp=Z,2µm,19.0s
PVCC Panska Ves 156.88 342 *e*PKPAB **PKPab 09 31 14.2 -0.8**
PVCC AMS AMS 11 00 00.0
comp=Z,2µm,18.7s
PVCC Panska Ves 156.88 342 *e*PKP2 **PKPab 09 31 14.2 -0.8**
PVCC MLR MLR
comp=Z,2µm,18.7s
HUMR Humele 156.90 318⇓ *i*P **PKPab 09 31 14.5 -0.8**
SZH Strazhica 157.01 314 *i* P **PKPdf 09 30 44.6 -0.9**
SZH Strazhica 157.01 314 P **PKPdf 09 30 44.6 -0.9**
KULA Kula-Manisa 157.04 301 P **PKPab 09 31 16.7 +0.4**
VYHS Vyhne 157.19 333 *e*PKIKP **PKPdf 09 30 46.5 +0.9**
VYHS Vyhne 157.19 333 *e*PKP **PKPdf 09 30 46.5 +0.9**
VYHS *e* 09 31 16.6
VYHS *es*KSDF 09 37 40.2
VYHS *eL* L 09 41 39.1
PSZ Piszkesteto 157.20 331⇓ *i*P **PKPab 09 31 16.8 +0.3**
VRAC Vranov 157.34 337 PKP **PKPdf 09 30 45.6 -0.1**
comp=Z,1.5nm,0.4s,baz=181,slow=2.1,SNR=5.0
VRAC PKPab **PKPab 09 31 16.9 -0.1**
comp=Z,33nm,1.2s,baz=38,slow=4.4,SNR=11
VRAC Vranov 157.34 337⇑ *i*P **PKPab 09 31 18.4 +1.4**
GOPC GO Pecny, Ondr 157.38 341 *e*PKPAB **PKPab 09 31 17.5 +0.4**
GOPC *ex* x 09 31 31.4
GOPC AMS AMS 11 01 20.0
comp=Z,2µm,19.3s
GOPC GO Pecny, Ondr 157.38 341 *e*PKP2 **PKPab 09 31 17.5 +0.4**
GOPC MLR MLR

	comp=Z,2µm,19.3s						
PRU	**Pruhonice**	**157.38**	**341**	*e*PKPAB	**PKPab**	**09 31 16.4**	**-0.7**
PRU				*ex*	x	09 31 30.3	
PRU				*e*PP	**PP**	**09 34 50.2**	**-5.4**
PRU				AMS	AMS	10 50 00.0	
	comp=Z,2µm,18.4s						
PRU	**Pruhonice**	**157.38**	**341**	*e*PKP2	**PKPab**	**09 31 16.4**	**-0.7**
PRU				MLR	MLR		
	comp=Z,2µm,18.4s						
NKC	**Novy Kostel**	**157.69**	**345**	*e*PKPAB	**PKPab**	**09 31 18.1**	**-0.4**
NKC				*e*PP	**PP**	**09 34 53.7**	**-3.6**
NKC				AMS	AMS	10 52 50.0	
	comp=Z,2µm,17.8s						
NKC	**Novy Kostel**	**157.69**	**345**	*e*PKP2	**PKPab**	**09 31 18.1**	**-0.4**
NKC				*e*		09 34 53.7	
NKC				MLR	MLR		
	comp=Z,2µm,17.8s						
YER	**Yerkesik**	**157.70**	**298**	P	**PKPab**	**09 31 19.5**	**+0.4**
TREC	**Trest**	**157.71**	**339**	*e*PKPAB	**PKPab**	**09 31 21.7**	**+3.1**
TREC				*ex*	x	09 31 32.0	
TREC				AMS	AMS	10 48 20.0	
	comp=Z,2µm,20.0s						
TREC	**Trest**	**157.71**	**339**	*e*PKP2	**PKPab**	**09 31 21.7**	**+3.1**
TREC				MLR	MLR		
	comp=Z,2µm,20.0s						
MPEP	**Malo Peshtene**	**158.30**	**317**	*i* P	**PKPdf**	**09 30 44.3**	**-2.8**
MPEP	**Malo Peshtene**	**158.30**	**317**	P	**PKPdf**	**09 30 44.3**	**-2.8**
KHC	**Kasperske Hory**	**158.42**	**342**	*e*PKPDF	**PKPdf**	**09 30 47.0**	**-0.1**
KHC				*e*PKPAB	**PKPab**	**09 31 21.2**	**-0.5**
KHC				*ex*	x	09 31 32.2	
KHC				*e*PP	PP	09 35 09.7	+8.3
KHC				AMS	AMS	10 52 30.0	
	comp=Z,3µm,18.6s						
KHC	**Kasperske Hory**	**158.42**	**342**	*e*PKIKP	**PKPdf**	**09 30 47.0**	**-0.1**
KHC				*e*		09 31 21.2	
KHC				*e*		09 35 09.7	
KHC				MLR	MLR		
	comp=Z,3µm,18.6s						
KHC	**Kasperske Hory**	**158.42**	**342**	*e*PKPdf	**PKPdf**	**09 30 50.7**	**+3.6**
BODT	**Bodrum**	**158.47**	**298**	P	**PKPab**	**09 31 22.2**	**-0.2**
PGB	**Panagyurishte**	**158.49**	**315**	*i* P	**PKPdf**	**09 30 46.5**	**-0.9**
PGB	**Panagyurishte**	**158.49**	**315**	P	**PKPdf**	**09 30 46.5**	**-0.9**
MDVR	**Moldovita**	**158.57**	**322**	*i* P	**PKPab**	**09 31 22.6**	**0.0**
GERES	**GERESS Array B**	**158.65**	**341**	PKP	**PKPdf**	**09 30 47.4**	**0.0**
	comp=Z,0.8nm,0.8s,baz=240,slow=32,SNR=6.4						
GERES				PKPab	**PKPab**	**09 31 24.0**	**+1.3**
	comp=Z,6.4nm,1.1s,baz=44,slow=4.1,SNR=14						
SMG	**Samos**	**158.66**	**300**	P	**PKPab**	**09 31 24.0**	**+0.8**
CONA	**Conrad Observa**	**158.77**	**336**	*i* PKPab	**PKPab**	**09 31 23.7**	**+0.4**
	comp=Z,42nm,1.3s						
KARP	**Karpathos**	**158.94**	**294**	P	**PKPab**	**09 31 25.1**	**+0.6**
VTS	**Vitosha**	**159.06**	**316**	P	**PKPab**	**09 31 25.5**	**+0.6**
VTS	**Vitosha**	**159.06**	**316**	*i* P	**PKPab**	**09 31 25.8**	**+0.9**
VTS	**Vitosha**	**159.06**	**316**	*e*PKP2	**PKPab**	**09 31 25.3**	**+0.4**
VTS	**Vitosha**	**159.06**	**316**	*i* P	**PKPdf**	**09 30 46.8**	**-1.4**
VTS	**Vitosha**	**159.06**	**316**	P	**PKPdf**	**09 30 46.0**	**-2.2**
VTS	**Vitosha**	**159.06**	**316**	*e*PKPab	**PKPab**	**09 31 25.3**	**+0.4**
MMB	**Musomiste**	**159.27**	**313**	*i* P	**PKPdf**	**09 30 46.5**	**-1.8**
MMB	**Musomiste**	**159.27**	**313**	P	**PKPdf**	**09 30 46.5**	**-1.8**
MOA	**Molln**	**159.37**	**339**	*e*PKPab	**PKPab**	**09 31 26.3**	**+0.4**
	comp=Z,28nm,1.5s						
ARSA	**Arzberg**	**159.47**	**336**	*i* PKPab	**PKPab**	**09 31 26.3**	**0.0**
	comp=Z,9.3nm,1.2s						
KKB	**Krupnik**	**159.53**	**314**	*i* P	**PKPdf**	**09 30 46.5**	**-2.1**
KKB	**Krupnik**	**159.53**	**314**	P	**PKPdf**	**09 30 46.5**	**-2.1**
ZKR	**Zakros**	**159.78**	**293**	P	**PKPab**	**09 31 28.7**	**+0.6**
KNT	**Kendrikon**	**160.02**	**313**	P	**PKPab**	**09 31 29.7**	**+0.7**
SOKA	**Soboth**	**160.13**	**336**	*i* PKPab	**PKPab**	**09 31 29.0**	**-0.3**
	comp=Z,37nm,1.6s						
VAY	**Valandovo**	**160.15**	**313**	*e*PKP	**PKPab**	**09 31 29.8**	**+0.3**
NPS	**Neapolis**	**160.24**	**294**	P	**PKPab**	**09 31 31.7**	**+1.6**
LAST	**Lasithi**	**160.36**	**294**	P	**PKPab**	**09 31 30.9**	**+0.1**
OBKA	**Obir**	**160.45**	**337**	*e*PKPab	**PKPab**	**09 31 31.2**	**+0.6**
	comp=Z,8.6nm,1.1s						
SKO	**Skopje**	**160.49**	**316**	*i* PKP	**PKPab**	**09 31 32.1**	**+1.2**
MYKA	**Terra Mystica**	**160.65**	**338**	*e*PKPab	**PKPab**	**09 31 30.8**	**-0.7**
	comp=Z,21nm,1.3s						
MOTA	**Moosalm**	**160.71**	**344**	*e*PKPab	**PKPab**	**09 31 32.5**	**+0.7**
	comp=Z,14nm,1.0s						
IDI	**Anoyia**	**160.81**	**295**	PKP	**PKPdf**	**09 30 50.6**	**+0.3**
	comp=Z,6.0nm,1.1s,baz=248,slow=0.9,SNR=4.1						
IDI				PKPab	**PKPab**	**09 31 33.3**	**+0.6**
	comp=Z,119nm,1.3s,baz=142,slow=9.9,SNR=17						
IDI	**Anoyia**	**160.81**	**295**	P	**PKPab**	**09 31 33.5**	**+0.8**
LIT	**Litokhoron**	**160.83**	**310**	P	**PKPab**	**09 31 31.7**	**-0.8**
LJU	**Ljubljana**	**160.86**	**336**	*e*PKPdf	**PKPdf**	**09 30 48.6**	**-1.4**
LJU				*e*PP	**PP**	**09 35 13.9**	**-0.7**
ABTA	**Abfaltersbach**	**160.89**	**341**	*e*PKPab	**PKPab**	**09 31 31.6**	**-1.0**
	comp=Z,14nm,1.1s						
CRNS	**Crni Vrh**	**160.92**	**336**	*e*PKPdf	**PKPdf**	**09 30 48.0**	**-2.0**
CRNS				*e*PKPab	**PKPab**	**09 31 30.1**	**-2.5**
SIVA	**Sivas**	**160.93**	**294**	P	**PKPab**	**09 31 33.5**	**+0.4**
BOJS	**Bojanci**	**161.05**	**334**	*e*PKPdf	**PKPdf**	**09 30 50.1**	**0.0**
BOJS				*e*PP	**PP**	**09 35 15.2**	**-0.5**
BOJS				*e*SS	SS	09 55 40.9	+13
VAM	**Vamos**	**161.33**	**295**	P	**PKPab**	**09 31 35.4**	**+0.5**
OHR	**Ohrid**	**161.38**	**315**	*e*PKP	**PKPab**	**09 31 35.1**	**+0.2**
AGG	**Agios Georgios**	**161.45**	**308**	*e*PKIKP	**PKPdf**	**09 30 53.8**	**+3.0**
AGG	**Agios Georgios**	**161.45**	**308**	*e*PKPdf	**PKPdf**	**09 30 53.8**	**+3.0**
PDG	**Podgorica**	**161.47**	**321**	*i* P	**PKPab**	**09 31 35.4**	**+0.3**
IMMV	**Iera Moni Meta**	**161.49**	**296**	P	**PKPab**	**09 31 35.7**	**+0.1**
DAVOX	**Davos/Dischmat**	**161.52**	**346**	PKP	**PKPdf**	**09 30 50.4**	**-0.5**
	comp=Z,1.3nm,0.3s,baz=262,slow=14,SNR=3.4						
DAVOX				PKPab	**PKPab**	**09 31 35.1**	**-0.3**
	comp=Z,6.8nm,0.7s,baz=246,slow=7.5,SNR=5.6						
GVD	**Gavdhos**	**161.55**	**294**	P	**PKPab**	**09 31 35.7**	**-0.2**
PMOZ	**Porto Moniz, M**	**161.86**	**73**	*e*LR	LR	10 35 37.5	
	comp=Z,2µm,18.0s						
KLV	**Kalavryta, Ach**	**162.00**	**305**	P	**PKPab**	**09 31 37.2**	**-0.6**
FUL	**Funchal**	**162.13**	**73**	*e*PKPdf	PKPdf	09 31 10.0	+18
DRO	**Drossia**	**162.36**	**305**	P	**PKPab**	**09 31 38.4**	**-0.9**
ITM	**Ithomi**	**162.51**	**303**	P	**PKPab**	**09 31 37.9**	**-2.1**
PMPS	**Porto Santo**	**162.55**	**72**	*e*PKPdf	PKPdf	09 31 13.9	+22
PYL	**PYLOS**	**162.75**	**302**	P	**PKPab**	**09 31 40.2**	**-0.9**
PGAV	**Gavieira, Arco**	**163.91**	**33**	*e*PKPdf	PKPab	09 31 21.4	-25
PGAV	**Gavieira, Arco**	**163.91**	**33**	*e*LR	LR	10 38 50.8	
	comp=Z,3µm,18.0s						
TORD	**Torodi Ar. Bea**	**164.17**	**174**	PKP	**PKPdf**	**09 30 53.5**	**-0.6**
	comp=Z,5.7nm,1.3s,baz=101,slow=1.1,SNR=11						
TORD				PKPab	**PKPab**	**09 31 47.3**	**-0.2**
	comp=Z,10nm,1.0s,baz=183,slow=3.1,SNR=9.0						
POLO	**Lamas de Olo**	**164.59**	**34**	*e*PKPdf	PKPab	09 31 24.7	-24
PCAS	**Casmilo, Conde**	**165.20**	**39**	*e*PKPdf	PKPab	09 31 29.7	-22
PCAS	**Casmilo, Conde**	**165.20**	**39**	*e*SS	SS	09 56 28.6	+12
MTE	**Manteigas**	**165.45**	**35**	*e*PKPdf	PKPab	09 31 24.6	-28
MTE	**Manteigas**	**165.45**	**35**	*e*SS	SS	09 56 22.3	+8.0
MTE	**Manteigas**	**165.45**	**35**	*e*LR	LR	10 35 57.0	
	comp=Z,2µm,18.0s						
PMAFR	**Mafra**	**165.49**	**43**	*e*PKPdf	PKPdf	09 31 04.0	+9.4
PMAFR	**Mafra**	**165.49**	**43**	*e*SS	SS	09 55 58.2	-17
LIS	**Lisbon**	**165.72**	**44**	*e*PKPdf	PKPdf	09 31 10.8	+16
PMRV	**Marv??o**	**166.24**	**38**	*e*PKPdf	PKPdf	09 31 09.6	+14
PMRV	**Marv??o**	**166.24**	**38**	*e*LR	LR	10 37 02.8	
	comp=Z,2µm,20.0s						
PNCL	**Nicolau / Gran**	**166.47**	**44**	*e*PKPdf	PKPdf	09 31 24.7	+29
PNCL	**Nicolau / Gran**	**166.47**	**44**	*e*SS	SS	09 56 42.5	+17
EVO	**Evora**	**166.51**	**42**	*e*PKPdf	PKPdf	09 31 24.9	+29
PESTR	**Estremoz**	**166.53**	**40**	*e*PKPdf	PKPdf	09 31 18.2	+23
PESTR	**Estremoz**	**166.53**	**40**	*e*SS	SS	09 56 42.5	+17
MESJ	**Messejana**	**166.84**	**45**	*e*PKPdf	PKPdf	09 31 24.9	+29
MORF	**Marmelete**	**166.89**	**48**	*e*PKPdf	PKPdf	09 31 22.9	+27
PCVE	**Castro Verde**	**167.08**	**45**	*e*PKPdf	PKPdf	09 31 21.4	+26
PBAR	**Barrancos**	**167.32**	**41**	*e*PKPdf	PKPdf	09 31 26.4	+30
PBAR	**Barrancos**	**167.32**	**41**	*e*SS	SS	09 56 37.6	+4.2
PBDV	**Barranco-do-Ve**	**167.38**	**46**	*e*PKPdf	PKPdf	09 31 24.1	+28
PAB	**San Pablo**	**167.63**	**29**	*e*PKIKP	**PKPdf**	**09 30 57.6**	**+1.3**
PAB	**San Pablo**	**167.63**	**29**	*e*PKPdf	**PKPdf**	**09 30 57.6**	**+1.3**
ESDC	**Sonseca Array**	**167.69**	**28**	PKP	**PKPdf**	**09 30 57.0**	**+0.6**
	comp=Z,0.3nm,0.3s,baz=26,slow=2.4,SNR=6.2						
ESDC				PKPab	**PKPab**	**09 32 02.8**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=315,slow=5.8,SNR=4.4						
KEST	**Kesra**	**171.62**	**325**	PKPab	**PKPab**	**09 32 20.5**	**+0.3**
	comp=Z,9.5nm,1.1s,baz=49,slow=3.2,SNR=4.9						
MDT	**Midelt**	**172.07**	**59**	PKP	**PKPdf**	**09 30 58.0**	**-1.2**
	comp=Z,6.3nm,1.2s,baz=262,slow=7.1,SNR=3.4						

*IDC **07** 09:14:48.4±0.6,29.°10S×176.°72W,h0km,mb4.7/16, mb1 4.8/16,mb1mx4.7/40,mbtmp4.7/16,Error ellipse: s-maj=24.1km s-min=20.4km az=161.0*
*NEIC **07** 09:14:49.8±0.3,29.°05S×176.°61W,h10km,mb5.0/3,Error ellipse: s-maj=12.6km s-min=10.0km az=164.0*

*ISCJB **07** 09:14:52.3±0.6,29.°1S±0.°1×176.°8W±0.°1,h33km,mb4.7/18, Error ellipse: s-maj=16.6km s-min=14.9km az=152.3*

ISC 07 09:14:53.6±0.6,29.°1S±0.°1×176.°49W±0.°09,h36km,n42, σ1s25/47,mb4.8/18,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.26**	**262**	Pn	**Pn**	**09 15 13.8**	**-0.9**
	869nm,0.3s,baz=358,slow=23,SNR=11						
RAO				Sn	**Sn**	**09 15 34.6**	**+4.3**
	4µm,0.3s,baz=80,slow=23,SNR=10						
DZM	**Mont Dzumac**	**16.89**	**290**	Pn	**P**	**09 18 51.0**	**+1.8**
	0.8nm,0.3s,baz=121,slow=16,SNR=7.4						
CTA	**Charters Tower**	**34.92**	**276**	P	**P**	**09 21 41.2**	**-0.9**
	23nm,0.8s,baz=98,slow=11,SNR=11						
CTAO	**Charters Tower**	**34.92**	**276**	*e*P	**P**	**09 21 42.0**	**-0.1**
STKA	**Stephens Creek**	**36.07**	**255**	P	**P**	**09 21 50.6**	**-1.2**
	9.7nm,0.8s,baz=98,slow=8.9,SNR=6.7						
ASAR	**Alice Springs**	**44.51**	**265**	P	**P**	**09 23 00.0**	**-1.9**
	15nm,0.8s,baz=101,slow=6.5,SNR=28						
ASAR				PcP	**PcP**	**09 24 42.3**	**-2.6**
	4.8nm,0.9s,baz=111,slow=4.5,SNR=4.8						
WRAB	**Tennant Creek**	**45.38**	**270**	*e*P	**P**	**09 23 06.9**	**-1.9**
	15nm,0.6s						
WRA	**Warramunga Arr**	**45.38**	**270**	P	**P**	**09 23 07.0**	**-1.8**
	19nm,0.7s,baz=110,slow=7.9,SNR=16						
WRA				PcP	**PcP**	**09 24 45.8**	**-2.1**
	12nm,1.0s,baz=112,slow=3.8,SNR=6.3						
FITZ	**Fitzroy Crossi**	**53.69**	**268**	P	**P**	**09 24 10.3**	**-1.9**
	20nm,1.0s,baz=138,slow=1.7,SNR=5.8						
FITZ	**Fitzroy Crossi**	**53.69**	**268**	*e*P	**P**	**09 24 10.2**	**-2.0**
	16nm,0.9s						
FITZ				P	**P**	**09 24 10.3**	**-1.9**
CASY	**Casey**	**56.91**	**207**	*e*P	**P**	**09 24 34.4**	**-0.3**
	2.5nm,0.4s						
MAW	**Mawson**	**74.00**	**200**	P	**P**	**09 26 26.0**	**+0.9**
	6.1nm,0.8s,baz=119,slow=8.2,SNR=4.2						
MJAR	**Matsushiro Arr**	**77.92**	**324**	P	**P**	**09 26 46.4**	**-1.4**
	5.2nm,0.9s,baz=159,slow=5.4,SNR=6.3						
MAT	**Matsushiro**	**77.92**	**324**	P	**P**	**09 26 47.5**	**-0.3**
SNAA	**Sanae**	**79.43**	**178**	*e*P	**P**	**09 26 56.3**	**+0.5**
JNU	**Nakatsue**	**79.46**	**317**	P	**P**	**09 26 56.0**	**-0.4**
	26nm,1.1s,baz=41,slow=7.5,SNR=3.6						
JNU	**Nakatsue**	**79.46**	**317**	P	**P**	**09 26 56.0**	**-0.4**
JNU				*e*P	**P**	**09 26 56.4**	**0.0**
ASAJ	**Asahikawa**	**81.89**	**332**	P	**P**	**09 27 10.2**	**+1.1**
	6.8nm,0.8s,baz=238,slow=7.5,SNR=8.3						
PLCA	**Paso Flores**	**82.44**	**133**	P	**P**	**09 27 13.4**	**+1.0**
	4.4nm,1.1s,baz=322,slow=16,SNR=3.2						
KSRS	**Korea Array**	**84.21**	**319**	P	**P**	**09 27 21.8**	**+0.6**
	3.2nm,0.8s,baz=140,slow=5.6,SNR=5.6						
KSAR	**Wonju Array Be**	**84.22**	**319**	P	**P**	**09 27 21.8**	**+0.5**
PETK	**Petropavlovsk-**	**84.88**	**345**	P	**P**	**09 27 24.8**	**+0.6**
	5.9nm,0.8s,baz=131,slow=6.5,SNR=5.1						
USRK	**Ussuriysk Ar.**	**86.80**	**326**	P	**P**	**09 27 34.3**	**+0.3**
	1.7nm,0.7s,baz=151,slow=3.3,SNR=5.4						
KLR	**Kudur**	**90.57**	**329**	P	**P**	**09 27 51.4**	**-0.3**
	0.8nm,0.5s,baz=69,slow=4.3,SNR=4.0						
TXAR	**Lajitas Array**	**90.57**	**57**	P	**P**	**09 27 53.8**	**+1.5**
	1.8nm,1.0s,baz=217,slow=4.4,SNR=7.0						
SEY	**Seymchan**	**95.00**	**346**	P	**P**	**09 28 12.6**	**+0.8**
	3.6nm,1.0s,baz=77,slow=4.3,SNR=4.1						
MKAR	**Makanchi Array**	**117.92**	**310**	PKP	**PKPdf**	**09 33 35.4**	**-0.8**
	0.8nm,0.7s,baz=103,slow=3.1,SNR=3.3						
KURK	**Kurchatov**	**121.08**	**314**	PKP	**PKPdf**	**09 33 42.1**	**+0.1**
KURBB	**Kurchatov Arra**	**121.12**	**314**	PKP	**PKPdf**	**09 33 42.1**	**0.0**
	1.1nm,0.3s,baz=127,slow=2.5,SNR=4.4						
BVAR	**Borovoye Array**	**126.37**	**316**	PKP	**PKPdf**	**09 33 52.3**	**+0.1**
	0.9nm,0.5s,baz=116,slow=5.0,SNR=3.5						
FINES	**FINESS Array B**	**144.33**	**342**	PKP	PKPbc	09 34 23.4	-0.1
	5.6nm,0.8s,baz=66,slow=4.8,SNR=5.8						
OBN	**Obninsk**	**144.81**	**327**	PKP	**PKPab**	**09 34 24.7**	**-0.5**
	18nm,0.4s,baz=345,slow=5.4,SNR=3.9						
NB2	**NORSAR Subarra**	**147.62**	**353**	PKP	**PKPbc**	**09 34 32.8**	**-0.8**
	comp=Z,12nm,1.2s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**147.62**	**353**	PKPbc	**PKPbc**	**09 34 33.9**	**+0.3**
	comp=Z,4.8nm,0.8s,baz=16,slow=4.5,SNR=7.0						
HFS	**Hagfors**	**148.19**	**350**	PKPbc	**PKPbc**	**09 34 35.2**	**+0.1**
	comp=Z,11nm,1.0s,baz=225,slow=0.4,SNR=5.5						
AKASG	**Malin Array Be**	**151.00**	**325**	PKPbc	**PKPbc**	**09 34 42.5**	**+0.2**
	comp=Z,15nm,0.7s,baz=47,slow=3.1,SNR=14						
ASF	**Jabal al Asfar**	**151.17**	**285**	PKPbc	**PKPbc**	**09 34 43.7**	**+0.3**
	comp=Z,13nm,0.9s,baz=34,slow=1.0,SNR=8.0						
MMAI	**Mount Meron Ar**	**152.45**	**286**	PKPbc	**PKPbc**	**09 34 46.3**	**0.0**
	comp=Z,11nm,0.8s,baz=54,slow=3.3,SNR=6.1						
EIL	**Elat**	**152.63**	**279**	PKPbc	**PKPbc**	**09 34 47.4**	**+0.7**
	comp=Z,12nm,0.7s,baz=336,slow=5.2,SNR=7.5						
BRTR	**Keskin Array B**	**153.08**	**301**	PKPbc	**PKPbc**	**09 34 47.8**	**+0.2**
	comp=Z,3.1nm,0.9s,baz=131,slow=2.7,SNR=4.3						
BRTR				PKPab	**PKPab**	**09 34 59.5**	**+0.3**
	comp=Z,6.9nm,0.9s,baz=112,slow=4.2,SNR=8.0						
GERES	**GERESS Array B**	**158.77**	**341**	PKPab	**PKPab**	**09 35 22.6**	**-0.5**
	comp=Z,0.3nm,0.3s,baz=315,slow=3.2,SNR=3.2						
TORD	**Torodi Ar. Bea**	**164.06**	**174**	PKPab	**PKPab**	**09 35 47.0**	**+0.1**
	comp=Z,7.6nm,1.0s,baz=178,slow=3.2,SNR=7.2						

*NIED **07** 09:15:00,39.°90N×142.°40E,h41km,Mw3.4 Best double couple: M0 1.20000×10^14 NP1:φs180.00000°,δ17.00000°, λ65.00000°. NP2:φs26.00000°,δ75.00000°,λ98.00000°.*

JMA 07 09:15:40.3±0.1,39.°92N×142.°41E,h39km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.42**	**273**	P	Pn	09 15 50.0	+0.2
JTH				S	Sn	09 15 56.7	0.0
MIYJ	**Miyakonagasawa**	**0.57**	**233**	P	Pn	09 15 51.8	-0.2
MIYJ				*e*S	Sn	09 15 59.8	-0.4
JANG	**Nango**	**0.82**	**304**	P	Pn	09 15 55.0	-0.4
JANG				*e*S	Sn	09 16 05.2	-1.2
JKZ	**Kuzumaki**	**0.83**	**275**	P	Pn	09 15 56.1	+0.5
JKZ				*e*S	Sn	09 16 07.0	+0.3
JOM	**Ohasama**	**0.97**	**243**	P	Pn	09 15 57.7	+0.3
JOM				*e*S	Sn	09 16 10.3	+0.3
OFUJ	**Ofunato**	**1.02**	**215**	P	Pn	09 15 58.2	+0.2
OFUJ				*e*S	Sn	09 16 11.0	-0.1
JMK	**Ichinoseki**	**1.34**	**224**	P	Pn	09 16 03.0	+0.6
JTM	**Tenmabayashi**	**1.34**	**311**	P	Pn	09 16 03.3	+0.8
JTM				S	Sn	09 16 20.4	+1.3
JAH	**Hinai**	**1.39**	**282**	P	Pn	09 16 04.0	+0.9

*ISCJB **07** 09:19:49.4±0.5,38.°42N±0.°03×35.°94E±0.°03,h0km,Error ellipse: s-maj=4.3km s-min=3.7km az=137.8*
*DDA **07** 09:19:49.5,38.°41N×35.°95E,h7km,Md2.7,Suspected Mining explosion.*
*ISK **07** 09:19:49.6,38.°38N×35.°95E,h8km,MD2.7*
*CSEM **07** 09:19:49.3±0.3,38.°42N×35.°97E,h1km,MD2.7,Error ellipse: s-maj=7.4km s-min=5.3km az=132.0,Suspected Mining explosion.*

ISC 07 09:19:49.7±0.8,38.°43N±0.°03×35.°97E±0.°02,h0km,n26, σ0s61/45,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YAHY	**KAYSERI_Yahyal**	**0.58**	**235**	*i* P	**Pg**	**09 20 00.4**	**-0.4**
YAHY				*i* S	**Sg**	**09 20 08.4**	**+0.1**
YAHY	**KAYSERI_Yahyal**	**0.58**	**235**	P	**Pg**	**09 20 00.4**	**-0.4**
YAHY				S	**Sg**	**09 20 08.4**	**+0.1**
ANDN	**Andirin**	**0.90**	**160**	*i* P	**Pn**	**09 20 10.7**	**+1.0**
ANDN				*i* S	**Sn**	**09 20 24.1**	**+0.7**
KOZT	**Kozan**	**0.95**	**187**	*e*PG	**Pg**	**09 20 07.2**	**-0.7**
KOZT				*e*SG	**Sg**	**09 20 20.4**	**+0.1**
KOZT	**Kozan**	**0.95**	**187**	*e*Pg	**Pg**	**09 20 07.2**	**-0.7**
KOZT				*e*Sg	**Sg**	**09 20 20.4**	**+0.1**
CUSAR	**Sarkisla-SIVAS**	**1.01**	**12**	*i* P	**Pg**	**09 20 08.5**	**-0.6**
CUSAR				*i* S	**Sg**	**09 20 24.3**	**+0.2**
CUSAR	**Sarkisla-SIVAS**	**1.01**	**12**	P	**Pg**	**09 20 08.5**	**-0.6**
CUSAR				S	**Sg**	**09 20 24.3**	**+0.2**
AKO	**Adana**	**1.05**	**203**	*i* P	**Pg**	**09 20 09.2**	**-0.5**
NIG	**Nigde**	**1.11**	**254**	*e*PN	**Pg**	**09 20 10.9**	**-0.1**
NIG				*e*SN	**Sg**	**09 20 26.3**	**-0.8**
NIG	**Nigde**	**1.11**	**254**	*e*Pn	**Pg**	**09 20 10.9**	**-0.1**
NIG				*e*Sn	**Sg**	**09 20 26.3**	**-0.8**
KMRS	**Kahramanmaras**	**1.18**	**141**	*e*PN	**Pg**	**09 20 12.1**	**-0.2**
KMRS				*e*SN	**Sg**	**09 20 28.3**	**-0.5**
KMRS	**Kahramanmaras**	**1.18**	**141**	*e*Pn	**Pg**	**09 20 12.1**	**-0.2**
KMRS				*e*Sn	**Sg**	**09 20 28.3**	**-0.5**
DARE	**Darende-Malaty**	**1.20**	**83**	*e*PN	**Pb**	**09 20 13.3**	**0.0**
DARE	**Darende-Malaty**	**1.20**	**83**	*e*Pn	**Pb**	**09 20 13.3**	**0.0**
YOZ	**Yozgat**	**1.31**	**338**	*e*PN	**Pb**	**09 20 15.3**	**0.0**
YOZ	**Yozgat**	**1.31**	**338**	*e*Pn	**Pb**	**09 20 15.3**	**0.0**
HCB	**Kahramanmara¯**	**1.31**	**145**	*i* P	**Pn**	**09 20 15.6**	**+0.3**
HCB				*i* S	**Sg**	**09 20 30.9**	**-1.0**
KAMA	**Osmaniye**	**1.36**	**156**	*i* P	**Pb**	**09 20 16.5**	**+0.4**
KAMA				*i* S	**Sn**	**09 20 34.3**	**-0.5**
KARA	**Karaisali**	**1.37**	**212**	*e*PN	**Pg**	**09 20 15.0**	**-0.9**
KARA	**Karaisali**	**1.37**	**212**	*e*Pn	**Pg**	**09 20 15.0**	**-0.9**
GULE	**Gulek**	**1.48**	**220**	*i* P	**Pb**	**09 20 19.0**	**+0.8**
GULE				*i* S	**Sn**	**09 20 37.7**	**-0.2**
GULE	**Gulek**	**1.48**	**220**	P	**Pb**	**09 20 19.0**	**+0.8**
GULE				S	**Sn**	**09 20 37.7**	**-0.2**
AKCD	**Akcadag**	**1.54**	**94**	*i* P	**Pn**	**09 20 18.2**	**-0.3**
AKCD				*i* S	**Sn**	**09 20 40.8**	**+1.4**
AKCD	**Akcadag**	**1.54**	**94**	P	**Pn**	**09 20 18.2**	**-0.3**
AKCD				S	**Sn**	**09 20 40.8**	**+1.4**
KERG	**Konya-Eregli**	**1.77**	**236**	*i* P	**Pn**	**09 20 22.1**	**+0.4**
KERG				*i* S	**Sb**	**09 20 45.5**	**-0.5**
KERG	**Konya-Eregli**	**1.77**	**236**	P	**Pn**	**09 20 22.1**	**+0.4**
KERG				S	**Sb**	**09 20 45.5**	**-0.5**

IDC 07 09:21:39.2±26.0,22.°09S×170.°91W,h0km,mb4.0/4, mb1 4.2/4,mb1mx3.7/42,mbtmp4.0/4,Error ellipse: s-maj=484.9km s-min=166.9km az=76.0,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**39.92**	**265**	P	P	09 29 15.3	-0.1
	3.2nm,0.4s,baz=91,slow=9.4,SNR=8.5						
STKA	**Stephens Creek**	**43.15**	**247**	P	P	09 29 39.6	-2.0
	1.7nm,0.9s,baz=98,slow=11,SNR=1.5						
ASAR	**Alice Springs**	**50.60**	**257**	P	P	09 30 40.5	+0.2
	0.3nm,0.3s,baz=94,slow=6.8,SNR=7.8						
WRA	**Warramunga Arr**	**50.93**	**262**	P	P	09 30 43.4	+0.7
	0.8nm,0.3s,baz=99,slow=6.8,SNR=49						

IDC 07 09:26:13.1±4.7,28.°06S×174.°71W,h0km,mb4.1/4, mb1 4.2/4,mb1mx3.8/32,mbtmp4.1/4,Error ellipse: s-maj=145.0km s-min=78.9km az=156.0,Kermadec Islands region

| Code | Station Name | Δ° | AZ° | Phase ID | | Time | Res |
|---|---|---|---|---

comp=Z,13µm,18.1s,baz=239,slow=39
RAR Rarotonga 17.32 67 *e*Pn Pn 09 33 52.0 -6.9
442nm,1.4s
RPZ Rata Peaks 17.45 211 P **Pn 09 33 54.5 -5.9**
4.0nm,0.3s,baz=344,slow=1.9,SNR=14
RPZ S Sn 09 36 56.5 -17
2.5nm,0.3s,baz=164,slow=24,SNR=6.2
RPZ LR LR 09 41 42.9
comp=Z,32µm,18.0s,baz=33,slow=40
RPZ Rata Peaks 17.45 211 P **Pn 09 33 54.5 -5.9**
RPZ *e*Pn **P 09 34 01.5 +0.2**
RPZ S Sn 09 36 56.5 -17
RPZ Rata Peaks 17.45 211 PN **Pn 09 33 54.9 -5.4**
ODZ Otahua Downs 18.68 209 *e*P **P 09 34 14.6 -0.3**
131nm,0.8s
ODZ Otahua Downs 18.68 209 PN **P 09 34 09.3 -5.6**
JCZ Jackson Bay 18.78 214 PN **P 09 34 10.4 -5.7**
MLZ Mavora Lakes 20.06 212 *e*P Pn 09 34 31.1 -0.8
191nm,1.4s
WHZ Wether Hill Ro 20.53 212 *e*P **P 09 34 35.7 +0.6**
70nm,0.9s
FUNA Funafuti 20.91 349 *e*P **P 09 34 36.8 -2.7**
194nm,1.0s
FUNA LR LR
comp=Z,21µm,19.0s
LHI Lord Howe Isla 20.96 258 *e*P Pn 09 34 44.0 +1.4
comp=Z,1µm,1.3s
TBI Tubuai 25.16 83 *e*LQ LQ 09 40 05.9
comp=Z,9µm,29.2s
TBI *e*LR LR 09 41 28.0
comp=Z,16µm,28.8s,baz=250
TBI Tubuai 25.16 83 *e*T T 10 01 05.3
comp=Z,13nm,0.3s
ARMA Armidale 27.39 260 P **P 09 35 42.5 +0.3**
baz=28,SNR=32
PAE Paea 27.41 71 *e*P **P 09 35 44.0 +1.7**
comp=Z,55nm,1.4s
PAE Paea 27.41 71 *e*T T 10 03 52.8
comp=Z,6.9nm,0.3s
PPT2 Papeete2 27.45 71 *e*LQ LQ 09 41 00.1
comp=Z,12µm,23.8s
PPT2 *e*LR LR 09 42 26.9
comp=Z,16µm,27.5s,baz=239
PPT2 Papeete2 27.45 71 *e*T T 10 03 53.1
comp=Z,5.3nm,0.3s
PPT Papeete 27.46 71 LR LR 09 46 09.3
comp=Z,6µm,18.6s,baz=250,slow=36
TVO Taravao 27.62 72 *e*T T 10 03 57.4
comp=Z,2.0nm,0.3s
MGCD Mangrove Creek 27.69 254 P **P 09 35 45.6 +0.8**
baz=28,SNR=13
EIDS Eidsvold 28.76 270 P **P 09 35 54.6 +0.2**
baz=29,SNR=18
EIDS Eidsvold 28.76 270 *e*P **P 09 35 55.3 +1.0**
comp=Z,72nm,1.1s
CNB Canberra Magne 29.17 249 P **P 09 35 58.9 +0.9**
baz=30,SNR=8.0
HNR Honiara 29.37 307 P **P 09 35 58.8 -1.0**
comp=Z,191nm,0.9s,baz=163,slow=11,SNR=6.0
HNR LR LR 09 47 16.4
comp=Z,9µm,18.1s,baz=154,slow=36
HNR Honiara 29.37 307 *e*P P 09 35 52.0 -7.8
HNR Honiara 29.37 307 *e*P **P 09 35 59.3 -0.5**
HNR pmax pmax
comp=Z,173nm,0.8s
HNR Honiara 29.37 307 *e*P **P 09 35 59.3 -0.5**
comp=Z,173nm,0.8s
CAN Canberra 29.47 249 *e*P **P 09 36 01.5 +0.8**
CAN pmax pmax
comp=Z,42nm,0.8s
CAN MLR MLR
comp=Z,14µm,19.0s
CAN Canberra 29.47 249 *e*P **P 09 36 01.5 +0.8**
comp=Z,42nm,0.8s
CAN LR LR
comp=Z,14µm,19.0s
YNG Young 29.95 251 P **P 09 36 05.5 +0.7**
baz=30,SNR=17
RMQ Roma 30.52 267 P **P 09 36 11.7 +1.7**
baz=31,SNR=37
MOO Moorlands 31.81 236 P **P 09 36 22.4 +1.2**
baz=32,SNR=5.2
TAU Tasmania Unive 31.82 235 PFAKE 09 36 30.0 +8.8
TAU LR LR
comp=Z,19µm,20.0s
CMSA Cobar Meteorol 32.36 256 P **P 09 36 26.8 +0.7**
baz=33,SNR=16
TOO Toolangi 32.41 245 P **P 09 36 28.0 +1.4**
baz=33,SNR=7.1
QLP Quilpie 34.45 265 P **P 09 36 44.9 +0.6**
baz=35,SNR=12
CTA Charters Tower 34.68 277 P **P 09 36 46.5 +0.1**
comp=Z,79nm,0.9s,baz=101,slow=11,SNR=66
CTAO Charters Tower 34.68 277 *e*P **P 09 36 46.5 +0.1**
CTAO pmax pmax
comp=Z,312nm,0.8s
CTAO MLR MLR
comp=Z,47µm,19.0s
CTAO Charters Tower 34.68 277 *e*P **P 09 36 46.5 +0.1**
comp=Z,312nm,0.8s
CTAO LR LR
comp=Z,47µm,19.0s
ARPS Mount Arapiles 35.30 247 P **P 09 36 51.5 -0.1**
baz=36,SNR=6.0
STKA Stephens Creek 35.79 255 P **P 09 36 55.8 -0.1**
comp=Z,45nm,0.8s,baz=101,slow=9.9,SNR=36
STKA LR LR 09 50 58.9
comp=Z,27µm,18.0s,baz=92,slow=35
STKA Stephens Creek 35.79 255 P **P 09 36 55.8 -0.1**
baz=36,SNR=34
STKA Stephens Creek 35.79 255 *e*P **P 09 36 56.2 +0.3**
comp=Z,10nm,0.8s
MTSU Mount Surprise 37.13 278 P **P 09 37 07.0 -0.5**
baz=37,SNR=44
HTT Hallett 37.86 252 P **P 09 37 12.9 -0.6**
baz=38,SNR=33
RKT Rikitea 37.87 91 *e*LR LR 09 47 21.3
comp=Z,9µm,28.5s,baz=252
PMG Port Moresby 39.08 293 PFAKE 09 37 30.0 +6.1
PMG LR LR
comp=Z,15µm,19.0s
TAOE Nuku Hiva Isla 39.87 67 *e*LR LR 09 48 08.4
comp=Z,7µm,26.9s,baz=242
COEN Coen 39.99 284 P **P 09 37 30.7 -0.7**
baz=40,SNR=15
COEN Coen 39.99 284 *e*P **P 09 37 31.4 -0.1**
comp=Z,42nm,0.9s
QIS Mount Isa 40.30 272 P **P 09 37 33.6 -0.4**
baz=40,SNR=10
BBOO Buckleboo 40.32 253 P **P 09 37 32.9 -1.1**
baz=41,SNR=15
BBOO Buckleboo 40.32 253 *e*P **P 09 37 32.9 -1.1**
comp=Z,64nm,1.0s
PTCN Pitcairn Islan 41.55 96 PFAKE 09 38 00.0 +16
PTCN LR LR
comp=Z,9µm,19.0s
MANU Manus Island 43.50 302 *e*P **P 09 37 59.8 -0.4**
comp=Z,92nm,0.9s
AS01 Alice Springs 44.20 265 *e*P **P 09 38 03.2 -2.6**
AS31 Alice Springs 44.24 265 *e*P **P 09 38 04.8 -1.4**
comp=Z,17nm,0.6s
ASAR Alice Springs 44.24 265 P **P 09 38 04.7 -1.5**
comp=Z,48nm,0.7s,baz=100,slow=6.3,SNR=259
ASAR ScP **ScP 09 43 47.0 +6.9**
comp=Z,4.9nm,1.0s,baz=125,slow=4.5,SNR=4.5
ASAR S **S 09 44 36.6 -1.3**
comp=Z,1.8nm,0.9s,baz=103,slow=16,SNR=4.1
ASAR LR LR 09 56 35.7
comp=Z,38µm,18.0s,baz=110,slow=36
WB2 Warramunga Arr 45.12 270 *e*P **P 09 38 11.8 -1.3**
comp=Z,67nm,0.8s
WRAB Tennant Creek 45.12 270 *d iP* **P 09 38 12.1 -1.1**
WRAB pmax pmax
comp=Z,195nm,1.0s
WRAB Tennant Creek 45.12 270 *e*P **P 09 38 11.9 -1.2**
comp=Z,111nm,1.3s
WRAB LR LR
comp=Z,13µm,19.0s
WRA Warramunga Arr 45.13 270 P **P 09 38 11.4 -1.8**
comp=Z,46nm,0.8s,baz=109,slow=7.7,SNR=130
WRA PcP **PcP 09 39 53.9 +0.4**
comp=Z,22nm,1.0s,baz=106,slow=3.3,SNR=4.7
WRA LR LR 09 56 12.2
comp=Z,12µm,18.1s,baz=110,slow=35
FORT Forrest 47.38 254 P **P 09 38 28.6 -2.2**
baz=48,SNR=26
FORT Forrest 47.38 254 *e*P **P 09 38 29.0 -1.8**
comp=Z,526nm,0.8s

WRKA Warakurna 48.69 261 P **P 09 38 38.5 -2.5**
baz=49,SNR=105
GENI Genyem 48.69 295 P **P 09 38 42.3 +1.2**
SBA Scott Base 49.31 185 *e*P **P 09 38 48.1 +3.1**
SBA pmax pmax
comp=Z,148nm,1.2s
SBA MLR MLR
comp=Z,5µm,20.0s
SBA Scott Base 49.31 185 *e*P **P 09 38 48.0 +3.1**
comp=Z,148nm,1.2s
SBA LR LR
comp=Z,5µm,20.0s
VNDA Vanda 49.39 186 P **P 09 38 46.7 +1.1**
comp=Z,23nm,1.0s,baz=9.7,slow=7.6,SNR=54
VNDA LR LR 09 55 56.5
comp=Z,4µm,20.5s,baz=18,slow=32
VNDA Vanda 49.39 186 *e*P **P 09 38 48.2 +2.6**
comp=Z,54nm,1.2s
MTN Manton Dam 50.86 277 P **P 09 38 56.4 -1.2**
baz=51,SNR=3.5
MTN Manton Dam 50.86 277 *e*P **P 09 38 56.5 -1.0**
comp=Z,33nm,0.8s
KMBL Kambalda 52.40 251 P **P 09 39 07.5 -1.4**
baz=53,SNR=8.6
POHA Pohakuloa 52.82 25 PFAKE 09 39 20.0 +7.7
POHA LR LR
comp=Z,5µm,19.0s
FITZ Fitzroy Crossi 53.43 268 P **P 09 39 15.5 -1.1**
comp=Z,44nm,1.0s,baz=125,slow=7.8,SNR=27
FITZ Fitzroy Crossi 53.43 268 P **P 09 39 15.7 -1.0**
baz=54,SNR=26
KIP Kipapa 53.49 22 PFAKE 09 39 30.0 +13
KIP LR LR
comp=Z,6µm,19.0s
KLBR Kellerberrin 55.74 250 P **P 09 39 31.4 -2.0**
baz=56,SNR=10
NWAO Narrogin (SRO) 55.81 248 P **P 09 39 31.9 -1.8**
comp=Z,21nm,1.1s,baz=2.7,slow=6.6,SNR=6.3
NWAO Narrogin (SRO) 55.81 248 P **P 09 39 32.1 -1.7**
baz=56,SNR=3.8
NWAO P **P 09 39 32.1 -1.7**
baz=56,SNR=3.8
NWAO Narrogin (SRO) 55.81 248 P **P 09 39 32.0 -1.8**
NWAO pmax pmax
comp=Z,21nm,1.1s
NWAO Narrogin (SRO) 55.81 248 P **P 09 39 31.9 -1.8**
NWAO LR LR
comp=Z,9µm,19.0s
GUMO Guam 56.40 314 P **P 09 39 35.7 -2.4**
comp=Z,101nm,0.9s,baz=181,slow=19,SNR=5.9
GUMO LR LR 10 02 21.9
comp=Z,3µm,18.8s,baz=148,slow=35
MEEK Meekatharra 56.49 256 P **P 09 39 36.3 -2.5**
baz=57,SNR=9.9
CASY Casey 56.69 208 PFAKE 09 39 50.0 +11
CASY LR LR
comp=Z,496nm,19.0s
BLDU Ballidu 56.88 251 P **P 09 39 39.3 -2.1**
baz=57,SNR=5.6
MIDW Midway 57.10 359 PFAKE 09 39 50.0 +7.3
MIDW LR LR
comp=Z,7µm,19.0s
MBWA Marble Bar 57.42 262 *e*P **P 09 39 43.4 -2.0**
comp=Z,120nm,1.1s
MBWA LR LR
comp=Z,21µm,19.0s
MORW Morawa 57.89 252 P **P 09 39 46.4 -2.2**
baz=58,SNR=4.9
SOEI Soe 58.25 277 P **P 09 39 52.1 +0.7**
SOEI Soe 58.25 277 *e*P **P 09 39 52.2 +0.9**
comp=Z,178nm,1.2s
RPN Rapa Nui 58.74 106 PFAKE 09 40 10.0 +15
RPN LR LR
comp=Z,1µm,20.0s
SANI Sanana 60.65 285 P **P 09 40 06.1 -1.7**
QSPA South Pole Qui 60.90 180 *e*P **P 09 40 09.9 +0.9**
comp=Z,314nm,1.0s
QSPA LR LR
comp=Z,7µm,19.0s
EDFI Ende, Flores 60.96 276 P P 09 40 16.3 +6.2
GIRL Giralia 61.61 259 P **P 09 40 13.1 -1.1**
baz=62,SNR=7.7
MIR Mirnyy 63.66 207⇑ *iP* **P 09 40 30.0 +2.8**
MIR *e*S **S 09 49 04.0 +5.0**
MIR pmax pmax
comp=Z,2µm,7.0s
MIR smax smax
comp=N,4µm,10.0s
MIR MLR MLR
comp=Z,10µm,16.0s
PLAI Plampang 64.33 274 P **P 09 40 31.9 -0.6**
comp=Z,104nm,0.9s,comp=Z,1µm
KAPI Kappang 64.45 279 P **P 09 40 32.1 -1.1**
comp=Z,6.1nm,0.6s,baz=144,slow=1.1,SNR=6.3
KAPI LR LR 10 08 42.3
comp=Z,4µm,18.4s,baz=157,slow=36
KAPI Kappang 64.45 279 *e*P **P 09 40 33.2 -0.1**
comp=Z,83nm,1.4s
TWSI Taliwang, Sumb 65.15 274 P **P 09 40 36.4 -1.4**
DAV Davao City (W) 66.10 294 LR LR 10 04 44.3
comp=Z,1µm,21.3s,baz=113,slow=32
JAGI Jajag, Banyuwa 67.66 273 P **P 09 40 52.8 -1.1**
JAGI Jajag, Banyuwa 67.66 273 *e*P **P 09 40 52.5 -1.4**
comp=Z,110nm,1.2s
GMJI Gumukmas 68.37 273 P **P 09 40 57.9 -0.4**
BBKI Banjar Baru 69.47 278 P P 09 41 18.0 +13
PWJI Pagerwojo 69.92 272 P P 09 41 15.5 +7.6
PCJI Pacitan 70.39 271 P **P 09 41 09.9 -0.9**
MYLDM Lahad Datu 70.83 288⇓ P **P 09 41 15.2 +1.8**
TSM Tawau 70.87 286⇑ P **P 09 41 13.7 -0.1**
SDKM Sandakan 72.17 287⇓ P **P 09 41 21.7 +0.1**
PMSA Palmer Station 72.92 156 PFAKE 09 41 40.0 +15
PMSA LR LR
comp=Z,4µm,20.0s
KDM Kudat 73.16 288⇑ P **P 09 41 27.5 +0.1**
KKM Kota Kinabalu 73.20 287 *e*P **P 09 41 28.9 +1.1**
KKM LR LR
comp=Z,2µm,19.0s
MAW Mawson 73.79 200 P **P 09 41 31.0 +0.7**
comp=Z,19nm,0.7s,baz=137,slow=7.7,SNR=26
MAW LR LR 10 14 42.8
comp=Z,8µm,18.3s,baz=112,slow=36
MAW Mawson 73.79 200 P **P 09 41 30.6 +0.3**
baz=74,SNR=22
MAW Mawson 73.79 200 *e*P **P 09 41 31.4 +1.1**
TGY Tagaytay City 73.91 297 LR LR 10 12 43.0
comp=Z,1µm,19.2s,baz=128,slow=35
STKI Sintang 74.13 279 P **P 09 41 35.3 +2.1**
JHJ Hachijo jima 2 74.41 323 LR LR 10 11 29.4
comp=Z,1µm,19.2s,baz=140,slow=34
SBUM Sibu 74.70 282 *e*P **P 09 41 35.1 -1.4**
KSM Kuching 75.85 280 *e*P **P 09 41 42.5 -0.6**
KSM LR LR
comp=Z,4µm,20.0s
INU Inuyama 77.58 323 *e*P **P 09 41 51.8 -0.5**
MJAR Matsushiro Arr 77.88 324 P **P 09 41 52.9 -1.1**
comp=Z,17nm,0.8s,baz=161,slow=5.5,SNR=27
MJAR LR LR 10 12 21.6
comp=Z,938nm,20.7s,baz=120,slow=33
MAJO Matsushiro 77.88 324 *c iP* **P 09 41 52.7 -1.3**
MAJO pmax pmax
comp=Z,248nm,1.1s
MAJO Matsushiro 77.88 324 *e*P **P 09 41 53.4 -0.6**
MAJO LR LR
comp=Z,2µm,19.0s
MAT Matsushiro 77.88 324 P **P 09 41 53.0 -1.0**
MJB9 Matsu-Tunnel 77.88 324 *e*P **P 09 41 53.5 -0.6**
SYO Syowa Base 78.51 193⇓ *e*P **P 09 41 55.6 -1.5**
SYO Syowa Base 78.51 193⇓ *i* PcP **PcP 09 42 05.0 -1.1**
SNAA Sanae 79.31 178 P **P 09 42 01.5 -0.1**
SNAA Sanae 79.31 178 *e*P **P 09 42 01.4 -0.1**
SNAA Sanae 79.31 178 *e*P **P 09 42 01.4 -0.2**
JNU Nakatsue 79.38 317 *e*P **P 09 42 01.7 -0.7**
SSLB Suanglung 79.74 305 *e*P **P 09 42 02.4 -2.2**
comp=Z,18nm,0.8s
ERM Erimo 79.92 331⇓ *iP* **P 09 42 06.8 +1.8**
ERM pmax pmax
comp=Z,72nm,1.8s
ERM Erimo 79.92 331 PFAKE 09 42 20.0 +15
ERM LR LR
comp=Z,4µm,20.0s
YHNB Yeheng 79.98 305 PFAKE 09 42 20.0 +14
YHNB LR LR
comp=Z,2µm,19.0s
VNA1 Neumayer--Stat 80.09 176 P **P 09 42 05.5 -0.1**
NVL N'lazarevskaya 80.12 183 *e*P **P 09 42 10.4 +4.5**

NVL *e* 09 45 11.3
NVL *e*S **S 09 52 11.0 +3.1**
COCO West Island 81.03 261 PFAKE 09 42 20.0 +8.3
COCO LR LR
comp=Z,6µm,19.0s
MYKOM Kota Tinggi 81.59 277 *e*P **P 09 42 14.1 -0.6**
PAF Port-aux-Franc 81.73 217 PFAKE 09 42 30.0 +15
PAF LR LR
comp=Z,11µm,20.0s
ASAJ Asahikawa 81.88 332 *e*P **P 09 42 16.2 +0.8**
SMY Shemya 81.97 354 *e*P **P 09 42 16.8 +1.1**
SMY Shemya 81.97 354 *e*P **P 09 42 16.8 +1.1**
QZH Quanzhou 82.15 304⇑ *i*P P 09 42 10.4 -6.9
QZH Quanzhou 82.15 304 S **S 09 52 24.9 -5.4**
QZH pmax pmax
comp=Z,90nm,0.8s
QZH pmax pmax
comp=Z,3µm,11.0s
QZH LR LR
comp=N,3µm,16.4s
QZH LR LR
comp=E,3µm,15.9s
QZH LR LR
comp=Z,4µm,18.6s
PLCA Paso Flores 82.54 133 P **P 09 42 19.8 +0.3**
comp=Z,8.4nm,0.9s,baz=266,slow=5.3,SNR=7.4
PLCA LR LR 10 13 16.5
comp=Z,2µm,18.0s,baz=276,slow=32
PLCA Paso Flores 82.54 133 *e*P **P 09 42 21.6 +2.2**
SCI2 San Clemente I 82.89 46 P **P 09 42 20.8 -0.2**
baz=228
SCZ2 Santa Cruz Isl 82.89 45 P **P 09 42 20.7 -0.3**
baz=228
SLBS Sierra La Lagu 83.03 58 *e*P **P 09 42 24.8 +2.7**
EFI East Falkland 83.21 147⇓ *e*P **P 09 42 23.2 +0.7**
EFI pmax pmax
comp=Z,57nm,1.2s
EFI East Falkland 83.21 147 PFAKE 09 42 30.0 +7.5
EFI LR LR
comp=Z,3µm,20.0s
CIS Catalina Islan 83.25 46 P **P 09 42 23.2 +0.3**
baz=229
BLG Laguna Peak, P 83.31 45 P **P 09 42 23.5 +0.3**
baz=228
PKM Mcpherson Peak 83.38 44 P **P 09 42 24.0 +0.2**
baz=228
SRIG Santa Rosalia 83.53 54 *e*P **P 09 42 23.8 -0.7**
FMP Fort Macarthur 83.53 46 P **P 09 42 25.0 +0.7**
baz=229
SMMC Simmler 83.56 44 P **P 09 42 25.2 +0.8**
baz=227
SAO San Andreas Ge 83.69 42 *e*P **P 09 42 27.1 +2.1**
SAO San Andreas Ge 83.69 42 *e*P **P 09 42 27.1 +2.1**
109C Camp Elliot, M 83.74 47 P **P 09 42 25.9 +0.5**
baz=229
OSI Osito Audit: C 83.86 45 P **P 09 42 26.4 +0.4**
baz=228
DECC Green Verdugo 83.86 45 P **P 09 42 25.8 -0.2**
baz=228
BAR Barrett 83.89 47 *e*P **P 09 42 29.0 +2.9**
MWC Mount Wilson 84.01 45 *e*P **P 09 42 27.5 +0.5**
MWC Mount Wilson 84.01 45 *e*P **P 09 42 27.5 +0.5**
KSRS Korea Array 84.13 319 P **P 09 42 27.2 0.0**
comp=Z,23nm,1.1s,baz=141,slow=5.8,SNR=33
KSRS Korea Array 84.13 319 P **P 09 42 27.3 0.0**
KSRS pmax pmax
comp=Z,13nm,0.9s
ARVC Arvin 84.14 44 P **P 09 42 26.8 -0.6**
baz=228
YSS Yuzh-Sakhalins 84.14 333 *e*P **P 09 42 27.6 +0.5**
YSS pmax pmax
comp=Z,184nm,2.5s
YSS Yuzh-Sakhalins 84.14 333 *e*P **P 09 42 27.3 +0.2**
YSS LR LR
comp=Z,1µm,20.0s
KSAR Wonju Array Be 84.15 319 P **P 09 42 27.3 -0.1**
KSAR Wonju Array Be 84.15 319 P **P 09 42 27.2 -0.1**
MURC Murrieta 84.15 46 P **P 09 42 27.4 -0.2**
baz=229,SNR=14
MONP2 Monument Peak 84.18 47 P **P 09 42 27.5 -0.4**
baz=230,SNR=19
IKP In-Ko-Pah, Jac 84.23 48 P **P 09 42 27.9 -0.1**
baz=230,SNR=13
BFSC Mount Baldy Ra 84.27 46 P **P 09 42 27.4 -0.9**
baz=229,SNR=11
VES Vestal, Richgr 84.46 44 P **P 09 42 28.3 -0.6**
baz=228,SNR=17
EDW2 Edwards Air Fo 84.49 45 P **P 09 42 29.1 -0.2**
baz=229,SNR=15
SWSC Sam W. Stewart 84.62 48 P **P 09 42 29.3 -0.5**
baz=230
PFO Pinyon Flats O 84.62 47 P **P 09 42 30.2 +0.2**
comp=Z,15nm,1.0s,baz=259,slow=5.0,SNR=11
PFO Pinyon Flats O 84.62 47 P **P 09 42 29.7 -0.3**
baz=230,SNR=21
PFO Pinyon Flats O 84.62 47 *e*P **P 09 42 30.4 +0.4**
PFO LR LR
comp=Z,3µm,19.0s
TPFO Pinon Flats 84.62 47 P **P 09 42 29.7 -0.3**
baz=230,SNR=22
PET Petropavlovsk 84.64 345 *i* P **P 09 42 29.4 0.0**
PET Petropavlovsk 84.64 345 PFAKE 09 42 40.0 +11
PET LR LR
comp=Z,4µm,19.0s
RCTC Rector, Farmer 84.67 43 P **P 09 42 29.9 -0.1**
baz=228
ISA Isabella, Lake 84.71 44 P **P 09 42 30.6 +0.2**
baz=228
ISA Isabella, Lake 84.71 44 *e*P **P 09 42 31.5 +1.2**
ISA Isabella, Lake 84.71 44 *e*P **P 09 42 31.5 +1.2**
BBRC Big Bear Solar 84.75 46 P **P 09 42 30.4 -0.4**
baz=229
INCN Inchon 84.90 318 *e*P **P 09 42 31.9 +0.7**
comp=Z,20nm,0.8s
INCN LR LR
comp=Z,1µm,20.0s
PEA0 Petropavlovsk- 84.93 345 *e*P **P 09 42 30.3 -0.7**
PEA0B Petropavlovsk- 84.93 345 *e*P **P 09 42 30.7 -0.2**
PETK Petropavlovsk- 84.93 345 P **P 09 42 30.2 -0.7**
comp=Z,21nm,0.9s,baz=119,slow=5.8,SNR=20
PETK LR LR 10 19 46.2
comp=Z,2µm,18.1s,baz=171,slow=35
LRMC Laurel Mtn Rad 85.07 45 P **P 09 42 31.9 -0.3**
baz=229,SNR=18
RRX Edison Barstow 85.10 45 P **P 09 42 32.0 -0.3**
baz=229
BELC Belle Mtn. Jos 85.17 47 P **P 09 42 32.6 -0.2**
baz=230,SNR=30
CMB Columbia Colle 85.17 41 *e*P **P 09 42 32.4 -0.2**
CMB Columbia Colle 85.17 41 *e*P **P 09 42 32.4 -0.2**
BC3 Big Chuckawall 85.29 47 P **P 09 42 33.3 -0.1**
baz=230,SNR=26
KHMM Horse Mountain 85.30 37 *e*P **P 09 42 37.3 +4.1**
GLA Glamis 85.31 48 P **P 09 42 34.2 +0.8**
baz=231,SNR=6.5
GLA Glamis 85.31 48 *e*P **P 09 42 34.5 +1.1**
GLA Glamis 85.31 48 *e*P **P 09 42 34.5 +1.1**
IPM Ipoh 85.36 278 *e*P **P 09 42 33.2 -0.9**
QIZ Qiongzhong 85.45 295 P **P 09 42 34.9 +0.6**
QIZ pmax pmax
comp=Z,12nm,1.7s
QIZ Qiongzhong 85.45 295 PFAKE 09 42 50.0 +16
QIZ LR LR
comp=Z,1µm,20.0s
HSIG 85.46 53 *e*P **P 09 42 35.0 +0.8**
AFDM Forest Hills D 85.46 40 *e*P **P 09 42 34.2 +0.2**
CWC Cottonwood Cre 85.46 44 P **P 09 42 33.8 -0.4**
baz=229
HEC Hector,Ludlow 85.49 46 P **P 09 42 33.8 -0.5**
baz=230,SNR=24
GSC Goldstone, Bar 85.50 45 P **P 09 42 34.0 -0.3**
baz=229,SNR=19
GSC Goldstone, Bar 85.50 45 *e*P **P 09 42 33.6 -0.7**
GSC Goldstone, Bar 85.50 45 *e*P **P 09 42 33.6 -0.7**
MPMC Manual Prospec 85.57 44 P **P 09 42 34.7 -0.1**
baz=229,SNR=23
ORV Oroville 85.58 40 *e*P **P 09 42 34.6 +0.1**
ORV Oroville 85.58 40 *e*P **P 09 42 34.6 +0.1**
DAC Darwin (Calif) 85.65 44 *e*P **P 09 42 35.4 +0.2**
DAC Darwin (Calif) 85.65 44 *e*P **P 09 42 35.4 +0.2**
WDC Whiskeytown Da 85.72 38 *e*P **P 09 42 35.6 +0.4**
WDC Whiskeytown Da 85.72 38 *e*P **P 09 42 35.6 +0.4**
TIN Tinemaha, Big 85.78 43 P **P 09 42 35.6 -0.1**
baz=228
MLAC Mammoth, Mammo 85.80 42 P **P 09 42 36.0 0.0**
baz=228

IRM **Iron Mountain** 85.81 47 P P 09 42 35.9 0.0
baz=230,SNR=25
GMRC **Granite Mounta** 85.88 46 P P 09 42 36.3 -0.1
baz=230,SNR=13
N02D **Trinity Center** 85.91 38 P P 09 42 36.2 0.0
baz=225
O03D **Paynes Creek** 85.93 39 P P 09 42 35.7 -0.7
baz=226
Y12C **Blythe** 85.95 48 P P 09 42 36.6 +0.1
baz=231
Y12C **Blythe** 85.95 48 eP P 09 42 37.3 +0.8
214A **Organ Pipe Nat** 85.96 50 P P 09 42 36.9 +0.2
baz=232
214A **Organ Pipe Nat** 85.96 50 eP P 09 42 37.9 +1.2
comp=Z,234nm,1.5s
MSHR **Mys Shultsa** 86.00 324⇓ eP P 09 42 37.1 +0.6
VLA **Vladivostok** 86.02 325⇑ iP P 09 42 37.0 +0.4
VLA i *PP pP 09 42 45.8 -0.9
VLA i *SP sP 09 42 50.0 -0.4
VLA i 09 45 55.8
VLA eS SKSac 09 52 58.4 -1.5
VLA pmax pmax
comp=Z,54nm,1.5s
WAKR **Walker** 86.04 41 eP P 09 42 37.8 +0.7
KULM **Kulim** 86.09 278 eP P 09 42 37.1 -0.6
KULM LR LR
comp=Z,4μm,19.0s
M02C **Callahan** 86.13 38 P P 09 42 37.9 +0.6
baz=225
TUQ **Turquoise Moun** 86.13 46 P P 09 42 37.5 -0.1
baz=230,SNR=12
SHOC **Shoshone, Teco** 86.21 45 P P 09 42 37.4 -0.4
baz=230
FURC **Furnace Creek,** 86.22 44 P P 09 42 37.9 +0.2
baz=229
GRAC **Grapevine Rang** 86.26 44 P P 09 42 37.8 -0.3
baz=229,SNR=12
NJ2 **Nanjing** 86.28 310 eP P 09 42 39.9 +1.8
NJ2 SKS SKSac 09 53 01.0 -1.1
NJ2 S S 09 53 11.5 +0.2
NJ2 pmax pmax
comp=Z,68nm,1.1s
NJ2 pmax pmax
comp=Z,1μm,7.1s
NJ2 LR LR
comp=Z,960nm,17.3s
NJ2 LR LR
comp=Z,1μm,16.3s
NJ2 LR LR
comp=Z,2μm,18.4s
PSI **Prapat** 86.37 275 eP P 09 42 37.6 -1.6
PSI **Prapat** 86.37 275 eP P 09 42 37.6 -1.6
LDFC **Landfair** 86.42 46 eP P 09 42 39.7 +0.7
YBH **Yreka Blue Hor** 86.44 37 eP P 09 42 35.1 -3.7
YBH **Yreka Blue Hor** 86.44 37 eP P 09 42 35.1 -3.7
PAYG **Puerto Ayora** 86.62 89 PFAKE 09 42 50.0 +10
PAYG LR LR
comp=Z,3μm,19.0s
USRK **Ussuriysk Ar.** 86.76 326 P P 09 42 39.2 -1.0
comp=Z,26nm,1.0s,baz=141,slow=3.7,SNR=32
USRK LR LR 10 18 54.4
comp=Z,1μm,19.1s,baz=134,slow=34
GSI **Gunungsitoli** 86.82 273 eP P 09 42 41.1 -0.1
PAHR **Pah Rah Range** 86.88 41 eP P 09 42 41.5 +0.4
TPNV **Topopah Spring** 86.91 44 P P 09 42 41.3 -0.1
baz=230,SNR=11
TPNV **Topopah Spring** 86.91 44 eP P 09 42 41.5 +0.1
TPNV **Topopah Spring** 86.91 44 eP P 09 42 41.5 +0.1
M04C **Macdoel** 86.94 38 P P 09 42 41.0 -0.4
baz=226
SKLT **Songkhla** 87.04 280 P P 09 42 45.1 +2.8
comp=Z,33nm,1.1s,comp=Z,1μm
SHPR **Sheep Range** 87.29 45 eP P 09 42 44.0 +0.8
TYV **Tymovskoe** 87.40 336 eP P 09 42 44.0 +0.9
TYV eS S 09 53 24.0 +2.7
TYV pmax pmax
comp=Z,1μm,7.0s
TYV smax smax
comp=E,2μm,12.0s
I03D **Drain, OR** 87.50 36 P P 09 42 44.0 +0.2
baz=225
TUC **Tucson** 87.54 51 P P 09 42 44.4 0.0
baz=233
TUC **Tucson** 87.54 51 eP P 09 42 45.0 +0.6
TUC MLR MLR
comp=Z,1μm,19.0s
TUC **Tucson** 87.54 51 eP P 09 42 45.0 +0.6
TUC LR LR
comp=Z,1μm,19.0s
I04A **Tendick Farm,** 88.05 36 P P 09 42 46.4 -0.1
baz=225
HPIG 88.06 58 eP P 09 42 46.5 -0.7
K05A **Summer Lake** 88.10 38 eP P 09 42 45.5 -1.5
ZAIG **Zacatecas** 88.13 63 eP P 09 42 51.1 +3.4
TRTT **Trang** 88.17 280 P P 09 42 48.4 +0.7
comp=Z,55nm,0.9s,comp=Z,1μm
R11A **Troy Canyon, C** 88.21 44 P P 09 42 47.7 +0.1
baz=230
R11A **Troy Canyon, C** 88.21 44 eP P 09 42 47.3 -0.3
MDJ **Mudanjiang** 88.25 325 P P 09 42 47.8 +0.4
MDJ pP pP 09 42 53.4 -4.1
MDJ sP sP 09 42 56.4 -4.8
MDJ S S 09 53 31.4 +1.7
MDJ SS SS 09 59 20.1 0.0
MDJ pmax pmax
comp=Z,19nm,1.1s
MDJ pmax pmax
comp=Z,1μm,8.9s
MDJ LR LR
comp=Z,1μm,24.2s
MDJ LR LR
comp=Z,1μm,16.9s
MDJ LR LR
comp=Z,3μm,21.8s
MDJ **Mudanjiang** 88.25 325 eP P 09 42 47.5 +0.2
comp=Z,26nm,0.8s
MDJ LR LR
comp=Z,2μm,19.0s
J05D **Fort Rock, OR** 88.31 37 P P 09 42 48.3 +0.4
baz=226
OHAK **Old Harbor** 88.35 13 eP P 09 42 49.5 +2.0
CHBT **CHBT** 88.36 285 P P 09 42 47.5 -1.1
comp=Z,6μm,1.8s
WHN **Wuhan** 88.48 306 ⇓P P 09 42 49.7 +0.9
WHN S S 09 53 22.9 -10
WHN LR LR
comp=Z,2μm,15.0s
WHN LR LR
comp=Z,2μm,14.4s
WHN LR LR
comp=Z,5μm,19.2s
HABR **Khabarovsk** 88.53 330 eP P 09 42 47.9 -0.6
HABR e*PP pP 09 42 58.5 -0.2
HABR e*SP sP 09 43 02.5 +0.1
HABR e 09 46 15.9
HABR eS SKSac 09 53 12.8 -2.2
HABR eS SKKSac 09 53 28.7 +2.8
HABR eSSS SSS 10 02 58.2
HABR pmax pmax
comp=Z,429nm,2.6s
HABR MLR MLR
comp=Z,2μm,19.0s
TLIG **Tlapa** 88.58 69 eP P 09 42 53.9 +4.1
BMN **Battle Mountai** 88.60 41 eP P 09 42 49.9 +0.6
BMN **Battle Mountai** 88.60 41 eP P 09 42 49.9 +0.6
G03D **McMinnville, O** 88.62 35 P P 09 42 49.7 +0.6
baz=225
LCO **Las Campanas** 88.74 123 PFAKE 09 43 00.0 +9.4
LCO LR LR
comp=Z,3μm,19.0s
DL2 **Dalian** 88.80 317 P P 09 42 50.4 +0.3
DL2 SKS SKSac 09 53 20.2 +3.1
DL2 S ScS 09 53 39.3 -1.1
DL2 pmax pmax
comp=Z,76nm,1.1s
DL2 pmax pmax
comp=Z,820nm,5.4s
DL2 LR LR
comp=Z,540nm,14.9s
DL2 LR LR
comp=Z,1μm,15.7s
DL2 LR LR
comp=Z,2μm,16.1s
LCMT **Little Creek M** 88.81 46 eP P 09 42 51.1 +0.7
I05D **Terrebonne, OR** 88.98 36 P P 09 42 51.6 +0.7
baz=226
KDAK **Kodiak Island** 89.01 13 PFAKE 09 43 00.0 +9.4
KDAK LR LR
comp=Z,2μm,19.0s
CCUT **Cedar City** 89.07 45 eP P 09 42 51.6 -0.1
KNB **Kanab** 89.08 46 eP P 09 42 52.1 +0.4
KNB **Kanab** 89.08 46 eP P 09 42 52.1 +0.4
WUAZ **Wupatki** 89.08 48 P P 09 42 51.5 -0.2
baz=233
WUAZ **Wupatki** 89.08 48 eP P 09 42 52.6 +0.8
WUAZ LR LR
comp=Z,2μm,19.0s
WVOR **Wild Horse Val** 89.13 39 eP P 09 42 52.5 +0.8
WVOR MLR MLR
comp=Z,5μm,19.0s
WVOR **Wild Horse Val** 89.13 39 eP P 09 42 52.5 +0.8
WVOR LR LR
comp=Z,5μm,19.0s
E03A **Lebam** 89.43 34 eP P 09 42 54.0 +1.2
SURT **Suratani** 89.49 280 P P 09 42 55.4 +1.5
comp=Z,26nm,1.2s,comp=Z,481nm
TRQA **Tornquist** 89.52 134 eP P 09 42 55.5 +1.7
TRQA LR LR
comp=Z,3μm,21.0s
SNY **Shenyang** 89.56 320 ⇑P P 09 42 53.1 -0.4
SNY pmax pmax
comp=Z,34nm,1.2s
SNY pmax pmax
comp=Z,890nm,7.8s
SNY LR LR
comp=Z,2μm,16.4s
SNY LR LR
comp=Z,580nm,18.5s
SNY LR LR
comp=Z,2μm,18.5s
G05D **Wamic, OR** 89.62 36 P P 09 42 54.0 +0.1
baz=226
PKCU **Pink Cliffs** 89.66 46 eP P 09 42 56.5 +1.9
PATY **Pattaya** 89.68 285 P P 09 42 58.0 +3.2
comp=Z,14nm,1.0s,comp=Z,2μm
121A **Cookes Peak, D** 89.72 52 P P 09 42 54.7 -0.1
baz=235
121A **Cookes Peak, D** 89.72 52 eP P 09 42 55.5 +0.7
comp=Z,23nm,1.2s
FL2 **Flat Top 2** 89.77 34 P P 09 42 55.0 +0.3
CN2 **Changchun** 89.84 322 eP P 09 42 54.9 +0.1
CN2 eS S 09 53 44.0 -0.7
CN2 pmax pmax
comp=Z,40nm,1.2s
CN2 LR LR
comp=Z,1μm,19.0s
CN2 LR LR
comp=Z,1μm,19.0s
CN2 LR LR
comp=Z,2μm,17.0s
ERK **Elk Rock** 89.85 34 P P 09 42 55.4 +0.4
NLWA **Neilton Lookou** 89.89 33 eP P 09 42 55.6 +0.6
comp=Z,15nm,1.0s
NLWA LR LR
comp=Z,5μm,19.0s
W18A **Petrified Fore** 89.92 49 P P 09 42 55.8 +0.1
baz=234
W18A **Petrified Fore** 89.92 49 eP P 09 42 55.2 -0.5
comp=Z,32nm,1.1s
TIA **Tai'an** 89.94 312 eP P 09 42 56.3 +0.8
TIA pmax pmax
comp=Z,110nm,1.1s
TIA pmax pmax
comp=Z,2μm,7.1s
TIA LR LR
comp=Z,2μm,17.1s
TIA LR LR
comp=Z,750nm,19.8s
TIA LR LR
comp=Z,2μm,16.7s
TDL **Tradedollar La** 89.95 34 P P 09 42 55.9 +0.4
ELK **Elko** 89.95 42 eP P 09 42 58.6 +2.8
ELK **Elko** 89.95 42 eP P 09 42 58.6 +2.8
VTHM **Trough** 89.97 36 P P 09 42 56.2 +0.7
NKL **Nikolayevsk** 89.97 336 eP P 09 54.0 -1.2
NKL e 09 53 28.0
NKL pmax pmax
comp=Z,60nm,1.0s
HOPE **Hope Point** 90.07 158 PFAKE 09 43 10.0 +14
HOPE LR LR
comp=Z,2μm,20.0s
MTPU **Mount Pierson** 90.10 46 eP P 09 42 58.0 +1.3
NONG **Nongkai** 90.35 290 P P 09 42 59.1 +1.2
comp=Z,85nm,1.1s,comp=Z,4μm
MSU **Marysvale** 90.40 45 eP P 09 42 58.9 +1.0
MSU **Marysvale** 90.40 45 eP P 09 42 58.9 +1.0
LON **Longmire** 90.43 34 eP P 09 42 57.9 +0.3
LON **Longmire** 90.43 34 eP P 09 42 57.9 +0.3
KLR **Kul'dur** 90.55 329 iP P 09 42 58.4 +0.4
D05A **Enumclaw** 90.64 34 eP P 09 42 59.9 +1.3
TX31 **Lajitas Ar. Si** 90.86 57 eP P 09 42 59.8 -0.3
TX31 eP P 09 43 00.2 +0.1
TXAR **Lajitas Array** 90.86 57 P P 09 42 59.5 -0.6
comp=Z,9.4nm,1.0s,baz=208,slow=5.7,SNR=21
TXAR PKKP PKKPbc 10 00 26.5 +1.2
comp=Z,0.7nm,1.0s,baz=67,slow=4.2,SNR=4.4
TXAR PKPPKP P'P'df 10 08 47.8 +15
comp=Z,0.4nm,1.0s,baz=116,slow=2.9,SNR=4.2
TXAR LR LR 10 17 06.1
comp=Z,1μm,19.3s,baz=0.0,slow=31
G08A **Pilot Rock** 90.87 37 eP P 09 42 59.9 +0.1
MNTX **Cornudas Mount** 90.93 54 P P 09 43 00.2 -0.1
baz=236
MNTX **Cornudas Mount** 90.93 54 eP P 09 42 59.9 -0.4
MNTX LR LR
comp=Z,875nm,20.0s
DUG **Dugway, Tooele** 91.04 44 P P 09 43 00.7 -0.1
baz=232
DUG **Dugway, Tooele** 91.04 44 eP P 09 43 03.4 +2.6
DUG MLR MLR
comp=Z,2μm,19.0s
DUG **Dugway, Tooele** 91.04 44 eP P 09 43 03.4 +2.6
DUG LR LR
comp=Z,2μm,19.0s
TWW **Teanaway** 91.16 34 P P 09 43 02.0 +1.0
BRLK **Bradley Lake** 91.18 13 eP P 09 43 01.6 +0.8
LAZ **Ladron** 91.24 51 eP P 09 43 02.5 +0.6
HAWA **Hanford** 91.32 36 eP P 09 43 02.5 +0.8
HAWA LR LR
comp=Z,3μm,19.0s
MFID **Camas Ranch** 91.33 40 eP P 09 43 02.1 +0.1
B05A **Bryant** 91.35 33 P P 09 43 01.9 +0.1
baz=226
BGU **Big Grassy Mou** 91.37 43 eP P 09 43 05.0 +2.7
A04D **Lummi Island** 91.38 32 P P 09 43 02.6 +0.8
baz=225
PBKT **Sadao Pong** 91.40 288 P P 09 43 04.5 +1.8
comp=Z,38nm,1.3s,comp=Z,2μm
BNM **Barren Site** 91.44 51 eP P 09 43 03.1 +0.3
BMO **Blue Mountains** 91.46 38 eP P 09 43 02.2 -0.3
BMO LR LR
comp=Z,3μm,19.0s
TMUT **Trail Mountain** 91.47 45 eP P 09 43 03.9 +0.8
LPM **Los Pinos Moun** 91.53 51 eP P 09 43 04.1 +0.9
LOEI **Loei** 91.62 289 P P 09 43 04.2 +0.4
comp=Z,13nm,0.8s,comp=Z,808nm
SRU **San Rafael Swe** 91.79 45 eP P 09 43 04.9 +0.6
SRU **San Rafael Swe** 91.79 45 eP P 09 43 04.9 +0.6
ENH **Enshi** 91.81 304 eP P 09 43 05.0 +0.6
comp=Z,325nm,1.3s
ENH LR LR
comp=Z,2μm,22.0s
SRDT **SRDT** 91.85 285 P P 09 43 08.0 +3.1
comp=Z,140nm,1.0s,comp=Z,5μm
P17A **Butcher Ranch,** 91.87 45 eP P 09 43 06.3 +1.7
GYA **Guiyang** 91.88 299 ⇑iP P 09 43 04.9 -0.1
GYA pP pP 09 43 12.4 -2.7
GYA PP PP 09 46 47.0 +2.3
GYA SKS SKSac 09 53 35.3 -0.5
GYA S S 09 54 03.8 -0.6
GYA SS SS 10 00 15.5 +1.9
GYA pmax pmax
comp=Z,40nm,1.0s
GYA pmax pmax
comp=Z,180nm,7.5s
GYA LR LR
comp=Z,820nm,20.6s
GYA LR LR
comp=Z,880nm,21.2s
GYA LR LR
comp=Z,700nm,20.8s
SPUT **South Promonto** 91.95 43 eP P 09 43 05.2 +0.2
MVCO **Mesa Verde** 91.95 48 P P 09 43 05.0 -0.2
baz=234
MVCO **Mesa Verde** 91.95 48 PFAKE 09 43 20.0 +15
MVCO LR LR
comp=Z,3μm,20.0s
ANMO **Albuquerque** 92.01 51 P P 09 43 05.3 -0.1
baz=236
ANMO **Albuquerque** 92.01 51⇑ eP P 09 43 05.1 -0.3
ANMO pmax pmax
comp=Z,10.0nm,1.0s
ANMO **Albuquerque** 92.01 51 eP P 09 43 05.1 -0.3
ANMO LR LR
comp=Z,2μm,20.0s
HVU **Hansel Valley** 92.05 42 eP P 09 43 05.6 +0.2
HVU **Hansel Valley** 92.05 42 eP P 09 43 05.5 +0.2
D08A **Wollman Farm,** 92.08 35 eP P 09 43 05.5 +0.3
E09A **Wood Farm, Sta** 92.11 36 eP P 09 43 08.4 +3.1
HLID **Hailey** 92.22 40 P P 09 43 06.2 +0.1
baz=231
HLID **Hailey** 92.22 40 eP P 09 43 05.7 -0.5
HLID LR LR
comp=Z,3μm,20.0s
MA2 **Magadan** 92.43 344 LR LR 10 21 25.0
comp=Z,1μm,19.8s,baz=152,slow=34
TCUT **Toone Canyon** 92.45 43 eP P 09 43 08.1 +0.6
RC01 **Rabbit Creek A** 92.63 13 eP P 09 43 07.2 -0.2
comp=Z,20nm,1.0s
HWUT **Hardware Ranch** 92.66 43 eP P 09 43 10.2 +2.0
HWUT LR LR
comp=Z,4μm,19.0s
NNA **Nana** 92.72 105 PFAKE 09 43 20.0 +11
NNA LR LR
comp=Z,924nm,21.0s
BJT **Baijiatuau** 92.81 315 eP P 09 43 08.7 -0.1
BJT pmax pmax
comp=Z,43nm,1.0s
BJT MLR MLR
comp=Z,3μm,19.0s
BJT **Baijiatuau** 92.81 315 eP P 09 43 08.7 -0.1
comp=Z,43nm,1.0s
BJT LR LR
comp=Z,3μm,19.0s
BJI **Beijing** 92.82 315 P P 09 43 09.0 +0.2
BJI pmax pmax
comp=Z,23nm,1.1s
BJI pmax pmax
comp=Z,700nm,5.7s
C09A **Chrisman Ranch** 92.90 35 eP P 09 43 06.7 -2.3
SUKH **Sukhothai** 92.96 288 P P 09 43 13.4 +3.5
comp=Z,5.0nm,0.9s,comp=Z,56nm
832A **Faith Ranch, C** 93.03 59 P P 09 43 09.8 -0.2
baz=238
PMR **Palmer** 93.21 13 eP P 09 43 08.8 -1.2
PMR pmax pmax
comp=Z,35nm,1.5s
PMR **Palmer** 93.21 13 eP P 09 43 08.8 -1.2
comp=Z,35nm,1.5s
933A **Laredo** 93.21 60 P P 09 43 10.8 -0.1
baz=239
WRAK **Wrangell Islan** 93.25 23 PFAKE 09 43 20.0 +10
WRAK LR LR
comp=Z,2μm,20.0s
TT01 **Tatalina** 93.28 9 eP P 09 43 10.2 -0.1
TTA **Tatalina** 93.31 9 eP P 09 43 10.6 0.0
TTA **Tatalina** 93.31 9 eP P 09 43 10.6 0.0
S22A **4UR Ranch, Cre** 93.35 48 P P 09 43 11.7 +0.1
baz=235
034A **Hebbronville** 93.38 61 P P 09 43 11.8 +0.1
baz=239
LAMP **Lampang** 93.47 289 P P 09 43 16.0 +3.7
comp=Z,6.5nm,0.9s
833A **Chaparral WMA,** 93.49 60 P P 09 43 12.6 +0.4
baz=239
LVC **Limon Verde** 93.58 118 eP P 09 43 15.9 +2.6
LVC LR LR
comp=Z,3μm,19.0s
AHID **Auburn Hatcher** 93.63 42 eP P 09 43 14.4 +1.7
AHID LR LR
comp=Z,4μm,19.0s
035A **Encino** 93.76 61 P P 09 43 13.0 -0.4
baz=239
733A **Divot King Ran** 93.77 59 P P 09 43 12.9 -0.6
baz=239
NEW **Newport** 93.79 35 PFAKE 09 43 20.0 +6.9
NEW LR LR
comp=Z,6μm,19.0s
TIY **Taiyuan** 93.87 311 eP P 09 43 16.7 +2.9
TIY S S 09 54 21.5 0.0
TIY pmax pmax
comp=Z,720nm,10.1s
TIY LR LR
comp=Z,640nm,17.2s
TIY LR LR
comp=Z,1μm,14.2s
TIY LR LR
comp=Z,2μm,17.4s
MCMT **McKenzie Canyo** 93.88 40 P P 09 43 13.4 -0.5
MSTX **Muleshoe** 94.01 53 P P 09 43 14.2 -0.3
baz=237
MSTX **Muleshoe** 94.01 53 eP P 09 43 13.9 -0.6
CMAR **Chiang Mai Arr** 94.01 289 P P 09 43 15.3 +0.5
comp=Z,1.5nm,0.4s,baz=138,slow=2.9,SNR=7.0
CMAR LR LR 10 25 35.5
comp=Z,886nm,20.6s,baz=165,slow=36
834A **Tilden** 94.03 60 P P 09 43 14.3 -0.4
baz=239
SMCO **Snowmass** 94.07 47 eP P 09 43 15.5 +0.4
REDW **Red Top Meadow** 94.14 42 eP P 09 43 15.1 0.0
comp=Z,22nm,1.1s
CMMT **Chiang Mai** 94.18 289 P P 09 43 19.4 +3.8
comp=Z,30nm,1.1s
CHTO **Chiang Mai** 94.18 289 P P 09 43 19.5 +3.9
comp=Z,55nm,1.3s,comp=Z,3μm
CHTO **Chiang Mai** 94.18 289 eP P 09 43 17.9 +2.3
CHTO MLR MLR
comp=Z,2μm,19.0s
CHTO **Chiang Mai** 94.18 289 eP P 09 43 17.9 +2.3
CHTO LR LR
comp=Z,2μm,19.0s
SDCO **Great Sand Dun** 94.22 49 P P 09 43 15.3 -0.3
baz=236
SDCO **Great Sand Dun** 94.22 49 eP P 09 43 16.0 +0.4
SDCO LR LR
comp=Z,2μm,20.0s
KVTX **Kingsville** 94.23 61 PFAKE 09 43 30.0 +14
KVTX LR LR
comp=Z,1μm,20.0s
KMI **Kunming** 94.23 296 P P 09 43 19.1 +3.1
KMI pmax pmax
comp=Z,14nm,0.7s
KMI LR LR
comp=Z,2μm,17.3s
KMI LR LR
comp=Z,920nm,16.8s
KMI LR LR
comp=Z,2μm,17.8s
633A **Saathoff Ranch** 94.24 59 P P 09 43 15.2 -0.4
baz=239
XAN **Xi'an** 94.24 307 P P 09 43 15.7 +0.1
XAN SKS SKSac 09 53 51.7 +3.3
XAN pmax pmax
comp=Z,17nm,1.3s
XAN pmax pmax
comp=Z,600nm,7.8s
XAN LR LR
comp=Z,2μm,16.2s
XAN LR LR
comp=Z,3μm,16.2s
SNOW **Snow King Moun** 94.25 42 eP P 09 43 15.1 -0.5
comp=Z,22nm,1.1s
JCT **Junction City** 94.30 58 P P 09 43 15.5 -0.4
baz=239
JCT **Junction City** 94.30 58 eP P 09 43 15.3 -0.6
JCT MLR MLR
comp=Z,3μm,19.0s
JCT **Junction City** 94.30 58 eP P 09 43 15.3 -0.6
JCT LR LR
comp=Z,3μm,19.0s
DLMT **Dillon** 94.35 40 eP P 09 43 15.5 -0.5
comp=Z,8.5nm,1.0s
IMW **Indian Meadow** 94.41 41 eP P 09 43 16.5 +0.1
MOOW **Moose Ponds** 94.43 42 eP P 09 43 19.6 +3.2
LOHW **Long Hollow** 94.43 42 eP P 09 43 17.6 +1.2
MSO **Missoula** 94.53 38 P P 09 43 17.0 +0.4

baz=231
MSO Missoula 94.53 38 *e*P **P 09 43 20.3 +3.6**
BW06 Boulder Array 94.54 43 P **P 09 43 16.7 -0.3**
baz=234
BW06 Boulder Array 94.54 43 PFAKE 09 43 30.0 +13
BW06 LR LR
comp=Z,4μm,19.0s
PDAR Pinedale Array 94.54 43 P **P 09 43 16.0 -1.0**
comp=Z,2.7nm,0.9s,baz=248,slow=1.6,SNR=9.5
PDAR PKKP **PKKPbc 10 00 16.4 -0.2**
comp=Z,2.4nm,1.0s,baz=60,slow=3.9,SNR=8.5
PDAR LR LR 10 22 11.2
comp=Z,3μm,18.0s,baz=258,slow=33
T25A Trinidad 94.61 50 P **P 09 43 16.9 -0.5**
baz=237
T25A Trinidad 94.61 50 *e*P **P 09 43 17.1 -0.3**
FLWY Flagg Ranch 94.66 41 *e*P **P 09 43 17.6 +0.1**
comp=Z,17nm,0.9s
533A Kerrville 94.66 58 P **P 09 43 16.8 -0.8**
baz=239
QLMT Earthquake Lak 94.69 40 *e*P **P 09 43 19.6 +2.0**
KTH Kantishna Hill 94.69 11 *e*P **P 09 43 15.3 -1.6**
comp=Z,7.6nm,0.9s
TRF Thorofare Moun 94.71 12 *e*P **P 09 43 15.9 -1.2**
H17A Grant Village 94.91 41 P **P 09 43 18.7 0.0**
baz=233
H17A Grant Village 94.91 41 *e*P **P 09 43 19.7 +1.0**
comp=Z,16nm,1.3s
RND Reindeer 94.92 12 *e*P **P 09 43 17.4 -0.6**
RND Reindeer 94.92 12 *e*P **P 09 43 17.4 -0.6**
433A Art 94.97 58 P **P 09 43 18.6 -0.4**
baz=239
534A Blanco 95.05 58 P **P 09 43 18.8 -0.5**
baz=239
SEY Seymchan 95.06 346 *e*P **P 09 43 18.2 -0.3**
BOZ Bozeman (W) 95.07 40 P **P 09 43 18.7 -0.5**
baz=233
BOZ Bozeman (W) 95.07 40 *e*P **P 09 43 19.0 -0.2**
BOZ MLR MLR
comp=Z,4μm,19.0s
BOZ Bozeman (W) 95.07 40 *e*P **P 09 43 19.0 -0.2**
BOZ LR LR
comp=Z,4μm,19.0s
LKWY Lake 95.11 41 PFAKE 09 43 30.0 +10
LKWY LR LR
comp=Z,4μm,20.0s
Q24A Divide 95.12 48 P **P 09 43 19.7 -0.1**
baz=236
MCK McKinley 95.21 12 *e*P **P 09 43 19.0 -0.2**
MCK McKinley 95.21 12 *e*P **P 09 43 19.0 -0.2**
ISCO Idaho Springs 95.29 47 PFAKE 09 43 30.0 +9.4
ISCO LR LR
comp=Z,1μm,20.0s
333A Richland Sprin 95.34 57 P **P 09 43 20.0 -0.6**
baz=239
ABTX Abilene, Hawle 95.53 56 P **P 09 43 21.2 -0.2**
baz=239
MENT Mentasta 95.54 15 *e*P **P 09 43 20.4 -0.3**
434A Burnet 95.61 58 P **P 09 43 21.7 -0.2**
baz=239
N23A Red Feather La 95.69 46 P **P 09 43 22.0 -0.3**
baz=236
233A Rising Star 95.75 57 P **P 09 43 22.0 -0.5**
baz=239
334A Lometa 95.89 57 P **P 09 43 23.3 +0.1**
baz=240
WRH Wood River Hil 96.04 12 *e*P **P 09 43 22.1 -0.8**
RLMT Red Lodge 96.09 41 PFAKE 09 43 40.0 +16
RLMT LR LR
comp=Z,3μm,19.0s
DOT Dot Lake 96.09 14 *e*P **P 09 43 22.6 -0.7**
comp=Z,19nm,0.9s
HHC Hu-ho-hao-te 96.17 314 *e*P **P 09 43 24.7 +0.4**
HHC SKS **SKSac 09 54 01.7 +3.2**
HHC S **ScS 09 54 43.9 +1.9**
HHC SS **SS 10 01 10.7 -3.7**
HHC pmax pmax
comp=Z,29nm,1.6s
HHC pmax pmax
comp=Z,190nm,4.2s
HHC LR LR
comp=Z,1μm,18.7s
HHC LR LR
comp=Z,1μm,18.7s
HHC LR LR
comp=Z,2μm,19.9s
234A Clairette 96.31 57 P **P 09 43 24.9 -0.1**
baz=240
CD2 Chengdu 96.35 302 P **P 09 43 25.2 -0.1**
CD2 sP pP 09 43 35.3 -0.2
CD2 SKS **SKSac 09 54 00.2 +0.4**
CD2 S **ScS 09 54 43.9 +0.1**
CD2 sS sS 09 54 56.4 -3.9
CD2 SS **SS 10 01 18.4 +1.2**
CD2 pmax pmax
comp=Z,20nm,0.7s
CD2 pmax pmax
comp=Z,140nm,7.8s
CD2 LR LR
comp=Z,2μm,19.1s
CD2 LR LR
comp=Z,2μm,21.1s
CD2 LR LR
comp=Z,2μm,20.1s
HIA Hailar 96.37 324 PFAKE 09 43 40.0 +15
HIA LR LR
comp=Z,3μm,19.0s
COLA College 96.45 12 P **P 09 43 24.3 -0.5**
COLA pmax pmax
comp=Z,15nm,1.1s
COLA MLR MLR
comp=Z,2μm,19.0s
COLA College 96.45 12 P **P 09 43 24.3 -0.5**
comp=Z,15nm,1.1s
COLA LR LR
comp=Z,2μm,19.0s
ILAR Eielson Array 96.53 12 P **P 09 43 23.4 -1.9**
comp=Z,2.0nm,0.8s,baz=216,slow=4.2,SNR=16
ILAR PP **PP 09 47 15.1 -5.1**
comp=Z,2.3nm,1.0s,baz=210,slow=7.6,SNR=4.4
ILAR PKKP **PKKPdf 10 00 12.9 -0.7**
comp=Z,1.1nm,1.0s,baz=46,slow=2.2,SNR=5.5
ILAR LR LR 10 23 36.9
comp=Z,1μm,18.4s,baz=202,slow=33
X32A Elmer 96.70 54 P **P 09 43 26.7 -0.1**
baz=239
W32A Sentinel 97.09 54 P **P 09 43 28.2 -0.3**
baz=239
WMOK Wichita Mounta 97.22 54 PFAKE 09 43 40.0 +11
WMOK LR LR
comp=Z,1μm,19.0s
OTAV Otavalo 97.40 94 PFAKE 09 43 40.0 +8.9
OTAV LR LR
comp=Z,2μm,20.0s
DAWY Dawson 97.50 16 *e*P **P 09 43 29.8 +0.1**
comp=Z,2.8nm,0.8s
EGMT Eagleton 97.51 39 PFAKE 09 43 40.0 +10
EGMT LR LR
comp=Z,8μm,20.0s
EGAK Eagle 97.71 15 PFAKE 09 43 40.0 +9.4
EGAK LR LR
comp=Z,3μm,19.0s
BILL Bilibino 97.77 354 PFAKE 09 43 40.0 +9.2
BILL LR LR
comp=Z,3μm,21.0s
X34A Smith Ranch, M 97.83 55 P **P 09 43 31.7 -0.1**
baz=240
OGNE Ogallala 98.21 48 PFAKE 09 43 50.0 +16
OGNE LR LR
comp=Z,3μm,19.0s
TEIG Tepich 98.37 72 PFAKE 09 43 50.0 +15
TEIG LR LR
comp=Z,32nm,19.0s
CBKS Cedar Bluff 98.62 50 PFAKE 09 43 50.0 +15
CBKS LR LR
comp=Z,1μm,20.0s
RSSD Black Hills 98.63 44 Pdiff **P 09 43 34.9 -0.6**
baz=238
RSSD Black Hills 98.63 44 *e*P **P 09 43 34.9 -0.6**
RSSD Black Hills 98.63 44 *e*P **P 09 43 34.9 -0.6**
LAO LASA Array 98.73 41 PFAKE 09 43 50.0 +14
LAO LR LR
comp=Z,3μm,19.0s
NATX Nacogdoches 98.76 59 PFAKE 09 43 50.0 +14
NATX LR LR
comp=Z,3μm,19.0s

LZH Lanzhou 98.86 306 *e*P Pdif 09 43 37.7 +1.1
LZH pP pP 09 43 43.9 -2.9
LZH sP sP 09 43 47.6 -2.9
LZH S **S 09 55 01.0 -3.8**
LZH sS sS 09 55 22.0 +0.2
LZH SS **SS 10 01 55.2 +2.6**
LZH pmax pmax
comp=Z,28nm,1.1s
LZH pmax pmax
comp=Z,240nm,7.5s
LZH LR LR
comp=Z,970nm,15.0s
LZH LR LR
comp=Z,2μm,16.6s
LZH LR LR
comp=Z,2μm,17.8s
YAK Yakutsk 100.55 337 PFAKE 09 43 50.0 +6.8
YAK LR LR
comp=Z,2μm,20.0s
DGMT Dagmar 100.85 40 PFAKE 09 44 00.0 +15
DGMT LR LR
comp=Z,3μm,19.0s
MIAR Mount Ida 100.88 57 PFAKE 09 44 00.0 +15
MIAR LR LR
comp=Z,2μm,19.0s
KSU1 Kansas State U 100.89 51 PFAKE 09 44 00.0 +15
KSU1 LR LR
comp=Z,2μm,19.0s
D26A Manning 101.11 42 Pdiff **Pdif 09 43 46.8 +0.6**
baz=239
SONM Songino Array 102.97 318 P **Pdif 09 43 53.3 -1.3**
comp=Z,0.9nm,0.6s,baz=130,slow=5.8,SNR=3.5
ECSD EROS Data Cent 103.08 47 PFAKE 09 44 10.0 +15
ECSD LR LR
comp=Z,3μm,19.0s
YKA Yellowknife Ar 103.92 25 Pdiff **Pdif 09 43 58.2 0.0**
comp=Z,0.1nm,0.4s,baz=259,slow=3.0,SNR=3.1
YKA PP **PP 09 48 16.0 -0.1**
comp=Z,0.8nm,1.0s,baz=239,slow=7.6,SNR=4.0
YKA PKKP **PKKPbc 09 59 49.1 -1.0**
comp=Z,0.6nm,0.5s,baz=36,slow=2.9,SNR=14
YKA PKPPKP P'P'df 10 08 23.1 +18
comp=Z,0.5nm,0.9s,baz=29,slow=1.9,SNR=3.8
DGAR Diego Garcia 104.19 253 PFAKE 09 44 10.0 +9.3
DGAR LR LR
comp=Z,5μm,19.0s
BRAL Brewton 104.27 62 PFAKE 09 44 10.0 +9.4
BRAL LR LR
comp=Z,2μm,19.0s
SCIA State Center 104.47 50 PFAKE 09 44 10.0 +8.8
SCIA LR LR
comp=Z,2μm,19.0s
FFC Flin Flon 105.22 35 PFAKE 09 48 30.0
FFC LR LR
comp=Z,4μm,19.0s
LSA Lhasa 105.47 296 PFAKE 09 48 30.0
LSA LR LR
comp=Z,1μm,19.0s
AGMN Agassiz Nation 105.62 43 PFAKE 09 48 30.0
AGMN LR LR
comp=Z,2μm,19.0s
SAML Samuel 105.71 110 PFAKE 09 48 30.0
SAML LR LR
comp=Z,3μm,19.0s
ZAK Zakamensk 105.97 319 *e*P **Pdif 09 44 03.6 -4.2**
ZAK pmax pmax
comp=Z,33nm,1.4s
ZAK pmax pmax
comp=Z,2.0nm,1.8s
TLY Talaya 106.34 320 PFAKE 09 48 30.0
TLY LR LR
comp=Z,2μm,19.0s
MTDJ Mount Denham 106.53 78 PFAKE 09 48 30.0
MTDJ LR LR
comp=Z,3μm,19.0s
HDIL Hopedale 106.57 53 PFAKE 09 48 30.0
HDIL LR LR
comp=Z,2μm,19.0s
JFWS Jewell Farm 106.89 50 PFAKE 09 48 30.0
JFWS LR LR
comp=Z,2μm,21.0s
TIXI Tiksi 107.40 344 PFAKE 09 48 30.0
TIXI LR LR
comp=Z,2μm,19.0s
GOGA Godfrey 107.96 61 PFAKE 09 48 40.0
GOGA LR LR
comp=Z,1μm,19.0s
EYMN Ely 108.13 45 PFAKE 09 48 40.0
EYMN LR LR
comp=Z,2μm,19.0s
SDV Santo Domingo 108.35 90 PFAKE 09 48 40.0
SDV LR LR
comp=Z,1μm,20.0s
SPB Sao Paulo 108.39 132 PFAKE 09 48 40.0
SPB LR LR
comp=Z,2μm,19.0s
RER Riviere de l'E 108.80 231 PFAKE 09 48 40.0
RER LR LR
comp=Z,4μm,20.0s
COWI Conover 108.89 47 PFAKE 09 48 40.0
COWI LR LR
comp=Z,3μm,19.0s
GTBY Guantanamo Bay 109.33 78 PFAKE 09 48 40.0
GTBY LR LR
comp=Z,1μm,19.0s
NHSC New Hope 110.39 63 PFAKE 09 48 40.0
NHSC LR LR
comp=Z,1μm,20.0s
ACSO Alum Creek Sta 110.90 55 PFAKE 09 48 40.0
ACSO LR LR
comp=Z,2μm,19.0s
AAM Ann Arbor 111.16 53 PFAKE 09 48 40.0
AAM LR LR
comp=Z,2μm,19.0s
BLA Blacksburg 111.70 59 PFAKE 09 48 40.0
BLA LR LR
comp=Z,2μm,19.0s
SDDR Presa de Saban 112.21 80 PFAKE 09 48 40.0
SDDR LR LR
comp=Z,2μm,21.0s
CNNC Cliffs of the 112.92 61 PFAKE 09 48 50.0
CNNC LR LR
comp=Z,1μm,19.0s
WMQ Urumqi 113.32 308 *e*PKP **PKiKP 09 48 34.1 +0.2**
WMQ PP **PP 09 49 30.5 +5.3**
WMQ SKS **SKSdf 09 55 36.3 -7.4**
WMQ SKKS **SKKSac 09 56 23.0 -1.4**
WMQ SS **SS 10 05 06.8 -2.4**
WMQ AMB AMB
comp=Z,200nm,5.2s
WMQ LR LR
comp=Z,1μm,14.8s
WMQ LR LR
comp=Z,1μm,15.4s
WMQ LR LR
comp=Z,2μm,18.6s
GRTK Grand Turk 113.37 78 PFAKE 09 48 50.0
GRTK LR LR
comp=Z,1μm,19.0s
CBN Corbin Frederi 114.31 59 PFAKE 09 48 50.0 +14
CBN LR LR
comp=Z,2μm,19.0s
ABPO Ambohimpanom 115.95 227 PFAKE 09 48 50.0 +10
ABPO LR LR
comp=Z,1μm,19.0s
SJG San Juan 116.30 83 PFAKE 09 48 50.0 +10
SJG LR LR
comp=Z,1μm,20.0s
SUR Sutherland 116.51 197 PFAKE 09 48 50.0 +9.2
SUR LR LR
comp=Z,5μm,20.0s
BINY Binghamton 116.53 55 PFAKE 09 48 50.0 +10
BINY LR LR
comp=Z,2μm,20.0s
GRGR Grenville 117.68 91 PFAKE 09 49 00.0 +17
GRGR LR LR
comp=Z,1μm,19.0s
MK31 Makanchi Array 117.81 310 *c i*PKIKP **PKPdf 09 48 40.9 -1.5**
MK31 pmax pmax
comp=Z,6.0nm,0.7s
MKAR Makanchi Array 117.81 310 PKP **PKPdf 09 48 40.9 -1.5**
comp=Z,9.7nm,1.0s,baz=83,slow=2.2,SNR=24
MKAR PKKPbc **PKKPab 09 59 09.2 +4.2**
comp=Z,0.3nm,0.4s,baz=302,slow=2.7,SNR=4.6
ZALV Zalesovo Beam 117.84 319 PKP **PKPdf 09 48 40.9 -1.3**
comp=Z,4.6nm,0.8s,baz=108,slow=1.1,SNR=12

LONY Lake Ozonia 118.15 52 PFAKE 09 49 00.0 +17
LONY LR LR
comp=Z,1μm,20.0s
BOSA Boshof 118.77 202 PKP **PKPdf 09 48 46.0 +0.9**
comp=Z,13nm,1.1s,baz=94,slow=3.2,SNR=5.9
BOSA Boshof 118.77 202 PKIKP **PKPdf 09 48 46.0 +0.9**
BOSA pmax pmax
comp=Z,12nm,1.0s
NVS Novosibirsk 118.92 319 *e*PKIKP **PKPdf 09 48 44.2 0.0**
FDF Fort de France 119.25 89 PFAKE 09 49 00.0 +14
FDF LR LR
comp=Z,976nm,19.0s
ANWB Willy Bob 119.92 85 PFAKE 09 49 00.0 +13
ANWB LR LR
comp=Z,1μm,19.0s
BBGH Gun Hill 119.96 91 PFAKE 09 49 00.0 +13
BBGH LR LR
comp=Z,2μm,20.0s
KSH Kashi 120.54 301 *e*PKP **PKPdf 09 48 47.7 -0.3**
KSH *e*PP **PP 09 50 22.3 +6.5**
KSH PKS **PKSdf 09 52 23.4 -1.4**
KSH SKS **SKSdf 09 55 54.3 -3.5**
KSH SKKS **SKKSac 09 57 10.5 -2.4**
KSH AMB AMB
comp=Z,330nm,5.6s
KSH LR LR
comp=Z,770nm,16.9s
KSH LR LR
comp=Z,1μm,17.1s
KSH LR LR
comp=Z,980nm,22.6s
KURK Kurchatov 120.98 314 PKIKP **PKPdf 09 48 47.2 -1.1**
KURK pmax pmax
comp=Z,10.0nm,0.8s
KURK Kurchatov 120.98 314 PKP **PKPdf 09 48 47.2 -1.1**
KURK LR LR
comp=Z,3μm,19.0s
KURBB Kurchatov Arra 121.02 314 PKP **PKPdf 09 48 47.2 -1.2**
comp=Z,10nm,0.8s,baz=100,slow=1.9,SNR=38
TKM2 Tokmak 2 121.58 305 *e*PKIKP **PKPdf 09 48 49.3 -0.7**
TKM2 MLR MLR
comp=Z,1μm,19.0s
TKM2 Tokmak 2 121.58 305 *e*PKPdf **PKPdf 09 48 49.3 -0.7**
TKM2 LR LR
comp=Z,1μm,19.0s
PKME Peaks-Kenny Pk 121.96 53 PFAKE 09 49 00.0 +10
PKME LR LR
comp=Z,2μm,19.0s
AAK Ala-Archa 122.32 304 PKP **PKPdf 09 48 51.1 -0.3**
comp=Z,3.0nm,0.4s,baz=122,slow=1.0,SNR=5.5
AAK Ala-Archa 122.32 304 PKP **PKPdf 09 48 51.1 -0.3**
AAK LR LR
comp=Z,1μm,20.0s
BBSR BB Station 122.47 68 PFAKE 09 49 00.0 +8.2
BBSR LR LR
comp=Z,1μm,19.0s
EKS2 Erkin-Say 122.84 304 *e*PKIKP **PKPdf 09 48 51.3 -1.1**
EKS2 MLR MLR
comp=Z,2μm,20.0s
EKS2 Erkin-Say 122.84 304 *e*PKPdf **PKPdf 09 48 51.3 -1.1**
EKS2 LR LR
comp=Z,2μm,20.0s
SCHQ Schefferville 124.65 41 PKP **PKPdf 09 48 55.6 +0.4**
comp=Z,3.8nm,0.8s,baz=45,slow=9.6,SNR=3.8
KK31 Karatay Array 125.28 304 *c i*PKIKP **PKPdf 09 48 56.1 -0.8**
KK31 pmax pmax
comp=Z,17nm,0.8s
KKAR Karatay Array 125.28 304 *e*PKIKP **PKPdf 09 48 56.1 -0.8**
KKAR Karatay Array 125.28 304 *e*PKPdf **PKPdf 09 48 56.1 -0.8**
BVA0 Borovoye Array 126.28 316 PKIKP **PKPdf 09 48 57.2 -1.2**
BVA0 pmax pmax
comp=Z,35nm,1.4s
BVAR Borovoye Array 126.28 316 PKP **PKPdf 09 48 57.6 -0.9**
comp=Z,12nm,0.8s,baz=102,slow=2.1,SNR=24
BRVK Borovoye 126.34 316 *c i*PKIKP **PKPdf 09 48 57.4 -1.1**
BRVK pmax pmax
comp=Z,57nm,1.0s
BRVK Borovoye 126.34 316 *e*PKPdf **PKPdf 09 48 58.0 -0.5**
BRVK LR LR
comp=Z,1μm,21.0s
RCBR Riachuelo 128.75 126 PFAKE 09 49 20.0 +16
RCBR LR LR
comp=Z,2μm,20.0s
LSZ Lusaka 129.63 212 *e*PKIKP **PKPdf 09 49 07.2 +1.0**
LSZ MLR MLR
comp=Z,3μm,19.0s
LSZ Lusaka 129.63 212 *e*PKPdf **PKPdf 09 49 07.2 +1.0**
LSZ LR LR
comp=Z,3μm,19.0s
TSUM Tsumeb 129.92 198 PFAKE 09 49 20.0 +13
TSUM LR LR
comp=Z,5μm,19.0s
KBS Kingsbay 130.04 358 PFAKE 09 49 20.0 +15
KBS LR LR
comp=Z,2μm,19.0s
SFJD Kangerlussuaq 130.48 25 PFAKE 09 49 20.0 +14
SFJD LR LR
comp=Z,2μm,19.0s
SUMG Summit 131.27 15 *i* P **PKPdf 09 49 07.9 0.0**
comp=Z,11nm,1.1s
SUMG Summit 131.27 15 *i* PKIKP **PKPdf 09 49 07.9 0.0**
SUMG pmax pmax
comp=Z,11nm,1.1s
SUMG Summit 131.27 15 *e*PKPdf **PKPdf 09 49 08.1 +0.2**
SVE Sverdlovsk 131.63 322 *e*PKIKP **PKPdf 09 49 05.7 -2.8**
ARU Arti 132.83 321 *i* PKIKP **PKPdf 09 49 11.5 +0.7**
ARU 09 51 34.5
ARU Arti 132.83 321 *e*PKPdf **PKPdf 09 49 11.3 +0.5**
ARU LR LR
comp=Z,2μm,19.0s
ABKAR Akbulak array 132.92 312 *e*PKPdf **PKPdf 09 49 10.4 -0.7**
HATD Hatta, Dubai 132.97 278 PKiKP **PKiKP 09 49 13.1 -0.1**
ASHO Ashiyiah 133.00 278 PKPdf **PKPdf 09 49 11.7 -0.5**
SOKR Solikamsk 133.00 326 *i* PKIKP **PKPdf 09 49 10.0 -0.9**
SOKR pmax pmax
comp=Z,19nm,0.8s
GEYT Alibeck 134.00 296 PKP **PKPdf 09 49 13.2 -0.4**
comp=Z,12nm,0.8s,baz=245,slow=3.1,SNR=8.1
AKTO Aktyubinsk 134.06 313 PKP **PKPdf 09 49 12.9 -0.4**
comp=Z,7.7nm,0.9s,baz=177,slow=0.7,SNR=2.9
SHEL Horse Pasture 134.28 168 PFAKE 09 49 30.0 +15
SHEL LR LR
comp=Z,1μm,19.0s
KMBO Kilima Mbogo 135.63 233 PKP **PKPdf 09 49 19.6 +1.8**
comp=Z,4.2nm,0.8s,baz=1.3,slow=1.8,SNR=6.0
KMBO Kilima Mbogo 135.63 233 PKP **PKPdf 09 49 19.6 +1.8**
KMBO LR LR
comp=Z,2μm,19.0s
SCO Scoresbysund 136.31 12 *i* P **PKPdf 09 49 17.4 +0.5**
comp=Z,4.1nm,0.9s
SCO Scoresbysund 136.31 12 *i* PKIKP **PKPdf 09 49 17.4 +0.5**
SCO pmax pmax
comp=Z,4.0nm,0.9s
LVZ Lovozero 137.02 343 PFAKE 09 49 30.0 +12
LVZ LR LR
comp=Z,2μm,20.0s
ARCES ARCESS Array B 137.64 349 PKhKP PKPpre 09 49 14.3
comp=Z,2.3nm,0.7s,baz=101,slow=1.9,SNR=7.5
ARCES PKP **PKiKP 09 49 20.8 -0.6**
comp=Z,4.6nm,0.8s,baz=188,slow=0.9,SNR=7.4
H10S3 ASCENSION HYDR 138.33 153 T T 12 25 23.9
baz=204,slow=75,SNR=25
H10S2 ASCENSION HYDR 138.33 153 T T 12 24 57.1
baz=204,slow=75,SNR=33
H10S1 ASCENSION HYDR 138.35 153 T T 12 25 23.1
baz=204,slow=75,SNR=23
ASCN Ascension 139.38 153 PFAKE 09 49 40.0 +16
ASCN LR LR
comp=Z,2μm,19.0s
H10N3 ASCENSION HYDR 139.41 152 T T 12 26 19.3
baz=203,slow=74,SNR=27
H10N1 ASCENSION HYDR 139.41 152 T T 12 26 37.7
baz=203,slow=74,SNR=29
H10N2 ASCENSION HYDR 139.42 152 T T 12 26 40.5
baz=203,slow=74,SNR=23
KLMR Klimovskoe 140.19 333 *e*PKHKP PKPpre 09 49 14.2
KLMR pmax pmax
comp=Z,18nm,1.0s
BORG Borgarnes 141.23 17 PFAKE 09 49 40.0 +14
BORG LR LR
comp=Z,2μm,19.0s
DGRG David-gareji 143.83 301 P PKPbc 09 49 29.7 +0.5
DGRG David-gareji 143.83 301 *e*PKIKP PKPbc 09 49 29.7 +0.5
VRH Novokhopyorsk 143.88 318 *e*PKHKP PKPpre 09 49 26.6
VRH pmax pmax

comp=Z,30nm,0.5s
MOS Moscow 143.93 327 *e*PKHKP PKPpre 09 49 26.8
MOS pmax pmax
comp=Z,71nm,1.3s
FINES FINESS Array B 144.37 341 PKP **PKPab 09 49 28.4 -1.4**
comp=Z,30nm,0.7s,baz=58,slow=4.7,SNR=52
GNI Garni 144.43 299 *i* PKPdf PKPbc 09 49 31.6 +0.3
SNR=20
GNI Garni 144.43 299 *e*PKIKP PKPbc 09 49 32.0 +0.7
GNI MLR MLR
comp=Z,2μm,19.0s
GNI Garni 144.43 299 *e*PKPdf **PKPdf 09 49 32.0 -0.7**
GNI LR LR
comp=Z,2μm,19.0s
ZEI Tsey 144.74 304 *i* PKIKP **PKPab 09 49 30.3 -1.8**
ZEI pmax pmax
comp=Z,281nm,1.1s
OBN Obninsk 144.77 327 *e*PKPdf **PKPab 09 49 30.8 -0.7**
OBN LR LR
comp=Z,2μm,20.0s
NCK Nalchik 144.84 305 *i* PKIKP **PKPdf 09 49 33.0 -0.1**
ONI Oni 145.10 304 P **PKPdf 09 49 33.9 +0.2**
ONI Oni 145.10 304 *e*PKIKP **PKPdf 09 49 33.8 +0.2**
BGD Bogdanovka 145.18 301 P **PKPdf 09 49 34.3 +0.2**
AKH Akhalkalaki 145.24 301 ⇓*i*P **PKPdf 09 49 35.4 +1.3**
AKH Akhalkalaki 145.24 301 P **PKPdf 09 49 34.4 +0.2**
AKH Akhalkalaki 145.24 301 *e*PKIKP **PKPdf 09 49 34.3 +0.2**
EAK Akyaka 145.25 300 *i* P **PKPdf 09 49 35.3 +1.2**
DYDN Diyadin 145.29 298 *i* P **PKPdf 09 49 34.8 +0.5**
KBZ Khabaz 145.30 306 PKPbc **PKPbc 09 49 33.6 0.0**
comp=Z,17nm,0.8s,baz=69,slow=1.1,SNR=35
VSR Storozhevoye 145.34 320 *e*PKP2 **PKPbc 09 49 32.3 -1.3**
VSR pmax pmax
comp=Z,140nm,0.7s
HAKT HAKKARI 145.39 295 *i* P **PKPbc 09 49 33.7 -0.8**
KIV Kislovodsk 145.40 306 *i* PKPdf **PKPbc 09 49 33.9 -0.2**
SNR=25
KIV Kislovodsk 145.40 306 *e*PKP2 **PKPbc 09 49 32.4 -1.8**
KIV *i* 09 49 35.0
KIV *e* 09 52 50.7
KIV *e*SS SS 10 11 40.5 -4.1
KIV pmax pmax
comp=Z,73nm,1.1s
KIV Kislovodsk 145.40 306 *e*PKPdf **PKPab 09 49 34.4 +0.1**
KIV LR LR
comp=Z,3μm,19.0s
DIGO Kars 145.45 300 *i* P **PKPab 09 49 35.7 +0.8**
NEY Neytrino 145.52 305 *de*PKIKP **PKPab 09 49 35.5 +0.6**
TVAN Van 145.58 296 *i* P **PKPab 09 49 36.2 +0.8**
EPOS Posof 145.80 302 *i* P **PKPab 09 49 35.9 -0.1**
GEVA Gevas 145.87 296 *i* P **PKPbc 09 49 35.7 -0.2**
TUTA Tutak 145.98 298 *i* P **PKPdf 09 49 35.9 +0.4**
CHVG Ch'k'valeri 146.07 304 P **PKPab 09 49 36.8 0.0**
SIRN S¯¯rnak 146.42 295 *i* P **PKPbc 09 49 37.0 -0.5**
ARTV Artvin 146.44 301 *i* P **PKPdf 09 49 36.9 +0.6**
DAGI Agillar 146.47 301 *i* P **PKPdf 09 49 35.8 -0.3**
TATV Tatvan 146.48 296 *i* P **PKPab 09 49 39.3 +0.6**
VSU Vasula 146.54 338 *c i* PKP2 **PKPdf 09 49 36.2 +0.7**
DBOC Borcka 146.61 302 *i* P **PKPbc 09 49 37.6 -0.2**
ERZM Erzurum 147.04 299 *i* P **PKPab 09 49 41.2 +0.2**
BTMN Batman 147.30 295 *i* P **PKPab 09 49 42.0 +0.2**
BNGL BINGOL 147.31 297 *i* P **PKPab 09 49 41.6 -0.4**
SOC Sochi 147.58 306 *c i* PKP2 **PKPbc 09 49 41.0 +0.6**
SOC 09 53 06.1
SOC *e*PPP PPP 09 56 23.8
SOC *e*SS SS 10 12 54.7 +46
SOC pmax pmax
comp=Z,62nm,0.8s
BGOL Bingol 147.68 298 *i* P **PKPab 09 49 42.7 -0.6**
KOPT Kop Dagi 147.69 300 *i* P **PKPab 09 49 42.8 -0.8**
NB2 NORSAR Subarra1 147.72 353 PKP **PKPdf 09 49 38.9 +1.4**
comp=Z,110nm,1.7s,baz=16,slow=3.2
NB2 NORSAR Subarra1 147.72 353 PKP **PKPdf 09 49 38.9 +1.4**
baz=16,slow=3.2
NOA NORSAR Array B 147.72 353 PKPbc **PKPdf 09 49 38.8 +1.3**
comp=Z,19nm,0.9s,baz=14,slow=4.4,SNR=22
MARD Mardin 147.73 294 *i* P **PKPdf 09 49 39.6 +1.2**
DIYA Diyarbakir 148.21 296 *i* P **PKPbc 09 49 43.7 +1.3**
EUZM Uzumlu 148.34 299 *i* P **PKPbc 09 49 43.9 +1.1**
TNCL Tunceli-Merkez 148.53 298 *i* P **PKPbc 09 49 44.3 +1.0**
KELT Kelkit 148.61 300 *i* P **PKPdf 09 49 38.5 -1.3**
IZAR Zarasai 148.79 335 *e*P **PKPbc 09 49 43.1 -0.1**
IZAR IAmb IAmb 09 49 48.6
comp=Z,56nm,1.0s
ANN Anapa 148.82 309 *i* PKP2 **PKPbc 09 49 43.0 -0.6**
ANN *e* 09 53 13.0
ANN *e*SS SS 10 12 13.3 -10
ANN pmax pmax
comp=Z,169nm,1.5s
IDID Didziasalis 148.93 334 *e*P **PKPbc 09 49 43.4 -0.1**
IDID IAmb IAmb 09 49 47.9
comp=Z,39nm,0.9s
ISAL Salakas 148.97 335 *e*P **PKPbc 09 49 43.6 0.0**
ISAL IAmb IAmb 09 49 48.1
comp=Z,30nm,1.0s
ELZG Elazig 149.04 297 *i* P **PKPbc 09 49 43.5 -1.2**
MNK Minsk 149.06 332 ⇓*e*PKP2 **PKPbc 09 49 43.0 -0.9**
REFA Refahiye_ERZ¯ 149.09 299 *i* P **PKPbc 09 49 45.0 +0.2**
GRSN GIRESUNGRSN 149.21 302 *i* P **PKPbc 09 49 43.6 -1.2**
NACGM Naroch 149.22 333 *e*P **PKPdf 09 49 39.0 -1.0**
NACGM PM 09 49 43.0
comp=Z,0.2nm,0.9s
NACGM LRM MLR 11 02 22.0
comp=Z,2.5nm,18.0s
KONO Kongsberg 149.25 354 *e*PKIKP **PKPdf 09 49 41.8 +1.9**
KONO MLR MLR
comp=Z,1μm,20.0s
KONO Kongsberg 149.25 354 *e*PKPdf **PKPdf 09 49 41.8 +1.9**
KONO LR LR
comp=Z,1μm,20.0s
KEMA Kemaliye 149.32 299 *i* P **PKPbc 09 49 43.8 -1.4**
SUSE Susehri 149.39 300 *i* P **PKPdf 09 49 38.6 -2.4**
ORDU Ordu-Boztepe 149.50 302 *i* P **PKPbc 09 49 45.4 -0.1**
ATAB Bozova 149.69 295 *i* P **PKPbc 09 49 46.8 +0.7**
CUKAN kangal_SIVAS 150.10 299 *i* P **PKPbc 09 49 48.3 +1.1**
SCER sogukcermik 150.27 300 *i* P **PKPbc 09 49 47.7 +0.1**
ERBA Erbaa 150.39 302 *i* P **PKPbc 09 49 45.8 -1.9**
CUALT Altinyayla-SIV 150.65 299 *i* P **PKPbc 09 49 48.0 -0.5**
SAMS Samsun-Alacam 150.65 303 *i* P **PKPbc 09 49 49.9 +1.7**
HCB Kahramanmara¯ 150.80 295 *i* P **PKPbc 09 49 48.8 0.0**
AKASG Malin Array Be 150.96 325 PKP **PKPdf 09 49 39.8 -3.1**
comp=Z,0.3nm,0.4s,baz=58,slow=1.5,SNR=4.3
AKASG PKPbc **PKPbc 09 49 47.6 -1.0**
comp=Z,24nm,0.8s,baz=46,slow=2.9,SNR=20
KIEV Kiev 150.97 325 *e*PKIKP **PKPbc 09 49 47.5 -1.2**
KIEV MLR MLR
comp=Z,2μm,20.0s
KIEV Kiev 150.97 325 *e*PKPbc **PKPbc 09 49 47.5 -1.2**
KIEV LR LR
comp=Z,2μm,20.0s
SIM Simferopol' 150.99 311 *i* PKIKP **PKPbc 09 49 49.7 +0.8**
SIM pmax pmax
comp=Z,85nm,0.9s
KAMA Osmaniye 151.01 295 *i* P **PKPab 09 49 56.7 -0.3**
CUSAR Sarkisla-SIVAS 151.02 299 *i* P **PKPbc 09 49 50.2 +0.9**
ANDN Andirin 151.22 296 *i* P **PKPbc 09 49 49.1 -0.7**
SUW Suwalki 151.26 335 *e*PKP **PKPbc 09 49 48.3 -0.9**
SUW Suwalki 151.26 335 *e*PKIKP **PKPbc 09 49 48.3 -0.9**
SACV Santiago Islan 151.48 114 PFAKE 09 50 00.0 +0.7
SACV LR LR
comp=Z,1μm,19.0s
YAYL Yayladag 151.56 292 *i* P **PKPbc 09 49 47.7 -3.1**
BOYT Boyabat 151.57 304 *i* P **PKPbc 09 49 50.8 +0.3**
COAL Corum-Alaca 151.80 301 *i* P **PKPbc 09 49 48.0 -3.1**
CTAK Corum_Osmancik 151.85 302 *i* P **PKPbc 09 49 50.4 -0.9**
YURE YUREGİR 151.87 294 *i* P **PKPbc 09 49 51.4 +0.1**
AKO Adana 151.94 296 *i* P **PKPab 09 50 01.4 +0.6**
CDAG Cicekdag 152.40 300 *i* P **PKPdf 09 49 48.3 +2.7**
MUD Monsted U'grnd 152.44 353 *i* P **PKPbc 09 49 53.7 +1.9**
comp=Z,33nm,1.2s
MUD Monsted U'grnd 152.44 353 *i* PKIKP **PKPbc 09 49 53.7 +1.9**
MUD pmax pmax
comp=Z,33nm,1.2s
DED Mersin 152.52 295 *i* P **PKPbc 09 49 51.2 -1.6**
ILGA Ilgaz 152.53 304 *i* P **PKPdf 09 49 48.6 +2.7**
COP Copenhagen 152.72 349 *i* P **PKPbc 09 49 53.7 +1.2**
comp=Z,13nm,0.7s
COP Copenhagen 152.72 349 *i* PKIKP **PKPbc 09 49 53.7 +1.2**
COP pmax pmax
comp=Z,13nm,0.7s
BSD Bornholm Skovb 152.77 345 *i* P **PKPbc 09 49 53.6 +1.0**
comp=Z,16nm,0.9s
BSD Bornholm Skovb 152.77 345 *i* PKIKP **PKPbc 09 49 53.6 +1.0**
BSD pmax pmax
comp=Z,16nm,0.9s
ELDT Eldivan 152.90 303 *i* P **PKPbc 09 49 54.5 +0.8**
BRTR Keskin Array B 152.93 301 PKP **PKPdf 09 49 48.1 +1.7**
comp=Z,8.9nm,0.9s,baz=139,slow=2.8,SNR=14
BRTR PKPbc **PKPbc 09 49 53.5 -0.2**
comp=Z,12nm,0.9s,baz=124,slow=2.6,SNR=27
BRTR PKPab **PKPab 09 50 05.3 +0.3**
comp=Z,25nm,0.9s,baz=91,slow=3.0,SNR=15
BRTR PKKP 09 58 24.7
comp=Z,2.1nm,1.0s,baz=193,slow=5.1,SNR=3.8
SORM Soroca 152.95 321 ⇓*i*P **PKPbc 09 49 52.8 -0.4**
SORM Soroca 152.95 321 ⇓PKIKP **PKPbc 09 49 52.8 -0.4**
KERG Konya-Eregli 152.99 296 *i* P **PKPdf 09 49 48.4 +1.8**
AKSY AKSARAY - Alti 153.06 299 *i* P **PKPbc 09 49 57.6 +3.6**
LLD Lille Linde 153.10 349 *i* P **PKPbc 09 49 55.1 +1.8**
comp=Z,69nm,1.0s
KIZK Mersin 153.10 294 *i* P **PKPbc 09 49 51.0 -3.0**
KIS Kishinev 153.32 319 *e*PKP **PKPbc 09 49 53.0 -1.1**
KIS Kishinev 153.32 319 *e*PKIKP **PKPbc 09 49 53.0 -1.1**
KIS *e* 09 53 40.0
ESK Eskdalemuir 153.50 8 PFAKE 09 50 00.0 +5.8
ESK LR LR
comp=Z,2μm,19.0s
ANTO Ankara 153.52 302 PFAKE 09 50 00.0 +5.1
ANTO LR LR
comp=Z,2μm,19.0s
KKUL Konya-Kulu 153.60 300 *i* P **PKPbc 09 49 55.6 +0.5**
BCAM Yenicaga 153.80 304 *i* P **PKPbc 09 49 55.3 -0.2**
CSS Mathiatis 153.90 290 PFAKE 09 50 00.0 +4.2
CSS LR LR
comp=Z,735nm,20.0s
ERMK Ermenek 154.06 294 *i* P **PKPbc 09 49 57.8 +1.5**
TLCR 154.26 315 ⇑*i*P **PKPbc 09 50 00.1 +3.9**
KDHN Kadinhani 154.35 299 *i* P **PKPbc 09 49 59.0 +2.3**
GAZI Gazipasa 154.59 294 *i* P **PKPbc 09 50 00.9 +3.7**
CMLA Cha da Macela 154.63 63 PFAKE 09 50 00.0 +2.7
CMLA LR LR
comp=Z,2μm,19.0s
BTAS Taskesti 154.65 304 *i* P **PKPab 09 50 06.8 -5.3**
SAHE Sakarya_HENDEK 154.66 305 *i* P **PKPbc 09 50 00.3 +3.1**
CFR Carcaliu 154.68 316 ⇓*i*P **PKPbc 09 49 55.3 -1.8**
CFR Carcaliu 154.68 316 ⇓PKIKP **PKPbc 09 49 55.3 -1.8**
KWP Kalwaria Pacla 154.78 329 *e*PKP **PKPdf 09 49 49.4 +0.8**
KWP Kalwaria Pacla 154.78 329 *e*PKIKP **PKPdf 09 49 49.4 +0.8**
TESR Tescani 154.83 320 ⇓*i*P **PKPab 09 50 12.5 -0.1**
TIRR Tirgusor 154.87 314 ⇑*i*P **PKPbc 09 49 58.9 +1.4**
BURAR Bucovina Array 154.94 323 ⇓*i*P **PKPbc 09 49 58.9 +1.2**
TLB Topalu 155.04 315 ⇑*i*P **PKPdf 09 49 56.3 +7.3**
TLB Topalu 155.04 315 ⇑PKIKP **PKPdf 09 49 56.4 +7.4**
HARR Harsova 155.05 315 ⇑*i*P PKPdf 09 50 00.6 +12
KAND Kocaeli-Kandir 155.06 306 *i* P **PKPab 09 50 12.9 -0.8**
VRI Vrincioaia 155.15 318 ⇓*i*P PKPdf 09 49 59.5 +10
BOLV Bolvadin 155.19 300 *i* P PKPab 09 50 04.1 -11
PLOR Plostina 155.21 318 ⇑*i*P **PKPab 09 50 14.7 +0.4**
PLOR Plostina 155.21 318 ⇑PKP2 **PKPab 09 50 14.7 +0.4**
OJC Ojcow 155.54 334 *e*PKP **PKPdf 09 49 51.0 +1.4**
OJC Ojcow 155.54 334 *e*PKIKP **PKPdf 09 49 51.0 +1.4**
STHS Stebnicka Huta 155.58 331 *e*PKP **PKPab 09 50 16.0 +0.3**
MLR Muntele Rosu 155.82 318 ⇓*i*P **PKPab 09 50 11.0 -6.0**
MLR Muntele Rosu 155.82 318 ⇓PKP2 **PKPab 09 50 11.0 -6.0**
LIC Lamto 155.85 160 *e*P **PKPdf 09 49 53.8 +2.7**
comp=Z,95nm,1.8s
DOPR Dopca 155.86 320 ⇑*i*P PKPdf 09 50 02.7 +13
CRVS Cervenica-Dubn 155.87 330 *e*PKP2 **PKPab 09 50 16.6 -0.4**
CRVS Cervenica-Dubn 155.87 330 *e*PKP **PKPab 09 50 16.5 -0.4**
CRVS *e* 09 50 30.3
NIE Niedzica 155.98 332 *e*PKP **PKPdf 09 49 52.4 +2.2**
NIE Niedzica 155.98 332 *e*PKIKP **PKPdf 09 49 52.4 +2.2**
KORT Korkueli 156.03 296 *i* P **PKPdf 09 49 58.5 +7.7**
IGD Bursa 156.05 304 *i* P **PKPdf 09 49 57.1 +6.6**
KIC Kosan Boka 156.07 160 *e*P **PKPdf 09 49 52.1 +0.7**
comp=Z,63nm,1.0s
PRD Provadia 156.11 312 *i* P **PKPab 09 50 18.9 +0.7**
GDZ Gediz 156.20 301 *i* P **PKPab 09 50 16.1 -2.9**
KSP Ksiaz 156.25 339 *e*PKP **PKPdf 09 49 51.4 +0.8**
KSP Ksiaz 156.25 339 *e*PKIKP **PKPdf 09 49 51.3 +0.8**
TIC Toumodi 156.25 159 *e*P **PKPdf 09 49 50.4 -1.2**
ELBA Catalca 156.28 307 *i* P PKPab 09 50 06.0 -13
DBIC Dimbokro 156.33 160 PKP **PKPdf 09 49 52.0 +0.3**
comp=Z,5.5nm,0.9s,baz=214,slow=7.3,SNR=2.6
VOIR 156.36 319 ⇓*i*P **PKPdf 09 49 58.5 +7.6**
VOIR 156.36 319 ⇓PKIKP **PKPdf 09 49 58.5 +7.6**
OKC Ostrava-Krasne 156.48 335 *e*PKPAB **PKPab 09 50 19.3 -0.2**
OKC *ep*PKP pPKP 09 50 29.2
OKC Ostrava-Krasne 156.48 335 *e*PKP2 **PKPab 09 50 19.3 -0.2**
LANS Liptovska Anna 156.53 333 *e*PKP2 **PKPab 09 50 20.2 +0.4**
LANS Liptovska Anna 156.53 333 *e*PKP **PKPab 09 50 20.1 +0.3**
GOLH Golhisar 156.60 297 *i* P **PKPab 09 50 14.7 -6.0**
KECS Kecovo 156.61 330 *e*PKP2 **PKPab 09 50 19.0 -1.1**
KECS Kecovo 156.61 330 *e*PKP **PKPab 09 50 19.0 -1.1**
KECS *e* 09 50 31.1
UPC Upice 156.63 339 *e*PKPAB **PKPab 09 50 19.9 -0.2**
UPC Upice 156.63 339 *e*PKP2 **PKPab 09 50 19.9 -0.2**
ARR Arges 156.64 320 ⇑*i*P **PKPdf 09 49 56.9 +5.6**
DPC Dobruska-Polom 156.67 338 *e*PKPDF **PKPdf 09 49 53.3 +2.2**
DPC *e*PKPAB **PKPab 09 50 19.9 -0.5**
DPC *ep*PKP pPKP 09 50 30.8
DPC Dobruska-Polom 156.67 338 *e*PKIKP **PKPdf 09 49 53.3 +2.2**
CLL Collm 156.73 344 *e*PKPdf **PKPdf 09 49 54.0 +2.9**
CLL *i* pPKPdf **pPKPdf 09 50 04.3 +2.7**
CLL *e*PKPdiff PKPab 09 50 09.0 -12
CLL ⇑*i*PKPab PKPab 09 50 20.1 -0.4
comp=Z,30nm,1.3s
CLL *i* pPKPab **pPKPab 09 50 29.2 -1.6**
CLL *i* 09 50 35.8
CLL *e* 09 53 46.0
CLL *e*PP **PP 09 53 56.0 -2.3**
CLL *e* 09 54 04.0
CLL *e*PSKS 10 04 18.0
CLL *e*SS SS 10 13 42.0 -5.7
CLL LmH 11 04 00.0
comp=N,800nm,21.9s
CLL LmH 11 04 00.0
comp=E,1μm,18.0s
CLL LmV 11 11 00.0
comp=Z,2μm,18.3s
CLL Collm 156.73 344 ⇑*e*PKIKP **PKPdf 09 49 54.0 +2.9**
CLL *e* 09 50 09.0
CLL pmax pmax
comp=Z,30nm,1.3s
CLL MLR MLR
comp=Z,2μm,18.3s
MORC Moravsky Berou 156.75 336 ⇑*i*P **PKPdf 09 49 52.6 +1.4**
MORC Moravsky Berou 156.75 336 ⇑PKIKP **PKPdf 09 49 52.6 +1.4**
KRLC Kraliky 156.75 337 *e*PKPAB **PKPab 09 50 20.5 -0.2**
KRLC *ep*PKP pPKP 09 50 30.8
KRLC Kraliky 156.75 337 *e*PKP2 **PKPab 09 50 20.5 -0.2**
AKAS Kas 156.76 294 *i* P **PKPdf 09 49 48.1 -3.7**
DRGR 156.78 324 ⇑*i*P PKPdf 09 50 02.2 +11
DNZL Cakiroluk 156.90 298 *i* P **PKPdf 09 49 49.8 -2.2**
BRG Berggiesshubel 156.90 343 *e*PKP PKPdf 09 50 02.9 +12
comp=Z,4.9nm,1.0s
BRG *e* 09 50 20.3
comp=Z,27nm,1.3s
BRG SS SS 10 13 55.0 +5.4
HUMR Humele 156.93 317 ⇓*i*P **PKPab 09 50 22.5 +0.9**
KULA Kula-Manisa 156.98 300 P **PKPab 09 50 22.6 +0.4**
JMB Yambol 156.98 311 *i* P **PKPab 09 50 23.1 +1.1**
SZH Strazhica 157.01 314 *i* P **PKPab 09 50 26.8 +4.7**
PVCC Panska Ves 157.04 341 *e*PKPAB **PKPab 09 50 21.5 -0.4**
PVCC Panska Ves 157.04 341 *e*PKP2 **PKPab 09 50 21.5 -0.4**
EDRB Edirne 157.15 310 P **PKPab 09 50 22.6 -0.1**
VYHS Vyhne 157.30 332 *e*PKP2 **PKPab 09 50 22.7 -0.4**
VYHS Vyhne 157.30 332 *e*PKP **PKPab 09 50 22.7 -0.4**
VYHS *e* 09 50 37.7
PSZ Piszkesteto 157.30 330 ⇑*i*P **PKPab 09 50 23.5 +0.3**
PSZ Piszkesteto 157.30 330 ⇑PKP2 **PKPab 09 50 23.5 +0.3**
PSZ Piszkesteto 157.30 330 PFAKE 09 50 00.0 +8.0
PSZ LR LR
comp=Z,3μm,20.0s
SART Tekirdag 157.33 307 *i* P **PKPab 09 50 22.9 -0.7**
VRAC Vranov 157.47 337 ⇓*i*P **PKPab 09 50 24.0 +0.2**
VRAC Vranov 157.47 337 ⇓PKP2 **PKPab 09 50 24.0 +0.2**
GOPC GO Pecny, Ondr 157.53 340 *e*PKPAB **PKPab 09 50 23.7 -0.3**
GOPC GO Pecny, Ondr 157.53 340 *e*PKP2 **PKPab 09 50 23.7 -0.3**
PRU Pruhonice 157.53 341 *e*PKPAB **PKPab 09 50 22.6 -1.4**
PRU *ep*PKP pPKP 09 50 35.3
PRU Pruhonice 157.53 341 *e*PKP2 **PKPab 09 50 22.6 -1.4**
GZR Gura Zlata 157.66 322 ⇑*i*P **PKPdf 09 49 53.8 +1.3**
GZR Gura Zlata 157.66 322 ⇑PKIKP **PKPdf 09 49 53.8 +1.3**
SMOL Smolenice 157.84 334 *e*PKP2 **PKPab 09 50 26.4 +1.0**
SMOL Smolenice 157.84 334 *e*PKP **PKPab 09 50 26.4 +1.0**
NKC Novy Kostel 157.86 344 *e*PKPAB **PKPab 09 50 25.2 -0.3**
NKC Novy Kostel 157.86 344 *e*PKP2 **PKPab 09 50 25.2 -0.3**
ALN Alexandroupoli 158.03 308 P **PKPab 09 50 26.0 -0.6**
BZS Buzias 158.13 324 ⇑*i*P **PKPdf 09 49 56.8 +3.8**
BZS Buzias 158.13 324 ⇑PKIKP **PKPdf 09 49 56.8 +3.8**
KDZ Kurdzhali 158.13 311 *i* P **PKPab 09 50 27.2 +0.2**
BDRM Kayabasi 158.29 297 *i* P pPKPdf 09 50 10.2 +6.1
MPEP Malo Peshtene 158.32 316 *i* P pPKPdf 09 50 16.1 +12
RZN Rozhen 158.57 311 *i* P **PKPab 09 50 29.5 +0.4**
KHC Kasperske Hory 158.58 341 *e*PKPDF **PKPdf 09 49 57.8 +4.3**
KHC *e*PKPAB **PKPab 09 50 29.0 +0.4**
KHC *ep*PKP pPKP 09 50 38.9
KHC Kasperske Hory 158.58 341 *e*PKIKP **PKPdf 09 49 57.8 +4.3**
KHC *e* 09 50 29.0
MDVR Moldovita 158.63 322 ⇑*i*P **PKPab 09 50 29.2 +0.1**
GERES GERESS Array B 158.80 341 PKP **PKPdf 09 49 54.5 +0.6**
comp=Z,0.2nm,0.3s,baz=222,slow=1.3,SNR=4.3
GERES PKPab **PKPab 09 50 28.2 -1.5**
comp=Z,2.8nm,0.8s,baz=31,slow=3.6,SNR=6.7
GERES GERESS Array B 158.80 341 PKIKP **PKPdf 09 49 54.5 +0.6**
GERES 09 50 28.2
GERES pmax pmax
comp=Z,1.0nm,0.6s
GERES pmax pmax
comp=Z,3.0nm,0.8s
CONA Conrad Observa 158.90 336 *i* PKPab **PKPab 09 50 30.7 +0.6**
comp=Z,30nm,1.3s
VTS Vitosha 159.07 315 P **PKPab 09 50 31.6 +0.4**
VTS Vitosha 159.07 315 ⇑*i*P **PKPab 09 50 32.5 +1.3**
VTS Vitosha 159.07 315 ⇑PKP2 **PKPab 09 50 32.5 +1.3**
VTS Vitosha 159.07 315 *i* P **PKPab 09 50 32.0 +0.8**
MMB Musomiste 159.27 312 *i* P **PKPab 09 50 32.3 +0.3**
WLF Walferdange 159.44 355 PFAKE 09 50 10.0 +16
WLF LR LR
comp=Z,3μm,19.0s
MOA Molln 159.51 338 *i* PKPab **PKPab 09 50 33.2 +0.5**
comp=Z,15nm,1.3s
KKB Krupnik 159.54 313 *i* P **PKPab 09 50 33.6 +0.5**
SANT Santorini 160.00 297 PFAKE 09 50 10.0 +14
SANT LR LR
comp=Z,1μm,21.0s
PAIG Paliouri 160.08 308 P **PKPab 09 50 35.1 -0.4**
VAY Valandovo 160.15 313 *i* PKP **PKPab 09 50 35.7 0.0**
LAST Lasithi 160.26 293 P **PKPab 09 50 36.5 -0.1**
SOKA Soboth 160.26 335 *i* PKPab **PKPab 09 50 36.0 -0.1**
comp=Z,18nm,1.3s
GRG Griva 160.45 312 P **PKPab 09 50 36.8 -0.3**
KBA Koelnbreinsper 160.49 339 *i* PKPab **PKPab 09 50 37.0 -0.2**
comp=Z,9.7nm,1.1s
BFO Black Forest 160.50 350 PFAKE 09 50 10.0 +14
BFO LR LR
comp=Z,2μm,19.0s
SKO Skopje 160.51 316 *i* PKP **PKPab 09 50 37.9 +0.6**
OBKA Obir 160.58 336 *i* PKPab **PKPab 09 50 36.5 -1.0**
comp=Z,9.9nm,0.8s
MYKA Terra Mystica 160.79 338 *i* PKPab **PKPab 09 50 36.5 -1.8**
comp=Z,16nm,0.9s
LIT Litokhoron 160.81 310 P **PKPab 09 50 37.8 -0.9**
RETA Reutte 160.83 344 *i* PKPab **PKPab 09 50 38.2 -0.3**
comp=Z,16nm,1.1s
LJU Ljubljana 160.99 335 *e*PKPdf **PKPdf 09 49 56.9 +0.6**
VISS Visnje 161.07 334 *e*PKPdf **PKPdf 09 49 56.8 +0.4**
VISS *e*PKPab **PKPab 09 50 36.9 -2.7**
FETA Feichten 161.27 344 *i* PKPab **PKPab 09 50 40.3 -0.3**
comp=Z,18nm,1.4s
OHR Ohrid 161.39 314 *i* PKP **PKPab 09 50 40.5 -0.8**
AGG Agios Georgios 161.42 307 P **PKPab 09 50 39.7 -1.7**
PDG Podgorica 161.51 320 ⇑*i*P **PKPab 09 50 41.1 -0.5**
TIR Tirane 161.83 316 ⇑*i*P **PKPab 09 50 42.4 -0.6**
TIR Tirane 161.83 316 ⇑PKP2 **PKPab 09 50 42.4 -0.6**
TIR Tirane 161.83 316 PFAKE 09 50 10.0 +13
TIR LR LR
comp=Z,3μm,21.0s
ANX Ano Chora 161.89 306 P **PKPab 09 50 42.8 -0.8**
KLV Kalavryta, Ach 161.96 304 P **PKPab 09 50 42.5 -1.4**
TUE Stuetta 162.10 346 *e*PKPdf **PKPdf 09 49 58.4 +0.7**
TUE LR LR
comp=Z,3μm,19.0s
DRO Drossia 162.31 304 P **PKPab 09 50 45.5 +0.1**
PDO Prodromos 162.41 307 P **PKPab 09 50 44.7 -1.0**
AXS Araxos 162.45 305 P **PKPab 09 50 45.9 0.0**
SSB Saint Sauveur 163.92 357 PFAKE 09 50 10.0 +11
SSB LR LR
comp=Z,2μm,20.0s
BNI Bardonecchia 163.94 351 PFAKE 09 50 10.0 +11
BNI LR LR
comp=Z,3μm,20.0s
TORD Torodi Ar. Bea 163.96 175 PKP **PKPdf 09 49 59.9 -0.3**
comp=Z,6.5nm,1.1s,baz=347,slow=1.1,SNR=14
TORD PKPab **PKPab 09 50 53.5 +0.7**
comp=Z,52nm,1.0s,baz=187,slow=4.0,SNR=29
TORD PP **PP 09 54 41.2 +4.2**
comp=Z,4.2nm,1.1s,baz=149,slow=5.4,SNR=3.7
VLC Villacollemand 164.01 341 PFAKE 09 50 10.0 +11
VLC LR LR
comp=Z,1μm,20.0s
AQU L'Aquila 164.51 331 PFAKE 09 50 10.0 +10
AQU LR LR
comp=Z,3μm,20.0s
TIP Timpagrande 165.03 315 *e*PKPdf **PKPdf 09 50 00.1 -0.4**
TIP LR LR
comp=Z,3μm,19.0s
CUC Castrocucco 165.07 319 PFAKE 09 50 10.0 +10
CUC LR LR
comp=Z,2μm,19.0s
MTE Manteigas 165.77 35 PFAKE 09 50 10.0 +8.9
MTE LR LR
comp=Z,3μm,20.0s
CEL Celeste 166.12 314 PFAKE 09 50 10.0 +8.6
CEL LR LR
comp=Z,2μm,19.0s
PAB San Pablo 167.95 29 PFAKE 09 50 10.0 +7.2
PAB LR LR
comp=Z,3μm,20.0s
ESDC Sonseca Array 168.00 28 PKP **PKPdf 09 50 04.0 +1.2**
comp=Z,1.1nm,0.7s,baz=331,slow=3.3,SNR=7.4
ESDC PKPab **PKPab 09 51 09.1 -1.2**
comp=Z,2.7nm,0.7s,baz=323,slow=4.2,SNR=5.8
CLTB Caltabellotta 168.19 318 PFAKE 09 50 10.0 +7.0
CLTB LR LR
comp=Z,2μm,20.0s
WDD Wied Dalam 168.39 308 PFAKE 09 50 10.0 +7.0
WDD LR LR
comp=Z,3μm,19.0s
VSL Villasalto 168.54 335 PFAKE 09 50 10.0 +6.9
VSL LR LR
comp=Z,2μm,19.0s
RTC Rabat Centre 170.18 58 PFAKE 09 50 20.0 +16
RTC LR LR
comp=Z,12μm,19.0s
KEST Kesra 171.68 323 PKPab **PKPab 09 51 27.3 +0.6**
comp=Z,11nm,1.0s,baz=311,slow=6.9,SNR=4.9
TAM Tamanrasset 173.28 199 *e*PKIKP **PKPdf 09 50 06.1 -0.2**
TAM MLR MLR
comp=Z,2μm,19.0s
TAM Tamanrasset 173.28 199 *e*PKPdf **PKPdf 09 50 06.1 -0.2**
TAM LR LR
comp=Z,2μm,19.0s

LJU 07 09:33:24.1, 45.84N×15.61E, h0km, ML0.7, 2C Artificial, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
GCIS	**Gornji Cirnik**	**0.03**	**25**	⇑*i*Pg	Pg		09 33 24.7	+0.1
CRES	**Cresnjev**	**0.11**	**262**	⇑*i*Pg	Pg		09 33 26.0	-0.2
CRES				*i* Sg	Sg		09 33 28.0	+0.5

comp=Z,23nm,0.1s

LEGS	**Legarje**	**0.23**	**298**	*e*Pg	Pg		09 33 28.7	+0.2

IDC 07 09:46:32.9±999.0, 46.65N×48.00E, h0km, Error ellipse: s-maj=514.5km s-min=212.3km az=131.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON1**	**2.08**	**330**	*i*			11 01 40.0	
	baz=142,slow=314,SNR=0.9							
I26DE	**FREYUNG INFRAS**	**23.05**	**288**	*i*			12 11 14.0	
	baz=81,slow=313,SNR=0.7							
I48TN	**KESRA INFRASON**	**30.76**	**263**	*i*			12 50 00.0	
	baz=53,slow=309,SNR=0.7							

IDC 07 09:48:27.7±3.1, 32°39S×178°21W, h0km, mb3.8/3, mb1 4.0/4, mb1mx3.8/27, mbtmp3.9/4, ML3.3/1, Error ellipse: s-maj=67.5km s-min=47.9km az=121.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.99**	**212**	Pn	Pn	09 50 10.9	-0.5
	0.6nm,0.3s,baz=115,slow=14,SNR=2.6						
URZ				Sn	Sn	09 51 29.8	-1.8
	1.9nm,0.3s,baz=247,slow=22,SNR=8.4						
CTA	**Charters Tower**	**34.00**	**282**	P	P	09 55 15.3	+2.0
	0.7nm,0.3s,baz=142,slow=12,SNR=1.9						
ASAR	**Alice Springs**	**42.87**	**269**	P	P	09 56 27.1	-0.9
	0.4nm,0.6s,baz=108,slow=7.2,SNR=7.6						
WRA	**Warramunga Arr**	**44.03**	**274**	P	P	09 56 36.8	-0.6
	0.9nm,0.4s,baz=113,slow=7.8,SNR=22						
FINES	**FINESS Array B**	**146.94**	**339**	PKPbc	PKPbc	10 08 10.8	-0.6
	1.1nm,0.7s,baz=22,slow=7.2,SNR=4.5						

*IDC **07** 09:52:18.2±1.3, 28°94S×176°57W, h0km, mb4.1/5, mb1 4.3/5, mb1mx4.0/30, mbtmp4.1/5, Error ellipse: s-maj=39.0km s-min=24.1km az=171.0*
*ISCJB **07** 09:52:19.1±1.9, 29°71S±0°09×176°5W±0°2, h21km, mb4.1/5, Error ellipse: s-maj=21.8km s-min=11.0km az=162.0*

ISC 07 09:52:21.3±1.3, 29°6S±0°1×176°5W±0°1, h21km, n11, σ1°02/12, mb4.2/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.25**	**285**	Pn	Pn	**09 52 43.9**	**+0.3**
	602nm,0.3s,baz=77,slow=9.5,SNR=14						
RAO				Sn	**Sn**	**09 52 59.5**	**-0.4**
	2µm,0.3s,baz=122,slow=21,SNR=11						
URZ	**Urewera**	**10.13**	**210**	Pn	**Pn**	**09 54 45.0**	**-0.6**
	0.5nm,0.3s,baz=126,slow=22,SNR=1.7						
URZ				Sn	**Sn**	**09 56 38.8**	**+0.2**
	3.1nm,0.3s,baz=79,slow=19,SNR=7.8						
CTA	**Charters Tower**	**34.94**	**277**	P	**P**	**09 59 12.2**	**+0.2**
	3.2nm,0.7s,baz=112,slow=14,SNR=5.6						
STKA	**Stephens Creek**	**35.91**	**256**	P	**P**	**09 59 21.9**	**+1.7**
	2.2nm,0.6s,baz=132,slow=12,SNR=4.1						
ASAR	**Alice Springs**	**44.43**	**265**	P	**P**	**10 00 30.4**	**-0.6**
	2.5nm,0.7s,baz=104,slow=6.8,SNR=21						
WRA	**Warramunga Arr**	**45.35**	**271**	P	**P**	**10 00 36.9**	**-1.5**
	3.8nm,1.0s,baz=110,slow=6.1,SNR=15						
VNDA	**Vanda**	**49.04**	**186**	P	P	10 01 11.1	+4.8
	0.4nm,0.4s,baz=79,slow=18,SNR=9.0						
FINES	**FINESS Array B**	**144.80**	**341**	PKP	**PKPab**	**10 11 54.3**	**-0.6**
	1.1nm,0.6s,baz=106,slow=4.2,SNR=4.5						
NB2	**NORSAR Subarra**	**148.12**	**353**	PKP	**PKPdf**	**10 12 02.9**	**+1.3**
	comp=Z,3.6nm,1.2s,baz=18,slow=3.0						
AKASG	**Malin Array Be**	**151.40**	**325**	PKPbc	**PKPbc**	**10 12 12.0**	**-1.1**
	comp=Z,1.9nm,0.6s,baz=49,slow=2.5,SNR=7.4						
BRTR	**Keskin Array B**	**153.31**	**300**	PKPbc	**PKPbc**	**10 12 18.4**	**+0.4**
	comp=Z,0.6nm,0.4s,baz=72,slow=4.0,SNR=5.7						

*IDC **07** 10:04:50.0±0.9, 7°67N×126°55E, h0km, mb3.8/6, mb1 3.9/6, mb1mx3.6/45, mbtmp3.8/6, Error ellipse: s-maj=19.1km s-min=13.6km az=146.0*
*ISCJB **07** 10:04:53.1±0.7, 7°68N±0°05×126°38E±0°07, h35km, mb3.8/6, Error ellipse: s-maj=10.7km s-min=7.2km az=168.8*

ISC 07 10:04:54.6±1.0, 7°75N±0°06×126°37E±0°10, h35km, n14, σ1°60/13, mb3.8/6, 3C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**0.43**	**358**	↑*eP*	**Pn**	**10 05 03.7**	**-0.6**
BIPH				*eS*	**Sn**	**10 05 11.7**	**+0.8**
DAV	**Davao City (W)**	**1.04**	**229**	Pg	**Pn**	**10 05 11.8**	**-0.9**
	140nm,0.3s,baz=61,slow=13,SNR=6.1						
DAV				Lg	Lg	10 05 27.4	
	155nm,0.3s,baz=90,slow=20,SNR=2.1						
DMPH	**Davao City--Mi**	**1.09**	**232**	↑*eP*	**Pn**	**10 05 14.0**	**+0.7**
DMPH				*eS*	**Sn**	**10 05 30.4**	**+3.1**
KCP	**Kidapawan**	**1.47**	**240**	||*eP*	**Pn**	**10 05 15.6**	**-3.1**
CGP	**Cagayan de Oro**	**1.80**	**293**	↑*eP*	**Pn**	**10 05 22.6**	**-0.6**
CGP				*eS*	**Sn**	**10 05 44.3**	**-0.6**
FITZ	**Fitzroy Crossi**	**25.70**	**182**	P	**P**	**10 10 21.3**	**-0.4**
	2.4nm,0.9s,baz=359,slow=8.9,SNR=5.6						
WRA	**Warramunga Arr**	**28.62**	**164**	P	**P**	**10 10 47.0**	**-0.9**
	0.3nm,0.5s,baz=343,slow=9.3,SNR=9.6						
ASAR	**Alice Springs**	**32.08**	**167**	P	P	10 11 17.9	-0.7
	0.4nm,0.4s,baz=344,slow=7.2,SNR=15						
ASAR				PcP	**PcP**	**10 14 07.2**	**-0.4**
	0.3nm,0.9s,baz=348,slow=2.4,SNR=3.1						
H11N1	**WAKE ISLAND Hy**	**41.00**	**69**	T	T	10 56 24.3	
	baz=264,slow=75,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**41.01**	**69**	T	T	10 56 28.5	
	baz=264						
H11N3	**WAKE ISLAND Hy**	**41.02**	**69**	T	T	10 56 22.1	
	baz=264,slow=75,SNR=3.7						
STKA	**Stephens Creek**	**42.01**	**161**	P	P	10 12 42.7	0.0
	2.0nm,0.9s,baz=313,slow=12,SNR=3.2						
MKAR	**Makanchi Array**	**54.09**	**324**	P	**P**	**10 14 17.0**	**+1.0**
	1.2nm,0.6s,baz=132,slow=7.3,SNR=8.5						
MKAR				PcP	**PcP**	**10 15 21.4**	**+0.8**
	0.7nm,0.7s,baz=108,slow=4.7,SNR=3.2						
FINES	**FINESS Array B**	**88.14**	**332**	P	P	10 17 45.2	+3.6
	0.5nm,0.5s,baz=76,slow=5.9,SNR=4.0						

JMA 07 10:05:41.5, 35°91N×138°04E, h9km±1km, M0.3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNT	**Takato**	**0.09**	**114**	P	Pg	10 05 43.8	-0.1
JNT				S	Sg	10 05 45.4	-0.2

*ISCJB **07** 10:05:57.1±0.6, 35°34N±0°04×140°40E±0°06, h67km±4km, mb3.9/6, Error ellipse: s-maj=8.9km s-min=5.8km az=161.7*
*IDC **07** 10:05:57.9±0.9, 34°60N×138°19E, h0km, mb3.8/6, mb1 4.0/7, mb1mx3.7/47, mbtmp3.8/7, ML3.3/1, MS4.1/1, Ms1 4.1/1, ms1mx3.6/52, Error ellipse: s-maj=30.5km s-min=15.1km az=77.0*
*JMA **07** 10:05:58.3±0.1, 35°41N×140°39E, h57km±1km, M3.4 Broadband fault plane solution: P waves. NP1: φs=347.00000°, δ67.00000°, λ82.00000°. NP2: φs=187.00000°, δ24.00000°, λ109.00000°. Principal axes: T Plg67.0000°, Azm242.0000°; N Plg7.0000°, Azm350.0000°; P Plg22.0000°, Azm83.0000°;*
JMA Felt I J1.

ISC 07 10:05:58.1±1.0, 35°35N±0°04×140°39E±0°07, h61km±6km, n26, σ0°82/25, mb3.9/6, 5C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCN	**Nagara**	**0.17**	**293**	↑P	**Pn**	**10 06 07.7**	**+0.2**
JCN				*eS*	**Sn**	**10 06 14.0**	**-0.3**
KTR	**Katsuura**	**0.21**	**197**	P	**Pn**	**10 06 07.8**	**+0.1**
KTR				S	**Sn**	**10 06 14.5**	**-0.2**
BSO4	**Boso 4**	**0.36**	**187**	↑P	**Pn**	**10 06 09.3**	**+0.6**
CHOJ	**Chosi**	**0.52**	**47**	↑P	Pn	10 06 10.2	-0.1
BSO3	**Boso 3**	**0.56**	**170**	↑P	**Pn**	**10 06 11.1**	**+0.6**
BSO1	**Boso 1**	**0.85**	**145**	↑P	**Pn**	**10 06 13.9**	**+0.2**
JYT	**Yasato**	**0.89**	**350**	P	**Pn**	**10 06 14.2**	**-0.5**
JYT				*eS*	**Sn**	**10 06 25.8**	**-1.2**
JIM2	**Oshima 3**	**1.01**	**231**	P	**Pn**	**10 06 16.3**	**-0.1**
JIM2				S	**Sn**	**10 06 29.0**	**-0.9**
JOD2	**Odawara 2**	**1.07**	**266**	↓P	**Pn**	**10 06 17.1**	**0.0**
JOD2				S	**Sn**	**10 06 30.9**	**-0.3**
JAG	**Ashikaga**	**1.31**	**325**	↓P	**Pn**	**10 06 20.2**	**-0.1**
MJAR	**Matsushiro Arr**	**2.13**	**304**	Pn	**Pn**	**10 06 31.2**	**-0.2**
	15nm,0.3s,baz=214,slow=11,SNR=98						
MJAR				Sn	**Sn**	**10 06 58.4**	**+1.6**
	11nm,0.3s,baz=176,slow=22,SNR=7.2						
MAT	**Matsushiro**	**2.13**	**304**	P	**Pn**	**10 06 31.9**	**+0.5**
MAT				S	**Sn**	**10 06 56.8**	**0.0**
JHJ	**Hachijo jima 2**	**2.29**	**193**	Pn	**Pn**	**10 06 33.2**	**-0.3**
	26nm,0.3s,baz=359,slow=17,SNR=23						
JHJ				Sn	**Sn**	**10 06 59.4**	**-1.1**
	92nm,0.3s,baz=65,slow=19,SNR=14						
JNU	**Nakatsue**	**8.19**	**257**	LR	LR	10 10 04.0	
	comp=Z,2µm,19.3s,baz=122,slow=39						

H11N2	**WAKE ISLAND Hy**	**28.07**	**117**	T	T	10 41 31.9	
	baz=309,slow=75,SNR=96						
H11N1	**WAKE ISLAND Hy**	**28.07**	**117**	T	T	10 41 41.2	
	baz=309,slow=100,SNR=100						
H11N3	**WAKE ISLAND Hy**	**28.09**	**117**	T	T	10 41 37.4	
	baz=309,slow=75,SNR=95						
H11S1	**WAKE ISLAND Hy**	**28.71**	**119**	T	T	10 42 19.7	
	baz=311,slow=76,SNR=47						
H11S3	**WAKE ISLAND Hy**	**28.71**	**119**	T	T	10 42 19.0	
	baz=311,slow=76,SNR=51						
H11S2	**WAKE ISLAND Hy**	**28.72**	**119**	T	T	10 42 20.2	
	baz=311,slow=76,SNR=54						
ZALV	**Zalesovo Beam**	**42.45**	**314**	P	**P**	**10 13 47.7**	**+0.9**
	0.9nm,0.5s,baz=88,slow=6.5,SNR=2.7						
MKAR	**Makanchi Array**	**44.33**	**303**	P	**P**	**10 14 01.1**	**-1.0**
	0.3nm,0.5s,baz=88,slow=4.6,SNR=3.2						
ILAR	**Eielson Array**	**51.35**	**32**	P	P	10 15 15.7	+20
	1.9nm,1.3s,baz=283,slow=5.9,SNR=2.9						
FITZ	**Fitzroy Crossi**	**54.97**	**197**	P	**P**	**10 15 21.8**	**-1.3**
	3.1nm,1.0s,baz=11,slow=10,SNR=6.6						
WRA	**Warramunga Arr**	**55.29**	**187**	P	**P**	**10 15 26.0**	**+0.6**
	1.1nm,0.4s,baz=1.2,slow=7.7,SNR=31						
ASAR	**Alice Springs**	**59.02**	**187**	P	**P**	**10 15 53.3**	**+1.6**
	0.5nm,0.6s,baz=3.5,slow=6.6,SNR=12						

IDC 07 10:09:28.5±1.5, 33°44S×178°52W, h0km, mb4.0/2, mb1 4.3/3, mb1mx3.8/32, mbtmp4.1/3, ML3.9/1, Error ellipse: s-maj=43.7km s-min=40.7km az=152.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**5.98**	**215**	Pn	Pn	10 10 57.2	-1.0
	3.3nm,0.3s,baz=273,slow=4.7,SNR=23						
URZ				Sn	Sn	10 12 02.9	-4.5
	3.7nm,0.3s,baz=160,slow=20,SNR=12						
ASAR	**Alice Springs**	**42.60**	**270**	P	P	10 17 26.6	0.0
	1.1nm,0.8s,baz=113,slow=8.1,SNR=9.7						
ASAR				PcP	PcP	10 19 18.6	-0.4
	0.3nm,0.7s,baz=113,slow=4.1,SNR=3.3						
WRA	**Warramunga Arr**	**43.86**	**276**	P	P	10 17 36.8	0.0
	4.3nm,1.2s,baz=115,slow=8.1,SNR=7.3						
KURBB	**Kurchatov Arra**	**122.83**	**312**	PKP	PKPdf	10 28 25.8	-0.2
	0.1nm,0.3s,baz=94,slow=2.7,SNR=2.5						
FINES	**FINESS Array B**	**147.81**	**338**	PKPbc	PKPbc	10 29 14.1	-0.5
	2.2nm,0.8s,baz=336,slow=4.2,SNR=5.0						
TORD	**Torodi Ar. Bea**	**159.80**	**181**	PKPab	PKPab	10 30 08.2	-0.5
	0.3nm,0.7s,baz=172,slow=2.9,SNR=2.7						

IDC 07 10:30:06.6±56.0, 22°51S×175°33W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/29, mbtmp4.0/3, Error ellipse: s-maj=1055.0km s-min=165.0km az=87.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**39.22**	**247**	P	P	10 37 37.1	+0.2
	2.8nm,1.0s,baz=91,slow=13,SNR=2.9						
ASAR	**Alice Springs**	**46.52**	**258**	P	P	10 38 35.8	-0.4
	0.7nm,0.4s,baz=99,slow=7.3,SNR=22						
WRA	**Warramunga Arr**	**46.81**	**263**	P	P	10 38 38.3	-0.2
	1.3nm,0.4s,baz=103,slow=8.3,SNR=51						

*IDC **07** 10:34:46.3±1.5, 29°44S×176°57W, h0km, mb4.0/4, mb1 4.2/6, mb1mx4.0/27, mbtmp4.1/6, ML3.7/2, Error ellipse: s-maj=33.1km s-min=25.0km az=162.0*
*ISCJB **07** 10:34:47.4±1.3, 29°63S±0°08×176°5W±0°1, h21km, mb3.8/4, Error ellipse: s-maj=15.5km s-min=11.3km az=166.6*

ISC 07 10:34:49.4±1.2, 29°5S±0°1×176°5W±0°1, h21km, n9, σ0°95/11, mb3.9/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.23**	**281**	Pn	**Pn**	**10 35 09.8**	**-1.5**
	320nm,0.3s,baz=252,slow=20,SNR=8.2						
RAO				Sn	**Sn**	**10 35 28.4**	**+1.2**
	552nm,0.3s,baz=261,slow=22,SNR=4.5						
URZ	**Urewera**	**10.21**	**209**	Pn	**Pn**	**10 37 13.6**	**-1.0**
	0.3nm,0.3s,baz=22,slow=16,SNR=5.4						
URZ				Sn	**Sn**	**10 39 08.8**	**+0.5**
	1.6nm,0.3s,baz=56,slow=18,SNR=6.5						
RPZ	**Rata Peaks**	**17.31**	**212**	Pn	**P**	**10 38 51.6**	**+0.6**
	0.5nm,0.3s,baz=34,slow=18,SNR=3.1						
STKA	**Stephens Creek**	**35.92**	**255**	P	**P**	**10 41 49.5**	**+1.2**
	1.9nm,1.0s,baz=119,slow=13,SNR=2.6						
ASAR	**Alice Springs**	**44.43**	**265**	P	**P**	**10 42 58.9**	**-0.2**
	1.5nm,0.8s,baz=101,slow=7.0,SNR=24						
WRA	**Warramunga Arr**	**45.34**	**270**	P	**P**	**10 43 05.7**	**-0.6**
	2.0nm,0.6s,baz=110,slow=8.1,SNR=22						
ILAR	**Eielson Array**	**96.77**	**12**	P	**P**	**10 48 18.3**	**+0.5**
	0.1nm,0.5s,baz=191,slow=3.3,SNR=2.7						
FINES	**FINESS Array B**	**144.72**	**341**	PKP	**PKPab**	**10 54 22.4**	**-0.2**
	1.2nm,0.7s,baz=7.8,slow=3.1,SNR=4.4						
AKASG	**Malin Array Be**	**151.32**	**325**	PKPbc	**PKPbc**	**10 54 41.1**	**+0.1**
	0.5nm,0.4s,baz=49,slow=3.0,SNR=4.1						

*ISCJB **07** 10:42:08.6±0.5, 39°51N±0°03×27°50E±0°04, h4km±6km, Error ellipse: s-maj=4.7km s-min=4.5km az=45.0*
*DDA **07** 10:42:08.7, 39°54N×27°50E, h7km, Md2.5*
*CSEM **07** 10:42:08.8±0.1, 39°52N×27°49E, h5km, MD2.5, Error ellipse: s-maj=3.1km s-min=2.8km az=124.0*
*ISK **07** 10:42:08.5, 39°50N×27°52E, h5km, MD2.5*

IDC 07 10:42:08.8±1.1, 39°51N±0°02×27°50E±0°02, h9km±9km, n32, σ0°87/46, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BALY	**Balya**	**0.25**	**22**	*i* P	**Pg**	**10 42 13.9**	**0.0**
BALY	**Balya**	**0.25**	**22**	P	**Pg**	**10 42 13.9**	**0.0**
BALB	**Balikesir**	**0.33**	**66**	*e*PG	**Pg**	**10 42 15.2**	**0.0**
BALB				*e*SG	**Sg**	**10 42 19.7**	**+0.1**
BALB	**Balikesir**	**0.33**	**66**	*e*Pg	**Pg**	**10 42 15.2**	**0.0**
BALB				*e*Sg	**Sg**	**10 42 19.7**	**+0.1**
DKL	**Dikili**	**0.63**	**227**	*e*PG	**Pg**	**10 42 21.2**	**+0.2**
DKL				*e*SG	**Sg**	**10 42 30.8**	**-0.1**
DKL	**Dikili**	**0.63**	**227**	*e*Pg	**Pg**	**10 42 21.2**	**+0.2**
DKL				*e*Sg	**Sg**	**10 42 30.8**	**-0.1**
AYVA	**Ayvalik**	**0.66**	**253**	*i* P	**Pg**	**10 42 19.8**	**-1.6**
AYVA				*i* S	**Sg**	**10 42 30.9**	**+0.9**
AYVA	**Ayvalik**	**0.66**	**253**	P	**Pg**	**10 42 19.8**	**-1.6**
AYVA				S	**Sg**	**10 42 30.9**	**+0.9**
AKS	**Akhisar**	**0.67**	**158**	*e*PG	**Pg**	**10 42 21.6**	**-0.1**
AKS				*e*SG	**Sg**	**10 42 31.4**	**+0.9**
AKS	**Akhisar**	**0.67**	**158**	*e*Pg	**Pg**	**10 42 21.7**	**-0.1**
AKS				*e*Sg	**Sg**	**10 42 31.4**	**+0.9**
KRBG	**Karabiga-Canak**	**0.90**	**350**	*e*PG	**Pb**	**10 42 26.3**	**-0.3**
KRBG	**Karabiga-Canak**	**0.90**	**350**	*e*Pg	**Pb**	**10 42 26.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.01**	**41**	*e*PG	**Pg**	**10 42 27.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.01**	**41**	*e*Pg	**Pg**	**10 42 27.9**	**-0.2**
DEMI	**Demirci**	**1.05**	**116**	*i* P	**Pb**	**10 42 29.7**	**+0.4**
DEMI				*i* S	**Sb**	**10 42 43.8**	**+0.6**
DEMI	**Demirci**	**1.05**	**116**	P	**Pb**	**10 42 29.7**	**+0.4**
DEMI				S	**Sb**	**10 42 43.8**	**+0.6**
MRMT	**Marmara Adasi**	**1.10**	**4**	*e*PN	**Pb**	**10 42 30.2**	**+0.2**
MRMT				*e*SN	**Sn**	**10 42 45.8**	**0.0**
MRMT	**Marmara Adasi**	**1.10**	**4**	*e*Pn	**Pb**	**10 42 30.2**	**+0.2**
MRMT				*e*Sn	**Sn**	**10 42 45.8**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.21**	**348**	*e*PN	**Pn**	**10 42 32.2**	**+0.3**
RKY	**Sarkoy-Tekirda**	**1.21**	**348**	*e*Pn	**Pn**	**10 42 32.2**	**+0.3**
SART	**Tekirdag**	**1.21**	**348**	*i* P	**Pg**	**10 42 31.4**	**-0.6**
SART				*i* S	**Sb**	**10 42 47.7**	**+0.1**
SART	**Tekirdag**	**1.21**	**348**	P	**Pg**	**10 42 31.4**	**-0.6**
SART				S	**Sb**	**10 42 47.7**	**+0.1**
SIGR	**SIGRI**	**1.31**	**258**	*e*PN	**Pg**	**10 42 34.2**	**+0.4**
SIGR	**SIGRI**	**1.31**	**258**	*e*Pn	**Pg**	**10 42 34.2**	**+0.4**
MANT	**Manisa**	**1.31**	**140**	*i* S	**Sg**	**10 42 47.7**	**-3.2**
MANT	**Manisa**	**1.31**	**140**	S	**Sg**	**10 42 47.7**	**-3.2**
ERIK	**Erikli-Kesan**	**1.39**	**327**	*e*PN	**Pg**	**10 42 35.2**	**-0.2**
ERIK	**Erikli-Kesan**	**1.39**	**327**	*e*Pn	**Pg**	**10 42 35.2**	**-0.2**
ARMT	**Armutlu**	**1.49**	**44**	*e*PN	**Pb**	**10 42 36.5**	**-0.1**
ARMT	**Armutlu**	**1.49**	**44**	*e*Pn	**Pb**	**10 42 36.5**	**-0.1**
TVSB	**Tavsanli**	**1.52**	**91**	*e*PN	**Pn**	**10 42 36.7**	**+0.4**
TVSB	**Tavsanli**	**1.52**	**91**	*e*Pn	**Pn**	**10 42 36.7**	**+0.4**

*IDC **07** 10:45:07.6±0.7, 28°96S×177°02W, h0km, mb4.3/13, mb1 4.4/16, mb1mx4.3/35, mbtmp4.3/16, ML3.9/3, MS4.2/4, Ms1 4.2/4, ms1mx3.8/21, Error ellipse: s-maj=22.9km s-min=13.5km az=147.0*
*NEIC **07** 10:45:08.6±0.5, 29°03S×177°06W, h10km, mb4.3/1, Error ellipse: s-maj=14.5km s-min=9.7km az=137.0*

ISC 07 10:45:12.4±0.6, 29°14S±0°09×177°01W±0°09, h36km, n37, σ1°79/34, mb4.3/14, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.80**	**261**	Pn	**Pn**	**10 45 28.4**	**+1.3**
	2µm,0.3s,baz=178,slow=5.5,SNR=36						
RAO				Sn	**Sn**	**10 45 40.7**	**+2.9**
	3µm,0.3s,baz=90,slow=20,SNR=15						
URZ	**Urewera**	**10.33**	**207**	Pn	**Pn**	**10 47 37.0**	**-1.0**
	0.6nm,0.3s,baz=270,slow=8.1,SNR=7.1						
URZ				Sn	**Sn**	**10 49 27.9**	**-4.5**
	3.8nm,0.3s,baz=92,slow=19,SNR=7.2						
AFI	**Afiamalu**	**15.91**	**19**	Pn	**Pn**	**10 48 51.0**	**-2.7**
	1.2nm,0.3s,baz=208,slow=17,SNR=2.1						
DZM	**Mont Dzumac**	**16.49**	**291**	Pn	**Pn**	**10 48 56.3**	**-4.8**
	0.1nm,0.3s,baz=88,slow=12,SNR=3.0						
DZM				LR	LR	10 54 14.4	
	comp=Z,1µm,18.0s,baz=117,slow=33						
RPZ	**Rata Peaks**	**17.40**	**210**	P	**Pn**	**10 49 09.9**	**-2.4**
	1.5nm,0.3s,baz=60,slow=20,SNR=7.5						
RPZ				LR	LR	10 56 17.3	
	comp=Z,628nm,18.6s,baz=34,slow=38						
RAR	**Rarotonga**	**17.47**	**67**	P	**Pn**	**10 49 11.3**	**-2.0**
	2.0nm,0.3s,baz=243,slow=9.0,SNR=5.5						
RAR				LR	LR	10 55 08.9	
	comp=Z,609nm,18.7s,baz=288,slow=34						
PPT	**Papeete**	**27.62**	**71**	LR	LR	11 00 45.8	
	comp=Z,339nm,18.2s,baz=306,slow=34						
CTA	**Charters Tower**	**34.48**	**277**	P	**P**	**10 51 57.1**	**0.0**
	5.0nm,0.7s,baz=101,slow=12,SNR=9.5						
CTAO	**Charters Tower**	**34.48**	**277**	*e*P	**P**	**10 51 56.8**	**-0.3**
STKA	**Stephens Creek**	**35.62**	**255**	P	**P**	**10 52 07.2**	**+0.5**
	2.1nm,0.5s,baz=98,slow=10.0,SNR=6.3						
ASAR	**Alice Springs**	**44.05**	**265**	P	**P**	**10 53 16.3**	**-0.7**
	3.3nm,0.8s,baz=98,slow=6.3,SNR=36						
ASAR				PcP	**PcP**	**10 55 04.5**	**+2.5**
	0.5nm,0.7s,baz=106,slow=4.8,SNR=2.6						
WRAB	**Tennant Creek**	**44.92**	**270**	*e*P	**P**	**10 53 23.4**	**-0.5**
	3.2nm,0.7s						
WRA	**Warramunga Arr**	**44.93**	**270**	P	**P**	**10 53 23.4**	**-0.5**
	4.5nm,0.8s,baz=109,slow=6.1,SNR=42						
WRA				PcP	**PcP**	**10 55 06.4**	**+1.4**
	0.9nm,0.8s,baz=119,slow=2.5,SNR=2.9						
VNDA	**Vanda**	**49.44**	**186**	P	**P**	**10 54 00.8**	**+2.5**
	1.5nm,0.3s,baz=128,slow=1.3,SNR=6.4						
FITZ	**Fitzroy Crossi**	**53.24**	**268**	P	**P**	**10 54 27.2**	**-0.4**
	3.8nm,0.8s,baz=128,slow=3.2,SNR=7.4						
MAW	**Mawson**	**73.79**	**200**	P	**P**	**10 56 43.2**	**+0.6**
	2.6nm,0.8s,baz=207,slow=4.5,SNR=3.6						
MJAR	**Matsushiro Arr**	**77.70**	**325**	P	**P**	**10 57 03.8**	**-1.5**
	1.5nm,0.8s,baz=151,slow=7.7,SNR=3.0						
UNV	**Unalaska Valle**	**83.14**	**6**	P	**P**	**10 57 34.1**	**+0.1**
PETK	**Petropavlovsk-**	**84.81**	**345**	P	**P**	**10 57 43.8**	**+1.1**
	1.2nm,0.6s,baz=142,slow=5.4,SNR=2.5						
USRK	**Ussuriysk Ar.**	**86.59**	**326**	P	**P**	**10 57 52.4**	**+0.7**
	3.1nm,0.9s,baz=152,slow=3.6,SNR=4.8						
KLR	**Kul'dur**	**90.39**	**329**	P	**P**	**10 58 10.8**	**+1.2**
	1.4nm,0.8s,baz=125,slow=7.0,SNR=3.9						
TXAR	**Lajitas Array**	**90.98**	**57**	P	**P**	**10 58 14.5**	**+1.5**
	0.2nm,0.7s,baz=201,slow=4.8,SNR=2.5						
ILAR	**Eielson Array**	**96.51**	**13**	P	**P**	**10 58 37.1**	**-0.3**
	0.3nm,0.6s,baz=219,slow=5.2,SNR=6.6						
MKAR	**Makanchi Array**	**117.61**	**310**	PKP	**PKPdf**	**11 03 54.1**	**-0.2**
	0.3nm,0.5s,baz=108,slow=1.8,SNR=2.4						
H10S3	**ASCENSION HYDR**	**138.48**	**153**	T	T	13 40 07.1	
	baz=204,slow=74,SNR=4.1						
H10S2	**ASCENSION HYDR**	**138.48**	**153**	T	T	13 40 07.2	
	baz=204,slow=74,SNR=3.4						
H10S1	**ASCENSION HYDR**	**138.50**	**153**	T	T	13 40 09.7	
	baz=204,slow=74,SNR=3.2						
H10N3	**ASCENSION HYDR**	**139.56**	**153**	T	T	13 41 21.6	
	baz=204,slow=74,SNR=3.0						
H10N1	**ASCENSION HYDR**	**139.56**	**153**	T	T	13 41 22.0	
	baz=204,slow=74,SNR=3.5						
H10N2	**ASCENSION HYDR**	**139.58**	**153**	T	T	13 41 23.6	
	baz=204,slow=74,SNR=3.2						
FINES	**FINESS Array B**	**144.24**	**341**	PKP	**PKPab**	**11 04 41.5**	**-0.1**
	3.4nm,0.8s,baz=62,slow=3.3,

IMRD					*e*Pg	**Pg**	10 56 05.5	**-1.2**
IMRD					*e*AMB	AMB	10 56 28.4	
	comp=Z,9μm,0.3s							
TUTA	**Tutak**	**1.18**	**286**	*i* P	**Pg**	10 56 06.8	**0.0**
TUTA				*i* S	**Sg**	10 56 22.1	**0.0**
TUTA	**Tutak**	**1.18**	**286**	P	**Pg**	10 56 06.8	**0.0**
TUTA				S	**Sg**	10 56 22.1	**0.0**
GEVA	**Gevas**	**1.23**	**231**	*i* P	**Pn**	10 56 08.2	**0.0**
GEVA				*i* S	**Sn**	10 56 29.9	**+4.7**
GEVA	**Gevas**	**1.23**	**231**	P	**Pn**	10 56 08.2	**0.0**
GEVA				S	**Sn**	10 56 29.9	**+4.7**
ISHB	**Shabestar**	**1.32**	**127**	*e*AMB	AMB	10 56 32.4	
	comp=Z,3μm,0.2s						
ISHB				*e*Pg	**Pn**	10 56 07.9	**-1.6**
DIGO	**Kars**	**1.50**	**333**	*i* P	**Pg**	10 56 14.1	**+1.1**
DIGO	**Kars**	**1.50**	**333**	P	**Pg**	10 56 14.1	**+1.1**
HKR	**Hakkari**	**1.56**	**196**	*e*PN	**Pg**	10 56 14.3	**+0.1**
HKR	**Hakkari**	**1.56**	**196**	*e*Pn	**Pg**	10 56 14.3	**+0.1**
HAKT	**HAKKARI**	**1.59**	**197**	*i* P	**Pn**	10 56 12.9	**-0.4**
HAKT				*i* S	**Sg**	10 56 39.0	**+3.7**
HAKT	**HAKKARI**	**1.59**	**197**	P	**Pn**	10 56 12.9	**-0.4**
HAKT				S	**Sg**	10 56 39.0	**+3.7**
EAK	**Akyaka**	**1.68**	**342**	*i* P	**Pg**	10 56 18.2	**+1.8**
EAK	**Akyaka**	**1.68**	**342**	P	**Pg**	10 56 18.2	**+1.8**
ITBZ	**Tabriz**	**1.69**	**120**	*e*Pn	**Pn**	10 56 14.6	**0.0**
ITBZ				*e*Sg	**Sn**	10 56 36.4	**-0.4**
ITBZ				*e*AMB	AMB	10 56 46.2	
	comp=Z,669nm,0.2s						
ITBZ	**Tabriz**	**1.69**	**120**	*e*Pn	**Pn**	10 56 14.6	**0.0**
ITBZ				*e*Sg	**Sn**	10 56 36.4	**-0.4**
CUKT	**Cukurca**	**1.91**	**196**	*e*PN	**Pb**	10 56 19.6	**0.0**
CUKT	**Cukurca**	**1.91**	**196**	*e*Pn	**Pb**	10 56 19.6	**0.0**
QZX	**Qazax, Azerbai**	**2.14**	**23**	⇑P	**Pb**	10 56 22.3	**-1.2**
	SNR=6.1						
QZX				⇓S	**Sg**	10 56 53.8	**+0.8**
QZX	**Qazax, Azerbai**	**2.14**	**23**	P	**Pb**	10 56 22.3	**-1.2**
	SNR=6.1						
QZX				S	**Sg**	10 56 53.8	**+0.8**
GANJ	**Ganja**	**2.21**	**45**	⇓P	**Pn**	10 56 22.5	**+0.9**
	SNR=10						
GANJ				⇑S	**Sg**	10 56 55.5	**+0.1**
GANJ	**Ganja**	**2.21**	**45**	P	**Pn**	10 56 22.5	**+0.9**
	SNR=10						
GANJ				S	**Sg**	10 56 55.5	**+0.1**
ERZM	**Erzurum**	**2.40**	**291**	*i* P	**Pg**	10 56 29.6	**-0.5**
ERZM	**Erzurum**	**2.40**	**291**	P	**Pg**	10 56 29.6	**-0.5**
EZM	**Erzurum**	**2.40**	**291**	*e*PN	**Pn**	10 56 24.7	**+0.3**
BTMN	**Batman**	**2.64**	**244**	*i* P	**Pg**	10 56 33.3	**-1.6**
BTMN	**Batman**	**2.64**	**244**	P	**Pg**	10 56 33.3	**-1.6**
DAGI	**Agillar**	**2.69**	**318**	*i* P	**Pg**	10 56 35.9	**+0.1**
LRK	**Lerik**	**3.20**	**97**	⇓P	**Pn**	10 56 34.2	**-1.1**
LRK				⇑S	**Sn**	10 57 15.7	**+1.7**
LRK	**Lerik**	**3.20**	**97**	P	**Pn**	10 56 34.2	**-1.1**
LRK				S	**Sn**	10 57 15.7	**+1.7**
GLBA	**Clilabad**	**3.20**	**86**	⇑P	**Pn**	10 56 34.1	**-1.1**
GLBA				⇓S	**Sn**	10 57 16.6	**+2.9**
GLBA	**Clilabad**	**3.20**	**86**	P	**Pn**	10 56 34.1	**-1.1**
GLBA				S	**Sn**	10 57 16.6	**+2.9**
LKRN	**Lenkeran, Azer**	**3.53**	**95**	⇓P	**Pn**	10 56 39.5	**-0.2**
LKRN				⇓S	**Sn**	10 57 23.1	**+1.2**
LKRN	**Lenkeran, Azer**	**3.53**	**95**	P	**Pn**	10 56 39.5	**-0.2**
LKRN				S	**Sn**	10 57 23.1	**+1.2**
ASTR	**Astara**	**3.56**	**97**	⇓P	**Pn**	10 56 39.4	**-0.7**
ASTR				⇓S	**Sn**	10 57 25.3	**+2.6**
ASTR	**Astara**	**3.56**	**97**	P	**Pn**	10 56 39.4	**-0.7**
ASTR				S	**Sn**	10 57 25.3	**+2.6**
XNQ	**Khinaliq**	**3.62**	**54**	⇓P	**Pn**	10 56 41.4	**+0.3**
XNQ				⇓S	**Sb**	10 57 29.1	**-4.1**
XNQ	**Khinaliq**	**3.62**	**54**	P	**Pn**	10 56 41.4	**+0.3**
XNQ				S	**Sb**	10 57 29.1	**-4.1**

IDC 07 11:19:53.4±2.9, 28°.52S × 176°.92W, h0km, mb3.5/2, mb1 3.7/2, mb1mx3.5/15, mbtmp3.5/2, Error ellipse: s-maj=91.0km s-min=26.5km az=132.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.14**	**230**	Pn	Pn	11 20 17.2	**+0.6**
	206nm,0.3s,baz=89,slow=14,SNR=6.0						
RAO				Sn	Sn	11 20 33.3	**+0.4**
	643nm,0.3s,baz=82,slow=18,SNR=9.5						
ASAR	**Alice Springs**	**44.19**	**265**	P	P	11 28 04.0	**-0.4**
	0.3nm,0.5s,baz=104,slow=7.1,SNR=12						
WRA	**Warramunga Arr**	**45.01**	**270**	P	P	11 28 10.8	**-0.1**
	0.3nm,0.4s,baz=110,slow=8.0,SNR=6.0						
MKAR	**Makanchi Array**	**117.28**	**311**	PKP	PKPdf	11 38 40.2	**-0.4**
	0.2nm,0.3s,baz=96,slow=2.9,SNR=2.1						
AKASG	**Malin Array Be**	**150.33**	**326**	PKPbc	PKPbc	11 39 46.2	**-0.1**
	0.2nm,0.3s,baz=56,slow=2.3,SNR=2.0						

IDC 07 11:23:01.9±1.6, 29°.30S × 176°.12W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/16, mbtmp3.7/3, Error ellipse: s-maj=75.2km s-min=27.8km az=4.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.57**	**271**	Pn	Pg	11 23 32.5	**+0.4**
	67nm,0.3s,baz=73,slow=19,SNR=2.0						
RAO				Sn	Sg	11 23 54.5	**+1.9**
	77nm,0.3s,baz=68,slow=19,SNR=2.9						
URZ	**Urewera**	**10.56**	**210**	Sn	Sn	11 27 21.1	**-12**
	0.3nm,0.3s,baz=71,slow=20,SNR=3.5						
STKA	**Stephens Creek**	**36.33**	**255**	P	P	11 30 07.6	**0.0**
	1.8nm,0.7s,baz=90,slow=11,SNR=3.9						
ASAR	**Alice Springs**	**44.82**	**265**	P	P	11 31 17.8	**-0.2**
	0.2nm,0.7s,baz=100,slow=6.7,SNR=8.3						
WRA	**Warramunga Arr**	**45.71**	**270**	P	P	11 31 23.5	**-1.6**
	0.8nm,0.7s,baz=110,slow=7.6,SNR=16						
FINES	**FINESS Array B**	**144.64**	**342**	PKP	PKPdf	11 42 40.0	**+0.1**
	1.9nm,0.9s,baz=22,slow=6.2,SNR=4.8						
AKASG	**Malin Array Be**	**151.37**	**325**	PKPbc	PKPbc	11 42 57.4	**+0.1**
	0.7nm,0.4s,baz=45,slow=2.8,SNR=2.0						
TORD	**Torodi Ar. Bea**	**163.80**	**172**	PKPab	PKPab	11 43 59.7	**0.0**
	0.9nm,0.7s,baz=195,slow=3.8,SNR=4.6						

IDC 07 11:37:57.4±995.0, 35°.81N × 57°.10E, h0km, Error ellipse: s-maj=416.3km s-min=239.9km az=155.0, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I31KZ	**AKTYUBINSK INF**	**14.60**	**2**	*i*		13 19 05.0	
	baz=183,slow=308,SNR=2.1						
I43RU	**DUBNA INFRASON**	**24.85**	**334**	*i*		14 10 50.0	
	baz=139,slow=317,SNR=2.4						
I46RU	**ZALESOVO INFRA**	**26.47**	**38**	*i*		14 44 30.0	
	baz=237,slow=332,SNR=7.6						
I26DE	**FREYUNG INFRAS**	**34.15**	**306**	*i*		15 05 35.0	
	baz=94,slow=306,SNR=2.1						
I48TN	**KESRA INFRASON**	**38.44**	**284**	*i*		15 33 01.0	
	baz=74,slow=305,SNR=0.8						

*IDC **07** 11:39:16.6±1.7, 28°.34S × 176°.50W, h0km, mb3.7/3, mb1 4.0/4, mb1mx3.8/18, mbtmp3.9/4, ML4.0/1, Error ellipse: s-maj=47.6km s-min=28.2km az=140.0*

IDC 07 11:39:20.6±1.4, 28°.4S ± 0°.2 × 176°.5W ± 0°.2, h29km, n8, σ 9°.90/9, mb3.9/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.52**	**236**	Pn	**Pn**	11 39 46.3	**+0.6**
	188nm,0.3s,baz=66,slow=20,SNR=2.5						
RAO				Sn	**Sb**	11 40 06.8	**-0.1**
	801nm,0.3s,baz=127,slow=20,SNR=11						
RPZ	**Rata Peaks**	**18.27**	**210**	P	**P**	11 43 30.9	**-0.9**
	0.5nm,0.3s,baz=59,slow=5.9,SNR=3.6						
STKA	**Stephens Creek**	**36.26**	**254**	P	**P**	11 46 20.8	**-0.6**
	0.9nm,0.5s,baz=102,slow=10,SNR=4.6						
ASAR	**Alice Springs**	**44.59**	**264**	P	**P**	11 47 30.9	**+0.5**
	0.2nm,0.4s,baz=103,slow=7.2,SNR=6.0						
WRA	**Warramunga Arr**	**45.40**	**269**	P	**P**	11 47 37.0	**+0.2**
	0.8nm,0.5s,baz=110,slow=7.8,SNR=16						
FINES	**FINESS Array B**	**143.71**	**342**	PKP	**PKPdf**	11 58 50.9	**-1.2**
	1.3nm,0.7s,baz=48,slow=4.1,SNR=5.6						
AKASG	**Malin Array Be**	**150.46**	**326**	PKPbc	**PKPbc**	11 59 09.6	**+0.6**
	0.4nm,0.3s,baz=48,slow=3.1,SNR=4.5						
TORD	**Torodi Ar. Bea**	**164.72**	**173**	PKPab	**PKPab**	12 00 18.8	**+1.1**
	0.4nm,0.7s,baz=173,slow=4.5,SNR=2.9						

IDC 07 11:56:26.6±5.0, 6°.03S × 149°.17E, h20km ± 27km, mb3.8/4, mb1 4.1/6, mb1mx3.6/46, mbtmp4.1/6, ML4.2/1, MS3.9/2, Ms1 3.9/2, ms1mx3.2/35, Error ellipse: s-maj=61.7km s-min=22.8km az=120.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.90**	**211**	Pn	Pn	11 57 26.7	**+1.1**
	22nm,0.3s,baz=14,slow=11,SNR=51						
PMG				Sn	Sn	11 58 10.2	**-0.7**
	8.4nm,0.3s,baz=38,slow=18,SNR=6.3						
WRA	**Warramunga Arr**	**19.98**	**225**	P	P	12 00 57.6	**-0.4**
	0.7nm,0.3s,baz=49,slow=11,SNR=61						
WRA				ScP	ScP	12 08 49.5	**-0.2**
	0.0nm,0.3s,baz=58,slow=2.9,SNR=3.1						
ASAR	**Alice Springs**	**22.88**	**218**	P	P	12 01 28.8	**-0.4**
	1.1nm,0.5s,baz=41,slow=11,SNR=88						
FITZ	**Fitzroy Crossi**	**25.91**	**240**	P	P	12 01 58.3	**+0.6**
	8.8nm,0.8s,baz=78,slow=7.6,SNR=10						
STKA	**Stephens Creek**	**26.68**	**194**	P	P	12 02 04.2	**-0.3**
	1.6nm,0.7s,baz=9.7,slow=12,SNR=3.2						
RAR	**Rarotonga**	**51.63**	**112**	LR	LR	12 23 50.9	
	comp=Z,140nm,20.0s,baz=266,slow=32						
ILAR	**Eielson Array**	**84.67**	**23**	P	P	12 08 58.7	**-0.1**
	0.2nm,0.7s,baz=241,slow=5.0,SNR=4.0						
INK	**Inuvik**	**90.89**	**21**	LR	LR	12 48 02.6	
	comp=Z,57nm,18.8s,baz=92,slow=34						
TORD	**Torodi Ar. Bea**	**147.18**	**285**	PKPbc	PKPbc	12 16 08.8	**-0.8**
	0.2nm,0.4s,baz=89,slow=3.8,SNR=2.5						

*CSEM **07** 12:00:38.8±2.5, 27°.38N × 51°.53E, h2km, ML3.4, Error ellipse: s-maj=56.8km s-min=21.9km az=31.0*
*IDC **07** 12:00:56.3±1.4, 28°.29N × 52°.34E, h0km, mb4.0/9, mb1 4.0/11, mb1mx3.7/53, mbtmp3.9/11, ML3.5/2, Error ellipse: s-maj=30.3km s-min=23.0km az=174.0*
*ISCJB **07** 12:00:57.2±0.6, 28°.31N ± 0°.05 × 52°.24E ± 0°.05, h10km, mb3.8/10, Error ellipse: s-maj=7.8km s-min=5.9km az=20.6*
*TEH **07** 12:01:04.4, 28°.60N × 52°.01E, h11km, ML3.6*

ISC 07 12:00:58.4±0.8, 28°.20N ± 0°.06 × 52°.24E ± 0°.06, h10km, n23, σ 1°.84/26, mb3.9/10, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GHIR	**Ghir-Karzin**	**0.67**	**82**	*e*Pg	**Pg**	**12 01 08.9**	**-2.5**
GHIR				*e*Sg	**Sg**	**12 01 19.7**	**-0.5**
ISRV	**Sarvestan**	**1.41**	**33**	*e*Pg	**Pg**	**12 01 26.9**	**+1.3**
ISRV				*e*AMB	AMB	12 01 50.5	
	comp=Z,14μm,0.3s						
ISRV	**Sarvestan**	**1.41**	**33**	*e*Pg	**Pg**	**12 01 26.9**	**+1.3**
IPAR	**Pars**	**1.79**	**23**	*e*Pg	**Pb**	**12 01 32.0**	**+0.5**
IPAR				*e*Sg	**Sn**	**12 01 52.4**	**-0.2**
IPAR				*e*AMB	AMB	12 01 56.6	
	comp=Z,10μm,0.4s						
IPAR	**Pars**	**1.79**	**23**	*e*Pg	**Pb**	**12 01 32.0**	**+0.5**
IPAR				*e*Sg	**Sn**	**12 01 52.4**	**-0.2**
KRBR	**Kerman**	**4.34**	**65**	*e*Pn	Pn	12 01 59.1	-5.7
IBAF	**Bafgh**	**4.45**	**40**	*e*Pn	**Pn**	**12 02 09.2**	**+3.0**
IBAF	**Bafgh**	**4.45**	**40**	*e*Pn	**Pn**	**12 02 09.3**	**+0.2**
IZEF	**Zefreh**	**4.69**	**1**	*e*Pn	**Pn**	**12 02 09.3**	**-0.2**
IZEF	**Zefreh**	**4.69**	**1**	*e*Pn	**Pn**	**12 02 09.3**	**-0.2**
WSAR	**Wadi Sarin**	**7.59**	**129**	Pn	**Pn**	**12 02 47.0**	**-2.2**
	comp=Z,0.3nm,0.3s,baz=311,slow=14,SNR=3.9						
WSAR				Sn	**Sn**	**12 04 19.9**	**+4.6**
	comp=Z,1.2nm,0.3s,baz=112,slow=12,SNR=3.2						
KBZ	**Khabaz**	**17.23**	**337**	Pn	**P**	**12 05 02.3**	**+1.7**
	comp=Z,0.1nm,0.3s,baz=162,slow=12,SNR=3.5						
BRTR	**Keskin Array B**	**19.20**	**312**	Pn	**Pn**	**12 05 24.4**	**+0.9**
	comp=Z,0.3nm,0.3s,baz=135,slow=12,SNR=6.6						
IDI	**Anoyia**	**24.26**	**294**	P	**P**	**12 06 16.3**	**+0.4**
	comp=Z,2.2nm,0.5s,baz=80,slow=18,SNR=3.8						
AKASG	**Malin Array Be**	**28.43**	**329**	P	**P**	**12 06 50.7**	**-2.5**
	comp=Z,0.4nm,0.3s,baz=134,slow=8.2,SNR=4.1						
MKAR	**Makanchi Array**	**29.95**	**44**	P	**P**	**12 07 07.9**	**+1.1**
	comp=Z,0.8nm,0.9s,baz=232,slow=7.1,SNR=3.4						
KURBB	**Kurchatov Arra**	**29.96**	**34**	P	**P**	**12 07 04.4**	**-2.4**
	comp=Z,0.3nm,0.4s,baz=235,slow=9.0,SNR=3.9						
ZALV	**Zalesovo Beam**	**35.04**	**34**	P	**P**	**12 07 50.5**	**-0.7**
	comp=Z,1.5nm,0.5s,baz=254,slow=10,SNR=6.8						
FINES	**FINESS Array B**	**37.55**	**340**	P	**P**	**12 08 11.2**	**-1.2**
	comp=Z,0.9nm,0.4s,baz=145,slow=10.0,SNR=6.2						
NOA	**NORSAR Array B**	**42.72**	**332**	P	**P**	**12 08 54.0**	**-1.5**
	comp=Z,0.2nm,0.4s,baz=130,slow=8.7,SNR=4.5						
ARCES	**ARCESS Array B**	**44.17**	**347**	P	**P**	**12 09 05.9**	**-1.1**
	comp=Z,7.0nm,1.3s,baz=141,slow=7.8,SNR=6.1						
TORD	**Torodi Ar. Bea**	**49.26**	**263**	P	**P**	**12 09 47.8**	**+0.2**
	comp=Z,2.3nm,0.6s,baz=61,slow=7.7,SNR=11						
YKA	**Yellowknife Ar**	**89.01**	**354**	P	**P**	**12 13 53.3**	**0.0**
	comp=Z,0.5nm,0.6s,baz=11,slow=5.0,SNR=3.9						

*ISCJB **07** 12:06:51.7±0.8, 35°.66N ± 0°.03 × 28°.34E ± 0°.03, h32km ± 7km, Error ellipse: s-maj=5.1km s-min=3.5km az=159.8*
*DDA **07** 12:06:51.1, 35°.77N × 28°.33E, h29km, Md3.3*
*ATH **07** 12:06:51.1, 35°.68N × 28°.37E, h29km ± 1km, ML2.9/8, Error ellipse: s-maj=2.5km s-min=1.2km az=351.0*
*ISK **07** 12:06:52.1, 35°.85N × 28°.23E, h14km, ML3.0*
*CSEM **07** 12:06:53.2±0.2, 35°.74N × 28°.29E, h30km ± 3km, ML3.1, Error ellipse: s-maj=5.7km s-min=3.6km az=156.0*
*THE **07** 12:06:53.6, 35°.76N × 28°.30E, h20km ± 3km, ML3.1/3, Error ellipse: s-maj=4.4km s-min=1.0km az=335.0*
*HLW **07** 12:06:55.6, 35°.35N × 28°.38E, h33km ± 23km, Md3.5*

ISC 07 12:06:52.6±1.1, 35°.73N ± 0°.03 × 28°.34E ± 0°.02, h33km ± 8km, n72, σ 1°.33/110, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ARG	**Arkhangelos**	**0.52**	**341**	P	**Pb**	**12 07 03.0**	**-0.4**
ARG				S	**Sb**	**12 07 10.9**	**0.0**
ARG	**Arkhangelos**	**0.52**	**341**	P	**Pb**	**12 07 03.2**	**-0.2**
ARG				S	**Sb**	**12 07 10.9**	**0.0**
KARP	**Karpathos**	**0.97**	**260**	*e*PG	**Pn**	**12 07 10.2**	**+0.2**
KARP				*e*SG	**Sn**	**12 07 23.6**	**+0.9**
KARP	**Karpathos**	**0.97**	**260**	P	**Pn**	**12 07 10.1**	**+0.2**
KARP				S	**Sn**	**12 07 23.3**	**+0.6**
KARP	**Karpathos**	**0.97**	**260**	*e*Pg	**Pn**	**12 07 10.2**	**+0.2**
KARP				S	**Sn**	**12 07 23.3**	**+0.6**
KARP	**Karpathos**	**0.97**	**260**	P	**Pn**	**12 07 10.3**	**+0.2**
KARP				S	**Sn**	**12 07 22.8**	**+0.1**
KARP				AML	AML	12 07 25.0	
	comp=N,1472μm,0.4s						
KARP				AML	AML	12 07 25.6	
	comp=E,1295μm,0.4s						
KSL	**Kastellorizon**	**1.09**	**67**	P	**Pn**	**12 07 12.4**	**+0.8**
KSL				S	**Sb**	**12 07 27.3**	**+0.3**
KSL	**Kastellorizon**	**1.09**	**67**	P	**Pn**	**12 07 12.9**	**+1.3**
KSL				S	**Sn**	**12 07 26.0**	**+0.4**
KSL				AML	AML	12 07 28.7	
	comp=E,990μm,0.3s						
KSL				AML	AML	12 07 28.8	
	comp=N,444μm,0.3s						
DALY	**Dalyan (Mu¨la**	**1.12**	**13**	*e*PG	**Pn**	**12 07 12.2**	**+0.3**
DALY	**Dalyan (Mu¨la**	**1.12**	**13**	*e*Pg	**Pn**	**12 07 12.2**	**+0.3**
AKAS	**Kas**	**1.15**	**63**	*i* P	**Pn**	**12 07 13.1**	**+0.7**
AKAS				*i* S	**Sn**	**12 07 28.1**	**+1.0**
AKAS	**Kas**	**1.15**	**63**	P	**Pn**	**12 07 13.1**	**+0.7**
TURN	**Turunc**	**1.16**	**11**	*i* P	**Pn**	**12 07 11.2**	**-1.3**
TURN				*i* S	**Sn**	**12 07 25.2**	**-2.1**
NIS1	**Nisyros Isl.**	**1.28**	**313**	*e*PN	**Pn**	**12 07 14.0**	**-0.2**
NIS1				*e*SN	**Sn**	**12 07 30.1**	**-0.1**
NIS1	**Nisyros Isl.**	**1.28**	**313**	P	**Pn**	**12 07 14.2**	**0.0**
NIS1	**Nisyros Isl.**	**1.28**	**313**	P	**Pn**	**12 07 14.2**	**0.0**
NIS1				*e*Sn	**Sn**	**12 07 30.2**	**-0.1**
NIS1				S	**Sb**	**12 07 33.2**	**+0.9**
NIS1	**Nisyros Isl.**	**1.28**	**313**	P	**Pn**	**12 07 15.1**	**+0.8**
NIS1				S	**Sb**	**12 07 33.2**	**+0.9**
NIS1				AML	AML	12 07 38.6	
	comp=N,3502μm,0.3s						
NIS1				AML	AML	12 07 40.4	
	comp=E,3148μm,0.6s						
NISR	**Nisiros**	**1.32**	**312**	P	**Pb**	**12 07 16.6**	**-0.1**
NISR	**Nisiros**	**1.32**	**312**	P	**Pb**	**12 07 16.6**	**-0.1**
NISR				S	**Sb**	**12 07 36.0**	**+2.7**
NISR				AML	AML	12 07 43.4	
	comp=E,1228μm,0.5s						
NISR				AML	AML	12 07 46.4	
	comp=N,907μm,0.8s						
YER	**Yerkesik**	**1.41**	**358**	*e*PN	**Pn**	**12 07 16.2**	**+0.2**
YER				*e*SN	**Sn**	**12 07 33.8**	**+0.4**
YER	**Yerkesik**	**1.41**	**358**	P	**Pn**	**12 07 16.7**	**+0.7**
YER				*e*Sn	**Sn**	**12 07 33.8**	**+0.4**
BDRM	**Kayabasi**	**1.52**	**332**	*i* P	**Pn**	**12 07 17.3**	**-0.2**
BDRM				*i* S	**Sn**	**12 07 34.4**	**-1.7**
BDRM	**Kayabasi**	**1.52**	**332**	P	**Pn**	**12 07 17.3**	**-0.2**
BDRM				S	**Sn**	**12 07 34.4**	**-1.7**
BODT	**Bodrum**	**1.57**	**328**	*e*PN	**Pn**	**12 07 18.2**	**+0.1**
BODT				*e*SN	**Sn**	**12 07 36.2**	**-1.1**
BODT	**Bodrum**	**1.57**	**328**	P	**Pn**	**12 07 18.1**	**-0.1**
BODT				S	**Sn**	**12 07 35.7**	**-1.7**
BODT	**Bodrum**	**1.57**	**328**	*e*Pn	**Pn**	**12 07 18.2**	**+0.1**
BODT				S	**Sn**	**12 07 35.7**	**-1.7**
BODT				*e*Sn	**Sn**	**12 07 36.3**	**-1.1**
ELL	**Elmali**	**1.63**	**51**	*e*PN	**Pn**	**12 07 21.0**	**+1.9**
ELL	**Elmali**	**1.63**	**51**	*e*Pn	**Pn**	**12 07 21.0**	**+1.9**
GLHS	**Glhisar (BURDU**	**1.71**	**33**	*e*PN	**Pn**	**12 07 21.6**	**+1.5**
GLHS	**Glhisar (BURDU**	**1.71**	**33**	*e*Pn	**Pn**	**12 07 21.6**	**+1.5**
GOLH	**Golhisar**	**1.80**	**33**	*i* P	**Pn**	**12 07 23.2**	**+1.8**
GOLH				*i* S	**Sb**	**12 07 45.9**	**-1.3**
GOLH	**Golhisar**	**1.80**	**33**	P	**Pn**	**12 07 23.2**	**+1.8**
GOLH				S	**Sb**	**12 07 45.9**	**-1.3**
ZKR	**Zakros**	**1.84**	**251**	P	**Pn**	**12 07 22.9**	**+1.1**
ZKR	**Zakros**	**1.84**	**251**	P	**Pn**	**12 07 22.9**	**+1.1**
ZKR	**Zakros**	**1.84**	**251**	P	**Pn**	**12 07 23.1**	**+1.3**
ZKR				AML	AML	12 08 03.8	
	comp=N,316μm,0.6s						
ZKR				AML	AML	12 08 03.9	
	comp=E,462μm,0.5s						
DNZL	**Cakiroluk**	**2.04**	**16**	*i* P	**Pn**	**12 07 25.0**	**+0.2**
DNZL	**Cakiroluk**	**2.04**	**16**	P	**Pn**	**12 07 25.0**	**+0.2**
KORT	**Korkueli**	**2.06**	**51**	*i* P	**Pn**	**12 07 26.9**	**+1.9**
KORT				*i* S	**Sb**	**12 07 53.5**	**-1.3**
KORT	**Korkueli**	**2.06**	**51**	P	**Pn**	**12 07 27.0**	**+1.9**
KORT				S	**Sb**	**12 07 53.5**	**-1.3**
AYDB	**Zeytinkoy-Aydi**	**2.24**	**351**	*e*PN	**Pn**	**12 07 27.8**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**2.24**	**351**	*e*Pn	**Pn**	**12 07 27.8**	**+0.3**
NPS	**Neapolis**	**2.27**	**259**	P	**Pn**	**12 07 29.4**	**+1.6**
NPS	**Neapolis**	**2.27**	**259**	P	**Pn**	**12 07 29.4**	**+1.6**
NPS				AML	AML	12 08 08.1	
	comp=N,202μm,0.3s						
NPS				AML	AML	12 08 16.3	
	comp=E,257μm,0.6s						
LAST	**Lasithi**	**2.40**	**257**	P	**Pn**	**12 07 31.6**	**+1.9**
LAST	**Lasithi**	**2.40**	**257**	P	**Pn**	**12 07 31.6**	**+1.9**
APE	**Apeiranthos**	**2.63**	**301**	P	**Pn**	**12 07 32.1**	**-0.7**
APE	**Apeiranthos**	**2.63**	**301**	P	**Pn**	**12 07 32.1**	**-0.7**
IDI	**Anoyia**	**2.85**	**262**	P	**Pn**	**12 07 35.9**	**+0.1**
IDI	**Anoyia**	**2.85**	**262**	P	**Pn**	**12 07 35.9**	**+0.1**
IDI	**Anoyia**	**2.85**	**262**	P	**Pn**	**12 07 38.8**	**+3.0**
IDI				AML	AML	12 08 24.4	
	comp=N,64μm,0.5s						
IDI				AML	AML	12 08 24.5	
	comp=E,72μm,0.5s						
SIVA	**Sivas**	**2.97**	**257**	P	**Pn**	**12 07 38.5**	**+1.1**
SIVA	**Sivas**	**2.97**	**257**	P	**Pn**	**12 07 38.5**	**+1.1**
GAZI	**Gazipasa**	**3.27**	**80**	*i* P	**Pn**	**12 07 41.3**	**-0.2**
GAZI				*i* S	**Sn**	**12 08 17.6**	**-1.6**
GAZI	**Gazipasa**	**3.27**	**80**	P	**Pn**	**12 07 41.3**	**-0.2**
GAZI				S	**Sn**	**12 08 17.6**	**-1.6**
GVD	**Gavdhos**	**3.59**	**257**	P	**Pn**	**12 07 47.6**	**+1.7**
GVD				S	**Sn**	**12 08 27.4**	**+0.2**
GVD	**Gavdhos**	**3.59**	**257**	P	**Pn**	**12 07 47.6**	**+1.7**
GVD				S	**Sn**	**12 08 27.4**	**+0.2**
GVD				AML	AML	12 08 30.0	
	comp=N,89μm,0.4s						
GVD				AML	AML	12 08 33.7	
	comp=E,87μm,0.5s						
ERMK	**Ermenek**	**3.81**	**75**	*i* P	**Pn**	**12 07 51.8**	**+2.6**
ERMK				*i* S	**

TKM2	**Tokmak 2**	**8.40 180**	⇓Lg	Lg	12 16 32.6	
	6.3nm,0.9s					
PDGK	**Podgornoye**	**8.41 160**	⇑Lg	Lg	12 16 34.8	
	2.3nm,0.7s					

IDC 07 12:17:27.0±2.7, 28°.61S×177°.07W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.6/20, mbtmp3.5/2, Error ellipse: s-maj=83.1km s-min=25.8km az=131.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.98**	**229**	Pn	Pn	12 17 48.3	+0.2
	100nm,0.3s,baz=149,slow=19,SNR=3.8						
RAO				Sn	Sn	12 18 03.3	+0.6
	329nm,0.3s,baz=63,slow=21,SNR=6.2						
URZ	**Urewera**	**10.78**	**205**	Sn	Sn	12 21 44.3	-20
	0.4nm,0.3s,baz=193,slow=4.8,SNR=3.1						
ASAR	**Alice Springs**	**44.05**	**265**	P	P	12 25 37.1	+0.2
	0.6nm,0.8s,baz=102,slow=6.7,SNR=6.5						
WRA	**Warramunga Arr**	**44.88**	**270**	P	P	12 25 43.0	-0.6
	0.6nm,0.8s,baz=110,slow=8.1,SNR=9.7						
KURBB	**Kurchatov Arra**	**120.43**	**314**	PKP	PKPdf	12 36 19.9	-0.2
	0.2nm,0.2s,baz=113,slow=1.4,SNR=2.8						
FINES	**FINESS Array B**	**143.73**	**341**	PKP	PKPdf	12 37 02.9	-0.5
	1.3nm,0.8s,baz=9.5,slow=4.2,SNR=3.8						

IDC 07 12:24:43.5±0.9, 29°.66S×176°.11W, h0km, mb4.1/6, mb1 4.3/7, mb1mx4.0/34, mbtmp4.1/7, ML3.4/1, MS3.7/5, Ms1 3.7/5, ms1mx3.3/28, Error ellipse: s-maj=35.9km s-min=19.9km az=173.0
NEIC 07 12:24:44.9±0.6, 29°.69S×176°.08W, h10km, mb4.4/1, Error ellipse: s-maj=17.0km s-min=12.6km az=158.0
ISC 07 12:24:47.8±0.8, 29°.7S±0°.1×176°.20W±0°.08, h28km, n21, σ0s76/21, mb4.2/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.56**	**285**	Pn	**Pb**	**12 25 15.3**	**-0.7**
	284nm,0.3s,baz=81,slow=23,SNR=4.6						
RAO				Sn	**Sb**	**12 25 35.7**	**+0.4**
	266nm,0.3s,baz=104,slow=21,SNR=4.7						
RAO				T	T	12 27 58.2	
	506nm,0.3s,baz=62,slow=18,SNR=5.1						
RAO	**Raoul Island**	**1.56**	**285**	*e*Pn	**Pb**	**12 25 15.2**	**-0.8**
RAO				Pn	**Pb**	**12 25 15.3**	**-0.7**
RAO				Sn	**Sb**	**12 25 35.7**	**+0.4**
RAO				TT		12 27 58.2	
URZ	**Urewera**	**10.21**	**211**	Pn	**Pn**	**12 27 11.8**	**-0.7**
	0.3nm,0.3s,baz=241,slow=5.5,SNR=2.3						
URZ				LR	LR	12 31 14.2	
	comp=Z,236nm,21.2s,baz=246,slow=38						
RAR	**Rarotonga**	**17.04**	**64**	LR	LR	12 32 45.9	
	comp=Z,207nm,21.4s,baz=300,slow=28						
DZM	**Mont Dzumac**	**17.35**	**292**	LR	LR	12 34 37.8	
	comp=Z,280nm,18.8s,baz=153,slow=34						
PPT	**Papeete**	**27.13**	**70**	LR	LR	12 39 46.1	
	comp=Z,175nm,18.1s,baz=274,slow=33						
CTA	**Charters Tower**	**35.24**	**277**	P	**P**	**12 31 41.8**	**+1.6**
	1.1nm,0.3s,baz=117,slow=11,SNR=3.4						
CTAO	**Charters Tower**	**35.24**	**277**	*e*P	**P**	**12 31 41.3**	**+1.1**
STKA	**Stephens Creek**	**36.17**	**256**	P	**P**	**12 31 48.8**	**+0.8**
	4.1nm,0.7s,baz=58,slow=6.9,SNR=4.9						
ASAR	**Alice Springs**	**44.72**	**265**	P	**P**	**12 32 58.3**	**-0.5**
	1.0nm,0.6s,baz=95,slow=7.7,SNR=28						
ASAR				LR	LR	12 52 58.9	
	comp=Z,228nm,18.2s,baz=124,slow=38						
WRAB	**Tennant Creek**	**45.64**	**270**	*e*P	**P**	**12 33 05.9**	**-0.3**
	3.0nm,0.7s						
WRA	**Warramunga Arr**	**45.65**	**270**	P	**P**	**12 33 05.3**	**-1.0**
	3.1nm,0.8s,baz=110,slow=6.1,SNR=21						
TXAR	**Lajitas Array**	**90.68**		P	**P**	**12 37 48.7**	**+0.5**
	0.4nm,0.9s,baz=208,slow=4.3,SNR=3.7						
ILAR	**Eielson Array**	**96.87**	**12**	P	**P**	**12 38 14.8**	**-0.9**
	0.5nm,0.8s,baz=211,slow=5.3,SNR=4.9						
KURK	**Kurchatov**	**121.67**	**314**	PKP	**PKPdf**	**12 43 38.5**	**0.0**
KURBB	**Kurchatov Arra**	**121.71**	**314**	PKP	**PKPdf**	**12 43 38.5**	**-0.1**
	0.7nm,0.7s,baz=102,slow=2.1,SNR=8.0						
FINES	**FINESS Array B**	**144.97**	**342**	PKP	**PKPab**	**12 44 20.4**	**-0.6**
	1.0nm,0.5s,baz=54,slow=6.5,SNR=9.1						
NB2	**NORSAR Subarra**	**148.24**	**353**	PKP	**PKPbc**	**12 44 30.5**	**-0.1**
	comp=Z,1.7nm,0.9s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**148.24**	**353**	PKPbc	**PKPbc**	**12 44 31.1**	**+0.4**
	comp=Z,1.6nm,0.8s,baz=11,slow=2.8,SNR=5.3						
AKASG	**Malin Array Be**	**151.63**	**325**	PKPbc	**PKPbc**	**12 44 39.0**	**-0.1**
	comp=Z,2.8nm,0.7s,baz=47,slow=2.9,SNR=8.4						
TORD	**Torodi Ar. Bea**	**163.44**	**173**	PKPab	**PKPab**	**12 45 40.2**	**+0.7**
	comp=Z,1.7nm,1.1s,baz=182,slow=6.0,SNR=3.7						

NEIC 07 12:26:19.2, 17°.24N×101°.00W, h9km, MD4.1(MEX), After MEX.
MEX 07 12:26:19.2±0.8, 17°.24N×101°.00W, h9km±4km, MD4.1, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.58**	**309**	*i* P	Pg	12 26 29.5	-0.9
ZIIG				*i* S	Sg	12 26 37.2	-0.8
ZIIG	**Zihuatanejo**	**0.58**	**309**	*i* P	Pg	12 26 29.5	-0.9
ZIIG				*i* S	Sg	12 26 37.2	-0.8
CAIG	**El Cayaco**	**0.72**	**105**	*i* P	Pg	12 26 31.1	-2.1
CAIG				*i* S	Sg	12 26 40.7	-1.9
CAIG	**El Cayaco**	**0.72**	**105**	*i* P	Pg	12 26 31.1	-2.1
CAIG				*i* S	Sg	12 26 40.7	-1.9
ACP2	**Acapulco**	**1.12**	**109**	*e*P	Pg	12 26 37.9	-2.8
ACP2				*e*S	Sg	12 26 52.4	-3.0
ACX	**Acapulco**	**1.15**	**109**	*e*P	Pn	12 26 41.5	0.0
ACX				*e*S	Sg	12 26 55.2	-1.0
ACX	**Acapulco**	**1.15**	**109**	*e*P	Pn	12 26 41.5	0.0
ACX				*e*S	Sg	12 26 55.2	-1.0
ARIG	**Puente Sto Nin**	**1.21**	**31**	*i* P	Pb	12 26 38.4	-3.9
ARIG				*i* S	Sb	12 26 53.2	-4.7
MEIG	**Mezcala**	**1.48**	**62**	*i* P	Pn	12 26 42.9	-3.2
MEIG				*e*S	Sn	12 27 01.6	-4.1
MEIG	**Mezcala**	**1.48**	**62**	*i* P	Pn	12 26 42.9	-3.2
MEIG				*e*S	Sn	12 27 01.6	-4.1
TLIG	**Tlapa**	**2.34**	**82**	*e*P	Pn	12 26 55.0	-3.0
TLIG				*i* S	Sn	12 27 21.9	-5.1
YAIG	**Yautepec**	**2.44**	**48**	*e*P	Pn	12 26 57.1	-2.3
YAIG				*e*S	Sn	12 27 24.6	-5.0
YAIG	**Yautepec**	**2.44**	**48**	*e*P	Pn	12 26 57.1	-2.3
YAIG				*e*S	Sn	12 27 24.6	-5.0

ISCJB 07 12:30:34.0±1.5, 28°.6S±0°.2×176°.5W±0°.2, h29km, mb4.1/5, Error ellipse: s-maj=32.1km s-min=16.5km az=149.2
IDC 07 12:30:33.0±1.6, 28°.66S×176°.65W, h0km, mb4.0/5, mb1 4.2/5, mb1mx3.8/30, mbtmp4.0/5, Error ellipse: s-maj=37.0km s-min=27.4km az=157.0
ISC 07 12:30:37.4±1.3, 28°.7S±0°.2×176°.6W±0°.2, h29km, n9, σ1s05/9, mb4.1/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.25**	**244**	Pn	**Pn**	**12 30 58.1**	**-0.9**
	344nm,0.3s,baz=109,slow=8.5,SNR=6.3						
RAO				Sn	**Sb**	**12 31 17.0**	**+0.8**
	1µm,0.3s,baz=142,slow=23,SNR=10						
URZ	**Urewera**	**10.87**	**207**	Sn	Sn	12 34 57.8	-14
	2.1nm,0.3s,baz=234,slow=22,SNR=5.2						
CTA	**Charters Tower**	**34.76**	**276**	P	**P**	**12 37 26.1**	**+0.7**
	2.5nm,0.6s,baz=95,slow=13,SNR=3.0						
STKA	**Stephens Creek**	**36.05**	**254**	P	**P**	**12 37 37.4**	**+1.0**
	1.9nm,0.8s,baz=79,slow=10,SNR=2.8						
ASAR	**Alice Springs**	**44.42**	**265**	P	**P**	**12 38 44.5**	**-1.4**
	1.6nm,0.5s,baz=102,slow=6.6,SNR=12						
WRA	**Warramunga Arr**	**45.26**	**270**	P	**P**	**12 38 51.4**	**-1.2**
	2.4nm,0.6s,baz=110,slow=7.7,SNR=19						
VNDA	**Vanda**	**49.90**	**186**	P	**P**	**12 39 27.9**	**+0.1**
	0.5nm,0.7s,baz=4.9,slow=7.1,SNR=3.4						
FINES	**FINESS Array B**	**143.94**	**342**	PKP	**PKPdf**	**12 50 09.6**	**+0.4**
	1.7nm,0.8s,baz=55,slow=5.3,SNR=4.8						
AKASG	**Malin Array Be**	**150.62**	**326**	PKPbc	**PKPbc**	**12 50 26.6**	**+0.4**
	0.5nm,0.3s,baz=45,slow=3.5,SNR=4.9						

NIED 07 12:32:00, 36°.60N×143°.50E, h32km, Mw3.8 Best double couple: M0 5.94000×10^14 NP1: φ=347.00000°, δ=74.00000°, λ=176.00000°. NP2: φ=78.00000°, δ=86.00000°, λ=16.00000°.
IDC 07 12:32:29.9±2.2, 36°.42N×144°.01E, h0km, mb3.7/3, mb1 4.0/7, mb1mx3.6/55, mbtmp3.9/7, ML4.1/3, Error ellipse: s-maj=47.6km s-min=24.7km az=81.0
ISCJB 07 12:32:34.7±0.8, 36°.58N±0°.04×143°.59E±0°.06, h33km, mb3.8/4, Error ellipse: s-maj=7.3km s-min=5.2km az=23.2
JMA 07 12:32:36.1±0.2, 36°.56N×143°.54E, h61km, M4.1
ISC 07 12:32:34.6±1.4, 36°.54N±0°.06×143°.74E±0°.10, h35km, n32, σ1s44/38, mb3.8/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**2.42**	**284**	P	**Pn**	**12 33 12.1**	**+0.3**
ONAJ				*e*S	**Sn**	**12 33 39.3**	**-0.9**
JFK	**Kawauchi**	**2.44**	**291**	P	**Pn**	**12 33 12.1**	**+0.2**
JFK				S	**Sn**	**12 33 39.2**	**-1.3**
CHOJ	**Chosi**	**2.47**	**251**	P	**Pn**	**12 33 13.0**	**+0.6**
JHO	**Hitachi**	**2.55**	**273**	P	**Pn**	**12 33 13.7**	**+0.3**
JHO				*e*S	**Sn**	**12 33 40.4**	**-2.9**
JFT	**Otama**	**2.89**	**291**	P	**Pn**	**12 33 19.4**	**+1.2**
JFT				*e*S	**Sn**	**12 33 51.8**	**+0.1**
BSO1	**Boso 1**	**2.93**	**231**	P	**Pn**	**12 33 18.4**	**+0.2**
BSO1				S	**Sn**	**12 33 52.6**	**+0.8**
JMK	**Ichinoseki**	**3.13**	**321**	P	**Pn**	**12 33 21.6**	**+0.2**
JMK				*e*S	**Sn**	**12 33 56.9**	**-0.6**
JAG	**Ashikaga**	**3.45**	**269**	P	**Pn**	**12 33 26.7**	**+0.8**
JAG				S	**Sn**	**12 34 03.6**	**-1.9**
JOM	**Ohasama**	**3.51**	**327**	P	**Pn**	**12 33 26.7**	**+0.1**
JOM				*e*S	**Sn**	**12 34 04.8**	**-2.1**
JYK	**Kaneyama**	**3.58**	**313**	P	**Pn**	**12 33 28.6**	**+1.0**
JYK				*e*S	**Sn**	**12 34 06.8**	**-1.9**
JRY	**Ryogami san**	**3.94**	**264**	P	**Pn**	**12 33 33.2**	**+0.6**
JRY				*e*S	**Sn**	**12 34 16.3**	**-1.3**
JOD2	**Odawara 2**	**3.98**	**253**	P	**Pn**	**12 33 33.9**	**+0.8**
JOD2				S	**Sn**	**12 34 17.0**	**-1.6**
JAW	**Awa shima**	**4.05**	**300**	P	Pn	12 33 37.5	+3.5
JANG	**Nango**	**4.21**	**336**	P	**Pn**	**12 33 35.8**	**-0.5**
JYN	**Shimodate**	**4.33**	**258**	P	**Pn**	**12 33 39.0**	**+1.0**
JYN				S	**Sn**	**12 34 27.1**	**-0.3**
MJAR	**Matsushiro Arr**	**4.45**	**272**	Pn	**Pn**	**12 33 41.0**	**+1.4**
	3.4nm,0.3s,baz=94,slow=9.0,SNR=28						
MJAR				Sn	**Sn**	**12 34 30.6**	**+0.4**
	4.0nm,0.3s,baz=79,slow=27,SNR=5.8						
MAT	**Matsushiro**	**4.45**	**272**	P	Pn	12 33 41.6	+2.0
MAT				S	**Sn**	**12 34 30.0**	**-0.2**
MAT	**Matsushiro**	**4.45**	**272**	P	Pn	12 33 41.2	+1.6
MAT				*e*S	**Sn**	**12 34 28.3**	**-1.9**
JHJ	**Hachijo jima 2**	**4.71**	**225**	Pn	**Pn**	**12 33 42.1**	**-1.0**
	50nm,0.3s,baz=294,slow=17,SNR=69						
JHJ				Sn	**Sn**	**12 34 33.1**	**-3.4**
	57nm,0.3s,baz=219,slow=23,SNR=7.7						
ASAJ	**Asahikawa**	**7.62**	**354**	Pn	**Pn**	**12 34 22.6**	**-0.5**
	3.3nm,0.3s,baz=205,slow=9.2,SNR=11						
ASAJ				Sn	**Sn**	**12 35 45.6**	**-2.6**
	1.0nm,0.3s,baz=290,slow=12,SNR=3.7						
USRK	**Ussuriysk Ar.**	**11.78**	**314**	Pn	**Pn**	**12 35 21.7**	**+1.7**
	0.4nm,0.3s,baz=115,slow=14,SNR=6.4						
KLR	**Kul'dur**	**15.40**	**329**	Pn	**Pn**	**12 36 07.3**	**-1.9**
	0.2nm,0.3s,baz=142,slow=12,SNR=5.2						
H11N2	**WAKE ISLAND Hy**	**26.30**	**123**	T	T	13 05 14.3	
	baz=316,slow=75,SNR=23						
H11N1	**WAKE ISLAND Hy**	**26.31**	**123**	T	T	13 05 14.3	
	baz=316,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy**	**26.32**	**123**	T	T	13 05 09.1	
	baz=316,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**27.04**	**125**	T	T	13 06 11.9	
	baz=316,slow=76,SNR=7.3						
H11S3	**WAKE ISLAND Hy**	**27.04**	**126**	T	T	13 06 12.8	
	baz=316,slow=76,SNR=5.9						
H11S2	**WAKE ISLAND Hy**	**27.05**	**125**	T	T	13 06 14.7	
	baz=316,slow=76,SNR=7.7						
ZALV	**Zalesovo Beam**	**43.62**	**313**	P	P	12 40 41.9	+6.5
	0.8nm,0.3s,baz=90,slow=7.2,SNR=3.7						
MKAR	**Makanchi Array**	**125.53**	**317**	PKP	P	12 40 57.1	+3.0
	0.3nm,0.7s,baz=82,slow=12,SNR=3.2						
KURBB	**Kurchatov Arra**	**47.77**	**309**	P	**P**	**12 41 10.7**	**+2.6**
	1.6nm,0.6s,baz=82,slow=7.8,SNR=17						
WRA	**Warramunga Arr**	**56.87**	**191**	P	**P**	**12 42 15.8**	**0.0**
	0.4nm,0.5s,baz=14,slow=7.3,SNR=5.9						

IDC 07 12:48:45.0±1.8, 28°.39S×177°.06W, h0km, mb3.9/2, mb1 4.2/2, mb1mx3.7/17, mbtmp3.9/2, Error ellipse: s-maj=65.0km s-min=22.6km az=128.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.14**	**221**	Pn	Pn	12 49 08.3	0.0
	377nm,0.3s,baz=77,slow=12,SNR=8.8						
RAO				Sn	Sn	12 49 25.2	+0.6
	1µm,0.3s,baz=101,slow=17,SNR=6.2						
RAO				LR	LR	12 49 35.5	
	comp=Z,1µm,18.3s,baz=116,slow=44						
URZ	**Urewera**	**10.98**	**205**	Sn	Sn	12 53 09.4	-18
	2.0nm,0.3s,baz=93,slow=20,SNR=6.5						
ASAR	**Alice Springs**	**44.08**	**264**	P	P	12 56 54.9	-0.3
	0.9nm,0.7s,baz=102,slow=6.7,SNR=8.1						
WRA	**Warramunga Arr**	**44.89**	**270**	P	P	12 57 01.7	0.0
	2.2nm,0.9s,baz=109,slow=7.8,SNR=9.5						
KURBB	**Kurchatov Arra**	**120.29**	**314**	PKP	PKPdf	13 07 37.3	-0.6
	0.3nm,0.4s,baz=129,slow=1.3,SNR=4.5						
BVAR	**Borovoye Array**	**125.53**	**317**	PKP	PKPdf	13 07 47.4	-0.4
	0.3nm,0.5s,baz=75,slow=2.2,SNR=3.4						
AKASG	**Malin Array Be**	**150.16**	**326**	PKPbc	PKPbc	13 08 37.3	-0.2
	0.3nm,0.2s,baz=45,slow=2.0,SNR=5.7						
BRTR	**Keskin Array B**	**152.30**	**302**	PKPbc	PKPbc	13 08 43.4	+0.3
	0.4nm,0.4s,baz=116,slow=2.9,SNR=3.8						

NSSC 07 12:48:50.6±1.7, 33°.85N×35°.76E, h0km±6km, ML1.9
ISCJB 07 12:48:51.9±0.5, 33°.86N±0°.03×35°.81E±0°.04, h6km±6km, Error ellipse: s-maj=5.4km s-min=4.4km az=10.3
CSEM 07 12:48:52.2, 33°.87N×35°.84E, h4km, ML2.8
GRAL 07 12:48:52.2±0.3, 33°.87N×35°.84E, h4km±6km, MD2.8
ISC 07 12:48:52.0±1.1, 33°.86N±0°.03×35°.84E±0°.03, h4km±12km, n14, σ0s82/25, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.16**	**287**	*e*P	**Pg**	**12 48 55.1**	**-0.1**
BHL				*e*S	**Sg**	**12 48 57.3**	**0.0**
BHL	**Bhannes**	**0.16**	**287**	*e*P	**Pg**	**12 48 55.1**	**-0.1**
BHL				*e*S	**Sg**	**12 48 57.3**	**0.0**
DQRL	**Deir Qamar**	**0.27**	**236**	*e*P	**Pg**	**12 48 57.4**	**+0.1**
DQRL				*e*S	**Sg**	**12 49 01.0**	**+0.2**
DQRL	**Deir Qamar**	**0.27**	**236**	*e*P	**Pg**	**12 48 57.4**	**+0.1**
DQRL				*e*S	**Sg**	**12 49 01.0**	**+0.2**
RCY	**Rachaya**	**0.36**	**180**	*e*P	**Pg**	**12 48 58.9**	**0.0**
RCY				*e*S	**Sg**	**12 49 04.0**	**+0.3**
HWQ	**Hawqa**	**0.43**	**12**	*e*P	**Pg**	**12 48 59.7**	**-0.6**
HWQ	**Hawqa**	**0.43**	**12**	*e*P	**Pg**	**12 48 59.7**	**-0.6**
QASN	**Qassioun**	**0.49**	**131**	*e*P	**Pg**	**12 49 00.9**	**-0.5**
QASN				*e*S	**Sg**	**12 49 09.5**	**+1.8**
QASN				AML	AML	12 49 13.4	
	comp=E,223nm,0.3s						
QASN				AML	AML	12 49 15.6	
	comp=N,162nm,0.5s						
MARH	**Ras Al Marh**	**0.56**	**72**	*e*P	**Pg**	**12 49 03.0**	**+0.2**
MARH				*e*S	**Sb**	**12 49 11.8**	**-1.3**
MARH				AML	AML	12 49 16.4	
	comp=E,130nm,0.3s						
MARH				AML	AML	12 49 17.1	
	comp=N,66nm,0.5s						
HAWK	**Haweek**	**0.81**	**35**	*e*P	**Pg**	**12 49 07.5**	**-0.1**
HAWK				*e*S	**Sb**	**12 49 20.0**	**-0.1**
HAWK				AML	AML	12 49 24.9	
	comp=N,37nm,0.5s						
HAWK				AML	AML	12 49 26.3	
	comp=E,30nm,0.5s						
TCHB	**Talchebab**	**1.19**	**175**	*e*P	**Pg**	**12 49 12.4**	**-2.4**
TCHB				*e*S	**Sg**	**12 49 29.6**	**-0.6**
TCHB				AML	AML	12 49 32.3	
	comp=E,33nm,0.6s						
TCHB				AML	AML	12 49 42.8	
	comp=N,38nm,0.5s						
BIDA	**Albida**	**1.22**	**19**	*e*P	**Pg**	**12 49 14.8**	**-0.7**
BIDA				AML	AML	12 49 36.8	
	comp=E,78nm,0.3s						
BIDA				AML	AML	12 49 39.3	
	comp=N,65nm,0.4s						
SALA	**Sala**	**1.37**	**146**	*e*P	**Pn**	**12 49 18.2**	**+0.2**
SALA				*e*S	**Sb**	**12 49 36.6**	**+0.5**
SALA				AML	AML	12 49 41.8	
	comp=E,3.1nm,0.5s						
SALA				AML	AML	12 49 47.2	
	comp=N,17nm,0.7s						
ZALF	**Zalf**	**1.56**	**126**	*e*P	**Pn**	**12 49 21.3**	**+0.8**
ZALF				*e*S	**Sn**	**12 49 41.7**	**+0.5**
ZALF				AML	AML	12 49 46.5	
	comp=E,9.9nm,0.3s						
ZALF				AML	AML	12 49 46.9	
	comp=N,7.2nm,0.4s						

ATH 07 12:49:15.8, 41°.91N×20°.60E, h11km±2km, ML2.4/7, Error ellipse: s-maj=2.9km s-min=1.7km az=183.0
TIR 07 12:49:15.1, 41°.87N×20°.59E, h12km, ML2.9
SKO 07 12:49:16.4, 41°.83N×20°.55E, h8km, M2.0, ML2.5
CSEM 07 12:49:17.2±0.2, 41°.87N×20°.51E, h2km, ML2.6, Error ellipse: s-maj=3.8km s-min=2.9km az=50.0
THE 07 12:49:17.1, 42°.06N×20°.65E, h6km±6km, ML2.6/2, Error ellipse: s-maj=8.9km s-min=0.7km az=14.0
BEO 07 12:49:18.4±0.3, 41°.89N×20°.50E, h0km, M2.4/1
PDG 07 12:49:18.1±0.6, 41°.92N×20°.48E, h2km±1km, ML2.6/11, Error ellipse: s-maj=0.8km s-min=1.2km az=0.0
ISC 07 12:49:16.9±1.1, 41°.87N±0°.01×20°.54E±0°.02, h4km±10km, n89, σ1s09/153, 20C-8D, Albania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKO	**Skopje**	**0.68**	**81**	P	**Pg**	**12 49 29.6**	**-0.3**
SKO				S	**Sg**	**12 49 39.7**	**+1.0**
SKO	**Skopje**	**0.68**	**81**	⇑*i* Pg	**Pg**	**12 49 29.6**	**-0.3**
SKO				*i* Sg	**Sg**	**12 49 39.4**	**+0.7**
SKO				*e*Lg	Lg	12 49 40.0	
	comp=N,29nm,0.3s						
SKO				*e*Lg	Lg	12 49 40.1	
	comp=E,22nm,0.3s						
SKO	**Skopje**	**0.68**	**81**	P	**Pg**	**12 49 29.6**	**-0.3**
SKO				*i* Sg	**Sg**	**12 49 39.4**	**+0.7**
SKO				*e*Lg	Lg	12 49 40.0	
	comp=E,29nm,0.3s						
TIR	**Tirane**	**0.73**	**224**	*i* PG	**Pg**	**12 49 30.2**	**-0.6**
TIR				*i* SG	**Sb**	**12 49 41.6**	**-1.0**
TIR	**Tirane**	**0.73**	**224**	*e*Pg	**Pg**	**12 49 30.3**	**-0.6**
TIR				*e*Sg	**Sb**	**12 49 41.8**	**-0.7**
TIR	**Tirane**	**0.73**	**224**	P	**Pg**	**12 49 30.4**	**-0.5**
TIR				*e*Sg	**Sb**	**12 49 41.8**	**-0.7**
TIR				S	**Sb**	**12 49 42.2**	**-0.3**
TIR	**Tirane**	**0.73**	**224**	P	**Pg**	**12 49 29.8**	**-1.1**
TIR				S	**Sb**	**12 49 42.2**	**-0.3**
TIR				AML	AML	12 49 45.5	
	comp=N,895µm,0.5s						
TIR				AML	AML	12 49 45.5	
	comp=E,711µm,0.5s						
OHR	**Ohrid**	**0.79**	**166**	⇑*i* Pg	**Pg**	**12 49 31.0**	**-1.0**
OHR				*i* Sg	**Sg**	**12 49 42.0**	**-0.2**
OHR				*e*Lg	Lg	12 49 42.9	
	comp=N,115nm,0.3s						
OHR				*e*Lg	Lg	12 49 43.1	
	comp=E,164nm,0.5s						
OHR	**Ohrid**	**0.79**	**166**	⇑*i* Pg	**Pg**	**12 49 30.9**	**-1.0**
OHR				*i* Sg	**Sg**	**12 49 41.9**	**-0.2**
OHR				*e*Lg	Lg	12 49 42.8	
	comp=E,115nm,0.3s						
PEJK	**Peje**	**0.79**	**346**	P	**Pg**	**12 49 32.5**	**+0.3**
PVY	**Plav**	**0.84**	**329**	⇓*i* Pg	**Pg**	**12 49 32.5**	**-0.6**
PVY				*e*Sg	**Sb**	**12 49 45.1**	**-0.8**
PVY	**Plav**	**0.84**	**329**	⇓*i* Pg	**Pg**	**12 49 32.5**	**-0.6**
PVY				*e*Sg	**Sb**	**12 49 45.1**	**-0.8**
ULC	**Ulcinj**	**0.97**	**276**	⇑*i* Pg	**Pg**	**12 49 33.9**	**-1.7**
ULC				*e*Sg	**Sb**	**12 49 49.7**	**+0.1**
ULC	**Ulcinj**	**0.97**	**276**	⇑*i* Pg	**Pg**	**12 49 33.9**	**-1.7**
ULC	**Ulcinj**	**0.97**	**276**	P	**Pg**	**12 49 34.4**	**-1.2**
ULC				*e*Sg	**Sb**	**12 49 49.7**	**+0.1**
DRME	**Dracevica, Mon**	**1.06**	**288**	⇓*i* Pg	**Pg**	**12 49 35.7**	**-1.5**
DRME				*e*Sg	**Sb**	**12 49 52.3**	**+0.3**
DRME	**Dracevica, Mon**	**1.06**	**288**	⇓*i* Pg	**Pg**	**12 49 35.7**	**-1.5**
DRME				*e*Sg	**Sb**	**12 49 52.3**	**+0.3**
PDG	**Podgorica**	**1.11**	**301**	P	**Pg**	**12 49 37.7**	**-0.4**
PDG				S	**Sb**	**12 49 53.3**	**-0.1**
PDG	**Podgorica**	**1.11**	**301**	*e*Pg	**Pg**	**12 49 38.1**	**0.0**
PDG				*e*Sg	**Sg**	**12 49 52.8**	**+0.3**
PDG	**Podgorica**	**1.11**	**301**	*e*Pn	**Pg**	**12 49 35.8**	**-2.3**
PDG	**Podgorica**	**1.11**	**301**	P	**Pg**	**12 49 37.7**	**-0.4**
PDG	**Podgorica**	**1.11**	**301**	*e*Pg	**Pg**	**12 49 38.1**	**0.0**
PDG				S	**Sb**	**12 49 53.3**	**-0.1**
PDG				*e*Sg	**Sn**	**12 49 54.3**	**-0.6**
TTG	**Podgorica**	**1.11**	**301**	⇑*i* Pg	**Pg**	**12 49 37.7**	**-0.4**
TTG				*e*Sg	**Sn**	**12 49 54.3**	**-0.6**
BEY	**Berane**	**1.11**	**335**	⇑*i* Pg	**Pg**	**12 49 37.2**	**-1.0**
BEY	**Berane**	**1.11**	**335**	P	**Pg**	**12 49 37.7**	**-0.5**
BEY				*e

IVAS	**Ivanjica**	**1.73 351**	*e*Pg	**Pn**	**12 49 48.1 +0.3**
IVAS			*e*Sg	**Sg**	**12 50 12.0 -0.4**
PENT	**Pentalofos**	**1.73 165**	P	**Pb**	**12 49 49.6 +0.2**
PENT			S	**Sg**	**12 50 14.6 +2.0**
PENT	**Pentalofos**	**1.73 165**	P	**Pn**	**12 49 48.3 +0.4**
PENT	**Pentalofos**	**1.73 165**	P	**Pn**	**12 49 48.3 +0.4**
PENT			AML	AML	12 50 20.0
	comp=E,173µm,0.7s				
PENT			AML	AML	12 50 21.7
	comp=N,151µm,0.8s				
UPM	**Unac-Piva**	**1.80 318** ⇑	*i*Pn	**Pb**	**12 49 49.9 -0.6**
UPM			*e*Sn	**Sg**	**12 50 16.3 +1.6**
UPM	**Unac-Piva**	**1.80 318** ⇑	*i*Pn	**Pb**	**12 49 49.9 -0.6**
UPM	**Unac-Piva**	**1.80 318**	P	**Pb**	**12 49 50.4 -0.1**
UPM			*e*Sn	**Sg**	**12 50 16.3 +1.6**
BRY	**Bratogost**	**1.81 305** ⇑	*i*Pn	**Pb**	**12 49 50.2 -0.4**
BRY			*e*Sn	**Sg**	**12 50 16.2 +1.3**
BRY	**Bratogost**	**1.81 305** ⇑	*i*Pn	**Pb**	**12 49 50.2 -0.4**
BRY			*e*Sn	**Sg**	**12 50 16.2 +1.3**
TREB	**Trebinje**	**1.83 298**	*e*Pn	**Pb**	**12 49 50.4 -0.6**
GRUS	**Gruza**	**2.02 4**	*e*Pn	**Pn**	**12 49 52.2 +0.4**
GRUS	**Gruza**	**2.02 4**	*e*Pn	**Pn**	**12 49 52.2 +0.4**
ZAPS	**Zavoj**	**2.08 47**	*e*Pn	**Pb**	**12 49 55.1 -0.2**
ZAPS			*e*Sn	**Sb**	**12 50 21.4 -0.2**
ZAPS	**Zavoj**	**2.08 47**	*e*Pn	**Pb**	**12 49 55.1 -0.2**
ZAPS			*e*Sn	**Sb**	**12 50 21.4 -0.2**
BBLS	**Lazići**	**2.16 338**	*e*Pn	**Pn**	**12 49 54.6 +0.8**
BBLS			*e*Sg	**Sb**	**12 50 24.8 +1.0**
BOLS	**Boljevac**	**2.21 27**	*e*Pn	**Pb**	**12 49 57.6 +0.1**
BOLS	**Boljevac**	**2.21 27**	*e*Pn	**Pb**	**12 49 57.6 +0.1**
KEK	**Kerkira**	**2.23 195**	P	**Pn**	**12 49 55.2 +0.5**
KEK			S	**Sb**	**12 50 25.0 -0.7**
DIVS	**Divibare**	**2.26 350**	*e*Pn	**Pn**	**12 49 55.3 +0.1**
DIVS	**Divibare**	**2.26 350**	*e*Pn	**Pn**	**12 49 55.3 +0.1**
SGD	**Sagiada**	**2.27 186**	P	**Pb**	**12 49 58.1 -0.3**
SGD	**Sagiada**	**2.27 186**	P	**Pn**	**12 49 56.7 +1.5**
SGD			S	**Sn**	**12 50 24.0 +0.4**
SGD	**Sagiada**	**2.27 186**	P	**Pn**	**12 49 56.7 +1.5**
SGD			S	**Sn**	**12 50 24.0 +0.4**
IGT	**Igoumenitsa**	**2.34 184**	P	**Pb**	**12 49 58.7 -1.0**
IGT	**Igoumenitsa**	**2.34 184**	P	**Pb**	**12 49 58.7 -1.0**
IGT			AML	AML	12 50 37.9
	comp=E,66µm,0.5s				
IGT			AML	AML	12 50 41.6
	comp=N,60µm,0.5s				
TRUS	**Trudelj**	**2.35 358**	*e*Pn	**Pb**	**12 49 59.5 -0.4**
TRUS	**Trudelj**	**2.35 358**	*e*Pn	**Pb**	**12 49 59.5 -0.4**
THL	**Klokotos Trika**	**2.56 154**	P	**Pn**	**12 50 00.7 +1.5**
THL			S	**Sn**	**12 50 32.2 +1.3**
KUBS	**Kucevo**	**2.67 18**	*e*Pn	**Pb**	**12 50 03.1 -2.2**
KUBS			*e*Sg	**Sg**	**12 50 42.9 +0.2**
KUBS	**Kucevo**	**2.67 18**	*e*Pn	**Pb**	**12 50 03.1 -2.2**
KUBS			*e*Sg	**Sg**	**12 50 42.9 +0.2**
TEKS	**Tekeris**	**2.78 345**	*e*Pn	**Pb**	**12 50 04.7 -2.4**
TEKS	**Tekeris**	**2.78 345**	*e*Pn	**Pb**	**12 50 04.7 -2.4**
AGG	**Agios Georgios**	**3.16 154**	P	**Pn**	**12 50 07.9 +0.4**
AGG			S	**Sn**	**12 50 44.7 -0.9**
AGG	**Agios Georgios**	**3.16 154**	P	**Pn**	**12 50 07.9 +0.4**
AGG			S	**Sn**	**12 50 44.7 -0.9**
AGG			AML	AML	12 50 53.3
	comp=N,83µm,0.3s				
AGG			AML	AML	12 50 58.8
	comp=E,93µm,0.6s				

IDC 07 12:55:36.4±5.3, 28°.26S×176°.25W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/19, mbtmp3.5/2, Error ellipse: s-maj=137.8km s-min=56.4km az=132.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.77**	**236**	Pn	Pn	12 56 07.4	-0.8
	172nm,0.3s,baz=66,slow=10,SNR=3.1						
RAO				Sn	Sn	12 56 27.7	-3.7
	218nm,0.3s,baz=198,slow=22,SNR=3.5						
URZ	**Urewera**	**11.41**	**207**	Sn	Sn	13 00 06.1	-23
	0.7nm,0.3s,baz=123,slow=23,SNR=4.1						
ASAR	**Alice Springs**	**44.80**	**264**	P	P	13 03 52.4	+0.1
	0.2nm,0.5s,baz=106,slow=6.8,SNR=4.8						
WRA	**Warramunga Arr**	**45.60**	**269**	P	P	13 03 58.8	+0.1
	0.2nm,0.3s,baz=108,slow=7.9,SNR=9.8						
FINES	**FINESS Array B**	**143.63**	**342**	PKP	PKPdf	13 15 11.4	-1.2
	0.5nm,0.6s,baz=242,slow=3.0,SNR=3.2						

IDC 07 12:56:27.4±3.3, 28°.39S×176°.97W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.7/19, mbtmp3.9/3, Error ellipse: s-maj=82.9km s-min=28.6km az=122.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.20**	**224**	Pn	Pn	12 56 51.6	+0.2
	497nm,0.3s,baz=108,slow=9.0,SNR=8.2						
RAO				Sn	Sn	12 57 08.5	0.0
	2µm,0.3s,baz=65,slow=22,SNR=15						
URZ	**Urewera**	**11.02**	**205**	Sn	Sn	13 00 52.6	-18
	1.0nm,0.3s,baz=66,slow=21,SNR=3.6						
STKA	**Stephens Creek**	**35.85**	**254**	P	P	13 03 29.6	+0.5
	2.3nm,0.9s,baz=126,slow=19,SNR=3.2						
ASAR	**Alice Springs**	**44.16**	**264**	P	P	13 04 37.8	-0.4
	0.7nm,0.5s,baz=104,slow=7.6,SNR=9.2						
WRA	**Warramunga Arr**	**44.97**	**270**	P	P	13 04 44.6	-0.1
	0.7nm,0.6s,baz=110,slow=7.9,SNR=6.1						
KURBB	**Kurchatov Arra**	**120.34**	**314**	PKP	PKPdf	13 15 19.8	-0.5
	0.2nm,0.5s,baz=102,slow=2.4,SNR=4.3						

*IDC **07** 13:07:19.6±0.4, 28°.73S×176°.93W, h0km, mb5.0/18, mb1 5.1/18, mb1mx5.0/26, mbtmp5.0/18, MS4.6/19, Ms1 4.5/19, ms1mx4.4/28, Error ellipse: s-maj=17.6km s-min=13.4km az=142.0*

*BJI **07** 13:07:20.9, 29°.20S×177°.20W, h20km, mb5.4/41, mB5.5/33, Ms5.0/32, Ms7 4.7/31*

*NEIC **07** 13:07:20.6±0.2, 29°.08S×177°.10W, h10km, mb5.3/31, Error ellipse: s-maj=7.3km s-min=5.0km az=137.0*

*GCMT **07** 13:07:20.6±0.2, 28°.88S×176°.54W, h22km, MW5.3/102, Moment Tensor Solution. s72,c111; s102,c160; Duration: 1s0 Moment tensor: Scale 10^17 Nm; Mrr 0.82±.03; Mθθ -0.01±.02; Mϕϕ -0.81±.02; Mrθ 0.08±.04; Mθϕ -0.15±.01; Mϕr 0.54±.03; Best double couple: M=0.99700×10^17 NP1:ϕs 9.00000°, δ62.00000°, λ89.00000°. NP2:ϕs 192.00000°, δ28.00000°, λ92.00000°. Principal axes: T 0.9870, Plg73.0000°, Azm277.0000°; N 0.0200, Plg1.0000°, Azm10.0000°; P -1.0070, Plg17.0000°, Azm100.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **07** 13:07:22.8±0.2, 29°.12S±0°.04×177°.11W±0°.04, h33km, mb5.3/59, MS4.7/36 Error ellipse: s-maj=7.0km s-min=4.1km az=142.5*

*MOS **07** 13:07:23.5±1.2, 28°.88S×177°.07W, h33km, mb5.5/46, MS4.9/13, Error ellipse: s-maj=10.2km s-min=9.0km az=107.3*

ISC 07 13:07:24.2±0.3, 29°.12S±0°.05×176°.87W±0°.06, h36km±2km, n455, σ1§59/453, mb5.4/59, MS4.8/37, 20C-34D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.93**	**261**	Pn	**Pn**	**13 07 41.7**	**+0.9**
	5µm,0.3s,baz=88,slow=7.6,SNR=53						
RAO				Sn	**Sn**	**13 07 58.8**	**+6.0**
	11µm,0.3s,baz=100,slow=19,SNR=16						
RAO				LR	LR	13 08 08.5	
	comp=Z,23µm,19.2s,baz=170,slow=48						
RAO	**Raoul Island**	**0.93**	**261**	*e*P	**Pn**	**13 07 41.6**	**+0.9**
RAO				*e*		13 07 52.9	
RAO	**Raoul Island**	**0.93**	**261**	*e*Pn	**Pn**	**13 07 41.6**	**+0.9**
RAO				*e*Sn	**Sn**	**13 07 52.9**	**+0.1**
RAO				Sn	Sn	13 07 58.8	+6.0
OUZ	**Omahuta**	**10.11**	**231**	*e*Pn	Pn	13 09 56.0	+9.2
URZ	**Urewera**	**10.40**	**207**	Pn	**Pn**	**13 09 48.7**	**-2.0**
	1.3nm,0.3s,baz=269,slow=4.6,SNR=7.0						
URZ				Sn	**Sn**	**13 11 44.0**	**-2.0**
	7.4nm,0.3s,baz=224,slow=3.5,SNR=6.3						
URZ	**Urewera**	**10.40**	**207**	*e*Pn	**Pn**	**13 09 47.1**	**-3.6**
URZ				Sn	**Sn**	**13 11 44.0**	**-2.0**
BKZ	**Black Stump Fm**	**11.43**	**207**	*e*Pn	**Pn**	**13 10 06.8**	**+2.0**
NIUE	**Niue**	**11.83**	**34**	P	Pn	13 10 01.8	-8.6
	baz=12,SNR=6.0						
MSVF	**Nonsavu**	**12.25**	**337** ⇓	*e*P	**Pn**	**13 10 15.5**	**-0.7**
MSVF	**Nonsavu**	**12.25**	**337**	*e*Pn	**Pn**	**13 10 14.3**	**-1.9**
THZ	**Tophouse**	**15.11**	**211**	*e*Pn	**Pn**	**13 10 52.6**	**-2.3**
KHZ	**Kahutara**	**15.37**	**208**	*e*Pn	**Pn**	**13 10 55.7**	**-2.6**
	226nm,1.4s						
AFI	**Afiamalu**	**15.85**	**18**	Sn	Sn	13 13 36.7	-23
	2.4nm,0.3s,baz=294,slow=2.8,SNR=3.9						
DZM	**Mont Dzumac**	**16.60**	**291**	Pn	**P**	**13 11 20.5**	**+4.0**
	3.3nm,0.3s,baz=110,slow=14,SNR=29						
DZM				LR	LR	13 16 27.5	
	comp=Z,6µm,19.2s,baz=122,slow=33						
DZM	**Mont Dzumac**	**16.60**	**291**	*e*Pn	**P**	**13 11 18.1**	**+1.7**
	184nm,0.8s						
DZM				*e*LQ	LQ	13 14 29.0	
	3µm,26.1s						
DZM				*e*LR	LR	13 15 13.4	
	7µm,23.5s						
DZM	**Mont Dzumac**	**16.60**	**291**	*e*Pn	**P**	**13 11 17.3**	**+0.9**
	96nm,0.7s						
OXZ	**Oxford**	**16.75**	**209**	*e*Pn	**Pn**	**13 11 10.6**	**-5.3**
	167nm,0.5s						
RAR	**Rarotonga**	**17.35**	**67**	P	Pn	13 11 15.3	-8.3
	1.6nm,0.3s,baz=239,slow=12,SNR=7.8						
RAR				S	Sn	13 14 12.5	-23
	1.9nm,0.3s,baz=272,slow=23,SNR=3.2						
RAR				LR	LR	13 16 29.4	
	comp=Z,1µm,21.3s,baz=245,slow=32						
RAR	**Rarotonga**	**17.35**	**67**	P	**Pn**	**13 11 23.4**	**-0.1**
RAR				pmax	pmax		
	comp=Z,158nm,2.9s						
RAR	**Rarotonga**	**17.35**	**67**	P	Pn	13 11 15.3	-8.3
RAR				Pn	**P**	**13 11 19.1**	**-5.5**
RPZ	**Rata Peaks**	**17.48**	**210**	P	**Pn**	**13 11 24.5**	**-0.6**
	comp=Z,6.5nm,0.3s,baz=60,slow=3.6,SNR=16						
RPZ				S	Sn	13 14 22.9	-16
	comp=Z,1.3nm,0.3s,baz=124,slow=23,SNR=5.2						
RPZ	**Rata Peaks**	**17.48**	**210**	Pn	**Pn**	**13 11 21.4**	**-3.7**
	comp=Z,222nm,1.6s						
RPZ				S	Sn	13 14 22.9	-16
FOZ	**Fox Glacier**	**17.91**	**213**	*e*Pn	**P**	**13 11 32.8**	**+2.1**
	comp=Z,232nm,1.5s						
LBZ	**Lake Benmore**	**18.40**	**211**	*e*P	**P**	**13 11 30.0**	**-6.1**
	comp=Z,181nm,1.7s						
ODZ	**Otahua Downs**	**18.72**	**209**	*e*P	**P**	**13 11 36.8**	**-2.8**
	comp=Z,71nm,1.0s						
LHI	**Lord Howe Isla**	**20.91**	**257**	*e*P	**P**	**13 12 00.6**	**-2.9**
	comp=Z,297nm,0.8s						
TBI	**Tubuai**	**25.22**	**83**	*e*LQ	LQ	13 17 35.3	
	comp=Z,2µm,28.0s						
TBI				*e*LR	LR	13 18 56.9	
	comp=Z,3µm,29.2s,baz=250						
TBI	**Tubuai**	**25.22**	**83**	*e*T	T	13 38 24.2	
	comp=Z,13nm,0.3s						
ARMA	**Armidale**	**27.33**	**259**	P	**P**	**13 13 05.2**	**-0.7**
	baz=28,SNR=28						
ARMA	**Armidale**	**27.33**	**259**	*e*P	**P**	**13 13 04.2**	**-1.7**
	comp=Z,29nm,0.8s						
PAE	**Paea**	**27.45**	**71**	*e*T	T	13 41 11.5	
	comp=Z,5.9nm,0.3s						
PPT2	**Papeete2**	**27.49**	**71**	*e*LQ	LQ	13 18 26.5	
	comp=Z,2µm,24.8s						
PPT2				*e*LR	LR	13 19 56.6	
	comp=Z,3µm,26.8s,baz=233						
PPT2	**Papeete2**	**27.49**	**71**	*e*T	T	13 41 15.8	
	comp=Z,5.3nm,0.3s						
PPT	**Papete**	**27.50**	**71**	LR	LR	13 21 12.3	
	comp=Z,816nm,19.9s,baz=233,slow=30						
MGCD	**Mangrove Creek**	**27.64**	**253**	P	**P**	**13 13 09.0**	**+0.5**
	baz=28,SNR=4.9						
TVO	**Taravao**	**27.66**	**72**	*e*T	T	13 41 27.8	
	comp=Z,2.5nm,0.4s						
EIDS	**Eidsvold**	**28.69**	**270**	P	**P**	**13 13 19.1**	**+1.1**
	baz=29,SNR=19						
EIDS	**Eidsvold**	**28.69**	**270**	*e*P	**P**	**13 13 17.4**	**-0.5**
	comp=Z,22nm,0.8s						
CNB	**Canberra Magne**	**29.14**	**249**	P	**P**	**13 13 23.9**	**+2.1**
	baz=30,SNR=12						
HNR	**Honiara**	**29.26**	**307**	*e*P	P	13 13 15.0	-8.0
CAN	**Canberra**	**29.43**	**249**	*e*P	**P**	**13 13 23.5**	**-1.0**
CAN				pmax	pmax		
	comp=Z,37nm,0.7s						
CAN	**Canberra**	**29.43**	**249**	*e*P	**P**	**13 13 23.5**	**-1.0**
	comp=Z,37nm,0.7s						
RMQ	**Roma**	**30.46**	**267**	P	**P**	**13 13 35.4**	**+1.8**
	baz=31,SNR=8.7						
MOO	**Moorlands**	**31.80**	**236**	P	**P**	**13 13 45.2**	**-0.1**
	baz=32,SNR=3.9						
TAU	**Tasmania Unive**	**31.82**	**235**	*e*P	**P**	**13 13 41.1**	**-4.3**
TAU				pmax	pmax		
	comp=Z,97nm,1.0s						
TAU	**Tasmania Unive**	**31.82**	**235**	*e*P	**P**	**13 13 41.1**	**-4.3**
	comp=Z,97nm,1.0s						
CMSA	**Cobar Meteorol**	**32.31**	**256**	P	**P**	**13 13 50.3**	**+0.4**
	baz=33,SNR=24						
TOO	**Toolangi**	**32.38**	**245**	P	**P**	**13 13 52.5**	**+2.0**
	baz=33,SNR=13						
QLP	**Quilpie**	**34.38**	**265**	P	**P**	**13 14 08.1**	**+0.2**
	baz=35,SNR=14						
CTA	**Charters Tower**	**34.60**	**277**	P	**P**	**13 14 10.0**	**+0.1**
	comp=Z,50nm,0.8s,baz=101,slow=11,SNR=64						
CTA				PcP	**PcP**	**13 16 45.5**	**+1.5**
	comp=Z,11nm,0.8s,baz=167,slow=4.6,SNR=3.9						
CTA				LR	LR	13 26 36.9	
	comp=Z,3µm,19.3s,baz=102,slow=34						
CTAO	**Charters Tower**	**34.60**	**277**	*e*P	**P**	**13 14 08.3**	**-1.6**
CTAO				*e*		13 16 45.5	
CTAO				pmax	pmax		
	comp=Z,51nm,0.8s						
CTAO	**Charters Tower**	**34.60**	**277**	*e*P	**P**	**13 14 08.2**	**-1.6**
	comp=Z,51nm,0.8s						
CTAO				*e*PcP	**PcP**	**13 16 45.5**	**+1.5**
ARPS	**Mount Arapiles**	**35.27**	**247**	P	**P**	**13 14 15.9**	**+0.3**
	baz=36,SNR=8.1						
STKA	**Stephens Creek**	**35.74**	**255**	P	**P**	**13 14 20.7**	**+1.0**
	comp=Z,30nm,0.8s,baz=88,slow=9.0,SNR=36						
STKA				LR	LR	13 27 43.7	
	comp=Z,1µm,18.2s,baz=91,slow=34						
STKA	**Stephens Creek**	**35.74**	**255**	P	**P**	**13 14 20.6**	**+1.0**
	baz=36,SNR=14						
STKA	**Stephens Creek**	**35.74**	**255**	*e*P	**P**	**13 14 16.6**	**-3.0**
STKA				pmax	pmax		
	comp=Z,7.0nm,0.8s						
STKA	**Stephens Creek**	**35.74**	**255**	*e*P	**P**	**13 14 16.6**	**-3.0**
	comp=Z,7nm,0.8s						
MTSU	**Mount Surprise**	**37.05**	**278**	P	**P**	**13 14 31.4**	**+0.5**
	baz=37,SNR=32						
HTT	**Hallett**	**37.82**	**252**	P	**P**	**13 14 37.3**	**-0.1**
	baz=38,SNR=23						
RKT	**Rikitea**	**37.94**	**91**	*e*LR	LR	13 24 48.2	
	comp=Z,2µm,29.2s						
PMG	**Port Moresby**	**38.98**	**293**	P	**P**	**13 14 46.7**	**-0.5**
	comp=Z,25nm,0.8s,baz=129,slow=4.6,SNR=5.2						
PMG				PcP	**PcP**	**13 16 59.9**	**+2.7**
	comp=Z,30nm,0.8s,baz=9.2,slow=9.5,SNR=5.0						
COEN	**Coen**	**39.90**	**284**	P	**P**	**13 14 55.3**	**+0.4**
	baz=40,SNR=14						
COEN	**Coen**	**39.90**	**284**	*e*P	**P**	**13 14 52.4**	**-2.5**
	comp=Z,24nm,0.8s						
COEN				*e*PcP	**PcP**	**13 17 01.3**	**+1.1**
TAOE	**Nuku Hiva Isla**	**39.90**	**67**	*e*LR	LR	13 25 39.0	
	comp=Z,1µm,24.5s						
QIS	**Mount Isa**	**40.23**	**272**	P	**P**	**13 14 57.0**	**-0.6**
	baz=41,SNR=4.9						
BBOO	**Buckleboo**	**40.28**	**253**	P	**P**	**13 14 57.0**	**-0.9**
	baz=41,SNR=30						
BBOO	**Buckleboo**	**40.28**	**253**	*e*P	**P**	**13 14 57.3**	**-0.6**
	comp=Z,49nm,0.8s						
MANU	**Manus Island**	**43.39**	**302**	*e*P	**P**	**13 15 22.5**	**-1.0**
	comp=Z,74nm,0.8s						
AS01	**Alice Springs**	**44.14**	**265**	*e*P	**P**	**13 15 28.2**	**-1.2**
AS31	**Alice Springs**	**44.18**	**265**	*e*P	**P**	**13 15 29.2**	**-0.6**
	comp=Z,9.9nm,0.6s						
ASAR	**Alice Springs**	**44.18**	**265**	P	**P**	**13 15 28.8**	**-1.0**
	comp=Z,33nm,0.8s,baz=98,slow=7.1,SNR=322						
ASAR				PcP	**PcP**	**13 17 14.6**	**+0.3**
	comp=Z,5.0nm,0.6s,baz=94,slow=4.3,SNR=5.3						
ASAR				LR	LR	13 33 19.4	
	comp=Z,3µm,18.4s,baz=114,slow=35						
ASAR	**Alice Springs**	**44.18**	**265**	P	**P**	**13 15 28.8**	**-1.0**
ASAR						13 17 14.6	
ASAR				pmax	pmax		
	comp=Z,31nm,0.8s						
ASAR				pmax	pmax		
	comp=Z,5.0nm,0.6s						
ASAR				MLR	MLR		
	comp=Z,3µm,18.4s						
WB2	**Warramunga Arr**	**45.04**	**270**	*e*P	**P**	**13 15 36.0**	**-0.7**
	comp=Z,63nm,0.8s						
WRAB	**Tennant Creek**	**45.05**	**270**	*e*P	**P**	**13 15 35.5**	**-1.2**
WRAB				*e*		13 17 15.8	
WRAB				pmax	pmax		
	comp=Z,58nm,0.8s						
WRAB	**Tennant Creek**	**45.05**	**270**	*e*P	**P**	**13 15 35.5**	**-1.2**
	comp=Z,58nm,0.8s						
WRAB				*e*PcP	**PcP**	**13 17 15.8**	**-1.4**
WRA	**Warramunga Arr**	**45.05**	**270**	P	**P**	**13 15 35.5**	**-1.4**
	comp=Z,54nm,0.7s,baz=110,slow=7.8,SNR=156						
WRA				PcP	**PcP**	**13 17 17.6**	**+0.3**
	comp=Z,13nm,0.9s,baz=112,slow=3.3,SNR=8.0						
WRA				LR	LR	13 33 22.9	
	comp=Z,668nm,18.1s,baz=110,slow=35						
FORT	**Forrest**	**47.34**	**254**	P	**P**	**13 15 53.1**	**-1.5**
	baz=48,SNR=34						
FORT	**Forrest**	**47.34**	**254**	*e*P	**P**	**13 15 53.3**	**-1.3**
	comp=Z,659nm,0.6s						
FORT				*e*PcP	**PcP**	**13 17 24.6**	**-0.6**
WRKA	**Warakurna**	**48.63**	**261**	P	**P**	**13 16 02.8**	**-2.0**
	baz=49,SNR=90						
SBA	**Scott Base**	**49.39**	**185**	*e*P	**P**	**13 16 14.4**	**+4.7**
SBA				*e*		13 17 31.6	
SBA				pmax	pmax		
	comp=Z,66nm,1.3s						
SBA	**Scott Base**	**49.39**	**185**	*e*P	**P**	**13 16 14.4**	**+4.7**
	comp=Z,66nm,1.3s						
SBA				*e*PcP	**PcP**	**13 17 31.6**	**-0.1**
VNDA	**Vanda**	**49.47**	**186**	P	**P**	**13 16 14.4**	**+4.1**
	comp=Z,4.8nm,1.0s,baz=355,slow=8.5,SNR=20						
VNDA				LR	LR	13 34 18.1	
	comp=Z,336nm,20.6s,baz=26,slow=32						
VNDA	**Vanda**	**49.47**	**186**	*e*P	**P**	**13 16 11.8**	**+1.5**
VNDA				pmax	pmax		
	comp=Z,8.0nm,0.8s						
VNDA	**Vanda**	**49.47**	**186**	*e*P	**P**	**13 16 11.8**	**+1.5**
	comp=Z,8.1nm,0.8s						
MTN	**Manton Dam**	**50.78**	**277**	*e*P	**P**	**13 16 19.4**	**-1.7**
	comp=Z,21nm,0.8s						
KMBL	**Kambalda**	**52.35**	**251**	P	**P**	**13 16 31.3**	**-1.4**
	baz=53,SNR=7.3						
FITZ	**Fitzroy Crossi**	**53.36**	**268**	P	**P**	**13 16 39.1**	**-1.2**
	baz=54,SNR=33						
FITZ	**Fitzroy Crossi**	**53.36**	**268**	*e*P	**P**	**13 16 39.4**	**-0.9**
	comp=Z,40nm,0.9s						
KIP	**Kipapa**	**53.43**	**22** ⇓	*e*P	**P**	**13 16 41.0**	**+0.4**
KLBR	**Kellerberrin**	**55.70**	**250**	P	**P**	**13 16 55.5**	**-1.7**
	baz=56,SNR=16						
GUMO	**Guam**	**56.29**	**314**	P	**P**	**13 16 58.7**	**-2.7**
	comp=Z,39nm,0.7s,baz=175,slow=14,SNR=3.6						
MEEK	**Meekatharra**	**56.44**	**256**	P	**P**	**13 17 00.6**	**-1.9**
	baz=57,SNR=8.9						
CASY	**Casey**	**56.73**	**207**	*e*P	**P**	**13 17 04.2**	**+0.3**
	comp=Z,85nm,0.8s						
BLDU	**Ballidu**	**56.84**	**251**	P	**P**	**13 17 03.3**	**-2.0**
	baz=57,SNR=6.2						
MBWA	**Marble Bar**	**57.36**	**262**	P	**P**	**13 17 07.2**	**-1.9**
	comp=Z,45nm,0.8s						
MORW	**Morawa**	**57.85**	**252**	P	**P**	**13 17 10.9**	**-1.6**
	baz=58,SNR=5.3						
SOEI	**Soe**	**58.16**	**277**	*e*P	**P**	**13 17 12.9**	**-2.1**
	comp=Z,82nm,1.0s						
QSPA	**South Pole Qui**	**60.99**	**180**	*e*P	**P**	**13 17 34.2**	**+0.5**
	comp=Z,40nm,1.1s						
GIRL	**Giralia**	**61.55**	**259**	P	**P**	**13 17 37.9**	**-0.1**
	baz=62,SNR=6.6						
MIR	**Mirnyy**	**63.71**	**207**	*i*P	**P**	**13 17 53.5**	**+1.9**
MIR				pmax	pmax		
	comp=Z,9.0nm,1.0s						
JAGI	**Jajag, Banyuwa**	**67.58**	**273**	*e*P	**P**	**13 18 16.3**	**-1.2**
	comp=Z,43nm,0.9s						
PMSA	**Palmer Station**	**73.02**	**156**	*e*P	P	13 18 57.5	+7.6
	comp=Z,81nm,0.6s						
KKM	**Kota Kinabalu**	**73.11**	**287**	*e*P	**P**	**13 18 50.4**	**-1.0**
TGY	**Tagaytay City**	**73.81**	**297**	LR	LR	13 49 39.2	
	comp=Z,90nm,20.4s,baz=128,slow=34						
MAW	**Mawson**	**73.85**	**200**	P	**P**	**13 18 57.4**	**+2.7**
	comp=Z,16nm,0.9s,baz=119,slow=7.2,SNR=17						
MAW				LR	LR	13 51 05.7	
	comp=Z,681nm,18.9s,baz=84,slow=35						
MAW	**Mawson**	**73.85**	**200**	*e*P	**P**	**13 18 57.6**	**+2.8**
SBUM	**Sibu**	**74.61**	**282**	*e*P	**P**	**13 19 00.1**	**0.0**
KSM	**Kuching**	**75.76**	**280**	*e*P	**P**	**13 19 06.2**	**-0.6**
USHA	**Ushuaia**	**76.42**	**146**	LR	LR	13 45 26.1	
	comp=Z,2µm,20.7s,baz=204,slow=30						
INU	**Inuyama**	**77.47**	**323**	*e*P	**P**	**13 19 15.3**	**-0.5**
MJAR	**Matsushiro Arr**	**77.76**	**324**	P	**P**	**13 19 16.6**	**-0.9**
	comp=Z,22nm,0.8s,baz=160,slow=5.5,SNR=61						
MJAR				LR	LR	13 47 25.8	
	comp=Z,105nm,21.1s,baz=185,slow=31						
MAJO	**Matsushiro**	**77.76**	**324** ⇓	*i*P	**P**	**13 19 16.1**	**-1.4**
MAJO				pmax	pmax		
	comp=Z,196nm,0.8s						
MAJO	**Matsushiro**	**77.76**	**324**	*e*P	**P**	**13 19 14.9**	**-2.5**
MAT	**Matsushiro**	**77.76**	**324**	P	**P**	**13 19 16.7**	**-0.8**
MAT				S	**S**	**13 29 12.6**	**+5.2**
MJB9	**Matsu-Tunnel**	**77.77**	**324**	*e*P	**P**	**13 19 16.8**

baz=230
IPM Ipoh 85.28 278 *e*P **P 13 19 57.4 -0.5**
BC3 Big Chuckawall 85.29 47 P **P 13 19 57.9 +0.4**
baz=230
GLA Glamis 85.31 48 P **P 13 19 58.6 +1.1**
baz=231
CWC Cottonwood Cre 85.45 44 P **P 13 19 59.0 +0.8**
baz=229
HEC Hector,Ludlow 85.48 46 P **P 13 19 59.2 +0.8**
baz=230
GSC Goldstone, Bar 85.49 45 P **P 13 19 59.2 +0.8**
baz=230
GSC Goldstone, Bar 85.49 45 *e*P **P 13 19 58.8 +0.4**
GSC Goldstone, Bar 85.49 45 *e*P **P 13 19 58.8 +0.4**
MPMC Manual Prospec 85.56 44 P **P 13 19 59.7 +0.9**
baz=229
WDC Whiskeytown Da 85.70 38 *e*P **P 13 20 00.9 +1.7**
WDC Whiskeytown Da 85.70 38 *e*P **P 13 20 00.9 +1.7**
IRM Iron Mountain 85.80 47 P **P 13 20 01.4 +1.5**
baz=231
GMRC Granite Mounta 85.87 46 P **P 13 20 01.4 +1.0**
baz=230
MSHR Mys Shultsa 85.89 324⇓ *i*P **P 13 20 00.2 +0.2**
KULM Kulim 86.00 278 *e*P **P 13 20 01.0 -0.4**
WAKR Walker 86.02 42 *e*P **P 13 20 03.0 +1.9**
TUQ Turquoise Moun 86.12 46 P **P 13 20 02.7 +1.1**
baz=230
SHOC Shoshone, Teco 86.20 45 P **P 13 20 03.1 +1.2**
baz=230
FURC Furnace Creek, 86.21 44 P **P 13 20 02.7 +0.9**
baz=230
GRAC Grapevine Rang 86.25 44 P **P 13 20 03.6 +1.6**
baz=229
PSI Prapat 86.29 275 *e*P **P 13 20 01.7 -1.3**
PSI Prapat 86.29 275 *e*P **P 13 20 01.7 -1.3**
LDFC Landfair 86.41 46 *e*P **P 13 20 04.7 +1.7**
USRK Ussuriysk Ar. 86.64 326 P **P 13 20 04.8 +1.0**
comp=Z,18nm,0.8s,baz=137,slow=4.7,SNR=32
USRK LR LR 13 51 56.0
comp=Z,181nm,21.9s,baz=138,slow=31
GSI Gunungsitoli 86.74 273 *e*P **P 13 20 05.2 +0.1**
PAHR Pah Rah Range 86.86 41 *e*P **P 13 20 06.5 +1.4**
TPNV Topopah Spring 86.89 44 P **P 13 20 06.6 +1.2**
baz=230
TPNV Topopah Spring 86.89 44 *e*P **P 13 20 06.3 +0.9**
TPNV Topopah Spring 86.89 44 *e*P **P 13 20 06.3 +0.9**
UBPT Khong Chiam 86.92 289 P **P 13 20 07.0 +1.2**
comp=Z,23nm,1.0s
TYV Tymovskoe 87.29 336 *e*P **P 13 20 06.2 -0.5**
TYV pmax pmax
comp=Z,18nm,0.8s
TUC Tucson 87.54 51 P **P 13 20 10.0 +1.4**
baz=233
TUC Tucson 87.54 51 *e*P **P 13 20 10.2 +1.6**
TUC Tucson 87.54 51 *e*P **P 13 20 10.2 +1.6**
K05A Summer Lake 88.08 38 *e*P **P 13 20 12.0 +1.0**
TRTT Trang 88.08 280 P **P 13 20 12.3 +0.9**
MDJ Mudanjiang 88.14 325 P **P 13 20 12.1 +1.2**
MDJ pmax pmax
comp=Z,25nm,0.7s
MDJ pmax pmax
comp=Z,130nm,6.2s
R11A Troy Canyon, C 88.20 44 *e*P **P 13 20 12.8 +1.1**
WHN Wuhan 88.37 306 ⇓P **P 13 20 12.7 +0.3**
WHN LR LR
comp=Z,630nm,18.8s
WHN LR LR
comp=Z,680nm,19.2s
WHN LR LR
comp=Z,850nm,21.5s
HABR Khabarovsk 88.41 330*c* *e*P **P 13 20 11.2 -0.9**
HABR *e**SP **pP 13 20 25.7 +2.2**
HABR *e* 13 23 38.0
HABR *e*PPP PPP 13 25 33.6
HABR *e*S **SKSac 13 30 35.9 -2.1**
HABR *e* 13 30 58.8
HABR *e*SS **SS 13 36 42.9 -3.2**
HABR *e*SSS SSS 13 40 17.6
HABR MLR MLR
comp=Z,205nm,20.0s
LCMT Little Creek M 88.80 46 *e*P **P 13 20 16.1 +1.6**
CCUT Cedar City 89.06 45 *e*P **P 13 20 16.7 +0.9**
WUAZ Wupatki 89.08 48 P **P 13 20 17.0 +1.1**
baz=233
WUAZ Wupatki 89.08 48 *e*P **P 13 20 16.8 +1.0**
WVOR Wild Horse Val 89.11 39 *e*P P 13 20 21.3 +5.5
WVOR Wild Horse Val 89.11 39 *e*P P 13 20 21.2 +5.5
SNY Shenyang 89.44 320 P **P 13 20 17.9 +0.8**
SNY S **S 13 30 56.7 -8.1**
SNY pmax pmax
comp=Z,22nm,0.8s
SNY pmax pmax
comp=Z,140nm,8.7s
SNY LR LR
comp=Z,220nm,14.3s
SNY LR LR
comp=Z,150nm,17.8s
SNY LR LR
comp=Z,310nm,20.8s
CN2 Changchun 89.72 322 ⇓P **P 13 20 19.2 +0.8**
CN2 *e*sP pP 13 20 30.4 +0.6
CN2 *e*S **S 13 31 07.4 +0.1**
CN2 pmax pmax
comp=Z,30nm,0.9s
CN2 LR LR
comp=Z,200nm,21.0s
CN2 LR LR
comp=Z,200nm,21.0s
CN2 LR LR
comp=Z,200nm,23.0s
TIA Tai'an 89.83 312 ⇑P **P 13 20 19.5 +0.4**
TIA pmax pmax
comp=Z,60nm,0.8s
TIA pmax pmax
comp=Z,240nm,9.3s
TIA LR LR
comp=Z,180nm,24.9s
TIA LR LR
comp=Z,190nm,15.2s
TIA LR LR
comp=Z,220nm,26.0s
NKL Nikolayevsk 89.86 336 *e*P **P 13 20 19.0 +0.2**
NKL pmax pmax
comp=Z,86nm,1.0s
NKL MLR MLR
comp=N,400nm,18.0s
NKL MLR MLR
comp=Z,500nm,18.0s
MTPU Mount Pierson 90.09 46 *e*P **P 13 20 23.0 +2.2**
KLR Kul'dur 90.43 329*c* *i*P **P 13 20 22.3 +0.7**
TX31 Lajitas Ar. Si 90.87 57 *e*P **P 13 20 25.1 +0.8**
TXAR Lajitas Array 90.87 57 P **P 13 20 25.0 +0.7**
comp=Z,1.1nm,0.8s,baz=212,slow=7.2,SNR=15
TXAR LR LR 13 55 48.4
comp=Z,231nm,18.4s,baz=0.0,slow=32
TXAR Lajitas Array 90.87 57 P **P 13 20 25.0 +0.7**
TXAR pmax pmax
comp=Z,1.0nm,0.8s
MNTX Cornudas Mount 90.93 54 P **P 13 20 24.9 +0.5**
baz=236
MNTX Cornudas Mount 90.93 54 *e*P **P 13 20 25.0 +0.5**
MFID Camas Ranch 91.31 40 *e*P **P 13 20 26.9 +0.9**
BMO Blue Mountains 91.43 38 *e*P **P 13 20 26.9 +0.4**
ENH Enshi 91.70 304 *e*P **P 13 20 27.0 -1.0**
comp=Z,20nm,0.7s
GYA Guiyang 91.78 299 P **P 13 20 29.2 +0.6**
GYA pP pP 13 20 37.8 -2.2
GYA PP **PP 13 24 10.0 +1.9**
GYA SKS **SKSac 13 30 59.4 +0.5**
GYA S **S 13 31 26.2 -1.0**
GYA SS **SS 13 37 37.0 +1.1**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,7.6s
GYA LR LR
comp=Z,620nm,20.4s
GYA LR LR
comp=Z,580nm,21.2s
GYA LR LR
comp=Z,550nm,20.6s
SPUT South Promonto 91.93 43 *e*P **P 13 20 30.6 +1.6**
ANMO Albuquerque 92.01 51 P **P 13 20 30.0 +0.4**
baz=236
ANMO Albuquerque 92.01 51⇑ *e*P **P 13 20 30.4 +0.8**
ANMO pmax pmax
comp=Z,3.0nm,0.9s
ANMO Albuquerque 92.01 51 *e*P **P 13 20 30.2 +0.7**
HLID Hailey 92.19 40 P **P 13 20 30.9 +0.7**
baz=231
HLID Hailey 92.19 40 *e*P **P 13 20 30.9 +0.7**
MA2 Magadan 92.32 344 *e*P **P 13 20 30.8 +0.7**
BJI Beijing 92.71 315 P **P 13 20 33.0 +0.6**
BJI S **S 13 31 35.2 +0.6**
BJI pmax pmax
comp=Z,13nm,0.5s
BJI LR LR
comp=Z,120nm,26.6s
BJI LR LR
comp=Z,110nm,18.0s
BJI LR LR
comp=Z,260nm,27.3s
S22A 4UR Ranch, Cre 93.34 48 P **P 13 20 36.8 +1.0**
baz=236
034A Hebbronville 93.40 61 P **P 13 20 36.9 +0.9**
baz=239
MCMT McKenzie Canyo 93.86 40 *e*P **P 13 20 39.0 +1.0**
CMAR Chiang Mai Arr 93.91 289 P **P 13 20 39.9 +1.4**
comp=Z,1.4nm,0.7s,baz=134,slow=3.6,SNR=8.3
CHTO Chiang Mai 94.08 289 *e*P **P 13 20 40.0 +0.7**
CHTO Chiang Mai 94.08 289 *e*P **P 13 20 40.0 +0.7**
KMI Kunming 94.13 296 P **P 13 20 40.8 +1.2**
KMI pmax pmax
comp=Z,11nm,0.5s
XAN Xi'an 94.13 307 P **P 13 20 40.3 +1.1**
XAN pP pP 13 20 47.7 -2.9
XAN pmax pmax
comp=Z,12nm,1.2s
XAN pmax pmax
comp=Z,56nm,6.6s
XAN LR LR
comp=Z,220nm,23.3s
XAN LR LR
comp=Z,290nm,21.3s
BW06 Boulder Array 94.53 43 P **P 13 20 41.5 +0.4**
baz=234
PDAR Pinedale Array 94.53 43 P **P 13 20 41.0 0.0**
comp=Z,1.2nm,0.9s,baz=202,slow=3.2,SNR=6.2
PDAR PKKP **PKKPdf 13 37 40.9 +0.1**
comp=Z,1.7nm,0.8s,baz=73,slow=4.9,SNR=13
PDAR LR LR 13 58 42.9
comp=Z,366nm,18.4s,baz=249,slow=33
SEY Seymchan 94.96 346⇓ *e*P **P 13 20 41.1 -1.1**
433A Art 94.98 58 P **P 13 20 42.8 -0.3**
baz=239
BOZ Bozeman (W) 95.05 40 P **P 13 20 42.7 -0.5**
baz=233
HHC Hu-ho-hao-te 96.06 314 *e*P **P 13 20 51.1 +3.2**
HHC PP **PP 13 24 45.5 +4.2**
HHC S **S 13 32 06.6 +2.4**
HHC pmax pmax
comp=Z,23nm,1.6s
HHC pmax pmax
comp=Z,72nm,4.3s
HHC LR LR
comp=Z,180nm,17.4s
HHC LR LR
comp=Z,200nm,19.9s
HHC LR LR
comp=Z,290nm,19.9s
CD2 Chengdu 96.24 302 *e*P **P 13 20 49.0 +0.1**
CD2 sP pP 13 21 00.1 -0.2
CD2 SKS **SKSac 13 31 23.6 +0.7**
CD2 S **ScS 13 32 06.8 +0.1**
CD2 sS sS 13 32 20.5 -4.6
CD2 SS **SS 13 38 40.4 +0.9**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.6s
COLA College 96.38 12 *e*P **P 13 20 47.9 -0.7**
COLA pmax pmax
comp=Z,5.0nm,0.8s
ILAR Eielson Array 96.46 12 P **P 13 20 48.0 -1.0**
comp=Z,1.8nm,0.7s,baz=220,slow=5.6,SNR=32
BILL Bilibino 97.67 354 *e*P **P 13 20 52.9 -1.5**
BILL pmax pmax
comp=Z,4.0nm,0.8s
BILL MLR MLR
comp=Z,410nm,20.0s
LZH Lanzhou 98.75 306 *e*P Pdif 13 21 03.2 +2.9
LZH pP pP 13 21 09.5 -2.2
LZH sP sP 13 21 12.2 -3.6
LZH pmax pmax
comp=Z,18nm,1.0s
SONM Songino Array 102.85 318 PKiKP **PKiKP 13 25 40.2 +1.7**
comp=Z,1.4nm,0.7s,baz=111,slow=6.5,SNR=3.7
GTA Gaotai 103.13 308 *e*P **Pdif 13 21 20.2 +0.6**
GTA pP 13 21 24.8
GTA sP 13 21 27.5
GTA pmax pmax
comp=Z,2.0nm,1.3s
YKA Yellowknife Ar 103.87 25 PKKPbc PKKPbc 13 37 13.7 -0.7
comp=Z,1.5nm,0.8s,baz=38,slow=3.3,SNR=11
YKA PKKP **PKKPdf 13 37 23.5 -0.4**
comp=Z,0.6nm,0.7s,baz=43,slow=3.3,SNR=4.2
WMQ Urumqi 113.20 308 *e*PKP **PKiKP 13 25 57.9 +0.1**
WMQ PP **PP 13 26 51.8 +3.2**
WMQ PKS **PKSdf 13 29 30.8 -3.6**
WMQ SKS **SKSdf 13 33 02.3 -4.8**
WMQ SS **SS 13 42 33.6 +2.1**
WMQ AMB AMB
comp=Z,120nm,3.7s
WMQ LR LR
comp=Z,370nm,18.0s
WMQ LR LR
comp=Z,210nm,24.0s
WMQ LR LR
comp=Z,430nm,24.1s
KRAR Krasnoyarsk 113.75 322⇓ *i*PKIKP **PKiKP 13 25 58.6 +0.3**
MK31 Makanchi Array 117.70 310 *i*PKIKP **PKPdf 13 26 05.2 -1.1**
MK31 pmax pmax
comp=Z,10.0nm,0.8s
MKAR Makanchi Array 117.70 310 PKP **PKPdf 13 26 05.2 -1.0**
comp=Z,9.7nm,0.7s,baz=72,slow=2.0,SNR=73
MKAR SKP 13 29 40.7
comp=Z,1.0nm,0.9s,baz=64,slow=5.5,SNR=3.9
ZALV Zalesovo Beam 117.73 319 PKP **PKPdf 13 26 05.2 -0.9**
comp=Z,8.0nm,0.8s,baz=185,slow=1.4,SNR=35
ZALV Zalesovo Beam 117.73 319 PKIKP **PKPdf 13 26 05.2 -0.9**
ZALV pmax pmax
comp=Z,9.0nm,0.8s
PDGK Podgornoye 118.79 306 PKIKP **PKPdf 13 26 07.6 -0.8**
PDGK pmax pmax
comp=Z,10.0nm,0.8s
NVS Novosibirsk 118.81 319 *e*PKIKP **PKPdf 13 26 04.6 -3.5**
NVS pmax pmax
comp=Z,10.0nm,0.8s
NVS pmax pmax
comp=N,3.0nm,0.8s
NVS pmax pmax
comp=E,4.0nm,0.8s
BOSA Boshof 118.82 202 PKP **PKPdf 13 26 11.0 +1.7**
comp=E,4.8nm,0.9s,baz=166,slow=4.2,SNR=3.8
BOSA Boshof 118.82 202 PKIKP **PKPdf 13 26 11.0 +1.7**
BOSA pmax pmax
comp=Z,5.0nm,0.9s
NRIK Noril'sk 118.87 336 PKP **PKPdf 13 26 08.0 +0.2**
comp=Z,4.8nm,0.8s,baz=64,slow=3.5,SNR=4.4
KSH Kashi 120.43 301 *e*PKP **PKPdf 13 26 12.3 +0.4**
KSH *e*PP **PP 13 27 46.5 +7.3**
KSH PKS **PKSdf 13 29 47.5 -1.2**
KSH SKS **SKSdf 13 33 19.2 -2.1**
KSH SKKS **SKKSac 13 34 34.0 -1.8**
KSH LR LR
comp=Z,250nm,9.8s
KSH LR LR
comp=Z,94nm,8.7s
KSH LR LR
comp=Z,150nm,6.2s
KURK Kurchatov 120.87 314⇓ *i*PKIKP **PKPdf 13 26 11.4 -0.8**
KURK pmax pmax
comp=Z,73nm,0.7s
KURK Kurchatov 120.87 314 PKP **PKPdf 13 26 11.3 -0.8**
KURBB Kurchatov Arra 120.91 314 PKP **PKPdf 13 26 11.3 -1.0**
comp=Z,18nm,0.7s,baz=102,slow=1.9,SNR=168
TKM2 Tokmak 2 121.47 305 PKIKP **PKPdf 13 26 12.7 -1.2**
TKM2 pmax pmax
comp=Z,9.0nm,0.7s
AAK Ala-Archa 122.21 304*c* *i*PKIKP **PKPdf 13 26 15.6 +0.3**
MNAS Manas 123.63 304 PKIKP **PKPdf 13 26 17.2 -0.8**
MNAS pmax pmax
comp=Z,16nm,0.8s
OTUK Ortayu 124.59 311 PKIKP **PKPdf 13 26 18.8 -0.7**
OTUK pmax pmax
comp=Z,20nm,0.8s
KK31 Karatay Array 125.18 304 *i*PKIKP **PKPdf 13 26 20.4 -0.4**
KK31 pmax pmax
comp=Z,17nm,0.8s
VOSK Vostochnaya 125.80 316 PKIKP **PKPdf 13 26 20.4 -1.2**
VOSK pmax pmax
comp=Z,32nm,0.8s
BVA0 Borovoye Array 126.17 316 *i*PKIKP **PKPdf 13 26 22.0 -0.3**
BVA0 pmax pmax
comp=Z,23nm,0.8s
BVAR Borovoye Array 126.17 316 PKP **PKPdf 13 26 21.9 -0.4**
comp=Z,20nm,0.7s,baz=90,slow=1.5,SNR=81
BRVK Borovoye 126.23 316*c* *i*PKIKP **PKPdf 13 26 22.4 0.0**
SVE Sverdlovsk 131.51 322 *e*PKIKP **PKPdf 13 26 32.4 0.0**
SVE pmax pmax
comp=Z,20nm,0.8s
ARU Arti 132.71 321 PKP **PKPdf 13 26 33.4 -1.2**
comp=Z,18nm,0.7s,baz=39,slow=0.3,SNR=32
ARU Arti 132.71 321 *i*PKIKP **PKPdf 13 26 35.1 +0.5**
ARU 13 28 58.7
ARU MLR MLR
comp=Z,324nm,23.0s
AB31 Akbulak array 132.81 312 *i*PKIKP **PKPdf 13 26 34.2 -0.8**
AB31 pmax pmax
comp=Z,5.0nm,0.8s
SOKR Solikamsk 132.88 326 *e*PKIKP **PKPdf 13 26 32.5 -2.3**
SOKR pmax pmax
comp=Z,22nm,0.8s
GEYT Alibeck 133.90 296 PKhKP PKPpre 13 26 29.3
comp=Z,3.8nm,0.7s,baz=298,slow=3.2,SNR=6.7
GEYT PKP **PKiKP 13 26 38.4 -0.4**
comp=Z,9.8nm,0.8s,baz=270,slow=1.3,SNR=14
GEYT SKP 13 30 12.5
comp=Z,1.6nm,0.5s,baz=318,slow=2.0,SNR=4.5
AKTO Aktyubinsk 133.95 313 PKhKP PKPpre 13 26 24.1
comp=Z,1.2nm,0.3s,baz=121,slow=3.2,SNR=5.8
AKTO PKP **PKiKP 13 26 37.8 -0.7**
comp=Z,15nm,0.8s,baz=58,slow=1.7,SNR=35
KMBO Kilima Mbogo 135.63 233 PKP **PKPdf 13 26 45.0 +3.2**
comp=Z,1.5nm,0.3s,baz=0.7,slow=1.4,SNR=5.5
ARCES ARCESS Array B 137.54 349 PKhKP PKPpre 13 26 37.4
comp=Z,1.9nm,0.7s,baz=294,slow=1.2,SNR=6.0
ARCES PKP **PKPdf 13 26 44.0 +0.7**
comp=Z,4.9nm,0.8s,baz=243,slow=0.3,SNR=9.9
ARCES ARCESS Array B 137.54 349 PKIKP **PKPdf 13 26 44.0 +0.7**
ARCES pmax pmax
comp=Z,5.0nm,0.8s
H10S3 ASCENSION HYDR 138.44 153 T T 16 02 26.9
baz=204,slow=74,SNR=18
H10S2 ASCENSION HYDR 138.44 153 T T 16 02 40.1
baz=204,slow=74,SNR=18
H10S1 ASCENSION HYDR 138.46 153 T T 16 02 38.9
baz=204,slow=74,SNR=24
H10N3 ASCENSION HYDR 139.52 152 T T 16 03 39.1
baz=204,slow=75,SNR=24
H10N1 ASCENSION HYDR 139.52 152 T T 16 03 46.0
baz=204,slow=75,SNR=25
H10N2 ASCENSION HYDR 139.53 152 T T 16 03 51.1
baz=204,slow=75,SNR=32
KLMR Klimovskoe 140.08 333 *e*PKHKP PKPpre 13 26 39.2
KLMR pmax pmax
comp=Z,14nm,1.0s
VRH Novokhopyorsk 143.76 318 *e*PKIKP **PKPdf 13 26 58.1 +3.1**
VRH pmax pmax
comp=Z,40nm,0.6s
TBLG Delisi 144.17 302 P PKPbc 13 26 54.8 +0.5
TBLG Delisi 144.17 302 *e*PKIKP PKPbc 13 26 54.8 +0.5
FINES FINESS Array B 144.26 341 PKhKP PKPpre 13 26 52.6
comp=Z,27nm,0.7s,baz=62,slow=4.5,SNR=101
FINES FINESS Array B 144.26 341 PKPpre PKPpre 13 26 52.6
GNI Garni 144.33 299 PKP **PKPdf 13 26 56.4 -0.3**
comp=Z,19nm,0.9s,baz=133,slow=3.9,SNR=6.7
ZEI Tsey 144.63 304 *i*PKIKP **PKPab 13 26 55.6 -0.2**
ZEI pmax pmax
comp=Z,70nm,0.6s
OBN Obninsk 144.66 327 *e*PKIKP **PKPab 13 26 54.8 -0.4**
OBN *i* 13 30 13.6
OBN pmax pmax
comp=Z,45nm,0.9s
OBN Obninsk 144.66 327 *e*PKPdf **PKPab 13 26 55.0 -0.2**
NCK Nalchik 144.74 305⇑ *e*PKIKP **PKPdf 13 26 56.8 -0.2**
ONI Oni 144.99 304 P **PKPdf 13 26 57.5 -0.1**
ONI Oni 144.99 304 *e*PKIKP **PKPdf 13 26 57.5 -0.1**
BGD Bogdanovka 145.07 301 P **PKPdf 13 26 58.5 +0.5**
AKH Akhalkalaki 145.14 302⇑ *i*P **PKPdf 13 26 58.6 +0.6**
AKH Akhalkalaki 145.14 302 P **PKPdf 13 26 59.0 +0.9**
AKH Akhalkalaki 145.14 302 *e*PKIKP **PKPdf 13 26 58.9 +0.9**
KBZ Khabaz 145.19 306 PKP **PKPdf 13 26 57.9 +0.2**
comp=Z,14nm,0.8s,baz=124,slow=1.1,SNR=33
VSR Storozhevoye 145.22 320 *e*PKIKP **PKPbc 13 26 56.3 -1.0**
VSR pmax pmax
comp=Z,80nm,0.8s
KIV Kislovodsk 145.29 306 *e*PKHKP PKPpre 13 26 54.5
KIV *i* 13 26 59.0
KIV *e* 13 30 13.8
KIV *e*SS SS 13 49 02.2 -4.9
KIV pmax pmax
comp=Z,36nm,1.1s
KIV Kislovodsk 145.29 306 *e*PKPbc **PKPdf 13 26 58.4 +0.3**
NEY Neytrino 145.41 305*d* *i*PKIKP **PKPab 13 26 59.7 +1.1**
CHVG Ch'k'valeri 145.97 304 P **PKPab 13 27 01.1 +0.5**
SIRN S¯¯rnak 146.32 295 *i*P **PKPab 13 27 02.9 +0.8**
VSU Vasula 146.44 338⇓ *e*PKP2 **PKPbc 13 27 00.3 -0.5**
ERZM Erzurum 146.93 299 *i*P **PKPab 13 27 05.5 +0.8**
BNGL BINGOL 147.20 298 *i*P **PKPab 13 27 06.0 +0.2**
SOC Sochi 147.47 306 *i*PKP2 **PKPbc 13 27 03.1 -1.1**
SOC pmax pmax
comp=Z,47nm,0.6s
BGOL Bingol 147.57 298 *i*P **PKPab 13 27 06.4 -0.6**
NB2 NORSAR Subarra 147.62 353 PKP **PKPbc 13 27 04.1 0.0**
comp=Z,19nm,0.8s,baz=13,slow=4.3
NOA NORSAR Array B 147.62 353 PKPbc **PKPbc 13 27 03.1 -1.0**
comp=Z,16nm,0.8s,baz=16,slow=4.6,SNR=46
NOA SKP 13 30 35.9
comp=Z,3.7nm,0.7s,baz=16,slow=4.6,SNR=4.8
MARD Mardin 147.63 295 *i*P **PKPbc 13 27 06.0 +1.0**
KBSD Kabsdagh 147.83 294 *e*P **PKPbc 13 27 05.7 +0.2**
TNCL Tunceli-Merkez 148.43 298 *i*P **PKPab 13 27 09.1 -1.4**
KELT Kelkit 148.50 300 *i*P **PKPbc 13 27 08.7 +1.3**
IZAR Zarasai 148.68 335 *e*P **PKPbc 13 27 07.4 +0.4**
IZAR IAmb IAmb 13 27 08.7
comp=Z,41nm,0.8s
ANN Anapa 148.71 309 *i*PKP2 **PKPbc 13 27 07.0 -0.4**
ANN pmax pmax
comp=Z,129nm,1.0s
IDID Didziasalis 148.82 334 *e*P **PKPbc 13 27 07.6 +0.3**
IDID IAmb IAmb 13 27 09.0
comp=Z,32nm,1.0s
ISAL Salakas 148.86 335 *e*P **PKPbc 13 27 08.7 +0.4**
ISAL IAmb IAmb 13 27 09.2
comp=Z,27nm,0.8s
MICGM Minsk 148.95 332 *e* **SKPdf 13 30 32.0 -2.7**
MNK Minsk 148.95 332 *e*PKP2 **PKPbc 13 27 07.0 -0.7**
REFA Refahiye_ERZ¯ 148.99 299 *i*P **PKPbc 13 27 09.9 +1.3**
NACGM Naroch 149.10 333 *e* **PKPbc 13 27 08.0 -0.1**
NACGM Naroch 149.10 333 *e* **SKPdf 13 30 33.0 -1.9**
GRSN GIRESUNGRSN 149.11 302 *i*P **PKPbc 13 27 08.8 +0.2**
KSRV Kasrt alli 149.13 292 *e*P **PKPab 13 27 11.3 -2.0**
KONO Kongsberg 149.16 354 *e*PKP2 **PKPbc 13 27 07.5 -0.6**
KONO Kongsberg 149.16 354 *e*PKPbc **PKPbc 13 27 07.5 -0.6**
KEMA Kemaliye 149.22 299 *i*P **PKPbc 13 27 10.4 +1.4**
SUSE Susehri 149.29 301 *i*P **PKPbc 13 27 10.4 +1.1**
ORDU Ordu-Boztepe 149.40 302 *i*P **PKPbc 13 27 09.9 +0.6**
SCER sogukcermik 150.16 300 *i*P **PKPbc 13 27 13.2 +1.7**
ERBA Erbaa 150.28 302 *i*P **PKPbc 13 27 12.7 +1.2**
ZALF Zalf 150.52 286 *e*P **PKPbc 13 27 10.7 -1.7**
CUALT Altinyayla-SIV 150.55 299 *i*P **PKPbc 13 27 14.0 +1.6**
KUZU Kuzuini 150.62 294 *i*P **PKPbc 13 27 13.8 +1.2**
AKASG Malin Array Be 150.85 325 PKPbc **PKPbc 13 27 11.8 -0.7**
comp=Z,100nm,0.7s,baz=45,slow=3.0,SNR=220
ASF Jabal al Asfar 150.86 285 PKPbc **PKPbc 13 27 15.0 +1.7**
comp=Z,30nm,0.7s,baz=69,slow=2.0,SNR=58
ASF Jabal al Asfar 150.86 285 PKIKP **PKPbc 13 27 15.0 +1.7**
ASF pmax pmax
comp=Z,30nm,0.7s
KIEV Kiev 150.86 325 *e*PKIKP **PKPbc 13 27 11.6 -0.9**
KIEV Kiev 150.86 325 *e*PKPbc **PKPbc 13 27 11.6 -0.9**
SIM Simferopol' 150.87 311 *i*PKIKP **PKPbc 13 27 13.6 +0.9**
SIM pmax pmax
comp=Z,76nm,0.8s

KAMA	Osmaniye	150.91 295	*i* P	PKPbc	13 27 14.1	+0.8	
CUSAR	Sarkisla-SIVAS	150.91 299	*i* P	PKPbc	13 27 14.2	+1.0	
SALA	Sala	151.02 286	*e*P	PKPdf	13 27 07.8	-0.2	
ANDN	Andirin	151.12 296	*i* P	PKPbc	13 27 14.7	+0.9	
SUW	Suwalki	151.15 335	*e*PKP	PKPbc	13 27 13.0	-0.1	
SUW	Suwalki	151.15 335	*e*PKIKP	PKPbc	13 27 13.0	-0.1	
TOTH	TOTAH	151.29 287	*e*P	PKPdf	13 27 06.5	-1.6	
YAYL	Yayladag	151.46 293	*i* P	PKPbc	13 27 13.4	-1.2	
TCHB	Talchebab	151.66 286	*e*P	PKPdf	13 27 05.4	-3.3	
KLNR	Kaliningrad	151.69 339	⇓*e*PKIKP	PKPbc	13 27 14.1	-0.2	
COAL	Corum-Alaca	151.69 302	*i* P	PKPbc	13 27 15.5	+0.5	
CTAK	Corum_Osmancik	151.74 302	*i* P	PKPbc	13 27 15.0	-0.1	
YURE	YUREGİR	151.77 294	*i* P	PKPbc	13 27 16.5	+1.4	
AKO	Adana	151.84 296	*i* P	PKPbc	13 27 16.4	+1.1	
MMAI	Mount Meron Ar	152.15 286	PKPbc	PKPbc	13 27 17.4	+1.2	
	comp=Z,48nm,0.7s,baz=74,slow=4.4,SNR=66						
CDAG	Cicekdag	152.29 301	*i* P	PKPbc	13 27 17.0	+0.6	
EIL	Elat	152.31 279	PKPbc	PKPbc	13 27 17.6	+1.0	
	comp=Z,26nm,0.7s,baz=332,slow=3.4,SNR=26						
MUD	Monsted U'grnd	152.34 353	*i* P	PKPab	13 27 25.6	-0.1	
	comp=Z,12nm,0.7s						
DED	Mersin	152.42 295	*i* P	PKPbc	13 27 16.7	+0.1	
ILGA	Ilgaz	152.43 304	*i* P	PKPbc	13 27 17.7	+1.0	
BSD	Bornholm Skovb	152.67 345	*i* P	PKPbc	13 27 16.7	+0.2	
	comp=Z,35nm,1.2s						
BSD	Bornholm Skovb	152.67 345	*e*PKIKP	PKPbc	13 27 16.7	+0.2	
BSD			pmax	pmax			
	comp=Z,35nm,1.2s						
BRTR	Keskin Array B	152.82 301	PKP	PKPdf	13 27 09.8	-0.5	
	comp=Z,1.4nm,0.8s,baz=119,slow=1.5,SNR=6.3						
BRTR			PKPbc	PKPbc	13 27 17.5	-0.1	
	comp=Z,21nm,0.9s,baz=116,slow=2.9,SNR=50						
BRTR			PKPab	PKPab	13 27 27.9	-0.7	
	comp=Z,19nm,0.7s,baz=116,slow=3.2,SNR=15						
SORM	Soroca	152.84 321	⇑*i*P	PKPbc	13 27 16.5	-0.6	
SORM	Soroca	152.84 321	⇑PKIKP	PKPbc	13 27 16.5	-0.6	
KERG	Konya-Eregli	152.89 296	*i* P	PKPbc	13 27 17.9	+0.1	
EKA	Eskdalemuir Ar	153.41 8	PKPbc	PKPbc	13 27 19.4	+1.3	
	comp=Z,1.9nm,0.7s,baz=356,slow=1.1,SNR=4.4						
GKP	Gorka Klasztor	153.74 341	*e*PKP	PKPbc	13 27 19.8	+0.9	
GKP	Gorka Klasztor	153.74 341	*e*PKIKP	PKPbc	13 27 19.8	+0.9	
CSS	Mathiatis	153.80 291	*e*PKPbc	PKPbc	13 27 19.9	+0.2	
TLCR		154.15 315	⇑*i*P	PKPbc	13 27 20.6	+0.6	
TLCR		154.15 315	⇑PKIKP	PKPbc	13 27 20.6	+0.6	
KDHN	Kadinhani	154.24 299	*i* P	PKPbc	13 27 20.5	-0.2	
CFR	Carcaliu	154.57 316	⇓*i*P	PKPbc	13 27 20.9	0.0	
CFR	Carcaliu	154.57 316	⇓PKIKP	PKPbc	13 27 20.9	0.0	
KWP	Kalwaria Pacla	154.67 329	*e*PKP	PKPbc	13 27 22.1	+1.1	
KWP	Kalwaria Pacla	154.67 329	*e*PKIKP	PKPbc	13 27 22.1	+1.1	
TESR	Tescani	154.72 320	⇓*i*P	PKPbc	13 27 21.2	0.0	
TIRR	Tirgusor	154.75 314	⇓*i*P	PKPbc	13 27 19.5	-1.8	
TIRR	Tirgusor	154.75 314	⇓PKIKP	PKPbc	13 27 19.6	-1.8	
BURAR	Bucovina Array	154.83 323	⇓*i*P	PKPbc	13 27 21.3	-0.3	
BURAR	Bucovina Array	154.83 323	⇓PKIKP	PKPbc	13 27 21.3	-0.3	
TLB	Topalu	154.92 315	⇓*i*P	PKPbc	13 27 22.1	+0.4	
TLB	Topalu	154.92 315	⇓PKIKP	PKPbc	13 27 22.1	+0.4	
HARR	Harsova	154.94 315	⇓*i*P	PKPbc	13 27 22.9	+1.2	
HARR	Harsova	154.94 315	⇓PKIKP	PKPbc	13 27 22.9	+1.2	
PLOR	Plostina	155.09 319	⇑*i*P	PKPdf	13 27 21.3	+8.1	
PLOR	Plostina	155.09 319	⇑PKIKP	PKPdf	13 27 21.3	+8.1	
STHS	Stebnicka Huta	155.47 331	*e*PKP2	PKPab	13 27 38.8	-0.6	
STHS	Stebnicka Huta	155.47 331	*e*PKP	PKPab	13 27 38.8	-0.6	
MLR	Muntele Rosu	155.70 318	⇑*i*P	PKPdf	13 27 23.5	+9.3	
MLR	Muntele Rosu	155.70 318	⇑PKIKP	PKPdf	13 27 23.5	+9.3	
CRVS	Cervenica-Dubn	155.76 330	*e*PKIKP	PKPdf	13 27 24.2	+10	
CRVS			*e*		13 27 40.5		
CRVS	Cervenica-Dubn	155.76 330	*e*	PKPdf	13 27 24.2	+10	
CRVS	Cervenica-Dubn	155.76 330	*e*PKP	PKPab	13 27 40.5	-0.1	
NIE	Niedzica	155.86 332	*e*PKP	PKPdf	13 27 23.6	+9.4	
NIE	Niedzica	155.86 332	*e*PKIKP	PKPdf	13 27 23.6	+9.4	
VOIR		156.25 319	⇓*i*P	PKPdf	13 27 24.8	+10	
VOIR		156.25 319	⇓PKIKP	PKPdf	13 27 24.8	+10	
OKC	Ostrava-Krasne	156.37 335	*e*PKPAB	PKPab	13 27 42.9	-0.2	
OKC	Ostrava-Krasne	156.37 335	*e*PKP2	PKPab	13 27 42.9	-0.2	
LANS	Liptovska Anna	156.41 333	*e*PKP2	PKPab	13 27 42.4	-1.0	
LANS	Liptovska Anna	156.41 333	*e*PKP	PKPab	13 27 42.4	-1.0	
KECS	Kecovo	156.50 330	*e*PKP2	PKPab	13 27 42.9	-0.9	
KECS	Kecovo	156.50 330	*e*PKP	PKPab	13 27 42.9	-0.9	
UPC	Upice	156.52 339	*e*PKPAB	PKPab	13 27 43.5	-0.3	
UPC			*ex*	x	13 27 55.5		
UPC			AMS	AMS	14 47 30.0		
	comp=Z,300nm,19.3s						
UPC	Upice	156.52 339	*e*PKP2	PKPab	13 27 43.5	-0.3	
UPC			MLR	MLR			
	comp=Z,300nm,19.3s						
DPC	Dobruska-Polom	156.56 338	*e*PKPDF	PKPdf	13 27 16.1	+1.0	
DPC			*ex*	x	13 27 26.5		
DPC			*e*PKPAB	PKPab	13 27 44.2	+0.2	
DPC			*ex*	x	13 27 56.7		
DPC	Dobruska-Polom	156.56 338	*e*PKIKP	PKPdf	13 27 16.1	+1.0	
DPC			*e*		13 27 26.5		
CLL	Collm	156.63 344	*e*PKPdiff	pPKPdf	13 27 28.0	+1.2	
CLL			*i* PKPab	PKPab	13 27 43.3	-0.9	
	comp=Z,13nm,0.7s						
CLL			*e*pPKPab	pPKPab	13 27 56.0	+0.4	
CLL			*e*PP	PP	13 31 22.0	+0.2	
CLL			LmV		14 45 00.0		
	comp=Z,200nm,19.5s						
CLL	Collm	156.63 344	*e*PKIKP	pPKPdf	13 27 28.0	+1.2	
CLL			*i*		13 27 43.3		
CLL			pmax	pmax			
	comp=Z,13nm,0.7s						
CLL			MLR	MLR			
	comp=Z,200nm,19.5s						
MORC	Moravsky Berou	156.64 336	⇓*i*P	PKPab	13 27 43.4	-1.0	
MORC	Moravsky Berou	156.64 336	⇓PKP2	PKPab	13 27 43.4	-1.0	
KRLC	Kraliky	156.65 337	*e*PKPAB	PKPab	13 27 44.1	-0.3	
KRLC	Kraliky	156.65 337	*e*PKP2	PKPab	13 27 44.1	-0.3	
DRGR		156.66 324	⇓*i*P	PKPdf	13 27 25.1	+10	
DRGR		156.66 324	⇓PKIKP	PKPdf	13 27 25.1	+10	
BRG	Berggiesshubel	156.79 342	*e*PKP	PKPab	13 27 44.1	-0.8	
	comp=Z,10nm,0.8s						
PVCC	Panska Ves	156.93 341	*e*PKPAB	PKPab	13 27 47.2	+1.7	
PVCC			AMS	AMS	14 36 20.0		
	comp=Z,200nm,21.5s						
PVCC	Panska Ves	156.93 341	*e*PKP2	PKPab	13 27 47.2	+1.7	
PVCC			MLR	MLR			
	comp=Z,200nm,21.5s						
VYHS	Vyhne	157.19 332	*e*PKP2	PKPab	13 27 46.5	-0.2	
VYHS	Vyhne	157.19 332	*e*PKP	PKPab	13 27 46.5	-0.2	
VRAC	Vranov	157.36 337	⇑*i*P	PKPab	13 27 47.4	-0.1	
VRAC	Vranov	157.36 337	⇑PKP2	PKPab	13 27 47.4	-0.1	
GOPC	GO Pecny, Ondr	157.42 340	AMS	AMS	14 35 40.0		
	comp=Z,200nm,17.3s						
PRU	Pruhonice	157.43 341	*e*PKPAB	PKPab	13 27 47.5	-0.2	
PRU			AMS	AMS	14 36 40.0		
	comp=Z,300nm,21.3s						
PRU	Pruhonice	157.43 341	*e*PKP2	PKPab	13 27 47.5	-0.2	
PRU			MLR	MLR			
	comp=Z,300nm,21.3s						
BZS	Buzias	158.01 324	⇓*i*P	PKPdf	13 27 28.5	+12	
BZS	Buzias	158.01 324	⇓PKIKP	PKPdf	13 27 28.5	+12	
KHC	Kasperske Hory	158.47 341	*e*PKPDF	PKPdf	13 27 17.0	-0.5	
KHC			*e*PKPAB	PKPab	13 27 51.8	-0.5	
KHC			*ex*	x	13 28 04.4		
KHC			AMS	AMS	14 47 40.0		
	comp=Z,300nm,20.3s						
KHC	Kasperske Hory	158.47 341	*e*PKIKP	PKPdf	13 27 17.0	-0.5	
KHC			*e*		13 27 51.8		
KHC			MLR	MLR			
	comp=Z,300nm,20.3s						
GERES	GERESS Array B	158.69 341	PKP	PKPdf	13 27 20.2	+2.3	
	comp=Z,0.7nm,0.7s,baz=112,slow=1.4,SNR=4.1						
GERES			PKPab	PKPab	13 27 52.4	-0.9	
	comp=Z,1.6nm,0.7s,baz=28,slow=3.5,SNR=7.8						
CONA	Conrad Observa	158.79 336	PKPab	PKPab	13 27 53.5	-0.2	
	comp=Z,11nm,0.8s						
MOA	Molln	159.41 338	*i* PKPab	PKPab	13 27 56.3	0.0	
	comp=Z,5.5nm,0.9s						
ARSA	Arzberg	159.49 335	*i* PKPab	PKPab	13 27 56.8	0.0	
	comp=Z,4.2nm,0.6s						
SOKA	Soboth	160.15 335	*i* PKPab	PKPab	13 27 59.2	-0.5	
	comp=Z,9.4nm,0.9s						
KBA	Koelnbreinsper	160.38 339	*i* sPKPab	PKPab	13 28 04.4	+3.6	
	comp=Z,4.6nm,0.7s						
OBKA	Obir	160.47 336	*i* PKPab	PKPab	13 28 00.6	-0.5	
	comp=Z,7.6nm,0.7s						
WATA	Walderalm	160.66 342	*i* pPKPab	PKPab	13 28 03.4	+1.4	
	comp=Z,3.7nm,0.4s						
MYKA	Terra Mystica	160.68 338	*i* PKPab	PKPab	13 28 01.4	-0.6	
	comp=Z,12nm,0.8s						
WTTA	Wattenberg	160.71 342	*i* PKPab	PKPab	13 28 02.6	+0.4	
	comp=Z,9.3nm,0.7s						
RETA	Reutte	160.72 344	*i* PKPab	PKPab	13 28 02.1	-0.1	
	comp=Z,7.0nm,0.7s						
MOTA	Moosalm	160.77 343	*i* pPKPab	PKPab	13 28 04.7	+2.2	
	comp=Z,6.9nm,0.7s						
ABTA	Abfaltersbach	160.93 340	*i* PKPab	PKPab	13 28 01.9	-1.2	
	comp=Z,10nm,0.8s						
DAVA	Damuels	161.11 346	*i* PKPab	PKPab	13 28 03.6	-0.4	
	comp=Z,6.3nm,0.7s						
FETA	Feichten	161.17 344	*i* PKPab	PKPab	13 28 04.0	-0.3	
	comp=Z,6.0nm,0.8s						
PDG	Podgorica	161.40 320	⇓*i*P	PKPab	13 28 04.9	-0.3	
TORD	Torodi Ar. Bea	164.05 175	PKP	PKPdf	13 27 25.1	+0.8	
	comp=Z,1.7nm,0.8s,baz=354,slow=0.3,SNR=9.0						
TORD			PKPab	PKPab	13 28 19.2	+1.8	
	comp=Z,4.5nm,0.8s,baz=178,slow=3.7,SNR=9.3						
ESDC	Sonseca Array	167.96 27	PKPab	PKPab	13 28 33.9	-0.3	
	comp=Z,0.2nm,0.4s,baz=313,slow=3.7,SNR=4.6						

*ISCJB **07** 13:10:36.2±0.8,29.64S±0.08×176.34W±0.09,h10km, mb4.6/13, Error ellipse: s-maj=12.2km s-min=10.4km az=38.6*

*IDC **07** 13:10:39.0±0.7,29.07S×176.72W,h0km,mb4.7/13, mb1 4.8/13,mb1mx4.6/25,mbtmp4.6/13,MS4.3/2, Ms1 4.3/2,ms1mx3.6/32, Error ellipse: s-maj=28.0km s-min=19.0km az=154.0*

ISC 07 13:10:41.7±0.7, 29.4S±0.1×176.57W±0.09, h21km, n33, σ1°49/33, mb4.7/13, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
RAO	Raoul Island	1.18	276	Pn		Pn	13 11 02.4	-0.6
	70nm,0.3s,baz=109,slow=23,SNR=1.8							
RAO				Sn		Sn	13 11 21.7	+3.2
	1µm,0.3s,baz=88,slow=22,SNR=4.9							
URZ	Urewera	10.30	209	Sn		Sn	13 15 00.4	-2.6
	1.2nm,0.3s,baz=8.6,slow=23,SNR=3.7							
DZM	Mont Dzumac	16.94	292	Pn		P	13 14 39.0	-0.4
	0.6nm,0.3s,baz=114,slow=12,SNR=8.9							
RPZ	Rata Peaks	17.40	211	S		Sn	13 17 43.4	-13
	0.9nm,0.3s,baz=301,slow=14,SNR=3.7							
CTA	Charters Tower	34.89	277	P		P	13 17 31.8	-0.1
	19nm,0.8s,baz=99,slow=11,SNR=8.5							
STKA	Stephens Creek	35.93	255	P		P	13 17 40.5	-0.2
	12nm,0.8s,baz=64,slow=9.2,SNR=4.8							
ASAR	Alice Springs	44.42	265	P		P	13 18 49.7	-1.5
	13nm,0.8s,baz=110,slow=7.7,SNR=11							
ASAR				PcP		PP	13 20 36.8	+1.9
	1.2nm,0.8s,baz=101,slow=4.8,SNR=3.0							
WRA	Warramunga Arr	45.32	270	P		P	13 18 56.6	-1.8
	20nm,1.0s,baz=109,slow=7.9,SNR=9.1							
WRA				PcP		PcP	13 20 37.3	-0.6
	7.9nm,1.1s,baz=104,slow=4.0,SNR=5.2							
GUMO	Guam	56.65	313	LR		LR	13 43 34.4	
	comp=Z,223nm,18.0s,baz=100,slow=35							
MAW	Mawson	73.70	200	P		P	13 22 16.6	+3.1
	11nm,0.9s,baz=123,slow=5.6,SNR=6.2							
JHJ	Hachijo jima 2	74.65	323	LR		LR	13 51 57.2	
	comp=Z,178nm,18.9s,baz=36,slow=33							
MJAR	Matsushiro Arr	78.12	324	P		P	13 22 37.4	-1.7
	4.7nm,0.9s,baz=163,slow=5.1,SNR=5.7							
MAT	Matsushiro	78.12	324	PKP		P	13 22 36.5	-2.7
JNU	Nakatsue	79.63	317	P		P	13 22 47.5	-0.1
	8.4nm,0.7s,baz=7.2,slow=0.7,SNR=4.5							
KSRS	Korea Array	84.39	319	P		P	13 23 11.9	-0.4
	3.0nm,0.9s,baz=137,slow=5.5,SNR=7.3							
PETK	Petropavlovsk-	85.14	345	P		P	13 23 14.8	-1.0
	4.2nm,0.8s,baz=134,slow=8.5,SNR=3.6							
USRK	Ussuriysk Ar.	87.00	326	P		P	13 23 24.5	-0.7
	3.9nm,0.8s,baz=72,slow=6.2,SNR=5.3							
TXAR	Lajitas Array	90.79	57	P		P	13 23 44.9	+1.3
	1.3nm,1.0s,baz=223,slow=6.8,SNR=5.4							
CMAR	Chiang Mai Arr	94.24	289	P		P	13 24 00.4	+0.7
	0.3nm,0.4s,baz=132,slow=5.2,SNR=5.0							
GEYT	Alibech	134.24	296	PKP		PKPdf	13 29 59.0	+1.1
	2.4nm,0.6s,baz=297,slow=6.5,SNR=3.6							
FINES	FINESS Array B	144.59	341	PKhKP		PKPpre	13 30 12.7	
	4.2nm,0.8s,baz=56,slow=4.8,SNR=4.5							
FINES				PKP		PKPdf	13 30 17.6	+1.7
	9.3nm,0.8s,baz=55,slow=7.2,SNR=5.2							
FINES	FINESS Array B	144.59	341	PKPpre		PKPpre	13 30 12.7	
KBZ	Khabaz	145.55	305	PKPbc		PKPdf	13 30 17.9	-0.3
	5.1nm,0.8s,baz=66,slow=1.6,SNR=5.3							
NB2	NORSAR Subarra	147.91	353	PKP		PKPdf	13 30 22.5	+0.8
	comp=Z,46nm,2.5s,baz=17,slow=2.6							
NOA	NORSAR Array B	147.91	353	PKPbc		PKPdf	13 30 23.3	+1.6
	comp=Z,3.5nm,0.9s,baz=15,slow=4.5,SNR=3.3							
AKASG	Malin Array Be	151.21	325	PKPbc		PKPbc	13 30 31.7	-1.4
	comp=Z,3.3nm,0.5s,baz=46,slow=3.1,SNR=4.1							
BRTR	Keskin Array B	153.18	301	PKPbc		PKPbc	13 30 37.6	-0.5
	comp=Z,4.2nm,1.0s,baz=139,slow=2.5,SNR=4.8							
BRTR				PKPab		PKPab	13 30 49.2	-0.7
	comp=Z,5.6nm,0.9s,baz=113,slow=3.6,SNR=5.8							
GERES	GERESS Array B	159.02	341	PKPab		PKPab	13 31 13.7	-0.7
	comp=Z,0.4nm,0.2s,baz=123,slow=4.9,SNR=3.7							
TORD	Torodi Ar. Bea	163.77	174	PKPab		PKPab	13 31 36.3	+0.5
	comp=Z,5.3nm,1.0s,baz=186,slow=3.6,SNR=7.5							

*SOME **07** 13:11:20.5,44.63N×82.28E,h25km*

*NNC **07** 13:11:20.3±3.8,44.65N×82.33E,h0km,mb3.1,mpv2.6, Error ellipse: s-maj=51.0km s-min=8.7km az=116.0*

*ISCJB **07** 13:11:23.2±1.7,44.72N±0.08×82.4E±0.1,h10km, Error ellipse: s-maj=17.6km s-min=5.5km az=35.2*

ISC 07 13:11:20.0±2.0, 44.67N±0.08×82.3E±0.1, h10km, n8, σ0°71/16, 4C-2D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
DJR	Jarkent	1.79	260	*e*P		Pb	13 11 52.4	-0.5
	4.8nm,0.2s							
DJR				*e*S		Sb	13 12 15.1	-0.4
	8.4nm,0.5s							
MK31	Makanchi Array	2.12	1	⇓Pn		Pb	13 11 58.5	-0.1
	3.9nm,0.3s,baz=181,slow=13,SNR=73							
MK31				⇑Sn		Sb	13 12 25.9	+0.9
	3.3nm,0.3s,baz=184,slow=27,SNR=17							
KAPS	Kapalarasan	2.14	288	*e*P		Pb	13 11 58.5	-0.4
	1.8nm,0.1s							
KAPS				*e*S		Sb	13 12 26.1	+0.6
	5.2nm,0.3s							
MAKZ	Makanchi	2.15	355	⇑Pn		Pb	13 11 58.0	-1.0
	2.5nm,0.5s							
MAKZ				⇓Sn		Sb	13 12 25.9	+0.3
	6.9nm,0.5s							
PDGK	Podgornoye	2.40	237	⇑Pn		Pn	13 11 59.6	+0.2
	0.6nm,0.4s							
PDGK				⇑Sn		Sb	13 12 33.9	+0.9
	3.2nm,0.4s							
KURS	Kuram	3.17	249	*e*P		Pb	13 12 16.0	-0.4
	0.9nm,0.4s							
KURS				*e*S		Sb	13 12 55.8	+0.7
	2.0nm,0.4s							
ARXS	Arharly	3.20	263	*e*P		Pb	13 12 16.6	-0.3
	2.1nm,0.3s							
ARXS				*e*S		Sb	13 12 56.9	+0.9
	6.5nm,0.2s							
CHKK	Chushkaly	3.85	260	*e*P		Pb	13 12 27.0	-1.1
	1.3nm,0.3s							
CHKK				*e*S		Sb	13 13 14.8	+0.1
	3.7nm,0.4s							

*IDC **07** 13:17:29.2±1.1,29.78S×176.35W,h0km,mb4.0/6, mb1 4.3/7,mb1mx4.0/21,mbtmp4.1/7,ML3.7/1, Error ellipse: s-maj=31.6km s-min=23.9km az=166.0*

*ISCJB **07** 13:17:30.9±1.1,29.92S±0.07×176.4W±0.1,h24km, mb4.0/6, Error ellipse: s-maj=14.8km s-min=9.8km az=166.1*

ISC 07 13:17:33.1±1.0, 29.80S±0.10×176.4W±0.1, h24km, n13, σ1°87/16, mb4.2/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
RAO	Raoul Island	1.43	292	Pn		Pb	13 17 57.9	-1.0
	259nm,0.3s,baz=145,slow=5.3,SNR=13							
RAO				Sn		Sn	13 18 14.4	-1.0
	960nm,0.3s,baz=234,slow=23,SNR=7.0							
URZ	Urewera	10.00	211	Pn		Pn	13 19 55.4	+0.2
	0.6nm,0.3s,baz=270,slow=4.3,SNR=9.5							
URZ				Sn		Sn	13 21 46.8	+0.1
	1.5nm,0.3s,baz=228,slow=3.7,SNR=10.0							
RPZ	Rata Peaks	17.11	212	P		Pn	13 21 27.2	-3.4
	0.5nm,0.3s,baz=278,slow=3.2,SNR=3.8							
DZM	Mont Dzumac	17.23	293	P		P	13 21 37.2	+3.6
	0.2nm,0.3s,baz=288,slow=20,SNR=4.0							
CTA	Charters Tower	35.08	277	P		P	13 24 24.0	-0.5
	1.9nm,0.7s,baz=104,slow=12,SNR=3.9							
STKA	Stephens Creek	35.96	256	P		P	13 24 32.7	+0.8
	3.2nm,0.9s,baz=129,slow=7.9,SNR=3.9							
ASAR	Alice Springs	44.53	266	P		P	13 25 42.2	-0.8
	1.1nm,0.8s,baz=102,slow=7.3,SNR=7.0							
WRA	Warramunga Arr	45.46	271	P		P	13 25 48.9	-1.6
	3.3nm,0.9s,baz=108,slow=8.3,SNR=24							
FITZ	Fitzroy Crossi	53.75	269	P		P	13 26 55.6	+1.9
	3.3nm,0.9s,baz=133,slow=8.8,SNR=3.6							
TXAR	Lajitas Array	90.91	57	P		P	13 30 34.2	-0.8
	0.1nm,0.4s,baz=223,slow=4.8,SNR=3.5							
FINES	FINESS Array B	145.04	341	PKPbc		PKPbc	13 37 04.7	-2.4
	2.0nm,0.8s,baz=315,slow=0.5,SNR=5.1							
AKASG	Malin Array Be	151.64	325	PKPbc		PKPbc	13 37 24.5	-0.5
	0.2nm,0.3s,baz=40,slow=2.0,SNR=4.6							
AKASG				PKPab		PKPab	13 37 35.6	+1.9
	2.3nm,0.5s,baz=47,slow=2.8,SNR=5.8							
TORD	Torodi Ar. Bea	163.34	174	PKPab		PKPab	13 38 25.8	+0.9
	1.1nm,0.9s,baz=177,slow=4.9,SNR=4.1							

MEX 07 13:17:53.5±0.5, 18.38N×101.87W, h57km±7km, MD3.7, Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
ZIIG	Zihuatanejo	0.86	153	*e*P		Pn	13 18 08.0	-1.6
ZIIG				*i* S		Sn	13 18 19.4	-2.1
ARIG	Puente Sto Nin	1.45	94	*e*P		Pn	13 18 16.7	-0.8
ARIG				*e*S		Sn	13 18 32.9	-2.5
CAIG	El Cayaco	2.02	131	*i* P		Pn	13 18 23.1	-2.2
CAIG				*i* S		Sn	13 18 47.1	-2.3
MEIG	Mezcala	2.19	102	*i* P		Pn	13 18 27.1	-0.5
MEIG				*i* S		Sn	13 18 51.8	-1.7

IDC 07 13:29:34.9±3.0, 28.03S×176.61W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/24, mbtmp3.7/2, Error ellipse: s-maj=81.7km s-min=29.6km az=125.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
RAO	Raoul Island	1.67	223	Pn		Pn	13 30 05.5	+0.1
	93nm,0.3s,baz=190,slow=22,SNR=3.9							
RAO				Sn		Sn	13 30 27.2	-0.4
	315nm,0.3s,baz=30,slow=22,SNR=9.0							
ASAR	Alice Springs	44.51	264	P		P	13 37 48.0	-0.4
	0.6nm,0.6s,baz=98,slow=7.2,SNR=8.8							
WRA	Warramunga Arr	45.29	269	P		P	13 37 55.1	+0.4
	0.8nm,0.6s,baz=108,slow=7.9,SNR=14							
FINES	FINESS Array B	143.31	342	PKP		PKPbc	13 49 08.0	+0.5
	0.5nm,0.4s,baz=49,slow=4.2,SNR=4.0							
AKASG	Malin Array Be	150.09	326	PKPbc		PKPbc	13 49 27.1	-0.1
	0.3nm,0.3s,baz=44,slow=2.5,SNR=4.4							

WEL 07 13:31:34.5±0.3, 37.92S×176.35E, h136km±2km, ML3.6/29, 3C-10D, Error ellipse: s-maj=2.5km s-min=2.5km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
MUGZ	Murupara	0.65	149	⇓PN		Pn	13 31 55.3	+0.1
MUGZ				SN		Sn	13 32 10.6	-0.2
URZ	Urewera	0.69	119	⇓PN		Pn	13 31 55.4	0.0
URZ				SN		Sn	13 32 11.5	+0.2
URZ				AML		AML	13 32 12.0	
RTZ	Ruatahuna	0.85	144	⇓PN		Pn	13 31 56.9	+0.1
RTZ				SN		Sn	13 32 13.7	0.0
MRHZ	Matea Rd	0.91	177	PN		Pn	13 31 57.4	+0.2
MRHZ				SN		Sn	13 32 14.1	-0.4
MRHZ				AML		AML	13 32 14.8

PRWZ	**Pori Road**	**2.64 186**	PN	Pn	13 32 14.7	-2.0
PRWZ			AML	AML	13 32 47.2	
PRWZ			AML	AML	13 32 48.1	
BFZ	**Birch Farm**	**2.75 182**	PN	Pn	13 32 15.6	-2.6
MRZ	**Mangatainoka R**	**2.80 192** ⇑	PN	Pn	13 32 15.9	-2.8
MRZ			AML	AML	13 32 49.7	
MRZ			AML	AML	13 32 49.8	
OGWZ	**Otaki Gorge**	**3.03 197**	PN	Pn	13 32 18.8	-2.9
OGWZ			AML	AML	13 32 19.3	
OGWZ			AML	AML	13 32 54.7	
KIW	**Kapiti Island**	**3.14 200**	PN	Pn	13 32 19.8	-3.3
KIW			AML	AML	13 32 41.1	
MTW	**Mount Morrison**	**3.29 191**	PN	Pn	13 32 21.4	-3.7
CAW	**Cannon Point**	**3.33 197**	PN	Pn	13 32 22.1	-3.5
CAW			AML	AML	13 33 25.0	
CAW			AML	AML	13 33 26.1	
DUWZ	**D'Urville Isla**	**3.43 212**	PN	Pn	13 32 23.6	-3.3
WEL	**Wellington**	**3.57 199**	PN	Pn	13 32 24.2	-4.5
MSWZ	**Moikau Station**	**3.59 193**	PN	Pn	13 32 24.9	-4.0
TCW	**Tory Channel**	**3.65 205**	PN	Pn	13 32 26.1	-3.7
TUWZ	**Tuamarina**	**3.96 207**	PN	Pn	13 32 29.8	-4.0
NNZ	**Nelson**	**4.01 214**	PN	Pn	13 32 30.6	-3.9
QRZ	**Quartz Range**	**4.14 224**	PN	Pn	13 32 32.8	-3.4
BSWZ	**Blackbirch Sta**	**4.24 206**	PN	Pn	13 32 33.6	-3.9
THZ	**Tophouse**	**4.66 214**	PN	Pn	13 32 39.0	-4.2
KHZ	**Kahutara**	**4.97 205**	PN	Pn	13 32 42.6	-4.6
OXZ	**Oxford**	**6.31 210**	PN	Pn	13 32 59.1	-6.1
MQZ	**McQueen's Vall**	**6.42 205**	PN	Pn	13 32 59.1	-7.5
ODZ	**Otahua Downs**	**8.30 209**	PN	Pn	13 33 25.6	-6.2

IDC ***07*** *13:34:18.9±1.3,28.˚77S×176.˚01W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/34, mbtmp4.0/3, Error ellipse: s-maj=57.3km s-min=28.6km az=169.0*

ISCJB ***07*** *13:34:21.0±1.9,29.˚3S±0.˚2×175.˚8W±0.˚2, h38km, mb4.1/3, Error ellipse: s-maj=26.5km s-min=15.8km az=32.9*

ISC 07 13:34:23.4±1.1,29.˚2S±0.˚2×175.˚9W±0.˚1, h38km, n12, σ1§32/13, mb4.0/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.76**	**267**	Pn	**Pn**		**13 34 52.5**	**+1.1**
	139nm,0.3s,baz=131,slow=17,SNR=6.2							
RAO				Sn	**Sn**		**13 35 12.3**	**-0.2**
	375nm,0.3s,baz=239,slow=20,SNR=5.8							
URZ	**Urewera**	**10.77**	**211**	Pn	**Pn**		**13 36 54.0**	**-1.0**
	0.9nm,0.3s,baz=296,slow=2.6,SNR=4.1							
RPZ	**Rata Peaks**	**17.88**	**212**	P	**Pn**		**13 38 28.3**	**-0.8**
	0.6nm,0.3s,baz=40,slow=8.8,SNR=2.6							
CTA	**Charters Tower**	**35.44**	**276**	P	**P**		**13 41 16.6**	**+0.5**
	1.7nm,0.5s,baz=97,slow=11,SNR=4.3							
ASAR	**Alice Springs**	**45.01**	**265**	P	**P**		**13 42 35.3**	**-0.2**
	1.5nm,0.6s,baz=105,slow=7.2,SNR=35							
WRA	**Warramunga Arr**	**45.89**	**270**	P	**P**		**13 42 41.2**	**-1.3**
	1.5nm,0.7s,baz=109,slow=8.0,SNR=17							
MKAR	**Makanchi Array**	**118.37**	**310**	PKP	**PKPdf**		**13 53 06.9**	**+0.3**
	0.3nm,0.7s,baz=77,slow=6.4,SNR=3.6							
FINES	**FINESS Array B**	**144.57**	**342**	PKP	**PKPdf**		**13 53 54.4**	**-0.7**
	1.6nm,0.7s,baz=5.7,slow=1.9,SNR=7.4							
NB2	**NORSAR Subarra1**	**147.77**	**354**	PKP	**PKPab**		**13 54 04.5**	**-1.5**
	comp=Z,1.5nm,0.8s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**147.77**	**354**	PKPbc	**PKPab**		**13 54 04.6**	**-1.3**
	comp=Z,1.4nm,0.8s,baz=14,slow=2.8,SNR=5.5							
AKASG	**Malin Array Be**	**151.36**	**326**	PKPbc	**PKPbc**		**13 54 13.3**	**+0.6**
	comp=Z,2.1nm,0.7s,baz=46,slow=2.6,SNR=7.2							
TORD	**Torodi Ar. Bea**	**163.91**	**172**	PKPab	**PKPab**		**13 55 18.5**	**+2.8**
	comp=Z,1.4nm,0.8s,baz=183,slow=3.5,SNR=7.4							

DJA ***07*** *13:45:13.3±1.9,2.˚S±12.˚×14.˚0E±.˚, h10km, M3.9/2, MLv3.9/2*

ISCJB ***07*** *13:45:14.4±0.9,2.˚75S±0.˚07×140.˚54E±0.˚07, h24km, mb3.5/3, Error ellipse: s-maj=10.8km s-min=8.3km az=139.4*

IDC ***07*** *13:45:14.0±2.7,2.˚87S×140.˚76E, h0km, mb3.6/3, mb1 4.0/4, mb1mx3.6/32, mbtmp3.8/4, ML3.8/1, Error ellipse: s-maj=87.2km s-min=8.4km az=90.0*

ISC 07 13:45:15.1±1.2,2.6S±0.2×140.47E±0.06, h24km, n7, σ0§43/8, mb3.8/3, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**0.24**	**75**	Pg	**Pb**		**13 45 20.8**	**-0.4**
	58nm,0.3s,baz=218,slow=20,SNR=1821							
JAY				Lg	Lg		13 45 25.5	
	171nm,0.3s,baz=87,slow=23,SNR=115							
JAY	**Jayapura**	**0.24**	**75**	P	**Pb**		**13 45 21.2**	**0.0**
JAY				S	**Sb**		**13 45 25.8**	**+0.4**
GENI	**Genyem**	**0.30**	**267**	P	**Pb**		**13 45 21.9**	**-0.2**
GENI				S	**Sn**		**13 45 29.6**	**-0.1**
WRA	**Warramunga Arr**	**18.27**	**199**	P	**Pn**		**13 49 26.7**	**-0.5**
	0.3nm,0.3s,baz=23,slow=12,SNR=19							
FITZ	**Fitzroy Crossi**	**21.20**	**222**	P	**P**		**13 49 59.8**	**+0.6**
	4.2nm,1.0s,baz=17,slow=9.4,SNR=6.1							
ASAR	**Alice Springs**	**21.91**	**196**	P	**P**		**13 50 06.8**	**+0.1**
	2.5nm,0.7s,baz=30,slow=9.8,SNR=49							
MKAR	**Makanchi Array**	**70.77**	**322**	P	P		13 56 35.9	+6.4
	0.1nm,0.4s,baz=101,slow=7.5,SNR=2.6							

IDC ***07*** *13:46:57.5±0.7,33.˚62S×178.˚63W, h0km, mb4.5/12, mb1 4.6/14, mb1mx4.5/32, mbtmp4.5/14, ML4.9/2, MS4.3/13, Ms1 4.3/13, ms1mx4.1/24, Error ellipse: s-maj=21.9km s-min=17.8km az=110.0*

BJI ***07*** *13:47:00.7,34.˚11S×179.˚07W, h24km, mb5.3/15, mB5.5/12, Ms5.3/8, Ms7 5.0/8*

ISCJB ***07*** *13:47:01.1±0.5,33.˚79S±0.˚03×178.˚65W±0.˚08, h37km, mb4.9/27, MS4.4/13, Error ellipse: s-maj=10.5km s-min=3.9km az=18.4*

GCMT ***07*** *13:47:02.4±0.5,33.˚63S×178.˚12W, h22km±1km, MW5.0/58, Moment Tensor Solution. s19,c22; s58,c79; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr3.54±.28; Mθθ-0.90±.19; Mφφ-2.64±.18; Mrθ0.55±.31; Mrφ-1.14±.11; Mθφ3.10±.30; Best double couple: M₀4.60600×10¹⁶ NP1:φs16.00000°,δ67.00000°,λ83.00000°. NP2: φs214.00000°,δ24.00000°,λ107.00000°. Principal axes: T 4.8280, Plg68.0000°, Azm272.0000°; N -0.4430, Plg7.0000°, Azm19.0000°; P -4.3850, Plg21.0000°, Azm111.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***07*** *13:47:02.4±0.4,33.˚73S×178.˚67W, h35km, mb5.0/15 Error ellipse: s-maj=12.0km s-min=7.7km az=110.0*

MOS ***07*** *13:47:03.3±1.4,33.˚53S×178.˚99W, h33km, mb5.1/13, Error ellipse: s-maj=16.6km s-min=12.4km az=112.3*

ISC 07 13:47:02.7±0.4,33.77S±0.05×178.50W±0.07, h37km, n155, σ1§88/167, mb5.1/27, MS4.3/13, 4C-10D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**4.53**	**6**	Pn	**Pn**		**13 48 06.6**	**-2.2**
	72nm,0.3s,baz=268,slow=19,SNR=2.6							
RAO				Sn	Sn		13 48 50.3	-10
	117nm,0.3s,baz=246,slow=22,SNR=3.2							
RAO				LR	LR		13 49 33.7	
	comp=Z,1μm,18.1s,baz=178,slow=36							
MXZ	**Matakaoa Point**	**4.59**	**214**	*e*Pn	**Pn**		**13 48 08.7**	**-0.8**
HAZ	**Te Kaha**	**5.00**	**216**	*e*Pn	**Pn**		**13 48 15.7**	**+0.6**
HAZ					SN		**13 49 16.5**	**+4.9**
PUZ	**Puketiti**	**5.04**	**211**	Pn	**Pn**		**13 49 15.1**	**-1.7**
PUZ				Sn	**Sn**		**13 49 15.3**	**+2.7**
CNGZ	**Carnagh Statio**	**5.41**	**209**	*e*PN	**Pn**		**13 48 19.4**	**-1.4**
TKGZ	**Te Karaka**	**5.52**	**211**	PN	**Pn**		**13 48 20.8**	**-1.5**
TKGZ					SN		**13 49 25.5**	**+1.1**
MWZ	**Matawai**	**5.58**	**214**	PN	**Pn**		**13 48 21.8**	**-1.4**
MWZ					SN		**13 49 28.5**	**+2.5**
KUZ	**Kuaotunu**	**5.58**	**236**	PN	**Pn**		**13 48 24.8**	**+1.6**
OPRZ	**Ohinepanea**	**5.72**	**223**	PN	**Pn**		**13 48 26.0**	**+1.0**
URZ	**Urewera**	**5.72**	**217**	Pn	**Pn**		**13 48 25.3**	**+0.3**
	25nm,0.3s,baz=264,slow=4.5,SNR=84							
URZ				Sn	**Sn**		**13 49 31.6**	**+2.1**
	36nm,0.3s,baz=126,slow=16,SNR=8.6							
URZ	**Urewera**	**5.72**	**217**	*e*Pn	**Pn**		**13 48 25.8**	**+0.7**
URZ				*e*Sn	**Sn**		**13 49 27.6**	**-1.8**
URZ	**Urewera**	**5.72**	**217**	*e*PN	**Pn**		**13 48 23.5**	**-1.5**
URZ					SN		**13 49 30.9**	**+1.5**
PRGZ	**Paritu Road**	**5.91**	**209**	PN	**Pn**		**13 48 25.8**	**-2.0**
SNGZ	**Shannon Statio**	**6.03**	**213**	*e*PN	**Pn**		**13 48 30.3**	**+0.9**
SNGZ					SN		**13 49 39.8**	**+2.8**
KNZ	**Kokohu**	**6.08**	**209**	PN	**Pn**		**13 48 27.0**	**-3.0**
KNZ					SN		**13 49 37.8**	**-0.5**
MHGZ	**Mahia Peninsul**	**6.10**	**207**	PN	**Pn**		**13 48 28.6**	**-1.7**
MKAZ	**Moumakai**	**6.15**	**235**	PN	**Pn**		**13 48 33.6**	**+2.6**
WCZ	**Waipu Caves**	**6.27**	**248**	*e*PN	**Pn**		**13 48 33.8**	**+1.2**
TOZ	**Tahuroa Road**	**6.28**	**229**	PN	**Pn**		**13 48 34.2**	**+1.5**
NMHZ	**Naumai**	**6.53**	**214**	*e*PN	**Pn**		**13 48 35.3**	**-0.9**
ARHZ	**Aropaoanui**	**6.57**	**212**	PN	**Pn**		**13 48 35.5**	**-1.3**
OUZ	**Omahuta**	**6.69**	**255**	*e*Pn	**Pn**		**13 48 40.0**	**+1.7**
OUZ				*e*Sn	**Sn**		**13 49 46.1**	**-7.1**
BKZ	**Black Stump Fm**	**6.73**	**215**	*e*Pn	**Pn**		**13 48 37.5**	**-1.5**
BKZ	**Black Stump Fm**	**6.73**	**215**	PN	**Pn**		**13 48 37.0**	**-2.0**
BKZ					SN		**13 49 52.3**	**-2.1**
MCHZ	**McNeill Hill**	**6.86**	**213**	*e*PN	**Pn**		**13 48 39.6**	**-1.1**
BHHZ	**Black Hill Sta**	**7.19**	**216**	PN	**Pn**		**13 48 44.3**	**-1.0**
BHHZ					SN		**13 50 06.4**	**+0.7**
PXZ	**Pawanui**	**7.27**	**209**	PN	**Pn**		**13 48 45.1**	**-1.2**
WNVZ	**Wahianoa**	**7.30**	**219**	PN	**Pn**		**13 48 46.6**	**-0.4**
TSZ	**Takapari Road**	**7.69**	**214**	*e*PN	**Pn**		**13 48 49.3**	**-2.8**
BFZ	**Birch Farm**	**8.07**	**210**	*e*Pn	**Pn**		**13 48 53.6**	**-3.7**
MRZ	**Mangatainoka R**	**8.34**	**213**	PN	**Pn**		**13 48 58.0**	**-3.1**
MRZ					SN		**13 50 29.2**	**-4.8**
RPZ	**Rata Peaks**	**12.84**	**216**	Pn	**Pn**		**13 49 59.4**	**-3.2**
	3.3nm,0.3s,baz=61,slow=5.1,SNR=13							
RPZ				Sn	Sn		13 52 14.2	-10
	2.2nm,0.3s,baz=314,slow=23,SNR=9.8							
MSVF	**Nonsavu**	**16.27**	**348**	⇓*e*P	**Pn**		**13 50 47.7**	**-0.8**
MSVF	**Nonsavu**	**16.27**	**348**	*e*Pn	**Pn**		**13 50 47.2**	**-1.3**
	90nm,1.2s							
DZM	**Mont Dzumac**	**17.66**	**307**	P	**P**		**13 51 07.8**	**+1.1**
	0.8nm,0.3s,baz=119,slow=13,SNR=20							
DZM				LR	LR		13 56 53.0	
	comp=Z,2μm,18.5s,baz=131,slow=34							
DZM	**Mont Dzumac**	**17.66**	**307**	*e*Pn	**Pn**		**13 51 05.9**	**-0.1**
	141nm,1.0s							
DZM				*e*LR	LR		13 55 09.4	
	2μm,24.6s							
DZM	**Mont Dzumac**	**17.66**	**307**	*e*Pn	**Pn**		**13 51 03.1**	**-2.9**
	63nm,0.9s							
RAR	**Rarotonga**	**20.75**	**58**	LR	LR		13 59 21.0	
	comp=Z,529nm,18.9s,baz=244,slow=36							
TBI	**Tubuai**	**27.45**	**75**	*e*LQ	LQ		13 57 47.4	
	662nm,25.5s							
TBI				*e*LR	LR		13 59 18.8	
	566nm,21.2s,baz=234							
EIDS	**Eidsvold**	**27.67**	**280**	*e*P	**P**		**13 52 45.0**	**-2.2**
	20nm,0.9s							
PPT2	**Papeete2**	**30.50**	**65**	*e*LR	LR		14 00 39.6	
	444nm,20.8s,baz=235							
PPT	**Papeete**	**30.51**	**65**	LR	LR		14 04 58.9	
	comp=Z,607nm,18.1s,baz=268,slow=35							
STKA	**Stephens Creek**	**33.45**	**262**	P	**P**		**13 53 38.8**	**+0.6**
	2.1nm,0.4s,baz=124,slow=17,SNR=4.3							
STKA				LR	LR		14 06 53.2	
	comp=Z,1μm,18.2s,baz=65,slow=36							
CTA	**Charters Tower**	**34.07**	**284**	P	**P**		**13 53 44.3**	**+0.6**
	9.0nm,0.6s,baz=114,slow=11,SNR=20							
CTAO	**Charters Tower**	**34.07**	**284**	*e*P	**P**		**13 53 41.2**	**-2.6**
CTAO				pmax	pmax			
	comp=Z,24nm,0.8s							
CTAO	**Charters Tower**	**34.07**	**284**	*e*P	**P**		**13 53 41.2**	**-2.6**
	comp=Z,24nm,0.8s							
RKT	**Rikitea**	**39.46**	**86**	*e*LR	LR		14 05 09.2	
	comp=Z,640nm,21.8s							
PMG	**Port Moresby**	**39.78**	**300**	LR	LR		14 09 01.1	
	comp=Z,479nm,18.8s,baz=164,slow=33							
COEN	**Coen**	**39.91**	**290**	*e*P	**P**		**13 54 32.8**	**-0.5**
	comp=Z,28nm,1.1s							
AS01	**Alice Springs**	**42.58**	**271**	*e*P	**P**		**13 54 52.9**	**-2.4**
AS31	**Alice Springs**	**42.62**	**271**	*e*P	**P**		**13 54 54.1**	**-1.5**
	comp=Z,6.1nm,0.8s							
ASAR	**Alice Springs**	**42.62**	**271**	P	**P**		**13 54 54.2**	**-1.4**
	comp=Z,18nm,0.8s,baz=110,slow=6.7,SNR=102							
ASAR				PcP	**PcP**		**13 56 46.5**	**-0.9**
	comp=Z,2.4nm,0.7s,baz=121,slow=4.0,SNR=5.0							
ASAR				LR	LR		14 12 12.3	
	comp=Z,375nm,18.3s,baz=134,slow=36							
TAOE	**Nuku Hiva Isla**	**43.10**	**64**	*e*LR	LR		14 06 28.9	
	comp=Z,379nm,24.9s							
WB2	**Warramunga Arr**	**43.90**	**276**	*e*P	**P**		**13 55 03.7**	**-2.2**
	comp=Z,26nm,0.8s							
WRAB	**Tennant Creek**	**43.91**	**276**	*c iP*	**P**		**13 55 04.4**	**-1.6**
WRAB				pmax	pmax			
	comp=Z,84nm,0.9s							
WRAB	**Tennant Creek**	**43.91**	**276**	*e*P	**P**		**13 55 04.1**	**-1.9**
	comp=Z,27nm,0.8s							
WRA	**Warramunga Arr**	**43.91**	**276**	P	**P**		**13 55 04.4**	**-1.6**
	comp=Z,29nm,0.9s,baz=118,slow=7.7,SNR=61							
WRA	**Warramunga Arr**	**43.91**	**276**	P	**P**		**13 55 04.4**	**-1.6**
WRA				pmax	pmax			
	comp=Z,30nm,0.9s							
VNDA	**Vanda**	**44.71**	**186**	P	**P**		**13 55 13.1**	**+1.4**
	comp=Z,0.6nm,0.7s,baz=276,slow=13,SNR=2.3							
VNDA				LR	LR		14 11 44.6	
	comp=Z,308nm,19.4s,baz=22,slow=33							
VNDA	**Vanda**	**44.71**	**186**	*e*P	**P**		**13 55 11.7**	**0.0**
VNDA				pmax	pmax			
	comp=Z,28nm,1.9s							
VNDA	**Vanda**	**44.71**	**186**	*e*P	**P**		**13 55 11.7**	**0.0**
	comp=Z,28nm,1.9s							
JAY	**Jayapura**	**49.15**	**300**	P	**P**		**13 55 45.2**	**-1.9**
	comp=Z,1.1nm,0.8s,baz=270,slow=23,SNR=4.2							
CASY	**Casey**	**51.98**	**209**	*e*P	**P**		**13 56 07.5**	**-0.3**
FITZ	**Fitzroy Crossi**	**52.01**	**273**	P	**P**		**13 56 07.5**	**-1.2**
	comp=Z,12nm,1.0s,baz=124,slow=6.1,SNR=9.3							
FITZ	**Fitzroy Crossi**	**52.01**	**273**	*e*P	**P**		**13 56 07.4**	**-1.3**
	comp=Z,21nm,1.1s							
NWAO	**Narrogin (SRO)**	**52.88**	**252**	LR	LR		14 16 48.9	
	comp=Z,207nm,19.4s,baz=326,slow=34							
QSPA	**South Pole Qui**	**56.35**	**180**	*e*P	**P**		**13 56 38.0**	**-1.9**
	comp=Z,91nm,0.9s							
MAW	**Mawson**	**69.02**	**201**	P	**P**		**13 58 05.5**	**+1.5**
	comp=Z,3.6nm,0.8s,baz=224,slow=10,SNR=3.2							
SYO	**Syowa Base**	**73.75**	**193**	⇓*e*P	**P**		**13 58 33.0**	**+0.5**
SYO	**Syowa Base**	**73.75**	**193**	⇓*e*pP	pP		13 58 39.6	-4.3
SNAA	**Sanae**	**74.81**	**179**	P	**P**		**13 58 38.6**	**-0.1**
SNAA	**Sanae**	**74.81**	**179**	P	**P**		**13 58 40.6**	**+1.8**
SNAA				pmax	pmax			
	comp=Z,31nm,1.5s							
SNAA	**Sanae**	**74.81**	**179**	P	**P**		**13 58 40.6**	**+1.8**
	comp=Z,31nm,1.5s							
NVL	**N'lazarevskaya**	**75.50**	**184**	*e*P	P		13 58 56.3	+14
VNA1	**Neumayer--Stat**	**75.64**	**177**	P	**P**		**13 58 45.9**	**+2.5**
PLCA	**Paso Flores**	**80.53**	**133**	LR	LR		14 29 42.5	
	comp=Z,126nm,18.0s,baz=206,slow=32							
MAJO	**Matsushiro**	**80.78**	**326**	⇓*iP*	**P**		**13 59 12.6**	**+0.3**
MAJO				pmax	pmax			
	comp=Z,88nm,1.3s							
KSRS	**Korea Array**	**86.64**	**320**	P	**P**		**13 59 43.1**	**+0.9**
	comp=Z,2.0nm,0.8s,baz=134,slow=4.8,SNR=7.4							
KSAR	**Wonju Array Be**	**86.66**	**320**	P	**P**		**13 59 43.1**	**+0.8**
KSAR	**Wonju Array Be**	**86.66**	**320**	P	**P**		**13 59 43.1**	**+0.8**
YSS	**Yuzh-Sakhalins**	**87.59**	**335**	*e*P	**P**		**13 59 46.2**	**-0.4**
YSS				pmax	pmax			
	comp=Z,14nm,1.0s							
YSS	**Yuzh-Sakhalins**	**87.59**	**335**	*e*P	**P**		**13 59 45.9**	**-0.6**
	comp=Z,15nm,1.0s							
NJ2	**Nanjing**	**88.12**	**311**	*e*P	**P**		**13 59 52.9**	**+3.4**
NJ2				pmax	pmax			
	comp=Z,13nm,0.5s							
PEA0	**Petropavlovsk-**	**88.96**	**346**	*e*P	**P**		**13 59 49.8**	**-3.1**
PEA0B	**Petropavlovsk-**	**88.96**	**346**	*e*P	**P**		**13 59 52.0**	**-1.0**
	comp=Z,58nm,1.3s							
PETK	**Petropavlovsk-**	**88.96**	**346**	P	**P**		**13 59 53.1**	**+0.2**
	comp=Z,6.5nm,0.7s,baz=134,slow=8.5,SNR=9.6							
USRK	**Ussuriysk Ar.**	**89.73**	**327**	P	**P**		**13 59 56.3**	**-0.5**
	comp=Z,1.3nm,0.8s,baz=0.0,slow=0.8,SNR=3.7							
LDFC	**Landfair**	**90.60**	**47**	*e*P	**P**		**14 00 03.1**	**+1.9**
	comp=Z,13nm,0.9s							
CN2	**Changchun**	**92.57**	**323**	*e*P	**P**		**14 00 13.0**	**+3.1**
GYA	**Guiyang**	**92.86**	**300**	P	**P**		**14 00 13.2**	**+1.3**
GYA				pP	pP		14 00 21.6	-2.0
GYA				PP	**PP**		**14 00 58.0**	**+3.0**
GYA				SKS	**SKSac**		**14 10 43.5**	**+0.4**
GYA				S	**S**		**14 11 14.4**	**-0.6**
GYA				SS	**SS**		**14 17 31.2**	**+1.5**
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
GYA				pmax	pmax			
	comp=Z,120nm,7.2s							
GYA				LR	LR			
	comp=Z,520nm,20.6s							
GYA				LR	LR			
	comp=Z,480nm,21.0s							
GYA				LR	LR			
	comp=Z,450nm,20.8s							
KLR	**Kul'dur**	**93.73**	**330**	⇓*eP*	**P**		**14 00 18.5**	**+3.3**
CMAR	**Chiang Mai Arr**	**94.11**	**289**	LR	LR		14 45 54.0	
	comp=Z,33nm,19.6s,baz=210,slow=38							
TXAR	**Lajitas Array**	**94.55**	**58**	P	**P**		**14 00 21.5**	**+1.9**
	comp=Z,0.4nm,0.8s,baz=212,slow=6.8,SNR=4.7							
TXAR				LR	LR		14 37 24.8	
	comp=Z,240nm,18.5s,baz=0.0,slow=32							
KMI	**Kunming**	**94.96**	**297**	P	**P**		**14 00 22.8**	**+1.1**
KMI				pmax	pmax			
	comp=Z,9.0nm,0.6s							
CD2	**Chengdu**	**97.52**	**302**	*e*P	**P**		**14 00 32.5**	**-0.5**
CD2				sP	pP		14 00 45.6	+0.9
CD2				SKS	**SKSac**		**14 11 07.5**	**-0.1**
CD2				S	**S**		**14 11 55.2**	**0.0**
CD2				sS	sS		14 12 11.5	-3.1
CD2				SS	**SS**		**14 18 36.6**	**+0.9**
CD2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
CD2				pmax	pmax			
	comp=Z,120nm,6.4s							
CPUP	**Villa Florida**	**98.21**	**129**	LR	LR		14 40 26.3	
	comp=Z,259nm,18.0s,baz=222,slow=33							
WMQ	**Urumqi**	**114.95**	**307**	*e*PKP	PKPdf		14 05 37.4	-2.0
MKAR	**Makanchi Array**	**119.58**	**309**	PKP	**PKPdf**		**14 05 47.0**	**-1.2**
	comp=Z,1.3nm,0.8s,baz=148,slow=0.9,SNR=8.7							
MKAR	**Makanchi Array**	**119.58**	**309**	PKIKP	**PKPdf**		**14 05 47.0**	**-1.2**
MKAR				pmax	pmax			
	comp=Z,1.0nm,0.8s							
ZAA0	**Zalesovo Array**	**120.24**	**317**	*e*PKPdf	**PKPdf**		**14 05 49.1**	**0.0**
ZALV	**Zalesovo Beam**	**120.24**	**317**	PKP	**PKPdf**		**14 05 49.8**	**+0.6**
	comp=Z,2.9nm,0.8s,baz=132,slow=1.8,SNR=7.1							
KSH	**Kashi**	**121.54**	**299**	*e*PKP	**PKPdf**		**14 05 52.6**	**+0.3**
KSH				*es*PKP			14 06 05.3	
KSH				*e*PP	**PP**		**14 07 29.3**	**+4.1**
KSH				PKS	**PKSdf**		**14 09 27.5**	**-1.6**
KSH				SKS	**SKSdf**		**14 12 59.4**	**-2.1**
KSH				SKKS	**SKKSac**		**14 14 17.7**	**-3.5**
KSH				SS	**SS**		**14 23 59.5**	**+1.0**
KSH				AMB	AMB			
	comp=Z,49nm,4.4s							
KSH				LR	LR			
	comp=Z,180nm,5.6s							
KSH				LR	LR			
	comp=Z,110nm,6.1s							
KSH				LR	LR			
	comp=Z,180nm,5.0s							
KURK	**Kurchatov**	**123.03**	**312**	*c iP*KIKP	**PKPdf**		**14 05 55.2**	**+0.6**
VOSK	**Vostochnaya**	**128.08**	**314**	*e*PKIKP	**PKPdf**		**14 06 04.0**	**-0.3**
VOSK	**Vostochnaya**	**128.08**	**314**	*e*PKPdf	**PKPdf**		**14 06 04.0**	**-0.3**
BRVK	**Borovoye**	**128.54**	**314**	⇓*e*PKIKP	**PKPdf**		**14 06 04.5**	**-0.6**
GEYT	**Alibeck**	**134.52**	**292**	PKP	**PKPdf**		**14 06 19.3**	**+2.3**
	comp=Z,3.5nm,0.7s,baz=169,slow=1.5,SNR=5.8							
ARU	**Arti**	**135.37**	**318**	*i* PKIKP	**PKPdf**		**14 06 18.3**	**+0.4**
ARU							14 09 03.1	
ARU	**Arti**	**135.37**	**318**	*e*PKPdf	**PKPdf**		**14 06 18.6**	**+0.7**
ARCES	**ARCESS Array B**	**141.77**	**347**	PKhKP	PKPpre		14 06 24.5	
	comp=Z,2.2nm,0.9s,baz=326,slow=0.4,SNR=4.5							
ARCES				PKP	**PKiKP**		**14 06 31.6**	**-0.6**
	comp=Z,1.2nm,0.6s,baz=72,slow=1.5,SNR=6.9							
KLMR	**Klimovskoe**	**143.49**	**330**	*e*PKHKP	PKPpre		14 06 26.8	
KLMR				pmax	pmax			
	comp=Z,20nm,1.4s							
DGRG	**David-gareji**	**144.71**	**296**	P	**PKPab**		**14 06 34.1**	**-0.2**
TBLG	**Delisi**	**145.20**	**296**	P	**PKPbc**		**14 06 35.6**	**-0.3**
NCK	**Nalchik**	**146.03**	**299**	⇓*e*PKIKP	**PKPdf**		**14 06 38.0**	**+0.5**
VRH	**Novokhopyorsk**	**146.12**	**313**	*e*PKIKP	**PKPdf**		**14 06 37.3**	**-0.1**
VRH				pmax	pmax			
	comp=Z,70nm,0.8s							
AKH	**Akh

mb1 4.4/11,mb1mx4.2/22,mbtmp4.2/11,ML3.9/3,MS3.7/2, Ms1 3.7/2,ms1mx3.1/27,Error ellipse: s-maj=24.8km s-min=19.4km az=172.0

*ISCJB **07** 14:15:00.5±0.8,30.06S±0.06×176.28W±0.10,h24km, mb4.2/9,MS3.6/2,Error ellipse: s-maj=12.1km s-min=8.7km az=179.8*

*NEIC **07** 14:15:00.6±0.7,29.91S×176.37W,h10km,mb4.4/1,Error ellipse: s-maj=16.2km s-min=14.2km az=117.0*

ISC 07 14:15:02.7±0.7,29.89S±0.09×176.40W±0.09,h24km,n24, σ1℘15/26,mb4.3/9,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.47**	**295**	Pn		**Pb**	**14 15 28.6**	**-0.8**
	519nm,0.3s,baz=66,slow=23,SNR=9.0							
RAO				Sn		**Sb**	**14 15 49.1**	**+1.6**
	1um,0.3s,baz=73,slow=20,SNR=7.6							
URZ	**Urewera**	**9.93**	**211**	Pn		**Pn**	**14 17 23.4**	**-0.4**
	0.9nm,0.3s,baz=264,slow=4.0,SNR=6.1							
URZ				Sn		**Sn**	**14 19 14.6**	**+0.1**
	2.5nm,0.3s,baz=31,slow=22,SNR=9.3							
RPZ	**Rata Peaks**	**17.04**	**213**	P		**Pn**	**14 18 58.3**	**-1.0**
	0.9nm,0.3s,baz=308,slow=19,SNR=4.3							
DZM	**Mont Dzumac**	**17.26**	**293**	P		**P**	**14 19 04.2**	**+0.5**
	0.2nm,0.3s,baz=120,slow=20,SNR=2.5							
PPT	**Papeete**	**27.38**	**69**	LR		LR	14 29 59.0	
	comp=Z,91nm,18.9s,baz=90,slow=33							
CTAO	**Charters Tower**	**35.09**	**277**	P		**P**	**14 21 52.1**	**-2.2**
STKA	**Stephens Creek**	**35.94**	**256**	P		**P**	**14 22 03.0**	**+1.5**
	5.4nm,0.6s,baz=97,slow=10,SNR=21							
ASAR	**Alice Springs**	**44.52**	**266**	P		**P**	**14 23 12.4**	**-0.3**
	0.8nm,0.5s,baz=103,slow=6.4,SNR=14							
ASAR				LR		LR	14 41 43.3	
	comp=Z,147nm,18.9s,baz=92,slow=36							
WRAB	**Tennant Creek**	**45.46**	**271**	*e*P		**P**	**14 23 18.8**	**-1.4**
	2.1nm,0.5s							
WRA	**Warramunga Arr**	**45.47**	**271**	P		**P**	**14 23 19.7**	**-0.6**
	6.3nm,0.6s,baz=110,slow=7.7,SNR=52							
MJAR	**Matsushiro Arr**	**78.63**	**324**	P		**P**	**14 27 02.1**	**-0.4**
	2.4nm,0.7s,baz=160,slow=5.2,SNR=8.7							
KSRS	**Korea Array**	**84.87**	**319**	P		**P**	**14 27 36.4**	**+1.1**
	0.3nm,0.4s,baz=64,slow=5.0,SNR=3.3							
KSAR	**Wonju Array Be**	**84.88**	**319**	P		**P**	**14 27 36.4**	**+1.0**
PETK	**Petropavlovsk-**	**85.68**	**345**	P		**P**	**14 27 38.3**	**-0.7**
	1.4nm,0.7s,baz=155,slow=4.8,SNR=2.7							
USRK	**Ussuriysk Ar.**	**87.51**	**326**	P		**P**	**14 27 48.8**	**+0.6**
	1.6nm,0.7s,baz=151,slow=2.8,SNR=4.2							
TXAR	**Lajitas Array**	**90.95**	**57**	P		**P**	**14 28 04.9**	**0.0**
	0.1nm,0.6s,baz=181,slow=7.2,SNR=2.6							
MKAR	**Makanchi Array**	**118.51**	**310**	PKP		**PKPdf**	**14 33 48.0**	**-0.1**
	0.2nm,0.5s,baz=64,slow=3.4,SNR=3.6							
FINES	**FINESS Array B**	**145.13**	**341**	PKPbc		**PKPdf**	**14 34 36.6**	**-0.8**
	3.6nm,0.6s,baz=62,slow=3.3,SNR=18							
KBZ	**Khabaz**	**145.97**	**305**	PKPbc		**PKPab**	**14 34 40.4**	**-0.3**
	2.4nm,0.8s,baz=166,slow=4.2,SNR=2.8							
NB2	**NORSAR Subarra**	**148.44**	**353**	PKP		**PKPbc**	**14 34 46.2**	**-0.4**
	comp=Z,1.0nm,0.7s,baz=20,slow=2.9							
NOA	**NORSAR Array B**	**148.44**	**353**	PKPbc		**PKPbc**	**14 34 46.5**	**-0.2**
	comp=Z,1.2nm,0.7s,baz=12,slow=4.4,SNR=5.2							
AKASG	**Malin Array Be**	**151.71**	**325**	PKPbc		**PKPbc**	**14 34 54.6**	**-0.2**
	comp=Z,1.8nm,0.4s,baz=43,slow=2.7,SNR=11							
BRTR	**Keskin Array B**	**153.56**	**300**	PKPbc		**PKPbc**	**14 35 01.8**	**+2.3**
	comp=Z,0.3nm,0.4s,baz=114,slow=3.6,SNR=2.7							
BRTR				PKPab		**PKPab**	**14 35 13.5**	**+1.4**
	comp=Z,0.5nm,0.4s,baz=77,slow=5.5,SNR=3.8							
TORD	**Torodi Ar. Bea**	**163.24**	**174**	PKPab		**PKPab**	**14 35 56.3**	**+2.2**
	comp=Z,1.6nm,0.9s,baz=189,slow=3.5,SNR=6.8							

MEX 07 14:24:02.6±0.9,15.06N×92.88W,h89km±21km,MD3.7, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.41**	**30**	*e*P		Pn	14 24 26.9	-0.5
CCIG				*e*S		Sn	14 24 44.1	-1.9
TGIG		**1.73**	**352**	*e*P		Pn	14 24 30.9	-0.4
TGIG				*e*S		Sn	14 24 50.7	-2.3

IDC 07 14:28:10.9±1.8,28.16S×176.87W,h0km,mb4.0/4, mb1 4.2/4,mb1mx3.9/17,mbtmp3.9/4,MS3.2/1,Ms1 3.2/1, ms1mx2.7/26,Error ellipse: s-maj=63.5km s-min=20.4km az=131.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.42**	**220**	Pn		Pg	14 28 38.3	+0.1
	90nm,0.3s,baz=78,slow=20,SNR=3.2							
RAO				Sn		Sn	14 28 59.5	+2.0
	544nm,0.3s,baz=70,slow=21,SNR=8.0							
RAR	**Rarotonga**	**17.00**	**70**	LR		LR	14 38 34.0	
	comp=Z,70nm,18.9s,baz=273,slow=37							
STKA	**Stephens Creek**	**36.00**	**254**	P		P	14 35 13.3	-0.4
	2.7nm,0.9s,baz=107,slow=7.4,SNR=6.7							
ASAR	**Alice Springs**	**44.27**	**264**	P		P	14 36 22.2	-0.3
	1.0nm,0.5s,baz=102,slow=7.3,SNR=19							
WRA	**Warramunga Arr**	**45.06**	**269**	P		P	14 36 28.8	-0.1
	0.8nm,0.4s,baz=109,slow=7.9,SNR=12							
ILAR	**Eielson Array**	**95.53**	**12**	P		P	14 41 37.7	+0.5
	0.3nm,0.9s,baz=210,slow=5.2,SNR=3.3							
FINES	**FINESS Array B**	**143.37**	**342**	PKP		PKPbc	14 47 43.6	-0.1
	1.0nm,0.7s,baz=42,slow=2.3,SNR=6.4							
NOA	**NORSAR Array B**	**146.68**	**353**	PKPbc		PKPbc	14 47 53.8	-0.3
	0.9nm,0.8s,baz=8.9,slow=2.6,SNR=3.1							
AKASG	**Malin Array Be**	**150.07**	**326**	PKPbc		PKPbc	14 48 01.3	-1.9
	0.3nm,0.4s,baz=45,slow=2.6,SNR=4.6							
AKASG				PKPab		PKPab	14 48 10.2	+1.1
	0.8nm,0.5s,baz=47,slow=3.7,SNR=6.1							

*CSEM **07** 14:42:00.2,44.06N×19.08E,h0km,ML1.4,Mining explosion.*

BEO 07 14:42:00.2±0.8,44.06N×19.08E,h0km,M1.4/7,Mining explosion.,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BBLS	**Lazi?i**	**0.30**	**129**	*e*Pg		Pg	14 42 05.6	-0.4
BBLS				*e*Sg		Sg	14 42 10.7	+0.7
BBLS	**Lazi?i**	**0.30**	**129**	*e*Pg		Pg	14 42 05.6	-0.4
BBLS				*e*Sg		Sg	14 42 10.7	+0.7
TEKS	**Tekeris**	**0.59**	**33**	*e*Pg		Pg	14 42 11.0	-0.4
TEKS	**Tekeris**	**0.59**	**33**	*e*Pg		Pg	14 42 11.0	-0.4
DIVS	**Divibare**	**0.66**	**86**	*e*Pg		Pg	14 42 11.1	-1.7
DIVS				*e*Sg		Sg	14 42 19.3	-2.0
DIVS	**Divibare**	**0.66**	**86**	*e*Pg		Pg	14 42 11.1	-1.7
DIVS				*e*Sg		Sg	14 42 19.3	-2.0
IVAS	**Ivanjica**	**0.91**	**122**	*e*Pg		Pg	14 42 15.3	-2.4
IVAS				*e*Sg		Sg	14 42 30.1	+0.5
IVAS	**Ivanjica**	**0.91**	**122**	*e*Pg		Pg	14 42 15.3	-2.4
IVAS				*e*Sg		Sg	14 42 30.1	+0.5
TRUS	**Trudelj**	**0.97**	**80**	*e*Pg		Pg	14 42 18.4	-0.4
TRUS				*e*Sg		Sg	14 42 31.5	+0.2
TRUS	**Trudelj**	**0.97**	**80**	*e*Pg		Pg	14 42 18.4	-0.4
TRUS				*e*Sg		Sg	14 42 31.5	+0.2
GRUS	**Gruza**	**1.19**	**98**	*e*Pg		Pg	14 42 22.9	-0.2
GRUS				*e*Sg		Sg	14 42 38.7	+0.2
GRUS	**Gruza**	**1.19**	**98**	*e*Pg		Pg	14 42 22.9	-0.2
GRUS				*e*Sg		Sg	14 42 38.7	+0.2
FGSL	**Fruska Gora**	**1.22**	**25**	*e*Pg		Pg	14 42 23.0	-0.5
FGSL				*e*Sg		Sg	14 42 38.1	-1.1
FRGS	**Fruska Gora**	**1.22**	**25**	*e*Pg		Pg	14 42 23.0	-0.5
FRGS				*e*Sg		Sg	14 42 38.1	-1.1
SELS	**Selova**	**1.70**	**119**	*e*Pg		Pn	14 42 29.2	-2.0
SELS				*e*Sg		Sb	14 42 54.2	-0.1
SELS	**Selova**	**1.70**	**119**	*e*Pg		Pn	14 42 29.2	-2.0
SELS				*e*Sg		Sb	14 42 54.2	-0.1

MAN 07 14:42:36,7.75N×126.55E,h2km,mb4.3,ML3.2,MS3.0, 1C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.47**	**336**	||*i*P		Pb	14 42 47.4	+0.3
BIPH				*i* S		Sb	14 42 54.4	-0.1
MATI	**Mati**	**0.85**	**200**	*e*P		Pb	14 42 53.5	0.0
MATI				*e*S		Sb	14 43 05.9	+0.6
BUKP	**Musuan**	**1.48**	**275**	*e*P		Pn	14 43 03.5	-0.2
BUKP				*e*S		Sn	14 43 24.4	+0.6
CGP	**Cagayan de Oro**	**1.97**	**291**	||*i*P		Pb	14 43 11.6	-1.1
CGP				*i* S		Sn	14 43 33.8	-1.9

*ISCJB **07** 14:43:17.3±0.9,41.21N±0.04×25.99E±0.04,h2km±8km, Error ellipse: s-maj=7.1km s-min=4.8km az=6.5*

*ISK **07** 14:43:18.2,41.18N×26.07E,h10km,MD2.7*

*ATH **07** 14:43:18.6,41.17N×25.93E,h17km±4km,ML1.7/2,Error ellipse: s-maj=6.3km s-min=1.6km az=195.0*

*CSEM **07** 14:43:18.0±0.3,41.20N×26.02E,h2km,ML1.8,Error ellipse: s-maj=5.8km s-min=4.2km az=22.0*

*DDA **07** 14:43:18.4,41.29N×26.10E,h8km,Ml2.9*

*THE **07** 14:43:19.3,41.13N×25.88E,h3km±19km,ML1.8/2,Error ellipse: s-maj=19.5km s-min=0.6km az=90.0*

ISC 07 14:43:17.3±1.1,41.22N±0.04×26.01E±0.03,h14km±8km, n36,σ0℘36/55,Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ALN	**Alexandroupoli**	**0.32**	**175**	*e*PG		**Pg**	**14 43 24.3**	**+0.4**
ALN				*e*SG		**Sg**	**14 43 28.3**	**-0.1**
ALN	**Alexandroupoli**	**0.32**	**175**	P		**Pg**	**14 43 24.3**	**+0.4**
ALN				S		**Sg**	**14 43 28.4**	**-0.1**
ALN	**Alexandroupoli**	**0.32**	**175**	P		**Pg**	**14 43 24.3**	**+0.4**
ALN				*e*Sg		**Sg**	**14 43 28.3**	**-0.1**
ALN	**Alexandroupoli**	**0.32**	**175**	P		**Pg**	**14 43 23.9**	**0.0**
ALN				S		**Sg**	**14 43 27.5**	**-0.9**
ALN				AML		AML	14 43 28.5	
	comp=E,459μm,0.2s							
ALN				AML		AML	14 43 28.5	
	comp=N,210μm,0.2s							
ENEZ	**Enez**	**0.49**	**167**	*e*PG		**Pb**	**14 43 27.5**	**-0.2**
ENEZ				*e*SG		**Sb**	**14 43 34.4**	**-0.4**
ENEZ	**Enez**	**0.49**	**167**	P		**Pb**	**14 43 27.8**	**+0.1**
ENEZ				S		**Sb**	**14 43 34.6**	**-0.2**
ENEZ	**Enez**	**0.49**	**167**	*e*Pg		**Pb**	**14 43 27.5**	**-0.2**
ENEZ	**Enez**	**0.49**	**167**	P		**Pb**	**14 43 27.8**	**+0.1**
ENEZ				*e*Sg		**Sb**	**14 43 34.4**	**-0.4**
KESN	**Edirne-Kesan**	**0.64**	**127**	*i* P		**Pb**	**14 43 30.2**	**-0.3**
KESN				*i* S		**Sb**	**14 43 39.9**	**+0.5**
KESN	**Edirne-Kesan**	**0.64**	**127**	P		**Pb**	**14 43 30.2**	**-0.3**
KESN				S		**Sb**	**14 43 39.9**	**+0.5**
ERIK	**Erikli-Kesan**	**0.67**	**145**	*e*PG		**Pg**	**14 43 30.4**	**+0.1**
ERIK				*e*SG		**Sg**	**14 43 39.3**	**+0.2**
ERIK	**Erikli-Kesan**	**0.67**	**145**	*e*Pg		**Pg**	**14 43 30.4**	**+0.1**
ERIK				*e*Sg		**Sg**	**14 43 39.3**	**+0.2**
SMTH	**Samothraki Isl**	**0.83**	**206**	P		**Pg**	**14 43 32.8**	**-0.6**
SMTH	**Samothraki Isl**	**0.83**	**206**	P		**Pg**	**14 43 32.8**	**-0.6**
SMTH				S		**Sb**	**14 43 44.8**	**+0.3**
SMTH	**Samothraki Isl**	**0.83**	**206**	P		**Pg**	**14 43 32.5**	**-0.9**
SMTH				S		**Sb**	**14 43 44.8**	**+0.3**
SMTH				AML		AML	14 43 47.7	
	comp=N,94μm,0.2s							
SMTH				AML		AML	14 43 47.9	
	comp=E,86μm,0.2s							
EDRB	**Edirne**	**0.84**	**41**	*e*PG		**Pn**	**14 43 34.5**	**-0.2**
EDRB	**Edirne**	**0.84**	**41**	*e*Pg		**Pn**	**14 43 34.5**	**-0.2**
GELI	**Tayfur-Gelibol**	**0.89**	**157**	*e*PG		**Pb**	**14 43 34.5**	**0.0**
GELI				*e*SG		**Sg**	**14 43 46.6**	**+0.4**
GELI	**Tayfur-Gelibol**	**0.89**	**157**	*e*Pg		**Pb**	**14 43 34.5**	**0.0**
GELI				*e*Sg		**Sg**	**14 43 46.7**	**+0.4**
LPK	**Lapseki**	**1.02**	**146**	*e*PG		**Pn**	**14 43 37.0**	**-0.1**
LPK	**Lapseki**	**1.02**	**146**	*e*Pg		**Pn**	**14 43 37.1**	**-0.1**
GADA	**Gvkgeada**	**1.03**	**185**	*e*PG		**Pn**	**14 43 37.8**	**+0.5**
GADA	**Gvkgeada**	**1.03**	**185**	*e*Pg		**Pn**	**14 43 37.8**	**+0.5**
RKY	**Sarkoy-Tekirda**	**1.03**	**120**	*e*PG		**Pb**	**14 43 37.0**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.03**	**120**	*e*Pg		**Pb**	**14 43 37.0**	**0.0**
SART	**Tekirdag**	**1.03**	**120**	*i* P		**Pn**	**14 43 37.9**	**+0.5**
SART				*i* S		**Sn**	**14 43 51.8**	**+0.1**
KAVA	**Kavala**	**1.15**	**260**	P		**Pn**	**14 43 38.9**	**-0.1**
KAVA				S		**Sb**	**14 43 53.8**	**0.0**
KAVA	**Kavala**	**1.15**	**260**	P		**Pn**	**14 43 38.9**	**-0.1**
KAVA				S		**Sb**	**14 43 53.4**	**-0.4**
KAVA	**Kavala**	**1.15**	**260**	P		**Pn**	**14 43 38.7**	**-0.3**
KRBG	**Karabiga-Canak**	**1.28**	**130**	*e*PN		**Pg**	**14 43 41.5**	**-0.4**
KRBG	**Karabiga-Canak**	**1.28**	**130**	*e*Pn		**Pg**	**14 43 41.5**	**-0.4**
MRMT	**Marmara Adasi**	**1.35**	**116**	*e*PN		**Pg**	**14 43 43.0**	**-0.3**
MRMT	**Marmara Adasi**	**1.35**	**116**	*e*Pn		**Pg**	**14 43 43.0**	**-0.3**
NVR	**Nevrokopi**	**1.62**	**275**	P		**Pg**	**14 43 49.1**	**+0.6**
NVR				S		**Sb**	**14 44 07.8**	**+0.4**
SRS	**Serrai**	**1.83**	**268**	P		**Pg**	**14 43 52.6**	**+0.2**
SRS	**Serrai**	**1.83**	**268**	P		**Pg**	**14 43 52.6**	**+0.2**

*ISCJB **07** 14:45:29.5±1.6,41.19N±0.07×25.99E±0.06,h2km±12km, Error ellipse: s-maj=12.5km s-min=7.4km az=175.9*

*ATH **07** 14:45:29.5,41.21N×25.96E,h8km±4km,ML1.4/2,Error ellipse: s-maj=5.1km s-min=1.5km az=188.0*

*CSEM **07** 14:45:30.8±0.5,41.14N×25.99E,h10km,MD2.5,Error ellipse: s-maj=11.0km s-min=5.8km az=20.0*

*ISK **07** 14:45:31.0,41.11N×26.03E,h11km,MD2.5*

ISC 07 14:45:30.2±1.6,41.17N±0.07×25.96E±0.04,h9km±13km, n22,σ0℘49/34,Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ALN	**Alexandroupoli**	**0.28**	**166**	*e*PG		**Pg**	**14 45 35.8**	**0.0**
ALN				*e*SG		**Sg**	**14 45 39.5**	**0.0**
ALN	**Alexandroupoli**	**0.28**	**166**	*e*Pg		**Pg**	**14 45 35.8**	**0.0**
ALN	**Alexandroupoli**	**0.28**	**166**	P		**Pg**	**14 45 36.1**	**+0.3**
ALN				*e*Sg		**Sg**	**14 45 39.6**	**0.0**
ALN	**Alexandroupoli**	**0.28**	**166**	P		**Pg**	**14 45 36.1**	**+0.3**
ALN				S		**Sg**	**14 45 39.5**	**0.0**
ALN				AML		AML	14 45 40.0	
	comp=E,217μm,0.2s							
ALN				AML		AML	14 45 40.1	
	comp=N,84μm,0.1s							
ENEZ	**Enez**	**0.46**	**161**	*e*PG		**Pg**	**14 45 39.3**	**+0.2**
ENEZ				*e*SG		**Sg**	**14 45 45.0**	**-0.2**
ENEZ	**Enez**	**0.46**	**161**	*e*Pg		**Pg**	**14 45 39.3**	**+0.2**
ENEZ				*e*Sg		**Sg**	**14 45 45.0**	**-0.2**
ERIK	**Erikli-Kesan**	**0.66**	**140**	*e*PG		**Pg**	**14 45 42.6**	**-0.2**
ERIK				*e*SG		**Sg**	**14 45 51.0**	**-0.3**
ERIK	**Erikli-Kesan**	**0.66**	**140**	*e*Pg		**Pg**	**14 45 42.6**	**-0.2**
ERIK				*e*Sg		**Sg**	**14 45 51.0**	**-0.3**
SMTH	**Samothraki Isl**	**0.77**	**205**	P		**Pg**	**14 45 44.4**	**-0.6**
SMTH				S		**Sb**	**14 45 56.8**	**+0.4**
SMTH	**Samothraki Isl**	**0.77**	**205**	P		**Pg**	**14 45 44.4**	**-0.6**
SMTH				S		**Sb**	**14 45 56.8**	**+0.4**
SMTH				AML		AML	14 45 59.1	
	comp=E,36μm,0.2s							
SMTH				AML		AML	14 45 59.3	
	comp=N,42μm,0.2s							
GELI	**Tayfur-Gelibol**	**0.87**	**153**	*e*PG		**Pg**	**14 45 46.8**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.87**	**153**	*e*Pg		**Pg**	**14 45 46.8**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.04**	**117**	*e*PG		**Pg**	**14 45 50.0**	**-0.2**
RKY	**Sarkoy-Tekirda**	**1.04**	**117**	*e*Pg		**Pg**	**14 45 50.0**	**-0.2**
KAVA	**Kavala**	**1.10**	**261**	P		**Pb**	**14 45 50.5**	**-0.9**
KAVA				S		**Sb**	**14 46 05.4**	**-0.6**
KAVA	**Kavala**	**1.10**	**261**	P		**Pb**	**14 45 50.5**	**-0.9**
MRMT	**Marmara Adasi**	**1.37**	**114**	*e*PN		**Pn**	**14 45 55.4**	**-0.1**
MRMT	**Marmara Adasi**	**1.37**	**114**	*e*Pn		**Pn**	**14 45 55.4**	**-0.1**
EZN	**Ezine**	**1.38**	**168**	*e*PN		**Pn**	**14 45 55.7**	**+0.1**
EZN	**Ezine**	**1.38**	**168**	*e*Pn		**Pn**	**14 45 55.7**	**+0.1**
SRS	**Serrai**	**1.79**	**269**	P		**Pb**	**14 46 04.3**	**+1.2**
SRS				S		**Sb**	**14 46 26.1**	**+0.5**
SRS	**Serrai**	**1.79**	**269**	P		**Pb**	**14 46 04.3**	**+1.2**
SRS				S		**Sb**	**14 46 26.1**	**+0.5**

*NIED **07** 14:46:00,21.80N×121.70E,h5km,Mw4.0 Best double couple: M0 1.07000×10^15 NP1:φs 175.00000°,δ48.00000°, λ34.00000°. NP2:φs 61.00000°,δ66.00000°,λ133.00000°.*

*ISCJB **07** 14:46:56.0±0.8,21.76N±0.05×121.86E±0.02,h11km±5km, Error ellipse: s-maj=8.0km s-min=3.6km az=176.1*

*JMA **07** 14:46:57.3±0.3,21.80N×121.69E,h74km,M3.5*

*TAP **07** 14:46:58.4,21.82N×121.61E,h14km,ML3.7,C*

ISC 07 14:46:57.1±1.7,21.84N±0.06×121.76E±0.04,h15km±10km, n57,σ1℘06/88,2C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.28**	**315**	||*i*P		**Pb**	**14 47 03.8**	**+0.1**
	baz=347							
LAY				*e*S		**Sb**	**14 47 07.5**	**-0.7**
	baz=347							
TSEB	**Hengchuen, Pin**	**0.80**	**274**	*e*P		**Pg**	**14 47 13.1**	**+0.4**
	baz=277							
TSEB				*i* S		**Sn**	**14 47 24.1**	**-1.3**
	baz=277							
TWK1	**Hengchun**	**0.89**	**277**	P		**Pb**	**14 47 13.8**	**-0.5**
	baz=279							
TWK1				S		**Sb**	**14 47 25.4**	**-0.6**
	baz=279							
TAW	**Tawu**	**0.95**	**303**	*e*P		**Pb**	**14 47 14.8**	**-0.4**
	baz=309							
HEN	**Hengchun**	**0.96**	**280**	*e*P		**Pb**	**14 47 15.1**	**-0.4**
	baz=283							
HEN				*e*S		**Sb**	**14 47 27.2**	**-0.8**
	baz=283							
EAST	**Anshuo**	**1.00**	**303**	⇑P		**Pb**	**14 47 15.3**	**-0.9**
	baz=309							
EAST				*e*S		**Sb**	**14 47 27.4**	**-1.8**
	baz=309							
TTN	**Taitung**	**1.07**	**328**	*e*P		**Pn**	**14 47 17.1**	**-0.4**
	baz=346							
TTN				*e*S		**Sg**	**14 47 33.1**	**+1.3**
	baz=346							
TWG	**Pinlang**	**1.16**	**327**	*e*P		**Pn**	**14 47 18.2**	**-0.6**
	baz=318							
TWG				*e*S		**Sb**	**14 47 33.6**	**-0.2**
	baz=318							
SCZT	**Fangliau**	**1.18**	**297**	*e*P		**Pn**	**14 47 18.2**	**-0.9**
	baz=313							
CHKT	**Chengkung**	**1.30**	**344**	*e*P		**Pn**	**14 47 19.6**	**-1.1**
	baz=350							
CHKT				*e*S		**Sn**	**14 47 36.3**	**-1.6**
	baz=350							
SSD	**Sandimen**	**1.38**	**311**	*e*P		**Pb**	**14 47 22.7**	**+0.1**
	baz=325							
TWP	**Hsiaoliuchiu**	**1.39**	**291**	*e*P		**Pb**	**14 47 22.9**	**+0.2**
	baz=295							
TWP				*e*S		**Sb**	**14 47 41.2**	**+0.8**
	baz=295							
SGLT	**Jiouru**	**1.47**	**307**	*e*P		**Pg**	**14 47 25.0**	**-0.4**
	baz=323							
ELDTW	**Lidau**	**1.50**	**333**	*e*P		**Pn**	**14 47 23.9**	**+0.2**
	baz=338							
TWF1	**Yuli**	**1.56**	**344**	*e*P		**Pn**	**14 47 23.8**	**-0.5**
	baz=360							
TWM1	**Shoushan**	**1.58**	**308**	*e*P		**Pb**	**14 47 26.4**	**+0.4**
	baz=323							
STYT	**Tauyuan**	**1.61**	**325**	*e*P		**Pb**	**14 47 26.5**	**-0.1**
	baz=341							
SGST	**Jiashian**	**1.65**	**319**	*e*P		**Pb**	**14 47 27.7**	**+0.6**
	baz=323							
EHY	**Hungye**	**1.70**	**346**	*e*P		**Pn**	**14 47 26.1**	**-0.1**
	baz=360							
WTP	**Ta-pu**	**1.75**	**323**	*e*P		**Pb**	**14 47 29.1**	**+0.1**
	baz=327							
CHN1	**Nanshi**	**1.75**	**320**	*e*P		**Pb**	**14 47 29.7**	**+0.7**
	baz=324							
CHN1				*e*S		**Sb**	**14 47 52.6**	**+1.7**
	baz=324							
CHN3	**Shinhua**	**1.78**	**314**	*e*P		**Pg**	**14 47 30.7**	**-0.7**
	baz=318							
YUS	**Yu-Shan**	**1.80**	**336**	*e*P		**Pn**	**14 47 28.7**	**+0.7**
	baz=340							
TWK	**Hsinying**	**1.84**	**321**	*e*P		**Pb**	**14 47 29.5**	**-1.0**
	baz=325							
TWK				*e*S		**Sb**	**14 47 54.5**	**+1.1**
	baz=325							
CHN4	**Tsaushan**	**1.85**	**324**	*e*P		**Pb**	**14 47 31.2**	**+0.6**
	baz=328							
CHN4				*e*S		**Sb**	**14 47 54.8**	**+1.3**
	baz=328							
ALS	**Alishan**	**1.88**	**332**	*e*P		**Pb**	**14 47 31.5**	**+0.2**
	baz=336							
ALS				*e*S		**Sb**	**14 47 56.7**	**+2.0**
	baz=336							
ESL	**Shilin**	**1.98**	**351**	*e*P		**Pn**	**14 47 29.9**	**-0.2**
	baz=6.0							
WDT	**Danda**	**1.99**	**343**	*e*P		**Pb**	**14 47 32.3**	**-0.9**
	baz=359							
CHN5	**Tsauling**	**2.01**	**330**	*e*P		**Pb**	**14 47 33.4**	**0.0**
	baz=334							
CHN5				*e*S		**Sg**	**14 48 00.8**	**-1.1**
	baz=334							
CHY	**Chiayi**	**2.06**	**323**	*e*P		**Pb**	**14 47 35.3**	**+1.1**
	baz=327							
CHY				*e*S		**Sb**	**14 47 59.9**	**+0.3**
	baz=327							
WGK	**Gukeng**	**2.14**	**329**	*e*P		**Pb**	**14 47 34.4**	**-1.2**
	baz=333							
WGK				*e*S		**Sb**	**14 48 02.4**	**+0.5**
	baz=333							
SMLT	**Sun Moon Lake**	**2.18**	**339**	*e*P		**Pb**	**14 47 34.8**	**-1.5**
	baz=353							
TYC	**Yuchr**	**2.21**	**338**	P		**Pb**	**14 47 36.2**	**-0.6**
	baz=325							
TYC				*e*S		**

1.4nm,0.3s,baz=75,slow=19,SNR=17
URZ Urewera 19.85 197 P **P 14 51 16.4 +0.1**
2.2nm,0.3s,baz=7.8,slow=4.3,SNR=9.1
CTA Charters Tower 35.95 262 P **P 14 53 41.5 -0.3**
7.8nm,0.5s,baz=97,slow=11,SNR=14
STKA Stephens Creek 40.37 243 P **P 14 54 18.8 +0.2**
1.0nm,0.4s,baz=89,slow=12,SNR=5.8
ASAR Alice Springs 47.06 255 P **P 14 55 11.2 -0.8**
9.9nm,0.6s,baz=91,slow=8.2,SNR=114
ASAR PcP **PcP 14 56 40.6 +0.3**
0.8nm,0.7s,baz=104,slow=3.3,SNR=5.3
WRAB Tennant Creek 47.08 261 *eP* **P 14 55 10.7 -1.4**
5.8nm,0.8s
WRA Warramunga Arr 47.09 260 P **P 14 55 11.0 -1.2**
3.2nm,0.4s,baz=92,slow=5.9,SNR=166
FITZ Fitzroy Crossi 55.51 261 P **P 14 56 14.2 -0.4**
0.9nm,0.3s,baz=96,slow=4.8,SNR=9.6
MJAR Matsushiro Arr 70.77 322 P **P 14 57 54.0 -0.4**
2.0nm,0.7s,baz=150,slow=5.7,SNR=5.6
CMAR Chiang Mai Arr 91.98 289 P **P 14 59 47.0 +0.9**
0.4nm,0.6s,baz=120,slow=3.6,SNR=4.1
CMAR Chiang Mai Arr 91.98 289 P **P 14 59 47.0 +0.9**
ARCES ARCESS Array B 128.25 351 PKP **PKPdf 15 05 41.5 +0.2**
1.4nm,0.8s,baz=5.7,slow=1.8,SNR=4.9
BRTR Keskin Array B 147.79 315 PKPbc **PKPbc 15 06 20.5 -0.6**
0.5nm,0.4s,baz=132,slow=6.2,SNR=3.5

IDC 07 14:50:19.4±3.2, 33°52S×178°68W, h0km, mb3.7/2, mb1 4.0/3, mb1mx3.7/37, mbtmp3.8/3, ML4.0/1, Error ellipse: s-maj=76.3km s-min=36.9km az=117.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**5.84 215**		Pn	Pn	14 51 48.1	+0.9
	3.7nm,0.3s,baz=269,slow=4.0,SNR=11						
URZ				Sn	Sn	14 52 54.0	-0.7
	2.0nm,0.3s,baz=89,slow=24,SNR=7.3						
ASAR	**Alice Springs**	**42.46 271**		P	P	14 58 16.8	+0.4
	0.7nm,0.7s,baz=112,slow=7.2,SNR=4.6						
WRA	**Warramunga Arr**	**43.73 276**		P	P	14 58 26.0	-0.7
	1.0nm,0.8s,baz=120,slow=7.5,SNR=5.1						
FINES	**FINESS Array B**	**147.84 338**		PKPbc	PKPbc	15 10 04.7	-0.8
	0.9nm,0.7s,baz=38,slow=5.3,SNR=4.5						

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*IDC **07** 14:53:07.9±1.6,24.°01N×121.°11E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/48, mbtmp3.4/4, ML3.1/1, Error ellipse: s-maj=69.2km s-min=26.1km az=69.0*
*ISCJB **07** 14:53:08.5±0.4,24.°20N±0.°01×121.°83E±0.°02, h6km±2km, mb3.2/3, Error ellipse: s-maj=2.8km s-min=2.0km az=42.1*
*JMA **07** 14:53:08.4±0.1,24.°19N×121.°72E, h21km±1km, M3.2*
*TAP **07** 14:53:08.9,24.°22N×121.°76E, h17km, ML4.0, B*
ISC 07 14:53:08.8±0.9, 24°20N±0.°02×121°76E±0.°02, h16km±7km, n75, σ1s05/115, mb3.2/3, 12C-10D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.11 350**	⇓	*iP*	**Pb**	**14 53 12.9**	**+0.3**
	baz=354						
EHP				S	**Sb**	**14 53 15.2**	**0.0**
	baz=354						
TWD	**Chiawan**	**0.19 232**	⇑	*iP*	**Pb**	**14 53 13.8**	**-0.2**
	baz=233						
TWD				*i* S	**Sb**	**14 53 17.4**	**-0.1**
	baz=233						
ENA	**Nanau**	**0.23 355**	⇑	*iP*	**Pg**	**14 53 13.8**	**-0.1**
	baz=357						
HWA	**Hwalien**	**0.27 213**	⇑	P	**Pb**	**14 53 15.8**	**+0.6**
	baz=214						
ESF	**Shoufeng Towns**	**0.40 215**		*eP*	**Pn**	**14 53 18.2**	**-1.8**
	baz=221						
TWC	**Suao**	**0.41 11**	⇑	*iP*	**Pg**	**14 53 17.2**	**0.0**
	baz=7.0						
TWC				S	**Sg**	**14 53 22.6**	**-0.3**
	baz=7.0						
NNS	**Nan Shan**	**0.43 304**	⇑	*iP*	**Pb**	**14 53 17.7**	**-0.4**
	baz=301						
NNS				*i* S	**Sb**	**14 53 23.5**	**-0.9**
	baz=301						
WHF	**Hehuan Shan**	**0.46 263**	⇑	*iP*	**Pb**	**14 53 18.5**	**-0.3**
	baz=261						
ENTT	**Nioudou**	**0.47 338**	⇑	*iP*	**Pb**	**14 53 18.4**	**-0.4**
	baz=335						
ENTT				*i* S	**Sg**	**14 53 24.5**	**-0.2**
	baz=335						
ESL	**Shilin**	**0.49 218**	⇑	*iP*	**Pb**	**14 53 19.0**	**-0.1**
	baz=223						
TWE	**Neicheng**	**0.53 351**	⇑	*iP*	**Pb**	**14 53 19.3**	**-0.4**
	baz=349						
TWE				*i* S	**Sg**	**14 53 26.1**	**-0.2**
	baz=349						
TWT	**Tachien**	**0.54 276**	⇑	*iP*	**Pn**	**14 53 20.3**	**-1.7**
	baz=274						
TWT				S	**Sb**	**14 53 27.6**	**0.0**
	baz=274						
ILA	**Ilan**	**0.56 359**		*eP*	**Pb**	**14 53 20.1**	**-0.2**
	baz=351						
ILA				*e*S	**Sg**	**14 53 27.5**	**0.0**
	baz=351						
NSK	**Sanguang**	**0.60 322**	⇑	*iP*	**Pb**	**14 53 20.7**	**-0.3**
	baz=320						
NSK				S	**Sb**	**14 53 28.3**	**-1.0**
	baz=320						
EGS		**0.66 14**		P	**Pg**	**14 53 21.8**	**0.0**
	baz=18						
WDT	**Danda**	**0.73 233**	⇓	*iP*	**Pn**	**14 53 23.6**	**-1.2**
	baz=241						
WDT				*e*S	**Sn**	**14 53 33.8**	**-1.9**
	baz=241						
TWA	**Mucha**	**0.79 348**		*eP*	**Pn**	**14 53 24.5**	**-0.9**
	baz=346						
TWA				*e*S	**Sb**	**14 53 33.2**	**-1.6**
	baz=346						
EHY	**Hungye**	**0.80 210**		*eP*	**Pg**	**14 53 23.8**	**-0.6**
	baz=221						
NSTT	**Nanjuang**	**0.81 302**	⇓	*iP*	**Pn**	**14 53 25.1**	**-0.6**
	baz=300						
NSTT				S	**Sn**	**14 53 36.0**	**-1.4**
	baz=300						
SMLT	**Sun Moon Lake**	**0.85 248**	⇓	*iP*	**Pn**	**14 53 25.7**	**-0.6**
	baz=242						
SMLT				S	**Sn**	**14 53 37.1**	**-1.3**
	baz=242						
TAP1	**Taipei**	**0.86 345**		*eP*	**Pn**	**14 53 26.1**	**-0.3**
	baz=342						
TAP1				*e*S	**Sg**	**14 53 37.1**	**+0.2**
	baz=342						
NWF	**Wu-fen Shan**	**0.87 1**		*eP*	**Pg**	**14 53 25.7**	**+0.1**
	baz=351						
NWF				*e*S	**Sg**	**14 53 37.0**	**-0.1**
	baz=351						
TAP	**Taipei**	**0.87 344**		*eP*	**Pn**	**14 53 26.0**	**-0.4**
	baz=342						
TAP				*e*S	**Sn**	**14 53 37.9**	**-0.8**
	baz=342						
TYC	**Yuchr**	**0.88 251**	⇓	*iP*	**Pn**	**14 53 26.0**	**-0.5**
	baz=244						
TYC				*e*S	**Sn**	**14 53 37.2**	**-1.8**
	baz=244						
TWQ1	**Liyutan**	**0.91 279**	⇑	P	**Pn**	**14 53 27.5**	**+0.4**
	baz=278						
NCU	**National Centr**	**0.93 326**		*eP*	**Pn**	**14 53 27.7**	**+0.4**
	baz=323						
NCU				*e*S	**Sn**	**14 53 41.0**	**+0.7**
	baz=323						
HSN	**Hsinchu**	**0.94 310**	⇓	P	**Pn**	**14 53 27.9**	**+0.5**
	baz=304						
HSN				*e*S	**Sn**	**14 53 42.0**	**+1.5**
	baz=304						
NSY	**Sanyi**	**0.94 283**		*eP*	**Pn**	**14 53 28.2**	**+0.8**
	baz=283						
NSY				*e*S	**Sn**	**14 53 41.7**	**+1.2**
	baz=283						
TWF1	**Yuli**	**0.95 207**		*eP*	**Pb**	**14 53 25.9**	**-1.0**
	baz=219						
TWS1	**Kuangyinshan**	**0.95 341**		*eP*	**Pn**	**14 53 27.6**	**0.0**
	baz=344						
TWS1				*e*S	**Sn**	**14 53 41.5**	**+0.7**
	baz=344						
TCU	**Taichung**	**0.99 267**	⇓	P	**Pn**	**14 53 29.4**	**+1.3**
	baz=267						
TCU				S	**Sn**	**14 53 43.6**	**+1.8**
	baz=267						
YUS	**Yu-Shan**	**1.03 226**	⇓	*iP*	**Pn**	**14 53 28.8**	**-0.3**
	baz=227						
WNT	**Mingjian**	**1.04 252**		*eP*	**Pg**	**14 53 29.9**	**+1.0**
	baz=250						
WNT				*e*S	**Sn**	**14 53 45.4**	**+2.4**
	baz=250						
TWY	**Chenhua**	**1.08 352**		*eP*	**Pg**	**14 53 29.7**	**0.0**
	baz=335						
JYNG	**Yonagunijimaku**	**1.11 77**		P	**Pn**	**14 53 29.3**	**-0.4**
ALS	**Alishan**	**1.11 232**	⇓	*iP*	**Pg**	**14 53 30.5**	**+0.1**
	baz=220						
ALS				*e*S	**Sn**	**14 53 46.0**	**+0.7**
	baz=220						
CHKT	**Chengkung**	**1.16 198**		*eP*	**Pb**	**14 53 29.7**	**-0.8**
	baz=187						
CHN5	**Tsauling**	**1.16 239**		P	**Pg**	**14 53 31.8**	**+0.5**
	baz=241						
CHN5				*e*S	**Sg**	**14 53 49.8**	**+3.4**
	baz=241						
YOJ	**Yonaguni jima**	**1.17 77**		P	**Pn**	**14 53 30.6**	**+0.1**
YOJ				*e*S	**Sg**	**14 53 47.2**	**+0.5**
YOJ	**Yonaguni jima**	**1.17 77**	⇓	*iP*	**Pn**	**14 53 30.5**	**-0.1**
	baz=64						
YOJ				*e*S	**Sg**	**14 53 47.2**	**+0.5**
	baz=64						
WGK	**Gukeng**	**1.21 245**		*eP*	**Pg**	**14 53 32.5**	**+0.3**
	baz=245						
ELDTW	**Lidau**	**1.22 214**		*eP*	**Pb**	**14 53 30.8**	**-0.7**
	baz=202						
CHN2	**Minshiung**	**1.35 241**		*eP*	**Pg**	**14 53 35.2**	**+0.3**
	baz=227						
CHN4	**Tsaushan**	**1.36 232**		P	**Pg**	**14 53 35.0**	**-0.1**
	baz=234						
CHN4				*e*S	**Sg**	**14 53 55.9**	**+3.0**
	baz=234						
STYT	**Tauyuan**	**1.38 222**		P	**Pg**	**14 53 34.1**	**-1.3**
	baz=223						
STYT				*e*S	**Sg**	**14 53 53.4**	**-0.1**
	baz=223						
WTCT	**Ta-ch'eng**	**1.40 256**		*eP*	**Pg**	**14 53 35.4**	**-0.3**
	baz=257						
CHY	**Chiayi**	**1.41 241**		*eP*	**Pg**	**14 53 35.9**	**-0.1**
	baz=243						
CHY				*e*S	**Sg**	**14 53 55.6**	**+1.2**
	baz=243						
WTP	**Ta-pu**	**1.42 228**		P	**Pg**	**14 53 35.3**	**-0.8**
	baz=230						
WTP				*e*S	**Sg**	**14 53 56.1**	**+1.5**
	baz=230						
PCYT	**Pengchaiyu**	**1.45 11**		*eP*	**Pb**	**14 53 34.7**	**-0.7**
	baz=8.0						
TWK	**Hsinying**	**1.49 232**		*eP*	**Pg**	**14 53 36.8**	**-0.8**
	baz=232						
TWG	**Pinlang**	**1.51 205**		*eP*	**Pb**	**14 53 35.1**	**-1.4**
	baz=191						
CHN1	**Nanshi**	**1.52 228**		*eP*	**Pg**	**14 53 37.2**	**-0.8**
	baz=230						
CHN1				*e*S	**Sg**	**14 54 00.4**	**+2.6**
	baz=230						
WSF	**Szhu**	**1.52 249**		*eP*	**Pg**	**14 53 37.0**	**-1.0**
	baz=260						
WSF				*e*S	**Sg**	**14 53 58.6**	**+0.9**
	baz=260						
TTN	**Taitung**	**1.55 202**		*eP*	**Pg**	**14 53 37.8**	**-0.8**
	baz=201						
SGST	**Jiashian**	**1.55 224**		*eP*	**Pg**	**14 53 37.6**	**-1.1**
	baz=226						
SGST				*e*S	**Sg**	**14 54 00.2**	**+1.3**
	baz=226						
CHN8	**Yiju**	**1.66 239**		*eP*	**Pg**	**14 53 38.8**	**-1.9**
	baz=240						
CHN3	**Shinhua**	**1.70 229**		*eP*	**Pg**	**14 53 40.0**	**-1.5**
	baz=229						
SSD	**Sandimen**	**1.78 216**		*eP*	**Pg**	**14 53 41.2**	**-1.8**
	baz=228						
IRIF	**Iriomote-Funau**	**1.80 85**		P	**Pn**	**14 53 39.2**	**-0.1**
IRIF				*e*S	**Sn**	**14 54 02.5**	**+0.7**
TWM1	**Shoushan**	**1.84 222**		*eP*	**Pb**	**14 53 42.0**	**-0.2**
	baz=222						
HATJ	**Hateruma jima**	**1.87 94**		P	**Pn**	**14 53 40.6**	**+0.4**
HATJ				*e*S	**Sn**	**14 54 04.2**	**+0.6**
EAST	**Anshuo**	**2.00 205**		*eP*	**Pn**	**14 53 41.8**	**-0.2**
	baz=193						
JKRS	**Kuro-shima**	**2.05 89**		P	**Pn**	**14 53 43.2**	**+0.5**
JKRS				*e*S	**Sn**	**14 54 09.4**	**+1.4**
SCZT	**Fangliau**	**2.10 210**		*eP*	**Pb**	**14 53 45.2**	**-1.4**
	baz=194						
PNG	**Penghu**	**2.12 253**		*eP*	**Pb**	**14 53 45.7**	**-1.1**
	baz=255						
WDGT	**Dungji**	**2.14 244**		*eP*	**Pb**	**14 53 45.0**	**-2.3**
	baz=246						
JIJ	**Ishigaki jima**	**2.18 85**		P	**Pn**	**14 53 44.5**	**0.0**
JIJ				S	**Sn**	**14 54 11.0**	**-0.1**
JISG	**Ishigakijimahi**	**2.35 80**		P	**Pn**	**14 53 46.6**	**-0.3**
JISG				S	**Sn**	**14 54 15.6**	**+0.1**
TWK1	**Hengchun**	**2.41 202**		*eP*	**Pn**	**14 53 48.7**	**+1.0**
	baz=189						
JTJ	**Tarama**	**2.72 80**		P	**Pn**	**14 53 53.0**	**+1.2**
JTJ				*e*S	**Sn**	**14 54 25.9**	**+1.5**
KNM	**Kinmen**	**3.04 275**		*eP*	**Pn**	**14 53 58.0**	**+1.6**
	baz=275						
KSRS	**Korea Array**	**14.22 20**		Pn	**P**	**14 56 36.2**	**-0.7**
	0.1nm,0.3s,baz=206,slow=11,SNR=4.6						
SONM	**Songino Array**	**26.56 336**		P	**P**	**14 58 46.9**	**+0.7**
	0.2nm,0.4s,baz=149,slow=5.9,SNR=3.1						
MKAR	**Makanchi Array**	**38.69 316**		P	**P**	**15 00 31.2**	**-0.8**
	0.3nm,0.7s,baz=98,slow=10,SNR=3.1						
WRA	**Warramunga Arr**	**45.56 163**		P	**P**	**15 01 29.6**	**+1.4**
	0.4nm,0.6s,baz=345,slow=8.7,SNR=5.4						

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*IDC **07** 14:53:46.9±0.5, 33°51S×178°64W, h0km, mb4.6/19, mb1 4.7/21, mb1mx4.6/33, mbtmp4.6/21, ML5.1/2, MS4.8/22, Ms1 4.8/22, ms1mx4.7/30, Error ellipse: s-maj=18.0km s-min=16.3km az=142.0*
*ISCJB **07** 14:53:51.1±0.2, 33.°74S±0.°03×178.°84W±0.°04, h33km, mb5.1/63, MS4.8/30, Error ellipse: s-maj=6.0km s-min=3.0km az=36.1*
*GCMT **07** 14:53:52.5±0.2, 33.°61S×178.°14W, h18km, MW5.3/87, Moment Tensor Solution. s65,c103; s87,c152; Duration: 1s0 Moment tensor: Scale 10^17 Nm; Mrr0.60±.02; Mθθ-0.06±.01; Mϕϕ-0.54±.01; Mrθ0.11±.03; Mθϕ-0.19±.01; Mϕr0.75±.04; Best double couple: M0 0.97200×10^17 NP1:ϕs11.0000°, δ71.00000°, λ84.00000°. NP2:ϕs207.00000°, δ20.00000°, λ106.00000°. Principal axes: T 0.9720, Plg64.0000°, Azm272.0000°; N 0.0000, Plg5.0000°, Azm13.0000°; P -0.9720, Plg26.0000°, Azm105.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **07** 14:53:52.5,33.°28S×178.°70W, h41km, mb5.0/20, mB5.4/20, Ms5.1/19, Ms7 4.8/16*
*NEIC **07** 14:53:52.5±0.2, 33.°70S×178.°88W, h35km, mb5.3/47, Error ellipse: s-maj=7.8km s-min=4.0km az=118.0*
*MOS **07** 14:53:52.9±1.1, 33.°46S×178.°94W, h40km, mb5.3/29, MS4.9/15, Error ellipse: s-maj=12.7km s-min=11.1km az=100.8*
ISC 07 14:53:53.0±0.6, 33°58S±0.°05×178°67W±0.°06, h42km±5km, h42km: pP-P, n355, σ2s05/359, mb5.3/63, MS4.8/32, 11C-6D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**4.37 9**		Pn	Pn	14 54 51.2	-5.6
	77nm,0.3s,baz=84,slow=19,SNR=2.1						
RAO				Sn	**Sn**	**14 55 39.8**	**-6.6**
	240nm,0.3s,baz=72,slow=20,SNR=6.3						
MXZ	**Matakaoa Point**	**4.67 211**		*e*Pn	**Pn**	**14 55 00.7**	**-0.3**
HAZ	**Te Kaha**	**5.07 214**		PN	**Pn**	**14 55 04.9**	**-1.4**
HAZ				SN	**Sn**	**14 56 05.6**	**+2.0**
TWGZ	**Tauwhareparae**	**5.33 210**		Pn	**Pn**	**14 55 07.3**	**-2.8**
TWGZ	**Tauwhareparae**	**5.33 210**		Pn	**Pn**	**14 55 07.3**	**-2.8**
TWGZ	**Tauwhareparae**	**5.33 210**		PN	**Pn**	**14 55 07.3**	**-2.8**
TWGZ				SN	**Sn**	**14 56 09.6**	**-0.6**
CNGZ	**Carnagh Statio**	**5.50 206**		Pn	**Pn**	**14 55 09.1**	**-3.4**
CNGZ	**Carnagh Statio**	**5.50 206**		Pn	**Pn**	**14 55 09.1**	**-3.4**
CNGZ	**Carnagh Statio**	**5.50 206**		PN	**Pn**	**14 55 08.7**	**-3.8**
KUZ	**Kuaotunu**	**5.57 234**		PN	**Pn**	**14 55 13.7**	**+0.4**
MWZ	**Matawai**	**5.65 212**		Pn	**Pn**	**14 55 11.2**	**-3.3**
MWZ	**Matawai**	**5.65 212**		Pn	**Pn**	**14 55 11.2**	**-3.3**
MWZ	**Matawai**	**5.65 212**		PN	**Pn**	**14 55 10.9**	**-3.6**
OPRZ	**Ohinepanea**	**5.76 221**		Pn	**Pn**	**14 55 14.9**	**-1.0**
OPRZ	**Ohinepanea**	**5.76 221**		Pn	**Pn**	**14 55 14.9**	**-1.0**
OPRZ	**Ohinepanea**	**5.76 221**		PN	**Pn**	**14 55 14.9**	**-1.0**
URZ	**Urewera**	**5.79 215**		Pn	**Pn**	**14 55 13.7**	**-2.6**
	60nm,0.3s,baz=26,slow=3.2,SNR=92						
URZ				Sn	**Sn**	**14 56 20.1**	**-1.2**
	20nm,0.3s,baz=174,slow=19,SNR=3.1						
URZ	**Urewera**	**5.79 215**		*e*Pn	**Pn**	**14 55 14.5**	**-1.7**
URZ				*e*Sn	**Sn**	**14 56 17.0**	**-4.3**
PRGZ	**Paritu Road**	**6.01 207**		Pn	**Pn**	**14 55 16.0**	**-3.4**
PRGZ	**Paritu Road**	**6.01 207**		Pn	**Pn**	**14 55 16.0**	**-3.4**
PRGZ	**Paritu Road**	**6.01 207**		PN	**Pn**	**14 55 16.0**	**-3.4**
SNGZ	**Shannon Statio**	**6.11 211**		Pn	**Pn**	**14 55 19.2**	**-1.5**
SNGZ	**Shannon Statio**	**6.11 211**		Pn	**Pn**	**14 55 19.2**	**-1.5**
SNGZ	**Shannon Statio**	**6.11 211**		PN	**Pn**	**14 55 19.2**	**-1.5**
SNGZ				SN	**Sn**	**14 56 27.0**	**-2.4**
RTZ	**Ruatahuna**	**6.13 214**		PN	**Pn**	**14 55 18.9**	**-2.2**
MKAZ	**Moumakai**	**6.14 233**		Pn	**Pn**	**14 55 23.3**	**+2.1**
MKAZ	**Moumakai**	**6.14 233**		Pn	**Pn**	**14 55 23.3**	**+2.1**
MKAZ	**Moumakai**	**6.14 233**		PN	**Pn**	**14 55 23.3**	**+2.1**
KNZ	**Kokohu**	**6.18 207**		Pn	**Pn**	**14 55 17.2**	**-4.4**
KNZ	**Kokohu**	**6.18 207**		Pn	**Pn**	**14 55 17.2**	**-4.4**
KNZ	**Kokohu**	**6.18 207**		PN	**Pn**	**14 55 17.2**	**-4.4**
MHGZ	**Mahia Peninsul**	**6.21 205**		Pn	**Pn**	**14 55 19.6**	**-2.5**
MHGZ	**Mahia Peninsul**	**6.21 205**		Pn	**Pn**	**14 55 19.6**	**-2.5**
MHGZ	**Mahia Peninsul**	**6.21 205**		PN	**Pn**	**14 55 19.4**	**-2.6**
TOZ	**Tahuroa Road**	**6.29 227**		PN	**Pn**	**14 55 23.7**	**+0.4**
PRRZ	**Plateau Road**	**6.33 218**		Pn	**Pn**	**14 55 22.6**	**-1.1**
PRRZ	**Plateau Road**	**6.33 218**		Pn	**Pn**	**14 55 22.6**	**-1.1**
PRRZ	**Plateau Road**	**6.33 218**		PN	**Pn**	**14 55 21.8**	**-1.9**
WHHZ	**Waihua**	**6.40 210**		PN	**Pn**	**14 55 22.2**	**-2.5**
OUZ	**Omahuta**	**6.59 254**		*e*Pn	**Pn**	**14 55 29.1**	**+1.7**
OUZ				*e*Sn	**Sn**	**14 56 37.2**	**-4.0**
NMHZ	**Naumai**	**6.60 212**		Pn	**Pn**	**14 55 25.0**	**-2.5**
NMHZ	**Naumai**	**6.60 212**		Pn	**Pn**	**14 55 25.0**	**-2.5**
NMHZ	**Naumai**	**6.60 212**		PN	**Pn**	**14 55 25.0**	**-2.5**
NMHZ				SN	**Sn**	**14 56 40.4**	**-1.1**
ARHZ	**Aropaoanui**	**6.66 210**		Pn	**Pn**	**14 55 24.7**	**-3.5**
ARHZ	**Aropaoanui**	**6.66 210**		Pn	**Pn**	**14 55 24.7**	**-3.5**
ARHZ	**Aropaoanui**	**6.66 210**		PN	**Pn**	**14 55 24.7**	**-3.5**
BKZ	**Black Stump Fm**	**6.80 214**		*e*Pn	**Pn**	**14 55 26.8**	**-3.5**
BKZ	**Black Stump Fm**	**6.80 214**		Pn	**Pn**	**14 55 26.8**	**-3.5**
BKZ	**Black Stump Fm**	**6.80 214**		PN	**Pn**	**14 55 26.8**	**-3.5**
KAHZ	**Kahuranaki**	**7.16 209**		Pn	Pn	14 55 29.6	-5.5
KAHZ	**Kahuranaki**	**7.16 209**		Pn	Pn	14 55 29.6	-5.5
KAHZ	**Kahuranaki**	**7.16 209**		PN	Pn	14 55 29.6	-5.5
HIZ	**Hauiti**	**7.19 225**		*e*Pn	**Pn**	**14 55 33.7**	**-1.8**
KRHZ	**Kereru**	**7.24 212**		PN	**Pn**	**14 55 32.8**	**-3.4**
BHHZ	**Black Hill Sta**	**7.26 214**		Pn	**Pn**	**14 55 33.6**	**-2.9**
BHHZ	**Black Hill Sta**	**7.26 214**		Pn	**Pn**	**14 55 33.6**	**-2.9**
BHHZ	**Black Hill Sta**	**7.26 214**		PN	**Pn**	**14 55 33.6**	**-2.9**
WNVZ	**Wahianoa**	**7.36 217**		Pn	**Pn**	**14 55 36.2**	**-1.8**
WNVZ	**Wahianoa**	**7.36 217**		Pn	**Pn**	**14 55 36.2**	**-1.8**
WNVZ	**Wahianoa**	**7.36 217**		PN	**Pn**	**14 55 36.2**	**-1.8**
PXZ	**Pawanui**	**7.36 208**		Pn	**Pn**	**14 55 34.5**	**-3.4**
PXZ	**Pawanui**	**7.36 208**		Pn	**Pn**	**14 55 34.5**	**-3.4**
PXZ	**Pawanui**	**7.36 208**		PN	**Pn**	**14 55 34.5**	**-3.4**
BFZ	**Birch Farm**	**8.16 208**		*e*Pn	**Pn**	**14 55 45.5**	**-3.4**
MRZ	**Mangatainoka R**	**8.42 211**		Pn	Pn	14 55 47.1	-5.3
MRZ	**Mangatainoka R**	**8.42 211**		Pn	Pn	14 55 47.1	-5.3
SNZO	**South Karori**	**9.34 212**		*e*Pn	**Pn**	**14 56 00.3**	**-4.6**
TUWZ	**Tuamarina**	**9.78 215**		Pn	Pn	14 56 05.3	-5.7
TUWZ	**Tuamarina**	**9.78 215**		Pn	Pn	14 56 05.3	-5.7
CTZ	**Chatham Island**	**10.26 172**		Pn	**Pn**	**14 56 13.1**	**-4.5**
CTZ	**Chatham Island**	**10.26 172**		Pn	**Pn**	**14 56 13.1**	**-4.5**
KHZ	**Kahutara**	**10.74 213**		*e*Pn	Pn	14 56 18.8	-5.4
RPZ	**Rata Peaks**	**12.90 215**		Pn	Pn	14 56 48.1	-5.7
	3.3nm,0.3s,baz=115,slow=1.8,SNR=10.0						
RPZ				Sn	Sn	14 59 02.4	-13
	3.9nm,0.3s,baz=336,slow=20,SNR=5.7						
RPZ	**Rata Peaks**	**12.90 215**		*e*Pn	**Pn**	**14 56 50.5**	**-3.2**
RPZ				Sn	Sn	14 59 02.4	-13
MSVF	**Nonsavu**	**16.05 349**		*e*P	**Pn**	**14 57 34.4**	**-1.5**
MSVF				pmax	pmax		
	comp=Z,321nm,1.7s						
MSVF	**Nonsavu**	**16.05 349**		*e*Pn	**Pn**	**14 57 34.4**	**-1.5**
	comp=Z,321nm,1.7s						
DZM	**Mont Dzumac**	**17.43 307**		P	**P**	**14 57 56.8**	**+2.8**
	comp=Z,1.5nm,0.3s,baz=126,slow=13,SNR=16						
DZM				LR	LR	15 03 43.6	
	comp=Z,6μm,18.5s,baz=131,slow=34						
DZM	**Mont Dzumac**	**17.43 307**		*e*Pn	**P**	**14 57 55.4**	**+1.4**
	comp=Z,343nm,1.6s						
DZM				*e*LR	LR	15 01 43.5	
	comp=Z,5μm,24.6s						
DZM	**Mont Dzumac**	**17.43 307**		*e*Pn	**Pn**	**14 57 52.5**	**-0.7**
	comp=Z,434nm,1.9s						
RAR	**Rarotonga**	**20.78 58**		P	**P**	**14 58 28.3**	**-2.2**
	comp=Z,58nm,1.1s,baz=233,slow=7.2,SNR=7.5						
RAR				LR	LR	15 06 10.7	
	comp=Z,2μm,18.9s,baz=230,slow=36						
RAR	**Rarotonga**	**20.78 58**		P	**P**	**14 58 28.3**	**-2.2**
RAR				pmax	pmax		
	comp=Z,58nm,1.1s						
RAR				MLR	MLR		
	comp=Z,2μm,9.0s						
RAR	**Rarotonga**	**20.78 58**		*e*P	**P**	**14 58 26.9**	**-3.6**
	comp=Z,450nm,1.6s						
MGCD	**Mangrove Creek**	**25.19 262**		P	**P**	**14 59 17.7**	**+3.1**
	baz=26,SNR=6.0						
ARMA	**Armidale**	**25.34 269**		P	**P**	**14 59 19.5**	**+3.4**
	baz=26,SNR=3.8						
ARMA	**Armidale**	**25.34 269**		*e*P	**P**	**14 59 15.8**	**-0.4**
	comp=Z,143nm,1.6s						
CNB	**Canberra Magne**	**26.36 257**		P	**P**	**14 59 28.3**	**+3.1**
	baz=27,SNR=

comp=Z,7.7nm,0.8s
ASAR Alice Springs 42.47 271 P **P** **15 01 43.6 -0.5**
comp=Z,15nm,0.7s,baz=112,slow=7.5,SNR=147
ASAR S **S** **15 08 02.8 -0.6**
comp=Z,4.3nm,1.1s,baz=111,slow=15,SNR=7.8
ASAR LR LR 15 19 02.1
comp=Z,972nm,18.6s,baz=130,slow=36
TAOE Nuku Hiva Isla 43.15 64 *e*S S 15 08 04.2 -9.3
comp=Z,351nm,23.5s
TAOE *e*LQ LQ 15 11 23.6
comp=Z,2µm,29.2s
TAOE *e*LR LR 15 13 13.7
comp=Z,743nm,20.9s
WRAB Tennant Creek 43.74 276⇑ *e*P **P** **15 01 53.8 -0.6**
WRAB pmax pmax
comp=Z,111nm,1.2s
WRAB Tennant Creek 43.74 276 *e*P **P** **15 01 51.8 -2.7**
comp=Z,35nm,0.8s
WRA Warramunga Arr 43.75 276 P **P** **15 01 53.9 -0.6**
comp=Z,22nm,0.7s,baz=116,slow=8.0,SNR=178
WRA S **S** **15 08 18.4 -3.7**
comp=Z,2.8nm,1.0s,baz=119,slow=12,SNR=4.5
WRA LR LR 15 19 05.0
comp=Z,606nm,19.3s,baz=115,slow=35
FORT Forrest 44.76 258 P **P** **15 02 01.9 -0.6**
baz=45,SNR=18
SBA Scott Base 44.83 184 *e*P **P** **15 02 03.7 +1.3**
SBA pmax pmax
comp=Z,82nm,1.7s
SBA Scott Base 44.83 184 *e*P **P** **15 02 03.7 +1.3**
comp=Z,82nm,1.7s
VNDA Vanda 44.88 186 P **P** **15 02 03.9 +1.1**
comp=Z,1.4nm,0.8s,baz=5.3,slow=7.6,SNR=6.3
VNDA LR LR 15 18 23.7
comp=Z,1µm,19.9s,baz=26,slow=33
VNDA Vanda 44.88 186 *e*P **P** **15 02 01.3 -1.5**
VNDA pmax pmax
comp=Z,32nm,1.7s
VNDA Vanda 44.88 186 *e*P **P** **15 02 01.3 -1.5**
comp=Z,32nm,1.7s
JAY Jayapura 48.93 300 LR LR 15 23 50.7
comp=Z,22nm,18.7s,baz=85,slow=37
MTN Manton Dam 50.00 282 P **P** **15 02 42.9 -0.4**
baz=50,SNR=7.1
FITZ Fitzroy Crossi 51.86 273 P **P** **15 02 56.6 -0.7**
comp=Z,12nm,0.9s,baz=132,slow=7.3,SNR=16
FITZ LR LR 15 25 15.9
comp=Z,2µm,18.1s,baz=120,slow=36
FITZ Fitzroy Crossi 51.86 273 P **P** **15 02 57.0 -0.3**
baz=52,SNR=18
FITZ Fitzroy Crossi 51.86 273 *e*P P 15 02 52.0 -5.2
comp=Z,42nm,1.3s
CASY Casey 52.08 209 *e*P **P** **15 02 57.3 -1.0**
comp=Z,29nm,0.8s
NWAO Narrogin (SRO) 52.80 252 P **P** **15 03 03.1 -1.0**
comp=Z,5.9nm,0.8s,baz=350,slow=16,SNR=3.9
NWAO LR LR 15 24 56.1
comp=Z,494nm,18.7s,baz=313,slow=35
KLBR Kellerberrin 52.84 254 P **P** **15 03 03.3 -1.1**
baz=53,SNR=9.2
MEEK Meekatharra 53.98 260 P **P** **15 03 11.5 -1.4**
baz=54,SNR=6.1
QSPA South Pole Qui 56.54 180 *e*P **P** **15 03 31.9 +1.0**
comp=Z,84nm,1.5s
SOEI Soe 57.31 281 *e*P **P** **15 03 35.9 -1.1**
comp=Z,80nm,1.0s
GUMO Guam 58.38 317 LR LR 15 29 10.7
comp=Z,352nm,18.1s,baz=92,slow=36
MIR Mirnyy 59.04 208 *i* P **P** **15 03 49.0 +0.8**
MIR pmax pmax
comp=Z,4.0nm,1.5s
MAW Mawson 69.14 201 P **P** **15 04 55.0 +0.6**
comp=Z,8.7nm,1.0s,baz=106,slow=12,SNR=5.5
MAW LR LR 15 34 01.6
comp=Z,1µm,19.8s,baz=98,slow=35
MAW Mawson 69.14 201 *e*P **P** **15 04 55.3 +0.9**
MAW pmax pmax
comp=Z,30nm,2.0s
MAW Mawson 69.14 201 *e*P **P** **15 04 55.3 +0.9**
comp=Z,30nm,2.0s
SYO Syowa Base 73.89 193⇓ *e*P **P** **15 05 21.0 -2.0**
SYO Syowa Base 73.89 193⇓ *i*pP pP 15 05 30.0 -5.6
SBUM Sibu 74.09 284 *e*P **P** **15 05 25.5 +0.4**
comp=Z,19nm,1.3s
SNAA Sanae 75.00 179 P **P** **15 05 29.0 -0.5**
SNAA Sanae 75.00 179 *e*P **P** **15 05 28.7 -0.9**
SNAA pmax pmax
comp=Z,27nm,1.1s
SNAA Sanae 75.00 179 *e*P **P** **15 05 28.6 -0.9**
comp=Z,27nm,1.1s
NVL N'lazarevskaya 75.67 184 *e*P **P** **15 05 38.0 +4.7**
NVL *e*S S 15 15 21.4 +10
NVL MLR MLR
comp=Z,1µm,17.0s
VNA1 Neumayer--Stat 75.83 177 P **P** **15 05 34.9 +0.7**
MJAR Matsushiro Arr 80.54 326 P **P** **15 05 59.5 -1.2**
comp=Z,0.9nm,0.7s,baz=180,slow=5.8,SNR=4.3
PLCA Paso Flores 80.76 133 P **P** **15 06 03.2 +1.0**
comp=Z,3.3nm,1.0s,baz=253,slow=7.4,SNR=3.2
PLCA LR LR 15 36 15.0
comp=Z,390nm,18.1s,baz=238,slow=32
PLCA Paso Flores 80.76 133 *e*P **P** **15 06 01.3 -0.9**
PLCA pmax pmax
comp=Z,44nm,1.8s
PLCA Paso Flores 80.76 133 *e*P **P** **15 06 01.3 -0.9**
comp=Z,44nm,1.8s
QZH Quanzhou 83.32 306⇑ P P 15 06 06.0 -10
QZH Quanzhou 83.32 306 S **S** **15 16 25.8 -7.5**
QZH pmax pmax
comp=Z,380nm,8.7s
QZH LR LR
comp=Z,450nm,15.5s
KUR Kuril'sk 84.11 337 *e*P P 15 06 12.7 -6.4
KUR *e*S S 15 16 29.3 -11
ASAJ Asahikawa 85.00 333 P **P** **15 06 24.6 +1.0**
comp=Z,5.3nm,0.9s,baz=291,slow=4.3,SNR=3.6
ASAJ Asahikawa 85.00 333 *e*P **P** **15 06 24.7 +1.1**
comp=Z,16nm,1.1s
GSI Gunungsitoli 85.50 275 *e*P **P** **15 06 26.6 -0.4**
comp=Z,21nm,0.8s
QIZ Qiongzhong 85.85 296 P **P** **15 06 28.9 +0.5**
QIZ S **S** **15 16 54.6 -4.1**
QIZ pmax pmax
comp=Z,140nm,8.9s
KSRS Korea Array 86.41 320 P **P** **15 06 31.8 +1.1**
comp=Z,1.4nm,0.7s,baz=152,slow=5.5,SNR=6.1
KSRS LR LR 15 41 30.3
comp=Z,118nm,20.6s,baz=134,slow=33
KSAR Wonju Array Be 86.42 320 P **P** **15 06 31.8 +1.0**
KSAR Wonju Array Be 86.42 320 P **P** **15 06 31.8 +1.0**
SLBS Sierra La Lagu 86.69 59 *e*P **P** **15 06 36.0 +3.4**
comp=Z,85nm,1.8s
YSS Yuzh-Sakhalins 87.36 335⇑ *i*P **P** **15 06 35.9 +0.8**
YSS *e* 15 06 47.9
YSS *e*S **S** **15 17 06.4 -5.7**
YSS MLR MLR
comp=Z,600nm,20.0s
YSS MLR MLR
comp=N,300nm,16.0s
YSS MLR MLR
comp=E,200nm,20.0s
YSS Yuzh-Sakhalins 87.36 335 *e*P **P** **15 06 36.3 +1.2**
comp=E,33nm,1.0s
PKM Mcpherson Peak 87.63 45 P **P** **15 06 39.9 +2.9**
baz=226
SAO San Andreas Ge 88.01 43 *e*P **P** **15 06 40.6 +2.1**
SAO pmax pmax
comp=Z,56nm,1.9s
SAO San Andreas Ge 88.01 43 *e*P **P** **15 06 40.6 +2.1**
comp=Z,56nm,1.9s
MONP2 Monument Peak 88.31 48 P **P** **15 06 41.8 +1.4**
baz=228
MURC Murrieta 88.31 47 P **P** **15 06 41.6 +1.5**
baz=227
IKP In-Ko-Pah, Jac 88.35 49 P **P** **15 06 42.6 +2.3**
baz=228
PET Petropavlovsk 88.48 347 *e*P **P** **15 06 39.5 -0.8**
PET *e* 15 17 07.9
PET *e*S **S** **15 17 22.0 -0.5**
PET *e*SP **SPn** **15 18 22.6 -2.4**
PET *e*SS **SS** **15 23 19.3 +4.8**
EDW2 Edwards Air Fo 88.70 46 P **P** **15 06 42.8 +0.8**
baz=227
PEA0 Petropavlovsk- 88.75 346 *e*P **P** **15 06 41.8 +0.1**
PETK Petropavlovsk- 88.75 346 P **P** **15 06 42.2 +0.6**
comp=Z,17nm,1.0s,baz=116,slow=3.4,SNR=14
PETK LR LR 15 39 37.0
comp=Z,369nm,21.9s,baz=158,slow=31
PFO Pinyon Flats O 88.77 48 P **P** **15 06 44.0 +1.6**
baz=228
PFO Pinyon Flats O 88.77 48 *e*P **P** **15 06 43.2 +0.8**
PFO pmax pmax
comp=Z,49nm,1.9s
PFO Pinyon Flats O 88.77 48 *e*P **P** **15 06 43.1 +0.8**
comp=Z,49nm,1.9s
ISA Isabella, Lake 88.95 45 P **P** **15 06 44.8 +1.7**
baz=226
LRMC Laurel Mtn Rad 89.30 46 P **P** **15 06 45.4 +0.6**
baz=227
BELC Belle Mtn. Jos 89.32 48 P **P** **15 06 45.6 +0.6**
baz=228
GLA Glamis 89.42 49 P **P** **15 06 47.2 +1.9**
baz=228
GLA Glamis 89.42 49 *e*P **P** **15 06 46.4 +1.1**
GLA pmax pmax
comp=Z,27nm,1.3s
GLA Glamis 89.42 49 *e*P **P** **15 06 46.4 +1.1**
comp=Z,27nm,1.3s
BC3 Big Chuckawall 89.42 48 P **P** **15 06 47.8 +2.3**
baz=228
USRK Ussuriysk Ar. 89.50 327 P **P** **15 06 45.8 +0.5**
comp=Z,3.3nm,0.9s,baz=83,slow=4.4,SNR=7.7
USRK LR LR 15 44 38.5
comp=Z,400nm,19.0s,baz=118,slow=34
CMB Columbia Colle 89.50 42 *e*P **P** **15 06 47.4 +1.8**
CMB pmax pmax
comp=Z,31nm,1.5s
CMB Columbia Colle 89.50 42 *e*P **P** **15 06 47.4 +1.8**
comp=Z,31nm,1.5s
HEC Hector,Ludlow 89.67 47 P **P** **15 06 48.2 +1.7**
baz=228
GSC Goldstone, Bar 89.70 46 P **P** **15 06 47.6 +0.9**
baz=227
GSC Goldstone, Bar 89.70 46 *e*P **P** **15 06 48.2 +1.5**
GSC pmax pmax
comp=Z,35nm,1.4s
GSC Goldstone, Bar 89.70 46 *e*P **P** **15 06 48.2 +1.5**
comp=Z,35nm,1.4s
MPMC Manual Prospec 89.81 45 P **P** **15 06 48.1 +0.8**
baz=227
AFDM Forest Hills D 89.82 41 *e*P **P** **15 06 48.1 +1.0**
comp=Z,28nm,1.7s
DAC Darwin (Calif) 89.89 45 *e*P **P** **15 06 49.3 +1.7**
DAC pmax pmax
comp=Z,7.0nm,1.0s
DAC Darwin (Calif) 89.89 45 *e*P **P** **15 06 49.3 +1.7**
comp=Z,6.5nm,1.0s
IRM Iron Mountain 89.95 48 P **P** **15 06 49.5 +1.7**
baz=228
ORV Oroville 89.96 41 *e*P **P** **15 06 49.8 +2.1**
ORV pmax pmax
comp=Z,31nm,1.9s
ORV Oroville 89.96 41 *e*P **P** **15 06 49.8 +2.1**
comp=Z,31nm,1.9s
214A Organ Pipe Nat 89.99 51 *e*P **P** **15 06 49.1 +1.1**
comp=Z,100nm,1.5s
GMRC Granite Mounta 90.05 47 P **P** **15 06 49.4 +1.1**
baz=228
WDC Whiskeytown Da 90.14 39 *e*P **P** **15 06 51.6 +3.2**
WDC pmax pmax
comp=Z,24nm,1.4s
WDC Whiskeytown Da 90.14 39 *e*P **P** **15 06 51.6 +3.2**
comp=Z,24nm,1.4s
TUQ Turquoise Moun 90.32 47 P **P** **15 06 50.7 +1.1**
baz=228
WAKR Walker 90.36 42 *e*P **P** **15 06 51.1 +1.3**
comp=Z,32nm,1.5s
LDFC Landfair 90.58 47 *e*P **P** **15 06 51.2 +0.3**
comp=Z,49nm,1.1s
TYV Tymovskoe 90.74 337 *e*P **P** **15 06 50.0 -0.9**
TYV pmax pmax
comp=Z,40nm,1.2s
MDJ Mudanjiang 90.92 326 P **P** **15 06 51.9 -0.1**
MDJ pmax pmax
comp=Z,7.0nm,1.1s
MDJ pmax pmax
comp=Z,97nm,6.5s
TPNV Topopah Spring 91.14 45 P **P** **15 06 54.0 +0.6**
baz=228
TPNV Topopah Spring 91.14 45 *e*P **P** **15 06 54.8 +1.4**
TPNV pmax pmax
comp=Z,17nm,1.5s
TPNV Topopah Spring 91.14 45 *e*P **P** **15 06 54.8 +1.4**
comp=Z,17nm,1.5s
W13A Hualapai Mount 91.35 48 *e*P **P** **15 06 56.2 +1.7**
HUMO Hull Mountain 91.39 38 *e*P **P** **15 06 54.2 0.0**
comp=Z,59nm,1.8s
SHPR Sheep Range 91.50 46 *e*P **P** **15 06 54.8 -0.3**
comp=Z,17nm,1.7s
TUC Tucson 91.53 52 *e*P **P** **15 06 57.2 +1.9**
TUC pmax pmax
comp=Z,39nm,1.8s
TUC Tucson 91.53 52 *e*P **P** **15 06 57.2 +1.9**
comp=Z,39nm,1.8s
HABR Khabarovsk 91.55 331 *ce*P **P** **15 06 55.2 +0.5**
HABR *e**SP **pP** **15 07 09.0 +1.4**
HABR *e* 15 10 31.5
HABR *e*PPP PPP 15 12 29.8
HABR *e*S **SKSac** **15 17 23.8 +0.3**
HABR *e* 15 17 53.1
HABR *e*SS **SS** **15 23 56.8 -2.3**
HABR *e*SSS SSS 15 27 34.8
HABR MLR MLR
comp=Z,227nm,18.0s
CN2 Changchun 92.33 323 *e*P **P** **15 07 01.0 +2.5**
CN2 *e*S **S** **15 17 59.1 +0.7**
CN2 pmax pmax
comp=Z,10.0nm,0.5s
CN2 LR LR
comp=Z,200nm,21.0s
CN2 LR LR
comp=Z,200nm,21.0s
CN2 LR LR
comp=Z,200nm,23.0s
X16A Lo Mia Camp, P 92.45 50 *e*P **P** **15 07 01.4 +1.9**
K05A Summer Lake 92.53 39 *e*P **P** **15 07 02.0 +2.3**
comp=Z,50nm,1.6s
GYA Guiyang 92.64 300 P **P** **15 07 02.0 +1.4**
GYA pP pP 15 07 14.2 +0.8
GYA PP **PP** **15 10 47.8 +4.8**
GYA SKS **SKSac** **15 17 31.6 +0.6**
GYA S **S** **15 18 01.0 -1.2**
GYA SS **SS** **15 24 18.4 +2.5**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,7.6s
GYA LR LR
comp=Z,610nm,20.8s
GYA LR LR
comp=Z,550nm,21.2s
GYA LR LR
comp=Z,520nm,20.5s
LVC Limon Verde 92.89 119 *e*P **P** **15 07 05.1 +2.9**
comp=Z,23nm,1.4s
ENH Enshi 92.93 305 *e*P **P** **15 07 00.8 -0.8**
comp=Z,15nm,1.2s
LCMT Little Creek M 92.99 47 *e*P **P** **15 07 01.8 -0.1**
comp=Z,15nm,1.7s
WUAZ Wupatki 93.19 49 *e*P **P** **15 07 05.3 +2.3**
comp=Z,8.4nm,1.1s
KLR Kul'dur 93.49 330 P **P** **15 07 03.9 +0.1**
comp=Z,1.9nm,0.9s,baz=191,slow=4.6,SNR=3.4
WVOR Wild Horse Val 93.52 40 *e*P **P** **15 07 05.5 +1.3**
WVOR pmax pmax
comp=Z,22nm,1.6s
WVOR Wild Horse Val 93.52 40 *e*P **P** **15 07 05.5 +1.3**
comp=Z,22nm,1.6s
CM01 Chiang Mai Arr 93.88 289 *e*P **P** **15 07 06.4 +0.1**
CMAR Chiang Mai Arr 93.91 289 P **P** **15 07 07.1 +0.6**
comp=Z,0.8nm,0.6s,baz=129,slow=3.6,SNR=3.4
CMAR PP **PP** **15 10 53.7 +0.8**
comp=Z,1.0nm,1.1s,baz=144,slow=7.0,SNR=5.1
CMAR LR LR 15 52 50.3
comp=Z,230nm,19.0s,baz=154,slow=38
MTPU Mount Pierson 94.30 47 *e*P **P** **15 07 10.9 +2.7**
comp=Z,35nm,2.0s
TX31 Lajitas Ar. Si 94.58 58 *e*P **P** **15 07 10.8 +1.5**
TXAR Lajitas Array 94.58 58 P **P** **15 07 10.0 +0.6**
comp=Z,0.8nm,0.9s,baz=210,slow=6.8,SNR=8.3
TXAR LR LR 15 44 14.6
comp=Z,810nm,18.5s,baz=0.0,slow=32
KMI Kunming 94.75 297 P **P** **15 07 11.5 +1.1**
KMI pmax pmax
comp=Z,11nm,0.5s
MNTX Cornudas Mount 94.78 55 *e*P **P** **15 07 11.4 +1.2**
comp=Z,6.5nm,1.4s
ANMO Albuquerque 96.00 52⇑ *e*P **P** **15 07 18.8 +2.9**
ANMO pmax pmax
comp=Z,6.0nm,2.5s
CD2 Chengdu 97.29 302 *e*P Pdif 15 07 22.5 +0.8
CD2 sP sP 15 07 39.8 +0.5
CD2 SKS **SKSac** **15 17 56.2 +0.6**
CD2 S **ScS** **15 18 43.7 +1.0**
CD2 sS sS 15 19 05.1 +1.0
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.6s
CPUP Villa Florida 98.44 129 LR LR 15 47 25.1
comp=Z,830nm,18.1s,baz=232,slow=33
PDAR Pinedale Array 98.82 44 LR LR 15 48 26.4
comp=Z,585nm,18.2s,baz=242,slow=33
LZH Lanzhou 100.16 307 *e*P **Pdif** **15 07 33.2 -1.3**
LZH sP pP 15 07 49.0 +1.6
LZH pmax pmax
comp=Z,16nm,1.0s
ILAR Eielson Array 101.15 13 P **Pdif** **15 07 38.2 +0.2**
comp=Z,0.3nm,1.0s,baz=212,slow=6.0,SNR=3.2
ILAR PP **PP** **15 11 46.5 -1.2**
comp=Z,0.5nm,1.1s,baz=215,slow=7.7,SNR=4.8
WMQ Urumqi 114.72 307 *e*PKP PKPdf 15 12 31.0 +2.4
WMQ PP **PP** **15 13 34.5 +7.1**
WMQ AMB AMB
comp=Z,160nm,6.7s
WMQ LR LR
comp=Z,340nm,20.3s
WMQ LR LR
comp=Z,240nm,19.0s
WMQ LR LR
comp=Z,470nm,19.2s
MKAR Makanchi Array 119.35 309 PKP **PKPdf** **15 12 36.6 -0.7**
comp=Z,3.9nm,1.0s,baz=62,slow=2.9,SNR=15
ZALV Zalesovo Beam 120.00 317 PKP **PKPdf** **15 12 37.4 -0.9**
comp=Z,1.4nm,0.6s,baz=165,slow=3.2,SNR=6.5
KSH Kashi 121.33 299 *e*PKP **PKPdf** **15 12 42.5 +0.9**
KSH *es*PKP 15 12 56.2
KSH *e*PP **PP** **15 14 15.8 +2.4**
KSH PKS **PKSdf** **15 16 17.5 -0.8**
KSH SKS **SKSdf** **15 19 49.0 -1.2**
KSH SKKS **SKKSac** **15 21 05.0 -4.0**
KSH SS **SS** **15 30 42.5 -2.5**
KSH AMB AMB
comp=Z,30nm,3.4s
KSH LR LR
comp=Z,120nm,7.2s
KSH LR LR
comp=Z,84nm,5.4s
NRIK Noril'sk 122.29 335 PKP **PKPdf** **15 12 42.2 -0.1**
comp=Z,1.9nm,0.6s,baz=120,slow=3.0,SNR=5.4
TKM2 Tokmak 2 122.67 303 *e*PKIKP **PKPdf** **15 12 43.5 -0.7**
TKM2 Tokmak 2 122.67 303 *e*PKPdf **PKPdf** **15 12 43.5 -0.7**
KURK Kurchatov 122.80 312 *c i*PKIKP **PKPdf** **15 12 42.8 -1.0**
KURK pmax pmax
comp=Z,30nm,0.8s
KURK Kurchatov 122.80 312 *e*PKPdf **PKPdf** **15 12 42.9 -1.0**
FRU Bishkek 123.33 303 *e*PKIKP **PKPdf** **15 12 41.0 -4.2**
AAK Ala-Archa 123.36 302⇓ *i*PKIKP **PKPdf** **15 12 47.1 +1.7**
EKS2 Erkin-Say 123.88 302 *e*PKIKP **PKPdf** **15 12 46.5 +0.2**
EKS2 Erkin-Say 123.88 302 *e*PKPdf **PKPdf** **15 12 46.5 +0.2**
BRVK Borovoye 128.31 314 *ce*PKIKP **PKPdf** **15 12 54.0 -0.3**
BRVK Borovoye 128.31 314 *e*PKPdf **PKPdf** **15 12 54.0 -0.3**
SVE Sverdlovsk 133.96 319 *e*PKIKP **PKPdf** **15 13 06.3 +1.4**
GEYT Alibeck 134.31 292 PKP **PKPdf** **15 13 08.3 +2.0**
comp=Z,2.2nm,0.7s,baz=156,slow=7.5,SNR=7.0
ARU Arti 135.13 319 *i* PKIKP **PKPdf** **15 13 06.6 -0.5**
ARU Arti 135.13 319 *e*PKPdf **PKPdf** **15 13 06.7 -0.5**
SOKR Solikamsk 135.62 323 *e*PKIKP **PKPdf** **15 13 13.9 +6.1**
SOKR pmax pmax
comp=Z,15nm,1.5s
ARCES ARCESS Array B 141.56 347 PKhKP PKPpre 15 13 15.3
comp=Z,1.5nm,0.6s,baz=28,slow=3.1,SNR=9.9
KLMR Klimovskoe 143.25 330 *e*PKIKP **PKPdf** **15 13 28.4 +6.7**
KLMR pmax pmax
comp=Z,29nm,1.4s
GNI Garni 144.92 294 *e*PKIKP PKPbc 15 13 25.0 +0.1
GNI Garni 144.92 294 *e*PKPdf PKPbc 15 13 25.0 +0.1
TBLG Delisi 144.99 296 P PKPbc 15 13 24.4 -0.5
TBLG Delisi 144.99 296 *e*PKIKP PKPbc 15 13 24.3 -0.5
ZEI Tsey 145.60 298 *i* PKP2 **PKPdf** **15 13 24.5 -2.2**
ZEI pmax pmax
comp=Z,384nm,2.1s
NCK Nalchik 145.81 299⇓ *i*PKIKP **PKPbc** **15 13 27.6 +0.2**
BGD Bogdanovka 145.83 295 P **PKPab** **15 13 28.3 0.0**
VRH Novokhopyorsk 145.89 313 *e*PKP2 **PKPdf** **15 13 26.7 +0.1**
VRH pmax pmax
comp=Z,110nm,0.7s
AKH Akhalkalaki 145.91 296 P **PKPbc** **15 13 27.8 -0.3**
AKH Akhalkalaki 145.91 296 *e*PKP2 **PKPbc** **15 13 27.7 -0.3**
ONI Oni 145.94 298 P **PKPdf** **15 13 27.3 +0.1**
ONI Oni 145.94 298 *e*PKP2 **PKPdf** **15 13 27.2 +0.1**
GOF Gofitskoye 146.10 302⇑ *e*PKP2 **PKPab** **15 13 28.7 -0.2**
GOF pmax pmax
comp=Z,183nm,1.5s
KBZ Khabaz 146.30 300 PKPbc **PKPbc** **15 13 28.6 -0.2**
comp=Z,34nm,1.2s,baz=80,slow=2.0,SNR=36
KIV Kislovodsk 146.44 300 *i* PKP2 **PKPbc** **15 13 29.3 -0.1**
KIV pmax pmax
comp=Z,25nm,1.1s
KIV Kislovodsk 146.44 300 *e*PKPdf **PKPdf** **15 13 28.6 +0.6**
NEY Neytrino 146.46 299 *d i*PKP2 **PKPab** **15 13 30.5 0.0**
MOS Moscow 146.57 323 *e*PKIKP **PKPdf** **15 13 26.3 -1.3**
MOS *e* 15 13 42.1
MOS pmax pmax
comp=Z,313nm,1.8s
MOS pmax pmax
comp=Z,700nm,2.3s
CHVG Ch'k'valeri 146.94 298 P **PKPbc** **15 13 30.9 +0.1**
OBN Obninsk 147.39 322 *c i*PKP2 **PKPbc** **15 13 31.1 -0.4**
OBN pmax pmax
comp=Z,43nm,1.3s
VSR Storozhevoye 147.42 314 *e*PKP2 **PKPbc** **15 13 31.1 -0.7**
VSR pmax pmax
comp=Z,70nm,1.2s
FINES FINESS Array B 147.90 338 PKPbc **PKPbc** **15 13 32.5 -0.2**
comp=Z,26nm,0.8s,baz=82,slow=4.0,SNR=100
SOC Sochi 148.62 300 *c i*PKP2 **PKPbc** **15 13 34.2 -1.0**
SOC *e*PPP PPP 15 20 33.4
SOC *e*SS SS 15 36 05.5 -6.7
SOC *e*SSS SSS 15 41 41.8
SOC pmax pmax
comp=Z,41nm,1.1s
KSRV Kasrt alli 149.07 285 *e*P **PKPab** **15 13 42.2 +1.2**
VSU Vasula 149.85 333 *c i*PKP2 **PKPbc** **15 13 37.5 -0.2**
ZALF Zalf 149.97 279 *e*P **PKPbc** **15 13 39.7 +0.7**
ANN Anapa 150.09 303 *i* PKHKP PKPpre 15 13 38.2
ANN *e*SS SS 15 36 25.5 -2.9
ANN pmax pmax
comp=Z,114nm,1.9s
ROOS tl_alroos 150.23 281 *e*P **PKPbc** **15 13 41.0 +1.4**
RABH Abou Rabah 150.34 282 *e*P **PKPdf** **15 13 34.7 +0.1**
SALA Sala 150.43 278 *e*P **PKPbc** **15 13 41.1 +0.9**
TOTH TOTAH 150.80 279 *e*P **PKPbc** **15 13 41.3 +0.4**
MARH Ras Al Marh 150.87 281 *e*P **PKPbc** **15 13 39.5 -1.9**
QASN Qassioun 150.96 280 *e*P **PKPdf** **15 13 33.3 -2.3**
HAWK Haweek 151.00 282 *e*P **PKPbc** **15 13 41.9 +0.4**
DRWC Darouich 151.03 286 *e*P **PKPbc** **15 13 42.8 +1.3**
TCHB Talchebab 151.05 278 *e*P **PKPdf** **15 13 32.5 -3.1**
BIDA Albida 151.14 283 *e*P **PKPbc** **15 13 42.0 +0.2**
BTCH Batrach 151.14 285 *e*P **PKPdf** **15 13 37.4 +1.6**
ARNB Al Arnab 151.52 284 *e*P **PKPdf** **15 13 33.5 -2.9**
NB2 NORSAR Subarra 151.79 350 PKP **PKPbc** **15 13 42.0 -0.3**
comp=Z,31nm,1.4s,baz=17,slow=2.6
NOA NORSAR Array B 151.79 350 PKPbc **PKPbc** **15 13 42.1 -0.3**
comp=Z,4.0nm,0.9s,baz=20,slow=4.7,SNR=22
MICGM Minsk 151.97 326 *e* **PKPbc** **15 13 42.0 -0.9**
MNK Minsk 151.97 326 *e*PKIKP **PKPbc** **15 13 42.0 -0.9**
NACGM Naroch 152.22 328 *e* **PKPbc** **15 13 43.0 -0.4**
SIM Simferopol' 152.37 304 *e*PKIKP **PKPbc** **15 13 44.7 +0.6**
SIM pmax pmax
comp=Z,20nm,1.0s
DBIC Dimbokro 152.61 167 PKPbc **PKPbc** **15 13 45.5 -0.1**
comp=Z,3.7nm,0.7s,baz=172,slow=3.2,SNR=4.9
AKASG Malin Array Be 153.39 318 PKPbc **PKPbc** **15 13 45.3 -0.8**
comp=Z,3.6nm,0.5s,baz=60,slow=2.7,SNR=13
KIEV Kiev 153.40 318⇓ *i*PKIKP **PKPbc** **15 13 45.2 -0.9**
BRTR Keskin Array B 153.46 293 PKPbc **PKPbc** **15 13 46.9 +0.1**
comp=Z,7.0nm,0.8s,baz=131,slow=3.4,SNR=33

SUW	**Suwalki**	**154.39**	**329**	*e*PKP	**PKPbc**	**15 13 49.1**	**+0.9**	
SUW	**Suwalki**	**154.39**	**329**	*e*PKIKP	**PKPbc**	**15 13 49.1**	**+0.9**	
KOLS	**Kolonicke sedl**	**158.13**	**321**	*e*PKIKP	**PKPdf**	**15 13 45.8**	**+0.9**	
KOLS	**Kolonicke sedl**	**158.13**	**321**	*e*PKP	**PKPdf**	**15 13 45.8**	**+0.9**	
CRVS	**Cervenica-Dubn**	**158.57**	**322**	*e*PKP2	**PKPab**	**15 14 21.0**	**+0.3**	
CRVS	**Cervenica-Dubn**	**158.57**	**322**	*e*PKP	**PKPab**	**15 14 21.0**	**+0.3**	
NIE	**Niedzica**	**158.83**	**324**	*e*PKP	**PKPdf**	**15 13 46.8**	**+1.0**	
NIE	**Niedzica**	**158.83**	**324**	*e*PKIKP	**PKPdf**	**15 13 46.8**	**+1.0**	
KECS	**Kecovo**	**159.34**	**322**	*e*PKP2	**PKPab**	**15 14 24.2**	**+0.2**	
KECS	**Kecovo**	**159.34**	**322**	*e*PKP	**PKPab**	**15 14 24.2**	**+0.2**	
OKC	**Ostrava-Krasne**	**159.55**	**328**	*e*PKPAB	**PKPab**	**15 14 23.9**	**-1.0**	
OKC	comp=Z,300nm,18.8s			AMS	AMS	16 38 20.0		
OKC	**Ostrava-Krasne**	**159.55**	**328**	*e*PKP2	**PKPab**	**15 14 23.9**	**-1.0**	
OKC	comp=Z,300nm,18.8s			MLR	MLR			
TORD	**Torodi Ar. Bea**	**159.65**	**181**	PKP	**PKPdf**	**15 13 49.3**	**+1.5**	
TORD	comp=Z,1.8nm,1.1s,baz=145,slow=35,SNR=5.1			PKPab	**PKPab**	**15 14 26.1**	**+0.1**	
DPC	**Dobruska-Polom**	**159.94**	**331**	*e*PKPAB	**PKPab**	**15 14 26.3**	**-0.3**	
DPC	comp=Z,4.1nm,0.8s,baz=175,slow=2.9,SNR=11			*ep*PKP	pPKP	15 14 39.4		
DPC	comp=Z,400nm,20.9s			AMS	AMS	16 39 10.0		
DPC	**Dobruska-Polom**	**159.94**	**331**	*e*PKP2	**PKPab**	**15 14 26.3**	**-0.3**	
DPC	comp=Z,400nm,20.9s			MLR	MLR			
UPC	**Upice**	**159.94**	**332**	*e*PKPAB	**PKPab**	**15 14 26.1**	**-0.5**	
UPC	comp=Z,400nm,19.9s			*ep*PKP	pPKP	15 14 39.0		
UPC	comp=Z,400nm,19.9s			AMS	AMS	16 39 00.0		
UPC	**Upice**	**159.94**	**332**	*e*PKP2	**PKPab**	**15 14 26.1**	**-0.5**	
UPC	comp=Z,400nm,19.9s			MLR	MLR			
VYHS	**Vyhne**	**160.16**	**324**	*e*PKP2	**PKPab**	**15 14 27.0**	**-0.7**	
VYHS	**Vyhne**	**160.16**	**324**	*e*PKP	**PKPab**	**15 14 27.0**	**-0.7**	
CLL	**Collm**	**160.35**	**338**	*i* PKPab	**PKPab**	**15 14 27.2**	**-1.1**	
CLL	comp=Z,20nm,1.4s			*i* pPKPab	**pPKPab**	**15 14 40.4**	**-0.8**	
CLL	comp=Z,13nm,0.9s			*i*		15 14 46.7		
CLL				*i*		15 14 58.4		
CLL	comp=Z,300nm,18.0s			Lm	MLR	16 42 00.0		
CLL	**Collm**	**160.35**	**338**	*i* PKP2	**PKPab**	**15 14 27.2**	**-1.1**	
CLL	comp=Z,20nm,1.4s			pmax	pmax			
CLL	comp=Z,300nm,18.0s			MLR	MLR			
BRG	**Berggiesshubel**	**160.41**	**336**	*e*PKP	**PKPab**	**15 14 27.3**	**-1.3**	
BRG	comp=Z,13nm,1.3s comp=Z,13nm,1.1s comp=N,162nm,13.9s comp=E,123nm,18.7s comp=Z,265nm,15.2s			*e*		15 14 40.4		
PVCC	**Panska Ves**	**160.47**	**334**	AMS	AMS	16 34 10.0		
GOPC	**GO Pecny, Ondr**	**160.89**	**333**	*e*PKPAB	**PKPab**	**15 14 30.1**	**-0.7**	
GOPC	comp=Z,400nm,19.8s			*ep*PKP	**pPKPab**	**15 14 43.2**	**-0.5**	
GOPC	comp=Z,300nm,19.7s			AMS	AMS	16 34 10.0		
GOPC	**GO Pecny, Ondr**	**160.89**	**333**	*e*PKP2	**PKPab**	**15 14 30.1**	**-0.7**	
GOPC	comp=Z,300nm,19.7s			MLR	MLR			
PRU	**Pruhonice**	**160.92**	**333**	*e*PKPAB	**PKPab**	**15 14 26.9**	**-4.0**	
PRU	comp=Z,400nm,16.4s			*ep*PKP	**pPKPab**	**15 14 43.4**	**-0.4**	
PRU	comp=Z,400nm,16.4s			AMS	AMS	16 41 40.0		
PRU	**Pruhonice**	**160.92**	**333**	*e*PKP2	**PKPab**	**15 14 26.9**	**-4.0**	
PRU	comp=Z,400nm,16.4s			MLR	MLR			
TREC	**Trest**	**161.10**	**330**	AMS	AMS	16 40 40.0		
CONA	**Conrad Observa**	**161.97**	**327**	PKPab	**PKPab**	**15 14 35.9**	**+0.3**	
KHC	**Kasperske Hory**	**161.99**	**333**	*e*PKPDF	**PKPdf**	**15 13 48.0**	**-1.3**	
KHC	comp=Z,500nm,19.9s			*e*PKPAB	**PKPab**	**15 14 35.1**	**-0.5**	
KHC				*ep*PKP	**pPKPab**	**15 14 48.1**	**-0.4**	
KHC	comp=Z,500nm,19.9s			AMS	AMS	16 32 10.0		
KHC	**Kasperske Hory**	**161.99**	**333**	*e*PKIKP	**PKPdf**	**15 13 48.0**	**-1.3**	
KHC				*e*		15 14 35.1		
KHC	comp=Z,500nm,19.9s			MLR	MLR			
GERES	**GERESS Array B**	**162.17**	**332**	PKPab	**PKPab**	**15 14 35.5**	**-1.0**	
MOA	**Molln**	**162.74**	**329**	*i* PKPab	**PKPab**	**15 14 38.7**	**-0.2**	
OBKA	**Obir**	**163.62**	**326**	*i* pPKPdf	pPKPdf	15 14 02.7	-1.7	
KBA	**Koelnbreinsper**	**163.73**	**329**	*e*PKPab	**PKPab**	**15 14 44.3**	**+0.8**	
MYKA	**Terra Mystica**	**163.95**	**328**	*i* PKPdf	**PKPdf**	**15 13 52.8**	**+1.5**	
WTTA	**Wattenberg**	**164.26**	**333**	*i* PKPab	**PKPab**	**15 14 45.6**	**-0.2**	
ABTA	**Abfaltersbach**	**164.34**	**330**	*i* PKPdf	**PKPdf**	**15 13 51.2**	**-0.5**	
RETA	**Reutte**	**164.39**	**336**	*i* PKPab	**PKPab**	**15 14 45.9**	**-0.3**	
MOTA	**Moosalm**	**164.39**	**335**	*i* PKPdf	**PKPdf**	**15 13 52.1**	**+0.3**	
FETA	**Feichten**	**164.80**	**335**	*i* PKPab	**PKPab**	**15 14 47.8**	**-0.4**	
DAVA	**Damuels**	**164.86**	**337**	*i* PKPab	**PKPab**	**15 14 48.1**	**-0.3**	

*KRNET **07** 15:04:03.6±0.1,41.°95N×72.°28E,h12km,mb2.4*
*SOME **07** 15:04:04.0,41.°92N×72.°27E,h10km*
*NNC **07** 15:04:06.6±2.9,42.°10N×72.°10E,h0km,mb2.8,mpv2.4,*
Error ellipse: s-maj=24.8km s-min=14.0km az=150.0
ISC 07 15:04:04.2±1.0,41.°94N±0.°03×72.°27E±0.°02,h8km±12km,
n21,σ1§60/41,21C-8D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ARK	**Arkit**	**0.27**	**238**	⇓*e*P	**Pg**	**15 04 08.9**	**-0.7**
ARK	baz=233			⇓*i*S	**Sg**	**15 04 13.8**	**+0.6**
MNAS	**Manas**	**0.57**	**18**	⇓*e*P	**Pg**	**15 04 15.0**	**-0.3**
MNAS	baz=18			⇓*e*S	**Sg**	**15 04 23.3**	**+0.5**
MNAS	**Manas**	**0.57**	**18**	⇑P	**Pg**	**15 04 15.3**	**+0.1**
MNAS	1.0nm,0.1s 23nm,0.3s			⇑S	**Sg**	**15 04 23.5**	**+0.7**
ARSB	**Arslanbob**	**0.82**	**139**	⇑*e*P	**Pg**	**15 04 18.9**	**-1.0**
ARSB	baz=140			⇑*e*S	**Sg**	**15 04 31.0**	**+0.4**
MRKS	**Merke**	**1.07**	**41**	*e*P	**Pg**	**15 04 24.1**	**-0.7**
MRKS	9.9nm,0.1s 24nm,0.2s			⇑*i*S	**Sb**	**15 04 38.9**	**-0.4**
AML	**Almayashu**	**1.08**	**79**	⇑*i*P	**Pg**	**15 04 24.3**	**-0.6**
AML	baz=80			⇑*i*S	**Sb**	**15 04 39.7**	**-0.1**
EKS2	**Erkin-Say**	**1.33**	**57**	⇑*i*P	**Pn**	**15 04 28.5**	**-0.8**
EKS2	baz=57			⇑*i*S	**Sg**	**15 04 46.9**	**-0.1**
ARLS	**Aral**	**1.54**	**92**	⇑*e*P	**Pn**	**15 04 32.2**	**+0.1**
ARLS	baz=92			⇑*e*S	**Sg**	**15 04 53.8**	**+0.2**
IUG	**Iuzhnay**	**1.68**	**278**	*e*P	**Pb**	**15 04 35.8**	**+0.4**
IUG	26nm,0.2s 25nm,0.2s			*e*S	**Sg**	**15 04 58.5**	**+0.4**
UCH	**Uchtor**	**1.69**	**80**	⇑*i*P	**Pb**	**15 04 35.5**	**-0.4**
UCH	baz=80			⇑*i*S	**Sg**	**15 04 59.1**	**+0.4**
KK31	**Karatay Array**	**1.74**	**312**	⇑Pn	**Pn**	**15 04 34.9**	**+0.1**
KK31	0.9nm,0.2s,baz=130,slow=16 3.0nm,0.3s,baz=133,slow=26,SNR=8.2			⇓Sn	**Sg**	**15 04 59.6**	**-0.6**
AAK	**Ala-Archa**	**1.79**	**66**	⇑Pn	**Pg**	**15 04 38.7**	**+0.1**
AAK	1.3nm,0.2s 3.0nm,0.3s			⇓Sn	**Sg**	**15 05 08.4**	**+6.7**
USP	**Ospenovka**	**2.11**	**50**	⇑*i*P	**Pb**	**15 04 42.3**	**-0.5**
USP	baz=50 baz=50			⇑*i*S	**Sb**	**15 05 10.2**	**+1.0**
KZA	**Kyzart**	**2.23**	**86**	⇑*i*P	**Pb**	**15 04 45.1**	**+0.1**
KZA	baz=86 baz=86			⇑*i*S	**Sg**	**15 05 15.4**	**-0.4**
TKM2	**Tokmak 2**	**2.65**	**67**	⇓Pn	**Pb**	**15 04 51.9**	**-0.2**
TKM2	1.2nm,0.4s 2.4nm,0.3s			⇓Lg	Lg	15 05 27.8	
BOOM	**Boomskoye usch**	**2.78**	**77**	⇑*e*P	**Pn**	**15 04 51.3**	**+2.0**
BOOM	baz=78 baz=78			⇑*e*S	**Sb**	**15 05 26.6**	**-2.0**
DGS	**Degeres**	**2.90**	**62**	*e*P	**Pb**	**15 04 57.6**	**+1.4**
DGS	3.1nm,0.3s 7.7nm,0.4s			*e*S	**Sg**	**15 05 36.0**	**-1.2**
KST	**Kastek**	**2.94**	**67**	*e*P	**Pb**	**15 04 58.3**	**+1.3**
KST	2.6nm,0.5s 5.4nm,0.4s			*e*S	**Sg**	**15 05 37.6**	**-1.2**
BTLS	**Baital**	**3.36**	**22**	*e*P	**Pb**	**15 05 05.1**	**+1.1**
BTLS	0.9nm,0.3s 2.8nm,0.2s			*e*S	**Sg**	**15 05 49.4**	**-2.5**
KUU	**Kurty**	**3.57**	**56**	*e*P	**Pb**	**15 05 08.6**	**+1.0**
KUU	3.0nm,0.1s 5.5nm,0.4s			*e*S	**Sg**	**15 05 55.1**	**-3.7**
TNSS	**Tian-Shan**	**3.63**	**71**	*e*P	**Pb**	**15 05 10.4**	**+1.6**
TNSS	2.3nm,0.5s 2.8nm,0.5s			*e*S	**Sg**	**15 05 58.8**	**-1.9**

IDC 07 15:04:48.9±3.0,33.°59S×178.°62W,h0km,mb3.5/2,
mb1 3.8/3,mb1mx3.5/30,mbtmp3.6/3,ML3.8/1,Error
ellipse: s-maj=72.4km s-min=35.8km az=120.0,South
of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**5.80**	**215**	Pn	Pn	15 06 16.8	+0.6
URZ	2.6nm,0.3s,baz=258,slow=4.6,SNR=24			Sn	Sn	15 07 22.6	-0.8
ASAR	**Alice Springs**	**42.51**	**271**	P	P	15 12 46.1	-0.2
WRA	**Warramunga Arr**	**43.79**	**276**	P	P	15 12 56.5	0.0
FINES	**FINESS Array B**	**147.92**	**338**	PKPbc	PKPbc	15 24 34.5	-0.8

1.7nm,0.3s,baz=275,slow=23,SNR=6.3
0.3nm,0.3s,baz=116,slow=7.5,SNR=7.7
0.8nm,0.7s,baz=18,slow=4.8,SNR=5.1

*IDC **07** 15:07:12.9±3.9,4.°76S×152.°98E,h0km,mb3.4/2,*
mb1 3.7/2,mb1mx3.3/30,mbtmp3.4/2,MS3.9/1,Ms1 3.9/1,
ms1mx3.0/23,Error ellipse: s-maj=170.9km s-min=52.3km
az=122.0
*ISCJB **07** 15:07:17.5±0.6,5.°01S±0.°06×153.°07E±0.°07,h43km,*
mb4.5/8,MS3.8/1,Error ellipse: s-maj=10.0km
s-min=8.3km az=150.6
*NEIC **07** 15:07:20.5±0.7,5.°00S×153.°01E,h57km±7km,mb4.7/5,*
Error ellipse: s-maj=9.3km s-min=7.1km az=123.0
ISC 07 15:07:19.1±0.6,5.°03S±0.°07×153.°05E±0.°08,h43km,n18,
σ1§28/19,mb4.6/8,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RABL	**Rabaul**	**1.22**	**313**	*e*Pn	**Pn**	**15 07 40.0**	**+0.4**
RABL				*e*Sn	**Sn**	**15 07 53.8**	**-1.1**
PMG	**Port Moresby**	**7.28**	**233**	*e*Pn	**Pn**	**15 09 04.3**	**+1.3**
HNR	**Honiara**	**8.12**	**123**	*e*Pn	**Pn**	**15 09 15.7**	**+1.3**
HNR				*e*Sn	**Sn**	**15 10 41.9**	**-3.1**
PATS	**Pohnpei**	**12.91**	**24**	*e*Pn	**Pn**	**15 10 22.6**	**+2.5**
WB2	**Warramunga Arr**	**23.47**	**229**	*e*P	**P**	**15 12 25.2**	**+0.2**
WR1	**Warramunga Arr**	**23.48**	**229**	*e*P	**P**	**15 12 25.9**	**+0.7**
WRA	**Warramunga Arr**	**23.48**	**229**	P	**P**	**15 12 25.9**	**+0.7**
AS01	**Alice Springs**	**26.12**	**223**	*e*P	**P**	**15 12 49.7**	**+0.5**
ASAR	**Alice Springs**	**26.15**	**223**	P	**P**	**15 12 50.4**	**+0.9**
FITZ	**Fitzroy Crossi**	**29.77**	**242**	*e*P	**P**	**15 13 21.7**	**-0.2**
KAPI	**Kappang**	**33.17**	**269**	LR	LR	15 29 41.9	
PYZ	**Puysegur Point**	**42.65**	**166**	*e*P	**P**	**15 15 11.6**	**+0.1**
KSM	**Kuching**	**43.18**	**278**	*e*P	**P**	**15 15 15.0**	**-1.2**
PET	**Petropavlovsk**	**58.03**	**4**	*e*P	**P**	**15 17 06.4**	**-1.1**
SONA1	**Songino Array**	**66.66**	**328**	*e*P	**P**	**15 18 04.8**	**-0.7**
RSO	**Redoubt South**	**77.70**	**24**	*e*P	**P**	**15 19 11.1**	**-0.2**
CNPM	**China Poot**	**77.81**	**26**	*e*P	**P**	**15 19 11.5**	**-0.3**
TORD	**Torodi Ar. Bea**	**150.61**	**288**	PKPbc	**PKPbc**	**15 27 07.4**	**-0.1**

39nm,2.0s
2.6nm,1.4s
1.2nm,0.5s,baz=53,slow=9.8,SNR=13
0.2nm,0.5s,baz=55,slow=9.1,SNR=4.1
30nm,2.0s
comp=Z,182nm,18.5s,baz=123,slow=41
288nm,1.4s
7.6nm,1.3s
16nm,1.1s
0.4nm,0.8s,baz=90,slow=1.4,SNR=3.0

*NEIC **07** 15:14:52.8,37.°01S×177.°02E,h212km,MG4.6(WEL),*
After WEL.
WEL 07 15:14:52.1±0.5,36.°97S×177.°01E,h218km±4km,ML4.7/53,
10C-11D,Error ellipse: s-maj=3.7km s-min=3.0km
az=0.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OPRZ	**Ohinepanea**	**0.95**	**202**	Pn	Pn	15 15 23.4	+0.2
OPRZ	**Ohinepanea**	**0.95**	**202**	PN	Pn	15 15 23.4	+0.2
OPRZ				SN	S	15 15 48.6	+0.9
HAZ	**Te Kaha**	**1.00**	**142**	PN	Pn	15 15 23.1	-0.5
HAZ				SN	S	15 15 46.2	-2.0
HAZ				AML	AML	15 15 53.2	
HAZ				AML	AML	15 15 53.2	
HAZ				AML	AML	15 15 55.6	
KUZ	**Kuaotunu**	**1.06**	**282**	PN	Pn	15 15 23.7	-0.3
MXZ	**Matakaoa Point**	**1.19**	**120**	*e*Pn	Pn	15 15 24.6	-0.3
MXZ				*e*S	S	15 15 48.8	-1.6
MXZ				*e*S	S	15 15 58.5	+8.1
MXZ	**Matakaoa Point**	**1.19**	**120**	AML	AML	15 15 24.6	
MXZ				⇑PN	Pn	15 15 25.0	+0.1
MXZ				AML	AML	15 15 58.5	
MXZ				AML	AML	15 15 58.5	
MXZ				AML	AML	15 15 58.7	
URZ	**Urewera**	**1.29**	**177**	*e*Pn	Pn	15 15 25.2	-0.4
URZ				*e*S	S	15 15 47.3	-4.5
URZ				*e*S	S	15 15 57.3	+5.4
URZ				*e*		15 15 59.4	
URZ	**Urewera**	**1.29**	**177**	⇑PN	Pn	15 15 25.2	-0.4
URZ				AML	AML	15 15 57.3	
URZ				AML	AML	15 15 59.4	
WMGZ	**Waiomatatini S**	**1.40**	**128**	Pn	Pn	15 15 26.8	+0.3
WMGZ	**Waiomatatini S**	**1.40**	**128**	PN	Pn	15 15 26.8	+0.3
WMGZ				AML	AML	15 15 53.8	
WMGZ				AML	AML	15 15 54.9	
MWZ	**Matawai**	**1.42**	**163**	⇓PN	Pn	15 15 26.6	-0.1
MWZ				AML	AML	15 15 54.8	
MWZ				AML	AML	15 16 04.2	
MWZ				AML	AML	15 16 04.6	
RRRZ	**Republican Roa**	**1.43**	**196**	Pn	Pn	15 15 27.1	+0.4
RRRZ	**Republican Roa**	**1.43**	**196**	PN	Pn	15 15 27.1	+0.4
TOZ	**Tahuroa Road**	**1.43**	**237**	⇑PN	Pn	15 15 27.2	+0.6
TWGZ	**Tauwhareparae**	**1.43**	**148**	Pn	Pn	15 15 27.4	+0.7
TWGZ	**Tauwhareparae**	**1.43**	**148**	⇑PN	Pn	15 15 27.4	+0.7
TWGZ				SN	S	15 15 54.0	+0.1
TWGZ				AML	AML	15 15 59.8	
MKAZ	**Moumakai**	**1.49**	**264**	PN	Pn	15 15 27.2	0.0
MUGZ	**Murupara**	**1.52**	**187**	PN	Pn	15 15 27.3	-0.1
PRRZ	**Plateau Road**	**1.61**	**198**	Pn	Pn	15 15 28.5	+0.3
PRRZ	**Plateau Road**	**1.61**	**198**	⇓PN	Pn	15 15 28.5	+0.3
TKGZ	**Te Karaka**	**1.61**	**156**	Pn	Pn	15 15 28.5	+0.3
TKGZ	**Te Karaka**	**1.61**	**156**	PN	Pn	15 15 28.5	+0.3
TKGZ				SN	S	15 15 55.6	-0.8
TKGZ				AML	AML	15 16 03.3	
RTZ	**Ruatahuna**	**1.65**	**181**	PN	Pn	15 15 28.4	-0.3
ALRZ	**Allen Road**	**1.68**	**198**	Pn	Pn	15 15 29.1	+0.3
ALRZ	**Allen Road**	**1.68**	**198**	⇓PN	Pn	15 15 29.1	+0.3
CNGZ	**Carnagh Statio**	**1.79**	**148**	Pn	Pn	15 15 30.3	+0.5
CNGZ	**Carnagh Statio**	**1.79**	**148**	⇓PN	Pn	15 15 30.3	+0.5
CNGZ				AML	AML	15 16 02.9	
CNGZ				AML	AML	15 16 03.7	
SNGZ	**Shannon Statio**	**1.83**	**172**	Pn	Pn	15 15 30.4	+0.2
SNGZ	**Shannon Statio**	**1.83**	**172**	PN	Pn	15 15 30.4	+0.2
SNGZ				AML	AML	15 16 03.0	
SNGZ				AML	AML	15 16 04.1	
RIGZ	**Rimuhau**	**1.83**	**161**	PN	Pn	15 15 30.7	+0.3
RIGZ				AML	AML	15 16 03.7	
RIGZ				AML	AML	15 16 03.8	
MRHZ	**Matea Rd**	**1.92**	**194**	PN	Pn	15 15 30.8	-0.3
MRHZ				AML	AML	15 16 01.5	
MRHZ				AML	AML	15 16 06.1	
WATZ	**Wairara**	**2.01**	**210**	PN	Pn	15 15 32.4	+0.4
PRGZ	**Paritu Road**	**2.07**	**161**	Pn	Pn	15 15 32.3	-0.3
PRGZ	**Paritu Road**	**2.07**	**161**	PN	Pn	15 15 32.3	-0.3
PRGZ				AML	AML	15 16 10.7	
PRGZ				AML	AML	15 16 10.7	
WHHZ	**Waihua**	**2.11**	**175**	⇓PN	Pn	15 15 33.0	+0.1
WHHZ				AML	AML	15 16 07.5	
WHHZ				AML	AML	15 16 09.9	
KNZ	**Kokohu**	**2.12**	**166**	*e*Pn	Pn	15 15 32.6	-0.4
KNZ				*e*S	S	15 16 06.7	+1.9
KNZ	**Kokohu**	**2.12**	**166**	⇓PN	Pn	15 15 32.6	-0.4
KNZ				AML	AML	15 16 06.4	
KNZ				AML	AML	15 16 06.7	
NMHZ	**Naumai**	**2.13**	**184**	Pn	Pn	15 15 33.4	+0.1
NMHZ	**Naumai**	**2.13**	**184**	PN	Pn	15 15 33.4	+0.1
NMHZ				AML	AML	15 16 08.4	
NMHZ				AML	AML	15 16 08.6	
RATZ	**Rangitukua**	**2.13**	**207**	Pn	Pn	15 15 33.4	+0.1
RATZ	**Rangitukua**	**2.13**	**207**	PN	Pn	15 15 33.4	+0.1
BKZ	**Black Stump Fm**	**2.23**	**190**	*e*Pn	Pn	15 15 33.5	-0.7
BKZ				*e*S	S	15 15 59.5	-7.6
BKZ				*e*S	S	15 16 09.0	+1.9
BKZ	**Black Stump Fm**	**2.23**	**190**	PN	Pn	15 15 33.4	-0.9
BKZ				AML	AML	15 16 09.0	
BKZ				AML	AML	15 16 09.8	
KATZ	**Kakaramea**	**2.26**	**207**	*e*Pn	Pn	15 15 34.5	-0.1
KATZ	**Kakaramea**	**2.26**	**207**	PN	Pn	15 15 34.5	-0.1
ARHZ	**Aropaoanui**	**2.29**	**180**	Pn	Pn	15 15 34.8	0.0
ARHZ	**Aropaoanui**	**2.29**	**180**	PN	Pn	15 15 34.8	0.0
ARHZ				AML	AML	15 16 10.2	
ARHZ				AML	AML	15 16 12.9	
MHGZ	**Mahia Peninsul**	**2.29**	**162**	Pn	Pn	15 15 34.8	0.0
MHGZ	**Mahia Peninsul**	**2.29**	**162**	PN	Pn	15 15 34.8	0.0
MHGZ				AML	AML	15 16 16.2	
MHGZ				AML	AML	15 16 18.0	
HIZ	**Hauiti**	**2.30**	**227**	PN	Pn	15 15 35.6	+0.7
KRVZ	**Karewarewa**	**2.38**	**207**	Pn	Pn	15 15 35.9	0.0
KRVZ	**Karewarewa**	**2.38**	**207**	PN	Pn	15 15 35.9	0.0
WTVZ	**West Tongariro**	**2.42**	**207**	*e*Pn	Pn	15 15 36.3	0.0
WTVZ	**West Tongariro**	**2.42**	**207**	PN	Pn	15 15 36.3	0.0
NGZ	**Ngauruhoe**	**2.47**	**206**	*e*Pn	Pn	15 15 37.2	+0.3
NGZ	**Ngauruhoe**	**2.47**	**206**	PN	Pn	15 15 37.2	+0.3
MCHZ	**McNeill Hill**	**2.48**	**186**	Pn	Pn	15 15 36.8	-0.1
MCHZ	**McNeill Hill**	**2.48**	**186**	⇓PN	Pn	15 15 36.8	-0.1
MCHZ				AML	AML	15 16 16.7	
MCHZ				AML	AML	15 16 30.2	
KWHZ	**Kaweka Forest**	**2.50**	**191**	PN	Pn	15 15 36.5	-0.5
KWHZ				AML	AML	15 16 15.8	
KWHZ				AML	AML	15 16 24.1	
TUVZ	**Tukino**	**2.53**	**205**	*e*Pn	Pn	15 15 37.3	-0.3
TUVZ	**Tukino**	**2.53**	**205**	PN	Pn	15 15 37.3	-0.3
FWVZ	**Far West T-bar**	**2.56**	**206**	*e*Pn	Pn	15 15 37.5	-0.4
FWVZ	**Far West T-bar**	**2.56**	**206**	⇑PN	Pn	15 15 37.5	-0.4
WHVZ	**Whangaehu Hut**	**2.57**	**205**	Pn	Pn	15 15 37.5	-0.5
WHVZ	**Whangaehu Hut**	**2.57**	**205**	PN	Pn	15 15 37.5	-0.5
TRVZ	**Turoa**	**2.60**	**206**	PN	Pn	15 15 37.9	-0.5
WNVZ	**Wahianoa**	**2.61**	**205**	*e*Pn	Pn	15 15 37.7	-0.6
WNVZ	**Wahianoa**	**2.61**	**205**	⇑PN	Pn	15 15 37.7	-0.6
BHHZ	**Black Hill Sta**	**2.63**	**196**	Pn	Pn	15 15 37.4	-1.1
BHHZ	**Black Hill Sta**	**2.63**	**196**	⇑PN	Pn	15 15 37.4	-1.1
BHHZ				AML	AML	15 16 14.9	
BHHZ				AML	AML	15 16 15.4	
MOVZ	**Moawhango**	**2.63**	**202**	*e*Pn	Pn	15 15 37.3	-1.2
MOVZ	**Moawhango**	**2.63**	**202**	PN	Pn	15 15 37.3	-1.2
PKVZ	**Pokaka**	**2.67**	**209**	Pn	Pn	15 15 38.6	-0.3
PKVZ	**Pokaka**	**2.67**	**209**	PN	Pn	15 15 38.6	-0.3
CKHZ	**Cape Kidnapper**	**2.69**	**179**	Pn	Pn	15 15 38.7	-0.4
CKHZ	**Cape Kidnapper**	**2.69**	**179**	PN	Pn	15 15 38.7	-0.4
CKHZ				AML	AML	15 16 18.1	
CKHZ				AML	AML	15 16 22.3	
MTVZ	**Mangateitei**	**2.70**	**206**	*e*Pn	Pn	15 15 39.3	0.0
MTVZ	**Mangateitei**	**2.70**	**206**	⇑PN	Pn	15 15 39.3	0.0
KRHZ	**Kereru**	**2.72**	**191**	PN	Pn	15 15 38.4	-1.0
KRHZ				AML	AML	15 16 18.0	
KRHZ				AML	AML	15 16 28.2	
VRZ	**Vera Road**	**2.79**	**219**	Pn	Pn	15 15 41.0	+0.8
VRZ	**Vera Road**	**2.79**	**219**	PN	Pn	15 15 41.0	+0.8
KAHZ	**Kahuranaki**	**2.82**	**182**	Pn	Pn	15 15 40.0	-0.7
KAHZ	**Kahuranaki**	**2.82**	**182**	⇓PN	Pn	15 15 40.0	-0.7
KAHZ				AML	AML	15 16 21.6	
KAHZ				AML	AML	15 16 22.4	
PNHZ	**Pukenui**	**3.01**	**192**	Pn	Pn	15 15 41.4	-1.3
PNHZ	**Pukenui**	**3.01**	**192**	PN	Pn	15 15 41.4	-1.3
PNHZ				AML	AML	15 16 22.6	
PNHZ				AML	AML	15 16 24.2	
PXZ	**Pawanui**	**3.06**	**182**	⇓PN	Pn	15 15 42.0	-1.3
PXZ				AML	AML	15 16 23.3	
PXZ				AML	AML	15 16 23.4	
PXZ				AML	AML	15 16 24.0	
PXZ				AML	AML	15 16 24.0	
WPHZ	**Waipukurau**	**3.12**	**188**	Pn	Pn	15 15 42.6	-1.4
WPHZ	**Waipukurau**	**3.12**	**188**	PN	Pn	15 15 42.6	-1.4
WPHZ				AML	AML	15 16 30.5	
WPHZ				AML	AML	15 16 30.5	
TSZ	**Takapari Road**	**3.19**	**195**	Pn	Pn	15 15 43.3	-1.5
TSZ	**Takapari Road**	**3.19**	**195**	PN	Pn	15 15 43.3	-1.5
TSZ				AML	AML	15 16 26.7	
TSZ				AML	AML	15 16 27.2	
WAZ	**Wanganui**	**3.21**	**209**	Pn	Pn	15 15 44.4	-0.6
WAZ	**Wanganui**	**3.21**	**209**	⇓PN	Pn	15 15 44.4

OGWZ				AML	AML	15 16 44.9	
OGWZ				AML	AML	15 16 45.0	
KIW	**Kapiti Island**	**4.22 202**		PN	Pn	15 15 54.4	-2.8
KIW				AML	AML	15 16 46.1	
KIW				AML	AML	15 16 46.6	
TMWZ	**Te Maipa**	**4.22 192**		Pn	Pn	15 15 49.4	-7.8
TMWZ	**Te Maipa**	**4.22 192**		AML	AML	15 16 47.8	
TMWZ				AML	AML	15 16 48.1	
MTW	**Mount Morrison**	**4.35 195**	*e*Pn	Pn	Pn	15 15 55.6	-3.1
MTW			*e*S	S	S	15 16 49.1	-2.0
MTW	**Mount Morrison**	**4.35 195**	PN	Pn	Pn	15 15 55.6	-3.1
MTW			AML	AML	AML	15 16 49.1	
MTW			AML	AML	AML	15 16 49.3	
CAW	**Cannon Point**	**4.40 200**	*e*Pn	Pn	Pn	15 15 56.2	-3.1
CAW			*e*S	S	S	15 16 50.5	-1.9
CAW	**Cannon Point**	**4.40 200**	PN	Pn	Pn	15 15 56.2	-3.1
CAW			AML	AML	AML	15 16 50.5	
CAW			AML	AML	AML	15 16 51.5	
DUWZ	**D'Urville Isla**	**4.53 211**	*e*Pn	Pn	Pn	15 15 58.3	-2.6
DUWZ	**D'Urville Isla**	**4.53 211**	PN	Pn	Pn	15 15 58.3	-2.6
TRWZ	**Traveller**	**4.54 193**	*e*Pn	Pn	Pn	15 15 58.6	-2.5
TRWZ			*e*S	S	S	15 16 53.7	-1.8
TRWZ	**Traveller**	**4.54 193**	PN	Pn	Pn	15 15 58.6	-2.5
TRWZ			AML	AML	AML	15 16 53.7	
TRWZ			AML	AML	AML	15 16 55.7	
PAWZ	**Paruwai Farm**	**4.58 195**	*e*Pn	Pn	Pn	15 15 58.6	-3.0
PAWZ			*e*S	S	S	15 16 53.6	-2.7
PAWZ			*e*			15 16 56.9	
PAWZ	**Paruwai Farm**	**4.58 195**	PN	Pn	Pn	15 15 58.6	-3.0
PAWZ			AML	AML	AML	15 16 53.6	
PAWZ			AML	AML	AML	15 16 56.8	
MSWZ	**Moikau Station**	**4.65 197**	Pn	Pn	Pn	15 15 59.2	-3.3
MSWZ	**Moikau Station**	**4.65 197**	PN	Pn	Pn	15 15 59.2	-3.3
MSWZ			AML	AML	AML	16 16 54.1	
MSWZ			AML	AML	AML	16 16 55.6	
WEL	**Wellington**	**4.65 201**	Pn	Pn	Pn	15 15 59.3	-3.1
WEL	**Wellington**	**4.65 201**	PN	Pn	Pn	15 15 59.3	-3.1
WEL			AML	AML	AML	16 16 55.4	
WEL			AML	AML	AML	16 16 56.4	
WEL			AML	AML	AML	16 16 56.4	
SNZO	**South Karori**	**4.69 202**	*e*Pn	Pn	Pn	15 15 59.5	-3.4
SNZO			*e*S	S	S	15 16 47.5	-11
BHW	**Baring Head**	**4.74 200**	*e*Pn	Pn	Pn	15 16 00.0	-3.5
BHW			*e*S	S	S	15 16 58.3	-1.6
BHW	**Baring Head**	**4.74 200**	PN	Pn	Pn	15 16 00.0	-3.5
BHW			AML	AML	AML	15 16 57.1	
BHW			AML	AML	AML	15 16 58.3	
TCW	**Tory Channel**	**4.74 206**	PN	Pn	Pn	15 16 00.5	-3.1
TCW			AML	AML	AML	15 16 59.1	
TCW			AML	AML	AML	15 16 59.2	
PLWZ	**Palliser**	**4.79 196**	Pn	Pn	Pn	15 16 01.0	-3.3
PLWZ	**Palliser**	**4.79 196**	PN	Pn	Pn	15 16 01.0	-3.3
PLWZ			AML	AML	AML	16 16 59.0	
PLWZ			AML	AML	AML	17 17 01.5	
TUWZ	**Tuamarina**	**5.05 207**	PN	Pn	Pn	15 16 04.2	-3.2
TUWZ			AML	AML	AML	17 17 06.5	
TUWZ			AML	AML	AML	15 17 07.6	
QRZ	**Quartz Range**	**5.20 221**	PN	Pn	Pn	15 16 06.3	-3.0
BSWZ	**Blackbirch Sta**	**5.33 206**	Pn	Pn	Pn	15 16 07.7	-3.2
BSWZ	**Blackbirch Sta**	**5.33 206**	PN	Pn	Pn	15 16 07.7	-3.2
BSWZ			AML	AML	AML	15 17 13.8	
BSWZ			AML	AML	AML	15 17 21.1	
THZ	**Tophouse**	**5.75 212**	*e*Pn	Pn	Pn	15 16 13.2	-3.1
THZ			*e*S	S	S	15 17 08.8	-14
THZ	**Tophouse**	**5.75 212**	PN	Pn	Pn	15 16 13.3	-3.1
KHZ	**Kahutara**	**6.07 205**	*e*Pn	Pn	Pn	15 16 16.8	-3.5
KHZ			*e*S	S	S	15 17 14.3	-16
KHZ	**Kahutara**	**6.07 205**	ǁPN	Pn	Pn	15 16 17.0	-3.3
KHZ			AML	AML	AML	15 17 26.2	
KHZ			AML	AML	AML	15 17 26.2	
KHZ			AML	AML	AML	15 17 26.7	
KHZ			AML	AML	AML	15 17 26.7	
DSZ	**Denniston Nort**	**6.25 219**	PN	Pn	Pn	15 16 18.7	-4.0
LTZ	**Lake Taylor**	**6.86 211**	*e*Pn	Pn	Pn	15 16 27.2	-3.3
LTZ			*e*S	S	S	15 17 34.5	-14
LTZ	**Lake Taylor**	**6.86 211**	PN	Pn	Pn	15 16 27.2	-3.3
INZ	**Inchbonnie**	**7.17 215**	PN	Pn	Pn	15 16 30.7	-3.7
CRLZ	**Canterbury Las**	**7.40 206**	PN	Pn	Pn	15 16 33.3	-4.2
OXZ	**Oxford**	**7.40 209**	*e*Pn	Pn	Pn	15 16 32.5	-5.0
OXZ			*e*S	S	S	15 17 50.4	-11
OXZ	**Oxford**	**7.40 209**	PN	Pn	Pn	15 16 32.7	-4.8
MQZ	**McQueen's Vall**	**7.51 205**	*e*Pn	Pn	Pn	15 16 34.0	-4.8
MQZ			*e*S	S	S	15 17 54.1	-10
MQZ	**McQueen's Vall**	**7.51 205**	ǁPN	Pn	Pn	15 16 33.9	-4.9
RPZ	**Rata Peaks**	**8.13 212**	PN	Pn	Pn	15 16 42.8	-4.0
FOZ	**Fox Glacier**	**8.56 218**	PN	Pn	Pn	15 16 48.4	-3.9
LBZ	**Lake Benmore**	**9.04 213**	*e*Pn	Pn	Pn	15 16 54.5	-4.1
LBZ			*e*S	S	S	15 18 24.0	-16
LBZ	**Lake Benmore**	**9.04 213**	PN	Pn	Pn	15 16 54.4	-4.2
ODZ	**Otahua Downs**	**9.39 209**	*e*Pn	Pn	Pn	15 16 59.5	-3.5
ODZ			*e*S	S	S	15 18 31.1	-17
ODZ	**Otahua Downs**	**9.39 209**	PN	Pn	Pn	16 16 59.4	-3.7
JCZ	**Jackson Bay**	**9.46 219**	*e*Pn	Pn	Pn	15 17 00.1	-4.0
JCZ	**Jackson Bay**	**9.46 219**	PN	Pn	Pn	15 17 00.1	-4.0
WKZ	**Wanaka**	**9.91 215**	*e*Pn	Pn	Pn	15 17 03.8	-6.0
WKZ			*e*			15 18 36.3	
WKZ	**Wanaka**	**9.91 215**	PN	Pn	Pn	15 17 04.9	-4.9
MSZ	**Milford Sound**	**10.32 219**	*e*Pn	Pn	Pn	15 17 11.8	-3.2
MSZ	**Milford Sound**	**10.32 219**	PN	Pn	Pn	15 17 11.8	-3.2
TUZ	**Tuapeka**	**10.54 209**	Pn	Pn	Pn	15 17 14.6	-3.2
TUZ	**Tuapeka**	**10.54 209**	PN	Pn	Pn	15 17 14.6	-3.2
MLZ	**Mavora Lakes**	**10.73 216**	*e*Pn	Pn	Pn	15 17 15.8	-4.5
MLZ			*e*			15 18 56.4	
SYZ	**Scrubby Hill**	**11.22 209**	Pn	Pn	Pn	15 17 23.3	-3.1
SYZ	**Scrubby Hill**	**11.22 209**	PN	Pn	Pn	15 17 23.3	-3.1
DCZ	**Deep Cove**	**11.27 218**	*e*Pn	Pn	Pn	15 17 21.9	-5.2
DCZ			*e*S	S	S	15 19 19.2	-12
PYZ	**Puysegur Point**	**12.00 217**	*e*Pn	Pn	Pn	15 17 30.1	-6.3
MCQ	**Macquarie Isla**	**21.48 210**	*e*P	P	P	15 19 16.7	-6.7
ARMA	**Armidale**	**22.07 280**	*e*P	P	P	15 19 23.0	-6.6
WB2	**Warramunga Arr**	**40.79 283**	*e*P	P	P	15 22 04.9	-7.5
CASY	**Casey**	**47.40 210**	*e*P	P	P	15 22 57.0	-7.0

*ATH **07** 15:20:10.2, 38°.72N×26°.54E, h31km±1km, ML2.6/5, Error ellipse: s-maj=3.5km s-min=1.2km az=261.0*
*DDA **07** 15:20:10.3, 38°.74N×26°.60E, h7km, Md2.9*
*CSEM **07** 15:20:10.8±0.1, 38°.73N×26°.57E, h12km, MD2.9, Error ellipse: s-maj=2.8km s-min=2.3km az=63.0*
*ISK **07** 15:20:10.0, 38°.74N×26°.61E, h10km, MD3.2*
*ISCJB **07** 15:20:10.5±0.4, 38°.74N±0°.02×26°.58E±0°.03, h10km±3km, Error ellipse: s-maj=3.7km s-min=2.6km az=160.8*
*THE **07** 15:20:11.4, 38°.73N×26°.50E, h15km±2km, ML2.8/3, Error ellipse: s-maj=3.3km s-min=0.7km az=269.0*

ISC 07 15:20:10.4±0.9, 38°.72N±0°.01×26°.57E±0°.02, h13km±8km, n86, σ0s63/124, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URLA	**Izmir**	**0.36**	**176**	*i* P	**Pg**	**15 20 17.7**	**-0.1**
URLA				*i* S	**Sb**	**15 20 24.1**	**-0.2**
URLA	**Izmir**	**0.36**	**176**	P	**Pg**	**15 20 17.7**	**-0.1**
URLA				S	**Sb**	**15 20 24.1**	**-0.2**
DKL	**Dikili**	**0.44**	**37**	*e*PG	**Pg**	**15 20 18.8**	**-0.3**
DKL				*e*SG	**Sg**	**15 20 24.8**	**-0.1**
DKL	**Dikili**	**0.44**	**37**	*e*Pg	**Pg**	**15 20 18.8**	**-0.3**
DKL				*e*Sg	**Sg**	**15 20 24.8**	**-0.1**
ZEY	**¨zmir**	**0.49**	**186**	*i* P	**Pg**	**15 20 19.7**	**-0.2**
ZEY				*i* S	**Sb**	**15 20 28.3**	**+0.5**
CHOS	**Chios island**	**0.52**	**230**	*e*PG	**Pg**	**15 20 21.1**	**+0.4**
CHOS				*e*SG	**Sb**	**15 20 29.7**	**+0.8**
CHOS	**Chios island**	**0.52**	**230**	P	**Pb**	**15 20 21.3**	**-0.1**
CHOS				S	**Sg**	**15 20 28.4**	**+0.7**
CHOS	**Chios island**	**0.52**	**230**	P	**Pb**	**15 20 21.3**	**-0.1**
CHOS				S	**Sg**	**15 20 28.4**	**+0.7**
CHOS				*e*Sg	**Sb**	**15 20 29.7**	**+0.8**
CHOS	**Chios island**	**0.52**	**230**	P	**Pb**	**15 20 21.6**	**+0.2**
CHOS				S	**Sg**	**15 20 27.9**	**+0.2**
CHOS				AML	AML	15 20 30.8	
	comp=E,1887μm,0.3s						
CHOS				AML	AML	15 20 33.6	
	comp=N,1535μm,0.3s						
PRK	**Paraskevi**	**0.57**	**336**	P	**Pb**	**15 20 21.9**	**-0.3**
PRK				S	**Sb**	**15 20 30.0**	**-0.2**
PRK	**Paraskevi**	**0.57**	**336**	P	**Pb**	**15 20 21.9**	**-0.3**
PRK				S	**Sg**	**15 20 29.2**	**+0.1**
PRK	**Paraskevi**	**0.57**	**336**	P	**Pg**	**15 20 21.6**	**0.0**
PRK				S	**Sg**	**15 20 29.2**	**+0.1**
PRK				AML	AML	15 20 30.5	
	comp=N,1489μm,0.6s						
PRK				AML	AML	15 20 30.6	
	comp=E,2767μm,0.4s						
AYVA	**Ayvalik**	**0.59**	**9**	*i* P	**Pg**	**15 20 21.8**	**-0.2**
AYVA				*i* S	**Sb**	**15 20 32.0**	**+1.2**
AYVA	**Ayvalik**	**0.59**	**9**	P	**Pg**	**15 20 21.8**	**-0.2**
AYVA				S	**Sb**	**15 20 32.0**	**+1.2**
IZM	**Izmir**	**0.64**	**121**	*e*PG	**Pg**	**15 20 22.5**	**-0.3**
IZM				*e*SG	**Sg**	**15 20 31.2**	**-0.1**
IZM	**Izmir**	**0.64**	**121**	*e*Pg	**Pg**	**15 20 22.5**	**-0.3**
IZM				*e*Sg	**Sg**	**15 20 31.2**	**-0.1**
DGB	**¨zmir**	**0.72**	**160**	*i* P	**Pg**	**15 20 23.5**	**-0.8**
DGB				*i* S	**Sb**	**15 20 34.3**	**-0.1**
SIGR	**SIGRI**	**0.74**	**312**	*e*PG	**Pn**	**15 20 25.8**	**-0.7**
SIGR	**SIGRI**	**0.74**	**312**	P	**Pb**	**15 20 25.3**	**+0.3**
SIGR				S	**Sb**	**15 20 34.7**	**-0.3**
SIGR	**SIGRI**	**0.74**	**312**	P	**Pb**	**15 20 25.3**	**+0.3**
SIGR	**SIGRI**	**0.74**	**312**	*e*Pg	**Pn**	**15 20 25.8**	**-0.7**
SIGR				S	**Sb**	**15 20 34.7**	**-0.3**
SIGR	**SIGRI**	**0.74**	**312**	P	**Pn**	**15 20 25.9**	**-0.5**
SIGR				S	**Sn**	**15 20 36.5**	**-1.0**
SIGR				AML	AML	15 20 38.0	
	comp=N,1325μm,0.3s						
SIGR				AML	AML	15 20 38.6	
	comp=E,927μm,0.3s						
AKS	**Akhisar**	**0.99**	**81**	*e*PG	**Pg**	**15 20 28.8**	**-0.7**
AKS	**Akhisar**	**0.99**	**81**	*e*Pg	**Pg**	**15 20 28.8**	**-0.7**
AKHS	**Akhisar**	**0.99**	**81**	*i* P	**Pg**	**15 20 29.2**	**-0.3**
AKHS				*i* S	**Sb**	**15 20 42.3**	**0.0**
AKHS	**Akhisar**	**0.99**	**81**	P	**Pg**	**15 20 29.2**	**-0.3**
AKHS				S	**Sb**	**15 20 42.3**	**0.0**
SMG	**Samos**	**1.04**	**168**	P	**Pb**	**15 20 29.8**	**-0.4**
SMG				S	**Sn**	**15 20 45.7**	**+0.8**
SMG	**Samos**	**1.04**	**168**	P	**Pb**	**15 20 29.8**	**-0.4**
SMG				S	**Sn**	**15 20 45.1**	**+0.2**
SMG	**Samos**	**1.04**	**168**	P	**Pb**	**15 20 29.1**	**-1.1**
SMG				S	**Sn**	**15 20 45.1**	**+0.2**
SMG				AML	AML	15 20 46.5	
	comp=E,953μm,0.3s						
SMG				AML	AML	15 20 47.4	
	comp=N,1478μm,0.6s						
EZN	**Ezine**	**1.11**	**350**	*e*PN	**Pb**	**15 20 31.1**	**-0.4**
EZN	**Ezine**	**1.11**	**350**	P	**Pb**	**15 20 30.8**	**-0.7**
EZN				S	**Sg**	**15 20 46.3**	**-0.1**
EZN	**Ezine**	**1.11**	**350**	P	**Pb**	**15 20 30.8**	**-0.7**
EZN	**Ezine**	**1.11**	**350**	*e*Pn	**Pb**	**15 20 31.1**	**-0.4**
EZN				S	**Sg**	**15 20 46.3**	**-0.1**
BOZC	**Bozcaada**	**1.19**	**341**	*i* P	**Pg**	**15 20 33.0**	**-0.2**
BOZC				*i* S	**Sn**	**15 20 49.5**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**1.30**	**126**	*e*PN	**Pn**	**15 20 34.1**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.30**	**126**	*e*Pn	**Pn**	**15 20 34.1**	**-0.2**
BALB	**Balikesir**	**1.37**	**48**	*e*PN	**Pb**	**15 20 35.7**	**-0.2**
BALB	**Balikesir**	**1.37**	**48**	*e*Pn	**Pb**	**15 20 35.7**	**-0.2**
GADA	**Gvkgeada**	**1.55**	**341**	*e*PN	**Pb**	**15 20 38.3**	**-0.6**
GADA	**Gvkgeada**	**1.55**	**341**	*e*Pn	**Pb**	**15 20 38.3**	**-0.6**
MANT	**Manisa**	**1.58**	**98**	*i* P	**Pb**	**15 20 38.9**	**-0.6**
MANT				*i* S	**Sn**	**15 20 58.8**	**+0.2**
MANT	**Manisa**	**1.58**	**98**	P	**Pb**	**15 20 38.9**	**-0.6**
MANT				S	**Sn**	**15 20 58.8**	**+0.2**
GONE	**Gonen-Balikesi**	**1.58**	**33**	*e*PN	**Pn**	**15 20 38.5**	**+0.4**
GONE	**Gonen-Balikesi**	**1.58**	**33**	*e*Pn	**Pn**	**15 20 38.5**	**+0.4**
LIA	**Limnos Island**	**1.59**	**318**	P	**Pn**	**15 20 38.7**	**+0.6**
LIA				S	**Sn**	**15 20 57.1**	**-1.4**
LPK	**Lapseki**	**1.65**	**5**	*e*PN	**Pn**	**15 20 39.1**	**0.0**
LPK	**Lapseki**	**1.65**	**5**	*e*Pn	**Pn**	**15 20 39.1**	**0.0**
KULA	**Kula-Manisa**	**1.66**	**97**	*e*PN	**Pn**	**15 20 39.5**	**+0.3**
KULA	**Kula-Manisa**	**1.66**	**97**	*e*Pn	**Pn**	**15 20 39.5**	**+0.3**
GELI	**Tayfur-Gelibol**	**1.67**	**358**	*e*PN	**Pn**	**15 20 39.9**	**+0.6**
GELI	**Tayfur-Gelibol**	**1.67**	**358**	*e*Pn	**Pn**	**15 20 39.9**	**+0.6**
DEMI	**Demirci**	**1.71**	**79**	*i* P	**Pb**	**15 20 42.0**	**+0.3**
DEMI				*i* S	**Sb**	**15 21 03.6**	**+0.5**
DEMI	**Demirci**	**1.71**	**79**	P	**Pb**	**15 20 42.0**	**+0.3**
DEMI				S	**Sb**	**15 21 03.6**	**+0.5**
KRBG	**Karabiga-Canak**	**1.76**	**19**	*e*PN	**Pn**	**15 20 40.3**	**-0.2**
KRBG	**Karabiga-Canak**	**1.76**	**19**	*e*Pn	**Pn**	**15 20 40.3**	**-0.2**
BODT	**Bodrum**	**1.76**	**160**	*e*PN	**Pb**	**15 20 41.8**	**-0.7**
BODT	**Bodrum**	**1.76**	**160**	*e*Pn	**Pb**	**15 20 41.8**	**-0.7**
APE	**Apeiranthos**	**1.84**	**207**	*e*PN	**Pb**	**15 20 43.4**	**-0.5**
APE	**Apeiranthos**	**1.84**	**207**	*e*Pn	**Pb**	**15 20 43.4**	**-0.5**
EDC	**Edincik**	**1.91**	**31**	*e*PN	**Pn**	**15 20 43.6**	**+1.1**
EDC	**Edincik**	**1.91**	**31**	*e*Pn	**Pn**	**15 20 43.6**	**+1.1**
SMTH	**Samothraki Isl**	**1.92**	**336**	P	**Pn**	**15 20 43.7**	**+1.0**
SMTH				S	**Sn**	**15 21 04.9**	**-1.8**
SMTH	**Samothraki Isl**	**1.92**	**336**	P	**Pn**	**15 20 43.7**	**+1.0**
SMTH				S	**Sn**	**15 21 04.9**	**-1.8**
ERIK	**Erikli-Kesan**	**1.94**	**359**	*e*PN	**Pn**	**15 20 43.9**	**+0.9**
ERIK	**Erikli-Kesan**	**1.94**	**359**	*e*Pn	**Pn**	**15 20 43.9**	**+0.9**
RKY	**Sarkoy-Tekirda**	**2.02**	**13**	*e*PN	**Pn**	**15 20 44.4**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.02**	**13**	*e*Pn	**Pn**	**15 20 44.4**	**+0.3**
ENEZ	**Enez**	**2.03**	**351**	*e*PN	**Pn**	**15 20 45.2**	**+0.9**
ENEZ	**Enez**	**2.03**	**351**	*e*Pn	**Pn**	**15 20 45.2**	**+0.9**
MRMT	**Marmara Adasi**	**2.04**	**23**	*e*PN	**Pn**	**15 20 44.3**	**+0.1**
MRMT	**Marmara Adasi**	**2.04**	**23**	*e*Pn	**Pn**	**15 20 44.3**	**+0.1**
KCTX	**Karacabey (Bur**	**2.07**	**41**	*e*PN	**Pn**	**15 20 45.5**	**+0.7**
KCTX	**Karacabey (Bur**	**2.07**	**41**	*e*Pn	**Pn**	**15 20 45.5**	**+0.7**
ALN	**Alexandroupoli**	**2.21**	**350**	*e*PN	**Pn**	**15 20 47.6**	**+0.9**
ALN	**Alexandroupoli**	**2.21**	**350**	P	**Pn**	**15 20 46.6**	**-0.1**
ALN	**Alexandroupoli**	**2.21**	**350**	P	**Pn**	**15 20 46.7**	**+0.1**
ALN	**Alexandroupoli**	**2.21**	**350**	*e*Pn	**Pn**	**15 20 47.6**	**+0.9**
ALN				S	**Sn**	**15 21 13.9**	**+0.1**
ALN	**Alexandroupoli**	**2.21**	**350**	P	**Pn**	**15 20 46.7**	**+0.1**
ALN				S	**Sn**	**15 21 13.9**	**+0.1**
ALN				AML	AML	15 21 21.4	
	comp=E,46μm,0.5s						
ALN				AML	AML	15 21 22.9	
	comp=N,71μm,0.4s						
TVSB	**Tavsanli**	**2.37**	**71**	*e*PN	**Pn**	**15 20 49.6**	**+0.6**
TVSB	**Tavsanli**	**2.37**	**71**	*e*Pn	**Pn**	**15 20 49.6**	**+0.6**
ARMT	**Armutlu**	**2.55**	**43**	*e*PN	**Pn**	**15 20 52.7**	**+1.2**
ARMT	**Armutlu**	**2.55**	**43**	*e*Pn	**Pn**	**15 20 52.7**	**+1.2**
CTKS	**Kestanelik-??a**	**2.92**	**30**	*e*PN	**Pn**	**15 20 57.7**	**+1.3**
CTKS	**Kestanelik-??a**	**2.92**	**30**	*e*Pn	**Pn**	**15 20 57.7**	**+1.3**
CAVI	**Cavuskoy**	**2.94**	**59**	*e*PN	**Pn**	**15 20 57.6**	**+0.9**
CAVI	**Cavuskoy**	**2.94**	**59**	*e*Pn	**Pn**	**15 20 57.6**	**+0.9**

*CSEM **07** 15:22:07.8±0.1, 40°.64N×34°.53E, h10km, ML2.9, Error ellipse: s-maj=3.9km s-min=3.0km az=52.0*
*ISK **07** 15:22:07.7, 40°.66N×34°.61E, h5km, MD2.6*
*DDA **07** 15:22:07.7, 40°.63N×34°.49E, h7km, Ml2.9*
*ISCJB **07** 15:22:08.0±0.6, 40°.66N±0°.03×34°.53E±0°.04, h12km±5km, Error ellipse: s-maj=5.6km s-min=4.8km az=151.5*

ISC 07 15:22:07.8±0.9, 40°.65N±0°.02×34°.52E±0°.03, h15km±7km, n22, σ0s26/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTAK	**Corum_Osmancik**	**0.21**	**91**	*i* P	**Pg**	**15 22 12.5**	**-0.2**
CTAK				*i* S	**Sg**	**15 22 16.2**	**+0.2**
CTAK	**Corum_Osmancik**	**0.21**	**91**	P	**Pg**	**15 22 12.5**	**-0.2**
CTAK				S	**Sg**	**15 22 16.2**	**+0.2**
CORM	**Corum**	**0.48**	**170**	*e*PG	**Pg**	**15 22 17.6**	**+0.2**
CORM				*e*SG	**Sb**	**15 22 24.6**	**-0.4**
CORM	**Corum**	**0.48**	**170**	*e*Pg	**Pg**	**15 22 17.6**	**+0.2**
CORM				*e*Sg	**Sb**	**15 22 24.6**	**-0.4**
COAL	**Corum-Alaca**	**0.53**	**138**	*i* P	**Pg**	**15 22 18.2**	**-0.2**
COAL				*i* S	**Sb**	**15 22 26.3**	**-0.1**
COAL	**Corum-Alaca**	**0.53**	**138**	P	**Pg**	**15 22 18.2**	**-0.2**
COAL				S	**Sb**	**15 22 26.3**	**-0.1**
ILGA	**Ilgaz**	**0.73**	**304**	*i* P	**Pg**	**15 22 22.2**	**+0.1**
ILGA				*i* S	**Sg**	**15 22 32.1**	**+0.3**
ILGA	**Ilgaz**	**0.73**	**304**	P	**Pg**	**15 22 22.2**	**+0.1**
ILGA				S	**Sg**	**15 22 32.1**	**+0.3**
BYBT	**Boyabat**	**0.84**	**13**	*e*PG	**Pg**	**15 22 23.4**	**-0.6**
BYBT	**Boyabat**	**0.84**	**13**	*e*Pg	**Pg**	**15 22 23.5**	**-0.6**
ELDT	**Eldivan**	**0.85**	**259**	*i* P	**Pg**	**15 22 24.1**	**-0.2**
ELDT				*i* S	**Sg**	**15 22 35.2**	**-0.3**
ELDT	**Eldivan**	**0.85**	**259**	P	**Pg**	**15 22 24.1**	**-0.2**
ELDT				S	**Sg**	**15 22 35.2**	**-0.3**
CDAG	**Cicekdag**	**1.03**	**186**	*i* P	**Pb**	**15 22 27.4**	**-0.1**
CDAG				*i* S	**Sg**	**15 22 41.3**	**0.0**
CDAG	**Cicekdag**	**1.03**	**186**	P	**Pb**	**15 22 27.4**	**-0.1**
CDAG				S	**Sg**	**15 22 41.3**	**0.0**
YOZ	**Yozgat**	**1.18**	**149**	*e*PN	**Pn**	**15 22 30.0**	**+0.1**
YOZ				*e*SN	**Sn**	**15 22 46.2**	**+0.4**
YOZ	**Yozgat**	**1.18**	**149**	*e*Pn	**Pn**	**15 22 30.0**	**+0.1**
YOZ				*e*Sn	**Sn**	**15 22 46.2**	**+0.4**
KVT	**Kavak**	**1.23**	**69**	*e*PN	**Pn**	**15 22 30.5**	**-0.1**
KVT				*e*SN	**Sn**	**15 22 47.2**	**+0.2**
KVT	**Kavak**	**1.23**	**69**	*e*Pn	**Pn**	**15 22 30.5**	**-0.1**
KVT				*e*Sn	**Sn**	**15 22 47.2**	**+0.2**
BZK	**Bozkurt**	**1.36**	**344**	*e*PN	**Pg**	**15 22 34.2**	**+0.1**
BZK	**Bozkurt**	**1.36**	**344**	*e*Pn	**Pg**	**15 22 34.2**	**+0.1**
SNOP	**Sinop**	**1.46**	**20**	*e*PN	**Pb**	**15 22 34.9**	**+0.2**
SNOP	**Sinop**	**1.46**	**20**	*e*Pn	**Pb**	**15 22 34.9**	**+0.2**

*ISCJB **07** 15:22:06.5±0.4, 4°.36S×0°.04×131°.75E±0°.08, h33km, mb4.7/14, Error ellipse: s-maj=10.9km s-min=4.9km az=172.2*
*IDC **07** 15:22:06.5±1.8, 4°.34S×131°.06E, h0km, mb4.0/3, mb1 4.0/6, mb1mx3.7/35, mbtmp3.8/6, ML3.7/3, Error ellipse: s-maj=75.0km s-min=23.5km az=74.0*
*NEIC **07** 15:22:10.2±1.2, 4°.21S×131°.78E, h46km±14km, mb4.5/13, Error ellipse: s-maj=11.8km s-min=7.9km az=85.0*

ISC 07 15:22:07.9±0.5, 4°.43S±0°.05×131°.72E±0°.09, h35km, n31, σ1s86/35, mb4.7/14, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FAKI	**Fak Fak**	**1.59**	**19**	*e*Pn	**Pn**	**15 22 32.9**	**-0.7**
MTN	**Manton Dam**	**8.38**	**184**	*e*Pn	Pn	15 24 14.0	+7.1
MTN				*e*Sn	**Sn**	**15 25 42.3**	**+2.1**
COEN	**Coen**	**14.73**	**131**	*e*Pn	**P**	**15 25 39.0**	**-0.5**
FITZ	**Fitzroy Crossi**	**14.83**	**203**	Pn	**Pn**	**15 25 34.9**	**-0.3**
	0.4nm,0.3s,baz=24,slow=10,SNR=22						
FITZ				Sn	**Sn**	**15 28 15.2**	**-3.1**
	0.1nm,0.3s,baz=162,slow=18,SNR=3.0						
FITZ	**Fitzroy Crossi**	**14.83**	**203**	*e*Pn	**Pn**	**15 25 34.8**	**-0.3**
	30nm,1.5s						
FITZ				*e*Sn	**Sn**	**15 28 14.5**	**-3.8**
WR1	**Warramunga Arr**	**15.62**	**171**	*e*Pn	**P**	**15 25 48.9**	**-0.5**
	38nm,1.8s						
WR1				*e*Sn	**Sn**	**15 28 37.5**	**-0.2**
WRA	**Warramunga Arr**	**15.62**	**171**	Pn	**P**	**15 25 48.9**	**-0.5**
	0.2nm,0.3s,baz=348,slow=14,SNR=10.0						
WRA				Sn	**Sn**	**15 28 37.5**	**-0.2**
	0.3nm,0.3s,baz=354,slow=24,SNR=6.3						
WB2	**Warramunga Arr**	**15.63**	**171**	*e*Pn	**P**	**15 25 48.3**	**-1.2**
AS31	**Alice Springs**	**19.23**	**174**	*e*P	**Pn**	**15 26 34.7**	**+4.2**
	1.6nm,0.8s						
ASAR	**Alice Springs**	**19.24**	**174**	P	**Pn**	**15 26 35.7**	**+5.2**
	0.3nm,0.3s,baz=351,slow=12,SNR=29						
ASAR				S	**Sn**	**15 30 02.3**	**-2.9**
	0.0nm,0.3s,baz=349,slow=24,SNR=4.4						
AS01	**Alice Springs**	**19.24**	**174**	*e*P	**Pn**	**15 26 32.0**	**+1.5**
MBWA	**Marble Bar**	**20.30**	**214**	*e*P	Pn	15 26 44.3	+1.2
	39nm,1.5s						
SBUM	**Sibu**	**20.65**	**289**	*e*P	**P**	**15 26 45.8**	**+1.0**
	7.8nm,0.8s	

IDC ***07*** *15:37:48.3±4.6,40.˝14N×139.˝98E,h0km,mb3.2/2, mb1 3.3/3,mb1mx3.1/33,mbtmp3.1/3,ML2.7/1,Error ellipse: s-maj=160.5km s-min=57.0km az=121.0*

ISCJB ***07*** *15:37:55.5±0.8,39.˚37N±0.˝04×140.˚35E±0.˝06,h15km±5km, mb3.4/1,Error ellipse: s-maj=8.2km s-min=5.6km az=33.6*

JMA ***07*** *15:37:55.7,39.˚37N×140.˚34E,h5km±1km,M3.0*

ISC 07 15:37:55.0±1.1,**39.˚42N**±0.˝05×**140.˚40E**±0.˝04,**h15**km±8km, **n13**,σ1°**20**/16,**Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JRG	**Rokugo**	**0.18**	**97**	P	**Pb**	**15 38 00.6**	**+0.6**
JRG				S	**Sg**	**15 38 04.1**	**+1.7**
JYW	**Yuwa**	**0.19**	**310**	P	**Pb**	**15 38 00.0**	**-0.2**
JYK	**Kaneyama**	**0.50**	**184**	P	**Pg**	**15 38 04.3**	**-0.6**
JYK				S	**Sg**	**15 38 10.5**	**-1.2**
JOM	**Ohasama**	**0.69**	**85**	P	**Pn**	**15 38 09.7**	**-0.5**
JOM				S	**Sn**	**15 38 19.7**	**-1.0**
JAH	**Hinai**	**0.79**	**13**	P	**Pn**	**15 38 11.6**	**0.0**
JAH				S	**Sn**	**15 38 22.8**	**-0.3**
JMK	**Ichinoseki**	**0.79**	**126**	P	**Pn**	**15 38 10.6**	**-0.9**
JYA	**Atsumi**	**0.98**	**213**	P	**Pg**	**15 38 12.9**	**-1.1**
JYA				S	**Sg**	**15 38 25.5**	**-1.4**
MJAR	**Matsushiro Arr**	**3.35**	**212**	Pn	**Pn**	**15 38 48.9**	**+2.1**
	0.6nm,0.3s,baz=21,slow=14,SNR=4.5						
MJAR				Sn	**Sb**	**15 39 36.2**	**+1.5**
	0.6nm,0.3s,baz=342,slow=32,SNR=5.2						
H11N2	**WAKE ISLAND Hy**	**30.09**	**123**	T	T	16 17 38.7	
	baz=314,slow=75						
H11N1	**WAKE ISLAND Hy**	**30.09**	**123**	T	T	16 17 28.5	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**30.10**	**123**	T	T	16 17 39.8	
	baz=314,slow=75						
WRA	**Warramunga Arr**	**59.32**	**187**	P	**P**	**15 47 56.7**	**+0.5**
	0.2nm,0.5s,baz=3.5,slow=7.1,SNR=5.0						
ASAR	**Alice Springs**	**63.05**	**187**	P	**P**	**15 48 21.6**	**+0.1**
	0.1nm,99.9s,baz=1.1,slow=7.1,SNR=4.2						

IDC 07 15:44:17.5±28.0,**29.˚56S×178.˚75E,h618**km±281km, **mb2.7**/4,**mb1 2.8**/4,**mb1mx2.6**/33,**mbtmp3.8**/4,**Error ellipse: s-maj=225.9km s-min=103.1km az=97.0, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**30.88**	**280**	P	P	15 49 46.1	+0.2
	0.6nm,0.3s,baz=96,slow=9.2,SNR=2.2						
STKA	**Stephens Creek**	**31.93**	**256**	P	P	15 49 54.3	-0.3
	1.4nm,0.9s,baz=95,slow=11,SNR=2.3						
ASAR	**Alice Springs**	**40.33**	**267**	P	P	15 51 03.6	+0.1
	0.8nm,0.9s,baz=104,slow=7.7,SNR=15						
WRA	**Warramunga Arr**	**41.24**	**273**	P	P	15 51 10.5	-0.3
	0.9nm,0.7s,baz=109,slow=7.7,SNR=5.9						
FINES	**FINESS Array B**	**143.36**	**338**	PKP	PKPdf	16 02 41.4	-0.5
	0.8nm,0.7s,baz=45,slow=4.9,SNR=3.6						

JMA ***07*** *15:44:59.6±0.1,38.˚21N×143.˚74E,h9km,M3.9*

ISCJB ***07*** *15:45:00.6±1.5,38.˚17N±0.˚08×143.˚9E±0.˚1,h58km±19km, mb4.0/2,Error ellipse: s-maj=14.4km s-min=13.1km az=153.8*

ISC 07 15:45:01.4±4.0,**38.˚2N**±0.˚1×**143.˚9E**±0.˚2,**h42**km±44km,**n12**, σ0°**67**/16,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.98**	**299**	P	Pn	15 45 32.0	-0.5
OFUJ				S	**Sn**	**15 45 55.9**	**-0.2**
JIO	**Ouri**	**2.03**	**279**	P	Pn	15 45 32.5	-0.6
JIO				S	**Sn**	**15 45 56.3**	**-1.0**
MIYJ	**Miyakonagasawa**	**2.16**	**312**	P	Pn	15 45 34.2	-0.8
MIYJ				eS	**Sn**	**15 45 59.8**	**-0.7**
JMK	**Ichinoseki**	**2.25**	**292**	P	Pn	15 45 36.0	-0.1
JOM	**Ohasama**	**2.43**	**304**	P	**Pn**	**15 45 39.1**	**+0.5**
JOM				eS	**Sn**	**15 46 07.0**	**-0.1**
JOU	**Okura**	**2.56**	**276**	P	Pn	15 45 40.3	-0.1
JOU				eS	**Sn**	**15 46 10.3**	**0.0**
JRG	**Rokugo**	**2.84**	**297**	P	**Pn**	**15 45 45.1**	**+0.8**
JRG				eS	**Sn**	**15 46 18.6**	**+1.3**
JYK	**Kaneyama**	**2.88**	**287**	P	**Pn**	**15 45 45.3**	**+0.5**
JYK				eS	**Sn**	**15 46 18.6**	**+0.3**
JANG	**Nango**	**2.90**	**321**	P	**Pn**	**15 45 45.3**	**+0.3**
JANG				eS	**Sn**	**15 46 18.8**	**+0.2**
JTM	**Tenmabayashi**	**3.43**	**321**	P	**Pn**	**15 45 52.8**	**+0.5**
JTM				eS	**Sn**	**15 46 31.2**	**-0.5**
WRA	**Warramunga Arr**	**58.48**	**191**	P	**P**	**15 54 52.8**	**-0.5**
	2.6nm,0.7s,baz=12,slow=7.3,SNR=23						
ASAR	**Alice Springs**	**62.20**	**190**	P	**P**	**15 55 19.0**	**+0.3**
	0.4nm,0.7s,baz=0.0,slow=7.4,SNR=6.7						

IDC ***07*** *15:45:33.1±5.0,35.˚58N×141.˚18E,h157km±31km,mb3.3/3, mb1 3.4/5,mb1mx3.0/51,mbtmp3.7/5,Error ellipse: s-maj=73.6km s-min=11.2km az=70.0*

ISCJB ***07*** *15:45:34.0±1.8,35.˚73N±0.˚06×141.˚1E±0.˚1,h26km, mb3.2/1,Error ellipse: s-maj=17.5km s-min=8.4km az=170.0*

JMA ***07*** *15:45:35.7±0.1,35.˚74N×140.˚97E,h34km±1km,M3.1*

ISC 07 15:45:34.1±2.2,**35.˚77N**±0.˚07×**141.˚2E**±0.˚1,**h26**km,**n14**, σ0°**75**/11,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.25**	**255**	P	**Pn**	**15 45 41.4**	**-0.6**
CHOJ				S	**Sn**	**15 45 45.4**	**+0.7**
JCN	**Nagara**	**0.85**	**246**	P	**Pn**	**15 45 49.8**	**-0.5**
JYT	**Yasato**	**0.90**	**301**	P	**Pn**	**15 45 50.2**	**-0.9**
JHO	**Hitachi**	**0.97**	**331**	P	**Pb**	**15 45 52.3**	**+0.1**
MJAR	**Matsushiro Arr**	**2.50**	**289**	P	**Pn**	**15 46 13.7**	**+0.5**
	4.6nm,0.3s,baz=93,slow=10,SNR=28						
MJAR				S	**Sb**	**15 46 49.4**	**+0.6**
	2.4nm,0.3s,baz=135,slow=12,SNR=5.0						
MAT	**Matsushiro**	**2.50**	**289**	P	**Pn**	**15 46 13.4**	**+0.3**
MAT				S	**Sn**	**15 46 42.3**	**-0.6**
JHJ	**Hachijo jima 2**	**2.87**	**204**	P	**Pn**	**15 46 18.8**	**+0.6**
	6.3nm,0.3s,baz=119,slow=19,SNR=11						
JHJ				S	**Sn**	**15 46 50.8**	**-1.1**
	31nm,0.3s,baz=78,slow=23,SNR=8.8						
H11N2	**WAKE ISLAND Hy**	**27.71**	**118**	T	T	16 20 19.1	
	baz=311,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**27.71**	**118**	T	T	16 20 18.9	
	baz=311,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy**	**27.73**	**118**	T	T	16 20 19.5	
	baz=311,slow=75,SNR=24						
H11S1	**WAKE ISLAND Hy**	**28.37**	**121**	T	T	16 21 15.9	
	baz=312,slow=75,SNR=46						
H11S3	**WAKE ISLAND Hy**	**28.37**	**121**	T	T	16 21 12.3	
	baz=312,slow=75,SNR=39						
H11S2	**WAKE ISLAND Hy**	**28.39**	**121**	T	T	16 21 13.5	
	baz=312,slow=75,SNR=30						
MKAR	**Makanchi Array**	**44.62**	**303**	P	P	15 53 28.8	-15
	0.2nm,0.5s,baz=82,slow=11,SNR=3.6						

ISCJB ***07*** *15:48:41.7±0.4,24.˚20N±0.˚02×121.˚83E±0.˚02,h4km±3km, Error ellipse: s-maj=2.9km s-min=2.1km az=142.3*

JMA ***07*** *15:48:41.3±0.1,24.˚18N×121.˚74E,h18km±2km,M3.1*

TAP ***07*** *15:48:42.3,24.˚23N×121.˚75E,h14km,ML3.6,B*

ISC 07 15:48:42.2±0.9,**24.˚22N**±0.˚02×**121.˚79E**±0.˚02,**h18**km±3km, **n63**,σ0°**73**/101,**14C-3D,Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.10**	**332**	P	**Pg**	**15 48 46.0**	**+0.1**
	baz=358						
EHP				eS	**Sg**	**15 48 48.4**	**0.0**
	baz=358						
ENA	**Nanau**	**0.21**	**347**	⇑*i*P	**Pb**	**15 48 46.9**	**-0.5**
	baz=358						
ENA				*i* S	**Sb**	**15 48 50.3**	**-0.5**
	baz=358						
TWD	**Chiawan**	**0.23**	**233**	⇓*i*P	**Pb**	**15 48 47.3**	**-0.4**
	baz=229						
TWD				*i* S	**Sb**	**15 48 50.4**	**-0.8**
	baz=229						
HWA	**Hwalien**	**0.29**	**216**	*e*P	**Pb**	**15 48 48.9**	**-0.1**
	baz=216						
TWC	**Suao**	**0.39**	**7**	⇑*i*P	**Pb**	**15 48 50.3**	**-0.4**
	baz=10.0						
TWC				*i* S	**Sg**	**15 48 55.5**	**-0.4**
	baz=10.0						
NNS	**Nan Shan**	**0.44**	**300**	⇑*i*P	**Pg**	**15 48 50.8**	**-0.5**
	baz=301						
NNS				S	**Sg**	**15 48 56.7**	**-0.8**
	baz=301						
ENTT	**Nioudou**	**0.47**	**334**	⇑*i*P	**Pg**	**15 48 51.4**	**-0.3**
	baz=337						
ENTT				S	**Sg**	**15 48 57.9**	**-0.2**
	baz=337						
WHF	**Hehuan Shan**	**0.49**	**262**	⇑*i*P	**Pg**	**15 48 51.5**	**-0.7**
	baz=260						
WHF				*i* S	**Sg**	**15 48 58.3**	**-0.7**
	baz=260						
TWE	**Neicheng**	**0.51**	**347**	⇑*i*P	**Pb**	**15 48 52.5**	**-0.2**
	baz=351						
TWE				*i* S	**Sb**	**15 48 59.6**	**-0.2**
	baz=351						
ESL	**Shilin**	**0.52**	**219**	*e*P	**Pg**	**15 48 52.0**	**-0.6**
	baz=221						
ILA	**Ilan**	**0.55**	**356**	*e*P	**Pg**	**15 48 53.1**	**-0.1**
	baz=354						
ILA				*e*S	**Sb**	**15 49 01.3**	**+0.5**
	baz=354						
TWT	**Tachien**	**0.56**	**274**	⇑*i*P	**Pb**	**15 48 53.4**	**-0.3**
	baz=273						
TWT				S	**Sg**	**15 49 00.4**	**-0.8**
	baz=273						
NSK	**Sanguang**	**0.60**	**319**	⇑*i*P	**Pb**	**15 48 53.8**	**-0.5**
	baz=321						
NSK				S	**Sb**	**15 49 01.7**	**-0.8**
	baz=321						
EGS		**0.64**	**11**	P	**Pg**	**15 48 55.2**	**+0.3**
	baz=22						
TWA	**Mucha**	**0.78**	**346**	*e*P	**Pg**	**15 48 57.6**	**+0.1**
	baz=347						
TWA				*e*S	**Sg**	**15 49 08.0**	**+0.1**
	baz=347						
EHY	**Hungye**	**0.83**	**211**	*e*P	**Pb**	**15 48 57.5**	**-0.6**
	baz=222						
NSTT	**Nanjuang**	**0.83**	**300**	*i* P	**Pg**	**15 48 58.3**	**-0.2**
	baz=300						
NSTT				*i* S	**Sb**	**15 49 08.3**	**-0.7**
	baz=300						
NWF	**Wu-fen Shan**	**0.85**	**359**	*e*P	**Pn**	**15 48 59.1**	**-0.3**
TAP1	**Taipei**	**0.85**	**343**	P	**Pn**	**15 48 59.0**	**-0.3**
	baz=344						
TAP1				*e*S	**Sg**	**15 49 10.3**	**+0.1**
	baz=344						
TAP	**Taipei**	**0.86**	**342**	*e*P	**Pn**	**15 48 59.0**	**-0.4**
	baz=335						
SMLT	**Sun Moon Lake**	**0.88**	**248**	⇑P	**Pb**	**15 48 59.0**	**-0.1**
	baz=240						
SMLT				S	**Sb**	**15 49 10.4**	**-0.1**
	baz=240						
TYC	**Yuchr**	**0.91**	**250**	⇑P	**Pb**	**15 48 59.2**	**-0.2**
	baz=243						
TYC				*e*S	**Sb**	**15 49 11.2**	**-0.1**
	baz=243						
NCU	**National Centr**	**0.93**	**324**	P	**Pg**	**15 49 00.7**	**+0.4**
	baz=324						
NCU				*i* S	**Sn**	**15 49 14.3**	**+1.1**
	baz=324						
TWQ1	**Liyutan**	**0.94**	**278**	⇓*i*P	**Pg**	**15 49 00.7**	**+0.2**
	baz=278						
TWQ1				*e*S	**Sn**	**15 49 14.6**	**+1.1**
	baz=278						
TWS1	**Kuangyinshan**	**0.94**	**339**	*e*P	**Pg**	**15 49 00.8**	**+0.2**
	baz=340						
TWS1				*e*S	**Sn**	**15 49 14.6**	**+1.0**
	baz=340						
HSN	**Hsinchu**	**0.95**	**308**	*e*P	**Pg**	**15 49 00.4**	**-0.2**
	baz=303						
HSN				*e*S	**Sn**	**15 49 14.2**	**+0.5**
	baz=303						
NSY	**Sanyi**	**0.96**	**282**	⇑P	**Pg**	**15 49 01.3**	**+0.4**
	baz=282						
NSY				*e*S	**Sn**	**15 49 14.9**	**+0.8**
	baz=282						
TWF1	**Yuli**	**0.97**	**208**	*e*P	**Pb**	**15 48 59.3**	**-1.3**
	baz=219						
TCU	**Taichung**	**1.02**	**266**	*e*P	**Pg**	**15 49 02.8**	**+0.7**
	baz=267						
TCU				*e*S	**Sg**	**15 49 16.4**	**+0.9**
	baz=267						
YUS	**Yu-Shan**	**1.06**	**227**	*e*P	**Pb**	**15 49 01.9**	**-0.4**
	baz=226						
TWY	**Chenhua**	**1.07**	**351**	*e*P	**Pg**	**15 49 03.8**	**+0.9**
	baz=336						
WNT	**Mingjian**	**1.07**	**252**	*e*P	**Pg**	**15 49 02.6**	**-0.3**
	baz=248						
WNT				*e*S	**Sg**	**15 49 18.2**	**+1.2**
	baz=248						
JYNG	**Yonagunijimaku**	**1.08**	**77**	P	**Pg**	**15 49 02.7**	**-0.4**
JYNG				S	**Sg**	**15 49 18.0**	**+0.8**
YOJ	**Yonaguni jima**	**1.14**	**77**	P	**Pg**	**15 49 03.6**	**-0.6**
YOJ				S	**Sg**	**15 49 19.7**	**+0.6**
YOJ	**Yonaguni jima**	**1.14**	**77**	⇓*i*P	**Pg**	**15 49 03.7**	**-0.6**
	baz=65						
YOJ				*e*S	**Sg**	**15 49 20.1**	**+1.0**
	baz=65						
ALS	**Alishan**	**1.15**	**232**	⇑*i*P	**Pb**	**15 49 03.7**	**0.0**
	baz=219						
CHKT	**Chengkung**	**1.18**	**200**	*e*P	**Pg**	**15 49 06.5**	**+1.4**
	baz=186						
CHN5	**Tsauling**	**1.19**	**239**	*e*P	**Pb**	**15 49 04.5**	**+0.2**
	baz=241						
CHN5				*e*S	**Sg**	**15 49 22.2**	**+1.3**
	baz=241						
WGK	**Gukeng**	**1.25**	**245**	*e*P	**Pb**	**15 49 04.8**	**-0.4**
	baz=245						
ELDTW	**Lidau**	**1.25**	**215**	*e*P	**Pn**	**15 49 03.9**	**-0.9**
	baz=215						
CHN2	**Minshiung**	**1.39**	**241**	*e*P	**Pg**	**15 49 08.9**	**-0.1**
	baz=227						
CHN4	**Tsaushan**	**1.40**	**232**	⇑*i*P	**Pb**	**15 49 08.2**	**+0.4**
	baz=235						
CHN4				S	**Sg**	**15 49 28.2**	**+0.8**
	baz=235						
STYT	**Tauyuan**	**1.42**	**222**	*e*P	**Pn**	**15 49 06.7**	**-0.4**
	baz=223						
PCYT	**Pengchaiyu**	**1.43**	**10**	*e*P	**Pb**	**15 49 08.3**	**0.0**
	baz=8.0						
CHY	**Chiayi**	**1.44**	**241**	*e*P	**Pb**	**15 49 08.3**	**-0.3**
	baz=242						
CHY				*e*S	**Sg**	**15 49 29.6**	**+0.7**
	baz=242						
WTP	**Ta-pu**	**1.45**	**228**	⇑*i*P	**Pb**	**15 49 08.7**	**0.0**
	baz=231						
WTP				S	**Sg**	**15 49 29.2**	**0.0**
	baz=231						
CHN1	**Nanshi**	**1.55**	**229**	*e*P	**Pb**	**15 49 09.8**	**-0.6**
	baz=232						
CHN1				*e*S	**Sg**	**15 49 33.0**	**+0.7**
	baz=232						
SGST	**Jiashian**	**1.58**	**225**	*e*P	**Pb**	**15 49 10.3**	**-0.7**
	baz=226						
SGST				*e*S	**Sg**	**15 49 33.7**	**+0.3**
	baz=226						
IRIF	**Iriomote-Funau**	**1.77**	**86**	P	**Pn**	**15 49 12.1**	**+0.2**
IRIF				S	**Sb**	**15 49 35.5**	**-0.5**
ECL	**Taimali**	**1.79**	**206**	*e*P	**Pn**	**15 49 12.7**	**+0.5**
	baz=193						
SSD	**Sandimen**	**1.81**	**216**	*e*P	**Pb**	**15 49 14.2**	**-0.7**
	baz=232						
SSD				*e*S	**Sb**	**15 49 38.3**	**+1.1**
	baz=232						
HATJ	**Hateruma jima**	**1.84**	**95**	S	**Sb**	**15 49 38.4**	**+0.2**
TWM1	**Shoushan**	**1.87**	**222**	*e*P	**Pb**	**15 49 14.7**	**-1.3**
	baz=224						
EAST	**Anshuo**	**2.02**	**206**	*e*P	**Pb**	**15 49 18.1**	**-0.4**
	baz=195						
JKRS	**Kuro-shima**	**2.02**	**89**	P	**Pn**	**15 49 16.3**	**+0.9**
JKRS				S	**Sb**	**15 49 42.5**	**-0.8**
SCZT	**Fangliau**	**2.13**	**211**	*e*P	**Pb**	**15 49 18.5**	**-1.8**
	baz=197						
JIJ	**Ishigaki jima**	**2.15**	**86**	P	**Pn**	**15 49 17.4**	**+0.3**
JIJ				S	**Sn**	**15 49 44.6**	**+1.2**
PNG	**Penghu**	**2.15**	**253**	*e*P	**Pn**	**15 49 17.4**	**+0.3**
	baz=255						
WDGT	**Dungji**	**2.17**	**244**	*e*P	**Pn**	**15 49 16.8**	**-0.7**
	baz=247						
LAY	**Lan-yu**	**2.18**	**186**	*e*P	**Pn**	**15 49 16.3**	**-1.3**
	baz=188						
JISG	**Ishigakijimahi**	**2.32**	**80**	P	**Pn**	**15 49 19.9**	**+0.3**
JISG				S	**Sn**	**15 49 47.3**	**-0.4**
TWK1	**Hengchun**	**2.44**	**202**	*e*P	**Pn**	**15 49 21.2**	**0.0**
	baz=191						
JTJ	**Tarama**	**2.68**	**80**	P	**Pn**	**15 49 25.9**	**+1.4**
JTJ				S	**Sb**	**15 49 59.4**	**-2.9**

NIED ***07*** *15:52:00,24.˚20N×121.˚70E,h8km,Mw4.5 Best double couple: M6.01000×10¹⁵ NP1:φ₁=253.00000°,δ19.00000°, λ104.00000°. NP2:φ₂=58.00000°,δ71.00000°,λ85.00000°.*

IDC ***07*** *15:52:16.6±1.0,24.˚20N×122.˚02E,h0km,mb3.7/9, mb1 3.9/9,mb1mx3.6/51,mbtmp3.8/9,MS3.3/7,Ms1 3.4/7, ms1mx3.1/46,Error ellipse: s-maj=35.4km s-min=19.1km az=63.0*

JMA ***07*** *15:52:19.0±0.1,24.˚19N×121.˚71E,h18km±1km,M3.7*

TAP ***07*** *15:52:19.5,24.˚23N×121.˚76E,h16km,ML4.3,B*

ISCJB ***07*** *15:52:19.2±0.3,24.˚21N±0.˚01×121.˚83E±0.˚01,h6km±2km, mb3.7/10,MS3.2/4,Error ellipse: s-maj=2.8km s-min=1.9km az=144.8*

BJI ***07*** *15:52:19.8,24.˚24N×121.˚86E,h25km,mb3.9/9,mB4.2/3, ML3.6/4,Ms4.0/6,Ms7 3.8/5*

ISC 07 15:52:19.3±0.8,**24.˚22N**±0.˚02×**121.˚83E**±0.˚02,**h14**km±5km, **n101**,σ1°**13**/138,**mb3.8**/10,**MS3.1**/4,**16C-8D,Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.12**	**320**	P	**Pg**	**15 52 23.4**	**+0.5**
	baz=353						
EHP				*e*S	**Sg**	**15 52 25.9**	**+0.7**
	baz=353						
ENA	**Nanau**	**0.23**	**339**	⇑*i*P	**Pg**	**15 52 24.3**	**0.0**
	baz=357						
TWD	**Chiawan**	**0.25**	**238**	⇑*i*P	**Pg**	**15 52 24.4**	**-0.3**
	baz=231						
TWD				*i* S	**Sg**	**15 52 28.2**	**-0.2**
	baz=231						
HWA	**Hwalien**	**0.31**	**221**	*e*P	**Pg**	**15 52 26.3**	**+0.5**
	baz=218						
TWC	**Suao**	**0.39**	**3**	⇑*i*P	**Pb**	**15 52 27.7**	**-0.3**
	baz=8.0						
TWC				*i* S	**Sg**	**15 52 32.8**	**+0.2**
	baz=8.0						
ESF	**Shoufeng Towns**	**0.45**	**221**	*e*P	**Pg**	**15 52 28.9**	**+0.6**
	baz=224						
NNS	**Nan Shan**	**0.47**	**298**	⇑*i*P	**Pg**	**15 52 28.1**	**-0.6**
	baz=301						
NNS				S	**Sg**	**15 52 33.5**	**-1.6**
	baz=301						
ENTT	**Nioudou**	**0.49**	**331**	⇑*i*P	**Pg**	**15 52 28.8**	**-0.1**
	baz=336						
WHF	**Hehuan Shan**	**0.52**	**262**	⇑*i*P	**Pg**	**15 52 29.1**	**-0.6**
	baz=260						
TWE	**Neicheng**	**0.52**	**344**	⇑P	**Pg**	**15 52 29.8**	**+0.1**
	baz=349						
TWE				*e*S	**Sg**	**15 52 36.7**	**0.0**
	baz=349						
ESL	**Shilin**	**0.54**	**222**	⇑*i*P	**Pg**	**15 52 29.5**	**-0.4**
	baz=222						
ILA	**Ilan**	**0.55**	**352**	⇑P	**Pb**	**15 52 30.6**	**-0.2**
	baz=352						
ILA				*e*S	**Sb**	**15 52 38.6**	**+0.1**
	baz=352						
TEGC	**Jichi Village**	**0.57**	**208**	*e*P	**Pb**	**15 52 32.1**	**+1.0**
	baz=196						
TEGC				*e*S	**Sn**	**15 52 42.5**	**+0.4**
	baz=196						
TWT	**Tachien**	**0.60**	**274**	⇑*i*P	**Pg**	**15 52 30.8**	**-0.3**
	baz=273						
TWT				*i* S	**Sg**	**15 52 38.0**	**-1.1**
	baz=273						
NSK	**Sanguang**	**0.63**	**317**	⇑*i*P	**Pb**	**15 52 31.2**	**-0.9**
	baz=320						
NSK				S	**Sg**	**15 52 38.8**	**-1.2**
	baz=320						
EGS		**0.63**	**9**	P	**Pg**	**15 52 32.4**	**+0.6**
	baz=21						
TWA	**Mucha**	**0.79**	**344**	*e*P	**Pg**	**15 52 35.1**	**+0.4**
	baz=347						
EHY	**Hungye**	**0.84**	**213**	⇑P	**Pb**	**15 52 34.4**	**-1.3**
	baz=223						
NWF	**Wu-fen Shan**	**0.85**	**357**	*e*P	**Pn**	**15 52 36.4**	**-0.6**
	baz=359						
NSTT	**Nanjuang**	**0.86**	**299**	P	**Pb**	**15 52 35.7**	**-0.4**
	baz=300						
NSTT				*e*S	**Sb**	**15 52 46.0**	**-1.4**
	baz=300						
TAP1	**Taipei**	**0.87**	**341**	*e*P	**Pn**	**15 52 36.5**	**-0.5**
	baz=342						
TAP1				*e*S	**Sb**	**15 52 47.4**	**-0.2**
	baz=342						
TAP	**Taipei**	**0.87**	**340**	*e*P	**Pg**	**15 52 36.6**	**+0.4**
	baz=334						
SMLT	**Sun Moon Lake**	**0.91**	**249**	⇑*i*P	**Pb**	**15 52 36.6**	**-0.4**
	baz=241						
SMLT				S	**Sb**	**15 52 48.3**	**-0.7**
	baz=241						
TYC	**Yuchr**	**0.94**	**251**	⇓P	**Pb**	**15 52 36.7**	**-0.7**
	baz=244						
TYC				S	**Sb**	**15 52 48.5**	**-1.2**
	baz=244						
NCU	**National Centr**	**0.95**	**322**	*e*P	**Pg**	**15 52 38.4**	**+0.7**
	baz=324						
NCU				*e*S	**Sn**	**15 52 52.2**	**+0.6**
	baz=324						
TWS1	**Kuangyinshan**	**0.96**	**337**	*e*P	**Pg**	**15 52 38.4**	**+0.5**
	baz=345						
TWS1				*e*S	**Sn**	**15 52 52.1**	**+0.3**
	baz=345						
TWQ1	**Liyutan**	**0.97**	**278**	⇑P	**Pb**	**15 52 38.0**	**+0.1**
	baz=279						
TWQ1				*e*S	**Sn**	**15 52 53.5**	**+1.4**
	baz=279						
HSN	**Hsinchu**	**0.98**	**307**	*e*P	**Pb**	**15 52 38.3**	**+0.3**
	baz=303						
HSN				*e*S	**Sn**	**15 52 52.9**	**+0.7**
	baz=303						
TWF1	**Yuli**	**0.99**	**210**	*e*P	**Pb**	**15 52 36.2**	**-2.0**
	baz=219						
NSY	**Sanyi**	**0.99**	**282**	P	**Pb**	**15 52 38.7**	**+0.3**
	baz=283						
NSY				*e*S	**Sn**	**15 52 53.5**	**+0.8**
	baz=283						
JYNG	**Yonagunijimaku**	**1.04**	**77**	P	**Pg**	**15 52 40.3**	**+0.8**
JYNG				S	**Sn**	**15 52 57.8**	**+3.9**
TCU	**Taichung**	**1.05**	**267**	⇓P	**Pg**	**15 52 40.2**	**+0.5**
	baz=267						
TCU				*e*S	**Sb**	**15 52 53.2**	**+0.2**
	baz=267						
TWY	**Chenhua**	**1.08**	**349**	*e*P	**Pg**	**15 52 40.2**	**+0.1**
	baz=350						
YUS	**Yu-Shan**	**1.08**	**228**	P	**Pb**	**15 52 39.5**	**-0.6**
	baz=228						
YUS				S	**Sb**	**15 52 54.5**	**+0.3**
	baz=228						
WNT	**Mingjian**	**1.10**	**252**	*e*P	**Pn**	**15 52 40.3**	**+0.1**
	baz=249						
WNT				*i* S	**Sn**	**15 52 55.8**	**+0.6**
	baz=249						
YOJ	**Yonaguni jima**	**1.11**	**77**	P	**Pg**	**15 52 41.3**	**+0.6**
YOJ				S	**

WTCT	**Ta-ch'eng**	**1.46**	**256**	*e*P		**Pn**	**15 52 45.9**	**+0.7**
	baz=258							
WTCT				S		**Sb**	**15 53 06.1**	**+1.5**
	baz=258							
CHY	**Chiayi**	**1.47**	**241**	P		**Pb**	**15 52 46.5**	**+0.1**
	baz=243							
CHY				*e*S		**Sb**	**15 53 06.3**	**+1.3**
	baz=243							
WTP	**Ta-pu**	**1.47**	**229**	*e*S		**Sb**	**15 53 06.1**	**+1.0**
	baz=231							
TWK	**Hsinying**	**1.55**	**233**	*e*P		**Pb**	**15 52 47.6**	**-0.2**
	baz=235							
TWK				*e*S		**Sg**	**15 53 10.2**	**+1.0**
	baz=235							
TWG	**Pinlang**	**1.55**	**207**	*e*P		**Pn**	**15 52 44.9**	**-1.6**
	baz=192							
CHN1	**Nanshi**	**1.57**	**230**	⇑P		**Pb**	**15 52 47.9**	**-0.3**
	baz=232							
CHN1				*e*S		**Sg**	**15 53 10.4**	**+0.4**
	baz=232							
WSF	**Szhu**	**1.58**	**249**	⇑*i*P		**Pn**	**15 52 47.8**	**+0.9**
	baz=261							
WSF				S		**Sb**	**15 53 09.4**	**+1.4**
	baz=261							
TTN	**Taitung**	**1.58**	**203**	*e*P		**Pn**	**15 52 46.0**	**-1.0**
	baz=203							
SGST	**Jiashian**	**1.61**	**226**	⇓P		**Pn**	**15 52 48.0**	**+0.8**
	baz=227							
SGST				*e*S		**Sb**	**15 53 09.7**	**+0.8**
	baz=227							
CHN8	**Yiju**	**1.72**	**240**	*e*P		**Pb**	**15 52 50.0**	**-0.6**
	baz=241							
IRIF	**Iriomote-Funau**	**1.74**	**86**	P		**Pb**	**15 52 50.2**	**-0.8**
IRIF				*e*S		**Sg**	**15 53 14.2**	**-1.1**
CHN3	**Shinhua**	**1.76**	**230**	*e*P		**Pn**	**15 52 50.3**	**+1.0**
	baz=234							
CHN3				*e*S		**Sg**	**15 53 16.4**	**+1.5**
	baz=234							
ECL	**Taimali**	**1.80**	**207**	*e*P		**Pn**	**15 52 48.7**	**-1.2**
	baz=194							
HATJ	**Hateruma jima**	**1.81**	**95**	P		**Pb**	**15 52 51.5**	**-0.8**
HATJ				S		**Sb**	**15 53 15.4**	**+0.6**
SCLT	**Jiali**	**1.82**	**236**	*e*P		**Pb**	**15 52 52.2**	**-0.3**
	baz=239							
SCLT				*e*S		**Sb**	**15 53 16.6**	**+1.6**
	baz=239							
SSD	**Sandimen**	**1.83**	**217**	*e*P		**Pn**	**15 52 51.0**	**+0.7**
	baz=231							
SSD				S		**Sb**	**15 53 16.1**	**+0.8**
	baz=231							
TWM1	**Shoushan**	**1.89**	**223**	*e*P		**Pb**	**15 52 53.8**	**+0.2**
	baz=223							
JKRS	**Kuro-shima**	**1.99**	**89**	P		**Pb**	**15 52 53.9**	**-1.4**
JKRS				S		**Sg**	**15 53 20.8**	**-2.6**
EAST	**Anshuo**	**2.04**	**206**	*e*P		**Pn**	**15 52 52.0**	**-1.2**
	baz=195							
TAW	**Tawu**	**2.04**	**205**	*e*P		**Pn**	**15 52 54.1**	**+1.0**
	baz=194							
JIJ	**Ishigaki jima**	**2.12**	**86**	P		**Pn**	**15 52 55.1**	**+0.8**
JIJ				*e*S		**Sb**	**15 53 21.7**	**-1.9**
SCZT	**Fangliau**	**2.15**	**211**	*e*P		**Pn**	**15 52 56.3**	**+1.6**
	baz=196							
PNG	**Penghu**	**2.18**	**253**	*e*P		**Pn**	**15 52 54.6**	**-0.5**
	baz=258							
PNG				*e*S		**Sn**	**15 53 22.3**	**+0.4**
	baz=258							
LAY	**Lan-yu**	**2.18**	**187**	*e*P		**Pn**	**15 52 53.2**	**-2.0**
	baz=187							
WDGT	**Dungji**	**2.20**	**245**	*e*P		**Pn**	**15 52 55.1**	**-0.4**
	baz=250							
WDGT				*e*S		**Sn**	**15 53 23.1**	**+0.6**
	baz=250							
JISG	**Ishigakijimahi**	**2.29**	**80**	P		**Pn**	**15 52 57.3**	**+0.6**
JISG				*e*S		**Sb**	**15 53 25.7**	**-3.0**
TWP	**Hsiaoliuchiu**	**2.30**	**216**	*e*P		**Pn**	**15 52 58.8**	**+2.0**
	baz=236							
HEN	**Hengchun**	**2.42**	**205**	*e*P		**Pb**	**15 53 00.9**	**-1.7**
	baz=195							
TWK1	**Hengchun**	**2.45**	**203**	*e*P		**Pn**	**15 53 00.5**	**+1.6**
	baz=191							
TSEB	**Hengchuen, Pin**	**2.46**	**201**	*e*P		**Pb**	**15 53 01.6**	**-1.7**
	baz=190							
JTJ	**Tarama**	**2.65**	**80**	P		**Pn**	**15 53 03.1**	**+1.5**
JTJ				S		**Sb**	**15 53 36.6**	**-2.4**
QZH	**Quanzhou**	**3.03**	**284**	⇓*i*Pn		Pn	15 52 57.9	-9.0
QZH				Sn		Sn	15 53 31.7	-11
QZH				smax		smax		
	comp=N,520nm,0.7s							
QZH				smax		smax		
	comp=E,560nm,1.1s							
QZH				LR		LR		
	comp=N,1μm,11.1s							
QZH				LR		LR		
	comp=E,4μm,13.8s							
QZH				LR		LR		
	comp=Z,3μm,13.2s							
KNM	**Kinmen**	**3.10**	**274**	*e*P		**Pn**	**15 53 08.9**	**+1.1**
	baz=274							
JIRB	**Irabujima**	**3.11**	**78**	P		**Pn**	**15 53 09.7**	**+1.8**
JIRB				S		**Sn**	**15 53 47.2**	**+2.4**
JIKM	**Ikemajima**	**3.19**	**77**	P		**Pn**	**15 53 11.2**	**+2.1**
JNU	**Nakatsue**	**11.90**	**40**	LR		LR	16 00 40.9	
	comp=Z,177nm,18.1s,baz=243,slow=43							
KSRS	**Korea Array**	**14.19**	**20**	Pn		**P**	**15 55 45.1**	**-2.2**
	comp=Z,0.1nm,0.3s,baz=200,slow=12,SNR=9.5							
KSRS				LR		LR	16 02 05.0	
	comp=Z,77nm,21.1s,baz=140,slow=42							
MJAR	**Matsushiro Arr**	**18.69**	**45**	LR		LR	16 04 12.4	
	comp=Z,136nm,19.4s,baz=195,slow=38							
CMAR	**Chiang Mai Arr**	**22.06**	**259**	P		**P**	**15 57 14.7**	**+0.8**
	comp=Z,1.0nm,0.9s,baz=52,slow=8.9,SNR=8.1							
CMAR				LR		LR	16 05 54.9	
	comp=Z,66nm,18.7s,baz=45,slow=37							
GTA	**Gaotai**	**23.98**	**314**	*e*P		**P**	**15 57 33.2**	**-0.4**
GTA				pP		sP	15 57 46.2	+6.5
GTA				pmax		pmax		
	comp=Z,3.0nm,1.0s							
GUMO	**Guam**	**24.19**	**112**	LR		LR	16 05 46.2	
	comp=Z,43nm,20.4s,baz=345,slow=34							
KLR	**Kul'dur**	**26.16**	**15**	LR		LR	16 07 41.8	
	comp=Z,45nm,18.4s,baz=189,slow=35							
SONM	**Songino Array**	**26.57**	**336**	P		**P**	**15 57 57.1**	**+0.1**
	comp=Z,2.5nm,1.0s,baz=150,slow=9.1,SNR=9.4							
SONM				LR		LR	16 09 37.3	
	comp=Z,250nm,18.1s,baz=101,slow=39							
MKAR	**Makanchi Array**	**38.73**	**316**	P		**P**	**15 59 44.2**	**+1.3**
	comp=Z,1.6nm,0.8s,baz=104,slow=10,SNR=9.3							
ZALV	**Zalesovo Beam**	**40.54**	**327**	P		**P**	**15 59 57.7**	**-0.3**
	comp=Z,0.8nm,0.5s,baz=116,slow=9.8,SNR=4.3							
H11N1	**WAKE ISLAND Hy**	**41.90**	**87**	T		T	16 45 28.5	
	baz=285							
H11N2	**WAKE ISLAND Hy**	**41.90**	**87**	T		T	16 45 30.2	
	baz=285							
H11N3	**WAKE ISLAND Hy**	**41.91**	**87**	T		T	16 45 26.5	
	baz=285							
H11S3	**WAKE ISLAND Hy**	**42.03**	**89**	T		T	16 45 23.5	
	baz=286							
H11S1	**WAKE ISLAND Hy**	**42.04**	**89**	T		T	16 45 30.2	
	baz=286							
H11S2	**WAKE ISLAND Hy**	**42.05**	**89**	T		T	16 45 29.8	
	baz=286							
WRA	**Warramunga Arr**	**45.55**	**163**	P		**P**	**16 00 37.1**	**-1.7**
	comp=Z,0.4nm,0.5s,baz=344,slow=8.8,SNR=5.8							
ASAR	**Alice Springs**	**49.02**	**165**	P		**P**	**16 01 05.3**	**-0.5**
	comp=Z,0.2nm,0.4s,baz=343,slow=6.9,SNR=7.8							
GEYT	**Ailbeck**	**55.29**	**300**	P		**P**	**16 01 53.9**	**+1.4**
	comp=Z,0.6nm,0.4s,baz=46,slow=6.2,SNR=4.3							
BRTR	**Keskin Array B**	**73.63**	**307**	P		**P**	**16 03 52.4**	**-0.2**
	comp=Z,1.6nm,0.9s,baz=111,slow=7.0,SNR=7.7							
YKA	**Yellowknife Ar**	**82.71**	**23**	P		**P**	**16 04 41.6**	**-0.7**
	comp=Z,1.1nm,0.9s,baz=306,slow=4.8,SNR=6.3							

*ISCJB **07** 15:54:53.9±0.6, 37.˙56S±0.˙06×176.˙54E±0.˙10, h292km±6km, mb4.5/2, Error ellipse: s-maj=14.0km s-min=6.6km az=30.7*

*NEIC **07** 15:54:54.2±0.4, 37.˙52S×176.˙55E, h291km±4km, MG4.1(WEL), Error ellipse: s-maj=7.3km s-min=4.4km az=118.0*

*WEL **07** 15:54:59.1±0.5, 37.˙39S×176.˙49E, h229km±3km, ML4.1/49, Error ellipse: s-maj=4.2km s-min=4.2km az=0.0*

ISC 07 15:54:53.1±1.1, 37.˙46S±0.˙07×176.˙56E±0.˙08, h278km±8km, n139, σ1^{s}75/149, 17C, North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**0.91**	**152**	*e*Pn	**Pn**	**15 55 31.6**	**+1.0**
URZ				*e*S	**S**	**15 55 57.4**	**-2.9**
URZ				*e*S	S	15 55 58.6	-1.7
URZ	**Urewera**	**0.91**	**152**	⇑PN	**Pn**	**15 55 31.6**	**+1.0**
URZ				SN	**S**	**15 55 57.2**	**-3.1**
URZ				AML	AML	15 55 58.9	
HAZ	**Te Kaha**	**1.01**	**107**	PN	**Pn**	**15 55 32.1**	**+1.0**
HAZ				SN	**S**	**15 55 58.0**	**-3.2**
HAZ				AML	AML	15 56 00.0	
MUGZ	**Murupara**	**1.02**	**171**	PN	**Pn**	**15 55 32.8**	**+1.6**
PRRZ	**Plateau Road**	**1.04**	**187**	Pn	**Pn**	**15 55 33.2**	**+1.9**
PRRZ	**Plateau Road**	**1.04**	**187**	PN	**Pn**	**15 55 33.2**	**+1.9**
ALRZ	**Allen Road**	**1.11**	**189**	Pn	**Pn**	**15 55 33.7**	**+2.0**
ALRZ	**Allen Road**	**1.11**	**189**	PN	**Pn**	**15 55 33.7**	**+2.0**
MWZ	**Matawai**	**1.16**	**139**	*e*Pn	**Pn**	**15 55 33.4**	**+1.4**
MWZ				*e*S	**S**	**15 56 03.6**	**+0.9**
MWZ	**Matawai**	**1.16**	**139**	⇑PN	**Pn**	**15 55 33.3**	**+1.4**
MWZ				AML	AML	15 55 34.2	
MWZ				AML	AML	15 56 02.7	
MWZ				AML	AML	15 56 03.6	
RTZ	**Ruatahuna**	**1.20**	**164**	PN	**Pn**	**15 55 33.8**	**+1.6**
TWGZ	**Tauwhareparae**	**1.33**	**123**	Pn	**Pn**	**15 55 35.2**	**+2.2**
TWGZ	**Tauwhareparae**	**1.33**	**123**	⇑PN	**Pn**	**15 55 35.2**	**+2.2**
TWGZ				AML	AML	15 56 06.7	
TWGZ				AML	AML	15 56 07.6	
MRHZ	**Matea Rd**	**1.37**	**185**	PN	**Pn**	**15 55 34.9**	**+1.7**
MRHZ				AML	AML	15 56 05.3	
MRHZ				AML	AML	15 56 06.7	
MXZ	**Matakaoa Point**	**1.39**	**95**	*e*Pn	**Pn**	**15 55 35.0**	**+1.7**
MXZ				*e*S	**S**	**15 56 00.8**	**-4.4**
MXZ	**Matakaoa Point**	**1.39**	**95**	⇑PN	**Pn**	**15 55 35.2**	**+1.8**
MXZ				AML	AML	15 56 05.1	
MXZ				AML	AML	15 56 06.3	
TKGZ	**Te Karaka**	**1.41**	**134**	Pn	**Pn**	**15 55 35.5**	**+2.1**
TKGZ	**Te Karaka**	**1.41**	**134**	⇑PN	**Pn**	**15 55 35.5**	**+2.1**
TKGZ				SN	**S**	**15 56 03.6**	**-1.8**
TKGZ				AML	AML	15 56 05.5	
SNGZ	**Shannon Statio**	**1.45**	**155**	Pn	**Pn**	**15 55 35.9**	**+2.2**
SNGZ	**Shannon Statio**	**1.45**	**155**	⇑PN	**Pn**	**15 55 35.9**	**+2.2**
SNGZ				AML	AML	15 56 04.4	
SNGZ				AML	AML	15 56 05.1	
PUZ	**Puketiti**	**1.47**	**115**	Pn	**Pn**	**15 55 35.8**	**+1.9**
PUZ	**Puketiti**	**1.47**	**115**	⇑PN	**Pn**	**15 55 35.8**	**+1.9**
PUZ				AML	AML	15 56 05.9	
PUZ				AML	AML	15 56 06.2	
WMGZ	**Waiomatatini S**	**1.51**	**104**	Pn	**Pn**	**15 55 36.4**	**+2.2**
WMGZ	**Waiomatatini S**	**1.51**	**104**	⇑PN	**Pn**	**15 55 36.4**	**+2.2**
WMGZ				AML	AML	15 55 36.8	
WMGZ				AML	AML	15 55 36.9	
RIGZ	**Rimuhau**	**1.56**	**143**	⇑PN	**Pn**	**15 55 36.9**	**+2.4**
RIGZ				AML	AML	15 56 06.8	
RIGZ				AML	AML	15 56 09.2	
NMHZ	**Naumai**	**1.64**	**173**	Pn	**Pn**	**15 55 37.7**	**+2.6**
NMHZ	**Naumai**	**1.64**	**173**	⇑PN	**Pn**	**15 55 37.7**	**+2.6**
NMHZ				AML	AML	15 56 09.9	
NMHZ				AML	AML	15 56 11.4	
CNGZ	**Carnagh Statio**	**1.65**	**129**	Pn	**Pn**	**15 55 37.8**	**+2.7**
CNGZ	**Carnagh Statio**	**1.65**	**129**	⇑PN	**Pn**	**15 55 37.8**	**+2.7**
CNGZ				AML	AML	15 55 38.5	
CNGZ				AML	AML	15 56 09.7	
WHHZ	**Waihua**	**1.69**	**162**	PN	**Pn**	**15 55 37.7**	**+2.3**
WHHZ				AML	AML	15 56 10.9	
WHHZ				AML	AML	15 56 11.4	
BKZ	**Black Stump Fm**	**1.70**	**182**	*e*Pn	**Pn**	**15 55 37.2**	**+1.6**
BKZ				*e*S	**S**	**15 56 07.0**	**-2.3**
BKZ				*e*S	S	15 56 10.0	+0.8
BKZ	**Black Stump Fm**	**1.70**	**182**	PN	**Pn**	**15 55 37.2**	**+1.6**
BKZ				AML	AML	15 56 08.5	
BKZ				AML	AML	15 56 10.0	
HIZ	**Hauiti**	**1.71**	**232**	*e*Pn	**Pn**	**15 55 38.3**	**+2.7**
KNZ	**Kokohu**	**1.78**	**151**	*e*Pn	**Pn**	**15 55 38.1**	**+2.0**
KNZ	**Kokohu**	**1.78**	**151**	PN	**Pn**	**15 55 38.1**	**+2.0**
PRGZ	**Paritu Road**	**1.79**	**145**	Pn	**Pn**	**15 55 38.4**	**+2.2**
PRGZ	**Paritu Road**	**1.79**	**145**	PN	**Pn**	**15 55 38.4**	**+2.2**
PRGZ				AML	AML	15 56 12.6	
PRGZ				AML	AML	15 56 13.0	
ARHZ	**Aropaoanui**	**1.83**	**169**	Pn	**Pn**	**15 55 38.8**	**+2.4**
ARHZ	**Aropaoanui**	**1.83**	**169**	⇑PN	**Pn**	**15 55 38.8**	**+2.4**
ARHZ				AML	AML	15 56 10.8	
ARHZ				AML	AML	15 56 11.3	
TUVZ	**Tukino**	**1.94**	**201**	*e*Pn	**Pn**	**15 55 39.6**	**+2.0**
TUVZ	**Tukino**	**1.94**	**201**	PN	**Pn**	**15 55 39.6**	**+2.0**
FWVZ	**Far West T-bar**	**1.96**	**204**	Pn	**Pn**	**15 55 39.6**	**+1.8**
KWHZ	**Kaweka Forest**	**1.96**	**183**	⇑PN	**Pn**	**15 55 39.7**	**+2.1**
KWHZ				AML	AML	15 56 14.7	
KWHZ				AML	AML	15 56 14.8	
WHVZ	**Whangaehu Hut**	**1.97**	**203**	Pn	**Pn**	**15 55 39.9**	**+2.0**
WHVZ	**Whangaehu Hut**	**1.97**	**203**	PN	**Pn**	**15 55 39.9**	**+2.0**
MCHZ	**McNeill Hill**	**1.98**	**177**	Pn	**Pn**	**15 55 39.5**	**+1.8**
MCHZ	**McNeill Hill**	**1.98**	**177**	PN	**Pn**	**15 55 39.5**	**+1.8**
MCHZ				AML	AML	15 56 15.3	
MCHZ				AML	AML	15 56 15.5	
MHGZ	**Mahia Peninsul**	**1.99**	**148**	Pn	**Pn**	**15 55 40.1**	**+2.3**
MHGZ	**Mahia Peninsul**	**1.99**	**148**	PN	**Pn**	**15 55 40.1**	**+2.3**
TRVZ	**Turoa**	**2.00**	**203**	PN	**Pn**	**15 55 40.2**	**+2.1**
WNVZ	**Wahianoa**	**2.01**	**202**	*e*Pn	**Pn**	**15 55 40.0**	**+1.9**
WNVZ	**Wahianoa**	**2.01**	**202**	⇑PN	**Pn**	**15 55 40.0**	**+1.9**
MOVZ	**Moawhango**	**2.04**	**198**	*e*Pn	**Pn**	**15 55 39.8**	**+1.5**
MOVZ	**Moawhango**	**2.04**	**198**	PN	**Pn**	**15 55 39.8**	**+1.5**
PKVZ	**Pokaka**	**2.06**	**207**	Pn	**Pn**	**15 55 40.4**	**+1.9**
PKVZ	**Pokaka**	**2.06**	**207**	PN	**Pn**	**15 55 40.4**	**+1.9**
BHHZ	**Black Hill Sta**	**2.06**	**191**	Pn	**Pn**	**15 55 40.3**	**+1.8**
BHHZ	**Black Hill Sta**	**2.06**	**191**	⇑PN	**Pn**	**15 55 40.3**	**+1.8**
BHHZ				AML	AML	15 56 14.2	
BHHZ				AML	AML	15 56 14.4	
KRHZ	**Kereru**	**2.18**	**184**	PN	**Pn**	**15 55 41.2**	**+1.7**
KRHZ				AML	AML	15 56 16.5	
KRHZ				AML	AML	15 56 17.0	
CKHZ	**Cape Kidnapper**	**2.23**	**170**	Pn	**Pn**	**15 55 42.0**	**+2.1**
CKHZ	**Cape Kidnapper**	**2.23**	**170**	PN	**Pn**	**15 55 42.0**	**+2.1**
CKHZ				AML	AML	15 56 19.2	
CKHZ				AML	AML	15 56 19.5	
KAHZ	**Kahuranaki**	**2.34**	**174**	Pn	**Pn**	**15 55 43.1**	**+2.2**
KAHZ	**Kahuranaki**	**2.34**	**174**	PN	**Pn**	**15 55 43.1**	**+2.2**
KAHZ				AML	AML	15 56 19.5	
KAHZ				AML	AML	15 56 19.8	
PNHZ	**Pukenui**	**2.46**	**187**	Pn	**Pn**	**15 55 43.6**	**+1.6**
PNHZ	**Pukenui**	**2.46**	**187**	PN	**Pn**	**15 55 43.6**	**+1.6**
PNHZ				AML	AML	15 56 20.8	
PNHZ				AML	AML	15 56 21.1	
PXZ	**Pawanui**	**2.57**	**175**	*e*Pn	**Pn**	**15 55 44.9**	**+1.8**
PXZ				*e*S	**S**	**15 56 24.1**	**+1.4**
PXZ	**Pawanui**	**2.57**	**175**	PN	**Pn**	**15 55 44.8**	**+1.8**
PXZ				AML	AML	15 56 22.4	
PXZ				AML	AML	15 56 24.1	
WPHZ	**Waipukurau**	**2.60**	**182**	Pn	**Pn**	**15 55 45.1**	**+1.8**
WPHZ	**Waipukurau**	**2.60**	**182**	PN	**Pn**	**15 55 45.1**	**+1.8**
WPHZ				AML	AML	15 56 28.1	
WPHZ				AML	AML	15 56 32.2	
WAZ	**Wanganui**	**2.60**	**208**	Pn	**Pn**	**15 55 46.0**	**+2.7**
WAZ	**Wanganui**	**2.60**	**208**	PN	**Pn**	**15 55 46.0**	**+2.7**
TSZ	**Takapari Road**	**2.63**	**190**	Pn	**Pn**	**15 55 45.2**	**+1.5**
TSZ	**Takapari Road**	**2.63**	**190**	⇑PN	**Pn**	**15 55 45.2**	**+1.5**
TSZ				AML	AML	15 56 23.0	
TSZ				AML	AML	15 56 25.3	
PRHZ	**Porangahau**	**2.80**	**179**	Pn	**Pn**	**15 55 47.1**	**+1.9**
PRHZ	**Porangahau**	**2.80**	**179**	PN	**Pn**	**15 55 47.1**	**+1.9**
PRHZ				AML	AML	15 56 26.9	
PRHZ				AML	AML	15 56 28.6	
OHWZ	**Ohakea**	**2.91**	**199**	PN	**Pn**	**15 55 48.6**	**+2.3**
POWZ	**Post Office Ro**	**2.99**	**192**	Pn	**Pn**	**15 55 48.8**	**+1.6**
POWZ	**Post Office Ro**	**2.99**	**192**	PN	**Pn**	**15 55 48.8**	**+1.6**
POWZ				AML	AML	15 56 31.2	
POWZ				AML	AML	15 56 31.6	
ANWZ	**Angora Road**	**2.99**	**181**	PN	**Pn**	**15 55 48.3**	**+1.1**
ANWZ				AML	AML	15 56 30.6	
ANWZ				AML	AML	15 56 32.3	
PRWZ	**Pori Road**	**3.12**	**188**	AML	AML	15 56 33.0	
PRWZ				AML	AML	15 56 34.5	
BFZ	**Birch Farm**	**3.22**	**184**	*e*Pn	**Pn**	**15 55 51.1**	**+1.5**
BFZ				*e*S	S	15 56 25.7	-9.0
BFZ				*e*S	S	15 56 34.3	-0.4
BFZ	**Birch Farm**	**3.22**	**184**	PN	**Pn**	**15 55 51.1**	**+1.5**
BFZ				AML	AML	15 56 34.3	
BFZ				AML	AML	15 56 34.3	
BFZ				AML	AML	15 56 34.5	
BFZ				AML	AML	15 56 34.5	
OUZ	**Omahuta**	**3.28**	**312**	*e*Pn	**Pn**	**15 55 53.3**	**+3.0**
MRZ	**Mangatainoka R**	**3.28**	**193**	⇑PN	**Pn**	**15 55 51.3**	**+1.1**
MRZ				AML	AML	15 56 35.6	
MRZ				AML	AML	15 56 36.2	
CPWZ	**Castlepoint**	**3.45**	**185**	AML	AML	15 56 41.5	
CPWZ				AML	AML	15 56 43.3	
OGWZ	**Otaki Gorge**	**3.52**	**197**	Pn	**Pn**	**15 55 54.0**	**+1.3**
OGWZ	**Otaki Gorge**	**3.52**	**197**	PN	**Pn**	**15 55 54.0**	**+1.3**
OGWZ				AML	AML	15 56 40.8	
OGWZ				AML	AML	15 56 41.2	
HOWZ	**Holdsworth Sta**	**3.52**	**193**	Pn	**Pn**	**15 55 53.8**	**+1.0**
HOWZ	**Holdsworth Sta**	**3.52**	**193**	PN	**Pn**	**15 55 53.8**	**+1.0**
HOWZ				AML	AML	15 56 38.8	
HOWZ				AML	AML	15 56 38.8	
KIW	**Kapiti Island**	**3.63**	**200**	*e*Pn	**Pn**	**15 55 55.0**	**+1.1**
KIW				*e*S	**S**	**15 56 42.0**	**-0.5**
KIW	**Kapiti Island**	**3.63**	**200**	PN	**Pn**	**15 55 55.0**	**+1.1**
KIW				AML	AML	15 56 42.0	
KIW				AML	AML	15 56 42.5	
TMWZ	**Te Maipa**	**3.67**	**188**	Pn	**Pn**	**15 55 56.1**	**+1.6**
TMWZ	**Te Maipa**	**3.67**	**188**	PN	**Pn**	**15 55 56.1**	**+1.6**
TMWZ				AML	AML	15 56 44.2	
TMWZ				AML	AML	15 56 47.8	
MTW	**Mount Morrison**	**3.78**	**192**	PN	**Pn**	**15 55 56.5**	**+0.9**
MTW				AML	AML	15 56 45.4	
MTW				AML	AML	15 56 46.1	
CAW	**Cannon Point**	**3.82**	**197**	*e*Pn	**Pn**	**15 55 57.3**	**+1.2**
CAW				*e*S	**S**	**15 56 45.6**	**-0.8**
CAW	**Cannon Point**	**3.82**	**197**	PN	**Pn**	**15 55 57.3**	**+1.2**
CAW				AML	AML	15 56 45.6	
CAW				AML	AML	15 56 45.9	
DUWZ	**D'Urville Isla**	**3.92**	**211**	*e*Pn	**Pn**	**15 55 57.9**	**+0.8**
DUWZ	**D'Urville Isla**	**3.92**	**211**	PN	**Pn**	**15 55 57.9**	**+0.8**
TRWZ	**Traveller**	**3.99**	**190**	PN	**Pn**	**15 55 59.2**	**+1.2**
TRWZ				AML	AML	15 56 35.7	
TRWZ				AML	AML	15 56 50.8	
WEL	**Wellington**	**4.06**	**199**	Pn	**Pn**	**15 55 59.5**	**+0.8**
WEL	**Wellington**	**4.06**	**199**	PN	**Pn**	**15 55 59.5**	**+0.8**
WEL				AML	AML	15 56 51.4	
WEL				AML	AML	15 56 51.7	
MSWZ	**Moikau Station**	**4.08**	**194**	Pn	**Pn**	**15 55 59.6**	**+0.7**
MSWZ	**Moikau Station**	**4.08**	**194**	PN	**Pn**	**15 55 59.6**	**+0.7**
MSWZ				AML	AML	15 56 50.9	
MSWZ				AML	AML	15 56 51.1	
SNZO	**South Karori**	**4.10**	**200**	*e*Pn	**Pn**	**15 56 00.0**	**+0.8**
TCW	**Tory Channel**	**4.14**	**205**	*e*Pn	**Pn**	**15 56 00.8**	**+1.2**
TCW				*e*S	**S**	**15 56 52.5**	**-0.5**
TCW	**Tory Channel**	**4.14**	**205**	PN	**Pn**	**15 56 00.8**	**+1.2**
TCW				AML	AML	15 56 52.4	
TCW				AML	AML	15 56 52.5	
BHW	**Baring Head**	**4.15**	**198**	*e*Pn	**Pn**	**15 56 00.8**	**+1.0**
BHW				*e*S	**S**	**15 56 50.5**	**-2.6**
BHW	**Baring Head**	**4.15**	**198**	PN	**Pn**	**15 56 00.8**	**+1.0**
BHW				AML	AML	15 56 50.5	
PLWZ	**Palliser**	**4.22**	**193**	Pn	**Pn**	**15 56 01.6**	**+0.9**
PLWZ	**Palliser**	**4.22**	**193**	PN	**Pn**	**15 56 01.6**	**+0.9**
PLWZ				AML	AML	15 56 54.5	
PLWZ				AML	AML	15 56 55.1	
TUWZ	**Tuamarina**	**4.45**	**206**	*e*Pn	**Pn**	**15 56 04.1**	**+0.9**
TUWZ				*e*S	**S**	**15 56 58.7**	**-0.6**
TUWZ	**Tuamarina**	**4.45**	**206**	PN	**Pn**	**15 56 04.1**	**+0.9**
TUWZ				AML	AML	15 56 58.6	
TUWZ				AML	AML	15 56 58.7	
NNZ	**Nelson**	**4.49**	**212**	Pn	**Pn**	**15 56 04.3**	**+0.6**
NNZ	**Nelson**	**4.49**	**212**	PN	**Pn**	**15 56 04.3**	**+0.6**
QRZ	**Quartz Range**	**4.59**	**222**	*e*Pn	**Pn**	**15 56 05.2**	**+0.3**
QRZ	**Quartz Range**	**4.59**	**222**	PN	**Pn**	**15 56 05.2**	**+0.3**
BSWZ	**Blackbird Sta**	**4.72**	**205**	Pn	**Pn**	**15 56 07.8**	**+1.4**
BSWZ	**Blackbird Sta**	**4.72**	**205**	PN	**Pn**	**15 56 07.8**	**+1.4**
BSWZ				AML	AML	15 56 47.4	
THZ	**Tophouse**	**5.14**	**212**	*e*Pn	**Pn**	**15 56 11.5**	**+0.1**
THZ	**Tophouse**	**5.14**	**212**	PN	**Pn**	**15 56 11.7**	**+0.3**
KHZ	**Kahutara**	**5.46**	**204**	*e*Pn	**Pn**	**15 56 16.9**	**+1.6**
KHZ	**Kahutara**	**5.46**	**204**	PN	**Pn**	**15 56 16.8**	**+1.6**
KHZ				AML	AML	15 57 26.0	
KHZ				AML	AML

	baz=262						
WHF				S	Sg	16 07 21.5	-0.8
	baz=262						
ESL	Shilin	0.51	224	eP	Pb	16 07 15.6	0.0
	baz=223						
TEGC	Jichi Village	0.54	208	eP	Pn	16 07 17.4	-0.5
	baz=193						
TWE	Neicheng	0.55	345	⇑iP	Pg	16 07 15.7	-0.3
	baz=347						
TWE				iS	Sg	16 07 22.6	-0.8
	baz=347						
ILA	Ilan	0.58	353	eP	Pb	16 07 16.9	+0.2
	baz=350						
ILA				eS	Sg	16 07 24.3	+0.1
	baz=350						
TWT	Tachien	0.59	276	⇑iP	Pb	16 07 16.9	-0.1
	baz=273						
TWT				S	Sg	16 07 24.3	-0.5
	baz=273						
NSK	Sanguang	0.64	319	⇑iP	Pg	16 07 17.1	-0.7
	baz=319						
NSK				iS	Sg	16 07 25.4	-0.9
	baz=319						
EGS		0.66	9	P	Pb	16 07 18.3	+0.3
	baz=17						
EGS				eS	Sb	16 07 28.1	+1.1
	baz=17						
EHY	Hungye	0.82	214	eP	Pb	16 07 21.1	+0.3
	baz=223						
TWA	Mucha	0.82	345	eP	Pb	16 07 21.0	+0.2
	baz=345						
TWA				eS	Sg	16 07 31.6	-0.3
	baz=345						
NSTT	Nanjuang	0.87	301	P	Pb	16 07 21.6	0.0
	baz=299						
NSTT				S	Sg	16 07 31.9	-1.4
	baz=299						
NWF	Wu-fen Shan	0.88	358	P	Pb	16 07 22.0	+0.1
	baz=351						
NWF				eS	Sg	16 07 33.5	-0.4
	baz=351						
TAP1	Taipei	0.89	342	P	Pb	16 07 22.5	+0.5
	baz=341						
TAP1				eS	Sg	16 07 31.6	-2.5
	baz=341						
SMLT	Sun Moon Lake	0.90	250	⇓iP	Pb	16 07 22.1	-0.1
	baz=242						
SMLT				S	Sg	16 07 33.9	-0.4
	baz=242						
TAP	Taipei	0.90	341	eP	Pb	16 07 22.2	+0.1
	baz=341						
TAP				eS	Sg	16 07 33.1	-1.1
	baz=341						
TYC	Yuchr	0.93	252	⇓iP	Pg	16 07 22.5	-0.5
	baz=244						
TYC				S	Sg	16 07 34.6	-0.6
	baz=244						
TWF1	Yuli	0.96	210	eP	Pg	16 07 22.3	-1.3
	baz=219						
NCU	National Centr	0.97	324	P	Pn	16 07 24.1	+0.3
	baz=322						
NCU				S	Sn	16 07 37.9	+0.8
	baz=322						
TWQ1	Liyutan	0.97	280	P	Pn	16 07 24.3	+0.5
	baz=278						
TWQ1				S	Sb	16 07 37.0	+1.1
	baz=278						
TWS1	Kuangyinshan	0.98	338	eP	Pg	16 07 23.5	-0.5
	baz=337						
TWS1				S	Sn	16 07 37.8	+0.4
	baz=337						
HSN	Hsinchu	0.99	308	eP	Pb	16 07 24.2	+0.5
	baz=303						
HSN				eS	Sb	16 07 37.9	+1.6
	baz=303						
NSY	Sanyi	0.99	283	P	Pn	16 07 24.6	+0.5
	baz=282						
NSY				S	Sn	16 07 38.1	+0.3
	baz=282						
TCU	Taichung	1.05	268	⇓iP	Pn	16 07 26.0	+1.1
	baz=267						
TCU				S	Sn	16 07 40.8	+1.8
	baz=267						
YUS	Yu-Shan	1.06	229	⇓P	Pb	16 07 25.3	+0.2
	baz=228						
YUS				eS	Sb	16 07 39.6	+0.8
	baz=228						
JYNG	Yonagunijimaku	1.06	75	P	Pn	16 07 26.0	+1.0
JYNG				eS	Sn	16 07 41.4	+2.0
WNT	Mingjian	1.08	254	eP	Pn	16 07 25.7	+0.3
	baz=250						
WNT				eS	Sn	16 07 41.5	+1.6
	baz=250						
TWY	Chenhua	1.10	350	eP	Pb	16 07 25.4	-0.2
	baz=335						
YOJ	Yonaguni jima	1.12	76	P	Pn	16 07 26.8	+1.0
YOJ				S	Sn	16 07 43.2	+2.4
YOJ	Yonaguni jima	1.12	76	⇓iP	Pn	16 07 26.8	+1.0
	baz=65						
YOJ				iS	Sn	16 07 43.3	+2.4
	baz=65						
ALS	Alishan	1.15	234	⇓iP	Pn	16 07 26.9	+0.3
	baz=220						
ALS				eS	Sn	16 07 42.7	+0.7
	baz=220						
CHKT	Chengkung	1.16	201	eP	Pb	16 07 26.0	-0.6
	baz=187						
CHN5	Tsauling	1.20	241	eP	Pg	16 07 28.1	-0.1
	baz=224						
CHN5				S	Sn	16 07 46.0	+3.0
	baz=224						
ELDTW	Lidau	1.24	217	eP	Pn	16 07 26.9	-0.7
	baz=202						
WGK	Gukeng	1.25	247	eP	Pg	16 07 28.5	-0.7
	baz=246						
WGK				eS	Sn	16 07 46.7	+2.5
	baz=246						
CHN2	Minshiung	1.39	242	eP	Pg	16 07 31.7	-0.2
	baz=227						
CHN4	Tsaushan	1.40	234	P	Pg	16 07 31.3	-0.7
	baz=233						
CHN4				eS	Sg	16 07 51.9	+1.7
	baz=233						
STYT	Tauyuan	1.41	224	P	Pb	16 07 30.6	-0.3
	baz=223						
STYT				eS	Sg	16 07 50.9	+0.3
	baz=223						
WTCT	Ta-ch'eng	1.44	257	eP	Pn	16 07 30.9	+0.6
	baz=257						
WTCT				eS	Sg	16 07 51.0	-0.6
	baz=257						
WTP	Ta-pu	1.45	230	P	Pb	16 07 31.6	+0.1
	baz=229						
WTP				eS	Sg	16 07 53.1	+1.2
	baz=229						
CHY	Chiayi	1.45	242	P	Pg	16 07 32.2	-0.8
	baz=242						
CHY				eS	Sg	16 07 52.1	+0.2
	baz=242						
PCYT	Pengchaiyu	1.45	9	eP	Pb	16 07 31.6	0.0
	baz=8.0						
TWG	Pinlang	1.52	207	eP	Pn	16 07 30.7	-0.8
	baz=191						
TWK	Hsinying	1.53	233	eP	Pg	16 07 33.7	-0.7
	baz=231						
CHN1	Nanshi	1.55	230	P	Pb	16 07 33.3	+0.1
	baz=230						
CHN1				eS	Sg	16 07 55.1	+0.1
	baz=230						
TTN	Taitung	1.56	204	eP	Pb	16 07 32.9	-0.4
	baz=202						
WSF	Szhu	1.56	250	eP	Pn	16 07 32.7	+0.8
	baz=250						
WSF				eS	Sg	16 07 54.4	-1.0
	baz=250						
SGST	Jiashian	1.58	226	eP	Pb	16 07 34.0	+0.2
	baz=226						
SGST				eS	Sg	16 07 56.4	+0.4
	baz=226						
CHN8	Yiju	1.70	241	eP	Pn	16 07 34.8	+1.0
	baz=225						
CHN8				eS	Sg	16 07 59.4	-0.3
	baz=225						
CHN3	Shinhua	1.73	231	eP	Pg	16 07 37.4	-1.0
	baz=228						
IRIF	Iriomote-Funau	1.75	85	P	Pn	16 07 35.4	+0.9
IRIF				S	Sb	16 07 59.1	+0.8
ECL	Taimali	1.77	207	eP	Pn	16 07 35.2	+0.3
	baz=192						
SCLT	Jiali	1.80	236	eP	Pb	16 07 36.9	-0.6
	baz=236						
SCLT				eS	Sg	16 08 02.2	-0.8
	baz=236						
SSD	Sandimen	1.80	217	eP	Pb	16 07 37.3	-0.2
	baz=228						
SSD				eS	Sb	16 08 01.1	+1.3
	baz=228						
HATJ	Hateruma jima	1.82	94	P	Pb	16 07 37.1	-0.7
HATJ				eS	Sb	16 08 00.8	+0.5
TWM1	Shoushan	1.87	224	eP	Pb	16 07 38.9	+0.2
	baz=222						
JKRS	Kuro-shima	2.00	88	P	Pb	16 07 39.6	-1.3
JKRS				S	Sb	16 08 06.6	+1.1
EAST	Anshuo	2.01	207	eP	Pb	16 07 40.7	-0.4
	baz=194						
TAW	Tawu	2.01	205	eP	Pn	16 07 39.4	+1.3
	baz=192						
SCZT	Fangliau	2.12	212	eP	Pb	16 07 41.9	-1.0
	baz=194						
JIJ	Ishigaki jima	2.13	85	P	Pn	16 07 40.5	+0.8
JIJ				S	Sn	16 08 07.1	+1.4
LAY	Lan-yu	2.15	187	eP	Pn	16 07 39.6	-0.5
	baz=186						
PNG	Penghu	2.16	254	eP	Pn	16 07 41.2	+1.0
	baz=254						
WDGT	Dungji	2.19	245	eP	Pn	16 07 41.3	+0.8
	baz=246						
TWP	Hsiaoliuchiu	2.27	216	eP	Pn	16 07 43.8	+2.0
	baz=233						
JISG	Ishigakijimahi	2.31	80	P	Pn	16 07 43.4	+1.2
JISG				S	Sn	16 08 12.1	+2.0
HEN	Hengchun	2.39	205	eP	Pb	16 07 45.8	-1.7
	baz=194						
TWK1	Hengchun	2.42	203	eP	Pn	16 07 45.0	+1.2
	baz=191						
JTJ	Tarama	2.67	80	P	Pn	16 07 49.7	+2.6
JTJ				S	Sb	16 08 22.5	-2.2
QZH	Quanzhou	3.03	285	⇑iPn	Pn	16 07 43.3	-8.9
QZH				Sn	Sn	16 08 16.9	-11
QZH				smax	smax		
	comp=N,290nm,0.9s						
QZH				smax	smax		
	comp=E,290nm,1.0s						
QZH				LR	LR		
	comp=N,620nm,11.4s						
QZH				LR	LR		
	comp=E,1μm,16.1s						
QZH				LR	LR		
	comp=Z,850nm,11.2s						
KNM	Kinmen	3.10	275	eP	Pn	16 07 53.6	+0.6
	baz=275						
JIRB	Irabujima	3.12	78	S	Sn	16 08 32.6	+2.4
KSRS	Korea Array	14.22	20	P	P	16 10 33.6	+0.8
	comp=Z,0.2nm,0.3s,baz=202,slow=12,SNR=9.5						
SONM	Songino Array	26.59	336	P	P	16 12 43.0	+0.6
	comp=Z,0.5nm,0.6s,baz=162,slow=11,SNR=3.8						
MKAR	Makanchi Array	38.74	316	P	P	16 14 28.3	0.0
	comp=Z,0.6nm,0.7s,baz=105,slow=9.2,SNR=6.8						
ZALV	Zalesovo Beam	40.56	327	P	P	16 14 41.3	-1.9
	comp=Z,0.6nm,0.5s,baz=115,slow=6.8,SNR=3.4						
WRA	Warramunga Arr	45.53	163	P	P	16 15 22.9	-0.9
	comp=Z,0.4nm,0.4s,baz=346,slow=8.8,SNR=5.3						
ASAR	Alice Springs	48.99	165	P	P	16 15 49.7	-1.1
	comp=Z,0.1nm,0.5s,baz=345,slow=6.5,SNR=4.1						
BRTR	Keskin Array B	73.64	307	P	P	16 18 37.6	-0.2
	comp=Z,0.8nm,0.7s,baz=104,slow=5.2,SNR=4.9						
YKA	Yellowknife Ar	82.74	23	P	P	16 19 26.3	-1.4
	comp=Z,0.4nm,0.6s,baz=316,slow=5.3,SNR=3.8						

ISCJB ***07*** *16:10:04.8±1.1, 38.°84N±0.°06×142.°1E±0.°1, h54km±8km, mb3.5/5, Error ellipse: s-maj=17.8km s-min=7.2km az=21.1*
JMA ***07*** *16:10:05.8±0.1, 38.°85N×142.°06E, h46km±1km, M3.6*
JMA Felt I J1.
IDC ***07*** *16:10:07.9±2.6, 38.°89N×142.°14E, h69km±24km, mb3.2/5, mb1 3.3/7, mb1mx3.1/51, mbtmp3.4/7, Error ellipse: s-maj=38.1km s-min=15.7km az=94.0*
ISC 07 16:10:06.3±1.5, 38.°86N±0.°06×142.°0E±0.°1, h46km±11km, n21, σ1.s02/21, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.34	310	P	Pn	16 10 15.5	+0.1
OFUJ				eS	Sn	16 10 22.1	+0.2
JMK	Ichinoseki	0.62	278	P	Pn	16 10 18.9	+0.1
JMK				S	Sn	16 10 28.2	+0.5
JIO	Ouri	0.66	232	P	Pn	16 10 18.9	-0.4
JIO				eS	Sn	16 10 27.8	-0.8
JOM	Ohasama	0.82	318	P	Pn	16 10 21.7	+0.2
JOM				eS	Sn	16 10 33.1	+0.5
JOU	Okura	1.16	245	P	Pn	16 10 26.1	0.0
JOU				S	Sn	16 10 41.3	+0.5
JRG	Rokugo	1.19	297	P	Pn	16 10 26.8	+0.3
JYK	Kaneyama	1.28	273	P	Pn	16 10 28.1	+0.3
JANG	Nango	1.56	346	P	Pn	16 10 31.3	-0.2
MJAR	Matsushiro Arr	3.80	234	P	Pn	16 11 05.6	+3.3
	1.0nm,0.3s,baz=33,slow=13,SNR=12						
ASAJ	Asahikawa	5.27	5	P	Pn	16 11 23.5	+1.1
	baz=108,slow=20						
ASAJ				S	Sn	16 12 23.1	+1.3
	baz=255,slow=20						
H11N2	WAKE ISLAND Hy	28.74	124	T	T	16 46 23.2	
	baz=317,slow=75						
H11N1	WAKE ISLAND Hy	28.75	124	T	T	16 46 23.3	
	baz=317,slow=75						
H11N3	WAKE ISLAND Hy	28.76	124	T	T	16 46 24.2	
	baz=317,slow=75						
H11S1	WAKE ISLAND Hy	29.51	126	T	T	16 47 17.9	
	baz=318,slow=76,SNR=21						
H11S3	WAKE ISLAND Hy	29.52	126	T	T	16 47 21.1	
	baz=318,slow=76,SNR=36						
H11S2	WAKE ISLAND Hy	29.53	126	T	T	16 47 22.3	
	baz=318,slow=76,SNR=21						
ZALV	Zalesovo Beam	41.05	311	P	P	16 17 44.4	-0.5
	0.6nm,0.5s,baz=120,slow=8.5,SNR=3.5						
MKAR	Makanchi Array	43.57	301	P	P	16 18 05.2	-0.4
	0.6nm,0.5s,baz=77,slow=9.7,SNR=5.8						
WRA	Warramunga Arr	58.94	188	P	P	16 19 59.7	-1.1
	0.2nm,0.4s,baz=5.7,slow=6.9,SNR=5.2						
ASAR	Alice Springs	62.66	188	P	P	16 20 25.8	-0.3
	0.1nm,0.7s,baz=11,slow=8.2,SNR=2.9						
FINES	FINESS Array B	67.42	332	P	P	16 20 56.3	-0.2
	0.7nm,0.6s,baz=32,slow=8.2,SNR=3.5						

KRSC 07 16:10:35.7±1.5, 53.°30N×160.°51E, h44km±16km, ML4.0, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	Mys Shipunski	0.35	236	eP	Pn	16 10 45.6	+0.8
NLC	Nalytchevo	0.71	260	eP	Pn	16 10 49.8	+0.5
NLC				eS	Sn	16 10 59.0	-0.1
KII	Karymskiy	0.97	320	eP	Pn	16 10 53.1	+0.1
KII				eS	Sn	16 11 04.4	-1.2
SDLR	Sedlovina	0.97	270	eP	Pn	16 10 54.0	+1.0
SDLR				eS	Sn	16 11 06.2	+0.5
UGLR	Uglovaya	1.01	266	eP	Pn	16 10 54.9	+1.4
UGLR				eS	Sn	16 11 07.6	+0.9
SMAR	Somma	1.02	269	eP	Pn	16 10 54.7	+0.9
SMAR				eS	Sn	16 11 07.7	+0.6
KRER	Koryakskii	1.05	271	eP	Pn	16 10 55.5	+1.3
KRER				eS	Sn	16 11 08.8	+1.0
AVH	Avacha	1.06	269	eP	Pn	16 10 55.6	+1.4
AVH				eS	Sn	16 11 08.9	+1.1
DALK	Dalny	1.09	257	eP	Pn	16 10 55.8	+1.4
DALK				eS	Sn	16 11 09.0	+0.7
KRX	Arik	1.11	274	eP	Pn	16 10 56.0	+1.0
KRX				eS	Sn	16 11 09.3	+0.1
KOK	Koryaka	1.12	271	eP	Pn	16 10 56.3	+1.3
KOK				eS	Sn	16 11 09.0	-0.3
PET	Petropavlovsk	1.15	257	eP	Pn	16 10 56.7	+1.5
PET				eS	Sn	16 11 10.5	+0.7
MKZ	Mys Kozlova	1.46	29	eP	Pn	16 11 00.5	+1.0
MKZ				eS	Sn	16 11 17.0	-0.3
RUS	Russkaya	1.48	235	eP	Pn	16 11 01.8	+2.0
RUS				eS	Sn	16 11 20.1	+2.1
KRMR	Karymshinskiy	1.51	253	eP	Pn	16 11 02.3	+2.1
KRMR				eS	Sn	16 11 20.6	+2.0
GNL	Ganaly	1.58	286	eP	Pn	16 11 03.3	+2.0
GNL				eS	Sn	16 11 21.9	+1.3
GRL	Gorelyy	1.65	244	eP	Pn	16 11 05.1	+2.8
GRL				eS	Sn	16 11 24.9	+2.6
ASAK	Asacha	1.83	241	eP	Pn	16 11 07.9	+3.3
ASAK				eS	Sn	16 11 30.5	+4.0
KZV	Kizimen	1.83	356	eP	Pn	16 11 06.7	+2.0
KZV				eS	Sn	16 11 28.3	+1.6
TUMR	Tumrok	2.00	354	eP	Pn	16 11 09.8	+2.7
TUMR				eS	Sn	16 11 34.4	+3.4
KMNR	Kamenistaya	2.47	356	eP	Pn	16 11 17.4	+3.9
KMNR				eS	Sn	16 11 49.2	+6.7
BZMR	Bezymyannaya	2.65	360	eP	Pn	16 11 20.0	+4.1
BZMR				eS	Sn	16 11 51.5	+4.7
KIRR	Kirishev	2.67	358	eP	Pn	16 11 18.4	+2.2
KIRR				eS	Sn	16 11 52.9	+5.6
KPT	Kopyto	2.68	357	eP	Pn	16 11 21.5	+5.1
ZLN	Zelenaya	2.73	4	eP	Pn	16 11 20.8	+3.7
ZLN				eS	Sn	16 11 53.0	+4.1
KOZ	Kozyrevsk	2.79	353	eP	Pn	16 11 22.9	+5.1
LGNR	Loginova	2.80	2	eP	Pn	16 11 22.1	+4.0
LGNR				eS	Sn	16 11 55.5	+4.8
CIRR	Tsirk	2.83	3	eP	Pn	16 11 22.9	+4.5
CIRR				eS	Sn	16 11 56.1	+4.8
ESO	Esso	2.84	339	eP	Pn	16 11 20.5	+2.1
PAU	Pauzhetka	2.91	233	eP	Pn	16 11 24.5	+5.1
KRSR	Krestovskiy	2.93	1	eP	Pn	16 11 23.2	+3.4
KRSR				eS	Sn	16 11 57.0	+3.3
KLY	Klyuchi	3.03	2	eP	Pn	16 11 24.3	+3.3
KLY				eS	Sn	16 11 59.2	+3.3
KBG	Krutoberegovo	3.23	22	eP	Pn	16 11 27.6	+3.9
KBG				eS	Sn	16 12 05.5	+4.6
BDR	Baidarnaya	3.31	7	eP	Pn	16 11 28.8	+3.9
BDR				eS	Sn	16 12 07.2	+4.3
SMKR	Semkarok	3.34	9	eP	Pn	16 11 28.9	+3.5
SMKR				eS	Sn	16 12 07.6	+3.8
SRKR	Sorokina	3.39	6	eP	Pn	16 11 29.6	+3.6
BKI	Bering	3.73	57	eP	Pn	16 11 33.2	+2.5
BKI				eS	Sn	16 12 13.2	-0.1

MEX 07 16:11:59.7±0.7, 16.°90N×99.°91W, h24km±5km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACP2	Acapulco	0.04	138	iP	Pb	16 12 03.1	-0.7
ACP2				iS	Sb	16 12 05.5	-1.1
ACX	Acapulco	0.06	123	eP	Pb	16 12 07.3	+3.4
ACX				eS	Sb	16 12 10.2	+3.3
CAIG	El Cayaco	0.37	293	eP	Pb	16 12 06.4	-1.3
CAIG				eS	Sb	16 12 11.4	-1.7
MEIG	Mezcala	1.05	15	eP	Pn	16 12 16.6	-2.5
MEIG				eS	Sb	16 12 28.6	-4.3
ARIG	Puente Sto Nin	1.43	343	eP	Pn	16 12 22.0	-2.2
ARIG				eS	Sn	16 12 39.1	-3.2
TLIG	Tlapa	1.44	63	eP	Pn	16 12 21.7	-2.8
TLIG				eS	Sn	16 12 39.7	-3.1
ZIIG	Zihuatanejo	1.64	295	iP	Pn	16 12 24.4	-2.6
ZIIG				iS	Sn	16 12 43.3	-4.2
PNIG	Pinotepa	1.79	106	iP	Pn	16 12 26.3	-2.9
PNIG				iS	Sn	16 12 47.6	-3.5
YAIG	Yautepec	2.11	22	iP	Pn	16 12 31.4	-2.3
YAIG				iS	Sn	16 12 55.8	-3.4

WEL 07 16:15:14.3±0.1, 43.°58S×172.°37E, h5km, ML2.7/6, 1C-1D, Error ellipse: s-maj=0.9km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.18	90	⇓PG	Pg	16 15 18.2	+0.3
CRLZ				AML	AML	16 15 39.4	
MQZ	McQueen's Vall	0.24	123	PG	Pg	16 15 19.1	+0.1
MQZ				SG	Sg	16 15 22.5	+0.3
OXZ	Oxford	0.35	316	PG	Pg	16 15 21.0	-0.1
OXZ				SG	Sg	16 15 25.7	+0.1
OXZ				AML	AML	16 15 26.1	
OXZ				AML	AML	16 15 26.1	
OXZ				AML	AML	16 15 26.3	
LTZ	Lake Taylor	0.80	355	⇑P*	Pg	16 15 29.8	+0.2
LTZ				AML	AML	16 16 16.1	
INZ	Inchbonnie	1.09	321	P*	Pg	16 15 35.1	-0.1
KHZ	Kahutara	1.44	37	PN	Pn	16 15 38.5	-2.5
KHZ				AML	AML	16 16 18.1	
LBZ	Lake Benmore	1.77	242	AML	AML	16 16 51.9	
ODZ	Otahua Downs	1.92	220	PN	Pb	16 15 49.8	0.0

IDC ***07*** *16:19:06.3±1.5, 29.°70S×176.°62W, h0km, mb4.0/3, mb1 4.2/4, mb1mx3.8/29, mbtmp4.0/4, ML3.3/1, MS3.6/4, Ms1 3.6/4, ms1mx3.2/29, Error ellipse: s-maj=36.6km s-min=30.5km az=154.0*
ISCJB ***07*** *16:19:09.3±0.7, 29.°77S±0.°07×176.°9W±0.°1, h21km, mb4.5/9, MS3.7/2, Error ellipse: s-maj=13.6km s-min=8.9km az=23.6*
NEIC ***07*** *16:19:11.2±3.0, 29.°65S×176.°87W, h23km±21km, mb4.9/7, Error ellipse: s-maj=14.4km s-min=11.2km az=145.0*
ISC 07 16:19:10.2±0.8, 29.°60S±0.°10×176.°74W±0.°10, h21km, n33, σ1.s49/30, mb4.7/9, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.09	288	Pn	Pb	16 19 30.8	+0.5
	232nm,0.3s,baz=91,slow=14,SNR=8.2						
RAO	Raoul Island	1.09	288	ePn	Pb	16 19 30.5	+0.2
OUZ	Omahuta	9.90	233	ePn	Pn	16 21 29.9	-1.4
URZ	Urewera	10.03	209	Pn	Pn	16 21 31.1	-2.0
	0.2nm,0.3s,baz=158,slow=11,SNR=2.8						
URZ				Sn	Sn	16 23 24.7	-0.3
	2.0nm,0.3s,baz=210,slow=20,SNR=7.9						
URZ	Urewera	10.03	209	ePn	Pn	16 21 31.1	-2.0
URZ				eSn	Sn	16 23 05.4	-20
BKZ	Black Stump Fm	11.06	209	ePn	Pn	16 21 46.4	-0.7
BKZ				eSn	Sn	16 23 30.6	-20
HIZ	Hauiti	11.29	216	ePn	Pn	16 21 49.7	-0.6
BFZ	Birch Farm	12.45	206	ePn	Pn	16 22 06.3	+0.1
BFZ				eSn	Sn	16 24 07.5	-17
THZ	Tophouse	14.75	212	ePn	Pn	16 22 36.7	-1.0
THZ				eSn	Sn	16 24 57.8	-23
KHZ	Kahutara	15.00	209	ePn	Pn	16 22 40.2	-0.7
	155nm,1.6s						
KHZ				eSn	Sn	16 25 07.8	-19
DZM	Mont Dzumac	16.88	292	LR	LR	16 28 40.1	
	comp=Z,235nm,18.6s,baz=93,slow=34						
RAR	Rarotonga	17.44	65	LR	LR	16 28 50.4	
	comp=Z,106nm,21.1s,baz=264,slow=34						
RAR	Rarotonga	17.44	65	ePn	P	16 23 14.5	+1.1
	240nm,2.0s						
STKA	Stephens Creek	35.73	256	P	P	16 26 08.6	+1.0
	1.6nm,0.6s,baz=99,slow=12,SNR=5.6						
STKA				LR	LR	16 40 00.1	
	comp=Z,98nm,19.4s,baz=122,slow=35						
STKA	Stephens Creek	35.73	256	eP	P	16 26 08.5	+1.0
	3.3nm,1.5s						
BBOO	Buckleboo	40.24	253	eP	P	16 26 47.1	+1.5
	106nm,1.9s						
AS01	Alice Springs	44.21	266	eP	P	16 27 17.4	-0.8
AS31	Alice Springs	44.25	266	eP	P	16 27 18.1	-0.4
	1.0nm,0.7s						
ASAR	Alice Springs	44.25	266	P	P	16 27 17.9	-0.5
	1.4nm,0.6s,baz=104,slow=7.0,SNR=43						
ASAR				LR	LR	16 44 49.8	
	comp=Z,137nm,19.3s,baz=146,slow=35						
WB2	Warramunga Arr	45.16	271	eP	P	16 27 25.2	-0.5
WR1	Warramunga Arr	45.17	271	eP	P	16 27 25.1	-0.7
	30nm,1.8s						
WRA	Warramunga Arr	45.17	271	P	P	16 27 25.1	-0.7
	1.2nm,0.6s,baz=110,slow=7.6,SNR=13						
FITZ	Fitzroy Crossi	53.46	269	eP	P	16 28 27.6	-1.6
	60nm,2.0s						
CASY	Casey	56.36	208	eP	P	16 28 52.0	+2.6
	4.4nm,0.6s						
QSPA	South Pole Qui	60.51	180	eP	P	16 29 23.7	+5.1
	14nm,1.4s						
TIMB	Timberline	89.78	35	eP	P	16 32 04.1	-3.1
HONU	Honeyville	92.71	43	eP	P	16 32 17.3	-3.5
DPW	Davenport	93.28	35	eP	P	16 32 26.0	+2.8
KURK	Kurchatov	121.28	314	PKP	PKPdf	16 38 00.8	-0.5
KURBB	Kurchatov Arra	121.33	314	PKP	PKPdf	16 38 00.8	-0.6
	0.3nm,0.7s,baz=114,slow=2.0,SNR=4.8						
FINES	FINESS Array B	144.76	341	PKP	PKPbc	16 38 43.4	-0.3

1.9nm,0.7s,baz=64,slow=4.4,SNR=7.2
AKASG Malin Array Be 151.31 325 PKPbc **PKPbc 16 39 02.3 +0.5**
1.0nm,0.5s,baz=43,slow=3.4,SNR=4.4
BRTR Keskin Array B 153.16 300 PKPbc **PKPbc 16 39 06.6 0.0**
0.3nm,0.5s,baz=0.0,slow=1.4,SNR=2.7

KRNET ***07*** *16:29:24.2±0.1, 41.71N×77.58E, h16km, mb2.5*
SOME ***07*** *16:29:24.3, 41.72N×77.62E, h5km*
ISC 07 16:29:23.7±1.8, 41.70N±0.06×77.61E±0.03, h3km±15km, n25, σ0=98/50, 22C-4D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KDJ	**Kajisay**	**0.54**	**323**	↑*e*P		**Pg**	**16 29 34.5**	**+0.5**
	baz=325							
KDJ				↑*e*S		**Sg**	**16 29 42.2**	**+1.2**
	baz=325							
ANVS	**Anan'yevo**	**1.08**	**2**	↑*e*P		**Pg**	**16 29 44.7**	**+0.3**
	baz=3.0							
ANVS				↑*e*S		**Sb**	**16 29 59.6**	**-0.2**
	baz=3.0							
ULHL	**Ulahol**	**1.16**	**298**	↑*i*P		**Pb**	**16 29 45.5**	**-1.0**
	baz=298							
ULHL				↑*i*S		**Sg**	**16 30 01.0**	**+0.1**
	baz=298							
TNSS	**Tian-Shan**	**1.43**	**340**	*e*P		**Pb**	**16 29 50.8**	**-0.4**
	11nm,0.1s							
TNSS				*e*S		**Sg**	**16 30 10.2**	**+0.6**
	24nm,0.3s							
BOOM	**Boomskoye usch**	**1.47**	**303**	↑*e*P		**Pb**	**16 29 51.6**	**-0.2**
	baz=303							
BOOM				↑*e*S		**Sg**	**16 30 11.5**	**+0.5**
	baz=303							
SATY	**Saty**	**1.48**	**23**	*e*P		**Pb**	**16 29 51.6**	**-0.3**
	9.2nm,0.4s							
SATY				*e*S		**Sb**	**16 30 11.0**	**-0.1**
	58nm,0.2s							
MDOK	**Medeo**	**1.52**	**344**	↑*i*P		**Pb**	**16 29 52.4**	**-0.3**
	21nm,0.4s							
MDOK				*e*S		**Sg**	**16 30 12.6**	**+0.1**
	15nm,0.5s							
IZV	**Izvestkoviy**	**1.52**	**331**	*e*P		**Pg**	**16 29 53.1**	**+0.2**
	27nm,0.2s							
IZV				*e*S		**Sg**	**16 30 14.1**	**+1.4**
	51nm,0.3s							
ZHN	**Zhinishke**	**1.59**	**22**	*e*P		**Pb**	**16 29 53.6**	**-0.1**
	6.6nm,0.2s							
ZHN				*e*S		**Sg**	**16 30 14.6**	**-0.1**
	93nm,0.2s							
AAA	**Alma-Ata**	**1.64**	**343**	*e*P		**Pb**	**16 29 54.4**	**-0.3**
	128nm,0.2s							
AAA				*e*S		**Sg**	**16 30 16.6**	**+0.1**
	91nm,0.2s							
KZA	**Kyzart**	**1.80**	**283**	↑*i*P		**Pb**	**16 29 57.7**	**+0.1**
	baz=283							
KZA				↑*i*S		**Sg**	**16 30 21.5**	**-0.1**
	baz=283							
KST	**Kastek**	**1.81**	**318**	↑*i*P		**Pb**	**16 29 57.7**	**+0.1**
	3.7nm,0.2s							
KST				↑*i*S		**Sg**	**16 30 21.9**	**0.0**
	32nm,0.5s							
KURS	**Kuram**	**1.83**	**13**	*e*P		**Pb**	**16 29 58.1**	**+0.2**
	1.4nm,0.5s							
KURS				*e*S		**Sg**	**16 30 22.5**	**0.0**
	5.9nm,0.4s							
TKM2	**Tokmak 2**	**1.93**	**310**	↑*i*P		**Pb**	**16 29 59.3**	**-0.3**
	baz=310							
TKM2				↑*i*S		**Sg**	**16 30 24.6**	**-1.0**
	baz=310							
DGS	**Degeres**	**2.06**	**319**	*e*P		**Pg**	**16 30 02.5**	**-0.6**
	3.8nm,0.3s							
DGS				*e*S		**Sg**	**16 30 29.9**	**+0.2**
	36nm,0.5s							
PDGK	**Podgornoye**	**2.13**	**40**	↓*e*P		**Pb**	**16 30 03.1**	**+0.1**
	baz=41							
PDGK				↓*e*S		**Sg**	**16 30 31.3**	**-1.0**
	baz=41							
KBK	**Karagaybulak**	**2.20**	**297**	↑*i*P		**Pb**	**16 30 04.3**	**+0.1**
	baz=297							
KBK				↑*i*S		**Sg**	**16 30 34.1**	**-0.2**
	baz=297							
CHKK	**Chushkaly**	**2.21**	**348**	*e*P		**Pb**	**16 30 04.7**	**+0.3**
	10nm,0.3s							
CHKK				↑*i*S		**Sg**	**16 30 33.9**	**-0.9**
	66nm,0.4s							
SHLS	**Shalkode**	**2.22**	**48**	*e*P		**Pg**	**16 30 06.0**	**-0.3**
	12nm,0.1s							
SHLS				*e*S		**Sg**	**16 30 35.9**	**+0.8**
	24nm,0.3s							
KUU	**Kurty**	**2.38**	**337**	↑*i*P		**Pb**	**16 30 07.3**	**0.0**
	15nm,0.3s							
KUU				*e*S		**Sg**	**16 30 38.6**	**-1.6**
	14nm,0.4s							
ARLS	**Aral**	**2.46**	**275**	↓*e*P		**Pn**	**16 30 06.1**	**+1.2**
	baz=275							
ARLS				↓*e*S		**Sb**	**16 30 36.8**	**-2.7**
	baz=275							
CHMS	**Chumysh**	**2.48**	**302**	↑*i*P		**Pb**	**16 30 08.8**	**-0.2**
	baz=303							
CHMS				↑*i*S		**Sb**	**16 30 39.8**	**-0.2**
	baz=303							
ARXS	**Arharly**	**2.52**	**4**	*e*P		**Pb**	**16 30 10.4**	**+0.9**
	11nm,0.5s							
ARXS				*e*S		**Sg**	**16 30 43.6**	**-0.8**
	51nm,0.4s							
MRKS	**Merke**	**3.42**	**289**	*e*P		**Pb**	**16 30 26.7**	**+1.8**
	12nm,0.3s							
MRKS				*e*S		**Sg**	**16 31 11.8**	**-1.8**
	7.3nm,0.2s							
KAPS	**Kapalarasan**	**3.80**	**19**	*e*P		**Pb**	**16 30 32.6**	**+1.2**
	0.9nm,0.5s							
KAPS				↑*e*S		**Sg**	**16 31 22.0**	**-3.7**
	3.8nm,0.3s							

IDC 07 16:30:09.4±8.8, 30.07S×176.15W, h0km, mb3.4/2, mb1 3.6/2, mb1mx3.4/30, mbtmp3.4/2, Error ellipse: s-maj=379.6km s-min=57.0km az=154.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.73**	**266**	P		P	16 38 24.6	-0.1
	0.3nm,0.9s,baz=108,slow=8.2,SNR=4.7							
WRA	**Warramunga Arr**	**45.69**	**271**	P		P	16 38 32.2	-0.2
	1.0nm,1.1s,baz=113,slow=7.9,SNR=6.3							
FINES	**FINESS Array B**	**145.36**	**341**	PKPbc		PKPbc	16 49 47.6	-0.8
	0.4nm,0.5s,baz=46,slow=4.0,SNR=3.0							

NIED ***07*** *16:31:00, 40.30N×143.80E, h11km, Mw4.8 Best double couple: M0 2.09000×1016 NP1:φs161.00000°, δ40.00000°, λ38.00000°. NP2:φs40.00000°, δ67.00000°, λ123.00000°.*
IDC ***07*** *16:31:32.0±0.5, 40.18N×143.84E, h0km, mb4.2/27, mb1 4.3/34, mb1mx4.3/58, mbtmp4.3/34, ML3.9/7, MS4.2/25, Ms1 4.2/25, ms1mx3.9/52, Error ellipse: s-maj=14.7km s-min=11.4km az=102.0*
JMA ***07*** *16:31:32.2±0.2, 40.25N×143.81E, h7km, M4.6*
ISCJB ***07*** *16:31:33.7±0.2, 40.26N±0.03×143.69E±0.04, h16km, mb4.6/119, MS4.5/47, Error ellipse: s-maj=4.9km s-min=3.0km az=33.6*
NEIC ***07*** *16:31:35.7±2.1, 40.25N×143.68E, h19km±13km, mb4.8/50, Error ellipse: s-maj=6.8km s-min=4.2km az=120.0*
MOS ***07*** *16:31:36.3±1.2, 40.25N×143.74E, h38km, mb4.9/52, MS4.2/18, Error ellipse: s-maj=7.8km s-min=4.9km az=113.8*
BJI ***07*** *16:31:40.9, 40.29N×143.15E, h46km, mb4.7/67, mB5.0/50, Ms4.7/66, Ms7 4.6/62*
ISC 07 16:31:36.0±0.4, 40.31N±0.04×143.52E±0.04, h16km, n320, σ2=21/314, mb4.7/121, MS4.4/47, 21C-19D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.32**	**254**	P		**Pn**	**16 31 59.9**	**+0.2**
MIYJ	**Miyakonagasawa**	**1.50**	**241**	P		**Pn**	**16 32 02.2**	**+0.1**
JANG	**Nango**	**1.53**	**273**	P		**Pn**	**16 32 03.5**	**+0.9**
ERM	**Erimo**	**1.73**	**351**	*d*iP		**Pn**	**16 32 04.6**	**-0.7**
ERM				pmax	pmax			
	comp=Z,66nm,0.7s							
ERM	**Erimo**	**1.73**	**351**	*e*Pn		**Pn**	**16 32 05.3**	**+0.1**
JEM	**Erimo**	**1.73**	**351**	P		**Pn**	**16 32 04.7**	**-0.6**
JOM	**Ohasama**	**1.91**	**245**	P		**Pn**	**16 32 08.7**	**+0.9**
JNBK	**Urakawa-nobuka**	**2.05**	**344**	P		**Pn**	**16 32 10.0**	**+0.2**
JOT	**Ohata**	**2.16**	**301**	P		**Pn**	**16 32 12.8**	**+1.6**
JMK	**Ichinoseki**	**2.23**	**233**	P		**Pn**	**16 32 12.4**	**+0.1**
JCH	**Churui**	**2.31**	**357**	P		**Pn**	**16 32 12.1**	**-1.2**
JCH				S		**Sn**	**16 32 41.7**	**+0.4**
JKB	**Kayabe**	**2.45**	**311**	P		**Pn**	**16 32 17.0**	**+1.7**
JKB				S		**Sn**	**16 32 49.0**	**+4.1**
JYK	**Kaneyama**	**2.81**	**241**	P		**Pn**	**16 32 21.2**	**+1.0**
JAK	**Akkeshi**	**2.83**	**18**	P		**Pn**	**16 32 17.9**	**-2.5**
JAK				S		**Sn**	**16 32 49.9**	**-4.2**
JFR	**Furan**	**2.93**	**347**	P		**Pn**	**16 32 22.6**	**+0.7**
JFR				S		**Sn**	**16 32 58.5**	**+1.7**
JEW	**Eniwo**	**2.97**	**329**	P		**Pn**	**16 32 24.2**	**+1.8**
JAR	**Ashorobuto**	**2.99**	**4**	P		**Pn**	**16 32 20.8**	**-1.9**
JAR				S		**Sn**	**16 32 56.3**	**-1.9**
NEM2	**Nemuro 2**	**3.48**	**28**	P		**Pn**	**16 32 25.8**	**-3.5**
NEM2				S		**Sn**	**16 33 03.2**	**-7.0**
ASAJ	**Asahikawa**	**3.87**	**350**	*e*Pn		**Pn**	**16 32 35.0**	**+0.3**
YUK	**Yuzh-Kuril'sk**	**4.11**	**24**	*i* P		**Pn**	**16 32 35.2**	**-2.8**
MAJO	**Matsushiro**	**5.61**	**230**	*c i*P		**Pn**	**16 32 59.6**	**+0.8**
MAJO	**Matsushiro**	**5.61**	**230**	*e*Pn		**Pn**	**16 32 59.6**	**+0.8**
MAT	**Matsushiro**	**5.61**	**230**	P		**Pn**	**16 32 59.7**	**+0.9**
MAT				*e*S		**Sn**	**16 34 09.2**	**+6.3**
MJAR	**Matsushiro Arr**	**5.61**	**230**	Pn		**Pn**	**16 32 59.0**	**+0.2**
	comp=Z,2.8nm,0.3s,baz=41,slow=11,SNR=58							
MJAR	**Matsushiro Arr**	**5.61**	**230**	P		**Pn**	**16 32 59.0**	**+0.2**
MJAR				pmax	pmax			
	comp=Z,3.0nm,0.3s							
MJB9	**Matsu-Tunnel**	**5.61**	**230**	*e*Pn		**Pn**	**16 32 59.7**	**+0.9**
KUR	**Kuril'sk**	**5.87**	**32**	*c i*P		**Pn**	**16 32 59.6**	**-2.6**
KUR				*i* S		**Sn**	**16 34 01.8**	**-7.3**
KUR				pmax	pmax			
	comp=Z,97nm,0.4s							
KUR				smax	smax			
	comp=E,180nm,0.5s							
KUR				smax	smax			
	comp=N,68nm,0.3s							
YSS	**Yuzh-Sakhalins**	**6.67**	**355**	↓*e*P		**Pn**	**16 33 14.3**	**+1.2**
YSS				*e*S		**Sn**	**16 34 24.6**	**-4.1**
YSS				pmax	pmax			
	comp=Z,20nm,1.1s							
YSS				MLR	MLR			
	comp=N,2μm,16.0s							
YSS				MLR	MLR			
	comp=Z,2μm,16.0s							
YSS				MLR	MLR			
	comp=E,2μm,14.0s							
YSS	**Yuzh-Sakhalins**	**6.67**	**355**	*e*Pn		**Pn**	**16 33 14.0**	**+0.9**
INU	**Inuyama**	**7.14**	**228**	*e*Pn		**Pn**	**16 33 19.7**	**0.0**
JHJ2	**Mitsune**	**7.77**	**204**	*e*Pn		**Pn**	**16 33 25.2**	**-3.1**
JHJ2				*e*Sn		Sn	16 34 46.0	-10
JHJ	**Hachijo jima 2**	**7.78**	**204**	Pn		**Pn**	**16 33 26.0**	**-2.4**
	comp=E,16nm,0.3s,baz=76,slow=21,SNR=9.0							
JHJ				Sn		**Sn**	**16 34 48.1**	**-8.1**
	comp=E,9.2nm,0.3s,baz=88,slow=22,SNR=5.1							
VLA	**Vladivostok**	**9.14**	**292**	*d i*P		Pn	16 33 52.0	+4.9
VLA				*e*S		**Sn**	**16 35 38.1**	**+8.5**
VLA				pmax	pmax			
	comp=Z,10.0nm,0.7s							
VLA				MLR	MLR			
	comp=E,22μm,13.0s							
USRK	**Ussuriysk Ar.**	**9.39**	**298**	Pn		**Pn**	**16 33 53.5**	**+3.0**
	comp=E,1.3nm,0.3s,baz=102,slow=14,SNR=47							
MSHR	**Mys Shultsa**	**9.56**	**288**	↓*i*P		**Pn**	**16 33 57.4**	**+4.6**
HABR	**Khabarovsk**	**10.16**	**326**	*de*P		**Pn**	**16 34 00.4**	**-0.6**
HABR				*e*S		**Sn**	**16 35 55.1**	**+0.6**
HABR				pmax	pmax			
	comp=N,7.0nm,1.2s							
HABR				pmax	pmax			
	comp=E,13nm,1.2s							
HABR				pmax	pmax			
	comp=Z,17nm,1.2s							
HABR				MLR	MLR			
	comp=Z,254nm,15.0s							
TYV	**Tymovskoe**	**10.57**	**357**	*e*P		**Pn**	**16 34 06.0**	**-0.7**
TYV				pmax	pmax			
	comp=Z,13nm,1.0s							
TYV				MLR	MLR			
	comp=N,3μm,14.0s							
TYV				MLR	MLR			
	comp=Z,3μm,14.0s							
MDJ	**Mudanjiang**	**11.15**	**297**	P		**Pn**	**16 34 17.7**	**+3.1**
MDJ				pmax	pmax			
	comp=Z,27nm,0.8s							
MDJ				pmax	pmax			
	comp=Z,340nm,8.7s							
MDJ				LR	LR			
	comp=Z,1μm,15.0s							
MDJ				LR	LR			
	comp=Z,2μm,16.8s							
MDJ				LR	LR			
	comp=Z,3μm,15.9s							
MDJ	**Mudanjiang**	**11.15**	**297**	*e*Pn		Pn	16 34 08.8	-5.8
KLR	**Kul'dur**	**12.21**	**321**	Pn		**Pn**	**16 34 31.3**	**+2.1**
	comp=Z,0.2nm,0.3s,baz=129,slow=12,SNR=25							
KLR				LR	LR		16 39 58.6	
	comp=Z,1μm,18.0s,baz=128,slow=41							
JNU	**Nakatsue**	**12.41**	**239**	Pn		**Pn**	**16 34 32.1**	**+0.1**
	comp=Z,0.6nm,0.3s,baz=354,slow=4.8,SNR=4.5							
JNU				LR	LR		16 39 48.9	
	comp=Z,2μm,18.2s,baz=82,slow=40							
KSRS	**Korea Array**	**12.48**	**262**	Pn		**Pn**	**16 34 36.0**	**+3.1**
	comp=Z,0.3nm,0.3s,baz=71,slow=14,SNR=11							
KSRS				LR	LR		16 39 35.1	
	comp=Z,837nm,18.8s,baz=72,slow=38							
KSRS	**Korea Array**	**12.48**	**262**	P		**Pn**	**16 34 36.0**	**+3.1**
KSRS				MLR	MLR			
	comp=Z,837nm,18.8s							
KS01	**Wonju Array Si**	**12.50**	**262**	*e*Pn		**Pn**	**16 34 31.6**	**-1.5**
KS15	**Wonju Array Si**	**12.52**	**262**	*e*Pn		Pn	16 34 26.9	-6.4
KSAR	**Wonju Array Be**	**12.52**	**262**	P		**Pn**	**16 34 36.0**	**+2.7**
KSAR	**Wonju Array Be**	**12.52**	**262**	Pn		**Pn**	**16 34 36.0**	**+2.7**
CN2	**Changchun**	**13.87**	**290**	*e*P		**Pn**	**16 34 54.1**	**+2.3**
CN2				*e*S		**Sn**	**16 37 20.3**	**-5.1**
CN2				LR	LR			
	comp=Z,800nm,14.0s							
CN2				LR	LR			
	comp=Z,1μm,14.0s							
CN2				LR	LR			
	comp=Z,2μm,14.0s							
PETK	**Petropavlovsk-**	**16.04**	**32**	LR		LR	16 41 12.2	
	comp=Z,559nm,19.4s,baz=218,slow=36							
PET	**Petropavlovsk**	**16.38**	**34**	*e*P		**P**	**16 35 33.0**	**+5.3**
PET				pmax	pmax			
	comp=Z,20nm,1.2s							
PET				pmax	pmax			
	comp=Z,100nm,11.5s							
PET				MLR	MLR			
	comp=Z,1μm,15.0s							
PET				MLR	MLR			
	comp=Z,1μm,14.0s							
PET	**Petropavlovsk**	**16.38**	**34**	*e*Pn		**P**	**16 35 32.5**	**+4.7**
	comp=Z,30nm,1.2s							
DL2	**Dalian**	**16.93**	**272**	↑P		**Pn**	**16 35 32.1**	**+0.1**
DL2				S		**Sn**	**16 38 32.9**	**-6.8**
DL2				sS		**S**	**16 38 45.6**	**-4.3**
DL2				pmax	pmax			
	comp=Z,56nm,0.8s							
DL2				pmax	pmax			
	comp=Z,450nm,6.4s							
DL2				LR	LR			
	comp=Z,930nm,13.2s							
DL2				LR	LR			
	comp=Z,510nm,13.8s							
DL2				LR	LR			
	comp=Z,750nm,12.6s							
HIA	**Hailar**	**19.04**	**306**	*e*P		**Pn**	**16 35 59.8**	**+1.8**
HIA	**Hailar**	**19.04**	**306**	*e*P		**Pn**	**16 35 59.8**	**+1.8**
MA2	**Magadan**	**19.82**	**11**	P		**P**	**16 36 04.2**	**-1.5**
	comp=Z,0.2nm,0.3s,baz=198,slow=20,SNR=3.2							
MA2				LR	LR		16 44 36.9	
	comp=Z,653nm,18.3s,baz=194,slow=39							
SSE	**Sheshan**	**20.29**	**250**	P		**P**	**16 36 11.1**	**+0.2**
SSE				pmax	pmax			
	comp=Z,26nm,1.0s							
SSE				pmax	pmax			
	comp=Z,170nm,12.0s							
SSE				LR	LR			
	comp=Z,760nm,17.3s							
SSE				LR	LR			
	comp=Z,430nm,17.3s							
SSE				LR	LR			
	comp=Z,710nm,12.8s							
CLNS	**Chul'man**	**20.51**	**330**	*e*P		**P**	**16 36 10.2**	**-3.0**
CLNS				pmax	pmax			
	comp=Z,22nm,0.9s							
CLNS				pmax	pmax			
	comp=N,13nm,1.0s							
CLNS				pmax	pmax			
	comp=E,7.0nm,0.9s							
BJI	**Beijing**	**20.87**	**278**	P		**P**	**16 36 14.9**	**-2.3**
BJI				S		S	16 39 56.3	-13
BJI				pmax	pmax			
	comp=E,8.0nm,0.5s							
BJI				LR	LR			
	comp=E,880nm,14.5s							
BJI				LR	LR			
	comp=E,470nm,12.5s							
BJI				LR	LR			
	comp=E,490nm,14.4s							
NJ2	**Nanjing**	**21.50**	**255**	*e*P		**P**	**16 36 22.8**	**-1.2**
NJ2				S		**S**	**16 40 14.8**	**-7.0**
NJ2				pmax	pmax			
	comp=E,17nm,0.6s							
NJ2				LR	LR			
	comp=E,1μm,17.3s							
NJ2				LR	LR			
	comp=E,1μm,16.8s							
NJ2				LR	LR			
	comp=E,1μm,18.4s							
SEY	**Seymchan**	**23.27**	**10**	P		**P**	**16 36 40.6**	**-1.9**
	comp=E,16nm,0.9s,baz=183,slow=10,SNR=25							
YAK	**Yakutsk**	**23.32**	**343**	P		**P**	**16 36 41.4**	**-1.5**
	comp=E,10nm,0.4s,baz=301,slow=2.7,SNR=12							
YAK	**Yakutsk**	**23.32**	**343**	*e*P		**P**	**16 36 39.8**	**-3.1**
YAK				*e**PP		**sP**	**16 36 50.9**	**+1.2**
YAK				*e*PPP		PPP	16 37 14.3	
YAK				*e*			16 40 29.2	
YAK				*e*S		**S**	**16 40 49.2**	**-5.4**
YAK				*e*SSS		SSS	16 41 36.9	
YAK				pmax	pmax			
	comp=Z,12nm,0.9s							
YAK				pmax	pmax			
	comp=N,6.0nm,1.1s							
YAK				pmax	pmax			
	comp=Z,47nm,2.0s							
YAK				pmax	pmax			
	comp=N,48nm,2.8s							
YAK				pmax	pmax			
	comp=E,68nm,3.9s							
YAK				smax	smax			
	comp=N,116nm,2.8s							
YAK				smax	smax			
	comp=E,152nm,3.7s							
YAK				MLR	MLR			
	comp=Z,831nm,17.0s							
YAK				MLR	MLR			
	comp=N,741nm,16.0s							
YAK				MLR	MLR			
	comp=E,440nm,17.0s							
YAK	**Yakutsk**	**23.32**	**343**	*e*P		**P**	**16 36 41.2**	**-1.7**
	comp=E,28nm,1.0s							
YAK				*e*S		**S**	**16 40 55.4**	**+0.8**
CIT	**Chita**	**23.65**	**310**	*e*P		**P**	**16 36 44.6**	**-1.8**
CIT				*e*			16 36 54.2	
CIT				*e*			16 37 02.4	
HHC	**Hu-ho-hao-te**	**24.21**	**282**	*e*P		**P**	**16 36 51.2**	**-0.7**
HHC				pP		sP	16 37 01.6	+2.8
HHC				PP		**PnPn**	**16 37 27.8**	**+6.4**
HHC				S		**S**	**16 41 04.3**	**-5.3**
HHC				sS		sS	16 41 17.8	+0.2
HHC				SS		**SnSn**	**16 41 52.6**	**+1.0**
HHC				pmax	pmax			
	comp=E,18nm,1.6s							
HHC				pmax	pmax			
	comp=E,170nm,4.7s							
HHC				LR	LR			
	comp=E,570nm,14.9s							
HHC				LR	LR			
	comp=E,710nm,16.2s							
HHC				LR	LR			
	comp=E,770nm,14.9s							
TIY	**Taiyuan**	**24.23**	**274**	*e*P		**P**	**16 36 57.0**	**+4.9**
TIY				S		**S**	**16 41 07.4**	**-2.5**
TIY				pmax	pmax			
	comp=E,200nm,6.8s							
TIY				LR	LR			
	comp=E,470nm,15.2s							
TIY				LR	LR			
	comp=E,610nm,13.7s							
TIY				LR	LR			
	comp=E,640nm,14.2s							
BTO	**Baotou**	**25.41**	**282**	*e*P		**P**	**16 37 01.3**	**-1.4**
WHN	**Wuhan**	**25.59**	**257**	↓P		**P**	**16 37 05.1**	**+0.8**
WHN				pmax	pmax			
	comp=E,54nm,1.0s							
WHN				LR	LR			
	comp=E,4μm,16.0s							
WHN				LR	LR			
	comp=E,2μm,13.5s							
WHN				LR	LR			
	comp=E,3μm,16.9s							
BOD	**Bodaibo**	**25.78**	**323**	*e*P		**P**	**16 37 05.7**	**-0.1**
BOD				pmax	pmax			
	comp=Z,33nm,1.5s							
QZH	**Quanzhou**	**25.87**	**241**	↑*i*P		P	16 36 58.7	-8.2
QZH				S		**S**	**16 41 32.5**	**-3.6**
QZH				pmax	pmax			
	comp=Z,500nm,6.6s							
QZH				LR	LR			
	comp=N,1μm,11.9s							
QZH				LR	LR			
	comp=E,1μm,12.6s							
QZH				LR	LR			
	comp=Z,2μm,14.3s							
GUMO	**Guam**	**26.64**	**177**	LR		LR	16 47 48.0	
	comp=Z,209nm,18.5s,baz=2.0,slow=37							
SONA1	**Songino Array**	**27.50**	**298**	*e*P		**P**	**16 37 22.2**	**+0.6**
SONA0	**Songino Array**	**27.50**	**298**	*e*P		**P**	**16 37 23.1**	**+1.4**
	comp=Z,46nm,1.8s							
SONM	**Songino Array**	**27.50**	**298**	P		**P**	**16 37 23.1**	**+1.4**
	comp=Z,2.9nm,0.5s,baz=95,slow=9.7,SNR=19							
SONM				LR	LR	LR	16 48 06.8	
	comp=Z,149nm,19.4s,baz=93,slow=36							
XAN	**Xi'an**	**28.14**	**268**	P		**P**	**16 37 27.4**	**0.0**
XAN				pP		sP	16 37 37.9	+3.6
XAN				sP		pP	16 37 43.1	+11
XAN				pmax	pmax			
	comp=Z,10.0nm,1.1s							
XAN				pmax	pmax			
	comp=Z,140nm,7.8s							
XAN				LR	LR			
	comp=Z,480nm,14.2s							
XAN				LR	LR			
	comp=Z,910nm,13.3s							
XAN				LR	LR			
	comp=Z,1μm,13.8s							
H11N2	**WAKE ISLAND Hy**	**28.66**	**129**	T		T	17 07 08.3	
	baz=321,slow=74,SNR=39							
H11N1	**WAKE ISLAND Hy**	**28.67**	**129**	T		T	17 07 10.6	
	baz=321,slow=74,SNR=21							
H11N3	**WAKE ISLAND Hy**	**28.68**	**129**	T		T	17 07 12.2	
	baz=321,slow=74,SNR=28							
IRK	**Irkutsk**	**29.27**	**307**	*e*P		**P**	**16 37 37.8**	**+0.6**
IRK				pmax	pmax			
	comp=Z,35nm,1.4s							
ENH	**Enshi**	**29.37**	**261**	*e*P		**P**	**16 37 38.0**	**-0.3**
	comp=Z,24nm,0.9s							
H11S3	**WAKE ISLAND Hy**	**29.50**	**131**	T		T	17 08 13.0	
	baz=321,slow=74,SNR=6.6							
H11S2	**WAKE ISLAND Hy**	**29.52**	**131**	T		T	17 08 15.8	
	baz=248,slow=74,SNR=11							
TLY	**Talaya**	**29.58**	**306**	LR		LR	16 49 43.4	
	comp=Z,240nm,19.8s,baz=109,slow=37							
TLY	**Talaya**	**29.58**	**306**	*e*P		**P**	**16 37 42.6**	**+2.6**
TLY				*e*S		**S**	**16 42 33.7**	**-0.6**
TLY				pmax	pmax			
	comp=Z,12nm,1.6s							
TLY				MLR	MLR			
	comp=Z,564nm,15.0s							
TLY	**Talaya**	**29.58**	**306**	*e*P		**P**	**16 37 40.1**	**+0.2**
	comp=Z,15nm,1.5s	

comp=Z,309nm,14.0s
BILL Bilibino 30.42 17 *e*P P **16 37 45.8 -1.4**
comp=Z,17nm,1.1s
MOY Mondy 31.22 306 *e*P P **16 37 54.5 -0.1**
LZH Lanzhou 31.28 275 *e*P P **16 37 57.9 +2.6**
LZH pP sP 16 38 09.6 +7.4
LZH sP pP 16 38 15.8 +16
LZH pmax pmax
comp=Z,19nm,1.0s
TIXI Tiksi 32.27 351 LR LR 16 53 28.5
comp=Z,762nm,18.4s,baz=154,slow=41
GTA Gaotai 33.31 283 ⇑P P **16 38 14.4 +1.4**
GTA pP sP 16 38 22.7 +2.8
GTA sP pP 16 38 26.8 +8.9
GTA PcP **PcP** **16 41 00.9 +6.1**
GTA S S **16 43 26.4 -6.5**
GTA sS sS 16 43 45.2 +4.2
GTA SS **SnSn** **16 45 25.4 -8.1**
GTA pmax pmax
comp=Z,24nm,1.0s
GTA pmax pmax
comp=Z,120nm,5.9s
GTA LR LR
comp=Z,340nm,13.8s
GTA LR LR
comp=Z,710nm,14.3s
GTA LR LR
comp=Z,860nm,13.8s
CD2 Chengdu 33.42 266 *e*P P **16 38 11.8 -2.2**
CD2 pP sP 16 38 25.4 +4.5
CD2 sP pP 16 38 32.0 +13
CD2 S S 16 43 25.5 -9.2
CD2 sS sS 16 43 49.1 +6.3
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
GYA Guiyang 33.48 257 P P **16 38 14.8 +0.2**
GYA pP sP 16 38 28.6 +7.1
GYA PP **PnPn** **16 39 26.2 +0.5**
GYA PcP **PcP** **16 40 59.0 +3.5**
GYA S S 16 43 28.4 -7.4
GYA sS sS 16 43 52.0 +8.1
GYA ScP **ScP** **16 44 38.2 -1.0**
GYA SS **SnSn** **16 45 29.7 -8.2**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,4.9s
GYA LR LR
comp=Z,510nm,16.8s
GYA LR LR
comp=Z,450nm,17.2s
GYA LR LR
comp=Z,480nm,16.9s
QIZ Qiongzhong 35.82 244 P P **16 38 35.4 +0.7**
QIZ S **S** **16 44 11.4 -0.3**
QIZ LR LR
comp=Z,610nm,16.1s
QIZ LR LR
comp=Z,550nm,16.4s
QIZ LR LR
comp=Z,720nm,14.7s
KMI Kunming 37.16 259 P P **16 38 47.3 +0.9**
KMI pP sP 16 38 55.2 +1.9
KMI S S **16 44 31.0 -1.5**
KMI pmax pmax
comp=Z,11nm,1.2s
KMI pmax pmax
comp=Z,120nm,3.1s
KMI LR LR
comp=Z,1μm,13.5s
KMI LR LR
comp=Z,420nm,14.1s
KMI LR LR
comp=Z,810nm,16.5s
WMQ Urumqi 40.93 294 *e*P P **16 39 18.0 +0.4**
WMQ pP sP 16 39 31.3 +6.8
WMQ sP pP 16 39 35.2 +13
WMQ S S **16 45 24.0 -4.6**
WMQ sS sS 16 45 42.7 +5.9
WMQ pmax pmax
comp=Z,24nm,0.7s
WMQ pmax pmax
comp=Z,200nm,5.2s
WMQ LR LR
comp=Z,610nm,14.6s
WMQ LR LR
comp=Z,540nm,11.6s
WMQ LR LR
comp=Z,620nm,19.4s
ZAA0 Zalesovo Array 41.01 310 *e*P P **16 39 17.8 -0.2**
ZAA1 Zalesovo Array 41.01 310 *e*P P **16 39 19.1 +1.1**
ZALV Zalesovo Beam 41.01 310 P P **16 39 19.1 +1.1**
comp=Z,4.6nm,0.5s,baz=89,slow=7.7,SNR=31
ZALV LR LR 16 55 49.7
comp=Z,85nm,21.3s,baz=70,slow=35
NRIK Noril'sk 41.03 333 P P **16 39 19.5 +1.5**
comp=Z,2.6nm,0.5s,baz=85,slow=4.7,SNR=4.5
NRIK LR LR 16 57 54.5
comp=Z,547nm,18.9s,baz=120,slow=38
MYLDM Lahad Datu 41.59 219 *e*P P **16 39 24.8 +1.7**
comp=Z,74nm,1.6s
NVS Novosibirsk 41.85 311 ⇓*i*P P **16 39 26.0 +1.1**
NVS pmax pmax
comp=N,8.0nm,1.6s
NVS pmax pmax
comp=E,15nm,1.6s
NVS pmax pmax
comp=Z,21nm,1.6s
KKM Kota Kinabalu 42.00 223 *e*P P **16 39 28.0 +1.4**
comp=Z,16nm,1.0s
RSO Redoubt South 43.33 40 *e*P P **16 39 38.9 +1.8**
KDAK Kodiak Island 43.59 44 *i*P P **16 39 37.8 -1.1**
CAST Castle Rocks 43.60 36 *e*P P 16 39 45.6 +6.6
comp=Z,13nm,0.6s
LSA Lhasa 43.62 273 P P **16 39 42.1 +1.9**
LSA pmax pmax
comp=Z,8.0nm,2.2s
SPU Mount Spurr 43.65 39 *e*P P 16 39 48.2 +8.7
CHTO Chiang Mai 43.73 254 *e*P P **16 39 41.0 +0.4**
CHTO pmax pmax
comp=Z,17nm,1.5s
CHTO Chiang Mai 43.73 254 *e*P P **16 39 41.0 +0.4**
comp=Z,17nm,1.5s
MK01 Makanchi Array 43.85 300 *e*P P **16 39 41.7 +0.4**
MK31 Makanchi Array 43.85 300 *e*P P **16 39 41.0 -0.3**
MK31 Makanchi Array 43.85 300 *e*P P **16 39 41.0 -0.3**
MK32 Makanchi Array 43.85 300 *e*P P **16 39 42.0 +0.7**
MKAR Makanchi Array 43.85 300 P P **16 39 42.0 +0.7**
comp=Z,7.5nm,1.0s,baz=80,slow=10.0,SNR=33
MKAR Makanchi Array 43.85 300 *e*P P **16 39 41.0 -0.3**
CM31 Chiang Mai Arr 43.96 254 *e*P P **16 39 43.0 +0.6**
CMAR Chiang Mai Arr 43.96 254 P P **16 39 42.4 -0.1**
comp=Z,0.7nm,0.7s,baz=49,slow=6.9,SNR=5.8
CMAR LR LR 17 00 19.9
comp=Z,175nm,20.0s,baz=69,slow=39
CM01 Chiang Mai Arr 43.97 254 *e*P P **16 39 42.1 -0.4**
MAKZ Makanchi 44.06 300 *e*P P **16 39 43.2 +0.3**
MAKZ pmax pmax
comp=Z,15nm,1.0s
MAKZ Makanchi 44.06 300 *e*P P **16 39 43.2 +0.3**
comp=Z,15nm,1.0s
BPAW Bear Paw Mtn. 44.09 35 *e*P P 16 39 51.3 +8.3
comp=Z,12nm,1.5s
KTH Kantishna Hill 44.12 36 *e*P P 16 39 50.3 +7.0
comp=Z,13nm,1.1s
MLY Manley 44.21 34 *e*P P **16 39 44.5 +0.6**
comp=Z,4.3nm,0.8s
SUA Susitna One 44.27 39 *e*P P 16 39 51.8 +7.3
COLD Coldfoot 44.50 31 *e*P P 16 39 51.0 +4.9
comp=Z,5.2nm,1.1s
BWN Browne 44.76 35 *e*P P **16 39 48.9 +0.6**
comp=Z,45nm,1.3s
RC01 Rabbit Creek A 44.77 39 *e*P P 16 39 54.0 +5.6
comp=Z,10nm,1.2s
MCK McKinley 45.01 36 *e*P P 16 39 54.6 +4.3
MCK pmax pmax
comp=Z,13nm,1.3s
MCK McKinley 45.01 36 *e*P P 16 39 54.6 +4.3
comp=Z,13nm,1.3s
RND Reindeer 45.06 36 *e*P P 16 39 55.8 +5.1
RND pmax pmax
comp=Z,23nm,1.6s
RND Reindeer 45.06 36 *e*P P 16 39 55.8 +5.1
comp=Z,23nm,1.6s
MDM Murphy Dome 45.28 34 *e*P P **16 39 51.5 -0.9**
comp=Z,12nm,1.3s
KURK Kurchatov 45.28 306 P P **16 39 53.8 +1.2**
KURK pmax pmax
comp=Z,11nm,0.5s
KURK Kurchatov 45.28 306 *e*P P **16 39 53.2 +0.6**
WRH Wood River Hil 45.35 34 *e*P P **16 39 53.7 +0.7**
comp=Z,4.9nm,1.1s
KURBB Kurchatov Arra 45.36 306 P P **16 39 53.8 +0.6**
comp=Z,11nm,0.5s,baz=78,slow=8.5,SNR=123
SML Sawmill 45.39 38 *e*P P **16 39 54.7 +1.3**
SML pmax pmax
comp=Z,13nm,1.0s
SML Sawmill 45.39 38 *e*P P **16 39 54.7 +1.3**
comp=Z,13nm,1.0s
CCB Clear Creek Bu 45.47 34 *e*P P **16 39 57.0 +3.1**
comp=Z,3.0nm,1.0s
HDA Harding Lake 45.85 35 *e*P P **16 39 55.2 -1.7**
comp=Z,14nm,1.5s
IL1 Eielson Array 45.86 34 *e*P P **16 39 55.9 -1.1**
ILAR Eielson Array 45.86 34 P P **16 39 55.7 -1.3**
comp=Z,1.4nm,0.8s,baz=261,slow=6.5,SNR=19
ILB Eielson Array 45.86 34 *e*P P **16 39 54.8 -2.2**
PDGK Podgornoye 46.77 296 P P **16 40 05.2 +0.8**
PDGK pmax pmax
comp=Z,7.0nm,1.9s
DOT Dot Lake 47.18 35 *e*P P **16 40 06.6 -0.8**
comp=Z,12nm,1.2s
EGAK Eagle 48.30 34 *e*P P 16 40 22.7 +6.7
comp=Z,8.5nm,1.0s
KSM Kuching 49.00 227 *e*P P **16 40 22.3 +0.3**
comp=Z,5.0nm,0.7s
KKN Kakani 49.04 274 *e*P P **16 40 23.3 +0.8**
comp=Z,38nm,1.0s
PKIN Phulchoki 49.06 274 *e*P P **16 40 23.1 +0.4**
DMN Daman 49.27 274 *e*P P **16 40 25.1 +0.8**
VOSK Vostochnaya 49.38 310 *e*P P **16 40 24.8 +0.3**
VOSK pmax pmax
comp=Z,30nm,1.5s
VOSK Vostochnaya 49.38 310 *e*P P **16 40 24.8 +0.3**
comp=Z,30nm,1.5s
GKN Gorkha 49.43 275 *e*P P **16 40 26.0 +0.6**
comp=Z,13nm,0.6s
PCA Pinnacle 49.54 40 *e*P P 16 40 32.4 +6.7
comp=Z,160nm,2.0s
TKM2 Tokmak 2 49.58 297 *e*P P **16 40 27.1 +0.7**
TKM2 pmax pmax
comp=Z,28nm,1.2s
TKM2 Tokmak 2 49.58 297 *e*P P **16 40 27.1 +0.7**
comp=Z,28nm,1.2s
BVAR Borovoye Array 49.64 311 P P **16 40 27.1 +0.7**
comp=Z,3.8nm,0.8s,baz=66,slow=9.1,SNR=2.5
BRVK Borovoye 49.69 311*c i*P P **16 40 27.6 +0.8**
BRVK pmax pmax
comp=Z,58nm,2.5s
BRVK Borovoye 49.69 311 *e*P P **16 40 27.3 +0.4**
comp=Z,18nm,1.4s
OTUK Ortayu 49.90 304 P P **16 40 29.2 +0.7**
OTUK pmax pmax
comp=Z,12nm,1.5s
FRU Bishkek 50.28 297 *e*P P **16 40 29.0 -2.5**
AAK Ala-Archa 50.44 297 LR LR 17 04 12.1
comp=Z,327nm,18.7s,baz=56,slow=39
AAK Ala-Archa 50.44 297 *e*P P **16 40 32.4 -0.5**
AAK pmax pmax
comp=Z,12nm,1.4s
AAK Ala-Archa 50.44 297 *e*P P **16 40 32.4 -0.5**
comp=Z,12nm,1.4s
ZRNK Zerenda 50.46 311 *e*P P **16 40 33.2 +0.5**
ZRNK pmax pmax
comp=Z,24nm,1.3s
ZRNK Zerenda 50.46 311 *e*P P **16 40 33.2 +0.5**
comp=Z,24nm,1.3s
KSH Kashi 50.63 292 *e*P P 16 40 39.1 +4.8
KSH *ep*P sP 16 40 54.3 +13
KSH *e*PcP **PcP** **16 41 56.2 +4.5**
KSH *e*ScP **ScP** **16 45 46.3 -0.8**
KSH S S **16 47 46.1 -2.4**
KSH ScS **ScS** **16 50 21.4 -3.3**
KSH pmax pmax
comp=Z,37nm,2.8s
KSH LR LR
comp=Z,170nm,7.9s
KSH LR LR
comp=Z,210nm,7.4s
KSH LR LR
comp=Z,220nm,12.6s
PYUN Piuthan 50.63 276 *e*P P **16 40 35.4 +0.8**
comp=Z,30nm,0.7s
HYT Haines Junctio 50.70 38 *e*P P **16 40 34.3 -0.2**
INK Inuvik 50.73 28 P P **16 40 34.5 0.0**
comp=Z,1.2nm,0.5s,baz=291,slow=5.3,SNR=3.9
EKS2 Erkin-Say 50.92 297 *e*P P **16 40 36.7 +0.2**
EKS2 pmax pmax
comp=Z,6.0nm,1.0s
EKS2 Erkin-Say 50.92 297 *e*P P **16 40 36.7 +0.2**
comp=Z,6.5nm,1.0s
MNAS Manas 51.85 297 P P **16 40 44.3 +0.8**
MNAS pmax pmax
comp=Z,9.0nm,0.7s
KKAR Karatay Array 52.95 299 *e*P P **16 40 50.8 -0.7**
KKAR Karatay Array 52.95 299 *e*P P **16 40 50.8 -0.7**
SVE Sverdlovsk 53.82 317 *e*P P **16 40 58.7 +1.1**
SVE pmax pmax
comp=Z,38nm,1.6s
SVE MLR MLR
comp=Z,1μm,14.0s
PSI Prapat 54.89 239 *e*P P **16 41 06.1 +0.1**
PSI pmax pmax
comp=Z,11nm,1.1s
PSI Prapat 54.89 239 *e*P P **16 41 06.1 +0.1**
comp=Z,11nm,1.1s
ARU Arti 55.03 318*c i*P P **16 41 06.7 +0.3**
ARU 16 42 05.6
ARU 16 43 07.4
ARU S S **16 48 50.7 +2.9**
ARU 16 50 52.5
ARU SS **SS** **16 52 28.7 -2.2**
ARU pmax pmax
comp=Z,21nm,1.2s
ARU MLR MLR
comp=Z,1μm,15.0s
ARU Arti 55.03 318 *e*P P **16 41 06.1 -0.3**
comp=Z,34nm,1.5s
UGM Wanagama 56.82 220 *e*P P **16 41 21.9 +2.1**
comp=Z,291nm,1.5s
GSI Gunungsitoli 56.89 239 *e*P P **16 41 20.5 +0.2**
comp=Z,26nm,1.2s
ABKAR Akbulak array 57.12 309 *e*P P **16 41 21.6 +0.1**
SPA0 Spitsbergen Ar 57.63 349 *e*P P **16 41 28.3 +3.6**
AKTO Aktyubinsk 57.74 311 P P **16 41 26.5 +0.7**
comp=Z,4.7nm,0.7s,baz=65,slow=12,SNR=14
KBL Kabul 57.81 290 *e*P P **16 41 26.3 -0.5**
KBL pmax pmax
comp=Z,10.0nm,0.9s
KBL Kabul 57.81 290 *e*P P **16 41 26.3 -0.5**
comp=Z,10.0nm,0.9s
RES Resolute Bay 59.02 15 *e*P P **16 41 38.3 +4.0**
RES pmax pmax
comp=Z,31nm,1.4s
RES Resolute Bay 59.02 15 *e*P P **16 41 38.3 +4.0**
comp=Z,31nm,1.4s
YKA Yellowknife Ar 60.16 32 P P **16 41 40.7 -1.7**
comp=Z,0.8nm,0.7s,baz=79,slow=19,SNR=4.2
FITZ Fitzroy Crossi 60.45 200 P P **16 41 43.7 -1.1**
comp=Z,2.5nm,0.9s,baz=45,slow=11,SNR=4.7
WRA Warramunga Arr 60.55 190 P P **16 41 42.7 -2.8**
comp=Z,2.1nm,0.5s,baz=8.1,slow=6.9,SNR=52
ARA0 ARCESS Array S 61.52 339 *e*P P **16 41 50.9 -0.6**
ARCES ARCESS Array B 61.52 339 P P **16 41 50.9 -0.7**
comp=Z,1.7nm,0.8s,baz=43,slow=9.0,SNR=5.2
ARCES LR LR 17 14 24.8
comp=Z,271nm,18.3s,baz=19,slow=42
ARCES ARCESS Array B 61.52 339 P P **16 41 50.9 -0.7**
ARCES pmax pmax
comp=Z,1.0nm,0.6s
ARCES MLR MLR
comp=Z,271nm,18.3s
KLMR Klimovskoe 61.88 327 *e*P P **16 41 52.8 -1.3**
KLMR pmax pmax
comp=Z,19nm,1.4s
GEYT Alibeck 63.71 298 P P **16 42 06.9 +0.2**
comp=Z,3.4nm,0.7s,baz=350,slow=3.3,SNR=9.7
GEYT LR LR 17 11 21.3
comp=Z,145nm,20.2s,baz=330,slow=37
JOF Joensuu 63.85 332 P P **16 42 08.7 +1.5**
JOF pmax pmax
comp=Z,10.0nm,1.2s
AS01 Alice Springs 64.27 190 *e*P P **16 42 08.6 -1.8**
ASAR Alice Springs 64.27 190 P P **16 42 08.4 -1.9**
comp=Z,0.9nm,0.8s,baz=5.0,slow=5.9,SNR=14
COR Corvallis 65.14 52 *e*P P 16 42 20.1 +4.2
COR pmax pmax
comp=Z,196nm,1.8s
COR Corvallis 65.14 52 *e*P P 16 42 20.1 +4.2
comp=Z,196nm,1.8s
LTY Liberty 65.23 48 *e*P P 16 42 22.3 +5.8
comp=Z,14nm,1.5s
TIMB Timberline 65.67 50 *e*P P 16 42 27.8 +8.1
DPW Davenport 66.28 47 *e*P P **16 42 26.7 +3.4**
DPW Davenport 66.28 47 *e*P P **16 42 26.7 +3.4**
OBN Obninsk 66.46 323 *i*P P **16 42 23.9 -0.3**
OBN pmax pmax
comp=Z,8.0nm,0.9s
OBN MLR MLR
comp=Z,450nm,16.0s
OBN Obninsk 66.46 323 *e*P P **16 42 24.1 -0.2**
comp=Z,29nm,0.3s
FIA1 FINESS Array S 66.68 332 *e*P P **16 42 24.9 -0.7**
FIA0 FINESS Array S 66.68 332 *e*P P **16 42 25.4 -0.1**
FIA0 FINESS Array S 66.68 332 *e*P P **16 42 25.4 -0.1**
FINES FINESS Array B 66.68 332 P P **16 42 25.4 -0.1**
comp=Z,2.3nm,0.6s,baz=43,slow=6.7,SNR=16
FINES LR LR 17 14 25.8
comp=Z,285nm,21.4s,baz=36,slow=38
E09A Wood Farm, Sta 67.08 48 *e*P P 16 42 32.9 +4.5
comp=Z,8.2nm,1.1s
SUMG Summit 67.41 1 *e*P P **16 42 30.4 -0.1**
SUMG pmax pmax
comp=Z,10.0nm,1.2s
SUMG Summit 67.41 1 *e*P P **16 42 30.4 -0.1**
comp=Z,10nm,1.2s
VSU Vasula 68.47 330⇑*e*P P **16 42 36.9 +0.1**
VSU pmax pmax
comp=Z,24nm,1.2s
NCK Nalchik 69.75 310⇑*e*P P **16 42 46.9 +1.7**
NCK pmax pmax
comp=Z,8.0nm,0.6s
KIV Kislovodsk 70.00 311 *e*P P **16 42 48.8 +2.0**
KIV pmax pmax
comp=Z,27nm,1.0s
KIV Kislovodsk 70.00 311 *e*P P **16 42 48.0 +1.2**
comp=Z,34nm,1.1s
KBZ Khabaz 70.02 311 P P **16 42 46.8 +0.1**
comp=Z,4.1nm,0.9s,baz=31,slow=5.7,SNR=8.6
KBZ LR LR 17 16 06.7
comp=Z,102nm,18.7s,baz=26,slow=38
NEY Neytrino 70.41 310⇑*e*P P **16 42 51.9 +2.5**
NEY pmax pmax
comp=Z,2.0nm,1.4s
NC204 NORSAR Array S 71.73 338 *e*P P **16 42 56.7 -0.2**
NB2 NORSAR Subarra 71.79 338 P P **16 42 56.6 -0.7**
comp=Z,6.4nm,1.0s,baz=37,slow=6.2
NB200 NORSAR Array S 71.79 338 *e*P P **16 42 57.0 -0.3**
NOA NORSAR Array B 71.79 338 P P **16 42 57.0 -0.3**
comp=Z,2.7nm,0.8s,baz=36,slow=6.0,SNR=7.2
NOA LR LR 17 18 34.1
comp=Z,143nm,19.2s,baz=35,slow=39
STKA Stephens Creek 71.85 182 P P **16 42 55.3 -2.5**
comp=Z,0.9nm,0.5s,baz=354,slow=9.0,SNR=5.4
NBO02 NORSAR Array S 71.89 338 *e*P P **16 42 57.3 -0.6**
AKASG Malin Array Be 72.71 323 P P **16 43 02.7 -0.2**
comp=Z,2.6nm,0.6s,baz=44,slow=6.7,SNR=16
KIEV Kiev 72.72 323⇑*i*P P **16 43 01.7 -1.2**
KIEV pmax pmax
comp=Z,15nm,1.5s
HVU Hansel Valley 73.01 49 *e*P P 16 43 09.4 +4.3
HVU pmax pmax
comp=Z,4.0nm,1.1s
HVU Hansel Valley 73.01 49 *e*P P 16 43 09.3 +4.3
comp=Z,4.1nm,1.1s
PDAR Pinedale Array 74.22 47 P P **16 43 10.5 -1.7**
comp=Z,0.8nm,0.5s,baz=266,slow=1.2,SNR=8.6
NLU North Lily Min 74.58 51 *e*P P 16 43 20.3 +5.9
comp=Z,22nm,0.8s
SORM Soroca 74.89 321⇑*i*P P **16 43 15.9 +0.2**
SORM Soroca 74.89 321⇑P P **16 43 15.9 +0.2**
PRAR RASCA 76.45 322⇓*i*P P **16 43 29.3 +4.6**
BUR08 Bucovina Ar. S 76.74 322 *e*P P **16 43 26.2 -0.2**
BURAR Bucovina Array 76.75 322⇑*i*P P **16 43 27.2 +0.7**
BURAR Bucovina Array 76.75 322⇑P P **16 43 27.2 +0.7**
CFR Carcaliu 77.07 319⇓*i*P P 16 43 35.2 +7.0
KOLS Kolonicke sedl 77.12 325 *e*P P **16 43 28.6 +0.1**
KOLS pmax pmax
comp=Z,5.0nm,1.1s
KOLS Kolonicke sedl 77.12 325 *e*P P **16 43 28.6 +0.1**
STHS Stebnicka Huta 77.21 326 *e*P P **16 43 30.4 +1.4**
STHS *e* 16 43 41.8
STHS pmax pmax
comp=Z,4.0nm,1.1s
STHS Stebnicka Huta 77.21 326 *e*P P **16 43 30.4 +1.4**
STHS *e* 16 43 41.8
OJC Ojcow 77.22 327 *e*P P **16 43 29.7 +0.7**
OJC Ojcow 77.22 327 *e*P P **16 43 29.0 0.0**
OJC pmax pmax
comp=Z,8.0nm,0.9s
OJC Ojcow 77.22 327 *e*P P **16 43 29.0 0.0**
comp=Z,8.0nm,0.9s
CRVS Cervenica-Dubn 77.50 325 *e*P P **16 43 31.1 +0.5**
CRVS *e* 16 43 40.6
CRVS Cervenica-Dubn 77.50 325 *e*P P **16 43 31.1 +0.5**
CRVS *e* 16 43 40.6
HARR Harsova 77.52 319⇓*i*P P 16 43 20.1 -11
NIE Niedzica 77.62 326 *e*P P **16 43 32.2 +1.0**
NIE Niedzica 77.62 326 *e*P P **16 43 32.2 +1.0**
BR101 Keskin Array S 77.90 312 *e*P P **16 43 33.4 +0.3**
BRTR Keskin Array B 77.90 312 P P **16 43 33.4 +0.3**
comp=Z,0.8nm,0.8s,baz=93,slow=2.5,SNR=4.6
BRTR LR LR 17 25 07.6
comp=Z,120nm,18.2s,baz=7.0,slow=41
MLR Muntele Rosu 77.93 320⇓*i*P P 16 43 43.2 +10
MLR Muntele Rosu 77.93 320 *e*P P **16 43 30.1 -3.1**
MLR pmax pmax
comp=Z,30nm,1.8s
MLR Muntele Rosu 77.93 320 *e*P P **16 43 30.1 -3.1**
comp=Z,30nm,1.8s
KSP Ksiaz 78.17 329 *e*P P **16 43 34.9 +0.6**
KSP Ksiaz 78.17 329 *e*P P **16 43 34.9 +0.6**
LANS Liptovska Anna 78.18 326 *e*P P **16 43 36.1 +1.7**
LANS Liptovska Anna 78.18 326 *e*P P **16 43 36.1 +1.7**
OKC Ostrava-Krasne 78.20 327 AMS AMS 17 27 20.0
comp=Z,400nm,16.2s
BR231 Keskin MP Arra 78.31 313 *e*P P **16 43 33.2 -2.1**
VOIR 78.41 321⇓*i*P P **16 43 36.8 +1.0**
VOIR 78.41 321⇓P P **16 43 36.8 +1.0**
MORC Moravsky Berou 78.50 328⇓*i*P P **16 43 34.8 -1.4**
MORC Moravsky Berou 78.50 328 *e*P P **16 43 36.6 +0.4**
MORC pmax pmax
comp=Z,56nm,1.5s
MORC Moravsky Berou 78.50 328 *e*P P **16 43 36.6 +0.4**
comp=Z,56nm,1.5s
DRGR 78.52 323⇓*i*P P 16 43 46.5 +10
UPC Upice 78.54 329 AMS AMS 17 22 20.0
comp=Z,400nm,18.3s
DPC Dobruska-Polom 78.54 329 *e*P P **16 43 37.3 +0.9**
DPC AMS AMS 17 23 50.0
comp=Z,300nm,20.2s
DPC Dobruska-Polom 78.54 329 *e*P P **16 43 37.3 +0.9**
DPC MLR MLR
comp=Z,300nm,20.2s
MTUR Matau 78.55 321⇓*i*P P **16 43 37.4 +0.8**
MTUR Matau 78.55 321⇓P P **16 43 37.4 +0.8**
PSZ Piszkesteto 78.93 325⇓*i*P P **16 43 39.5 +0.9**
PSZ Piszkesteto 78.93 325⇓P P **16 43 39.5 +0.9**
VYHS Vyhne 78.95 326 *e*P P **16 43 39.0 +0.4**
VYHS *e* 16 43 48.7
VYHS pmax pmax
comp=Z,5.0nm,1.4s
VYHS Vyhne 78.95 326 *e*P P **16 43 39.0 +0.4**
VYHS *e* 16 43 48.7
CLL Collm 79.06 331⇑*i*P P **16 43 38.8 -0.3**
comp=Z,8.0nm,1.0s
CLL *e* 16 43 48.0
CLL *e* 16 43 52.0
CLL LmH 17 17 00.0
comp=N,300nm,19.7s
CLL LmH 17 17 00.0
comp=E,500nm,21.8s
CLL Collm 79.06 331⇑*i*P P **16 43 38.8 -0.3**

CLL				*e*		16 43 48.0	
CLL				pmax	pmax		
	comp=Z,8.0nm,1.0s						
PVCC	**Panska Ves**	**79.09 330**		AMS	AMS	17 22 20.0	
	comp=Z,400nm,16.5s						
VRAC	**Vranov**	**79.25 328**	⇑	*i* P	**P**	**16 43 41.6**	**+1.3**
VRAC	**Vranov**	**79.25 328**	⇑	P	**P**	**16 43 41.6**	**+1.3**
GOPC	**GO Pecny, Ondr**	**79.49 329**		AMS	AMS	17 23 00.0	
	comp=Z,300nm,16.7s						
PRU	**Pruhonice**	**79.53 329**		*e*P	**P**	**16 43 42.8**	**+1.1**
PRU				*e*pP	**PcP**	**16 43 52.1**	**+2.4**
PRU				AMS	AMS	17 23 00.0	
	comp=Z,400nm,18.7s						
PRU	**Pruhonice**	**79.53 329**		*e*P	**P**	**16 43 42.8**	**+1.1**
PRU				*e*		16 43 52.1	
PRU				MLR	MLR		
	comp=Z,400nm,18.7s						
TREC	**Trest**	**79.71 328**		AMS	AMS	17 24 10.0	
	comp=Z,300nm,20.3s						
KHC	**Kasperske Hory**	**80.59 329**		*e*P	**P**	**16 43 46.5**	**-1.1**
KHC				*e*pP	**sP**	**16 43 57.6**	**+2.8**
KHC				AMS	AMS	17 23 40.0	
	comp=Z,500nm,16.7s						
KHC	**Kasperske Hory**	**80.59 329**		*e*P	**P**	**16 43 46.5**	**-1.1**
KHC				*e*		16 43 57.6	
KHC				MLR	MLR		
	comp=Z,500nm,16.7s						
CONA	**Conrad Observa**	**80.64 327**		*i* P	**P**	**16 43 48.8**	**+0.9**
	comp=Z,5.3nm,1.1s						
GERES	**GERESS Array B**	**80.78 329**		P	**P**	**16 43 47.9**	**-0.7**
	comp=Z,0.9nm,0.7s,baz=33,slow=5.6,SNR=5.1						
GERES				LR	LR	17 23 57.5	
	comp=Z,323nm,19.4s,baz=14,slow=39						
ARSA	**Arzberg**	**81.31 327**		*i* P	**P**	**16 43 51.9**	**+0.5**
	comp=Z,2.3nm,0.7s						
VTS	**Vitosha**	**81.40 320**	⇑	*i* P	**P**	**16 43 52.6**	**+0.5**
VTS	**Vitosha**	**81.40 320**		*e*P	**P**	**16 43 51.8**	**-0.3**
VTS				pmax	pmax		
	comp=Z,8.0nm,1.2s						
VTS	**Vitosha**	**81.40 320**		*e*P	**P**	**16 43 51.8**	**-0.3**
	comp=Z,8.3nm,1.2s						
SCHQ	**Schefferville**	**81.73 17**		LR	LR	17 25 34.0	
	comp=Z,163nm,18.0s,baz=308,slow=40						
SOKA	**Soboth**	**81.97 327**		*i* P	**P**	**16 43 55.3**	**+0.3**
	comp=Z,8.5nm,1.2s						
OBKA	**Obir**	**82.31 327**		*i* P	**P**	**16 43 56.9**	**+0.2**
	comp=Z,2.8nm,0.5s						
KBA	**Koelnbreinsper**	**82.34 328**		*i* PcP	**P**	**16 43 58.2**	**+1.2**
	comp=Z,9.1nm,1.1s						
MYKA	**Terra Mystica**	**82.58 328**		*i* P	**P**	**16 43 58.8**	**+0.6**
	comp=Z,4.4nm,0.9s						
WTTA	**Wattenberg**	**82.87 329**		*i* P	**P**	**16 44 00.1**	**+0.3**
	comp=Z,4.1nm,0.9s						
ABTA	**Abfaltersbach**	**82.94 328**		*i* P	**P**	**16 43 58.0**	**-2.1**
	comp=Z,5.1nm,1.0s						
MOTA	**Moosalm**	**83.01 330**		*i* PcP	**P**	**16 44 01.9**	**+1.4**
	comp=Z,7.6nm,1.0s						
RETA	**Reutte**	**83.02 330**		*i* P	**P**	**16 44 00.6**	**+0.2**
	comp=Z,8.1nm,1.4s						
FETA	**Feichten**	**83.42 330**		*i* P	**P**	**16 44 01.2**	**-1.4**
	comp=Z,7.0nm,1.3s						
PDG	**Podgorica**	**83.43 322**	⇑	*i* P	**P**	**16 44 02.1**	**-0.4**
DAVA	**Damuels**	**83.53 330**		*i* PcP	**P**	**16 44 03.6**	**+0.5**
	comp=Z,15nm,1.2s						
FUORN	**Ofenpass-Fuorn**	**83.93 330**		*e*P	**P**	**16 44 05.4**	**0.0**
	comp=Z,16nm,1.1s						
PPT	**Papeete**	**84.67 118**		LR	LR	17 15 31.5	
	comp=Z,124nm,21.4s,baz=300,slow=31						
LTX	**Lajitas**	**86.84 54**		*e*P	**P**	**16 44 19.0**	**-1.0**
LTX	**Lajitas**	**86.84 54**		*e*P	**P**	**16 44 18.9**	**-1.0**
TXAR	**Lajitas Array**	**86.84 54**		P	**P**	**16 44 18.9**	**-1.0**
	comp=Z,0.4nm,0.5s,baz=305,slow=3.9,SNR=7.8						
TXAR				LR	LR	17 21 25.0	
	comp=Z,50nm,19.8s,baz=0.0,slow=34						
TXAR	**Lajitas Array**	**86.84 54**		P	**P**	**16 44 19.0**	**-1.0**
TXAR				MLR	MLR		
	comp=Z,50nm,19.8s						
KEST	**Kesra**	**93.38 324**		LR	LR	17 33 04.8	
	comp=Z,275nm,18.5s,baz=298,slow=39						
ESDC	**Sonseca Array**	**95.04 335**		LR	LR	17 34 51.2	
	comp=Z,106nm,19.0s,baz=15,slow=40						
TOA1	**Torodi Ar. Sit**	**116.10 318**		*e*PKPdf	**PKPdf**	**16 50 17.7**	**-1.1**
TORD	**Torodi Ar. Bea**	**116.10 318**		PKP	**PKPdf**	**16 50 17.7**	**-1.1**
	comp=Z,0.3nm,0.5s,baz=11,slow=2.6,SNR=4.8						
SNAA	**Sanae**	**144.36 198**		PKP	**PKPab**	**16 51 06.7**	**-1.6**

*ISCJB **07** 16:35:38.0±0.6, 19°.45N±0°.07×145°.7E±0°.2, h147km, mb3.9/18, Error ellipse: s-maj=22.5km s-min=9.4km az=175.4*

*IDC **07** 16:35:45.9±4.0, 19°.46N×145°.54E, h207km±39km, mb3.6/18,mb1 3.7/20,mb1mx3.5/51,mbtmp4.2/20,Error ellipse: s-maj=22.1km s-min=8.4km az=89.0*

ISC 07 16:35:39.8±0.7, 19°.44N±0°.09×145°.6E±0°.2, h147km, n22, σ0§86/22, mb3.9/18, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**14.57 340**		P	**P**	**16 39 02.0**	**+0.6**
	4.5nm,0.3s,baz=62,slow=18,SNR=3.0						
MJAR	**Matsushiro Arr**	**18.22 341**		P	**P**	**16 39 42.1**	**+0.4**
	0.9nm,0.3s,baz=161,slow=9.2,SNR=9.0						
MAT	**Matsushiro**	**18.22 341**		P	**P**	**16 39 42.6**	**+0.9**
JNU	**Nakatsue**	**18.91 319**		P	**Pn**	**16 39 50.9**	**-0.7**
	0.2nm,0.3s,baz=175,slow=15,SNR=2.4						
KSRS	**Korea Array**	**23.65 323**		P	**P**	**16 40 38.0**	**+0.4**
	2.5nm,0.6s,baz=149,slow=8.6,SNR=16						
KLR	**Kul'dur**	**31.73 343**		P	**P**	**16 41 50.4**	**+0.8**
	3.7nm,0.5s,baz=151,slow=6.2,SNR=17						
CTA	**Charters Tower**	**39.29 179**		P	**P**	**16 42 55.2**	**+0.7**
	1.1nm,0.4s,baz=355,slow=11,SNR=4.0						
WRA	**Warramunga Arr**	**40.66 196**		P	**P**	**16 43 06.0**	**+0.3**
	7.8nm,0.6s,baz=6.0,slow=8.7,SNR=36						
FITZ	**Fitzroy Crossi**	**42.12 209**		P	**P**	**16 43 18.2**	**+0.4**
	10nm,0.7s,baz=9.6,slow=6.6,SNR=65						
SONM	**Songino Array**	**42.49 321**		P	**P**	**16 43 21.0**	**+0.4**
	1.2nm,0.7s,baz=139,slow=9.0,SNR=5.5						
SEY	**Seymchan**	**43.71 5**		P	**P**	**16 43 30.8**	**+0.8**
	0.6nm,0.5s,baz=190,slow=7.8,SNR=6.0						
YAK	**Yakutsk**	**43.97 349**		P	**P**	**16 43 32.1**	**+0.1**
	4.3nm,0.5s,baz=293,slow=3.6,SNR=4.1						
ASAR	**Alice Springs**	**44.33 195**		P	**P**	**16 43 35.4**	**0.0**
	1.6nm,0.6s,baz=18,slow=6.7,SNR=15						
STKA	**Stephens Creek**	**51.16 184**		P	**P**	**16 44 27.5**	**-0.4**
	1.3nm,0.5s,baz=333,slow=6.2,SNR=4.5						
ZALV	**Zalesovo Beam**	**57.35 327**		P	**P**	**16 45 11.6**	**-0.9**
	0.9nm,0.4s,baz=96,slow=7.7,SNR=3.6						
MKAR	**Makanchi Array**	**57.86 314**		P	**P**	**16 45 17.1**	**+0.9**
	0.6nm,0.7s,baz=92,slow=7.8,SNR=4.2						
ILAR	**Eielson Array**	**63.04 26**		P	**P**	**16 45 50.2**	**-0.8**
	1.6nm,0.5s,baz=249,slow=5.4,SNR=18						
BVAR	**Borovoye Array**	**65.82 320**		P	**P**	**16 46 08.5**	**-0.8**
	0.7nm,0.5s,baz=86,slow=7.9,SNR=5.1						
INK	**Inuvik**	**68.75 23**		P	**P**	**16 46 27.6**	**+0.3**
	1.6nm,0.5s,baz=239,slow=5.1,SNR=3.7						
YKA	**Yellowknife Ar**	**77.40 28**		P	**P**	**16 47 18.3**	**0.0**
	1.0nm,0.7s,baz=288,slow=5.3,SNR=4.3						
ARCES	**ARCESS Array B**	**81.75 342**		P	**P**	**16 47 40.8**	**-0.9**
	1.2nm,0.7s,baz=86,slow=7.4,SNR=3.5						
FINES	**FINESS Array B**	**86.16 335**		P	**P**	**16 48 01.8**	**-2.5**
	0.4nm,0.4s,baz=70,slow=6.3,SNR=8.1						

*IDC **07** 16:46:30.9±1.1, 29°.33S×176°.58W, h0km, mb4.3/5, mb1 4.4/7,mb1mx4.1/27,mbtmp4.3/7,ML3.4/2,MS3.8/6, Ms1 3.8/6,ms1mx3.4/36, Error ellipse: s-maj=32.9km s-min=20.0km az=157.0*

*ISCJB **07** 16:46:32.9±0.7, 29°.41S±0°.04×176°.6W±0°.1, h21km, mb4.5/13,MS3.9/4, Error ellipse: s-maj=12.8km s-min=6.1km az=7.6*

*NEIC **07** 16:46:33.0±0.7, 29°.29S×176°.71W, h10km, mb4.8/16, Error ellipse: s-maj=18.9km s-min=8.0km az=104.0*

ISC 07 16:46:34.3±0.7, 29°.34S±0°.07×176°.59W±0°.09, h21km, n52, σ1§43/48, mb4.6/13, MS3.9/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.17 274**		Pn	**Pb**	**16 46 55.4**	**-0.4**
	619nm,0.3s,baz=97,slow=5.5,SNR=44						
RAO				Sn	**Sn**	**16 47 12.4**	**+1.7**
	1µm,0.3s,baz=285,slow=20,SNR=12						
RAO	**Raoul Island**	**1.17 274**		*e*Pn	**Pb**	**16 46 55.4**	**-0.4**
RAO				*e*Sn	**Sn**	**16 47 09.3**	**-1.3**
MXZ	**Matakaoa Point**	**9.25 206**		*e*Pn	**Pn**	**16 48 46.1**	**-0.2**
OUZ	**Omahuta**	**10.17 232**		*e*Pn	Pn	16 49 03.7	+4.7
URZ	**Urewera**	**10.33 209**		Pn	**Pn**	**16 49 01.1**	**-0.1**
	0.2nm,0.3s,baz=307,slow=20,SNR=4.2						
URZ				Sn	**Sn**	**16 50 57.5**	**+1.2**
	0.8nm,0.3s,baz=72,slow=22,SNR=5.9						
URZ	**Urewera**	**10.33 209**		*e*Pn	**Pn**	**16 49 00.4**	**-0.8**
URZ				*e*Sn	**Sn**	**16 50 57.5**	**+1.2**
BKZ	**Black Stump Fm**	**11.35 208**		*e*Pn	**Pn**	**16 49 12.8**	**-2.4**
HIZ	**Hauiti**	**11.58 216**		*e*Pn	**Pn**	**16 49 17.7**	**-0.7**
MSVF	**Nonsavu**	**12.55 336**		*e*Pn	**Pn**	**16 49 34.5**	**+2.8**
BFZ	**Birch Farm**	**12.75 208**		*e*Pn	**Pn**	**16 49 36.2**	**+1.9**
SNZO	**South Karori**	**13.89 208**		*e*Pn	**Pn**	**16 49 50.2**	**+0.4**
THZ	**Touhousse**	**15.05 212**		*e*Pn	**Pn**	**16 50 05.8**	**+0.2**
KHZ	**Kahutara**	**15.30 209**		*e*Pn	**Pn**	**16 50 08.0**	**-0.9**
	347nm,2.0s						
AFI	**Afiamalu**	**15.98 17**		*e*Pn	**P**	**16 50 20.5**	**-0.9**
	57nm,1.1s						
LTZ	**Lake Taylor**	**16.14 211**		*e*Pn	**P**	**16 50 22.5**	**-0.5**
	123nm,1.6s						
OXZ	**Oxford**	**16.68 210**		*e*P	**P**	**16 50 28.4**	**-0.5**
	111nm,1.5s						
DZM	**Mont Dzumac**	**16.91 291**		LR	LR	16 55 50.9	
	comp=Z,511nm,18.3s,baz=102,slow=33						
DZM	**Mont Dzumac**	**16.91 291**		*e*LR	LR	16 54 31.7	
	583nm,23.4s						
DZM	**Mont Dzumac**	**16.91 291**		*e*Pn	**P**	**16 50 33.3**	**+1.7**
	32nm,1.5s						
RAR	**Rarotonga**	**17.21 66**		LR	LR	16 55 40.3	
	comp=Z,188nm,19.5s,baz=236,slow=32						
RPZ	**Rata Peaks**	**17.42 211**		P	**P**	**16 50 36.6**	**-0.6**
	0.2nm,0.3s,baz=130,slow=7.9,SNR=2.7						
ODZ	**Otahua Downs**	**18.65 209**		*e*P	**Pn**	**16 50 51.1**	**0.0**
	168nm,1.9s						
WKZ	**Wanaka**	**19.22 213**		*e*P	**Pn**	**16 50 57.6**	**-0.3**
	244nm,1.8s						
TBI	**Tubuai**	**25.00 83**		*e*LR	LR	16 58 05.7	
	266nm,29.2s						
PPT2	**Papeete2**	**27.32 71**		*e*LR	LR	16 59 07.9	
	250nm,25.0s						
ARMA	**Armidale**	**27.54 260**		*e*P	**P**	**16 52 18.9**	**-0.8**
	36nm,1.4s						
STKA	**Stephens Creek**	**35.93 255**		P	**P**	**16 53 33.2**	**0.0**
	1.3nm,0.4s,baz=104,slow=8.7,SNR=4.0						
STKA				LR	LR	17 06 41.5	
	comp=Z,100nm,19.6s,baz=28,slow=34						
STKA	**Stephens Creek**	**35.93 255**		*e*P	**P**	**16 53 33.1**	**-0.1**
	6.3nm,1.9s						
PMG	**Port Moresby**	**39.29 293**		LR	LR	17 07 14.3	
	comp=Z,151nm,19.0s,baz=174,slow=32						
PATS	**Pohnpei**	**43.32 322**		*e*P	**P**	**16 54 35.2**	**+0.3**
	45nm,1.1s						
MANU	**Manus Island**	**43.71 302**		*e*P	**P**	**16 54 36.8**	**-1.4**
	275nm,2.0s						
AS01	**Alice Springs**	**44.37 265**		*e*P	**P**	**16 54 42.6**	**-0.8**
AS31	**Alice Springs**	**44.41 265**		*e*P	**P**	**16 54 43.1**	**-0.7**
	1.4nm,1.1s						
ASAR	**Alice Springs**	**44.41 265**		P	**P**	**16 54 43.0**	**-0.8**
	1.5nm,0.5s,baz=104,slow=7.0,SNR=51						
ASAR				LR	LR	17 12 15.3	
	comp=Z,230nm,20.2s,baz=64,slow=35						
WB2	**Warramunga Arr**	**45.29 270**		*e*P	**P**	**16 54 48.3**	**-2.5**
WR1	**Warramunga Arr**	**45.30 270**		*e*P	**P**	**16 54 48.9**	**-2.0**
	6.1nm,0.9s						
WRA	**Warramunga Arr**	**45.30 270**		P	**P**	**16 54 48.9**	**-2.0**
	2.7nm,0.7s,baz=109,slow=7.7,SNR=15						
VNDA	**Vanda**	**49.28 186**		*e*P	**P**	**16 55 25.0**	**+4.0**
	14nm,1.8s						
MTN	**Manton Dam**	**51.05 277**		*e*P	**P**	**16 55 37.7**	**+2.4**
	31nm,1.4s						
FITZ	**Fitzroy Crossi**	**53.60 268**		P	**P**	**16 55 55.7**	**+1.4**
	10.0nm,1.3s,baz=30,slow=20,SNR=5.3						
FITZ				LR	LR	17 18 20.7	
	comp=Z,95nm,18.7s,baz=62,slow=36						
FITZ	**Fitzroy Crossi**	**53.60 268**		*e*P	**P**	**16 55 54.8**	**+0.5**
	24nm,1.6s						
CASY	**Casey**	**56.65 208**		*e*P	**P**	**16 56 13.4**	**-2.2**
	6.5nm,1.0s						
PETK	**Petropavlovsk-**	**85.10 345**		P	**P**	**16 59 09.2**	**+1.0**
	0.8nm,0.5s,baz=98,slow=5.1,SNR=4.1						
PEA1	**Petropavlovsk-**	**85.11 345**		*e*P	**P**	**16 59 09.2**	**+1.0**
KURK	**Kurchatov**	**121.20 314**		PKP	**PKPdf**	**17 05 24.2**	**-0.9**
KURBB	**Kurchatov Arra**	**121.24 314**		PKP	**PKPdf**	**17 05 24.2**	**-1.0**
	0.8nm,0.9s,baz=118,slow=2.0,SNR=7.0						
BVAR	**Borovoye Array**	**126.50 316**		PKP	**PKPdf**	**17 05 35.9**	**+0.6**
	0.7nm,0.7s,baz=77,slow=3.2,SNR=6.1						
FINES	**FINESS Array B**	**144.55 341**		PKP	PKPbc	17 06 06.3	-0.8
	1.0nm,0.7s,baz=5.7,slow=3.8,SNR=5.6						
NB2	**NORSAR Subarra**	**147.87 353**		PKP	**PKPbc**	**17 06 15.0**	**-2.2**
	comp=Z,0.9nm,0.6s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**147.87 353**		PKPbc	**PKPab**	**17 06 17.8**	**-1.9**
	comp=Z,1.3nm,0.7s,baz=16,slow=5.0,SNR=4.3						
AKASG	**Malin Array Be**	**151.17 325**		PKPbc	**PKPbc**	**17 06 25.2**	**-0.3**
	comp=Z,3.8nm,0.7s,baz=44,slow=2.8,SNR=11						
BRTR	**Keskin Array B**	**153.14 301**		PKPbc	**PKPbc**	**17 06 30.9**	**+0.3**
	comp=Z,0.6nm,0.6s,baz=116,slow=2.9,SNR=5.3						

*IDC **07** 16:49:43.3±1.0, 28°.45N×93°.99E, h0km, mb3.5/9, mb1 3.6/10,mb1mx3.4/54,mbtmp3.5/10,ML3.1/1, Error ellipse: s-maj=58.6km s-min=16.4km az=60.0*

ISC 07 16:49:43.9±3.7, 28°.63N±0°.05×94°.17E±0°.05, h1km±24km, n23, σ2§19/30, mb3.7/8, Eastern Xizang-India border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZIRO	**ZIRO**	**1.14 194**		*ex*	**Pn**	**16 50 04.8**	**-2.3**
ZIRO				*ex*	**Sn**	**16 50 18.2**	**-5.2**
DIBR	**DIBRUGARH**	**1.33 150**		*ex*	**Sn**	**16 50 29.1**	**+1.0**
DIBR				AML	AML	16 50 31.1	
	comp=E,3µm,0.2s						
DIBR				AML	AML	16 50 31.1	
	comp=N,1µm,0.2s						
ITAN	**ITANAGAR**	**1.53 195**		*e*P	**Pn**	**16 50 12.8**	**+0.5**
ITAN				AML	AML	16 50 33.8	
	comp=E,1µm,0.2s						
JORH	**JORHAT**	**1.88 178**		*e*P	**Pn**	**16 50 18.5**	**+1.3**
JORH				*ex*	**Sn**	**16 50 42.7**	**+1.1**
JORH				AML	AML	16 50 44.2	
	comp=E,1µm,0.2s						
JORH				AML	AML	16 50 45.3	
	comp=N,1µm,0.3s						
LKP	**Lekhapani**	**1.97 131**		*e*P	**Pn**	**16 50 15.5**	**-2.9**
LKP				*e*S	**Sb**	**16 50 45.5**	**-0.2**
LKP				AML	AML	16 50 49.6	
	comp=N,658nm,0.5s						
LKP				AML	AML	16 50 50.3	
	comp=E,1µm,0.4s						
MOKO	**MOKOCHONG**	**2.32 172**		*e*P	**Pn**	**16 50 25.0**	**+1.6**
MOKO				*e*S	**Sb**	**16 50 57.3**	**+1.4**
MOKO				AML	AML	16 50 57.4	
	comp=N,1µm,0.3s						
MOKO				AML	AML	16 50 57.8	
	comp=E,1µm,0.7s						
TEZP	**TEZPUR**	**2.34 211**		*e*P	**Pn**	**16 50 25.1**	**+1.5**
TEZP				*ex*	**Sn**	**16 50 54.0**	**+1.0**
TEZP				AML	AML	16 50 54.9	
	comp=E,661nm,0.5s						
KOHI	**KOHIMA**	**2.90 181**		*e*S	**Sb**	**16 51 13.3**	**+0.7**
KOHI				AML	AML	16 51 15.5	
	comp=N,498nm,0.6s						
GUWA	**GUWAHATI**	**3.28 223**		*e*P	**Pn**	**16 50 35.3**	**-1.0**
GUWA				*i* S	**Sb**	**16 51 22.0**	**-1.2**
GUWA				AML	AML	16 51 25.7	
SHL	**Shillong**	**3.67 214**		*ex*	**Pb**	**16 50 49.1**	**-0.5**
SHL				*e*S	**Sb**	**16 51 31.3**	**-3.4**
SHL				AML	AML	16 51 35.7	
	comp=E,200nm,0.5s						
SHL				*ex*	x	16 51 37.6	
SHL				AML	AML	16 51 37.8	
	comp=N,201nm,0.5s						
IMP	**Imphal**	**3.79 183**		*e*P	**Pn**	**16 50 42.5**	**-1.1**
IMP				AML	AML	16 51 45.5	
	comp=N,36nm,0.6s						
IMP				AML	AML	16 51 45.9	
	comp=E,29nm,0.5s						
SILR	**SILCHAR**	**4.02 198**		*ex*	**Sb**	**16 51 51.4**	**+6.7**
SILR				AMB	AMB	16 51 53.3	
	comp=N,1µm,0.7s						
TURI	**Tura**	**4.59 229**		*e*P	**Pn**	**16 50 53.5**	**-1.0**
CMAR	**Chiang Mai Arr**	**11.03 156**		Pn	**Pn**	**16 52 21.6**	**-1.3**
	comp=N,0.0nm,0.3s,baz=327,slow=13,SNR=3.7						
MKAR	**Makanchi Array**	**20.38 336**		P	**P**	**16 54 23.1**	**+1.1**
	comp=N,1.1nm,0.4s,baz=144,slow=11,SNR=13						
SONM	**Songino Array**	**21.39 23**		P	**P**	**16 54 34.8**	**+1.8**
	comp=N,0.5nm,0.4s,baz=207,slow=11,SNR=3.8						
KURBB	**Kurchatov Arra**	**24.95 336**		P	**P**	**16 55 09.7**	**+1.0**
	comp=N,1.0nm,0.5s,baz=141,slow=10,SNR=17						
BVAR	**Borovoye Array**	**30.02 331**		P	**P**	**16 55 55.3**	**+1.2**
	comp=N,0.5nm,0.4s,baz=223,slow=44,SNR=2.8						
FINES	**FINESS Array B**	**54.85 327**		P	**P**	**16 59 14.6**	**-0.9**
	comp=N,0.7nm,0.6s,baz=69,slow=10,SNR=4.4						
ARCES	**ARCESS Array B**	**56.03 337**		P	**P**	**16 59 23.9**	**0.0**
	comp=N,0.9nm,0.8s,baz=74,slow=8.9,SNR=4.0						
WRA	**Warramunga Arr**	**61.95 137**		P	**P**	**17 00 05.0**	**-0.6**
	comp=N,0.2nm,0.6s,baz=320,slow=7.8,SNR=4.8						
NOA	**NORSAR Array B**	**62.03 327**		P	**P**	**17 00 05.2**	**-0.6**
	comp=N,0.4nm,0.6s,baz=90,slow=4.4,SNR=3.3						
ASAR	**Alice Springs**	**64.56 140**		P	**P**	**17 00 22.2**	**-0.7**
	comp=N,0.4nm,0.8s,baz=321,slow=7.2,SNR=3.9						

*IDC **07** 17:11:06.3±1.1, 29°.41S×176°.28W, h0km, mb4.1/5, mb1 4.4/6,mb1mx4.0/36,mbtmp4.2/6,ML3.8/1,MS3.5/3, Ms1 3.5/3,ms1mx3.0/25, Error ellipse: s-maj=38.8km s-min=21.3km az=176.0*

*NEIC **07** 17:11:08.6±0.8, 29°.10S×176°.50W, h10km, mb4.6/2, Error ellipse: s-maj=31.7km s-min=16.4km az=183.0*

ISC 07 17:11:10.0±1.0, 29°.4S±0°.2×176°.37W±0°.08, h21km, n13, σ1§89/17, mb4.2/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.37 277**		Pn	**Pb**	**17 11 35.3**	**+0.5**
	220nm,0.3s,baz=90,slow=15,SNR=7.2						
RAO				Sn	**Sb**	**17 11 54.5**	**+2.6**
	324nm,0.3s,baz=92,slow=23,SNR=8.8						
RAO	**Raoul Island**	**1.37 277**		Pn	**Pn**	**17 11 30.8**	**-3.0**
RAO				*e*Sn	**Sn**	**17 11 50.6**	**-0.7**
RAO				Sn	**Sb**	**17 11 54.5**	**+2.6**
URZ	**Urewera**	**10.33 210**		Pn	**Pn**	**17 13 34.5**	**-2.4**
	0.7nm,0.3s,baz=293,slow=2.9,SNR=7.0						
URZ				LR	LR	17 17 46.6	
	comp=Z,123nm,19.2s,baz=24,slow=38						
CTAO	**Charters Tower**	**35.07 277**		*e*P	**P**	**17 18 02.2**	**+0.5**
	15nm,0.6s						
STKA	**Stephens Creek**	**36.09 255**		P	**P**	**17 18 11.3**	**+0.9**
	2.4nm,0.7s,baz=96,slow=11,SNR=8.3						
STKA				LR	LR	17 32 22.9	
	comp=Z,64nm,18.5s,baz=39,slow=35						
ASAR	**Alice Springs**	**44.59 265**		P	**P**	**17 19 20.3**	**-0.6**
	2.7nm,0.8s,baz=101,slow=6.2,SNR=60						
ASAR				LR	LR	17 37 53.5	
	comp=Z,106nm,18.4s,baz=112,slow=36						
WRAB	**Tennant Creek**	**45.49 270**		*e*P	**P**	**17 19 27.0**	**-1.0**
	1.8nm,0.7s						
WRA	**Warramunga Arr**	**45.50 270**		P	**P**	**17 19 27.1**	**-1.0**
	3.2nm,0.8s,baz=110,slow=7.5,SNR=20						
FITZ	**Fitzroy Crossi**	**53.79 268**		P	**P**	**17 20 32.1**	**+0.8**
	3.5nm,1.0s,baz=135,slow=10.0,SNR=3.6						
QSPA	**South Pole Qui**	**60.67 180**		*e*P	**P**	**17 21 23.0**	**+3.6**
TXAR	**Lajitas Array**	**90.68 56**		P	**P**	**17 24 11.6**	**+0.3**
	0.4nm,0.8s,baz=206,slow=5.4,SNR=4.6						
AKASG	**Malin Array Be**	**151.36 325**		PKPbc	**PKPbc**	**17 31 00.5**	**-1.2**
	0.5nm,0.4s,baz=52,slow=2.4,SNR=4.8						
AKASG				PKPab	**PKPab**	**17 31 08.8**	**-1.1**
	0.9nm,0.4s,baz=47,slow=3.6,SNR=7.2						
TORD	**Torodi Ar. Bea**	**163.69 173**		PKPab	**PKPab**	**17 32 04.4**	**+0.7**
	1.5nm,0.8s,baz=180,slow=3.9,SNR=7.0						

*ISCJB **07** 17:13:12.4±0.4, 24°.23N±0°.02×121°.81E±0°.02, h6km±3km, Error ellipse: s-maj=3.4km s-min=2.5km az=41.8*

*JMA **07** 17:13:12.0, 24°.21N×121°.73E, h16km±1km, M2.3*

*TAP **07** 17:13:12.8, 24°.26N×121°.76E, h14km, ML3.2, B*

ISC 07 17:13:12.6±0.8, 24°.24N±0°.02×121°.77E±0°.02, h16km±5km, n52, σ0§72/77, 8C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.08 339**		*e*P	**Pg**	**17 13 16.0**	**+0.2**
	baz=353						
EHP				*e*S	**Sg**	**17 13 18.5**	**+0.6**
	baz=353						
ENA	**Nanau**	**0.19 351**	⇑	*i* P	**Pg**	**17 13 17.1**	**-0.1**
	baz=357						
ENA				S	**Sg**	**17 13 20.1**	**-0.3**
	baz=357						
TWD	**Chiawan**	**0.22 226**	⇑	*i* P	**Pb**	**17 13 17.9**	**-0.4**
	baz=219

	baz=247								
YUS	**Yu-Shan**	**1.06**	**225**	*e*P		**Pn**	**17 13 32.8**	**-0.5**
	baz=226								
JYNG	**Yonagunijimaku**	**1.09**	**78**	P		**Pb**	**17 13 33.0**	**-0.1**
ALS	**Alishan**	**1.14**	**231**	*e*P		**Pn**	**17 13 33.8**	**-0.4**
	baz=218								
YOJ	**Yonaguni jima**	**1.15**	**78**	P		**Pn**	**17 13 34.0**	**-0.1**
YOJ				S		**Sn**	**17 13 50.2**	**+0.7**
YOJ	**Yonaguni jima**	**1.15**	**78**	*e*P		**Pn**	**17 13 33.5**	**-0.5**
	baz=69								
CHN5	**Tsauling**	**1.19**	**238**	*e*P		**Pg**	**17 13 35.7**	**+0.2**
	baz=239								
CHN5				*e*S		**Sg**	**17 13 53.0**	**+2.0**
	baz=239								
WGK	**Gukeng**	**1.23**	**244**	*e*P		**Pg**	**17 13 35.5**	**-1.0**
	baz=245								
ELDTW	**Lidau**	**1.25**	**214**	*e*P		**Pn**	**17 13 35.0**	**-0.6**
	baz=201								
CHN4	**Tsaushan**	**1.39**	**231**	*e*P		**Pg**	**17 13 38.8**	**-0.7**
	baz=234								
CHN4				*e*S		**Sg**	**17 13 58.5**	**+0.9**
	baz=234								
STYT	**Tauyuan**	**1.42**	**221**	*e*P		**Pb**	**17 13 38.2**	**-0.5**
	baz=223								
WTP	**Ta-pu**	**1.45**	**227**	*e*P		**Pg**	**17 13 39.6**	**-0.9**
	baz=229								
TWK	**Hsinying**	**1.52**	**231**	*e*P		**Pg**	**17 13 41.9**	**0.0**
	baz=233								
CHN1	**Nanshi**	**1.55**	**228**	*e*P		**Pg**	**17 13 41.1**	**-1.3**
	baz=230								
SGST	**Jiashian**	**1.58**	**224**	*e*P		**Pg**	**17 13 42.3**	**-0.8**
	baz=226								
SGST				*e*S		**Sg**	**17 14 04.8**	**+1.1**
	baz=226								
CHN8	**Yiju**	**1.68**	**239**	*e*P		**Pg**	**17 13 44.2**	**-0.8**
	baz=225								
IRIF	**Iriomote-Funau**	**1.79**	**86**	P		**Pn**	**17 13 42.7**	**-0.1**
ECL	**Taimali**	**1.80**	**205**	*e*P		**Pn**	**17 13 43.2**	**+0.2**
	baz=194								
SSD	**Sandimen**	**1.81**	**215**	*e*P		**Pb**	**17 13 45.5**	**+0.1**
	baz=229								
EAST	**Anshuo**	**2.03**	**205**	*e*P		**Pb**	**17 13 47.6**	**-1.5**
	baz=196								
JKRS	**Kuro-shima**	**2.04**	**89**	P		**Pn**	**17 13 47.4**	**+1.1**
JKRS				S		**Sb**	**17 14 14.1**	**-0.4**
PNG	**Penghu**	**2.14**	**252**	*e*P		**Pb**	**17 13 50.4**	**-0.6**
	baz=253								
JIJ	**Ishigaki jima**	**2.17**	**86**	P		**Pn**	**17 13 47.9**	**-0.1**
JIJ				S		**Sn**	**17 14 14.9**	**+0.3**
JISG	**Ishigakijimahi**	**2.34**	**81**	P		**Pn**	**17 13 50.5**	**+0.1**

*JMA **07** 17:16:04.8±0.3,24°.19N×121°.74E,h16km±4km*
*ISCJB **07** 17:16:05.7±0.4,24°.22N±0°.02×121°.78E±0°.03,h11km±3km, Error ellipse: s-maj=4.6km s-min=3.0km az=26.8*
*TAP **07** 17:16:05.6,24°.22N×121°.75E,h14km,ML2.9,C*
ISC 07 17:16:05.5±0.9,24°.22N±0°.02×121°.76E±0°.04,h17km±5km, n32,σ0§64/53,4C,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.09**	**347**	*e*P		**Pg**	**17 16 09.3**	**+0.3**
	baz=359							
EHP				*e*S		**Sg**	**17 16 11.8**	**+0.5**
	baz=359							
TWD	**Chiawan**	**0.21**	**228**	*i* P		**Pg**	**17 16 10.3**	**-0.2**
	baz=231							
TWD				*i* S		**Sg**	**17 16 13.4**	**-0.3**
	baz=231							
ENA	**Nanau**	**0.21**	**354**	*i* P		**Pg**	**17 16 10.4**	**-0.1**
	baz=359							
ENA				*i* S		**Sg**	**17 16 13.8**	**-0.1**
	baz=359							
HWA	**Hwalien**	**0.28**	**211**	*e*P		**Pb**	**17 16 12.2**	**+0.1**
	baz=217							
TWC	**Suao**	**0.40**	**11**	P		**Pg**	**17 16 13.7**	**+0.1**
	baz=7.0							
TWC				S		**Sb**	**17 16 19.5**	**-0.4**
	baz=7.0							
NNS	**Nan Shan**	**0.42**	**302**	⇑*i*P		**Pg**	**17 16 14.1**	**-0.1**
	baz=303							
NNS				*i* S		**Sg**	**17 16 19.9**	**-0.1**
	baz=303							
ENTT	**Nioudou**	**0.46**	**337**	⇑*i*P		**Pb**	**17 16 14.9**	**-0.3**
	baz=338							
ENTT				*i* S		**Sb**	**17 16 21.3**	**-0.3**
	baz=338							
WHF	**Hehuan Shan**	**0.46**	**261**	⇑*i*P		**Pg**	**17 16 14.9**	**-0.2**
	baz=261							
WHF				*i* S		**Sg**	**17 16 20.9**	**-0.5**
	baz=261							
ESL	**Shilin**	**0.51**	**217**	*i* P		**Pg**	**17 16 15.2**	**-0.5**
	baz=222							
ESL				*e*S		**Sb**	**17 16 23.4**	**+0.3**
	baz=222							
TWE	**Neicheng**	**0.51**	**350**	P		**Pb**	**17 16 15.9**	**-0.1**
	baz=358							
TWE				S		**Sb**	**17 16 22.7**	**-0.4**
	baz=358							
TWT	**Tachien**	**0.54**	**274**	⇑*i*P		**Pb**	**17 16 16.7**	**0.0**
	baz=274							
TWT				*i* S		**Sb**	**17 16 23.9**	**-0.3**
	baz=274							
NSK	**Sanguang**	**0.59**	**321**	P		**Pg**	**17 16 17.0**	**-0.2**
	baz=322							
NSK				S		**Sg**	**17 16 24.4**	**-0.6**
	baz=322							
EGS		**0.64**	**14**	*e*P		**Pn**	**17 16 20.4**	**+0.5**
	baz=22							
NSTT	**Nanjuang**	**0.81**	**301**	P		**Pg**	**17 16 21.2**	**-0.1**
	baz=301							
NSTT				S		**Sg**	**17 16 32.2**	**+0.2**
	baz=301							
EHY	**Hungye**	**0.82**	**210**	*e*P		**Pb**	**17 16 20.9**	**-0.5**
	baz=221							
EHY				*e*S		**Sn**	**17 16 34.0**	**0.0**
	baz=221							
NWF	**Wu-fen Shan**	**0.85**	**1**	*e*P		**Pg**	**17 16 22.2**	**+0.2**
	baz=1.0							
SMLT	**Sun Moon Lake**	**0.86**	**247**	P		**Pb**	**17 16 21.9**	**-0.2**
	baz=240							
SMLT				*i* S		**Sb**	**17 16 33.5**	**+0.2**
	baz=240							
TYC	**Yuchr**	**0.89**	**249**	P		**Pb**	**17 16 21.9**	**-0.5**
	baz=243							
TYC				S		**Sg**	**17 16 34.4**	**0.0**
	baz=243							
TWQ1	**Liyutan**	**0.91**	**278**	P		**Pn**	**17 16 24.4**	**+0.8**
	baz=279							
TWQ1				*e*S		**Sg**	**17 16 35.7**	**+0.4**
	baz=279							
TWF1	**Yuli**	**0.96**	**206**	*e*P		**Pb**	**17 16 23.3**	**-0.5**
	baz=219							
YUS	**Yu-Shan**	**1.04**	**226**	*e*P		**Pb**	**17 16 24.5**	**-0.9**
	baz=227							
JYNG	**Yonagunijimaku**	**1.10**	**78**	P		**Pn**	**17 16 26.4**	**+0.2**
ALS	**Alishan**	**1.13**	**231**	*e*P		**Pb**	**17 16 26.4**	**-0.4**
	baz=220							
ALS				*e*S		**Sg**	**17 16 42.5**	**+0.3**
	baz=220							
YOJ	**Yonaguni jima**	**1.16**	**78**	P		**Pn**	**17 16 27.2**	**+0.2**
CHN5	**Tsauling**	**1.17**	**238**	P		**Pg**	**17 16 28.0**	**-0.2**
	baz=240							
CHN5				*e*S		**Sg**	**17 16 44.5**	**+1.0**
	baz=240							
ELDTW	**Lidau**	**1.23**	**214**	*e*P		**Pn**	**17 16 27.1**	**-1.1**
	baz=215							
CHN4	**Tsaushan**	**1.38**	**231**	*e*P		**Pn**	**17 16 30.3**	**+0.3**
	baz=234							
CHN4				*e*S		**Sg**	**17 16 53.0**	**+2.9**
	baz=234							
STYT	**Tauyuan**	**1.40**	**221**	*e*P		**Pn**	**17 16 30.3**	**-0.1**
	baz=223							
WTP	**Ta-pu**	**1.43**	**228**	*e*P		**Pb**	**17 16 31.6**	**-0.2**
	baz=230							
WTP				*e*S		**Sg**	**17 16 53.5**	**+1.7**
	baz=230							
CHN1	**Nanshi**	**1.53**	**228**	*e*P		**Pb**	**17 16 33.1**	**-0.4**
	baz=221							
CHN1				*e*S		**Sg**	**17 16 55.9**	**+0.9**
	baz=221							
SGST	**Jiashian**	**1.57**	**224**	*e*P		**Pg**	**17 16 35.3**	**-0.4**
	baz=226							
IRIF	**Iriomote-Funau**	**1.80**	**86**	P		**Pn**	**17 16 35.9**	**+0.1**

*ISCJB **07** 17:17:13.9±0.3,19°.24N±0°.03×121°.35E±0°.08,h46km,*
mb4.1/24,MS3.4/6,Error ellipse: s-maj=10.2km s-min=3.9km az=179.2
*NEIC **07** 17:17:14.8±1.6,19°.14N×121°.39E,h43km±14km,mb4.7/5, Error ellipse: s-maj=10.9km s-min=8.5km az=81.0*
*MAN **07** 17:17:16,18°.95N×121°.04E,h8km,mb4.8,ML3.7,MS3.7*
*IDC **07** 17:17:16.6±4.6,19°.11N×121°.29E,h60km±43km,mb3.8/18, mb1 4.0/19,mb1mx3.8/49,mbtmp4.1/19,ML4.2/1,MS3.4/9, Ms1 3.5/9,ms1mx3.2/47,Error ellipse: s-maj=19.9km s-min=12.4km az=83.0*
ISC 07 17:17:15.8±0.5,19°.24N±0°.04×121°.33E±0°.08,h46km,n52, σ1§57/49,mb4.0/24,MS3.5/6,3C,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time h m s	Res ISC
APYP	**Conner**	**1.37**	**183**	*e*P		**Pn**	**17 17 36.7**	**-1.7**
APYP				*e*S		**Sn**	**17 17 53.7**	**-1.6**
CVP	**Callao Caves**	**1.59**	**163**	⇑*i*P		**Pn**	**17 17 41.4**	**-0.1**
CVP				*i* S		Sn	17 18 10.3	+9.3
ABRA	**Dolores**	**1.68**	**200**	*e*P		**Pn**	**17 17 39.2**	**-3.5**
CAUP	**Cauayan**	**2.33**	**168**	*e*P		**Pn**	**17 17 53.5**	**+1.9**
CAUP				*e*S		**Sn**	**17 18 21.8**	**+2.8**
BOLP	**Bolinao**	**3.14**	**206**	*e*P		**Pn**	**17 18 01.2**	**-1.6**
BOLP				*e*S		**Sn**	**17 18 40.0**	**+0.9**
BALP	**Baler**	**3.48**	**176**	*e*P		**Pn**	**17 18 08.7**	**+1.3**
BALP				*e*S		**Sn**	**17 18 47.0**	**-0.5**
TWG	**Pinlang**	**3.58**	**356**	*e*Pn		**Pn**	**17 18 07.9**	**-0.8**
PCPH	**Palayan**	**3.66**	**183**	⇑*e*P		**Pn**	**17 18 11.3**	**+1.4**
SCZP	**Santa Cruz**	**3.69**	**202**	*e*P		**Pn**	**17 18 11.7**	**+1.3**
SCZP				*e*S		**Sn**	**17 18 58.8**	**+6.1**
TGY	**Tagaytay City**	**5.12**	**184**	LR		LR	17 20 58.9	
	comp=Z,271nm,19.2s,baz=2.5,slow=44							
GQP	**Guinayangan**	**5.41**	**168**	⇑*e*P		**Pn**	**17 18 34.5**	**+0.6**
GQP				*e*S		**Sn**	**17 19 33.0**	**-1.9**
DAV	**Davao City (W)**	**12.78**	**161**	LR		LR	17 26 00.5	
	comp=Z,239nm,19.5s,baz=348,slow=41							
JNU	**Nakatsue**	**16.26**	**30**	LR		LR	17 27 50.8	
	comp=Z,107nm,18.5s,baz=118,slow=39							
KSAR	**Wonju Array Be**	**19.03**	**16**	P		**Pn**	**17 21 34.6**	**-0.3**
KSRS	**Korea Array**	**19.05**	**16**	P		**P**	**17 21 34.6**	**+0.6**
	0.7nm,0.3s,baz=197,slow=11,SNR=21							
CHTO	**Chiang Mai**	**21.16**	**273**	*e*P		**P**	**17 21 59.0**	**+1.7**
	2.4nm,0.8s							
CMAR	**Chiang Mai Arr**	**21.20**	**272**	P		**P**	**17 21 57.1**	**-0.5**
	1.1nm,0.7s,baz=65,slow=9.2,SNR=13							
CMAR				PcP		**PcP**	**17 26 02.3**	**+0.4**
	0.9nm,0.7s,baz=52,slow=0.6,SNR=9.1							
CMAR				LR		LR	17 29 33.3	
	comp=Z,45nm,18.4s,baz=110,slow=35							
USRK	**Ussuriysk Ar.**	**26.44**	**17**	P		**P**	**17 22 48.1**	**-0.2**
	2.2nm,0.7s,baz=207,slow=9.9,SNR=5.9							
LSA	**Lhasa**	**29.30**	**297**	*e*P		**P**	**17 23 16.3**	**+1.8**
SONM	**Songino Array**	**31.01**	**340**	P		**P**	**17 23 29.9**	**+0.8**
	1.8nm,0.7s,baz=160,slow=8.9,SNR=11							
SONM				LR		LR	17 37 30.7	
	comp=Z,79nm,18.3s,baz=126,slow=39							
KLR	**Kul'dur**	**31.08**	**13**	P		**P**	**17 23 30.1**	**+0.7**
	3.0nm,0.8s,baz=221,slow=4.7,SNR=11							
TLY	**Talaya**	**35.24**	**341**	LR		LR	17 40 28.4	
	comp=Z,96nm,18.1s,baz=162,slow=39							
WRAB	**Tennant Creek**	**40.97**	**161**	*e*P		**P**	**17 24 53.0**	**-1.3**
WRA	**Warramunga Arr**	**40.97**	**161**	P		**P**	**17 24 51.6**	**-2.7**
	0.5nm,0.3s,baz=342,slow=9.2,SNR=16							
MKAR	**Makanchi Array**	**42.08**	**320**	P		**P**	**17 25 03.9**	**+0.7**
	2.7nm,0.5s,baz=114,slow=9.8,SNR=28							
MKAR				PcP		**PcP**	**17 26 55.8**	**-1.5**
	0.8nm,0.7s,baz=113,slow=3.3,SNR=3.8							
H11S3	**WAKE ISLAND Hy**	**42.84**	**83**	T		T	18 11 00.5	
	baz=278,slow=75,SNR=39							
H11S1	**WAKE ISLAND Hy**	**42.85**	**83**	T		T	18 10 52.7	
	baz=278,slow=75,SNR=28							
H11S2	**WAKE ISLAND Hy**	**42.85**	**83**	T		T	18 10 55.5	
	baz=278,slow=75,SNR=30							
H11N1	**WAKE ISLAND Hy**	**42.86**	**81**	T		T	18 10 57.8	
	baz=277,slow=75,SNR=94							
H11N2	**WAKE ISLAND Hy**	**42.86**	**81**	T		T	18 10 54.8	
	baz=277,slow=75,SNR=80							
H11N3	**WAKE ISLAND Hy**	**42.88**	**81**	T		T	18 10 55.8	
	baz=277,slow=75,SNR=83							
PETK	**Petropavlovsk-**	**43.95**	**31**	P		**P**	**17 25 19.3**	**+1.1**
	2.1nm,0.7s,baz=210,slow=4.8,SNR=4.5							
ASAR	**Alice Springs**	**44.37**	**163**	P		**P**	**17 25 20.7**	**-1.1**
	1.1nm,0.5s,baz=342,slow=7.3,SNR=38							
ZALV	**Zalesovo Beam**	**44.52**	**330**	P		**P**	**17 25 22.7**	**+0.1**
	3.2nm,0.7s,baz=116,slow=7.6,SNR=14							
ZALV				LR		LR	17 44 37.6	
	comp=Z,43nm,18.0s,baz=68,slow=37							
KURK	**Kurchatov**	**46.04**	**323**	*e*P		**P**	**17 25 35.0**	**+0.2**
	20nm,0.9s							
HNR	**Honiara**	**47.54**	**123**	LR		LR	17 45 28.0	
	comp=Z,50nm,19.4s,baz=218,slow=36							
SEY	**Seymchan**	**48.59**	**18**	P		**P**	**17 25 55.3**	**+0.9**
KKAR	**Karatay Array**	**48.68**	**311**	*e*P		**P**	**17 25 56.1**	**+0.6**
	4.0nm,0.9s							
BRVK	**Borovoye**	**51.71**	**323**	*e*P		**P**	**17 26 18.7**	**+0.5**
	4.6nm,0.5s							
NWAO	**Narrogin (SRO)**	**52.02**	**184**	P		**P**	**17 26 19.4**	**-1.2**
	7.8nm,0.9s,baz=243,slow=6.8,SNR=3.0							
NRIK	**Noril'sk**	**54.20**	**346**	P		**P**	**17 26 37.0**	**+0.7**
	11nm,0.6s,baz=128,slow=5.9,SNR=14							
ABKAR	**Akbulak array**	**57.05**	**317**	*e*P		**P**	**17 26 57.1**	**0.0**
	3.0nm,0.5s							
ARU	**Arti**	**59.17**	**325**	*e*P		**P**	**17 27 11.2**	**-0.6**
	4.2nm,0.4s							
KBZ	**Khabaz**	**68.72**	**310**	P		**P**	**17 28 14.0**	**-0.8**
	2.5nm,0.9s,baz=43,slow=1.2,SNR=4.6							
ILAR	**Eielson Array**	**73.55**	**27**	P		**P**	**17 28 42.9**	**-0.8**
	0.6nm,0.9s,baz=288,slow=6.1,SNR=5.6							
ARCES	**ARCESS Array B**	**74.17**	**339**	P		**P**	**17 28 46.9**	**-0.3**
	1.2nm,0.8s,baz=83,slow=4.0,SNR=4.9							
FINES	**FINESS Array B**	**75.78**	**330**	P		**P**	**17 28 55.5**	**-1.0**
	0.7nm,0.5s,baz=95,slow=8.2,SNR=5.8							
BRTR	**Keskin Array B**	**76.24**	**307**	P		**P**	**17 28 58.8**	**-1.0**
	0.4nm,0.5s,baz=60,slow=3.0,SNR=3.5							
NB2	**NORSAR Subarra**	**82.65**	**333**	P		**P**	**17 29 33.0**	**-1.2**
	comp=Z,0.8nm,0.8s,baz=57,slow=5.3							
NOA	**NORSAR Array B**	**82.65**	**333**	P		**P**	**17 29 32.5**	**-1.7**
	comp=Z,0.8nm,0.8s,baz=63,slow=5.1,SNR=4.3							
NOA				LR		LR	18 09 32.1	
	comp=Z,42nm,19.0s,baz=85,slow=38							
YKA	**Yellowknife Ar**	**87.46**	**23**	P		**P**	**17 29 58.0**	**-0.1**
	comp=Z,2.4nm,0.7s,baz=311,slow=4.4,SNR=14							
TXAR	**Lajitas Array**	**115.08**	**43**	PKP		**PKPdf**	**17 35 52.2**	**-0.4**
	comp=Z,0.2nm,0.5s,baz=184,slow=1.3,SNR=4.8							

*NIED **07** 17:19:00,33°.90N×141°.70E,h59km,Mw3.7 Best double couple: M0=4.23000×10^14 NP1:φs=124.00000°,δ36.00000°, λ-18.00000°. NP2:φs=229.00000°,δ79.00000°, λ-125.00000°.*
*ISCJB **07** 17:19:50.3±1.1,33°.91N±0°.04×141°.65E±0°.09,h65km±9km, mb3.6/5,Error ellipse: s-maj=13.0km s-min=7.0km az=6.3*
*JMA **07** 17:19:50.2±0.3,33°.91N×141°.67E,h57km±4km,MS3.7*
*IDC **07** 17:19:52.3±4.0,33°.86N×141°.61E,h61km±32km,mb3.3/5, mb1 3.5/6,mb1mx3.2/48,mbtmp3.5/6,ML3.3/1,Error ellipse: s-maj=33.4km s-min=11.8km az=91.0*
ISC 07 17:19:51.5±2.1,33°.89N±0°.06×141°.6E±0°.1,h55km±17km, n20,σ0§43/29,mb3.5/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.93**	**325**	P		**Pn**	**17 20 07.3**	**-0.6**
BSO1				*e*S		**Sn**	**17 20 20.7**	**+0.6**
BSO3	**Boso 3**	**1.30**	**315**	P		**Pn**	**17 20 13.1**	**+0.1**
BSO4	**Boso 4**	**1.53**	**316**	P		**Pn**	**17 20 16.6**	**+0.3**
KTR	**Katsuura**	**1.66**	**320**	P		**Pn**	**17 20 18.0**	**-0.2**
KTR				*e*S		**Sn**	**17 20 38.5**	**+0.2**
JHJ2	**Mitsune**	**1.70**	**243**	P		**Pn**	**17 20 18.9**	**+0.2**
JHJ2				*e*S		**Sn**	**17 20 39.7**	**+0.3**
JHJ	**Hachijo jima 2**	**1.72**	**244**	P		**Pn**	**17 20 19.0**	**0.0**
	46nm,0.3s,baz=119,slow=18,SNR=42							
JHJ				S		**Sn**	**17 20 40.0**	**+0.1**
	298nm,0.3s,baz=29,slow=21,SNR=39							
JHCJ	**Hachijojimakas**	**1.73**	**242**	P		**Pn**	**17 20 19.3**	**+0.1**
JHCJ				S		**Sn**	**17 20 40.2**	**0.0**
JIM2	**Oshima 3**	**2.00**	**295**	P		**Pn**	**17 20 22.1**	**-0.7**
JIM2				*e*S		**Sn**	**17 20 45.9**	**-0.8**
JIZS	**Izushimoda**	**2.42**	**291**	P		**Pn**	**17 20 28.6**	**0.0**
JIZS				S		**Sn**	**17 20 57.1**	**+0.1**
JOD2	**Odawara 2**	**2.50**	**304**	P		**Pn**	**17 20 29.1**	**-0.6**
JYN	**Shimob**	**3.00**	**303**	P		**Pn**	**17 20 36.8**	**+0.2**
JRY	**Ryogami san**	**3.08**	**314**	P		**Pn**	**17 20 37.7**	**0.0**
JAG	**Ashikaga**	**3.09**	**325**	P		**Pn**	**17 20 37.5**	**-0.3**
MJAR	**Matsushiro Arr**	**3.85**	**314**	P		**Pn**	**17 20 48.3**	**+0.1**
	2.0nm,0.3s,baz=197,slow=8.9,SNR=18							
MJAR				S		**Sn**	**17 21 33.2**	**+1.0**
	6.2nm,0.3s,baz=197,slow=33,SNR=8.2							
MAT	**Matsushiro**	**3.85**	**314**	P		**Pn**	**17 20 48.9**	**+0.7**
MAT				S		**Sn**	**17 21 32.0**	**-0.2**
CMAR	**Chiang Mai Arr**	**40.97**	**259**	P		**P**	**17 27 28.8**	**-0.3**
	0.5nm,0.8s,baz=46,slow=6.7,SNR=5.6							
MKAR	**Makanchi Array**	**45.99**	**305**	P		**P**	**17 28 09.6**	**+0.3**
	0.4nm,0.6s,baz=91,slow=8.6,SNR=3.2							
FITZ	**Fitzroy Crossi**	**53.90**	**199**	P		**P**	**17 29 09.5**	**+0.1**
	2.4nm,1.0s,baz=32,slow=13,SNR=4.4							
WRA	**Warramunga Arr**	**53.98**	**188**	P		**P**	**17 29 09.4**	**-0.5**
	0.4nm,0.4s,baz=3.5,slow=7.5,SNR=9.3							
ASAR	**Alice Springs**	**57.71**	**188**	P		**P**	**17 29 36.6**	**+0.1**
	0.2nm,0.5s,baz=8.1,slow=8.0,SNR=5.8							

*JMA **07** 17:26:00.8±0.1,24°.20N×121°.72E,h22km±1km,M2.9*
*ISCJB **07** 17:26:01.1±0.4,24°.24N±0°.01×121°.84E±0°.02,h7km±2km, Error ellipse: s-maj=3.0km s-min=2.1km az=28.2*
*TAP **07** 17:26:01.4,24°.25N×121°.76E,h16km,ML3.7,B*
ISC 07 17:26:01.3±0.9,24°.23N±0°.02×121°.77E±0°.02,h18km±2km, n69,σ0§96/111,7C-3D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.09**	**340**	*e*P		**Pg**	**17 26 05.2**	**+0.2**
	baz=347							
EHP				*e*S		**Sg**	**17 26 07.6**	**+0.2**
	baz=347							
ENA	**Nanau**	**0.20**	**352**	⇑*i*P		**Pg**	**17 26 05.9**	**-0.4**
	baz=355							
ENA				S		**Sb**	**17 26 08.8**	**-0.3**
	baz=355							
TWD	**Chiawan**	**0.22**	**228**	⇑*i*P		**Pg**	**17 26 06.7**	**+0.1**
	baz=228							
TWD				*i* S		**Sg**	**17 26 10.5**	**+0.4**
	baz=228							
HWA	**Hwalien**	**0.29**	**212**	P		**Pb**	**17 26 08.6**	**+0.5**
	baz=217							
HWA				*e*S		**Sn**	**17 26 14.0**	**-2.6**
	baz=217							
TWC	**Suao**	**0.39**	**10**	⇑*i*P		**Pg**	**17 26 09.2**	**-0.2**
	baz=9.0							
TWC				*i* S		**Sg**	**17 26 14.5**	**-0.4**
	baz=9.0							
NNS	**Nan Shan**	**0.42**	**300**	⇑*i*P		**Pb**	**17 26 10.0**	**-0.4**
	baz=298							
NNS				*i* S		**Sb**	**17 26 15.5**	**-1.0**
	baz=298							
ESF	**Shoufeng Towns**	**0.43**	**214**	*e*P		**Pn**	**17 26 11.2**	**-1.4**
	baz=222							
ENTT	**Nioudou**	**0.45**	**335**	⇑*i*P		**Pg**	**17 26 10.3**	**-0.3**
	baz=334							
ENTT				S		**Sg**	**17 26 16.4**	**-0.4**
	baz=334							
WHF	**Hehuan Shan**	**0.47**	**260**	P		**Pb**	**17 26 11.0**	**-0.4**
	baz=258							
TWE	**Neicheng**	**0.50**	**349**	⇑*i*P		**Pg**	**17 26 11.1**	**-0.3**
	baz=349							
TWE				*i* S		**Sg**	**17 26 17.9**	**-0.3**
	baz=349							
ESL	**Shilin**	**0.52**	**217**	⇓*i*P		**Pb**	**17 26 11.7**	**-0.1**
	baz=222							
ESL				*e*S		**Sn**	**17 26 20.0**	**-2.1**
	baz=222							
ILA	**Ilan**	**0.54**	**358**	*i* P		**Pg**	**17 26 12.2**	**+0.1**
	baz=351							
ILA				*i* S		**Sb**	**17 26 19.6**	**0.0**
	baz=351							
TWT	**Tachien**	**0.55**	**273**	*i* P		**Pn**	**17 26 12.8**	**-1.5**
	baz=271							
TWT				*i* S		**Sb**	**17 26 19.8**	**-0.1**
	baz=271							
NSK	**Sanguang**	**0.58**	**320**	⇑*i*P		**Pg**	**17 26 12.7**	**-0.4**
	baz=318							
NSK				*i* S		**Sg**	**17 26 20.4**	**-0.5**
	baz=318							
EGS		**0.63**	**13**	*i* P		**Pg**	**17 26 13.8**	**-0.1**
	baz=19							
EGS				*e*S		**Sg**	**17 26 22.8**	**+0.4**
	baz=19							
TWA	**Mucha**	**0.77**	**347**	P		**Pn**	**17 26 17.2**	**-0.1**
	baz=346							
TWA				*e*S		**Sg**	**17 26 26.6**	**-0.1**
	baz=346							
NSTT	**Nanjuang**	**0.81**	**300**	⇓*i*P		**Pn**	**17 26 17.4**	**-0.4**
	baz=299							
NSTT				*i* S		**Sg**	**17 26 27.6**	**-0.3**
	baz=299							
EHY	**Hungye**	**0.83**	**210**	*e*P		**Pg**	**17 26 17.1**	**-0.4**
	baz=223							
TAP1	**Taipei**	**0.84**	**344**	P		**Pg**	**17 26 17.6**	**-0.2**
	baz=342							
TAP1				*e*S		**Sb**	**17 26 27.5**	**-0.8**
	baz=342							
NWF	**Wu-fen Shan**	**0.84**	**0**	P		**Pg**	**17 26 17.6**	**-0.1**
	baz=352							
NWF				*e*S		**Sg**	**17 26 28.9**	**0.0**
	baz=352							
TAP	**Taipei**	**0.84**	**343**	*e*P		**Pn**	**17 26 18.0**	**-0.3**
	baz=342							
TAP				*e*S		**Sg**	**17 26 28.4**	**-0.6**

ELDTW	**Lidau** baz=202	1.25	214	*e*P		Pb	17 26 24.2	-0.2
CHN2	**Minshiung** baz=244	1.38	240	*e*P		Pg	17 26 27.0	-0.9
CHN2	baz=244			*e*S		Sg	17 26 48.2	+2.3
CHN4	**Tsaushan** baz=235	1.39	231	P		Pg	17 26 27.7	-0.4
CHN4	baz=235			S		Sg	17 26 47.6	+1.3
STYT	**Tauyuan** baz=224	1.41	222	*e*P		Pb	17 26 27.0	-0.2
WTCT	**Ta-ch'eng** baz=257	1.41	255	*e*P		Pb	17 26 27.0	-0.1
WTCT	baz=257			*e*S		Sg	17 26 47.1	+0.1
PCYT	**Pengchaiyu** baz=8.0	1.42	11	*e*P		Pb	17 26 27.2	-0.1
CHY	**Chiayi** baz=243	1.43	240	*e*P		Pg	17 26 28.4	-0.6
CHY	baz=243			*e*S		Sg	17 26 49.5	+1.7
WTP	**Ta-pu** baz=232	1.44	228	P		Pg	17 26 28.4	-0.8
WTP	baz=232			*e*S		Sg	17 26 49.1	+1.1
TWK	**Hsinying** baz=234	1.52	231	*e*P		Pg	17 26 30.9	+0.3
WSF	**Szhu** baz=259	1.54	248	*e*P		Pn	17 26 27.1	-0.7
WSF	baz=259			*e*S		Sg	17 26 51.1	+0.1
TWG	**Pinlang** baz=192	1.54	205	*e*P		Pn	17 26 27.5	-0.4
CHN1	**Nanshi** baz=231	1.54	228	*e*P		Pg	17 26 30.4	-0.7
SGST	**Jiashian** baz=228	1.58	224	*e*P		Pg	17 26 30.7	-1.1
SGST	baz=228			*e*S		Sg	17 26 52.9	+0.6
CHN8	**Yiju** baz=229	1.68	239	*e*P		Pb	17 26 31.4	-0.2
CHN8	baz=229			*e*S		Sg	17 26 56.6	+1.1
CHN3	**Shinhua** baz=232	1.73	229	*e*P		Pg	17 26 33.9	-0.7
ECL	**Taimali** baz=195	1.79	205	*e*P		Pn	17 26 31.8	+0.5
IRIF	**Iriomote-Funau**	1.79	86	P		Pn	17 26 31.3	0.0
SSD	**Sandimen** baz=230	1.81	216	*e*P		Pb	17 26 33.6	-0.3
TWM1	**Shoushan** baz=222	1.87	222	*e*P		Pg	17 26 35.5	-1.8
EAST	**Anshuo** baz=196	2.02	205	*e*P		Pn	17 26 35.2	+0.7
JKRS	**Kuro-shima**	2.04	89	P		Pn	17 26 35.4	+0.7
JKRS				S		Sb	17 27 02.9	0.0
SCZT	**Fangliau** baz=197	2.13	210	*e*P		Pb	17 26 38.4	-1.0
PNG	**Penghu** baz=255	2.13	253	*e*P		Pb	17 26 37.0	-2.4
WDGT	**Dungji** baz=247	2.16	244	*e*P		Pb	17 26 38.9	-1.1
JIJ	**Ishigaki jima**	2.17	86	P		Pn	17 26 36.4	-0.1
JIJ				S		Sn	17 27 03.5	+0.6
LAY	**Lan-yu** baz=188	2.19	185	*e*P		Pn	17 26 35.2	-1.6
JISG	**Ishigakijimahi**	2.34	81	P		Pn	17 26 38.8	-0.1
TWK1	**Hengchun** baz=192	2.44	202	*e*P		Pn	17 26 40.8	+0.5
KNM	**Kinmen** baz=273	3.05	274	*e*P		Pn	17 26 50.6	+1.9

MEX 07 17:27:10.1±0.6, 14°12.N×93°33.W, h15km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	2.44	28	*i* P		Pn	17 27 46.8	-2.8
CCIG				*i* S		Sn	17 28 15.0	-4.3
TGIG		2.65	4	*i* P		Pn	17 27 50.1	-2.4
TGIG				*i* S		Sn	17 28 20.1	-4.3

IDC 07 17:28:02.3±2.9, 33°54S×178°69W, h0km, mb3.9/2, mb1 4.2/3, mb1mx3.7/28, mbtmp4.0/3, ML3.9/1, Error ellipse: s-maj=68.3km s-min=35.5km az=119.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera** 3.4nm,0.3s,baz=272,slow=2.7,SNR=24	5.81	215	Pn		Pn	17 29 30.1	+0.4
URZ				Sn		Sn	17 30 35.5	-1.5
ASAR	**Alice Springs** 2.7nm,0.3s,baz=265,slow=8.0,SNR=7.6	42.46	271	P		P	17 35 59.2	0.0
WRA	**Warramunga Arr** 1.0nm,0.6s,baz=110,slow=7.4,SNR=17	43.73	276	P		P	17 36 09.4	-0.1
FINES	**FINESS Array B** 0.8nm,0.4s,baz=116,slow=7.6,SNR=19	147.86	338	PKPbc		PKPbc	17 47 47.6	-0.8
	1.5nm,0.7s,baz=38,slow=5.3,SNR=8.4							

*ISCJB **07** 17:30:11.0±0.4, 39°.10N±0°.04×28°.99E±0°.03, h8km±7km, Error ellipse: s-maj=7.3km s-min=3.9km az=160.5*
*DDA **07** 17:30:10.7, 39°.11N×29°.01E, h7km, Md2.9*
*ISK **07** 17:30:10.9, 39°.13N×29°.01E, h6km, MD2.8*
*CSEM **07** 17:30:11.1±0.1, 39°.11N×29°.00E, h5km, MD2.9, Error ellipse: s-maj=2.5km s-min=2.2km az=169.0*
ISC 07 17:30:11.1±0.9, 39°11N±0°.02×29°00E±0°.02, h14km±8km, n37, σ0°75/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	0.23	254	*i* P		Pg	17 30 16.3	+0.1
DEMI				*i* S		Sg	17 30 19.6	0.0
DEMI	**Demirci**	0.23	254	P		Pg	17 30 16.3	+0.1
DEMI				S		Sg	17 30 19.6	0.0
GEDZ	**Gediz**	0.33	101	*e*PG		Pg	17 30 17.6	-0.3
GEDZ				*e*SG		Sb	17 30 23.5	-0.4
GEDZ	**Gediz**	0.33	101	*e*Pg		Pg	17 30 17.6	-0.3
GEDZ				*e*Sg		Sb	17 30 23.5	-0.4
GDZ	**Gediz**	0.38	92	*i* P		Pg	17 30 18.6	-0.2
GDZ				*i* S		Sg	17 30 23.8	-0.2
GDZ	**Gediz**	0.38	92	P		Pg	17 30 18.6	-0.2
GDZ				S		Sg	17 30 23.8	-0.2
TVSB	**Tavsanli**	0.50	46	*e*PG		Pg	17 30 20.6	-0.4
TVSB				*e*SG		Sg	17 30 27.0	-0.7
TVSB	**Tavsanli**	0.50	46	*e*Pg		Pg	17 30 20.6	-0.4
TVSB				*e*Sg		Sg	17 30 27.0	-0.7
KULA	**Kula-Manisa**	0.65	204	*e*PG		Pb	17 30 24.2	0.0
KULA	**Kula-Manisa**	0.65	204	*e*Pg		Pb	17 30 24.2	0.0
MANT	**Manisa**	0.70	209	*i* P		Pg	17 30 24.0	-0.9
MANT				*i* S		Sg	17 30 33.3	-0.9
MANT	**Manisa**	0.70	209	P		Pg	17 30 24.0	-0.9
MANT				S		Sg	17 30 33.3	-0.9
KHL	**Karahalli**	0.88	152	*e*PG		Pb	17 30 28.4	+0.2
KHL	**Karahalli**	0.88	152	*e*Pg		Pb	17 30 28.4	+0.2
AKS	**Akhisar**	0.95	257	*e*PG		Pb	17 30 29.7	+0.4
AKS	**Akhisar**	0.95	257	*e*Pg		Pb	17 30 29.7	+0.4
BALB	**Balikesir**	1.02	302	*e*PG		Pb	17 30 31.1	+0.6
BALB	**Balikesir**	1.02	302	*e*Pg		Pb	17 30 31.1	+0.6
IGD	**Bursa**	1.17	8	*i* P		Pg	17 30 32.0	-1.7
IGD				*i* S		Sb	17 30 48.8	+0.7
BALY	**Balya**	1.24	301	*i* P		Pn	17 30 35.1	+1.1
BALY				*i* S		Sg	17 30 49.1	-2.1
BALY	**Balya**	1.24	301	P		Pn	17 30 35.1	+1.1
BALY				S		Sg	17 30 49.1	-2.1
KCTX	**Karacabey (Bur**	1.26	337	*e*PN		Pn	17 30 35.1	+0.9
KCTX	**Karacabey (Bur**	1.26	337	*e*Pn		Pn	17 30 35.1	+0.9
MDNY	**Mudanya-Bursa**	1.27	356	*e*PN		Pg	17 30 35.2	-0.2
MDNY	**Mudanya-Bursa**	1.27	356	*e*Pn		Pg	17 30 35.2	-0.2
IZI	**Iznik**	1.28	16	*e*PN		Pb	17 30 35.4	+0.3
IZI	**Iznik**	1.28	16	*e*Pn		Pb	17 30 35.4	+0.3
GONE	**Gonen-Balikesi**	1.38	313	*e*PN		Pg	17 30 37.3	-0.4
GONE	**Gonen-Balikesi**	1.38	313	*e*Pn		Pg	17 30 37.3	-0.4
ADVT	**Abdulvahap**	1.44	23	*e*PN		Pn	17 30 37.5	+0.7
ADVT	**Abdulvahap**	1.44	23	*e*Pn		Pn	17 30 37.5	+0.7
ARMT	**Armutlu**	1.46	356	*e*PN		Pb	17 30 38.1	+0.1
ARMT	**Armutlu**	1.46	356	*e*Pn		Pb	17 30 38.1	+0.1
EDC	**Edincik**	1.52	325	*e*PN		Pb	17 30 39.2	+0.2
EDC	**Edincik**	1.52	325	*e*Pn		Pb	17 30 39.2	+0.2
GULT	**Gulveren**	1.77	41	*e*PN		Pn	17 30 42.3	+1.0
GULT	**Gulveren**	1.77	41	*e*Pn		Pn	17 30 42.3	+1.0

*ISCJB **07** 17:33:54.8±0.6, 37°.32N±0°.05×72°.4E±0°.1, h200km, mb3.3/6, Error ellipse: s-maj=12.5km s-min=6.4km az=164.3*
*IDC **07** 17:33:55.4±4.3, 37°.31N×72°.36E, h188km±39km, mb3.2/6, mb1 3.3/11, mb1mx3.0/53, mbtmp3.9/11, Error ellipse: s-maj=35.9km s-min=21.1km az=32.0*
*NNC **07** 17:34:03.4±5.6, 37°.98N×72°.27E, h228km±74km, mb2.6, mpv3.6, Error ellipse: s-maj=60.0km s-min=36.4km az=12.0*
ISC 07 17:33:55.6±0.8, 37°.42N±0°.06×72°.36E±0°.09, h200km, n19, σ2°53/26, mb3.4/6, 7C-4D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MNAS	**Manas** 6.5nm,0.5s	5.07	1	⇓P		Pn	17 35 12.6	+1.7
MNAS	32nm,0.6s			⇑S		Sn	17 36 08.2	-2.2
AAK	**Ala-Archa** 2.9nm,0.3s,baz=173,slow=6.2,SNR=10	5.46	17	P		Pn	17 35 18.5	+2.4
AAK	3.3nm,0.3s,baz=325,slow=19,SNR=13			S		Sn	17 36 19.6	0.0
AAK	**Ala-Archa** 4.0nm,0.4s	5.46	17	⇓P		Pn	17 35 18.1	+2.1
AAK	9.1nm,0.5s			⇑S		Sn	17 36 19.5	-0.1
THN	**Thein Dam**	5.68	150	*e*P		Pn	17 35 17.0	-1.8
THN				*e*S		Sn	17 36 21.4	-3.1
KK31	**Karatay Array** 1.9nm,0.3s,baz=166,slow=16,SNR=7.0	5.85	347	⇑P		Pn	17 35 22.1	+1.2
KK31	11nm,0.3s,baz=171,slow=24,SNR=26			⇓S		Sn	17 36 25.1	-3.3
TKM2	**Tokmak 2** 3.3nm,0.6s	6.03	23	⇑P		Pn	17 35 25.1	+1.8
TKM2	4.1nm,0.8s			⇑S		Sn	17 36 27.6	-5.2
KURBB	**Kurchatov Arra** 0.1nm,0.3s,baz=202,slow=11,SNR=13	13.92	17	P		P	17 37 07.6	+1.3
AB31	**Akbulak array** 0.8nm,0.4s	14.87	327	⇓P		P	17 37 16.9	+0.1
AB31	0.2nm,0.3s			⇑S		S	17 39 53.8	-7.1
BVAR	**Borovoye Array** 0.5nm,0.3s,baz=164,slow=12,SNR=12	15.67	356	P		Pn	17 37 27.0	+1.3
AKTO	**Aktyubinsk** 1.2nm,0.3s,baz=106,slow=7.7,SNR=17	16.58	326	P		Pn	17 37 38.1	+1.4
AKTO	**Aktyubinsk** 4.1nm,0.5s	16.58	326	⇑P		Pn	17 37 38.7	+2.0
ZALV	**Zalesovo Beam** 1.1nm,0.3s,baz=222,slow=11,SNR=20	18.63	24	P		Pn	17 37 59.9	-0.9
FINES	**FINESS Array B** 0.4nm,0.3s,baz=123,slow=8.4,SNR=6.0	37.35	325	P		P	17 40 50.0	+1.6
ARCES	**ARCESS Array B** 0.9nm,0.6s,baz=112,slow=9.3,SNR=7.2	40.72	337	P		P	17 41 18.4	+2.0
HFS	**Hagfors** 1.1nm,0.5s,baz=105,slow=12,SNR=6.4	43.03	321	P		P	17 41 36.8	+1.7
NB2	**NORSAR Subarra** comp=Z,0.4nm,0.5s,baz=91,slow=7.9	44.31	322	P		P	17 41 46.5	+1.1
NOA	**NORSAR Array B** comp=Z,0.5nm,0.5s,baz=95,slow=7.9,SNR=3.5	44.31	322	P		P	17 41 46.2	+0.8
TORD	**Torodi Ar. Bea** comp=Z,0.3nm,0.4s,baz=49,slow=6.0,SNR=5.6	66.83	269	P		P	17 44 26.9	+0.7
WRA	**Warramunga Arr** comp=Z,0.5nm,1.0s,baz=325,slow=4.7,SNR=2.8	81.56	123	P		P	17 45 51.9	+0.8

IDC 07 17:35:16.1±19.0, 17°83S×178°00W, h402km±162km, mb3.5/5, mb1 3.7/5, mb1mx3.2/27, mbtmp4.3/5, Error ellipse: s-maj=125.1km s-min=40.4km az=103.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower** 2.2nm,0.5s,baz=87,slow=7.5,SNR=6.5	33.85	260	P		P	17 41 23.1	0.0
STKA	**Stephens Creek** 1.9nm,0.5s,baz=97,slow=10,SNR=14	39.01	241	P		P	17 42 06.9	+0.9
WRA	**Warramunga Arr** 1.5nm,0.7s,baz=94,slow=7.7,SNR=33	45.03	259	P		P	17 42 53.0	-1.1
WRA	0.8nm,0.8s,baz=98,slow=3.5,SNR=4.6			PcP		PcP	17 44 26.7	-0.5
ASAR	**Alice Springs** 5.7nm,0.4s,baz=90,slow=8.1,SNR=298	45.19	254	P		P	17 42 55.1	-0.2
ASAR	0.3nm,0.4s,baz=103,slow=3.8,SNR=4.5			PcP		PcP	17 44 26.4	-1.3
MJAR	**Matsushiro Arr** 1.1nm,0.5s,baz=141,slow=6.2,SNR=4.1	68.08	323	P		P	17 45 34.4	+0.4
MKAR	**Makanchi Array** 0.2nm,0.7s,baz=136,slow=1.1,SNR=5.6	109.36	314	PKiKP		PKiKP	17 52 57.8	-1.5
BRTR	**Keskin Array B** 0.9nm,0.7s,baz=132,slow=1.8,SNR=5.3	145.01	315	PKPbc		PKPdf	17 54 06.7	0.0
MMAI	**Mount Meron Ar** 1.4nm,0.5s,baz=57,slow=6.1,SNR=5.3	146.43	303	PKPbc		PKPbc	17 54 11.5	+0.2
GERES	**GERESS Array B** 0.5nm,0.4s,baz=46,slow=3.9,SNR=6.8	147.64	346	PKPbc		PKPbc	17 54 13.2	-0.9

*JMA **07** 17:35:52.5±0.1, 24°.14N×122°.05E, h23km, M2.5*
*ISCJB **07** 17:35:54.0±0.4, 24°.93N±0°.03×122°.28E±0°.02, h3km±3km, Error ellipse: s-maj=4.5km s-min=2.9km az=11.0*
*TAP **07** 17:35:55.3, 24°.96N×122°.17E, h12km, ML3.0, C*
ISC 07 17:35:54.3±1.1, 24°.91N±0°.03×122°.29E±0°.03, h8km±9km, n40, σ0°63/66, 1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
EGS		0.33	259	*i* P		Pg	17 36 01.3	+0.4
EGS	baz=232			S		Sg	17 36 04.9	-0.4
NWF	**Wu-fen Shan** baz=286	0.49	289	⇓*i* P		Pg	17 36 03.9	0.0
NWF	baz=286			*i* S		Sg	17 36 09.7	-0.6
TWC	**Suao** baz=212	0.50	233	*e*P		Pg	17 36 04.5	+0.5
TWC	baz=212			*e*S		Sg	17 36 09.8	-0.8
TWC	**Suao** baz=11	0.50	233	*e*P		Pg	17 36 04.0	0.0
ILA	**Ilan** baz=240	0.52	254	*e*P		Pg	17 36 04.4	+0.1
ILA	baz=240			*e*S		Sg	17 36 11.6	+0.5
TWE	**Neicheng** baz=239	0.60	252	*e*P		Pg	17 36 06.3	+0.4
TWE	baz=239			*e*S		Sg	17 36 13.8	+0.1
TWA	**Mucha** baz=270	0.65	276	*e*P		Pg	17 36 07.2	+0.4
TWA	baz=270			S		Sg	17 36 14.9	-0.4
ENA	**Nanau** baz=212	0.69	226	*e*P		Pb	17 36 08.5	-0.2
ENA	baz=212			*e*S		Sg	17 36 17.2	+0.4
TAP1	**Taipei** baz=290	0.71	281	*e*P		Pg	17 36 08.2	+0.2
TAP1	baz=290			*e*S		Sg	17 36 17.1	-0.2
ENTT	**Nioudou** baz=237	0.71	248	*e*P		Pb	17 36 08.8	-0.2
TAP	**Taipei** baz=290	0.72	280	*e*P		Pg	17 36 08.3	+0.1
TAP	baz=290			*e*S		Sg	17 36 17.2	-0.5
TWY	**Chenhua** baz=288	0.72	300	*e*P		Pg	17 36 08.3	-0.1
TWY	baz=288			*e*S		Sg	17 36 17.5	-0.3
PCYT	**Pengchaiyu** baz=359	0.74	344	*e*P		Pg	17 36 08.2	-0.5
PCYT	baz=359			*e*S		Sg	17 36 18.9	+0.5
JYNG	**Yonaguni jima**	0.75	127	P		Pg	17 36 08.8	0.0
JYNG				S		Sb	17 36 21.2	+1.2
YOJ	**Yonaguni jima**	0.79	124	P		Pg	17 36 09.2	-0.4
YOJ				S		Sb	17 36 21.5	+0.2
TWS1	**Kuangyinshan** baz=281	0.81	284	*e*P		Pg	17 36 10.1	0.0
TWS1	baz=281			*e*S		Sg	17 36 20.7	+0.1
NSK	**Sanguang** baz=263	0.88	255	*e*P		Pg	17 36 11.1	-0.2
NSK	baz=263			*e*S		Sg	17 36 22.2	-0.6
NNS	**Nan Shan** baz=231	0.96	241	*e*P		Pg	17 36 12.9	+0.2
NNS	baz=231			*e*S		Sg	17 36 25.6	+0.3
NCU	**National Centr** baz=255	1.00	274	*e*P		Pg	17 36 12.9	-0.7
NCU	baz=255			*e*S		Sg	17 36 26.5	-0.2
TWD	**Chiawan** baz=205	1.04	218	*e*P		Pg	17 36 14.4	+0.1
TWD	baz=205			*e*S		Sg	17 36 27.4	-0.5
NSTT	**Nanjuang** baz=250	1.21	257	*e*P		Pb	17 36 17.6	+0.1
NSTT	baz=250			*e*S		Sb	17 36 33.6	+0.4
TWT	**Tachien** baz=240	1.21	237	*e*P		Pg	17 36 15.8	-1.7
TWT	baz=240			*e*S		Sg	17 36 33.6	+0.3
TWT	**Tachien** baz=270	1.21	237	*e*S		Pg	17 36 15.9	-1.7
ESL	**Shilin** baz=209	1.34	216	*e*P		Pn	17 36 18.8	-0.7
TWQ1	**Liyutan** baz=254	1.49	248	*e*P		Pn	17 36 21.3	-0.1
TWQ1	baz=254			*e*S		Sn	17 36 40.3	-0.9
SMLT	**Sun Moon Lake** baz=214	1.63	231	*e*P		Pn	17 36 23.9	+0.4
SMLT	baz=214			*e*S		Sn	17 36 44.6	-0.1
TYC	**Yuchr** baz=215	1.65	233	*e*P		Pn	17 36 24.1	+0.5
TYC	baz=215			*e*S		Sn	17 36 45.6	+0.7
JKRS	**Kuro-shima**	1.70	113	P		Pn	17 36 23.7	-0.6
JIJ	**Ishigaki jima**	1.77	108	P		Pn	17 36 25.2	-0.1
TWF1	**Yuli** baz=206	1.80	211	*e*P		Pn	17 36 26.0	+0.3
JISG	**Ishigakijimahi**	1.86	100	P		Pn	17 36 27.0	+0.4
YUS	**Yu-Shan** baz=213	1.87	221	*e*P		Pn	17 36 27.7	+0.6
ALS	**Alishan** baz=206	1.94	225	*e*P		Pn	17 36 29.1	+1.1
ALS	baz=206			*e*S		Sb	17 36 54.9	+0.1
CHN5	**Tsauling** baz=217	1.97	229	*e*P		Pn	17 36 29.0	+0.9
ELDTW	**Lidau** baz=197	2.07	214	*e*P		Pn	17 36 30.8	+1.2
CHN4	**Tsaushan** baz=207	2.19	225	*e*P		Pn	17 36 31.7	+0.6
CHN4	baz=207			*e*S		Sb	17 37 01.5	-0.2
STYT	**Tauyuan** baz=202	2.23	219	*e*P		Pn	17 36 31.9	+0.1
WTP	**Ta-pu** baz=204	2.26	223	*e*P		Pn	17 36 33.0	+0.9
WTP	baz=204			*e*S		Sb	17 37 02.8	-0.7
CHN1	**Nanshi** baz=211	2.36	224	*e*P		Pn	17 36 35.1	+1.7
SGST	**Jiashian** baz=204	2.40	221	*e*P		Pn	17 36 34.2	+0.3

TAP 07 17:35:57.3, 24°.26N×121°.75E, h14km, ML2.2, 4C, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ENA	**Nanau** baz=358	0.17	356	⇑*i* P		Pg	17 36 01.6	+0.1
ENA	baz=358			*i* S		Sg	17 36 04.6	+0.4
TWD	**Chiawan** baz=219	0.23	219	⇑*i* P		Pg	17 36 02.5	+0.1
TWD	baz=219			*i* S		Sg	17 36 06.2	+0.4
NNS	**Nan Shan** baz=298	0.39	298	⇑*i* P		Pg	17 36 05.6	+0.3
NNS	baz=298			*e*S		Sg	17 36 10.9	+0.2
ENTT	**Nioudou** baz=336	0.42	336	⇑*i* P		Pg	17 36 06.1	+0.4
WHF	**Hehuan Shan** baz=256	0.46	256	P		Pg	17 36 06.7	0.0
WHF	baz=256			*e*S		Sg	17 36 13.3	+0.4
TWT	**Tachien** baz=270	0.53	269	*e*P		Pb	17 36 08.2	-0.2
NSK	**Sanguang** baz=319	0.55	319	*e*P		Pg	17 36 08.2	0.0

IDC 07 17:36:57.8±3.6, 32°.25S×178°.64W, h0km, mb3.7/2, mb1 4.1/3, mb1mx3.9/3, mbtmp3.9/3, ML4.4/1, Error ellipse: s-maj=89.2km s-min=28.3km az=129.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 50nm,0.3s,baz=240,slow=20,SNR=2.6	3.06	12	Pn		Pn	17 37 47.6	+0.2
RAO				Sn		Sn	17 38 26.3	+1.7
URZ	**Urewera** 1.4nm,0.3s,baz=259,slow=4.5,SNR=9.9	6.93	209	Pn		Pn	17 38 32.3	-8.2
URZ	2.1nm,0.3s,baz=256,slow=19,SNR=6.5			Sn		Sn	17 39 45.4	-15
ASAR	**Alice Springs** 0.4nm,0.5s,baz=108,slow=7.6,SNR=6.1	42.50	269	P		P	17 44 54.9	-0.2
WRA	**Warramunga Arr** 1.0nm,0.5s,baz=114,slow=7.7,SNR=22	43.66	274	P		P	17 45 04.5	0.0
FINES	**FINESS Array B** 0.8nm,0.6s,baz=50,slow=4.7,SNR=9.3	146.68	339	PKPbc		PKPdf	17 56 39.8	+0.6

*FUNV **07** 17:41:39.4, 9°.79N×73°.82W, h5km, MW2.5*
*RSNC **07** 17:41:45.8±0.9, 9°.40N×73°.50W, h2km±9km, ML2.4*
ISC 07 17:41:43.8±1.4, 9°54N±0°.05×73°48W±0°.04, h23km±21km, n12, σ1°58/17, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OCAC	**Ocana**	1.30	173	*e*P		Pn	17 42 06.4	-0.4
OCAC				*e*S		Sn	17 42 23.5	-0.1
OCAC	comp=Z,69nm,0.5s			*i*			17 42 31.7	
VIRV	**Villa del Rosa**	1.43	48	*e*P		Pn	17 42 07.0	-1.4
VIRV				*e*S		Sb	17 42 28.2	+0.6
SJCC	**San Jacinto, C**	1.71	282	*e*P		Pb	17 42 15.1	+0.4
SJCC				*e*S		Sb	17 42 39.2	+3.5
SJCC	comp=Z,26nm,0.7s			*i*			17 42 56.0	
CBRI	**Barrientos, No**	1.94	159	*e*P		Pn	17 42 16.2	+0.7
VIGV	**El Vigia**	2.21	108	*e*P		Pb	17 42 22.1	-1.0
MOTC	**Monteria, Cord**	2.28	251	*e*P		Pb	17 42 22.4	-1.9
MOTC				*e*S		Sb	17 42 50.2	-2.0
MOTC	comp=Z,9.8nm,0.9s			*i*			17 43 25.1	
URIC	**Uribia, Colomb**	2.60	34	*e*P		Pb	17 42 29.7	-0.1
URIC				*e*S		Sb	17 43 02.3	+1.0
URIC	comp=Z,17nm,0.6s			*i*			17 43 14.3	
SOCV	**Socops**	2.88	116	*e*P		Pn	17 42 30.5	+2.1
BARC	**Barichara**	2.95	174	*e*P		Pn	17 42 30.5	+1.0
BARC	comp=Z,25nm,0.8s			*i*			17 43 29.0	
CURV	**Curarigua**	3.50	82	*e*P		Pn	17 42 37.3	+0.3
MONV	**Montecano**	4.20	55	*e*P		Pn	17 42 45.3	-1.2
BAUV	**El Baul**	5.41	96	*e*P		Pn	17 43 03.1	+0.1

*IDC **07** 18:08:25.8±1.6, 28°.11S×176°.06W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.7/18, mbtmp3.8/3, Error ellipse: s-maj=54.1km s-min=34.9km az=163.0*
*NEIC **07** 18:08:27.1±0.9, 28°.05S×176°.10W, h10km, mb4.9/2, Error ellipse: s-maj=26.3km s-min=19.8km az=160.0*
ISC 07 18:08:29.9±1.2, 28°9S±0°.1×175°9W±0°.1, h28km, n11, σ1°25/14, mb4.1/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.82**	**258**	Pn		**Pb**	**18 09 02.0**	**-0.5**
	151nm,0.3s,baz=201,slow=17,SNR=7.7							
RAO				Sn		**Sb**	**18 09 25.5**	**+0.6**
	330nm,0.3s,baz=96,slow=21,SNR=6.7							
RAO	**Raoul Island**	**1.82**	**258**	*e*Pn		**Pn**	**18 09 00.7**	**+1.4**
RAO				Pn		**Pb**	**18 09 02.0**	**-0.5**
RAO				Sn		**Sb**	**18 09 25.5**	**+0.6**
URZ	**Urewera**	**11.03**	**210**	Pn		**Pn**	**18 11 05.4**	**-0.4**
	0.3nm,0.3s,baz=13,slow=15,SNR=4.4							
URZ				Sn		**Sn**	**18 13 07.2**	**-1.0**
	0.6nm,0.3s,baz=323,slow=18,SNR=2.5							
STKA	**Stephens Creek**	**36.63**	**254**	P		**P**	**18 15 34.3**	**+0.3**
	2.2nm,0.8s,baz=120,slow=14,SNR=3.5							
ASAR	**Alice Springs**	**45.05**	**264**	P		**P**	**18 16 42.8**	**-0.8**
	0.4nm,0.5s,baz=98,slow=6.6,SNR=23							
WRA	**Warramunga Arr**	**45.91**	**270**	P		**P**	**18 16 48.7**	**-1.7**
	0.7nm,0.5s,baz=109,slow=7.8,SNR=12							
MBWA	**Marble Bar**	**58.24**	**262**	*e*P		**P**	**18 18 21.9**	**-0.3**
	16nm,0.9s							
QSPA	**South Pole Qui**	**61.23**	**180**	*e*P		P	18 18 48.5	+6.3
	4.8nm,0.9s							
FINES	**FINESS Array B**	**144.30**	**342**	PKP		**PKPab**	**18 27 59.9**	**-0.7**
	0.5nm,0.4s,baz=21,slow=4.8,SNR=7.8							
AKASG	**Malin Array Be**	**151.13**	**326**	PKPbc		**PKPbc**	**18 28 19.8**	**-0.3**
	1.0nm,0.5s,baz=49,slow=2.7,SNR=6.3							
TORD	**Torodi Ar. Bea**	**164.19**	**171**	PKPab		**PKPab**	**18 29 27.8**	**+2.9**
	0.5nm,0.8s,baz=201,slow=2.7,SNR=3.0							

ISK ***07*** *18:15:38.1,40.36N×34.81E,h7km,MD2.7*
ISCJB ***07*** *18:15:39.1±0.6,40.35N±0.02×34.68E±0.05,h4km±5km, Error ellipse: s-maj=6.0km s-min=3.7km az=7.2*
CSEM ***07*** *18:15:39.1±0.2,40.36N×34.70E, h5km,MD2.9, Error ellipse: s-maj=6.3km s-min=3.8km az=100.0*
DDA ***07*** *18:15:39.1,40.32N×34.72E,h7km,Md2.9*

ISC 07 18:15:39.2±0.8, 40°34N±0.02×34°73E±0.03, h14km±6km, n27, σ0.961/46, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CORM	**Corum**	**0.18**	**205**	*e*PG		**Pg**	**18 15 43.2**	**-0.3**
CORM				*e*SG		**Sg**	**18 15 46.9**	**+0.5**
CORM	**Corum**	**0.18**	**205**	*e*Pg		**Pg**	**18 15 43.2**	**-0.3**
CORM				*e*Sg		**Sg**	**18 15 46.9**	**+0.5**
COAL	**Corum-Alaca**	**0.21**	**113**	*i* P		**Pg**	**18 15 43.6**	**-0.4**
COAL				*i* S		**Sg**	**18 15 47.4**	**+0.2**
COAL	**Corum-Alaca**	**0.21**	**113**	P		**Pg**	**18 15 43.6**	**-0.4**
COAL				S		**Sg**	**18 15 47.4**	**+0.2**
CTAK	**Corum_Osmancik**	**0.31**	**9**	*i* P		**Pg**	**18 15 45.6**	**-0.1**
CTAK				*i* S		**Sb**	**18 15 51.3**	**-0.4**
CTAK	**Corum_Osmancik**	**0.31**	**9**	P		**Pg**	**18 15 45.6**	**-0.1**
CTAK				S		**Sb**	**18 15 51.3**	**-0.4**
CDAG	**Cicekdag**	**0.77**	**201**	*i* P		**Pg**	**18 15 53.6**	**-0.5**
CDAG				*i* S		**Sb**	**18 16 04.9**	**+0.2**
CDAG	**Cicekdag**	**0.77**	**201**	P		**Pg**	**18 15 53.6**	**-0.5**
CDAG				S		**Sb**	**18 16 04.9**	**+0.2**
YOZ	**Yozgat**	**0.83**	**147**	*e*PG		**Pg**	**18 15 54.1**	**-1.2**
YOZ				*e*SG		**Sg**	**18 16 06.2**	**-0.1**
YOZ	**Yozgat**	**0.83**	**147**	*e*Pg		**Pg**	**18 15 54.1**	**-1.2**
YOZ				*e*Sg		**Sg**	**18 16 06.2**	**-0.1**
CANT	**Cankiri**	**0.89**	**288**	*e*PG		**Pb**	**18 15 56.4**	**0.0**
HAVZ	**Havza**	**1.05**	**45**	*i* P		**Pn**	**18 15 59.5**	**0.0**
HAVZ				*i* S		**Sn**	**18 16 14.5**	**+0.5**
HAVZ	**Havza**	**1.05**	**45**	P		**Pn**	**18 15 59.5**	**0.0**
HAVZ				S		**Sn**	**18 16 14.5**	**+0.5**
BOYT	**Boyabat**	**1.09**	**7**	*i* P		**Pb**	**18 15 59.6**	**-0.2**
BOYT				*i* S		**Sb**	**18 16 12.7**	**-1.2**
BOYT	**Boyabat**	**1.09**	**7**	P		**Pb**	**18 15 59.6**	**-0.2**
BOYT				S		**Sb**	**18 16 12.7**	**-1.2**
BYBT	**Boyabat**	**1.13**	**1**	*e*PN		**Pb**	**18 15 59.7**	**-0.7**
BYBT	**Boyabat**	**1.13**	**1**	*e*Pn		**Pb**	**18 15 59.7**	**-0.7**
KAMT	**Kaman**	**1.25**	**219**	*e*PN		**Pg**	**18 16 03.1**	**0.0**
KAMT	**Kaman**	**1.25**	**219**	*e*Pn		**Pg**	**18 16 03.1**	**0.0**
CUSAR	**Sarkisla-SIVAS**	**1.48**	**128**	*i* P		**Pg**	**18 16 07.6**	**-0.1**
CUSAR				*i* S		**Sg**	**18 16 27.8**	**+0.8**
CUSAR	**Sarkisla-SIVAS**	**1.48**	**128**	P		**Pg**	**18 16 07.6**	**-0.1**
CUSAR				S		**Sg**	**18 16 27.8**	**+0.8**
SAMS	**Samsun-Alacam**	**1.50**	**47**	*i* P		**Pg**	**18 16 08.3**	**+0.2**
SAMS				*i* S		**Sg**	**18 16 29.4**	**+1.8**
SAMS	**Samsun-Alacam**	**1.50**	**47**	P		**Pg**	**18 16 08.3**	**+0.2**
AVNS	**Nevsehir-Avano**	**1.53**	**177**	*i* P		**Pb**	**18 16 08.1**	**+0.6**
AVNS				*i* S		**Sg**	**18 16 28.2**	**-0.3**
AVNS	**Nevsehir-Avano**	**1.53**	**177**	P		**Pb**	**18 16 08.1**	**+0.6**
AVNS				S		**Sg**	**18 16 28.2**	**-0.3**
SNOP	**Sinop**	**1.72**	**12**	*e*PN		**Pn**	**18 16 08.8**	**+0.1**
SNOP	**Sinop**	**1.72**	**12**	*e*Pn		**Pn**	**18 16 08.8**	**+0.1**

IDC 07 18:17:15.1±3.0, 28°08S×176°40W, h0km, mb3.3/2, mb1 3.6/2, mb1mx3.4/18, mbtmp3.3/2, Error ellipse: s-maj=98.1km s-min=37.7km az=134.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.77**	**228**	Pn		Pn	18 17 46.7	-0.3
	148nm,0.3s,baz=98,slow=24,SNR=9.8							
RAO				Sn		Sn	18 18 06.9	-3.4
	536nm,0.3s,baz=143,slow=22,SNR=10							
ASAR	**Alice Springs**	**44.69**	**264**	P		P	18 25 30.0	-0.1
	0.2nm,0.6s,baz=103,slow=7.5,SNR=5.1							
WRA	**Warramunga Arr**	**45.47**	**269**	P		P	18 25 36.4	0.0
	0.2nm,0.3s,baz=108,slow=7.9,SNR=4.9							
FINES	**FINESS Array B**	**143.41**	**342**	PKP		PKPbc	18 36 48.8	+0.7
	0.3nm,0.4s,baz=46,slow=6.0,SNR=4.1							
AKASG	**Malin Array Be**	**150.23**	**326**	PKPbc		PKPbc	18 37 07.7	-0.1
	0.2nm,0.3s,baz=35,slow=3.4,SNR=3.6							

GUC 07 18:25:30.7±0.6, 21°08S×69°06W, h113km±3km, ML3.9, 9C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.41**	**275**	↑*i* P		Pn	18 25 47.9	+0.5
PB01				*i* S		Sn	18 26 00.7	+0.7
PB01				IAML			18 26 01.2	
	comp=E,7μm,0.3s							
PB09	**IPOC Station P**	**0.73**	**194**	↑*i* P		Pn	18 25 50.6	+0.8
PB09				*i* S		Sn	18 26 05.1	+0.8
PB09				IAML			18 26 06.8	
	comp=E,5μm,0.4s							
PB08	**IPOC Station P**	**0.94**	**354**	↓*i* P		Pn	18 25 52.8	+0.8
PB08				*i* S		Sn	18 26 09.1	+1.1
PB07	**IPOC Station P**	**1.01**	**230**	↑*i* P		Pn	18 25 53.2	+0.8
PB07				*i* S		Sn	18 26 09.9	+1.1
HMBC	**Humberstone**	**1.11**	**316**	↑*i* P		Pn	18 25 54.2	+0.7
HMBC				*i* S		Sn	18 26 11.6	+0.9
HMBC				IAML			18 26 12.4	
	comp=E,2μm,0.8s							
PB11	**IPOC Station P**	**1.43**	**337**	↑*i* P		Pn	18 25 57.8	+0.7
PB11				*i* S		Sn	18 26 18.1	+1.1
PB04	**IPOC Station P**	**1.61**	**219**	↑*i* P		Pn	18 25 59.9	+0.7
PB04				*i* S		Sn	18 26 20.6	-0.2
PB06	**IPOC Station P**	**1.69**	**196**	↑*i* P		Pn	18 26 00.8	+0.7
PB06				*e*S		Sn	18 26 23.4	+0.8
PSGC	**Pisagua**	**1.78**	**326**	↑*i* P		Pn	18 26 01.5	+0.3
MNMC	**Minye Minye**	**2.00**	**345**	*e*P		Pn	18 26 05.2	+1.0
MNMC				*i* S		Sn	18 26 31.0	+1.3
PB12	**IPOC Station P**	**2.73**	**334**	↑*i* P		Pn	18 26 13.1	-0.2
PB10	**IPOC Station P**	**2.79**	**210**	*e*P		Pn	18 26 14.1	+0.1

ISCJB ***07*** *18:34:42.9×1.7,36.98N×0.03×140.72E±0.05, h14km±12km,mb3.6/5, Error ellipse: s-maj=6.6km s-min=4.9km az=15.6*
IDC ***07*** *18:34:42.5±1.0,36.90N×140.66E,h0km,mb3.6/5, mb1 3.7/8, mb1mx3.5/43, mbtmp3.6/8, ML2.7/3, Error ellipse: s-maj=24.6km s-min=18.0km az=90.0*
JMA ***07*** *18:34:43.5,37.00N×140.62E,h5km±1km, M3.4 Broadband fault plane solution: P waves. NP1: φs61.00000°, δ55.00000°, λ-115.00000°. NP2: φs281.00000°, δ42.00000°, λ-58.00000°. Principal axes: T Plg7.0000°, Azm169.0000°; N Plg21.0000°, Azm76.0000°; P Plg68.0000°, Azm277.0000°;*
JMA Felt I J1.

ISC 07 18:34:42.7±1.4, 36°93N±0.05×140°62E±0.04, h1km±11km, n17, σ0.968/25, mb3.5/5, 5C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**40**	↑P		**Pg**	**18 34 47.1**	**+0.1**
ONAJ				S		**Sg**	**18 34 49.8**	**-0.1**
JHO	**Hitachi**	**0.32**	**187**	↑P		**Pb**	**18 34 51.1**	**-0.2**
JHO				S		**Sb**	**18 34 56.7**	**-0.3**
JFK	**Kawauchi**	**0.48**	**25**	↑P		**Pg**	**18 34 51.5**	**-0.4**
JSB	**Shiboa**	**0.56**	**274**	↓P		**Pb**	**18 34 55.2**	**-0.2**
JSB				S		**Sb**	**18 35 03.3**	**-0.7**
JFT	**Otama**	**0.63**	**339**	↑P		**Pg**	**18 34 54.6**	**-0.2**
JFT				S		**Sg**	**18 35 02.3**	**-0.6**
JYT	**Yasato**	**0.78**	**206**	↑P		**Pb**	**18 34 59.4**	**+0.3**
JFY	**Yanaizu**	**0.87**	**303**	↓P		**Pg**	**18 34 59.7**	**+0.3**
JFY				S		**Sg**	**18 35 10.5**	**-0.2**
MJAR	**Matsushiro Arr**	**1.98**	**259**	Pn		**Pn**	**18 35 18.3**	**+0.9**
	9.7nm,0.3s,baz=81,slow=15,SNR=68							
MJAR				Sn		**Sb**	**18 35 44.3**	**-0.3**
	15nm,0.3s,baz=87,slow=28,SNR=6.2							
MAT	**Matsushiro**	**1.98**	**259**	P		**Pn**	**18 35 18.5**	**+1.1**
MAT				S		**Sb**	**18 35 44.7**	**0.0**
JHJ	**Hachijo jima 2**	**3.87**	**190**	Pn		**Pn**	**18 35 43.4**	**0.0**
	2.1nm,0.3s,baz=51,slow=15,SNR=3.1							
JHJ				Sn		**Sn**	**18 36 29.3**	**-0.1**
	4.1nm,0.3s,baz=53,slow=16,SNR=2.5							
ASAJ	**Asahikawa**	**7.33**	**11**	Pn		**Pn**	**18 36 31.7**	**+0.8**
	0.3nm,0.3s,baz=249,slow=8.6,SNR=4.3							
USRK	**Ussuriysk Ar.**	**9.78**	**321**	Pn		**Pn**	**18 37 06.1**	**+1.6**
	0.1nm,0.3s,baz=122,slow=14,SNR=3.4							
MKAR	**Makanchi Array**	**43.63**	**302**	P		**P**	**18 42 47.4**	**-1.4**
	0.4nm,0.8s,baz=87,slow=8.5,SNR=2.7							
WRA	**Warramunga Arr**	**56.88**	**187**	P		**P**	**18 44 28.5**	**-0.8**
	0.9nm,0.8s,baz=3.4,slow=7.4,SNR=7.8							
ASAR	**Alice Springs**	**60.60**	**187**	P		**P**	**18 44 55.0**	**-0.2**
	0.4nm,0.9s,baz=13,slow=8.7,SNR=5.3							
FINES	**FINESS Array B**	**68.61**	**332**	P		**P**	**18 45 47.6**	**+0.6**
	1.3nm,1.0s,baz=27,slow=6.5,SNR=3.4							
TXAR	**Lajitas Array**	**90.69**	**52**	P		**P**	**18 47 47.6**	**0.0**
	0.1nm,0.5s,baz=343,slow=5.0,SNR=3.4							

NIED ***07*** *18:35:00,37.10N×141.20E,h56km,Mw5.5 Best double couple: M0 2.06000×10^17 NP1:φs209.00000°, δ43.00000°, λ91.00000°. NP2:φs28.00000°, δ47.00000°, λ89.00000°.*
BJI ***07*** *18:35:37.8,37.01N×141.29E,h46km,mb5.3/72,mB5.2/47, Ms5.1/93,Ms7 5.0/87*
MOS ***07*** *18:35:39.0±0.8,37.15N×140.94E,h33km,mb5.8/145, MS4.9/73, Error ellipse: s-maj=5.7km s-min=3.2km az=105.5*
NEIC ***07*** *18:35:40.7±0.1,37.13N×140.87E,h35km,mb5.7/296, ME5.1,MW5.5,MW5.6, Error ellipse: s-maj=2.5km s-min=1.9km az=144.0, Moment Tensor Solution. s57 Moment tensor: Scale 10^17Nm; Mrr2.83; Mθθ0.00; Mφφ-2.83; Mrθ0.05; Mθφ-1.31; Mφr-0.40; Best double couple: M0 3.10000×10^17 NP1:φs197.00000°, δ48.00000°, λ84.00000°. NP2:φs26.00000°, δ42.00000°, λ97.00000°. Principal axes: T 2.8700, Plg84.0000°, Azm56.0000°; N 0.5000, Plg5.0000°, Azm201.0000°; P -3.3700, Plg3.0000°, Azm291.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Felt [II] at Tokyo. Felt widely in eastern Honshu. Recorded [4 JMA] in Fukushima, Ibaraki and Miyagi.
JMA ***07*** *18:35:41.8±0.1,37.10N×141.13E,h55km±1km,M5.6 Broadband fault plane solution: P waves. NP1: φs220.00000°, δ68.00000°, λ101.00000°. NP2: φs14.00000°, δ25.00000°, λ66.00000°. Principal axes: T Plg66.0000°, Azm149.0000°; N Plg10.0000°, Azm36.0000°; P Plg22.0000°, Azm302.0000°;*
JMA Felt IV J1.
NEIC ***07*** *18:35:42.0±0.0,37.12N×140.97E,h60km,Moment Tensor Solution. s15 Moment tensor: Scale 10^17Nm; Mrr2.01; Mθθ-0.81; Mφφ-1.20; Mrθ0.42; Mθφ-0.84; Mφr0.56; Best double couple: M0 2.10000×10^17 NP1:φs38.00000°, δ55.00000°, λ89.00000°. NP2:φs219.00000°, δ35.00000°, λ91.00000°. Principal axes: T 2.1300, Plg80.0000°, Azm304.0000°; N -0.1400, Plg0.0000°, Azm38.0000°; P -1.9900, Plg9.0000°, Azm128.0000°;*
IDC ***07*** *18:35:42.9±0.6,37.14N×140.98E,h55km±5km,mb5.1/36, mb1 5.1/42,mb1mx5.1/46,mbtmp5.3/42,MS4.9/40, Ms1 4.9/40,ms1mx4.8/52 Error ellipse: s-maj=10.2km s-min=8.6km az=85.0*
ISCJB ***07*** *18:35:42.6±0.2,37.11N±0.01×140.95E±0.01,h64km±1km, mb5.7/477, Error ellipse: s-maj=2.5km s-min=1.7km az=154.0*
GCMT ***07*** *18:35:42.6±0.1,37.18N×141.11E,h55km,MW5.5/126, Moment Tensor Solution. s122,c228; s126,c246; Duration: 184 Moment tensor: Scale 10^17Nm; Mrr2.31±.03; Mθθ-0.59±.02; Mφφ-1.72±.02; Mrθ-0.04±.02; Mθφ-0.68±.02; Mφr0.05±.02; Best double couple: M0 2.17600×10^17 NP1:φs24.00000°, δ45.00000°, λ88.00000°. NP2:φs207.00000°, δ45.00000°, λ92.00000°. Principal axes: T 2.3110, Plg89.0000°, Azm219.0000°; N -0.2730, Plg1.0000°, Azm25.0000°; P -2.0410, Plg0.0000°, Azm115.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISC 07 18:35:42.1±0.3, 37°14N±0.02×140°97E±0.03, h50km±1km, h50km: pP-P, n1850, σ1934/1996, mb5.7/510, MS5.0/214, 149C-76D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**254**	↑P		**Pn**	**18 35 51.1**	**+0.9**
ONAJ				*e*S		**Sn**	**18 35 57.6**	**+1.6**
JFK	**Kawauchi**	**0.24**	**342**	↑P		**Pn**	**18 35 51.6**	**+0.8**
JFK				S		**Sn**	**18 35 58.6**	**+1.6**
JHO	**Hitachi**	**0.62**	**211**	↓P		**Pn**	**18 35 55.1**	**+0.2**
JHO				*e*S		**Sn**	**18 36 04.3**	**+0.3**
JFT	**Otama**	**0.63**	**307**	↑P		**Pn**	**18 35 57.3**	**+2.3**
JFT				*e*S		**Sn**	**18 36 08.1**	**+3.8**
JMM	**Marumori**	**0.74**	**349**	↑P		**Pn**	**18 35 57.2**	**+0.8**
JMM				*e*S		**Sn**	**18 36 08.6**	**+1.9**
JSB	**Shiboa**	**0.85**	**259**	↓P		**Pn**	**18 35 59.9**	**+2.0**
JFY	**Yanaizu**	**1.04**	**285**	↓P		**Pn**	**18 36 02.4**	**+2.0**
JFY				*e*S		**Sn**	**18 36 15.2**	**+1.3**
JOU	**Okura**	**1.25**	**349**	↓P		**Pn**	**18 36 04.3**	**+1.1**
JOU				*e*S		**Sn**	**18 36 21.9**	**+3.0**
JYS	**Shirataka**	**1.29**	**327**	↓P		**Pn**	**18 36 05.9**	**+2.1**
JYS				*e*S		**Sn**	**18 36 24.1**	**+4.1**
JIO	**Ouri**	**1.35**	**13**	P		**Pn**	**18 36 04.5**	**0.0**
JAG	**Ashikaga**	**1.41**	**240**	↓P		**Pn**	**18 36 06.6**	**+1.2**
JAG				*e*S		**Sn**	**18 36 25.2**	**+2.4**
JKT	**Katashina**	**1.43**	**255**	↓P		**Pn**	**18 36 08.1**	**+2.4**
JNS	**Sasagawa**	**1.48**	**298**	↓P		**Pn**	**18 36 07.9**	**+1.6**
JHK	**Hiroka**	**1.56**	**275**	↓P		**Pn**	**18 36 09.7**	**+2.3**
TOK	**Tokyo**	**1.75**	**214**	P		**Pn**	**18 36 11.0**	**+1.0**
JYA	**Atsumi**	**1.76**	**326**	↓P		**Pn**	**18 36 12.4**	**+2.3**
JIZZ	**Izumozaki**	**1.84**	**283**	↓P		**Pn**	**18 36 14.4**	**+3.1**
JAW	**Awa shima**	**1.89**	**315**	↓P		**Pn**	**18 36 14.0**	**+2.0**
JGK	**Kuni**	**1.95**	**253**	↓P		**Pn**	**18 36 15.6**	**+2.7**
JRY	**Ryogami san**	**2.00**	**237**	P		**Pn**	**18 36 15.1**	**+1.5**
JRY				S		**Sn**	**18 36 39.3**	**+1.8**
JJN	**Nakama**	**2.24**	**270**	↓P		**Pn**	**18 36 19.5**	**+2.8**
MJAR	**Matsushiro Arr**	**2.29**	**256**	P		**Pn**	**18 36 19.3**	**+1.8**
	263nm,0.3s,baz=82,slow=15,SNR=109							
MJAR				S		**Sn**	**18 36 47.3**	**+2.8**
	332nm,0.3s,baz=95,slow=26,SNR=6.7							
MAJO	**Matsushiro**	**2.29**	**256**	*e*P		**Pn**	**18 36 19.8**	**+2.3**
MAJO	**Matsushiro**	**2.29**	**256**	*e*Pn		**Pn**	**18 36 19.8**	**+2.3**
MAT	**Matsushiro**	**2.29**	**256**	P		**Pn**	**18 36 20.3**	**+2.8**
MAT				S		**Sn**	**18 36 49.8**	**+5.3**
MAT	**Matsushiro**	**2.29**	**256**	P		**Pn**	**18 36 20.3**	**+2.8**
MJB9	**Matsu-Tunnel**	**2.29**	**256**	*e*Pn		**Pn**	**18 36 20.1**	**+2.6**
JSD	**Sado**	**2.33**	**293**	P		**Pn**	**18 36 19.4**	**+1.5**
JTB	**Tobi-shima**	**2.33**	**332**	↓P		**Pn**	**18 36 19.9**	**+1.9**
JNG	**Nsakai**	**2.42**	**253**	↓P		**Pn**	**18 36 21.9**	**+2.7**
BSO1	**Boso 1**	**2.48**	**180**	P		**Pn**	**18 36 20.0**	**+0.4**
JYN	**Shimob**	**2.55**	**231**	↓P		**Pn**	**18 36 23.2**	**+2.1**
JNT	**Takato**	**2.60**	**242**	↓P		**Pn**	**18 36 24.7**	**+2.8**
JSZ	**Suzu**	**2.89**	**277**	↓P		**Pn**	**18 36 27.8**	**+2.2**
JTT	**Ttatey**	**2.96**	**261**	P		**Pn**	**18 36 30.4**	**+3.8**
SHZ3	**Shizuoka 3**	**3.04**	**228**	↓P		**Pn**	**18 36 30.5**	**+2.7**
JGN	**Niukaw**	**3.07**	**254**	↓P		**Pn**	**18 36 31.6**	**+3.4**
JNY	**Yasuok**	**3.08**	**236**	↓P		**Pn**	**18 36 31.6**	**+3.3**
JGF	**Kuroka**	**3.29**	**243**	↓P		**Pn**	**18 36 34.6**	**+3.4**
JKO	**Kozu shima**	**3.30**	**207**	P		**Pn**	**18 36 33.3**	**+2.0**
JYZW	**Yoshizawa**	**3.38**	**232**	P		**Pn**	**18 36 34.9**	**+2.5**
HMMJ	**Hamamatsu 2**	**3.48**	**230**	P		**Pn**	**18 36 36.5**	**+2.7**
JTM	**Tenmabayashi**	**3.64**	**1**	↓P		**Pn**	**18 36 38.0**	**+2.1**
INU	**Inuyama**	**3.66**	**242**	*e*Pn		**Pn**	**18 36 39.5**	**+3.3**
JKG	**Kaga**	**3.82**	**258**	↓P		**Pn**	**18 36 42.2**	**+3.8**
JHJ	**Hachijo jima 2**	**4.13**	**194**	P		**Pn**	**18 36 42.6**	**0.0**
	932nm,0.3s,baz=357,slow=3.2,SNR=106							
JHJ				S		**Sn**	**18 37 28.4**	**-1.2**
	1μm,0.3s,baz=47,slow=24,SNR=15							
JHJ				LR		LR	18 38 23.9	
	comp=Z,11μm,21.7s,baz=45,slow=39							
JHJ2	**Mitsune**	**4.13**	**194**	*e*Pn		**Pn**	**18 36 42.6**	**-0.1**
JHJ2				*e*Sn		**Sn**	**18 37 30.2**	**+0.6**
JFM	**Mihama**	**4.33**	**250**	↓P		**Pn**	**18 36 49.3**	**+3.9**
JKN2	**Miekihoku**	**4.79**	**234**	↑P		**Pn**	**18 36 54.0**	**+2.3**
ERM	**Erimo**	**5.15**	**18**	*d* P		**Pn**	**18 36 56.0**	**-0.7**
ERM				pmax		pmax		
	comp=Z,726nm,1.0s							
ERM	**Erimo**	**5.15**	**18**	*e*Pn		**Pn**	**18 36 56.3**	**-0.3**
ASAJ	**Asahikawa**	**7.08**	**10**	P		**Pn**	**18 37 22.5**	**-0.5**
	baz=210,slow=11							
ASAJ				S		**Sn**	**18 38 38.1**	**-4.0**
	comp=Z,39nm,0.3s,baz=217,slow=20,SNR=3.6							
YUK	**Yuzh-Kuril'sk**	**7.83**	**27**	*i* P		**Pn**	**18 37 30.8**	**-2.5**
JNU	**Nakatsue**	**9.18**	**247**	P		**Pn**	**18 37 54.3**	**+2.3**
	comp=Z,3.1nm,0.3s,baz=67,slow=3.7,SNR=28							
JNU				LR		LR	18 42 05.3	
	comp=Z,6μm,21.5s,baz=95,slow=42							
JNU	**Nakatsue**	**9.18**	**247**	*e*Pn		**Pn**	**18 37 55.1**	**+3.2**
MSHR	**Mys Shultsa**	**9.29**	**309**	↑*e*P		**Pn**	**18 37 54.8**	**+1.5**
KUR	**Kuril'sk**	**9.61**	**31**	*e*P		**Pn**	**18 37 56.1**	**-1.6**
KUR				*e*S		**Sn**	**18 39 36.9**	**-7.2**
KUR				pmax		pmax		
	comp=Z,192nm,0.7s							
KUR				pmax		pmax		
	comp=E,75nm,0.5s							
KUR				pmax		pmax		
	comp=N,81nm,0.6s							
KUR				smax		smax		
	comp=N,676nm,0.8s							
KUR				smax		smax		
	comp=E,245nm,0.8s							
KUR				smax		smax		
	comp=N,2μm,2.0s							
KUR				smax		smax		
	comp=E,749nm,2.0s							
USRK	**Ussuriysk Ar.**	**9.80**	**319**	P		**Pn**	**18 38 04.9**	**+4.5**
	comp=E,11nm,0.3s,baz=134,slow=14,SNR=530							
USRK				LR		LR	18 41 45.2	
	comp=E,9μm,18.0s,baz=121,slow=37							
YSS	**Yuzh-Sakhalins**	**9.89**	**7**	*d*eP		**Pn**	**18 38 00.8**	**-0.8**
YSS				*e*S		**Sn**	**18 39 47.1**	**-4.0**
YSS				pmax		pmax		
	comp=Z,170nm,0.4s							
YSS				MLR		MLR		
	comp=Z,3μm,12.0s							
YSS				MLR		MLR		
	comp=N,3μm,16.0s							
YSS				MLR		MLR		
	comp=E,1μm,17.0s							
YSS	**Yuzh-Sakhalins**	**9.89**	**7**	*e*Pn		**Pn**	**18 38 00.7**	**-0.8**
CBIJ	**Chichi jima**	**10.07**	**174**	*e*Pn		Pn	18 37 57.2	-6.9
KSRS	**Korea Array**	**10.40**	**276**	P		Pn	18 38 13.4	+4.9
	comp=E,3.8nm,0.3s,baz=91,slow=12,SNR=144							
KSRS				LR		LR	18 41 57.7	
	comp=E,9μm,21.3s,baz=78,slow=36							
KSRS				PcP		**PcP**	**18 44 12.0**	**+0.8**
	comp=E,0.1nm,0.3s,baz=89,slow=0.8,SNR=4.4							
KSRS				ScP		**ScP**	**18 47 38.9**	**-0.5**
	baz=156,slow=0.8,SNR=9.9							
KS01	**Wonju Array Si**	**10.42**	**276**	*e*Pn		**Pn**	**18 38 13.4**	**+4.6**
KS01				*e*ScP		**ScP**	**18 47 38.3**	**-1.1**
KS15	**Wonju Array Si**	**10.43**	**276**	*e*Pn		Pn	18 38 13.9	+5.0
KSAR	**Wonju Array Be**	**10.43**	**276**	P		**Pn**	**18 38 13.4**	**+4.5**
KSAR	**Wonju Array Be**	**10.43**	**276**	P		**Pn**	**18 38 13.4**	**+4.5**
KSAR				PcP		**PcP**	**18 44 12.0**	**+0.7**
KSAR				ScP		**ScP**	**18 47 38.9**	**-0.6**
MDJ	**Mudanjiang**	**11.39**	**314**	P		Pn	18 38 27.3	+5.3
MDJ				S		**Sn**	**18 40 34.8**	**+7.1**
MDJ				ScS		**ScS**	**18 51 11.8**	**-4.1**
MDJ				pmax		pmax		
	comp=E,620nm,

comp=E,1μm,10.0s
NKL smax smax
comp=Z,5μm,10.0s
NKL MLR MLR
comp=N,2μm,17.0s
NKL MLR MLR
comp=E,4μm,17.0s
NKL MLR MLR
comp=Z,4μm,19.0s
SKR Severo-Kuril's 17.34 34 *c iP* **Pn 18 39 38.9 -1.5**
SKR *i* S **S 18 42 57.1 -1.7**
SKR pmax pmax
comp=Z,1μm,2.4s
SKR smax smax
comp=Z,433nm,1.1s
SKR MLR MLR
comp=Z,2μm,21.0s
SSE Sheshan 17.44 256 P **Pn 18 39 42.0 +0.2**
SSE S **Sn 18 42 54.5 -0.5**
SSE pmax pmax
comp=Z,110nm,1.2s
SSE pmax pmax
comp=Z,1μm,10.0s
SSE LR LR
comp=Z,2μm,28.4s
SSE LR LR
comp=Z,3μm,28.4s
SSE LR LR
comp=Z,4μm,23.3s
NJ2 Nanjing 18.89 261 *eP* **P 18 39 58.5 +0.2**
NJ2 pP **pP 18 40 10.0 +0.2**
NJ2 sP **sP 18 40 13.0 -3.2**
NJ2 S **Sn 18 43 30.0 +0.1**
NJ2 sS **sS 18 43 47.7 -1.1**
NJ2 pmax pmax
comp=Z,72nm,1.1s
NJ2 pmax pmax
comp=Z,1μm,8.5s
NJ2 LR LR
comp=Z,3μm,22.8s
NJ2 LR LR
comp=Z,4μm,22.8s
NJ2 LR LR
comp=Z,5μm,20.6s
TIA Tai'an 19.14 274 ⇓P **P 18 40 01.5 +0.4**
TIA S **S 18 43 28.3 -7.1**
TIA pmax pmax
comp=Z,130nm,1.4s
TIA LR LR
comp=Z,2μm,10.1s
TIA LR LR
comp=Z,3μm,17.7s
TIA LR LR
comp=Z,4μm,16.4s
HIA Hailar 19.57 315 *eP* **P 18 40 04.1 -1.7**
HIA pmax pmax
comp=Z,95nm,1.0s
HIA Hailar 19.57 315 *eP* **P 18 40 04.1 -1.7**
comp=Z,95nm,1.0s
BJI Beijing 19.58 286 P **P 18 40 05.7 -0.1**
BJI S **S 18 43 40.6 -3.5**
BJI LR LR
comp=Z,620nm,16.1s
BJI LR LR
comp=Z,3μm,13.1s
BJI LR LR
comp=Z,4μm,30.5s
BJT Baijiatuau 19.58 286 *eP* **P 18 40 05.9 0.0**
BJT pmax pmax
comp=Z,490nm,1.4s
BJT Baijiatuau 19.58 286 *eP* **P 18 40 05.9 0.0**
comp=Z,490nm,1.4s
PEA0 Petropavlovsk- 19.78 31 *eP* **P 18 40 07.6 -0.3**
PEA0B Petropavlovsk- 19.78 31 *eP* **P 18 40 08.4 +0.5**
comp=Z,180nm,1.1s
PETK Petropavlovsk- 19.78 31 P **P 18 40 07.8 -0.1**
comp=Z,1.9nm,0.3s,baz=211,slow=6.1,SNR=42
YOJ Yonaguni jima 19.90 236 *eP* **P 18 40 08.4 -1.0**
YOJ pmax pmax
comp=Z,79nm,1.1s
YOJ Yonaguni jima 19.90 236 *eP* **P 18 40 08.4 -1.0**
comp=Z,79nm,1.1s
PET Petropavlovsk 20.11 32 ⇑*iP* **P 18 40 12.1 +0.6**
PET *eS* **S 18 43 52.1 -2.4**
PET pmax pmax
comp=Z,302nm,1.4s
PET pmax pmax
comp=Z,700nm,11.7s
PET MLR MLR
comp=Z,4μm,23.0s
PET MLR MLR
comp=Z,2μm,21.0s
PET Petropavlovsk 20.11 32 *eP* **P 18 40 11.5 0.0**
comp=Z,541nm,1.4s
PET LR LR
comp=Z,3μm,22.0s
TATO Taipei 20.58 239 *eP* **P 18 40 15.3 -1.5**
comp=Z,157nm,1.4s
SARN Sarigan 20.80 167 *eP* **P 18 40 18.5 -0.8**
YHNB Yeheng 20.86 239 *eP* **P 18 40 18.1 -1.9**
comp=Z,47nm,1.0s
YHNB LR LR
comp=Z,1μm,20.0s
NACB Ninganchiao 21.04 238 *eP* **P 18 40 19.7 -2.0**
comp=Z,51nm,1.2s
ANA2 Anatahan 21.14 167 *eP* **P 18 40 18.8 -4.1**
SSLB Suanglung 21.73 238 *eP* **P 18 40 26.8 -2.5**
comp=Z,81nm,1.4s
YULB Yu-li 21.77 237 *eP* **P 18 40 26.2 -3.4**
comp=Z,21nm,0.8s
TWG Pinlang 22.31 236 *eP* **P 18 40 31.4 -4.0**
comp=Z,209nm,0.7s
TWG *eS* **S 18 44 28.9 -8.8**
CLNS Chul'man 22.44 337 *eP* **P 18 40 34.9 -1.7**
CLNS *e**PP **pP 18 40 43.8 -4.5**
CLNS *e* 18 40 59.7
CLNS *e* 18 44 30.0
CLNS *eS* **S 18 44 39.8 +0.3**
CLNS *eSS* **SnSn 18 45 11.3 +0.1**
CLNS *e* 18 51 49.3
CLNS pmax pmax
comp=Z,106nm,1.4s
CLNS pmax pmax
comp=N,91nm,1.2s
CLNS pmax pmax
comp=E,23nm,1.6s
CLNS pmax pmax
comp=N,59nm,1.1s
CLNS pmax pmax
comp=Z,47nm,1.0s
CLNS pmax pmax
comp=E,27nm,1.0s
CLNS smax smax
comp=E,142nm,1.6s
CLNS smax smax
comp=N,159nm,1.5s
CLNS MLR MLR
comp=N,3μm,17.0s
CLNS MLR MLR
comp=Z,4μm,16.0s
CLNS MLR MLR
comp=E,933nm,15.0s
TIY Taiyuan 22.63 280 *eP* **P 18 40 38.1 -0.8**
TIY S **S 18 44 37.0 -6.3**
TIY pmax pmax
comp=E,220nm,1.2s
TIY pmax pmax
comp=E,800nm,5.2s
TIY LR LR
comp=E,2μm,14.4s
TIY LR LR
comp=E,3μm,16.9s
TIY LR LR
comp=E,5μm,18.5s
QZH Quanzhou 22.64 244 P P 18 40 28.7 -10
QZH S S 18 44 29.7 -14
QZH LR LR
comp=N,2μm,12.6s
QZH LR LR
comp=E,1μm,11.5s
QZH LR LR
comp=Z,5μm,20.8s
WHN Wuhan 23.02 261 P **P 18 40 41.5 -1.3**
WHN S **S 18 44 39.1 -11**
WHN pmax pmax
comp=Z,160nm,0.8s
WHN LR LR
comp=Z,3μm,12.8s
WHN LR LR
comp=Z,9μm,18.6s
WHN LR LR
comp=Z,10μm,20.0s
HHC Hu-ho-hao-te 23.10 288 ⇓P **P 18 40 43.1 -0.6**
HHC pP pP 18 40 56.8 +1.3
HHC sP sP 18 41 05.3 +3.5
HHC PP **PnPn 18 41 13.8 +3.4**
HHC S **S 18 44 46.9 -4.2**
HHC sS sS 18 45 11.8 -0.6
HHC SS **SnSn 18 45 35.4 +7.9**
HHC pmax pmax
comp=Z,260nm,3.1s
HHC LR LR
comp=Z,1μm,13.7s
HHC LR LR
comp=Z,2μm,12.4s
HHC LR LR
comp=Z,2μm,16.2s
MA2 Magadan 23.33 13 P **P 18 40 44.9 -0.6**
comp=Z,185nm,0.9s,baz=199,slow=8.3,SNR=68
MA2 LR LR 18 49 55.1
comp=Z,2μm,21.9s,baz=168,slow=36
GUMO Guam 23.71 171 P **P 18 40 49.2 -0.3**
comp=Z,109nm,0.9s,baz=48,slow=12,SNR=8.4
GUMO LR LR 18 53 03.0
comp=Z,789nm,18.1s,baz=15,slow=44
GUMO Guam 23.71 171 P **P 18 40 49.2 -0.3**
GUMO pmax pmax
comp=Z,151nm,1.0s
GUMO MLR MLR
comp=Z,789nm,18.2s
GUMO Guam 23.71 171 *eP* **P 18 40 48.7 -0.8**
comp=Z,224nm,1.0s
BTO Baotou 24.28 288 *eP* **P 18 40 53.4 -1.3**
CIT Chita 24.35 316 *eP* **P 18 40 52.2 -3.0**
CIT *e* 18 41 02.2
CIT *e* 18 41 09.8
CIT *eS* **S 18 45 06.6 -4.4**
CIT pmax pmax
comp=Z,410nm,1.4s
YAK Yakutsk 25.89 348 P **P 18 41 08.1 -0.8**
comp=Z,148nm,0.4s,baz=170,slow=2.2,SNR=65
YAK S **S 18 45 32.5 -2.5**
comp=Z,20nm,0.7s,baz=195,slow=19,SNR=9.1
YAK LR LR 18 51 25.5
comp=Z,4μm,21.5s,baz=143,slow=36
YAK Yakutsk 25.89 348 *c iP* **P 18 41 08.6 -0.3**
YAK *e**PP **pP 18 41 21.8 0.0**
YAK *e* 18 41 46.5
YAK *eS* **S 18 45 33.7 -1.4**
YAK *e**SS **sS 18 45 53.8 -3.1**
YAK *e* 18 51 56.8
YAK pmax pmax
comp=Z,61nm,0.8s
YAK pmax pmax
comp=N,71nm,1.4s
YAK pmax pmax
comp=E,29nm,1.1s
YAK pmax pmax
comp=Z,169nm,1.0s
YAK pmax pmax
comp=N,279nm,1.6s
YAK pmax pmax
comp=E,230nm,2.0s
YAK smax smax
comp=N,2μm,2.7s
YAK smax smax
comp=E,851nm,2.7s
YAK Yakutsk 25.89 348 *eP* **P 18 41 08.1 -0.8**
comp=E,208nm,0.6s
YAK S **S 18 45 32.5 -2.5**
XAN Xi'an 26.18 273 P **P 18 41 12.3 +0.4**
XAN pP pP 18 41 25.1 +0.3
XAN S **S 18 45 31.2 -9.1**
XAN pmax pmax
comp=E,72nm,0.9s
XAN pmax pmax
comp=E,240nm,7.1s
XAN LR LR
comp=E,2μm,17.3s
XAN LR LR
comp=E,1μm,19.3s
SEY Seymchan 26.76 12 P **P 18 41 17.6 +0.8**
comp=E,100nm,0.8s,baz=202,slow=7.2,SNR=100
ENH Enshi 26.99 265 *eP* **P 18 41 18.8 -0.4**
comp=E,137nm,0.7s
ENH LR LR
comp=Z,3μm,22.0s
BOD Bodaibo 27.25 328 ⇓*iP* **P 18 41 21.3 +0.1**
BOD pmax pmax
comp=Z,118nm,0.8s
SONA1 Songino Array 27.43 304 *eP* **P 18 41 22.7 -0.4**
SONM Songino Array 27.43 304 P **P 18 41 23.0 -0.1**
comp=Z,36nm,0.5s,baz=105,slow=8.2,SNR=70
SONM PcP **PcP 18 44 41.4 +0.7**
comp=Z,8.2nm,0.9s,baz=100,slow=2.5,SNR=4.9
SONM ScP **ScP 18 48 16.3 -0.6**
comp=Z,5.1nm,1.0s,baz=149,slow=1.7,SNR=6.9
SONM LR LR 18 52 34.7
comp=Z,3μm,20.1s,baz=86,slow=37
SONM Songino Array 27.43 304 P **P 18 41 23.0 -0.1**
SONM 18 44 41.4
SONM pmax pmax
comp=Z,38nm,0.5s
SONM pmax pmax
comp=Z,8.0nm,0.9s
SONM pmax pmax
comp=N,5.0nm,1.0s
SONM MLR MLR
comp=Z,3μm,20.1s
GZH Guangzhou 27.58 247 P **P 18 41 18.0 -6.5**
GZH PP **PnPn 18 42 02.2 -9.4**
GZH S S 18 45 51.2 -11
GZH pmax pmax
comp=Z,930nm,4.7s
PVCP Virac 27.84 217 *eP* P 18 41 35.9 +8.9
MCO Taipa Grande 28.01 245 P P 18 41 35.0 +6.7
H11N2 WAKE ISLAND Hy 28.51 120 T T 19 11 29.1
baz=313,slow=75,SNR=2441
H11N1 WAKE ISLAND Hy 28.52 120 T T 19 11 39.5
baz=313,slow=75,SNR=806
H11N3 WAKE ISLAND Hy 28.53 120 T T 19 11 31.9
baz=313,slow=75,SNR=3313
WAKE Wake Island 28.65 121 PFAKE 18 41 40.0 +5.9
WAKE LR LR
comp=Z,3μm,22.0s
H11S1 WAKE ISLAND Hy 29.22 122 T T 19 12 31.1
baz=315,slow=75,SNR=532
H11S3 WAKE ISLAND Hy 29.22 122 T T 19 12 32.7
baz=315,slow=75,SNR=657
H11S2 WAKE ISLAND Hy 29.23 122 T T 19 12 31.6
baz=315,slow=75,SNR=520
LZH Lanzhou 29.70 279 ⇑P **P 18 41 45.2 +1.7**
LZH pP pP 18 41 56.9 +0.4
LZH sP sP 18 42 04.1 +1.7
LZH PP **PP 18 42 46.0 -5.1**
LZH PcP **PcP 18 44 48.2 +1.6**
LZH S **S 18 46 35.2 -0.8**
LZH sS sS 18 47 00.2 +2.3
LZH SS **SnSn 18 48 12.0 +3.3**
LZH pmax pmax
comp=Z,180nm,1.0s
LZH pmax pmax
comp=Z,630nm,4.2s
LZH LR LR
comp=Z,2μm,13.1s
LZH LR LR
comp=Z,3μm,14.0s
LZH LR LR
comp=Z,4μm,14.8s
IRK Irkutsk 29.76 312 *eP* **P 18 41 43.5 -0.2**
IRK *e* 18 42 34.2
IRK *eS* **S 18 46 38.0 +1.7**
IRK pmax pmax
comp=Z,58nm,3.0s
ZAK Zakamensk 29.92 308 *eP* **P 18 41 45.6 +0.4**
ZAK pmax pmax
comp=Z,12nm,1.0s
ZAK pmax pmax
comp=Z,16nm,1.7s
TLY Talaya 29.99 311 P **P 18 41 46.8 +1.1**
comp=Z,36nm,0.7s,baz=112,slow=2.6,SNR=68
TLY PcP **PcP 18 44 47.5 +0.7**
comp=Z,7.8nm,0.8s,baz=107,slow=5.9,SNR=3.0
TLY LR LR 18 54 22.3
comp=Z,3μm,18.6s,baz=114,slow=37
TLY Talaya 29.99 311 *c iP* **P 18 41 46.7 +1.0**
TLY *e* 18 44 47.0
TLY *eS* **S 18 46 37.0 -3.0**
TLY pmax pmax
comp=Z,35nm,0.6s
TLY MLR MLR
comp=Z,3μm,19.0s
TLY Talaya 29.99 311 *eP* **P 18 41 45.6 -0.2**
comp=Z,42nm,0.7s
TLY PcP **PcP 18 44 47.5 +0.7**
GYA Guiyang 30.89 260 ⇑*iP* **P 18 41 53.5 -0.5**
GYA pP pP 18 42 08.0 +1.0
GYA PP **PnPn 18 42 58.5 +2.5**
GYA PcP **PcP 18 44 52.2 +2.4**
GYA S **S 18 46 51.4 -3.3**
GYA sS sS 18 47 16.9 +0.3
GYA pmax pmax
comp=Z,90nm,1.1s
GYA pmax pmax
comp=Z,310nm,10.6s
GYA LR LR
comp=Z,1μm,18.0s
GYA LR LR
comp=Z,2μm,19.8s
GYA LR LR
comp=Z,4μm,20.8s
CD2 Chengdu 31.32 270 ⇓P **P 18 41 57.6 -0.1**
CD2 pP pP 18 42 09.5 -1.2
CD2 sP sP 18 42 15.2 -1.5
CD2 S **S 18 46 58.6 -2.6**
CD2 sS sS 18 47 22.5 -0.6
CD2 pmax pmax
comp=Z,110nm,0.8s
CD2 pmax pmax
comp=Z,200nm,4.8s
CD2 LR LR
comp=Z,2μm,15.4s
CD2 LR LR
comp=Z,3μm,15.9s
CD2 LR LR
comp=Z,3μm,16.4s
MOY Mondy 31.60 310 *eP* **P 18 42 00.9 +0.9**
MOY pmax pmax
comp=Z,24nm,1.6s
GTA Gaotai 32.19 287 *eP* **P 18 42 05.3 -0.1**
GTA PP **PnPn 18 43 15.0 +2.4**
GTA PcP **PcP 18 44 54.2 +1.1**
GTA S **S 18 47 15.2 +0.4**
GTA ScP **ScP 18 48 33.4 +0.9**
GTA PcS **PcS 18 48 38.5 +0.4**
GTA ScS **ScS 18 52 30.1 -1.4**
GTA pmax pmax
comp=Z,190nm,6.4s
GTA LR LR
comp=Z,1μm,18.1s
GTA LR LR
comp=Z,1μm,20.4s
GTA LR LR
comp=Z,2μm,27.1s
QIZ Qiongzhong 32.65 245 P **P 18 42 11.3 +1.9**
QIZ sP **sP 18 42 26.2 -2.2**
QIZ S **S 18 47 20.0 -2.0**
QIZ LR LR
comp=Z,1μm,19.7s
QIZ LR LR
comp=Z,1μm,20.4s
QIZ LR LR
comp=Z,1μm,25.0s
QIZ Qiongzhong 32.65 245 PFAKE 18 42 20.0 +11
QIZ LR LR
comp=Z,1μm,21.0s
DAV Davao City (W) 33.05 209 PFAKE 18 42 20.0 +7.1
DAV LR LR
comp=Z,776nm,22.0s
BILL Bilibino 34.03 17 *c iP* **P 18 42 20.5 -0.4**
BILL *i* 18 44 58.8
BILL *i* S **S 18 47 39.7 -2.7**
BILL *i* SS **SnSn 18 49 57.5 +4.7**
BILL pmax pmax
comp=Z,58nm,1.1s
BILL MLR MLR
comp=Z,2μm,25.0s
BILL Bilibino 34.03 17 *eP* **P 18 42 20.7 -0.1**
comp=Z,97nm,1.2s
BILL LR LR
comp=Z,779nm,21.0s
PATS Pohnpei 34.05 148 *eP* **P 18 42 21.0 -0.6**
comp=Z,103nm,1.2s
KMI Kunming 34.62 261 P **P 18 42 26.8 0.0**
KMI pP pP 18 42 40.1 +0.2
KMI sP sP 18 42 46.6 +0.7
KMI PP **PP 18 43 49.5 +3.6**
KMI PcP **PcP 18 45 01.3 +1.0**
KMI S **S 18 47 50.6 -2.4**
KMI sS sS 18 48 13.4 -1.6
KMI SS **SnSn 18 50 09.8 +1.1**
KMI pmax pmax
comp=Z,130nm,1.1s
KMI pmax pmax
comp=Z,260nm,3.1s
KMI LR LR
comp=Z,1μm,22.6s
KMI LR LR
comp=Z,2μm,20.6s
KMI LR LR
comp=Z,3μm,22.6s
TIXI Tiksi 35.14 353 P **P 18 42 30.1 -0.4**
comp=Z,17nm,0.5s,baz=140,slow=9.3,SNR=20
TIXI LR LR 18 57 51.4
comp=Z,1μm,19.6s,baz=163,slow=38
TIXI Tiksi 35.14 353 *c iP* **P 18 42 30.0 -0.4**
TIXI pmax pmax
comp=Z,101nm,1.7s
TIXI MLR MLR
comp=Z,1μm,16.0s
TIXI Tiksi 35.14 353 *eP* **P 18 42 29.8 -0.6**
comp=Z,80nm,1.2s
MIDW Midway 35.95 92 *eP* **P 18 42 36.8 -1.0**
comp=Z,114nm,1.1s
MIDW LR LR
comp=Z,2μm,21.0s
KWAJ Kwajalein Atol 37.13 133 *eP* **P 18 42 47.2 -0.8**
KWAJ pmax pmax
comp=Z,169nm,1.2s
KWAJ Kwajalein Atol 37.13 133 *eP* **P 18 42 47.2 -0.8**
comp=Z,169nm,1.2s
KRAR Krasnoyarsk 37.14 316 *c iP* **P 18 42 48.3 +0.6**
KRAR pmax pmax
comp=Z,8μm,1.3s
KDM Kudat 37.26 222 ⇓P **P 18 42 50.5 +1.4**
MYLDM Lahad Datu 37.87 218 *eP* **P 18 42 56.1 +1.8**
comp=Z,516nm,1.6s
NIKH Nikolski High 37.98 49 *eP* **P 18 42 54.2 -0.6**
comp=Z,65nm,0.8s
SDKM Sandakan 38.14 221 ⇓P **P 18 42 57.6 +1.0**
NONG Nongkai 38.20 251 P **P 18 42 57.9 +0.8**
comp=Z,98nm,1.3s
UBPT Khong Chiam 38.25 245 P **P 18 42 58.6 +1.1**
comp=Z,167nm,0.9s,comp=Z,2μm
SKNT Sakolnakorn 38.25 248 P **P 18 42 58.3 +0.8**
comp=Z,134nm,1.0s
KKM Kota Kinabalu 38.32 222 ⇑P **P 18 42 59.8 +1.6**
KKM Kota Kinabalu 38.32 222 *eP* **P 18 42 58.9 +0.7**
comp=Z,257nm,1.7s
KKM LR LR
comp=Z,784nm,20.0s
TSM Tawau 38.95 218 ⇑P **P 18 43 04.1 +0.8**
UNV Unalaska Valle 39.44 48 *eP* **P 18 43 07.2 +0.2**
comp=Z,106nm,1.6s
JAY Jayapura 39.45 180 P **P 18 43 08.4 +0.8**
KHON Khomkaen 39.51 249 P **P 18 43 08.7 +0.6**
comp=Z,33nm,1.2s
GENI Genyem 39.54 181 P **P 18 43 08.8 +0.6**
LBMI Labuha 39.61 201 P **P 18 43 10.8 +2.0**
comp=Z,93nm,2.1s,comp=Z,3μm
KMSI Bibinong 39.63 207 P **P 18 43 09.5 +0.5**
comp=Z,332nm,0.9s,comp=Z,4μm
LOEI Loei 39.96 252 P **P 18 43 09.5 -2.3**
comp=Z,60nm,1.1s
UTTA Uttaradit 40.36 253 P **P 18 43 15.9 +0.8**
comp=Z,8.7nm,1.1s,comp=Z,112nm
CHAI Chaiyaphum 40.41 249 P **P 18 43 15.8 +0.3**
comp=Z,34nm,1.2s,comp=Z,314nm

WMQ Urumqi 40.47 297⇑ *i*P P 18 43 17.7 +1.8
WMQ pP pP 18 43 30.5 +1.3
WMQ sP sP 18 43 35.0 -0.1
WMQ ScP **ScP** **18 49 02.0 -0.8**
WMQ S **S** **18 49 24.2 +3.2**
WMQ sS sS 18 49 43.9 +0.5
WMQ pmax pmax
comp=Z,160nm,0.8s
WMQ pmax pmax
comp=Z,600nm,5.2s
WMQ LR LR
comp=Z,2μm,13.0s
WMQ LR LR
comp=Z,3μm,22.2s
WMQ LR LR
comp=Z,5μm,26.0s
MRSI Marisa 40.50 210 P **P** **18 43 16.8 +0.6**
comp=Z,135nm,1.7s,comp=Z,3μm
LAMP Lampang 40.61 254 P **P** **18 43 19.1 +1.9**
comp=Z,13nm,0.9s,comp=Z,132nm
FAKI Fak Fak 40.67 193 *e*P **P** **18 43 17.2 -0.5**
comp=Z,251nm,1.7s
PBKT Sadao Pong 40.76 251 P **P** **18 43 18.8 +0.4**
comp=Z,61nm,1.5s,comp=Z,1μm
CMMT Chiang Mai 40.97 255 P **P** **18 43 19.8 -0.3**
comp=Z,37nm,1.6s,comp=Z,735nm
CHTO Chiang Mai 40.97 255 P **P** **18 43 19.8 -0.4**
comp=Z,257nm,1.1s,comp=Z,3μm
CHTO Chiang Mai 40.97 255 *e*P **P** **18 43 18.8 -1.4**
CHTO pmax pmax
comp=Z,88nm,1.5s
CHTO MLR MLR
comp=Z,1μm,20.0s
CHTO Chiang Mai 40.97 255 P **P** **18 43 20.8 +0.7**
SNR=18
CHTO Chiang Mai 40.97 255 *e*P **P** **18 43 18.8 -1.4**
comp=Z,88nm,1.5s
CHTO LR LR
comp=Z,1μm,20.0s
CM31 Chiang Mai Arr 41.18 255 *e*P **P** **18 43 22.5 +0.7**
CMAR Chiang Mai Arr 41.18 255 P **P** **18 43 21.5 -0.4**
comp=Z,5.1nm,0.6s,baz=44,slow=8.4,SNR=36
CMAR PcP **PcP** **18 45 21.6 +1.2**
comp=Z,7.0nm,0.9s,baz=20,slow=2.2,SNR=8.1
CMAR ScP **ScP** **18 49 05.3 -0.6**
comp=Z,1.9nm,0.9s,baz=24,slow=3.3,SNR=4.5
CMAR LR LR 19 01 42.2
comp=Z,1μm,19.2s,baz=69,slow=38
CM01 Chiang Mai Arr 41.19 255 *e*P **P** **18 43 21.9 0.0**
SANI Sanana 41.40 203 P **P** **18 43 22.7 -0.9**
comp=Z,125nm,1.1s,comp=Z,2μm
LUWI Luwuk 41.57 208 P **P** **18 43 24.4 -0.6**
LUWI Luwuk 41.57 208 *e*P **P** **18 43 24.7 -0.3**
comp=Z,75nm,0.8s
SRAK Srakaew 41.58 247 P **P** **18 43 22.5 -2.6**
comp=Z,226nm,1.3s,comp=Z,2μm
ZAA0 Zalesovo Array 41.58 312 *e*P **P** **18 43 24.1 -0.6**
ZAA0 *e*P **P** **18 43 25.1 +0.4**
ZAA0 *e*ScP **ScP** **18 49 06.3 -0.6**
ZALV Zalesovo Beam 41.58 312 P **P** **18 43 24.8 +0.1**
comp=Z,136nm,0.7s,baz=94,slow=6.7,SNR=331
ZALV PcP **PcP** **18 45 21.1 0.0**
comp=Z,13nm,0.6s,baz=102,slow=4.9,SNR=3.6
ZALV ScP **ScP** **18 49 06.2 -0.7**
comp=Z,6.8nm,0.9s,baz=90,slow=3.0,SNR=4.5
ZALV LR LR 19 01 34.3
comp=Z,2μm,19.0s,baz=70,slow=37
ZALV PKPPKP P'P'df 19 15 27.4 -11
comp=Z,0.4nm,0.3s,baz=267,slow=5.5,SNR=4.1
MSAI Masohi 41.81 198 P **P** **18 43 31.7 +4.7**
comp=Z,21nm,0.6s
LSA Lhasa 41.84 275 *i*P **P** **18 43 29.7 +1.9**
LSA S **S** **18 49 39.1 -3.3**
LSA sS **sS** **18 50 00.7 -4.2**
LSA pmax pmax
comp=Z,64nm,1.7s
LSA pmax pmax
comp=Z,190nm,5.4s
LSA LR LR
comp=Z,450nm,18.9s
LSA LR LR
comp=Z,2μm,27.0s
LSA LR LR
comp=Z,2μm,27.0s
LSA Lhasa 41.84 275 *e*P **P** **18 43 29.1 +1.3**
LSA pmax pmax
comp=Z,96nm,1.1s
LSA MLR MLR
comp=Z,1μm,22.0s
LSA Lhasa 41.84 275 *e*P **P** **18 43 29.1 +1.3**
comp=Z,96nm,1.1s
LSA LR LR
comp=Z,1μm,22.0s
ZSN Zaisan 41.92 303 *i*P **P** **18 43 26.1 -1.6**
comp=Z,1μm,1.4s
ZSN *e*S **S** **18 49 44.9 +2.5**
ZSN LR LR 19 01 05.7
comp=Z,470nm,11.8s
CHBT CHBT 42.20 245 P **P** **18 43 30.1 0.0**
comp=Z,2μm,1.2s
NLAI Namlea 42.20 201 P **P** **18 43 33.9 +3.8**
comp=Z,55nm,1.5s,comp=Z,1μm
BTM Bintulu 42.39 224 ⇓P **P** **18 43 33.0 +1.3**
NVS Novosibirsk 42.51 314⇑ *i*P **P** **18 43 34.0 +1.8**
NVS *i*S **S** **18 49 51.0 +0.4**
NVS *i*SS **ScS** **18 53 28.8 0.0**
NVS pmax pmax
comp=Z,273nm,1.5s
NVS pmax pmax
comp=N,65nm,1.6s
NVS pmax pmax
comp=E,235nm,1.6s
NVS smax smax
comp=N,20nm,1.3s
NVS smax smax
comp=E,57nm,1.3s
UMPA Umpang Tak 42.58 252 P **P** **18 43 35.9 +2.6**
comp=E,19nm,1.2s,comp=E,242nm
PCI Palu 42.62 212 P **P** **18 43 33.4 -0.2**
comp=E,127nm,1.6s,comp=E,2μm
NRIK Noril'sk 43.02 335 P **P** **18 43 36.1 -0.1**
comp=E,19nm,0.6s,baz=108,slow=9.3,SNR=52
NRIK PcP **PcP** **18 45 26.0 +0.5**
comp=E,26nm,0.8s,baz=142,slow=4.6,SNR=5.5
NRIK S **S** **18 49 54.9 -3.0**
comp=E,4.6nm,0.6s,baz=117,slow=11,SNR=14
NRIK LR LR 19 02 36.9
comp=E,2μm,18.6s,baz=110,slow=38
SHL Shillong 43.05 269 *e*P **P** **18 43 37.6 +0.3**
SHL IAmb IAmb 18 43 40.2
comp=Z,28nm,0.5s
SHL *e*S **S** **18 50 00.0 +0.3**
SBUM Sibu 43.49 224 *e*P **P** **18 43 41.2 +0.6**
comp=Z,179nm,1.6s
SRDT SRDT 43.53 250 P **P** **18 43 42.1 +1.1**
comp=Z,150nm,1.5s,comp=Z,2μm
MK01 Makanchi Array 43.76 302 *e*P **P** **18 43 42.4 -0.1**
MK31 Makanchi Array 43.76 302 P **P** **18 43 43.0 +0.5**
MK31 pmax pmax
comp=Z,113nm,0.9s
MK31 Makanchi Array 43.76 302 *e*P **P** **18 43 43.2 +0.7**
MKAR Makanchi Array 43.76 302 P **P** **18 43 43.0 +0.5**
comp=Z,58nm,0.7s,baz=89,slow=9.5,SNR=223
MKAR ScP **ScP** **18 49 14.1 -1.8**
comp=Z,5.5nm,0.9s,baz=76,slow=6.9,SNR=5.0
MKAR S **S** **18 50 09.0 -0.3**
comp=Z,2.9nm,0.9s,baz=99,slow=15,SNR=3.7
MKAR LR LR 19 02 22.3
comp=Z,2μm,21.7s,baz=78,slow=36
MKAR Makanchi Array 43.76 302 P **P** **18 43 43.0 +0.5**
MKAR S **S** **18 50 09.0 -0.3**
MKAR pmax pmax
comp=Z,59nm,0.7s
MKAR pmax pmax
comp=N,6.0nm,1.0s
MKAR smax smax
comp=N,3.0nm,0.9s
MKAR MLR MLR
comp=Z,2μm,21.7s
MAKZ Makanchi 43.97 302 *e*P **P** **18 43 45.0 +0.8**
MAKZ pmax pmax
comp=Z,124nm,1.0s
MAKZ Makanchi 43.97 302 *e*P **P** **18 43 45.0 +0.8**
comp=Z,124nm,1.0s
PHET Kaeng Krachan 44.07 248 P **P** **18 43 46.8 +1.5**
comp=Z,27nm,0.7s,comp=Z,257nm
KDI Kendari 44.32 207 P **P** **18 43 48.1 +0.9**

TTSI Tana Toraja 44.56 211 P **P** **18 43 51.3 +2.1**
SEM Semipalatinsk 44.59 307 *i*P **P** **18 43 47.4 -2.0**
comp=Z,814nm,1.5s
SEM *e*S **S** **18 50 21.4 -0.3**
SEM LR LR 19 01 40.9
comp=Z,1μm,15.5s
MTKI Muara Teweh, K 44.94 218 P **P** **18 43 53.7 +1.5**
KSM Kuching 45.37 226 ⇑P **P** **18 43 57.0 +1.3**
KSM Kuching 45.37 226 *e*P **P** **18 43 56.7 +1.1**
comp=Z,156nm,1.7s
KSM LR LR
comp=Z,340nm,22.0s
SPSI Sidrap Palu 45.41 210 P **P** **18 43 56.8 +0.9**
TT01 Tatalina 45.53 35 *e*P **P** **18 43 57.5 +1.1**
TTA Tatalina 45.54 35 *e*P **P** **18 43 57.6 +1.1**
TTA pmax pmax
comp=Z,55nm,1.2s
TTA Tatalina 45.54 35 *e*P **P** **18 43 57.6 +1.1**
comp=Z,55nm,1.2s
KURK Kurchatov 45.58 308 *e*P **P** **18 43 57.2 +0.2**
KURK MLR MLR
comp=Z,4μm,21.0s
KURK Kurchatov 45.58 308 *e*P **P** **18 43 57.2 +0.2**
comp=Z,3μm,1.0s
KURK LR LR
comp=Z,4μm,21.0s
SVW2 Sparrevohn 45.65 37 *e*P **P** **18 43 57.4 0.0**
comp=Z,166nm,1.2s
STKI Sintang 45.87 223 P **P** **18 44 01.1 +1.5**
TARA Tarawa 46.22 133 *e*P **P** **18 44 04.5 +2.2**
comp=Z,202nm,1.3s
TARA LR LR
comp=Z,162nm,22.0s
KAPI Kappang 46.38 210 *e*P **P** **18 44 04.2 +0.7**
comp=Z,228nm,1.4s
KAPI LR LR
comp=Z,286nm,21.0s
PDGK Podgornoye 46.41 298 P **P** **18 44 04.3 +0.6**
PDGK pmax pmax
comp=Z,224nm,1.0s
SHLS Shalkode 46.47 297 *i*P **P** **18 44 00.1 -4.1**
comp=Z,477nm,1.4s
SHLS *e*S **S** **18 50 44.6 -4.2**
SHLS LR LR 19 03 46.9
comp=Z,983nm,14.0s
SURA Surathani 46.56 244 P **P** **18 44 07.1 +2.1**
comp=Z,54nm,0.9s
RAMN Ramite 46.64 274 *e*P **P** **18 44 07.0 +1.1**
comp=Z,410nm,0.8s
PMG Port Moresby 46.66 172 LR LR 19 03 56.9
comp=Z,88nm,18.6s,baz=16,slow=36
PMG Port Moresby 46.66 172 *e*P **P** **18 44 05.5 -0.2**
PMG pmax pmax
comp=Z,269nm,2.0s
PMG Port Moresby 46.66 172 *e*sP sP 18 44 24.3 -0.8
GUN Gumba 46.79 275 *e*P **P** **18 44 08.4 +1.2**
comp=Z,421nm,0.9s
KTGM Kuala Trenggan 46.85 237 ⇑P **P** **18 44 08.7 +1.4**
OHAK Old Harbor 46.92 43 *e*P **P** **18 44 07.7 +0.4**
comp=Z,89nm,1.0s
RSO Reoubt South 47.04 38 *e*P **P** **18 44 09.3 +0.8**
BBKI Banjar Baru 47.15 217 P **P** **18 44 09.3 -0.3**
SATY Saty 47.24 298 *i*P **P** **18 44 08.8 -1.5**
comp=Z,716nm,1.6s
SATY *e*S **S** **18 51 00.3 +0.5**
SATY LR LR 19 04 22.1
comp=Z,868nm,14.4s
SKLT Songkhla 47.24 241 P **P** **18 44 12.3 +1.9**
comp=Z,60nm,1.6s,comp=Z,1μm
KDAK Kodiak Island 47.26 42 *e*P **P** **18 44 10.0 +0.1**
KDAK pmax pmax
comp=Z,730nm,1.2s
KDAK MLR MLR
comp=Z,535nm,21.0s
KDAK Kodiak Island 47.26 42 *e*P **P** **18 44 10.0 +0.1**
comp=Z,730nm,1.2s
KDAK LR LR
comp=Z,535nm,21.0s
PPLA Purkeypile 47.29 35 *e*P **P** **18 44 11.9 +1.6**
comp=Z,182nm,1.3s
SURT Suratani 47.30 244 P **P** **18 44 12.1 +1.3**
comp=Z,36nm,1.4s,comp=Z,492nm
KKN Kakani 47.32 275 *e*P **P** **18 44 12.0 +0.9**
comp=Z,464nm,1.0s
PKIN Phulchoki 47.32 275 *e*P **P** **18 44 12.6 +1.4**
comp=Z,94nm,0.7s
CAST Castle Rocks 47.34 34 *e*P **P** **18 44 12.2 +1.6**
comp=Z,328nm,1.9s
SPU Mount Spurr 47.37 37 *e*P **P** **18 44 12.0 +1.2**
TRTT Trang 47.43 243 P **P** **18 44 13.0 +1.2**
comp=Z,62nm,1.6s,comp=Z,997nm
KRAB Krabi 47.52 243 P **P** **18 44 14.7 +2.2**
comp=Z,216nm,0.6s,comp=Z,206μm
DMN Daman 47.54 275 *e*P **P** **18 44 13.8 +0.9**
comp=Z,178nm,1.0s
GKN Gorkha 47.74 276 *e*P **P** **18 44 15.3 +1.0**
comp=Z,563nm,1.0s
BPAW Bear Paw Mtn. 47.83 33 *e*P **P** **18 44 15.6 +1.2**
comp=Z,99nm,1.4s
CNPM China Poot 47.84 40 *e*P **P** **18 44 15.3 +0.7**
comp=Z,78nm,1.2s
KTH Kantishna Hill 47.86 34 *e*P **P** **18 44 15.9 +1.3**
comp=Z,271nm,1.4s
MLY Manley 47.95 32 *e*P **P** **18 44 16.7 +1.4**
comp=Z,124nm,1.3s
SUA Susitna One 47.99 37 *e*P **P** **18 44 16.0 +0.2**
comp=Z,79nm,1.1s
JOHN Johnston Islan 47.99 101 PFAKE 18 44 30.0 +14
JOHN LR LR
comp=Z,156nm,22.0s
BRLK Bradley Lake 48.01 39 *e*P **P** **18 44 15.4 -0.4**
comp=Z,59nm,1.0s
TRF Thorofare Moun 48.15 34 *e*P **P** **18 44 17.8 +0.8**
comp=Z,45nm,1.1s
MDOK Medeo 48.17 298 *i*P **P** **18 44 15.8 -1.7**
comp=Z,499nm,1.7s
MDOK *e*S **S** **18 51 13.3 +0.2**
MDOK LR LR 19 03 10.1
comp=Z,2μm,17.5s
COLD Coldfoot 48.23 29 *e*P **P** **18 44 18.5 +1.1**
comp=Z,88nm,1.6s
AAA Alma-Ata 48.26 298 *e*P **P** **18 44 19.7 +1.7**
AAA *e*S **S** **18 51 14.4 +0.3**
AAA pmax pmax
comp=Z,600nm,2.2s
AAA smax smax
comp=E,2μm,10.5s
AAA MLR MLR
comp=Z,5μm,20.0s
AAA Alma-Ata 48.26 298 *e*P **P** **18 44 17.2 -0.9**
comp=Z,670nm,1.9s
AAA *e*S **S** **18 51 15.2 +1.1**
AAA LR LR 19 04 11.8
comp=Z,774nm,14.3s
PKDT Phuket 48.36 244 P **P** **18 44 20.4 +1.4**
comp=Z,153nm,1.1s,comp=Z,2μm
KUU Kurty 48.48 299 *i*P **P** **18 44 17.6 -2.1**
comp=Z,815nm,1.6s
KUU *e*S **S** **18 51 16.6 -0.4**
KUU LR LR 19 04 41.7
comp=Z,1μm,15.6s
RC01 Rabbit Creek A 48.49 37 *e*P **P** **18 44 20.2 +0.7**
comp=Z,136nm,1.2s
BWN Browne 48.50 33 *e*P **P** **18 44 21.3 +1.8**
comp=Z,518nm,1.3s
KULM Kulim 48.56 239 ⇑P **P** **18 44 21.6 +1.0**
KULM Kulim 48.56 239 *e*P **P** **18 44 21.6 +1.0**
comp=Z,84nm,1.3s
KULM LR LR
comp=Z,902nm,22.0s
KOLN Koldanda 48.66 276 *e*P **P** **18 44 22.5 +1.0**
comp=Z,154nm,0.8s
SEW Seward 48.70 39 *e*P **P** **18 44 21.2 +0.1**
comp=Z,278nm,1.7s
MCK McKinley 48.74 34 *e*P **P** **18 44 22.0 +0.6**
MCK pmax pmax
comp=Z,154nm,1.5s
MCK McKinley 48.74 34 *e*P **P** **18 44 22.0 +0.6**
comp=Z,154nm,1.5s
PMR Palmer 48.75 37 *e*P **P** **18 44 21.7 +0.2**
PMR pmax pmax
comp=Z,151nm,1.3s
PMR Palmer 48.75 37 *e*P **P** **18 44 21.7 +0.2**
comp=Z,151nm,1.3s
RND Reindeer 48.79 34 *e*P **P** **18 44 22.1 +0.3**
RND pmax pmax
comp=Z,288nm,1.6s

RND Reindeer 48.79 34 *e*P **P** **18 44 22.1 +0.3**
comp=Z,288nm,1.6s
IPM Ipoh 48.89 238 *e*P **P** **18 44 22.1 -1.0**
comp=Z,152nm,1.6s
DGPR DIGLIPUR 48.96 254 *e*P **P** **18 44 24.5 +0.9**
PYUN Piuthan 49.00 277 *e*P **P** **18 44 25.2 +1.1**
comp=Z,971nm,1.1s
MDM Murphy Dome 49.02 32 *e*P **P** **18 44 24.6 +1.1**
comp=Z,234nm,1.2s
MYKOM Kota Tinggi 49.04 233 *e*P **P** **18 44 26.5 +2.3**
comp=Z,110nm,1.7s
WRH Wood River Hil 49.09 33 *e*P **P** **18 44 24.6 +0.6**
comp=Z,91nm,1.0s
EDFI Ende, Flores 49.10 206 P **P** **18 44 23.1 -1.6**
SML Sawmill 49.12 36 *e*P **P** **18 44 24.9 +0.5**
SML pmax pmax
comp=Z,71nm,0.8s
SML Sawmill 49.12 36 *e*P **P** **18 44 24.9 +0.5**
comp=Z,71nm,0.8s
COLA College 49.18 32 *e*P **P** **18 44 26.2 +1.6**
COLA pmax pmax
comp=Z,116nm,1.4s
COLA MLR MLR
comp=Z,555nm,19.0s
COLA College 49.18 32 *e*P **P** **18 44 26.2 +1.6**
comp=Z,116nm,1.4s
COLA LR LR
comp=Z,555nm,19.0s
CCB Clear Creek Bu 49.21 33 *e*P **P** **18 44 25.2 +0.3**
comp=Z,54nm,1.2s
KGM Kluang 49.21 234 ⇓P **P** **18 44 26.9 +1.4**
KGM Kluang 49.21 234 ⇓P **P** **18 44 26.9 +1.4**
SOEI Soe 49.21 202 P **P** **18 44 25.9 +0.3**
SOEI Soe 49.21 202 *e*P **P** **18 44 24.9 -0.7**
comp=Z,189nm,1.0s
TKM2 Tokmak 2 49.26 298 *e*P **P** **18 44 27.4 +1.5**
TKM2 pmax pmax
comp=Z,95nm,0.8s
TKM2 MLR MLR
comp=Z,5μm,20.0s
TKM2 Tokmak 2 49.26 298 *e*P **P** **18 44 27.4 +1.5**
comp=Z,95nm,0.8s
TKM2 LR LR
comp=Z,5μm,20.0s
FRIM Kepong 49.40 236 ⇓P **P** **18 44 27.8 +0.8**
FRIM Kepong 49.40 236 ⇓P **P** **18 44 27.8 +0.8**
BRZS Berezniki 49.46 308 *i*P **P** **18 44 26.1 -1.0**
comp=Z,169nm,1.1s
BRZS *e*S **S** **18 51 31.7 +1.1**
DHY Denali Highway 49.48 35 *e*P **P** **18 44 26.6 -0.6**
comp=Z,185nm,1.6s
HDA Harding Lake 49.59 33 *e*P **P** **18 44 27.9 +0.1**
comp=Z,181nm,1.4s
SCM Sheep Creek Mo 49.59 36 *e*P **P** **18 44 28.7 +0.7**
SCM pmax pmax
comp=Z,161nm,1.3s
SCM Sheep Creek Mo 49.59 36 *e*P **P** **18 44 28.7 +0.7**
comp=Z,161nm,1.3s
ILAR Eielson Array 49.59 32 P **P** **18 44 28.0 +0.1**
comp=Z,45nm,0.9s,baz=268,slow=5.9,SNR=229
ILB Eielson Array 49.59 32 *e*P **P** **18 44 28.1 +0.1**
IL1 Eielson Array 49.60 32 *e*P **P** **18 44 26.1 -1.7**
HNR Honiara 49.63 155 PFAKE 18 44 40.0 +11
HNR LR LR
comp=Z,1μm,22.0s
BTLS Baital 49.75 301 *i*P **P** **18 44 26.6 -2.8**
comp=Z,281nm,0.8s
BTLS *e*S **S** **18 51 33.1 -1.7**
BTLS LR LR 19 05 49.2
comp=Z,454nm,15.2s
BATI Baumata 49.82 203 P **P** **18 44 31.2 +1.1**
VOSK Vostochnaya 49.94 312 P **P** **18 44 30.8 +0.1**
VOSK pmax pmax
comp=Z,115nm,1.0s
VOSK Vostochnaya 49.94 312 *e*P **P** **18 44 31.0 +0.3**
comp=Z,101nm,0.9s
FRU Bishkek 49.98 298 *i*P **P** **18 44 32.0 +0.8**
FRU *i* 18 44 44.0
FRU *e* 18 45 48.0
FRU *e* 18 46 29.5
FRU *e*S **S** **18 51 40.0 +1.8**
FRU pmax pmax
comp=Z,210nm,1.6s
FRU smax smax
comp=E,310nm,3.0s
KSH Kashi 50.03 294 *e*P P 18 44 36.7 +4.9
KSH *e*pP sP 18 44 49.5 -1.7
KSH *e*sP pP 18 44 54.4 +9.0
KSH *e*PcP **PcP** **18 45 54.4 +3.4**
KSH S **S** **18 51 45.4 +6.2**
KSH ScS **ScS** **18 54 21.0 +2.3**
KSH pmax pmax
comp=E,76nm,1.5s
KSH pmax pmax
comp=E,400nm,3.1s
KSH LR LR
comp=E,2μm,16.3s
KSH LR LR
comp=E,2μm,15.7s
KSH LR LR
comp=E,3μm,17.1s
PBA Port Blair 50.04 252 *e*P P 18 44 32.0 +0.1
OTUK Ortayu 50.07 306 P **P** **18 44 32.3 +0.5**
OTUK pmax pmax
comp=Z,108nm,0.9s
AAK Ala-Archa 50.12 298 LR LR 19 07 14.3
comp=Z,5μm,19.4s,baz=60,slow=38
AAK Ala-Archa 50.12 298*c* *i*P **P** **18 44 33.3 +0.9**
AAK pmax pmax
comp=Z,227nm,2.1s
AAK Ala-Archa 50.12 298 P **P** **18 44 33.4 +1.0**
SNR=29
AAK Ala-Archa 50.12 298 *e*P **P** **18 44 33.5 +1.0**
comp=Z,46nm,1.0s
BVA0 Borovoye Array 50.23 312 *i*P **P** **18 44 33.4 +0.5**
BVA0 pmax pmax
comp=Z,68nm,0.8s
BVAR Borovoye Array 50.23 312 P **P** **18 44 33.2 +0.3**
comp=Z,57nm,0.8s,baz=81,slow=9.2,SNR=166
BVAR PcP **PcP** **18 45 51.8 +0.5**
comp=Z,25nm,0.7s,baz=81,slow=9.2,SNR=5.1
BVAR S **S** **18 51 41.0 -0.3**
comp=Z,4.6nm,1.0s,baz=87,slow=15,SNR=6.5
BVAR LR LR 19 07 03.2
comp=Z,2μm,19.0s,baz=78,slow=37
BRVK Borovoye 50.29 312 *e*P **P** **18 44 34.0 +0.7**
BRVK pmax pmax
comp=Z,79nm,0.9s
BRVK MLR MLR
comp=Z,1μm,20.0s
BRVK Borovoye 50.29 312 *e*P **P** **18 44 34.0 +0.7**
comp=Z,79nm,0.9s
BRVK LR LR
comp=Z,1μm,20.0s
KLU Klutina 50.29 37 *e*P **P** **18 44 34.2 +0.9**
comp=Z,102nm,1.2s
PAX Paxson 50.35 35 *e*P **P** **18 44 34.9 +1.1**
PAX pmax pmax
comp=Z,67nm,1.1s
PAX Paxson 50.35 35 *e*P **P** **18 44 34.9 +1.1**
comp=Z,67nm,1.1s
DIV Divide 50.41 37 *e*P **P** **18 44 35.2 +1.0**
comp=Z,272nm,1.4s
WSI Waingapu 50.44 207 P **P** **18 44 35.2 +0.4**
EYAK Cordova Ski Ar 50.49 38 *e*P **P** **18 44 36.0 +1.3**
comp=Z,112nm,1.3s
BWNR Bhubaneshwar 50.52 267 *e*P **P** **18 44 36.8 +1.4**
BWNR IAmb IAmb 18 44 38.2
comp=Z,77nm,1.1s
MTN Manton Dam 50.57 192 *e*P **P** **18 44 35.4 -0.3**
comp=Z,195nm,1.5s
EKS2 Erkin-Say 50.62 298 *e*P **P** **18 44 37.0 +0.9**
EKS2 pmax pmax
comp=Z,26nm,0.8s
EKS2 MLR MLR
comp=Z,4μm,20.0s
EKS2 Erkin-Say 50.62 298 *e*P **P** **18 44 37.0 +0.9**
comp=Z,26nm,0.8s
EKS2 LR LR
comp=Z,4μm,20.0s
PLAI Plampang 50.63 210 P **P** **18 44 35.0 -1.3**
PPBI Pangkal Pinang 50.73 227 P **P** **18 44 37.9 +0.8**
COEN Coen 50.87 177 *e*P **P** **18 44 38.3 +0.3**
comp=Z,320nm,2.0s
DOT Dot Lake 50.91 34 *e*P **P** **18 44 38.2 +0.3**
comp=Z,557nm,1.8s

TWSI **Taliwang, Sumb** 50.92 211 P **P** 18 44 37.3 -1.1
BMRM **Bremner River** 50.99 37 *e*P **P** 18 44 39.6 +1.0
comp=Z,172nm,1.3s
SRBI **Singaraja** 51.05 214 P **P** 18 44 39.4 0.0
ZRNK **Zerenda** 51.07 312 P **P** 18 44 39.7 +0.5
ZRNK pmax pmax
comp=Z,107nm,1.0s
MENT **Mentasta** 51.15 35 *e*P **P** 18 44 41.0 +1.4
comp=Z,56nm,0.9s
LHMI **Lhok Sumawe** 51.19 243 P **P** 18 44 42.0 +1.5
ABJI **Asem Bagus** 51.23 215 P **P** 18 44 42.3 +1.6
TSI **Tuntungan** 51.28 240 P **P** 18 44 42.2 +1.0
PSI **Prapat** 51.54 239 *e*P **P** 18 44 43.6 +0.3
PSI pmax pmax
comp=Z,161nm,1.8s
PSI **Prapat** 51.54 239 *e*P **P** 18 44 43.6 +0.3
comp=Z,161nm,1.8s
MNAS **Manas** 51.57 299 P **P** 18 44 44.2 +0.9
MNAS pmax pmax
comp=Z,93nm,0.9s
CRQM **Cirque** 51.73 37 *e*P **P** 18 44 45.6 +1.4
comp=Z,191nm,1.3s
JMBI **JAMBI** 51.82 230 P P 18 44 50.4 +5.2
comp=Z,141nm,0.5s
JAGI **Jajag, Banyuwa** 51.86 215 P **P** 18 44 45.7 +0.2
JAGI **Jajag, Banyuwa** 51.86 215 *e*P **P** 18 44 44.4 -1.1
comp=Z,100nm,1.4s
DDI **Dehra Dun** 51.93 282 *e*P **P** 18 44 46.2 +0.2
DDI IAmb IAmb 18 44 48.9
comp=Z,95nm,1.1s
BKNI **Bangkinang** 51.96 235 P **P** 18 44 48.3 +2.0
comp=Z,153nm,1.3s,comp=Z,2µm
BKNI **Bangkinang** 51.96 235 *e*P **P** 18 44 47.1 +0.8
comp=Z,110nm,1.0s
GMJI **Gumukmas** 52.02 215 P **P** 18 44 47.2 +0.6
EGAK **Eagle** 52.04 32 *e*P **P** 18 44 46.4 +0.1
comp=Z,63nm,1.1s
EGAK LR LR
comp=Z,457nm,21.0s
CMBY **CAMPBELL BAY** 52.16 247 *e*P **P** 18 44 48.4 +0.6
CMBY IAmb IAmb 18 44 51.3
comp=Z,128nm,0.9s
NGJI **Ngawi** 52.18 218 P **P** 18 44 49.8 +2.0
MLSI **Meulaboh, Aceh** 52.25 242 P **P** 18 44 48.4 0.0
SDNR **Sundarnagar** 52.28 284 *e*P **P** 18 44 49.0 +0.5
SMLA **Simla** 52.28 283 *e*P **P** 18 44 49.1 +0.6
TPTI 52.41 241 P **P** 18 44 49.5 -0.2
MNSI **Mandailing Nat** 52.57 236 P **P** 18 44 50.7 -0.1
PWJI **Pagerwojo** 52.58 217 P **P** 18 44 49.6 -1.2
SDSI **Sungai Dareh** 52.66 233 P **P** 18 44 52.7 +1.2
KK31 **Karatay Array** 52.76 300 P **P** 18 44 52.5 +0.5
KK31 pmax pmax
comp=Z,116nm,1.1s
KKAR **Karatay Array** 52.76 300 *e*P **P** 18 44 52.6 +0.7
KKAR **Karatay Array** 52.76 300 *e*P **P** 18 44 52.6 +0.7
CHLP **Challavanipeta** 52.87 266 *e*P **P** 18 44 53.7 +0.7
CHLP IAmb IAmb 18 44 55.7
comp=Z,104nm,1.0s
CHLP *e*S **S** 18 52 17.6 -0.8
CHLP IVMs_BB IVMs_BB 19 06 39.6
comp=Z,524nm,29.1s
DAWY **Dawson** 52.91 33 *e*P **P** 18 44 53.4 +0.7
comp=Z,59nm,1.5s
PCJI **Pacitan** 53.03 218 P **P** 18 44 54.9 +0.8
UGM **Wanagama** 53.11 219 P **P** 18 44 54.0 -0.8
UGM **Wanagama** 53.11 219 *e*P **P** 18 44 54.6 -0.2
comp=Z,757nm,1.6s
BRLS **Boroldav** 53.25 300 *i* P **P** 18 44 56.4 +0.8
BRLS LR LR 19 08 16.3
PCA **Pinnacle** 53.26 38 *e*P **P** 18 44 56.7 +1.3
comp=Z,50nm,0.8s
NDI **New Delhi** 53.30 281 *e*P P 18 44 50.0 -6.1
NDI *e*S **S** 18 52 17.0 -7.1
IUG **Iuzhnay** 53.41 299 *i* P **P** 18 44 55.3 -1.6
comp=Z,719nm,1.4s
IUG *e*S **S** 18 52 25.9 +0.4
IUG LR LR 19 08 03.7
comp=Z,470nm,14.3s
GSI **Gunungsitoli** 53.55 239 P **P** 18 44 58.3 +0.3
GSI **Gunungsitoli** 53.55 239 *e*P **P** 18 44 58.2 +0.3
comp=Z,1µm,1.5s
LHSI **Lahat** 53.62 229 P **P** 18 44 58.9 +0.4
LEM **Lembang** 53.71 223 P **P** 18 45 03.8 +4.5
BLSI **Bandar Lampung** 53.84 226 P **P** 18 45 01.8 +1.7
comp=Z,104nm,0.5s
VIS **Vishakhapatnam** 53.87 265 *e*P **P** 18 45 01.6 +1.2
VIS IAmb IAmb 18 45 03.4
comp=Z,144nm,1.3s
DBJI **Dramaga** 53.96 224 P P 18 45 06.2 +5.2
comp=Z,64nm,1.4s
KSI **Kapahiang** 54.04 230 P **P** 18 45 02.7 +1.0
CISI **Cisompet, Garu** 54.21 222 P **P** 18 45 01.2 -1.7
CISI **Cisompet, Garu** 54.21 222 *e*P **P** 18 45 03.8 +0.9
comp=Z,61nm,1.1s
LWLI **Liwa** 54.24 227 P **P** 18 45 06.8 +3.6
comp=Z,73nm,0.6s,comp=Z,2µm
KASI **Kota Agung** 54.40 227 P **P** 18 45 01.8 -2.3
HYT **Haines Junctio** 54.43 37 *e*P **P** 18 45 06.0 +2.0
comp=Z,286nm,1.4s
INK **Inuvik** 54.45 27 P **P** 18 45 04.5 +0.6
comp=Z,22nm,0.7s,baz=294,slow=6.8,SNR=75
INK **Inuvik** 54.45 27 *e*P **P** 18 45 04.8 +0.9
INK pmax pmax
comp=Z,77nm,1.3s
INK **Inuvik** 54.45 27 *e*P **P** 18 45 04.8 +0.9
comp=Z,77nm,1.3s
SVE **Sverdlovsk** 54.83 318*d i*P **P** 18 45 07.8 +1.0
SVE *e*S **S** 18 52 44.8 +0.8
SVE pmax pmax
comp=Z,224nm,1.0s
SVE MLR MLR
comp=Z,2µm,16.0s
PVM **Polavaram** 55.49 266 *e*P **P** 18 45 13.1 +1.0
PVM IAmb IAmb 18 45 14.4
comp=Z,168nm,1.6s
PVM *e*S **S** 18 52 56.4 +2.7
PVM IVMs_BB IVMs_BB 19 08 24.4
comp=Z,453nm,26.5s
BHPL **Bhopal** 55.71 275 *e*P **P** 18 45 13.7 0.0
BHPL IAmb IAmb 18 45 15.2
comp=Z,51nm,0.9s
SKAG **Skagway** 55.83 38 *e*P **P** 18 45 15.7 +1.8
comp=Z,121nm,1.3s
SOKR **Solikamsk** 56.02 322*c i*P **P** 18 45 14.4 -0.9
SOKR S **S** 18 52 59.0 -0.7
SOKR pmax pmax
comp=Z,148nm,1.5s
SOKR MLR MLR
comp=Z,1µm,20.0s
ARU **Arti** 56.04 318 LR LR 19 12 00.3
comp=Z,1µm,18.3s,baz=71,slow=39
ARU **Arti** 56.04 318*c i*P **P** 18 45 15.9 +0.4
ARU *PP **pP** 18 45 28.9 -0.5
ARU 18 46 09.8
ARU 18 47 20.3
ARU S **S** 18 53 00.4 +0.3
ARU 18 54 53.8
ARU SS **SS** 18 56 46.1 -0.2
ARU pmax pmax
comp=Z,308nm,1.2s
ARU MLR MLR
comp=Z,1µm,18.0s
ARU **Arti** 56.04 318 *e*P **P** 18 45 15.9 +0.4
comp=Z,203nm,0.9s
RPR **Rampur** 56.48 269 *e*P **P** 18 45 19.3 +0.1
RPR IAmb IAmb 18 45 21.0
comp=Z,109nm,1.2s
RPR *e*S **S** 18 53 05.8 -1.0
RPR IVMs_BB IVMs_BB 19 14 06.5
comp=Z,405nm,4.1s
FITZ **Fitzroy Crossi** 56.82 197 LR LR 19 06 47.2
comp=Z,152nm,21.6s,slow=33
FITZ **Fitzroy Crossi** 56.82 197 *e*P **P** 18 45 21.8 +0.4
comp=Z,27nm,0.8s
KBL **Kabul** 57.04 291 *e*P **P** 18 45 23.5 +0.3
KBL pmax pmax
comp=Z,71nm,0.9s
KBL **Kabul** 57.04 291 *e*P **P** 18 45 23.5 +0.3
comp=Z,71nm,0.9s
WRAB **Tennant Creek** 57.11 187 *e*P **P** 18 45 22.8 -0.6
WRAB pmax pmax
comp=Z,421nm,1.9s
WRAB MLR MLR
comp=Z,504nm,21.0s
WRAB **Tennant Creek** 57.11 187 *e*P **P** 18 45 22.8 -0.6
comp=Z,421nm,1.9s
WRAB LR LR
comp=Z,504nm,21.0s
WB2 **Warramunga Arr** 57.12 187 *e*P **P** 18 45 22.8 -0.7
comp=Z,54nm,0.8s
WRA **Warramunga Arr** 57.12 187 P **P** 18 45 22.6 -0.9
comp=Z,36nm,0.6s,baz=5.5,slow=7.4,SNR=196
WRA S **S** 18 53 11.9 -3.1
comp=Z,1.9nm,1.0s,baz=4.3,slow=13,SNR=6.3
WRA PKP2bc 19 15 24.7
comp=Z,2.7nm,1.0s,baz=194,slow=2.1,SNR=5.2
CTAO **Charters Tower** 57.14 174 *e*P **P** 18 45 23.1 -0.6
CTAO pmax pmax
comp=Z,41nm,1.1s
CTAO MLR MLR
comp=Z,854nm,20.0s
CTAO **Charters Tower** 57.14 174 *e*P **P** 18 45 23.1 -0.6
comp=Z,41nm,1.1s
CTAO LR LR
comp=Z,854nm,20.0s
SRSP **Sriramsagar** 57.20 270 *e*P **P** 18 45 23.9 -0.4
SRSP IAmb IAmb 18 45 26.0
comp=Z,194nm,1.2s
SRSP *e*S **S** 18 53 17.7 +1.2
SRSP IVMs_BB IVMs_BB 19 12 30.1
comp=Z,609nm,4.2s
POHA **Pohakuloa** 57.46 89 PFAKE 18 45 40.0 +14
POHA LR LR
comp=Z,1µm,20.0s
ADKI **Addanki** 57.59 266 *e*P **P** 18 45 27.9 +0.9
ADKI IAmb IAmb 18 45 29.4
comp=Z,177nm,1.8s
ADKI *e*S **S** 18 53 21.3 -0.2
ADKI IVMs_BB IVMs_BB 19 08 25.2
comp=Z,555nm,4.7s
AB31 **Akbulak array** 57.60 310 P **P** 18 45 26.7 0.0
AB31 pmax pmax
comp=Z,45nm,0.7s
ABKAR **Akbulak array** 57.60 310 *e*P **P** 18 45 26.8 +0.1
NJS **Nagarjunasagar** 57.72 267 *e*P **P** 18 45 28.5 +0.6
NJS IAmb IAmb 18 45 29.7
comp=Z,110nm,1.5s
NJS *e*S **S** 18 53 23.0 -0.3
NJS IVMs_BB IVMs_BB 19 12 04.9
comp=Z,726nm,6.0s
FUNA **Funafuti** 57.84 134 PFAKE 18 45 40.0 +11
FUNA LR LR
comp=Z,5µm,19.0s
HYB **Hyderabad** 57.85 268 *i* P **P** 18 45 29.0 +0.1
HYB *e* 18 45 44.5
HYB *e*PcP **PcP** 18 46 20.5 -0.5
HYB *e*S **S** 18 53 24.0 -1.0
HYB **Hyderabad** 57.85 268 *e*P **P** 18 45 28.7 -0.2
HYB IAmb IAmb 18 45 31.0
comp=Z,76nm,0.4s
HYBB **Hyderabad (bro** 57.85 268 *e*P **P** 18 45 29.1 +0.2
HYBB IAmb IAmb 18 45 30.5
comp=Z,69nm,0.9s
HYBB *e*S **S** 18 53 25.3 +0.3
HYBB IVMs_BB IVMs_BB 19 13 27.5
comp=Z,574nm,4.2s
CRAG **Craig** 58.22 42 *e*P **P** 18 45 32.6 +1.7
comp=Z,102nm,1.4s
WRAK **Wrangell Islan** 58.30 41 *e*P **P** 18 45 33.2 +1.8
comp=Z,102nm,1.4s
WRAK LR LR
comp=Z,440nm,20.0s
SRLM **Srisailam** 58.30 267 *e*P **P** 18 45 31.9 -0.2
SRLM IAmb IAmb 18 45 33.6
comp=Z,76nm,1.2s
SRLM *e*S **S** 18 53 29.4 -1.6
SRLM IVMs_BB IVMs_BB 19 09 12.1
comp=Z,781nm,4.2s
AKTO **Aktyubinsk** 58.34 312 LR LR 19 12 01.7
comp=Z,2µm,19.2s,baz=85,slow=37
AKTO **Aktyubinsk** 58.34 312 P **P** 18 45 31.2 -0.6
AKTO pmax pmax
comp=Z,69nm,0.9s
RCLA **Racherla** 58.61 266 *e*P **P** 18 45 34.5 +0.3
RCLA IAmb IAmb 18 45 36.1
comp=Z,94nm,1.3s
RCLA *e*S **S** 18 53 35.8 +0.9
RCLA IVMs_BB IVMs_BB 19 10 59.5
comp=Z,727nm,4.5s
DLBC **Dease Lake** 58.76 38 *e*P **P** 18 45 36.8 +2.1
comp=Z,167nm,1.4s
MDRS **Chennai** 58.94 263 *e*P **P** 18 45 36.1 -0.4
MDRS *e*S S 18 53 02.8 -36
SKHT **Srikalahasti** 58.98 264 *e*P **P** 18 45 37.2 +0.5
SKHT IAmb IAmb 18 45 38.6
comp=Z,81nm,1.1s
SKHT *e*S **S** 18 53 42.4 +2.7
SKHT IVMs_BB IVMs_BB 19 09 58.4
comp=Z,721nm,4.9s
KLRI **Killari** 59.06 270 *e*P **P** 18 45 37.0 -0.4
KLRI IAmb IAmb 18 45 38.6
comp=Z,107nm,0.8s
KLRI *e*S **S** 18 53 39.8 -1.0
KLRI IVMs_BB IVMs_BB 19 13 34.6
comp=Z,938nm,15.3s
DIB **Dawson Inlet,** 59.40 44 *e*P **P** 18 45 40.2 +1.1
comp=Z,75nm,1.2s
SPA0 **Spitsbergen Ar** 60.35 349 *e*P **P** 18 45 46.0 +0.7
SPA0 **Spitsbergen Ar** 60.35 349 *e*P **P** 18 45 46.2 +0.8
KBS **Kingsbay** 60.49 350 *e*P **P** 18 45 47.2 +0.9
KBS pmax pmax
comp=Z,63nm,0.9s
KBS MLR MLR
comp=Z,506nm,22.0s
KBS **Kingsbay** 60.49 350 *e*P **P** 18 45 47.2 +0.9
comp=Z,63nm,0.9s
KBS LR LR
comp=Z,506nm,22.0s
AS01 **Alice Springs** 60.84 187 *e*P **P** 18 45 47.6 -1.7
AS31 **Alice Springs** 60.84 187 *e*P **P** 18 45 48.7 -0.6
comp=Z,7.6nm,0.8s
ASAR **Alice Springs** 60.85 187 P **P** 18 45 48.8 -0.5
comp=Z,11nm,0.7s,baz=15,slow=6.9,SNR=201
ASAR PKP2bc 19 15 15.4
comp=Z,3.3nm,0.9s,baz=172,slow=2.1,SNR=10
POO **Poona** 61.01 272⇑*i*P **P** 18 45 49.0 -1.7
comp=Z,15nm,1.5s
POO *e*P **P** 18 45 51.4 +0.7
POO IAmb IAmb 18 45 52.8
comp=Z,268nm,1.5s
HSPB **Hornsund (broa** 61.27 348 *e*P **P** 18 45 52.6 +1.1
MBWA **Marble Bar** 61.35 203 *e*P **P** 18 45 52.7 0.0
comp=Z,220nm,1.6s
MBWA LR LR
comp=Z,416nm,19.0s
LVZ **Lovozero** 61.87 336*c i*P **P** 18 45 55.6 -0.1
LVZ pmax pmax
comp=Z,95nm,1.7s
LVZ **Lovozero** 61.87 336 *e*P **P** 18 45 56.0 +0.2
comp=Z,129nm,1.4s
LVZ LR LR
comp=Z,2µm,20.0s
BHJ **Bhuj** 61.87 279 *e*P **P** 18 45 57.4 +1.0
PALK **Pallekele** 62.04 257 *i* P **P** 18 45 58.8 +1.0
SNR=6.2
PALK **Pallekele** 62.04 257 *e*P **P** 18 45 58.7 +1.0
PALK pmax pmax
comp=Z,83nm,1.3s
PALK **Pallekele** 62.04 257 *e*P **P** 18 45 58.7 +1.0
comp=Z,83nm,1.3s
BBB **Bella Bella** 62.24 44 *e*P **P** 18 45 59.1 +0.7
comp=Z,98nm,1.3s
APA **Apatity** 62.44 336⇓*i*P **P** 18 45 58.5 -1.0
APA *i* 18 46 14.0
APA *i* S **S** 18 54 19.0 -3.5
APA *i* 18 55 45.0
APA pmax pmax
comp=Z,31nm,1.1s
APA MLR MLR
comp=Z,2µm,22.0s
RES **Resolute Bay** 62.59 14 *e*P **P** 18 46 00.5 +0.1
RES pmax pmax
comp=Z,12nm,0.6s
RES **Resolute Bay** 62.59 14 *e*P **P** 18 46 00.5 +0.1
comp=Z,12nm,0.6s
GOA **Goa** 62.69 269 *e*P **P** 18 46 01.4 -0.5
GOA IAmb IAmb 18 46 04.2
comp=Z,242nm,1.1s
GEYT **Alibeck** 63.47 299 P **P** 18 46 07.4 +0.5
comp=Z,48nm,0.9s,baz=26,slow=3.8,SNR=125
GEYT LR LR 19 15 22.2
comp=Z,940nm,21.0s,baz=0.0,slow=38
HAMF **Hammerfest** 63.60 341 *e*P **P** 18 46 07.4 +0.2
HAMF IAmb IAmb 18 46 08.3
comp=Z,286nm,1.7s
DZM **Mont Dzumac** 63.61 154 *e*P **P** 18 46 08.0 +0.1
comp=Z,408nm,1.4s
DZM *e*S **S** 18 54 39.2 +1.0
comp=Z,547nm,27.8s
DZM **Mont Dzumac** 63.61 154 *e*LR LR 19 05 09.4
comp=Z,2µm,21.6s
DZM **Mont Dzumac** 63.61 154 *e*P **P** 18 46 07.9 +0.1
comp=Z,155nm,1.1s
ARA0 **ARCESS Array S** 63.77 339 *e*P **P** 18 46 08.7 +0.3
ARCES **ARCESS Array B** 63.77 339 P **P** 18 46 08.0 -0.3
comp=Z,18nm,0.8s,baz=58,slow=7.7,SNR=72
ARCES LR LR 19 17 24.4
comp=Z,774nm,19.5s,baz=49,slow=39
ARE0 **ARCESS Array S** 63.77 339 *e*P **P** 18 46 08.9 +0.5
ARE0 IAmb IAmb 18 46 09.9
comp=Z,222nm,1.8s
ARE0 **ARCESS Array S** 63.77 339 *e*P **P** 18 46 08.9 +0.5
comp=Z,191nm,1.8s
YKA **Yellowknife Ar** 63.90 30 P **P** 18 46 09.0 -0.2
comp=Z,17nm,0.8s,baz=298,slow=6.4,SNR=74
YKA pP **pP** 18 46 24.4 +1.1
comp=Z,9.2nm,0.6s,baz=305,slow=6.8,SNR=10
YKA PP **PP** 18 48 35.3 +5.6
comp=Z,3.6nm,1.1s,baz=303,slow=7.7,SNR=3.8
YKA PKPPKP **P'P'df** 19 15 01.5 -5.4
comp=Z,5.4nm,1.2s,baz=108,slow=2.7,SNR=8.8
TRD **Trivandrum** 64.23 261⇑*e*P **P** 18 46 12.3 +0.1
SGF **Sodankyl** 64.72 337 P **P** 18 46 17.4 +2.9
SGF pmax pmax
comp=Z,43nm,0.7s
KTK1 **Kautokeino** 64.73 339 *e*P **P** 18 46 15.2 +0.6
KTK1 IAmb IAmb 18 46 16.0
comp=Z,213nm,1.8s
MSF **Maaselka** 64.80 335 P **P** 18 46 15.6 +0.5
MSF pmax pmax
comp=Z,64nm,1.6s
MSVF **Nonsavu** 64.81 141 *e*P **P** 18 46 18.0 +2.1
MSVF pmax pmax
comp=Z,127nm,1.4s
MSVF MLR MLR
comp=Z,2µm,19.0s
MSVF **Nonsavu** 64.81 141 *e*P **P** 18 46 18.0 +2.1
comp=Z,128nm,1.4s
MSVF LR LR
comp=Z,2µm,19.0s
HEF **Hetta** 64.99 339 *e*P **P** 18 46 16.8 +0.5
KIF **Kilpisjarvi** 65.41 340 *e*P **P** 18 46 18.9 -0.1
TRO **Tromso** 65.50 341 *e*P **P** 18 46 19.6 +0.1
TRO IAmb IAmb 18 46 29.9
comp=Z,48nm,1.0s
DAG **Danmarks Havn** 65.64 355⇑*i*P **P** 18 46 20.5 +0.1
DAG **Danmarks Havn** 65.64 355⇑*i*P **P** 18 46 20.5 +0.1
JOF **Joensuu** 65.70 332 P **P** 18 46 21.1 +0.1
JOF pmax pmax
comp=Z,66nm,1.4s
LLLB **Lilloget** 66.42 44 *e*P **P** 18 46 26.7 +0.8
comp=Z,86nm,1.2s
PGC **Sidney** 66.52 46 *e*P **P** 18 46 27.7 +1.3
comp=Z,76nm,1.3s
NLWA **Neilton Lookou** 66.91 47 *e*P **P** 18 46 30.8 +1.8
comp=Z,115nm,1.1s
NLWA LR LR
comp=Z,430nm,20.0s
MOS **Moscow** 66.95 323 *e*P **P** 18 46 28.6 -0.5
MOS *e* 18 48 55.0
MOS *e*S **S** 18 55 15.9 -2.4
MOS *e* 18 55 39.2
MOS pmax pmax
comp=Z,300nm,1.6s
MOS pmax pmax
comp=N,123nm,1.4s
MOS pmax pmax
comp=E,90nm,1.2s
MOS pmax pmax
comp=E,200nm,1.8s
MOS pmax pmax
comp=Z,600nm,1.8s
MOS pmax pmax
comp=N,200nm,1.7s
MOS smax smax
comp=E,1µm,3.3s
MOS MLR MLR
comp=Z,1µm,20.0s
MOS MLR MLR
comp=N,500nm,18.0s
MOS MLR MLR
comp=E,700nm,19.0s
VRH **Novokhopyorsk** 67.26 318 *e*P **P** 18 46 30.9 -0.2
VRH *e*S **S** 18 55 20.5 -1.6
VRH pmax pmax
comp=Z,110nm,0.8s
VRH smax smax
comp=E,210nm,1.6s
AFI **Afiamalu** 67.48 129 LR LR 19 11 46.8
comp=E,1µm,20.6s,baz=353,slow=32
B05A **Bryant** 67.49 46 P **P** 18 46 34.0 +1.3
baz=301
E03A **Lebam** 67.51 48 *e*P **P** 18 46 34.6 +1.8
comp=E,92nm,1.0s
E03A *e*pP **pP** 18 46 49.4 +2.3
STEI **Steigen** 67.65 341 *e*P **P** 18 46 33.6 +0.3
STEI IAmb IAmb 18 46 49.7
comp=Z,31nm,0.8s
OBN **Obninsk** 67.80 323*c i*P **P** 18 46 34.2 -0.2
OBN *i* 18 46 45.6
OBN *i* 18 46 58.3
OBN *i* S **S** 18 55 31.4 +3.0
OBN pmax pmax
comp=Z,105nm,1.1s
OBN MLR MLR
comp=Z,972nm,17.0s
OBN **Obninsk** 67.80 323 *e*P **P** 18 46 34.8 +0.4
comp=Z,650nm,2.0s
OBN LR LR
comp=Z,960nm,19.0s
F03A **Seaside** 67.83 49 *e*P **P** 18 46 36.8 +1.9
comp=Z,266nm,1.5s
KULLO **Kullorsuaq** 67.90 5⇑*i*P **P** 18 46 34.4 -0.4
comp=Z,50nm,1.2s
KULLO **Kullorsuaq** 67.90 5⇑*i*P **P** 18 46 34.4 -0.4
KULLO pmax pmax
comp=Z,50nm,1.2s
ARMA **Armidale** 67.94 170 *e*P **P** 18 46 36.8 +1.2
comp=Z,176nm,1.5s
F04D **Rainier, OR** 68.08 48 P **P** 18 46 38.0 +1.6
baz=301
D05A **Enumclaw** 68.11 47 *e*P **P** 18 46 38.4 +1.8
comp=Z,78nm,1.1s
C06D **Leavenworth** 68.36 46 P **P** 18 46 39.2 +1.1
baz=302
G03D **McMinnville, O** 68.38 49 P **P** 18 46 39.8 +1.5
baz=301
LON **Longmire** 68.44 47 *e*P **P** 18 46 39.6 +0.8
LON pmax pmax
comp=Z,28nm,1.3s
LON **Longmire** 68.44 47 *e*P **P** 18 46 39.6 +0.8
comp=Z,28nm,1.3s
FIA1 **FINESS Array S** 68.55 332 *e*P **P** 18 46 38.7 -0.4
FIA1 *e*P **P** 18 46 39.2 +0.2
FINES **FINESS Array B** 68.55 332 P **P** 18 46 39.0 -0.1
comp=Z,43nm,0.8s,baz=64,slow=8.7,SNR=179
FINES S **S** 18 55 38.2 +0.9
comp=Z,0.6nm,0.7s,baz=57,slow=13,SNR=4.7
FINES PKP2ab 19 14 57.0
comp=Z,2.0nm,1.1s,baz=232,slow=9.4,SNR=4.5
FINES LR LR 19 19 06.9
comp=Z,2µm,18.5s,baz=44,slow=38
VSR **Storozhevoye** 68.61 319 *e*P **P** 18 46 39.4 -0.2
VSR *e*S **S** 18 55 35.2 -3.2
VSR pmax pmax
comp=Z,60nm,0.6s
VSR smax smax
comp=E,140nm,1.5s
VSR MLR MLR
comp=Z,2µm,16.0s
FORT **Forrest** 68.64 192 *e*P **P** 18 46 40.1 +0.2
comp=Z,5µm,1.5s
STKA **Stephens Creek** 68.66 179 P **P** 18 46 39.7 -0.3
comp=Z,24nm,0.8s,baz=343,slow=6.9,SNR=50
STKA **Stephens Creek** 68.66 179 *e*P **P** 18 46 40.0 0.0
STKA pmax pmax
comp=Z,44nm,1.9s
STKA **Stephens Creek** 68.66 179 *e*P **P** 18 46 40.0 0.0

comp=Z,44nm,1.9s
COR Corvallis 68.68 50 *e*P **P 18 46 42.6 +2.4**
COR pmax pmax
comp=Z,140nm,1.0s
COR Corvallis 68.68 50 *e*P **P 18 46 42.6 +2.4**
comp=Z,140nm,1.0s
VAF Ylistaro 68.75 334 P **P 18 46 40.6 +0.4**
VAF pmax pmax
comp=Z,71nm,1.6s
B08A Colville Reser 69.01 45 *e*P **P 18 46 43.0 +0.8**
comp=Z,92nm,1.4s
GROC Groznyy 69.06 309 *e*P **P 18 46 42.9 +0.4**
GROC pmax pmax
comp=Z,180nm,1.8s
I03D Drain, OR 69.12 51 P **P 18 46 44.5 +1.6**
baz=302,SNR=16
EDM Edmonton 69.48 38 *e*P **P 18 46 45.6 +0.5**
EDM pmax pmax
comp=Z,240nm,1.4s
EDM Edmonton 69.48 38 *e*P **P 18 46 45.6 +0.5**
comp=Z,240nm,1.4s
G05D Wamic, OR 69.53 48 P **P 18 46 46.7 +1.2**
baz=302,SNR=8.3
I04A Tendick Farm, 69.64 50 P **P 18 46 47.3 +1.1**
baz=302,SNR=26
BBOO Buckleboo 69.74 184 *e*P **P 18 46 46.7 0.0**
comp=Z,230nm,1.8s
GOF Gofitskoye 69.75 312⇑ *e*P **P 18 46 47.3 +0.5**
GOF pmax pmax
comp=Z,380nm,1.5s
L02D Cave Junction, 69.77 52 P **P 18 46 48.4 +1.4**
baz=302
HUMO Hull Mountain 69.94 51 *e*P **P 18 46 49.5 +1.4**
comp=Z,63nm,1.5s
D08A Wollman Farm, 69.95 46 *e*P **P 18 46 48.8 +0.8**
comp=Z,48nm,1.0s
HAWA Hanford 69.96 47 *e*P **P 18 46 49.5 +1.4**
HAWA LR LR
comp=Z,324nm,20.0s
I05D Terrebonne, OR 70.00 49 P **P 18 46 49.4 +1.0**
baz=303,SNR=6.1
VSU Vasula 70.18 329 *c i*P **P 18 46 49.6 +0.4**
VSU pmax pmax
comp=Z,466nm,1.7s
JCC Jacoby Creek, 70.21 53 *e*P **P 18 46 51.7 +2.0**
comp=Z,186nm,1.4s
NCK Nalchik 70.26 310⇑ *e*P **P 18 46 50.4 +0.4**
NCK pmax pmax
comp=Z,96nm,1.4s
NEW Newport 70.30 44 P **P 18 46 50.8 +0.6**
baz=304
NEW Newport 70.30 44 *e*P **P 18 46 51.0 +0.8**
NEW pmax pmax
comp=Z,93nm,1.3s
NEW MLR MLR
comp=Z,351nm,22.0s
NEW Newport 70.30 44 *e*P **P 18 46 51.0 +0.8**
comp=Z,93nm,1.3s
NEW LR LR
comp=Z,351nm,22.0s
KHMM Horse Mountain 70.37 53 *e*P **P 18 46 53.0 +2.1**
comp=Z,158nm,1.5s
ZEI Tsey 70.45 309 *e*P **P 18 46 49.0 -2.4**
ZEI pmax pmax
comp=Z,202nm,1.5s
WSAR Wadi Sarin 70.49 285 P **P 18 46 52.8 +1.0**
comp=Z,29nm,1.1s,baz=83,slow=6.0,SNR=14
TBLG Delisi 70.50 308 P **P 18 46 51.8 +0.2**
TBLG Delisi 70.50 308 *e*P **P 18 46 51.7 +0.2**
KBZ Khabaz 70.56 310 P **P 18 46 52.2 +0.4**
comp=Z,44nm,0.8s,baz=71,slow=4.9,SNR=112
KBZ LR LR 19 22 27.4
comp=Z,1μm,19.0s,baz=60,slow=40
KIV Kislovodsk 70.56 311 *i*P **P 18 46 52.8 +0.9**
SNR=72
KIV Kislovodsk 70.56 311 *e*P **P 18 46 52.6 +0.7**
KIV *e* 18 49 30.0
KIV *e*S **S 18 56 03.0 +1.2**
KIV *e*SS **SS 19 00 37.0 +3.9**
KIV pmax pmax
comp=Z,223nm,1.1s
KIV pmax pmax
comp=Z,108nm,4.6s
KIV MLR MLR
comp=Z,815nm,18.0s
KIV Kislovodsk 70.56 311 P **P 18 46 52.8 +0.9**
SNR=89
KIV Kislovodsk 70.56 311 *e*P **P 18 46 52.7 +0.7**
comp=Z,267nm,1.2s
KIV LR LR
comp=Z,994nm,20.0s
SUMG Summit 70.58 360⇑ *i*P **P 18 46 52.8 +0.9**
comp=Z,74nm,1.0s
SUMG Summit 70.58 360 *e*P **P 18 46 52.8 +0.9**
SUMG pmax pmax
comp=Z,92nm,1.1s
SUMG Summit 70.58 360 *e*P **P 18 46 52.8 +0.9**
comp=Z,92nm,1.1s
J05D Fort Rock, OR 70.64 50 P **P 18 46 53.8 +1.3**
baz=303
M02C Callahan 70.65 52 P **P 18 46 54.0 +1.5**
baz=303,SNR=12
K04D Chiloquin, OR 70.68 51 P **P 18 46 53.7 +1.0**
baz=303
E09A Wood Farm, Sta 70.70 46 P **P 18 46 53.5 +0.9**
BIDO Bidbid 70.73 285 P **P 18 46 54.4 +1.2**
SNR=17
BANOM Banah 70.83 288 *i*P **P 18 46 54.9 +1.1**
SNR=13
BANOM Banah 70.83 288 P **P 18 46 54.9 +1.1**
SNR=9.1
ONI Oni 70.84 309 P **P 18 46 54.5 +0.8**
ONI Oni 70.84 309 *e*P **P 18 46 54.4 +0.8**
G08A Pilot Rock 70.90 47 *e*P **P 18 46 54.9 +0.9**
comp=Z,40nm,1.2s
NEY Neytrino 70.93 310 *d i*P **P 18 46 56.0 +1.7**
NEY pmax pmax
comp=Z,20nm,1.2s
N02D Trinity Center 70.97 53 P **P 18 46 55.8 +1.3**
baz=303,SNR=12
SMDO Samad 71.04 285 P **P 18 46 56.0 +0.8**
SNR=26
M04C Macdoel 71.08 52 P **P 18 46 56.4 +1.2**
baz=303,SNR=20
K05A Summer Lake 71.15 50 *e*P **P 18 46 57.2 +1.6**
comp=Z,198nm,1.3s
WDC Whiskeytown Da 71.29 53 *e*P **P 18 46 57.2 +0.9**
WDC pmax pmax
comp=Z,83nm,1.4s
WDC Whiskeytown Da 71.29 53 *e*P **P 18 46 57.2 +0.9**
comp=Z,83nm,1.4s
HOQ Hoqain 71.33 286 P **P 18 46 57.4 +0.6**
SNR=28
GNI Garni 71.35 306 *e*P **P 18 46 57.7 +0.8**
GNI pmax pmax
comp=Z,982nm,1.4s
GNI MLR MLR
comp=Z,838nm,20.0s
GNI Garni 71.35 306 *e*P **P 18 46 57.7 +0.8**
comp=Z,982nm,1.4s
GNI LR LR
comp=Z,838nm,20.0s
UOSS Minazif 71.43 288 *e*P **P 18 46 57.7 +0.3**
comp=Z,103nm,1.2s
AKH Akhalkalaki 71.46 308 P **P 18 46 58.5 +1.0**
AKH Akhalkalaki 71.46 308 *e*P **P 18 46 58.5 +1.0**
BGD Bogdanovka 71.47 308 P **P 18 46 58.9 +1.2**
F10A Beach Ranch, E 71.53 46 *e*P **P 18 46 58.5 +0.8**
comp=Z,35nm,1.0s
HATD Hatta, Dubai 71.55 287 *i*P **P 18 46 59.0 +0.8**
SNR=29
HATD Hatta, Dubai 71.55 287 P **P 18 46 59.1 +1.0**
SNR=18
WALA Waterton Lakes 71.60 42 *e*P **P 18 46 58.8 +0.7**
comp=Z,132nm,1.4s
CHVG Ch'k'valeri 71.61 310 P **P 18 46 58.8 +0.6**
ASHO Ashiyiah 71.69 287 *i*P **P 18 46 59.6 +0.6**
SNR=28
ASHO Ashiyiah 71.69 287 P **P 18 46 59.8 +0.9**
SNR=21
NAZ Nazwa, Dubai 71.82 288 *i*P **P 18 47 00.4 +0.7**
SNR=21
NAZ Nazwa, Dubai 71.82 288 P **P 18 47 00.2 +0.4**
SNR=18
BSMT Bassoo Peak 71.83 43 *e*P **P 18 47 00.5 +0.8**
O03D Paynes Creek 71.92 53 P **P 18 47 00.5 +0.3**
baz=304,SNR=25
BLMT Blacktail Moun 71.96 43 *e*P **P 18 47 01.5 +1.0**
SCO Scoresbysund 71.97 354⇑ *i*P **P 18 47 00.8 +1.0**
comp=Z,46nm,1.1s
SCO Scoresbysund 71.97 354⇑ *i*P **P 18 47 00.8 +1.0**
SCO pmax pmax
comp=Z,46nm,1.1s
MOD Modoc Plateau 71.97 51 *e*P **P 18 47 01.4 +0.8**
comp=Z,38nm,1.1s
FAQ Al Faqa, Dubai 72.01 288 *i*P **P 18 47 01.3 +0.5**
SNR=15
FAQ Al Faqa, Dubai 72.01 288 P **P 18 47 01.3 +0.5**
SNR=14
ARQ Araqi 72.07 286 P **P 18 47 02.1 +0.8**
SNR=29
BMO Blue Mountains 72.12 47 *e*P **P 18 47 02.2 +0.9**
comp=Z,64nm,1.0s
BMO LR LR
comp=Z,303nm,22.0s
IZAR Zarasai 72.12 327 *e*P **P 18 47 01.6 +0.6**
IZAR IAmb IAmb 18 47 03.3
comp=Z,46nm,1.2s
JTMT Jette 72.16 43 *e*P **P 18 47 02.4 +0.8**
IDID Didziasalis 72.19 327 *e*P **P 18 47 02.1 +0.7**
IDID IAmb IAmb 18 47 03.7
comp=Z,42nm,1.0s
MICGM Minsk 72.20 326⇓ *e*P **P 18 47 02.0 +0.5**
MICGM PM 18 47 03.0
comp=Z,0.3nm,1.2s
MICGM *e*pP **pP 18 47 16.0 +0.2**
MICGM *e*PP **PP 18 49 42.0 +0.2**
MICGM *e*S **S 18 56 20.0 -0.1**
MICGM *e*sS **sS 18 56 46.0 +1.9**
MICGM *e*LR LR 19 18 30.0
MNK Minsk 72.20 326⇓ *e*P **P 18 47 02.0 +0.5**
MNK *e*'PP **pP 18 47 16.0 +0.2**
MNK *e* 18 49 42.0
MNK *e*S **S 18 56 20.0 -0.1**
MNK *e*'SS **sS 18 56 46.0 +1.9**
MNK pmax pmax
comp=Z,340nm,1.0s
YBMT Yellow Bay 72.24 43 *e*P **P 18 47 03.0 +0.9**
ISAL Salakas 72.29 327 *e*P **P 18 47 02.6 +0.7**
ISAL IAmb IAmb 18 47 04.5
comp=Z,86nm,1.1s
NACGM Naroch 72.44 326 *e* **P 18 47 03.0 +0.1**
NACGM *e*LR LR 19 19 34.0
SWMT Swartz Lake 72.46 43 *e*P **P 18 47 04.0 +0.7**
CAN Canberra 72.48 173 *e*P **P 18 47 04.0 +0.7**
CAN pmax pmax
comp=Z,167nm,1.5s
CAN MLR MLR
comp=Z,1μm,22.0s
CAN Canberra 72.48 173 *e*P **P 18 47 04.0 +0.7**
comp=Z,167nm,1.5s
CAN LR LR
comp=Z,1μm,22.0s
ORV Oroville 72.52 53 *e*P **P 18 47 03.6 -0.1**
ORV pmax pmax
comp=Z,74nm,1.3s
ORV Oroville 72.52 53 *e*P **P 18 47 03.6 -0.1**
comp=Z,74nm,1.3s
SOC Sochi 72.56 312 *c i*P **P 18 47 04.2 +0.4**
SOC *e*'PP **pP 18 47 17.3 -0.8**
SOC *e* 18 49 46.4
SOC *i*S **S 18 56 23.9 -0.6**
SOC pmax pmax
comp=Z,73nm,1.1s
SOC MLR MLR
comp=Z,2μm,22.0s
WVOR Wild Horse Val 72.70 50 PFAKE 18 47 20.0 +15
WVOR LR LR
comp=Z,406nm,22.0s
MSO Missoula 72.89 44 P **P 18 47 06.1 +0.2**
baz=306
MSO Missoula 72.89 44 *e*P **P 18 47 06.2 +0.3**
comp=Z,74nm,1.2s
NWAO Narrogin (SRO) 73.14 201 *e*P **P 18 47 07.3 +0.1**
NWAO pmax pmax
comp=Z,184nm,1.4s
NWAO Narrogin (SRO) 73.14 201 *e*P **P 18 47 07.3 +0.1**
comp=Z,184nm,1.4s
ANN Anapa 73.20 314 *e*P **P 18 47 05.2 -2.3**
ANN *e* 18 47 21.6
ANN *e* 18 49 47.8
ANN *e*S **S 18 56 29.5 -2.2**
ANN pmax pmax
comp=Z,208nm,1.5s
ANN MLR MLR
comp=N,602nm,20.0s
ANN MLR MLR
comp=Z,687nm,20.0s
ANN MLR MLR
comp=E,513nm,20.0s
AFDM Forest Hills D 73.20 54 *e*P **P 18 47 08.5 +0.7**
comp=E,100nm,1.5s
CHMT Chamberlain Mo 73.22 44 *e*P **P 18 47 08.0 +0.1**
ILULI Ilulissat 73.58 4 *i*P **P 18 47 08.8 -0.6**
ILULI Ilulissat 73.58 4 *i*P **P 18 47 08.8 -0.6**
NC405 NORSAR Array S 73.74 337 *e*P **P 18 47 11.0 +0.5**
NC303 NORSAR Array S 73.76 337 *e*P **P 18 47 10.9 +0.3**
PAHR Pah Rah Range 73.79 52 *e*P **P 18 47 12.2 +0.9**
comp=E,112nm,1.4s
FFC Flin Flon 73.81 33 *e*P **P 18 47 11.2 +0.2**
FFC pmax pmax
comp=Z,119nm,1.2s
FFC MLR MLR
comp=Z,392nm,20.0s
FFC Flin Flon 73.81 33 *e*P **P 18 47 11.2 +0.2**
comp=Z,119nm,1.2s
FFC LR LR
comp=Z,392nm,20.0s
MOL Molde 73.83 339 *e*P **P 18 47 11.7 +0.8**
MOL IAmb IAmb 18 47 30.4
comp=Z,30nm,0.9s
NC204 NORSAR Array S 73.91 337 *e*P **P 18 47 11.3 -0.2**
NB201 NORSAR Array S 73.92 337 *e*P **P 18 47 11.9 +0.3**
NB2 NORSAR Subarra 73.95 337 P **P 18 47 11.8 +0.1**
comp=Z,531nm,2.0s,baz=38,slow=5.9
NB2 NORSAR Subarra 73.95 337 P **P 18 47 11.8 +0.1**
baz=38,slow=5.9
NOA NORSAR Array B 73.95 337 P **P 18 47 11.8 +0.1**
comp=Z,35nm,0.8s,baz=39,slow=5.8,SNR=155
NOA PP **PP 18 49 56.7 +0.1**
comp=Z,1.9nm,0.7s,baz=46,slow=7.2,SNR=3.6
NOA LR LR 19 22 55.0
comp=Z,1μm,19.7s,baz=40,slow=38
AKASG Malin Array Be 73.99 322 P **P 18 47 12.0 -0.1**
comp=Z,7.0nm,0.3s,baz=46,slow=6.3,SNR=147
AKASG PP **PP 18 49 58.2 +1.1**
comp=Z,2.2nm,0.7s,baz=46,slow=9.3,SNR=4.7
AKASG LR LR 19 22 05.2
comp=Z,2μm,21.2s,baz=45,slow=38
AKASG Malin Array Be 73.99 322 P **P 18 47 12.0 -0.1**
AKASG 18 49 58.3
AKASG pmax pmax
comp=Z,6.0nm,0.3s
AKASG pmax pmax
comp=Z,2.0nm,0.7s
AKASG MLR MLR
comp=Z,2μm,21.2s
AKBB Malin Array Si 73.99 322 *e*P **P 18 47 12.2 +0.1**
AKBB Malin Array Si 73.99 322 *e*P **P 18 47 12.2 +0.1**
KIEV Kiev 74.00 322 *e*P **P 18 47 12.0 -0.2**
KIEV pmax pmax
comp=Z,146nm,1.4s
KIEV MLR MLR
comp=Z,2μm,21.0s
KIEV Kiev 74.00 322 *e*P **P 18 47 12.0 -0.2**
comp=Z,146nm,1.4s
KIEV LR LR
comp=Z,2μm,21.0s
AK11 Malin Array Si 74.03 322 *e*P **P 18 47 12.1 -0.3**
NBO02 NORSAR Array S 74.05 337 *e*P **P 18 47 11.9 -0.5**
FCC Fort Churchill 74.06 26 *e*P **P 18 47 12.4 0.0**
FCC pmax pmax
comp=Z,109nm,1.0s
FCC Fort Churchill 74.06 26 *e*P **P 18 47 12.4 0.0**
comp=Z,109nm,1.0s
NC602 NORSAR Array S 74.08 337 *e*P **P 18 47 12.3 -0.1**
NBO00 NORSAR Array S 74.09 337 *e*P **P 18 47 13.0 +0.4**
HRY Holter Researc 74.12 43 *e*P **P 18 47 14.2 +1.0**
SAO San Andreas Ge 74.12 56 *e*P **P 18 47 14.2 +1.0**
SAO pmax pmax
comp=Z,49nm,1.3s
SAO San Andreas Ge 74.12 56 *e*P **P 18 47 14.2 +1.0**
comp=Z,49nm,1.3s
NAO01 NORSAR Array S 74.20 337 *e*P **P 18 47 13.7 +0.5**
LRM Limekiln Ridge 74.32 44 *e*P **P 18 47 15.2 +0.8**
EGMT Eagleton 74.43 41 PFAKE 18 47 30.0 +15
EGMT LR LR
comp=Z,5μm,20.0s
WAKR Walker 74.44 53 *e*P **P 18 47 16.6 +1.3**
comp=Z,84nm,1.3s
DLMT Dillon 74.52 45 *e*P **P 18 47 16.1 +0.6**
comp=Z,154nm,1.1s
HLID Hailey 74.56 47 P **P 18 47 16.8 +1.0**
baz=307
HLID Hailey 74.56 47 *e*P **P 18 47 17.0 +1.1**
comp=Z,55nm,1.1s
HLID LR LR
comp=Z,423nm,22.0s
SUW Suwalki 74.61 327 *i*P **P 18 47 15.7 +0.1**
SUW *e*S **S 18 56 47.1 -0.1**
SUW Suwalki 74.61 327⇑ *i*P **P 18 47 15.7 +0.1**
SUW *e*S **S 18 56 47.1 -0.1**
MCMT McKenzie Canyo 74.70 45 *e*P **P 18 47 16.7 0.0**
BOZ Bozeman (W) 74.91 44 P **P 18 47 18.5 +0.7**
baz=308
BOZ Bozeman (W) 74.91 44 PFAKE 18 47 30.0 +12
BOZ LR LR
comp=Z,276nm,21.0s
SIM Simferopol' 75.00 315⇑ *i*P **P 18 47 18.5 +0.4**
SIM *e*S **S 18 56 51.0 -1.0**
SIM *e*SS **SS 19 01 40.0 -0.5**
SIM pmax pmax
comp=Z,57nm,0.9s
SIM MLR MLR
comp=Z,660nm,14.9s
MLAC Mammoth, Mammo 75.33 54 P **P 18 47 21.8 +1.4**
baz=306
KLNR Kaliningrad 75.45 329 *c i*P **P 18 47 20.6 +0.2**
KLNR pmax pmax
comp=Z,204nm,1.4s
QLMT Earthquake Lak 75.50 44 *e*P **P 18 47 22.3 +1.1**
KONO Kongsberg 75.54 337 *c i*P **P 18 47 21.0 +0.1**
KONO pmax pmax
comp=Z,293nm,1.7s
KONO Kongsberg 75.54 337 *e*P **P 18 47 21.4 +0.6**
comp=Z,32nm,1.0s
KONO LR LR
comp=Z,2μm,19.0s
YHB Horse Butte 75.68 44 *e*P **P 18 47 23.5 +1.2**
comp=Z,73nm,1.0s
ELK Elko 75.75 50 *e*P **P 18 47 24.1 +1.3**
ELK pmax pmax
comp=Z,36nm,1.3s
ELK Elko 75.75 50 *e*P **P 18 47 24.1 +1.3**
comp=Z,36nm,1.3s
SFJD Kangerlussuaq 75.81 5 *i*P **P 18 47 22.5 +0.2**
comp=Z,32nm,0.9s
SFJD Kangerlussuaq 75.81 5 *i*P **P 18 47 22.5 +0.2**
SFJD pmax pmax
comp=Z,32nm,0.9s
SFJD Kangerlussuaq 75.81 5 PFAKE 18 47 30.0 +7.7
SFJD LR LR
comp=Z,523nm,20.0s
RCTC Rector, Farmer 75.84 55 P **P 18 47 23.5 +0.5**
baz=306
YHH Holmes Hill 75.85 44 *e*P **P 18 47 24.8 +1.5**
comp=Z,64nm,1.3s
GCMT Greycliff 75.87 43 *e*P **P 18 47 24.4 +1.1**
SMMC Simmler 75.92 56 P **P 18 47 24.8 +1.2**
baz=306
TIN Tinemaha, Big 76.06 54 P **P 18 47 25.7 +1.3**
baz=306
SORM Soroca 76.08 320⇑ *i*P **P 18 47 23.7 -0.5**
SORM Soroca 76.08 320⇑ P **P 18 47 23.7 -0.5**
YPP Pitchstone Pla 76.19 45 *e*P **P 18 47 27.6 +2.2**
comp=Z,153nm,1.8s
VES Vestal, Richgr 76.21 55 P **P 18 47 25.4 +0.2**
baz=306
LKWY Lake 76.24 44 *e*P **P 18 47 28.5 +3.0**
LKWY pmax pmax
comp=Z,65nm,1.1s
LKWY MLR MLR
comp=Z,421nm,21.0s
LKWY Lake 76.24 44 *e*P **P 18 47 28.5 +3.0**
comp=Z,65nm,1.1s
LKWY LR LR
comp=Z,421nm,21.0s
H17A Grant Village 76.24 44 P **P 18 47 28.1 +2.5**
baz=309
H17A Grant Village 76.24 44 *e*P **P 18 47 28.3 +2.7**
comp=Z,168nm,1.1s
PKM Mcpherson Peak 76.29 57 P **P 18 47 27.0 +1.1**
baz=306
IMW Indian Meadow 76.35 45 *e*P **P 18 47 27.9 +1.7**
comp=Z,85nm,1.1s
FLWY Flagg Ranch 76.37 45 *e*P **P 18 47 28.2 +2.0**
comp=Z,166nm,1.4s
RAO Raoul Island 76.48 144 LR LR 19 16 12.7
comp=Z,763nm,19.0s,baz=306,slow=32
RLMT Red Lodge 76.51 43 P **P 18 47 28.1 +1.2**
baz=310
RLMT Red Lodge 76.51 43 *e*P **P 18 47 28.2 +1.2**
comp=Z,82nm,1.2s
RLMT LR LR
comp=Z,359nm,19.0s
CWC Cottonwood Cre 76.52 54 P **P 18 47 27.7 +0.6**
baz=306
MOOW Moose Ponds 76.55 45 *e*P **P 18 47 28.7 +1.4**
comp=Z,115nm,1.4s
KIS Kishinev 76.58 319 *e*PcP P 18 47 20.0 -7.0
KIS Kishinev 76.58 319⇑ *i*P **P 18 47 27.0 0.0**
comp=Z,400nm,2.0s
KIS *e*S **S 18 57 08.0 -1.3**
KIS Kishinev 76.58 319 *e*PS **SS 19 02 07.0 +2.8**
KIS LRM MLR 19 24 04.0
comp=Z,3μm,16.0s
KIS Kishinev 76.58 319α *i*P **P 18 47 27.0 0.0**
KIS *e* 18 47 40.0
KIS *e* 18 50 20.0
KIS *e*S **S 18 57 08.0 -1.3**
KIS *e* 18 57 30.0
KIS *e* 18 58 08.0
KIS *e*PS **SS 19 02 07.0 +2.8**
KIS pmax pmax
comp=Z,400nm,2.0s
KIS pmax pmax
comp=Z,400nm,2.0s
KIS MLR MLR
comp=Z,2μm,16.0s
KIS MLR MLR
comp=N,1μm,15.0s
KIS MLR MLR
comp=E,500nm,16.0s
KIS MLR MLR
comp=Z,3μm,16.0s
TPAW Teton Pass 76.60 45 *e*P **P 18 47 29.1 +1.5**
comp=Z,175nm,1.6s
HVU Hansel Valley 76.60 48 *e*P **P 18 47 28.8 +1.3**
HVU pmax pmax
comp=Z,55nm,1.1s
HVU Hansel Valley 76.60 48 *e*P **P 18 47 28.8 +1.3**
comp=Z,55nm,1.1s
SBC Santa Barbara 76.61 57 P **P 18 47 28.7 +1.2**
baz=306
GRAC Grapevine Rang 76.65 54 P **P 18 47 28.7 +1.0**
baz=307
LOHW Long Hollow 76.72 45 *e*P **P 18 47 29.5 +1.3**
comp=Z,48nm,1.3s
ISA Isabella, Lake 76.72 55 P **P 18 47 27.9 -0.2**
baz=306
ISA Isabella, Lake 76.72 55 *e*P **P 18 47 28.2 0.0**
ISA pmax pmax
comp=Z,38nm,1.1s
ISA Isabella, Lake 76.72 55 *e*P **P 18 47 28.2 0.0**
comp=Z,38nm,1.1s
SNOW Snow King Moun 76.73 45 *e*P **P 18 47 29.9 +1.6**
comp=Z,73nm,1.1s
REDW Red Top Meadow 76.73 45 *e*P **P 18 47 29.6 +1.2**
comp=Z,104nm,1.3s
ARVC Arvin 76.80 56 P **P 18 47 28.8 +0.3**
baz=306
MTUT Morton Thiokol 76.83 47 *e*P **P 18 47 30.2 +1.4**
SCZ2 Santa Cruz Isl 76.93 57 P **P 18 47 30.0 +0.6**
baz=306
DAC Darwin (Calif) 76.93 54 *e*P **P 18 47 30.1 +0.6**
DAC pmax pmax
comp=Z,39nm,1.0s

DAC Darwin (Calif) 76.93 54 *e*P **P 18 47 30.1 +0.6**
comp=Z,39nm,1.0s
AHID Auburn Hatcher 76.97 46 *e*P **P 18 47 30.6 +1.0**
comp=Z,99nm,1.4s
AHID LR LR
comp=Z,400nm,21.0s
BGU Big Grassy Mou 76.97 48 *e*P **P 18 47 30.7 +1.1**
comp=Z,41nm,1.2s
DGMT Dagmar 76.98 38 P **P 18 47 29.8 +0.4**
baz=312
DGMT Dagmar 76.98 38 *e*P **P 18 47 29.9 +0.6**
comp=Z,198nm,1.3s
DGMT *e*PcP **sP 18 47 47.4 -2.1**
DGMT LR LR
comp=Z,683nm,20.0s
R11A Troy Canyon, C 76.98 52 P **P 18 47 30.6 +0.9**
baz=307
R11A Troy Canyon, C 76.98 52 *e*P **P 18 47 30.6 +0.9**
comp=Z,122nm,1.2s
LVV L'vov 77.08 324 *i*P **P 18 47 28.9 -0.9**
LVV *e* 18 52 10.9
LVV *e*S **S 18 57 13.1 -1.6**
LVV pmax pmax
comp=Z,400nm,1.5s
LVV MLR MLR
comp=N,600nm,16.0s
LVV MLR MLR
comp=E,900nm,16.0s
LVV MLR MLR
comp=Z,1µm,16.0s
SPUT South Promonto 77.08 48 *e*P **P 18 47 31.8 +1.6**
comp=Z,196nm,1.9s
IAS Iasi 77.10 320⇑*i*P **P 18 47 29.0 -1.0**
IAS Iasi 77.10 320⇑P **P 18 47 29.0 -1.0**
LAO LASA Array 77.13 41 *e*P **P 18 47 31.1 +0.9**
comp=Z,209nm,1.3s
LAO LR LR
comp=Z,497nm,22.0s
MPMC Manual Prospec 77.13 55 P **P 18 47 31.3 +0.6**
baz=307
BEL Belsk 77.16 327 *i*P **P 18 47 31.4 +1.2**
BEL *e*S **S 18 57 17.2 +1.8**
BEL Belsk 77.16 327⇑*i*P **P 18 47 31.4 +1.2**
BEL *e*S **S 18 57 17.2 +1.8**
OSI Osito Audit: C 77.17 56 P **P 18 47 31.5 +0.8**
baz=306
OSI Osito Audit: C 77.17 56 *e*P **P 18 47 31.9 +1.2**
comp=Z,48nm,1.0s
BSD Bornholm Skovb 77.18 332⇑*i*P **P 18 47 30.3 0.0**
comp=Z,88nm,1.1s
BSD Bornholm Skovb 77.18 332⇑*i*P **P 18 47 30.3 0.0**
BSD pmax pmax
comp=Z,88nm,1.1s
A25A Svangstu Ranch 77.19 37 P **P 18 47 31.2 +0.7**
baz=313
LEOM Leova 77.22 319⇓*i*P **P 18 47 30.8 +0.2**
LEOM Leova 77.22 319⇓P **P 18 47 30.8 +0.2**
BLG Laguna Peak, P 77.24 57 P **P 18 47 31.4 +0.3**
baz=306
FURC Furnace Creek, 77.29 54 P **P 18 47 32.2 +0.9**
baz=307
LRMC Laurel Mtn Rad 77.35 55 P **P 18 47 32.2 +0.4**
baz=307
TPNV Topopah Spring 77.40 53 P **P 18 47 33.0 +0.9**
baz=307
TPNV Topopah Spring 77.40 53 *e*P **P 18 47 33.0 +0.9**
TPNV pmax pmax
comp=Z,91nm,1.0s
TPNV Topopah Spring 77.40 53 *e*P **P 18 47 33.0 +0.9**
comp=Z,91nm,1.0s
HWUT Hardware Ranch 77.42 47 *e*P **P 18 47 33.2 +1.1**
comp=Z,165nm,1.3s
HWUT LR LR
comp=Z,226nm,20.0s
SNCC San Nicolas Is 77.44 58 P **P 18 47 33.3 +1.1**
baz=306
SNCC San Nicolas Is 77.44 58 *e*P **P 18 47 33.6 +1.4**
comp=Z,107nm,1.0s
RSUT Red Spur Mount 77.49 47 *e*P **P 18 47 33.9 +1.2**
BORG Borgarnes 77.49 352 *e*P **P 18 47 34.6 +2.8**
BORG pmax pmax
comp=Z,54nm,1.0s
BORG MLR MLR
comp=Z,464nm,19.0s
BORG Borgarnes 77.49 352 *e*P **P 18 47 34.6 +2.8**
comp=Z,54nm,1.0s
BORG LR LR
comp=Z,464nm,19.0s
FSU Fish Springs 77.50 50 *e*P **P 18 47 33.7 +1.2**
EDW2 Edwards Air Fo 77.50 56 P **P 18 47 33.2 +0.6**
baz=307
MCU Monte Cristo P 77.54 47 *e*P **P 18 47 34.0 +1.1**
DUG Dugway, Tooele 77.56 49 P **P 18 47 34.0 +1.2**
baz=308
DUG Dugway, Tooele 77.56 49 *e*P **P 18 47 34.1 +1.2**
DUG pmax pmax
comp=Z,144nm,1.4s
DUG MLR MLR
comp=Z,314nm,20.0s
DUG Dugway, Tooele 77.56 49 *e*P **P 18 47 34.1 +1.2**
comp=Z,144nm,1.4s
DUG LR LR
comp=Z,314nm,20.0s
B25A Knox Farm, Ray 77.62 38 P **P 18 47 33.7 +0.8**
baz=313
GKP Gorka Klasztor 77.63 329 *i*P **P 18 47 33.2 +0.4**
GKP *e*S **S 18 57 21.1 +0.6**
GKP Gorka Klasztor 77.63 329⇑*i*P **P 18 47 33.2 +0.4**
GKP *e*S **S 18 57 21.1 +0.6**
DECC Green Verdugo 77.65 56 P **P 18 47 34.0 +0.7**
baz=307
COP Copenhagen 77.67 333⇑*i*P **P 18 47 33.6 +0.6**
COP Copenhagen 77.67 333⇑P **P 18 47 33.6 +0.6**
PRAR RASCA 77.67 321⇓*i*P **P 18 47 33.7 +0.5**
A26A Wade Farm, Ken 77.74 37 P **P 18 47 34.2 +0.6**
baz=313
TLCR 77.76 318⇑*i*P **P 18 47 34.3 +0.6**
TLCR 77.76 318⇑P **P 18 47 34.3 +0.6**
PASC Pasadena Art C 77.79 56 *e*P **P 18 47 35.1 +0.9**
comp=Z,66nm,1.3s
TCUT Toone Canyon 77.82 47 *e*P **P 18 47 35.6 +1.2**
KWP Kalwaria Pacla 77.83 324 *i*P **P 18 47 35.2 +1.1**
KWP *e*S **S 18 57 23.9 +1.0**
KWP Kalwaria Pacla 77.83 324⇑*i*P **P 18 47 35.2 +1.1**
KWP *e*S **S 18 57 23.9 +1.0**
BW06 Boulder Array 77.84 45 P **P 18 47 34.9 +0.3**
baz=310
BW06 Boulder Array 77.84 45 *e*P **P 18 47 33.9 -0.7**
BW06 *e*P **P 18 47 34.8 +0.3**
BW06 LR LR
comp=Z,513nm,22.0s
PD31 Pinedale Array 77.85 45 *e*P **P 18 47 34.9 +0.4**
PDAR Pinedale Array 77.85 45 P **P 18 47 34.6 0.0**
comp=Z,16nm,0.8s,baz=270,slow=3.0,SNR=82
PDAR pP **pP 18 47 50.5 +1.5**
comp=Z,6.3nm,0.6s,baz=292,slow=4.3,SNR=6.5
PDAR PKKPbc **PKKPbc 19 06 34.6 +0.1**
comp=Z,0.5nm,0.7s,baz=161,slow=5.7,SNR=4.0
MWC Mount Wilson 77.85 56 *e*P **P 18 47 35.5 +0.9**
MWC pmax pmax
comp=Z,116nm,1.4s
MWC Mount Wilson 77.85 56 *e*P **P 18 47 35.5 +0.9**
comp=Z,116nm,1.4s
CTU Camp Tracy 77.88 48 *e*P **P 18 47 35.9 +1.1**
comp=Z,208nm,1.3s
PSUT Pine Spring 77.94 51 *e*P **P 18 47 36.7 +1.6**
comp=Z,96nm,1.3s
C25A Freed Ranch, W 77.95 38 P **P 18 47 35.6 +0.8**
baz=313
BUR08 Bucovina Ar. S 77.99 321 *e*P **P 18 47 35.9 +0.8**
FMP Fort Macarthur 78.00 57 P **P 18 47 35.7 +0.5**
baz=307
B26A Jensen Ranch, 78.00 37 P **P 18 47 35.7 +0.7**
baz=313
BURAR Bucovina Array 78.00 321⇑*i*P **P 18 47 36.0 +0.8**
BURAR Bucovina Array 78.00 321⇑P **P 18 47 36.0 +0.8**
SHOC Shoshone, Teco 78.01 54 P **P 18 47 36.0 +0.7**
baz=307
LLD Lille Linde 78.02 333 *i*P **P 18 47 35.6 +0.7**
LLD Lille Linde 78.02 333 *i*P **P 18 47 35.6 +0.7**
TESR Tescani 78.02 320⇑*i*P **P 18 47 35.6 +0.4**
GSC Goldstone, Bar 78.03 55 P **P 18 47 36.1 +0.5**
baz=307
GSC Goldstone, Bar 78.03 55 *e*P **P 18 47 36.2 +0.7**
comp=Z,74nm,1.3s
CIS Catalina Islan 78.10 57 P **P 18 47 36.2 +0.3**
baz=307
BFSC Mount Baldy Ra 78.10 56 P **P 18 47 36.3 +0.3**
baz=307
JLU Jordanelle 78.12 48 *e*P **P 18 47 37.2 +1.1**
comp=Z,92nm,1.3s
CFR Carcaliu 78.13 318⇓*i*P **P 18 47 35.8 +0.1**
CFR Carcaliu 78.13 318⇓P **P 18 47 35.8 +0.1**
RRX Edison Barstow 78.16 55 P **P 18 47 36.9 +0.7**
baz=307
MUD Monsted U'grnd 78.21 335⇑*i*P **P 18 47 36.3 +0.4**
comp=Z,68nm,1.2s
MUD Monsted U'grnd 78.21 335⇑*i*P **P 18 47 36.3 +0.4**
MUD pmax pmax
comp=Z,68nm,1.2s
RGN Rugen 78.21 332 *e*P **P 18 47 37.4 +1.4**
comp=Z,248nm,1.5s
SCI2 San Clemente I 78.26 58 P **P 18 47 37.1 +0.4**
baz=307
ODBI Odobesti 78.31 319⇑*i*P **P 18 47 39.0 +2.3**
SHPR Sheep Range 78.36 53 *e*P **P 18 47 38.6 +1.2**
comp=Z,99nm,1.2s
TIRR Tirgusor 78.45 318⇓*i*P **P 18 47 37.3 -0.2**
TIRR Tirgusor 78.45 318 *e*P **P 18 47 38.3 +0.8**
TIRR pmax pmax
comp=Z,131nm,1.7s
TIRR Tirgusor 78.45 318 *e*P **P 18 47 38.3 +0.8**
comp=Z,131nm,1.7s
PLOR Plostina 78.46 319⇓*i*P **P 18 47 38.0 +0.3**
PLOR Plostina 78.46 319⇓P **P 18 47 38.0 +0.3**
BR131 Keskin Array S 78.51 311 *e*P **P 18 47 38.6 +0.4**
BRTR Keskin Array B 78.51 311 P **P 18 47 38.5 +0.3**
comp=Z,19nm,1.1s,baz=99,slow=3.9,SNR=82
BRTR PP **PP 18 50 36.2 +0.5**
comp=Z,4.7nm,0.9s,baz=74,slow=6.7,SNR=4.4
TUQ Turquoise Moun 78.52 54 P **P 18 47 39.1 +0.8**
baz=308
KOLS Kolonicke sedl 78.52 324 *e*P **P 18 47 38.6 +0.7**
KOLS pmax pmax
comp=Z,65nm,1.4s
KOLS Kolonicke sedl 78.52 324 *e*P **P 18 47 38.6 +0.7**
KOLS *e*S **S 18 57 30.3 0.0**
KOLS *e*L L 19 25 40.6
HARR Harsova 78.56 318⇑*i*P **P 18 47 38.7 +0.6**
HARR Harsova 78.56 318⇑P **P 18 47 38.7 +0.6**
DRWC Darouich 78.56 307 *e*P pP 18 47 53.7 +0.8
TLB Topalu 78.57 318⇑*i*P **P 18 47 38.8 +0.6**
TLB Topalu 78.57 318⇑P **P 18 47 38.8 +0.6**
A28A Rude Farm, Bot 78.58 36 P **P 18 47 38.9 +0.6**
baz=314
BBRC Big Bear Solar 78.58 56 P **P 18 47 39.1 +0.3**
baz=307
GRER 78.61 319⇑*i*P **P 18 47 40.5 +2.1**
HEC Hector,Ludlow 78.62 55 P **P 18 47 39.5 +0.7**
baz=308
STHS Stebnicka Huta 78.67 325 *e*P **P 18 47 39.6 +0.9**
STHS *e*S **S 18 57 30.6 -1.2**
STHS pmax pmax
comp=Z,827nm,3.7s
STHS Stebnicka Huta 78.67 325 *e*P **P 18 47 39.6 +0.9**
STHS *e* 18 48 00.8
STHS *e*S **S 18 57 30.6 -1.2**
UZH Uzhgorod 78.73 324*d*i*P **P 18 47 38.6 -0.4**
UZH *e* 18 47 45.9
UZH *e*S **S 18 57 28.0 -4.4**
UZH MLR MLR
comp=N,3µm,15.0s
UZH MLR MLR
comp=E,2µm,15.0s
UZH MLR MLR
comp=Z,1µm,15.0s
OJC Ojcow 78.75 326 *i*P **P 18 47 40.0 +0.9**
OJC *e*S **S 18 57 33.2 +0.5**
OJC Ojcow 78.75 326⇑*i*P **P 18 47 40.0 +0.9**
OJC *e*S **S 18 57 33.2 +0.5**
OJC Ojcow 78.75 326 *e*P **P 18 47 39.7 +0.6**
comp=Z,176nm,1.2s
ARCR ARCALIA 78.80 321⇓*i*P **P 18 47 40.0 +0.6**
MURC Murrieta 78.80 56 P **P 18 47 40.1 +0.4**
baz=307
BMR Baia Mare 78.81 322⇓*i*P **P 18 47 39.7 +0.2**
BMR Baia Mare 78.81 322⇓P **P 18 47 39.7 +0.2**
D26A Manning 78.83 39 P **P 18 47 40.1 +0.4**
baz=313
B28A Dugan Ranch, T 78.85 37 P **P 18 47 40.1 +0.4**
baz=314
CCUT Cedar City 78.85 51 *e*P **P 18 47 40.5 +0.2**
comp=Z,76nm,1.1s
PGOR Pogoanele 78.92 319⇓*i*P **P 18 47 41.9 +1.8**
ANTO Ankara 78.93 312 *e*P **P 18 47 41.3 +0.9**
ANTO pmax pmax
comp=Z,42nm,0.9s
ANTO MLR MLR
comp=Z,1µm,19.0s
ANTO Ankara 78.93 312 P **P 18 47 41.2 +0.8**
SNR=24
ANTO Ankara 78.93 312 *e*P **P 18 47 41.3 +0.9**
comp=Z,42nm,0.9s
ANTO LR LR
comp=Z,1µm,19.0s
CRVS Cervenica-Dubn 78.93 324 *e*P **P 18 47 41.0 +0.9**
CRVS *e*S **S 18 57 30.9 -3.7**
CRVS Cervenica-Dubn 78.93 324 *e*P **P 18 47 41.0 +0.9**
CRVS *e*S **S 18 57 30.9 -3.7**
BR231 Keskin MP Arra 78.95 312 *e*P **P 18 47 39.2 -1.4**
BR231 *e*P **P 18 47 41.6 +1.0**
TRPA Tarpa 78.96 323⇑*e*P **P 18 47 41.4 +1.1**
MSU Marysvale 78.99 50 *e*P **P 18 47 42.4 +1.4**
MSU Marysvale 78.99 50 *e*P **P 18 47 42.4 +1.4**
ISR Istrita 79.01 319⇓*i*P **P 18 47 41.6 +0.9**
ISR Istrita 79.01 319⇓P **P 18 47 41.6 +0.9**
DOPR Dopca 79.03 320⇓*i*P **P 18 47 42.0 +1.2**
A29A Manning Farm, 79.05 36 P **P 18 47 41.3 +0.5**
baz=315
MLR Muntele Rosu 79.07 320⇓*i*P **P 18 47 41.2 +0.1**
MLR Muntele Rosu 79.07 320 *e*P **P 18 47 41.1 0.0**
MLR pmax pmax
comp=Z,129nm,1.6s
MLR Muntele Rosu 79.07 320 *e*P **P 18 47 41.1 0.0**
comp=Z,129nm,1.6s
TMUT Trail Mountain 79.08 49 *e*P **P 18 47 42.5 +1.0**
comp=Z,76nm,1.2s
GMRC Granite Mounta 79.09 55 P **P 18 47 42.0 +0.6**
baz=308
PSN Presentsi 79.09 317 P **P 18 47 42.0 +0.9**
NIE Niedzica 79.10 325 *i*P **P 18 47 42.3 +1.2**
NIE *e*S **S 18 57 38.2 +1.7**
NIE Niedzica 79.10 325⇑*i*P **P 18 47 42.3 +1.2**
NIE *e*S **S 18 57 38.2 +1.7**
P17A Butcher Ranch, 79.25 48 *e*P **P 18 47 43.5 +1.2**
comp=Z,228nm,1.3s
LCMT Little Creek M 79.26 52 *e*P **P 18 47 43.6 +1.2**
comp=Z,120nm,1.2s
LDFC Landfair 79.27 54 *e*P **P 18 47 43.5 +1.1**
comp=Z,158nm,1.3s
PFO Pinyon Flats O 79.28 56 P **P 18 47 43.0 +0.6**
baz=308
PFO Pinyon Flats O 79.28 56 *e*P P 18 47 36.0 -6.5
PFO pmax pmax
comp=Z,137nm,1.4s
PFO MLR MLR
comp=Z,1µm,22.0s
PFO Pinyon Flats O 79.28 56 *e*P P 18 47 36.0 -6.4
comp=Z,137nm,1.4s
PFO LR LR
comp=Z,1µm,22.0s
MTPU Mount Pierson 79.28 50 *e*P **P 18 47 44.3 +1.6**
comp=Z,109nm,1.2s
TPFO Pinon Flats 79.28 56 P **P 18 47 43.1 +0.6**
baz=308
109C Camp Elliot, M 79.28 57 P **P 18 47 43.0 +0.7**
baz=307
SECR 79.31 319⇓*i*P **P 18 47 42.8 +0.5**
B29A Wagenman Farm, 79.32 36 P **P 18 47 42.8 +0.5**
baz=315
BELC Belle Mtn. Jos 79.34 55 P **P 18 47 43.1 +0.2**
baz=308
CJR Cluj-Napoca 79.43 322⇓*i*P **P 18 47 44.4 +1.5**
CJR Cluj-Napoca 79.43 322⇓P **P 18 47 44.4 +1.5**
A30A Hoffart Farm, 79.47 35 P **P 18 47 43.5 +0.4**
baz=316
KNB Kanab 79.52 51 *e*P **P 18 47 45.3 +1.5**
KNB pmax pmax
comp=Z,212nm,1.3s
KNB Kanab 79.52 51 *e*P **P 18 47 45.3 +1.5**
comp=Z,212nm,1.3s
VOIR 79.57 320⇑*i*P **P 18 47 44.5 +0.7**
VOIR 79.57 320⇑P **P 18 47 44.5 +0.7**
PKCU Pink Cliffs 79.57 51 *e*P **P 18 47 46.5 +2.2**
comp=Z,72nm,1.2s
ULM Lac du Bonnet 79.61 33 P **P 18 47 43.2 -0.5**
comp=Z,50nm,1.0s,baz=305,slow=8.0,SNR=36
ULM LR LR 19 25 18.2
comp=Z,148nm,20.0s,baz=328,slow=37
SRU San Rafael Swe 79.61 49 *e*P **P 18 47 45.1 +0.9**
SRU pmax pmax
comp=Z,231nm,1.4s
SRU San Rafael Swe 79.61 49 *e*P **P 18 47 45.1 +0.9**
comp=Z,231nm,1.4s
K22A Casper 79.62 44 P **P 18 47 44.6 +0.4**
baz=312
K22A Casper 79.62 44 *e*P **P 18 47 44.6 +0.4**
comp=Z,311nm,1.9s
MDND Maddock 79.64 37 P **P 18 47 44.6 +0.6**
baz=315
MDND Maddock 79.64 37 *e*P **P 18 47 45.0 +1.0**
comp=Z,224nm,1.1s
BTU Barney Top 79.65 50 *e*P **P 18 47 46.5 +1.8**
ROOS tl_alroos 79.66 305 *e*P **P 18 47 44.3 -0.2**
LANS Liptovska Anna 79.67 325 *e*P **P 18 47 45.7 +1.5**
LANS Liptovska Anna 79.67 325 *e*P **P 18 47 45.7 +1.5**
KECS Kecovo 79.68 324 *e*P **P 18 47 45.2 +1.0**
KECS pmax pmax
comp=Z,32nm,1.6s
KECS Kecovo 79.68 324 *e*P **P 18 47 45.2 +1.0**
KECS *e*PP **PP 18 50 43.8 -1.1**
BAR Barrett 79.70 57 *e*P **P 18 47 45.2 +0.6**
comp=Z,75nm,1.1s
MMU Miners Mountai 79.72 50 *e*P **P 18 47 46.3 +1.3**
MONP2 Monument Peak 79.74 57 P **P 18 47 45.5 +0.4**
baz=308
OKC Ostrava-Krasne 79.76 326⇑*e*P **P 18 47 45.4 +0.8**
OKC *e*pP **pP 18 47 59.9 +0.8**
OKC *e*S **S 18 57 43.4 0.0**
OKC AMS AMS 19 24 40.0
comp=Z,700nm,18.9s
OKC Ostrava-Krasne 79.76 326 *e*P **P 18 47 45.4 +0.8**
OKC *e* 18 47 59.9
OKC *e*S **S 18 57 43.4 0.0**
OKC MLR MLR
comp=Z,700nm,18.9s
NEE2 Needles Airpor 79.78 54 P **P 18 47 45.6 +0.6**
baz=308
B30A Myrvik Farm, E 79.81 36 P **P 18 47 45.4 +0.4**
baz=316
IRM Iron Mountain 79.81 55 P **P 18 47 46.0 +0.8**
baz=308
DRGR 79.81 322⇓*i*P **P 18 47 43.6 -1.5**
DRGR 79.81 322⇓P **P 18 47 43.6 -1.5**
KSP Ksiaz 79.82 328 *i*P **P 18 47 45.9 +1.0**
KSP *e*S **S 18 57 45.5 +1.5**
KSP Ksiaz 79.82 328⇑*i*P **P 18 47 45.9 +1.0**
KSP *e*S **S 18 57 45.5 +1.5**
ARR Arges 79.83 320⇑*i*P **P 18 47 46.8 +1.6**
PRD Provadia 79.84 317 P **P 18 47 46.0 +0.9**
H25A Fruitdale 79.88 41 P **P 18 47 45.7 +0.2**
baz=313
BC3 Big Chuckawall 79.91 55 P **P 18 47 46.5 +0.6**
baz=308
A31A Linda, St. Vin 79.98 35 P **P 18 47 45.6 -0.2**
baz=317
RSSD Black Hills 79.99 42 P **P 18 47 46.4 +0.1**
baz=313
RSSD Black Hills 79.99 42 *e*P **P 18 47 46.3 +0.1**
RSSD pmax pmax
comp=Z,100nm,1.4s
RSSD Black Hills 79.99 42 *e*P **P 18 47 46.3 +0.1**
comp=Z,100nm,1.4s
W13A Hualapai Mount 80.04 53 *e*P **P 18 47 47.4 +0.7**
MORC Moravsky Berou 80.07 327⇑*i*P **P 18 47 47.1 +0.7**
MORC Moravsky Berou 80.07 327⇑P **P 18 47 47.1 +0.7**
MORC Moravsky Berou 80.07 327 *e*P **P 18 47 47.1 +0.7**
comp=Z,577nm,1.4s
IKP In-Ko-Pah, Jac 80.09 57 P **P 18 47 47.5 +0.7**
baz=308
SWSC Sam W. Stewart 80.12 56 P **P 18 47 47.4 +0.5**
baz=308
B31A Greenbush Farm 80.14 35 P **P 18 47 46.9 +0.2**
baz=316
DPC Dobruska-Polom 80.18 328⇑*i*P **P 18 47 48.0 +1.1**
DPC *e*S **S 18 57 48.3 +0.4**
DPC AMS AMS 19 22 50.0
comp=Z,600nm,22.9s
DPC Dobruska-Polom 80.18 328⇑*i*P **P 18 47 48.0 +1.1**
DPC *e*S **S 18 57 48.3 +0.4**
DPC MLR MLR
comp=Z,600nm,22.9s
KRLC Kraliky 80.18 327⇑*i*P **P 18 47 47.6 +0.6**
KRLC Kraliky 80.18 327⇑*i*P **P 18 47 47.6 +0.6**
UPC Upice 80.19 328⇑*i*P **P 18 47 47.9 +1.0**
UPC *e*S **S 18 57 48.9 +1.0**
UPC AMS AMS 19 22 30.0
comp=Z,700nm,20.7s
UPC Upice 80.19 328⇑*i*P **P 18 47 47.9 +1.0**
UPC *e*S **S 18 57 48.9 +1.0**
UPC MLR MLR
comp=Z,700nm,20.7s
LOT Lotru 80.22 321⇓*i*P **P 18 47 47.7 +0.4**
U15A North Rim 80.22 52 *e*P **P 18 47 49.1 +1.3**
comp=Z,116nm,1.1s
C30A Mose, Pekin 80.27 36 P **P 18 47 47.6 +0.1**
baz=316
MARH Ras Al Marh 80.28 305 *e*P **P 18 47 48.9 +0.8**
O20A White River Ci 80.30 47 P **P 18 47 48.5 +0.5**
baz=311
O20A White River Ci 80.30 47 *e*P **P 18 47 48.5 +0.5**
comp=Z,100nm,1.2s
BIGH Upper Bighouse 80.31 342 *e*P **P 18 47 47.8 +0.4**
BIGH AMB AMB 18 47 50.3
comp=Z,195nm,2.0s
BIGH AMS AMS 19 34 17.2
comp=Z,6µm,10.5s
A32A Rocking H Ranc 80.31 34 P **P 18 47 47.4 -0.2**
baz=317
ISK Istanbul-Kandi 80.33 315 P **P 18 47 47.8 0.0**
ISK Istanbul-Kandi 80.33 315 P **P 18 47 47.8 0.0**
ISK Istanbul-Kandi 80.33 315 P **P 18 47 47.8 0.0**
PSZ Piszkesteto 80.36 324⇓*i*P **P 18 47 48.4 +0.4**
PSZ Piszkesteto 80.36 324 *e*P **P 18 47 48.9 +0.9**
PSZ pmax pmax
comp=Z,214nm,1.4s
PSZ MLR MLR
comp=Z,960nm,20.0s
PSZ Piszkesteto 80.36 324 *e*P **P 18 47 48.9 +0.9**
comp=Z,214nm,1.4s
PSZ LR LR
comp=Z,960nm,20.0s
PSZ Piszkesteto 80.36 324⇑*e*P **P 18 47 48.9 +0.9**
ZALF Zalf 80.40 304 *e*P **P 18 47 49.3 +0.9**
VYHS Vyhne 80.43 325 *e*P **P 18 47 49.3 +1.0**
VYHS pmax pmax
comp=Z,73nm,1.5s
VYHS Vyhne 80.43 325 *e*P **P 18 47 49.2 +1.0**
VYHS *e*PP **PP 18 50 46.0 -5.2**
VYHS *e*S **S 18 57 50.3 -0.3**
VYHS *e*L L 19 29 30.4
Y12C Blythe 80.47 55 P **P 18 47 49.5 +0.8**
baz=308
Y12C Blythe 80.47 55 *e*P **P 18 47 49.7 +1.0**
comp=Z,106nm,1.1s
RAR Rarotonga 80.51 126 P **P 18 47 50.1 +1.2**
comp=Z,9.4nm,0.5s,baz=101,slow=2.8,SNR=3.7
RAR LR LR 19 14 38.6
comp=Z,999nm,22.0s,baz=336,slow=29
C31A Landman Farms, 80.56 36 P **P 18 47 49.1 +0.1**
baz=316
SZH Strazhica 80.58 318 P **P 18 47 49.0 -0.2**
B32A Ashes, Strandq 80.67 35 P **P 18 47 49.4 -0.1**
baz=317
SIRR Siria 80.70 322⇑*i*P **P 18 47 50.5 +0.8**
GLA Glamis 80.70 56 P **P 18 47 50.8 +0.8**
baz=308
GLA Glamis 80.70 56 *e*P **P 18 47 50.9 +0.8**
GLA pmax pmax
comp=Z,120nm,1.2s
GLA Glamis 80.70 56 *e*P **P 18 47 50.9 +0.9**
comp=Z,120nm,1.2s
TOTH TOTAH 80.72 305 *e*P **P 18 47 50.9 +0.7**
BRG Berggiesshubel 80.78 329 *i*P **P 18 47 50.7 +0.7**
comp=Z,69nm,1.2s
BRG *i* sP **sP 18 48 10.7 +0.5**

comp=Z,27nm,1.0s
BRG ePP PP 18 50 45.4 -8.5
comp=Z,9.2nm,1.1s
BRG S **S** **18 57 54.0 0.0**
BRG SS **SS** **19 03 08.0 +1.1**
comp=N,2µm,12.8s comp=E,3µm,12.0s comp=Z,4µm,16.5s
PVCC Panska Ves 80.78 329⇑ eP **P** **18 47 51.1 +1.0**
PVCC eS **S** **18 57 51.7 -2.4**
PVCC Panska Ves 80.78 329 eP **P** **18 47 51.1 +1.0**
PVCC eS **S** **18 57 51.7 -2.4**
A33A Warroad 80.79 34 P **P** **18 47 49.9 -0.3**
baz=318
CLL Collm 80.83 330 *i*P **P** **18 47 50.5 +0.2**
comp=Z,160nm,1.4s
CLL *e* 18 48 12.0
CLL *e* 18 48 38.0
CLL ePP **PP** **18 50 49.0 -5.3**
CLL *e* 18 51 10.0
CLL eS **S** **18 57 55.0 +0.5**
CLL eSS **SS** **19 03 06.0 -1.6**
CLL eSSS SSS 19 06 42.0
CLL eSSSS 19 10 00.0
CLL Collm 80.83 330⇑ *i*P **P** **18 47 50.5 +0.2**
CLL eS **S** **18 57 55.0 +0.5**
CLL pmax pmax
comp=Z,160nm,1.4s
CLL Collm 80.83 330 eP **P** **18 47 50.1 -0.1**
comp=Z,93nm,1.1s
VRAC Vranov 80.84 327⇑ *i*P **P** **18 47 51.5 +1.1**
VRAC Vranov 80.84 327⇑ P **P** **18 47 51.5 +1.1**
SALA Sala 80.93 304 eP **P** **18 47 51.4 -0.1**
F29A Eureka 80.95 38 P **P** **18 47 51.5 +0.4**
baz=315
PV10 Paradox Valley 80.97 48 eP **P** **18 47 52.9 +1.2**
PV04 Paradox Valley 81.04 48 eP **P** **18 47 52.8 +0.9**
AGMN Agassiz Nation 81.05 34 P **P** **18 47 51.1 -0.4**
baz=318
AGMN Agassiz Nation 81.05 34 eP **P** **18 47 51.2 -0.4**
comp=Z,89nm,1.2s
AGMN LR LR
comp=Z,757nm,22.0s
SMOL Smolenice 81.06 326 eP **P** **18 47 52.9 +1.3**
SMOL Smolenice 81.06 326 eP **P** **18 47 52.9 +1.3**
BUD Budapest 81.08 324⇑ eP **P** **18 47 52.7 +1.0**
C32A Crookston 81.09 35 P **P** **18 47 51.6 -0.2**
baz=317
D31A Mcclaflin, Tow 81.10 36 P **P** **18 47 52.0 +0.1**
baz=316
EDRB Edirne 81.10 316 P **P** **18 47 52.5 +0.5**
EDRB Edirne 81.10 316 P **P** **18 47 52.5 +0.5**
N23A Red Feather La 81.11 45 P **P** **18 47 53.6 +1.2**
baz=312
N23A Red Feather La 81.11 45 eP **P** **18 47 53.4 +1.0**
comp=Z,169nm,1.3s
PHWY Pilot Hill 81.11 44 eP **P** **18 47 52.8 +0.4**
comp=Z,126nm,1.5s
PV05 Paradox Valley 81.13 49 eP **P** **18 47 53.6 +1.1**
GOPC GO Pecny, Ondr 81.16 328⇑ *i*P **P** **18 47 53.0 +0.9**
GOPC epP **pP** **18 48 07.6 +0.9**
GOPC AMS AMS 19 23 20.0
comp=Z,600nm,24.6s
GOPC GO Pecny, Ondr 81.16 328⇑ *i*P **P** **18 47 53.0 +0.9**
GOPC *e* 18 48 07.6
GOPC MLR MLR
comp=Z,600nm,24.6s
BZS Buzias 81.18 322⇓ *i*P **P** **18 47 51.3 -1.0**
BZS Buzias 81.18 322⇓ P **P** **18 47 51.3 -1.0**
B33A Robert and Kas 81.19 34 P **P** **18 47 51.9 -0.5**
baz=318
PRU Pruhonice 81.20 328⇑ *i*P **P** **18 47 53.2 +0.9**
PRU ePCP **PcP** **18 48 01.4 +2.9**
PRU eS **S** **18 57 59.7 +1.2**
PRU eXS **sS** **18 58 23.5 +0.6**
PRU AMS AMS 19 24 30.0
comp=Z,500nm,18.2s
PRU Pruhonice 81.20 328⇑ *i*P **P** **18 47 53.2 +0.9**
PRU *e* 18 48 01.4
PRU eS **S** **18 57 59.7 +1.2**
PRU MLR MLR
comp=Z,500nm,18.2s
TREC Trest 81.33 327⇑ eP **P** **18 47 53.8 +0.7**
TREC eS **S** **18 58 00.7 +0.8**
TREC Trest 81.33 327 eP **P** **18 47 53.8 +0.7**
TREC eS **S** **18 58 00.7 +0.8**
Y14A Wickenburg 81.33 54 eP **P** **18 47 54.1 +0.7**
comp=Z,356nm,1.1s
F30A Leola 81.35 38 P **P** **18 47 53.4 +0.2**
baz=316
G29A Hoven 81.36 39 P **P** **18 47 53.3 0.0**
baz=315
D32A Dogwood Acres, 81.37 36 P **P** **18 47 52.9 -0.4**
baz=317
WUAZ Wupatki 81.38 52 P **P** **18 47 54.9 +1.2**
baz=310
WUAZ Wupatki 81.38 52 eP **P** **18 47 55.0 +1.2**
comp=Z,137nm,1.1s
WUAZ LR LR
comp=Z,336nm,19.0s
E31A Nome 81.38 37 P **P** **18 47 53.5 +0.1**
baz=316
PV01 Paradox Valley 81.41 48 eP **P** **18 47 54.8 +0.8**
B34A Aery, Baudette 81.45 34 P **P** **18 47 53.2 -0.5**
baz=318
TCHB Talchebab 81.46 305 eP **P** **18 47 54.5 +0.5**
C33A Trail 81.49 35 P **P** **18 47 53.4 -0.5**
baz=318
KAC Achnashellach 81.53 342⇑ eP **P** **18 47 54.6 +0.6**
113A Mohawk Valley, 81.57 55 eP **P** **18 47 55.2 +0.6**
comp=Z,61nm,1.1s
MMAI Mount Meron Ar 81.61 305 LR LR 19 27 33.8
comp=Z,996nm,21.4s,baz=40,slow=38
SMCO Snowmass 81.66 47 eP **P** **18 47 56.5 +1.0**
comp=Z,97nm,1.3s
MPEP Malo Peshtene 81.69 319 P **P** **18 47 56.0 +1.0**
F31A Hecla 81.71 37 P **P** **18 47 55.3 +0.1**
baz=316
CSS Mathiatis 81.71 308 P **P** **18 47 55.6 +0.2**
CSS Mathiatis 81.71 308 eP **P** **18 47 55.5 +0.2**
comp=Z,8.6nm,1.0s
CSS LR LR
comp=Z,219nm,21.0s
MDVR Moldovita 81.72 321⇓ *i*P **P** **18 47 55.5 +0.2**
E32A Braaten, Kindr 81.74 36 P **P** **18 47 55.0 -0.3**
baz=317
KPL Plockton 81.76 342⇑ eP **P** **18 47 56.0 +0.9**
KPL AMB AMB 18 47 56.8
comp=Z,123nm,1.2s
KPL AMS AMS 19 34 22.9
comp=Z,3µm,9.2s
KSB Sheil Bridge 81.82 342⇑ eP **P** **18 47 55.8 +0.3**
NKC Novy Kostel 81.88 329⇑ *i*P **P** **18 47 56.4 +0.4**
NKC eS **S** **18 58 03.4 -2.1**
NKC eXS **sS** **18 58 28.8 -1.2**
NKC Novy Kostel 81.88 329⇑ *i*P **P** **18 47 56.4 +0.4**
NKC eS **S** **18 58 03.4 -2.1**
D33A AnnSam, Waubun 81.91 35 P **P** **18 47 55.8 -0.4**
baz=318
B35A Bob, Littlefor 81.96 33 P **P** **18 47 56.0 -0.3**
baz=319
C34A RKJ Ranch, Bem 81.96 34 P **P** **18 47 55.9 -0.6**
baz=318
ISCO Idaho Springs 82.03 46 P **P** **18 47 58.2 +0.9**
baz=312
ISCO Idaho Springs 82.03 46 eP **P** **18 47 58.2 +0.9**
ISCO pmax pmax
comp=Z,33nm,1.1s
ISCO MLR MLR
comp=Z,362nm,22.0s
ISCO Idaho Springs 82.03 46 eP **P** **18 47 58.2 +0.9**
comp=Z,33nm,1.1s
ISCO LR LR
comp=Z,362nm,22.0s
X16A Lo Mia Camp, P 82.03 53 eP **P** **18 47 58.3 +1.0**
PLD Plovdiv 82.04 318 P **P** **18 47 56.5 -0.4**
MVCO Mesa Verde 82.06 49 P **P** **18 47 58.3 +0.9**
baz=311
MVCO Mesa Verde 82.06 49 eP **P** **18 47 58.3 +0.9**
comp=Z,142nm,1.3s
MVCO LR LR
comp=Z,329nm,20.0s
URZ Urewera 82.11 152 P **P** **18 47 55.5 -1.5**
comp=Z,13nm,0.9s,baz=0.0,slow=3.0,SNR=3.5
URZ LR LR 19 20 05.9
comp=Z,750nm,21.3s,baz=358,slow=32
ALN Alexandroupoli 82.13 316 P **P** **18 47 57.6 +0.2**
ALN Alexandroupoli 82.13 316 P **P** **18 47 57.6 +0.2**
ALN Alexandroupoli 82.13 316 P **P** **18 47 57.6 +0.2**
ENEZ Enez 82.18 316 P **P** **18 47 58.1 +0.4**
G31A Conde 82.19 38 P **P** **18 47 57.8 +0.2**
baz=316
CONA Conrad Observa 82.19 326 *i*P **P** **18 47 58.7 +1.0**
comp=Z,120nm,1.4s,SNR=66
F32A Veblen 82.24 37 P **P** **18 47 57.6 -0.3**
baz=317
KULA Kula-Manisa 82.25 313 P **P** **18 47 58.4 +0.2**
KULA Kula-Manisa 82.25 313 P **P** **18 47 58.4 +0.2**
KHC Kasperske Hory 82.26 328⇑ *i*P **P** **18 47 58.6 +0.6**
KHC ePCP **PcP** **18 48 05.3 +2.1**
KHC eS **S** **18 58 08.8 -0.8**
KHC eXS **sS** **18 58 32.4 -1.6**
KHC AMS AMS 19 23 40.0
comp=Z,700nm,22.5s
KHC Kasperske Hory 82.26 328⇑ *i*P **P** **18 47 58.6 +0.6**
KHC *e* 18 48 05.3
KHC eS **S** **18 58 08.8 -0.8**
KHC MLR MLR
comp=Z,700nm,22.5s
KHC Kasperske Hory 82.26 328 eP **P** **18 47 58.4 +0.4**
comp=Z,59nm,1.5s
E33A Westby DABS, E 82.31 36 P **P** **18 47 58.4 +0.1**
baz=318
C35A Jirik Farms, M 82.34 34 P **P** **18 47 57.9 -0.5**
baz=319
SUSD Miller 82.38 39 P **P** **18 47 58.7 0.0**
baz=316
EDI Edinburgh 82.40 341 AMS AMS 19 32 23.3
comp=Z,3µm,11.2s
GEC2 GERESS Array S 82.43 328 eP **P** **18 47 59.3 +0.3**
GEC2 pmax pmax
comp=Z,87nm,1.5s
GEC2 GERESS Array S 82.43 328 eP **P** **18 47 59.3 +0.3**
comp=Z,87nm,1.5s
GERES GERESS Array B 82.43 328 P **P** **18 47 58.7 -0.2**
comp=Z,9.5nm,0.8s,baz=42,slow=4.2,SNR=90
GERES PKKPbc **PKKPbc** **19 06 24.1 -0.3**
comp=Z,1.3nm,0.7s,baz=225,slow=1.7,SNR=11
GERES LR LR 19 26 51.3
comp=Z,622nm,20.3s,baz=30,slow=37
GEA0 GERESS Array S 82.44 328 eP **P** **18 47 58.3 -0.7**
EAB Aberfoyle 82.46 341⇑ eP **P** **18 47 59.2 +0.4**
VTS Vitosha 82.50 319 P **P** **18 48 00.2 +0.7**
VTS Vitosha 82.50 319⇑ *i*P **P** **18 48 00.2 +0.7**
VTS Vitosha 82.50 319 eP **P** **18 48 00.3 +0.7**
VTS pmax pmax
comp=Z,148nm,1.8s
VTS Vitosha 82.50 319 P **P** **18 47 59.5 0.0**
VTS Vitosha 82.50 319 eP **P** **18 48 00.2 +0.7**
comp=Z,148nm,1.8s
G32A Webster 82.51 37 P **P** **18 47 59.5 +0.1**
baz=317
I30A Oacoma 82.52 39 P **P** **18 47 59.6 +0.2**
baz=316
H31A Wolsey 82.59 38 P **P** **18 47 59.6 -0.2**
baz=316
W18A Petrified Fore 82.66 51 P **P** **18 48 01.5 +1.0**
baz=311
W18A Petrified Fore 82.66 51 eP **P** **18 48 01.2 +0.7**
comp=Z,155nm,1.8s
F33A 5 Mile Ranch, 82.66 36 P **P** **18 48 00.3 +0.2**
baz=318
E34A Wadena 82.69 35 P **P** **18 47 60.0 -0.3**
baz=318
GADA Gvkgeada 82.70 316 P **P** **18 48 00.4 0.0**
GADA Gvkgeada 82.70 316 P **P** **18 48 00.4 0.0**
S22A 4UR Ranch, Cre 82.70 48 P **P** **18 48 02.2 +1.4**
baz=312
EZN Ezine 82.71 315 P **P** **18 48 00.6 +0.2**
EZN Ezine 82.71 315 P **P** **18 48 00.6 +0.2**
EZN Ezine 82.71 315 P **P** **18 48 00.6 +0.2**
214A Organ Pipe Nat 82.71 55 P **P** **18 48 01.5 +0.8**
baz=310
214A Organ Pipe Nat 82.71 55 eP **P** **18 48 00.8 +0.2**
comp=Z,302nm,1.3s
SMTH Samothraki Isl 82.71 316 P **P** **18 48 00.0 -0.5**
SMTH Samothraki Isl 82.71 316 P **P** **18 48 00.0 -0.5**
D35A Remer 82.77 34 P **P** **18 48 00.0 -0.6**
baz=319
GRFO Grafenberg 82.80 330 eP **P** **18 48 01.7 +0.9**
GRFO pmax pmax
comp=Z,264nm,1.5s
GRFO Grafenberg 82.80 330 eP **P** **18 48 01.7 +0.9**
comp=Z,264nm,1.5s
C36A Pine Crest Far 82.80 33 P **P** **18 48 00.6 -0.2**
baz=320
PGBU Glenifferbraes 82.83 341 eP **P** **18 48 01.4 +0.6**
PGBU AMB AMB 18 48 05.2
comp=Z,132nm,2.3s
PGBU AMS AMS 19 33 18.8
comp=Z,3µm,7.1s
ARSA Arzberg 82.85 326 *i*P **P** **18 48 01.7 +0.6**
comp=Z,57nm,1.3s,SNR=21
Q24A Divide 82.86 46 P **P** **18 48 02.3 +0.6**
baz=313
BEHE Becsehely 82.87 325⇑ eP **P** **18 48 01.6 +0.4**
I31A Royce, Wessing 82.89 39 P **P** **18 48 01.1 -0.2**
baz=316
X18A Snowflake 82.91 52 eP **P** **18 48 02.8 +1.0**
comp=Z,67nm,1.0s
J30A Dallas 82.91 40 P **P** **18 48 01.5 0.0**
baz=316
KAVA Kavala 82.91 317 P **P** **18 48 01.8 +0.4**
KAVA Kavala 82.91 317 P **P** **18 48 01.8 +0.4**
MMB Musomiste 82.92 318 P **P** **18 48 02.5 +0.9**
ESK Eskdalemuir 82.94 340 eP **P** **18 48 01.8 +0.5**
ESK AMB AMB 18 48 03.1
comp=Z,50nm,1.2s
ESK AMS AMS 19 32 00.0
comp=Z,4µm,10.4s
ESK Eskdalemuir 82.94 340 eP **P** **18 48 02.3 +1.0**
ESK pmax pmax
comp=Z,44nm,1.1s
ESK MLR MLR
comp=Z,1µm,21.0s
ESK Eskdalemuir 82.94 340 eP **P** **18 48 02.3 +1.0**
comp=Z,44nm,1.1s
ESK LR LR
comp=Z,1µm,21.0s
MOA Moln 82.95 327 *i*P **P** **18 48 02.2 +0.6**
comp=Z,85nm,1.6s,SNR=37
E35A Pequot Lakes 83.01 35 P **P** **18 48 01.4 -0.5**
baz=319
NVR Nevrokopi 83.02 318 P **P** **18 48 02.4 +0.3**
NVR Nevrokopi 83.02 318 P **P** **18 48 02.4 +0.3**
ECK Cauldkaine Hil 83.04 340⇑ eP **P** **18 48 01.9 +0.1**
G33A Ortonville 83.06 37 P **P** **18 48 02.3 +0.1**
baz=317
DIVS Divibare 83.07 322 P **P** **18 48 02.4 0.0**
KKB Krupnik 83.07 318 P **P** **18 48 03.0 +0.7**
H32A Carlson Farm, 83.09 38 P **P** **18 48 02.0 -0.4**
baz=317
D36A Goodland 83.10 34 P **P** **18 48 01.8 -0.5**
baz=319
C37A Embarrass 83.11 33 P **P** **18 48 02.1 -0.3**
baz=320
PRK Paraskevi 83.13 315 P **P** **18 48 02.7 +0.1**
PRK Paraskevi 83.13 315 P **P** **18 48 02.7 +0.1**
PRK Paraskevi 83.13 315 P **P** **18 48 02.7 +0.1**
F34A Alexandria 83.18 36 P **P** **18 48 02.6 -0.2**
baz=318
EYMN Ely 83.24 32 P **P** **18 48 02.9 -0.2**
baz=320
EYMN Ely 83.24 32 PFAKE 18 48 10.0 +6.9
EYMN LR LR
comp=Z,414nm,21.0s
OGNE Ogallala 83.24 43 P **P** **18 48 03.5 +0.2**
baz=314
OGNE Ogallala 83.24 43 eP **P** **18 48 03.6 +0.2**
comp=Z,237nm,1.4s
OGNE LR LR
comp=Z,284nm,22.0s
H33A Prehn Over Nor 83.30 37 P **P** **18 48 03.6 +0.2**
baz=317
LIA Limnos Island 83.30 316 P **P** **18 48 03.5 0.0**
LIA Limnos Island 83.30 316 P **P** **18 48 03.5 0.0**
K30A Basset 83.31 40 P **P** **18 48 03.9 +0.4**
baz=316
J31A Geddes 83.31 39 P **P** **18 48 03.5 0.0**
baz=316
SRS Serrai 83.33 318 P **P** **18 48 03.6 0.0**
SRS Serrai 83.33 318 P **P** **18 48 03.6 0.0**
YER Yerkesik 83.39 312 P **P** **18 48 05.0 +0.9**
YER Yerkesik 83.39 312 P **P** **18 48 05.0 +0.9**
YER Yerkesik 83.39 312 P **P** **18 48 05.0 +0.9**
SIGR SIGRI 83.39 315 P **P** **18 48 04.1 +0.1**
SIGR SIGRI 83.39 315 P **P** **18 48 04.1 +0.1**
G34A Benson 83.41 36 P **P** **18 48 04.3 +0.3**
baz=318
I32A Karley and Nic 83.42 38 P **P** **18 48 03.6 -0.5**
baz=317
D37A Cotton 83.44 33 P **P** **18 48 03.4 -0.7**
baz=320
F35A Swanville 83.45 35 P **P** **18 48 03.8 -0.4**
baz=319
BBO1 Bothel 83.46 340⇑ eP **P** **18 48 04.6 +0.6**
SDCO Great Sand Dun 83.48 47 P **P** **18 48 05.8 +0.9**
baz=313
SDCO Great Sand Dun 83.48 47 eP **P** **18 48 05.8 +0.9**
comp=Z,88nm,1.3s
SDCO LR LR
comp=Z,292nm,21.0s
PERS Pernice 83.50 326 eP **P** **18 48 04.8 +0.3**
SOKA Soboth 83.50 326 *i*P **P** **18 48 05.0 +0.4**
comp=Z,183nm,1.4s,SNR=107
C38A Sawbill Land. 83.51 32 P **P** **18 48 04.1 -0.4**
baz=321
KESW Keswick, Cumbr 83.55 340 eP **P** **18 48 05.1 +0.6**
KESW AMB AMB 18 48 06.5
comp=Z,68nm,1.1s
KESW AMS AMS 19 31 32.4
comp=Z,4µm,11.2s
E36A McGregor 83.56 34 P **P** **18 48 04.4 -0.3**
baz=319
OUR Ouranopolis 83.66 317 P **P** **18 48 05.3 0.0**
OUR Ouranopolis 83.66 317 P **P** **18 48 05.3 0.0**
OUR Ouranopolis 83.66 317 P **P** **18 48 05.3 0.0**
SOH Sokhos 83.66 317 P **P** **18 48 05.2 -0.2**
SOH Sokhos 83.66 317 P **P** **18 48 05.2 -0.2**
SOH Sokhos 83.66 317 P **P** **18 48 05.2 -0.2**
KNT Kendrikon 83.67 318 P **P** **18 48 05.7 +0.3**
KNT Kendrikon 83.67 318 P **P** **18 48 05.7 +0.3**
KNT Kendrikon 83.67 318 P **P** **18 48 05.7 +0.3**
J32A Parkston 83.70 39 P **P** **18 48 05.3 -0.3**
baz=317
VAY Valandovo 83.73 318 P **P** **18 48 06.0 +0.3**
VAY Valandovo 83.73 318⇑ *i*P **P** **18 48 06.4 +0.8**
VAY Valandovo 83.73 318 P **P** **18 48 06.0 +0.3**
VAY Valandovo 83.73 318 P **P** **18 48 06.0 +0.3**
I33A Coleman 83.73 38 P **P** **18 48 05.8 +0.1**
baz=317
GAL1 Galloway 83.74 341 eP **P** **18 48 05.8 +0.4**
GAL1 AMB AMB 18 48 06.5
comp=Z,29nm,1.2s
GAL1 AMS AMS 19 32 23.1
comp=Z,3µm,9.9s
H34A Spellman Lake, 83.77 37 P **P** **18 48 06.0 +0.2**
baz=318
K31A O'Neill 83.79 40 P **P** **18 48 06.0 0.0**
baz=316
TUC Tucson 83.81 54 P **P** **18 48 07.1 +0.7**
baz=310
TUC Tucson 83.81 54 eP **P** **18 48 07.1 +0.7**
TUC pmax pmax
comp=Z,65nm,1.1s
TUC MLR MLR
comp=Z,794nm,22.0s
TUC Tucson 83.81 54 eP **P** **18 48 07.1 +0.7**
comp=Z,64nm,1.1s
TUC LR LR
comp=Z,794nm,22.0s
CHOS Chios island 83.84 314 P **P** **18 48 06.3 -0.1**
CHOS Chios island 83.84 314 P **P** **18 48 06.3 -0.1**
OBKA Obir 83.85 326 *i*P **P** **18 48 06.2 -0.1**
comp=Z,28nm,1.1s,SNR=11
SMG Samos 83.85 313 P **P** **18 48 06.0 -0.4**
SMG Samos 83.85 313 P **P** **18 48 06.0 -0.4**
SKO Skopje 83.86 319 P **P** **18 48 07.4 +1.0**
SKO Skopje 83.86 319⇑ *i*P **P** **18 48 07.7 +1.3**
SKO Skopje 83.86 319 P **P** **18 48 07.4 +1.0**
SKO Skopje 83.86 319 P **P** **18 48 07.4 +1.0**
PLG Polygyros 83.92 317 P **P** **18 48 06.9 +0.1**
PLG Polygyros 83.92 317 P **P** **18 48 06.9 +0.1**
PLG Polygyros 83.92 317 P **P** **18 48 06.9 +0.1**
PLE Pljevlja 83.93 321⇑ *i*P **P** **18 48 07.3 +0.5**
F36A Milaca 83.93 35 P **P** **18 48 06.0 -0.7**
baz=319
KBA Koelnbreinsper 83.94 327 *i*P **P** **18 48 06.9 0.0**
comp=Z,75nm,1.7s,SNR=28
HORT Hortiatis 83.95 317 P **P** **18 48 06.5 -0.5**
HORT Hortiatis 83.95 317 P **P** **18 48 06.5 -0.5**
G35A Watkins 83.97 36 P **P** **18 48 07.2 +0.3**
baz=319
THE Thessaloniki 84.00 317 P **P** **18 48 06.4 -0.7**
THE Thessaloniki 84.00 317 P **P** **18 48 06.4 -0.7**
THE Thessaloniki 84.00 317 P **P** **18 48 06.4 -0.7**
IVA Berane 84.01 321⇑ *i*P **P** **18 48 07.5 +0.3**
BODT Bodrum 84.01 313 P **P** **18 48 07.5 +0.3**
BODT Bodrum 84.01 313 P **P** **18 48 07.5 +0.3**
BEBN Eben Emael 84.02 333 P **P** **18 48 07.0 0.0**
comp=Z,23nm,1.8s
EIL Elat 84.02 303 LR LR 19 29 21.9
comp=Z,580nm,21.4s,baz=60,slow=38
ECSD EROS Data Cent 84.05 38 P **P** **18 48 07.3 0.0**
baz=317
ECSD EROS Data Cent 84.05 38 eP **P** **18 48 07.3 0.0**
comp=Z,88nm,1.2s
ECSD LR LR
comp=Z,493nm,22.0s
MEM Membach 84.05 333 P **P** **18 48 07.1 -0.1**
comp=Z,33nm,1.8s
L31A Butterfield Fa 84.06 40 P **P** **18 48 07.8 +0.4**
baz=316
GRG Griva 84.08 318 P **P** **18 48 07.6 +0.1**
GRG Griva 84.08 318 P **P** **18 48 07.6 +0.1**
GRG Griva 84.08 318 P **P** **18 48 07.6 +0.1**
ARG Arkhangelos 84.10 311 P **P** **18 48 08.0 +0.3**
ARG Arkhangelos 84.10 311 P **P** **18 48 08.0 +0.3**
ARG Arkhangelos 84.10 311 P **P** **18 48 08.0 +0.3**
PAIG Paliouri 84.11 317 P **P** **18 48 07.5 -0.1**
PAIG Paliouri 84.11 317 P **P** **18 48 07.5 -0.1**
PAIG Paliouri 84.11 317 P **P** **18 48 07.5 -0.1**
K32A Verdigre 84.16 39 P **P** **18 48 07.5 -0.4**
baz=317
MYKA Terra Mystica 84.16 327 *i*P **P** **18 48 07.5 -0.4**
comp=Z,73nm,1.6s,SNR=19
PVY Plav 84.18 320⇑ *i*P **P** **18 48 08.3 +0.2**
J33A Davis 84.18 38 P **P** **18 48 07.8 -0.2**
baz=317
I34A Hadley 84.20 37 P **P** **18 48 08.0 0.0**
baz=318
H35A Sunnyside Ranc 84.20 36 P **P** **18 48 08.5 +0.5**
baz=318
LJU Ljubljana 84.22 326 *i*P **P** **18 48 08.0 -0.1**
LJU ePP **PP** **18 51 24.9 +2.6**
LJU eS **S** **18 58 25.0 -4.3**
KSCO Kaye Shedlock' 84.26 45 P **P** **18 48 08.8 +0.2**
baz=314
KSCO Kaye Shedlock' 84.26 45 eP **P** **18 48 09.4 +0.8**
comp=Z,320nm,1.8s
UPM Unac-Piva 84.26 321⇑ *i*P **P** **18 48 08.3 -0.3**
BOJS Bojanci 84.30 325 *i*P **P** **18 48 08.5 0.0**
BOJS eS **S** **18 58 24.7 -5.5**
G36A St. Michael 84.30 35 P **P** **18 48 08.5 0.0**
baz=319
CRNS Crni Vrh 84.31 326 *i*P **P** **18 48 08.1 -0.5**
CRNS *e* 18 59 19.2
STU Stuttgart 84.34 330 eP **P** **18 48 09.2 +0.5**
STU pmax pmax
comp=Z,107nm,1.1s
STU Stuttgart 84.34 330 eP **P** **18 48 09.2 +0.5**
comp=Z,107nm,1.1s
WIM Isle of Man 84.37 341 eP **P** **18 48 09.0 +0.3**
NIS1 Nisyros Isl. 84.40 312 P **P** **18 48 08.8 -0.4**
NIS1 Nisyros Isl. 84.40 312 P **P** **18 48 08.8 -0.4**
CADS Cadrg 84.43 326 *i*P **P** **18 48 08.0 -1.2**
BCLA Clavier 84.46 333 P **P** **18 48 09.3 0.0**
comp=Z,49nm,1.8s
UCC Uccle 84.48 334 P **P** **18 48 09.6 +0.3**
WATA Walderalm 84.50 328 *i*PcP **P** **18 48 10.0 +0.3**
comp=Z,50nm,1.4s
NKY Niksic 84.51 321⇑ *i*P **P** **18 48 09.8 +0.1**
AOS Alonnisos 84.53 316 P **P** **18 48 09.4 -0.4**
AOS Alonnisos 84.53 316 P **P** **18 48 09.4 -0.4**

T25A Trinidad 84.53 47 P P 18 48 10.9 +0.8
baz=313
T25A Trinidad 84.53 47 eP P 18 48 10.8 +0.7
comp=Z,176nm,1.3s
WTTA Wattenberg 84.53 328 i PcP P 18 48 10.1 +0.2
comp=Z,28nm,1.3s,SNR=8.3
NKME Niksic 84.56 321⇑ iP P 18 48 09.7 -0.2
ABTA Abfaltersbach 84.56 327 i P P 18 48 09.1 -0.8
comp=Z,38nm,1.3s,SNR=15
M31A Lambtecht Ranc 84.59 41 P P 18 48 09.8 -0.3
baz=316
L32A Elgin 84.61 40 P P 18 48 10.0 -0.3
baz=317
GMM Mts of Mourne 84.62 341⇑ eP P 18 48 09.9 -0.1
LIT Litokhoron 84.64 317 P P 18 48 10.1 -0.2
LIT Litokhoron 84.64 317 P P 18 48 10.1 -0.2
LIT Litokhoron 84.64 317 P P 18 48 10.1 -0.2
PDG Podgorica 84.65 321 P P 18 48 10.5 +0.2
PDG Podgorica 84.65 321⇑ iP P 18 48 10.5 +0.2
TTG Podgorica 84.65 321⇑ iP P 18 48 10.6 +0.2
TTG Podgorica 84.65 321 P P 18 48 10.5 +0.2
TTG Podgorica 84.65 321 P P 18 48 10.5 +0.2
BRY Bratogost 84.67 321 eP P 18 48 10.2 -0.4
K33A Hardington 84.69 39 P P 18 48 10.4 -0.2
baz=317
MOTA Moosalm 84.69 328 i PcP P 18 48 10.9 +0.3
comp=Z,80nm,1.4s,SNR=24
J34A George 84.71 38 P P 18 48 10.4 -0.2
baz=318
LANF Langenberg 84.71 331⇑ eP P 18 48 10.9 +0.3
LANF Langenberg 84.71 331 P P 18 48 11.2 +0.6
H36A Jessenland, He 84.72 36 P P 18 48 11.0 +0.4
baz=319
RETA Reutte 84.72 329 i PcP P 18 48 11.2 +0.4
comp=Z,126nm,1.6s,SNR=39
LAZ Ladron 84.74 50 eP P 18 48 12.2 +1.0
CEME Cevo 84.74 321⇑ iP P 18 48 10.7 -0.2
FNA Florina 84.75 318 P P 18 48 10.5 -0.4
FNA Florina 84.75 318 P P 18 48 10.5 -0.4
FNA Florina 84.75 318 P P 18 48 10.5 -0.4
SPMN Marine on St. 84.75 35 P P 18 48 10.6 -0.2
baz=320
SPMN Marine on St. 84.75 35 eP P 18 48 10.8 0.0
comp=Z,87nm,1.3s
SNF Seneffe 84.75 334 P P 18 48 10.5 -0.2
I35A Creekview Farm 84.75 37 P P 18 48 10.8 -0.1
baz=318
SKIA Skiathos 84.76 316 P P 18 48 10.3 -0.7
XOR Xorichti 84.77 316 P P 18 48 10.4 -0.6
XOR Xorichti 84.77 316 P P 18 48 10.4 -0.6
WLF Walferdange 84.78 332 P P 18 48 11.8 +1.0
comp=Z,88nm,1.9s
WLF Walferdange 84.78 332 eP P 18 48 11.9 +1.0
WLF pmax pmax
comp=Z,270nm,1.8s
WLF MLR MLR
comp=Z,5μm,19.0s
WLF Walferdange 84.78 332 eP P 18 48 11.9 +1.0
comp=Z,270nm,1.8s
WLF LR LR
comp=Z,5μm,19.0s
ANMO Albuquerque 84.79 50 P P 18 48 12.4 +1.0
baz=312
ANMO Albuquerque 84.79 50 c iP P 18 48 12.4 +1.0
ANMO pmax pmax
comp=Z,115nm,1.2s
ANMO Albuquerque 84.79 50 PFAKE 18 48 20.0 +8.5
ANMO LR LR
comp=Z,298nm,21.0s
NEO Neokhori 84.80 316 P P 18 48 10.0 -1.2
NEO Neokhori 84.80 316 P P 18 48 10.0 -1.2
TRI Trieste 84.81 326 eP P 18 48 10.6 -0.5
TRI pmax pmax
comp=Z,70nm,1.3s
TRI Trieste 84.81 326 eP P 18 48 10.6 -0.5
comp=Z,70nm,1.3s
OHR Ohrid 84.81 319⇑ iP P 18 48 11.5 +0.2
DRME Dracevica, Mon 84.87 321⇑ iP P 18 48 11.8 +0.4
L33A Hoskins 84.87 39 P P 18 48 11.3 -0.2
baz=317
KZN Kozani 84.88 318 P P 18 48 11.1 -0.5
KZN Kozani 84.88 318 P P 18 48 11.1 -0.5
KZN Kozani 84.88 318 P P 18 48 11.1 -0.5
FYTO Fytoko, Volos 84.88 317 P P 18 48 10.9 -0.6
FYTO Fytoko, Volos 84.88 317 P P 18 48 10.9 -0.6
OXZ Oxford 84.93 158 eP P 18 48 12.0 +0.6
comp=Z,151nm,1.2s
BUM Brajici-Budva 84.93 321⇑ iP P 18 48 12.0 +0.2
WPM1 Penmaenmawr 84.95 340⇑ eP P 18 48 12.1 +0.4
BGNE Belgrade 84.97 40 P P 18 48 11.8 -0.3
baz=317
N31A Bailey Ranch, 84.98 41 P P 18 48 11.8 -0.3
baz=316
RPZ Rata Peaks 84.99 159 P P 18 48 13.8 +2.1
comp=Z,24nm,1.0s,baz=342,slow=3.2,SNR=4.5
RPZ LR LR 19 20 12.8
comp=Z,896nm,20.4s,baz=296,slow=31
ULC Ulcinj 85.00 320⇑ iP P 18 48 12.3 +0.2
PPT Papeete 85.00 116 LR LR 19 19 46.6
comp=Z,500nm,20.6s,baz=302,slow=31
J35A Milford 85.01 37 P P 18 48 12.0 -0.2
baz=318
PPT2 Papeete2 85.02 116 eS S 18 58 38.4 +0.4
comp=Z,292nm,28.2s
PPT2 Papeete2 85.02 116 eLR LR 19 14 51.4
comp=Z,3μm,29.2s,baz=312
PPT2 Papeete2 85.02 116 eT T 20 21 33.6
comp=Z,7.7nm,0.3s
EREA Eretria 85.02 315 P P 18 48 11.5 -0.8
HCY Herceg Novi 85.03 321⇑ iP P 18 48 12.1 -0.1
BFO Black Forest 85.03 330 eP P 18 48 12.3 +0.1
BFO pmax pmax
comp=Z,128nm,1.2s
BFO MLR MLR
comp=Z,414nm,19.0s
BFO Black Forest 85.03 330 eP P 18 48 12.3 +0.1
comp=Z,128nm,1.2s
BFO LR LR
comp=Z,414nm,19.0s
WLF1 Llynfaes 85.06 340 eP P 18 48 12.3 +0.2
WLF1 AMB AMB 18 48 14.1
comp=Z,218nm,1.5s
WLF1 AMS AMS 19 32 42.9
comp=Z,7μm,7.8s
K34A Le Mars 85.08 38 P P 18 48 12.3 -0.2
baz=318
FOEL Foel Wylfa 85.08 339⇑ eP P 18 48 12.9 +0.6
FOEL AMB AMB 18 48 13.8
comp=Z,138nm,1.2s
FOEL AMS AMS 19 31 42.9
comp=Z,4μm,8.6s
Y22D IRIS PASSCAL I 85.09 51 P P 18 48 13.8 +0.9
baz=312
I36A Fitzsimmons Fa 85.10 36 P P 18 48 12.5 -0.1
baz=319
SMIA Simia 85.10 316 P P 18 48 12.1 -0.6
FETA Feichten 85.11 328 i P P 18 48 12.6 -0.1
comp=Z,45nm,1.4s,SNR=17
LPM Los Pinos Moun 85.11 50 eP P 18 48 13.8 +0.8
KARP Karpathos 85.13 312 P P 18 48 12.6 -0.3
KARP Karpathos 85.13 312 eP P 18 48 13.3 +0.4
comp=Z,70nm,1.2s
TIR Tirane 85.13 320⇓ iP P 18 48 09.6 -3.2
TIR Tirane 85.13 320 eP P 18 48 13.1 +0.4
TIR pmax pmax
comp=Z,383nm,1.9s
TIR MLR MLR
comp=Z,4μm,19.0s
TIR Tirane 85.13 320 eP P 18 48 13.1 +0.4
comp=Z,383nm,1.9s
TIR LR LR
comp=Z,4μm,19.0s
TIAR Tiarei 85.16 116 eT T 20 21 43.8
comp=Z,9.9nm,0.3s
H37A Dierke Farm, C 85.18 35 P P 18 48 13.3 +0.3
baz=320
NEST Nestorio 85.18 318 P P 18 48 13.1 -0.1
BNM Barren Site 85.22 50 eP P 18 48 14.4 +0.8
DAVA Damuels 85.25 329 i PcP P 18 48 13.8 +0.3
comp=Z,88nm,1.3s,SNR=23
O31A Woolen Ranch, 85.26 42 P P 18 48 12.9 -0.6
baz=316
THL Klokotos Trika 85.27 317 P P 18 48 11.9 -1.6
PENT Pentalofos 85.29 318 P P 18 48 13.2 -0.5
PTL Penteli 85.32 315 P P 18 48 12.6 -1.2
PTL Penteli 85.32 315 P P 18 48 12.6 -1.2
SCHQ Schefferville 85.33 16 P P 18 48 13.1 -0.4
comp=Z,32nm,0.9s,baz=347,slow=5.8,SNR=13
SCHQ LR LR 19 27 42.9
comp=Z,404nm,21.9s,baz=359,slow=37
SCHQ Schefferville 85.33 16 eP P 18 48 13.4 -0.2
comp=Z,56nm,1.1s
ATAL Atalanti 85.34 316 P P 18 48 12.9 -1.0
ATAL Atalanti 85.34 316 P P 18 48 12.9 -1.0
KPRO Kipourio 85.35 318 P P 18 48 13.1 -0.9
M33A Taylor Creek F 85.35 40 P P 18 48 13.6 -0.3
baz=317
WLS Welschbruch 85.35 331 eP P 18 48 14.3 +0.5
LBZ Lake Benmore 85.36 159 eP P 18 48 14.4 +0.9
comp=Z,152nm,1.4s
N32A Stulken Farm, 85.36 41 P P 18 48 13.5 -0.5
baz=317
TVO Taravao 85.38 116 eT T 20 22 00.3
comp=Z,2.0nm,0.3s
CDF Champ du Feu 85.38 331 eP P 18 48 13.2 -0.8
CDF pmax pmax
comp=Z,90nm,1.2s
LKR Lokris 85.38 316 P P 18 48 12.7 -1.4
LKR Lokris 85.38 316 P P 18 48 12.7 -1.4
319A Douglas 85.38 54 eP P 18 48 15.2 +0.8
I37A Lemond, Waseca 85.39 36 P P 18 48 14.4 +0.4
baz=320
ATHU Athens Univers 85.42 315 P P 18 48 12.6 -1.7
ATHU Athens Univers 85.42 315 P P 18 48 12.6 -1.7
J36A Seneca 1, Swea 85.46 37 P P 18 48 14.3 -0.1
baz=319
L34A Svendsen Farm, 85.47 39 P P 18 48 14.4 -0.1
baz=318
K35A Storm Lake 85.48 38 P P 18 48 14.0 -0.5
baz=318
AGG Agios Georgios 85.49 317 P P 18 48 13.2 -1.4
AGG Agios Georgios 85.49 317 eP P 18 48 14.0 -0.7
AGG pmax pmax
comp=Z,174nm,1.5s
AGG Agios Georgios 85.49 317 eP P 18 48 14.0 -0.7
comp=Z,174nm,1.5s
VLY Voula,Athens 85.50 315 P P 18 48 13.0 -1.7
VLY Voula,Athens 85.50 315 P P 18 48 13.0 -1.7
VILL Villia 85.55 316 P P 18 48 13.2 -1.8
SANT Santorini 85.57 313 eP P 18 48 14.0 -1.1
comp=Z,193nm,1.6s
SANT LR LR
comp=Z,1μm,20.0s
121A Cookes Peak, D 85.58 52 P P 18 48 16.5 +1.1
baz=312
121A Cookes Peak, D 85.58 52 eP P 18 48 15.9 +0.5
comp=Z,92nm,1.1s
ECH Echery 85.58 331⇑ eP P 18 48 14.9 0.0
FUORN Ofenpass-Fuorn 85.62 328 eP P 18 48 15.7 +0.3
comp=Z,127nm,1.3s
DSB Dublin 85.63 341 eP P 18 48 15.9 +0.9
comp=Z,43nm,1.0s
COWI Conover 85.69 32 eP P 18 48 15.3 -0.2
comp=Z,63nm,1.2s
COWI LR LR
comp=Z,526nm,20.0s
M34A Aspy Farms, Fr 85.71 39 P P 18 48 15.4 -0.3
baz=318
O32A Brockman Farm, 85.74 41 P P 18 48 14.9 -1.0
baz=317
HMNX Herstmonceux 85.78 336 AMS AMS 19 29 07.1
comp=Z,4μm,13.8s
L35A Bielow Farm, R 85.78 38 P P 18 48 15.7 -0.4
baz=318
MCH1 Michaelchurch 85.81 339⇑ eP P 18 48 16.5 +0.6
MCH1 AMB AMB 18 48 17.8
comp=Z,115nm,2.0s
MCH1 AMS AMS 19 30 23.3
comp=Z,5μm,11.1s
HSIG 85.82 57 eP P 18 48 15.5 -0.9
comp=Z,52nm,1.1s
JAN Janina 85.83 318 P P 18 48 16.4 0.0
JAN Janina 85.83 318 P P 18 48 16.4 0.0
JAN Janina 85.83 318 P P 18 48 16.4 0.0
EVR Evrytania 85.85 317 P P 18 48 15.5 -1.0
EVR Evrytania 85.85 317 P P 18 48 15.5 -1.0
J37A Redenius Farm, 85.85 37 P P 18 48 16.3 0.0
baz=319
I38A Scanlan Farm, 85.87 35 P P 18 48 16.4 0.0
baz=320
SWN1 Swindon 85.88 338 eP P 18 48 17.1 +0.8
SWN1 AMB AMB 18 48 18.3
comp=Z,267nm,1.7s
SWN1 AMS AMS 19 30 32.8
comp=Z,5μm,7.5s
MOF Molkenrain 85.89 331⇑ eP P 18 48 16.5 -0.1
MONM Monmouth 85.90 338⇑ eP P 18 48 16.9 +0.6
MONM AMB AMB 18 48 17.5
comp=Z,134nm,1.3s
MONM AMS AMS 19 30 11.9
comp=Z,6μm,11.4s
ZKR Zakros 85.99 312 P P 18 48 16.5 -0.6
ZKR Zakros 85.99 312 P P 18 48 16.5 -0.6
CBKS Cedar Bluff 86.00 43 P P 18 48 16.8 -0.4
baz=316
CBKS Cedar Bluff 86.00 43 eP P 18 48 17.2 0.0
CBKS pmax pmax
comp=Z,119nm,1.3s
CBKS Cedar Bluff 86.00 43 eP P 18 48 17.2 0.0
comp=Z,119nm,1.3s
LPW Lampeter 86.02 339 eP P 18 48 17.3 +0.3
LPW AMB AMB 18 48 18.7
comp=Z,104nm,1.7s
LPW AMS AMS 19 30 36.0
comp=Z,9μm,11.1s
THEF They Montfort 86.02 332⇑ eP P 18 48 17.2 +0.1
P32A Huiting Farm, 86.03 42 P P 18 48 16.8 -0.5
baz=316
KALE Kalithea 86.04 316 P P 18 48 16.1 -1.3
KALE Kalithea 86.04 316 P P 18 48 16.1 -1.3
TUE Stuetta 86.12 329 eP P 18 48 17.9 0.0
comp=Z,98nm,1.5s
TUE LR LR
comp=Z,2μm,21.0s
M35A Neola 86.19 39 P P 18 48 18.2 +0.2
baz=318
KRND KRANIDI 86.19 315 P P 18 48 15.9 -2.2
IGT Igoumenitsa 86.20 318 P P 18 48 17.6 -0.5
IGT Igoumenitsa 86.20 318 P P 18 48 17.6 -0.5
IGT Igoumenitsa 86.20 318 P P 18 48 17.6 -0.5
K37A Belmond 86.22 37 P P 18 48 18.2 0.0
baz=319
L36A Harm Buss Farm 86.22 38 P P 18 48 18.4 +0.2
baz=319
LAKA Lakka 86.24 316 P P 18 48 17.5 -0.9
LAKA Lakka 86.24 316 P P 18 48 17.5 -0.9
O33A Hebron 86.24 41 P P 18 48 17.5 -0.8
baz=317
N34A Lincoln 86.24 40 P P 18 48 17.6 -0.8
baz=318
KLV Kalavryta, Ach 86.28 316 P P 18 48 17.3 -1.3
KLV Kalavryta, Ach 86.28 316 P P 18 48 17.3 -1.3
MEH Mehetia 86.29 116 eT T 20 23 08.2
comp=Z,73nm,0.3s
J38A Wedel Dairy, R 86.35 36 P P 18 48 18.7 -0.1
baz=320
KEK Kerkira 86.35 319 P P 18 48 18.4 -0.5
KEK Kerkira 86.35 319 P P 18 48 18.4 -0.5
LAST Lasithi 86.39 312 P P 18 48 18.8 -0.5
LAST Lasithi 86.39 312 eP P 18 48 19.3 0.0
comp=Z,383nm,1.6s
LOMF Lomont 86.42 331⇑ eP P 18 48 19.1 -0.1
DAMY Dhamar 86.46 285 eP P 18 48 21.0 +0.9
comp=Z,158nm,1.5s
Q32A Meitler Ranch, 86.51 42 P P 18 48 19.3 -0.4
baz=316
TAOE Nuku Hiva Isla 86.54 104 eLR LR 19 15 38.4
comp=Z,2μm,23.4s
LKD2 Lefkada island 86.56 317 P P 18 48 22.1 +2.1
LKD2 Lefkada island 86.56 317 P P 18 48 22.1 +2.1
O34A Beatrice 86.62 40 P P 18 48 19.5 -0.7
baz=318
M36A Felix, Anita 86.64 39 P P 18 48 20.4 +0.2
baz=319
P33A Williams Farm, 86.65 41 P P 18 48 19.9 -0.4
baz=317
RLS Riolos of Patr 86.65 317 P P 18 48 19.9 -0.4
RLS Riolos of Patr 86.65 317 P P 18 48 19.9 -0.4
L37A Phoenix Point, 86.65 37 P P 18 48 20.2 -0.1
baz=319
IDI Anoyia 86.65 313 P P 18 48 19.0 -1.5
IDI Anoyia 86.65 313 eP P 18 48 19.5 -1.0
comp=Z,106nm,1.4s
N35A Tabor 86.66 39 P P 18 48 20.5 +0.1
baz=318
J39A Decorah 86.70 36 P P 18 48 19.9 -0.6
baz=321
K38A Parkersburg 86.73 37 P P 18 48 20.6 0.0
baz=320
VLI Veliai 86.78 315 P P 18 48 18.6 -2.4
VLI Veliai 86.78 315 P P 18 48 18.6 -2.4
R32A Long Quarter, 86.84 43 P P 18 48 20.8 -0.6
baz=316
SIVA Sivas 86.89 312 P P 18 48 21.2 -0.3
SIVA Sivas 86.89 312 P P 18 48 21.2 -0.3
Q33A Connelly Farm, 86.89 42 P P 18 48 21.2 -0.3
baz=317
O35A Humboldt 86.97 40 P P 18 48 21.4 -0.5
baz=318
ITM Ithomi 87.02 316 P P 18 48 21.0 -1.2
ITM Ithomi 87.02 316 P P 18 48 21.0 -1.2
P34A Walnut Farm, R 87.02 41 P P 18 48 21.6 -0.6
baz=318
L38A Oak Wood Farm, 87.02 37 P P 18 48 22.1 +0.1
baz=320
KYTH Kithira 87.04 314 P P 18 48 22.4 +0.1
KYTH Kithira 87.04 314 P P 18 48 22.4 +0.1
N36A Muff Farm, Cla 87.04 39 P P 18 48 22.4 +0.2
baz=319
SENIN Lac Senin/Sane 87.04 330 eP P 18 48 22.5 +0.1
comp=Z,65nm,1.6s
VLS Valsamata 87.04 317 P P 18 48 21.2 -1.1
VLS Valsamata 87.04 317 P P 18 48 21.2 -1.1
VLS Valsamata 87.04 317 P P 18 48 21.2 -1.1
M37A Trindle Farm, 87.05 38 P P 18 48 22.5 +0.3
baz=319
IMMV Iera Moni Meta 87.06 313 P P 18 48 21.9 -0.5
SCIA State Center 87.08 37 eP P 18 48 23.5 +1.1
comp=Z,224nm,1.3s
SCIA LR LR
comp=Z,374nm,20.0s
J40A Soldiers Grove 87.10 35 P P 18 48 22.1 -0.4
baz=321
K39A Oelwein 87.10 36 P P 18 48 21.9 -0.5
baz=320
HTL Hartland 87.13 339 eP P 18 48 22.8 +0.4
HTL AMB AMB 18 48 23.6
comp=Z,39nm,1.2s
HTL AMS AMS 19 30 02.8
comp=Z,2μm,12.0s
S32A Newby Ranch, P 87.23 43 P P 18 48 23.2 -0.1
baz=316
R33A Olander Ranch, 87.31 42 P P 18 48 23.3 -0.3
baz=317
Q34A Chapman 87.42 41 P P 18 48 23.9 -0.2
baz=318
GVD Gavdhos 87.44 313 P P 18 48 22.6 -1.6
GVD Gavdhos 87.44 313 P P 18 48 22.6 -1.6
J41A Loganville 87.45 35 P P 18 48 24.0 -0.1
baz=322
K40A Colesburg 87.45 36 P P 18 48 23.9 -0.2
baz=321
P35A Duane Minner, 87.46 40 P P 18 48 23.8 -0.5
baz=318
M38A Pleasantville 87.46 38 P P 18 48 24.4 +0.2
baz=320
N37A Lee Faris, Mou 87.46 39 P P 18 48 24.6 +0.3
baz=319
KSU1 Kansas State U 87.46 41 P P 18 48 24.1 -0.2
baz=318
KSU1 Kansas State U 87.46 41 eP P 18 48 24.2 -0.1
comp=Z,141nm,1.4s
KSU1 LR LR
comp=Z,367nm,19.0s
DYA Yadsworthy 87.47 338 eP P 18 48 24.6 +0.6
L39A Vinton 87.50 36 P P 18 48 24.4 +0.1
baz=320
VLC Villacollemand 87.52 327 PFAKE 18 48 30.0 +5.5
VLC LR LR
comp=Z,516nm,19.0s
O36A Bolckow 87.55 39 P P 18 48 24.9 +0.2
baz=319
AQU L'Aquila 87.57 324 eP P 18 48 24.8 0.0
AQU pmax pmax
comp=Z,83nm,1.2s
AQU MLR MLR
comp=Z,8μm,21.0s
AQU L'Aquila 87.57 324 eP P 18 48 24.8 0.0
comp=Z,83nm,1.2s
AQU LR LR
comp=Z,8μm,21.0s
T32A Huddler Ranch, 87.62 44 P P 18 48 25.5 +0.4
baz=316
MNTX Cornudas Mount 87.64 51 P P 18 48 25.8 +0.4
baz=313
MNTX Cornudas Mount 87.64 51 eP P 18 48 25.7 +0.4
comp=Z,63nm,1.4s
MNTX LR LR
comp=Z,340nm,22.0s
MSTX Muleshoe 87.68 48 P P 18 48 25.6 0.0
baz=314
MSTX Muleshoe 87.68 48 eP P 18 48 25.6 0.0
comp=Z,66nm,1.4s
AMTX Amarillo 87.68 47 P P 18 48 26.2 +0.7
baz=315
AMTX Amarillo 87.68 47 eP P 18 48 26.3 +0.7
comp=Z,98nm,1.0s
JFWS Jewell Farm 87.70 35 eP P 18 48 25.1 -0.3
JFWS pmax pmax
comp=Z,63nm,1.3s
JFWS MLR MLR
comp=Z,533nm,19.0s
JFWS Jewell Farm 87.70 35 eP P 18 48 25.1 -0.3
comp=Z,63nm,1.3s
JFWS LR LR
comp=Z,533nm,19.0s
R34A Isabella, Hill 87.71 42 P P 18 48 25.5 0.0
baz=317
P36A Good Intent, A 87.81 40 P P 18 48 25.9 -0.1
baz=318
S33A Kaszmaul Farm, 87.82 43 P P 18 48 26.3 +0.3
baz=317
LDF La Druitiere 87.89 335 eP P 18 48 25.3 -0.8
LDF pmax pmax
comp=Z,123nm,1.6s
M39A Webster 87.91 37 P P 18 48 26.5 +0.2
baz=320
L40A Anamosa 87.91 36 P P 18 48 26.2 -0.2
baz=321
K41A Shullsburg 87.91 35 P P 18 48 26.2 -0.2
baz=322
N38A Joes South For 87.92 38 P P 18 48 26.6 +0.2
baz=320
SSF Saint Saulge 87.92 332 eP P 18 48 26.6 +0.3
SSF pmax pmax
comp=Z,53nm,1.3s
O37A Wolven Farm, M 87.94 39 P P 18 48 26.7 +0.2
baz=319
Q35A Mercer Eighty, 87.94 41 P P 18 48 26.6 0.0
baz=318
LPL La Plagne 87.96 330 eP P 18 48 25.8 -1.0
LPL pmax pmax
comp=Z,54nm,1.6s
LPG La Plagne 87.97 330 eP P 18 48 26.4 -0.5
LPG pmax pmax
comp=Z,46nm,1.4s
T33A Patterson Ranc 88.06 43 P P 18 48 27.4 +0.2
baz=317
SMF Signal de Mont 88.15 332 eP P 18 48 27.2 -0.2
SMF pmax pmax
comp=Z,63nm,1.5s
U32A Winter Ranch, 88.15 44 P P 18 48 28.0 +0.4
baz=316
Q36A Arnold C. Orve 88.17 41 P P 18 48 27.3 -0.3
baz=318
CUC Castrocucco 88.20 321 eP P 18 48 26.7 -1.1
comp=Z,17nm,1.1s
CUC e 18 51 55.9
CUC LR LR
comp=Z,2μm,20.0s
AVF Avril sur Loir 88.21 332 eP P 18 48 27.0 -0.7
AVF pmax pmax
comp=Z,127nm,1.5s
N39A Derby Farms, D 88.21 38 P P 18 48 28.0 +0.2
baz=320
S34A Willow Spring 88.23 42 P P 18 48 28.0 +0.1
baz=317
L41A Preston 88.24 36 P P 18 48 27.6 -0.3

baz=321
R35A **Emporia Munici** 88.25 41 P P 18 48 28.6 +0.5
baz=318
P37A **Lathrop** 88.27 39 P P 18 48 28.2 +0.1
baz=319
O38A **Galt** 88.31 39 P P 18 48 28.5 +0.2
baz=320
TIP **Timpagrande** 88.33 320 P P 18 48 28.4 -0.1
TIP **Timpagrande** 88.33 320 eP P 18 48 27.7 -0.8
comp=Z,66nm,1.3s
TIP LR LR
comp=Z,3µm,19.0s
BNI **Bardonecchia** 88.36 329 PFAKE 18 48 40.0 +11
BNI LR LR
comp=Z,4µm,19.0s
VLDQ **Val d'Or** 88.47 25 eP P 18 48 28.1 -0.8
comp=Z,104nm,1.1s
V32A **Arapaho** 88.60 45 P P 18 48 30.5 +0.7
baz=316
U33A **Lingo Farm, Me** 88.61 44 P P 18 48 30.0 +0.2
baz=317
R36A **Gordon, Harris** 88.62 41 P P 18 48 29.8 0.0
baz=318
P38A **Dawn** 88.66 39 P P 18 48 30.3 +0.3
baz=320
S35A **Otter Creek Ra** 88.67 42 P P 18 48 30.4 +0.3
baz=318
O39A **Kirksville** 88.67 38 P P 18 48 30.4 +0.4
baz=320
T34A **McClaskey Farm** 88.68 43 P P 18 48 30.4 +0.3
baz=317
Q37A **Longview Farm,** 88.75 40 P P 18 48 29.8 -0.6
baz=319
PLDF **La Plantade** 88.80 332⇑ eP P 18 48 31.6 +1.0
TBI **Tubuai** 88.89 121 eS S 18 59 17.6 +2.6
comp=Z,461nm,29.2s
TBI **Tubuai** 88.89 121 eLR LR 19 16 44.4
comp=Z,2µm,23.5s,baz=312
TBI **Tubuai** 88.89 121 eT T 20 26 24.2
comp=Z,129nm,0.3s
AGO **Saint Agoulin** 88.91 332⇑ eP P 18 48 31.4 +0.4
W32A **Sentinel** 88.92 45 P P 18 48 32.0 +0.7
baz=316
U34A **Anderson Ranch** 88.92 43 P P 18 48 31.9 +0.7
baz=317
U34A **Anderson Ranch** 88.92 43 eP P 18 48 31.9 +0.7
comp=Z,140nm,1.3s
V33A **Lossen Ranch,** 88.95 44 P P 18 48 31.7 +0.3
baz=317
R37A **Teagarden Farm** 88.98 41 P P 18 48 31.0 -0.5
baz=319
S36A **Lake Cedric, C** 89.02 41 P P 18 48 31.6 -0.1
baz=318
SSB **Saint Sauveur** 89.03 331 eP P 18 48 32.0 +0.4
SSB pmax pmax
comp=Z,40nm,1.5s
SSB MLR MLR
comp=Z,3µm,19.0s
SSB **Saint Sauveur** 89.03 331 eP P 18 48 32.0 +0.4
comp=Z,40nm,1.5s
SSB LR LR
comp=Z,3µm,19.0s
TCF **Toulx Ste Croi** 89.05 333 eP P 18 48 31.2 -0.5
TCF pmax pmax
comp=Z,76nm,1.6s
O40A **La Belle** 89.10 38 P P 18 48 32.3 +0.3
baz=321
Q38A **Cooks Store, C** 89.11 39 P P 18 48 31.9 -0.2
baz=320
T35A **Sooner Cattle** 89.13 43 P P 18 48 32.7 +0.4
baz=318
P39B **Salisbury** 89.15 39 P P 18 48 32.3 +0.1
baz=320
PYM **Petit Puy Mans** 89.22 332⇑ eP P 18 48 33.3 +0.8
VIVF **Saint-Julien-l** 89.33 331 eP P 18 48 34.4 +1.4
VIVF pmax pmax
comp=Z,72nm,1.6s
W33A **Caddo, Fort Co** 89.34 45 P P 18 48 34.4 +1.1
baz=317
T36A **Boggs Farm, Ca** 89.36 42 P P 18 48 33.6 +0.3
baz=318
V34A **Guthrie** 89.37 44 P P 18 48 33.9 +0.6
baz=317
V34A **Guthrie** 89.37 44 eP P 18 48 34.0 +0.6
comp=Z,109nm,1.1s
Q39A **Willow Grove F** 89.38 39 P P 18 48 33.4 0.0
baz=320
S37A **Fort Scott** 89.39 41 P P 18 48 33.3 -0.1
baz=319
X32A **Elmer** 89.40 46 P P 18 48 33.9 +0.3
baz=316
U35A **Pawnee** 89.41 43 P P 18 48 33.8 +0.2
baz=318
LPIG **La Paz** 89.44 60 LR LR 19 23 59.9
comp=Z,166nm,18.6s,baz=284,slow=32
WMOK **Wichita Mounta** 89.46 45 P P 18 48 34.0 +0.2
baz=316
WMOK **Wichita Mounta** 89.46 45 eP P 18 48 33.8 0.0
WMOK pmax pmax
comp=Z,63nm,1.2s
WMOK MLR MLR
comp=Z,288nm,19.0s
WMOK **Wichita Mounta** 89.46 45 eP P 18 48 33.8 0.0
comp=Z,63nm,1.2s
WMOK LR LR
comp=Z,288nm,19.0s
P40A **Paris** 89.47 38 P P 18 48 34.1 +0.3
baz=320
CEL **Celeste** 89.47 320 eP P 18 48 32.5 -1.4
comp=Z,51nm,1.0s
CEL LR LR
comp=Z,2µm,20.0s
R38A **Fenwick Farm,** 89.55 40 P P 18 48 33.4 -0.8
baz=319
LBL **Lubilhac** 89.56 332 eP P 18 48 35.4 +1.2
O41A **Passleys Farm,** 89.58 37 P P 18 48 34.4 +0.2
baz=321
MFF **Saint Martin d** 89.62 334 eP P 18 48 33.9 -0.4
MFF pmax pmax
comp=Z,170nm,1.9s
W34A **Bridge Creek,** 89.67 44 P P 18 48 35.2 +0.4
baz=317
W34A **Bridge Creek,** 89.67 44 eP P 18 48 36.0 +1.2
comp=Z,86nm,1.1s
X33A **Lawton** 89.76 45 P P 18 48 35.2 -0.1
baz=317
V35A **Meyer Ranch, C** 89.80 43 P P 18 48 35.5 +0.2
baz=318
T37A **Cheneyville 18** 89.83 41 P P 18 48 35.4 0.0
baz=319
P41A **Barry, Barry** 89.84 37 P P 18 48 35.8 +0.4
baz=321
Q40A **Laux Farm, Aux** 89.86 39 P P 18 48 35.8 +0.2
baz=320
O42A **Bath** 89.90 37 P P 18 48 35.7 -0.1
baz=322
U36A **Oologah** 89.93 42 P P 18 48 36.0 +0.1
baz=318
SLBS **Sierra La Lagu** 89.97 60 eP P 18 48 38.1 +1.7
comp=Z,48nm,1.2s
S38A **Stockton** 89.97 40 P P 18 48 35.6 -0.5
baz=319
HDIL **Hopedale** 89.99 36 P P 18 48 36.2 +0.1
baz=322
HDIL **Hopedale** 89.99 36 eP P 18 48 36.5 +0.3
comp=Z,100nm,1.2s
HDIL LR LR
comp=Z,542nm,21.0s
Y33A **Hilltop Ranch,** 90.07 46 P P 18 48 36.8 +0.1
baz=317
X34A **Smith Ranch, M** 90.09 45 P P 18 48 37.4 +0.6
baz=317
T38A **Diamond** 90.22 41 P P 18 48 37.3 0.0
baz=319
W35A **Tecumseh** 90.23 44 P P 18 48 37.8 +0.4
baz=318
S39A **Bolivar** 90.23 40 P P 18 48 36.7 -0.6
baz=320
U37A **Salina** 90.26 42 P P 18 48 37.8 +0.3
baz=319
TUL1 **Leonard** 90.26 43 P P 18 48 37.9 +0.3
baz=318
CAF **Calviac** 90.27 332 eP P 18 48 37.3 -0.1
CAF pmax pmax
comp=Z,73nm,1.4s
V36A **Jenks** 90.27 43 P P 18 48 37.9 +0.3
baz=318
R40A **Maddies Statio** 90.31 39 P P 18 48 37.6 -0.1
baz=320
TX31 **Lajitas Ar. Si** 90.34 52 eP P 18 48 37.9 -0.2
TX31 eP PcP 18 48 38.6 -0.7
TXAR **Lajitas Array** 90.34 52 P P 18 48 38.6 +0.4
comp=Z,36nm,0.9s,baz=294,slow=3.2,SNR=192
TXAR pP pP 18 48 54.4 +1.5
comp=Z,12nm,0.7s,baz=291,slow=3.1,SNR=9.5
TXAR PKKPbc PKKPbc 19 06 06.8 +1.6
comp=Z,0.3nm,0.5s,baz=150,slow=5.7,SNR=3.9
TXAR LR LR 19 22 43.9
comp=Z,325nm,21.8s,baz=0.0,slow=31
ABTX **Abilene, Hawle** 90.48 47 P P 18 48 39.2 +0.6
baz=316
ABTX **Abilene, Hawle** 90.48 47 eP P 18 48 39.2 +0.6
comp=Z,113nm,1.1s
Z33A **Whitaker Ranch** 90.52 46 P P 18 48 38.9 +0.2
baz=316
W36A **Wetumka** 90.59 44 P P 18 48 39.3 +0.2
baz=318
Y34A **Reagan Ranch,** 90.61 45 P P 18 48 39.3 +0.1
baz=317
U38A **Gravette** 90.62 42 P P 18 48 39.0 -0.2
baz=319
V37A **Hulbert** 90.63 42 P P 18 48 39.2 0.0
baz=319
Q42A **Golden Eagle** 90.69 38 P P 18 48 39.9 +0.4
baz=321
HPIG 90.69 55 eP P 18 48 40.7 +0.7
comp=Z,34nm,0.9s
T39A **Clever** 90.71 41 P P 18 48 39.4 -0.2
baz=320
S40A **Lebanon** 90.72 40 P P 18 48 39.3 -0.3
baz=320
X35A **Drake** 90.72 44 P P 18 48 39.6 -0.1
baz=318
SADO **Sadowa** 90.77 27 eP P 18 48 39.9 +0.2
comp=Z,36nm,1.1s
133A **Hamilton Ranch** 90.92 47 P P 18 48 41.0 +0.4
baz=316
Z34A **Collier Ranch,** 90.94 46 P P 18 48 41.0 +0.2
baz=317
X36A **Centrahoma** 90.94 44 P P 18 48 41.1 +0.4
baz=318
HHAR **Hobbs** 90.97 41 eP P 18 48 40.6 -0.2
comp=Z,33nm,1.1s
HHAR epP pP 18 48 54.1 -1.5
W37B **Quinton** 91.03 43 P P 18 48 41.7 +0.6
baz=318
V38A **Canehill** 91.04 42 P P 18 48 41.1 0.0
baz=319
Y35A **Marietta** 91.05 45 P P 18 48 41.3 +0.1
baz=318
T40A **Mansfield** 91.05 40 P P 18 48 40.8 -0.4
baz=320
Q43A **New Douglas** 91.07 37 P P 18 48 41.2 0.0
baz=322
AAM **Ann Arbor** 91.08 31 PFAKE 18 48 50.0 +8.8
AAM LR LR
comp=Z,345nm,22.0s
TRQ **Mont Tremblant** 91.08 24 eP P 18 48 41.2 0.0
TRQ epP pP 18 48 54.2 -1.7
S41A **Jillco Farms,** 91.11 39 P P 18 48 41.2 -0.2
baz=321
U39A **Green Forest** 91.14 41 P P 18 48 41.3 -0.3
baz=320
SFIN **Lafayette** 91.15 35 P P 18 48 41.8 +0.2
baz=324
SFIN **Lafayette** 91.15 35 eP P 18 48 42.2 +0.6
comp=Z,66nm,1.2s
LMQ **La Malbaie** 91.17 21 eP P 18 48 41.8 +0.3
Z35A **Perchaven, San** 91.35 45 P P 18 48 42.6 0.0
baz=317
233A **Rising Star** 91.35 47 P P 18 48 43.3 +0.6
baz=316
CLTB **Caltabellotta** 91.35 321 PFAKE 18 48 50.0 +7.3
CLTB LR LR
comp=Z,2µm,22.0s
Q44A **Meyer Farm, Va** 91.43 37 P P 18 48 43.0 +0.1
baz=322
134A **White-Moore Ra** 91.43 46 P P 18 48 43.5 +0.5
baz=317
V39A **Pettigrew** 91.47 42 P P 18 48 43.0 -0.2
baz=320
X37A **Clayton** 91.47 43 P P 18 48 43.4 +0.3
baz=318
Y36A **Durant** 91.48 44 P P 18 48 43.1 -0.1
baz=318
U40A **Yellville** 91.49 41 P P 18 48 43.1 -0.1
baz=320
T41A **Mountain View** 91.52 40 P P 18 48 43.0 -0.4
baz=321
W38A **Poteau** 91.58 43 P P 18 48 43.7 +0.1
baz=319
VSL **Villasalto** 91.69 325 PFAKE 18 48 50.0 +5.9
VSL LR LR
comp=Z,1µm,21.0s
X38A **Whitesboro** 91.71 43 P P 18 48 44.8 +0.5
baz=319
Y37A **Hugo** 91.79 44 P P 18 48 45.0 +0.4
baz=318
333A **Richland Sprin** 91.80 48 P P 18 48 45.2 +0.4
baz=316
234A **Clairette** 91.81 47 P P 18 48 45.4 +0.6
baz=317
135A **Vickery Place,** 91.83 46 P P 18 48 45.5 +0.6
baz=317
Z36A **Blue Ridge** 91.86 45 P P 18 48 45.1 +0.1
baz=318
W39A **Magazine** 91.88 42 P P 18 48 45.0 0.0
baz=319
R44A **Waltonville** 91.91 37 P P 18 48 45.2 +0.1
baz=322
JCT **Junction City** 91.92 49 P P 18 48 45.5 +0.1
baz=316
JCT **Junction City** 91.92 49 eP P 18 48 45.6 +0.2
JCT pmax pmax
comp=Z,185nm,1.8s
JCT MLR MLR
comp=Z,319nm,20.0s
JCT **Junction City** 91.92 49 eP P 18 48 45.6 +0.2
comp=Z,185nm,1.8s
JCT LR LR
comp=Z,319nm,20.0s
V40A **Witts Springs** 91.92 41 P P 18 48 44.8 -0.4
baz=320
S43A **Fulton Ridge,** 91.96 38 P P 18 48 45.1 -0.2
baz=322
U41A **Viola** 91.98 40 P P 18 48 45.2 -0.3
baz=321
OLIL **Olney** 92.00 36 eP P 18 48 46.3 +0.8
comp=Z,100nm,1.4s
WDD **Wied Dalam** 92.02 319 PFAKE 18 49 00.0 +14
WDD LR LR
comp=Z,1µm,21.0s
433A **Art** 92.15 48 P P 18 48 46.2 -0.1
baz=316
WHTX **Lake Whitney,** 92.21 46 P P 18 48 47.1 +0.5
baz=317
WHTX **Lake Whitney,** 92.21 46 eP P 18 48 47.1 +0.5
comp=Z,156nm,1.1s
WHTX epP pP 18 49 02.6 +1.3
X39A **Fountain Ranch** 92.22 43 P P 18 48 47.1 +0.5
baz=319
334A **Lometa** 92.23 47 P P 18 48 47.2 +0.4
baz=317
W40A **Ferguson Farm,** 92.26 42 P P 18 48 46.8 0.0
baz=320
S44A **Carbondale** 92.27 38 P P 18 48 46.9 +0.1
baz=322
SIUC **Southern Illin** 92.27 38 eP P 18 48 47.4 +0.6
comp=Z,65nm,1.1s
V41A **Mountainview** 92.29 41 P P 18 48 46.5 -0.5
baz=320
Y38A **Idabel** 92.32 43 P P 18 48 46.6 -0.4
baz=319
U42A **Revenden** 92.32 40 P P 18 48 46.7 -0.3
baz=321
Z37A **Pogue Cattle C** 92.37 44 P P 18 48 47.5 +0.2
baz=318
136A **Ennis** 92.39 46 P P 18 48 47.3 -0.1
baz=318
PBMO **Poplar Bluff** 92.40 39 eP P 18 48 47.5 +0.1
comp=Z,52nm,1.1s
MIAR **Mount Ida** 92.48 42 P P 18 48 48.0 +0.3
baz=320
MIAR **Mount Ida** 92.48 42 eP P 18 48 48.1 +0.3
MIAR pmax pmax
comp=Z,92nm,1.2s
MIAR MLR MLR
comp=Z,400nm,20.0s
MIAR **Mount Ida** 92.48 42 eP P 18 48 48.1 +0.3
comp=Z,92nm,1.2s
MIAR LR LR
comp=Z,400nm,20.0s
LONY **Lake Ozonia** 92.49 25 eP P 18 48 48.0 +0.3
comp=Z,25nm,1.3s
LONY LR LR
comp=Z,635nm,22.0s
X201 **Greenbrier Sit** 92.56 41 eP P 18 48 48.4 +0.2
comp=Z,58nm,1.1s
X301 **Greenbrier Sit** 92.58 41 eP P 18 48 48.4 +0.1
comp=Z,42nm,1.1s
434A **Burnet** 92.59 48 P P 18 48 48.3 -0.2
baz=317
WHAR **Wooly Hollow** 92.60 41 eP P 18 48 48.3 0.0
comp=Z,75nm,1.1s
S45A **Carrier Mills** 92.61 37 P P 18 48 48.4 +0.1
baz=323
FRNY **Flat Rock** 92.63 24 eP P 18 48 48.3 0.0
comp=Z,18nm,1.3s
Y39A **Lockesburg** 92.66 43 P P 18 48 48.8 +0.1
baz=319
V42A **Cord** 92.67 40 P P 18 48 48.2 -0.5
baz=321
533A **Kerrville** 92.67 49 P P 18 48 48.8 0.0
baz=316
Z38A **Mt. Pleasant** 92.68 44 P P 18 48 48.8 +0.1
baz=319
W41B **Gary Mavity, V** 92.71 41 P P 18 48 48.6 -0.2
baz=320
137A **Heron Place, G** 92.74 45 P P 18 48 49.4 +0.4
baz=318
335A **Moody** 92.75 47 P P 18 48 49.2 +0.1
baz=317
X40A **Basin Creek Fa** 92.92 42 P P 18 48 49.9 0.0
baz=320
UALR **University of** 92.96 41 eP P 18 48 50.6 +0.6
comp=Z,21nm,1.0s
MMNY **Mt. Morris Dam** 92.98 28 eP P 18 48 51.3 +1.3
336A **Riesel** 93.01 46 P P 18 48 50.6 +0.3
baz=318
435B **Jarrell** 93.02 47 P P 18 48 50.4 0.0
baz=317
633A **Saathoff Ranch** 93.03 49 P P 18 48 51.0 +0.5
baz=316
534A **Blanco** 93.04 48 P P 18 48 50.6 +0.1
baz=317
Y40A **Okolona** 93.04 42 P P 18 48 50.4 0.0
baz=320
138A **Matatall Enter** 93.07 44 P P 18 48 50.9 +0.3
baz=319
ACSO **Alum Creek Sta** 93.08 32 eP P 18 48 51.1 +0.6
comp=Z,59nm,1.3s
ACSO LR LR
comp=Z,388nm,21.0s
X41A **Kaden, Bauxite** 93.09 42 P P 18 48 50.9 +0.2
baz=320
Z39A **Irene McRaven,** 93.13 44 P P 18 48 51.3 +0.4
baz=319
NCB **Newcomb** 93.19 25 eP P 18 48 51.1 +0.2
comp=Z,1.2nm,1.8s
WCI **Wyandotte Cave** 93.25 35 eP P 18 48 51.9 +0.6
WCI pmax pmax
comp=Z,27nm,1.1s
WCI **Wyandotte Cave** 93.25 35 eP P 18 48 51.9 +0.6
comp=Z,27nm,1.1s
M54A **Oil Creek Stat** 93.36 29 P P 18 48 51.9 +0.1
baz=329
832A **Faith Ranch, C** 93.38 51 P P 18 48 52.5 +0.5
baz=316
WLAR **White Oak Lake** 93.38 43 eP P 18 48 53.6 +1.6
comp=Z,113nm,1.3s
V44A **Blytheville** 93.41 39 P P 18 48 52.6 +0.6
baz=322
139A **Bunkhouse Ranc** 93.44 44 P P 18 48 52.5 +0.3
baz=319
733A **Divot King Ran** 93.48 50 P P 18 48 53.1 +0.5
baz=316
436A **Wall Ranch, Ga** 93.49 47 P P 18 48 53.3 +0.7
baz=318
Y41A **Eaglete Beard** 93.50 42 P P 18 48 52.8 +0.2
baz=320
238A **Jacksonville** 93.54 45 P P 18 48 53.4 +0.7
baz=318
PKME **Peaks-Kenny Pk** 93.54 21 eP P 18 48 53.7 +1.2
comp=Z,46nm,1.3s
PKME LR LR
comp=Z,627nm,20.0s
Z40A **Long Farm, Mag** 93.55 43 P P 18 48 53.2 +0.4
baz=320
535A **Dale** 93.58 48 P P 18 48 53.2 +0.3
baz=317
634A **China Grove, S** 93.58 49 P P 18 48 53.3 +0.3
baz=317
337A **Centerville** 93.61 46 P P 18 48 53.8 +0.7
baz=318
N54A **Moraine State** 93.69 30 P P 18 48 53.4 +0.1
baz=328
833A **Chaparral WMA,** 93.71 50 P P 18 48 54.2 +0.6
baz=316
437A **Phantom Ranch,** 93.83 46 P P 18 48 54.8 +0.7
baz=318
536A **Bastrop** 93.84 47 P P 18 48 54.9 +0.7
baz=317
734A **La Parita Cree** 93.84 49 P P 18 48 54.8 +0.6
baz=316
Z41A **Richland Creek** 93.88 43 P P 18 48 54.6 +0.4
baz=320
239A **Gary** 93.89 45 P P 18 48 54.8 +0.5
baz=319
338A **Crockett** 93.91 45 P P 18 48 55.1 +0.7
baz=318
635A **Leesville** 93.92 48 P P 18 48 55.2 +0.6
baz=317
140A **Cam and Jess,** 93.92 44 P P 18 48 55.2 +0.8
baz=320
X43A **Marvell** 93.93 41 P P 18 48 54.6 +0.1
baz=321
V45A **Humboldt** 93.95 39 P P 18 48 54.5 -0.1
baz=322
Y42A **Garnett, Star** 93.98 42 P P 18 48 55.1 +0.4
baz=321
NATX **Nacogdoches** 93.98 45 P P 18 48 55.4 +0.6
baz=319
NATX **Nacogdoches** 93.98 45 PFAKE 18 49 10.0 +15
NATX LR LR
comp=Z,408nm,21.0s
W44A **Shelby Farms P** 93.99 40 P P 18 48 54.9 +0.2
baz=322
HNH **Hanover** 94.05 23 eP P 18 48 56.1 +1.2
comp=Z,25nm,1.0s
WVL **Waterville** 94.08 21 eP P 18 48 55.9 +0.9
comp=Z,77nm,1.4s
BINY **Binghamton** 94.14 27 PFAKE 18 49 10.0 +15
BINY LR LR
comp=Z,692nm,19.0s
LMN **Caledonia Moun** 94.19 18 eP P 18 48 56.2 +0.8
comp=Z,34nm,1.1s
WVT **Waverly** 94.20 38 eP P 18 48 56.0 +0.3
WVT pmax pmax
comp=Z,96nm,0.8s
WVT **Waverly** 94.20 38 eP P 18 48 56.0 +0.3
comp=Z,96nm,0.8s
438A **Sam Houston St** 94.27 46 P P 18 48 56.9 +0.8
baz=318
240A **Hunter Patters** 94.27 44 P P 18 48 56.6 +0.5
baz=319
537A **Green Hill Far** 94.28 47 P P 18 48 57.0 +0.8
baz=318
636A **Smothers Creek** 94.28 48 P P 18 48 57.4 +1.2
baz=317
735A **Kenedy** 94.29 49 P P 18 48 57.7 +1.4
baz=317
933A **Laredo** 94.29 51 P P 18 48 57.5 +1.2
baz=316
W45A **Hickory Valley** 94.30 39 P P 18 48 56.2 +0.1
baz=322
141A **Papa Simpson,** 94.32 43 P P 18 48 56.8 +0.5
baz=320
X44A **Crenshaw** 94.32 40 P P 18 48 56.6 +0.3
baz=322
Z42A **Norrel Spur, H** 94.32 42 P P 18 48 57.0 +0.7
baz=320
FURI **Furi** 94.34 284 epP pP 18 49 08.0 -3.9
GGN **Saint George** 94.35 19 eP P 18 48 57.0 +0.8
comp=Z,20nm,1.0s

339A Huntington 94.36 45 P P 18 48 56.8 +0.2
baz=319
834A Tilden 94.36 50 P P 18 48 57.8 +1.2
baz=316
Y43A Makayla and Ka 94.37 41 P P 18 48 57.0 +0.5
baz=321
439A Center Grove, 94.64 46 P P 18 48 58.5 +0.7
baz=319
538A Harpers Horsep 94.65 46 P P 18 48 59.1 +1.2
baz=318
736A Circle Diamond 94.66 48 P P 18 48 59.6 +1.7
baz=317
340A Bronson 94.67 45 P P 18 48 58.3 +0.4
baz=319
835A Beeville 94.69 49 P P 18 48 59.4 +1.4
baz=317
Y44A Strider, Charl 94.71 41 P P 18 48 58.4 +0.4
baz=322
KEST Kesra 94.72 322 P P 18 48 58.0 -0.2
comp=Z,21nm,1.2s,baz=75,slow=3.8,SNR=11
KEST Kesra 94.72 322 *e*P P 18 48 58.6 +0.4
comp=Z,44nm,1.4s
637A Eagle Lake 94.74 47 P P 18 48 59.6 +1.4
baz=318
Z43A Armstrong Fami 94.75 42 P P 18 48 58.6 +0.3
baz=321
241A Mo Tay, Goldon 94.75 44 P P 18 48 58.8 +0.5
baz=320
934A Benavides 94.76 50 P P 18 48 60.0 +1.5
baz=316
X45A UM Field Stati 94.77 40 P P 18 48 58.3 0.0
baz=322
SSPA Standing Stone 94.79 29 *e*P P 18 48 58.2 -0.1
comp=Z,14nm,1.1s
O56A Blue Knob Stat 94.85 29 P P 18 48 58.9 +0.2
baz=330
142A Monroe 94.88 43 P P 18 48 59.4 +0.5
baz=320
034A Hebbronville 95.05 51 P P 18 49 01.3 +1.6
baz=316
143A Socs Landing, 95.05 42 P P 18 49 00.2 +0.6
baz=321
Z44A Pea Ridge, Bel 95.12 41 P P 18 49 00.3 +0.3
baz=321
Y45A Yeager Farm, C 95.13 40 P P 18 49 00.3 +0.3
baz=322
341A Kurthwood 95.14 44 P P 18 49 00.7 +0.7
baz=320
440A Kirbyville 95.14 45 P P 18 49 00.4 +0.3
baz=319
242A Grayson 95.14 43 P P 18 49 00.5 +0.4
baz=320
737A Port Lavaca 95.17 48 P P 18 49 02.0 +1.7
baz=318
KVTX Kingsville 95.19 50 PFAKE 18 49 10.0 +10
KVTX LR LR
comp=Z,319nm,20.0s
638A Rosharon 95.27 47 P P 18 49 02.0 +1.3
baz=318
N59A State Game Lan 95.34 27 P P 18 49 01.0 +0.2
baz=332
Z45A Winona 95.44 41 P P 18 49 01.8 +0.4
baz=322
Y46A Houston 95.47 40 P P 18 49 01.5 0.0
baz=322
035A Encino 95.50 50 P P 18 49 03.0 +1.2
baz=317
441A DeRidder 95.57 45 P P 18 49 02.7 +0.7
baz=320
342A Flagon Creek P 95.57 44 P P 18 49 02.5 +0.5
baz=320
ZAIG Zacatecas 95.59 56 *e*P P 18 49 03.7 +1.1
comp=Z,49nm,1.1s
144A Alexander Plac 95.63 41 P P 18 49 02.9 +0.6
baz=321
243A Waterproof 95.64 43 P P 18 49 03.4 +1.0
baz=321
SWET Sewanee 95.85 37 *e*P P 18 49 02.8 -0.5
comp=Z,7.4nm,1.1s
035Z Hargill 95.86 51 P P 18 49 04.8 +1.4
baz=317
TZTN Tazewell 95.88 35 *e*P P 18 49 03.8 +0.4
comp=Z,50nm,1.4s
VBMS Vicksburg 95.90 42 P P 18 49 03.7 +0.1
baz=321
145A Houston Renfro 95.91 41 P P 18 49 03.9 +0.3
baz=322
244A Avery, Jackson 95.95 42 P P 18 49 04.2 +0.4
baz=321
Y47A UCPARC, Winfie 95.96 39 P P 18 49 03.4 -0.4
baz=323
Z46A Louisville 95.97 40 P P 18 49 04.4 +0.5
baz=322
CPCT Cooper Cave 96.33 36 *e*P P 18 49 05.6 +0.2
comp=Z,7.7nm,1.0s
146A Union 96.34 41 P P 18 49 05.9 +0.4
baz=322
344A Westbrook Farm 96.38 42 P P 18 49 05.4 -0.3
baz=321
TKL Tuckaleechee C 96.51 35 *e*P P 18 49 06.5 +0.2
TKL pmax pmax
comp=Z,17nm,1.0s
TKL Tuckaleechee C 96.51 35 *e*P P 18 49 06.5 +0.2
comp=Z,17nm,1.0s
BLA Blacksburg 96.70 32 *e*P P 18 49 07.9 +0.7
BLA pmax pmax
comp=Z,27nm,1.2s
BLA MLR MLR
comp=Z,595nm,21.0s
BLA Blacksburg 96.70 32 *e*P P 18 49 07.9 +0.7
comp=Z,27nm,1.2s
BLA LR LR
comp=Z,595nm,21.0s
147A Livingston 96.72 40 P P 18 49 07.8 +0.5
baz=323
246A Jackson Lee, B 96.80 41 P P 18 49 08.3 +0.7
baz=322
ES19 SONSECA Array 96.99 333 *e*P P 18 49 08.6 +0.1
247A Quitman 97.03 41 P P 18 49 08.6 -0.1
baz=322
ESDC Sonseca Array 97.03 333 P P 18 49 07.4 -1.3
comp=Z,1.5nm,0.7s,baz=37,slow=4.0,SNR=10
ESDC PP PP 18 53 12.7 +8.9
comp=Z,1.5nm,0.8s,baz=36,slow=6.3,SNR=4.3
ESDC LR LR 19 36 45.8
comp=Z,754nm,21.8s,baz=35,slow=38
CBN Corbin Frederi 97.09 30 PFAKE 18 49 20.0 +11
CBN LR LR
comp=Z,412nm,21.0s
PAB San Pablo 97.29 334 PFAKE 18 49 20.0 +10
PAB LR LR
comp=Z,2µm,21.0s
MTE Manteigas 97.60 336 PFAKE 18 49 20.0 +8.8
MTE LR LR
comp=Z,2µm,22.0s
446A Poplarville 97.63 42 P Pdif 18 49 11.6 +0.2
baz=322
KMSC Kings Mountain 98.04 34 P P 18 49 12.8 -0.3
baz=327
GOGA Godfrey 98.50 36 PFAKE 18 49 30.0 +15
GOGA LR LR
comp=Z,325nm,20.0s
BRAL Brewton 98.54 40 PFAKE 18 49 30.0 +15
BRAL LR LR
comp=Z,405nm,20.0s
JSC Jenkinsville 98.79 34 *e*P Pdif 18 49 17.3 +0.7
JSC Jenkinsville 98.79 34 *e*P Pdif 18 49 17.3 +0.7
RKT Rikitea 99.13 112 *e*LR LR 19 21 27.9
comp=Z,2µm,25.5s,baz=318
CNNC Cliffs of the 99.44 31 PFAKE 18 49 30.0 +11
CNNC LR LR
comp=Z,562nm,19.0s
NHSC New Hope 100.27 34 PFAKE 18 49 30.0 +6.9
NHSC LR LR
comp=Z,632nm,20.0s
KMBO Kilima Mbogo 101.60 277 PP PP 18 53 39.7 -0.6
comp=Z,1.1nm,0.3s,baz=53,slow=9.3,SNR=3.8
KMBO Kilima Mbogo 101.60 277 PFAKE 18 49 40.0 +10
KMBO LR LR
comp=Z,396nm,20.0s
RTC Rabat Centre 103.15 333 PFAKE 18 49 50.0 +14
RTC LR LR
comp=Z,3µm,19.0s
CMLA Cha da Macela 104.43 349 PFAKE 18 49 50.0 +8.4
CMLA LR LR
comp=Z,1µm,21.0s
BBSR BB Station 106.81 23 PFAKE 18 54 10.0
BBSR LR LR
comp=Z,212nm,21.0s
CCIG Comitan 107.05 53 *e*P PP 18 54 20.9 +0.9
TAM Tamanrasset 107.09 317 PFAKE 18 54 10.0
TAM LR LR
comp=Z,810nm,21.0s
GTBY Guantanamo Bay 113.83 37 PFAKE 18 54 30.0
GTBY LR LR
comp=Z,369nm,22.0s
MTDJ Mount Denham 114.05 40 PFAKE 18 54 30.0 +14
MTDJ LR LR
comp=Z,302nm,20.0s
GRTK Grand Turk 114.28 33 PFAKE 18 54 30.0 +14
GRTK LR LR
comp=Z,713nm,21.0s
VNDA Vanda 115.11 175 PKP PKPdf 18 54 16.0 -0.3
comp=Z,3.5nm,0.9s,baz=314,slow=4.5,SNR=16
VNDA Vanda 115.11 175 PKIKP PKPdf 18 54 16.0 -0.3
VNDA pmax pmax
comp=Z,4.0nm,0.9s
SBA Scott Base 115.80 174 *e*PKIKP PKPdf 18 54 18.0 +0.4
SBA Scott Base 115.80 174 *e*PKPdf PKPdf 18 54 18.0 +0.4
SDDR Presa de Saban 116.43 34 PFAKE 18 54 30.0 +9.2
SDDR LR LR
comp=Z,505nm,19.0s
TORD Torodi Ar. Bea 117.00 314 PKP PKPdf 18 54 21.1 -0.8
comp=Z,6.0nm,0.9s,baz=54,slow=2.7,SNR=23
TORD PP PP 18 55 30.6 -0.2
comp=Z,18nm,1.1s,baz=34,slow=5.6,SNR=12
TORD PKKPbc PKKPbc 19 04 46.4 +0.6
comp=Z,3.3nm,0.8s,baz=211,slow=3.1,SNR=11
LSZ Lusaka 117.13 271 *e*PKIKP PKPdf 18 54 22.8 +0.6
LSZ MLR MLR
comp=Z,539nm,19.0s
LSZ Lusaka 117.13 271 *e*PKPdf PKPdf 18 54 22.8 +0.6
LSZ LR LR
comp=Z,539nm,19.0s
SJG San Juan 119.39 30 PFAKE 18 54 40.0 +14
SJG LR LR
comp=Z,453nm,21.0s
MAW Mawson 119.48 206 PKP PKPdf 18 54 25.1 +0.2
comp=Z,4.7nm,0.9s,baz=53,slow=3.2,SNR=6.9
PAYG Puerto Ayora 120.47 65 PFAKE 18 54 40.0 +11
PAYG LR LR
comp=Z,531nm,19.0s
ANWB Willy Bob 121.42 26 PFAKE 18 54 40.0 +10
ANWB LR LR
comp=Z,419nm,20.0s
SJCC San Jacinto, C 122.22 43 *e*P PKPdf 18 54 31.5 -0.5
MOTC Monteria, Cord 122.87 45 *e*P PKPdf 18 54 32.0 -1.1
DBBC Dabeiba 123.99 46 *e*P PKPdf 18 54 36.5 +1.1
LBTB Lobatse 124.29 263 *e*PKIKP PKPdf 18 54 36.3 +0.6
LBTB Lobatse 124.29 263 *e*P PKPdf 18 54 36.3 +0.6
FDF Fort de France 124.36 26 PFAKE 18 54 50.0 +14
FDF LR LR
comp=Z,551nm,22.0s
OCAC Ocana 124.61 43 *e*P PKPdf 18 54 37.1 +0.4
SDV Santo Domingo 125.47 39 *e*P PKPdf 18 54 37.7 -0.7
SDV Santo Domingo 125.47 39 *e*PKPdf PKPdf 18 54 38.4 0.0
SDV LR LR
comp=Z,337nm,22.0s
NORC Norcasia 125.94 46 *e*P PKPdf 18 54 37.7 -1.5
DBIC Dimbokro 125.97 316 PKP PKPdf 18 54 38.6 -0.5
comp=Z,24nm,1.1s,baz=27,slow=1.4,SNR=7.9
DBIC Dimbokro 125.97 316 *e*P PKPdf 18 54 39.0 -0.1
BARC Barichara 126.05 44 *e*P PKPdf 18 54 38.8 -0.8
TIC Toumodi 126.08 317 *e*PKP1 PKPdf 18 54 38.6 -0.8
KIC Kosan Boka 126.16 316 *e*PKP1 PKPdf 18 54 38.9 -0.6
comp=Z,80nm,1.2s
SACV Santiago Islan 126.17 341 PFAKE 18 54 50.0 +11
SACV LR LR
comp=Z,152nm,19.0s
BOSA Boshof 126.24 259 PKP PKPdf 18 54 38.4 -1.0
comp=Z,20nm,0.9s,baz=72,slow=3.1,SNR=16
BOSA Boshof 126.24 259 *e*P PKPdf 18 54 39.7 +0.4
LIC Lamto 126.43 316 *e*PKP1 PKPdf 18 54 39.4 -0.6
comp=Z,39nm,1.4s
GRGR Grenville 126.57 28 PFAKE 18 54 50.0 +10
GRGR LR LR
comp=Z,497nm,22.0s
RUSC La Rusia 126.68 44 *e*P PKPdf 18 54 41.1 0.0
ROSC El Rosal 126.84 46 PKP PKPdf 18 54 42.1 +0.8
comp=Z,30nm,1.0s,baz=326,slow=7.3,SNR=18
QSPA South Pole Qui 126.88 180 *e*PKPdf PKPdf 18 54 38.5 -0.8
QSPA LR LR
comp=Z,849nm,21.0s
CHIC Chingaza 127.35 46 *e*P PKPdf 18 54 42.2 -0.1
PRAC Prado 127.42 47 *e*P PKPdf 18 54 41.9 -0.1
TSUM Tsumeb 127.74 274 *e*PKPdf PKPdf 18 54 43.1 +0.7
TSUM LR LR
comp=Z,393nm,19.0s
OTAV Otavalo 127.94 54 *e*PKPdf PKPdf 18 54 43.6 +0.2
OTAV LR LR
comp=Z,339nm,22.0s
SYO Syowa Base 128.14 207⇑*i*X PKiKP 18 54 40.2 -1.9
SYO Syowa Base 128.14 207‖*e*PKiKP PKiKP 18 54 42.2 +0.1
NVL N^{l}azarevskaya 137.25 202 *e*PKIKP PKPdf 18 55 01.9 +3.3
NNA Nana 137.89 63 *e*PKIKP PKPdf 18 55 01.6 0.0
NNA MLR MLR
comp=Z,196nm,22.0s
NNA Nana 137.89 63 *e*PKPdf PKPdf 18 55 01.6 0.0
NNA LR LR
comp=Z,196nm,22.0s
PTGA Pitinga 138.93 33 PKhKP PKPpre 18 54 53.9
comp=Z,8.5nm,1.1s,baz=6.4,slow=3.0,SNR=8.0
PTGA PKP PKPdf 18 55 03.5 0.0
comp=Z,21nm,1.0s,baz=346,slow=2.3,SNR=15
SNAA Sanae 140.75 197 P PKPpre 18 54 57.2
VNA1 Neumayer--Stat 142.72 196 P PKPdf 18 55 04.7 -3.8
ASCN Ascension 143.29 316 PFAKE 18 55 20.0 +8.7
ASCN LR LR
comp=Z,1µm,21.0s
SAML Samuel 144.42 44 *e*PKPdf PKPab 18 55 10.8 -0.7
SAML LR LR
comp=Z,345nm,22.0s
LPAZ La Paz 146.95 59 PKPbc PKPdf 18 55 19.2 +0.9
comp=Z,102nm,0.7s,baz=319,slow=2.2,SNR=168
PMSA Palmer Station 148.60 160 PFAKE 18 55 30.0 +3.9
PMSA LR LR
comp=Z,921nm,19.0s
RCBR Riachuelo 148.70 354 *e*PKPdf PKPdf 18 55 20.6 0.0
RCBR LR LR
comp=Z,343nm,20.0s
LVC Limon Verde 150.47 69 PKP PKPdf 18 55 24.0 +0.5
comp=Z,66nm,1.2s,baz=288,slow=3.2,SNR=6.8
LVC PKPbc PKiKP 18 55 29.7 +0.1
comp=Z,631nm,1.1s,baz=286,slow=2.7,SNR=56
LVC Limon Verde 150.47 69 PKP PKPdf 18 55 24.0 +0.5
LVC PKPbc PKiKP 18 55 29.7 +0.1
LVC LR LR
comp=Z,509nm,20.0s
SIV San Ignacio 151.28 49 PKP PKPdf 18 55 24.7 +0.2
comp=Z,16nm,0.9s,baz=309,slow=0.6,SNR=27
SIV PKPbc PKPbc 18 55 30.4 -0.1
comp=Z,136nm,0.9s,baz=296,slow=1.7,SNR=113
LCO Las Campanas 152.35 82 *e*P PKPdf 18 55 25.6 -0.4
LCO Las Campanas 152.35 82 PFAKE 18 55 40.0 -3.1
LCO LR LR
comp=Z,629nm,22.0s
ROC1 El Roble 153.56 91 *e*P PKPdf 18 55 27.6 -0.1
VCA Vinchina 154.20 80 *e*P PKPdf 18 55 29.3 +0.7
AZAP Zapla 154.27 67 *e*P PKPdf 18 55 29.4 +0.5
AGUA GUANDACOL 154.30 81‖*e*P PKPdf 18 55 29.3 +0.6
RTLS Leoncito 154.55 87 *e*P PKPbc 18 55 38.0 +0.4
AUSP Uspallata 154.62 88 *e*P PKPdf 18 55 29.7 +0.4
FSA Cafayete 154.64 72 *e*P PKPdf 18 55 30.2 +0.9
AMOG MOGNA 154.88 84‖*e*P PKPdf 18 55 30.0 +0.6
RTCV Cerro Valdivia 155.18 87 *e*P PKPdf 18 55 39.0 +9.2
ASAL Salagasta 155.18 88 *e*P PKPdf 18 55 30.1 +0.4
ARCO CERRO ARCO 155.19 89 *e*P PKPdf 18 55 29.7 -0.2
PLCA Paso Flores 155.29 108 *e*P PKPdf 18 55 28.1 -1.5
PLCA Paso Flores 155.29 108 PKP PKPdf 18 55 29.2 -0.5
comp=Z,3.9nm,0.8s,baz=209,slow=6.0,SNR=6.2
PLCA PKPab PKPab 18 55 55.4 +0.3
comp=Z,20nm,0.8s,baz=281,slow=4.6,SNR=19
AAGR Agrelo 155.34 89‖*e*P PKPdf 18 55 30.1 +0.1
CYA Choya 155.94 77 *e*P PKPdf 18 55 30.2 -0.6
ACAN Cantantal 156.39 87 *e*P PKPdf 18 55 31.5 +0.2
ACHE Chepes 156.41 84 *e*P PKPdf 18 55 31.5 0.0
BDFB Brasilia 157.15 23 PKP PKPdf 18 55 34.7 +1.9
comp=Z,6.9nm,0.8s,baz=347,slow=19
BDFB PKPab PKPab 18 56 05.6 +2.1
baz=343,slow=20
TCA Tanti 158.12 82 *e*P PKPdf 18 55 33.8 +0.2
CPUP Villa Florida 161.10 60 PKP PKPdf 18 55 36.5 -0.5
comp=Z,12nm,1.1s,baz=346,slow=2.7,SNR=10.0
CPUP PKPab PKPab 18 56 20.0 -0.4
comp=Z,13nm,0.9s,baz=312,slow=4.2,SNR=12
TRQA Tornquist 161.80 100 PFAKE 18 55 50.0 +13
TRQA LR LR
comp=Z,467nm,19.0s

TAP ***07*** *18:36:44.7,24.24N×121.74E,h11km,ML3.2,C*
JMA ***07*** *18:36:44.2±0.1,24.19N×121.76E,h12km±2km,M2.5*
ISC 07 18:36:44.7±0.9,24°22N±0.02×121°80E±0.02,h11km±7km,
n50,σ0966/80,6C,Taiwan

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.22**	**347**	⇑*i*P		**Pg**	**18 36 49.6**	**+0.2**
	baz=3.0							
ENA				S		**Sg**	**18 36 53.1**	**+0.5**
	baz=3.0							
TWD	**Chiawan**	**0.23**	**233**	*e*P		**Pg**	**18 36 49.6**	**+0.1**
	baz=217							
TWD				*e*S		**Sg**	**18 36 53.2**	**+0.5**
	baz=217							
HWA	**Hwalien**	**0.29**	**216**	*e*P		**Pg**	**18 36 49.8**	**-0.9**
	baz=203							
TWC	**Suao**	**0.40**	**7**	⇑*i*P		**Pg**	**18 36 52.9**	**+0.2**
	baz=16							
TWC				*e*S		**Sg**	**18 36 57.3**	**-0.6**
	baz=16							
NNS	**Nan Shan**	**0.45**	**300**	⇑*i*P		**Pg**	**18 36 53.4**	**-0.2**
	baz=301							
NNS				S		**Sg**	**18 36 59.4**	**-0.2**
	baz=301							
ENTT	**Nioudou**	**0.47**	**334**	P		**Pg**	**18 36 54.1**	**+0.1**
	baz=339							
ENTT				S		**Sg**	**18 37 00.6**	**+0.3**
	baz=339							
WHF	**Hehuan Shan**	**0.49**	**262**	⇑*i*P		**Pg**	**18 36 54.2**	**-0.2**
	baz=257							
WHF				S		**Sg**	**18 37 00.7**	**-0.3**
	baz=257							
TWE	**Neicheng**	**0.52**	**347**	P		**Pg**	**18 36 55.1**	**+0.2**
	baz=354							
TWE				S		**Sg**	**18 37 02.1**	**+0.4**
	baz=354							
ESL	**Shilin**	**0.52**	**220**	P		**Pg**	**18 36 54.8**	**-0.1**
	baz=212							
ILA	**Ilan**	**0.55**	**356**	*e*P		**Pb**	**18 36 56.9**	**+0.6**
	baz=1.0							
ILA				*e*S		**Sb**	**18 37 03.9**	**-0.3**
	baz=1.0							
TWT	**Tachien**	**0.57**	**274**	⇑*i*P		**Pb**	**18 36 56.1**	**-0.7**
	baz=271							
TWT				S		**Sg**	**18 37 03.5**	**+0.2**
	baz=271							
NSK	**Sanguang**	**0.61**	**319**	P		**Pg**	**18 36 56.3**	**-0.3**
	baz=322							
NSK				S		**Sg**	**18 37 04.0**	**-0.7**
	baz=322							
EGS		**0.64**	**11**	P		**Pb**	**18 36 57.9**	**0.0**
	baz=17							
TWA	**Mucha**	**0.79**	**346**	*e*P		**Pn**	**18 37 01.2**	**-0.6**
	baz=349							
TWA				*e*S		**Sb**	**18 37 11.7**	**+0.6**
	baz=349							
EHY	**Hungye**	**0.83**	**212**	*e*P		**Pg**	**18 37 00.7**	**-0.1**
	baz=207							
NSTT	**Nanjuang**	**0.83**	**300**	P		**Pb**	**18 37 00.8**	**-0.4**
	baz=300							
NSTT				S		**Sg**	**18 37 11.5**	**-0.3**
	baz=300							
NWF	**Wu-fen Shan**	**0.85**	**359**	*e*P		**Pb**	**18 37 01.7**	**+0.1**
	baz=2.0							
NWF				*e*S		**Sg**	**18 37 12.8**	**+0.4**
	baz=2.0							
TAP1	**Taipei**	**0.86**	**343**	*e*P		**Pg**	**18 37 01.3**	**0.0**
	baz=345							
SMLT	**Sun Moon Lake**	**0.88**	**248**	⇑*i*P		**Pg**	**18 37 01.4**	**-0.4**
	baz=244							
SMLT				S		**Sg**	**18 37 13.0**	**-0.4**
	baz=244							
TYC	**Yuchr**	**0.91**	**250**	*e*P		**Pg**	**18 37 01.9**	**-0.4**
	baz=247							
TYC				*e*S		**Sb**	**18 37 14.5**	**-0.1**
	baz=247							
TWQ1	**Liyutan**	**0.94**	**278**	P		**Pn**	**18 37 03.4**	**-0.5**
	baz=277							
TWS1	**Kuangyinshan**	**0.95**	**339**	*e*P		**Pn**	**18 37 03.5**	**-0.4**
	baz=341							
TWS1				*e*S		**Sn**	**18 37 17.5**	**+0.1**
	baz=341							
HSN	**Hsinchu**	**0.95**	**308**	*e*S		**Sn**	**18 37 17.2**	**-0.3**
	baz=311							
NSY	**Sanyi**	**0.96**	**282**	*e*P		**Pn**	**18 37 04.0**	**-0.2**
	baz=281							
NSY				S		**Sn**	**18 37 17.0**	**-0.9**
	baz=281							
TWF1	**Yuli**	**0.97**	**208**	*e*P		**Pg**	**18 37 02.1**	**-1.4**
	baz=204							
TCU	**Taichung**	**1.02**	**266**	*e*P		**Pn**	**18 37 05.6**	**+0.6**
	baz=264							
TCU				*e*S		**Sn**	**18 37 20.4**	**+1.0**
	baz=264							
YUS	**Yu-Shan**	**1.06**	**227**	*e*P		**Pg**	**18 37 04.7**	**-0.4**
	baz=223							
WNT	**Mingjian**	**1.07**	**252**	*e*P		**Pn**	**18 37 05.9**	**+0.3**
	baz=249							
TWY	**Chenhua**	**1.07**	**351**	*e*P		**Pn**	**18 37 06.6**	**+1.0**
	baz=353							
JYNG	**Yonagunijimaku**	**1.08**	**77**	P		**Pb**	**18 37 05.5**	**+0.2**
JYNG				S		**Sg**	**18 37 20.1**	**+0.6**
YOJ	**Yonaguni jima**	**1.14**	**77**	P		**Pb**	**18 37 06.1**	**-0.3**
YOJ				S		**Sn**	**18 37 22.3**	**+0.2**
ALS	**Alishan**	**1.15**	**232**	P		**Pb**	**18 37 06.0**	**-0.7**
	baz=229							
CHKT	**Chengkung**	**1.18**	**200**	*e*P		**Pg**	**18 37 08.6**	**+1.2**
	baz=196							
CHKT				*e*S		**Sn**	**18 37 23.6**	**+0.5**
	baz=196							
CHN5	**Tsauling**	**1.19**	**239**	*e*P		**Pg**	**18 37 07.4**	**-0.3**
	baz=236							
CHN5				*e*S		**Sn**	**18 37 26.2**	**+2.5**
	baz=236							
ELDTW	**Lidau**	**1.25**	**215**	P		**Pn**	**18 37 07.6**	**-0.6**
	baz=211							
CHN4	**Tsaushan**	**1.40**	**232**	*e*P		**Pg**	**18 37 11.0**	**-0.6**
	baz=229							
CHN4				*e*S		**Sg**	**18 37 31.4**	**+1.6**
	baz=229							
STYT	**Tauyuan**	**1.42**	**222**	*e*P		**Pb**	**18 37 11.0**	**-0.2**
	baz=219							
WTP	**Ta-pu**	**1.45**	**229**	*e*P		**Pb**	**18 37 11.3**	**-0.4**
	baz=225							
WTP				*e*S		**Sg**	**18 37 32.9**	**+1.5**
	baz=225							
TWK	**Hsinying**	**1.52**	**232**	*e*P		**Pg**	**18 37 13.6**	**-0.5**
	baz=229							
TWG	**Pinlang**	**1.54**	**206**	*e*P		**Pg**	**18 37 13.8**	**-0.5**
	baz=203							
CHN1	**Nanshi**	**1.55**	**229**	*e*P		**Pb**	**18 37 13.6**	**+0.1**
	baz=226							
CHN1				*e*S		**Sg**	**18 37 35.6**	**+1.0**
	baz=226							
WSF	**Szhu**	**1.55**	**249**	*e*S		**Sg**	**18 37 34.2**	**-0.5**
	baz=246							
SGST	**Jiashian**	**1.58**	**225**	*e*P		**Pg**	**18 37 15.4**	**+0.3**
	baz=222							
IRIF	**Iriomote-Funau**	**1.77**	**86**	P		**Pn**	**18 37 14.7**	**-0.6**
IRIF				*e*S		**Sn**	**18 37 37.8**	**+0.1**
ECL	**Taimali**	**1.79**	**206**	*e*P		**Pn**	**18 37 14.4**	**-1.1**
	baz=203							
SSD	**Sandimen**	**1.81**	**216**	*e*P		**Pb**	**18 37 17.7**	**-0.2**
	baz=214							
SSD				*e*S		**Sb**	**18 37 41.1**	**+0.6**
	baz=214							
EAST	**Anshuo**	**2.02**	**206**	*e*P		**Pn**	**18 37 19.8**	**+1.1**
	baz=203							
JKRS	**Kuro-shima**	**2.02**	**89**	P		**Pn**	**18 37 18.8**	**+0.1**
JKRS				S		**Sb**	**18 37 45.8**	**-0.8**
JIJ	**Ishigaki jima**	**2.15**	**86**	P		**Pn**	**18 37 20.0**	**-0.5**
JIJ				S		**Sn**	**18 37 46.6**	**-0.5**
JISG	**Ishigakijimahi**	**2.32**	**80**	P		**Pn**	**18 37 22.1**	**-0.8**
JISG				*e*S		**Sn**	**18 37 51.4**	**0.0**

IDC ***07*** *18:38:20.6±1.0,5.86N×82.54W,h0km,mb3.9/9,*

mb1 4.1/12,mb1mx4.0/33,mbtmp4.0/12,ML2.7/2,MS3.6/8, Ms1 3.6/8,ms1mx3.3/43,Error ellipse: s-maj=31.4km s-min=16.0km az=45.0

*ISCJB **07** 18:38:21.1±0.3,5°.91N±0°.03×82°.41W±0°.03,h14km, mb4.5/46,MS3.7/3,Error ellipse: s-maj=5.4km s-min=3.3km az=31.5*

*NEIC **07** 18:38:23.5±0.6,6°.17N×82°.30W,h10km,mb4.5/38,Error ellipse: s-maj=14.2km s-min=6.9km az=213.0*

ISC 07 18:38:22.8±0.6,**5°.98N**±0°.06×**82°.36W**±0°.06,**h14**km,**n101, σ2s04/101,mb4.5/46,MS3.8/3,2C-3D,South of Panama**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AZU	**Azuero**	**2.74**	**49**	⇓*i*P	**Pn**	**18 39 05.9**	**-0.5**
AZU				*e*S	**Sn**	**18 39 34.4**	**-5.0**
TBS2		**2.81**	**354**	*e*P	**Pn**	**18 39 08.0**	**+0.5**
TBS2				*i* S	**Sn**	**18 39 42.3**	**+1.0**
BRU	**Baru**	**2.81**	**356**	⇑*e*P	**Pn**	**18 39 08.0**	**+0.3**
BRU2	**Volcan**	**2.81**	**353**	⇓*e*P	**Pn**	**18 39 07.6**	**+0.1**
BRU2				*i* S	**Sn**	**18 39 42.2**	**+0.9**
PNME	**Penonome**	**3.20**	**39**	*e*P	**Pn**	**18 39 13.9**	**+1.2**
PNME				*e*S	**Sn**	**18 39 53.2**	**+2.4**
BUS	**Buena Vista**	**3.81**	**339**	*e*P	**Pn**	**18 39 21.0**	**-0.5**
ZANG	**Zanguenga, Cho**	**3.85**	**40**	*e*P	**Pn**	**18 39 22.5**	**+0.9**
ZANG				*e*S	**Sn**	**18 40 07.2**	**+0.4**
QCR	**Quepos**	**3.86**	**332**	*e*P	**Pn**	**18 39 23.1**	**+1.4**
URSC	**Urasca**	**4.08**	**340**	⇓*e*P	**Pn**	**18 39 24.6**	**-0.4**
HDC	**Heredia**	**4.35**	**337**	*e*Pn	**Pn**	**18 39 28.0**	**-0.7**
HDC	**Heredia**	**4.35**	**337**	⇑*i*P	**Pn**	**18 39 28.4**	**-0.4**
CGA2	**Cerro Gallo 2**	**4.52**	**333**	*e*P	**Pn**	**18 39 32.2**	**+1.3**
JCR	**Jicaral**	**4.71**	**325**	*e*P	**Pn**	**18 39 37.8**	**+4.3**
SOLC	**Bahia Solano**	**4.93**	**87**	*e*P	**Pn**	**18 39 36.5**	**0.0**
UPD2	**Meteti**	**5.01**	**59**	*i* P	**Pn**	**18 39 39.8**	**+2.2**
UPD2				*e*S	**Sn**	**18 40 35.7**	**+0.4**
GRGC	**Isla de Gorgon**	**5.12**	**125**	*e*P	**Pn**	**18 39 35.2**	**-3.9**
VCR	**Vista de Mar**	**5.24**	**322**	*e*P	**Pn**	**18 39 44.0**	**+3.2**
MALC	**Bahia Malaga**	**5.38**	**111**	*e*P	**Pn**	**18 39 41.8**	**-0.9**
DBBC	**Dabeiba**	**6.20**	**80**	*e*P	**Pn**	**18 39 55.7**	**+1.6**
HELC	**Santa Helena**	**6.80**	**88**	*e*Pn	**Pn**	**18 40 02.8**	**+0.2**
OTAV	**Otavalo**	**6.91**	**146**	*e*Pn	**Pn**	**18 40 03.0**	**-1.2**
CRUC	**La Cruz**	**6.95**	**129**	*e*P	**Pn**	**18 40 03.2**	**-1.5**
TOLC	**Tolima**	**7.15**	**101**	*e*P	**Pn**	**18 40 07.8**	**+0.5**
MOTC	**Monteria, Cord**	**7.20**	**67**	*e*P	**Pn**	**18 40 11.1**	**+3.4**
NORC	**Norcasia**	**7.46**	**93**	*e*P	**Pn**	**18 40 14.1**	**+2.7**
PRAC	**Prado**	**7.78**	**107**	*e*P	**Pn**	**18 40 17.4**	**+1.6**
PRAC	**Prado**	**7.78**	**107**	*e*Pn	**Pn**	**18 40 16.7**	**+0.9**
ROSC	**El Rosal**	**8.09**	**98**	Pn	**Pn**	**18 40 22.2**	**+2.0**
	2.0nm,0.3s,baz=222,slow=16,SNR=2.7						
ROSC				Sn	**Sn**	**18 41 54.8**	**+3.1**
	1.9nm,0.3s,baz=162,slow=20,SNR=2.0						
ROSC	**El Rosal**	**8.09**	**98**	*e*Pn	**Pn**	**18 40 21.2**	**+1.0**
ROSC				Sn	**Sn**	**18 41 54.8**	**+3.1**
SJCC	**San Jacinto, C**	**8.11**	**61**	*e*P	**Pn**	**18 40 23.7**	**+3.5**
CHIC	**Chingaza**	**8.70**	**98**	*e*P	**Pn**	**18 40 31.5**	**+2.9**
SJAC	**San Juan de Ar**	**8.80**	**107**	*e*P	**Pn**	**18 40 33.3**	**+3.4**
BARC	**Barichara**	**9.14**	**86**	*e*P	**Pn**	**18 40 37.8**	**+3.2**
SDV	**Santo Domingo**	**11.98**	**75**	Pn	**Pn**	**18 41 15.9**	**+2.4**
	0.6nm,0.3s,baz=248,slow=8.7,SNR=7.9						
SDV				Sn	**Sn**	**18 43 26.1**	**-1.1**
	0.5nm,0.3s,baz=25,slow=19,SNR=2.1						
MTDJ	**Mount Denham**	**13.05**	**21**	*e*Pn	**Pn**	**18 41 24.2**	**-3.8**
ATAH	**Atahualpa**	**13.62**	**163**	LR	LR	18 46 14.3	
	comp=Z,420nm,19.9s,baz=344,slow=35						
CCIG	**Comitan**	**14.02**	**318**	*e*Pn	**Pn**	**18 41 41.6**	**+0.3**
CMIG	**Matias Romero**	**16.49**	**313**	Pn	**P**	**18 42 15.4**	**-1.1**
	0.2nm,0.3s,baz=137,slow=10,SNR=4.3						
CMIG				LR	LR	18 47 50.8	
	comp=Z,154nm,19.2s,baz=146,slow=35						
PCRV	**Puerto La Cruz**	**18.03**	**76**	LR	LR	18 51 17.6	
	comp=Z,114nm,19.7s,baz=280,slow=42						
NNA	**Nana**	**18.68**	**163**	P	**P**	**18 42 39.1**	**-1.7**
	1.1nm,0.3s,baz=291,slow=8.6,SNR=2.3						
NNA				LR	LR	18 49 06.1	
	comp=Z,78nm,18.7s,baz=313,slow=35						
NNA	**Nana**	**18.68**	**163**	*e*P	**Pn**	**18 42 43.9**	**+2.8**
	30nm,1.3s						
CELP	**Cerrillos**	**19.54**	**51**	*e*P	**P**	**18 42 45.3**	**-4.8**
TLIG	**Tlapa**	**19.58**	**307**	*e*P	**Pn**	**18 42 52.6**	**+0.6**
	19nm,1.1s						
SJG	**San Juan**	**19.89**	**51**	P	**Pn**	**18 42 56.1**	**+0.4**
	11nm,0.2s,baz=222,slow=15,SNR=3.3						
SJG				LR	LR	18 50 13.7	
	comp=Z,91nm,21.5s,baz=206,slow=36						
SJG	**San Juan**	**19.89**	**51**	*e*P	**P**	**18 42 52.8**	**-1.2**
	70nm,1.5s						
PTGA	**Pitinga**	**23.33**	**106**	P	**P**	**18 43 32.9**	**+2.1**
	1.8nm,0.7s,baz=291,slow=12,SNR=4.6						
PTGA				LR	LR	18 52 39.7	
	comp=Z,137nm,18.7s,baz=290,slow=37						
PTGA	**Pitinga**	**23.33**	**106**	*e*P	**P**	**18 43 34.4**	**+3.5**
	30nm,2.0s						
SAML	**Samuel**	**24.20**	**128**	*e*P	**P**	**18 43 37.3**	**-1.8**
	5.2nm,0.7s						
TIGA	**Tifton**	**25.35**	**358**	*e*P	**P**	**18 43 51.4**	**+1.9**
	56nm,1.6s						
BRAL	**Brewton**	**25.44**	**351**	*e*P	**P**	**18 43 50.5**	**+0.3**
	220nm,1.9s						
ZAIG	**Zacatecas**	**25.66**	**313**	*e*P	**P**	**18 43 56.1**	**+3.4**
	8.0nm,1.1s						
LPAZ	**La Paz**	**26.23**	**148**	P	**P**	**18 43 58.8**	**+0.5**
	1.2nm,0.6s,baz=324,slow=8.7,SNR=2.7						
LPAZ				LR	LR	18 55 57.0	
	comp=Z,297nm,19.9s,baz=320,slow=40						
LRAL	**Lakeview Retre**	**27.26**	**351**	*e*P	**P**	**18 44 07.0**	**+0.3**
	6.3nm,1.0s						
GOGA	**Godfrey**	**27.31**	**358**	*e*P	**P**	**18 44 09.6**	**+2.5**
	6.3nm,1.0s						
JCT	**Junction City**	**29.37**	**328**	*e*P	**P**	**18 44 26.5**	**+0.8**
	24nm,2.0s						
SIV	**San Ignacio**	**30.34**	**136**	LR	LR	18 56 34.7	
	comp=Z,185nm,18.9s,baz=9.5,slow=36						
WVT	**Waverly**	**30.42**	**351**	*e*P	**P**	**18 44 33.2**	**-1.6**
	12nm,1.7s						
X301	**Greenbrier Sit**	**30.55**	**344**	*e*P	**P**	**18 44 36.1**	**+0.2**
	6.3nm,1.0s						
WHAR	**Wooly Hollow**	**30.57**	**344**	*e*P	**P**	**18 44 35.6**	**-0.5**
	15nm,1.3s						
X201	**Greenbrier Sit**	**30.59**	**344**	*e*P	**P**	**18 44 35.7**	**-0.7**
	32nm,1.8s						
H06E1	**SOCORRO T-PHAS**	**30.60**	**297**	T	T	19 16 44.8	
	SNR=5.3						
TXAR	**Lajitas Array**	**30.73**	**322**	P	**P**	**18 44 37.7**	**0.0**
	0.2nm,0.6s,baz=138,slow=8.2,SNR=2.6						
TUL1	**Leonard**	**32.24**	**339**	*e*P	**P**	**18 44 47.6**	**-3.2**
	6.6nm,0.7s						
WCI	**Wyandotte Cave**	**32.30**	**354**	*e*P	**P**	**18 44 47.1**	**-4.2**
	5.8nm,0.6s						
WMOK	**Wichita Mounta**	**32.39**	**334**	*e*P	**P**	**18 44 50.6**	**-1.6**
	2.6nm,1.0s						
MNTX	**Cornudas Mount**	**33.44**	**323**	*e*P	**P**	**18 45 00.5**	**-1.0**
	3.5nm,1.3s						
AMTX	**Amarillo**	**33.84**	**331**	*e*P	**P**	**18 45 04.0**	**-0.9**
	7.6nm,1.1s						
SSPA	**Standing Stone**	**34.73**	**6**	*e*P	**P**	**18 45 09.4**	**-3.1**
	5.0nm,0.8s						
KSPA	**Keystone Colle**	**35.91**	**8**	*e*P	**P**	**18 45 25.7**	**+3.1**
	8.2nm,1.0s						
ANMO	**Albuquerque**	**36.40**	**326**	*e*P	**P**	**18 45 27.4**	**+0.3**
	2.3nm,0.9s						
BINY	**Binghamton**	**36.51**	**8**	*e*P	**P**	**18 45 23.0**	**-4.7**
	30nm,1.8s						
T25A	**Trinidad**	**36.97**	**330**	*e*P	**P**	**18 45 31.6**	**-0.5**
	6.6nm,0.9s						
BRYW	**Bryant College**	**37.06**	**13**	*e*P	P	18 45 26.5	-6.0
	58nm,1.4s						
SDCO	**Great Sand Dun**	**37.99**	**330**	*e*P	**P**	**18 45 42.2**	**+1.5**
	5.7nm,1.0s						
W18A	**Petrified Fore**	**38.43**	**323**	*e*P	**P**	**18 45 45.8**	**+1.4**
	8.3nm,0.8s						
HNH	**Hanover**	**38.60**	**12**	*e*P	**P**	**18 45 42.9**	**-2.5**
	44nm,1.5s						
S22A	**4UR Ranch, Cre**	**38.67**	**328**	*e*P	**P**	**18 45 46.6**	**+0.2**
	3.9nm,1.1s						
X16A	**Lo Mia Camp, P**	**39.03**	**320**	*e*P	**P**	**18 45 47.8**	**-1.6**
	3.0nm,1.2s						
MVCO	**Mesa Verde**	**39.17**	**326**	*e*P	**P**	**18 45 51.4**	**+0.7**
	27nm,1.7s						
ECSD	**EROS Data Cent**	**39.64**	**344**	*e*P	**P**	**18 45 50.8**	**-3.3**
	4.8nm,1.1s						
ISCO	**Idaho Springs**	**39.64**	**332**	*e*P	**P**	**18 45 54.0**	**-0.7**
	13nm,1.8s						
SPMN	**Marine on St.**	**40.13**	**349**	*e*P	**P**	**18 45 56.3**	**-2.0**
	17nm,0.3s						
W13A	**Hualapai Mount**	**41.02**	**319**	*e*P	**P**	**18 46 07.3**	**+1.3**
	5.8nm,1.5s						
SRU	**San Rafael Swe**	**41.65**	**326**	*e*P	**P**	**18 46 11.5**	**+0.4**
	59nm,0.8s						
BW06	**Boulder Array**	**43.82**	**331**	*e*P	**P**	**18 46 29.0**	**+0.3**
PDAR	**Pinedale Array**	**43.82**	**331**	P	**P**	**18 46 29.0**	**+0.3**
	0.4nm,0.7s,baz=149,slow=7.8,SNR=3.5						
HWUT	**Hardware Ranch**	**43.98**	**328**	*e*P	**P**	**18 46 30.9**	**+0.9**
	165nm,1.3s						
LOHW	**Long Hollow**	**44.96**	**331**	*e*P	**P**	**18 46 38.2**	**+0.4**
	48nm,1.3s						
ULM	**Lac du Bonnet**	**45.55**	**348**	P	**P**	**18 46 43.9**	**+1.8**
	3.0nm,0.6s,baz=166,slow=6.7,SNR=3.1						
LKWY	**Lake**	**45.58**	**332**	*e*P	**P**	**18 46 39.9**	**-2.9**
	127nm,1.4s						
GCMT	**Greycliff**	**46.18**	**334**	*e*P	**P**	**18 46 47.4**	**+0.1**
BOZ	**Bozeman (W)**	**46.97**	**332**	*e*P	**P**	**18 46 54.2**	**+0.7**
	94nm,1.1s						
WVOR	**Wild Horse Val**	**48.45**	**324**	*e*P	**P**	**18 47 05.9**	**+0.8**
	118nm,1.5s						
INK	**Inuvik**	**70.85**	**342**	P	**P**	**18 49 39.1**	**+0.3**
	2.9nm,0.8s,baz=112,slow=6.1,SNR=3.0						
ILAR	**Eielson Array**	**73.92**	**336**	P	**P**	**18 49 57.4**	**+0.1**
	0.4nm,0.7s,baz=101,slow=5.4,SNR=4.3						
TORD	**Torodi Ar. Bea**	**82.89**	**78**	P	**P**	**18 50 47.8**	**-0.1**
	0.7nm,1.1s,baz=266,slow=4.0,SNR=2.3						
H11S2	**WAKE ISLAND Hyl**	**07.73**	**291**	T	T	20 53 10.7	
	baz=77,slow=75,SNR=17						
H11S1	**WAKE ISLAND Hyl**	**07.74**	**291**	T	T	20 53 10.9	
	baz=77,slow=75,SNR=20						
H11S3	**WAKE ISLAND Hyl**	**07.75**	**291**	T	T	20 53 12.0	
	baz=77,slow=75,SNR=22						
ASAR	**Alice Springs**	**140.95**	**239**	PKhKP	PKPpre	18 57 49.8	
	0.3nm,0.8s,baz=117,slow=2.0,SNR=3.7						
WRA	**Warramunga Arr**	**141.75**	**245**	PKP	**PKPdf**	**18 57 54.1**	**-0.9**
	0.5nm,0.9s,baz=122,slow=2.5,SNR=6.1						

*MOS **07** 18:40:55.6±1.0,56°.02N×163°.12E,h45km,mb4.4/1,Error ellipse: s-maj=10.6km s-min=6.8km az=54.8*

KRSC 07 18:40:54.4±1.2,**55°.99N×163°.11E,h74**km±27km,**ML4.3, Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SMKR	**Semkarok**	**1.09**	**304**	PN	Pn	18 41 14.8	+0.6
SMKR	**Semkarok**	**1.09**	**304**	*e*P	Pn	18 41 14.8	+0.6
BDR	**Baidarnaya**	**1.21**	**299**	PN	Pn	18 41 16.9	+1.2
BDR				S	Sn	18 41 34.6	+2.9
BDR	**Baidarnaya**	**1.21**	**299**	*e*P	Pn	18 41 16.9	+1.2
BDR				*e*S	Sn	18 41 34.6	+2.9
SRKR	**Sorokina**	**1.27**	**302**	PN	Pn	18 41 17.9	+1.4
SRKR				S	Sn	18 41 36.7	+3.6
SRKR	**Sorokina**	**1.27**	**302**	*e*P	Pn	18 41 17.9	+1.4
SRKR				*e*S	Sn	18 41 36.7	+3.6
ZLN	**Zelenaya**	**1.29**	**272**	PN	Pn	18 41 17.5	+0.6
ZLN				S	Sn	18 41 35.5	+1.8
ZLN	**Zelenaya**	**1.29**	**272**	*e*P	Pn	18 41 17.5	+0.6
ZLN				*e*S	Sn	18 41 35.5	+1.8
CIRR	**Tsirk**	**1.33**	**276**	PN	Pn	18 41 17.9	+0.5
CIRR	**Tsirk**	**1.33**	**276**	*e*P	Pn	18 41 17.9	+0.5
LGNR	**Loginova**	**1.36**	**275**	PN	Pn	18 41 18.6	+0.7
LGNR	**Loginova**	**1.36**	**275**	*e*P	Pn	18 41 18.6	+0.7
KRSR	**Krestovskiy**	**1.44**	**280**	PN	Pn	18 41 19.2	+0.4
KRSR				S	Sn	18 41 38.7	+1.6
KRSR	**Krestovskiy**	**1.44**	**280**	*e*P	Pn	18 41 19.2	+0.4
KRSR				*e*S	Sn	18 41 38.7	+1.6
BZMR	**Bezymyannaya**	**1.47**	**269**	PN	Pn	18 41 19.8	+0.6
BZMR	**Bezymyannaya**	**1.47**	**269**	*e*P	Pn	18 41 19.8	+0.6
KIRR	**Kirishev**	**1.56**	**270**	PN	Pn	18 41 21.2	+0.9
KIRR				S	Sn	18 41 44.2	+4.3
KIRR	**Kirishev**	**1.56**	**270**	*e*P	Pn	18 41 21.2	+0.9
KIRR				*e*S	Sn	18 41 44.2	+4.3
KPT	**Kopyto**	**1.62**	**270**	PN	Pn	18 41 22.0	+0.9
KPT				S	Sn	18 41 43.6	+2.2
KPT	**Kopyto**	**1.62**	**270**	*e*P	Pn	18 41 22.0	+0.9
KPT				*e*S	Sn	18 41 43.6	+2.2
KMNR	**Kamenistaya**	**1.64**	**263**	PN	Pn	18 41 23.0	+1.7
KMNR				S	Sn	18 41 45.2	+3.5
KMNR	**Kamenistaya**	**1.64**	**263**	*e*P	Pn	18 41 23.0	+1.7
KMNR				*e*S	Sn	18 41 45.2	+3.5
MKZ	**Mys Kozlova**	**1.64**	**209**	PN	Pn	18 41 22.0	+0.7
MKZ				S	Sn	18 41 42.6	+1.0
MKZ	**Mys Kozlova**	**1.64**	**209**	*e*P	Pn	18 41 22.0	+0.7
MKZ				*e*S	Sn	18 41 42.6	+1.0
BKI	**Bering**	**1.81**	**115**	PN	Pn	18 41 25.3	+1.8
BKI				S	Sn	18 41 48.7	+3.1
BKI	**Bering**	**1.81**	**115**	*e*P	Pn	18 41 25.3	+1.8
BKI				*e*S	Sn	18 41 48.7	+3.1
KOZ	**Kozyrevsk**	**1.82**	**273**	PN	Pn	18 41 25.9	+2.2
KOZ	**Kozyrevsk**	**1.82**	**273**	*e*P	Pn	18 41 25.9	+2.2
TUMR	**Tumrok**	**1.82**	**248**	PN	Pn	18 41 25.6	+1.8
TUMR				S	Sn	18 41 49.1	+2.9
TUMR	**Tumrok**	**1.82**	**248**	*e*P	Pn	18 41 25.6	+1.8
TUMR				*e*S	Sn	18 41 49.1	+2.9
KZV	**Kizimen**	**1.83**	**242**	PN	Pn	18 41 26.0	+2.1
KZV	**Kizimen**	**1.83**	**242**	*e*P	Pn	18 41 26.0	+2.1
ESO	**Esso**	**2.48**	**270**	PN	Pn	18 41 34.9	+2.3
ESO	**Esso**	**2.48**	**270**	*e*P	Pn	18 41 34.9	+2.3
KII	**Karymskiy**	**2.88**	**229**	PN	Pn	18 41 43.3	+5.3
KII	**Karymskiy**	**2.88**	**229**	*e*P	Pn	18 41 43.3	+5.3
SPN	**Mys Shipunski**	**3.41**	**213**	PN	Pn	18 41 47.0	+1.8
SPN				S	Sn	18 42 26.8	+2.4
SPN	**Mys Shipunski**	**3.41**	**213**	*e*P	Pn	18 41 47.0	+1.8
SPN				*e*S	Sn	18 42 26.8	+2.4
NLC	**Nalytchevo**	**3.58**	**219**	PN	Pn	18 41 49.4	+2.0
NLC	**Nalytchevo**	**3.58**	**219**	*e*P	Pn	18 41 49.4	+2.0
KRER	**Koryakskii**	**3.70**	**225**	PN	Pn	18 41 51.6	+2.3
KRER	**Koryakskii**	**3.70**	**225**	*e*P	Pn	18 41 51.6	+2.3
SMAR	**Somma**	**3.71**	**224**	PN	Pn	18 41 53.8	+4.4
SMAR	**Somma**	**3.71**	**224**	*e*P	Pn	18 41 53.8	+4.4
AVH	**Avacha**	**3.73**	**225**	PN	Pn	18 41 53.5	+3.9
AVH	**Avacha**	**3.73**	**225**	*e*P	Pn	18 41 53.5	+3.9
UGLR	**Uglovaya**	**3.74**	**224**	PN	Pn	18 41 52.3	+2.5
UGLR	**Uglovaya**	**3.74**	**224**	*e*P	Pn	18 41 52.3	+2.5
GNL	**Ganaly**	**3.77**	**235**	PN	Pn	18 41 52.5	+2.3
GNL	**Ganaly**	**3.77**	**235**	*e*P	Pn	18 41 52.5	+2.3
DALK	**Dalny**	**3.90**	**222**	PN	Pn	18 41 53.8	+1.9
DALK				S	Sn	18 42 38.0	+1.6
DALK	**Dalny**	**3.90**	**222**	*e*P	Pn	18 41 53.8	+1.9
DALK				*e*S	Sn	18 42 38.0	+1.6
PET	**Petropavlovsk**	**3.95**	**223**	*e*PN	Pn	18 41 57.1	+4.6
PET				*e*S	Sn	18 42 40.8	+3.3
PET				pmax	pmax		
	comp=Z,34nm,0.5s						
PET				smax	smax		
	comp=N,160nm,0.6s						
PET				smax	smax		
	comp=E,159nm,0.7s						
PET	**Petropavlovsk**	**3.95**	**223**	*e*P	Pn	18 41 56.8	+4.3
KRMR	**Karymshinskiy**	**4.30**	**225**	PN	Pn	18 42 00.9	+3.6
KRMR	**Karymshinskiy**	**4.30**	**225**	*e*P	Pn	18 42 00.9	+3.6
RUS	**Russkaya**	**4.47**	**219**	PN	Pn	18 42 01.4	+1.8
RUS	**Russkaya**	**4.47**	**219**	*e*P	Pn	18 42 01.4	+1.8

*ISCJB **07** 18:47:52.5±0.4,24°.20N±0°.02×121°.83E±0°.02,h5km±2km, Error ellipse: s-maj=2.9km s-min=2.1km az=135.1*

*JMA **07** 18:47:52.0±0.1,24°.16N×121°.73E,h17km±2km,M2.7*

*TAP **07** 18:47:53.1,24°.23N×121°.76E,h14km,ML3.5,B*

ISC 07 18:47:52.5±0.9,**24°.20N**±0°.02×**121°.82E**±0°.02,**h13**km±6km, **n63,σ0s74/101,6C-4D,Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.13**	**327**	*e*P	**Pb**	**18 47 56.8**	**-0.2**
	baz=356						
EHP				*e*S	**Sg**	**18 47 59.3**	**+0.8**
	baz=356						
TWD	**Chiawan**	**0.24**	**241**	*i* P	**Pg**	**18 47 57.8**	**+0.3**
	baz=231						
TWD				*i* S	**Sg**	**18 48 01.3**	**+0.3**
	baz=231						
ENA	**Nanau**	**0.24**	**343**	⇓*i*P	**Pg**	**18 47 57.9**	**+0.2**
	baz=357						
ENA				S	**Sg**	**18 48 01.1**	**-0.1**
	baz=357						
HWA	**Hwalien**	**0.29**	**222**	*e*P	**Pb**	**18 47 59.2**	**-0.4**
	baz=218						
HWA				*e*S	**Sb**	**18 48 04.5**	**+0.1**
	baz=218						
TWC	**Suao**	**0.41**	**4**	⇓*i*P	**Pb**	**18 48 01.2**	**-0.4**
	baz=9.0						
TWC				*e*S	**Sg**	**18 48 05.5**	**-0.8**
	baz=9.0						
ESF	**Shoufeng Towns**	**0.43**	**222**	*e*P	**Pb**	**18 48 02.1**	**+0.1**
	baz=224						
NNS	**Nan Shan**	**0.47**	**301**	⇑*i*P	**Pg**	**18 48 01.7**	**-0.3**
	baz=302						
NNS				S	**Sg**	**18 48 07.2**	**-1.1**
	baz=302						
ENTT	**Nioudou**	**0.50**	**332**	⇑*i*P	**Pg**	**18 48 02.4**	**+0.1**
	baz=337						
ENTT				*i* S	**Sg**	**18 48 08.7**	**-0.3**
	baz=337						
ESL	**Shilin**	**0.52**	**223**	P	**Pg**	**18 48 02.9**	**+0.1**
	baz=222						
ESL				*e*S	**Sb**	**18 48 11.0**	**+0.1**
	baz=222						
TWE	**Neicheng**	**0.54**	**345**	*i* P	**Pb**	**18 48 03.4**	**-0.4**
	baz=351						
TWE				S	**Sg**	**18 48 10.3**	**-0.1**
	baz=351						
TWT	**Tachien**	**0.59**	**276**	⇑*i*P	**Pb**	**18 48 04.4**	**-0.5**
	baz=273						
TWT				*i* S	**Sg**	**18 48 11.7**	**-0.3**
	baz=273						
NSK	**Sanguang**	**0.64**	**319**	⇑*i*P	**Pg**	**18 48 04.7**	**-0.3**
	baz=321						
NSK				*i* S	**Sg**	**18 48 12.6**	**-0.9**
	baz=321						
EGS		**0.65**	**9**	P	**Pb**	**18 48 06.0**	**+0.2**
	baz=22						
TWA	**Mucha**	**0.81**	**345**	*e*P	**Pb**	**18 48 08.4**	**0.0**
	baz=348						
EHY	**Hungye**	**0.82**	**214**	*e*P	**Pg**	**18 48 07.8**	**-0.7**
	baz=221						
EHY				*e*S	**Sn**	**18 48 21.3**	**-0.6**
	baz=221						
NSTT	**Nanjuang**	**0.86**	**300**	P	**Pg**	**18 48 08.9**	**-0.3**
	baz=301						
NSTT				S	**Sg**	**18 48 19.8**	**-0.8**
	baz=301						
NWF	**Wu-fen Shan**	**0.87**	**358**	*e*P	**Pn**	**18 48 10.0**	**-0.5**
	baz=353						
NWF				*e*S	**Sg**	**18 48 20.8**	**0.0**
	baz=353						
TAP1	**Taipei**	**0.88**	**342**	*e*P	**Pg**	**18 48 09.5**	**-0.1**
	baz=335						
TAP	**Taipei**	**0.89**	**341**	*e*P	**Pg**	**18 48 08.8**	**-0.9**
	baz=335						
SMLT	**Sun Moon Lake**	**0.90**	**250**	P	**Pg**	**18 48 09.6**	**-0.3**
	baz=241						
SMLT				S	**Sg**	**18 48 21.4**	**-0.2**
	baz=241						
TYC	**Yuchr**	**0.93**	**252**	*i* P	**Pg**	**18 48 10.0**	**-0.5**
	baz=243						
TYC				S	**Sg**	**18 48 22.1**	**-0.5**
	baz=243						
NCU	**National Centr**	**0.96**	**323**	P	**Pn**	**18 48 11.4**	**-0.3**
	baz=324						
NCU				S	**Sn**	**18 48 25.1**	**-0.2**
	baz=324						
TWF1	**Yuli**	**0.97**	**210**	*e*P	**Pg**	**18 48 09.4**	**-1.8**
	baz=219						
TWQ1	**Liyutan**	**0.97**	**279**	P	**Pb**	**18 48 11.3**	**+0.2**
	baz=279						
TWQ1				*e*S	**Sb**	**18 48 23.7**	**-0.1**
	baz=279						
TWS1	**Kuangyinshan**	**0.97**	**338**	*e*P	**Pn**	**18 48 11.6**	**-0.3**
	baz=339						
TWS1				*e*S	**Sn**	**18 48 25.7**	**+0.2**
	baz=339						
HSN	**Hsinchu**	**0.98**	**308**	*e*P	**Pn**	**18 48 11.7**	**-0.3**
	baz=303						
HSN				*e*S	**Sn**	**18 48 26.2**	**+0.5**
	baz=303						
NSY	**Sanyi**	**0.99**	**283**	P	**Pn**	**18 48 12.1**	**0.0**
	baz=283						
NSY				*e*S	**Sn**	**18 48 26.9**	**+0.9**
	baz=283						
TCU	**Taichung**	**1.05**	**268**	P	**Pn**	**18 48 13.8**	**+0.9**
	baz=267						
TCU				*e*S	**Sn**	**18 48 28.4**	**+1.1**
	baz=267						
JYNG	**Yonagunijimaku**	**1.06**	**76**	P	**Pn**	**18 48 13.7**	**+0.7**
JYNG				S	**Sn**	**18 48 27.9**	**+0.3**
YUS	**Yu-Shan**	**1.06**	**229**	⇓P	**Pg**	**18 48 12.7**	**-0.4**
	baz=227		

JISG	**Ishigakijimahi**	**2.30**	**80**	P		**Pn**	**18 48 30.7**	**+0.6**
JISG				S		**Sn**	**18 48 59.5**	**+1.2**

IDC 07 18:48:35.0±2.8, 33.49S×178.73W, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.6/27, mbtmp3.6/3, ML3.5/1, Error ellipse: s-maj=73.5km s-min=44.3km az=127.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**5.84**	**214**	Pn		Pn	18 50 02.2	-0.6
	1.4nm,0.3s,baz=14,slow=4.2,SNR=5.8							
URZ				Sn		Sn	18 51 06.6	-3.8
	1.9nm,0.3s,baz=148,slow=16,SNR=3.2							
ASAR	**Alice Springs**	**42.42**	**271**	P		P	18 56 31.4	-0.3
	0.6nm,0.9s,baz=111,slow=7.7,SNR=4.7							
WRA	**Warramunga Arr**	**43.69**	**276**	P		P	18 56 42.1	+0.2
	0.9nm,1.0s,baz=115,slow=7.7,SNR=5.0							
FINES	**FINESS Array B**	**147.79**	**338**	PKPbc		PKPbc	19 08 20.3	-0.7
	1.4nm,0.4s,baz=5.7,slow=1.4,SNR=12							

IDC 07 18:50:57.5±5.3, 28.26S×176.40W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/30, mbtmp3.6/2, Error ellipse: s-maj=127.7km s-min=52.0km az=126.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.66**	**233**	Pn		Pn	18 51 27.4	-0.5
	44nm,0.3s,baz=72,slow=20,SNR=1.8							
RAO				Sn		Sn	18 51 48.5	-1.4
	345nm,0.3s,baz=15,slow=24,SNR=5.8							
ASAR	**Alice Springs**	**44.67**	**264**	P		P	18 59 11.8	-0.5
	0.4nm,0.5s,baz=101,slow=6.4,SNR=14							
WRA	**Warramunga Arr**	**45.47**	**269**	P		P	18 59 19.4	+0.6
	0.4nm,0.4s,baz=108,slow=7.9,SNR=5.5							
FINES	**FINESS Array B**	**143.58**	**342**	PKP		PKPdf	19 10 32.8	-0.8
	0.4nm,0.6s,baz=336,slow=3.0,SNR=2.7							

*ISCJB **07** 18:54:39.6±0.7, 23.01N±0.03×122.55E±0.02, h17km±5km, Error ellipse: s-maj=5.1km s-min=2.9km az=157.8*
*JMA **07** 18:54:40.4±0.2, 22.96N×122.55E, h44km, M2.3*
*TAP **07** 18:54:42.3, 22.99N×122.48E, h62km±1km, ML3.0, C*
ISC 07 18:54:38.3±1.7, 22.95N±0.04×122.57E±0.03, h17km±13km, n43, σ0.967/77, 1C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHKT	**Chengkung**	**1.11**	**278**	P		**Pn**	**18 54 59.6**	**+0.5**
	baz=279							
CHKT				*e*S		**Sb**	**18 55 12.4**	**-1.0**
	baz=279							
TWF1	**Yuli**	**1.23**	**289**	⇑*i*P		**Pb**	**18 55 01.7**	**+0.5**
	baz=289							
TWF1				*e*S		**Sb**	**18 55 15.4**	**-1.4**
	baz=289							
EHY	**Hungye**	**1.27**	**296**	*e*P		**Pb**	**18 55 02.5**	**+0.7**
	baz=296							
EHY				*e*S		**Sb**	**18 55 17.8**	**-0.1**
	baz=296							
LAY	**Lan-yu**	**1.31**	**226**	*e*P		**Pn**	**18 55 02.1**	**+0.3**
	baz=228							
TTN	**Taitung**	**1.32**	**262**	*e*P		**Pg**	**18 55 03.7**	**-0.1**
	baz=255							
ESL	**Shilin**	**1.35**	**310**	*e*P		**Pb**	**18 55 03.0**	**-0.1**
	baz=311							
ESL				*e*S		**Sn**	**18 55 18.4**	**-1.5**
	baz=311							
TWG	**Pinlang**	**1.38**	**265**	P		**Pb**	**18 55 04.4**	**+0.6**
	baz=259							
TWG				*i* S		**Sn**	**18 55 20.9**	**+0.1**
	baz=259							
TWD	**Chiawan**	**1.43**	**322**	*e*P		**Pb**	**18 55 04.3**	**-0.2**
	baz=331							
TWD				*e*S		**Sn**	**18 55 20.9**	**-1.0**
	baz=331							
ELDTW	**Lidau**	**1.45**	**280**	P		**Pb**	**18 55 04.8**	**0.0**
	baz=285							
ELDTW				S		**Sn**	**18 55 21.0**	**-1.5**
	baz=285							
ECL	**Taimali**	**1.53**	**257**	*e*P		**Pb**	**18 55 06.0**	**-0.2**
	baz=255							
ECL				*e*S		**Sn**	**18 55 23.3**	**-1.0**
	baz=255							
JYNG	**Yonagunijimaku**	**1.53**	**13**	P		**Pb**	**18 55 06.3**	**0.0**
JYNG				*e*S		**Sb**	**18 55 25.6**	**+0.2**
YOJ	**Yonaguni jima**	**1.56**	**15**	P		**Pb**	**18 55 07.0**	**+0.3**
YOJ				S		**Sb**	**18 55 25.8**	**-0.3**
YUS	**Yu-Shan**	**1.58**	**290**	*e*P		**Pb**	**18 55 07.7**	**+0.4**
	baz=290							
YUS				*e*S		**Sn**	**18 55 25.7**	**-0.6**
	baz=290							
HATJ	**Hateruma jima**	**1.58**	**46**	P		**Pb**	**18 55 06.8**	**-0.3**
HATJ				S		**Sn**	**18 55 25.3**	**-0.4**
ENA	**Nanau**	**1.65**	**333**	*e*P		**Pb**	**18 55 07.9**	**-0.4**
	baz=329							
ENA				*e*S		**Sn**	**18 55 27.5**	**+0.1**
	baz=329							
STYT	**Tauyuan**	**1.68**	**278**	P		**Pb**	**18 55 08.8**	**-0.1**
	baz=282							
STYT				S		**Sn**	**18 55 28.2**	**0.0**
	baz=282							
WHF	**Hehuan Shan**	**1.68**	**315**	*e*P		**Pn**	**18 55 08.3**	**+0.9**
	baz=317							
WHF				*e*S		**Sn**	**18 55 28.1**	**-0.7**
	baz=317							
EAST	**Anshuo**	**1.69**	**251**	*e*P		**Pb**	**18 55 09.2**	**+0.3**
	baz=256							
EAST				S		**Sn**	**18 55 28.9**	**+0.6**
	baz=256							
ALS	**Alishan**	**1.71**	**289**	*e*P		**Pn**	**18 55 08.3**	**+0.7**
	baz=289							
ALS				*e*S		**Sn**	**18 55 29.2**	**-0.1**
	baz=289							
IRIF	**Iriomote-Funau**	**1.74**	**38**	P		**Pb**	**18 55 09.2**	**-0.6**
IRIF				S		**Sn**	**18 55 30.0**	**+0.4**
TWC	**Suao**	**1.77**	**338**	*e*P		**Pb**	**18 55 10.4**	**0.0**
	baz=348							
TWC				*e*S		**Sb**	**18 55 31.7**	**-0.7**
	baz=348							
SMLT	**Sun Moon Lake**	**1.79**	**302**	*e*P		**Pb**	**18 55 10.3**	**-0.4**
	baz=307							
SSD	**Sandimen**	**1.80**	**264**	*e*P		**Pb**	**18 55 10.6**	**-0.1**
	baz=262							
SSD				*e*S		**Sn**	**18 55 30.4**	**-0.6**
	baz=262							
TWT	**Tachien**	**1.82**	**316**	*e*P		**Pb**	**18 55 10.6**	**-0.6**
	baz=323							
TWT				*e*S		**Sn**	**18 55 31.1**	**-0.7**
	baz=323							
WTP	**Ta-pu**	**1.82**	**280**	*e*P		**Pb**	**18 55 11.7**	**+0.5**
	baz=284							
WTP				*e*S		**Sb**	**18 55 33.5**	**-0.2**
	baz=284							
SGST	**Jiashian**	**1.83**	**274**	*e*P		**Pb**	**18 55 10.8**	**-0.6**
	baz=277							
TYC	**Yuchr**	**1.83**	**301**	*e*P		**Pb**	**18 55 10.7**	**-0.7**
	baz=307							
NNS	**Nan Shan**	**1.84**	**324**	*e*P		**Pb**	**18 55 11.1**	**-0.5**
	baz=325							
NNS				*e*S		**Sn**	**18 55 32.3**	**0.0**
	baz=325							
JKRS	**Kuro-shima**	**1.84**	**46**	P		**Pb**	**18 55 10.6**	**-0.9**
JKRS				*e*S		**Sn**	**18 55 31.9**	**-0.2**
CHN5	**Tsauling**	**1.85**	**291**	*e*P		**Pb**	**18 55 12.2**	**+0.4**
	baz=291							
CHN4	**Tsaushan**	**1.86**	**283**	*e*P		**Pb**	**18 55 12.3**	**+0.4**
	baz=286							
CHN4				*e*S		**Sn**	**18 55 33.1**	**+0.6**
	baz=286							
SCZT	**Fangliau**	**1.89**	**253**	*e*P		**Pb**	**18 55 12.3**	**0.0**
	baz=253							
CHN1	**Nanshi**	**1.89**	**277**	*e*P		**Pb**	**18 55 12.8**	**+0.4**
	baz=281							
CHN1				*e*S		**Sb**	**18 55 36.0**	**+0.3**
	baz=281							
ENTT	**Nioudou**	**1.91**	**332**	*e*P		**Pn**	**18 55 11.6**	**+1.4**
	baz=329							
ENTT				*e*S		**Sn**	**18 55 34.1**	**+0.2**
	baz=329							
TWK	**Hsinying**	**1.94**	**280**	*e*P		**Pb**	**18 55 12.8**	**-0.4**
	baz=286							
TWE	**Neicheng**	**1.94**	**335**	*e*P		**Pb**	**18 55 13.0**	**-0.3**
	baz=337							
TWE				*e*S		**Sn**	**18 55 33.8**	**-0.8**
	baz=337							
TWM1	**Shoushan**	**1.98**	**267**	*e*P		**Pb**	**18 55 13.2**	**-0.7**
	baz=266							
JIJ	**Ishigaki jima**	**2.02**	**46**	P		**Pn**	**18 55 12.6**	**+1.0**
JIJ				S		**Sn**	**18 55 35.1**	**-1.3**
NSK	**Sanguang**	**2.04**	**327**	*e*P		**Pb**	**18 55 14.4**	**-0.6**
	baz=329							
NSK				S		**Sn**	**18 55 37.4**	**+0.3**
	baz=329							
TWQ1	**Liyutan**	**2.15**	**311**	*e*P		**Pn**	**18 55 14.2**	**+0.7**
	baz=319							
TWQ1				*e*S		**Sn**	**18 55 40.1**	**+0.4**
	baz=319							
NSTT	**Nanjuang**	**2.20**	**320**	*e*P		**Pb**	**18 55 17.0**	**-0.6**
	baz=327							
NSTT				*e*S		**Sn**	**18 55 42.0**	**+1.0**
	baz=327							
JISG	**Ishigakijimahi**	**2.28**	**44**	P		**Pn**	**18 55 16.1**	**+0.9**
JISG				S		**Sn**	**18 55 42.0**	**-0.9**
JTJ	**Tarama**	**2.58**	**49**	P		**Pn**	**18 55 20.7**	**+1.4**
JTJ				S		**Sn**	**18 55 50.3**	**0.0**

*ISCJB **07** 18:57:42.6±0.4, 24.20N±0.01×121.83E±0.02, h5km±2km, Error ellipse: s-maj=2.9km s-min=2.1km az=40.2*
*TAP **07** 18:57:42.9, 24.22N×121.76E, h15km, ML3.6, B*
*JMA **07** 18:57:42.5±0.1, 24.17N×121.73E, h17km±1km, M2.8*
ISC 07 18:57:43.0±0.9, 24.20N±0.02×121.78E±0.02, h14km±7km, n65, σ0.970/107, 8C-2D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.11**	**342**	P		**Pb**	**18 57 46.7**	**-0.3**
	baz=353							
EHP				S		**Sb**	**18 57 49.3**	**-0.3**
	baz=353							
TWD	**Chiawan**	**0.21**	**233**	⇑*i*P		**Pg**	**18 57 47.8**	**+0.1**
	baz=233							
TWD				*i* S		**Sb**	**18 57 51.3**	**-1.0**
	baz=233							
ENA	**Nanau**	**0.23**	**351**	⇑*i*P		**Pg**	**18 57 47.9**	**-0.1**
	baz=356							
ENA				*i* S		**Sg**	**18 57 51.3**	**-0.1**
	baz=356							
HWA	**Hwalien**	**0.28**	**215**	*e*P		**Pb**	**18 57 50.1**	**+0.4**
	baz=219							
TWC	**Suao**	**0.41**	**9**	⇑*i*P		**Pg**	**18 57 51.3**	**+0.1**
	baz=8.0							
TWC				S		**Sg**	**18 57 56.8**	**0.0**
	baz=8.0							
NNS	**Nan Shan**	**0.44**	**303**	⇑*i*P		**Pg**	**18 57 51.6**	**-0.2**
	baz=302							
NNS				*i* S		**Sg**	**18 57 57.5**	**-0.3**
	baz=302							
WHF	**Hehuan Shan**	**0.47**	**263**	⇑*i*P		**Pg**	**18 57 52.4**	**-0.1**
	baz=261							
ENTT	**Nioudou**	**0.47**	**336**	⇑*i*P		**Pg**	**18 57 52.4**	**-0.1**
	baz=336							
ENTT				*i* S		**Sg**	**18 57 58.9**	**+0.1**
	baz=336							
ESL	**Shilin**	**0.50**	**219**	P		**Pg**	**18 57 52.8**	**-0.1**
	baz=223							
ESL				*e*S		**Sb**	**18 58 01.1**	**+0.4**
	baz=223							
TWE	**Neicheng**	**0.53**	**349**	⇑*i*P		**Pg**	**18 57 53.4**	**0.0**
	baz=350							
TWE				*i* S		**Sg**	**18 58 00.3**	**-0.1**
	baz=350							
TWT	**Tachien**	**0.55**	**275**	*i* P		**Pb**	**18 57 54.3**	**-0.3**
	baz=274							
TWT				*i* S		**Sb**	**18 58 01.7**	**-0.8**
	baz=274							
ILA	**Ilan**	**0.56**	**357**	*e*P		**Pb**	**18 57 54.3**	**-0.3**
	baz=352							
ILA				*e*S		**Sb**	**18 58 02.4**	**-0.1**
	baz=352							
NSK	**Sanguang**	**0.61**	**321**	⇑*i*P		**Pg**	**18 57 54.8**	**-0.1**
	baz=321							
NSK				*i* S		**Sg**	**18 58 02.7**	**-0.3**
	baz=321							
EGS		**0.65**	**12**	P		**Pg**	**18 57 55.8**	**0.0**
	baz=18							
EGS				*e*S		**Sb**	**18 58 05.8**	**+0.6**
	baz=18							
TWA	**Mucha**	**0.79**	**347**	*e*P		**Pb**	**18 57 58.8**	**+0.2**
	baz=347							
EHY	**Hungye**	**0.81**	**211**	*e*P		**Pg**	**18 57 57.9**	**-0.8**
	baz=223							
NSTT	**Nanjuang**	**0.83**	**301**	P		**Pb**	**18 57 59.3**	**+0.1**
	baz=301							
NSTT				S		**Sb**	**18 58 10.0**	**-0.1**
	baz=301							
NWF	**Wu-fen Shan**	**0.86**	**0**	P		**Pg**	**18 58 00.1**	**+0.3**
	baz=352							
NWF				S		**Sg**	**18 58 10.4**	**-0.7**
	baz=352							
TAP1	**Taipei**	**0.86**	**344**	P		**Pn**	**18 58 00.1**	**-0.6**
	baz=343							
TAP1				*e*S		**Sn**	**18 58 12.7**	**-0.5**
	baz=343							
SMLT	**Sun Moon Lake**	**0.86**	**248**	⇓*i*P		**Pg**	**18 57 59.7**	**0.0**
	baz=241							
SMLT				*i* S		**Sb**	**18 58 11.7**	**+0.3**
	baz=241							
TAP	**Taipei**	**0.87**	**343**	*e*P		**Pn**	**18 58 00.2**	**-0.6**
	baz=343							
TAP				*e*S		**Sg**	**18 58 11.9**	**+0.7**
	baz=343							
TYC	**Yuchr**	**0.89**	**251**	*i* P		**Pb**	**18 57 59.9**	**-0.4**
	baz=244							
TYC				*e*S		**Sg**	**18 58 11.9**	**-0.1**
	baz=244							
TWQ1	**Liyutan**	**0.93**	**279**	P		**Pn**	**18 58 01.7**	**0.0**
	baz=279							
TWQ1				*e*S		**Sn**	**18 58 14.6**	**-0.2**
	baz=279							
NCU	**National Centr**	**0.93**	**325**	P		**Pn**	**18 58 01.3**	**-0.4**
	baz=323							
NCU				*e*S		**Sn**	**18 58 15.1**	**+0.1**
	baz=323							
HSN	**Hsinchu**	**0.95**	**309**	*e*P		**Pn**	**18 58 01.9**	**0.0**
	baz=303							
HSN				*e*S		**Sn**	**18 58 15.7**	**+0.4**
	baz=303							
NSY	**Sanyi**	**0.95**	**283**	*e*P		**Pn**	**18 58 02.3**	**+0.3**
	baz=283							
NSY				*e*S		**Sn**	**18 58 14.5**	**-0.9**
	baz=283							
TWS1	**Kuangyinshan**	**0.95**	**340**	P		**Pn**	**18 58 01.9**	**0.0**
	baz=339							
TWS1				*e*S		**Sn**	**18 58 15.7**	**+0.4**
	baz=339							
TWF1	**Yuli**	**0.95**	**208**	*e*P		**Pb**	**18 57 59.8**	**-1.6**
	baz=220							
TCU	**Taichung**	**1.01**	**267**	*i* P		**Pn**	**18 58 03.4**	**+0.7**
	baz=267							
TCU				*i* S		**Sn**	**18 58 18.5**	**+1.8**
	baz=267							
YUS	**Yu-Shan**	**1.04**	**227**	P		**Pb**	**18 58 02.9**	**-0.2**
	baz=228							
YUS				*e*S		**Sn**	**18 58 17.9**	**-0.2**
	baz=228							
WNT	**Mingjian**	**1.05**	**252**	P		**Pg**	**18 58 03.7**	**+0.4**
	baz=249							
WNT				S		**Sn**	**18 58 19.4**	**+1.6**
	baz=249							
TWY	**Chenhua**	**1.08**	**351**	*e*P		**Pg**	**18 58 03.7**	**-0.2**
	baz=335							
JYNG	**Yonagunijimaku**	**1.09**	**77**	P		**Pn**	**18 58 03.9**	**0.0**
JYNG				S		**Sb**	**18 58 18.2**	**+0.4**
ALS	**Alishan**	**1.13**	**232**	⇓*i*P		**Pn**	**18 58 04.3**	**-0.3**
	baz=221							
ALS				S		**Sn**	**18 58 20.4**	**+0.3**
	baz=221							
YOJ	**Yonaguni jima**	**1.15**	**77**	P		**Pb**	**18 58 04.8**	**+0.1**
YOJ				S		**Sg**	**18 58 20.8**	**+0.5**
YOJ	**Yonaguni jima**	**1.15**	**77**	*i* P		**Pn**	**18 58 04.5**	**-0.2**
	baz=64							
YOJ				*e*S		**Sg**	**18 58 21.6**	**+1.3**
	baz=64							
CHKT	**Chengkung**	**1.16**	**199**	*e*P		**Pn**	**18 58 03.2**	**-1.6**
	baz=186							
CHN5	**Tsauling**	**1.17**	**239**	P		**Pg**	**18 58 05.8**	**+0.2**
	baz=241							
CHN5				*e*S		**Sg**	**18 58 23.2**	**+2.2**
	baz=241							
WGK	**Gukeng**	**1.23**	**245**	*e*P		**Pg**	**18 58 06.4**	**-0.2**
	baz=247							
WGK				*e*S		**Sg**	**18 58 24.3**	**+1.7**
	baz=247							
ELDTW	**Lidau**	**1.23**	**215**	*e*P		**Pn**	**18 58 04.8**	**-1.1**
	baz=202							
CHN2	**Minshiung**	**1.37**	**241**	*e*P		**Pg**	**18 58 08.6**	**-0.7**
	baz=243							
CHN2				*e*S		**Sg**	**18 58 28.8**	**+1.7**
	baz=243							
CHN4	**Tsaushan**	**1.38**	**232**	P		**Pg**	**18 58 09.0**	**-0.5**
	baz=234							
CHN4				*e*S		**Sg**	**18 58 30.4**	**+2.9**
	baz=234							
STYT	**Tauyuan**	**1.40**	**222**	*e*P		**Pn**	**18 58 08.2**	**0.0**
	baz=224							
STYT				*e*S		**Sg**	**18 58 28.0**	**-0.1**
	baz=224							
WTCT	**Ta-ch'eng**	**1.41**	**256**	*e*P		**Pb**	**18 58 08.8**	**-0.3**
	baz=258							
WTCT				*e*S		**Sg**	**18 58 28.9**	**+0.4**
	baz=258							
CHY	**Chiayi**	**1.43**	**241**	*e*P		**Pb**	**18 58 09.4**	**0.0**
	baz=243							
CHY				*e*S		**Sg**	**18 58 29.2**	**+0.2**
	baz=243							
WTP	**Ta-pu**	**1.43**	**228**	P		**Pb**	**18 58 09.5**	**0.0**
	baz=230							
WTP				*e*S		**Sg**	**18 58 30.6**	**+1.4**
	baz=230							
PCYT	**Pengchaiyu**	**1.44**	**11**	*e*P		**Pn**	**18 58 08.9**	**+0.1**
	baz=7.0							
TWK	**Hsinying**	**1.51**	**232**	*e*P		**Pb**	**18 58 10.7**	**-0.1**
	baz=233							
TWG	**Pinlang**	**1.52**	**205**	*e*P		**Pn**	**18 58 09.2**	**-0.6**
	baz=192							
CHN1	**Nanshi**	**1.53**	**229**	*e*P		**Pb**	**18 58 11.3**	**+0.1**
	baz=230							
WSF	**Szhu**	**1.53**	**249**	*e*P		**Pb**	**18 58 10.6**	**-0.6**
	baz=250							
SGST	**Jiashian**	**1.56**	**225**	*e*P		**Pb**	**18 58 11.8**	**0.0**
	baz=226							
CHN8	**Yiju**	**1.67**	**240**	*e*P		**Pb**	**18 58 13.5**	**-0.1**
	baz=226							
CHN8				*e*S		**Sg**	**18 58 36.4**	**-0.4**
	baz=226							
ECL	**Taimali**	**1.77**	**205**	*e*P		**Pb**	**18 58 14.6**	**-0.7**
	baz=194							
IRIF	**Iriomote-Funau**	**1.79**	**85**	P		**Pn**	**18 58 13.4**	**-0.1**
SSD	**Sandimen**	**1.79**	**216**	*e*P		**Pb**	**18 58 14.9**	**-0.7**
	baz=229							
TWM1	**Shoushan**	**1.85**	**222**	*e*P		**Pb**	**18 58 16.3**	**-0.4**
	baz=223							
EAST	**Anshuo**	**2.00**	**205**	*e*P		**Pn**	**18 58 16.1**	**-0.4**
	baz=195							
JKRS	**Kuro-shima**	**2.04**	**89**	P		**Pn**	**18 58 17.6**	**+0.7**
JKRS				S		**Sn**	**18 58 43.1**	**+0.9**
SCZT	**Fangliau**	**2.11**	**211**	*e*P		**Pb**	**18 58 20.2**	**-0.9**
	baz=196							
PNG	**Penghu**	**2.13**	**253**	*e*P		**Pn**	**18 58 18.0**	**-0.2**
	baz=255							
WDGT	**Dungji**	**2.16**	**245**	*e*P		**Pb**	**18 58 21.2**	**-0.7**
	baz=247							
JIJ	**Ishigaki jima**	**2.16**	**85**	P		**Pn**	**18 58 18.5**	**-0.2**
JIJ				S		**Sn**	**18 58 45.0**	**-0.3**
TWP	**Hsiaoliuchiu**	**2.26**	**215**	*e*P		**Pb**	**18 58 23.4**	**-0.3**
	baz=236							
JISG	**Ishigakijimahi**	**2.34**	**80**	P		**Pn**	**18 58 20.7**	**-0.4**
JISG				S		**Sn**	**18 58 49.1**	**-0.5**

*IDC **07** 19:07:02.3±4.9, 7.56S×107.27E, h0km, mb3.8/3, mb1 3.9/3, mb1mx3.4/52, mbtmp3.8/3, Error ellipse: s-maj=170.4km s-min=79.1km az=48.0*
*DJA **07** 19:07:09.3±0.8, 8°S±4°×107°E±°, h10km±6km, M4.2/19, mB4.8/1, mb4.2/3, MLv4.2/19, Mw(mB)4.1/1*
*ISCJB **07** 19:07:10.7±0.8, 8.11S±0.10×107.32E±0.07, h62km, mb3.6/3, Error ellipse: s-maj=16.2km s-min=5.2km az=31.5*
ISC 07 19:07:12.5±1.1, 8.1S±0.1×107.33E±0.08, h62km, n24, σ0.994/22, mb3.2/3, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CISI	**Cisompet, Garu**	**0.69**	**44**	P		**Pn**	**19 07 24.5**	**-2.3**
CNJI	**Cibinong**	**0.76**	**345**	P		**Pn**	**19 07 25.6**	**-2.0**
CMJI	**Cimerak**	**1.14**	**77**	P		**Pn**	**19 07 30.9**	**-1.5**
LEM	**Lembang**	**1.25**	**13**	P		**Pn**	**19 07 35.4**	**+1.4**
SKJI	**Sukabumi**	**1.29**	**324**	P		**Pn**	**19 07 33.5**	**-0.9**
SKJI				S		**Sn**	**19 07 50.6**	**-0.3**
DBJI	**Dramaga**	**1.59**	**339**	P		**Pn**	**19 07 38.7**	**+0.2**
CGJI	**Cibinong**	**2.16**	**311**	P		**Pn**	**19 07 45.2**	**-1.0**
SBJI	**Serang**	**2.26**	**328**	P		**Pn**	**19 07 47.7**	**+0.2**
UGM	**Wanagama**	**3.17**	**88**	P		**Pn**	**19 07 59.7**	**-0.2**
WOJI	**Wonogiri, Jawa**	**3.57**	**87**	P		**Pn**	**19 08 04.7**	**-0.6**
KASI	**Kota Agung**	**3.77**	**312**	P		**Pn**	**19 08 08.0**	**-0.2**
PCJI	**Pacitan**	**3.81**	**92**	P		**Pn**	**19 08 08.9**	**+0.2**
PWJI	**Pagerwojo**	**4.43**	**90**	P		**Pn**	**19 08 17.1**	**-0.1**
LWLI	**Liwa**	**4.43**	**313**	P		**Pn**	**19 08 17.2**	**-0.1**
LHSI	**Lahat**	**5.65**	**318**	P		**Pn**	**19 08 34.1**	**+0.2**
GMJI	**Gumukmas**	**6.06**	**93**	P		**Pn**	**19 08 39.8**	**+0.3**
JAGI	**Jajag, Banyuwa**	**6.76**	**94**	P		**Pn**	**19 08 49.4**	**+0.2**
WRA	**Warramunga Arr**	**28.70**	**117**	P		**P**	**19 13 03.7**	**-0.2**
	0.5nm,0.9s,baz=291,slow=11,SNR=3.4							
ASAR	**Alice Springs**	**29.82**	**124**	P		**P**	**19 13 13.9**	**-0.1**
	0.4nm,1.0s,baz=293,slow=8.7,SNR=3.7							
H08S2	**Diego Garcia H**	**34.51**	**268**	T		T	19 51 13.9	
	baz=93,slow=76,SNR=4.3							
H08S3	**Diego Garcia H**	**34.52**	**268**	T		T	19 51 14.8	
	baz=93,slow=76,SNR=5.8							
H08S1	**Diego Carcia H**	**34.52**	**268**	T		T	19 51 15.3	
	baz=93,slow=76,SNR=11							
STKA	**Stephens Creek**	**39.70**	**131**	P		**P**	**19 14 39.8**	**+0.9**
	2.8nm,0.4s,baz=306,slow=9.3,SNR=16							
TXAR	**Lajitas Array**	**144.00**	**50**	PKP		**PKPab**	**19 26 39.5**	**+0.2**
	0.2nm,0.6s,baz=297,slow=1.6,SNR=2.7							

*CSEM **07** 19:08:05.4, 44.03N×11.23E, h7km, MD1.7/5*
ROM 07 19:08:05.4±0.2, 44.03N×11.23E, h7km±1km, Md1.7/5, Ml1.5/1, Error ellipse: s-maj=2.7km s-min=1.1km az=35.0, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SEI	**Scarperia**	**0.10**	**77**	Pg	Pg	19 08 08.4	+0.7
SEI				Sg	Sg	19 08 10.0	+0.7
SEI	**Scarperia**	**0.10**	**77**	Pg	Pg	19 08 08.4	+0.7
SEI				Sg	Sg	19 08 10.0	+0.7
FNVD	**Fontana Vidola**	**0.15**	**331**	Pg	Pg	19 08 09.3	+0.6
FNVD				Sg	Sg	19 08 11.8	+0.9
	99nm,0.2s						
FNVD	**Fontana Vidola**	**0.15**	**331**	Pg	Pg	19 08 09.3	+0.6
FNVD				Sg	Sg	19 08 11.8	+0.9
	99nm,0.2s						
VMG	**Vicchio**	**0.24**	**

*GCMT **07** 19:08:36.0±0.2, 17.85S×178.52W, h569km±1km, MW5.4/90, Moment Tensor Solution. s90,c129; Duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}1.28±.04; $M_{\theta\theta}$-0.09±.06; $M_{\phi\phi}$-1.19±.06; $M_{r\theta}$1.02±.07; $M_{\theta\phi}$0.24±.06; $M_{r\phi}$-0.54±.07; Best double couple: M_{o}1.67600×10^{17} NP1:ϕ_s140.00000°,δ66.00000°, λ68.00000°. NP2:ϕ_s5.00000°,δ32.00000°,λ130.00000°. Principal axes: T 1.8670, Plg62.0000°, Azm15.0000°; N -0.3860, Plg20.0000°, Azm247.0000°; nsta1 refers to body waves, cutoff=40s.*

ISC 07 19:08:35.2±0.3,**17°82S**±0'.04×**178°62W**±0'.04, **h556**km±3km,**h557**km:**pP-P,n1091,**σ**1s20**/1136,**mb5.2**/199, **63C-44D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**3.18**	**271**	*eP*		**P**	**19 09 53.3**	**+1.3**
MSVF				*eS*		**S**	**19 10 57.2**	**+2.7**
MSVF	**Nonsavu**	**3.18**	**271**	*eP*		**P**	**19 09 53.3**	**+1.3**
MSVF				*eS*		**S**	**19 10 57.2**	**+2.7**
AFI	**Afiamalu**	**7.64**	**60**	P		**P**	**19 10 26.7**	**-3.1**
	119nm,0.3s,baz=33,slow=1.1,SNR=58							
AFI				S		**S**	**19 11 58.0**	**-5.7**
	2.6nm,0.3s,baz=204,slow=20,SNR=2.6							
FUNA	**Funafuti**	**9.48**	**347**	*eP*		**P**	**19 10 47.5**	**-0.6**
RAO	**Raoul Island**	**11.39**	**177**	P		**P**	**19 11 06.3**	**-1.1**
RAO	**Raoul Island**	**11.39**	**177**	P		**P**	**19 11 06.3**	**-1.1**
DZM	**Mont Dzumac**	**14.67**	**251**	P		**P**	**19 11 39.9**	**-1.4**
	20nm,0.3s,baz=73,slow=21,SNR=88							
DZM	**Mont Dzumac**	**14.67**	**251**	*eP*		**P**	**19 11 39.0**	**-2.3**
	1μm,1.4s							
DZM	**Mont Dzumac**	**14.67**	**251**	*eP*		**P**	**19 11 38.9**	**-2.5**
NFK	**Norfolk Island**	**16.62**	**225**	P		**P**	**19 12 02.6**	**+2.3**
	baz=17,SNR=3.5							
RAR	**Rarotonga**	**18.08**	**104**	P		**P**	**19 12 14.5**	**+0.9**
	4.0nm,0.3s,baz=233,slow=5.3,SNR=11							
RAR	**Rarotonga**	**18.08**	**104**	*eP*		**P**	**19 12 14.5**	**+0.9**
	124nm,1.0s							
OUZ	**Omahuta**	**18.66**	**200**	*eP*		**P**	**19 12 21.0**	**+2.4**
	273nm,0.9s							
MXZ	**Matakaoa Point**	**19.85**	**187**	*eP*		**P**	**19 12 27.9**	**-1.5**
	153nm,1.0s							
URZ	**Urewera**	**20.70**	**190**	P		**P**	**19 12 34.5**	**-2.7**
	97nm,0.7s,baz=260,slow=1.8,SNR=45							
URZ				S		**S**	**19 15 48.1**	**-4.7**
	9.4nm,0.6s,baz=122,slow=21,SNR=3.5							
URZ	**Urewera**	**20.70**	**190**	*eP*		**P**	**19 12 34.7**	**-2.4**
	104nm,0.8s							
URZ				S		**S**	**19 15 48.1**	**-4.7**
TARA	**Tarawa**	**20.80**	**336**	*eP*		**P**	**19 12 37.6**	**-0.8**
	723nm,1.3s							
HIZ	**Hauiti**	**21.39**	**194**	*eP*		**P**	**19 12 43.0**	**-0.3**
	478nm,1.5s							
BKZ	**Black Stump Fm**	**21.69**	**190**	*eP*		**P**	**19 12 44.1**	**-2.0**
	29nm,0.7s							
HNR	**Honiara**	**22.42**	**289**	P		**P**	**19 12 53.2**	**+0.3**
	161nm,0.7s,baz=92,slow=1.8,SNR=8.3							
HNR	**Honiara**	**22.42**	**289**	*eP*		**P**	**19 12 53.0**	**+0.1**
HNR	**Honiara**	**22.42**	**289**	*eP*		**P**	**19 12 54.0**	**+1.0**
HNR					pmax	pmax		
	comp=Z,213nm,0.8s							
HNR	**Honiara**	**22.42**	**289**	*eP*		**P**	**19 12 54.0**	**+1.0**
	comp=E,213nm,0.8s							
BFZ	**Birch Farm**	**23.21**	**190**	*eP*		**P**	**19 12 58.8**	**-0.8**
	comp=Z,367nm,1.8s							
SNZO	**South Karori**	**24.10**	**192**	*eP*		**P**	**19 13 06.2**	**-1.3**
	comp=Z,392nm,1.5s							
LHI	**Lord Howe Isla**	**24.38**	**232**	*eP*		**P**	**19 13 10.9**	**+0.8**
	comp=Z,194nm,0.8s							
THZ	**Tophouse**	**24.94**	**195**	*eP*		**P**	**19 13 13.8**	**-1.2**
	comp=Z,77nm,1.0s							
KHZ	**Kahutara**	**25.41**	**194**	*eP*		**P**	**19 13 17.4**	**-1.6**
	comp=Z,90nm,0.9s							
LTZ	**Lake Taylor**	**26.06**	**195**	*eP*		**P**	**19 13 23.4**	**-1.4**
	comp=Z,108nm,0.7s							
OXZ	**Oxford**	**26.63**	**195**	*eP*		**P**	**19 13 28.4**	**-1.4**
	comp=Z,205nm,0.9s							
CRLZ	**Canterbury Las**	**26.72**	**194**	*eP*		**P**	**19 13 29.4**	**-1.2**
	comp=Z,146nm,1.0s							
MQZ	**McQueen's Vall**	**26.84**	**194**	*eP*		**P**	**19 13 29.9**	**-1.7**
	comp=Z,293nm,1.6s							
RPZ	**Rata Peaks**	**27.25**	**196**	P		**P**	**19 13 33.3**	**-1.9**
	comp=Z,39nm,0.6s,baz=327,slow=0.5,SNR=21							
RPZ	**Rata Peaks**	**27.25**	**196**	*eP*		**P**	**19 13 33.6**	**-1.6**
	comp=Z,149nm,1.4s							
FOZ	**Fox Glacier**	**27.43**	**198**	*eP*		**P**	**19 13 35.9**	**-0.9**
	comp=Z,180nm,0.7s							
PAE	**Paea**	**27.64**	**94**	*eP*		**P**	**19 13 39.3**	**+0.3**
	comp=Z,12nm,0.8s							
PPT2	**Papeete2**	**27.65**	**94**	*eP*		**P**	**19 13 39.8**	**+0.6**
	comp=Z,128nm,1.2s							
PPT	**Papeete**	**27.66**	**94**	P		**P**	**19 13 39.2**	**0.0**
	comp=Z,84nm,0.7s,baz=100,slow=0.4,SNR=10							
PPT	**Papeete**	**27.66**	**94**	*eP*		**P**	**19 13 39.9**	**+0.8**
TIAR	**Tiarei**	**27.88**	**94**	*eP*		**P**	**19 13 41.4**	**+0.3**
	comp=Z,29nm,0.8s							
TVO	**Taravao**	**27.95**	**94**	*eP*		**P**	**19 13 42.3**	**+0.5**
	comp=Z,18nm,0.7s							
LBZ	**Lake Benmore**	**28.11**	**197**	*eP*		**P**	**19 13 41.0**	**-1.7**
	comp=Z,182nm,1.3s							
ODZ	**Otahua Downs**	**28.59**	**196**	*eP*		**P**	**19 13 45.6**	**-1.3**
	comp=Z,94nm,1.5s							
XMAS	**Kiritimati**	**28.72**	**49**	*eP*		**P**	**19 13 48.2**	**-0.3**
	comp=Z,78nm,1.1s							
WKZ	**Wanaka**	**28.85**	**198**	*eP*		**P**	**19 13 48.0**	**-1.2**
	comp=Z,192nm,1.1s							
EIDS	**Eidsvold**	**29.11**	**250**	P		**P**	**19 13 51.3**	**-0.4**
	baz=29,SNR=87							
EIDS	**Eidsvold**	**29.11**	**250**	*eP*		**P**	**19 13 51.2**	**-0.5**
	comp=Z,206nm,0.9s							
EIDS				*eS*		**S**	**19 18 04.2**	**-0.9**
MLZ	**Mavora Lakes**	**29.61**	**199**	*eP*		**P**	**19 13 56.2**	**+0.4**
	comp=Z,273nm,0.8s							
KWAJ	**Kwajalein Atol**	**29.75**	**332**	*i* P		**P**	**19 13 57.4**	**+0.1**
KWAJ	**Kwajalein Atol**	**29.75**	**332**	*eP*		**P**	**19 13 57.4**	**+0.1**
	comp=Z,477nm,0.8s							
ARMA	**Armidale**	**29.81**	**240**	P		**P**	**19 13 58.6**	**+0.7**
	baz=30,SNR=257							
ARMA	**Armidale**	**29.81**	**240**	*eP*		**P**	**19 13 58.6**	**+0.7**
	comp=Z,182nm,0.7s							
DCZ	**Deep Cove**	**30.01**	**200**	*eP*		**P**	**19 13 58.1**	**-1.0**
	comp=Z,296nm,1.8s							
MGCD	**Mangrove Creek**	**31.18**	**235**	P		**P**	**19 14 10.4**	**+1.0**
	baz=31,SNR=80							
RMQ	**Roma**	**31.35**	**248**	P		**P**	**19 14 11.6**	**+0.6**
	baz=32,SNR=105							
RABL	**Rabaul**	**31.65**	**292**	*eP*		**P**	**19 14 12.5**	**-1.2**
	comp=Z,111nm,0.4s							
CTA	**Charters Tower**	**33.27**	**260**	P		**P**	**19 14 26.8**	**-0.5**
	comp=Z,71nm,0.5s,baz=87,slow=10,SNR=130							
CTA				S		**S**	**19 19 07.2**	**-1.7**
	comp=Z,4.3nm,0.9s,baz=281,slow=17,SNR=3.6							
CTAO	**Charters Tower**	**33.27**	**260**	*eP*		**P**	**19 14 26.8**	**-0.5**
CTAO					pmax	pmax		
	comp=Z,188nm,1.1s							
CTAO	**Charters Tower**	**33.27**	**260**	*eP*		**P**	**19 14 26.8**	**-0.5**
	comp=E,188nm,1.1s							
CNB	**Canberra Magne**	**33.32**	**232**	P		**P**	**19 14 28.7**	**+1.0**
	baz=34,SNR=169							
PATS	**Pohnpei**	**33.46**	**315**	*eP*		**P**	**19 14 29.6**	**+0.7**
	comp=Z,68nm,1.2s							
PATS				*ePcP*		**PcP**	**19 16 55.4**	**+1.7**
CAN	**Canberra**	**33.60**	**232**	*eP*		**P**	**19 14 30.4**	**+0.5**
CAN					pmax	pmax		
	comp=Z,186nm,1.0s							
CAN	**Canberra**	**33.60**	**232**	*eP*		**P**	**19 14 30.4**	**+0.5**
	comp=E,186nm,1.0s							
YNG	**Young**	**33.68**	**234**	P		**P**	**19 14 31.2**	**+0.6**
	baz=34,SNR=26							
PMG	**Port Moresby**	**34.25**	**280**	*d* iP		**P**	**19 14 36.0**	**+0.3**
PMG					pmax	pmax		
	comp=Z,1μm,1.0s							
PMG	**Port Moresby**	**34.25**	**280**	*eP*		**P**	**19 14 35.9**	**+0.3**
	comp=Z,292nm,0.9s							
CMSA	**Cobar Meteorol**	**35.02**	**240**	P		**P**	**19 14 41.9**	**+0.1**
	baz=35,SNR=452							
MTSU	**Mount Surprise**	**35.22**	**264**	P		**P**	**19 14 43.0**	**-0.7**
	baz=35,SNR=99							
QLP	**Quilpie**	**35.38**	**249**	P		**P**	**19 14 44.5**	**-0.4**
	baz=36,SNR=224							
JOHN	**Johnston Islan**	**35.49**	**15**	*eP*		**P**	**19 14 45.6**	**-0.1**
	comp=Z,411nm,0.8s							
MANU	**Manus Island**	**36.88**	**291**	*eP*		**P**	**19 14 58.1**	**+0.7**
	comp=Z,120nm,0.7s							
COEN	**Coen**	**36.91**	**270**	P		**P**	**19 14 57.7**	**+0.1**
	baz=37,SNR=63							
COEN	**Coen**	**36.91**	**270**	*eP*		**P**	**19 14 58.0**	**+0.4**
	comp=Z,262nm,1.1s							
COEN				*eS*		**S**	**19 20 01.2**	**-2.3**
TOO	**Toolangi**	**37.07**	**231**	P		**P**	**19 14 59.6**	**+0.9**
	baz=37,SNR=102							
MOO	**Moorlands**	**38.02**	**222**	P		**P**	**19 15 07.3**	**+1.0**
	baz=38,SNR=9.8							
TAU	**Tasmania Unive**	**38.17**	**222**	*eP*		**P**	**19 15 08.0**	**+0.5**
TAU					pmax	pmax		
	comp=Z,87nm,0.8s							
TAU	**Tasmania Unive**	**38.17**	**222**	*eP*		**P**	**19 15 08.0**	**+0.5**
	comp=Z,87nm,0.8s							
STKA	**Stephens Creek**	**38.50**	**241**	P		**P**	**19 15 10.4**	**+0.1**
	comp=Z,145nm,0.5s,baz=88,slow=9.6,SNR=495							
STKA				ScP		**ScP**	**19 20 07.7**	**+3.4**
	comp=Z,13nm,1.1s,baz=81,slow=4.9,SNR=4.0							
STKA	**Stephens Creek**	**38.50**	**241**	P		**P**	**19 15 11.0**	**+0.6**
	baz=39,SNR=311							
STKA	**Stephens Creek**	**38.50**	**241**	*eP*		**P**	**19 15 11.1**	**+0.7**
STKA					pmax	pmax		
	comp=Z,75nm,1.1s							
STKA	**Stephens Creek**	**38.50**	**241**	*eP*		**P**	**19 15 11.1**	**+0.7**
	comp=Z,75nm,1.1s							
STKA				ScP		**ScP**	**19 20 07.7**	**+3.4**
ARPS	**Mount Arapiles**	**39.54**	**233**	P		**P**	**19 15 19.1**	**+0.4**
	baz=40,SNR=14							
HTT	**Hallett**	**41.02**	**239**	P		**P**	**19 15 30.9**	**+0.3**
	baz=41,SNR=142							
JAY	**Jayapura**	**42.69**	**286**	P		**P**	**19 15 44.2**	**+0.2**
	comp=Z,5.2nm,0.4s,baz=96,slow=22,SNR=119							
JAY	**Jayapura**	**42.69**	**286**	P		**P**	**19 15 43.8**	**-0.2**
GENI	**Genyem**	**43.15**	**286**	P		**P**	**19 15 48.0**	**+0.4**
BBOO	**Buckleboo**	**43.27**	**241**	*eP*		**P**	**19 15 48.6**	**+0.4**
	comp=Z,392nm,0.9s							
KEKH	**Kekaha**	**43.68**	**26**	*eP*		**P**	**19 15 51.7**	**+0.2**
	comp=Z,198nm,1.0s							
POHA	**Pohakuloa**	**43.69**	**32**	*eP*		**P**	**19 15 52.1**	**+0.3**
	comp=Z,905nm,1.0s							
HPAH	**Hawaii Prepara**	**43.83**	**32**	*eP*		**P**	**19 15 53.1**	**+0.3**
	comp=Z,702nm,1.3s							
KIP	**Kipapa**	**43.92**	**28**	*ieP*		**P**	**19 15 53.9**	**+0.6**
KIP	**Kipapa**	**43.92**	**28**	*eP*		**P**	**19 15 54.3**	**+1.0**
	comp=Z,325nm,1.3s							
OPA	**Opana**	**44.15**	**28**	*eP*		**P**	**19 15 56.0**	**+0.9**
OPA					pmax	pmax		
	comp=Z,141nm,1.0s							
OPA	**Opana**	**44.15**	**28**	*eP*		**P**	**19 15 56.0**	**+0.9**
	comp=Z,141nm,1.0s							
HLK	**Haleakala**	**44.17**	**31**	*eP*		**P**	**19 15 56.0**	**+0.4**
	comp=Z,444nm,1.0s							
WB2	**Warramunga Arr**	**44.44**	**259**	*eP*		**P**	**19 15 56.8**	**-0.7**
	comp=Z,210nm,1.3s							
WRAB	**Tennant Creek**	**44.44**	**259**	*eP*		**P**	**19 15 56.3**	**-1.2**
WRAB					pmax	pmax		
	comp=Z,193nm,1.3s							
WRAB	**Tennant Creek**	**44.44**	**259**	*eP*		**P**	**19 15 56.2**	**-1.2**
	comp=Z,193nm,1.3s							
WRA	**Warramunga Arr**	**44.45**	**259**	P		**P**	**19 15 56.4**	**-1.2**
	comp=Z,73nm,0.7s,baz=96,slow=6.9,SNR=807							
WRA				PcP		**PcP**	**19 17 29.3**	**+0.2**
	comp=Z,8.5nm,0.8s,baz=92,slow=4.0,SNR=4.4							
WRA				PP		**PP**	**19 17 51.3**	**-0.6**
	comp=Z,14nm,1.0s,baz=93,slow=9.1,SNR=4.5							
WRA				ScP		**ScP**	**19 20 30.6**	**+2.2**
	comp=Z,9.9nm,1.0s,baz=88,slow=4.4,SNR=11							
WRA				S		**S**	**19 21 46.4**	**-6.3**
	comp=Z,7.4nm,0.9s,baz=93,slow=14,SNR=9.1							
WRA				ScS		**ScS**	**19 24 55.0**	**+0.8**
	comp=Z,3.4nm,1.0s,baz=99,slow=5.2,SNR=4.6							
AS01	**Alice Springs**	**44.58**	**254**	*eP*		**P**	**19 15 58.2**	**-0.3**
AS31	**Alice Springs**	**44.62**	**254**	*eP*		**P**	**19 15 58.7**	**-0.2**
	comp=Z,182nm,0.6s							
ASAR	**Alice Springs**	**44.62**	**254**	P		**P**	**19 15 58.5**	**-0.4**
	comp=Z,550nm,0.5s,baz=90,slow=7.8							
ASAR				ScP		**ScP**	**19 20 31.4**	**+2.3**
	comp=Z,13nm,0.9s,baz=100,slow=4.1,SNR=9.9							
ASAR				S		**S**	**19 21 52.0**	**-3.1**
	comp=Z,21nm,1.0s,baz=86,slow=16,SNR=30							
ASAR				ScS		**ScS**	**19 24 56.2**	**+0.9**
	comp=Z,3.3nm,1.1s,baz=95,slow=7.5,SNR=4.8							
ASAR				P3KPbc			19 44 38.9	
	comp=Z,0.8nm,1.1s,baz=268,slow=4.3,SNR=5.1							
KDU	**Kakadu**	**47.36**	**269**	P		**P**	**19 16 19.1**	**-0.6**
	baz=48,SNR=20							
GUMO	**Guam**	**47.67**	**308**	P		**P**	**19 16 22.2**	**+0.2**
	comp=Z,154nm,0.7s,baz=172,slow=9.5,SNR=16							
GUMO	**Guam**	**47.67**	**308**	*eP*		**P**	**19 16 22.4**	**+0.4**
GUMO					pmax	pmax		
	comp=Z,172nm,0.8s							
GUMO	**Guam**	**47.67**	**308**	*eP*		**P**	**19 16 22.4**	**+0.4**
	comp=Z,172nm,0.8s							
MTN	**Manton Dam**	**48.60**	**268**	P		**P**	**19 16 28.2**	**-0.8**
	baz=49,SNR=24							
MTN	**Manton Dam**	**48.60**	**268**	*eP*		**P**	**19 16 28.5**	**-0.5**
	comp=Z,133nm,1.2s							
ANA2	**Anatahan**	**48.86**	**312**	*eP*		**P**	**19 16 31.9**	**+1.2**
WRKA	**Warakurna**	**49.68**	**252**	P		**P**	**19 16 36.5**	**-0.3**
	baz=50,SNR=1000							
FORT	**Forrest**	**49.87**	**245**	*eP*		**P**	**19 16 37.5**	**-0.6**
	comp=Z,2μm,0.6s							
FAKI	**Fak Fak**	**50.37**	**281**	*eP*		**P**	**19 16 41.6**	**-0.4**
	comp=Z,45nm,0.6s							
FITZ	**Fitzroy Crossi**	**52.85**	**261**	P		**P**	**19 16 59.7**	**-0.1**
	comp=Z,17nm,0.3s,baz=93,slow=9.9							
FITZ				S		**S**	**19 23 47.0**	**-0.5**
	comp=Z,3.8nm,1.0s,baz=143,slow=20,SNR=3.7							
FITZ	**Fitzroy Crossi**	**52.85**	**261**	*eP*		**P**	**19 17 00.0**	**+0.2**
	comp=Z,119nm,1.6s							
FITZ				S		**S**	**19 23 47.0**	**-0.5**
SOEI	**Soe**	**55.87**	**270**	*eP*		**P**	**19 17 22.3**	**+1.1**
	comp=Z,254nm,1.2s							
MBWA	**Marble Bar**	**57.90**	**256**	*eP*		**P**	**19 17 34.4**	**-0.5**
	comp=Z,50nm,0.8s							
NWAO	**Narrogin (SRO)**	**59.08**	**242**	*eP*		**P**	**19 17 42.4**	**-0.2**
NWAO					pmax	pmax		
	comp=Z,105nm,1.4s							
NWAO	**Narrogin (SRO)**	**59.08**	**242**	*eP*		**P**	**19 17 42.4**	**-0.2**
	comp=Z,105nm,1.4s							
LUWI	**Luwuk**	**59.90**	**279**	*eP*		**P**	**19 17 48.4**	**0.0**
	comp=Z,140nm,1.4s							
SBA	**Scott Base**	**60.49**	**184**	*eP*		**P**	**19 17 53.2**	**+2.0**
SBA				*e**PP		**pP**	**19 19 45.1**	**+4.3**
SBA	**Scott Base**	**60.49**	**184**	*eP*		**P**	**19 17 53.2**	**+2.0**
SBA				*ep*P		**pP**	**19 19 45.1**	**+4.3**
VNDA	**Vanda**	**60.51**	**185**	P		**P**	**19 17 52.6**	**+1.3**
	comp=Z,2.5nm,0.6s,baz=356,slow=7.2,SNR=16							
VNDA				pP		**pP**	**19 19 42.2**	**+1.3**
	comp=Z,3.3nm,1.1s,baz=3.2,slow=8.2,SNR=2.9							
VNDA				ScP		**ScP**	**19 21 40.0**	**+3.0**
	comp=Z,3.4nm,0.9s,baz=340,slow=3.3,SNR=3.7							
VNDA	**Vanda**	**60.51**	**185**	*eP*		**P**	**19 17 52.9**	**+1.6**
VNDA					*PP	**pP**	**19 19 42.3**	**+1.3**
VNDA					pmax	pmax		
	comp=Z,30nm,1.8s							
VNDA	**Vanda**	**60.51**	**185**	*eP*		**P**	**19 17 52.9**	**+1.6**
	comp=Z,30nm,1.8s							
VNDA				pP		**pP**	**19 19 42.2**	**+1.3**
VNDA				ScP		**ScP**	**19 21 40.0**	**+3.0**
KAPI	**Kappang**	**61.49**	**274**	P		**P**	**19 17 58.7**	**-0.1**
	comp=Z,9.3nm,0.5s,baz=191,slow=0.8,SNR=6.3							
KAPI	**Kappang**	**61.49**	**274**	*eP*		**P**	**19 17 58.5**	**-0.3**
	comp=Z,44nm,1.4s							
RPN	**Rapa Nui**	**64.00**	**112**	*eP*		**P**	**19 18 14.2**	**-0.6**
RPN					pmax	pmax		
	comp=Z,963nm,1.8s							
RPN	**Rapa Nui**	**64.00**	**112**	*eP*		**P**	**19 18 14.2**	**-0.6**
	comp=Z,963nm,1.8s							
JHJ2	**Mitsune**	**64.36**	**322**	*eP*		**P**	**19 18 16.9**	**+0.1**
	comp=Z,413nm,0.9s							
JHJ	**Hachijo jima 2**	**64.38**	**322**	P		**P**	**19 18 16.8**	**-0.2**
	comp=Z,339nm,0.8s,baz=78,slow=23,SNR=12							
JAGI	**Jajag, Banyuwa**	**65.84**	**269**	*eP*		**P**	**19 18 25.3**	**-1.3**
	comp=Z,55nm,0.8s							
MYLDM	**Lahad Datu**	**66.10**	**284**	*eP*		**P**	**19 18 29.6**	**+1.4**
	comp=Z,20nm,0.9s							
CASY	**Casey**	**66.13**	**205**	*eP*		**P**	**19 18 27.9**	**+0.5**
	comp=Z,50nm,1.2s							
INU	**Inuyama**	**67.58**	**322**	*eP*		**P**	**19 18 36.2**	**-0.6**
	comp=Z,57nm,1.3s							
MJAR	**Matsushiro Arr**	**67.72**	**323**	P		**P**	**19 18 37.2**	**-0.5**
	comp=Z,46nm,0.7s,baz=160,slow=6.1,SNR=102							
MAJO	**Matsushiro**	**67.72**	**323**	*eP*		**P**	**19 18 37.7**	**0.0**
MAJO				*e**PP		**pP**	**19 20 33.3**	**+2.3**
MAJO					pmax	pmax		
	comp=Z,57nm,0.8s							
MAJO	**Matsushiro**	**67.72**	**323**	*eP*		**P**	**19 18 37.7**	**0.0**
	comp=Z,57nm,0.8s							
MAJO				*ep*P		**pP**	**19 20 33.3**	**+2.3**
MJB9	**Matsu-Tunnel**	**67.73**	**323**	*eP*		**P**	**19 18 37.8**	**0.0**
	comp=Z,15nm,0.8s							
MJB9				*ep*P		**pP**	**19 20 33.3**	**+2.3**
JOW	**Kunigami**	**68.01**	**310**	*eP*		**P**	**19 18 40.8**	**+1.1**
	comp=Z,73nm,1.0s							
KKM	**Kota Kinabalu**	**68.53**	**284**	*eP*		**P**	**19 18 43.5**	**+0.3**
	comp=Z,20nm,0.5s							
ERM	**Erimo**	**69.22**	**330**	*eP*		**P**	**19 18 48.0**	**+1.4**
ERM					pmax	pmax		
	comp=Z,25nm,0.9s							
ERM	**Erimo**	**69.22**	**330**	*eP*		**P**	**19 18 48.0**	**+1.4**
	comp=Z,25nm,0.9s							
UGM	**Wanagama**	**69.45**	**268**	*eP*		**P**	**19 18 48.5**	**-0.2**
	comp=Z,908nm,2.0s							
KUR	**Kuril'sk**	**69.76**	**335**	*i* P		**P**	**19 18 49.8**	**+0.1**
JNU	**Nakatsue**	**69.94**	**316**	P		**P**	**19 18 50.8**	**-0.4**
	comp=Z,21nm,0.9s,baz=116,slow=4.2,SNR=8.6							
JNU	**Nakatsue**	**69.94**	**316**	*eP*		**P**	**19 18 50.7**	**-0.4**
JNU				P		**P**	**19 18 50.8**	**-0.4**
SMY	**Shemya**	**70.54**	**355**	*eP*		**P**	**19 18 53.5**	**-0.6**
SMY					pmax	pmax		
	comp=Z,258nm,0.9s							
SMY	**Shemya**	**70.54**	**355**	*eP*		**P**	**19 18 53.5**	**-0.6**
	comp=E,258nm,0.9s							
SBUM	**Sibu**	**71.00**	**279**	*eP*		**P**	**19 18 58.4**	**+0.7**
	comp=Z,4.8nm,0.7s							
NIKH	**Nikolski High**	**71.01**	**6**	*eP*		**P**	**19 18 55.8**	**-1.1**
	comp=Z,359nm,1.0s							
ASAJ	**Asahikawa**	**71.11**	**332**	*eP*		**P**	**19 18 59.0**	**+1.3**
	comp=Z,60nm,0.8s							
SKR	**Severo-Kuril's**	**71.74**	**343**	*c iP*		**P**	**19 19 00.6**	**-0.6**
SKR					pmax	pmax		
	comp=Z,500nm,3.3s							
SKR					pmax	pmax		
	comp=Z,217nm,1.1s							
CISI	**Cisompet, Garu**	**72.13**	**268**	*eP*		**P**	**19 19 03.2**	**-1.2**
	comp=Z,95nm,0.4s							
UNV	**Unalaska Valle**	**72.13**	**8**	*eP*		**P**	**19 19 02.3**	**-1.1**
	comp=Z,108nm,0.9s							
QSPA	**South Pole Qui**	**72.23**	**180**	*eP*		**P**	**19 19 05.2**	**+1.1**
	comp=Z,56nm,0.9s							
KSM	**Kuching**	**72.48**	**277**	*eP*		**P**	**19 19 07.4**	**+1.0**
	comp=Z,26nm,0.7s							
AKUT	**Akutan**	**72.51**	**8**	*eP*		**P**	**19 19 04.1**	**-1.5**
	comp=Z,81nm,1.0s							
PET	**Petropavlovsk**	**73.25**	**346**	*i iP*		**P**	**19 19 09.1**	**-0.7**
PET					pmax	pmax		
	comp=Z,60nm,1.1s							
PET	**Petropavlovsk**	**73.25**	**346**	*eP*		**P**	**19 19 09.3**	**-0.5**
	comp=Z,46nm,0.7s							
YSS	**Yuzh-Sakhalins**	**73.25**	**333**	*i iP*		**P**	**19 19 10.8**	**+0.7**
YSS					pmax	pmax		
	comp=Z,80nm,1.0s							
YSS	**Yuzh-Sakhalins**	**73.25**	**333**	*eP*		**P**	**19 19 10.7**	**+0.7**
	comp=E,168nm,1.4s							
PEA0	**Petropavlovsk-**	**73.55**	**345**	*eP*		**P**	**19 19 11.6**	**0.0**
PEA0B	**Petropavlovsk-**	**73.55**	**345**	*eP*		**P**	**19 19 11.8**	**+0.2**
	comp=Z,166nm,1.0s							
PETK	**Petropavlovsk-**	**73.55**	**345**	P		**P**	**19 19 11.5**	**-0.1**
	comp=Z,93nm,0.8s,baz=124,slow=8.5,SNR=106							
SDPT	**Sand Point**	**74.50**	**11**	*eP*		**P**	**19 19 16.0**	**-0.9**
	comp=Z,172nm,1.0s							
KSRS	**Korea Array**	**74.51**	**318**	P		**P**	**19 19 18.1**	**+0.7**
	comp=Z,10nm,0.7s,baz=130,slow=6.0,SNR=31							
KS15	**Wonju Array Si**	**74.52**	**318**	*eP*		**P**	**19 19 18.6**	**+1.1**
KSAR	**Wonju Array Be**	**74.52**	**318**	P		**P**	**19 19 18.1**	**+0.6**
KSAR	**Wonju Array Be**	**74.52**	**318**	P		**P**	**19 19 18.1**	**+0.6**
**KS01

MDJ	**Mudanjiang**	**78.00**	**325**	P		**P**		**19 19 37.5**	**+1.1**
MDJ	comp=Z,120nm,0.8s			pmax		pmax			
MDJ	comp=Z,200nm,6.7s			pmax		pmax			
MDJ	**Mudanjiang**	**78.00**	**325**	*e*P		**P**		**19 19 37.2**	**+0.7**
WDC	**Whiskeytown Da**	**78.01**	**40**	*e*P		**P**		**19 19 37.5**	**+0.9**
WDC	comp=Z,126nm,1.4s			pmax		pmax			
WDC	**Whiskeytown Da**	**78.01**	**40**	*e*P		**P**		**19 19 37.5**	**+0.9**
IKP	**In-Ko-Pah, Jac**	**78.02**	**50**	P		**P**		**19 19 38.2**	**+1.3**
AFDM	**Forest Hills D**	**78.05**	**42**	*e*P		**P**		**19 19 37.5**	**+0.6**
ORV	**Oroville**	**78.06**	**42**	*e*P		**P**		**19 19 37.5**	**+0.6**
ORV	comp=Z,78nm,1.1s			pmax		pmax			
ORV	**Oroville**	**78.06**	**42**	*e*P		**P**		**19 19 37.5**	**+0.6**
N02D	**Trinity Center**	**78.14**	**40**	P		**P**		**19 19 38.7**	**+1.3**
PFO	**Pinyon Flats O**	**78.25**	**49**	P		**P**		**19 19 39.5**	**+1.3**
PFO	**Pinyon Flats O**	**78.25**	**49**	P		**P**		**19 19 39.1**	**+0.9**
PFO	**Pinyon Flats O**	**78.25**	**49**	*e*P		**P**		**19 19 38.8**	**+0.6**
PFO	comp=Z,63nm,1.3s			pmax		pmax			
PFO	**Pinyon Flats O**	**78.25**	**49**	*e*P		**P**		**19 19 38.8**	**+0.6**
TPFO	**Pinon Flats**	**78.25**	**49**	P		**P**		**19 19 39.1**	**+0.9**
BBRC	**Big Bear Solar**	**78.25**	**48**	P		**P**		**19 19 39.2**	**+0.9**
M02C	**Callahan**	**78.30**	**39**	P		**P**		**19 19 39.7**	**+1.5**
O03D	**Paynes Creek**	**78.30**	**41**	P		**P**		**19 19 38.7**	**+0.5**
L02D	**Cave Junction,**	**78.31**	**38**	P		**P**		**19 19 39.3**	**+1.2**
LRMC	**Laurel Mtn Rad**	**78.35**	**47**	P		**P**		**19 19 39.6**	**+0.8**
KDAK	**Kodiak Island**	**78.37**	**14**	*e*P		**P**		**19 19 37.9**	**-0.1**
KDAK	comp=Z,550nm,0.9s			pmax		pmax			
KDAK	**Kodiak Island**	**78.37**	**14**	*e*P		**P**		**19 19 37.9**	**-0.1**
SWSC	**Sam W. Stewart**	**78.39**	**50**	P		**P**		**19 19 39.7**	**+1.0**
SRIG	**Santa Rosalia**	**78.42**	**56**	*e*P		**P**		**19 19 39.9**	**+0.8**
RRX	**Edison Barstow**	**78.52**	**48**	P		**P**		**19 19 40.1**	**+0.7**
LPIG	**La Paz**	**78.57**	**60**	P		**P**		**19 19 41.1**	**+1.2**
YBH	**Yreka Blue Hor**	**78.58**	**39**	*e*P		**P**		**19 19 41.0**	**+1.2**
YBH	comp=Z,129nm,1.0s			pmax		pmax			
YBH	**Yreka Blue Hor**	**78.58**	**39**	*e*P		**P**		**19 19 41.0**	**+1.2**
SLBS	**Sierra La Lagu**	**78.69**	**61**	*e*P		**P**		**19 19 42.6**	**+1.9**
MLAC	**Mammoth, Mammo**	**78.71**	**44**	P		**P**		**19 19 42.0**	**+1.2**
BELC	**Belle Mtn. Jos**	**78.78**	**49**	P		**P**		**19 19 42.0**	**+1.0**
MPMC	**Manual Prospec**	**78.79**	**46**	P		**P**		**19 19 42.1**	**+1.0**
WAKR	**Walker**	**78.80**	**43**	*e*P		**P**		**19 19 42.3**	**+1.2**
TIN	**Tinemaha, Big**	**78.81**	**45**	P		**P**		**19 19 42.2**	**+1.1**
DAC	**Darwin (Calif)**	**78.83**	**46**	*e*P		**P**		**19 19 42.1**	**+0.8**
DAC	comp=Z,127nm,1.5s			pmax		pmax			
DAC	**Darwin (Calif)**	**78.83**	**46**	*e*P		**P**		**19 19 42.1**	**+0.8**
GSC	**Goldstone, Bar**	**78.87**	**47**	P		**P**		**19 19 42.2**	**+0.8**
GSC	**Goldstone, Bar**	**78.87**	**47**	*e*P		**P**		**19 19 42.1**	**+0.7**
GSC	comp=Z,121nm,1.5s			pmax		pmax			
GSC	**Goldstone, Bar**	**78.87**	**47**	*e*P		**P**		**19 19 42.1**	**+0.7**
NKL	**Nikolayevsk**	**78.92**	**336**	*e*P		**P**		**19 19 41.0**	**-0.1**
NKL	comp=N,27nm,0.9s			pmax		pmax			
NKL	comp=E,20nm,0.9s			pmax		pmax			
NKL	comp=Z,70nm,0.9s			pmax		pmax			
HEC	**Hector,Ludlow**	**78.96**	**48**	P		**P**		**19 19 42.8**	**+0.9**
HUMO	**Hull Mountain**	**78.96**	**38**	*e*P		**P**		**19 19 42.7**	**+1.1**
BC3	**Big Chuckawall**	**79.00**	**49**	P		**P**		**19 19 43.4**	**+1.2**
M04C	**Macdoel**	**79.14**	**40**	P		**P**		**19 19 43.8**	**+1.0**
GLA	**Glamis**	**79.15**	**50**	P		**P**		**19 19 44.5**	**+1.6**
GRAC	**Grapevine Rang**	**79.36**	**46**	P		**P**		**19 19 45.2**	**+1.2**
I03D	**Drain, OR**	**79.38**	**37**	P		**P**		**19 19 44.7**	**+0.9**
DL2	**Dalian**	**79.39**	**317**	P		**P**		**19 19 44.2**	**+0.3**
DL2	comp=Z,59nm,0.9s			pmax		pmax			
GMRC	**Granite Mounta**	**79.41**	**48**	P		**P**		**19 19 45.3**	**+0.9**
FURC	**Furnace Creek,**	**79.43**	**46**	P		**P**		**19 19 45.1**	**+0.9**
IRM	**Iron Mountain**	**79.47**	**49**	P		**P**		**19 19 45.7**	**+1.2**
PAHR	**Pah Rah Range**	**79.49**	**42**	*e*P		**P**		**19 19 45.5**	**+0.9**
SHOC	**Shoshone, Teco**	**79.55**	**47**	P		**P**		**19 19 45.5**	**+0.6**
TUQ	**Turquoise Moun**	**79.56**	**48**	P		**P**		**19 19 46.0**	**+0.9**
K04D	**Chiloquin, OR**	**79.68**	**39**	P		**P**		**19 19 46.5**	**+0.9**
Y12C	**Blythe**	**79.72**	**50**	P		**P**		**19 19 47.1**	**+1.3**
Y12C	**Blythe**	**79.72**	**50**	*e*P		**P**		**19 19 47.1**	**+1.3**
113A	**Mohawk Valley,**	**79.79**	**51**	*e*P		**P**		**19 19 45.2**	**-1.0**
CN2	**Changchun**	**79.83**	**322**	⇑P		**P**		**19 19 46.6**	**+0.4**
CN2	comp=Z,90nm,1.0s			pmax		pmax			
KLR	**Kul'dur**	**79.94**	**330**	P		**P**		**19 19 47.0**	**+0.4**
KLR	**Kul'dur**	**79.94**	**330**	P		**P**		**19 19 47.0**	**+0.4**
KLR	comp=Z,25nm,1.1s			pmax		pmax			
COR	**Corvallis**	**79.95**	**37**	*e*P		**P**		**19 19 47.4**	**+0.7**
COR	comp=Z,85nm,1.1s			pmax		pmax			
COR	**Corvallis**	**79.95**	**37**	*e*P		**P**		**19 19 47.4**	**+0.7**
LDFC	**Landfair**	**79.95**	**48**	*e*P		**P**		**19 19 48.5**	**+1.3**
I04A	**Tendick Farm,**	**79.99**	**38**	P		**P**		**19 19 47.6**	**+0.6**
TPNV	**Topopah Spring**	**80.10**	**46**	P		**P**		**19 19 49.0**	**+1.0**
TPNV	**Topopah Spring**	**80.10**	**46**	*e*P		**P**		**19 19 48.9**	**+1.0**
TPNV	comp=Z,165nm,1.5s			pmax		pmax			
TPNV	**Topopah Spring**	**80.10**	**46**	*e*P		**P**		**19 19 48.9**	**+0.9**
214A	**Organ Pipe Nat**	**80.12**	**52**	P		**P**		**19 19 49.6**	**+1.6**
214A	**Organ Pipe Nat**	**80.12**	**52**	*e*P		**P**		**19 19 49.1**	**+1.1**
NEE2	**Needles Airpor**	**80.15**	**49**	P		**P**		**19 19 49.2**	**+1.1**
MOD	**Modoc Plateau**	**80.15**	**40**	*e*P		**P**		**19 19 48.9**	**+0.8**
HSIG		**80.20**	**55**	*e*P		**P**		**19 19 49.4**	**+0.9**
CNPM	**China Poot**	**80.25**	**14**	*e*P		**P**		**19 19 47.6**	**-0.4**
K05A	**Summer Lake**	**80.26**	**39**	*e*P		**P**		**19 19 50.0**	**+1.3**
G03D	**McMinnville, O**	**80.35**	**36**	P		**P**		**19 19 49.7**	**+0.9**
J05D	**Fort Rock, OR**	**80.38**	**39**	P		**P**		**19 19 50.5**	**+1.2**

	baz=234,SNR=9.6								
WHN	**Wuhan**	**80.40**	**306**	⇑P		**P**		**19 19 49.9**	**+0.5**
WHN	comp=Z,60nm,1.0s			pmax		pmax			
BRLK	**Bradley Lake**	**80.54**	**14**	*e*P		**P**		**19 19 49.2**	**-0.3**
F03A	**Seaside**	**80.62**	**35**	*e*P		**P**		**19 19 50.9**	**+0.7**
	comp=Z,157nm,1.1s								
SHPR	**Sheep Range**	**80.63**	**47**	*e*P		**P**		**19 19 51.8**	**+1.0**
	comp=Z,86nm,1.2s								
SVW2	**Sparrevohn**	**80.80**	**11**	*e*P		**P**		**19 19 50.2**	**-0.5**
	comp=Z,50nm,1.0s								
Y14A	**Wickenburg**	**80.91**	**50**	*e*P		**P**		**19 19 53.2**	**+1.1**
I05D	**Terrebonne, OR**	**80.93**	**38**	P		**P**		**19 19 52.8**	**+0.9**
	baz=234,SNR=28								
E03A	**Lebam**	**81.00**	**35**	*e*P		**P**		**19 19 53.1**	**+1.0**
	comp=Z,172nm,1.0s								
F04D	**Rainier, OR**	**81.02**	**36**	P		**P**		**19 19 53.4**	**+1.1**
	baz=233								
TIA	**Tai'an**	**81.05**	**312**	⇑P		**P**		**19 19 53.0**	**+0.3**
TIA	comp=Z,30nm,1.0s			pmax		pmax			
MA2	**Magadan**	**81.06**	**345**	P		**P**		**19 19 51.4**	**-0.8**
	comp=Z,41nm,0.7s,baz=142,slow=5.8,SNR=25								
DIB	**Dawson Inlet,**	**81.14**	**26**	*e*P		**P**		**19 19 53.0**	**+0.3**
SEW	**Seward**	**81.18**	**14**	*e*P		**P**		**19 19 52.1**	**-0.6**
R11A	**Troy Canyon, C**	**81.27**	**45**	P		**P**		**19 19 54.6**	**+0.5**
	baz=239,SNR=63								
R11A	**Troy Canyon, C**	**81.27**	**45**	*e*P		**P**		**19 19 54.5**	**+0.5**
R11A				*e*pP		**pP**		**19 21 56.0**	**+3.1**
BMN	**Battle Mountai**	**81.28**	**43**	*e*P		**P**		**19 19 54.9**	**+0.9**
BMN	**Battle Mountai**	**81.28**	**43**	*e*P		**P**		**19 19 54.9**	**+0.9**
LVP	**Lakeview Peak**	**81.34**	**36**	P		**P**		**19 19 54.9**	**+0.8**
NLWA	**Neilton Lookou**	**81.35**	**34**	*e*P		**P**		**19 19 55.1**	**+1.1**
	comp=Z,91nm,1.0s								
OOW	**Octopus West**	**81.40**	**34**	P		**P**		**19 19 55.6**	**+1.4**
VFP	**Flag Point**	**81.43**	**37**	P		**P**		**19 19 55.2**	**+0.6**
WVOR	**Wild Horse Val**	**81.47**	**40**	*e*P		**P**		**19 19 56.0**	**+1.1**
WVOR	comp=Z,170nm,1.0s			pmax		pmax			
WVOR	**Wild Horse Val**	**81.47**	**40**	*e*P		**P**		**19 19 56.0**	**+1.1**
	comp=Z,170nm,1.0s								
G05D	**Wamic, OR**	**81.47**	**37**	P		**P**		**19 19 55.3**	**+0.6**
	baz=234,SNR=10								
GAMB	**Gambell**	**81.51**	**3**	*e*P		**P**		**19 19 55.2**	**+0.9**
SPU	**Mount Spurr**	**81.56**	**13**	*e*P		**P**		**19 19 53.5**	**-1.3**
TDL	**Tradedollar La**	**81.62**	**36**	P		**P**		**19 19 56.6**	**+1.1**
UBPT	**Khong Chiam**	**81.72**	**289**	P		**P**		**19 19 57.4**	**+0.9**
	comp=Z,24nm,1.2s								
TUC	**Tucson**	**81.81**	**52**	P		**P**		**19 19 58.3**	**+1.5**
	baz=243								
TUC	**Tucson**	**81.81**	**52**	*e*P		**P**		**19 19 58.6**	**+1.8**
TUC	comp=Z,125nm,1.1s			pmax		pmax			
TUC	**Tucson**	**81.81**	**52**	*e*P		**P**		**19 19 58.6**	**+1.8**
	comp=Z,125nm,1.1s								
VTHM	**Trough**	**81.87**	**37**	P		**P**		**19 19 57.4**	**+0.7**
RC01	**Rabbit Creek A**	**81.98**	**14**	*e*P		**P**		**19 19 56.5**	**-0.4**
LON	**Longmire**	**82.08**	**36**	*e*P		**P**		**19 19 58.0**	**+0.2**
LON	comp=Z,30nm,1.0s			pmax		pmax			
LON	**Longmire**	**82.08**	**36**	*e*P		**P**		**19 19 58.0**	**+0.2**
	comp=Z,30nm,1.0s								
SUA	**Susitna One**	**82.10**	**13**	*e*P		**P**		**19 19 57.0**	**-0.6**
IPM	**Ipoh**	**82.22**	**277**	*e*P		**P**		**19 19 59.4**	**+0.2**
LCMT	**Little Creek M**	**82.22**	**47**	*e*P		**P**		**19 19 60.0**	**+1.1**
	comp=Z,87nm,1.0s								
D05A	**Enumclaw**	**82.25**	**35**	*e*P		**P**		**19 20 00.1**	**+1.6**
	comp=Z,337nm,1.4s								
BBB	**Bella Bella**	**82.34**	**29**	P		**P**		**19 19 58.4**	**-0.4**
	comp=Z,56nm,0.9s,baz=249,slow=5.7,SNR=20								
BBB	**Bella Bella**	**82.34**	**29**	*e*P		**P**		**19 19 59.4**	**+0.6**
PGC	**Sidney**	**82.35**	**33**	*e*P		**P**		**19 19 59.8**	**+0.8**
TT01	**Tatalina**	**82.40**	**10**	*e*P		**P**		**19 19 58.7**	**-0.2**
JBO	**Jordan Butte**	**82.45**	**37**	P		**P**		**19 20 00.3**	**+0.6**
EYAK	**Cordova Ski Ar**	**82.48**	**16**	*e*P		**P**		**19 19 59.1**	**-0.2**
KNB	**Kanab**	**82.52**	**47**	*e*P		**P**		**19 20 01.7**	**+1.3**
KNB	comp=Z,97nm,1.1s			pmax		pmax			
KNB	**Kanab**	**82.52**	**47**	*e*P		**P**		**19 20 01.7**	**+1.3**
	comp=Z,97nm,1.1s								
CRAG	**Craig**	**82.52**	**24**	*e*P		**P**		**19 20 00.8**	**+1.2**
TRW	**Toppenish Ridg**	**82.52**	**36**	P		**P**		**19 20 00.8**	**+0.8**
PMR	**Palmer**	**82.57**	**14**	*e*P		**P**		**19 19 59.3**	**-0.5**
PMR	**Palmer**	**82.57**	**14**	*e*P		**P**		**19 19 59.3**	**-0.5**
U15A	**North Rim**	**82.61**	**48**	*e*P		**P**		**19 20 02.3**	**+1.3**
ELK	**Elko**	**82.73**	**43**	*e*P		**P**		**19 20 02.2**	**+0.8**
ELK	**Elko**	**82.73**	**43**	*e*P		**P**		**19 20 02.2**	**+0.8**
A04D	**Lummi Island**	**82.78**	**34**	P		**P**		**19 20 02.0**	**+0.9**
	baz=233,SNR=8.9								
KULM	**Kulim**	**82.83**	**278**	*e*P		**P**		**19 20 03.0**	**+0.8**
B05A	**Bryant**	**82.83**	**34**	P		**P**		**19 20 02.1**	**+0.7**
	baz=233,SNR=22								
WUAZ	**Wupatki**	**82.84**	**49**	P		**P**		**19 20 03.3**	**+1.3**
	baz=242								
WUAZ	**Wupatki**	**82.84**	**49**	*e*P		**P**		**19 20 03.3**	**+1.3**
	comp=Z,136nm,1.1s								
G08A	**Pilot Rock**	**82.86**	**38**	*e*P		**P**		**19 20 02.5**	**+0.6**
SML	**Sawmill**	**82.94**	**14**	*e*P		**P**		**19 20 01.2**	**-0.5**
SML	**Sawmill**	**82.94**	**14**	*e*P		**P**		**19 20 01.2**	**-0.5**
DIV	**Divide**	**82.97**	**15**	*e*P		**P**		**19 20 01.6**	**-0.3**
PKCU	**Pinal Cliffs**	**83.08**	**47**	*e*P		**P**		**19 20 05.8**	**+2.4**
PPLA	**Purkeypile**	**83.09**	**12**	*e*P		**P**		**19 20 00.4**	**-2.2**
BMRM	**Bremner River**	**83.13**	**16**	*e*P		**P**		**19 20 02.4**	**-0.3**
HAWA	**Hanford**	**83.16**	**37**	*e*P		**P**		**19 20 03.9**	**+0.8**
SCM	**Sheep Creek Mo**	**83.20**	**14**	*e*P		**P**		**19 20 02.8**	**-0.3**
SCM	**Sheep Creek Mo**	**83.20**	**14**	*e*P		**P**		**19 20 02.8**	**-0.3**
KLU	**Klutina**	**83.24**	**15**	*e*P		**P**		**19 20 03.0**	**-0.3**
WRW	**Wenatchee Ridg**	**83.25**	**35**	P		**P**		**19 20 04.0**	**+0.3**
CRQM	**Cirque**	**83.35**	**17**	*e*P		**P**		**19 20 03.8**	**-0.2**
X18A	**Snowflake**	**83.43**	**51**	*e*P		**P**		**19 20 06.3**	**+1.3**
MTPU	**Mount Pierson**	**83.45**	**47**	*e*P		**P**		**19 20 07.1**	**+1.8**
DHAK	**Deception Hill**	**83.46**	**20**	*e*P		**P**		**19 20 05.3**	**+1.0**
WRAK	**Wrangell Islan**	**83.51**	**24**	*e*P		**P**		**19 20 05.1**	**+0.5**
HPIG		**83.55**	**59**	*e*P		**P**		**19 20 06.7**	**+0.9**
BJT	**Baijiatuau**	**83.58**	**315**	*e*P		**P**		**19 20 05.6**	**+0.2**
BJT	comp=Z,14nm,0.6s			pmax		pmax			
BJT	**Baijiatuau**	**83.58**	**315**	*e*P		**P**		**19 20 05.6**	**+0.2**
	comp=Z,14nm,0.6s								
BJI	**Beijing**	**83.59**	**315**	P		**P**		**19 20 05.8**	**+0.4**
BJI				sP		**sP**		**19 23 04.0**	**+2.4**
BJI				S		**S**		**19 29 42.4**	**+0.7**
BJI	comp=Z,59nm,1.1s			pmax		pmax			
CAST	**Castle Rocks**	**83.59**	**12**	*e*P		**P**		**19 20 03.1**	**-1.8**
BMO	**Blue Mountains**	**83.60**	**39**	*e*P		**P**		**19 20 05.8**	**+0.3**
PCA	**Pinnacle**	**83.63**	**18**	*e*P		**P**		**19 20 05.5**	**+0.2**
SEY	**Seymchan**	**83.65**	**347**	P		**P**		**19 20 05.0**	**-0.2**
	comp=Z,135nm,0.8s,baz=151,slow=5.2,SNR=251								
SEY	**Seymchan**	**83.65**	**347**	P		**P**		**19 20 05.0**	**-0.2**
SEY	comp=Z,135nm,0.8s			pmax		pmax			
SKNT	**Sakolnakorn**	**83.65**	**290**	P		**P**		**19 20 06.7**	**+0.5**
	comp=Z,83nm,1.0s								
PSI	**Prapat**	**83.68**	**275**	*e*P		**P**		**19 20 06.3**	**-0.3**
PSI	**Prapat**	**83.68**	**275**	*e*P		**P**		**19 20 06.3**	**-0.3**
MSU	**Marysvale**	**83.68**	**46**	*e*P		**P**		**19 20 07.6**	**+1.4**
MSU	**Marysvale**	**83.68**	**46**	*e*P		**P**		**19 20 07.6**	**+1.4**
MFID	**Camas Ranch**	**83.74**	**41**	*e*P		**P**		**19 20 03.8**	**-2.5**
W18A	**Petrified Fore**	**83.85**	**50**	P		**P**		**19 20 08.2**	**+1.1**
	baz=243								
W18A	**Petrified Fore**	**83.85**	**50**	*e*P		**P**		**19 20 08.4**	**+1.3**
MAW	**Mawson**	**83.87**	**200**	P		**P**		**19 20 07.1**	**+0.8**
	comp=Z,5.0nm,0.4s,baz=148,slow=4.4,SNR=15								
MAW				pP		**pP**		**19 22 02.6**	**-3.5**
	comp=Z,1.6nm,0.6s,baz=100,slow=11,SNR=1.7								
MAW	**Mawson**	**83.87**	**200**	P		**P**		**19 20 07.1**	**+0.8**
MAW				pP		**pP**		**19 22 02.6**	**-3.5**
MAW				*e*				19 22 08.1	
D08A	**Wollman Farm,**	**83.88**	**36**	*e*P		**P**		**19 20 07.5**	**+0.8**
KTH	**Kantishna Hill**	**83.94**	**12**	*e*P		**P**		**19 20 05.2**	**-1.4**
TRF	**Thorofare Moun**	**83.97**	**12**	*e*P		**P**		**19 20 05.8**	**-1.2**
SAW	**Saint Andrews**	**83.97**	**36**	P		**P**		**19 20 07.6**	**+0.4**
E09A	**Wood Farm, Sta**	**84.02**	**37**	*e*P		**P**		**19 20 08.2**	**+0.8**
DUG	**Dugway, Tooele**	**84.06**	**45**	*e*P		**P**		**19 20 08.3**	**+0.3**
DUG	**Dugway, Tooele**	**84.06**	**45**	*e*P		**P**		**19 20 08.2**	**+0.3**
ENH	**Enshi**	**84.06**	**304**	*e*P		**P**		**19 20 08.7**	**+0.7**
121A	**Cookes Peak, D**	**84.18**	**53**	P		**P**		**19 20 10.2**	**+1.4**
	baz=245								
121A	**Cookes Peak, D**	**84.18**	**53**	*e*P		**P**		**19 20 10.0**	**+1.3**
	comp=Z,52nm,1.0s								
RND	**Reindeer**	**84.23**	**13**	*e*P		**P**		**19 20 07.4**	**-0.7**
RND	**Reindeer**	**84.23**	**13**	*e*P		**P**		**19 20 07.4**	**-0.7**
F10A	**Beach Ranch, E**	**84.25**	**38**	P		**P**		**19 20 08.8**	**+0.1**

DHY	**Denali Highway**	**84.27**	**14**	*e*P		**P**		**19 20 06.8**	**-1.6**
LLLB	**Lillooet**	**84.35**	**32**	*e*P		**P**		**19 20 09.4**	**+0.5**
B08A	**Colville Reser**	**84.38**	**35**	*e*P		**P**		**19 20 08.9**	**-0.2**
BPAW	**Bear Paw Mtn.**	**84.42**	**12**	*e*P		**P**		**19 20 07.2**	**-1.7**
KHON	**Khomkaen**	**84.47**	**289**	P		**P**		**19 20 11.9**	**+1.6**
	comp=Z,11nm,0.8s								
GSI	**Gunungsitoli**	**84.50**	**273**	*e*P		**P**		**19 20 11.5**	**+0.9**
MCK	**McKinley**	**84.50**	**13**	*e*P		**P**		**19 20 08.6**	**-0.8**
MCK	**McKinley**	**84.50**	**13**	*e*P		**P**		**19 20 08.6**	**-0.8**
TRTT	**Trang**	**84.54**	**280**	P		**P**		**19 20 12.4**	**+1.7**
	comp=Z,44nm,0.9s								
ZAIG	**Zacatecas**	**84.55**	**64**	*e*P		**P**		**19 20 12.5**	**+1.6**
PAX	**Paxson**	**84.62**	**15**	*e*P		**P**		**19 20 09.1**	**-1.0**
PAX	**Paxson**	**84.62**	**15**	*e*P		**P**		**19 20 09.1**	**-1.0**
SKAG	**Skagway**	**84.69**	**21**	*e*P		**P**		**19 20 11.3**	**+1.0**
HLID	**Hailey**	**84.70**	**41**	P		**P**		**19 20 12.2**	**+1.2**
	baz=239								
HLID	**Hailey**	**84.70**	**41**	*e*P		**P**		**19 20 12.0**	**+0.9**
NONG	**Nongkai**	**84.78**	**291**	P		**P**		**19 20 12.4**	**+0.7**
	comp=Z,29nm,0.9s								
BWN	**Browne**	**84.78**	**12**	*e*P		**P**		**19 20 10.0**	**-0.7**
GYA	**Guiyang**	**84.82**	**300**	⇓*i*P		**P**		**19 20 13.0**	**+1.0**
GYA				pP		pP		19 22 15.4	+3.2
GYA				sP		sP		19 23 10.0	+1.5
GYA				PP		**PP**		**19 23 42.2**	**+3.3**
GYA				SKS		**SKSac**		**19 29 41.8**	**-2.0**
GYA				S		**S**		**19 29 53.6**	**-1.0**
GYA				sS		sS		19 33 29.0	+0.2
GYA				pmax		pmax			
GYA	comp=Z,30nm,0.6s			pmax		pmax			
	comp=Z,140nm,6.8s								
MENT	**Mentasta**	**85.02**	**15**	*e*P		**P**		**19 20 11.8**	**-0.1**
HYT	**Haines Junctio**	**85.04**	**19**	*e*P		**P**		**19 20 12.4**	**+0.2**
MLY	**Manley**	**85.30**	**11**	*e*P		**P**		**19 20 12.0**	**-1.2**
WRH	**Wood River Hil**	**85.33**	**13**	*e*P		**P**		**19 20 12.3**	**-1.0**
LAZ	**Ladron**	**85.46**	**52**	*e*P		**P**		**19 20 16.1**	**+1.1**
Y22D	**IRIS PASSCAL I**	**85.49**	**52**	P		**P**		**19 20 16.3**	**+1.3**
	baz=245								
HDA	**Harding Lake**	**85.52**	**13**	*e*P		**P**		**19 20 13.2**	**-1.1**
DOT	**Dot Lake**	**85.53**	**15**	*e*P		**P**		**19 20 13.9**	**-0.5**
CCB	**Clear Creek Bu**	**85.55**	**13**	*e*P		**P**		**19 20 13.1**	**-1.2**
NEW	**Newport**	**85.56**	**36**	P		**P**		**19 20 14.9**	**0.0**
	comp=Z,35nm,0.9s,baz=235,slow=4.7,SNR=33								
NEW	**Newport**	**85.56**	**36**	P		**P**		**19 20 14.9**	**0.0**
	baz=237,SNR=21								
NEW	**Newport**	**85.56**	**36**	*e*P		**P**		**19 20 15.0**	**+0.1**
HWUT	**Hardware Ranch**	**85.57**	**44**	*e*P		**P**		**19 20 15.7**	**+0.4**
PV05	**Paradox Valley**	**85.63**	**48**	*e*P		**P**		**19 20 17.1**	**+1.3**
MVCO	**Mesa Verde**	**85.67**	**49**	P		**P**		**19 20 16.4**	**+0.5**
	baz=244								
MNTX	**Cornudas Mount**	**85.69**	**55**	P		**P**		**19 20 17.0**	**+1.1**
	baz=246,SNR=66								
MNTX	**Cornudas Mount**	**85.69**	**55**	*e*P		**P**		**19 20 17.0**	**+1.1**
MDM	**Murphy Dome**	**85.73**	**12**	*e*P		**P**		**19 20 14.0**	**-1.3**
COLA	**College**	**85.73**	**13**	*e*P		**P**		**19 20 14.7**	**-0.5**
COLA	**College**	**85.73**	**13**	*e*P		**P**		**19 20 14.7**	**-0.5**
SURT	**Suratani**	**85.74**	**281**	P		**P**		**19 20 19.3**	**+2.9**
	comp=Z,7.3nm,1.3s								
BNM	**Barren Site**	**85.74**	**52**	*e*P		**P**		**19 20 17.2**	**+0.9**
BNM				*e*pP		**pP**		**19 22 20.7**	**+3.8**
LPM	**Los Pinos Moun**	**85.80**	**52**	*e*P		**P**		**19 20 17.5**	**+0.9**
DLBC	**Dease Lake**	**85.83**	**23**	P		**P**		**19 20 16.4**	**+0.4**
	comp=Z,38nm,1.0s,baz=224,slow=6.1,SNR=64								
DLBC	**Dease Lake**	**85.83**	**23**	*e*P		**P**		**19 20 16.5**	**+0.5**
ILAR	**Eielson Array**	**85.85**	**13**	P		**P**		**19 20 14.8**	**-1.1**
	comp=Z,16nm,0.5s,baz=222,slow=5.3,SNR=217								
ILAR				pP		**pP**		**19 22 13.7**	**-2.8**
	comp=Z,4.5nm,1.1s,baz=239,slow=6.0,SNR=2.5								
ILAR				PP		**PP**		**19 23 47.0**	**+0.8**
	comp=Z,4.4nm,1.0s,baz=224,slow=7.3,SNR=4.1								
ILAR	**Eielson Array**	**85.85**	**13**	P		**P**		**19 20 14.8**	**-1.1**
ILAR				*PP		**pP**		**19 22 13.7**	**-2.8**
ILAR								19 23 47.0	
ILAR				pmax		pmax			
	comp=Z,18nm,0.5s								
ILAR				pmax		pmax			
	comp=Z,5.0nm,1.1s								
ILAR				pmax		pmax			
	comp=Z,4.0nm,1.0s								
ILB	**Eielson Array**	**85.85**	**13**	*e*P		**P**		**19 20 14.7**	**-1.1**
PV01	**Paradox Valley**	**86.03**	**48**	*e*P		**P**		**19 20 18.1**	**+0.5**
XAN	**Xi'an**	**86.05**	**307**	P		**P**		**19 20 18.6**	**+1.0**
XAN				S		**S**		**19 30 11.5**	**+5.7**
XAN				pmax		pmax			
	comp=Z,100nm,1.1s								
XAN				pmax		pmax			
	comp=Z,120nm,4.6s								
TX31	**Lajitas Ar. Si**	**86.12**	**58**	*e

KMI **Kunming** 87.62 297 P P 19 20 26.8 +1.4
KMI pP pP 19 22 29.0 +2.4
KMI S S 19 30 25.2 +4.0
KMI pmax pmax
comp=Z,31nm,0.9s
LKWY **Lake** 87.71 42 eP P 19 20 28.1 +2.7
LKWY **Lake** 87.71 42 eP P 19 20 28.1 +2.7
WALA **Waterton Lakes** 87.79 37 eP P 19 20 26.0 +0.5
HRY **Holter Researc** 87.84 39 eP P 19 20 26.9 +1.1
CLNS **Chul'man** 88.00 333 eP P 19 20 25.1 -1.1
CLNS pmax pmax
comp=Z,26nm,1.3s
CLNS pmax pmax
comp=E,14nm,1.2s
CLNS pmax pmax
comp=N,16nm,1.2s
UMPA **Umpang Tak** 88.01 288 P P 19 20 29.7 +2.6
comp=N,6.1nm,1.1s
SDCO **Great Sand Dun** 88.06 49 P P 19 20 27.7 +0.4
baz=246,SNR=29
SDCO **Great Sand Dun** 88.06 49 eP P 19 20 27.6 +0.4
LAMP **Lampang** 88.07 290 P P 19 20 28.9 +1.5
comp=N,11nm,0.9s,comp=N,86nm
MSTX **Muleshoe** 88.60 54 P P 19 20 30.2 +0.5
baz=247
T25A **Trinidad** 88.61 50 P P 19 20 29.9 +0.2
baz=246,SNR=14
T25A **Trinidad** 88.61 50 eP P 19 20 30.5 +0.7
CMAR **Chiang Mai Arr** 88.67 290 P P 19 20 31.4 +1.3
comp=N,14nm,0.9s,baz=107,slow=2.8,SNR=74
CMAR pP pP 19 22 28.1 -3.6
comp=N,0.1nm,0.5s,baz=128,slow=1.4,SNR=0.9
CMAR PKKPbc PKKPbc 19 38 08.2 +0.9
comp=N,1.5nm,0.8s,baz=286,slow=4.8,SNR=6.5
RLMT **Red Lodge** 88.68 42 P P 19 20 31.1 +1.2
baz=243,SNR=26
RLMT **Red Lodge** 88.68 42 eP P 19 20 30.6 +0.7
comp=N,87nm,1.3s
GCMT **Greycliff** 88.74 41 eP P 19 20 31.2 +1.2
832A **Faith Ranch, C** 88.74 60 P P 19 20 31.3 +1.0
baz=249,SNR=17
CMMT **Chiang Mai** 88.78 290 P P 19 20 31.5 +0.8
comp=N,26nm,1.4s
CHTO **Chiang Mai** 88.79 290 P P 19 20 31.6 +0.9
comp=N,116nm,1.4s
CHTO **Chiang Mai** 88.79 290 eP P 19 20 31.7 +1.0
CHTO **Chiang Mai** 88.79 290 eP P 19 20 31.6 +1.0
Q24A **Divide** 88.81 48 P P 19 20 31.5 +0.8
baz=246,SNR=16
Q24A **Divide** 88.81 48 eP P 19 20 31.3 +0.5
ISCO **Idaho Springs** 88.82 47 P P 19 20 31.6 +0.8
baz=246,SNR=9.5
ISCO **Idaho Springs** 88.82 47 eP P 19 20 31.3 +0.5
ISCO pmax pmax
comp=Z,38nm,1.5s
ISCO **Idaho Springs** 88.82 47 eP P 19 20 31.3 +0.5
comp=Z,38nm,1.5s
CD2 **Chengdu** 88.86 303 P P 19 20 31.6 +0.8
CD2 pP pP 19 22 34.0 +1.6
CD2 sP sP 19 23 30.7 +2.3
CD2 SKS SKSac 19 30 07.0 -0.7
CD2 S S 19 30 32.6 +0.6
CD2 sS sS 19 34 11.8 +2.9
CD2 SS SS 19 36 43.8 +1.9
CD2 pmax pmax
comp=Z,20nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.6s
N23A **Red Feather La** 89.04 46 P P 19 20 32.7 +1.0
baz=245,SNR=7.7
933A **Laredo** 89.08 61 P P 19 20 33.3 +1.4
baz=249,SNR=16
SYO **Syowa Base** 89.19 193 ⇑iP P 19 20 30.0 -1.6
SYO **Syowa Base** 89.19 193 ⇓epP pP 19 22 33.0 -0.2
833A **Chaparral WMA,** 89.23 60 P P 19 20 33.7 +1.2
baz=249,SNR=7.0
034A **Hebbronville** 89.38 61 P P 19 20 35.3 +2.1
baz=250,SNR=28
K22A **Casper** 89.39 45 P P 19 20 33.6 +0.4
baz=245
CMIG **Matias Romero** 89.39 72 P P 19 20 34.6 +1.1
comp=Z,19nm,0.9s,baz=268,slow=4.8,SNR=22
YAK **Yakutsk** 89.42 338 P P 19 20 31.3 -1.3
comp=Z,20nm,0.7s,baz=117,slow=0.3,SNR=22
YAK **Yakutsk** 89.42 338 ciP P 19 20 31.7 -0.9
YAK pmax pmax
comp=Z,23nm,0.7s
YAK pmax pmax
comp=N,8.0nm,1.0s
YAK pmax pmax
comp=E,10.0nm,1.0s
YAK **Yakutsk** 89.42 338 eP P 19 20 31.4 -1.1
733A **Divot King Ran** 89.45 60 P P 19 20 34.6 +1.0
baz=249,SNR=6.0
PHWY **Pilot Hill** 89.55 46 eP P 19 20 34.4 +0.3
comp=E,36nm,1.0s
JCT **Junction City** 89.66 58 P P 19 20 35.0 +0.5
baz=249,SNR=8.4
JCT **Junction City** 89.66 58 eP P 19 20 35.2 +0.7
JCT **Junction City** 89.66 58 eP P 19 20 35.2 +0.7
035Z **Hargill** 89.69 62 P P 19 20 36.6 +1.9
baz=250
934A **Benavides** 89.70 61 P P 19 20 36.9 +2.1
baz=250,SNR=6.5
AMTX **Amarillo** 89.78 53 P P 19 20 35.5 +0.4
baz=248
AMTX **Amarillo** 89.78 53 eP P 19 20 35.5 +0.4
633A **Saathoff Ranch** 89.81 59 P P 19 20 36.6 +1.5
baz=249,SNR=28
035A **Encino** 89.82 62 P P 19 20 37.7 +2.4
baz=250,SNR=17
834A **Tilden** 89.86 60 P P 19 20 37.3 +1.9
baz=250,SNR=10
734A **La Parita Cree** 90.10 60 P P 19 20 38.1 +1.5
baz=250
533A **Kerrville** 90.13 58 P P 19 20 37.6 +0.9
baz=249,SNR=28
EDM **Edmonton** 90.20 33 eP P 19 20 36.5 +0.1
EDM **Edmonton** 90.20 33 eP P 19 20 36.5 +0.1
433A **Art** 90.33 58 P P 19 20 38.3 +0.7
baz=249,SNR=94
634A **China Grove, S** 90.45 59 P P 19 20 39.7 +1.5
baz=250
835A **Beeville** 90.51 61 P P 19 20 40.6 +2.1
baz=250
ABTX **Abilene, Hawle** 90.54 56 P P 19 20 39.2 +0.6
baz=249,SNR=23
ABTX **Abilene, Hawle** 90.54 56 eP P 19 20 39.3 +0.7
534A **Blanco** 90.57 59 P P 19 20 39.7 +0.9
baz=250,SNR=38
333A **Richland Sprin** 90.61 57 P P 19 20 39.3 +0.4
baz=250,SNR=28
KSCO **Kaye Shedlock'** 90.63 49 P P 19 20 39.6 +0.6
baz=248
LZH **Lanzhou** 90.68 308 ⇑P P 19 20 40.8 +1.5
LZH pP pP 19 22 45.4 +4.1
LZH SKS SKSac 19 30 19.0 +0.9
LZH S S 19 30 43.4 -5.1
LZH SS SS 19 37 15.2 +7.2
LZH pmax pmax
comp=E,64nm,1.1s
SNAA **Sanae** 90.69 179 P P 19 20 38.5 0.0
SNAA **Sanae** 90.69 179 ⇓eP P 19 20 38.0 -0.6
SNAA **Sanae** 90.69 179 eP P 19 20 37.5 -1.1
735A **Kenedy** 90.72 60 P P 19 20 41.5 +2.1
baz=250
233A **Rising Star** 90.92 57 P P 19 20 41.1 +0.7
baz=250,SNR=31
635A **Leesville** 90.93 60 P P 19 20 41.9 +1.5
baz=250,SNR=7.7
CIT **Chita** 90.98 325 eP P 19 20 40.5 +0.4
CIT pmax pmax
comp=Z,90nm,1.3s
434A **Burnet** 91.01 58 P P 19 20 41.3 +0.6
baz=250,SNR=32
133A **Hamilton Ranch** 91.11 56 P P 19 20 41.9 +0.7
baz=250,SNR=18
334A **Lometa** 91.21 58 P P 19 20 42.5 +0.8
baz=250,SNR=22
LAO **LASA Array** 91.28 41 P P 19 20 43.2 +1.5
baz=245,SNR=37
LAO **LASA Array** 91.28 41 eP P 19 20 43.1 +1.5
535A **Dale** 91.31 59 P P 19 20 43.3 +1.2
baz=250
736A **Circle Diamond** 91.37 60 P P 19 20 44.7 +2.3
baz=250
X32A **Elmer** 91.45 54 P P 19 20 43.1 +0.4
baz=249,SNR=18
Z33A **Whitaker Ranch** 91.47 56 P P 19 20 43.4 +0.6
baz=250,SNR=17
VNA1 **Neumayer--Stat** 91.50 177 P P 19 20 43.1 +0.9
234A **Clairette** 91.52 57 P P 19 20 43.8 +0.7
baz=250,SNR=12
PLCA **Paso Flores** 91.53 134 P P 19 20 44.4 +1.2
comp=Z,7.6nm,1.0s,baz=258,slow=5.3,SNR=8.6
PLCA **Paso Flores** 91.53 134 eP P 19 20 45.0 +1.9
PLCA e 19 22 49.5
636A **Smothers Creek** 91.55 60 P P 19 20 45.1 +1.9
baz=250,SNR=5.9
435B **Jarrell** 91.55 58 P P 19 20 44.1 +0.9
baz=250
RSSD **Black Hills** 91.64 44 P P 19 20 43.9 +0.3
baz=247
RSSD **Black Hills** 91.64 44 eP P 19 20 43.9 +0.3
RSSD **Black Hills** 91.64 44 eP P 19 20 43.9 +0.3
W32A **Sentinel** 91.73 54 P P 19 20 44.7 +0.7
baz=249,SNR=11
536A **Bastrop** 91.74 59 P P 19 20 45.5 +1.4
baz=250,SNR=5.1
134A **White-Moore Ra** 91.76 56 P P 19 20 45.0 +0.8
baz=250,SNR=8.7
OGNE **Ogallala** 91.79 47 P P 19 20 44.6 +0.4
baz=248,SNR=6.4
OGNE **Ogallala** 91.79 47 eP P 19 20 45.1 +0.9
Y33A **Hilltop Ranch,** 91.82 55 P P 19 20 44.7 +0.3
baz=250,SNR=8.3
335A **Moody** 91.85 58 P P 19 20 45.2 +0.7
baz=250
INK **Inuvik** 91.86 15 P P 19 20 42.9 -0.8
comp=Z,49nm,0.9s,baz=220,slow=5.3,SNR=71
WMOK **Wichita Mounta** 91.95 54 P P 19 20 44.8 -0.2
baz=250,SNR=11
WMOK **Wichita Mounta** 91.95 54 eP P 19 20 44.8 -0.2
WMOK **Wichita Mounta** 91.95 54 eP P 19 20 44.8 -0.2
WHTX **Lake Whitney,** 92.06 57 P P 19 20 46.0 +0.5
baz=250,SNR=5.5
WHTX **Lake Whitney,** 92.06 57 eP P 19 20 46.2 +0.7
V32A **Arapaho** 92.09 53 P P 19 20 46.4 +0.8
baz=250,SNR=6.0
X33A **Lawton** 92.10 54 P P 19 20 45.9 +0.2
baz=250
H25A **Fruitdale** 92.13 44 P P 19 20 46.3 +0.7
baz=247,SNR=6.8
637A **Eagle Lake** 92.13 60 P P 19 20 47.8 +1.9
baz=251
Z34A **Collier Ranch,** 92.16 56 P P 19 20 46.6 +0.6
baz=250
436A **Wall Ranch, Ga** 92.19 58 P P 19 20 47.4 +1.3
baz=251
135A **Vickery Place,** 92.29 57 P P 19 20 47.5 +0.9
baz=250
W33A **Caddo, Fort Co** 92.34 54 P P 19 20 47.7 +1.0
baz=250,SNR=10
336A **Riesel** 92.35 58 P P 19 20 47.7 +0.8
baz=251
U32A **Winter Ranch,** 92.35 53 P P 19 20 47.6 +0.8
baz=250,SNR=6.3
537A **Green Hill Far** 92.36 59 P P 19 20 48.6 +1.6
baz=251,SNR=6.0
Y34A **Reagan Ranch,** 92.48 55 P P 19 20 47.8 +0.4
baz=250,SNR=7.3
X34A **Smith Ranch, M** 92.64 55 P P 19 20 49.2 +1.0
baz=250
CBKS **Cedar Bluff** 92.66 50 P P 19 20 48.7 +0.5
baz=249,SNR=8.6
CBKS **Cedar Bluff** 92.66 50 eP P 19 20 48.5 +0.3
CBKS **Cedar Bluff** 92.66 50 eP P 19 20 48.5 +0.3
Z35A **Perchaven, San** 92.67 56 P P 19 20 48.7 +0.4
baz=250
T32A **Huddler Ranch,** 92.69 52 P P 19 20 48.9 +0.6
baz=250,SNR=12
V33A **Lossen Ranch,** 92.71 53 P P 19 20 49.0 +0.5
baz=250,SNR=5.0
437A **Phantom Ranch,** 92.74 59 P P 19 20 49.9 +1.2
baz=251
S32A **Newby Ranch, P** 92.86 51 P P 19 20 49.7 +0.6
baz=250
W34A **Bridge Creek,** 92.90 54 P P 19 20 50.1 +0.8
baz=250
136A **Ennis** 92.96 57 P P 19 20 50.3 +0.6
baz=251
U33A **Lingo Farm, Me** 93.05 53 P P 19 20 50.2 +0.3
baz=250
538A **Harpers Horsep** 93.08 59 P P 19 20 52.1 +1.9
baz=251
337A **Centerville** 93.11 58 P P 19 20 51.5 +1.2
baz=251
T33A **Patterson Ranc** 93.17 52 P P 19 20 51.0 +0.5
baz=250,SNR=6.4
X35A **Drake** 93.25 55 P P 19 20 51.1 +0.2
baz=251
DGMT **Dagmar** 93.26 40 P P 19 20 51.5 +0.8
baz=247,SNR=16
DGMT **Dagmar** 93.26 40 eP P 19 20 51.6 +0.9
438A **Sam Houston St** 93.26 59 P P 19 20 52.7 +1.6
baz=251
R32A **Long Quarter,** 93.28 51 P P 19 20 51.7 +0.8
baz=250,SNR=19
V34A **Guthrie** 93.30 54 P P 19 20 51.4 +0.3
baz=250
Z36A **Blue Ridge** 93.30 56 P P 19 20 51.8 +0.7
baz=251,SNR=5.3
SONA1 **Songino Array** 93.36 319 eP P 19 20 50.8 -0.5
SONM **Songino Array** 93.36 319 P P 19 20 50.0 -1.2
comp=Z,6.4nm,1.0s,baz=112,slow=4.6,SNR=21
SONM PP PP 19 24 47.7 +2.3
comp=Z,1.7nm,0.8s,baz=108,slow=9.7,SNR=4.2
237A **Washetta, Mont** 93.39 58 P P 19 20 52.2 +0.6
baz=251
O31A **Woolen Ranch,** 93.42 49 P P 19 20 52.2 +0.6
baz=250
U34A **Anderson Ranch** 93.49 53 P P 19 20 52.4 +0.5
baz=250
U34A **Anderson Ranch** 93.49 53 eP P 19 20 52.6 +0.6
BOD **Bodaibo** 93.49 330 eP P 19 20 49.3 -2.1
BOD pmax pmax
comp=Z,15nm,1.5s
S33A **Kaszmaul Farm,** 93.52 52 P P 19 20 52.7 +0.6
baz=250
C25A **Freed Ranch, W** 93.54 41 P P 19 20 53.0 +1.0
baz=247
W35A **Tecumseh** 93.57 54 P P 19 20 52.9 +0.6
baz=251,SNR=9.4
Q32A **Meitler Ranch,** 93.58 50 P P 19 20 53.3 +0.9
baz=250,SNR=17
338A **Crockett** 93.58 58 P P 19 20 53.3 +0.8
baz=251
Y36A **Durant** 93.62 56 P P 19 20 53.3 +0.7
baz=251,SNR=10
137A **Heron Place, G** 93.62 57 P P 19 20 53.8 +1.2
baz=251
P32A **Huiting Farm,** 93.77 50 P P 19 20 53.7 +0.5
baz=250
R33A **Olander Ranch,** 93.77 51 P P 19 20 54.0 +0.8
baz=250,SNR=17
X36A **Centrahoma** 93.79 55 P P 19 20 53.7 +0.3
baz=251,SNR=6.3
D26A **Manning** 93.80 42 P P 19 20 53.9 +0.8
baz=248,SNR=6.9
B25A **Knox Farm, Ray** 93.81 40 P P 19 20 54.4 +1.2
baz=248
439A **Center Grove,** 93.85 59 P P 19 20 55.0 +1.2
baz=252
Z37A **Pogue Cattle C** 93.92 57 P P 19 20 55.0 +1.0
baz=251
N31A **Bailey Ranch,** 93.92 48 P P 19 20 54.9 +1.0
baz=250
T34A **McClaskey Farm** 93.94 52 P P 19 20 54.7 +0.7
baz=251,SNR=10
238A **Jacksonville** 93.94 58 P P 19 20 55.5 +1.4
baz=252
W36A **Wetumka** 94.07 55 P P 19 20 55.1 +0.5
baz=251
U35A **Pawnee** 94.08 53 P P 19 20 55.3 +0.6
baz=251
M31A **Lambtecht Ranc** 94.08 48 P P 19 20 55.6 +1.0
baz=250,SNR=13
K30A **Basset** 94.10 47 P P 19 20 55.5 +0.8
baz=250,SNR=5.2
A25A **Svangstu Ranch** 94.10 40 P P 19 20 55.3 +0.8
baz=248
Q33A **Connelly Farm,** 94.12 50 P P 19 20 55.6 +0.8
baz=250,SNR=28
Y37A **Hugo** 94.17 56 P P 19 20 55.7 +0.6
baz=251
339A **Huntington** 94.19 59 P P 19 20 56.5 +1.2
baz=252
O32A **Brockman Farm,** 94.22 49 P P 19 20 55.9 +0.7
baz=250
S34A **Willow Spring** 94.22 52 P P 19 20 55.9 +0.6
baz=251,SNR=10
NATX **Nacogdoches** 94.24 58 P P 19 20 56.6 +1.1
baz=252
R34A **Isabella, Hill** 94.32 51 P P 19 20 56.2 +0.5
baz=251,SNR=13
YKA **Yellowknife Ar** 94.34 25 P P 19 20 54.8 -0.4
comp=Z,16nm,0.8s,baz=244,slow=4.4,SNR=75
YKA PP PP 19 24 49.5 -2.8
comp=Z,2.4nm,1.0s,baz=243,slow=7.4,SNR=5.9
P33A **Williams Farm,** 94.36 50 P P 19 20 56.8 +0.9
baz=251,SNR=11
N32A **Stulken Farm,** 94.37 49 P P 19 20 56.5 +0.6
baz=250
J30A **Dallas** 94.41 46 P P 19 20 56.4 +0.4
baz=250
T35A **Sooner Cattle** 94.42 53 P P 19 20 56.8 +0.5
baz=251,SNR=6.3
B26A **Jensen Ranch,** 94.43 41 P P 19 20 56.5 +0.5
baz=248
Z38A **Mt. Pleasant** 94.44 57 P P 19 20 57.2 +0.8
baz=252
L31A **Butterfield Fa** 94.46 47 P P 19 20 56.9 +0.6
baz=250
239A **Gary** 94.47 58 P P 19 20 57.4 +0.8
baz=252
V36A **Jenks** 94.49 54 P P 19 20 57.1 +0.5
baz=251
X37A **Clayton** 94.56 55 P P 19 20 57.2 +0.3
baz=252
TUL1 **Leonard** 94.65 54 P P 19 20 57.7 +0.5
baz=251
O33A **Hebron** 94.65 50 P P 19 20 57.7 +0.5
baz=251,SNR=11
K31A **O'Neill** 94.67 47 P P 19 20 57.9 +0.7
baz=250
W37B **Quinton** 94.68 55 P P 19 20 57.8 +0.3
baz=252
BGNE **Belgrade** 94.69 48 P P 19 20 58.1 +0.7
baz=250,SNR=7.5
BGNE **Belgrade** 94.69 48 eP P 19 20 58.8 +1.4
139A **Bunkhouse Ranc** 94.74 57 P P 19 20 59.0 +1.3
baz=252
A26A **Wade Farm, Ken** 94.74 40 P P 19 20 58.1 +0.7
baz=248,SNR=7.4
Q34A **Chapman** 94.75 51 P P 19 20 58.6 +0.9
baz=251,SNR=7.6
G29A **Hoven** 94.76 44 P P 19 20 56.9 -0.7
baz=250
S35A **Otter Creek Ra** 94.81 52 P P 19 20 58.6 +0.6
baz=251,SNR=5.6
GTA **Gaotai** 94.83 310 eP P 19 20 58.5 +0.3
GTA pmax pmax
comp=Z,15nm,1.2s
U36A **Oologah** 94.85 53 P P 19 20 58.4 +0.3
baz=252
Y38A **Idabel** 94.86 56 P P 19 20 58.4 +0.2
baz=252
J31A **Geddes** 94.91 46 P P 19 20 58.0 -0.3
baz=250
T36A **Boggs Farm, Ca** 94.95 53 P P 19 20 59.2 +0.6
baz=252
L32A **Elgin** 94.99 48 P P 19 20 59.2 +0.5
baz=251
X38A **Whitesboro** 95.01 55 P P 19 20 59.3 +0.4
baz=252,SNR=12
P34A **Walnut Farm, R** 95.03 50 P P 19 20 59.8 +0.9
baz=251,SNR=26
F29A **Eureka** 95.05 44 P P 19 20 58.5 -0.3
baz=250
KSU1 **Kansas State U** 95.05 51 P P 19 20 59.9 +0.9
baz=251,SNR=8.8
KSU1 **Kansas State U** 95.05 51 eP P 19 21 00.2 +1.2
Z39A **Irene McRaven,** 95.08 57 P P 19 21 00.6 +1.3
baz=252
R35A **Emporia Munici** 95.11 52 P P 19 21 00.1 +0.8
baz=251,SNR=11
V37A **Hulbert** 95.14 54 P P 19 20 59.8 +0.3
baz=252,SNR=5.1
SUSD **Miller** 95.15 45 P P 19 20 59.1 -0.3
baz=250
K32A **Verdigre** 95.23 47 P P 19 20 59.3 -0.5
baz=251
I31A **Royce, Wessing** 95.30 46 P P 19 20 59.7 -0.3
baz=250
U37A **Salina** 95.32 54 P P 19 21 00.6 +0.3
baz=252
O34A **Beatrice** 95.33 50 P P 19 21 00.6 +0.3
baz=251,SNR=8.2
S36A **Lake Cedric, C** 95.37 52 P P 19 21 00.9 +0.4
baz=252
140A **Cam and Jess,** 95.39 58 P P 19 21 01.5 +0.9
baz=252
Q35A **Mercer Eighty,** 95.40 51 P P 19 21 01.4 +0.8
baz=252,SNR=7.7
M33A **Taylor Creek F** 95.42 48 P P 19 21 00.9 +0.3
baz=251
H31A **Wolsey** 95.49 45 P P 19 21 00.6 -0.3
baz=250
X39A **Fountain Ranch** 95.52 56 P P 19 21 01.1 -0.2
baz=252
J32A **Parkston** 95.55 46 P P 19 21 00.8 -0.4
baz=251
L33A **Hoskins** 95.56 48 P P 19 21 01.6 +0.4
baz=251
B28A **Dugan Ranch, T** 95.62 41 P P 19 21 01.8 +0.5
baz=250
P35A **Duane Minner,** 95.62 50 P P 19 21 02.5 +0.9
baz=252,SNR=14
R36A **Gordon, Harris** 95.62 52 P P 19 21 02.1 +0.5
baz=252
N34A **Lincoln** 95.68 49 P P 19 21 02.4 +0.5
baz=251
T37A **Cheneyville 18** 95.70 53 P P 19 21 02.5 +0.5
baz=252
V38A **Canehill** 95.70 54 P P 19 21 02.1 0.0
baz=252
Z40A **Long Farm, Mag** 95.71 57 P P 19 21 02.6 +0.5
baz=252
M34A **Aspy Farms, Fr** 95.83 48 P P 19 21 02.8 +0.3
baz=252
A28A **Rude Farm, Bot** 95.84 41 P P 19 21 02.6 +0.2
baz=250
Q36A **Arnold C. Orve** 95.86 51 P P 19 21 03.2 +0.6
baz=252
U38A **Gravette** 95.89 54 P P 19 21 03.0 +0.1
baz=252
O35A **Humboldt** 95.93 50 P P 19 21 03.8 +0.9
baz=252,SNR=7.7
MIAR **Mount Ida** 95.95 56 P P 19 21 03.7 +0.5
baz=252
S37A **Fort Scott** 95.96 52 P P 19 21 03.4 +0.2
baz=252
W39A **Magazine** 95.99 55 P P 19 21 03.6 +0.3
baz=252
TIXI **Tiksi** 96.02 345 P P 19 21 01.3 -1.3
comp=Z,7.5nm,0.8s,baz=146,slow=9.9,SNR=3.9
TIXI **Tiksi** 96.02 345 ⇓iP P 19 21 01.0 -1.6
TIXI pmax pmax
comp=Z,8.0nm,0.8s
I32A **Karley and Nic** 96.03 46 P P 19 21 03.2 -0.1
baz=251
F31A **Hecla** 96.09 44 P P 19 21 03.0 -0.6
baz=251
R37A **Teagarden Farm** 96.13 52 P P 19 21 04.4 +0.5
baz=252,SNR=8.4
L34A **Svendsen Farm,** 96.13 48 P P 19 21 03.6 -0.2
baz=252
J33A **Davis** 96.14 47 P P 19 21 03.5 -0.4
baz=251
T38A **Diamond** 96.14 53 P P 19 21 04.3 +0.3
baz=252,SNR=8.2
ZAK **Zakamensk** 96.20 321 eP P 19 21 02.4 -1.6
ZAK pmax pmax
comp=Z,6.0nm,1.3s
H32A **Carlson Farm,** 96.20 45 Pdiff P 19 21 03.7 -0.3
baz=251
P36A **Good Intent, A** 96.25 51 Pdiff P 19 21 05.0 +0.6
baz=252
B29A **Wagenman Farm,** 96.25 41 Pdiff P 19 21 04.4 +0.2
baz=250
V39A **Pettigrew** 96.29 55 Pdiff P 19 21 04.8 +0.1

baz=253
N35A **Tabor** 96.31 49 Pdiff P 19 21 05.2 +0.5
baz=252
G32A **Webster** 96.40 45 Pdiff P 19 21 05.5 +0.5
baz=251
TLY **Talaya** 96.44 322 P P 19 21 04.2 -0.8
comp=Z,3.8nm,0.8s,baz=354,slow=6.0,SNR=3.9
TLY **Talaya** 96.44 322 *e*P P 19 21 04.1 -0.8
TLY pmax pmax
comp=Z,7.0nm,1.0s
M35A **Neola** 96.46 49 Pdiff P 19 21 05.6 +0.3
baz=252
A29A **Manning Farm,** 96.48 41 Pdiff P 19 21 05.0 -0.2
baz=250
ECSD **EROS Data Cent** 96.52 46 Pdiff P 19 21 05.1 -0.4
baz=252
ECSD **EROS Data Cent** 96.52 46 *e*P P 19 21 05.7 +0.2
C30A **Mose, Pekin** 96.55 42 Pdiff P 19 21 05.3 -0.2
baz=251
U39A **Green Forest** 96.57 54 Pdiff P 19 21 06.2 +0.2
baz=253
O36A **Bolckow** 96.58 50 Pdiff P 19 21 06.2 +0.4
baz=252
Q37A **Longview Farm,** 96.58 51 Pdiff P 19 21 06.0 +0.1
baz=252
S38A **Stockton** 96.62 53 Pdiff P 19 21 05.9 -0.1
baz=253
H33A **Prehn Over Nor** 96.73 45 Pdiff P 19 21 06.3 -0.2
baz=252
R38A **Fenwick Farm,** 96.78 52 Pdiff P 19 21 06.7 -0.1
baz=253
J34A **George** 96.83 47 Pdiff P 19 21 06.7 -0.2
baz=252
T39A **Clever** 96.84 53 Pdiff P 19 21 07.3 +0.1
baz=253
P37A **Lathrop** 96.87 51 Pdiff P 19 21 07.4 +0.2
baz=253
B30A **Myrvik Farm, E** 96.89 41 Pdiff P 19 21 06.6 -0.4
baz=251
V40A **Witts Springs** 96.91 55 Pdiff P 19 21 07.7 +0.2
baz=253
U40A **Yellville** 97.05 54 Pdiff P 19 21 07.7 -0.3
baz=253
C31A **Landman Farms,** 97.06 42 Pdiff P 19 21 07.5 -0.4
baz=251
A30A **Hoffart Farm,** 97.07 41 Pdiff P 19 21 07.4 -0.4
baz=251
S39A **Bolivar** 97.08 53 Pdiff Pdif 19 21 08.2 0.0
baz=253
X301 **Greenbrier Sit** 97.08 55 *e*P Pdif 19 21 09.1 +0.9
G33A **Ortonville** 97.09 45 Pdiff P 19 21 07.6 -0.4
baz=252
M36A **Felix, Anita** 97.09 49 Pdiff Pdif 19 21 08.2 +0.1
baz=253
X201 **Greenbrier Sit** 97.13 55 *e*P Pdif 19 21 09.4 +0.9
K35A **Storm Lake** 97.17 48 Pdiff P 19 21 09.0 +0.5
baz=252
W41B **Gary Mavity, V** 97.18 55 Pdiff P 19 21 09.1 +0.4
baz=253
WHAR **Wooly Hollow** 97.18 55 *e*P P 19 21 10.0 +1.4
O37A **Wolven Farm, M** 97.19 50 Pdiff P 19 21 09.0 +0.5
baz=253
Q38A **Cooks Store, C** 97.22 52 Pdiff P 19 21 09.3 +0.5
baz=253
N37A **Lee Fairs, Mou** 97.31 50 Pdiff P 19 21 09.5 +0.4
baz=253
H34A **Spellman Lake,** 97.38 46 Pdiff Pdif 19 21 09.0 -0.4
baz=252
L36A **Harm Buss Farm** 97.38 48 Pdiff Pdif 19 21 08.9 -0.5
baz=253
F33A **5 Mile Ranch,** 97.39 44 Pdiff P 19 21 09.3 0.0
baz=252
V41A **Mountainview** 97.43 55 Pdiff Pdif 19 21 09.7 -0.1
baz=253
P38A **Dawn** 97.48 51 Pdiff P 19 21 10.2 +0.3
baz=253
T40A **Mansfield** 97.53 54 Pdiff P 19 21 10.5 +0.3
baz=253
244A **Avery, Jackson** 97.55 59 Pdiff P 19 21 10.9 +0.5
baz=254
M37A **Trindle Farm,** 97.61 49 Pdiff P 19 21 11.1 +0.7
baz=253
O38A **Galt** 97.67 50 Pdiff P 19 21 10.7 0.0
baz=253
S40A **Lebanon** 97.68 53 Pdiff P 19 21 11.2 +0.3
baz=254
Q39A **Willow Grove F** 97.73 52 Pdiff P 19 21 11.4 +0.4
baz=253
U41A **Viola** 97.77 54 Pdiff P 19 21 11.5 +0.2
baz=254
J36A **Seneca 1, Swea** 97.97 47 Pdiff Pdif 19 21 11.9 -0.1
baz=253
P39B **Salisbury** 98.02 51 Pdiff P 19 21 12.5 +0.2
baz=254
V42A **Cord** 98.03 55 Pdiff Pdif 19 21 12.4 0.0
baz=254
N38A **Joes South For** 98.03 50 Pdiff Pdif 19 21 12.1 -0.2
baz=254
R40A **Maddies Statio** 98.05 52 Pdiff P 19 21 12.7 +0.2
baz=254
T41A **Mountain View** 98.08 54 Pdiff P 19 21 12.8 +0.1
baz=254
M38A **Pleasantville** 98.24 49 Pdiff P 19 21 13.8 +0.5
baz=254
S41A **Jillco Farms,** 98.25 53 Pdiff P 19 21 14.1 +0.7
baz=254
446A **Poplarville** 98.29 60 Pdiff P 19 21 14.8 +1.1
baz=254
U42A **Revenden** 98.30 55 Pdiff P 19 21 14.0 +0.4
baz=254
K37A **Belmond** 98.30 48 Pdiff P 19 21 14.0 +0.5
baz=254
O39A **Kirksville** 98.39 51 Pdiff P 19 21 14.0 +0.1
baz=254
AGMN **Agassiz Nation** 98.41 42 Pdiff Pdif 19 21 13.4 -0.4
baz=253
AGMN **Agassiz Nation** 98.41 42 *e*Pdif Pdif 19 21 13.4 -0.4
J37A **Redenius Farm,** 98.52 47 Pdiff P 19 21 14.7 +0.2
baz=254
P40A **Paris** 98.56 51 Pdiff P 19 21 15.2 +0.5
baz=254
N39A **Derby Farms, D** 98.59 50 Pdiff P 19 21 15.4 +0.5
baz=254
L38A **Oak Wood Farm,** 98.61 49 Pdiff P 19 21 15.5 +0.5
baz=254
I37A **Lemond, Waseca** 98.82 47 Pdiff P 19 21 16.2 +0.4
baz=254
O40A **La Belle** 98.84 51 Pdiff P 19 21 16.5 +0.5
baz=254
K38A **Parkersburg** 98.88 48 Pdiff Pdif 19 21 15.9 -0.1
baz=254
A33A **Warroad** 98.89 42 Pdiff Pdif 19 21 15.9 0.0
baz=253
G36A **St. Michael** 98.92 45 Pdiff Pdif 19 21 16.1 -0.1
baz=254
ULM **Lac du Bonnet** 98.97 40 P Pdif 19 21 14.9 -1.3
comp=Z,2.6nm,0.5s,baz=280,slow=2.6,SNR=3.3
ULM **Lac du Bonnet** 98.97 40 P Pdif 19 21 15.0 -1.3
ULM pmax pmax
comp=Z,3.0nm,0.5s
M39A **Webster** 99.00 49 Pdiff P 19 21 17.0 +0.4
baz=254
D35A **Remer** 99.23 44 Pdiff Pdif 19 21 17.4 -0.1
baz=254
F36A **Milaca** 99.25 45 Pdiff Pdif 19 21 17.9 +0.3
baz=254
J38A **Wedel Dairy, R** 99.28 48 Pdiff Pdif 19 21 17.7 -0.1
baz=254
L39A **Vinton** 99.29 49 Pdiff Pdif 19 21 17.8 -0.1
baz=254
H37A **Dierke Farm, C** 99.31 46 Pdiff Pdif 19 21 18.1 +0.2
baz=254
P41A **Barry, Barry** 99.33 51 Pdiff Pdif 19 21 18.8 +0.7
baz=255
C35A **Jirik Farms, M** 99.45 43 Pdiff Pdif 19 21 18.0 -0.4
baz=254
K39A **Oelwein** 99.53 48 Pdiff Pdif 19 21 18.6 -0.4
baz=255
I38A **Scanlan Farm,** 99.57 47 Pdiff Pdif 19 21 18.9 -0.2
baz=255
O41A **Passleys Farm,** 99.58 51 Pdiff Pdif 19 21 19.2 0.0
baz=255
E36A **McGregor** 99.60 44 Pdiff Pdif 19 21 18.8 -0.4
baz=254
B35A **Bob, Littlefor** 99.79 42 Pdiff Pdif 19 21 20.2 +0.2
baz=254
J39A **Decorah** 99.82 48 Pdiff Pdif 19 21 20.1 -0.1
baz=255

L40A **Anamosa** 99.83 49 Pdiff Pdif 19 21 20.2 -0.1
baz=255
P42A **Winchester** 99.84 52 Pdiff Pdif 19 21 20.4 +0.1
baz=255
D36A **Goodland** 99.84 44 Pdiff Pdif 19 21 20.3 +0.1
baz=254
K40A **Colesburg** 100.06 48 Pdiff Pdif 19 21 21.4 +0.2
baz=255
D37A **Cotton** 100.32 44 Pdiff Pdif 19 21 22.6 +0.3
baz=255
L41A **Preston** 100.36 49 Pdiff Pdif 19 21 22.6 -0.1
baz=255
J40A **Soldiers Grove** 100.52 48 Pdiff Pdif 19 21 23.6 +0.3
baz=256
K41A **Shullsburg** 100.63 49 Pdiff Pdif 19 21 24.0 +0.1
baz=256
JFWS **Jewell Farm** 100.75 48 *e*P Pdif 19 21 25.6 +1.2
JFWS **Jewell Farm** 100.75 48 *e*Pdif Pdif 19 21 25.6 +1.2
J41A **Loganville** 101.02 48 Pdiff Pdif 19 21 26.1 +0.6
baz=256
COWI **Conover** 102.27 45 *e*P Pdif 19 21 31.4 +0.3
comp=Z,12nm,1.0s
LPAZ **La Paz** 103.61 112 Pdiff Pdif 19 21 42.7 +4.2
comp=Z,1.3nm,0.6s,baz=268,slow=5.2,SNR=3.9
NRIK **Noril'sk** 107.88 338 Pdiff Pdif 19 21 54.0 -1.5
comp=Z,2.7nm,0.7s,baz=98,slow=2.9,SNR=3.7
NRIK PKIKP **PKiKP** 19 25 58.6 -0.5
comp=Z,2.9nm,0.6s,baz=115,slow=3.1,SNR=4.0
NRIK **Noril'sk** 107.88 338 P Pdif 19 21 54.0 -1.5
NRIK pmax pmax
comp=Z,3.0nm,0.7s
ZALV **Zalesovo Beam** 108.05 322 Pdiff Pdif 19 21 55.8 -0.7
comp=Z,1.3nm,0.8s,baz=98,slow=6.1,SNR=5.2
ZALV PKiKP **PKiKP** 19 25 58.6 -1.2
comp=Z,4.9nm,0.6s,baz=165,slow=1.0,SNR=25
ZALV PP **PP** 19 26 32.6 -1.5
comp=Z,2.8nm,1.0s,baz=86,slow=6.1,SNR=4.5
MKAR **Makanchi Array** 108.94 314 Pdiff Pdif 19 22 00.6 -0.1
comp=Z,0.9nm,0.8s,baz=85,slow=5.2,SNR=4.6
MKAR PKiKP **PKiKP** 19 26 00.7 -1.1
comp=Z,4.6nm,0.5s,baz=135,slow=0.7,SNR=53
MKAR PP **PP** 19 26 38.2 -2.5
comp=Z,1.8nm,0.8s,baz=78,slow=8.8,SNR=4.0
MKAR PKKPbc **PKKPbc** 19 37 11.3 -0.8
comp=Z,1.8nm,0.9s,baz=267,slow=4.9,SNR=6.0
PDGK **Podgornoye** 110.57 310 PKiKP **PKiKP** 19 26 03.9 -1.2
PDGK pmax pmax
comp=Z,8.0nm,0.9s
N59A **State Game Lan** 111.04 52 PKiKP **PKiKP** 19 26 04.8 -1.2
baz=264
KURK **Kurchatov** 111.63 318 *e*PKiKP **PKiKP** 19 26 05.4 -1.3
KURK **Kurchatov** 111.63 318 *e*P **PKiKP** 19 26 05.4 -1.3
KSH **Kashi** 112.87 306 *e*PKP **PKiKP** 19 26 09.9 +0.3
KSH *e*PP **PP** 19 27 09.7 +0.8
KSH *es*PKP 19 29 08.4
KSH SKS **SKSdf** 19 32 30.7 +1.4
KSH SKKS **SKKSac** 19 33 06.2 -6.5
KSH AMB AMB
comp=Z,50nm,3.6s
TKM2 **Tokmak 2** 113.38 310 PKiKP **PKiKP** 19 26 09.4 -1.2
TKM2 pmax pmax
comp=Z,7.0nm,0.8s
TKM2 **Tokmak 2** 113.38 310 *e*P **PKiKP** 19 26 09.5 -1.0
AAK **Ala-Archa** 114.18 309 PKP PKPdf 19 26 11.3 -0.7
comp=Z,1.5nm,0.4s,baz=103,slow=0.9,SNR=5.3
AAK **Ala-Archa** 114.18 309 PKiKP PKPdf 19 26 11.3 -0.8
AAK pmax pmax
comp=Z,4.0nm,0.6s
EKS2 **Erkin-Say** 114.71 309 *e*PKiKP PKPdf 19 26 12.4 -0.6
EKS2 **Erkin-Say** 114.71 309 *e*PKPdf PKPdf 19 26 12.4 -0.6
MNAS **Manas** 115.64 309 PKiKP **PKPdf** 19 26 14.0 -0.9
MNAS pmax pmax
comp=Z,16nm,1.0s
OTUK **Ortayu** 115.73 315 PKiKP **PKPdf** 19 26 13.8 -0.9
OTUK pmax pmax
comp=Z,7.0nm,0.4s
VOSK **Vostochnaya** 116.33 321 PKiKP **PKPdf** 19 26 14.4 -1.3
VOSK pmax pmax
comp=Z,24nm,0.9s
CHKZ **Chkalovo** 116.45 322 PKiKP **PKPdf** 19 26 14.5 -1.3
CHKZ pmax pmax
comp=Z,8.0nm,0.5s
BVA0 **Borovoye Array** 116.66 321 *i* PKiKP **PKPdf** 19 26 15.5 -0.8
BVA0 pmax pmax
comp=Z,10.0nm,0.5s
BRVK **Borovoye** 116.72 321 *c i*PKiKP **PKPdf** 19 26 15.4 -1.0
BRVK pmax pmax
comp=Z,51nm,1.0s
BRVK **Borovoye** 116.72 321 *e*PKPdf **PKPdf** 19 26 15.6 -0.8
KK31 **Karatay Array** 117.11 310 PKiKP **PKPdf** 19 26 16.2 -1.3
KK31 pmax pmax
comp=Z,10.0nm,0.9s
KKAR **Karatay Array** 117.11 310 *e*PKiKP **PKPdf** 19 26 16.6 -0.9
KKAR **Karatay Array** 117.11 310 *e*PKPdf **PKPdf** 19 26 16.6 -0.9
ZRNK **Zerenda** 117.50 321 PKiKP **PKPdf** 19 26 16.7 -1.2
ZRNK pmax pmax
comp=Z,17nm,1.1s
SPITS **Spitsbergen Ar** 119.17 356 PKP **PKPdf** 19 26 19.9 -0.6
comp=Z,24nm,0.8s,baz=64,slow=3.8,SNR=19
ILULI **Ilulissat** 119.42 19 *i* P **PKPdf** 19 26 20.0 -1.1
ILULI **Ilulissat** 119.42 19 *i* PKiKP **PKPdf** 19 26 20.0 -1.1
DAG **Danmarks Havn** 120.14 5 *i* P PKPdf 19 26 32.7 +10
SFJD **Kangerlussuaq** 120.68 21 *i* P **PKPdf** 19 26 22.5 -1.1
SFJD **Kangerlussuaq** 120.68 21 *i* PKiKP **PKPdf** 19 26 22.5 -1.1
SUMG **Summit** 120.69 13 *i* P **PKPdf** 19 26 24.1 +0.1
SUMG **Summit** 120.69 13 *i* PKiKP **PKPdf** 19 26 24.1 +0.1
BDFB **Brasilia** 121.05 121 PKP **PKPdf** 19 26 26.8 +0.8
comp=Z,1.3nm,0.3s,baz=163,slow=20,SNR=4.1
SVE **Sverdlovsk** 121.46 326 *e*PKiKP **PKPdf** 19 26 24.8 -0.6
SVE pmax pmax
comp=Z,37nm,0.9s
SOKR **Solikamsk** 122.48 330 *c i*PKiKP **PKPdf** 19 26 25.0 -2.2
SOKR pmax pmax
comp=Z,69nm,1.1s
ARU **Arti** 122.67 326 *i* PKiKP **PKPdf** 19 26 26.8 -0.9
ARU 19 28 13.2
ARU 19 32 44.4
ARU SS SS 19 44 09.8 -4.5
ARU **Arti** 122.67 326 *e*PKPdf **PKPdf** 19 26 27.1 -0.6
AB31 **Akbulak array** 123.74 318 PKiKP **PKPdf** 19 26 29.3 -0.7
AB31 pmax pmax
comp=Z,15nm,1.0s
ABKAR **Akbulak array** 123.74 318 *e*PKPdf **PKPdf** 19 26 29.1 -0.9
AKTO **Aktyubinsk** 124.68 320 PKiKP **PKPdf** 19 26 31.1 -0.7
AKTO pmax pmax
comp=Z,24nm,0.9s
LVZ **Lovozero** 125.66 345 *i* PKiKP **PKPdf** 19 26 32.7 -0.5
LVZ pmax pmax
comp=Z,49nm,2.5s
ARCES **ARCESS Array B** 126.20 350 PKhKP PKPpre 19 26 22.9
comp=Z,1.1nm,0.8s,baz=49,slow=1.6,SNR=8.9
ARCES PKP **PKPdf** 19 26 33.6 -0.5
comp=Z,26nm,0.8s,baz=90,slow=0.9,SNR=48
ARCES PKKPbc **PKKPab** 19 36 09.7 +0.9
comp=Z,1.1nm,0.6s,baz=222,slow=1.2,SNR=8.7
JMIC **Jan Mayen** 126.51 4 PKP **PKPdf** 19 26 35.1 +0.4
comp=Z,32nm,0.9s,baz=318,slow=2.4,SNR=4.9
GEYT **Alibeck** 126.83 304 PKhKP PKPpre 19 26 23.4
comp=Z,2.7nm,0.7s,baz=294,slow=4.4,SNR=9.1
GEYT PKP **PKPdf** 19 26 36.2 -0.1
comp=Z,16nm,0.8s,baz=294,slow=1.5,SNR=45
GEYT pPKP **PP** 19 28 40.4 -2.6
comp=Z,2.1nm,1.0s,baz=20,slow=4.6,SNR=3.0
BOSA **Boshof** 128.38 207 PKP **PKPdf** 19 26 40.9 +1.1
comp=Z,5.4nm,0.8s,baz=64,slow=4.3,SNR=5.9
KLMR **Klimovskoe** 129.20 337 *e*PKiKP **PKPdf** 19 26 38.0 -2.1
KLMR pmax pmax
comp=Z,45nm,1.2s
BORG **Borgarnes** 130.67 13 PKP **PKPdf** 19 26 43.4 +0.6
comp=Z,3.8nm,0.8s,baz=65,slow=1.0,SNR=3.7
FINES **FINESS Array B** 133.05 344 PKhKP PKPpre 19 26 32.5
comp=Z,0.5nm,0.3s,baz=58,slow=4.7,SNR=9.4
FINES PKP **PKPdf** 19 26 46.2 -1.1
comp=Z,63nm,0.8s,baz=86,slow=1.6,SNR=109
FINES SKPbc **SKPab** 19 29 24.9 -1.1
comp=Z,7.0nm,0.8s,baz=46,slow=4.0,SNR=5.4
FINES **FINESS Array B** 133.05 344 PKiKP **PKPdf** 19 26 46.2 -1.1
FINES 19 29 24.9
FINES pmax pmax
comp=Z,64nm,0.8s
FINES pmax pmax
comp=N,7.0nm,0.8s
OBN **Obninsk** 134.13 333 PKP **PKPdf** 19 26 49.3 -0.2
comp=N,85nm,1.0s,baz=102,slow=1.3,SNR=12
OBN **Obninsk** 134.13 333 *d i*PKiKP **PKPdf** 19 26 50.3 +0.8
OBN *i* 19 29 27.7
OBN pmax pmax
comp=Z,25nm,0.7s
OBN **Obninsk** 134.13 333 *i* P **PKPdf** 19 26 50.4 +0.9
OBN *i* 19 26 57.6
OBN pmax pmax
comp=Z,45nm,1.0s
OBN MLR MLR
comp=Z,891nm,15.0s
OBN **Obninsk** 134.13 333 *i* P **PKPdf** 19 26 50.4 +0.9
comp=Z,45nm,1.0s
OBN **Obninsk** 134.13 333 *e*P **PKPdf** 19 26 49.7 +0.2
comp=Z,184nm,1.0s
VORR **Voronezh** 134.96 327 PKiKP **PKPdf** 19 26 54.0 +2.8
VORR pmax pmax
comp=Z,250nm,1.5s
NCK **Nalchik** 136.23 315 *i* PKiKP **PKPdf** 19 26 54.3 +0.4
NOA **NORSAR Array B** 136.27 353 PKP **PKPdf** 19 26 53.0 -0.4
comp=Z,4.2nm,0.7s,baz=13,slow=4.1,SNR=6.7
NOA SKPbc **SKPbc** 19 29 35.5 +1.9
comp=Z,6.2nm,1.0s,baz=16,slow=4.5,SNR=4.4
GNI **Garni** 136.57 310 PKP **PKPdf** 19 26 54.4 -0.4
comp=Z,14nm,1.0s,baz=344,slow=3.9,SNR=6.4
GNI **Garni** 136.57 310 *e*PKPdf **PKPdf** 19 26 52.0 -2.8
GNI PKP **PKPdf** 19 26 54.4 -0.4
KBZ **Khabaz** 136.61 316 PKP **PKPdf** 19 26 55.0 +0.5
comp=Z,5.8nm,0.8s,baz=134,slow=2.9,SNR=12
KVAR **Kislovodsk Arr** 136.65 316 PKP **PKPdf** 19 26 54.5 -0.3
comp=Z,12nm,0.9s,baz=337,slow=2.2,SNR=12
KIV **Kislovodsk** 136.66 316 *e*PKiKP **PKPdf** 19 26 52.7 -2.0
KIV pmax pmax
comp=Z,15nm,1.1s
KIV **Kislovodsk** 136.66 316 *e*PKPdf **PKPdf** 19 26 54.6 -0.1
HFS **Hagfors** 136.82 351 PKhKP PKPpre 19 26 41.4
comp=Z,13nm,0.8s,baz=59,slow=3.8,SNR=12
HFS PKP **PKPdf** 19 26 54.5 +0.1
comp=Z,9.4nm,0.7s,baz=102,slow=2.9,SNR=5.7
NEY **Neytrino** 136.91 315 *i* PKiKP **PKPdf** 19 26 56.1 +0.8
AKH **Akhalkalaki** 137.06 312 *i* P **PKPdf** 19 26 48.3 -7.4
SOC **Sochi** 138.76 317 *i* PKiKP **PKPdf** 19 26 57.6 -0.9
SOC pmax pmax
comp=Z,89nm,1.0s
KMBO **Kilima Mbogo** 139.98 246 PKP **PKPdf** 19 27 01.9 -0.1
comp=Z,6.1nm,0.8s,baz=28,slow=3.8,SNR=7.8
KMBO SKPbc **SKiKP** 19 29 48.4 +0.2
comp=Z,2.4nm,0.4s,baz=64,slow=3.4,SNR=7.8
AKASG **Malin Array Be** 140.39 332 PKhKP PKPpre 19 26 54.1
comp=Z,3.9nm,0.3s,baz=42,slow=4.1,SNR=24
AKASG PKP **PKPdf** 19 27 02.6 +1.4
comp=Z,4.3nm,0.4s,baz=37,slow=2.9,SNR=12
AKASG **Malin Array Be** 140.39 332 PKiKP **PKPdf** 19 27 02.6 +1.4
AKASG pmax pmax
comp=Z,5.0nm,0.4s
BSD **Bornholm Skovb** 141.36 348 *i* PKHKP PKPpre 19 26 56.7
SIM **Simferopol'** 141.56 322 *i* PKHKP PKPpre 19 26 51.0
SIM pmax pmax
comp=Z,19nm,0.9s
EKA **Eskdalemuir Ar** 142.40 4 PKhKP PKPpre 19 27 00.2
comp=Z,2.3nm,0.3s,baz=344,slow=2.0,SNR=6.9
GKP **Gorka Klasztor** 142.53 344 *e*PKP **PKPdf** 19 27 01.5 -3.4
GKP **Gorka Klasztor** 142.53 344 *e*PKHKP **PKPdf** 19 27 01.5 -3.4
SORM **Soroca** 142.62 330 *i* P **PKPdf** 19 27 01.9 -3.3
SORM **Soroca** 142.62 330 *i* PKHKP **PKPdf** 19 27 01.9 -3.3
BEL **Belsk** 142.76 340 *e*PKPc **PKPdf** 19 27 03.1 -2.2
BEL **Belsk** 142.76 340 *e*PKiKP **PKPdf** 19 27 03.1 -2.2
KIS **Kishinev** 143.18 328 *i* PKP PKPbc 19 27 05.0 +0.4
KIS M M 19 27 05.5
comp=Z,400nm,1.0s
KIS **Kishinev** 143.18 328 *i* PKiKP PKPbc 19 27 05.0 +0.4
KIS *e* 19 29 10.0
KIS pmax pmax
comp=Z,400nm,1.0s
LVV **L'vov** 143.25 335 *e*PKHKP PKPpre 19 27 03.5
IAS **Iasi** 143.66 329 *i* P PKPbc 19 27 06.2 +0.2
IAS **Iasi** 143.66 329 *i* PKiKP PKPbc 19 27 06.2 +0.2
DRWC **Darouich** 143.74 308 *e*P PKPdf 19 27 21.9 +14
DRWC **Darouich** 143.74 308 *e*P PKPdf 19 27 17.5 +10
LEOM **Leova** 143.82 328 *i* P PKPab 19 27 06.8 +0.2
LEOM **Leova** 143.82 328 *i* PKiKP PKPab 19 27 06.8 +0.2
KWP **Kalwaria Pacla** 143.91 336 *i* PKPc PKPbc 19 27 06.9 +0.1
KWP **Kalwaria Pacla** 143.91 336 *i* PKiKP PKPab 19 27 06.9 0.0
ROOS **tl_alroos** 144.08 304 *e*P **PKPdf** 19 27 08.7 +0.3
ROOS **tl_alroos** 144.08 304 *e*P **PKPdf** 19 27 08.8 +0.5
BTCH **Batrach** 144.10 307 *e*P PKPbc 19 27 07.4 -0.5
KFRA **Kufra** 144.13 306 *e*P **PKPab** 19 27 08.1 -0.2
KFRA **Kufra** 144.13 306 *e*P **PKPdf** 19 27 09.5 +1.1
DSB **Dublin** 144.13 8 *e*PKPdf PKPbc 19 27 06.5 -0.8
PRAR **RASCA** 144.17 331 *i* P PKPbc 19 27 07.5 -0.2
TLCR 144.39 326 *i* P **PKPab** 19 27 08.8 0.0
TLCR 144.39 326 *i* PKiKP **PKPab** 19 27 08.8 0.0
ZALF **Zalf** 144.41 302 *e*P **PKPab** 19 27 09.8 +0.4
ZALF **Zalf** 144.41 302 *e*P **PKPab** 19 27 09.4 0.0
H07N1 **FLORES T-PHASE** 144.43 45 *e*PKP **PKPab** 19 27 09.2 0.0
BURAR **Bucovina Array** 144.45 332 *i* P **PKPab** 19 27 09.1 0.0
BURAR **Bucovina Array** 144.45 332 *i* PKiKP **PKPab** 19 27 09.1 0.0
OJC **Ojcow** 144.47 340 *e*PKPc 19 27 08.2
OJC **Ojcow** 144.47 340 *e*PKiKP **PKPdf** 19 27 08.2 -0.2
ARNB **Al Arnab** 144.53 307 *e*P **PKPdf** 19 27 08.7 -0.4
BRTR **Keskin Array B** 144.58 315 PKP **PKPdf** 19 27 08.8 -0.3
comp=Z,64nm,0.8s,baz=135,slow=3.0,SNR=81
BRTR SKPbc **SKiKP** 19 29 57.3 +0.5
comp=Z,1.4nm,0.8s,baz=102,slow=3.5,SNR=2.5
BRTR SKKPbc **SKKPbc** 19 38 01.6 +0.7
comp=Z,1.5nm,1.0s,baz=205,slow=5.5,SNR=5.2
STHS **Stebnicka Huta** 144.64 337 *e*PKiKP **PKPab** 19 27 09.7 0.0
STHS **Stebnicka Huta** 144.64 337 *e*PKP **PKPab** 19 27 09.7 0.0
KOLS **Kolonicke sedl** 144.65 336 *e*PKiKP **PKPab** 19 27 09.4 -0.3
KOLS **Kolonicke sedl** 144.65 336 *e*PKP **PKPab** 19 27 09.4 -0.3
HAWK **Haweek** 144.66 305 *e*P **PKPdf** 19 27 09.2 -0.2
HAWK **Haweek** 144.66 305 *e*P **PKPab** 19 27 10.3 -0.1
CFR **Carcaliu** 144.76 327 *i* P PKPbc 19 27 09.4 -0.1
CFR **Carcaliu** 144.76 327 *i* PKiKP PKPbc 19 27 09.4 -0.1
MARH **Ras Al Marh** 144.76 304 *e*P **PKPdf** 19 27 09.9 +0.1
MARH **Ras Al Marh** 144.76 304 *e*P PKPbc 19 27 10.5 +0.2
UZH **Uzhgorod** 144.88 336 *ce*PKiKP **PKPdf** 19 27 07.5 -1.6
SALA **Sala** 144.95 302 *e*P PKPbc 19 27 10.5 -0.3
SALA **Sala** 144.95 302 *e*P **PKPdf** 19 27 10.2 +0.1
ASF **Jabal al Asfar** 144.96 301 PKP PKPbc 19 27 10.5 -0.2
comp=Z,44nm,1.0s,baz=44,slow=1.5,SNR=52
KSP **Ksiaz** 144.97 343 *e*PKPc **PKPab** 19 27 10.6 -0.3
KSP **Ksiaz** 144.97 343 *e*PKiKP **PKPab** 19 27 10.6 -0.3
NIE **Niedzica** 144.97 338 *e*PKPc **PKPab** 19 27 10.7 -0.3
NIE **Niedzica** 144.97 338 *e*PKiKP **PKPab** 19 27 10.7 -0.3
CRVS **Cervenica-Dubn** 144.98 337 *e*PKiKP **PKPab** 19 27 10.6 -0.4
CRVS **Cervenica-Dubn** 144.98 337 *e*PKP **PKPab** 19 27 10.6 -0.4
TOTH **TOTAH** 145.01 303 *e*P **PKPbc** 19 27 10.7 -0.1
TOTH **TOTAH** 145.01 303 *e*P **PKPbc** 19 27 10.9 +0.2
PLOR **Plostina** 145.05 329 *i* P **PKPbc** 19 27 10.6 +0.1
PLOR **Plostina** 145.05 329 *i* PKiKP **PKPbc** 19 27 10.6 +0.1
ANTO **Ankara** 145.08 316 *e*PKiKP **PKPdf** 19 27 10.1 +0.2
ANTO **Ankara** 145.08 316 *e*PKPdf **PKPdf** 19 27 10.1 +0.2
TIRR **Tirgusor** 145.09 325 *i* P **PKPdf** 19 27 10.0 +0.4
TIRR **Tirgusor** 145.09 325 *e*PKiKP **PKPbc** 19 27 10.6 +0.1
TIRR **Tirgusor** 145.09 325 *e*PKPdf **PKPbc** 19 27 10.6 +0.1
BMR **Baia Mare** 145.15 334 *i* P **PKPbc** 19 27 11.0 +0.4
BMR **Baia Mare** 145.15 334 *i* PKP2 **PKPbc** 19 27 11.0 +0.4
TRPA **Tarpa** 145.19 335 *ex* **PKPbc** 19 27 11.0 +0.3
HARR **Harsova** 145.19 326 *i* P **PKPbc** 19 27 11.2 +0.4
HARR **Harsova** 145.19 326 *i* PKP2 **PKPbc** 19 27 11.2 +0.4
TLB **Topalu** 145.20 326 *i* P **PKPbc** 19 27 10.3 +0.5
TLB **Topalu** 145.20 326 *i* PKiKP **PKPdf** 19 27 10.3 +0.5
EFOR **EFORIE** 145.21 325 *i* P **PKPbc** 19 27 11.0 +0.1
GRER 145.22 328 *i* P **PKPab** 19 27 11.8 -0.2
ARCR **ARCALIA** 145.23 332 *i* P **PKPab** 19 27 11.8 -0.2
CLL **Collm** 145.34 347 *i* PKPbc **PKPbc** 19 27 11.0 0.0
comp=Z,225nm,0.9s
CLL **Collm** 145.34 347 *i* PKiKP **PKPbc** 19 27 11.0 0.0
CLL pmax pmax
comp=Z,225nm,0.9s
CVDA **Cernavoda** 145.37 325 *i* P **PKPab** 19 27 12.3 -0.3
MANR **Mangalia** 145.41 324 *i* P **PKPbc** 19 27 11.6 +0.1
LANS **Liptovska Anna** 145.49 339 *e*PKP2 **PKPab** 19 27 12.9 -0.1
LANS **Liptovska Anna** 145.49 339 *e*PKP **PKPab** 19 27 12.8 -0.2
AMRR **Amara** 145.56 326 *i* P **PKPbc** 19 27 12.5 +0.6
AMRR **Amara** 145.56 326 *i* PKP2 **PKPbc** 19 27 12.5 +0.6
TCHB **Talchebab** 145.58 302 *e*P **PKPdf** 19 27 11.6 +0.7
TCHB **Talchebab** 145.58 302 *e*P **PKPdf** 19 27 10.9 0.0
DOPR **Dopca** 145.59 330 *i* P **PKPab** 19 27 13.0 -0.5
ISR **Istrita** 145.62 328 *i* P **PKPbc** 19 27 12.8 +0.7
ISR **Istrita** 145.62 328 *i* PKP2 **PKPbc** 19 27 12.8 +0.7
MLR **Muntele Rosu** 145.66 329 PKPbc **PKPbc** 19 27 12.1 -0.3
comp=Z,18nm,1.0s,baz=332,slow=4.5,SNR=22
KECS **Kecovo** 145.69 337 *e*PKP2 **PKPbc** 19 27 12.9 +0.7
KECS **Kecovo** 145.69 337 *e*PKP **PKPbc** 19 27 12.9 +0.7

CJR	**Cluj-Napoca**	**145.85 332**	⇓*i*P	**PKPbc**	**19 27 13.3 +0.6**	
CJR	**Cluj-Napoca**	**145.85 332**	⇓PKP2	**PKPbc**	**19 27 13.3 +0.6**	
SECR		**145.92 328**	⇑*i*P	**PKPbc**	**19 27 13.3 +0.4**	
MMAI	**Mount Meron Ar**	**145.93 303**	PKPbc	**PKPbc**	**19 27 13.6 +0.2**	
	comp=Z,56nm,0.7s,baz=67,slow=4.6,SNR=55					
MMAI			pPKPbc	pPKPbc	19 29 21.3 +0.1	
	comp=Z,0.4nm,0.3s,baz=56,slow=5.4,SNR=1.1					
SULR		**146.07 327**	⇑*i*P	**PKPdf**	**19 27 11.9 +0.6**	
VOIR		**146.13 330**	⇑*i*P	**PKPdf**	**19 27 12.3 +0.8**	
VOIR		**146.13 330**	⇑PKIKP	**PKPdf**	**19 27 12.3 +0.8**	
DRGR		**146.18 333**	⇑*i*P	**PKPbc**	**19 27 14.1 +0.4**	
DRGR		**146.18 333**	⇑PKP2	**PKPbc**	**19 27 14.2 +0.5**	
VRAC	**Vranov**	**146.27 342**	PKPbc	**PKPbc**	**19 27 13.9 +0.1**	
	comp=Z,62nm,0.9s,baz=14,slow=8.3,SNR=5.6					
VYHS	**Vyhne**	**146.27 339**	*e*PKP2	**PKPbc**	**19 27 14.2 +0.4**	
VYHS	**Vyhne**	**146.27 339**	*e*PKP	**PKPbc**	**19 27 14.2 +0.4**	
MTUR	**Matau**	**146.28 329**	⇓*i*P	**PKPbc**	**19 27 13.9 -0.1**	
MTUR	**Matau**	**146.28 329**	⇓PKP2	**PKPbc**	**19 27 13.9 -0.1**	
PSZ	**Piszkesteto**	**146.38 337**	⇑PKP2	**PKPbc**	**19 27 14.6 +0.4**	
ARR	**Arges**	**146.38 330**	⇓*i*P	**PKPdf**	**19 27 12.8 +0.9**	
PRD	**Provadia**	**146.46 325**	P	**PKPbc**	**19 27 15.0 +0.6**	
SMOL	**Smolenice**	**146.72 340**	*e*PKP2	**PKPbc**	**19 27 15.8 +0.8**	
SMOL	**Smolenice**	**146.72 340**	*e*PKP	**PKPbc**	**19 27 15.8 +0.8**	
LOT	**Lotru**	**146.73 331**	⇓*i*P	**PKPbc**	**19 27 14.4 -0.9**	
PCAN	**Candelaria**	**146.82 46**	*e*PKP	**PKPdf**	**19 27 13.3 +0.5**	
HUMR	**Humele**	**146.82 328**	⇑*i*P	**PKPdf**	**19 27 13.9 +1.3**	
PICO	**Pico**	**146.84 45**	*e*PKP	**PKPdf**	**19 27 12.4 -0.5**	
ROSA	**Rosais**	**146.85 45**	*e*PKP	**PKPdf**	**19 27 12.1 -0.7**	
PGRA	**Graciosa**	**146.87 44**	*e*PKP	**PKPdf**	**19 27 13.9 +1.1**	
PMAN	**Manadas**	**147.00 45**	*e*PKP	**PKPdf**	**19 27 13.3 +0.2**	
SIRR	**Siria**	**147.03 334**	⇑*i*P	**PKPbc**	**19 27 16.5 +0.6**	
BUD	**Budapest**	**147.06 338**	⇑*ex*	**PKPbc**	**19 27 16.1 +0.2**	
EIL	**Elat**	**147.21 297**	PKP	**PKPdf**	**19 27 13.4 -0.3**	
	comp=Z,45nm,1.0s,baz=16,slow=2.6,SNR=7.2					
EIL			PKPbc	**PKPbc**	**19 27 16.8 -0.1**	
	comp=Z,45nm,1.0s,baz=106,slow=2.1,SNR=21					
EIL			pPKPbc	**pPKPbc**	**19 29 23.0 -2.0**	
	comp=Z,16nm,1.2s,baz=137,slow=2.1,SNR=3.1					
SZH	**Strazhica**	**147.22 326**	P	**PKPbc**	**19 27 16.5 0.0**	
ZIMR		**147.25 327**	⇓*i*P	**PKPbc**	**19 27 17.0 +0.5**	
ZIMR		**147.25 327**	⇓PKP2	**PKPbc**	**19 27 17.1 +0.5**	
GERES	**GERESS Array B**	**147.48 345**	PKPbc	**PKPbc**	**19 27 17.1 0.0**	
	comp=Z,46nm,0.5s,baz=23,slow=3.1,SNR=20					
BZS	**Buzias**	**147.57 333**	⇓*i*P	**PKPbc**	**19 27 17.2 -0.1**	
BZS	**Buzias**	**147.57 333**	⇓PKP2	**PKPbc**	**19 27 17.2 -0.1**	
CONA	**Conrad Observa**	**147.72 342**	*i* PKPbc	**PKPbc**	**19 27 17.6 -0.1**	
	comp=Z,138nm,1.0s					
MDVR	**Moldovita**	**148.18 332**	⇑*i*P	**PKPbc**	**19 27 18.4 -0.6**	
MOA	**Molln**	**148.25 343**	*i* PKPbc	**PKPdf**	**19 27 16.5 +1.6**	
	comp=Z,95nm,1.2s					
MPEP	**Malo Peshtene**	**148.29 328**	P	**PKPbc**	**19 27 19.5 +0.3**	
ARSA	**Arzberg**	**148.43 341**	*i* PKPdf	**PKPdf**	**19 27 13.4 -1.7**	
	comp=Z,102nm,1.6s					
PGB	**Panagyurishte**	**148.65 327**	P	**PKPbc**	**19 27 20.0 -0.2**	
PSET	**Sete Cidades**	**149.01 44**	*e*PKP	**PKPdf**	**19 27 15.8 -0.6**	
BFO	**Black Forest**	**149.05 351**	*i* PKHKP	**PKPbc**	**19 27 21.4 +0.4**	
SOKA	**Soboth**	**149.09 342**	*i* PKiKP	**PKPbc**	**19 27 21.2 0.0**	
	comp=Z,141nm,1.3s					
VTS	**Vitosha**	**149.11 328**	⇑*i*P	**PKPbc**	**19 27 21.6 +0.1**	
VTS	**Vitosha**	**149.11 328**	⇑PKHKP	**PKPbc**	**19 27 21.6 +0.1**	
VTS	**Vitosha**	**149.11 328**	P	**PKPbc**	**19 27 21.5 +0.1**	
KBA	**Koelnbreinsper**	**149.21 344**	*i* PKiKP	**PKPbc**	**19 27 21.4 -0.2**	
	comp=Z,54nm,0.5s					
OBKA	**Obir**	**149.39 342**	*i* PKiKP	**PKPbc**	**19 27 21.9 0.0**	
	comp=Z,125nm,1.5s					
WATA	**Walderalm**	**149.40 346**	*i* PKiKP	**PKPbc**	**19 27 22.0 +0.1**	
	comp=Z,33nm,0.4s,SNR=8.3					
RETA	**Reutte**	**149.43 347**	*i* PKiKP	**PKPbc**	**19 27 22.3 +0.4**	
	comp=Z,124nm,1.3s					
WTTA	**Wattenberg**	**149.45 346**	*i* PKiKP	**PKPbc**	**19 27 22.5 +0.3**	
	comp=Z,90nm,0.8s					
MOTA	**Moosalm**	**149.49 347**	*i* PKiKP	**PKPbc**	**19 27 22.3 +0.1**	
	comp=Z,32nm,0.4s					
MYKA	**Terra Mystica**	**149.54 343**	*i* PKPbc	**PKPbc**	**19 27 21.3 -0.9**	
	comp=Z,58nm,0.5s,SNR=10					
MMB	**Musomiste**	**149.55 326**	P	**PKPbc**	**19 27 22.0 -0.4**	
SQTA	**Sankt Quirin**	**149.59 347**	*i* PKiKP	**PKPbc**	**19 27 22.7 +0.3**	
	comp=Z,41nm,0.4s					
KKB	**Krupnik**	**149.70 327**	P	**PKPbc**	**19 27 22.5 -0.2**	
ABTA	**Abfaltersbach**	**149.73 345**	*i* PKPbc	**PKPbc**	**19 27 22.2 -0.5**	
	comp=Z,144nm,0.9s,SNR=9.9					
DAVA	**Damuels**	**149.80 348**	*i* PKiKP	**PKiKP**	**19 27 23.3 -0.3**	
	comp=Z,190nm,1.1s					
LJU	**Ljubljana**	**149.82 342**	*i* PKPbc	**PKPbc**	**19 27 22.8 0.0**	
PSMA	**Santa Maria**	**149.85 45**	*e*PKP	**PKPdf**	**19 27 17.7 0.0**	
CRNS	**Crni Vrh**	**149.86 342**	*i* PKPbc	**PKPbc**	**19 27 22.6 -0.4**	
FETA	**Feichten**	**149.88 347**	*i* PKiKP	**PKiKP**	**19 27 23.7 -0.1**	
	comp=Z,141nm,1.0s					
PSMN	**Pico do Norte,**	**149.89 45**	*e*PKP	**PKPdf**	**19 27 17.3 -0.5**	
BOJS	**Bojanci**	**150.07 340**	*i* PKPbc	**PKPbc**	**19 27 23.8 +0.4**	
DAVOX	**Davos/Dischmat**	**150.28 348**	PKPbc	**PKPbc**	**19 27 24.4 +0.3**	
	comp=Z,127nm,0.7s,baz=294,slow=2.3,SNR=6.0					
PLE	**Pljevlja**	**150.35 333**	⇓*i*PKP	**PKPbc**	**19 27 24.2 -0.1**	
IVA	**Berane**	**150.50 332**	⇓*i*PKP	**PKPbc**	**19 27 24.6 0.0**	
UPM	**Unac-Piva**	**150.65 333**	⇓*i*PKP	**PKPbc**	**19 27 25.8 -1.3**	
PVY	**Plav**	**150.68 331**	⇓*i*PKP	**PKPbc**	**19 27 25.0 -0.1**	
NKY	**Niksic**	**150.94 333**	⇓*i*PKP	**PKPbc**	**19 27 25.2 -0.5**	
NKME	**Niksic**	**151.00 333**	⇓*i*PKP	**PKPbc**	**19 27 25.2 -0.5**	
BRY	**Bratogost**	**151.07 333**	⇓*i*PKP	**PKPbc**	**19 27 25.3 -0.7**	
PDG	**Podgorica**	**151.13 332**	⇑*i*P	**PKPbc**	**19 27 25.5 -0.4**	
TTG	**Podgorica**	**151.13 332**	⇓*i*PKP	**PKPbc**	**19 27 25.6 -0.4**	
CEME	**Cevo**	**151.19 332**	⇓*i*PKP	**PKPbc**	**19 27 25.3 -0.9**	
DRME	**Dracevica, Mon**	**151.36 332**	⇓*i*PKP	**PKPbc**	**19 27 26.0 -0.5**	
HCY	**Herceg Novi**	**151.46 333**	⇓*i*PKP	**PKPbc**	**19 27 26.5 -0.2**	
ULC	**Ulcinj**	**151.51 331**	⇓*i*PKP	**PKPbc**	**19 27 26.2 -0.7**	
TIR	**Tirane**	**151.70 330**	⇓*i*P	**PKPbc**	**19 27 26.6 -0.7**	
TIR	**Tirane**	**151.70 330**	*e*PKIKP	**PKPbc**	**19 27 26.7 -0.6**	
TIR	**Tirane**	**151.70 330**	*e*PKPbc	**PKPbc**	**19 27 26.7 -0.6**	
IDI	**Anoyia**	**152.82 314**	PKP	**PKPdf**	**19 27 21.8 -0.5**	
	comp=Z,6.9nm,0.8s,baz=118,slow=2.4,SNR=2.9					
IDI			PKPbc	**PKiKP**	**19 27 30.2 0.0**	
	comp=Z,8.8nm,0.3s,baz=15,slow=2.2,SNR=19					
IDI	**Anoyia**	**152.82 314**	*e*PKPdf	**PKPdf**	**19 27 21.6 -0.7**	
IDI			PKP	PKP	19 27 21.8	
IDI			PKPbc	**PKiKP**	**19 27 30.2 0.0**	
TIP	**Timpagrande**	**154.87 331**	*e*PKPdf	**PKPdf**	**19 27 22.5 -2.6**	
TIP			*e*PKPab	**PKPab**	**19 27 52.2 -0.2**	
ESDC	**Sonseca Array**	**157.74 11**	PKPab	**PKPab**	**19 28 04.2 -0.5**	
	comp=Z,8.0nm,0.7s,baz=342,slow=4.2,SNR=5.4					
ESDC			PP	**PP**	**19 31 46.1 +0.5**	
	comp=Z,2.0nm,0.9s,baz=348,slow=5.2,SNR=4.6					
KEST	**Kesra**	**160.81 340**	PKPab	**PKPab**	**19 28 18.6 +0.3**	
	comp=Z,17nm,0.8s,baz=278,slow=2.4,SNR=3.7					
MDT	**Midelt**	**164.12 19**	PKP	**PKPdf**	**19 27 36.5 +0.8**	
	comp=Z,15nm,0.9s,baz=51,slow=2.3,SNR=11					
MDT			PKPab	**PKPab**	**19 28 33.3 +0.3**	
	comp=Z,34nm,0.9s,baz=351,slow=5.1,SNR=17					
LIC	**Lamto**	**166.88 151**	*e*PKP1	**PKPdf**	**19 27 37.3 -1.0**	
	comp=Z,50nm,1.8s					
KIC	**Kosan Boka**	**167.13 152**	*e*PKP1	**PKPdf**	**19 27 37.3 -1.2**	
	comp=Z,82nm,1.2s					
TIC	**Toumodi**	**167.25 150**	*e*PKP1	**PKPdf**	**19 27 36.4 -2.2**	
DBIC	**Dimbokro**	**167.35 150**	PKP	**PKPdf**	**19 27 37.5 -1.2**	
	comp=Z,15nm,1.0s,baz=193,slow=2.4,SNR=5.6					
DBIC	**Dimbokro**	**167.35 150**	PKIKP	**PKPdf**	**19 27 37.5 -1.2**	
DBIC			pmax	pmax		
	comp=Z,20nm,1.1s					
TORD	**Torodi Ar. Bea**	**175.34 184**	PKP	**PKPdf**	**19 27 41.2 -1.2**	
	comp=Z,14nm,1.0s,baz=270,slow=0.7,SNR=49					
TORD			PKPab	**PKPab**	**19 29 23.1 +0.3**	
	comp=Z,1.5nm,0.6s,baz=191,slow=3.9,SNR=7.2					
TORD			PP	**PP**	**19 33 15.5 +1.2**	
	comp=Z,0.7nm,0.8s,baz=192,slow=5.5,SNR=2.8					
TORD			PKKP		19 35 18.6	
	comp=Z,2.9nm,1.1s,baz=1.8,slow=0.7,SNR=4.6					

JMA 07 19:09:55.4, 32.65N×131.65E, h16km, M0.7, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JKIT	**Kitakata**	**0.17**	**261**	P		Pg	19 09 59.7	0.0
JKIT				*e*S		Sg	19 10 02.4	-0.1
JTSN	**Tsuno**	**0.42**	**197**	P		Pg	19 10 03.8	-0.1
JTSN				*e*S		Sg	19 10 09.3	-0.4
JUS	**Usuki**	**0.42**	**12**	P		Pg	19 10 04.0	0.0
JUS				*e*S		Sg	19 10 09.6	-0.2
JTO	**Tosashimizu**	**0.99**	**78**	S		Sb	19 10 26.7	-0.4

*NIED **07** 19:10:00, 31.40N×130.50E, h165km, Mw4.5 Best double couple: M0 6.98000×10^15 NP1:φ=265.00000°, δ=14.00000°, λ=-143.00000°. NP2:φ=139.00000°, δ=82.00000°, λ=-79.00000°.*

*BJI **07** 19:10:40.4, 31.10N×130.82E, h156km, mb4.5/33, mB4.7/22*

*ISCJB **07** 19:10:43.9±0.2, 31.32N±0.02×130.46E±0.03, h166km±1km, mb4.5/61, Error ellipse: s-maj=5.1km s-min=3.6km az=28.4*

*MOS **07** 19:10:44.4±1.0, 31.33N×130.40E, h171km, mb4.5/32, Error ellipse: s-maj=9.7km s-min=5.8km az=83.6*

*NEIC **07** 19:10:45.2±0.2, 31.35N×130.41E, mb4.9/25, Error ellipse: s-maj=4.9km s-min=3.5km az=112.0*

NEIC Recorded [1 JMA] in Kagoshima and Miyazaki.

*IDC **07** 19:10:45.8±0.7, 31.39N×130.38E, h167km±6km, mb4.1/28, mb1 4.2/32, mb1mx4.0/68, mbtmp4.5/32, Error ellipse: s-maj=12.4km s-min=8.5km az=90.0*

*JMA **07** 19:10:46.1±0.1, 31.36N×130.45E, h155km±1km, M4.2*

JMA Felt I J1.

ISC 07 19:10:45.3±0.4, 31.38N±0.03×130.39E±0.04, h162km±3km, h162km:pP-P,n158,σ180/195, mb4.5/61,5D, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JSU	**Suzuyama**	**0.14**	**24**	P		**Pn**	**19 11 07.0**	**0.0**
JSU				*e*S		**Sn**	**19 11 23.1**	**-0.6**
JTSR	**Tashiro 2**	**0.50**	**114**	P		**Pn**	**19 11 07.9**	**-0.2**
JTSR				*e*S		**Sn**	**19 11 23.8**	**-1.7**
JSJ	**Shimokoshiki**	**0.65**	**298**	P		**Pn**	**19 11 08.7**	**-0.1**
JSJ				*e*S		**Sn**	**19 11 26.4**	**-0.4**
JTZ	**Takazaki**	**0.80**	**49**	P		**Pn**	**19 11 09.7**	**0.0**
JTZ				*e*S		**Sn**	**19 11 27.1**	**-1.4**
JTN	**Tanegashima 3**	**0.88**	**144**	P		**Pn**	**19 11 10.2**	**-0.1**
JTN				*e*S		**Sn**	**19 11 28.2**	**-1.3**
JYAK	**Yakushimahirau**	**1.14**	**175**	P		**Pn**	**19 11 12.1**	**-0.3**
JYAK				*e*S		**Sn**	**19 11 31.8**	**-1.4**
JIU2	**Izumi 2**	**1.22**	**17**	P		**Pn**	**19 11 13.5**	**+0.4**
JIU2				*e*S		**Sn**	**19 11 34.5**	**-0.1**
JNN	**Nakanoshima**	**1.59**	**196**	P		**Pn**	**19 11 16.9**	**+0.2**
JNN				*e*S		**Sn**	**19 11 40.6**	**-0.4**
JNU	**Nakatsue**	**1.79**	**13**	P		**Pn**	**19 11 19.0**	**+0.2**
	146nm,0.3s,baz=189,slow=5.4,SNR=803							
JNU				S		**Sn**	**19 11 44.1**	**-0.7**
	22nm,0.3s,baz=241,slow=19,SNR=2.9							
JOW	**Kunigami**	**4.89**	**203**	*e*Pn		**Pn**	**19 11 56.3**	**-1.1**
JOW				*e*Sn		Sn	19 12 40.7	-13
KS15	**Wonju Array Si**	**6.39**	**342**	*e*Pn		**Pn**	**19 12 18.7**	**+1.5**
KSAR	**Wonju Array Be**	**6.39**	**342**	P		**Pn**	**19 12 18.7**	**+1.5**
KSAR				S		**Sn**	**19 13 22.5**	**-7.0**
KSAR	**Wonju Array Be**	**6.39**	**342**	P		**Pn**	**19 12 18.7**	**+1.5**
KSAR				S		**Sn**	**19 13 22.5**	**-7.0**
KSRS	**Korea Array**	**6.40**	**342**	P		**Pn**	**19 12 18.7**	**+1.5**
	2.1nm,0.3s,baz=161,slow=14,SNR=35							
KSRS				S		**Sn**	**19 13 22.5**	**-7.0**
	0.8nm,0.3s,baz=151,slow=30,SNR=4.7							
KS01	**Wonju Array Si**	**6.42**	**342**	*e*Pn		**Pn**	**19 12 18.5**	**+0.9**
INU	**Inuyama**	**6.82**	**53**	*e*Pn		**Pn**	**19 12 23.0**	**+0.1**
INU				*e*Sn		Sn	19 13 22.9	-17
INCN	**Inchon**	**6.83**	**334**	*e*Pn		**Pn**	**19 12 23.6**	**+0.5**
JHJ	**Hachijo jima 2**	**8.15**	**75**	P		**Pn**	**19 12 44.9**	**+4.3**
	88nm,0.3s,baz=77,slow=14,SNR=43							
JHJ				S		**Sn**	**19 14 15.6**	**+4.2**
	baz=72,slow=20,SNR=1.9							
JHJ2	**Mitsune**	**8.17**	**75**	*e*Pn		**Pn**	**19 12 44.9**	**+4.0**
MAJO	**Matsushiro**	**8.29**	**49**	*e*P		**Pn**	**19 12 42.9**	**+0.5**
MAJO	**Matsushiro**	**8.29**	**49**	*e*Pn		**Pn**	**19 12 42.9**	**+0.5**
MAJO				*e*Sn		Sn	19 13 57.0	-18
MAT	**Matsushiro**	**8.29**	**49**	P		**Pn**	**19 12 42.8**	**+0.4**
MAT				S		**Sn**	**19 14 12.7**	**-2.2**
MJB9	**Matsu-Tunnel**	**8.29**	**49**	*e*Pn		**Pn**	**19 12 42.7**	**+0.2**
MJB9				*e*Sn		Sn	19 13 56.5	-18
MJAR	**Matsushiro Arr**	**8.29**	**49**	P		**Pn**	**19 12 43.3**	**+0.9**
	11nm,0.3s,baz=240,slow=15,SNR=66							
MJAR				S		**Sn**	**19 14 06.8**	**-8.1**
	0.7nm,0.3s,baz=220,slow=16,SNR=4.4							
YOJ	**Yonaguni jima**	**9.48**	**225**	*e*P		**Pn**	**19 12 56.0**	**-2.3**
YOJ	**Yonaguni jima**	**9.48**	**225**	*e*Pn		**Pn**	**19 12 56.0**	**-2.3**
NJ2	**Nanjing**	**9.85**	**277**	*e*P		**Pn**	**19 13 03.5**	**+0.5**
NJ2				pmax	pmax			
	comp=Z,41nm,0.9s							
TATO	**Taipei**	**10.11**	**233**	*e*Pn		**Pn**	**19 13 06.1**	**-0.5**
YHNB	**Yeheng**	**10.39**	**232**	*e*Pn		**Pn**	**19 13 09.8**	**-0.5**
NACB	**Ninganchiao**	**10.58**	**229**	*e*Pn		**Pn**	**19 13 10.2**	**-2.5**
SSLB	**Suanglung**	**11.27**	**230**	*e*Pn		**Pn**	**19 13 18.9**	**-2.9**
YULB	**Yu-li**	**11.33**	**228**	*e*Pn		Pn	19 13 17.3	-5.2
TWG	**Pinlang**	**11.89**	**226**	*e*Pn		Pn	19 13 24.2	-5.5
USRK	**Ussuriysk Ar.**	**12.87**	**5**	P		**Pn**	**19 13 42.8**	**+0.7**
	0.2nm,0.3s,baz=165,slow=16,SNR=4.3							
CN2	**Changchun**	**13.00**	**344**	*e*P		**P**	**19 13 51.0**	**+2.7**
CN2				pmax	pmax			
	comp=Z,10.0nm,1.0s							
WHN	**Wuhan**	**13.79**	**271**	⇓P		**P**	**19 13 55.9**	**-1.2**
ERM	**Erimo**	**14.74**	**40**	⇓*e*P		**P**	**19 14 07.9**	**+0.4**
ASAJ	**Asahikawa**	**15.95**	**34**	P		**Pn**	**19 14 19.5**	**-1.1**
	comp=Z,1.4nm,0.3s,baz=221,slow=10,SNR=20							
ASAJ	**Asahikawa**	**15.95**	**34**	*e*Pn		**Pn**	**19 14 19.4**	**-1.1**
	comp=Z,13nm,0.7s							
HABR	**Khabarovsk**	**17.44**	**10**	*e*P		**P**	**19 14 36.5**	**-0.8**
HABR				*e*S		**S**	**19 17 49.9**	**-0.5**
HABR				pmax	pmax			
	comp=Z,30nm,1.3s							
KLR	**Kul'dur**	**17.86**	**3**	P		**Pn**	**19 14 43.0**	**-0.6**
	comp=Z,0.7nm,0.3s,baz=190,slow=10,SNR=11							
KLR	**Kul'dur**	**17.86**	**3**	P		**Pn**	**19 14 43.0**	**-0.6**
KLR				pmax	pmax			
	comp=Z,1.0nm,0.3s							
HHC	**Hu-ho-hao-te**	**17.88**	**307**	*e*P		**Pn**	**19 14 44.3**	**+0.4**
HHC				S		**S**	**19 17 57.7**	**-1.6**
HHC				pmax	pmax			
	comp=Z,26nm,1.4s							
HHC				pmax	pmax			
	comp=Z,76nm,4.0s							
ENH	**Enshi**	**17.98**	**272**	*e*P		**Pn**	**19 14 45.8**	**+0.6**
	comp=Z,147nm,0.8s							
YSS	**Yuzh-Sakhalins**	**18.24**	**28**	*e*P		**Pn**	**19 14 47.2**	**-0.7**
YSS	**Yuzh-Sakhalins**	**18.24**	**28**	*e*P		**P**	**19 14 45.0**	**-1.1**
	comp=Z,8.4nm,0.6s							
XAN	**Xi'an**	**18.26**	**284**	P		**P**	**19 14 47.4**	**+0.9**
KUR	**Kuril'sk**	**19.43**	**40**	*e*P		**Pn**	**19 15 00.8**	**-1.1**
SARN	**Sarigan**	**20.24**	**133**	*e*P		**P**	**19 15 08.3**	**+0.3**
ANA2	**Anatahan**	**20.47**	**133**	*e*P		**P**	**19 15 10.2**	**-0.2**
GYA	**Guiyang**	**21.32**	**263**	⇓*i*P		**P**	**19 15 19.2**	**-0.4**
GYA				PP		**pP**	**19 15 51.0**	**+3.0**
GYA				sP		sP	19 16 06.4	-2.0
GYA				S		**S**	**19 19 01.2**	**-5.5**
GYA				PcP		**PcP**	**19 19 18.8**	**+1.6**
GYA				ScP		**ScP**	**19 22 39.3**	**+0.4**
GYA				pmax	pmax			
	comp=Z,10.0nm,1.0s							
LZH	**Lanzhou**	**22.54**	**289**	*e*P		**P**	**19 15 33.4**	**+1.6**
LZH				pP		pP	19 16 04.5	+3.2
LZH				sP		sP	19 16 23.3	+1.8
LZH				pmax	pmax			
	comp=Z,36nm,1.0s							
LZH				pmax	pmax			
	comp=Z,120nm,4.5s							
CD2	**Chengdu**	**22.78**	**276**	P		**P**	**19 15 33.5**	**-0.4**
CD2				pP		pP	19 16 02.5	-1.3
CD2				sP		sP	19 16 22.3	-1.7
CD2				S		**S**	**19 19 31.6**	**+1.0**
CD2				sS		sS	19 20 24.3	0.0
CD2				pmax	pmax			
	comp=Z,20nm,0.5s							
CD2				pmax	pmax			
	comp=Z,180nm,5.2s							
SONM	**Songino Array**	**24.59**	**319**	P		**P**	**19 15 50.6**	**+0.3**
	comp=Z,1.6nm,0.6s,baz=133,slow=8.9,SNR=7.1							
SONA1	**Songino Array**	**24.59**	**319**	*e*P		**P**	**19 15 50.3**	**0.0**
KMI	**Kunming**	**25.10**	**263**	P		**P**	**19 15 57.3**	**+2.0**
KMI				pmax	pmax			
	comp=Z,17nm,0.8s							
GTA	**Gaotai**	**26.09**	**296**	*e*P		**P**	**19 16 04.3**	**+0.3**
GTA				pP		pP	19 16 35.2	-2.3
GTA				sP		sP	19 16 54.9	-1.5
GTA				pmax	pmax			
	comp=Z,4.0nm,1.1s							
TLY	**Talaya**	**28.24**	**324**	P		**P**	**19 16 25.2**	**+2.4**
	comp=Z,1.6nm,0.6s,baz=45,slow=14,SNR=3.2							
MYLDM	**Lahad Datu**	**28.35**	**206**	*e*P		**P**	**19 16 24.4**	**+0.3**
	comp=Z,15nm,1.1s							
PEA0	**Petropavlovsk-**	**29.36**	**34**	*e*P		**P**	**19 16 33.3**	**+0.6**
PETK	**Petropavlovsk-**	**29.36**	**34**	P		**P**	**19 16 33.4**	**+0.6**
	comp=Z,3.6nm,0.9s,baz=236,slow=6.8,SNR=3.8							
YAK	**Yakutsk**	**30.67**	**359**	P		**P**	**19 16 43.7**	**-0.4**
	comp=Z,6.8nm,0.5s,baz=195,slow=8.1,SNR=5.2							
YAK	**Yakutsk**	**30.67**	**359**	*i* P		**P**	**19 16 43.7**	**-0.4**
YAK				pmax	pmax			
	comp=Z,4.0nm,0.5s							
CHTO	**Chiang Mai**	**30.98**	**254**	*e*P		**P**	**19 16 47.7**	**+0.3**
CHTO				pmax	pmax			
	comp=Z,12nm,0.7s							
CHTO	**Chiang Mai**	**30.98**	**254**	*e*P		**P**	**19 16 47.7**	**+0.3**
	comp=Z,12nm,0.7s							
CM31	**Chiang Mai Arr**	**31.16**	**253**	*e*P		**P**	**19 16 49.3**	**+0.3**
CMAR	**Chiang Mai Arr**	**31.16**	**253**	P		**P**	**19 16 50.0**	**+1.0**
	comp=Z,3.8nm,0.6s,baz=51,slow=7.8,SNR=43							
CMAR				pP		**pP**	**19 17 24.5**	**+1.4**
	comp=Z,1.2nm,1.0s,baz=44,slow=8.4,SNR=2.0							
CM01	**Chiang Mai Arr**	**31.17**	**253**	*e*P		**P**	**19 16 48.2**	**-0.9**
SBUM	**Sibu**	**33.49**	**214**	*e*P		**P**	**19 17 09.6**	**+0.3**
	comp=Z,4.3nm,0.7s							
FAKI	**Fak Fak**	**34.15**	**177**	*e*P		**P**	**19 17 15.1**	**+0.2**
	comp=Z,45nm,0.6s							
SEY	**Seymchan**	**34.56**	**18**	P		**P**	**19 17 18.6**	**+0.6**
	comp=Z,6.2nm,0.7s,baz=208,slow=6.9,SNR=42							
KSM	**Kuching**	**35.28**	**216**	*e*P		**P**	**19 17 25.4**	**+0.7**
	comp=Z,15nm,0.5s							
WMQ	**Urumqi**	**35.66**	**303**	*e*P		**P**	**19 17 29.4**	**+1.7**
WMQ				pmax	pmax			
	comp=Z,7.0nm,0.5s							
WMQ				pmax	pmax			
	comp=Z,170nm,6.0s							
KAPI	**Kappang**	**37.58**	**198**	*e*P		**P**	**19 17 42.4**	**-1.7**
	comp=Z,44nm,1.4s							
SMY	**Shemya**	**38.07**	**43**	*e*P		**P**	**19 17 45.9**	**-1.9**
SMY				pmax	pmax			
	comp=Z,258nm,0.9s							
SMY	**Shemya**	**38.07**	**43**	*e*P		**P**	**19 17 45.9**	**-1.9**
	comp=Z,258nm,0.9s							
KULM	**Kulim**	**38.09**	**233**	*e*P		**P**	**19 17 49.1**	**+0.7**
	comp=Z,21nm,0.9s							
KULM				*e*S		**S**	**19 23 26.8**	**-2.5**
IPM	**Ipoh**	**38.43**	**232**	*e*P		**P**	**19 17 51.4**	**+0.1**
	comp=Z,46nm,1.0s							
GUN	**Gumba**	**38.64**	**277**	*e*P		**P**	**19 17 55.2**	**+1.8**
	comp=Z,28nm,0.4s							
PKIN	**Phulchoki**	**39.15**	**276**	*e*P		**P**	**19 17 58.6**	**+1.1**
	comp=Z,2.8nm,0.3s							
KKN	**Kakani**	**39.18**	**277**	*e*P		**P**	**19 17 59.1**	**+1.3**
	comp=Z,5.2nm,0.4s		

KIV	**Kislovodsk**	**67.47**	**309**	*e*P		**P**	**19 21 25.0**	**+1.3**
KIV				pmax	pmax				
	comp=Z,5.0nm,1.1s								
FIA1	**FINESS Array S**	**69.34**	**330**	*e*P		**P**	**19 21 34.5**	**-0.3**
FINES	**FINESS Array B**	**69.34**	**330**	P		**P**	**19 21 34.5**	**-0.3**
	comp=Z,5.0nm,0.4s,baz=68,slow=5.5,SNR=82								
FINES				pP		**pP**	**19 22 13.8**	**+0.1**	
	comp=Z,0.9nm,0.6s,baz=80,slow=6.2,SNR=1.6								
AKASG	**Malin Array Be**	**72.87**	**319**	P		**P**	**19 21 55.9**	**-0.3**	
	comp=Z,1.6nm,0.3s,baz=57,slow=6.4,SNR=9.5								
KIEV	**Kiev**	**72.88**	**319**	*de*P		**P**	**19 21 56.0**	**-0.3**	
KIEV				pmax	pmax				
	comp=Z,3.0nm,0.8s								
YKA	**Yellowknife Ar**	**73.08**	**26**	P		**P**	**19 21 57.6**	**+0.3**	
	comp=Z,2.5nm,0.7s,baz=304,slow=5.9,SNR=15								
YKA				pP		**pP**	**19 22 36.9**	**+0.3**	
	comp=Z,0.8nm,0.7s,baz=305,slow=6.4,SNR=2.4								
HFS	**Hagfors**	**75.15**	**332**	P		**P**	**19 22 08.6**	**-0.7**	
	comp=Z,2.2nm,0.4s,baz=76,slow=6.3,SNR=25								
NC405	**NORSAR Array S**	**75.31**	**334**	*e*P		**P**	**19 22 09.4**	**-0.8**	
BRTR	**Keskin Array B**	**75.39**	**308**	P		**P**	**19 22 11.9**	**+0.7**	
	comp=Z,1.4nm,0.7s,baz=103,slow=5.3,SNR=8.7								
NB2	**NORSAR Subarra**	**75.54**	**334**	P		**P**	**19 22 10.7**	**-0.9**	
	comp=Z,1.8nm,0.5s,baz=47,slow=5.6								
NOA	**NORSAR Array B**	**75.54**	**334**	P		**P**	**19 22 10.9**	**-0.6**	
	comp=Z,2.3nm,0.5s,baz=49,slow=5.5,SNR=16								
BR231	**Keskin MP Arra**	**75.91**	**308**	*e*P		**P**	**19 22 12.6**	**-1.5**	
SUMG	**Summit**	**76.04**	**357**	*e*P		**P**	**19 22 15.0**	**+0.4**	
SUMG				pmax	pmax				
	comp=Z,13nm,0.8s								
SUMG	**Summit**	**76.04**	**357**	*e*P		**P**	**19 22 15.0**	**+0.4**	
	comp=Z,13nm,0.8s								
BUR08	**Bucovina Ar. S**	**76.69**	**318**	*e*P		**P**	**19 22 18.9**	**+0.4**	
NEW	**Newport**	**80.40**	**39**	P		**P**	**19 22 39.3**	**+0.7**	
	comp=Z,4.5nm,0.6s,baz=257,slow=3.8,SNR=5.1								
CLL	**Collm**	**81.00**	**326**	*e*P		**P**	**19 22 41.4**	**-0.3**	
CLL				pmax	pmax				
	comp=Z,40nm,1.2s								
CLL	**Collm**	**81.00**	**326**	*e*P		**P**	**19 22 41.4**	**-0.3**	
	comp=Z,40nm,1.2s								
GERES	**GERESS Array B**	**82.23**	**323**	P		**P**	**19 22 48.3**	**0.0**	
	comp=Z,0.4nm,0.6s,baz=54,slow=5.1,SNR=4.9								
GEA0	**GERESS Array S**	**82.23**	**323**	*e*P		**P**	**19 22 46.0**	**-2.4**	
IDI	**Anoyia**	**83.63**	**308**	P		**P**	**19 22 55.1**	**-0.7**	
	comp=Z,3.5nm,0.9s,baz=11,slow=7.0,SNR=4.2								
WAKR	**Walker**	**84.85**	**48**	*e*P		**P**	**19 23 02.7**	**+0.7**	
	comp=Z,7.7nm,0.6s								
EKA	**Eskdalemuir Ar**	**84.92**	**335**	P		**P**	**19 23 01.1**	**-0.6**	
	comp=Z,1.1nm,0.4s,baz=47,slow=4.4,SNR=9.8								
PDAR	**Pinedale Array**	**87.99**	**40**	P		**P**	**19 23 17.6**	**+0.4**	
	comp=Z,1.4nm,0.6s,baz=337,slow=0.6,SNR=3.9								
ULM	**Lac du Bonnet**	**88.99**	**28**	P		**P**	**19 23 21.2**	**-0.3**	
	comp=Z,4.5nm,0.5s,baz=316,slow=5.9,SNR=4.8								
PV10	**Paradox Valley**	**91.24**	**43**	*e*P		**P**	**19 23 34.5**	**+1.9**	
PV05	**Paradox Valley**	**91.41**	**43**	*e*P		**P**	**19 23 34.6**	**+1.3**	
TXAR	**Lajitas Array**	**100.71**	**46**	P		**Pdif**	**19 24 16.1**	**+0.6**	
	comp=Z,0.6nm,0.8s,baz=286,slow=3.0,SNR=5.0								
BOSA	**Boshof**	**116.30**	**251**	PKP		**PKPdf**	**19 29 09.1**	**-0.7**	
	comp=Z,6.5nm,0.9s,baz=136,slow=3.6,SNR=5.7								

*IDC **07** 19:17:57.2±2.8,4°.09N×125°.82E,h0km,mb3.7/5, mb1 4.0/5,mb1mx3.6/62,mbtmp3.8/5,Error ellipse: s-maj=104.9km s-min=24.4km az=53.0*
*ISCJB **07** 19:18:04.4±0.7,4°.29N±0°.05×125°.7E±0°.1,h100km, mb3.5/5,Error ellipse: s-maj=16.4km s-min=6.3km az=167.6*

ISC 07 19:18:05.9±0.9,**4°.36N**±0°.07×**125°.9E**±0°.1,**h100**km,**n9, σ2s23/12,mb3.5/5,1C,Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**2.71**	**353**	Sn		**Sn**	**19 19 22.5**	**+2.5**
	baz=246,slow=20,SNR=2.1							
BUKP	**Musuan**	**3.59**	**347**	*e*P		**Pn**	**19 18 56.8**	**-2.9**
BUKP				*e*S		**Sn**	**19 19 40.8**	**-0.5**
BIPH	**Bislig**	**3.82**	**7**	*i*P		**Pn**	**19 18 59.9**	**-2.9**
BIPH				*i* S		**Sn**	**19 19 49.1**	**+2.4**
IPIL	**Ipil**	**4.75**	**316**	*e*P		**Pn**	**19 19 13.9**	**-1.4**
IPIL				*e*S		**Sn**	**19 20 07.8**	**-1.4**
FITZ	**Fitzroy Crossi**	**22.32**	**181**	P		**P**	**19 22 54.4**	**-1.1**
	1.6nm,0.6s,baz=353,slow=8.1,SNR=2.7							
WRA	**Warramunga Arr**	**25.54**	**161**	P		**P**	**19 23 26.0**	**+0.5**
	0.9nm,0.7s,baz=338,slow=11,SNR=6.6							
ASAR	**Alice Springs**	**28.93**	**165**	P		**P**	**19 23 55.8**	**-0.1**
	0.4nm,0.5s,baz=344,slow=7.0,SNR=3.8							
CMAR	**Chiang Mai Arr**	**29.84**	**300**	P		**P**	**19 24 07.2**	**+3.2**
	1.5nm,1.0s,baz=116,slow=6.1,SNR=3.6							
STKA	**Stephens Creek**	**39.01**	**159**	P		**P**	**19 25 22.9**	**+0.1**
	1.7nm,0.7s,baz=330,slow=8.1,SNR=3.3							

*ISCJB **07** 19:18:16.9±0.4,24°.18N±0°.01×121°.83E±0°.02,h2km±3km, Error ellipse: s-maj=3.0km s-min=2.0km az=42.5*
*TAP **07** 19:18:17.6,24°.22N×121°.76E,h15km,ML3.6,B*
*JMA **07** 19:18:17.1,24°.17N×121°.71E,h18km±1km,M2.9*

ISC 07 19:18:17.6±0.9,**24°.19N**±0°.02×**121°.78E**±0°.02,**h13**km±7km, **n70,σ0s73/112,12C-3D,Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.12**	**343**	*e*P		**Pb**	**19 18 21.6**	**-0.3**
	baz=356							
EHP				*e*S		**Sb**	**19 18 24.1**	**-0.5**
	baz=356							
TWD	**Chiawan**	**0.20**	**236**	*i*P		**Pg**	**19 18 22.3**	**+0.2**
	baz=233							
TWD				*i* S		**Sb**	**19 18 25.8**	**-1.1**
	baz=233							
ENA	**Nanau**	**0.24**	**351**	*i*P		**Pg**	**19 18 22.6**	**-0.1**
	baz=357							
ENA				S		**Sg**	**19 18 26.0**	**-0.1**
	baz=357							
HWA	**Hwalien**	**0.27**	**217**	*e*P		**Pb**	**19 18 24.2**	**-0.1**
	baz=219							
ESF	**Shoufeng Towns**	**0.41**	**218**	*e*P		**Pb**	**19 18 26.0**	**-0.7**
	baz=221							
TWC	**Suao**	**0.42**	**9**	*i* P		**Pg**	**19 18 25.9**	**0.0**
	baz=9.0							
TWC				*i* S		**Sg**	**19 18 31.8**	**+0.2**
	baz=9.0							
NNS	**Nan Shan**	**0.45**	**304**	*i*P		**Pg**	**19 18 26.3**	**-0.2**
	baz=303							
NNS				*i* S		**Sg**	**19 18 32.1**	**-0.4**
	baz=303							
WHF	**Hehuan Shan**	**0.47**	**264**	*i*P		**Pg**	**19 18 27.1**	**0.0**
	baz=262							
WHF				S		**Sg**	**19 18 33.3**	**-0.1**
	baz=262							
ENTT	**Nioudou**	**0.49**	**336**	*i*P		**Pg**	**19 18 27.2**	**0.0**
	baz=337							
ENTT				*i* S		**Sg**	**19 18 33.6**	**-0.1**
	baz=337							
ESL	**Shilin**	**0.49**	**220**	*i*P		**Pg**	**19 18 27.4**	**+0.1**
	baz=223							
ESL				*e*S		**Sb**	**19 18 34.9**	**-0.4**
	baz=223							
TWE	**Neicheng**	**0.54**	**349**	*i*P		**Pg**	**19 18 28.0**	**-0.2**
	baz=350							
TWE				S		**Sg**	**19 18 34.8**	**-0.5**
	baz=350							
TWT	**Tachien**	**0.56**	**276**	*i*P		**Pb**	**19 18 28.9**	**-0.4**
	baz=275							
TWT				*i* S		**Sb**	**19 18 36.2**	**-1.0**
	baz=275							
ILA	**Ilan**	**0.57**	**357**	*e*P		**Pb**	**19 18 29.2**	**-0.3**
	baz=351							
NSK	**Sanguang**	**0.62**	**321**	*i*P		**Pg**	**19 18 29.3**	**-0.3**
	baz=321							
NSK				*i* S		**Sg**	**19 18 37.1**	**-0.7**
	baz=321							
EGS		**0.66**	**12**	*i* P		**Pb**	**19 18 30.9**	**-0.1**
	baz=18							
EGS				S		**Sb**	**19 18 40.1**	**-0.1**
	baz=18							
EHY	**Hungye**	**0.80**	**212**	*e*P		**Pg**	**19 18 32.7**	**-0.4**
	baz=222							
EHY				*e*S		**Sn**	**19 18 45.4**	**-1.1**
	baz=222							
TWA	**Mucha**	**0.80**	**347**	*e*P		**Pb**	**19 18 33.3**	**-0.2**
	baz=347							
TWA				*e*S		**Sb**	**19 18 44.7**	**+0.5**
	baz=347							
NSTT	**Nanjuang**	**0.83**	**302**	*i*P		**Pb**	**19 18 33.9**	**-0.1**
	baz=301							
NSTT				S		**Sg**	**19 18 43.8**	**-0.9**
	baz=301							
SMLT	**Sun Moon Lake**	**0.86**	**249**	*i* P		**Pb**	**19 18 34.3**	**-0.2**
	baz=241							
SMLT				S		**Sb**	**19 18 45.8**	**-0.2**
	baz=241							
NWF	**Wu-fen Shan**	**0.87**	**0**	P		**Pb**	**19 18 34.9**	**+0.1**
	baz=352							
NWF				*e*S		**Sg**	**19 18 45.9**	**-0.2**
	baz=352							
TAP1	**Taipei**	**0.87**	**345**	P		**Pg**	**19 18 34.8**	**+0.3**
	baz=335							
TAP	**Taipei**	**0.88**	**344**	*e*P		**Pn**	**19 18 34.9**	**-0.8**
	baz=335							
TYC	**Yuchr**	**0.89**	**251**	*i* P		**Pb**	**19 18 34.5**	**-0.4**
	baz=244							
TYC				S		**Sb**	**19 18 46.6**	**-0.1**
	baz=244							
TWQ1	**Liyutan**	**0.93**	**280**	*e*P		**Pn**	**19 18 36.2**	**-0.2**
	baz=279							
NCU	**National Centr**	**0.94**	**325**	*e*P		**Pn**	**19 18 36.3**	**-0.3**
	baz=325							
NCU				*e*S		**Sn**	**19 18 50.1**	**+0.2**
	baz=325							
TWF1	**Yuli**	**0.95**	**208**	*e*P		**Pb**	**19 18 34.3**	**-1.6**
	baz=220							
HSN	**Hsinchu**	**0.96**	**310**	*e*P		**Pb**	**19 18 35.3**	**-0.8**
	baz=304							
HSN				*e*S		**Sn**	**19 18 50.6**	**+0.4**
	baz=304							
NSY	**Sanyi**	**0.96**	**284**	*e*P		**Pn**	**19 18 37.4**	**+0.6**
	baz=283							
NSY				*e*S		**Sn**	**19 18 51.7**	**+1.4**
	baz=283							
TWS1	**Kuangyinshan**	**0.96**	**340**	P		**Pn**	**19 18 36.5**	**-0.3**
	baz=346							
TWS1				S		**Sn**	**19 18 50.4**	**0.0**
	baz=346							
TCU	**Taichung**	**1.01**	**268**	*e*P		**Pn**	**19 18 38.4**	**+0.9**
	baz=267							
TCU				S		**Sn**	**19 18 52.5**	**+0.9**
	baz=267							
YUS	**Yu-Shan**	**1.03**	**227**	*i*P		**Pb**	**19 18 37.2**	**-0.4**
	baz=227							
WNT	**Mingjian**	**1.05**	**253**	P		**Pn**	**19 18 38.6**	**+0.6**
	baz=249							
WNT				*e*S		**Sn**	**19 18 53.4**	**+0.8**
	baz=249							
TWY	**Chenhua**	**1.09**	**351**	*e*P		**Pg**	**19 18 38.7**	**+0.1**
	baz=336							
JYNG	**Yonagunijimaku**	**1.09**	**76**	P		**Pb**	**19 18 38.3**	**-0.1**
ALS	**Alishan**	**1.12**	**233**	*i*P		**Pn**	**19 18 38.9**	**-0.4**
	baz=220							
ALS				*e*S		**Sn**	**19 18 54.4**	**-0.4**
	baz=220							
CHKT	**Chengkung**	**1.15**	**199**	*e*P		**Pn**	**19 18 37.9**	**-1.6**
	baz=187							
YOJ	**Yonaguni jima**	**1.15**	**76**	P		**Pn**	**19 18 39.3**	**-0.2**
YOJ				*e*S		**Sg**	**19 18 55.5**	**+0.6**
YOJ	**Yonaguni jima**	**1.15**	**76**	*i* P		**Pn**	**19 18 39.2**	**-0.2**
	baz=64							
YOJ				*e*S		**Sg**	**19 18 56.0**	**+1.1**
	baz=64							
CHN5	**Tsauling**	**1.17**	**240**	P		**Pg**	**19 18 40.2**	**0.0**
	baz=241							
CHN5				S		**Sn**	**19 18 58.0**	**+2.3**
	baz=241							
ELDTW	**Lidau**	**1.22**	**215**	*e*P		**Pn**	**19 18 39.4**	**-1.1**
	baz=202							
WGK	**Gukeng**	**1.22**	**246**	P		**Pg**	**19 18 41.3**	**+0.1**
	baz=247							
WGK				*e*S		**Sg**	**19 18 58.5**	**+1.4**
	baz=247							
CHN2	**Minshiung**	**1.36**	**241**	*e*P		**Pg**	**19 18 43.6**	**-0.2**
	baz=228							
CHN4	**Tsaushan**	**1.37**	**233**	*i*P		**Pg**	**19 18 43.7**	**-0.3**
	baz=234							
CHN4				*e*S		**Sg**	**19 19 04.4**	**+2.5**
	baz=234							
STYT	**Tauyuan**	**1.39**	**223**	*i*P		**Pb**	**19 18 42.8**	**-0.6**
	baz=223							
STYT				*e*S		**Sg**	**19 19 02.5**	**+0.1**
	baz=223							
WTCT	**Ta-ch'eng**	**1.41**	**257**	*e*P		**Pn**	**19 18 41.5**	**-1.5**
	baz=257							
CHY	**Chiayi**	**1.42**	**241**	*e*P		**Pb**	**19 18 43.8**	**-0.2**
	baz=243							
CHY				*e*S		**Sg**	**19 19 03.5**	**+0.1**
	baz=243							
WTP	**Ta-pu**	**1.43**	**229**	*i*P		**Pb**	**19 18 44.2**	**+0.1**
	baz=230							
WTP				*e*S		**Sg**	**19 19 05.2**	**+1.7**
	baz=230							
PCYT	**Pengchaiyu**	**1.46**	**10**	*e*P		**Pb**	**19 18 43.9**	**-0.7**
	baz=7.0							
TWK	**Hsinying**	**1.50**	**232**	*e*P		**Pb**	**19 18 45.6**	**+0.2**
	baz=233							
TWG	**Pinlang**	**1.51**	**206**	*e*P		**Pn**	**19 18 44.2**	**-0.2**
	baz=191							
CHN1	**Nanshi**	**1.52**	**229**	*e*P		**Pb**	**19 18 46.0**	**+0.2**
	baz=231							
CHN1				*e*S		**Sg**	**19 19 07.8**	**+1.1**
	baz=231							
WSF	**Szhu**	**1.53**	**249**	*e*P		**Pb**	**19 18 45.2**	**-0.6**
	baz=261							
WSF				*e*S		**Sg**	**19 19 06.9**	**0.0**
	baz=261							
SGST	**Jiashian**	**1.56**	**225**	*e*P		**Pb**	**19 18 46.2**	**-0.1**
	baz=226							
SGST				*e*S		**Sg**	**19 19 08.2**	**+0.4**
	baz=226							
CHN8	**Yiju**	**1.67**	**240**	*e*P		**Pn**	**19 18 46.9**	**+0.3**
	baz=226							
CHN8				*e*S		**Sg**	**19 19 11.4**	**+0.2**
	baz=226							
CHN3	**Shinhua**	**1.71**	**230**	*e*P		**Pg**	**19 18 50.8**	**+0.4**
	baz=231							
ECL	**Taimali**	**1.76**	**206**	*e*P		**Pn**	**19 18 47.4**	**-0.4**
	baz=194							
IRIF	**Iriomote-Funau**	**1.79**	**85**	P		**Pn**	**19 18 47.9**	**-0.2**
IRIF				*e*S		**Sb**	**19 19 12.1**	**-0.4**
SSD	**Sandimen**	**1.79**	**216**	*e*P		**Pb**	**19 18 49.7**	**-0.5**
	baz=201							
TWM1	**Shoushan**	**1.85**	**223**	*e*P		**Pb**	**19 18 50.9**	**-0.4**
	baz=223							
HATJ	**Hateruma jima**	**1.85**	**94**	P		**Pn**	**19 18 49.0**	**-0.1**
EAST	**Anshuo**	**2.00**	**206**	*e*P		**Pn**	**19 18 51.4**	**+0.3**
	baz=195							
JKRS	**Kuro-shima**	**2.04**	**88**	P		**Pn**	**19 18 52.0**	**+0.4**
JKRS				S		**Sn**	**19 19 18.0**	**+1.1**
SCZT	**Fangliau**	**2.10**	**211**	*e*P		**Pb**	**19 18 54.3**	**-1.3**
	baz=196							
PNG	**Penghu**	**2.13**	**253**	*e*P		**Pn**	**19 18 53.2**	**+0.3**
	baz=255							
WDGT	**Dungji**	**2.15**	**245**	*e*P		**Pb**	**19 18 55.9**	**-0.6**
	baz=247							
JIJ	**Ishigaki jima**	**2.16**	**85**	P		**Pn**	**19 18 53.2**	**-0.2**
JIJ				*e*S		**Sn**	**19 19 19.9**	**-0.1**
JISG	**Ishigakijimahi**	**2.34**	**80**	P		**Pn**	**19 18 55.5**	**-0.3**
JISG				S		**Sn**	**19 19 24.5**	**+0.1**
TWK1	**Hengchun**	**2.41**	**202**	*e*P		**Pn**	**19 18 57.9**	**+1.1**
	baz=193							
TWK1				*e*S		**Sb**	**19 19 28.9**	**-1.7**
	baz=193							
JTJ	**Tarama**	**2.70**	**80**	P		**Pn**	**19 19 02.1**	**+1.4**
KNM	**Kinmen**	**3.06**	**275**	*e*P		**Pn**	**19 19 07.5**	**+1.8**
	baz=274							

*PDG **07** 19:21:44.1±0.8,42°.01N×7°.55E,h3km±1km,ML4.5/10, Error ellipse: s-maj=1.1km s-min=1.2km az=0.0*
*LDG **07** 19:21:46.8±0.1,41°.95N×7°.70E,h11km,Md5.0/3,Ml5.3/43, ms4.2/5,Error ellipse: s-maj=3.8km s-min=2.5km az=13.0*
*NEIC **07** 19:21:46.8,41°.95N×7°.70E,h11km,mb5.3/215, ML5.3(LDG),After LDG.*
NEIC Felt [III] at Ajaccio, Calvi, Cannes, Cargese and Toulon; [II] at Antibes, Draguignan, La Valette-du-Var, Marseille, Mougins and Nice, France. Felt in southeastern France and in much of Corsica. Felt [II] at Rome, Italy. Also felt in Liguria and northern Sardinia.
*IDC **07** 19:21:46.3±0.4,42°.00N×7°.64E,h0km,mb4.9/39, mb1 5.0/49,mb1mx4.9/63,mbtmp4.9/49,ML5.1/6,MS4.2/30, Ms1 4.2/30,ms1mx4.1/53,Error ellipse: s-maj=10.2km s-min=8.5km az=147.0*
*BJI **07** 19:21:46.7,42°.40N×7°.63E,h9km,mb5.3/62,mB5.2/39, Ms4.9/38,Ms7 4.7/26*
*ISCJB **07** 19:21:46.5±0.1,42°.11N±0°.01×7°.69E±0°.01,h10km, mb5.2/297,MS4.5/115,Error ellipse: s-maj=1.6km s-min=1.1km az=178.3*
*GEN **07** 19:21:47.7,42°.07N×7°.66E,h3km,ML5.1*
*CRAAG **07** 19:21:48.0,42°.06N×7°.60E,Mw5.3*
*GCMT **07** 19:21:48.3±0.2,41°.94N×7°.63E,h13km,MW5.1/113, Moment Tensor Solution. s61,c81; s113,c187; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr5.74±.20; Mθθ-2.72±.13; Mφφ-3.02±.14; Mrθ-0.28±.31; Mrφ-2.92±.09; Mθφ1.26±.31; Best double couple: Mo5.90800×10^16 NP1:φs33.00000°,δ49.00000°,λ77.00000°. NP2: φs234.00000°,δ42.00000°,λ105.00000°. Principal axes: T 5.9770, Plg79.0000°, Azm242.0000°; N -0.1370, Plg10.0000°, Azm42.0000°; P -5.8400, Plg4.0000°, Azm133.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **07** 19:21:48.9±1.1,42°.25N×7°.64E,h20km,mb5.4/96, MS4.4/51 Error ellipse: s-maj=3.8km s-min=2.5km az=76.1*
*ROM **07** 19:21:48.5±0.1,42°.03N×7°.63E,h46km±1km,Ml4.7/63, Error ellipse: s-maj=2.2km s-min=1.6km az=43.0*
*CSEM **07** 19:21:48.1±0.1,42°.07N×7°.67E,h10km,mb5.4/99, ML5.2/20,Mw5.3,Error ellipse: s-maj=2.3km s-min=1.5km az=11.0*
*STR **07** 19:21:53.5±0.1,42°.37N×7°.20E,h10km,Ml5.5,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*PRU **07** 19:21:53.1,42°.26N×7°.66E,h29km,MS.3*

ISC 07 19:21:47.8±0.6,**42°.09N**±0°.03×**7°.59E**±0°.02,**h9**km±3km, **n2119,σ1s98/2391,mb5.3/297,MS4.5/116,104C-80D, Western Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PGF	**Pioggiola**	**1.14**	**66**	*e*Pn		**Pg**	**19 22 08.4**	**-1.3**
	SNR=1.0							
PGF				*e*Sn		**Sg**	**19 22 22.5**	**-2.0**
	19μm,0.2s							
PGF	**Pioggiola**	**1.14**	**66**	*e*P		**Pg**	**19 22 08.4**	**-1.3**
PGF				*e*			19 22 22.5	
PGF	**Pioggiola**	**1.14**	**66**	*e*Pn		**Pg**	**19 22 08.4**	**-1.3**
	SNR=1.0							
PGF				*e*Sn		**Sg**	**19 22 22.5**	**-2.0**
	10μm,0.2s							
PGF	**Pioggiola**	**1.14**	**66**	*e*Pn		**Pg**	**19 22 08.4**	**-1.3**
PGF				*e*Sn		**Sg**	**19 22 22.5**	**-2.0**
LMR	**La Mourre**	**1.48**	**328**	*e*Pn		**Pn**	**19 22 13.8**	**-0.8**
	SNR=1.0							
LMR				*e*Sn		**Sn**	**19 22 31.2**	**-2.9**
	57μm,0.4s							
LMR	**La Mourre**	**1.48**	**328**	*e*P		**Pn**	**19 22 13.8**	**-0.8**
LMR				*e*			19 22 31.2	
LMR	**La Mourre**	**1.48**	**328**	*e*Pn		**Pn**	**19 22 13.8**	**-0.8**
	SNR=1.0							
LMR				*e*S		**Sn**	**19 22 31.2**	**-2.9**
LMR	**La Mourre**	**1.48**	**328**	*e*Pn		**Pn**	**19 22 13.8**	**-0.8**
LMR				*e*Sn		**Sn**	**19 22 31.2**	**-2.9**
FRF	**La Foret Royal**	**1.63**	**335**	*e*Pn		**Pn**	**19 22 16.0**	**-0.6**
	SNR=1.0							
FRF				*e*Sn		**Sn**	**19 22 34.7**	**-3.0**
	20μm,0.4s							
FRF	**La Foret Royal**	**1.63**	**335**	*e*P		**Pn**	**19 22 16.0**	**-0.6**
FRF				*e*			19 22 34.7	
FRF	**La Foret Royal**	**1.63**	**335**	*e*Pn		**Pn**	**19 22 16.0**	**-0.6**
	SNR=1.0							
FRF				*e*S		**Sn**	**19 22 34.7**	**-3.0**
FRF	**La Foret Royal**	**1.63**	**335**	*e*Pn		**Pn**	**19 22 16.0**	**-0.6**
FRF				*e*Sn		**Sn**	**19 22 34.7**	**-3.0**
REVF	**Revere**	**1.66**	**354**	Pn		**Pn**	**19 22 17.0**	**-0.1**
REVF				Sg		**Sn**	**19 22 38.1**	**-0.5**
REVF	**Revere**	**1.66**	**354**	Pn		**Pn**	**19 22 17.0**	**-0.1**
REVF				Sg		**Sn**	**19 22 38.1**	**-0.5**
NEGI	**Seborga**	**1.76**	**3**	*i*P		**Pn**	**19 22 17.2**	**-1.3**
NEGI				Sn		**Sn**	**19 22 37.6**	**-3.5**
	12μm,0.4s							
NEGI	**Seborga**	**1.76**	**3**	P		**Pn**	**19 22 17.3**	**-1.3**
NEGI				Sn		**Sn**	**19 22 37.6**	**-3.5**
	12μm,0.4s							
SBF	**Sospel**	**1.78**	**356**	*e*Pn		**Pn**	**19 22 17.5**	**-1.3**
	SNR=1.0							
SBF	**Sospel**	**1.78**	**356**	*e*Pg		**Pb**	**19 22 21.3**	**+0.7**
SBF				*e*Sn		**Sn**	**19 22 38.3**	**-3.2**
	29μm,0.4s							
SBF	**Sospel**	**1.78**	**356**	*e*P		**Pn**	**19 22 17.5**	**-1.3**
SBF				*e*			19 22 38.3	
SBF	**Sospel**	**1.78**	**356**	*e*Pn		**Pn**	**19 22 17.5**	**-1.3**
	SNR=1.0							
SBF	**Sospel**	**1.78**	**356**	*e*Pg		**Pb**	**19 22 21.3**	**+0.7**
SBF				*e*Sn		**Sn**	**19 22 38.3**	**-3.2**
SBF	**Sospel**	**1.78**	**356**	*e*Pn		**Pn**	**19 22 17.5**	**-1.3**
SBF				*e*Pg		**Pb**	**19 22 21.3**	**+0.7**
SBF				*e*Sn		**Sn**	**19 22 38.3**	**-3.2**
LUCF	**Luceram**	**1.81**	**354**	Pn		**Pn**	**19 22 19.4**	**+0.1**
LUCF	**Luceram**	**1.81**	**354**	Pg		**Pb**	**19 22 22.1**	**+0.9**
LUCF				Sg		**Sn**	**19 22 42.7**	**+0.3**
LUCF	**Luceram**	**1.81**	**354**	Pn		**Pn**	**19 22 19.4**	**+0.1**
LUCF	**Luceram**	**1.81**	**354**	Pg		**Pb**	**19 22 22.1**	**+0.9**
LUCF				Sg		**Sn**	**19 22 42.7**	**+0.3**
IMI	**Imperia**	**1.83**	**7**	*i*Pn		**Pn**	**19 22 18.2**	**-1.3**
IMI				Sn		**Sn**	**19 22 39.6**	**-3.3**
IMI	**Imperia**	**1.83**	**7**	P		**Pn**	**19 22 18.3**	**-1.3**
IMI				S		**Sn**	**19 22 39.1**	**-3.8**
MVIF	**Mont Vial**	**1.84**	**350**	Pn		**Pn**	**19 22 19.1**	**-0.5**
MVIF	**Mont Vial**	**1.84**	**350**	Pg		**Pb**	**19 22 21.8**	**+0.2**
MVIF				Sg		**Sn**	**19 22 43.1**	**0.0**
MVIF	**Mont Vial**	**1.84**	**350**	Pn		**Pn**	**19 22 19.1**	**-0.5**
MVIF	**Mont Vial**	**1.84**	**350**

SMRF eSn Sn 19 22 57.6 +0.8
6µm,0.5s,SNR=1.0
SMRF Simiane la Rot 2.40 323 ePn Pn 19 22 27.8 +0.5
SMRF eSn Sn 19 22 57.6 +0.8
DOI San Damiano 2.43 354⇓ePn Pn 19 22 28.1 +0.4
DOI Sn Sn 19 22 56.3 -1.3
22µm,0.4s
DOI San Damiano 2.43 354⇓ePn Pn 19 22 28.1 +0.4
DOI Sn Sn 19 22 56.3 -1.3
22µm,0.4s
PZZ Stroppo 2.44 352⇓ePn Pn 19 22 28.6 +0.6
PZZ Sn Sn 19 22 57.5 -0.5
26µm,0.4s
PZZ Stroppo 2.44 352 P Pn 19 22 27.7 -0.3
PZZ Stroppo 2.44 352⇓ePn Pn 19 22 28.6 +0.6
PZZ S Sn 19 22 55.0 -3.0
PZZ Sn Sn 19 22 57.5 -0.5
26µm,0.4s
CASP Castiglione de 2.52 73⇓ePn Pn 19 22 27.6 -1.3
CASP Sn Sn 19 22 56.0 -3.8
6µm,0.7s
CASP Castiglione de 2.52 73⇓ePn Pn 19 22 27.6 -1.3
CASP Sn Sn 19 22 56.0 -3.8
6µm,0.7s
PCP Piancastagn 2.55 15⇓ePn Pn 19 22 28.2 -1.2
PCP Sn Sn 19 22 57.0 -3.5
4µm,0.3s
PCP Piancastagn 2.55 15⇓ePn Pn 19 22 28.2 -1.2
PCP Piancastagn 2.55 15 P Pn 19 22 28.5 -0.9
PCP Sn Sn 19 22 57.0 -3.5
4µm,0.3s
MSSA Maissana 2.63 32⇑ePn Pn 19 22 30.0 -0.5
4µm,1.0s
MSSA Maissana 2.63 32⇑ePn Pn 19 22 30.0 -0.5
4µm,1.0s
MAON Monte Argentar 2.65 81⇓iPn Pn 19 22 28.7 -1.9
10µm,2.0s
MAON Monte Argentar 2.65 81⇓iPn Pn 19 22 28.7 -1.9
10µm,2.0s
MBDF Montbardon 2.71 347 ePn Pn 19 22 32.8 +1.2
SNR=1.0
MBDF eSn Sn 19 23 02.8 -1.7
6µm,0.4s,SNR=1.0
MBDF Montbardon 2.71 347 eP Pn 19 22 32.8 +1.2
MBDF e 19 23 02.8
MBDF Montbardon 2.71 347 ePn Pn 19 22 32.8 +1.2
SNR=1.0
MBDF eSn Sn 19 23 02.8 -1.7
3µm,0.4s,SNR=1.0
MBDF Montbardon 2.71 347 ePn Pn 19 22 32.8 +1.2
MBDF eSn Sn 19 23 02.8 -1.7
BHB Bricherasio 2.76 355⇓ePn Pn 19 22 31.9 -0.4
BHB Sn Sn 19 23 03.3 -2.5
3µm,0.3s
BHB Bricherasio 2.76 355⇓ePn Pn 19 22 31.9 -0.4
BHB Sn Sn 19 23 03.3 -2.5
3µm,0.3s
OG22 Abries 2.77 350 Pn Pn 19 22 32.7 +0.1
OG22 Abries 2.77 350 Pn Pn 19 22 32.7 +0.1
MAIM Mastiano 2.80 48⇓ePn Pn 19 22 32.0 -0.8
MAIM Sn Sn 19 23 02.4 -4.3
1µm,0.7s
MAIM Mastiano 2.80 48 P Pn 19 22 32.0 -0.8
MAIM Sn Sn 19 23 02.4 -4.3
1µm,0.7s
ROTM Rocchetta Tana 2.82 11 Pn Pn 19 22 33.6 +0.7
35µm,0.8s
ROTM Rocchetta Tana 2.82 11 Pn Pn 19 22 33.6 +0.7
35µm,0.8s
CODM Codolo 2.83 35 P Pn 19 22 32.4 -0.8
RRL Rocca Remolon 2.89 349⇓iPn Pn 19 22 36.1 +1.8
6µm,0.6s
RRL Rocca Remolon 2.89 349 P Pn 19 22 36.0 +1.8
VLC Villacollemand 2.91 44 Pn Pn 19 22 33.7 -0.6
1µm,0.8s
VLC Villacollemand 2.91 44 Pn Pn 19 22 33.7 -0.6
1µm,0.8s
VLC Villacollemand 2.91 44 ePn Pn 19 22 34.0 -0.3
VLC eSn Sn 19 23 02.8 -6.6
VSL Villasalto 2.92 152⇓ePn Pn 19 22 32.0 -2.4
VSL Sn Sn 19 23 02.9 -6.8
2µm,0.3s
VSL Villasalto 2.92 152⇓ePn Pn 19 22 32.0 -2.4
VSL Villasalto 2.92 152 ePn Pn 19 22 31.9 -2.4
VSL eSn Sn 19 23 01.8 -7.8
SARO Sassorosso 2.94 43 P Pn 19 22 34.0 -0.7
BDI Bagni Di Lucca 2.96 47⇑ePn Pn 19 22 34.2 -0.8
1µm,0.6s
BDI Bagni Di Lucca 2.96 47⇑ePn Pn 19 22 34.2 -0.8
1µm,0.6s
ARCI Arcidosso 2.97 74 Pn Pn 19 22 33.7 -1.5
4µm,1.3s
ARCI Arcidosso 2.97 74 Pn Pn 19 22 33.7 -1.5
4µm,1.3s
BOB Bobbio (Coli) 3.00 26 Pn Pn 19 22 35.9 +0.3
4µm,0.7s
BOB Bobbio (Coli) 3.00 26 Pn Pn 19 22 35.9 +0.3
4µm,0.7s
GRAM Graiana 3.00 36 P Pn 19 22 35.4 -0.2
CRMI Carmignano 3.01 54 Pn Pn 19 22 34.9 -0.7
6µm,2.4s
CRMI Carmignano 3.01 54 Pn Pn 19 22 34.9 -0.7
6µm,2.4s
CGL Cagliari Serpe 3.02 154⇓ePn Pn 19 22 33.2 -2.6
17µm,2.4s
CGL Cagliari Serpe 3.02 154⇓ePn Pn 19 22 33.2 -2.6
17µm,2.4s
POPM Popiglio 3.03 49 P Pn 19 22 35.3 -0.7
CSNT Castellina Chi 3.05 62⇑iPn Pn 19 22 35.2 -1.1
2µm,1.4s
CSNT Castellina Chi 3.05 62⇑iPn Pn 19 22 35.2 -1.1
2µm,1.4s
RSP Reno Superiore 3.07 356⇓iPn Pn 19 22 36.4 -0.2
3µm,0.4s
RSP Reno Superiore 3.07 356 P Pn 19 22 36.4 -0.2
ORIF Oris-en-Rattie 3.09 337 ePn Pn 19 22 37.3 +0.5
SNR=1.0
ORIF eSn Sn 19 23 12.4 -1.6
6µm,0.6s,SNR=1.0
ORIF Oris-en-Rattie 3.09 337 eP Pn 19 22 37.3 +0.5
ORIF e 19 23 12.4
ORIF Oris-en-Rattie 3.09 337 ePn Pn 19 22 37.3 +0.5
SNR=1.0
ORIF eSn Sn 19 23 12.4 -1.6
3µm,0.6s,SNR=1.0
ORIF Oris-en-Rattie 3.09 337 ePn Pn 19 22 37.3 +0.5
ORIF eSn Sn 19 23 12.4 -1.6
ERBM Eremo 3.11 41 Pn Pn 19 22 37.3 +0.2
5µm,1.4s
ERBM Eremo 3.11 41 Pn Pn 19 22 37.3 +0.2
5µm,1.4s
PTF Prato 3.16 53⇑ePn Pn 19 22 37.2 -0.5
PTF Sn Sn 19 23 12.4 -3.2
PTF Prato 3.16 53⇑ePn Pn 19 22 37.2 -0.5
PTF Sn Sn 19 23 12.4 -3.2
LATE Laterza 3.17 79 Pn Pn 19 22 36.2 -1.6
6µm,1.1s
LATE Laterza 3.17 79 Pn Pn 19 22 36.2 -1.6
6µm,1.1s
FIR Firenze 3.17 57 Pn Pn 19 22 37.4 -0.4
1µm,1.2s
FIR Firenze 3.17 57 Pn Pn 19 22 37.4 -0.4
1µm,1.2s
TOLF Tolfa 3.28 89 Pn Pn 19 22 36.6 -2.8
2µm,1.1s
TOLF Tolfa 3.28 89 Pn Pn 19 22 36.6 -2.8
2µm,1.1s
SACS San Casciano d 3.28 75 Pn Pn 19 22 38.2 -1.2
4µm,2.0s
FNVD Fontana Vidola 3.32 50⇑iPn Pn 19 22 39.6 -0.3
4µm,1.5s
FNVD Fontana Vidola 3.32 50⇑iPn Pn 19 22 39.6 -0.3
4µm,1.5s
ZCCA Zocca 3.35 46 Pn Pn 19 22 41.3 +0.9
388nm,0.7s
ZCCA Zocca 3.35 46 Pn Pn 19 22 41.3 +0.9
388nm,0.7s
LASF Ste Croix 3.38 307 ePn Pn 19 22 39.5 -1.3
SNR=1.0
LASF eSn Sn 19 23 17.0 -4.0
3µm,0.3s,SNR=1.0
LASF Ste Croix 3.38 307 ePn Pn 19 22 39.5 -1.3
SNR=1.0
LASF Ste Croix 3.38 307 ePn Pn 19 22 39.5 -1.3
LASF eSn Sn 19 23 17.0 -4.0
SEI Scarperia 3.39 53 Pn Pn 19 22 40.3 -0.5
SEI Scarperia 3.39 53 Pn Pn 19 22 40.3 -0.5
LSD Lago del Serru 3.39 355 Pn Pn 19 22 41.8 +0.7
5µm,0.6s
LSD Lago del Serru 3.39 355 P Pn 19 22 41.7 +0.7
TRAV Traversella 3.43 2 Pn Pn 19 22 40.6 -0.8
2µm,0.3s
TRAV Traversella 3.43 2 P Pn 19 22 40.6 -0.8
MGAB Montegabbione 3.44 75 Pn Pn 19 22 40.4 -1.2
2µm,1.0s
MGAB Montegabbione 3.44 75 Pn Pn 19 22 40.4 -1.2
2µm,1.0s
CAFI Castiglion Fio 3.45 67⇑iPn Pn 19 22 40.9 -0.9
2µm,1.5s
CAFI Castiglion Fio 3.45 67⇑iPn Pn 19 22 40.9 -0.9
2µm,1.5s
LPG La Plagne 3.46 350 ePn Pn 19 22 45.1 +3.0
SNR=1.0
LPG eSn Sn 19 23 25.0 +1.6
4µm,0.6s
LPG La Plagne 3.46 350 eP Pn 19 22 45.1 +3.0
LPG e 19 23 25.0
LPG La Plagne 3.46 350 eP Pn 19 22 45.1 +3.0
LPG eSn Sn 19 23 25.0 +1.6
2µm,0.6s
LPG La Plagne 3.46 350 ePn Pn 19 22 45.1 +3.0
LPG eSn Sn 19 23 25.0 +1.6
LPL La Plagne 3.48 350 ePn Pn 19 22 44.3 +1.9
SNR=1.0
LPL eSn Sn 19 23 24.8 +1.0
3µm,0.5s,SNR=1.0
LPL La Plagne 3.48 350 eP Pn 19 22 44.3 +1.9
LPL e 19 23 24.8
LPL La Plagne 3.48 350 ePn Pn 19 22 44.3 +1.9
SNR=1.0
LPL eSn Sn 19 23 24.8 +1.0
1µm,0.5s,SNR=1.0
LPL La Plagne 3.48 350 ePn Pn 19 22 44.3 +1.9
LPL eSn Sn 19 23 24.8 +1.0
VIVF Saint-Julien-l 3.49 323 ePn Pn 19 22 41.7 -0.6
SNR=1.0
VIVF eSn Sn 19 23 19.8 -3.9
1µm,0.3s,SNR=1.0
VIVF Saint-Julien-l 3.49 323 eP Pn 19 22 41.7 -0.6
VIVF e 19 23 19.8
VIVF Saint-Julien-l 3.49 323 ePn Pn 19 22 41.7 -0.6
SNR=1.0
VIVF eS Sn 19 23 19.8 -3.9
VIVF Saint-Julien-l 3.49 323 ePn Pn 19 22 41.7 -0.6
VIVF eSn Sn 19 23 19.8 -3.9
SJAF Saint Jean de 3.52 278 Pn Pn 19 22 42.1 -0.5
SJAF Sg Sg 19 23 38.2 -2.5
SJAF Saint Jean de 3.52 278 Pn Pn 19 22 42.1 -0.5
SJAF Sg Sg 19 23 38.2 -2.5
ASQU Asqua 3.52 60⇑iPn Pn 19 22 42.1 -0.6
819nm,1.0s
ASQU Asqua 3.52 60⇑iPn Pn 19 22 42.1 -0.6
819nm,1.0s
SFI Santa Sofia 3.61 58⇑iPn Pn 19 22 43.4 -0.5
979nm,0.8s
SFI Santa Sofia 3.61 58⇑iPn Pn 19 22 43.4 -0.5
979nm,0.8s
ATMC Monte Cedrone 3.65 67⇑iPn Pn 19 22 44.0 -0.5
2µm,0.9s
ATMC Monte Cedrone 3.65 67⇑iPn Pn 19 22 44.0 -0.5
2µm,0.9s
BADI Badiali 3.71 66⇑iPn Pn 19 22 44.7 -0.5
8µm,3.0s
BADI Badiali 3.71 66⇑iPn Pn 19 22 44.7 -0.5
8µm,3.0s
SAMA S.Maria delle 3.74 93 Pn Pn 19 22 43.2 -2.5
9µm,2.4s
SAMA S.Maria delle 3.74 93 Pn Pn 19 22 43.2 -2.5
9µm,2.4s
PARC Parchiule 3.75 64 Pn Pn 19 22 45.3 -0.6
3µm,2.2s
PARC Parchiule 3.75 64 Pn Pn 19 22 45.3 -0.6
3µm,2.2s
FILF Fillols 3.76 279 Pn Pn 19 22 47.1 +1.1
FILF Sg Sg 19 23 48.8 +0.3
FILF Fillols 3.76 279 Pn Pn 19 22 47.1 +1.1
FILF Sg Sg 19 23 48.8 +0.3
ATVO AVT- Monte Val 3.77 68⇑iPn Pn 19 22 45.6 -0.6
2µm,1.6s
ATVO AVT- Monte Val 3.77 68⇑iPn Pn 19 22 45.6 -0.6
2µm,1.6s
MURB Monte Urbino 3.82 70⇑iPn Pn 19 22 46.3 -0.5
2µm,0.8s
MURB Monte Urbino 3.82 70⇑iPn Pn 19 22 46.3 -0.5
2µm,0.8s
LRDF Laroque-de-Fa 3.83 285 Pn Pn 19 22 46.0 -0.9
LRDF Sg Sb 19 23 47.1 +5.1
LRDF Laroque-de-Fa 3.83 285 Pn Pn 19 22 46.0 -0.9
MTCE Montecelio 3.83 89 Pn Pn 19 22 44.2 -2.8
2µm,1.4s
MTCE Montecelio 3.83 89 Pn Pn 19 22 44.2 -2.8
2µm,1.4s
ATPC Poggio Castell 3.84 67⇑iPn Pn 19 22 46.7 -0.4
2µm,1.6s
ATPC Poggio Castell 3.84 67⇑iPn Pn 19 22 46.7 -0.4
2µm,1.6s
ATCC AVT- Casa Cast 3.88 72⇑iPn Pn 19 22 47.1 -0.5
2µm,0.8s
ATCC AVT- Casa Cast 3.88 72⇑iPn Pn 19 22 47.1 -0.5
2µm,0.8s
SSB Saint Sauveur 3.88 326 Pn Pn 19 22 46.2 -1.5
SSB Saint Sauveur 3.88 326 eP Pn 19 22 47.2 -0.5
SSB e 19 23 27.0
SSB Saint Sauveur 3.88 326 ePn Pn 19 22 47.2 -0.5
SSB eS Sn 19 23 27.0 -6.4
SSB Saint Sauveur 3.88 326 ePn Pn 19 22 47.2 -0.5
SSB eSn Sn 19 23 27.0 -6.4
EMV Vieux Emosson 4.01 353⇓iPn Pn 19 22 51.4 +1.9
2µm,1.0s
EMV Vieux Emosson 4.01 353⇓iPn Pn 19 22 51.4 +1.9
2µm,1.0s
CERT Cerreto 4.02 90⇓ePn Pn 19 22 46.9 -2.6
2µm,1.3s
CERT Cerreto 4.02 90⇓ePn Pn 19 22 46.9 -2.6
2µm,1.3s
CESI CESI - Serrava 4.03 75 Pn Pn 19 22 49.2 -0.5
299nm,1.2s
CESI CESI - Serrava 4.03 75 Pn Pn 19 22 49.2 -0.5
299nm,1.2s
LNSS Leonessa 4.07 81⇓iPn Pn 19 22 49.0 -1.3
2µm,1.2s
LNSS Leonessa 4.07 81⇓iPn Pn 19 22 49.0 -1.3
2µm,1.2s
CARF Carcanieres 4.11 281 Pn Pn 19 22 49.7 -1.2
CARF Sg Sg 19 23 57.3 -2.5
CARF Carcanieres 4.11 281 Pn Pn 19 22 49.7 -1.2
CARF Sg Sg 19 23 57.3 -2.5
SALO Salr 4.12 30 Pn Pn 19 22 52.4 +1.5
4µm,0.8s
SALO Salr 4.12 30 Pn Pn 19 22 52.4 +1.5
4µm,0.8s
VALF Valcebollere 4.15 276 Pn Pn 19 22 50.3 -1.2
VALF Valcebollere 4.15 276 Pn Pn 19 22 50.3 -1.2
NRCA Norcia 4.15 78 Pn Pn 19 22 50.9 -0.5
392nm,0.7s
NRCA Norcia 4.15 78 Pn Pn 19 22 50.9 -0.5
392nm,0.7s
MTLF Montolieu 4.15 289 ePn Pn 19 22 49.7 -1.7
MTLF eSn Sn 19 23 35.2 -4.8
3µm,0.4s
MTLF Montolieu 4.15 289 eP Pn 19 22 49.7 -1.7
MTLF e 19 23 35.2
MTLF Montolieu 4.15 289 eP Pn 19 22 49.7 -1.7
MTLF eS Sn 19 23 35.2 -4.8
MTLF Montolieu 4.15 289 eSn Sn 19 23 35.2 -4.8
MTLF Montolieu 4.15 289 ePn Pn 19 22 49.7 -1.7
MTLF eSn Sn 19 23 35.2 -4.8
FDMO Fiordimonte 4.17 75 Pn Pn 19 22 51.2 -0.4
1µm,2.1s
FDMO Fiordimonte 4.17 75 Pn Pn 19 22 51.2 -0.4
1µm,2.1s
SENIN Lac Senin/Sane 4.28 357 ePn Pn 19 22 54.6 +1.3
SENIN eSn Sn 19 23 44.0 +0.5
SENIN Lac Senin/Sane 4.28 357 ePn Pn 19 22 54.6 +1.3
SENIN eSn Sn 19 23 44.0 +0.5
MAGA Magasa 4.29 30 Pn Pn 19 22 54.2 +0.9
MAGA Magasa 4.29 30 Pn Pn 19 22 54.2 +0.9
OG01 Vacheresse 4.29 352 Pn Pn 19 22 53.2 -0.1
OG01 Vacheresse 4.29 352 Pn Pn 19 22 53.2 -0.1
AQU L'Aquila 4.32 85 eP Pn 19 22 53.1 -0.6
AQU e 19 23 41.9
AQU L'Aquila 4.32 85 ePn Pn 19 22 53.1 -0.6
AQU eSn Sn 19 23 41.9 -2.3
AQU L'Aquila 4.32 85 ePn Pn 19 22 53.1 -0.6
AQU eSn Sn 19 23 41.9 -2.3
LBL Lubilhac 4.45 316 Pn Pn 19 22 54.3 -1.2
LBL Lubilhac 4.45 316 Pn Pn 19 22 54.3 -1.2
MABI Malga Bissina 4.49 27 Pn Pn 19 22 57.1 +1.0
554nm,0.4s
MABI Malga Bissina 4.49 27 Pn Pn 19 22 57.1 +1.0
554nm,0.4s
TUE Stuetta 4.56 15 ePn Pn 19 22 58.1 +1.0
TUE eSn Sn 19 23 46.8 -3.6
TUE Stuetta 4.56 15 ePn Pn 19 22 58.1 +1.0
TUE eSn Sn 19 23 46.8 -3.6
VENT Ventotene 4.57 104 Pn Pn 19 22 51.7 -5.3
VENT Ventotene 4.57 104 Pn Pn 19 22 51.7 -5.3
POFI Posta Fibreno 4.58 93⇓iPn Pn 19 22 54.8 -2.5
939nm,1.6s
POFI Posta Fibreno 4.58 93⇓iPn Pn 19 22 54.8 -2.5
939nm,1.6s
CABF La Chapelle 4.65 347 ePn Pn 19 22 58.6 +0.4
SNR=1.0
CABF eSn Sn 19 23 44.2 -8.2
1µm,0.5s,SNR=1.0
CABF La Chapelle 4.65 347 eP Pn 19 22 58.6 +0.4
CABF e 19 23 44.2
CABF La Chapelle 4.65 347 ePn Pn 19 22 58.6 +0.4
SNR=1.0
CABF eS Sn 19 23 44.2 -8.2
CABF La Chapelle 4.65 347 ePn Pn 19 22 58.6 +0.4
CABF eSn Sn 19 23 44.2 -8.2
INTR Introdacqua 4.70 89⇓iPn Pn 19 22 57.8 -1.1
2µm,1.1s
INTR Introdacqua 4.70 89⇓iPn Pn 19 22 57.8 -1.1
2µm,1.1s
MODR Mondragone 4.80 99⇓iPn Pn 19 22 57.2 -3.1
658nm,1.3s
MODR Mondragone 4.80 99⇓iPn Pn 19 22 57.2 -3.1
658nm,1.3s
PLDF La Plantade 4.82 325 Pn Pn 19 22 59.4 -1.2
PLDF La Plantade 4.82 325 Pn Pn 19 22 59.4 -1.2
CERA Filignano 4.83 94⇓iPn Pn 19 22 58.5 -2.1
890nm,1.1s
CERA Filignano 4.83 94⇓iPn Pn 19 22 58.5 -2.1
890nm,1.1s
FRNF Fournols 4.92 314 Pn Pn 19 23 00.6 -1.2
FRNF Fournols 4.92 314 Pn Pn 19 23 00.6 -1.2
FUORN Ofenpass-Fuorn 4.92 22 ePn Pn 19 23 04.1 +2.0
FUORN Ofenpass-Fuorn 4.92 22 ePn Pn 19 23 04.1 +2.0
CAF Calviac 4.92 307 ePn Pn 19 23 01.5 -0.4
SNR=1.0
CAF eSn Sn 19 23 53.3 -5.7
1µm,0.4s,SNR=1.0
CAF Calviac 4.92 307 eP Pn 19 23 01.5 -0.4
CAF e 19 23 53.3
CAF Calviac 4.92 307 ePn Pn 19 23 01.5 -0.4
SNR=1.0
CAF eS Sn 19 23 53.3 -5.7
CAF Calviac 4.92 307 ePn Pn 19 23 01.5 -0.4
CAF eSn Sn 19 23 53.3 -5.7
OC9 Casamicciola 4.93 104 Pn Pn 19 22 59.4 -2.6
OC9 Casamicciola 4.93 104 Pn Pn 19 22 59.4 -2.6
PYM Petit Puy Mans 4.94 319 Pn Pn 19 23 01.0 -1.2
PYM Petit Puy Mans 4.94 319 Pn Pn 19 23 01.0 -1.2
DAVOX Davos/Dischmat 4.97 18 Pn Pn 19 23 04.2 +1.5
68nm,0.3s,baz=223,slow=6.5,SNR=133
DAVOX Sn Sn 19 23 59.3 -1.1
88nm,0.3s,baz=128,slow=18,SNR=8.8
DAVOX LR LR 19 25 12.5
comp=Z,3µm,19.5s,baz=252,slow=41
MIDA Miranda 4.99 93 Pn Pn 19 23 00.7 -2.3
769nm,1.5s
MIDA Miranda 4.99 93 Pn Pn 19 23 00.7 -2.3
769nm,1.5s
VAGA Valle Agricola 5.01 95 Pn Pn 19 23 01.0 -2.2
807nm,1.4s
VAGA Valle Agricola 5.01 95 Pn Pn 19 23 01.0 -2.2
807nm,1.4s
AGO Saint Agoulin 5.10 322 Pn Pn 19 23 03.2 -1.2
AGO Saint Agoulin 5.10 322 Pn Pn 19 23 03.2 -1.2
MELF Melles 5.11 281 Pn Pn 19 23 03.0 -1.6
MELF Melles 5.11 281 Pn Pn 19 23 03.0 -1.6
VERF Verneugheol 5.20 317 Pn Pn 19 23 04.6 -1.1
VERF Verneugheol 5.20 317 Pn Pn 19 23 04.6 -1.1
LOMF Lomont 5.29 354 Pn Pn 19 23 06.4 -0.6
LOMF Lomont 5.29 354 Pn Pn 19 23 06.4 -0.6
SMF Signal de Mont 5.29 331 ePn Pn 19 23 06.9 -0.1
SNR=1.0
SMF eSn Sn 19 24 00.1 -8.0
300nm,0.2s
SMF Signal de Mont 5.29 331 eP Pn 19 23 06.9 -0.1
SMF e 19 24 00.1
SMF Signal de Mont 5.29 331 ePn Pn 19 23 06.9 -0.1
SNR=1.0
SMF eS Sn 19 24 00.1 -8.0
SMF Signal de Mont 5.29 331 ePn Pn 19 23 06.9 -0.1
SMF eSn Sn 19 24 00.1 -8.0
CAEH 'Ain El Ouahch 5.33 186 P Pn 19 23 04.9 -2.7
CAEH 'Ain El Ouahch 5.33 186 P Pn 19 23 04.9 -2.7
SACR S. Croce Del S 5.37 95⇓iPn Pn 19 23 06.2 -1.9
5µm,3.5s
SACR S. Croce Del S 5.37 95⇓iPn Pn 19 23 06.2 -1.9
5µm,3.5s
RESF Ens 5.42 280 Pn Pn 19 23 07.9 -0.9
RESF Sg Sg 19 24 39.7 -1.9
RESF Ens 5.42 280 Pn Pn 19 23 07.9 -0.9
FETA Feichten 5.42 23 iPn Pn 19 23 11.2 +2.4
99nm,0.4s,SNR=113
FETA iSn Sn 19 24 12.6 +1.2
639nm,1.0s
FETA Feichten 5.42 23 Pn Pn 19 23 11.2 +2.4
99nm,0.4s,SNR=113
FETA Sn Sn 19 24 12.6 +1.2
639nm,1.0s
USI Ustica 5.44 127⇓iPn Pn 19 23 05.3 -3.7
1µm,1.0s
EPF Esparros 5.44 282 ePn Pn 19 23 06.9 -2.2
EPF eSn Sn 19 24 06.4 -5.4
1µm,0.6s,SNR=1.0
EPF Esparros 5.44 282 eP Pn 19 23 06.9 -2.2
EPF e 19 24 06.4
EPF Esparros 5.44 282 eP Pn 19 23 06.9 -2.2
EPF eS Sn 19 24 06.4 -5.4
EPF Esparros 5.44 282 ePn Pn 19 23 06.9 -2.2
EPF eSn Sn 19 24 06.4 -5.4
DAVA Damuels 5.45 17 iPn Pn 19 23 10.7 +1.4
124nm,0.5s,SNR=70
DAVA iSn Sn 19 24 10.7 -1.5
1µm,0.7s
DAVA Damuels 5.45 17 Pn Pn 19 23 10.7 +1.4
124nm,0.5s,SNR=70
DAVA Sn Sn 19 24 10.7 -1.5
1µm,0.7s
RJF Les Rejaudoux 5.45 308 ePn Pn 19 23 08.8 -0.4
SNR=1.0
RJF eSn Sn 19 24 06.5 -5.6
608nm,0.4s
RJF Les Rejaudoux 5.45 308 eP Pn 19 23 08.8 -0.4
RJF e 19 24 06.5
RJF Les Rejaudoux 5.45 308 ePn Pn 19 23 08.8 -0.4
SNR=1.0
RJF eS Sn 19 24 06.5 -5.6
RJF Les Rejaudoux 5.45 308 ePn Pn 19 23 08.8 -0.4
RJF eSn Sn 19 24 06.5 -5.6
CMAH Djebel Manchou 5.46 181 P Pn 19 23 04.7 -4.6
AVF Avril sur Loir 5.60 329 ePn Pn 19 23 11.4 +0.3
SNR=1.0
AVF eSn Sn 19 24 09.4 -6.1
574nm,0.5s
AVF Avril sur Loir 5.60 329 eP Pn 19 23 11.4 +0.3
AVF e 19 24 09.4
AVF Avril sur Loir 5.60 329 ePn Pn 19 23 11.4 +0.3
SNR=1.0
AVF eS Sn 19 24 09.4 -6.1
AVF Avril sur Loir 5.60 329 ePn Pn 19 23 11.4 +0.3
AVF eSn Sn 19 24 09.4 -6.1
BGF Bois d'Agland 5.62 324 ePn Pn 19 23 11.6 +0.1
SNR=1.0
BGF eSn Sn 19 24 11.7 -4.4
1µm,0.5s
BGF Bois d'Agland 5.62 324 eP Pn 19 23 11.6 +0.1
BGF e 19 24 11.7
BGF Bois d'Agland 5.62 324 ePn Pn 19 23 11.6 +0.1
SNR=1.0

BGF					eS	Sn	19 24 11.7	-4.4
BGF	**Bois d'Agland**	**5.62**	**324**		ePn	Pn	19 23 11.6	+0.1
BGF					eSn	Sn	19 24 11.7	-4.4
DFRA	**Djebel Bou Aff**	**5.69**	**194**		P	Pn	19 23 08.5	-4.1
TCF	**Toulx Ste Croi**	**5.71**	**319**		ePn	Pn	19 23 12.7	0.0
	SNR=1.0							
TCF					eSn	Sn	19 24 13.1	-5.3
	687nm,0.8s							
TCF	**Toulx Ste Croi**	**5.71**	**319**		eP	Pn	19 23 12.7	0.0
TCF					e		19 24 13.1	
TCF	**Toulx Ste Croi**	**5.71**	**319**		ePn	Pn	19 23 12.7	0.0
	SNR=1.0							
TCF					eS	Sn	19 24 13.1	-5.3
TCF	**Toulx Ste Croi**	**5.71**	**319**		ePn	Pn	19 23 12.7	0.0
TCF					eSn	Sn	19 24 13.1	-5.3
CKFL	**Kef-Lekhel**	**5.72**	**187**		P	Pn	19 23 09.1	-3.9
LFF	**La Frestale**	**5.74**	**302**		ePn	Pn	19 23 12.6	-0.5
	SNR=1.0							
LFF					eSn	Sn	19 24 13.2	-5.9
	758nm,0.4s,SNR=1.0							
LFF	**La Frestale**	**5.74**	**302**		eP	Pn	19 23 12.6	-0.5
LFF					e		19 24 13.2	
LFF	**La Frestale**	**5.74**	**302**		ePn	Pn	19 23 12.6	-0.5
	SNR=1.0							
LFF					eS	Sn	19 24 13.2	-5.9
LFF	**La Frestale**	**5.74**	**302**		ePn	Pn	19 23 12.6	-0.5
LFF					eSn	Sn	19 24 13.2	-5.9
TRI	**Trieste**	**5.74**	**49**		eP	Pn	19 23 12.1	-1.1
TRI	**Trieste**	**5.74**	**49**		ePn	Pn	19 23 12.1	-1.1
TRI	**Trieste**	**5.74**	**49**		ePn	Pn	19 23 12.1	-1.1
HINF	**Hinteralfeld**	**5.75**	**355**		ePn	Pn	19 23 12.7	-0.7
	SNR=1.0							
HINF					eSn	Sn	19 24 11.7	-7.8
	444nm,0.4s,SNR=1.0							
HINF	**Hinteralfeld**	**5.75**	**355**		eP	Pn	19 23 12.7	-0.7
HINF					e		19 24 11.7	
HINF	**Hinteralfeld**	**5.75**	**355**		ePn	Pn	19 23 12.7	-0.7
	SNR=1.0							
HINF					eS	Sn	19 24 11.7	-7.8
HINF	**Hinteralfeld**	**5.75**	**355**		ePn	Pn	19 23 12.7	-0.7
HINF					eSn	Sn	19 24 11.7	-7.8
SSF	**Saint Saulge**	**5.77**	**331**		ePn	Pn	19 23 13.5	0.0
	SNR=1.0							
SSF					eSn	Sn	19 24 13.8	-5.9
	812nm,0.5s							
SSF	**Saint Saulge**	**5.77**	**331**		eP	Pn	19 23 13.5	0.0
SSF					e		19 24 13.8	
SSF	**Saint Saulge**	**5.77**	**331**		ePn	Pn	19 23 13.5	0.0
	SNR=1.0							
SSF					eS	Sn	19 24 13.8	-5.9
SSF	**Saint Saulge**	**5.77**	**331**		ePn	Pn	19 23 13.5	0.0
SSF					eSn	Sn	19 24 13.8	-5.9
MOF	**Molkenrain**	**5.77**	**357**		Pn	Pn	19 23 13.0	-0.7
MOF	**Molkenrain**	**5.77**	**357**		Pn	Pn	19 23 13.0	-0.7
SKDS	**Skadanscina**	**5.79**	**51**		*i* Pn	Pn	19 23 12.8	-1.0
SKDS					eSn	Sn	19 24 15.9	-4.4
	comp=Z,6µm,8.9s							
SKDS	**Skadanscina**	**5.79**	**51**		Pn	Pn	19 23 12.8	-1.0
FELD	**Feldberg im Sc**	**5.80**	**3**		Pn	Pn	19 23 13.6	-0.4
ABSA	**Djebel Ababsia**	**5.81**	**181**		P	Pn	19 23 10.0	-4.2
MOTA	**Moosalm**	**5.82**	**24**		*i* Pn	Pn	19 23 15.8	+1.4
	comp=Z,108nm,0.5s,SNR=144							
MOTA					*i* Sn	Sn	19 24 20.7	-0.6
	comp=Z,207nm,0.5s							
MOTA	**Moosalm**	**5.82**	**24**		Pn	Pn	19 23 15.8	+1.4
	comp=Z,108nm,0.5s,SNR=144							
MOTA					Sn	Sn	19 24 20.7	-0.6
	comp=Z,207nm,0.5s							
LOR	**Lormes**	**5.82**	**334**		ePn	Pn	19 23 14.4	+0.1
	SNR=1.0							
LOR					eSn	Sn	19 24 16.0	-5.2
	comp=Z,1µm,0.6s,SNR=1.0							
LOR	**Lormes**	**5.82**	**334**		eP	Pn	19 23 14.4	+0.1
LOR					e		19 24 16.0	
LOR	**Lormes**	**5.82**	**334**		ePn	Pn	19 23 14.4	+0.1
	SNR=1.0							
LOR					eS	Sn	19 24 16.0	-5.2
LOR	**Lormes**	**5.82**	**334**		ePn	Pn	19 23 14.4	+0.1
LOR					eSn	Sn	19 24 16.0	-5.2
SNAL	**S. Angelo Dei**	**5.83**	**99**⇓	*i* Pn	Pn	19 23 12.1	-2.4
	comp=Z,939nm,1.6s							
SNAL	**S. Angelo Dei**	**5.83**	**99**⇓	*i* Pn	Pn	19 23 12.1	-2.4
	comp=Z,939nm,1.6s							
ABTA	**Abfaltersbach**	**5.84**	**35**	*i* Pn	Pn	19 23 16.8	+2.2
	comp=Z,150nm,0.5s,SNR=118							
ABTA					*i* Sn	Sn	19 24 21.4	-0.2
	comp=Z,809nm,0.9s							
RETA	**Reutte**	**5.85**	**22**	*i* Pn	Pn	19 23 16.3	+1.6
	comp=Z,47nm,0.5s,SNR=43							
RETA					*i* Sn	Sn	19 24 20.0	-1.9
	comp=Z,214nm,0.5s							
RETA	**Reutte**	**5.85**	**22**		Pn	Pn	19 23 16.3	+1.6
	comp=Z,47nm,0.5s,SNR=43							
RETA					Sn	Sn	19 24 20.0	-1.9
	comp=Z,214nm,0.5s							
NVLJ	**Novalja**	**5.86**	**63**		ePn	Pn	19 23 15.1	+0.4
NVLJ	**Novalja**	**5.86**	**63**		ePn	Pn	19 23 15.1	+0.4
CASM	**Ain Smara**	**5.88**	**189**		P	Pn	19 23 10.8	-4.4
MPG	**Monte Pellegri**	**5.91**	**130**⇓	*i* Pn	Pn	19 23 12.4	-3.1
	comp=Z,752nm,2.3s							
WTTA	**Wattenberg**	**5.92**	**28**	*i* Pn	Pn	19 23 15.3	-0.5
	comp=Z,56nm,0.4s,SNR=19							
WTTA					*i* Sn	Sn	19 24 21.3	-2.6
	comp=Z,786nm,0.7s							
WTTA	**Wattenberg**	**5.92**	**28**		Pn	Pn	19 23 15.3	-0.5
	comp=Z,56nm,0.4s,SNR=19							
WTTA					Sn	Sn	19 24 21.3	-2.6
	comp=Z,786nm,0.7s							
WATA	**Walderalm**	**5.96**	**27**	*i* Pn	Pn	19 23 17.3	+1.0
	comp=Z,87nm,0.5s,SNR=23							
WATA					*i* Sn	Sn	19 24 23.6	-1.3
	comp=Z,230nm,0.6s							
WATA	**Walderalm**	**5.96**	**27**		Pn	Pn	19 23 17.3	+1.0
	comp=Z,87nm,0.5s,SNR=23							
WATA					Sn	Sn	19 24 23.6	-1.3
	comp=Z,230nm,0.6s							
REYF	**Montagne du Re**	**5.98**	**282**		Pn	Pn	19 23 15.2	-1.3
REYF	**Montagne du Re**	**5.98**	**282**		Pn	Pn	19 23 15.2	-1.3
HAU	**Haudompre**	**5.98**	**352**		ePn	Pn	19 23 16.1	-0.4
	SNR=1.0							
HAU					eSn	Sn	19 24 19.2	-5.9
	comp=Z,1µm,0.4s,SNR=1.0							
HAU	**Haudompre**	**5.98**	**352**		eP	Pn	19 23 16.1	-0.4
HAU					e		19 24 19.2	
HAU	**Haudompre**	**5.98**	**352**		ePn	Pn	19 23 16.1	-0.4
	SNR=1.0							
HAU					eS	Sn	19 24 19.2	-5.9
HAU	**Haudompre**	**5.98**	**352**		ePn	Pn	19 23 16.1	-0.4
HAU					eSn	Sn	19 24 19.2	-5.9
CDRU	**Civita di Ruta**	**6.02**	**103**		Pn	Pn	19 23 14.1	-3.0
	comp=Z,40nm,0.3s							
SOLUN	**Solunto**	**6.05**	**129**⇓	*i* Pn	Pn	19 23 14.7	-2.8
	comp=Z,165nm,0.9s							
SPAK	**Spaichingen-Ko**	**6.07**	**8**		Pn	Pn	19 23 18.3	+0.5
ETSF	**Etsaut**	**6.08**	**280**		ePn	Pn	19 23 17.7	-0.2
ETSF					eSn	Sn	19 24 25.4	-2.2
	comp=Z,440nm,0.4s							
ETSF	**Etsaut**	**6.08**	**280**		eP	Pn	19 23 17.7	-0.2
ETSF					e		19 24 25.4	
ETSF	**Etsaut**	**6.08**	**280**		ePn	Pn	19 23 17.7	-0.2
ETSF					eS	Sn	19 24 25.4	-2.2
ETSF	**Etsaut**	**6.08**	**280**		ePn	Pn	19 23 17.7	-0.2
ETSF					eSn	Sn	19 24 25.4	-2.2
MRLC	**Muro Lucano**	**6.08**	**100**		Pn	Pn	19 23 15.7	-2.2
	comp=Z,848nm,3.1s							
MRLC	**Muro Lucano**	**6.08**	**100**		Pn	Pn	19 23 15.7	-2.2
	comp=Z,848nm,3.1s							
SET	**Setif**	**6.12**	**197**		P	Pn	19 23 15.0	-3.5
ECH	**Echery**	**6.14**	**357**		Pn	Pn	19 23 18.0	-0.6
ECH	**Echery**	**6.14**	**357**		Pn	Pn	19 23 18.0	-0.6
CEY	**Cerknica**	**6.14**	**51**		ePn	Pn	19 23 17.0	-1.6
ATE	**Arette**	**6.20**	**282**		Pn	Pn	19 23 17.5	-2.0
ATE	**Arette**	**6.20**	**282**		Pg	Pg	19 23 43.7	-2.8
BULG	**Bulgheria - Ca**	**6.21**	**106**		Pn	Pn	19 23 16.0	-3.7
	comp=Z,77nm,0.4s							
THEF	**They Montfort**	**6.24**	**350**		Pn	Pn	19 23 18.9	-1.2
THEF	**They Montfort**	**6.24**	**350**		Pn	Pn	19 23 18.9	-1.2
CLTB	**Caltabellotta**	**6.24**	**134**		Pn	Pn	19 23 18.6	-1.6
	comp=Z,1µm,0.5s							
CLTB	**Caltabellotta**	**6.24**	**134**		ePn	Pn	19 23 19.1	-1.1
CLTB	**Caltabellotta**	**6.24**	**134**		ePn	Pn	19 23 19.1	-1.1
BFO	**Black Forest**	**6.26**	**5**		eP	Pn	19 23 19.5	-0.8
BFO					e		19 24 27.8	
BFO	**Black Forest**	**6.26**	**5**		ePn	Pn	19 23 19.5	-0.8
BFO					eS	Sn	19 24 27.8	-4.3
BFO	**Black Forest**	**6.26**	**5**		ePn	Pn	19 23 19.5	-0.8
BFO					eSn	Sn	19 24 27.8	-4.3
HYF	**Humbligny**	**6.27**	**327**		ePn	Pn	19 23 21.1	+0.7
HYF					eSn	Sn	19 24 28.5	-3.6
HYF	**Humbligny**	**6.27**	**327**		ePn	Pn	19 23 21.1	+0.7
HYF	**Humbligny**	**6.27**	**327**		ePn	Pn	19 23 21.1	+0.7
HYF					eSn	Sn	19 24 28.5	-3.6
IACL	**Alicudi**	**6.27**	**122**		Pn	Pn	19 23 16.2	-4.2
	comp=Z,2µm,2.9s							
MYKA	**Terra Mystica**	**6.28**	**42**	*i* Pn	Pn	19 23 22.0	+1.4
	comp=Z,26nm,0.4s,SNR=23							
MYKA				*i* Sn	Sn	19 24 28.5	-3.9
	comp=Z,105nm,0.7s							
MYKA	**Terra Mystica**	**6.28**	**42**	Pn	Pn	19 23 22.0	+1.4
	comp=Z,26nm,0.4s,SNR=23							
WLS	**Welschbruch**	**6.33**	**359**	Pn	Pn	19 23 20.6	-0.7
WLS	**Welschbruch**	**6.33**	**359**	Pn	Pn	19 23 20.6	-0.7
CDF	**Champ du Feu**	**6.33**	**358**	*e*Pn	Pn	19 23 20.7	-0.6
	SNR=1.0							
CDF				eSn	Sn	19 24 25.8	-7.9
	comp=Z,280nm,0.5s,SNR=1.0							
CDF	**Champ du Feu**	**6.33**	**358**	eP	Pn	19 23 20.7	-0.6
CDF				e		19 24 25.8	
CDF	**Champ du Feu**	**6.33**	**358**	ePn	Pn	19 23 20.7	-0.6
	SNR=1.0							
CDF				eS	Sn	19 24 25.8	-7.9
CDF	**Champ du Feu**	**6.33**	**358**	ePn	Pn	19 23 20.7	-0.6
CDF				eSn	Sn	19 24 25.8	-7.9
LJU	**Ljubljana**	**6.37**	**49**	ePn	Pn	19 23 21.5	-0.3
LJU				*i* Sn	Sn	19 24 31.2	-3.4
LJU	**Ljubljana**	**6.37**	**49**	ePn	Pn	19 23 21.5	-0.3
SFTF	**Sexfontaines**	**6.38**	**344**	ePn	Pn	19 23 21.9	0.0
SFTF				eSn	Sn	19 24 29.1	-5.7
	comp=Z,726nm,0.4s							
SFTF	**Sexfontaines**	**6.38**	**344**	ePn	Pn	19 23 21.9	0.0
SFTF	**Sexfontaines**	**6.38**	**344**	ePn	Pn	19 23 21.9	0.0
SFTF				eSn	Sn	19 24 29.1	-5.7
IFIL	**Filicudi I Eol**	**6.38**	**121**	Pn	Pn	19 23 18.7	-3.3
	comp=Z,5747µm,79.0s							
ORDF	**Ordiarp**	**6.39**	**283**	Pn	Pn	19 23 20.4	-1.6
LARF	**Larrau**	**6.41**	**281**	Pn	Pn	19 23 20.7	-1.6
GIB	**Gibilmanna**	**6.41**	**128**	Pn	Pn	19 23 19.4	-3.1
	comp=Z,428nm,0.8s							
UDBI	**Udbina**	**6.44**	**65**	ePn	Pn	19 23 24.2	+1.3
UDBI	**Udbina**	**6.44**	**65**	ePn	Pn	19 23 24.1	+1.3
KBA	**Koelnbreinsper**	**6.46**	**37**	*i* Pn	Pn	19 23 24.8	+1.6
	comp=Z,118nm,1.1s,SNR=52							
KBA				*i* Sn	Sn	19 24 36.6	-0.5
	comp=Z,185nm,0.7s							
KBA	**Koelnbreinsper**	**6.46**	**37**	Pn	Pn	19 23 24.8	+1.6
	comp=Z,118nm,1.1s,SNR=52							
KBA				Sn	Sn	19 24 36.6	-0.5
	comp=Z,185nm,0.7s							
PLLN	**Pollina**	**6.48**	**127**	Pn	Pn	19 23 20.6	-2.8
KEST	**Kesra**	**6.49**	**167**	Pn	Pn	19 23 22.1	-1.4
	comp=Z,26nm,0.3s,baz=296,slow=3.6,SNR=216							
KEST				Sn	Sn	19 24 29.6	-8.1
	comp=Z,5.3nm,0.3s,baz=332,slow=17,SNR=2.3							
KEST				LR	LR	19 25 59.9		
	comp=Z,3µm,18.0s,baz=268,slow=40							
KEST	**Kesra**	**6.49**	**167**	ePn	Pn	19 23 22.8	-0.8
KEST	**Kesra**	**6.49**	**167**	ePn	Pn	19 23 22.8	-0.8
KEST				eSn	Sn	19 24 29.2	-8.6
CUC	**Castrocucco**	**6.56**	**106**	ePn	Pn	19 23 21.2	-3.2
CDT	**Castel del Mon**	**6.59**	**96**	ePn	Pn	19 23 22.8	-2.0
SJPF	**Ste Jean**	**6.59**	**282**	ePn	Pn	19 23 22.9	-1.9
SJPF				eSn	Sn	19 24 35.0	-5.0
	comp=Z,490nm,0.5s							
SJPF	**Ste Jean**	**6.59**	**282**	eP	Pn	19 23 22.9	-1.9
SJPF				e		19 24 35.0	
SJPF	**Ste Jean**	**6.59**	**282**	eP	Pn	19 23 22.9	-1.9
SJPF				eS	Sn	19 24 35.0	-5.0
SJPF	**Ste Jean**	**6.59**	**282**	ePn	Pn	19 23 22.9	-1.9
SJPF				eSn	Sn	19 24 35.0	-5.0
PAGF	**Fort de Pagny**	**6.60**	**349**	ePn	Pn	19 23 25.1	+0.2
PAGF				eSn	Sn	19 24 33.7	-6.6
	comp=Z,223nm,0.6s							
PAGF	**Fort de Pagny**	**6.60**	**349**	ePn	Pn	19 23 25.1	+0.2
PAGF	**Fort de Pagny**	**6.60**	**349**	ePn	Pn	19 23 25.1	+0.2
PAGF				eSn	Sn	19 24 33.7	-6.6
OSSF	**Osses**	**6.63**	**283**	Pn	Pn	19 23 23.8	-1.6
MEZF	**Maizieres J'vi**	**6.66**	**345**	ePn	Pn	19 23 25.9	+0.2
	SNR=1.0							
MEZF				eSn	Sn	19 24 32.7	-9.0
	comp=Z,507nm,0.4s,SNR=1.0							
MEZF	**Maizieres J'vi**	**6.66**	**345**	ePn	Pn	19 23 25.9	+0.2
	SNR=1.0							
MEZF	**Maizieres J'vi**	**6.66**	**345**	ePn	Pn	19 23 25.9	+0.2
MEZF				eSn	Sn	19 24 32.7	-9.0
OBKA	**Obir**	**6.67**	**46**	*i* Pn	Pn	19 23 27.5	+1.6
	comp=Z,53nm,1.0s,SNR=29							
OBKA				*i* Sn	Sn	19 24 42.4	+0.4
	comp=Z,99nm,0.6s							
OBKA	**Obir**	**6.67**	**46**	Pn	Pn	19 23 27.5	+1.6
	comp=Z,53nm,1.0s,SNR=29							
OBKA				Sn	Sn	19 24 42.4	+0.4
	comp=Z,99nm,0.6s							
STR3	**STROMBOLI 3**	**6.69**	**117**	Pn	Pn	19 23 23.2	-3.0
LLI	**Lipari**	**6.70**	**120**	Pn	Pn	19 23 23.9	-2.4
	comp=Z,1µm,1.3s							
LLI	**Lipari**	**6.70**	**120**	Pn	Pn	19 23 23.9	-2.4
	comp=Z,1µm,1.3s							
VPL	**Vulcano Piano**	**6.76**	**121**	Pn	Pn	19 23 23.9	-3.3
	comp=Z,1µm,1.4s							
STU	**Stuttgart**	**6.78**	**9**	eP	Pn	19 23 27.3	-0.1
STU				e		19 24 38.3	
STU	**Stuttgart**	**6.78**	**9**	ePn	Pn	19 23 27.3	-0.1
STU				eS	Sn	19 24 38.3	-6.4
STU	**Stuttgart**	**6.78**	**9**	ePn	Pn	19 23 27.3	-0.1
STU				eSn	Sn	19 24 38.3	-6.4
CRES	**Cresnjev**	**6.79**	**54**	ePn	Pn	19 23 27.7	+0.1
EMHD	**Djebel Mahouad**	**6.89**	**213**	P	Pn	19 23 26.0	-3.1
LANF	**Langenberg**	**6.89**	**1**	Pn	Pn	19 23 28.7	-0.3
LANF	**Langenberg**	**6.89**	**1**	Pn	Pn	19 23 28.7	-0.3
SG1	**Sgolgore (BA)**	**6.94**	**97**	ePn	Pn	19 23 26.7	-2.9
MILZ	**Milazzo**	**6.98**	**121**	Pn	Pn	19 23 26.8	-3.3
	comp=Z,115nm,1.0s							
VAE	**Valguarnera**	**6.98**	**129**	Pn	Pn	19 23 29.9	-0.4
	comp=Z,7.3nm,0.3s,baz=281,slow=7.2,SNR=15							
VAE				Sn	Sn	19 24 50.4	+0.6
	comp=Z,1.8nm,0.3s,baz=225,slow=19,SNR=1.5							
VAE				LR	LR	19 26 11.7		
	comp=Z,3µm,18.4s,baz=26,slow=39							
BAI	**Bari**	**7.03**	**95**	ePn	Pn	19 23 29.9	-0.9
SOKA	**Soboth**	**7.03**	**47**	*i* Pn	Pn	19 23 32.3	+1.4
	comp=Z,58nm,0.9s,SNR=51							
SOKA				*i* Sn	Sn	19 24 50.8	-0.2
	comp=Z,99nm,1.1s							
SOKA	**Soboth**	**7.03**	**47**	Pn	Pn	19 23 32.3	+1.4
	comp=Z,58nm,0.9s,SNR=51							
SOKA				Sn	Sn	19 24 50.8	-0.2
	comp=Z,99nm,1.1s							
MFF	**Saint Martin d**	**7.15**	**312**	ePn	Pn	19 23 32.1	-0.4
	SNR=1.0							
MFF				eSn	Sn	19 24 48.1	-5.7
	comp=Z,309nm,0.6s							
MFF	**Saint Martin d**	**7.15**	**312**	eP	Pn	19 23 32.1	-0.4
MFF				e		19 24 48.1	
MFF	**Saint Martin d**	**7.15**	**312**	ePn	Pn	19 23 32.1	-0.4
	SNR=1.0							
MFF				eS	Sn	19 24 48.1	-5.7
MFF	**Saint Martin d**	**7.15**	**312**	ePn	Pn	19 23 32.1	-0.4
MFF				eSn	Sn	19 24 48.1	-5.7
JOPP	**Joppolo**	**7.22**	**116**	Pn	Pn	19 23 30.1	-3.5
	comp=Z,142nm,1.4s							
KTD	**Kalmit**	**7.24**	**3**	Pn	Pn	19 23 33.8	0.0
CEL	**Celeste**	**7.42**	**118**	ePn	Pn	19 23 33.1	-3.1
MOA	**Molln**	**7.45**	**37**	*i* Pn	Pn	19 23 38.1	+1.4
	comp=Z,36nm,0.3s,SNR=52							
MOA				*i* Sn	Sn	19 24 58.3	-3.0
	comp=Z,203nm,0.7s							
MOA	**Molln**	**7.45**	**37**	Pn	Pn	19 23 38.1	+1.4
	comp=Z,36nm,0.3s,SNR=52							
TAR1	**Taranto**	**7.46**	**99**	ePn	Pn	19 23 36.0	-0.8
BLY	**Banja Luka**	**7.47**	**66**	ePn	Pn	19 23 37.3	+0.4
TIP	**Timpagrande**	**7.55**	**110**	P	Pn	19 23 36.0	-2.1
TIP	**Timpagrande**	**7.55**	**110**	P	Pn	19 23 36.0	-2.1
TIP	**Timpagrande**	**7.55**	**110**	ePn	Pn	19 23 35.8	-2.3
SERS	**Sersale**	**7.56**	**111**	Pn	Pn	19 23 35.5	-2.8
	comp=Z,167nm,1.5s							
TOD	**Tromm**	**7.57**	**6**	Pn	Pn	19 23 37.9	-0.3
RUP	**Ruppelstein**	**7.62**	**357**	Pn	Pn	19 23 38.5	-0.5
SOI	**Samo**	**7.63**	**119**	Pn	Pn	19 23 36.1	-2.9
WLF	**Walferdange**	**7.64**	**353**	P	Pn	19 23 39.9	+0.7
	comp=Z,77nm,1.1s							
WLF	**Walferdange**	**7.64**	**353**	eP	Pn	19 23 39.7	+0.4
WLF	**Walferdange**	**7.64**	**353**	ePn	Pn	19 23 39.7	+0.4
WLF	**Walferdange**	**7.64**	**353**	ePn	Pn	19 23 39.7	+0.4
ARSA	**Arzberg**	**7.65**	**45**	*i* Pn	Pn	19 23 41.2	+1.8
	comp=Z,26nm,0.5s,SNR=19							
ARSA				*i* Sn	Sn	19 25 05.7	-0.5
	comp=Z,73nm,1.1s							
ARSA	**Arzberg**	**7.65**	**45**	Pn	Pn	19 23 41.2	+1.8
	comp=Z,26nm,0.5s,SNR=19							
ARSA				Sn	Sn	19 25 05.7	-0.5
	comp=Z,73nm,1.1s							
ABH	**Alteburg**	**7.80**	**360**	Pn	Pn	19 23 41.3	-0.1
BEHE	**Becsehely**	**7.91**	**53**	ePn	Pn	19 23 43.1	+0.2
GEA0	**GERESS Array S**	**8.00**	**30**	ePn	Pn	19 23 43.9	-0.3
GEA0	**GERESS Array S**	**8.00**	**30**	ePn	Pn	19 23 43.9	-0.3
GEC2	**GERESS Array S**	**8.00**	**30**	eP	Pn	19 23 44.3	0.0
GEC2	**GERESS Array S**	**8.00**	**30**	ePn	Pn	19 23 44.3	0.0
GEC2	**GERESS Array S**	**8.00**	**30**	ePn	Pn	19 23 44.3	0.0
GERES	**GERESS Array B**	**8.00**	**30**	Pn	Pn	19 23 44.1	-0.2
	comp=Z,19nm,0.3s,baz=208,slow=13,SNR=416							
GERES				Sn	Sn	19 25 08.9	-6.1
	comp=Z,22nm,0.3s,baz=213,slow=23,SNR=16							
GRFO	**Grafenberg**	**8.01**	**17**	eP	Pn	19 23 44.5	+0.2
GRFO	**Grafenberg**	**8.01**	**17**	ePn	Pn	19 23 44.5	+0.2
GRFO	**Grafenberg**	**8.01**	**17**	ePn	Pn	19 23 44.5	+0.2
HCY	**Herceg Novi**	**8.09**	**84**⇑	*i* Pn	Pn	19 23 44.8	-0.6
HCY				eSn	Sn	19 25 16.0	-1.0
HCY	**Herceg Novi**	**8.09**	**84**⇑	*i* Pn	Pn	19 23 44.8	-0.6
HCY				eSn	Sn	19 25 16.0	-1.0
BRY	**Bratogost**	**8.13**	**81**⇑	*i* Pn	Pn	19 23 45.7	-0.4
BRY				eSn	Sn	19 25 17.6	-0.6
BRY	**Bratogost**	**8.13**	**81**⇑	*i* Pn	Pn	19 23 45.7	-0.4
BRY				eSn	Sn	19 25 17.6	-0.6
KHC	**Kasperske Hory**	**8.20**	**29**	ePN	Pn	19 23 46.9	0.0
KHC				eSN	Sn	19 25 13.6	-6.2
KHC				*ex*	x	19 25 30.0	
KHC				AMS	AMS	19 27 20.0	
	comp=Z,6µm,13.0s							
KHC	**Kasperske Hory**	**8.20**	**29**	eP	Pn	19 23 46.9	0.0
KHC				e		19 25 13.4	
KHC				MLR	MLR		
	comp=Z,6µm,13.0s							
KHC	**Kasperske Hory**	**8.20**	**29**	ePn	Pn	19 23 46.9	0.0
KHC				eS	Sn	19 25 13.4	-6.2
	comp=Z,6µm,13.0s							
KHC	**Kasperske Hory**	**8.20**	**29**	ePn	Pn	19 23 46.9	0.0
GIVF	**Givet**	**8.24**	**347**	ePn	Pn	19 23 47.4	-0.1
	SNR=1.0							
GIVF				eSn	Sn	19 25 13.8	-6.9
	comp=Z,209nm,0.5s							
GIVF	**Givet**	**8.24**	**347**	eP	Pn	19 23 47.4	-0.1
GIVF				e		19 25 13.8	
GIVF	**Givet**	**8.24**	**347**	ePn	Pn	19 23 47.4	-0.1
	SNR=1.0							
GIVF				eS	Sn	19 25 13.8	-6.9
GIVF	**Givet**	**8.24**	**347**	ePn	Pn	19 23 47.4	-0.1
GIVF				eSn	Sn	19 25 13.8	-6.9
WDD	**Wied Dalam**	**8.25**	**137**	ePn	Pn	19 23 45.3	-2.3
WDD	**Wied Dalam**	**8.25**	**137**	ePn	Pn	19 23 45.3	-2.3
CONA	**Conrad Observa**	**8.27**	**42**	Pn	Pn	19 23 49.2	+1.3
	comp=Z,39nm,0.6s,SNR=34							
CONA				eSn	Sn	19 25 17.7	-3.7
	comp=Z,155nm,1.0s							
CONA	**Conrad Observa**	**8.27**	**42**	Pn	Pn	19 23 49.2	+1.3
	comp=Z,39nm,0.6s,SNR=34							
DOU

NKC	**Novy Kostel**	**8.81**	**21**	*e*PN	**Pn**	**19 23 54.4**	**-0.9**
NKC				*e*SN	**Sn**	**19 25 27.2**	**-7.5**
NKC				AMS	AMS	19 27 30.0	
	comp=Z,4μm,14.4s						
NKC	**Novy Kostel**	**8.81**	**21**	*e*P	**Pn**	**19 23 54.4**	**-0.9**
NKC				*e*		19 25 27.2	
NKC				MLR	MLR		
	comp=Z,4μm,14.4s						
NKC	**Novy Kostel**	**8.81**	**21**	*e*P	**Pn**	**19 23 54.4**	**-0.9**
	comp=Z,4μm,14.4s						
NKC				*e*S	**Sn**	**19 25 27.2**	**-7.5**
BBLS	**Lazići**	**8.84**	**74**	*e*Pn	**Pn**	**19 23 55.7**	**-0.1**
BBLS	**Lazići**	**8.84**	**74**	⇑*i*P	**Pn**	**19 23 56.0**	**+0.2**
ES19	**SONSECA Array**	**9.03**	**258**	*e*Pn	**Pn**	**19 23 56.0**	**-2.2**
TEKS	**Tekeris**	**9.04**	**70**	*e*Pn	**Pn**	**19 23 58.0**	**-0.5**
TEKS	**Tekeris**	**9.04**	**70**	*i* P	**Pn**	**19 23 58.7**	**+0.2**
TREC	**Trest**	**9.08**	**35**	*e*SN	**Sn**	**19 25 34.2**	**-7.0**
TREC				AMS	AMS	19 28 20.0	
	comp=Z,4μm,12.0s						
ESDC	**Sonseca Array**	**9.08**	**258**	Pn	**Pn**	**19 23 56.8**	**-2.3**
	comp=Z,9.8nm,0.3s,baz=68,slow=14,SNR=43						
ESDC				Sn	**Sn**	**19 25 34.4**	**-7.0**
	comp=Z,12nm,0.3s,baz=67,slow=24,SNR=8.2						
ESLA	**Sonseca Array**	**9.08**	**258**	*e*Pn	**Pn**	**19 23 56.5**	**-2.6**
BEY	**Berane**	**9.12**	**81**	⇓*i*Pn	**Pn**	**19 23 59.1**	**-0.6**
BEY				*e*Sn	**Sn**	**19 25 40.8**	**-1.7**
IVA	**Berane**	**9.12**	**81**	⇓*i*Pn	**Pn**	**19 23 59.1**	**-0.6**
IVA				*e*Sn	**Sn**	**19 25 40.8**	**-1.7**
PVY	**Plav**	**9.17**	**83**	*e*Pn	**Pn**	**19 24 00.8**	**+0.4**
PVY				*e*Sn	**Sn**	**19 25 42.1**	**-1.7**
PVY	**Plav**	**9.17**	**83**	*e*Pn	**Pn**	**19 24 00.8**	**+0.4**
PVY				*e*Sn	**Sn**	**19 25 42.1**	**-1.7**
TIR	**Tirane**	**9.21**	**91**	*e*P	**Pn**	**19 23 59.0**	**-1.7**
TIR	**Tirane**	**9.21**	**91**	*e*Pn	**Pn**	**19 23 59.0**	**-1.7**
TIR	**Tirane**	**9.21**	**91**	*e*Pn	**Pn**	**19 23 59.0**	**-1.7**
PRU	**Pruhonice**	**9.26**	**29**	*e*PN	**Pn**	**19 24 01.3**	**-0.1**
PRU				*e*SN	**Sn**	**19 25 37.9**	**-7.7**
PRU				AMS	AMS	19 28 10.0	
	comp=Z,4μm,13.1s						
PRU	**Pruhonice**	**9.26**	**29**	*e*P	**Pn**	**19 24 01.3**	**-0.1**
PRU				*e*		19 25 37.9	
PRU				MLR	MLR		
	comp=Z,4μm,13.1s						
PRU	**Pruhonice**	**9.26**	**29**	*e*P	**Pn**	**19 24 01.3**	**-0.1**
	comp=Z,4μm,13.1s						
PRU				*e*S	**Sn**	**19 25 37.9**	**-7.7**
GOPC	**GO Pecny, Ondr**	**9.29**	**30**	*e*PN	**Pn**	**19 24 01.8**	**0.0**
GOPC				*e*SN	**Sn**	**19 25 38.5**	**-7.8**
GOPC				AMS	AMS	19 28 00.0	
	comp=Z,5μm,13.3s						
GOPC	**GO Pecny, Ondr**	**9.29**	**30**	*e*P	**Pn**	**19 24 01.8**	**0.0**
GOPC				*e*		19 25 38.5	
GOPC				MLR	MLR		
	comp=Z,5μm,13.3s						
GOPC	**GO Pecny, Ondr**	**9.29**	**30**	*e*P	**Pn**	**19 24 01.8**	**0.0**
	comp=Z,5μm,13.3s						
GOPC				*e*S	**Sn**	**19 25 38.5**	**-7.8**
DIVS	**Divibare**	**9.29**	**73**	P	Pn	19 24 08.5	+6.5
DIVS	**Divibare**	**9.29**	**73**	*e*Pn	**Pn**	**19 24 00.8**	**-1.2**
DIVS	**Divibare**	**9.29**	**73**	⇑*i*P	**Pn**	**19 24 01.4**	**-0.6**
IVAS	**Ivanjica**	**9.35**	**77**	*i* P	**Pn**	**19 24 02.4**	**-0.3**
FGSL	**Fruska Gora**	**9.38**	**67**	*e*P	**Pn**	**19 24 02.8**	**-0.2**
FRGS	**Fruska Gora**	**9.38**	**67**	*e*Pn	**Pn**	**19 24 02.8**	**-0.6**
PAB	**San Pablo**	**9.40**	**258**	*e*P	**Pn**	**19 24 01.0**	**-2.5**
PAB	**San Pablo**	**9.40**	**258**	*e*P	**Pn**	**19 24 01.0**	**-2.5**
PAB	**San Pablo**	**9.40**	**258**	*e*Pn	**Pn**	**19 24 01.0**	**-2.5**
SMOL	**Smolenice**	**9.45**	**44**	*e*P	**Pn**	**19 24 04.2**	**+0.2**
SMOL				*e*		19 25 48.0	
SMOL	**Smolenice**	**9.45**	**44**	*e*Pn	**Pn**	**19 24 04.2**	**+0.2**
SMOL				*e*Sn	**Sn**	**19 25 48.0**	**-2.2**
SMOL	**Smolenice**	**9.45**	**44**	*e*PN	**Pn**	**19 24 04.2**	**+0.2**
SMOL				*e*SN	**Sn**	**19 25 48.0**	**-2.2**
SGMF	**Saint Gilles**	**9.45**	**314**	*e*Pn	**Pn**	**19 24 03.4**	**-0.6**
	SNR=1.0						
SGMF				*e*Sn	**Sn**	**19 25 42.2**	**-8.1**
	comp=Z,81nm,0.7s						
SGMF	**Saint Gilles**	**9.45**	**314**	*e*P	**Pn**	**19 24 03.4**	**-0.6**
SGMF				*e*		19 25 42.2	
SGMF	**Saint Gilles**	**9.45**	**314**	*e*Pn	**Pn**	**19 24 03.4**	**-0.6**
	SNR=1.0						
SGMF				*e*S	**Sn**	**19 25 42.2**	**-8.1**
SGMF	**Saint Gilles**	**9.45**	**314**	*e*Pn	**Pn**	**19 24 03.4**	**-0.6**
SGMF				*e*Sn	**Sn**	**19 25 42.2**	**-8.1**
VRAC	**Vranov**	**9.57**	**38**	Pn	**Pn**	**19 24 05.1**	**-0.7**
	comp=Z,2.2nm,0.3s,baz=222,slow=12,SNR=9.5						
VRAC				Sn	**Sn**	**19 25 46.1**	**-7.3**
	comp=Z,1.7nm,0.3s,baz=322,slow=16,SNR=5.8						
QUIF	**Quistinic**	**9.59**	**311**	*e*Pn	**Pn**	**19 24 05.1**	**-0.8**
	SNR=1.0						
QUIF				*e*Sn	**Sn**	**19 25 45.4**	**-8.3**
	comp=Z,80nm,0.3s						
QUIF	**Quistinic**	**9.59**	**311**	*e*P	**Pn**	**19 24 05.1**	**-0.8**
QUIF	**Quistinic**	**9.59**	**311**	*e*Pn	**Pn**	**19 24 05.1**	**-0.8**
	SNR=1.0						
QUIF	**Quistinic**	**9.59**	**311**	*e*Pn	**Pn**	**19 24 05.1**	**-0.8**
QUIF				*e*Sn	**Sn**	**19 25 45.4**	**-8.3**
TRUS	**Trudelj**	**9.61**	**73**	⇑*i*P	**Pn**	**19 24 05.5**	**-0.7**
PVCC	**Panska Ves**	**9.72**	**27**	*e*PN	**Pn**	**19 24 07.6**	**-0.1**
PVCC				*e*SN	**Sn**	**19 25 48.4**	**-8.5**
PVCC				AMS	AMS	19 28 50.0	
	comp=Z,5μm,9.6s						
PVCC	**Panska Ves**	**9.72**	**27**	*e*P	**Pn**	**19 24 07.6**	**-0.1**
PVCC				*e*		19 25 48.4	
PVCC				MLR	MLR		
	comp=Z,5μm,9.6s						
PVCC	**Panska Ves**	**9.72**	**27**	*e*P	**Pn**	**19 24 07.6**	**-0.1**
	comp=Z,5μm,9.6s						
PVCC				*e*S	**Sn**	**19 25 48.4**	**-8.5**
GRUS	**Gruza**	**9.79**	**75**	⇑*i*P	**Pn**	**19 24 08.1**	**-0.5**
BRG	**Berggiesshubel**	**9.81**	**24**	PN	**Pn**	**19 24 08.7**	**-0.3**
BRG				SN	**Sn**	**19 25 56.2**	**-3.1**
ROSF	**Rostrenen**	**9.89**	**313**	*e*Pn	**Pn**	**19 24 09.7**	**-0.3**
	SNR=1.0						
ROSF				*e*Sn	**Sn**	**19 25 55.0**	**-6.0**
	comp=Z,208nm,0.6s						
ROSF	**Rostrenen**	**9.89**	**313**	*e*P	**Pn**	**19 24 09.7**	**-0.3**
ROSF				*e*		19 25 55.0	
ROSF	**Rostrenen**	**9.89**	**313**	*e*Pn	**Pn**	**19 24 09.7**	**-0.3**
	SNR=1.0						
ROSF				*e*S	**Sn**	**19 25 55.0**	**-6.0**
ROSF	**Rostrenen**	**9.89**	**313**	*e*Pn	**Pn**	**19 24 09.7**	**-0.3**
ROSF				*e*Sn	**Sn**	**19 25 55.0**	**-6.0**
SGD	**Sagiada**	**9.89**	**100**	P	**Pn**	**19 24 09.6**	**-0.5**
SGD	**Sagiada**	**9.89**	**100**	P	**Pn**	**19 24 09.6**	**-0.5**
WTSB	**Winterswijk**	**9.90**	**357**	*e*Pn	**Pn**	**19 24 10.4**	**+0.3**
	comp=Z,21nm,0.6s						
WTSB				*e*Sn	**Sn**	**19 25 59.4**	**-1.8**
WTSB	**Winterswijk**	**9.90**	**357**	*e*Pn	**Pn**	**19 24 10.4**	**+0.3**
	comp=Z,21nm,0.6s						
WTSB				*e*Sn	**Sn**	**19 25 59.4**	**-1.8**
CLL	**Collm**	**9.94**	**20**	*e*Pn	**Pn**	**19 24 11.0**	**+0.3**
CLL				*e*		19 25 47.0	
CLL				*e*(Sn)	**Sn**	**19 25 56.0**	**-6.3**
CLL				*e*		19 26 26.0	
CLL				*e*		19 26 47.0	
CLL				LmH		19 27 00.0	
	comp=N,2μm,20.1s						
CLL				LmH		19 27 00.0	
	comp=E,3μm,19.1s						
CLL				*e*Sg		19 27 03.0	
CLL				Lmax		19 30 00.0	
CLL	**Collm**	**9.94**	**20**	*e*P	**Pn**	**19 24 11.0**	**+0.3**
CLL				*e*		19 25 56.0	
CLL	**Collm**	**9.94**	**20**	*e*Pn	**Pn**	**19 24 08.8**	**-1.9**
CLL	**Collm**	**9.94**	**20**	*e*P	**Pn**	**19 24 11.0**	**+0.3**
CLL				*e*S	**Sn**	**19 25 56.0**	**-6.3**
CLL	**Collm**	**9.94**	**20**	*e*Pn	**Pn**	**19 24 08.8**	**-1.9**
OHR	**Ohrid**	**9.94**	**91**	*e*Pn	**Pn**	**19 24 12.6**	**+1.7**
OHR	**Ohrid**	**9.94**	**91**	*e*Pn	**Pn**	**19 24 12.5**	**+1.7**
IGT	**Igoumenitsa**	**9.99**	**101**	P	**Pn**	**19 24 10.6**	**-0.9**
IGT	**Igoumenitsa**	**9.99**	**101**	P	**Pn**	**19 24 10.6**	**-0.9**
IGT	**Igoumenitsa**	**9.99**	**101**	P	**Pn**	**19 24 10.6**	**-0.9**
IGT	**Igoumenitsa**	**9.99**	**101**	P	**Pn**	**19 24 10.6**	**-0.9**
SELS	**Selova**	**10.03**	**79**	*e*P	**Pn**	**19 24 10.3**	**-1.7**
VYHS	**Vyhne**	**10.18**	**47**	*e*P	**Pn**	**19 24 14.3**	**+0.3**
VYHS				*e*		19 26 01.5	
VYHS	**Vyhne**	**10.18**	**47**	*e*Pn	**Pn**	**19 24 14.3**	**+0.3**
VYHS				*e*S	**Sn**	**19 26 01.5**	**-6.8**
VYHS	**Vyhne**	**10.18**	**47**	*e*PN	**Pn**	**19 24 14.3**	**+0.3**
VYHS				*e*SN	**Sn**	**19 26 01.5**	**-6.8**
KRLC	**Kraliky**	**10.22**	**35**	*e*PN	**Pn**	**19 24 14.4**	**-0.2**
KRLC				*e*SN	**Sn**	**19 26 01.2**	**-8.0**
KRLC	**Kraliky**	**10.22**	**35**	*e*P	**Pn**	**19 24 14.4**	**-0.2**
KRLC				*e*		19 26 01.2	
KRLC	**Kraliky**	**10.22**	**35**	*e*P	**Pn**	**19 24 14.4**	**-0.2**
KRLC				*e*S	**Sn**	**19 26 01.2**	**-8.0**
UPC	**Upice**	**10.23**	**32**	*e*PN	**Pn**	**19 24 14.4**	**-0.3**
UPC				*e*SN	**Sn**	**19 26 01.0**	**-8.5**
UPC				AMS	AMS	19 28 30.0	
	comp=E,3μm,10.3s						
UPC	**Upice**	**10.23**	**32**	*e*P	**Pn**	**19 24 14.4**	**-0.3**
UPC				*e*		19 26 01.0	
UPC				MLR	MLR		
	comp=Z,3μm,10.3s						
UPC	**Upice**	**10.23**	**32**	*e*P	**Pn**	**19 24 14.4**	**-0.3**
	comp=Z,3μm,10.3s						
UPC				*e*S	**Sn**	**19 26 01.0**	**-8.5**
DPC	**Dobruska-Polom**	**10.23**	**33**	*e*PN	**Pn**	**19 24 14.4**	**-0.4**
DPC				*e*SN	Sn	19 26 00.3	-9.3
DPC				AMS	AMS	19 29 00.0	
	comp=Z,4μm,12.9s						
DPC	**Dobruska-Polom**	**10.23**	**33**	*e*P	**Pn**	**19 24 14.4**	**-0.4**
DPC				MLR	MLR		
	comp=Z,4μm,12.9s						
DPC	**Dobruska-Polom**	**10.23**	**33**	*e*P	**Pn**	**19 24 14.4**	**-0.4**
	comp=Z,4μm,12.9s						
NEST	**Nestorio**	**10.27**	**95**	P	**Pn**	**19 24 16.5**	**+1.1**
NEST	**Nestorio**	**10.27**	**95**	P	**Pn**	**19 24 16.5**	**+1.1**
SKO	**Skopje**	**10.31**	**86**	*e*Pn	**Pn**	**19 24 11.3**	**-4.4**
MORC	**Moravsky Berou**	**10.34**	**39**	*e*P	**Pn**	**19 24 15.4**	**-0.9**
MORC	**Moravsky Berou**	**10.34**	**39**	*e*Pn	**Pn**	**19 24 15.4**	**-0.9**
MORC	**Moravsky Berou**	**10.34**	**39**	*e*Pn	**Pn**	**19 24 15.4**	**-0.9**
PSZ	**Piszkesteto**	**10.48**	**52**	⇓*i*P	**Pn**	**19 24 20.2**	**+2.1**
PSZ	**Piszkesteto**	**10.48**	**52**	*e*P	**Pn**	**19 24 19.6**	**+1.4**
PSZ	**Piszkesteto**	**10.48**	**52**	*e*Pn	**Pn**	**19 24 19.6**	**+1.4**
PSZ	**Piszkesteto**	**10.48**	**52**	*e*Pn	**Pn**	**19 24 19.6**	**+1.4**
KUBS	**Kucevo**	**10.53**	**73**	*e*P	**Pn**	**19 24 17.1**	**-1.8**
KSP	**Ksiaz**	**10.61**	**31**	*e*P	**Pn**	**19 24 19.9**	**+0.1**
KSP	**Ksiaz**	**10.61**	**31**	*e*P	**Pn**	**19 24 19.9**	**+0.1**
KSP	**Ksiaz**	**10.61**	**31**	*e*P	**Pn**	**19 24 19.9**	**+0.1**
MDVR	**Moldovita**	**10.62**	**71**	⇑*i*P	**Pn**	**19 24 19.6**	**-0.5**
MDVR	**Moldovita**	**10.62**	**71**	⇑*i*P	**Pn**	**19 24 19.6**	**-0.5**
KPRO	**Kipourio**	**10.62**	**97**	P	**Pn**	**19 24 20.8**	**+0.6**
KPRO	**Kipourio**	**10.62**	**97**	P	**Pn**	**19 24 20.8**	**+0.6**
OKC	**Ostrava-Krasne**	**10.67**	**40**	AMS	AMS	19 29 50.0	
	comp=Z,4μm,10.1s						
BOLS	**Boljevac**	**10.67**	**76**	*e*P	**Pn**	**19 24 19.1**	**-1.6**
DSL	**Palaion Diasel**	**10.68**	**102**	P	**Pn**	**19 24 19.9**	**-1.1**
DSL	**Palaion Diasel**	**10.68**	**102**	P	**Pn**	**19 24 19.9**	**-1.1**
DSL	**Palaion Diasel**	**10.68**	**102**	P	**Pn**	**19 24 19.9**	**-1.1**
PBRG	**Braganca**	**10.69**	**273**	*e*P	**Pn**	**19 24 18.7**	**-2.3**
	comp=Z,96nm,1.9s						
BZS	**Buzias**	**10.72**	**66**	⇑*i*P	**Pn**	**19 24 22.3**	**+0.8**
BZS	**Buzias**	**10.72**	**66**	⇑P	**Pn**	**19 24 22.3**	**+0.8**
BZS	**Buzias**	**10.72**	**66**	⇑*i*P	**Pn**	**19 24 22.3**	**+0.8**
LANS	**Liptovska Anna**	**10.90**	**46**	*e*P	**Pn**	**19 24 28.4**	**+4.5**
LANS	**Liptovska Anna**	**10.90**	**46**	*e*P	**Pn**	**19 24 28.4**	**+4.5**
LANS	**Liptovska Anna**	**10.90**	**46**	*e*PN	**Pn**	**19 24 28.4**	**+4.5**
SIRR	**Siria**	**10.93**	**63**	⇓*i*P	**Pn**	**19 24 25.1**	**+0.8**
SIRR	**Siria**	**10.93**	**63**	⇓*i*P	**Pn**	**19 24 25.1**	**+0.8**
MVO	**Moncorvo**	**10.99**	**270**	*e*P	**Pn**	**19 24 23.2**	**-2.0**
	comp=Z,56nm,1.2s						
MVO				*e*LQ	LQ	19 27 17.8	
MVO				*e*LR	LR	19 28 23.9	
	comp=Z,1μm,14.0s						
ZKS	**Zakynthos**	**11.04**	**109**	P	**Pn**	**19 24 23.8**	**-2.1**
ZKS	**Zakynthos**	**11.04**	**109**	P	**Pn**	**19 24 23.8**	**-2.1**
KECS	**Kecovo**	**11.10**	**50**	*e*P	**Pn**	**19 24 28.5**	**+1.9**
KECS	**Kecovo**	**11.10**	**50**	*e*Pn	**Pn**	**19 24 28.5**	**+1.9**
KECS	**Kecovo**	**11.10**	**50**	*e*PN	**Pn**	**19 24 28.5**	**+1.9**
ZAPS	**Zavoj**	**11.14**	**79**	*e*P	**Pn**	**19 24 27.6**	**+0.4**
PVO	**Paravola**	**11.18**	**103**	P	**Pn**	**19 24 27.7**	**-0.1**
PVO	**Paravola**	**11.18**	**103**	P	**Pn**	**19 24 27.7**	**-0.1**
EVR	**Evrytania**	**11.28**	**102**	P	**Pn**	**19 24 29.4**	**+0.2**
EVR	**Evrytania**	**11.28**	**102**	P	**Pn**	**19 24 29.4**	**+0.2**
EVR	**Evrytania**	**11.28**	**102**	P	**Pn**	**19 24 29.4**	**+0.2**
PVRL	**Vila Real**	**11.48**	**271**	*e*P	**Pn**	**19 24 29.4**	**-2.5**
	comp=Z,46nm,2.0s						
NIE	**Niedzica**	**11.50**	**46**	*e*P	**Pn**	**19 24 36.5**	**+4.3**
NIE	**Niedzica**	**11.50**	**46**	*e*P	**Pn**	**19 24 36.5**	**+4.4**
NIE	**Niedzica**	**11.50**	**46**	*e*P	**Pn**	**19 24 36.5**	**+4.4**
MTE	**Manteigas**	**11.52**	**267**	*e*P	**Pn**	**19 24 31.0**	**-1.5**
	comp=Z,65nm,1.3s						
MTE				*e*LQ	LQ	19 27 40.3	
MTE				*e*LR	LR	19 28 24.1	
	comp=Z,2μm,18.0s						
MTE	**Manteigas**	**11.52**	**267**	*e*Pn	**Pn**	**19 24 30.5**	**-2.0**
POLO	**Lamas de Olo**	**11.52**	**272**	*e*P	**Pn**	**19 24 30.4**	**-2.1**
	comp=Z,31nm,1.9s						
DYA	**Yadsworthy**	**11.54**	**320**	*e*Pn	**Pn**	**19 24 32.3**	**-0.2**
DYA	**Yadsworthy**	**11.54**	**320**	*e*Pn	**Pn**	**19 24 32.3**	**-0.2**
VTS	**Vitosha**	**11.57**	**82**	⇑*i*P	**Pn**	**19 24 32.7**	**-0.5**
VTS	**Vitosha**	**11.57**	**82**	*e*P	**Pn**	**19 24 32.2**	**-1.0**
VTS	**Vitosha**	**11.57**	**82**	*e*Pn	**Pn**	**19 24 32.2**	**-1.0**
VTS	**Vitosha**	**11.57**	**82**	⇑*i*P	**Pn**	**19 24 32.7**	**-0.5**
VTS	**Vitosha**	**11.57**	**82**	*e*Pn	**Pn**	**19 24 32.1**	**-1.0**
PCBR	**Castelo Branco**	**11.62**	**264**	*e*P	**Pn**	**19 24 31.1**	**-2.6**
	comp=Z,35nm,1.8s						
AGG	**Agios Georgios**	**11.62**	**100**	P	**Pn**	**19 24 33.4**	**-0.4**
AGG	**Agios Georgios**	**11.62**	**100**	*e*P	**Pn**	**19 24 34.5**	**+0.7**
AGG	**Agios Georgios**	**11.62**	**100**	P	**Pn**	**19 24 33.4**	**-0.4**
AGG	**Agios Georgios**	**11.62**	**100**	*e*Pn	**Pn**	**19 24 34.5**	**+0.7**
AGG	**Agios Georgios**	**11.62**	**100**	*e*Pn	**Pn**	**19 24 34.5**	**+0.7**
PCAB	**Cabril**	**11.65**	**273**	*e*P	Pn	19 24 29.7	-4.5
	comp=Z,113nm,0.9s						
LAKA	**Lakka**	**11.66**	**104**	P	**Pn**	**19 24 33.7**	**-0.6**
LAKA	**Lakka**	**11.66**	**104**	P	**Pn**	**19 24 33.7**	**-0.6**
LAKA	**Lakka**	**11.66**	**104**	P	**Pn**	**19 24 33.7**	**-0.6**
DEV	**Deva**	**11.66**	**66**	⇑*i*P	**Pn**	**19 24 35.5**	**+1.2**
DEV	**Deva**	**11.66**	**66**	⇑P	**Pn**	**19 24 35.5**	**+1.2**
DEV	**Deva**	**11.66**	**66**	⇑*i*P	**Pn**	**19 24 35.5**	**+1.2**
PMRV	**Marv??o**	**11.67**	**262**	*e*P	**Pn**	**19 24 33.4**	**-1.1**
	comp=Z,55nm,1.0s						
PMRV				*e*LQ	LQ	19 27 23.5	
PMRV				*e*LR	LR	19 28 29.7	
	comp=Z,818nm,16.0s						
PMRV	**Marv??o**	**11.67**	**262**	*e*P	**Pn**	**19 24 33.4**	**-1.1**
	comp=Z,55nm,1.0s						
PVIS	**Viseu**	**11.71**	**268**	*e*P	**Pn**	**19 24 32.5**	**-2.6**
	comp=Z,58nm,1.7s						
OJC	**Ojcow**	**11.73**	**42**	*e*P	**Pn**	**19 24 37.2**	**+2.0**
OJC	**Ojcow**	**11.73**	**42**	*e*P	**Pn**	**19 24 34.7**	**-0.4**
OJC	**Ojcow**	**11.73**	**42**	*e*Pn	**Pn**	**19 24 34.7**	**-0.4**
OJC	**Ojcow**	**11.73**	**42**	*e*P	**Pn**	**19 24 37.2**	**+2.0**
OJC	**Ojcow**	**11.73**	**42**	*e*Pn	**Pn**	**19 24 34.7**	**-0.4**
OJC				*e*		19 24 52.3	
DRGR		**11.78**	**61**	⇓*i*P	**Pn**	**19 24 37.5**	**+1.5**
DRGR		**11.78**	**61**	⇓P	**Pn**	**19 24 37.5**	**+1.5**
DRGR		**11.78**	**61**	⇓*i*P	**Pn**	**19 24 37.5**	**+1.5**
PGAV	**Gavieira, Arco**	**11.80**	**275**	*e*P	**Pn**	**19 24 32.3**	**-4.0**
	comp=Z,88nm,1.8s						
PGAV				*e*LQ	LQ	19 27 33.2	
PGAV				*e*LR	LR	19 28 50.1	
	comp=Z,698nm,18.0s						
PBAR	**Barrancos**	**11.86**	**256**	*e*P	**Pn**	**19 24 34.2**	**-2.8**
	comp=Z,62nm,1.9s						
CRVS	**Cervenica-Dubn**	**11.87**	**50**	*e*P	**Pn**	**19 24 39.0**	**+1.9**
CRVS	**Cervenica-Dubn**	**11.87**	**50**	*e*Pn	**Pn**	**19 24 39.0**	**+1.9**
CRVS	**Cervenica-Dubn**	**11.87**	**50**	*e*PN	**Pn**	**19 24 39.0**	**+1.9**
PESTR	**Estremoz**	**12.00**	**259**	*e*P	**Pn**	**19 24 35.9**	**-3.1**
	comp=Z,20nm,1.1s						
STHS	**Stebnicka Huta**	**12.01**	**48**	*e*P	**Pn**	**19 24 42.5**	**+3.4**
STHS	**Stebnicka Huta**	**12.01**	**48**	*e*P	**Pn**	**19 24 42.5**	**+3.4**
STHS	**Stebnicka Huta**	**12.01**	**48**	*e*PN	**Pn**	**19 24 42.5**	**+3.4**
STHS				*e*		19 24 52.6	
PYL	**PYLOS**	**12.09**	**111**	P	**Pn**	**19 24 38.5**	**-1.7**
PYL	**PYLOS**	**12.09**	**111**	*e*P	**Pn**	**19 24 38.5**	**-1.7**
PYL	**PYLOS**	**12.09**	**111**	P	**Pn**	**19 24 38.5**	**-1.7**
UZH	**Uzhgorod**	**12.23**	**53**	*e*P	**Pn**	**19 24 42.8**	**+0.8**
UZH				*e*S	**Sn**	**19 26 57.8**	**-0.5**
UZH				MLR	MLR		
	comp=N,4μm,11.0s						
UZH				MLR	MLR		
	comp=E,14μm,11.0s						
UZH				MLR	MLR		
	comp=Z,4μm,11.0s						
UZH	**Uzhgorod**	**12.23**	**53**	*e*P	**Pn**	**19 24 42.8**	**+0.8**
UZH				*e*S	**Sn**	**19 26 57.8**	**-0.5**
PCAS	**Casmilo, Conde**	**12.32**	**266**	*e*P	**Pn**	**19 24 41.9**	**-1.4**
	comp=Z,85nm,1.5s						
CJR	**Cluj-Napoca**	**12.34**	**63**	⇑*i*P	**Pn**	**19 24 45.4**	**+1.8**
CJR	**Cluj-Napoca**	**12.34**	**63**	⇑P	**Pn**	**19 24 45.4**	**+1.8**
CJR	**Cluj-Napoca**	**12.34**	**63**	⇑*i*P	**Pn**	**19 24 45.4**	**+1.8**
KOLS	**Kolonicke sedl**	**12.35**	**51**	*e*P	**Pn**	**19 24 45.4**	**+1.6**
KOLS	**Kolonicke sedl**	**12.35**	**51**	*e*PN	**Pn**	**19 24 45.4**	**+1.6**
KOLS				*e*		19 24 59.6	
PTOM	**Tomar**	**12.37**	**264**	*e*P	**Pn**	**19 24 40.9**	**-3.1**
	comp=Z,66nm,1.7s						
EVO	**Evora**	**12.43**	**259**	*e*P	**Pn**	**19 24 42.6**	**-2.2**
	comp=Z,27nm,1.1s						
ARR	**Arges**	**12.75**	**69**	⇓*i*P	**Pn**	**19 24 51.2**	**+1.9**
ARR	**Arges**	**12.75**	**69**	⇓*i*P	**Pn**	**19 24 51.2**	**+1.9**
GKP	**Gorka Klasztor**	**12.92**	**27**	*e*P	**Pn**	**19 24 50.7**	**-0.7**
GKP	**Gorka Klasztor**	**12.92**	**27**	*e*P	**Pn**	**19 24 50.7**	**-0.7**
GKP	**Gorka Klasztor**	**12.92**	**27**	*e*P	**Pn**	**19 24 50.7**	**-0.7**
KWP	**Kalwaria Pacla**	**12.94**	**49**	*e*P	Pn	19 24 58.2	+6.4
KWP				*e*		19 25 06.3	
KWP	**Kalwaria Pacla**	**12.94**	**49**	*e*P	Pn	19 24 58.2	+6.4
RGN	**Rugen**	**13.03**	**15**	*e*Pn	**Pn**	**19 24 54.2**	**+1.3**
RGN	**Rugen**	**13.03**	**15**	*e*Pn	**Pn**	**19 24 54.2**	**+1.3**
MTUR	**Matau**	**13.03**	**70**	⇓*i*P	**Pn**	**19 24 53.2**	**+0.1**
MTUR	**Matau**	**13.03**	**70**	⇓P	**Pn**	**19 24 53.2**	**+0.1**
MTUR	**Matau**	**13.03**	**70**	⇓*i*P	**Pn**	**19 24 53.2**	**+0.1**
VOIR		**13.05**	**69**	⇓*i*P	**Pn**	**19 24 54.6**	**+1.2**
VOIR		**13.05**	**69**	⇓P	**Pn**	**19 24 54.6**	**+1.2**
VOIR		**13.05**	**69**	⇓*i*P	**Pn**	**19 24 54.6**	**+1.2**
BEL	**Belsk**	**13.26**	**38**	*e*P	**P**	**19 25 02.9**	**-3.1**
BEL				*e*		19 25 09.6	
BEL	**Belsk**	**13.26**	**38**	*e*P	**P**	**19 25 02.9**	**-3.1**
BEL	**Belsk**	**13.26**	**38**	*e*P	**P**	**19 25 02.9**	**-3.1**
KYTH	**Kithira**	**13.32**	**111**	P	**Pn**	**19 24 56.4**	**-0.6**
KYTH	**Kithira**	**13.32**	**111**	P	**Pn**	**19 24 56.4**	**-0.6**
KYTH	**Kithira**	**13.32**	**111**	P	**Pn**	**19 24 56.4**	**-0.6**
DOPR	**Dopca**	**13.38**	**67**	⇓*i*P	**Pn**	**19 24 59.3**	**+1.6**
DOPR	**Dopca**	**13.38**	**67**	⇓*i*P	**Pn**	**19 24 59.3**	**+1.6**
MDT	**Midelt**	**13.39**	**230**	Pn	**Pn**	**19 24 58.7**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=46,slow=14,SNR=2.2						
LLD	**Lille Linde**	**13.60**	**11**

SNR=40
BLS5 Blasjo 17.37 358 *e*P **P 19 25 53.6 +2.1**
BLS5 Blasjo 17.37 358 *e*P **P 19 25 53.7 +2.1**
SNR=35
KONO Kongsberg 17.63 3⇑ *e*P **P 19 25 55.5 +1.1**
KONO pmax pmax
comp=Z,285nm,1.7s
KONO Kongsberg 17.63 3 *e*P **P 19 25 55.5 +1.1**
comp=Z,285nm,1.7s
KONO Kongsberg 17.63 3 *e*P **P 19 25 56.0 +1.6**
comp=Z,92nm,1.8s
NACGM Naroch 17.98 38 *e* **Pn 19 25 57.0 -0.8**
NACGM *e*LR LR 19 32 16.0
ISAL Salakas 18.11 36 *e*P **P 19 26 00.1 +0.5**
ISAL IAmb IAmb 19 26 02.9
comp=Z,37nm,1.0s
ISAL Salakas 18.11 36 *e*P **P 19 26 00.2 +0.5**
SNR=35
IDID Didziasalis 18.21 37 *e*P **P 19 26 01.3 +0.5**
IDID IAmb IAmb 19 26 04.7
comp=Z,48nm,1.1s
IDID Didziasalis 18.21 37 *e*P **P 19 26 01.3 +0.5**
SNR=35
MICGM Minsk 18.26 40⇑ *i*P **Pn 19 26 00.0 -1.2**
MICGM PM 19 26 02.0
comp=Z,0.3nm,1.5s
MICGM PM 19 26 02.0
comp=N,0.6nm,2.0s
MICGM PM 19 26 02.0
comp=E,0.8nm,2.0s
MICGM *e*PP PnPn 19 26 28.0 +16
MICGM *e*PPP PPP 19 26 35.0
MICGM *e*S **Sn 19 29 22.0 -3.0**
MICGM *e*LR LR 19 32 35.0
MICGM LRM MLR 19 34 16.0
comp=Z,3.3nm,14.0s
MNK Minsk 18.26 40⇑ *i*P **Pn 19 26 00.0 -1.2**
MNK *e*S **Sn 19 29 22.0 -3.0**
MNK pmax pmax
comp=N,630nm,2.0s
MNK pmax pmax
comp=E,760nm,2.0s
MNK pmax pmax
comp=Z,260nm,1.5s
MNK MLR MLR
comp=Z,3μm,14.0s
IZAR Zarasai 18.28 35 *e*P **P 19 26 02.0 +0.5**
IZAR IAmb IAmb 19 26 04.8
comp=Z,58nm,1.1s
IZAR Zarasai 18.28 35 *e*P **P 19 26 02.0 +0.5**
SNR=35
HFS Hagfors 18.46 10 P **Pn 19 26 04.5 +1.0**
comp=Z,1.0nm,0.3s,baz=188,slow=9.7,SNR=39
ASK Askoy 18.48 356 *e*P **P 19 26 03.7 0.0**
NC602 NORSAR Array S 18.83 6 *e*P **Pn 19 26 08.8 +0.7**
NC602 NORSAR Array S 18.83 6 *e*P **Pn 19 26 08.8 +0.7**
NAO01 NORSAR Array S 18.89 5 *e*P **Pn 19 26 09.3 +0.5**
NAO01 NORSAR Array S 18.89 5 *e*P **Pn 19 26 09.3 +0.5**
NBO00 NORSAR Array S 19.07 5 *e*P **Pn 19 26 12.5 +1.5**
NBO00 NORSAR Array S 19.07 5 *e*P **Pn 19 26 12.5 +1.5**
SUE Sulen 19.07 356 *e*P **Pn 19 26 12.3 +1.3**
SUE Sulen 19.07 356 *e*P **Pn 19 26 12.3 +1.3**
SNR=35
NBO02 NORSAR Array S 19.09 5 *e*P **Pn 19 26 11.4 +0.1**
NBO02 NORSAR Array S 19.09 5 *e*P **Pn 19 26 11.4 +0.1**
NB2 NORSAR Subarra 19.11 5 P **Pn 19 26 12.3 +0.8**
comp=Z,50nm,1.2s,baz=189,slow=12
NB2 NORSAR Subarra 19.11 5 P **Pn 19 26 12.3 +0.8**
baz=189,slow=12
NB2 NORSAR Subarra 19.11 5 P **Pn 19 26 12.3 +0.8**
comp=Z,50nm,1.2s,SNR=4.1
NOA NORSAR Array B 19.11 5 P **Pn 19 26 12.2 +0.8**
comp=Z,2.0nm,0.3s,baz=190,slow=9.4,SNR=65
NOA PcP **PcP 19 30 34.4 -0.2**
comp=Z,0.1nm,0.3s,baz=171,slow=1.5,SNR=6.1
NOA LR LR 19 34 16.5
comp=Z,467nm,18.1s,baz=210,slow=39
NB201 NORSAR Array S 19.12 6 *e*P **Pn 19 26 12.5 +0.8**
NB201 NORSAR Array S 19.12 6 *e*P **Pn 19 26 12.5 +0.8**
HYA Hoyanger 19.13 358 *e*P **Pn 19 26 13.7 +2.1**
HYA Hoyanger 19.13 358 *e*P **Pn 19 26 13.7 +2.1**
SNR=35
BR231 Keskin MP Arra 19.13 88 *e*P **Pn 19 26 16.3 +4.3**
ANTO Ankara 19.14 88 *e*P **P 19 26 11.2 0.0**
ANTO pmax pmax
comp=Z,12nm,0.7s
ANTO Ankara 19.14 88 *e*P **P 19 26 11.2 0.0**
comp=Z,12nm,0.7s
ANTO Ankara 19.14 88 *e*P **P 19 26 11.2 0.0**
comp=Z,12nm,0.7s
NC405 NORSAR Array S 19.22 6 *e*P **Pn 19 26 14.0 +1.2**
NC405 NORSAR Array S 19.22 6 *e*P **Pn 19 26 14.0 +1.2**
NC303 NORSAR Array S 19.30 6 *e*P **Pn 19 26 14.0 +0.2**
NC303 NORSAR Array S 19.30 6 *e*P **Pn 19 26 14.0 +0.2**
NC204 NORSAR Array S 19.31 5 *e*P **Pn 19 26 14.9 +0.9**
NC204 NORSAR Array S 19.31 5 *e*P **Pn 19 26 14.9 +0.9**
TAM Tamanrasset 19.32 186 *e*P **P 19 26 13.3 -0.1**
TAM pmax pmax
comp=Z,20nm,1.1s
TAM Tamanrasset 19.32 186 *e*P **P 19 26 13.3 -0.1**
comp=Z,20nm,1.1s
TAM Tamanrasset 19.32 186 *e*P **P 19 26 13.3 -0.1**
comp=Z,20nm,1.1s
SIM Simferopol' 19.42 73 *e*P **Pn 19 26 14.6 -0.7**
SIM S **S 19 29 55.0 +1.3**
SIM pmax pmax
comp=Z,20nm,1.1s
SIM MLR MLR
comp=N,580nm,16.3s
SIM Simferopol' 19.42 73 *e*P **Pn 19 26 14.6 -0.7**
comp=N,20nm,1.1s
SIM S **S 19 29 55.0 +1.3**
comp=N,580nm,16.3s
FOO Floro 19.60 356 *e*P **Pn 19 26 18.1 +0.8**
FOO IAmb IAmb 19 26 19.2
comp=Z,38nm,1.1s
FOO Floro 19.60 356 *e*P **Pn 19 26 18.1 +0.8**
SNR=34
BR131 Keskin Array S 19.80 88 *e*P **P 19 26 19.1 +0.5**
BR131 Keskin Array S 19.80 88 *e*P **P 19 26 19.1 +0.5**
BRTR Keskin Array B 19.80 88 P **P 19 26 18.9 +0.4**
comp=Z,0.1nm,0.3s,baz=280,slow=7.1,SNR=33
BRTR PcP **PcP 19 30 36.1 -0.3**
comp=Z,0.0nm,0.3s,baz=211,slow=1.4,SNR=4.2
BRTR LR LR 19 35 13.6
comp=Z,1μm,18.5s,baz=277,slow=41
BRTR Keskin Array B 19.80 88 P **P 19 26 19.0 +0.4**
BRTR MLR MLR
comp=Z,1μm,18.5s
BRTR Keskin Array B 19.80 88 P **P 19 26 19.0 +0.4**
VSU Vasula 20.33 30*c* *i*P Pn 19 26 25.5 -0.5
VSU pmax pmax
comp=Z,2μm,1.7s
VSU Vasula 20.33 30 *i* P Pn 19 26 25.5 -0.5
comp=Z,2μm,1.7s
CSS Mathiatis 21.31 101 *e*P **P 19 26 33.5 -1.3**
comp=Z,38nm,1.0s
CSS Mathiatis 21.31 101 *e*P **P 19 26 33.5 -1.3**
comp=Z,38nm,1.0s
CSS LR LR
comp=Z,209nm,22.0s
ANN Anapa 21.78 73 *e*P **P 19 26 36.1 -3.6**
ANN *e*S **S 19 30 36.4 -4.1**
ANN pmax pmax
comp=Z,142nm,1.5s
ANN MLR MLR
comp=Z,838nm,13.0s
ANN MLR MLR
comp=E,345nm,13.0s
ANN MLR MLR
comp=N,548nm,13.0s
FINES FINESS Array B 22.35 24 PcP **PcP 19 30 40.4 -0.2**
comp=N,4.7nm,0.7s,baz=174,slow=1.7,SNR=4.4
FINES LR LR 19 35 19.5
comp=N,512nm,21.3s,baz=212,slow=36
FIA1 FINESS Array S 22.36 24 *e*P **P 19 26 45.6 -0.2**
FIA1 FINESS Array S 22.36 24 *e*P **P 19 26 45.6 -0.2**
OBN Obninsk 22.97 45 LR LR 19 37 40.0
comp=N,720nm,19.7s,baz=254,slow=41
VSR Storozhevoye 23.36 56 *e*P **P 19 26 52.5 -3.8**
VSR *e*S **S 19 31 05.2 -4.0**
VSR pmax pmax
comp=Z,150nm,1.1s
VSR smax smax
comp=E,600nm,4.1s
VORR Voronezh 23.48 55 *e*P **P 19 26 56.0 -1.5**
VORR pmax pmax
comp=Z,300nm,1.4s
VORR Voronezh 23.48 55 *e*P **P 19 26 56.0 -1.5**
comp=Z,300nm,1.4s
MMAI Mount Meron Ar 23.75 103 P **P 19 27 00.5 +0.1**
comp=Z,34nm,1.2s,baz=309,slow=7.2,SNR=16
MMAI LR LR 19 37 53.4
comp=Z,376nm,20.6s,baz=45,slow=41
MOS Moscow 23.77 45 *e*P **P 19 26 58.1 -2.2**
MOS *e*S **S 19 31 13.3 -2.3**
MOS pmax pmax
comp=Z,519nm,1.5s
MOS pmax pmax
comp=E,232nm,1.1s
MOS pmax pmax
comp=Z,2μm,2.5s
MOS pmax pmax
comp=E,1μm,3.1s
MOS pmax pmax
comp=N,500nm,4.0s
MOS smax smax
comp=N,500nm,4.0s
MOS MLR MLR
comp=Z,1μm,13.0s
MOS MLR MLR
comp=N,400nm,11.0s
MOS MLR MLR
comp=E,1μm,14.0s
MOS Moscow 23.77 45 *e*P **P 19 26 58.1 -2.2**
comp=E,500nm,4.0s
MOS *e*S **S 19 31 13.3 -2.3**
comp=E,400nm,11.0s
VRH Novokhopyorsk 24.95 57 *e*P **P 19 27 11.4 +0.2**
VRH pmax pmax
comp=Z,120nm,1.0s
VRH Novokhopyorsk 24.95 57 *e*P **P 19 27 11.4 +0.2**
comp=Z,120nm,1.0s
CHVG Ch'k'valeri 25.38 77 P **P 19 27 17.0 +1.8**
KIV Kislovodsk 25.61 74 *e*P **P 19 27 18.4 +1.0**
KIV *e*S **S 19 31 47.9 +2.3**
KIV pmax pmax
comp=Z,89nm,1.1s
KIV MLR MLR
comp=Z,266nm,15.0s
KIV Kislovodsk 25.61 74 *e*P **P 19 27 18.4 +1.0**
comp=Z,89nm,1.1s
KIV *e*S **S 19 31 47.9 +2.3**
comp=Z,266nm,15.0s
KIV Kislovodsk 25.61 74 *e*P **P 19 27 18.7 +1.3**
comp=Z,64nm,0.9s
KIV LR LR
comp=Z,575nm,21.0s
KVAR Kislovodsk Arr 25.62 74 LR LR 19 38 56.9
comp=Z,426nm,20.3s,baz=272,slow=40
CMLA Cha da Macela 25.67 271 PFAKE 19 27 30.0 +12
CMLA LR LR
comp=Z,1μm,21.0s
GOF Gofitskoye 25.73 71⇓ *e*P **P 19 27 19.5 +1.1**
GOF pmax pmax
comp=Z,115nm,1.0s
GOF Gofitskoye 25.73 71 *e*P **P 19 27 19.5 +1.1**
comp=Z,115nm,1.0s
NEY Neytrino 25.75 75⇑ *e*P **P 19 27 20.3 +1.5**
NEY pmax pmax
comp=Z,6.0nm,1.5s
NEY Neytrino 25.75 75 *e*P **P 19 27 20.3 +1.5**
comp=Z,6.0nm,1.5s
KBZ Khabaz 25.80 74 P **P 19 27 19.8 +0.9**
comp=Z,28nm,0.9s,baz=287,slow=9.6,SNR=23
KBZ PcP **PcP 19 30 48.7 +0.4**
comp=Z,7.0nm,0.8s,baz=218,slow=2.0,SNR=5.2
NCK Nalchik 26.33 75⇓ *i*P **P 19 27 26.3 +2.4**
NCK pmax pmax
comp=Z,83nm,1.9s
NCK Nalchik 26.33 75 *i* P **P 19 27 26.3 +2.4**
comp=Z,83nm,1.9s
ONI Oni 26.39 77 P **P 19 27 25.5 +1.0**
BGD Bogdanovka 26.79 80 P **P 19 27 28.8 +0.5**
KLMR Klimovskoe 26.93 35 *e*P **P 19 27 26.1 -2.9**
KLMR *e* 19 30 48.5
KLMR pmax pmax
comp=Z,135nm,1.2s
KLMR Klimovskoe 26.93 35 *e*PcP **PcP 19 30 48.5 -2.2**
TBLG Delisi 27.51 78 P **P 19 27 34.9 +0.4**
TBLG Delisi 27.51 78 P **P 19 27 34.9 +0.4**
GNI Garni 27.91 81 P **P 19 27 38.7 +0.4**
comp=Z,52nm,1.2s,baz=197,slow=2.2,SNR=21
GNI LR LR 19 40 16.3
comp=Z,259nm,20.8s,baz=297,slow=40
GNI Garni 27.91 81 P **P 19 27 39.7 +1.4**
SNR=9.6
BORG Borgarnes 28.03 334 LR LR 19 38 18.6
comp=Z,700nm,18.9s,baz=138,slow=35
ARA0 ARCESS Array S 29.05 13 *e*P **P 19 27 47.7 -0.2**
ARA0 ARCESS Array S 29.05 13 *e*P **P 19 27 47.7 -0.2**
ARCES ARCESS Array B 29.05 13 P **P 19 27 47.6 -0.3**
comp=Z,8.2nm,0.8s,baz=199,slow=9.9,SNR=10
ARCES PcP **PcP 19 30 55.5 -0.3**
comp=Z,7.6nm,0.7s,baz=197,slow=3.7,SNR=9.8
APA Apatity 29.10 20⇑ *i*P **P 19 27 47.8 -0.5**
APA *i* 19 30 53.0
APA *i* S **S 19 32 37.0 -2.8**
APA pmax pmax
comp=Z,14nm,1.0s
APA Apatity 29.10 20 *i* P **P 19 27 47.8 -0.5**
comp=Z,14nm,1.0s
TORD Torodi Ar. Bea 29.29 192 P **P 19 27 49.0 -1.4**
comp=Z,2.7nm,0.8s,baz=5.5,slow=8.4,SNR=14
TORD PcP **PcP 19 30 56.5 -0.7**
comp=Z,3.1nm,0.6s,baz=347,slow=2.0,SNR=9.6
TORD Torodi Ar. Bea 29.29 192 P **P 19 27 49.0 -1.4**
LVZ Lovozero 29.66 20*c* *i*P **P 19 27 53.7 +0.3**
LVZ pmax pmax
comp=Z,71nm,2.5s
LVZ Lovozero 29.66 20 *i* P **P 19 27 53.7 +0.3**
comp=Z,71nm,2.5s
LVZ Lovozero 29.66 20 PFAKE 19 28 10.0 +17
LVZ LR LR
comp=Z,615nm,19.0s
JMIC Jan Mayen 30.08 350 P **P 19 27 59.0 +2.0**
comp=Z,19nm,0.7s,baz=192,slow=5.7,SNR=4.0
JMIC LR LR 19 40 22.4
comp=Z,538nm,19.1s,baz=102,slow=37
SOKR Solikamsk 34.68 43*c* *i*P **P 19 28 35.9 -1.4**
SOKR pmax pmax
comp=Z,113nm,0.9s
SOKR MLR MLR
comp=Z,444nm,11.0s
SOKR Solikamsk 34.68 43 *i* P **P 19 28 35.9 -1.4**
comp=Z,444nm,11.0s
AKTK Aktyubinsk 35.25 59 P **P 19 28 41.7 -0.7**
comp=Z,71nm,1.4s
AKTO Aktyubinsk 35.25 59 P **P 19 28 41.7 -0.7**
AKTO pmax pmax
comp=Z,71nm,1.4s
ARU Arti 35.35 48*c* *i*P **P 19 28 43.1 -0.1**
ARU 19 30 00.3
ARU 19 31 12.6
ARU S **S 19 34 19.7 +2.4**
ARU pmax pmax
comp=Z,180nm,1.7s
ARU MLR MLR
comp=Z,825nm,15.0s
ARU Arti 35.35 48 *e*P **P 19 28 43.1 -0.1**
comp=Z,99nm,1.0s
ARU Arti 35.35 48 PcP **PcP 19 31 12.6 -0.6**
ARU S **S 19 34 19.7 +2.4**
comp=Z,825nm,15.0s
ARU Arti 35.35 48 *e*P **P 19 28 43.1 -0.1**
comp=Z,99nm,1.0s
ARU LR LR
comp=Z,124nm,20.0s
SPA0 Spitsbergen Ar 36.38 3 *e*P **P 19 28 53.9 +2.1**
SPA0 Spitsbergen Ar 36.38 3 *e*P **P 19 28 53.9 +2.1**
SPITS Spitsbergen Ar 36.38 3 P **P 19 28 53.2 +1.4**
comp=Z,23nm,0.9s,baz=171,slow=11,SNR=7.3
SPITS PcP **PcP 19 31 16.3 +0.4**
comp=Z,4.3nm,0.9s,baz=260,slow=4.7,SNR=3.6
SVE Sverdlovsk 36.50 48*d* *i*P **P 19 28 53.6 +0.5**
SVE *e*S **S 19 34 35.0 0.0**
SVE pmax pmax
comp=Z,152nm,1.4s
SVE MLR MLR
comp=Z,1μm,14.0s
SVE Sverdlovsk 36.50 48 *i* P **P 19 28 53.6 +0.5**
comp=Z,152nm,1.4s
SVE *e*S **S 19 34 35.0 0.0**
comp=Z,1μm,14.0s
AB31 Akbulak array 36.64 60 P **P 19 28 53.7 -0.7**
AB31 pmax pmax
comp=Z,40nm,1.4s
AB31 Akbulak array 36.64 60 P **P 19 28 53.7 -0.7**
comp=Z,40nm,1.4s
ABKAR Akbulak array 36.64 60 *e*P **P 19 28 54.6 +0.3**
ABKAR Akbulak array 36.64 60 *e*P **P 19 28 54.6 +0.3**
DBIC Dimbokro 36.96 201 P **P 19 28 56.0 -1.3**
comp=Z,3.7nm,0.7s,baz=352,slow=11,SNR=6.4
KBS Kingsbay 37.00 1 *i* P **P 19 28 58.4 +1.4**
KBS pmax pmax
comp=Z,146nm,1.7s
KBS Kingsbay 37.00 1 *i* P **P 19 28 58.4 +1.4**
comp=Z,146nm,1.7s
KBS Kingsbay 37.00 1 PFAKE 19 29 10.0 +13
KBS LR LR
comp=Z,206nm,20.0s
SUMG Summit 37.59 339 *i* P **P 19 29 04.6 +2.0**
comp=Z,38nm,1.0s
SUMG Summit 37.59 339 *e*P **P 19 29 04.6 +2.0**
SUMG *e* 19 31 21.5
SUMG pmax pmax
comp=Z,39nm,1.0s
SUMG Summit 37.59 339 *e*P **P 19 29 04.6 +2.0**
comp=Z,40nm,1.0s
SUMG Summit 37.59 339 *e*P **P 19 29 04.6 +2.0**
comp=Z,40nm,1.0s
SUMG *e*PcP **PcP 19 31 21.5 +1.4**
SACV Santiago Islan 38.12 234 PFAKE 19 29 20.0 +13
SACV LR LR
comp=Z,152nm,22.0s
GEYT Alibeck 38.47 79 P **P 19 29 09.8 -0.3**
comp=Z,30nm,1.1s,baz=286,slow=12,SNR=32
GEYT PcP **PcP 19 31 22.9 -0.1**
comp=Z,4.0nm,0.8s,baz=270,slow=4.3,SNR=5.2
SFJD Kangerlussuaq 39.81 329 LR LR 19 45 04.8
comp=Z,567nm,18.3s,baz=88,slow=35
ZRNK Zerenda 41.65 53 P **P 19 29 36.3 +0.1**
ZRNK pmax pmax
comp=Z,78nm,2.0s
ZRNK Zerenda 41.65 53 P **P 19 29 36.3 +0.1**
comp=Z,78nm,2.0s
BRVK Borovoye 42.39 53 *e*P **P 19 29 43.3 +1.1**
BRVK pmax pmax
comp=Z,144nm,1.7s
BRVK MLR MLR
comp=Z,205nm,22.0s
BRVK Borovoye 42.39 53 *e*P **P 19 29 43.3 +1.1**
comp=Z,144nm,1.7s
BRVK Borovoye 42.39 53 *e*P **P 19 29 43.3 +1.1**
comp=Z,144nm,1.7s
BRVK LR LR
comp=Z,205nm,22.0s
BVA0 Borovoye Array 42.46 53 *i* P **P 19 29 43.5 +0.7**
BVA0 pmax pmax
comp=Z,76nm,2.0s
BVA0 Borovoye Array 42.46 53 *i* P **P 19 29 43.5 +0.7**
comp=Z,76nm,2.0s
CHKZ Chkalovo 42.47 52 P **P 19 29 43.0 +0.2**
CHKZ pmax pmax
comp=Z,22nm,1.1s
CHKZ Chkalovo 42.47 52 P **P 19 29 43.0 +0.2**
comp=Z,22nm,1.1s
VOSK Vostochnaya 42.87 53 P **P 19 29 46.2 0.0**
VOSK pmax pmax
comp=Z,62nm,2.1s
VOSK Vostochnaya 42.87 53 P **P 19 29 46.2 0.0**
comp=Z,62nm,2.1s
VOSK Vostochnaya 42.87 53 *e*P **P 19 29 46.8 +0.7**
comp=Z,18nm,0.8s
BANOM Banah 42.89 96 *i* P **P 19 29 45.8 -0.9**
SNR=5.8
BANOM Banah 42.89 96 P **P 19 29 45.8 -0.9**
SNR=5.8
NAZ Nazwa, Dubai 42.95 98 *i* P **P 19 29 46.3 -0.8**
SNR=11
NAZ Nazwa, Dubai 42.95 98 P **P 19 29 46.3 -0.8**
SNR=11
FAQ Al Faqa, Dubai 43.04 98 *i* P **P 19 29 47.0 -0.9**
SNR=6.9
FAQ Al Faqa, Dubai 43.04 98 P **P 19 29 47.0 -0.9**
SNR=6.9
UOSS Minazif 43.38 97 *e*P **P 19 29 49.7 -0.9**
comp=Z,46nm,0.9s
UOSS Minazif 43.38 97 *e*P **P 19 29 49.7 -0.9**
comp=Z,46nm,0.9s
HATD Hatta, Dubai 43.39 98 *i* P **P 19 29 49.8 -0.9**
SNR=10
HATD Hatta, Dubai 43.39 98 P **P 19 29 50.0 -0.7**
SNR=5.4
HATD Hatta, Dubai 43.39 98 P **P 19 29 50.0 -0.7**
SNR=5.4
ASHO Ashiyiah 43.42 98 *i* P **P 19 29 49.8 -1.2**
SNR=6.5
ASHO Ashiyiah 43.42 98 P **P 19 29 49.8 -1.2**
SNR=6.5
ARQ Araqi 44.56 99 P **P 19 29 59.2 -0.9**
SNR=6.4
ARQ Araqi 44.56 99 P **P 19 29 59.2 -0.9**
SNR=6.4
DRLN Deer Lake 44.78 302 *e*P **P 19 30 02.6 +1.1**
comp=Z,102nm,0.4s
DRLN Deer Lake 44.78 302 *e*P **P 19 30 02.6 +1.1**
comp=Z,102nm,0.4s
OTUK Ortayu 44.85 59 P **P 19 30 02.1 -0.1**
OTUK pmax pmax
comp=Z,152nm,1.3s
OTUK Ortayu 44.85 59 P **P 19 30 02.1 -0.1**
comp=Z,152nm,1.3s
KK31 Karatay Array 45.34 66 P **P 19 30 06.0 -0.1**
KK31 pmax pmax
comp=Z,37nm,1.0s
KK31 Karatay Array 45.34 66 P **P 19 30 06.0 -0.1**
comp=Z,37nm,1.0s
KKAR Karatay Array 45.34 66 *e*P **P 19 30 06.5 +0.4**
KKAR Karatay Array 45.34 66 *e*P **P 19 30 06.5 +0.4**
KKAR Karatay Array 45.34 66 *e*P **P 19 30 06.5 +0.4**
SMDO Samad 45.85 98 P **P 19 30 09.2 -1.3**
SNR=8.7
SMDO Samad 45.85 98 P **P 19 30 09.2 -1.3**
SNR=8.7
MNAS Manas 46.93 66 P **P 19 30 18.9 +0.1**
MNAS pmax pmax
comp=Z,59nm,1.3s
MNAS Manas 46.93 66 P **P 19 30 18.9 +0.1**
comp=Z,59nm,1.3s
EKS2 Erkin-Say 47.73 66 *e*P **P 19 30 26.1 +1.1**
EKS2 pmax pmax
comp=Z,147nm,1.0s
EKS2 MLR MLR
comp=Z,260nm,19.0s
EKS2 Erkin-Say 47.73 66 *e*P **P 19 30 26.1 +1.1**
comp=Z,147nm,1.0s
EKS2 Erkin-Say 47.73 66 *e*P **P 19 30 26.1 +1.1**
comp=Z,147nm,1.0s
EKS2 LR LR
comp=Z,260nm,19.0s
KBL Kabul 47.89 78 *e*P **P 19 30 26.1 -0.4**
KBL pmax pmax
comp=Z,14nm,1.0s
KBL Kabul 47.89 78 *e*P **P 19 30 26.1 -0.4**
comp=Z,14nm,1.0s
KBL Kabul 47.89 78 *e*P **P 19 30 26.1 -0.4**
comp=Z,14nm,1.0s
NRIK Noril'sk 47.91 28 P **P 19 30 27.1 +1.3**
comp=Z,30nm,1.0s,baz=271,slow=5.4,SNR=36
NRIK LR LR 19 53 02.1
comp=Z,275nm,19.0s,baz=286,slow=39
KURK Kurchatov 47.98 54 *e*P **P 19 30 26.4 -0.3**
KURK MLR MLR
comp=Z,333nm,20.0s
KURK Kurchatov 47.98 54 *e*P **P 19 30 26.4 -0.3**
comp=Z,444nm,1.2s
KURK Kurchatov 47.98 54 *e*P **P 19 30 26.4 -0.3**
comp=Z,444nm,1.2s
KURK LR LR
comp=Z,333nm,20.0s
AAK Ala-Archa 48.23 66 P **P 19 30 29.7 +0.8**
comp=Z,45nm,1.2s,baz=251,slow=4.5,SNR=53
AAK Ala-Archa 48.23 66 *e*P **P 19 30 30.0 +1.1**
AAK pmax pmax
comp=Z,113nm,1.4s
AAK MLR MLR
comp=Z,240nm,20.0s
AAK Ala-Archa 48.23 66 *e*P **P 19 30 30.0 +1.1**

comp=Z,113nm,1.4s
AAK Ala-Archa 48.23 66 eP P 19 30 30.0 +1.1
AAK comp=Z,113nm,1.4s LR LR
comp=Z,240nm,20.0s
FRU Bishkek 48.23 65⇑ iP P 19 30 29.0 +0.2
FRU pmax pmax
comp=Z,240nm,1.8s
FRU Bishkek 48.23 65 i P P 19 30 29.0 +0.2
comp=Z,240nm,1.8s
SCHQ Schefferville 48.68 312 P P 19 30 32.0 0.0
comp=Z,26nm,0.7s,baz=72,slow=7.0,SNR=25
SCHQ LR LR 19 49 08.3
comp=Z,185nm,19.1s,baz=72,slow=34
SCHQ Schefferville 48.68 312 eP P 19 30 32.6 +0.6
comp=Z,34nm,0.8s
SCHQ Schefferville 48.68 312 eP P 19 30 32.6 +0.6
comp=Z,34nm,0.8s
TKM2 Tokmak 2 48.86 65 eP P 19 30 34.3 +0.5
TKM2 pmax pmax
comp=Z,14nm,0.9s
TKM2 MLR MLR
comp=Z,177nm,20.0s
TKM2 Tokmak 2 48.86 65 eP P 19 30 34.3 +0.5
comp=Z,14nm,0.9s
TKM2 Tokmak 2 48.86 65 eP P 19 30 34.3 +0.5
comp=Z,14nm,0.9s
TKM2 LR LR
comp=Z,177nm,20.0s
NVS Novosibirsk 49.34 48⇑ iP P 19 30 38.5 +1.4
NVS pmax pmax
comp=Z,53nm,1.4s
NVS pmax pmax
comp=N,7.0nm,1.0s
NVS pmax pmax
comp=E,28nm,1.7s
NVS Novosibirsk 49.34 48 i P P 19 30 38.5 +1.4
comp=E,7.0nm,1.0s
AAA Alma-Ata 49.62 64 eP P 19 30 40.7 +1.2
AAA eS S 19 37 48.8 +0.9
AAA pmax pmax
comp=Z,500nm,1.7s
AAA smax smax
comp=E,300nm,6.3s
AAA MLR MLR
comp=Z,200nm,6.0s
AAA Alma-Ata 49.62 64 eP P 19 30 40.7 +1.2
comp=Z,500nm,1.7s
AAA eS S 19 37 48.8 +0.9
comp=Z,200nm,6.0s
ZAA0 Zalesovo Array 50.51 48 eP P 19 30 46.1 +0.1
ZAA0 Zalesovo Array 50.51 48 eP P 19 30 46.1 +0.1
ZALV Zalesovo Beam 50.51 48 P P 19 30 46.0 0.0
comp=Z,8.2nm,0.7s,baz=281,slow=8.3,SNR=31
ZALV PP PP 19 32 41.2 -0.1
comp=Z,4.9nm,1.0s,baz=295,slow=7.8,SNR=5.5
ZALV Zalesovo Beam 50.51 48 P P 19 30 46.0 0.0
KSH Kashi 50.55 69 eP P 19 30 46.6 -0.1
KSH ePcP PcP 19 32 06.8 +2.4
KSH ePP PP 19 32 43.3 +1.1
KSH eScP ScP 19 36 02.5 +1.9
KSH S S 19 37 56.4 -4.7
KSH ScS ScS 19 40 35.1 -2.9
KSH pmax pmax
comp=Z,44nm,1.0s
KSH LR LR
comp=Z,140nm,6.8s
KSH LR LR
comp=Z,130nm,7.7s
KSH LR LR
comp=Z,300nm,7.3s
PDGK Podgornoye 51.29 63 P P 19 30 52.7 +0.8
PDGK pmax pmax
comp=Z,79nm,0.8s
PDGK Podgornoye 51.29 63 P P 19 30 52.7 +0.8
comp=Z,79nm,0.8s
MAKZ Makanchi 51.47 58 eP P 19 30 53.8 +0.5
MAKZ pmax pmax
comp=Z,57nm,1.1s
MAKZ Makanchi 51.47 58 eP P 19 30 53.8 +0.5
comp=Z,57nm,1.1s
MAKZ Makanchi 51.47 58 eP P 19 30 53.8 +0.5
comp=Z,57nm,1.1s
MK31 Makanchi Array 51.67 58 P P 19 30 55.0 +0.2
MK31 pmax pmax
comp=Z,55nm,0.8s
MK31 Makanchi Array 51.67 58 P P 19 30 55.0 +0.2
comp=Z,55nm,0.8s
MK31 Makanchi Array 51.67 58 eP P 19 30 55.4 +0.5
MKAR Makanchi Array 51.67 58 P P 19 30 55.2 +0.3
comp=Z,54nm,0.8s,baz=289,slow=6.0,SNR=220
MKAR Makanchi Array 51.67 58 eP P 19 30 55.4 +0.5
MK01 Makanchi Array 51.69 58 eP P 19 30 54.6 -0.3
MK01 Makanchi Array 51.69 58 eP P 19 30 54.6 -0.3
LMQ La Malbaie 53.36 304 eP P 19 31 07.7 +0.4
comp=Z,23nm,0.8s
LMQ La Malbaie 53.36 304 eP P 19 31 07.7 +0.4
comp=Z,23nm,0.8s
KRAR Krasnoyarsk 54.06 44⇓ iP P 19 31 13.8 +1.5
KRAR Krasnoyarsk 54.06 44 i P P 19 31 13.8 +1.5
WMQ Urumqi 56.40 59⇑ iP P 19 31 30.6 +1.1
WMQ pP sP 19 31 35.4 +2.0
WMQ sP pP 19 31 38.9 +6.6
WMQ PP PP 19 33 35.4 +0.7
WMQ pmax pmax
comp=Z,33nm,1.4s
WMQ pmax pmax
comp=Z,180nm,3.6s
WMQ LR LR
comp=Z,560nm,17.5s
WMQ LR LR
comp=Z,580nm,11.2s
WMQ LR LR
comp=Z,520nm,22.6s
TRQ Mont Tremblant 56.55 304 eP P 19 31 30.8 +0.3
TRQ Mont Tremblant 56.55 304 eP P 19 31 30.8 +0.3
QUA2 Belchertown 57.04 299 eP P 19 31 35.3 +1.4
comp=Z,27nm,0.9s
QUA2 Belchertown 57.04 299 eP P 19 31 35.3 +1.4
comp=Z,27nm,0.9s
LONY Lake Ozonia 57.33 303 eP P 19 31 36.8 +0.8
comp=Z,10.0nm,0.9s
LONY Lake Ozonia 57.33 303 eP P 19 31 36.8 +0.8
comp=Z,10.0nm,0.9s
LONY LR LR
comp=Z,369nm,20.0s
ACCN Adirondack Com 57.35 301 eP P 19 31 37.7 +1.6
comp=Z,19nm,0.9s
ACCN Adirondack Com 57.35 301 eP P 19 31 37.7 +1.6
comp=Z,19nm,0.9s
VLDQ Val d'Or 57.40 308 eP P 19 31 38.0 +1.6
comp=Z,26nm,1.0s
VLDQ Val d'Or 57.40 308 eP P 19 31 38.0 +1.6
comp=Z,26nm,1.0s
NCB Newcomb 57.42 302 eP P 19 31 37.8 +1.2
comp=Z,0.1nm,0.9s
NCB Newcomb 57.42 302 eP P 19 31 37.8 +1.2
comp=Z,0.1nm,0.9s
TRY Troy 57.67 300 eP P 19 31 40.2 +1.8
comp=Z,23nm,0.9s
TRY Troy 57.67 300 eP P 19 31 40.2 +1.8
comp=Z,23nm,0.9s
TIXI Tiksi 59.27 18 P P 19 31 49.8 +0.7
comp=Z,16nm,0.9s,baz=325,slow=4.1,SNR=6.7
TIXI Tiksi 59.27 18 i P P 19 31 49.9 +0.8
TIXI pmax pmax
comp=Z,74nm,1.7s
TIXI Tiksi 59.27 18 i P P 19 31 49.9 +0.8
comp=Z,74nm,1.7s
TIXI Tiksi 59.27 18 eP P 19 31 50.3 +1.3
comp=Z,146nm,1.7s
TIXI LR LR
comp=Z,211nm,21.0s
BINY Binghamton 59.42 301 eP P 19 31 51.7 +1.1
comp=Z,17nm,1.0s
BINY Binghamton 59.42 301 eP P 19 31 51.7 +1.1
comp=Z,17nm,1.0s
BINY LR LR
comp=Z,261nm,22.0s
N59A State Game Lan 59.94 300 P P 19 31 55.2 +0.9
baz=59,SNR=5.3
SADO Sadowa 60.07 305 P P 19 31 55.7 +0.7
comp=Z,19nm,0.9s,baz=79,slow=9.0,SNR=14
SADO Sadowa 60.07 305 eP P 19 31 56.1 +1.1
comp=Z,64nm,1.4s
SADO Sadowa 60.07 305 eP P 19 31 56.1 +1.1
comp=Z,64nm,1.4s

MOY Mondy 60.33 46 eP P 19 31 58.3 +1.4
MOY pmax pmax
comp=Z,66nm,1.8s
MOY Mondy 60.33 46 eP P 19 31 58.3 +1.4
comp=Z,66nm,1.8s
MMNY Mt. Morris Dam 60.36 302 eP P 19 31 58.5 +1.4
MMNY Mt. Morris Dam 60.36 302 eP P 19 31 58.5 +1.4
FCC Fort Churchill 60.57 324 eP P 19 31 59.2 +1.0
FCC pmax pmax
comp=Z,36nm,1.4s
FCC Fort Churchill 60.57 324 eP P 19 31 59.2 +1.0
comp=Z,36nm,1.4s
FCC Fort Churchill 60.57 324 eP P 19 31 59.1 +1.0
comp=Z,36nm,1.4s
MVL Millersville 60.80 299 eP P 19 32 01.8 +1.7
comp=Z,12nm,1.0s
MVL Millersville 60.80 299 eP P 19 32 01.8 +1.7
comp=Z,12nm,1.0s
PYUN Piuthan 61.40 77 eP P 19 32 04.1 -0.5
comp=Z,302nm,1.3s
SSPA Standing Stone 61.45 300 eP P 19 32 05.4 +0.9
comp=Z,24nm,0.9s
SSPA Standing Stone 61.45 300 eP P 19 32 05.4 +0.9
comp=Z,24nm,0.9s
TSUM Tsumeb 61.68 169 eP P 19 32 05.3 -0.9
comp=Z,17nm,1.3s
TSUM Tsumeb 61.68 169 eP P 19 32 05.3 -0.9
comp=Z,17nm,1.3s
TSUM LR LR
comp=Z,393nm,19.0s
TLY Talaya 61.72 45 P P 19 32 07.7 +1.5
comp=Z,27nm,0.9s,baz=305,slow=5.2,SNR=50
TLY Talaya 61.72 45 eP P 19 32 07.8 +1.6
TLY pmax pmax
comp=Z,106nm,1.5s
TLY MLR MLR
comp=Z,346nm,18.0s
TLY Talaya 61.72 45 eP P 19 32 07.3 +1.1
comp=Z,89nm,1.2s
TLY Talaya 61.72 45 eP P 19 32 07.3 +1.1
comp=Z,90nm,1.2s
TLY LR LR
comp=Z,354nm,22.0s
IRK Irkutsk 61.74 44 eP P 19 32 05.0 -1.3
IRK pmax pmax
comp=Z,102nm,2.2s
IRK Irkutsk 61.74 44 eP P 19 32 05.0 -1.3
comp=Z,102nm,2.2s
RCBR Riachuelo 61.97 231 PFAKE 19 32 20.0 +12
RCBR LR LR
comp=Z,343nm,20.0s
KOLN Koldanda 62.03 77 eP P 19 32 07.9 -1.0
comp=Z,88nm,1.5s
O56A Blue Knob Stat 62.09 300 P P 19 32 09.7 +0.9
baz=57
M54A Oil Creek Stat 62.12 302 P P 19 32 09.9 +0.9
baz=57
ZAK Zakamensk 62.24 46 eP P 19 32 10.2 +0.4
ZAK pmax pmax
comp=Z,24nm,1.3s
ZAK Zakamensk 62.24 46 eP P 19 32 10.2 +0.4
comp=Z,24nm,1.3s
ALLY Alegheny Colle 62.34 302 eP P 19 32 11.6 +1.1
comp=Z,34nm,0.8s
ALLY Alegheny Colle 62.34 302 eP P 19 32 11.6 +1.1
comp=Z,34nm,0.8s
N54A Moraine State 62.62 302 P P 19 32 13.3 +0.9
baz=57
GKN Gorkha 62.65 76 eP P 19 32 12.0 -0.9
comp=Z,190nm,1.2s
BOD Bodaibo 63.16 35 eP P 19 32 13.9 -1.7
BOD pmax pmax
comp=Z,79nm,1.6s
BOD Bodaibo 63.16 35 eP P 19 32 13.9 -1.7
comp=Z,79nm,1.6s
DMN Daman 63.21 76 eP P 19 32 16.4 -0.4
comp=Z,102nm,0.9s
KKN Kakani 63.23 76 eP P 19 32 16.0 -0.9
comp=Z,39nm,0.8s
PKIN Phulchoki 63.44 76 eP P 19 32 17.7 -0.6
comp=Z,14nm,0.8s
GUN Gumba 63.60 75 eP P 19 32 19.0 -0.5
comp=Z,67nm,0.5s
RAMN Ramite 64.68 76 eP P 19 32 25.7 -0.7
comp=Z,152nm,0.9s
ACSO Alum Creek Sta 64.92 302 eP P 19 32 28.1 +0.6
comp=Z,40nm,0.9s
ACSO Alum Creek Sta 64.92 302 eP P 19 32 28.1 +0.6
comp=Z,40nm,0.9s
BLA Blacksburg 64.99 298 PFAKE 19 32 40.0 +12
BLA LR LR
comp=Z,263nm,20.0s
COWI Conover 65.23 310 eP P 19 32 29.9 +0.4
comp=Z,107nm,2.0s
COWI Conover 65.23 310 eP P 19 32 29.9 +0.4
comp=Z,107nm,2.0s
COWI LR LR
comp=Z,255nm,19.0s
SONA1 Songino Array 65.37 47 eP P 19 32 30.4 -0.1
SONA1 Songino Array 65.37 47 eP P 19 32 30.4 -0.1
SONM Songino Array 65.37 47 P P 19 32 31.0 +0.5
comp=Z,35nm,1.0s,baz=296,slow=7.0,SNR=102
SONM LR LR 20 04 13.2
comp=Z,248nm,20.3s,baz=304,slow=39
SONM Songino Array 65.37 47 P P 19 32 31.0 +0.5
SONM pmax pmax
comp=Z,35nm,1.0s
SONM MLR MLR
comp=Z,249nm,20.3s
SONM Songino Array 65.37 47 P P 19 32 31.0 +0.5
EYMN Ely 65.46 313 P P 19 32 31.2 +0.3
baz=54,SNR=12
EYMN Ely 65.46 313 eP P 19 32 31.2 +0.3
comp=Z,108nm,1.8s
EYMN Ely 65.46 313 eP P 19 32 31.2 +0.3
comp=Z,108nm,1.8s
EYMN LR LR
comp=Z,264nm,19.0s
C38A Sawbill Land. 65.48 313 P P 19 32 30.5 -0.5
baz=54,SNR=7.2
YKA Yellowknife Ar 65.97 335 P P 19 32 34.4 +0.6
comp=Z,4.8nm,0.6s,baz=44,slow=6.2,SNR=44
YKA LR LR 20 00 36.4
comp=Z,59nm,19.0s,baz=0.0,slow=35
C37A Embarrass 65.97 313 P P 19 32 34.1 -0.1
baz=53,SNR=12
SJG San Juan 66.14 273 PFAKE 19 32 50.0 +14
SJG LR LR
comp=Z,345nm,22.0s
INK Inuvik 66.14 345 P P 19 32 35.4 +0.5
comp=Z,7.9nm,1.0s,baz=45,slow=8.2,SNR=9.6
INK Inuvik 66.14 345 eP P 19 32 35.8 +0.9
INK pmax pmax
comp=Z,43nm,1.6s
INK Inuvik 66.14 345 eP P 19 32 35.8 +0.9
comp=Z,43nm,1.6s
INK Inuvik 66.14 345 eP P 19 32 35.8 +0.9
comp=Z,43nm,1.6s
YAK Yakutsk 66.27 26 P P 19 32 36.0 +0.2
comp=Z,159nm,0.8s,baz=297,slow=3.3,SNR=92
YAK Yakutsk 66.27 26 c iP P 19 32 35.9 +0.1
YAK pmax pmax
comp=Z,101nm,0.9s
YAK pmax pmax
comp=N,29nm,0.9s
YAK pmax pmax
comp=E,30nm,1.1s
YAK Yakutsk 66.27 26 eP P 19 32 36.0 +0.2
comp=E,170nm,0.8s
YAK Yakutsk 66.27 26 eP P 19 32 36.0 +0.2
comp=E,170nm,0.8s
YAK LR LR
comp=Z,247nm,20.0s
C36A Pine Crest Far 66.30 314 P P 19 32 36.6 +0.2
baz=53,SNR=19
LSA Lhasa 66.31 71 eP P 19 32 37.4 +0.2
LSA pmax pmax
comp=Z,54nm,1.3s
LSA MLR MLR
comp=Z,160nm,21.0s
LSA Lhasa 66.31 71 eP P 19 32 37.4 +0.2
comp=Z,54nm,1.3s
LSA Lhasa 66.31 71 eP P 19 32 37.4 +0.2
comp=Z,54nm,1.3s
LSA LR LR
comp=Z,160nm,21.0s
ULM Lac du Bonnet 66.38 317 P P 19 32 36.8 0.0
comp=Z,57nm,1.0s,baz=54,slow=7.7,SNR=31
ULM LR LR 19 59 37.6
comp=Z,188nm,19.4s,baz=70,slow=34
B35A Bob, Littlefor 66.41 314 P P 19 32 36.9 -0.1
baz=53,SNR=12
GTA Gaotai 66.43 58 ⇑P P 19 32 38.0 +0.6
GTA pP sP 19 32 42.2 +0.8
GTA sP pP 19 32 45.2 +4.8
GTA S S **19 41 26.5 -1.3**
GTA sS sS 19 41 34.3 +1.7
GTA SS SS **19 45 44.5 +0.7**
GTA pmax pmax
comp=Z,27nm,1.1s
GTA pmax pmax
comp=Z,150nm,5.9s
GTA LR LR
comp=Z,210nm,17.6s
GTA LR LR
comp=Z,200nm,14.7s
D37A Cotton 66.44 313 P P 19 32 37.3 +0.1
baz=53,SNR=8.6
FFC Flin Flon 66.47 323 eP P 19 32 37.9 +0.6
FFC pmax pmax
comp=Z,62nm,1.8s
FFC MLR MLR
comp=Z,360nm,20.0s
FFC Flin Flon 66.47 323 eP P 19 32 37.9 +0.6
comp=Z,62nm,1.8s
FFC Flin Flon 66.47 323 eP P 19 32 37.9 +0.6
comp=Z,62nm,1.8s
FFC LR LR
comp=Z,360nm,20.0s
CIT Chita 66.51 40 eP P 19 32 37.6 -0.1
CIT e 19 32 44.0
CIT e 19 33 13.1
CIT pmax pmax
comp=Z,76nm,1.4s
CIT Chita 66.51 40 eP P 19 32 37.6 -0.1
comp=Z,76nm,1.4s
GRGR Grenville 66.58 265 PFAKE 19 32 50.0 +11
GRGR LR LR
comp=Z,335nm,21.0s
E37A Wrenshall 66.78 312 P P 19 32 39.7 +0.3
baz=53
KMSC Kings Mountain 66.79 297 P P 19 32 40.0 +0.4
baz=54
B34A Aery, Baudette 66.83 315 P P 19 32 40.0 +0.4
baz=52,SNR=6.2
D36A Goodland 66.83 313 P P 19 32 39.8 +0.1
baz=53,SNR=7.6
A33A Warroad 66.94 316 P P 19 32 40.1 -0.3
baz=52,SNR=10
C35A Jirik Farms, M 66.95 314 P P 19 32 40.3 -0.2
baz=52,SNR=12
NHSC New Hope 67.21 295 PFAKE 19 32 50.0 +7.7
NHSC LR LR
comp=Z,231nm,19.0s
JSC Jenkinsville 67.25 296 eP P 19 32 43.6 +1.0
JSC pmax pmax
comp=Z,66nm,1.8s
JSC Jenkinsville 67.25 296 eP P 19 32 43.6 +1.0
comp=Z,66nm,1.8s
JSC Jenkinsville 67.25 296 eP P 19 32 43.6 +1.0
comp=Z,66nm,1.8s
E36A McGregor 67.28 313 P P 19 32 42.9 +0.3
baz=52,SNR=15
J41A Loganville 67.35 308 P P 19 32 43.4 +0.3
baz=53,SNR=10
D35A Remer 67.37 314 P P 19 32 43.3 +0.1
baz=52,SNR=9.1
SFIN Lafayette 67.39 304 P P 19 32 43.0 -0.4
baz=54,SNR=5.1
SFIN Lafayette 67.39 304 eP P 19 32 43.2 -0.2
comp=Z,20nm,1.0s
SFIN Lafayette 67.39 304 eP P 19 32 43.2 -0.2
comp=Z,20nm,1.0s
TZTN Tazewell 67.42 299 eP P 19 32 44.5 +0.8
comp=Z,49nm,1.6s
TZTN Tazewell 67.42 299 eP P 19 32 44.5 +0.8
comp=Z,49nm,1.6s
B33A Robert and Kas 67.45 315 P P 19 32 43.6 0.0
baz=52
C34A RKJ Ranch, Bem 67.48 314 P P 19 32 43.8 0.0
baz=52
A32A Rocking H Ranc 67.52 316 P P 19 32 44.5 +0.4
baz=51,SNR=9.0
AGMN Agassiz Nation 67.58 315 P P 19 32 44.7 +0.3
baz=52,SNR=15
AGMN Agassiz Nation 67.58 315 eP P 19 32 44.8 +0.3
comp=Z,30nm,0.8s
AGMN Agassiz Nation 67.58 315 eP P 19 32 44.8 +0.3
comp=Z,30nm,0.8s
AGMN LR LR
comp=Z,484nm,22.0s
J40A Soldiers Grove 67.76 309 P P 19 32 45.6 0.0
baz=53,SNR=9.5
JFWS Jewell Farm 67.76 308 eP P 19 32 45.6 -0.1
JFWS pmax pmax
comp=Z,25nm,1.1s
JFWS MLR MLR
comp=Z,298nm,21.0s
JFWS Jewell Farm 67.76 308 eP P 19 32 45.6 -0.1
comp=Z,25nm,1.1s
JFWS Jewell Farm 67.76 308 eP P 19 32 45.6 -0.1
comp=Z,25nm,1.1s
JFWS LR LR
comp=Z,298nm,21.0s
SPMN Marine on St. 67.82 311 P P 19 32 46.2 +0.1
baz=52
SPMN Marine on St. 67.82 311 eP P 19 32 46.5 +0.5
comp=Z,30nm,0.7s
SPMN Marine on St. 67.82 311 eP P 19 32 46.5 +0.5
comp=Z,30nm,0.7s
F36A Milaca 67.83 312 P P 19 32 46.0 -0.1
baz=52,SNR=11
C33A Trail 67.87 315 P P 19 32 46.3 0.0
baz=51,SNR=5.7
A31A Linda, St. Vin 67.87 316 P P 19 32 46.4 +0.2
baz=51
B32A Ashes, Strandq 67.87 316 P P 19 32 46.5 +0.2
baz=51,SNR=8.9
E35A Pequot Lakes 67.88 313 P P 19 32 46.7 +0.3
baz=52,SNR=5.5
D34A Park Rapids 67.98 314 P P 19 32 47.0 0.0
baz=52
K41A Shullsburg 67.98 308 P P 19 32 46.9 -0.1
baz=53
TKL Tuckaleechee C 68.09 299 P P 19 32 47.9 0.0
comp=Z,5.4nm,0.8s,baz=77,slow=8.9,SNR=6.2
TKL Tuckaleechee C 68.09 299 eP P 19 32 48.3 +0.4
TKL pmax pmax
comp=Z,37nm,1.5s
TKL Tuckaleechee C 68.09 299 eP P 19 32 48.3 +0.4
comp=Z,37nm,1.5s
TKL Tuckaleechee C 68.09 299 eP P 19 32 48.3 +0.4
comp=Z,37nm,1.5s
WCI Wyandotte Cave 68.17 302 eP P 19 32 48.5 +0.1
WCI pmax pmax
comp=Z,27nm,0.8s
WCI Wyandotte Cave 68.17 302 eP P 19 32 48.5 +0.1
comp=Z,27nm,0.8s
WCI Wyandotte Cave 68.17 302 eP P 19 32 48.5 +0.1
comp=Z,27nm,0.8s
C32A Crookston 68.22 315 P P 19 32 48.5 +0.1
baz=51
CLNS Chul'man 68.27 32 eP P 19 32 48.7 0.0
CLNS pmax pmax
comp=Z,28nm,0.8s
CLNS pmax pmax
comp=N,9.0nm,0.9s
CLNS pmax pmax
comp=E,8.0nm,0.9s
CLNS MLR MLR
comp=Z,363nm,13.0s
CLNS MLR MLR
comp=E,250nm,13.0s
CLNS MLR MLR
comp=N,184nm,11.0s
CLNS Chul'man 68.27 32 eP P 19 32 48.7 0.0
comp=N,184nm,11.0s
H37A Dierke Farm, C 68.28 311 P P 19 32 49.1 +0.2
baz=52
I38A Scanlan Farm, 68.28 310 P P 19 32 49.1 +0.2
baz=52,SNR=6.2
D33A AnnSam, Waubun 68.29 314 P P 19 32 49.1 +0.1
baz=51
E34A Wadena 68.32 314 P P 19 32 49.1 -0.1
baz=51

G36A **St. Michael** 68.34 312 P P 19 32 49.5 +0.2
baz=52
J39A **Decorah** 68.35 309 P P 19 32 49.3 -0.1
baz=52,SNR=18
F35A **Swanville** 68.41 313 P P 19 32 49.6 -0.1
baz=52
K40A **Colesburg** 68.41 308 P P 19 32 49.4 -0.3
baz=52,SNR=6.3
L41A **Preston** 68.42 308 P P 19 32 49.7 -0.1
baz=52,SNR=15
B31A **Greenbush Farm** 68.42 316 P P 19 32 49.9 +0.2
baz=50,SNR=6.4
A30A **Hoffart Farm,** 68.43 317 P P 19 32 49.9 +0.1
baz=50,SNR=21
HDIL **Hopedale** 68.62 306 P P 19 32 51.0 -0.1
baz=52,SNR=5.5
HDIL **Hopedale** 68.62 306 *e*P P 19 32 51.5 +0.4
comp=N,51nm,0.8s
HDIL **Hopedale** 68.62 306 *e*P P 19 32 51.5 +0.4
comp=N,51nm,0.8s
HDIL LR LR
comp=Z,264nm,19.0s
CPCT **Cooper Cave** 68.71 299 *e*P P 19 32 52.3 +0.6
comp=Z,26nm,1.4s
CPCT **Cooper Cave** 68.71 299 *e*P P 19 32 52.3 +0.6
comp=Z,26nm,1.4s
B30A **Myrvik Farm, E** 68.76 317 P P 19 32 52.1 +0.3
baz=50,SNR=24
E33A **Westby DABS, E** 68.78 314 P P 19 32 52.2 +0.2
baz=51
J38A **Wedel Dairy, R** 68.81 310 P P 19 32 51.7 -0.5
baz=52
LBTB **Lobatse** 68.81 162 *e*P P 19 32 52.1 -0.3
LBTB pmax pmax
comp=Z,49nm,1.5s
LBTB **Lobatse** 68.81 162 *e*P P 19 32 52.1 -0.3
comp=Z,49nm,1.5s
LBTB **Lobatse** 68.81 162 *e*P P 19 32 52.1 -0.3
comp=Z,49nm,1.5s
F34A **Alexandria** 68.82 313 P P 19 32 52.0 -0.3
baz=51
K39A **Oelwein** 68.84 309 P P 19 32 51.9 -0.6
baz=52
H36A **Jessenland, He** 68.85 311 P P 19 32 52.7 +0.2
baz=51
L40A **Anamosa** 68.85 308 P P 19 32 52.3 -0.2
baz=52,SNR=9.6
C31A **Landman Farms,** 68.87 316 P P 19 32 52.3 -0.2
baz=50,SNR=8.4
I37A **Lemond, Waseca** 68.90 311 P P 19 32 52.8 0.0
baz=52,SNR=6.3
A29A **Manning Farm,** 68.91 317 P P 19 32 52.9 +0.1
baz=50,SNR=8.9
D32A **Dogwood Acres,** 68.92 315 P P 19 32 52.6 -0.2
baz=50
OLIL **Olney** 69.00 304 *e*P P 19 32 53.0 -0.5
comp=Z,43nm,0.9s
OLIL **Olney** 69.00 304 *e*P P 19 32 53.0 -0.5
comp=Z,43nm,0.9s
BILL **Bilibino** 69.03 8*c i*P P 19 32 54.4 +1.2
BILL *i* 19 33 17.4
BILL pmax pmax
comp=Z,34nm,1.7s
BILL MLR MLR
comp=Z,240nm,20.0s
BILL **Bilibino** 69.03 8 *i* P P 19 32 54.4 +1.2
comp=Z,34nm,1.7s
BILL **Bilibino** 69.03 8 *i* PcP PcP 19 33 17.4 +0.1
comp=Z,240nm,20.0s
BILL **Bilibino** 69.03 8 PFAKE 19 33 00.0 +6.8
BILL LR LR
comp=Z,118nm,20.0s
USIN **University of** 69.20 303 *e*P P 19 32 54.7 0.0
comp=Z,64nm,0.8s
USIN **University of** 69.20 303 *e*P P 19 32 54.7 0.0
comp=Z,64nm,0.8s
GOGA **Godfrey** 69.24 297 *e*P P 19 32 55.9 +0.8
GOGA pmax pmax
comp=Z,40nm,1.7s
GOGA MLR MLR
comp=Z,284nm,21.0s
GOGA **Godfrey** 69.24 297 *e*P P 19 32 55.9 +0.8
comp=Z,40nm,1.7s
GOGA **Godfrey** 69.24 297 *e*P P 19 32 55.9 +0.8
comp=Z,40nm,1.7s
GOGA LR LR
comp=Z,284nm,21.0s
I36A **Fitzsimmons Fa** 69.25 311 P P 19 32 54.7 -0.2
baz=51
B29A **Wagenman Farm,** 69.27 317 P P 19 32 54.9 -0.1
baz=50,SNR=11
L39A **Vinton** 69.27 308 P P 19 32 54.7 -0.5
baz=52,SNR=16
H35A **Sunnyside Ranc** 69.27 312 P P 19 32 55.4 +0.3
baz=51
E32A **Braaten, Kindr** 69.29 314 P P 19 32 55.1 0.0
baz=50
C30A **Mose, Pekin** 69.31 316 P P 19 32 55.2 -0.1
baz=50,SNR=6.8
O42A **Bath** 69.32 306 P P 19 32 55.3 -0.1
baz=52
D31A **Mcclaflin, Tow** 69.34 315 P P 19 32 55.3 -0.2
baz=50
F33A **5 Mile Ranch,** 69.35 314 P P 19 32 55.5 -0.1
baz=50,SNR=19
G34A **Benson** 69.38 313 P P 19 32 55.8 0.0
baz=51
SDDR **Presa de Saban** 69.41 277 *e*P P 19 32 58.1 +1.7
comp=Z,30nm,0.8s
SDDR **Presa de Saban** 69.41 277 *e*P P 19 32 58.1 +1.7
comp=Z,30nm,0.8s
SDDR LR LR
comp=Z,464nm,19.0s
J37A **Redenius Farm,** 69.43 310 P P 19 32 55.9 -0.2
baz=51,SNR=14
A28A **Rude Farm, Bot** 69.44 318 P P 19 32 56.5 +0.4
baz=49,SNR=10.0
Q44A **Meyer Farm, Va** 69.46 304 P P 19 32 55.9 -0.4
baz=52
COLD **Coldfoot** 69.71 351 *e*P P 19 32 59.4 +2.0
comp=Z,15nm,1.0s
COLD **Coldfoot** 69.71 351 *e*P P 19 32 59.4 +2.0
comp=Z,15nm,1.0s
E31A **Nome** 69.74 315 P P 19 32 58.0 0.0
baz=50
M39A **Webster** 69.77 308 P P 19 32 57.9 -0.3
baz=51,SNR=6.6
F32A **Veblen** 69.78 314 P P 19 32 57.8 -0.4
baz=50
B28A **Dugan Ranch, T** 69.79 318 P P 19 32 58.2 0.0
baz=49,SNR=6.6
MDND **Maddock** 69.80 317 P P 19 32 58.4 +0.1
baz=49
MDND **Maddock** 69.80 317 *e*P P 19 32 58.9 +0.6
comp=Z,115nm,1.5s
MDND **Maddock** 69.80 317 *e*P P 19 32 58.9 +0.6
comp=Z,115nm,1.5s
H34A **Spellman Lake,** 69.82 312 P P 19 32 58.9 +0.4
baz=50,SNR=5.6
K37A **Belmond** 69.82 310 P P 19 32 57.6 -0.9
baz=51,SNR=11
L38A **Oak Wood Farm,** 69.82 309 P P 19 32 57.7 -0.9
baz=51,SNR=14
G33A **Ortonville** 69.84 313 P P 19 32 58.5 -0.1
baz=50
O41A **Passleys Farm,** 69.85 306 P P 19 32 58.2 -0.5
baz=52,SNR=15
P42A **Winchester** 69.86 305 P P 19 32 58.3 -0.5
baz=52,SNR=12
Q43A **New Douglas** 69.86 305 P P 19 32 58.6 -0.2
baz=52,SNR=13
J36A **Seneca 1, Swea** 69.86 310 P P 19 32 58.8 +0.1
baz=51,SNR=9.9
I35A **Creekview Farm** 69.89 311 P P 19 32 59.0 0.0
baz=51
R44A **Waltonville** 69.91 304 P P 19 32 58.4 -0.7
baz=52,SNR=6.6
S45A **Carrier Mills** 69.94 303 P P 19 32 58.4 -0.9
baz=52
SCIA **State Center** 70.11 309 PFAKE 19 33 10.0 +10
SCIA LR LR
comp=Z,262nm,22.0s
P41A **Barry, Barry** 70.23 306 P P 19 33 00.6 -0.5
baz=51,SNR=14
I34A **Hadley** 70.26 312 P P 19 33 01.5 +0.2
baz=50
L37A **Phoenix Point,** 70.29 309 P P 19 33 00.7 -0.7
baz=51

SIUC **Southern Illin** 70.32 303 *e*P P 19 33 01.4 -0.2
comp=Z,27nm,0.9s
SIUC **Southern Illin** 70.32 303 *e*P P 19 33 01.4 -0.2
comp=Z,27nm,0.9s
A26A **Wade Farm, Ken** 70.32 319 P P 19 33 02.4 +0.8
baz=48,SNR=7.3
J35A **Milford** 70.33 311 P P 19 33 01.1 -0.6
baz=50
H33A **Prehn Over Nor** 70.34 313 P P 19 33 01.8 +0.1
baz=50
N39A **Derby Farms, D** 70.34 308 P P 19 33 01.1 -0.6
baz=51,SNR=8.2
S44A **Carbondale** 70.36 303 P P 19 33 01.3 -0.6
baz=52
G32A **Webster** 70.38 314 P P 19 33 02.2 +0.3
baz=50,SNR=12
Q42A **Golden Eagle** 70.39 305 P P 19 33 01.7 -0.4
baz=51
F31A **Hecla** 70.39 314 P P 19 33 02.0 +0.1
baz=49,SNR=7.3
M38A **Pleasantville** 70.41 308 P P 19 33 01.6 -0.5
baz=51,SNR=7.2
WVT **Waverly** 70.42 301 *e*P P 19 33 01.5 -0.8
WVT pmax pmax
comp=Z,61nm,1.5s
WVT **Waverly** 70.42 301 *e*P P 19 33 01.5 -0.8
comp=Z,61nm,1.5s
WVT **Waverly** 70.42 301 *e*P P 19 33 01.5 -0.8
comp=Z,61nm,1.5s
O40A **La Belle** 70.44 307 P P 19 33 01.7 -0.6
baz=51
EGAK **Eagle** 70.69 346 *e*P P 19 33 04.7 +1.2
comp=Z,17nm,0.9s
EGAK **Eagle** 70.69 346 *e*P P 19 33 04.7 +1.2
comp=Z,17nm,0.9s
EGAK LR LR
comp=Z,183nm,19.0s
K35A **Storm Lake** 70.75 310 P P 19 33 04.1 -0.2
baz=50
O39A **Kirksville** 70.76 307 P P 19 33 03.6 -0.7
baz=51
I33A **Coleman** 70.78 312 P P 19 33 04.6 +0.2
baz=50
G31A **Conde** 70.78 314 P P 19 33 04.8 +0.4
baz=49
J34A **George** 70.80 311 P P 19 33 04.4 -0.2
baz=50
F30A **Leola** 70.81 315 P P 19 33 05.1 +0.5
baz=49
A25A **Svangstu Ranch** 70.82 319 P P 19 33 05.7 +1.1
baz=47,SNR=9.4
N38A **Joes South For** 70.83 308 P P 19 33 04.0 -0.7
baz=51
L36A **Harm Buss Farm** 70.83 310 P P 19 33 04.1 -0.6
baz=50
H32A **Carlson Farm,** 70.83 313 P P 19 33 05.1 +0.4
baz=50,SNR=8.9
ECSD **EROS Data Cent** 70.88 312 P P 19 33 05.2 +0.2
baz=50,SNR=36
ECSD **EROS Data Cent** 70.88 312 *e*P P 19 33 05.4 +0.4
comp=Z,30nm,0.7s
ECSD **EROS Data Cent** 70.88 312 *e*P P 19 33 05.4 +0.4
comp=Z,30nm,0.7s
ECSD LR LR
comp=Z,345nm,21.0s
P40A **Paris** 70.92 306 P P 19 33 04.5 -0.8
baz=51,SNR=13
M37A **Trindle Farm,** 70.92 309 P P 19 33 05.0 -0.3
baz=50
S43A **Fulton Ridge,** 70.94 304 P P 19 33 04.9 -0.5
baz=51,SNR=14
LZH **Lanzhou** 70.98 58 ⇑P P 19 33 07.0 +1.1
LZH pP sP 19 33 12.5 +2.6
LZH sP pP 19 33 15.2 +6.4
LZH PP **PP** **19 35 49.4 +6.6**
LZH *e*S **S** **19 42 16.0 -6.0**
LZH sS sS 19 42 27.5 +0.7
LZH pmax pmax
comp=Z,67nm,1.0s
LZH pmax pmax
comp=Z,220nm,4.2s
LZH LR LR
comp=Z,370nm,13.6s
LZH LR LR
comp=Z,420nm,14.0s
LZH LR LR
comp=Z,550nm,14.7s
DAWY **Dawson** 71.02 345 *e*P P 19 33 07.2 +1.7
comp=Z,58nm,1.1s
DAWY **Dawson** 71.02 345 *e*P P 19 33 07.2 +1.7
comp=Z,58nm,1.1s
I32A **Karley and Nic** 71.16 313 P P 19 33 07.0 +0.3
baz=49
F29A **Eureka** 71.24 315 P P 19 33 07.1 -0.1
baz=48
K34A **Le Mars** 71.26 311 P P 19 33 07.1 -0.2
baz=50
Q40A **Laux Farm, Aux** 71.27 306 P P 19 33 07.2 -0.3
baz=51
HIA **Hailar** 71.29 40 *e*P P 19 33 08.2 +0.8
HIA pmax pmax
comp=Z,100nm,1.4s
HIA MLR MLR
comp=Z,368nm,19.0s
HIA **Hailar** 71.29 40 *e*P P 19 33 08.2 +0.8
comp=Z,100nm,1.4s
HIA **Hailar** 71.29 40 *e*P P 19 33 08.2 +0.8
comp=Z,100nm,1.4s
HIA LR LR
comp=Z,368nm,19.0s
B25A **Knox Farm, Ray** 71.30 319 P P 19 33 08.8 +1.3
baz=47
M36A **Felix, Anita** 71.32 309 P P 19 33 07.3 -0.4
baz=50
L35A **Bielow Farm, R** 71.32 310 P P 19 33 07.4 -0.3
baz=50
J33A **Davis** 71.34 312 P P 19 33 08.0 +0.1
baz=50
P39B **Salisbury** 71.37 307 P P 19 33 07.4 -0.6
baz=51,SNR=7.7
V45A **Humboldt** 71.38 301 P P 19 33 07.3 -0.9
baz=51
O38A **Galt** 71.39 307 P P 19 33 07.9 -0.3
baz=50
H31A **Wolsey** 71.41 313 P P 19 33 08.4 +0.2
baz=49
N37A **Lee Faris, Mou** 71.42 308 P P 19 33 07.8 -0.5
baz=50,SNR=6.3
SEY **Seymchan** 71.60 16 P P 19 33 09.9 +1.0
comp=Z,25nm,1.2s,baz=329,slow=4.4,SNR=29
SEY **Seymchan** 71.60 16 P P 19 33 10.0 +1.0
SEY pmax pmax
comp=Z,25nm,1.2s
IL1 **Eielson Array** 71.61 349 *e*P P 19 33 09.7 +0.7
IL1 **Eielson Array** 71.61 349 *e*P P 19 33 09.7 +0.7
ILAR **Eielson Array** 71.61 349 P P 19 33 10.7 +1.6
comp=Z,11nm,1.0s,baz=12,slow=5.7,SNR=60
ILB **Eielson Array** 71.61 349 *e*P P 19 33 10.6 +1.6
ILB **Eielson Array** 71.61 349 *e*P P 19 33 10.7 +1.6
MDM **Murphy Dome** 71.62 349 *e*P P 19 33 10.8 +1.6
comp=Z,46nm,1.4s
MDM **Murphy Dome** 71.62 349 *e*P P 19 33 10.8 +1.6
comp=Z,46nm,1.4s
COLA **College** 71.65 349 *e*P P 19 33 10.7 +1.5
COLA **College** 71.65 349 *e*P P 19 33 10.7 +1.5
COLA **College** 71.65 349 PFAKE 19 33 20.0 +11
COLA LR LR
comp=Z,138nm,19.0s
PBMO **Poplar Bluff** 71.66 303 *e*P P 19 33 09.4 -0.4
comp=Z,61nm,0.8s
PBMO **Poplar Bluff** 71.66 303 *e*P P 19 33 09.4 -0.4
comp=Z,61nm,0.8s
DGMT **Dagmar** 71.67 319 P P 19 33 11.0 +1.3
baz=47
DGMT **Dagmar** 71.67 319 PFAKE 19 33 20.0 +10
DGMT LR LR
comp=Z,327nm,19.0s
SUSD **Miller** 71.69 314 P P 19 33 10.2 +0.3
baz=49,SNR=7.0
G29A **Hoven** 71.71 315 P P 19 33 09.9 -0.1
baz=48,SNR=5.4
C25A **Freed Ranch, W** 71.72 318 P P 19 33 11.8 +1.7
baz=47
I31A **Royce, Wessing** 71.74 313 P P 19 33 10.6 +0.4
baz=49
P38A **Dawn** 71.74 307 P P 19 33 09.9 -0.3
baz=50,SNR=9.3

O37A **Wolven Farm, M** 71.76 308 P P 19 33 10.0 -0.3
baz=50,SNR=9.1
D26A **Manning** 71.78 317 P P 19 33 11.5 +1.1
baz=47,SNR=6.6
Q39A **Willow Grove F** 71.78 306 P P 19 33 10.2 -0.3
baz=50,SNR=11
J32A **Parkston** 71.79 312 P P 19 33 10.2 -0.3
baz=49
LRAL **Lakeview Retre** 71.80 298 *e*P P 19 33 10.6 -0.1
comp=Z,59nm,1.4s
LRAL **Lakeview Retre** 71.80 298 *e*P P 19 33 10.6 -0.1
comp=Z,59nm,1.4s
Y47A **UCPARC, Winfie** 71.82 299 P P 19 33 10.3 -0.5
baz=51,SNR=11
N36A **Muff Farm, Cla** 71.82 309 P P 19 33 10.4 -0.3
baz=50
M35A **Neola** 71.82 310 P P 19 33 10.6 -0.1
baz=50
K33A **Hardington** 71.82 311 P P 19 33 10.6 -0.1
baz=49
R40A **Maddies Statio** 71.83 305 P P 19 33 10.6 -0.3
baz=50,SNR=25
CCB **Clear Creek Bu** 71.86 349 *e*P P 19 33 11.5 +1.0
comp=Z,35nm,1.7s
CCB **Clear Creek Bu** 71.86 349 *e*P P 19 33 11.5 +1.0
comp=Z,35nm,1.7s
MLY **Manley** 71.88 351 *e*P P 19 33 13.0 +2.3
comp=Z,23nm,1.2s
MLY **Manley** 71.88 351 *e*P P 19 33 13.0 +2.3
comp=Z,23nm,1.2s
BTO **Baotou** 71.88 51 *e*P P 19 33 11.2 0.0
L34A **Svendsen Farm,** 71.89 310 P P 19 33 10.7 -0.4
baz=49,SNR=8.9
W45A **Hickory Valley** 71.89 301 P P 19 33 10.2 -1.1
baz=51
Z48A **Northport** 71.95 299 P P 19 33 11.1 -0.5
baz=51,SNR=22
S41A **Jillco Farms,** 71.96 304 P P 19 33 11.5 -0.2
baz=50,SNR=42
HDA **Harding Lake** 71.96 349 *e*P P 19 33 12.5 +1.3
comp=Z,34nm,1.0s
HDA **Harding Lake** 71.96 349 *e*P P 19 33 12.5 +1.3
comp=Z,34nm,1.0s
WRH **Wood River Hil** 72.07 349 *e*P P 19 33 13.0 +1.2
comp=Z,24nm,1.2s
WRH **Wood River Hil** 72.07 349 *e*P P 19 33 13.0 +1.2
comp=Z,24nm,1.2s
N35A **Tabor** 72.19 309 P P 19 33 12.7 -0.2
baz=50
BOSA **Boshof** 72.22 164 P P 19 33 11.9 -1.2
comp=Z,7.9nm,0.9s,baz=354,slow=5.1,SNR=9.7
Q38A **Cooks Store, C** 72.22 307 P P 19 33 13.1 -0.1
baz=50,SNR=23
DOT **Dot Lake** 72.23 347 *e*P P 19 33 14.8 +2.0
comp=Z,244nm,1.9s
DOT **Dot Lake** 72.23 347 *e*P P 19 33 14.8 +2.0
comp=Z,244nm,1.9s
P37A **Lathrop** 72.25 307 P P 19 33 12.9 -0.4
baz=50,SNR=11
L33A **Hoskins** 72.26 311 P P 19 33 13.1 -0.3
baz=49
O36A **Bolckow** 72.26 308 P P 19 33 13.1 -0.3
baz=50
I30A **Oacoma** 72.30 313 P P 19 33 14.1 +0.5
baz=48
W44A **Shelby Farms P** 72.30 301 P P 19 33 12.8 -0.9
baz=51
M34A **Aspy Farms, Fr** 72.31 310 P P 19 33 13.2 -0.5
baz=49
T41A **Mountain View** 72.32 304 P P 19 33 13.7 -0.1
baz=50,SNR=49
K32A **Verdigre** 72.33 312 P P 19 33 13.4 -0.4
baz=49
J31A **Geddes** 72.34 313 P P 19 33 13.9 +0.1
baz=48
Z47A **Carrollton** 72.40 299 P P 19 33 13.7 -0.6
baz=51
S40A **Lebanon** 72.42 305 P P 19 33 14.3 -0.1
baz=50,SNR=33
U42A **Revenden** 72.43 303 P P 19 33 14.0 -0.4
baz=50,SNR=13
Y46A **Houston** 72.48 300 P P 19 33 14.0 -0.7
baz=51
X45A **UM Field Stati** 72.49 301 P P 19 33 13.6 -1.2
baz=51
M33A **Taylor Creek F** 72.61 311 P P 19 33 15.1 -0.4
baz=49
HHC **Hu-ho-hao-te** 72.62 50 ⇑P P 19 33 16.1 +0.5
HHC PcP PcP 19 33 35.5 +2.4
HHC S S 19 42 41.4 +0.8
HHC pmax pmax
comp=Z,39nm,1.5s
HHC pmax pmax
comp=Z,180nm,5.4s
HHC LR LR
comp=Z,140nm,14.9s
HHC LR LR
comp=Z,240nm,16.2s
N34A **Lincoln** 72.69 310 P P 19 33 15.4 -0.6
baz=49,SNR=5.3
T40A **Mansfield** 72.71 305 P P 19 33 16.4 +0.2
baz=50,SNR=13
J30A **Dallas** 72.72 313 P P 19 33 16.3 +0.1
baz=48
O35A **Humboldt** 72.73 309 P P 19 33 15.5 -0.6
baz=49,SNR=5.5
P36A **Good Intent, A** 72.74 308 P P 19 33 15.8 -0.4
baz=49,SNR=13
Q37A **Longview Farm,** 72.77 307 P P 19 33 16.5 +0.1
baz=50
L32A **Elgin** 72.78 311 P P 19 33 16.5 0.0
baz=49
K31A **O'Neill** 72.79 312 P P 19 33 16.5 0.0
baz=48
BPAW **Bear Paw Mtn.** 72.81 350 *e*P P 19 33 17.5 +1.3
comp=Z,15nm,1.0s
BPAW **Bear Paw Mtn.** 72.81 350 *e*P P 19 33 17.5 +1.3
comp=Z,15nm,1.0s
MENT **Mentasta** 72.83 347 *e*P P 19 33 18.4 +2.0
comp=Z,37nm,1.8s
MENT **Mentasta** 72.83 347 *e*P P 19 33 18.4 +2.0
comp=Z,37nm,1.8s
S39A **Bolivar** 72.86 305 P P 19 33 16.9 -0.1
baz=50,SNR=24
U41A **Viola** 72.86 304 P P 19 33 16.9 -0.2
baz=50,SNR=13
147A **Livingston** 72.86 299 P P 19 33 16.6 -0.5
baz=51
V42A **Cord** 72.87 303 P P 19 33 17.0 -0.1
baz=50,SNR=22
248A **Dixon Mills** 72.88 298 P P 19 33 17.1 -0.1
baz=51
MCK **McKinley** 72.89 349 *e*P P 19 33 18.4 +1.7
MCK pmax pmax
comp=Z,43nm,1.1s
MCK **McKinley** 72.89 349 *e*P P 19 33 18.4 +1.7
comp=Z,43nm,1.1s
MCK **McKinley** 72.89 349 *e*P P 19 33 18.4 +1.7
comp=Z,43nm,1.1s
R38A **Fenwick Farm,** 72.89 306 P P 19 33 16.9 -0.2
baz=50,SNR=16
X44A **Crenshaw** 72.92 301 P P 19 33 16.8 -0.5
baz=50
Y45A **Yeager Farm, C** 72.94 300 P P 19 33 16.9 -0.6
baz=50
Z46A **Louisville** 72.97 299 P P 19 33 17.1 -0.6
baz=51
PAX **Paxson** 73.09 348 *e*P P 19 33 20.0 +2.0
PAX pmax pmax
comp=Z,13nm,1.5s
PAX **Paxson** 73.09 348 *e*P P 19 33 20.0 +2.0
comp=Z,13nm,1.5s
PAX **Paxson** 73.09 348 *e*P P 19 33 20.0 +2.0
comp=Z,13nm,1.5s
L31A **Butterfield Fa** 73.13 312 P P 19 33 18.6 +0.1
baz=48
RND **Reindeer** 73.19 349 *e*P P 19 33 19.3 +0.7
RND pmax pmax
comp=Z,13nm,0.9s
RND **Reindeer** 73.19 349 *e*P P 19 33 19.3 +0.7
comp=Z,13nm,0.9s
RND **Reindeer** 73.19 349 *e*P P 19 33 19.3 +0.7
comp=Z,13nm,0.9s
K30A **Basset** 73.22 313 P P 19 33 19.5 +0.4
baz=48
O34A **Beatrice** 73.23 309 P P 19 33 18.9 -0.2
baz=49,SNR=11
S38A **Stockton** 73.25 306 P P 19 33 19.1 -0.2

baz=50,SNR=22
BGNE Belgrade 73.26 311 P P 19 33 19.5 +0.1
baz=48
BGNE Belgrade 73.26 311 *e*P P 19 33 19.9 +0.6
comp=Z,121nm,0.8s
BGNE Belgrade 73.26 311 *e*P P 19 33 19.9 +0.6
comp=Z,121nm,0.8s
P35A Duane Minner, 73.27 308 P P 19 33 19.2 -0.2
baz=49,SNR=21
DHY Denali Highway 73.29 348 *e*P P 19 33 21.0 +1.7
comp=Z,61nm,0.8s
DHY Denali Highway 73.29 348 *e*P P 19 33 21.0 +1.7
comp=Z,61nm,0.8s
Y44A Strider, Charl 73.30 301 P P 19 33 19.3 -0.3
baz=50
Q36A Arnold C. Orve 73.31 308 P P 19 33 19.4 -0.2
baz=49
T39A Clever 73.32 305 P P 19 33 19.5 -0.3
baz=50,SNR=10
KTH Kantishna Hill 73.32 350 *e*P P 19 33 21.0 +1.6
comp=Z,17nm,0.9s
KTH Kantishna Hill 73.32 350 *e*P P 19 33 21.0 +1.6
comp=Z,17nm,0.9s
TRF Thorofare Moun 73.34 350 *e*P P 19 33 20.7 +1.1
comp=Z,30nm,1.0s
TRF Thorofare Moun 73.34 350 *e*P P 19 33 20.7 +1.1
comp=Z,30nm,1.0s
Z45A Winona 73.34 300 P P 19 33 19.3 -0.6
baz=50
R37A Teagarden Farm 73.36 307 P P 19 33 19.4 -0.5
baz=49,SNR=5.5
V41A Mountainview 73.36 303 P P 19 33 19.9 -0.1
baz=50,SNR=27
X43A Marvell 73.38 302 P P 19 33 20.0 -0.1
baz=50
348A Jackson 73.42 297 P P 19 33 20.8 +0.4
baz=51
U40A Yellville 73.43 304 P P 19 33 20.4 0.0
baz=50,SNR=17
247A Quitman 73.48 298 P P 19 33 21.1 +0.4
baz=50
HYT Haines Junctio 73.56 343 *e*P P 19 33 23.2 +2.3
comp=Z,37nm,1.5s
HYT Haines Junctio 73.56 343 *e*P P 19 33 23.2 +2.3
comp=Z,37nm,1.5s
CAST Castle Rocks 73.60 351 *e*P P 19 33 22.0 +1.1
comp=Z,21nm,1.2s
CAST Castle Rocks 73.60 351 *e*P P 19 33 22.0 +1.1
comp=Z,21nm,1.2s
448A Bay Minette 73.69 297 P P 19 33 22.6 +0.6
baz=50
Q35A Mercer Eighty, 73.72 308 P P 19 33 21.9 -0.2
baz=49,SNR=8.8
S37A Fort Scott 73.72 306 P P 19 33 21.8 -0.3
baz=49,SNR=22
P34A Walnut Farm, R 73.73 309 P P 19 33 22.2 +0.1
baz=49,SNR=21
R36A Gordon, Harris 73.76 307 P P 19 33 21.9 -0.4
baz=49,SNR=16
M31A Lambtecht Ranc 73.76 311 P P 19 33 22.4 +0.1
baz=48,SNR=5.3
N32A Stulken Farm, 73.77 310 P P 19 33 22.3 0.0
baz=48
WHAR Wooly Hollow 73.77 303 *e*P P 19 33 22.5 +0.2
comp=Z,52nm,1.0s
WHAR Wooly Hollow 73.77 303 *e*P P 19 33 22.5 +0.2
comp=Z,52nm,1.0s
V40A Witts Springs 73.77 304 P P 19 33 22.3 -0.1
baz=50,SNR=8.7
Y43A Makayla and Ka 73.79 301 P P 19 33 22.2 -0.3
baz=50
U39A Green Forest 73.80 304 P P 19 33 22.4 -0.2
baz=50,SNR=19
X201 Greenbrier Sit 73.81 303 *e*P P 19 33 22.8 +0.2
comp=Z,51nm,1.1s
X201 Greenbrier Sit 73.81 303 *e*P P 19 33 22.8 +0.2
comp=Z,51nm,1.1s
W41B Gary Mavity, V 73.81 303 P P 19 33 22.8 +0.1
baz=50,SNR=18
DLBC Dease Lake 73.82 338 P P 19 33 23.8 +1.5
comp=Z,8.2nm,1.1s,baz=21,slow=5.3,SNR=10
DLBC Dease Lake 73.82 338 *e*P P 19 33 24.8 +2.4
comp=Z,28nm,1.4s
DLBC Dease Lake 73.82 338 *e*P P 19 33 24.8 +2.4
comp=Z,28nm,1.4s
O33A Hebron 73.82 310 P P 19 33 22.2 -0.4
baz=48,SNR=8.1
246A Jackson Lee, B 73.84 299 P P 19 33 23.2 +0.3
baz=50
347A Saraland 73.85 298 P P 19 33 23.3 +0.4
baz=50
X301 Greenbrier Sit 73.87 303 *e*P P 19 33 23.1 +0.2
comp=Z,48nm,1.0s
X301 Greenbrier Sit 73.87 303 *e*P P 19 33 23.1 +0.2
comp=Z,48nm,1.0s
T38A Diamond 73.87 305 P P 19 33 22.8 -0.2
baz=49,SNR=13
Z44A Pea Ridge, Bel 73.88 300 P P 19 33 22.4 -0.6
baz=50
LAO LASA Array 73.89 319 P P 19 33 24.4 +1.3
baz=45,SNR=12
LAO LASA Array 73.89 319 *e*P P 19 33 24.3 +1.3
comp=Z,51nm,0.9s
LAO LASA Array 73.89 319 *e*P P 19 33 24.3 +1.3
comp=Z,51nm,0.9s
LAO LR LR
comp=Z,394nm,22.0s
KSU1 Kansas State U 73.90 308 P P 19 33 23.0 -0.1
baz=49,SNR=12
KSU1 Kansas State U 73.90 308 *e*P P 19 33 23.5 +0.4
comp=Z,79nm,0.8s
KSU1 Kansas State U 73.90 308 *e*P P 19 33 23.5 +0.4
comp=Z,79nm,0.8s
KSU1 LR LR
comp=Z,270nm,20.0s
145A Houston Renfro 73.99 299 P P 19 33 23.7 +0.1
baz=50
PTGA Pitinga 74.00 254 *e*P P 19 33 24.5 +0.5
comp=Z,21nm,1.3s
PTGA Pitinga 74.00 254 *e*P P 19 33 24.5 +0.5
comp=Z,21nm,1.3s
PTGA LR LR
comp=Z,44µm,20.0s
H25A Fruitdale 74.02 316 P P 19 33 24.1 +0.3
baz=46
O32A Brockman Farm, 74.09 310 P P 19 33 24.1 -0.1
baz=48
N31A Bailey Ranch, 74.10 311 P P 19 33 24.4 +0.1
baz=48
PPLA Purkeypile 74.12 351 *e*P P 19 33 25.1 +1.0
comp=Z,23nm,1.1s
PPLA Purkeypile 74.12 351 *e*P P 19 33 25.1 +1.0
comp=Z,23nm,1.1s
UALR University of 74.13 303 *e*P P 19 33 24.8 +0.3
comp=Z,58nm,1.6s
UALR University of 74.13 303 *e*P P 19 33 24.8 +0.3
comp=Z,58nm,1.6s
HHAR Hobbs 74.15 305 *e*P P 19 33 24.5 -0.1
comp=Z,51nm,0.8s
HHAR Hobbs 74.15 305 *e*P P 19 33 24.5 -0.1
comp=Z,51nm,0.8s
R35A Emporia Munici 74.17 307 P P 19 33 24.7 0.0
baz=49
CD2 Chengdu 74.18 63 *e*P P 19 33 23.8 -1.1
CD2 PP **PP** 19 36 08.6 -1.5
CD2 S **S** 19 42 57.4 -1.1
CD2 SKS **SKSac** 19 43 31.1 -1.8
CD2 SS **SS** 19 47 42.8 -0.3
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,180nm,5.6s
T37A Cheneyville 18 74.19 306 P P 19 33 24.7 -0.2
baz=49,SNR=16
S36A Lake Cedric, C 74.20 307 P P 19 33 24.6 -0.3
baz=49
Q34A Chapman 74.21 308 P P 19 33 24.7 -0.2
baz=48,SNR=5.4
MA2 Magadan 74.24 18 *i*P P 19 33 25.9 +1.2
MA2 Magadan 74.24 18 *i*P P 19 33 25.9 +1.2
V39A Pettigrew 74.25 304 P P 19 33 25.2 0.0
baz=49,SNR=14
SKAG Skagway 74.28 341 *e*P P 19 33 27.0 +2.1
comp=Z,33nm,1.4s
SKAG Skagway 74.28 341 *e*P P 19 33 27.0 +2.1
comp=Z,33nm,1.4s
144A Alexander Plac 74.29 300 P P 19 33 25.5 +0.1
baz=50
P33A Williams Farm, 74.31 309 P P 19 33 25.6 +0.1
baz=48
447A Lucedale 74.31 297 P P 19 33 26.2 +0.7
baz=50
U38A Gravette 74.31 305 P P 19 33 25.2 -0.4
baz=49,SNR=11
W40A Ferguson Farm, 74.32 303 P P 19 33 26.0 +0.4
baz=49
245A Little AP, Sta 74.33 299 P P 19 33 25.3 -0.4
baz=50
Y42A Garnett, Star 74.39 301 P P 19 33 25.9 0.0
baz=50
X41A Kaden, Bauxite 74.42 302 P P 19 33 25.8 -0.4
baz=50
Z43A Armstrong Fami 74.44 301 P P 19 33 25.9 -0.5
baz=50
SCM Sheep Creek Mo 74.46 348 *e*P P 19 33 28.1 +2.1
SCM pmax pmax
comp=Z,57nm,1.0s
SCM Sheep Creek Mo 74.46 348 *e*P P 19 33 28.1 +2.1
comp=Z,57nm,1.0s
SCM Sheep Creek Mo 74.46 348 *e*P P 19 33 28.1 +2.1
comp=Z,57nm,1.0s
346A Big Creek Wild 74.46 298 P P 19 33 26.8 +0.3
baz=50
TT01 Tatalina 74.53 352 *e*P P 19 33 28.3 +2.0
TT01 Tatalina 74.53 352 *e*P P 19 33 28.3 +2.0
KLU Klutina 74.56 347 *e*P P 19 33 28.6 +2.0
comp=Z,22nm,0.9s
KLU Klutina 74.56 347 *e*P P 19 33 28.6 +2.0
comp=Z,22nm,0.9s
RSSD Black Hills 74.59 316 P P 19 33 27.7 +0.4
baz=46
VBMS Vicksburg 74.61 300 P P 19 33 27.0 -0.3
baz=50
X40A Basin Creek Fa 74.63 303 P P 19 33 27.2 -0.2
baz=49,SNR=14
SML Sawmill 74.64 348 *e*P P 19 33 29.0 +2.0
SML pmax pmax
comp=Z,43nm,1.0s
SML Sawmill 74.64 348 *e*P P 19 33 29.0 +2.0
comp=Z,42nm,1.0s
SML Sawmill 74.64 348 *e*P P 19 33 29.0 +2.0
comp=Z,42nm,1.0s
S35A Otter Creek Ra 74.66 307 P P 19 33 27.2 -0.3
baz=48
Q33A Connelly Farm, 74.68 309 P P 19 33 27.6 -0.1
baz=48,SNR=5.6
P32A Huiting Farm, 74.70 310 P P 19 33 27.8 0.0
baz=48
V38A Canehill 74.71 305 P P 19 33 27.7 -0.1
baz=49
W39A Magazine 74.76 304 P P 19 33 28.3 +0.2
baz=49,SNR=25
CRQM Cirque 74.76 346 *e*P P 19 33 30.0 +2.1
comp=Z,119nm,1.5s
CRQM Cirque 74.76 346 *e*P P 19 33 30.0 +2.1
comp=Z,119nm,1.5s
O31A Woolen Ranch, 74.76 311 P P 19 33 28.2 0.0
baz=48
446A Poplarville 74.78 298 P P 19 33 28.5 +0.2
baz=50
U37A Salina 74.78 305 P P 19 33 28.1 -0.2
baz=49,SNR=6.3
R34A Isabella, Hill 74.80 308 P P 19 33 28.2 -0.1
baz=48,SNR=13
PCA Pinnacle 74.80 344 *e*P P 19 33 30.6 +2.5
comp=Z,52nm,1.0s
PCA Pinnacle 74.80 344 *e*P P 19 33 30.6 +2.5
comp=Z,52nm,1.0s
T36A Boggs Farm, Ca 74.81 306 P P 19 33 28.2 -0.2
baz=48,SNR=5.6
BMRM Bremner River 74.82 346 *e*P P 19 33 29.9 +1.8
comp=Z,111nm,1.3s
BMRM Bremner River 74.82 346 *e*P P 19 33 29.9 +1.8
comp=Z,111nm,1.3s
244A Avery, Jackson 74.84 299 P P 19 33 28.6 0.0
baz=50
Z42A Norrel Spur, H 74.85 301 P P 19 33 28.5 -0.2
baz=50
DIV Divide 74.87 347 *e*P P 19 33 30.4 +1.9
comp=Z,14nm,0.9s
DIV Divide 74.87 347 *e*P P 19 33 30.4 +1.9
comp=Z,14nm,0.9s
143A Socs Landing, 74.87 300 P P 19 33 28.7 -0.1
baz=50
Y41A Eaglette Beard 74.88 302 P P 19 33 28.7 -0.2
baz=49
345A Thompson Farm, 74.88 299 P P 19 33 29.2 +0.3
baz=50
PMR Palmer 74.96 349 *e*P P 19 33 30.5 +1.7
PMR pmax pmax
comp=Z,30nm,1.4s
PMR Palmer 74.96 349 *e*P P 19 33 30.5 +1.7
comp=Z,30nm,1.4s
PMR Palmer 74.96 349 *e*P P 19 33 30.5 +1.7
comp=Z,30nm,1.4s
MIAR Mount Ida 75.05 303 P P 19 33 30.2 +0.3
baz=49,SNR=16
MIAR Mount Ida 75.05 303 *e*P P 19 33 30.4 +0.5
MIAR pmax pmax
comp=Z,112nm,1.6s
MIAR MLR MLR
comp=Z,231nm,19.0s
MIAR Mount Ida 75.05 303 *e*P P 19 33 30.4 +0.5
comp=Z,112nm,1.6s
MIAR Mount Ida 75.05 303 *e*P P 19 33 30.4 +0.5
comp=Z,112nm,1.6s
MIAR LR LR
comp=Z,231nm,19.0s
Q32A Meitler Ranch, 75.10 309 P P 19 33 29.8 -0.3
baz=48
S34A Willow Spring 75.12 307 P P 19 33 30.3 +0.1
baz=48,SNR=7.5
V37A Hulbert 75.14 305 P P 19 33 30.0 -0.3
baz=49
U36A Oologah 75.16 306 P P 19 33 30.5 0.0
baz=48,SNR=6.3
Y40A Okolona 75.22 302 P P 19 33 30.8 0.0
baz=49
R33A Olander Ranch, 75.23 308 P P 19 33 31.0 +0.2
baz=48,SNR=5.6
344A Westbrook Farm 75.25 299 P P 19 33 31.7 +0.7
baz=50
T35A Sooner Cattle 75.29 307 P P 19 33 31.3 +0.1
baz=48,SNR=13
W38A Poteau 75.29 304 P P 19 33 31.6 +0.4
baz=49
SUA Susitna One 75.31 349 *e*P P 19 33 32.7 +1.7
comp=Z,75nm,1.1s
SUA Susitna One 75.31 349 *e*P P 19 33 32.7 +1.7
comp=Z,75nm,1.1s
142A Monroe 75.32 301 P P 19 33 31.7 +0.3
baz=49
WLAR White Oak Lake 75.32 302 *e*P P 19 33 32.7 +1.3
comp=Z,33nm,1.1s
WLAR White Oak Lake 75.32 302 *e*P P 19 33 32.7 +1.3
comp=Z,33nm,1.1s
SDV Santo Domingo 75.37 269 *e*P P 19 33 32.6 +0.4
comp=Z,32nm,0.8s
SDV Santo Domingo 75.37 269 *e*P P 19 33 32.6 +0.4
comp=Z,32nm,0.8s
SDV LR LR
comp=Z,337nm,22.0s
Z41A Richland Creek 75.41 302 P P 19 33 32.4 +0.5
baz=49
X39A Fountain Ranch 75.41 303 P P 19 33 32.7 +0.7
baz=49,SNR=5.5
EYAK Cordova Ski Ar 75.42 347 *e*P P 19 33 34.1 +2.6
comp=Z,65nm,1.5s
EYAK Cordova Ski Ar 75.42 347 *e*P P 19 33 34.1 +2.6
comp=Z,65nm,1.5s
445A Amite 75.46 298 P P 19 33 33.0 +0.7
baz=50
243A Waterproof 75.46 300 P P 19 33 33.1 +0.8
baz=49
XAN Xi'an 75.48 57 P P 19 33 32.6 +0.2
XAN S **SKiKP** 19 43 00.8 +6.2
XAN pmax pmax
comp=Z,67nm,1.3s
XAN pmax pmax
comp=Z,120nm,5.3s
XAN LR LR
comp=Z,150nm,14.2s
XAN LR LR
comp=Z,220nm,14.2s
TUL1 Leonard 75.52 305 P P 19 33 32.6 0.0
baz=48,SNR=5.8
TUL1 Leonard 75.52 305 *e*P P 19 33 33.0 +0.4
comp=Z,36nm,0.9s
TUL1 Leonard 75.52 305 *e*P P 19 33 33.0 +0.4
comp=Z,36nm,0.9s
RC01 Rabbit Creek A 75.53 349 *e*P P 19 33 33.6 +1.5
comp=Z,31nm,1.2s
RC01 Rabbit Creek A 75.53 349 *e*P P 19 33 33.6 +1.5
comp=Z,31nm,1.2s
R32A Long Quarter, 75.57 309 P P 19 33 32.8 -0.1
baz=48
T34A McClaskey Farm 75.62 307 P P 19 33 33.5 +0.4
baz=48,SNR=15
V36A Jenks 75.69 305 P P 19 33 33.5 -0.1
baz=48
WALA Waterton Lakes 75.69 325 *e*P P 19 33 34.3 +0.8
comp=Z,11nm,0.9s
WALA Waterton Lakes 75.69 325 *e*P P 19 33 34.3 +0.8
comp=Z,11nm,0.9s
S33A Kaszmaul Farm, 75.72 308 P P 19 33 34.2 +0.5
baz=48
OGNE Ogallala 75.73 313 P P 19 33 34.6 +0.8
baz=46,SNR=9.5
OGNE Ogallala 75.73 313 *e*P P 19 33 34.6 +0.8
comp=Z,225nm,1.9s
OGNE Ogallala 75.73 313 *e*P P 19 33 34.6 +0.8
comp=Z,225nm,1.9s
OGNE LR LR
comp=Z,312nm,19.0s
444A Pine Grove 75.73 298 P P 19 33 34.5 +0.7
baz=49
X38A Whitesboro 75.75 304 P P 19 33 34.4 +0.6
baz=48
SPU Mount Spurr 75.76 350 *e*P P 19 33 34.5 +1.0
SPU Mount Spurr 75.76 350 *e*P P 19 33 34.5 +1.0
BJI Beijing 75.77 49 P P 19 33 34.7 +0.8
BJI pmax pmax
comp=Z,80nm,0.9s
242A Grayson 75.77 300 P P 19 33 34.8 +0.8
baz=49
Y39A Lockesburg 75.77 303 P P 19 33 34.6 +0.6
baz=49,SNR=5.5
BJT Baijiatuau 75.78 49 *e*P P 19 33 34.5 +0.6
BJT pmax pmax
comp=Z,47nm,0.7s
BJT MLR MLR
comp=Z,394nm,19.0s
BJT Baijiatuau 75.78 49 *e*P P 19 33 34.5 +0.6
comp=Z,47nm,0.7s
BJT Baijiatuau 75.78 49 *e*P P 19 33 34.5 +0.6
comp=Z,47nm,0.7s
BJT LR LR
comp=Z,394nm,19.0s
U35A Pawnee 75.78 306 P P 19 33 34.5 +0.5
baz=48,SNR=5.2
Z40A Long Farm, Mag 75.78 302 P P 19 33 34.6 +0.5
baz=49
W37B Quinton 75.81 305 P P 19 33 34.4 +0.2
baz=48,SNR=5.5
141A Papa Simpson, 75.90 301 P P 19 33 35.2 +0.5
baz=49
CBKS Cedar Bluff 75.90 310 P P 19 33 35.0 +0.3
baz=47,SNR=6.6
CBKS Cedar Bluff 75.90 310 *e*P P 19 33 35.6 +0.9
CBKS pmax pmax
comp=Z,181nm,1.6s
CBKS Cedar Bluff 75.90 310 *e*P P 19 33 35.6 +0.9
comp=Z,180nm,1.6s
CBKS Cedar Bluff 75.90 310 *e*P P 19 33 35.6 +0.9
comp=Z,180nm,1.6s
343A Vidalia 75.93 299 P P 19 33 35.5 +0.6
baz=49
X37A Clayton 76.14 304 P P 19 33 36.6 +0.5
baz=48,SNR=7.1
Y38A Idabel 76.18 303 P P 19 33 36.6 +0.3
baz=48
S32A Newby Ranch, P 76.19 308 P P 19 33 36.5 +0.1
baz=47
GCMT Greycliff 76.20 320 *e*P P 19 33 38.0 +1.5
GCMT Greycliff 76.20 320 *e*P P 19 33 38.0 +1.5
T33A Patterson Ranc 76.20 308 P P 19 33 36.9 +0.4
baz=48,SNR=5.5
U34A Anderson Ranch 76.22 307 P P 19 33 37.2 +0.7
baz=48,SNR=14
U34A Anderson Ranch 76.22 307 *e*P P 19 33 37.8 +1.3
comp=Z,82nm,0.8s
U34A Anderson Ranch 76.22 307 *e*P P 19 33 37.8 +1.3
comp=Z,82nm,0.8s
V35A Meyer Ranch, C 76.25 306 P P 19 33 37.2 +0.5
baz=48,SNR=5.5
SVW2 Sparrevohn 76.26 352 *e*P P 19 33 38.4 +2.1
comp=Z,36nm,1.3s
SVW2 Sparrevohn 76.26 352 *e*P P 19 33 38.4 +2.1
comp=Z,36nm,1.3s
241A Mo Tay, Goldon 76.29 301 P P 19 33 37.8 +0.8
baz=49
Z39A Irene McRaven, 76.29 302 P P 19 33 37.7 +0.8
baz=48
W36A Wetumka 76.30 305 P P 19 33 37.1 +0.1
baz=48
140A Cam and Jess, 76.30 302 P P 19 33 37.9 +0.9
baz=49
342A Flagon Creek P 76.33 300 P P 19 33 38.1 +0.9
baz=49
443A Delano Plantat 76.38 299 P P 19 33 38.5 +1.0
baz=49
RLMT Red Lodge 76.50 319 P P 19 33 39.4 +1.2
baz=43,SNR=6.1
RLMT Red Lodge 76.50 319 *e*P P 19 33 39.8 +1.5
comp=Z,27nm,1.3s
RLMT Red Lodge 76.50 319 *e*P P 19 33 39.8 +1.5
comp=Z,27nm,1.3s
RLMT LR LR
comp=Z,419nm,19.0s
T32A Huddler Ranch, 76.54 308 P P 19 33 38.9 +0.5
baz=47
RSO Redoubt South 76.54 350 *e*P P 19 33 39.4 +1.2
RSO Redoubt South 76.54 350 *e*P P 19 33 39.4 +1.2
U33A Lingo Farm, Me 76.56 307 P P 19 33 38.9 +0.4
baz=47
V34A Guthrie 76.61 306 P P 19 33 39.5 +0.8
baz=48,SNR=7.2
V34A Guthrie 76.61 306 *e*P P 19 33 39.9 +1.1
comp=Z,63nm,1.0s
V34A Guthrie 76.61 306 *e*P P 19 33 39.9 +1.1
comp=Z,63nm,1.0s
YBMT Yellow Bay 76.64 324 *e*P P 19 33 39.8 +0.9
YBMT Yellow Bay 76.64 324 *e*P P 19 33 39.9 +0.9
W35A Tecumseh 76.68 305 P P 19 33 39.4 +0.3
baz=48
KLR Kul'dur 76.68 34 LR LR 20 10 40.5
comp=Z,316nm,18.4s,slow=38
KLR Kul'dur 76.68 34 *c i*P P 19 33 38.8 -0.1
KLR Kul'dur 76.68 34 *i* P P 19 33 38.8 -0.1
BLMT Blacktail Moun 76.69 324 *e*P P 19 33 40.4 +1.2
BLMT Blacktail Moun 76.69 324 *e*P P 19 33 40.4 +1.2
Y37A Hugo 76.70 304 P P 19 33 40.0 +0.8
baz=48
X36A Centrahoma 76.75 305 P P 19 33 40.0 +0.5
baz=48,SNR=7.9
Z38A Mt. Pleasant 76.79 303 P P 19 33 40.4 +0.7
baz=48
139A Bunkhouse Ranc 76.79 302 P P 19 33 40.7 +0.9
baz=48
240A Hunter Patters 76.82 301 P P 19 33 40.8 +0.8
baz=48
442A Mamou 76.83 299 P P 19 33 41.0 +1.0
baz=49
JTMT Jette 76.85 324 *e*P P 19 33 41.4 +1.3
JTMT Jette 76.85 324 *e*P P 19 33 41.4 +1.3
NKL Nikolayevsk 76.89 27 *e*P P 19 33 40.0 0.0
NKL pmax pmax
comp=Z,77nm,1.1s
NKL Nikolayevsk 76.89 27 *e*P P 19 33 40.0 0.0
comp=Z,77nm,1.1s
341A Kurthwood 76.90 300 P P 19 33 41.1 +0.7
baz=49
SWMT Swartz Lake 76.91 324 *e*P P 19 33 41.5 +1.1
SWMT Swartz Lake 76.91 324 *e*P P 19 33 41.5 +1.1
K22A Casper 76.91 316 P P 19 33 40.7 +0.1
baz=44
K22A Casper 76.91 316 *e*P P 19 33 39.5 -1.1
comp=Z,32nm,1.0s
K22A Casper 76.91 316 *e*P P 19 33 39.5 -1.1
comp=Z,32nm,1.0s
BDFB Brasilia 76.93 235 P P 19 33 42.2 +1.4
comp=Z,7.3nm,0.6s,baz=18,slow=20,SNR=9.2
BDFB Brasilia 76.93 235 *e*P P 19 33 42.9 +2.1

BDFB pmax pmax
comp=Z,87nm,1.6s
BDFB Brasilia 76.93 235 *e*P **P 19 33 42.9 +2.1**
comp=Z,86nm,1.6s
BDFB Brasilia 76.93 235 *e*P **P 19 33 42.9 +2.1**
comp=Z,86nm,1.6s
BSMT Bassoo Peak 76.99 324 *e*P **P 19 33 42.2 +1.2**
BSMT Bassoo Peak 76.99 324 *e*P **P 19 33 42.2 +1.2**
CHMT Chamberlain Mo 77.02 323 *e*P **P 19 33 41.3 +0.1**
CHMT Chamberlain Mo 77.02 323 *e*P **P 19 33 41.3 +0.1**
V33A Lossen Ranch, 77.08 307 P **P 19 33 42.2 +0.8**
baz=47
U32A Winter Ranch, 77.13 308 P **P 19 33 42.6 +0.9**
baz=47
Y36A Durant 77.16 304 P **P 19 33 42.0 +0.2**
baz=48
W34A Bridge Creek, 77.17 306 P **P 19 33 42.6 +0.7**
baz=47
KMI Kunming 77.21 68 P **P 19 33 42.6 0.0**
KMI pmax pmax
comp=Z,16nm,1.5s
Z37A Pogue Cattle C 77.22 303 P **P 19 33 42.9 +0.7**
baz=48
BOZ Bozeman (W) 77.23 321 P **P 19 33 43.7 +1.4**
baz=42,SNR=25
BOZ Bozeman (W) 77.23 321 *e*P **P 19 33 43.7 +1.4**
BOZ pmax pmax
comp=Z,35nm,1.3s
BOZ MLR MLR
comp=Z,183nm,19.0s
BOZ Bozeman (W) 77.23 321 *e*P **P 19 33 43.7 +1.4**
comp=Z,35nm,1.3s
BOZ Bozeman (W) 77.23 321 *e*P **P 19 33 43.7 +1.4**
comp=Z,35nm,1.3s
BOZ LR LR
comp=Z,183nm,19.0s
138A Matatall Enter 77.24 302 P **P 19 33 43.4 +1.1**
baz=48
CNPM China Poot 77.25 349 *e*P **P 19 33 43.5 +1.6**
comp=Z,135nm,2.0s
CNPM China Poot 77.25 349 *e*P **P 19 33 43.5 +1.6**
comp=Z,135nm,2.0s
X35A Drake 77.25 305 P **P 19 33 42.5 +0.2**
baz=48,SNR=5.2
239A Gary 77.28 302 P **P 19 33 43.3 +0.7**
baz=48
542A Morse 77.30 299 P **P 19 33 43.1 +0.4**
baz=49
441A DeRidder 77.30 300 P **P 19 33 43.4 +0.7**
baz=48
340A Bronson 77.31 301 P **P 19 33 42.9 +0.1**
baz=48
PHWY Pilot Hill 77.32 315 *e*P **P 19 33 44.1 +1.1**
comp=Z,40nm,1.0s
PHWY Pilot Hill 77.32 315 *e*P **P 19 33 44.1 +1.1**
comp=Z,40nm,1.0s
KSCO Kaye Shedlock' 77.40 311 P **P 19 33 44.1 +0.8**
baz=46
MSO Missoula 77.40 323 P **P 19 33 43.5 +0.3**
baz=40,SNR=6.1
MSO Missoula 77.40 323 *e*P **P 19 33 44.0 +0.8**
comp=Z,13nm,1.1s
MSO Missoula 77.40 323 *e*P **P 19 33 44.0 +0.8**
comp=Z,13nm,1.1s
LKWY Lake 77.45 320 PFAKE 19 33 50.0 +6.3
LKWY LR LR
comp=Z,565nm,20.0s
LRM Limekiln Ridge 77.48 322 *e*P **P 19 33 45.0 +1.2**
LRM Limekiln Ridge 77.48 322 *e*P **P 19 33 45.0 +1.2**
YHH Holmes Hill 77.50 320 *e*P **P 19 33 46.6 +2.6**
comp=Z,9.1nm,1.1s
YHH Holmes Hill 77.50 320 *e*P **P 19 33 46.6 +2.6**
comp=Z,9.1nm,1.1s
NATX Nacogdoches 77.57 302 P **P 19 33 45.0 +0.8**
baz=48
V32A Arapaho 77.60 307 P **P 19 33 45.4 +1.0**
baz=47
Y35A Marietta 77.62 305 P **P 19 33 44.8 +0.3**
baz=48
X34A Smith Ranch, M 77.63 306 P **P 19 33 45.6 +1.1**
baz=47,SNR=5.0
W33A Caddo, Fort Co 77.64 306 P **P 19 33 45.8 +1.2**
baz=47
H17A Grant Village 77.66 320 P **P 19 33 47.3 +2.4**
baz=42
H17A Grant Village 77.66 320 *e*P **P 19 33 47.9 +3.1**
comp=Z,24nm,0.9s
H17A Grant Village 77.66 320 *e*P **P 19 33 47.9 +3.1**
comp=Z,24nm,0.9s
NEW Newport 77.67 326 P **P 19 33 45.0 +0.5**
comp=Z,5.7nm,0.9s,baz=21,slow=5.6,SNR=7.7
NEW Newport 77.67 326 P **P 19 33 45.1 +0.6**
baz=39
NEW Newport 77.67 326 *e*P **P 19 33 46.4 +1.9**
NEW pmax pmax
comp=Z,27nm,1.4s
NEW MLR MLR
comp=Z,413nm,19.0s
NEW Newport 77.67 326 *e*P **P 19 33 46.4 +1.9**
comp=Z,26nm,1.4s
NEW Newport 77.67 326 *e*P **P 19 33 46.4 +1.9**
comp=Z,26nm,1.4s
NEW LR LR
comp=Z,413nm,19.0s
Z36A Blue Ridge 77.67 304 P **P 19 33 45.1 +0.3**
baz=48
238A Jacksonville 77.70 302 P **P 19 33 45.7 +0.8**
baz=48
137A Heron Place, G 77.70 303 P **P 19 33 46.2 +1.2**
baz=48
QLMT Earthquake Lak 77.75 320 *e*P **P 19 33 47.4 +2.1**
QLMT Earthquake Lak 77.75 320 *e*P **P 19 33 47.4 +2.1**
YPP Pitchstone Pla 77.86 320 *e*P **P 19 33 49.0 +3.0**
comp=Z,42nm,1.3s
YPP Pitchstone Pla 77.86 320 *e*P **P 19 33 49.0 +3.0**
comp=Z,42nm,1.3s
N23A Red Feather La 77.87 315 P **P 19 33 47.6 +1.5**
baz=44,SNR=16
N23A Red Feather La 77.87 315 *e*P **P 19 33 47.6 +1.5**
comp=Z,35nm,1.0s
N23A Red Feather La 77.87 315 *e*P **P 19 33 47.6 +1.5**
comp=Z,35nm,1.0s
DLMT Dillon 77.89 321 *e*P **P 19 33 47.4 +1.4**
comp=Z,34nm,1.1s
DLMT Dillon 77.89 321 *e*P **P 19 33 47.4 +1.4**
comp=Z,34nm,1.1s
CN2 Changchun 77.95 41 ⇑P **P 19 33 46.3 +0.2**
CN2 *e*S **S 19 43 37.2 -2.3**
CN2 pmax pmax
comp=Z,30nm,1.0s
CN2 LR LR
comp=Z,500nm,14.0s
CN2 LR LR
comp=Z,400nm,14.0s
CN2 LR LR
comp=Z,700nm,15.0s
FLWY Flagg Ranch 77.95 320 *e*P **P 19 33 48.7 +2.2**
comp=Z,17nm,1.0s
FLWY Flagg Ranch 77.95 320 *e*P **P 19 33 48.6 +2.2**
comp=Z,17nm,1.0s
Y34A Reagan Ranch, 78.02 305 P **P 19 33 46.9 +0.1**
baz=47
X33A Lawton 78.08 306 P **P 19 33 47.6 +0.6**
baz=47,SNR=5.2
WMOK Wichita Mounta 78.11 306 P **P 19 33 47.9 +0.6**
baz=47,SNR=26
WMOK Wichita Mounta 78.11 306 *e*P **P 19 33 48.0 +0.8**
WMOK pmax pmax
comp=Z,48nm,0.9s
WMOK MLR MLR
comp=Z,142nm,20.0s
WMOK Wichita Mounta 78.11 306 *e*P **P 19 33 48.0 +0.8**
comp=Z,48nm,0.9s
WMOK Wichita Mounta 78.11 306 *e*P **P 19 33 48.0 +0.8**
comp=Z,48nm,0.9s
WMOK LR LR
comp=Z,142nm,20.0s
W32A Sentinel 78.13 307 P **P 19 33 48.3 +1.0**
baz=47,SNR=6.6
237A Washetta, Mont 78.14 302 P **P 19 33 48.3 +1.0**
baz=48
Z35A Perchaven, San 78.14 304 P **P 19 33 47.6 +0.3**
baz=47
IMW Indian Meadow 78.21 320 *e*P **P 19 33 50.1 +2.1**
comp=Z,42nm,1.6s
IMW Indian Meadow 78.21 320 *e*P **P 19 33 50.1 +2.1**
comp=Z,42nm,1.6s
MOOW Moose Ponds 78.22 319 *e*P **P 19 33 49.4 +1.5**
comp=Z,18nm,1.1s
MOOW Moose Ponds 78.22 319 *e*P **P 19 33 49.4 +1.5**
comp=Z,18nm,1.1s
338A Crockett 78.25 302 P **P 19 33 49.1 +1.1**
baz=48
LOHW Long Hollow 78.26 319 *e*P **P 19 33 49.5 +1.4**
comp=Z,7.2nm,0.9s
LOHW Long Hollow 78.26 319 *e*P **P 19 33 49.5 +1.4**
comp=Z,7.2nm,0.9s
136A Ennis 78.27 303 P **P 19 33 48.7 +0.6**
baz=47
ENH Enshi 78.33 60 *e*P **P 19 33 48.2 -0.3**
comp=Z,51nm,1.5s
ENH Enshi 78.33 60 *e*P **P 19 33 48.2 -0.3**
comp=Z,51nm,1.5s
ENH LR LR
comp=Z,126nm,20.0s
BW06 Boulder Array 78.37 318 P **P 19 33 48.7 -0.2**
baz=42,SNR=8.7
BW06 Boulder Array 78.37 318 *e*P **P 19 33 48.6 -0.2**
comp=Z,7.3nm,0.8s
BW06 Boulder Array 78.37 318 *e*P **P 19 33 48.6 -0.2**
comp=Z,7.3nm,0.8s
BW06 LR LR
comp=Z,389nm,21.0s
PD31 Pinedale Array 78.37 318 *e*P **P 19 33 48.6 -0.2**
PD31 Pinedale Array 78.37 318 *e*P **P 19 33 48.6 -0.2**
PDAR Pinedale Array 78.37 318 P **P 19 33 48.5 -0.3**
comp=Z,4.2nm,0.7s,baz=48,slow=5.0,SNR=35
PDAR LR LR 20 07 23.8
comp=Z,184nm,18.5s,baz=40,slow=35
MCMT McKenzie Canyo 78.42 321 *e*P **P 19 33 50.5 +1.5**
MCMT McKenzie Canyo 78.42 321 *e*P **P 19 33 50.5 +1.5**
ISCO Idaho Springs 78.47 314 P **P 19 33 50.8 +1.3**
baz=44,SNR=20
ISCO Idaho Springs 78.47 314 *e*P **P 19 33 51.1 +1.6**
ISCO pmax pmax
comp=Z,36nm,1.0s
ISCO MLR MLR
comp=Z,223nm,20.0s
ISCO Idaho Springs 78.47 314 *e*P **P 19 33 51.1 +1.6**
comp=Z,36nm,1.0s
ISCO Idaho Springs 78.47 314 *e*P **P 19 33 51.1 +1.6**
comp=Z,36nm,1.0s
ISCO LR LR
comp=Z,223nm,20.0s
B08A Colville Reser 78.50 327 *e*P **P 19 33 50.5 +1.4**
comp=Z,12nm,1.1s
B08A Colville Reser 78.50 327 *e*P **P 19 33 50.5 +1.4**
comp=Z,12nm,1.1s
C09A Chrisman Ranch 78.51 326 *e*P **P 19 33 50.0 +0.8**
comp=Z,22nm,1.0s
C09A Chrisman Ranch 78.51 326 *e*P **P 19 33 50.0 +0.8**
comp=Z,22nm,1.0s
TPAW Teton Pass 78.52 319 *e*P **P 19 33 50.3 +0.7**
comp=Z,44nm,1.6s
TPAW Teton Pass 78.52 319 *e*P **P 19 33 50.3 +0.7**
comp=Z,44nm,1.6s
Y33A Hilltop Ranch, 78.52 306 P **P 19 33 50.4 +0.9**
baz=47,SNR=8.0
Z34A Collier Ranch, 78.52 305 P **P 19 33 49.8 +0.3**
baz=47
REDW Red Top Meadow 78.56 319 *e*P **P 19 33 51.5 +1.6**
comp=Z,31nm,1.3s
REDW Red Top Meadow 78.56 319 *e*P **P 19 33 51.5 +1.6**
comp=Z,31nm,1.3s
CHTO Chiang Mai 78.61 75 P **P 19 33 49.8 -0.4**
comp=Z,108nm,1.2s
CHTO Chiang Mai 78.61 75 *e*P **P 19 33 49.8 -0.4**
CHTO pmax pmax
comp=Z,21nm,1.0s
CHTO MLR MLR
comp=Z,126nm,19.0s
CHTO Chiang Mai 78.61 75 P **P 19 33 49.9 -0.4**
SNR=7.9
CHTO Chiang Mai 78.61 75 P **P 19 33 49.9 -0.3**
SNR=7.9
CHTO Chiang Mai 78.61 75 *e*P **P 19 33 49.8 -0.3**
comp=Z,21nm,1.0s
CHTO LR LR
comp=Z,126nm,19.0s
CMMT Chiang Mai 78.62 75 P **P 19 33 49.7 -0.5**
comp=Z,24nm,1.4s
HABR Khabarovsk 78.63 33 *ce*P **P 19 33 48.5 -1.2**
HABR *e**SP **sP 19 33 53.1 -0.7**
HABR *e* 19 33 57.1
HABR *e* 19 36 46.3
HABR *e*PPP PPP 19 38 34.4
HABR *e*S **S 19 43 46.5 -0.1**
HABR *e**SS **sS 19 43 52.6 +1.2**
HABR *e* 19 44 09.6
HABR *e*SS **SS 19 48 51.6 +2.5**
HABR pmax pmax
comp=Z,60nm,1.6s
HABR pmax pmax
comp=E,18nm,1.6s
HABR pmax pmax
comp=N,15nm,1.6s
HABR MLR MLR
comp=Z,142nm,16.0s
HABR Khabarovsk 78.63 33 *e*P **P 19 33 48.5 -1.2**
comp=Z,15nm,1.6s
HABR Khabarovsk 78.63 33 *e*PcP **PcP 19 33 57.1 -1.6**
HABR *e*S **S 19 43 46.5 -0.1**
HABR *e*ScS **ScS 19 44 09.6 -1.3**
X32A Elmer 78.63 306 P **P 19 33 51.1 +1.0**
baz=46,SNR=8.5
539A Cross D Ranch, 78.71 300 P **P 19 33 52.0 +1.4**
baz=48
135A Vickery Place, 78.76 304 P **P 19 33 51.1 +0.3**
baz=47
438A Sam Houston St 78.76 301 P **P 19 33 51.8 +1.0**
baz=48
Q24A Divide 78.82 313 P **P 19 33 52.3 +0.9**
baz=44,SNR=8.4
Q24A Divide 78.82 313 *e*P **P 19 33 52.2 +0.7**
comp=Z,55nm,1.4s
Q24A Divide 78.82 313 *e*P **P 19 33 52.1 +0.7**
comp=Z,55nm,1.4s
CM31 Chiang Mai Arr 78.84 75 *e*P **P 19 33 51.5 0.0**
CM31 Chiang Mai Arr 78.84 75 *e*P **P 19 33 51.5 0.0**
CMAR Chiang Mai Arr 78.84 75 P **P 19 33 51.0 -0.5**
comp=Z,9.0nm,0.9s,baz=305,slow=7.5,SNR=66
CMAR LR LR 20 16 22.8
comp=Z,78nm,20.2s,baz=305,slow=42
CM01 Chiang Mai Arr 78.88 75 *e*P **P 19 33 50.5 -1.1**
CM01 Chiang Mai Arr 78.88 75 *e*P **P 19 33 50.5 -1.1**
TIA Tai'an 78.96 51 ⇑P **P 19 33 52.1 +0.3**
TIA pmax pmax
comp=Z,40nm,1.1s
GYA Guiyang 79.00 64 P **P 19 33 53.2 +0.8**
GYA PP **PP 19 36 53.8 +2.9**
GYA S **S 19 43 50.0 -1.6**
GYA SKS **SKSac 19 44 04.6 -4.0**
GYA SS **SS 19 48 56.8 +0.4**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,140nm,6.2s
GYA LR LR
comp=Z,520nm,18.4s
GYA LR LR
comp=Z,510nm,19.0s
GYA LR LR
comp=Z,480nm,18.5s
Z33A Whitaker Ranch 79.09 305 P **P 19 33 53.0 +0.4**
baz=47
KDAK Kodiak Island 79.12 349 *e*P **P 19 33 54.0 +1.7**
KDAK pmax pmax
comp=Z,176nm,1.2s
KDAK MLR MLR
comp=Z,52nm,20.0s
KDAK Kodiak Island 79.12 349 *e*P **P 19 33 54.0 +1.7**
comp=Z,176nm,1.2s
KDAK Kodiak Island 79.12 349 *e*P **P 19 33 54.0 +1.7**
comp=Z,176nm,1.2s
KDAK LR LR
comp=Z,52nm,20.0s
538A Harpers Horsep 79.13 301 P **P 19 33 53.9 +1.1**
baz=48
437A Phantom Ranch, 79.13 302 P **P 19 33 53.2 +0.4**
baz=47
134A White-Moore Ra 79.16 304 P **P 19 33 53.3 +0.2**
baz=47
WHTX Lake Whitney, 79.17 303 P **P 19 33 53.4 +0.3**
baz=47,SNR=5.5
WHTX Lake Whitney, 79.17 303 *e*P **P 19 33 53.7 +0.6**
comp=Z,23nm,0.8s
WHTX Lake Whitney, 79.17 303 *e*P **P 19 33 53.7 +0.6**
comp=Z,23nm,0.8s
336A Riesel 79.20 303 P **P 19 33 53.4 +0.2**
baz=47
LAMP Lampang 79.30 75 P **P 19 33 54.1 +0.2**
comp=Z,11nm,1.0s
MDJ Mudanjiang 79.30 38 *e*P **P 19 33 52.4 -1.1**
comp=Z,7.7nm,1.0s
MDJ Mudanjiang 79.30 38 *e*P **P 19 33 52.4 -1.1**
comp=Z,7.7nm,1.0s
MDJ LR LR
comp=Z,192nm,20.0s
D08A Wollman Farm, 79.37 326 *e*P **P 19 33 54.8 +0.9**
comp=Z,22nm,1.3s
D08A Wollman Farm, 79.37 326 *e*P **P 19 33 54.8 +0.9**
comp=Z,22nm,1.3s
E09A Wood Farm, Sta 79.47 325 *e*P **P 19 33 55.5 +1.0**
comp=Z,23nm,0.9s
E09A Wood Farm, Sta 79.47 325 *e*P **P 19 33 55.5 +1.0**
comp=Z,23nm,0.9s
A04D Lummi Island 79.54 329 P **P 19 33 54.9 +0.1**
baz=35
DL2 Dalian 79.56 46 P **P 19 33 54.9 -0.2**
DL2 *e*S **S 19 43 56.7 -0.2**
DL2 pmax pmax
comp=Z,61nm,0.9s
DL2 pmax pmax
comp=Z,290nm,4.5s
DL2 LR LR
comp=Z,330nm,16.4s
DL2 LR LR
comp=Z,350nm,15.9s
DL2 LR LR
comp=Z,510nm,13.9s
234A Clairette 79.59 304 P **P 19 33 55.6 +0.3**
baz=47,SNR=7.1
436A Wall Ranch, Ga 79.59 302 P **P 19 33 55.7 +0.4**
baz=47
O20A White River Ci 79.63 315 P **P 19 33 56.7 +1.0**
baz=43,SNR=12
O20A White River Ci 79.63 315 *e*P **P 19 33 56.8 +1.1**
comp=Z,55nm,0.9s
O20A White River Ci 79.63 315 *e*P **P 19 33 56.8 +1.1**
comp=Z,55nm,0.9s
335A Moody 79.64 303 P **P 19 33 55.9 +0.3**
baz=47
133A Hamilton Ranch 79.65 305 P **P 19 33 56.1 +0.4**
baz=46
SMCO Snowmass 79.65 314 *e*P **P 19 33 57.7 +1.6**
comp=Z,31nm,1.1s
SMCO Snowmass 79.65 314 *e*P **P 19 33 57.7 +1.6**
comp=Z,31nm,1.1s
T25A Trinidad 79.71 311 P **P 19 33 57.3 +1.1**
baz=44,SNR=5.9
T25A Trinidad 79.71 311 *e*P **P 19 33 57.9 +1.7**
comp=Z,28nm,1.3s
T25A Trinidad 79.71 311 *e*P **P 19 33 57.9 +1.7**
comp=Z,28nm,1.3s
AMTX Amarillo 79.73 308 P **P 19 33 56.8 +0.6**
baz=46
537A Green Hill Far 79.75 301 P **P 19 33 57.2 +1.0**
baz=47
SDCO Great Sand Dun 79.89 312 P **P 19 33 58.1 +0.8**
baz=44,SNR=24
SDCO Great Sand Dun 79.89 312 *e*P **P 19 33 58.0 +0.8**
comp=Z,23nm,1.1s
SDCO Great Sand Dun 79.89 312 *e*P **P 19 33 58.0 +0.7**
comp=Z,23nm,1.1s
SDCO LR LR
comp=Z,203nm,19.0s
233A Rising Star 80.05 304 P **P 19 33 58.4 +0.5**
baz=46,SNR=15
435B Jarrell 80.08 303 P **P 19 33 58.1 +0.1**
baz=47
ABTX Abilene, Hawle 80.09 305 P **P 19 33 58.7 +0.6**
baz=46,SNR=9.8
ABTX Abilene, Hawle 80.09 305 *e*P **P 19 33 59.1 +1.0**
comp=Z,37nm,0.8s
ABTX Abilene, Hawle 80.09 305 *e*P **P 19 33 59.1 +1.0**
comp=Z,37nm,0.8s
334A Lometa 80.11 303 P **P 19 33 58.6 +0.4**
baz=47,SNR=16
HLID Hailey 80.11 321 P **P 19 33 59.7 +1.5**
baz=40,SNR=13
HLID Hailey 80.11 321 *e*P **P 19 33 59.8 +1.6**
comp=Z,38nm,1.7s
HLID Hailey 80.11 321 *e*P **P 19 33 59.8 +1.6**
comp=Z,38nm,1.7s
HLID LR LR
comp=Z,274nm,19.0s
HAWA Hanford 80.15 326 *e*P **P 19 34 00.5 +2.3**
comp=Z,22nm,1.1s
HAWA Hanford 80.15 326 *e*P **P 19 34 00.5 +2.3**
comp=Z,22nm,1.1s
HAWA LR LR
comp=Z,456nm,22.0s
637A Eagle Lake 80.20 301 P **P 19 33 59.8 +1.1**
baz=47
HWUT Hardware Ranch 80.22 318 *e*P **P 19 33 59.9 +1.0**
comp=Z,40nm,0.8s
HWUT Hardware Ranch 80.22 318 *e*P **P 19 33 59.9 +1.0**
comp=Z,40nm,0.8s
HWUT LR LR
comp=Z,362nm,22.0s
BMO Blue Mountains 80.42 324 *e*P **P 19 34 00.2 +0.4**
comp=Z,56nm,1.0s
BMO Blue Mountains 80.42 324 *e*P **P 19 34 00.2 +0.4**
comp=Z,56nm,1.0s
BMO LR LR
comp=Z,332nm,21.0s
434A Burnet 80.48 303 P **P 19 34 00.4 +0.2**
baz=46,SNR=13
TCUT Toone Canyon 80.51 318 *e*P **P 19 34 01.7 +1.2**
comp=Z,22nm,0.8s
TCUT Toone Canyon 80.51 318 *e*P **P 19 34 01.7 +1.2**
comp=Z,22nm,0.8s
333A Richland Sprin 80.58 304 P **P 19 34 01.3 +0.6**
baz=46,SNR=22
535A Dale 80.58 302 P **P 19 34 01.0 +0.2**
baz=47
636A Smothers Creek 80.63 301 P **P 19 34 02.1 +1.1**
baz=47
HVU Hansel Valley 80.69 319 *e*P **P 19 34 02.7 +1.4**
HVU pmax pmax
comp=Z,18nm,1.0s
HVU Hansel Valley 80.69 319 *e*P **P 19 34 02.7 +1.4**
comp=Z,18nm,1.0s
HVU Hansel Valley 80.69 319 *e*P **P 19 34 02.7 +1.4**
comp=Z,18nm,1.0s
USRK Ussuriysk Ar. 80.71 37 P **P 19 34 00.7 -0.5**
comp=Z,11nm,0.8s,baz=287,slow=4.6,SNR=33
USRK LR LR 20 13 42.9
comp=Z,154nm,18.3s,baz=313,slow=39
ROSC El Rosal 80.78 268 LR LR 20 05 37.2
comp=Z,230nm,21.9s,baz=257,slow=33
HELC Santa Helena 80.78 270 *e*P **P 19 34 03.2 +0.8**
comp=Z,192nm,2.0s
G08A Pilot Rock 80.79 325 *e*P **P 19 34 03.0 +1.3**
comp=Z,19nm,1.5s
G08A Pilot Rock 80.79 325 *e*P **P 19 34 03.0 +1.3**
comp=Z,19nm,1.5s
LON Longmire 80.80 327 *e*P **P 19 34 03.0 +1.3**
LON pmax pmax
comp=Z,33nm,1.4s
LON Longmire 80.80 327 *e*P **P 19 34 03.0 +1.3**
comp=Z,33nm,1.4s
LON Longmire 80.80 327 *e*P **P 19 34 03.0 +1.3**
comp=Z,33nm,1.4s
MFID Camas Ranch 80.88 322 *e*P **P 19 34 03.5 +1.3**
comp=Z,34nm,1.1s
MFID Camas Ranch 80.88 322 *e*P **P 19 34 03.5 +1.3**
comp=Z,34nm,1.1s
SPUT South Promonto 80.89 319 *e*P **P 19 34 03.7 +1.3**
comp=Z,31nm,1.5s
SPUT South Promonto 80.89 319 *e*P **P 19 34 03.7 +1.3**
comp=Z,31nm,1.5s
TEIG Tepich 80.91 289 P **P 19 34 02.6 0.0**
comp=Z,0.2nm,0.3s,baz=90,slow=20,SNR=4.7
TEIG Tepich 80.91 289 *e*P **P 19 34 03.2 +0.6**
TEIG Tepich 80.91 289 *e*P **P 19 34 03.1 +0.6**
736A Circle Diamond 80.99 301 P **P 19 34 04.1 +1.2**
baz=47
CTU Camp Tracy 81.00 318 *e*P **P 19 34 04.5 +1.4**
comp=Z,45nm,0.9s
CTU Camp Tracy 81.00 318 *e*P **P 19 34 04.5 +1.4**
comp=Z,45nm,0.9s
MSTX Muleshoe 81.02 308 P **P 19 34 03.5 +0.3**

baz=45,SNR=5.2
MSTX Muleshoe 81.02 308 *e*P P 19 34 04.0 +0.9
comp=Z,23nm,1.1s
MSTX Muleshoe 81.02 308 *e*P P 19 34 04.0 +0.9
comp=Z,23nm,1.1s
433A Art 81.04 303 P P 19 34 03.6 +0.4
baz=46,SNR=25
NLWA Neilton Lookou 81.08 329 PFAKE 19 34 10.0 +6.9
NLWA LR LR
comp=Z,413nm,19.0s
LOEI Loei 81.13 75 P P 19 34 04.6 +0.8
comp=Z,28nm,1.8s
635A Leesville 81.15 302 P P 19 34 04.4 +0.6
baz=46
534A Blanco 81.15 303 P P 19 34 04.1 +0.3
baz=46,SNR=11
WHN Wuhan 81.23 57 P P 19 34 04.6 +0.5
WHN pmax pmax
comp=Z,86nm,1.4s
PV04 Paradox Valley 81.25 315 *e*P P 19 34 05.5 +1.1
PV04 Paradox Valley 81.25 315 *e*P P 19 34 05.5 +1.1
PV01 Paradox Valley 81.27 314 *e*P P 19 34 05.6 +1.0
PV01 Paradox Valley 81.27 314 *e*P P 19 34 05.6 +1.0
PV09 Paradox Valley 81.30 315 *e*P P 19 34 06.2 +1.4
PV09 Paradox Valley 81.30 315 *e*P P 19 34 06.2 +1.4
PV10 Paradox Valley 81.34 315 *e*P P 19 34 06.8 +1.8
PV10 Paradox Valley 81.34 315 *e*P P 19 34 06.8 +1.8
P17A Butcher Ranch, 81.41 316 *e*P P 19 34 06.2 +1.0
comp=Z,64nm,1.9s
P17A Butcher Ranch, 81.41 316 *e*P P 19 34 06.2 +1.0
comp=Z,64nm,1.9s
BGU Big Grassy Mou 81.46 319 *e*P P 19 34 06.7 +1.2
comp=Z,30nm,1.1s
BGU Big Grassy Mou 81.46 319 *e*P P 19 34 06.7 +1.2
comp=Z,30nm,1.1s
533A Kerrville 81.47 303 P P 19 34 06.0 +0.5
baz=46,SNR=6.7
SRU San Rafael Swe 81.57 316 *e*P P 19 34 06.9 +0.8
SRU pmax pmax
comp=Z,47nm,0.9s
SRU San Rafael Swe 81.57 316 *e*P P 19 34 06.9 +0.8
comp=Z,47nm,0.9s
SRU San Rafael Swe 81.57 316 *e*P P 19 34 06.9 +0.8
comp=Z,47nm,0.9s
PV05 Paradox Valley 81.59 315 *e*P P 19 34 06.8 +0.5
PV05 Paradox Valley 81.59 315 *e*P P 19 34 06.8 +0.5
MSHR Mys Shultsa 81.59 38*c i*P P 19 34 05.4 -0.5
MSHR Mys Shultsa 81.59 38 *i*P P 19 34 05.4 -0.5
JCT Junction City 81.67 304 P P 19 34 07.3 +0.8
baz=46,SNR=8.6
JCT Junction City 81.67 304 *e*P P 19 34 07.5 +0.9
JCT pmax pmax
comp=Z,65nm,1.2s
JCT MLR MLR
comp=Z,182nm,20.0s
JCT Junction City 81.67 304 *e*P P 19 34 07.5 +0.9
comp=Z,65nm,1.2s
JCT Junction City 81.67 304 *e*P P 19 34 07.5 +0.9
comp=Z,65nm,1.2s
JCT LR LR
comp=Z,182nm,20.0s
PEA0 Petropavlovsk- 81.74 18 *e*P P 19 34 06.3 -0.2
PEA0 Petropavlovsk- 81.74 18 *e*P P 19 34 06.3 -0.2
PETK Petropavlovsk- 81.74 18 P P 19 34 06.8 +0.3
comp=Z,13nm,1.1s,baz=59,slow=7.1,SNR=7.5
PETK LR LR 20 15 03.1
comp=Z,82nm,18.1s,baz=323,slow=39
PETK Petropavlovsk- 81.74 18 P P 19 34 06.8 +0.3
PETK pmax pmax
comp=Z,7.0nm,0.9s
PETK MLR MLR
comp=Z,82nm,18.1s
TMUT Trail Mountain 81.78 317 *e*P P 19 34 08.1 +0.7
comp=Z,23nm,0.8s
TMUT Trail Mountain 81.78 317 *e*P P 19 34 08.1 +0.7
comp=Z,23nm,0.8s
MVCO Mesa Verde 81.91 314 P P 19 34 09.3 +1.3
baz=42,SNR=12
MVCO Mesa Verde 81.91 314 *e*P P 19 34 09.8 +1.8
comp=Z,25nm,0.8s
MVCO Mesa Verde 81.91 314 *e*P P 19 34 09.8 +1.8
comp=Z,25nm,0.8s
MVCO LR LR
comp=Z,288nm,19.0s
DUG Dugway, Tooele 81.91 318 P P 19 34 08.7 +0.9
baz=40
DUG Dugway, Tooele 81.91 318 *e*P P 19 34 09.0 +1.2
DUG pmax pmax
comp=Z,23nm,0.9s
DUG MLR MLR
comp=Z,245nm,22.0s
DUG Dugway, Tooele 81.91 318 *e*P P 19 34 09.0 +1.2
comp=Z,23nm,0.9s
DUG Dugway, Tooele 81.91 318 *e*P P 19 34 09.0 +1.2
comp=Z,23nm,0.9s
DUG LR LR
comp=Z,245nm,22.0s
633A Saathoff Ranch 81.98 303 P P 19 34 08.9 +0.7
baz=46,SNR=6.3
SAML Samuel 82.01 250 *e*P P 19 34 08.8 +0.4
comp=Z,22nm,1.1s
SAML Samuel 82.01 250 *e*P P 19 34 08.8 +0.4
comp=Z,22nm,1.1s
SAML LR LR
comp=Z,289nm,22.0s
NONG Nongkai 82.11 73 P P 19 34 08.6 -0.4
comp=Z,37nm,0.8s
ANMO Albuquerque 82.44 311 P P 19 34 11.7 +0.9
baz=43
ANMO Albuquerque 82.44 311*c i*P P 19 34 11.9 +1.1
ANMO pmax pmax
comp=Z,21nm,1.7s
ANMO Albuquerque 82.44 311 *i*P P 19 34 11.9 +1.1
comp=Z,21nm,1.7s
ANMO Albuquerque 82.44 311 *e*P P 19 34 12.2 +1.5
comp=Z,8.7nm,0.9s
ANMO LR LR
comp=Z,227nm,20.0s
834A Tilden 82.51 301 P P 19 34 12.7 +1.7
baz=46
I05D Terrebonne, OR 82.56 326 P P 19 34 12.5 +1.5
baz=36
733A Divot King Ran 82.57 302 P P 19 34 12.2 +0.9
baz=46
G03D McMinnville, O 82.64 327 P P 19 34 12.6 +1.3
baz=34
ELK Elko 82.67 320 *e*P P 19 34 13.8 +1.9
ELK pmax pmax
comp=Z,53nm,1.6s
ELK Elko 82.67 320 *e*P P 19 34 13.8 +1.9
comp=Z,53nm,1.6s
ELK Elko 82.67 320 *e*P P 19 34 13.8 +1.9
comp=Z,53nm,1.6s
YSS Yuzh-Sakhalins 82.82 29⇑ *i*P P 19 34 12.8 +0.5
YSS *eS* S 19 44 32.0 +1.5
YSS pmax pmax
comp=Z,90nm,0.8s
YSS MLR MLR
comp=N,200nm,14.0s
YSS MLR MLR
comp=Z,300nm,14.0s
YSS Yuzh-Sakhalins 82.82 29 *e*P P 19 34 12.7 +0.5
comp=Z,89nm,0.8s
YSS Yuzh-Sakhalins 82.82 29 *e*P P 19 34 12.7 +0.5
comp=Z,89nm,0.8s
YSS LR LR
comp=Z,112nm,19.0s
934A Benavides 82.85 301 P P 19 34 14.1 +1.3
baz=46
MSU Marysvale 82.87 317 *e*P P 19 34 14.3 +1.3
MSU Marysvale 82.87 317 *e*P P 19 34 14.3 +1.3
MSU Marysvale 82.87 317 *e*P P 19 34 14.3 +1.3
833A Chaparral WMA, 82.91 302 P P 19 34 13.9 +0.9
baz=46
NJ2 Nanjing 82.91 53 *e*P P 19 34 13.1 +0.1
NJ2 pmax pmax
comp=Z,37nm,1.1s
WVOR Wild Horse Val 82.92 323 PFAKE 19 34 20.0 +7.0
WVOR LR LR
comp=Z,288nm,19.0s
LPM Los Pinos Moun 83.00 310 *e*P P 19 34 15.5 +1.8
LPM Los Pinos Moun 83.00 310 *e*P P 19 34 15.5 +1.8
KHON Khomkaen 83.02 74 P P 19 34 14.3 +0.6
035A Encino 83.04 300 P P 19 34 15.3 +1.5
baz=46
BNM Barren Site 83.11 310 *e*P P 19 34 15.8 +1.5
BNM Barren Site 83.11 310 *e*P P 19 34 15.8 +1.5

LAZ Ladron 83.22 311 *e*P P 19 34 16.9 +2.1
LAZ Ladron 83.22 311 *e*P P 19 34 16.9 +2.1
MTPU Mount Pierson 83.23 316 *e*P P 19 34 16.6 +1.6
comp=Z,158nm,1.9s
MTPU Mount Pierson 83.23 316 *e*P P 19 34 16.6 +1.6
comp=Z,158nm,1.9s
832A Faith Ranch, C 83.30 302 P P 19 34 16.3 +1.2
baz=46
933A Laredo 83.33 301 P P 19 34 16.7 +1.5
baz=46
034A Hebbronville 83.33 300 P P 19 34 16.7 +1.4
baz=46
035Z Hargill 83.35 300 P P 19 34 16.4 +1.1
baz=46
J05D Fort Rock, OR 83.37 325 P P 19 34 16.9 +1.5
baz=36
SKNT Sakolnakorn 83.42 73 P P 19 34 16.0 +0.1
comp=Z,26nm,1.8s
I04A Tenick Farm, 83.45 326 P P 19 34 16.7 +1.1
baz=35
K05A Summer Lake 83.68 325 *e*P P 19 34 18.8 +1.7
comp=Z,44nm,1.2s
K05A Summer Lake 83.68 325 *e*P P 19 34 18.8 +1.7
comp=Z,44nm,1.2s
PSUT Pine Spring 83.70 318 *e*P P 19 34 19.5 +2.2
comp=Z,75nm,1.4s
PSUT Pine Spring 83.70 318 *e*P P 19 34 19.5 +2.2
comp=Z,75nm,1.4s
PKCU Pink Cliffs 83.75 316 *e*P P 19 34 19.4 +1.7
comp=Z,36nm,0.8s
PKCU Pink Cliffs 83.75 316 *e*P P 19 34 19.4 +1.7
comp=Z,36nm,0.8s
BMN Battle Mountai 83.86 321 *e*P P 19 34 19.7 +1.8
BMN pmax pmax
comp=Z,39nm,1.4s
BMN Battle Mountai 83.86 321 *e*P P 19 34 19.7 +1.8
comp=Z,39nm,1.4s
BMN Battle Mountai 83.86 321 *e*P P 19 34 19.7 +1.8
comp=Z,39nm,1.4s
I03D Drain, OR 83.92 327 P P 19 34 19.1 +1.1
baz=34
KS01 Wonju Array Si 83.93 44 *e*P P 19 34 17.3 -0.8
KS01 Wonju Array Si 83.93 44 *e*P P 19 34 17.3 -0.8
KSAR Wonju Array Be 83.95 44 P P 19 34 18.3 +0.1
KSAR Wonju Array Be 83.95 44 P P 19 34 18.3 +0.1
KSAR Wonju Array Be 83.95 44 P P 19 34 18.2 +0.1
KSRS Korea Array 83.96 44 P P 19 34 18.2 0.0
comp=Z,10.0nm,1.0s,baz=334,slow=4.9,SNR=20
MNTX Cornudas Mount 84.17 308 P P 19 34 20.3 +0.7
baz=44,SNR=16
MNTX Cornudas Mount 84.17 308 *e*P P 19 34 20.0 +0.5
comp=Z,14nm,1.1s
MNTX Cornudas Mount 84.17 308 *e*P P 19 34 20.0 +0.5
comp=Z,14nm,1.1s
MNTX LR LR
comp=Z,238nm,20.0s
CCUT Cedar City 84.20 317 *e*P P 19 34 20.5 +0.6
comp=Z,33nm,0.9s
CCUT Cedar City 84.20 317 *e*P P 19 34 20.5 +0.6
comp=Z,33nm,0.9s
KNB Kanab 84.34 316 *e*P P 19 34 21.4 +0.9
KNB pmax pmax
comp=Z,21nm,1.0s
KNB Kanab 84.34 316 *e*P P 19 34 21.4 +0.9
comp=Z,21nm,1.0s
KNB Kanab 84.34 316 *e*P P 19 34 21.4 +0.9
comp=Z,21nm,1.0s
U15A North Rim 84.51 315 *e*P P 19 34 22.3 +0.8
U15A North Rim 84.51 315 *e*P P 19 34 22.3 +0.8
LCMT Little Creek M 84.56 316 *e*P P 19 34 22.6 +1.1
comp=Z,33nm,1.5s
LCMT Little Creek M 84.56 316 *e*P P 19 34 22.6 +1.1
comp=Z,33nm,1.5s
HUMO Hull Mountain 84.66 326 *e*P P 19 34 22.8 +1.0
comp=Z,25nm,1.5s
HUMO Hull Mountain 84.66 326 *e*P P 19 34 22.8 +1.0
comp=Z,25nm,1.5s
X18A Snowflake 84.69 313 *e*P P 19 34 23.6 +1.3
X18A Snowflake 84.69 313 *e*P P 19 34 23.6 +1.3
R11A Troy Canyon, C 84.70 319 P P 19 34 23.8 +1.5
baz=39
R11A Troy Canyon, C 84.70 319 *e*P P 19 34 23.8 +1.5
comp=Z,70nm,1.0s
R11A Troy Canyon, C 84.70 319 *e*P P 19 34 23.8 +1.5
comp=Z,70nm,1.0s
WUAZ Wupatki 84.71 314 P P 19 34 23.9 +1.5
baz=41,SNR=13
WUAZ Wupatki 84.71 314 *e*P P 19 34 19.1 -3.3
comp=Z,30nm,0.9s
WUAZ LR LR
comp=Z,183nm,19.0s
TX31 Lajitas Ar. Si 84.85 305 *e*P P 19 34 23.4 +0.3
TX31 Lajitas Ar. Si 84.85 305 *e*P P 19 34 23.4 +0.3
TXAR Lajitas Array 84.85 305 P P 19 34 24.4 +1.3
comp=Z,111nm,0.8s,baz=60,slow=5.7,SNR=111
TXAR LR LR 20 13 09.5
comp=Z,121nm,18.4s,baz=0.0,slow=36
M04C Macdoel 84.85 325 P P 19 34 23.9 +0.9
baz=35,SNR=7.4
121A Cookes Peak, D 84.96 310 P P 19 34 25.4 +1.7
baz=42,SNR=31
121A Cookes Peak, D 84.96 310 *e*P P 19 34 25.1 +1.4
comp=Z,48nm,1.0s
ASAJ Asahikawa 85.17 31 *e*P P 19 34 23.8 -0.5
comp=Z,73nm,1.4s
ASAJ Asahikawa 85.17 31 *e*P P 19 34 23.8 -0.5
comp=Z,73nm,1.4s
YBH Yreka Blue Hor 85.27 325 *e*P P 19 34 25.4 +0.4
YBH pmax pmax
comp=Z,18nm,1.0s
YBH Yreka Blue Hor 85.27 325 *e*P P 19 34 25.4 +0.4
comp=Z,18nm,1.0s
YBH Yreka Blue Hor 85.27 325 *e*P P 19 34 25.4 +0.4
comp=Z,18nm,1.0s
L02D Cave Junction, 85.30 326 P P 19 34 26.0 +1.0
baz=34
PAHR Pah Rah Range 85.44 322 *e*P P 19 34 27.7 +1.8
comp=Z,40nm,1.4s
PAHR Pah Rah Range 85.44 322 *e*P P 19 34 27.7 +1.8
comp=Z,40nm,1.4s
X16A Lo Mia Camp, P 85.58 314 *e*P P 19 34 29.0 +2.2
comp=Z,14nm,1.0s
X16A Lo Mia Camp, P 85.58 314 *e*P P 19 34 29.1 +2.2
comp=Z,14nm,1.0s
M02C Callahan 85.61 325 P P 19 34 27.4 +0.7
baz=34
N02D Trinity Center 85.89 325 P P 19 34 28.8 +0.7
baz=35
SHPR Sheep Range 85.92 317 *e*P P 19 34 30.9 +2.5
comp=Z,43nm,1.1s
SHPR Sheep Range 85.92 317 *e*P P 19 34 30.9 +2.5
comp=Z,43nm,1.1s
O03D Paynes Creek 86.05 324 P P 19 34 29.2 +0.3
baz=35
TPNV Topopah Spring 86.12 318 P P 19 34 30.5 +1.2
baz=38,SNR=8.3
TPNV Topopah Spring 86.12 318 *e*P P 19 34 30.6 +1.2
TPNV pmax pmax
comp=Z,15nm,1.1s
TPNV Topopah Spring 86.12 318 *e*P P 19 34 30.6 +1.2
comp=Z,15nm,1.1s
TPNV Topopah Spring 86.12 318 *e*P P 19 34 30.6 +1.2
comp=Z,15nm,1.1s
CCIG Comitan 86.26 288 *e*P P 19 34 30.8 +0.4
comp=Z,82nm,1.8s
CCIG Comitan 86.26 288 *e*P P 19 34 30.8 +0.4
comp=Z,82nm,1.8s
W13A Hualapai Mount 86.36 316 *e*P P 19 34 32.1 +1.5
W13A Hualapai Mount 86.36 316 *e*P P 19 34 32.1 +1.5
WAKR Walker 86.43 321 *e*P P 19 34 32.9 +2.0
comp=Z,33nm,1.5s
WAKR Walker 86.43 321 *e*P P 19 34 32.9 +2.0
comp=Z,33nm,1.5s
ORV Oroville 86.52 323 *e*P P 19 34 31.7 +0.6
ORV pmax pmax
comp=Z,12nm,1.2s
ORV Oroville 86.52 323 *e*P P 19 34 31.7 +0.6
comp=Z,12nm,1.2s
ORV Oroville 86.52 323 *e*P P 19 34 31.7 +0.6
comp=Z,12nm,1.2s
GRAC Grapevine Rang 86.64 319 P P 19 34 33.0 +1.2
baz=38
319A Douglas 86.66 310 *e*P P 19 34 34.2 +2.1
comp=Z,63nm,1.6s
Y14A Wickenburg 86.78 314 *e*P P 19 34 34.1 +1.5
comp=Z,16nm,0.9s
Y14A Wickenburg 86.78 314 *e*P P 19 34 34.1 +1.5
comp=Z,16nm,0.9s
FURC Furnace Creek, 86.81 318 P P 19 34 34.1 +1.6
baz=38
TUC Tucson 86.81 312 P P 19 34 34.1 +1.4
baz=41
TUC Tucson 86.81 312 *e*P P 19 34 34.3 +1.5
TUC pmax pmax
comp=Z,7.0nm,0.9s
TUC MLR MLR
comp=Z,330nm,21.0s
TUC Tucson 86.81 312 *e*P P 19 34 34.3 +1.5
comp=Z,6.7nm,0.9s
TUC Tucson 86.81 312 *e*P P 19 34 34.3 +1.5
comp=Z,6.7nm,0.9s
TUC LR LR
comp=Z,330nm,21.0s
TUQ Turquoise Moun 87.14 317 P P 19 34 35.8 +1.4
baz=38,SNR=5.7
ERM Erimo 87.18 31 *i*P P 19 34 33.9 -0.3
ERM pmax pmax
comp=Z,53nm,1.7s
ERM Erimo 87.18 31 *e*P P 19 34 34.7 +0.5
comp=Z,56nm,1.3s
ERM Erimo 87.18 31 *e*P P 19 34 34.7 +0.5
comp=Z,56nm,1.3s
ERM LR LR
comp=Z,265nm,21.0s
DAC Darwin (Calif) 87.32 319 *e*P P 19 34 36.9 +1.6
DAC pmax pmax
comp=Z,6.0nm,0.8s
DAC Darwin (Calif) 87.32 319 *e*P P 19 34 36.9 +1.6
comp=Z,6.3nm,0.8s
DAC Darwin (Calif) 87.32 319 *e*P P 19 34 36.9 +1.6
comp=Z,6.3nm,0.8s
CWC Cottonwood Cre 87.43 319 P P 19 34 36.6 +0.8
baz=37
MPMC Manual Prospec 87.44 318 P P 19 34 37.2 +1.3
baz=38,SNR=11
GMRC Granite Mounta 87.52 316 P P 19 34 37.5 +1.3
baz=38,SNR=13
CMIG Matias Romero 87.64 291 P P 19 34 36.0 -0.8
comp=Z,7.0nm,0.9s,baz=55,slow=4.2,SNR=9.0
GSC Goldstone, Bar 87.70 318 P P 19 34 38.3 +1.3
baz=38,SNR=6.7
GSC Goldstone, Bar 87.70 318 *e*P P 19 34 38.4 +1.4
GSC pmax pmax
comp=Z,10.0nm,0.9s
GSC Goldstone, Bar 87.70 318 *e*P P 19 34 38.4 +1.4
comp=Z,10.0nm,0.9s
GSC Goldstone, Bar 87.70 318 *e*P P 19 34 38.4 +1.4
comp=Z,10.0nm,0.9s
Y12C Blythe 87.73 315 P P 19 34 38.4 +1.3
baz=39,SNR=5.7
Y12C Blythe 87.73 315 *e*P P 19 34 38.9 +1.8
comp=Z,20nm,0.9s
Y12C Blythe 87.73 315 *e*P P 19 34 38.9 +1.8
comp=Z,20nm,0.9s
IRM Iron Mountain 87.74 316 P P 19 34 38.4 +1.2
baz=39,SNR=9.8
HEC Hector,Ludlow 87.83 317 P P 19 34 38.9 +1.2
baz=38,SNR=11
LRMC Laurel Mtn Rad 87.99 318 P P 19 34 39.4 +1.0
baz=37,SNR=5.5
113A Mohawk Valley, 88.09 314 *e*P P 19 34 39.6 +0.9
214A Organ Pipe Nat 88.19 313 P P 19 34 40.5 +1.1
baz=40
214A Organ Pipe Nat 88.19 313 *e*P P 19 34 39.7 +0.4
comp=Z,15nm,0.8s
ISA Isabella, Lake 88.24 319 P P 19 34 40.7 +1.1
baz=37,SNR=5.6
ISA Isabella, Lake 88.24 319 *e*P P 19 34 41.2 +1.7
ISA pmax pmax
comp=Z,16nm,0.9s
ISA Isabella, Lake 88.24 319 *e*P P 19 34 41.2 +1.7
comp=Z,16nm,0.9s
ISA Isabella, Lake 88.24 319 *e*P P 19 34 41.2 +1.7
comp=Z,16nm,0.9s
BC3 Big Chuckawall 88.29 316 P P 19 34 41.0 +1.1
baz=38,SNR=8.7
GLA Glamis 88.43 315 P P 19 34 41.4 +1.0
baz=39
GLA Glamis 88.43 315 *e*P P 19 34 41.8 +1.3
GLA pmax pmax
comp=Z,9.0nm,0.8s
GLA Glamis 88.43 315 *e*P P 19 34 41.8 +1.3
comp=Z,8.9nm,0.8s
GLA Glamis 88.43 315 *e*P P 19 34 41.8 +1.3
comp=Z,8.9nm,0.8s
EDW2 Edwards Air Fo 88.62 318 P P 19 34 42.6 +1.2
baz=37,SNR=7.8
PFO Pinyon Flats O 88.85 316 P P 19 34 44.4 +1.8
comp=Z,13nm,0.9s,baz=62,slow=3.6,SNR=13
PFO LR LR 20 13 37.8
comp=Z,219nm,18.2s,baz=47,slow=35
PFO Pinyon Flats O 88.85 316 P P 19 34 43.9 +1.4
baz=38,SNR=8.4
PFO Pinyon Flats O 88.85 316 *e*P P 19 34 43.9 +1.4
comp=Z,26nm,1.1s
PFO Pinyon Flats O 88.85 316 *e*P P 19 34 43.9 +1.4
comp=Z,26nm,1.1s
TPFO Pinon Flats 88.85 316 P P 19 34 43.9 +1.3
baz=38,SNR=9.1
BFSC Mount Baldy Ra 88.96 317 P P 19 34 43.7 +0.7
baz=37,SNR=5.2
SWSC Sam W. Stewart 89.03 315 P P 19 34 44.0 +0.8
baz=38
GSI Gunungsitoli 89.12 89 *e*P P 19 34 43.8 -0.1
comp=Z,15nm,0.9s
GSI Gunungsitoli 89.12 89 *e*P P 19 34 43.8 -0.1
comp=Z,15nm,0.9s
MURC Murrieta 89.23 317 P P 19 34 45.6 +1.3
baz=38
MONP2 Monument Peak 89.39 316 P P 19 34 46.7 +1.5
baz=38,SNR=6.8
IKP In-Ko-Pah, Jac 89.42 315 P P 19 34 46.1 +0.9
baz=38
PKM Mcpherson Peak 89.51 319 P P 19 34 47.2 +1.5
baz=36,SNR=6.5
MAJO Matsushiro 89.67 38⇓ *e*P P 19 34 45.5 -0.7
MAJO pmax pmax
comp=Z,69nm,1.1s
MAJO Matsushiro 89.67 38 *e*P P 19 34 45.5 -0.7
comp=Z,69nm,1.1s
MAT Matsushiro 89.67 38 P P 19 34 44.5 -1.7
MJAR Matsushiro Arr 89.68 38 P P 19 34 45.3 -0.9
comp=Z,4.8nm,0.8s,baz=314,slow=4.6,SNR=11
MJAR LR LR 20 19 49.3
comp=Z,106nm,18.3s,baz=310,slow=39
BAR Barrett 89.69 316 *e*P P 19 34 47.8 +1.4
comp=Z,11nm,0.9s
BAR Barrett 89.69 316 *e*P P 19 34 47.8 +1.4
comp=Z,11nm,0.9s
YHNB Yeheng 89.77 56 *e*P P 19 34 48.3 +1.4
comp=Z,2µm,0.7s
YHNB Yeheng 89.77 56 *e*P P 19 34 48.4 +1.4
comp=Z,2µm,0.7s
CIS Catalina Islan 90.01 317 P P 19 34 48.9 +1.1
baz=37
LPAZ La Paz 90.56 249 P P 19 34 50.2 -1.0
comp=Z,2.4nm,0.9s,baz=13,slow=4.1,SNR=4.8
CPUP Villa Florida 90.66 234 P P 19 34 50.4 -0.3
comp=Z,4.3nm,0.8s,baz=27,slow=6.4,SNR=7.7
CPUP Villa Florida 90.66 234 *e*P P 19 34 50.9 +0.2
CPUP Villa Florida 90.66 234 *e*P P 19 34 50.9 +0.2
LPIG La Paz 92.70 306 LR LR 20 15 21.6
comp=Z,116nm,18.4s,baz=50,slow=35
DAV Davao City (W) 105.37 65 PFAKE 19 40 20.0
DAV LR LR
comp=Z,136nm,20.0s
KAPI Kappang 109.73 79 PFAKE 19 40 30.0
KAPI LR LR
comp=Z,87nm,20.0s
MIDW Midway 109.90 5 PFAKE 19 40 30.0
MIDW LR LR
comp=Z,319nm,20.0s
WAKE Wake Island 115.94 22 PFAKE 19 40 40.0 +8.7
WAKE LR LR
comp=Z,244nm,19.0s
MBWA Marble Bar 120.10 92 PFAKE 19 40 50.0 +11
MBWA LR LR
comp=Z,276nm,22.0s
WRAB Tennant Creek 130.19 81 *i*PKIKP **PKPdf** 19 40 58.4 -0.1
QSPA South Pole Qui 131.95 180 *e*PKPdf **PKPdf** 19 40 59.1 -1.4
ASAR Alice Springs 132.12 85 PKP **PKPdf** 19 41 00.1 -2.0
comp=Z,3.8nm,0.8s,baz=312,slow=1.4,SNR=19
AS01 Alice Springs 132.16 85 *e*PKIKP **PKPdf** 19 41 00.9 -1.3
AS01 Alice Springs 132.16 85 *e*PKPdf **PKPdf** 19 41 00.9 -1.3

CTA	**Charters Tower**	**138.88**	**71**	PKP	**PKPdf**	**19 41 14.9**	**+0.2**
	comp=Z,5.2nm,0.7s,baz=343,slow=1.8,SNR=7.1						
CTA	**Charters Tower**	**138.88**	**71**	PKIKP	**PKPdf**	**19 41 15.0**	**+0.2**
CTA				pmax	pmax		
	comp=Z,5.0nm,0.7s						
STKA	**Stephens Creek**	**142.27**	**90**	PKhKP	PKPpre	19 41 14.7	
	comp=Z,4.8nm,0.8s,baz=305,slow=4.2,SNR=11						
STKA	**Stephens Creek**	**142.27**	**90**	*e*PKPpre	PKPpre	19 41 15.5	
VNDA	**Vanda**	**142.91**	**171**	PKhKP	PKPpre	19 41 15.8	
	comp=Z,2.4nm,0.9s,baz=266,slow=6.3,SNR=12						
VNDA	**Vanda**	**142.91**	**171**	*e*PKPpre	PKPpre	19 41 17.3	
SBA	**Scott Base**	**143.13**	**173**	*e*PKIKP	**PKPdf**	**19 41 25.2**	**+4.5**
SBA	**Scott Base**	**143.13**	**173**	*e*PKIKP	**PKPdf**	**19 41 25.2**	**+4.5**
SBA	**Scott Base**	**143.13**	**173**	*e*PKPdf	**PKPdf**	**19 41 25.2**	**+4.5**
EIDS	**Eidsvold**	**145.67**	**73**	*e*PKIKP	**PKPdf**	**19 41 26.6**	**-0.1**
EIDS	**Eidsvold**	**145.67**	**73**	*e*PKPdf	**PKPdf**	**19 41 26.6**	**-0.1**
ARMA	**Armidale**	**148.97**	**80**	*e*PKPbc	**PKPbc**	**19 41 36.2**	**0.0**
ARMA	**Armidale**	**148.97**	**80**	*e*PKPbc	**PKPbc**	**19 41 36.2**	**0.0**
CAN	**Canberra**	**149.33**	**90**	*e*PKP2	**PKPbc**	**19 41 36.4**	**-0.5**
CAN	**Canberra**	**149.33**	**90**	*e*PKPbc	**PKPbc**	**19 41 36.4**	**-0.5**
CAN	**Canberra**	**149.33**	**90**	*e*PKPbc	**PKPbc**	**19 41 36.4**	**-0.5**
AFI	**Afiamalu**	**151.92**	**359**	PKPbc	**PKPbc**	**19 41 42.7**	**-0.9**
	comp=Z,16nm,0.5s,baz=34,slow=6.3,SNR=3.8						
DZM	**Mont Dzumac**	**153.31**	**48**	PKPbc	**PKPbc**	**19 41 47.0**	**+0.4**
	comp=Z,16nm,1.0s,baz=354,slow=19,SNR=5.4						
DZM	**Mont Dzumac**	**153.31**	**48**	PKPbc	**PKPbc**	**19 41 47.0**	**+0.4**

*IDC **07** 19:32:46.2±1.1,33.˚62S×178.˚52W,h0km,mb4.1/3, mb1 4.3/4,mb1mx3.9/27,mbtmp4.2/4,ML4.0/1,MS3.5/1, Ms1 3.5/1,ms1mx2.9/27,Error ellipse: s-maj=40.5km s-min=31.5km az=170.0*

*NEIC **07** 19:32:47.2±0.7,33.˚71S×178.˚44W,h10km,mb4.7/2,Error ellipse: s-maj=19.3km s-min=17.9km az=88.0*

*ISCJB **07** 19:32:48.6±1.6,33.˚8S±0.˚1×178.˚4W±0.˚2,h41km,mb4.2/4, Error ellipse: s-maj=29.2km s-min=13.6km az=17.0*

ISC 07 19:32:51.9±1.1,33.˚8S±0.˚1×178.˚5W±0.˚2,h41km,n18, σ1§18/17,mb4.3/4,1D,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**5.69**	**217**	Pn	**Pn**	**19 34 14.5**	**+0.7**
	4.0nm,0.3s,baz=36,slow=12,SNR=12						
URZ				Sn	**Sn**	**19 35 18.3**	**+0.4**
	baz=360,slow=19,SNR=3.0						
DZM	**Mont Dzumac**	**17.68**	**308**	LR	LR	19 42 14.8	
	comp=Z,153nm,18.8s,baz=116,slow=32						
CTA	**Charters Tower**	**34.08**	**285**	P	**P**	**19 39 32.6**	**0.0**
	1.6nm,0.6s,baz=108,slow=11,SNR=4.5						
CTAO	**Charters Tower**	**34.08**	**285**	*e*P	**P**	**19 39 32.1**	**-0.4**
	8.6nm,0.7s						
ASAR	**Alice Springs**	**42.61**	**271**	P	**P**	**19 40 44.0**	**-0.4**
	2.3nm,0.8s,baz=110,slow=7.4,SNR=20						
WRAB	**Tennant Creek**	**43.90**	**276**	*e*P	**P**	**19 40 53.4**	**-1.3**
	10nm,1.1s						
WRA	**Warramunga Arr**	**43.91**	**276**	P	**P**	**19 40 54.1**	**-0.7**
	2.2nm,0.6s,baz=116,slow=7.7,SNR=15						
QSPA	**South Pole Qui**	**56.32**	**180**	*e*P	**P**	**19 42 26.5**	**-1.9**
SYO	**Syowa Base**	**73.71**	**193**	*e*pP	P	19 44 26.8	+5.8
KURK	**Kurchatov**	**123.05**	**312**	PKP	**PKPdf**	**19 51 43.0**	**-0.3**
KURBB	**Kurchatov Arra**	**123.08**	**312**	PKP	**PKPdf**	**19 51 43.0**	**-0.4**
	0.5nm,0.7s,baz=104,slow=2.5,SNR=5.4						
BVAR	**Borovoye Array**	**128.49**	**314**	PKP	**PKPdf**	**19 51 54.3**	**+0.6**
	0.2nm,0.4s,baz=59,slow=0.8,SNR=2.7						
FINES	**FINESS Array B**	**148.15**	**338**	PKPbc	**PKPbc**	**19 52 31.8**	**-0.6**
	1.7nm,0.6s,baz=37,slow=3.8,SNR=17						
MMAI	**Mount Meron Ar**	**151.75**	**278**	PKPbc	**PKPbc**	**19 52 43.7**	**+1.5**
	3.0nm,0.8s,baz=62,slow=3.7,SNR=5.4						
NB2	**NORSAR Subarra**	**152.03**	**350**	PKP	**PKPbc**	**19 52 44.8**	**+2.9**
	comp=Z,0.4nm,0.5s,baz=14,slow=2.5						
NOA	**NORSAR Array B**	**152.03**	**350**	PKPbc	**PKPbc**	**19 52 42.7**	**+0.8**
	comp=Z,0.4nm,0.5s,baz=14,slow=4.1,SNR=4.2						
BRTR	**Keskin Array B**	**153.67**	**292**	PKPbc	**PKPbc**	**19 52 46.5**	**+0.1**
	comp=Z,0.9nm,0.8s,baz=140,slow=4.7,SNR=5.1						
TORD	**Torodi Ar. Bea**	**159.44**	**181**	PKPab	**PKPab**	**19 53 24.9**	**+0.7**
	comp=Z,0.4nm,0.8s,baz=160,slow=4.6,SNR=2.6						

*JMA **07** 19:36:10.7±0.1,24.˚17N×121.˚74E,h15km±2km,M3.2*

*IDC **07** 19:36:10.5±1.6,24.˚02N×121.˚11E,h0km,mb3.3/3, mb1 3.4/4,mb1mx3.1/56,mbtmp3.4/4,ML3.5/1,Error ellipse: s-maj=73.0km s-min=26.3km az=68.0*

*ISCJB **07** 19:36:11.2±0.4,24.˚20N±0.˚01×121.˚83E±0.˚02,h7km±2km, mb3.3/3,Error ellipse: s-maj=2.9km s-min=2.0km az=136.5*

*TAP **07** 19:36:11.5,24.˚22N×121.˚75E,h15km,ML3.7,B*

ISC 07 19:36:11.1±0.9,24.˚18N±0.˚02×121.˚77E±0.˚02,h15km±7km, n73,σ1§19/115,mb3.2/3,12C-1D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.13**	**348**	*e*P	**Pb**	**19 36 15.4**	**+0.1**
	baz=356						
EHP				*e*S	**Sb**	**19 36 18.1**	**0.0**
	baz=356						
TWD	**Chiawan**	**0.19**	**237**	⇑*i*P	**Pb**	**19 36 16.3**	**0.0**
	baz=233						
TWD				*i* S	**Sb**	**19 36 19.7**	**0.0**
	baz=233						
ENA	**Nanau**	**0.24**	**354**	⇑*i*P	**Pg**	**19 36 16.5**	**0.0**
	baz=357						
ENA				S	**Sg**	**19 36 19.9**	**-0.3**
	baz=357						
HWA	**Hwalien**	**0.26**	**216**	*e*P	**Pb**	**19 36 18.0**	**+0.6**
	baz=218						
ESF	**Shoufeng Towns**	**0.39**	**218**	*e*P	**Pn**	**19 36 20.4**	**-1.8**
	baz=221						
TWC	**Suao**	**0.43**	**10**	⇑*i*P	**Pg**	**19 36 19.8**	**+0.1**
	baz=9.0						
TWC				*i* S	**Sg**	**19 36 25.7**	**+0.1**
	baz=9.0						
NNS	**Nan Shan**	**0.44**	**305**	⇑*i*P	**Pb**	**19 36 20.2**	**-0.6**
	baz=303						
NNS				*i* S	**Sb**	**19 36 26.3**	**-1.0**
	baz=303						
WHF	**Hehuan Shan**	**0.46**	**265**	⇑*i*P	**Pb**	**19 36 21.0**	**-0.3**
	baz=262						
WHF				S	**Sb**	**19 36 27.4**	**-0.7**
	baz=262						
ESL	**Shilin**	**0.48**	**220**	P	**Pb**	**19 36 21.4**	**+0.1**
	baz=223						
ESL				*e*S	**Sn**	**19 36 29.4**	**-2.2**
	baz=223						
ENTT	**Nioudou**	**0.49**	**338**	⇑*i*P	**Pb**	**19 36 21.0**	**-0.5**
	baz=337						
ENTT				*i* S	**Sg**	**19 36 27.3**	**-0.2**
	baz=337						
TWE	**Neicheng**	**0.54**	**350**	⇑*i*P	**Pb**	**19 36 22.0**	**-0.4**
	baz=350						
TWE				*i* S	**Sg**	**19 36 29.0**	**-0.1**
	baz=350						
TWT	**Tachien**	**0.55**	**277**	*i* P	**Pn**	**19 36 22.8**	**-1.8**
	baz=274						
TWT				*i* S	**Sb**	**19 36 30.1**	**-0.2**
	baz=274						
ILA	**Ilan**	**0.58**	**358**	*e*P	**Pb**	**19 36 23.2**	**+0.2**
	baz=351						
NSK	**Sanguang**	**0.62**	**323**	⇑*i*P	**Pb**	**19 36 23.2**	**-0.5**
	baz=321						
NSK				*i* S	**Sg**	**19 36 31.0**	**-0.5**
	baz=321						
EGS		**0.68**	**13**	*i* P	**Pb**	**19 36 24.8**	**+0.2**
	baz=18						
EGS				*e*S	**Sn**	**19 36 35.6**	**-0.8**
	baz=18						
EHY	**Hungye**	**0.79**	**211**	*e*P	**Pb**	**19 36 26.1**	**-0.4**
	baz=223						
TWA	**Mucha**	**0.81**	**348**	*e*P	**Pn**	**19 36 27.5**	**-0.6**
	baz=347						
NSTT	**Nanjuang**	**0.83**	**303**	P	**Pn**	**19 36 27.6**	**-0.7**
	baz=301						
NSTT				S	**Sb**	**19 36 37.9**	**-0.4**
	baz=301						
SMLT	**Sun Moon Lake**	**0.85**	**250**	⇑*i*P	**Pn**	**19 36 28.2**	**-0.5**
	baz=241						
SMLT				S	**Sn**	**19 36 39.4**	**-1.6**
	baz=241						
TYC	**Yuchr**	**0.88**	**252**	P	**Pn**	**19 36 28.2**	**-0.8**
	baz=244						
TYC				*e*S	**Sn**	**19 36 40.1**	**-1.4**
	baz=244						
TAP1	**Taipei**	**0.88**	**345**	*i* P	**Pn**	**19 36 28.7**	**-0.2**
	baz=343						
TAP1				*e*S	**Sb**	**19 36 38.6**	**-1.1**
	baz=343						
NWF	**Wu-fen Shan**	**0.88**	**1**	*e*P	**Pg**	**19 36 28.5**	**+0.2**
	baz=348						
TAP	**Taipei**	**0.89**	**344**	*e*P	**Pg**	**19 36 28.3**	**0.0**
	baz=343						
TAP				*e*S	**Sb**	**19 36 39.1**	**-0.7**
	baz=343						
TWQ1	**Liyutan**	**0.92**	**280**	*e*P	**Pn**	**19 36 29.9**	**+0.3**
	baz=279						
TWQ1				*e*S	**Sn**	**19 36 44.2**	**+1.6**
	baz=279						
TWF1	**Yuli**	**0.93**	**208**	*e*P	**Pg**	**19 36 28.4**	**-0.8**
	baz=220						
NCU	**National Centr**	**0.95**	**326**	P	**Pn**	**19 36 30.2**	**+0.3**
	baz=325						
NCU				S	**Sn**	**19 36 43.7**	**+0.6**
	baz=325						
NSY	**Sanyi**	**0.95**	**284**	*e*P	**Pn**	**19 36 30.4**	**+0.5**
	baz=282						
HSN	**Hsinchu**	**0.95**	**310**	*e*P	**Pn**	**19 36 30.3**	**+0.3**
	baz=303						
HSN				*e*S	**Sn**	**19 36 44.4**	**+1.1**
	baz=303						
TWS1	**Kuangyinshan**	**0.97**	**341**	⇑P	**Pn**	**19 36 30.3**	**+0.1**
	baz=345						
TWS1				S	**Sn**	**19 36 44.3**	**+0.6**
	baz=345						
TCU	**Taichung**	**1.00**	**268**	P	**Pn**	**19 36 31.6**	**+1.0**
	baz=267						
TCU				S	**Sn**	**19 36 46.0**	**+1.6**
	baz=267						
YUS	**Yu-Shan**	**1.02**	**227**	*e*P	**Pn**	**19 36 30.9**	**-0.5**
	baz=227						
YUS				*e*S	**Sn**	**19 36 47.5**	**+1.9**
	baz=227						
WNT	**Mingjian**	**1.04**	**253**	*e*P	**Pn**	**19 36 32.2**	**+1.0**
	baz=249						
WNT				*e*S	**Sn**	**19 36 46.7**	**+1.3**
	baz=249						
TWY	**Chenhua**	**1.10**	**352**	*e*P	**Pg**	**19 36 32.7**	**0.3**
	baz=335						
JYNG	**Yonagunijimaku**	**1.10**	**76**	P	**Pn**	**19 36 32.2**	**+0.1**
JYNG				*e*S	**Sg**	**19 36 48.6**	**+1.7**
ALS	**Alishan**	**1.11**	**233**	P	**Pg**	**19 36 32.6**	**0.0**
	baz=232						
CHKT	**Chengkung**	**1.14**	**199**	*e*P	**Pg**	**19 36 32.3**	**-0.9**
	baz=187						
CHN5	**Tsauling**	**1.16**	**240**	P	**Pg**	**19 36 34.0**	**+0.5**
	baz=241						
CHN5				*e*S	**Sn**	**19 36 52.0**	**+3.5**
	baz=241						
YOJ	**Yonaguni jima**	**1.17**	**76**	P	**Pb**	**19 36 33.1**	**+0.1**
YOJ				S	**Sg**	**19 36 49.3**	**+0.5**
YOJ	**Yonaguni jima**	**1.17**	**76**	⇓*i*P	**Pb**	**19 36 33.1**	**+0.1**
	baz=63						
YOJ				*e*S	**Sn**	**19 36 48.9**	**+0.4**
	baz=63						
ELDTW	**Lidau**	**1.21**	**215**	*e*P	**Pb**	**19 36 33.0**	**-0.8**
	baz=202						
WGK	**Gukeng**	**1.21**	**246**	*e*P	**Pg**	**19 36 34.7**	**+0.2**
	baz=247						
WGK				*e*S	**Sg**	**19 36 52.2**	**+1.9**
	baz=247						
CHN2	**Minshiung**	**1.35**	**242**	*e*P	**Pg**	**19 36 37.8**	**+0.6**
	baz=243						
CHN2				*e*S	**Sg**	**19 36 57.5**	**+2.7**
	baz=243						
CHN4	**Tsaushan**	**1.36**	**233**	⇑*i*P	**Pg**	**19 36 37.5**	**+0.2**
	baz=234						
CHN4				*e*S	**Sg**	**19 36 59.7**	**+4.6**
	baz=234						
STYT	**Tauyuan**	**1.38**	**223**	*e*P	**Pg**	**19 36 36.2**	**-1.4**
	baz=224						
STYT				*e*S	**Sg**	**19 36 58.3**	**+2.7**
	baz=224						
WTCT	**Ta-ch'eng**	**1.40**	**257**	*e*P	**Pg**	**19 36 37.0**	**-1.0**
	baz=257						
CHY	**Chiayi**	**1.41**	**241**	*e*P	**Pg**	**19 36 38.6**	**+0.3**
	baz=243						
CHY				*e*S	**Sg**	**19 36 58.1**	**+1.5**
	baz=243						
WTP	**Ta-pu**	**1.41**	**229**	P	**Pg**	**19 36 37.9**	**-0.5**
	baz=230						
WTP				*e*S	**Sg**	**19 36 59.3**	**+2.6**
	baz=230						
PCYT	**Pengchaiyu**	**1.47**	**11**	*e*P	**Pn**	**19 36 37.3**	**+0.2**
	baz=8.0						
TWK	**Hsinying**	**1.49**	**232**	*e*P	**Pg**	**19 36 40.2**	**+0.5**
	baz=233						
TWG	**Pinlang**	**1.50**	**205**	*e*P	**Pb**	**19 36 37.4**	**-1.3**
	baz=192						
CHN1	**Nanshi**	**1.51**	**229**	⇑P	**Pg**	**19 36 39.5**	**-0.7**
	baz=231						
CHN1				*e*S	**Sg**	**19 37 03.3**	**+3.4**
	baz=231						
WSF	**Szhu**	**1.52**	**249**	*e*P	**Pg**	**19 36 38.7**	**-1.6**
	baz=261						
WSF				*e*S	**Sg**	**19 37 00.8**	**+0.7**
	baz=261						
SGST	**Jiashian**	**1.54**	**225**	*e*P	**Pg**	**19 36 39.8**	**-1.1**
	baz=226						
SGST				*e*S	**Sg**	**19 37 03.2**	**+2.2**
	baz=226						
CHN8	**Yiju**	**1.65**	**240**	*e*P	**Pb**	**19 36 40.6**	**-0.7**
	baz=241						
CHN3	**Shinhua**	**1.70**	**230**	*e*P	**Pg**	**19 36 42.5**	**-1.2**
	baz=231						
ECL	**Taimali**	**1.75**	**206**	*e*P	**Pb**	**19 36 41.7**	**-1.3**
	baz=194						
SSD	**Sandimen**	**1.77**	**216**	*e*P	**Pb**	**19 36 43.0**	**-0.3**
	baz=230						
SSD				*e*S	**Sg**	**19 37 06.6**	**-1.6**
	baz=230						
IRIF	**Iriomote-Funau**	**1.79**	**85**	P	**Pn**	**19 36 41.6**	**0.0**
IRIF				*e*S	**Sn**	**19 37 04.8**	**+0.7**
TWM1	**Shoushan**	**1.83**	**223**	*e*P	**Pb**	**19 36 43.9**	**-0.5**
	baz=223						
HATJ	**Hateruma jima**	**1.86**	**93**	*e*S	**Sn**	**19 37 06.6**	**+0.8**
EAST	**Anshuo**	**1.98**	**205**	*e*P	**Pb**	**19 36 46.8**	**-0.2**
	baz=195						
JKRS	**Kuro-shima**	**2.04**	**88**	P	**Pn**	**19 36 45.7**	**+0.7**
JKRS				*e*S	**Sb**	**19 37 12.3**	**-0.9**
SCZT	**Fangliau**	**2.09**	**211**	*e*P	**Pg**	**19 36 49.1**	**-2.1**
	baz=195						
PNG	**Penghu**	**2.12**	**254**	*e*P	**Pb**	**19 36 48.7**	**-0.6**
	baz=255						
WDGT	**Dungji**	**2.14**	**245**	*e*P	**Pb**	**19 36 48.0**	**-1.6**
	baz=247						
JIJ	**Ishigaki jima**	**2.17**	**85**	P	**Pn**	**19 36 47.0**	**+0.2**
JIJ				S	**Sn**	**19 37 13.7**	**+0.3**
JISG	**Ishigakijimahi**	**2.35**	**80**	P	**Pn**	**19 36 49.0**	**-0.2**
JISG				S	**Sn**	**19 37 18.1**	**+0.3**
TWK1	**Hengchun**	**2.40**	**202**	*e*P	**Pb**	**19 36 52.5**	**-1.5**
	baz=190						
JTJ	**Tarama**	**2.71**	**80**	*e*S	**Sn**	**19 37 27.7**	**+1.0**
KSRS	**Korea Array**	**14.24**	**20**	Pn	**P**	**19 39 38.2**	**-1.3**
	0.2nm,0.3s,baz=203,slow=11,SNR=3.6						
MKAR	**Makanchi Array**	**38.71**	**316**	P	**P**	**19 43 33.5**	**-1.0**
	0.4nm,0.8s,baz=106,slow=9.6,SNR=3.6						
ZALV	**Zalesovo Beam**	**40.54**	**327**	P	**P**	**19 43 49.7**	**+0.1**
	0.4nm,0.5s,baz=120,slow=8.5,SNR=2.9						
ASAR	**Alice Springs**	**49.00**	**165**	P	**P**	**19 44 59.1**	**+1.7**
	0.2nm,0.7s,baz=352,slow=6.8,SNR=3.2						

*IDC **07** 19:38:13.5±1.7,42.˚10N×7.˚40E,h0km,mb3.5/2,mb1 3.5/8, mb1mx3.3/50,mbtmp3.4/8,ML3.6/6,Error ellipse: s-maj=35.6km s-min=22.7km az=114.0*

*CSEM **07** 19:38:14.2±0.2,41.˚97N×7.˚63E,h15km,ML3.6/23,Error ellipse: s-maj=3.7km s-min=2.6km az=179.0*

*GEN **07** 19:38:15.2,42.˚05N×7.˚66E,h4km,ML3.6*

*ROM **07** 19:38:16.0±0.1,42.˚01N×7.˚68E,h40km±1km,Ml3.3/20, Error ellipse: s-maj=1.9km s-min=1.4km az=102.0*

*LDG **07** 19:38:17.8,42.˚02N×7.˚65E,h30km*

*STR **07** 19:38:21.5±0.2,42.˚30N×7.˚09E,h10km,Ml3.8,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 07 19:38:13.9±1.9,42.˚01N±0.˚04×7.˚63E±0.˚02,h12km±14km, n204,σ2§33/291,Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGF	**Pioggiola**	**1.15**	**62**	*e*Pn	**Pb**	**19 38 35.7**	**0.0**
PGF				*e*Sn	**Sb**	**19 38 49.6**	**-0.9**
	1µm,0.2s						
PGF	**Pioggiola**	**1.15**	**62**	*e*Pn	**Pb**	**19 38 35.7**	**0.0**
PGF				*e*Sn	**Sb**	**19 38 49.6**	**-0.9**
	580nm,0.2s						
LMR	**La Mourre**	**1.56**	**328**	*e*Pn	**Pn**	**19 38 41.2**	**-0.2**
LMR				*e*Sn	**Sn**	**19 38 58.7**	**-2.8**
	797nm,0.2s						
LMR	**La Mourre**	**1.56**	**328**	*e*Pn	**Pn**	**19 38 41.2**	**-0.2**
LMR				*e*Sn	**Sn**	**19 38 58.7**	**-2.8**
	398nm,0.2s						
FRF	**La Foret Royal**	**1.71**	**335**	*e*Pn	**Pn**	**19 38 43.4**	**-0.1**
FRF				*e*Sn	**Sn**	**19 39 01.9**	**-3.3**
	353nm,0.2s						
FRF	**La Foret Royal**	**1.71**	**335**	*e*Pn	**Pn**	**19 38 43.4**	**-0.1**
FRF				*e*Sn	**Sn**	**19 39 01.9**	**-3.3**
	176nm,0.2s						
NEGI	**Seborga**	**1.83**	**2**	Pn	**Pn**	**19 38 46.2**	**+1.0**
NEGI	**Seborga**	**1.83**	**2**	P	**Pn**	**19 38 44.8**	**-0.4**
NEGI	**Seborga**	**1.83**	**2**	Pn	**Pn**	**19 38 46.2**	**+1.0**
SBF	**Sospel**	**1.85**	**356**	*e*Pn	**Pn**	**19 38 44.8**	**-0.7**
SBF	**Sospel**	**1.85**	**356**	*e*Pg	**Pb**	**19 38 48.5**	**+0.8**
SBF				*e*Sn	**Sn**	**19 39 05.6**	**-3.3**
	306nm,0.2s						
SBF	**Sospel**	**1.85**	**356**	*e*Pn	**Pn**	**19 38 44.8**	**-0.7**
SBF	**Sospel**	**1.85**	**356**	*e*Pg	**Pb**	**19 38 48.5**	**+0.8**
SBF				*e*Sn	**Sn**	**19 39 05.6**	**-3.3**
	153nm,0.2s						
IMI	**Imperia**	**1.91**	**6**	Pn	**Pn**	**19 38 46.9**	**+0.7**
IMI	**Imperia**	**1.91**	**6**	P	**Pn**	**19 38 46.1**	**-0.1**
IMI	**Imperia**	**1.91**	**6**	Pn	**Pn**	**19 38 46.9**	**+0.7**
CELB	**S.Piero in Cam**	**2.05**	**68**	Pn	**Pn**	**19 38 48.1**	**0.0**
CELB					Sn	**19 39 11.4**	**-2.2**
	198nm,0.1s						
CELB	**S.Piero in Cam**	**2.05**	**68**	Pn	**Pn**	**19 38 48.1**	**0.0**
CELB					Sn	**19 39 11.4**	**-2.2**
	198nm,0.1s						
LEPF	**PUYLOUBIER**	**2.07**	**317**	Pn	**Pn**	**19 38 49.0**	**+0.5**
LEPF					Sg	**19 39 13.3**	**-0.9**
LEPF	**PUYLOUBIER**	**2.07**	**317**	Pn	**Pn**	**19 38 49.0**	**+0.5**
RORO	**Rocca Rossa**	**2.12**	**8**	Pn	**Pn**	**19 38 49.1**	**0.0**
RORO					Sn	**19 39 12.3**	**-3.1**
RORO	**Rocca Rossa**	**2.12**	**8**	P	**Pn**	**19 38 49.1**	**0.0**
GROG	**Isola di Gorgo**	**2.18**	**49**	Pn	**Pn**	**19 38 49.9**	**0.0**
GROG					Sn	**19 39 14.7**	**-2.2**
	124nm,0.2s						
GROG	**Isola di Gorgo**	**2.18**	**49**	Pn	**Pn**	**19 38 49.9**	**0.0**
GROG					Sn	**19 39 14.7**	**-2.2**
	124nm,0.2s						
ENR	**Entracque**	**2.22**	**356**	Pn	**Pn**	**19 38 51.3**	**+0.8**
ENR					Sn	**19 39 15.8**	**-2.1**
	185nm,0.3s						
ENR	**Entracque**	**2.22**	**356**	Pn	**Pn**	**19 38 51.3**	**+0.8**
FINB	**Finale Ligure**	**2.22**	**13**	Pn	**Pn**	**19 38 50.4**	**-0.1**
FINB					Sn	**19 39 14.4**	**-3.4**
	219nm,0.2s						
FINB	**Finale Ligure**	**2.22**	**13**	Pn	**Pn**	**19 38 50.4**	**-0.1**
STV	**Sant Anna di V**	**2.24**	**354**	Pn	**Pn**	**19 38 51.6**	**+0.7**
STV					Sn	**19 39 16.1**	**-2.4**
	159nm,0.3s						
STV	**Sant Anna di V**	**2.24**	**354**	P	**Pn**	**19 38 51.6**	**+0.7**
QLNO	**Quiliano**	**2.37**	**12**	Pn	**Pn**	**19 38 52.5**	**0.0**
	70nm,0.3s						
QLNO	**Quiliano**	**2.37**	**12**	Pn	**Pn**	**19 38 52.5**	**0.0**
	70nm,0.3s						
SMRF	**Simiane la Rot**	**2.48**	**323**	*e*Pn	**Pn**	**19 38 55.2**	**+1.2**
SMRF				*e*Sn	**Sn**	**19 39 25.1**	**+0.9**
	65nm,0.2s						
SMRF	**Simiane la Rot**	**2.48**	**323**	*e*Pn	**Pn**	**19 38 55.2**	**+1.2**
SMRF				*e*Sn	**Sn**	**19 39 25.1**	**+0.9**
	32nm,0.2s						
DOI	**San Damiano**	**2.51**	**354**	Pn	**Pn**	**19 38 55.4**	**+0.9**
DOI					Sn	**19 39 23.0**	**-2.0**
	242nm,0.3s						
DOI	**San Damiano**	**2.51**	**354**	Pn	**Pn**	**19 38 55.4**	**+0.9**
CASP	**Castiglione de**	**2.52**	**71**	Pn	**Pn**	**19 38 54.8**	**+0.2**
CASP					Sn	**19 39 23.2**	**-2.0**
	351nm,0.3s						
CASP	**Castiglione de**	**2.52**	**71**	Pn	**Pn**	**19 38 54.8**	**+0.2**
CASP					Sn	**19 39 23.2**	**-2.0**
	351nm,0.3s						
PZZ	**Stroppo**	**2.52**	**352**	Pn	**Pn**	**19 38 56.0**	**+1.2**
PZZ					Sn	**19 39 24.8**	**-0.7**
	336nm,0.3s						
PZZ	**Stroppo**	**2.52**	**352**	Pn	**Pn**	**19 38 56.0**	**+1.2**
PZZ					Sn	**19 39 24.8**	**-0.7**
	336nm,0.3s						
PLMA	**Palmaria, Port**	**2.61**	**38**	Pn	**Pn**	**19 38 56.8**	**+1.1**
PLMA					Sn	**19 39 24.4**	**-2.9**
PLMA	**Palmaria, Port**	**2.61**	**38**	Pn	**Pn**	**19 38 56.8**	**+1.1**
PLMA					Sn	**19 39 24.4**	**-2.9**
PCP	**Piancastagn**	**2.61**	**14**	Pn	**Pn**	**19 38 55.9**	**0.0**
PCP					Sn	**19 39 24.0**	**-3.6**
	77nm,0.5s						
PCP	**Piancastagn**	**2.61**	**14**	Pn	**Pn**	**19 38 55.9**	**0.0**
PCP	**Piancastagn**	**2.61**	**14**	P	**Pn**	**19 38 56.4**	**+0.5**
MAON	**Monte Argentar**	**2.63**	**80**	Pn	**Pn**	**19 38 55.8**	**-0.3**
MAON	**Monte Argentar**	**2.63**	**80**	Pn	**Pn**	**19 38 55.8**	**-0.3**
MSSA	**Maissana**	**2.68**	**30**	Pn	**Pn**	**19 38 57.3**	**+0.4**
MSSA	**Maissana**	**2.68**	**30**	Pn	**Pn**	**19 38 57.3**	**+0.4**
MBDF	**Montbardon**	**2.79**	**347**	*e*Pn	**Pn**	**19 39 00.6**	**+2.2**
MBDF				*e*Sn	**Sn**	**19 39 30.0**	**-2.0**
	59nm,0.2s						
MBDF	**Montbardon**	**2.79**	**347**	*e*Pn	**Pn**	**19 39 00.6**	**+2.2**
MBDF				*e*Sn	**

MGAB	**Montegabbione**	3.43	73	Pn		Pn	19 39 07.0	-0.2	
	25nm,0.4s								
LASF	**Ste Croix**	3.45	308	*e*Pn		Pn	19 39 07.5	+0.1	
LASF				*e*Sn		Sn	19 39 44.3	-3.9	
	118nm,0.2s								
LASF	**Ste Croix**	3.45	308	*e*Pn		Pn	19 39 07.5	+0.1	
LASF				*e*Sn		Sn	19 39 44.3	-3.9	
	59nm,0.2s								
LSD	**Lago del Serru**	3.46	354	Pn		Pn	19 39 09.2	+1.4	
	39nm,0.3s								
LSD	**Lago del Serru**	3.46	354	Pn		Pn	19 39 09.2	+1.4	
	39nm,0.3s								
LSD	**Lago del Serru**	3.46	354	P		Pn	19 39 09.6	+1.8	
LSD				S		Sn	19 39 48.2	-0.7	
TRAV	**Traversella**	3.50	1	P		Pn	19 39 09.0	+0.9	
LPG	**La Plagne**	3.54	350	*e*Pn		Pn	19 39 13.0	+4.1	
LPG				*e*Sn		Sn	19 39 52.4	+1.6	
	35nm,0.4s								
LPG	**La Plagne**	3.54	350	*e*Pn		Pn	19 39 13.0	+4.1	
LPG				*e*Sn		Sn	19 39 52.4	+1.6	
	18nm,0.4s								
SJAF	**Saint Jean de**	3.56	279	Pn		Pn	19 39 08.6	-0.3	
SJAF				Sg		Sb	19 40 03.8	+3.9	
SJAF	**Saint Jean de**	3.56	279	Pn		Pn	19 39 08.6	-0.3	
LPL	**La Plagne**	3.56	350	*e*Pn		Pn	19 39 12.2	+3.1	
LPL				*e*Sn		Sn	19 39 51.9	+0.6	
	27nm,0.3s								
LPL	**La Plagne**	3.56	350	*e*Pn		Pn	19 39 12.2	+3.1	
LPL				*e*Sn		Sn	19 39 51.9	+0.6	
	13nm,0.3s								
VIVF	**Saint-Julien-l**	3.57	324	*e*Pn		Pn	19 39 09.1	+0.1	
VIVF				*e*Sn		Sn	19 39 47.1	-4.0	
	20nm,0.2s								
VIVF	**Saint-Julien-l**	3.57	324	*e*Pn		Pn	19 39 09.1	+0.1	
VIVF				*e*Sn		Sn	19 39 47.1	-4.0	
	9.9nm,0.2s								
FILF	**Fillols**	3.80	280	Pn		Pn	19 39 13.7	+1.4	
FILF				Sg		Sg	19 40 14.6	-1.4	
FILF	**Fillols**	3.80	280	Pn		Pn	19 39 13.7	+1.4	
FILF				Sg		Sg	19 40 14.6	-1.4	
LRDF	**Laroque-de-Fa**	3.88	285	Pn		Pn	19 39 13.2	-0.1	
LRDF				Sg		Sb	19 40 13.3	+4.2	
LRDF	**Laroque-de-Fa**	3.88	285	Pn		Pn	19 39 13.2	-0.1	
SSB	**Saint Sauveur**	3.96	327	Pn		Pn	19 39 14.2	-0.2	
SSB	**Saint Sauveur**	3.96	327	Pn		Pn	19 39 14.2	-0.2	
CARF	**Carcanieres**	4.16	282	Pn		Pn	19 39 17.0	-0.2	
CARF				Sg		Sb	19 40 22.7	+5.6	
CARF	**Carcanieres**	4.16	282	Pn		Pn	19 39 17.0	-0.2	
VALF	**Valcebollere**	4.19	277	Pn		Pn	19 39 17.3	-0.4	
VALF				Sg		Sb	19 40 23.8	+5.6	
VALF	**Valcebollere**	4.19	277	Pn		Pn	19 39 17.3	-0.4	
MTLF	**Montolieu**	4.21	290	*e*Pn		Pn	19 39 17.1	-0.7	
MTLF				*e*Sn		Sn	19 40 02.6	-4.2	
	46nm,0.3s								
MTLF	**Montolieu**	4.21	290	*e*Pn		Pn	19 39 17.1	-0.7	
MTLF				*e*Sn		Sn	19 40 02.6	-4.2	
	23nm,0.3s								
LBL	**Lubilhac**	4.53	317	Pn		Pn	19 39 21.8	-0.4	
LBL	**Lubilhac**	4.53	317	Pn		Pn	19 39 21.8	-0.4	
CABF	**La Chapelle**	4.73	347	*e*Pn		Pn	19 39 26.0	+1.0	
CABF				*e*Sn		Sn	19 40 10.9	-8.9	
	5.6nm,0.3s								
CABF	**La Chapelle**	4.73	347	*e*Pn		Pn	19 39 26.0	+1.0	
CABF				*e*Sn		Sn	19 40 10.9	-8.9	
	2.8nm,0.3s								
PLDF	**La Plantade**	4.90	325	Pn		Pn	19 39 27.5	+0.1	
PLDF	**La Plantade**	4.90	325	Pn		Pn	19 39 27.5	+0.1	
FRNF	**Fournols**	4.99	314	Pn		Pn	19 39 28.1	-0.4	
FRNF	**Fournols**	4.99	314	Pn		Pn	19 39 28.1	-0.4	
CAF	**Calviac**	4.99	308	*e*Pn		Pn	19 39 29.0	+0.4	
CAF				*e*Sn		Sn	19 40 20.7	-5.5	
	22nm,0.2s								
CAF	**Calviac**	4.99	308	*e*Pn		Pn	19 39 29.0	+0.4	
CAF				*e*Sn		Sn	19 40 20.7	-5.5	
	11nm,0.2s								
PYM	**Petit Puy Mans**	5.01	320	Pn		Pn	19 39 28.5	-0.4	
PYM	**Petit Puy Mans**	5.01	320	Pn		Pn	19 39 28.5	-0.4	
DAVOX	**Davos/Dischmat**	5.03	18	Pn		Pn	19 39 31.5	+2.3	
	1.4nm,0.3s,baz=249,slow=7.4,SNR=9.8								
DAVOX				*i* Sn		Sn	19 40 26.8	-0.6	
	1.2nm,0.3s,baz=349,slow=16,SNR=5.3								
MELF	**Melles**	5.16	282	Pn		Pn	19 39 31.3	+0.4	
MELF				Sg		Sg	19 40 55.2	-4.2	
MELF	**Melles**	5.16	282	Pn		Pn	19 39 31.3	+0.4	
AGO	**Saint Agoulin**	5.18	323	Pn		Pn	19 39 31.6	+0.4	
AGO	**Saint Agoulin**	5.18	323	Pn		Pn	19 39 31.6	+0.4	
SMF	**Signal de Mont**	5.37	331	*e*Pn		Pn	19 39 34.3	+0.5	
SMF				*e*Sn		Sn	19 40 27.4	-8.1	
	8.0nm,0.2s								
SMF	**Signal de Mont**	5.37	331	*e*Pn		Pn	19 39 34.3	+0.5	
SMF				*e*Sn		Sn	19 40 27.4	-8.1	
	4.0nm,0.2s								
RESF	**Ens**	5.46	281	Pn		Pn	19 39 34.7	-0.4	
RESF	**Ens**	5.46	281	Pn		Pn	19 39 34.7	-0.4	
FETA	**Feichten**	5.47	23	*i* Pn		Pn	19 39 40.1	+4.8	
	1.7nm,0.3s								
FETA				*i* Sn		Sn	19 40 40.1	+1.8	
	2.8nm,0.4s								
EPF	**Esparros**	5.49	283	*e*Pn		Pn	19 39 34.3	-1.1	
EPF				*e*Sn		Sn	19 40 34.1	-4.3	
	22nm,0.3s								
EPF	**Esparros**	5.49	283	*e*Pn		Pn	19 39 34.3	-1.1	
EPF				*e*Sn		Sn	19 40 34.1	-4.3	
	11nm,0.3s								
DAVA	**Damuels**	5.51	16	*i* Pn		Pn	19 39 40.3	+4.5	
	1.3nm,0.2s								
DAVA				*i* Sn		Sn	19 40 41.3	+2.2	
	4.6nm,0.3s								
RJF	**Les Rejaudoux**	5.52	309	*e*Pn		Pn	19 39 36.4	+0.5	
RJF				*e*Sn		Sn	19 40 33.8	-5.5	
	13nm,0.2s								
RJF	**Les Rejaudoux**	5.52	309	*e*Pn		Pn	19 39 36.4	+0.5	
RJF				*e*Sn		Sn	19 40 33.8	-5.5	
	6.7nm,0.2s								
AVF	**Avril sur Loir**	5.68	329	*e*Pn		Pn	19 39 38.9	+1.0	
AVF	**Avril sur Loir**	5.68	329	*e*Pn		Pn	19 39 38.9	+1.0	
BGF	**Bois d'Agland**	5.70	325	*e*Pn		Pn	19 39 39.4	+1.2	
BGF	**Bois d'Agland**	5.70	325	*e*Pn		Pn	19 39 39.4	+1.2	
TCF	**Toulx Ste Croi**	5.79	319	*e*Pn		Pn	19 39 40.5	+1.0	
TCF	**Toulx Ste Croi**	5.79	319	*e*Pn		Pn	19 39 40.5	+1.0	
LFF	**La Frestale**	5.81	303	*e*Pn		Pn	19 39 40.6	+0.9	
LFF	**La Frestale**	5.81	303	*e*Pn		Pn	19 39 40.6	+0.9	
HINF	**Hinteralfeld**	5.83	355	*e*Pn		Pn	19 39 40.0	-0.1	
HINF				*e*Sn		Sn	19 40 39.4	-7.5	
	4.4nm,0.3s								
HINF	**Hinteralfeld**	5.83	355	*e*Pn		Pn	19 39 40.0	-0.1	
HINF				*e*Sn		Sn	19 40 39.4	-7.5	
	2.2nm,0.3s								
SSF	**Saint Saulge**	5.85	331	*e*Pn		Pn	19 39 41.4	+1.1	
SSF	**Saint Saulge**	5.85	331	*e*Pn		Pn	19 39 41.4	+1.1	
FELD	**Feldberg im Sc**	5.87	2	Pn		Pn	19 39 42.0	+1.3	
MOTA	**Moosalm**	5.88	24	*e*Pn		Pn	19 39 45.0	+4.1	
	3.3nm,0.3s								
MOTA				*e*Sn		Sn	19 40 49.9	+1.7	
	3.3nm,0.3s								
ABTA	**Abfaltersbach**	5.88	35	*e*Pn		Pn	19 39 45.3	+4.4	
	2.6nm,0.3s								
ABTA				*i* Sn		Sn	19 40 48.0	-0.2	
	2.3nm,0.3s								
LOR	**Lormes**	5.90	334	*e*Pn		Pn	19 39 42.3	+1.2	
	baz=161								
LOR				*e*Sn		Sn	19 40 43.4	-5.2	
	12nm,0.4s								
LOR	**Lormes**	5.90	334	*e*Pn		Pn	19 39 42.3	+1.2	
LOR				*e*Sn		Sn	19 40 43.4	-5.2	
	6.2nm,0.4s								
RETA	**Reutte**	5.91	21	*i* Sn		Sn	19 40 50.6	+1.7	
	4.0nm,0.4s								
RETA	**Reutte**	5.91	21	Sn		Sn	19 40 50.6	+1.7	
	4.0nm,0.4s								
WTTA	**Wattenberg**	5.98	27	*i* Pn		Pn	19 39 45.9	+3.7	
	0.6nm,0.2s								
WTTA				*i* Sn		Sn	19 40 53.0	+2.4	
	6.6nm,0.4s								
WATA	**Walderalm**	6.02	26	*i* Pn		Pn	19 39 46.6	+3.8	
	2.5nm,0.2s								
WATA				*i* Sn		Sn	19 40 54.8	+3.2	
	1.1nm,0.2s								
HAU	**Haudompre**	6.06	352	*e*Pn		Pn	19 39 43.5	+0.2	
HAU				*e*Sn		Sn	19 40 46.2	-6.3	
	12nm,0.3s								
HAU	**Haudompre**	6.06	352	*e*Pn		Pn	19 39 43.5	+0.2	
HAU				*e*Sn		Sn	19 40 46.2	-6.3	
	5.8nm,0.3s								
ETSF	**Etsaut**	6.12	281	*e*Pn		Pn	19 39 44.9	+0.7	
ETSF				*e*Sn		Sn	19 40 52.6	-1.6	
	20nm,0.3s								
ETSF	**Etsaut**	6.12	281	*e*Pn		Pn	19 39 44.9	+0.7	
ETSF				*e*Sn		Sn	19 40 52.6	-1.6	
	9.9nm,0.3s								
ECH	**Echery**	6.21	357	Pn		Pn	19 39 47.0	+1.7	
ECH	**Echery**	6.21	357	Pn		Pn	19 39 47.0	+1.7	
MYKA	**Terra Mystica**	6.31	41	*i* Sn		Sn	19 40 58.4	-0.4	
	2.0nm,0.5s								
MYKA	**Terra Mystica**	6.31	41	Sn		Sn	19 40 58.4	-0.4	
	2.0nm,0.5s								
THEF	**They Montfort**	6.32	350	Pn		Pn	19 39 48.5	+1.7	
THEF	**They Montfort**	6.32	350	Pn		Pn	19 39 48.5	+1.7	
WLS	**Welschbruch**	6.40	358	Pn		Pn	19 39 48.8	+0.8	
WLS	**Welschbruch**	6.40	358	Pn		Pn	19 39 48.8	+0.8	
CDF	**Champ du Feu**	6.41	358	*e*Pn		Pn	19 39 47.9	-0.1	
CDF				*e*Sn		Sn	19 40 52.9	-8.2	
	2.2nm,0.3s								
CDF	**Champ du Feu**	6.41	358	*e*Pn		Pn	19 39 47.9	-0.1	
CDF				*e*Sn		Sn	19 40 52.9	-8.2	
	1.1nm,0.3s								
KEST	**Kesra**	6.41	167	Pn		Pn	19 39 50.7	+2.6	
	0.5nm,0.3s,baz=258,slow=9.3,SNR=6.8								
KEST				Sn		Sn	19 40 58.6	-2.7	
	0.3nm,0.3s,baz=319,slow=20,SNR=4.6								
SFTF	**Sexfontaines**	6.46	344	*e*Sn		Sn	19 40 56.3	-6.0	
	9.3nm,0.3s								
SFTF	**Sexfontaines**	6.46	344	*e*Sn		Sn	19 40 56.3	-6.0	
	4.7nm,0.3s								
KBA	**Koelnbreinsper**	6.50	37	*i* Pn		Pn	19 39 53.3	+3.8	
	0.4nm,0.1s								
KBA				*i* Sn		Sn	19 41 04.1	+0.5	
	1.9nm,0.3s								
SJPF	**Ste Jean**	6.63	283	*e*Sn		Sn	19 41 02.2	-4.4	
	6.1nm,0.3s								
SJPF	**Ste Jean**	6.63	283	*e*Sn		Sn	19 41 02.2	-4.4	
	3.0nm,0.3s								
PAGF	**Fort de Pagny**	6.68	349	*e*Pn		Pn	19 39 52.4	+0.7	
PAGF	**Fort de Pagny**	6.68	349	*e*Pn		Pn	19 39 52.4	+0.7	
OBKA	**Obir**	6.70	45	*i* Pn		Pn	19 39 54.9	+2.9	
	0.5nm,0.2s								
OBKA				*i* Sn		Sn	19 41 09.0	+0.7	
	1.4nm,0.4s								
OBKA	**Obir**	6.70	45	Pn		Pn	19 39 54.9	+2.9	
	0.5nm,0.2s								
OBKA				Sn		Sn	19 41 09.0	+0.7	
	1.4nm,0.4s								
MFF	**Saint Martin d**	7.22	312	*e*Pn		Pn	19 40 00.1	+0.9	
MFF	**Saint Martin d**	7.22	312	*e*Pn		Pn	19 40 00.1	+0.9	
MOA	**Molln**	7.50	37	*i* Pn		Pn	19 40 06.4	+3.4	
	0.7nm,0.2s								
MOA				*i* Sn		Sn	19 41 27.6	-0.2	
	0.6nm,0.3s								
GERES	**GERESS Array B**	8.05	30	Pn		Pn	19 40 11.6	+0.9	
	0.3nm,0.3s,baz=210,slow=12,SNR=8.7								
GERES				Sn		Sn	19 41 35.3	-6.3	
	0.6nm,0.3s,baz=209,slow=24,SNR=7.1								
BAIF	**Baives**	8.39	345	*e*Pn		Pn	19 40 16.0	+0.8	
BAIF	**Baives**	8.39	345	*e*Pn		Pn	19 40 16.0	+0.8	
LDF	**La Druitiere**	8.55	323	*e*Pn		Pn	19 40 18.4	+1.0	
LDF	**La Druitiere**	8.55	323	*e*Pn		Pn	19 40 18.4	+1.0	
GRR	**Gorron**	8.75	320	*e*Pn		Pn	19 40 21.8	+1.7	
GRR	**Gorron**	8.75	320	*e*Pn		Pn	19 40 21.8	+1.7	
FLN	**La Foliniere**	8.84	323	*e*Pn		Pn	19 40 22.5	+1.2	
FLN	**La Foliniere**	8.84	323	*e*Pn		Pn	19 40 22.5	+1.2	
ESDC	**Sonseca Array**	9.10	259	Pn		Pn	19 40 24.1	-0.8	
	0.8nm,0.3s,baz=65,slow=14,SNR=9.0								
QUIF	**Quistinic**	9.66	311	*e*Pn		Pn	19 40 33.5	+0.9	
QUIF	**Quistinic**	9.66	311	*e*Pn		Pn	19 40 33.5	+0.9	
ROSF	**Rostrenen**	9.96	313	*e*Pn		Pn	19 40 36.9	+0.2	
ROSF	**Rostrenen**	9.96	313	*e*Pn		Pn	19 40 36.9	+0.2	
EKA	**Eskdalemuir Ar**	15.09	336	Pn		Pn	19 41 43.7	-3.0	
	baz=152,slow=14,SNR=2.3								
HFS	**Hagfors**	18.53	10	P		P	19 42 31.3	+1.4	
	0.1nm,0.3s,baz=186,slow=12,SNR=3.5								
FINES	**FINESS Array B**	22.41	24	P		P	19 43 13.9	+2.0	
	0.6nm,0.5s,baz=218,slow=8.8,SNR=7.1								
MKAR	**Makanchi Array**	51.69	58	P		P	19 47 22.8	+2.3	
	1.1nm,0.7s,baz=297,slow=5.9,SNR=6.9								

*IDC **07** 19:55:50.5±0.7,28°.83S×176°.34W,h0km,mb4.3/14, mb1 4.5/14,mb1mx4.3/36,mbtmp4.3/14,MS3.7/7, Ms1 3.7/7,ms1mx3.4/28,Error ellipse: s-maj=23.5km s-min=19.1km az=152.0*
*NEIC **07** 19:55:52.1±0.4,28°.92S×176°.38W,h10km,mb5.3/4,Error ellipse: s-maj=14.0km s-min=10.4km az=122.0*
*ISCJB **07** 19:55:54.4±0.5,29°.17S±0°.08×176°.35W±0°.07,h36km, mb4.5/19,MS3.6/6,Error ellipse: s-maj=12.1km s-min=9.0km az=161.6*

ISC 07 19:55:56.1±0.5,29°.10S±0°.08×176°.42W±0°.08,h36km,n46, σ1s68/44,mb4.4/19,MS3.6/6,1C-1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	1.32	263	Pn	Pn	19 56 19.7	+1.7
	329nm,0.3s,baz=65,slow=8.0,SNR=15						
RAO				Sn	Sn	19 56 35.2	+0.8
	455nm,0.3s,baz=107,slow=19,SNR=5.6						
URZ	**Urewera**	10.60	209	Pn	Pn	19 58 21.9	-3.5
	1.1nm,0.3s,baz=0.0,slow=19,SNR=5.3						
URZ				Sn	Sn	20 00 19.7	-3.1
	1.3nm,0.3s,baz=315,slow=19,SNR=4.5						
URZ	**Urewera**	10.60	209	*e*P	Pn	19 58 25.0	-0.4
URZ				Sn	Sn	20 00 19.7	-3.1
KHZ	**Kahutara**	15.57	209	*e*P	Pn	19 59 33.1	+0.3
DZM	**Mont Dzumac**	16.96	290	Pn	P	19 59 53.9	+1.5
	0.3nm,0.3s,baz=120,slow=15,SNR=4.1						
DZM				LR	LR	20 05 23.7	
	comp=Z,299nm,18.4s,baz=112,slow=34						
DZM	**Mont Dzumac**	16.96	290	*e*P	P	19 59 54.0	+1.6
	99nm,1.6s						
DZM				*e*LR	LR	20 03 54.5	
	650nm,27.2s						
RPZ	**Rata Peaks**	17.70	211	P	Pn	19 59 56.3	-3.4
	1.6nm,0.3s,baz=319,slow=4.8,SNR=5.5						
RPZ				S	Sn	20 03 02.9	-13
	0.5nm,0.3s,baz=306,slow=14,SNR=2.4						
TBI	**Tubuai**	24.82	83	*e*LR	LR	20 07 05.2	
	373nm,28.0s						
PPT2	**Papeete2**	27.11	71	*e*LR	LR	20 08 03.0	
	294nm,27.5s						
PPT	**Papeete**	27.12	71	LR	LR	20 09 55.3	
	comp=Z,152nm,18.8s,baz=268,slow=31						
HNR	**Honiara**	29.57	307	LR	LR	20 12 37.6	
	comp=Z,57nm,19.8s,baz=208,slow=34						
CTAO	**Charters Tower**	34.99	276	*e*P	P	20 02 45.2	0.0
STKA	**Stephens Creek**	36.13	255	P	P	20 02 55.1	+0.3
	4.8nm,0.9s,baz=107,slow=11,SNR=6.7						
STKA				LR	LR	20 16 35.2	
	comp=Z,231nm,19.2s,baz=50,slow=34						
ASAR	**Alice Springs**	44.57	265	P	P	20 04 04.0	-0.9
	2.5nm,0.4s,baz=106,slow=8.0,SNR=30						
WRAB	**Tennant Creek**	45.44	270	*e*P	P	20 04 10.2	-1.5
	1.6nm,0.7s						
WRA	**Warramunga Arr**	45.45	270	P	P	20 04 10.6	-1.3
	2.5nm,0.5s,baz=110,slow=7.7,SNR=31						
SBA	**Scott Base**	49.43	185	P	P	20 04 46.0	+4.0
VNDA	**Vanda**	49.52	186	P	P	20 04 45.6	+3.0
	1.0nm,0.9s,baz=350,slow=5.3,SNR=4.3						
FITZ	**Fitzroy Crossi**	53.76	268	LR	LR	20 28 14.3	
	comp=Z,92nm,18.3s,slow=36						
GUMO	**Guam**	56.56	313	LR	LR	20 26 41.2	
	comp=Z,52nm,20.5s,baz=216,slow=33						
QSPA	**South Pole Qui**	61.01	180	*e*P	P	20 06 08.2	+2.5
	65nm,1.3s						
MJAR	**Matsushiro Arr**	77.98	324	P	P	20 07 49.0	-1.6
	1.7nm,0.7s,baz=160,slow=5.8,SNR=7.4						
SYO	**Syowa Base**	78.68	192	*e*P	P	20 07 53.8	-0.2
SYO	**Syowa Base**	78.68	192	*e*PcP	PcP	20 08 03.6	+0.7
PLCA	**Paso Flores**	82.37	132	P	P	20 08 14.9	+0.4
	2.1nm,0.9s,baz=242,slow=9.1,SNR=4.6						
KSRS	**Korea Array**	84.27	319	P	P	20 08 25.1	+1.1
	1.5nm,0.8s,baz=140,slow=4.8,SNR=5.2						
KSRS				LR	LR	20 43 21.6	
	comp=Z,20nm,19.3s,baz=290,slow=34						
KSAR	**Wonju Array Be**	84.28	319	P	P	20 08 25.1	+1.1
PETK	**Petropavlovsk-**	84.92	345	P	P	20 08 25.9	-1.0
	5.8nm,0.9s,baz=120,slow=9.0,SNR=5.2						
USRK	**Ussuriysk Ar.**	86.86	326	P	P	20 08 36.6	-0.1
	1.2nm,0.6s,baz=134,slow=5.5,SNR=4.1						
GSI	**Gunungsitoli**	87.14	273	*e*P	P	20 08 40.0	+1.1
	30nm,1.0s						
TUC	**Tucson**	87.23	51	*e*P	P	20 08 39.3	+0.4
	19nm,1.7s						
TXAR	**Lajitas Array**	90.53	57	P	P	20 08 54.2	-0.4
	0.7nm,0.8s,baz=198,slow=7.9,SNR=7.2						
KLR	**Kul'dur**	90.62	329	P	P	20 08 53.9	-0.5
	0.8nm,0.6s,baz=79,slow=0.2,SNR=3.5						
ENH	**Enshi**	92.02	304	*e*P	P	20 09 02.5	+1.1
	10nm,1.1s						
CMAR	**Chiang Mai Arr**	94.28	289	P	P	20 09 13.7	+1.6
	1.4nm,0.8s,baz=144,slow=3.9,SNR=11						
SEY	**Seymchan**	95.04	346	P	P	20 09 13.6	-0.9
	0.3nm,0.3s,baz=154,slow=4.8,SNR=3.8						
ILAR	**Eielson Array**	96.36	12	P	P	20 09 18.9	-1.6
	1.1nm,0.7s,baz=219,slow=5.9,SNR=6.8						
FINES	**FINESS Array B**	144.38	342	PKP	PKPab	20 15 24.6	-1.2
	5.1nm,0.8s,baz=62,slow=4.5,SNR=17						
KBZ	**Khabaz**	145.50	306	PKPbc	PKPbc	20 15 30.4	+0.1
	1.2nm,0.5s,baz=152,slow=3.2,SNR=5.0						
KIV	**Kislovodsk**	145.60	306	*e*PKPdf	PKPdf	20 15 29.4	-1.2
NB2	**NORSAR Subarra**	147.66	353	PKP	PKPdf	20 15 34.6	+1.2
	comp=Z,5.2nm,0.8s,baz=9.8,slow=2.9						
NOA	**NORSAR Array B**	147.66	353	PKPbc	PKPbc	20 15 34.9	-1.2
	comp=Z,5.1nm,0.8s,baz=14,slow=4.4,SNR=18						
AKASG	**Malin Array Be**	151.06	325	PKPbc	PKPbc	20 15 44.0	-0.9
	comp=Z,2.7nm,0.6s,baz=47,slow=2.5,SNR=11						
AKASG				PKPab	PKPab	20 15 51.0	-1.5
	comp=Z,3.0nm,0.7s,baz=45,slow=4.0,SNR=9.1						
BRTR	**Keskin Array B**	153.15	301	PKPbc	PKPbc	20 15 49.4	-0.8
	comp=Z,0.7nm,0.9s,baz=101,slow=1.3,SNR=4.0						
GERES	**GERESS Array B**	158.81	341	PKPab	PKPab	20 16 23.9	-1.8
	comp=Z,0.1nm,0.4s,baz=42,slow=2.2,SNR=4.1						
TORD	**Torodi Ar. Bea**	164.03	173	PKPab	PKPab	20 16 49.6	+0.5
	comp=Z,3.2nm,0.8s,baz=190,slow=3.8,SNR=15						

*IDC **07** 19:58:06.2±2.7,35°.77N×141°.03E,h0km,mb3.5/3, mb1 3.7/4,mb1mx3.4/49,mbtmp3.5/4,ML3.5/1,Error ellipse: s-maj=79.8km s-min=27.0km az=60.0*
*ISCJB **07** 19:58:16.5±0.7,35°.62N±0°.06×140°.16E±0°.09,h75km±7km, mb3.5/3,Error ellipse: s-maj=12.4km s-min=10.1km az=148.5*
*JMA **07** 19:58:16.9±0.2,35°.73N×140°.21E,h63km±2km,M2.8*

ISC 07 19:58:17.7±1.2,35°.61N±0°.06×140°.17E±0°.07,h70km±9km, n21,σ1s45/18,mb3.6/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCN	**Nagara**	0.20	172	P	Pn	19 58 28.0	-0.3
TOK	**Tokyo**	0.34	282	P	Pn	19 58 28.9	-0.2
BSO3	**Boso 3**	0.86	161	P	Pn	19 58 34.1	-0.1
JOD2	**Odawara 2**	0.95	249	P	Pn	19 58 35.0	-0.6
JOD2				S	Sn	19 58 48.0	-0.9
JAG	**Ashikaga**	1.00	325	P	Pn	19 58 34.4	-1.8
JIM2	**Oshima 3**	1.08	214	P	Pn	19 58 36.5	-0.8
JRY	**Ryogami san**	1.10	292	P	Pn	19 58 37.1	-0.5
BSO1	**Boso 1**	1.17	145	P	Pn	19 58 37.7	-0.1
JYN	**Shimob**	1.33	265	P	Pn	19 58 40.1	-0.4
JKT	**Katashina**	1.37	327	P	Pn	19 58 39.4	-1.7
JIZS	**Izushimoda**	1.38	230	P	Pn	19 58 40.8	-0.4
JIZS				S	Sn	19 58 58.2	-0.6
MJAR	**Matsushiro Arr**	1.84	301	Pn	Pn	19 58 46.5	-0.7
	11nm,0.3s,baz=105,slow=14,SNR=102						
MJAR				Sn	Sn	19 59 13.5	+3.9
	5.9nm,0.3s,baz=113,slow=21,SNR=6.1						
H11N2	**WA

STV				Sn		Sb	20 05 16.3	-1.8
	33nm,0.3s							
STV	**Sant Anna di V**	**2.19**	**354**	P		Pb	20 04 51.5	+1.0
STV				Sn		Sb	20 05 16.3	-1.8
	33nm,0.3s							
SMRF	**Simiane la Rot**	**2.45**	**322**	*e*Pn		Pb	20 04 55.1	+0.2
SMRF				*e*Sn		Sb	20 05 25.1	-0.3
	26nm,0.4s							
SMRF	**Simiane la Rot**	**2.45**	**322**	*e*Pn		Pb	20 04 55.1	+0.2
DOI	**San Damiano**	**2.46**	**353**	Pn		Pb	20 04 55.4	+0.3
DOI				Sn		Sb	20 05 23.5	-2.2
	47nm,0.3s							
DOI	**San Damiano**	**2.46**	**353**	Pn		Pb	20 04 55.4	+0.3
DOI				Sn		Sb	20 05 23.5	-2.2
	47nm,0.3s							
PZZ	**Stroppo**	**2.47**	**351**	Pn		Pb	20 04 56.2	+0.8
PZZ				Sn		Sb	20 05 24.9	-1.3
PZZ	**Stroppo**	**2.47**	**351**	P		Pb	20 04 55.5	+0.1
PZZ	**Stroppo**	**2.47**	**351**	Pn		Pb	20 04 56.2	+0.8
PZZ				Sn		Sb	20 05 24.9	-1.3
CASP	**Castiglione de**	**2.48**	**72**	Pn		Pn	20 04 54.7	+3.2
CASP				Sn		Sn	20 05 22.8	+0.7
	36nm,0.2s							
CASP	**Castiglione de**	**2.48**	**72**	Pn		Pn	20 04 54.7	+3.2
PCP	**Piancastagn**	**2.56**	**14**	P		Pb	20 04 55.9	-0.9
MBDF	**Montbardon**	**2.74**	**347**	*e*Sn		Sb	20 05 30.6	-3.3
	16nm,0.4s							
MBDF	**Montbardon**	**2.74**	**347**	*e*Sn		Sb	20 05 30.6	-3.3
	8.0nm,0.4s							
BHB	**Bricherasio**	**2.79**	**354**	P		Pb	20 04 59.8	-0.9
OG22	**Abries**	**2.81**	**350**	Pn		Pb	20 04 59.4	-1.7
OG22	**Abries**	**2.81**	**350**	Pg		Pg	20 05 05.7	+1.6
OG22				Sg		Sg	20 05 38.7	-1.8
OG22	**Abries**	**2.81**	**350**	Pn		Pb	20 04 59.4	-1.7
OG22	**Abries**	**2.81**	**350**	Pg		Pg	20 05 05.7	+1.6
OG22				Sg		Sg	20 05 38.7	-1.8
VSL	**Villasalto**	**2.88**	**153**	Pn		Pn	20 04 59.2	+2.3
VSL				Sn		Sn	20 05 30.0	-2.0
RRL	**Rocca Remolon**	**2.92**	**348**	P		Pb	20 05 03.5	+0.4
RRL				S		Sb	20 05 36.6	-2.7
CGL	**Cagliari Serpe**	**2.97**	**155**	Pn		Pn	20 05 00.7	+2.4
CGL				Sn		Sn	20 05 32.7	-1.7
RSP	**Reno Superiore**	**3.10**	**355**	P		Pb	20 05 04.0	-2.0
RSP				S		Sn	20 05 37.0	-0.5
ORIF	**Oris-en-Rattie**	**3.13**	**336**	*e*Pn		Pb	20 05 04.7	-1.9
ORIF				*e*Sn		Sn	20 05 39.7	+1.3
	5.7nm,0.3s							
ORIF	**Oris-en-Rattie**	**3.13**	**336**	*e*Pn		Pb	20 05 04.7	-1.9
ORIF				*e*Sn		Sn	20 05 39.7	+1.3
	2.8nm,0.3s							
LSD	**Lago del Serru**	**3.42**	**354**	P		Pb	20 05 10.1	-1.4
LSD				S		Sn	20 05 47.6	+2.1
LASF	**Ste Croix**	**3.44**	**307**	*e*Pn		Pn	20 05 07.0	+2.4
LASF				*e*Sn		Sn	20 05 44.2	-1.5
	22nm,0.2s							
LASF	**Ste Croix**	**3.44**	**307**	*e*Pn		Pn	20 05 07.0	+2.4
LASF				*e*Sn		Sn	20 05 44.2	-1.5
	11nm,0.2s							
LPG	**La Plagne**	**3.49**	**349**	*e*Pn		Pb	20 05 12.5	-0.4
LPG				*e*Sn		Sb	20 05 52.2	-3.5
	2.7nm,0.2s							
LPL	**La Plagne**	**3.52**	**349**	*e*Pg		Pb	20 05 11.5	-1.7
LPL	**La Plagne**	**3.52**	**349**	*e*Pn		Pb	20 05 11.7	-1.5
VIVF	**Saint-Julien-l**	**3.54**	**323**	*e*Pn		Pn	20 05 09.4	+3.4
VIVF				*e*Sn		Sn	20 05 48.2	-0.1
	3.6nm,0.2s							
VIVF	**Saint-Julien-l**	**3.54**	**323**	*e*Pn		Pn	20 05 09.4	+3.4
VIVF				*e*Sn		Sn	20 05 48.2	-0.1
	1.8nm,0.2s							
FILF	**Fillols**	**3.81**	**279**	Pn		Pn	20 05 15.8	+5.9
FILF	**Fillols**	**3.81**	**279**	Pn		Pn	20 05 15.8	+5.9
LRDF	**Laroque-de-Fa**	**3.89**	**285**	Pn		Pn	20 05 14.6	+3.8
LRDF	**Laroque-de-Fa**	**3.89**	**285**	Pn		Pn	20 05 14.6	+3.8
MTLF	**Montolieu**	**4.21**	**289**	*e*Pn		Pn	20 05 17.4	+2.2
MTLF				*e*Sn		Sn	20 06 02.6	-2.2
	11nm,0.3s							
MTLF	**Montolieu**	**4.21**	**289**	*e*Pn		Pn	20 05 17.4	+2.2
LBL	**Lubilhac**	**4.50**	**316**	Pn		Pn	20 05 21.9	+2.6
LBL				Sg		Sg	20 06 34.3	-0.7
LBL	**Lubilhac**	**4.50**	**316**	Pn		Pn	20 05 21.9	+2.6
LBL				Sg		Sg	20 06 34.3	-0.7
PLDF	**La Plantade**	**4.87**	**325**	Pn		Pn	20 05 27.5	+3.1
PLDF				Sg		Sg	20 06 46.1	-0.6
PLDF	**La Plantade**	**4.87**	**325**	Pn		Pn	20 05 27.5	+3.1
PLDF				Sg		Sg	20 06 46.1	-0.6
CAF	**Calviac**	**4.97**	**307**	*e*Pn		Pn	20 05 29.1	+3.3
CAF				*e*Sn		Sn	20 06 21.7	-2.0
	4.6nm,0.2s							
CAF	**Calviac**	**4.97**	**307**	*e*Pn		Pn	20 05 29.1	+3.3
CAF				*e*Sn		Sn	20 06 21.7	-2.0
	2.3nm,0.2s							
PYM	**Petit Puy Mans**	**4.99**	**319**	Pn		Pn	20 05 28.3	+2.3
PYM				Sg		Sg	20 06 48.9	-1.6
PYM	**Petit Puy Mans**	**4.99**	**319**	Pn		Pn	20 05 28.3	+2.3
PYM				Sg		Sg	20 06 48.9	-1.6
EPF	**Esparros**	**5.49**	**283**	*e*Pn		Pn	20 05 35.1	+2.2
EPF	**Esparros**	**5.49**	**283**	*e*Pn		Pn	20 05 35.1	+2.2
RJF	**Les Rejaudoux**	**5.51**	**308**	*e*Pn		Pn	20 05 36.5	+3.5
RJF				*e*Sn		Sn	20 06 36.8	0.0
	3.1nm,0.2s							
RJF	**Les Rejaudoux**	**5.51**	**308**	*e*Pn		Pn	20 05 36.5	+3.5
RJF				*e*Sn		Sn	20 06 36.8	0.0
	1.5nm,0.2s							
ETSF	**Etsaut**	**6.13**	**281**	*e*Pn		Pn	20 05 45.3	+3.6
ETSF				*e*Sn		Sn	20 06 52.9	+0.6
	2.6nm,0.2s							
ETSF	**Etsaut**	**6.13**	**281**	*e*Pn		Pn	20 05 45.3	+3.6
ETSF				*e*Sn		Sn	20 06 52.9	+0.6
	1.3nm,0.2s							

JMA 07 20:08:28.0±0.2, 39°.73N×143°.63E, h14km±4km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.38**	**279**	P	Pn	20 08 52.7	-0.1
MIYJ	**Miyakonagasawa**	**1.41**	**264**	P	Pn	20 08 53.5	+0.3
MIYJ				*e*S	Sn	20 09 11.6	+0.1
JANG	**Nango**	**1.75**	**292**	P	Pn	20 08 57.7	-0.2
JOM	**Ohasama**	**1.82**	**263**	P	Pn	20 08 59.9	+1.0
JOM				*e*S	Sn	20 09 21.9	+0.1
JMK	**Ichinoseki**	**2.02**	**248**	P	Pn	20 09 02.5	+0.8
JIO	**Ouri**	**2.19**	**235**	P	Pn	20 09 04.3	+0.4
JTM	**Tenmabayashi**	**2.23**	**299**	P	Pn	20 09 05.8	+1.3
JTM				*e*S	Sb	20 09 33.8	-1.6
JAH	**Hinai**	**2.35**	**282**	P	Pn	20 09 07.5	+1.4
JAH				*e*S	Sn	20 09 36.2	+1.5
JNBK	**Urakawa-nobuka**	**2.63**	**346**	P	Pb	20 09 12.7	-2.2

GUC 07 20:10:56.2±0.6, 34°.15S×72°.26W, h25km±7km, ML3.1
ISC 07 20:10:56.2±2.4, 34°21S±0°.07×72°2W±0°2, h33km±10km, n13, σ2s45/21, 1C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.26**	**133**	*e*P	Pb	20 11 02.9	-0.5
CHPI				*i* S	Sb	20 11 08.9	+0.6
TALC	**Talca**	**1.28**	**158**	*e*P	Pn	20 11 16.9	-0.8
TALC				*i* S	Sb	20 11 37.0	+1.1
RCDM	**Rinconada Maip**	**1.39**	**59**	*e*P	Pn	20 11 18.8	-0.5
RCDM				*e*S	Sn	20 11 36.5	0.0
ROC1	**El Roble**	**1.60**	**40**	*e*P	Pn	20 11 22.4	0.0
CLCH	**Cerro Calan**	**1.63**	**60**	⇑*i*P	Pn	20 11 24.1	+1.5
CLCH				*i* S	Sb	20 11 45.1	-0.9
CLCH				IAML		20 11 50.4	
	comp=N,381nm,0.6s						
PEL	**Peldehue**	**1.68**	**51**	*e*P	Pn	20 11 24.6	+1.4
PEL				*i* S	Sb	20 11 45.6	-1.5
PEL				IAML		20 11 54.2	
	comp=N,474nm,0.5s						
FCH	**Farellones**	**1.84**	**62**	*e*P	Pn	20 11 27.8	+1.9
FCH				IAML		20 11 59.4	
	comp=E,320nm,0.3s						
ARCO	**CERRO ARCO**	**3.08**	**65**	*e*P	Pb	20 11 49.6	-0.7
ARCO				IAML		20 11 54.4	
	comp=Z,44nm,0.4s						
ARCO				*e*S	Sb	20 12 31.2	+3.6
AUSP	**Uspallata**	**3.10**	**51**	*e*P	Pb	20 11 49.0	-1.8
AUSP				*e*S	Sb	20 12 24.2	-4.2
ASAL	**Salagasta**	**3.27**	**61**	*e*P	Pb	20 11 52.0	-1.5
ASAL				*e*S	Sb	20 12 29.9	-3.0
RTLS	**Leoncito**	**3.45**	**46**	*e*P	Pb	20 11 55.4	-1.3
RTLS				*e*S	Sb	20 12 44.1	+5.9
RTCV	**Cerro Valdivia**	**3.89**	**54**	⇓*e*S	Sb	20 13 01.4	+11
RTLL	**Cerro Villicun**	**4.28**	**49**	*e*P	Pn	20 12 01.5	+2.5

IDC 07 20:17:05.5±4.6, 4°.44S×148°.49E, h178km±52km, mb3.1/4, mb1 3.4/5, mb1mx3.1/23, mbtmp3.8/5, MS3.1/1, Ms1 3.3/1, ms1mx2.7/12, Error ellipse: s-maj=110.4km s-min=38.0km az=109.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.11**	**195**	P	Pn	20 18 21.2	+0.4
	16nm,0.3s,baz=20,slow=10,SNR=96						
PMG				S	Sn	20 19 05.4	-15
	4.3nm,0.3s,baz=268,slow=18,SNR=1.7						
WRA	**Warramunga Arr**	**20.67**	**221**	P	P	20 21 30.6	-1.2
	0.6nm,0.3s,baz=38,slow=11,SNR=24						
ASAR	**Alice Springs**	**23.73**	**215**	P	P	20 22 01.9	+0.3
	0.6nm,0.5s,baz=50,slow=8.2,SNR=14						
ASAR				S	S	20 25 57.4	-6.5
	0.7nm,0.8s,baz=39,slow=23,SNR=4.5						
FITZ	**Fitzroy Crossi**	**26.15**	**237**	P	P	20 22 24.0	+0.5
	3.1nm,0.7s,baz=61,slow=11,SNR=14						
CMAR	**Chiang Mai Arr**	**53.86**	**297**	LR	LR	20 48 14.8	
	comp=Z,17nm,20.4s,baz=165,slow=35						
MKAR	**Makanchi Array**	**77.26**	**320**	P	P	20 28 40.1	-0.1
	0.2nm,0.6s,baz=109,slow=4.3,SNR=1.3						

ISCJB 07 20:19:30.9±0.5, 40°.71N±0°.03×42°.34E±0°.04, h8km±5km, Error ellipse: s-maj=5.5km s-min=4.0km az=136.1
CSEM 07 20:19:30.8±0.2, 40°.68N×42°.33E, h8km, MD2.6, Error ellipse: s-maj=5.0km s-min=4.3km az=14.0
ISK 07 20:19:30.2, 40°.69N×42°.35E, h3km, MD2.6
DDA 07 20:19:30.5, 40°.72N×42°.35E, h7km, Md2.6
ISC 07 20:19:30.7±0.9, 40°.68N±0°.03×42°.33E±0°.03, h9km±7km, n21, σ0s36/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SENK	**Senkaya-Erzuru**	**0.12**	**174**	*e*PG	Pg	20 19 33.4	-0.2
SENK				*e*SG	Sg	20 19 35.9	+0.2
SENK	**Senkaya-Erzuru**	**0.12**	**174**	*e*Pg	Pg	20 19 33.4	-0.2
SENK				*e*Sg	Sg	20 19 35.9	+0.2
DDEM	**Demirkent**	**0.49**	**296**	*i* P	Pg	20 19 40.4	+0.2
DDEM				*i* S	Sg	20 19 47.2	+0.5
DDEM	**Demirkent**	**0.49**	**296**	P	Pg	20 19 40.4	+0.2
DDEM				S	Sg	20 19 47.2	+0.5
DAGI	**Agillar**	**0.51**	**321**	*i* P	Pg	20 19 40.6	0.0
DAGI				*i* S	Sg	20 19 47.8	+0.5
KARS	**Kars**	**0.57**	**95**	*e*PG	Pg	20 19 42.1	+0.4
KARS				*e*SG	Sb	20 19 50.7	-0.5
KARS	**Kars**	**0.57**	**95**	*e*Pg	Pg	20 19 42.1	+0.4
KARS				*e*Sg	Sb	20 19 50.7	-0.5
HOMI	**Horasan**	**0.71**	**207**	*i* P	Pb	20 19 45.2	-0.2
HOMI				*i* S	Sn	20 19 58.3	0.0
DBOC	**Borcka**	**0.83**	**323**	*i* P	Pg	20 19 46.1	-0.6
DBOC				*i* S	Sg	20 19 56.8	-0.8
DIGO	**Kars**	**0.84**	**108**	*i* P	Pg	20 19 46.5	-0.3
DIGO				*i* S	Sb	20 19 58.7	-0.2
DIGO	**Kars**	**0.84**	**108**	P	Pg	20 19 46.5	-0.3
DIGO				S	Sb	20 19 58.7	-0.2
EPOS	**Posof**	**0.88**	**20**	*i* P	Pg	20 19 47.5	0.0
EPOS				*i* S	Sb	20 20 00.5	+0.4
EPOS	**Posof**	**0.88**	**20**	P	Pg	20 19 47.5	0.0
EPOS				S	Sb	20 20 00.4	+0.4
ERZM	**Erzurum**	**1.07**	**224**	*i* P	Pn	20 19 52.1	0.0
ERZM	**Erzurum**	**1.07**	**224**	P	Pn	20 19 52.1	0.0
EZM	**Erzurum**	**1.07**	**224**	*e*PN	Pn	20 19 52.3	+0.2
AGRB	**Hanur-Agry**	**1.21**	**155**	*e*PN	Pg	20 19 54.3	+0.3
AGRB	**Hanur-Agry**	**1.21**	**155**	*e*Pn	Pg	20 19 54.3	+0.3
TUTA	**Tutak**	**1.33**	**164**	*i* P	Pb	20 19 56.0	+0.1
YEDI	**Yedisu-Bingol**	**1.85**	**228**	*e*PN	Pb	20 20 04.5	-0.2
YEDI	**Yedisu-Bingol**	**1.85**	**228**	*e*Pn	Pb	20 20 04.5	-0.2

GEN 07 20:25:19.9, 42°.10N×7°.71E, h3km, ML2.8
CSEM 07 20:25:20.1±0.2, 42°.05N×7°.66E, h30km, ML3.3/10, Error ellipse: s-maj=5.2km s-min=4.3km az=49.0
LDG 07 20:25:20.7, 41°.95N×7°.65E, h30km
ROM 07 20:25:20.2±0.2, 42°.06N×7°.63E, h38km, Ml2.4/3, Error ellipse: s-maj=1.6km s-min=0.0km az=180.0
STR 07 20:25:25.7±0.3, 42°.47N×7°.21E, h10km, Ml3.3, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0
ISC 07 20:25:16.7±2.9, 42°.03N±0°.03×7°.62E±0°.03, h16km±21km, n72, σ1s65/119, Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGF	**Pioggiola**	**1.15**	**63**	*e*Pn	Pn	20 25 39.8	+1.5
PGF				*e*Sn	Sb	20 25 53.3	+0.3
	166nm,0.2s						
PGF	**Pioggiola**	**1.15**	**63**	*e*Pn	Pn	20 25 39.8	+1.5
PGF				*e*Sn	Sb	20 25 53.3	+0.3
	83nm,0.2s						
LMR	**La Mourre**	**1.54**	**328**	*e*Pn	Pb	20 25 45.1	+0.3
LMR				*e*Sn	Sn	20 26 02.3	-0.8
	72nm,0.2s						
LMR	**La Mourre**	**1.54**	**328**	*e*Pn	Pb	20 25 45.1	+0.3
LMR				*e*Sn	Sn	20 26 02.3	-0.8
	36nm,0.2s						
FRF	**La Foret Royal**	**1.69**	**335**	*e*Pn	Pb	20 25 47.3	-0.1
FRF				*e*Sn	Sn	20 26 06.2	-0.7
	30nm,0.2s						
FRF	**La Foret Royal**	**1.69**	**335**	*e*Pn	Pb	20 25 47.3	-0.1
FRF				*e*Sn	Sn	20 26 06.2	-0.7
	15nm,0.2s						
REVF	**Revere**	**1.72**	**354**	Pn	Pb	20 25 48.2	+0.2
REVF				Sg	Sn	20 26 07.8	+0.1
REVF	**Revere**	**1.72**	**354**	Pn	Pb	20 25 48.2	+0.2
REVF				Sg	Sn	20 26 07.8	+0.1
NEGI	**Seborga**	**1.82**	**2**	Pn	Pb	20 25 49.2	-0.5
NEGI				Sn	Sn	20 26 08.6	-1.6
	23nm,0.1s						
NEGI	**Seborga**	**1.82**	**2**	Pn	Pb	20 25 49.2	-0.5
NEGI				Sn	Sn	20 26 08.6	-1.6
	23nm,0.1s						
SBF	**Sospel**	**1.84**	**356**	*e*Pn	Pb	20 25 49.6	-0.4
SBF				*e*Sn	Sn	20 26 09.5	-1.2
	31nm,0.2s						
SBF	**Sospel**	**1.84**	**356**	*e*Pn	Pb	20 25 49.6	-0.4
SBF				*e*Sn	Sn	20 26 09.5	-1.2
	15nm,0.2s						
LUCF	**Luceram**	**1.87**	**354**	Pn	Pb	20 25 50.2	-0.4
LUCF				Sg	Sn	20 26 12.6	+1.0
LUCF	**Luceram**	**1.87**	**354**	Pn	Pb	20 25 50.2	-0.4
LUCF				Sg	Sn	20 26 12.6	+1.0
IMI	**Imperia**	**1.89**	**6**	Pn	Pb	20 25 50.3	-0.7
IMI				Sn	Sn	20 26 10.7	-1.3
	22nm,0.3s						
IMI	**Imperia**	**1.89**	**6**	P	Pb	20 25 50.2	-0.7
IMI				Sn	Sn	20 26 10.7	-1.3
	22nm,0.3s						
MVIF	**Mont Vial**	**1.90**	**350**	Pn	Pb	20 25 51.2	+0.1
MVIF				Sg	Sn	20 26 11.8	-0.4
MVIF	**Mont Vial**	**1.90**	**350**	Pn	Pb	20 25 51.2	+0.1
MVIF				Sg	Sn	20 26 11.8	-0.4
CELB	**S.Piero in Cam**	**2.05**	**69**	Pn	Pb	20 25 52.6	-1.0
CELB				Sn	Sn	20 26 15.3	-0.6
CELB	**S.Piero in Cam**	**2.05**	**69**	Pn	Pb	20 25 52.6	-1.0
CELB				Sn	Sn	20 26 15.3	-0.6
LEPF	**PUYLOUBIER**	**2.05**	**317**	Pn	Pn	20 25 52.2	+1.6
LEPF				Sg	Sn	20 26 16.0	+0.1
LEPF	**PUYLOUBIER**	**2.05**	**317**	Pn	Pn	20 25 52.2	+1.6
LEPF				Sg	Sn	20 26 16.0	+0.1
RORO	**Rocca Rossa**	**2.11**	**9**	Pn	Pn	20 25 52.9	+1.6
RORO	**Rocca Rossa**	**2.11**	**9**	P	Pn	20 25 52.9	+1.6
ENR	**Entracque**	**2.20**	**356**	Pn	Pb	20 25 55.5	-0.7
ENR				Sn	Sn	20 26 19.9	+0.2
ENR	**Entracque**	**2.20**	**356**	P	Pb	20 25 55.3	-0.9
ENR				Sn	Sn	20 26 19.9	+0.2
STV	**Sant Anna di V**	**2.23**	**355**	Pn	Pb	20 25 55.7	-0.9
STV				Sn	Sn	20 26 19.9	-0.3
STV	**Sant Anna di V**	**2.23**	**355**	P	Pb	20 25 55.7	-0.9
STV				Sn	Sn	20 26 19.9	-0.3
SMRF	**Simiane la Rot**	**2.46**	**323**	*e*Pn	Pb	20 25 59.1	-1.4
SMRF				*e*Sn	Sb	20 26 29.1	-1.4
	16nm,0.3s						
SMRF	**Simiane la Rot**	**2.46**	**323**	*e*Pn	Pb	20 25 59.1	-1.4
	7.9nm,0.3s						
DOI	**San Damiano**	**2.49**	**354**	Pn	Pb	20 25 59.9	-1.2
DOI	**San Damiano**	**2.49**	**354**	Pn	Pb	20 25 59.9	-1.2
PZZ	**Stroppo**	**2.50**	**352**	Pn	Pb	20 26 00.2	-1.2
PZZ				Sn	Sn	20 26 28.5	+1.3
PZZ	**Stroppo**	**2.50**	**352**	P	Pb	20 26 00.1	-1.3
PZZ				S	Sn	20 26 26.6	-0.6
PZZ				Sn	Sn	20 26 28.5	+1.3
CASP	**Castiglione de**	**2.52**	**71**	Pn	Pn	20 25 58.8	+1.7
CASP				Sn	Sn	20 26 27.0	-0.5
CASP	**Castiglione de**	**2.52**	**71**	Pn	Pn	20 25 58.8	+1.7
CASP				Sn	Sn	20 26 27.0	-0.5
PCP	**Piancastagn**	**2.60**	**15**	P	Pn	20 25 59.7	+1.5
MBDF	**Montbardon**	**2.77**	**347**	*e*Pn	Pb	20 26 05.0	-0.9
MBDF				*e*Sn	Sn	20 26 34.1	+0.4
	11nm,0.4s						
BHB	**Bricherasio**	**2.83**	**355**	P	Pn	20 26 03.8	+2.6
BHB				S	Sn	20 26 33.9	-1.0
VSL	**Villasalto**	**2.86**	**152**	Pn	Pn	20 26 03.7	+2.0
VSL				Sn	Sn	20 26 34.8	-1.0
	16nm,0.2s						
VSL	**Villasalto**	**2.86**	**152**	Pn	Pn	20 26 03.7	+2.0
VSL				Sn	Sn	20 26 34.8	-1.0
	16nm,0.2s						
CGL	**Cagliari Serpe**	**2.95**	**154**	Pn	Pn	20 26 05.1	+2.1
CGL				Sn	Sn	20 26 37.0	-1.2
CGL	**Cagliari Serpe**	**2.95**	**154**	Pn	Pn	20 26 05.1	+2.1
CGL				Sn	Sn	20 26 37.0	-1.2
RSP	**Reno Superiore**	**3.13**	**355**	P	Pn	20 26 07.9	+2.4
ORIF	**Oris-en-Rattie**	**3.15**	**337**	*e*Pn	Pn	20 26 09.1	+3.3
ORIF				*e*Sn	Sn	20 26 43.8	+0.7
	2.6nm,0.2s						
ORIF	**Oris-en-Rattie**	**3.15**	**337**	*e*Pn	Pn	20 26 09.1	+3.3
ORIF				*e*Sn	Sn	20 26 43.8	+0.7
	1.3nm,0.2s						
LASF	**Ste Croix**	**3.43**	**308**	*e*Pn	Pn	20 26 11.6	+2.1
LASF				*e*Sn	Sn	20 26 48.1	-1.8
	17nm,0.3s						
LASF	**Ste Croix**	**3.43**	**308**	*e*Pn	Pn	20 26 11.6	+2.1
LSD	**Lago del Serru**	**3.45**	**354**	P	Pb	20 26 15.1	-2.4
LPG	**La Plagne**	**3.52**	**350**	*e*Pn	Pb	20 26 16.4	-2.5
LPG				*e*Sn	Sn	20 26 56.5	+4.0
	2.7nm,0.3s						
LPL	**La Plagne**	**3.55**	**350**	*e*Pn	Pb	20 26 15.6	-3.6
LPL	**La Plagne**	**3.55**	**350**	*e*Pn	Pb	20 26 15.6	-3.6
VIVF	**Saint-Julien-l**	**3.55**	**324**	*e*Pn	Pn	20 26 13.1	+2.0
VIVF				*e*Sn	Sn	20 26 51.2	-1.5
	2.2nm,0.2s						
VIVF	**Saint-Julien-l**	**3.55**	**324**	*e*Pn	Pn	20 26 13.1	+2.0
FILF	**Fillols**	**3.79**	**280**	Pn	Pn	20 26 19.0	+4.5
FILF	**Fillols**	**3.79**	**280**	Pn	Pn	20 26 19.0	+4.5
VALF	**Valcebollere**	**4.17**	**277**	Pn	Pn	20 26 22.5	+2.6
VALF	**Valcebollere**	**4.17**	**277**	Pn	Pn	20 26 22.5	+2.6
MTLF	**Montolieu**	**4.19**	**290**	*e*Pn	Pn	20 26 21.4	+1.5
MTLF				*e*Sn	Sn	20 27 06.9	-1.6
	11nm,0.3s						
MTLF	**Montolieu**	**4.19**	**290**	*e*Pn	Pn	20 26 21.4	+1.5
LBL	**Lubilhac**	**4.51**	**317**	Pn	Pn	20 26 25.1	+0.7
LBL	**Lubilhac**	**4.51**	**317**	Pn	Pn	20 26 25.1	+0.7
PLDF	**La Plantade**	**4.88**	**325**	Pn	Pn	20 26 30.2	+0.7
PLDF	**La Plantade**	**4.88**	**325**	Pn	Pn	20 26 30.2	+0.7
CAF	**Calviac**	**4.97**	**308**	*e*Pn	Pn	20 26 33.0	+2.3
CAF				*e*Sn	Sn	20 27 24.7	-3.1
	2.1nm,0.2s						
CAF	**Calviac**	**4.97**	**308**	*e*Pn	Pn	20 26 33.0	+2.3
PYM	**Petit Puy Mans**	**4.99**	**320**	Pn	Pn	20 26 32.0	+1.0
PYM	**Petit Puy Mans**	**4.99**	**320**	Pn	Pn	20 26 32.0	+1.0
EPF	**Esparros**	**5.47**	**283**	*e*Pn	Pn	20 26 39.1	+1.5
EPF				*e*Sn	Sn	20 27 37.8	-2.3
	4.1nm,0.3s						
EPF	**Esparros**	**5.47**	**283**	*e*Pn	Pn	20 26 39.1	+1.5
ETSF	**Etsaut**	**6.11**	**281**	*e*Pn	Pn	20 26 49.1	+2.7
ETSF	**Etsaut**	**6.11**	**281**	*e*Pn	Pn	20 26 49.1	+2.7

ISCJB 07 20:27:25.7±0.4, 24°.20N±0°.01×121°.84E±0°.02, h7km±2km, Error ellipse: s-maj=2.8km s-min=2.1km az=40.1
JMA 07 20:27:25.4, 24°.17N×121°.72E, h20km±1km, M2.9
TAP 07 20:27:26.3, 24°.23N×121°.77E, h14km, ML3.7, B
ISC 07 20:27:25.2±0.9, 24°.19N±0°.02×121°.87E±0°.02, h13km±7km, n70, σ0s95/110, 11C-5D, Taiwan

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

TWF1	**Yuli**	**0.98**	**212**	*e*P		**Pg**	**20 27 42.7**	**-1.6**
	baz=220								
NCU	**National Centr**	**1.00**	**322**	*i* P		**Pn**	**20 27 44.8**	**-0.1**
	baz=324								
NCU				S		**Sb**	**20 27 58.4**	**+0.9**
	baz=324								
TWS1	**Kuangyinshan**	**1.00**	**336**	*e*P		**Pn**	**20 27 45.0**	**0.0**
	baz=339								
TWS1				*e*S		**Sn**	**20 27 58.5**	**-0.4**
	baz=339								
JYNG	**Yonagunijimaku**	**1.01**	**75**	P		**Pn**	**20 27 46.7**	**+1.5**
JYNG				*e*S		**Sn**	**20 28 00.2**	**+0.9**
TWQ1	**Liyutan**	**1.01**	**279**	⇓P		**Pb**	**20 27 44.8**	**+0.1**
	baz=278								
TWQ1				*e*S		**Sg**	**20 27 57.2**	**-0.9**
	baz=278								
HSN	**Hsinchu**	**1.02**	**307**	*e*P		**Pg**	**20 27 44.6**	**-0.4**
	baz=303								
HSN				*e*S		**Sb**	**20 27 59.2**	**+1.0**
	baz=303								
NSY	**Sanyi**	**1.04**	**283**	*e*P		**Pb**	**20 27 45.0**	**0.0**
	baz=282								
NSY				*e*S		**Sg**	**20 27 58.8**	**0.0**
	baz=282								
YOJ	**Yonaguni jima**	**1.07**	**75**	P		**Pn**	**20 27 47.6**	**+1.6**
YOJ				S		**Sn**	**20 28 03.7**	**+2.9**
YOJ	**Yonaguni jima**	**1.07**	**75**	⇓*i* P		**Pn**	**20 27 47.6**	**+1.6**
	baz=65								
YOJ				*e*S		**Sn**	**20 28 04.0**	**+3.2**
	baz=65								
YUS	**Yu-Shan**	**1.09**	**231**	*e*P		**Pg**	**20 27 45.8**	**-0.6**
	baz=227								
TCU	**Taichung**	**1.09**	**268**	*i* P		**Pn**	**20 27 46.9**	**+0.7**
	baz=267								
TCU				S		**Sn**	**20 28 01.5**	**+0.2**
	baz=267								
TWY	**Chenhua**	**1.11**	**347**	*e*P		**Pn**	**20 27 46.7**	**+0.2**
	baz=335								
WNT	**Mingjian**	**1.13**	**254**	*e*P		**Pg**	**20 27 46.4**	**-0.6**
	baz=249								
WNT				*e*S		**Sg**	**20 28 01.5**	**-0.2**
	baz=249								
CHKT	**Chengkung**	**1.18**	**203**	*e*P		**Pg**	**20 27 45.8**	**-2.1**
	baz=188								
ALS	**Alishan**	**1.19**	**236**	*e*P		**Pg**	**20 27 47.3**	**-0.9**
	baz=221								
ALS				*e*S		**Sn**	**20 28 04.6**	**+0.6**
	baz=221								
CHN5	**Tsauling**	**1.24**	**242**	P		**Pb**	**20 27 48.6**	**+0.1**
	baz=241								
CHN5				S		**Sn**	**20 28 06.3**	**+1.3**
	baz=241								
ELDTW	**Lidau**	**1.27**	**218**	*e*P		**Pn**	**20 27 47.9**	**-0.8**
	baz=202								
WGK	**Gukeng**	**1.30**	**248**	*e*P		**Pn**	**20 27 49.2**	**+0.2**
	baz=248								
WGK				*e*S		**Sn**	**20 28 07.8**	**+1.5**
	baz=248								
CHN2	**Minshiung**	**1.44**	**243**	*e*P		**Pn**	**20 27 51.2**	**+0.3**
	baz=228								
CHN4	**Tsaushan**	**1.44**	**235**	*e*P		**Pb**	**20 27 52.1**	**+0.2**
	baz=235								
CHN4				*e*S		**Sg**	**20 28 12.6**	**+1.1**
	baz=235								
STYT	**Tauyuan**	**1.44**	**225**	*e*P		**Pn**	**20 27 51.2**	**+0.1**
	baz=224								
STYT				*e*S		**Sg**	**20 28 11.5**	**-0.2**
	baz=224								
PCYT	**Pengchaiyu**	**1.45**	**7**	*e*P		**Pg**	**20 27 52.1**	**-1.0**
	baz=8.0								
WTP	**Ta-pu**	**1.48**	**231**	⇑P		**Pb**	**20 27 52.8**	**+0.1**
	baz=231								
WTP				*e*S		**Sg**	**20 28 12.8**	**-0.3**
	baz=231								
WTCT	**Ta-ch'eng**	**1.49**	**258**	*e*P		**Pn**	**20 27 52.2**	**+0.5**
	baz=258								
WTCT				*e*S		**Sb**	**20 28 12.3**	**+0.7**
	baz=258								
CHY	**Chiayi**	**1.49**	**243**	*e*P		**Pn**	**20 27 51.5**	**-0.3**
	baz=242								
TWG	**Pinlang**	**1.54**	**209**	*e*P		**Pn**	**20 27 51.3**	**-1.2**
	baz=192								
TWK	**Hsinying**	**1.56**	**234**	*e*P		**Pb**	**20 27 54.2**	**+0.1**
	baz=233								
CHN1	**Nanshi**	**1.58**	**231**	*e*P		**Pb**	**20 27 54.5**	**+0.1**
	baz=230								
WSF	**Szhu**	**1.60**	**250**	*e*P		**Pn**	**20 27 53.9**	**+0.6**
	baz=260								
WSF				*e*S		**Sb**	**20 28 15.5**	**+0.6**
	baz=260								
SGST	**Jiashian**	**1.61**	**227**	*e*P		**Pb**	**20 27 54.8**	**-0.1**
	baz=226								
SGST				*e*S		**Sg**	**20 28 16.9**	**-0.3**
	baz=226								
IRIF	**Iriomote-Funau**	**1.70**	**85**	P		**Pb**	**20 27 56.2**	**-0.2**
IRIF				*e*S		**Sg**	**20 28 19.2**	**-0.9**
CHN8	**Yiju**	**1.74**	**242**	*e*P		**Pn**	**20 27 55.5**	**+0.4**
	baz=241								
CHN3	**Shinhua**	**1.77**	**232**	*e*P		**Pb**	**20 27 57.3**	**-0.3**
	baz=231								
HATJ	**Hateruma jima**	**1.77**	**94**	P		**Pg**	**20 27 57.7**	**-1.6**
ECL	**Taimali**	**1.79**	**208**	*e*P		**Pn**	**20 27 56.9**	**+1.0**
	baz=195								
SSD	**Sandimen**	**1.83**	**219**	*e*P		**Pb**	**20 27 58.3**	**-0.3**
	baz=231								
SSD				*e*S		**Sb**	**20 28 22.3**	**+0.9**
	baz=231								
TWM1	**Shoushan**	**1.90**	**225**	*e*P		**Pn**	**20 27 57.6**	**+0.2**
	baz=224								
JKRS	**Kuro-shima**	**1.95**	**88**	P		**Pb**	**20 28 00.5**	**-0.2**
EAST	**Anshuo**	**2.03**	**208**	*e*P		**Pn**	**20 27 59.6**	**+0.5**
	baz=196								
JIJ	**Ishigaki jima**	**2.08**	**85**	P		**Pb**	**20 28 01.4**	**-1.5**
JIJ				S		**Sb**	**20 28 27.6**	**-1.0**
SCZT	**Fangliau**	**2.14**	**213**	*e*P		**Pn**	**20 28 02.0**	**+1.3**
	baz=197								
PNG	**Penghu**	**2.21**	**254**	*e*P		**Pn**	**20 28 00.7**	**-0.9**
	baz=255								
WDGT	**Dungji**	**2.23**	**246**	*e*P		**Pn**	**20 28 02.6**	**+0.8**
	baz=247								
JISG	**Ishigakijimahi**	**2.26**	**79**	P		**Pn**	**20 28 03.5**	**+1.2**
JISG				S		**Sb**	**20 28 32.7**	**-1.1**
TWP	**Hsiaoliuchiu**	**2.30**	**217**	*e*P		**Pg**	**20 28 07.9**	**-1.4**
	baz=237								
TWK1	**Hengchun**	**2.44**	**204**	*e*P		**Pn**	**20 28 06.5**	**+1.7**
	baz=192								
KNM	**Kinmen**	**3.15**	**275**	*e*P		**Pn**	**20 28 15.6**	**+1.2**
	baz=274								

*GEN **07** 20:28:24.7, 42.˚06N×7.˚81E, h7km, ML2.7*
*CSEM **07** 20:28:24.7±0.3, 42.˚02N×7.˚64E, h30km, ML2.9/12, Error ellipse: s-maj=7.3km s-min=6.4km az=71.0*
*ROM **07** 20:28:25.9±0.3, 42.˚15N×8.˚30E, h38km, Ml2.3/4, Error ellipse: s-maj=1.1km s-min=0.4km az=49.0*
*LDG **07** 20:28:25.4±0.6, 41.˚92N×7.˚65E, h25km, Md2.8/4, Ml2.9/13, Error ellipse: s-maj=13.5km s-min=7.4km az=176.0*

ISC 07 20:28:19.3±1.6, **42.˚05N**±0.˚04×**7.˚66E**±0.˚03, **h6**km±12km, **n48**, σ1°**88**/85, **Western Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGF	**Pioggiola**	**1.12**	**63**	*e*Pn	**Pn**	**20 28 44.8**	**+3.3**
PGF				*e*Sn	**Sn**	**20 28 58.6**	**+1.3**
	61nm,0.2s						
PGF	**Pioggiola**	**1.12**	**63**	*e*Pn	**Pn**	**20 28 44.8**	**+3.3**
PGF				*e*Sn	**Sn**	**20 28 58.6**	**+1.3**
	30nm,0.2s						
LMR	**La Mourre**	**1.54**	**327**	*e*Pn	**Pg**	**20 28 49.8**	**+1.0**
LMR				*e*Sn	**Sn**	**20 29 07.5**	**-0.1**
	31nm,0.2s						
LMR	**La Mourre**	**1.54**	**327**	*e*Pn	**Pg**	**20 28 49.8**	**+1.0**
LMR				*e*Sn	**Sn**	**20 29 07.5**	**-0.1**
	16nm,0.2s						
FRF	**La Foret Royal**	**1.69**	**334**	*e*Pn	**Pg**	**20 28 52.1**	**+0.5**
FRF				*e*Sn	**Sn**	**20 29 11.5**	**+0.3**
	15nm,0.2s						
FRF	**La Foret Royal**	**1.69**	**334**	*e*Pn	**Pg**	**20 28 52.1**	**+0.5**
FRF				*e*Sn	**Sn**	**20 29 11.5**	**+0.3**
	7.3nm,0.2s						
NEGI	**Seborga**	**1.80**	**1**	Pn	**Pg**	**20 28 53.9**	**+0.1**
NEGI				Sn	**Sb**	**20 29 13.8**	**-1.7**
NEGI	**Seborga**	**1.80**	**1**	Pn	**Pg**	**20 28 53.9**	**+0.1**
NEGI				Sn	**Sb**	**20 29 13.8**	**-1.7**
SBF	**Sospel**	**1.82**	**355**	*e*Pn	**Pg**	**20 28 53.9**	**-0.3**
SBF				*e*Sn	**Sb**	**20 29 14.5**	**-1.7**
	18nm,0.2s						
SBF	**Sospel**	**1.82**	**355**	*e*Pn	**Pg**	**20 28 53.9**	**-0.3**
SBF				*e*Sn	**Sb**	**20 29 14.5**	**-1.7**
	9.1nm,0.2s						
IMI	**Imperia**	**1.87**	**5**	Pn	**Pg**	**20 28 54.8**	**-0.4**
IMI				Sn	**Sb**	**20 29 15.8**	**-1.8**
	19nm,0.5s						
IMI	**Imperia**	**1.87**	**5**	P	**Pg**	**20 28 54.8**	**-0.4**
IMI				Sn	**Sb**	**20 29 15.8**	**-1.8**
	19nm,0.5s						
RORO	**Rocca Rossa**	**2.09**	**8**	P	**Pg**	**20 28 57.8**	**-1.5**
ENR	**Entracque**	**2.19**	**356**	Pn	**Pg**	**20 29 00.3**	**-0.9**
ENR				Sn	**Sb**	**20 29 24.9**	**-1.8**
	17nm,0.1s						
ENR	**Entracque**	**2.19**	**356**	Pn	**Pg**	**20 29 00.3**	**-0.9**
ENR	**Entracque**	**2.19**	**356**	P	**Pg**	**20 29 00.6**	**-0.6**
ENR				S	**Sb**	**20 29 24.4**	**-2.3**
ENR				Sn	**Sb**	**20 29 24.9**	**-1.8**
	17nm,0.1s						
STV	**Sant Anna di V**	**2.21**	**354**	Pn	**Pb**	**20 29 00.4**	**+0.7**
STV				Sn	**Sb**	**20 29 25.1**	**-2.3**
	14nm,0.1s						
STV	**Sant Anna di V**	**2.21**	**354**	Pn	**Pb**	**20 29 00.4**	**+0.7**
STV				Sn	**Sb**	**20 29 25.1**	**-2.3**
	14nm,0.1s						
SMRF	**Simiane la Rot**	**2.46**	**322**	*e*Pn	**Pb**	**20 29 04.1**	**+0.2**
SMRF				*e*Sn	**Sb**	**20 29 33.7**	**-0.8**
	7.3nm,0.3s						
SMRF	**Simiane la Rot**	**2.46**	**322**	*e*Pn	**Pb**	**20 29 04.1**	**+0.2**
SMRF				*e*Sn	**Sb**	**20 29 33.7**	**-0.8**
	3.7nm,0.3s						
DOI	**San Damiano**	**2.48**	**353**	Pn	**Pb**	**20 29 04.6**	**+0.4**
DOI				Sn	**Sb**	**20 29 32.2**	**-2.8**
DOI	**San Damiano**	**2.48**	**353**	Pn	**Pb**	**20 29 04.6**	**+0.4**
DOI				Sn	**Sb**	**20 29 32.2**	**-2.8**
PZZ	**Stroppo**	**2.49**	**351**	Pn	**Pb**	**20 29 05.0**	**+0.5**
PZZ				Sn	**Sb**	**20 29 33.7**	**-1.8**
PZZ	**Stroppo**	**2.49**	**351**	P	**Pb**	**20 29 05.0**	**+0.5**
PZZ				S	**Sb**	**20 29 32.4**	**-3.1**
PZZ				Sn	**Sb**	**20 29 33.7**	**-1.8**
PCP	**Piancastagn**	**2.58**	**14**	P	**Pb**	**20 29 05.2**	**-0.7**
PCP				S	**Sn**	**20 29 32.8**	**-0.5**
MBDF	**Montbardon**	**2.76**	**347**	*e*Pn	**Pb**	**20 29 09.1**	**+0.1**
MBDF				*e*Sn	**Sn**	**20 29 39.3**	**+1.5**
	3.7nm,0.2s						
MBDF	**Montbardon**	**2.76**	**347**	*e*Pn	**Pb**	**20 29 09.1**	**+0.1**
MBDF				*e*Sn	**Sn**	**20 29 39.3**	**+1.5**
	1.9nm,0.2s						
VSL	**Villasalto**	**2.86**	**152**	Pn	**Pn**	**20 29 07.7**	**+2.2**
VSL				Sn	**Sn**	**20 29 38.5**	**-1.8**
	11nm,0.8s						
VSL	**Villasalto**	**2.86**	**152**	Pn	**Pn**	**20 29 07.7**	**+2.2**
VSL				Sn	**Sn**	**20 29 38.5**	**-1.8**
	11nm,0.8s						
RSP	**Reno Superiore**	**3.11**	**355**	P	**Pb**	**20 29 12.9**	**-2.2**
RSP				S	**Sn**	**20 29 46.2**	**-0.4**
ORIF	**Oris-en-Rattie**	**3.15**	**336**	*e*Pn	**Pb**	**20 29 13.7**	**-2.0**
ORIF	**Oris-en-Rattie**	**3.15**	**336**	*e*Pn	**Pb**	**20 29 13.7**	**-2.0**
LASF	**Ste Croix**	**3.44**	**307**	*e*Pn	**Pn**	**20 29 15.8**	**+2.3**
LASF				*e*Sn	**Sn**	**20 29 52.9**	**-1.7**
	7.5nm,0.3s						
LASF	**Ste Croix**	**3.44**	**307**	*e*Pn	**Pn**	**20 29 15.8**	**+2.3**
LPL	**La Plagne**	**3.53**	**349**	*e*Pn	**Pb**	**20 29 20.7**	**-1.6**
LPL				*e*Sn	**Sb**	**20 30 01.1**	**-4.4**
	1.6nm,0.3s						
LPL	**La Plagne**	**3.53**	**349**	*e*Pn	**Pb**	**20 29 20.7**	**-1.6**
LPL				*e*Sn	**Sb**	**20 30 01.1**	**-4.4**
	0.8nm,0.3s						
VIVF	**Saint-Julien-l**	**3.55**	**323**	*e*Pn	**Pn**	**20 29 18.1**	**+3.1**
VIVF				*e*Sn	**Sn**	**20 29 57.5**	**+0.3**
	1.0nm,0.2s						
VIVF	**Saint-Julien-l**	**3.55**	**323**	*e*Pn	**Pn**	**20 29 18.1**	**+3.1**
VIVF				*e*Sn	**Sn**	**20 29 57.5**	**+0.3**
	0.5nm,0.2s						
MTLF	**Montolieu**	**4.21**	**290**	*e*Pn	**Pn**	**20 29 26.0**	**+2.0**
MTLF				*e*Sn	**Sn**	**20 30 11.9**	**-1.6**
	6.1nm,0.3s						
MTLF	**Montolieu**	**4.21**	**290**	*e*Pn	**Pn**	**20 29 26.0**	**+2.0**
CAF	**Calviac**	**4.98**	**307**	*e*Pn	**Pn**	**20 29 37.9**	**+3.3**
CAF				*e*Sn	**Sn**	**20 30 30.0**	**-2.6**
	0.5nm,0.2s						
CAF	**Calviac**	**4.98**	**307**	*e*Pn	**Pn**	**20 29 37.9**	**+3.3**
EPF	**Esparros**	**5.49**	**283**	*e*Pn	**Pn**	**20 29 43.5**	**+1.8**
EPF	**Esparros**	**5.49**	**283**	*e*Pn	**Pn**	**20 29 43.5**	**+1.8**
RJF	**Les Rejaudoux**	**5.52**	**308**	*e*Pn	**Pn**	**20 29 45.2**	**+3.3**
RJF	**Les Rejaudoux**	**5.52**	**308**	*e*Pn	**Pn**	**20 29 45.2**	**+3.3**
ETSF	**Etsaut**	**6.13**	**281**	*e*Sn	**Sn**	**20 31 01.9**	**+0.9**
	1.4nm,0.3s						
ETSF	**Etsaut**	**6.13**	**281**	*e*Sn	**Sn**	**20 31 01.9**	**+0.9**
	0.7nm,0.3s						

*GEN **07** 20:39:29.8, 42.˚09N×7.˚69E, h4km, ML2.6*
*CSEM **07** 20:39:30.0±0.3, 42.˚04N×7.˚64E, h30km, ML3.0/11, Error ellipse: s-maj=5.8km s-min=5.4km az=55.0*
*ROM **07** 20:39:30.0±0.2, 42.˚01N×7.˚67E, h38km, Ml2.4/4, Error ellipse: s-maj=0.0km s-min=0.0km az=180.0*
*LDG **07** 20:39:30.8±0.5, 41.˚98N×7.˚67E, h30km, Md2.8/4, Ml2.9/15, Error ellipse: s-maj=10.9km s-min=6.6km az=169.0*

ISC 07 20:39:27.1±1.5, **42.˚01N**±0.˚03×**7.˚62E**±0.˚03, **h16**km±11km, **n49**, σ1°**84**/84, **Western Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGF	**Pioggiola**	**1.16**	**62**	*e*Pn	**Pg**	**20 39 49.6**	**+0.1**
PGF				*e*Sn	**Sg**	**20 40 03.4**	**-1.3**
	94nm,0.2s						
PGF	**Pioggiola**	**1.16**	**62**	*e*Pn	**Pg**	**20 39 49.6**	**+0.1**
PGF				*e*Sn	**Sg**	**20 40 03.4**	**-1.3**
	47nm,0.2s						
LMR	**La Mourre**	**1.56**	**329**	*e*Pn	**Pn**	**20 39 54.8**	**+0.7**
LMR				*e*Sn	**Sn**	**20 40 12.2**	**-1.7**
	52nm,0.2s						
LMR	**La Mourre**	**1.56**	**329**	*e*Pn	**Pn**	**20 39 54.8**	**+0.7**
LMR				*e*Sn	**Sn**	**20 40 12.2**	**-1.7**
	26nm,0.2s						
FRF	**La Foret Royal**	**1.71**	**336**	*e*Pn	**Pn**	**20 39 57.0**	**+0.8**
FRF				*e*Sn	**Sn**	**20 40 16.0**	**-1.6**
	26nm,0.2s						
FRF	**La Foret Royal**	**1.71**	**336**	*e*Pn	**Pn**	**20 39 57.0**	**+0.8**
FRF				*e*Sn	**Sn**	**20 40 16.0**	**-1.6**
	13nm,0.2s						
NEGI	**Seborga**	**1.84**	**2**	Pn	**Pn**	**20 39 58.9**	**+0.9**
NEGI	**Seborga**	**1.84**	**2**	Pn	**Pn**	**20 39 58.9**	**+0.9**
SBF	**Sospel**	**1.86**	**356**	*e*Pn	**Pn**	**20 39 59.9**	**+1.6**
SBF				*e*Sn	**Sn**	**20 40 19.6**	**-1.8**
	17nm,0.3s						
SBF	**Sospel**	**1.86**	**356**	*e*Pn	**Pn**	**20 39 59.9**	**+1.6**
SBF				*e*Sn	**Sn**	**20 40 19.6**	**-1.8**
	8.6nm,0.3s						
IMI	**Imperia**	**1.91**	**6**	P	**Pn**	**20 40 00.2**	**+1.2**
IMI				S	**Sn**	**20 40 20.2**	**-2.6**
CELB	**S.Piero in Cam**	**2.06**	**68**	Pn	**Pn**	**20 40 02.2**	**+1.2**
CELB				Sn	**Sn**	**20 40 25.5**	**-0.9**
	21nm,0.1s						
CELB	**S.Piero in Cam**	**2.06**	**68**	Pn	**Pn**	**20 40 02.2**	**+1.2**
RORO	**Rocca Rossa**	**2.13**	**9**	P	**Pn**	**20 40 02.8**	**+0.9**
RORO				S	**Sn**	**20 40 25.1**	**-2.9**
ENR	**Entracque**	**2.22**	**356**	Pn	**Pn**	**20 40 05.2**	**+1.9**
ENR				Sn	**Sn**	**20 40 29.8**	**-0.6**
	12nm,0.1s						
ENR	**Entracque**	**2.22**	**356**	P	**Pn**	**20 40 05.2**	**+1.9**
ENR				S	**Sn**	**20 40 29.1**	**-1.3**
ENR				Sn	Sn	20 40 29.8	-0.6
	12nm,0.1s						
STV	**Sant Anna di V**	**2.24**	**355**	Pn	**Pn**	**20 40 05.5**	**+1.9**
STV				Sn	**Sn**	**20 40 29.8**	**-1.2**
	12nm,0.3s						
STV	**Sant Anna di V**	**2.24**	**355**	Pn	**Pn**	**20 40 05.5**	**+1.9**
STV	**Sant Anna di V**	**2.24**	**355**	P	**Pn**	**20 40 05.9**	**+2.3**
STV				S	**Sn**	**20 40 29.2**	**-1.8**
STV				Sn	Sn	20 40 29.8	-1.2
	12nm,0.3s						
SMRF	**Simiane la Rot**	**2.47**	**323**	*e*Pn	**Pn**	**20 40 08.9**	**+2.2**
SMRF				*e*Sn	**Sn**	**20 40 38.9**	**+2.4**
	8.7nm,0.3s						
SMRF	**Simiane la Rot**	**2.47**	**323**	*e*Pn	**Pn**	**20 40 08.9**	**+2.2**
SMRF				*e*Sn	**Sn**	**20 40 38.9**	**+2.4**
	4.3nm,0.3s						
DOI	**San Damiano**	**2.51**	**354**	Pn	**Pn**	**20 40 09.5**	**+2.2**
DOI				Sn	**Sn**	**20 40 37.1**	**-0.4**
DOI	**San Damiano**	**2.51**	**354**	Pn	**Pn**	**20 40 09.5**	**+2.2**
DOI				Sn	**Sn**	**20 40 37.1**	**-0.4**
PZZ	**Stroppo**	**2.52**	**352**	Pn	**Pn**	**20 40 09.9**	**+2.4**
PZZ				Sn	**Sn**	**20 40 38.3**	**+0.3**
PZZ	**Stroppo**	**2.52**	**352**	P	**Pn**	**20 40 09.8**	**+2.3**
PZZ				S	**Sn**	**20 40 37.0**	**-1.0**
PZZ				Sn	Sn	20 40 38.3	+0.3
PCP	**Piancastagn**	**2.62**	**15**	P	**Pn**	**20 40 10.1**	**+1.3**
PCP				S	**Sn**	**20 40 37.9**	**-2.3**
MBDF	**Montbardon**	**2.79**	**348**	*e*Sn	**Sn**	**20 40 43.8**	**-0.6**
	5.3nm,0.3s						
MBDF	**Montbardon**	**2.79**	**348**	*e*Sn	**Sn**	**20 40 43.8**	**-0.6**
	2.7nm,0.3s						
VSL	**Villasalto**	**2.85**	**151**	Pn	**Pn**	**20 40 13.5**	**+1.7**
VSL				Sn	**Sn**	**20 40 44.6**	**-1.1**
	10.0nm,0.2s						
VSL	**Villasalto**	**2.85**	**151**	Pn	**Pn**	**20 40 13.5**	**+1.7**
VSL				Sn	**Sn**	**20 40 44.6**	**-1.1**
	10.0nm,0.2s						
RSP	**Reno Superiore**	**3.15**	**355**	P	**Pn**	**20 40 18.0**	**+1.9**
RSP				S	**Sn**	**20 40 51.4**	**-1.9**
ORIF	**Oris-en-Rattie**	**3.17**	**337**	*e*Pn	**Pn**	**20 40 18.6**	**+2.2**
ORIF	**Oris-en-Rattie**	**3.17**	**337**	*e*Pn	**Pn**	**20 40 18.6**	**+2.2**
LASF	**Ste Croix**	**3.44**	**308**	*e*Pn	**Pn**	**20 40 21.1**	**+1.1**
LASF				*e*Sn	**Sn**	**20 40 58.1**	**-2.4**
	10nm,0.2s						
LASF	**Ste Croix**	**3.44**	**308**	*e*Pn	**Pn**	**20 40 21.1**	**+1.1**
VIVF	**Saint-Julien-l**	**3.56**	**324**	*e*Pn	**Pn**	**20 40 23.0**	**+1.3**
VIVF				*e*Sn	**Sn**	**20 41 00.6**	**-2.8**
	1.7nm,0.2s						
VIVF	**Saint-Julien-l**	**3.56**	**324**	*e*Pn	**Pn**	**20 40 23.0**	**+1.3**
LPL	**La Plagne**	**3.56**	**350**	*e*Pn	**Pn**	**20 40 25.1**	**+3.2**
LPL				*e*Sn	**Sn**	**20 41 06.2**	**+2.5**
	2.6nm,0.4s						
LPL	**La Plagne**	**3.56**	**350**	*e*Pn	**Pn**	**20 40 25.1**	**+3.2**
LPL				*e*Sn	**Sn**	**20 41 06.2**	**+2.5**
	1.3nm,0.4s						
MTLF	**Montolieu**	**4.20**	**290**	*e*Pn	**Pn**	**20 40 31.0**	**+0.6**
MTLF				*e*Sn	**Sn**	**20 41 16.3**	**-2.8**
	5.6nm,0.3s						
MTLF	**Montolieu**	**4.20**	**290**	*e*Pn	**Pn**	**20 40 31.0**	**+0.6**
CAF	**Calviac**	**4.98**	**308**	*e*Pn	**Pn**	**20 40 42.7**	**+1.5**
CAF				*e*Sn	**Sn**	**20 41 35.4**	**-3.0**
	1.6nm,0.2s						
CAF	**Calviac**	**4.98**	**308**	*e*Pn	**Pn**	**20 40 42.7**	**+1.5**
EPF	**Esparros**	**5.47**	**283**	*e*Pn	**Pn**	**20 40 48.6**	**+0.6**
EPF				*e*Sn	**Sn**	**20 41 48.1**	**-2.5**
	0.4nm,0.1s						
EPF	**Esparros**	**5.47**	**283**	*e*Pn	**Pn**	**20 40 48.6**	**+0.6**
RJF	**Les Rejaudoux**	**5.51**	**309**	*e*Pn	**Pn**	**20 40 50.1**	**+1.6**
RJF				*e*Sn	**Sn**	**20 41 47.3**	**-4.2**
	0.1nm,0.1s						
RJF	**Les Rejaudoux**	**5.51**	**309**	*e*Pn	**Pn**	**20 40 50.1**	**+1.6**
ETSF	**Etsaut**	**6.11**	**281**	*e*Pn	**Pn**	**20 40 59.2**	**+2.4**
ETSF				*e*Sn	**Sn**	**20 42 06.7**	**+0.3**
	2.8nm,0.4s						
ETSF	**Etsaut**	**6.11**	**281**	*e*Pn	**Pn**	**20 40 59.2**	**+2.4**
ETSF				*e*Sn	**Sn**	**20 42 06.7**	**+0.3**
	1.4nm,0.4s						

BUC 07 20:53:11.6±0.6, **47.˚99N**×**26.˚55E**, **h5**km, **MD2.6/2.2**, **C-4D**, **Error ellipse: s-maj=9.6km s-min=3.7km az=332.0, Romania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BURAR	**Bucovina Array**	**0.97**	**248**	⇓*i* P	Pb	20 53 31.4	+0.4
BURAR	**Bucovina Array**	**0.97**	**248**	⇓*i* P	Pb	20 53 31.4	+0.4
SORM	**Soroca**	**1.22**	**83**	⇓*i* P	Pn	20 53 35.3	0.0
SORM				*i* S	Sb	20 53 51.0	-0.1
SORM	**Soroca**	**1.22**	**83**	⇓*i* P	Pn	20 53 35.3	0.0
SORM				*i* S	Sb	20 53 51.0	-0.1
TESR	**Tescani**	**1.48**	**177**	⇑*i* P	Pb	20 53 39.8	+0.2
TESR				S	Sg	20 54 00.1	+0.9
TESR	**Tescani**	**1.48**	**177**	⇑*i* P	Pb	20 53 39.8	+0.2
TESR				*i* S	Sg	20 54 00.1	+0.9
PLOR	**Plostina**	**2.14**	**178**	S	Sn	20 54 16.3	+1.3
PLOR	**Plostina**	**2.14**	**178**	*i* S	Sn	20 54 16.3	+1.3

MEX 07 20:57:17.9±1.0, **13.˚78N**×**91.˚55W**, **h20**km±999km, **MD3.5, Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.55**	**347**	*e*P	Pn	20 57 56.4	-1.9
CCIG				*e*S	Sn	20 58 24.8	-4.1
TGIG		**3.34**	**333**	*i* P	Pn	20 58 06.7	-2.5
TGIG				*i* S	Sn	20 58 46.0	-2.3

*IDC **07** 20:59:02.6±0.6, 8.˚10N×38.˚05W, h0km, mb4.2/20, mb1 4.4/21, mb1mx4.3/38, mbtmp4.2/21, ML4.0/1, MS3.8/21, Ms1 3.8/21, ms1mx3.7/29, Error ellipse: s-maj=22.4km s-min=11.9km az=145.0*
*ISCJB **07**

ESDC	**Sonseca Array**	**43.80**	**39**	P		**P**	**21 07 11.3**	**+0.7**
	1.1nm,0.8s,baz=251,slow=8.0,SNR=5.6							
ESDC				LR		LR	21 22 12.6	
	comp=Z,158nm,19.6s,baz=245,slow=32							
TAM	**Tamanrasset**	**44.27**	**66**	*eP*		**P**	**21 07 15.7**	**+0.9**
	9.8nm,1.4s							
TAM	**Tamanrasset**	**44.27**	**66**	*eP*		**P**	**21 07 15.7**	**+0.9**
	9.8nm,1.4s							
KEST	**Kesra**	**51.19**	**50**	P		**P**	**21 08 09.4**	**+1.2**
	7.1nm,1.0s,baz=180,slow=3.0,SNR=4.7							
KEST				LR		LR	21 30 12.1	
	comp=Z,227nm,18.9s,baz=296,slow=36							
SCHQ	**Schefferville**	**51.99**	**339**	LR		LR	21 26 48.5	
	comp=Z,36nm,20.2s,baz=118,slow=32							
BFO	**Black Forest**	**55.95**	**36**	*eP*		**P**	**21 08 41.1**	**-1.7**
	16nm,1.4s							
BFO	**Black Forest**	**55.95**	**36**	*eP*		**P**	**21 08 41.1**	**-1.7**
	16nm,1.4s							
FETA	**Feichten**	**56.74**	**38**	*iP*		**P**	**21 08 47.6**	**-1.2**
	5.5nm,1.1s							
RETA	**Reutte**	**56.98**	**37**	*iP*		**P**	**21 08 50.3**	**0.0**
	12nm,1.3s							
PLCA	**Paso Flores**	**57.06**	**209**	P		**P**	**21 08 54.6**	**+3.7**
	5.9nm,1.0s,baz=45,slow=6.5,SNR=6.8							
MOTA	**Moosalm**	**57.12**	**38**	*iP*		**P**	**21 08 50.7**	**-0.7**
	3.6nm,0.9s							
WATA	**Walderalm**	**57.40**	**38**	*iP*		**P**	**21 08 53.2**	**-0.1**
	3.7nm,0.5s							
WTTA	**Wattenberg**	**57.41**	**38**	*iP*		**P**	**21 08 52.0**	**-1.4**
	2.8nm,0.6s							
ABTA	**Abfaltersbach**	**57.72**	**39**	*iP*		**P**	**21 08 57.2**	**+1.6**
	3.5nm,0.7s							
MYKA	**Terra Mystica**	**58.38**	**39**	*iP*		**P**	**21 09 00.3**	**+0.2**
	11nm,1.1s							
KBA	**Koelnbreinsper**	**58.38**	**39**	*iP*		**P**	**21 08 59.8**	**-0.4**
	11nm,1.4s							
OBKA	**Obir**	**58.90**	**40**	*iP*		**P**	**21 09 04.7**	**+0.9**
	12nm,1.3s							
NKC	**Novy Kostel**	**59.23**	**35**	*eP*		**P**	**21 09 06.4**	**+0.5**
NKC				*ex*		x	21 09 13.6	
MOA	**Molln**	**59.27**	**38**	*iP*		**P**	**21 09 06.3**	**+0.1**
	4.0nm,0.8s							
SOKA	**Soboth**	**59.28**	**40**	*iP*		**P**	**21 09 05.1**	**-1.2**
	9.4nm,1.2s							
GERES	**GERESS Array B**	**59.34**	**37**	P		**P**	**21 09 06.6**	**-0.2**
	0.6nm,0.8s,baz=257,slow=11,SNR=5.3							
GERES				LR		LR	21 31 03.5	
	comp=Z,56nm,21.5s,baz=263,slow=32							
KHC	**Kasperske Hory**	**59.39**	**37**	*eP*		**P**	**21 09 06.9**	**-0.2**
KHC				*ep*	P	**sP**	**21 09 13.8**	**-0.4**
KHC	**Kasperske Hory**	**59.39**	**37**	*eP*		**P**	**21 09 06.8**	**-0.3**
	2.6nm,1.2s							
KHC	**Kasperske Hory**	**59.39**	**37**	*eP*		**P**	**21 09 06.8**	**-0.3**
	2.6nm,1.2s							
ARSA	**Arzberg**	**59.81**	**39**	*iP*		**P**	**21 09 09.9**	**-0.1**
	4.0nm,0.8s							
CONA	**Conrad Observa**	**60.28**	**39**	*iP*		**P**	**21 09 13.1**	**-0.2**
	11nm,1.6s							
PRU	**Pruhonice**	**60.33**	**36**	*eP*		**P**	**21 09 13.4**	**-0.1**
PRU				*ex*		x	21 09 20.8	
BRG	**Berggiesshubel**	**60.37**	**35**	*eP*		**P**	**21 09 13.8**	**+0.1**
	6.4nm,1.4s							
PVCC	**Panska Ves**	**60.58**	**36**	*eP*		**P**	**21 09 16.0**	**+0.9**
PDG	**Podgorica**	**60.66**	**46**⇑	*iP*		**P**	**21 09 16.7**	**+0.9**
PDG	**Podgorica**	**60.66**	**46**⇑	*iP*		**P**	**21 09 16.7**	**+0.9**
VRAC	**Vranov**	**61.27**	**37**⇑	*iP*		**P**	**21 09 19.8**	**-0.1**
VRAC	**Vranov**	**61.27**	**37**	*eP*		**P**	**21 09 19.6**	**-0.3**
UPC	**Upice**	**61.40**	**36**	*eP*		**P**	**21 09 21.6**	**+0.8**
UPC				*ex*		x	21 09 28.3	
DPC	**Dobruska-Polom**	**61.52**	**36**	*eP*		**P**	**21 09 21.9**	**+0.3**
DPC				*ex*		x	21 09 29.1	
MORC	**Moravsky Berou**	**62.02**	**37**	*eP*		**P**	**21 09 24.8**	**-0.2**
VYHS	**Vyhne**	**62.34**	**39**	*eP*		**P**	**21 09 26.6**	**-0.5**
VYHS	**Vyhne**	**62.34**	**39**	*eP*		**P**	**21 09 26.6**	**-0.5**
MDVR	**Moldovita**	**63.05**	**44**⇓	*iP*		**P**	**21 09 32.1**	**+0.1**
MDVR	**Moldovita**	**63.05**	**44**⇓	*iP*		**P**	**21 09 32.1**	**+0.1**
BZS	**Buzias**	**63.22**	**43**⇓	*iP*		**P**	**21 09 33.6**	**+0.6**
BZS	**Buzias**	**63.22**	**43**⇓	*iP*		**P**	**21 09 33.6**	**+0.6**
IDI	**Anoyia**	**63.32**	**55**	*eP*		**P**	**21 09 34.6**	**+0.6**
	22nm,1.1s							
IDI	**Anoyia**	**63.32**	**55**	*eP*		**P**	**21 09 34.6**	**+0.6**
	22nm,1.1s							
SIRR	**Siria**	**63.44**	**42**⇑	*iP*		**P**	**21 09 34.6**	**+0.1**
SIRR	**Siria**	**63.44**	**42**⇑	*iP*		**P**	**21 09 34.6**	**+0.1**
VTS	**Vitosha**	**63.52**	**46**⇓	*iP*		**P**	**21 09 32.3**	**-2.9**
CRVS	**Cervenica-Dubn**	**64.12**	**39**	*eP*		**P**	**21 09 39.4**	**+0.5**
CRVS	**Cervenica-Dubn**	**64.12**	**39**	*eP*		**P**	**21 09 39.4**	**+0.5**
NB2	**NORSAR Subarra**	**64.12**	**24**	P		**P**	**21 09 38.8**	**+0.1**
	comp=Z,2.2nm,0.8s,baz=237,slow=6.9							
NB2	**NORSAR Subarra**	**64.12**	**24**	P		**P**	**21 09 38.8**	**+0.1**
	comp=Z,2.2nm,0.8s,baz=237,slow=6.6,SNR=7.6							
NOA	**NORSAR Array B**	**64.12**	**24**	P		**P**	**21 09 39.1**	**+0.4**
	comp=Z,3.7nm,1.0s,baz=238,slow=6.7,SNR=6.2							
NOA				LR		LR	21 35 44.7	
	comp=Z,41nm,18.1s,baz=225,slow=34							
DRGR		**64.28**	**42**⇑	*iP*		**P**	**21 09 39.8**	**-0.3**
DRGR		**64.28**	**42**⇑	*iP*		**P**	**21 09 39.8**	**-0.3**
SUMG	**Summit**	**64.45**	**360**⇓	*iP*		**P**	**21 09 41.1**	**0.0**
	comp=Z,6.3nm,0.9s							
SUMG				*i*			21 09 49.2	
SUMG	**Summit**	**64.45**	**360**	*eP*		**P**	**21 09 41.3**	**+0.2**
	comp=Z,13nm,0.8s							
SUMG	**Summit**	**64.45**	**360**	*eP*		**P**	**21 09 41.3**	**+0.2**
	comp=Z,13nm,0.8s							
LOT	**Lotru**	**64.63**	**43**⇑	*iP*		P	21 09 56.5	+14
KOLS	**Kolonicke sedl**	**64.64**	**39**	*eP*		**P**	**21 09 41.8**	**-0.5**
	comp=Z,11nm,1.7s							
KOLS	**Kolonicke sedl**	**64.64**	**39**	*eP*		**P**	**21 09 41.8**	**-0.5**
TXAR	**Lajitas Array**	**64.88**	**299**	P		**P**	**21 09 43.9**	**-0.4**
	comp=Z,0.6nm,0.5s,baz=102,slow=6.3,SNR=14							
ARR	**Arges**	**65.20**	**44**⇑	*iP*		**P**	**21 09 46.3**	**+0.2**
ARR	**Arges**	**65.20**	**44**⇑	*iP*		**P**	**21 09 46.3**	**+0.2**
VOIR		**65.50**	**44**⇑	*iP*		**P**	**21 09 48.9**	**+0.8**
VOIR		**65.50**	**44**⇑	*iP*		**P**	**21 09 48.9**	**+0.8**
DOPR	**Dopca**	**65.86**	**43**⇓	*iP*		**P**	**21 09 50.3**	**0.0**
DOPR	**Dopca**	**65.86**	**43**⇓	*iP*		**P**	**21 09 50.3**	**0.0**
MLR	**Muntele Rosu**	**66.12**	**44**⇑	*iP*		**P**	**21 09 51.9**	**-0.3**
MLR	**Muntele Rosu**	**66.12**	**44**⇑	*iP*		**P**	**21 09 51.9**	**-0.3**
BURAR	**Bucovina Array**	**66.15**	**41**⇑	*iP*		**P**	**21 09 52.5**	**+0.2**
BURAR	**Bucovina Array**	**66.15**	**41**⇑	*iP*		**P**	**21 09 52.5**	**+0.2**
SULR		**66.15**	**45**⇓	*iP*		**P**	**21 09 52.4**	**+0.2**
SULR		**66.15**	**45**⇓	*iP*		**P**	**21 09 52.4**	**+0.2**
ISR	**Istrita**	**66.45**	**44**⇑	*iP*		**P**	**21 09 55.2**	**+1.0**
ISR	**Istrita**	**66.45**	**44**⇑	*iP*		**P**	**21 09 55.2**	**+1.0**
MNTX	**Cornudas Mount**	**66.56**	**301**	*eP*		**P**	**21 09 53.5**	**-1.6**
	comp=Z,5.0nm,1.0s							
MNTX	**Cornudas Mount**	**66.56**	**301**	*eP*		**P**	**21 09 53.5**	**-1.6**
	comp=Z,5.0nm,1.0s							
PLOR	**Plostina**	**66.69**	**43**⇓	*iP*		P	21 09 50.7	-4.9
VRI	**Vrincioaia**	**66.74**	**43**⇓	*iP*		**P**	**21 09 55.7**	**-0.3**
VRI	**Vrincioaia**	**66.74**	**43**⇓	*iP*		**P**	**21 09 55.7**	**-0.3**
PRAR	**RASCA**	**66.75**	**42**⇓	*iP*		**P**	**21 09 55.8**	**-0.2**
PRAR	**RASCA**	**66.75**	**42**⇓	*iP*		**P**	**21 09 55.8**	**-0.2**
TESR	**Tescani**	**66.83**	**43**⇑	*iP*		**P**	**21 09 55.2**	**-1.3**
TESR	**Tescani**	**66.83**	**43**⇑	*iP*		**P**	**21 09 55.2**	**-1.3**
TLB	**Topalu**	**67.38**	**45**⇑	*iP*		**P**	**21 09 59.8**	**-0.2**
TLB	**Topalu**	**67.38**	**45**⇑	*iP*		**P**	**21 09 59.8**	**-0.2**
TIRR	**Tirgusor**	**67.62**	**45**⇑	*iP*		**P**	**21 09 59.9**	**-1.6**
TIRR	**Tirgusor**	**67.62**	**45**⇑	*iP*		**P**	**21 09 59.9**	**-1.6**
SORM	**Soroca**	**68.32**	**41**⇑	*iP*		**P**	**21 10 04.6**	**-1.3**
SORM	**Soroca**	**68.32**	**41**⇑	*iP*		**P**	**21 10 04.6**	**-1.3**
AKASG	**Malin Array Be**	**69.44**	**39**	P		**P**	**21 10 12.4**	**-0.4**
	comp=Z,2.0nm,0.8s,baz=264,slow=5.3,SNR=11							
AKASG				LR		LR	21 38 19.7	
	comp=Z,76nm,20.8s,baz=240,slow=34							
FINES	**FINESS Array B**	**70.72**	**27**	P		**P**	**21 10 20.0**	**-0.4**
	comp=Z,1.2nm,0.8s,baz=242,slow=3.0,SNR=5.4							
FINES				LR		LR	21 38 03.4	
	comp=Z,70nm,20.9s,baz=236,slow=33							
FINES	**FINESS Array B**	**70.72**	**27**	P		**P**	**21 10 20.0**	**-0.4**
BRTR	**Keskin Array B**	**70.79**	**51**	P		**P**	**21 10 21.5**	**0.0**
	comp=Z,2.3nm,1.0s,baz=269,slow=4.9,SNR=14							
BRTR				LR		LR	21 41 25.6	
	comp=Z,47nm,21.6s,baz=250,slow=36							
BOSA	**Boshof**	**71.03**	**124**	LR		LR	21 34 22.7	
	comp=Z,142nm,22.0s,baz=256,slow=30							
ARCES	**ARCESS Array B**	**73.39**	**19**	P		**P**	**21 10 36.7**	**+0.4**
	comp=Z,1.8nm,0.8s,baz=243,slow=5.3,SNR=6.6							
ARCES				LR		LR	21 37 54.3	
	comp=Z,32nm,20.5s,baz=217,slow=32							
KMBO	**Kilima Mbogo**	**75.59**	**93**	LR		LR	21 42 16.5	
	comp=Z,58nm,19.1s,baz=274,slow=34							
YKA	**Yellowknife Ar**	**76.69**	**332**	P		**P**	**21 10 54.1**	**-1.4**
	comp=Z,2.0nm,0.9s,baz=93,slow=5.0,SNR=11							
KIV	**Kislovodsk**	**77.77**	**47**	*eP*		**P**	**21 11 02.4**	**+0.3**
	comp=Z,7.8nm,1.0s							
KIV	**Kislovodsk**	**77.77**	**47**	*eP*		**P**	**21 11 02.4**	**+0.3**
	comp=Z,7.8nm,1.0s							
KBZ	**Khabaz**	**77.92**	**47**	P		**P**	**21 11 02.8**	**0.0**
	comp=Z,3.7nm,1.0s,baz=349,slow=1.1,SNR=5.7							
KBZ				LR		LR	21 48 08.1	
	comp=Z,28nm,18.3s,baz=309,slow=38							
MOD	**Modoc Plateau**	**78.92**	**311**	*eP*		**P**	**21 11 09.5**	**+0.9**
	comp=Z,16nm,0.8s							
MOD	**Modoc Plateau**	**78.92**	**311**	*eP*		**P**	**21 11 09.5**	**+0.9**
	comp=Z,16nm,0.8s							
ABKAR	**Akbulak array**	**89.12**	**40**	*eP*		**P**	**21 12 00.7**	**+0.6**
	comp=Z,4.0nm,0.9s							
ABKAR	**Akbulak array**	**89.12**	**40**	*eP*		**P**	**21 12 00.7**	**+0.6**
	comp=Z,4.0nm,0.9s							
ILAR	**Eielson Array**	**90.64**	**336**	P		**P**	**21 12 06.7**	**-0.2**
	comp=Z,0.6nm,0.8s,baz=71,slow=4.4,SNR=5.9							

*BJI **07** 21:03:34.2,29˚.23S×175˚.59W,h7km,mb5.2/31,mB5.5/23, Ms5.0/15,Ms7 4.9/7*

*NEIC **07** 21:03:35.5±2.6,29˚.88S×176˚.25W,h9km±16km,mb5.1/33, Error ellipse: s-maj=6.7km s-min=5.9km az=138.0*

*GCMT **07** 21:03:35.5±0.3,29˚.53S×175˚.97W,h32km,MW5.1/75, Moment Tensor Solution. s46,c58; s75,c114; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr~3.20±.21; Mθθ~1.52±.16; Mφφ4.72±.14; Mrθ~0.76±.21; Mrφ~0.01±.12; Mθφ~2.70±.17; Best double couple: M₀4.89400×10¹⁶ NP1:φs13.00000°,δ64.00000°,λ-74.00000°. NP2: φs161.00000°,δ30.00000°,λ-118.00000°. Principal axes: T 5.5590, Plg17.0000°, Azm92.0000°; N -1.3300, Plg14.0000°, Azm186.0000°; P -4.2290, Plg68.0000°, Azm313.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **07** 21:03:37.8±0.2,30˚.00S±0˚.04×176˚.22W±0˚.04,h33km, mb5.2/61,MS4.3/23 Error ellipse: s-maj=6.8km s-min=3.5km az=135.8*

*IDC **07** 21:03:42.7±3.1,29˚.44S×176˚.46W,h52km±23km,mb4.5/16, mb1 4.6/16,mb1mx4.4/37,mbtmp4.8/16,MS4.2/20, Ms1 4.2/20,ms1mx4.1/27,Error ellipse: s-maj=22.6km s-min=17.0km az=82.0*

*MOS **07** 21:03:42.2±1.1,29˚.44S×176˚.45W,h55km,mb5.1/22, MS4.2/12,Error ellipse: s-maj=11.2km s-min=10.1km az=112.7*

ISC 07 21:03:40.6±0.4,29˚.76S±0˚.06×176˚.25W±0˚.06,h35km, n375,σ1ŝ93/355,mb5.2/61,MS4.4/23,16C-31D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.54**	**289**	P		**Pn**		**21 04 05.4**	**-0.1**
	2μm,0.3s,baz=120,slow=6.7,SNR=122								
RAO				S		**Sn**		**21 04 20.1**	**-4.1**
	4μm,0.3s,baz=85,slow=13,SNR=18								
RAO				LR		LR		21 04 34.0	
	comp=Z,7μm,18.4s,baz=50,slow=40								
RAO	**Raoul Island**	**1.54**	**289**	*ePn*		**Pn**		**21 04 06.2**	**+0.7**
RAO				S		**Sn**		**21 04 20.1**	**-4.1**
MXZ	**Matakaoa Point**	**9.01**	**209**	*ePn*		Pn		21 05 42.7	-5.5
URZ	**Urewera**	**10.11**	**211**	P		Pn		21 06 02.6	-0.6
	2.9nm,0.3s,baz=273,slow=4.3,SNR=9.5								
URZ				S		**Sn**		**21 07 54.8**	**-0.6**
	22nm,0.3s,baz=143,slow=18,SNR=21								
URZ	**Urewera**	**10.11**	**211**	*ePn*		Pn		21 06 00.5	-2.7
URZ				S		**Sn**		**21 07 54.8**	**-0.6**
OUZ	**Omahuta**	**10.16**	**235**	*ePn*		Pn		21 05 59.8	-4.1
BKZ	**Black Stump Fm**	**11.13**	**211**	*ePn*		Pn		21 06 13.0	-4.2
BKZ				*eSn*		Sn		21 08 11.3	-9.2
HIZ	**Hauiti**	**11.42**	**218**	*ePn*		Pn		21 06 19.0	-2.2
BFZ	**Birch Farm**	**12.50**	**207**	*ePn*		Pn		21 06 31.9	-4.0
BFZ				*eSn*		Sn		21 08 37.2	-17
MSVF	**Nonsavu**	**13.05**	**335**	*eP*		**Pn**		**21 06 41.8**	**-1.8**
MSVF	**Nonsavu**	**13.05**	**335**	*ePn*		**Pn**		**21 06 41.8**	**-1.8**
SNZO	**South Karori**	**13.67**	**210**	*ePn*		Pn		21 06 49.0	-2.8
THZ	**Tophouse**	**14.85**	**213**	*ePn*		**Pn**		**21 07 05.1**	**-2.9**
KHZ	**Kahutara**	**15.07**	**210**	*ePn*		Pn		21 07 05.8	-5.1
	193nm,0.8s								
KHZ				*eSn*		Sn		21 09 47.9	-8.7
LTZ	**Lake Taylor**	**15.94**	**212**	*ePn*		Pn		21 07 19.0	-3.2
	58nm,1.0s								
AFI	**Afiamalu**	**16.30**	**16**	LR		LR		21 14 17.8	
	comp=Z,157nm,19.7s,baz=172,slow=40								
OXZ	**Oxford**	**16.47**	**211**	*ePn*		Pn		21 07 25.9	-3.0
	69nm,0.6s								
OXZ				*eSn*		Sn		21 10 15.2	-15
MQZ	**McQueen's Vall**	**16.50**	**209**	*ePn*		Pn		21 07 23.1	-6.1
	174nm,1.5s								
RAR	**Rarotonga**	**17.12**	**64**	P		Pn		21 07 27.4	-10
	4.8nm,0.3s,baz=268,slow=8.3,SNR=14								
RAR				LR		LR		21 12 27.5	
	comp=Z,1μm,21.9s,baz=254,slow=31								
RPZ	**Rata Peaks**	**17.22**	**213**	P		**Pn**		**21 07 36.9**	**-1.4**
	2.5nm,0.3s,baz=39,slow=1.7,SNR=6.8								
RPZ				S		Sn		21 10 34.9	-14
	2.1nm,0.3s,baz=134,slow=21,SNR=9.3								
RPZ	**Rata Peaks**	**17.22**	**213**	*ePn*		Pn		21 07 33.8	-4.6
	171nm,1.7s								
RPZ				S		Sn		21 10 35.0	-14
DZM	**Mont Dzumac**	**17.33**	**292**	LR		LR		21 13 05.0	
	comp=Z,2μm,20.1s,baz=120,slow=33								
DZM	**Mont Dzumac**	**17.33**	**292**	*ePn*		**Pn**		**21 07 39.9**	**-1.2**
	74nm,1.0s								
DZM				*eLQ*		LQ		21 11 08.3	
	3μm,28.6s								
DZM				*eLR*		LR		21 11 48.0	
	3μm,24.5s								
LBZ	**Lac Benmore**	**18.14**	**213**	*ePn*		P		21 07 45.2	-4.5
	205nm,1.8s								
ODZ	**Otahua Downs**	**18.44**	**211**	*ePn*		**P**		**21 07 50.2**	**-2.7**
	213nm,1.8s								
WKZ	**Wanaka**	**19.02**	**214**	*eP*		P		21 07 55.7	-3.7
	322nm,1.7s								
PPT2	**Papeete2**	**27.19**	**70**	*eS*		S		21 13 46.7	-11
	202nm,25.5s								
PPT2				*eLR*		LR		21 16 03.7	
	2μm,25.5s,baz=232								
PPT	**Papeete**	**27.20**	**70**	LR		LR		21 17 07.8	
	comp=Z,664nm,19.8s,baz=254,slow=30								
EIDS	**Eidsvold**	**29.23**	**271**	P		**P**		**21 09 40.2**	**+0.9**
	baz=29,SNR=6.5								
EIDS	**Eidsvold**	**29.23**	**271**	*eP*		**P**		**21 09 40.0**	**+0.8**
	25nm,0.9s								
RMQ	**Roma**	**30.96**	**267**	P		**P**		**21 09 55.9**	**+1.3**
	baz=31,SNR=10								
CMSA	**Cobar Meteorol**	**32.68**	**257**	P		**P**		**21 10 10.6**	**+1.0**
	baz=33,SNR=12								
CTA	**Charters Tower**	**35.21**	**277**	P		**P**		**21 10 31.1**	**-0.6**
	4.0nm,0.3s,baz=103,slow=11,SNR=8.3								
CTAO	**Charters Tower**	**35.21**	**277**	*eP*		**P**		**21 10 32.1**	**+0.4**
CTAO				*pmax*		*pmax*			
	comp=Z,48nm,1.8s								
CTAO	**Charters Tower**	**35.21**	**277**	*eP*		**P**		**21 10 32.1**	**+0.4**
	comp=Z,48nm,1.8s								
STKA	**Stephens Creek**	**36.10**	**256**	P		**P**		**21 10 38.9**	**-0.3**
	comp=Z,22nm,0.8s,baz=98,slow=9.5,SNR=42								
STKA				LR		LR		21 24 33.1	
	comp=Z,565nm,18.8s,baz=89,slow=35								
STKA	**Stephens Creek**	**36.10**	**256**	P		**P**		**21 10 40.0**	**+0.8**
	baz=36,SNR=32								
STKA	**Stephens Creek**	**36.10**	**256**	*eP*		**P**		**21 10 39.1**	**-0.1**
	comp=Z,7.7nm,0.9s								
HTT	**Hallett**	**38.14**	**253**	P		**P**		**21 10 57.1**	**+0.6**
	baz=38,SNR=18								
TAOE	**Nuku Hiva Isla**	**39.66**	**66**	*eLR*		LR		21 21 47.7	
	comp=Z,1μm,25.2s								
PMG	**Port Moresby**	**39.73**	**293**	LR		LR		21 24 45.7	
	comp=Z,550nm,21.1s,baz=126,slow=32								
BBOO	**Buckleboo**	**40.60**	**253**	P		**P**		**21 11 16.8**	**-0.2**
	baz=41,SNR=15								
BBOO	**Buckleboo**	**40.60**	**253**	*eP*		**P**		**21 11 16.1**	**-1.0**
	comp=Z,48nm,1.0s								
AS01	**Alice Springs**	**44.62**	**266**	*eP*		**P**		**21 11 48.7**	**-1.2**
AS31	**Alice Springs**	**44.66**	**266**	*eP*		**P**		**21 11 49.1**	**-1.1**
	comp=Z,12nm,0.8s								
ASAR	**Alice Springs**	**44.66**	**266**	P		**P**		**21 11 48.9**	**-1.3**
	comp=Z,1.5nm,0.3s,baz=105,slow=7.8,SNR=41								
ASAR				LR		LR		21 29 22.2	
	comp=Z,814nm,21.4s,baz=117,slow=35								
WB2	**Warramunga Arr**	**45.59**	**271**	*eP*		**P**		**21 11 56.4**	**-1.1**
	comp=Z,47nm,0.8s								
WRAB	**Tennant Creek**	**45.59**	**271**⇑	*eP*		**P**		**21 11 56.8**	**-0.8**
WRAB				*pmax*		*pmax*			
	comp=Z,130nm,1.7s								
WRAB	**Tennant Creek**	**45.59**	**271**	*eP*		**P**		**21 11 56.2**	**-1.3**
	comp=Z,38nm,0.8s								
WRA	**Warramunga Arr**	**45.60**	**271**	P		**P**		**21 11 56.8**	**-0.8**
	comp=Z,12nm,0.7s,baz=110,slow=6.3,SNR=52								
WRA				LR		LR		21 28 56.0	
	comp=Z,407nm,20.9s,baz=100,slow=33								
FORT	**Forrest**	**47.68**	**254**	*eP*		**P**		**21 12 12.2**	**-1.5**
	comp=Z,376nm,1.0s								
VNDA	**Vanda**	**48.89**	**186**	P		**P**		**21 12 26.1**	**+3.6**
	comp=Z,4.8nm,1.0s,baz=9.2,slow=8.4,SNR=18								
VNDA				LR		LR		21 30 01.7	
	comp=Z,119nm,21.0s,baz=22,slow=32								
WRKA	**Warakurna**	**49.07**	**261**	P		**P**		**21 12 22.9**	**-1.8**
	baz=49,SNR=29								
KMBL	**Kambalda**	**52.66**	**252**	P		**P**		**21 12 50.6**	**-1.0**
	baz=53,SNR=6.3								
KLBR	**Kellerberrin**	**55.99**	**250**	P		**P**		**21 13 14.6**	**-1.2**
	baz=56,SNR=12								
CASY	**Casey**	**56.41**	**208**	P		P		21 13 16.1	-2.0
	comp=Z,29nm,0.9s								
MEEK	**Meekatharra**	**56.81**	**256**	P		**P**		**21 13 20.6**	**-1.1**
	baz=57,SNR=3.3								
GUMO	**Guam**	**57.12**	**313**	P		**P**		**21 13 21.3**	**-2.5**
	comp=Z,94nm,0.8s,baz=195,slow=5.7,SNR=7.3								
MORW	**Morawa**	**58.17**	**252**	P		**P**		**21 13 29.8**	**-1.4**
	baz=58,SNR=3.1								
KAPI	**Kappang**	**65.00**	**279**	LR		LR		21 41 19.5	
	comp=Z,150nm,21.9s,baz=139,slow=35								
MAW	**Mawson**	**73.44**	**200**	P		**P**		**21 15 10.0**	**+1.1**
	comp=Z,16nm,1.1s,baz=120,slow=6.2,SNR=15								
MAW				LR		LR		21 50 46.3	
	comp=Z,96nm,18.0s,baz=66,slow=38								
MAW	**Mawson**	**73.44**	**200**	P		**P**		**21 15 10.0**	**+1.1**
MAW				*pmax*		*pmax*			
	comp=Z,16nm,1.1s								
MAW				MLR		MLR			
	comp=Z,96nm,18.0s								
MAW	**Mawson**	**73.44**	**200**	*eP*		**P**		**21 15 11.0**	**+2.1**
	comp=Z.6.0nm,1.2s								
SYO	**Syowa Base**	**78.08**	**192**⇑	*eP*		**P**		**21 15 34.9**	**-0.4**
MJAR	**Matsushiro Arr**	**78.59**	**324**	P		**P**		**21 15 36.5**	**-2.1**
	comp=Z,7.6nm,0.9s,baz=162,slow=5.5,SNR=11								
MJAR				LR		LR		21 46 19.2	
	comp=Z,33nm,21.2s,baz=155,slow=33								
MAJO	**Matsushiro**	**78.59**	**324**	*d iP*		**P**		**21 15 38.3**	**-0.3**
MAJO				*pmax*		*pmax*			
	comp=Z,69nm,0.9s								
MAJO	**Matsushiro**	**78.59**	**324**	*eP*		**P**		**21 15 38.8**	**+0.2**
	comp=Z,10nm,0.8s								
MAT	**Matsushiro**	**78.59**	**324**	P		**P**		**21 15 36.6**	**-2.0**
MAT				*eS*		**S**		**21 25 38.0**	**+5.1**
SNAA	**Sanae**	**78.75**	**178**	P		**P**		**21 15 39.8**	**+0.7**
SNAA	**Sanae**	**78.75**	**178**⇓	*eP*		**P**		**21 15 39.8**	**+0.7**
SNAA	**Sanae**	**78.75**	**178**	*eP*		**P**		**21 15 39.8**	**+0.7**
	comp=Z,20nm,1.

comp=Z,21nm,1.0s
WAKR Walker 86.14 41 *e*P **P 21 16 18.2 -0.1**
comp=Z,32nm,1.4s
PAYG Puerto Ayora 86.16 89 *e*P P 21 16 16.0 -2.8
comp=Z,105nm,1.1s
TUQ Turquoise Moun 86.19 45 P **P 21 16 18.0 -0.4**
baz=229
M02C Callahan 86.28 37 P **P 21 16 18.8 +0.1**
baz=224
FURC Furnace Creek, 86.29 44 P **P 21 16 18.2 -0.4**
baz=228
KULM Kulim 86.63 278 *e*P **P 21 16 20.9 0.0**
MSHR Mys Shultsa 86.72 324⇑*e*P **P 21 16 20.7 +0.1**
PSI Prapat 86.88 275 *e*P **P 21 16 21.2 -1.2**
PSI Prapat 86.88 275 *e*P **P 21 16 21.2 -1.2**
TPNV Topopah Spring 86.98 44 P **P 21 16 21.8 -0.5**
baz=229
TPNV Topopah Spring 86.98 44 *e*P **P 21 16 21.9 -0.4**
TPNV pmax pmax
comp=Z,9.0nm,0.9s
TPNV Topopah Spring 86.98 44 *e*P **P 21 16 21.9 -0.4**
comp=Z,9.1nm,0.9s
NJ2 Nanjing 86.99 310 *e*P **P 21 16 23.2 +1.0**
NJ2 pmax pmax
comp=Z,20nm,1.2s
PAHR Pah Rah Range 86.99 40 *e*P **P 21 16 21.7 -0.6**
comp=Z,9.9nm,1.1s
GSI Gunungsitoli 87.31 273 *e*P **P 21 16 24.5 +0.2**
SHPR Sheep Range 87.35 45 *e*P **P 21 16 24.9 +0.8**
USRK Ussuriysk Ar. 87.47 326 P **P 21 16 24.0 -0.3**
comp=Z,8.1nm,0.9s,baz=126,slow=3.0,SNR=18
USRK LR LR 21 49 09.0
comp=Z,68nm,20.1s,baz=137,slow=31
TUC Tucson 87.53 50 P **P 21 16 25.2 +0.2**
baz=232
TUC Tucson 87.53 50 *e*P **P 21 16 25.4 +0.4**
TUC pmax pmax
comp=Z,12nm,1.0s
TUC Tucson 87.53 50 *e*P **P 21 16 25.4 +0.4**
comp=Z,12nm,1.0s
UBPT Khong Chiam 87.64 289 P **P 21 16 27.1 +1.3**
comp=Z,28nm,2.1s
UBPT Khong Chiam 87.64 289 P **P 21 16 27.1 +1.3**
comp=Z,28nm,2.1s
K05A Summer Lake 88.26 37 *e*P **P 21 16 28.1 -0.2**
R11A Troy Canyon, C 88.29 43 P **P 21 16 27.8 -0.7**
baz=229
R11A Troy Canyon, C 88.29 43 *e*P **P 21 16 27.9 -0.7**
J05D Fort Rock, OR 88.47 37 P **P 21 16 28.8 -0.4**
baz=225
BMN Battle Mountai 88.71 41 *e*P **P 21 16 29.9 -0.6**
BMN Battle Mountai 88.71 41 *e*P **P 21 16 29.9 -0.6**
TRTT Trang 88.72 280 P **P 21 16 32.3 +1.3**
comp=Z,26nm,1.1s
LCMT Little Creek M 88.86 46 *e*P **P 21 16 31.4 +0.1**
CHBT CHBT 88.95 285 P **P 21 16 36.4 +4.4**
comp=Z,720nm,1.6s,comp=Z,118µm
MDJ Mudanjiang 88.97 325 P **P 21 16 31.6 +0.2**
MDJ pmax pmax
comp=Z,13nm,1.0s
MDJ pmax pmax
comp=Z,67nm,5.4s
WUAZ Wupatki 89.11 48 P **P 21 16 32.1 -0.4**
baz=232
WUAZ Wupatki 89.11 48 *e*P **P 21 16 32.7 +0.2**
KNB Kanab 89.12 46 *e*P **P 21 16 32.9 +0.3**
KNB Kanab 89.12 46 *e*P **P 21 16 32.9 +0.3**
CCUT Cedar City 89.12 45 *e*P **P 21 16 31.9 -0.7**
WHN Wuhan 89.18 306 P **P 21 16 32.7 0.0**
KRAB Krabi 89.34 280 P P 21 16 27.7 -6.2
SKNT Sakolnakorn 89.74 290 P **P 21 16 36.5 +0.8**
comp=Z,75nm,1.1s
CROR Criterion Ridg 89.78 36 P **P 21 16 34.9 -0.4**
G05D Wamic, OR 89.80 35 P **P 21 16 35.1 -0.2**
baz=225
SRAK Srakaew 89.83 286 P **P 21 16 36.0 -0.1**
comp=Z,67nm,1.4s,comp=Z,851nm
W18A Petrified Fore 89.93 49 P **P 21 16 35.6 -0.7**
baz=233
W18A Petrified Fore 89.93 49 *e*P **P 21 16 36.6 +0.2**
FL2 Flat Top 2 89.96 34 P **P 21 16 36.1 -0.1**
ERK Elk Rock 90.05 34 P **P 21 16 36.4 -0.1**
SURT Suratani 90.05 280 P **P 21 16 39.4 +2.2**
comp=Z,8.4nm,1.4s
TDL Tradedollar La 90.14 34 P **P 21 16 36.2 -0.8**
MTPU Mount Pierson 90.16 45 *e*P **P 21 16 37.9 +0.3**
SNY Shenyang 90.27 320 ||P **P 21 16 36.7 -0.8**
SNY pmax pmax
comp=Z,9.0nm,1.0s
KHON Khomkaen 90.36 289 P **P 21 16 40.2 +1.6**
comp=Z,17nm,1.0s
CN2 Changchun 90.56 322 *e*P **P 21 16 38.5 -0.3**
CN2 pmax pmax
comp=Z,20nm,1.2s
TIA Tai'an 90.65 312 *e*P **P 21 16 39.8 +0.3**
TIA pmax pmax
comp=Z,10.0nm,0.8s
TX31 Lajitas Ar. Si 90.77 56 *e*P **P 21 16 39.3 -1.0**
TXAR Lajitas Array 90.77 56 P **P 21 16 39.8 -0.5**
comp=Z,3.1nm,1.0s,baz=217,slow=6.0,SNR=11
TXAR LR LR 21 49 07.6
comp=Z,197nm,20.6s,baz=0.0,slow=30
FMW Mount Fremont 90.81 34 P **P 21 16 39.8 -0.4**
CHAI Chaiyaphum 90.83 288 P **P 21 16 41.8 +1.0**
comp=Z,8.7nm,0.9s
D05A Enumclaw 90.84 34 *e*P **P 21 16 40.5 +0.4**
MNTX Cornudas Mount 90.88 54 P **P 21 16 39.7 -0.9**
baz=235
MNTX Cornudas Mount 90.88 54 *e*P **P 21 16 40.1 -0.6**
KLR Kul'dur 91.26 329 P **P 21 16 40.9 -1.0**
comp=Z,1.7nm,0.7s,baz=126,slow=8.1,SNR=4.6
CNPM China Poot 91.33 12 *e*P **P 21 16 41.6 -0.5**
MFID Camas Ranch 91.45 39 *e*P **P 21 16 42.6 -0.6**
TMUT Trail Mountain 91.53 45 *e*P **P 21 16 44.1 +0.2**
B05A Bryant 91.55 33 P **P 21 16 43.3 -0.1**
baz=225
JCW Jim Creek 91.58 33 *e*P **P 21 16 44.4 +0.8**
BMO Blue Mountains 91.61 38 *e*P **P 21 16 42.9 -1.0**
BRLK Bradley Lake 91.62 13 *e*P **P 21 16 42.8 -0.6**
BBB Bella Bella 91.82 27 *e*P **P 21 16 44.5 0.0**
SRU San Rafael Swe 91.84 45 *e*P **P 21 16 45.2 0.0**
SRU San Rafael Swe 91.84 45 *e*P **P 21 16 45.2 0.0**
ANMO Albuquerque 92.00 50 P **P 21 16 44.7 -1.3**
baz=234
ANMO Albuquerque 92.00 50||*e*P **P 21 16 45.2 -0.8**
ANMO pmax pmax
comp=Z,6.0nm,1.0s
ANMO Albuquerque 92.00 50 *e*P **P 21 16 45.7 -0.3**
PV05 Paradox Valley 92.11 47 *e*P **P 21 16 46.5 -0.1**
HVU Hansel Valley 92.14 42 *e*P **P 21 16 46.1 -0.4**
HVU Hansel Valley 92.14 42 *e*P **P 21 16 46.1 -0.4**
D08A Wollman Farm, 92.26 35 *e*P **P 21 16 46.4 -0.3**
HLID Hailey 92.33 40 P **P 21 16 46.5 -0.8**
baz=230
HLID Hailey 92.33 40 *e*P **P 21 16 47.0 -0.4**
GYA Guiyang 92.56 299 P **P 21 16 50.4 +1.7**
GYA PP **PP 21 20 34.8 +4.1**
GYA SKS **SKSac 21 27 24.2 +4.3**
GYA S **ScS 21 27 54.3 +1.5**
GYA SS **SS 21 34 11.0 +7.3**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,7.6s
GYA LR LR
comp=Z,520nm,20.6s
GYA LR LR
comp=Z,480nm,21.0s
GYA LR LR
comp=Z,450nm,20.8s
RC01 Rabbit Creek A 93.06 13 *e*P **P 21 16 49.8 -0.2**
SUA Susitna One 93.22 12 *e*P **P 21 16 49.8 -1.2**
S22A 4UR Ranch, Cre 93.37 48 P **P 21 16 52.1 -0.3**
baz=234
S22A 4UR Ranch, Cre 93.37 48 *e*P **P 21 16 52.1 -0.3**
TT01 Tatalina 93.75 9 *e*P **P 21 16 52.5 -0.6**
TTA Tatalina 93.77 9 *e*P **P 21 16 53.1 -0.2**
TTA Tatalina 93.77 9 *e*P **P 21 16 53.1 -0.2**
MSTX Muleshoe 93.96 53 P **P 21 16 53.6 -1.4**
baz=236
MSTX Muleshoe 93.96 53 *e*P **P 21 16 53.9 -1.1**
MCMT McKenzie Canyo 94.01 40 *e*P **P 21 16 54.7 -0.4**
SCM Sheep Creek Mo 94.22 13 *e*P **P 21 16 54.6 -0.8**
SCM Sheep Creek Mo 94.22 13 *e*P **P 21 16 54.6 -0.8**
SDCO Great Sand Dun 94.23 49 P **P 21 16 55.4 -1.0**
baz=235
DLMT Dillon 94.48 39 *e*P **P 21 16 57.1 -0.1**
CMAR Chiang Mai Arr 94.63 288 LR LR 21 59 19.8
comp=Z,40nm,20.9s,baz=140,slow=35
PDAR Pinedale Array 94.63 43 LR LR 21 52 33.9
comp=Z,283nm,20.3s,baz=228,slow=31
CAST Castle Rocks 94.82 11 *e*P **P 21 16 56.3 -1.8**
KMI Kunming 94.89 296 P **P 21 17 00.5 +0.9**
KMI pmax pmax
comp=Z,4.0nm,0.7s
KTH Kantishna Hill 95.14 11 *e*P **P 21 16 57.1 -2.5**
TRF Thorofare Moun 95.15 11 *e*P **P 21 16 58.7 -1.1**
RND Reindeer 95.36 12 *e*P **P 21 16 59.6 -1.0**
RND Reindeer 95.36 12 *e*P **P 21 16 59.6 -1.0**
MCK McKinley 95.65 12 *e*P **P 21 17 01.1 -0.8**
MCK McKinley 95.65 12 *e*P **P 21 17 01.1 -0.8**
SEY Seymchan 95.70 346 P **P 21 17 00.1 -2.0**
comp=Z,0.9nm,0.3s,baz=9.7,slow=20,SNR=4.5
WRH Wood River Hil 96.48 12 *e*P **P 21 17 04.3 -1.3**
DOT Dot Lake 96.52 14 *e*P **P 21 17 05.5 -0.3**
CCB Clear Creek Bu 96.69 12 *e*P **P 21 17 04.4 -2.1**
HHC Hu-ho-hao-te 96.89 313 *e*P **P 21 17 09.5 +1.3**
HHC S **S 21 28 34.9 +7.0**
HHC pmax pmax
comp=Z,21nm,1.5s
HHC pmax pmax
comp=Z,41nm,4.3s
HHC LR LR
comp=Z,110nm,16.2s
HHC LR LR
comp=Z,190nm,16.2s
COLA College 96.89 12 *e*P **P 21 17 06.2 -1.2**
COLA pmax pmax
comp=Z,11nm,1.0s
MDM Murphy Dome 96.90 12 *e*P **P 21 17 06.0 -1.5**
IL1 Eielson Array 96.97 12 *e*P **P 21 17 05.8 -2.0**
ILAR Eielson Array 96.97 12 P **P 21 17 06.2 -1.6**
comp=Z,2.3nm,0.9s,baz=217,slow=5.6,SNR=17
LPAZ La Paz 97.01 113 LR LR 21 52 57.0
comp=Z,85nm,20.9s,baz=276,slow=30
CD2 Chengdu 97.04 301 *e*P **P 21 17 09.2 +0.2**
CD2 SKS **SKSac 21 27 47.5 +3.9**
CD2 S **ScS 21 28 34.4 +4.5**
CD2 sS S 21 28 37.6 +8.1
CD2 SS **SS 21 35 14.1 +6.8**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.4s
GTA Gaotai 103.95 307 *e*P **Pdif 21 17 46.9 +7.1**
GTA pP 21 17 50.2
GTA sP 21 17 52.9
WMQ Urumqi 114.02 308 *e*PKP PKPdf 21 22 16.9 +1.0
WMQ PP **PP 21 23 17.8 +6.9**
WMQ SKS **SKSdf 21 29 24.8 -0.5**
WMQ SKKS **SKKSac 21 30 01.6 -7.8**
WMQ AMB AMB
comp=Z,120nm,5.8s
WMQ LR LR
comp=Z,140nm,20.8s
WMQ LR LR
comp=Z,280nm,22.6s
WMQ LR LR
comp=Z,280nm,22.6s
MKAR Makanchi Array 118.52 310 PKP **PKPdf 21 22 22.9 -1.5**
comp=Z,3.3nm,1.0s,baz=64,slow=3.4,SNR=5.8
ZALV Zalesovo Beam 118.56 318 PKP **PKPdf 21 22 22.6 -1.5**
comp=Z,1.1nm,0.8s,baz=343,slow=2.0,SNR=3.8
KSH Kashi 121.22 301 *e*PKP **PKPdf 21 22 30.2 +0.3**
KSH *e*PP **PP 21 24 04.4 +3.3**
KSH PKS **PKSdf 21 26 05.6 -1.1**
KSH SKS **SKSdf 21 29 40.8 +1.4**
KSH SKKS **SKKSac 21 30 56.3 -1.3**
KSH AMB AMB
comp=Z,74nm,4.5s
KSH LR LR
comp=Z,83nm,5.4s
KSH LR LR
comp=Z,91nm,5.8s
KSH LR LR
comp=Z,120nm,6.1s
TKM2 Tokmak 2 122.28 304 *e*PKIKP **PKPdf 21 22 30.7 -1.3**
TKM2 Tokmak 2 122.28 304 *e*PKPdf **PKPdf 21 22 30.7 -1.3**
AAK Ala-Archa 123.01 304||*i*PKIKP **PKPdf 21 22 31.6 -1.8**
KKAR Karatay Array 125.98 304 *e*PKIKP **PKPdf 21 22 38.5 -0.3**
KKAR Karatay Array 125.98 304 *e*PKPdf **PKPdf 21 22 38.5 -0.3**
BRVK Borovoye 127.06 316||*i*PKIKP **PKPdf 21 22 39.1 -1.4**
ARU Arti 133.55 321 *i* PKIKP **PKPdf 21 22 54.6 +1.9**
ARU 21 25 20.2
GEYT Alibeck 134.66 295 PKhKP PKPpre 21 22 49.3
comp=Z,0.5nm,0.4s,baz=83,slow=1.6,SNR=2.3
GEYT PKP **PKPdf 21 22 56.5 +1.0**
comp=Z,2.1nm,0.7s,baz=90,slow=3.0,SNR=5.7
H10S3 ASCENSION HYDR 137.63 152 T T 23 58 43.4
baz=204,slow=74,SNR=34
H10S2 ASCENSION HYDR 137.63 152 T T 23 58 43.4
baz=204,slow=74,SNR=31
H10S1 ASCENSION HYDR 137.65 152 T T 23 58 43.4
baz=204,slow=74
ARCES ARCESS Array B 138.27 349 PKhKP PKPpre 21 22 54.9
comp=Z,2.3nm,0.8s,baz=24,slow=1.1,SNR=2.9
ARCES PKP **PKPdf 21 23 01.3 +0.1**
comp=Z,2.3nm,0.8s,baz=46,slow=3.5,SNR=4.9
H10N2 ASCENSION HYDR 138.72 152 T T 23 59 53.3
baz=204,slow=75,SNR=40
KLMR Klimovskoe 140.89 333 *e*PKIKP **PKPdf 21 23 03.4 -2.7**
KLMR pmax pmax
comp=Z,9.0nm,1.5s
VRH Novokhopyorsk 144.59 318 *e*PKIKP **PKPab 21 23 10.1 -1.5**
VRH pmax pmax
comp=Z,10.0nm,0.6s
MOS Moscow 144.64 327 *e*PKIKP **PKPab 21 23 09.8 -1.8**
MOS pmax pmax
comp=Z,34nm,1.2s
TBLG Delisi 144.96 301 P **PKPab 21 23 13.2 -0.2**
TBLG Delisi 144.96 301 *e*PKIKP **PKPab 21 23 13.1 -0.2**
FINES FINESS Array B 145.04 341 PKP **PKPab 21 23 11.1 -1.8**
comp=Z,15nm,0.8s,baz=56,slow=4.8,SNR=50
GUDG Gudauri 145.06 303 P **PKPab 21 23 14.1 +0.2**
GNI Garni 145.11 298*d* PKIKP **PKPab 21 23 13.7 -0.4**
GNI Garni 145.11 298 *e*PKPbc **PKPab 21 23 13.4 -0.8**
ZEI Tsey 145.43 303 *i* PKP2 **PKPbc 21 23 12.7 -2.4**
ZEI pmax pmax
comp=Z,58nm,0.6s
OBN Obninsk 145.49 327*d* PKIKP **PKPbc 21 23 13.1 -1.4**
OBN *i* 21 23 29.4
OBN *i* 21 26 33.3
OBN pmax pmax
comp=Z,73nm,1.0s
OBN MLR MLR
comp=Z,55nm,18.0s
NCK Nalchik 145.54 305⇑*i*PKIKP **PKPbc 21 23 15.3 +0.2**
GOF Gofitskoye 145.62 307⇑*e*PKIKP **PKPbc 21 23 15.3 0.0**
ONI Oni 145.79 303 P **PKPdf 21 23 16.2 +0.7**
ONI Oni 145.79 303 *e*PKIKP **PKPdf 21 23 16.1 +0.7**
AKH Akhalkalaki 145.93 301⇑*i*P **PKPdf 21 23 16.3 +0.4**
AKH Akhalkalaki 145.93 301 P **PKPdf 21 23 16.9 +1.0**
AKH Akhalkalaki 145.93 301 *e*PKP2 **PKPdf 21 23 16.9 +1.0**
KBZ Khabaz 146.00 305 PKPbc **PKPdf 21 23 15.2 -0.4**
comp=Z,5.7nm,0.9s,baz=70,slow=2.9,SNR=12
VSR Storozhevoye 146.06 319 *e*PKP2 **PKPdf 21 23 14.7 -0.8**
VSR pmax pmax
comp=Z,80nm,0.9s
KIV Kislovodsk 146.10 306 *i* PKP2 **PKPdf 21 23 16.6 +0.6**
KIV pmax pmax
comp=Z,17nm,1.1s
KIV Kislovodsk 146.10 306 *e*PKPdf **PKPdf 21 23 15.3 -0.7**
NEY Neytrino 146.21 304⇑*i*PKP2 **PKPbc 21 23 18.3 +0.9**
VSU Vasula 147.23 338*d* PKP2 **PKPdf 21 23 18.1 +0.9**
NB2 NORSAR Subarra 148.32 353 PKP **PKPdf 21 23 20.1 +1.0**
comp=Z,25nm,1.0s,baz=9.7,slow=3.0
NOA NORSAR Array B 148.32 353 PKPbc **PKPdf 21 23 20.9 +1.8**
comp=Z,11nm,0.9s,baz=14,slow=4.4,SNR=27
ANN Anapa 149.53 309 *i* PKHKP PKPpre 21 23 23.5
ANN *e* 21 23 30.2
ANN *e* 21 26 57.3
ANN *e*SS SS 21 46 01.7 -9.4
ANN pmax pmax
comp=Z,57nm,1.8s
MICGM Minsk 149.76 332 *e* **PKPdf 21 23 25.0 +3.5**
MNK Minsk 149.76 332 *e*PKP2 **PKPdf 21 23 25.0 +3.5**
KONO Kongsberg 149.84 354||*i*PKP2 **PKPdf 21 23 24.8 +3.3**
KONO pmax pmax
comp=Z,198nm,1.7s
NACGM Naroch 149.91 333 *e* **PKPdf 21 23 25.0 +3.3**
AKASG Malin Array Be 151.68 325 PKPbc **PKPbc 21 23 29.6 -1.3**
comp=Z,14nm,0.8s,baz=46,slow=2.7,SNR=38
AKASG PKPab **PKiKP 21 23 35.5 +4.2**
comp=Z,2.6nm,0.6s,baz=51,slow=2.6,SNR=5.6
KIEV Kiev 151.69 325*d* iPKIKP **PKPbc 21 23 29.6 -1.3**
SIM Simferopol' 151.70 311 *i* PKIKP **PKPbc 21 23 31.4 +0.2**
SIM pmax pmax
comp=Z,14nm,0.8s
SUW Suwalki 151.96 335 *e*PKP **PKPbc 21 23 30.5 -0.9**
SUW Suwalki 151.96 335 *e*PKIKP **PKPbc 21 23 30.5 -0.9**
BRTR Keskin Array B 153.61 300 PKPbc **PKPbc 21 23 34.7 -1.1**
comp=Z,2.8nm,1.0s,baz=116,slow=2.9,SNR=11
BRTR PKPab **PKPab 21 23 45.2 -3.3**
comp=Z,1.3nm,0.8s,baz=111,slow=2.8,SNR=5.1
SORM Soroca 153.67 321||*i*P **PKPdf 21 23 32.7 +5.1**
SORM Soroca 153.67 321||PKIKP **PKPdf 21 23 32.7 +5.1**
LVV L'vov 154.76 328 *e*PKP2 **PKPab 21 23 49.5 -3.3**
KWP Kalwaria Pacla 155.49 329 *e*PKP **PKPab 21 23 55.0 -1.0**
KWP Kalwaria Pacla 155.49 329 *e*PKP2 **PKPab 21 23 55.0 -1.0**
TESR Tescani 155.55 320||*i*P **PKPab 21 23 54.6 -1.7**
BURAR Bucovina Array 155.66 323||*i*P PKPab 21 23 46.6 -10
TLB Topalu 155.75 314⇑*i*P **PKPab 21 23 55.5 -1.7**
TLB Topalu 155.75 314⇑PKP2 **PKPab 21 23 55.5 -1.7**
VRI Vrincioaia 155.87 318||*i*P **PKPab 21 23 56.7 -1.0**
VRI Vrincioaia 155.87 318||PKP2 **PKPab 21 23 56.7 -1.0**
PLOR Plostina 155.93 318⇑*i*P **PKPab 21 23 51.9 -6.1**
PLOR Plostina 155.93 318⇑PKP2 **PKPab 21 23 51.9 -6.1**
KOLS Kolonicke sedl 156.20 329 *e*PKIKP **PKPdf 21 23 32.0 +0.9**
KOLS *e* 21 23 57.8
KOLS Kolonicke sedl 156.20 329 *e*PKP **PKPdf 21 23 32.0 +0.9**
KOLS *e* 21 23 57.8
STHS Stebnicka Huta 156.29 331 *e*PKP2 **PKPab 21 23 57.1 -2.3**
STHS Stebnicka Huta 156.29 331 *e*PKP **PKPab 21 23 57.1 -2.3**
CRVS Cervenica-Dubn 156.58 330 *e*PKIKP **PKPdf 21 23 30.8 -0.8**
CRVS Cervenica-Dubn 156.58 330 *e*PKP **PKPdf 21 23 30.8 -0.8**
CRVS *e* 21 23 59.7
DOPR Dopca 156.58 320||*i*P **PKPab 21 23 59.0 -1.8**
KSP Ksiaz 156.93 339 *e*PKP **PKPab 21 24 00.0 -2.0**
KSP Ksiaz 156.93 339 *e*PKP2 **PKPab 21 24 00.0 -2.0**
VOIR 157.08 319⇑*i*P **PKPab 21 23 56.1 -6.9**
VOIR 157.08 319⇑PKP2 **PKPab 21 23 56.1 -6.9**
VOIR 157.08 319⇑*i*P **PKPab 21 23 56.1 -6.9**
CJR Cluj-Napoca 157.09 323⇑*i*P **PKPdf 21 23 29.6 -2.8**
CJR Cluj-Napoca 157.09 323⇑PKIKP **PKPdf 21 23 29.6 -2.8**
OKC Ostrava-Krasne 157.17 335 *e*PKPAB **PKPab 21 24 02.1 -1.0**
OKC Ostrava-Krasne 157.17 335||*e*PKP2 **PKPab 21 24 02.1 -1.0**
KECS Kecovo 157.32 330 *e*PKP2 **PKPab 21 24 02.8 -1.0**
KECS Kecovo 157.32 330 *e*PKP **PKPab 21 24 02.8 -1.0**
DPC Dobruska-Polom 157.35 339 *e*PKPAB **PKPab 21 24 03.5 -0.4**
DPC *ex* x 21 24 23.1
DPC Dobruska-Polom 157.35 339 *e*PKP2 **PKPab 21 24 03.5 -0.4**
ARR Arges 157.36 319||*i*P PKPab 21 23 55.5 -8.7
ARR Arges 157.36 319||*i*P PKPab 21 23 55.5 -8.7
CLL Collm 157.39 345 *e*PKPdiff PKPdf 21 23 42.0 +9.5
CLL ||*i*PKPab **PKPab 21 24 01.8 -2.2**
comp=Z,11nm,1.0s
CLL LmV 21 29 00.0
comp=Z,100nm,21.3s
CLL LmV 22 37 00.0
comp=Z,100nm,21.6s
CLL Collm 157.39 345||*e*PKIKP PKPdf 21 23 42.0 +9.5
CLL *i* 21 24 01.8
CLL pmax pmax
comp=Z,11nm,1.0s
MORC Moravsky Berou 157.44 336||*i*P PKPab 21 23 56.6 -7.7
MORC Moravsky Berou 157.44 336||PKP2 PKPab 21 23 56.6 -7.7
DRGR 157.49 324||*i*P **PKPab 21 23 58.1 -6.6**
DRGR 157.49 324||PKP2 **PKPab 21 23 58.1 -6.6**
BRG Berggiesshubel 157.56 343 *e*PKP PKPdf 21 23 42.4 +10
comp=Z,6.4nm,1.3s
BRG *e* 21 24 03.1
comp=Z,15nm,1.4s
PVCC Panska Ves 157.71 342 *e*PKPAB **PKPab 21 24 04.5 -0.9**
PVCC Panska Ves 157.71 342 *e*PKP2 **PKPab 21 24 04.5 -0.9**
LOT Lotru 157.80 320||*i*P **PKPab 21 24 04.1 -2.1**
VYHS Vyhne 158.00 332 *e*PKP2 **PKPab 21 24 05.3 -1.5**
VYHS Vyhne 158.00 332 *e*PKP **PKPab 21 24 05.3 -1.5**
VRAC Vranov 158.16 337||*i*P **PKPab 21 24 05.8 -1.6**
VRAC Vranov 158.16 337||PKP2 **PKPab 21 24 05.8 -1.6**
VRAC Vranov 158.16 337||*i*P **PKPab 21 24 05.8 -1.6**
VRAC Vranov 158.16 337 *e*PKIKP **PKPab 21 24 06.7 -0.7**
GOPC GO Pecny, Ondr 158.20 341 *e*PKPAB **PKPab 21 24 06.8 -0.8**
GOPC AMS AMS 22 35 50.0
comp=Z,100nm,19.9s
GOPC GO Pecny, Ondr 158.20 341 *e*PKP2 **PKPab 21 24 06.8 -0.8**
GOPC MLR MLR
comp=Z,100nm,19.9s
PRU Pruhonice 158.20 341 *e*PKPAB **PKPab 21 24 06.8 -0.7**
PRU AMS AMS 22 35 30.0
comp=Z,100nm,17.5s
PRU Pruhonice 158.20 341 *e*PKP2 **PKPab 21 24 06.8 -0.7**
PRU MLR MLR
comp=Z,100nm,17.5s
NKC Novy Kostel 158.52 345 *e*PKPAB **PKPab 21 24 07.6 -1.3**
NKC Novy Kostel 158.52 345 *e*PKP2 **PKPab 21 24 07.6 -1.3**
SMOL Smolenice 158.53 335 *e*PKP2 **PKPab 21 24 09.3 +0.3**
SMOL Smolenice 158.53 335 *e*PKP **PKPab 21 24 09.3 +0.3**
KHC Kasperske Hory 159.25 342 *e*PKPAB **PKPab 21 24 11.4 -0.8**
KHC *ex* x 21 24 30.5
KHC Kasperske Hory 159.25 342 *e*PKP2 **PKPab 21 24 11.4 -0.8**
GERES GERESS Array B 159.47 341 PKPab **PKPab 21 24 12.2 -1.0**
comp=Z,0.9nm,0.8s,baz=39,slow=5.1,SNR=6.8
CONA Conrad Observa 159.59 336 *i* PKPab **PKPab 21 24 11.5 -2.3**
comp=Z,12nm,1.6s
MOA Molln 160.19 339 *i* PKPab **PKPab 21 24 15.7 -0.6**
comp=Z,7.2nm,1.2s
ARSA Arzberg 160.29 336 *i* PKPab **PKPab 21 24 15.8 -1.0**
comp=Z,2.9nm,1.0s
SOKA Soboth 160.95 336 *i* PKPab **PKPab 21 24 17.7 -2.0**
comp=Z,9.7nm,1.5s
KBA Koelnbreinsper 161.17 339 *i* PKPab **PKPab 21 24 19.2 -1.5**
comp=Z,5.1nm,1.4s
SKO Skopje 161.22 315 *e*PKP **PKPab 21 24 20.8 -0.3**
OBKA Obir 161.27 336 *i* PKPab **PKPab 21 24 20.0 -1.1**
comp=Z,7.4nm,1.7s
WATA Walderalm 161.43 343 *i* PKPab **PKPab 21 24 19.8 -2.0**
comp=Z,10nm,1.2s
MYKA Terra Mystica 161.47 338 *i* PKPab **PKPab 21 24 20.3 -1.7**
comp=Z,6.3nm,1.1s
WTTA Wattenberg 161.48 343 *i* PKPab **PKPab 21 24 22.1 0.0**
comp=Z,13nm,1.8s
RETA Reutte 161.48 345 *i* PKPab **PKPab 21 24 20.4 -1.6**
comp=Z,11nm,1.4s
MOTA Moosalm 161.53 344 *i* PKPab **PKPab 21 24 21.4 -0.9**
comp=Z,7.8nm,1.1s
ABTA Abfaltersbach 161.71 340 *i* PKPab **PKPab 21 24 21.7 -1.4**
comp=Z,6.2nm,1.1s
FETA Feichten 161.93 344 *i* PKPab **PKPab 21 24 22.7 -1.4**
comp=Z,6.1nm,1.3s
TORD Torodi Ar. Bea 163.36 173 PKP **PKPdf 21 23 39.1 -1.1**
comp=Z,0.8nm,0.8s,baz=207,slow=1.6,SNR=4.2
TORD PKPab **PKPab 21 24 30.9 +0.1**
comp=Z,7.9nm,0.9s,baz=188,slow=4.6,SNR=27
ESDC Sonseca Array 168.25 31 PKPab **PKPab 21 24 50.0 -2.0**
comp=Z,1.1nm,0.8s,baz=303,slow=4.9,SNR=4.6

CSEM ***07*** *21:07:04.2, 42°.85N × 12°.70E, h10km, MD1.6/4*
ROM 07 21:07:04.2±0.2, **42°.85N**×**12°.70E, h10**km±1km, **Md1.6**/4,
Ml0.8/3, **Error ellipse: s-maj=3.3km s-min=1.5km**
az=108.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CESI	**CESI - Serrava**	**0.21**	**44**	Pg	Pb	21 07 09.5	-0.7
CESI				Sg	Sg	21 07 13.1	+1.4
CESI	**CESI - Serrava**	**0.21**	**44**	Pg	Pb	21 07 09.5	-0.7
CESI				Sg	Sg	21 07 13.1	+1.4
NRCA	**Norcia**	**0.30**	**93**	Pg	Pg	21 07 10.8	+0.5
NRCA				Sg	Sb	21 07 15.7	-1.1
	16nm,0.1s						
NRCA	**Norcia**	**0.30**	**93**	Pg	Pg	21 07 10.8	+0.5
NRCA				Sg	Sb	21 07 15.7	-1.1
	16nm,0.1s						
FDMO	**Fiordimonte**	**0.34**	**57**	Pg	Pg	21 07 11.5	+0.6
FDMO				Sg	Sb	21 07 17.0	-0.8
	5.0nm,0.1s						
FDMO	**Fiordimonte**	**0.34**	**57**	Pg	Pg	21 07 11.5	+0.6
FDMO				Sg	Sb	21 07 17.0	-0.8
	5.0nm,0.1s						
LNSS	**Leonessa**	**0.35**	**135**	Pg	Pg	21 07 11.7	+0.5
LNSS				Sg	Sb	21 07 17.5	-0.7
	7.0nm,0.3s						

LNSS	**Leonessa**	**0.35 135**	Pg	Pg	21 07 11.7	+0.5
LNSS			Sg	Sb	21 07 17.5	-0.7
	7.0nm,0.3s					

IDC 07 21:09:21.7±1.3, 29°03'S×175°94'W, h0km, Error ellipse: s-maj=55.3km s-min=28.7km az=171.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.74**	**262**	Pn	Pn	21 09 53.8	+0.6
	220nm,0.3s,baz=77,slow=11,SNR=5.3						
RAO				Sn	Sn	21 10 16.2	+0.1
	307nm,0.3s,baz=261,slow=23,SNR=4.6						
FINES	**FINESS Array B**	**144.43**	**342**	PKP	PKPbc	21 28 57.6	-0.1
	2.8nm,0.7s,baz=44,slow=2.6,SNR=12						
NB2	**NORSAR Subarra**	**147.63**	**353**	PKP	PKPbc	21 29 07.3	-0.2
	comp=Z,1.0nm,0.6s,baz=8.7,slow=2.9						
NOA	**NORSAR Array B**	**147.63**	**353**	PKPbc	PKPbc	21 29 07.4	-0.1
	comp=Z,1.9nm,0.8s,baz=14,slow=4.4,SNR=7.5						
AKASG	**Malin Array Be**	**151.23**	**326**	PKPbc	PKPbc	21 29 16.3	-0.5
	comp=Z,0.3nm,0.3s,baz=40,slow=2.1,SNR=4.2						
TORD	**Torodi Ar. Bea**	**164.05**	**172**	PKPab	PKPab	21 30 20.0	-0.6
	comp=Z,0.4nm,0.7s,baz=203,slow=3.4,SNR=3.9						

*IDC **07** 21:09:36.8±3.3, 7°42S×128°22E, h115km±31km, mb4.0/13, mb1 4.1/16, mb1mx4.0/39, mbtmp4.5/16, Error ellipse: s-maj=30.8km s-min=12.1km az=76.0*

*ISCJB **07** 21:09:38.4±0.3, 7°47S±0°04×128°42E±0°05, h151km, mb4.3/19, Error ellipse: s-maj=6.4km s-min=5.5km az=20.1*

*NEIC **07** 21:09:39.1±1.0, 7°50S×128°38E, h139km±10km, mb4.6/7, Error ellipse: s-maj=12.4km s-min=8.3km az=70.0*

*DJA **07** 21:09:41.7±0.2, 8°S±3°×12°8E±°, h162km±5km, M4.6/14, mb4.5/14, mB5.0/6, MLv4.8/10, Mw(mB)4.3/6*

ISC 07 21:09:39.7±0.4, 7°67S±0°05×128°38E±0°06, h151km, n53, σ2s26/60, mb4.2/19, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**2.91**	**96**	P	**Pn**	**21 10 29.0**	**+3.0**
BNDI	**Bandanaira**	**3.47**	**26**	P	**Pn**	**21 10 35.8**	**+2.6**
MSAI	**Masohi**	**4.33**	**7**	P	**Pn**	**21 10 47.2**	**+2.9**
SOEI	**Soe**	**4.56**	**243**	P	**Pn**	**21 10 49.5**	**+1.9**
SOEI	**Soe**	**4.56**	**243**	*e*Pn	**Pn**	**21 10 49.0**	**+1.4**
SOEI				*e*Sn	**Sn**	**21 11 41.7**	**+1.3**
NLAI	**Namlea**	**4.58**	**344**	P	**Pn**	**21 10 50.3**	**+2.6**
BATI	**Baumata**	**5.30**	**241**	P	**Pn**	**21 10 59.4**	**+2.2**
SANI	**Sanana**	**6.07**	**337**	P	**Pn**	**21 11 09.3**	**+1.9**
	63nm,0.9s,842nm0.2nm						
FAKI	**Fak Fak**	**6.09**	**39**	P	**Pn**	**21 11 09.9**	**+2.2**
FAKI	**Fak Fak**	**6.09**	**39**	*e*Pn	**Pn**	**21 11 05.4**	**-2.3**
	36nm,0.6s						
FAKI				*e*Sn	**Sn**	**21 12 12.1**	**-4.4**
MMRI	**Maumere**	**6.16**	**261**	P	**Pn**	**21 11 10.7**	**+2.1**
EDFI	**Ende, Flores**	**6.71**	**260**	P	**Pn**	**21 11 17.9**	**+1.9**
LBMI	**Labuha**	**7.04**	**353**	P	**Pn**	**21 11 23.2**	**+2.9**
	70nm,0.9s,0.3nm						
FITZ	**Fitzroy Crossi**	**10.71**	**194**	P	**Pn**	**21 12 07.9**	**-1.2**
	1.0nm,0.3s,baz=27,slow=11,SNR=33						
FITZ				S	**Sn**	**21 14 02.9**	**-4.8**
	7.9nm,0.3s,baz=77,slow=12,SNR=10						
FITZ	**Fitzroy Crossi**	**10.71**	**194**	*e*Pn	**Pn**	**21 12 08.1**	**-1.1**
FITZ				*e*Sn	**Sn**	**21 14 03.3**	**-4.4**
WRA	**Warramunga Arr**	**13.50**	**155**	P	**Pn**	**21 12 45.6**	**+0.2**
	2.5nm,0.3s,baz=327,slow=13,SNR=39						
WRA				S	**Sn**	**21 15 09.1**	**-5.8**
	3.2nm,0.3s,baz=327,slow=22,SNR=9.2						
BBKI	**Banjar Baru**	**14.11**	**286**	P	**P**	**21 12 55.2**	**-0.9**
ASAR	**Alice Springs**	**16.77**	**162**	P	**Pn**	**21 13 29.4**	**+3.6**
	2.0nm,0.3s,baz=341,slow=11,SNR=118						
ASAR				S	**S**	**21 16 28.9**	**-3.4**
	1.1nm,0.3s,baz=350,slow=28,SNR=4.7						
KKM	**Kota Kinabalu**	**18.24**	**318**	*e*P	**P**	**21 13 41.2**	**-0.6**
	18nm,0.9s						
STKI	**Sintang**	**18.52**	**294**	P	**P**	**21 13 45.7**	**+0.9**
	38nm,1.0s,4μm						
PMG	**Port Moresby**	**18.65**	**97**	P	**Pn**	**21 13 53.7**	**+5.4**
	0.5nm,0.3s,baz=300,slow=21,SNR=3.7						
KSM	**Kuching**	**20.18**	**296**	*e*P	**P**	**21 14 02.7**	**0.0**
	48nm,0.9s						
CTAO	**Charters Tower**	**21.27**	**127**	*e*P	**P**	**21 14 15.3**	**+1.0**
	14nm,0.8s						
PPBI	**Pangkal Pinang**	**22.82**	**283**	P	**P**	**21 14 29.8**	**-0.1**
	30nm,1.3s						
TGY	**Tagaytay City**	**22.86**	**341**	P	**P**	**21 14 30.8**	**+0.6**
	104nm,0.4s,baz=292,slow=9.4,SNR=3.9						
STKA	**Stephens Creek**	**27.05**	**155**	P	**P**	**21 15 11.3**	**+3.3**
	1.4nm,0.4s,baz=332,slow=8.9,SNR=6.8						
CMAR	**Chiang Mai Arr**	**38.95**	**312**	P	**P**	**21 16 50.8**	**-0.5**
	1.7nm,0.9s,baz=144,slow=6.8,SNR=9.9						
CHTO	**Chiang Mai**	**39.18**	**313**	*e*P	**P**	**21 16 53.1**	**-0.1**
KSAR	**Wonju Array Be**	**44.88**	**359**	P	**P**	**21 17 39.1**	**+0.1**
KSRS	**Korea Array**	**44.89**	**359**	P	**P**	**21 17 39.1**	**0.0**
	1.2nm,0.5s,baz=176,slow=10,SNR=4.9						
MJAR	**Matsushiro Arr**	**44.93**	**11**	P	**P**	**21 17 38.5**	**-1.1**
	1.5nm,0.7s,baz=187,slow=9.6,SNR=3.6						
LSA	**Lhasa**	**51.59**	**318**	*e*P	**P**	**21 18 30.8**	**-0.5**
	5.7nm,0.8s						
USRK	**Ussuriysk Ar.**	**51.73**	**3**	P	**P**	**21 18 30.9**	**-0.6**
	2.3nm,0.6s,baz=181,slow=6.5,SNR=9.2						
RAMN	**Ramite**	**53.13**	**312**	*e*P	**P**	**21 18 41.4**	**-1.0**
	19nm,0.6s						
GTA	**Gaotai**	**53.80**	**333**	*e*P	**P**	**21 18 45.8**	**-1.2**
GTA				pP	pP	21 18 49.8	-32
GTA				sP	sP	21 18 52.4	-46
GTA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GUN	**Gumba**	**54.20**	**313**	*e*P	**P**	**21 18 48.6**	**-1.7**
PKIN	**Phulchoki**	**54.37**	**312**	*e*P	**P**	**21 18 49.3**	**-2.2**
GKN	**Gorkha**	**55.16**	**312**	*e*P	**P**	**21 18 55.6**	**-1.4**
	comp=Z,10.0nm,0.4s						
KOLN	**Koldanda**	**55.81**	**311**	*e*P	**P**	**21 19 00.4**	**-1.3**
	comp=Z,16nm,0.8s						
PYUN	**Piuthan**	**56.44**	**311**	*e*P	**P**	**21 19 04.8**	**-1.4**
	comp=Z,38nm,1.0s						
SONM	**Songino Array**	**58.58**	**343**	P	**P**	**21 19 20.6**	**-0.2**
	comp=Z,3.8nm,1.1s,baz=170,slow=8.1,SNR=9.4						
MKAR	**Makanchi Array**	**67.92**	**328**	P	**P**	**21 20 21.3**	**-0.8**
	comp=Z,2.0nm,0.8s,baz=116,slow=8.2,SNR=9.0						
YAK	**Yakutsk**	**69.50**	**1**	P	**P**	**21 20 30.6**	**-0.9**
	comp=Z,7.8nm,0.3s,baz=25,slow=1.9,SNR=6.9						
ZALV	**Zalesovo Beam**	**71.48**	**335**	P	**P**	**21 20 42.3**	**-1.4**
	comp=Z,7.6nm,0.8s,baz=108,slow=4.8,SNR=24						
VNDA	**Vanda**	**71.99**	**173**	P	**P**	**21 20 50.1**	**+3.7**
	comp=Z,0.5nm,0.4s,baz=92,slow=16,SNR=9.8						
KURK	**Kurchatov**	**72.26**	**329**	*e*P	**P**	**21 20 47.9**	**-0.5**
	comp=Z,73nm,0.8s						
SEY	**Seymchan**	**72.76**	**11**	P	**P**	**21 20 50.5**	**-0.7**
	comp=Z,3.6nm,0.7s,baz=201,slow=5.2,SNR=13						
NRIK	**Noril'sk**	**81.82**	**346**	P	**P**	**21 21 40.8**	**-0.6**
	comp=Z,3.2nm,0.6s,baz=134,slow=5.9,SNR=5.0						
ARU	**Arti**	**85.42**	**328**	P	**P**	**21 21 58.6**	**-1.5**
	comp=Z,5.4nm,0.8s,baz=109,slow=1.7,SNR=9.3						
ARU	**Arti**	**85.42**	**328**	*e*P	**P**	**21 21 58.5**	**-1.6**
	comp=Z,12nm,1.3s						
TORD	**Torodi Ar. Bea**	**127.36**	**281**	PKP	**PKPdf**	**21 28 27.4**	**-0.1**
	comp=Z,0.8nm,0.8s,baz=1.5,slow=2.8,SNR=4.6						
CPUP	**Villa Florida**	**145.75**	**171**	PKPbc	**PKPab**	**21 29 03.0**	**+0.7**
	comp=Z,0.7nm,0.4s,baz=352,slow=5.4,SNR=4.1						
LPAZ	**La Paz**	**151.13**	**146**	PKPbc	**PKPbc**	**21 29 18.5**	**+1.7**
	comp=Z,2.0nm,0.3s,baz=66,slow=3.4,SNR=10						
LPAZ				PKPab	**PKPab**	**21 29 27.6**	**+2.7**
	comp=Z,1.8nm,0.6s,baz=89,slow=1.8,SNR=4.4						

*NIED **07** 21:10:00, 35°70N×140°20E, h53km, Mw4.1 Best double couple: M0 1.56000×10^15 NP1:φs159.00000°, δ37.00000°, λ65.00000°. NP2:φs10.00000°, δ57.00000°, λ108.00000°.*

*IDC **07** 21:10:51.0±2.3, 35°71N×140°56E, h54km±20km, mb3.8/12, mb1 4.0/17, mb1mx3.7/56, mbtmp4.1/17, ML3.7/4, MS2.7/3, Ms1 2.7/3, ms1mx2.5/38, Error ellipse: s-maj=26.8km s-min=11.2km az=77.0*

*ISCJB **07** 21:10:52.1±0.5, 35°69N±0°04×140°26E±0°07, h74km±3km, mb4.1/18, Error ellipse: s-maj=10.3km s-min=5.4km az=163.1*

*JMA **07** 21:10:52.4±0.2, 35°74N×140°21E, h68km±2km, M3.3 Broadband fault plane solution: P waves. NP1: φs20.00000°, δ90.00000°, λ90.00000°. NP2:φs290.00000°, δ1.00000°, λ179.00000°. Principal axes: T Plg45.0000°, Azm288.0000°; N Plg1.0000°, Azm20.0000°; P Plg45.0000°, Azm111.0000°;*

JMA Felt I J1.

*NEIC **07** 21:10:53.6±0.7, 35°67N×140°25E, h71km±6km, mb4.3/5 Error ellipse: s-maj=9.5km s-min=7.3km az=106.0*

ISC 07 21:10:53.2±0.8, 35°71N±0°05×140°28E±0°09, h70km±7km, n44, σ1s08/43, mb4.2/18, 2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.29**	**192**	⇓P	**Pn**	**21 11 04.1**	**-0.3**
JCN				S	**Sn**	**21 11 13.0**	**+0.5**
TOK	**Tokyo**	**0.42**	**267**	P	**Pn**	**21 11 04.9**	**-0.4**
TOK				S	**Sn**	**21 11 13.9**	**-0.2**
BSO3	**Boso 3**	**0.92**	**168**	P	**Pn**	**21 11 10.1**	**-0.4**
JAG	**Ashikaga**	**0.98**	**317**	⇓P	**Pn**	**21 11 10.4**	**-1.1**
JAG				*e*S	**Sn**	**21 11 23.5**	**-1.5**
MJAR	**Matsushiro Arr**	**1.87**	**297**	P	**Pn**	**21 11 22.4**	**-0.7**
	50nm,0.3s,baz=100,slow=15,SNR=345						
MJAR				LR	LR	21 12 05.3	
	comp=Z,141nm,20.7s,baz=110,slow=36						
MAJO	**Matsushiro**	**1.87**	**297**	*e*Pn	**Pn**	**21 11 23.1**	**-0.1**
MAT	**Matsushiro**	**1.87**	**297**	P	**Pn**	**21 11 22.7**	**-0.5**
MAT				S	**Sn**	**21 11 43.7**	**-2.2**
JHJ	**Hachijo jima 2**	**2.61**	**189**	P	**Pn**	**21 11 32.4**	**-0.8**
	97nm,0.3s,baz=94,slow=2.9,SNR=28						
JHJ				S	**Sn**	**21 12 02.6**	**-1.3**
	106nm,0.3s,baz=109,slow=23,SNR=9.0						
JHJ2	**Mitsune**	**2.62**	**188**	*e*Pn	**Pn**	**21 11 32.5**	**-0.7**
JHJ2				*e*Sn	**Sn**	**21 12 02.9**	**-1.0**
ERM	**Erimo**	**6.69**	**19**	*e*Pn	**Pn**	**21 12 29.5**	**+0.8**
JNU	**Nakatsue**	**8.18**	**254**	P	**Pn**	**21 12 49.8**	**+0.5**
	0.4nm,0.3s,baz=6.3,slow=9.2,SNR=3.0						
JNU				LR	LR	21 16 36.8	
	comp=Z,41nm,18.7s,baz=301,slow=41						
ASAJ	**Asahikawa**	**8.59**	**11**	P	**Pn**	**21 12 56.7**	**+2.0**
	baz=208,slow=7.5						
KSRS	**Korea Array**	**10.09**	**284**	P	**Pn**	**21 13 17.6**	**+2.4**
	0.4nm,0.3s,baz=98,slow=14,SNR=10						
KSRS				LR	LR	21 16 51.6	
	comp=Z,62nm,20.4s,baz=60,slow=35						
KSAR	**Wonju Array Be**	**10.12**	**283**	P	**Pn**	**21 13 17.6**	**+2.0**
USRK	**Ussuriysk Ar.**	**10.60**	**326**	P	**Pn**	**21 13 23.1**	**+1.0**
	0.1nm,0.3s,baz=152,slow=11,SNR=10						
MDJ	**Mudanjiang**	**12.07**	**321**	*e*Pn	**Pn**	**21 13 42.2**	**0.0**
ENH	**Enshi**	**26.33**	**267**	*e*P	**P**	**21 16 21.6**	**-1.0**
	2.8nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**28.31**	**117**	T	T	21 46 40.5	
	baz=308,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy**	**28.32**	**117**	T	T	21 46 26.8	
	baz=308,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**28.33**	**117**	T	T	21 46 30.8	
	baz=308,slow=75,SNR=17						
H11S1	**WAKE ISLAND Hy**	**28.96**	**119**	T	T	21 46 59.8	
	baz=312,slow=75,SNR=11						
H11S3	**WAKE ISLAND Hy**	**28.96**	**119**	T	T	21 46 52.7	
	baz=312,slow=75,SNR=9.0						
H11S2	**WAKE ISLAND Hy**	**28.98**	**119**	T	T	21 46 57.4	
	baz=312,slow=75,SNR=6.7						
ZALV	**Zalesovo Beam**	**42.15**	**313**	PcP	**PcP**	**21 20 32.1**	**+0.4**
	1.3nm,0.5s,baz=118,slow=2.2,SNR=6.0						
MKAR	**Makanchi Array**	**44.06**	**303**	P	**P**	**21 18 54.5**	**+0.4**
	1.9nm,0.8s,baz=94,slow=10,SNR=12						
KURK	**Kurchatov**	**46.04**	**309**	*e*P	**P**	**21 19 09.8**	**+0.1**
	45nm,0.8s						
AAK	**Ala-Archa**	**50.32**	**299**	*e*P	**P**	**21 19 44.1**	**+1.1**
	1.3nm,0.5s						
ILAR	**Eielson Array**	**51.10**	**32**	P	**P**	**21 19 47.4**	**-1.0**
	0.4nm,0.6s,baz=266,slow=6.3,SNR=4.9						
WRA	**Warramunga Arr**	**55.63**	**187**	P	**P**	**21 20 21.3**	**-0.7**
	3.0nm,0.6s,baz=2.5,slow=7.5,SNR=4.8						
ARU	**Arti**	**56.75**	**319**	P	**P**	**21 20 29.9**	**+0.3**
	2.8nm,0.4s,baz=99,slow=3.4,SNR=8.3						
ARU	**Arti**	**56.75**	**319**	*e*P	**P**	**21 20 29.8**	**+0.2**
	3.6nm,0.8s						
ABKAR	**Akbulak array**	**58.10**	**310**	*e*P	**P**	**21 20 39.2**	**0.0**
	1.0nm,0.4s						
ASAR	**Alice Springs**	**59.36**	**187**	P	**P**	**21 20 49.4**	**+1.2**
	1.2nm,0.8s,baz=8.5,slow=7.5,SNR=3.0						
ARCES	**ARCESS Array B**	**64.91**	**339**	P	**P**	**21 21 25.4**	**+0.5**
	0.7nm,0.7s,baz=55,slow=7.8,SNR=4.4						
FINES	**FINESS Array B**	**69.56**	**332**	P	**P**	**21 21 54.7**	**+0.4**
	2.2nm,0.9s,baz=64,slow=8.7,SNR=11						
KBZ	**Khabaz**	**71.07**	**311**	P	**P**	**21 22 04.4**	**+0.6**
	2.5nm,0.8s,baz=40,slow=5.3,SNR=5.7						
KIV	**Kislovodsk**	**71.08**	**311**	*e*P	**P**	**21 22 04.3**	**+0.3**
	6.3nm,1.0s						
AKASG	**Malin Array Be**	**74.78**	**322**	P	**P**	**21 22 25.7**	**+0.1**
	1.7nm,0.5s,baz=47,slow=6.5,SNR=9.1						
NB2	**NORSAR Subarra**	**75.05**	**337**	P	**P**	**21 22 27.5**	**+0.5**
	comp=Z,0.7nm,0.5s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**75.05**	**337**	P	**P**	**21 22 27.6**	**+0.5**
	comp=Z,2.5nm,1.0s,baz=41,slow=5.8,SNR=5.8						
BRTR	**Keskin Array B**	**79.04**	**311**	P	**P**	**21 22 49.5**	**-0.4**
	comp=Z,1.0nm,0.8s,baz=55,slow=4.2,SNR=5.5						
PDAR	**Pinedale Array**	**79.25**	**45**	P	**P**	**21 22 48.6**	**-2.6**
	comp=Z,0.4nm,0.3s,baz=41,slow=0.6,SNR=7.5						
ULM	**Lac du Bonnet**	**81.11**	**33**	LR	LR	22 00 33.3	
	comp=Z,149nm,19.6s,baz=248,slow=37						
TXAR	**Lajitas Array**	**91.66**	**52**	P	**P**	**21 23 54.6**	**+1.5**
	comp=Z,0.4nm,0.7s,baz=304,slow=4.9,SNR=4.4						

GUC 07 21:15:39.4±0.5, 34°19S×72°27W, h37km±3km, ML3.3, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.30**	**132**	*e*P	Pn	21 15 47.5	-0.1
CHPI				*i* S	Sn	21 15 54.0	-0.7
NICH	**Los Niches**	**1.18**	**134**	*e*P	Pn	21 16 00.9	+1.6
NICH				*i* S	Sn	21 16 17.2	+3.0
ANTU	**Antumapu**	**1.50**	**66**	*i* S	Sn	21 16 26.0	+4.0
ROCH	**El Roble**	**1.61**	**41**	*e*P	Pn	21 16 07.7	+2.2
ROCH				*i* S	Sn	21 16 28.9	+3.9
ROCH				IAML		21 16 37.4	
	comp=N,484nm,0.6s						
CLCH	**Cerro Calan**	**1.65**	**62**	*e*P	Pn	21 16 08.4	+2.5
CLCH				*e*S	Sn	21 16 30.5	+4.8
CLCH				IAML		21 16 38.4	
	comp=N,644nm,0.8s						
PEL	**Peldehue**	**1.68**	**52**	*e*P	Pn	21 16 09.0	+2.7
PEL				*i* S	Sn	21 16 31.0	+4.4
PEL				IAML		21 16 40.8	
	comp=E,482nm,0.3s						
FCH	**Farellones**	**1.86**	**63**	*e*P	Pn	21 16 12.1	+3.1
FCH				*e*S	Sn	21 16 36.7	+5.3
FCH				IAML		21 16 43.7	
	comp=N,490nm,0.3s						

IDC 07 21:18:47.1±4.8, 28°27S×176°76W, h0km, mb3.7/2, mb1 3.9/2, mb1mx3.6/22, mbtmp3.7/2, Error ellipse: s-maj=108.9km s-min=33.7km az=119.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.41**	**226**	Pn	Pg	21 19 14.2	0.0
	156nm,0.3s,baz=81,slow=23,SNR=4.4						
RAO				Sn	Sb	21 19 33.1	+0.2
	749nm,0.3s,baz=105,slow=23,SNR=10						
ASAR	**Alice Springs**	**44.35**	**264**	P	P	21 26 59.1	-0.3
	0.5nm,0.7s,baz=105,slow=7.6,SNR=9.3						
WRA	**Warramunga Arr**	**45.15**	**269**	P	P	21 27 06.2	+0.4
	1.2nm,0.8s,baz=108,slow=7.9,SNR=6.8						
FINES	**FINESS Array B**	**143.49**	**342**	PKP	PKPbc	21 38 21.3	+1.1
	0.6nm,0.9s,baz=98,slow=2.7,SNR=4.4						

*CSEM **07** 21:22:32.7±0.3, 43°06N×18°15E, h2km, ML1.9, Error ellipse: s-maj=5.9km s-min=3.3km az=81.0*

*PDG **07** 21:22:35.2±0.1, 43°02N×18°34E, h11km, MD2.0/1, ML1.9/8, Error ellipse: s-maj=0.3km s-min=0.5km az=0.0*

BEO 07 21:22:35.4±0.5, 42°99N×18°25E, h13km±2km, M1.7/8, 4C-18D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRY	**Bratogost**	**0.23**	**113**	⇓*i*Pg	Pg	21 22 39.7	-0.8
BRY				*e*Sg	Sg	21 22 43.2	-0.7
BRY	**Bratogost**	**0.23**	**113**	⇓*i*Pg	Pg	21 22 39.7	-0.8
BRY				*e*Sg	Sg	21 22 43.3	-0.6
TREB	**Trebinje**	**0.28**	**165**	⇓*i*Pg	Pg	21 22 41.5	+0.2
TREB				*e*Sg	Sb	21 22 46.9	-0.1
TREB	**Trebinje**	**0.28**	**165**	⇓*i*Pg	Pg	21 22 41.4	+0.1
TREB				*e*Sg	Sb	21 22 46.7	-0.3
UPM	**Unac-Piva**	**0.53**	**66**	⇓*i*Pg	Pg	21 22 43.9	-1.9
UPM				*e*Sg	Sg	21 22 50.9	-1.9
UPM	**Unac-Piva**	**0.53**	**66**	⇓*i*Pg	Pg	21 22 44.0	-1.8
UPM				*e*Sg	Sg	21 22 51.2	-1.6
NKME	**Niksic**	**0.56**	**113**	⇓*i*Pg	Pg	21 22 45.1	-1.3
NKME				*e*Sg	Sg	21 22 53.4	-0.5
NKME	**Niksic**	**0.56**	**113**	⇓*i*Pg	Pg	21 22 45.1	-1.3
NKME				*e*Sg	Sg	21 22 53.4	-0.5
HCY	**Herceg Novi**	**0.57**	**162**	⇓*i*Pg	Pg	21 22 46.2	-0.4
HCY				*e*Sg	Sb	21 22 56.0	+0.7
HCY	**Herceg Novi**	**0.57**	**162**	⇓*i*Pg	Pg	21 22 46.2	-0.4
HCY				*e*Sg	Sb	21 22 55.8	+0.5
NKY	**Niksic**	**0.57**	**108**	⇑*i*Pg	Pg	21 22 45.1	-1.6
NKY				*e*Sg	Sg	21 22 53.6	-0.7
NKY	**Niksic**	**0.57**	**108**	⇑*i*Pg	Pg	21 22 45.1	-1.6
NKY				*e*Sg	Sg	21 22 53.6	-0.7
CEME	**Cevo**	**0.66**	**132**	⇓*i*Pg	Pg	21 22 47.0	-1.3
CEME				*e*Sg	Sg	21 22 57.4	+0.4
CEME	**Cevo**	**0.66**	**132**	⇓*i*Pg	Pg	21 22 47.0	-1.3
CEME				*e*Sg	Sg	21 22 57.4	+0.4
BUM	**Brajici-Budva**	**0.84**	**145**	⇓*i*Pg	Pg	21 22 50.6	-1.0
BUM				*e*Sg	Sb	21 23 03.8	+0.8
BUM	**Brajici-Budva**	**0.84**	**145**	⇓*i*Pg	Pg	21 22 50.6	-1.0
BUM				*e*Sg	Sb	21 23 03.8	+0.8
PLE	**Pljevlja**	**0.90**	**67**	⇑*i*Pg	Pg	21 22 50.2	-2.6
PLE				*e*Sg	Sg	21 23 03.6	-1.0
PLE	**Pljevlja**	**0.90**	**67**	⇑*i*Pg	Pg	21 22 50.2	-2.6
PLE				*e*Sg	Sg	21 23 03.8	-1.0
PDG	**Podgorica**	**0.93**	**127**	*e*Pg	Pb	21 22 51.2	-2.1
PDG				*e*Sg	Sb	21 23 06.3	+0.8
PDG	**Podgorica**	**0.93**	**127**	⇓*i*Pg	Pb	21 22 51.9	-1.4
PDG				*e*Sg	Sb	21 23 06.3	+0.8
TTG	**Podgorica**	**0.93**	**127**	⇓*i*Pg	Pb	21 22 51.9	-1.4
TTG				*e*Sg	Sb	21 23 06.3	+0.8
DRME	**Dracevica, Mon**	**1.06**	**139**	*e*Pg	Pb	21 22 54.9	-0.7
DRME				*e*Sg	Sn	21 23 11.0	+0.5
DRME	**Dracevica, Mon**	**1.06**	**139**	*e*Pg	Pb	21 22 54.9	-0.7
DRME				*e*Sg	Sg	21 23 09.5	-0.1
BEY	**Berane**	**1.21**	**95**	*e*Pg	Pn	21 22 56.4	-1.7
BEY				*e*Sg	Sg	21 23 14.6	+0.1
IVA	**Berane**	**1.21**	**95**	*e*Pg	Pn	21 22 56.4	-1.7
IVA				*e*Sg	Sg	21 23 14.6	+0.1
BBLS	**Lazići**	**1.21**	**43**	*e*Pg	Pn	21 22 56.9	-1.2
BBLS				*e*Sg	Sb	21 23 13.3	-0.6
BBLS	**Lazići**	**1.21**	**43**	*e*Pg	Pn	21 22 56.9	-1.2
BBLS				*e*Sg	Sb	21 23 12.8	-1.1
ULC	**Ulcinj**	**1.26**	**144**	⇓*i*Pg	Pn	21 22 58.2	-0.5
ULC				*e*Sg	Sg	21 23 18.1	+2.0
ULC	**Ulcinj**	**1.26**	**144**	⇓*i*Pg	Pn	21 22 58.2	-0.5
ULC				*e*Sg	Sg	21 23 18.1	+2.0
PVY	**Plav**	**1.32**	**107**	*e*Pg	Pn	21 22 58.8	-0.8
PVY				*e*Sg	Sg	21 23 18.6	+0.7
PVY	**Plav**	**1.32**	**107**	*e*Pg	Pn	21 22 58.8	-0.8
PVY				*e*Sg	Sg	21 23 18.6	+0.7
IVAS	**Ivanjica**	**1.51**	**66**	*e*Pn	Pn	21 23 02.4	+0.2
IVAS				*e*Sg	Sg	21 23 23.6	-0.4
IVAS	**Ivanjica**	**1.51**	**66**	*e*Pn	Pn	21 23 02.4	+0.2
IVAS				*e*Sg	Sg	21 23 23.6	-0.4
DIVS	**Divibare**	**1.68**	**48**	*e*Pg	Pb	21 23 06.1	-0.2
DIVS	**Divibare**	**1.68**	**48**	*e*Pg	Pb	21 23 06.1	-0.2
TEKS	**Tekeris**	**1.81**	**30**	*e*Pg	Pn	21 23 06.8	+0.5
TEKS				*e*Sg	Sg	21 23 33.4	-0.3
TEKS	**Tekeris**	**1.81**	**30**	*e*Pg	Pn	21 23 06.8	+0.5
TEKS				*e*Sg	Sg	21 23 33.4	-0.3
BLY	**Banja Luka**	**1.92**	**337**	*e*Sg	Sg	21 23 38.3	+1.2
TRUS	**Trudelj**	**1.99**	**51**	*e*Pn	Pn	21 23 08.3	-0.5

TALC				*i* S		**Sb**	**21 29 31.5**	**+0.6**
RCDM	**Rinconada Maip**	**1.34**	**60**	⇑*i* P		**Pn**	**21 29 08.7**	**-4.3**
RCDM				*i* S		**Sn**	**21 29 27.2**	**-2.6**
ANTU	**Antumapu**	**1.43**	**66**	*e*P		**Pb**	**21 29 15.5**	**-0.8**
ANTU				*e*S		**Sb**	**21 29 35.4**	**+1.3**
ANTU				IAML			21 29 36.6	
	comp=N,3μm,0.4s							
ROC1	**El Roble**	**1.54**	**40**	*e*P		**Pn**	**21 29 16.4**	**+0.5**
ROCH	**El Roble**	**1.54**	**40**	*e*P		**Pn**	**21 29 16.4**	**+0.4**
ROCH				*i* S		**Sb**	**21 29 37.6**	**0.0**
CLCH	**Cerro Calan**	**1.58**	**62**	⇓*i* P		**Pb**	**21 29 17.9**	**-0.9**
CLCH				*i* S		**Sb**	**21 29 39.6**	**+1.2**
CLCH				IAML			21 29 47.3	
	comp=N,3μm,0.7s							
PEL	**Peldehue**	**1.62**	**52**	⇑*i* P		**Pb**	**21 29 18.1**	**-1.4**
PEL				*i* S		**Sb**	**21 29 40.3**	**+0.8**
PEL				IAML			21 29 49.7	
	comp=E,2μm,0.3s							
FCH	**Farellones**	**1.79**	**63**	*e*P		**Pb**	**21 29 20.9**	**-1.7**
FCH				*e*S		**Sb**	**21 29 45.2**	**+0.4**
ARCO	**CERRO ARCO**	**3.03**	**65**	*e*P		**Pb**	**21 29 39.7**	**-3.8**
ARCO				IAML			21 29 49.7	
	comp=Z,232nm,0.5s							
AUSP	**Uspallata**	**3.04**	**51**	*e*P		**Pb**	**21 29 40.4**	**-3.5**
AUSP				*e*S		**Sb**	**21 30 24.2**	**+3.4**
ASAL	**Salagasta**	**3.22**	**62**	*e*P		**Pb**	**21 29 46.2**	**-0.6**
ASAL				*e*S		**Sb**	**21 30 33.7**	**+8.1**
RTLS	**Leoncito**	**3.39**	**47**	*e*P		**Pb**	**21 29 45.7**	**-4.1**
RTLS				⇓*e*S		**Sb**	**21 30 38.0**	**+7.3**
RTCV	**Cerro Valdivia**	**3.83**	**54**	*e*P		**Pn**	**21 29 51.2**	**+3.9**
RTCV				⇓*e*S		Sb	21 30 55.2	+12
AMOG	**MOGNA**	**4.48**	**45**	*e*P		**Pn**	**21 29 58.9**	**+2.7**
ACAN	**Cantantal**	**4.60**	**67**	*e*P		**Pn**	**21 30 01.9**	**+4.0**
AVFE	**Valle Fertil**	**5.32**	**50**	*e*P		**Pn**	**21 30 10.0**	**+2.3**
AVFE				IAML			21 30 19.8	
	comp=Z,25nm,0.3s							
ACHE	**Chepes**	**5.54**	**59**	*e*P		**Pn**	**21 30 13.4**	**+2.5**
ACHE				*e*S		**Sb**	**21 31 25.8**	**-6.6**
AGUA	**GUANDACOL**	**5.62**	**35**	*e*P		**Pn**	**21 30 13.8**	**+1.8**

JMA 07 21:32:08.8±0.2, 28°.35N×128°.11E, h129km±4km, M3.7, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.93**	**127**	P	Pn	21 32 30.7	+0.2
JTK				S	Sn	21 32 48.1	+0.8
JAMN	**Amaminishikomi**	**0.94**	**96**	P	Pn	21 32 30.6	0.0
JAMN				S	Sn	21 32 47.9	+0.5
JOKE	**Okinoerabujima**	**1.07**	**157**	P	Pn	21 32 32.1	+0.3
JOKE				*e*S	Sn	21 32 50.6	+1.0
JTAJ	**Takarajima**	**1.25**	**50**	P	Pn	21 32 33.7	+0.1
JTAJ				*e*S	Sn	21 32 53.1	+0.3
JIH	**Iheya**	**1.32**	**186**	P	Pn	21 32 34.9	+0.6
JIH				S	Sn	21 32 54.9	+0.8
JAM	**Amami Oshima**	**1.32**	**87**	P	Pn	21 32 34.0	-0.3
JAM				S	Sn	21 32 53.9	-0.2
JOW	**Kunigami**	**1.52**	**174**	P	Pn	21 32 36.7	+0.1
JOW				S	Sn	21 32 57.8	-0.3
JZK	**Kikaishima**	**1.64**	**91**	P	Pn	21 32 39.0	+1.1
JZK				S	Sn	21 33 01.4	+0.9
JNTH	**Nagotoyohara**	**1.83**	**182**	P	Pn	21 32 40.4	+0.3
JNTH				S	Sn	21 33 04.3	-0.1
JAGN	**Aguni-jima**	**1.92**	**204**	P	Pn	21 32 41.5	+0.3
JAGN				S	Sn	21 33 06.6	+0.3
JJT2	**Tamagusuku 2**	**2.22**	**188**	P	Pn	21 32 45.5	+0.5
JKE	**Kume jima 2**	**2.33**	**211**	P	Pn	21 32 46.4	0.0
JKE				*e*S	Sn	21 33 15.5	-0.1
JMZ	**Minamidaito 2**	**3.75**	**132**	P	Pn	21 33 04.0	-0.7
JMZ				S	Sn	21 33 44.6	-3.8

*GUC **07** 21:37:04.3±0.6, 34°.12S×72°.36W, h33km±10km, ML3.9*
ISC 07 21:37:05.1±2.8, 34°.17S±0°.04×72°.2W±0°.1, h2km±16km, n19, σ1°.56/32, 2C-4D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NICH	**Los Niches**	**1.16**	**136**	*e*P	**Pb**	**21 37 27.7**	**-0.2**
NICH				*i* S	**Sn**	**21 37 45.2**	**+0.4**
TALC	**Talca**	**1.32**	**159**	⇑*i* P	**Pn**	**21 37 29.9**	**-0.6**
TALC				*i* S	**Sb**	**21 37 48.4**	**+0.5**
ANTU	**Antumapu**	**1.44**	**66**	*e*P	**Pn**	**21 37 31.5**	**-0.8**
ANTU				*i* S	**Sn**	**21 37 52.2**	**+0.4**
ANTU				IAML		21 37 59.2	
	comp=E,3μm,0.5s						
ROC1	**El Roble**	**1.55**	**40**	*e*P	**Pn**	**21 37 32.8**	**-1.3**
ROCH	**El Roble**	**1.56**	**40**	*e*P	**Pn**	**21 37 32.6**	**-1.5**
ROCH				IAML		21 38 04.0	
	comp=N,3μm,0.4s						
CLCH	**Cerro Calan**	**1.59**	**62**	⇓*i* P	**Pn**	**21 37 34.0**	**-0.4**
CLCH				*i* S	**Sb**	**21 37 56.6**	**+0.7**
CLCH				IAML		21 38 03.4	
	comp=N,3μm,0.5s						
PEL	**Peldehue**	**1.63**	**52**	⇑*i* P	**Pn**	**21 37 34.2**	**-0.7**
PEL				*e*S	**Sn**	**21 37 56.9**	**+0.3**
PEL				IAML		21 38 07.2	
	comp=E,2μm,0.6s						
FCH	**Farellones**	**1.81**	**63**	*e*P	**Pn**	**21 37 37.1**	**-0.5**
FCH				*e*S	**Sb**	**21 38 02.5**	**+0.2**
FCH				IAML		21 38 08.5	
	comp=N,2μm,0.4s						
AAGR	**Agrelo**	**3.02**	**70**	*e*P	**Pb**	**21 37 58.0**	**-1.7**
ARCO	**CERRO ARCO**	**3.04**	**65**	*e*P	**Pb**	**21 37 59.3**	**-0.8**
ARCO				IAML		21 38 11.6	
	comp=Z,211nm,0.5s						
ARCO				*e*S	**Sg**	**21 38 43.7**	**+0.8**
AUSP	**Uspallata**	**3.06**	**51**	*e*P	**Pb**	**21 37 59.3**	**-1.2**
AUSP				*e*S	**Sg**	**21 38 42.3**	**-1.2**
ASAL	**Salagasta**	**3.23**	**62**	*e*P	**Pb**	**21 38 01.2**	**-2.1**
ASAL				⇓*e*S	**Sg**	**21 38 52.0**	**+2.9**
RTLS	**Leoncito**	**3.40**	**47**	*e*P	**Pn**	**21 38 02.4**	**+2.8**
RTLS				⇓*e*S	**Sg**	**21 38 55.0**	**+0.5**
RTCV	**Cerro Valdivia**	**3.85**	**54**	*e*P	**Pn**	**21 38 07.5**	**+2.1**
AMOG	**MOGNA**	**4.50**	**45**	*e*P	**Pn**	**21 38 15.2**	**+0.9**
ACAN	**Cantantal**	**4.62**	**67**	*e*P	**Pn**	**21 38 18.1**	**+2.2**
ACAN				*e*S	**Sb**	**21 39 21.0**	**-1.9**
ACHE	**Chepes**	**5.56**	**59**	*e*P	**Pn**	**21 38 30.1**	**+1.1**
ACHE				*e*S	**Sb**	**21 39 47.4**	**-2.7**
AGUA	**GUANDACOL**	**5.64**	**35**	*e*P	**Pn**	**21 38 30.3**	**+0.2**
AGUA				⇓*e*S	**Sb**	**21 39 55.7**	**+3.2**
TCA	**Tanti**	**7.01**	**68**	*e*P	**Pn**	**21 38 48.9**	**+0.1**

IDC 07 21:38:50.6±2.4, 10°.10S×113°.10E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/35, mbtmp3.6/4, Error ellipse: s-maj=147.4km s-min=24.1km az=48.0, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.70**	**118**	P	P	21 43 53.5	-0.6
	0.4nm,0.4s,baz=295,slow=12,SNR=6.7						
ASAR	**Alice Springs**	**24.00**	**127**	P	P	21 44 07.9	+0.7
	1.1nm,0.6s,baz=302,slow=9.1,SNR=24						
STKA	**Stephens Creek**	**34.12**	**134**	P	P	21 45 37.0	-0.3
	0.9nm,0.6s,baz=288,slow=9.6,SNR=2.8						
MKAR	**Makanchi Array**	**62.97**	**337**	P	P	21 49 19.0	0.0
	0.4nm,0.5s,baz=163,slow=6.7,SNR=5.6						

IDC 07 21:39:08.8±4.9, 28°.19S×176°.78W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.6/23, mbtmp3.8/3, Error ellipse: s-maj=106.2km s-min=33.9km az=115.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.46**	**223**	Pn	Pb	21 39 37.0	+0.2
	132nm,0.3s,baz=73,slow=19,SNR=2.8						
RAO				Sn	Sb	21 39 56.0	0.0
	392nm,0.3s,baz=101,slow=23,SNR=4.8						
STKA	**Stephens Creek**	**36.07**	**254**	P	P	21 46 11.6	-0.6
	1.6nm,0.8s,baz=90,slow=15,SNR=3.0						
ASAR	**Alice Springs**	**44.35**	**264**	P	P	21 47 20.8	-0.2
	0.6nm,0.7s,baz=96,slow=7.3,SNR=11						
WRA	**Warramunga Arr**	**45.14**	**269**	P	P	21 47 27.6	+0.3
	0.6nm,0.5s,baz=109,slow=8.1,SNR=12						
FINES	**FINESS Array B**	**143.41**	**342**	PKP	PKPdf	21 58 43.3	-1.3
	0.7nm,0.7s,baz=294,slow=1.9,SNR=4.1						

*IDC **07** 21:49:14.4±0.5, 29°.32S×176°.13W, h0km, mb4.7/21, mb1 4.9/22, mb1mx4.8/36, mbtmp4.7/22, ML3.4/1, MS4.3/3, Ms1 4.2/3, ms1mx3.9/9, Error ellipse: s-maj=18.5km s-min=14.2km az=168.0*

*GCMT **07** 21:49:15.4±0.2, 29°.28S×175°.92W, h12km, MW5.1/100, Moment Tensor Solution. s59,c81; s100,c148; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr=5.37±.11; Mθθ=0.35±.12; Mϕϕ=5.02±.09; Mrθ=-0.12±.40; Mrϕ=1.21±.10; Mθϕ=0.08±.32; Best double couple: M=5.34400×10^16 NP1:ϕs=192.00000°, δ45.00000°, λ=-88.00000°. NP2: ϕs=15.00000°, δ45.00000°, λ=-88.00000°. Principal axes: T 5.3150, Plg0.0000°, Azm284.0000°; N 0.0570, Plg1.0000°, Azm194.0000°; P -5.3740, Plg89.0000°, Azm25.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **07** 21:49:15.4±0.2, 29°.58S×176°.18W, h10km, mb5.1/81 Error ellipse: s-maj=7.0km s-min=4.2km az=147.0*

*BJI **07** 21:49:16.3, 29°.52S×176°.03W, h23km, mb5.1/21, mB5.5/19, Ms5.1/17, Ms7 4.7/17*

*ISCJB **07** 21:49:16.9±0.2, 29°.58S±0°.06×176°.19W±0°.05, h28km, mb5.1/102, MS4.8/10, Error ellipse: s-maj=8.8km s-min=4.9km az=155.2*

*MOS **07** 21:49:18.7±0.9, 29°.32S×176°.23W, h33km, mb5.3/24, Error ellipse: s-maj=11.2km s-min=10.4km az=66.9*

ISC 07 21:49:18.5±0.3, 29°.54S±0°.06×176°.09W±0°.05, h28km, n347, σ1°.32/355, mb5.1/102, MS5.0/10, 16C-17D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.62**	**280**	Pn	**Pn**	**21 49 45.1**	**-0.1**
	2μm,0.3s,baz=93,slow=11,SNR=23						
RAO				Sn	**Sb**	**21 50 07.8**	**+0.1**
	2μm,0.3s,baz=21,slow=20,SNR=8.2						
RAO	**Raoul Island**	**1.62**	**280**	*e*P	**Pn**	**21 49 44.5**	**-0.6**
RAO						21 50 07.8	
RAO	**Raoul Island**	**1.62**	**280**	*e*Pn	**Pn**	**21 49 44.5**	**-0.6**
RAO				Sn	**Sb**	**21 50 07.8**	**+0.1**
URZ	**Urewera**	**10.37**	**211**	Pn	Pn	21 51 39.2	-6.0
	3.2nm,0.3s,baz=358,slow=1.0,SNR=6.7						
URZ				Sn	**Sn**	**21 53 35.1**	**-5.4**
	10nm,0.3s,baz=100,slow=22,SNR=15						
MSVF	**Nonsavu**	**12.91**	**334**	⇓*e*P	**Pn**	**21 52 18.1**	**-2.1**
MSVF	**Nonsavu**	**12.91**	**334**	*e*Pn	**Pn**	**21 52 18.1**	**-2.1**
KHZ	**Kahutara**	**15.33**	**210**	*e*Pn	**Pn**	**21 52 50.2**	**-2.6**
	173nm,0.8s						
OXZ	**Oxford**	**16.73**	**211**	*e*Pn	**Pn**	**21 53 07.2**	**-3.5**
	90nm,0.8s						
RAR	**Rarotonga**	**16.90**	**64**	Pn	**Pn**	**21 53 10.3**	**-2.7**
	1.2nm,0.3s,baz=198,slow=5.8,SNR=5.1						
RAR				LR	LR	21 59 29.8	
	comp=Z,2μm,18.4s,baz=246,slow=36						
DZM	**Mont Dzumac**	**17.38**	**291**	Pn	**P**	**21 53 20.8**	**+0.4**
	0.5nm,0.3s,baz=121,slow=17,SNR=9.5						
DZM	**Mont Dzumac**	**17.38**	**291**	*e*Pn	**P**	**21 53 20.7**	**+0.4**
	61nm,1.0s						
DZM				*e*LQ	LQ	21 56 43.4	
	2μm,29.3s						
DZM				*e*LR	LR	21 57 30.7	
	5μm,27.9s						
DZM	**Mont Dzumac**	**17.38**	**291**	*e*Pn	**Pn**	**21 53 18.3**	**-0.8**
	31nm,1.0s						
RPZ	**Rata Peaks**	**17.48**	**212**	Pn	**Pn**	**21 53 16.8**	**-3.3**
	5.6nm,0.3s,baz=26,slow=2.9,SNR=12						
TBI	**Tubuai**	**24.60**	**82**	*e*LQ	LQ	21 59 13.0	
	2μm,29.2s						
TBI				*e*LR	LR	22 00 24.9	
	3μm,27.5s,baz=248						
PPT2	**Papeete2**	**26.99**	**70**	*e*LQ	LQ	22 00 08.6	
	2μm,25.2s						
PPT2				*e*LR	LR	22 01 26.5	
	3μm,26.5s,baz=231						
PPT	**Papeete**	**27.00**	**70**	LR	LR	22 04 21.0	
	comp=Z,1μm,18.1s,baz=231,slow=34						
EIDS	**Eidsvold**	**29.37**	**270**	*e*P	**P**	**21 55 19.1**	**-0.1**
	18nm,1.0s						
CTA	**Charters Tower**	**35.32**	**277**	P	**P**	**21 56 11.6**	**+0.1**
	13nm,0.6s,baz=103,slow=11,SNR=24						
CTAO	**Charters Tower**	**35.32**	**277**	*e*P	**P**	**21 56 11.4**	**0.0**
CTAO				pmax	pmax		
	comp=Z,15nm,0.8s						
CTAO	**Charters Tower**	**35.32**	**277**	*e*P	**P**	**21 56 11.4**	**0.0**
	comp=Z,15nm,0.8s						
STKA	**Stephens Creek**	**36.29**	**255**	P	**P**	**21 56 20.3**	**+0.6**
	comp=Z,18nm,0.6s,baz=99,slow=10,SNR=82						
STKA	**Stephens Creek**	**36.29**	**255**	*e*P	**P**	**21 56 20.3**	**+0.6**
STKA				pmax	pmax		
	comp=Z,4.0nm,0.6s						
STKA	**Stephens Creek**	**36.29**	**255**	*e*P	**P**	**21 56 20.2**	**+0.6**
	comp=Z,4.3nm,0.6s						
RKT	**Rikitea**	**37.26**	**90**	*e*LR	LR	22 06 01.5	
	comp=Z,2μm,31.0s,baz=250						
TAOE	**Nuku Hiva Isla**	**39.44**	**66**	*e*LR	LR	22 07 13.5	
	comp=Z,1μm,24.0s						
BBOO	**Buckleboo**	**40.80**	**253**	*e*P	**P**	**21 56 56.4**	**-1.1**
	comp=Z,26nm,0.7s						
AS01	**Alice Springs**	**44.78**	**265**	*e*P	**P**	**21 57 28.3**	**-1.7**
AS31	**Alice Springs**	**44.82**	**265**	*e*P	**P**	**21 57 29.1**	**-1.2**
	comp=Z,3.2nm,0.6s						
ASAR	**Alice Springs**	**44.82**	**265**	P	**P**	**21 57 28.8**	**-1.5**
	comp=Z,7.2nm,0.6s,baz=98,slow=7.4,SNR=121						
WB2	**Warramunga Arr**	**45.73**	**270**	*e*P	**P**	**21 57 35.1**	**-2.3**
	comp=Z,21nm,0.6s						
WRAB	**Tennant Creek**	**45.73**	**270**	*d i*P	**P**	**21 57 36.9**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,31nm,0.7s						
WRAB	**Tennant Creek**	**45.73**	**270**	*e*P	**P**	**21 57 36.9**	**-0.6**
	comp=Z,24nm,0.8s						
WRAB				*e*		21 57 48.9	
WRA	**Warramunga Arr**	**45.74**	**270**	P	**P**	**21 57 35.4**	**-2.1**
	comp=Z,18nm,0.7s,baz=109,slow=7.8,SNR=90						
FORT	**Forrest**	**47.87**	**254**	*e*P	**P**	**21 57 53.3**	**-0.8**
	comp=Z,1μm,1.9s						
SBA	**Scott Base**	**49.02**	**185**	*e*P	**P**	**21 58 06.7**	**+4.4**
SBA				pmax	pmax		
	comp=Z,92nm,1.9s						
SBA	**Scott Base**	**49.02**	**185**	*e*P	**P**	**21 58 06.7**	**+4.4**
	comp=Z,92nm,1.9s						
VNDA	**Vanda**	**49.12**	**186**	P	**P**	**21 58 06.4**	**+3.4**
	comp=Z,2.7nm,1.0s,baz=5.7,slow=7.9,SNR=7.4						
VNDA	**Vanda**	**49.12**	**186**	*e*P	**P**	**21 58 06.5**	**+3.4**
VNDA				pmax	pmax		
	comp=Z,15nm,1.4s						
VNDA	**Vanda**	**49.12**	**186**	*e*P	**P**	**21 58 06.5**	**+3.4**
	comp=Z,15nm,1.4s						
FITZ	**Fitzroy Crossi**	**54.03**	**268**	P	**P**	**21 58 39.3**	**-1.3**
	comp=Z,8.4nm,0.6s,baz=155,slow=6.7,SNR=24						
FITZ	**Fitzroy Crossi**	**54.03**	**268**	*e*P	**P**	**21 58 39.6**	**-0.9**
	comp=Z,12nm,0.8s						
CASY	**Casey**	**56.67**	**208**	*e*P	**P**	**21 59 00.0**	**+1.2**
	comp=Z,12nm,0.8s						
QSPA	**South Pole Qui**	**60.57**	**180**	*e*P	**P**	**21 59 28.3**	**+2.1**
	comp=Z,103nm,0.9s						
MAW	**Mawson**	**73.69**	**200**	P	**P**	**22 00 51.7**	**+2.5**
	comp=Z,7.2nm,0.8s,baz=143,slow=3.4,SNR=8.4						
MAW				LR	LR	22 32 47.6	
	comp=Z,59nm,20.6s,baz=64,slow=35						
MAW	**Mawson**	**73.69**	**200**	*e*P	**P**	**22 00 51.4**	**+2.2**
MAW				pmax	pmax		
	comp=Z,11nm,1.6s						
MAW	**Mawson**	**73.69**	**200**	*e*P	**P**	**22 00 51.4**	**+2.2**
	comp=Z,11nm,1.6s						
SYO	**Syowa Base**	**78.32**	**192**	⇓*e*P	**P**	**22 01 15.0**	**-0.6**
SYO	**Syowa Base**	**78.32**	**192**	⇑*e*PcP	**PcP**	**22 01 22.8**	**-2.0**
MJAR	**Matsushiro Arr**	**78.50**	**324**	P	**P**	**22 01 15.6**	**-1.4**
	comp=Z,2.7nm,0.7s,baz=160,slow=5.4,SNR=8.9						
MAT	**Matsushiro**	**78.50**	**324**	P	**P**	**22 01 15.3**	**-1.7**
MAT				*e*S	**S**	**22 11 09.6**	**-1.8**
SNAA	**Sanae**	**78.96**	**178**	P	**P**	**22 01 19.9**	**+0.6**
SNAA	**Sanae**	**78.96**	**178**	⇑*e*P	**P**	**22 01 19.8**	**+0.6**
SNAA	**Sanae**	**78.96**	**178**	*e*P	**P**	**22 01 19.8**	**+0.6**
	comp=Z,17nm,1.1s						
VNA1	**Neumayer--Stat**	**79.72**	**176**	P	**P**	**22 01 23.9**	**+0.7**
JNU	**Nakatsue**	**80.03**	**317**	P	**P**	**22 01 25.4**	**-0.1**
	comp=Z,7.2nm,0.6s						
SSLB	**Suanglung**	**80.43**	**304**	*e*P	**P**	**22 01 25.9**	**-2.0**
	comp=Z,15nm,0.7s						
PLCA	**Paso Flores**	**81.87**	**132**	P	**P**	**22 01 36.0**	**+0.5**
	comp=Z,2.0nm,0.8s,baz=217,slow=4.1,SNR=5.0						
PLCA	**Paso Flores**	**81.87**	**132**	P	**P**	**22 01 36.0**	**+0.5**
SBC	**Santa Barbara**	**82.95**	**44**	P	**P**	**22 01 41.0**	**+0.2**
	baz=227						
CIS	**Catalina Islan**	**83.05**	**45**	P	**P**	**22 01 41.1**	**-0.3**
	baz=228						
PKM	**Mcpherson Peak**	**83.20**	**44**	P	**P**	**22 01 42.2**	**-0.1**
	baz=227						
FMP	**Fort Macarthur**	**83.33**	**45**	P	**P**	**22 01 43.1**	**+0.4**
	baz=228						
SMMC	**Simmler**	**83.38**	**43**	P	**P**	**22 01 43.4**	**+0.4**
	baz=227						
DECC	**Green Verdugo**	**83.67**	**45**	P	**P**	**22 01 44.9**	**+0.3**
	baz=228						
OSI	**Osito Audit: C**	**83.67**	**44**	P	**P**	**22 01 44.4**	**-0.2**
	baz=228						
MURC	**Murrieta**	**83.94**	**46**	P	**P**	**22 01 45.8**	**-0.1**
	baz=228						
ARVC	**Arvin**	**83.95**	**44**	P	**P**	**22 01 46.2**	**+0.2**
	baz=227						
MONP2	**Monument Peak**	**83.96**	**47**	P	**P**	**22 01 46.4**	**0.0**
	baz=229,SNR=5.5						
IKP	**In-Ko-Pah, Jac**	**84.00**	**47**	P	**P**	**22 01 46.6**	**+0.2**
	baz=229						
BFSC	**Mount Baldy Ra**	**84.07**	**45**	P	**P**	**22 01 46.7**	**-0.1**
	baz=228						
VES	**Vestal, Richgr**	**84.28**	**43**	P	**P**	**22 01 47.6**	**0.0**
	baz=227						
EDW2	**Edwards Air Fo**	**84.29**	**45**	P	**P**	**22 01 47.7**	**-0.1**
	baz=228,SNR=5.8						
SWSC	**Sam W. Stewart**	**84.39**	**47**	P	**P**	**22 01 48.2**	**0.0**
	baz=229						
TPFO	**Pinon Flats**	**84.41**	**46**	P	**P**	**22 01 48.5**	**+0.1**
	baz=229,SNR=5.2						
PFO	**Pinyon Flats O**	**84.41**	**46**	P	**P**	**22 01 49.7**	**+1.2**
	comp=Z,7.6nm,0.9s,baz=267,slow=2.1,SNR=7.5						
PFO	**Pinyon Flats O**	**84.41**	**46**	P	**P**	**22 01 48.5**	**0.0**
	baz=229,SNR=5.3						
PFO	**Pinyon Flats O**	**84.41**	**46**	*e*P	**P**	**22 01 49.0**	**+0.5**
PFO				pmax	pmax		
	comp=Z,9.0nm,0.9s						
PFO	**Pinyon Flats O**	**84.41**	**46**	*e*P	**P**	**22 01 49.0**	**+0.5**
	comp=Z,9.3nm,0.9s						
RCTC	**Rector, Farmer**	**84.50**	**43**	P	**P**	**22 01 48.8**	**+0.1**
	baz=227						
ISA	**Isabella, Lake**	**84.53**	**44**	P	**P**	**22 01 49.1**	**+0.1**
	baz=228						
BBRC	**Big Bear Solar**	**84.55**	**46**	P	**P**	**22 01 49.4**	**+0.1**
	baz=229						
YSS	**Yuzh-Sakhalins**	**84.71**	**333**	*e*P	**P**	**22 01 49.9**	**+0.4**
YSS				pmax	pmax		
	comp=Z,12nm,0.7s						
KSRS	**Korea Array**	**84.78**	**319**	P	**P**	**22 01 51.4**	**+1.3**
	comp=Z,3.2nm,0.7s,baz=132,slow=5.9,SNR=12						
KSAR	**Wonju Array Be**	**84.80**	**318**	P	**P**	**22 01 51.4**	**+1.2**
KSAR	**Wonju Array Be**	**84.80**	**318**	P	**P**	**22 01 51.4**	**+1.2**
KS01	**Wonju Array Si**	**84.81**	**319**	*e*P	**P**	**22 01 53.7**	**+3.4**
LRMC	**Laurel Mtn Rad**	**84.88**	**44**	P	**P**	**22 01 51.3**	**+0.4**
	baz=228						
RRX	**Edison Barstow**	**84.90**	**45**	P	**P**	**22 01 50.8**	**0.0**
	baz=229						
CMB	**Columbia Colle**	**85.02**	**41**	*e*P	**P**	**22 01 51.7**	**+0.3**
CMB				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CMB	**Columbia Colle**	**85.02**	**41**	*e*P	**P**	**22 01 51.7**	**+0.3**
	comp=Z,10nm,0.9s						
BC3	**Big Chuckawall**	**85.07**	**47**	P	**P**	**22 01 52.1**	**+0.3**
	baz=230						
GLA	**Glamis**	**85.09**	**48**	P	**P**	**22 01 52.1**	**+0.2**
	baz=230						
GLA	**Glamis**	**85.09**	**48**	*e*P	**P**	**22 01 50.0**	**-1.8**
GLA				pmax	pmax		
	comp=Z,349nm,0.9s						
GLA	**Glamis**	**85.09**	**48**	*e*P	**P**	**22 01 50.0**	**-1.8**
	comp=Z,349nm,0.9s						
HEC	**Hector,Ludlow**	**85.28**	**45**	P	**P**	**22 01 52.6**	**-0.2**
	baz=229						
GSC	**Goldstone, Bar**	**85.30**	**45**	P	**P**	**22 01 53.0**	**+0.1**
	baz=229,SNR=6.1						
GSC	**Goldstone, Bar**	**85.30**	**45**	*e*P	**P**	**22 01 53.5**	**+0.6**
GSC				pmax	pmax		
	comp=Z,15nm,1.2s						
GSC	**Goldstone, Bar**	**85.30**	**45**	*e*P	**P**	**22 01 53.5**	**+0.6**
	comp=Z,15nm,1.2s						
AFDM	**Forest Hills D**	**85.32**	**40**	*e*P	**P**	**22 01 53.1**	**+0.3**
	comp=Z,12nm,1.2s						
MPMC	**Manual Prospec**	**85.39**	**44**	P	**P**	**22 01 53.7**	**+0.3**
	baz=228,SNR=11						
PETK	**Petropavlovsk-**	**85.41**	**345**	P	**P**	**22 01 52.7**	**-0.2**
	comp=Z,3.4nm,0.6s,baz=98,slow=5.3,SNR=4.9						
DAC	**Darwin (Calif)**	**85.47**	**44**	*e*P	**P**	**22 01 54.2**	**+0.4**
DAC				pmax	pmax		
	comp=Z,10.0nm,1.3s						
DAC	**Darwin (Calif)**	**85.47**	**44**	*e*P	**P**	**22 01 54.2**	**+0.4**
	comp=Z,10nm,1.3s						
IRM	**Iron Mountain**	**85.59**	**47**	P	**P**	**22 01 55.0**	**+0.6**
	baz=230,SNR=6.0						
WDC	**Whiskeytown Da**	**85.61**	**38**	*e*P	**P**	**22 01 54.7**	**+0.5**
WDC				pmax	pmax		
	comp=Z,22nm,1.1s						
WDC	**Whiskeytown Da**	**85.61**	**38**	*e*P	**P**	**22 01 54.7**	**+0.5**
	comp=Z,22nm,1.1s						
**M

baz=232
CCUT Cedar City 88.87 45 *e*P **P** **22 02 10.4 +0.1**
comp=Z,9.7nm,1.1s
KNB Kanab 88.87 46 *e*P **P** **22 02 10.9 +0.6**
KNB pmax pmax
comp=Z,15nm,0.9s
KNB Kanab 88.87 46 *e*P **P** **22 02 10.9 +0.6**
comp=Z,15nm,0.9s
I05D Terrebonne, OR 88.89 36 P **P** **22 02 09.9 -0.1**
baz=225
KDAK Kodiak Island 89.20 12 *i*P **P** **22 02 12.6 +1.6**
121A Cookes Peak, D 89.45 52 P **P** **22 02 13.5 +0.4**
baz=234
W18A Petrified Fore 89.68 49 P **P** **22 02 14.5 +0.4**
baz=233
FL2 Flat Top 2 89.70 34 P **P** **22 02 14.7 +0.8**
ERK Elk Rock 89.79 34 P **P** **22 02 14.8 +0.5**
MTPU Mount Pierson 89.91 45 *e*P **P** **22 02 16.8 +1.5**
comp=Z,10nm,1.0s
LON Longmire 90.36 34 *e*P **P** **22 02 16.9 +0.1**
LON pmax pmax
comp=Z,7.0nm,1.0s
LON Longmire 90.36 34 *e*P **P** **22 02 16.9 +0.1**
comp=Z,6.9nm,1.0s
TX31 Lajitas Ar. Si 90.53 56 *e*P **P** **22 02 17.9 -0.2**
TXAR Lajitas Array 90.53 56 P **P** **22 02 18.5 +0.4**
comp=Z,3.0nm,0.9s,baz=212,slow=6.8,SNR=21
TIA Tai'an 90.61 312 *e*P **P** **22 02 18.8 +0.6**
TIA pmax pmax
comp=Z,20nm,0.7s
MNTX Cornudas Mount 90.63 54 P **P** **22 02 18.4 -0.1**
baz=235,SNR=6.0
MNTX Cornudas Mount 90.63 54 *e*P **P** **22 02 18.8 +0.3**
comp=Z,6.1nm,1.0s
G08A Pilot Rock 90.78 36 *e*P **P** **22 02 19.3 +0.4**
comp=Z,19nm,1.0s
DUG Dugway, Tooele 90.87 43 P **P** **22 02 19.1 -0.4**
baz=231
LAZ Ladron 90.98 51 *e*P **P** **22 02 19.9 -0.3**
CNPM China Poot 91.09 12 *e*P **P** **22 02 20.2 +0.4**
comp=Z,34nm,1.1s
KLR Kul'dur 91.14 329 P **P** **22 02 20.2 -0.1**
comp=Z,1.1nm,0.6s,baz=76,slow=5.7,SNR=6.3
BNM Barren Site 91.18 51 *e*P **P** **22 02 21.5 +0.3**
MFID Camas Ranch 91.20 39 *e*P **P** **22 02 21.2 +0.3**
comp=Z,8.1nm,1.1s
TMUT Trail Mountain 91.28 45 *e*P **P** **22 02 22.7 +1.0**
comp=Z,9.1nm,0.8s
B05A Bryant 91.30 33 P **P** **22 02 21.5 +0.5**
baz=225
BMO Blue Mountains 91.35 37 *e*P **P** **22 02 21.4 -0.1**
comp=Z,24nm,1.8s
BRLK Bradley Lake 91.37 12 *e*P **P** **22 02 21.5 +0.3**
comp=Z,22nm,0.9s
SRU San Rafael Swe 91.59 45 *e*P **P** **22 02 23.3 +0.4**
SRU pmax pmax
comp=Z,12nm,0.9s
SRU San Rafael Swe 91.59 45 *e*P **P** **22 02 23.3 +0.4**
comp=Z,12nm,0.9s
MVCO Mesa Verde 91.73 48 P **P** **22 02 23.6 -0.1**
baz=234
MVCO Mesa Verde 91.73 48 *e*P **P** **22 02 23.4 -0.2**
comp=Z,5.3nm,0.8s
ANMO Albuquerque 91.75 50 P **P** **22 02 24.0 +0.2**
baz=235
ANMO Albuquerque 91.75 50 *de*P **P** **22 02 23.6 -0.2**
ANMO pmax pmax
comp=Z,20nm,2.2s
ANMO Albuquerque 91.75 50 *e*P **P** **22 02 24.1 +0.4**
comp=Z,5.5nm,0.8s
SPUT South Promonto 91.78 42 *e*P **P** **22 02 23.7 0.0**
comp=Z,9.6nm,1.0s
PV05 Paradox Valley 91.86 47 *e*P **P** **22 02 25.1 +0.8**
HVU Hansel Valley 91.88 42 *e*P **P** **22 02 24.5 +0.3**
HVU pmax pmax
comp=Z,39nm,1.7s
HVU Hansel Valley 91.88 42 *e*P **P** **22 02 24.5 +0.3**
comp=Z,39nm,1.7s
D08A Wollman Farm, 92.00 35 *e*P **P** **22 02 24.9 +0.5**
comp=Z,22nm,0.8s
HLID Hailey 92.08 40 P **P** **22 02 25.3 +0.3**
baz=230
HLID Hailey 92.08 40 *e*P **P** **22 02 25.5 +0.4**
comp=Z,6.4nm,0.9s
PV09 Paradox Valley 92.09 46 *e*P **P** **22 02 25.8 +0.4**
PV01 Paradox Valley 92.23 47 *e*P **P** **22 02 26.2 +0.3**
TCUT Toone Canyon 92.28 43 *e*P **P** **22 02 26.5 +0.3**
comp=Z,9.3nm,0.8s
ENH Enshi 92.50 303 *e*P **P** **22 02 27.4 +0.2**
comp=Z,48nm,1.2s
GYA Guiyang 92.57 299 P **P** **22 02 29.8 +2.1**
GYA pP pP 22 02 37.4 +0.6
GYA PP **PP** **22 06 13.2 +3.5**
GYA SKS **SKSac** **22 12 59.8 +0.2**
GYA S **S** **22 13 30.6 +0.1**
GYA SS **SS** **22 19 47.2 +3.8**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,140nm,7.9s
GYA LR LR
comp=Z,520nm,20.5s
GYA LR LR
comp=Z,480nm,21.2s
GYA LR LR
comp=Z,450nm,20.9s
RC01 Rabbit Creek A 92.82 12 *e*P **P** **22 02 27.8 0.0**
comp=Z,25nm,1.2s
933A Laredo 92.85 60 P **P** **22 02 28.3 -0.5**
baz=238
MA2 Magadan 92.91 344 *e*P **P** **22 02 28.5 +0.2**
SUA Susitna One 92.98 12 *e*P **P** **22 02 28.3 -0.4**
comp=Z,9.5nm,0.8s
S22A 4UR Ranch, Cre 93.12 48 P **P** **22 02 30.7 +0.6**
baz=235
S22A 4UR Ranch, Cre 93.12 48 *e*P **P** **22 02 30.8 +0.6**
comp=Z,4.2nm,0.8s
833A Chaparral WMA, 93.14 59 P **P** **22 02 29.7 -0.4**
baz=238
035A Encino 93.39 61 P **P** **22 02 30.9 -0.4**
baz=238
934A Benavides 93.42 60 P **P** **22 02 31.0 -0.3**
baz=238
TT01 Tatalina 93.51 9 *e*P **P** **22 02 30.4 -0.5**
TTA Tatalina 93.54 9 *e*P **P** **22 02 31.9 +0.7**
TTA pmax pmax
comp=Z,12nm,1.1s
TTA Tatalina 93.54 9 *e*P **P** **22 02 31.9 +0.7**
comp=Z,12nm,1.1s
MSTX Muleshoe 93.72 53 P **P** **22 02 32.4 -0.4**
baz=237
MSTX Muleshoe 93.72 53 *e*P **P** **22 02 32.6 -0.2**
comp=Z,6.6nm,0.8s
MCMT McKenzie Canyo 93.75 40 *e*P **P** **22 02 33.2 +0.3**
BMRM Bremner River 93.77 15 *e*P **P** **22 02 32.8 +0.6**
comp=Z,11nm,0.9s
633A Saathoff Ranch 93.89 58 P **P** **22 02 33.3 -0.3**
baz=238
JCT Junction City 93.97 57 P **P** **22 02 33.6 -0.3**
baz=238
SCM Sheep Creek Mo 93.97 13 *e*P **P** **22 02 33.8 +0.6**
SCM pmax pmax
comp=Z,21nm,0.8s
SCM Sheep Creek Mo 93.97 13 *e*P **P** **22 02 33.8 +0.6**
comp=Z,21nm,0.8s
REDW Red Top Meadow 93.98 42 *e*P **P** **22 02 33.9 0.0**
comp=Z,8.9nm,0.9s
SDCO Great Sand Dun 93.98 49 P **P** **22 02 33.8 -0.4**
baz=235
TPAW Teton Pass 94.00 41 *e*P **P** **22 02 34.2 +0.2**
comp=Z,11nm,1.3s
DLMT Dillon 94.22 39 *e*P **P** **22 02 35.1 +0.3**
comp=Z,9.0nm,1.1s
IMW Indian Meadow 94.25 41 *e*P **P** **22 02 34.8 -0.4**
comp=Z,13nm,1.1s
T25A Trinidad 94.36 50 P **P** **22 02 35.7 -0.1**
baz=236
T25A Trinidad 94.36 50 *e*P **P** **22 02 36.2 +0.4**
comp=Z,4.1nm,0.8s
BW06 Boulder Array 94.37 43 *e*P **P** **22 02 34.6 -1.2**
PDAR Pinedale Array 94.37 43 P **P** **22 02 35.2 -0.5**
comp=Z,1.5nm,0.8s,baz=204,slow=3.3,SNR=8.9
MSO Missoula 94.42 38 P **P** **22 02 35.6 -0.1**
baz=231
FLWY Flagg Ranch 94.50 41 *e*P **P** **22 02 36.9 +0.7**
comp=Z,12nm,0.9s
CAST Castle Rocks 94.58 11 *e*P **P** **22 02 34.7 -1.2**
comp=Z,5.2nm,0.8s
433A Art 94.63 57 P **P** **22 02 36.4 -0.5**
baz=238
CM01 Chiang Mai Arr 94.66 288 *e*P **P** **22 02 38.0 +0.7**
CMAR Chiang Mai Arr 94.69 288 P **P** **22 02 38.8 +1.3**
comp=Z,1.3nm,0.7s,baz=140,slow=3.7,SNR=11
H17A Grant Village 94.76 41 P **P** **22 02 37.5 0.0**
baz=233
635A Leesville 94.90 59 P **P** **22 02 37.6 -0.6**
baz=239
TRF Thorofare Moun 94.91 11 *e*P **P** **22 02 37.2 -0.3**
comp=Z,7.7nm,0.8s
KMI Kunming 94.92 296 P **P** **22 02 39.1 +0.4**
KMI pmax pmax
comp=Z,4.0nm,0.6s
BOZ Bozeman (W) 94.93 39 P **P** **22 02 38.3 +0.1**
baz=232
BOZ Bozeman (W) 94.93 39 *e*P **P** **22 02 38.3 +0.1**
BOZ pmax pmax
comp=Z,9.0nm,0.9s
BOZ Bozeman (W) 94.93 39 *e*P **P** **22 02 38.3 +0.1**
comp=Z,9.1nm,0.9s
333A Richland Sprin 95.01 57 P **P** **22 02 38.3 -0.4**
baz=238
736A Circle Diamond 95.21 60 P **P** **22 02 39.2 -0.3**
baz=239
SEY Seymchan 95.53 346 P **P** **22 02 38.5 -1.7**
comp=Z,1.5nm,0.6s,baz=142,slow=6.6,SNR=6.7
SEY Seymchan 95.53 346 *ce*P **P** **22 02 39.7 -0.5**
MENT Mentasta 95.71 14 *e*P **P** **22 02 41.6 +0.5**
comp=Z,3.7nm,0.8s
K22A Casper 96.12 44 *e*P **P** **22 02 43.8 +0.2**
comp=Z,42nm,0.6s
WRH Wood River Hil 96.23 12 *e*P **P** **22 02 42.8 -0.6**
comp=Z,10nm,0.9s
DOT Dot Lake 96.27 14 *e*P **P** **22 02 44.0 +0.4**
comp=Z,11nm,0.9s
MLY Manley 96.31 11 *e*P **P** **22 02 43.0 -0.8**
comp=Z,4.6nm,1.0s
HDA Harding Lake 96.39 12 *e*P **P** **22 02 44.1 0.0**
comp=Z,14nm,1.0s
CCB Clear Creek Bu 96.45 12 *e*P **P** **22 02 43.5 -0.8**
comp=Z,6.3nm,0.9s
COLA College 96.65 12 *e*P **P** **22 02 44.9 -0.3**
COLA pmax pmax
comp=Z,10.0nm,0.7s
MDM Murphy Dome 96.66 12 *e*P **P** **22 02 44.4 -0.9**
comp=Z,7.8nm,1.0s
IL1 Eielson Array 96.73 12 *e*P **P** **22 02 44.3 -1.3**
ILAR Eielson Array 96.73 12 P **P** **22 02 44.9 -0.8**
comp=Z,3.0nm,0.8s,baz=220,slow=5.6,SNR=37
ILB Eielson Array 96.73 12 *e*P **P** **22 02 45.2 -0.4**
HHC Hu-ho-hao-te 96.84 313 *e*P **P** **22 02 46.9 0.0**
HHC SKS **SKSac** **22 13 23.5 +1.6**
HHC S **ScS** **22 14 13.2 +5.7**
HHC sS sS 22 14 18.6 -3.6
HHC pmax pmax
comp=Z,20nm,1.4s
HHC pmax pmax
comp=Z,25nm,4.7s
HHC LR LR
comp=Z,140nm,14.9s
HHC LR LR
comp=Z,150nm,13.7s
HHC LR LR
comp=Z,250nm,13.7s
LPAZ La Paz 96.97 113 P **P** **22 02 49.9 +1.1**
comp=Z,2.3nm,0.7s,baz=143,slow=2.0,SNR=5.3
CD2 Chengdu 97.04 301 *e*P Pdif 22 02 48.8 +0.7
CD2 pP pP 22 02 56.9 -0.1
CD2 sP sP 22 03 00.0 -0.3
CD2 SKS **SKSac** **22 13 24.0 +0.7**
CD2 S **ScS** **22 14 10.7 +1.2**
CD2 sS sS 22 14 24.7 +0.4
CD2 SS **SS** **22 20 50.1 +3.3**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.8s
RSSD Black Hills 98.45 44 *e*P **P** **22 02 54.0 -0.2**
RSSD pmax pmax
comp=Z,3.0nm,0.7s
RSSD Black Hills 98.45 44 *e*P **P** **22 02 54.0 -0.2**
comp=Z,2.6nm,0.7s
T33A Patterson Ranc 98.50 52 Pdiff Pdif 22 02 55.1 +0.8
baz=239
YKA Yellowknife Ar 103.96 25 PKiKP **PKiKP** **22 07 34.1 -1.1**
comp=Z,0.4nm,0.6s,baz=247,slow=1.5,SNR=5.4
WMQ Urumqi 114.00 308 *e*PKP **PKiKP** **22 07 55.2 +0.4**
WMQ PP **PP** **22 08 54.0 +4.4**
WMQ SKKS 22 15 39.8
WMQ SS **SS** **22 24 33.0 -5.0**
WMQ AMB AMB
comp=Z,170nm,8.6s
WMQ LR LR
comp=Z,200nm,23.0s
WMQ LR LR
comp=Z,260nm,21.4s
WMQ LR LR
comp=Z,280nm,23.2s
MKAR Makanchi Array 118.49 310 PKP **PKPdf** **22 08 02.1 -1.2**
comp=Z,1.6nm,0.7s,baz=74,slow=0.5,SNR=11
ZALV Zalesovo Beam 118.49 318 PKP **PKPdf** **22 08 01.7 -1.3**
comp=Z,1.2nm,0.6s,baz=134,slow=2.7,SNR=7.4
KSH Kashi 121.23 301 *e*PKP **PKPdf** **22 08 08.4 -0.5**
KSH *es*PKP 22 08 22.2
KSH *e*PP **PP** **22 09 45.8 +5.8**
KSH PKS **PKSdf** **22 11 44.1 -1.5**
KSH SKS **SKSdf** **22 15 15.2 -3.9**
KSH SKKS **SKKSac** **22 16 33.5 -3.8**
KSH SS **SS** **22 26 15.8 +3.5**
KSH AMB AMB
comp=Z,73nm,3.6s
KSH LR LR
comp=Z,89nm,4.8s
KSH LR LR
comp=Z,86nm,6.2s
KSH LR LR
comp=Z,160nm,6.6s
KURK Kurchatov 121.65 314 *e*PKiKP **PKPdf** **22 08 08.2 -0.9**
KURK Kurchatov 121.65 314 *e*PKPdf **PKPdf** **22 08 08.2 -0.9**
KKAR Karatay Array 125.97 304 *e*PKiKP **PKPdf** **22 08 17.5 -0.3**
KKAR Karatay Array 125.97 304 *e*PKPdf **PKPdf** **22 08 17.5 -0.3**
BRVK Borovoye 127.00 316 *i*PKiKP **PKPdf** **22 08 18.6 -0.8**
BRVK pmax pmax
comp=Z,23nm,2.5s
ARU Arti 133.47 321 *i*PKiKP **PKPdf** **22 08 31.9 +0.4**
ARU 22 10 57.1
GEYT Alibeck 134.69 296 PKP **PKPdf** **22 08 35.5 +1.1**
comp=Z,1.7nm,0.6s,baz=116,slow=3.4,SNR=4.8
AKTO Aktyubinsk 134.73 313 PKP **PKPdf** **22 08 34.4 +0.2**
comp=Z,1.7nm,0.5s,baz=53,slow=2.6,SNR=9.4
ARCES ARCESS Array B 138.08 349 PKP **PKPdf** **22 08 38.9 -0.9**
comp=Z,3.8nm,0.7s,baz=0.0,slow=1.2,SNR=10
FINES FINESS Array B 144.88 342 PKP **PKPab** **22 08 50.3 -0.9**
comp=Z,12nm,0.6s,baz=69,slow=2.8,SNR=96
GNI Garni 145.13 299 *i*PKiKP **PKPbc** **22 08 52.7 -0.3**
GNI Garni 145.13 299 *e*PKPdf **PKPab** **22 08 53.1 0.0**
OBN Obninsk 145.38 327 *d i*PKP2 **PKPbc** **22 08 51.5 -1.6**
OBN pmax pmax
comp=Z,22nm,0.8s
OBN Obninsk 145.38 327 *e*PKPbc **PKPbc** **22 08 52.4 -0.7**
ZEI Tsey 145.43 304 *i*PKiKP **PKPdf** **22 08 52.9 -1.1**
ZEI pmax pmax
comp=Z,40nm,0.5s
NCK Nalchik 145.53 305 *q i*PKiKP **PKPab** **22 08 54.2 -0.1**
AKH Akhalkalaki 145.93 301 *i*P **PKPbc** **22 08 55.6 0.0**
VSR Storozhevoye 145.98 320 *e*PKP2 **PKPdf** **22 08 53.9 -0.4**
VSR pmax pmax
comp=Z,30nm,0.6s
KBZ Khabaz 145.99 305 PKPbc **PKPbc** **22 08 55.3 0.0**
comp=Z,4.4nm,0.7s,baz=146,slow=3.4,SNR=14
KIV Kislovodsk 146.09 306 *i*PKP2 **PKPab** **22 08 56.5 0.0**
KIV pmax pmax
comp=Z,13nm,1.1s
KIV Kislovodsk 146.09 306 *e*PKPdf **PKPbc** **22 08 55.5 -0.4**
NEY Neytrino 146.20 305 *d i*PKP2 **PKPab** **22 08 58.0 +0.9**
NB2 NORSAR Subarra1 148.12 353 PKP **PKPbc** **22 09 00.1 -0.8**
comp=Z,100nm,2.0s,baz=21,slow=3.0
NB2 NORSAR Subarra1 148.12 353 PKP **PKPbc** **22 09 00.1 -0.8**
baz=21,slow=3.0
NOA NORSAR Array B 148.12 353 PKPbc **PKPbc** **22 09 00.2 -0.7**
comp=Z,6.5nm,0.6s,baz=15,slow=4.3,SNR=44
MICGM Minsk 149.64 332 *e* **PKPbc** **22 09 03.0 -1.9**
MNK Minsk 149.64 332 *e*PKHKP **PKPbc** **22 09 03.0 -1.9**
KONO Kongsberg 149.64 354 *e*PKP2 **PKPbc** **22 09 04.4 -0.4**
KONO Kongsberg 149.64 354 *e*PKPbc **PKPbc** **22 09 04.4 -0.4**
NACGM Naroch 149.78 334 *e* **PKPbc** **22 09 05.0 -0.2**
AKASG Malin Array Be 151.58 325 PKPbc **PKPbc** **22 09 09.0 -0.6**
comp=Z,16nm,0.6s,baz=45,slow=2.9,SNR=79
AKASG PKPab **PKPab** **22 09 17.9 -0.4**
comp=Z,7.1nm,0.6s,baz=44,slow=3.2,SNR=7.3
KIEV Kiev 151.59 325 *e*PKiKP **PKPbc** **22 09 09.2 -0.5**
KIEV Kiev 151.59 325 *e*PKPbc **PKPbc** **22 09 09.2 -0.5**
SIM Simferopol' 151.66 311 *i*PKiKP **PKPbc** **22 09 10.5 +0.5**
SIM pmax pmax
comp=Z,16nm,0.7s
SUW Suwalki 151.82 336 *e*PKP **PKPbc** **22 09 09.9 -0.1**
SUW Suwalki 151.82 336 *e*PKiKP **PKPbc** **22 09 09.9 -0.1**
BSD Bornholm Skovb 153.24 346 *i*P **PKPbc** **22 09 12.9 -0.3**
comp=Z,11nm,0.8s
BSD Bornholm Skovb 153.24 346 *i*PKiKP **PKPbc** **22 09 12.9 -0.3**
BSD pmax pmax
comp=Z,11nm,0.8s
SORM Soroca 153.59 321 ⇑*i*P **PKPbc** **22 09 13.6 -0.6**
SORM Soroca 153.59 321 ⇑PKiKP **PKPbc** **22 09 13.6 -0.6**
BRTR Keskin Array B 153.62 301 PKPbc **PKPbc** **22 09 14.2 -0.5**
comp=Z,1.1nm,0.6s,baz=143,slow=4.8,SNR=8.0
BRTR PKPab **PKPab** **22 09 26.9 -0.5**
comp=Z,2.0nm,0.7s,baz=121,slow=3.8,SNR=9.3
PRAR RASCA 155.20 322 ⇑*i*P PKPdf 22 09 19.9 +11
TESR Tescani 155.48 320 ⇓*i*P **PKPab** **22 09 33.9 -1.0**
TIRR Tirgusor 155.53 314 ⇓*i*P **PKPab** **22 09 36.4 +1.2**
TIRR Tirgusor 155.53 314 ⇓⇓PKP2 **PKPab** **22 09 36.4 +1.2**
BURAR Bucovina Array 155.57 324 ⇑*i*P PKPdf 22 09 19.4 +10
BURAR Bucovina Array 155.57 324 ⇑PKiKP PKPdf 22 09 19.4 +10
TLB Topalu 155.70 315 ⇓*i*P **PKPab** **22 09 38.2 +2.3**
TLB Topalu 155.70 315 ⇓⇓PKP2 **PKPab** **22 09 38.2 +2.3**
VRI Vrincioaia 155.80 319 ⇑*i*P **PKPab** **22 09 36.9 +0.5**
VRI Vrincioaia 155.80 319 ⇑⇑PKP2 **PKPab** **22 09 36.9 +0.5**
PLOR Plostina 155.86 319 ⇓*i*P **PKPab** **22 09 32.4 -4.2**
PLOR Plostina 155.86 319 ⇓⇓PKP2 **PKPab** **22 09 32.4 -4.2**
DOPR Dopca 156.50 320 ⇓*i*P **PKPab** **22 09 39.7 +0.3**
UPC Upice 157.15 340 AMS AMS 23 31 00.0
comp=Z,200nm,20.6s
DPC Dobruska-Polom 157.20 339 *e*PKPAB **PKPab** **22 09 41.9 -0.3**
DPC *ex* x 22 09 53.9
DPC Dobruska-Polom 157.20 339 *e*PKP2 **PKPab** **22 09 41.9 -0.3**
CLL Collm 157.21 345 *i*PKPab **PKPab** **22 09 41.4 -0.7**
CLL LmV 23 31 00.0
comp=Z,200nm,18.7s
CLL Collm 157.21 345 *i*PKP2 **PKPab** **22 09 41.4 -0.7**
ARR Arges 157.29 320 ⇑*i*P **PKPab** **22 09 43.1 +0.3**
MORC Moravsky Berou 157.29 337 ⇑*i*P **PKPab** **22 09 42.5 -0.1**
MORC Moravsky Berou 157.29 337 ⇑⇑PKP2 **PKPab** **22 09 42.5 -0.1**
BRG Berggiesshubel 157.39 343 *e*PKP **PKPab** **22 09 42.1 -0.9**
comp=Z,3.1nm,0.7s
PVCC Panska Ves 157.55 342 AMS AMS 23 36 00.0
comp=Z,200nm,17.8s
VYHS Vyhne 157.87 333 *e*PKP2 **PKPab** **22 09 41.9 -3.2**
VYHS Vyhne 157.87 333 *e*PKP **PKPab** **22 09 41.9 -3.2**
PRU Pruhonice 158.04 341 *e*PKPAB **PKPab** **22 09 45.7 -0.1**
PRU AMS AMS 23 28 50.0
comp=Z,200nm,19.4s
PRU Pruhonice 158.04 341 *e*PKP2 **PKPab** **22 09 45.7 -0.1**
PRU MLR MLR
comp=Z,200nm,19.4s
TREC Trest 158.38 339 AMS AMS 23 30 40.0
comp=Z,200nm,18.7s
KHC Kasperske Hory 159.09 342 *e*PKPAB **PKPab** **22 09 50.3 -0.1**
KHC *ex* x 22 10 02.9
KHC AMS AMS 23 36 20.0
comp=Z,300nm,18.5s
KHC Kasperske Hory 159.09 342 *e*PKP2 **PKPab** **22 09 50.3 -0.1**
KHC MLR MLR
comp=Z,300nm,18.5s
MDVR Moldovita 159.26 322 ⇓*i*P PKPdf 22 09 23.3 +9.3
GERES GERESS Array B 159.31 341 PKPbc PKPdf 22 09 25.9 +12
comp=Z,0.3nm,0.7s,baz=208,slow=3.3,SNR=2.7
GERES PKPab **PKPab** **22 09 50.6 -0.8**
comp=Z,0.8nm,0.6s,baz=29,slow=3.0,SNR=7.0
CONA Conrad Observa 159.45 337 *i*PKPab **PKPab** **22 09 51.3 -0.8**
comp=Z,1.1nm,0.6s
VTS Vitosha 159.74 315 ⇓*i*P **PKPab** **22 09 52.9 -0.7**
VTS Vitosha 159.74 315 ⇓⇓PKP2 **PKPab** **22 09 52.9 -0.7**
MOA Molln 160.04 339 *i*PKPab **PKPab** **22 09 55.6 +1.1**
comp=Z,0.6nm,0.3s
ARSA Arzberg 160.15 336 *i*PKPab **PKPab** **22 09 54.3 -0.7**
SOKA Soboth 160.81 336 *i*PKPab **PKPab** **22 09 55.7 -2.3**
comp=Z,0.8nm,0.5s
KBA Koelnbreinsper 161.01 340 *i*PKPab **PKPab** **22 09 59.0 0.0**
comp=Z,3.0nm,0.7s
OBKA Obir 161.13 337 *i*PKPab **PKPab** **22 09 57.1 -2.3**
comp=Z,1.9nm,0.4s
RETA Reutte 161.31 345 *i*PKPab **PKPab** **22 09 59.6 -0.5**
comp=Z,1.1nm,0.5s
WTTA Wattenberg 161.31 343 *i*PKPab **PKPab** **22 10 00.2 -0.1**
comp=Z,1.8nm,0.4s
MYKA Terra Mystica 161.32 339 *i*PKPab **PKPab** **22 10 00.2 0.0**
comp=Z,1.9nm,0.5s
MOTA Moosalm 161.36 345 *i*PKPab **PKPab** **22 09 59.7 -0.7**
comp=Z,1.0nm,0.4s
ABTA Abfaltersbach 161.55 341 *i*PKPab **PKPab** **22 10 00.1 -1.2**
comp=Z,0.3nm,0.3s
DAVA Damuels 161.68 347 *i*PKPab **PKPab** **22 10 00.8 -1.1**
comp=Z,4.7nm,1.0s
FETA Feichten 161.75 345 *i*pPKPab **PKPab** **22 10 03.4 +1.2**
comp=Z,1.0nm,0.5s
TORD Torodi Ar. Bea 163.56 172 PKP **PKPdf** **22 09 18.7 -0.7**
comp=Z,1.0nm,1.0s,baz=178,slow=7.4,SNR=4.0
TORD PKPab **PKPab** **22 10 10.9 +0.2**
comp=Z,4.3nm,0.7s,baz=188,slow=4.2,SNR=19
ESDC Sonseca Array 167.99 31 PKPab **PKPab** **22 10 28.9 -0.9**
comp=Z,1.2nm,0.7s,baz=315,slow=4.2,SNR=7.4

IDC ***07*** *21:50:01.0±0.5, 29°33S×176°10W, h0km, mb4.7/20, mb1 4.9/20, mb1mx4.7/35, mbtmp4.7/20, MS4.4/3, Ms1 4.4/3, ms1mx4.0/10, Error ellipse: s-maj=19.6km s-min=17.5km az=164.0*
NEIC ***07*** *21:50:02.5±0.2, 29°39S×176°17W, h10km, mb5.0/29, Error ellipse: s-maj=8.1km s-min=5.7km az=156.0*
ISCJB ***07*** *21:50:04.1±0.3, 29°44S±0°07×176°25W±0°06, h28km, mb4.9/50, MS4.5/3, Error ellipse: s-maj=10.9km s-min=6.8km az=158.6*

ISC 07 21:50:05.3±0.4, 29°39S±0°09×176°19W±0°09, h28km, n109, σ0°79/109, mb4.9/50, MS4.4/3, 1C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.52**	**275**	Pn	**Pn**	**21 50 29.7**	**-0.8**
AFI	**Afiamalu**	**15.93**	**16**	Pn	**Pn**	**21 53 48.0**	**+0.3**
EIDS	**Eidsvold** 6.4nm,0.8s	**29.29**	**270**	*e*P	**P**	**21 56 05.7**	**+0.4**
HNR	**Honiara** 81nm,0.8s	**29.89**	**307**	*e*P	**P**	**21 56 10.3**	**-0.5**
CTA	**Charters Tower** 6.7nm,0.5s,baz=99,slow=14,SNR=3.9	**35.22**	**277**	P	**P**	**21 56 58.4**	**+1.0**
CTAO	**Charters Tower** 38nm,0.7s	**35.22**	**277**	*e*P	**P**	**21 56 57.8**	**+0.4**
STKA	**Stephens Creek** 15nm,0.7s,baz=99,slow=9.2,SNR=6.3	**36.25**	**255**	P	**P**	**21 57 06.8**	**+0.7**
PMG	**Port Moresby** comp=Z,557nm,18.7s,baz=96,slow=33	**39.63**	**293**	LR	LR	22 12 00.3	
ASAR	**Alice Springs** 5.2nm,0.6s,baz=106,slow=7.7,SNR=5.9	**44.75**	**265**	P	**P**	**21 58 15.5**	**-1.1**
WRAB	**Tennant Creek** 21nm,0.9s	**45.65**	**270**	*e*P	**P**	**21 58 23.7**	**0.0**
WRA	**Warramunga Arr** 12nm,0.7s,baz=109,slow=6.1,SNR=9.4	**45.65**	**270**	P	**P**	**21 58 23.9**	**+0.2**
WRA	comp=Z,521nm,18.1s,baz=135,slow=34			LR	LR	22 16 06.4	
VNDA	**Vanda** 3.2nm,0.9s,baz=1.3,slow=6.6,SNR=6.4	**49.26**	**186**	P	**P**	**21 58 52.9**	**+1.9**
FITZ	**Fitzroy Crossi** 7.8nm,0.8s,baz=145,slow=7.6,SNR=5.8	**53.95**	**268**	P	**P**	**21 59 27.0**	**+0.1**
CASY	**Casey** 2.2nm,0.8s	**56.77**	**208**	*e*P	**P**	**21 59 46.0**	**-0.4**
MBWA	**Marble Bar** 44nm,1.0s	**57.91**	**262**	*e*P	**P**	**21 59 54.8**	**-0.4**
QSPA	**South Pole Qui** 98nm,0.9s	**60.72**	**180**	*e*P	**P**	**22 00 14.6**	**+0.5**
MAW	**Mawson** 14nm,1.0s,baz=108,slow=6.8,SNR=6.5	**73.80**	**200**	P	**P**	**22 01 37.9**	**+1.2**
MJAR	**Matsushiro Arr** 4.6nm,0.8s,baz=162,slow=4.9,SNR=6.3	**78.33**	**324**	P	**P**	**22 02 02.5**	**-0.4**
SYO	**Syowa Base**	**78.45**	**192**	*e*P	**P**	**22 02 00.4**	**-2.7**
SNAA	**Sanae** 726nm,1.0s	**79.11**	**178**	*e*P	**P**	**22 02 06.5**	**-0.4**

JNU	Nakatsue	79.87	317	P		P	22 02 12.4	+1.0
	5.9nm,0.7s,baz=71,slow=11,SNR=2.7							
SSLB	Suanglung	80.28	304	*e*P		P	22 02 12.8	-1.0
	15nm,0.9s							
PLCA	Paso Flores	82.03	132	P		P	22 02 22.4	-0.7
	3.4nm,1.0s,baz=245,slow=8.6,SNR=5.1							
MURC	Murrieta	83.89	46	P		P	22 02 33.3	+0.7
	baz=229							
MONP2	Monument Peak	83.92	47	P		P	22 02 33.5	+0.5
	baz=229							
BFSC	Mount Baldy Ra	84.03	45	P		P	22 02 33.9	+0.5
	baz=228							
EDW2	Edwards Air Fo	84.25	45	P		P	22 02 35.1	+0.7
	baz=228							
PFO	Pinyon Flats O	84.37	46	P		P	22 02 35.5	+0.3
	6.6nm,1.0s,baz=240,slow=3.2,SNR=4.3							
PFO	Pinyon Flats O	84.37	46	P		P	22 02 35.4	+0.3
	baz=229							
PFO	Pinyon Flats O	84.37	46	*e*P		P	22 02 35.7	+0.6
	6.1nm,1.0s							
ISA	Isabella, Lake	84.48	44	P		P	22 02 35.9	+0.3
	baz=228							
KSRS	Korea Array	84.61	319	P		P	22 02 38.0	+2.0
	3.8nm,0.8s,baz=135,slow=6.1,SNR=6.1							
KSAR	Wonju Array Be	84.63	319	P		P	22 02 38.0	+1.9
BELC	Belle Mtn. Jos	84.91	46	P		P	22 02 38.6	+0.7
	baz=229							
CMB	Columbia Colle	84.96	41	*e*P		P	22 02 38.5	+0.6
	45nm,0.9s							
BC3	Big Chuckawall	85.03	47	P		P	22 02 39.1	+0.7
	baz=230							
GLA	Glamis	85.05	48	P		P	22 02 39.4	+0.9
	baz=230							
PETK	Petropavlovsk-	85.24	345	P		P	22 02 40.0	+1.2
	2.1nm,0.5s,baz=94,slow=10,SNR=3.6							
PETK				LR		LR	22 35 49.9	
	comp=Z,157nm,19.6s,baz=149,slow=32							
GSC	Goldstone, Bar	85.25	45	P		P	22 02 40.1	+0.6
	baz=229							
MPMC	Manual Prospec	85.33	44	P		P	22 02 40.8	+0.7
	baz=228							
IRM	Iron Mountain	85.55	47	P		P	22 02 42.0	+1.0
	baz=230							
GMRC	Granite Mounta	85.63	46	P		P	22 02 42.1	+0.7
	baz=230							
214A	Organ Pipe Nat	85.68	50	P		P	22 02 42.1	+0.5
	baz=231							
FURC	Furnace Creek,	85.98	44	P		P	22 02 43.7	+0.7
	baz=229							
TPNV	Topopah Spring	86.67	44	P		P	22 02 46.9	+0.3
	baz=229							
USRK	Ussuriysk Ar.	87.20	326	P		P	22 02 49.6	+0.9
	5.8nm,0.8s,baz=123,slow=3.0,SNR=7.8							
TUC	Tucson	87.25	50	P		P	22 02 50.4	+1.0
	baz=232							
TUC	Tucson	87.25	50	*e*P		P	22 02 50.0	+0.5
	19nm,1.1s							
I04A	Tendick Farm,	87.89	36	P		P	22 02 52.9	+0.7
	baz=225							
J05D	Fort Rock, OR	88.14	37	P		P	22 02 54.3	+0.8
	baz=226							
WUAZ	Wupatki	88.82	48	P		P	22 02 57.9	+1.1
	baz=232							
WUAZ	Wupatki	88.82	48	*e*P		P	22 02 57.7	+0.8
	6.9nm,0.8s							
I05D	Terrebonne, OR	88.82	36	P		P	22 02 57.8	+1.2
	baz=225							
CN2	Changchun	90.30	322	*e*P		P	22 03 03.4	0.0
CN2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
TXAR	Lajitas Array	90.52	56	P		P	22 03 05.5	+0.6
	comp=Z,3.8nm,1.0s,baz=224,slow=6.5,SNR=9.3							
MNTX	Cornudas Mount	90.61	54	P		P	22 03 05.3	+0.1
	baz=235							
MNTX	Cornudas Mount	90.61	54	*e*P		P	22 03 05.1	-0.1
	comp=Z,4.5nm,1.0s							
MFID	Camas Ranch	91.14	39	*e*P		P	22 03 07.9	+0.4
	comp=Z,5.6nm,1.0s							
B05A	Bryant	91.22	33	P		P	22 03 08.7	+1.2
	baz=225							
ANMO	Albuquerque	91.72	50	P		P	22 03 10.7	+0.2
	baz=235							
ANMO	Albuquerque	91.72	50	*e*P		P	22 03 10.6	+0.2
	comp=Z,5.0nm,1.0s							
HLID	Hailey	92.02	40	P		P	22 03 12.3	+0.7
	baz=230							
HLID	Hailey	92.02	40	*e*P		P	22 03 12.2	+0.5
	comp=Z,5.2nm,0.9s							
ENH	Enshi	92.34	304	*e*P		P	22 03 13.9	+0.6
	comp=Z,17nm,1.1s							
933A	Laredo	92.85	60	P		P	22 03 15.4	-0.2
	baz=238							
S22A	4UR Ranch, Cre	93.08	48	P		P	22 03 17.4	+0.6
	baz=235							
PMR	Palmer	93.27	13	*e*P		P	22 03 17.0	+0.3
	comp=Z,6.1nm,0.9s							
DIV	Divide	93.53	14	*e*P		P	22 03 18.5	+0.5
	comp=Z,10nm,1.0s							
MSTX	Muleshoe	93.70	53	*e*P		P	22 03 19.4	-0.1
	comp=Z,6.4nm,1.0s							
SDCO	Great Sand Dun	93.94	49	P		P	22 03 21.1	+0.3
	baz=236							
SDCO	Great Sand Dun	93.94	49	*e*P		P	22 03 20.8	0.0
	comp=Z,1.1nm,0.8s							
JCT	Junction City	93.96	57	P		P	22 03 20.5	-0.3
	baz=238							
DLMT	Dillon	94.16	39	*e*P		P	22 03 21.9	+0.4
	comp=Z,4.4nm,0.9s							
BW06	Boulder Array	94.32	43	P		P	22 03 22.3	-0.1
	baz=233							
PDAR	Pinedale Array	94.32	43	P		P	22 03 22.1	-0.3
	comp=Z,2.0nm,0.9s,baz=224,slow=4.1,SNR=7.1							
MSO	Missoula	94.35	38	P		P	22 03 21.8	-0.4
	baz=231							
FLWY	Flagg Ranch	94.44	41	*e*P		P	22 03 23.5	+0.7
	comp=Z,8.3nm,1.0s							
CMAR	Chiang Mai Arr	94.56	288	P		P	22 03 25.9	+2.2
	comp=Z,1.2nm,0.7s,baz=139,slow=3.7,SNR=5.1							
433A	Art	94.62	57	P		P	22 03 22.6	-1.1
	baz=238							
CHTO	Chiang Mai	94.74	289	*e*P		P	22 03 24.6	+0.1
	comp=Z,1.7nm,0.8s							
TRF	Thorofare Moun	94.78	11	*e*P		P	22 03 23.5	-0.3
	comp=Z,7.6nm,0.8s							
BOZ	Bozeman (W)	94.87	39	P		P	22 03 25.2	+0.5
	baz=232							
BOZ	Bozeman (W)	94.87	39	*e*P		P	22 03 25.1	+0.4
	comp=Z,1.1nm,1.1s							
MCK	McKinley	95.28	12	*e*P		P	22 03 25.9	0.0
	comp=Z,3.0nm,0.6s							
SEY	Seymchan	95.36	346	P		P	22 03 25.9	-0.3
	comp=Z,0.8nm,0.3s,baz=174,slow=7.2,SNR=4.9							
K22A	Casper	96.07	44	*e*P		P	22 03 30.4	+0.1
	comp=Z,38nm,0.6s							
DOT	Dot Lake	96.14	14	*e*P		P	22 03 30.0	+0.1
	comp=Z,9.6nm,0.9s							
ILAR	Eielson Array	96.60	12	P		P	22 03 31.8	-0.1
	comp=Z,3.8nm,0.9s,baz=215,slow=5.8,SNR=11							
HIA	Hailar	96.83	324	*e*P		P	22 03 33.5	+0.1
	comp=Z,4.9nm,0.4s							
LPAZ	La Paz	97.11	113	P		P	22 03 35.9	-0.3
	comp=Z,3.0nm,0.9s,baz=230,slow=3.3,SNR=4.5							
ZALV	Zalesovo Beam	118.32	318	PKP		PKPdf	22 08 48.5	-0.9
	comp=Z,2.0nm,0.8s,baz=231,slow=0.9,SNR=5.8							
MKAR	Makanchi Array	118.33	310	PKP		PKPdf	22 08 48.3	-1.5
	comp=Z,2.2nm,0.9s,baz=54,slow=3.1,SNR=6.3							
KURK	Kurchatov	121.48	314	PKPdf		PKPdf	22 08 54.7	-1.0
BRVK	Borovoye	126.84	316	*e*PKPdf		PKPdf	22 09 05.6	-0.3
SUMG	Summit	131.31	16	*i* P		PKPdf	22 09 15.2	+0.8
	comp=Z,9.7nm,1.1s							
GEYT	Alibeck	134.55	296	PKP		PKPdf	22 09 22.3	+1.2
	comp=Z,1.4nm,0.8s,baz=158,slow=1.6,SNR=3.7							
AKTO	Aktyubinsk	134.57	313	PKP		PKPdf	22 09 20.2	-0.4
	comp=Z,3.0nm,0.7s,baz=343,slow=1.6,SNR=6.8							
ARCES	ARCESS Array B	137.92	349	PKP		PKPdf	22 09 25.8	-0.5
	comp=Z,1.0nm,0.3s,baz=27,slow=1.6,SNR=11							
FINES	FINESS Array B	144.71	342	PKP		PKPab	22 09 37.0	-0.5
	comp=Z,12nm,0.7s,baz=64,slow=4.4,SNR=9.7							
OBN	Obninsk	145.21	327	*e*PKPbc		PKPbc	22 09 39.1	-0.3
KBZ	Khabaz	145.83	306	PKPbc		PKPab	22 09 42.4	+0.2
	comp=Z,4.9nm,0.8s,baz=156,slow=3.8,SNR=4.1							
NB2	NORSAR Subarra	147.96	353	PKP		PKPbc	22 09 47.2	-0.2
	comp=Z,7.1nm,0.8s,baz=10,slow=3.2							
NOA	NORSAR Array B	147.96	353	PKPbc		PKPbc	22 09 46.6	-0.7
	comp=Z,16nm,1.0s,baz=14,slow=4.4,SNR=8.7							
KONO	Kongsberg	149.49	354	*e*PKPbc		PKPbc	22 09 50.9	-0.3
AKASG	Malin Array Be	151.41	325	PKPbc		PKPbc	22 09 55.8	-0.3
	comp=Z,15nm,0.6s,baz=47,slow=2.9,SNR=10							
BRTR	Keskin Array B	153.47	301	PKPbc		PKPbc	22 10 01.1	-0.2
	comp=Z,1.5nm,0.8s,baz=132,slow=1.8,SNR=4.3							
BRTR				PKPab		PKPab	22 10 12.8	-0.8
	comp=Z,1.5nm,0.7s,baz=57,slow=4.6,SNR=3.8							
GERES	GERESS Array B	159.14	341	PKPab		PKPab	22 10 36.4	-1.2
	comp=Z,0.9nm,0.7s,baz=29,slow=3.0,SNR=4.9							
TORD	Torodi Ar. Bea	163.72	173	PKPab		PKPab	22 10 57.7	-0.5
	comp=Z,7.0nm,0.8s,baz=188,slow=4.2,SNR=11							
ESDC	Sonseca Array	167.91	30	PKPab		PKPab	22 11 14.9	-1.4
	comp=Z,1.3nm,0.8s,baz=313,slow=2.5,SNR=4.5							

*ATH **07** 21:53:12.4,34˚.88N×26˚.06E,h9km±2km, ML2.6/5, Error ellipse: s-maj=3.8km s-min=1.0km az=349.0*
*THE **07** 21:53:13.0,34˚.93N×26˚.03E,h1km±5km, ML2.8/3, Error ellipse: s-maj=6.7km s-min=1.1km az=169.0*
*CSEM **07** 21:53:13.4±0.5,34˚.91N×26˚.04E, h2km, ML2.8, Error ellipse: s-maj=13.4km s-min=4.4km az=172.0*
*ISK **07** 21:53:15.0,35˚.03N×26˚.12E, h5km, MD3.0*

ISC 07 21:53:13.1±1.5,**34˚91N**±0˚.06×**26˚04E**±0˚.02,**h5**km±11km, **n39**,σ0**s76**/58,**Crete**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ZKR	**Zakros**	**0.25**	**35**	P		**Pg**	**21 53 17.7**	**-0.3**
ZKR				S		**Sg**	**21 53 21.7**	**+0.4**
ZKR	**Zakros**	**0.25**	**35**	P		**Pg**	**21 53 17.7**	**-0.3**
ZKR				S		**Sg**	**21 53 21.7**	**+0.4**
ZKR	**Zakros**	**0.25**	**35**	P		**Pg**	**21 53 18.3**	**+0.3**
ZKR				S		**Sg**	**21 53 21.0**	**-0.3**
ZKR				AML	AML		21 53 21.9	
	comp=E,4781μm,0.3s							
ZKR				AML	AML		21 53 22.1	
	comp=N,6142μm,0.3s							
NPS	**Neapolis**	**0.50**	**315**	P		**Pg**	**21 53 22.5**	**-0.2**
NPS				S		**Sg**	**21 53 30.4**	**+1.1**
NPS	**Neapolis**	**0.50**	**315**	P		**Pg**	**21 53 22.9**	**+0.1**
NPS				S		**Sg**	**21 53 29.9**	**+0.6**
NPS	**Neapolis**	**0.50**	**315**	P		**Pg**	**21 53 22.9**	**+0.1**
NPS				S		**Sg**	**21 53 29.9**	**+0.6**
NPS				AML	AML		21 53 31.0	
	comp=E,1985μm,0.2s							
NPS				AML	AML		21 53 31.9	
	comp=N,1559μm,0.2s							
LAST	**Lasithi**	**0.53**	**299**	P		**Pg**	**21 53 22.7**	**-0.6**
LAST				S		**Sg**	**21 53 30.8**	**+0.6**
LAST	**Lasithi**	**0.53**	**299**	P		**Pg**	**21 53 23.4**	**+0.1**
LAST				S		**Sg**	**21 53 30.8**	**+0.6**
LAST	**Lasithi**	**0.53**	**299**	P		**Pg**	**21 53 23.4**	**+0.1**
IDI	**Anoyia**	**1.02**	**292**	P		**Pg**	**21 53 31.6**	**-1.1**
IDI	**Anoyia**	**1.02**	**292**	P		**Pg**	**21 53 31.6**	**-1.1**
IDI				S		**Sg**	**21 53 45.8**	**-0.1**
IDI	**Anoyia**	**1.02**	**292**	P		**Pg**	**21 53 31.4**	**-1.3**
IDI				S		**Sg**	**21 53 45.9**	**-0.1**
IDI				AML	AML		21 53 51.1	
	comp=E,194μm,0.3s							
IDI				AML	AML		21 53 54.8	
	comp=N,243μm,0.5s							
SIVA	**Sivas**	**1.02**	**276**	P		**Pg**	**21 53 32.2**	**-0.5**
SIVA	**Sivas**	**1.02**	**276**	P		**Pg**	**21 53 32.2**	**-0.5**
SIVA				S		**Sg**	**21 53 46.3**	**+0.4**
SIVA	**Sivas**	**1.02**	**276**	P		**Pg**	**21 53 31.9**	**-0.8**
SIVA				S		**Sg**	**21 53 46.3**	**+0.4**
SIVA				AML	AML		21 53 58.3	
	comp=N,672μm,0.8s							
SIVA				AML	AML		21 54 01.8	
	comp=E,685μm,1.1s							
KARP	**Karpathos**	**1.11**	**55**	*e*PG		**Pg**	**21 53 33.9**	**-0.6**
KARP				*e*SG		**Sb**	**21 53 49.2**	**-0.6**
KARP	**Karpathos**	**1.11**	**55**	P		**Pg**	**21 53 33.9**	**-0.6**
KARP	**Karpathos**	**1.11**	**55**	P		**Pg**	**21 53 33.9**	**-0.6**
KARP				*e*Sg		**Sb**	**21 53 49.2**	**-0.6**
KARP				S		**Sb**	**21 53 50.0**	**+0.2**
KARP	**Karpathos**	**1.11**	**55**	P		**Pg**	**21 53 33.3**	**-1.3**
KARP				S		**Sb**	**21 53 50.0**	**+0.2**
KARP				AML	AML		21 53 53.5	
	comp=N,413μm,0.5s							
KARP				AML	AML		21 53 58.2	
	comp=E,564μm,0.5s							
SANT	**Santorini**	**1.54**	**342**	P		**Pb**	**21 53 42.2**	**+0.1**
SANT	**Santorini**	**1.54**	**342**	P		**Pb**	**21 53 42.1**	**+0.1**
THR3	**Thira Island,**	**1.59**	**341**	P		**Pn**	**21 53 41.4**	**-0.5**
THR3	**Thira Island,**	**1.59**	**341**	P		**Pn**	**21 53 41.4**	**-0.5**
VAM	**Vamos**	**1.59**	**289**	P		**Pn**	**21 53 42.0**	**0.0**
VAM				S		**Sb**	**21 54 03.8**	**+0.4**
THR5	**Thira Island,**	**1.61**	**340**	*e*PN		**Pg**	**21 53 43.9**	**-0.1**
THR5				*e*SN		**Sb**	**21 54 04.1**	**+0.1**
THR5	**Thira Island,**	**1.61**	**340**	P		**Pn**	**21 53 41.5**	**-0.7**
THR5	**Thira Island,**	**1.61**	**340**	P		**Pn**	**21 53 41.5**	**-0.7**
THR5	**Thira Island,**	**1.61**	**340**	*e*Pn		**Pg**	**21 53 43.9**	**-0.1**
THR5				*e*Sn		**Sb**	**21 54 04.1**	**+0.1**
IMMV	**Iera Moni Meta**	**1.78**	**289**	P		**Pg**	**21 53 47.0**	**-0.2**
IMMV	**Iera Moni Meta**	**1.78**	**289**	P		**Pg**	**21 53 47.0**	**-0.2**
ARG	**Arkhangelos**	**2.14**	**52**	P		**Pn**	**21 53 50.2**	**+0.7**
APE	**Apeiranthos**	**2.19**	**349**	*e*PN		**Pb**	**21 53 52.0**	**-1.4**
APE	**Apeiranthos**	**2.19**	**349**	*e*Pn		**Pb**	**21 53 52.0**	**-1.4**
ANKY	**Antikythira Is**	**2.44**	**294**	P		**Pn**	**21 53 55.0**	**+1.4**
ANKY	**Antikythira Is**	**2.44**	**294**	P		**Pn**	**21 53 55.0**	**+1.4**
DALY	**Dalyan (Mu˘la**	**2.85**	**47**	*e*PN		**Pn**	**21 54 01.3**	**+2.0**
DALY	**Dalyan (Mu˘la**	**2.85**	**47**	*e*Pn		**Pn**	**21 54 01.3**	**+2.0**
VLI	**Veliai**	**3.10**	**306**	P		**Pn**	**21 54 02.8**	**0.0**
VLI	**Veliai**	**3.10**	**306**	P		**Pn**	**21 54 02.8**	**0.0**

*NEIC **07** 21:53:26.6±0.4,29˚.34S×176˚.11W, h10km, mb4.7/12, Error ellipse: s-maj=15.8km s-min=9.8km az=165.0*
*ISCJB **07** 21:53:27.8±0.6,29˚.5S±0˚.1×176˚.08W±0˚.09, h28km, mb4.6/18, Error ellipse: s-maj=20.5km s-min=10.9km az=174.3*
*IDC **07** 21:53:33.3±4.5,29˚.34S×176˚.29W, h54km±34km, mb3.9/5, mb1 4.1/5, mb1mx3.7/36, mbtmp4.1/5, Error ellipse: s-maj=57.1km s-min=31.1km az=155.0*

ISC 07 21:53:29.6±0.6,**29˚3S**±0˚.2×**176˚17W**±0˚.08,**h28**km,**n25**, σ0**s73**/25,**mb4.5**/18,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.53**	**273**	P		**Pb**	**21 53 56.5**	**-0.8**
	432nm,0.3s,baz=79,slow=18,SNR=5.3							
RAO				S		**Sb**	**21 54 17.6**	**+1.3**
	362nm,0.3s,baz=285,slow=20,SNR=3.7							
CTAO	**Charters Tower**	**35.23**	**276**	*e*P		**P**	**22 00 21.8**	**0.0**
	13nm,0.7s							
STKA	**Stephens Creek**	**36.28**	**255**	P		**P**	**22 00 31.6**	**+1.0**
	3.3nm,0.7s,baz=98,slow=10.0,SNR=3.8							
ASAR	**Alice Springs**	**44.77**	**265**	P		**P**	**22 01 41.0**	**-0.1**
	1.1nm,0.7s,baz=103,slow=7.8,SNR=4.2							
WRAB	**Tennant Creek**	**45.66**	**270**	*e*P		**P**	**22 01 47.9**	**-0.1**
	3.2nm,0.7s							
WRA	**Warramunga Arr**	**45.67**	**270**	P		**P**	**22 01 47.3**	**-0.8**
	2.4nm,0.7s,baz=109,slow=6.1,SNR=12							
CASY	**Casey**	**56.82**	**208**	*e*P		**P**	**22 03 11.1**	**0.0**
	0.9nm,0.9s							
QSPA	**South Pole Qui**	**60.77**	**180**	*e*P		**P**	**22 03 38.7**	**-0.1**
	13nm,0.8s							
SSLB	**Suanglung**	**80.26**	**304**	*e*P		**P**	**22 05 37.8**	**-0.2**
	4.7nm,0.8s							
COCO	**West Island**	**81.55**	**261**	*e*P		**P**	**22 05 44.9**	**-0.2**
	209nm,0.7s							
CMB	**Columbia Colle**	**84.91**	**41**	*e*P		**P**	**22 06 02.4**	**+0.5**
	7.4nm,0.4s							
TXAR	**Lajitas Array**	**90.47**	**56**	P		**P**	**22 06 29.7**	**+0.7**
	0.5nm,0.9s,baz=205,slow=5.5,SNR=3.7							
ANMO	**Albuquerque**	**91.67**	**50**	*e*P		**P**	**22 06 35.1**	**+0.6**
	0.6nm,0.5s							
ENH	**Enshi**	**92.33**	**304**	*e*P		**P**	**22 06 37.0**	**-0.4**
	9.3nm,1.7s							
BJT	**Baijiatuan**	**93.29**	**315**	P		**P**	**22 06 41.7**	**+0.1**
	5.3nm,0.8s							
CHTO	**Chiang Mai**	**94.74**	**289**	*e*P		**P**	**22 06 48.7**	**-0.1**
	0.5nm,0.4s							
WALA	**Waterton Lakes**	**95.72**	**36**	*e*P		**P**	**22 06 52.5**	**-0.3**
	1.4nm,0.6s							
ILAR	**Eielson Array**	**96.55**	**12**	P		**P**	**22 06 56.6**	**+0.7**
	0.5nm,0.8s,baz=205,slow=4.0,SNR=3.8							
HIA	**Hailar**	**96.80**	**324**	*e*P		**P**	**22 06 57.1**	**-0.4**
	5.7nm,0.4s							
BVAR	**Borovoye Array**	**126.75**	**316**	PKP		**PKPdf**	**22 12 29.7**	**-0.3**
	0.6nm,0.6s,baz=46,slow=5.0,SNR=3.7							
ARCES	**ARCESS Array B**	**137.88**	**349**	PKP		**PKPdf**	**22 12 48.3**	**-2.2**
	3.8nm,1.1s,baz=15,slow=2.0,SNR=2.4							
FINES	**FINESS Array B**	**144.67**	**342**	PKP		PKPbc	22 13 01.9	+0.1
	1.4nm,0.6s,baz=50,slow=2.9,SNR=5.6							
NOA	**NORSAR Array B**	**147.91**	**353**	PKPbc		**PKPbc**	**22 13 12.2**	**+0.7**
	0.5nm,0.6s,baz=31,slow=6.8,SNR=3.5							
AKASG	**Malin Array Be**	**151.38**	**325**	PKPbc		**PKPbc**	**22 13 20.7**	**+0.4**
	2.3nm,0.5s,baz=45,slow=3.0,SNR=5.9							
TORD	**Torodi Ar. Bea**	**163.77**	**173**	PKPab		**PKPab**	**22 14 22.8**	**+0.1**
	0.9nm,0.7s,baz=180,slow=4.2,SNR=3.6							

*ISCJB **07** 21:55:29.8±0.5,39˚.94N±0˚.03×39˚.83E±0˚.03, h10km±5km, Error ellipse: s-maj=4.9km s-min=4.4km az=1.5*
*CSEM **07** 21:55:29.8±0.2,39˚.92N×39˚.82E, h10km, MD2.5, Error ellipse: s-maj=3.9km s-min=3.1km az=9.0*
*ISK **07** 21:55:29.3,39˚.95N×39˚.83E, h11km, MD2.7*
*DDA **07** 21:55:30.1,39˚.93N×39˚.83E, h7km, Md2.5*

ISC 07 21:55:29.8±0.9,**39˚95N**±0˚.03×**39˚84E**±0˚.02,**h13**km±8km, **n21**,σ0**s49**/37,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
EUZM	**Uzumlu**	**0.26**	**205**	*i* P			**Pg**	**21 55 35.5**	**+0.1**
EUZM				*i* S			**Sg**	**21 55 39.5**	**+0.4**
EUZM	**Uzumlu**	**0.26**	**205**	P			**Pg**	**21 55 35.5**	**+0.1**
EUZM				S			**Sg**	**21 55 39.5**	**+0.4**
ERZN	**Erzincan**	**0.37**	**194**	*e*PG			**Pg**	**21 55 37.2**	**-0.1**
ERZN				*e*SG			**Sb**	**21 55 42.9**	**-1.1**
EZC	**Erzincan**	**0.42**	**243**	*e*Pg			**Pg**	**21 55 37.2**	**-1.0**
EZC				*e*Sg			**Sg**	**21 55 42.9**	**-1.0**
KELT	**Kelkit**	**0.49**	**295**	*i* P			**Pg**	**21 55 39.6**	**0.0**
KELT				*i* S			**Sg**	**21 55 46.7**	**+0.5**
KELT	**Kelkit**	**0.49**	**295**	P			**Pg**	**21 55 39.6**	**0.0**
KELT				S			**Sg**	**21 55 46.7**	**+0.5**
KOPT	**Kop Dagi**	**0.51**	**82**	*i* P			**Pg**	**21 55 39.7**	**-0.2**
KOPT				*i* S			**Sb**	**21 55 48.1**	**-0.1**
KOPT	**Kop Dagi**	**0.51**	**82**	P			**Pg**	**21 55 39.7**	**-0.2**
KOPT				S			**Sb**	**21 55 48.1**	**-0.1**
YEDI	**Yedisu-Bingol**	**0.74**	**133**	*e*PG			**Pg**	**21 55 43.7**	**-0.5**
YEDI				*e*SG			**Sb**	**21 55 55.0**	**+0.2**
YEDI	**Yedisu-Bingol**	**0.74**	**133**	*e*Pg			**Pg**	**21 55 43.7**	**-0.5**
YEDI				*e*Sg			**Sb**	**21 55 55.0**	**+0.2**
MACK	**Trabzon**	**1.00**	**357**	*i* P			**Pn**	**21 55 50.3**	**+0.7**
MACK				*i* S			**Sg**	**21 56 01.2**	**-0.9**
MACK	**Trabzon**	**1.00**	**357**	P			**Pn**	**21 55 50.3**	**+0.7**
MACK				S			**Sg**	**21 56 01.2**	**-0.9**
PTK	**Pertek**	**1.11**	**198**	*e*PN			**Pb**	**21 55 51.0**	**+0.1**
PTK				*e*SN			**Sn**	**21 56 06.6**	**+0.2**
PTK	**Pertek**	**1.11**	**198**	*e*Pn			**Pb**	**21 55 51.0**	**+0.1**
PTK				*e*Sn			**Sn**	**21 56 06.6**	**+0.2**
EZM	**Erzurum**	**1.17**	**91**	*e*PN			**Pb**	**21 55 52.1**	**+0.1**
KEMA	**Kemaliye**	**1.24**	**237**	*i* P			**Pb**	**21 55 53.2**	**+0.1**
KEMA	**Kemaliye**	**1.24**	**237**	P			**Pb**	**21 55 53.2**	**+0.1**
SUSE	**Susehri**	**1.28**	**282**	*i* P			**Pg**	**21 55 54.6**	**+0.1**
SUSE				*i* S			**Sb**	**21 56 10.1**	**-0.3**
SUSE	**Susehri**	**1.28**	**282**	P			**Pg**	**21 55 54.6**	**+0.1**
SUSE				S			**Sb**	**21 56 10.1**	**-0.3**
ESPY	**Espiye-Giresun**	**1.29**	**319**	*e*PN			**Pn**	**21 55 53.6**	**+0.1**
ESPY	**Espiye-Giresun**	**1.29**	**319**	*e*Pn			**Pn**	**21 55 53.6**	**+0.1**

NIED 07 21:56:00,27˚20N×143˚70E,h20km,Mw3.5 Best double couple: M0 2.20000×10^{14} **NP1:**ϕs192.00000°, δ27.00000°,λ32.00000°. **NP2:**ϕs72.00000°,δ76.00000°, λ113.00000°.,**Bonin Islands region**

*ISCJB **07** 21:58:24.9±0.5, 17˚.4S±0˚.1×174˚.6W±0˚.1, h139km, mb4.2/34, Error ellipse: s-maj=21.2km s-min=7.8km az=142.3*
*IDC **07** 21:58:26.9±2.9, 17˚.49S×174˚.51W, h146km±23km, mb3.8/12, mb1 4.1/13, mb1mx3.8/37, mbtmp4.3/13, Error ellipse: s-maj=39.6km s-min=15.5km az=144.0*
*NEIC **07** 21:58:30.1±1.4, 17˚.50S×174˚.38W, h177km±11km, mb4.3/21, Error ellipse: s-maj=23.9km s-min=9.2km az=149.0*

ISC 07 21:58:26.2±0.7,**17˚4S**±0˚.2×**174˚5W**±0˚.1,**h139**km,**n53**, σ0**s94**/54,**mb4.3**/34,**1C, Tonga Islands**

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

BRTR	**Keskin Array B**	**146.99**	**318**	PKPbc	**PKPbc**	**22**	**17**	**52.6 -0.3**
	comp=Z,0.9nm,0.6s,baz=96,slow=2.5,SNR=6.6							
GERES	**GERESS Array B**	**147.95**	**350**	PKPbc	**PKPbc**	**22**	**17**	**55.2 0.0**
	comp=Z,1.0nm,0.8s,baz=0.0,slow=2.7,SNR=8.4							
ASF	**Jabal al Asfar**	**148.06**	**303**	PKPbc	**PKPbc**	**22**	**17**	**56.6 +0.6**
	comp=Z,0.6nm,0.3s,baz=181,slow=5.2,SNR=3.6							
CONA	**Conrad Observa**	**148.41**	**347**	*i* PKiKP	**PKPbc**	**22**	**17**	**57.2 +0.8**
	comp=Z,6.5nm,1.7s							
MMAI	**Mount Meron Ar**	**148.93**	**306**	PKPbc	**PKPbc**	**22**	**17**	**58.5 +0.4**
	comp=Z,1.0nm,0.6s,baz=2.5,slow=1.9,SNR=3.1							
ARSA	**Arzberg**	**149.12**	**347**	*i* PKiKP	**PKPbc**	**22**	**17**	**58.2 0.0**
	comp=Z,2.6nm,1.4s							
WATA	**Walderalm**	**149.75**	**352**	*i* PKiKP	**PKPbc**	**22**	**17**	**59.4 -0.5**
	comp=Z,1.6nm,0.7s							
MOTA	**Moosalm**	**149.80**	**352**	*i* PKiKP	**PKPbc**	**22**	**18**	**00.5 +0.5**
	comp=Z,3.2nm,0.9s							
WTTA	**Wattenberg**	**149.81**	**352**	*i* PKPbc	**PKPdf**	**22**	**17**	**56.1 +0.9**
	comp=Z,3.4nm,0.8s							
FETA	**Feichten**	**150.17**	**353**	*i* PKiKP	**PKPbc**	**22**	**18**	**01.1 +0.2**
	comp=Z,5.6nm,1.4s							
ABTA	**Abfaltersbach**	**150.19**	**350**	*i* PKPbc	**PKPdf**	**22**	**17**	**56.9 +1.3**
	comp=Z,3.9nm,0.9s							

*IDC **07** 22:08:38.1±0.9, 34.°68S×179.°12W, h0km, mb4.5/4, mb1 4.6/6, mb1mx4.1/25, mbtmp4.5/6, ML4.2/2, MS3.7/3, Ms1 3.7/3, ms1mx3.2/25, Error ellipse: s-maj=30.9km s-min=22.4km az=129.0*
*ISCJB **07** 22:08:41.8±0.9, 34.°73S±0.°06×179.°2W±0.°2, h33km, mb4.8/9, MS3.8/2, Error ellipse: s-maj=20.2km s-min=6.3km az=18.8*
*NEIC **07** 22:08:44.0±0.5, 34.°70S×179.°21W, h35km, mb4.7/5, Error ellipse: s-maj=13.8km s-min=7.4km az=117.0*

ISC 07 22:08:43.5±0.8, 34.°70S±0.°09×179.°2W±0.°1, h35km, n39, σ1s03/47, mb4.6/9, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
WMGZ	**Waiomatatini S**	**3.68**	**212**	PN	**Pn**	**22**	**09**	**38.2 +0.4**
WMGZ				SN	**Sn**	**22**	**10**	**21.1 +1.1**
HAZ	**Te Kaha**	**3.93**	**218**	PN	**Pn**	**22**	**09**	**42.1 +0.9**
PUZ	**Puketiti**	**3.96**	**211**	PN	**Pn**	**22**	**09**	**40.9 -0.8**
TWGZ	**Tauwhareparae**	**4.17**	**213**	PN	**Pn**	**22**	**09**	**45.2 +0.7**
TWGZ				SN	**Sn**	**22**	**10**	**31.3 -0.7**
CNGZ	**Carnagh Statio**	**4.33**	**209**	PN	**Pn**	**22**	**09**	**47.2 +0.5**
MWZ	**Matawai**	**4.50**	**215**	PN	**Pn**	**22**	**09**	**49.4 +0.3**
URZ	**Urewera**	**4.65**	**219**	Pn	**Pn**	**22**	**09**	**51.0 -0.2**
	13nm,0.3s,baz=273,slow=2.4,SNR=27							
URZ				Sn	**Sn**	**22**	**10**	**44.9 +1.0**
	19nm,0.3s,baz=130,slow=23,SNR=12							
URZ	**Urewera**	**4.65**	**219**	*e*Sn	**Sn**	**22**	**10**	**44.7 +0.7**
URZ	**Urewera**	**4.65**	**219**	PN	**Pn**	**22**	**09**	**51.3 +0.1**
URZ				SN	**Sn**	**22**	**10**	**45.1 +1.1**
RIGZ	**Rimuhau**	**4.70**	**211**	PN	**Pn**	**22**	**09**	**51.7 -0.2**
KNZ	**Kokohu**	**5.00**	**210**	PN	**Pn**	**22**	**09**	**54.4 -1.6**
RAO	**Raoul Island**	**5.54**	**11**	LR	LR	22	11	39.3
	comp=Z,380nm,18.1s,baz=300,slow=33							
BKZ	**Black Stump Fm**	**5.66**	**217**	PN	**Pn**	**22**	**10**	**04.9 -0.1**
BKZ				SN	**Sn**	**22**	**11**	**07.8 -1.0**
RPZ	**Rata Peaks**	**11.77**	**217**	Pn	**Pn**	**22**	**11**	**26.8 -1.9**
	1.3nm,0.3s,baz=18,slow=16,SNR=4.0							
HNR	**Honiara**	**31.61**	**318**	P	**P**	**22**	**15**	**02.1 -0.9**
	138nm,0.5s,baz=167,slow=5.2,SNR=5.5							
STKA	**Stephens Creek**	**32.79**	**264**	LR	LR	22	27	59.4
	comp=Z,163nm,18.3s,baz=33,slow=35							
CTA	**Charters Tower**	**33.80**	**286**	P	**P**	**22**	**15**	**22.6 +0.3**
	3.5nm,0.7s,baz=114,slow=13,SNR=5.6							
CTAO	**Charters Tower**	**33.80**	**286**	*e*P	**P**	**22**	**15**	**22.5 +0.3**
	9.9nm,0.7s							
ASAR	**Alice Springs**	**42.10**	**272**	P	**P**	**22**	**16**	**33.2 +0.9**
	4.2nm,0.5s,baz=115,slow=7.5,SNR=52							
ASAR				LR	LR	22	32	51.3
	comp=Z,112nm,18.8s,baz=122,slow=34							
WRAB	**Tennant Creek**	**43.48**	**277**	*e*P	**P**	**22**	**16**	**43.3 -0.1**
	5.1nm,0.5s							
WRA	**Warramunga Arr**	**43.48**	**277**	P	**P**	**22**	**16**	**44.1 +0.6**
	5.7nm,0.6s,baz=119,slow=7.5,SNR=50							
QSPA	**South Pole Qui**	**55.42**	**180**	*e*P	**P**	**22**	**18**	**15.4 +1.3**
	18nm,0.8s							
SYO	**Syowa Base**	**72.71**	**194**⇑	*e*P	**P**	**22**	**20**	**05.6 -1.7**
MAJO	**Matsushiro**	**81.25**	**326**	*e*P	**P**	**22**	**20**	**56.5 +0.7**
	2.6nm,0.5s							
GSI	**Gunungsitoli**	**85.20**	**275**	*e*P	**P**	**22**	**21**	**17.2 +0.5**
	4.8nm,0.8s							
PETK	**Petropavlovsk-**	**89.74**	**346**	P	**P**	**22**	**21**	**37.9 +0.3**
	4.8nm,0.9s,baz=104,slow=6.3,SNR=3.8							
KURK	**Kurchatov**	**123.26**	**312**	PKP	**PKPdf**	**22**	**27**	**37.4 +1.4**
KURBB	**Kurchatov Arra**	**123.29**	**312**	PKP	**PKPdf**	**22**	**27**	**37.4 +1.3**
	0.5nm,0.3s,baz=114,slow=1.9,SNR=4.7							
BVAR	**Borovoye Array**	**128.73**	**313**	PKP	**PKPdf**	**22**	**27**	**47.4 +1.0**
	0.7nm,0.7s,baz=215,slow=1.8,SNR=5.5							
KBZ	**Khabaz**	**146.53**	**298**	PKPbc	**PKPbc**	**22**	**28**	**20.5 -0.2**
	1.4nm,0.8s,baz=196,slow=6.2,SNR=3.8							
FINES	**FINESS Array B**	**148.78**	**337**	PKPbc	**PKPbc**	**22**	**28**	**26.5 +0.2**
	2.0nm,0.5s,baz=40,slow=3.7,SNR=18							
EIL	**Elat**	**150.79**	**270**	PKPbc	**PKPbc**	**22**	**28**	**31.9 -0.3**
	2.9nm,0.8s,baz=72,slow=2.1,SNR=3.1							
EIL				PKPab	**PKPab**	**22**	**28**	**37.1 -2.4**
	4.0nm,1.0s,baz=299,slow=7.7,SNR=3.6							
MMAI	**Mount Meron Ar**	**151.34**	**277**	PKPbc	**PKPbc**	**22**	**28**	**34.1 +0.6**
	2.0nm,0.7s,baz=106,slow=5.4,SNR=4.6							
MMAI				PKPab	**PKPab**	**22**	**28**	**39.5 -2.3**
	1.9nm,0.7s,baz=111,slow=7.9,SNR=5.2							
NB2	**NORSAR Subarra**	**152.81**	**349**	PKP	**PKPbc**	**22**	**28**	**36.4 +0.5**
	comp=Z,2.1nm,1.1s,baz=23,slow=2.0							
NOA	**NORSAR Array B**	**152.81**	**349**	PKPbc	**PKPbc**	**22**	**28**	**36.2 +0.2**
	comp=Z,0.6nm,0.7s,baz=13,slow=4.1,SNR=3.3							
NOA				PKPab	**PKPab**	**22**	**28**	**45.8 -1.2**
	comp=Z,1.0nm,0.8s,baz=14,slow=4.1,SNR=3.7							
HFS	**Hagfors**	**153.21**	**346**	PKPbc	**PKPbc**	**22**	**28**	**36.7 -0.1**
	comp=Z,1.7nm,0.9s,baz=19,slow=6.1,SNR=3.0							
HFS				PKPab	**PKPab**	**22**	**28**	**48.7 0.0**
	comp=Z,0.6nm,0.6s,baz=64,slow=3.7,SNR=3.9							
BRTR	**Keskin Array B**	**153.50**	**291**	PKPbc	**PKPbc**	**22**	**28**	**38.4 +0.1**
	comp=Z,0.7nm,0.8s,baz=134,slow=3.6,SNR=5.4							
BRTR				PKPab	**PKPab**	**22**	**28**	**48.6 -2.2**
	comp=Z,1.1nm,0.8s,baz=142,slow=2.9,SNR=4.2							
AKASG	**Malin Array Be**	**153.94**	**317**	PKPbc	**PKPbc**	**22**	**28**	**39.9 +1.3**
	comp=Z,0.5nm,0.4s,baz=33,slow=2.5,SNR=4.1							
TORD	**Torodi Ar. Bea**	**158.53**	**182**	PKPab	**PKPab**	**22**	**29**	**12.9 +0.4**
	comp=Z,0.5nm,0.7s,baz=170,slow=4.0,SNR=5.5							

IDC 07 22:18:48.3±1.4, 29.°09S×176.°26W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/18, mbtmp3.7/2, MS3.4/2, Ms1 3.4/2, ms1mx2.9/29, Error ellipse: s-maj=58.9km s-min=39.4km az=174.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
RAR	**Rarotonga**	**16.85**	**66**	LR	LR	22	29	11.7
	comp=Z,98nm,18.7s,baz=243,slow=37							
PPT	**Papeete**	**26.99**	**71**	LR	LR	22	33	49.1
	comp=Z,76nm,18.8s,baz=217,slow=33							
ASAR	**Alice Springs**	**44.71**	**265**	P	P	22	27	03.3 -0.1
	0.4nm,0.4s,baz=102,slow=6.8,SNR=5.2							
WRA	**Warramunga Arr**	**45.58**	**270**	P	P	22	27	09.8 -0.6
	0.5nm,0.3s,baz=109,slow=6.2,SNR=9.7							
FINES	**FINESS Array B**	**144.41**	**342**	PKP	PKPbc	22	38	24.4 +0.2
	1.1nm,0.7s,baz=64,slow=3.2,SNR=6.8							
NB2	**NORSAR Subarra**	**147.66**	**353**	PKP	PKPbc	22	38	33.9 -0.3
	comp=Z,0.8nm,0.5s,baz=8.8,slow=2.9							
NOA	**NORSAR Array B**	**147.66**	**353**	PKPbc	PKPbc	22	38	34.1 -0.1
	comp=Z,0.9nm,0.5s,baz=12,slow=4.5,SNR=5.6							
HFS	**Hagfors**	**148.24**	**351**	PKPbc	PKPbc	22	38	35.4 -0.3
	comp=Z,1.4nm,0.7s,baz=34,slow=0.5,SNR=5.9							
TORD	**Torodi Ar. Bea**	**164.02**	**173**	PKPab	PKPab	22	39	46.5 -0.5
	comp=Z,0.7nm,1.0s,baz=195,slow=4.5,SNR=3.1							

*IDC **07** 22:19:44.8±1.0, 41.°16N×47.°40E, h0km, mb3.6/6, mb1 3.7/12, mb1mx3.5/41, mbtmp3.7/12, ML3.4/5, Error ellipse: s-maj=17.6km s-min=9.1km az=149.0*
*AZER **07** 22:19:46.1±0.0, 41.°26N×47.°36E, h10km, Error ellipse: s-maj=1.1km s-min=0.4km az=21.0*
*ISCJB **07** 22:19:47.5±0.3, 41.°18N±0.°01×47.°37E±0.°02, h2km±2km, mb3.4/6, Error ellipse: s-maj=2.5km s-min=1.8km az=35.9*
*MOS **07** 22:19:47.0±1.0, 41.°12N×47.°48E, h10km, mb3.9/4, Error ellipse: s-maj=7.6km s-min=4.6km az=108.1*
*CSEM **07** 22:19:48.2±0.1, 41.°21N×47.°41E, h10km, ML4.0, Error ellipse: s-maj=3.2km s-min=2.7km az=54.0*
*NSSP **07** 22:19:48.5, 41.°23N×47.°32E, h10km, Ms4.0*
*TEH **07** 22:19:50.7, 41.°07N×47.°42E, h11km, ML3.6*

ISC 07 22:19:48.1±0.8, 41.°23N±0.°01×47.°39E±0.°01, h16km±5km, n180, σ1s80/297, mb3.5/6, 31C-43D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
SEKA	**Sheki**	**0.14**	**263**	⇑P	**Pg**	**22**	**19**	**51.6 -0.5**
	SNR=8210							
SEKA				⇑S	**Sg**	**22**	**19**	**54.7 0.0**
SEKA	**Sheki**	**0.14**	**263**	PG	**Pg**	**22**	**19**	**51.6 -0.5**
SEKA	**Sheki**	**0.14**	**263**	P	**Pg**	**22**	**19**	**51.6 -0.5**
	SNR=1000							
SEKA				S	**Sg**	**22**	**19**	**54.7 0.0**
AKT	**Akhty**	**0.36**	**45**	*e*PG	**Pg**	**22**	**19**	**55.2 -0.4**
AKT				*e*		22	20	00.9
AKT				pmax	pmax			
	comp=Z,4μm,0.2s							
AKT				smax	smax			
	comp=E,16μm,0.4s							
AKT				smax	smax			
	comp=N,7μm,0.5s							
AKT	**Akhty**	**0.36**	**45**	*e*Pg	**Pg**	**22**	**19**	**55.2 -0.4**
	comp=N,4μm,0.2s							
AKT				*e*Sg	**Sb**	**22**	**20**	**00.9 -0.9**
	comp=N,7μm,0.5s							
QBL	**Gabala**	**0.44**	**129**	⇓P	**Pg**	**22**	**19**	**56.6 -0.4**
	SNR=112							
QBL				⇓S	**Sb**	**22**	**20**	**04.2 +0.2**
QBL	**Gabala**	**0.44**	**129**	P	**Pg**	**22**	**19**	**56.6 -0.4**
	SNR=112							
QBL				S	**Sb**	**22**	**20**	**04.2 +0.2**
MNGR	**Mingechevir, A**	**0.51**	**207**	⇓P	**Pg**	**22**	**19**	**58.7 +0.5**
	SNR=127							
MNGR				⇓S	**Sb**	**22**	**20**	**08.2 +2.3**
MNGR	**Mingechevir, A**	**0.51**	**207**	PG	**Pb**	**22**	**19**	**59.1 +0.4**
MNGR				S	**Sb**	**22**	**20**	**08.1 +2.3**
MNGR	**Mingechevir, A**	**0.51**	**207**	P	**Pg**	**22**	**19**	**58.7 +0.5**
	SNR=127							
MNGR	**Mingechevir, A**	**0.51**	**207**	Pg	**Pb**	**22**	**19**	**59.1 +0.4**
MNGR				Sg	**Sb**	**22**	**20**	**08.1 +2.3**
XNQ	**Khinaliq**	**0.57**	**95**	⇓P	**Pg**	**22**	**19**	**58.9 -0.6**
	SNR=430							
XNQ				⇓S	**Sb**	**22**	**20**	**06.9 -1.0**
XNQ	**Khinaliq**	**0.57**	**95**	P	**Pg**	**22**	**19**	**58.9 -0.6**
	SNR=430							
XNQ				S	**Sb**	**22**	**20**	**06.9 -1.0**
KSMR	**Kasumkent**	**0.67**	**56**	⇑*i*PG	**Pb**	**22**	**20**	**01.2 -0.3**
KSMR				*i* S	**Sb**	**22**	**20**	**10.7 0.0**
KSMR				pmax	pmax			
	comp=Z,410nm,0.3s							
KSMR	**Kasumkent**	**0.67**	**56**	*i* Pg	**Pb**	**22**	**20**	**01.2 -0.3**
	comp=Z,410nm,0.3s							
KSMR				*i* Sg	**Sb**	**22**	**20**	**10.7 0.0**
ZKTA	**Zakatala**	**0.71**	**306**	⇑P	**Pg**	**22**	**20**	**01.4 -0.6**
ZKTA				⇑S	**Sb**	**22**	**20**	**12.2 +0.6**
QSAR	**Qusar**	**0.72**	**66**	⇑P	**Pb**	**22**	**20**	**02.4 +0.1**
	SNR=145							
QSAR				⇑S	**Sb**	**22**	**20**	**12.9 +0.9**
IML	**Ismayilli**	**0.74**	**125**	⇑P	**Pg**	**22**	**20**	**01.9 -0.7**
	SNR=185							
IML				⇑S	**Sb**	**22**	**20**	**13.4 +0.8**
IML	**Ismayilli**	**0.74**	**125**	P	**Pg**	**22**	**20**	**01.9 -0.7**
	SNR=185							
IML				S	**Sb**	**22**	**20**	**13.4 +0.8**
QUBA	**Quba, Azerbaij**	**0.84**	**81**	⇑P	**Pb**	**22**	**20**	**04.7 +0.3**
	SNR=49							
QUBA				⇓S	**Sn**	**22**	**20**	**16.6 -0.9**
QUBA	**Quba, Azerbaij**	**0.84**	**81**	P	**Pb**	**22**	**20**	**04.7 +0.3**
	SNR=49							
QUBA				S	**Sn**	**22**	**20**	**16.6 -0.9**
KMKR	**Kumukh**	**0.93**	**347**	*e*PG	**Pg**	**22**	**20**	**06.0 -0.2**
KMKR				*e*S	**Sb**	**22**	**20**	**19.0 +0.8**
KMKR	**Kumukh**	**0.93**	**347**	*e*Pg	**Pg**	**22**	**20**	**06.0 -0.2**
KMKR				*e*Sg	**Sb**	**22**	**20**	**19.0 +0.8**
URKR	**Urkarakh**	**0.96**	**11**	⇓*i*PG	**Pb**	**22**	**20**	**06.5 +0.1**
URKR				*e*S	**Sn**	**22**	**20**	**20.0 -0.4**
URKR				pmax	pmax			
	comp=Z,340nm,0.2s							
URKR	**Urkarakh**	**0.96**	**11**	*i* Pg	**Pb**	**22**	**20**	**06.5 +0.1**
	comp=Z,340nm,0.2s							
URKR				*e*Sg	**Sn**	**22**	**20**	**20.0 -0.4**
ZRD	**Zardab**	**0.97**	**166**	⇓P	**Pg**	**22**	**20**	**06.8 -0.2**
	SNR=332							
ZRD				⇓S	**Sn**	**22**	**20**	**22.6 +2.0**
ZRD	**Zardab**	**0.97**	**166**	P	**Pg**	**22**	**20**	**06.8 -0.2**
	SNR=332							
ZRD				S	**Sn**	**22**	**20**	**22.6 +2.0**
BRDA	**Brd**	**0.97**	**189**	⇑P	**Pb**	**22**	**20**	**07.2 +0.5**
	SNR=586							
BRDA				⇓S	**Sn**	**22**	**20**	**23.7 +3.0**
BRDA	**Brd**	**0.97**	**189**	P	**Pb**	**22**	**20**	**07.2 +0.5**
	SNR=586							
BRDA				S	**Sn**	**22**	**20**	**23.7 +3.0**
GANJ	**Ganja**	**0.99**	**235**	⇑P	**Pg**	**22**	**20**	**05.6 -1.8**
	SNR=380							
GANJ				⇓S	**Sg**	**22**	**20**	**19.2 -1.2**
GANJ	**Ganja**	**0.99**	**235**	PG	**Pg**	**22**	**20**	**05.5 -1.8**
GANJ				S	**Sg**	**22**	**20**	**19.1 -1.3**
GANJ	**Ganja**	**0.99**	**235**	P	**Pg**	**22**	**20**	**05.6 -1.8**
	SNR=380							
GANJ				S	**Sg**	**22**	**20**	**19.2 -1.2**
PQL	**Pirkuli**	**1.01**	**115**	⇑P	**Pg**	**22**	**20**	**07.0 -0.7**
	SNR=139							
PQL				⇑S	**Sn**	**22**	**20**	**23.4 +1.6**
PQL	**Pirkuli**	**1.01**	**115**	P	**Pg**	**22**	**20**	**07.0 -0.7**
	SNR=139							
PQL				S	**Sn**	**22**	**20**	**23.4 +1.6**
KDMR	**Kurdemir**	**1.04**	**144**	⇑P	**Pg**	**22**	**20**	**07.4 -0.9**
	SNR=58							
KDMR				⇓S	**Sn**	**22**	**20**	**23.4 +1.1**
KDMR	**Kurdemir**	**1.04**	**144**	P	**Pg**	**22**	**20**	**07.4 -0.9**
	SNR=58							
KDMR				S	**Sn**	**22**	**20**	**23.4 +1.1**
DRN	**Derbent**	**1.07**	**41**	*e*PG	**Pn**	**22**	**20**	**09.7 +1.2**
DRN				*e*S	**Sn**	**22**	**20**	**25.2 +2.2**
DRN	**Derbent**	**1.07**	**41**	*e*Pg	**Pn**	**22**	**20**	**09.7 +1.2**
DRN				*e*Sg	**Sn**	**22**	**20**	**25.2 +2.2**
MTKZ	**Martakert**	**1.11**	**203**	⇓*i*P	**Pn**	**22**	**20**	**13.0 +3.9**
MTKZ				⇓*i*S	**Sn**	**22**	**20**	**29.7 +5.6**
MTKZ	**Martakert**	**1.11**	**203**	⇓P	**Pn**	**22**	**20**	**13.0 +3.9**
MTKZ				S	**Sn**	**22**	**20**	**29.7 +5.6**
SIZA	**Siyzn**	**1.15**	**97**	⇑P	**Pb**	**22**	**20**	**09.4 -0.3**
	SNR=13							
SIZA				⇑S	**Sn**	**22**	**20**	**28.0 +2.8**
SIZA	**Siyzn**	**1.15**	**97**	P	**Pb**	**22**	**20**	**09.4 -0.3**
	SNR=13							
SIZA				S	**Sn**	**22**	**20**	**28.0 +2.8**
GNBR	**Gunib**	**1.20**	**345**	*e*PG	**Pg**	**22**	**20**	**11.0 -0.4**
GNBR				*e*S	**Sn**	**22**	**20**	**29.8 +3.3**
GNBR	**Gunib**	**1.20**	**345**	*e*Pg	**Pg**	**22**	**20**	**11.0 -0.4**
GNBR				*e*Sg	**Sn**	**22**	**20**	**29.8 +3.3**
ATGJ	**Altiaghaj**	**1.23**	**107**	⇓P	**Pg**	**22**	**20**	**11.1 -0.7**
ATGJ				⇓S	**Sn**	**22**	**20**	**29.5 +2.4**
ATGJ	**Altiaghaj**	**1.23**	**107**	P	**Pg**	**22**	**20**	**11.1 -0.7**
ATGJ				S	**Sn**	**22**	**20**	**29.5 +2.4**
GDB	**GEDABAY**	**1.33**	**248**	⇓P	**Pn**	**22**	**20**	**11.1 -1.2**
	SNR=534							
GDB				⇓S	**Sb**	**22**	**20**	**28.7 -1.1**
GDB	**GEDABAY**	**1.33**	**248**	P	**Pn**	**22**	**20**	**11.1 -1.2**
	SNR=534							
GDB				S	**Sb**	**22**	**20**	**28.7 -1.1**
GBS	**Qobustan**	**1.37**	**120**	⇓P	**Pg**	**22**	**20**	**14.0 -0.5**
GBS				⇓S	**Sg**	**22**	**20**	**34.7 +2.5**
GBS	**Qobustan**	**1.37**	**120**	P	**Pg**	**22**	**20**	**14.0 -0.5**
GBS				S	**Sg**	**22**	**20**	**34.7 +2.5**
ARKR	**Arakani**	**1.41**	**348**	*e*PG	**Pg**	**22**	**20**	**15.0 -0.2**
ARKR				S	**Sg**	**22**	**20**	**41.0 +7.5**
ARKR	**Arakani**	**1.41**	**348**	*e*Pg	**Pg**	**22**	**20**	**15.0 -0.2**
ARKR				S	**Sg**	**22**	**20**	**41.0 +7.5**
XNZR	**Khunzakh**	**1.41**	**339**	⇓*i*PG	**Pb**	**22**	**20**	**14.7 +0.5**
XNZR				*e*S	**Sg**	**22**	**20**	**36.0 +2.3**
XNZR	**Khunzakh**	**1.41**	**339**	*i* Pg	**Pb**	**22**	**20**	**14.7 +0.5**
XNZR				*e*Sg	**Sg**	**22**	**20**	**36.0 +2.3**
STKZ		**1.49**	**199**	⇓*i*P	**Pg**	**22**	**20**	**17.8 +0.9**
STKZ				⇑*i*S	**Sg**	**22**	**20**	**37.8 +1.5**
STKZ		**1.49**	**199**	⇓P	**Pg**	**22**	**20**	**17.8 +0.9**
STKZ				S	**Sg**	**22**	**20**	**37.8 +1.5**
QZX	**Qazax, Azerbai**	**1.53**	**264**	⇓P	**Pn**	**22**	**20**	**14.4 -0.4**
	SNR=515							
QZX				⇑S	**Sn**	**22**	**20**	**35.6 +1.1**
QZX	**Qazax, Azerbai**	**1.53**	**264**	P	**Pn**	**22**	**20**	**14.4 -0.4**
	SNR=515							
QZX				S	**Sn**	**22**	**20**	**35.6 +1.1**
DGRG	**David-gareji**	**1.53**	**279**	P	Pg	22	20	25.8 +8.2
DGRG				S	**Sg**	**22**	**20**	**39.0 +1.5**
DGRG	**David-gareji**	**1.53**	**279**	*e*PN	Pg	22	20	25.8 +8.2
DGRG				*e*S	**Sg**	**22**	**20**	**39.0 +1.5**
SAAT	**Saatly**	**1.58**	**150**	⇑Pn	**Pn**	**22**	**20**	**15.2 -0.2**
SAAT				⇓Sn	**Sn**	**22**	**20**	**35.6 +0.1**
SAAT	**Saatly**	**1.58**	**150**	Pn	**Pn**	**22**	**20**	**15.2 -0.2**
SAAT				Sn	**Sn**	**22**	**20**	**35.6 +0.1**
BUJR	**Buynaksk**	**1.61**	**353**	⇓*i*Pn	**Pg**	**22**	**20**	**20.5 +1.4**
BUJR				*e*S	**Sg**	**22**	**20**	**46.5 +6.5**
BUJR				pmax	pmax			
	comp=Z,165nm,0.3s							
BUJR	**Buynaksk**	**1.61**	**353**	*i* Pn	**Pg**	**22**	**20**	**20.5 +1.4**
	comp=Z,165nm,0.3s							
BUJR				*e*Sg	**Sg**	**22**	**20**	**46.5 +6.5**
KRNR	**Karanay**	**1.64**	**348**	*e*PN	**Pg**	**22**	**20**	**19.0 -0.6**
KRNR				*e*S	**Sg**	**22**	**20**	**42.0 +1.0**
KRNR				pmax	pmax			
	comp=Z,146nm,0.3s							
KRNR	**Karanay**	**1.64**	**348**	*e*Pn	**Pg**	**22**	**20**	**19.0 -0.6**
	comp=Z,146nm,0.3s							
KRNR				*e*Sg	**Sg**	**22**	**20**	**42.0 +1.0**
ALIB	**Äli-Bayra**	**1.77**	**135**	⇓Pn	**Pn**	**22**	**20**	**19.3 +1.3**
	SNR=19							
ALIB				⇓Sn	**Sg**	**22**	**20**	**44.8 -0.2**
ALIB	**Äli-Bayra**	**1.77**	**135**	Pn	**Pn**	**22**	**20**	**19.3 +1.3**
	SNR=19							
ALIB				Sn	**Sg**	**22**	**20**	**44.8 -0.2**
DBC	**Dubki**	**1.84**	**347**	⇑*i*PN	Pg	22	20	32.4 +8.9
DBC				pmax	pmax			
	comp=Z,130nm,0.7s							
DBC	**Dubki**	**1.84**	**347**	*i* Pn	Pg	22	20	32.4 +8.9
	comp=Z,130nm,0.7s							
DLMR	**Dylym**	**1.93**	**343**	*e*PN	**Pg**	**22**	**20**	**25.0 -0.1**
DLMR				*e*S	**Sg**	**22**	**20**	**53.0 +2.9**
DLMR	**Dylym**	**1.93**	**343**	*e*Pn	**Pg**	**22**	**20**	**25.0 -0.1**
DLMR				*e*Sg	**Sg**	**22**	**20**	**53.0 +2.9**
GOBA	**Gobu**	**1.96**	**114**	⇓Pn	**Pb**	**22**	**20**	**24.2 +0.7**
GOBA	**Gobu**	**1.96**	**114**	Pn	**Pb**	**22**	**20**	**24.2 +0.7**
SEAG	**Tbilisi Sea**	**2.01**	**286**	P	**Pn**	**22**	**20**	**22.1 +0.6**
SEAG				S	**Sg**	**22**	**20**	**52.4 -0.5**
TBLG	**Delisi**	**2.05**	**285**	P	**Pn**	**22**	**20**	**22.5 +0.4**
TBLG				S	**Sb**	**22**	**20**	**51.0 +0.6**
TBLG	**Delisi**	**2.05**	**285**	*e*PN	**Pn**	**22**	**20**	**22.4 +0.4**
TBLG	**Delisi**	**2.05**	**285**	P	**Pn**	**22**	**20**	**22.5 +0.4**
TBLG				S	**Sb**	**22**	**20**	**51.0 +0.6**
NDR	**Nardaran**	**2.07**	**107**	⇓Pn	**Pb**	**22**	**20**	**24.6 -0.8**
NDR	**Nardaran**	**2.07**	**107**	Pn	**Pb**	**22**	**20**	**24.6 -0.8**
GLBA	**Clilabad**	**2.13**	**158**	⇓Pn	**Pn**	**22**	**20**	**22.9 -0.1**
	SNR=59							
GLBA				⇑Sn	**Sb**	**22**	**20**	**52.1 -0.3**
GLBA	**Clilabad**	**2.13**	**158**	Pn	**Pn**	**22**	**20**	**22.9 -0.1**
	SNR=59							
GLBA				Sn	**Sb**	**22**	**20**	**52

ISRB	**Sarab**		**3.40**	**176**	*e*Pn		**Pn**	**22 20 41.5**	**+0.7**
ISRB					*e*AMB		AMB	22 21 14.1	
	comp=Z,863nm,0.2s								
ISRB	**Sarab**		**3.40**	**176**	*e*Pn		**Pn**	**22 20 41.5**	**+0.7**
PRTR	**Priterechnaya**		**3.41**	**319**	*e*PN		**Pn**	**22 20 43.3**	**+2.6**
PRTR					pmax	pmax			
	comp=Z,51nm,0.8s								
PRTR	**Priterechnaya**		**3.41**	**319**	*e*Pn		**Pn**	**22 20 43.3**	**+2.6**
	comp=Z,51nm,0.8s								
IBST	**Bostanabad**		**3.54**	**186**	*e*Pn		**Pn**	**22 20 43.2**	**+0.5**
IBST					*e*AMB		AMB	22 21 20.1	
	comp=Z,456nm,0.2s								
IBST	**Bostanabad**		**3.54**	**186**	*e*Pn		**Pn**	**22 20 43.2**	**+0.5**
NCK	**Nalchik**		**3.61**	**310**	⇑*e*PN		**Pn**	**22 20 46.3**	**+2.9**
NCK	**Nalchik**		**3.61**	**310**	*e*Pn		**Pn**	**22 20 46.3**	**+2.9**
NEY	**Neytrino**		**4.01**	**302**	⇑*e*PN		**Pn**	**22 20 51.0**	**+1.9**
NEY	**Neytrino**		**4.01**	**302**	*e*Pn		**Pn**	**22 20 51.0**	**+1.9**
KBZ	**Khabaz**		**4.16**	**308**	Pn		**Pb**	**22 20 56.6**	**-4.2**
	comp=Z,1.1nm,0.3s,baz=208,slow=5.2,SNR=12								
KBZ					Lg	Lg		22 21 55.4	
	comp=Z,1.0nm,0.3s,baz=96,slow=6.0,SNR=4.5								
KVAR	**Kislovodsk Arr**		**4.41**	**310**	Pn		**Pn**	**22 20 56.1**	**+1.6**
	baz=114,slow=10.0,SNR=5.7								
KVAR					Lg	Lg		22 22 07.5	
	baz=165,slow=20,SNR=3.2								
KIV	**Kislovodsk**		**4.41**	**310**	*e*PN		**Pn**	**22 20 56.5**	**+2.0**
KIV					pmax	pmax			
	comp=Z,15nm,0.9s								
KIV	**Kislovodsk**		**4.41**	**310**	*e*Pn		**Pn**	**22 20 56.5**	**+2.0**
	comp=Z,15nm,0.9s								
THKV	**Tehran--Karaj**		**5.97**	**152**	*e*Pn		**Pn**	**22 21 15.8**	**-0.2**
CHTH	**Charan**		**6.06**	**150**	*e*Pn		**Pn**	**22 21 17.4**	**0.0**
SNGE	**Sanandaj**		**6.12**	**180**	*e*Pn		**Pn**	**22 21 17.9**	**-0.3**
SHRO	**Shahrood**		**8.54**	**125**	*e*Pn		**Pn**	**22 21 51.8**	**+0.6**
GEYT	**Alibeck**		**8.91**	**108**	Pn		**Pn**	**22 21 54.1**	**-2.2**
	comp=Z,0.5nm,0.3s,baz=290,slow=17,SNR=4.8								
GEYT					Sn		**Sn**	**22 23 36.8**	**+0.4**
	comp=Z,0.4nm,0.3s,baz=297,slow=45,SNR=3.6								
AKTK	**Aktyubinsk**		**11.81**	**35**	P		**Pn**	**22 22 33.3**	**-2.5**
	comp=Z,1.0nm,0.3s								
AKTK					S		**Sn**	**22 24 43.1**	**-4.1**
AKTO	**Aktyubinsk**		**11.81**	**35**	Pn		**Pn**	**22 22 33.3**	**-2.6**
	comp=Z,1.0nm,0.3s,baz=214,slow=7.9,SNR=16								
AKTO					Sn		**Sn**	**22 24 43.1**	**-4.1**
	comp=Z,0.2nm,0.3s,baz=58,slow=21,SNR=3.8								
AKTO	**Aktyubinsk**		**11.81**	**35**	⇓Pn		**Pn**	**22 22 36.0**	**+0.1**
	comp=Z,0.8nm,0.2s								
AKTO					⇑Sn		**Sn**	**22 24 43.4**	**-3.9**
	comp=Z,2.3nm,0.6s								
AKTO	**Aktyubinsk**		**11.81**	**35**	Pn		**Pn**	**22 22 36.0**	**+0.1**
	comp=Z,0.8nm,0.2s								
AKTO					Sn		**Sn**	**22 24 43.4**	**-3.9**
	comp=Z,2.3nm,0.6s								
AB31	**Akbulak array**		**11.94**	**44**	⇑Pn		**Pn**	**22 22 37.0**	**-0.5**
	comp=Z,0.6nm,0.3s,baz=228,slow=12,SNR=25								
AB31					⇑Sn		**Sn**	**22 24 48.2**	**-2.1**
	comp=Z,0.8nm,0.5s,baz=229,slow=23,SNR=4.7								
AB31	**Akbulak array**		**11.94**	**44**	Pn		**Pn**	**22 22 37.0**	**-0.5**
	comp=Z,0.6nm,0.3s,SNR=25								
AB31					Sn		**Sn**	**22 24 48.2**	**-2.1**
	comp=Z,0.8nm,0.5s,SNR=4.7								
AKASG	**Malin Array Be**		**15.75**	**313**	Pn		**Pn**	**22 23 29.1**	**0.0**
	comp=Z,0.4nm,0.3s,baz=123,slow=11,SNR=2.7								
ARU	**Arti**		**16.86**	**22**	Pn		**Pn**	**22 23 40.4**	**-3.0**
	comp=Z,0.0nm,0.3s,baz=234,slow=8.0,SNR=7.7								
ARU	**Arti**		**16.86**	**22**	*d* P		**Pn**	**22 23 44.1**	**+0.8**
ARU					S		**Sn**	**22 26 53.0**	**+2.8**
ARU					pmax	pmax			
	comp=Z,4.0nm,0.6s								
ARU	**Arti**		**16.86**	**22**	*i* P		**Pn**	**22 23 44.1**	**+0.8**
	comp=Z,4.0nm,0.6s								
KKAR	**Karatay Array**		**17.24**	**76**	*e*P		**P**	**22 23 52.1**	**+2.5**
KKAR	**Karatay Array**		**17.24**	**76**	*e*P		**P**	**22 23 52.1**	**+2.5**
SVE	**Sverdlovsk**		**17.81**	**24**	*e*P		**Pn**	**22 23 52.3**	**-2.9**
SVE					pmax	pmax			
	comp=Z,12nm,0.8s								
SOKR	**Solikamsk**		**19.31**	**15**	*e*P		**P**	**22 24 12.0**	**-0.2**
SOKR					pmax	pmax			
	comp=Z,16nm,1.1s								
BRVK	**Borovoye**		**19.46**	**45**	⇓*i* P		**Pn**	**22 24 15.7**	**+0.5**
BRVK					pmax	pmax			
	comp=Z,5.0nm,0.5s								
BRVK	**Borovoye**		**19.46**	**45**	*i* P		**Pn**	**22 24 15.7**	**+0.5**
	comp=Z,5.0nm,0.5s								
BVAR	**Borovoye Array**		**19.50**	**45**	P		**P**	**22 24 13.9**	**-0.6**
	comp=Z,0.4nm,0.3s,baz=236,slow=9.8,SNR=12								
KLMR	**Klimovskoe**		**20.24**	**349**	*e*P		**P**	**22 24 20.0**	**-2.3**
KLMR					pmax	pmax			
	comp=Z,4.0nm,1.1s								
KURBB	**Kurchatov Arra**		**23.46**	**56**	P		**P**	**22 24 56.5**	**-0.2**
	comp=Z,0.5nm,0.4s,baz=262,slow=9.6,SNR=7.4								
KURK	**Kurchatov**		**23.54**	**56**	P		**P**	**22 24 56.5**	**-0.9**
KURK	**Kurchatov**		**23.54**	**56**	P		**P**	**22 24 56.5**	**-0.9**
FINES	**FINESS Array B**		**24.02**	**335**	P		**P**	**22 25 00.6**	**-1.3**
	comp=Z,0.6nm,0.4s,baz=129,slow=9.4,SNR=9.1								
GERES	**GERESS Array B**		**24.84**	**299**	P		**P**	**22 25 10.1**	**+0.4**
	comp=Z,0.6nm,0.4s,baz=99,slow=9.4,SNR=11								
GERES	**GERESS Array B**		**24.84**	**299**	*e*P		**P**	**22 25 10.8**	**+1.1**
GERES					pmax	pmax			
	comp=Z,1.0nm,0.4s								
GERES	**GERESS Array B**		**24.84**	**299**	*e*P		**P**	**22 25 10.8**	**+1.1**
	comp=Z,1.0nm,0.4s								
HFS	**Hagfors**		**28.05**	**324**	P		**P**	**22 25 36.4**	**-2.0**
	comp=Z,0.7nm,0.7s,baz=113,slow=10,SNR=5.0								
ARCES	**ARCESS Array B**		**30.60**	**345**	P		**P**	**22 26 00.1**	**-0.8**
	comp=Z,0.8nm,0.8s,baz=145,slow=9.9,SNR=3.3								
ESDC	**Sonseca Array**		**38.64**	**285**	P		**P**	**22 27 09.0**	**-1.8**
	comp=Z,0.4nm,0.6s,baz=69,slow=7.9,SNR=2.8								

*IDC **07** 22:26:49.4±2.2,28.47S×177.22W,h0km,mb3.7/3, mb1 4.0/3,mb1mx3.7/17,mbtmp3.7/3, Error ellipse: s-maj=43.1km s-min=29.2km az=106.0*
*ISCJB **07** 22:26:53.5±1.8,28.5S±0.1×177.2W±0.3,h48km,mb3.7/3, Error ellipse: s-maj=33.9km s-min=14.8km az=19.5*
ISC 07 22:26:55.5±1.7,**28.5S**±0.1×**177.2W**±0.2,**h48**km,**n6,** σ1**9**75/**7,mb3.6**/3,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**0.95**	**220**	Pn		**Pn**	**22 27 10.1**	**-2.4**
	266nm,0.3s,baz=155,slow=23,SNR=6.7							
RAO				Sn		**Sn**	**22 27 26.5**	**+1.6**
	318nm,0.3s,baz=276,slow=24,SNR=7.0							
HNR	**Honiara**	**28.65**	**307**	P		**P**	**22 32 48.0**	**+0.2**
ASAR	**Alice Springs**	**43.92**	**265**	P		**P**	**22 34 57.6**	**-0.2**
	0.5nm,0.5s,baz=96,slow=6.4,SNR=5.0							
WRA	**Warramunga Arr**	**44.74**	**270**	P		**P**	**22 35 05.6**	**+1.2**
	0.8nm,0.7s,baz=110,slow=8.0,SNR=5.8							
VNDA	**Vanda**	**50.02**	**186**	P		**P**	**22 35 45.9**	**+1.3**
	0.5nm,0.3s,baz=26,slow=6.2,SNR=8.9							
FINES	**FINESS Array B**	**143.60**	**341**	PKP		**PKPdf**	**22 46 23.3**	**-1.0**
	1.1nm,0.7s,baz=68,slow=4.8,SNR=5.4							

*IDC **07** 22:34:57.7±1.2,32.51S×178.21W,h0km,mb4.2/4, mb1 4.4/5,mb1mx4.0/24,mbtmp4.2/5,ML4.0/1,MS3.7/2, Ms1 3.7/2,ms1mx3.0/24,Error ellipse: s-maj=39.1km s-min=28.2km az=153.0*
*ISCJB **07** 22:34:58.5±0.8,32.67S±0.08×178.2W±0.2,h20km, mb4.7/14,MS3.7/1,Error ellipse: s-maj=20.7km s-min=8.2km az=24.4*
*NEIC **07** 22:35:03.1±0.9,32.59S×178.25W,h37km±7km,mb4.8/9, Error ellipse: s-maj=11.0km s-min=6.8km az=117.0*
ISC 07 22:35:00.2±0.8,**32.64S**±0.09×**178.1W**±0.2,**h20**km,**n28,** σ0**85**/**28,mb4.5**/14,**1C,South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**3.38**	**3**	*e*Pn		**Pn**	**22 35 53.4**	**+1.6**
URZ	**Urewera**	**6.82**	**213**	Pn		**Pn**	**22 36 39.9**	**+0.9**
	3.0nm,0.3s,baz=281,slow=2.3,SNR=12							
URZ				Sn		**Sn**	**22 37 56.8**	**+0.7**
	7.2nm,0.3s,baz=274,slow=22,SNR=8.3							
DZM	**Mont Dzumac**	**17.25**	**304**	LR		LR	22 44 07.0	
	comp=Z,306nm,18.8s,baz=156,slow=32							
HNR	**Honiara**	**30.71**	**314**	*e*P		**P**	**22 41 13.2**	**-0.8**
	47nm,0.3s							
STKA	**Stephens Creek**	**33.92**	**260**	P		**P**	**22 41 41.3**	**-0.7**
	1.4nm,0.9s,baz=102,slow=9.3,SNR=2.5							
CTA	**Charters Tower**	**34.10**	**283**	P		**P**	**22 41 43.9**	**+0.2**
	1.3nm,0.4s,baz=77,slow=12,SNR=3.9							
CTAO	**Charters Tower**	**34.10**	**283**	*e*P		**P**	**22 41 43.5**	**-0.2**
	14nm,0.6s							
ASAR	**Alice Springs**	**42.91**	**269**	P		**P**	**22 42 58.1**	**+0.4**
	3.3nm,0.7s,baz=110,slow=7.6,SNR=25							
WRA	**Warramunga Arr**	**44.10**	**275**	P		**P**	**22 43 07.5**	**+0.1**
	2.6nm,0.4s,baz=113,slow=8.0,SNR=44							
FITZ	**Fitzroy Crossi**	**52.27**	**272**	LR		LR	23 04 55.6	
	comp=Z,61nm,18.2s,slow=34							
CASY	**Casey**	**53.12**	**209**	*e*P		**P**	**22 44 16.9**	**+0.9**
	0.4nm,0.6s							
MIDW	**Midway**	**60.52**	**1**	*e*P		**P**	**22 45 08.4**	**-0.5**
	31nm,0.5s							
KKM	**Kota Kinabalu**	**73.15**	**289**	*e*P		**P**	**22 46 29.8**	**-0.1**
	2.0nm,0.6s							
SYO	**Syowa Base**	**74.92**	**193**	⇑*e*P		**P**	**22 46 36.4**	**-2.8**
KSM	**Kuching**	**75.33**	**281**	*e*P		**P**	**22 46 42.5**	**-0.1**
	3.3nm,0.6s							
MAJO	**Matsushiro**	**80.01**	**326**	*e*P		**P**	**22 47 07.8**	**-0.3**
	4.8nm,0.9s							
MDJ	**Mudanjiang**	**90.40**	**326**	*e*P		**P**	**22 47 59.6**	**-0.2**
	4.3nm,0.6s							
BJT	**Baijiatuan**	**94.42**	**315**	*e*P		**P**	**22 48 18.2**	**-0.4**
	4.1nm,0.5s							
PV01	**Paradox Valley**	**95.61**	**48**	*e*P		**P**	**22 48 24.5**	**+0.1**
	40nm,0.5s							
HWUT	**Hardware Ranch**	**95.94**	**44**	*e*P		**P**	**22 48 25.8**	**0.0**
	0.8nm,0.5s							
KIV	**Kislovodsk**	**146.34**	**302**	*e*PKPab		**PKPab**	**22 54 40.0**	**-0.4**
OBN	**Obninsk**	**146.91**	**323**	*e*PKPab		**PKPab**	**22 54 42.6**	**+0.6**
FINES	**FINESS Array B**	**147.19**	**339**	PKPbc		**PKPbc**	**22 54 41.1**	**0.0**
	4.9nm,0.8s,baz=90,slow=3.8,SNR=25							
NB2	**NORSAR Subarra**	**150.94**	**351**	PKP		**PKPbc**	**22 54 51.5**	**+0.7**
	comp=Z,3.8nm,1.2s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**150.94**	**351**	PKPbc		**PKPbc**	**22 54 50.9**	**+0.1**
	comp=Z,0.5nm,0.7s,baz=13,slow=4.1,SNR=3.7							
NOA				PKPab		**PKPab**	**22 54 57.5**	**-0.6**
	comp=Z,0.5nm,0.6s,baz=14,slow=4.1,SNR=2.8							
AKASG	**Malin Array Be**	**152.97**	**320**	PKPbc		**PKPbc**	**22 54 56.2**	**+0.6**
	comp=Z,0.3nm,0.3s,baz=56,slow=1.7,SNR=7.0							
BRTR	**Keskin Array B**	**153.49**	**295**	PKPbc		**PKPbc**	**22 54 57.9**	**+0.5**
	comp=Z,1.0nm,0.8s,baz=104,slow=2.5,SNR=6.3							
TORD	**Torodi Ar. Bea**	**160.60**	**180**	PKPab		**PKPab**	**22 55 41.9**	**+1.3**
	comp=Z,0.5nm,0.7s,baz=186,slow=3.6,SNR=3.0							

*CSEM **07** 22:36:04.7±1.3,41.40N×47.51E,h10km,ML3.1,Error ellipse: s-maj=30.0km s-min=13.3km az=64.0*
*NSSP **07** 22:36:05.9,41.27N×47.28E,h10km,Ms3.1*
ISC 07 22:36:05.0±3.1,**41.36N**±0.09×**47.5E**±0.2,**h13**km±14km, **n11,**σ1**41**/**20,3C-6D,Eastern Caucasus**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MTKZ	**Martakert**	**1.28**	**205**	⇓*i*P		**Pg**	**22 36 29.9**	**+0.4**
MTKZ				⇑*i*S		**Sn**	**22 36 46.3**	**+0.7**
MTKZ	**Martakert**	**1.28**	**205**	⇓P		**Pg**	**22 36 29.9**	**+0.4**
MTKZ				S		**Sn**	**22 36 46.3**	**+0.7**
STKZ		**1.65**	**201**	⇓*i*P		**Pn**	**22 36 34.4**	**+0.6**
STKZ				⇑*i*S		**Sn**	**22 36 54.1**	**-0.8**
STKZ		**1.65**	**201**	⇓P		**Pn**	**22 36 34.4**	**+0.6**
STKZ				S		**Sn**	**22 36 54.1**	**-0.8**
SEAG	**Tbilisi Sea**	**2.09**	**282**	P		**Sn**	**22 37 06.8**	**+1.2**
TBLG	**Delisi**	**2.13**	**281**	P		**Pn**	**22 36 40.0**	**-0.3**
TBLG				S		**Sn**	**22 37 07.4**	**+0.8**
TBLG	**Delisi**	**2.13**	**281**	P		**Pn**	**22 36 40.0**	**-0.3**
TBLG				S		**Sn**	**22 37 07.4**	**+0.8**
GNI	**Garni**	**2.44**	**241**	⇓*i*P		**Pn**	**22 36 43.7**	**-1.0**
GNI				⇑*i*S		**Sn**	**22 37 14.9**	**+0.5**
GNI	**Garni**	**2.44**	**241**	⇓P		**Pn**	**22 36 43.7**	**-1.0**
GNI				S		**Sn**	**22 37 14.9**	**+0.5**
GUDG	**Gudauri**	**2.53**	**297**	P		**Pn**	**22 36 46.0**	**0.0**
GUDG				S		**Sb**	**22 37 19.0**	**-2.6**
BGD	**Bogdanovka**	**2.96**	**269**	P		**Sn**	**22 37 31.5**	**+4.0**

*IDC **07** 22:59:41.8±3.2,1.67S×128.55E,h0km,mb4.1/2, mb1 4.3/5,mb1mx3.7/42,mbtmp4.1/5,ML4.0/3,Error ellipse: s-maj=53.2km s-min=24.6km az=54.0*
*ISCJB **07** 22:59:48.1±1.1,2.1S±0.1×128.4E±0.1,h34km,mb4.9/5, Error ellipse: s-maj=21.7km s-min=10.7km az=44.8*
*NEIC **07** 22:59:52.5±2.2,2.19S×128.31E,h57km±19km,mb4.2/2, Error ellipse: s-maj=23.9km s-min=9.2km az=51.0*
ISC 07 22:59:50.4±1.3,**2.1S**±0.1×**128.4E**±0.1,**h34**km,**n11,** σ1**71**/**12,mb4.5**/5,**Ceram Sea**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LUWI	**Luwuk**	**5.68**	**280**	*e*Pn		**Pn**	**23 01 15.1**	**+2.7**
	110nm,0.6s							
KAPI	**Kappang**	**9.07**	**251**	Pn		**Pn**	**23 01 58.4**	**-0.6**
	1.9nm,0.3s,baz=147,slow=14,SNR=5.5							
FITZ	**Fitzroy Crossi**	**16.14**	**189**	Pn		**Pn**	**23 03 34.3**	**-0.6**
	0.2nm,0.3s,baz=15,slow=12,SNR=4.3							
KSM	**Kuching**	**18.39**	**281**	*e*P		**Pn**	**23 04 03.1**	**+0.2**
	2.5nm,0.6s							
WRAB	**Tennant Creek**	**18.68**	**162**	*e*P		**P**	**23 04 05.5**	**-0.4**
	5.8nm,0.7s							
WRA	**Warramunga Arr**	**18.69**	**162**	P		**P**	**23 04 04.8**	**-1.2**
	0.9nm,0.3s,baz=345,slow=12,SNR=28							
WRA				S		**S**	**23 07 41.0**	**+3.9**
	0.2nm,0.3s,baz=336,slow=18,SNR=7.3							
ASAR	**Alice Springs**	**22.12**	**166**	P		**P**	**23 04 42.5**	**-0.6**
	5.6nm,0.7s,baz=344,slow=9.7,SNR=30							
STKA	**Stephens Creek**	**32.16**	**159**	P		**P**	**23 06 14.9**	**0.0**
	1.1nm,0.5s,baz=337,slow=12,SNR=4.3							
COCO	**West Island**	**32.81**	**251**	*e*P		**P**	**23 06 20.1**	**-0.8**
	120nm,0.5s							
BJT	**Baijiatuan**	**43.36**	**346**	*e*P		**P**	**23 07 49.1**	**-0.3**
	4.7nm,0.5s							
DGAR	**Diego Garcia**	**55.93**	**263**	*e*P		**P**	**23 09 24.8**	**-0.9**
	41nm,0.4s							

*GEN **07** 23:12:08.0,42.07N×7.84E,h1km,ML2.6*
*CSEM **07** 23:12:09.4±0.4,42.07N×7.62E,h30km,ML2.8/9,Error ellipse: s-maj=8.3km s-min=5.2km az=175.0*
*LDG **07** 23:12:10.0±0.4,41.99N×7.66E,h25km,Md2.5/4,Ml2.7/9, Error ellipse: s-maj=10.0km s-min=5.1km az=1.0*
*ROM **07** 23:12:10.9±0.6,42.13N×7.80E,h35km,Ml2.2/2,Error ellipse: s-maj=9.0km s-min=3.4km az=35.0*
ISC 07 23:12:07.7±1.8,**41.98N**±0.07×**7.62E**±0.03,**h32**km±17km, **n43,**σ1**37**/**70,Western Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PGF	**Pioggiola**	**1.17**	**60**	*e*Pn		**Pb**	**23 12 29.0**	**-0.5**
PGF				*e*Sn		**Sn**	**23 12 42.8**	**-0.1**
	27nm,0.2s							
PGF	**Pioggiola**	**1.17**	**60**	*e*Pn		**Pb**	**23 12 29.0**	**-0.5**
PGF				*e*Sn		**Sn**	**23 12 42.8**	**-0.1**
	13nm,0.2s							
LMR	**La Mourre**	**1.58**	**329**	*e*Pn		**Pn**	**23 12 34.2**	**+0.7**
LMR				*e*Sn		**Sn**	**23 12 51.7**	**-1.2**
	20nm,0.2s							
LMR	**La Mourre**	**1.58**	**329**	*e*Pn		**Pn**	**23 12 34.2**	**+0.7**
LMR				*e*Sn		**Sn**	**23 12 51.7**	**-1.2**
	10.0nm,0.2s							
FRF	**La Foret Royal**	**1.74**	**336**	*e*Pn		**Pn**	**23 12 36.4**	**+0.7**
FRF				*e*Sn		**Sn**	**23 12 55.5**	**-1.2**
	16nm,0.3s							
FRF	**La Foret Royal**	**1.74**	**336**	*e*Pn		**Pn**	**23 12 36.4**	**+0.7**
FRF				*e*Sn		**Sn**	**23 12 55.5**	**-1.2**
	8.2nm,0.3s							
NEGI	**Seborga**	**1.87**	**2**	P		**Pn**	**23 12 37.8**	**+0.3**
NEGI				S		**Sn**	**23 12 57.8**	**-2.3**
SBF	**Sospel**	**1.89**	**356**	*e*Pn		**Pn**	**23 12 38.2**	**+0.4**
SBF				*e*Sn		**Sn**	**23 12 59.1**	**-1.5**
SBF	**Sospel**	**1.89**	**356**	*e*Pn		**Pn**	**23 12 38.2**	**+0.4**
SBF				*e*Sn		**Sn**	**23 12 59.1**	**-1.5**
IMI	**Imperia**	**1.94**	**6**	P		**Pn**	**23 12 39.0**	**+0.5**
IMI				S		**Sn**	**23 12 59.5**	**-2.4**
CELB	**S.Piero in Cam**	**2.07**	**67**	Pn		**Pn**	**23 12 41.8**	**+1.5**
CELB				Sn		**Sn**	**23 13 03.3**	**-1.6**
CELB	**S.Piero in Cam**	**2.07**	**67**	Pn		**Pn**	**23 12 41.8**	**+1.5**
CELB				Sn		**Sn**	**23 13 03.3**	**-1.6**
RORO	**Rocca Rossa**	**2.16**	**9**	P		**Pn**	**23 12 41.6**	**+0.2**
ENR	**Entracque**	**2.25**	**356**	Pn		**Pn**	**23 12 44.2**	**+1.4**
ENR				Sn		**Sn**	**23 13 09.2**	**-0.4**
	14nm,0.1s							
ENR	**Entracque**	**2.25**	**356**	Pn		**Pn**	**23 12 44.2**	**+1.4**
ENR				Sn		**Sn**	**23 13 09.2**	**-0.4**
	14nm,0.1s							
STV	**Sant Anna di V**	**2.28**	**355**	Pn		**Pn**	**23 12 44.5**	**+1.3**
STV				Sn		**Sn**	**23 13 09.2**	**-0.9**
	9.0nm,0.2s							
STV	**Sant Anna di V**	**2.28**	**355**	P		**Pn**	**23 12 44.4**	**+1.3**
STV				Sn		**Sn**	**23 13 09.2**	**-0.9**
	9.0nm,0.2s							
SMRF	**Simiane la Rot**	**2.50**	**324**	*e*Pn		**Pn**	**23 12 48.3**	**+2.1**
SMRF				*e*Sn		**Sn**	**23 13 18.2**	**+2.6**
	1.6nm,0.2s							
SMRF	**Simiane la Rot**	**2.50**	**324**	*e*Pn		**Pn**	**23 12 48.3**	**+2.1**
DOI	**San Damiano**	**2.54**	**354**	Pn		**Pn**	**23 12 48.5**	**+1.7**
DOI				Sn		**Sn**	**23 13 16.5**	**-0.2**
DOI	**San Damiano**	**2.54**	**354**	Pn		**Pn**	**23 12 48.5**	**+1.7**
DOI				Sn		**Sn**	**23 13 16.5**	**-0.2**
PZZ	**Stroppo**	**2.56**	**352**	Pn		**Pn**	**23 12 49.3**	**+2.2**
PZZ				Sn		**Sn**	**23 13 17.6**	**+0.5**
PZZ	**Stroppo**	**2.56**	**352**	P		**Pn**	**23 12 49.2**	**+2.2**
PZZ				Sn		**Sn**	**23 13 17.6**	**+0.5**
PCP	**Piancastagn**	**2.65**	**14**	P		**Pn**	**23 12 48.9**	**+0.6**
MBDF	**Montbardon**	**2.82**	**348**	*e*Sn		**Sn**	**23 13 23.4**	**-0.2**
	3.0nm,0.2s							
MBDF	**Montbardon**	**2.82**	**348**	*e*Sn		**Sn**	**23 13 23.4**	**-0.2**
	1.5nm,0.2s							
RSP	**Reno Superiore**	**3.18**	**355**	P		**Pn**	**23 12 56.8**	**+1.2**
ORIF	**Oris-en-Rattie**	**3.20**	**337**	*e*Pn		**Pn**	**23 12 57.9**	**+2.0**
ORIF	**Oris-en-Rattie**	**3.20**	**337**	*e*Pn		**Pn**	**23 12 57.9**	**+2.0**
LASF	**Ste Croix**	**3.47**	**308**	*e*Pn		**Pn**	**23 13 00.7**	**+1.3**
LASF				*e*Sn		**Sn**	**23 13 37.6**	**-1.8**
	3.3nm,0.2s							
LASF	**Ste Croix**	**3.47**	**308**	*e*Pn		**Pn**	**23 13 00.7**	**+1.3**
LASF				*e*Sn		**Sn**	**23 13 37.6**	**-1.8**
	1.6nm,0.2s							
VIVF	**Saint-Julien-l**	**3.59**	**324**	*e*Pn		**Pn**	**23 13 01.9**	**+0.7**
VIVF				*e*Sn		**Sn**	**23 13 40.4**	**-2.1**
	0.7nm,0.2s							
VIVF	**Saint-Julien-l**	**3.59**	**324**	*e*Pn		**Pn**	**23 13 01.9**	**+0.7**
VIVF				*e*Sn		**Sn**	**23 13 40.4**	**-2.1**
	0.3nm,0.2s							
MTLF	**Montolieu**	**4.21**	**291**	*e*Pn		**Pn**	**23 13 10.4**	**+0.7**
MTLF				*e*Sn		**Sn**	**23 13 56.9**	**-0.8**
	3.6nm,0.3s							
MTLF	**Montolieu**	**4.21**	**291**	*e*Pn		**Pn**	**23 13 10.4**	**+0.7**
MTLF				*e*Sn		**Sn**	**23 13 56.9**	**-0.8**
	1.8nm,0.3s							
CAF	**Calviac**	**5.00**	**308**	*e*Pn		**Pn**	**23 13 22.2**	**+1.6**
CAF	**Calviac**	**5.00**	**308**	*e*Pn		**Pn**	**23 13 22.2**	**+1.6**
EPF	**Esparros**	**5.48**	**283**	*e*Pn		**Pn**	**23 13 27.4**	**+0.2**
EPF	**Esparros**	**5.48**	**283**	*e*Pn		**Pn**	**23 13 27.4**	**+0.2**
RJF	**Les Rejaudoux**	**5.54**	**309**	*e*Pn		**Pn**	**23 13 29.6**	**+1.7**
RJF	**Les Rejaudoux**	**5.54**	**309**	*e*Pn		**Pn**	**23 13 29.6**	**+1.7**
LFF	**La Frestale**	**5.82**	**303**	*e*Pn		**Pn**	**23 13 33.2**	**+1.5**
LFF	**La Frestale**	**5.82**	**303**	*e*Pn		**Pn**	**23 13 33.2**	**+1.5**

IDC 07 23:12:28.9±2.7,**29.24S**×**176.66W**,**h0**km,**mb3.6**/2, **mb1 3.9**/2,**mb1mx3.6**/20,**mbtmp3.6**/2,**Error ellipse: s-maj=123.6km s-min=34.3km az=175.0,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**

TWD	**Chiawan**	**0.77**	**239**	*e*P	**Pn**	**23 23 45.9**	**-0.5**
	baz=228							
TWD				*e*S	**Sn**	**23 23 56.7**	**-0.7**
	baz=228							
NNS	**Nan Shan**	**0.86**	**267**	*e*P	**Pn**	**23 23 47.6**	**-0.1**
	baz=258							
NNS				S	**Sn**	**23 23 59.5**	**-0.1**
	baz=258							
NSK	**Sanguang**	**0.89**	**283**⇑	*i*P	**Pn**	**23 23 48.2**	**+0.1**
	baz=282							
NSK				*e*S	**Sn**	**23 24 00.1**	**-0.2**
	baz=282							
WHF	**Hehuan Shan**	**1.01**	**251**	P	**Pn**	**23 23 49.9**	**-0.1**
	baz=249							
TWS1	**Kuangyinshan**	**1.02**	**307**	P	**Pn**	**23 23 49.5**	**-0.2**
	baz=315							
TWS1				S	**Sn**	**23 24 02.7**	**-0.5**
	baz=315							
TWY	**Chenhua**	**1.02**	**321**	*e*P	**Pn**	**23 23 48.9**	**-0.8**
	baz=322							
ESL	**Shilin**	**1.04**	**231**	*e*S	**Sn**	**23 24 02.5**	**-1.2**
	baz=237							
TWT	**Tachien**	**1.06**	**258**	⇓P	**Pn**	**23 23 50.8**	**+0.4**
	baz=252							
TWT				*i* S	**Sn**	**23 24 04.7**	**+0.2**
	baz=252							
NSTT	**Nanjuang**	**1.21**	**277**⇑	*i*P	**Pn**	**23 23 52.2**	**+0.1**
	baz=276							
NSTT				S	**Sn**	**23 24 07.8**	**+0.2**
	baz=276							
IRIF	**Iriomote-Funau**	**1.30**	**96**	P	**Pn**	**23 23 53.1**	**-0.2**
IRIF				S	**Sn**	**23 24 09.9**	**+0.2**
WDT	**Danda**	**1.30**	**237**	P	**Pn**	**23 23 53.1**	**-0.6**
	baz=234							
WDT				S	**Sn**	**23 24 08.7**	**-1.6**
	baz=234							
EHY	**Hungye**	**1.33**	**223**	*e*P	**Pn**	**23 23 52.5**	**-1.2**
	baz=229							
TWQ1	**Liyutan**	**1.41**	**265**	*e*P	**Pn**	**23 23 54.5**	**-0.4**
	baz=264							
TWQ1				*e*S	**Sn**	**23 24 12.8**	**+0.3**
	baz=264							
SMLT	**Sun Moon Lake**	**1.42**	**246**	*e*P	**Pn**	**23 23 55.7**	**+0.6**
	baz=238							
SMLT				*e*S	**Sn**	**23 24 13.2**	**+0.2**
	baz=238							
TYC	**Yuchr**	**1.45**	**247**	*e*P	**Pn**	**23 23 56.2**	**+0.9**
	baz=239							
TYC				*e*S	**Sn**	**23 24 12.9**	**-0.5**
	baz=239							
TWF1	**Yuli**	**1.46**	**220**	*e*P	**Pn**	**23 23 54.3**	**-1.3**
	baz=227							
JKRS	**Kuro-shima**	**1.56**	**99**	P	**Pn**	**23 23 57.2**	**+0.3**
JKRS				*e*S	**Sn**	**23 24 15.9**	**-0.2**
YUS	**Yu-Shan**	**1.59**	**232**	P	**Pn**	**23 23 57.9**	**+0.2**
	baz=223							
YUS				*e*S	**Sn**	**23 24 16.6**	**-0.9**
	baz=223							
JIJ	**Ishigaki jima**	**1.67**	**94**	P	**Pn**	**23 23 58.1**	**-0.2**
JIJ				S	**Sn**	**23 24 18.3**	**-0.4**
ALS	**Alishan**	**1.69**	**235**	*e*P	**Pn**	**23 23 59.6**	**+0.7**
	baz=226							
ALS				*e*S	**Sn**	**23 24 19.7**	**+0.2**
	baz=226							
CHN5	**Tsauling**	**1.74**	**240**	*e*P	**Pn**	**23 24 00.1**	**+0.8**
	baz=230							
CHN5				*e*S	**Sn**	**23 24 21.3**	**+0.8**
	baz=230							
JISG	**Ishigakijimahi**	**1.82**	**86**	P	**Pn**	**23 24 00.1**	**-0.3**
CHN4	**Tsaushan**	**1.94**	**235**	*e*P	**Pn**	**23 24 02.2**	**+0.2**
	baz=233							
CHN4				*e*S	**Sn**	**23 24 26.6**	**+1.4**
	baz=233							
STYT	**Tauyuan**	**1.94**	**228**	*e*P	**Pn**	**23 24 02.3**	**+0.3**
	baz=219							
STYT				*e*S	**Sn**	**23 24 25.6**	**+0.2**
	baz=219							
CHN1	**Nanshi**	**2.08**	**232**	*e*P	**Pn**	**23 24 05.8**	**+1.8**
	baz=230							
CHN1				*e*S	**Sn**	**23 24 29.2**	**+0.3**
	baz=230							
SSD	**Sandimen**	**2.32**	**222**	*e*P	**Pn**	**23 24 07.9**	**+0.8**
	baz=220							
SSD				*e*S	**Sn**	**23 24 34.1**	**-0.4**
	baz=220							
EAST	**Anshuo**	**2.48**	**213**	*e*P	**Pn**	**23 24 09.1**	**-0.4**
	baz=205							

GCMT ***07*** *23:27:07.4±0.1,29.˚10S×176.˚29W,h14km,MW5.3/109, Moment Tensor Solution. s84,c134; s109,c179; Duration: 1ŝ1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.73±.02; $M_{\theta\theta}$-0.00±.01; $M_{\phi\phi}$-0.72±.01; $M_{r\theta}$0.13±.03; $M_{\theta\phi}$-0.23±.01; $M_{r\phi}$0.64±.04; Best double couple: $M_0$1.00000×10^{17} NP1:ϕs13.00000°,δ65.00000°, λ87.00000°. NP2:ϕs200.00000°,δ25.00000°,λ96.00000°. Principal axes: T 0.9710, Pl69.0000°, Azm277.0000°; N 0.0580, Plg3.0000°, Azm14.0000°; P -1.0290, Plg20.0000°, Azm105.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISCJB ***07*** *23:27:07.7±0.2,29.˚47S×0.˚04×176.˚69W±0.˚04,h21km, mb5.2/54,MS5.1/154 Error ellipse: s-maj=6.2km s-min=3.6km az=138.0*

NEIC ***07*** *23:27:07.4±0.2,29.˚38S×176.˚67W,h10km,mb5.4/24, MS5.1/116,Error ellipse: s-maj=9.7km s-min=5.6km az=134.0*

MOS ***07*** *23:27:10.4±1.4,29.˚16S×176.˚76W,h33km,mb5.3/13, MS5.1/15,Error ellipse: s-maj=10.9km s-min=9.7km az=140.8*

BJI ***07*** *23:27:13.9,28.˚77S×176.˚24W,h70km,mb5.2/43, mB5.6/38,Ms5.2/40,Ms7 4.9/34*

IDC ***07*** *23:27:13.2±1.9,29.˚05S×176.˚78W,h52km±15km,mb4.2/13, mb1 4.4/13,mb1mx4.4/23,mbtmp4.5/13,MS4.9/22, Ms1 4.9/22,ms1mx4.9/25,Error ellipse: s-maj=20.4km s-min=15.9km az=154.0*

ISC 07 23:27:08.4±0.3,29˚34S±0˚05×176˚57W±0˚05,h21km, n532,σ2ŝ18/422,mb5.3/54,MS5.1/155,15C-26D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.18**	**274**	P	**Pb**	**23 27 31.6**	**+1.5**
	1μm,0.3s,baz=196,slow=4.0,SNR=24						
RAO				S	**Sn**	**23 27 51.2**	**+6.1**
	3μm,0.3s,baz=116,slow=22,SNR=13						
RAO	**Raoul Island**	**1.18**	**274**	*e*P	**Pb**	**23 27 31.0**	**+0.9**
RAO				*e*		23 27 44.7	
RAO	**Raoul Island**	**1.18**	**274**	*e*Pn	**Pb**	**23 27 31.0**	**+0.9**
RAO				*e*Sn	**Sb**	**23 27 44.7**	**-0.3**
RAO				*e*Sn	**Sn**	**23 27 48.4**	**+3.2**
OUZ	**Omahuta**	**10.18**	**232**	*e*Pn	**Pn**	**23 29 35.1**	**+1.9**
URZ	**Urewera**	**10.33**	**209**	P	**Pn**	**23 29 34.2**	**-1.1**
	1.4nm,0.3s,baz=307,slow=3.1,SNR=8.4						
URZ				S	**Sn**	**23 31 28.4**	**-1.9**
	3.9nm,0.3s,baz=102,slow=21,SNR=7.6						
URZ				LR	LR	23 33 44.8	
	comp=Z,8μm,18.0s,baz=27,slow=37						
URZ	**Urewera**	**10.33**	**209**	*e*Pn	**Pn**	**23 29 32.2**	**-3.0**
URZ				S	**Sn**	**23 31 28.4**	**-1.9**
BKZ	**Black Stump Fm**	**11.35**	**208**	*e*Pn	**Pn**	**23 29 49.1**	**-0.3**
BKZ				*e*Sn	**Sn**	**23 31 54.4**	**-1.2**
HIZ	**Hauiti**	**11.58**	**216**	*e*Pn	**Pn**	**23 29 54.5**	**+2.0**
MSVF	**Nonsavu**	**12.56**	**336**	*e*P	**Pn**	**23 30 09.2**	**+3.1**
MSVF	**Nonsavu**	**12.56**	**336**	*e*Pn	**Pn**	**23 30 09.2**	**+3.1**
BFZ	**Birch Farm**	**12.74**	**206**	*e*Pn	**Pn**	**23 30 06.7**	**-1.7**
SNZO	**South Karori**	**13.89**	**208**	*e*Pn	**Pn**	**23 30 23.4**	**-0.6**
SNZO				*e*Sn	**Sn**	**23 32 48.8**	**-8.8**
THZ	**Tophouse**	**15.05**	**212**	*e*Pn	**Pn**	**23 30 36.5**	**-3.3**
	160nm,1.4s						
THZ				*e*Sn	**Sn**	**23 33 17.2**	**-8.6**
KHZ	**Kahutara**	**15.29**	**209**	*e*P	**P**	**23 30 46.1**	**-1.5**
AFI	**Afiamalu**	**15.99**	**17**	LR	LR	23 38 36.6	
	comp=Z,1μm,19.1s,baz=198,slow=43						
OXZ	**Oxford**	**16.68**	**210**	*e*Pn	**Pn**	**23 30 58.3**	**-2.5**
	65nm,0.8s						
OXZ				*e*Sn	**Sn**	**23 33 57.2**	**-8.1**
DZM	**Mont Dzumac**	**16.92**	**291**	LR	LR	23 36 31.0	
	comp=Z,7μm,18.4s,baz=132,slow=34						
DZM	**Mont Dzumac**	**16.92**	**291**	*e*Pn	**P**	**23 31 07.5**	**+1.5**
	566nm,1.6s						
DZM				*e*LQ	LQ	23 34 25.8	
	3μm,26.7s						
DZM				*e*LR	LR	23 35 09.0	
	9μm,25.4s						
DZM	**Mont Dzumac**	**16.92**	**291**	*e*P	**P**	**23 31 06.8**	**+0.8**
	854nm,1.9s						
RAR	**Rarotonga**	**17.20**	**66**	P	**Pn**	**23 31 05.4**	**-2.1**
	1.1nm,0.3s,baz=125,slow=9.5,SNR=3.8						
RAR				LR	LR	23 37 04.2	
	comp=Z,3μm,20.4s,baz=244,slow=34						
RAR	**Rarotonga**	**17.20**	**66**	P	**P**	**23 31 08.5**	**-0.4**
RPZ	**Rata Peaks**	**17.42**	**211**	P	**Pn**	**23 31 09.4**	**-0.7**
	1.6nm,0.3s,baz=303,slow=11,SNR=5.3						
RPZ				S	**Sn**	**23 34 14.8**	**-8.7**
	0.8nm,0.3s,baz=203,slow=15,SNR=5.1						
RPZ				LR	LR	23 38 46.4	
	comp=Z,6μm,18.9s,baz=32,slow=39						
MLZ	**Mavora Lakes**	**20.04**	**213**	*e*P	**P**	**23 31 40.7**	**+0.7**
	143nm,1.5s						
TBI	**Tubuai**	**24.98**	**83**	*e*LQ	LQ	23 37 10.5	
	2μm,28.8s						
TBI				*e*LR	LR	23 38 30.9	
	3μm,31.5s,baz=251						
PPT2	**Papeete2**	**27.32**	**71**	*e*LQ	LQ	23 38 06.6	
	3μm,24.5s						
PPT2				*e*LR	LR	23 39 34.9	
	2μm,22.0s,baz=238						
PPT	**Papeete**	**27.33**	**71**	LR	LR	23 41 56.1	
	comp=Z,1μm,18.8s,baz=238,slow=32						
ARMA	**Armidale**	**27.55**	**260**	P	**P**	**23 32 54.3**	**+0.2**
	baz=27,SNR=7.9						
EIDS	**Eidsvold**	**28.95**	**270**	*e*P	**P**	**23 33 08.6**	**+2.2**
	42nm,1.3s						
HNR	**Honiara**	**29.60**	**307**	LR	LR	23 43 37.3	
	comp=Z,526nm,19.6s,baz=153,slow=34						
RMQ	**Roma**	**30.70**	**267**	P	**P**	**23 33 24.6**	**+2.6**
	baz=31,SNR=10						
TAU	**Tasmania Unive**	**31.90**	**235**	PFAKE		23 33 40.0	+7.7
TAU				LR	LR		
	comp=Z,4μm,21.0s						
TARA	**Tarawa**	**32.14**	**340**	PFAKE		23 33 50.0	+15
TARA				LR	LR		
	comp=Z,168nm,19.0s						
CMSA	**Cobar Meteorol**	**32.51**	**257**	P	**P**	**23 33 40.6**	**+2.8**
	baz=32,SNR=7.6						
QLP	**Quilpie**	**34.62**	**265**	P	**P**	**23 33 56.7**	**+0.5**
	baz=34,SNR=8.1						
CTA	**Charters Tower**	**34.88**	**277**	LR	LR	23 47 34.2	
	comp=Z,1μm,18.2s,baz=112,slow=35						
CTA	**Charters Tower**	**34.88**	**277**	P	**P**	**23 34 00.4**	**+1.8**
CTA				pmax	pmax		
	comp=Z,38nm,1.8s						
CTAO	**Charters Tower**	**34.88**	**277**	*e*P	**P**	**23 33 59.6**	**+1.0**
CTAO				pmax	pmax		
	comp=Z,123nm,1.8s						
CTAO				MLR	MLR		
	comp=Z,9μm,19.0s						
CTAO	**Charters Tower**	**34.88**	**277**	*e*P	**P**	**23 33 59.6**	**+1.0**
	comp=Z,123nm,1.8s						
CTAO				LR	LR		
	comp=Z,9μm,19.0s						
STKA	**Stephens Creek**	**35.94**	**255**	P	**P**	**23 34 07.3**	**-0.2**
	comp=Z,5.0nm,0.6s,baz=100,slow=10.0,SNR=18						
STKA				LR	LR	23 48 20.1	
	comp=Z,4μm,18.3s,baz=95,slow=35						
STKA	**Stephens Creek**	**35.94**	**255**	P	**P**	**23 34 08.2**	**+0.7**
	baz=36,SNR=11						
STKA	**Stephens Creek**	**35.94**	**255**	*e*P	**P**	**23 34 08.7**	**+1.2**
STKA				pmax	pmax		
	comp=Z,13nm,1.4s						
STKA	**Stephens Creek**	**35.94**	**255**	*e*P	**P**	**23 34 08.7**	**+1.2**
	comp=Z,13nm,1.4s						
MTSU	**Mount Surprise**	**37.34**	**278**	P	**P**	**23 34 20.6**	**+1.0**
	baz=37,SNR=4.3						
RKT	**Rikitea**	**37.68**	**90**	*e*S	**S**	**23 40 04.8**	**-6.7**
	comp=Z,401nm,30.5s						
RKT				*e*LR	LR	23 44 12.3	
	comp=Z,2μm,24.0s						
HTT	**Hallett**	**38.00**	**252**	P	**P**	**23 34 26.2**	**+1.1**
	baz=38,SNR=6.4						
PMG	**Port Moresby**	**39.31**	**293**	PFAKE		23 34 50.0	+14
PMG				LR	LR		
	comp=Z,2μm,19.0s						
TAOE	**Nuku Hiva Isla**	**39.75**	**67**	*e*LR	LR	23 45 18.6	
	comp=Z,2μm,22.5s						
COEN	**Coen**	**40.20**	**284**	P	**P**	**23 34 44.0**	**+0.3**
	baz=40,SNR=3.9						
AS01	**Alice Springs**	**44.38**	**265**	*e*P	**P**	**23 35 16.2**	**-1.5**
AS31	**Alice Springs**	**44.42**	**265**	*e*P	**P**	**23 35 17.5**	**-0.5**
	comp=Z,12nm,1.4s						
ASAR	**Alice Springs**	**44.42**	**265**	P	**P**	**23 35 17.4**	**-0.6**
	comp=Z,6.1nm,0.6s,baz=101,slow=6.6,SNR=95						
ASAR				PcP	**PP**	**23 37 02.4**	**+0.6**
	comp=Z,2.0nm,0.7s,baz=110,slow=3.9,SNR=4.6						
ASAR				S	**S**	**23 41 48.5**	**-3.3**
	comp=Z,0.4nm,0.8s,baz=112,slow=16,SNR=4.3						
ASAR				LR	LR	23 54 06.0	
	comp=Z,7μm,18.0s,baz=114,slow=36						
WC3	**Warramunga Arr**	**45.28**	**270**	P	**P**	**23 35 24.0**	**-0.9**
	baz=45						
WB2	**Warramunga Arr**	**45.31**	**270**	*e*P	**P**	**23 35 24.1**	**-0.9**
	comp=Z,109nm,1.6s						
WRAB	**Tennant Creek**	**45.31**	**270**	*e*P	**P**	**23 35 23.6**	**-1.5**
WRAB				pmax	pmax		
	comp=Z,107nm,1.6s						
WRAB				MLR	MLR		
	comp=Z,3μm,20.0s						
WRAB	**Tennant Creek**	**45.31**	**270**	*e*P	**P**	**23 35 23.6**	**-1.5**
	comp=Z,108nm,1.6s						
WRAB				LR	LR		
	comp=Z,3μm,20.0s						
WRA	**Warramunga Arr**	**45.32**	**270**	P	**P**	**23 35 23.4**	**-1.7**
	comp=Z,8.9nm,0.6s,baz=109,slow=7.7,SNR=52						
WRA				PcP	**PcP**	**23 37 04.5**	**-0.1**
	comp=Z,4.2nm,0.9s,baz=119,slow=3.0,SNR=5.3						
WRA				LR	LR	23 54 01.1	
	comp=Z,3μm,18.0s,baz=110,slow=36						
JOHN	**Johnston Islan**	**46.31**	**9**	PFAKE		23 35 50.0	+17
JOHN				LR	LR		
	comp=Z,115nm,19.0s						
FORT	**Forrest**	**47.52**	**254**	P	**P**	**23 35 42.8**	**+0.5**
	baz=47,SNR=8.0						
WRKA	**Warakurna**	**48.86**	**261**	P	**P**	**23 35 51.2**	**-1.6**
	baz=49,SNR=26						
SBA	**Scott Base**	**49.18**	**185**	P	P	23 36 00.4	+6.0
SBA				pmax	pmax		
	comp=Z,190nm,1.9s						
VNDA	**Vanda**	**49.27**	**186**	P	**P**	**23 35 58.3**	**+3.2**
	comp=Z,2.8nm,1.1s,baz=2.9,slow=8.4,SNR=8.0						
VNDA				LR	LR	23 53 08.4	
	comp=Z,1μm,20.7s,baz=23,slow=31						
VNDA	**Vanda**	**49.27**	**186**	*e*P	**P**	**23 35 58.8**	**+3.7**
VNDA				pmax	pmax		
	comp=Z,15nm,1.3s						
VNDA	**Vanda**	**49.27**	**186**	*e*P	**P**	**23 35 58.8**	**+3.7**
	comp=Z,15nm,1.3s						
POHA	**Pohakuloa**	**52.87**	**25**	PFAKE		23 36 40.0	+17
POHA				LR	LR		
	comp=Z,2μm,19.0s						
FITZ	**Fitzroy Crossi**	**53.62**	**268**	P	**P**	**23 36 28.3**	**-0.2**
	baz=54,SNR=7.2						
FITZ	**Fitzroy Crossi**	**53.62**	**268**	*e*P	**P**	**23 36 27.8**	**-0.7**
	comp=Z,116nm,1.8s						
NWAO	**Narrogin (SRO)**	**55.94**	**248**	PFAKE		23 37 00.0	+15
NWAO				LR	LR		
	comp=Z,1μm,19.0s						
GUMO	**Guam**	**56.63**	**313**	PFAKE		23 37 00.0	+10
GUMO				LR	LR		
	comp=Z,580nm,20.0s						
CASY	**Casey**	**56.65**	**208**	*e*P	**P**	**23 36 51.2**	**+1.6**
	comp=Z,171nm,1.9s						
MIDW	**Midway**	**57.24**	**359**	PFAKE		23 37 10.0	+16
MIDW				LR	LR		
	comp=Z,1μm,20.0s						
MBWA	**Marble Bar**	**57.59**	**262**	PFAKE		23 37 10.0	+13
MBWA				LR	LR		
	comp=Z,2μm,20.0s						
SOEI	**Soe**	**58.45**	**277**	*e*P	**P**	**23 37 03.5**	**+0.2**
	comp=Z,124nm,1.4s						
QSPA	**South Pole Qui**	**60.76**	**180**	*e*P	**P**	**23 37 20.4**	**+1.9**
	comp=Z,148nm,1.1s						
QSPA				LR	LR		
	comp=Z,2μm,19.0s						
MIR	**Mirnyy**	**63.62**	**207**	*e*P	**P**	**23 37 42.0**	**+4.6**
MIR				pmax	pmax		
	comp=Z,5.0nm,2.0s						
KAPI	**Kappang**	**64.66**	**279**	*e*P	**P**	**23 37 46.4**	**+1.3**
	comp=Z,34nm,1.3s						
KAPI				LR	LR		
	comp=Z,692nm,19.0s						
DAV	**Davao City (W)**	**66.33**	**293**	PFAKE		23 38 10.0	+14
DAV				LR	LR		
	comp=Z,286nm,21.0s						
KKM	**Kota Kinabalu**	**73.42**	**287**	PFAKE		23 38 50.0	+10
KKM				LR	LR		
	comp=Z,135nm,19.0s						
MAW	**Mawson**	**73.73**	**200**	P	**P**	**23 38 42.7**	**+2.3**
	comp=Z,7.1nm,0.9s,baz=86,slow=3.8,SNR=8.5						
MAW				LR	LR	00 11 45.5	
	comp=Z,1μm,18.3s,baz=104,slow=36						
MAW	**Mawson**	**73.73**	**200**	P	**P**	**23 38 42.9**	**+2.5**
	baz=74,SNR=5.7						
MAW	**Mawson**	**73.73**	**200**	*e*P	**P**	**23 38 43.3**	**+2.9**
MAW	**Mawson**	**73.73**	**200**	*e*P	**P**	**23 38 43.3**	**+2.9**
SBUM	**Sibu**	**74.91**	**282**	*e*P	**P**	**23 38 47.8**	**-0.4**
KSM	**Kuching**	**76.06**	**280**	PFAKE		23 39 10.0	+15
KSM				LR	LR		
	comp=Z,541nm,20.0s						
INU	**Inuyama**	**77.80**	**323**	*e*P	**P**	**23 39 03.7**	**-0.4**
MJAR	**Matsushiro Arr**	**78.10**	**324**	P	**P**	**23 39 04.2**	**-1.6**
	comp=Z,0.9nm,0.4s,baz=156,slow=5.6,SNR=7.9						
MAJO	**Matsushiro**	**78.10**	**324**	*c i*P	**P**	**23 39 04.8**	**-1.0**
MAJO				pmax	pmax		
	comp=Z,239nm,1.8s						
MAJO	**Matsushiro**	**78.10**	**324**	*e*P	**P**	**23 39 05.8**	**+0.1**
MAJO				LR	LR		
	comp=Z,367nm,20.0s						
MAT	**Matsushiro**	**78.10**	**324**	P	**P**	**23 39 03.9**	**-1.9**
MAT				S	**S**	**23 48 57.6**	**-1.2**
MJB9	**Matsu-Tunnel**	**78.10**	**324**	*e*P	**P**	**23 39 05.9**	**+0.1**
SYO	**Syowa Base**	**78.42**	**193**⇑	*e*P	**P**	**23 39 07.2**	**+0.1**
SYO	**Syowa Base**	**78.42**	**193**	⇓*i*pP	**P**	**23 39 10.0**	**+2.9**
SYO	**Syowa Base**	**78.42**	**193**	⇓*i*PcP	**PcP**	**23 39 17.5**	**+1.2**
SNAA	**Sanae**	**79.17**	**178**	P	**P**	**23 39 12.4**	**+1.1**
SNAA	**Sanae**	**79.17**	**178**	⇓*i*P	**P**	**23 39 12.9**	**+1.6**
SNAA	**Sanae**	**79.17**	**178**	*e*P	**P**	**23 39 12.8**	**+1.4**
JNU	**Nakatsue**	**79.61**	**317**	*e*P	**P**	**23 39 13.7**	**-0.5**
VNA1	**Neumayer--Stat**	**79.94**	**176**	P	**P**	**23 39 18.2**	**+2.8**
ERM	**Erimo**	**80.14**	**331**	⇓*e*P	**P**	**23 39 20.2**	**+3.5**
ERM	**Erimo**	**80.14**	**331**	PFAKE		23 39 30.0	+13
ERM				LR	LR		
	comp=Z,1μm,20.0s						
YHNB	**Yeheng**	**80.22**	**305**	PFAKE		23 39 30.0	+12
YHNB				LR	LR		
	comp=Z,401nm,19.0s						
KUR	**Kuril'sk**	**80.97**	**335**	*e*P	P	23 39 15.3	-5.8
KUR				*e*S	**S**	**23 49 30.6**	**+1.9**
ASAJ	**Asahikawa**	**82.09**	**332**	*e*P	**P**	**23 39 28.8**	**+1.7**
PLCA	**Paso Flores**	**82.31**	**133**	LR	LR	00 10 06.3	
	comp=Z,672nm,18.1s,baz=307,slow=31						
PLCA	**Paso Flores**	**82.31**	**133**	P	**P**	**23 39 31.9**	**+3.2**
QZH	**Quanzhou**	**82.39**	**304**⇑	*i*P	P	23 39 20.6	-8.5
QZH	**Quanzhou**	**82.39**	**304**	S	S	23 49 33.5	-11
QZH				pmax	pmax		
	comp=Z,610nm,2.9s						
QZH				LR	LR		
	comp=N,1μm,18.0s						
QZH				LR	LR		
	comp=E,300nm,11.0s						
QZH				LR	LR		
	comp=Z,730nm,15.5s						
EFI	**East Falkland**	**82.99**	**147**	PFAKE		23 39 40.0	+8.1
EFI				LR	LR		
	comp=Z,761nm,19.0s						
MURC	**Murrieta**	**84.11**	**46**	P	**P**	**23 39 39.7**	**+1.8**
	baz=229						
MONP2	**Monument Peak**	**84.14**	**47**	P	**P**	**23 39 39.4**	**+1.2**
	baz=230						
BFSC	**Mount Baldy Ra**	**84.24**	**45**	P	**P**	**23 39 40.4**	**+1.8**
	baz=229						
YSS	**Yuzh-Sakhalins**	**84.35**	**333**	*i* P	**P**	**23 39 39.3**	**+0.6**
YSS				pmax	pmax		
	comp=Z,21nm,0.9s						
KSRS	**Korea Array**	**84.36**	**319**	P	**P**	**23 39 39.6**	**+0.7**
	comp=Z,3.9nm,0.9s,baz=140,slow=5.1,SNR=11						
KSAR	**Wonju Array Be**	**84.38**	**319**	P	**P**	**23 39 39.7**	**+0.6**
KSAR	**Wonju Array Be**	**84.38**	**319**	P	**P**	**23 39 39.6**	**+0.6**
VES	**Vestal, Richgr**	**84.43**	**44**	P	**P**	**23 39 40.9**	**+1.6**
	baz=226						
EDW2	**Edwards Air Fo**	**84.45**	**45**	P	**P**	**23 39 40.7**	**+1.1**
	baz=228						
TPFO	**Pinon Flats**	**84.58**	**47**	P	**P**	**23 39 42.5**	**+2.2**
	baz=229						
PFO	**Pinyon Flats O**	**84.58**	**47**	*e*P	**P**	**23 39 42.7**	**+2.4**
PFO				MLR	MLR		
	comp=Z,1μm,19.0s						
PFO	**Pinyon Flats O**	**84.58**	**47**	*e*P	**P**	**23 39 42.7**	**+2.4**
PFO				LR	LR		
	comp=Z,1μm,19.0s						
ISA	**Isabella, Lake**	**84.68**	**44**	P	**P**	**23 39 42.1**	**+1.4**
	baz=228						
ISA	**Isabella, Lake**	**84.68**	**44**	*e*P	**P**	**23 39 42.9**	**+2.2**
ISA	**Isabella, Lake**	**84.68**	**44**	*e*P	**P**	**23 39 42.9**	**+2.2**
PET	**Petropavlovsk**	**84.82**	**345**	*e*P	**P**	**23 39 36.8**	**-4.1**
PET				*e*S	**S**	**23 50 00.0**	**-7.5**
PET				pmax	pmax		
	comp=Z,200nm,9.6s						
PET				pmax	pmax		
	comp=Z,400nm,9.2s						
PET				MLR	MLR		
	comp=Z,800nm,19.0s						
PET				MLR	MLR		
	comp=Z,700nm,19.0s						
PET	**Petropavlovsk**	**84.82**	**345**	PFAKE		23 39 50.0	+9.1
PET				LR	LR		
	comp=Z,768nm,19.0s						
LRMC	**Laurel Mtn Rad**	**85.04**	**45**	P	**P**	**23 39 43.7**	**+1.0**
	baz=228						
PETK	**Petropavlovsk-**	**85.11**	**345**	P	**P**	**23 39 41.3**	**-1.1**
	comp=Z,6.3nm,0.8s,baz=129,slow=8.5,SNR=5.4						
PETK				LR	LR	00 13 37.7	
	comp=Z,471nm,19.9s,baz=160,slow=33						
BELC	**Belle Mtn. Jos**	**85.12**	**47**	P	**P**	**23 39 43.8**	**+0.7**
	baz=230						
INCN	**Inchon**	**85.13**	**318**	PFAKE		23 39 50.0	+7.1
INCN				LR	LR		
	comp=Z,368nm,21.0s						
CMB	**Columbia Colle**	**85.15**	**41**	*e*P	**P**	**23 39 45.1**	**+2.1**
CMB	**Columbia Colle**	**85.15**	**41**	*e*P	**P**	**23 39 45.1**	**+2.1**
BC3	**Big Chuckawall**	**85.25**	**47**	P	**P**	**23 39 45.0**	**+1.3**
	baz=230						
GLA	**Glamis**	**85.27**	**48**	P	**P**	**23

baz=229
MSHR Mys Shultsa 86.22 324⇓*e*P **P 23 39 52.2 +4.1**
GRAC Grapevine Rang 86.23 44 P **P 23 39 50.0 +1.6**
baz=229
KULM Kulim 86.30 278 *e*P **P 23 39 47.6 -1.6**
KULM LR LR
comp=Z,612nm,20.0s
PAYG Puerto Ayora 86.43 89 PFAKE 23 40 00.0 +10
PAYG LR LR
comp=Z,1μm,19.0s
YBH Yreka Blue Hor 86.44 37 *e*P **P 23 39 54.1 +4.7**
YBH Yreka Blue Hor 86.44 37 *e*P **P 23 39 54.1 +4.7**
NJ2 Nanjing 86.51 310 *e*P **P 23 39 50.6 +0.8**
NJ2 pmax pmax
comp=Z,36nm,0.8s
PSI Prapat 86.57 275 *e*P **P 23 39 49.4 -1.4**
PSI Prapat 86.57 275 *e*P **P 23 39 49.4 -1.4**
PAHR Pah Rah Range 86.86 40 *e*P **P 23 39 53.8 +2.2**
TPNV Topopah Spring 86.88 44 P **P 23 39 52.5 +0.8**
baz=229
TPNV Topopah Spring 86.88 44 *e*P **P 23 39 52.8 +1.0**
TPNV Topopah Spring 86.88 44 *e*P **P 23 39 52.8 +1.0**
USRK Ussuriysk Ar. 86.98 326 P **P 23 39 50.5 -1.3**
comp=Z,2.7nm,0.7s,baz=122,slow=2.5,SNR=13
GSI Gunungsitoli 87.02 273 *e*P **P 23 39 52.6 -0.2**
SHPR Sheep Range 87.26 45 *e*P **P 23 39 55.7 +2.1**
TUC Tucson 87.48 51 P **P 23 39 56.2 +1.5**
baz=233
TUC Tucson 87.48 51 *e*P **P 23 39 56.3 +1.6**
TUC Tucson 87.48 51 *e*P **P 23 39 56.3 +1.6**
K05A Summer Lake 88.10 38 *e*P **P 23 39 60.0 +2.4**
R11A Troy Canyon, C 88.18 43 *e*P **P 23 40 02.3 +4.3**
TRTT Trang 88.38 280 P P 23 40 09.8 +11
MDJ Mudanjiang 88.47 325 PFAKE 23 40 10.0 +11
MDJ LR LR
comp=Z,671nm,20.0s
LCO Las Campanas 88.50 123 PFAKE 23 40 10.0 +10
LCO LR LR
comp=Z,1μm,19.0s
BMN Battle Mountai 88.58 41 *e*P **P 23 40 00.9 +1.1**
BMN pmax pmax
comp=Z,3.0nm,1.0s
BMN Battle Mountai 88.58 41 *e*P **P 23 40 00.9 +1.1**
comp=Z,3.4nm,1.0s
WHN Wuhan 88.72 306 P **P 23 40 01.4 +1.0**
WHN S S 23 50 33.4 -13
WHN pmax pmax
comp=Z,86nm,1.2s
WHN pmax pmax
comp=Z,680nm,6.7s
WHN LR LR
comp=Z,400nm,11.4s
WHN LR LR
comp=Z,970nm,19.4s
LCMT Little Creek M 88.77 46 *e*P **P 23 40 02.0 +1.3**
DL2 Dalian 89.03 317⇑*i*P **P 23 40 01.5 -0.2**
DL2 sP sP 23 40 27.2 +16
DL2 SKS **SKSac 23 50 27.1 -3.0**
DL2 S **SKKSac 23 50 42.7 +0.9**
DL2 pmax pmax
comp=Z,49nm,1.5s
DL2 pmax pmax
comp=Z,270nm,5.0s
DL2 LR LR
comp=Z,390nm,17.3s
DL2 LR LR
comp=Z,410nm,16.7s
DL2 LR LR
comp=Z,530nm,16.6s
CCUT Cedar City 89.03 45 *e*P **P 23 40 02.7 +0.6**
KNB Kanab 89.03 46 *e*P **P 23 40 03.7 +1.6**
KNB Kanab 89.03 46 *e*P **P 23 40 03.7 +1.6**
WUAZ Wupatki 89.04 48 P **P 23 40 02.9 +0.8**
baz=232
WUAZ Wupatki 89.04 48 *e*P **P 23 40 04.0 +2.0**
KDAK Kodiak Island 89.10 13 PFAKE 23 40 10.0 +8.4
KDAK LR LR
comp=Z,466nm,19.0s
WVOR Wild Horse Val 89.12 39 *e*P **P 23 40 06.4 +4.1**
WVOR Wild Horse Val 89.12 39 *e*P **P 23 40 06.4 +4.1**
TRQA Tornquist 89.28 134 PFAKE 23 40 20.0 +17
TRQA LR LR
comp=Z,962nm,20.0s
SKNT Sakolnakorn 89.34 290 P **P 23 40 05.3 +1.6**
comp=Z,66nm,2.0s
121A Cookes Peak, D 89.66 52 P **P 23 40 06.4 +1.3**
baz=234
121A Cookes Peak, D 89.66 52 *e*P **P 23 40 06.8 +1.7**
comp=Z,42nm,1.7s
SNY Shenyang 89.78 320⇑P **P 23 40 04.6 -0.6**
SNY S S 23 50 43.2 -13
SNY pmax pmax
comp=Z,28nm,1.9s
SNY pmax pmax
comp=Z,350nm,9.4s
SNY LR LR
comp=Z,330nm,16.5s
SNY LR LR
comp=Z,170nm,24.3s
SNY LR LR
comp=Z,440nm,19.6s
W18A Petrified Fore 89.86 49 *e*P **P 23 40 07.7 +1.7**
comp=Z,52nm,1.7s
NLWA Neilton Lookou 89.90 33 PFAKE 23 40 20.0 +14
NLWA LR LR
comp=Z,1μm,19.0s
ELK Elko 89.93 42 *e*P **P 23 40 07.4 +1.2**
ELK pmax pmax
comp=Z,2.0nm,0.9s
ELK Elko 89.93 42 *e*P **P 23 40 07.4 +1.2**
comp=Z,1.6nm,0.9s
G06A Carlson Farm, 89.97 36 *e*P **P 23 40 04.7 -1.4**
CN2 Changchun 90.06 322 *e*P **P 23 40 06.1 -0.3**
CN2 *e*S **S 23 50 56.9 -1.5**
CN2 pmax pmax
comp=Z,10.0nm,0.9s
CN2 LR LR
comp=Z,500nm,20.0s
CN2 LR LR
comp=Z,300nm,20.0s
MTPU Mount Pierson 90.07 45 *e*P **P 23 40 09.0 +1.9**
TIA Tai'an 90.17 312⇑P **P 23 40 07.7 +0.5**
TIA pmax pmax
comp=Z,40nm,1.5s
TIA pmax pmax
comp=Z,450nm,3.6s
TIA LR LR
comp=Z,360nm,17.7s
TIA LR LR
comp=Z,270nm,16.0s
TIA LR LR
comp=Z,370nm,15.5s
NKL Nikolayevsk 90.17 336 *e*P **P 23 40 05.0 -1.7**
NKL *e* 23 50 40.0
NKL pmax pmax
comp=Z,500nm,4.0s
MSU Marysvale 90.36 45 *e*P **P 23 40 10.8 +2.5**
MSU Marysvale 90.36 45 *e*P **P 23 40 10.8 +2.5**
NONG Nongkai 90.58 290 P **P 23 40 11.4 +1.9**
comp=Z,24nm,1.7s
TX31 Lajitas Ar. Si 90.77 57 *e*P **P 23 40 11.5 +1.3**
TXAR Lajitas Array 90.77 57 P **P 23 40 10.7 +0.4**
comp=Z,3.3nm,1.0s,baz=212,slow=4.4,SNR=18
TXAR LR LR 00 13 54.2
comp=Z,612nm,20.0s,baz=0.0,slow=31
MNTX Cornudas Mount 90.86 54 P **P 23 40 11.2 +0.7**
baz=236
MNTX Cornudas Mount 90.86 54 *e*P **P 23 40 11.8 +1.3**
MNTX LR LR
comp=Z,428nm,19.0s
G08A Pilot Rock 90.87 37 *e*P **P 23 40 11.7 +1.3**
DUG Dugway, Tooele 91.01 43 PFAKE 23 40 20.0 +8.8
DUG LR LR
comp=Z,1μm,19.0s
HAWA Hanford 91.32 36 PFAKE 23 40 20.0 +7.7
HAWA LR LR
comp=Z,1μm,19.0s
BNM Barren Site 91.38 51 *e*P **P 23 40 15.8 +2.7**
BMO Blue Mountains 91.45 38 *e*P **P 23 40 14.1 +1.0**
BMO LR LR
comp=Z,882nm,19.0s
PBKT Sadao Pong 91.62 288 P **P 23 40 16.7 +2.4**
comp=Z,39nm,1.4s
SRU San Rafael Swe 91.75 45 *e*P **P 23 40 16.1 +1.4**
SRU San Rafael Swe 91.75 45 *e*P **P 23 40 16.1 +1.4**

LOEI Loei 91.85 289 P **P 23 40 16.0 +0.6**
MVCO Mesa Verde 91.91 48 PFAKE 23 40 30.0 +14
MVCO LR LR
comp=Z,754nm,20.0s
ANMO Albuquerque 91.95 51 P **P 23 40 15.6 -0.1**
baz=235
ANMO Albuquerque 91.95 51*d*/P **P 23 40 16.5 +0.8**
ANMO pmax pmax
comp=Z,19nm,2.2s
ANMO Albuquerque 91.95 51 *e*P **P 23 40 16.6 +0.8**
ANMO LR LR
comp=Z,914nm,19.0s
ENH Enshi 92.04 304 *e*P **P 23 40 17.1 +1.0**
comp=Z,380nm,1.7s
ENH LR LR
comp=Z,234nm,19.0s
GYA Guiyang 92.11 299⇑*i*P **P 23 40 16.8 +0.2**
GYA pP sP 23 40 37.6 +12
GYA PP **PP 23 44 00.4 +3.4**
GYA SKS **SKSac 23 50 42.8 -6.0**
GYA S **SKKSac 23 51 11.0 +5.2**
GYA SS **SS 23 57 25.2 -3.2**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,7.6s
GYA LR LR
comp=Z,560nm,20.9s
GYA LR LR
comp=Z,510nm,21.0s
GYA LR LR
comp=Z,540nm,20.8s
HLID Hailey 92.20 40 P **P 23 40 17.3 +0.7**
baz=230
HLID Hailey 92.20 40 *e*P **P 23 40 18.0 +1.4**
HLID LR LR
comp=Z,764nm,20.0s
PV01 Paradox Valley 92.40 47 *e*P **P 23 40 19.2 +1.4**
comp=Z,61nm,0.5s
NNA Nana 92.51 105 LR LR 00 16 21.7
comp=Z,343nm,18.0s,baz=272,slow=32
MA2 Magadan 92.61 344 PFAKE 23 40 30.0 +12
MA2 LR LR
comp=Z,1μm,21.0s
HWUT Hardware Ranch 92.63 43 PFAKE 23 40 30.0 +11
HWUT LR LR
comp=Z,1μm,19.0s
BJT Baijiatuau 93.04 315 PFAKE 23 40 30.0 +10
BJT LR LR
comp=Z,378nm,19.0s
BJI Beijing 93.05 315 P **P 23 40 21.1 +0.7**
BJI PP **PP 23 44 01.0 -3.0**
BJI pmax pmax
comp=Z,22nm,2.0s
BJI LR LR
comp=Z,230nm,19.9s
BJI LR LR
comp=Z,210nm,17.2s
BJI LR LR
comp=Z,260nm,47.3s
LVC Limon Verde 93.35 118 PFAKE 23 40 30.0 +7.2
LVC LR LR
comp=Z,886nm,20.0s
NEW Newport 93.79 35 PFAKE 23 40 40.0 +16
NEW LR LR
comp=Z,2μm,19.0s
MCMT McKenzie Canyo 93.87 40 *e*P **P 23 40 26.0 +1.6**
MSTX Muleshoe 93.94 53 *e*P **P 23 40 26.6 +1.8**
comp=Z,7.1nm,0.8s
TIY Taiyuan 94.10 311 *e*P **P 23 40 26.6 +1.2**
TIY S **S 23 51 33.4 -1.7**
TIY pmax pmax
comp=Z,240nm,6.8s
TIY LR LR
comp=Z,470nm,20.3s
TIY LR LR
comp=Z,250nm,23.0s
REDW Red Top Meadow 94.11 42 *e*P **P 23 40 26.9 +1.4**
comp=Z,26nm,1.6s
KVTX Kingsville 94.13 61 PFAKE 23 40 40.0 +14
KVTX LR LR
comp=Z,644nm,19.0s
SDCO Great Sand Dun 94.17 49 *e*P **P 23 40 27.9 +1.9**
SDCO LR LR
comp=Z,645nm,20.0s
JCT Junction City 94.22 57 PFAKE 23 40 40.0 +14
JCT LR LR
comp=Z,2μm,19.0s
CMAR Chiang Mai Arr 94.23 289 P **P 23 40 27.3 +0.9**
comp=Z,0.5nm,0.3s,baz=138,slow=3.6,SNR=5.5
CMAR LR LR 00 22 06.0
comp=Z,110nm,21.3s,baz=115,slow=35
CHTO Chiang Mai 94.41 289 PFAKE 23 40 40.0 +13
CHTO LR LR
comp=Z,187nm,20.0s
KMI Kunming 94.46 296 P **P 23 40 29.4 +1.8**
KMI pmax pmax
comp=Z,17nm,1.6s
XAN Xi'an 94.47 307 P **P 23 40 27.8 +0.6**
XAN pmax pmax
comp=Z,15nm,1.6s
XAN pmax pmax
comp=Z,170nm,9.2s
XAN LR LR
comp=Z,160nm,19.7s
XAN LR LR
comp=Z,290nm,19.7s
XAN LR LR
comp=Z,470nm,19.7s
BW06 Boulder Array 94.52 43 PFAKE 23 40 40.0 +13
BW06 LR LR
comp=Z,1μm,20.0s
PDAR Pinedale Array 94.52 43 P **P 23 40 26.9 -0.6**
comp=Z,0.7nm,0.8s,baz=217,slow=4.7,SNR=4.9
PDAR LR LR 00 17 38.1
comp=Z,865nm,18.9s,baz=252,slow=32
FLWY Flagg Ranch 94.63 41 *e*P **P 23 40 29.1 +1.2**
comp=Z,6.3nm,1.5s
433A Art 94.88 58 P **P 23 40 29.3 +0.2**
baz=239
BOZ Bozeman (W) 95.05 40 P **P 23 40 29.9 +0.2**
baz=232
BOZ Bozeman (W) 95.05 40 PFAKE 23 40 40.0 +10
BOZ LR LR
comp=Z,911nm,20.0s
LKWY Lake 95.09 41 PFAKE 23 40 40.0 +10
LKWY LR LR
comp=Z,2μm,19.0s
ISCO Idaho Springs 95.24 47 PFAKE 23 40 40.0 +9.1
ISCO LR LR
comp=Z,658nm,19.0s
PAX Paxson 95.29 14 *e*P **P 23 40 32.4 +2.1**
PAX pmax pmax
comp=Z,10.0nm,0.4s
PAX Paxson 95.29 14 *e*P **P 23 40 32.4 +2.1**
comp=Z,10nm,0.4s
RLMT Red Lodge 96.07 41 PFAKE 23 40 50.0 +16
RLMT LR LR
comp=Z,1μm,19.0s
HHC Hu-ho-hao-te 96.40 313 S **SKSac 23 51 14.2 +2.8**
HHC Hu-ho-hao-te 96.40 313 sS S 23 51 56.5 +1.4
COLA College 96.54 12 PFAKE 23 40 50.0 +14
COLA LR LR
comp=Z,618nm,19.0s
CD2 Chengdu 96.58 302 *e*P **P 23 40 36.8 -0.1**
CD2 pP sP 23 40 55.9 +9.5
CD2 sP pP 23 41 03.7 +20
CD2 SKS **SKSac 23 51 06.9 -5.8**
CD2 S **S 23 51 51.4 -5.6**
CD2 sS sS 23 52 24.9 +16
CD2 SS **SS 23 58 27.6 -4.3**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,6.8s
HIA Hailar 96.60 324 PFAKE 23 40 50.0 +14
HIA LR LR
comp=Z,716nm,20.0s
ILAR Eielson Array 96.63 12 P **P 23 40 35.2 -1.0**
comp=Z,0.9nm,0.9s,baz=213,slow=5.6,SNR=7.1
ILAR LR LR 00 19 09.3
comp=Z,223nm,19.2s,baz=208,slow=32
OTAV Otavalo 97.20 94 PFAKE 23 40 50.0 +9.3
OTAV LR LR
comp=Z,543nm,19.0s
LPAZ La Paz 97.43 113 LR LR 00 18 44.2

comp=Z,339nm,18.2s,baz=268,slow=32
EGMT Eagleton 97.50 38 PFAKE 23 40 50.0 +9.2
EGMT LR LR
comp=Z,5μm,21.0s
EGAK Eagle 97.80 15 PFAKE 23 40 50.0 +8.5
EGAK LR LR
comp=Z,718nm,20.0s
BILL Bilibino 97.93 354 *e*P **P 23 40 38.1 -3.9**
BILL pmax pmax
comp=Z,4.0nm,1.3s
BILL Bilibino 97.93 354 PFAKE 23 40 50.0 +8.0
BILL LR LR
comp=Z,499nm,20.0s
OGNE Ogallala 98.16 48 PFAKE 23 41 00.0 +16
OGNE LR LR
comp=Z,1μm,19.0s
CBKS Cedar Bluff 98.57 50 PFAKE 23 41 00.0 +14
CBKS LR LR
comp=Z,931nm,19.0s
NATX Nacogdoches 98.67 59 PFAKE 23 41 00.0 +14
NATX LR LR
comp=Z,1μm,19.0s
LAO LASA Array 98.71 41 PFAKE 23 41 00.0 +14
LAO LR LR
comp=Z,802nm,19.0s
CPUP Villa Florida 99.65 127 LR LR 00 21 24.9
comp=Z,403nm,18.6s,baz=223,slow=32
MIAR Mount Ida 100.80 57 PFAKE 23 41 10.0 +14
MIAR LR LR
comp=Z,697nm,19.0s
KSU1 Kansas State U 100.83 51 PFAKE 23 41 10.0 +14
KSU1 LR LR
comp=Z,554nm,19.0s
DGMT Dagmar 100.83 40 PFAKE 23 41 10.0 +15
DGMT LR LR
comp=Z,930nm,21.0s
ECSD EROS Data Cent 103.03 47 PFAKE 23 41 20.0 +15
ECSD LR LR
comp=Z,824nm,19.0s
BRAL Brewton 104.17 62 PFAKE 23 41 20.0 +9.3
BRAL LR LR
comp=Z,455nm,20.0s
SCIA State Center 104.42 50 PFAKE 23 41 20.0 +8.5
SCIA LR LR
comp=Z,812nm,19.0s
FFC Flin Flon 105.22 35 PFAKE 23 45 40.0
FFC LR LR
comp=Z,847nm,20.0s
SAML Samuel 105.49 110 PFAKE 23 45 40.0
SAML LR LR
comp=Z,1μm,20.0s
AGMN Agassiz Nation 105.59 43 PFAKE 23 45 40.0
AGMN LR LR
comp=Z,755nm,19.0s
LSA Lhasa 105.70 295 PFAKE 23 45 40.0
LSA LR LR
comp=Z,268nm,22.0s
MTDJ Mount Denham 106.37 78 PFAKE 23 45 40.0
MTDJ LR LR
comp=Z,503nm,21.0s
HDIL Hopedale 106.51 53 PFAKE 23 45 40.0
HDIL LR LR
comp=Z,500nm,19.0s
TLY Talaya 106.57 320 PFAKE 23 45 40.0
TLY LR LR
comp=Z,395nm,20.0s
JFWS Jewell Farm 106.84 50 PFAKE 23 45 40.0
JFWS LR LR
comp=Z,769nm,19.0s
GOGA Godfrey 107.86 61 PFAKE 23 45 50.0
GOGA LR LR
comp=Z,555nm,19.0s
EYMN Ely 108.09 45 PFAKE 23 45 50.0
EYMN LR LR
comp=Z,808nm,21.0s
SPB Sao Paulo 108.15 132 PFAKE 23 45 50.0
SPB LR LR
comp=Z,433nm,21.0s
COWI Conover 108.84 47 PFAKE 23 45 50.0
COWI LR LR
comp=Z,703nm,20.0s
GTBY Guantanamo Bay 109.17 77 PFAKE 23 45 50.0
GTBY LR LR
comp=Z,384nm,19.0s
NHSC New Hope 110.28 63 PFAKE 23 45 50.0
NHSC LR LR
comp=Z,533nm,19.0s
ACSO Alum Creek Sta 110.82 55 PFAKE 23 45 50.0
ACSO LR LR
comp=Z,1μm,19.0s
AAM Ann Arbor 111.09 53 PFAKE 23 45 50.0
AAM LR LR
comp=Z,572nm,20.0s
BLA Blacksburg 111.61 59 PFAKE 23 45 50.0
BLA LR LR
comp=Z,606nm,19.0s
PTGA Pitinga 112.63 104 PFAKE 23 46 00.0
PTGA LR LR
comp=Z,40μm,22.0s
CNNC Cliffs of the 112.82 61 PFAKE 23 46 00.0
CNNC LR LR
comp=Z,505nm,19.0s
WMQ Urumqi 113.55 308 *e*PKP **PKiKP 23 45 46.9 +1.9**
WMQ sPKP 23 46 11.8
WMQ PP **PP 23 46 37.7 +0.4**
WMQ AMB AMB
comp=Z,120nm,6.2s
WMQ LR LR
comp=Z,230nm,15.5s
WMQ LR LR
comp=Z,210nm,14.6s
WMQ LR LR
comp=Z,380nm,18.8s
CBN Corbin Frederi 114.22 59 PFAKE 23 46 00.0 +14
CBN LR LR
comp=Z,627nm,20.0s
ABPO Ambohimpanom 116.00 227 PFAKE 23 46 00.0 +9.4
ABPO LR LR
comp=Z,397nm,20.0s
BINY Binghamton 116.45 55 PFAKE 23 46 00.0 +9.5
BINY LR LR
comp=Z,728nm,20.0s
GRGR Grenville 117.49 91 PFAKE 23 46 10.0 +17
GRGR LR LR
comp=Z,446nm,21.0s
MKAR Makanchi Array 118.04 310 PKP **PKPdf 23 45 52.5 -1.0**
comp=Z,1.2nm,0.8s,baz=64,slow=2.8,SNR=5.5
ZALV Zalesovo Beam 118.07 319 PKP **PKPdf 23 45 52.7 -0.5**
comp=Z,0.6nm,0.6s,baz=207,slow=1.6,SNR=2.8
LONY Lake Ozonia 118.08 52 PFAKE 23 46 10.0 +16
LONY LR LR
comp=Z,567nm,20.0s
FDF Fort de France 119.07 89 PFAKE 23 46 10.0 +14
FDF LR LR
comp=Z,367nm,19.0s
NVS Novosibirsk 119.15 319 *e*PKIKP **PKPdf 23 45 57.4 +2.2**
KSH Kashi 120.77 301 *e*PKP **PKPdf 23 45 59.0 -0.1**
KSH PKS **PKSdf 23 49 35.0 -0.8**
KSH SKS **SKSdf 23 52 59.5 -11**
KSH SKKS **SKKSac 23 54 20.0 -6.1**
KSH AMB AMB
comp=Z,61nm,4.5s
KSH LR LR
comp=Z,83nm,6.9s
KSH LR LR
comp=Z,84nm,6.4s
KSH LR LR
comp=Z,160nm,6.5s
KURK Kurchatov 121.21 314 *e*PKIKP **PKPdf 23 45 58.8 -0.5**
KURK MLR MLR
comp=Z,550nm,20.0s
KURK Kurchatov 121.21 314 *e*PKPdf **PKPdf 23 45 58.8 -0.5**
KURK LR LR
comp=Z,550nm,20.0s
TKM2 Tokmak 2 121.82 305 PFAKE 23 46 10.0 +8.9
TKM2 LR LR
comp=Z,286nm,20.0s
PKME Peaks-Kenny Pk 121.89 53 PFAKE 23 46 10.0 +9.2
PKME LR LR
comp=Z,437nm,19.0s
BBSR BB Station 122.35 68 PFAKE 23 46 10.0 +7.9
BBSR LR LR
comp=Z,250nm,19.0s
FRU Bishkek 122.51 304 *e*PKIKP **PKPdf 23 46 01.0 -1.2**
AAK Ala-Archa 122.56 304 PFAKE 23 46 10.0 +7.5

AAK LR LR
comp=Z,246nm,19.0s
EKS2 Erkin-Say 123.08 304 PFAKE 23 46 20.0 +17
EKS2 LR LR
comp=Z,306nm,19.0s
KKAR Karatay Array 125.52 304 *e*PKIKP **PKPdf 23 46 09.1 +1.1**
KKAR *e* 23 46 22.2
KKAR Karatay Array 125.52 304 *e*PKPdf **PKPdf 23 46 09.1 +1.1**
KKAR *e*PKPdf **pPKPdf 23 46 22.2 +7.1**
BVAR Borovoye Array 126.51 316 PKP **PKPdf 23 46 09.2 -0.3**
comp=Z,1.3nm,0.7s,baz=135,slow=0.4,SNR=8.9
BRVK Borovoye 126.58 316 *e*PKIKP **PKPdf 23 46 09.8 +0.2**
BRVK MLR MLR
comp=Z,213nm,19.0s
BRVK Borovoye 126.58 316 *e*PKPdf **PKPdf 23 46 09.8 +0.2**
BRVK LR LR
comp=Z,213nm,19.0s
RCBR Riachuelo 128.51 126 PFAKE 23 46 30.0 +15
RCBR LR LR
comp=Z,838nm,19.0s
LSZ Lusaka 129.61 212 PFAKE 23 46 30.0 +13
LSZ LR LR
comp=Z,670nm,19.0s
KBS Kingsbay 130.19 358 PFAKE 23 46 30.0 +14
KBS LR LR
comp=Z,284nm,20.0s
SFJD Kangerlussuaq 130.52 25 PFAKE 23 46 30.0 +13
SFJD LR LR
comp=Z,800nm,19.0s
SVE Sverdlovsk 131.85 322 *e*PKIKP PKPdf 23 46 34.2 +15
ARU Arti 133.05 321 *i* PKIKP **PKPdf 23 46 22.3 +0.5**
ARU MLR MLR
comp=Z,440nm,22.0s
ARU Arti 133.05 321 PFAKE 23 46 30.0 +8.2
ARU LR LR
comp=Z,446nm,21.0s
GEYT Alibeck 134.23 296 PKP **PKPdf 23 46 24.9 +0.2**
comp=Z,1.8nm,1.0s,baz=180,slow=0.1,SNR=5.5
AKTO Aktyubinsk 134.30 313 PKP **PKPdf 23 46 25.7 +1.3**
comp=Z,1.2nm,0.8s,baz=267,slow=0.9,SNR=4.5
KMBO Kilima Mbogo 135.70 233 PFAKE 23 46 40.0 +12
KMBO LR LR
comp=Z,368nm,19.0s
LVZ Lovozero 137.21 343 PFAKE 23 46 40.0 +11
LVZ LR LR
comp=Z,343nm,19.0s
ARCES ARCESS Array B 137.81 349 PKP **PKPdf 23 46 29.1 -1.2**
comp=Z,2.5nm,0.8s,baz=0.0,slow=2.3,SNR=3.6
ASCN Ascension 139.17 152 PFAKE 23 46 50.0 +15
ASCN LR LR
comp=Z,780nm,19.0s
KLMR Klimovskoe 140.40 333 *e*PKIKP PKPdf 23 46 47.7 +12
KLMR pmax pmax
comp=Z,19nm,1.5s
MBAR Mbarara 140.41 226 PFAKE 23 46 50.0 +13
MBAR LR LR
comp=Z,639nm,21.0s
BORG Borgarnes 141.31 17 PFAKE 23 46 50.0 +13
BORG LR LR
comp=Z,263nm,19.0s
GROC Groznyy 143.54 304 *e*PKHKP PKPpre 23 46 38.2
GROC pmax pmax
comp=Z,31nm,1.7s
MOS Moscow 144.15 327 *e*PKHKP PKPpre 23 46 36.0
MOS pmax pmax
comp=Z,42nm,1.0s
TBLG Delisi 144.51 302 P PKPbc 23 46 41.9 0.0
TBLG Delisi 144.51 302 *e*PKIKP PKPbc 23 46 41.8 -0.1
FINES FINESS Array B 144.56 341 PKP **PKPab 23 46 40.2 -0.9**
comp=Z,9.4nm,0.8s,baz=56,slow=3.2,SNR=33
GNI Garni 144.67 299 *e*PKIKP PKPbc 23 46 43.1 +0.5
GNI MLR MLR
comp=Z,337nm,19.0s
GNI Garni 144.67 299 *e*PKPdf PKPbc 23 46 43.1 +0.5
GNI LR LR
comp=Z,337nm,19.0s
ZEI Tsey 144.98 304 *i* PKIKP **PKPab 23 46 41.6 -2.0**
ZEI pmax pmax
comp=Z,124nm,1.0s
OBN Obninsk 144.99 327 *d i*PKIKP PKPbc 23 46 42.4 -0.5
OBN *i* 23 46 49.2
OBN *i* 23 50 03.2
OBN *i* SS SS 00 08 44.3 -5.6
OBN pmax pmax
comp=Z,29nm,1.0s
OBN Obninsk 144.99 327 *e*PKPbc **PKPdf 23 46 43.2 -0.3**
OBN LR LR
comp=Z,285nm,19.0s
NCK Nalchik 145.08 305 ⇓*i*PKIKP **PKPdf 23 46 44.0 -0.1**
GOF Gofitskoye 145.15 308 ⇑*e*PKIKP **PKPdf 23 46 44.3 +0.1**
GOF pmax pmax
comp=Z,52nm,1.0s
ONI Oni 145.34 303 P **PKPbc 23 46 44.6 0.0**
ONI Oni 145.34 303 *e*PKIKP **PKPbc 23 46 44.5 0.0**
BGD Bogdanovka 145.42 301 P **PKPab 23 46 45.6 +0.4**
AKH Akhalkalaki 145.48 301 P **PKPab 23 46 45.7 +0.3**
AKH Akhalkalaki 145.48 301 *e*PKIKP **PKPab 23 46 45.7 +0.3**
KBZ Khabaz 145.53 305 PKPbc **PKPbc 23 46 45.0 0.0**
comp=Z,4.8nm,0.9s,baz=90,slow=2.6,SNR=20
VSR Storozhevoye 145.57 319 *e*PKP2 **PKPdf 23 46 43.5 -1.2**
VSR pmax pmax
comp=Z,40nm,0.8s
KIV Kislovodsk 145.64 306 *i* PKIKP **PKPdf 23 46 45.1 -0.1**
KIV pmax pmax
comp=Z,28nm,1.1s
KIV Kislovodsk 145.64 306 *e*PKPdf **PKPab 23 46 45.7 -0.1**
KIV LR LR
comp=Z,341nm,20.0s
NEY Neytrino 145.75 305 *d i*PKP2 **PKPab 23 46 47.4 +1.0**
CHVG Ch'k'valeri 146.31 304 P **PKPbc 23 46 47.7 +0.2**
VSU Vasula 146.75 338 *c i*PKP2 **PKPbc 23 46 47.4 -0.8**
SOC Sochi 147.82 306 *e*PKP2 **PKPbc 23 46 51.1 -0.6**
SOC pmax pmax
comp=Z,22nm,0.9s
NB2 NORSAR Subarra147.88 353 PKP **PKPbc 23 46 50.2 -1.1**
comp=Z,55nm,2.0s,baz=13,slow=2.9
NB2 NORSAR Subarra147.88 353 PKP **PKPbc 23 46 50.2 -1.1**
baz=13,slow=2.9
NOA NORSAR Array B147.88 353 PKPbc **PKPbc 23 46 50.5 -0.8**
comp=Z,4.1nm,1.0s,baz=15,slow=4.5,SNR=13
MZRK Al-Mazaregh 148.12 291 *e*P **PKPab 23 46 56.3 +0.7**
KBSD Kabsdagh 148.16 294 *e*P **PKPbc 23 46 52.9 0.0**
SFNV Sufian 148.54 293 *e*P **PKPab 23 46 55.8 -1.6**
IZAR Zarasai 149.00 335 *e*P **PKPbc 23 46 54.2 -0.1**
IZAR IAmb IAmb 23 47 10.5
comp=Z,14nm,0.9s
ANN Anapa 149.06 309 *i* PKP2 **PKPbc 23 46 55.0 +0.2**
ANN *e*PPP PPP 23 53 43.1
ANN pmax pmax
comp=Z,64nm,1.5s
IDID Didziasalis 149.14 334 *e*P **PKPdf 23 46 52.4 +1.9**
IDID IAmb IAmb 23 47 12.6
comp=Z,7.9nm,0.9s
ISAL Salakas 149.18 335 *e*P **PKPdf 23 46 50.7 +0.2**
ISAL IAmb IAmb 23 47 01.7
comp=Z,13nm,0.8s
MICGM Minsk 149.27 332 *e* **PKPbc 23 46 54.0 -1.0**
MNK Minsk 149.27 332 *e*PKIKP **PKPbc 23 46 54.0 -1.0**
NACGM Naroch 149.42 333 *e* **PKPbc 23 46 56.0 +0.6**
NACGM *e*LR LR 00 57 18.0
ZALF Zalf 150.83 286 *e*P **PKPab 23 47 04.2 -2.6**
ROOS tl_alroos 150.89 288 *e*P **PKPab 23 47 04.6 -2.5**
RABH Abou Rabah 150.96 289 *e*P **PKPab 23 47 05.1 -2.3**
AKASG Malin Array Be 151.18 325 PKPbc **PKPbc 23 46 59.1 -0.6**
comp=Z,5.2nm,0.7s,baz=45,slow=2.6,SNR=19
AKASG PKPab **PKPab 23 47 05.3 -2.3**
comp=Z,14nm,0.8s,baz=43,slow=2.4,SNR=13
KIEV Kiev 151.19 325 *e*PKIKP **PKPbc 23 46 59.2 -0.6**
KIEV MLR MLR
comp=Z,283nm,20.0s
KIEV Kiev 151.19 325 *e*PKPbc **PKPbc 23 46 59.1 -0.6**
KIEV LR LR
comp=Z,283nm,20.0s
SIM Simferopol' 151.22 311 *i* PKIKP **PKPbc 23 47 01.4 +1.4**
SIM pmax pmax
comp=Z,22nm,1.1s
SACV Santiago Islan 151.25 114 PFAKE 23 47 10.0 +1.1
SACV LR LR
comp=Z,193nm,19.0s
DRWC Darouich 151.29 293 *e*P PKPab 23 47 19.6 +11
SALA Sala 151.33 285 *e*P **PKPbc 23 47 01.8 +0.8**
SUW Suwalki 151.47 335 *e*PKP **PKPbc 23 46 59.9 -0.4**
SUW Suwalki 151.47 335 *e*PKIKP **PKPbc 23 46 59.9 -0.4**
MARH Ras Al Marh 151.56 288 *e*P **PKPbc 23 47 03.0 +1.4**

TOTH TOTAH 151.60 287 *e*P **PKPbc 23 47 02.6 +1.2**
HAWK Haweek 151.62 289 *e*P **PKPbc 23 47 02.6 +1.2**
BIDA Albida 151.67 290 *e*P **PKPbc 23 47 01.9 +0.4**
TCHB Talchebab 151.97 285 *e*P **PKPbc 23 47 03.0 +0.8**
BSD Bornholm Skovb 152.95 345 *i* P **PKPab 23 47 19.5 +4.7**
comp=Z,18nm,1.0s
BSD Bornholm Skovb 152.95 345 *e*PKP2 **PKPab 23 47 19.5 +4.7**
BSD pmax pmax
comp=Z,18nm,1.0s
BRTR Keskin Array B 153.16 301 PKPbc **PKPbc 23 47 06.0 +1.2**
comp=Z,2.1nm,0.9s,baz=83,slow=3.1,SNR=11
BRTR PKPab **PKPab 23 47 16.0 -0.5**
comp=Z,5.3nm,0.8s,baz=117,slow=3.0,SNR=12
ANTO Ankara 153.76 301 PFAKE 23 47 10.0 +4.0
ANTO LR LR
comp=Z,250nm,20.0s
CSS Mathiatis 154.13 290 P **PKPbc 23 47 08.9 +2.0**
TESR Tescani 155.06 320 ⇓*i*P **PKPab 23 47 23.2 -0.9**
BURAR Bucovina Array 155.17 323 ⇓*i*P **PKPab 23 47 21.3 -3.4**
BURAR Bucovina Array 155.17 323 ⇓*i*PKP2 **PKPab 23 47 21.3 -3.4**
PLOR Plostina 155.44 318 ⇓*i*P **PKPab 23 47 25.0 -0.8**
PLOR Plostina 155.44 318 ⇓*i*PKP2 **PKPab 23 47 25.0 -0.8**
PSN Preselentsi 155.61 313 P **PKPab 23 47 27.0 +0.4**
KOLS Kolonicke sedl 155.70 329 *e*PKIKP **PKPdf 23 47 01.6 +1.2**
KOLS Kolonicke sedl 155.70 329 *e*PKP **PKPdf 23 47 01.6 +1.2**
STHS Stebnicka Huta 155.79 331 *e*PKP2 **PKPab 23 47 28.8 +1.6**
STHS Stebnicka Huta 155.79 331 *e*PKP **PKPab 23 47 28.8 +1.6**
ISR Istrita 155.90 317 ⇓*i*P **PKPab 23 47 23.5 -4.4**
ISR Istrita 155.90 317 ⇓*i*PKP2 **PKPab 23 47 23.5 -4.4**
MLR Muntele Rosu 156.05 318 ⇓*i*P **PKPab 23 47 25.4 -3.2**
MLR Muntele Rosu 156.05 318 ⇓*i*PKP2 **PKPab 23 47 25.4 -3.2**
CRVS Cervenica-Dubn 156.09 330 *e*PKP2 **PKPab 23 47 27.8 -0.7**
CRVS Cervenica-Dubn 156.09 330 *e*PKP **PKPab 23 47 27.8 -0.7**
DOPR Dopca 156.09 320 ⇑*i*P **PKPab 23 47 29.1 +0.5**
ISK Istanbul-Kandi 156.10 306 P **PKPab 23 47 28.6 -0.2**
SECR 156.23 317 ⇑*i*P **PKPab 23 47 24.0 -5.2**
PRD Provadia 156.34 312 P **PKPab 23 47 30.0 +0.3**
VOIR 156.59 319 ⇑*i*P **PKPab 23 47 28.8 -2.1**
VOIR 156.59 319 ⇑*i*PKP2 **PKPab 23 47 28.8 -2.1**
OKC Ostrava-Krasne 156.68 335 AMS AMS 01 13 40.0
comp=Z,400nm,20.5s
UPC Upice 156.83 339 AMS AMS 01 08 10.0
comp=Z,300nm,19.0s
UPC *e*PKPAB **PKPab 23 47 31.5 0.0**
UPC Upice 156.83 339 *e*PKP2 **PKPab 23 47 31.5 0.0**
UPC MLR MLR
comp=Z,300nm,19.0s
KECS Kecovo 156.83 330 *e*PKP2 **PKPab 23 47 32.0 +0.4**
KECS Kecovo 156.83 330 *e*PKP **PKPab 23 47 32.0 +0.4**
DPC Dobruska-Polom 156.87 339 AMS AMS 01 09 10.0
comp=Z,300nm,20.7s
DPC *e*PKPDF **PKPdf 23 47 02.5 +0.5**
DPC *ex* x 23 47 12.0
DPC *e*PKPAB **PKPab 23 47 31.6 -0.2**
DPC Dobruska-Polom 156.87 339 *e*PKIKP **PKPdf 23 47 02.5 +0.5**
DPC *e* 23 47 12.0
DPC MLR MLR
comp=Z,300nm,20.7s
ARR Arges 156.87 320 ⇓*i*P **PKPab 23 47 30.3 -1.7**
CLL Collm 156.92 345 *e*PKPdiff PKPab 23 47 21.0 -11
CLL *i* 23 47 26.7
CLL ⇓*i*PKPab **PKPab 23 47 32.8 +0.9**
comp=Z,18nm,1.4s
CLL *e*pPKPab pPKPab 23 47 43.0 +4.1
CLL LmV 01 07 00.0
comp=Z,300nm,19.5s
DRGR 157.00 325 ⇓*i*P **PKPab 23 47 32.2 -0.3**
DRGR 157.00 325 ⇓PKP2 **PKPab 23 47 32.2 -0.3**
BRG Berggiesshubel 157.09 343 *e*PKP **PKPdf 23 47 06.7 +4.6**
comp=Z,22nm,2.2s
BRG *e* 23 47 31.3
comp=Z,37nm,1.9s
PVCC Panska Ves 157.23 341 AMS AMS 01 09 40.0
comp=Z,400nm,17.9s
PVCC *e*PKPAB **PKPab 23 47 34.8 +1.5**
PVCC Panska Ves 157.23 341 *e*PKP2 **PKPab 23 47 34.8 +1.5**
PVCC MLR MLR
comp=Z,400nm,17.9s
SZH Strazhica 157.25 314 P **PKPab 23 47 33.0 -0.7**
LOT Lotru 157.31 321 ⇓*i*P **PKPab 23 47 32.9 -1.1**
EDRB Edirne 157.39 310 P **PKPab 23 47 33.8 -0.5**
VYHS Vyhne 157.51 332 *e*PKP2 **PKPab 23 47 33.6 -1.0**
VYHS Vyhne 157.51 332 *e*PKP **PKPab 23 47 33.6 -1.0**
PSZ Piszkesteto 157.51 330 PFAKE 23 47 10.0 +7.1
PSZ LR LR
comp=Z,534nm,20.0s
VRAC Vranov 157.68 337 ⇑*i*P **PKPab 23 47 36.6 +1.3**
VRAC Vranov 157.68 337 ⇑PKP2 **PKPab 23 47 36.6 +1.3**
GOPC GO Pecny, Ondr 157.72 340 AMS AMS 01 09 30.0
comp=Z,400nm,16.6s
GOPC *e*PKPAB **PKPab 23 47 36.2 +0.8**
GOPC *ex* x 23 47 44.1
GOPC GO Pecny, Ondr 157.72 340 *e*PKP2 **PKPab 23 47 36.2 +0.8**
GOPC MLR MLR
comp=Z,400nm,16.6s
PRU Pruhonice 157.72 341 AMS AMS 01 05 40.0
comp=Z,500nm,19.0s
PRU *e*PKPAB **PKPab 23 47 35.8 +0.4**
PRU *ex* x 23 47 43.9
PRU Pruhonice 157.72 341 *e*PKP2 **PKPab 23 47 35.8 +0.4**
PRU MLR MLR
comp=Z,500nm,19.0s
NKC Novy Kostel 158.05 344 AMS AMS 01 08 00.0
comp=Z,400nm,19.3s
TREC Trest 158.05 339 AMS AMS 01 02 50.0
comp=Z,400nm,18.2s
ENEZ Enez 158.26 308 P **PKPab 23 47 37.6 -0.5**
ALN Alexandroupoli 158.27 308 P **PKPab 23 47 37.4 -0.7**
MPEP Malo Peshtene 158.56 316 P **PKPab 23 47 36.0 -3.3**
PGB Panagyurishte 158.73 314 P **PKPab 23 47 40.5 +0.3**
PRK Paraskevi 158.75 304 P **PKPab 23 47 39.4 -0.9**
KHC Kasperske Hory 158.77 341 AMS AMS 01 09 30.0
comp=Z,500nm,20.2s
KHC *e*PKPAB **PKPab 23 47 39.7 -0.3**
KHC *ex* x 23 47 47.9
KHC Kasperske Hory 158.77 341 *e*PKP2 **PKPab 23 47 39.7 -0.3**
KHC MLR MLR
comp=Z,500nm,20.2s
SMTH Samothraki Isl 158.80 307 P **PKPab 23 47 38.7 -1.8**
MDVR Moldovita 158.85 322 ⇓*i*P **PKPab 23 47 41.0 +0.4**
GERES GERESS Array B 158.99 341 PKPab **PKPab 23 47 39.6 -1.5**
comp=Z,0.5nm,0.8s,baz=297,slow=0.9,SNR=3.8
SIGR SIGRI 159.06 304 P **PKPab 23 47 41.4 -0.2**
CONA Conrad Observa 159.10 336 *i* PKPab **PKPab 23 47 42.9 +1.3**
comp=Z,17nm,1.7s
LIA Limnos Island 159.28 306 P **PKPab 23 47 41.9 -0.7**
VTS Vitosha 159.30 315 P **PKPab 23 47 42.6 -0.2**
VTS Vitosha 159.30 315 ⇓*i*P **PKPab 23 47 42.9 +0.1**
VTS Vitosha 159.30 315 ⇓*i*PKP2 **PKPab 23 47 42.9 +0.1**
VTS Vitosha 159.30 315 P **PKPab 23 47 41.0 -1.8**
MMB Musomiste 159.50 312 P **PKPab 23 47 43.0 -0.5**
NVR Nevrokopi 159.53 311 P **PKPab 23 47 43.1 -0.6**
WLF Walferdange 159.60 355 PFAKE 23 47 20.0 +15
WLF LR LR
comp=Z,420nm,19.0s
MOA Molln 159.71 339 *i* PKPab **PKPab 23 47 45.4 +1.3**
comp=Z,9.7nm,1.6s
KKB Krupnik 159.77 313 P **PKPab 23 47 44.0 -0.7**
ARSA Arzberg 159.80 336 *i* PKPab **PKPab 23 47 46.5 +1.9**
comp=Z,6.8nm,1.2s
SRS Serrai 159.82 311 P **PKPab 23 47 43.9 -1.0**
OUR Ouranopolis 159.93 309 P **PKPab 23 47 44.3 -1.0**
SANT Santorini 160.24 296 PFAKE 23 47 20.0 +14
SANT LR LR
comp=Z,347nm,20.0s
KNT Kendrikon 160.25 312 P **PKPab 23 47 46.0 -0.8**
PLG Polygyros 160.28 309 P **PKPab 23 47 45.7 -1.2**
PAIG Palíouri 160.32 308 P **PKPab 23 47 45.8 -1.3**
VAY Valandovo 160.38 313 P **PKPab 23 47 46.8 -0.5**
VAY Valandovo 160.38 313 *i* PKP **PKPab 23 47 47.4 +0.1**
SOKA Soboth 160.47 336 *i* PKPab **PKPab 23 47 48.0 +0.5**
comp=Z,14nm,1.8s
AOS Alonnisos 160.50 306 P **PKPab 23 47 47.0 -0.9**
BFO Black Forest 160.67 350 PFAKE 23 47 20.0 +13
BFO LR LR
comp=Z,377nm,20.0s
GRG Griva 160.68 312 P **PKPab 23 47 47.9 -0.8**
KBA Koelnbreinsper 160.69 339 *i* PKPab **PKPab 23 47 49.4 +0.8**
comp=Z,9.5nm,1.5s
SKO Skopje 160.74 316 P **PKPab 23 47 48.6 -0.2**
SKO Skopje 160.74 316 *i* PKP **PKPab 23 47 49.9 +1.1**
OBKA Obir 160.78 336 *i* PKPab **PKPab 23 47 48.2 -0.7**
comp=Z,4.6nm,0.8s

WATA Walderalm 160.95 343 *i* PKPab **PKPab 23 47 50.9 +1.2**
comp=Z,6.5nm,1.1s
MYKA Terra Mystica 160.99 338 *i* PKPab **PKPab 23 47 48.4 -1.3**
WTTA Wattenberg 161.00 343 *i* PKPab **PKPab 23 47 50.8 +0.8**
comp=Z,8.5nm,1.2s
RETA Reutte 161.01 345 *i* PKPab **PKPab 23 47 47.4 -2.5**
comp=Z,7.6nm,1.5s
ATHU Athens Univers 161.03 302 P **PKPab 23 47 48.1 -2.2**
LIT Litokhoron 161.05 310 P **PKPab 23 47 49.0 -1.3**
SIVA Sivas 161.05 293 P **PKPab 23 47 50.6 +0.1**
VLY Voula,Athens 161.06 302 P **PKPab 23 47 48.5 -1.9**
MOTA Moosalm 161.06 344 *i* PKPab **PKPab 23 47 50.6 +0.4**
comp=Z,5.5nm,1.2s
ABTA Abfaltersbach 161.23 340 *i* PKPab **PKPab 23 47 51.7 +0.8**
comp=Z,9.0nm,1.6s
ATAL Atalanti 161.30 305 P **PKPab 23 47 49.6 -1.9**
DAVA Damuels 161.40 346 *i* PKPab **PKPab 23 47 48.2 -3.5**
comp=Z,13nm,2.0s
FNA Florina 161.44 313 P **PKPab 23 47 50.7 -1.3**
FETA Feichten 161.46 344 *i* PKPab **PKPab 23 47 52.7 +0.8**
comp=Z,7.6nm,1.5s
VAM Vamos 161.46 294 P **PKPab 23 47 52.2 -0.1**
DID Didima 161.59 301 P **PKPab 23 47 50.8 -2.0**
IMMV Iera Moni Meta 161.62 295 P **PKPab 23 47 52.6 -0.4**
OHR Ohrid 161.62 314 *i* PKP **PKPab 23 47 52.8 0.0**
AGG Agios Georgios 161.65 307 P **PKPab 23 47 51.1 -1.9**
TIR Tirane 162.06 316 PFAKE 23 47 20.0 +12
TIR LR LR
comp=Z,419nm,20.0s
GUR Goura 162.09 304 P **PKPab 23 47 53.1 -2.0**
KLV Kalavryta, Ach 162.19 304 P **PKPab 23 47 53.9 -1.5**
TUE Stuetta 162.28 346 PFAKE 23 47 20.0 +11
TUE LR LR
comp=Z,436nm,19.0s
DRO Drossia 162.55 304 P **PKPab 23 47 56.6 -0.3**
RLS Riolos of Patr 162.68 305 P **PKPab 23 47 57.2 -0.3**
ITM Ithomi 162.69 302 P **PKPab 23 47 56.3 -1.3**
SGD Sagiada 162.80 311 P **PKPab 23 47 57.2 -0.7**
TORD Torodi Ar. Bea 163.80 174 PKP **PKPdf 23 47 11.0 +0.4**
TORD PKPab **PKPab 23 48 03.9 +1.2**
comp=Z,7.4nm,0.9s,baz=186,slow=3.2,SNR=16
SSB Saint Sauveur 164.07 357 PFAKE 23 47 20.0 +10
SSB LR LR
comp=Z,490nm,19.0s
BNI Bardonecchia 164.11 352 PFAKE 23 47 20.0 +10
BNI LR LR
comp=Z,492nm,19.0s
VLC Villacollemand 164.21 341 PFAKE 23 47 20.0 +10
VLC LR LR
comp=Z,184nm,20.0s
AQU L'Aquila 164.72 331 PFAKE 23 47 20.0 +9.3
AQU LR LR
comp=Z,371nm,19.0s
TIP Timpagrande 165.26 315 PFAKE 23 47 20.0 +8.7
TIP LR LR
comp=Z,431nm,21.0s
CUC Castrocucco 165.29 320 PFAKE 23 47 20.0 +8.7
CUC LR LR
comp=Z,265nm,19.0s
MTE Manteigas 165.77 36 PFAKE 23 47 20.0 +8.3
MTE LR LR
comp=Z,581nm,20.0s
CEL Celeste 166.36 314 PFAKE 23 47 20.0 +7.8
CEL LR LR
comp=Z,298nm,19.0s
PAB San Pablo 167.97 30 PFAKE 23 47 30.0 +17
PAB LR LR
comp=Z,631nm,19.0s
WDD Wied Dalam 168.63 308 PFAKE 23 47 30.0 +16
WDD LR LR
comp=Z,386nm,20.0s
VSL Villasalto 168.75 336 PFAKE 23 47 30.0 +16
VSL LR LR
comp=Z,477nm,19.0s
RTC Rabat Centre 170.09 60 PFAKE 23 47 30.0 +15
RTC LR LR
comp=Z,3μm,19.0s
TAM Tamanrasset 173.21 197 PFAKE 23 47 30.0 +13
TAM LR LR
comp=Z,644nm,20.0s

WEL 07 23:36:19.7±0.1, 43.55S×172.74E, h6km, ML3.8/29, 3C-3D, Error ellipse: s-maj=0.9km s-min=0.4km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.09**	**255**	⇑PG	Pg	Pg	23 36 21.7	+0.1
CRLZ				SG	Sg	Sg	23 36 23.5	+0.5
CRLZ				AML	AML	AML	23 36 23.5	
CRLZ				AML	AML	AML	23 36 23.6	
CRLZ				AML	AML	AML	23 36 23.6	
MQZ	**McQueen's Vall**	**0.17**	**202**	⇑PG	Pg	Pg	23 36 23.0	0.0
MQZ				SG	Sg	Sg	23 36 25.6	+0.3
MQZ				AML	AML	AML	23 36 25.7	
MQZ				AML	AML	AML	23 36 25.7	
OXZ	**Oxford**	**0.56**	**294**	P*	Pg	Pg	23 36 30.3	0.0
OXZ				AML	AML	AML	23 36 40.9	
OXZ				AML	AML	AML	23 36 43.7	
OXZ				AML	AML	AML	23 36 43.7	
OXZ				AML	AML	AML	23 36 43.7	
LTZ	**Lake Taylor**	**0.84**	**336**	P*	Pg	Pg	23 36 36.1	+0.2
LTZ				AML	AML	AML	23 36 48.6	
RPZ	**Rata Peaks**	**1.23**	**262**	⇓P*	Pg	Pg	23 36 41.8	-1.5
RPZ				AML	AML	AML	23 37 08.8	
RPZ				AML	AML	AML	23 37 12.7	
INZ	**Inchbonnie**	**1.26**	**311**	P*	Pn	Pn	23 36 43.3	-0.4
KHZ	**Kahutara**	**1.28**	**28**	⇑P*	Pn	Pn	23 36 42.0	-2.0
KHZ				AML	AML	AML	23 37 08.6	
KHZ				AML	AML	AML	23 37 08.7	
WVZ	**Waitaha Valley**	**1.54**	**287**	*e*PN	Pn	Pn	23 36 47.7	+0.1
WVZ				AML	AML	AML	23 37 23.2	
THZ	**Tophouse**	**1.79**	**4**	PN	Pn	Pn	23 36 49.3	-1.8
THZ				AML	AML	AML	23 37 28.5	
THZ				AML	AML	AML	23 37 32.5	
DSZ	**Denniston Nort**	**1.93**	**339**	⇓PN	Pn	Pn	23 36 52.1	-0.9
DSZ				AML	AML	AML	23 37 21.0	
DSZ				AML	AML	AML	23 37 21.0	
DSZ				AML	AML	AML	23 37 29.0	
DSZ				AML	AML	AML	23 37 29.0	
BSWZ	**Blackbirch Sta**	**2.02**	**25**	AML	AML	AML	23 37 34.5	
BSWZ				AML	AML	AML	23 37 47.3	
LBZ	**Lake Benmore**	**2.02**	**245**	PN	Pn	Pn	23 36 53.2	-1.1
LBZ				AML	AML	AML	23 37 32.3	
LBZ				AML	AML	AML	23 37 33.3	
ODZ	**Otahua Downs**	**2.12**	**224**	PN	Pn	Pn	23 36 53.7	-1.8
ODZ				AML	AML	AML	23 37 28.6	
ODZ				AML	AML	AML	23 37 33.3	
ODZ				AML	AML	AML	23 37 41.7	
ODZ				AML	AML	AML	23 37 42.1	
FOZ	**Fox Glacier**	**2.12**	**270**	PN	Pn	Pn	23 36 55.8	+0.2
FOZ				AML	AML	AML	23 37 33.4	
FOZ				AML	AML	AML	23 37 47.7	
TUWZ	**Tuamarina**	**2.30**	**23**	PN	Pn	Pn	23 36 55.8	-2.2
TUWZ				AML	AML	AML	23 37 44.1	
NNZ	**Nelson**	**2.38**	**12**	PN	Pn	Pn	23 36 58.0	-1.2
NNZ				AML	AML	AML	23 37 43.1	
NNZ				AML	AML	AML	23 37 56.1	
TCW	**Tory Channel**	**2.60**	**26**	PN	Pn	Pn	23 36 59.8	-2.4
TCW				AML	AML	AML	23 37 56.4	
PLWZ	**Palliser**	**2.72**	**44**	PN	Pn	Pn	23 37 00.8	-3.0
QRZ	**Quartz Range**	**2.73**	**357**	PN	Pn	Pn	23 37 03.0	-1.0
QRZ				AML	AML	AML	23 37 18.5	
QRZ				AML	AML	AML	23 37 52.2	
QRZ				AML	AML	AML	23 37 52.2	
QRZ				AML	AML	AML	23 37 54.5	
DUWZ	**D'Urville Isla**	**2.89**	**18**	AML	AML	AML	23 39 38.1	
DUWZ				AML	AML	AML	23 39 38.1	
JCZ	**Jackson Bay**	**2.91**	**258**	PN	Pn	Pn	23 37 06.3	-0.2
JCZ				AML	AML	AML	23 37 59.3	
JCZ				AML	AML	AML	23 38 06.2	
WKZ	**Wanaka**	**2.96**	**243**	AML	AML	AML	23 38 02.6	
WKZ				AML	AML	AML	23 38 04.7	
EAZ	**Earnscleugh**	**2.98**	**234**	⇓PN	Pn	Pn	23 37 05.9	-1.5
EAZ				AML	AML	AML	23 38 00.8	
EAZ				AML	AML	AML	23 38 00.8	
EAZ				AML	AML	AML	23 38 01.1	
CAW	**Cannon Point**	**2.99**	**36**	PN	Pn	Pn	23 37 04.9	-2.7
CAW				AML	AML	AML	23 37 45.7	
CAW				AML	AML	AML	23 38 11.0	

MTW	**Mount Morrison**	**3.15**	**42**	PN	Pn	23 37 06.6	-3.2
MTW				AML	AML	23 37 27.6	
TUZ	**Tuapeka**	**3.27**	**222**	PN	Pn	23 37 09.9	-1.4
TUZ				AML	AML	23 45 06.8	
TUZ				AML	AML	23 45 06.8	
OGWZ	**Otaki Gorge**	**3.28**	**34**	PN	Pn	23 37 08.6	-2.9
OGWZ				AML	AML	23 37 47.8	
OGWZ				AML	AML	23 38 05.0	
MRZ	**Mangatainoka R**	**3.58**	**37**	PN	Pn	23 37 12.7	-3.0
MRZ				AML	AML	23 37 56.7	
MRZ				AML	AML	23 37 57.6	
BFZ	**Birch Farm**	**3.88**	**43**	AML	AML	23 37 22.3	
SYZ	**Scrubby Hill**	**3.93**	**219**	PN	Pn	23 37 19.8	-0.6
SYZ				AML	AML	23 38 32.9	
SYZ				AML	AML	23 39 51.5	
VRZ	**Vera Road**	**4.68**	**20**	AML	AML	23 37 38.2	

*IDC **07** 23:36:32.3±10.0, 15°.52S×166°.94E, h90km±122km, mb3.8/7, mb1 4.0/8, mb1mx3.7/33, mbtmp4.1/8, ML3.9/1, MS4.4/3, Ms1 4.4/3, ms1mx3.9/20, Error ellipse: s-maj=121.0km s-min=30.1km az=159.0*
*ISCJB **07** 23:36:40.5±0.9, 16°.19S±0°.10×167°.1E±0°.1, h200km, mb3.9/11, Error ellipse: s-maj=19.8km s-min=13.1km az=12.6*
*NEIC **07** 23:36:40.3±1.4, 16°.14S×167°.13E, h184km±12km, mb4.3/7, Error ellipse: s-maj=15.7km s-min=12.3km az=105.0*

ISC 07 23:36:41.9±1.1, 16°.2S±0°.1×167°.1E±0°.2, h200km, n19, σ1§05/16, mb4.0/11, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**5.86**	**186**	P		**Pn**	**23 38 06.7**	**-0.7**
	2.5nm,0.3s,baz=332,slow=17,SNR=12							
HNR	**Honiara**	**9.68**	**313**	*e*Pn		**Pn**	**23 38 55.5**	**-1.6**
EIDS	**Eidsvold**	**17.51**	**236**	*e*P		**Pn**	**23 40 32.8**	**-1.4**
	0.7nm,0.4s							
CTA	**Charters Tower**	**20.17**	**256**	P		**P**	**23 41 01.1**	**0.0**
	4.4nm,0.7s,baz=82,slow=13,SNR=3.8							
CTAO	**Charters Tower**	**20.17**	**256**	*e*P		**P**	**23 41 01.6**	**+0.4**
	7.7nm,0.6s							
JAY	**Jayapura**	**29.31**	**295**	LR		LR	23 53 31.7	
	comp=Z,28nm,21.8s,baz=172,slow=35							
WRA	**Warramunga Arr**	**31.32**	**258**	P		**P**	**23 42 42.6**	**-1.1**
	2.2nm,1.2s,baz=86,slow=8.4,SNR=3.1							
ASAR	**Alice Springs**	**32.01**	**251**	P		**P**	**23 42 50.1**	**+0.4**
	2.0nm,0.6s,baz=74,slow=9.8,SNR=13							
FITZ	**Fitzroy Crossi**	**39.59**	**261**	P		**P**	**23 43 55.5**	**+1.4**
	3.2nm,0.7s,baz=104,slow=9.7,SNR=6.4							
KKM	**Kota Kinabalu**	**54.97**	**290**	*e*P		**P**	**23 45 53.2**	**+0.2**
	5.6nm,0.8s							
MAJO	**Matsushiro**	**59.13**	**333**	*e*P		**P**	**23 46 21.4**	**-0.2**
	4.1nm,0.6s							
KULM	**Kulim**	**69.08**	**282**	*e*P		**P**	**23 47 26.6**	**-0.2**
	1.0nm,0.4s							
MDJ	**Mudanjiang**	**69.50**	**332**	*e*P		**P**	**23 47 28.7**	**+0.1**
	4.2nm,0.5s							
CMAR	**Chiang Mai Arr**	**75.39**	**294**	P		**P**	**23 48 06.3**	**+2.2**
	2.1nm,0.3s,baz=116,slow=4.1,SNR=6.2							
SONM	**Songino Array**	**83.58**	**324**	P		**P**	**23 48 47.5**	**-0.2**
	0.3nm,0.5s,baz=132,slow=4.3,SNR=2.7							
SONM				LR		LR	00 26 06.5	
	comp=Z,264nm,20.1s,baz=108,slow=36							
MCK	**McKinley**	**86.61**	**18**	*e*P		**P**	**23 49 02.3**	**0.0**
	1.6nm,0.5s							
ILAR	**Eielson Array**	**87.98**	**18**	P		**P**	**23 49 08.0**	**-0.8**
	0.5nm,0.7s,baz=231,slow=5.2,SNR=5.6							
MKAR	**Makanchi Array**	**98.14**	**316**	LR		LR	00 35 30.7	
	comp=Z,97nm,19.8s,baz=93,slow=36							
ZALV	**Zalesovo Beam**	**98.47**	**324**	LR		LR	00 36 02.4	
	comp=Z,242nm,19.2s,baz=70,slow=36							

IDC 07 23:38:41.5±10.0, 20°.37S×167°.45E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.7/28, mbtmp3.8/4, Error ellipse: s-maj=183.3km s-min=34.9km az=89.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**1.94**	**209**	Pn		Pn	23 39 15.6	-0.2
	3.8nm,0.3s,baz=118,slow=14,SNR=34							
DZM				Sn		Sn	23 39 41.7	+0.8
	31nm,0.3s,baz=263,slow=22,SNR=14							
STKA	**Stephens Creek**	**25.82**	**238**	P		P	23 44 14.9	+0.3
	1.1nm,0.6s,baz=80,slow=8.3,SNR=3.5							
WRA	**Warramunga Arr**	**31.05**	**265**	P		P	23 45 00.7	-0.8
	0.3nm,0.5s,baz=92,slow=8.5,SNR=3.5							
ASAR	**Alice Springs**	**31.23**	**258**	P		P	23 45 03.0	0.0
	2.0nm,0.7s,baz=87,slow=9.2,SNR=11							
FITZ	**Fitzroy Crossi**	**39.46**	**266**	P		P	23 46 14.3	+0.4
	1.5nm,0.6s,baz=124,slow=11,SNR=3.3							

*ISCJB **07** 23:40:23.0±1.4, 17°.28S±0°.06×71°.1W±0°.1, h128km±10km, mb3.9/3, Error ellipse: s-maj=22.3km s-min=8.2km az=17.1*
*IDC **07** 23:40:26.8±4.5, 17°.33S×70°.80W, h134km±28km, mb3.8/2, mb1 3.5/6, mb1mx3.2/31, mbtmp3.9/6, Error ellipse: s-maj=56.9km s-min=14.1km az=109.0*
*NEIC **07** 23:40:28.8±1.7, 17°.42S×70°.52W, h139km±13km, mb4.0/1, Error ellipse: s-maj=27.7km s-min=11.8km az=107.0*

ISC 07 23:40:25.5±1.8, 17°.31S±0°.08×71°.0W±0°.2, h122km±13km, n16, σ1§43/24, mb4.1/3, 5C-1D, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ARCH	**Arica**	**1.34**	**151**	*i* S		**Sn**	**23 41 11.3**	**+0.3**
PB12	**IPOC Station P**	**1.44**	**154**	⇑*i*P		**Pn**	**23 40 51.3**	**-1.2**
PB12				*e*S		**Sn**	**23 41 13.2**	**+0.2**
PB12				IAML			23 41 17.7	
	comp=N,2μm,0.3s							
PB13	**IPOC Station P**	**1.74**	**126**	*e*P		**Pn**	**23 40 56.8**	**+0.2**
PB13				*e*S		**Sn**	**23 41 23.1**	**+3.0**
PB13				IAML			23 41 29.5	
	comp=E,2μm,0.3s							
MNMC	**Minye Minye**	**2.24**	**144**	⇓*i*P		**Pn**	**23 41 02.1**	**-0.3**
MNMC				*i* S		**Sn**	**23 41 32.5**	**+1.8**
MNMC				IAML			23 41 43.1	
	comp=E,397nm,0.6s							
PSGC	**Pisagua**	**2.42**	**160**	⇑*i*P		**Pn**	**23 41 03.4**	**-1.1**
PSGC				*i* S		**Sn**	**23 41 34.5**	**+0.1**
PB11	**IPOC Station P**	**2.74**	**153**	⇑*i*P		**Pn**	**23 41 07.7**	**-1.0**
LPAZ	**La Paz**	**2.92**	**70**	P		**Pn**	**23 41 10.8**	**-0.7**
	comp=E,8.9nm,0.3s,baz=254,slow=10,SNR=130							
LPAZ				S		**Sn**	**23 41 46.0**	**-0.6**
	comp=E,1.4nm,0.3s,baz=141,slow=22,SNR=6.2							
PB08	**IPOC Station P**	**3.31**	**149**	⇑*i*P		**Pn**	**23 41 16.5**	**+0.2**
PB08				*i* S		**Sn**	**23 41 56.9**	**+1.4**
PB07	**IPOC Station P**	**4.51**	**167**	⇑*i*P		**Pn**	**23 41 31.5**	**-0.7**
PB07				*i* S		**Sn**	**23 42 21.5**	**-2.4**
LVC	**Limon Verde**	**5.62**	**160**	P		**Pn**	**23 41 47.4**	**+0.2**
	comp=E,44nm,0.3s,baz=350,slow=9.8,SNR=14							
LVC				S		**Sn**	**23 42 51.3**	**+0.4**
	comp=E,108nm,0.3s,baz=266,slow=22,SNR=14							
SIV	**San Ignacio**	**9.59**	**84**	P		**Pn**	**23 42 37.7**	**-2.8**
	comp=E,0.6nm,0.3s,baz=272,slow=11,SNR=7.2							
SAML	**Samuel**	**11.26**	**43**	*e*Pn		**Pn**	**23 43 03.1**	**+0.1**
PTGA	**Pitinga**	**19.72**	**34**	P		**P**	**23 44 45.7**	**0.0**
	comp=E,0.3nm,0.3s,baz=318,slow=15,SNR=3.7							
DBIC	**Dimbokro**	**69.52**	**76**	P		**P**	**23 51 21.0**	**-0.5**
	comp=E,4.8nm,0.9s,baz=252,slow=6.4,SNR=3.3							
TORD	**Torodi Ar. Bea**	**77.87**	**72**	P		**P**	**23 52 09.1**	**-1.2**
	comp=E,0.7nm,0.7s,baz=250,slow=4.6,SNR=5.7							
INK	**Inuvik**	**96.36**	**341**	*e*P		**P**	**23 53 42.4**	**+2.4**
	comp=E,0.4nm,0.6s							

IDC 07 23:42:13.6±5.1, 28°.95S×176°.54W, h68km±31km, mb3.7/3, mb1 3.9/3, mb1mx3.5/23, mbtmp4.0/3, Error ellipse: s-maj=83.4km s-min=40.7km az=7.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.25**	**256**	P		Pn	23 42 35.2	0.0
	266nm,0.3s,baz=137,slow=18,SNR=4.3							
RAO				S		Sn	23 42 51.2	-0.1
	454nm,0.3s,baz=287,slow=22,SNR=5.7							
STKA	**Stephens Creek**	**36.07**	**255**	P		P	23 49 09.4	+0.6
	2.8nm,0.9s,baz=80,slow=11,SNR=3.3							
ASAR	**Alice Springs**	**44.48**	**265**	P		P	23 50 18.1	-0.4
	1.1nm,0.6s,baz=103,slow=7.5,SNR=8.5							
WRA	**Warramunga Arr**	**45.35**	**270**	P		P	23 50 25.2	-0.1
	1.6nm,0.7s,baz=109,slow=7.9,SNR=4.8							

FINES	**FINESS Array B**	**144.20**	**342**	PKP		PKPdf	00 01 40.4	-0.6
	0.6nm,0.6s,baz=343,slow=2.0,SNR=5.6							
TORD	**Torodi Ar. Bea**	**164.19**	**174**	PKPab		PKPab	00 03 02.9	-0.7
	0.8nm,0.8s,baz=190,slow=5.3,SNR=4.2							

*IDC **07** 23:48:50.2±8.4, 15°.77S×173°.15W, h0km, mb3.9/2, mb1 4.2/3, mb1mx3.7/28, mbtmp4.0/3, ML4.7/1, Error ellipse: s-maj=382.8km s-min=27.4km az=139.0*
*NEIC **07** 23:48:51.8±0.8, 15°.73S×173°.18W, h10km, mb4.0/4, Error ellipse: s-maj=34.6km s-min=11.5km az=144.0*
*ISCJB **07** 23:48:53.4±1.2, 15°.5S±0°.3×173°.3W±0°.2, h26km, mb4.2/7, Error ellipse: s-maj=46.1km s-min=11.5km az=143.1*

ISC 07 23:48:55.0±1.5, 15°.5S±0°.3×173°.2W±0°.3, h26km, n16, σ1§49/12, mb4.2/7, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.06**	**40**	Pn		**Pn**	**23 49 28.7**	**+0.8**
	193nm,0.3s,baz=177,slow=2.1,SNR=121							
AFI				Sn		**Sn**	**23 49 50.4**	**-2.4**
	314nm,0.3s,baz=56,slow=22,SNR=29							
AFI	**Afiamalu**	**2.06**	**40**	*e*Pn		**Pn**	**23 49 28.7**	**+0.8**
AFI				Sn		**Sn**	**23 49 50.9**	**-1.9**
H11S2	**WAKE ISLAND Hy**	**39.16**	**329**	T		T	00 37 03.2	
	baz=147,slow=76,SNR=6.1							
H11S3	**WAKE ISLAND Hy**	**39.17**	**329**	T		T	00 37 23.6	
	baz=147,slow=76,SNR=5.6							
H11S1	**WAKE ISLAND Hy**	**39.18**	**329**	T		T	00 37 11.4	
	baz=147,slow=76,SNR=5.5							
H11N3	**WAKE ISLAND Hy**	**40.10**	**330**	T		T	00 38 19.5	
	baz=147,slow=76,SNR=4.8							
H11N1	**WAKE ISLAND Hy**	**40.11**	**330**	T		T	00 38 18.6	
	baz=147,slow=76,SNR=4.7							
H11N2	**WAKE ISLAND Hy**	**40.12**	**330**	T		T	00 38 16.0	
	baz=147,slow=76,SNR=3.7							
MIDW	**Midway**	**43.63**	**355**	*e*P		**P**	**23 56 58.9**	**+1.6**
	48nm,0.8s							
WRA	**Warramunga Arr**	**50.06**	**257**	P		**P**	**23 57 46.0**	**-1.9**
	0.3nm,0.5s,baz=95,slow=7.3,SNR=5.0							
ASAR	**Alice Springs**	**50.31**	**252**	P		**P**	**23 57 48.4**	**-1.5**
	2.4nm,0.6s,baz=87,slow=7.8,SNR=22							
ANMO	**Albuquerque**	**80.67**	**50**	*e*P		**P**	**00 01 07.0**	**+0.8**
	0.6nm,0.7s							
SDCO	**Great Sand Dun**	**82.59**	**48**	*e*P		**P**	**00 01 16.7**	**+0.3**
	0.3nm,0.5s							
BJT	**Baijiatuan**	**85.70**	**313**	P		**P**	**00 01 32.0**	**+0.3**
	2.7nm,0.5s							
RSSD	**Black Hills**	**86.36**	**42**	*e*P		**P**	**00 01 35.6**	**+0.4**
	0.9nm,0.6s							
BRTR	**Keskin Array B**	**146.38**	**321**	PKPbc		**PKPbc**	**00 08 34.0**	**-0.1**
	0.7nm,0.7s,baz=141,slow=2.8,SNR=6.1							

IDC 08 00:25:09.3±4.0, 6°.85S×147°.12E, h0km, mb3.4/1, mb1 3.7/2, mb1mx3.4/18, mbtmp3.5/2, ML3.3/1, Error ellipse: s-maj=156.3km s-min=44.8km az=114.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.98**	**222**	P		Pn	00 29 19.5	-1.5
	0.1nm,0.3s,baz=47,slow=12,SNR=2.9							
ASAR	**Alice Springs**	**21.00**	**216**	P		P	00 29 54.9	+0.3
	1.5nm,0.8s,baz=32,slow=10.8,SNR=12							
TORD	**Torodi Ar. Bea**	**145.41**	**283**	PKPbc		PKPbc	00 44 49.7	-0.6
	1.2nm,0.6s,baz=75,slow=4.2,SNR=13							

*IDC **08** 00:30:23.9±7.5, 30°.10S×68°.81W, h54km±53km, mb3.4/3, mb1 3.8/6, mb1mx3.6/26, mbtmp3.7/6, ML3.8/3, Error ellipse: s-maj=75.8km s-min=32.0km az=27.0*
*NEIC **08** 00:30:28.6±1.4, 29°.83S×68°.58W, h92km±10km, mb4.1/5, MD4.3(SJA), Error ellipse: s-maj=18.0km s-min=11.6km az=178.0*
NEIC Felt [III] at Villa Union.
*SJA **08** 00:30:28.7±0.9, 29°.59S×68°.73W, h110km, ML4.3*
*ISCJB **08** 00:30:30.1±0.4, 29°.64S±0°.04×68°.68W±0°.07, h100km, mb4.1/9, Error ellipse: s-maj=8.8km s-min=5.6km az=178.5*

ISC 08 00:30:29.8±0.7, 29°.68S±0°.05×68°.68W±0°.06, h100km, n31, σ1§51/35, mb4.1/9, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
AGUA	**GUANDACOL**	**0.25**	**41**	*e*P		**Pn**	**00 30 46.5**	**+2.1**
VCA	**Vinchina**	**1.02**	**24**	*e*P		**Pn**	**00 30 53.1**	**+2.4**
VCA				*e*S		**Sn**	**00 31 09.2**	**+2.7**
VCA				IAML			00 31 11.9	
	comp=Z,5μm,0.2s							
AMOG	**MOGNA**	**1.27**	**173**	*e*P		**Pn**	**00 30 54.6**	**+1.2**
RTLL	**Cerro Villicun**	**1.66**	**174**	*e*P		**Pn**	**00 30 59.4**	**+1.3**
LCO	**Las Campanas**	**1.89**	**290**	*e*P		**Pn**	**00 31 02.2**	**+1.0**
LCO	**Las Campanas**	**1.89**	**290**	*e*Pn		**Pn**	**00 31 02.2**	**+1.0**
LCO				*e*Sn		**Sn**	**00 31 26.1**	**+0.9**
RTCV	**Cerro Valdivia**	**2.18**	**177**	*e*P		**Pn**	**00 31 06.3**	**+1.5**
RTLS	**Leoncito**	**2.18**	**194**	*e*P		**Pn**	**00 31 06.5**	**+1.4**
AUSP	**Uspallata**	**2.61**	**193**	*e*P		**Pn**	**00 31 12.3**	**+1.6**
CYA	**Choya**	**2.80**	**65**	*e*P		**Pn**	**00 31 14.5**	**+1.4**
ACAN	**Cantantal**	**2.89**	**154**	*e*P		Pn	00 31 15.8	+1.7
ASAL	**Salagasta**	**2.91**	**183**	*e*P		**Pn**	**00 31 16.1**	**+1.6**
ARCO	**CERRO ARCO**	**3.16**	**184**	*e*P		**Pn**	**00 31 19.3**	**+1.4**
LVC	**Limon Verde**	**7.04**	**358**	P		**Pn**	**00 32 10.2**	**-0.4**
	comp=Z,172nm,0.3s,baz=194,slow=11,SNR=1.9							
LVC				S		**Sn**	**00 33 26.4**	**-3.0**
	comp=Z,93nm,0.3s,baz=229,slow=20,SNR=3.5							
CPUP	**Villa Florida**	**10.57**	**74**	P		**Pn**	**00 32 55.7**	**-2.6**
	comp=Z,0.2nm,0.3s,baz=241,slow=13,SNR=5.0							
LPAZ	**La Paz**	**13.34**	**2**	P		**Pn**	**00 33 37.3**	**+1.5**
	comp=Z,0.2nm,0.3s,baz=200,slow=6.0,SNR=4.8							
SIV	**San Ignacio**	**15.31**	**29**	P		**P**	**00 34 02.7**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=221,slow=10,SNR=3.5							
SAML	**Samuel**	**21.25**	**15**	*e*P		**P**	**00 35 08.0**	**-0.1**
	comp=Z,13nm,1.4s							
TXAR	**Lajitas Array**	**67.51**	**327**	P		**P**	**00 41 16.3**	**+0.9**
	comp=Z,0.2nm,0.7s,baz=157,slow=9.4,SNR=3.1							
MNTX	**Cornudas Mount**	**70.30**	**327**	*e*P		**P**	**00 41 31.5**	**-1.0**
	comp=Z,1.9nm,0.6s							
PV01	**Paradox Valley**	**77.08**	**329**	*e*P		**P**	**00 42 13.3**	**+1.0**
	comp=Z,245nm,0.8s							
TORD	**Torodi Ar. Bea**	**80.01**	**69**	P		**P**	**00 42 29.1**	**+0.5**
	comp=Z,1.2nm,0.6s,baz=275,slow=6.3,SNR=13							
HWUT	**Hardware Ranch**	**81.24**	**329**	*e*P		**P**	**00 42 35.4**	**+0.5**
	comp=Z,4.0nm,1.3s							
PDAR	**Pinedale Array**	**81.30**	**331**	P		**P**	**00 42 35.8**	**+0.6**
	comp=Z,0.2nm,0.6s,baz=111,slow=9.7,SNR=2.3							
CMB	**Columbia Colle**	**82.90**	**321**	*e*P		**P**	**00 42 44.1**	**+0.6**
	comp=Z,19nm,1.1s							
HLID	**Hailey**	**84.07**	**328**	*e*P		**P**	**00 42 50.6**	**+1.1**
	comp=Z,1.9nm,1.3s							
WRA	**Warramunga Arr**	**125.91**	**207**	PKP		**PKPdf**	**00 49 19.4**	**-1.4**
	comp=Z,0.8nm,0.7s,baz=163,slow=1.6,SNR=2.8							
KURBB	**Kurchatov Arra**	**147.75**	**40**	PKP		**PKPbc**	**00 50 00.8**	**-1.8**
	comp=Z,0.9nm,0.6s,baz=304,slow=3.0,SNR=18							
KURBB				PKPbc		**PKiKP**	**00 50 03.1**	**-1.4**
	comp=Z,1.4nm,0.7s,baz=302,slow=3.1,SNR=18							
KURK	**Kurchatov**	**147.76**	**40**	PKP		**PKPbc**	**00 50 00.8**	**-1.8**
KURK				PKPbc		**PKiKP**	**00 50 03.1**	**-1.4**
ZALV	**Zalesovo Beam**	**149.06**	**31**	PKPbc		**PKPbc**	**00 50 06.2**	**+0.4**
	comp=Z,3.3nm,0.6s,baz=301,slow=3.9,SNR=16							
MKAR	**Makanchi Array**	**151.73**	**45**	PKPbc		**PKPbc**	**00 50 12.4**	**-0.1**
	comp=Z,1.3nm,0.7s,baz=305,slow=0.8,SNR=6.8							

JMA 08 00:39:11.1±0.1, 39°.53N×142°.61E, h32km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.61**	**275**	P		Pb	00 39 23.1	-0.3
MIYJ				S		Sb	00 39 31.4	-0.5
JTH	**Tanohata**	**0.71**	**306**	P		Pn	00 39 24.7	-0.2
JTH				S		Sb	00 39 34.0	-0.5
OFUJ	**Ofunato**	**0.86**	**239**	P		Pn	00 39 26.8	-0.1
OFUJ				S		Sn	00 39 38.3	-0.1
JOM	**Ohasama**	**1.02**	**267**	P		Pn	00 39 29.6	+0.4
JOM				S		Sn	00 39 42.8	+0.4
JKZ	**Kuzumaki**	**1.09**	**295**	P		Pn	00 39 30.6	+0.5
JKZ				S		Sn	00 39 44.2	+0.1
JANG	**Nango**	**1.19**	**315**	P		Pn	00 39 31.6	+0.1
JMK	**Ichinoseki**	**1.22**	**242**	P		Pn	00 39 32.5	+0.5
JMK				S		Sn	00 39 48.0	+0.6
JIO	**Ouri**	**1.46**	**223**	P		Pn	00 39 35.4	+0.2
JIO				S		Sn	00 39 53.1	0.0
JRG	**Rokugo**	**1.54**	**266**	P		Pb	00 39 37.9	-1.0
JRG				*e*S		Sb	00 39 58.5	+0.5
JAH	**Hinai**	**1.66**	**294**	P		Pb	00 39 40.1	-0.9
JAH				S		Sb	00 40 00.7	-0.7
JTM	**Tenmabayashi**	**1.72**	**317**	P		Pn	00 39 40.2	+1.4
JTM				S		Sb	00 40 01.6	-1.8

WEL 08 00:43:33.3±0.1, 43°.70S×170°.14E, h7km, ML3.9/24, 4C-5D, Error ellipse: s-maj=0.8km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FOZ	**Fox Glacier**	**0.29**	**306**	⇓PG		Pg	00 43 39.7	+0.6
FOZ				SG		Sg	00 43 43.5	+0.6
FOZ				AML	AML	AML	00 43 43.9	
FOZ				AML	AML	AML	00 43 43.9	
FOZ				AML	AML	AML	00 43 44.1	
RPZ	**Rata Peaks**	**0.66**	**91**	⇓P*		Pg	00 43 46.3	+0.3
RPZ				S*		Sg	00 43 54.8	+0.2
RPZ				AML	AML	AML	00 43 55.1	
LBZ	**Lake Benmore**	**0.68**	**177**	⇑P*		Pg	00 43 46.6	+0.1
LBZ				AML	AML	AML	00 44 02.5	
LBZ				AML	AML	AML	00 44 02.5	
LBZ				AML	AML	AML	00 44 04.4	
LBZ				AML	AML	AML	00 44 04.4	
WVZ	**Waitaha Valley**	**0.76**	**35**	P*		Pg	00 43 47.8	-0.2
WVZ				AML	AML	AML	00 44 01.6	
JCZ	**Jackson Bay**	**1.05**	**249**	⇓P*		Pg	00 43 53.0	-0.4
JCZ				AML	AML	AML	00 44 10.4	
JCZ				AML	AML	AML	00 44 12.3	
WKZ	**Wanaka**	**1.38**	**215**	⇓PN		Pn	00 43 58.4	-0.7
WKZ				AML	AML	AML	00 44 21.9	
WKZ				AML	AML	AML	00 44 21.9	
WKZ				AML	AML	AML	00 44 27.9	
WKZ				AML	AML	AML	00 44 27.9	
ODZ	**Otahua Downs**	**1.39**	**165**	PN		Pn	00 43 58.6	-0.5
ODZ				AML	AML	AML	00 44 18.6	
ODZ				AML	AML	AML	00 44 18.6	
ODZ				AML	AML	AML	00 44 19.8	
ODZ				AML	AML	AML	00 44 19.8	
OXZ	**Oxford**	**1.43**	**75**	⇑PN		Pn	00 43 59.9	+0.2
OXZ				AML	AML	AML	00 44 23.2	
OXZ				AML	AML	AML	00 44 23.3	
OXZ				AML	AML	AML	00 44 24.3	
OXZ				AML	AML	AML	00 44 24.3	
EAZ	**Earnscleugh**	**1.64**	**201**	PN		Pn	00 44 01.9	-0.6
EAZ				AML	AML	AML	00 44 31.8	
EAZ				AML	AML	AML	00 44 31.8	
EAZ				AML	AML	AML	00 44 32.5	
EAZ				AML	AML	AML	00 44 32.5	
CRLZ	**Canterbury Las**	**1.81**	**87**	⇑PN		Pn	00 44 05.1	+0.4
CRLZ				AML	AML	AML	00 44 35.4	
CRLZ				AML	AML	AML	00 44 39.1	
LTZ	**Lake Taylor**	**1.81**	**60**	PN		Pb	00 44 05.8	-0.9
LTZ				AML	AML	AML	00 44 33.9	
MQZ	**McQueen's Vall**	**1.82**	**91**	⇑PN		Pn	00 44 05.0	0.0
MQZ				AML	AML	AML	00 44 35.4	
MQZ				AML	AML	AML	00 44 39.8	
MSZ	**Milford Sound**	**1.87**	**238**	⇓PN		Pn	00 44 06.1	+0.5
MSZ				AML	AML	AML	00 44 35.7	
MSZ				AML	AML	AML	00 44 35.7	
MSZ				AML	AML	AML	00 44 39.8	
MSZ				AML	AML	AML	00 44 39.8	
HHSZ	**Highcliff Hill**	**2.20**	**172**	AML	AML	AML	00 44 31.3	
HHSZ				AML	AML	AML	00 44 47.7	
MLZ	**Mavora Lakes**	**2.20**	**220**	PN		Pn	00 44 10.0	-0.3
MLZ				AML	AML	AML	00 44 44.2	
MLZ				AML	AML	AML	00 44 50.8	
TUZ	**Tuapeka**	**2.28**	**189**	PN		Pn	00 44 10.6	-0.7
TUZ				AML	AML	AML	00 44 57.8	
TUZ				AML	AML	AML	00 44 57.8	
TUZ				AML	AML	AML	00 44 58.1	
TUZ				AML	AML	AML	00 44 58.1	
DSZ	**Denniston Nort**	**2.31**	**33**	PN		Pn	00 44 12.1	+0.3
DSZ				AML	AML	AML	00 44 49.1	
DSZ				AML	AML	AML	00 44 49.1	
DSZ				AML	AML	AML	00 44 54.8	
DSZ				AML	AML	AML	00 44 56.3	
DCZ	**Deep Cove**	**2.77**	**229**	PN		Pn	00 44 18.4	+0.4
DCZ				AML	AML	AML	00 45 05.0	
DCZ				AML	AML	AML	00 45 07.0	
THZ	**Tophouse**	**2.81**	**47**	PN		Pn	00 44 19.9	+1.2
THZ				AML	AML	AML	00 44 57.1	
THZ				AML	AML	AML	00 45 01.9	
SYZ	**Scrubby Hill**	**2.92**	**194**	PN		Pn	00 44 18.9	-1.2
SYZ				AML	AML	AML	00 45 14.6	
SYZ				AML	AML	AML	00 52 17.3	
QRZ	**Quartz Range

9.7nm,0.3s,baz=179,slow=12,SNR=83
AAK Sn **Sn** **00 48 59.1 +3.0**
15nm,0.3s,baz=137,slow=11,SNR=14
TKM2 Tokmak 2 4.04 25 *e*Pn **Pn** **00 48 24.6 +1.5**
TKM2 *e*Sn **Sn** **00 49 10.9 +0.8**
KKAR Karatay Array 4.33 332 *e*Pn **Pn** **00 48 28.1 +1.2**
KKAR *e*Sn **Sn** **00 49 16.1 -1.0**
MKAR Makanchi Array 10.00 38 Pn **Pn** **00 49 46.5 +1.9**
0.1nm,0.3s,baz=215,slow=15,SNR=4.1
MKAR Lg Lg 00 52 33.8
0.1nm,0.3s,baz=221,slow=33,SNR=3.2
WMQ Urumqi 11.73 63 *e*P Pn 00 50 01.5 -6.9
GEYT Alibeck 11.91 268 Pn **Pn** **00 50 10.4 -0.6**
0.2nm,0.3s,baz=90,slow=10,SNR=4.2
GEYT Sn **Sn** **00 52 25.9 +2.3**
0.4nm,0.3s,baz=105,slow=17,SNR=4.0
KURBB Kurchatov Arra 11.93 16 Pn **Pn** **00 50 09.8 -1.1**
0.0nm,0.3s,baz=207,slow=12,SNR=4.2
KURBB Lg Lg 00 53 31.1
0.0nm,0.3s,baz=199,slow=29,SNR=5.3
KURK Kurchatov 12.03 17 Pn **Pn** **00 50 09.8 -2.6**
ABKAR Akbulak array 13.76 321 *e*Pn **Pn** **00 50 34.3 -1.7**
1.1nm,0.5s
ABKAR *e*Sn Sn 00 52 58.7 -10
BVAR Borovoye Array 13.88 353 Pn **Pn** **00 50 35.7 -1.9**
0.2nm,0.3s,baz=169,slow=10,SNR=6.7
BVAR Lg Lg 00 54 30.9
0.1nm,0.3s,baz=160,slow=30,SNR=3.3
AKTO Aktyubinsk 15.48 321 Pn **Pn** **00 50 57.5 -1.8**
0.2nm,0.3s,baz=142,slow=11,SNR=3.7
AKTO Sn **Sn** **00 53 41.1 -9.1**
0.1nm,0.3s,baz=193,slow=18,SNR=3.1
ZALV Zalesovo Beam 16.64 24 Pn **Pn** **00 51 14.5 +0.4**
0.3nm,0.3s,baz=212,slow=11,SNR=4.6
ARU Arti 19.70 335 P **P** **00 51 50.7 +0.6**
0.0nm,0.3s,baz=90,slow=20,SNR=2.1
GTA Gaotai 20.53 81 *e*P Pn 00 52 01.7 +0.1
GTA pP sP 00 52 07.4 +1.5
GTA sP pP 00 52 10.5 +6.7
GTA pmax pmax
comp=Z,5.0nm,1.2s
SONM Songino Array 25.34 59 P **P** **00 52 48.8 +1.0**
comp=Z,1.4nm,0.8s,baz=260,slow=9.8,SNR=5.7
BRTR Keskin Array B 30.39 284 P **P** **00 53 33.8 +0.6**
comp=Z,0.6nm,0.7s,baz=85,slow=9.8,SNR=5.4
FINES FINESS Array B 36.23 323 P **P** **00 54 24.0 +0.5**
comp=Z,0.9nm,0.4s,baz=115,slow=9.9,SNR=18
ARCES ARCESS Array B 39.29 336 P **P** **00 54 49.4 0.0**
comp=Z,1.6nm,0.7s,baz=106,slow=8.9,SNR=11
KLR Kul'dur 42.09 56 P **P** **00 55 13.5 +0.8**
comp=Z,0.5nm,0.5s,baz=213,slow=6.1,SNR=3.0
GERES GERESS Array B 42.83 303 P **P** **00 55 19.3 +0.4**
comp=Z,0.1nm,0.3s,baz=40,slow=7.7,SNR=2.7
NB2 NORSAR Subarra 43.27 321 P **P** **00 55 22.0 -0.2**
comp=Z,0.6nm,0.6s,baz=92,slow=8.6
NOA NORSAR Array B 43.27 321 P **P** **00 55 22.1 -0.1**
comp=Z,0.5nm,0.6s,baz=91,slow=7.9,SNR=5.3
MAJO Matsushiro 50.33 71 P **P** **00 56 18.5 +0.8**
comp=Z,1.0nm,0.3s
ESDC Sonseca Array 57.74 297 P **P** **00 57 12.4 +0.5**
comp=Z,0.2nm,0.4s,baz=56,slow=7.2,SNR=3.9
TORD Torodi Ar. Bea 67.56 269 P **P** **00 58 17.6 -0.1**
comp=Z,0.4nm,0.8s,baz=56,slow=4.4,SNR=7.0
INK Inuvik 70.86 10 P **P** **00 58 37.7 +0.5**
comp=Z,1.1nm,0.5s,baz=5.5,slow=7.3,SNR=2.8
COLA College 71.30 17 *e*P **P** **00 58 39.3 -0.6**
comp=Z,2.8nm,0.4s
ILAR Eielson Array 71.60 17 P **P** **00 58 40.8 -1.0**
comp=Z,0.3nm,0.7s,baz=322,slow=4.5,SNR=4.7
WRA Warramunga Arr 82.01 124 P **P** **00 59 41.7 +0.5**
comp=Z,0.7nm,0.8s,baz=329,slow=4.8,SNR=3.6
ULM Lac du Bonnet 90.32 353 P **P** **01 00 21.7 0.0**
comp=Z,2.5nm,0.6s,baz=89,slow=4.2,SNR=3.0

PGC 08 01:00:32.8±6.1, 55°.45N×135°.18W, h20km, ML2.6/6, 178km south of Sitka, Ak Off Coast Of Southeastern Alaska, Off coast of southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NDB	**Naden**	**1.98**	**138**	Pn	Pn	01 01 04.8	-0.4
NDB				Sn	Sb	01 01 32.3	-0.1
NDB				Sg	Sn	01 01 36.0	+6.6
VIB	**Van Inlet**	**2.69**	**144**	Pn	Pn	01 01 14.7	-0.2
VIB				Sn	Sn	01 01 44.8	-2.1
DIB	**Dawson Inlet,**	**2.75**	**144**	Pn	Pn	01 01 15.3	-0.4
DIB				Sn	Sn	01 01 45.3	-3.0
MOBC	**Moresby Island**	**2.98**	**139**	Pn	Pn	01 01 18.5	-0.4
MOBC				Sn	Sn	01 01 54.1	+0.1
MOBC				Sg	Sb	01 02 05.7	+4.6
BNB	**Barry Inlet**	**3.52**	**143**	Pn	Pn	01 01 25.3	-1.0
PLBC	**Pleasant Camp**	**4.07**	**351**	Sn	Sn	01 02 18.2	-2.6
PLBC				Sg	Sb	01 02 38.7	+6.3
DLBC	**Dease Lake**	**4.12**	**41**	Pn	Pn	01 01 33.8	-0.8
DLBC				Sn	Sn	01 02 19.3	-2.8
DLBC				Sg	Sb	01 02 33.9	+0.1

*IDC **08** 01:04:14.9±0.8, 4°.83S×101°.73E, h0km, mb4.3/21, mb1 4.4/21, mb1mx4.2/39, mbtmp4.3/21, MS3.7/6, Ms1 3.8/6, ms1mx3.2/42, Error ellipse: s-maj=29.3km s-min=13.2km az=49.0*
*ISCJB **08** 01:04:16.7±0.4, 5°.00S±0°.05×101°.57E±0°.03, h32km, mb4.5/40, MS3.8/8, Error ellipse: s-maj=7.1km s-min=3.8km az=26.7*
*DJA **08** 01:04:17.6±1.2, 5°.S±4°.×10°.1E±°, h37km±37km, M4.9/15, mB5.4/1, mb5.1/7, MLv4.8/15, Mw(mB)4.9/1*
*NEIC **08** 01:04:19.0±2.1, 4°.98S×101°.64E, h33km±14km, mb4.6/14, Error ellipse: s-maj=11.4km s-min=4.8km az=45.0*
ISC 08 01:04:18.7±0.5, 5°.01S±0°.06×101°.64E±0°.05, h32km, n151, σ1°.9/14/138, mb4.5/40, MS3.8/8, 1D, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**1.46**	**64**	*e*Pn	**Pn**	**01 04 43.0**	**+0.2**
MNAI				*e*Sn	**Sn**	**01 05 00.5**	**-0.4**
KSI	**Kapahiang**	**1.65**	**35**	P	**Pn**	**01 04 44.6**	**-0.9**
KSI				S	**Sb**	**01 05 09.3**	**+0.3**
LHSI	**Lahat**	**2.21**	**58**	P	**Pn**	**01 04 54.7**	**+1.5**
LHSI				S	**Sb**	**01 05 22.8**	**-2.3**
LWLI	**Liwa**	**2.41**	**90**	P	**Pb**	**01 04 59.6**	**-1.9**
LWLI				S	**Sn**	**01 05 26.1**	**+1.6**
PPSI	**Pulau Pagai**	**2.76**	**324**	P	**Pn**	**01 04 59.5**	**-1.3**
KASI	**Kota Agung**	**2.89**	**100**	P	**Pn**	**01 05 03.1**	**+0.5**
KLSI		**3.09**	**84**	P	**Pn**	**01 05 06.2**	**+0.8**
KLI	**Kotabumi**	**3.21**	**88**	P	**Pn**	**01 05 07.8**	**+0.9**
BLSI	**Bandar Lampung**	**3.61**	**96**	P	**Pn**	**01 05 12.8**	**+0.3**
JMBI	**JAMBI**	**3.90**	**31**	P	**Pn**	**01 05 17.6**	**+1.1**
CGJI	**Cibinong**	**4.34**	**112**	P	**Pn**	**01 05 21.7**	**-0.8**
TNG	**Tangerang**	**5.12**	**103**	P	**Pn**	**01 05 35.6**	**+2.4**
BKNI	**Bangkinang**	**5.33**	**354**	*e*Pn	**Pn**	**01 05 35.6**	**-0.6**
CBJI	**Citeko**	**5.37**	**105**	P	**Pn**	**01 05 39.1**	**+2.4**
MNSI	**Mandailing Nat**	**6.12**	**340**	P	**Pn**	**01 05 46.4**	**-0.6**
CISI	**Cisompet, Garu** 145nm,0.7s	**6.64**	**113**	P	**Pn**	**01 05 53.6**	**-0.6**
CISI	**Cisompet, Garu**	**6.64**	**113**	*e*Pn	**Pn**	**01 05 53.6**	**-0.6**
CISI				*e*Sn	**Sn**	**01 07 05.1**	**-3.8**
MYKOM	**Kota Tinggi**	**7.10**	**18**	*e*Pn	**Pn**	**01 06 00.3**	**-0.2**
CMJI	**Cimerak** 97nm,0.7s	**7.31**	**113**	P	**Pn**	**01 06 03.0**	**-0.3**
GSI	**Gunungsitoli** 45nm,0.6s,3µm	**7.47**	**327**	P	**Pn**	**01 06 05.3**	**-0.3**
GSI	**Gunungsitoli**	**7.47**	**327**	*e*Pn	**Pn**	**01 06 05.2**	**-0.3**
UGM	**Wanagama**	**9.29**	**109**	P	**Pn**	**01 06 30.2**	**-0.3**
TPTI		**9.34**	**331**	P	**Pn**	**01 06 30.5**	**-0.8**
KULM	**Kulim**	**10.28**	**354**	*e*Pn	**Pn**	**01 06 43.7**	**-0.4**
JAGI	**Jajag, Banyuwa**	**12.89**	**106**	*e*Pn	**Pn**	**01 07 20.3**	**+0.4**
SBUM	**Sibu**	**12.91**	**55**	*e*Pn	**Pn**	**01 07 21.5**	**+1.4**
KKM	**Kota Kinabalu** 14nm,0.8s	**18.23**	**53**	*e*P	**P**	**01 08 29.8**	**+0.3**
MYLDM	**Lahad Datu** 122nm,1.9s	**19.64**	**59**	*e*P	**P**	**01 08 45.0**	**+0.1**
UBPT	**Khong Chiam** 30nm,1.0s	**20.51**	**11**	P	**P**	**01 08 53.5**	**-0.9**
CHAI	**Chaiyaphum** 4.0nm,0.7s	**20.78**	**1**	P	Pn	01 09 00.0	+0.2
UTTA	**Uttaradit** 3.2nm,0.8s	**22.63**	**357**	P	**P**	**01 09 19.1**	**+1.9**
NONG	**Nongkai**	**22.97**	**4**	P	**P**	**01 09 19.5**	**-1.2**
CMAR	**Chiang Mai Arr** 1.3nm,0.3s,baz=184,slow=9.1,SNR=11	**23.47**	**354**	P	**P**	**01 09 24.5**	**-1.2**
CMAR				LR	LR	01 19 56.9	
comp=Z,183nm,19.0s,baz=195,slow=40							
DAV	**Davao City (W)**	**26.73**	**64**	LR	LR	01 21 42.8	
comp=Z,138nm,19.1s,baz=334,slow=39							
FITZ	**Fitzroy Crossi** 3.0nm,0.8s,baz=265,slow=9.5,SNR=5.7	**26.82**	**121**	P	**P**	**01 09 57.1**	**+0.7**
FITZ				LR	LR	01 21 13.3	
comp=Z,98nm,20.4s,baz=312,slow=38							
FITZ	**Fitzroy Crossi** 11nm,1.1s	**26.82**	**121**	*e*P	**P**	**01 09 56.7**	**+0.2**
H08S2	**Diego Garcia H** baz=86,slow=75,SNR=408	**29.08**	**263**	T	T	01 40 37.9	
H08S3	**Diego Garcia H** baz=86,slow=75,SNR=330	**29.09**	**263**	T	T	01 40 38.3	
H08S1	**Diego Garcia H** baz=86,slow=75,SNR=336	**29.10**	**263**	T	T	01 40 38.5	
KMI	**Kunming**	**29.97**	**2**	P	P	01 10 29.8	+5.2
KMI				pmax	pmax		
comp=Z,16nm,0.5s							
H08N1	**Diego Carcia H** baz=135,slow=75,SNR=10	**30.50**	**266**	T	T	01 43 04.2	
H08N2	**Diego Garcia H** baz=135,slow=75,SNR=12	**30.52**	**266**	T	T	01 43 03.8	
H08N3	**Diego Garcia H** baz=135,slow=75,SNR=8.8	**30.52**	**266**	T	T	01 43 03.3	
H01W3	**Cape Leeuwin H** baz=337,slow=76,SNR=14	**31.90**	**160**	T	T	01 44 21.5	
H01W2	**Cape Leeuwin H** baz=337,slow=76,SNR=17	**31.91**	**160**	T	T	01 44 22.5	
H01W1	**Cape Leeuwin H** baz=337,slow=76,SNR=11	**31.91**	**160**	T	T	01 44 22.6	
WRA	**Warramunga Arr** comp=Z,1.2nm,0.7s,baz=298,slow=11,SNR=9.6	**35.11**	**118**	P	**P**	**01 11 09.5**	**0.0**
WRA				PcP	**PcP**	**01 13 44.4**	**+3.6**
comp=Z,0.5nm,0.9s,baz=303,slow=1.9,SNR=2.6							
WRAB	**Tennant Creek** comp=Z,7.2nm,0.9s	**35.11**	**118**	*e*P	**P**	**01 11 10.1**	**+0.6**
ASAR	**Alice Springs** comp=Z,2.3nm,0.6s,baz=300,slow=7.9,SNR=17	**36.20**	**124**	P	**P**	**01 11 19.6**	**+0.8**
LZH	**Lanzhou**	**40.93**	**3**	*e*P	**P**	**01 11 59.2**	**+0.7**
LZH				pP	pP	01 12 07.5	-0.5
LZH				sP	sP	01 12 10.7	-1.1
LZH				*e*PP	**PnPn**	**01 13 37.6**	**-0.1**
LZH				pmax	pmax		
comp=Z,16nm,1.2s							
LZH				pmax	pmax		
comp=Z,43nm,5.6s							
LZH				LR	LR		
comp=N,100nm,13.5s							
LZH				LR	LR		
comp=E,120nm,14.0s							
LZH				LR	LR		
comp=Z,150nm,17.4s							
GTA	**Gaotai**	**44.23**	**358**	*e*P	**P**	**01 12 25.7**	**+0.5**
GTA				pP	pP	01 12 31.3	-3.4
GTA				sP	sP	01 12 34.0	-4.6
GTA				pmax	pmax		
comp=Z,7.0nm,1.1s							
CTA	**Charters Tower** comp=Z,2.8nm,0.4s,baz=255,slow=13,SNR=4.5	**45.88**	**113**	P	**P**	**01 12 39.5**	**+0.9**
STKA	**Stephens Creek** comp=Z,2.7nm,0.8s,baz=279,slow=13,SNR=2.6	**45.95**	**131**	P	**P**	**01 12 40.1**	**+1.2**
STKA				LR	LR	01 35 01.1	
comp=Z,73nm,18.1s,baz=257,slow=40							
HHC	**Hu-ho-hao-te**	**46.53**	**10**	*e*P	**P**	**01 12 47.6**	**+4.2**
HHC				pP	sP	01 12 55.1	-1.7
HHC				sP	pP	01 12 58.5	+5.5
HHC				S	**S**	**01 19 34.8**	**+4.8**
HHC				pmax	pmax		
comp=Z,24nm,0.6s							
HHC				pmax	pmax		
comp=Z,90nm,9.4s							
HHC				LR	LR		
comp=N,220nm,16.6s							
HHC				LR	LR		
comp=E,280nm,18.7s							
HHC				LR	LR		
comp=Z,190nm,16.2s							
KSAR	**Wonju Array Be**	**48.80**	**28**	P	**P**	**01 13 00.6**	**-0.3**
KSRS	**Korea Array** comp=Z,4.4nm,0.7s,baz=213,slow=7.9,SNR=14	**48.83**	**28**	P	**P**	**01 13 00.6**	**-0.5**
KS01	**Wonju Array Si**	**48.83**	**28**	*e*P	**P**	**01 13 00.9**	**-0.3**
WMQ	**Urumqi**	**50.21**	**347**	*e*P	**P**	**01 13 10.8**	**-0.9**
WMQ				pP	pP	01 13 18.6	-2.7
WMQ				pmax	pmax		
comp=Z,9.0nm,0.6s							
WMQ				pmax	pmax		
comp=Z,91nm,3.5s							
KSH	**Kashi**	**50.23**	**334**	*e*P	**P**	**01 13 11.5**	**-0.5**
KSH				*es*P	pP	01 13 22.4	+0.7
KSH				*e*PP	**PP**	**01 15 07.4**	**-0.3**
KSH				*e*ScP	**ScP**	**01 18 24.1**	**-0.5**
KSH				PcS	**PcS**	**01 18 28.7**	**+0.7**
KSH				S	**S**	**01 20 18.1**	**-4.3**
KSH				ScS	**ScS**	**01 22 57.2**	**-3.9**
KSH				pmax	pmax		
comp=Z,7.0nm,0.8s							
KSH				pmax	pmax		
comp=Z,110nm,4.5s							
KSH				LR	LR		
comp=N,61nm,7.6s							
KSH				LR	LR		
comp=E,130nm,5.7s							
KSH				LR	LR		
comp=Z,110nm,6.5s							
SONM	**Songino Array** comp=Z,11nm,0.9s,baz=183,slow=8.8,SNR=47	**52.78**	**4**	P	**P**	**01 13 31.9**	**+0.9**
SONA1	**Songino Array**	**52.80**	**4**	*e*P	**P**	**01 13 31.8**	**+0.8**
CN2	**Changchun**	**53.12**	**21**	*e*P	**P**	**01 13 32.3**	**-1.0**
CN2				pmax	pmax		
comp=Z,10.0nm,0.7s							
TKM2	**Tokmak 2** comp=Z,6.5nm,0.9s	**53.23**	**336**	*e*P	**P**	**01 13 34.6**	**+0.2**
MJAR	**Matsushiro Arr** comp=Z,5.0nm,0.8s,baz=220,slow=7.4,SNR=14	**53.63**	**37**	P	**P**	**01 13 35.6**	**-1.6**
EKS2	**Erkin-Say** comp=Z,7.6nm,0.8s	**53.76**	**335**	*e*P	**P**	**01 13 39.5**	**+1.2**
MK01	**Makanchi Array**	**54.33**	**344**	*e*P	**P**	**01 13 42.4**	**+0.2**
MK31	**Makanchi Array**	**54.35**	**344**	*e*P	**P**	**01 13 42.9**	**+0.6**
MKAR	**Makanchi Array** comp=Z,2.5nm,0.6s,baz=150,slow=7.8,SNR=17	**54.35**	**344**	P	**P**	**01 13 42.6**	**+0.2**
MKAR	**Makanchi Array**	**54.35**	**344**	*e*P	**P**	**01 13 42.9**	**+0.6**
USRK	**Ussuriysk Ar.** comp=Z,22nm,0.7s,baz=219,slow=5.8,SNR=102	**56.07**	**26**	P	**P**	**01 13 54.8**	**0.0**
GEYT	**Alibeck** comp=Z,1.6nm,0.8s,baz=140,slow=4.8,SNR=5.0	**58.79**	**320**	P	**P**	**01 14 14.9**	**+0.8**
KURK	**Kurchatov** comp=Z,20nm,0.8s	**58.94**	**343**	*e*P	**P**	**01 14 14.6**	**-0.2**
ZAA0	**Zalesovo Array**	**60.41**	**349**	*e*P	**P**	**01 14 24.9**	**+0.1**
ZALV	**Zalesovo Beam** comp=Z,9.6nm,0.8s,baz=172,slow=4.6,SNR=34	**60.41**	**349**	P	**P**	**01 14 24.9**	**0.0**
YSS	**Yuzh-Sakhalins** comp=Z,12nm,0.6s	**63.19**	**30**	*e*P	**P**	**01 14 43.2**	**-0.5**
BRVK	**Borovoye** comp=Z,7.7nm,0.6s	**63.62**	**339**	*e*P	**P**	**01 14 46.7**	**+0.3**
ZRNK	**Zerenda** comp=Z,3.3nm,0.9s	**63.98**	**339**	*e*P	**P**	**01 14 48.9**	**0.0**
ABKAR	**Akbulak array** comp=Z,6.2nm,0.8s	**65.05**	**331**	*e*P	**P**	**01 14 56.1**	**+0.2**
MAW	**Mawson** comp=Z,154nm,21.5s,baz=60,slow=32	**67.81**	**195**	LR	LR	01 40 02.2	
YAK	**Yakutsk** comp=Z,63nm,19.1s,baz=276,slow=38	**70.24**	**14**	LR	LR	01 48 19.5	
ARU	**Arti** comp=Z,3.1nm,0.7s	**70.60**	**336**	*e*P	**P**	**01 15 29.8**	**-0.9**
KBZ	**Khabaz** comp=Z,1.6nm,0.8s,baz=108,slow=5.9,SNR=3.9	**71.64**	**319**	P	**P**	**01 15 38.4**	**+1.2**
PETK	**Petropavlovsk-** comp=Z,3.2nm,0.8s,baz=182,slow=5.6,SNR=3.5	**74.56**	**31**	P	**P**	**01 15 53.6**	**-0.7**
NRIK	**Noril'sk** comp=Z,2.3nm,0.5s,baz=171,slow=2.3,SNR=6.4	**74.82**	**355**	P	**P**	**01 15 54.8**	**-0.7**
CSS	**Mathiatis** comp=Z,0.6nm,0.4s	**75.35**	**308**	*e*P	**P**	**01 15 59.4**	**+0.1**
SYO	**Syowa Base**	**75.57**	**199**	LR	eX	**P**	01 16 05.0	+5.1
BRTR	**Keskin Array B** comp=Z,0.6nm,0.7s,baz=140,slow=7.8,SNR=5.9	**76.55**	**313**	P	**P**	**01 16 06.2**	**-0.1**
AKASG	**Malin Array Be** comp=Z,0.3nm,0.3s,baz=88,slow=5.3,SNR=3.8	**82.85**	**322**	P	**P**	**01 16 40.5**	**+0.5**
BUR08	**Bucovina Ar. S**	**84.60**	**319**	*e*P	**P**	**01 16 49.1**	**-0.1**
FINES	**FINESS Array B** comp=Z,1.5nm,0.8s,baz=79,slow=7.2,SNR=6.4	**87.52**	**332**	P	**P**	**01 17 03.9**	**+0.8**
TIP	**Timpagrande** comp=Z,3.2nm,1.0s	**89.17**	**309**	*e*P	**P**	**01 17 10.5**	**-1.1**
ARCES	**ARCESS Array B** comp=Z,1.4nm,0.8s,baz=133,slow=10,SNR=4.4	**89.84**	**340**	P	**P**	**01 17 14.5**	**+0.6**
GERES	**GERESS Array B** comp=Z,0.4nm,0.8s,baz=132,slow=6.7,SNR=3.5	**92.37**	**319**	P	**P**	**01 17 26.5**	**+0.2**
SDCO	**Great Sand Dun**	**139.08**	**34**	*e*PKPdf	**PKPdf**	**01 23 42.4**	**-0.7**
Q40A	**Laux Farm, Aux** baz=336	**143.95**	**18**	P	PKPbc	01 23 49.2	0.0
R39A	**Chumby, Stover** baz=334	**144.25**	**20**	P	PKPbc	01 23 50.0	-0.1
T36A	**Boggs Farm, Ca** baz=329	**144.29**	**24**	P	PKPbc	01 23 50.8	+0.5
W32A	**Sentinel** baz=323	**144.35**	**30**	P	PKPbc	01 23 50.7	+0.1
U35A	**Pawnee** baz=327	**144.51**	**26**	P	PKPbc	01 23 51.1	0.0
R40A	**Maddies Statio** baz=336,SNR=5.3	**144.53**	**19**	P	**PKPab**	**01 23 50.7**	**-0.1**
S38A	**Stockton** baz=333	**144.56**	**22**	P	**PKPab**	**01 23 50.9**	**-0.1**
V34A	**Guthrie** baz=326	**144.61**	**27**	P	PKPbc	01 23 51.6	+0.2
T37A	**Chenevville 18** baz=331,SNR=5.4	**144.62**	**23**	P	PKPbc	01 23 51.3	0.0
Q43A	**New Douglas** baz=340	**144.69**	**15**	P	**PKPdf**	**01 23 52.1**	**-0.6**
W33A	**Caddo, Fort Co** baz=324	**144.71**	**29**	P	PKPbc	01 23 51.8	0.0
S39A	**Bolivar** baz=334	**144.72**	**21**	P	**PKPab**	**01 23 51.0**	**-0.6**
X32A	**Elmer** baz=322	**144.89**	**31**	P	**PKPab**	**01 23 52.1**	**-0.2**
WMOK	**Wichita Mounta** baz=323,SNR=8.2	**144.89**	**30**	P	**PKPab**	**01 23 52.0**	**-0.3**
WMOK	**Wichita Mounta**	**144.89**	**30**	*e*PKPdf	**PKPab**	**01 23 50.9**	**-1.4**
O56A	**Blue Knob Stat** baz=360	**144.89**	**0**	P	PKPbc	01 23 52.2	0.0
Q44A	**Meyer Farm, Va** baz=341	**144.90**	**15**	P	PKPbc	01 23 52.3	+0.1
U36A	**Oologah** baz=329	**144.92**	**25**	P	PKPbc	01 23 52.4	+0.1
T38A	**Diamond** baz=332	**144.94**	**22**	P	**PKPab**	**01 23 52.1**	**-0.3**
S40A	**Lebanon** baz=335,SNR=7.6	**145.08**	**20**	P	**PKPbc**	**01 23 52.4**	**-0.4**
U37A	**Salina** baz=330	**145.16**	**24**	P	**PKPab**	**01 23 53.1**	**-0.1**
X33A	**Lawton** baz=323	**145.19**	**30**	P	**PKPbc**	**01 23 53.0**	**-0.3**
T39A	**Clever** baz=333	**145.29**	**21**	P	**PKPbc**	**01 23 53.4**	**-0.2**
TUL1	**Leonard** baz=328	**145.31**	**25**	P	**PKPdf**	**01 23 53.7**	**-0.2**
S41A	**Jillco Farms,** baz=336,SNR=21	**145.34**	**19**	P	**PKPbc**	**01 23 53.5**	**-0.2**
V36A	**Jenks** baz=328	**145.35**	**26**	P	**PKPab**	**01 23 53.7**	**-0.2**
U38A	**Gravette** baz=331,SNR=7.4	**145.43**	**23**	P	**PKPbc**	**01 23 53.9**	**-0.1**
W35A	**Tecumseh** baz=326	**145.47**	**27**	P	**PKPdf**	**01 23 54.1**	**-0.1**
T40A	**Mansfield** baz=335	**145.48**	**20**	P	**PKPbc**	**01 23 54.0**	**-0.2**
R44A	**Waltonville** baz=341	**145.50**	**15**	P	**PKPab**	**01 23 54.1**	**-0.2**
V37A	**Hulbert** baz=330	**145.60**	**25**	P	**PKPab**	**01 23 54.9**	**0.0**
U39A	**Green Forest** baz=333,SNR=5.9	**145.82**	**22**	P	**PKPdf**	**01 23 54.9**	**+0.1**
T41A	**Mountain View** baz=336,SNR=7.3	**145.83**	**19**	P	**PKPbc**	**01 23 55.3**	**+0.1**
TXAR	**Lajitas Array** comp=Z,4.2nm,0.8s,baz=281,slow=1.3,SNR=30	**145.96**	**42**	PKPbc	**PKPab**	**01 23 57.2**	**+0.7**
S44A	**Carbondale** baz=340	**145.98**	**16**	P	**PKPbc**	**01 23 55.4**	**-0.2**
Y34A	**Reagan Ranch,** baz=324	**146.02**	**30**	P	**PKPbc**	**01 23 55.9**	**0.0**
X35A	**Drake** baz=325	**146.04**	**28**	P	**PKPdf**	**01 23 55.5**	**+0.3**
U40A	**Yellville** baz=334,SNR=5.1	**146.07**	**21**	P	**PKPbc**	**01 23 56.1**	**0.0**
V39A	**Pettigrew** baz=332	**146.24**	**23**	P	**PKPbc**	**01 23 56.2**	**-0.4**
U41A	**Viola** baz=335	**146.41**	**20**	P	**PKPbc**	**01 23 56.8**	**-0.2**
V40A	**Witts Springs** baz=333	**146.58**	**22**	P	**PKPbc**	**01 23 57.3**	**-0.2**
X37A	**Clayton** baz=328	**146.61**	**26**	P	**PKPbc**	**01 23 57.7**	**0.0**
U42A	**Revenden** baz=336,SNR=9.9	**146.63**	**19**	P	**PKPbc**	**01 23 57.7**	**+0.1**
W39A	**Magazine** baz=331	**146.75**	**23**	P	**PKPbc**	**01 23 58.4**	**+0.4**
Y36A	**Durant** baz=326	**146.77**	**28**	P	**PKPbc**	**01 23 58.5**	**+0.4**
X38A	**Whitesboro** baz=329	**146.78**	**25**	P	**PKPbc**	**01 23 58.4**	**+0.3**
V41A	**Mountainview** baz=334,SNR=5.8	**146.84**	**21**	P	**PKPbc**	**01 23 58.2**	**-0.1**
233A	**Rising Star** baz=320	**146.95**	**33**	P	**PKPbc**	**01 23 59.1**	**+0.4**
V42A	**Cord** baz=336	**147.08**	**20**	P	**PKPab**	**01 23 59.6**	**-0.9**
X39A	**Fountain Ranch** baz=330	**147.21**	**24**	P	**PKPbc**	**01 23 59.8**	**+0.4**
MIAR	**Mount Ida** baz=331	**147.40**	**24**	P	**PKPbc**	**01 24 00.2**	**+0.3**
MIAR	**Mount Ida**	**147.40**	**24**	*e*PKPbc	**PKPbc**	**01 24 00.5**	**+0.6**
333A	**Richland Sprin** baz=320	**147.43**	**34**	P	**PKPbc**	**01 24 00.4**	**+0.3**
JCT	**Junction City** baz=317	**147.59**	**36**	P	**PKPbc**	**01 24 00.9**	**+0.3**
JCT	**Junction City**	**147.59**	**36**	*e*PKPbc	**PKPbc**	**01 24 01.5**	**+0.9**
433A	**Art** baz=319	**147.80**	**35**	P	**PKPbc**	**01 24 01.7**	**+0.5**
X41A	**Kaden, Bauxite** baz=333	**147.86**	**22**	P	**PKPbc**	**01 24 01.1**	**0.0**

*ISCJB **08** 01:14:59.4±0.5, 73°.71N±0°.05×60°.9W±0°.1, h10km, Error ellipse: s-maj=7.6km s-min=4.4km az=146.4*
*OTT **08** 01:15:03.5±0.1, 73°.92N×61°.06W, h18km, ML3.4/9, Eastern Baffin Bay. 463km northeast from Clyde River, Nu Eastern Arctic Background Seismic Zone.*
ISC 08 01:14:60.0±0.8, 73°.80N±0°.07×61°.28W±0°.05, h10km, n16, σ3°.89/28, 1C, Baffin Bay

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KULLO	**Kullorsuaq**	**1.36**	**53**	*i*P	**Pg**	**01 15 26.5**	**+0.4**
KULLO				*i* S	**Sb**	**01 15 41.4**	**-1.6**
KULLO	**Kullorsuaq**	**1.36**	**53**	PG	**Pg**	**01 15 26.5**	**+0.4**
KULLO				SG	**Sb**	**01 15 42.0**	**-1.0**
KULLO				Trac		01 15 44.6	
comp=Z,233nm,0.1s							
CLRN	**Clyde River**	**4.03**	**218**	PN	**Pn**	**01 16 06.0**	**+4.5**
CLRN				SN	**Sn**	**01 16 51.0**	**+2.4**
CLRN				Trac		01 16 58.4	
comp=Z,12nm,0.1s							
ILULI	**Ilulissat**	**5.62**	**140**	PN	**Pn**	**01 16 27.1**	**+3.6**
ILULI				SN	**Sn**	**01 17 27.7**	**-0.3**
SUMG	**Summit**	**6.71**	**89**	*i* P	**Pn**	**01 16 41.5**	**+2.7**

SEDN	**First Sedna Si**	**14.98**	**241**	PN	**Pn**	**01 18 32.8**	**+1.4**
SEDN				Trac		01 20 59.4	
	comp=Z,13nm,1.6s						
SEDN				SN	**Sn**	**01 21 10.8**	**-6.4**
MCMN	**McManaman Lake**	**15.21**	**243**	SN	**Sn**	**01 21 13.4**	**-9.2**
MCMN				SN	**Sn**	**01 21 15.0**	**-7.6**
MCMN				Trac		01 21 22.1	
	comp=Z,2.3nm,0.3s						
INUQ	**Inukjuak**	**16.73**	**212**	PN	**P**	**01 18 55.9**	**-0.3**
INUQ				Trac		01 22 11.9	
	comp=Z,5.6nm,0.5s						

*ISCJB **08** 01:22:38.2±0.4,20°.39S×0°.03×69°.01W±0°.07,h111km±5km, mb3.8/3, Error ellipse: s-maj=11.2km s-min=4.3km az=178.4*

*GUC **08** 01:22:38.9±0.7,20°.39S×69°.05W,h97km±3km, ML4.0*

*IDC **08** 01:22:40.1±1.1,20°.40S×68°.78W,h112km±10km, mb3.5/4, mb1 3.6/7, mb1mx3.4/24, mbtmp3.9/7, Error ellipse: s-maj=31.2km s-min=8.8km az=97.0*

ISC 08 01:22:38.7±0.8,**20°.38S**±0°.03×**69°.02W**±0°.08,**h99**km±7km, **n25**,σ1°**28**/32,**mb3.8**/3,**Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB08	**IPOC Station P**	**0.27**	**332**	*i* P	**Pn**	**01 22 53.9**	**+0.4**
PB08				*i* S	**Sn**	**01 23 05.2**	**+0.6**
PB08				IAML		01 23 06.1	
	comp=E,9µm,0.2s						
PB01	**IPOC Station P**	**0.79**	**214**	*i* P	**Pn**	**01 22 57.3**	**+0.3**
PB01				*i* S	**Sn**	**01 23 11.3**	**+0.6**
PB01				IAML		01 23 14.2	
	comp=N,6µm,0.4s						
HMBC	**Humberstone**	**0.82**	**277**	*i* P	**Pn**	**01 22 57.3**	**0.0**
HMBC				*i* S	**Sn**	**01 23 11.8**	**+0.5**
HMBC				IAML		01 23 14.9	
	comp=E,5µm,0.3s						
PSGC	**Pisagua**	**1.30**	**307**	*i* P	**Pn**	**01 23 02.7**	**+0.1**
PSGC				*i* S	**Sn**	**01 23 20.8**	**+0.1**
MNMC	**Minye Minye**	**1.36**	**336**	*i* P	**Pn**	**01 23 04.3**	**+0.8**
MNMC				*i* S	**Sn**	**01 23 23.0**	**+0.8**
MNMC				IAML		01 23 25.4	
	comp=N,8µm,0.4s						
PB09	**IPOC Station P**	**1.42**	**188**	*i* P	**Pn**	**01 23 04.6**	**+0.4**
PB09				*i* S	**Sn**	**01 23 24.4**	**+1.1**
PB09				IAML		01 23 28.2	
	comp=E,3µm,0.4s						
PB07	**IPOC Station P**	**1.56**	**211**	*i* P	**Pn**	**01 23 06.3**	**+0.4**
PB07				*i* S	**Sn**	**01 23 27.1**	**+0.7**
PB07				IAML		01 23 33.5	
	comp=E,2µm,0.1s						
PB13	**IPOC Station P**	**2.09**	**347**	*i* P	**Pn**	**01 23 15.0**	**+2.0**
PB13				*i* S	**Sn**	**01 23 41.6**	**+2.5**
PB12	**IPOC Station P**	**2.15**	**325**	*i* P	**Pn**	**01 23 16.6**	**+0.3**
PB12				*i* S	**Sn**	**01 23 40.9**	**+1.1**
PB04	**IPOC Station P**	**2.21**	**208**	*i* P	**Pn**	**01 23 15.1**	**+0.9**
PB04				*i* S	**Sn**	**01 23 42.6**	**+1.4**
LVC	**Limon Verde**	**2.22**	**177**	P	**Pn**	**01 23 15.9**	**+1.5**
	comp=E,2µm,0.3s,baz=10,slow=9.2,SNR=276						
LVC				S	**Sn**	**01 23 44.1**	**+2.4**
	comp=E,2µm,0.3s,baz=115,slow=21,SNR=7.5						
PB06	**IPOC Station P**	**2.37**	**193**	*i* P	**Pn**	**01 23 16.6**	**+0.3**
PB06				*i* S	**Sn**	**01 23 46.4**	**+1.4**
LPAZ	**La Paz**	**4.16**	**12**	P	**Pn**	**01 23 43.8**	**+3.1**
	comp=E,6.1nm,0.3s,baz=168,slow=6.2,SNR=97						
LPAZ				S	**Sn**	**01 24 29.6**	**+1.1**
	baz=210,slow=8.1,SNR=2.2						
SIV	**San Ignacio**	**8.72**	**61**	P	**Pn**	**01 24 40.9**	**-1.2**
	comp=E,2.0nm,0.3s,baz=257,slow=12,SNR=24						
CPUP	**Villa Florida**	**12.26**	**121**	P	**Pn**	**01 25 28.5**	**-1.3**
	comp=E,0.1nm,0.3s,baz=305,slow=11,SNR=5.1						
PLCA	**Paso Flores**	**20.33**	**183**	P	**P**	**01 27 07.2**	**+0.2**
	comp=E,1.6nm,1.0s,baz=52,slow=14,SNR=3.0						
DBIC	**Dimbokro**	**68.52**	**74**	P	**P**	**01 33 30.0**	**-1.1**
	comp=E,3.5nm,0.8s,baz=216,slow=8.1,SNR=5.6						
TORD	**Torodi Ar. Bea**	**77.08**	**71**	P	**P**	**01 34 20.4**	**-1.3**
	comp=E,0.7nm,0.4s,baz=250,slow=5.2,SNR=32						
YKA	**Yellowknife Ar**	**90.11**	**341**	P	**P**	**01 35 27.5**	**+0.3**
	comp=E,0.2nm,0.7s,baz=133,slow=5.4,SNR=3.0						
H11S2	**WAKE ISLAND Hy**	**27.63**	**278**	T	T	04 01 26.4	
	baz=102,slow=74,SNR=66						
H11S1	**WAKE ISLAND Hy**	**27.64**	**278**	T	T	04 01 27.0	
	baz=102,slow=74,SNR=37						
H11S3	**WAKE ISLAND Hy**	**27.65**	**278**	T	T	04 01 27.6	
	baz=102,slow=74,SNR=36						
H11N3	**WAKE ISLAND Hy**	**27.68**	**280**	T	T	04 01 27.4	
	baz=100,slow=74,SNR=17						
H11N2	**WAKE ISLAND Hy**	**27.70**	**280**	T	T	04 01 28.4	
	baz=100,slow=74,SNR=19						
H11N1	**WAKE ISLAND Hy**	**27.70**	**280**	T	T	04 01 29.9	
	baz=100,slow=74,SNR=13						

*IDC **08** 01:24:32.9±1.3,8°.64S×127°.40E,h0km, mb4.0/4, mb1 4.0/7, mb1mx3.8/38, mbtmp3.8/7, ML3.7/3, Error ellipse: s-maj=75.6km s-min=23.0km az=72.0*

*ISCJB **08** 01:24:35.6±0.6,8°.91S±0°.07×127°.03E±0°.06,h33km, mb4.1/6, Error ellipse: s-maj=10.9km s-min=7.7km az=27.6*

*NEIC **08** 01:24:35.5±5.2,8°.83S×127°.06E,h15km±35km, mb4.4/2, Error ellipse: s-maj=18.3km s-min=8.0km az=216.0*

ISC 08 01:24:37.4±0.7,**8°.98S**±0°.08×**127°.07E**±0°.08,**h35**km,**n14**, σ1°**73**/18,**mb4.0**/6,**Timor region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SOEI	**Soe**	**2.87**	**254**	*e*Pn	**Pn**	**01 25 20.5**	**-0.3**
SOEI				*e*Sn	**Sn**	**01 25 52.9**	**-1.2**
KAPI	**Kappang**	**8.26**	**298**	*e*Pn	**Pn**	**01 26 34.0**	**-0.8**
FITZ	**Fitzroy Crossi**	**9.17**	**189**	Pn	**Pn**	**01 26 50.4**	**+3.2**
	0.6nm,0.3s,baz=0.6,slow=8.5,SNR=9.7						
FITZ				Sn	**Sn**	**01 28 28.5**	**-0.8**
	2.2nm,0.3s,baz=93,slow=19,SNR=9.2						
WRAB	**Tennant Creek**	**12.96**	**148**	*e*Pn	**Pn**	**01 27 41.3**	**+2.0**
WRA	**Warramunga Arr**	**12.97**	**148**	Pn	**Pn**	**01 27 40.5**	**+1.2**
	0.5nm,0.3s,baz=320,slow=14,SNR=13						
WRA				Sn	**Sn**	**01 29 59.9**	**-2.6**
	1.4nm,0.3s,baz=324,slow=20,SNR=11						
ASAR	**Alice Springs**	**16.00**	**157**	Pn	**P**	**01 28 22.1**	**-0.9**
	0.3nm,0.3s,baz=322,slow=10,SNR=7.6						
ASAR				Sn	**Sn**	**01 31 13.2**	**-3.2**
	0.4nm,0.3s,baz=322,slow=22,SNR=4.5						
PMG	**Port Moresby**	**19.84**	**93**	*e*P	**Pn**	**01 29 07.0**	**-0.3**
	11nm,0.6s						
KULM	**Kulim**	**29.91**	**297**	*e*P	**P**	**01 30 42.8**	**+0.5**
	5.4nm,0.7s						
CAN	**Canberra**	**33.00**	**146**	*e*P	**P**	**01 31 10.0**	**+0.7**
	13nm,1.0s						
CMAR	**Chiang Mai Arr**	**38.91**	**315**	P	**P**	**01 32 00.7**	**+0.7**
	0.9nm,0.3s,baz=153,slow=8.7,SNR=4.1						
SONM	**Songino Array**	**59.46**	**344**	P	**P**	**01 34 35.1**	**-1.8**
	0.3nm,0.5s,baz=171,slow=9.8,SNR=2.3						
MKAR	**Makanchi Array**	**68.34**	**329**	P	**P**	**01 35 35.6**	**+0.4**
	0.8nm,0.5s,baz=127,slow=6.7,SNR=6.7						
ZALV	**Zalesovo Beam**	**72.11**	**335**	P	**P**	**01 35 58.4**	**+0.3**
	1.1nm,0.5s,baz=137,slow=6.0,SNR=5.8						
TORD	**Torodi Ar. Bea**	**126.31**	**280**	PKP	**PKPdf**	**01 43 39.5**	**+2.0**
	0.4nm,0.7s,baz=52,slow=2.5,SNR=2.9						

CASC 08 01:25:24.8±1.8,**11°.83N**×**86°.58W**,**h56**km±18km,**MD4.3, ML3.5,2C-2D,Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRUN	**El Crucero**	**0.31**	**61**	*e*P	Pn	01 25 35.7	+1.0
CRUN	**El Crucero**	**0.31**	**61**	*e*P	Pn	01 25 35.7	+1.0
COPN	**Copaltepe**	**0.35**	**358**	*e*P	Pn	01 25 34.8	-0.2
COPN	**Copaltepe**	**0.35**	**358**	*e*P	Pn	01 25 34.8	-0.2
XAVN	**Gruta Xavier**	**0.40**	**38**	*e*P	Pn	01 25 35.8	+0.4
XAVN	**Gruta Xavier**	**0.40**	**38**	*e*P	Pn	01 25 35.8	+0.4
TISN	**Laguna Tiscapa**	**0.43**	**44**	*e*P	Pn	01 25 35.9	+0.2
TISN	**Laguna Tiscapa**	**0.43**	**44**	*e*P	Pn	01 25 35.9	+0.2
MASN	**Masaya**	**0.45**	**70**	*e*P	Pn	01 25 36.5	+0.6
MASN	**Masaya**	**0.45**	**70**	*e*P	Pn	01 25 36.5	+0.6
MGAN	**Managua**	**0.45**	**46**	*e*P	Pn	01 25 36.4	+0.5
MGAN	**Managua**	**0.45**	**46**	*e*P	Pn	01 25 36.4	+0.5
MOMN	**Momotombo**	**0.57**	**4**	*e*P	Pn	01 25 36.6	-0.7
MOMN	**Momotombo**	**0.57**	**4**	*e*P	Pn	01 25 36.6	-0.7
CNGN	**Cerro Negro**	**0.67**	**350**	*e*P	Pn	01 25 37.7	-0.9
CNGN				*e*S	Sn	01 25 48.7	+0.1
CNGN				AML	AML	01 25 49.2	
	comp=E,2µm,0.3s						
CNGN	**Cerro Negro**	**0.67**	**350**	*e*P	Pn	01 25 37.7	-0.9
CNGN				*e*S	Sn	01 25 48.7	+0.1
CNGN				AML	AML	01 25 49.2	
	comp=E,2µm,0.3s						
CONN	**Concepcion**	**0.97**	**106**	*e*P	Pn	01 25 42.4	+0.1
CONN	**Concepcion**	**0.97**	**106**	*e*P	Pn	01 25 42.4	+0.1
BOAB	**BOACO BROADBAN**	**.08**	**55**	*e*P	Pn	01 25 43.2	-0.6
BOAB	**BOACO BROADBAN**	**.08**	**55**	*e*P	Pn	01 25 43.2	-0.6
ACON	**Acoyapa**	**1.38**	**84**	*e*P	Pn	01 25 47.8	0.0
ACON	**Acoyapa**	**1.38**	**84**	*e*P	Pn	01 25 47.8	0.0
VCR	**Vista de Mar**	**1.93**	**151**⇓	*e*P	Pn	01 25 55.6	+0.2
VCR				*e*S	Sn	01 26 19.6	+0.9
VCR	**Vista de Mar**	**1.93**	**151**⇓	*e*P	Pn	01 25 55.6	+0.2
VCR				*e*S	Sn	01 26 19.6	+0.9
JCR	**Jicaral**	**2.44**	**144**	*e*P	Pn	01 26 02.8	+0.5
JCR				*e*S	Sn	01 26 29.4	-1.6
JCR	**Jicaral**	**2.44**	**144**	*e*P	Pn	01 26 02.8	+0.5
JCR				*e*S	Sn	01 26 29.4	-1.6
URSC	**Urasca**	**3.39**	**126**⇑	*e*P	Pn	01 26 16.8	+1.3
URSC	**Urasca**	**3.39**	**126**⇑	*e*P	Pn	01 26 16.8	+1.3

*IDC **08** 01:29:02.5±1.0,29°.77S×176°.58W,h0km, mb4.1/5, mb1 4.3/5, mb1mx3.9/37, mbtmp4.1/5, MS3.2/2, Ms1 3.2/2, ms1mx2.8/25, Error ellipse: s-maj=39.7km s-min=24.2km az=11.0*

*NEIC **08** 01:29:03.6±0.6,29°.92S×176°.60W,h10km, mb4.4/1, Error ellipse: s-maj=16.2km s-min=13.9km az=75.0*

*ISCJB **08** 01:29:05.2±1.3,30°.1S±0°.1×176°.8W±0°.2,h24km, mb4.4/8, Error ellipse: s-maj=26.6km s-min=11.0km az=147.5*

ISC 08 01:29:06.3±0.8,**29°.9S**±0°.1×**176°.7W**±0°.1,**h24**km,**n22**, σ1°**11**/23,**mb4.3**/8,**1C,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.25**	**302**	Pn	**Pn**	**01 29 28.0**	**-0.2**
	93nm,0.3s,baz=197,slow=20,SNR=2.3						
RAO				Sn	**Sb**	**01 29 44.6**	**-0.3**
	267nm,0.3s,baz=94,slow=23,SNR=4.1						
URZ	**Urewera**	**9.76**	**210**	Pn	**Pn**	**01 31 22.8**	**-2.4**
	0.4nm,0.3s,baz=345,slow=16,SNR=3.7						
DZM	**Mont Dzumac**	**17.04**	**293**	LR	LR	01 38 24.4	
	comp=Z,101nm,18.4s,baz=186,slow=33						
RAR	**Rarotonga**	**17.55**	**64**	LR	LR	01 39 13.2	
	comp=Z,48nm,19.7s,baz=262,slow=35						
CTAO	**Charters Tower**	**34.84**	**278**	*e*P	**P**	**01 35 56.0**	**+0.4**
	40nm,1.1s						
STKA	**Stephens Creek**	**35.68**	**256**	P	**P**	**01 36 04.8**	**+2.0**
	2.6nm,0.7s,baz=100,slow=10,SNR=4.5						
ASAR	**Alice Springs**	**44.26**	**266**	P	**P**	**01 37 14.5**	**+0.4**
	0.9nm,0.8s,baz=122,slow=9.7,SNR=4.7						
WRAB	**Tennant Creek**	**45.20**	**271**	*e*P	**P**	**01 37 21.9**	**+0.3**
	3.9nm,0.8s						
WRA	**Warramunga Arr**	**45.21**	**271**	P	**P**	**01 37 21.7**	**0.0**
	3.0nm,0.8s,baz=109,slow=7.6,SNR=13						
QSPA	**South Pole Qui**	**60.18**	**180**	*e*P	**P**	**01 39 13.1**	**+1.1**
	27nm,1.2s						
SYO	**Syowa Base**	**77.83**	**193**⇑	*e*PcP	**PcP**	**01 41 13.3**	**+2.2**
MJAR	**Matsushiro Arr**	**78.50**	**324**	P	**P**	**01 41 05.4**	**0.0**
	0.8nm,0.3s,baz=141,slow=7.9,SNR=3.1						
USRK	**Ussuriysk Ar.**	**87.39**	**326**	P	**P**	**01 41 51.8**	**+0.6**
	1.0nm,0.7s,baz=122,slow=5.6,SNR=4.3						
TKM2	**Tokmak 2**	**122.05**	**304**	*e*PKPdf	**PKPdf**	**01 47 58.7**	**-0.2**
FINES	**FINESS Array B**	**145.07**	**341**	PKP	**PKPdf**	**01 48 39.3**	**-1.6**
	2.4nm,0.6s,baz=74,slow=3.2,SNR=21						
OBN	**Obninsk**	**145.41**	**326**	*e*PKPbc	**PKPab**	**01 48 40.7**	**-1.1**
KBZ	**Khabaz**	**145.77**	**305**	PKPbc	**PKPab**	**01 48 43.5**	**-0.1**
	1.1nm,0.5s,baz=231,slow=4.5,SNR=4.5						
NB2	**NORSAR Subarra**	**148.44**	**353**	PKP	**PKPbc**	**01 48 48.9**	**-1.3**
	comp=Z,0.7nm,0.8s,baz=18,slow=2.9						
NOA	**NORSAR Array B**	**148.44**	**353**	PKPbc	**PKPbc**	**01 48 49.1**	**-1.1**
	comp=Z,1.3nm,1.0s,baz=15,slow=3.7,SNR=4.4						
AKASG	**Malin Array Be**	**151.59**	**324**	PKPbc	**PKPbc**	**01 48 57.1**	**-0.9**
	comp=Z,1.5nm,0.5s,baz=48,slow=3.1,SNR=7.7						
AKASG				PKPab	**PKPab**	**01 49 06.4**	**-0.3**
	comp=Z,0.9nm,0.4s,baz=47,slow=3.4,SNR=6.1						
BRTR	**Keskin Array B**	**153.35**	**300**	PKPbc	**PKPbc**	**01 49 02.4**	**-0.2**
	comp=Z,0.3nm,0.5s,baz=165,slow=6.0,SNR=3.3						
BRTR				PKPab	**PKPab**	**01 49 15.1**	**+0.3**
	comp=Z,0.6nm,0.7s,baz=108,slow=4.0,SNR=5.4						
TORD	**Torodi Ar. Bea**	**163.24**	**175**	PKPab	**PKPab**	**01 49 58.0**	**+0.4**
	comp=Z,1.0nm,0.9s,baz=186,slow=3.9,SNR=3.2						

*CSEM **08** 01:32:32.3,40°.38N×27°.65E,h16km, MD2.5*
*ISK **08** 01:32:32.3,40°.38N×27°.65E,h16km, MD2.5*
*DDA **08** 01:32:32.5,40°.36N×27°.64E,h7km, Ml2.1*

ISC 08 01:32:32.2±0.9,**40°.37N**±0°.04×**27°.65E**±0°.03,**h13**km±8km, **n23**,σ0°**38**/26,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KNL	**Bal¯–kesir**	**0.14**	**222**	*i* P	**Pg**	**01 32 35.2**	**-0.5**
KNL				*i* S	**Sg**	**01 32 38.0**	**-0.2**
EDC	**Edincik**	**0.17**	**99**	*e*PG	**Pg**	**01 32 36.7**	**+0.6**
EDC	**Edincik**	**0.17**	**99**	*e*Pg	**Pg**	**01 32 36.7**	**+0.6**
MRMT	**Marmara Adasi**	**0.23**	**350**	*e*PG	**Pb**	**01 32 38.4**	**+0.1**
MRMT				*e*SG	**Sb**	**01 32 42.0**	**-0.3**
MRMT	**Marmara Adasi**	**0.23**	**350**	*e*Pg	**Pb**	**01 32 38.4**	**+0.1**
MRMT				*e*Sg	**Sb**	**01 32 42.1**	**-0.3**
KRBG	**Karabiga-Canak**	**0.27**	**274**	*e*PG	**Pg**	**01 32 38.5**	**+0.7**
KRBG	**Karabiga-Canak**	**0.27**	**274**	*e*Pg	**Pg**	**01 32 38.5**	**+0.7**
RKY	**Sarkoy-Tekirda**	**0.48**	**311**	*e*PG	**Pb**	**01 32 42.2**	**-0.2**
RKY	**Sarkoy-Tekirda**	**0.48**	**311**	*e*Pg	**Pb**	**01 32 42.2**	**-0.2**
LPK	**Lapseki**	**0.68**	**270**	*e*PG	**Pb**	**01 32 46.0**	**+0.2**
LPK	**Lapseki**	**0.68**	**270**	*e*Pg	**Pb**	**01 32 46.0**	**+0.2**
BALB	**Balikesir**	**0.75**	**166**	*e*PG	**Pb**	**01 32 47.3**	**+0.2**
BALB	**Balikesir**	**0.75**	**166**	*e*Pg	**Pb**	**01 32 47.3**	**+0.2**
GELI	**Tayfur-Gelibol**	**0.90**	**272**	*e*PG	**Pg**	**01 32 50.0**	**+0.5**
GELI	**Tayfur-Gelibol**	**0.90**	**272**	*e*Pg	**Pg**	**01 32 50.0**	**+0.5**
ERIK	**Erikli-Kesan**	**0.92**	**289**	*e*PG	**Pn**	**01 32 50.5**	**-0.1**
ERIK	**Erikli-Kesan**	**0.92**	**289**	*e*Pg	**Pn**	**01 32 50.6**	**-0.1**
MDNY	**Mudanya-Bursa**	**0.94**	**90**	*e*PG	**Pn**	**01 32 50.7**	**-0.3**
MDNY	**Mudanya-Bursa**	**0.94**	**90**	*e*Pg	**Pn**	**01 32 50.7**	**-0.3**
ARMT	**Armutlu**	**0.94**	**78**	*e*PG	**Pn**	**01 32 50.8**	**-0.3**
ARMT	**Armutlu**	**0.94**	**78**	*e*Pg	**Pn**	**01 32 50.8**	**-0.3**
ALN	**Alexandroupoli**	**1.33**	**294**	*e*PN	**Pb**	**01 32 56.8**	**-0.1**
ALN	**Alexandroupoli**	**1.33**	**294**	*e*Pn	**Pb**	**01 32 56.8**	**-0.1**

*IDC **08** 01:35:24.6±1.2,34°.14S×72°.17W,h0km, mb4.0/5, mb1 4.1/7, mb1mx3.9/20, mbtmp3.9/7, ML3.6/2, MS3.6/3, Ms1 3.6/3, ms1mx3.2/20, Error ellipse: s-maj=48.3km s-min=18.5km az=87.0*

*NEIC **08** 01:35:28.0,34°.15S×72°.25W,h34km, mb4.1/5, ML4.1(GUC), After GUC.*

*GUC **08** 01:35:28.1±0.4,34°.15S×72°.25W,h34km±2km, ML4.1*

ISC 08 01:35:25.2±1.8,**34°.12S**±0°.03×**72°.33W**±0°.07,**h8**km±11km, **n34**,σ1°**54**/47,**mb4.2**/9,**1D,Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.38**	**135**	*i* P	**Pn**	**01 35 35.6**	**-1.4**
CHPI				*i* S	**Sb**	**01 35 41.2**	**+1.1**
NICH	**Los Niches**	**1.26**	**134**	*i* P	**Pb**	**01 35 49.3**	**0.0**
NICH				*i* S	**Sb**	**01 36 05.0**	**-0.6**
NICH				AML	AML	01 36 14.1	
	comp=E,10µm,0.4s						
TALC	**Talca**	**1.39**	**156**	*i* P	**Pb**	**01 35 51.4**	**-0.1**
TALC				*i* S	**Sb**	**01 36 09.1**	**-0.4**
ANTU	**Antumapu**	**1.51**	**69**	*i* P	**Pb**	**01 35 53.5**	**0.0**
ANTU				*i* S	**Sn**	**01 36 12.6**	**0.0**
ROC1	**El Roble**	**1.58**	**44**	*e*P	**Pg**	**01 35 55.4**	**-0.2**
ROCH	**El Roble**	**1.59**	**44**	*i* P	**Pg**	**01 35 55.4**	**-0.3**
ROCH				*i* S	**Sg**	**01 36 16.1**	**-0.2**
ROCH				AML	AML	01 36 27.0	
	comp=E,4µm,0.6s						
CLCH	**Cerro Calan**	**1.66**	**65**	*i* P	**Pb**	**01 35 56.1**	**0.0**
CLCH				*i* S	**Sb**	**01 36 17.0**	**-0.1**
CLCH				AML	AML	01 36 31.7	
	comp=N,3µm,0.6s						
PEL	**Peldehue**	**1.68**	**55**	*i* P	**Pb**	**01 35 56.4**	**-0.1**
PEL				*i* S	**Sb**	**01 36 17.8**	**0.0**
FCH	**Farellones**	**1.87**	**65**	*i* P	**Pb**	**01 35 59.9**	**0.0**
FCH				*i* S	**Sb**	**01 36 24.1**	**+0.5**
AUSP	**Uspallata**	**3.11**	**53**	*e*P	**Pb**	**01 36 19.6**	**-1.3**
AUSP				*e*S	**Sg**	**01 37 04.5**	**-0.6**
RTLS	**Leoncito**	**3.44**	**49**	*e*P	**Pb**	**01 36 24.5**	**-2.1**
RTLS				⇓*e*S	**Sg**	**01 37 15.2**	**-0.6**
RTCV	**Cerro Valdivia**	**3.90**	**56**	*e*P	**Pb**	**01 36 30.1**	**-4.2**
RTLL	**Cerro Villicun**	**4.28**	**50**	*e*P	**Pn**	**01 36 35.2**	**+4.5**
RTLL				*e*S	**Sb**	**01 37 34.4**	**+1.9**
AMOG	**MOGNA**	**4.54**	**47**	*e*P	**Pn**	**01 36 37.5**	**+3.3**
ACAN	**Cantantal**	**4.69**	**68**	*e*P	Pb	01 36 42.0	-5.7
ACAN				*e*S	**Sb**	**01 37 44.8**	**+0.6**
LCO	**Las Campanas**	**5.28**	**16**	*e*Pn	**Pn**	**01 36 44.4**	**-0.4**
	comp=N,29nm,0.7s						
LCO				*e*Sn	**Sn**	**01 37 44.2**	**-1.8**
AGUA	**GUANDACOL**	**5.66**	**36**	*e*P	**Pn**	**01 36 52.6**	**+2.9**
PLCA	**Paso Flores**	**6.15**	**168**	Pn	**Pn**	**01 37 06.0**	**+1.4**
	comp=N,0.3nm,0.3s,baz=348,slow=14,SNR=6.1						
PLCA				Lg	Lg	01 38 57.7	
	comp=N,0.3nm,0.3s,baz=304,slow=16,SNR=3.2						
PLCA				LR	LR	01 40 05.0	
	comp=N,484nm,19.3s,baz=52,slow=42						
CYA	**Choya**	**7.95**	**46**	*e*P	**Pn**	**01 37 18.7**	**-2.4**
CYA				IAML		01 37 31.2	
	comp=Z,12nm,0.6s						
TRQA	**Tornquist**	**9.25**	**118**	*e*Pn	**Pn**	**01 37 41.1**	**+2.3**
CPUP	**Villa Florida**	**15.10**	**63**	Pn	**P**	**01 39 02.6**	**-1.6**
	comp=Z,0.1nm,0.3s,baz=161,slow=18,SNR=1.8						
CPUP				Lg	Lg	01 43 10.6	
	comp=Z,0.1nm,0.3s,baz=328,slow=17,SNR=3.7						
LPAZ	**La Paz**	**18.16**	**13**	P	**P**	**01 39 39.3**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=222,slow=5.4,SNR=4.2						
LPAZ				Lg	Lg	01 45 01.4	
	comp=Z,0.2nm,0.3s,baz=175,slow=12,SNR=4.5						
SIV	**San Ignacio**	**20.70**	**32**	P	**P**	**01 40 06.2**	**+0.1**
	comp=Z,2.5nm,0.9s,baz=220,slow=14,SNR=7.0						
SIV				LR	LR	01 49 47.0	
	comp=Z,201nm,18.3s,baz=193,slow=42						
NNA	**Nana**	**22.42**	**348**	LR	LR	01 47 01.9	
	comp=Z,93nm,19.1s,baz=178,slow=31						
SAML	**Samuel**	**26.43**	**21**	*e*P	**P**	**01 41 01.9**	**-0.7**
	comp=Z,1.9nm,0.7s						
TXAR	**Lajitas Array**	**69.73**	**331**	P	**P**	**01 46 36.8**	**+1.0**
	comp=Z,0.4nm,0.7s,baz=166,slow=6.5,SNR=4.0						
MNTX	**Cornudas Mount**	**72.50**	**331**	*e*P	**P**	**01 46 51.9**	**-0.6**
	comp=Z,0.5nm,0.7s						
MAW	**Mawson**	**73.13**	**164**	P	**P**	**01 46 55.9**	**+0.2**
	comp=Z,1.2nm,0.5s,baz=209,slow=13,SNR=3.2						
BOSA	**Boshof**	**80.22**	**118**	P	**P**	**01 47 36.0**	**-0.7**
	comp=Z,4.0nm,1.0s,baz=180,slow=5.1,SNR=2.7						
HWUT	**Hardware Ranch**	**83.54**	**331**	*e*P	**P**	**01 47 53.1**	**-0.7**
	comp=Z,1.5nm,0.7s						
TORD	**Torodi Ar. Bea**	**84.48**	**70**	P	**P**	**01 47 59.2**	**+0.2**
	comp=Z,0.9nm,0.8s,baz=275,slow=7.1,SNR=7.8						
MOOW	**Moose Ponds**	**85.05**	**333**	*e*P	**P**	**01 47 59.1**	**-2.3**
	comp=Z,1.7nm,0.7s						
NEW	**Newport**	**91.27**	**332**	*e*P	**P**	**01 48 29.3**	**-1.6**
	comp=Z,1.9nm,0.6s						
ZALV	**Zalesovo Beam**	**154.46**	**32**	PKP	**PKPdf**	**01 55 17.0**	**-0.4**
	comp=Z,0.4nm,0.4s,baz=27,slow=1.6,SNR=3.1						
ZALV				PKPbc	**PKiKP**	**01 55 26.6**	**+0.8**
	comp=Z,1.8nm,0.7s,baz=302,slow=3.0,SNR=8.0						
ZALV				PKPab	**PKPab**	**01 55 40.4**	**+0.2**
	comp=Z,0.9nm,0.6s,baz=320,slow=5.8,SNR=4.1						

*NIED **08** 01:37:00,37°.10N×142°.40E,h17km,Mw3.7 Best double couple: M0 3.50000×10^14 NP1:φs 90.00000°, δ40.00000°, λ-64.00000°. NP2:φs 238.00000°, δ54.00000°, λ-110.00000°.*

*IDC **08** 01:37:20.2±1.1,37°.05N×142°.67E,h0km, mb3.6/6, mb1 3.7/9, mb1mx3.5/33, mbtmp3.6/9, ML3.1/3

KOZ	**Kozyrevsk**	**3.77**	**283**	P		**Pn**	**01 51 38.2**	**+1.4**
NLC	**Nalytchevo**	**4.71**	**245**	PN		**Pn**	**01 51 49.5**	**0.0**
NLC				S		**Sn**	**01 52 41.3**	**-2.1**
NLC	**Nalytchevo**	**4.71**	**245**	P		**Pn**	**01 51 49.5**	**0.0**
NLC				*eS*		**Sn**	**01 52 41.3**	**-2.1**
SDLR	**Sedlovina**	**4.89**	**248**	PN		**Pn**	**01 51 53.5**	**+1.3**
SDLR				S		**Sn**	**01 52 47.5**	**-0.8**
SDLR	**Sedlovina**	**4.89**	**248**	*eP*		**Pn**	**01 51 53.5**	**+1.3**
SDLR				*eS*		**Sn**	**01 52 47.5**	**-0.8**
SMAR	**Somma**	**4.94**	**248**	PN		**Pn**	**01 51 54.0**	**+1.0**
SMAR				S		**Sn**	**01 52 48.5**	**-1.2**
SMAR	**Somma**	**4.94**	**248**	P		**Pn**	**01 51 54.0**	**+1.0**
SMAR				*eS*		**Sn**	**01 52 48.5**	**-1.2**
KRER	**Koryakskii**	**4.95**	**248**	PN		**Pn**	**01 51 54.4**	**+1.3**
KRER				S		**Sn**	**01 52 50.0**	**+0.1**
KRER	**Koryakskii**	**4.95**	**248**	*eP*		**Pn**	**01 51 54.4**	**+1.3**
KRER				*eS*		**Sn**	**01 52 50.0**	**+0.1**
UGLR	**Uglovaya**	**4.96**	**247**	PN		**Pn**	**01 51 54.2**	**+1.1**
UGLR				S		**Sn**	**01 52 48.3**	**-1.6**
UGLR	**Uglovaya**	**4.96**	**247**	*eP*		**Pn**	**01 51 54.2**	**+1.1**
UGLR				*eS*		**Sn**	**01 52 48.3**	**-1.6**
AVH	**Avacha**	**4.98**	**248**	PN		**Pn**	**01 51 54.7**	**+1.4**
AVH				S		**Sn**	**01 52 50.0**	**-0.3**
AVH	**Avacha**	**4.98**	**248**	*eP*		**Pn**	**01 51 54.7**	**+1.4**
AVH				*eS*		**Sn**	**01 52 50.0**	**-0.3**
KRX	**Arik**	**4.98**	**249**	PN		**Pn**	**01 51 54.8**	**+1.3**
KRX				S		**Sn**	**01 52 50.0**	**-0.5**
KRX	**Arik**	**4.98**	**249**	*eP*		**Pn**	**01 51 54.8**	**+1.3**
KRX				*eS*		**Sn**	**01 52 50.0**	**-0.5**
KOK	**Koryaka**	**5.02**	**249**	PN		**Pn**	**01 51 55.6**	**+1.7**
KOK				S		**Sn**	**01 52 50.5**	**-0.8**
KOK	**Koryaka**	**5.02**	**249**	*eP*		**Pn**	**01 51 55.6**	**+1.7**
KOK				*eS*		**Sn**	**01 52 50.5**	**-0.8**
DALK	**Dalny**	**5.08**	**246**	PN		**Pn**	**01 51 55.7**	**+1.0**
DALK				S		**Sn**	**01 52 52.2**	**-0.6**
DALK	**Dalny**	**5.08**	**246**	P		**Pn**	**01 51 55.7**	**+1.0**
DALK				S		**Sn**	**01 52 52.2**	**-0.6**
PET	**Petropavlovsk**	**5.14**	**246**	S		**Sn**	**01 52 54.1**	**0.0**
GNL	**Ganaly**	**5.22**	**255**	PN		**Pn**	**01 51 58.3**	**+1.5**
GNL	**Ganaly**	**5.22**	**255**	*eP*		**Pn**	**01 51 58.3**	**+1.5**
KRMR	**Karymshinskiy**	**5.51**	**246**	PN		**Pn**	**01 52 03.3**	**+2.7**
KRMR				S		**Sn**	**01 53 03.6**	**+0.3**
KRMR	**Karymshinskiy**	**5.51**	**246**	P		**Pn**	**01 52 03.3**	**+2.7**
KRMR				*eS*		**Sn**	**01 53 03.6**	**+0.3**
RUS	**Russkaya**	**5.53**	**241**	PN		**Pn**	**01 52 01.3**	**+0.4**
RUS	**Russkaya**	**5.53**	**241**	P		**Pn**	**01 52 01.3**	**+0.4**
RUS				S		**Sn**	**01 53 01.5**	**-2.3**
PETK	**Petropavlovsk-**	**5.60**	**250**	Pn		**Pn**	**01 52 03.3**	**+1.4**
	2.0nm,0.3s,baz=71,slow=18,SNR=12							
PETK				Sn		**Sn**	**01 53 04.7**	**-0.9**
	1.0nm,0.3s,baz=93,slow=19,SNR=4.2							
ASAK	**Asacha**	**5.87**	**243**	PN		**Pn**	**01 52 07.2**	**+1.6**
ASAK	**Asacha**	**5.87**	**243**	P		**Pn**	**01 52 07.2**	**+1.6**
ILAR	**Eielson Array**	**24.54**	**49**	P		**P**	**01 55 57.0**	**-0.6**
	2.0nm,0.9s,baz=255,slow=8.2,SNR=18							
VLA	**Vladivostok**	**25.38**	**256**	*α i*	P	**P**	**01 56 02.3**	**-3.1**
VLA				*i*	*SP	**sP**	**01 56 16.5**	**+2.5**
VLA				*i*			01 56 39.1	
VLA				*i*			01 59 33.7	
H11N2	**WAKE ISLAND Hy 35.59**		**179**	T		T	02 35 42.7	
	baz=359,slow=76,SNR=25							
H11N3	**WAKE ISLAND Hy 35.60**		**179**	T		T	02 35 41.6	
	baz=359,slow=76,SNR=23							
H11N1	**WAKE ISLAND Hy 35.61**		**179**	T		T	02 35 41.0	
	baz=359,slow=76,SNR=21							
SONM	**Songino Array**	**36.98**	**284**	P		**P**	**01 57 49.7**	**+2.1**
	0.5nm,0.6s,baz=73,slow=9.8,SNR=2.7							
YKA	**Yellowknife Ar**	**38.92**	**46**	P		**P**	**01 58 03.5**	**-0.2**
	0.3nm,0.7s,baz=288,slow=12,SNR=3.4							
TXAR	**Lajitas Array**	**66.36**	**72**	P		**P**	**02 01 27.5**	**+0.4**
	0.7nm,0.7s,baz=318,slow=5.4,SNR=5.0							

*GUC **08** 01:53:17.8±0.4,34°.06S×72°.30W,h20km±8km, ML2.9*
ISC 08 01:53:17.6±2.5,34°.14S±0°.05×72°.4W±0°.1,h26km±15km,
n14,σ2§93/26,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.40**	**129**	*i* P	**Pb**	**01 53 25.8**	**-0.3**
CHPI				*i* S	**Sb**	**01 53 32.3**	**+0.3**
NICH	**Los Niches**	**1.28**	**132**	*i* P	**Pn**	**01 53 40.5**	**+0.7**
NICH				*i* S	**Sb**	**01 53 57.6**	**+0.5**
RCDM	**Rinconada Maip**	**1.46**	**64**	*i* P	**Pn**	**01 53 41.5**	**-0.9**
RCDM				*i* S	**Sn**	**01 53 59.4**	**-1.3**
ROC1	**El Roble**	**1.63**	**45**	*eP*	**Pb**	**01 53 45.1**	**-2.0**
ROC1				*eS*	**Sb**	**01 54 13.1**	**+5.8**
ROCH	**El Roble**	**1.63**	**45**	*i* P	**Pn**	**01 53 44.9**	**0.0**
ROCH				*i* S	**Sb**	**01 54 05.2**	**-2.2**
ROCH				AML	AML	01 54 14.5	
	comp=N,309nm,0.5s						
CLCH	**Cerro Calan**	**1.71**	**65**	*i* P	**Pn**	**01 53 45.9**	**+0.2**
CLCH				*i* S	**Sb**	**01 54 07.2**	**-2.2**
CLCH				AML	AML	01 54 13.8	
	comp=E,323nm,0.3s						
PEL	**Peldehue**	**1.73**	**55**	*i* P	**Pn**	**01 53 46.1**	**+0.1**
PEL				*i* S	**Sb**	**01 54 07.7**	**-2.4**
PEL				AML	AML	01 54 15.8	
	comp=E,230nm,0.6s						
FCH	**Farellones**	**1.92**	**66**	*i* P	**Pb**	**01 53 49.7**	**-2.4**
FCH				*i* S	**Sb**	**01 54 14.0**	**-1.8**
AUSP	**Uspallata**	**3.16**	**54**	*eP*	**Pb**	**01 54 11.4**	**-1.8**
AUSP				*eS*	**Sb**	**01 54 54.0**	**+2.7**
ARCO	**CERRO ARCO**	**3.16**	**67**	*eP*	**Pb**	**01 54 12.2**	**-0.9**
ARCO				IAML		01 54 15.5	
	comp=Z,32nm,0.5s						
ARCO				*eS*	**Sb**	**01 54 56.7**	**+5.4**
ASAL	**Salagasta**	**3.35**	**63**	*eP*	**Pb**	**01 54 14.7**	**-1.6**
ASAL				*eS*	**Sb**	**01 55 01.6**	**+5.1**
RTLS	**Leoncito**	**3.49**	**49**	*eP*	**Pb**	**01 54 14.7**	**-4.1**
RTLS				*eS*	**Sb**	**01 55 06.2**	**+5.4**
AMOG	**MOGNA**	**4.58**	**47**	*eP*	**Pn**	**01 54 27.4**	**+2.2**
AMOG				*eS*	Sb	01 55 40.3	+8.3
AGUA	**GUANDACOL**	**5.70**	**37**	*eP*	**Pn**	**01 54 42.6**	**+1.9**

IDC 08 02:09:23.1±2.2,6°.07S×130°.29E,h0km,mb3.6/1,
mb1 3.8/4,mb1mx3.5/36,mbtmp3.6/4,ML3.6/3,MS3.6/1,
Ms1 3.5/1,ms1mx2.5/35,Error ellipse: s-maj=94.2km
s-min=27.9km az=77.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.79**	**200**	Pn	Pn	02 12 25.4	-0.9
	0.4nm,0.3s,baz=26,slow=11,SNR=32						
FITZ				Sn	Sn	02 14 31.5	-18
	0.6nm,0.3s,baz=61,slow=19,SNR=7.5						
WRA	**Warramunga Ar**	**14.34**	**164**	Pn	Pn	02 12 47.5	0.0
	0.3nm,0.3s,baz=348,slow=13,SNR=12						
WRA				Sn	Sn	02 15 13.3	-14
	0.6nm,0.3s,baz=337,slow=22,SNR=8.6						
ASAR	**Alice Springs**	**17.83**	**169**	P	P	02 13 33.4	-0.3
	0.1nm,0.3s,baz=348,slow=11,SNR=6.3						
ASAR				S	Sn	02 16 38.0	-14
	0.1nm,0.3s,baz=340,slow=16,SNR=3.2						
STKA	**Stephens Creek**	**27.76**	**159**	LR	LR	02 27 29.3	
	comp=Z,123nm,19.1s,baz=203,slow=39						
MKAR	**Makanchi Array**	**67.62**	**326**	P	P	02 20 21.8	0.0
	0.4nm,0.5s,baz=134,slow=6.2,SNR=2.5						

*KRSC **08** 02:15:44.0±1.2,53°.31N×160°.59E,h48km±13km, ML4.2*
*ISCJB **08** 02:15:45.9±0.5,53°.31N±0°.03×160°.48E±0°.06, h58km±4km,*
mb3.8/13,MS3.2/2,Error ellipse: s-maj=7.4km
s-min=2.8km az=35.3
*MOS **08** 02:15:45.5±0.7,53°.27N×160°.51E,h53km,mb4.0/7,Error*
ellipse: s-maj=8.5km s-min=4.8km az=81.4
*IDC **08** 02:15:50.4±2.0,53°.49N×160°.10E,h86km±17km,mb3.4/12,*
mb1 3.6/13,mb1mx3.4/52,mbtmp3.7/13,MS3.0/3,
Ms1 3.1/3,ms1mx2.6/31,Error ellipse: s-maj=23.7km
s-min=18.3km az=130.0
ISC 08 02:15:45.6±0.8,53°.32N±0°.03×160°.51E±0°.04,h44km±8km,
n103,σ1§69/150,mb3.8/13,1D,Near east coast of
Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPN	**Mys Shipunski**	**0.36**	**233**	PN	**Pn**	**02 15 55.7**	**+0.9**
SPN				S	**Sn**	**02 16 02.2**	**+0.8**
SPN	**Mys Shipunski**	**0.36**	**233**	*i* P	**Pn**	**02 15 55.7**	**+0.9**
SPN				S	**Sn**	**02 16 02.2**	**+0.8**
NLC	**Nalytchevo**	**0.71**	**259**	PN	**Pn**	**02 15 59.7**	**+0.5**
NLC				S	**Sn**	**02 16 09.4**	**+0.3**
NLC	**Nalytchevo**	**0.71**	**259**	*i* P	**Pn**	**02 15 59.7**	**+0.5**
NLC				*i* S	**Sn**	**02 16 09.4**	**+0.3**
KII	**Karymskiy**	**0.96**	**319**	PN	**Pn**	**02 16 02.7**	**+0.1**
KII				S	**Sn**	**02 16 14.8**	**-0.4**
KII	**Karymskiy**	**0.96**	**319**	*i* P	**Pn**	**02 16 02.7**	**+0.1**
KII				*eS*	**Sn**	**02 16 14.8**	**-0.4**
SDLR	**Sedlovina**	**0.98**	**268**	PN	**Pn**	**02 16 03.7**	**+0.8**
SDLR				S	**Sn**	**02 16 16.2**	**+0.5**
SDLR	**Sedlovina**	**0.98**	**268**	*i* P	**Pn**	**02 16 03.7**	**+0.8**
SDLR				*i* S	**Sn**	**02 16 16.2**	**+0.5**
UGLR	**Uglovaya**	**1.02**	**265**	PN	**Pn**	**02 16 04.5**	**+1.0**
UGLR				S	**Sn**	**02 16 18.0**	**+1.3**
UGLR	**Uglovaya**	**1.02**	**265**	*i* P	**Pn**	**02 16 04.5**	**+1.0**
UGLR				*eS*	**Sn**	**02 16 18.0**	**+1.3**
SMAR	**Somma**	**1.03**	**268**	PN	**Pn**	**02 16 04.3**	**+0.6**
SMAR	**Somma**	**1.03**	**268**	*i* P	**Pn**	**02 16 04.3**	**+0.6**
KRER	**Koryakskii**	**1.06**	**270**	PN	**Pn**	**02 16 05.0**	**+0.9**
KRER				S	**Sn**	**02 16 18.7**	**+1.0**
KRER	**Koryakskii**	**1.06**	**270**	*i* P	**Pn**	**02 16 05.0**	**+0.9**
KRER				*eS*	**Sn**	**02 16 18.7**	**+1.0**
AVH	**Avacha**	**1.06**	**268**	PN	**Pn**	**02 16 05.1**	**+1.0**
AVH				S	**Sn**	**02 16 18.2**	**+0.4**
AVH	**Avacha**	**1.06**	**268**	*i* P	**Pn**	**02 16 05.1**	**+1.0**
AVH				*eS*	**Sn**	**02 16 18.2**	**+0.4**
DALK	**Dalny**	**1.09**	**256**	PN	**Pn**	**02 16 05.1**	**+0.7**
DALK				S	**Sn**	**02 16 18.8**	**+0.5**
DALK	**Dalny**	**1.09**	**256**	*i* P	**Pn**	**02 16 05.1**	**+0.7**
DALK				*i* S	**Sn**	**02 16 18.8**	**+0.5**
KRX	**Arik**	**1.12**	**273**	PN	**Pn**	**02 16 05.4**	**+0.6**
KRX				S	**Sn**	**02 16 19.3**	**+0.2**
KRX	**Arik**	**1.12**	**273**	*i* P	**Pn**	**02 16 05.4**	**+0.6**
KRX				*i* S	**Sn**	**02 16 19.3**	**+0.2**
KOK	**Koryaka**	**1.12**	**269**	PN	**Pn**	**02 16 05.7**	**+0.8**
KOK				S	**Sn**	**02 16 19.8**	**+0.6**
KOK	**Koryaka**	**1.12**	**269**	*eP*	**Pn**	**02 16 05.7**	**+0.8**
KOK				*eS*	**Sn**	**02 16 19.8**	**+0.6**
PET	**Petropavlovsk**	**1.16**	**256**	*i* PN	**Pn**	**02 16 05.9**	**+0.7**
PET				*eS*	**Sn**	**02 16 20.1**	**+0.3**
PET				pmax	pmax		
	comp=Z,303nm,0.3s						
PET				smax	smax		
	comp=N,1μm,0.5s						
PET				smax	smax		
	comp=E,920nm,0.4s						
PET	**Petropavlovsk**	**1.16**	**256**	*i* P	**Pn**	**02 16 05.9**	**+0.7**
PET				*i* S	**Sn**	**02 16 20.3**	**+0.5**
MKZ	**Mys Kozlova**	**1.44**	**30**	PN	**Pn**	**02 16 09.1**	**0.0**
MKZ				S	**Sn**	**02 16 26.0**	**-0.7**
MKZ	**Mys Kozlova**	**1.44**	**30**	*eP*	**Pn**	**02 16 09.1**	**0.0**
MKZ				*eS*	**Sn**	**02 16 26.0**	**-0.7**
RUS	**Russkaya**	**1.50**	**235**	PN	**Pn**	**02 16 10.6**	**+0.7**
RUS				S	**Sn**	**02 16 28.3**	**+0.1**
RUS	**Russkaya**	**1.50**	**235**	*i* P	**Pn**	**02 16 10.6**	**+0.7**
RUS				*i* S	**Sn**	**02 16 28.3**	**+0.1**
KRMR	**Karymshinskiy**	**1.52**	**252**	PN	**Pn**	**02 16 11.3**	**+1.1**
KRMR				S	**Sn**	**02 16 29.3**	**+0.6**
KRMR	**Karymshinskiy**	**1.52**	**252**	*i* P	**Pn**	**02 16 11.3**	**+1.1**
KRMR				*eS*	**Sn**	**02 16 29.3**	**+0.6**
GNL	**Ganaly**	**1.58**	**285**	PN	**Pn**	**02 16 12.3**	**+1.1**
GNL				S	**Sn**	**02 16 32.7**	**+2.3**
GNL	**Ganaly**	**1.58**	**285**	*i* P	**Pn**	**02 16 12.3**	**+1.1**
GNL				*eS*	**Sn**	**02 16 32.7**	**+2.3**
GRL	**Gorelyy**	**1.66**	**244**	PN	**Pn**	**02 16 13.4**	**+1.1**
GRL				S	**Sn**	**02 16 33.5**	**+1.0**
GRL	**Gorelyy**	**1.66**	**244**	P	**Pn**	**02 16 13.4**	**+1.1**
GRL				*eS*	**Sn**	**02 16 33.5**	**+1.0**
PETK	**Petropavlovsk-**	**1.70**	**264**	P	**Pn**	**02 16 14.2**	**+1.4**
	comp=E,67nm,0.3s,baz=78,slow=19,SNR=751						
PETK				S	**Sn**	**02 16 35.2**	**+1.9**
	comp=E,43nm,0.3s,baz=89,slow=20,SNR=12						
PETK				LR	LR	02 16 55.0	
	comp=E,103nm,19.2s,baz=88,slow=43						
KZV	**Kizimen**	**1.80**	**356**	PN	**Pn**	**02 16 15.2**	**+0.9**
KZV				S	**Sn**	**02 16 36.7**	**+0.7**
KZV	**Kizimen**	**1.80**	**356**	*eP*	**Pn**	**02 16 15.2**	**+0.9**
KZV				*eS*	**Sn**	**02 16 36.7**	**+0.7**
ASAK	**Asacha**	**1.84**	**240**	PN	**Pn**	**02 16 16.5**	**+1.8**
ASAK				S	**Sn**	**02 16 38.5**	**+1.8**
ASAK	**Asacha**	**1.84**	**240**	*i* P	**Pn**	**02 16 16.5**	**+1.8**
ASAK				*i* S	**Sn**	**02 16 38.5**	**+1.8**
TUMR	**Tumrok**	**1.98**	**354**	PN	**Pn**	**02 16 18.4**	**+1.7**
TUMR				S	**Sn**	**02 16 41.9**	**+1.6**
TUMR	**Tumrok**	**1.98**	**354**	*i* P	**Pn**	**02 16 18.4**	**+1.7**
TUMR				*eS*	**Sn**	**02 16 41.9**	**+1.6**
KMNR	**Kamenistaya**	**2.45**	**356**	PN	**Pn**	**02 16 25.4**	**+2.3**
KMNR				S	**Sn**	**02 16 53.3**	**+1.5**
KMNR	**Kamenistaya**	**2.45**	**356**	*eP*	**Pn**	**02 16 25.4**	**+2.3**
KMNR				S	**Sn**	**02 16 53.3**	**+1.5**
BZMR	**Bezymyannaya**	**2.62**	**360**	PN	**Pn**	**02 16 27.6**	**+2.1**
BZMR	**Bezymyannaya**	**2.62**	**360**	*eP*	**Pn**	**02 16 27.6**	**+2.1**
KPT	**Kopyto**	**2.66**	**357**	PN	**Pn**	**02 16 27.7**	**+1.7**
KPT	**Kopyto**	**2.66**	**357**	*eP*	**Pn**	**02 16 27.7**	**+1.7**
ZLN	**Zelenaya**	**2.71**	**4**	PN	**Pn**	**02 16 29.4**	**+2.7**
ZLN				S	**Sn**	**02 17 00.5**	**+2.2**
ZLN	**Zelenaya**	**2.71**	**4**	*eP*	**Pn**	**02 16 29.4**	**+2.7**
ZLN				*eS*	**Sn**	**02 17 00.5**	**+2.2**
KOZ	**Kozyrevsk**	**2.77**	**353**	PN	**Pn**	**02 16 29.3**	**+1.9**
KOZ	**Kozyrevsk**	**2.77**	**353**	*eP*	**Pn**	**02 16 29.3**	**+1.9**
LGNR	**Loginova**	**2.77**	**2**	PN	**Pn**	**02 16 30.5**	**+2.8**
LGNR				S	**Sn**	**02 17 03.3**	**+3.2**
LGNR	**Loginova**	**2.77**	**2**	*eP*	**Pn**	**02 16 30.5**	**+2.8**
LGNR				*eS*	**Sn**	**02 17 03.3**	**+3.2**
CIRR	**Tsirk**	**2.81**	**3**	PN	**Pn**	**02 16 30.7**	**+2.7**
CIRR				S	**Sn**	**02 17 03.2**	**+2.5**
CIRR	**Tsirk**	**2.81**	**3**	*eP*	**Pn**	**02 16 30.7**	**+2.7**
CIRR				*eS*	**Sn**	**02 17 03.2**	**+2.5**
ESO	**Esso**	**2.82**	**339**	PN	**Pn**	**02 16 29.2**	**+1.2**
ESO	**Esso**	**2.82**	**339**	*eP*	**Pn**	**02 16 29.2**	**+1.2**
KRSR	**Krestovskiy**	**2.91**	**1**	PN	**Pn**	**02 16 31.3**	**+2.0**
KRSR	**Krestovskiy**	**2.91**	**1**	*eP*	**Pn**	**02 16 31.3**	**+2.0**
PAU	**Pauzhetka**	**2.93**	**232**	PN	**Pn**	**02 16 33.1**	**+3.6**
PAU	**Pauzhetka**	**2.93**	**232**	P	**Pn**	**02 16 33.1**	**+3.6**
KLY	**Klyuchi**	**3.00**	**2**	PN	**Pn**	**02 16 33.1**	**+2.5**
KLY				S	**Sn**	**02 17 06.5**	**+1.2**
KLY	**Klyuchi**	**3.00**	**2**	*eP*	**Pn**	**02 16 33.1**	**+2.5**
KLY				*eS*	**Sn**	**02 17 06.5**	**+1.2**
KBG	**Krutoberegovo**	**3.21**	**22**	S	**Sn**	**02 17 14.5**	**+4.2**
BDR	**Baidarnaya**	**3.28**	**7**	PN	**Pn**	**02 16 37.2**	**+2.7**
BDR				S	**Sn**	**02 17 13.8**	**+1.5**
BDR	**Baidarnaya**	**3.28**	**7**	*eP*	**Pn**	**02 16 37.2**	**+2.7**
BDR				S	**Sn**	**02 17 13.8**	**+1.5**
SMKR	**Semkarok**	**3.32**	**9**	PN	**Pn**	**02 16 37.3**	**+2.3**
SMKR				S	**Sn**	**02 17 15.4**	**+2.2**
SMKR	**Semkarok**	**3.32**	**9**	*eP*	**Pn**	**02 16 37.3**	**+2.3**
SMKR				S	**Sn**	**02 17 15.4**	**+2.2**
SRKR	**Sorokina**	**3.37**	**6**	PN	**Pn**	**02 16 37.9**	**+2.3**
SRKR				S	**Sn**	**02 17 17.3**	**+3.0**
SRKR	**Sorokina**	**3.37**	**6**	P	**Pn**	**02 16 37.9**	**+2.3**
SRKR				S	**Sn**	**02 17 17.3**	**+3.0**
BKI	**Bering**	**3.72**	**57**	PN	**Pn**	**02 16 41.1**	**+0.7**
BKI	**Bering**	**3.72**	**57**	*i* P	**Pn**	**02 16 41.1**	**+0.7**
BKI				*i* S	**Sn**	**02 17 19.7**	**-3.2**
SKR	**Severo-Kuril's**	**3.78**	**228**	S	**Sn**	**02 17 28.9**	**+4.4**
MA2	**Magadan**	**8.27**	**323**	LR	LR	02 21 23.1	
	comp=E,48nm,18.2s,baz=88,slow=42						
UGL	**Uglegorsk**	**12.31**	**257**	*eP*	**Pn**	**02 18 37.8**	**-0.2**
UGL				*eS*	S	02 21 09.8	-10
BILL	**Bilibino**	**15.03**	**8**	*eP*	**Pn**	**02 19 12.1**	**-2.5**
BILL				pmax	pmax		
	comp=Z,5.0nm,0.3s						
KLR	**Kul'dur**	**18.39**	**269**	P	**P**	**02 19 56.0**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=346,slow=17,SNR=2.8						
KLR	**Kul'dur**	**18.39**	**269**	P	**P**	**02 19 56.0**	**-0.5**
YAK	**Yakutsk**	**18.48**	**310**	*eP*	**P**	**02 19 55.4**	**-2.0**
YAK				pmax	pmax		
	comp=Z,12nm,0.8s						
MJA0	**Matsu Arr-Jizo**	**22.86**	**232**	*eP*	**P**	**02 20 47.7**	**+2.7**
MJA0				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MJAR	**Matsushiro Arr**	**22.88**	**232**	P	**P**	**02 20 45.8**	**+0.7**
	comp=Z,1.1nm,0.3s,baz=24,slow=12,SNR=4.8						
TIXI	**Tiksi**	**22.98**	**335**	*eP*	**P**	**02 20 45.4**	**-0.4**
TIXI				pmax	pmax		
	comp=Z,7.0nm,1.1s						
H11N2	**WAKE ISLAND Hy 33.89**		**169**	T	T	02 58 55.4	
	baz=354,slow=76,SNR=108						
H11N3	**WAKE ISLAND Hy 33.90**		**169**	T	T	02 58 56.5	
	baz=354,slow=76,SNR=96						
H11N1	**WAKE ISLAND Hy 33.90**		**169**	T	T	02 58 56.4	
	baz=354,slow=76,SNR=92						
H11S1	**WAKE ISLAND Hy 35.07**		**170**	T	T	03 00 23.0	
	baz=352,slow=76,SNR=12						
H11S3	**WAKE ISLAND Hy 35.08**		**170**	T	T	03 00 20.4	
	baz=352,slow=76,SNR=20						
H11S2	**WAKE ISLAND Hy 35.09**		**170**	T	T	03 00 23.8	
	baz=352,slow=76,SNR=2.6						
GUMO	**Guam**	**41.53**	**203**	LR	LR	02 37 47.7	
	comp=Z,22nm,20.6s,baz=162,slow=32						
YKA	**Yellowknife Ar**	**42.83**	**43**	P	**P**	**02 23 39.4**	**+0.8**
	comp=Z,0.4nm,0.7s,baz=299,slow=8.0,SNR=3.4						
MKAR	**Makanchi Array**	**48.28**	**296**	P	**P**	**02 24 19.6**	**-2.3**
	comp=Z,0.6nm,0.5s,baz=53,slow=7.5,SNR=5.2						
ARCES	**ARCESS Array B**	**53.15**	**342**	P	**P**	**02 24 56.6**	**-1.7**
	comp=Z,1.1nm,0.8s,baz=46,slow=8.8,SNR=4.8						
PDAR	**Pinedale Array**	**57.20**	**61**	P	**P**	**02 25 29.4**	**+1.3**
	comp=Z,0.2nm,0.5s,baz=338,slow=3.9,SNR=2.6						
CMAR	**Chiang Mai Arr**	**58.47**	**258**	LR	LR	02 54 20.6	
	comp=Z,25nm,19.3s,baz=194,slow=40						
FINES	**FINESS Array B**	**60.01**	**337**	P	**P**	**02 25 45.6**	**-1.5**
	comp=Z,1.4nm,0.4s,baz=35,slow=8.9,SNR=14						
NB2	**NORSAR Subarra**	**63.40**	**344**	P	**P**	**02 26 08.6**	**-1.3**
	comp=Z,0.6nm,0.5s,baz=25,slow=6.9						
NOA	**NORSAR Array B**	**63.40**	**344**	P	**P**	**02 26 08.8**	**-1.1**
	comp=Z,0.6nm,0.7s,baz=23,slow=6.0,SNR=8.2						
TXAR	**Lajitas Array**	**70.32**	**67**	*eP*	**P**	**02 26 56.2**	**+1.8**
	comp=Z,0.5nm,0.6s,baz=326,slow=6.0,SNR=4.6						
TXAR	**Lajitas Array**	**70.32**	**67**	*eP*	**P**	**02 26 56.4**	**+1.9**
TXAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WRA	**Warramunga Arr**	**76.39**	**205**	P	**P**	**02 27 30.1**	**+0.2**
	comp=Z,0.7nm,1.0s,baz=21,slow=6.3,SNR=3.7						
ASAR	**Alice Springs**	**80.06**	**205**	P	**P**	**02 27 50.7**	**+0.4**
	comp=Z,0.3nm,0.4s,baz=22,slow=5.3,SNR=4.2						
ESDC	**Sonseca Array**	**86.41**	**348**	P	**P**	**02 28 21.9**	**-1.1**
	comp=Z,0.2nm,0.4s,baz=357,slow=5.1,SNR=3.1						
KEST	**Kesra**	**87.85**	**337**	P	**P**	**02 28 29.3**	**-0.8**
	comp=Z,0.7nm,0.4s,baz=280,slow=5.3,SNR=4.9						

*IDC **08** 02:28:44.5±1.0,29°.53S×176°.66W,h0km,mb4.1/5,*
mb1 4.3/7,mb1mx4.0/27,mbtmp4.2/7,ML3.7/2,MS3.6/7,
Ms1 3.6/7,ms1mx3.3/30,Error ellipse: s-maj=29.7km
s-min=21.7km az=179.0
*ISCJB **08** 02:28:45.9±0.8,29°.73S±0°.08×176°.6W±0°.1,h21km,*
mb4.4/12,MS3.6/5,Error ellipse: s-maj=14.4km
s-min=10.5km az=146.5
*NEIC **08** 02:28:46.0±0.6,29°.58S×176°.69W,h10km,mb4.4/5,Error*
ellipse: s-maj=14.9km s-min=11.3km az=102.0
ISC 08 02:28:47.5±0.8,29°.6S±0°.1×176°.65W±0°.10,h21km,n30,
σ1§32/26,mb4.3/12,MS3.4/5,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.15**	**286**	Pn	**Pb**	**02 29 08.2**	**-0.5**
	503nm,0.3s,baz=183,slow=18,SNR=12						
RAO				Sn	**Sn**	**02 29 24.3**	**+0.9**
	2μm,0.3s,baz=111,slow=22,SNR=14						
RAO				LR	LR	02 29 33.8	
	comp=Z,2μm,18.2s,baz=212,slow=44						
URZ	**Urewera**	**10.10**	**209**

WRA	**Warramunga Arr**	**45.68**	**271**	P		**P**	**02 44 40.9**	**0.0**
	2.3nm,0.5s,baz=110,slow=7.7,SNR=23								
VNDA	**Vanda**	**48.79**	**186**	LR		LR	03 01 31.3		
	comp=Z,22nm,20.9s,baz=213,slow=31								
KKM	**Kota Kinabalu**	**73.92**	**287**	*e*P		**P**	**02 47 55.7**	**+0.4**
	3.2nm,0.2s								
TUC	**Tucson**	**87.54**	**50**	*e*P		**P**	**02 49 06.2**	**-1.4**
	3.8nm,0.8s								
USRK	**Ussuriysk Ar.**	**87.62**	**326**	P		**P**	**02 49 07.7**	**+0.2**
	1.0nm,0.6s,baz=96,slow=9.3,SNR=3.1								
TXAR	**Lajitas Array**	**90.76**	**56**	P		**P**	**02 49 22.9**	**+0.1**
	0.9nm,0.9s,baz=195,slow=8.9,SNR=5.1								
MNTX	**Cornudas Mount**	**90.87**	**54**	*e*P		**P**	**02 49 22.7**	**-0.5**
	1.2nm,0.8s								
KLR	**Kul'dur**	**91.40**	**329**	LR		LR	03 27 48.7		
	comp=Z,27nm,18.3s,baz=163,slow=34								
ANMO	**Albuquerque**	**92.00**	**50**	*e*P		**P**	**02 49 27.7**	**-0.9**
	1.4nm,0.9s								
HLID	**Hailey**	**92.37**	**40**	*e*P		**P**	**02 49 28.9**	**-1.2**
	1.3nm,0.9s								
TPAW	**Teton Pass**	**94.28**	**41**	*e*P		**P**	**02 49 39.0**	**0.0**
	1.5nm,0.6s								
BOZ	**Bozeman (W)**	**95.19**	**40**	*e*P		**P**	**02 49 43.1**	**+0.1**
	0.8nm,0.5s								
ILAR	**Eielson Array**	**97.06**	**12**	P		Pdif	02 49 50.0	-1.0	
	0.9nm,1.0s,baz=211,slow=6.9,SNR=6.1								
FINES	**FINESS Array B**	**145.18**	**341**	PKP		**PKPdf**	**02 55 55.1**	**-1.1**	
	2.0nm,0.5s,baz=50,slow=3.0,SNR=12								
OBN	**Obninsk**	**145.63**	**327**	*e*PKPbc		**PKPab**	**02 55 57.3**	**-0.6**	
NB2	**NORSAR Subarra**	**148.44**	**353**	PKP		**PKPbc**	**02 56 05.0**	**-0.4**	
	comp=Z,1.3nm,0.7s,baz=8.2,slow=2.8								
NOA	**NORSAR Array B**	**148.44**	**353**	PKPbc		**PKPbc**	**02 56 05.0**	**-0.4**	
	comp=Z,2.3nm,0.8s,baz=14,slow=4.3,SNR=9.6								
AKASG	**Malin Array Be**	**151.82**	**325**	PKPbc		**PKPbc**	**02 56 13.8**	**-0.1**	
	comp=Z,2.4nm,0.5s,baz=46,slow=3.0,SNR=10								
BRTR	**Keskin Array B**	**153.74**	**300**	PKPbc		**PKPbc**	**02 56 20.1**	**+1.4**	
	comp=Z,0.5nm,0.8s,baz=147,slow=7.1,SNR=4.5								
TORD	**Torodi Ar. Bea**	**163.24**	**173**	PKPab		**PKPab**	**02 57 15.4**	**+2.6**	
	comp=Z,1.1nm,0.7s,baz=178,slow=4.4,SNR=7.4								

IDC 08 02:39:30.2±2.0, 31°.34S×178°.82W, h0km, mb4.2/2, mb1 4.4/2, mb1mx3.7/31, mbtmp4.2/2, Error ellipse: s-maj=70.7km s-min=46.6km az=11.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ASAR	**Alice Springs**	**42.37**	**268**	P		P	02 47 25.9	-0.5
	1.5nm,0.6s,baz=106,slow=7.5,SNR=8.4							
WRA	**Warramunga Arr**	**43.44**	**274**	P		P	02 47 35.2	+0.1
	1.7nm,0.3s,baz=114,slow=8.0,SNR=19							
FINES	**FINESS Array B**	**145.78**	**339**	PKPbc		PKPdf	02 59 09.9	-0.1
	0.9nm,0.5s,baz=36,slow=3.0,SNR=7.6							
TORD	**Torodi Ar. Bea**	**161.89**	**182**	PKPab		PKPab	03 00 18.9	-0.6
	0.8nm,1.1s,baz=204,slow=3.2,SNR=3.5							

*IDC **08** 02:39:58.8±1.5, 29°.37S×176°.40W, h0km, mb4.2/3, mb1 4.4/3, mb1mx3.8/31, mbtmp4.2/3, Error ellipse: s-maj=61.7km s-min=37.4km az=173.0*
*ISCJB **08** 02:40:00.4±0.7, 29°.5S±0°.1×176°.4W±0°.1, h21km, mb4.4/10, Error ellipse: s-maj=22.4km s-min=14.2km az=144.3*
*NEIC **08** 02:40:00.1±0.4, 29°.43S×176°.36W, h10km, mb4.3/6, Error ellipse: s-maj=15.0km s-min=10.0km az=143.0*
ISC 08 02:40:01.7±0.8, 29°.4S±0°.2×176°.3W±0°.2, h21km, n16, σ0s89/16, mb4.3/10, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KHZ	**Kahutara**	**15.34**	**209**	*e*Pn		**Pn**	**02 43 35.7**	**-1.1**
CTAO	**Charters Tower**	**35.09**	**277**	*e*P		**P**	**02 46 54.4**	**+0.8**
	23nm,0.7s							
STKA	**Stephens Creek**	**36.11**	**255**	P		**P**	**02 47 03.2**	**+1.0**
	4.2nm,0.9s,baz=72,slow=8.2,SNR=3.0							
ASAR	**Alice Springs**	**44.61**	**265**	P		**P**	**02 48 12.3**	**-0.5**
	1.6nm,0.6s,baz=97,slow=8.0,SNR=8.7							
WRAB	**Tennant Creek**	**45.51**	**270**	*e*P		**P**	**02 48 20.0**	**+0.1**
	3.9nm,0.7s							
WRA	**Warramunga Arr**	**45.51**	**270**	P		**P**	**02 48 19.4**	**-0.5**
	2.8nm,0.7s,baz=107,slow=8.0,SNR=8.1							
CASY	**Casey**	**56.69**	**208**	*e*P		**P**	**02 49 43.6**	**+0.4**
	0.7nm,0.7s							
SNAA	**Sanae**	**79.10**	**178**	*e*P		**P**	**02 52 04.5**	**+0.3**
CMB	**Columbia Colle**	**85.07**	**41**	*e*P		**P**	**02 52 35.8**	**0.0**
KULM	**Kulim**	**86.50**	**278**	*e*P		**P**	**02 52 42.7**	**-0.8**
	2.9nm,0.5s							
TUC	**Tucson**	**87.37**	**51**	*e*P		**P**	**02 52 47.2**	**-0.2**
	3.7nm,1.0s							
ANMO	**Albuquerque**	**91.84**	**51**	*e*P		**P**	**02 53 08.9**	**+0.4**
	0.5nm,0.5s							
HLID	**Hailey**	**92.12**	**40**	*e*P		**P**	**02 53 10.8**	**+1.3**
	0.7nm,0.6s							
NOA	**NORSAR Array B**	**147.96**	**353**	PKPbc		**PKPab**	**02 59 45.5**	**-1.9**
	0.4nm,0.7s,baz=31,slow=2.6,SNR=3.2							
AKASG	**Malin Array Be**	**151.34**	**325**	PKPbc		**PKPbc**	**02 59 52.8**	**-0.6**
	0.2nm,0.3s,baz=52,slow=2.6,SNR=4.4							
TORD	**Torodi Ar. Bea**	**163.72**	**173**	PKPab		**PKPab**	**03 00 55.8**	**+0.2**
	1.7nm,0.9s,baz=178,slow=3.5,SNR=6.9							

*NIED **08** 02:42:00, 38°.60N×141°.80E, h47km, Mw4.1 Best double couple: M0 1.36000×10^15 NP1:φs97.00000°, δ65.00000°, λ27.00000°. NP2:φs355.00000°, δ66.00000°, λ153.00000°.*
*IDC **08** 02:42:48.2±1.1, 38°.71N×142°.39E, h0km, mb3.9/8, mb1 4.0/12, mb1mx3.8/47, mbtmp4.0/12, ML3.7/4, MS2.9/4, Ms1 2.9/4, ms1mx2.5/41, Error ellipse: s-maj=27.1km s-min=19.4km az=105.0*
*ISCJB **08** 02:42:54.8±0.7, 38°.58N±0°.03×141°.91E±0°.08, h53km±5km, mb4.0/13, MS3.0/1, Error ellipse: s-maj=10.2km s-min=5.3km az=12.7*
*NEIC **08** 02:42:55.4±1.3, 38°.58N×142°.10E, h50km±10km, mb4.4/3, Error ellipse: s-maj=21.8km s-min=9.2km az=126.0*
NEIC Recorded [3 JMA] in Iwate.
*JMA **08** 02:42:56.5, 38°.61N×141°.81E, h46km±1km, M4.0*
JMA Felt III J1.
ISC 08 02:42:55.1±1.4, 38°.60N±0°.04×141°.99E±0°.09, h42km±12km, n44, σ1s74/49, mb4.0/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.52**	**254**	P		**Pn**	**02 43 06.2**	**0.0**
JIO				S		**Sn**	**02 43 12.7**	**-1.3**
OFUJ	**Ofunato**	**0.54**	**333**	P		**Pn**	**02 43 14.8**	**+0.3**
JMK	**Ichinoseki**	**0.69**	**301**	P		**Pn**	**02 43 08.6**	**+0.1**
JMK				S		**Sn**	**02 43 17.1**	**-1.0**
JOM	**Ohasama**	**1.02**	**328**	P		**Pn**	**02 43 13.7**	**+0.7**
JOM				S		**Sn**	**02 43 26.1**	**-0.1**
JOU	**Okura**	**1.06**	**258**	P		**Pn**	**02 43 13.2**	**-0.4**
JOU				S		**Sn**	**02 43 25.5**	**-1.7**
JMM	**Marumori**	**1.19**	**232**	P		**Pn**	**02 43 14.9**	**-0.4**
JMM				S		**Sn**	**02 43 28.5**	**-1.8**
JYK	**Kaneyama**	**1.31**	**285**	P		**Pn**	**02 43 16.7**	**-0.2**
JYK				S		**Sn**	**02 43 31.3**	**-1.9**
JRG	**Rokugo**	**1.32**	**307**	P		**Pn**	**02 43 17.1**	**0.0**
JRG				S		**Sn**	**02 43 33.8**	**+0.4**
JFK	**Kawauchi**	**1.51**	**216**	P		**Pn**	**02 43 19.9**	**+0.2**
JFK				S		**Sn**	**02 43 36.9**	**-1.3**
JYS	**Shirataka**	**1.56**	**256**	P		**Pn**	**02 43 20.2**	**-0.1**
JYS				S		**Sn**	**02 43 38.1**	**-1.2**
ERM	**Erimo**	**3.53**	**14**	*e*Pn		**Pn**	**02 43 49.8**	**+2.4**
ERM				*e*Sn		**Sn**	**02 44 25.2**	**-2.5**
MJAR	**Matsushiro Arr**	**3.64**	**237**	Pn		**Pn**	**02 43 50.5**	**+1.6**
	8.2nm,0.3s,baz=39,slow=12,SNR=63							
MJAR				LR		LR	02 45 32.2	
	comp=Z,120nm,20.4s,baz=65,slow=42							
MAJO	**Matsushiro**	**3.64**	**237**	*e*Pn		**Pn**	**02 43 50.0**	**+1.0**
MAT	**Matsushiro**	**3.64**	**237**	P		**Pn**	**02 43 50.2**	**+1.3**
MAT				S		**Sn**	**02 44 37.8**	**+7.2**
ASAJ	**Asahikawa**	**5.53**	**5**	Pn		**Pn**	**02 44 15.8**	**+0.9**
	baz=252,slow=10							
ASAJ	**Asahikawa**	**5.53**	**5**	*e*Pn		**Pn**	**02 44 13.0**	**-1.9**
	6.4nm,0.7s							
ASAJ				*e*Sn		**Sn**	**02 45 14.6**	**-2.6**
JHJ	**Hachijo jima 2**	**5.75**	**199**	Pn		**Pn**	**02 44 17.7**	**-0.2**
	29nm,0.3s,baz=267,slow=16,SNR=7.4							
JHJ				Sn		**Sn**	**02 45 19.6**	**-3.1**
	20nm,0.3s,baz=36,slow=17,SNR=3.4							
USRK	**Ussuriysk Ar.**	**9.36**	**310**	Pn		**Pn**	**02 45 09.9**	**+2.5**
	1.2nm,0.3s,baz=124,slow=13,SNR=23							
JNU	**Nakatsue**	**10.54**	**242**	Pn		**Pn**	**02 45 25.1**	**+1.5**
	0.3nm,0.3s,baz=54,slow=8.7,SNR=2.7							
JNU				LR		LR	02 49 42.7	
	comp=Z,59nm,20.2s,baz=302,slow=38							
JNU	**Nakatsue**	**10.54**	**242**	*e*Pn		**Pn**	**02 45 23.5**	**-0.1**
KSRS	**Korea Array**	**11.15**	**268**	Pn		**Pn**	**02 45 34.2**	**+2.3**
	0.2nm,0.3s,baz=76,slow=14,SNR=4.0							
KSAR	**Wonju Array Be**	**11.19**	**268**	Pn		**Pn**	**02 45 34.2**	**+1.9**
KLR	**Kul'dur**	**12.92**	**329**	LR		LR	02 50 43.8	
	comp=Z,41nm,19.6s,baz=148,slow=37							
SEY	**Seymchan**	**25.17**	**11**	P		**P**	**02 48 17.2**	**+1.1**
	0.8nm,0.3s,baz=210,slow=5.1,SNR=5.5							
SONM	**Songino Array**	**27.32**	**301**	P		**P**	**02 48 37.0**	**+1.0**
	0.5nm,0.5s,baz=99,slow=7.6,SNR=4.1							
H11N2	**WAKE ISLAND Hy**	**28.60**	**124**	T		T	03 19 04.5	
	baz=317,slow=75,SNR=1384							
H11N1	**WAKE ISLAND Hy**	**28.61**	**124**	T		T	03 19 03.5	
	baz=317,slow=75,SNR=1805							
H11N3	**WAKE ISLAND Hy**	**28.62**	**124**	T		T	03 19 05.8	
	baz=317,slow=75,SNR=1483							
H11S1	**WAKE ISLAND Hy**	**29.37**	**126**	T		T	03 20 00.6	
	baz=319,slow=76,SNR=122							
H11S3	**WAKE ISLAND Hy**	**29.37**	**126**	T		T	03 20 00.1	
	baz=319,slow=76,SNR=181							
H11S2	**WAKE ISLAND Hy**	**29.39**	**126**	T		T	03 20 01.8	
	baz=319,slow=76,SNR=158							
TLY	**Talaya**	**29.68**	**309**	LR		LR	03 01 31.1	
	comp=Z,32nm,18.3s,baz=73,slow=38							
ZALV	**Zalesovo Beam**	**41.21**	**311**	P		**P**	**02 50 35.5**	**0.0**
	4.7nm,0.7s,baz=84,slow=7.6,SNR=11							
MKAR	**Makanchi Array**	**43.69**	**301**	P		**P**	**02 50 56.0**	**+0.2**
	3.2nm,0.7s,baz=84,slow=10.0,SNR=16							
KURK	**Kurchatov**	**45.34**	**307**	*e*P		**P**	**02 51 08.6**	**-0.3**
	68nm,0.9s							
ILAR	**Eielson Array**	**47.93**	**33**	P		**P**	**02 51 26.2**	**-2.8**
	0.1nm,0.5s,baz=277,slow=8.1,SNR=2.9							
ARU	**Arti**	**55.49**	**318**	*e*P		**P**	**02 52 25.8**	**+0.4**
	3.7nm,0.5s							
ABKAR	**Akbulak array**	**57.28**	**310**	*e*P		**P**	**02 52 37.6**	**-0.7**
	0.6nm,0.4s							
WRA	**Warramunga Arr**	**58.67**	**188**	P		**P**	**02 52 48.3**	**0.0**
	0.8nm,0.5s,baz=5.5,slow=7.1,SNR=15							
FINES	**FINESS Array B**	**67.64**	**332**	P		**P**	**02 53 47.2**	**0.0**
	0.9nm,0.8s,baz=26,slow=9.1,SNR=3.9							
SUMG	**Summit**	**69.12**	**0**	*e*P		**P**	**02 53 56.9**	**0.0**
	6.4nm,1.0s							
NB2	**NORSAR Subarra**	**72.92**	**337**	P		**P**	**02 54 20.1**	**+0.5**
	comp=Z,0.3nm,0.5s,baz=37,slow=6.2							
NOA	**NORSAR Array B**	**72.92**	**337**	P		**P**	**02 54 18.6**	**-1.0**
	comp=Z,0.6nm,0.7s,baz=39,slow=6.0,SNR=5.4							
AKASG	**Malin Array Be**	**73.34**	**322**	P		**P**	**02 54 22.2**	**0.0**
	comp=Z,0.4nm,0.3s,baz=43,slow=6.4,SNR=3.7							

IDC 08 02:50:12.0±5.8, 27°.23S×176°.10W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/31, mbtmp3.5/2, Error ellipse: s-maj=277.9km s-min=53.1km az=155.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ASAR	**Alice Springs**	**45.05**	**263**	P		P	02 58 29.6	-0.3
	0.2nm,0.4s,baz=104,slow=7.2,SNR=4.0							
WRA	**Warramunga Arr**	**45.76**	**268**	P		P	02 58 35.5	0.0
	0.7nm,0.8s,baz=108,slow=7.9,SNR=4.0							
FINES	**FINESS Array B**	**142.69**	**343**	PKP		PKPdf	03 09 46.6	+0.1
	0.7nm,0.8s,baz=21,slow=12,SNR=2.8							
NOA	**NORSAR Array B**	**145.84**	**354**	PKPbc		PKPdf	03 09 51.6	-0.5
	0.4nm,0.7s,baz=15,slow=4.0,SNR=3.4							

*ISCJB **08** 02:52:54.9±0.4, 24°.21N±0°.02×121°.80E±0°.02, h13km±2km, Error ellipse: s-maj=3.3km s-min=2.6km az=135.5*
*JMA **08** 02:52:54.3±0.1, 24°.20N×121°.78E, h12km±3km, M2.3*
*TAP **08** 02:52:54.8, 24°.22N×121°.76E, h15km, ML3.4, C*
ISC 08 02:52:54.6±0.9, 24°.21N±0°.02×121°.79E±0°.02, h14km±7km, n46, σ0s61/67, 3C, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
EHP	**Heping Village**	**0.11**	**338**	P		**Pb**	**02 52 58.9**	**+0.2**
	baz=352							
EHP				*e*S		**Sb**	**02 53 01.4**	**+0.2**
	baz=352							
TWD	**Chiawan**	**0.21**	**234**	P		**Pb**	**02 52 59.8**	**-0.6**
	baz=233							
TWD				*i* S		**Sb**	**02 53 03.2**	**-1.0**
	baz=233							
ENA	**Nanau**	**0.22**	**349**	↑*i*P		**Pg**	**02 52 59.7**	**+0.1**
	baz=356							
ENA				*i* S		**Sg**	**02 53 03.2**	**+0.3**
	baz=356							
HWA	**Hwalien**	**0.28**	**216**	*e*P		**Pb**	**02 53 01.5**	**0.0**
	baz=219							
TWC	**Suao**	**0.41**	**8**	P		**Pg**	**02 53 03.0**	**+0.2**
	baz=8.0							
TWC				*e*S		**Sg**	**02 53 08.5**	**+0.3**
	baz=8.0							
ESF	**Shoufeng Towns**	**0.42**	**218**	*e*P		**Pb**	**02 53 03.8**	**-0.1**
	baz=222							
NNS	**Nan Shan**	**0.44**	**302**	↑*i*P		**Pg**	**02 53 03.5**	**0.0**
	baz=302							
NNS				*i* S		**Sg**	**02 53 09.4**	**-0.1**
	baz=302							
ENTT	**Nioudou**	**0.48**	**335**	*i* P		**Pb**	**02 53 04.3**	**-0.5**
	baz=336							
ENTT				*i* S		**Sb**	**02 53 10.8**	**-1.0**
	baz=336							
WHF	**Hehuan Shan**	**0.48**	**263**	↑*i*P		**Pg**	**02 53 04.3**	**+0.1**
	baz=261							
ESL	**Shilin**	**0.51**	**220**	*e*P		**Pg**	**02 53 04.7**	**0.0**
	baz=223							
TWE	**Neicheng**	**0.52**	**348**	*i* P		**Pb**	**02 53 05.3**	**-0.4**
	baz=350							
TWE				*i* S		**Sb**	**02 53 12.4**	**-0.7**
	baz=350							
TWT	**Tachien**	**0.56**	**275**	*i* P		**Pb**	**02 53 06.1**	**-0.2**
	baz=274							
TWT				*i* S		**Sb**	**02 53 13.6**	**-0.7**
	baz=274							
NSK	**Sanguang**	**0.61**	**320**	P		**Pg**	**02 53 06.5**	**-0.1**
	baz=320							
NSK				S		**Sg**	**02 53 14.5**	**-0.3**
	baz=320							
EGS		**0.65**	**12**	*e*P		**Pb**	**02 53 07.6**	**-0.2**
	baz=21							
WDT	**Dadda**	**0.75**	**233**	*e*P		**Pb**	**02 53 09.3**	**-0.3**
	baz=240							
WDT				S		**Sb**	**02 53 19.4**	**-0.4**
	baz=240							
TWA	**Mucha**	**0.79**	**347**	*e*P		**Pb**	**02 53 10.5**	**+0.3**
	baz=347							
EHY	**Hungye**	**0.82**	**211**	*e*P		**Pg**	**02 53 10.2**	**-0.3**
	baz=223							
NSTT	**Nanjuang**	**0.83**	**301**	P		**Pb**	**02 53 10.6**	**-0.3**
	baz=300							
NSTT				S		**Sg**	**02 53 21.2**	**-0.5**
	baz=300							
NWF	**Wu-fen Shan**	**0.86**	**360**	*e*P		**Pb**	**02 53 11.7**	**+0.3**
	baz=352							
NWF				*e*S		**Sg**	**02 53 22.6**	**-0.1**
	baz=352							
SMLT	**Sun Moon Lake**	**0.87**	**249**	*e*P		**Pb**	**02 53 11.8**	**+0.2**
	baz=241							
SMLT				*e*S		**Sb**	**02 53 22.8**	**-0.5**
	baz=241							
TYC	**Yuchr**	**0.90**	**251**	*e*P		**Pg**	**02 53 11.5**	**-0.6**
	baz=250							
TWQ1	**Liyutan**	**0.94**	**279**	P		**Pn**	**02 53 13.3**	**-0.1**
	baz=278							
TWS1	**Kuangyinshan**	**0.95**	**339**	*e*P		**Pn**	**02 53 13.7**	**+0.1**
	baz=339							
TWS1				*e*S		**Sn**	**02 53 27.2**	**+0.2**
	baz=339							
NSY	**Sanyi**	**0.96**	**283**	*e*P		**Pn**	**02 53 14.4**	**+0.7**
	baz=283							
NSY				*e*S		**Sn**	**02 53 26.7**	**-0.5**
	baz=283							
TWF1	**Yuli**	**0.96**	**208**	*e*P		**Pn**	**02 53 13.6**	**-0.2**
	baz=220							
TCU	**Taichung**	**1.02**	**267**	*e*P		**Pn**	**02 53 15.5**	**+1.0**
	baz=267							
YUS	**Yu-Shan**	**1.05**	**227**	*e*P		**Pb**	**02 53 14.5**	**-0.4**
	baz=228							
YUS				*e*S		**Sb**	**02 53 29.0**	**+0.4**
	baz=228							
TWY	**Chenhua**	**1.08**	**351**	*e*P		**Pb**	**02 53 15.0**	**-0.1**
	baz=335							
JYNG	**Yonagunijimaku**	**1.08**	**77**	P		**Pg**	**02 53 15.8**	**+0.2**
JYNG				*e*S		**Sb**	**02 53 29.1**	**-0.1**
ALS	**Alishan**	**1.14**	**233**	*e*P		**Pn**	**02 53 16.2**	**-0.2**
	baz=232							
YOJ	**Yonaguni jima**	**1.15**	**77**	P		**Pn**	**02 53 14.9**	**-1.4**
YOJ				*e*S		**Sb**	**02 53 30.9**	**-0.1**
CHKT	**Chengkung**	**1.17**	**199**	*e*P		**Pg**	**02 53 17.1**	**0.0**
	baz=188							
CHN5	**Tsauling**	**1.18**	**239**	*e*P		**Pg**	**02 53 17.4**	**-0.1**
	baz=241							
CHN5				*e*S		**Sn**	**02 53 35.1**	**+2.3**
	baz=241							
ELDTW	**Lidau**	**1.23**	**215**	*e*P		**Pn**	**02 53 16.4**	**-1.2**
	baz=202							
CHN4	**Tsaushan**	**1.39**	**232**	*e*P		**Pg**	**02 53 20.8**	**-0.5**
	baz=234							
CHN4				*e*S		**Sg**	**02 53 41.1**	**+1.7**
	baz=234							
STYT	**Tauyuan**	**1.40**	**222**	*e*P		**Pb**	**02 53 20.7**	**0.0**
	baz=223							
WTP	**Ta-pu**	**1.44**	**229**	*e*P		**Pb**	**02 53 21.1**	**-0.2**
	baz=229							
TWK	**Hsinying**	**1.51**	**232**	*e*P		**Pg**	**02 53 23.9**	**+0.2**
	baz=233							
TWG	**Pinlang**	**1.53**	**206**	*e*P		**Pn**	**02 53 21.8**	**+0.2**
	baz=192							
CHN1	**Nanshi**	**1.54**	**229**	*e*P		**Pn**	**02 53 21.7**	**0.0**
	baz=230							
SGST	**Jiashian**	**1.57**	**225**	*e*P		**Pb**	**02 53 22.8**	**-0.7**
	baz=226							
IRIF	**Iriomote-Funau**	**1.78**	**85**	*e*S		**Sn**	**02 53 48.1**	**+0.7**
HATJ	**Hateruma jima**	**1.85**	**94**	*e*S		**Sn**	**02 53 49.7**	**+0.5**
EAST	**Anshuo**	**2.01**	**206**	*e*P		**Pn**	**02 53 28.1**	**-0.1**
	baz=195							
JKRS	**Kuro-shima**	**2.03**	**89**	*e*S		**Sn**	**02 53 55.0**	**+1.4**
JIJ	**Ishigaki jima**	**2.15**	**85**	P		**Pn**	**02 53 29.7**	**-0.5**
JIJ				*e*S		**Sn**	**02 53 56.8**	**+0.1**

IDC 08 02:53:17.2±2.7, 28°.19S×176°.68W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/26, mbtmp3.6/2, MS2.7/1, Ms1 2.7/1, ms1mx2.5/19, Error ellipse: s-maj=84.4km s-min=27.1km az=130.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**1.52**	**226**	Pn		Pn	02 53 45.8	+0.1
	241nm,0.3s,baz=104,slow=19,SNR=7.8							
RAO				Sn		Sn	02 54 06.4	+0.2
	457nm,0.3s,baz=66,slow=19,SNR=7.7							
AFI	**Afiamalu**	**14.92**	**19**	LR		LR	03 01 24.1	
	comp=Z,27nm,20.8s,baz=71,slow=33							
ASAR	**Alice Springs**	**44.44**	**264**	P		P	03 01 30.6	+0.4
	0.2nm,0.3s,baz=109,slow=7.9,SNR=3.5							
WRA	**Warramunga Arr**	**45.23**	**269**	P		P	03 01 36.0	-0.5
	0.7nm,0.7s,baz=109,slow=8.0,SNR=6.1							
FINES	**FINESS Array B**	**143.44**	**342**	PKP		PKPbc	03 12 51.1	+0.8
	0.4nm,0.5s,baz=18,slow=0.4,SNR=3.2							
NOA	**NORSAR Array B**	**146.72**	**353**	PKPbc		PKPbc	03 12 59.9	-0.6
	0.5nm,0.6s,baz=12,slow=4.5,SNR=2.8							

MAN 08 03:21:43, 18°.33N×120°.69E, h45km, mb3.6, ML2.3, MS1.8, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PIP	**Pasuquin**	**0.06**	**263**	↑*i*P		Pn	03 21 51.2	+1.1
PIP				*e*S		Sn	03 21 56.9	+1.8
SGCP	**Mt. Cagua**	**1.29**	**94**	*e*P		Pn	03 22 06.3	+1.6
SGCP				*e*S		Sn	03 22 22.8	+2.0

IDC 08 03:29:24.0±3.1, 28°.54S×176°.19W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/22, mbtmp3.7/2, Error ellipse: s-maj=122.5km s-min=45.6km az=20.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ASAR	**Alice Springs**	**44.82**	**264**	P		P	03 37 40.0	-0.1
	0.7nm,0.5s,baz=106,slow=8.3,SNR=6.6							
WRA	**Warramunga Arr**	**45.65**	**269**	P		P	03 37 46.5	-0.2
	0.7nm,0.6s,baz=109,slow=7.9,SNR=5.0							
FINES	**FINESS Array B**	**143.90**	**342**	PKP		PKPdf	03 49 00.9	+0.3
	0.9nm,0.9s,baz=27,slow=4.7,SNR=3.6							
TORD	**Torodi Ar. Bea**	**164.56**	**172**	PKPab		PKPab	03 50 24.5	-0.7
	0.4nm,0.8s,baz=198,slow=3.9,SNR=3.1							

IDC 08 03:30:31.4±4.1, 28°.58S×177°.00W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/21, mbtmp3.5/2, Error ellipse: s-maj=95.2km s-min=31.3km az=124.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**1.05**	**230**	Pn		Pn	03 30 53.6	+0.2
	142nm,0

CTAO	**Charters Tower**	**34.82 277**	*e*P		**P**	**03 38 34.1**	**-0.3**	
	57nm,0.7s							
STKA	**Stephens Creek**	**35.87 255**	P		**P**	**03 38 44.0**	**+0.7**	
	3.3nm,0.6s,baz=96,slow=12,SNR=4.2							
RKT	**Rikitea**	**37.74 90**	*e*LR		LR	03 49 09.8		
	617nm,31.0s							
ASAR	**Alice Springs**	**44.35 265**	P		**P**	**03 39 52.6**	**-1.2**	
	4.4nm,0.5s,baz=101,slow=6.5,SNR=4.8							
ASAR				PcP	**PcP**	**03 41 38.7**	**+0.9**	
	0.9nm,0.6s,baz=122,slow=3.4,SNR=3.0							
WRAB	**Tennant Creek**	**45.25 270**	*e*P		**P**	**03 39 59.7**	**-1.3**	
	14nm,1.0s							
WRA	**Warramunga Arr**	**45.25 270**	P		**P**	**03 40 00.0**	**-1.0**	
	11nm,0.9s,baz=109,slow=7.7,SNR=29							
WRA				PcP	**PcP**	**03 41 41.3**	**+0.5**	
	3.0nm,0.9s,baz=106,slow=3.5,SNR=4.0							
FORT	**Forrest**	**47.45 254**	*e*P		**P**	**03 40 17.8**	**-0.3**	
VNDA	**Vanda**	**49.22 186**	P		P	03 40 36.5	+5.4	
	2.2nm,0.8s,baz=27,slow=6.6,SNR=7.1							
CASY	**Casey**	**56.58 208**	*e*P		**P**	**03 41 26.6**	**+1.1**	
	7.7nm,1.3s							
MBWA	**Marble Bar**	**57.52 262**	*e*P		**P**	**03 41 31.2**	**-1.8**	
	23nm,0.6s							
QSPA	**South Pole Qui**	**60.72 180**	*e*P		**P**	**03 41 58.3**	**+3.7**	
MAW	**Mawson**	**73.67 200**	P		**P**	**03 43 19.7**	**+3.3**	
	2.3nm,0.6s,baz=143,slow=8.4,SNR=9.1							
MJAR	**Matsushiro Arr**	**78.10 324**	P		**P**	**03 43 40.6**	**-1.5**	
	3.1nm,0.9s,baz=160,slow=6.4,SNR=5.8							
MAJO	**Matsushiro**	**78.10 324**	*e*P		**P**	**03 43 41.8**	**-0.4**	
	3.9nm,0.7s							
SYO	**Syowa Base**	**78.36 193**‖	*e*PcP		**P**	**03 43 47.4**	**+4.2**	
KSRS	**Korea Array**	**84.35 319**	P		**P**	**03 44 14.0**	**-1.2**	
	2.7nm,1.0s,baz=144,slow=5.9,SNR=5.9							
KSAR	**Wonju Array Be**	**84.37 319**	P		**P**	**03 44 14.0**	**-1.3**	
PETK	**Petropavlovsk-**	**85.14 345**	P		**P**	**03 44 19.2**	**+0.4**	
	3.4nm,0.6s,baz=116,slow=6.8,SNR=4.1							
GSI	**Gunungsitoli**	**86.95 273**	*e*P		**P**	**03 44 29.0**	**+0.1**	
USRK	**Uusuriysk Ar.**	**86.96 326**	P		**P**	**03 44 28.7**	**+0.5**	
	4.7nm,0.9s,baz=170,slow=2.5,SNR=16							
MNTX	**Cornudas Mount**	**90.93 54**	*e*P		**P**	**03 44 45.2**	**-2.0**	
	0.7nm,0.6s							
ILAR	**Eielson Array**	**96.68 12**	P		**P**	**03 45 11.7**	**-1.1**	
	0.5nm,0.9s,baz=207,slow=4.8,SNR=4.7							
MKAR	**Makanchi Array**	**118.02 310**	PKP		**PKPdf**	**03 50 29.4**	**-0.4**	
	0.3nm,0.3s,baz=197,slow=3.8,SNR=3.8							
KURK	**Kurchatov**	**121.20 314**	*e*PKPdf		**PKPdf**	**03 50 35.1**	**-0.6**	
TKM2	**Tokmak 2**	**121.79 305**	*e*PKPdf		**PKPdf**	**03 50 36.7**	**-0.8**	
EKS2	**Erkin-Say**	**123.04**	*e*PKPdf		**PKPdf**	**03 50 40.3**	**+0.6**	
KKAR	**Karatay Array**	**125.49 304**	*e*PKPdf		**PKPdf**	**03 50 44.2**	**0.0**	
BRVK	**Borovoye**	**126.56 316**	*e*PKPdf		**PKPdf**	**03 50 45.9**	**0.0**	
GEYT	**Alibeck**	**134.19 296**	PKP		**PKPdf**	**03 51 01.4**	**+0.4**	
	1.1nm,0.5s,baz=29,slow=3.3,SNR=3.3							
ARCES	**ARCESS Array B**	**137.84 349**	PKP		**PKPdf**	**03 51 06.9**	**+0.1**	
	2.2nm,0.8s,baz=335,slow=16,SNR=3.8							
FINES	**FINESS Array B**	**144.58 341**	PKP		**PKPab**	**03 51 17.3**	**-0.3**	
	5.4nm,0.6s,baz=52,slow=3.1,SNR=29							
GNI	**Garni**	**144.63 299**	*e*PKPdf		PKPbc	03 51 19.7	+0.8	
OBN	**Obninsk**	**144.99 327**	*e*PKPbc		**PKPab**	**03 51 19.5**	**+0.2**	
KBZ	**Khabaz**	**145.51 305**	PKPbc		**PKPdf**	**03 51 21.1**	**0.0**	
	6.2nm,1.0s,baz=90,slow=1.4,SNR=1.4							
KIV	**Kislovodsk**	**145.61 306**	*e*PKPbc		**PKPdf**	**03 51 21.3**	**-0.2**	
TUTA	**Tutak**	**146.18 298**	*i* P		**PKPab**	**03 51 26.2**	**+1.6**	
DAGI	**Agillar**	**146.67 301**	*i* P		**PKPab**	**03 51 28.1**	**+1.8**	
DBOC	**Borcka**	**146.81 301**	*i* P		**PKPdf**	**03 51 25.1**	**+1.5**	
KOPT	**Kop Dagi**	**147.88 299**	*i* P		**PKPab**	**03 51 30.7**	**-0.6**	
NB2	**NORSAR Subarra**	**147.91 353**	PKP		**PKPbc**	**03 51 27.7**	**-0.1**	
	comp=Z,11nm,1.4s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**147.91 353**	PKPbc		**PKPbc**	**03 51 27.9**	**+0.1**	
	comp=Z,4.2nm,0.9s,baz=16,slow=4.5,SNR=10							
KELT	**Kelkit**	**148.81 300**	*i* P		**PKPbc**	**03 51 32.4**	**+1.3**	
KEMA	**Kemaliye**	**149.52 298**	*i* P		**PKPbc**	**03 51 34.5**	**+1.8**	
CUKAN	**kangal_SIVAS**	**150.30 299**	*i* P		**PKPbc**	**03 51 36.1**	**+1.5**	
AKASG	**Malin Array Be**	**151.18 325**	PKPbc		**PKPbc**	**03 51 36.0**	**-0.1**	
	comp=Z,12nm,0.8s,baz=45,slow=2.8,SNR=26							
KIEV	**Kiev**	**151.19 325**	*e*PKPbc		**PKPbc**	**03 51 36.0**	**-0.2**	
ANDN	**Andirin**	**151.41 295**	*i* P		**PKPbc**	**03 51 39.0**	**+1.7**	
BRTR	**Keskin Array B**	**153.13 301**	PKPbc		**PKPbc**	**03 51 41.4**	**+0.3**	
	comp=Z,1.7nm,0.7s,baz=134,slow=4.9,SNR=11							
ANTO	**Ankara**	**153.72 301**	*e*PKPbc		**PKPbc**	**03 51 42.2**	**-0.1**	
BRG	**Berggiesshubel**	**157.11 343**	*e*(P)		**PKPab**	**03 52 07.4**	**-1.7**	
	comp=Z,3.8nm,1.1s							
GERES	**GERESS Array B**	**159.01 341**	PKPab		**PKPab**	**03 52 16.2**	**-1.4**	
	comp=Z,0.4nm,0.7s,baz=64,slow=3.1,SNR=4.1							
TORD	**Torodi Ar. Bea**	**163.77 174**	PKPab		**PKPab**	**03 52 41.4**	**+2.5**	
	comp=Z,1.5nm,0.8s,baz=231,slow=3.5,SNR=5.7							
TIP	**Timpagrande**	**165.25 315**	*e*PKPab		**PKPab**	**03 52 45.3**	**+0.1**	

IDC ***08*** *03:40:20.9±0.4,29˙05S×176˚87W,h0km,mb5.1/19, mb1 5.2/19,mb1mx5.1/29,mbtmp5.1/19,MS4.8/23, Ms1 4.8/23,ms1mx4.7/29,Error ellipse: s-maj=17.0km s-min=12.3km az=160.0*

BJI ***08*** *03:40:22.3,28˙81S×176˚43W,h19km,mb5.6/44, mB5.7/39,Ms5.2/42,Ms7 5.0/43*

ISCJB ***08*** *03:40:23.7±2.3,29˙29S±0˙04×176˚97W±0˙04, h27km±16km,mb5.3/155,MS5.0/173,Error ellipse: s-maj=7.6km s-min=4.9km az=163.2*

NEIC ***08*** *03:40:24.0±1.7,29˙31S×176˚94W,h21km±11km, mb5.3/124,MS5.0/131,Error ellipse: s-maj=5.6km s-min=4.0km az=149.0*

GCMT ***08*** *03:40:24.0±0.1,29˙13S×176˚60W,h17km,MW5.4/114, Moment Tensor Solution. s104,c181; s114,c202; Duration: 1s2 Moment tensor: Scale 10^17Nm; Mrr1.18±.03; Mθθ0.01±.02; Mϕϕ-1.19±.02; Mrθ0.24±.05; Mθϕ-0.34±.01; Mrϕ1.09±.05; Best double couple: M₀1.66200×10^17 NP1:ϕs13.00000°,δ66.00000°, λ88.00000°. NP2:ϕs197.00000°,δ24.00000°,λ93.00000°. Principal axes: T 1.6110, Plg69.0000°, Azm280.0000°; N 0.1000, Plg1.0000°, Azm14.0000°; P -1.7120, Plg21.0000°, Azm104.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***08*** *03:40:27.0±0.9,29˙04S×177˚03W,h45km,mb5.5/71, MS5.0/38 Error ellipse: s-maj=9.4km s-min=7.6km az=76.5*

ISC 08 03:40:25.0±0.4,**29˙28S**±0˙04×**176˚83W**±0˙04,**h30**km±2km, **h29**km:**pP-P,n927,**σ1§**38**/888,**mb5.3**/155,**MS5.0**/174, **94C-46D,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.96**	**271**	Pn		**Pb**	**03 40 42.9**	**-0.1**
	3μm,0.3s,baz=61,slow=21,SNR=41							
RAO				Sn		**Sb**	**03 40 57.5**	**+2.2**
	6μm,0.3s,baz=68,slow=19,SNR=21							
RAO				LR		LR	03 41 09.7	
	comp=Z,45μm,20.2s,baz=175,slow=52							
RAO	**Raoul Island**	**0.96**	**271**	*e*Pn		**Pb**	**03 40 42.5**	**-0.5**
RAO				*e*Sn		**Sn**	**03 40 51.9**	**-3.2**
RAO				Sn		**Sb**	**03 40 57.5**	**+2.2**
OUZ	**Omahuta**	**10.04**	**231**	*e*Pn		**Pn**	**03 42 48.5**	**+1.3**
URZ	**Urewera**	**10.28**	**208**	Pn		Pn	03 42 45.5	-4.9
	2.0nm,0.3s,baz=333,slow=12,SNR=10							
URZ				Sn		**Sn**	**03 44 40.4**	**-4.2**
	8.9nm,0.3s,baz=13,slow=6.6,SNR=3.8							
URZ	**Urewera**	**10.28**	**208**	*e*Pn		**Pn**	**03 42 47.4**	**-3.0**
URZ				*e*Sn		**Sn**	**03 44 42.8**	**-1.8**
BKZ	**Black Stump Fm**	**11.30**	**207**	*e*Pn		**Pn**	**03 43 02.6**	**-1.9**
MSVF	**Nonsavu**	**12.42**	**337**‖	*e*P		**Pn**	**03 43 19.3**	**-0.6**
MSVF	**Nonsavu**	**12.42**	**337**	*e*Pn		**Pn**	**03 43 19.3**	**-0.6**
BFZ	**Birch Farm**	**12.71**	**205**	*e*Pn		**Pn**	**03 43 22.3**	**-1.4**
BFZ				*e*Sn		**Sn**	**03 45 37.3**	**-6.8**
KHZ	**Kahutara**	**15.24**	**208**	*e*Pn		**Pn**	**03 43 52.5**	**-5.6**
KHZ				*e*Sn		Sn	03 46 34.9	-11
AFI	**Afiamalu**	**16.00**	**18**	Pn		Pn	03 43 59.8	-8.3
	1.9nm,0.3s,baz=288,slow=19,SNR=3.4							
AFI				Sn		Sn	03 46 44.7	-20
	5.0nm,0.3s,baz=203,slow=23,SNR=5.9							
AFI	**Afiamalu**	**16.00**	**18**	P		**P**	**03 44 11.6**	**+0.3**
AFI				pmax		pmax		
	comp=Z,95nm,1.1s							
LTZ	**Lake Taylor**	**16.08**	**210**	*e*Pn		**Pn**	**03 44 10.1**	**+1.1**
	comp=Z,256nm,1.7s							
CRLZ	**Canterbury Las**	**16.58**	**208**	*e*Pn		**Pn**	**03 44 15.8**	**+0.6**
	comp=Z,232nm,1.3s							
OXZ	**Oxford**	**16.62**	**210**	*e*Pn		**Pn**	**03 44 13.7**	**-2.1**
	comp=Z,144nm,0.6s							
OXZ				*e*Sn		Sn	03 47 05.8	-14
MQZ	**McQueen's Vall**	**16.68**	**207**	*e*Pn		**Pn**	**03 44 15.8**	**-0.7**
	comp=Z,51nm,0.9s							
MQZ				*e*Sn		Sn	03 47 04.9	-16
DZM	**Mont Dzumac**	**16.69**	**292**	Pn		**P**	**03 44 22.5**	**+3.4**
	comp=Z,2.2nm,0.3s,baz=110,slow=13,SNR=24							
DZM				LR		LR	03 49 41.0	
	comp=Z,13μm,18.2s,baz=132,slow=34							
DZM	**Mont Dzumac**	**16.69**	**292**	*e*P		**P**	**03 44 19.5**	**+0.4**
	comp=Z,597nm,1.6s							
DZM				*e*LR		LR	03 48 19.1	
	comp=Z,14μm,23.4s							
DZM	**Mont Dzumac**	**16.69**	**292**	*e*Pn		**P**	**03 44 18.6**	**-0.4**
	comp=Z,521nm,1.6s							
RPZ	**Rata Peaks**	**17.36**	**211**	P		**Pn**	**03 44 19.5**	**-5.5**
	comp=Z,1.4nm,0.3s,baz=81,slow=19,SNR=6.7							
RPZ				S		Sn	03 47 18.9	-19
	comp=Z,1.3nm,0.3s,baz=92,slow=17,SNR=4.5							
RPZ				LR		LR	03 51 50.5	
	comp=Z,4μm,18.7s,baz=40,slow=39							
RPZ	**Rata Peaks**	**17.36**	**211**	*e*Pn		**Pn**	**03 44 20.3**	**-4.8**
	comp=Z,149nm,1.2s							
RPZ				S		Sn	03 47 18.9	-19
RPZ				*e*Sn		Sn	03 47 26.2	-11
RAR	**Rarotonga**	**17.38**	**66**	P		**Pn**	**03 44 20.3**	**-5.1**
	comp=Z,1.3nm,0.3s,baz=223,slow=6.3,SNR=9.1							
RAR				LR		LR	03 49 32.3	
	comp=Z,2μm,21.7s,baz=240,slow=32							
RAR	**Rarotonga**	**17.38**	**66**	*e*P		**Pn**	**03 44 21.3**	**-4.1**
RAR				pmax		pmax		
	comp=Z,237nm,1.1s							
RAR	**Rarotonga**	**17.38**	**66**	*e*Pn		**Pn**	**03 44 21.3**	**-4.1**
	comp=Z,236nm,1.1s							
ODZ	**Otahua Downs**	**18.60**	**209**	*e*P		**P**	**03 44 39.4**	**-0.5**
	comp=Z,87nm,1.0s							
LHI	**Lord Howe Isla**	**20.91**	**258**	*e*P		Pn	03 45 06.9	-0.8
	comp=Z,630nm,0.9s							
FUNA	**Funafuti**	**20.98**	**349**	PFAKE			03 45 20.0	+11
FUNA				LR		LR		
	comp=Z,6μm,20.0s							
TBI	**Tubuai**	**25.20**	**83**	*e*LQ		LQ	03 50 37.6	
	comp=Z,3μm,28.0s							
TBI				*e*LR		LR	03 51 56.0	
	comp=Z,6μm,29.0s,baz=250							
TBI	**Tubuai**	**25.20**	**83**	*e*T		T	04 11 45.4	
	comp=Z,16nm,0.3s							
ARMA	**Armidale**	**27.34**	**260**	P		**P**	**03 46 09.8**	**+2.2**
	baz=27,SNR=16							
ARMA	**Armidale**	**27.34**	**260**	*e*P		**P**	**03 46 10.1**	**+2.4**
	comp=Z,39nm,0.8s							
PAE	**Paea**	**27.47**	**71**	*e*T		T	04 14 26.3	
	comp=Z,9.5nm,0.3s							
PPT2	**Papeete2**	**27.50**	**71**	*e*LQ		LQ	03 51 29.1	
	comp=Z,4μm,24.8s							
PPT2				*e*LR		LR	03 52 57.4	
	comp=Z,6μm,27.2s,baz=240							
PPT2	**Papeete2**	**27.50**	**71**	*e*T		T	04 14 30.3	
	comp=Z,5.6nm,0.3s							
PPT	**Papeete**	**27.52**	**71**	LR		LR	03 54 04.0	
	comp=Z,2μm,21.3s,baz=247,slow=30							
MGCD	**Mangrove Creek**	**27.63**	**254**	P		**P**	**03 46 13.0**	**+2.9**
	baz=28,SNR=7.8							
TVO	**Taravao**	**27.68**	**72**	*e*T		T	04 14 37.3	
	comp=Z,2.3nm,0.4s							
EIDS	**Eidsvold**	**28.73**	**270**	P		**P**	**03 46 21.3**	**+1.3**
	baz=29,SNR=16							
EIDS	**Eidsvold**	**28.73**	**270**	*e*P		**P**	**03 46 20.6**	**+0.6**
	comp=Z,49nm,0.9s							
CNB	**Canberra Magne**	**29.11**	**249**	P		**P**	**03 46 25.4**	**+2.1**
	baz=29,SNR=14							
HNR	**Honiara**	**29.39**	**308**	LR		LR	03 56 13.8	
	comp=Z,1μm,21.6s,baz=149,slow=33							
CAN	**Canberra**	**29.41**	**249**	*e*P		**P**	**03 46 26.2**	**+0.2**
CAN				pmax		pmax		
	comp=Z,91nm,1.1s							
CAN				MLR		MLR		
	comp=Z,3μm,19.0s							
CAN	**Canberra**	**29.41**	**249**	*e*P		**P**	**03 46 26.1**	**+0.2**
	comp=Z,91nm,1.1s							
CAN				LR		LR		
	comp=Z,3μm,19.0s							
YNG	**Young**	**29.89**	**251**	P		**P**	**03 46 32.9**	**+2.7**
	baz=30,SNR=10.0							
RMQ	**Roma**	**30.49**	**267**	P		**P**	**03 46 37.7**	**+2.2**
	baz=30,SNR=14							
MOO	**Moorlands**	**31.74**	**236**	P		**P**	**03 46 47.6**	**+1.3**
	baz=32,SNR=7.9							
TAU	**Tasmania Unive**	**31.75**	**235**	*e*P		**P**	**03 46 48.2**	**+1.7**
TAU				pmax		pmax		
	comp=Z,117nm,1.0s							
TAU				MLR		MLR		
	comp=Z,3μm,20.0s							
TAU	**Tasmania Unive**	**31.75**	**235**	*e*P		**P**	**03 46 48.2**	**+1.7**
	comp=Z,117nm,1.0s							
TAU				LR		LR		
	comp=Z,3μm,20.0s							
CMSA	**Cobar Meteorol**	**32.31**	**256**	P		**P**	**03 46 52.5**	**+1.1**
	baz=32,SNR=10							
QLP	**Quilpie**	**34.41**	**265**	P		**P**	**03 47 09.9**	**+0.1**
	baz=34,SNR=12							
CTA	**Charters Tower**	**34.65**	**277**	P		**P**	**03 47 13.1**	**+1.0**
CTA				pmax		pmax		
	comp=Z,117nm,1.0s							
CTAO	**Charters Tower**	**34.65**	**277**	*e*P		**P**	**03 47 12.7**	**+0.7**
CTAO				*e*			03 49 46.5	
CTAO				pmax		pmax		
	comp=Z,80nm,0.8s							
CTAO				MLR		MLR		
	comp=Z,9μm,20.0s							
CTAO	**Charters Tower**	**34.65**	**277**	*e*P		**P**	**03 47 12.7**	**+0.7**
	comp=Z,80nm,0.8s							
CTAO				*e*PcP		**PcP**	**03 49 46.5**	**+0.6**
CTAO				LR		LR		
	comp=Z,9μm,20.0s							
ARPS	**Mount Arapiles**	**35.24**	**247**	P		**P**	**03 47 18.1**	**+1.1**
	baz=35,SNR=8.0							
STKA	**Stephens Creek**	**35.74**	**255**	P		**P**	**03 47 21.5**	**+0.2**
	comp=Z,13nm,0.7s,baz=79,slow=8.8,SNR=15							
STKA				PcP		**PcP**	**03 49 50.0**	**+1.1**
	comp=Z,11nm,1.0s,baz=27,slow=4.5,SNR=3.7							
STKA				LR		LR	04 01 03.2	
	comp=Z,4μm,18.1s,baz=96,slow=35							
STKA	**Stephens Creek**	**35.74**	**255**	P		**P**	**03 47 21.9**	**+0.6**
	baz=36,SNR=16							
STKA	**Stephens Creek**	**35.74**	**255**	*e*P		**P**	**03 47 21.7**	**+0.4**
STKA							03 49 50.0	
STKA				pmax		pmax		
	comp=Z,17nm,1.1s							
STKA	**Stephens Creek**	**35.74**	**255**	*e*P		**P**	**03 47 21.7**	**+0.4**
	comp=Z,17nm,1.1s							
STKA				PcP		**PcP**	**03 49 50.0**	**+1.1**
MTSU	**Mount Surprise**	**37.11**	**279**	P		**P**	**03 47 33.8**	**+0.6**
	baz=37,SNR=30							
HTT	**Hallett**	**37.80**	**252**	P		**P**	**03 47 39.2**	**+0.2**
	baz=38,SNR=60							
RKT	**Rikitea**	**37.90**	**91**	*e*LR		LR	03 57 50.4	
	comp=Z,3μm,28.8s							
PMG	**Port Moresby**	**39.08**	**293**	LR		LR	04 01 23.6	
	comp=Z,3μm,20.0s,baz=129,slow=32							
PMG	**Port Moresby**	**39.08**	**293**	PFAKE			03 48 00.0	+10
PMG				LR		LR		
	comp=Z,3μm,20.0s							
TAOE	**Nuku Hiva Isla**	**39.93**	**67**	*e*LR		LR	03 58 38.6	
	comp=Z,3μm,27.5s							
COEN	**Coen**	**39.97**	**284**	P		**P**	**03 47 57.9**	**+0.7**
	baz=40,SNR=6.2							
COEN	**Coen**	**39.97**	**284**	*e*P		**P**	**03 47 57.9**	**+0.7**
	comp=Z,34nm,0.9s							
COEN				*e*PP		**PP**	**03 49 24.5**	**-4.9**
COEN				*e*PcP		**PcP**	**03 50 02.5**	**+0.3**
BBOO	**Buckleboo**	**40.27**	**253**	P		**P**	**03 47 58.9**	**-0.6**
	baz=40,SNR=24							
BBOO	**Buckleboo**	**40.27**	**253**	*e*P		**P**	**03 47 59.2**	**-0.2**
	comp=Z,97nm,1.0s							
QIS	**Mount Isa**	**40.27**	**272**	P		**P**	**03 47 59.7**	**+0.1**
	baz=40,SNR=11							
AS01	**Alice Springs**	**44.16**	**265**	*e*P		**P**	**03 48 30.1**	**-1.3**
AS31	**Alice Springs**	**44.20**	**265**	*e*P		**P**	**03 48 30.9**	**-0.8**
	comp=Z,29nm,1.1s							
ASAR	**Alice Springs**	**44.20**	**265**	P		**P**	**03 48 31.2**	**-0.5**
	comp=Z,54nm,0.9s,baz=111,slow=7.7,SNR=244							
ASAR				PcP		**PcP**	**03 50 16.5**	**+0.3**
	comp=Z,11nm,0.9s,baz=111,slow=4.8,SNR=6.6							
ASAR				ScP		**ScP**	**03 54 10.6**	**+4.6**
	comp=Z,6.1nm,1.1s,baz=116,slow=3.6,SNR=7.5							
ASAR				LR		LR	04 06 21.9	
	comp=Z,6μm,18.8s,baz=110,slow=35							
WR0	**Warramunga Arr**	**44.91**	**270**	P		**P**	**03 48 36.8**	**-0.5**
	baz=45							
WB2	**Warramunga Arr**	**45.08**	**270**	*e*P		**P**	**03 48 38.4**	**-0.4**
	comp=Z,83nm,0.8s							
WRAB	**Tennant Creek**	**45.09**	**270**	*e*P		**P**	**03 48 38.2**	**-0.5**
WRAB				*e*			03 50 18.9	
WRAB				pmax		pmax		
	comp=Z,89nm,0.9s							
WRAB				MLR		MLR		
	comp=Z,2μm,19.0s							
WRAB	**Tennant Creek**	**45.09**	**270**	*e*P		**P**	**03 48 38.2**	**-0.5**
	comp=Z,89nm,0.9s							
WRAB				*e*PcP		**PcP**	**03 50 18.9**	**-0.3**
WRAB				LR		LR		
	comp=Z,2μm,19.0s							
WRA	**Warramunga Arr**	**45.09**	**270**	P		**P**	**03 48 38.1**	**-0.7**
	comp=Z,85nm,1.0s,baz=109,slow=7.7,SNR=119							
WRA				PcP		**PcP**	**03 50 20.0**	**+0.8**
	comp=Z,24nm,1.0s,baz=107,slow=3.4,SNR=9.7							
WRA				ScP		**ScP**	**03 54 14.9**	**+5.2**
	comp=Z,6.6nm,1.3s,baz=105,slow=4.5,SNR=5.3							
WRA				LR		LR	04 06 17.2	
	comp=Z,2μm,18.7s,baz=110,slow=34							
FORT	**Forrest**	**47.33**	**254**	P		**P**	**03 48 54.4**	**-1.9**
	baz=47,SNR=36							
FORT	**Forrest**	**47.33**	**254**	*e*P		**P**	**03 48 54.1**	**-2.1**
	comp=Z,1μm,1.3s							
FORT				*e*PcP		**PcP**	**03 50 26.7**	**-0.2**
JAY	**Jayapura**	**48.32**	**295**	LR		LR	04 07 13.7	
	comp=Z,38nm,20.8s,baz=174,slow=34							
WRKA	**Warakurna**	**48.65**	**261**	P		**P**	**03 49 05.6**	**-0.9**
	baz=49,SNR=73							
SBA	**Scott Base**	**49.23**	**185**	*e*P		P	03 49 14.9	+4.7
SBA				pmax		pmax		
	comp=Z,66nm,1.0s							
SBA				MLR		MLR		
	comp=Z,937nm,20.0s							
SBA	**Scott Base**	**49.23**	**185**	*e*P		P	03 49 14.9	+4.7
	comp=Z,66nm,1.0s							
SBA				LR		LR		
	comp=Z,937nm,20.0s							
VNDA	**Vanda**	**49.31**	**186**	P		**P**	**03 49 14.1**	**+3.2**
	comp=Z,18nm,1.0s,baz=2.8,slow=8.7,SNR=48							
VNDA				LR		LR	04 07 13.6	
	comp=Z,690nm,19.8s,baz=22,slow=33							
VNDA	**Vanda**	**49.31**	**186**	*e*P		**P**	**03 49 14.4**	**+3.6**
	comp=Z,34nm,1.3s							
MTN	**Manton Dam**	**50.84**	**277**	*e*P		**P**	**03 49 22.6**	**-0.6**
	comp=Z,48nm,0.9s							
KMBL	**Kambalda**	**52.34**	**251**	P		**P**	**03 49 32.9**	**-1.5**
	baz=52,SNR=6.6							
FITZ	**Fitzroy Crossi**	**53.40**	**268**	P		**P**	**03 49 41.6**	**-0.7**
	comp=Z,70nm,1.1s,baz=130,slow=6.9,SNR=32							
FITZ	**Fitzroy Crossi**	**53.40**	**268**	P		**P**	**03 49 41.6**	**-0.7**
	baz=53							
KIP	**Kipapa**	**53.57**	**22**‖	*e*P		**P**	**03 49 43.8**	**+0.5**
RKGY	**Rocky Gully**	**55.53**	**246**	P		**P**	**03 49 57.3**	**-0.4**
	baz=56							
KLBR	**Kellerberrin**	**55.68**	**250**	P		**P**	**03 49 57.5**	**-1.3**
	baz=56,SNR=21							
NWAO	**Narrogin (SRO)**	**55.75**	**248**	P		**P**	**03 49 58.0**	**-1.2**
	comp=Z,25nm,1.0s,baz=68,slow=19,SNR=5.8							
NWAO	**Narrogin (SRO)**	**55.75**	**248**	P		**P**	**03 49 57.7**	**-1.5**
	baz=56,SNR=4.2							
NWAO				P		**P**	**03 49 57.7**	**-1.5**
	baz=56,SNR=4.2							
NWAO	**Narrogin (SRO)**	**55.75**	**248**	P		**P**	**03 49 58.0**	**-1.2**
NWAO				pmax		pmax		
	comp=Z,25nm,1.0s							
NWAO	**Narrogin (SRO)**	**55.75**	**248**	*e*P		**P**	**03 49 58.0**	**-1.2**
	comp=Z,48nm,1.3s							
NWAO				LR		LR		
	comp=Z,1μm,19.0s							
GUMO	**Guam**	**56.43**	**314**	*e*P		**P**	**03 50 02.6**	**-1.5**
GUMO				pmax		pmax		
	comp=Z,136nm,0.9s							
GUMO				MLR		MLR		
	comp=Z,932nm,20.0s							
GUMO	**Guam**	**56.43**	**314**	*e*P		**P**	**03 50 02.6**	**-1.5**
	comp=Z,136nm,0.9s							
GUMO				LR		LR		
	comp=Z,932nm,20.0s							
MEEK	**Meekatharra**	**56.44**	**256**	P		**P**	**03 50 02.4**	**-1.9**
	baz=56,SNR=13							
CASY	**Casey**	**56.60**	**208**	*e*P		**P**	**03

comp=Z,80nm,1.6s
ERM Erimo 79.97 331 *e*P **P** **03 52 30.9 -0.2**
comp=Z,129nm,1.7s
ERM LR LR
comp=Z,832nm,20.0s
YHNB Yeheng 80.00 305 PFAKE 03 52 40.0 +8.1
YHNB LR LR
comp=Z,664nm,21.0s
VNA1 Neumayer--Stat 80.02 176 P **P** **03 52 32.7 +1.5**
NVL N'lazarevskaya 80.04 183 *e*P **P** **03 52 34.2 +2.9**
KUR Kuril'sk 80.83 336 P P 03 52 22.9 -13
KUR S **S** **04 02 43.4 +1.7**
KUR MLR MLR
comp=N,511nm,18.0s
KUR MLR MLR
comp=E,256nm,18.0s
KUR MLR MLR
comp=Z,613nm,18.0s
MYKOM Kota Tinggi 81.57 277 ⇓P **P** **03 52 40.3 -0.1**
MYKOM Kota Tinggi 81.57 277 *e*P **P** **03 52 39.5 -0.9**
comp=Z,181nm,1.9s
ASAJ Asahikawa 81.93 332 *e*P **P** **03 52 43.1 +1.5**
comp=Z,93nm,1.2s
KGM Kluang 82.14 277 ⇑P **P** **03 52 43.5 0.0**
QZH Quanzhou 82.17 304 ⇑*i*P P 03 52 34.2 -9.1
QZH Quanzhou 82.17 304 S S 04 02 45.8 -11
QZH pmax pmax
comp=Z,760nm,7.6s
QZH LR LR
comp=N,620nm,12.3s
QZH LR LR
comp=E,630nm,15.9s
QZH LR LR
comp=Z,970nm,22.6s
NIKH Nikolski High 82.20 5 *e*P **P** **03 52 42.7 0.0**
comp=Z,64nm,0.9s
PLCA Paso Flores 82.52 133 P **P** **03 52 46.7 +1.5**
comp=Z,3.1nm,0.8s,baz=235,slow=7.3,SNR=8.3
PLCA LR LR 04 20 51.5
comp=Z,350nm,20.1s,baz=266,slow=29
EFI East Falkland 83.17 147 PFAKE 03 53 00.0 +12
EFI LR LR
comp=Z,948nm,21.0s
SRIG Santa Rosalia 83.60 54 *e*P **P** **03 52 51.1 +0.4**
comp=Z,30nm,1.0s
SAO San Andreas Ge 83.77 42 *e*P **P** **03 52 52.7 +1.4**
SAO pmax pmax
comp=Z,15nm,1.1s
SAO San Andreas Ge 83.77 42 *e*P **P** **03 52 52.7 +1.4**
comp=Z,15nm,1.1s
KTGM Kuala Trenggan 83.94 280 ⇓P **P** **03 52 53.3 +0.5**
MWC Mount Wilson 84.09 45 *e*P **P** **03 52 54.3 +1.0**
MWC pmax pmax
comp=Z,17nm,1.1s
MWC Mount Wilson 84.09 45 *e*P **P** **03 52 54.3 +1.0**
comp=Z,17nm,1.1s
KSRS Korea Array 84.17 319 P **P** **03 52 54.0 +0.7**
comp=Z,22nm,1.0s,baz=140,slow=5.6,SNR=45
KSRS LR LR 04 26 26.1
comp=Z,247nm,21.1s,baz=129,slow=33
KS15 Wonju Array Si 84.18 319 *e*P **P** **03 52 54.8 +1.4**
KSAR Wonju Array Be 84.18 319 P **P** **03 52 54.1 +0.7**
KSAR Wonju Array Be 84.18 319 P **P** **03 52 54.0 +0.7**
YSS Yuzh-Sakhalins 84.20 333 *oe*P **P** **03 52 54.2 +1.0**
YSS pmax pmax
comp=Z,80nm,1.4s
YSS pmax pmax
comp=Z,300nm,10.0s
YSS MLR MLR
comp=Z,500nm,21.0s
YSS Yuzh-Sakhalins 84.20 333 *e*P **P** **03 52 54.3 +1.1**
comp=Z,77nm,1.0s
YSS LR LR
comp=Z,380nm,20.0s
KS01 Wonju Array Si 84.20 319 *e*P **P** **03 52 53.1 -0.4**
ARVC Arvin 84.21 44 P **P** **03 52 54.4 +0.8**
baz=228
MURC Murrieta 84.22 46 P **P** **03 52 54.6 +0.8**
baz=229,SNR=6.7
MONP2 Monument Peak 84.26 47 P **P** **03 52 54.9 +0.7**
baz=230,SNR=7.3
IKP In-Ko-Pah, Jac 84.31 48 P **P** **03 52 55.2 +0.9**
baz=230
BFSC Mount Baldy Ra 84.35 46 P **P** **03 52 55.0 +0.4**
baz=229,SNR=5.5
VES Vestal, Richgr 84.54 44 P **P** **03 52 55.9 +0.7**
baz=228,SNR=8.2
EDW2 Edwards Air Fo 84.56 45 P **P** **03 52 56.3 +0.8**
baz=229,SNR=7.6
SWSC Sam W. Stewart 84.69 48 P **P** **03 52 57.2 +1.1**
baz=230
TPFO Pinon Flats 84.70 47 P **P** **03 52 57.1 +0.8**
baz=230,SNR=7.7
PFO Pinyon Flats O 84.70 47 P **P** **03 52 57.6 +1.3**
comp=Z,8.9nm,1.0s,baz=253,slow=5.3,SNR=8.0
PFO Pinyon Flats O 84.70 47 P **P** **03 52 57.2 +0.9**
baz=230,SNR=7.1
PFO Pinyon Flats O 84.70 47 *e*P **P** **03 52 56.5 +0.2**
PFO pmax pmax
comp=Z,11nm,0.7s
PFO MLR MLR
comp=Z,713nm,19.0s
PFO Pinyon Flats O 84.70 47 *e*P **P** **03 52 56.5 +0.2**
comp=Z,11nm,0.7s
PFO LR LR
comp=Z,713nm,19.0s
PET Petropavlovsk 84.70 345 *e*P **P** **03 52 52.9 -2.7**
PET *e*S **S** **04 03 19.4 -1.5**
PET *e*SS **SS** **04 08 51.2 -2.6**
PET pmax pmax
comp=Z,26nm,1.3s
PET pmax pmax
comp=Z,200nm,12.8s
PET pmax pmax
comp=Z,200nm,10.0s
PET Petropavlovsk 84.70 345 PFAKE 03 53 10.0 +14
PET LR LR
comp=Z,553nm,21.0s
ISA Isabella, Lake 84.79 44 P **P** **03 52 57.6 +1.0**
baz=228,SNR=5.9
ISA Isabella, Lake 84.79 44 *e*P **P** **03 52 58.0 +1.4**
ISA pmax pmax
comp=Z,16nm,0.9s
ISA Isabella, Lake 84.79 44 *e*P **P** **03 52 58.0 +1.4**
comp=Z,16nm,0.9s
INCN Inchon 84.93 318 PFAKE 03 53 10.0 +13
INCN LR LR
comp=Z,295nm,21.0s
PEA0 Petropavlovsk- 84.99 345 *e*P **P** **03 52 56.9 -0.3**
PEA0B Petropavlovsk- 84.99 345 *e*P **P** **03 52 57.4 +0.2**
comp=Z,55nm,1.1s
PETK Petropavlovsk- 84.99 345 P **P** **03 52 56.8 -0.3**
comp=Z,34nm,0.9s,baz=124,slow=6.4,SNR=24
PETK LR LR 04 28 11.1
comp=Z,332nm,18.9s,baz=167,slow=34
LRMC Laurel Mtn Rad 85.15 45 P **P** **03 52 59.4 +0.9**
baz=229,SNR=9.2
RRX Edison Barstow 85.18 46 P **P** **03 52 59.4 +0.8**
baz=229
BELC Belle Mtn. Jos 85.24 47 P **P** **03 53 00.1 +1.0**
baz=230,SNR=13
CMB Columbia Colle 85.25 41 *e*P **P** **03 52 58.7 -0.2**
CMB pmax pmax
comp=Z,16nm,1.0s
CMB Columbia Colle 85.25 41 *e*P **P** **03 52 58.7 -0.2**
comp=Z,16nm,1.0s
IPM Ipoh 85.34 278 ⇑P **P** **03 53 00.2 +0.3**
IPM Ipoh 85.34 278 *e*P **P** **03 52 59.6 -0.3**
comp=Z,16nm,0.7s
BC3 Big Chuckanall 85.37 47 P **P** **03 53 00.9 +1.3**
baz=230,SNR=10.0
GLA Glamis 85.39 48 P **P** **03 53 00.9 +1.2**
baz=231
GLA Glamis 85.39 48 *e*P **P** **03 53 01.6 +1.9**
GLA pmax pmax
comp=Z,19nm,1.0s
GLA Glamis 85.39 48 *e*P **P** **03 53 01.6 +1.9**
comp=Z,18nm,1.0s
QIZ Qiongzhong 85.45 295 P **P** **03 52 58.8 -1.4**
QIZ pP **pP** **03 53 08.7 -1.0**
QIZ S **S** **04 03 32.9 +3.1**
QIZ sS **sS** **04 03 42.9 -2.6**
QIZ pmax pmax
comp=Z,250nm,11.7s
QIZ LR LR
comp=Z,210nm,20.3s
QIZ LR LR
comp=Z,220nm,22.9s
QIZ Qiongzhong 85.45 295 PFAKE 03 53 10.0 +10
QIZ LR LR
comp=Z,261nm,20.0s
HSIG 85.53 53 *e*P **P** **03 53 01.4 +1.0**
comp=Z,18nm,0.9s
AFDM Forest Hills D 85.54 40 *e*P **P** **03 53 01.1 +0.9**
comp=Z,15nm,1.1s
CWC Cottonwood Cre 85.54 44 P **P** **03 53 01.2 +0.7**
baz=228
HEC Hector,Ludlow 85.56 46 P **P** **03 53 01.3 +0.8**
baz=230,SNR=5.2
GSC Goldstone, Bar 85.58 45 P **P** **03 53 01.4 +0.9**
baz=229,SNR=14
GSC Goldstone, Bar 85.58 45 *e*P **P** **03 53 01.5 +0.9**
GSC pmax pmax
comp=Z,18nm,1.0s
GSC Goldstone, Bar 85.58 45 *e*P **P** **03 53 01.5 +0.9**
comp=Z,18nm,1.0s
MPMC Manual Prospec 85.65 44 P **P** **03 52 02.0 +0.9**
baz=229,SNR=21
DAC Darwin (Calif) 85.73 44 *e*P **P** **03 53 01.5 0.0**
DAC pmax pmax
comp=Z,7.0nm,1.0s
DAC Darwin (Calif) 85.73 44 *e*P **P** **03 53 01.5 0.0**
comp=Z,6.9nm,1.0s
WDC Whiskeytown Da 85.81 38 *e*P **P** **03 53 02.6 +1.1**
WDC pmax pmax
comp=Z,26nm,1.1s
WDC Whiskeytown Da 85.81 38 *e*P **P** **03 53 02.6 +1.1**
comp=Z,26nm,1.1s
TIN Tinemaha, Big 85.86 43 P **P** **03 53 03.1 +1.1**
baz=228
IRM Iron Mountain 85.89 47 P **P** **03 53 03.4 +1.3**
baz=230,SNR=14
113A Mohawk Valley, 85.91 49 *e*P **P** **03 53 03.6 +1.4**
GMRC Granite Mounta 85.96 46 P **P** **03 53 03.5 +1.0**
baz=230,SNR=8.9
N02D Trinity Center 86.00 38 P **P** **03 53 03.7 +1.2**
baz=225,SNR=9.0
O03D Paynes Creek 86.01 39 P **P** **03 53 04.1 +1.5**
baz=226,SNR=9.3
Y12C Blythe 86.03 48 P **P** **03 53 03.9 +1.1**
baz=231
Y12C Blythe 86.03 48 *e*P **P** **03 53 04.5 +1.7**
comp=Z,26nm,1.5s
214A Organ Pipe Nat 86.04 50 P **P** **03 53 03.9 +1.0**
baz=232,SNR=6.6
214A Organ Pipe Nat 86.04 50 *e*P **P** **03 53 03.8 +0.8**
comp=Z,107nm,1.5s
MSHR Mys Shultsa 86.04 324 *ce*P **P** **03 53 03.6 +1.0**
VLA Vladivostok 86.06 325 *bi*P **P** **03 53 01.2 -1.5**
VLA *i* *SP **sP** **03 53 15.6 +0.1**
VLA *e* 03 56 20.6
VLA pmax pmax
comp=Z,72nm,1.7s
KULM Kulim 86.07 278 ⇓P **P** **03 53 03.1 -0.4**
KULM Kulim 86.07 278 *e*P **P** **03 53 02.0 -1.4**
comp=Z,112nm,1.9s
KULM LR LR
comp=Z,947nm,19.0s
WAKR Walker 86.12 41 *e*P **P** **03 53 04.8 +1.4**
comp=Z,34nm,1.3s
M02C Callahan 86.21 38 P **P** **03 53 04.9 +1.3**
baz=225
TUQ Turquoise Moun 86.21 46 P **P** **03 53 04.8 +1.0**
baz=230,SNR=11
SHOC Shoshone, Teco 86.29 45 P **P** **03 53 05.3 +1.3**
baz=230
FURC Furnace Creek, 86.30 44 P **P** **03 53 05.2 +1.2**
baz=229
NJ2 Nanjing 86.30 310 *e*P **P** **03 53 05.3 +1.2**
NJ2 pmax pmax
comp=Z,35nm,1.2s
GRAC Grapevine Rang 86.34 44 P **P** **03 53 05.3 +1.0**
baz=229
PSI Prapat 86.34 275 *e*P **P** **03 53 03.6 -1.4**
PSI pmax pmax
comp=Z,50nm,1.2s
PSI Prapat 86.34 275 *e*P **P** **03 53 03.6 -1.4**
comp=Z,50nm,1.2s
LDFC Landfair 86.49 46 *e*P **P** **03 53 06.9 +1.7**
comp=Z,39nm,1.0s
YBH Yreka Blue Hor 86.53 37 *e*P **P** **03 53 06.5 +1.3**
YBH pmax pmax
comp=Z,14nm,1.0s
YBH Yreka Blue Hor 86.53 37 *e*P **P** **03 53 06.5 +1.3**
comp=Z,14nm,1.0s
PAYG Puerto Ayora 86.65 89 PFAKE 03 53 20.0 +14
PAYG LR LR
comp=Z,720nm,20.0s
GSI Gunungsitoli 86.79 273 *e*P **P** **03 53 07.2 +0.2**
comp=Z,172nm,1.4s
USRK Ussuriysk Ar. 86.80 326 P **P** **03 53 06.9 +0.6**
comp=Z,36nm,0.9s,baz=134,slow=3.4,SNR=98
USRK LR LR 04 30 00.6
comp=Z,185nm,18.7s,baz=133,slow=34
PAHR Pah Rah Range 86.96 41 *e*P **P** **03 53 08.2 +0.8**
comp=Z,15nm,1.3s
TPNV Topopah Spring 86.98 44 P **P** **03 53 08.5 +0.9**
baz=230,SNR=9.7
TPNV Topopah Spring 86.98 44 *e*P **P** **03 53 08.7 +1.1**
TPNV pmax pmax
comp=Z,14nm,0.9s
TPNV Topopah Spring 86.98 44 *e*P **P** **03 53 08.7 +1.1**
comp=Z,14nm,0.9s
UBPT Khong Chiam 87.01 289 P P 03 53 16.1 +8.1
SKLT Songkhla 87.02 280 P **P** **03 53 09.7 +1.6**
comp=Z,18nm,1.5s
M04C Macdoel 87.03 38 P **P** **03 53 08.8 +1.2**
baz=226
W13A Hualapai Mount 87.28 47 *e*P **P** **03 53 10.4 +1.2**
SHPR Sheep Range 87.37 45 *e*P **P** **03 53 10.8 +1.3**
comp=Z,16nm,1.4s
TYV Tymovskoe 87.45 336 *e*P **P** **03 53 09.8 +0.5**
TYV pmax pmax
comp=Z,105nm,1.4s
TYV MLR MLR
comp=Z,500nm,20.0s
I03D Drain, OR 87.58 36 P **P** **03 53 11.9 +1.8**
baz=225
TUC Tucson 87.62 51 P **P** **03 53 12.2 +1.5**
baz=233
TUC Tucson 87.62 51 *e*P **P** **03 53 12.2 +1.5**
TUC pmax pmax
comp=Z,19nm,1.0s
TUC MLR MLR
comp=Z,538nm,19.0s
TUC Tucson 87.62 51 *e*P **P** **03 53 12.2 +1.5**
comp=Z,19nm,1.0s
TUC LR LR
comp=Z,538nm,19.0s
MOD Modoc Plateau 87.94 39 *e*P **P** **03 53 12.8 +0.7**
comp=Z,11nm,0.9s
HPIG 88.13 58 *e*P **P** **03 53 13.8 +0.4**
comp=Z,11nm,0.9s
I04A Tendick Farm, 88.13 36 P **P** **03 53 14.3 +1.5**
baz=225
TRTT Trang 88.15 280 P **P** **03 53 14.4 +0.9**
comp=Z,33nm,1.3s
K05A Summer Lake 88.19 38 *e*P **P** **03 53 13.9 +0.7**
comp=Z,45nm,1.5s
R11A Troy Canyon, C 88.29 44 P **P** **03 53 14.6 +0.8**
baz=230
R11A Troy Canyon, C 88.29 44 *e*P **P** **03 53 14.3 +0.5**
comp=Z,9.3nm,1.5s
MDJ Mudanjiang 88.29 325 P **P** **03 53 13.5 +0.1**
MDJ pP pP 03 53 20.0 -3.0
MDJ sP sP 03 53 22.7 -3.7
MDJ PP **PP** **03 56 39.3 -2.2**
MDJ S **S** **04 03 49.2 -7.0**
MDJ sS sS 04 04 07.3 -4.7
MDJ pmax pmax
comp=Z,52nm,1.0s
MDJ pmax pmax
comp=Z,170nm,7.8s
MDJ LR LR
comp=Z,270nm,20.3s
MDJ LR LR
comp=Z,100nm,17.4s
MDJ LR LR
comp=Z,370nm,26.1s
MDJ Mudanjiang 88.29 325 *e*P **P** **03 53 14.4 +0.9**
comp=Z,70nm,1.2s
MDJ LR LR
comp=Z,390nm,20.0s
J05D Fort Rock, OR 88.39 37 P **P** **03 53 15.2 +1.0**
baz=226
X16A Lo Mia Camp, P 88.45 49 *e*P **P** **03 53 16.2 +1.5**
WHN Wuhan 88.50 306 P **P** **03 53 15.3 +0.5**
WHN sP **sP** **03 53 29.7 +2.0**
WHN SKS **SKSac** **04 03 36.3 -5.5**
WHN S **S** **04 03 55.9 -2.9**
WHN LR LR
comp=Z,640nm,12.7s
WHN LR LR
comp=Z,870nm,17.4s
WHN LR LR
comp=Z,1μm,20.1s
HABR Khabarovsk 88.58 330 *ce*P **P** **03 53 14.9 +0.3**
HABR *e**SP **sP** **03 53 28.0 +0.4**
HABR *e* 03 56 41.1
HABR *e* 04 04 01.9
HABR *e*SS SS 04 09 47.6 -3.1
HABR *e*SSS SSS 04 13 22.0
HABR pmax pmax
comp=Z,228nm,1.7s
BMN Battle Mountai 88.68 41 *e*P **P** **03 53 16.1 +0.5**
BMN pmax pmax
comp=Z,13nm,1.2s
BMN Battle Mountai 88.68 41 *e*P **P** **03 53 16.1 +0.5**
comp=Z,13nm,1.2s
LCO Las Campanas 88.72 123 PFAKE 03 53 30.0 +14
LCO LR LR
comp=Z,438nm,20.0s
LCMT Little Creek M 88.88 46 *e*P **P** **03 53 18.2 +1.6**
comp=Z,13nm,1.1s
I05D Terrebonne, OR 89.07 36 P **P** **03 53 18.7 +1.5**
baz=226
KDAK Kodiak Island 89.09 13 PFAKE 03 53 30.0 +13
KDAK LR LR
comp=Z,227nm,19.0s
SKNT Sakolnakorn 89.11 290 P **P** **03 53 19.1 +1.1**
comp=Z,33nm,1.0s
CCUT Cedar City 89.14 45 *e*P **P** **03 53 18.9 +0.9**
comp=Z,23nm,1.5s
KNB Kanab 89.15 46 *e*P **P** **03 53 19.5 +1.5**
KNB pmax pmax
comp=Z,18nm,1.0s
KNB Kanab 89.15 46 *e*P **P** **03 53 19.5 +1.5**
comp=Z,18nm,1.0s
WUAZ Wupatki 89.16 48 P **P** **03 53 19.1 +1.1**
baz=233
WUAZ Wupatki 89.16 48 *e*P **P** **03 53 18.5 +0.5**
comp=Z,24nm,1.0s
WUAZ LR LR
comp=Z,473nm,22.0s
WVOR Wild Horse Val 89.21 39 *e*P **P** **03 53 17.9 -0.1**
WVOR pmax pmax
comp=Z,16nm,1.3s
WVOR MLR MLR
comp=Z,1μm,19.0s
WVOR Wild Horse Val 89.21 39 *e*P **P** **03 53 17.9 -0.1**
comp=Z,16nm,1.3s
WVOR LR LR
comp=Z,1μm,19.0s
SURT Suratani 89.47 280 P P 03 53 25.6 +5.9
comp=Z,12nm,0.7s,comp=Z,2μm
TRQA Tornquist 89.49 134 PFAKE 03 53 30.0 +10
TRQA LR LR
comp=Z,851nm,21.0s
X18A Snowflake 89.50 49 *e*P **P** **03 53 21.1 +1.5**
E03A Lebam 89.51 34 *e*P **P** **03 53 20.6 +1.6**
comp=Z,65nm,1.1s
G05D Wamic, OR 89.70 36 P **P** **03 53 21.3 +1.2**
baz=226
121A Cookes Peak, D 89.80 52 P **P** **03 53 22.0 +0.9**
baz=235
121A Cookes Peak, D 89.80 52 *e*P **P** **03 53 18.8 -2.3**
comp=Z,9.9nm,1.1s
CN2 Changchun 89.88 322 ⇑P **P** **03 53 21.5 +0.6**
CN2 pmax pmax
comp=Z,100nm,1.2s
CN2 pmax pmax
comp=Z,300nm,3.0s
ERK Elk Rock 89.94 34 P **P** **03 53 22.6 +1.3**
TIA Tai'an 89.97 312 ⇑P **P** **03 53 26.2 +4.7**
TIA pP **pP** **03 53 27.6 -3.5**
TIA pmax pmax
comp=Z,140nm,1.1s
TIA pmax pmax
comp=Z,510nm,5.0s
TIA LR LR
comp=Z,430nm,23.3s
TIA LR LR
comp=Z,410nm,23.3s
TIA LR LR
comp=Z,740nm,26.8s
NLWA Neilton Lookou 89.97 33 *e*P **P** **03 53 22.1 +0.8**
comp=Z,41nm,1.1s
NLWA LR LR
comp=Z,702nm,19.0s
NKL Nikolayevsk 90.03 336 *i*P **P** **03 53 22.0 +0.7**
NKL *e* 03 53 30.0
NKL pmax pmax
comp=Z,450nm,3.0s
NKL pmax pmax
comp=Z,52nm,1.0s
NKL MLR MLR
comp=N,500nm,18.0s
NKL MLR MLR
comp=Z,700nm,18.0s
TDL Tradedollar La 90.03 34 P **P** **03 53 23.1 +1.4**
ELK Elko 90.03 42 *e*P **P** **03 53 22.5 +0.5**
ELK pmax pmax
comp=Z,7.0nm,1.4s
ELK Elko 90.03 42 *e*P **P** **03 53 22.5 +0.5**
comp=Z,7.0nm,1.4s
G06A Carlson Farm, 90.05 36 *e*P **P** **03 53 22.7 +0.9**
comp=Z,32nm,1.1s
VTHM Trough 90.05 36 P **P** **03 53 22.9 +1.1**
MTPU Mount Pierson 90.18 46 *e*P **P** **03 53 24.8 +1.8**
comp=Z,9.7nm,0.9s
CHAI Chaiyaphum 90.21 288 P **P** **03 53 26.3 +3.2**
comp=Z,5.3nm,1.0s
NONG Nongkai 90.35 290 P **P** **03 53 24.8 +1.1**
comp=Z,29nm,1.1s,comp=Z,8μm
MSU Marysvale 90.47 45 *e*P **P** **03 53 25.6 +1.5**
MSU Marysvale 90.47 45 *e*P **P** **03 53 25.6 +1.5**
LON Longmire 90.51 34 *e*P **P** **03 53 24.6 +0.7**
LON pmax pmax
comp=Z,10.0nm,1.0s
LON Longmire 90.51 34 *e*P **P** **03 53 24.6 +0.7**
comp=Z,9.9nm,1.0s
KLR Kul'dur 90.59 329 LR LR 04 29 12.0
comp=Z,368nm,20.1s,slow=32
D05A Enumclaw 90.73 34 *e*P **P** **03 53 26.9 +2.2**
comp=Z,49nm,1.0s
TX31 Lajitas Ar. Si 90.92 57 *e*P **P** **03 53 27.0 +0.7**
TXAR Lajitas Array 90.92 57 P **P** **03 53 27.1 +0.8**
comp=Z,7.0nm,1.0s,baz=210,slow=7.1,SNR=32
TXAR PKKPbc **PKKPbc** **04 10 53.3 +2.3**
comp=Z,0.4nm,0.8s,baz=90,slow=3.8,SNR=3.6
TXAR LR LR 04 28 06.9
comp=Z,234nm,18.8s,baz=0.0,slow=32
G08A Pilot Rock 90.95 37 *e*P **P** **03 53 27.0 +1.0**
comp=Z,25nm,0.9s
CNPM China Poot 90.98 13 *e*P **P** **03 53 26.3 +0.6**
comp=Z,42nm,1.1s
NAC Naches 90.98 35 P **P** **03 53 27.0 +1.0**
MNTX Cornudas Mount 91.00 54 P **P** **03 53 27.2 +0.7**
baz=236
MNTX Cornudas Mount 91.00 54 *e*P **P** **03 53 26.9 +0.4**
comp=Z,7.4nm,0.9s
MNTX LR LR
comp=Z,327nm,19.0s
DUG Dugway, Tooele 91.12 44 P **P** **03 53 28.0 +1.0**
baz=232
DUG Dugway, Tooele 91.12 44 PFAKE 03 53 40.0 +13
DUG LR LR
comp=Z,788nm,19.0s
BRLK Bradley Lake 91.27 13 *e*P **P** **03 53 28.0 +0.9**
LAZ Ladron 91.31 51 *e*P **P** **03 53 29.3 +1.2**
PBKT Sadao Pong 91.39 288 P **P** **03 53 30.8 +2.2**
comp=Z,30nm,1.2s
HAWA Hanford 91.40 36 *e*P **P** **03 53 29.2 +1.2**
comp=Z,29nm,1.0s
HAWA LR LR
comp=Z,678nm,19.0s
MFID Camas Ranch 91.41 40 *e*P **P** **03 53 29.0 +0.7**
comp=Z,13nm,1.0s
B05A Bryant 91.43 33 P **P** **03 53 29.7 +1.7**
baz=226

CMIG **Matias Romero** 91.43 71 P **P** 03 53 29.9 +1.1
comp=Z,4.3nm,1.0s,baz=213,slow=6.3,SNR=4.2
A04D **Lummi Island** 91.46 32 P **P** 03 53 29.6 +1.5
baz=225
BNM **Barren Site** 91.52 51 *e*P **P** 03 53 30.0 +0.9
BMO **Blue Mountains** 91.54 38 *e*P **P** 03 53 28.9 +0.2
comp=Z,8.4nm,1.0s
BMO LR LR
comp=Z,596nm,19.0s
TMUT **Trail Mountain** 91.55 45 *e*P **P** 03 53 30.9 +1.6
comp=Z,14nm,1.0s
LPM **Los Pinos Moun** 91.60 51 *e*P **P** 03 53 30.7 +1.2
LOEI **Loei** 91.62 289 P P 03 53 34.5 +4.9
comp=Z,6.7nm,1.7s,comp=Z,506nm
BBB **Bella Bella** 91.63 28 LR LR 04 30 34.8
comp=Z,581nm,18.3s,baz=238,slow=33
ENH **Enshi** 91.82 304 *e*P **P** 03 53 31.2 +0.8
comp=Z,123nm,1.1s
ENH LR LR
comp=Z,371nm,20.0s
SEW **Seward** 91.86 13 *e*P **P** 03 53 29.4 -0.3
comp=Z,28nm,1.0s
SRU **San Rafael Swe** 91.86 45 *e*P **P** 03 53 31.5 +0.9
SRU pmax pmax
comp=Z,12nm,1.1s
SRU **San Rafael Swe** 91.86 45 *e*P **P** 03 53 31.5 +0.9
comp=Z,12nm,1.1s
GYA **Guiyang** 91.89 299 ⇑*i*P **P** 03 53 33.0 +2.1
GYA pP pP 03 53 40.2 -0.2
GYA PP **PP** 03 57 14.4 +3.7
GYA SKS **SKSac** 04 04 03.0 +1.0
GYA S **S** 04 04 30.8 +0.2
GYA SS **SS** 04 10 43.2 +3.4
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,7.8s
GYA LR LR
comp=Z,560nm,20.6s
GYA LR LR
comp=Z,520nm,21.2s
GYA LR LR
comp=Z,540nm,20.9s
P17A **Butcher Ranch,** 91.95 45 *e*P **P** 03 53 32.2 +1.3
comp=Z,9.7nm,1.2s
MVCO **Mesa Verde** 92.03 48 P **P** 03 53 32.0 +0.6
baz=234
MVCO **Mesa Verde** 92.03 48 PFAKE 03 53 40.0 +8.6
MVCO LR LR
comp=Z,433nm,19.0s
ANMO **Albuquerque** 92.08 51 P **P** 03 53 32.4 +0.7
baz=235
ANMO **Albuquerque** 92.08 51 *c i*P **P** 03 53 32.3 +0.6
ANMO pmax pmax
comp=Z,11nm,1.0s
ANMO **Albuquerque** 92.08 51 *e*P **P** 03 53 32.2 +0.6
comp=Z,8.9nm,0.9s
ANMO LR LR
comp=Z,526nm,19.0s
PV05 **Paradox Valley** 92.15 47 *e*P **P** 03 53 33.3 +1.3
D08A **Wollman Farm,** 92.16 35 *e*P **P** 03 53 32.6 +1.1
comp=Z,28nm,0.9s
E09A **Wood Farm, Sta** 92.19 36 *e*P **P** 03 53 32.4 +0.7
comp=Z,25nm,1.0s
HLID **Hailey** 92.29 40 P **P** 03 53 33.1 +0.8
baz=231
HLID **Hailey** 92.29 40 *e*P **P** 03 53 33.2 +0.8
comp=Z,11nm,1.0s
HLID LR LR
comp=Z,577nm,19.0s
SPU **Mount Spurr** 92.37 12 *e*P **P** 03 53 31.6 -0.5
PV09 **Paradox Valley** 92.38 47 *e*P **P** 03 53 34.1 +1.0
MA2 **Magadan** 92.49 344 *e*P **P** 03 53 32.6 -0.1
MA2 **Magadan** 92.49 344 PFAKE 03 53 40.0 +7.3
MA2 LR LR
comp=Z,2μm,19.0s
PV01 **Paradox Valley** 92.52 47 *e*P **P** 03 53 33.6 -0.1
TCUT **Toone Canyon** 92.53 43 *e*P **P** 03 53 34.8 +1.1
comp=Z,25nm,1.3s
RC01 **Rabbit Creek A** 92.71 13 *e*P **P** 03 53 33.6 0.0
comp=Z,30nm,1.2s
HWUT **Hardware Ranch** 92.73 43 PFAKE 03 53 50.0 +15
HWUT LR LR
comp=Z,819nm,19.0s
NNA **Nana** 92.74 105 *i* P **P** 03 53 35.4 +0.4
NNA **Nana** 92.74 105 PFAKE 03 53 50.0 +15
NNA LR LR
comp=Z,191nm,22.0s
BJT **Baijiatuau** 92.84 315 *e*P **P** 03 53 35.3 +0.5
BJT pmax pmax
comp=Z,44nm,1.0s
BJT MLR MLR
comp=Z,438nm,20.0s
BJT **Baijiatuau** 92.84 315 *e*P **P** 03 53 35.3 +0.5
comp=Z,44nm,1.0s
BJT LR LR
comp=Z,438nm,20.0s
BJI **Beijing** 92.85 315 P **P** 03 53 35.5 +0.7
BJI S **S** 04 04 38.9 +0.6
BJI pmax pmax
comp=Z,38nm,0.9s
BJI pmax pmax
comp=Z,220nm,4.0s
BJI LR LR
comp=Z,220nm,17.7s
BJI LR LR
comp=Z,280nm,21.8s
BJI LR LR
comp=Z,430nm,28.6s
SUA **Susitna One** 92.87 12 *e*P **P** 03 53 34.6 +0.1
SUKH **Sukhothai** 92.95 288 P **P** 03 53 39.2 +3.4
EYAK **Cordova Ski Ar** 93.05 15 *e*P **P** 03 53 35.7 +0.5
832A **Faith Ranch, C** 93.10 59 P **P** 03 53 36.8 +0.5
baz=238
933A **Laredo** 93.28 60 P **P** 03 53 37.7 +0.6
baz=239
PMR **Palmer** 93.29 13 *e*P **P** 03 53 35.6 -0.7
PMR pmax pmax
comp=Z,15nm,1.2s
PMR **Palmer** 93.29 13 *e*P **P** 03 53 35.5 -0.7
comp=Z,15nm,1.2s
WRAK **Wrangell Islan** 93.33 23 PFAKE 03 53 50.0 +13
WRAK LR LR
comp=Z,312nm,19.0s
TT01 **Tatalina** 93.36 9 *e*P **P** 03 53 36.6 0.0
TTA **Tatalina** 93.39 9 *e*P **P** 03 53 36.8 0.0
TTA pmax pmax
comp=Z,11nm,1.0s
TTA **Tatalina** 93.39 9 *e*P **P** 03 53 36.8 0.0
comp=Z,11nm,1.0s
S22A **4UR Ranch, Cre** 93.42 48 P **P** 03 53 38.5 +0.6
baz=235
S22A **4UR Ranch, Cre** 93.42 48 *e*P **P** 03 53 38.9 +0.9
comp=Z,7.6nm,1.0s
034A **Hebbronville** 93.45 61 P **P** 03 53 38.7 +0.8
baz=239
833A **Chaparral WMA,** 93.56 60 P **P** 03 53 38.6 +0.2
baz=239
DIV **Divide** 93.57 15 *e*P **P** 03 53 38.2 +0.5
LVC **Limon Verde** 93.57 118 PFAKE 03 53 50.0 +11
LVC LR LR
comp=Z,522nm,22.0s
035Z **Hargill** 93.61 62 P **P** 03 53 39.1 +0.4
baz=239
BMRM **Bremner River** 93.69 15 *e*P **P** 03 53 38.8 +0.5
AHID **Auburn Hatcher** 93.71 42 *e*P **P** 03 53 40.0 +1.0
comp=Z,14nm,1.1s
AHID LR LR
comp=Z,831nm,19.0s
NEW **Newport** 93.87 35 PFAKE 03 53 50.0 +11
NEW LR LR
comp=Z,726nm,19.0s
SCM **Sheep Creek Mo** 93.87 14 *e*P **P** 03 53 39.6 +0.5
SCM **Sheep Creek Mo** 93.87 14 *e*P **P** 03 53 39.6 +0.5
O20A **White River Ci** 93.89 46 P **P** 03 53 40.1 +0.2
baz=235
O20A **White River Ci** 93.89 46 *e*P **P** 03 53 40.4 +0.5
TIY **Taiyuan** 93.89 311 *e*P **P** 03 53 42.0 +2.2
TIY SKS **SKSac** 04 04 14.9 +2.4
TIY S **ScS** 04 04 48.8 -0.4
TIY pmax pmax
comp=Z,170nm,4.2s
TIY LR LR
comp=Z,290nm,17.2s
TIY LR LR
comp=Z,250nm,16.4s
TIY LR LR
comp=Z,580nm,23.8s
MCMT **McKenzie Canyo** 93.96 40 P **P** 03 53 41.1 +0.9
CM01 **Chiang Mai Arr** 93.97 289 *e*P **P** 03 53 41.6 +1.1
CMAR **Chiang Mai Arr** 94.00 289 P **P** 03 53 40.8 +0.1
comp=Z,2.4nm,0.9s,baz=141,slow=3.5,SNR=8.9
CMAR PP **PP** 03 57 26.4 -0.9
comp=Z,1.3nm,0.3s,baz=134,slow=8.2,SNR=6.1
CMAR LR LR 04 35 26.5
comp=Z,167nm,20.8s,baz=115,slow=35
MSTX **Muleshoe** 94.08 53 P **P** 03 53 40.8 0.0
baz=237
MSTX **Muleshoe** 94.08 53 *e*P **P** 03 53 41.1 +0.3
SMCO **Snowmass** 94.14 47 *e*P **P** 03 53 41.2 -0.1
comp=Z,5.5nm,0.9s
CHTO **Chiang Mai** 94.17 289 PFAKE 03 53 50.0 +8.6
CHTO LR LR
comp=Z,347nm,20.0s
REDW **Red Top Meadow** 94.21 42 *e*P **P** 03 53 42.1 +0.8
comp=Z,15nm,1.0s
TPAW **Teton Pass** 94.23 42 *e*P **P** 03 53 42.4 +1.0
comp=Z,7.9nm,1.0s
KMI **Kunming** 94.24 296 P **P** 03 53 41.2 -0.7
KMI pmax pmax
comp=Z,9.0nm,0.5s
XAN **Xi'an** 94.26 307 P **P** 03 53 42.4 +0.9
XAN SKS **SKSac** 04 04 17.7 +3.1
XAN pmax pmax
comp=Z,22nm,1.3s
XAN pmax pmax
comp=Z,130nm,6.8s
XAN LR LR
comp=Z,200nm,23.3s
XAN LR LR
comp=Z,360nm,21.3s
XAN LR LR
comp=Z,540nm,20.3s
BALM **Baldy** 94.27 16 *e*P **P** 03 53 41.7 +0.7
BALM **Baldy** 94.27 16 *e*P **P** 03 53 41.7 +0.7
SDCO **Great Sand Dun** 94.29 49 P **P** 03 53 42.3 +0.4
baz=236
SDCO **Great Sand Dun** 94.29 49 *e*P **P** 03 53 42.1 +0.2
comp=Z,4.6nm,1.1s
SDCO LR LR
comp=Z,268nm,20.0s
KVTX **Kingsville** 94.30 61 PFAKE 03 53 50.0 +8.2
KVTX LR LR
comp=Z,678nm,19.0s
633A **Saathoff Ranch** 94.31 59 P **P** 03 53 42.3 +0.5
baz=239
SNOW **Snow King Moun** 94.33 42 *e*P **P** 03 53 42.0 +0.1
comp=Z,21nm,1.1s
JCT **Junction City** 94.37 58 P **P** 03 53 42.6 +0.5
baz=238
JCT **Junction City** 94.37 58 *e*P **P** 03 53 41.8 -0.3
JCT pmax pmax
comp=Z,5.0nm,0.9s
JCT MLR MLR
comp=Z,423nm,19.0s
JCT **Junction City** 94.37 58 *e*P **P** 03 53 41.8 -0.3
comp=Z,5.4nm,0.9s
JCT LR LR
comp=Z,423nm,19.0s
DLMT **Dillon** 94.43 40 *e*P **P** 03 53 42.2 +0.1
comp=Z,8.3nm,1.0s
IMW **Indian Meadow** 94.48 41 *e*P **P** 03 53 43.3 +0.7
comp=Z,12nm,1.1s
LOHW **Long Hollow** 94.51 42 *e*P **P** 03 53 43.6 +0.9
comp=Z,9nm,1.0s
MOOW **Moose Ponds** 94.51 42 *e*P **P** 03 53 43.5 +0.9
comp=Z,8.8nm,1.4s
MSO **Missoula** 94.61 38 P **P** 03 53 43.6 +0.7
baz=231
BW06 **Boulder Array** 94.62 43 P **P** 03 53 43.2 0.0
baz=234
BW06 **Boulder Array** 94.62 43 *e*P **P** 03 53 43.3 +0.1
comp=Z,19nm,2.0s
BW06 LR LR
comp=Z,785nm,19.0s
PD31 **Pinedale Array** 94.62 43 *e*P **P** 03 53 43.4 +0.1
PDAR **Pinedale Array** 94.62 43 P **P** 03 53 42.2 -1.0
comp=Z,2.4nm,0.9s,baz=204,slow=3.3,SNR=13
PDAR PKKPbc **PKKPbc** 04 10 41.1 -1.1
comp=Z,2.2nm,0.8s,baz=67,slow=3.9,SNR=14
PDAR LR LR 04 32 33.2
comp=Z,621nm,18.1s,baz=246,slow=33
T25A **Trinidad** 94.68 50 P **P** 03 53 43.5 -0.1
baz=237
533A **Kerrville** 94.73 58 P **P** 03 53 43.6 -0.2
baz=239
FLWY **Flagg Ranch** 94.73 41 *e*P **P** 03 53 44.1 +0.5
KTH **Kantishna Hill** 94.77 11 *e*P **P** 03 53 42.4 -0.7
TRF **Thorofare Moun** 94.79 12 *e*P **P** 03 53 42.8 -0.5
LRM **Limekiln Ridge** 94.80 39 *e*P **P** 03 53 44.6 +0.6
DHY **Denali Highway** 94.99 13 *e*P **P** 03 53 44.7 +0.4
RND **Reindeer** 95.01 12 *e*P **P** 03 53 44.4 +0.1
RND **Reindeer** 95.01 12 *e*P **P** 03 53 44.4 +0.1
433A **Art** 95.04 58 P **P** 03 53 44.8 -0.4
baz=239
BOZ **Bozeman (W)** 95.12 40 P **P** 03 53 45.7 +0.4
baz=233
BOZ **Bozeman (W)** 95.12 40 *e*P **P** 03 53 45.4 +0.1
BOZ pmax pmax
comp=Z,10.0nm,1.0s
BOZ MLR MLR
comp=Z,649nm,19.0s
BOZ **Bozeman (W)** 95.12 40 *e*P **P** 03 53 45.4 +0.1
comp=Z,10nm,1.0s
BOZ LR LR
comp=Z,649nm,19.0s
534A **Blanco** 95.12 59 P **P** 03 53 45.7 +0.1
baz=239
SEY **Seymchan** 95.13 346 ⇓*i*P **P** 03 53 44.7 0.0
LKWY **Lake** 95.19 41 PFAKE 03 54 00.0 +14
LKWY LR LR
comp=Z,2μm,19.0s
PAX **Paxson** 95.28 14 *e*P **P** 03 53 45.4 -0.1
PAX **Paxson** 95.28 14 *e*P **P** 03 53 45.4 -0.1
MCK **McKinley** 95.29 12 *e*P **P** 03 53 45.8 +0.3
MCK **McKinley** 95.29 12 *e*P **P** 03 53 45.8 +0.3
AMTX **Amarillo** 95.33 53 P **P** 03 53 46.5 0.0
baz=238
ISCO **Idaho Springs** 95.36 47 P **P** 03 53 46.5 -0.3
baz=236
ISCO **Idaho Springs** 95.36 47 PFAKE 03 54 00.0 +13
ISCO LR LR
comp=Z,349nm,20.0s
333A **Richland Sprin** 95.41 57 P **P** 03 53 46.3 -0.5
baz=239
ABTX **Abilene, Hawle** 95.60 56 P **P** 03 53 47.4 -0.3
baz=239
MENT **Mentasta** 95.62 15 *e*P **P** 03 53 47.3 +0.2
comp=Z,5.3nm,0.9s
434A **Burnet** 95.68 58 P **P** 03 53 48.5 +0.4
baz=239
DLBC **Dease Lake** 95.70 23 LR LR 04 29 02.8
comp=Z,285nm,21.3s,baz=218,slow=31
334A **Lometa** 95.96 57 P **P** 03 53 48.7 -0.7
baz=239
133A **Hamilton Ranch** 96.11 56 P **P** 03 53 50.5 +0.5
baz=239
WRH **Wood River Hil** 96.12 12 *e*P **P** 03 53 48.6 -0.6
RLMT **Red Lodge** 96.17 41 P **P** 03 53 50.5 +0.3
baz=234
RLMT **Red Lodge** 96.17 41 PFAKE 03 54 00.0 +10
RLMT LR LR
comp=Z,872nm,20.0s
DOT **Dot Lake** 96.18 14 *e*P **P** 03 53 49.8 +0.3
HHC **Hu-ho-hao-te** 96.20 314 *e*P **P** 03 53 53.2 +2.9
HHC pP pP 03 53 59.7 -0.1
HHC sP sP 03 54 02.6 -0.6
HHC S **S** **04 05 08.8 +1.0**
HHC pmax pmax
comp=Z,18nm,0.7s
HHC pmax pmax
comp=Z,130nm,8.0s
HHC LR LR
comp=Z,300nm,20.2s
HHC LR LR
comp=Z,490nm,20.7s
HHC LR LR
comp=Z,560nm,20.1s
CCB **Clear Creek Bu** 96.33 12 *e*P **P** 03 53 49.3 -0.8
CD2 **Chengdu** 96.36 302 *e*P **P** 03 53 51.5 +0.3
CD2 pP pP 03 53 58.9 -1.9
CD2 SKS **SKSac** **04 04 26.5 +0.6**
CD2 S **ScS** **04 05 10.5 +0.4**
CD2 sS sS 04 05 23.1 -2.3
CD2 SS **SS** **04 11 45.3 +1.9**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.8s
K22A **Casper** 96.39 44 P **P** 03 53 51.3 +0.1
baz=236
K22A **Casper** 96.39 44 *e*P **P** 03 53 51.2 0.0
HIA **Hailar** 96.42 324 PFAKE 03 54 00.0 +9.0
HIA LR LR
comp=Z,559nm,19.0s
COLA **College** 96.53 12 *i* P **P** 03 53 49.9 -1.1
COLA pmax pmax
comp=Z,12nm,1.1s
COLA **College** 96.53 12 PFAKE 03 54 00.0 +9.0
COLA LR LR
comp=Z,457nm,20.0s
MDM **Murphy Dome** 96.54 12 *e*P **P** 03 53 50.5 -0.7
Z33A **Whitaker Ranch** 96.57 56 P **P** 03 53 52.5 +0.5
baz=239
ILAR **Eielson Array** 96.61 12 P **P** 03 53 50.6 -0.9
comp=Z,2.9nm,0.9s,baz=220,slow=5.3,SNR=23
ILAR PP **PP** 03 57 39.3 -7.3
comp=Z,1.1nm,1.0s,baz=223,slow=6.1,SNR=4.2
ILAR PKKPbc **PKKPbc** **04 10 35.5 -1.8**
comp=Z,0.5nm,0.9s,baz=342,slow=3.7,SNR=6.3
ILB **Eielson Array** 96.61 12 *e*P **P** 03 53 51.0 -0.5
IL1 **Eielson Array** 96.61 12 *e*P **P** 03 53 50.2 -1.2
X32A **Elmer** 96.78 54 P **P** 03 53 53.9 +0.9
baz=239
W32A **Sentinel** 97.16 54 P Pdif 03 53 55.5 +0.7
baz=239
WMOK **Wichita Mounta** 97.29 54 PFAKE 03 54 10.0 +15
WMOK LR LR
comp=Z,240nm,19.0s
OTAV **Otavalo** 97.42 94 PFAKE 03 54 10.0 +13
OTAV LR LR
comp=Z,266nm,22.0s
LPAZ **La Paz** 97.66 113 LR LR 04 29 59.0
comp=Z,169nm,20.8s,baz=230,slow=30
EGAK **Eagle** 97.79 15 PFAKE 03 54 10.0 +13
EGAK LR LR
comp=Z,375nm,19.0s
BILL **Bilibino** 97.84 354 ⇑*e*P **P** **03 53 56.7 -0.2**
BILL *e* 03 57 58.6
BILL *e*SS SS 04 12 03.2 +0.5
BILL pmax pmax
comp=Z,13nm,1.2s
BILL MLR MLR
comp=Z,295nm,18.0s
BILL **Bilibino** 97.84 354 PFAKE 03 54 10.0 +13
BILL LR LR
comp=Z,559nm,20.0s
X34A **Smith Ranch, M** 97.90 55 P Pdif 03 53 58.7 +0.6
baz=240
OGNE **Ogallala** 98.28 48 PFAKE 03 54 10.0 +10
OGNE LR LR
comp=Z,512nm,22.0s
RSSD **Black Hills** 98.71 44 Pdiff Pdif 03 54 02.5 +0.8
baz=238
RSSD **Black Hills** 98.71 44 *e*P Pdif 03 54 02.1 +0.4
RSSD **Black Hills** 98.71 44 *e*P Pdif 03 54 02.1 +0.4
LAO **LASA Array** 98.81 41 PFAKE 03 54 10.0 +8.1
LAO LR LR
comp=Z,578nm,19.0s
NATX **Nacogdoches** 98.83 59 PFAKE 03 54 10.0 +7.8
NATX LR LR
comp=Z,409nm,20.0s
T33A **Patterson Ranc** 98.85 52 Pdiff Pdif 03 54 02.9 +0.7
baz=240
LZH **Lanzhou** 98.88 306 *e*P Pdif 03 54 03.5 +0.9
LZH pP pP 03 54 10.6 -1.5
LZH sP sP 03 54 13.4 -2.1
LZH PP **PP** **03 58 08.0 +3.1**
LZH SKS **SKSac** **04 04 39.0 +0.2**
LZH *e*S **S** **04 05 30.1 -0.9**
LZH sS sS 04 05 42.3 -4.6
LZH *e*SS **SS** **04 12 21.0 +2.1**
LZH pmax pmax
comp=Z,28nm,1.5s
LZH pmax pmax
comp=Z,140nm,8.5s
LZH LR LR
comp=Z,400nm,18.0s
LZH LR LR
comp=Z,510nm,17.1s
LZH LR LR
comp=Z,810nm,19.5s
R32A **Long Quarter,** 99.20 51 Pdiff **Pdif** **03 54 05.0 +1.2**
baz=240
CPUP **Villa Florida** 99.87 128 PKKPbc PKKPbc 04 10 26.6 +0.3
comp=Z,2.2nm,1.1s,baz=12,slow=3.9,SNR=2.8
V37A **Hulbert** 100.45 55 Pdiff **Pdif** **03 54 10.5 +1.1**
baz=242
YAK **Yakutsk** 100.61 337 PFAKE 03 54 20.0 +11
YAK LR LR
comp=Z,300nm,21.0s
DGMT **Dagmar** 100.93 40 PFAKE 03 54 20.0 +8.8
DGMT LR LR
comp=Z,606nm,19.0s
MIAR **Mount Ida** 100.95 57 PFAKE 03 54 20.0 +8.4
MIAR LR LR
comp=Z,423nm,19.0s
KSU1 **Kansas State U** 100.96 51 PFAKE 03 54 20.0 +8.4
KSU1 LR LR
comp=Z,397nm,20.0s
P34A **Walnut Farm, R** 101.03 51 Pdiff **Pdif** **03 54 12.9 +1.0**
baz=241
SONM **Songino Array** 103.00 318 P **Pdif** **03 54 19.9 -0.7**
comp=Z,2.5nm,1.1s,baz=114,slow=1.8,SNR=6.5
SONM PP **PKiKP** **03 58 41.0 +0.5**
comp=Z,1.0nm,0.9s,baz=126,slow=5.0,SNR=4.7
SONA1 **Songino Array** 103.00 318 *e*Pdif **Pdif** **03 54 19.6 -1.0**
ECSD **EROS Data Cent** 103.15 47 PFAKE 03 54 30.0 +8.8
ECSD LR LR
comp=Z,607nm,19.0s
GTA **Gaotai** 103.26 308 *e*P **Pdif** **03 54 22.8 +0.8**
GTA pP 03 54 29.2
GTA sP 03 54 32.1
GTA pmax pmax
comp=Z,7.0nm,1.0s
YKA **Yellowknife Ar** 104.00 25 Pdiff **Pdif** **03 54 24.4 -0.1**
comp=Z,0.6nm,0.9s,baz=237,slow=3.4,SNR=3.8
YKA PP **PKiKP** **03 58 38.7 -2.9**
comp=Z,0.6nm,0.9s,baz=232,slow=8.3,SNR=3.8
YKA PKKPbc **PKKPbc** **04 10 11.3 -4.5**
comp=Z,1.7nm,0.9s,baz=44,slow=3.6,SNR=3.7
YKA **Yellowknife Ar** 104.00 25 P **Pdif** **03 54 24.4 -0.1**
YKA 03 58 38.7
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA pmax pmax
comp=Z,2.0nm,0.9s
DGAR **Diego Garcia** 104.14 253 PFAKE 03 54 40.0 +14
DGAR LR LR
comp=Z,1μm,22.0s
SCIA **State Center** 104.55 50 PFAKE 03 54 40.0 +13
SCIA LR LR
comp=Z,389nm,19.0s
FFC **Flin Flon** 105.30 35 PFAKE 03 59 00.0
FFC LR LR
comp=Z,424nm,19.0s
LSA **Lhasa** 105.47 296 PFAKE 03 59 00.0
LSA LR LR
comp=Z,246nm,20.0s
AGMN **Agassiz Nation** 105.70 43 PFAKE 03 59 00.0
AGMN LR LR
comp=Z,740nm,19.0s
SAML **Samuel** 105.72 110 PFAKE 03 59 00.0
SAML LR LR
comp=Z,576nm,20.0s
ZAK **Zakamensk** 106.00 319 *e*P **Pdif** **03 54 32.0 -1.8**
ZAK pmax pmax
comp=Z,2.0nm,1.8s
TLY **Talaya** 106.38 320 P **Pdif** **03 54 36.2 +0.8**
TLY **Talaya** 106.38 320 PFAKE 03 59 00.0
TLY LR LR
comp=Z,231nm,21.0s
ULM **Lac du Bonnet** 106.55 41 PKKP **PKKPdf** **04 10 22.1 +1.9**
comp=Z,8.2nm,1.0s,baz=76,slow=4.0,SNR=4.9
MTDJ **Mount Denham** 106.58 78 PFAKE 03 59 00.0

MTDJ LR LR
comp=Z,520nm,20.0s
HDIL Hopedale 106.65 53 PFAKE 03 59 00.0
HDIL LR LR
comp=Z,319nm,20.0s
JFWS Jewell Farm 106.97 50 PFAKE 03 59 00.0
JFWS LR LR
comp=Z,413nm,19.0s
TIXI Tiksi 107.46 344 PFAKE 03 59 00.0
TIXI LR LR
comp=Z,288nm,20.0s
GOGA Godfrey 108.03 61 PFAKE 03 59 00.0
GOGA LR LR
comp=Z,285nm,19.0s
EYMN Ely 108.20 45 PFAKE 03 59 00.0
EYMN LR LR
comp=Z,586nm,19.0s
SPB Sao Paulo 108.36 132 PFAKE 03 59 00.0
SPB LR LR
comp=Z,499nm,19.0s
SDV Santo Domingo 108.39 90 PFAKE 03 59 00.0
SDV LR LR
comp=Z,228nm,21.0s
COWI Conover 108.96 47 PFAKE 03 59 00.0
COWI LR LR
comp=Z,514nm,19.0s
NHSC New Hope 110.45 63 PFAKE 03 59 10.0
NHSC LR LR
comp=Z,309nm,20.0s
ACSO Alum Creek Sta 110.97 55 PFAKE 03 59 10.0
ACSO LR LR
comp=Z,531nm,20.0s
AAM Ann Arbor 111.23 53 PFAKE 03 59 10.0
AAM LR LR
comp=Z,394nm,19.0s
BLA Blacksburg 111.77 59 PFAKE 03 59 10.0
BLA LR LR
comp=Z,404nm,19.0s
SDDR Presa de Saban 112.26 80 PFAKE 03 59 10.0
SDDR LR LR
comp=Z,353nm,21.0s
CNNC Cliffs of the 112.99 61 PFAKE 03 59 10.0
CNNC LR LR
comp=Z,264nm,19.0s
WMQ Urumqi 113.34 308 *e*PKP **PKiKP 03 58 59.2 -0.7**
WMQ PP **PP 03 59 58.2 +7.0**
WMQ SKS **SKSdf 04 06 03.9 -6.0**
WMQ SKKS **SKKSac 04 06 46.4 -4.2**
WMQ SS **SS 04 15 38.2 +2.7**
WMQ AMB AMB
comp=Z,100nm,6.4s
WMQ LR LR
comp=Z,270nm,18.8s
WMQ LR LR
comp=Z,390nm,20.2s
WMQ LR LR
comp=Z,410nm,24.1s
BDFB Brasilia 113.40 125 PKKPab PKKPab 04 09 54.9 +0.6
baz=84,slow=3.3
CBN Corbin Frederi 114.38 59 PFAKE 03 59 10.0 +8.1
CBN LR LR
comp=Z,353nm,19.0s
ABPO Ambohimpanom 115.88 227 PFAKE 03 59 20.0 +14
ABPO LR LR
comp=Z,154nm,19.0s
OPO Ambohidratompo 116.23 227 PKP **PKPdf 03 59 06.7 +0.3**
comp=Z,6.7nm,0.8s,baz=207,slow=2.3,SNR=5.5
SJG San Juan 116.34 83 PFAKE 03 59 20.0 +14
SJG LR LR
comp=Z,243nm,21.0s
BINY Binghamton 116.60 55 PFAKE 03 59 20.0 +14
BINY LR LR
comp=Z,600nm,19.0s
GRGR Grenville 117.71 91 PFAKE 03 59 20.0 +11
GRGR LR LR
comp=Z,274nm,19.0s
MK31 Makanchi Array 117.83 310 *i* PKIKP **PKPdf 03 59 07.8 -0.6**
MK31 pmax pmax
comp=Z,12nm,0.9s
MKAR Makanchi Array 117.83 310 PKP **PKPdf 03 59 07.8 -0.6**
comp=Z,9.0nm,0.8s,baz=73,slow=4.1,SNR=32
ZALV Zalesovo Beam 117.88 319 PKP **PKPdf 03 59 07.1 -1.0**
comp=Z,6.7nm,0.8s,baz=190,slow=1.4,SNR=18
LONY Lake Ozonia 118.22 52 PFAKE 03 59 20.0 +11
LONY LR LR
comp=Z,490nm,19.0s
BOSA Boshof 118.68 202 PKP **PKPdf 03 59 10.7 -0.2**
comp=Z,11nm,1.0s,baz=150,slow=3.9,SNR=8.3
NVS Novosibirsk 118.96 319 || *i* PKIKP **PKPdf 03 59 09.8 -0.4**
NVS pmax pmax
comp=Z,25nm,1.3s
NVS pmax pmax
comp=N,8.0nm,1.4s
NVS pmax pmax
comp=E,10.0nm,1.4s
NRIK Noril'sk 119.03 336 PKP **PKPdf 03 59 09.3 -0.6**
comp=E,5.4nm,0.8s,baz=65,slow=2.1,SNR=6.3
NRIK PP **PP 04 00 26.0 -4.2**
comp=E,3.5nm,0.7s,baz=132,slow=5.2,SNR=6.3
FDF Fort de France 119.29 89 PFAKE 03 59 20.0 +7.9
FDF LR LR
comp=Z,225nm,21.0s
KSH Kashi 120.55 301 PKP **PKPdf 03 59 15.2 +1.3**
KSH *e*PP PP 04 00 51.4 +10
KSH PKS **PKSdf 04 02 50.4 -0.3**
KSH SKS **SKSdf 04 06 22.8 -1.2**
KSH SKKS **SKKSac 04 07 38.5 -0.5**
KSH AMB AMB
comp=Z,130nm,5.7s
KSH LR LR
comp=Z,170nm,13.2s
KSH LR LR
comp=Z,130nm,7.5s
KSH LR LR
comp=Z,210nm,7.2s
KURK Kurchatov 121.01 314*c* *i* PKIKP **PKPdf 03 59 13.4 -0.9**
KURK Kurchatov 121.01 314 *e*PKPdf **PKPdf 03 59 13.4 -0.9**
KURK LR LR
comp=Z,533nm,19.0s
TKM2 Tokmak 2 121.60 305 *e*PKIKP **PKPdf 03 59 15.8 -0.2**
TKM2 MLR MLR
comp=Z,311nm,20.0s
TKM2 Tokmak 2 121.60 305 *e*PKPdf **PKPdf 03 59 15.8 -0.2**
TKM2 LR LR
comp=Z,311nm,20.0s
LBTB Lobatse 121.88 204 PKP **PKPdf 03 59 17.6 +0.5**
comp=Z,5.4nm,1.0s,baz=37,slow=21,SNR=4.9
PKME Peaks-Kenny Pk 122.03 53 PFAKE 03 59 30.0 +14
PKME LR LR
comp=Z,351nm,19.0s
AAK Ala-Archa 122.34 304 *e*PKIKP **PKPdf 03 59 17.3 0.0**
AAK MLR MLR
comp=Z,504nm,21.0s
AAK Ala-Archa 122.34 304 *e*PKPdf **PKPdf 03 59 17.3 0.0**
AAK LR LR
comp=Z,504nm,21.0s
BBSR BB Station 122.53 68 PFAKE 03 59 30.0 +12
BBSR LR LR
comp=Z,229nm,20.0s
EKS2 Erkin-Say 122.86 304 *e*PKIKP **PKPdf 03 59 18.3 0.0**
EKS2 MLR MLR
comp=Z,331nm,20.0s
EKS2 Erkin-Say 122.86 304 *e*PKPdf **PKPdf 03 59 18.3 0.0**
EKS2 LR LR
comp=Z,331nm,20.0s
MNAS Manas 123.75 304 PKIKP **PKPdf 03 59 18.9 -1.1**
MNAS pmax pmax
comp=Z,28nm,1.0s
OTUK Ortayu 124.72 311 PKIKP **PKPdf 03 59 21.6 +0.1**
OTUK pmax pmax
comp=Z,4.0nm,0.9s
MATP Matopo 124.88 209 PKP **PKPdf 03 59 23.6 +0.7**
comp=Z,16nm,0.9s,baz=132,slow=2.2,SNR=18
KK31 Karatay Array 125.30 304 *i* PKIKP **PKPdf 03 59 23.0 +0.2**
KK31 pmax pmax
comp=Z,26nm,1.0s
KKAR Karatay Array 125.30 304 *e*PKIKP **PKPdf 03 59 23.0 +0.2**
KKAR Karatay Array 125.30 304 *e*PKPdf **PKPdf 03 59 23.0 +0.2**
BVA0 Borovoye Array 126.31 316 *i* PKIKP **PKPdf 03 59 24.4 0.0**
BVA0 pmax pmax
comp=Z,38nm,1.1s
BRVK Borovoye 126.38 316 *e*PKIKP **PKPdf 03 59 23.9 -0.6**
BRVK MLR MLR
comp=Z,262nm,22.0s
BRVK Borovoye 126.38 316 *e*PKPdf **PKPdf 03 59 23.9 -0.6**

BRVK LR LR
comp=Z,262nm,22.0s
RCBR Riachuelo 128.73 126 PFAKE 03 59 40.0 +10
RCBR LR LR
comp=Z,579nm,20.0s
LSZ Lusaka 129.54 212 PFAKE 03 59 40.0 +8.1
LSZ LR LR
comp=Z,505nm,20.0s
TSUM Tsumeb 129.83 198 PKP **PKPdf 03 59 32.7 +0.3**
comp=Z,5.3nm,0.9s,baz=164,slow=2.5,SNR=5.9
TSUM PP **PP 04 01 41.7 -0.5**
comp=Z,4.6nm,0.8s,baz=139,slow=6.8,SNR=8.1
TSUM Tsumeb 129.83 198 PKP **PKPdf 03 59 32.7 +0.3**
TSUM PP **PP 04 01 41.7 -0.5**
TSUM LR LR
comp=Z,873nm,19.0s
KBS Kingsbay 130.12 358 PFAKE 03 59 40.0 +9.0
KBS LR LR
comp=Z,218nm,22.0s
SFJD Kangerlussuaq 130.56 25 PFAKE 03 59 40.0 +8.0
SFJD LR LR
comp=Z,289nm,20.0s
SVE Sverdlovsk 131.67 322 *e*PKIKP **PKPdf 03 59 35.4 +1.0**
SVE pmax pmax
comp=Z,21nm,1.0s
ARU Arti 132.87 321 *i* PKIKP **PKPdf 03 59 36.7 0.0**
ARU 04 02 00.4
ARU PPP PPP 04 04 51.8
ARU MLR MLR
comp=Z,492nm,23.0s
ARU Arti 132.87 321 *e*PKPpre PKPpre 03 59 25.9
ARU *e*PKPdf **PKPdf 03 59 36.5 -0.2**
ARU LR LR
comp=Z,478nm,22.0s
AB31 Akbulak array 132.94 312 *i* PKIKP **PKPdf 03 59 36.7 -0.4**
AB31 pmax pmax
comp=Z,11nm,1.0s
ABKAR Akbulak array 132.94 312 *e*PKPdf **PKPdf 03 59 37.0 -0.1**
HATD Hatta, Dubai 132.95 278 *i* P **PKPdf 03 59 39.6 +1.7**
SNR=5.5
ASHO Ashiyiah 132.97 278 *i* P **PKPdf 03 59 38.8 +0.8**
SNR=6.6
SOKR Solikamsk 133.04 326 *i* PKIKP **PKPdf 03 59 35.6 -1.3**
SOKR pmax pmax
comp=Z,31nm,0.9s
GEYT Alibeck 134.00 296 PKhKP PKPpre 03 59 29.9
comp=Z,2.5nm,0.6s,baz=64,slow=13,SNR=5.2
GEYT PKP **PKPdf 03 59 40.1 +0.6**
comp=Z,12nm,0.9s,baz=112,slow=8.1,SNR=12
GEYT SKPbc **SKPab 04 03 11.5 +2.1**
comp=Z,7.5nm,0.9s,baz=30,slow=8.9,SNR=8.4
AKTO Aktyubinsk 134.09 313 PKIKP **PKPdf 03 59 38.9 -0.3**
AKTO pmax pmax
comp=Z,15nm,0.9s
KMBO Kilima Mbogo 135.56 233 PKP **PKPdf 03 59 43.2 -0.2**
comp=Z,8.3nm,1.0s,baz=197,slow=19,SNR=5.2
KMBO Kilima Mbogo 135.56 233 *e*PKPdf **PKPdf 03 59 43.0 -0.4**
KMBO LR LR
comp=Z,448nm,19.0s
LVZ Lovozero 137.09 343 PFAKE 04 00 00.0 +16
LVZ LR LR
comp=Z,240nm,20.0s
ARCES ARCESS Array B 137.71 349 PKhKP PKPpre 03 59 36.6
comp=Z,5.8nm,0.9s,baz=45,slow=5.3,SNR=8.8
ARCES PKP **PKPdf 03 59 45.7 +0.3**
comp=Z,4.5nm,0.8s,baz=40,slow=2.1,SNR=7.5
DAMY Dhamar 139.28 258 *e*PKPdf **PKPdf 03 59 48.8 -1.5**
ASCN Ascension 139.33 153 PFAKE 04 00 00.0 +10
ASCN LR LR
comp=Z,980nm,19.0s
KLMR Klimovskoe 140.25 333 *e*PKHKP PKPpre 03 59 42.2
MBAR Mbarara 140.30 226 PFAKE 04 00 00.0 +7.9
MBAR LR LR
comp=Z,488nm,22.0s
VRH Novokhopyorsk 143.91 318 *e*PKIKP **PKPdf 03 59 57.1 0.0**
VRH pmax pmax
comp=Z,50nm,0.7s
MOS Moscow 143.97 327 *e*PKIKP PKPab 03 59 54.1 -0.3
MOS pmax pmax
comp=Z,89nm,1.4s
TBLG Delisi 144.29 302 P PKPbc 03 59 56.9 +0.5
TBLG Delisi 144.29 302 *e*PKIKP PKPbc 03 59 56.9 +0.4
FINES FINESS Array B 144.43 341 PKP **PKPab 03 59 55.4 -0.5**
comp=Z,56nm,0.8s,baz=31,slow=3.4,SNR=205
GNI Garni 144.44 299 *e*PKIKP **PKPdf 03 59 58.0 -0.6**
GNI MLR MLR
comp=Z,501nm,21.0s
GNI Garni 144.44 299 *e*PKPdf **PKPdf 03 59 58.0 -0.6**
GNI LR LR
comp=Z,501nm,21.0s
ZEI Tsey 144.76 304 *i* PKHKP PKPpre 03 59 55.4
ZEI pmax pmax
comp=Z,239nm,0.9s
OBN Obninsk 144.82 327*c* *i* PKIKP **PKPab 03 59 57.3 -0.2**
OBN *i* 04 00 08.7
OBN *e* 04 03 21.7
OBN *e*SS SS 04 22 04.3 +1.8
OBN pmax pmax
comp=Z,234nm,1.0s
OBN Obninsk 144.82 327 *e*PKPdf **PKPab 03 59 57.4 -0.2**
OBN LR LR
comp=Z,298nm,20.0s
NCK Nalchik 144.86 305 || *i* PKIKP **PKPdf 03 59 59.4 +0.3**
GOF Gofitskoye 144.94 308 || *e*PKIKP **PKPdf 03 59 59.6 +0.5**
GOF pmax pmax
comp=Z,148nm,0.9s
ONI Oni 145.12 303 *e*PKIKP **PKPdf 03 59 59.5 -0.1**
CLDR Caldiran 145.15 297 *e*P **PKPdf 04 00 00.5 +0.5**
BGD Bogdanovka 145.19 301 P **PKPdf 04 00 00.8 +0.8**
AKH Akhalkalaki 145.25 301 *e*P **PKPdf 04 00 00.9 +0.9**
AKH Akhalkalaki 145.25 301 ⇑ *i*P **PKPdf 04 00 01.3 +1.3**
AKH Akhalkalaki 145.25 301 P **PKPdf 04 00 00.9 +0.9**
AKH Akhalkalaki 145.25 301 *e*PKIKP **PKPdf 04 00 00.8 +0.8**
KBZ Khabaz 145.32 305 PKPbc **PKPab 04 00 00.5 +0.7**
comp=Z,50nm,1.1s,baz=104,slow=1.3,SNR=71
VSR Storozhevoye 145.37 319 *e*PKIKP **PKPbc 03 59 59.1 -0.5**
VSR pmax pmax
comp=Z,210nm,0.9s
KIV Kislovodsk 145.42 306 *e*P **PKPab 04 00 00.3 -0.1**
KIV Kislovodsk 145.42 306*c* *i* PKIKP **PKPab 04 00 00.2 -0.1**
KIV *e* 04 00 13.7
KIV pmax pmax
comp=Z,190nm,1.3s
KIV pmax pmax
comp=Z,64nm,0.9s
KIV Kislovodsk 145.42 306 *e*PKPbc **PKPab 04 00 00.8 +0.5**
KIV LR LR
comp=Z,254nm,19.0s
CUKT Cukurca 145.48 294 *e*P **PKPab 04 00 00.7 -0.1**
NEY Neytrino 145.53 305*d* *i* PKIKP **PKPab 04 00 02.1 +1.2**
VANB Van 145.60 296 *e*P **PKPdf 04 00 00.5 -0.2**
KARS Kars 145.66 300 *e*P **PKPab 04 00 01.7 +0.3**
AGRB Hanur-Agry 145.83 298 *e*P **PKPab 04 00 02.5 +0.4**
CHVG Ch'k'valeri 146.09 304 *e*P **PKPab 04 00 04.8 +2.1**
CHVG Ch'k'valeri 146.09 304 P **PKPab 04 00 03.2 +0.5**
SENK Senkaya-Erzuru 146.22 300 *e*P **PKPab 04 00 04.3 +0.7**
SIRT Sirnak 146.40 295 *e*P **PKPab 04 00 04.2 0.0**
SIRN S¨¨rnak 146.42 295 ⇑ *i*P **PKPbc 04 00 03.8 +0.4**
DAGI Agillar 146.48 301 ⇑ *i*P **PKPab 04 00 04.0 -0.4**
VSU Vasula 146.60 338*c* *i* PKP2 **PKPbc 04 00 02.7 -0.3**
HOMI Horasan 146.62 299 ⇑ *i*P **PKPab 04 00 04.9 -0.3**
DBOC Borcka 146.62 302 ⇑ *i*P **PKPbc 04 00 03.6 -0.2**
DDEM Demirkent 146.63 301 ⇑ *i*P **PKPab 04 00 04.5 -0.5**
ERZM Erzurum 147.04 299 *i* P **PKPbc 04 00 05.9 +0.6**
VRTB Varto-Mus 147.06 298 *e*P **PKPab 04 00 07.0 +0.1**
SVAN Silvan-Diyarba 147.34 296 *e*P **PKPab 04 00 07.3 -0.5**
SOC Sochi 147.60 306 *e*PKIKP **PKPdf 04 00 03.6 -0.1**
SOC *i* 04 00 07.4
SOC *e* 04 03 30.9
SOC pmax pmax
comp=Z,92nm,1.2s
SOC pmax pmax
comp=Z,81nm,1.1s
BNGB Bing¨ || 147.68 297 *e*P **PKPab 04 00 08.7 -0.5**
BGOL Bingol 147.68 297 ⇑ *i*P **PKPbc 04 00 08.0 +1.1**
KOPT Kop Dagi 147.69 299 ⇑ *i*P **PKPab 04 00 08.3 -1.2**
MARD Mardin 147.73 294 ⇑ *i*P **PKPbc 04 00 07.3 +0.2**
YEDI Yedisu-Bingol 147.73 298 *e*P **PKPab 04 00 08.6 -0.9**
NB2 NORSAR Subarra 147.79 353 PKP **PKPbc 04 00 05.8 -0.6**
comp=Z,49nm,0.9s,baz=16,slow=2.9
NB2 NORSAR Subarra 147.79 353 PKP **PKPbc 04 00 05.8 -0.6**
baz=16,slow=2.9
NOA NORSAR Array B 147.79 353 PKPbc **PKPbc 04 00 05.7 -0.6**
comp=Z,39nm,0.9s,baz=16,slow=4.5,SNR=61

MAZI Mazidag 147.99 295 *e*P **PKPbc 04 00 08.8 +1.0**
KTUT Trabzon 148.10 301 *e*P **PKPbc 04 00 09.0 +1.2**
DYBB Diyarbakir 148.19 296 *e*P **PKPbc 04 00 08.8 +0.5**
SFNV Sufian 148.31 293 *e*P **PKPbc 04 00 10.0 +1.4**
EUZM Uzumlu 148.34 299 ⇑ *i*P **PKPbc 04 00 09.8 +1.1**
KELT Kelkit 148.62 300 ⇑ *i*P **PKPbc 04 00 11.0 +1.6**
PTK Pertek 148.68 297 *e*P **PKPab 04 00 11.6 -1.7**
SVRC Sivrice-ELAZID 148.81 297 *e*P **PKPbc 04 00 11.7 +1.7**
ANN Anapa 148.84 309*c* *i* PKP2 **PKPbc 04 00 09.5 -0.1**
ANN pmax pmax
comp=Z,320nm,1.1s
IZAR Zarasai 148.85 335 *e*P **PKPbc 04 00 09.0 -0.2**
IZAR IAmb IAmb 04 00 11.2
comp=Z,62nm,0.9s
ESPY Espiye-Giresun 148.88 301 *e*P **PKPbc 04 00 10.1 +0.2**
IDID Didziasalis 148.98 334 *e*P **PKPbc 04 00 08.8 -0.8**
IDID IAmb IAmb 04 00 11.4
comp=Z,43nm,1.0s
ISAL Salakas 149.03 335 *e*P **PKPbc 04 00 09.1 -0.6**
ISAL IAmb IAmb 04 00 11.6
comp=Z,44nm,1.0s
ELZG Elazig 149.05 297 ⇑ *i*P **PKPbc 04 00 12.2 +1.6**
REFA Refahiye_ERZ¨ 149.10 299 ⇓ *i*P **PKPbc 04 00 11.5 +0.9**
KSRV Kasrt alli 149.22 292 *e*P **PKPbc 04 00 10.0 -0.8**
GRSN GIRESUNGRSN 149.22 302 *i* P **PKPbc 04 00 09.7 -1.1**
NACGM Naroch 149.27 333 *e* **PKPbc 04 00 10.0 -0.3**
NACGM eLR LR 04 57 44.0
KONO Kongsberg 149.32 354 *e*PKP2 **PKPbc 04 00 10.1 -0.2**
KONO Kongsberg 149.32 354 *e*PKPbc **PKPbc 04 00 10.1 -0.2**
KEMA Kemaliye 149.33 298 ⇑ *i*P **PKPbc 04 00 12.4 +1.3**
SUSE Susehri 149.40 300 ⇑ *i*P **PKPbc 04 00 11.9 +0.5**
ORDU Ordu-Boztepe 149.52 302 ⇑ *i*P **PKPbc 04 00 11.7 +0.3**
ATAB Bozova 149.69 295 ⇑ *i*P **PKPbc 04 00 13.4 +1.4**
AKCD Akcadag 149.90 297 ⇑ *i*P **PKPbc 04 00 13.4 +0.8**
CUKAN kangal_SIVAS 150.11 299 ⇑ *i*P **PKPbc 04 00 13.9 +0.7**
DARE Darende-Malaty 150.21 297 *e*P **PKPbc 04 00 15.0 +1.7**
ERBA Erbaa 150.40 302 ⇑ *i*P **PKPbc 04 00 14.3 +0.7**
GAZ Gaziantep 150.58 294 *e*P **PKPbc 04 00 15.5 +1.3**
ZALF Zalf 150.60 286 *e*P **PKPbc 04 00 16.0 +1.6**
CUALT Altinyayla-SIV 150.66 299 ⇑ *i*P **PKPbc 04 00 15.1 +0.6**
ROOS Il_alroos 150.66 288 *e*P **PKPbc 04 00 16.8 +2.3**
SAMS Samsun-Alacam 150.67 303 ⇑ *i*P **PKPbc 04 00 14.3 +0.2**
KMRS Kahramanmaras 150.79 295 *e*P **PKPbc 04 00 15.8 +1.2**
HCB Kahramanmara¨ 150.80 295 ⇑ *i*P **PKPbc 04 00 14.6 -0.1**
KVT Kavak 150.84 303 *e*P **PKPbc 04 00 16.0 +1.4**
ASF Jabal al Asfar 150.94 284 PKPbc **PKPbc 04 00 16.7 +1.5**
baz=83,slow=0.8
AKASG Malin Array Be 151.00 325 PKP **PKPdf 04 00 08.1 -0.8**
comp=Z,5.1nm,1.0s,baz=54,slow=1.5,SNR=7.1
AKASG PKPbc **PKPbc 04 00 14.5 -0.1**
comp=Z,76nm,0.8s,baz=46,slow=2.8,SNR=110
AKASG Malin Array Be 151.00 325 PKIKP **PKPdf 04 00 08.1 -0.8**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
AKASG pmax pmax
comp=Z,76nm,0.8s
KAMA Osmaniye 151.01 295 ⇑ *i*P **PKPbc 04 00 15.7 +0.5**
SIM Simferopol' 151.01 311 *e*PKIKP **PKPbc 04 00 15.6 +0.7**
SIM *e* 04 00 23.2
SIM pmax pmax
comp=Z,60nm,1.0s
SIM pmax pmax
comp=Z,87nm,0.9s
KIEV Kiev 151.02 325 *e*PKIKP **PKPbc 04 00 14.5 -0.2**
KIEV MLR MLR
comp=Z,330nm,20.0s
KIEV Kiev 151.02 325 *e*PKPbc **PKPbc 04 00 14.5 -0.2**
KIEV LR LR
comp=Z,330nm,20.0s
CUSAR Sarkisla-SIVAS 151.03 299 ⇑ *i*P **PKPbc 04 00 15.9 +0.7**
SARI SarD1z-Kayseri 151.06 297 *e*P **PKPbc 04 00 16.7 +1.3**
DRWC Darouich 151.06 293 *e*P **PKPab 04 00 22.2 -0.9**
HAVZ Havza 151.08 303 ⇑ *i*P **PKPbc 04 00 15.9 +0.7**
SALA Sala 151.10 285 *e*P **PKPbc 04 00 17.0 +1.3**
ANDN Andirin 151.22 295 ⇑ *i*P **PKPbc 04 00 16.7 +1.0**
BTCH Batrach 151.28 292 *e*P **PKPbc 04 00 16.8 +0.9**
SUW Suwalki 151.32 335 *e*PKP **PKPbc 04 00 15.2 0.0**
SUW Suwalki 151.32 335 *e*PKIKP **PKPbc 04 00 15.2 0.0**
MARH Ras Al Marh 151.33 289 *e*P **PKPbc 04 00 17.6 +1.2**
TOTH TOTAH 151.37 287 *e*P **PKPbc 04 00 17.6 +1.4**
HAWK Haweek 151.39 289 *e*P **PKPbc 04 00 17.3 +1.1**
BNN Bunyan 151.43 298 *e*P **PKPbc 04 00 14.5 -1.7**
BIDA Albida 151.44 290 *e*P **PKPbc 04 00 17.3 +1.0**
TAHT Tahtakopru-Hat 151.47 293 *e*P **PKPbc 04 00 17.6 +1.4**
SACV Santiago Islan 151.48 114 PFAKE 04 00 20.0 +3.2
SACV LR LR
comp=Z,158nm,20.0s
QASN Qassioun 151.50 287 *e*P **PKPdf 04 00 11.9 +1.6**
YAYL Yayladag 151.56 292 ⇑ *i*P **PKPbc 04 00 15.1 -1.5**
BYBT Boyabat 151.67 304 *e*P **PKPbc 04 00 18.0 +1.5**
CEYT Ceyhan 151.76 294 *e*P **PKPbc 04 00 18.2 +1.3**
HWQ Hawqa 151.77 289 *e*P **PKPbc 04 00 17.9 +0.7**
COAL Corum-Alaca 151.81 301 ⇑ *i*P **PKPbc 04 00 17.2 +0.2**
RCY Rachaya 151.87 287 *e*P **PKPbc 04 00 18.7 +1.3**
YURE YUREGIR 151.87 294 ⇑ *i*P **PKPbc 04 00 17.9 +0.7**
AKO Adana 151.94 295 ⇑ *i*P **PKPbc 04 00 17.7 +0.4**
BHL Bhannes 152.02 288 *e*P **PKPbc 04 00 18.8 +1.1**
BZK Bozkurt 152.09 305 *e*P **PKPbc 04 00 18.4 +1.0**
CORM Corum 152.09 301 *e*P **PKPbc 04 00 17.9 +0.2**
DQRL Deir Qamar 152.09 287 *e*P **PKPbc 04 00 19.2 +1.3**
KRTS Karatas 152.10 294 *e*P **PKPbc 04 00 17.9 +0.3**
MMAI Mount Meron Ar 152.23 286 PKPbc **PKPbc 04 00 19.6 +1.5**
comp=Z,74nm,0.9s,baz=66,slow=3.5,SNR=6.8
KARA Karaisali 152.28 295 *e*P **PKPbc 04 00 17.9 -0.1**
TOS Tosya 152.33 303 *e*P **PKPbc 04 00 18.2 0.0**
HRFI Mount Harif 152.35 280 *e*P **PKPbc 04 00 19.2 +0.8**
EIL Elat 152.38 279 PKP **PKPdf 04 00 12.2 +0.6**
comp=Z,11nm,1.1s,baz=120,slow=2.7,SNR=2.3
EIL PKPbc **PKiKP 04 00 19.2 +0.5**
comp=Z,58nm,0.7s,baz=121,slow=0.9,SNR=11
EIL Elat 152.38 279 *e*P **PKPbc 04 00 19.7 +1.2**
CDAG Cicekdag 152.41 300 ⇑ *i*P **PKPbc 04 00 17.7 -0.7**
NIG Nigde 152.51 297 *e*P **PKPbc 04 00 19.9 +1.1**
MUD Monsted U'grnd 152.51 353 *i* P **PKPbc 04 00 18.5 +0.7**
comp=Z,94nm,1.6s
MUD *e* 04 00 27.8
MUD Monsted U'grnd 152.51 353 *i* PKIKP **PKPbc 04 00 18.5 +0.7**
MUD *e* 04 00 27.8
MUD pmax pmax
comp=Z,94nm,1.6s
DED Mersin 152.52 294 ⇑ *i*P **PKPbc 04 00 18.4 -0.2**
ILGA Ilgaz 152.55 304 ⇑ *i*P **PKPbc 04 00 19.6 +0.8**
CANT Cankiri 152.74 303 *e*P **PKPbc 04 00 19.2 +0.2**
MERS Mersin 152.75 294 *e*P **PKPbc 04 00 19.2 0.0**
BSD Bornholm Skovb 152.84 345 *i* P **PKPbc 04 00 18.4 -0.2**
comp=Z,50nm,1.2s
BSD pmax pmax
comp=Z,50nm,1.2s
BSD Bornholm Skovb 152.84 345 *i* PKIKP **PKPbc 04 00 18.4 -0.2**
BSD pmax pmax
comp=Z,50nm,1.2s
BRTR Keskin Array B 152.94 301 PKP **PKPdf 04 00 11.8 -0.5**
comp=Z,1.6nm,0.9s,baz=131,slow=3.4,SNR=7.4
BRTR PKPbc **PKPbc 04 00 19.5 -0.1**
comp=Z,21nm,1.0s,baz=126,slow=2.1,SNR=47
KAMT Kaman 152.96 300 *e*P **PKPbc 04 00 19.5 -0.1**
KZIT Kziot 152.98 281 P **PKPbc 04 00 20.7 +0.9**
SORM Soroca 152.99 321 ⇓ *i*P **PKPbc 04 00 18.8 -0.4**
SORM Soroca 152.99 321 || PKIKP **PKPbc 04 00 18.8 -0.4**
KIZK Mersin 153.10 294 ⇓ *i*P **PKPbc 04 00 20.1 +0.3**
SULT Sultanhani-AKS 153.34 297 *e*P **PKPbc 04 00 19.5 -1.0**
KIS Kishinev 153.36 319 *e*PKP PKPab 04 00 40.0 +7.8
KIS LRM MLR 05 09 20.0
comp=Z,600nm,20.0s
KIS Kishinev 153.36 319 *e*PKP2 PKPab 04 00 40.0 +7.8
BBAL Bala 153.37 301 ⇑ *i*P **PKPbc 04 00 20.8 +0.3**
AFSR Af¨ar-Bala (A 153.43 300 *e*P **PKPbc 04 00 21.4 +0.8**
ANTO Ankara 153.53 301 *e*PKIKP **PKPdf 04 00 13.2 +0.1**
ANTO *e* 04 00 20.8
ANTO MLR MLR
comp=Z,299nm,22.0s
ANTO Ankara 153.53 301 *e*PKPdf **PKPdf 04 00 13.2 +0.1**
ANTO *e*PKPbc **PKPbc 04 00 20.8 0.0**
ANTO LR LR
comp=Z,299nm,22.0s
LOD Lodumlu 153.55 301 *e*P **PKPbc 04 00 20.8 -0.1**
ESK Eskdalemuir 153.58 8 PFAKE 04 00 20.0 -0.3
ESK LR LR
comp=Z,387nm,19.0s
KKUL Konya-Kulu 153.60 300 ⇑ *i*P **PKPbc 04 00 21.4 +0.4**
LFK Lefkose 153.71 291 *e*P **PKPbc 04 00 20.8 -0.5**
CSS Mathiatis 153.90 290 *e*PKPbc **PKPbc 04 00 21.6 -0.1**
CSS *e*PKPab **PKPab 04 00 35.5 +0.5**
CSS LR LR

comp=Z,147nm,19.0s
GKP Gorka Klasztor 153.90 341 *e*PKP **PKPbc 04 00 20.6 -0.4**
GKP Gorka Klasztor 153.90 341 *e*PKIKP **PKPbc 04 00 20.6 -0.4**
BEL Belsk 153.93 335 *e*PKP **PKPbc 04 00 21.7 +0.5**
BEL Belsk 153.93 335 *e*PKIKP **PKPbc 04 00 21.7 +0.5**
IAS Iasi 153.97 320⇑*i*P **PKPab 04 00 35.2 +0.4**
IAS Iasi 153.97 320⇑⇑PKP2 **PKPab 04 00 35.2 +0.4**
LEOM Leova 153.97 318⇑*i*P **PKPab 04 00 34.7 -0.1**
LEOM Leova 153.97 318⇑⇑PKP2 **PKPab 04 00 34.7 -0.1**
LVV L'vov 154.09 328 *e*PKIKP **PKPdf 04 00 13.5 0.0**
KONT Konya--Tatoy 154.28 297 *e*P **PKPbc 04 00 22.1 -0.3**
TLCR 154.29 315⇓*i*P **PKPbc 04 00 22.8 +0.7**
TLCR 154.29 315⇓⇓PKIKP **PKPbc 04 00 22.8 +0.7**
KIZT Kizilcal 154.46 300 *e*P **PKPbc 04 00 23.7 +0.8**
MDUB Mudurnu 154.55 303 *e*P **PKPbc 04 00 24.0 +1.0**
SVRH Sivrihisar-ESK 154.59 301 *e*P **PKPab 04 00 35.4 -2.4**
PRAR RASCA 154.60 322⇓*i*P **PKPab 04 00 36.7 -0.8**
BTAS Taskesti 154.66 304⇑*i*P **PKPab 04 00 38.2 +0.1**
CFR Carcaliu 154.71 316⇑*i*P **PKPbc 04 00 22.2 -0.8**
CFR Carcaliu 154.71 316⇑⇑PKIKP **PKPbc 04 00 22.2 -0.8**
KWP Kalwaria Pacla 154.83 329 *e*PKP **PKPdf 04 00 15.2 +0.6**
KWP *e* 04 00 38.7
KWP Kalwaria Pacla 154.83 329 *e*PKIKP **PKPdf 04 00 15.1 +0.6**
TESR Tescani 154.87 320⇓*i*P **PKPab 04 00 39.1 +0.4**
TIRR Tirgusor 154.90 314⇓*i*P **PKPab 04 00 39.2 +0.4**
TIRR Tirgusor 154.90 314 *e*PKIKP **PKPdf 04 00 15.1 +0.4**
TIRR *e* 04 00 23.9
TIRR *e* 04 00 38.7
TIRR Tirgusor 154.90 314 *e*PKPdf **PKPdf 04 00 15.1 +0.4**
TIRR *e*PKPbc **PKiKP 04 00 23.9 +0.4**
TIRR *e*PKPab **PKPab 04 00 38.7 -0.1**
BURAR Bucovina Array 154.98 323⇓*i*P PKPdf 04 00 23.0 +8.1
BURAR Bucovina Array 154.98 323⇓⇓PKIKP PKPdf 04 00 23.0 +8.1
GULT Gulveren 155.06 304 *e*P PKPdf 04 00 23.1 +7.9
TLB Topalu 155.07 315⇑*i*P **PKPab 04 00 38.8 -0.7**
TLB Topalu 155.07 315⇑⇑PKP2 **PKPab 04 00 38.8 -0.7**
HARR Harsova 155.08 315⇑*i*P **PKPab 04 00 34.6 -5.0**
HARR Harsova 155.08 315⇑⇑PKP2 **PKPab 04 00 34.6 -5.0**
VRI Vrincioaia 155.19 318⇑*i*P **PKPab 04 00 40.7 +0.6**
VRI Vrincioaia 155.19 318⇑⇑PKP2 **PKPab 04 00 40.7 +0.6**
PLOR Plostina 155.24 318⇑*i*P **PKPab 04 00 41.1 +0.8**
PLOR Plostina 155.24 318⇑⇑PKP2 **PKPab 04 00 41.1 +0.8**
PSN Preselentsi 155.41 313 P **PKPab 04 00 41.0 0.0**
SUTC Sutluce-Ispart 155.43 297 *e*P **PKPdf 04 00 21.6 +5.7**
SILT Sile 155.44 306 *e*P **PKPab 04 00 40.4 -0.9**
KOLS Kolonicke sedl 155.53 329 *e*PKIKP **PKPdf 04 00 15.9 +0.4**
KOLS *e* 04 00 26.2
KOLS *e* 04 00 41.4
KOLS Kolonicke sedl 155.53 329 *e*PKP **PKPdf 04 00 15.9 +0.4**
KOLS *e* 04 00 26.2
KOLS *e* 04 00 41.4
HRT Hereke 155.54 305 *e*P **PKPab 04 00 40.9 -0.9**
OJC Ojcow 155.60 334 *e*PKP **PKPdf 04 00 15.4 -0.1**
OJC Ojcow 155.60 334 *e*PKIKP **PKPdf 04 00 15.4 -0.1**
STHS Stebnicka Huta 155.63 331 *e*PKIKP **PKPdf 04 00 16.6 +1.0**
STHS Stebnicka Huta 155.63 331 *e*PKP **PKPdf 04 00 16.6 +1.0**
STHS *e* 04 00 42.6
ISR Istrita 155.71 317⇓*i*P **PKPab 04 00 43.5 +1.1**
ISR Istrita 155.71 317⇓⇓PKP2 **PKPab 04 00 43.5 +1.1**
UZH Uzhgorod 155.74 328 *e*PKP2 **PKPab 04 00 36.4 -5.9**
MLR Muntele Rosu 155.85 318⇓*i*P **PKPab 04 00 42.2 -0.9**
MLR Muntele Rosu 155.85 318⇓⇓PKP2 **PKPab 04 00 42.2 -0.9**
ISK Istanbul-Kandi 155.89 306 *e*P **PKPab 04 00 40.9 -2.3**
DOPR Dopca 155.90 320⇓*i*P **PKPab 04 00 43.8 +0.7**
CRVS Cervenica-Dubn 155.92 330 *e*PKIKP **PKPdf 04 00 16.3 +0.3**
CRVS *e* 04 00 43.2
CRVS Cervenica-Dubn 155.92 330 *e*PKP **PKPdf 04 00 16.3 +0.3**
CRVS *e* 04 00 43.2
TRPA Tarpa 155.98 327⇑*e*PP **PKPdf 04 00 14.7 -1.4**
TRPA *e*PKPdf **PKPab 04 00 43.2 -0.1**
NIE Niedzica 156.03 332 *e*PKP **PKPdf 04 00 16.1 -0.1**
NIE *e* 04 00 42.9
NIE Niedzica 156.03 332 *e*PKIKP **PKPdf 04 00 16.1 -0.1**
NIE *e* 04 00 42.9
SECR 156.03 317⇑*i*P **PKPab 04 00 43.9 +0.2**
TVSB Tavsanli 156.12 302 *e*P **PKPab 04 00 43.8 -0.6**
PRD Provadia 156.13 312 P **PKPab 04 00 45.0 +0.8**
ARMT Armutlu 156.20 305 *e*P **PKPab 04 00 44.0 -0.6**
CTKS Kestanelik-??a 156.21 307 *e*P PKPdf 04 00 25.5 +8.9
DBIC Dimbokro 156.27 160 PKPab **PKPab 04 00 46.0 +0.7**
comp=Z,11nm,1.0s,baz=235,slow=6.8,SNR=4.2
KSP Ksiaz 156.31 339 *e*PKP **PKPdf 04 00 17.1 +0.7**
KSP *e* 04 00 45.2
KSP Ksiaz 156.31 339 *e*PKIKP **PKPdf 04 00 17.1 +0.7**
VOIR 156.40 319⇓*i*P **PKPab 04 00 42.2 -3.2**
VOIR 156.40 319⇓⇓PKP2 **PKPab 04 00 42.2 -3.2**
OKC Ostrava-Krasne 156.53 335 *e*PKPAB **PKPab 04 00 45.8 +0.2**
OKC AMS AMS 05 13 00.0
comp=Z,300nm,19.0s
OKC Ostrava-Krasne 156.53 335 *e*PKP2 **PKPab 04 00 45.8 +0.2**
OKC MLR MLR
comp=Z,300nm,19.0s
LANS Liptovska Anna 156.58 332 *e*PKIKP **PKPdf 04 00 18.5 +1.6**
LANS Liptovska Anna 156.58 332 *e*PKP **PKPdf 04 00 18.5 +1.6**
LANS *e* 04 00 46.7
KECS Kecovo 156.66 330 *e*PKP2 **PKPab 04 00 46.3 +0.1**
KECS Kecovo 156.66 330 *e*PKP **PKPab 04 00 46.3 +0.1**
KCTX Karacabey (Bur 156.67 305 *e*P **PKPab 04 00 47.2 +0.5**
ARR Arges 156.68 319⇑*i*P **PKPab 04 00 46.5 0.0**
UPC Upice 156.69 339 *e*PKPDF **PKPdf 04 00 17.4 +0.4**
UPC ⇑*e*PKP **pPKPdf 04 00 30.5 +3.7**
UPC *e*PKPAB **PKPab 04 00 46.6 +0.3**
UPC AMS AMS 05 21 00.0
comp=Z,400nm,19.1s
UPC Upice 156.69 339 *e*PKIKP **PKPdf 04 00 17.4 +0.4**
UPC *e* 04 00 30.5
UPC MLR MLR
comp=Z,400nm,19.1s
DPC Dobruska-Polom 156.73 338 *e*PKPDF **PKPdf 04 00 17.5 +0.4**
DPC ⇑*e*PKP **pPKPdf 04 00 28.2 +1.3**
DPC *e*PKPAB **PKPab 04 00 47.2 +0.7**
DPC AMS AMS 05 25 50.0
comp=Z,300nm,20.2s
DPC Dobruska-Polom 156.73 338 *e*PKIKP **PKPdf 04 00 17.5 +0.4**
DPC *e* 04 00 28.2
DPC MLR MLR
comp=Z,300nm,20.2s
CLL Collm 156.80 344 *e*PKPdf **PKPdf 04 00 15.0 -2.0**
CLL *e*pPKPdiff **pPKPdf 04 00 28.0 +1.1**
CLL *e*PKPab **PKPab 04 00 46.0 -0.7**
comp=Z,32nm,1.0s
CLL *e*pPKPab **pPKPab 04 00 55.0 -1.2**
CLL *e*PP **PP 04 04 19.0 -5.5**
CLL *e*PPP PPP 04 09 00.0
CLL *e*PSKS 04 14 45.0
CLL *e*PPS PPS 04 15 36.0
CLL *e*SS SS 04 24 18.0 +3.5
CLL *e*SSS SSS 04 30 12.0
CLL *e*SSSS 04 34 48.0
CLL LmV 05 16 00.0
comp=Z,300nm,20.9s
CLL Collm 156.80 344 *e*PKIKP **PKPdf 04 00 15.0 -2.0**
CLL pmax pmax
comp=Z,32nm,1.0s
CLL MLR MLR
comp=Z,300nm,20.9s
MORC Moravsky Berou 156.80 336⇓*i*P **PKPab 04 00 47.0 +0.2**
MORC Moravsky Berou 156.80 336⇓⇓PKP2 **PKPab 04 00 47.0 +0.2**
KRLC Kraliky 156.81 337 *e*PKPDF **PKPdf 04 00 17.6 +0.4**
KRLC *e*PKPAB **PKPab 04 00 46.7 -0.2**
KRLC Kraliky 156.81 337 *e*PKIKP **PKPdf 04 00 17.6 +0.4**
DRGR 156.82 324⇑*i*P **PKPab 04 00 47.2 +0.1**
DRGR 156.82 324⇑⇑PKP2 **PKPab 04 00 47.2 +0.1**
HUMR Humele 156.96 317⇑*i*P **PKPab 04 00 47.9 +0.2**
BRG Berggiesshubel 156.96 342 *e*PKP **PKPdf 04 00 17.7 +0.4**
comp=Z,20nm,1.9s
BRG *i* 04 00 47.0
comp=Z,36nm,1.3s
BRG *e*PP **PP 04 04 22.9 -2.5**
comp=Z,14nm,1.8s
BRG SS SS 04 24 18.0 +1.6
comp=N,298nm,26.7s
comp=E,249nm,20.8s
comp=Z,354nm,19.4s
BRG Berggiesshubel 156.96 342 *e*PKIKP **PKPdf 04 00 17.7 +0.4**
BRG *e* 04 04 22.9
BRG SS SS 04 24 18.0 +1.6
BRG pmax pmax
comp=Z,20nm,1.9s
BRG pmax pmax
comp=Z,14nm,1.8s
BRG MLR MLR
comp=N,298nm,26.7s
BRG MLR MLR
comp=E,249nm,20.8s
BRG MLR MLR
comp=Z,354nm,19.4s
KULA Kula-Manisa 156.99 300 *e*P **PKPab 04 00 49.0 +0.9**
EDC Edincik 156.99 305 *e*P **PKPab 04 00 47.4 -0.6**
SZH Strazhica 157.04 314 P **PKPab 04 00 48.0 -0.1**
PVCC Panska Ves 157.10 341 *e*PKPAB **PKPab 04 00 48.2 +0.2**
PVCC *ex* x 04 01 00.5
PVCC AMS AMS 05 16 20.0
comp=Z,300nm,16.8s
PVCC Panska Ves 157.10 341 *e*PKP2 **PKPab 04 00 48.2 +0.2**
PVCC MLR MLR
comp=Z,300nm,16.8s
LOT Lotru 157.12 320⇓*i*P **PKPab 04 00 48.6 +0.1**
ZIMR 157.20 315⇓*i*P **PKPab 04 00 48.0 -0.7**
ZIMR 157.20 315⇓⇓PKP2 **PKPab 04 00 48.0 -0.7**
PSZ Piszkesteto 157.35 330⇑*i*P **PKPab 04 00 49.3 0.0**
PSZ Piszkesteto 157.35 330⇑⇑PKP2 **PKPab 04 00 49.3 0.0**
PSZ Piszkesteto 157.35 330 PFAKE 04 00 30.0 +12
PSZ LR LR
comp=Z,406nm,20.0s
PSZ Piszkesteto 157.35 330⇑*e*PP **PKPdf 04 00 17.6 -0.4**
PSZ *ep*PKPdf **PKPab 04 00 49.5 +0.2**
SART Tekirdag 157.35 307⇑*i*P **PKPab 04 00 48.4 -1.2**
VYHS Vyhne 157.35 332 *e*PKIKP **PKPdf 04 00 18.4 +0.5**
VYHS Vyhne 157.35 332 *e*PKP **PKPdf 04 00 18.4 +0.5**
VYHS *e* 04 00 49.3
VYHS *e* 04 00 49.5
RKY Sarkoy-Tekirda 157.35 307 *e*P **PKPab 04 00 48.5 -1.1**
KRBG Karabiga-Canak 157.38 306 *e*P **PKPab 04 00 48.0 -1.7**
BALY Balya 157.38 304⇑*i*P **PKPab 04 00 49.6 -0.1**
VRAC Vranov 157.53 337⇓*i*P **PKPab 04 00 50.3 +0.3**
VRAC Vranov 157.53 337⇓⇓PKP2 **PKPab 04 00 50.3 +0.3**
GOPC GO Pecny, Ondr 157.59 340 *e*PKPAB **PKPab 04 00 50.3 +0.1**
GOPC AMS AMS 05 16 10.0
comp=Z,400nm,20.6s
GOPC GO Pecny, Ondr 157.59 340 *e*PKP2 **PKPab 04 00 50.3 +0.1**
GOPC MLR MLR
comp=Z,400nm,20.6s
PRU Pruhonice 157.59 341 *e*PKPAB **PKPab 04 00 50.2 0.0**
PRU AMS AMS 05 19 40.0
comp=Z,300nm,19.9s
PRU Pruhonice 157.59 341 *e*PKP2 **PKPab 04 00 50.2 0.0**
PRU MLR MLR
comp=Z,300nm,19.9s
GZR Gura Zlata 157.70 321⇓*i*P **PKPab 04 00 51.2 +0.3**
GZR Gura Zlata 157.70 321⇓⇓PKP2 **PKPab 04 00 51.2 +0.3**
ERIK Erikli-Kesan 157.82 307 *e*P **PKPab 04 00 51.4 -0.2**
TREC Trest 157.91 338 *e*PKPDF **PKPdf 04 00 18.8 +0.2**
TREC *e*PKPAB **PKPab 04 00 51.8 +0.2**
TREC *ep*PKP **pPKPab 04 01 02.1 +0.9**
TREC AMS AMS 05 20 50.0
comp=Z,400nm,19.2s
TREC Trest 157.91 338 *e*PKIKP **PKPdf 04 00 18.8 +0.2**
TREC MLR MLR
comp=Z,400nm,19.2s
NKC Novy Kostel 157.93 344 *e*PKPAB **PKPab 04 00 51.5 -0.1**
NKC *ep*PKP **pPKPab 04 01 02.1 +0.9**
NKC Novy Kostel 157.93 344 *e*PKP2 **PKPab 04 00 51.5 -0.1**
ENIZ Enez 158.05 307 *e*P **PKPab 04 00 52.7 +0.2**
ALN Alexandroupoli 158.06 308 *e*P **PKPab 04 00 51.2 -1.3**
BZS Buzias 158.17 323⇓*i*P **PKPab 04 00 51.3 -1.5**
BZS Buzias 158.17 323⇓⇓PKP2 **PKPab 04 00 51.3 -1.5**
MPEP Malo Peshtene 158.36 316 P **PKPab 04 00 54.0 +0.2**
BODT Bodrum 158.40 297 *e*P **PKPab 04 00 52.9 -1.3**
GADA Gvkgeada 158.44 306 *e*P **PKPab 04 00 54.0 -0.3**
BOZC Bozcaada 158.47 305⇑*i*P **PKPab 04 00 54.0 -0.4**
PGB Panagyurishte 158.52 314 P **PKPab 04 00 55.0 +0.4**
MEM Membach 158.59 355 PKPab **PKPab 04 00 54.5 +0.1**
KHC Kasperske Hory 158.64 341 *e*PKPDF **PKPdf 04 00 19.3 -0.2**
KHC ⇑*e*PKP **pPKPdf 04 00 32.2 +2.9**
KHC *e*PKPAB **PKPab 04 00 55.0 +0.2**
KHC *ep*PKP **pPKPab 04 01 05.6 +1.3**
KHC *e*PP **PP 04 04 31.6 -3.2**
KHC AMS AMS 05 22 50.0
comp=Z,400nm,18.9s
KHC Kasperske Hory 158.64 341 *e*PKIKP **PKPdf 04 00 19.3 -0.2**
KHC *e* 04 00 32.2
KHC *e* 04 00 55.0
KHC *e* 04 04 31.6
KHC MLR MLR
comp=Z,400nm,18.9s
KHC Kasperske Hory 158.64 341 *e*PKPdf **PKPdf 04 00 18.3 -1.2**
KHC *e*PKPab **PKPab 04 00 54.6 -0.2**
MDVR Moldovita 158.67 322⇑*i*P **PKPab 04 00 54.8 -0.3**
SNF Seneffe 158.78 358 PKPab **PKPab 04 00 55.0 -0.2**
BCLA Clavier 158.83 356 PKPab **PKPab 04 00 55.0 -0.5**
GERES GERESS Array B 158.86 340 PKP **PKPdf 04 00 19.6 -0.2**
comp=Z,2.4nm,1.0s,baz=37,slow=0.7,SNR=9.6
GERES PKPab **PKPab 04 00 54.9 -0.9**
comp=Z,4.8nm,1.0s,baz=35,slow=4.9,SNR=12
CONA Conrad Observa 158.96 336 *e*PKPab **PKPab 04 00 56.8 +0.5**
comp=Z,13nm,0.9s,SNR=8.3
VTS Vitosha 159.10 315⇓*i*P **PKPab 04 00 56.8 -0.4**
VTS Vitosha 159.10 315⇓⇓PKP2 **PKPab 04 00 56.8 -0.4**
VTS Vitosha 159.10 315 P **PKPab 04 00 57.4 +0.2**
DOU Dourbes 159.18 357 PKPab **PKPab 04 00 57.1 +0.1**
WLF Walferdange 159.52 354 PKPab **PKPab 04 00 58.9 +0.5**
WLF Walferdange 159.52 354 PFAKE 04 00 30.0 +10
WLF LR LR
comp=Z,578nm,22.0s
KKB Krupnik 159.57 313 P **PKPab 04 00 59.0 -0.1**
MOA Molin 159.57 338 *i* PKPab **PKPab 04 00 59.5 +0.6**
comp=Z,7.8nm,0.8s,SNR=6.1
ARSA Arzberg 159.65 335 *i* PKPab **PKPab 04 00 59.0 -0.2**
comp=Z,3.6nm,0.7s,SNR=5.4
SANT Santorini 160.01 296 PFAKE 04 00 30.0 +8.5
SANT LR LR
comp=Z,245nm,20.0s
VAY Valandovo 160.18 312 *i* PKP **PKPab 04 01 02.2 +0.5**
SOKA Soboth 160.32 335 *i* PKPab **PKPab 04 01 01.9 -0.3**
comp=Z,1.9nm,0.3s,SNR=11
PERS Pernice 160.32 335 *e*PKPab **PKPab 04 01 01.6 -0.6**
SKO Skopje 160.54 315 *i* PKP **PKPab 04 01 04.6 +1.3**
KBA Koelnbreinsper 160.55 339 *i* PKPab **PKPab 04 01 03.6 +0.3**
comp=Z,4.8nm,0.8s
BFO Black Forest 160.57 350 PFAKE 04 00 30.0 +8.3
BFO LR LR
comp=Z,233nm,20.0s
OBKA Obir 160.64 336 *i* PKPab **PKPab 04 01 03.5 -0.2**
comp=Z,6.3nm,0.7s
WATA Walderalm 160.83 342 *i* PKPab **PKPab 04 01 04.3 -0.2**
comp=Z,1.8nm,0.4s
MYKA Terra Mystica 160.85 338 *i* PKPab **PKPab 04 01 04.1 -0.4**
comp=Z,8.3nm,0.7s,SNR=5.5
WTTA Wattenberg 160.88 342 *i* PKPab **PKPab 04 01 05.0 +0.3**
comp=Z,4.2nm,0.5s,SNR=5.1
RETA Reutte 160.89 344 *i* PKPab **PKPab 04 01 04.9 +0.2**
comp=Z,4.4nm,0.7s,SNR=5.7
MOTA Moosalm 160.94 343 *i* PKPab **PKPab 04 01 05.0 0.0**
comp=Z,5.6nm,0.8s,SNR=5.8
LJU Ljubljana 161.04 335 *e*PKPdf **PKPdf 04 00 22.0 -0.3**
LJU *i* PKPab **PKPab 04 01 04.3 -1.0**
ABTA Abfaltersbach 161.10 340 *i* PKPab **PKPab 04 01 05.0 -0.6**
comp=Z,9.5nm,0.8s,SNR=8.3
BOJS Bojanci 161.21 333 *i* PKPdf **PKPdf 04 00 22.0 -0.4**
BOJS *e* 04 00 48.2
BOJS *e*PKPab **PKPab 04 01 04.9 -1.1**
DAVA Damuels 161.28 346 *i* PKPab **PKPab 04 01 05.1 -1.4**
comp=Z,5.6nm,0.7s
OHR Ohrid 161.42 314 *i* PKP **PKPab 04 01 07.5 +0.2**
AGG Agios Georgios 161.44 307 *e*P **PKPab 04 01 06.6 -0.8**
PDG Podgorica 161.55 320⇓*i*P **PKPab 04 01 07.8 +0.2**
TIR Tirane 161.86 316⇑*i*P **PKPab 04 01 09.5 +0.4**
TIR Tirane 161.86 316⇑⇑PKP2 **PKPab 04 01 09.5 +0.4**
TIR Tirane 161.86 316 PFAKE 04 00 30.0 +6.8
TIR LR LR
comp=Z,546nm,21.0s
TUE Stuetta 162.17 346 *e*PKPdf **PKPdf 04 00 23.6 0.0**
TUE *e*PKPab **PKPab 04 01 10.0 -0.4**
TUE LR LR
comp=Z,559nm,19.0s
TORD Torodi Ar. Bea 163.89 175 PKP **PKPdf 04 00 26.4 +0.4**
comp=Z,7.9nm,1.1s,baz=340,slow=0.9,SNR=25
TORD PKPab **PKPab 04 01 19.7 +1.3**
comp=Z,15nm,0.9s,baz=192,slow=3.7,SNR=17
TORD PKKP 04 08 22.4
comp=Z,1.1nm,1.0s,baz=21,slow=6.3,SNR=4.4
SSB Saint Sauveur 163.99 356 PFAKE 04 00 40.0 +15
SSB LR LR
comp=Z,424nm,22.0s
BNI Bardonecchia 164.01 351 PFAKE 04 00 40.0 +15
BNI LR LR
comp=Z,564nm,22.0s
VLC Villacollemand 164.08 341 PFAKE 04 00 40.0 +15
VLC LR LR
comp=Z,168nm,21.0s
AQU L'Aquila 164.56 330 PFAKE 04 00 40.0 +14
AQU LR LR
comp=Z,431nm,20.0s
TIP Timpagrande 165.06 315 *e*PKPdf **PKPdf 04 00 26.3 -0.2**
TIP *e*PKPab **PKPab 04 01 23.7 +0.4**
TIP LR LR
comp=Z,371nm,21.0s
CUC Castrocucco 165.10 319 PFAKE 04 00 40.0 +14
CUC LR LR
comp=Z,188nm,19.0s
MTE Manteigas 165.85 36 PFAKE 04 00 40.0 +13
MTE LR LR
comp=Z,654nm,19.0s
CEL Celeste 166.15 314 PFAKE 04 00 40.0 +13
CEL LR LR
comp=Z,366nm,21.0s
PAB San Pablo 168.03 29 PFAKE 04 00 40.0 +11
PAB LR LR
comp=Z,472nm,20.0s
ESDC Sonseca Array 168.08 28 PKP **PKPdf 04 00 28.3 -0.4**
comp=Z,1.3nm,0.7s,baz=338,slow=2.0,SNR=10
ESDC PKPab **PKPab 04 01 36.0 -0.5**
comp=Z,3.8nm,0.9s,baz=315,slow=3.6,SNR=9.4
WDD Wied Dalam 168.41 307 PFAKE 04 00 40.0 +11
WDD LR LR
comp=Z,401nm,19.0s
VSL Villasalto 168.60 335 PFAKE 04 00 40.0 +11
VSL LR LR
comp=Z,394nm,20.0s
KEST Kesra 171.72 323 PKP **PKPdf 04 00 31.4 +0.4**
comp=Z,4.4nm,0.9s,baz=234,slow=4.5,SNR=3.9
KEST PKPab **PKPab 04 01 51.7 -1.1**
comp=Z,6.3nm,1.0s,baz=167,slow=3.7,SNR=4.2
TAM Tamanrasset 173.20 199 *e*PKIKP **PKPdf 04 00 33.1 +1.0**
TAM *e* 04 01 59.9
TAM MLR MLR
comp=Z,469nm,19.0s
TAM Tamanrasset 173.20 199 *e*PKPdf **PKPdf 04 00 33.0 +1.0**
TAM *e*PKPab **PKPab 04 01 59.9 +0.3**
TAM LR LR
comp=Z,469nm,19.0s

NEIC ***08*** *03:48:25.2±0.8, 28.67S×177.03W, h10km, mb4.3/2, Error ellipse: s-maj=26.9km s-min=16.5km az=141.0*
IDC ***08*** *03:48:25.5±1.8, 28.53S×177.32W, h0km, mb4.0/2, mb1 4.3/2, mb1mx3.8/22, mbtmp4.0/2, Error ellipse: s-maj=59.0km s-min=20.5km az=120.0*
ISCJB ***08*** *03:48:27.9±1.1, 28.7S±0.2×177.0W±0.2, h48km, mb4.3/6, Error ellipse: s-maj=30.0km s-min=12.7km az=141.4*

ISC 08 03:48:30.1±1.1, 28.8S±0.2×177.1W±0.2, h48km, n11, σ0.95/11, mb4.2/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.89**	**235**	Pn	**Pn**	**03 48 45.8**	**-0.5**
	573nm,0.3s,baz=90,slow=20,SNR=3.1						
RAO				Sn	**Sn**	**03 48 58.5**	**+0.3**
	487nm,0.3s,baz=60,slow=20,SNR=4.9						
ASAR	**Alice Springs**	**44.03**	**265**	P	**P**	**03 56 33.5**	**+0.1**
	1.2nm,0.5s,baz=102,slow=6.6,SNR=11						
WRAB	**Tennant Creek**	**44.86**	**270**	*e*P	**P**	**03 56 40.0**	**+0.1**
	3.3nm,0.7s						
WRA	**Warramunga Arr**	**44.87**	**270**	P	**P**	**03 56 40.0**	**0.0**
	1.8nm,0.7s,baz=110,slow=7.2,SNR=8.8						
SBA	**Scott Base**	**49.74**	**184**	*e*P	**P**	**03 57 16.9**	**-0.2**
	2.0nm,0.8s						
KKM	**Kota Kinabalu**	**72.83**	**287**	*e*P	**P**	**03 59 53.5**	**-0.8**
	3.3nm,0.5s						
CMB	**Columbia Colle**	**85.00**	**41**	*e*P	**P**	**04 00 59.8**	**-0.6**
	5.3nm,0.5s						
FINES	**FINESS Array B**	**143.86**	**341**	PKhKP	PKPpre	04 07 57.0	
	0.9nm,0.5s,baz=46,slow=5.5,SNR=7.2						
NOA	**NORSAR Array B**	**147.23**	**353**	PKPbc	**PKPab**	**04 08 09.0**	**-0.3**
	0.8nm,0.7s,baz=15,slow=4.5,SNR=3.1						
AKASG	**Malin Array Be**	**150.44**	**325**	PKPbc	**PKPbc**	**04 08 16.9**	**+1.0**
	0.8nm,0.5s,baz=50,slow=3.3,SNR=4.0						
MMAI	**Mount Meron Ar**	**151.86**	**287**	PKPbc	**PKPbc**	**04 08 22.2**	**+2.2**
	0.4nm,0.3s,baz=86,slow=5.9,SNR=2.7						

IDC 08 03:50:25.1±1.3, 28.76S×176.83W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/23, mbtmp3.7/2, Error ellipse: s-maj=54.6km s-min=22.8km az=151.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.07**	**242**	Pn	Pn	03 50 48.5	+1.2
	516nm,0.3s,baz=348,slow=22,SNR=6.7						
RAO				Sn	Sn	03 51 02.9	0.0
	1µm,0.3s,baz=64,slow=20,SNR=8.1						
ASAR	**Alice Springs**	**44.24**	**265**	P	P	03 58 36.3	-0.2
	0.6nm,0.5s,baz=107,slow=7.2,SNR=4.1						
WRA	**Warramunga Arr**	**45.09**	**270**	P	P	03 58 42.2	-1.0
	0.7nm,0.5s,baz=110,slow=6.2,SNR=7.1						
FINES	**FINESS Array B**	**143.94**	**341**	PKP	PKPbc	04 10 00.5	+0.9
	1.1nm,0.7s,baz=46,slow=5.5,SNR=4.2						
NOA	**NORSAR Array B**	**147.27**	**353**	PKPbc	PKPbc	04 10 08.9	-1.0
	0.5nm,0.7s,baz=14,slow=4.3,SNR=2.7						
AKASG	**Malin Array Be**	**150.57**	**325**	PKPbc	PKPbc	04 10 19.2	+0.6
	0.5nm,0.4s,baz=48,slow=3.0,SNR=3.9						
TORD	**Torodi Ar. Bea**	**164.41**	**175**	PKPab	PKPab	04 11 24.7	-0.8
	0.4nm,0.8s,baz=197,slow=3.0,SNR=2.6						

ISCJB ***08*** *03:51:39.9±0.9, 58.6S±0.2×25.8W±0.3, h107km, mb4.1/6, Error ellipse: s-maj=26.2km s-min=21.1km az=156.3*
IDC ***08*** *03:51:50.3±7.1, 58.6OS×26.09W, h196km±66km, mb3.8/6, mb1 3.9/6, mb1mx3.4/32, mbtmp4.3/6, MS4.5/1, Ms1 4.5/1, ms1mx3.2/23, Error ellipse: s-maj=25.2km s-min=20.6km az=126.0*

ISC 08 03:51:40.3±0.8, 58.5S±0.2×26.1W±0.2, h107km, n10, σ1.33/10, mb4.1/6, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
USHA	**Ushuaia**	**23.27**	**261**	P	**P**	**03 56 39.5**	**+1.5**
	37nm,0.9s,baz=127,slow=10,SNR=2.9						
USHA				LR	LR	04 04 27.7	
	comp=Z,1µm,18.2s,baz=312,slow=33						
MAW	**Mawson**	**37.83**	**141**	P	**P**	**03 58 46.7**	**+0.8**
	2.0nm,0.7s,baz=254,slow=7.0,SNR=5.6						
VNDA	**Vanda**	**44.14**	**182**	P	**P**	**03 59 38.1**	**+0.7**
	1.2nm,0.5s,baz=185,slow=6.2,SNR=13						
BOSA	**Boshof**	**46.07**	**72**	P	**P**	**03 59 53.8**	**+0.4**
	2.8nm,0.6s,baz=213,slow=6.2,SNR=5.9						
TORD	**Torodi Ar. Bea**	**74.92**	**28**	P	**P**	**04 03 10.7**	**+1.3**
	1.1nm,0.6s,baz=199,slow=6.2,SNR=15						
ASAR	**Alice Springs**	**96.47**	**162**	P	**P**	**04 04 55.8**	**-1.7**
	0.3nm,0.4s,baz=188,slow=4.2,SNR=4.2						
FINES	**FINESS Array B**	**126.28**	**28**	PKP	**PKPdf**	**04 10 27.9**	**-0.8**
	0.8nm,0.6s,baz=192,slow=4.1,SNR=3.4						
YKA	**Yellowknife Ar**	**138.37**	**316**	PKP	**PKPdf**	**04 10 50.5**	**-0.9**
	0.2nm,0.5s,baz=133,slow=2.2,SNR=6.4						
SONM	**Songino Array**	**150.21**	**90**	PKPbc	**PKPbc**	**04 11 16.9**	**-0.9**
	0.9nm,0.6s,baz=239,slow=2.4,SNR=4.5						
ILAR	**Eielson Array**	**152.15**	**308**	PKPbc	**PKPbc**	**04 11 20.1**	**-1.4**
	0.3nm,0.5s,baz=153,slow=2.4,SNR=7.0						

CSEM ***08*** *03:56:56.7±0.1, 46.89N×6.94E, h2km, ML2.5/18, Error ellipse: s-maj=2.0km s-min=1.7km az=92.0*
ZUR ***08*** *03:56:56.7, 46.87N×6.98E, h-0km±3km, ML2.0/9*
VIE ***08*** *03:56:57.6±1.3, 46.84N×7.08E, h10km, ML1.9/4, Error ellipse: s-maj=20.3km s-min=7.6km az=170.0*
LDG ***08*** *03:56:57.3±0.1, 46.88N×6.97E, h2km, Md2.6/5, Ml2.6/12, Error ellipse: s-maj=1.8km s-min=1.3km az=94.0*
STR ***08*** *03:56:57.0±0.2, 46.90N×6.98E, h10km, Ml2.4, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 08 03:56:57.1±0.9, 46.88N±0.01×6.95E±0.02, h6km±7km, n67, σ0.72/112, 8C-2D, Switzerland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TORNY	**Torny/Romont**	**0.10**	**177**⇑	*i*Pg	**Pg**	**03 56 59.0**	**-

SCOU	**Cournillens**	**0.11**	**103**	⇑*i*Pg	**Pg**	**03 56 58.9**	**-0.5**
SCOU	**Cournillens**	**0.11**	**103**	⇑*i*Pg	**Pg**	**03 56 58.9**	**-0.5**
STAF	**Tafers**	**0.20**	**112**	⇓*i*Pg	**Pg**	**03 57 00.8**	**-0.2**
STAF				*i* Sg	**Sg**	**03 57 04.0**	**+0.4**
STAF	**Tafers**	**0.20**	**112**	⇓*i*Pg	**Pg**	**03 57 00.8**	**-0.2**
STAF				*i* Sg	**Sg**	**03 57 04.0**	**+0.4**
BRANT	**Les Verrieres**	**0.33**	**280**	⇑*i*Pg	**Pg**	**03 57 04.2**	**+0.6**
	406nm,0.4s						
BRANT				*i* Sg	**Sb**	**03 57 09.9**	**-1.2**
	406nm,0.4s						
BRANT	**Les Verrieres**	**0.33**	**280**	⇑*i*Pg	**Pg**	**03 57 04.2**	**+0.6**
	406nm,0.4s						
BRANT				*i* Sg	**Sb**	**03 57 09.9**	**-1.2**
	406nm,0.4s						
LOMF	**Lomont**	**0.48**	**350**	Pg	**Pg**	**03 57 06.4**	**0.0**
LOMF				Sg	**Sg**	**03 57 13.4**	**+0.8**
LOMF	**Lomont**	**0.48**	**350**	Pg	**Pg**	**03 57 06.4**	**0.0**
LOMF				Sg	**Sg**	**03 57 13.4**	**+0.8**
WIMIS	**Wimmis**	**0.51**	**115**	*e*Pg	**Pg**	**03 57 06.6**	**-0.3**
	165nm,0.6s						
WIMIS				*e*Sg	**Sg**	**03 57 14.2**	**+0.7**
	165nm,0.6s						
WIMIS	**Wimmis**	**0.51**	**115**	*e*Pg	**Pg**	**03 57 06.6**	**-0.3**
	165nm,0.6s						
WIMIS				*e*Sg	**Sg**	**03 57 14.2**	**+0.7**
	165nm,0.6s						
AIGLE	**Aigle**	**0.54**	**180**	*e*Pg	**Pg**	**03 57 07.4**	**0.0**
	143nm,0.6s						
AIGLE	**Aigle**	**0.54**	**180**	*e*Pg	**Pg**	**03 57 07.4**	**0.0**
	143nm,0.6s						
BOURR	**Bourrignon**	**0.55**	**20**	*e*Pg	**Pg**	**03 57 07.8**	**+0.1**
	85nm,0.7s						
BOURR	**Bourrignon**	**0.55**	**20**	*e*Pg	**Pg**	**03 57 07.8**	**+0.1**
	85nm,0.7s						
SENIN	**Lac Senin/Sane**	**0.57**	**155**	*e*Pg	**Pg**	**03 57 07.7**	**-0.3**
	45nm,0.7s						
SENIN	**Lac Senin/Sane**	**0.57**	**155**	*e*Pg	**Pg**	**03 57 07.7**	**-0.3**
	45nm,0.7s						
GIMEL	**St. Georges /**	**0.58**	**234**	⇑*i*Pg	**Pg**	**03 57 08.6**	**+0.3**
	89nm,0.2s						
GIMEL	**St. Georges /**	**0.58**	**234**	⇑*i*Pg	**Pg**	**03 57 08.6**	**+0.3**
	89nm,0.2s						
CABF	**La Chapelle**	**0.65**	**246**	*e*Pg	**Pg**	**03 57 09.7**	**+0.1**
CABF				*e*Sg	**Sg**	**03 57 18.6**	**+0.5**
	8.2nm,0.2s						
CABF	**La Chapelle**	**0.65**	**246**	*e*Pg	**Pg**	**03 57 09.7**	**+0.1**
CABF				*e*Sg	**Sg**	**03 57 18.6**	**+0.5**
	4.1nm,0.2s						
LKBD	**Leukerbad**	**0.68**	**136**	*e*Pg	**Pg**	**03 57 09.7**	**-0.4**
	18nm,0.3s						
LKBD	**Leukerbad**	**0.68**	**136**	*e*Pg	**Pg**	**03 57 09.7**	**-0.4**
	18nm,0.3s						
BALST	**Balsthal**	**0.68**	**48**	*e*Pg	**Pg**	**03 57 10.1**	**-0.1**
	107nm,0.4s						
HINF	**Hinteralfeld**	**0.94**	**356**	*e*Pg	**Pg**	**03 57 15.2**	**+0.1**
HINF				*e*Sg	**Sg**	**03 57 27.4**	**+0.1**
	57nm,0.2s						
HINF	**Hinteralfeld**	**0.94**	**356**	*e*Pg	**Pg**	**03 57 15.2**	**+0.1**
HINF				*e*Sg	**Sg**	**03 57 27.4**	**+0.1**
	29nm,0.2s						
MOF	**Molkenrain**	**0.98**	**7**	Pg	**Pg**	**03 57 15.5**	**-0.4**
MOF	**Molkenrain**	**0.98**	**7**	Pg	**Pg**	**03 57 15.5**	**-0.4**
HAU	**Haudompre**	**1.20**	**340**	*e*Pg	**Pg**	**03 57 19.9**	**-0.2**
HAU				*e*Sg	**Sg**	**03 57 35.5**	**-0.1**
	39nm,0.2s						
HAU	**Haudompre**	**1.20**	**340**	*e*Pg	**Pg**	**03 57 19.9**	**-0.2**
HAU				*e*Sg	**Sg**	**03 57 35.5**	**-0.1**
	20nm,0.2s						
RSL	**Roselend**	**1.21**	**191**	Pg	**Pg**	**03 57 19.5**	**-0.8**
RSL				Sg	**Sn**	**03 57 38.3**	**+0.8**
RSL	**Roselend**	**1.21**	**191**	Pg	**Pg**	**03 57 19.5**	**-0.8**
RSL				Sg	**Sn**	**03 57 38.3**	**+0.8**
FELD	**Feldberg im Sc**	**1.23**	**35**	Pg	**Pg**	**03 57 20.1**	**-0.5**
FELD				Sg	**Sg**	**03 57 35.9**	**-0.7**
ECH	**Echery**	**1.34**	**6**	Pg	**Pn**	**03 57 21.7**	**-0.7**
ECH				Sg	**Sb**	**03 57 40.1**	**-0.1**
ECH	**Echery**	**1.34**	**6**	Pg	**Pn**	**03 57 21.7**	**-0.7**
ECH				Sg	**Sb**	**03 57 40.1**	**-0.1**
LPL	**La Plagne**	**1.37**	**186**	*e*Pg	**Pb**	**03 57 24.4**	**+1.2**
LPL				*e*Sg	**Sn**	**03 57 41.7**	**+0.2**
	8.9nm,0.3s						
LPL	**La Plagne**	**1.37**	**186**	*e*Pg	**Pb**	**03 57 24.4**	**+1.2**
LPL				*e*Sg	**Sn**	**03 57 41.7**	**+0.2**
	4.4nm,0.3s						
LPG	**La Plagne**	**1.39**	**186**	*e*Pg	**Pb**	**03 57 24.4**	**+0.8**
LPG				*e*Sg	**Sn**	**03 57 42.2**	**+0.2**
	11nm,0.3s						
LPG	**La Plagne**	**1.39**	**186**	*e*Pg	**Pb**	**03 57 24.4**	**+0.8**
LPG				*e*Sg	**Sn**	**03 57 42.2**	**+0.2**
	5.7nm,0.3s						
LSD	**Lago del Serru**	**1.43**	**175**	P	**Pg**	**03 57 25.4**	**+1.0**
LSD				S	**Sn**	**03 57 43.8**	**+0.9**
TRAV	**Traversella**	**1.47**	**158**	P	**Pg**	**03 57 25.4**	**+0.1**
TRAV				S	**Sg**	**03 57 44.9**	**+0.5**
THEF	**They Montfort**	**1.50**	**334**	Pg	**Pn**	**03 57 24.8**	**+0.3**
THEF				Sg	**Sg**	**03 57 45.3**	**+0.1**
THEF	**They Montfort**	**1.50**	**334**	Pg	**Pn**	**03 57 24.8**	**+0.3**
THEF				Sg	**Sg**	**03 57 45.3**	**+0.1**
CDF	**Champ du Feu**	**1.55**	**8**	*e*Pg	**Pb**	**03 57 26.2**	**0.0**
CDF				*e*Sg	**Sg**	**03 57 46.4**	**-0.5**
	8.1nm,0.2s						
CDF	**Champ du Feu**	**1.55**	**8**	*e*Pg	**Pb**	**03 57 26.2**	**0.0**
CDF				*e*Sg	**Sg**	**03 57 46.4**	**-0.5**
	4.1nm,0.2s						
RSP	**Reno Superiore**	**1.75**	**173**	S	**Sb**	**03 57 51.6**	**-0.1**
SFTF	**Sexfontaines**	**1.85**	**316**	*e*Pg	**Pb**	**03 57 31.8**	**+0.4**
SFTF				*e*Sg	**Sg**	**03 57 56.2**	**-0.4**
	3.8nm,0.2s						
SFTF	**Sexfontaines**	**1.85**	**316**	*e*Pg	**Pb**	**03 57 31.8**	**+0.4**
SFTF				*e*Sg	**Sg**	**03 57 56.2**	**-0.4**
	1.9nm,0.2s						
DAVA	**Damuels**	**2.04**	**77**	Pg	**Pg**	**03 57 35.2**	**-1.0**
	0.5nm,0.1s						
DAVA				Sg	**Sg**	**03 58 02.9**	**+0.2**
	6.7nm,0.3s						
ORIF	**Oris-en-Rattie**	**2.10**	**201**	*e*Pg	**Pg**	**03 57 36.4**	**-0.9**
ORIF				*e*Sg	**Sg**	**03 58 03.3**	**-1.2**
	5.0nm,0.3s						
ORIF	**Oris-en-Rattie**	**2.10**	**201**	*e*Pg	**Pg**	**03 57 36.4**	**-0.9**
ORIF				*e*Sg	**Sg**	**03 58 03.3**	**-1.2**
	2.5nm,0.3s						
LOR	**Lormes**	**2.15**	**282**	*e*Pg	**Pg**	**03 57 37.5**	**-0.7**
	baz=111						
LOR				*e*Sg	**Sg**	**03 58 05.2**	**-0.9**
	baz=114						
LOR	**Lormes**	**2.15**	**282**	*e*Pg	**Pg**	**03 57 37.5**	**-0.7**
LOR				*e*Sg	**Sg**	**03 58 05.2**	**-0.9**
SMF	**Signal de Mont**	**2.15**	**265**	*e*Pg	**Pg**	**03 57 37.6**	**-0.7**
SMF				*e*Sg	**Sg**	**03 58 05.2**	**-0.9**
	8.4nm,0.2s						
SMF	**Signal de Mont**	**2.15**	**265**	*e*Pg	**Pg**	**03 57 37.6**	**-0.7**
SMF				*e*Sg	**Sg**	**03 58 05.2**	**-0.9**
	4.2nm,0.2s						
MBDF	**Montbardon**	**2.16**	**183**	*e*Pg	**Pg**	**03 57 37.5**	**-0.9**
MBDF				*e*Sg	**Sg**	**03 58 05.1**	**-1.2**
	2.8nm,0.4s						
MBDF	**Montbardon**	**2.16**	**183**	*e*Pg	**Pg**	**03 57 37.5**	**-0.9**
MBDF				*e*Sg	**Sg**	**03 58 05.1**	**-1.2**
	1.4nm,0.4s						
SSF	**Saint Saulge**	**2.37**	**276**	*e*Sg	**Sg**	**03 58 11.6**	**-1.5**
SSF	**Saint Saulge**	**2.37**	**276**	*e*Sg	**Sg**	**03 58 11.6**	**-1.5**
AVF	**Avril sur Loir**	**2.47**	**269**	*e*Pg	**Pg**	**03 57 43.7**	**-0.7**
AVF				*e*Sg	**Sb**	**03 58 14.4**	**+1.8**
	2.8nm,0.2s						
AVF	**Avril sur Loir**	**2.47**	**269**	*e*Pg	**Pg**	**03 57 43.7**	**-0.7**
AVF				*e*Sg	**Sb**	**03 58 14.4**	**+1.8**
	1.4nm,0.2s						
VIVF	**Saint-Julien-l**	**2.57**	**219**	*e*Pg	**Pb**	**03 57 44.8**	**+1.2**
VIVF				*e*Sg	**Sg**	**03 58 18.6**	**-1.1**
	5.9nm,0.3s						
VIVF	**Saint-Julien-l**	**2.57**	**219**	*e*Pg	**Pb**	**03 57 44.8**	**+1.2**
VIVF				*e*Sg	**Sg**	**03 58 18.6**	**-1.1**
	3.0nm,0.3s						
FETA	**Feichten**	**2.59**	**85**	Sg	**Sg**	**03 58 20.3**	**0.0**
	0.2nm,0.1s						
RETA	**Reutte**	**2.67**	**75**	Pg	**Pg**	**03 57 46.7**	**-1.5**
RETA				Sg	**Sg**	**03 58 22.9**	**+0.1**
	0.8nm,0.2s						
MOTA	**Moosalm**	**2.87**	**79**	Sg	**Sg**	**03 58 29.1**	**-0.2**
	0.7nm,0.2s						

IDC 08 03:59:08.7±13.0, 15°10S×167°81E, h82km±112km, mb3.7/2, mb1 3.8/3, mb1mx3.3/33, mbtmp3.9/3, ML3.6/1,

Error ellipse: s-maj=138.3km s-min=45.8km az=179.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.05**	**190**	P	Pn	04 00 49.1	-0.3
	1.2nm,0.3s,baz=60,slow=20,SNR=11						
WRA	**Warramunga Arr**	**32.25**	**257**	P	P	04 05 29.9	+0.3
	0.2nm,0.4s,baz=84,slow=8.3,SNR=8.6						
WRA				PcP	PcP	04 08 15.1	-1.3
	0.3nm,0.6s,baz=75,slow=3.1,SNR=3.6						
ASAR	**Alice Springs**	**33.03**	**250**	P	P	04 05 36.5	0.0
	2.8nm,0.5s,baz=76,slow=9.1,SNR=41						
ASAR				PcP	PcP	04 08 17.1	-1.5
	0.2nm,0.3s,baz=58,slow=3.5,SNR=3.2						
ARCES	**ARCESS Array B**	**120.74**	**346**	PKP	PKPdf	04 17 51.7	+1.1
	0.7nm,0.6s,baz=11,slow=0.9,SNR=4.2						

JMA 08 04:07:04.2±0.3, 37°36N×143°96E, h51km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.34**	**299**	P	Pn	04 07 41.5	+1.4
JIO				*e*S	Sn	04 08 09.0	+1.4
JFK	**Kawauchi**	**2.46**	**271**	P	Pn	04 07 43.1	+1.2
JFK				*e*S	Sn	04 08 11.7	+1.0
OFUJ	**Ofunato**	**2.49**	**314**	P	Pn	04 07 43.2	+0.9
OFUJ				*e*S	Sn	04 08 12.3	+0.9
ONAJ	**Iwakimizuishiy**	**2.54**	**265**	P	Pn	04 07 43.9	+1.0
ONAJ				*e*S	Sn	04 08 13.7	+1.1
JMM	**Marumori**	**2.56**	**282**	P	Pn	04 07 44.2	+0.9
JMM				*e*S	Sn	04 08 14.9	+1.7
JMK	**Ichinoseki**	**2.68**	**307**	P	Pn	04 07 46.4	+1.5
JFT	**Otama**	**2.89**	**274**	P	Pn	04 07 50.1	+2.4
JOM	**Ohasama**	**2.97**	**316**	P	Pn	04 07 50.6	+1.7
JOM				*e*S	Sn	04 08 24.5	+1.2
JYK	**Kaneyama**	**3.24**	**300**	P	Pn	04 07 54.2	+1.7
BSO1	**Boso 1**	**3.62**	**223**	P	Pn	04 07 57.7	+0.4

WEL 08 04:12:19.5±0.4, 37°64S×176°44E, h159km±3km, ML3.6/13, 3C-2D, Error ellipse: s-maj=4.7km s-min=3.8km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.81**	**140**	⇑PN	Pn	04 12 43.9	+0.3
URZ				AML	AML	04 13 02.4	
URZ				SN	Sn	04 13 02.5	+0.3
MUGZ	**Murupara**	**0.87**	**163**	PN	Pn	04 12 44.6	+0.5
RUGZ	**Raukumara Rang**	**1.03**	**109**	PN	Pn	04 12 45.0	-0.4
RTZ	**Ruatahuna**	**1.06**	**157**	PN	Pn	04 12 46.0	+0.3
RTZ				SN	Sn	04 13 06.0	+0.1
HAZ	**Te Kaha**	**1.07**	**96**	PN	Pn	04 12 45.4	-0.2
HAZ				SN	Sn	04 13 05.5	-0.1
HAZ				AML	AML	04 13 05.9	
HAZ				AML	AML	04 13 05.9	
HAZ				AML	AML	04 13 06.1	
MWZ	**Matawai**	**1.10**	**129**	PN	Pn	04 12 46.3	+0.4
MWZ				SN	Sn	04 13 05.6	-0.7
MWZ				AML	AML	04 13 07.1	
RAGZ	**Rawiri**	**1.15**	**138**	PN	Pn	04 12 46.9	+0.5
RAGZ				AML	AML	04 13 07.5	
RAGZ				AML	AML	04 13 08.8	
NMHZ	**Naumai**	**1.48**	**169**	PN	Pn	04 12 48.7	-0.9
NMHZ				AML	AML	04 13 15.7	
NMHZ				AML	AML	04 13 20.7	
RIGZ	**Rimuhau**	**1.48**	**136**	PN	Pn	04 12 49.9	+0.3
RIGZ				SN	Sn	04 13 12.1	-0.7
RIGZ				AML	AML	04 13 14.8	
BKZ	**Black Stump Fm**	**1.52**	**179**	⇑PN	Pn	04 12 49.8	-0.2
WMGZ	**Waiomatatini S**	**1.57**	**97**	PN	Pn	04 12 50.4	0.0
CNGZ	**Carnagh Statio**	**1.62**	**122**	PN	Pn	04 12 51.6	+0.6
CNGZ				AML	AML	04 13 17.4	
ARHZ	**Aropaoanui**	**1.67**	**165**	PN	Pn	04 12 51.2	-0.3
ARHZ				AML	AML	04 13 17.2	
KNZ	**Kokohu**	**1.68**	**145**	PN	Pn	04 12 51.4	-0.1
PRZZ	**Paritu Road**	**1.71**	**139**	PN	Pn	04 12 52.0	+0.1
WNVZ	**Wahianoa**	**1.81**	**201**	⇓PN	Pn	04 12 53.4	+0.2
MCHZ	**McNeill Hill**	**1.81**	**174**	PN	Pn	04 12 53.2	+0.3
BHHZ	**Black Hill Sta**	**1.87**	**189**	PN	Pn	04 12 53.1	-0.6
MHGZ	**Mahia Peninsul**	**1.90**	**143**	PN	Pn	04 12 53.9	-0.1
CKHZ	**Cape Kidnapper**	**2.07**	**166**	PN	Pn	04 12 55.6	-0.3
KAHZ	**Kahuranaki**	**2.17**	**171**	PN	Pn	04 12 56.7	-0.5
KAHZ				AML	AML	04 13 27.0	
PXZ	**Pawanui**	**2.41**	**172**	PN	Pn	04 12 58.9	-1.0
TSZ	**Takapari Road**	**2.44**	**189**	PN	Pn	04 12 59.2	-1.1
ANWZ	**Angora Road**	**2.81**	**180**	⇓PN	Pn	04 13 03.4	-1.5
ANWZ				AML	AML	04 13 39.4	
ANWZ				AML	AML	04 13 39.5	
BFZ	**Birch Farm**	**3.04**	**183**	PN	Pn	04 13 05.6	-2.1
MRZ	**Mangatainoka R**	**3.09**	**192**	PN	Pn	04 13 06.0	-2.3
MRZ				AML	AML	04 13 07.6	
MRZ				AML	AML	04 13 43.8	
TIWZ	**Tintock**	**3.16**	**188**	PN	Pn	04 13 07.0	-2.1
OGWZ	**Otaki Gorge**	**3.32**	**197**	PN	Pn	04 13 08.6	-2.6
OGWZ				AML	AML	04 13 09.3	
OGWZ				AML	AML	04 13 49.3	
HOWZ	**Holdsworth Sta**	**3.33**	**192**	PN	Pn	04 13 08.6	-2.7
KIW	**Kapiti Island**	**3.43**	**200**	PN	Pn	04 13 08.7	-3.9
TMWZ	**Te Maipa**	**3.48**	**187**	PN	Pn	04 13 10.7	-2.6
MTW	**Mount Morrison**	**3.58**	**191**	PN	Pn	04 13 11.5	-3.1
CAW	**Cannon Point**	**3.62**	**197**	PN	Pn	04 13 12.1	-3.0
CAW				AML	AML	04 14 00.1	
DUWZ	**D'Urville Isla**	**3.71**	**211**	⇑PN	Pn	04 13 13.6	-2.7
TRWZ	**Traveller**	**3.79**	**189**	PN	Pn	04 13 14.2	-3.1
PAWZ	**Paruwai Farm**	**3.81**	**192**	PN	Pn	04 13 14.2	-3.4
MSWZ	**Moikau Station**	**3.88**	**193**	PN	Pn	04 13 14.9	-3.5
TCW	**Tory Channel**	**3.94**	**205**	PN	Pn	04 13 16.0	-3.1
PLWZ	**Palliser**	**4.03**	**193**	PN	Pn	04 13 16.6	-3.7
TUWZ	**Tuamarina**	**4.25**	**206**	PN	Pn	04 13 19.8	-3.3
NNZ	**Nelson**	**4.29**	**213**	PN	Pn	04 13 20.2	-3.4
THZ	**Tophouse**	**4.94**	**212**	PN	Pn	04 13 29.2	-3.0
KHZ	**Kahutara**	**5.26**	**204**	PN	Pn	04 13 32.4	-4.0

CASC 08 04:17:56.8±1.1, 9°37N×83°84W, h7km±5km, MD3.6, 1C-2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUS	**Buena Vista**	**0.20**	**25**	⇓*i*P	Pg	04 18 02.2	+1.2
BUS				*e*S	Sg	04 18 05.9	+2.1
QCR	**Quepos**	**0.32**	**279**	⇑*i*P	Pg	04 18 03.3	+0.2
QCR				*e*S	Sb	04 18 08.9	-1.4
URSC	**Urasca**	**0.46**	**8**	⇓*i*P	Pb	04 18 06.7	-0.8
URSC				*e*S	Sb	04 18 13.8	-0.8
BRU2	**Volcan**	**1.28**	**117**	*e*P	Pn	04 18 20.5	-0.7
BRU2				*e*S	Sg	04 18 37.8	-0.1
TBS2		**1.31**	**116**	*e*P	Pn	04 18 21.3	-0.4
TBS2				*e*S	Sg	04 18 38.9	0.0
JCR	**Jicaral**	**1.34**	**291**	*e*P	Pn	04 18 20.6	-1.4
JCR				*e*S	Sb	04 18 39.0	-0.7

*KRSC **08** 04:33:12.7±0.8, 53°18N×159°42E, h96km±7km, ML4.3*
*MOS **08** 04:33:12.5±0.9, 53°18N×159°20E, h111km, mb4.0/1, Error ellipse: s-maj=15.3km s-min=5.0km az=76.8*
*ISCJB **08** 04:33:13.1±0.3, 53°18N±0°03×159°28E±0°07, h105km±2km, mb3.5/12, Error ellipse: s-maj=8.6km s-min=3.4km az=33.7*
*IDC **08** 04:33:14.6±0.8, 53°43N×158°93E, h109km±6km, mb3.3/12, mb1 3.5/12, mb1mx3.4/43, mbtmp3.6/12, Error ellipse: s-maj=23.6km s-min=16.2km az=149.0*

ISC 08 04:33:13.0±0.7, 53°20N±0°03×159°34E±0°04, h97km±4km, n93, σ1978/139, mb3.6/12, 1D, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDLR	**Sedlovina**	**0.28**	**286**	PN	**Pn**	**04 33 28.1**	**+0.8**
SDLR				S	**Sn**	**04 33 39.1**	**+1.2**
SDLR	**Sedlovina**	**0.28**	**286**	*i* P	**Pn**	**04 33 28.1**	**+0.8**
SDLR				*i* S	**Sn**	**04 33 39.1**	**+1.2**
UGLR	**Uglovaya**	**0.31**	**272**	PN	**Pn**	**04 33 28.5**	**+1.1**
UGLR				S	**Sn**	**04 33 39.5**	**+1.4**
UGLR	**Uglovaya**	**0.31**	**272**	*i* P	**Pn**	**04 33 28.5**	**+1.1**
UGLR				*i* S	**Sn**	**04 33 39.5**	**+1.4**
SMAR	**Somma**	**0.33**	**281**	PN	**Pn**	**04 33 28.5**	**+0.9**
SMAR				S	**Sn**	**04 33 39.2**	**+0.7**
SMAR	**Somma**	**0.33**	**281**	*e*P	**Pn**	**04 33 28.5**	**+0.9**
SMAR				*e*S	**Sn**	**04 33 39.2**	**+0.7**
AVH	**Avacha**	**0.37**	**280**	PN	**Pn**	**04 33 28.6**	**+1.0**
AVH				S	**Sn**	**04 33 40.4**	**+1.8**
AVH	**Avacha**	**0.37**	**280**	*i* P	**Pn**	**04 33 28.6**	**+1.0**
AVH				*i* S	**Sn**	**04 33 40.4**	**+1.8**
KRER	**Koryakskii**	**0.37**	**286**	PN	**Pn**	**04 33 28.7**	**+0.9**
KRER				S	**Sn**	**04 33 40.1**	**+1.3**
KRER	**Koryakskii**	**0.37**	**286**	*i* P	**Pn**	**04 33 28.7**	**+0.9**
KRER				*i* S	**Sn**	**04 33 40.1**	**+1.3**
DALK	**Dalny**	**0.39**	**245**	PN	**Pn**	**04 33 28.4**	**+0.8**
DALK				S	**Sn**	**04 33 39.1**	**+0.5**
DALK	**Dalny**	**0.39**	**245**	*i* P	**Pn**	**04 33 28.4**	**+0.8**
DALK				*i* S	**Sn**	**04 33 39.1**	**+0.5**
SPN	**Mys Shipunski**	**0.42**	**104**	PN	**Pn**	**04 33 29.0**	**+1.1**
SPN				S	**Sn**	**04 33 40.8**	**+1.8**
SPN	**Mys Shipunski**	**0.42**	**104**	*i* P	**Pn**	**04 33 29.0**	**+1.1**
SPN				*e*S	**Sn**	**04 33 40.8**	**+1.8**
KOK	**Koryaka**	**0.43**	**282**	PN	**Pn**	**04 33 28.8**	**+0.7**
KOK				S	**Sn**	**04 33 40.4**	**+1.1**
KOK	**Koryaka**	**0.43**	**282**	*e*P	**Pn**	**04 33 28.8**	**+0.7**
KOK				*e*S	**Sn**	**04 33 40.4**	**+1.1**
KRX	**Arik**	**0.44**	**291**	PN	**Pn**	**04 33 28.9**	**+0.7**
KRX				S	**Sn**	**04 33 40.1**	**+0.6**
KRX	**Arik**	**0.44**	**291**	*i* P	**Pn**	**04 33 28.9**	**+0.7**
KRX				*e*S	**Sn**	**04 33 40.1**	**+0.6**
PET	**Petropavlovsk**	**0.45**	**247**	⇓*i*PN	**Pn**	**04 33 28.7**	**+0.7**
PET				*e*S	**Sn**	**04 33 39.9**	**+0.7**
PET				pmax	pmax		
	comp=Z,632nm,0.6s						
PET				smax	smax		
	comp=N,3μm,0.6s						
PET				smax	smax		
	comp=E,2μm,0.4s						
PET	**Petropavlovsk**	**0.45**	**247**	*i* P	**Pn**	**04 33 28.8**	**+0.7**
INSR	**Institute**	**0.46**	**253**	PN	**Pn**	**04 33 29.2**	**+1.1**
INSR				S	**Sn**	**04 33 40.5**	**+1.1**
INSR	**Institute**	**0.46**	**253**	*i* P	**Pn**	**04 33 29.2**	**+1.1**
INSR				*i* S	**Sn**	**04 33 40.5**	**+1.1**
KRMR	**Karymshinskiy**	**0.82**	**244**	PN	**Pn**	**04 33 31.9**	**+0.7**
KRMR				S	**Sn**	**04 33 46.1**	**+1.2**
KRMR	**Karymshinskiy**	**0.82**	**244**	*i* P	**Pn**	**04 33 31.9**	**+0.7**
KRMR				*i* S	**Sn**	**04 33 46.1**	**+1.2**
KII	**Karymskiy**	**0.84**	**4**	PN	**Pn**	**04 33 32.1**	**+0.6**
KII				S	**Sn**	**04 33 46.5**	**+1.1**
KII	**Karymskiy**	**0.84**	**4**	*e*P	**Pn**	**04 33 32.1**	**+0.6**
KII				*e*S	**Sn**	**04 33 46.5**	**+1.1**
RUS	**Russkaya**	**0.92**	**213**	PN	**Pn**	**04 33 33.2**	**+1.0**
RUS				S	**Sn**	**04 33 47.7**	**+1.0**
RUS	**Russkaya**	**0.92**	**213**	*i* P	**Pn**	**04 33 33.2**	**+1.0**
RUS				*i* S	**Sn**	**04 33 47.7**	**+1.0**
GNL	**Ganaly**	**0.97**	**301**	PN	**Pn**	**04 33 33.1**	**+0.1**
GNL				S	**Sn**	**04 33 47.7**	**-0.2**
GNL	**Ganaly**	**0.97**	**301**	*i* P	**Pn**	**04 33 33.1**	**+0.1**
GNL				*e*S	**Sn**	**04 33 47.7**	**-0.2**
PETK	**Petropavlovsk-**	**0.99**	**265**	P	**Pn**	**04 33 33.8**	**+0.7**
	comp=E,204nm,0.3s,baz=81,slow=15,SNR=1735						
PETK				S	**Sn**	**04 33 49.2**	**+1.0**
	comp=E,76nm,0.3s,baz=284,slow=36,SNR=34						
GRL	**Gorelyy**	**1.01**	**230**	PN	**Pn**	**04 33 35.0**	**+1.7**
GRL				S	**Sn**	**04 33 50.9**	**+2.3**
GRL	**Gorelyy**	**1.01**	**230**	P	**Pn**	**04 33 35.0**	**+1.7**
GRL				*e*S	**Sn**	**04 33 50.9**	**+2.3**
ASAK	**Asacha**	**1.20**	**227**	PN	**Pn**	**04 33 37.0**	**+1.5**
ASAK				S	**Sn**	**04 33 54.8**	**+2.4**
ASAK	**Asacha**	**1.20**	**227**	*i* P	**Pn**	**04 33 37.0**	**+1.5**
ASAK				*e*S	**Sn**	**04 33 54.8**	**+2.4**
MKZ	**Mys Kozlova**	**1.96**	**45**	PN	**Pn**	**04 33 45.8**	**+0.9**
MKZ				S	**Sn**	**04 34 09.9**	**+0.7**
MKZ	**Mys Kozlova**	**1.96**	**45**	*i* P	**Pn**	**04 33 45.8**	**+0.9**
MKZ				*e*S	**Sn**	**04 34 09.9**	**+0.7**
KZV	**Kizimen**	**2.00**	**16**	PN	**Pn**	**04 33 47.1**	**+1.6**
KZV				S	**Sn**	**04 34 12.8**	**+2.5**
KZV	**Kizimen**	**2.00**	**16**	*e*P	**Pn**	**04 33 47.1**	**+1.6**
KZV				*e*S	**Sn**	**04 34 12.8**	**+2.5**
TUMR	**Tumrok**	**2.14**	**12**	PN	**Pn**	**04 33 49.0**	**+1.7**
TUMR				S	**Sn**	**04 34 16.2**	**+2.7**
TUMR	**Tumrok**	**2.14**	**12**

comp=Z,0.2nm,0.3s,baz=17,slow=4.7,SNR=3.2

*ISCJB **08** 04:35:09.8±1.0,29°.3S±0°.2×176°.0W±0°.1,h28km,mb4.4/8, Error ellipse: s-maj=24.5km s-min=12.8km az=177.6*
*NEIC **08** 04:35:09.8±0.7,29°.2S×176°.15W,h10km,mb4.5/4,Error ellipse: s-maj=21.5km s-min=14.7km az=161.0*
*IDC **08** 04:35:09.0±1.3,29°.59S×176°.25W,h0km,mb4.2/4, mb1 4.4/4,mb1mx3.9/26,mbtmp4.2/4,MS3.6/1,Ms1 3.6/1, ms1mx2.8/27,Error ellipse: s-maj=54.5km s-min=24.0km az=7.0*

ISC 08 04:35:12.5±0.9,29°.3S±0°.2×176°.1W±0°.1,h28km,n18, σ1§05/18,mb4.5/8,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.56**	**270**	**Pn**	**Pn**	**04 35 38.4**	**+0.1**
	120nm,0.3s,baz=60,slow=20,SNR=4.9						
RAO				Sn	**Sn**	**04 35 58.2**	**+0.5**
	456nm,0.3s,baz=85,slow=22,SNR=4.7						
KHZ	**Kahutara**	**15.54**	**210**	*e*Pn	**Pn**	**04 38 50.0**	**+0.4**
RPZ	**Rata Peaks**	**17.68**	**212**	LR	LR	04 46 38.6	
	comp=Z,182nm,18.3s,baz=277,slow=40						
CTA	**Charters Tower**	**35.25**	**276**	P	**P**	**04 42 06.3**	**+1.4**
	3.2nm,0.7s,baz=90,slow=8.7,SNR=4.0						
CTAO	**Charters Tower**	**35.25**	**276**	*e*P	**P**	**04 42 05.1**	**+0.2**
	19nm,0.7s						
STKA	**Stephens Creek**	**36.32**	**255**	P	**P**	**04 42 13.5**	**-0.5**
	4.3nm,0.8s,baz=92,slow=9.0,SNR=7.1						
ASAR	**Alice Springs**	**44.81**	**265**	P	**P**	**04 43 22.6**	**-1.6**
	0.7nm,0.7s,baz=103,slow=7.5,SNR=8.6						
WRAB	**Tennant Creek**	**45.69**	**270**	*e*P	**P**	**04 43 29.7**	**-1.4**
	4.2nm,0.7s						
WRA	**Warramunga Arr**	**45.70**	**270**	P	**P**	**04 43 29.6**	**-1.7**
	5.4nm,0.8s,baz=110,slow=7.8,SNR=17						
FITZ	**Fitzroy Crossi**	**54.00**	**268**	*e*P	**P**	**04 44 33.5**	**-0.8**
	2.3nm,0.6s						
IPM	**Ipoh**	**85.94**	**277**	*e*P	**P**	**04 47 50.7**	**+0.2**
	6.0nm,0.8s						
TUC	**Tucson**	**87.14**	**50**	*e*P	**P**	**04 47 55.4**	**-0.6**
	1.8nm,0.8s						
TKM2	**Tokmak 2**	**122.09**	**305**	*e*PKPdf	**PKPdf**	**04 54 04.0**	**-0.6**
FINES	**FINESS Array B**	**144.62**	**342**	PKP	**PKPdf**	**04 54 46.2**	**+0.6**
	1.2nm,0.7s,baz=14,slow=2.4,SNR=7.4						
NB2	**NORSAR Subarra**	**147.86**	**353**	PKP	**PKPab**	**04 54 56.3**	**-0.5**
	comp=Z,0.8nm,0.8s,baz=14,slow=2.9						
NOA	**NORSAR Array B**	**147.86**	**353**	PKPbc	**PKPbc**	**04 54 55.5**	**+1.3**
	comp=Z,0.7nm,0.8s,baz=12,slow=5.0,SNR=4.7						
AKASG	**Malin Array Be**	**151.34**	**325**	PKPbc	**PKPbc**	**04 55 04.7**	**+1.6**
	comp=Z,1.8nm,0.7s,baz=44,slow=3.0,SNR=5.7						
TORD	**Torodi Ar. Bea**	**163.83**	**172**	PKPab	**PKPab**	**04 56 06.1**	**+0.3**
	comp=Z,0.7nm,0.7s,baz=198,slow=3.5,SNR=5.4						

*GUC **08** 04:41:33.8±0.3,34°.08S×72°.07W,h16km±5km,ML3.0*

ISC 08 04:41:32.0±2.8,34°.05S±0°.04×72°.2W±0°.1,h6km±18km,n14, σ2§38/26,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.38**	**156**	*i* P	**Pb**	**04 41 40.9**	**-0.2**
CHPI				*i* S	**Sb**	**04 41 46.0**	**-1.3**
NICH	**Los Niches**	**1.24**	**141**	*i* P	**Pb**	**04 41 55.5**	**-0.4**
NICH				*i* S	**Sg**	**04 42 11.7**	**-0.2**
ROC1	**El Roble**	**1.45**	**43**	*e*P	**Pb**	**04 42 00.1**	**+0.5**
ROC1				*e*S	**Sg**	**04 42 20.4**	**+1.7**
ROCH	**El Roble**	**1.46**	**43**	*i* P	**Pb**	**04 42 00.2**	**+0.6**
ROCH				*i* S	**Sg**	**04 42 20.5**	**+1.7**
ROCH				AML	AML	04 42 33.4	
	comp=E,327nm,0.6s						
CLCH	**Cerro Calan**	**1.52**	**65**	*i* P	**Pb**	**04 42 00.6**	**-0.1**
CLCH				*i* S	**Sg**	**04 42 20.9**	**0.0**
CLCH				AML	AML	04 42 34.6	
	comp=N,388nm,0.6s						
PEL	**Peldehue**	**1.54**	**55**	*i* P	**Pb**	**04 42 01.1**	**0.0**
PEL				*i* S	**Sg**	**04 42 21.8**	**+0.1**
PEL				AML	AML	04 42 31.9	
	comp=E,439nm,0.4s						
FCH	**Farellones**	**1.74**	**66**	*i* P	**Pb**	**04 42 04.6**	**+0.1**
FCH				*i* S	**Sg**	**04 42 28.1**	**+0.2**
AUSP	**Uspallata**	**2.97**	**53**	*e*P	**Pb**	**04 42 26.6**	**+1.0**
AUSP				*e*S	**Sg**	**04 43 09.5**	**+1.9**
ARCO	**CERRO ARCO**	**2.98**	**67**	*e*P	**Pg**	**04 42 27.8**	**-1.3**
ARCO				IAML		04 42 32.8	
	comp=Z,42nm,0.4s						
ARCO				*e*S	**Sg**	**04 43 11.8**	**+4.2**
ASAL	**Salagasta**	**3.16**	**64**	*e*P	**Pb**	**04 42 29.8**	**+1.1**
ASAL				*e*S	**Sg**	**04 43 16.2**	**+2.6**
RTLS	**Leoncito**	**3.31**	**48**	*e*P	**Pb**	**04 42 29.6**	**-1.6**
RTLS				*e*S	**Sg**	**04 43 19.3**	**+0.9**
AVFE	**Valle Fertil**	**5.24**	**51**	IAML		04 43 02.7	
	comp=Z,4.0nm,0.3s						
ACHE	**Chepes**	**5.48**	**60**	*e*P	**Pn**	**04 42 56.6**	**+2.3**
ACHE				*e*S	**Sb**	**04 44 08.5**	**-5.8**
AGUA	**GUANDACOL**	**5.53**	**36**	*e*P	**Pn**	**04 42 57.9**	**+3.0**
AGUA				*e*S	**Sg**	**04 44 23.9**	**-5.8**

IDC 08 04:43:33.0±2.0,31°.25S×178°.88W,h94km±19km,mb3.6/3, mb1 3.9/5,mb1mx3.6/24,mbtmp4.1/5,Error ellipse: s-maj=36.8km s-min=17.8km az=121.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**2.15**	**23**	P	Pn	04 44 06.9	-0.5
	106nm,0.3s,baz=75,slow=20,SNR=3.6						
RAO				S	Sn	04 44 34.4	+0.8
	183nm,0.3s,baz=73,slow=20,SNR=3.5						
URZ	**Urewera**	**7.73**	**204**	P	Pn	04 45 22.6	-0.2
	3.7nm,0.3s,baz=59,slow=5.9,SNR=13						
URZ				S	Sn	04 46 43.7	-5.0
	3.1nm,0.3s,baz=0.0,slow=20,SNR=8.8						
ASAR	**Alice Springs**	**42.32**	**268**	P	P	04 51 17.6	-0.2
	0.6nm,0.5s,baz=105,slow=7.1,SNR=6.8						
WRA	**Warramunga Arr**	**43.38**	**274**	P	P	04 51 26.1	-0.3
	0.7nm,0.3s,baz=111,slow=8.0,SNR=19						
FITZ	**Fitzroy Crossi**	**51.61**	**271**	P	P	04 52 30.6	+0.5
	2.8nm,0.9s,baz=135,slow=10.0,SNR=1.3						
NRIK	**Noril'sk**	**120.10**	**336**	PKP	PKPdf	05 02 12.8	+0.9
	3.3nm,0.6s,baz=90,slow=3.0,SNR=5.0						
FINES	**FINESS Array B**	**145.67**	**339**	PKPbc	PKPdf	05 02 58.2	-1.4
	2.1nm,0.6s,baz=40,slow=4.0,SNR=12						
TORD	**Torodi Ar. Bea**	**161.98**	**182**	PKPab	PKPab	05 04 09.9	-0.3
	0.2nm,0.6s,baz=166,slow=4.4,SNR=3.7						

*IDC **08** 04:49:19.8±0.6,21°.23S×179°.13W,h603km,6km,mb3.9/21, mb1 4.1/24,mb1mx4.0/32,mbtmp4.8/24, Error ellipse: s-maj=11.5km s-min=9.7km az=107.0*
*ISCJB **08** 04:49:20.3±0.8,21°.29S±0°.04×179°.34W±0°.05, h623km±10km,mb4.6/116,Error ellipse: s-maj=7.8km s-min=6.2km az=29.8*
*NEIC **08** 04:49:21.1±1.1,21°.26S×179°.29W,h620km±13km, mb4.7/98, Error ellipse: s-maj=6.9km s-min=6.1km az=115.0*

ISC 08 04:49:20.7±0.4,21°.28S±0°.05×179°.10W±0°.07, h618km±4km,h619km:pP-P,n278,σ1§45/314,mb4.7/115, 18C-4D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSVF	**Nonsavu**	**4.43**	**322**	*e*P	**P**	**04 50 50.6**	**-0.1**
AFI	**Afiamalu**	**10.12**	**45**	P	**P**	**04 51 37.9**	**-3.3**
	12nm,0.3s,baz=98,slow=1.6,SNR=13						
AFI				S	**S**	**04 53 29.2**	**-7.2**
	20nm,0.3s,baz=64,slow=21,SNR=9.0						
DZM	**Mont Dzumac**	**13.46**	**264**	P	**P**	**04 52 13.4**	**-0.5**
	1.7nm,0.3s,baz=81,slow=18,SNR=21						
DZM	**Mont Dzumac**	**13.46**	**264**	*e*P	**P**	**04 52 11.9**	**-2.0**
OUZ	**Omahuta**	**15.30**	**203**	*e*P	**P**	**04 52 31.9**	**+1.2**
	153nm,1.2s						
URZ	**Urewera**	**17.24**	**190**	P	**P**	**04 52 46.6**	**-1.8**
	20nm,0.3s,baz=262,slow=2.8,SNR=56						
URZ				S	**S**	**04 55 31.0**	**-6.1**
	1.9nm,0.3s,baz=42,slow=24,SNR=10						
URZ	**Urewera**	**17.24**	**190**	*e*P	**P**	**04 52 46.6**	**-1.8**
	43nm,0.8s						
URZ				*e*S	**S**	**04 55 35.4**	**-1.7**
BKZ	**Black Stump Fm**	**18.23**	**191**	*e*P	**P**	**04 52 55.2**	**-2.2**
	97nm,1.7s						
BKZ				*e*S	**S**	**04 55 52.4**	**-0.8**
KHZ	**Kahutara**	**21.97**	**195**	*e*P	**P**	**04 53 29.2**	**-1.7**
OXZ	**Oxford**	**23.20**	**197**	*e*P	**P**	**04 53 41.4**	**-0.5**
	43nm,0.6s						
TARA	**Tarawa**	**23.81**	**340**	*e*P	**P**	**04 53 47.3**	**-0.4**
RPZ	**Rata Peaks**	**23.83**	**198**	P	**P**	**04 53 46.7**	**-0.8**
	8.3nm,0.3s,baz=40,slow=4.8,SNR=7.9						
RPZ				S	**S**	**04 57 17.1**	**-4.4**
	15nm,1.1s,baz=357,slow=17,SNR=2.6						
CAN	**Canberra**	**31.22**	**236**	*e*P	**P**	**04 54 51.4**	**-0.5**
	7.0nm,0.7s						
CTA	**Charters Tower**	**32.40**	**266**	P	**P**	**04 55 02.0**	**0.0**
	16nm,0.4s,baz=91,slow=10,SNR=24						
CTAO	**Charters Tower**	**32.40**	**266**	*e*P	**P**	**04 55 02.0**	**0.0**
	18nm,0.5s						
PMG	**Port Moresby**	**34.53**	**285**	*e*P	**P**	**04 55 18.2**	**-1.6**
	34nm,1.0s						
STKA	**Stephens Creek**	**36.52**	**245**	P	**P**	**04 55 36.3**	**+0.2**
	9.4nm,0.6s,baz=79,slow=11,SNR=13						
STKA	**Stephens Creek**	**36.52**	**245**	*e*P	**P**	**04 55 36.8**	**+0.7**
	16nm,1.9s						
COEN	**Coen**	**36.61**	**275**	*e*P	**P**	**04 55 36.5**	**-0.5**
AS01	**Alice Springs**	**43.30**	**258**	*e*P	**P**	**04 56 29.5**	**-0.6**
JAY	**Jayapura**	**43.32**	**290**	P	**P**	**04 56 30.4**	**0.0**
	3.8nm,0.5s,baz=83,slow=24,SNR=39						
ASAR	**Alice Springs**	**43.34**	**258**	P	**P**	**04 56 29.9**	**-0.5**
	17nm,0.7s,baz=92,slow=8.2,SNR=96						
WRAB	**Tennant Creek**	**43.47**	**263**	*e*P	**P**	**04 56 29.9**	**-1.5**
	9.0nm,0.7s						
WRA	**Warramunga Arr**	**43.48**	**263**	P	**P**	**04 56 30.4**	**-1.1**
	5.1nm,0.3s,baz=96,slow=7.5,SNR=259						
FORT	**Forrest**	**48.04**	**247**	*e*P	**P**	**04 57 04.8**	**-1.1**
	190nm,0.6s						
GUMO	**Guam**	**49.52**	**311**	P	**P**	**04 57 16.2**	**-0.7**
	54nm,0.6s,baz=198,slow=12,SNR=4.2						
FITZ	**Fitzroy Crossi**	**51.91**	**263**	P	**P**	**04 57 33.8**	**-0.3**
	1.6nm,0.3s,baz=126,slow=5.3,SNR=30						
SOEI	**Soe**	**55.50**	**273**	*e*P	**P**	**04 57 58.1**	**-1.4**
	21nm,0.5s						
MBWA	**Marble Bar**	**56.68**	**258**	*e*P	**P**	**04 58 06.2**	**-1.2**
	64nm,0.8s						
SBA	**Scott Base**	**57.03**	**184**	*e*P	**P**	**04 58 11.2**	**+2.3**
	37nm,1.0s						
VNDA	**Vanda**	**57.05**	**185**	P	**P**	**04 58 11.0**	**+2.0**
	10nm,0.6s,baz=360,slow=7.6,SNR=84						
VNDA	**Vanda**	**57.05**	**185**	*e*P	**P**	**04 58 11.1**	**+2.0**
	12nm,0.7s						
CASY	**Casey**	**62.82**	**205**	*e*P	**P**	**04 58 47.2**	**0.0**
	48nm,1.2s						
QSPA	**South Pole Qui**	**68.80**	**180**	*e*P	**P**	**04 59 24.9**	**+0.5**
	141nm,0.6s						
KKM	**Kota Kinabalu**	**68.97**	**286**	*e*P	**P**	**04 59 25.9**	**-0.4**
	7.5nm,0.6s						
INU	**Inuyama**	**70.02**	**323**	*e*P	**P**	**04 59 32.7**	**+0.8**
	33nm,0.9s						
MJAR	**Matsushiro Arr**	**70.23**	**325**	P	**P**	**04 59 32.8**	**-0.4**
	8.5nm,0.4s,baz=164,slow=7.9,SNR=11						
YULB	**Yu-li**	**73.07**	**304**	*e*P	**P**	**04 59 49.0**	**-0.9**
	75nm,2.0s						
TPUB	**Ta-pu**	**73.54**	**304**	*e*P	**P**	**04 59 50.2**	**-2.3**
	34nm,0.7s						
ASAJ	**Asahikawa**	**73.92**	**332**	*e*P	**P**	**04 59 55.5**	**+1.3**
	26nm,1.0s						
NIKH	**Nikolski High**	**74.47**	**6**	*e*P	**P**	**04 59 56.9**	**-0.2**
	116nm,0.8s						
YSS	**Yuzh-Sakhalins**	**76.13**	**334**	*e*P	**P**	**05 00 07.0**	**+0.6**
	17nm,0.6s						
PEA0	**Petropavlovsk-**	**76.76**	**346**	*e*P	**P**	**05 00 09.6**	**-0.1**
PEA0B	**Petropavlovsk-**	**76.76**	**346**	*e*P	**P**	**05 00 10.1**	**+0.3**
	28nm,0.9s						
PETK	**Petropavlovsk-**	**76.76**	**346**	P	**P**	**05 00 09.6**	**-0.2**
	15nm,0.6s,baz=128,slow=6.8,SNR=23						
KSRS	**Korea Array**	**76.79**	**319**	P	**P**	**05 00 10.6**	**+0.4**
	1.7nm,0.6s,baz=133,slow=7.0,SNR=8.4						
KSAR	**Wonju Array Be**	**76.81**	**319**	P	**P**	**05 00 10.6**	**+0.3**
KS01	**Wonju Array Si**	**76.82**	**319**	*e*P	**P**	**05 00 11.3**	**+0.9**
SDPT	**Sand Point**	**77.95**	**11**	*e*P	**P**	**05 00 14.6**	**-1.5**
	49nm,0.6s						
USRK	**Ussuriysk Ar.**	**79.03**	**326**	P	**P**	**05 00 22.8**	**+0.8**
	12nm,0.8s,baz=141,slow=3.6,SNR=24						
MAW	**Mawson**	**80.49**	**200**	P	**P**	**05 00 29.9**	**+0.5**
	9.8nm,0.8s,baz=150,slow=6.8,SNR=16						
MAW	**Mawson**	**80.49**	**200**	*e*P	**P**	**05 00 30.4**	**+1.1**
	2.4nm,0.9s						
MONP2	**Monument Peak**	**80.49**	**49**	P	**P**	**05 00 31.2**	**+0.9**
	baz=237						
EDW2	**Edwards Air Fo**	**80.50**	**47**	P	**P**	**05 00 31.4**	**+1.3**
	baz=236						
IKP	**In-Ko-Pah, Jac**	**80.58**	**50**	P	**P**	**05 00 31.7**	**+1.1**
	baz=237						
ISA	**Isabella, Lake**	**80.61**	**46**	P	**P**	**05 00 32.0**	**+1.3**
	baz=236						
CMB	**Columbia Colle**	**80.73**	**43**	*e*P	**P**	**05 00 32.5**	**+1.3**
	11nm,1.1s						
AFDM	**Forest Hills D**	**80.90**	**42**	*e*P	**P**	**05 00 33.4**	**+1.4**
	8.9nm,1.1s						
WDC	**Whiskeytown Da**	**80.93**	**40**	*e*P	**P**	**05 00 33.9**	**+1.9**
	12nm,1.0s						
SWSC	**Sam W. Stewart**	**80.96**	**50**	P	**P**	**05 00 33.6**	**+1.2**
	baz=238						
PMSA	**Palmer Station**	**80.98**	**157**	*e*P	**P**	**05 00 32.7**	**+0.8**
	47nm,0.7s						
LRMC	**Laurel Mtn Rad**	**81.04**	**47**	P	**P**	**05 00 33.8**	**+0.8**
	baz=236						
N02D	**Trinity Center**	**81.07**	**40**	P	**P**	**05 00 34.5**	**+1.7**
	baz=232,SNR=5.6						
O03D	**Paynes Creek**	**81.20**	**41**	P	**P**	**05 00 34.6**	**+1.0**
	baz=233,SNR=6.2						
M02C	**Callahan**	**81.24**	**39**	P	**P**	**05 00 35.5**	**+1.8**
	baz=232,SNR=6.0						
L02D	**Cave Junction,**	**81.28**	**38**	P	**P**	**05 00 35.5**	**+1.6**
	baz=231						
CWC	**Cottonwood Cre**	**81.31**	**46**	P	**P**	**05 00 35.5**	**+1.2**
	baz=236						
BELC	**Belle Mtn. Jos**	**81.39**	**49**	P	**P**	**05 00 35.9**	**+1.1**
	baz=237						
MPMC	**Manual Prospec**	**81.50**	**46**	P	**P**	**05 00 36.5**	**+1.1**
	baz=236						
YBH	**Yreka Blue Hor**	**81.54**	**39**	*e*P	**P**	**05 00 37.3**	**+2.1**
	18nm,0.9s						
GSC	**Goldstone, Bar**	**81.54**	**47**	P	**P**	**05 00 36.5**	**+1.1**
	baz=237						
GSC	**Goldstone, Bar**	**81.54**	**47**	*e*P	**P**	**05 00 36.8**	**+1.4**
	4.4nm,0.9s						
DAC	**Darwin (Calif)**	**81.55**	**46**	*e*P	**P**	**05 00 36.8**	**+1.3**
	3.0nm,0.8s						
BC3	**Big Chuckawall**	**81.59**	**49**	P	**P**	**05 00 37.0**	**+1.3**
	baz=238						
HEC	**Hector,Ludlow**	**81.61**	**48**	P	**P**	**05 00 36.7**	**+0.9**
	baz=237						
WAKR	**Walker**	**81.61**	**43**	*e*P	**P**	**05 00 37.7**	**+1.8**
	16nm,1.2s						
GLA	**Glamis**	**81.71**	**50**	P	**P**	**05 00 37.7**	**+1.4**
	baz=238						
HUMO	**Hull Mountain**	**81.94**	**38**	*e*P	**P**	**05 00 39.3**	**+2.2**
	15nm,1.0s						
GMRC	**Granite Mounta**	**82.05**	**48**	P	**P**	**05 00 39.0**	**+0.9**
	baz=237						
IRM	**Iron Mountain**	**82.07**	**49**	P	**P**	**05 00 39.4**	**+1.4**
	baz=238						
M04C	**Macdoel**	**82.08**	**39**	P	**P**	**05 00 39.5**	**+1.5**
	baz=232						
GRAC	**Grapevine Rang**	**82.10**	**45**	P	**P**	**05 00 39.5**	**+1.4**
	baz=236						
FURC	**Furnace Creek,**	**82.14**	**46**	P	**P**	**05 00 39.7**	**+1.4**
	baz=236						
TUQ	**Turquoise Moun**	**82.22**	**47**	P	**P**	**05 00 39.9**	**+1.0**
	baz=237						
SHOC	**Shoshone, Teco**	**82.23**	**47**	P	**P**	**05 00 40.2**	**+1.4**
	baz=237						
Y12C	**Blythe**	**82.29**	**49**	P	**P**	**05 00 40.5**	**+1.3**
	baz=238						
PAHR	**Pah Rah Range**	**82.34**	**42**	*e*P	**P**	**05 00 40.9**	**+1.4**
	8.2nm,0.8s						
I03D	**Drain, OR**	**82.39**	**37**	P	**P**	**05 00 40.8**	**+1.4**
	baz=231						
LDFC	**Landfair**	**82.59**	**48**	*e*P	**P**	**05 00 42.6**	**+1.9**
	14nm,0.8s						
TPNV	**Topopah Spring**	**82.82**	**46**	P	**P**	**05 00 43.2**	**+1.3**
	baz=237						
TPNV	**Topopah Spring**	**82.82**	**46**	*e*P	**P**	**05 00 43.3**	**+1.4**
	5.2nm,0.8s						
I04A	**Tendick Farm,**	**82.99**	**38**	P	**P**	**05 00 43.7**	**+1.3**
	baz=232						
MOD	**Modoc Plateau**	**83.07**	**40**	*e*P	**P**	**05 00 43.9**	**+0.8**
	7.4nm,0.9s						
K05A	**Summer Lake**	**83.21**	**39**	*e*P	**P**	**05 00 45.7**	**+1.9**
	17nm,0.8s						
SHPR	**Sheep Range**	**83.31**	**47**	*e*P	**P**	**05 00 46.0**	**+1.6**
	5.5nm,1.2s						
J05D	**Fort Rock, OR**	**83.35**	**39**	P	**P**	**05 00 45.8**	**+1.4**
	baz=233,SNR=13						
G03D	**McMinnville, O**	**83.39**	**36**	P	**P**	**05 00 45.9**	**+1.5**
	baz=231						
CNPM	**China Poot**	**83.69**	**14**	*e*P	**P**	**05 00 45.9**	**+0.4**
	21nm,0.8s						
I05D	**Terrebonne, OR**	**83.93**	**38**	P	**P**	**05 00 48.4**	**+1.3**
	baz=233						
R11A	**Troy Canyon, C**	**84.02**	**45**	P	**P**	**05 00 48.7**	**+0.9**
	baz=237						
TUC	**Tucson**	**84.27**	**52**	P	**P**	**05 00 50.6**	**+1.5**
	baz=241						
TUC	**Tucson**	**84.27**	**52**	*e*P	**P**	**05 00 50.6**	**+1.5**
	45nm,2.0s						
LCMT	**Little Creek M**	**84.89**	**47**	*e*P	**P**	**05 00 53.1**	**+1.0**
	2.9nm,0.8s						
319A	**Douglas**	**84.94**	**54**	*e*P	**P**	**05 00 54.8**	**+2.4**
SPU	**Mount Spurr**	**85.02**	**13**	*e*P	**P**	**05 00 51.2**	**-0.8**
CCUT	**Cedar City**	**85.09**	**47**	*e*P	**P**	**05 00 53.9**	**+0.8**
	11nm,1.8s						
U15A	**North Rim**	**85.25**	**48**	*e*P	**P**	**05 00 55.2**	**+1.3**
WUAZ	**Wupatki**	**85.43**	**49**	P	**P**	**05 00 55.4**	**+0.7**
	baz=240						
WUAZ	**Wupatki**	**85.43**	**49**	*e*P	**P**	**05 00 56.2**	**+1.5**
	3.0nm,1.0s						
RC01	**Rabbit Creek A**	**85.43**	**14**	*e*P	**P**	**05 00 53.3**	**-0.6**
	11nm,0.6s						
SUA	**Susitna One**	**85.55**	**13**	*e*P	**P**	**05 00 54.8**	**+0.2**
	20nm,0.6s						
SYO	**Syowa Base**	**85.74**	**193**	*e*P	**P**	**05 00 53.5**	**-1.9**
G08A	**Pilot Rock**	**85.86**	**38**	*e*P	**P**	**05 00 57.8**	**+1.4**
	19nm,1.4s						
TT01	**Tatalina**	**85.86**	**10**	*e*P	**P**	**05 00 54.7**	**-1.1**
TTA	**Tatalina**	**85.89**	**10**	*e*P	**P**	**05 00 57.0**	**+0.9**
	7.4nm,1.0s						
EYAK	**Cordova Ski Ar**	**85.91**	**16**	*e*P	**P**	**05 00 56.4**	**+0.3**
	23nm,1.2s						
B05A	**Bryant**	**85.93**	**34**	P	**P**	**05 00 57.6**	**+1.1**
	baz=232						
PMR	**Palmer**	**86.01**	**14**	*e*P	**P**	**05 00 55.9**	**-0.7**
	22nm,1.2s						
GYA	**Guiyang**	**86.14**	**300**	*e*P	**P**	**05 00 59.0**	**+0.8**
GYA				pP	pP	05 03 12.8	+3.0
GYA				sP	sP	05 04 14.0	+2.5
GYA				PP	**PP**	**05 04 34.2**	**+3.2**
GYA				SKS	**SKSac**	**05 10 24.6**	**-2.0**
GYA				S	**S**	**05 10 40.8**	**-2.0**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
MTPU	**Mount Pierson**	**86.14**	**47**	*e*P	**P**	**05 01 00.5**	**+2.2**
	comp=Z,3.7nm,1.0s						
DIV	**Divide**	**86.40**	**15**	*e*P	**P**	**05 00 58.8**	**+0.3**
	comp=Z,15nm,0.8s						
PPLA	**Purkeypile**	**86.55**	**12**	*e*P	**P**	**05 00 58.2**	**-1.1**
	comp=Z,11nm,1.1s						
BMRM	**Bremner River**	**86.56**	**16**	*e*P	**P**	**05 00 59.7**	**+0.4**
	comp=Z,19nm,0.9s						
BMO	**Blue Mountains**	**86.56**	**39**	*e*P	**P**	**05 01 00.8**	**+1.0**
	comp=Z,5.5nm,1.1s						
SCM	**Sheep Creek Mo**	**86.64**	**14**	*e*P	**P**	**05 00 59.7**	**0.0**
	comp=Z,44nm,0.6s						
MFID	**Camas Ranch**	**86.64**	**41**	*e*P	**P**	**05 01 01.5**	**+1.3**
	comp=Z,5.9nm,0.9s						
KLU	**Klutina**	**86.68**	**15**	*e*P	**P**	**05 01 00.1**	**+0.2**
	comp=Z,8.7nm,0.8s						
CRQM	**Cirque**	**86.77**	**17**	*e*P	**P**	**05 01 01.0**	**+0.6**
	comp=Z,31nm,0.6s						
DUG	**Dugway, Tooele**	**86.83**	**45**	P	**P**	**05 01 02.4**	**+1.2**
	baz=239						
D08A	**Wollman Farm,**	**86.91**	**36**	*e*P	**P**	**05 01 02.8**	**+1.5**
	comp=Z,17nm,1.0s						
BALM	**Baldy**	**87.22**	**17**	*e*P	**P**	**05 01 02.9**	**+0.5**
F10A	**Beach Ranch, E**	**87.24**	**38**	*e*P	**P**	**05 01 03.8**	**+0.8**
	comp=Z,16nm,0.9s						
SNAA	**Sanae**	**87.26**	**179**	P	**P**	**05 01 01.6**	**-1.0**
SNAA	**Sanae**	**87.26**	**179**	*e*P	**P**	**05 01 02.0**	**-0.7**
	comp=Z,6.9nm,0.5s						
SNAA				*e*pP	**pP**	**05 03 17.6**	**+3.0**
KTH	**Kantishna Hill**	**87.39**	**12**	*e*P	**P**	**05 01 01.8**	**-1.4**
	comp=Z,14nm,0.8s						
TRF	**Thorofare Moun**	**87.42**	**13**	*e*P	**P**	**05 01 02.9**	**-0.6**
	comp=Z,33nm,0.8s						
TMUT	**Trail Mountain**	**87.43**	**46**	*e*P	**P**	**05 01 05.4**	**+1.1**
	comp=Z,5.9nm,1.0s						
B08A	**Colville Reser**	**87.45**	**35**	*e*P	**P**	**05 01 04.5**	**+0.8**
	comp=Z,11nm,0.8s						
LLLB	**Lillooet**	**87.50**	**32**	*e*P	**P**	**05 01 04.8**	**+0.9**
	comp=Z,7.2nm,0.8s						
HLID	**Hailey**	**87.58**	**41**	P	**P**	**05 01 05.9**	**+1.2**
	baz=238						
HLID	**Hailey**	**87.58**	**41**	*e*P	**P**	**05 01 05.4**	**+0.7**
	comp=Z,8.8nm,

MSO	Missoula	89.61	39	P	P	05 01 15.2	+1.3
	baz=238						
REDW	Red Top Meadow	89.70	43	*e*P	P	05 01 15.8	+1.2
	comp=Z,7.6nm,1.0s						
BILL	Bilibino	89.70	355	*e*P	P	05 01 13.8	+0.1
	comp=Z,6.4nm,0.4s						
S22A	4UR Ranch, Cre	89.70	49	P	P	05 01 15.6	+0.7
	baz=243						
SNOW	Snow King Moun	89.81	43	*e*P	P	05 01 16.5	+1.4
	comp=Z,7.9nm,1.1s						
O20A	White River Ci	89.84	46	P	P	05 01 15.9	+0.6
	baz=242						
BW06	Boulder Array	90.23	44	P	P	05 01 17.8	+0.7
	baz=241						
BW06	Boulder Array	90.23	44	*e*P	P	05 01 17.7	+0.7
	comp=Z,3.6nm,0.9s						
PD31	Pinedale Array	90.23	44	*e*P	P	05 01 17.8	+0.7
PDAR	Pinedale Array	90.23	44	P	P	05 01 17.2	+0.2
	comp=Z,2.1nm,0.8s,baz=211,slow=4.7,SNR=17						
BOZ	Bozeman (W)	90.37	40	P	P	05 01 18.5	+1.0
	baz=240						
BOZ	Bozeman (W)	90.37	40	*e*P	P	05 01 18.6	+1.0
	comp=Z,2.6nm,0.9s						
DAWY	Dawson	90.49	16	*e*P	P	05 01 17.9	+0.4
	comp=Z,6.3nm,0.7s						
EGAK	Eagle	90.62	15	*e*P	P	05 01 18.4	+0.4
	comp=Z,6.7nm,0.7s						
SDCO	Great Sand Dun	90.64	50	P	P	05 01 19.9	+0.7
	baz=244						
COLD	Coldfoot	90.83	11	*e*P	P	05 01 19.6	+0.6
	comp=Z,5.4nm,0.9s						
T25A	Trinidad	91.15	50	P	P	05 01 22.2	+0.8
	baz=244						
N23A	Red Feather La	91.74	47	P	P	05 01 24.8	+0.7
	baz=243						
LZH	Lanzhou	92.42	308	⇑P	P	05 01 28.6	+1.4
LZH				pP	pP	05 03 43.9	+3.5
LZH				sP	sP	05 04 45.0	+3.5
LZH				PP	PP	05 05 23.5	+3.5
LZH				pmax	pmax		
	comp=Z,18nm,1.4s						
LZH				pmax	pmax		
	comp=Z,52nm,9.3s						
Z33A	Whitaker Ranch	93.78	56	P	P	05 01 34.1	+0.8
	baz=247						
RSSD	Black Hills	94.43	44	P	P	05 01 36.9	+0.7
	baz=245						
INK	Inuvik	95.29	15	*e*P	P	05 01 39.1	-0.2
	comp=Z,5.9nm,1.2s						
SONM	Songino Array	95.66	319	P	P	05 01 41.9	+0.3
	comp=Z,0.4nm,0.6s,baz=108,slow=4.7,SNR=3.1						
W37B	Quinton	97.03	55	Pdiff	Pdif	05 01 48.4	+0.5
	baz=249						
YKA	Yellowknife Ar	97.65	25	P	Pdif	05 01 48.9	-1.0
	comp=Z,0.7nm,0.8s,baz=242,slow=4.5,SNR=6.6						
KURK	Kurchatov	113.86	317	SKP	SKPdf	05 09 27.6	-0.5
KURBB	Kurchatov Arra	113.91	317	SKP	SKPdf	05 09 27.6	-0.6
	comp=Z,0.4nm,0.7s,baz=94,slow=2.8,SNR=4.7						
TKM2	Tokmak 2	115.19	308	*e*PKPdf	PKPdf	05 06 53.8	+0.4
BVAR	Borovoye Array	119.00	320	PKP	PKPdf	05 06 59.1	-1.0
	comp=Z,0.8nm,0.3s,baz=100,slow=3.0,SNR=5.0						
BVAR				SKP		05 09 38.3	
	comp=Z,0.4nm,0.5s,baz=116,slow=3.4,SNR=4.0						
SUR	Sutherland	123.35	200	*e*PKPdf	PKPdf	05 07 09.6	0.0
ARCES	ARCESS Array B	129.49	349	PKP	PKPdf	05 07 19.1	-0.7
	comp=Z,1.2nm,0.6s,baz=53,slow=0.6,SNR=8.8						
ARCES				SKPbc	SKPbc	05 09 46.1	+1.1
	comp=Z,14nm,0.7s,baz=10,slow=2.0,SNR=30						
LSZ	Lusaka	134.87	219	*e*PKPdf	PKPdf	05 07 32.9	+1.3
FINES	FINESS Array B	136.21	343	PKhKP	PKPpre	05 07 20.8	
	comp=Z,0.3nm,0.3s,baz=346,slow=2.9,SNR=4.8						
FINES				PKP	PKPdf	05 07 33.4	+0.9
	comp=Z,1.0nm,0.4s,baz=63,slow=0.3,SNR=10						
FINES				SKPbc	SKPbc	05 10 07.8	+0.2
	comp=Z,5.6nm,0.6s,baz=37,slow=3.5,SNR=20						
TSUM	Tsumeb	136.58	203	*e*PKPdf	PKPdf	05 07 36.2	+1.4
NB2	NORSAR Subarra	139.62	352	PKP	PKPpre	05 07 30.8	
	comp=Z,0.7nm,0.4s,baz=4.1,slow=2.9						
NB2	NORSAR Subarra	139.62	352	PKP	SKPbc	05 10 17.6	+0.3
	comp=Z,1.1nm,0.8s,baz=14,slow=2.8						
NOA	NORSAR Array B	139.62	352	PKhKP	PKPpre	05 07 30.9	
	comp=Z,0.5nm,0.5s,baz=359,slow=1.8,SNR=8.4						
NOA				SKPbc	SKPbc	05 10 17.7	+0.4
	comp=Z,2.2nm,0.8s,baz=17,slow=4.3,SNR=7.4						
NOA				SKPab	SKPab	05 10 30.2	+0.7
	comp=Z,1.7nm,0.8s,baz=16,slow=3.2,SNR=7.3						
HFS	Hagfors	140.13	350	PKhKP	PKPpre	05 07 32.7	
	comp=Z,2.2nm,0.3s,baz=90,slow=4.4,SNR=40						
HFS				SKPbc	SKPbc	05 10 18.9	+0.3
	comp=Z,2.8nm,0.8s,baz=0.0,slow=3.3,SNR=6.2						
AKASG	Malin Array Be	143.18	330	PKhKP	PKPpre	05 07 42.8	
	comp=Z,14nm,0.4s,baz=43,slow=4.4,SNR=40						
AKASG				SKP	SKPbc	05 10 25.4	-1.0
	comp=Z,2.3nm,0.7s,baz=42,slow=2.7,SNR=6.2						
SUW	Suwalki	143.18	339	*e*PKP	PKPab	05 07 43.7	+0.1
KIEV	Kiev	143.19	330	*e*PKPdf	PKPab	05 07 42.7	-1.0
SORM	Soroca	145.31	327	⇑*i*P	PKPbc	05 07 49.9	-0.6
ESK	Eskdalemuir	145.87	4	*e*PKPbc	PKPbc	05 07 51.6	-0.3
BRTR	Keskin Array B	146.58	311	PKPbc	PKPbc	05 07 54.1	-0.5
	comp=Z,2.0nm,0.7s,baz=76,slow=1.9,SNR=8.1						
BRTR				pPKPbc	pPKPbc	05 10 12.0	-2.3
	comp=Z,1.8nm,1.1s,baz=120,slow=4.1,SNR=3.5						
KWP	Kalwaria Pacla	146.84	334	*e*PKP	PKPbc	05 07 55.0	+0.3
BURAR	Bucovina Array	147.21	329	⇓*i*P	PKPbc	05 07 56.1	+0.2
TESR	Tescani	147.25	326	⇑*i*P	PKPbc	05 07 55.9	0.0
MMAI	Mount Meron Ar	147.29	298	PKPbc	PKPbc	05 07 56.9	+0.3
	comp=Z,4.0nm,0.7s,baz=85,slow=3.6,SNR=2.8						
MMAI				pPKPbc	pPKPbc	05 10 13.1	-3.4
	comp=Z,0.6nm,0.3s,baz=106,slow=4.7,SNR=2.3						
CFR	Carcaliu	147.30	323	⇑*i*P	PKPbc	05 07 56.2	+0.2
KOLS	Kolonicke sedl	147.56	333	*e*PKP	PKPdf	05 07 51.9	-1.1
KOLS				*e*		05 07 57.3	
KOLS				*e*		05 08 00.8	
TIRR	Tirgusor	147.58	322	⇑*i*P	PKPbc	05 07 57.1	+0.3
STHS	Stebnicka Huta	147.59	335	*e*PKP	PKPbc	05 07 57.3	+0.6
STHS				*e*		05 08 02.4	
VRI	Vrincioaia	147.63	325	⇓*i*P	PKPbc	05 07 57.6	+0.7
TLB	Topalu	147.72	322	⇑*i*P	PKPbc	05 07 57.3	+0.2
CRVS	Cervenica-Dubn	147.92	334	*e*PKP	PKPab	05 08 02.9	+0.4
KSP	Ksiaz	148.11	341	*e*PKP	PKPbc	05 07 58.8	+0.8
MLR	Muntele Rosu	148.29	325	PKPbc	PKPbc	05 07 59.4	+0.7
	comp=Z,0.5nm,0.5s,baz=63,slow=2.3,SNR=5.8						
MLR	Muntele Rosu	148.29	325	⇑*i*P	PKPbc	05 07 59.8	+1.0
CSS	Mathiatis	148.47	303	*e*PKPdf	PKPdf	05 07 54.9	-0.1
CSS				*e*PKPbc	PKPbc	05 07 58.9	-0.5
CSS				*e*PKPab	PKPab	05 08 05.1	-0.2
LANS	Liptovska Anna	148.49	336	*e*PKP	PKPbc	05 08 00.3	+1.3
LANS				*e*		05 08 05.6	
DPC	Dobruska-Polom	148.54	341	⇑*e*PKP	PKPbc	05 07 59.9	+0.8
DPC				*e*PKPAB	PKPab	05 08 05.9	+0.8
CLL	Collm	148.56	345	*e*PKPab	PKPbc	05 07 59.0	0.0
	comp=Z,14nm,1.3s						
CLL				*i* pPKPab	PKPab	05 08 04.8	-0.3
	comp=Z,9.0nm,0.7s						
CLL	Collm	148.56	345	*e*(P)	pPKPab	05 10 21.0	+0.1
	comp=Z,12nm,1.5s						
CLL				*e*		05 10 25.0	
	comp=Z,9.0nm,1.0s						
KRLC	Kraliky	148.63	340	⇑*e*PKP	PKPbc	05 07 59.7	+0.4
KRLC				*e*PKPAB	PKPab	05 08 05.6	+0.1
KECS	Kecovo	148.64	335	*e*PKP	PKPbc	05 07 59.5	+0.2
KECS				*e*		05 08 06.2	
BRG	Berggiesshubel	148.73	344	*e*PKP	pPKPab	05 10 23.6	+2.0
	comp=Z,5.4nm,1.2s						
BRG	Berggiesshubel	148.73	344	*e*PKP	PKPbc	05 07 59.7	+0.2
	comp=Z,13nm,1.5s						
BRG				*i*		05 08 05.8	
	comp=Z,9.2nm,1.0s						
VOIR		148.80	326	⇑*i*P	PKPbc	05 08 01.3	+1.4
DRGR		148.99	330	⇑*i*P	PKPbc	05 07 59.3	-1.0
ARR	Arges	149.06	326	⇓*i*P	PKPbc	05 08 02.0	+1.5
VYHS	Vyhne	149.27	336	*e*PKP	PKPbc	05 08 01.3	+0.4
VYHS				*e*		05 08 08.6	
PSZ	Piszkesteto	149.33	335	*e*PKPbc	PKPbc	05 08 00.5	-0.6
PSZ				*e*PKPab	PKPab	05 08 07.4	-1.1
VRAC	Vranov	149.36	340	⇑*i*P	PKPab	05 08 09.3	+0.8
GOPC	GO Pecny, Ondr	149.38	342	⇑*e*PKP	PKPbc	05 08 01.4	+0.3
GOPC				*e*PKPAB	PKPab	05 08 09.0	+0.5
PRU	Pruhonice	149.38	343	⇑*e*PKP	PKPbc	05 08 01.5	+0.5
PRU				*e*PKPAB	PKPab	05 08 08.1	-0.4
LOT	Lotru	149.44	327	⇓*i*P	PKPbc	05 08 01.2	-0.3
NKC	Novy Kostel	149.69	345	*e*PKPAB	PKPab	05 08 10.2	+0.4
SIRR	Siria	149.86	331	⇑*i*P	PKPbc	05 08 02.8	+0.5
GZR	Gura Zlata	149.98	328	⇑*i*P	PKPbc	05 08 02.1	-0.6
KHC	Kasperske Hory	150.42	343	⇑*e*PKP	PKPbc	05 08 03.2	-0.4
KHC				*e*PKPAB	PKPab	05 08 13.7	+0.8
KHC				*e*pPKP	pPKPdf	05 10 29.0	+8.7
KHC	Kasperske Hory	150.42	343	*e*PKPdf	PKPdf	05 07 57.3	-0.2
KHC				*e*PKPbc	PKPbc	05 08 03.6	0.0
KHC				*e*PKPab	PKPab	05 08 13.3	+0.4
GERES	GERESS Array B	150.65	343	PKPbc	PKPbc	05 08 04.0	-0.2
	comp=Z,1.8nm,0.6s,baz=54,slow=2.5,SNR=11						
GERES				pPKPbc	pPKPbc	05 10 21.6	-3.7
	comp=Z,0.3nm,0.6s,baz=345,slow=2.2,SNR=1.6						
BCLA	Clavier	150.71	354	PKPab	PKPab	05 08 13.4	-0.6
CONA	Conrad Observa	150.80	339	*i* PKPab	PKPab	05 08 15.2	+0.5
	comp=Z,6.7nm,0.7s						
CONA				*i* pPKPab	pPKPab	05 10 29.6	-0.4
	comp=Z,11nm,1.2s						
WLF	Walferdange	151.37	353	*e*PKPbc	PKPbc	05 08 05.7	0.0
MOA	Molln	151.38	341	*i* PKPab	PKPab	05 08 17.9	+0.9
	comp=Z,5.3nm,0.8s						
MOA				*i* pPKPab	pPKPab	05 10 32.4	+0.1
	comp=Z,0.3nm,0.4s						
ARSA	Arzberg	151.51	339	*i* PKPab	PKPab	05 08 17.9	+0.3
	comp=Z,2.3nm,0.6s						
ARSA				*i* pPKPab	pPKPab	05 10 30.9	-1.9
	comp=Z,4.6nm,1.3s						
SOKA	Soboth	152.17	339	*i* PKPab	PKPab	05 08 20.8	+0.3
	comp=Z,8.3nm,1.2s						
SOKA				*i* SKPdf	SKPdf	05 10 32.7	-3.4
	comp=Z,6.6nm,1.3s						
KBA	Koelnbreinsper	152.35	341	*i* PKPab	PKPab	05 08 21.8	+0.5
	comp=Z,4.0nm,0.5s						
KBA				*i* pPKiKP	pPKiKP	05 10 30.5	+0.4
	comp=Z,4.8nm,1.1s						
OBKA	Obir	152.48	339	*i* PKPab	PKPab	05 08 21.8	0.0
	comp=Z,5.8nm,1.1s						
OBKA				*i* SKPdf	SKPdf	05 10 32.8	-3.7
	comp=Z,7.3nm,1.4s						
WATA	Walderalm	152.60	344	*i* PKPab	PKPab	05 08 22.3	-0.1
	comp=Z,2.9nm,0.5s						
WTTA	Wattenberg	152.65	344	*i* PKPab	PKPab	05 08 23.3	+0.7
	comp=Z,9.5nm,1.3s						
RETA	Reutte	152.66	345	*i* PKPab	PKPab	05 08 22.7	+0.2
	comp=Z,3.0nm,0.5s						
MYKA	Terra Mystica	152.66	341	*i* PKPab	PKPab	05 08 21.8	-0.8
	comp=Z,2.4nm,0.5s						
MYKA				*i* SKPdf	SKPdf	05 10 34.7	-2.0
	comp=Z,5.3nm,1.0s						
DAVOX	Davos/Dischmat	153.53	346	PKPbc	PKPbc	05 08 11.4	+0.7
	comp=Z,1.8nm,0.3s,baz=287,slow=11,SNR=3.7						
DAVOX				PKPab	PKPab	05 08 26.7	+0.3
	comp=Z,5.8nm,0.6s,baz=280,slow=1.4,SNR=8.8						
TIP	Timpagrande	157.56	326	*e*PKPdf	PKPdf	05 08 07.9	+0.1
TIP				*e*PKPab	PKPab	05 08 41.7	-2.2
ESDC	Sonseca Array	161.19	12	PKPab	PKPab	05 08 59.5	-0.2
	comp=Z,2.1nm,0.8s,baz=347,slow=4.3,SNR=7.8						
KEST	Kesra	163.81	335	PKPab	PKPab	05 09 11.6	+0.2
	comp=Z,5.9nm,0.8s,baz=336,slow=0.4,SNR=6.7						
LIC	Lamto	163.97	158	*e*PKP2	PKPab	05 09 13.2	+0.8
	comp=Z,22nm,1.1s						
KIC	Kosan Boka	164.20	159	*e*PKP2	PKPab	05 09 14.2	+0.8
	comp=Z,31nm,0.6s						
TIC	Toumodi	164.37	158	*e*PKP2	PKPab	05 09 14.8	+0.6
DBIC	Dimbokro	164.45	158	PKPab	PKPab	05 09 14.9	+0.4
	comp=Z,6.3nm,0.6s,baz=185,slow=4.5,SNR=9.5						
TORD	Torodi Ar. Bea	171.88	186	PKP	PKPdf	05 08 19.2	-1.2
	comp=Z,1.7nm,0.8s,baz=134,slow=0.4,SNR=12						
TORD				PKPab	PKPab	05 09 47.0	-0.2
	comp=Z,3.5nm,0.8s,baz=171,slow=3.3,SNR=15						

NIED ***08*** *04:51:00,38.60N×141.90E,h50km,Mw3.8 Best double couple: M₀5.48000×10¹⁴ NP1:φs245.00000°,δ32.00000°, λ133.00000°. NP2:φs17.00000°,δ67.00000°,λ67.00000°.*

JMA 08 04:51:33.9,38.62N×141.91E,h48km±1km,M3.7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.47	250	P	Pn	04 51 44.6	0.0
JIO				S	Sn	04 51 51.8	-0.5
OFUJ	Ofunato	0.50	338	P	Pn	04 51 45.1	+0.1
OFUJ				S	Sn	04 51 52.9	0.0
JMK	Ichinoseki	0.63	302	P	Pn	04 51 46.8	+0.1
JMK				S	Sn	04 51 56.1	+0.2
JOM	Ohasama	0.98	331	P	Pn	04 51 51.5	+0.2
JOU	Okura	1.01	256	P	Pn	04 51 51.7	0.0
JMM	Marumori	1.16	230	P	Pn	04 51 53.2	-0.5
JYK	Kaneyama	1.25	284	P	Pn	04 51 55.1	+0.2
JRG	Rokugo	1.26	308	P	Pn	04 51 55.3	+0.2
MAT	Matsushiro	3.60	236	P	Pn	04 52 29.1	+1.9
MAT				*e*S	Sn	04 53 09.6	+1.2

NIED ***08*** *04:58:00,35.90N×140.90E,h38km,Mw3.6 Best double couple: M₀2.58000×10¹⁴ NP1:φs309.00000°,δ21.00000°, λ155.00000°. NP2:φs62.00000°,δ81.00000°,λ71.00000°.*

JMA 08 04:58:37.3±0.1,35.85N×140.80E,h25km±1km,M3.5,2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.15	162	⇑P	Pb	04 58 42.2	-0.2
CHOJ				S	Sb	04 58 45.4	-0.5
JYT	Yasato	0.62	308	⇑P	Pb	04 58 49.1	-0.4
JYT				S	Sb	04 58 57.4	-0.4
JCN	Nagara	0.65	229	P	Pn	04 58 51.0	+0.1
JHO	Hitachi	0.78	346	P	Pb	04 58 51.5	-0.8
JHO				S	Sb	04 59 01.8	-0.7
BSO4	Boso 4	0.94	204	P	Pb	04 58 55.2	+0.4
BSO3	Boso 3	1.07	193	P	Pb	04 58 57.2	+0.2
MAT	Matsushiro	2.21	289	P	Pn	04 59 12.9	+0.5
MAT				S	Sn	04 59 39.5	+0.6

IDC 08 05:10:56.3±2.6,20.44S×178.93W,h585km±22km, mb3.1/5,mb1 3.4/7,mb1mx3.0/36,mbtmp4.2/7,Error ellipse: s-maj=83.6km s-min=15.7km az=149.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	9.42	48	P	P	05 13 09.8	+0.6
	3.6nm,0.3s,baz=161,slow=6.0,SNR=4.4						
AFI				S	S	05 14 57.6	-0.7
	2.4nm,0.3s,baz=127,slow=20,SNR=3.3						
DZM	Mont Dzumac	13.73	261	P	P	05 13 53.5	+0.7
	0.9nm,0.3s,baz=89,slow=17,SNR=9.3						
ASAR	Alice Springs	43.68	257	P	P	05 18 10.7	-0.2
	1.2nm,0.6s,baz=95,slow=7.4,SNR=9.7						
WRA	Warramunga Arr	43.74	262	P	P	05 18 10.9	-0.4
	0.5nm,0.4s,baz=96,slow=7.7,SNR=12						
PETK	Petropavlovsk-	75.99	346	P	P	05 21 44.3	+0.5
	2.9nm,0.7s,baz=101,slow=7.7,SNR=3.6						
ILAR	Eielson Array	88.45	13	P	P	05 22 45.8	-0.7
	0.8nm,0.5s,baz=220,slow=5.2,SNR=13						
PDAR	Pinedale Array	89.52	44	P	P	05 22 52.5	+0.3
	0.4nm,0.6s,baz=204,slow=3.3,SNR=3.9						
ARCES	ARCESS Array B	128.70	349	PKP	PKPdf	05 28 56.2	-0.9
	0.8nm,0.6s,baz=27,slow=2.2,SNR=4.7						
FINES	FINESS Array B	135.46	343	PKP	PKPdf	05 29 10.6	+0.6
	0.5nm,0.6s,baz=226,slow=3.6,SNR=2.4						
HFS	Hagfors	139.34	350	PKhKP	PKPpre	05 29 08.8	
	0.5nm,0.3s,baz=66,slow=3.6,SNR=9.3						
AKASG	Malin Array Be	142.53	330	PKhKP	PKPpre	05 29 19.1	
	1.7nm,0.4s,baz=42,slow=4.4,SNR=15						
EKA	Eskdalemuir Ar	145.01	4	PKPbc	PKPdf	05 29 27.7	+0.4
	1.6nm,0.8s,baz=0.0,slow=3.0,SNR=2.9						
BRTR	Keskin Array B	146.15	312	PKPbc	PKPbc	05 29 31.6	-0.6
	0.7nm,0.5s,baz=124,slow=4.9,SNR=3.8						
GERES	GERESS Array B	149.90	343	PKPbc	PKPbc	05 29 40.8	-0.5
	0.5nm,0.5s,baz=22,slow=3.2,SNR=2.4						

IDC ***08*** *05:12:03.5±0.5,29.01S×176.37W,h0km,mb4.7/18, mb1 4.9/18,mb1mx4.7/33,mbtmp4.7/18,MS3.8/4, Ms1 3.8/4,ms1mx3.5/31,Error ellipse: s-maj=19.6km s-min=16.9km az=159.0*

NEIC ***08*** *05:12:05.4±0.1,29.14S×176.37W,h10km,mb5.2/107, Error ellipse: s-maj=7.2km s-min=4.1km az=142.0*

GCMT ***08*** *05:12:05.4±0.4,29.10S×176.01W,h22km±1km,MW4.9/60, Moment Tensor Solution. s20,c26; s60,c78; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-3.11±.28; Mθθ0.03±.17; Mφφ3.09±.18; Mrθ-0.61±.32; Mφθ0.28±.11; Mrφ-0.29±.24; Best double couple: M₀3.18400×10¹⁶ NP1:φs15.00000°,δ49.00000°,λ-77.00000°. NP2: φs175.00000°,δ43.00000°,λ-105.00000°. Principal axes: T 3.1350, Plg3.0000°, Azm96.0000°; N 0.1040, Plg10.0000°, Azm186.0000°; P -3.2340, Plg79.0000°, Azm348.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISCJB ***08*** *05:12:06.0±0.1,29.48S±0.03×176.33W±0.04,h28km, mb5.2/126,MS4.6/8 Error ellipse: s-maj=6.0km s-min=2.8km az=42.8*

BJI ***08*** *05:12:06.7,28.81S×176.06W,h23km,mb5.4/24, mB5.6/18,Ms5.2/14,Ms7 4.8/14*

MOS ***08*** *05:12:09.1±0.9,29.03S×176.45W,h43km,mb5.2/43, Error ellipse: s-maj=11.0km s-min=9.7km az=64.5*

ISC 08 05:12:07.5±0.3,29.29S±0.05×176.26W±0.05,h28km, n406,σ1§44/400,mb5.2/125,**MS4.8**/10,**7C-8D,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.45	271	Pn	Pb	05 12 33.5	-0.5
	3μm,0.3s,baz=296,slow=2.1,SNR=39						
RAO				Sn	Sb	05 12 53.1	+1.1
	5μm,0.3s,baz=8.7,slow=23,SNR=13						
RAO	Raoul Island	1.45	271	*e*P	Pb	05 12 33.4	-0.5
RAO				*e*		05 12 47.6	
RAO	Raoul Island	1.45	271	*e*Pn	Pb	05 12 33.4	-0.5
RAO				*e*Sn	Sn	05 12 47.6	-2.5
MXZ	Matakaoa Point	9.42	207	*e*Pn	Pn	05 14 21.9	+0.5
RUGZ	Raukumara Rang	10.02	209	PN	Pn	05 14 28.2	-1.6
CNGZ	Carnagh Statio	10.26	205	PN	Pn	05 14 28.7	-4.2
MWZ	Matawai	10.40	208	PN	Pn	05 14 30.4	-4.4
MWZ				SN	Sn	05 16 27.7	-2.6
OUZ	Omahuta	10.43	233	*e*Pn	Pn	05 14 40.2	+5.1
URZ	Urewera	10.51	210	Pn	Pn	05 14 31.7	-4.6
	4.0nm,0.3s,baz=231,slow=0.9,SNR=9.9						
URZ				Sn	Sn	05 16 29.2	-3.9
	9.4nm,0.3s,baz=176,slow=19,SNR=14						
URZ	Urewera	10.51	210	*e*Pn	Pn	05 14 32.0	-4.3
URZ				*e*Sn	Sn	05 16 32.0	-1.1
URZ	Urewera	10.51	210	PN	Pn	05 14 31.7	-4.6
RIGZ	Rimuhau	10.62	206	PN	Pn	05 14 36.0	-1.9
RIGZ				SN	Sn	05 16 33.9	-2.0
SNGZ	Shannon Statio	10.85	208	PN	Pn	05 14 37.6	-3.4
SNGZ				SN	Sn	05 16 38.1	-3.5
BKZ	Black Stump Fm	11.53	209	*e*Pn	Pn	05 14 45.1	-5.3
BKZ	Black Stump Fm	11.53	209	PN	Pn	05 14 44.8	-5.5
BKZ				SN	Sn	05 16 54.7	-3.5
HIZ	Hauiti	11.79	216	*e*Pn	Pn	05 14 53.8	0.0
MSVF	Nonsavu	12.63	334	*e*P	Pn	05 15 04.0	-1.5
MSVF	Nonsavu	12.63	334	*e*Pn	Pn	05 15 04.0	-1.5
BFZ	Birch Farm	12.92	206	*e*Pn	Pn	05 15 05.5	-3.7
THZ	Tophouse	15.24	212	*e*Pn	Pn	05 15 38.4	-2.4
	259nm,1.9s						
THZ	Tophouse	15.24	212	PN	Pn	05 15 36.5	-4.3
AFI	Afiamalu	15.86	16	Sn	Sn	05 18 23.5	-20
	5.8nm,0.3s,baz=37,slow=19,SNR=6.9						
AFI				LR	LR	05 24 06.4	
	comp=Z,95nm,18.9s,baz=188,slow=46						
LTZ	Lake Taylor	16.33	211	*e*Pn	Pn	05 15 51.8	-3.1
	74nm,1.3s						
OXZ	Oxford	16.86	211	*e*Pn	Pn	05 16 00.7	-0.9
	81nm,0.5s						
OXZ				*e*Sn	Sn	05 18 53.8	-14
MQZ	McQueen's Vall	16.90	209	*e*Pn	Pn	05 15 56.1	-5.9
	137nm,1.6s						
RAR	Rarotonga	16.93	65	Pn	Pn	05 15 55.7	-6.7
	2.3nm,0.3s,baz=225,slow=11,SNR=7.5						
RAR				Sn	Sn	05 18 40.1	-30
	1.8nm,0.3s,baz=97,slow=16,SNR=3.9						
DZM	Mont Dzumac	17.16	291	Pn	P	05 16 09.3	+2.4
	1.1nm,0.3s,baz=112,slow=15,SNR=10						
DZM				LR	LR	05 21 28.9	
	comp=Z,679nm,19.4s,baz=120,slow=33						
DZM	Mont Dzumac	17.16	291	*e*P	P	05 16 08.5	+1.6
	116nm,1.4s						
DZM				*e*LR	LR	05 20 14.2	
	1μm,27.2s						
DZM	Mont Dzumac	17.16	291	*e*P	Pn	05 16 05.9	+0.5
	42nm,1.1s						
RPZ	Rata Peaks	17.61	212	P	Pn	05 16 07.3	-3.6
	2.7nm,0.3s,baz=356,slow=3.0,SNR=6.7						
RPZ

comp=Z,35nm,0.8s
WRAB Tennant Creek 45.58 270 *e*P P 05 20 24.1 -1.3
comp=Z,14nm,0.8s
WRA Warramunga Arr 45.59 270 P P 05 20 23.8 -1.7
comp=Z,12nm,0.6s,baz=109,slow=7.7,SNR=50
FORT Forrest 47.80 254 P P 05 20 41.4 -1.3
baz=48,SNR=17
FORT Forrest 47.80 254 *e*P P 05 20 41.5 -1.2
comp=Z,194nm,0.6s
WRKA Warakurna 49.14 261 P P 05 20 51.4 -1.7
baz=49,SNR=29
SBA Scott Base 49.26 185 *e*P P 05 20 57.1 +3.9
SBA pmax pmax
comp=Z,71nm,2.0s
SBA Scott Base 49.26 185 *e*P P 05 20 57.1 +3.9
comp=Z,71nm,2.0s
VNDA Vanda 49.35 186 P P 05 20 56.6 +2.7
comp=Z,2.2nm,1.0s,baz=9.9,slow=6.5,SNR=7.3
KMBL Kambalda 52.81 251 P P 05 21 21.0 +0.4
baz=53
KIP Kipapa 53.39 21*c* *i*P P 05 21 24.7 -0.1
FITZ Fitzroy Crossi 53.89 268 P P 05 21 27.5 -1.1
comp=Z,11nm,0.8s,baz=172,slow=7.0,SNR=14
FITZ Fitzroy Crossi 53.89 268 P P 05 21 27.6 -1.1
baz=54,SNR=6.4
KLBR Kellerberrin 56.15 250 P P 05 21 43.7 -1.1
baz=56,SNR=8.2
CASY Casey 56.83 208 *e*P P 05 21 51.1 +2.1
comp=Z,9.5nm,0.8s
BLDU Ballidu 57.28 251 P P 05 21 53.2 +0.3
baz=57,SNR=7.7
MBWA Marble Bar 57.86 262 *e*P P 05 21 55.6 -1.5
comp=Z,188nm,1.3s
MORW Morawa 58.31 252 P P 05 22 00.6 +0.5
baz=58,SNR=6.3
QSPA South Pole Qui 60.82 180 *e*P P 05 22 19.9 +2.9
KKM Kota Kinabalu 73.67 287 *e*P P 05 23 38.7 -0.5
comp=Z,1µm,0.7s
MAW Mawson 73.87 200 P P 05 23 41.8 +2.4
comp=Z,3.3nm,0.9s,baz=308,slow=3.6,SNR=4.5
MAW Mawson 73.87 200 *e*P P 05 23 42.2 +2.8
comp=Z,1.5nm,1.0s
SBUM Sibu 75.17 281 *e*P P 05 23 48.0 +0.2
comp=Z,181nm,1.0s
MJAR Matsushiro Arr 78.21 324 P P 05 24 03.2 -1.3
comp=Z,4.4nm,0.9s,baz=159,slow=4.8,SNR=9.4
MAJO Matsushiro 78.22 324 ⇓*i*P P 05 24 04.3 -0.2
MAJO pmax pmax
comp=Z,43nm,0.9s
MAJO Matsushiro 78.22 324 *e*P P 05 24 03.8 -0.7
comp=Z,17nm,1.1s
MJB9 Matsu-Tunnel 78.22 324 *e*P P 05 24 04.2 -0.3
comp=Z,4.4nm,1.2s
SYO Syowa Base 78.53 192⇓*e*P P 05 24 06.0 +0.2
SNAA Sanae 79.22 178 P P 05 24 09.0 -0.6
SNAA Sanae 79.22 178 ⇓*i*P P 05 24 10.8 +1.1
SNAA Sanae 79.22 178 *e*P P 05 24 11.1 +1.5
comp=Z,13nm,1.3s
VNA1 Neumayer--Stat 79.98 176 P P 05 24 17.3 +3.6
SSLB Suanglung 80.17 304 *e*P P 05 24 13.8 -1.7
comp=Z,14nm,0.9s
PLCA Paso Flores 82.14 132 P P 05 24 27.7 +1.8
comp=Z,5.5nm,0.8s,baz=250,slow=4.9,SNR=9.6
PLCA Paso Flores 82.14 132 *e*P P 05 24 27.8 +1.8
PLCA pmax pmax
comp=Z,8.0nm,0.9s
PLCA Paso Flores 82.14 132 *e*P P 05 24 27.8 +1.8
comp=Z,8.2nm,0.9s
SRIG Santa Rosalia 83.20 54 *e*P P 05 24 32.0 +0.6
comp=Z,23nm,1.0s
MURC Murrieta 83.87 46 P P 05 24 35.2 +0.4
baz=229
ARVC Arvin 83.87 44 P P 05 24 35.2 +0.5
baz=228
MONP2 Monument Peak 83.90 47 P P 05 24 35.7 +0.6
baz=230
IKP In-Ko-Pah, Jac 83.94 47 P P 05 24 35.8 +0.6
baz=230
BFSC Mount Baldy Ra 84.00 45 P P 05 24 35.8 +0.3
baz=229
VES Vestal, Richgr 84.20 43 P P 05 24 36.7 +0.4
baz=228
EDW2 Edwards Air Fo 84.22 45 P P 05 24 37.0 +0.5
baz=228
SWSC Sam W. Stewart 84.33 47 P P 05 24 37.5 +0.5
baz=230
TPFO Pinon Flats 84.34 46 P P 05 24 37.9 +0.6
baz=229,SNR=6.6
PFO Pinyon Flats O 84.34 46 P P 05 24 38.0 +0.7
comp=Z,4.8nm,0.9s,baz=217,slow=5.1,SNR=5.4
PFO Pinyon Flats O 84.34 46 P P 05 24 37.9 +0.7
baz=229
PFO Pinyon Flats O 84.34 46 *e*P P 05 24 38.2 +0.9
PFO pmax pmax
comp=Z,9.0nm,1.0s
PFO Pinyon Flats O 84.34 46 *e*P P 05 24 38.2 +0.9
comp=Z,8.9nm,1.0s
YSS Yuzh-Sakhalins 84.42 333 *i*P P 05 24 37.9 +0.8
YSS pmax pmax
comp=Z,6.0nm,0.5s
ISA Isabella, Lake 84.45 44 P P 05 24 38.4 +0.7
baz=228
ISA Isabella, Lake 84.45 44 *e*P P 05 24 38.8 +1.1
ISA pmax pmax
comp=Z,27nm,1.4s
ISA Isabella, Lake 84.45 44 *e*P P 05 24 38.8 +1.1
comp=Z,27nm,1.4s
BBRC Big Bear Solar 84.48 46 P P 05 24 38.5 +0.4
baz=229
KSRS Korea Array 84.50 319 P P 05 24 38.2 +0.5
comp=Z,2.7nm,0.8s,baz=140,slow=5.7,SNR=8.3
KSAR Wonju Array Be 84.52 319 P P 05 24 38.2 +0.4
KSAR Wonju Array Be 84.52 319 P P 05 24 38.2 +0.4
KS01 Wonju Array Si 84.53 319 *e*P P 05 24 37.9 0.0
LRMC Laurel Mtn Rad 84.81 44 P P 05 24 40.1 +0.6
baz=228
RRX Edison Barstow 84.83 45 P P 05 24 40.1 +0.6
baz=229
PET Petropavlovsk 84.83 345 *e*P P 05 24 39.4 +0.4
PET pmax pmax
comp=Z,7.0nm,1.0s
BELC Belle Mtn. Jos 84.89 46 P P 05 24 40.7 +0.7
baz=230,SNR=9.1
CMB Columbia Colle 84.93 41 *e*P P 05 24 40.4 +0.4
CMB pmax pmax
comp=Z,18nm,1.1s
CMB Columbia Colle 84.93 41 *e*P P 05 24 40.4 +0.4
comp=Z,18nm,1.1s
BC3 Big Chuckawall 85.01 47 P P 05 24 41.4 +0.8
baz=230,SNR=7.7
GLA Glamis 85.03 48 P P 05 24 41.5 +0.9
baz=230
PETK Petropavlovsk- 85.13 345 P P 05 24 39.7 -0.9
comp=Z,6.2nm,0.6s,baz=119,slow=8.8,SNR=5.0
CWC Cottonwood Cre 85.20 43 P P 05 24 42.1 +0.6
baz=228
HEC Hector,Ludlow 85.21 46 P P 05 24 41.9 +0.4
baz=229,SNR=7.1
AFDM Forest Hills D 85.22 40 *e*P P 05 24 42.1 +0.6
comp=Z,14nm,1.1s
GSC Goldstone, Bar 85.23 45 P P 05 24 42.2 +0.6
baz=229,SNR=9.3
GSC Goldstone, Bar 85.23 45 *e*P P 05 24 42.5 +0.9
GSC pmax pmax
comp=Z,24nm,1.4s
GSC Goldstone, Bar 85.23 45 *e*P P 05 24 42.5 +0.9
comp=Z,24nm,1.4s
MPMC Manual Prospec 85.31 44 P P 05 24 42.7 +0.5
baz=229,SNR=11
DAC Darwin (Calif) 85.39 44 *e*P P 05 24 42.9 +0.4
DAC pmax pmax
comp=Z,6.0nm,1.0s
DAC Darwin (Calif) 85.39 44 *e*P P 05 24 42.9 +0.4
comp=Z,5.9nm,1.0s
WDC Whiskeytown Da 85.50 38 *e*P P 05 24 43.7 +1.0
WDC pmax pmax
comp=Z,23nm,1.0s
WDC Whiskeytown Da 85.50 38 *e*P P 05 24 43.7 +1.0
comp=Z,23nm,1.0s
IRM Iron Mountain 85.53 47 P P 05 24 43.9 +0.8
baz=230,SNR=14
113A Mohawk Valley, 85.54 49 *e*P P 05 24 44.3 +1.2
comp=Z,12nm,1.2s
GMRC Granite Mounta 85.61 46 P P 05 24 44.0 +0.4
baz=230,SNR=7.6
214A Organ Pipe Nat 85.66 50 P P 05 24 44.5 +0.7
baz=232
214A Organ Pipe Nat 85.66 50 *e*P P 05 24 44.7 +0.9
comp=Z,114nm,1.8s
Y12C Blythe 85.67 47 P P 05 24 44.3 +0.5
baz=231
Y12C Blythe 85.67 47 *e*P P 05 24 45.1 +1.4
comp=Z,16nm,1.4s
N02D Trinity Center 85.69 38 P P 05 24 43.8 0.0
baz=225,SNR=6.1
O03D Paynes Creek 85.70 39 P P 05 24 44.0 +0.1
baz=226,SNR=7.7
WAKR Walker 85.79 41 *e*P P 05 24 45.7 +1.2
comp=Z,28nm,1.2s
IPM Ipoh 85.83 277 *e*P P 05 24 45.0 -0.1
comp=Z,14nm,0.6s
TUQ Turquoise Moun 85.86 45 P P 05 24 45.5 +0.7
baz=230
M02C Callahan 85.91 37 P P 05 24 46.0 +1.1
baz=225,SNR=6.0
SHOC Shoshone, Teco 85.94 45 P P 05 24 46.3 +1.2
baz=229
FURC Furnace Creek, 85.96 44 P P 05 24 45.8 +0.8
baz=229
GRAC Grapevine Rang 86.00 43 P P 05 24 46.3 +1.0
baz=229
L02D Cave Junction, 86.07 36 P P 05 24 46.6 +1.1
baz=224
LDFC Landfair 86.14 46 *e*P P 05 24 47.9 +1.7
comp=Z,60nm,1.4s
YBH Yreka Blue Hor 86.23 37 *e*P P 05 24 47.4 +1.0
YBH pmax pmax
comp=Z,19nm,1.0s
YBH Yreka Blue Hor 86.23 37 *e*P P 05 24 47.4 +1.0
comp=Z,19nm,1.0s
NEE2 Needles Airpor 86.25 47 P P 05 24 47.7 +1.1
baz=230
PAHR Pah Rah Range 86.64 40 *e*P P 05 24 49.2 +0.6
comp=Z,15nm,1.1s
TPNV Topopah Spring 86.64 44 P P 05 24 49.5 +0.8
baz=229,SNR=12
TPNV Topopah Spring 86.64 44 *e*P P 05 24 49.5 +0.8
TPNV pmax pmax
comp=Z,12nm,1.0s
TPNV Topopah Spring 86.64 44 *e*P P 05 24 49.5 +0.8
comp=Z,12nm,1.0s
M04C Macdoel 86.73 38 P P 05 24 49.4 +0.5
baz=225
LASM Arnica Sink 86.74 38 P P 05 24 49.8 +0.7
PSI Prapat 86.84 275 *e*P P 05 24 49.3 -0.9
PSI pmax pmax
comp=Z,115nm,0.8s
PSI Prapat 86.84 275 *e*P P 05 24 49.3 -0.9
comp=Z,115nm,0.8s
W13A Hualapai Mount 86.93 47 *e*P P 05 24 51.1 +1.0
comp=Z,21nm,1.5s
SHPR Sheep Range 87.02 45 *e*P P 05 24 51.9 +1.3
comp=Z,15nm,1.3s
USRK Ussuriysk Ar. 87.09 326 P P 05 24 50.0 -0.4
comp=Z,4.8nm,0.8s,baz=144,slow=3.4,SNR=10
TUC Tucson 87.24 50 P P 05 24 52.7 +1.1
baz=233
TUC Tucson 87.24 50 *e*P P 05 24 52.9 +1.3
TUC pmax pmax
comp=Z,13nm,1.0s
TUC Tucson 87.24 50 *e*P P 05 24 52.9 +1.3
comp=Z,13nm,1.0s
GSI Gunungsitoli 87.29 273 *e*P P 05 24 52.6 +0.5
comp=Z,51nm,0.7s
I03D Drain, OR 87.30 35 P P 05 24 52.3 +0.9
baz=224
UBPT Khong Chiam 87.48 289 P P 05 24 54.7 +1.7
comp=Z,23nm,0.9s
MOD Modoc Plateau 87.63 38 *e*P P 05 24 53.6 +0.2
comp=Z,11nm,1.0s
319A Douglas 87.70 52 *e*P P 05 24 55.3 +1.4
comp=Z,12nm,0.9s
HPIG 87.71 57 *e*P P 05 24 54.5 +0.3
comp=Z,7.4nm,1.0s
I04A Tendick Farm, 87.85 36 P P 05 24 54.5 +0.4
baz=225
R11A Troy Canyon, C 87.95 43 P P 05 24 55.2 +0.2
baz=230
J05D Fort Rock, OR 88.10 37 P P 05 24 56.1 +0.6
baz=226
BMN Battle Mountai 88.36 41 *e*P P 05 24 57.1 +0.3
BMN pmax pmax
comp=Z,13nm,1.1s
BMN Battle Mountai 88.36 41 *e*P P 05 24 57.1 +0.3
comp=Z,13nm,1.1s
G03D McMinnville, O 88.43 34 P P 05 24 57.5 +0.7
baz=224
LCMT Little Creek M 88.53 46 *e*P P 05 24 59.1 +1.4
comp=Z,10nm,1.1s
MDJ Mudanjiang 88.58 325 P P 05 24 58.3 +0.7
MDJ pP pP 05 25 04.9 -1.7
MDJ sP sP 05 25 07.5 -2.4
MDJ pmax pmax
comp=Z,10.0nm,0.8s
MDJ pmax pmax
comp=Z,70nm,8.6s
U15A North Rim 88.77 46 *e*P P 05 25 00.2 +1.2
comp=Z,46nm,1.6s
I05D Terrebonne, OR 88.78 36 P P 05 24 59.1 +0.6
baz=226
WUAZ Wupatki 88.80 48 P P 05 24 60.0 +0.9
baz=232
WUAZ Wupatki 88.80 48 *e*P P 05 25 00.5 +1.5
comp=Z,32nm,1.4s
CCUT Cedar City 88.80 45 *e*P P 05 24 59.7 +0.6
comp=Z,11nm,1.2s
KNB Kanab 88.80 46 *e*P P 05 25 00.2 +1.2
KNB pmax pmax
comp=Z,23nm,1.2s
KNB Kanab 88.80 46 *e*P P 05 25 00.2 +1.2
comp=Z,22nm,1.2s
WHN Wuhan 88.90 306 ⇑P P 05 25 00.4 +1.0
X18A Snowflake 89.13 49 *e*P P 05 25 01.8 +1.1
comp=Z,38nm,1.8s
F04D Rainier, OR 89.17 34 P P 05 25 01.8 +1.5
baz=224
CROR Criterion Ridg 89.41 36 P P 05 25 01.2 -0.4
121A Cookes Peak, D 89.41 52 P P 05 25 02.9 +0.9
baz=234
SKNT Sakolnakorn 89.58 290 P P 05 25 04.2 +1.3
comp=Z,66nm,0.9s
FL2 Flat Top 2 89.58 34 P P 05 25 03.5 +1.2
W18A Petrified Fore 89.62 49 P P 05 25 03.7 +0.8
baz=233
W18A Petrified Fore 89.62 49 *e*P P 05 25 03.4 +0.5
comp=Z,23nm,1.4s
ERK Elk Rock 89.66 34 P P 05 25 03.7 +0.9
TDL Tradedollar La 89.75 34 P P 05 25 04.3 +1.1
G06A Carlson Farm, 89.76 36 *e*P P 05 25 03.8 +0.6
comp=Z,32nm,1.3s
MTPU Mount Pierson 89.83 45 *e*P P 05 25 05.7 +1.6
comp=Z,24nm,1.5s
MSU Marysvale 90.13 45 *e*P P 05 25 06.5 +1.2
MSU Marysvale 90.13 45 *e*P P 05 25 06.5 +1.2
CN2 Changchun 90.19 322 *e*P P 05 24 59.5 -5.6
CN2 pmax pmax
comp=Z,10.0nm,0.6s
KHON Khomkaen 90.21 289 P P 05 25 08.3 +2.4
comp=Z,22nm,1.0s
LON Longmire 90.23 34 *e*P P 05 25 05.7 +0.4
LON pmax pmax
comp=Z,8.0nm,1.0s
LON Longmire 90.23 34 *e*P P 05 25 05.7 +0.4
comp=Z,7.7nm,1.0s
JBO Jordan Butte 90.33 36 P P 05 25 06.4 +0.6
TX31 Lajitas Ar. Si 90.51 56 *e*P P 05 25 08.0 +0.8
TXAR Lajitas Array 90.51 56 P P 05 25 07.4 +0.2
comp=Z,3.9nm,0.9s,baz=211,slow=7.4,SNR=39
MNTX Cornudas Mount 90.60 54 P P 05 25 07.7 +0.3
baz=236
MNTX Cornudas Mount 90.60 54 *e*P P 05 25 08.1 +0.7
comp=Z,6.0nm,0.9s
G08A Pilot Rock 90.66 36 *e*P P 05 25 08.2 +0.8
comp=Z,32nm,1.1s
CHAI Chaiyaphum 90.69 288 P P 05 25 09.4 +1.3
NAC Naches 90.71 35 P P 05 25 08.2 +0.7
DUG Dugway, Tooele 90.78 43 P P 05 25 08.5 +0.3
baz=232
KLR Kul'dur 90.86 329 P P 05 25 07.5 -0.6
comp=Z,1.9nm,0.8s,baz=129,slow=1.0,SNR=8.2
CNPM China Poot 90.88 12 *e*P P 05 25 08.6 +0.6
comp=Z,41nm,1.2s
MFID Camas Ranch 91.10 39 *e*P P 05 25 10.2 +0.6
comp=Z,12nm,1.1s
HAWA Hanford 91.12 35 *e*P P 05 25 10.3 +0.9
comp=Z,30nm,1.0s
BNM Barren Site 91.13 51 *e*P P 05 25 11.1 +1.0
BRLK Bradley Lake 91.16 13 *e*P P 05 25 09.7 +0.4
comp=Z,24nm,1.0s
B05A Bryant 91.16 33 P P 05 25 10.1 +0.6
baz=225
BMO Blue Mountains 91.24 38 *e*P P 05 25 10.4 +0.3
comp=Z,6.0nm,0.9s
P17A Butcher Ranch, 91.60 45 *e*P P 05 25 13.2 +1.1
comp=Z,8.7nm,0.7s
MVCO Mesa Verde 91.67 48 P P 05 25 13.0 +0.5
baz=234
ANMO Albuquerque 91.70 50 P P 05 25 13.2 +0.6
baz=235
ANMO Albuquerque 91.70 50⇓*i*P P 05 25 13.1 +0.4
ANMO pmax pmax
comp=Z,5.0nm,0.9s
ANMO Albuquerque 91.70 50 *e*P P 05 25 13.1 +0.4
comp=Z,2.7nm,0.7s
D08A Wollman Farm, 91.88 35 *e*P P 05 25 13.6 +0.6
comp=Z,26nm,0.9s
HLID Hailey 91.98 40 P P 05 25 14.2 +0.5
baz=230
HLID Hailey 91.98 40 *e*P P 05 25 14.4 +0.7
comp=Z,10nm,1.0s
PV10 Paradox Valley 92.01 46 *e*P P 05 25 14.3 +0.3
PV01 Paradox Valley 92.16 47 *e*P P 05 25 15.2 +0.4
ENH Enshi 92.24 304 *e*P P 05 25 16.3 +1.2
comp=Z,129nm,1.8s
GYA Guiyang 92.33 299⇑*i*P P 05 25 17.2 +1.6
GYA pP pP 05 25 24.4 -0.3
GYA PP **PP** **05 29 00.2 +3.4**
GYA SKS **SKSac** **05 35 48.4 +1.0**
GYA S **S** **05 36 17.0 -0.4**
GYA SS **SS** **05 42 30.6 +1.6**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,7.6s
GYA LR LR
comp=Z,520nm,20.4s
GYA LR LR
comp=Z,500nm,21.0s
GYA LR LR
comp=Z,490nm,20.6s
933A Laredo 92.85 60 P P 05 25 18.1 +0.2
baz=238
EYAK Cordova Ski Ar 92.93 15 *e*P P 05 25 17.9 +0.5
comp=Z,9.3nm,0.8s
034A Hebbronville 93.02 61 P P 05 25 19.2 +0.6
baz=239
S22A 4UR Ranch, Cre 93.06 48 P P 05 25 19.6 +0.6
baz=235
833A Chaparral WMA, 93.13 59 P P 05 25 19.5 +0.3
baz=238
TT01 Tatalina 93.29 9 *e*P P 05 25 19.1 +0.1
AHID Auburn Hatcher 93.38 42 *e*P P 05 25 20.7 +0.4
comp=Z,8.0nm,0.9s
934A Benavides 93.42 60 P P 05 25 21.2 +0.7
baz=239
O20A White River Ci 93.54 45 P P 05 25 20.8 -0.2
baz=234
O20A White River Ci 93.54 45 *e*P P 05 25 20.9 -0.2
comp=Z,5.3nm,1.0s
BMRM Bremner River 93.56 15 *e*P P 05 25 20.9 +0.5
comp=Z,14nm,0.8s
MSTX Muleshoe 93.69 53 P P 05 25 21.6 -0.1
baz=237
MSTX Muleshoe 93.69 53 *e*P P 05 25 21.6 -0.1
comp=Z,8.8nm,0.8s
SMCO Snowmass 93.78 47 *e*P P 05 25 22.9 +0.5
comp=Z,6.5nm,1.1s
REDW Red Top Meadow 93.89 42 *e*P P 05 25 22.7 +0.1
comp=Z,21nm,1.2s
TPAW Teton Pass 93.91 42 *e*P P 05 25 23.4 +0.7
comp=Z,9.6nm,1.0s
SDCO Great Sand Dun 93.92 49 P P 05 25 22.8 -0.2
baz=236
JCT Junction City 93.96 57 P P 05 25 22.5 -0.5
baz=238
JCT Junction City 93.96 57 *e*P P 05 25 22.9 -0.1
JCT pmax pmax
comp=Z,7.0nm,1.0s
JCT Junction City 93.96 57 *e*P P 05 25 22.9 -0.1
comp=Z,7.2nm,1.0s
SNOW Snow King Moun 94.00 42 *e*P P 05 25 23.4 +0.2
comp=Z,18nm,0.9s
IMW Indian Meadow 94.16 41 *e*P P 05 25 24.4 +0.5
comp=Z,5.7nm,1.0s
LOHW Long Hollow 94.18 42 *e*P P 05 25 24.2 +0.3
comp=Z,18nm,1.5s
BW06 Boulder Array 94.29 43 P P 05 25 24.1 -0.4
baz=234
BW06 Boulder Array 94.29 43 *e*P P 05 25 24.3 -0.1
comp=Z,3.5nm,1.0s
PDAR Pinedale Array 94.29 43 P P 05 25 23.8 -0.7
comp=Z,2.5nm,0.9s,baz=224,slow=4.1,SNR=15
T25A Trinidad 94.31 50 P P 05 25 24.4 -0.3
baz=236
MSO Missoula 94.31 38 P P 05 25 24.1 -0.1
baz=231
FLWY Flagg Ranch 94.41 41 *e*P P 05 25 25.6 +0.7
comp=Z,15nm,0.9s
CM01 Chiang Mai Arr 94.44 289 *e*P P 05 25 27.0 +1.6
CMAR Chiang Mai Arr 94.47 289 P P 05 25 26.9 +1.3
comp=Z,2.4nm,0.6s,baz=139,slow=3.6,SNR=14
YHB Horse Butte 94.53 40 *e*P P 05 25 26.9 +1.4
comp=Z,8.2nm,0.9s
YMR Madison River 94.61 41 *e*P P 05 25 27.5 +1.6
comp=Z,14nm,1.0s
433A Art 94.62 57 P P 05 25 25.2 -0.8
baz=239
CHTO Chiang Mai 94.65 289 *e*P P 05 25 28.2 +1.8
CHTO pmax pmax
comp=Z,314nm,0.8s
CHTO Chiang Mai 94.65 289 *e*P P 05 25 28.2 +1.8
comp=Z,314nm,0.8s
XAN Xi'an 94.66 306 P P 05 25 26.9 +0.8
XAN SKS **SKSac** **05 36 02.2 +2.5**
XAN pmax pmax
comp=Z,6.0nm,0.7s
XAN LR LR
comp=Z,110nm,18.2s
XAN LR LR
comp=Z,190nm,20.3s
H17A Grant Village 94.67 41 P P 05 25 26.6 +0.4
baz=233
H17A Grant Village 94.67 41 *e*P P 05 25 27.0 +0.8
comp=Z,6.8nm,1.1s
KMI Kunming 94.69 296 P P 05 25 26.3 -0.4
KMI pmax pmax
comp=Z,10.0nm,0.5s
TRF Thorofare Moun 94.70 11 *e*P P 05 25 25.2 -0.5
comp=Z,6.9nm,0.8s
534A Blanco 94.70 58 P P 05 25 25.9 -0.4
baz=239
CHMT Chamberlain Mo 94.73 38 *e*P P 05 25 26.3 0.0
BOZ Bozeman (W) 94.83 39 P P 05 25 26.9 +0.1
baz=232
BOZ Bozeman (W) 94.83 39 *e*P P 05 25 26.9 +0.1
BOZ pmax pmax
comp=Z,16nm,1.2s
BOZ Bozeman (W) 94.83 39 *e*P P 05 25 26.9 +0.1
comp=Z,16nm,1.2s
Q24A Divide 94.83 48 P P 05 25 26.8 -0.4
baz=236
RND Reindeer 94.91 12 *e*P P 05 25 26.6 0.0
RND pmax pmax
comp=Z,12nm,0.8s
RND Reindeer 94.91 12 *e*P P 05 25 26.6 0.0
comp=Z,12nm,0.8s
AMTX Amarillo 94.94 53 P P 05 25 26.9 -0.5
baz=238
333A Richland Sprin 95.00 57 P P 05 25 27.1 -0.6
baz=239
ABTX Abilene, Hawle 95.19 56 P P 05 25 28.0 -0.5
baz=239
SEY Seymchan 95.25 346⇑*i*P P 05 25 27.6 -0.4
233A Rising Star 95.41 56 P P 05 25 29.5 -0.1
baz=239
MENT Mentasta 95.51 14 *e*P P 05 25 29.8 +0.6
comp=Z,5.5nm,0.8s
RLMT Red Lodge 95.85 41 P P 05 25 31.6 +0.1
baz=234
RLMT Red Lodge 95.85 41 *e*P P 05 25 32.3 +0.8
comp=Z,5.2nm,0.8s

234A	**Clairette**	**95.96**	**57**	P	**P**	**05 25 32.1**	**+0.1**
	baz=239							
WRH	**Wood River Hil**	**96.02**	**12**	*e*P	**P**	**05 25 31.3**	**-0.2**
	comp=Z,9.7nm,0.8s							
K22A	**Casper**	**96.04**	**44**	P	**P**	**05 25 33.0**	**+0.6**
	baz=236							
K22A	**Casper**	**96.04**	**44**	*e*P	**P**	**05 25 32.6**	**+0.2**
	comp=Z,8.6nm,1.0s							
DOT	**Dot Lake**	**96.06**	**14**	*e*P	**P**	**05 25 31.6**	**-0.2**
	comp=Z,11nm,0.8s							
Z33A	**Whitaker Ranch**	**96.16**	**55**	P	**P**	**05 25 32.8**	**-0.2**
	baz=239							
HDA	**Harding Lake**	**96.17**	**12**	*e*P	**P**	**05 25 32.0**	**-0.2**
	comp=Z,12nm,0.9s							
CCB	**Clear Creek Bu**	**96.23**	**12**	*e*P	**P**	**05 25 31.6**	**-0.9**
	comp=Z,5.4nm,0.8s							
COLA	**College**	**96.43**	**12**	*e*P	**P**	**05 25 33.0**	**-0.3**
COLA				pmax	pmax			
	comp=Z,11nm,0.7s							
COLA	**College**	**96.43**	**12**	*e*P	**P**	**05 25 33.0**	**-0.3**
	comp=Z,11nm,0.7s							
ILAR	**Eielson Array**	**96.51**	**12**	P	**P**	**05 25 32.6**	**-1.1**
	comp=Z,3.3nm,0.8s,baz=221,slow=5.7,SNR=28							
ILB	**Eielson Array**	**96.51**	**12**	*e*P	**P**	**05 25 33.2**	**-0.5**
HHC	**Hu-ho-hao-te**	**96.56**	**313**	*e*P	**P**	**05 25 37.3**	**+2.6**
HHC				pP	pP	05 25 43.7	-0.1
HHC				sP	sP	05 25 46.4	-0.6
HHC				S	**S**	**05 36 53.8**	**0.0**
HHC				pmax	pmax			
	comp=Z,16nm,0.6s							
HHC				pmax	pmax			
	comp=Z,77nm,6.0s							
HHC				LR	LR			
	comp=Z,120nm,15.1s							
HHC				LR	LR			
	comp=Z,310nm,17.3s							
HHC				LR	LR			
	comp=Z,96nm,14.7s							
CD2	**Chengdu**	**96.79**	**302**	*e*P	**P**	**05 25 36.2**	**+0.3**
CD2				sP	pP	05 25 45.5	+0.5
CD2				SKS	**SKSac**	**05 36 11.6**	**+0.5**
CD2				S	**ScS**	**05 36 56.5**	**0.0**
CD2				sS	sS	05 37 08.1	-3.1
CD2				SS	**SS**	**05 43 33.0**	**+0.7**
CD2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
CD2				pmax	pmax			
	comp=Z,120nm,6.6s							
LPAZ	**La Paz**	**97.20**	**113**	P	Pdif	05 25 40.5	+1.5
	comp=Z,3.1nm,1.0s,baz=234,slow=7.4,SNR=7.1							
LPAZ	**La Paz**	**97.20**	**113**	*e*P	Pdif	05 25 41.0	+2.0
LPAZ				pmax	pmax			
	comp=Z,5.0nm,1.0s							
LPAZ	**La Paz**	**97.20**	**113**	*e*P	Pdif	05 25 41.0	+2.0
	comp=Z,4.9nm,1.0s							
X34A	**Smith Ranch, M**	**97.50**	**55**	P	Pdif	05 25 39.3	+0.3
	baz=240							
BILL	**Bilibino**	**97.91**	**353**	*e*P	**P**	**05 25 36.0**	**-4.0**
BILL				*e*		05 29 38.7		
BILL				pmax	pmax			
	comp=Z,3.0nm,1.1s							
BILL				MLR	MLR			
	comp=Z,168nm,20.0s							
RSSD	**Black Hills**	**98.37**	**44**	Pdiff	Pdif	05 25 43.1	+0.2
	baz=237							
RSSD	**Black Hills**	**98.37**	**44**	*e*P	Pdif	05 25 43.1	+0.1
RSSD				pmax	pmax			
	comp=Z,14nm,1.0s							
RSSD	**Black Hills**	**98.37**	**44**	*e*P	Pdif	05 25 43.1	+0.1
	comp=Z,14nm,1.0s							
LZH	**Lanzhou**	**99.28**	**306**	*e*P	**Pdif**	**05 25 48.5**	**+1.3**
LZH				pP	pP	05 25 55.0	-1.2
LZH				sP	sP	05 25 57.7	-1.8
LZH				PP	**PP**	**05 29 53.5**	**+2.8**
LZH				pmax	pmax			
	comp=Z,21nm,1.5s							
LZH				pmax	pmax			
	comp=Z,100nm,9.6s							
LZH				LR	LR			
	comp=Z,320nm,17.5s							
LZH				LR	LR			
	comp=Z,340nm,18.0s							
LZH				LR	LR			
	comp=Z,600nm,19.6s							
WMQ	**Urumqi**	**113.73**	**308**	*e*PKP	**PKiKP**	**05 30 44.2**	**+0.8**
WMQ				PP	**PP**	**05 31 39.0**	**+2.2**
WMQ				SKS	**SKSdf**	**05 37 51.3**	**-2.2**
WMQ				AMB	AMB			
	comp=Z,96nm,3.7s							
WMQ				LR	LR			
	comp=Z,110nm,11.8s							
WMQ				LR	LR			
	comp=Z,260nm,19.2s							
WMQ				LR	LR			
	comp=Z,280nm,24.0s							
MK01	**Makanchi Array**	**118.20**	**310**	*e*PKPdf	**PKPdf**	**05 30 50.7**	**-1.1**
ZALV	**Zalesovo Beam**	**118.21**	**318**	PKP	**PKPdf**	**05 30 50.1**	**-1.4**
	comp=Z,0.7nm,0.6s,baz=122,slow=1.9,SNR=4.2							
MKAR	**Makanchi Array**	**118.22**	**310**	PKP	**PKPdf**	**05 30 50.7**	**-1.2**
	comp=Z,1.1nm,0.6s,baz=98,slow=0.2,SNR=8.3							
KSH	**Kashi**	**120.98**	**301**	*e*PKP	**PKPdf**	**05 30 56.5**	**-1.0**
KSH				*es*PKP		05 31 10.6		
KSH				*e*PP	**PP**	**05 32 28.2**	**+0.8**
KSH				SKS	**SKSdf**	**05 38 03.7**	**-4.0**
KSH				SKKS	**SKKSac**	**05 39 20.4**	**-4.4**
KSH				AMB	AMB			
	comp=Z,33nm,3.3s							
KSH				LR	LR			
	comp=Z,170nm,9.1s							
KSH				LR	LR			
	comp=Z,190nm,11.3s							
KSH				LR	LR			
	comp=Z,160nm,7.5s							
KURK	**Kurchatov**	**121.37**	**314**	PKIKP	**PKPdf**	**05 30 56.9**	**-0.8**
KURK				pmax	pmax			
	comp=Z,2.0nm,0.7s							
KURK	**Kurchatov**	**121.37**	**314**	*e*PKPdf	**PKPdf**	**05 30 56.9**	**-0.8**
KURBB	**Kurchatov Arra**	**121.41**	**314**	PKP	**PKPdf**	**05 30 56.9**	**-0.9**
	comp=Z,2.3nm,0.7s,baz=106,slow=2.0,SNR=26							
AAK	**Ala-Archa**	**122.75**	**304**	↓*i* PKIKP	**PKPdf**	**05 31 01.3**	**+0.4**
BVAR	**Borovoye Array**	**126.66**	**316**	PKP	**PKPdf**	**05 31 07.1**	**-0.7**
	comp=Z,1.9nm,0.5s,baz=106,slow=2.2,SNR=11							
BRVK	**Borovoye**	**126.72**	**316**	*i* PKIKP	**PKPdf**	**05 31 07.4**	**-0.5**
ZRNK	**Zerenda**	**127.50**	**316**	*e*PKIKP	**PKPdf**	**05 31 09.1**	**-0.3**
ZRNK	**Zerenda**	**127.50**	**316**	*e*PKPdf	**PKPdf**	**05 31 09.1**	**-0.3**
ARU	**Arti**	**133.18**	**321**	PKP	**PKPdf**	**05 31 20.8**	**+0.8**
	comp=Z,3.2nm,0.5s,baz=322,slow=3.8,SNR=4.1							
ARU	**Arti**	**133.18**	**321**	*i* PKIKP	**PKPdf**	**05 31 19.6**	**-0.5**
ARU						05 33 43.7		
ARU				SS	SS	05 51 19.5	-9.3
AKTO	**Aktyubinsk**	**134.46**	**313**	PKP	**PKPdf**	**05 31 23.6**	**+0.9**
	comp=Z,1.7nm,0.6s,baz=330,slow=2.4,SNR=5.5							
ARCES	**ARCESS Array B**	**137.81**	**349**	PKP	**PKPdf**	**05 31 27.6**	**-0.7**
	comp=Z,3.9nm,0.9s,baz=20,slow=3.9,SNR=5.5							
H10S3	**ASCENSION HYDR**	**138.04**	**152**	T	T	08 07 15.1		
	baz=204							
H10S2	**ASCENSION HYDR**	**138.05**	**152**	T	T	08 07 15.1		
	baz=204							
H10S1	**ASCENSION HYDR**	**138.06**	**152**	T	T	08 07 15.8		
	baz=204							
H10N3	**ASCENSION HYDR**	**139.12**	**152**	T	T	08 08 06.3		
	baz=203,slow=75,SNR=11							
H10N1	**ASCENSION HYDR**	**139.12**	**152**	T	T	08 08 26.2		
	baz=203,slow=75,SNR=11							
H10N2	**ASCENSION HYDR**	**139.13**	**152**	T	T	08 08 27.1		
	baz=203,slow=75,SNR=12							
KLMR	**Klimovskoe**	**140.47**	**333**	*e*PKIKP	**PKPdf**	**05 31 32.2**	**-1.2**
KLMR				pmax	pmax			
	comp=Z,6.0nm,1.0s							
FIA1	**FINESS Array S**	**144.59**	**342**	*e*PKPdf	**PKPab**	**05 31 38.5**	**-0.8**
FINES	**FINESS Array B**	**144.60**	**342**	PKP	**PKPab**	**05 31 38.2**	**-1.1**
	comp=Z,13nm,0.7s,baz=64,slow=4.4,SNR=42							
GNI	**Garni**	**144.88**	**299**	↓*i* PKIKP	PKPbc	05 31 41.6	+0.3
OBN	**Obninsk**	**145.10**	**327**	↑*i* PKIKP	**PKPbc**	**05 31 40.8**	**-0.5**
OBN				pmax	pmax			
	comp=Z,55nm,1.6s							
ZEI	**Tsey**	**145.17**	**304**	*i* PKIKP	**PKPbc**	**05 31 40.8**	**-1.5**
ZEI				pmax	pmax			
	comp=Z,39nm,0.6s							
VSR	**Storozhevoye**	**145.70**	**320**	*e*PKIKP	**PKPdf**	**05 31 42.1**	**-0.8**
VSR				pmax	pmax			
	comp=Z,30nm,0.6s							
KBZ	**Khabaz**	**145.72**	**306**	PKPbc	**PKPbc**	**05 31 43.7**	**+0.1**
	comp=Z,6.2nm,0.9s,baz=91,slow=3.2,SNR=7.1							
KIV	**Kislovodsk**	**145.83**	**306**	↓*e*PKIKP	**PKPbc**	**05 31 44.2**	**+0.1**
KIV				pmax	pmax			
	comp=Z,19nm,1.1s							
KIV				pmax	pmax			
	comp=Z,10.0nm,0.7s							
KIV				MLR	MLR			
	comp=Z,670nm,20.0s							
NC303	**NORSAR Array S**	**147.66**	**353**	*e*PKPdf	**PKPbc**	**05 31 48.3**	**-0.5**
NC405	**NORSAR Array S**	**147.73**	**353**	*e*PKPdf	**PKPbc**	**05 31 48.4**	**-0.6**
NB201	**NORSAR Array S**	**147.84**	**353**	*e*PKPdf	**PKPbc**	**05 31 48.6**	**-0.7**
NB2	**NORSAR Subarra**	**147.86**	**353**	PKP	**PKPbc**	**05 31 48.3**	**-1.0**
	comp=Z,7.6nm,0.6s,baz=9.8,slow=2.9							
NOA	**NORSAR Array B**	**147.86**	**353**	PKPbc	**PKPbc**	**05 31 48.1**	**-1.2**
	comp=Z,10nm,0.9s,baz=13,slow=4.4,SNR=33							
NBO02	**NORSAR Array S**	**147.88**	**353**	*e*PKPdf	**PKPbc**	**05 31 48.6**	**-0.7**
NBO00	**NORSAR Array S**	**147.91**	**354**	*e*PKPbc	**PKPbc**	**05 31 48.9**	**-0.6**
NAO01	**NORSAR Array S**	**148.08**	**353**	*e*PKPbc	**PKPbc**	**05 31 49.6**	**-0.3**
NC602	**NORSAR Array S**	**148.12**	**353**	*e*PKPdf	**PKPbc**	**05 31 49.2**	**-0.8**
HFS	**Hagfors**	**148.43**	**350**	PKPbc	**PKPbc**	**05 31 49.7**	**-1.1**
	comp=Z,4.9nm,0.4s,baz=104,slow=3.1,SNR=23							
KONO	**Kongsberg**	**149.38**	**354**	↑*e*PKIKP	**PKPdf**	**05 31 49.8**	**+1.0**
KONO				*i*		05 31 53.5		
KONO				pmax	pmax			
	comp=Z,279nm,2.5s							
AKASG	**Malin Array Be**	**151.29**	**325**	PKPbc	**PKPbc**	**05 31 57.2**	**-0.9**
	comp=Z,9.5nm,0.7s,baz=45,slow=3.0,SNR=23							
AKBB	**Malin Array Si**	**151.29**	**325**	*e*PKIKP	**PKPbc**	**05 31 57.5**	**-0.6**
AKBB	**Malin Array Si**	**151.29**	**325**	*e*PKPbc	**PKPbc**	**05 31 57.5**	**-0.6**
KIEV	**Kiev**	**151.31**	**325**	↓*i* PKIKP	**PKPbc**	**05 31 56.7**	**-1.4**
KIEV	**Kiev**	**151.31**	**325**	*e*PKPbc	**PKPbc**	**05 31 57.4**	**-0.6**
AK11	**Malin Array Si**	**151.34**	**325**	*e*PKPbc	**PKPbc**	**05 31 57.1**	**-1.0**
ASF	**Jabal al Asfar**	**151.42**	**284**	PKPbc	**PKPbc**	**05 32 00.2**	**+1.1**
	comp=Z,6.2nm,0.7s,baz=170,slow=2.6,SNR=13							
MMAI	**Mount Meron Ar**	**152.71**	**286**	PKPbc	**PKPbc**	**05 32 03.2**	**+1.2**
	comp=Z,5.1nm,0.5s,baz=81,slow=6.0,SNR=11							
EIL	**Elat**	**152.87**	**279**	PKPbc	**PKPbc**	**05 32 03.0**	**+0.7**
	comp=Z,6.6nm,0.8s,baz=281,slow=6.0,SNR=7.1							
BR131	**Keskin Array S**	**153.37**	**301**	*e*PKPbc	**PKPbc**	**05 32 03.1**	**-0.2**
BRTR	**Keskin Array B**	**153.37**	**301**	PKPbc	**PKPbc**	**05 32 02.5**	**-0.9**
	comp=Z,1.2nm,0.7s,baz=128,slow=2.0,SNR=9.4							
EKA	**Eskdalemuir Ar**	**153.50**	**9**	PKPbc	**PKPbc**	**05 32 02.3**	**-0.6**
	comp=Z,0.6nm,0.7s,baz=339,slow=1.8,SNR=3.6							
KIS	**Kishinev**	**153.69**	**319**	*e*PKP	PKPab	05 32 30.0	+14
KIS	**Kishinev**	**153.69**	**319**	*e*PKP2	PKPab	05 32 30.0	+14
KOLS	**Kolonicke sedl**	**155.79**	**329**	*e*PKP2	**PKPab**	**05 32 23.4**	**-1.9**
KOLS	**Kolonicke sedl**	**155.79**	**329**	*e*PKP	**PKPab**	**05 32 23.4**	**-1.9**
STHS	**Stebnicka Huta**	**155.88**	**331**	*e*PKP2	**PKPab**	**05 32 25.5**	**-0.1**
STHS	**Stebnicka Huta**	**155.88**	**331**	*e*PKP	**PKPab**	**05 32 25.5**	**-0.1**
CRVS	**Cervenica-Dubn**	**156.18**	**330**	*e*PKP2	**PKPab**	**05 32 26.6**	**-0.3**
CRVS	**Cervenica-Dubn**	**156.18**	**330**	*e*PKP	**PKPab**	**05 32 26.6**	**-0.3**
KECS	**Kecovo**	**156.91**	**331**	*e*PKP2	**PKPab**	**05 32 30.3**	**+0.2**
KECS	**Kecovo**	**156.91**	**331**	*e*PKP	**PKPab**	**05 32 30.3**	**+0.2**
CLL	**Collm**	**156.94**	**345**	*e*PKPab	**PKPab**	**05 32 29.0**	**-1.0**
CLL				*ep*PKPab	**pPKPab**	**05 32 38.0**	**-1.1**
CLL	**Collm**	**156.94**	**345**	*e*PKP2	**PKPab**	**05 32 29.0**	**-1.0**
VYHS	**Vyhne**	**157.59**	**333**	*e*PKP2	**PKPab**	**05 32 32.7**	**-0.3**
VYHS	**Vyhne**	**157.59**	**333**	*e*PKP	**PKPab**	**05 32 32.7**	**-0.3**
GERES	**GERESS Array B**	**159.03**	**341**	PKPab	**PKPab**	**05 32 38.8**	**-0.5**
	comp=Z,0.5nm,0.5s,baz=18,slow=4.1,SNR=3.9							
VTS	**Vitosha**	**159.46**	**315**	*e*PKPab	**PKPab**	**05 32 41.6**	**+0.1**
TOA0	**Torodi Ar. Sit**	**163.83**	**173**	*e*PKPdf	**PKPdf**	**05 32 09.2**	**+0.5**
TOA0				*e*PKPab	**PKPab**	**05 33 01.8**	**+0.9**
TORD	**Torodi Ar. Bea**	**163.83**	**173**	PKP	**PKPdf**	**05 32 08.8**	**+0.1**
	comp=Z,1.1nm,0.9s,baz=179,slow=0.7,SNR=5.3							
TORD				PKPab	**PKPab**	**05 33 01.8**	**+0.9**
	comp=Z,3.6nm,0.8s,baz=179,slow=4.1,SNR=14							
ESDC	**Sonseca Array**	**167.85**	**29**	PKPab	**PKPab**	**05 33 16.8**	**-1.4**
	comp=Z,0.9nm,0.6s,baz=309,slow=4.7,SNR=9.1							
ES19	**SONSECA Array**	**167.85**	**29**	*e*PKPab	**PKPab**	**05 33 17.9**	**-0.4**

*MOS **08** 05:22:39.7±1.1, 0.21N×123.19E, h163km, mb5.6/98, Error ellipse: s-maj=7.3km s-min=4.3km az=113.8*
*NEIC **08** 05:22:40.8±0.4, 0.13N×123.24E, h159km±4km, mb5.6/160, MW5.3, Error ellipse: s-maj=3.5km s-min=2.8km az=62.0*
NEIC Felt [III] at Gorontalo and Tolitoli. Also felt at Luwuk.
*IDC **08** 05:22:40.8±1.0, 0.17N×123.19E, h161km±8km, mb5.1/36, mb1 5.1/37, mb1mx5.1/39, mbtmp5.5/37, MS4.0/13, Ms1 4.1/13, ms1mx3.8/44, Error ellipse: s-maj=10.6km s-min=6.0km az=73.0*
*BJI **08** 05:22:40.8, 0.10N×123.30E, h159km, mb5.6/78, mB5.4/50*
*NEIC **08** 05:22:40.0±0.0, 0.20S×123.28E, h160km, Moment Tensor Solution. s17 Moment tensor: Scale 10^17^Nm; Mrr1.01; Mθθ0.25; Mϕϕ-1.26; Mrθ0.29; Mθϕ-0.49; Mϕr-0.05; Best double couple: Mo1.30000×10^17^ NP1:ϕs37.00000°, δ50.00000°, λ119.00000°. NP2:ϕs176.00000°, δ48.00000°, λ60.00000°. Principal axes: T 1.1300, Plg68.0000°, Azm14.0000°; N 0.2700, Plg21.0000°, Azm197.0000°; P -1.4100, Plg0.0000°, Azm106.0000°;*
*GCMT **08** 05:22:40.8±0.1, 0.11N×123.36E, h157km, MW5.4/116, Moment Tensor Solution. s92,c142; s116,c201; Duration: 1s2 Moment tensor: Scale 10^17^Nm; Mrr1.01±.02; Mθθ0.17±.02; Mϕϕ-1.18±.02; Mrθ0.76±.02; Mθϕ-0.56±.02; Mϕr0.09±.02; Best double couple: Mo1.45900×10^17^ NP1:ϕs48.00000°, δ61.00000°, λ126.00000°. NP2:ϕs172.00000°, δ45.00000°, λ44.00000°. Principal axes: T 1.4790, Plg58.0000°, Azm9.0000°; N -0.0430, Plg31.0000°, Azm209.0000°; P -1.4400, Plg9.0000°, Azm113.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*DJA **08** 05:22:41.2±0.2, 0.7N±2.2×123.3E±.7, h150km±2km, M5.3/54, mb5.5/54, mB5.7/44, MLv5.8/17, Mw(mB)5.3/44, Mwp5.5/2*
*KLM **08** 05:22:41.8, 0.19S×123.28E, h174km, mb5.6, MS7.1*
*ISCJB **08** 05:22:42.0±0.3, 0.08N±0.02×123.31E±0.02, h188km±2km, mb5.5/256, Error ellipse: s-maj=2.9km s-min=2.5km az=170.6*

ISC 08 05:22:40.6±0.3, 0.11N±0.03×123.32E±0.03, h160km±2km, h160km:pP-P, n1502, σ1.938/1653, mb5.6/279, 58C-33D, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GTOI	**Gorontalo**	**0.61**	**329**	P	**Pn**	**05 23 05.1**	**+1.4**
KMSI	**Cibinong**	**0.81**	**55**	P	**Pn**	**05 23 05.8**	**+0.9**
LUWI	**Luwuk**	**1.27**	**206**	P	**Pn**	**05 23 08.8**	**+0.1**
LUWI	**Luwuk**	**1.27**	**206**	*e*Pn	**Pn**	**05 23 07.6**	**-1.1**
LUWI				*e*Sn	**Sn**	**05 23 28.1**	**-2.2**
MRSI	**Marisa**	**1.43**	**285**	P	**Pn**	**05 23 10.1**	**-0.1**
SANI	**Sanana**	**3.42**	**129**	P	**Pn**	**05 23 30.7**	**-3.0**
PCI	**Palu**	**3.62**	**254**	P	**Pn**	**05 23 37.4**	**+1.1**
PCI				S	**Sn**	**05 24 21.8**	**+2.2**
KDI	**Kendari**	**4.10**	**190**	P	**Pn**	**05 23 41.1**	**-1.3**
SGSI	**Sangihe**	**4.18**	**32**	P	**Pn**	**05 23 44.5**	**+1.0**
LBMI	**Labuha**	**4.25**	**100**	P	**Pn**	**05 23 42.9**	**-1.4**
LBMI				S	**Sn**	**05 24 32.5**	**-1.5**
TTSI	**Tana Toraja**	**4.70**	**228**	P	**Pn**	**05 23 51.2**	**+1.0**
SPSI	**Sidrap Palu**	**5.38**	**221**	P	**Pn**	**05 24 00.2**	**+1.0**
KAPI	**Kappang**	**6.21**	**215**	P	**Pn**	**05 24 10.5**	**+0.3**
	20nm,0.3s,baz=38,slow=13,SNR=46						
KAPI				S	**Sn**	**05 25 22.7**	**+2.2**
	12nm,0.3s,baz=217,slow=20,SNR=7.5						
KAPI				LR	LR	05 26 37.5	
	comp=Z,2μm,18.7s,baz=36,slow=38						
KAPI	**Kappang**	**6.21**	**215**	*e*Pn	**Pn**	**05 24 11.1**	**+0.9**
KAPI				S	**Sn**	**05 25 22.7**	**+2.2**
BKB	**Balikpapan**	**6.56**	**258**	P	**Pn**	**05 24 16.7**	**+1.8**
	2μm,1.5s,28μm12nm						
MSAI	**Masohi**	**6.57**	**122**	P	**Pn**	**05 24 15.4**	**+0.4**
	282nm,0.7s,4μm1.3nm						
BSSI	**Bau Bau, Buton**	**6.82**	**204**	P	**Pn**	**05 24 19.8**	**+1.5**
	880nm,0.8s,9μm3.2nm						
MYLDM	**Lahad Datu**	**6.97**	**316**	↑P	**Pn**	**05 24 24.5**	**+4.2**
MYLDM	**Lahad Datu**	**6.97**	**316**	*e*Pn	**Pn**	**05 24 23.9**	**+3.6**
KCP	**Kidapawan**	**7.08**	**14**	↓*i* P	**Pn**	**05 24 26.3**	**+4.5**
CTBH	**Cotabato--PC H**	**7.13**	**7**	↑*i* P	**Pn**	**05 24 26.0**	**+3.6**
CTBH				*i* S	**Sn**	**05 25 48.7**	**+6.3**
DAV	**Davao City (W)**	**7.27**	**18**	P	Pn	05 24 29.3	+5.0
	61nm,0.3s,baz=107,slow=3.1,SNR=12						
DAV				S	**Sn**	**05 25 50.9**	**+4.9**
	57nm,0.3s,baz=65,slow=19,SNR=1.8						
DAV	**Davao City (W)**	**7.27**	**18**	↑*e*P	**Pn**	**05 24 24.9**	**+0.6**
DAV	**Davao City (W)**	**7.27**	**18**	↑S	**Sn**	**05 25 53.4**	**+7.4**
DAV	**Davao City (W)**	**7.27**	**18**	P	**Pn**	**05 24 28.6**	**+4.3**
	SNR=8.6						
MATI	**Mati**	**7.40**	**23**	*e*P	**Pn**	**05 24 27.4**	**+1.4**
IPIL	**Ipil**	**7.67**	**354**	*e*P	**Pn**	**05 24 33.9**	**+4.4**
IPIL				*e*S	**Sn**	**05 25 58.4**	**+3.0**
BUKP	**Musuan**	**7.91**	**13**	*e*P	Pn	05 24 37.8	+4.9
BNDI	**Bandanaira**	**8.03**	**125**	P	**Pn**	**05 24 34.0**	**-0.4**
	3μm,1.3s,35μm13nm						
SDKM	**Sandakan**	**8.22**	**312**	↑P	**Pn**	**05 24 40.5**	**+3.5**
CGP	**Cagayan de Oro**	**8.40**	**9**	↓*e*P	Pn	05 24 44.5	+5.2
MTKI	**Muara Teweh, K**	**8.49**	**263**	P	**Pn**	**05 24 41.7**	**+1.2**
	2μm,0.9s,14μm						
MMRI	**Maumere**	**8.75**	**187**	*e*Pn	**Pn**	**05 24 43.9**	**-0.1**
EDFI	**Ende, Flores**	**8.95**	**190**	P	Pn	**05 24 46.5**	**-0.2**
	145nm,0.9s,1μm						
BBKI	**Banjar Baru**	**9.19**	**247**	P	Pn	**05 24 52.1**	**+2.3**
	2μm,1.4s,17μm						
KKM	**Kota Kinabalu**	**9.22**	**310**	↓P	**Pn**	**05 24 53.7**	**+3.4**
KKM	**Kota Kinabalu**	**9.22**	**310**	*e*Pn	**Pn**	**05 24 52.9**	**+2.6**
KDM	**Kudat**	**9.36**	**316**	↓P	**Pn**	**05 24 55.9**	**+3.9**
FAKI	**Fak Fak**	**9.42**	**109**	P	Pn	**05 24 50.9**	**-1.9**
	360nm,1.3s,4μm						
FAKI	**Fak Fak**	**9.42**	**109**	*e*Pn	Pn	**05 24 51.3**	**-1.5**
SOEI	**Soe**	**9.84**	**175**	P	Pn	**05 25 02.2**	**+3.6**
	484nm,1.1s,5μm						
SOEI	**Soe**	**9.84**	**175**	*e*Pn	Pn	**05 25 02.5**	**+3.9**
LLP	**Lapu-Lapu**	**10.16**	**4**	↑*e*P	Pn	**05 25 06.5**	**+3.9**
LLP				*e*S	S	05 27 06.6	+10
WSI	**Waingapu**	**10.17**	**197**	P	Pn	**05 25 04.4**	**+1.7**
	727nm,1.2s,29μm						
BATI	**Baumata**	**10.25**	**178**	P	Pn	**05 25 05.8**	**+1.9**
PLAI	**Plampang**	**10.45**	**212**	P	Pn	**05 25 08.0**	**+1.5**
	145nm,0.8s,2μm						
BTM	**Bintulu**	**10.68**	**287**	↑P	Pn	**05 25 11.2**	**+1.7**
TWSI	**Taliwang, Sumb**	**10.88**	**216**	P	Pn	**05 25 14.2**	**+2.2**
SAUI	**Saumlaki**	**11.31**	**135**	*e*Pn	Pn	**05 25 18.6**	**+0.9**
SBUM	**Sibu**	**11.34**	**282**	↑P	Pn	**05 25 19.4**	**+1.3**
SBUM	**Sibu**	**11.34**	**282**	*e*Pn	Pn	**05 25 18.9**	**+0.8**
RCP	**Roxas**	**11.39**	**357**	↓*e*P	**P**	**05 25 23.1**	**-3.0**
SRBI	**Singaraja**	**11.47**	**225**	P	Pn	**05 25 22.1**	**+2.4**
	141nm,0.9s,2μm						
STKI	**Sintang**	**11.84**	**270**	P	Pn	**05 25 26.3**	**+1.7**
DNP	**Denpasar**	**11.89**	**223**	P	Pn	**05 25 26.9**	**+1.6**
PBKI	**Pangkalan Bun**	**11.98**	**256**	P	Pn	**05 25 27.2**	**+0.8**
	1μm,1.2s,13μm						
ABJI	**Asem Bagus**	**11.99**	**229**	P	Pn	**05 25 28.6**	**+2.1**
OTRP	**Odiongan**	**12.24**	**354**	*e*P	**P**	**05 25 38.0**	**+2.5**
BLJI	**Banyuglugur**	**12.44**	**231**	P	**P**	**05 25 40.1**	**+2.3**
SJMP	**San Jose**	**12.46**	**350**	*e*P	**P**	**05 25 37.0**	**-1.0**
JAGI	**Jajag, Banyuwa**	**12.49**	**227**	P	Pn	**05 25 35.4**	**+2.4**
	255nm,0.9s,2μm						
JAGI	**Jajag, Banyuwa**	**12.49**	**227**	*e*Pn	**Pn**	**05 25 35.0**	**+2.0**
GRJI	**Gresik**	**12.87**	**237**	P	**P**	**05 25 40.2**	**-2.3**
	88nm,1.2s,924nm						
GMJI	**Gumukmas**	**12.89**	**230**	P	**P**	**05 25 40.7**	**-2.0**
	428nm,0.8s,3μm						
KSM	**Kuching**	**13.08**	**276**	*e*Pn	**Pn**	**05 25 41.5**	**+1.0**

CASC 08 05:13:27.7±1.7, 9.16N×83.69W, h32km±8km, MD3.7, 1C-2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BUS	**Buena Vista**	**0.40**	**351**	↓*e*P	Pn	05 13 38.1	+0.3
BUS				*e*S	Sn	05 13 46.3	+1.9
QCR	**Quepos**	**0.54**	**300**	↑*e*P	Pb	05 13 38.3	-0.6
QCR				*e*S	Sn	05 13 46.9	-0.2
URSC	**Urasca**	**0.68**	**353**	↓*i* P	Pn	05 13 41.3	0.0
URSC				*e*S	Sb	05 13 50.3	-0.4
BRU2	**Volcan**	**1.05**	**110**	*e*P	Pn	05 13 46.1	-0.3
BRU2				*e*S	Sb	05 14 00.7	-0.4
TBS2		**1.08**	**109**	*e*P	Pn	05 13 46.9

PALU **Palau** 13.24 57 P Pn 05 25 44.3 +1.7
baz=13,SNR=14
UWJI **Ujung Watu** 13.95 242 P P 05 25 54.2 -0.3
NGJI **Ngawi** 13.96 238 P P 05 25 55.2 +0.5
LQP **Lukban** 14.03 353⇑ *e*P P 05 25 56.5 +1.0
PWJI **Pagerwojo** 14.04 235 P P 05 25 54.3 -1.2
220nm,0.8s,2μm
TGY **Tagaytay City** 14.10 350 P P 05 25 57.3 +1.0
126nm,0.3s,baz=279,slow=4.2,SNR=31
TGY **Tagaytay City** 14.10 350⇑ *e*P P 05 25 59.5 +3.2
PCJI **Pacitan** 14.64 235 P P 05 26 02.6 +0.4
218nm,0.7s,3μm
MTN **Manton Dam** 15.02 149 P Pn 05 26 04.9 0.0
baz=15,SNR=44
MTN **Manton Dam** 15.02 149 *e*Pn Pn 05 26 04.6 -0.3
395nm,1.1s
UGM **Wanagama** 15.04 238 P P 05 26 06.9 +0.2
UGM **Wanagama** 15.04 238 *e*Pn Pn 05 26 05.5 +0.3
KDU **Kakadu** 15.62 145 P Pn 05 26 11.9 -0.4
baz=16,SNR=34
BALP **Baler** 15.63 354 *e*P P 05 26 15.9 +2.8
SCZP **Santa Cruz** 15.93 348 *e*P P 05 26 18.5 +2.1
JCJI **Jatiwangi** 16.39 246 P Pn 05 26 25.1 +3.5
449nm,0.8s,8μm
KNRA **Kununurra** 16.58 161 P Pn 05 26 24.7 +0.8
baz=17
CMJI **Cimerak** 16.77 242 P Pn 05 26 28.0 +1.7
382nm,0.9s,4μm
CAUP **Cauayan** 16.79 355 *e*P Pn 05 26 28.6 +2.1
GENI **Genyem** 17.05 99 P Pn 05 26 30.6 +0.9
1μm,1.2s,16μm
LEM **Lembang** 17.11 246 P Pn 05 26 37.3 +6.7
3μm,1.2s,28μm
CISI **Cisompet, Garu** 17.23 243 P P 05 26 30.8 -0.1
548nm,0.9s,5μm
CISI **Cisompet, Garu** 17.23 243 *e*P P 05 26 31.2 +0.2
353nm,0.8s
CVP **Callao Caves** 17.55 355⇓ *e*P Pn 05 26 37.2 +1.7
JAY **Jayapura** 17.57 99 P Pn 05 26 35.5 -0.4
0.4nm,0.3s,baz=262,slow=21,SNR=19
JAY S S 05 29 46.9 -2.5
0.0nm,0.3s,baz=270,slow=20,SNR=3.9
JAY **Jayapura** 17.57 99 P P 05 26 34.4 -0.3
88nm,0.9s,1μm
ABRA **Dolores** 17.62 352 *e*P P 05 26 34.2 -0.8
CBJI **Citeko** 17.67 248 P Pn 05 26 37.6 +0.6
2μm,0.7s,21μm
CNJI **Cibinong** 17.75 245 P Pn 05 26 40.2 +2.2
284nm,1.1s,3μm
DBJI **Dramaga** 17.81 248 P Pn 05 26 38.9 +0.2
SKJI **Sukabumi** 18.15 247 P Pn 05 26 43.6 +0.8
FITZ **Fitzroy Crossi** 18.24 173 P P 05 26 41.9 0.0
9.8nm,0.3s,baz=5.3,slow=8.7,SNR=127
FITZ S S 05 29 56.0 -6.2
0.5nm,0.3s,baz=238,slow=19,SNR=3.6
FITZ **Fitzroy Crossi** 18.24 173 P P 05 26 41.8 0.0
baz=18,SNR=177
SBJI **Serang** 18.24 250 P Pn 05 26 46.6 +2.9
PIP **Pasuquin** 18.30 352⇓ *e*P Pn 05 26 43.5 -0.9
PMBI **Palembang** 18.78 261 P Pn 05 26 51.3 +1.2
TPRI **Tanjung Pinang** 18.81 273 P Pn 05 26 51.0 +0.5
MYKOM **Kota Tinggi** 19.54 275 *e*P P 05 26 55.5 -0.5
79nm,0.7s
KASI **Kota Agung** 19.61 253 P Pn 05 26 58.5 -1.3
198nm,0.9s,2μm
JMBI **JAMBI** 19.75 265 P Pn 05 27 01.5 0.0
423nm,0.7s
LWLI **Liwa** 19.90 255 P Pn 05 27 02.1 -1.3
LHSI **Lahat** 20.16 259 P Pn 05 27 05.6 -0.8
179nm,0.8s,6μm
XMIS **Christmas Isla** 20.48 239 *e*P P 05 27 04.5 -1.5
129nm,1.0s
MNAI **Manna** 20.82 257 P P 05 27 11.5 +1.7
MNAI **Manna** 20.82 257 *e*P P 05 27 10.0 +0.3
242nm,0.6s
MBWA **Marble Bar** 21.43 189 *e*P P 05 27 15.2 -0.9
60nm,1.0s
BKNI **Bangkinang** 22.28 271 P P 05 27 26.0 +1.1
214nm,0.9s,2μm
BKNI **Bangkinang** 22.28 271 *e*P P 05 27 25.5 +0.6
295nm,1.2s
WRAB **Tennant Creek** 22.66 152 *d i*P P 05 27 27.4 -1.0
WRAB pmax pmax
comp=Z,545nm,1.6s
WRAB **Tennant Creek** 22.66 152 *e*P P 05 27 28.2 -0.2
comp=Z,112nm,1.0s
WRA **Warramunga Arr** 22.66 152 P P 05 27 27.9 -0.6
comp=Z,43nm,0.6s,baz=331,slow=10,SNR=222
WRA PcP PcP 05 31 15.9 +0.2
comp=Z,10nm,0.6s,baz=317,slow=2.4,SNR=7.6
WRA S S 05 31 20.8 -3.8
comp=Z,33nm,0.9s,baz=332,slow=16,SNR=8.8
WRA ScP ScP 05 34 38.2 -0.3
comp=Z,32nm,0.9s,baz=337,slow=3.1,SNR=25
WRA ScS ScS 05 38 21.5 -2.9
comp=Z,4.2nm,0.9s,baz=342,slow=3.9,SNR=8.0
WRA PKiKP PKiKP 05 38 59.7 -1.1
comp=Z,0.9nm,0.4s,baz=300,slow=1.3,SNR=16
WRA **Warramunga Arr** 22.66 152 P P 05 27 27.9 -0.6
WRA 05 31 15.9
WRA S S 05 31 20.8 -3.8
WRA 05 38 21.5
WRA pmax pmax
comp=Z,70nm,0.8s
WRA pmax pmax
comp=Z,11nm,0.6s
WRA smax smax
comp=N,33nm,0.9s
WRA pmax pmax
comp=N,32nm,0.9s
WRA pmax pmax
comp=N,4.0nm,0.9s
WB2 **Warramunga Arr** 22.67 152 *e*P P 05 27 28.2 -0.3
comp=N,101nm,0.9s
TWG **Pinlang** 22.68 355 *e*P P 05 27 29.0 +0.5
comp=N,876nm,0.6s
IPM **Ipoh** 22.69 281 *e*P P 05 27 30.2 +1.4
comp=N,453nm,0.8s
QIZ **Qiongzhong** 22.99 326 P P 05 27 32.1 +0.7
QIZ sP **sP** 05 28 23.3 +2.0
QIZ S S 05 31 27.9 -1.9
QIZ sS **sS** 05 32 23.1 -0.7
QIZ pmax pmax
comp=N,750nm,8.0s
TPUB **Ta-pu** 23.20 354 *e*P P 05 27 33.8 +0.4
comp=N,766nm,0.8s
UBPT **Khong Chiam** 23.20 311 P P 05 27 35.4 +2.0
comp=N,430nm,1.2s,comp=N,5μm
KULM **Kulim** 23.21 283 *e*P P 05 27 34.7 +1.1
comp=N,364nm,1.0s
YULB **Yu-li** 23.23 355 *e*P P 05 27 33.6 +0.1
comp=N,645nm,1.7s
SSLB **Suanglung** 23.65 355 *e*P P 05 27 37.5 0.0
comp=N,442nm,0.8s
SKLT **Songkhla** 23.70 288 P P 05 27 39.8 +1.8
comp=N,447nm,1.0s,comp=N,4μm
MNSI **Mandailing Nat** 23.75 272 P P 05 27 40.7 +2.2
NACB **Ninganchiao** 23.98 356 *e*P P 05 27 41.0 +0.6
comp=N,83nm,0.8s
COEN **Coen** 24.12 126 P P 05 27 42.1 +0.2
baz=24,SNR=27
COEN **Coen** 24.12 126 *e*P P 05 27 42.0 +0.2
comp=N,107nm,1.0s
MANU **Manus Island** 24.14 95 *e*P P 05 27 44.5 +2.5
comp=N,538nm,1.8s
YOJ **Yonaguni jima** 24.21 359 *e*P P 05 27 43.3 +0.8
YOJ pmax pmax
comp=Z,528nm,1.1s
YOJ **Yonaguni jima** 24.21 359 *e*P P 05 27 43.3 +0.8
comp=Z,526nm,1.1s
GIRL **Giralia** 24.28 201 P P 05 27 43.7 +0.5
baz=24,SNR=10
YHNB **Yeheng** 24.49 356 *e*P P 05 27 44.8 -0.3
comp=Z,209nm,0.7s
PSI **Prapat** 24.53 276 *e*P P 05 27 46.1 +0.4
PSI pmax pmax
comp=Z,115nm,0.8s
PSI **Prapat** 24.53 276 *e*P P 05 27 46.1 +0.4
comp=Z,115nm,0.8s
TRTT **Trang** 24.77 289 P P 05 27 49.5 +1.7
comp=Z,151nm,1.1s,comp=Z,2μm
TATO **Taipei** 24.78 356 *e*P P 05 27 48.4 +0.7
comp=Z,350nm,0.7s
GZH **Guangzhou** 24.82 338 P P 05 27 53.4 +5.4
GZH sP PP 05 28 45.2 -2.3
GZH S S 05 32 09.1 +10
GZH pmax pmax
comp=Z,1μm,5.2s
GZH **Guangzhou** 24.82 338 P P 05 27 53.1 +5.1
QZH **Quanzhou** 25.11 350⇑ *i*P P 05 27 43.2 -7.4
QZH pP pP 05 28 15.5 -8.2
QZH sP sP 05 28 34.7 -7.7
QZH S S 05 32 04.9 +1.4
QZH pmax pmax
comp=Z,500nm,1.0s
QZH pmax pmax
comp=Z,1μm,2.0s
QZH LR LR
comp=N,1μm,18.1s
QZH LR LR
comp=E,740nm,11.8s
QZH LR LR
comp=Z,1μm,18.6s
GUMO **Guam** 25.20 57 P P 05 27 51.3 -0.3
comp=Z,47nm,0.4s,baz=163,slow=7.4,SNR=5.0
GUMO **Guam** 25.20 57 *e*P P 05 27 51.5 -0.1
GUMO pmax pmax
comp=Z,86nm,0.8s
GUMO **Guam** 25.20 57 *e*P P 05 27 51.5 -0.1
comp=Z,86nm,0.8s
SURA **Surathani** 25.25 292 P P 05 27 53.9 +1.9
comp=Z,48nm,1.3s
KRAB **Krabi** 25.35 289 P P 05 27 58.0 +5.0
comp=Z,258nm,0.8s,comp=Z,6μm
SKNT **Sakolnakorn** 25.37 312 P P 05 27 54.5 +1.3
comp=Z,674nm,0.9s
WRKA **Warakurna** 25.46 169 P P 05 27 53.8 -0.1
baz=26,SNR=44
PMG **Port Moresby** 25.55 112 P P 05 27 55.4 +0.7
comp=Z,64nm,0.9s,baz=294,slow=11,SNR=8.1
PMG **Port Moresby** 25.55 112 *ce*P P 05 27 55.7 +1.0
PMG pmax pmax
comp=Z,255nm,0.9s
PMG **Port Moresby** 25.55 112 *e*P P 05 27 56.1 +1.4
comp=Z,86nm,1.0s
PATY **Pattaya** 25.64 301 P P 05 28 00.4 +4.8
comp=Z,20nm,1.0s
GSI **Gunungsitoli** 25.77 273 *e*P P 05 27 56.0 -0.8
comp=Z,180nm,1.0s
AS31 **Alice Springs** 25.77 157 *e*P P 05 27 57.0 +0.3
comp=Z,13nm,0.6s
ASAR **Alice Springs** 25.77 157 P P 05 27 56.5 -0.2
comp=Z,39nm,1.1s,baz=337,slow=9.2,SNR=47
ASAR PcP PcP 05 31 22.6 +0.2
comp=Z,29nm,0.7s,baz=347,slow=2.2,SNR=23
ASAR S S 05 32 15.2 +1.1
comp=Z,10.0nm,0.8s,baz=347,slow=21,SNR=5.2
ASAR ScP ScP 05 34 46.5 -0.6
comp=Z,16nm,0.8s,baz=348,slow=2.7,SNR=18
ASAR ScS ScS 05 38 33.9 -3.0
comp=Z,3.4nm,0.9s,baz=334,slow=4.1,SNR=5.9
ASAR PKiKP PKiKP 05 39 01.4 -1.1
comp=Z,2.0nm,1.0s,baz=352,slow=1.6,SNR=5.5
ASAR P3KPbc 06 00 46.1
comp=Z,1.5nm,0.8s,baz=150,slow=4.5,SNR=8.0
AS01 **Alice Springs** 25.79 157 *e*P P 05 27 57.0 +0.1
KHON **Khomkaen** 25.86 310 P P 05 27 59.2 +1.7
comp=Z,518nm,0.8s,comp=Z,4μm
SURT **Suratani** 25.96 290 P P 05 28 00.1 +1.7
comp=Z,25nm,1.1s,comp=Z,570nm
QIS **Mount Isa** 26.00 143 P P 05 27 59.4 +0.6
baz=26,SNR=76
PKDT **Phuket** 26.08 288 P P 05 28 01.3 +1.8
comp=Z,120nm,0.8s,comp=Z,4μm
CHAI **Chaiyaphum** 26.26 308 P P 05 28 02.5 +1.4
comp=Z,189nm,0.8s,comp=Z,1μm
NONG **Nongkai** 26.68 313 P P 05 28 05.8 +0.9
comp=Z,232nm,0.9s,comp=Z,6μm
PHET **Kaeng Krachan** 26.71 299 P P 05 28 07.3 +2.1
comp=Z,60nm,0.8s,comp=Z,445nm
LHMI **Lhok Sumawe** 26.82 281 *e*P P 05 28 05.2 -1.0
comp=Z,220nm,0.9s
MEEK **Meekatharra** 26.98 189 P P 05 28 06.7 -0.7
baz=27,SNR=50
JOW **Kunigami** 27.00 10 *e*P P 05 28 08.3 +0.7
comp=Z,152nm,0.6s
ANA2 **Anatahan** 27.35 53 *e*P P 05 28 12.4 +1.5
PBKT **Sadao Pong** 27.44 308 P P 05 28 13.1 +1.4
comp=Z,87nm,0.8s,comp=Z,1μm
MTSU **Mount Surprise** 27.47 132 P P 05 28 13.2 +1.2
baz=28,SNR=16
LOEI **Loei** 27.75 310 P P 05 28 13.0 -1.5
comp=Z,327nm,0.8s,comp=Z,2μm
UTTA **Uttaradit** 28.44 309 P P 05 28 22.1 +1.6
comp=Z,100nm,0.8s,comp=Z,655nm
UMPA **Umpang Tak** 28.95 305 P P 05 28 26.4 +1.3
comp=Z,71nm,0.9s,comp=Z,2μm
SUKH **Sukhothai** 29.01 308 P P 05 28 27.5 +1.9
comp=Z,198nm,0.7s,comp=Z,2μm
RABL **Rabaul** 29.13 99 *e*P P 05 28 28.7 +1.9
comp=Z,404nm,0.4s
LAMP **Lampang** 29.60 309 P P 05 28 32.8 +2.0
comp=Z,109nm,0.8s,comp=Z,747nm
MORW **Morawa** 29.84 193 P P 05 28 32.3 -0.5
baz=30,SNR=8.9
CM01 **Chiang Mai Arr** 30.07 309 *e*P P 05 28 37.1 +2.1
CM31 **Chiang Mai Arr** 30.10 309 *e*P P 05 28 37.6 +2.4
CMAR **Chiang Mai Arr** 30.10 309 P P 05 28 37.2 +2.0
comp=Z,134nm,0.7s,baz=133,slow=7.0,SNR=158
CMAR PcP PcP 05 31 33.6 +0.6
comp=Z,21nm,0.7s,baz=150,slow=2.3,SNR=16
CMAR ScP ScP 05 34 59.9 -0.6
comp=Z,5.4nm,0.5s,baz=157,slow=2.6,SNR=11
CMAR PKiKP PKiKP 05 39 04.5 -0.7
comp=Z,2.1nm,0.5s,baz=268,slow=1.0,SNR=10
CMAR LR LR 05 40 48.9
comp=Z,342nm,21.8s,baz=130,slow=36
CMAR **Chiang Mai Arr** 30.10 309 P P 05 28 37.2 +2.0
CMAR 05 31 33.7
CMAR pmax pmax
comp=Z,147nm,0.7s
CMAR pmax pmax
comp=Z,21nm,0.7s
CMAR pmax pmax
comp=N,5.0nm,0.5s
CTA **Charters Tower** 30.12 133 P P 05 28 36.6 +1.2
comp=N,32nm,0.9s,baz=297,slow=9.0,SNR=23
CTA PcP PcP 05 31 34.5 +1.3
comp=N,6.2nm,0.6s,baz=286,slow=6.0,SNR=5.0
CTA ScP ScP 05 35 01.1 +0.6
comp=N,37nm,0.9s,baz=273,slow=4.9,SNR=14
CTAO **Charters Tower** 30.12 133 *e*P P 05 28 36.8 +1.4
CTAO pmax pmax
comp=Z,49nm,1.0s
CTAO **Charters Tower** 30.12 133 *e*P P 05 28 36.8 +1.4
comp=Z,49nm,1.0s
CMMT **Chiang Mai** 30.30 309 P P 05 28 38.5 +1.5
comp=Z,476nm,0.8s,comp=Z,4μm
CHTO **Chiang Mai** 30.30 309 P P 05 28 38.5 +1.5
comp=Z,2μm,0.8s,comp=Z,17μm
CHTO **Chiang Mai** 30.30 309 *e*P P 05 28 39.0 +2.0
CHTO *e* 05 31 34.2
CHTO pmax pmax
comp=Z,314nm,0.8s
CHTO **Chiang Mai** 30.30 309 P P 05 28 39.0 +2.0
SNR=96
CHTO **Chiang Mai** 30.30 309 *e*P P 05 28 39.0 +2.0
comp=Z,314nm,0.8s
CHTO *e*PcP PcP 05 31 34.1 +0.5
GYA **Guiyang** 30.72 330⇑ *i*P P 05 28 42.2 +1.4
GYA pP pP 05 29 16.0 +1.5
GYA sP sP 05 29 34.2 +1.2
GYA PP **PP** 05 29 51.6 -1.8
GYA PcP PcP 05 31 35.2 +0.5
GYA S S 05 33 33.9 +1.9
GYA sS sS 05 34 32.0 +0.5
GYA ScP **ScP** 05 35 04.4 +1.9
GYA PcS **PcS** 05 35 19.2 +0.2
GYA SS **SnSn** 05 35 30.8 +0.2
GYA ScS **ScS** 05 38 59.9 +0.3
GYA pmax pmax
comp=Z,80nm,0.6s
GYA pmax pmax
comp=Z,240nm,5.7s
GYA LR LR
comp=Z,850nm,17.4s
GYA LR LR
comp=Z,640nm,17.7s
GYA LR LR
comp=Z,440nm,13.6s
FORT **Forrest** 31.05 172 P P 05 28 43.1 -0.3
baz=31,SNR=88
FORT **Forrest** 31.05 172 *e*P P 05 28 43.0 -0.3
comp=Z,974nm,0.6s
BLDU **Ballidu** 31.19 191 P P 05 28 44.1 -0.6
baz=31,SNR=42
KMBL **Kambalda** 31.33 182 P P 05 28 45.5 -0.4
baz=31,SNR=20
WHN **Wuhan** 31.45 345⇓ *i*P P 05 28 48.7 +1.8
WHN PcP **PcP** 05 31 36.6 +0.2
WHN pmax pmax
comp=Z,960nm,4.5s
WHN LR LR
comp=Z,850nm,14.2s
KMI **Kunming** 31.85 323 P P 05 28 53.1 +2.3
KMI pP pP 05 29 27.7 +3.1
KMI sP sP 05 29 45.1 +2.0
KMI PP **PP** 05 30 05.9 -0.2
KMI S S 05 33 54.7 +4.8
KMI pmax pmax
comp=Z,83nm,0.6s
KMI pmax pmax
comp=Z,320nm,6.0s
KMI LR LR
comp=Z,420nm,15.4s
KMI LR LR
comp=Z,240nm,8.5s
KMI LR LR
comp=Z,390nm,14.5s
KLBR **Kellerberrin** 31.96 189 P P 05 28 51.0 -0.5
baz=32,SNR=39
NJ2 **Nanjing** 32.05 353 *e*P P 05 28 53.6 +1.4
NJ2 pmax pmax
comp=Z,160nm,0.9s
ENH **Enshi** 32.76 338 *e*P P 05 28 59.8 +1.3
comp=Z,314nm,0.9s
ENH *e*PcP PcP 05 31 40.2 +0.1
DGPR **DIGLIPUR** 32.80 295 *e*P P 05 28 59.0 +0.1
DGPR IAmb IAmb 05 28 59.0
comp=Z,178nm,1.6s
QLP **Quilpie** 33.32 144 P P 05 29 04.3 +1.0
baz=33,SNR=12
NWAO **Narrogin (SRO)** 33.36 189 P P 05 29 03.4 -0.1
comp=Z,20nm,0.5s,baz=261,slow=8.0,SNR=23
NWAO PcP PcP 05 31 41.9 +0.2
comp=Z,32nm,0.9s,baz=214,slow=1.5,SNR=5.9
NWAO **Narrogin (SRO)** 33.36 189 P P 05 29 03.6 +0.1
baz=34,SNR=20
NWAO P P 05 29 03.6 +0.1
baz=34,SNR=20
NWAO **Narrogin (SRO)** 33.36 189 *e*P P 05 29 03.5 -0.1
NWAO *e* 05 31 41.8
NWAO pmax pmax
comp=Z,24nm,0.8s
NWAO **Narrogin (SRO)** 33.36 189 *e*P P 05 29 03.5 0.0
comp=Z,24nm,0.8s
NWAO *e*PcP PcP 05 31 41.8 +0.2
JNU **Nakatsue** 33.60 12 LR LR 05 41 06.9
comp=Z,97nm,21.1s,baz=127,slow=33
JNU **Nakatsue** 33.60 12 *e*P P 05 29 04.9 -0.8
comp=Z,84nm,1.0s
BBOO **Buckleboo** 34.88 161 P P 05 29 17.4 +0.7
baz=35,SNR=5.9
BBOO **Buckleboo** 34.88 161 *e*P P 05 29 16.5 -0.2
comp=Z,124nm,1.8s
RKGY **Rocky Gully** 35.04 189 P P 05 29 19.3 +1.3
baz=35,SNR=9.8
PATS **Pohnpei** 35.54 78 P P 05 29 23.9 +1.2
baz=36,SNR=4.2
PATS **Pohnpei** 35.54 78 *e*P P 05 29 23.5 +0.9
comp=Z,208nm,1.5s
CD2 **Chengdu** 35.82 331 P P 05 29 25.4 +0.6
CD2 pP pP 05 29 58.1 -1.1
CD2 sP sP 05 30 15.8 -1.7
CD2 S S 05 34 53.2 +2.6
CD2 sS sS 05 35 51.1 +0.3
CD2 pmax pmax
comp=Z,550nm,0.7s
CD2 pmax pmax
comp=Z,320nm,5.0s
CD2 LR LR
comp=Z,1μm,10.9s
CD2 LR LR
comp=Z,910nm,14.4s
CD2 LR LR
comp=Z,680nm,7.9s
RMQ **Roma** 36.05 139 P P 05 29 27.2 +0.4
baz=36,SNR=9.4
STKA **Stephens Creek** 36.21 153 P P 05 29 28.4 +0.4
comp=Z,67nm,1.0s,baz=325,slow=8.9,SNR=58
STKA PcP PcP 05 31 50.4 +0.4
comp=Z,30nm,0.6s,baz=343,slow=3.3,SNR=7.6
STKA ScP ScP 05 35 21.4 -0.1
comp=Z,34nm,0.8s,baz=340,slow=9.0,SNR=12
STKA LR LR 05 45 06.1
comp=Z,405nm,18.9s,baz=320,slow=37
STKA **Stephens Creek** 36.21 153 P P 05 29 28.7 +0.7
baz=36,SNR=42
STKA **Stephens Creek** 36.21 153 *e*P P 05 29 28.4 +0.4
comp=Z,13nm,0.8s
STKA PcP PcP 05 31 50.4 +0.4
STKA ScP ScP 05 35 21.4 -0.1
JHJ2 **Mitsune** 36.32 24 *e*P P 05 29 28.6 -0.4
comp=Z,238nm,1.0s
XAN **Xi'an** 36.36 340 P P 05 29 30.2 +0.9
XAN pP pP 05 30 06.6 +2.9
XAN sP sP 05 30 21.9 -0.1
XAN S S 05 34 55.4 -3.2
XAN SS **SS** 05 37 34.4 -10
XAN pmax pmax
comp=Z,250nm,0.9s
XAN pmax pmax
comp=Z,270nm,6.0s
XAN LR LR
comp=Z,600nm,15.2s
XAN LR LR
comp=Z,980nm,15.2s
XAN LR LR
comp=Z,730nm,15.2s
TIA **Tai'an** 36.38 352 ⇑P P 05 29 29.5 +0.1
TIA pmax pmax
comp=Z,110nm,1.1s
HTT **Hallett** 36.45 158 P P 05 29 31.0 +0.9
baz=36,SNR=26
EIDS **Eidsvold** 36.90 135 P P 05 29 33.4 -0.6
baz=37,SNR=5.7
EIDS **Eidsvold** 36.90 135 *e*P P 05 29 33.4 -0.6
comp=Z,32nm,1.1s
INCN **Inchon** 37.32 4 *e*P P 05 29 38.6 +1.3
comp=Z,50nm,0.6s
INU **Inuyama** 37.32 19 *e*P P 05 29 37.4 0.0
comp=Z,362nm,1.0s
KS15 **Wonju Array Si** 37.39 6 *e*P P 05 29 38.6 +0.7
KSAR **Wonju Array Be** 37.39 6 P P 05 29 38.5 +0.6
KSAR 05 31 53.6
KSAR **Wonju Array Be** 37.39 6 P P 05 29 38.5 +0.6
KSAR PcP PcP 05 31 53.5 +0.1
KSAR ScP ScP 05 35 24.6 -1.2
KSAR PKiKP PKiKP 05 39 09.5 -0.5
KSRS **Korea Array** 37.40 6 P P 05 29 38.5 +0.5
comp=Z,56nm,0.6s,baz=182,slow=7.7,SNR=20
KSRS PcP PcP 05 31 53.5 +0.1
comp=Z,13nm,0.7s,baz=183,slow=2.6,SNR=9.9
KSRS ScP ScP 05 35 24.6 -1.2
comp=Z,3.0nm,0.6s,baz=191,slow=3.4,SNR=8.8
KSRS PKiKP PKiKP 05 39 09.5 -0.5
comp=Z,1.0nm,0.6s,baz=197,slow=1.3,SNR=4.1
KSRS LR LR 05 44 43.9
comp=Z,227nm,21.9s,baz=179,slow=35
KS01 **Wonju Array Si** 37.42 6 *e*P P 05 29 38.8 +0.6
CMSA **Cobar Meteorol** 37.94 148 P P 05 29 43.9 +1.2
baz=38,SNR=41
DL2 **Dalian** 38.64 358 P P 05 29 48.2 -0.2
DL2 *e*S S 05 35 33.9 +1.0
DL2 pmax pmax
comp=Z,190nm,0.6s
DL2 pmax pmax
comp=Z,130nm,4.0s
TIY **Taiyuan** 38.74 346 *e*P P 05 29 50.0 +0.6
TIY S S 05 35 34.6 -0.1
TIY pmax pmax
comp=Z,200nm,0.6s
TIY pmax pmax
comp=Z,310nm,6.0s
TIY LR LR
comp=Z,350nm,14.3s
TIY LR LR
comp=Z,170nm,12.7s
TIY LR LR

comp=Z,530nm,23.2s
MJAR Matsushiro Arr 38.79 19 P **P 05 29 49.0 -0.7**
comp=Z,223nm,0.7s,baz=193,slow=9.2,SNR=480
MJAR PcP **PcP 05 31 58.1 +0.2**
comp=Z,21nm,1.0s,baz=203,slow=3.0,SNR=6.8
MJAR ScP **ScP 05 35 29.8 -1.4**
comp=Z,6.4nm,0.7s,baz=186,slow=4.9,SNR=8.5
MAJO Matsushiro 38.80 19⇑*i*P **P 05 29 48.8 -0.9**
MAJO pmax pmax
comp=Z,2μm,0.8s
MAJO Matsushiro 38.80 19 *e*P **P 05 29 49.0 -0.7**
comp=Z,313nm,0.8s
MAT Matsushiro 38.80 19 P **P 05 29 48.9 -0.8**
MAT S **S 05 35 32.4 -2.9**
MJB9 Matsu-Tunnel 38.80 19 *e*P **P 05 29 49.1 -0.7**
comp=Z,77nm,0.8s
SHL Shillong 39.52 312 *i*P **P 05 29 56.5 +0.4**
SHL IAmb IAmb 05 29 58.8
comp=Z,188nm,0.8s
SHL *ex* x 05 35 23.5
LZH Lanzhou 40.12 335⇑P **P 05 30 02.9 +2.0**
LZH pP pP 05 30 37.0 +1.2
LZH sP sP 05 30 55.3 +1.3
LZH PP **PnPn 05 31 42.2 +0.5**
LZH S **S 05 35 58.0 +2.6**
LZH sS sS 05 36 56.5 +0.1
LZH SS **SS 05 38 59.1 -0.7**
LZH pmax pmax
comp=Z,370nm,1.4s
LZH pmax pmax
comp=Z,1μm,4.9s
LZH LR LR
comp=Z,760nm,13.6s
LZH LR LR
comp=Z,510nm,14.0s
LZH LR LR
comp=Z,950nm,16.7s
BJT Baijiatuau 40.25 351 *e*P **P 05 30 01.7 0.0**
BJT pmax pmax
comp=Z,213nm,1.5s
BJT Baijiatuau 40.25 351 *e*P **P 05 30 01.7 0.0**
comp=Z,213nm,1.5s
BJI Beijing 40.27 352 P **P 05 30 01.6 -0.3**
BJI PP **PP 05 31 39.6 +1.6**
BJI S **S 05 35 54.1 -3.1**
BJI pmax pmax
comp=Z,78nm,0.9s
BJI pmax pmax
comp=Z,360nm,3.9s
BJI LR LR
comp=Z,150nm,8.0s
BJI LR LR
comp=Z,330nm,17.8s
BJI LR LR
comp=Z,290nm,48.4s
ARPS Mount Arapiles 40.51 157 P **P 05 30 04.6 +0.7**
baz=41,SNR=20
ARMA Armidale 40.57 141 P **P 05 30 06.4 +1.7**
baz=41,SNR=32
ARMA Armidale 40.57 141 *e*P **P 05 30 06.2 +1.6**
comp=Z,50nm,0.8s
YNG Young 41.52 148 P **P 05 30 13.7 +1.5**
baz=42,SNR=11
SNY Shenyang 41.53 0⇑P **P 05 30 11.4 -0.7**
SNY sP **sP 05 31 02.9 -2.5**
SNY S **S 05 36 14.1 -1.6**
SNY pmax pmax
comp=Z,80nm,0.8s
SNY pmax pmax
comp=Z,370nm,3.5s
SNY LR LR
comp=Z,440nm,18.7s
SNY LR LR
comp=Z,450nm,20.6s
BWNR Bhubaneshwar 41.82 301 *e*P **P 05 30 14.4 -0.4**
BWNR IAmb IAmb 05 30 17.7
comp=Z,155nm,1.2s
HHC Hu-ho-hao-te 41.94 347 *e*P **P 05 30 15.5 -0.1**
HHC pP pP 05 30 50.4 -0.4
HHC sP sP 05 31 08.8 -0.1
HHC S **S 05 36 22.4 +0.4**
HHC ScS **ScS 05 39 58.4 -2.9**
HHC pmax pmax
comp=Z,23nm,0.4s
HHC pmax pmax
comp=Z,310nm,5.2s
BTO Baotou 42.08 345 *e*P **P 05 30 16.1 -0.7**
LSA Lhasa 42.49 317 P **P 05 30 22.6 +1.9**
LSA pmax pmax
comp=Z,200nm,0.8s
LSA Lhasa 42.49 317 *e*P **P 05 30 22.6 +1.9**
LSA pmax pmax
comp=Z,130nm,0.6s
LSA Lhasa 42.49 317 *e*P **P 05 30 22.6 +1.9**
comp=Z,130nm,0.6s
CAN Canberra 42.62 148 P **P 05 30 22.9 +1.7**
baz=43
CAN Canberra 42.62 148 *e*P **P 05 30 22.3 +1.2**
CAN pmax pmax
comp=Z,51nm,0.7s
CAN Canberra 42.62 148 *e*P **P 05 30 22.3 +1.2**
comp=Z,51nm,0.7s
CHLP Challavanipeta 42.67 298 *e*P **P 05 30 23.1 +1.4**
CHLP IAmb IAmb 05 30 24.4
comp=Z,102nm,1.0s
TOO Toolangi 42.72 154 P **P 05 30 23.8 +1.9**
baz=43,SNR=7.5
MSHR Mys Shultsa 42.87 9*c*eP **P 05 30 23.4 +0.5**
VIS Vishakhapatnam 43.05 296 *e*P **P 05 30 24.7 0.0**
PALK Pallekele 43.09 280 LR LR 05 50 07.1
comp=Z,246nm,18.1s,baz=116,slow=38
BOK Bokaro 43.27 306 *e*P **P 05 30 26.1 -0.4**
BOK IAmb IAmb 05 30 29.8
comp=Z,85nm,1.1s
CN2 Changchun 43.54 2 *e*P **P 05 30 27.1 -1.2**
RAMN Ramite 44.25 310 *e*P **P 05 30 35.4 +0.8**
comp=Z,1μm,0.7s
RAMN Ramite 44.25 310 *e*P **ScP 05 35 52.0 -1.4**
comp=Z,35nm,0.7s
PVM Polavaram 44.43 295 *e*P **P 05 30 36.4 +0.5**
PVM IAmb IAmb 05 30 37.8
comp=Z,50nm,0.8s
USRK Ussuriysk Ar. 44.58 9 P **P 05 30 36.8 +0.2**
comp=Z,133nm,0.9s,baz=192,slow=7.5,SNR=207
USRK LR LR 05 51 20.2
comp=Z,61nm,18.1s,baz=154,slow=39
MDRS Chennai 44.58 289 *e*P **P 05 30 35.8 -1.3**
GTA Gaotai 44.63 334⇑P **P 05 30 38.1 +0.8**
GTA pP pP 05 31 11.2 -1.7
GTA PcP **PcP 05 32 17.8 +0.5**
GTA PP **PP 05 32 26.3 +1.4**
GTA ScP **ScP 05 35 53.6 -1.0**
GTA PcS **PcS 05 36 09.6 -1.4**
GTA S **S 05 37 04.0 +2.5**
GTA ScS **ScS 05 40 14.7 -3.6**
GTA SS **SS 05 40 19.5 -6.6**
GTA pmax pmax
comp=Z,600nm,6.4s
GTA LR LR
comp=Z,290nm,17.6s
GTA LR LR
comp=Z,380nm,18.1s
GTA LR LR
comp=Z,290nm,20.9s
MDJ Mudanjiang 44.67 6 P **P 05 30 37.5 +0.2**
MDJ pP pP 05 31 11.1 -1.7
MDJ sP sP 05 31 27.7 -3.2
MDJ PP **PP 05 32 25.0 +0.1**
MDJ ScP **ScP 05 35 55.0 +0.6**
MDJ PcS **PcS 05 36 11.0 +0.4**
MDJ S **S 05 37 02.4 +1.0**
MDJ pmax pmax
comp=Z,200nm,0.8s
MDJ pmax pmax
comp=Z,200nm,5.1s
MDJ LR LR
comp=Z,120nm,22.8s
MDJ LR LR
comp=Z,220nm,22.8s
MDJ LR LR
comp=Z,230nm,17.7s
MDJ Mudanjiang 44.67 6 *e*P **P 05 30 37.4 +0.2**
comp=Z,172nm,0.8s
SKHT Srikalahasti 45.25 289 *e*P **P 05 30 42.8 +0.5**
SKHT IAmb IAmb 05 30 45.9
comp=Z,38nm,1.0s
GUN Gumba 45.29 311 *e*P **P 05 30 43.3 +0.4**
comp=Z,1μm,0.8s
GUN Gumba 45.29 311 *e*P **ScP 05 35 55.4 -2.4**
comp=Z,40nm,0.7s
ERM Erimo 45.39 21*d i*P **P 05 30 44.5 +1.5**
ERM pmax pmax
comp=Z,133nm,0.9s
ERM Erimo 45.39 21 *e*P **P 05 30 44.2 +1.2**
comp=Z,107nm,0.7s
PKIN Phulchoki 45.49 310 *e*P **P 05 30 45.3 +0.9**
comp=Z,71nm,0.5s
PKIN Phulchoki 45.49 310 *e*P **ScP 05 35 57.0 -1.5**
ADKI Addanki 45.54 292 *e*P **P 05 30 45.8 +1.1**
ADKI IAmb IAmb 05 30 48.1
comp=Z,51nm,0.8s
KKN Kakani 45.68 310 *e*P **P 05 30 46.4 +0.5**
comp=Z,705nm,0.9s
KKN Kakani 45.68 310 *e*P **ScP 05 35 57.7 -1.6**
comp=Z,65nm,0.7s
DMN Daman 45.73 310 *e*P **P 05 30 46.9 +0.6**
comp=Z,843nm,0.9s
DMN Daman 45.73 310 *e*P **ScP 05 35 58.4 -1.1**
GKN Gorkha 46.28 310 *e*P **P 05 30 50.7 +0.2**
comp=Z,820nm,0.9s
GKN Gorkha 46.28 310 *e*P **ScP 05 35 59.6 -2.1**
comp=Z,46nm,0.7s
NJS Nagarjunasagar 46.35 293 *e*P **P 05 30 50.6 -0.4**
NJS IAmb IAmb 05 30 53.8
comp=Z,45nm,0.7s
RCLA Racherla 46.38 291 *e*P **P 05 30 50.6 -0.6**
RCLA IAmb IAmb 05 30 54.0
comp=Z,116nm,0.8s
SRLM Srisailam 46.61 292 *e*P **P 05 30 52.4 -0.6**
SRLM IAmb IAmb 05 30 55.7
comp=Z,65nm,1.0s
TRD Trivandrum 46.93 282 *e*P **P 05 30 54.9 -0.7**
KOLN Koldanda 46.97 309 *e*P **P 05 30 56.3 +0.4**
comp=Z,1μm,0.7s
KOLN Koldanda 46.97 309 *e*P **ScP 05 36 02.8 -1.8**
comp=Z,46nm,0.8s
RPR Rampur 47.04 296 *e*P **P 05 30 55.9 -0.4**
RPR IAmb IAmb 05 30 59.0
comp=Z,95nm,0.8s
ASAJ Asahikawa 47.06 19 P **P 05 30 56.7 +0.7**
comp=Z,343nm,0.8s,baz=231,slow=11,SNR=335
ASAJ Asahikawa 47.06 19 *e*P **P 05 30 57.2 +1.2**
comp=Z,391nm,0.8s
HYB Hyderabad 47.28 294 *i*P **P 05 30 57.5 -0.8**
HYB *e*pP **pP 05 31 36.5 +2.3**
HYB *e*PcP **PcP 05 32 27.0 +0.1**
HYB Hyderabad 47.28 294 *e*P **P 05 30 58.3 +0.1**
HYB IAmb IAmb 05 31 00.6
comp=Z,150nm,1.0s
HYBB Hyderabad (bro 47.28 294 *e*P **P 05 30 57.9 -0.4**
HYBB IAmb IAmb 05 31 00.9
comp=Z,137nm,0.9s
DZM Mont Dzumac 47.44 121 *e*P **P 05 30 59.7 +0.2**
comp=Z,88nm,1.1s
DZM Mont Dzumac 47.44 121 *e*P **P 05 31 00.4 +0.9**
comp=Z,33nm,0.9s
PYUN Piuthan 47.60 309 *e*P **P 05 31 01.3 +0.6**
comp=Z,2μm,0.9s
PYUN Piuthan 47.60 309 *e*P **ScP 05 36 05.3 -2.0**
comp=Z,110nm,0.9s
SRSP Sriramsagar 47.92 296 *e*P **P 05 31 03.0 -0.1**
SRSP IAmb IAmb 05 31 05.4
comp=Z,74nm,0.8s
NGP Nagpur 48.00 299 *e*P **P 05 31 04.1 +0.4**
NGP IAmb IAmb 05 31 05.7
comp=Z,178nm,1.3s
HIA Hailar 49.07 357 *e*P **P 05 31 11.3 -0.1**
HIA *e* 05 32 33.3
HIA pmax pmax
comp=Z,137nm,0.7s
HIA Hailar 49.07 357 *e*P **P 05 31 11.3 -0.1**
comp=Z,136nm,0.7s
HIA *e*PcP **PcP 05 32 33.3 +0.7**
HABR Khabarovsk 49.23 10*ce*P **P 05 31 10.5 -2.1**
HABR *e**PP **pP 05 31 44.6 -4.2**
HABR *e**SP **sP 05 32 01.7 -5.0**
HABR *e* 05 32 31.1
HABR *e*PPP PPP 05 34 03.5
HABR *e*S **S 05 38 05.2 -0.9**
HABR *e**SS **sS 05 39 05.4 -3.6**
HABR *e* 05 40 47.7
HABR pmax pmax
comp=E,48nm,1.1s
HABR pmax pmax
comp=N,57nm,1.1s
HABR pmax pmax
comp=Z,156nm,1.1s
HABR MLR MLR
comp=Z,113nm,19.0s
KLRI Killari 49.25 294 *e*P **P 05 31 12.5 -0.9**
KLRI IAmb IAmb 05 31 15.4
comp=Z,78nm,1.0s
KLR Kul'dur 49.47 7 P **P 05 31 14.1 -0.3**
comp=Z,45nm,0.8s,baz=208,slow=5.3,SNR=140
KLR LR LR 05 54 35.3
comp=Z,63nm,18.2s,slow=39
YSS Yuzh-Sakhalins 49.66 17⇑*i*P **P 05 31 16.0 +0.2**
YSS pmax pmax
comp=Z,190nm,1.5s
YSS MLR MLR
comp=Z,200nm,21.0s
YSS Yuzh-Sakhalins 49.66 17 *e*P **P 05 31 16.1 +0.3**
comp=Z,166nm,0.8s
SONM Songino Array 49.76 345 P **P 05 31 16.9 +0.1**
comp=Z,161nm,0.7s,baz=159,slow=8.0,SNR=305
SONM PcP **PcP 05 32 34.9 -0.4**
comp=Z,40nm,0.8s,baz=161,slow=3.7,SNR=6.9
SONM ScP **ScP 05 36 14.2 -1.8**
comp=Z,2.9nm,0.9s,baz=150,slow=3.2,SNR=4.8
SONM PKP2ab 06 02 53.6
comp=Z,0.5nm,0.6s,baz=336,slow=3.3,SNR=4.0
SONM P4KPbc 06 08 48.4
comp=Z,1.0nm,0.6s,baz=155,slow=4.2,SNR=5.3
SONA1 Songino Array 49.77 345 *e*P **P 05 31 17.1 +0.2**
KUR Kuril'sk 49.90 23 *i*P **P 05 31 18.8 +1.1**
BHPL Bhopal 50.14 301 *e*P **P 05 31 20.2 +0.2**
BHPL IAmb IAmb 05 31 21.7
comp=Z,145nm,0.9s
H08S2 Diego Garcia H 51.25 260 P P 05 31 21.8 -6.3
baz=54,slow=10.0,SNR=6.0
H08S3 Diego Garcia H 51.26 260 P P 05 31 22.3 -5.9
baz=54,slow=10.0,SNR=12
DGAR Diego Garcia 51.27 260 *e*P **P 05 31 28.9 +0.4**
DGAR pmax pmax
comp=Z,132nm,0.8s
DGAR Diego Garcia 51.27 260 *e*P **P 05 31 28.9 +0.4**
comp=Z,132nm,0.8s
H08S1 Diego Garcia H 51.27 260 P P 05 31 22.4 -5.8
baz=54,slow=10.0,SNR=17
POO Poona 51.89 294 *e*P **P 05 31 32.0 -1.1**
NDI New Delhi 52.40 307 *ex* P 05 31 24.5 -12
DDI Dehra Dun 52.44 309 *e*P **P 05 31 37.9 +0.9**
DDI IAmb IAmb 05 31 40.3
comp=Z,265nm,1.2s
H08N1 Diego Garcia H 52.59 262 P **P 05 31 42.1 +4.2**
baz=108,slow=3.9,SNR=2.8
H08N2 Diego Garcia H 52.60 262 P **P 05 31 42.4 +4.4**
baz=108,slow=3.9,SNR=3.7
H08N3 Diego Garcia H 52.61 262 P **P 05 31 42.0 +3.9**
baz=108,slow=3.9,SNR=3.0
ZAK Zakamensk 52.92 344 *e*P **P 05 31 39.6 -0.7**
ZAK *e* 05 32 46.0
ZAK pmax pmax
comp=Z,47nm,1.0s
ZAK pmax pmax
comp=Z,53nm,1.1s
SMLA Simla 53.49 310 *e*P **P 05 31 45.4 +0.8**
SDNR Sundarnagar 53.80 310 *e*P **P 05 31 47.0 +0.1**
WMQ Urumqi 53.87 329‖*i*P **P 05 31 47.7 +0.5**
WMQ PcP **PcP 05 32 50.8 0.0**
WMQ PP PP 05 33 58.4 +8.2
WMQ S **S 05 39 08.3 -1.6**
WMQ sS sS 05 40 16.2 +2.4
WMQ pmax pmax
comp=Z,82nm,1.0s
WMQ pmax pmax
comp=Z,360nm,3.8s
WMQ LR LR
comp=Z,590nm,12.0s
WMQ LR LR
comp=Z,370nm,14.2s
WMQ LR LR
comp=Z,440nm,18.4s
TLY Talaya 54.01 345 *e*P **P 05 31 48.4 +0.4**
TLY *e*S S 05 39 28.8 +17
TLY *e*SSS SSS 05 44 55.7
TLY pmax pmax
comp=Z,90nm,0.8s
TLY MLR MLR
comp=Z,123nm,15.0s
TLY Talaya 54.01 345 *e*P **P 05 31 48.9 +0.8**
comp=Z,87nm,0.8s
IRK Irkutsk 54.36 346 *e*P **P 05 31 49.4 -1.2**
IRK pmax pmax
comp=Z,121nm,2.6s
MOY Mondy 54.72 343 *e*P **P 05 31 53.8 +0.5**
MOY pmax pmax
comp=Z,150nm,1.3s
PONG Pong 54.78 310 *e*P **P 05 31 54.5 +0.6**
NKL Nikolayevsk 54.80 13 *i*P **P 05 31 54.0 +0.3**
NKL pmax pmax
comp=N,300nm,2.0s
NKL pmax pmax
comp=Z,800nm,2.0s
NKL pmax pmax
comp=N,130nm,0.9s
NKL pmax pmax
comp=E,67nm,0.9s
NKL pmax pmax
comp=Z,430nm,0.9s
THN Thein Dam 55.17 310 *e*P P 05 31 51.6 -5.1
THN *e*S **S 05 39 24.0 -3.5**
MSVF Nonsavu 56.65 111⇑*e*P **P 05 32 09.5 +1.9**
MSVF pmax pmax
comp=Z,43nm,1.4s
BHJ Bhuj 56.93 298 *e*P **P 05 32 09.4 0.0**
SKR Severo-Kuril's 57.58 24 *e*P **P 05 32 12.0 -1.4**
SKR pmax pmax
comp=Z,500nm,2.4s
BOD Bodaibo 58.02 354⇓*i*P **P 05 32 15.8 -0.5**
BOD *e* 05 33 05.4
BOD *e*S **ScS 05 41 43.7 -6.1**
BOD pmax pmax
comp=Z,134nm,1.2s
KSH Kashi 58.31 318 P **P 05 32 19.7 +0.8**
KSH *e*pP pP 05 32 56.8 +0.5
KSH *e*PcP **PcP 05 33 09.5 +1.2**
KSH *e*sP sP 05 33 14.8 +1.0
KSH *e*ScP **ScP 05 36 52.2 -1.3**
KSH S **S 05 40 05.8 -3.1**
KSH ScS **ScS 05 41 51.1 -2.0**
KSH SS **SS 05 44 03.0 -0.7**
KSH pmax pmax
comp=Z,74nm,1.0s
KSH pmax pmax
comp=Z,290nm,2.8s
KSH LR LR
comp=Z,590nm,15.7s
KSH LR LR
comp=Z,110nm,10.0s
KSH LR LR
comp=Z,200nm,11.4s
MK01 Makanchi Array 58.67 328 *e*P **P 05 32 21.2 +0.1**
MK31 Makanchi Array 58.69 328 *i*P **P 05 32 21.2 -0.1**
MK31 pmax pmax
comp=Z,31nm,0.5s
MK31 Makanchi Array 58.69 328 *e*P **P 05 32 21.4 +0.1**
MKAR Makanchi Array 58.69 328 P **P 05 32 21.3 0.0**
comp=Z,55nm,0.5s,baz=121,slow=8.7,SNR=257
MKAR PcP **PcP 05 33 08.7 -0.8**
comp=Z,48nm,0.8s,baz=137,slow=4.0,SNR=14
MKAR ScP **ScP 05 36 52.5 -2.4**
comp=Z,6.3nm,0.7s,baz=133,slow=4.9,SNR=5.5
MKAR PKPPKP **P'P'df 06 01 57.8 +1.8**
comp=Z,1.0nm,0.8s,baz=307,slow=5.2,SNR=3.7
MKAR P4KPbc 06 09 27.5
comp=Z,1.0nm,0.6s,baz=123,slow=4.5,SNR=7.0
MAKZ Makanchi 58.87 328 *e*P **P 05 32 22.5 0.0**
MAKZ pmax pmax
comp=Z,231nm,1.6s
MAKZ Makanchi 58.87 328 *e*P **P 05 32 22.5 0.0**
comp=Z,230nm,1.6s
FOZ Fox Glacier 60.04 142 *e*P **P 05 32 31.2 +0.7**
comp=Z,188nm,1.2s
PEA0 Petropavlovsk- 60.06 23 *e*P **P 05 32 31.6 +1.1**
PEA0B Petropavlovsk- 60.06 23 *e*P **P 05 32 31.7 +1.2**
comp=Z,196nm,0.9s
PETK Petropavlovsk- 60.06 23 P **P 05 32 31.6 +1.0**
comp=Z,112nm,0.7s,baz=194,slow=4.7,SNR=116
PETK Petropavlovsk- 60.06 23 P **P 05 32 31.6 +1.0**
PETK pmax pmax
comp=Z,114nm,0.7s
TKM2 Tokmak 2 60.30 321 *e*P **P 05 32 33.0 +0.4**
TKM2 pmax pmax
comp=Z,50nm,0.7s
TKM2 Tokmak 2 60.30 321 *e*P **P 05 32 33.0 +0.4**
comp=Z,50nm,0.7s
PET Petropavlovsk 60.38 24 *e*P **P 05 32 33.7 +1.0**
PET *e**SP **sP 05 33 26.4 -1.3**
PET *e*S **S 05 40 35.2 +0.6**
PET pmax pmax
comp=Z,800nm,1.6s
PET pmax pmax
comp=Z,295nm,1.2s
PET pmax pmax
comp=Z,200nm,7.9s
PET MLR MLR
comp=Z,200nm,19.0s
PET MLR MLR
comp=Z,200nm,20.0s
PET Petropavlovsk 60.38 24 *e*P **P 05 32 33.6 +1.0**
comp=Z,366nm,1.2s
AAK Ala-Archa 60.85 321 P **P 05 32 36.2 -0.1**
comp=Z,34nm,0.8s,baz=115,slow=5.2,SNR=54
AAK PcP **PcP 05 33 18.1 -0.3**
comp=Z,24nm,0.9s,baz=253,slow=0.5,SNR=6.1
AAK Ala-Archa 60.85 321 *e*P **P 05 32 36.8 +0.5**
AAK 05 33 18.1
AAK pmax pmax
comp=Z,61nm,1.0s
AAK Ala-Archa 60.85 321 P **P 05 32 37.1 +0.8**
SNR=26
AAK Ala-Archa 60.85 321 *e*P **P 05 32 36.8 +0.5**
comp=Z,61nm,1.0s
AAK PcP **PcP 05 33 18.1 -0.3**
FRU Bishkek 60.87 321⇑*i*P **P 05 32 36.0 -0.3**
FRU pmax pmax
comp=Z,114nm,2.2s
RPZ Rata Peaks 60.90 142 *e*P **P 05 32 38.0 +1.6**
comp=Z,89nm,0.8s
KBL Kabul 61.12 310 *e*P **P 05 32 37.9 -0.4**
KBL pmax pmax
comp=Z,109nm,0.7s
KBL Kabul 61.12 310 *e*P **P 05 32 37.9 -0.4**
comp=Z,109nm,0.7s
OXZ Oxford 61.30 141 *e*P **P 05 32 39.8 +0.6**
comp=Z,265nm,2.0s
EKS2 Erkin-Say 61.32 320 *e*P **P 05 32 40.0 +0.5**
EKS2 pmax pmax
comp=Z,97nm,1.2s
EKS2 Erkin-Say 61.32 320 *e*P **P 05 32 40.0 +0.5**
comp=Z,97nm,1.2s
ODZ Otahua Downs 61.37 144 *e*P **P 05 32 40.2 +0.7**
comp=Z,266nm,1.9s
KHZ Kahutara 61.80 140 *e*P **P 05 32 43.1 +0.7**
comp=Z,272nm,2.0s
YAK Yakutsk 61.95 3 P **P 05 32 42.5 -0.5**
comp=Z,590nm,0.7s,baz=201,slow=1.6,SNR=114
YAK Yakutsk 61.95 3 *e*P **P 05 32 42.7 -0.3**
YAK pmax pmax
comp=Z,553nm,0.8s
YAK pmax pmax
comp=N,162nm,1.0s
YAK pmax pmax
comp=E,35nm,0.9s
YAK Yakutsk 61.95 3 *e*P **P 05 32 42.7 -0.3**
comp=E,686nm,0.7s
SNZO South Karori 62.04 138 *e*P **P 05 32 44.1 +0.1**
comp=E,532nm,1.9s
MNAS Manas 62.06 320 *i*P **P 05 32 44.3 -0.1**
MNAS pmax pmax
comp=Z,92nm,1.0s
BKZ Black Stump Fm 62.30 135 *e*P **P 05 32 47.0 +1.1**
comp=Z,141nm,1.4s
ZAA0 Zalesovo Array 62.35 335 *e*P **P 05 32 45.1 -0.8**
ZALV Zalesovo Beam 62.35 335 P **P 05 32 44.5 -1.3**
comp=Z,60nm,0.6s,baz=125,slow=6.1,SNR=132

ZALV PP **PP** **05 35 06.2 +1.1**
comp=Z,16nm,1.0s,baz=134,slow=10,SNR=4.5
ZALV S **S** **05 40 54.5 -5.1**
comp=Z,4.4nm,1.0s,baz=126,slow=17,SNR=4.3
ZALV LR LR 06 01 41.6
comp=Z,113nm,18.5s,baz=68,slow=38
ZALV PKPPKP **P'P'df** **06 01 48.9 -0.9**
comp=Z,0.5nm,0.4s,baz=306,slow=3.5,SNR=3.8
ZALV PKP2bc 06 01 56.3
comp=Z,5.3nm,0.8s,baz=300,slow=3.3,SNR=13
URZ **Urewera** **62.36 134** *e*P **P** **05 32 46.7 +0.4**
comp=Z,139nm,1.6s
BFZ **Birch Farm** **62.79 137** *e*P **P** **05 32 49.8 +0.6**
comp=Z,234nm,1.7s
KURBB **Kurchatov Arra** **63.03 330** P **P** **05 32 49.9 -0.6**
comp=Z,52nm,0.6s,baz=131,slow=6.6,SNR=261
KURBB PcP **PcP** **05 33 25.4 -1.5**
comp=Z,22nm,0.7s,baz=126,slow=4.4,SNR=9.4
KURBB PP **PP** **05 35 11.5 +0.3**
comp=Z,12nm,1.1s,baz=129,slow=9.4,SNR=4.8
KURK **Kurchatov** **63.04 330** *e*P **P** **05 32 50.3 -0.3**
KURK 05 33 25.4
KURK 05 35 11.5
KURK pmax pmax
comp=Z,115nm,0.6s
KURK **Kurchatov** **63.04 330** *e*P **P** **05 32 50.2 -0.3**
comp=Z,115nm,0.6s
KURK PcP **PcP** **05 33 25.4 -1.5**
KURK PP **PP** **05 35 11.5 +0.2**
MA2 **Magadan** **63.05 15** *i*P **P** **05 32 51.5 +1.1**
RAO **Raoul Island** **63.11 123** *e*P **P** **05 32 51.3 -0.1**
RAO **Raoul Island** **63.11 123** *e*P **P** **05 32 51.3 -0.1**
comp=Z,865nm,0.6s
NVS **Novosibirsk** **63.63 335** ⇓*i*P **P** **05 32 53.4 -0.9**
NVS *e* 05 33 27.8
NVS *i*S **S** **05 41 12.5 -3.0**
NVS *i* 05 42 21.7
NVS pmax pmax
comp=N,79nm,0.8s
NVS pmax pmax
comp=E,76nm,0.8s
NVS pmax pmax
comp=Z,148nm,0.8s
NVS pmax pmax
comp=Z,22nm,1.4s
NVS pmax pmax
comp=N,25nm,1.7s
NVS pmax pmax
comp=E,13nm,1.4s
NVS smax smax
comp=N,11nm,1.9s
NVS smax smax
comp=E,36nm,1.7s
KK31 **Karatay Array** **63.64 319** *i*P **P** **05 32 54.2 -0.5**
KK31 pmax pmax
comp=Z,33nm,0.9s
KKAR **Karatay Array** **63.64 319** *e*P **P** **05 32 54.2 -0.5**
KKAR **Karatay Array** **63.64 319** *e*P **P** **05 32 54.2 -0.5**
SEY **Seymchan** **66.33 14** *c i*P **P** **05 33 12.5 +0.9**
CASY **Casey** **66.87 186** *e*P **P** **05 33 15.4 +0.4**
comp=Z,71nm,1.1s
JMDO **Jabal Madar** **67.12 294** P **P** **05 33 17.0 -0.5**
SNR=8.1
SMY **Shemya** **67.29 31** *e*P **P** **05 33 19.6 +1.7**
SMY pmax pmax
comp=Z,323nm,0.9s
SMY **Shemya** **67.29 31** *e*P **P** **05 33 19.6 +1.7**
comp=Z,323nm,0.9s
BIDO **Bidbid** **67.30 295** P **P** **05 33 18.1 -0.5**
SNR=9.4
MRIV **Mauritius Mete** **67.43 248** *e*P **P** **05 33 19.4 0.0**
HOQ **Hoqain** **68.05 295** P **P** **05 33 23.0 -0.3**
SNR=7.4
BVA0 **Borovoye Array** **68.56 329** *i*P **P** **05 33 24.6 -1.2**
BVA0 pmax pmax
comp=Z,44nm,1.1s
BVAR **Borovoye Array** **68.56 329** P **P** **05 33 24.7 -1.1**
comp=Z,16nm,0.6s,baz=134,slow=7.7,SNR=53
BRVK **Borovoye** **68.63 329** *e*P **P** **05 33 25.7 -0.5**
BRVK pmax pmax
comp=Z,218nm,1.9s
BRVK **Borovoye** **68.63 329** *e*P **P** **05 33 25.7 -0.5**
comp=Z,218nm,1.9s
ARQ **Araqi** **68.72 295** P **P** **05 33 27.3 -0.2**
SNR=16
CHKZ **Chkalovo** **68.78 329** *i*P **P** **05 33 25.8 -1.3**
CHKZ pmax pmax
comp=Z,41nm,1.0s
RER **Riviere de l'E** **69.18 247** *e*P **P** **05 33 30.8 +0.3**
comp=Z,362nm,1.6s
ZRNK **Zerenda** **69.24 328** *e*P **P** **05 33 29.5 -0.6**
ZRNK pmax pmax
comp=Z,101nm,1.3s
ZRNK **Zerenda** **69.24 328** *e*P **P** **05 33 29.4 -0.6**
comp=Z,101nm,1.3s
UOSS **Minazif** **69.28 297** *e*P **P** **05 33 29.6 -1.3**
comp=Z,33nm,0.8s
HATD **Hatta, Dubai** **69.32 296** *i*P **P** **05 33 31.0 -0.2**
SNR=23
ASHO **Ashiyiah** **69.37 296** *i*P **P** **05 33 31.5 +0.1**
SNR=9.1
ASHO **Ashiyiah** **69.37 296** P **P** **05 33 30.2 -1.3**
NAZ **Nazwa, Dubai** **69.77 297** *i*P **P** **05 33 33.8 -0.1**
SNR=6.8
FAQ **Al Faqa, Dubai** **69.79 296** *i*P **P** **05 33 33.7 -0.3**
SNR=18
MIR **Mirnyy** **69.89 192** *i*P **P** **05 33 34.5 +0.8**
MIR pmax pmax
comp=Z,8.0nm,1.2s
GEYT **Alibeck** **70.56 310** P **P** **05 33 37.9 -0.6**
comp=Z,16nm,0.8s,baz=143,slow=3.7,SNR=18
GEYT PcP **PcP** **05 33 58.1 -0.5**
comp=Z,6.9nm,0.4s,baz=56,slow=0.5,SNR=5.8
TIXI **Tiksi** **71.52 2** *c i*P **P** **05 33 41.9 -1.5**
TIXI pmax pmax
comp=Z,303nm,1.0s
TIXI **Tiksi** **71.52 2** *e*P **P** **05 33 42.9 -0.5**
comp=Z,210nm,0.8s
AB31 **Akbulak array** **72.84 322** *i*P **P** **05 33 50.4 -1.4**
AB31 pmax pmax
comp=Z,12nm,0.6s
ABKAR **Akbulak array** **72.84 322** *e*P **P** **05 33 51.0 -0.8**
NRIK **Noril'sk** **73.16 347** P **P** **05 33 52.8 -0.5**
comp=Z,83nm,0.7s,baz=131,slow=6.2,SNR=92
NRIK LR LR 06 06 57.4
comp=Z,202nm,21.8s,baz=128,slow=36
BILL **Bilibino** **73.92 15** ⇓*i*P **P** **05 33 57.6 -0.1**
BILL *e* 05 36 44.3
BILL *i*SS SS 05 48 09.8 +5.8
BILL pmax pmax
comp=Z,95nm,1.3s
BILL **Bilibino** **73.92 15** *e*P **P** **05 33 57.4 -0.3**
comp=Z,93nm,1.2s
AKTO **Aktyubinsk** **74.42 323** LR LR 06 09 33.6
comp=Z,121nm,21.7s,slow=38
AKTO **Aktyubinsk** **74.42 323** *i*P **P** **05 33 59.8 -1.2**
AKTO pmax pmax
comp=Z,58nm,0.8s
SVE **Sverdlovsk** **75.29 330** *de*P **P** **05 34 04.8 -1.1**
SVE pmax pmax
comp=Z,98nm,0.9s
ARU **Arti** **76.20 329** *c i*P **P** **05 34 09.4 -1.6**
ARU *PP **pP** **05 34 46.7 -3.6**
ARU 05 37 01.9
ARU PPP PPP 05 38 46.2
ARU S **S** **05 43 41.6 -0.3**
ARU SS **SS** **05 48 32.0 -7.0**
ARU pmax pmax
comp=Z,73nm,0.8s
ARU **Arti** **76.20 329** *e*P **P** **05 34 09.6 -1.4**
comp=Z,72nm,0.9s
NIKH **Nikolski High** **76.72 35** *e*P **P** **05 34 15.0 +1.0**
comp=Z,106nm,0.7s
ABPO **Ambohimpanom** **76.89 251** *e*P **P** **05 34 15.6 -0.3**
ABPO pmax pmax
comp=Z,29nm,0.8s
ABPO **Ambohimpanom** **76.89 251** *e*P **P** **05 34 15.6 -0.3**
comp=Z,29nm,0.8s
SPIA **Saint Paul Isl** **77.33 31** *e*P **P** **05 34 19.1 +1.8**
comp=Z,431nm,1.4s
SOKR **Solikamsk** **78.22 332** *c i*P **P** **05 34 18.7 -3.4**
SOKR pmax pmax
comp=Z,35nm,0.9s
UNV **Unalaska Valle** **78.32 35** *e*P **P** **05 34 23.4 +0.6**
comp=Z,124nm,0.8s
AKUT **Akutan** **78.81 35** *e*P **P** **05 34 26.3 +0.8**
comp=Z,426nm,0.7s
GAMB **Gambell** **79.07 24** *e*P **P** **05 34 28.3 +1.6**
comp=Z,84nm,0.9s
MAW **Mawson** **79.21 200** P **P** **05 34 28.2 +0.9**
comp=Z,72nm,1.0s,baz=57,slow=6.0,SNR=72
MAW PKKPbc **PKKPbc** **05 53 17.5 -3.2**
comp=Z,3.9nm,0.6s,baz=196,slow=2.6,SNR=15
MAW PKPPKP **P'P'df** **06 01 20.7 +0.3**
comp=Z,4.3nm,0.9s,baz=277,slow=6.0,SNR=5.5
MAW **Mawson** **79.21 200** P **P** **05 34 28.3 +0.9**
baz=79,SNR=52
MAW **Mawson** **79.21 200** *e*P **P** **05 34 28.2 +0.9**
comp=Z,16nm,0.9s
MAW PKKPbc **PKKPbc** **05 53 17.5 -3.2**
MAW P'P' 06 01 20.7
DAMY **Dhamar** **79.26 285** *e*P **P** **05 34 29.1 0.0**
comp=Z,27nm,0.8s
VNDA **Vanda** **80.31 172** P **P** **05 34 33.7 +0.5**
comp=Z,38nm,0.8s,baz=317,slow=6.0,SNR=214
VNDA PKKPbc **PKKPbc** **05 53 14.7 -3.9**
comp=Z,1.4nm,0.9s,baz=310,slow=1.2,SNR=5.3
VNDA LR LR 06 10 52.7
comp=Z,154nm,18.1s,baz=349,slow=36
VNDA **Vanda** **80.31 172** *e*P **P** **05 34 33.7 +0.5**
comp=Z,40nm,0.8s
VNDA PKKPbc **PKKPbc** **05 53 14.7 -3.9**
GNI **Garni** **81.20 311** P **P** **05 34 38.3 -0.6**
comp=Z,16nm,0.7s,baz=17,slow=4.6,SNR=7.2
GNI **Garni** **81.20 311** *c i*P **P** **05 34 38.7 -0.2**
GNI pmax pmax
comp=Z,76nm,1.0s
GNI **Garni** **81.20 311** P **P** **05 34 38.8 -0.1**
SNR=8.7
GNI **Garni** **81.20 311** *e*P **P** **05 34 39.8 +0.8**
comp=Z,36nm,0.8s
SBA **Scott Base** **81.26 172** *e*P **P** **05 34 39.2 +1.0**
SBA pmax pmax
comp=Z,36nm,1.1s
SBA **Scott Base** **81.26 172** *e*P **P** **05 34 39.2 +1.0**
comp=Z,36nm,1.1s
TBLG **Delisi** **81.41 312** P **P** **05 34 39.6 -0.3**
TBLG **Delisi** **81.41 312** *e*P **P** **05 34 39.5 -0.3**
SDPT **Sand Point** **82.08 34** *e*P **P** **05 34 43.2 +0.3**
comp=Z,504nm,0.7s
ZEI **Tsey** **82.16 313** *e*P **P** **05 34 42.4 -1.5**
ZEI pmax pmax
comp=Z,137nm,1.0s
AKH **Akhalkalaki** **82.29 312** ⇑*i*P **P** **05 34 45.1 +0.4**
AKH **Akhalkalaki** **82.29 312** P **P** **05 34 45.0 +0.4**
AKH **Akhalkalaki** **82.29 312** P **P** **05 34 45.5 +0.9**
ONI **Oni** **82.46 313** P **P** **05 34 45.5 +0.1**
ONI **Oni** **82.46 313** *e*P **P** **05 34 45.4 +0.1**
NCK **Nalchik** **82.47 314** *i*P **P** **05 34 43.9 -1.4**
NCK pmax pmax
comp=Z,24nm,0.9s
KBZ **Khabaz** **83.00 314** P **P** **05 34 47.2 -0.7**
comp=Z,29nm,0.9s,baz=89,slow=3.8,SNR=35
GOF **Gofitskoye** **83.05 315** ⇑*e*P **P** **05 34 47.6 -0.6**
NEY **Neytrino** **83.07 313** *c i*P **P** **05 34 49.1 +0.5**
NEY pmax pmax
comp=Z,5.0nm,1.0s
KIV **Kislovodsk** **83.17 314** *c i*P **P** **05 34 47.9 -1.1**
KIV *e* 05 38 00.8
KIV *e*PPP PPP 05 39 51.4
KIV S **S** **05 44 58.0 +2.1**
KIV pmax pmax
comp=Z,31nm,1.8s
CHGN **Chignik** **83.40 33** *e*P **P** **05 34 49.9 +0.2**
MZRK **Al-Mazaregh** **83.98 306** *e*P **P** **05 34 54.7 +1.4**
SFNV **Sufian** **84.46 306** *e*P **P** **05 34 55.6 -0.1**
VRH **Novokhopyorsk** **84.64 321** *e*P **P** **05 34 54.8 -1.3**
VRH pmax pmax
comp=Z,150nm,0.8s
SOC **Sochi** **85.28 314** *e*P **P** **05 34 57.4 -2.1**
SOC *e* 05 38 16.3
SOC *e*PPP PPP 05 40 09.0
SOC *e*S **SKSac** **05 45 06.0 -3.5**
SOC pmax pmax
comp=Z,79nm,0.8s
SVW2 **Sparrevohn** **85.59 29** *e*P **P** **05 35 02.0 +1.3**
comp=Z,35nm,0.6s
TT01 **Tatalina** **85.64 27** *e*P **P** **05 35 02.0 +1.1**
TTA **Tatalina** **85.65 27** *e*P **P** **05 35 02.2 +1.2**
TTA pmax pmax
comp=Z,21nm,0.7s
TTA **Tatalina** **85.65 27** *e*P **P** **05 35 02.2 +1.2**
comp=Z,21nm,0.7s
KMBO **Kilima Mbogo** **86.07 269** P **P** **05 35 04.1 -0.3**
comp=Z,22nm,0.8s,baz=66,slow=6.4,SNR=40
KMBO **Kilima Mbogo** **86.07 269** *e*P **P** **05 35 04.6 +0.2**
KMBO pmax pmax
comp=Z,32nm,0.9s
KMBO **Kilima Mbogo** **86.07 269** *e*P **P** **05 35 04.6 +0.2**
comp=Z,32nm,0.9s
VSR **Storozhevoye** **86.24 321** *e*P **P** **05 35 02.2 -1.9**
VSR pmax pmax
comp=Z,180nm,0.7s
OHAK **Old Harbor** **86.32 33** *e*P **P** **05 35 05.3 +1.0**
comp=Z,278nm,1.4s
RABH **Abou Rabah** **86.73 304** *e*P P 05 35 22.0 +15
KDAK **Kodiak Island** **86.75 32** *e*P **P** **05 35 07.4 +1.0**
KDAK pmax pmax
comp=Z,152nm,0.6s
KDAK **Kodiak Island** **86.75 32** *e*P **P** **05 35 07.4 +1.0**
comp=Z,152nm,0.6s
KLMR **Klimovskoe** **86.88 331** *e*P **P** **05 35 02.4 -4.5**
KLMR *e* 05 38 26.5
KLMR *e*PPP PPP 05 40 24.1
KLMR pmax pmax
comp=Z,136nm,0.9s
RSO **Redoubt South** **86.90 30** *e*P **P** **05 35 07.3 0.0**
ASF **Jabal al Asfar** **86.91 302** P **P** **05 35 07.9 0.0**
comp=Z,52nm,1.1s,baz=26,slow=0.7,SNR=29
ANN **Anapa** **87.00 315** *c i*P **P** **05 35 05.9 -2.0**
ANN *e* 05 45 26.0
ANN pmax pmax
comp=Z,211nm,1.0s
SALA **Sala** **87.06 303** *e*P **P** **05 35 08.8 0.0**
KFRA **Kufra** **87.09 305** *e*P **P** **05 35 08.5 -0.2**
DRWC **Darquich** **87.24 306** *e*P P 05 35 15.7 +6.3
SPU **Mount Spurr** **87.31 29** *e*P **P** **05 35 09.3 +0.2**
PPLA **Purkeypile** **87.39 27** *e*P **P** **05 35 09.5 -0.1**
comp=Z,90nm,1.6s
HOM **Homer** **87.39 30** *e*P **P** **05 35 08.5 -0.9**
comp=Z,104nm,0.8s
HAWK **Haweek** **87.39 304** *e*P **P** **05 35 09.5 -0.6**
HAWK *e*P **PcP** **05 35 09.7 -2.4**
BIDA **Albida** **87.47 305** *e*P **P** **05 35 09.5 -1.0**
CAST **Castle Rocks** **87.48 27** *e*P **P** **05 35 10.1 +0.3**
comp=Z,31nm,0.6s
MOS **Moscow** **87.48 326** *e*P **P** **05 35 06.5 -3.4**
MOS pmax pmax
comp=Z,110nm,1.2s
CNPM **China Poot** **87.59 31** *e*P **P** **05 35 10.5 +0.1**
comp=Z,66nm,1.0s
BRLK **Bradley Lake** **87.78 30** *e*P **P** **05 35 10.9 -0.4**
comp=Z,92nm,1.0s
SYO **Syowa Base** **87.84 201** ⇓*i*X **P** **05 35 10.2 -1.2**
SYO **Syowa Base** **87.84 201** ⇓*i*PcP **PcP** **05 35 13.1 0.0**
SUA **Susitna One** **87.96 29** *e*P **P** **05 35 11.9 -0.4**
comp=Z,55nm,0.8s
KTH **Katishna Hill** **88.01 27** *e*P **P** **05 35 12.4 0.0**
comp=Z,26nm,1.0s
BPAW **Bear Paw Mtn.** **88.02 26** *e*P **P** **05 35 12.6 +0.3**
comp=Z,31nm,0.7s
MLY **Manley** **88.18 25** *e*P **P** **05 35 13.4 +0.3**
comp=Z,65nm,1.1s
MMAI **Mount Meron Ar** **88.19 303** P **P** **05 35 13.5 -0.5**
comp=Z,14nm,0.5s,baz=92,slow=4.3,SNR=27
TRF **Thorofare Moun** **88.28 27** *e*P **P** **05 35 13.7 -0.1**
comp=Z,36nm,1.0s
RC01 **Rabbit Creek A** **88.42 29** *e*P **P** **05 35 14.2 -0.1**
comp=Z,38nm,0.8s
SEW **Seward** **88.52 30** *e*P **P** **05 35 14.9 +0.2**
comp=Z,84nm,1.1s
EIL **Elat** **88.53 300** P **P** **05 35 14.8 -0.7**
comp=Z,12nm,0.8s,baz=308,slow=3.6,SNR=10
EIL LR LR 06 20 30.5
comp=Z,132nm,20.3s,baz=250,slow=39
COLD **Coldfoot** **88.53 23** *e*P **P** **05 35 15.8 +1.1**
comp=Z,52nm,0.8s
BWN **Browne** **88.68 26** *e*P **P** **05 35 16.1 +0.6**
comp=Z,66nm,0.9s
PMR **Palmer** **88.73 29** *e*P **P** **05 35 15.4 -0.3**
PMR pmax pmax
comp=Z,22nm,0.8s
PMR **Palmer** **88.73 29** *e*P **P** **05 35 15.4 -0.3**
comp=Z,22nm,0.8s
MCK **McKinley** **88.90 26** *e*P **P** **05 35 16.0 -0.5**
MCK pmax pmax
comp=Z,60nm,0.8s
MCK **McKinley** **88.90 26** *e*P **P** **05 35 16.0 -0.5**
comp=Z,60nm,0.8s
RND **Reindeer** **88.93 27** *e*P **P** **05 35 16.0 -0.7**
RND pmax pmax
comp=Z,60nm,0.7s
RND **Reindeer** **88.93 27** *e*P **P** **05 35 16.0 -0.7**
comp=Z,60nm,0.7s
VAH **Vaihoa** **89.11 105** *e*P **P** **05 35 22.1 +3.6**
comp=Z,170nm,1.1s
SML **Sawmill** **89.12 28** *e*P **P** **05 35 17.7 0.0**
SML pmax pmax
comp=Z,71nm,0.8s
SML **Sawmill** **89.12 28** *e*P **P** **05 35 17.6 0.0**
comp=Z,71nm,0.8s
MDM **Murphy Dome** **89.24 25** *e*P **P** **05 35 17.4 -0.8**
comp=Z,15nm,0.8s
WRH **Wood River Hil** **89.29 26** *e*P **P** **05 35 18.0 -0.3**
comp=Z,128nm,1.6s
SIM **Simferopol'** **89.36 315** *ce*P **P** **05 35 17.6 -1.5**
SIM *e* 05 38 57.0
SIM pmax pmax
comp=Z,40nm,0.8s
LVZ **Lovozero** **89.40 338** *ce*P **P** **05 35 17.0 -1.8**
LVZ pmax pmax
comp=Z,69nm,1.7s
LVZ **Lovozero** **89.40 338** *e*P **P** **05 35 17.0 -1.8**
comp=Z,35nm,0.9s
COLA **College** **89.40 25** *e*P **P** **05 35 18.2 -0.6**
COLA pmax pmax
comp=Z,11nm,0.8s
COLA **College** **89.40 25** *e*P **P** **05 35 18.2 -0.6**
comp=Z,11nm,0.8s
CCB **Clear Creek Bu** **89.42 25** *e*P **P** **05 35 18.3 -0.6**
comp=Z,35nm,0.7s
DHY **Denali Highway** **89.59 27** *e*P **P** **05 35 20.0 +0.1**
comp=Z,35nm,0.7s
SCM **Sheep Creek Mo** **89.60 28** *e*P **P** **05 35 19.9 0.0**
SCM pmax pmax
comp=Z,73nm,1.2s
SCM **Sheep Creek Mo** **89.60 28** *e*P **P** **05 35 19.9 0.0**
comp=Z,73nm,1.2s
BR131 **Keskin Array S** **89.69 310** *e*P **P** **05 35 19.1 -1.8**
BRTR **Keskin Array B** **89.69 310** P **P** **05 35 19.0 -1.9**
comp=Z,17nm,0.9s,baz=110,slow=4.0,SNR=52
BRTR PP **PP** **05 38 53.4 -1.8**
comp=Z,6.2nm,0.8s,baz=116,slow=7.3,SNR=9.0
HDA **Harding Lake** **89.79 26** *e*P **P** **05 35 19.5 -1.1**
comp=Z,26nm,0.7s
IL1 **Eielson Array** **89.81 25** *e*P **P** **05 35 19.7 -1.0**
ILAR **Eielson Array** **89.81 25** P **P** **05 35 19.1 -1.7**
comp=Z,9.7nm,0.5s,baz=244,slow=4.9,SNR=182
ILAR PP **PP** **05 38 52.4 -2.9**
comp=Z,3.3nm,1.0s,baz=270,slow=7.3,SNR=6.8
ILAR PKKP **PKKPdf** **05 52 48.9 -1.6**
comp=Z,3.3nm,0.8s,baz=18,slow=1.9,SNR=5.9
ILAR PKKPbc **PKKPbc** **05 52 52.5 -3.0**
comp=Z,3.6nm,0.8s,baz=113,slow=2.4,SNR=25
ILAR PKPPKP **P'P'df** **06 01 02.0 +0.9**
comp=Z,0.9nm,1.0s,baz=90,slow=2.2,SNR=5.1
ILAR **Eielson Array** **89.81 25** P **P** **05 35 19.1 -1.7**
ILAR 05 38 52.4
ILAR pmax pmax
comp=Z,10.0nm,0.5s
ILAR pmax pmax
comp=Z,3.0nm,1.0s
ILAR pmax pmax
comp=Z,3.0nm,0.8s
ILAR pmax pmax
comp=Z,4.0nm,0.8s
ILB **Eielson Array** **89.81 25** *e*P **P** **05 35 19.8 -1.0**
APA **Apatity** **89.87 337** ⇓*i*P **P** **05 35 17.3 -3.6**
APA *i* *PP **pP** **05 35 56.0 -5.3**
APA *i*S **SKKSac** **05 45 48.0 -1.9**
APA pmax pmax
comp=Z,19nm,0.8s
APA MLR MLR
comp=Z,400nm,15.0s
CSS **Mathiatis** **89.93 305** *e*P **P** **05 35 21.1 -0.9**
comp=Z,12nm,1.0s
QSPA **South Pole Qui** **90.04 180** *e*P **P** **05 35 22.5 +0.6**
QSPA *e*PcP **PcP** **05 35 22.8 -0.3**
KLU **Klutina** **90.27 29** *e*P **P** **05 35 23.3 +0.2**
comp=Z,30nm,0.7s
ANTO **Ankara** **90.34 310** *e*P **P** **05 35 22.7 -1.1**
ANTO pmax pmax
comp=Z,14nm,0.8s
ANTO **Ankara** **90.34 310** P **P** **05 35 22.1 -1.7**
SNR=5.1
ANTO **Ankara** **90.34 310** *e*P **P** **05 35 22.7 -1.1**
comp=Z,14nm,0.8s
DIV **Divide** **90.35 29** *e*P **P** **05 35 23.8 +0.4**
comp=Z,175nm,1.6s
EYAK **Cordova Ski Ar** **90.37 30** *e*P **P** **05 35 24.2 +0.8**
comp=Z,23nm,1.1s
PAX **Paxson** **90.46 27** *e*P **P** **05 35 24.1 +0.2**
PAX pmax pmax
comp=Z,152nm,1.8s
PAX **Paxson** **90.46 27** *e*P **P** **05 35 24.1 +0.2**
comp=Z,152nm,1.8s
BMRM **Bremner River** **90.92 29** *e*P **P** **05 35 26.3 +0.2**
comp=Z,43nm,1.0s
DOT **Dot Lake** **91.07 26** *e*P **P** **05 35 26.6 -0.1**
comp=Z,45nm,0.7s
MENT **Mentasta** **91.26 27** *e*P **P** **05 35 27.6 +0.1**
comp=Z,27nm,0.6s
CRQM **Cirque** **91.64 29** *e*P **P** **05 35 30.1 +0.5**
comp=Z,32nm,0.8s
BALM **Baldy** **92.02 29** *e*P **P** **05 35 31.8 +0.6**
BALM pmax pmax
comp=Z,211nm,1.7s
BALM **Baldy** **92.02 29** *e*P **P** **05 35 31.8 +0.6**
comp=Z,211nm,1.7s
EGAK **Eagle** **92.27 25** *e*P **P** **05 35 32.5 +0.4**
comp=Z,52nm,1.3s
AKASG **Malin Array Be** **92.52 321** P **P** **05 35 31.4 -2.1**
comp=Z,26nm,0.8s,baz=71,slow=4.6,SNR=44
AKASG PP **PP** **05 39 20.6 +3.7**
comp=Z,2.9nm,0.7s,baz=79,slow=7.3,SNR=5.0
KIEV **Kiev** **92.53 321** *e*P **P** **05 35 31.5 -2.1**
KIEV pmax pmax
comp=Z,29nm,1.0s
KIEV **Kiev** **92.53 321** *e*P **P** **05 35 31.5 -2.1**
comp=Z,29nm,1.0s
AK11 **Malin Array Si** **92.56 321** *e*P **P** **05 35 31.9 -1.8**
MBAR **Mbarara** **92.58 269** *e*P **P** **05 35 33.7 -1.2**
MBAR pmax pmax
comp=Z,10.0nm,0.5s
MBAR **Mbarara** **92.58 269** *e*P **P** **05 35 33.7 -1.2**
comp=Z,9.5nm,0.5s
ARA0 **ARCESS Array S** **92.64 340** *e*P **P** **05 35 31.8 -2.0**
ARCES **ARCESS Array B** **92.64 340** P **P** **05 35 31.9 -1.8**
comp=Z,21nm,0.7s,baz=84,slow=6.2,SNR=57
ARCES PKIKP **PKiKP** **05 40 21.1 0.0**
comp=Z,2.3nm,0.7s,baz=96,slow=0.9,SNR=4.8
ARCES PKKP **PKKPdf** **05 52 45.0 -0.5**
comp=Z,1.0nm,0.5s,baz=268,slow=2.7,SNR=9.0
ARCES **ARCESS Array B** **92.64 340** P **P** **05 35 32.0 -1.8**
ARCES pmax pmax
comp=Z,21nm,0.7s
ARE0 **ARCESS Array S** **92.64 340** *e*P **P** **05 35 32.2 -1.6**
ARE0 IAmb IAmb 05 35 39.4
comp=Z,207nm,2.0s
ARE0 **ARCESS Array S** **92.64 340** *e*P **P** **05 35 32.4 -1.4**
comp=Z,143nm,1.8s
HAMF **Hammerfest** **93.10 341** *e*P **P** **05 35 33.7 -2.1**
HAMF IAmb IAmb 05 35 34.8
comp=Z,60nm,0.8s
DAWY **Dawson** **93.10 26** *e*P **P** **05 35 36.5 +0.5**
comp=Z,56nm,1.0s
PCA **Pinnacle** **93.12 30** *e*P **P** **05 35 37.5 +1.3**
comp=Z,199nm,1.3s
SORM **Soroca** **93.25 318** ⇑*i*P **P** **05 35 35.2 -1.8**
SORM **Soroca** **93.25 318** ⇑P **P** **05 35 35.2 -1.8**
SPA0 **Spitsbergen Ar** **93.34 349** *e*P **P** **05 35 35.6 -1.3**
SPA0 IAmb IAmb 05 35 36.6
comp=Z,309nm,1.0s
SPA0 **Spitsbergen Ar** **93.34 349** *e*P **P** **05 35 36.1 -0.8**
SPITS **Spitsbergen Ar** **93.34 349** P **P** **05 35 35.5 -1.3**
comp=Z,203nm,0.9s,baz=99,slow=7.4,SNR=92
VSU **Vasula** **93.36 328** *ce*P **P** **05 35 35.6 -1.7**
VSU pmax pmax
comp=Z,145nm,1.0s

FIA1 FINESS Array S 93.38 331 eP P 05 35 35.2 -2.1
FINES FINESS Array B 93.38 331 P P 05 35 35.0 -2.3
comp=Z,9,4nm,0.8s,baz=91,slow=7.0,SNR=25
FINES PKiKP PKiKP 05 40 23.0 +0.3
comp=Z,1.9nm,0.5s,baz=106,slow=4.2,SNR=6.3
TIRR Tirgusor 93.44 314⇓iP P 05 35 36.3 -1.6
TIRR Tirgusor 93.44 314 eP P 05 35 36.0 -1.9
TIRR pmax pmax
comp=Z,12nm,0.9s
TIRR Tirgusor 93.44 314 eP P 05 35 36.0 -1.9
comp=Z,12nm,0.9s
KTK1 Kautokeino 93.52 339 eP P 05 35 36.0 -1.8
KTK1 IAmb IAmb 05 35 36.4
comp=Z,81nm,1.7s
CFR Carcaliu 93.59 315⇓iP P 05 35 37.2 -1.4
CFR Carcaliu 93.59 315 ⇓P P 05 35 37.2 -1.4
IDID Didziasalis 93.67 325 eP P 05 35 38.1 -0.6
IDID IAmb IAmb 05 35 39.3
comp=Z,49nm,0.9s
NACGM Naroch 93.68 325 e P 05 35 37.0 -1.8
TLB Topalu 93.69 315⇓iP P 05 35 37.7 -1.4
TLB Topalu 93.69 315 ⇓P P 05 35 37.7 -1.4
IZAR Zarasai 93.90 326 eP P 05 35 39.1 -0.7
IZAR IAmb IAmb 05 35 40.2
comp=Z,44nm,0.7s
KBS Kingsbay 93.94 350 eP P 05 35 38.4 -1.2
KBS pmax pmax
comp=Z,60nm,0.9s
KBS Kingsbay 93.94 350 eP P 05 35 38.4 -1.2
comp=Z,60nm,0.9s
ISAL Salakas 93.99 326 eP P 05 35 39.5 -0.8
ISAL IAmb IAmb 05 35 40.6
comp=Z,29nm,0.9s
DHAK Deception Hill 94.27 31 eP P 05 35 42.7 +1.2
comp=Z,172nm,1.6s
HYT Haines Junctio 94.39 29 eP P 05 35 43.2 +1.1
comp=Z,59nm,0.8s
TESR Tescani 94.52 317⇓iP P 05 35 41.9 -1.0
VRI Vrincioaia 94.52 316⇓iP P 05 35 42.3 -0.7
VRI Vrincioaia 94.52 316 ⇓P P 05 35 42.3 -0.7
PRAR RASCA 94.74 317⇓iP P 05 35 43.5 -0.4
TRO Tromso 94.89 340 eP P 05 35 41.8 -2.3
TRO IAmb IAmb 05 35 42.8
comp=Z,161nm,1.7s
KARP Karpathos 94.96 306 eP P 05 35 44.0 -1.2
comp=Z,98nm,1.6s
LSZ Lusaka 94.98 255 eP P 05 35 45.3 -0.5
LSZ pmax pmax
comp=Z,119nm,0.8s
LSZ Lusaka 94.98 255 eP P 05 35 45.3 -0.5
comp=Z,119nm,0.8s
MLR Muntele Rosu 95.10 316 P P 05 35 44.5 -1.3
baz=57,slow=2.7
MLR Muntele Rosu 95.10 316⇓iP P 05 35 44.7 -1.1
MLR Muntele Rosu 95.10 316 ⇓P P 05 35 44.7 -1.1
MLR Muntele Rosu 95.10 316 eP P 05 35 44.5 -1.3
comp=Z,27nm,1.0s
BURAR Bucovina Array 95.39 318⇑iP P 05 35 46.0 -1.0
BURAR Bucovina Array 95.39 318 ⇑P P 05 35 46.0 -1.0
BUR08 Bucovina Ar. S 95.40 318 eP P 05 35 46.1 -1.0
SKAG Skagway 95.68 30 eP P 05 35 48.9 +1.1
comp=Z,72nm,0.9s
VOIR 95.74 316⇑iP P 05 35 48.3 -0.3
VOIR 95.74 316 ⇑P P 05 35 48.3 -0.3
SUW Suwalki 95.88 324 eP P 05 35 47.4 -1.4
SUW Suwalki 95.88 324 eP P 05 35 47.4 -1.4
LVI L'vov 95.92 320 eP P 05 35 47.7 -1.5
ARR Arges 96.03 316⇑iP P 05 35 49.0 -0.9
LAST Lasithi 96.36 305 eP P 05 35 50.4 -1.2
comp=Z,24nm,1.0s
BMR Baia Mare 96.54 318⇑iP P 05 35 51.2 -0.9
BMR Baia Mare 96.54 318 ⇑P P 05 35 51.2 -0.9
STEI Steigen 96.63 339 eP P 05 35 50.0 -2.0
STEI IAmb IAmb 05 35 50.5
comp=Z,37nm,0.9s
KWP Kalwaria Pacla 96.80 320 eP P 05 35 51.9 -1.3
KWP Kalwaria Pacla 96.80 320 eP P 05 35 51.9 -1.3
IDI Anoyia 96.83 305 P P 05 35 51.7 -2.0
comp=Z,11nm,0.6s,baz=72,slow=6.1,SNR=10
IDI Anoyia 96.83 305 eP P 05 35 52.5 -1.2
comp=Z,12nm,0.7s
LBTB Lobatse 97.05 245 eP Pdif 05 35 55.2 +0.1
LBTB pmax pmax
comp=Z,9.0nm,0.8s
LBTB Lobatse 97.05 245 eP Pdif 05 35 55.2 +0.2
comp=Z,9.0nm,0.8s
TRPA Tarpa 97.12 318⇑eSKPdf P 05 35 53.2 -1.4
BOSA Boshof 97.14 241 P P 05 35 54.4 -1.0
comp=Z,6.8nm,0.9s,baz=95,slow=2.4,SNR=7.3
BOSA Boshof 97.14 241 eP P 05 35 55.1 -0.2
BOSA pmax pmax
comp=Z,41nm,1.7s
BOSA Boshof 97.14 241 eP P 05 35 55.1 -0.2
comp=Z,41nm,1.7s
KOLS Kolonicke sedl 97.18 319 eP P 05 35 54.0 -0.9
KOLS pmax pmax
comp=Z,21nm,0.9s
KOLS Kolonicke sedl 97.18 319 eP P 05 35 54.0 -0.9
KOLS e 05 36 01.6
DRGR 97.19 317⇑iP P 05 35 53.7 -1.4
DRGR 97.19 317 ⇑P P 05 35 53.7 -1.4
UZH Uzhgorod 97.21 319 eP P 05 35 54.2 -0.8
GZR Gura Zlata 97.33 316⇑iP P 05 35 54.1 -1.7
GZR Gura Zlata 97.33 316 ⇑P P 05 35 54.1 -1.7
VTS Vitosha 97.38 313⇑iP P 05 35 54.2 -2.0
VTS Vitosha 97.38 313 eP P 05 35 54.0 -2.2
VTS pmax pmax
comp=Z,12nm,1.1s
VTS Vitosha 97.38 313 eP P 05 35 54.0 -2.2
comp=Z,12nm,1.1s
CRAG Craig 97.58 34 eP Pdif 05 35 57.5 +0.9
comp=Z,98nm,1.7s
BEL Belsk 97.65 322 eP P 05 35 55.7 -1.3
BEL Belsk 97.65 322 eP P 05 35 55.7 -1.3
CRVS Cervenica-Dubn 97.71 319 eP P 05 35 56.5 -0.8
CRVS Cervenica-Dubn 97.71 319 eP P 05 35 56.5 -0.8
STHS Stebnicka Huta 97.77 320 eP P 05 35 57.0 -0.6
STHS pmax pmax
comp=Z,12nm,0.9s
STHS Stebnicka Huta 97.77 320 eP P 05 35 57.0 -0.6
WRAK Wrangell Islan 97.82 33 eP Pdif 05 35 58.7 +1.1
comp=Z,34nm,0.9s
SIRR Siria 97.98 317⇓iP P 05 35 57.5 -1.1
BZS Buzias 98.11 316⇑iP P 05 35 57.2 -2.0
BZS Buzias 98.11 316 ⇑P P 05 35 57.2 -2.0
MDVR Moldovita 98.16 315⇓iP P 05 35 58.4 -1.1
NIE Niedzica 98.38 320 eP P 05 35 59.8 -0.5
NIE Niedzica 98.38 320 eP P 05 35 59.8 -0.5
KECS Kecovo 98.42 319 eP P 05 35 59.7 -0.8
KECS pmax pmax
comp=Z,8.0nm,1.2s
KECS Kecovo 98.42 319 eP P 05 35 59.7 -0.8
KECS ePP PP 05 40 04.2 +1.6
AGG Agios Georgios 98.47 309 eP P 05 35 58.3 -2.7
AGG pmax pmax
comp=Z,20nm,0.9s
AGG Agios Georgios 98.47 309 eP P 05 35 58.3 -2.7
comp=Z,20nm,0.9s
OJC Ojcow 98.56 321 eP P 05 36 00.0 -1.1
OJC Ojcow 98.56 321 eP P 05 36 00.3 -0.7
OJC pmax pmax
comp=Z,20nm,0.9s
OJC Ojcow 98.56 321 eP P 05 36 00.3 -0.7
comp=Z,20nm,0.9s
DLBC Dease Lake 98.58 31 PKKPbc PKKPbc 05 52 30.4 -1.9
comp=Z,3.1nm,0.9s,baz=145,slow=5.6,SNR=5.0
DLBC Dease Lake 98.58 31 eP Pdif 05 36 02.5 +1.4
comp=Z,13nm,0.9s
DLBC PKKPbc PKKPbc 05 52 30.4 -1.9
PSZ Piszkesteto 98.91 319⇓iP P 05 36 01.6 -1.2
PSZ Piszkesteto 98.91 319 eP P 05 36 01.7 -1.1
PSZ pmax pmax
comp=Z,13nm,1.0s
PSZ Piszkesteto 98.91 319 eP P 05 36 01.7 -1.1
comp=Z,13nm,1.0s
PSZ Piszkesteto 98.91 319⇑ePP P 05 36 01.3 -1.5
LANS Liptovska Anna 98.96 320 eP P 05 36 02.5 -0.5
LANS Liptovska Anna 98.96 320 eP P 05 36 02.5 -0.5
VYHS Vyhne 99.50 319 eP Pdif 05 36 04.2 -1.1
VYHS pmax pmax
comp=Z,3.0nm,1.1s
VYHS Vyhne 99.50 319 eP Pdif 05 36 04.2 -1.1
VYHS ePP PP 05 40 09.7 -1.1
HFS Hagfors 99.58 331 P Pdif 05 36 03.2 -2.2
baz=106,slow=5.1
OKC Ostrava-Krasne 99.67 321 ePDIFF Pdif 05 36 05.4 -0.6
OKC ePP PP 05 40 16.8 +4.7
OKC Ostrava-Krasne 99.67 321 eP Pdif 05 36 05.4 -0.6
OKC e 05 40 16.8
MORC Moravsky Berou 100.07 321⇓iP Pdif 05 36 07.6 -0.3
MORC Moravsky Berou 100.07 321 eP Pdif 05 36 07.5 -0.3
MORC Moravsky Berou 100.07 321 ePdif Pdif 05 36 07.5 -0.4
PDG Podgorica 100.29 313⇑iP Pdif 05 36 06.9 -2.0
NB2 NORSAR Subarra 100.46 333 P Pdif 05 36 06.7 -2.6
comp=Z,7.6nm,0.8s,baz=72,slow=4.4
NB2 NORSAR Subarra 100.46 333 P Pdif 05 36 06.7 -2.6
baz=72,slow=4.4
NOA NORSAR Array B 100.46 333 P Pdif 05 36 06.7 -2.6
comp=Z,5.5nm,0.8s,baz=72,slow=4.6,SNR=21
NOA PP PP 05 40 07.3 -10
comp=Z,1.3nm,0.7s,baz=66,slow=6.2,SNR=4.0
KSP Ksiaz 100.61 322 eP Pdif 05 36 09.7 -0.5
KSP Ksiaz 100.61 322 eP Pdif 05 36 09.7 -0.5
NBO02 NORSAR Array S 100.62 333 ePdif Pdif 05 36 07.8 -2.2
DPC Dobruska-Polom 100.71 321 ePDIFF Pdif 05 36 10.3 -0.4
DPC ePP PP 05 40 25.5 +5.6
DPC Dobruska-Polom 100.71 321 eP Pdif 05 36 10.3 -0.4
DPC e 05 40 25.5
VRAC Vranov 100.78 320⇑iP Pdif 05 36 10.9 -0.1
VRAC Vranov 100.78 320 ⇑P Pdif 05 36 10.9 -0.1
SNAA Sanae 100.86 195 P Pdif 05 36 11.6 +0.6
SNAA Sanae 100.86 195 eP Pdif 05 36 11.6 +0.6
SNAA Sanae 100.86 195 ePdif Pdif 05 36 11.6 +0.6
UPC Upice 100.87 322 ePDIFF Pdif 05 36 10.7 -0.7
UPC Upice 100.87 322 eP Pdif 05 36 10.7 -0.7
CONA Conrad Observa 101.56 319 i Pdiff Pdif 05 36 13.5 -1.1
comp=Z,6.0nm,1.3s
CONA i PKiKP PKiKP 05 40 34.1 -3.5
comp=Z,10nm,1.2s
PRU Pruhonice 101.91 321 ePDIFF Pdif 05 36 15.5 -0.5
PRU Pruhonice 101.91 321 eP Pdif 05 36 15.5 -0.5
ARSA Arsberg 101.94 318 i Pdiff Pdif 05 36 14.8 -1.5
comp=Z,4.4nm,1.1s
ARSA i PKiKP PKiKP 05 40 36.5 -1.7
comp=Z,7.9nm,1.4s
BRG Berggiesshubel 102.05 322 eP Pdif 05 36 15.7 -0.9
comp=Z,9.7nm,0.9s
BRG e 05 40 37.0
comp=Z,5.6nm,1.0s
BRG Berggiesshubel 102.05 322 eP Pdif 05 36 15.7 -0.9
BRG e 05 40 37.0
BRG pmax pmax
comp=Z,10.0nm,0.9s
SOKA Soboth 102.40 318 i Pdiff Pdif 05 36 17.2 -1.1
comp=Z,4.9nm,1.0s
SOKA i PP PP 05 40 33.6 +0.9
comp=Z,14nm,1.3s
CLL Collm 102.50 323 ePdif Pdif 05 36 18.0 -0.6
CLL ePP PP 05 40 33.0 -0.2
CLL eSSS SSS 05 58 54.0
CLL Collm 102.50 323 eP Pdif 05 36 18.0 -0.6
MOA Molln 102.62 319 i Pdiff Pdif 05 36 17.8 -1.4
comp=Z,8.1nm,1.1s
MOA i PKiKP PKiKP 05 40 41.2 +1.8
comp=Z,7.7nm,0.9s
GEC2 GERESS Array S 102.73 320 eP Pdif 05 36 19.6 -0.2
GEC2 GERESS Array S 102.73 320 ePdif Pdif 05 36 19.6 -0.2
GERES GERESS Array B 102.73 320 Pdiff Pdif 05 36 18.7 -1.1
comp=Z,3.8nm,1.0s,baz=86,slow=6.8,SNR=11
GERES PKiKP PKiKP 05 40 39.2 -0.6
comp=Z,1.9nm,0.7s,baz=79,slow=0.5,SNR=5.2
GERES PKPKP P'P'df 06 00 31.5 -6.3
comp=Z,0.6nm,0.6s,baz=38,slow=5.2,SNR=5.1
GEA0 GERESS Array S 102.73 320 ePdif Pdif 05 36 18.7 -1.1
KHC Kasperske Hory 102.74 321 ePDIFF Pdif 05 36 19.0 -0.8
KHC ePP PP 05 40 28.3 -6.8
KHC Kasperske Hory 102.74 321 eP Pdif 05 36 19.0 -0.8
OBKA Obir 102.76 318 i Pdiff Pdif 05 36 17.6 -2.4
comp=Z,8.3nm,1.6s
OBKA i PKiKP PP 05 40 37.5 +2.0
comp=Z,9.8nm,1.2s
MYKA Terra Mystica 103.34 318 i Pdiff Pdif 05 36 22.1 -0.4
comp=Z,3.9nm,0.9s
MYKA i PKiKP PKiKP 05 40 40.7 -0.1
comp=Z,5.1nm,1.0s
KBA Koelnbreinsper 103.42 319 i Pdiff Pdif 05 36 21.2 -1.8
comp=Z,3.9nm,0.8s
KBA i PKiKP PKiKP 05 40 43.1 +2.0
comp=Z,5.8nm,1.2s
ABTA Abfaltersbach 104.06 318 i Pdiff Pdif 05 36 23.7 -2.1
comp=Z,4.4nm,0.7s
ABTA i PKiKP PKiKP 05 40 42.7 +0.5
comp=Z,2.5nm,0.6s
YKA Yellowknife Ar 104.18 24 Pdiff Pdif 05 36 26.1 +0.3
comp=Z,2.3nm,0.7s,baz=297,slow=4.3,SNR=18
YKA PKiKP PKiKP 05 40 41.2 -0.6
comp=Z,1.9nm,0.5s,baz=301,slow=1.7,SNR=22
YKA PKKPbc PKKPbc 05 52 12.2 -3.9
comp=Z,3.1nm,0.5s,baz=120,slow=3.3,SNR=34
WTTA Wattenberg 104.49 319 i Pdiff Pdif 05 36 26.4 -1.4
comp=Z,9.7nm,1.0s
WTTA i PKiKP PKiKP 05 40 44.8 +1.6
comp=Z,14nm,1.2s
WATA Walderalm 104.51 319 i Pdiff Pdif 05 36 26.8 -1.0
comp=Z,14nm,1.2s
WATA i PKiKP PKiKP 05 40 44.3 +1.2
comp=Z,7.1nm,0.6s
MOTA Moosalm 104.82 319 i Pdiff Pdif 05 36 28.6 -0.6
comp=Z,11nm,0.9s
MOTA i PKiKP PKiKP 05 40 44.4 +0.7
comp=Z,12nm,1.0s
RETA Reutte 105.00 320 i PP PP 05 40 49.5 -2.5
comp=Z,5.4nm,1.0s
FETA Feichten 105.16 319 i PKiKP PKiKP 05 40 43.0 -1.3
comp=Z,8.5nm,1.3s
DAVA Damuels 105.63 320 i PKiKP PKiKP 05 40 42.5 -2.7
comp=Z,12nm,1.2s
DAVOX Davos/Dischmat 105.78 319 Pdiff Pdif 05 36 32.2 -1.4
comp=Z,3.0nm,0.6s,baz=80,slow=4.7,SNR=4.7
B05A Bryant 106.06 39 P PKiKP 05 40 46.1 +0.4
baz=289
I03D Drain, OR 106.62 44 P PKiKP 05 40 47.3 +0.4
baz=287
HUMO Hull Mountain 107.20 45 ePKiKP PKiKP 05 40 49.5 +1.4
I04A Tendick Farm, 107.24 44 P PKiKP 05 40 48.3 +0.1
baz=288
M02C Callahan 107.62 46 P PKiKP 05 40 50.0 +1.0
baz=286,SNR=5.4
B08A Colville Reser 107.76 38 ePdif Pdif 05 36 43.4 +1.2
I05D Terrebonne, OR 107.81 43 P PKiKP 05 40 50.1 +0.9
baz=288
N02D Trinity Center 107.85 47 P PKiKP 05 40 50.4 +1.0
baz=286,SNR=5.7
K04D Chiloquin, OR 108.05 45 P PKiKP 05 40 50.2 +0.4
baz=288
WDC Whiskeytown Da 108.08 47 ePKiKP PKiKP 05 40 50.6 +0.9
J05D Fort Rock, OR 108.21 44 P PKiKP 05 40 51.1 +1.0
baz=288,SNR=21
M04C Macdoel 108.24 46 P PKiKP 05 40 50.9 +0.7
baz=287
K05A Summer Lake 108.62 44 ePKiKP PKiKP 05 40 52.0 +1.1
O03D Paynes Creek 108.70 47 P PKiKP 05 40 51.4 +0.4
baz=287,SNR=5.9
NEW Newport 109.16 38 Pdiff Pdif 05 36 49.0 +0.6
comp=Z,1.2nm,0.4s,baz=277,slow=4.4,SNR=4.7
NEW Newport 109.16 38 P PKiKP 05 40 51.9 +0.3
baz=293
NEW Newport 109.16 38 P Pdif 05 36 49.0 +0.6
NEW pmax pmax
comp=Z,1.0nm,0.4s
EDM Edmonton 109.20 32 ePKiKP PKiKP 05 40 52.1 +0.6
KEST Kesra 109.24 308 PP PP 05 41 22.6 -0.8
comp=Z,12nm,0.9s,baz=12,slow=4.3,SNR=7.5
MOD Modoc Plateau 109.29 45 ePKiKP PKiKP 05 40 53.4 +1.2
AFDM Forest Hills D 109.70 48 ePKiKP PKiKP 05 40 54.0 +1.1
EKA Eskdalemuir Ar 109.77 331 PKiKP PKiKP 05 40 51.7 -0.7
comp=Z,2.1nm,0.9s,baz=104,slow=3.0,SNR=3.1
WVOR Wild Horse Val 110.29 44 eP Pdif 05 36 54.7 +1.1
WVOR Wild Horse Val 110.29 44 ePdif Pdif 05 36 54.7 +1.1
BMO Blue Mountains 110.34 41 ePKiKP PKiKP 05 40 54.0 0.0
CMB Columbia Colle 110.40 49 ePKiKP PKiKP 05 40 55.2 +1.0
PAHR Pah Rah Range 110.64 47 ePKiKP PKiKP 05 40 56.1 +1.3
WAKR Walker 110.98 48 ePKiKP PKiKP 05 40 57.3 +1.7
MSO Missoula 111.71 38 P PKiKP 05 40 56.5 0.0
baz=295
MSO Missoula 111.71 38 ePKiKP PKiKP 05 40 56.7 +0.1
PKM Mcpherson Peak 111.74 52 P PKiKP 05 40 57.8 +0.7
baz=286
MFID Camas Ranch 111.86 42 ePKiKP PKiKP 05 40 58.2 +1.2
VES Vestal, Richgr 112.04 51 P PKiKP 05 40 57.7 +0.4
baz=287
ARVC Arvin 112.45 52 P PKiKP 05 40 58.6 +0.5
baz=287
BLG Laguna Peak, P 112.55 53 P PKiKP 05 40 58.6 +0.2
baz=286
CWC Cottonwood Cre 112.64 50 P PKiKP 05 40 59.9 +1.1
baz=288
HLID Hailey 112.75 42 P PKiKP 05 41 00.0 +1.3
baz=294
HLID Hailey 112.75 42 ePKiKP PKiKP 05 41 00.2 +1.5
GRAC Grapevine Rang 113.01 49 P PKiKP 05 41 00.2 +0.9
baz=289
DAC Darwin (Calif) 113.06 50 ePKIKP PKiKP 05 40 59.7 +0.2
DAC Darwin (Calif) 113.06 50 ePKPdf PKiKP 05 40 59.7 +0.2
EDW2 Edwards Air Fo 113.18 52 P PKiKP 05 41 00.9 +1.2
baz=288
DLMT Dillon 113.19 39 ePKPdf PKiKP 05 41 00.4 +0.9
MPMC Manual Prospec 113.21 50 P PKiKP 05 41 00.9 +1.1
baz=288
PASC Pasadena Art C 113.23 52 ePKPdf PKiKP 05 40 59.9 +0.2
LRMC Laurel Mtn Rad 113.24 51 P PKiKP 05 41 00.8 +0.9
baz=288
MCMT McKenzie Canyo 113.26 40 P PKiKP 05 41 00.9 +1.2
CIS Catalina Islan 113.27 53 P PKiKP 05 41 00.6 +0.8
baz=287
ELK Elko 113.27 45 ePKIKP PKiKP 05 41 01.0 +1.1
ELK Elko 113.27 45 ePKiKP PKiKP 05 41 01.0 +1.1
FURC Furnace Creek, 113.56 50 P PKiKP 05 41 01.1 +0.9
baz=289
BFSC Mount Baldy Ra 113.63 52 P PKiKP 05 41 01.4 +0.8
baz=288
BOZ Bozeman (W) 113.70 39 P PKiKP 05 41 01.1 +0.7
baz=297
BOZ Bozeman (W) 113.70 39 ePKIKP PKiKP 05 41 01.0 +0.6
BOZ Bozeman (W) 113.70 39 ePKPdf PKiKP 05 41 01.0 +0.6
TPNV Topopah Spring 113.87 49 P PKiKP 05 41 01.6 +0.5
baz=290
TPNV Topopah Spring 113.87 49 ePKIKP PKiKP 05 41 02.2 +1.2
TPNV Topopah Spring 113.87 49 ePKiKP PKiKP 05 41 02.2 +1.2
R11A Troy Canyon, C 113.89 47 P PKiKP 05 41 02.2 +1.2
baz=291
R11A Troy Canyon, C 113.89 47 ePKiKP PKiKP 05 41 02.2 +1.2
RRX Edison Barstow 113.96 51 P PKiKP 05 41 01.8 +0.7
baz=288
GSC Goldstone, Bar 113.97 51 P PKiKP 05 41 02.5 +1.3
baz=288
GSC Goldstone, Bar 113.97 51 ePKIKP PKiKP 05 41 03.1 +1.9
GSC Goldstone, Bar 113.97 51 ePKiKP PKiKP 05 41 03.1 +1.9
FFC Flin Flon 113.99 27 ePKIKP PKiKP 05 41 00.6 +0.1
FFC Flin Flon 113.99 27 ePKiKP PKiKP 05 41 00.6 +0.1
MURC Murrieta 114.19 53 P PKPdf 05 41 02.2 +0.6
baz=288
SHOC Shoshone, Teco 114.19 50 P PKPdf 05 41 02.3 +0.8
baz=289
BBRC Big Bear Solar 114.21 52 P PKPdf 05 41 02.5 +0.6
baz=288
FCC Fort Churchill 114.35 20 ePKIKP PKPdf 05 41 00.9 -0.1
FCC Fort Churchill 114.35 20 ePKiKP PKPdf 05 41 00.9 -0.2
HEC Hector,Ludlow 114.49 51 P PKPdf 05 41 03.0 +0.8
baz=289
YHH Holmes Hill 114.55 39 ePKiKP PKiKP 05 41 04.1 +1.8
TUQ Turquoise Moun 114.61 51 P PKPdf 05 41 03.3 +0.8
baz=289
BGU Big Grassy Mou 114.75 44 ePKiKP PKPdf 05 41 03.5 +0.8
PFO Pinyon Flats O 114.77 53 P PKPdf 05 41 03.7 +0.9
baz=288
PFO Pinyon Flats O 114.77 53 ePKIKP PKPdf 05 41 04.5 +1.7
PFO Pinyon Flats O 114.77 53 ePKiKP PKPdf 05 41 04.5 +1.7
TPFO Pinon Flats 114.78 53 P PKPdf 05 41 03.8 +1.0
baz=288
YPP Pitchstone Pla 114.81 40 ePKiKP PKPdf 05 41 05.2 +2.4
GCMT Greycliff 114.83 38 ePKiKP PKPdf 05 41 03.5 +0.9
SHPR Sheep Range 114.84 49 ePKiKP PKPdf 05 41 05.0 +2.1
IMW Indian Meadow 114.90 40 ePKiKP PKPdf 05 41 04.3 +1.4
H17A Grant Village 114.91 40 P PKPdf 05 41 04.1 +1.2
baz=297
H17A Grant Village 114.91 40 ePKPdf PKPdf 05 41 05.3 +2.4
BELC Belle Mtn. Jos 115.02 52 P PKPdf 05 41 04.3 +1.0
baz=288
MONP2 Monument Peak 115.02 53 P PKPdf 05 41 04.4 +1.0
baz=288
GMRC Granite Mounta 115.03 51 P PKPdf 05 41 04.7 +1.4
baz=289
TPAW Teton Pass 115.07 41 ePKiKP PKPdf 05 41 04.5 +1.2
MOOW Moose Ponds 115.09 40 ePKPdf PKPdf 05 41 04.4 +1.2
REDW Red Top Meadow 115.19 41 ePKPdf PKPdf 05 41 04.5 +1.0
DUG Dugway, Tooele 115.19 45 P PKPdf 05 41 04.3 +0.9
baz=294
DUG Dugway, Tooele 115.19 45 ePKIKP PKPdf 05 41 04.6 +1.1
DUG Dugway, Tooele 115.19 45 ePKPdf PKPdf 05 41 04.6 +1.1
WVUT Wellsville 115.21 43 ePKPdf PKPdf 05 41 04.3 +0.8
LOHW Long Hollow 115.24 40 ePKPdf PKPdf 05 41 04.6 +1.0
AHID Auburn Hatcher 115.29 41 ePKPdf PKPdf 05 41 04.7 +1.1
IKP In-Ko-Pah, Jac 115.34 53 P PKPdf 05 41 05.2 +1.3
baz=288
LDFC Landfair 115.36 51 ePKPdf PKPdf 05 41 05.8 +1.9
RLMT Red Lodge 115.39 38 P PKPdf 05 41 05.0 +1.2
baz=289
RLMT Red Lodge 115.39 38 ePKPdf PKPdf 05 41 04.7 +0.9
TAM Tamanrasset 115.44 295 ePKIKP PKPdf 05 41 05.5 +1.1
TAM Tamanrasset 115.44 295 ePKPdf PKPdf 05 41 05.5 +1.1
HWUT Hardware Ranch 115.48 43 ePKPdf PKPdf 05 41 04.7 +0.6
SWSC Sam W. Stewart 115.50 53 P PKPdf 05 41 05.6 +1.5
baz=288
BC3 Big Chuckawall 115.56 52 P PKPdf 05 41 05.8 +1.5
baz=289
RSUT Red Spur Mount 115.56 43 ePKPdf PKPdf 05 41 05.2 +0.8
IRM Iron Mountain 115.64 52 P PKPdf 05 41 06.0 +1.6
baz=289
CTU Camp Tracy 115.73 44 ePKPdf PKPdf 05 41 05.6 +1.1
TCUT Toone Canyon 115.79 43 ePKPdf PKPdf 05 41 05.9 +1.1
NLU North Lily Min 115.81 45 ePKPdf PKPdf 05 41 05.8 +1.0
CCUT Cedar City 115.81 48 ePKPdf PKPdf 05 41 05.8 +0.9
NEE2 Needles Airpor 115.85 51 P PKPdf 05 41 05.7 +1.1
baz=290
JLU Jordanelle 115.98 44 ePKPdf PKPdf 05 41 06.2 +1.1
LCMT Little Creek M 116.10 48 ePKPdf PKPdf 05 41 07.2 +1.9
DAU Daniels Canyon 116.19 44 ePKPdf PKPdf 05 41 06.6 +1.0
DAU Daniels Canyon 116.19 44 ePKPdf PKPdf 05 41 06.6 +1.0
GLA Glamis 116.25 53 P PKPdf 05 41 07.1 +1.6
baz=289
GLA Glamis 116.25 53 ePKIKP PKPdf 05 41 06.8 +1.2
GLA Glamis 116.25 53 ePKPdf PKPdf 05 41 06.8 +1.2
Y12C Blythe 116.26 52 P PKPdf 05 41 06.5 +1.0
baz=289
Y12C Blythe 116.26 52 ePKPdf PKPdf 05 41 07.3 +1.8
W13A Hualapai Mount 116.30 50 ePKPdf PKPdf 05 41 07.4 +1.5
BW06 Boulder Array 116.31 41 P PKPdf 05 41 05.9 +0.3
baz=297
BW06 Boulder Array 116.31 41 ePKPdf PKPdf 05 41 05.6 0.0
BW06 ePKPdf PKiKP 05 41 05.8 +0.2
PD31 Pinedale Array 116.31 41 ePKPdf PKiKP 05 41 06.1 +0.5
PDAR Pinedale Array 116.31 41 PKP PKPdf 05 41 05.7 0.0
comp=Z,5.6nm,0.6s,baz=174,slow=1.5,SNR=37
PDAR PP PP 05 42 15.7 +2.2
comp=Z,1.7nm,0.8s,baz=328,slow=1.9,SNR=3.9
PDAR PKKPbc PKKPbc 05 51 33.6 -2.9
comp=Z,2.1nm,0.7s,baz=111,slow=4.7,SNR=15
PDAR PKKPab PKKPab 05 51 39.4 -1.2
comp=Z,6.9nm,0.7s,baz=116,slow=5.1,SNR=32
MSU Marysvale 116.31 46 ePKIKP PKPdf 05 41 07.5 +1.7
MSU Marysvale 116.31 46 ePKPdf PKPdf 05 41 07.5 +1.7
KNB Kanab 116.41 48 ePKIKP PKPdf 05 41 07.7 +1.8
KNB Kanab 116.41 48 ePKPdf PKPdf 05 41 07.7 +1.8
SGU Sterling 116.42 45 ePKPdf PKPdf 05 41 07.8 +1.8
LAO LASA Array 116.44 36 P PKPdf 05 41 08.0 +1.2
baz=302
MTPU Mount Pierson 116.49 47 ePKPdf PKPdf 05 41 08.1 +1.8
DGMT Dagmar 116.62 33 P PKPdf 05 41 06.1 +0.3
baz=305
DGMT Dagmar 116.62 33 ePKPdf PKPdf 05 41 06.5 +0.7
PKCU Pink Cliffs 116.63 47 ePKPdf PKPdf 05 41 08.0 +1.4
TMUT Trail Mountain 116.69 45 ePKPdf PKPdf 05 41 07.7 +1.1
A25A Svangstu Ranch 116.94 32 P PKPdf 05 41 07.0 +0.6
baz=306
P17A Butcher Ranch, 116.94 45 ePKPdf PKPdf 05 41 08.2 +1.3
U15A North Rim 117.03 48 ePKPdf PKPdf 05 41 09.0 +1.7
113A Mohawk Valley, 117.18 53 ePKPdf PKPdf 05 41 07.9 +0.6
SRU San Rafael Swe 117.25 45 ePKIKP PKPdf 05 41 08.3 +0.8
SRU San Rafael Swe 117.25 45 ePKPdf PKPdf 05 41 08.3 +0.8
B25A Knox Farm, Ray 117.30 33 P PKPdf 05 41 07.8 +0.7
baz=306
Y14A Wickenburg 117.38 51 ePKPdf PKPdf 05 41 08.8 +1.1

A26A **Wade Farm, Ken** 117.54 32 P PKPdf 05 41 08.2 +0.7
baz=307
C25A **Freed Ranch, W** 117.57 34 P PKPdf 05 41 08.4 +0.8
baz=305
ES19 **SONSECA Array** 117.74 316 *e*PKPdf PKPdf 05 41 08.5 +0.2
B26A **Jensen Ranch,** 117.74 33 P PKPdf 05 41 08.3 +0.3
baz=306
ESDC **Sonseca Array** 117.80 316 PKP PKPdf 05 41 08.2 -0.2
comp=Z,0.8nm,0.5s,baz=48,slow=1.2,SNR=7.2
ESDC PP PP 05 42 24.1 +0.5
comp=Z,1.5nm,0.7s,baz=67,slow=6.3,SNR=5.5
ESDC PKKPab PKKPab 05 51 34.7 +0.9
comp=Z,0.9nm,0.6s,baz=266,slow=5.9,SNR=6.2
A27A **Ledoux Ranch,** 117.92 32 P PKPdf 05 41 08.7 +0.4
baz=308
WUAZ **Wupatki** 118.06 49 P PKPdf 05 41 10.1 +0.9
baz=292
WUAZ **Wupatki** 118.06 49 *e*PKPdf PKPdf 05 41 10.5 +1.4
214A **Organ Pipe Nat** 118.21 53 P PKPdf 05 41 10.4 +1.0
baz=290
214A **Organ Pipe Nat** 118.21 53 *e*PKPdf PKPdf 05 41 10.2 +0.8
K22A **Casper** 118.33 40 P PKPdf 05 41 09.3 -0.2
baz=300
K22A **Casper** 118.33 40 *e*PKPdf PKPdf 05 41 09.5 0.0
O20A **White River Ci** 118.39 43 P PKPdf 05 41 10.3 +0.6
baz=297
O20A **White River Ci** 118.39 43 *e*PKPdf PKPdf 05 41 10.7 +1.0
D26A **Manning** 118.42 34 P PKPdf 05 41 09.7 +0.4
baz=306
X16A **Lo Mia Camp, P** 118.42 50 *e*PKPdf PKPdf 05 41 11.4 +1.5
A28A **Rude Farm, Bot** 118.45 31 P PKPdf 05 41 09.5 +0.1
baz=308,SNR=29
PV09 **Paradox Valley** 118.49 45 *e*PKPdf PKPdf 05 41 11.4 +1.3
PV10 **Paradox Valley** 118.61 45 *e*PKPdf PKPdf 05 41 11.2 +1.0
B28A **Dugan Ranch, T** 118.69 32 P PKPdf 05 41 10.2 +0.4
baz=308,SNR=11
PV05 **Paradox Valley** 118.70 45 *e*PKPdf PKPdf 05 41 11.1 +0.7
PV04 **Paradox Valley** 118.70 45 *e*PKPdf PKPdf 05 41 11.4 +1.1
A29A **Manning Farm,** 118.98 31 P PKPdf 05 41 10.1 -0.2
baz=310,SNR=29
PV01 **Paradox Valley** 119.05 45 *e*PKPdf PKPdf 05 41 12.0 +1.0
H25A **Fruitdale** 119.11 37 P PKPdf 05 41 10.4 -0.4
baz=304
RSSD **Black Hills** 119.12 37 P PKPdf 05 41 10.7 -0.3
baz=303
RSSD **Black Hills** 119.12 37 *e*PKIKP PKPdf 05 41 10.7 -0.3
RSSD **Black Hills** 119.12 37 *e*PKPdf PKPdf 05 41 10.7 -0.3
MVO **Moncorvo** 119.18 319 *e*LR LR 06 13 28.6
comp=Z,2µm,20.0s
B29A **Wagenman Farm,** 119.21 31 P PKPdf 05 41 10.8 0.0
baz=309,SNR=14
A30A **Hoffart Farm,** 119.44 30 P PKPdf 05 41 10.9 -0.3
baz=310,SNR=19
W18A **Petrified Fore** 119.45 49 P PKPdf 05 41 13.2 +1.3
baz=294
W18A **Petrified Fore** 119.45 49 *e*PKPdf PKPdf 05 41 13.2 +1.3
MDND **Maddock** 119.46 32 P PKPdf 05 41 11.4 +0.1
baz=309,SNR=6.6
MDND **Maddock** 119.46 32 *e*PKPdf PKPdf 05 41 11.7 +0.4
MVCO **Mesa Verde** 119.50 46 P PKPdf 05 41 13.2 +1.2
baz=296
MVCO **Mesa Verde** 119.50 46 *e*PKPdf PKPdf 05 41 13.2 +1.2
X18A **Snowflake** 119.52 49 *e*PKPdf PKPdf 05 41 13.3 +1.3
N23A **Red Feather La** 119.57 41 P PKPdf 05 41 12.5 +0.5
baz=300
N23A **Red Feather La** 119.57 41 *e*PKPdf PKPdf 05 41 12.6 +0.5
PVRL **Vila Real** 119.58 319 *e*PKPdf PKPdf 05 41 11.6 -0.1
POLO **Lamas de Olo** 119.58 319 *e*PKPdf PKPdf 05 41 12.4 +0.6
PGAV **Gavieira, Arco** 119.59 320 *e*PKPdf PKPdf 05 41 12.0 +0.2
PGAV **Gavieira, Arco** 119.59 320 *e*LQ LQ 06 10 28.0
PGAV *e*LR LR 06 13 38.9
comp=Z,2µm,20.0s
PHWY **Pilot Hill** 119.69 41 *e*PKPdf PKPdf 05 41 12.5 +0.2
SMCO **Snowmass** 119.69 44 *e*PKPdf PKPdf 05 41 13.6 +1.1
TUC **Tucson** 119.70 52 P PKPdf 05 41 13.2 +0.9
baz=291
TUC **Tucson** 119.70 52 *e*PKIKP PKPdf 05 41 13.4 +1.1
TUC **Tucson** 119.70 52 *e*PKPdf PKPdf 05 41 13.4 +1.1
B30A **Myrvik Farm, E** 119.74 31 P PKPdf 05 41 11.4 -0.4
baz=310,SNR=31
ULM **Lac du Bonnet** 119.74 28 PKP PKPdf 05 41 11.2 -0.6
comp=Z,42nm,0.7s,baz=332,slow=2.1,SNR=50
MTE **Manteigas** 119.90 318 *e*PKPdf PKPdf 05 41 13.0 +0.6
MTE **Manteigas** 119.90 318 *e*LQ LQ 06 10 42.7
MTE *e*LR LR 06 13 01.8
comp=Z,2µm,20.0s
PVIS **Viseu** 119.97 319 *e*PKPdf PKPdf 05 41 13.0 +0.5
A31A **Linda, St. Vin** 120.00 30 P PKPdf 05 41 11.8 -0.4
baz=312
B31A **Greenbush Farm** 120.10 30 P PKPdf 05 41 11.9 -0.6
baz=311,SNR=16
PCBR **Castelo Branco** 120.12 318 *e*PKPdf PKPdf 05 41 13.3 +0.5
C30A **Mose, Pekin** 120.14 31 P PKPdf 05 41 12.5 -0.1
baz=310,SNR=42
PMRV **Marv??o** 120.26 317 *e*PKPdf PKPdf 05 41 13.3 +0.2
PMRV **Marv??o** 120.26 317 *e*LQ LQ 06 10 42.3
PMRV *e*LR LR 06 12 49.5
comp=Z,2µm,20.0s
ISCO **Idaho Springs** 120.33 42 P PKPdf 05 41 14.0 +0.4
baz=299
ISCO **Idaho Springs** 120.33 42 *e*PKIKP PKPdf 05 41 14.2 +0.6
ISCO **Idaho Springs** 120.33 42 *e*PKPdf PKPdf 05 41 14.2 +0.6
A32A **Rocking H Ranc** 120.35 29 P PKPdf 05 41 12.3 -0.6
baz=312,SNR=8.8
S22A **4UR Ranch, Cre** 120.45 45 P PKPdf 05 41 15.4 +1.5
baz=297
S22A **4UR Ranch, Cre** 120.45 45 *e*PKPdf PKPdf 05 41 15.2 +1.4
C31A **Landman Farms,** 120.47 31 P PKPdf 05 41 13.0 -0.2
baz=310,SNR=141
F29A **Eureka** 120.58 34 P PKPdf 05 41 13.6 +0.1
baz=308
PBAR **Barrancos** 120.61 316 *e*PKPdf PKPdf 05 41 14.3 +0.6
PESTR **Estremoz** 120.67 317 *e*PKPdf PKPdf 05 41 14.1 +0.2
B32A **Ashes, Strandq** 120.68 30 P PKPdf 05 41 12.7 -0.8
baz=312,SNR=39
TOA0 **Torodi Ar. Sit** 120.69 285 *e*PKPdf PKPdf 05 41 13.7 -0.8
TOA0 *e*PKPdf PKiKP 05 41 14.0 -0.6
TORD **Torodi Ar. Bea** 120.69 285 PKP PKPdf 05 41 13.9 -0.6
comp=Z,17nm,0.7s,baz=87,slow=1.9,SNR=134
TORD PP PP 05 42 41.7 -2.8
comp=Z,2.8nm,0.7s,baz=63,slow=7.8,SNR=4.8
TORD SKP 05 44 33.9
comp=Z,2.7nm,1.1s,baz=85,slow=2.1,SNR=4.1
TORD PKKPab PKKPab 05 51 21.1 -0.2
comp=Z,5.7nm,0.7s,baz=280,slow=3.9,SNR=24
HSIG 120.70 56 *e*PKPdf PKPdf 05 41 15.0 +0.8
PCAS **Casmilo, Conde** 120.70 318 *e*PKPdf PKPdf 05 41 14.0 +0.1
A33A **Warroad** 120.87 29 P PKPdf 05 41 13.6 -0.3
baz=313,SNR=23
G29A **Hoven** 120.92 34 P PKPdf 05 41 13.8 -0.3
baz=307
D31A **Mcclaflin, Tow** 120.96 32 P PKPdf 05 41 13.9 -0.3
baz=310,SNR=50
F30A **Leola** 121.02 33 P PKPdf 05 41 13.9 -0.5
baz=308,SNR=14
Q24A **Divide** 121.05 43 P PKPdf 05 41 15.4 +0.4
baz=299
C32A **Crookston** 121.06 30 P PKPdf 05 41 13.3 -1.0
baz=312
AGMN **Agassiz Nation** 121.08 30 P PKPdf 05 41 13.5 -0.8
baz=313
AGMN **Agassiz Nation** 121.08 30 *e*PKPdf PKPdf 05 41 13.5 -0.8
EVO **Evora** 121.12 317 *e*PKPdf PKPdf 05 41 05.2 -10
E31A **Nome** 121.18 32 P PKPdf 05 41 14.1 -0.5
baz=310,SNR=56
B33A **Robert and Kas** 121.23 29 P PKPdf 05 41 13.8 -0.9
baz=313,SNR=16
319A **Douglas** 121.23 53 *e*PKPdf PKPdf 05 41 17.2 +1.9
PBEJ **Beja** 121.26 316 *e*PKPdf PKPdf 05 41 15.4 +0.4
D32A **Dogwood Acres,** 121.27 31 P PKPdf 05 41 14.1 -0.6
baz=311,SNR=7.7
SDCO **Great Sand Dun** 121.39 44 P PKPdf 05 41 16.5 +0.9
baz=298
SDCO **Great Sand Dun** 121.39 44 *e*PKPdf PKPdf 05 41 16.1 +0.5
F31A **Hecla** 121.43 33 P PKPdf 05 41 14.6 -0.6
baz=309,SNR=23
C33A **Trail** 121.49 30 P PKPdf 05 41 14.4 -0.8
baz=312,SNR=24
B34A **Aery, Baudette** 121.54 29 P PKPdf 05 41 14.7 -0.5
baz=314,SNR=40
PCVE **Castro Verde** 121.56 316 *e*PKPdf PKPdf 05 41 16.1 +0.5
MESJ **Messejana** 121.59 316 *e*P PKPdf 05 41 15.1 -0.6
MESJ **Messejana** 121.59 316 *e*PKPdf PKPdf 05 41 15.9 +0.3
E32A **Braaten, Kindr** 121.59 32 P PKPdf 05 41 14.9 -0.5
baz=311,SNR=6.3
PNCL **Nicolau / Gran** 121.68 316 *e*PKPdf PKPdf 05 41 16.4 +0.6

LAZ **Ladron** 121.69 49 *e*PKPdf PKPdf 05 41 17.5 +1.2
D33A **AnnSam, Waubun** 121.86 31 P PKPdf 05 41 15.4 -0.6
baz=312,SNR=32
SUSD **Miller** 121.92 35 P PKPdf 05 41 16.0 -0.1
baz=308
121A **Cookes Peak, D** 121.97 51 P PKPdf 05 41 18.4 +1.7
baz=294
121A **Cookes Peak, D** 121.97 51 *e*PKPdf PKPdf 05 41 17.8 +1.1
ANMO **Albuquerque** 121.97 48 P PKPdf 05 41 18.0 +1.3
baz=296
ANMO **Albuquerque** 121.97 48 *e*PKIKP PKPdf 05 41 17.9 +1.2
ANMO **Albuquerque** 121.97 48 *e*PKPdf PKPdf 05 41 17.9 +1.2
I30A **Oacoma** 121.97 35 P PKPdf 05 41 16.0 -0.3
baz=307
C34A **RKJ Ranch, Bem** 121.99 30 P PKPdf 05 41 15.5 -0.7
baz=313,SNR=36
Y22D **IRIS PASSCAL I** 121.99 49 P PKPdf 05 41 18.0 +1.2
baz=295
F32A **Veblen** 122.03 32 P PKPdf 05 41 15.9 -0.3
baz=310
B35A **Bob, Littlefor** 122.07 28 P PKPdf 05 41 16.1 -0.1
baz=315
OGNE **Ogallala** 122.08 39 P PKPdf 05 41 16.3 -0.3
baz=303
OGNE **Ogallala** 122.08 39 *e*PKPdf PKPdf 05 41 16.3 -0.3
LPM **Los Pinos Moun** 122.11 48 *e*PKPdf PKPdf 05 41 18.5 +1.5
MORF **Marmelete** 122.15 316 *e*P PKPdf 05 41 16.2 -0.6
MORF **Marmelete** 122.15 316 *e*PKPdf PKPdf 05 41 16.2 -0.6
H31A **Wolsey** 122.17 34 P PKPdf 05 41 16.2 -0.4
baz=296,SNR=13
BNM **Barren Site** 122.18 49 *e*PKPdf PKPdf 05 41 18.3 +1.1
E33A **Westby DABS, E** 122.21 31 P PKPdf 05 41 16.3 -0.3
baz=312,SNR=28
G32A **Webster** 122.22 33 P PKPdf 05 41 16.4 -0.2
baz=310,SNR=37
D34A **Park Rapids** 122.23 30 P PKPdf 05 41 16.4 -0.2
baz=313,SNR=44
J30A **Dallas** 122.28 36 P PKPdf 05 41 16.3 -0.5
baz=307
I31A **Royce, Wessing** 122.41 35 P PKPdf 05 41 16.9 -0.1
baz=308
C35A **Jirik Farms, M** 122.41 29 P PKPdf 05 41 15.9 -1.0
baz=314
T25A **Trinidad** 122.44 44 P PKPdf 05 41 18.8 +1.2
baz=299
T25A **Trinidad** 122.44 44 *e*PKPdf PKPdf 05 41 18.6 +1.1
F33A **5 Mile Ranch,** 122.49 32 P PKPdf 05 41 17.1 -0.1
baz=311,SNR=55
K30A **Basset** 122.59 37 P PKPdf 05 41 17.8 +0.3
baz=306
E34A **Wadena** 122.63 31 P PKPdf 05 41 17.2 -0.2
baz=312
KSCO **Kaye Shedlock'** 122.72 42 P PKPdf 05 41 18.3 +0.3
baz=302
KSCO **Kaye Shedlock'** 122.72 42 *e*PKPdf PKPdf 05 41 19.0 +1.0
H32A **Carlson Farm,** 122.73 34 P PKPdf 05 41 17.4 -0.3
baz=309,SNR=26
J31A **Geddes** 122.74 36 P PKPdf 05 41 17.4 -0.3
baz=307
D35A **Remer** 122.80 30 P PKPdf 05 41 17.1 -0.6
baz=314
G33A **Ortonville** 122.84 33 P PKPdf 05 41 17.4 -0.5
baz=311,SNR=19
C36A **Pine Crest Far** 122.92 28 P PKPdf 05 41 17.5 -0.4
baz=316
E35A **Pequot Lakes** 122.99 30 P PKPdf 05 41 17.9 -0.2
baz=313,SNR=26
H33A **Prehn Over Nor** 123.00 33 P PKPdf 05 41 18.0 -0.2
baz=310,SNR=25
I32A **Karley and Nic** 123.02 34 P PKPdf 05 41 18.1 -0.2
baz=309,SNR=34
F34A **Alexandria** 123.07 31 P PKPdf 05 41 17.8 -0.5
baz=312,SNR=9.1
K31A **O'Neill** 123.13 36 P PKPdf 05 41 18.2 -0.3
baz=307
D36A **Goodland** 123.17 29 P PKPdf 05 41 18.0 -0.5
baz=315
SLBS **Sierra La Lagu** 123.20 61 *e*PKPdf PKPdf 05 41 21.2 +2.0
J32A **Parkston** 123.21 35 P PKPdf 05 41 18.2 -0.4
baz=308,SNR=20
G34A **Benson** 123.23 32 P PKPdf 05 41 18.4 -0.2
baz=311,SNR=38
C37A **Embarrass** 123.24 28 P PKPdf 05 41 18.0 -0.6
baz=316
L31A **Butterfield Fa** 123.35 37 P PKPdf 05 41 18.5 -0.5
baz=307
I33A **Coleman** 123.38 34 P PKPdf 05 41 18.9 0.0
baz=310,SNR=24
F35A **Swanville** 123.38 31 P PKPdf 05 41 18.5 -0.4
baz=313,SNR=34
EYMN **Ely** 123.41 27 P PKPdf 05 41 18.5 -0.3
baz=317
EYMN **Ely** 123.41 27 *e*PKPdf PKPdf 05 41 19.2 +0.4
H34A **Spellman Lake,** 123.54 33 P PKPdf 05 41 19.2 0.0
baz=311,SNR=35
D37A **Cotton** 123.54 29 P PKPdf 05 41 18.8 -0.3
baz=316
K32A **Verdigre** 123.57 36 P PKPdf 05 41 18.8 -0.6
baz=308,SNR=46
E36A **McGregor** 123.59 30 P PKPdf 05 41 18.9 -0.3
baz=314
C38A **Sawbill Land.** 123.68 27 P PKPdf 05 41 18.7 -0.7
baz=317
ECSD **EROS Data Cent** 123.68 34 P PKPdf 05 41 19.6 +0.1
baz=310,SNR=62
ECSD **EROS Data Cent** 123.68 34 *e*PKPdf PKPdf 05 41 19.9 +0.4
J33A **Davis** 123.74 35 P PKPdf 05 41 19.1 -0.5
baz=309,SNR=48
M31A **Lambtecht Ranc** 123.76 38 P PKPdf 05 41 19.3 -0.5
baz=306
G35A **Watkins** 123.86 31 P PKPdf 05 41 19.8 0.0
baz=313,SNR=25
I34A **Hadley** 123.90 33 P PKPdf 05 41 20.1 +0.2
baz=311,SNR=20
F36A **Milaca** 123.91 30 P PKPdf 05 41 19.5 -0.4
baz=314
L32A **Elgin** 123.95 36 P PKPdf 05 41 20.0 -0.1
baz=307,SNR=7.8
E37A **Wrenshall** 123.97 29 P PKPdf 05 41 20.0 0.0
baz=315
H35A **Sunnyside Ranc** 124.02 32 P PKPdf 05 41 20.1 0.0
baz=312,SNR=92
N31A **Bailey Ranch,** 124.08 38 P PKPdf 05 41 20.0 -0.4
baz=306
MNTX **Cornudas Mount** 124.17 51 P PKPdf 05 41 21.7 +0.9
baz=295
MNTX **Cornudas Mount** 124.17 51 *e*PKPdf PKPdf 05 41 22.1 +1.2
K33A **Hardington** 124.17 35 P PKPdf 05 41 20.5 0.0
baz=309,SNR=15
BGNE **Belgrade** 124.22 37 P PKPdf 05 41 20.0 -0.6
baz=307
BGNE **Belgrade** 124.22 37 *e*PKPdf PKPdf 05 41 21.1 +0.5
G36A **St. Michael** 124.23 31 P PKPdf 05 41 20.5 0.0
baz=313,SNR=27
O31A **Woolen Ranch,** 124.23 39 P PKPdf 05 41 20.1 -0.7
baz=305
L33A **Hoskins** 124.28 36 P PKPdf 05 41 20.5 -0.2
baz=308,SNR=5.3
J34A **George** 124.33 34 P PKPdf 05 41 20.1 -0.7
baz=310,SNR=30
I35A **Creekview Farm** 124.50 33 P PKPdf 05 41 20.8 -0.3
baz=311,SNR=20
N32A **Stulken Farm,** 124.52 38 P PKPdf 05 41 21.1 -0.2
baz=306
H36A **Jessenland, He** 124.58 32 P PKPdf 05 41 21.4 +0.2
baz=313,SNR=44
SCHQ **Schefferville** 124.61 7 PKP PKPdf 05 41 21.1 +0.2
comp=Z,28nm,0.7s,baz=340,slow=1.7,SNR=39
SCHQ PP PP 05 43 08.9 +0.1
comp=Z,6.6nm,0.7s,baz=290,slow=4.3,SNR=4.1
K34A **Le Mars** 124.64 35 P PKPdf 05 41 21.0 -0.3
baz=310,SNR=37
M33A **Taylor Creek F** 124.69 36 P PKPdf 05 41 20.8 -0.7
baz=308,SNR=22
J35A **Milford** 124.70 34 P PKPdf 05 41 20.9 -0.6
baz=311,SNR=7.8
SPMN **Marine on St.** 124.72 30 P PKPdf 05 41 21.0 -0.4
baz=314
SPMN **Marine on St.** 124.72 30 *e*PKPdf PKPdf 05 41 21.0 -0.4
CBKS **Cedar Bluff** 124.73 40 P PKPdf 05 41 21.5 -0.2
baz=304
CBKS **Cedar Bluff** 124.73 40 *e*PKIKP PKPdf 05 41 21.8 +0.1
CBKS **Cedar Bluff** 124.73 40 *e*PKPdf PKPdf 05 41 21.8 +0.1
O32A **Brockman Farm,** 124.83 38 P PKPdf 05 41 21.5 -0.3
baz=306
I36A **Fitzsimmons Fa** 124.91 32 P PKPdf 05 41 21.9 +0.1
baz=312,SNR=17

L34A **Svendsen Farm,** 124.93 36 P PKPdf 05 41 21.4 -0.6
baz=309,SNR=28
P32A **Huiting Farm,** 125.00 39 P PKPdf 05 41 21.9 -0.3
baz=306
M34A **Aspy Farms, Fr** 125.10 36 P PKPdf 05 41 21.7 -0.6
baz=309,SNR=5.3
K35A **Storm Lake** 125.10 34 P PKPdf 05 41 21.9 -0.3
baz=311,SNR=30
H37A **Dierke Farm, C** 125.11 31 P PKPdf 05 41 22.2 0.0
baz=314
MSTX **Muleshoe** 125.12 47 P PKPdf 05 41 22.9 +0.2
baz=298
MSTX **Muleshoe** 125.12 47 *e*PKPdf PKPdf 05 41 23.1 +0.4
J36A **Seneca 1, Swea** 125.20 33 P PKPdf 05 41 22.2 -0.2
baz=312,SNR=49
I37A **Lemond, Waseca** 125.24 32 P PKPdf 05 41 22.4 -0.1
baz=313,SNR=23
L35A **Bielow Farm, R** 125.32 35 P PKPdf 05 41 22.5 -0.2
baz=310,SNR=33
O33A **Hebron** 125.36 38 P PKPdf 05 41 22.2 -0.7
baz=307,SNR=80
Q32A **Meitler Ranch,** 125.39 40 P PKPdf 05 41 22.9 -0.1
baz=305
AMTX **Amarillo** 125.47 46 P PKPdf 05 41 23.7 +0.4
baz=300
N34A **Lincoln** 125.56 37 P PKPdf 05 41 22.3 -0.9
baz=308,SNR=11
K36A **Gilmore City** 125.59 34 P PKPdf 05 41 23.0 -0.2
baz=311,SNR=60
R32A **Long Quarter,** 125.61 40 P PKPdf 05 41 23.5 +0.1
baz=305
J37A **Redenius Farm,** 125.64 33 P PKPdf 05 41 22.9 -0.3
baz=313,SNR=42
M35A **Neola** 125.64 36 P PKPdf 05 41 23.2 -0.1
baz=309,SNR=14
P33A **Williams Farm,** 125.67 39 P PKPdf 05 41 23.5 +0.1
baz=306,SNR=40
I38A **Scanlan Farm,** 125.78 31 P PKPdf 05 41 22.9 -0.6
baz=314
HPIG 125.81 56 *e*PKPdf PKPdf 05 41 24.8 +0.5
L36A **Harm Buss Farm** 125.82 34 P PKPdf 05 41 23.3 -0.4
baz=311,SNR=40
Q33A **Connelly Farm,** 125.84 39 P PKPdf 05 41 23.7 -0.1
baz=306
O34A **Beatrice** 125.84 37 P PKPdf 05 41 22.8 -0.9
baz=308,SNR=32
COWI **Conover** 125.86 27 *e*PKPdf PKPdf 05 41 23.6 0.0
S32A **Newby Ranch, P** 125.87 41 P PKPdf 05 41 23.8 -0.1
baz=304
K37A **Belmond** 125.96 33 P PKPdf 05 41 23.5 -0.4
baz=312,SNR=46
N35A **Tabor** 126.05 36 P PKPdf 05 41 23.6 -0.5
baz=309
R33A **Olander Ranch,** 126.14 40 P PKPdf 05 41 24.8 +0.4
baz=305
P34A **Walnut Farm, R** 126.15 38 P PKPdf 05 41 24.5 +0.2
baz=307,SNR=59
M36A **Felix, Anita** 126.17 35 P PKPdf 05 41 23.8 -0.5
baz=310,SNR=12
T32A **Huddler Ranch,** 126.17 42 P PKPdf 05 41 24.9 +0.4
baz=304
J38A **Wedel Dairy, R** 126.21 32 P PKPdf 05 41 23.6 -0.7
baz=314
O35A **Humboldt** 126.27 37 P PKPdf 05 41 24.0 -0.5
baz=308,SNR=11
L37A **Phoenix Point,** 126.32 34 P PKPdf 05 41 23.7 -0.9
baz=312
Q34A **Chapman** 126.45 39 P PKPdf 05 41 25.1 +0.2
baz=307,SNR=67
N36A **Muff Farm, Cla** 126.48 36 P PKPdf 05 41 24.8 -0.2
baz=310
TX31 **Lajitas Ar. Si** 126.49 53 *e*PKPdf PKPdf 05 41 26.0 +0.6
TXAR **Lajitas Array** 126.49 53 PKP PKPdf 05 41 25.6 +0.2
comp=Z,11nm,0.8s,baz=286,slow=1.3,SNR=74
TXAR SKPbc SKPbc 05 44 27.3
comp=Z,2.0nm,0.8s,baz=270,slow=2.7,SNR=5.4
TXAR PKKPbc PKKPbc 05 50 58.9 +0.9
comp=Z,0.4nm,0.6s,baz=140,slow=5.7,SNR=4.0
TXAR SKKPbc SKKPbc 05 54 36.0 +2.2
comp=Z,0.3nm,0.7s,baz=131,slow=5.1,SNR=3.5
K38A **Parkersburg** 126.51 33 P PKPdf 05 41 24.5 -0.5
baz=313
S33A **Kaszmaul Farm,** 126.54 41 P PKPdf 05 41 25.1 -0.1
baz=305
KSU1 **Kansas State U** 126.55 38 P PKPdf 05 41 25.1 -0.1
baz=307,SNR=50
KSU1 **Kansas State U** 126.55 38 *e*PKPdf PKPdf 05 41 25.4 +0.3
U32A **Winter Ranch,** 126.55 43 P PKPdf 05 41 25.7 +0.5
baz=303
J39A **Decorah** 126.60 31 P PKPdf 05 41 24.9 -0.2
baz=315
R34A **Isabella, Hill** 126.62 40 P PKPdf 05 41 25.3 0.0
baz=306,SNR=25
M37A **Trindle Farm,** 126.62 35 P PKPdf 05 41 25.4 +0.2
baz=311,SNR=28
P35A **Duane Minner,** 126.65 38 P PKPdf 05 41 24.6 -0.7
baz=308,SNR=29
T33A **Patterson Ranc** 126.67 41 P PKPdf 05 41 25.9 +0.5
baz=304
L38A **Oak Wood Farm,** 126.75 33 P PKPdf 05 41 25.0 -0.4
baz=313
SCIA **State Center** 126.76 34 *e*PKPdf PKPdf 05 41 25.8 +0.4
V32A **Arapaho** 126.88 43 P PKPdf 05 41 26.2 +0.3
baz=303
O36A **Bolckow** 126.91 36 P PKPdf 05 41 25.1 -0.7
baz=309,SNR=7.7
K39A **Oelwein** 126.94 32 P PKPdf 05 41 25.0 -0.7
baz=314
N37A **Lee Faris, Mou** 126.96 35 P PKPdf 05 41 25.4 -0.4
baz=310,SNR=9.3
Q35A **Mercer Eighty,** 127.05 38 P PKPdf 05 41 26.0 -0.1
baz=308,SNR=58
J40A **Soldiers Grove** 127.06 31 P PKPdf 05 41 24.9 -1.1
baz=316
S34A **Willow Spring** 127.06 40 P PKPdf 05 41 25.9 -0.2
baz=306,SNR=6.8
W32A **Sentinel** 127.06 44 P PKPdf 05 41 26.7 +0.4
baz=302
P36A **Good Intent, A** 127.09 37 P PKPdf 05 41 26.0 -0.2
baz=309,SNR=8.7
M38A **Pleasantville** 127.10 34 P PKPdf 05 41 25.8 -0.3
baz=312
U33A **Lingo Farm, Me** 127.12 42 P PKPdf 05 41 26.5 +0.2
baz=304
R35A **Emporia Munici** 127.27 39 P PKPdf 05 41 26.4 -0.1
baz=307,SNR=10.0
L39A **Vinton** 127.28 33 P PKPdf 05 41 25.9 -0.5
baz=314
K40A **Colesburg** 127.34 32 P PKPdf 05 41 26.3 -0.3
baz=315
Q36A **Arnold C. Orve** 127.34 38 P PKPdf 05 41 26.3 -0.3
baz=308,SNR=5.4
V33A **Lossen Ranch,** 127.34 43 P PKPdf 05 41 26.8 +0.1
baz=304
O37A **Wolven Farm, M** 127.38 36 P PKPdf 05 41 26.6 -0.1
baz=310,SNR=19
T34A **McClaskey Farm** 127.40 41 P PKPdf 05 41 26.8 0.0
baz=305,SNR=17
X32A **Elmer** 127.40 45 P PKPdf 05 41 27.1 +0.2
baz=302
J41A **Loganville** 127.45 30 P PKPdf 05 41 26.1 -0.6
baz=316
N38A **Joes South For** 127.49 35 P PKPdf 05 41 26.6 -0.3
baz=312
U34A **Anderson Ranch** 127.50 42 P PKPdf 05 41 27.5 +0.5
baz=305,SNR=16
U34A **Anderson Ranch** 127.50 42 *e*PKPdf PKPdf 05 41 27.9 +0.8
S35A **Otter Creek Ra** 127.58 40 P PKPdf 05 41 27.3 +0.1
baz=307,SNR=31
W33A **Caddo, Fort Co** 127.58 44 P PKPdf 05 41 27.7 +0.4
baz=303
WMOK **Wichita Mounta** 127.59 44 P PKPdf 05 41 27.4 +0.1
baz=302
WMOK **Wichita Mounta** 127.59 44 *e*PKIKP PKPdf 05 41 27.4 +0.1
WMOK **Wichita Mounta** 127.59 44 *e*PKPdf PKPdf 05 41 27.4 +0.1
P37A **Lathrop** 127.62 37 P PKPdf 05 41 26.5 -0.7
baz=310,SNR=24
M39A **Webster** 127.63 33 P PKPdf 05 41 27.1 0.0
baz=313
JFWS **Jewell Farm** 127.65 31 *e*PKIKP PKPdf 05 41 26.8 -0.3
JFWS **Jewell Farm** 127.65 31 *e*PKPdf PKPdf 05 41 26.8 -0.3
R36A **Gordon, Harris** 127.71 39 P PKPdf 05 41 27.0 -0.4
baz=308,SNR=20
L40A **Anamosa** 127.74 32 P PKPdf 05 41 26.5 -0.8
baz=314
KIC **Kosan Boka** 127.77 278 *e*PKIKP PKPdf 05 41 28.3 +0.2
comp=Z,33nm,0.8s
O38A **Galt** 127.80 36 P PKPdf 05 41 26.9 -0.6

baz=311
K41A **Shullsburg** 127.84 31 P PKPdf 05 41 27.0 -0.5
baz=316
N39A **Derby Farms, D** 127.85 34 P PKPdf 05 41 27.3 -0.3
baz=312
V34A **Guthrie** 127.86 42 P PKPdf 05 41 27.9 +0.2
baz=304,SNR=30
V34A **Guthrie** 127.86 42 *e*PKPdf PKPdf 05 41 28.4 +0.7
DBIC **Dimbokro** 127.86 278 PKP PKPdf 05 41 28.2 -0.1
comp=Z,20nm,0.9s,baz=99,slow=1.7,SNR=15
DBIC SKPbc SKPbc 05 44 30.7
comp=Z,3.5nm,0.5s,baz=72,slow=2.7,SNR=4.7
X33A **Lawton** 127.89 44 P PKPdf 05 41 27.9 +0.1
baz=303,SNR=38
T35A **Sooner Cattle** 127.90 41 P PKPdf 05 41 27.9 +0.1
baz=306,SNR=17
Q37A **Longview Farm,** 128.01 37 P PKPdf 05 41 27.7 -0.2
baz=309,SNR=5.8
S36A **Lake Cedric, C** 128.01 39 P PKPdf 05 41 28.1 +0.1
baz=307,SNR=26
W34A **Bridge Creek,** 128.01 43 P PKPdf 05 41 28.6 +0.6
baz=304,SNR=8.6
W34A **Bridge Creek,** 128.01 43 *e*PKPdf PKPdf 05 41 29.1 +1.0
TIC **Toumodi** 128.02 278 *e*PKIKP PKPdf 05 41 28.7 +0.1
ABTX **Abilene, Hawle** 128.06 47 P PKPdf 05 41 28.6 +0.4
baz=300
ABTX **Abilene, Hawle** 128.06 47 *e*PKPdf PKPdf 05 41 29.6 +1.4
LIC **Lamto** 128.07 278 *e*PKIKP PKPdf 05 41 28.7 0.0
comp=Z,24nm,0.7s
U35A **Pawnee** 128.07 41 P PKPdf 05 41 28.5 +0.3
baz=305,SNR=8.9
Y33A **Hilltop Ranch,** 128.08 45 P PKPdf 05 41 28.6 +0.4
baz=302
P38A **Dawn** 128.09 36 P PKPdf 05 41 28.2 +0.2
baz=311,SNR=26
L41A **Preston** 128.12 32 P PKPdf 05 41 27.5 -0.5
baz=315
R37A **Teagarden Farm** 128.13 38 P PKPdf 05 41 27.7 -0.5
baz=308,SNR=20
T36A **Boggs Farm, Ca** 128.23 40 P PKPdf 05 41 28.6 +0.2
baz=307,SNR=13
O39A **Kirksville** 128.24 35 P PKPdf 05 41 28.2 -0.1
baz=312
X34A **Smith Ranch, M** 128.32 44 P PKPdf 05 41 29.4 +0.8
baz=303,SNR=31
V35A **Meyer Ranch, C** 128.35 42 P PKPdf 05 41 28.7 +0.1
baz=305,SNR=16
Z33A **Whitaker Ranch** 128.36 46 P PKPdf 05 41 29.0 +0.3
baz=302
Q38A **Cooks Store, C** 128.46 37 P PKPdf 05 41 28.0 -0.7
baz=310,SNR=26
S37A **Fort Scott** 128.47 39 P PKPdf 05 41 28.8 0.0
baz=308,SNR=70
133A **Hamilton Ranch** 128.60 47 P PKPdf 05 41 29.5 +0.2
baz=301,SNR=14
P39B **Salisbury** 128.63 36 P PKPdf 05 41 28.9 -0.2
baz=311
W35A **Tecumseh** 128.67 43 P PKPdf 05 41 29.5 +0.2
baz=304,SNR=36
VLDQ **Val d'Or** 128.70 18 *e*PKPdf PKPdf 05 41 28.2 -0.7
O40A **La Belle** 128.72 34 P PKPdf 05 41 28.9 -0.3
baz=313
U36A **Oologah** 128.72 41 P PKPdf 05 41 29.3 0.0
baz=306,SNR=11
Y34A **Reagan Ranch,** 128.72 44 P PKPdf 05 41 29.7 +0.3
baz=303,SNR=28
R38A **Fenwick Farm,** 128.78 38 P PKPdf 05 41 28.9 -0.5
baz=309,SNR=23
Q39A **Willow Grove F** 128.79 36 P PKPdf 05 41 29.4 0.0
baz=311
T37A **Cheneyville 18** 128.81 39 P PKPdf 05 41 29.5 0.0
baz=308,SNR=27
233A **Rising Star** 128.91 47 P PKPdf 05 41 30.2 +0.3
baz=300,SNR=18
Z34A **Collier Ranch,** 128.92 45 P PKPdf 05 41 30.2 +0.4
baz=302
V36A **Jenks** 128.93 41 P PKPdf 05 41 30.1 +0.3
baz=306,SNR=23
TUL1 **Leonard** 128.96 41 P PKPdf 05 41 30.0 +0.2
baz=306,SNR=21
TUL1 **Leonard** 128.96 41 *e*PKPdf PKPdf 05 41 30.4 +0.6
JCT **Junction City** 128.99 49 P PKPdf 05 41 30.5 +0.4
baz=299,SNR=43
JCT **Junction City** 128.99 49 *e*PKIKP PKPdf 05 41 28.9 -1.2
JCT **Junction City** 128.99 49 *e*PKPdf PKPdf 05 41 28.9 -1.2
P40A **Paris** 129.01 35 P PKPdf 05 41 29.7 -0.1
baz=312
X35A **Drake** 129.02 43 P PKPdf 05 41 29.9 -0.1
baz=304
U37A **Salina** 129.11 40 P PKPdf 05 41 30.0 0.0
baz=307,SNR=22
W36A **Wetumka** 129.12 42 P PKPdf 05 41 30.6 +0.4
baz=305,SNR=31
S38A **Stockton** 129.13 38 P PKPdf 05 41 29.6 -0.5
baz=309,SNR=29
333A **Richland Sprin** 129.19 48 P PKPdf 05 41 30.8 +0.3
baz=300,SNR=31
134A **White-Moore Ra** 129.22 46 P PKPdf 05 41 30.9 +0.5
baz=302,SNR=20
R39A **Chumby, Stover** 129.22 37 P PKPdf 05 41 30.4 +0.1
baz=310
Y35A **Marietta** 129.25 44 P PKPdf 05 41 30.5 0.0
baz=304,SNR=24
T38A **Diamond** 129.25 39 P PKPdf 05 41 30.3 -0.1
baz=308,SNR=43
O41A **Passleys Farm,** 129.28 34 P PKPdf 05 41 30.2 -0.1
baz=314
Q40A **Laux Farm, Aux** 129.35 36 P PKPdf 05 41 30.3 -0.1
baz=312
X36A **Centrahoma** 129.35 43 P PKPdf 05 41 30.6 0.0
baz=305,SNR=42
433A **Art** 129.39 49 P PKPdf 05 41 31.0 +0.2
baz=299,SNR=31
V37A **Hulbert** 129.41 41 P PKPdf 05 41 30.7 +0.1
baz=307,SNR=38
Z35A **Perchaven, San** 129.41 45 P PKPdf 05 41 30.9 +0.1
baz=303,SNR=9.8
S39A **Bolivar** 129.45 38 P PKPdf 05 41 30.7 0.0
baz=310
234A **Clairette** 129.48 47 P PKPdf 05 41 31.3 +0.3
baz=301,SNR=18
P41A **Barry, Barry** 129.48 34 P PKPdf 05 41 30.4 -0.2
baz=313
U38A **Gravette** 129.56 40 P PKPdf 05 41 30.9 -0.1
baz=308,SNR=36
W37B **Quinton** 129.65 42 P PKPdf 05 41 31.4 +0.3
baz=306,SNR=28
O42A **Bath** 129.66 33 P PKPdf 05 41 31.2 +0.2
baz=315
R40A **Maddies Statio** 129.70 37 P PKPdf 05 41 31.5 +0.4
baz=311
135A **Vickery Place,** 129.71 46 P PKPdf 05 41 32.1 +0.7
baz=302,SNR=6.2
334A **Lometa** 129.74 48 P PKPdf 05 41 31.4 -0.1
baz=301,SNR=13
533A **Kerrville** 129.77 49 P PKPdf 05 41 31.8 +0.3
baz=299,SNR=8.8
Y36A **Durant** 129.78 44 P PKPdf 05 41 31.9 +0.5
baz=304,SNR=50
HDIL **Hopedale** 129.84 32 P PKPdf 05 41 31.5 +0.1
baz=316
HDIL **Hopedale** 129.84 32 *e*PKPdf PKPdf 05 41 31.3 0.0
T39A **Clever** 129.84 39 P PKPdf 05 41 31.5 +0.1
baz=309
832A **Faith Ranch, C** 129.87 52 P PKPdf 05 41 32.3 +0.5
baz=297,SNR=31
V38A **Canehill** 129.89 40 P PKPdf 05 41 31.8 +0.2
baz=307,SNR=9.7
ZAIG **Zacatecas** 129.92 60 *e*PKPdf PKPdf 05 41 32.9 +0.5
HHAR **Hobbs** 129.94 40 *e*PKPdf PKPdf 05 41 31.4 -0.3
P42A **Winchester** 129.94 34 P PKPdf 05 41 31.8 +0.3
baz=314
633A **Saathoff Ranch** 129.95 50 P PKPdf 05 41 32.4 +0.5
baz=298,SNR=16
WHTX **Lake Whitney,** 129.98 46 P PKPdf 05 41 32.3 +0.5
baz=302,SNR=9.9
WHTX **Lake Whitney,** 129.98 46 *e*PKPdf PKPdf 05 41 32.9 +1.0
434A **Burnet** 129.98 48 P PKPdf 05 41 32.1 +0.2
baz=300,SNR=18
S40A **Lebanon** 130.01 37 P PKPdf 05 41 31.7 -0.1
baz=310
X37A **Clayton** 130.01 42 P PKPdf 05 41 32.4 +0.5
baz=306,SNR=20
Z36A **Blue Ridge** 130.02 44 P PKPdf 05 41 32.5 +0.6
baz=304,SNR=16
U39A **Green Forest** 130.17 39 P PKPdf 05 41 32.2 0.0
baz=309
733A **Divot King Ran** 130.20 51 P PKPdf 05 41 33.3 +0.9
baz=298,SNR=10
534A **Blanco** 130.21 49 P PKPdf 05 41 32.6 +0.2
baz=299,SNR=15
T40A **Mansfield** 130.28 38 P PKPdf 05 41 32.6 +0.3
baz=310
W38A **Poteau** 130.29 41 P PKPdf 05 41 32.6 +0.3
baz=307,SNR=20
Q42A **Golden Eagle** 130.30 35 P PKPdf 05 41 32.9 +0.6
baz=313
833A **Chaparral WMA,** 130.31 52 P PKPdf 05 41 33.6 +1.0
baz=297,SNR=28
X38A **Whitesboro** 130.32 42 P PKPdf 05 41 33.3 +0.9
baz=306,SNR=13
335A **Moody** 130.37 47 P PKPdf 05 41 33.0 +0.4
baz=301,SNR=20
136A **Ennis** 130.39 45 P PKPdf 05 41 33.2 +0.6
baz=303,SNR=15
V39A **Pettigrew** 130.40 40 P PKPdf 05 41 32.8 +0.2
baz=308
PMOZ **Porto Moniz, M** 130.46 315 *e*LQ LQ 06 07 17.9
PMOZ *e*LR LR 06 08 03.9
comp=Z,4µm,22.0s
S41A **Jillco Farms,** 130.47 37 P PKPdf 05 41 33.0 +0.3
baz=311
435B **Jarrell** 130.50 48 P PKPdf 05 41 33.3 +0.4
baz=301,SNR=7.5
U40A **Yellville** 130.58 39 P PKPdf 05 41 33.1 +0.1
baz=309
634A **China Grove, S** 130.62 50 P PKPdf 05 41 33.9 +0.8
baz=299
Z37A **Pogue Cattle C** 130.63 44 P PKPdf 05 41 33.9 +0.9
baz=304
W39A **Magazine** 130.70 41 P PKPdf 05 41 33.2 0.0
baz=308
734A **La Parita Cree** 130.72 51 P PKPdf 05 41 34.5 +1.2
baz=298,SNR=11
933A **Laredo** 130.72 52 P PKPdf 05 41 34.9 +1.5
baz=297,SNR=19
336A **Riesel** 130.74 47 P PKPdf 05 41 34.1 +0.8
baz=302,SNR=12
Q43A **New Douglas** 130.75 34 P PKPdf 05 41 33.1 0.0
baz=314
T41A **Mountain View** 130.81 37 P PKPdf 05 41 33.7 +0.4
baz=311
Y38A **Idabel** 130.82 43 P PKPdf 05 41 33.8 +0.4
baz=306
137A **Heron Place, G** 130.87 45 P PKPdf 05 41 34.9 +1.4
baz=304,SNR=6.1
535A **Dale** 130.89 49 P PKPdf 05 41 34.7 +1.1
baz=300,SNR=14
X39A **Fountain Ranch** 130.90 42 P PKPdf 05 41 34.9 +1.4
baz=307
V40A **Witts Springs** 130.95 39 P PKPdf 05 41 34.1 +0.5
baz=309
Z38A **Mt. Pleasant** 131.04 44 P PKPdf 05 41 34.8 +1.0
baz=305
635A **Leesville** 131.06 50 P PKPdf 05 41 35.1 +1.2
baz=300,SNR=7.3
834A **Tilden** 131.06 51 P PKPdf 05 41 35.5 +1.5
baz=298,SNR=11
LMQ **La Malbaie** 131.07 12 *e*PKPdf PKPdf 05 41 33.7 +0.2
SADO **Sadowa** 131.07 21 *e*PKPdf PKPdf 05 41 33.2 -0.3
436A **Wall Ranch, Ga** 131.09 47 P PKPdf 05 41 35.3 +1.3
baz=304,SNR=6.8
SFIN **Lafayette** 131.12 31 P PKPdf 05 41 34.2 +0.5
baz=318
SFIN **Lafayette** 131.12 31 *e*PKPdf PKPdf 05 41 34.4 +0.7
Q44A **Meyer Farm, Va** 131.15 34 P PKPdf 05 41 34.3 +0.5
baz=315
237A **Washetta, Mont** 131.16 45 P PKPdf 05 41 35.0 +1.0
baz=303,SNR=17
W40A **Ferguson Farm,** 131.17 40 P PKPdf 05 41 34.5 +0.5
baz=308
U41A **Viola** 131.17 38 P PKPdf 05 41 34.5 +0.5
baz=310
MIAR **Mount Ida** 131.23 41 P PKPdf 05 41 34.8 +0.6
baz=307
MIAR **Mount Ida** 131.23 41 *e*PKIKP PKPdf 05 41 34.8 +0.6
MIAR **Mount Ida** 131.23 41 *e*PKPdf PKPdf 05 41 34.8 +0.6
Y39A **Lockesburg** 131.25 42 P PKPdf 05 41 34.7 +0.5
baz=306
536A **Bastrop** 131.25 48 P PKPdf 05 41 35.4 +1.1
baz=301
TRQ **Mont Tremblant** 131.25 16 *e*PKPdf PKPdf 05 41 34.6 +0.6
735A **Kenedy** 131.29 50 P PKPdf 05 41 36.0 +1.5
baz=299,SNR=9.1
138A **Matatall Enter** 131.30 44 P PKPdf 05 41 35.8 +1.5
baz=304,SNR=11
934A **Benavides** 131.32 52 P PKPdf 05 41 36.4 +1.9
baz=298,SNR=7.7
V41A **Mountainview** 131.38 39 P PKPdf 05 41 34.7 +0.2
baz=310
034A **Hebbronville** 131.44 53 P PKPdf 05 41 36.6 +1.9
baz=297,SNR=10
337A **Centerville** 131.47 46 P PKPdf 05 41 36.1 +1.4
baz=303,SNR=7.8
S43A **Fulton Ridge,** 131.47 36 P PKPdf 05 41 34.8 +0.3
baz=313
437A **Phantom Ranch,** 131.54 47 P PKPdf 05 41 36.0 +1.2
baz=302,SNR=6.0
835A **Beeville** 131.54 51 P PKPdf 05 41 36.4 +1.5
baz=299,SNR=6.7
PLVO **Pelvina** 131.55 19 *e*PKPdf PKPdf 05 41 34.3 -0.1
636A **Smothers Creek** 131.55 49 P PKPdf 05 41 36.4 +1.5
baz=300,SNR=22
X201 **Greenbrier Sit** 131.56 40 *e*PKPdf PKPdf 05 41 34.6 -0.2
X301 **Greenbrier Sit** 131.57 40 *e*PKPdf PKPdf 05 41 34.7 -0.1
R44A **Waltonville** 131.58 34 P PKPdf 05 41 35.1 +0.4
baz=314
U42A **Revenden** 131.59 38 P PKPdf 05 41 35.3 +0.5
baz=311
Z39A **Irene McRaven,** 131.59 43 P PKPdf 05 41 36.6 +1.7
baz=306
WHAR **Wooly Hollow** 131.61 40 *e*PKPdf PKPdf 05 41 35.5 +0.6
238A **Jacksonville** 131.64 45 P PKPdf 05 41 35.9 +0.9
baz=304
W41B **Gary Mavity, V** 131.71 40 P PKPdf 05 41 35.0 0.0
baz=309
Y40A **Okolona** 131.75 42 P PKPdf 05 41 36.0 +0.9
baz=307
X40A **Basin Creek Fa** 131.75 41 P PKPdf 05 41 36.1 +1.0
baz=308
139A **Bunkhouse Ranc** 131.77 44 P PKPdf 05 41 36.4 +1.2
baz=305
OLIL **Olney** 131.78 33 *e*PKPdf PKPdf 05 41 35.2 +0.2
PBMO **Poplar Bluff** 131.79 37 *e*PKPdf PKPdf 05 41 35.1 0.0
537A **Green Hill Far** 131.81 48 P PKPdf 05 41 36.4 +1.0
baz=301
736A **Circle Diamond** 131.81 50 P PKPdf 05 41 37.2 +1.8
baz=300,SNR=12
KVTX **Kingsville** 131.84 52 *e*PKPdf PKPdf 05 41 37.5 +2.0
V42A **Cord** 131.84 38 P PKPdf 05 41 35.7 +0.4
baz=310
338A **Crockett** 131.86 46 P PKPdf 05 41 36.6 +1.2
baz=303
S44A **Carbondale** 131.86 35 P PKPdf 05 41 35.9 +0.7
baz=314
SIUC **Southern Illin** 131.87 35 *e*PKPdf PKPdf 05 41 35.8 +0.5
UALR **University of** 131.89 40 *e*PKPdf PKPdf 05 41 35.9 +0.5
X41A **Kaden, Bauxite** 131.96 41 P PKPdf 05 41 36.3 +0.7
baz=308
035A **Encino** 131.96 53 P PKPdf 05 41 37.2 +1.5
baz=297,SNR=5.8
WLAR **White Oak Lake** 132.05 42 *e*PKPdf PKPdf 05 41 36.9 +1.1
438A **Sam Houston St** 132.07 47 P PKPdf 05 41 37.6 +1.8
baz=303
239A **Gary** 132.09 45 P PKPdf 05 41 36.9 +1.1
baz=305
NATX **Nacogdoches** 132.10 45 P PKPdf 05 41 37.3 +1.4
baz=304
NATX **Nacogdoches** 132.10 45 *e*PKPdf PKPdf 05 41 37.1 +1.2
Z40A **Long Farm, Mag** 132.11 42 P PKPdf 05 41 36.4 +0.6
baz=306
637A **Eagle Lake** 132.12 49 P PKPdf 05 41 37.2 +1.3
baz=301
035Z **Hargill** 132.20 53 P PKPdf 05 41 37.4 +1.2
baz=297
S45A **Carrier Mills** 132.26 35 P PKPdf 05 41 36.7 +0.7
baz=315
Y41A **Eaglette Beard** 132.27 41 P PKPdf 05 41 37.1 +1.0
baz=308
BLO **Bloomington** 132.31 32 *e*PKIKP PKPdf 05 41 36.2 +0.1
BLO **Bloomington** 132.31 32 *e*PKPdf PKPdf 05 41 36.2 +0.1
538A **Harpers Horsep** 132.34 47 P PKPdf 05 41 37.5 +1.2
baz=302
140A **Cam and Jess,** 132.36 43 P PKPdf 05 41 37.7 +1.3
baz=306
737A **Port Lavaca** 132.38 49 P PKPdf 05 41 37.7 +1.3
baz=300
339A **Huntington** 132.41 45 P PKPdf 05 41 37.5 +1.1
baz=304
Z41A **Richland Creek** 132.52 42 P PKPdf 05 41 37.4 +0.8
baz=307
439A **Center Grove,** 132.56 46 P PKPdf 05 41 37.7 +0.9
baz=304
USIN **University of** 132.57 34 *e*PKPdf PKPdf 05 41 38.0 +1.5
240A **Hunter Patters** 132.57 44 P PKPdf 05 41 38.1 +1.3
baz=305
LONY **Lake Ozonia** 132.71 17 *e*PKPdf PKPdf 05 41 36.8 +0.1
BUF **Buffalo** 132.76 22 *e*PKPdf PKPdf 05 41 36.9 +0.1
FRNY **Flat Rock** 132.80 16 *e*PKPdf PKPdf 05 41 36.6 -0.2
141A **Papa Simpson,** 132.84 43 P PKPdf 05 41 38.7 +1.4
baz=306
Y42A **Garnett, Star** 132.84 41 P PKPdf 05 41 38.5 +1.3
baz=309
340A **Bronson** 132.84 45 P PKPdf 05 41 38.8 +1.5
baz=305
539A **Cross D Ranch,** 132.96 47 P PKPdf 05 41 39.2 +1.7
baz=303
X43A **Marvell** 132.99 39 P PKPdf 05 41 38.7 +1.2
baz=310
ERPA **Erie** 133.00 24 *e*PKPdf PKPdf 05 41 37.0 -0.3
Z42A **Norrel Spur, H** 133.08 41 P PKPdf 05 41 38.9 +1.2
baz=308
440A **Kirbyville** 133.16 46 P PKPdf 05 41 39.4 +1.5
baz=304
241A **Mo Tay, Goldon** 133.17 44 P PKPdf 05 41 39.3 +1.4
baz=306
ACSO **Alum Creek Sta** 133.24 28 *e*PKPdf PKPdf 05 41 38.0 +0.2
MMNY **Mt. Morris Dam** 133.28 21 *e*PKPdf PKPdf 05 41 37.4 -0.4
ALLY **Alegheny Colle** 133.33 24 *e*PKPdf PKPdf 05 41 37.8 -0.1
Y43A **Makayla and Ka** 133.34 40 P PKPdf 05 41 39.1 +1.0
baz=310
V45A **Humboldt** 133.37 37 P PKPdf 05 41 38.9 +0.7
baz=313
341A **Kurthwood** 133.39 44 P PKPdf 05 41 40.1 +1.8
baz=305
NCB **Newcomb** 133.40 17 *e*PKPdf PKPdf 05 41 38.4 +0.4
PKME **Peaks-Kenny Pk** 133.46 12 *e*PKPpre PKPpre 05 41 28.9
PKME *e*PKPdf PKPdf 05 41 38.5 +0.5
X44A **Crenshaw** 133.47 39 P PKPdf 05 41 38.6 +0.2
baz=311
142A **Monroe** 133.52 42 P PKPdf 05 41 39.4 +0.9
baz=308
W45A **Hickory Valley** 133.63 37 P PKPdf 05 41 38.9 +0.2
baz=312
M54A **Oil Creek Stat** 133.65 24 P PKPdf 05 41 38.8 +0.3
baz=328
242A **Grayson** 133.67 43 P PKPdf 05 41 39.6 +0.8
baz=307
LMN **Caledonia Moun** 133.68 8 *e*PKPdf PKPdf 05 41 38.4 0.0
MDV **Middlebury** 133.68 16 *e*PKPdf PKPdf 05 41 38.8 +0.3
441A **DeRidder** 133.71 45 P PKPdf 05 41 39.8 +0.9
baz=305
Y44A **Strider, Charl** 133.77 39 P PKPdf 05 41 39.5 +0.6
baz=310
143A **Socs Landing,** 133.79 42 P PKPdf 05 41 39.8 +0.8
baz=308
OXF **Oxford** 133.92 38 *e*PKIKP PKPdf 05 41 39.2 0.0
OXF **Oxford** 133.92 38 *e*PKPdf PKPdf 05 41 39.2 0.0
342A **Flagon Creek P** 133.96 44 P PKPdf 05 41 40.3 +0.9
baz=306
N54A **Moraine State** 133.97 25 P PKPdf 05 41 39.7 +0.5
baz=327
X45A **UM Field Stati** 133.99 38 P PKPdf 05 41 39.4 +0.1
baz=312
WVL **Waterville** 134.05 13 *e*PKPdf PKPdf 05 41 39.3 +0.1
Z44A **Pea Ridge, Bel** 134.07 40 P PKPdf 05 41 40.6 +1.1
baz=310
GGN **Saint George** 134.07 10 *e*PKPdf PKPdf 05 41 39.1 -0.1
541A **Lake Charles** 134.10 46 P PKPdf 05 41 40.5 +0.9
baz=304
ACCN **Adirondack Com** 134.10 17 *e*PKPdf PKPdf 05 41 39.9 +0.5
HNH **Hanover** 134.20 16 *e*PKPdf PKPdf 05 41 40.2 +0.8
243A **Waterproof** 134.23 43 P PKPdf 05 41 40.8 +0.9
baz=307
Y45A **Yeager Farm, C** 134.26 39 P PKPdf 05 41 40.9 +1.0
baz=311
BINY **Binghamton** 134.43 20 *e*PKPdf PKPdf 05 41 40.1 +0.1
144A **Alexander Plac** 134.48 41 P PKPdf 05 41 41.1 +0.8
baz=309
Z45A **Winona** 134.48 40 P PKPdf 05 41 40.3 0.0
baz=310
542A **Morse** 134.52 45 P PKPdf 05 41 42.4 +2.0
baz=305
244A **Avery, Jackson** 134.67 42 P PKPdf 05 41 41.3 +0.6
baz=308
Y46A **Houston** 134.68 39 P PKPdf 05 41 40.9 +0.3
baz=312
TRY **Troy** 134.70 18 *e*PKPdf PKPdf 05 41 41.0 +0.6
145A **Houston Renfro** 134.82 41 P PKPdf 05 41 42.2 +1.3
baz=310
344A **Westbrook Farm** 135.00 43 P PKPdf 05 41 42.6 +1.2
baz=308
Z46A **Louisville** 135.08 39 P PKPdf 05 41 41.9 +0.5
baz=311
SSPA **Standing Stone** 135.09 23 *e*PKPdf PKPdf 05 41 41.3 +0.1
O56A **Blue Knob Stat** 135.14 24 P PKPdf 05 41 41.8 +0.4
baz=328
245A **Little AP, Sta** 135.20 41 P PKPdf 05 41 42.8 +1.1
baz=309
TLIG **Tlapa** 135.21 65 *e*PKPdf PKPdf 05 41 44.2 +2.0
Y47A **UCPARC, Winfie** 135.28 38 P PKPdf 05 41 42.2 +0.4
baz=313
146A **Union** 135.36 40 P PKPdf 05 41 42.5 +0.5
baz=311
444A **Pine Grove** 135.44 43 P PKPdf 05 41 43.5 +1.4
baz=307
544A **White Castle** 135.51 44 P PKPdf 05 41 43.6 +1.3
baz=306
HRV **Adam Dziewonsk** 135.51 16 *e*PKIKP PKPdf 05 41 42.5 +0.5
HRV **Adam Dziewonsk** 135.51 16 *e*PKPdf PKPdf 05 41 42.5 +0.5
345A **Thompson Farm,** 135.56 42 P PKPdf 05 41 43.6 +1.2
baz=308
Z47A **Carrollton** 135.62 39 P PKPdf 05 41 43.3 +0.9
baz=312
N59A **State Game Lan** 135.64 21 P PKPdf 05 41 43.0 +0.7
baz=332
WES **Weston** 135.69 16 *e*PKIKP PKPdf 05 41 41.8 -0.5
WES **Weston** 135.69 16 *e*PKPdf PKPdf 05 41 41.8 -0.5
445A **Amite** 135.71 43 P PKPdf 05 41 43.8 +1.1
baz=308
BCX **Boston College** 135.78 15 *e*PKPdf PKPdf 05 41 42.8 +0.4
Z48A **Northport** 135.82 38 P PKPdf 05 41 44.0 +1.2
baz=313
TZTN **Tazewell** 135.83 31 *e*PKPdf PKPdf 05 41 43.0 +0.2
147A **Livingston** 135.84 39 P PKPdf 05 41 43.6 +0.7
baz=312
346A **Big Creek Wild** 135.89 42 P PKPdf 05 41 44.1 +1.1
baz=309
ODNJ **Ogdensburg** 135.89 20 *e*PKPdf PKPdf 05 41 43.1 +0.4
247A **Quitman** 136.03 40 P PKPdf 05 41 44.3 +1.1
baz=311
BRYW **Bryant College** 136.06 16 *e*PKPdf PKPdf 05 41 43.7 +0.6
CPCT **Cooper Cave** 136.13 33 *e*PKPdf PKPdf 05 41 43.2 -0.2
PAL **Palisades** 136.19 19 *e*PKIKP PKPdf 05 41 43.8 +0.6
PAL **Palisades** 136.19 19 *e*PKPdf PKPdf 05 41 43.8 +0.6
YLE **Yale** 136.21 18 *e*PKPdf PKPdf 05 41 43.9 +0.6
MVL **Millersville** 136.23 22 *e*PKPdf PKPdf 05 41 44.0 +0.7
BRNJ **Basking Ridge** 136.26 20 *e*PKPdf PKPdf 05 41 44.2 +0.8
446A **Poplarville** 136.33 42 P PKPdf 05 41 44.5 +0.7
baz=309
CPNY **Central Park** 136.37 19 *e*PKPdf PKPdf 05 41 44.6 +1.1
TKL **Tuckaleechee C** 136.38 33 *e*PKIKP PKPdf 05 41 44.1 +0.3
TKL **Tuckaleechee C** 136.38 33 *e*PKPdf PKPdf 05 41 44.1 +0.3
LRAL **Lakeview Retre** 136.40 38 *e*PKPpre PKPpre 05 41 31.0
LRAL *e*PKPdf PKPdf 05 41 43.8 -0.1
347A **Saraland** 136.49 41 P PKPdf 05 41 45.2 +1.1
baz=310
SDMD **Soldier's Deli** 136.56 23 *e*PKPdf PKPdf 05 41 44.4 +0.4
248A **Dixon Mills** 136.56 40 P PKPdf 05 41 45.5 +1.3
baz=312
PSUB **Penn St. - Bra** 136.62 21 *e*PKPdf PKPdf 05 41 43.9 -0.2
447A **Lucedale** 136.80 42 P PKPdf 05 41 46.0 +1.3
baz=310
348A **Jackson** 136.90 40 P PKPdf 05 41 46.5 +1.7
baz=311
448A **Bay Minette** 137.24 41 P PKPdf 05 41 47.2 +1.7
baz=311
CBN **Corbin Frederi** 137.38 24 *e*PKPdf PKPdf 05 41 45.9 +0.4
BRAL **Brewton** 137.61 40 *e*PKPpre PKPpre 05 41 36.6
BRAL *e*PKPdf PKPdf 05 41 47.1 +1.0
PLCA **Paso Flores** 137.65 164 PKhKP PKPpre 05 41 36.9

	comp=Z,3.5nm,0.8s,baz=243,slow=4.7,SNR=7.2								
PLCA					PKP	**PKiKP**	05 41 49.2	**+1.1**
	comp=Z,10nm,0.7s,baz=220,slow=0.4,SNR=17								
PLCA					SKPbc	**SKPbc**	05 45 04.8	**-0.2**
	comp=Z,6.6nm,0.8s,baz=257,slow=2.2,SNR=10.0								
PLCA	**Paso Flores**	**137.65**	**164**	*e*PKPpre	PKPpre		05 41 36.8		
PLCA				*e*PKPdf	**PKiKP**		05 41 47.3	**-0.7**	
PLCA				SKPbc	**SKPbc**		05 45 04.8	**-0.2**	
KMSC	**Kings Mountain**	**138.05**	**31**	P	**PKPdf**		05 41 48.1	**+1.2**	
	baz=322								
KMSC	**Kings Mountain**	**138.05**	**31**	*e*PKPdf	**PKPdf**		05 41 47.4	**+0.4**	
GOGA	**Godfrey**	**138.22**	**34**	*e*PKHKP	PKPpre		05 41 37.9		
GOGA				*e*			05 41 47.5		
GOGA	**Godfrey**	**138.22**	**34**	*e*PKPpre	PKPpre		05 41 37.9		
GOGA				*e*PKPdf	**PKPdf**		05 41 47.5	**+0.3**	
JSC	**Jenkinsville**	**138.76**	**31**	*e*PKHKP	PKPpre		05 41 39.2		
JSC				*e*			05 41 48.6		
JSC	**Jenkinsville**	**138.76**	**31**	*e*PKPpre	PKPpre		05 41 39.2		
JSC				*e*PKPdf	**PKPdf**		05 41 48.5	**+0.3**	
TIGA	**Tifton**	**139.57**	**37**	P	**PKPdf**		05 41 50.9	**+1.1**	
	baz=316								
TIGA	**Tifton**	**139.57**	**37**	*e*PKPpre	PKPpre		05 41 41.6		
TIGA				*e*PKPdf	**PKPdf**		05 41 50.2	**+0.4**	
NHSC	**New Hope**	**140.24**	**32**	*e*PKPdf	**PKPdf**		05 41 51.8	**+0.8**	
CCIG	**Comitan**	**141.42**	**63**	*e*PKPdf	**PKPdf**		05 41 53.7	**0.0**	
TRQA	**Tornquist**	**141.92**	**173**	*e*PKPpre	PKPpre		05 41 48.9		
TEIG	**Tepich**	**143.06**	**55**	*e*PKPdf	PKPbc		05 41 53.3	-0.3	
DWPF	**Disney Wildern**	**143.26**	**38**	*e*PKPdf	PKPbc		05 41 54.3	+0.4	
SACV	**Santiago Islan**	**144.04**	**296**	*e*PKPdf	**PKPab**		05 41 56.0	**0.0**	
ROC1	**El Roble**	**144.63**	**159**	*e*P	**PKPdf**		05 41 58.8	**-0.3**	
ROC1	**El Roble**	**144.63**	**159**	*e*PKPdf	**PKPdf**		05 41 58.7	**-0.3**	
AAGR	**Agrelo**	**145.26**	**162**	*e*P	**PKPab**		05 42 01.0	**+0.8**	
ARCO	**CERRO ARCO**	**145.45**	**162**	*e*P	**PKPab**		05 42 01.4	**+0.4**	
ASAL	**Salagasta**	**145.72**	**162**	*e*P	**PKPab**		05 42 02.0	**+0.1**	
AUSP	**Uspallata**	**145.88**	**161**	*e*P	**PKPbc**		05 42 02.4	**+0.3**	
RTLS	**Leoncito**	**146.29**	**160**	*e*P	**PKPbc**		05 42 03.6	**+0.2**	
RTCV	**Cerro Valdivia**	**146.48**	**162**	*e*P	**PKPbc**		05 42 04.1	**+0.5**	
ACAN	**Cantantal**	**146.50**	**164**	*e*P	**PKPdf**		05 42 02.5	**+0.5**	
TGUH	**Tegucigalpa,Un**	**146.61**	**64**	*e*PKPdf	**PKPbc**		05 42 03.9	**-0.5**	
MRA	**San Martin**	**146.75**	**166**	*e*P	**PKPbc**		05 42 03.6	**-0.9**	
BBSR	**BB Station**	**146.82**	**12**	*e*PKPdf	**PKPbc**		05 42 03.8	**-0.6**	
RTLL	**Cerro Villicun**	**147.00**	**161**	*e*P	**PKPbc**		05 42 05.5	**+0.4**	
AMOG	**MOGNA**	**147.35**	**161**	*e*P	**PKPdf**		05 42 04.5	**+1.0**	
ACHE	**Chepes**	**147.70**	**164**	*e*P	**PKPdf**		05 42 04.9	**+0.7**	
AVFE	**Valle Fertil**	**147.94**	**162**	*e*P	**PKPbc**		05 42 08.4	**+0.7**	
TCA	**Tanti**	**148.05**	**167**	*e*P	**PKPdf**		05 42 05.5	**+0.8**	
LCO	**Las Campanas**	**148.29**	**156**	*e*PKPdf	**PKPdf**		05 42 06.5	**+1.1**	
LCO				*e*PKPbc	**PKiKP**		05 42 10.0	**-0.5**	
AGUA	**GUANDACOL**	**148.69**	**160**	*e*P	**PKPdf**		05 42 07.3	**+1.5**	
VCA	**Vinchina**	**149.47**	**160**	*e*P	**PKPbc**		05 42 12.3	**+0.5**	
CYA	**Choya**	**150.50**	**164**	*e*P	**PKPbc**		05 42 14.3	**+0.2**	
HDC	**Heredia**	**150.92**	**69**	*e*PKPdf	**PKPdf**		05 42 10.9	**+1.2**	
HDC				*e*PKPbc	**PKiKP**		05 42 16.8	**+0.6**	
MTDJ	**Mount Denham**	**152.57**	**47**	*e*PKPbc	**PKPbc**		05 42 19.1	**0.0**	
MTDJ				*e*PKPab	**PKPab**		05 42 31.5	**+1.4**	
FSA	**Cafayete**	**152.64**	**162**	*e*P	**PKPdf**		05 42 13.1	**+1.0**	
PB10	**IPOC Station P**	**153.11**	**151**	*e*PKPbc	**PKPbc**		05 42 20.9	**+0.8**	
GTBY	**Guantanamo Bay**	**153.12**	**41**	*e*PKPdf	**PKPdf**		05 42 13.9	**+1.2**	
GTBY				*e*PKPbc	**PKiKP**		05 42 20.8	**+0.5**	
CPUP	**Villa Florida**	**153.92**	**179**	*e*P	**PKPdf**		05 42 14.2	**+0.5**	
CPUP	**Villa Florida**	**153.92**	**179**	PKP	**PKPdf**		05 42 14.5	**+0.8**	
	comp=Z,17nm,1.0s,baz=182,slow=1.2,SNR=28								
CPUP					PKPbc	**PKiKP**	05 42 22.6	**+0.8**	
	comp=Z,18nm,0.7s,baz=157,slow=1.5,SNR=29								
CPUP					PKPab	**PKPab**	05 42 36.2	**+0.8**	
	comp=Z,30nm,0.9s,baz=180,slow=4.8,SNR=14								
CPUP					PP	**PP**	05 46 09.3	**+0.4**	
	comp=Z,4.2nm,0.9s,baz=150,slow=2.0,SNR=3.5								
CPUP	**Villa Florida**	**153.92**	**179**	*e*PKPdf	**PKPdf**		05 42 14.5	**+0.8**	
CPUP				*e*PKPbc	**PKiKP**		05 42 22.6	**+0.8**	
CPUP				*e*PKPab	**PKPab**		05 42 36.5	**+1.2**	
CPUP				PP	**PP**		05 46 09.3	**+0.4**	
PB04	**IPOC Station P**	**154.31**	**150**	*e*PKPbc	**PKPbc**		05 42 23.7	**+0.7**	
LVC	**Limon Verde**	**154.66**	**153**	PKP	**PKPdf**		05 42 17.0	**+1.7**	
	comp=Z,17nm,0.7s,baz=100,slow=2.4,SNR=6.1								
LVC					PKPbc	**PKiKP**	05 42 25.6	**+1.7**	
	comp=Z,49nm,0.7s,baz=279,slow=1.7,SNR=18								
LVC					PKPab	**PKPab**	05 42 41.4	**+2.3**	
	comp=Z,69nm,0.8s,baz=163,slow=4.1,SNR=7.5								
LVC	**Limon Verde**	**154.66**	**153**	*e*PKPdf	**PKPdf**		05 42 17.4	**+2.1**	
LVC				*e*PKPbc	**PKiKP**		05 42 25.5	**+1.5**	
LVC				*e*PKPab	**PKPab**		05 42 41.4	**+2.3**	
HJA	**Humahuaca**	**155.52**	**160**	*e*P	**PKPdf**		05 42 18.1	**+1.6**	
PB01	**IPOC Station P**	**155.72**	**150**	*e*PKPdf	**PKPdf**		05 42 17.9	**+1.5**	
SDDR	**Presa de Saban**	**156.22**	**36**	*e*PKPab	**PKPab**		05 42 45.9	**+0.4**	
NNA	**Nana**	**156.77**	**121**	PKP	**PKPdf**		05 42 18.8	**+0.9**	
	comp=Z,14nm,0.9s,baz=248,slow=3.5,SNR=7.0								
NNA					PKPab	**PKPab**	05 42 49.4	**+1.3**	
	comp=Z,7.5nm,0.6s,baz=286,slow=5.5,SNR=5.3								
ATAH	**Atahualpa**	**157.25**	**108**	PKP	**PKPdf**		05 42 20.0	**+1.0**	
	comp=Z,18nm,1.0s,baz=222,slow=0.4,SNR=11								
OTAV	**Otavalo**	**158.23**	**89**	*e*P	**PKPdf**		05 42 21.8	**+1.5**	
OTAV	**Otavalo**	**158.23**	**89**	*e*PKPdf	**PKPdf**		05 42 21.6	**+1.3**	
GRGC	**Isla de Gorgon**	**158.30**	**82**	*e*P	**PKPdf**		05 42 20.1	**+0.3**	
RCBR	**Riachuelo**	**158.49**	**254**	*e*PKPdf	**PKPdf**		05 42 21.4	**+1.4**	
RCBR				*e*PKPab	**PKPab**		05 42 55.9	**+0.2**	
CMBC	**Cumbal**	**158.83**	**87**	*e*P	**PKPdf**		05 42 22.8	**+1.8**	
MALC	**Bahia Malaga**	**158.96**	**79**	*e*P	**PKPdf**		05 42 22.3	**+1.8**	
HUMP	**Col San Antoni**	**159.75**	**26**	*e*PKPdf	**PKPdf**		05 42 21.3	**0.0**	
STVI	**Saint Thomas**	**159.93**	**23**	*e*PKPdf	**PKPdf**		05 42 21.9	**+0.4**	
HELC	**Santa Helena**	**160.17**	**71**	*e*PKPdf	**PKPdf**		05 42 22.4	**0.0**	
LPAZ	**La Paz**	**160.35**	**145**	PKP	**PKPdf**		05 42 24.0	**+1.2**	
	comp=Z,14nm,1.0s,baz=242,slow=1.5,SNR=34								
LPAZ					PKPab	**PKPab**	05 43 06.0	**+1.8**	
	comp=Z,14nm,0.9s,baz=184,slow=5.1,SNR=7.6								
SMRT	**St. Maarten**	**160.89**	**19**	*e*PKPdf	**PKPdf**		05 42 22.8	**+0.2**	
PRAC	**Prado**	**161.41**	**78**	*e*PKPdf	**PKPdf**		05 42 23.5	**+0.2**	
PRAC				*e*PKPab	**PKPab**		05 43 10.2	**+1.7**	
ROSC	**El Rosal**	**161.71**	**74**	PKP	**PKPdf**		05 42 25.0	**+0.9**	
	comp=Z,25nm,0.9s,baz=116,slow=3.5,SNR=22								
ROSC					PKPab	**PKPab**	05 43 12.2	**+2.0**	
	comp=Z,20nm,0.8s,baz=105,slow=7.0,SNR=6.9								
ROSC	**El Rosal**	**161.71**	**74**	*e*PKPdf	**PKPdf**		05 42 25.3	**+1.2**	
ROSC				*e*PKPab	**PKPab**		05 43 13.2	**+3.1**	
CHIC	**Chingaza**	**162.33**	**74**	*e*P	**PKPdf**		05 42 24.6	**-0.2**	
BDFB	**Brasilia**	**162.35**	**209**	PKP	**PKPdf**		05 42 25.4	**+1.1**	
	comp=Z,7.6nm,0.8s								
BDFB					PKPab	**PKPab**	05 43 14.3	**+2.1**	
	baz=142,slow=7.7								
BDFB	**Brasilia**	**162.35**	**209**	*e*PKPdf	**PKPdf**		05 42 26.4	**+2.1**	
BDFB				*e*PKPab	**PKPab**		05 43 13.6	**+1.3**	
SDV	**Santo Domingo**	**163.48**	**57**	PKP	**PKPdf**		05 42 25.3	**-0.2**	
	comp=Z,43nm,0.9s,baz=295,slow=0.5,SNR=23								
SDV					PKPab	**PKPab**	05 43 18.3	**+0.7**	
	comp=Z,22nm,0.7s,baz=322,slow=3.5,SNR=8.2								
SDV	**Santo Domingo**	**163.48**	**57**	*e*PKPdf	**PKPdf**		05 42 25.6	**+0.1**	
SDV				*e*PKPab	**PKPab**		05 43 19.4	**+1.8**	
SIV	**San Ignacio**	**163.63**	**165**	PKP	**PKPdf**		05 42 26.2	**+0.8**	
	comp=Z,20nm,0.9s,baz=181,slow=1.9,SNR=40								
SIV					PKPab	**PKPab**	05 43 18.5	**+0.8**	
	comp=Z,11nm,0.8s,baz=204,slow=6.3,SNR=14								
PCRV	**Puerto La Cruz**	**167.08**	**38**	PKP	**PKPdf**		05 42 27.0	**-1.4**	
	comp=Z,12nm,1.0s,baz=294,slow=3.6,SNR=5.3								
PCRV					PKPab	**PKPab**	05 43 32.6	**-0.5**	
	comp=Z,9.6nm,0.8s,baz=96,slow=2.2,SNR=5.6								
SAML	**Samuel**	**169.09**	**144**	*e*PKPab	**PKPab**		05 43 42.8	**+0.9**	
PTGA	**Pitinga**	**176.66**	**101**	PKP	**PKPdf**		05 42 32.3	**-0.5**	
	comp=Z,11nm,0.8s,baz=316,slow=0.7,SNR=21								

MAN 08 05:26:52.6, 6.73N × 126.77E, h50km, mb4.8, ML3.7, MS3.7, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.55**	**293**	*e*P	Pn	05 27 06.4	+2.6
MATI				*e*S	Sn	05 27 16.0	+3.7
BIPH	**Bislig**	**1.50**	**344**	⇓*i*P	Pn	05 27 18.6	+2.1
BIPH				*i* S	Sn	05 27 37.7	+2.8
KCP	**Kidapawan**	**1.69**	**279**	⇑*e*P	Pn	05 27 19.6	+0.5
KCP				*i* S	Sn	05 27 40.4	+0.8
BUKP	**Musuan**	**2.04**	**304**	*e*P	Pn	05 27 25.3	+1.4
BUKP				*e*S	Sn	05 27 51.3	+3.1

*CSEM **08** 05:30:52.0, 45.10N × 7.49E, h30km, ML0.9*
GEN 08 05:30:52.0, 45.10N × 7.49E, h30km, ML0.9, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHB	**Bricherasio**	**0.30**	**213**	P	Pb	05 30 59.1	-0.4
TRAV	**Traversella**	**0.46**	**23**	P	Pb	05 31 01.3	-0.5
TRAV				S	Sb	05 31 07.2	-1.3
RRL	**Rocca Remolon**	**0.53**	**251**	P	Pb	05 31 03.3	+0.3
RRL				S	Sb	05 31 10.3	-0.3
PZZ	**Stroppo**	**0.65**	**205**	P	Pb	05 31 04.0	-0.9
PZZ				S	Sb	05 31 12.1	-1.6
ENR	**Entracque**	**0.87**	**183**	P	Pn	05 31 07.1	-1.2

*CSEM **08** 05:33:53.1, 43.94N × 11.55E, h9km, MD1.9/6*
ROM 08 05:33:53.1±0.1, 43.94N × 11.55E, h9km, Md1.9/6, Ml1.4/2, Error ellipse: s-maj=2.0km s-min=0.5km az=32.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VMG	**Vicchio**	**0.03**	**358**	Pg	Pg	05 33 55.3	+0.5
VMG				Sg	Sg	05 33 56.3	+0.3
VMG	**Vicchio**	**0.03**	**358**	Pg	Pg	05 33 55.3	+0.5
VMG				Sg	Sg	05 33 56.3	+0.3
SEI	**Scarperia**	**0.18**	**311**	Pg	Pg	05 33 57.6	+0.7
SEI				Sg	Sg	05 34 00.6	+1.1
SEI	**Scarperia**	**0.18**	**311**	Pg	Pg	05 33 57.6	+0.7
SEI				Sg	Sg	05 34 00.6	+1.1
SFI	**Santa Sofia**	**0.22**	**98**	Pg	Pg	05 33 58.4	+0.8
SFI				Sg	Sg	05 34 02.0	+1.3
	55nm,0.2s						
SFI	**Santa Sofia**	**0.22**	**98**	Pg	Pg	05 33 58.4	+0.8
SFI				Sg	Sg	05 34 02.0	+1.3
	55nm,0.2s						
ASQU	**Asqua**	**0.23**	**128**	Pg	Pg	05 33 58.5	+0.8
ASQU				Sg	Sg	05 34 02.4	+1.6
	69nm,0.2s						
ASQU	**Asqua**	**0.23**	**128**	Pg	Pg	05 33 58.5	+0.8
ASQU				Sg	Sg	05 34 02.4	+1.6
	69nm,0.2s						
PTF	**Prato**	**0.34**	**274**	Pg	Pb	05 34 00.7	-0.7
PTF				Sg	Sb	05 34 06.0	-1.0
PTF	**Prato**	**0.34**	**274**	Pg	Pb	05 34 00.7	-0.7
PTF				Sg	Sb	05 34 06.0	-1.0
FNVD	**Fontana Vidola**	**0.38**	**307**	Pg	Pg	05 34 01.2	+0.6
FNVD				Sg	Sb	05 34 07.6	-0.6
FNVD	**Fontana Vidola**	**0.38**	**307**	Pg	Pg	05 34 01.2	+0.6
FNVD				Sg	Sb	05 34 07.6	-0.6

*CSEM **08** 05:36:07.7±0.2, 42.05N × 7.64E, h20km, ML3.7/7, Error ellipse: s-maj=5.0km s-min=3.6km az=130.0*
*GEN **08** 05:36:08.1, 42.05N × 7.59E, h9km, ML3.3*
*ROM **08** 05:36:08.4±0.2, 42.03N × 7.65E, h38km, Ml3.0/2, Error ellipse: s-maj=0.9km s-min=0.0km az=180.0*
*LDG **08** 05:36:09.4±0.3, 41.96N × 7.65E, h25km, Md3.3/4, Ml3.7/11, Error ellipse: s-maj=6.9km s-min=4.0km az=144.0*
*STR **08** 05:36:13.3±0.2, 42.44N × 7.31E, h10km, Ml3.5, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 08 05:36:04.3±2.4, 42.00N±0.03 × 7.64E±0.03, h6km±17km, n120, σ2s02/172, Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGF	**Pioggiola**	**1.15**	**61**	*e*Pn	**Pn**	05 36 28.3	**+1.2**
PGF				*e*Sn	**Sb**	05 36 42.1	**+0.2**
	434nm,0.2s						
PGF	**Pioggiola**	**1.15**	**61**	*e*Pn	**Pn**	05 36 28.3	**+1.2**
PGF				*e*Sn	**Sb**	05 36 42.1	**+0.2**
	217nm,0.2s						
LMR	**La Mourre**	**1.57**	**328**	*e*Pn	**Pn**	05 36 33.4	**+0.7**
LMR				*e*Sn	**Sn**	05 36 50.9	**-2.5**
	221nm,0.2s						
LMR	**La Mourre**	**1.57**	**328**	*e*Pn	**Pn**	05 36 33.4	**+0.7**
LMR				*e*Sn	**Sn**	05 36 50.9	**-2.5**
	110nm,0.2s						
FRF	**La Foret Royal**	**1.72**	**335**	*e*Pn	**Pn**	05 36 35.7	**+0.9**
FRF				*e*Sn	**Sn**	05 36 54.4	**-2.7**
	142nm,0.2s						
FRF	**La Foret Royal**	**1.72**	**335**	*e*Pn	**Pn**	05 36 35.7	**+0.9**
FRF				*e*Sn	**Sn**	05 36 54.4	**-2.7**
	71nm,0.2s						
REVF	**Revere**	**1.75**	**354**	Pn	**Pn**	05 36 36.3	**+1.0**
REVF				Sg	**Sn**	05 36 56.2	**-1.7**
REVF	**Revere**	**1.75**	**354**	Pn	**Pn**	05 36 36.3	**+1.0**
REVF				Sg	**Sn**	05 36 56.2	**-1.7**
NEGI	**Seborga**	**1.85**	**1**	Pn	**Pn**	05 36 37.2	**+0.6**
NEGI	**Seborga**	**1.85**	**1**	Pn	**Pn**	05 36 37.2	**+0.6**
NEGI				S	**Sn**	05 36 56.8	**-3.5**
SBF	**Sospel**	**1.87**	**355**	*e*Pn	**Pn**	05 36 37.4	**+0.5**
SBF				*e*Sn	**Sn**	05 36 57.9	**-2.9**
	141nm,0.2s						
SBF	**Sospel**	**1.87**	**355**	*e*Pn	**Pn**	05 36 37.4	**+0.5**
SBF				*e*Sn	**Sn**	05 36 57.9	**-2.9**
	70nm,0.2s						
LUCF	**Luceram**	**1.90**	**354**	Pn	**Pn**	05 36 37.9	**+0.5**
LUCF	**Luceram**	**1.90**	**354**	Pg	**Pb**	05 36 40.2	**+0.7**
LUCF				Sg	**Sn**	05 37 01.0	**-0.7**
LUCF	**Luceram**	**1.90**	**354**	Pn	**Pn**	05 36 37.9	**+0.5**
LUCF	**Luceram**	**1.90**	**354**	Pg	**Pb**	05 36 40.2	**+0.7**
LUCF				Sg	**Sn**	05 37 01.0	**-0.7**
IMI	**Imperia**	**1.92**	**6**	Pn	**Pn**	05 36 38.5	**+0.9**
IMI				Sn	**Sn**	05 36 58.8	**-3.3**
IMI	**Imperia**	**1.92**	**6**	Pn	**Pn**	05 36 38.5	**+0.9**
IMI				Sn	**Sn**	05 36 58.8	**-3.3**
MVIF	**Mont Vial**	**1.93**	**350**	Pn	**Pn**	05 36 38.3	**+0.5**
MVIF				Sg	**Sn**	05 37 01.5	**-0.9**
MVIF	**Mont Vial**	**1.93**	**350**	Pn	**Pn**	05 36 38.3	**+0.5**
MVIF				Sg	**Sn**	05 37 01.5	**-0.9**
CELB	**S.Piero in Cam**	**2.05**	**68**	Pn	**Pn**	05 36 40.7	**+1.4**
CELB				Sn	**Sn**	05 37 04.1	**-1.1**
CELB	**S.Piero in Cam**	**2.05**	**68**	Pn	**Pn**	05 36 40.7	**+1.4**
CELB				Sn	**Sn**	05 37 04.1	**-1.1**
LEPF	**PUYLOUBIER**	**2.08**	**317**	Pn	**Pn**	05 36 41.3	**+1.5**
LEPF				Sn	**Sn**	05 37 02.9	**-3.2**
LEPF	**PUYLOUBIER**	**2.08**	**317**	Pn	**Pn**	05 36 41.3	**+1.5**
LEPF				Sn	**Sn**	05 37 02.9	**-3.2**
RORO	**Rocca Rossa**	**2.13**	**8**	Pn	**Pn**	05 36 41.4	**+0.9**
RORO				Sn	**Sn**	05 37 04.3	**-3.0**
RORO	**Rocca Rossa**	**2.13**	**8**	P	**Pn**	05 36 41.4	**+0.9**
RORO				Sn	**Sn**	05 37 04.3	**-3.0**
ENR	**Entracque**	**2.23**	**356**	Pn	**Pn**	05 36 43.5	**+1.6**
ENR				Sn	**Sn**	05 37 08.2	**-1.6**
ENR	**Entracque**	**2.23**	**356**	P	**Pn**	05 36 43.5	**+1.6**
ENR				Sn	**Sn**	05 37 08.2	**-1.6**
STV	**Sant Anna di V**	**2.25**	**354**	Pn	**Pn**	05 36 43.8	**+1.5**
STV				Sn	**Sn**	05 37 08.4	**-2.0**
STV	**Sant Anna di V**	**2.25**	**354**	P	**Pn**	05 36 43.7	**+1.5**
STV				Sn	**Sn**	05 37 08.4	**-2.0**
SMRF	**Simiane la Rot**	**2.49**	**323**	*e*Pn	**Pn**	05 36 47.4	**+2.0**
SMRF				*e*Sn	**Sn**	05 37 17.5	**+1.4**
	54nm,0.4s						
SMRF	**Simiane la Rot**	**2.49**	**323**	*e*Pn	**Pn**	05 36 47.4	**+2.0**
SMRF				*e*Sn	**Sn**	05 37 17.5	**+1.4**
	27nm,0.4s						
DOI	**San Damiano**	**2.52**	**354**	Pn	**Pn**	05 36 47.7	**+1.8**
DOI				Sn	**Sn**	05 37 15.7	**-1.2**
DOI	**San Damiano**	**2.52**	**354**	Pn	**Pn**	05 36 47.7	**+1.8**
DOI				Sn	**Sn**	05 37 15.7	**-1.2**
PZZ	**Stroppo**	**2.53**	**352**	Pn	**Pn**	05 36 48.4	**+2.3**
PZZ				Sn	**Sn**	05 37 17.4	**0.0**
PZZ	**Stroppo**	**2.53**	**352**	Pn	**Pn**	05 36 48.4	**+2.3**
PZZ				Sn	**Sn**	05 37 17.4	**0.0**
PCP	**Piancastagn**	**2.62**	**14**	P	**Pn**	05 36 48.2	**+0.9**
MBDF	**Montbardon**	**2.80**	**347**	*e*Pn	**Pn**	05 36 52.5	**+2.7**
MBDF				*e*Sn	**Sn**	05 37 22.8	**-1.1**
	30nm,0.3s						
MBDF	**Montbardon**	**2.80**	**347**	*e*Pn	**Pn**	05 36 52.5	**+2.7**
MBDF				*e*Sn	**Sn**	05 37 22.8	**-1.1**
	15nm,0.3s						
VSL	**Villasalto**	**2.83**	**152**	Pn	**Pn**	05 36 51.9	**+1.8**
VSL				Sn	**Sn**	05 37 23.0	**-1.5**
	60nm,0.2s						
VSL	**Villasalto**	**2.83**	**152**	Pn	**Pn**	05 36 51.9	**+1.8**
VSL				Sn	**Sn**	05 37 23.0	**-1.5**
	60nm,0.2s						
BHB	**Bricherasio**	**2.85**	**355**	P	**Pn**	05 36 51.5	**+1.1**
OG22	**Abries**	**2.87**	**350**	Pn	**Pn**	05 36 51.3	**+0.6**
OG22	**Abries**	**2.87**	**350**	Pn	**Pn**	05 36 51.3	**+0.6**
CODM	**Codolo**	**2.88**	**33**	P	**Pn**	05 36 52.7	**+1.9**
CGL	**Cagliari Serpe**	**2.92**	**154**	Pn	**Pn**	05 36 53.3	**+1.9**
CGL				Sn	**Sn**	05 37 25.2	**-1.7**
	25nm,0.2s						
CGL	**Cagliari Serpe**	**2.92**	**154**	Pn	**Pn**	05 36 53.3	**+1.9**
CGL				Sn	**Sn**	05 37 25.2	**-1.7**
	25nm,0.2s						
RRL	**Rocca Remolon**	**2.98**	**348**	P	**Pn**	05 36 55.7	**+3.3**
RSP	**Reno Superiore**	**3.16**	**355**	Pn	**Pn**	05 36 56.2	**+1.5**
	21nm,0.5s						
RSP	**Reno Superiore**	**3.16**	**355**	P	**Pn**	05 36 56.2	**+1.5**
ORIF	**Oris-en-Rattie**	**3.18**	**337**	*e*Pn	**Pn**	05 36 57.6	**+2.6**
ORIF	**Oris-en-Rattie**	**3.18**	**337**	*e*Pn	**Pn**	05 36 57.6	**+2.6**
LASF	**Ste Croix**	**3.46**	**308**	*e*Pn	**Pn**	05 36 59.8	**+1.0**
LASF				*e*Sn	**Sn**	05 37 36.6	**-3.5**
	33nm,0.2s						
LASF	**Ste Croix**	**3.46**	**308**	*e*Pn	**Pn**	05 36 59.8	**+1.0**
LSD	**Lago del Serru**	**3.48**	**354**	Pn	**Pn**	05 37 01.5	**+2.3**
LSD	**Lago del Serru**	**3.48**	**354**	P	**Pn**	05 37 01.5	**+2.3**
LSD				S	**Sn**	05 37 39.6	**-1.2**
TRAV	**Traversella**	**3.51**	**1**	P	**Pn**	05 37 01.3	**+1.8**
TRAV				S	**Sn**	05 37 37.3	**-4.1**
LPG	**La Plagne**	**3.55**	**350**	*e*Pn	**Pn**	05 37 04.7	**+4.4**
EJON	**La Jonquera**	**3.56**	**279**	P	**Pn**	05 37 00.1	**0.0**
	4.5nm,0.1s,SNR=17						
EJON				S	**Sn**	05 37 38.4	**-4.0**
	1.6nm,0.1s,SNR=7.9						
SJAF	**Saint Jean de**	**3.56**	**279**	Pn	**Pn**	05 37 03.0	**+2.8**
SJAF	**Saint Jean de**	**3.56**	**279**	P	**Pn**	05 37 00.2	**0.0**
	10nm,0.1s,SNR=18						
SJAF	**Saint Jean de**	**3.56**	**279**	Pn	**Pn**	05 37 03.0	**+2.8**
LPL	**La Plagne**	**3.57**	**350**	*e*Pn	**Pn**	05 37 04.8	**+4.3**
LPL				*e*Sn	**Sn**	05 37 44.8	**+1.6**
	13nm,0.3s						
VIVF	**Saint-Julien-l**	**3.58**	**324**	*e*Pn	**Pn**	05 37 01.4	**+1.0**
VIVF				*e*Sn	**Sn**	05 37 39.5	**-3.5**
	6.7nm,0.2s						
VIVF	**Saint-Julien-l**	**3.58**	**324**	*e*Pn	**Pn**	05 37 01.4	**+1.0**
RSL	**Roselend**	**3.76**	**349**	Pn	**Pn**	05 37 03.8	**+0.8**
RSL	**Roselend**	**3.76**	**349**	Pn	**Pn**	05 37 03.8	**+0.8**
FILF	**Fillols**	**3.81**	**280**	Pn	**Pn**	05 37 07.2	**+3.6**
FILF	**Fillols**	**3.81**	**280**	Pn	**Pn**	05 37 07.2	**+3.6**
LRDF	**Laroque-de-Fa**	**3.89**	**286**	Pn	**Pn**	05 37 06.9	**+2.3**
LRDF	**Laroque-de-Fa**	**3.89**	**286**	Pn	**Pn**	05 37

ZEY	¯zmir	0.49	187	⇑	*i*	P	**Pg**	05 40 39.2	-0.2
ZEY					*i*	S	**Sb**	05 40 47.4	-0.1
CHOS	**Chios island**	0.54	231			P	**Pb**	05 40 40.7	-0.4
CHOS						S	**Sb**	05 40 48.0	-0.8
CHOS	**Chios island**	0.54	231			P	**Pb**	05 40 40.7	-0.4
CHOS						S	**Sb**	05 40 48.0	-0.8
CHOS	**Chios island**	0.54	231			P	**Pb**	05 40 41.0	-0.1
CHOS						S	**Sb**	05 40 48.3	-0.5
CHOS						AML	AML	05 40 51.1	
	comp=E,10726μm,0.3s								
CHOS						AML	AML	05 40 52.7	
	comp=N,5373μm,0.3s								
PRK	**Paraskevi**	0.57	335			P	**Pb**	05 40 41.1	-0.5
PRK						S	**Sb**	05 40 49.0	-0.6
PRK	**Paraskevi**	0.57	335			P	**Pb**	05 40 41.1	-0.5
PRK						S	**Sb**	05 40 49.0	-0.6
PRK	**Paraskevi**	0.57	335			P	**Pb**	05 40 41.0	-0.5
PRK						S	**Sb**	05 40 48.9	-0.6
PRK						AML	AML	05 40 51.3	
	comp=E,10036μm,0.4s								
PRK						AML	AML	05 40 53.9	
	comp=N,11404μm,0.2s								
AYVA	**Ayvalik**	0.58	8		*i*	P	**Pg**	05 40 40.6	-0.5
AYVA					*i*	S	**Sb**	05 40 50.1	+0.1
AYVA	**Ayvalik**	0.58	8			P	**Pg**	05 40 40.6	-0.5
AYVA						S	**Sb**	05 40 50.1	+0.1
DGB	¯zmir	0.72	161	⇑	*i*	P	**Pg**	05 40 43.3	-0.3
DGB					*i*	S	**Sb**	05 40 53.6	-0.2
SIGR	**SIGRI**	0.74	310			P	**Pb**	05 40 44.3	-0.2
SIGR						S	**Sb**	05 40 55.5	+0.9
SIGR	**SIGRI**	0.74	310			P	**Pb**	05 40 44.6	+0.1
SIGR						S	**Sb**	05 40 54.4	-0.2
SIGR	**SIGRI**	0.74	310			P	**Pb**	05 40 44.6	+0.1
SIGR						S	**Sb**	05 40 54.4	-0.2
SIGR						AML	AML	05 40 57.8	
	comp=N,8713μm,0.6s								
SIGR						AML	AML	05 40 59.1	
	comp=E,5995μm,0.4s								
SMG	**Samos**	1.04	169			P	**Pg**	05 40 49.3	-0.4
SMG						S	**Sn**	05 41 04.3	-0.2
SMG	**Samos**	1.04	169			P	**Pg**	05 40 49.3	-0.4
SMG						S	**Sn**	05 41 04.0	-0.5
SMG	**Samos**	1.04	169			P	**Pg**	05 40 49.3	-0.4
SMG						S	**Sn**	05 41 04.0	-0.5
EZN	**Ezine**	1.11	350		*e*PN	P	**Pb**	05 40 50.6	-0.1
EZN					*e*SN	S	**Sn**	05 41 06.2	0.0
EZN	**Ezine**	1.11	350			P	**Pb**	05 40 50.4	-0.4
EZN						S	**Sn**	05 41 06.2	0.0
EZN	**Ezine**	1.11	350			P	**Pb**	05 40 50.4	-0.4
EZN	**Ezine**	1.11	350		*e*Pn	P	**Pb**	05 40 50.7	-0.1
EZN						S	**Sn**	05 41 06.2	0.0
GCAM	**G?zelcaml?**	1.15	153		*i*	P	**Pb**	05 40 51.1	-0.3
GCAM					*i*	S	**Sn**	05 41 07.7	+0.6
GCAM	**G?zelcaml?**	1.15	153			P	**Pb**	05 40 51.1	-0.3
GCAM						S	**Sn**	05 41 07.7	+0.6
BOZC	**Bozcaada**	1.18	340		*i*	P	**Pg**	05 40 53.5	-0.5
BOZC					*i*	S	**Sg**	05 41 07.7	-0.2
BALY	**Balya**	1.29	38	⇑	*i*	P	**Pn**	05 40 53.3	-0.3
BALY					*i*	S	**Sg**	05 41 12.2	+0.9
BALY	**Balya**	1.29	38			P	**Pn**	05 40 53.3	-0.3
BALY						S	**Sg**	05 41 12.2	+0.9
AYDB	**Zeytinkoy-Aydi**	1.29	127		*e*PN	P	**Pb**	05 40 53.7	-0.2
AYDB	**Zeytinkoy-Aydi**	1.29	127		*e*Pn	P	**Pb**	05 40 53.7	-0.2
BALB	**Balikesir**	1.36	48		*e*PN	P	**Pb**	05 40 54.7	-0.3
BALB	**Balikesir**	1.36	48		*e*Pn	P	**Pb**	05 40 54.7	-0.3
GADA	**Gvkgeada**	1.55	340		*e*PN	P	**Pb**	05 40 57.8	-0.5
GADA	**Gvkgeada**	1.55	340			P	**Pn**	05 40 57.1	0.0
GADA						S	**Sn**	05 41 17.5	+0.4
GADA	**Gvkgeada**	1.55	340			P	**Pn**	05 40 57.1	0.0
GADA	**Gvkgeada**	1.55	340		*e*Pn	P	**Pb**	05 40 57.8	-0.5
GADA						S	**Sn**	05 41 17.5	+0.4
MANT	**Manisa**	1.56	98		*i*	P	**Pn**	05 40 56.4	-1.1
MANT					*i*	S	**Sb**	05 41 18.2	-0.3
MANT	**Manisa**	1.56	98			P	**Pn**	05 40 56.4	-1.1
MANT						S	**Sb**	05 41 18.2	-0.3
LIA	**Limnos Island**	1.59	317			P	**Pn**	05 40 58.0	+0.4
LIA	**Limnos Island**	1.59	317			P	**Pn**	05 40 58.0	+0.4
LIA						S	**Sn**	05 41 17.7	-0.4
KULA	**Kula-Manisa**	1.64	97		*e*PN	P	**Pn**	05 40 58.8	+0.4
KULA	**Kula-Manisa**	1.64	97		P	P	**Pn**	05 40 58.5	+0.1
KULA						S	**Sb**	05 41 20.7	+0.1
KULA	**Kula-Manisa**	1.64	97		P	P	**Pn**	05 40 58.5	+0.1
KULA	**Kula-Manisa**	1.64	97		*e*Pn	P	**Pn**	05 40 58.8	+0.4
KULA						S	**Sb**	05 41 20.7	+0.1
LPK	**Lapseki**	1.65	5		*e*PN	P	**Pn**	05 40 58.8	+0.4
LPK	**Lapseki**	1.65	5		*e*Pn	P	**Pn**	05 40 58.8	+0.4
GELI	**Tayfur-Gelibol**	1.67	357		*e*PN	P	**Pn**	05 40 59.1	+0.5
GELI	**Tayfur-Gelibol**	1.67	357		*e*Pn	P	**Pn**	05 40 59.1	+0.5
DEMI	**Demirci**	1.69	79		*i*	P	**Pb**	05 41 00.1	-0.7
DEMI					*i*	S	**Sg**	05 41 23.3	-0.9
DEMI	**Demirci**	1.69	79			P	**Pb**	05 41 00.1	-0.7
DEMI						S	**Sg**	05 41 23.3	-0.9
KNL	**Bal¯–kesir**	1.70	25		*i*	P	**Pn**	05 40 58.3	-0.9
KNL					*i*	S	**Sb**	05 41 22.5	+0.3
KRBG	**Karabiga-Canak**	1.75	18		*e*PN	P	**Pn**	05 40 59.8	0.0
KRBG	**Karabiga-Canak**	1.75	18		*e*Pn	P	**Pn**	05 40 59.8	0.0
BODT	**Bodrum**	1.76	161		*e*PN	P	**Pn**	05 41 00.1	+0.1
BODT	**Bodrum**	1.76	161			P	**Pn**	05 40 59.8	-0.2
BODT						S	**Sb**	05 41 23.7	-0.3
BODT	**Bodrum**	1.76	161			P	**Pn**	05 40 59.8	-0.2
BODT	**Bodrum**	1.76	161		*e*Pn	P	**Pn**	05 41 00.1	+0.1
BODT						S	**Sb**	05 41 23.7	-0.3
BDRM	**Kayabasi**	1.80	157		*i*	P	**Pn**	05 41 00.3	-0.2
BDRM					*i*	S	**Sg**	05 41 28.7	+1.3
BDRM	**Kayabasi**	1.80	157			P	**Pn**	05 41 00.3	-0.2
APE	**Apeiranthos**	1.86	207		*e*PN	P	**Pn**	05 41 01.9	+0.6
APE	**Apeiranthos**	1.86	207			P	**Pn**	05 41 00.3	-1.0
APE						S	**Sn**	05 41 23.6	-1.1
APE	**Apeiranthos**	1.86	207	⇑	*i*	P	**Pb**	05 41 02.7	+0.1
APE	**Apeiranthos**	1.86	207			P	**Pn**	05 41 00.3	-1.0
APE	**Apeiranthos**	1.86	207		*e*Pn	P	**Pn**	05 41 01.9	+0.6
APE						S	**Sn**	05 41 23.6	-1.1
APE	**Apeiranthos**	1.86	207			P	**Pn**	05 40 59.5	-1.8
APE						S	**Sn**	05 41 23.0	-1.7
APE						AML	AML	05 41 35.1	
	comp=N,425μm,0.4s								
APE						AML	AML	05 41 35.2	
	comp=E,291μm,0.3s								
EDC	**Edincik**	1.89	31		*e*PN	P	**Pn**	05 41 01.3	-0.5
EDC	**Edincik**	1.89	31		*e*Pn	P	**Pn**	05 41 01.3	-0.5
SMTH	**Samothraki Isl**	1.92	335			P	**Pn**	05 41 02.3	+0.1
SMTH						S	**Sn**	05 41 26.5	+0.3
SMTH	**Samothraki Isl**	1.92	335			P	**Pn**	05 41 02.3	+0.1
SMTH						S	**Sn**	05 41 26.5	+0.3
SMTH	**Samothraki Isl**	1.92	335			P	**Pn**	05 41 02.0	-0.1
SMTH						S	**Sb**	05 41 27.9	-0.6
SMTH						AML	AML	05 41 33.2	
	comp=E,275μm,0.4s								
SMTH						AML	AML	05 41 35.3	
	comp=N,476μm,0.2s								
ERIK	**Erikli-Kesan**	1.94	358		*e*PN	P	**Pn**	05 41 02.8	+0.4
ERIK	**Erikli-Kesan**	1.94	358		*e*Pn	P	**Pn**	05 41 02.8	+0.4
RKY	**Sarkoy-Tekirda**	2.01	13		*e*PN	P	**Pn**	05 41 03.5	+0.1
RKY	**Sarkoy-Tekirda**	2.01	13		*e*Pn	P	**Pn**	05 41 03.5	+0.1
SART	**Tekirdag**	2.01	13		*i*	P	**Pn**	05 41 03.5	0.0
SART					*i*	S	**Sb**	05 41 30.0	-1.1
SART	**Tekirdag**	2.01	13			P	**Pn**	05 41 03.5	0.0
SART						S	**Sb**	05 41 30.0	-1.1
MRMT	**Marmara Adasi**	2.03	22		*e*PN	P	**Pn**	05 41 03.9	+0.2
MRMT	**Marmara Adasi**	2.03	22		*e*Pn	P	**Pn**	05 41 03.9	+0.2
ENEZ	**Enez**	2.03	351		*e*PN	P	**Pn**	05 41 04.5	+0.8
ENEZ	**Enez**	2.03	351		P	P	**Pn**	05 41 04.3	+0.6
ENEZ						S	**Sn**	05 41 29.4	+0.5
ENEZ	**Enez**	2.03	351		P	P	**Pn**	05 41 04.3	+0.6
ENEZ						S	**Sn**	05 41 29.4	+0.5
KCTX	**Karacabey (Bur**	2.06	41		*e*PN	P	**Pn**	05 41 03.7	-0.3
KCTX	**Karacabey (Bur**	2.06	41		*e*Pn	P	**Pn**	05 41 03.7	-0.3
YER	**Yerkesik**	2.08	139		*e*PN	P	**Pn**	05 41 05.1	+0.6
YER	**Yerkesik**	2.08	139		P	P	**Pn**	05 41 04.7	+0.2
YER	**Yerkesik**	2.08	139		P	P	**Pn**	05 41 04.7	+0.2
YER	**Yerkesik**	2.08	139		*e*Pn	P	**Pn**	05 41 05.1	+0.6
KESN	**Edirne-Kesan**	2.09	2		*i*	P	**Pn**	05 41 05.1	+0.2
KESN					*i*	S	**Sn**	05 41 31.5	+0.5
KESN	**Edirne-Kesan**	2.09	2			P	**Pn**	05 41 05.1	+0.2
KESN						S	**Sn**	05 41 31.5	+0.5
EREA	**Eretria**	2.10	262			P	**Pn**	05 41 04.7	0.0
EREA	**Eretria**	2.10	262			P	**Pn**	05 41 04.7	0.0
AOS	**Alonnisos**	2.15	283			P	**Pn**	05 41 05.8	+0.4
AOS	**Alonnisos**	2.15	283			P	**Pn**	05 41 05.8	+0.4
AOS	**Alonnisos**	2.15	283			P	**Pn**	05 41 06.8	+1.4
DNZL	**Cakiroluk**	2.20	117		*i*	P	**Pn**	05 41 06.9	+0.7
DNZL					*i*	S	**Sg**	05 41 41.4	+1.0
DNZL	**Cakiroluk**	2.20	117			P	**Pn**	05 41 06.9	+0.7
ALN	**Alexandroupoli**	2.20	349			P	**Pn**	05 41 06.2	+0.2
ALN						S	**Sn**	05 41 33.5	+0.3
ALN	**Alexandroupoli**	2.20	349			P	**Pn**	05 41 06.2	+0.2
ALN						S	**Sn**	05 41 33.5	+0.3
GDZ	**Gediz**	2.29	80		*i*	P	**Pb**	05 41 11.9	+1.0
GDZ					*i*	S	**Sg**	05 41 42.0	-1.3
TVSB	**Tavsanli**	2.35	71		*e*PN	P	**Pn**	05 41 09.1	+0.9
TVSB	**Tavsanli**	2.35	71		*e*Pn	P	**Pn**	05 41 09.1	+0.9
TKR	**Tekirdag**	2.37	18		*e*PN	P	**Pn**	05 41 08.6	+0.2
TKR	**Tekirdag**	2.37	18		*e*Pn	P	**Pn**	05 41 08.6	+0.2
MDNY	**Mudanya-Bursa**	2.42	47		*e*PN	P	**Pn**	05 41 09.1	+0.1
MDNY	**Mudanya-Bursa**	2.42	47		*e*Pn	P	**Pn**	05 41 09.1	+0.1
TURN	**Turunc**	2.45	139		*i*	P	**Pn**	05 41 08.3	-1.1
TURN					*i*	S	**Sg**	05 41 48.7	+0.3
ARMT	**Armutlu**	2.54	43		*e*PN	P	**Pn**	05 41 12.3	+1.6
ARMT	**Armutlu**	2.54	43		*e*Pn	P	**Pn**	05 41 12.3	+1.6
IGD	**Bursa**	2.54	52		*i*	P	**Pn**	05 41 10.7	+0.1
IGD					*i*	S	**Sg**	05 41 50.5	-0.8
PAIG	**Paliouri**	2.55	299			P	**Pn**	05 41 11.7	+0.9
PAIG	**Paliouri**	2.55	299			P	**Pn**	05 41 11.7	+0.9
KAVA	**Kavala**	2.77	326			P	**Pn**	05 41 15.0	+1.2
EDRB	**Edirne**	3.12	2			P	**Pn**	05 41 18.7	+0.1
EDRB	**Edirne**	3.12	2			P	**Pn**	05 41 18.7	+0.1
KSL	**Kastellorizon**	3.51	136			P	**Pn**	05 41 26.2	+2.2
BARS	**Barje**	5.46	320		*e*Pn	P	**Pn**	05 41 52.3	+1.6
TIRR	**Tirgusor**	5.88	13	⇓	*i*	P	**Pn**	05 41 57.4	+0.8
TIRR	**Tirgusor**	5.88	13	⇓	*i*	P	**Pn**	05 41 57.4	+0.8
TLB	**Topalu**	5.95	10	⇓	*i*	P	**Pn**	05 41 58.2	+0.7
TLB	**Topalu**	5.95	10	⇓	*i*	P	**Pn**	05 41 58.2	+0.7
CFR	**Carcaliu**	6.54	10	⇓	*i*	P	**Pn**	05 42 05.6	-0.1
CFR	**Carcaliu**	6.54	10	⇓	*i*	P	**Pn**	05 42 05.6	-0.1
KUBS	**Kucevo**	6.76	329		*e*Pn	P	**Pn**	05 42 08.6	-0.1
MLR	**Muntele Rosu**	6.77	356	⇑	*i*	P	**Pn**	05 42 09.2	+0.3
MLR	**Muntele Rosu**	6.77	356	⇑	*i*	P	**Pn**	05 42 09.2	+0.3
VOIR		6.80	351	⇑	*i*	P	**Pn**	05 42 09.8	+0.6
VOIR		6.80	351	⇑	*i*	P	**Pn**	05 42 09.8	+0.6
MDVR	**Moldovita**	7.06	331	⇑	*i*	P	**Pn**	05 42 13.9	+1.1
MDVR	**Moldovita**	7.06	331	⇑	*i*	P	**Pn**	05 42 13.9	+1.1
VRI	**Vrincioaia**	7.13	1	⇑	*i*	P	**Pn**	05 42 14.8	+1.0
VRI	**Vrincioaia**	7.13	1	⇑	*i*	P	**Pn**	05 42 14.8	+1.0
GZR	**Gura Zlata**	7.23	338	⇑	*i*	P	**Pn**	05 42 16.0	+0.8
GZR	**Gura Zlata**	7.23	338	⇑	*i*	P	**Pn**	05 42 16.0	+0.8
BURAR	**Bucovina Array**	8.94	354	⇓	*i*	P	**Pn**	05 42 39.9	+1.3
BURAR	**Bucovina Array**	8.94	354	⇓	*i*	P	**Pn**	05 42 39.9	+1.3

ATH ***08*** *05:45:15.6, 38°.73N×26°.55E, h29km±1km, ML2.6/5, Error ellipse: s-maj=3.0km s-min=1.0km az=261.0*
ISK ***08*** *05:45:15.1, 38°.73N×26°.59E, h8km, ML2.9*
CSEM ***08*** *05:45:15.8±0.1, 38°.74N×26°.59E, h10km, MD3.0, Error ellipse: s-maj=2.1km s-min=1.7km az=73.0*
ISCJB ***08*** *05:45:15.6±0.4, 38°.74N±0°.02×26°.58E±0°.03, h8km±3km, Error ellipse: s-maj=3.8km s-min=2.5km az=156.2*
DDA ***08*** *05:45:15.3, 38°.72N×26°.61E, h25km, Md3.0*
THE ***08*** *05:45:16.8, 38°.72N×26°.51E, h12km±1km, ML2.7/6, Error ellipse: s-maj=2.0km s-min=0.6km az=251.0*

ISC 08 05:45:15.6±1.0, 38°.73N±0°.01×26°.59E±0°.02, h12km±8km, n82, σ0s47/125, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URLA	**Izmir**	0.37	179	*i* P	**Pg**		05 45 23.3	+0.2
URLA				*i* S	**Sb**		05 45 30.5	+0.5
URLA	**Izmir**	0.37	179	P	**Pg**		05 45 23.3	+0.2
URLA				S	**Sb**		05 45 30.5	+0.5
DKL	**Dikili**	0.42	36	*e*PG	**Pg**		05 45 23.6	-0.3
DKL	**Dikili**	0.42	36	*e*Pg	**Pg**		05 45 23.6	-0.3
ZEY	¯zmir	0.50	188	*i* P	**Pg**		05 45 25.2	-0.2
ZEY				*i* S	**Sb**		05 45 33.5	-0.1
CHOS	**Chios island**	0.55	231	*e*PG	**Pg**		05 45 26.3	0.0
CHOS				*e*SG	**Sb**		05 45 34.4	-0.6
CHOS	**Chios island**	0.55	231	P	**Pb**		05 45 26.7	-0.5
CHOS				S	**Sg**		05 45 34.0	+0.5
CHOS	**Chios island**	0.55	231	*e*Pg	**Pg**		05 45 26.3	0.0
CHOS	**Chios island**	0.55	231	P	**Pg**		05 45 26.7	-0.5
CHOS				S	**Sg**		05 45 34.0	+0.5
CHOS	**Chios island**	0.55	231	P	**Pb**		05 45 26.9	-0.2
CHOS				S	**Sg**		05 45 33.7	+0.2
CHOS				AML	AML		05 45 34.4	
	comp=N,1110μm,0.4s							
CHOS				AML	AML		05 45 35.4	
	comp=E,1933μm,0.2s							
PRK	**Paraskevi**	0.57	334	P	**Pb**		05 45 27.2	-0.3
PRK				S	**Sb**		05 45 35.4	-0.2
PRK	**Paraskevi**	0.57	334	P	**Pb**		05 45 27.2	-0.3
PRK				S	**Sg**		05 45 34.3	0.0
PRK	**Paraskevi**	0.57	334	P	**Pb**		05 45 27.3	-0.1
PRK				S	**Sg**		05 45 34.3	0.0
PRK				AML	AML		05 45 36.1	
	comp=E,1666μm,0.4s							
PRK				AML	AML		05 45 36.5	
	comp=N,1034μm,0.5s							
AYVA	**Ayvalik**	0.58	8	*i* P	**Pg**		05 45 27.0	+0.1
AYVA				*i* S	**Sn**		05 45 38.5	-0.6
AYVA	**Ayvalik**	0.58	8	P	**Pg**		05 45 27.0	+0.1
IZM	**Izmir**	0.62	122	*e*PG	**Pg**		05 45 27.5	-0.3
IZM	**Izmir**	0.62	122	*e*Pg	**Pg**		05 45 27.5	-0.3
DGB	¯zmir	0.72	161	*i* P	**Pg**		05 45 29.5	0.0
DGB				*i* S	**Sb**		05 45 39.5	-0.3
SIGR	**SIGRI**	0.75	310	*e*PG	**Pb**		05 45 30.3	-0.3
SIGR	**SIGRI**	0.75	310	P	**Pb**		05 45 30.3	-0.3
SIGR				S	**Sb**		05 45 40.5	-0.2
SIGR	**SIGRI**	0.75	310	P	**Pb**		05 45 30.3	-0.3
SIGR				S	**Sb**		05 45 40.5	-0.2
SIGR	**SIGRI**	0.75	310	P	**Pb**		05 45 30.9	+0.4
SIGR				S	**Sb**		05 45 41.5	+0.8
SIGR				AML	AML		05 45 44.2	
	comp=N,1266μm,0.6s							
SIGR				AML	AML		05 45 45.3	
	comp=E,945μm,0.4s							
AKS	**Akhisar**	0.97	81	*e*PG	**Pb**		05 45 34.2	-0.1
AKS				*e*SG	**Sb**		05 45 47.8	+0.7
AKS	**Akhisar**	0.97	81	*e*Pg	**Pb**		05 45 34.2	-0.1
AKS				*e*Sg	**Sb**		05 45 47.8	+0.7
SMG	**Samos**	1.04	169	P	**Pg**		05 45 35.7	0.0
SMG				S	**Sn**		05 45 50.4	-0.2
SMG	**Samos**	1.04	169	P	**Pg**		05 45 35.7	0.0
SMG				S	**Sn**		05 45 50.4	-0.2
SMG	**Samos**	1.04	169	P	**Pb**		05 45 34.7	-0.9
SMG				S	**Sn**		05 45 50.7	+0.1
SMG				AML	AML		05 45 51.4	
	comp=N,1486μm,0.4s							
SMG				AML	AML		05 45 54.1	
	comp=E,1227μm,0.3s							
EZN	**Ezine**	1.11	349	*e*PN	**Pb**		05 45 36.5	-0.2
EZN				*e*SN	**Sn**		05 45 52.5	+0.3
EZN	**Ezine**	1.11	349	P	**Pb**		05 45 36.6	-0.2
EZN				S	**Sn**		05 45 52.4	+0.2
EZN	**Ezine**	1.11	349	P	**Pb**		05 45 36.6	-0.2
EZN				*e*Sn	**Sn**		05 45 52.5	+0.3
GCAM	**G?zelcaml?**	1.15	154	*i* P	**Pb**		05 45 37.3	-0.1
GCAM				*i* S	**Sn**		05 45 53.4	+0.2
GCAM	**G?zelcaml?**	1.15	154	P	**Pb**		05 45 37.3	-0.1
GCAM				S	**Sn**		05 45 53.4	+0.2
BOZC	**Bozcaada**	1.18	339	*i* P	**Pg**		05 45 38.4	0.0
BOZC				*i* S	**Sn**		05 45 54.0	-0.1
BALY	**Balya**	1.28	38	*i* P	**Pn**		05 45 39.3	-0.2
BALY				*i* S	**Sg**		05 45 57.6	+0.6
BALY	**Balya**	1.28	38	P	**Pn**		05 45 39.3	-0.2
BALY				S	**Sg**		05 45 57.6	+0.6
AYDB	**Zeytinkoy-Aydi**	1.29	127	*e*PN	**Pn**		05 45 39.5	-0.1
AYDB	**Zeytinkoy-Aydi**	1.29	127	*e*Pn	**Pn**		05 45 39.5	-0.1
BALB	**Balikesir**	1.35	47	*e*PN	**Pg**		05 45 41.6	0.0
BALB	**Balikesir**	1.35	47	*e*Pn	**Pg**		05 45 41.6	0.0
GADA	**Gvkgeada**	1.55	340	*e*PN	**Pb**		05 45 44.3	0.0
GADA	**Gvkgeada**	1.55	340	P	**Pn**		05 45 43.1	0.0
GADA				S	**Sn**		05 46 02.5	-0.6
GADA	**Gvkgeada**	1.55	340	P	**Pn**		05 45 43.1	0.0
GADA	**Gvkgeada**	1.55	340	*e*Pn	**Pb**		05 45 44.3	0.0
GADA				S	**Sn**		05 46 02.5	-0.6
MANT	**Manisa**	1.56	98	*i* P	**Pn**		05 45 42.8	-0.6
MANT				*i* S	**Sn**		05 46 03.7	0.0
MANT	**Manisa**	1.56	98	P	**Pn**		05 45 42.8	-0.6
MANT				S	**Sn**		05 46 03.7	0.0
GONE	**Gonen-Balikesi**	1.56	33	*e*PN	**Pb**		05 45 44.1	-0.4
GONE	**Gonen-Balikesi**	1.56	33	*e*Pn	**Pb**		05 45 44.1	-0.4
LIA	**Limnos Island**	1.59	317	P	**Pb**		05 45 44.3	-0.7
LIA				S	**Sn**		05 46 03.0	-1.2
KULA	**Kula-Manisa**	1.64	97	*e*PN	**Pb**		05 45 45.2	-0.6
KULA	**Kula-Manisa**	1.64	97	P	**Pn**		05 45 44.8	+0.5
KULA				S	**Sg**		05 46 07.5	-0.8
KULA	**Kula-Manisa**	1.64	97	P	**Pn**		05 45 44.8	+0.5
KULA	**Kula-Manisa**	1.64	97	*e*Pn	**Pb**		05 45 45.2	-0.6
KULA				S	**Sg**		05 46 07.5	-0.8
LPK	**Lapseki**	1.64	5	*e*PN	**Pn**		05 45 44.8	+0.5
LPK	**Lapseki**	1.64	5	*e*Pn	**Pn**		05 45 44.8	+0.5
GELI	**Tayfur-Gelibol**	1.67	357	*e*PN	**Pn**		05 45 45.3	+0.7
GELI	**Tayfur-Gelibol**	1.67	357	*e*Pn	**Pn**		05 45 45.3	+0.7
DEMI	**Demirci**	1.69	79	*i* P	**Pb**		05 45 46.3	-0.4
DEMI				*i* S	**Sb**		05 46 08.5	+0.6
DEMI	**Demirci**	1.69	79	P	**Pb**		05 45 46.3	-0.4
DEMI				S	**Sb**		05 46 08.5	+0.6
KRBG	**Karabiga-Canak**	1.75	18	*e*PN	**Pn**		05 45 46.0	+0.3
KRBG	**Karabiga-Canak**	1.75	18	*e*Pn	**Pn**		05 45 46.0	+0.3
APE	**Apeiranthos**	1.86	207	P	**Pn**		05 45 48.0	+0.6
APE	**Apeiranthos**	1.86	207	P	**Pn**		05 45 48.0	+0.6
EDC	**Edincik**	1.89	31	*e*PN	**Pn**		05 45 48.3	+0.6
EDC	**Edincik**	1.89	31	*e*Pn	**Pn**		05 45 48.3	+0.6
SMTH	**Samothraki Isl**	1.92	335	P	**Pn**		05 45 48.2	+0.1
SMTH				S	**Sn**		05 46 11.7	-0.5
SMTH	**Samothraki

DGB	˜zmir	**0.70**	**163**	*i* P	**Pg**	**05 47 46.2**	**+0.1**
DGB				*i* S	**Sb**	**05 47 56.5**	**-0.1**
SIGR	**SIGRI**	**0.77**	**310**	*e*PG	**Pb**	**05 47 46.6**	**-1.7**
SIGR				*e*SG	**Sb**	**05 47 58.5**	**-0.4**
SIGR	**SIGRI**	**0.77**	**310**	*e*Pg	**Pb**	**05 47 46.6**	**-1.7**
SIGR	**SIGRI**	**0.77**	**310**	P	**Pb**	**05 47 47.5**	**-0.8**
SIGR				S	**Sb**	**05 47 58.4**	**-0.4**
SIGR	**SIGRI**	**0.77**	**310**	P	**Pb**	**05 47 47.5**	**-0.8**
SIGR				S	**Sb**	**05 47 58.4**	**-0.4**
SIGR				AML	AML	05 48 00.6	
	comp=N,1324µm,0.3s						
SIGR				AML	AML	05 48 00.9	
	comp=E,1182µm,0.3s						
AKS	**Akhisar**	**0.95**	**80**	*e*PG	**Pb**	**05 47 49.9**	**-1.3**
AKS	**Akhisar**	**0.95**	**80**	*e*Pg	**Pb**	**05 47 49.9**	**-1.3**
SMG	**Samos**	**1.02**	**170**	P	**Pb**	**05 47 52.4**	**-0.2**
SMG				S	**Sn**	**05 48 07.4**	**-0.3**
SMG	**Samos**	**1.02**	**170**	P	**Pb**	**05 47 52.4**	**-0.2**
SMG				S	**Sn**	**05 48 07.4**	**-0.3**
SMG				AML	AML	05 48 08.1	
	comp=N,1398µm,0.4s						
SMG				AML	AML	05 48 10.8	
	comp=E,1289µm,0.3s						
GCAM	**G?zelcaml?**	**1.13**	**154**	*i* P	**Pb**	**05 47 54.3**	**0.0**
GCAM				*i* S	**Sg**	**05 48 10.2**	**+1.3**
GCAM	**G?zelcaml?**	**1.13**	**154**	P	**Pb**	**05 47 54.3**	**0.0**
GCAM				S	**Sg**	**05 48 10.2**	**+1.3**
EZN	**Ezine**	**1.13**	**348**	*e*PN	**Pb**	**05 47 53.6**	**-0.7**
EZN				*e*SN	**Sg**	**05 48 09.8**	**+0.9**
EZN	**Ezine**	**1.13**	**348**	*e*Pn	**Pb**	**05 47 53.6**	**-0.7**
EZN				*e*Sn	**Sg**	**05 48 09.8**	**+0.9**
BOZC	**Bozcaada**	**1.20**	**339**	*i* P	**Pn**	**05 47 54.8**	**-0.9**
BOZC				*i* S	**Sb**	**05 48 10.9**	**-0.5**
BALY	**Balya**	**1.28**	**37**	*i* P	**Pn**	**05 47 56.1**	**-0.7**
BALY				*i* S	**Sg**	**05 48 14.6**	**+0.7**
BALY	**Balya**	**1.28**	**37**	P	**Pn**	**05 47 56.1**	**-0.7**
BALY				S	**Sg**	**05 48 14.6**	**+0.7**
BALB	**Balikesir**	**1.34**	**46**	*e*PN	**Pn**	**05 47 57.2**	**-0.4**
BALB				*e*SN	**Sb**	**05 48 15.6**	**+0.3**
BALB	**Balikesir**	**1.34**	**46**	*e*Pn	**Pn**	**05 47 57.2**	**-0.4**
BALB				*e*Sn	**Sb**	**05 48 15.6**	**+0.3**
MANT	**Manisa**	**1.54**	**98**	*i* P	**Pn**	**05 47 59.3**	**-1.2**
MANT				*i* S	**Sb**	**05 48 21.1**	**0.0**
MANT	**Manisa**	**1.54**	**98**	P	**Pn**	**05 47 59.3**	**-1.2**
MANT				S	**Sb**	**05 48 21.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.56**	**32**	*e*PN	**Pn**	**05 48 00.9**	**+0.3**
GONE	**Gonen-Balikesi**	**1.56**	**32**	*e*Pn	**Pn**	**05 48 00.9**	**+0.3**
GADA	**Gvkgeada**	**1.57**	**339**	*e*PN	**Pn**	**05 48 00.8**	**+0.1**
GADA	**Gvkgeada**	**1.57**	**339**	*e*Pn	**Pn**	**05 48 00.8**	**+0.1**
KULA	**Kula-Manisa**	**1.61**	**97**	*e*PN	**Pn**	**05 48 01.1**	**-0.3**
KULA	**Kula-Manisa**	**1.61**	**97**	*e*Pn	**Pn**	**05 48 01.1**	**-0.3**
LPK	**Lapseki**	**1.65**	**4**	*e*PN	**Pn**	**05 48 01.3**	**-0.6**
LPK	**Lapseki**	**1.65**	**4**	*e*Pn	**Pn**	**05 48 01.3**	**-0.6**
DEMI	**Demirci**	**1.67**	**78**	*i* P	**Pb**	**05 48 03.5**	**0.0**
DEMI				*i* S	**Sb**	**05 48 23.7**	**-1.1**
GELI	**Tayfur-Gelibol**	**1.68**	**356**	*e*PN	**Pn**	**05 48 02.5**	**+0.3**
GELI	**Tayfur-Gelibol**	**1.68**	**356**	*e*Pn	**Pn**	**05 48 02.5**	**+0.3**
BODT	**Bodrum**	**1.74**	**162**	*e*PN	**Pb**	**05 48 04.1**	**-0.8**
KRBG	**Karabiga-Canak**	**1.75**	**17**	*e*PN	**Pn**	**05 48 03.1**	**-0.1**
KRBG	**Karabiga-Canak**	**1.75**	**17**	*e*Pn	**Pn**	**05 48 03.1**	**-0.1**
EDC	**Edincik**	**1.89**	**30**	*e*PN	**Pn**	**05 48 05.6**	**+0.5**
EDC	**Edincik**	**1.89**	**30**	*e*Pn	**Pn**	**05 48 05.6**	**+0.5**
ERIK	**Erikli-Kesan**	**1.95**	**358**	*e*PN	**Pn**	**05 48 05.7**	**-0.2**
ERIK	**Erikli-Kesan**	**1.95**	**358**	*e*Pn	**Pn**	**05 48 05.7**	**-0.2**
RKY	**Sarkoy-Tekirda**	**2.01**	**12**	*e*PN	**Pn**	**05 48 07.2**	**+0.4**
RKY	**Sarkoy-Tekirda**	**2.01**	**12**	*e*Pn	**Pn**	**05 48 07.2**	**+0.4**
MRMT	**Marmara Adasi**	**2.03**	**22**	*e*PN	**Pn**	**05 48 07.2**	**+0.1**
MRMT	**Marmara Adasi**	**2.03**	**22**	*e*Pn	**Pn**	**05 48 07.2**	**+0.1**
KCTX	**Karacabey (Bur**	**2.05**	**40**	*e*PN	**Pn**	**05 48 07.7**	**+0.4**
KCTX	**Karacabey (Bur**	**2.05**	**40**	*e*Pn	**Pn**	**05 48 07.7**	**+0.4**
YER	**Yerkesik**	**2.06**	**140**	*e*PN	**Pn**	**05 48 07.7**	**+0.2**
YER	**Yerkesik**	**2.06**	**140**	*e*Pn	**Pn**	**05 48 07.7**	**+0.2**
ORLT	**Orhaneli**	**2.21**	**52**	*e*PN	**Pn**	**05 48 09.8**	**+0.3**
ORLT	**Orhaneli**	**2.21**	**52**	*e*Pn	**Pn**	**05 48 09.8**	**+0.3**
ALN	**Alexandroupoli**	**2.22**	**349**	*e*PN	**Pn**	**05 48 10.4**	**+0.8**
ALN	**Alexandroupoli**	**2.22**	**349**	*e*Pn	**Pn**	**05 48 10.4**	**+0.8**
TVSB	**Tavsanli**	**2.33**	**71**	*e*PN	**Pn**	**05 48 11.9**	**+0.7**
TVSB	**Tavsanli**	**2.33**	**71**	*e*Pn	**Pn**	**05 48 12.0**	**+0.7**
ARMT	**Armutlu**	**2.53**	**42**	*e*PN	**Pn**	**05 48 14.1**	**+0.2**
ARMT	**Armutlu**	**2.53**	**42**	*e*Pn	**Pn**	**05 48 14.1**	**+0.2**
CTKS	**Kestanelik-??a**	**2.90**	**29**	*e*PN	**Pn**	**05 48 19.8**	**+0.8**
CTKS	**Kestanelik-??a**	**2.90**	**29**	*e*Pn	**Pn**	**05 48 19.8**	**+0.8**
CTYL	**Yalikoy Yolu**	**3.04**	**24**	*e*PN	**Pn**	**05 48 21.4**	**+0.6**
CTYL	**Yalikoy Yolu**	**3.04**	**24**	*e*Pn	**Pn**	**05 48 21.4**	**+0.6**

*ISCJB **08** 05:48:13.5±0.4,51°.54N±0°.02×16°.12E±0°.02,h0km, mb3.7/1, Error ellipse: s-maj=3.2km s-min=2.0km az=13.2*
*CSEM **08** 05:48:15.3±0.2,51°.55N×16°.12E,h2km,ML3.4/9,Ms3.3, Error ellipse: s-maj=4.8km s-min=2.6km az=11.0*
*WAR **08** 05:48:16.3,51°.55N×16°.09E,h1km,Mw3.0*
*IDC **08** 05:48:16.1±0.6,51°.56N×15°.92E,h0km,mb3.6/1, mb1 3.6/9,mb1mx3.4/57,mbtmp3.5/9,ML3.3/8,Error ellipse: s-maj=13.7km s-min=6.6km az=105.0*
*BGR **08** 05:48:16.5±0.4,51°.52N×16°.09E,h1km,ML3.4/14,Error ellipse: s-maj=4.4km s-min=2.2km az=12.0*
*PRU **08** 05:48:16.5,51°.52N×16°.10E,h0km*
*VIE **08** 05:48:21.0±0.9,51°.19N×16°.00E,h0km,mb2.8/13, ML2.9/14,Ms3.3/1,Error ellipse: s-maj=6.5km s-min=5.1km az=130.0,Suspected Mining induced.*

ISC 08 05:48:13.4±0.6,51°.62N±0°.03×16°.13E±0°.02,h0km,n91,
σ1§40/175,3C-12D,Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.78**	**172**	*i* Pg	**Pb**	**05 48 29.8**	**-0.1**
KSP				*e*Sg	**Sg**	**05 48 39.3**	**+0.7**
KSP				*e*		05 48 43.0	
KSP	**Ksiaz**	**0.78**	**172**	*e*Pg	**Pb**	**05 48 29.9**	**-0.1**
KSP				*e*Sg	**Sg**	**05 48 39.4**	**+0.7**
KSP	**Ksiaz**	**0.78**	**172**	*i* Pg	**Pb**	**05 48 29.8**	**-0.1**
KSP				*e*Sg	**Sg**	**05 48 39.3**	**+0.7**
KSP	**Ksiaz**	**0.78**	**172**	*i* Pgd	**Pb**	**05 48 29.8**	**-0.1**
KSP				*e*Sg	**Sg**	**05 48 39.3**	**+0.7**
KSP				*e*		05 48 43.0	
UPC	**Upice**	**1.12**	**184**	⇓*e*PG	**Pb**	**05 48 35.8**	**+0.2**
UPC				*e*SG	**Sg**	**05 48 49.1**	**-0.1**
DPC	**Dobruska-Polom**	**1.28**	**174**	⇓*i*PG	**Pn**	**05 48 38.7**	**+0.1**
DPC				*e*SG	**Sg**	**05 48 54.0**	**-0.4**
	comp=Z,123nm,0.4s						
DPC	**Dobruska-Polom**	**1.28**	**174**	*e*Pg	**Pn**	**05 48 38.7**	**+0.1**
DPC				*e*Sg	**Sg**	**05 48 54.3**	**-0.1**
DPC	**Dobruska-Polom**	**1.28**	**174**	Pg	**Pn**	**05 48 38.7**	**+0.1**
DPC				Sg	**Sg**	**05 48 54.3**	**-0.1**
PVCC	**Panska Ves**	**1.47**	**223**	⇓*e*PG	**Pb**	**05 48 42.0**	**+0.3**
PVCC				*e*SG	**Sn**	**05 49 01.7**	**+0.6**
	comp=Z,635nm,0.3s						
BRG	**Berggiesshubel**	**1.56**	**242**	PN	**Pb**	**05 48 43.0**	**-0.3**
BRG				PG	**Pg**	**05 48 44.7**	**+1.3**
BRG				SG	**Sg**	**05 49 04.9**	**+1.2**
	277nm,0.4s						
BRG	**Berggiesshubel**	**1.56**	**242**	*e*Pn	**Pb**	**05 48 43.0**	**-0.3**
BRG				*e*Pg	**Pg**	**05 48 44.5**	**+1.1**
BRG				*e*Sg	**Sg**	**05 49 05.0**	**+1.3**
BRG	**Berggiesshubel**	**1.56**	**242**	Pn	**Pb**	**05 48 43.0**	**-0.3**
KRLC	**Kraliky**	**1.60**	**165**	⇓*e*PG	**Pb**	**05 48 43.8**	**-0.1**
KRLC				*e*SG	**Sn**	**05 49 04.5**	**+0.1**
FBE	**Freiberg**	**1.88**	**249**	*e*Pg	**Pg**	**05 48 50.0**	**+0.6**
FBE				*e*Sg	**Sg**	**05 49 14.7**	**+0.9**
FBE	**Freiberg**	**1.88**	**249**	Pg	**Pg**	**05 48 50.0**	**+0.6**
FBE				Sg	**Sg**	**05 49 14.7**	**+0.9**
GOPC	**GO Pecny, Ondr**	**1.91**	**207**	⇓*e*PN	**Pn**	**05 48 47.8**	**+0.6**
GOPC				*e*PG	**Pg**	**05 48 49.9**	**-0.1**
PRU	**Pruhonice**	**1.92**	**212**	⇓*e*PN	**Pn**	**05 48 47.9**	**+0.5**
PRU				*e*PG	**Pg**	**05 48 50.0**	**-0.2**
PRU				*e*SG	**Sb**	**05 49 13.8**	**0.0**
	comp=Z,123nm,0.3s						
CLL	**Collm**	**1.98**	**262**	*i* Pn	**Pn**	**05 48 48.9**	**+0.7**
CLL				*i* Pg	**Pg**	**05 48 51.9**	**+0.5**
CLL				*i*		05 48 55.5	
CLL				*e*Sg	**Sg**	**05 49 18.0**	**+1.0**
	comp=Z,101nm,0.5s						
CLL	**Collm**	**1.98**	**262**	*e*Pn	**Pn**	**05 48 48.9**	**+0.7**
CLL				*e*Sg	**Sg**	**05 49 18.1**	**+1.0**
CLL	**Collm**	**1.98**	**262**	Pn	**Pn**	**05 48 48.9**	**+0.7**
CLL				Sg	**Sg**	**05 49 18.1**	**+1.0**
RAC	**Raciborz**	**2.02**	**139**	*e*Pg	**Pg**	**05 48 53.4**	**+1.3**
RAC				*e*Sg	**Sg**	**05 49 19.0**	**+0.7**
MORC	**Moravsky Berou**	**2.05**	**154**	⇑*i*P	**Pn**	**05 48 50.3**	**+1.1**
MORC	**Moravsky Berou**	**2.05**	**154**	*e*Pn	**Pn**	**05 48 50.0**	**+0.8**
MORC				*e*Sg	**Sg**	**05 49 19.3**	**0.0**
MORC	**Moravsky Berou**	**2.05**	**154**	Pn	**Pn**	**05 48 50.0**	**+0.8**
MORC	**Moravsky Berou**	**2.05**	**154**	⇑*i*P	**Pn**	**05 48 50.3**	**+1.1**
MORC				S	**Sb**	**05 49 17.9**	**+0.3**
MORC				Sg	**Sg**	**05 49 19.3**	**0.0**
OKC	**Ostrava-Krasne**	**2.20**	**144**	⇓*e*PG	**Pg**	**05 48 56.2**	**+0.7**
OKC				*e*SG	**Sb**	**05 49 22.8**	**+1.1**
	comp=Z,110nm,0.5s						
OKC	**Ostrava-Krasne**	**2.20**	**144**	*e*Pn	**Pn**	**05 48 52.2**	**+1.0**
OKC				*e*Pg	**Pg**	**05 48 56.3**	**+0.8**
OKC				*e*Sg	**Sg**	**05 49 23.6**	**-0.3**
OKC	**Ostrava-Krasne**	**2.20**	**144**	Pn	**Pn**	**05 48 52.2**	**+1.0**
VRAC	**Vranov**	**2.33**	**173**	Pn	**Pn**	**05 48 54.4**	**+1.3**
	comp=Z,7.8nm,0.3s,baz=340,slow=14,SNR=21						
VRAC				Lg	Lg	05 49 27.2	
	comp=Z,19nm,0.3s,baz=250,slow=23,SNR=9.4						
VRAC	**Vranov**	**2.33**	**173**	⇓*i*P	**Pn**	**05 48 54.2**	**+1.1**
VRAC	**Vranov**	**2.33**	**173**	*e*Pn	**Pn**	**05 48 54.1**	**+1.0**
VRAC				S	**Sn**	**05 49 23.5**	**+1.1**
VRAC				*e*Sg	**Sb**	**05 49 26.8**	**+1.1**
TREC	**Trest**	**2.36**	**190**	⇓*e*PN	**Pn**	**05 48 54.7**	**+1.2**
TREC				*e*PG	**Pg**	**05 48 58.4**	**-0.3**
TREC				*e*SG	**Sb**	**05 49 27.8**	**+1.2**
WERD	**Werda**	**2.68**	**246**	*e*Pn	**Pn**	**05 48 59.2**	**+1.3**
WERD				*e*Pg	**Pg**	**05 49 05.4**	**+0.5**
WERD				*e*Sg	**Sg**	**05 49 38.9**	**-0.8**
WERD	**Werda**	**2.68**	**246**	Pn	**Pn**	**05 48 59.2**	**+1.3**
OJC	**Ojcow**	**2.71**	**120**	*e*Pn	**Pn**	**05 48 57.9**	**-0.3**
OJC				*e*Pg	**Pg**	**05 49 06.5**	**+1.1**
OJC				*e*Sg	**Sg**	**05 49 41.7**	**+1.2**
OJC	**Ojcow**	**2.71**	**120**	*e*Pn	**Pn**	**05 48 58.2**	**-0.1**
OJC				*e*Pg	**Pg**	**05 49 06.7**	**+1.3**
OJC				*e*Sg	**Sg**	**05 49 41.9**	**+1.4**
OJC	**Ojcow**	**2.71**	**120**	Pn	**Pn**	**05 48 58.2**	**-0.1**
OJC	**Ojcow**	**2.71**	**120**	*e*Pn	**Pn**	**05 48 57.9**	**-0.3**
OJC				*e*Pg	**Pg**	**05 49 06.5**	**+1.1**
OJC				*e*Sg	**Sg**	**05 49 41.7**	**+1.2**
NKC	**Novy Kostel**	**2.71**	**241**	⇓*e*PN	**Pn**	**05 48 59.6**	**+1.3**
NKC				*e*PG	**Pg**	**05 49 06.4**	**+1.0**
NKC				*e*SG	**Sg**	**05 49 41.4**	**+0.9**
	comp=Z,134nm,0.3s						
KHC	**Kasperske Hory**	**2.98**	**214**	⇓*e*PN	**Pn**	**05 49 02.7**	**+0.7**
KHC				*e*PG	**Pg**	**05 49 09.3**	**-1.2**
KHC				*e*SN	**Sn**	**05 49 38.4**	**0.0**
KHC				*e*SG	**Sg**	**05 49 47.9**	**-1.2**
	comp=Z,33nm,0.4s						
MOX	**Moxa**	**3.01**	**253**	*e*Pn	**Pn**	**05 49 03.2**	**+0.9**
MOX				*e*Pg	**Pg**	**05 49 11.8**	**+0.8**
MOX				*e*Sg	**Sg**	**05 49 50.6**	**+0.6**
MOX	**Moxa**	**3.01**	**253**	Pn	**Pn**	**05 49 03.2**	**+0.9**
MANZ	**Manzenberg**	**3.03**	**239**	*e*Pn	**Pn**	**05 49 04.1**	**+1.4**
MANZ				*e*Pg	**Pg**	**05 49 12.6**	**+1.1**
MANZ				*e*Sg	**Sg**	**05 49 49.9**	**-0.8**
MANZ	**Manzenberg**	**3.03**	**239**	Pn	**Pn**	**05 49 04.1**	**+1.4**
ROTZ	**Rotzenmuhle**	**3.11**	**235**	*e*Pn	**Pn**	**05 49 05.3**	**+1.6**
ROTZ				*e*Sg	**Sg**	**05 49 52.2**	**-1.1**
ROTZ	**Rotzenmuhle**	**3.11**	**235**	Pn	**Pn**	**05 49 05.3**	**+1.6**
ROTZ				Sg	**Sg**	**05 49 52.2**	**-1.1**
GEC2	**GERESS Array S**	**3.19**	**210**	*e*Pn	**Pn**	**05 49 06.5**	**+1.7**
GEC2				*e*Sg	**Sb**	**05 49 52.4**	**+2.1**
GEC2	**GERESS Array S**	**3.19**	**210**	Pn	**Pn**	**05 49 06.5**	**+1.7**
GERES	**GERESS Array B**	**3.19**	**210**	Pn	**Pn**	**05 49 06.1**	**+1.2**
	comp=Z,4.7nm,0.3s,baz=30,slow=13,SNR=73						
GERES				Pg	**Pb**	**05 49 11.8**	**+0.9**
	comp=Z,8.2nm,0.3s,baz=31,slow=16,SNR=37						
GERES				Lg	Lg	05 49 54.9	
	comp=Z,16nm,0.3s,baz=29,slow=28,SNR=16						
SMOL	**Smolenice**	**3.22**	**164**	*e*Sg	**Sg**	**05 49 57.2**	**+0.4**
SMOL	**Smolenice**	**3.22**	**164**	*e*SG	**Sg**	**05 49 57.2**	**+0.4**
WET	**Wettzell**	**3.24**	**221**	*e*Pn	**Pn**	**05 49 06.8**	**+1.3**
WET				*e*Sg	**Sg**	**05 49 56.0**	**-1.4**
WET	**Wettzell**	**3.24**	**221**	Pn	**Pn**	**05 49 06.8**	**+1.3**
WET				Sg	**Sg**	**05 49 56.0**	**-1.4**
LANS	**Liptovska Anna**	**3.27**	**138**	*e*Pg	**Pg**	**05 49 15.4**	**-0.6**
LANS				*e*Sg	**Sg**	**05 49 57.1**	**-1.2**
LANS	**Liptovska Anna**	**3.27**	**138**	*e*PG	**Pg**	**05 49 15.4**	**-0.6**
LANS				*e*SG	**Sg**	**05 49 57.1**	**-1.2**
NIE	**Niedzica**	**3.45**	**128**	*e*P	**Pg**	**05 49 20.0**	**+0.4**
NIE				*e*S	**Sg**	**05 50 03.4**	**-0.9**
NIE	**Niedzica**	**3.45**	**128**	*e*P	**Pg**	**05 49 20.0**	**+0.4**
NIE				*e*S	**Sg**	**05 50 03.4**	**-0.9**
BSD	**Bornholm Skovb**	**3.58**	**349**	*i* P	**Pn**	**05 49 11.4**	**+1.3**
BSD				*i* S	**Sn**	**05 49 52.1**	**-0.9**
BSD	**Bornholm Skovb**	**3.58**	**349**	*i* P	**Pn**	**05 49 11.4**	**+1.3**
BSD				*i* S	**Sn**	**05 49 52.1**	**-0.9**
VYHS	**Vyhne**	**3.58**	**150**	*e*Pg	**Pg**	**05 49 20.3**	**-1.7**
VYHS				*e*Sg	**Sg**	**05 50 08.0**	**-0.4**
VYHS	**Vyhne**	**3.58**	**150**	*e*PG	**Pg**	**05 49 20.3**	**-1.7**
VYHS				*e*SG	**Sg**	**05 50 08.0**	**-0.4**
VYHS				*e*LG	Lg	05 50 16.6	
CONA	**Conrad Observa**	**3.70**	**183**	Pn	**Pn**	**05 49 13.2**	**+1.3**
	comp=Z,5.1nm,0.4s						
CONA				Sg	**Sb**	**05 50 07.5**	**+2.4**
	comp=Z,57nm,0.7s						
STHS	**Stebnicka Huta**	**3.94**	**122**	*e*Pg	**Pg**	**05 49 30.9**	**+2.0**
STHS				*e*Sg	**Sg**	**05 50 21.9**	**+2.0**
STHS	**Stebnicka Huta**	**3.94**	**122**	*e*PG	**Pg**	**05 49 30.9**	**+2.0**
STHS				*e*SG	**Sg**	**05 50 21.9**	**+2.0**
STHS				*e*LG	Lg	05 50 29.4	
MOA	**Molln**	**3.96**	**198**	Pn	**Pn**	**05 49 16.8**	**+1.3**
	comp=Z,21nm,0.4s						
MOA				Sg	**Sg**	**05 50 18.9**	**-1.8**
	comp=Z,2.4nm,0.2s						
KECS	**Kecovo**	**4.21**	**137**	*e*Pg	**Pg**	**05 49 34.5**	**+0.4**
KECS				*e*Sg	**Sg**	**05 50 26.9**	**-1.7**
KECS	**Kecovo**	**4.21**	**137**	*e*PG	**Pg**	**05 49 34.5**	**+0.4**
KECS				*e*SG	**Sg**	**05 50 26.9**	**-1.7**
KECS				*e*LG	Lg	05 50 44.6	
CRVS	**Cervenica-Dubn**	**4.37**	**126**	*e*Pg	**Pg**	**05 49 39.0**	**+1.9**
CRVS	**Cervenica-Dubn**	**4.37**	**126**	*e*PG	**Pg**	**05 49 39.0**	**+1.9**
ARSA	**Arzberg**	**4.39**	**185**	Pn	**Pn**	**05 49 23.8**	**+2.4**
	comp=Z,3.9nm,0.3s						
ARSA				Sg	**Sg**	**05 50 34.3**	**-0.1**
	comp=Z,40nm,0.9s						
KOLS	**Kolonicke sedl**	**4.77**	**122**	*e*Pg	**Pg**	**05 49 47.1**	**+2.3**
KOLS				*e*Sg	**Sg**	**05 50 45.9**	**-0.6**
KOLS	**Kolonicke sedl**	**4.77**	**122**	*e*PG	**Pg**	**05 49 47.1**	**+2.3**
KOLS				*e*SG	**Sg**	**05 50 45.9**	**-0.6**
KOLS				*e*LG	Lg	05 51 04.9	
KBA	**Koelnbreinsper**	**4.90**	**203**	Pn	**Pn**	**05 49 30.2**	**+1.8**
	comp=Z,13nm,0.4s						
KBA				Sg	**Sg**	**05 50 47.2**	**-3.5**
	comp=Z,12nm,0.4s						
SOKA	**Soboth**	**5.00**	**189**	Pn	**Pn**	**05 49 32.1**	**+2.3**
	comp=Z,1.0nm,0.2s						
SOKA				Sg	**Sg**	**05 50 51.1**	**-2.8**
	comp=Z,3.8nm,0.3s						
WATA	**Walderalm**	**5.21**	**216**	Pn	**Pn**	**05 49 34.7**	**+1.9**
	comp=Z,4.9nm,0.3s						
WATA				Sg	**Sg**	**05 51 02.0**	**+1.1**
	comp=Z,2.1nm,0.2s						
OBKA	**Obir**	**5.22**	**192**	Sg	**Sg**	**05 50 59.9**	**-1.1**
	comp=Z,10.0nm,0.6s						
WTTA	**Wattenberg**	**5.25**	**216**	Pn	**Pn**	**05 49 35.4**	**+2.1**
	comp=Z,1.2nm,0.2s						
WTTA				Sg	**Sg**	**05 51 01.7**	**-0.4**
	comp=Z,8.8nm,0.4s						
MYKA	**Terra Mystica**	**5.25**	**199**	Pn	**Pn**	**05 49 34.7**	**+1.4**
	comp=Z,0.9nm,0.2s						
MYKA				Sg	**Sg**	**05 50 59.7**	**-2.4**
	comp=Z,9.4nm,0.4s						
MOTA	**Moosalm**	**5.39**	**219**	Pn	**Pn**	**05 49 37.9**	**+2.7**
	comp=Z,1.9nm,0.2s						
MOTA				Sg	**Sg**	**05 51 06.7**	**+0.3**
	comp=Z,3.9nm,0.3s						
ABTA	**Abfaltersbach**	**5.42**	**207**	Pn	**Pn**	**05 49 37.9**	**+2.3**
	comp=Z,1.5nm,0.2s						
ABTA				Sg	**Sg**	**05 51 04.1**	**-3.4**
	comp=Z,5.0nm,0.3s						
FETA	**Feichten**	**5.80**	**220**	Sg	**Sg**	**05 51 18.8**	**-0.9**
	comp=Z,4.9nm,0.4s						
DAVOX	**Davos/Dischmat**	**6.34**	**223**	Pn	**Pn**	**05 49 50.3**	**+2.0**
	comp=Z,0.6nm,0.3s,baz=34,slow=17,SNR=4.2						
DAVOX				Lg	Lg	05 51 34.0	
	comp=Z,1.3nm,0.3s,baz=246,slow=19,SNR=3.0						
DRGR		**6.47**	**136**	⇑*i*P	**Pn**	**05 49 52.1**	**+2.1**
BURAR	**Bucovina Array**	**7.13**	**121**	⇓*i*P	**Pn**	**05 50 01.0**	**+1.9**
AKASG	**Malin Array Be**	**8.29**	**91**	Pn	**Pn**	**05 50 16.6**	**+1.8**
	comp=Z,2.2nm,0.3s,baz=281,slow=12,SNR=8.1						
AKASG				Sn	**Sn**	**05 51 46.3**	**-2.7**
	comp=Z,0.8nm,0.3s,baz=268,slow=24,SNR=3.2						
AKASG				Lg	Lg	05 52 54.7	
	comp=Z,0.2nm,0.3s,baz=271,slow=30,SNR=4.0						
HFS	**Hagfors**	**8.64**	**352**	Pn	**Pn**	**05 50 20.8**	**+1.2**
	comp=Z,0.2nm,0.3s,baz=167,slow=14,SNR=6.6						
HFS				Sn	**Sn**	**05 51 54.4**	**-3.3**
	comp=Z,0.2nm,0.3s,baz=177,slow=27,SNR=3.1						
HFS				Lg	Lg	05 52 58.5	
	comp=Z,0.3nm,0.3s,baz=163,slow=30,SNR=4.3						
NOA	**NORSAR Array B**	**9.83**	**346**	Pn	**Pn**	**05 50 36.4**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=164,slow=12,SNR=3.9						
NOA				Lg	Lg	05 53 36.0	
	comp=Z,0.3nm,0.3s,baz=211,slow=17,SNR=4.2						
FINES	**FINESS Array B**	**11.26**	**25**	Pn	**Pn**	**05 50 55.4**	**0.0**
	comp=Z,0.3nm,0.3s,baz=206,slow=13,SNR=9.5						
FINES				Sn	**Sn**	**05 52 55.0**	**-6.8**
	comp=Z,0.6nm,0.3s,baz=203,slow=21,SNR=6.7						
FINES				Lg	Lg	05 54 19.2	
	comp=Z,0.1nm,0.3s,baz=212,slow=26,SNR=2.9						
EKA	**Eskdalemuir Ar**	**12.07**	**295**	Pn	**Pn**	**05 51 04.2**	**-2.3**
	baz=101,slow=14,SNR=3.5						
ARCES	**ARCESS Array B**	**18.51**	**10**	Pn	**P**	**05 52 28.7**	**-2.3**
	comp=Z,0.2nm,0.3s,baz=198,slow=11,SNR=7.6						
YKA	**Yellowknife Ar**	**59.76**	**336**	P	**P**	**05 58 21.6**	**+2.1**
	comp=Z,0.5nm,0.6s,baz=32,slow=7.0,SNR=4.1						

*BJI **08** 05:53:01.5,0°.80N×26°.13W,h9km,mb5.5/2,mB5.6/26, Ms5.6/19,Ms7 5.3/21*
*ISCJB **08** 05:53:01.7±0.1,0°.98N±0°.03×26°.43W±0°.02,h10km, mb5.2/325,MS5.2/198,Error ellipse: s-maj=4.5km s-min=2.1km az=167.7*
*IDC **08** 05:53:02.0±0.4,1°.01N×26°.45W,h0km,mb4.9/38, mb1 5.0/38,mb1mx4.9/47,mbtmp4.9/38,MS5.1/25, Ms1 5.1/25,ms1mx5.0/30,Error ellipse: s-maj=14.1km s-min=10.3km az=143.0*
*MOS **08** 05:53:02.3±1.0,1°.02N×26°.40W,h10km,mb5.5/115, MS5.1/53,Error ellipse: s-maj=7.3km s-min=4.1km az=59.8*
*NEIC **08** 05:53:03.8±0.1,0°.96N×26°.42W,h10km,mb5.4/218, MS5.2/148,Error ellipse: s-maj=3.9km s-min=2.3km az=172.0*
*GCMT **08** 05:53:03.8±0.1,1°.07N×26°.40W,h12km,MW5.6/131, Moment Tensor Solution. s104,c192; s131,c344; Duration: 1§5 Moment tensor: Scale 10^17Nm; Mrr-0.31±.03; Mθθ0.67±.03; Mϕϕ-0.36±.03; Mrθ0.72±.08; Mθϕ-3.06±.03; Mϕr0.06±.09; Best double couple: M03.18900×10^17 NP1:ϕ§266.00

comp=Z,7µm,20.0s
SIV San Ignacio 38.09 242 P **P 06 00 23.4 +0.8**
comp=Z,4.2nm,1.1s,baz=80,slow=7.7,SNR=6.6
ANWB Willy Bob 38.52 298 PFAKE 06 00 40.0 +14
ANWB LR LR
comp=Z,721nm,19.0s
H07N1 FLORES T-PHASE 38.84 354 T T 06 40 23.4
SNR=72
MORF Marmelete 39.77 22 *e*P **P 06 00 35.9 -0.5**
MORF AMb AMB 06 00 40.7
comp=Z,111nm,1.0s
MORF Marmelete 39.77 22 *e*P P 06 00 40.0 +3.6
comp=Z,62nm,1.5s
MORF Marmelete 39.77 22 *e*PP PP 06 02 22.7 +15
MORF *e*S S 06 06 15.8 -25
MORF Marmelete 39.77 22 *e*P **P 06 00 35.9 -0.5**
PTEO Sao Teotonio 39.95 22 *e*P **P 06 00 40.1 +2.2**
comp=Z,140nm,1.7s
PTEO Sao Teotonio 39.95 22 *e*PP PP 06 02 27.1 +17
PBDV Barranco-do-Ve 39.99 23 *e*P P 06 00 43.8 +5.5
comp=Z,68nm,1.9s
PBDV Barranco-do-Ve 39.99 23 *e*PP PP 06 02 19.2 +8.9
PBDV *e*S S 06 06 52.8 +8.9
H09W1 TRISTAN DA CUN 40.01 162 T T 06 43 31.0
SNR=15
CPUP Villa Florida 40.26 225 P **P 06 00 41.7 +1.1**
comp=Z,4.5nm,0.9s,baz=55,slow=8.8,SNR=8.8
CPUP LR LR 06 17 06.0
comp=Z,10µm,18.0s,baz=62,slow=36
CPUP Villa Florida 40.26 225 *e*P **P 06 00 42.1 +1.5**
PCVE Castro Verde 40.29 23 *e*P **P 06 00 41.7 +1.0**
comp=Z,104nm,1.5s
PCVE Castro Verde 40.29 23 *e*PP PP 06 02 23.6 +10
PCVE *e*S S 06 06 58.5 +10
MESJ Messejana 40.40 22 *e*P **P 06 00 41.0 -0.5**
MESJ AMb AMB 06 00 45.3
comp=Z,80nm,1.6s
MESJ *e*S **S 06 06 50.6 +0.7**
MESJ Messejana 40.40 22 *e*P P 06 00 46.1 +4.5
comp=Z,37nm,1.3s
MESJ Messejana 40.40 22 *e*PP PP 06 02 24.8 +10
MESJ Messejana 40.40 22 *e*P **P 06 00 41.1 -0.5**
MESJ *e*S **S 06 06 50.6 +0.7**
PNCL Nicolau / Gran 40.52 22 *e*P **P 06 00 43.4 +0.8**
comp=Z,47nm,1.5s
PNCL Nicolau / Gran 40.52 22 *e*PP PP 06 02 31.5 +15
PNCL *e*S S 06 06 59.4 +7.7
PBEJ Beja 40.70 23 *e*P **P 06 00 44.7 +0.6**
comp=Z,73nm,1.6s
PBEJ Beja 40.70 23 *e*PP PP 06 02 29.5 +12
LIS Lisbon 40.83 21 *e*P **P 06 00 44.8 -0.3**
LIS AMb AMB 06 00 51.1
comp=Z,123nm,2.6s
LIS *e*S **S 06 06 56.9 +0.6**
LIS Lisbon 40.83 21 *e*P **P 06 00 44.8 -0.3**
LIS *e*S **S 06 06 56.9 +0.6**
PMST Lisbon--Monsan 40.84 21 *e*P P 06 00 54.7 +10
comp=Z,140nm,1.7s
PMST Lisbon--Monsan 40.84 21 *e*PP PP 06 02 36.3 +17
PMAFR Mafra 41.00 21 *e*P **P 06 00 46.7 +0.2**
comp=Z,127nm,1.5s
PMAFR Mafra 41.00 21 *e*PP PP 06 02 33.9 +13
PMAFR *e*S S 06 07 05.4 +6.6
EVO Evora 41.09 22 *e*P P 06 00 52.1 +4.9
comp=Z,39nm,1.1s
EVO Evora 41.09 22 *e*PP PP 06 02 32.5 +10
PBAR Barrancos 41.15 23 *e*P **P 06 00 47.9 +0.1**
comp=Z,102nm,1.4s
PBAR Barrancos 41.15 23 *e*PP PP 06 02 32.1 +9.2
PBAR *e*S **S 06 06 57.3 -3.8**
PESTR Estremoz 41.54 22 *e*P **P 06 00 51.3 +0.3**
comp=Z,56nm,1.7s
PESTR Estremoz 41.54 22 *e*PP PP 06 02 38.3 +11
PESTR *e*S S 06 07 15.7 +8.8
PTOM Tomar 41.90 21 *e*P P 06 00 56.9 +3.0
comp=Z,98nm,1.4s
PMRV Marv??o 42.10 22 *e*P **P 06 00 55.8 +0.2**
comp=Z,126nm,1.4s
PMRV Marv??o 42.10 22 *e*PP PP 06 02 43.2 +10
PMRV *e*S S 06 07 34.7 +19
PMRV *e*LQ LQ 06 10 43.2
PMRV *e*LR LR 06 12 47.4
comp=Z,2µm,20.0s
PCAS Casmilo, Conde 42.25 21 *e*P P 06 01 02.4 +5.6
comp=Z,67nm,2.0s
PCAS Casmilo, Conde 42.25 21 *e*PP PP 06 02 45.7 +11
PCAS *e*S **S 06 07 22.3 +5.0**
HUMP Col San Antoni 42.31 296 *e*P **P 06 00 58.6 +1.0**
comp=Z,172nm,1.9s
CBYP Canovanas 42.36 296 *e*P **P 06 00 59.0 +0.9**
comp=Z,80nm,1.4s
PCBR Castelo Branco 42.43 22 *e*P **P 06 00 59.1 +0.9**
comp=Z,44nm,2.1s
SJG San Juan 42.57 296 PFAKE 06 01 10.0 +10
SJG LR LR
comp=Z,894nm,22.0s
MTE Manteigas 42.90 21 *e*P P 06 01 07.4 +5.3
comp=Z,49nm,0.6s
MTE Manteigas 42.90 21 *e*PP PP 06 02 50.8 +9.0
MTE *e*S **S 06 07 22.4 -4.6**
MTE *e*LQ LQ 06 10 55.6
MTE *e*LR LR 06 13 03.3
comp=Z,2µm,20.0s
MTE Manteigas 42.90 21 *e*P **P 06 01 02.2 +0.1**
comp=Z,28nm,0.8s
MTE LR LR
comp=Z,2µm,22.0s
CELP Cerrillos 42.95 296 *e*P **P 06 01 03.3 +0.5**
PVIS Viseu 43.05 21 *e*P **P 06 01 03.7 +0.4**
comp=Z,52nm,1.4s
PAB San Pablo 43.42 25 *e*P **P 06 01 07.1 +0.7**
PAB pmax pmax
comp=Z,38nm,1.2s
PAB MLR MLR
comp=Z,1µm,22.0s
PAB San Pablo 43.42 25 *e*P **P 06 01 07.1 +0.7**
comp=Z,38nm,1.2s
PAB LR LR
comp=Z,1µm,22.0s
POLO Lamas de Olo 43.67 20 *e*P **P 06 01 10.9 +2.5**
comp=Z,24nm,3.0s
POLO *e*S **S 06 07 37.8 -0.5**
ESDC Sonseca Array 43.69 25 P **P 06 01 08.5 -0.1**
comp=Z,18nm,0.9s,baz=219,slow=8.7,SNR=36
ESDC LR LR 06 18 49.7
comp=Z,872nm,19.6s,baz=200,slow=36
ESLA Sonseca Array 43.69 25 *e*P **P 06 01 09.2 +0.6**
comp=Z,47nm,1.2s
ES19 SONSECA Array 43.74 25 *e*P **P 06 01 08.2 -0.7**
MVO Moncorvo 43.76 21 *e*P **P 06 01 09.7 +0.7**
comp=Z,55nm,1.6s
MVO Moncorvo 43.76 21 *e*PP PP 06 03 01.3 +10
MVO *e*S **S 06 07 42.3 +2.7**
MVO *e*LQ LQ 06 11 12.1
MVO *e*LR LR 06 13 30.3
comp=Z,2µm,20.0s
PCAB Cabril 43.89 20 *e*P **P 06 01 10.4 +0.4**
comp=Z,82nm,1.3s
PGAV Gavieira, Arco 44.03 20 *e*S **S 06 07 50.0 +6.4**
PGAV *e*LQ LQ 06 10 49.8
PGAV *e*LR LR 06 13 37.2
comp=Z,2µm,20.0s
PBRG Braganca 44.42 21 *e*P P 06 01 19.8 +5.5
comp=Z,54nm,1.3s
PBRG Braganca 44.42 21 *e*PP PP 06 03 08.2 +10
LPAZ La Paz 44.55 246 P **P 06 01 16.5 +0.1**
comp=Z,12nm,1.2s,baz=50,slow=7.6,SNR=17
LPAZ LR LR 06 19 15.9
comp=Z,5µm,19.8s,baz=70,slow=35
LPAZ La Paz 44.55 246 *e*P **P 06 01 16.4 +0.1**
LPAZ pmax pmax
comp=Z,113nm,1.9s
LPAZ La Paz 44.55 246 *e*P **P 06 01 16.4 0.0**
comp=Z,113nm,1.9s
SDV Santo Domingo 44.70 282 *e*P **P 06 01 17.4 +0.3**
comp=Z,43nm,1.3s
SDV LR LR
comp=Z,1µm,19.0s
HJA Humahuaca 44.84 235 *e*P **P 06 01 16.1 -2.3**
ABA Alger-Bouzarea 44.93 34 P P 06 01 10.3 -8.1
AZAP Zapla 45.03 234‖ *e*P **P 06 01 18.6 -1.1**
AHML Horco Molle 46.48 231 *e*P **P 06 01 31.2 +0.3**
FSA Cafayete 46.65 232 *e*P **P 06 01 30.6 -1.8**
CBRI Barrientos, No 46.68 280 *e*P **P 06 01 32.9 0.0**
GRMC Gramalote, San 46.69 280 *e*P **P 06 01 34.0 +1.1**

RUSC La Rusia 46.80 277 *e*P P 06 01 37.9 +3.8
BARC Barichara 46.96 278 *e*P **P 06 01 34.0 -1.1**
CHIC Chingaza 47.37 275 *e*P **P 06 01 35.7 -2.8**
SDDR Presa de Saban 47.48 295 PFAKE 06 01 50.0 +11
SDDR LR LR
comp=Z,804nm,19.0s
LVC Limon Verde 47.50 238 *e*P **P 06 01 40.4 +1.1**
comp=Z,35nm,1.5s
LVC LR LR
comp=Z,2µm,19.0s
BRRC Barranca, Sant 47.53 279 *e*P **P 06 01 35.7 -3.6**
TSUM Tsumeb 47.60 117 P **P 06 01 41.1 +1.3**
comp=Z,12nm,0.9s,baz=296,slow=8.4,SNR=17
TSUM Tsumeb 47.60 117 *e*P **P 06 01 40.3 +0.4**
comp=Z,34nm,1.1s
TSUM LR LR
comp=Z,2µm,20.0s
CYA Choya 47.67 229 *e*P **P 06 01 38.3 -1.9**
BBSR BB Station 47.72 315 PFAKE 06 01 50.0 +10
BBSR LR LR
comp=Z,1µm,21.0s
ATE Arette 47.89 25 *e*P **P 06 01 41.7 +0.1**
ROSC El Rosal 47.97 276 P **P 06 01 43.2 +0.1**
comp=Z,8.7nm,1.0s,baz=90,slow=5.1,SNR=15
ROSC El Rosal 47.97 276 *e*P **P 06 01 44.3 +1.2**
comp=Z,25nm,1.0s
KEST Kesra 48.01 40 P **P 06 01 43.0 +0.3**
comp=Z,19nm,0.7s,baz=110,slow=4.3,SNR=18
KEST PP PP 06 03 42.7 +7.8
comp=Z,13nm,0.9s,baz=338,slow=19,SNR=3.9
KEST LR LR 06 23 09.0
comp=Z,7µm,18.1s,baz=184,slow=38
KEST Kesra 48.01 40 *e*P **P 06 01 43.2 +0.5**
comp=Z,52nm,1.1s
KEST PP PP 06 03 42.7 +7.8
REYF Montagne du Re 48.01 26 *e*P **P 06 01 41.9 -0.7**
GRTK Grand Turk 48.12 298 PFAKE 06 02 00.0 +16
GRTK LR LR
comp=Z,666nm,19.0s
TCA Tanti 48.34 225 *e*P **P 06 01 42.4 -3.1**
MELF Melles 48.36 27 *e*P **P 06 01 46.1 +0.8**
PRAC Prado 48.48 274 *e*P **P 06 01 46.6 -2.0**
PRAC Prado 48.48 274 *e*P **P 06 01 46.5 -0.2**
comp=Z,119nm,1.9s
NORC Norcasia 48.55 277 *e*P **P 06 01 44.6 -2.6**
VALF Valcebollere 48.57 28 *e*P **P 06 01 47.3 +0.2**
HELC Santa Helena 49.25 277 *e*P **P 06 01 54.2 +1.2**
HELC Santa Helena 49.25 277 *e*P **P 06 01 51.7 -1.3**
comp=Z,117nm,1.7s
MTLF Montolieu 49.39 27 *e*P **P 06 01 53.2 0.0**
MTLF pmax pmax
comp=Z,36nm,1.4s
MOTC Monteria, Cord 49.62 281 *e*P **P 06 01 55.3 -0.1**
ACHE Chepes 49.73 227‖ *e*P **P 06 01 52.2 -4.0**
DBBC Daniba 49.99 278 *e*P **P 06 01 54.2 -4.1**
LFF La Frestale 50.00 25 *e*P **P 06 01 58.6 +0.9**
LFF pmax pmax
comp=Z,48nm,1.1s
VSL Villasalto 50.41 36 *e*P **P 06 02 00.9 -0.1**
comp=Z,40nm,1.2s
VSL LR LR
comp=Z,3µm,19.0s
CAF Calviac 50.56 26 *e*P **P 06 02 02.6 +0.5**
CAF pmax pmax
comp=Z,26nm,0.9s
TRQA Tornquist 50.76 216 *e*P **P 06 02 02.8 -0.8**
comp=Z,64nm,1.7s
TRQA LR LR
comp=Z,2µm,19.0s
MFF Saint Martin d 50.99 23 *e*P **P 06 02 06.7 +1.5**
MFF pmax pmax
comp=Z,53nm,1.1s
GTBY Guantanamo Bay 51.20 295 PFAKE 06 02 20.0 +13
GTBY LR LR
comp=Z,805nm,21.0s
LBL Lubilhac 51.33 27 *e*P **P 06 02 08.9 +1.0**
WDD Wied Dalam 51.49 43 PFAKE 06 02 20.0 +11
WDD LR LR
comp=Z,12µm,20.0s
CLTB Caltabellotta 51.60 40 *e*P **P 06 02 10.3 +0.3**
comp=Z,213nm,1.9s
CLTB LR LR
comp=Z,2µm,19.0s
PYM Petit Puy Mans 51.62 26 *e*P **P 06 02 10.3 +0.2**
NNA Nana 51.66 254 *e*P **P 06 02 10.4 -0.4**
NNA pmax pmax
comp=Z,115nm,1.7s
NNA MLR MLR
comp=Z,749nm,22.0s
NNA Nana 51.66 254 *e*P **P 06 02 10.4 -0.4**
comp=Z,115nm,1.7s
NNA LR LR
comp=Z,749nm,22.0s
VIVF Saint-Julien-l 51.69 28 *e*P **P 06 02 11.2 +0.6**
VIVF pmax pmax
comp=Z,24nm,1.0s
TCF Toulx Ste Croi 51.70 25 *e*P **P 06 02 11.2 +0.6**
TCF pmax pmax
comp=Z,43nm,1.4s
LCO Las Campanas 51.71 231 PFAKE 06 02 20.0 +8.8
LCO LR LR
comp=Z,6µm,20.0s
AGO Saint Agoulin 51.91 26 *e*P **P 06 02 12.7 +0.6**
SSB Saint Sauveur 51.95 27 *e*P **P 06 02 13.1 +0.6**
SSB pmax pmax
comp=Z,17nm,1.0s
SSB MLR MLR
comp=Z,1µm,20.0s
SSB Saint Sauveur 51.95 27 *e*P **P 06 02 13.1 +0.6**
comp=Z,17nm,1.0s
SSB LR LR
comp=Z,1µm,20.0s
RTLS Leoncito 51.98 227 *e*P **P 06 02 13.3 +0.1**
OTAV Otavalo 52.01 270 *e*P **P 06 02 14.3 +0.3**
comp=Z,59nm,1.7s
OTAV LR LR
comp=Z,918nm,21.0s
PLDF La Plantade 52.06 26 *e*P **P 06 02 13.3 0.0**
REVF Revere 52.20 31 *e*P **P 06 02 15.3 +1.0**
MVIF Mont Vial 52.20 30 *e*P **P 06 02 15.5 +1.0**
AUSP Uspallata 52.26 227 *e*P **P 06 02 14.6 -0.7**
LUCF Luceram 52.29 31 *e*P **P 06 02 15.5 +0.4**
AAGR Agrelo 52.30 226 *e*P **P 06 02 17.0 +1.6**
VAE Valguarnera 52.33 41 P **P 06 02 16.2 +0.8**
comp=Z,12nm,0.4s,baz=245,slow=4.1,SNR=7.7
AVF Avril sur Loir 52.58 25 *e*P **P 06 02 17.7 +0.6**
AVF pmax pmax
comp=Z,34nm,1.5s
VAL Valentia 52.65 13 *e*P **P 06 02 12.9 -4.5**
VAL Valentia 52.65 13‖ *e*S S 06 09 54.2 +9.4
LDF La Druitiere 52.65 22 *e*P **P 06 02 17.9 +0.4**
LDF pmax pmax
comp=Z,66nm,1.4s
BNI Bardonecchia 52.80 29 PFAKE 06 02 30.0 +11
BNI LR LR
comp=Z,2µm,20.0s
SSF Saint Saulge 52.86 25 *e*P **P 06 02 20.8 +1.7**
SSF pmax pmax
comp=Z,141nm,2.1s
MTDJ Mount Denham 53.01 292 PFAKE 06 02 30.0 +9.2
MTDJ LR LR
comp=Z,832nm,20.0s
LOR Lormes 53.17 25 *e*P **P 06 02 22.2 +0.7**
LOR pmax pmax
comp=Z,38nm,1.0s
CEL Celeste 53.73 41 *e*P **P 06 02 26.3 +0.5**
comp=Z,39nm,1.0s
CEL LR LR
comp=Z,7µm,19.0s
SENIN Lac Senin/Sane 54.05 28 *e*P **P 06 02 28.6 +0.4**
comp=Z,26nm,0.8s
VLC Villacollemand 54.06 32 PFAKE 06 02 40.0 +12
VLC LR LR
comp=Z,839nm,22.0s
LOMF Lomont 54.55 27 *e*P **P 06 02 31.9 +0.2**
AQU L'Aquila 54.58 36 *e*P **P 06 02 32.7 +0.8**
AQU pmax pmax
comp=Z,43nm,0.8s
AQU MLR MLR
comp=Z,2µm,19.0s
AQU L'Aquila 54.58 36 *e*P **P 06 02 32.7 +0.8**
comp=Z,43nm,0.8s
AQU LR LR
comp=Z,2µm,19.0s
CUC Castrocucco 54.65 39 *e*P **P 06 02 32.0 -0.4**
comp=Z,13nm,0.8s
CUC LR LR
comp=Z,2µm,19.0s
TIP Timpagrande 54.80 41 *e*P **P 06 02 32.9 -0.7**
comp=Z,21nm,0.9s
TIP LR LR
comp=Z,6µm,21.0s
THEF They Montfort 54.83 26 *e*P **P 06 02 33.3 -0.3**
MOF Molkenrain 55.06 27 *e*P **P 06 02 35.0 -0.4**
TUE Stuetta 55.12 30 *e*P **P 06 02 35.3 -0.6**
comp=Z,18nm,0.8s
TUE LR LR
comp=Z,1µm,19.0s
ECH Echery 55.34 27 *e*P **P 06 02 36.5 -0.8**
SUR Sutherland 55.54 131 P **P 06 02 39.3 +0.2**
comp=Z,1.0nm,0.9s,baz=294,slow=9.2,SNR=9.1
SUR Sutherland 55.54 131 P **P 06 02 39.3 +0.2**
SUR LR LR
comp=Z,3µm,20.0s
WLS Welschbruch 55.58 27 *e*P **P 06 02 38.8 -0.2**
FUORN Ofenpass-Fuorn 55.67 30 *e*P **P 06 02 40.0 +0.1**
comp=Z,23nm,0.9s
DOU Dourbes 55.68 24 P **P 06 02 41.0 +1.3**
DAVA Damuels 55.95 29 *i* P **P 06 02 41.3 -0.5**
comp=Z,36nm,0.9s,SNR=9.2
BFO Black Forest 55.96 27 *e*P **P 06 02 41.7 0.0**
BFO pmax pmax
comp=Z,30nm,1.2s
BFO MLR MLR
comp=Z,1µm,19.0s
BFO Black Forest 55.96 27 *e*P **P 06 02 41.7 0.0**
comp=Z,30nm,1.2s
BFO LR LR
comp=Z,1µm,19.0s
WLF Walferdange 55.99 25 PFAKE 06 02 50.0 +8.1
WLF LR LR
comp=Z,3µm,19.0s
LMN Caledonia Moun 56.00 328 *e*P **P 06 02 42.9 +0.8**
comp=Z,57nm,1.3s
FETA Feichten 56.18 30 *i* P **P 06 02 42.8 -0.7**
comp=Z,43nm,1.0s,SNR=20
LANF Langenberg 56.20 26 *e*P **P 06 02 42.9 -0.5**
BCLA Clavier 56.22 24 P **P 06 02 44.6 +1.1**
LSZ Lusaka 56.33 109 *e*P **P 06 02 45.9 +0.9**
LSZ pmax pmax
comp=Z,45nm,1.1s
LSZ MLR MLR
comp=Z,2µm,21.0s
LSZ Lusaka 56.33 109 *e*P **P 06 02 45.9 +0.9**
comp=Z,45nm,1.1s
LSZ LR LR
comp=Z,2µm,21.0s
RETA Reutte 56.52 29 *i* P **P 06 02 45.4 -0.4**
comp=Z,26nm,1.2s,SNR=5.9
LBTB Lobatse 56.53 121 *e*P **P 06 02 46.0 -0.3**
LBTB pmax pmax
comp=Z,79nm,1.4s
LBTB Lobatse 56.53 121 *e*P **P 06 02 46.0 -0.3**
comp=Z,78nm,1.4s
MOTA Moosalm 56.59 30 *i* P **P 06 02 45.7 -0.7**
comp=Z,17nm,0.8s,SNR=8.1
GGN Saint George 56.62 327 *e*P **P 06 02 47.3 +0.9**
comp=Z,46nm,1.3s
MEM Membach 56.65 24 P **P 06 02 48.3 +1.8**
WTTA Wattenberg 56.80 30 *i* P **P 06 02 48.2 +0.3**
comp=Z,11nm,0.7s
WATA Walderalm 56.82 30 *i* P **P 06 02 48.5 +0.5**
comp=Z,9.1nm,0.7s
TRI Trieste 56.89 33 *e*P **P 06 02 48.7 +0.4**
TRI pmax pmax
comp=Z,63nm,1.1s
TRI Trieste 56.89 33 *e*P **P 06 02 48.7 +0.4**
comp=Z,63nm,1.1s
ABTA Abfaltersbach 56.90 31 *i* P **P 06 02 48.6 +0.1**
comp=Z,69nm,1.3s,SNR=23
PYL PYLOS 57.05 45 P **P 06 02 48.8 -0.9**
PYL PYLOS 57.05 45 P **P 06 02 48.8 -0.9**
VOJS Vojsko 57.16 32 *e*P **P 06 02 49.5 -0.9**
CADS Cadrg 57.20 32 *e*P **P 06 02 50.1 -0.5**
AXS Araxos 57.41 44 P **P 06 02 54.7 +2.5**
MYKA Terra Mystica 57.41 32 *i* P **P 06 02 52.7 +0.6**
comp=Z,45nm,1.4s,SNR=16
ESK Eskdalemuir 57.45 16 *e*P **P 06 02 52.8 +0.7**
ESK pmax pmax
comp=Z,98nm,1.5s
ESK MLR MLR
comp=Z,3µm,20.0s
ESK Eskdalemuir 57.45 16 *e*P **P 06 02 52.8 +0.7**
comp=Z,98nm,1.5s
ESK LR LR
comp=Z,3µm,20.0s
BOSA Boshof 57.49 125 P **P 06 02 52.9 -0.2**
comp=Z,8.2nm,0.8s,baz=301,slow=8.5,SNR=11
BOSA LR LR 06 22 44.8
comp=Z,3µm,20.6s,baz=274,slow=31
BOSA Boshof 57.49 125 *e*P **P 06 02 53.5 +0.4**
BOSA pmax pmax
comp=Z,76nm,1.5s
BOSA Boshof 57.49 125 *e*P **P 06 02 53.5 +0.4**
comp=Z,76nm,1.5s
BRYW Bryant College 57.51 321 *e*P **P 06 02 53.7 +0.9**
comp=Z,37nm,1.0s
LJU Ljubljana 57.51 33 *e*P **P 06 02 52.8 0.0**
LJU *e* 06 05 00.5
LJU *e* 06 06 25.2
LJU *e*S **S 06 10 52.5 +2.2**
KBA Koelnbreinsper 57.55 31 *i* P **P 06 02 52.6 -0.6**
comp=Z,17nm,0.7s,SNR=9.1
BOJS Bojanci 57.57 34 *i* P **P 06 02 52.5 -0.7**
BOJS *e*S **S 06 10 52.6 +1.4**
WES Weston 57.62 322 *e*P **P 06 02 54.3 +0.7**
WES pmax pmax
comp=Z,56nm,1.4s
WES Weston 57.62 322 *e*P **P 06 02 54.3 +0.7**
comp=Z,56nm,1.4s
PLCA Paso Flores 57.63 219 P **P 06 02 54.0 +0.2**
comp=Z,13nm,1.3s,baz=56,slow=7.9,SNR=4.6
PLCA LR LR 06 27 11.0
comp=Z,3µm,19.2s,baz=71,slow=36
PLCA Paso Flores 57.63 219 *e*P **P 06 02 54.6 +0.8**
PLCA pmax pmax
comp=Z,48nm,1.7s
PLCA Paso Flores 57.63 219 *e*P **P 06 02 54.5 +0.8**
comp=Z,48nm,1.7s
DSL Palaion Diasel 57.66 43 P **P 06 02 53.9 -0.1**
HCY Herceg Novi 57.69 38⇑ *i*P **P 06 02 54.0 -0.1**
OBKA Obir 57.82 32 *i* P **P 06 02 56.1 +1.1**
comp=Z,16nm,1.1s
VLI Veliai 57.83 46 P **P 06 02 55.4 +0.2**
VLI Veliai 57.83 46 P **P 06 02 55.4 +0.2**
HRV Adam Dziewonsk 57.84 322 *e*P **P 06 02 54.8 -0.3**
HRV pmax pmax
comp=Z,93nm,1.4s
HRV Adam Dziewonsk 57.84 322 *e*P **P 06 02 54.8 -0.3**
comp=Z,93nm,1.4s
LAKA Lakka 57.84 44 P **P 06 02 55.3 0.0**
LAKA Lakka 57.84 44 P **P 06 02 55.3 0.0**
BUM Brajici-Budva 57.86 39⇑ *i*P **P 06 02 55.3 -0.1**
KLV Kalavryta, Ach 57.87 44 P **P 06 02 55.8 +0.2**
KLV Kalavryta, Ach 57.87 44 P **P 06 02 55.8 +0.2**
ULC Ulcinj 57.90 39⇑ *i*P **P 06 02 55.6 0.0**
TIR Tirane 57.97 40 *e*P **P 06 02 57.0 +0.9**
TIR pmax pmax
comp=Z,41nm,1.0s
TIR MLR MLR
comp=Z,5µm,19.0s
TIR Tirane 57.97 40 *e*P **P 06 02 57.0 +0.9**
comp=Z,41nm,1.0s
TIR LR LR
comp=Z,5µm,19.0s
ANX Ano Chora 57.97 44 P **P 06 02 56.1 -0.2**
BRY Bratogost 57.97 38⇑ *i*P **P 06 02 55.8 -0.4**
SERG Sergoula 57.98 44 P **P 06 02 56.3 0.0**
DRME Dracevica, Mon 57.98 39⇑ *i*P **P 06 02 56.2 0.0**
CEME Cevo 58.01 38⇑ *i*P **P 06 02 56.2 -0.2**
KALE Kalithea 58.03 44 P **P 06 02 56.6 0.0**
KALE Kalithea 58.03 44 P **P 06 02 56.6 0.0**
PKME Peaks-Kenny Pk 58.08 326 *e*P **P 06 02 56.0 -0.8**
comp=Z,29nm,1.3s
PKME LR LR
comp=Z,1µm,21.0s
NKME Niksic 58.15 38 *e*P **P 06 02 57.1 -0.3**
PDG Podgorica 58.16 39⇑ *i*P **P 06 02 58.4 +1.1**
TTG Podgorica 58.16 39⇑ *i*P **P 06 02 57.6 +0.3**
SOKA Soboth 58.18 32 *i* P **P 06 02 57.7 +0.1**
comp=Z,44nm,1.2s,SNR=22

PERS Pernice 58.20 33 *i* P P 06 02 56.9 -0.8
NKY Niksic 58.20 38 *e*P P 06 02 57.6 -0.2
QUA2 Belchertown 58.21 321 *e*P P 06 02 57.5 -0.2
comp=Z,72nm,1.5s
PENT Pentalofos 58.22 42 P P 06 02 57.9 -0.1
KPRO Kipourio 58.25 42 P P 06 02 57.7 -0.4
GRFO Grafenberg 58.27 28 *e*P P 06 02 57.8 -0.2
GRFO pmax pmax
comp=Z,159nm,1.8s
GRFO Grafenberg 58.27 28 *e*P P 06 02 57.8 -0.2
comp=Z,159nm,1.8s
NEST Nestorio 58.27 41 P P 06 02 58.6 +0.3
UPM Unac-Piva 58.36 38⇑*i*P P 06 02 58.9 -0.1
DID Didima 58.40 45 P P 06 02 58.0 -1.2
DID Didima 58.40 45 P P 06 02 58.0 -1.2
LTK Loutraki 58.44 45 P P 06 02 58.5 -0.9
LTK Loutraki 58.44 45 P P 06 02 58.5 -0.9
OHR Ohrid 58.45 41 *e*P P 06 02 59.7 +0.1
AGG Agios Georgios 58.45 43 P P 06 02 59.3 -0.3
AGG Agios Georgios 58.45 43 *e*P P 06 03 00.1 +0.5
AGG pmax pmax
comp=Z,161nm,1.3s
AGG Agios Georgios 58.45 43 *e*P P 06 03 00.1 +0.5
comp=Z,161nm,1.3s
THL Klokotos Trika 58.50 43 P P 06 02 59.4 -0.4
MOA Molln 58.52 31 *i*P P 06 02 58.7 -1.2
comp=Z,18nm,0.9s,SNR=12
PAL Palisades 58.55 319 *e*P P 06 03 00.3 +0.2
PAL pmax pmax
comp=Z,34nm,1.0s
PAL Palisades 58.55 319 *e*P P 06 03 00.3 +0.2
comp=Z,34nm,1.0s
IDI Anoyia 58.66 48 P P 06 03 00.4 -0.7
comp=Z,18nm,0.7s,baz=264,slow=9.2,SNR=15
IDI LR LR 06 31 10.1
comp=Z,2µm,18.2s,baz=261,slow=39
IDI Anoyia 58.66 48 *e*P P 06 03 02.0 +0.9
comp=Z,68nm,1.3s
PVY Plav 58.68 39 *e*P P 06 03 01.1 -0.1
PLE Pljevlja 58.73 38⇑*i*P P 06 03 01.0 -0.5
CNNC Cliffs of the 58.73 311 PFAKE 06 03 10.0 +8.5
CNNC LR LR
comp=Z,2µm,22.0s
IVA Berane 58.79 38 *e*P P 06 03 01.8 -0.1
ARSA Arzberg 58.80 32 *i*P P 06 03 01.5 -0.3
comp=Z,16nm,1.0s,SNR=7.2
EFI East Falkland 58.81 202 PFAKE 06 03 20.0 +18
EFI LR LR
comp=Z,3µm,21.0s
GEA0 GERESS Array S 58.88 30 *e*P P 06 03 02.5 +0.1
GEC2 GERESS Array S 58.89 30 *e*P P 06 03 02.0 -0.5
GEC2 pmax pmax
comp=Z,25nm,1.1s
GEC2 GERESS Array S 58.89 30 *e*P P 06 03 02.0 -0.5
comp=Z,25nm,1.1s
GERES GERESS Array B 58.89 30 P P 06 03 01.7 -0.8
comp=Z,12nm,1.0s,baz=222,slow=6.5,SNR=26
GERES LR LR 06 26 06.3
comp=Z,1µm,20.8s,baz=230,slow=34
HNH Hanover 58.94 323 *e*P P 06 03 02.6 -0.2
comp=Z,36nm,1.0s
BEHE Becsehely 59.00 34 *e*P P 06 03 03.5 +0.3
KHC Kasperske Hory 59.02 30 *e*P P 06 03 02.8 -0.5
KHC *e*pP sP 06 03 09.6 +1.9
KHC *ex* x 06 06 31.7
KHC *e*S S 06 11 12.1 +2.1
KHC AMS AMS 06 35 30.0
comp=Z,1µm,16.6s
KHC Kasperske Hory 59.02 30 *e*P P 06 03 02.8 -0.5
KHC *e* 06 03 09.6
KHC *e*S S 06 11 12.1 +2.1
KHC MLR MLR
comp=Z,1µm,16.6s
KHC Kasperske Hory 59.02 30 *e*P P 06 03 03.1 -0.1
comp=Z,15nm,1.2s
ODNJ Ogdensburg 59.04 319 *e*P P 06 03 04.0 +0.4
comp=Z,17nm,1.0s
PSUB Penn St. - Bra 59.05 317 *e*P P 06 03 02.8 -0.8
comp=Z,23nm,0.7s
LAST Lasithi 59.05 49 *e*P P 06 03 03.2 -0.6
comp=Z,103nm,1.6s
LIT Litokhoron 59.07 42 P P 06 03 02.5 -1.4
LIT Litokhoron 59.07 42 P P 06 03 02.5 -1.4
LIT Litokhoron 59.07 42 P P 06 03 02.5 -1.4
MOX Moxa 59.11 27 P P 06 03 02.3 -1.6
MOX pmax pmax
comp=Z,27nm,2.1s
XOR Xorichti 59.21 43 P P 06 03 04.0 -0.8
XOR Xorichti 59.21 43 P P 06 03 04.0 -0.8
NKC Novy Kostel 59.21 28 *e*P P 06 03 04.2 -0.4
NKC AMS AMS 06 30 20.0
comp=Z,1µm,16.1s
NKC Novy Kostel 59.21 28 *e*P P 06 03 04.2 -0.4
NKC MLR MLR
comp=Z,1µm,16.1s
TRY Troy 59.27 321 *e*P P 06 03 03.7 -1.4
comp=Z,56nm,1.4s
SKO Skopje 59.30 40 *i*P P 06 03 05.3 -0.1
SKIA Skiathos 59.30 44 P P 06 03 04.9 -0.5
CONA Conrad Observa 59.41 32 *i*P P 06 03 05.6 -0.4
comp=Z,19nm,1.1s,SNR=8.8
DIVS Divibare 59.51 37 P P 06 03 06.2 -0.7
SANT Santorini 59.52 47 *e*P P 06 03 08.5 +1.5
comp=Z,46nm,1.0s
SANT LR LR
comp=Z,2µm,21.0s
AOS Alonnisos 59.59 44 P P 06 03 06.3 -1.1
AOS Alonnisos 59.59 44 P P 06 03 06.3 -1.1
CBN Corbin Frederi 59.59 315 PFAKE 06 03 20.0 +13
CBN LR LR
comp=Z,1µm,19.0s
ACCN Adirondack Com 59.62 322 *e*P P 06 03 08.0 +0.5
comp=Z,26nm,1.4s
NHSC New Hope 59.67 308 PFAKE 06 03 20.0 +12
NHSC LR LR
comp=Z,1µm,21.0s
MVL Millersville 59.69 317 *e*P P 06 03 08.2 +0.2
comp=Z,16nm,1.1s
VAY Valandovo 59.72 41 *e*P P 06 03 05.0 -3.2
N59A State Game Lan 59.73 318 P P 06 03 08.3 -0.1
baz=119
SDMD Soldier's Deli 59.76 316 *e*P P 06 03 08.2 -0.3
comp=Z,9.7nm,0.8s
PRU Pruhonice 60.05 29 *e*P P 06 03 10.2 -0.2
PRU *ex* x 06 03 17.8
PRU *ex* x 06 06 49.9
PRU *e*S S 06 11 26.8 +3.6
PRU AMS AMS 06 35 40.0
comp=Z,1µm,16.2s
PRU Pruhonice 60.05 29 *e*P P 06 03 10.2 -0.2
PRU *e* 06 03 17.8
PRU *e* 06 06 49.9
PRU *e*S S 06 11 26.8 +3.6
PRU MLR MLR
comp=Z,1µm,16.2s
TREC Trest 60.07 30 *e*P P 06 03 10.1 -0.5
TREC *e*S S 06 11 25.1 +1.5
TREC AMS AMS 06 33 30.0
comp=Z,1µm,14.7s
TREC Trest 60.07 30 *e*P P 06 03 10.1 -0.5
TREC *e*S S 06 11 25.1 +1.5
TREC MLR MLR
comp=Z,1µm,14.7s
GOPC GO Pecny, Ondr 60.12 29 *e*P P 06 03 11.2 +0.3
GOPC *e*pP sP 06 03 17.5 +2.2
GOPC *e*S S 06 11 26.5 +2.3
GOPC AMS AMS 06 35 40.0
comp=Z,1µm,15.9s
GOPC GO Pecny, Ondr 60.12 29 *e*P P 06 03 11.2 +0.3
GOPC *e* 06 03 17.5
GOPC *e*S S 06 11 26.5 +2.3
GOPC MLR MLR
comp=Z,1µm,15.9s
OUR Ouranopolis 60.19 43 P P 06 03 11.0 -0.5
OUR Ouranopolis 60.19 43 P P 06 03 11.0 -0.5
OUR Ouranopolis 60.19 43 P P 06 03 11.0 -0.5
CLL Collm 60.20 27 *e*P P 06 03 12.0 +0.6
comp=Z,70nm,1.8s
CLL *e*PP PP 06 05 18.0 -6.2
CLL *e*PPP PPP 06 06 47.0
CLL *e*S S 06 11 30.0 +4.9
comp=N,1µm,27.6s
CLL *e*S S 06 11 30.0 +4.9
comp=E,900nm,26.8s
CLL *e* 06 14 18.0
CLL *e*SS SS 06 15 12.0 -10
CLL *e*SSS SSS 06 18 03.0
CLL Lm MLR 06 26 00.0
comp=Z,1µm,21.0s
CLL Collm 60.20 27 *e*P P 06 03 12.0 +0.6
CLL *e*S S 06 11 30.0 +4.9
CLL pmax pmax
comp=Z,70nm,1.8s
CLL MLR MLR
comp=Z,1µm,21.0s
CLL Collm 60.20 27 *e*P P 06 03 11.2 -0.1
comp=Z,49nm,1.6s
NCB Newcomb 60.27 322 *e*P P 06 03 12.4 +0.4
comp=Z,0.3nm,1.4s
SRS Serrai 60.29 42 P P 06 03 11.7 -0.5
SRS Serrai 60.29 42 P P 06 03 11.7 -0.5
SRS Serrai 60.29 42 P P 06 03 11.7 -0.5
FRNY Flat Rock 60.34 323 *e*P P 06 03 13.7 +1.3
comp=Z,42nm,1.5s
BRG Berggiesshubel 60.35 28 *e*P P 06 03 13.9 +1.5
comp=Z,19nm,1.1s
BRG PP PP 06 06 22.0 +56
BRG S S 06 11 28.0 +1.0
BRG *e*PKPPKP P'P'df 06 32 40.3 +4.9
comp=Z,1.4nm,0.7s
comp=N,1µm,15.7s
comp=E,1µm,16.5s
comp=Z,998nm,15.1s
BRG Berggiesshubel 60.35 28 *e*P P 06 03 13.9 +1.5
BRG S S 06 11 28.0 +1.0
BRG pmax pmax
comp=Z,19nm,1.1s
CSKK Cs˙ákako 60.35 33 *e*P P 06 03 12.7 +0.2
PVCC Panska Ves 60.42 29 *e*P P 06 03 12.8 -0.1
PVCC *ex* x 06 03 20.5
PVCC AMS AMS 06 28 20.0
comp=Z,1µm,16.2s
PVCC Panska Ves 60.42 29 *e*P P 06 03 12.8 -0.1
PVCC *e* 06 03 20.5
PVCC MLR MLR
comp=Z,1µm,16.2s
KARP Karpathos 60.47 49 *e*P P 06 03 13.9 +0.3
comp=Z,24nm,0.8s
BINY Binghamton 60.49 319 *e*P P 06 03 14.1 +0.5
comp=Z,90nm,1.7s
BINY LR LR
comp=Z,2µm,21.0s
SMOL Smolenice 60.59 32 *e*P P 06 03 15.9 +1.8
SMOL Smolenice 60.59 32 *e*P P 06 03 15.9 +1.8
MMB Musomiste 60.61 41 P P 06 03 14.0 -0.4
VRAC Vranov 60.65 31⇑*i*P P 06 03 14.3 -0.2
VRAC Vranov 60.65 31 P P 06 03 14.3 -0.2
VTS Vitosha 60.75 40 P P 06 03 15.3 -0.2
VTS Vitosha 60.75 40⇑*i*P P 06 03 16.5 +1.0
VTS Vitosha 60.75 40 *e*P P 06 03 16.2 +0.7
VTS pmax pmax
comp=Z,39nm,1.2s
VTS Vitosha 60.75 40 P P 06 03 14.0 -1.5
VTS Vitosha 60.75 40 *e*P P 06 03 16.2 +0.7
comp=Z,39nm,1.2s
LIA Limnos Island 60.82 44 P P 06 03 15.4 -0.4
LIA Limnos Island 60.82 44 P P 06 03 15.4 -0.4
LONY Lake Ozonia 60.83 322 PFAKE 06 03 30.0 +14
LONY LR LR
comp=Z,1µm,20.0s
BUD Budapest 60.84 34 *e*P P 06 03 16.1 +0.3
KAVA Kavala 60.86 42 P P 06 03 15.3 -0.7
KAVA Kavala 60.86 42 P P 06 03 15.3 -0.7
MDVR Moldovita 60.92 37⇑*i*P P 06 03 17.4 +0.9
JSC Jenkinsville 60.93 309 *e*P P 06 03 16.5 -0.2
JSC pmax pmax
comp=Z,14nm,1.0s
JSC Jenkinsville 60.93 309 *e*P P 06 03 16.5 -0.2
comp=Z,14nm,1.0s
SSPA Standing Stone 61.02 317 *e*P P 06 03 18.4 +1.2
comp=Z,60nm,1.8s
UPC Upice 61.11 29 *e*P P 06 03 17.5 -0.1
UPC *ex* x 06 06 57.8
UPC *e*S S 06 11 41.9 +5.1
UPC AMS AMS 06 34 50.0
comp=Z,1µm,15.1s
UPC Upice 61.11 29 *e*P P 06 03 17.5 -0.1
UPC *e* 06 06 57.8
UPC *e*S S 06 11 41.9 +5.1
UPC MLR MLR
comp=Z,1µm,15.1s
URLA Izmir 61.16 46 *i*P P 06 03 17.5 -0.7
DPC Dobruska-Polom 61.16 30 *e*P P 06 03 17.6 -0.4
DPC *e*pP sP 06 03 24.8 +2.4
DPC *e*S S 06 11 38.8 +1.2
DPC AMS AMS 06 31 20.0
comp=Z,900nm,15.8s
DPC Dobruska-Polom 61.16 30 *e*P P 06 03 17.6 -0.4
DPC *e* 06 03 24.8
DPC *e*S S 06 11 38.8 +1.2
DPC MLR MLR
comp=Z,900nm,15.8s
KRLC Kraliky 61.22 30 *e*P P 06 03 18.4 0.0
KRLC *e*pP sP 06 03 25.6 +2.8
KRLC Kraliky 61.22 30 *e*P P 06 03 18.4 0.0
KRLC *e* 06 03 25.6
DGB ˙zmir 61.24 46 *i*P P 06 03 17.3 -1.4
KMSC Kings Mountain 61.30 310 P P 06 03 19.1 -0.1
baz=111
BZS Buzias 61.30 37⇑*i*P P 06 03 19.5 +0.5
SMTH Samothraki Isl 61.31 43 P P 06 03 18.6 -0.6
SMTH Samothraki Isl 61.31 43 P P 06 03 18.6 -0.6
O56A Blue Knob Stat 61.33 316 P P 06 03 19.6 +0.3
baz=116
VYHS Vyhne 61.33 33 *e*P P 06 03 18.8 -0.3
VYHS pmax pmax
comp=Z,19nm,1.2s
VYHS Vyhne 61.33 33 *e*P P 06 03 18.8 -0.3
BLA Blacksburg 61.39 313 *e*P P 06 03 20.3 +0.5
BLA pmax pmax
comp=Z,25nm,1.0s
BLA MLR MLR
comp=Z,2µm,21.0s
BLA Blacksburg 61.39 313 *e*P P 06 03 20.3 +0.5
comp=Z,25nm,1.0s
BLA LR LR
comp=Z,2µm,21.0s
BOZC Bozcaada 61.40 44 *i*P P 06 03 18.6 -1.2
MORC Moravsky Berou 61.42 31⇑*i*P P 06 03 20.2 +0.4
MORC Moravsky Berou 61.42 31 *e*P P 06 03 19.8 0.0
MORC pmax pmax
comp=Z,174nm,1.3s
MORC Moravsky Berou 61.42 31 *e*P P 06 03 19.8 0.0
comp=Z,174nm,1.3s
GADA Gvkgeada 61.44 44 P P 06 03 19.6 -0.4
GADA Gvkgeada 61.44 44 P P 06 03 19.6 -0.4
KSP Ksiaz 61.46 29 *e*P P 06 03 19.2 -0.7
KSP *e*S S 06 11 47.7 +6.5
KSP Ksiaz 61.46 29 *e*P P 06 03 19.2 -0.7
KSP *e*S S 06 11 47.7 +6.5
MPEP Malo Peshtene 61.46 40 P P 06 03 19.5 -0.6
TGUH Tegucigalpa,Un 61.53 285 *e*P P 06 03 20.9 -0.2
comp=Z,49nm,1.0s
PSZ Piszkesteto 61.58 34⇑*i*P P 06 03 21.6 +0.7
PSZ Piszkesteto 61.58 34 *e*P P 06 03 20.4 -0.5
PSZ pmax pmax
comp=Z,76nm,1.0s
PSZ MLR MLR
comp=Z,2µm,21.0s
PSZ Piszkesteto 61.58 34 *e*P P 06 03 20.4 -0.5
comp=Z,76nm,1.0s
PSZ LR LR
comp=Z,2µm,21.0s
PSZ Piszkesteto 61.58 34 *e*P P 06 03 20.6 -0.3
AYVA Ayvalik 61.62 45 *i*P P 06 03 20.9 -0.4
TRQ Mont Tremblant 61.66 324 *e*P P 06 03 21.4 0.0
SIRR Siria 61.67 36⇑*i*P P 06 03 22.4 +0.9
OKC Ostrava-Krasne 61.77 31 *e*P P 06 03 22.0 0.0
OKC *e*S S 06 11 50.5 +5.3
OKC AMS AMS 06 35 20.0
comp=Z,1µm,15.3s
OKC Ostrava-Krasne 61.77 31 *e*P P 06 03 22.0 0.0
OKC *e*S S 06 11 50.5 +5.3
OKC MLR MLR
comp=Z,1µm,15.3s
ALN Alexandroupoli 61.85 43 P P 06 03 21.9 -0.8
ALN Alexandroupoli 61.85 43 P P 06 03 21.9 -0.8
ALN Alexandroupoli 61.85 43 P P 06 03 21.9 -0.8
TIGA Tifton 61.85 305 P P 06 03 23.0 +0.1
baz=108
GZR Gura Zlata 61.88 37⇓*i*P P 06 03 23.4 +0.4
MMNY Mt. Morris Dam 61.99 319 *e*P P 06 03 23.3 -0.4
TURN Turunc 62.05 48 *i*P P 06 03 21.0 -3.1
LANS Liptovska Anna 62.05 32 *e*P P 06 03 24.8 +0.8
LANS Liptovska Anna 62.05 32 *e*P P 06 03 24.8 +0.8
KECS Kecovo 62.22 33 *e*P P 06 03 25.9 +0.8
KECS pmax pmax
comp=Z,9.0nm,1.0s
KECS Kecovo 62.22 33 *e*P P 06 03 25.9 +0.8
GOGA Godfrey 62.37 308 PFAKE 06 03 40.0 +14
GOGA LR LR
comp=Z,872nm,21.0s
BALY Balya 62.45 45 *i*P P 06 03 24.6 -2.3
SART Tekirdag 62.54 44 *i*P P 06 03 26.1 -1.4
AKAS Kas 62.56 49 *i*P P 06 03 23.8 -4.0
DRGR 62.56 36⇓*i*P P 06 03 27.8 +0.2
DRGR 62.56 36 P P 06 03 27.5 -0.1
PLVO Plevna 62.57 322 *e*P P 06 03 27.4 -0.1
comp=Z,34nm,1.5s
N54A Moraine State 62.60 317 P P 06 03 28.5 +0.6
baz=115
M54A Oil Creek Stat 62.62 317 P P 06 03 28.1 +0.1
baz=116
NIE Niedzica 62.65 32 *e*P P 06 03 28.3 +0.2
NIE Niedzica 62.65 32 *e*P P 06 03 28.3 +0.2
DNZL Cakiroluk 62.68 47 *i*P P 06 03 26.1 -2.6
EDRB Edirne 62.74 42 P P 06 03 27.9 -0.8
HUMR Humele 62.81 39⇑*i*P P 06 03 29.8 +0.7
SZH Strazhica 62.83 41 P P 06 03 28.0 -1.3
OJC Ojcow 62.85 31 *e*P P 06 03 28.5 -0.8
OJC *e*S S 06 12 05.8 +7.0
OJC Ojcow 62.85 31 *e*P P 06 03 28.5 -0.8
OJC *e*S S 06 12 05.8 +7.0
OJC Ojcow 62.85 31 *e*P P 06 03 29.4 +0.1
comp=Z,35nm,1.0s
GOLH Golhisar 62.89 48 *i*P P 06 03 30.6 +0.6
CRVS Cervenica-Dubn 62.99 33 *e*P P 06 03 31.0 +0.7
CRVS Cervenica-Dubn 62.99 33 *e*P P 06 03 31.0 +0.7
ARR Arges 63.00 38⇑*i*P P 06 03 31.1 +0.6
ALLY Alegheny Colle 63.00 317 *e*P P 06 03 30.3 -0.2
comp=Z,39nm,0.8s
SCHQ Schefferville 63.04 335 P P 06 03 30.0 -0.5
comp=Z,5.7nm,0.6s,baz=163,slow=5.2,SNR=8.6
SCHQ LR LR 06 27 35.2
comp=Z,1µm,19.3s,baz=136,slow=33
SCHQ Schefferville 63.04 335 *e*P P 06 03 30.6 +0.1
comp=Z,96nm,2.0s
ERPA Erie 63.10 318 *e*P P 06 03 30.6 -0.5
comp=Z,26nm,0.7s
STHS Stebnicka Huta 63.16 33 *e*P P 06 03 33.7 +2.3
STHS pmax pmax
comp=Z,10.0nm,1.0s
STHS Stebnicka Huta 63.16 33 *e*P P 06 03 33.6 +2.2
TRPA Tarpa 63.17 34⇓*e*P P 06 03 31.3 -0.2
MTUR Matau 63.20 38⇑*i*P P 06 03 33.0 +1.2
VOIR 63.29 38⇑*i*P P 06 03 32.8 +0.4
UZH Uzhgorod 63.30 34 *e*P P 06 03 34.2 +1.9
UZH *e* 06 05 58.0
UZH *e*S S 06 12 00.6 -3.9
UZH *e*PS PnS 06 12 26.0 +5.5
UZH MLR MLR
comp=N,3µm,13.0s
UZH MLR MLR
comp=E,2µm,13.0s
UZH MLR MLR
comp=Z,1µm,13.0s
KORT Korkueli 63.40 49 *i*P P 06 03 33.3 0.0
KOLS Kolonicke sedl 63.46 34 *e*P P 06 03 34.4 +1.0
KOLS pmax pmax
comp=Z,10.0nm,1.0s
KOLS Kolonicke sedl 63.46 34 *e*P P 06 03 34.4 +1.0
GDZ Gediz 63.52 46 *i*P P 06 03 33.9 -0.3
KMBO Kilima Mbogo 63.72 92 P P 06 03 39.6 +3.6
comp=Z,7.1nm,0.9s,baz=306,slow=3.2,SNR=8.3
KMBO LR LR 06 28 30.5
comp=Z,1µm,19.1s,baz=256,slow=33
KMBO Kilima Mbogo 63.72 92 *e*P P 06 03 38.0 +1.9
KMBO pmax pmax
comp=Z,113nm,1.8s
KMBO Kilima Mbogo 63.72 92 *e*P P 06 03 38.0 +1.9
comp=Z,113nm,1.8s
SADO Sadowa 63.73 321 *e*P P 06 03 36.4 +1.2
comp=Z,84nm,2.0s
DOPR Dopca 63.75 38⇑*i*P P 06 03 36.0 +0.6
PRD Provadia 63.76 41 P P 06 03 33.5 -1.9
BORG Borgarnes 63.81 2 LR LR 06 23 46.5
comp=Z,643nm,21.1s,baz=202,slow=29
CPCT Cooper Cave 63.85 309 *e*P P 06 03 37.6 +1.4
comp=Z,6.6nm,1.0s
PAYG Puerto Ayora 63.86 269 PFAKE 06 03 50.0 +13
PAYG LR LR
comp=Z,605nm,19.0s
MLR Muntele Rosu 63.87 38⇑*i*P P 06 03 36.6 +0.3
MLR Muntele Rosu 63.87 38 *e*P P 06 03 36.7 +0.4
MLR pmax pmax
comp=Z,122nm,1.1s
MLR Muntele Rosu 63.87 38 *e*P P 06 03 36.7 +0.4
comp=Z,122nm,1.1s
ISR Istrita 64.07 39⇓*i*P P 06 03 37.9 +0.4
KWP Kalwaria Pacla 64.08 33 *e*P P 06 03 37.6 +0.2
KWP Kalwaria Pacla 64.08 33 *e*P P 06 03 37.6 +0.2
VLDQ Val d'Or 64.33 325 *e*P P 06 03 41.8 +2.7
comp=Z,16nm,1.1s
ACSO Alum Creek Sta 64.40 315 *e*P P 06 03 39.5 -0.3
comp=Z,40nm,0.7s
ACSO LR LR
comp=Z,1µm,20.0s
BOLV Bolvadin 64.45 47 *i*P P 06 03 39.0 -1.3
BURAR Bucovina Array 64.45 36⇓*i*P P 06 03 40.3 +0.2
BURAR Bucovina Array 64.45 36 P P 06 03 40.3 +0.2
BUR08 Bucovina Ar. S 64.46 36 *e*P P 06 03 41.3 +1.2
PLOR Plostina 64.47 38⇑*i*P P 06 03 40.2 0.0
VRI Vrincioaia 64.53 38⇑*i*P P 06 03 40.6 +0.1
VRI Vrincioaia 64.53 38 P P 06 03 38.1 -2.4
VRI pmax pmax
comp=Z,526nm,0.9s
BRAL Brewton 64.61 304 PFAKE 06 03 50.0 +8.7
BRAL LR LR
comp=Z,3µm,21.0s
GAZI Gazipasa 64.63 50 *i*P P 06 03 38.0 -3.3
ODBI Odobesti 64.69 38⇑*i*P P 06 03 42.5 +1.0
HARR Harsova 64.76 40⇓*i*P P 06 03 42.1 +0.1
TESR Tescani 64.78 38⇑*i*P P 06 03 41.8 -0.3
TLB Topalu 64.78 40⇑*i*P P 06 03 42.0 -0.1
SWET Sewanee 64.87 309 *e*P P 06 03 43.7 +0.8
comp=Z,12nm,1.3s
EIL Elat 64.89 58 P P 06 03 42.9 -0.3
comp=Z,14nm,1.0s,baz=232,slow=9.8,SNR=8.0
LVV L'vov 64.90 33 *e*P P 06 03 44.3 +1.5
LVV *e*S S 06 12 22.1 -2.2
LVV MLR MLR
comp=N,410nm,16.0s
LVV MLR MLR
comp=E,440nm,16.0s
LVV MLR MLR
comp=Z,530nm,16.0s
KONO Kongsberg 64.91 19*ce*P P 06 03 43.6 +1.0
KONO pmax pmax
comp=Z,25nm,1.0s
KONO Kongsberg 64.91 19 PFAKE 06 04 00.0 +17
KONO LR LR
comp=Z,2µm,20.0s
PRAR RASCA 64.93 37⇓*i*P P 06 03 44.2 +1.1
TIRR Tirgusor 64.97 40⇑*i*P P 06 03 43.1 -0.2
TIRR Tirgusor 64.97 40 *e*P P 06 03 42.9 -0.4
TIRR pmax pmax
comp=Z,40nm,1.2s
TIRR Tirgusor 64.97 40 *e*P P 06 03 42.9 -0.4
comp=Z,40nm,1.2s
CSS Mathiatis 65.01 52 *e*P P 06 03 43.3 -0.6
comp=Z,20nm,1.5s
CSS LR LR
comp=Z,497nm,22.0s
CFR Carcaliu 65.10 39⇑*i*P P 06 03 43.7 -0.5
CFR Carcaliu 65.10 39 P P 06 03 42.0 -2.2
CFR pmax pmax
comp=Z,47nm,1.1s
BTAS Taskesti 65.16 45 *i*P P 06 03 44.7 -0.1
ERMK Ermenek 65.21 50 *i*P P 06 03 44.9 -0.4
KDHN Kadinhani 65.24 47 *i*P P 06 03 43.6 -1.7
348A Jackson 65.38 304 P P 06 03 46.8 +0.5
baz=105

248A **Dixon Mills** 65.42 305 P P 06 03 46.8 +0.3
baz=105
Z48A **Northport** 65.62 306 P P 06 03 48.0 +0.2
baz=106
AAM **Ann Arbor** 65.66 317 eP P 06 03 50.6 +2.7
AAM pmax pmax
comp=Z,31nm,0.8s
AAM MLR MLR
comp=Z,1µm,20.0s
AAM **Ann Arbor** 65.66 317 eP P 06 03 50.6 +2.7
comp=Z,30nm,0.8s
AAM LR LR
comp=Z,1µm,20.0s
447A **Lucedale** 65.85 303 P P 06 03 49.8 +0.5
baz=104
347A **Saraland** 65.91 304 P P 06 03 49.7 0.0
baz=104
Z47A **Carrollton** 65.99 306 P P 06 03 50.4 +0.2
baz=106
Y47A **UCPARC, Winfie** 66.00 307 P P 06 03 50.3 +0.1
baz=106
BCAM **Yenicaga** 66.00 45 i P P 06 03 48.5 -1.8
147A **Livingston** 66.01 306 P P 06 03 50.1 -0.2
baz=105
KKUL **Konya-Kulu** 66.05 47 i P P 06 03 50.2 -0.4
KIZK **Mersin** 66.10 50 i P P 06 03 50.0 -0.9
MMAI **Mount Meron Ar** 66.11 54 P P 06 03 51.3 +0.2
comp=Z,14nm,0.8s,baz=256,slow=5.5,SNR=13
247A **Quitman** 66.13 305 P P 06 03 51.2 +0.1
baz=105
BR231 **Keskin MP Arra** 66.17 46 eP P 06 03 53.6 +2.3
ANTO **Ankara** 66.19 46 eP P 06 03 52.1 +0.6
ANTO pmax pmax
comp=Z,66nm,0.9s
ANTO MLR MLR
comp=Z,2µm,19.0s
ANTO **Ankara** 66.19 46 P P 06 03 51.1 -0.4
comp=Z,0.4nm,0.2s,SNR=21
ANTO P P 06 03 51.1 -0.4
comp=Z,0.4nm,0.2s,SNR=21
ANTO **Ankara** 66.19 46 eP P 06 03 52.1 +0.6
comp=Z,66nm,0.9s
ANTO LR LR
comp=Z,2µm,19.0s
NAO01 **NORSAR Array S** 66.23 19 eP P 06 03 52.6 +1.4
KIS **Kishinev** 66.33 38 eP P 06 03 49.0 -3.1
KIS eS S 06 12 42.0 +0.1
KIS eScS ScS 06 13 50.0 +1.1
KIS eLR LR 06 28 00.0
comp=Z,3µm,20.0s
KIS **Kishinev** 66.33 38 eP P 06 03 49.0 -3.1
KIS e 06 04 20.0
KIS e 06 06 20.0
KIS eS S 06 12 42.0 +0.1
KIS e 06 13 50.0
KIS MLR MLR
comp=Z,2µm,16.0s
KIS MLR MLR
comp=N,2µm,17.0s
KIS MLR MLR
comp=E,1µm,18.0s
KIS MLR MLR
comp=Z,3µm,20.0s
NBO00 **NORSAR Array S** 66.34 19 eP P 06 03 52.5 +0.6
NC602 **NORSAR Array S** 66.36 19 eP P 06 03 52.4 +0.3
KERG **Konya-Eregli** 66.38 49 i P P 06 03 50.0 -2.8
NBO02 **NORSAR Array S** 66.38 19 eP P 06 03 52.1 0.0
CCIG **Comitan** 66.45 287 eP P 06 03 53.3 -0.3
comp=Z,12nm,0.8s
NB2 **NORSAR Subarra** 66.48 19 P P 06 03 53.0 +0.1
comp=Z,27nm,1.1s,baz=222,slow=6.5
NB2 **NORSAR Subarra** 66.48 19 P P 06 03 53.0 +0.1
baz=222,slow=6.5
NOA **NORSAR Array B** 66.48 19 P P 06 03 52.5 -0.3
comp=Z,8.9nm,0.9s,baz=220,slow=6.4,SNR=28
NOA LR LR 06 31 24.6
comp=Z,658nm,18.1s,baz=210,slow=35
AKSY **AKSARAY - Alti** 66.50 48 i P P 06 03 52.0 -1.5
NB201 **NORSAR Array S** 66.52 19 eP P 06 03 53.2 +0.1
NC204 **NORSAR Array S** 66.52 19 eP P 06 03 54.2 +1.1
SORM **Soroca** 66.56 37 i P P 06 03 52.3 -1.2
BLO **Bloomington** 66.58 313 eP P 06 03 54.4 +0.6
BLO pmax pmax
comp=Z,18nm,0.9s
BLO **Bloomington** 66.58 313 eP P 06 03 54.4 +0.6
comp=Z,18nm,0.9s
WVT **Waverly** 66.62 309 eP P 06 03 54.3 +0.1
WVT pmax pmax
comp=Z,10.0nm,1.0s
WVT **Waverly** 66.62 309 eP P 06 03 54.3 +0.1
comp=Z,10nm,1.0s
146A **Union** 66.64 305 P P 06 03 54.8 +0.4
baz=105
346A **Big Creek Wild** 66.67 304 P P 06 03 54.5 -0.1
baz=104
NC303 **NORSAR Array S** 66.67 19 eP P 06 03 54.7 +0.7
NC405 **NORSAR Array S** 66.70 19 eP P 06 03 55.1 +0.9
SUW **Suwalki** 66.74 29 eP P 06 03 54.4 -0.1
SUW **Suwalki** 66.74 29 eP P 06 03 54.4 -0.1
DED **Mersin** 66.75 50 i P P 06 03 53.9 -1.1
BRTR **Keskin Array B** 66.76 47 P P 06 03 54.7 -0.5
comp=Z,34nm,0.7s,baz=238,slow=5.8,SNR=132
BRTR LR LR 06 34 10.2
comp=Z,2µm,21.0s,baz=220,slow=37
BR131 **Keskin Array S** 66.76 47 eP P 06 03 55.5 +0.3
Y46A **Houston** 66.80 307 P P 06 03 56.1 +0.7
baz=105
ASF **Jabal al Asfar** 67.12 55 P P 06 03 57.7 +0.1
comp=Z,28nm,1.0s,baz=202,slow=4.4,SNR=21
345A **Thompson Farm,** 67.12 304 P P 06 03 57.6 +0.1
baz=104
245A **Little AP, Sta** 67.18 304 P P 06 03 58.2 +0.4
baz=104
CDAG **Cicekdag** 67.26 47 i P P 06 03 57.1 -1.2
ILGA **Ilgaz** 67.26 45 i P P 06 03 56.8 -1.7
Z45A **Winona** 67.34 306 P P 06 03 59.0 +0.2
baz=105
145A **Houston Renfro** 67.35 305 P P 06 03 58.9 0.0
baz=104
X45A **UM Field Stati** 67.38 307 P P 06 03 58.5 -0.6
baz=105
SFIN **Lafayette** 67.39 314 P P 06 03 58.9 -0.1
baz=109
SFIN **Lafayette** 67.39 314 eP P 06 03 59.5 +0.5
comp=Z,28nm,1.1s
W45A **Hickory Valley** 67.41 308 P P 06 03 59.0 -0.2
baz=106
444A **Pine Grove** 67.58 303 P P 06 04 00.7 +0.3
baz=103
OLIL **Olney** 67.60 312 eP P 06 04 00.9 +0.5
comp=Z,39nm,0.9s
S45A **Carrier Mills** 67.65 311 P P 06 04 01.0 +0.3
baz=107
344A **Westbrook Farm** 67.74 304 P P 06 04 01.5 +0.1
baz=103
144A **Alexander Plac** 67.76 305 P P 06 04 01.6 +0.1
baz=104
244A **Avery, Jackson** 67.83 304 P P 06 04 02.2 +0.2
baz=104
COAL **Corum-Alaca** 67.91 46 i P P 06 04 01.7 -0.7
X44A **Crenshaw** 68.00 307 P P 06 04 03.1 +0.2
baz=105
SFJD **Kangerlussuaq** 68.10 350 P P 06 04 02.9 0.0
comp=Z,16nm,0.8s,baz=170,slow=5.1,SNR=5.7
SFJD **Kangerlussuaq** 68.10 350 i P P 06 04 03.3 +0.4
SFJD **Kangerlussuaq** 68.10 350 eP P 06 04 03.7 +0.8
SFJD pmax pmax
comp=Z,25nm,1.0s
SFJD MLR MLR
comp=Z,1µm,19.0s
SFJD **Kangerlussuaq** 68.10 350 eP P 06 04 03.7 +0.8
comp=Z,25nm,1.0s
SFJD LR LR
comp=Z,1µm,19.0s
ANDN **Andirin** 68.11 50 i P P 06 04 02.6 -1.2
SIUC **Southern Illin** 68.14 311 eP P 06 04 03.8 0.0
comp=Z,27nm,1.0s
S44A **Carbondale** 68.16 311 P P 06 04 04.5 +0.5
baz=107
R44A **Waltonville** 68.19 311 P P 06 04 05.0 +0.9
baz=107
AK11 **Malin Array Si** 68.20 34 eP P 06 04 03.0 -0.8
BOYT **Boyabat** 68.23 45 i P P 06 04 03.2 -1.1
KIEV **Kiev** 68.23 34 eP P 06 04 03.9 -0.1
KIEV pmax pmax
comp=Z,127nm,1.3s
KIEV MLR MLR
comp=Z,986nm,20.0s
KIEV **Kiev** 68.23 34 eP P 06 04 03.9 -0.1
comp=Z,126nm,1.3s
KIEV LR LR
comp=Z,986nm,20.0s
AKASG **Malin Array Be** 68.24 34 P P 06 04 03.2 -0.9
comp=Z,50nm,1.0s,baz=240,slow=6.5,SNR=32
AKASG LR LR 06 32 50.9
comp=Z,625nm,21.3s,baz=215,slow=35
AKBB **Malin Array Si** 68.24 34 eP P 06 04 03.5 -0.6
AKBB pmax pmax
comp=Z,118nm,1.3s
AKBB **Malin Array Si** 68.24 34 eP P 06 04 03.5 -0.6
comp=Z,118nm,1.3s
Q44A **Meyer Farm, Va** 68.34 312 P P 06 04 06.4 +1.4
baz=107
HCB **Kahramanmara** 68.47 50 i P P 06 04 03.6 -2.3
Z43A **Armstrong Fami** 68.57 305 P P 06 04 06.2 -0.3
baz=104
CUSAR **Sarkisla-SIVAS** 68.57 48 i P P 06 04 06.1 -0.5
143A **Socs Landing,** 68.58 305 P P 06 04 07.0 +0.4
baz=103
X43A **Marvell** 68.59 307 P P 06 04 07.4 +0.8
baz=104
S43A **Fulton Ridge,** 68.75 310 P P 06 04 08.3 +0.6
baz=106
Q43A **New Douglas** 68.86 312 P P 06 04 09.2 +0.9
baz=107
SIM **Simferopol'** 68.90 42 eP P 06 04 08.7 +0.3
SIM e 06 06 37.0
SIM eS S 06 13 15.0 +2.2
SIM ePS PnS 06 13 42.0 +4.9
SIM eSS SS 06 17 30.0 -8.2
SIM pmax pmax
comp=Z,14nm,0.9s
SIM MLR MLR
comp=Z,1µm,18.0s
NACGM **Naroch** 68.99 30 e P 06 04 09.0 +0.3
NACGM eLQ LQ 06 24 16.0
NACGM eLR LR 06 33 40.0
HDIL **Hopedale** 69.04 313 P P 06 04 09.9 +0.6
baz=108
HDIL **Hopedale** 69.04 313 eP P 06 04 10.5 +1.2
comp=Z,72nm,1.7s
HDIL LR LR
comp=Z,1µm,20.0s
342A **Flagon Creek P** 69.05 303 P P 06 04 10.3 +0.7
baz=102
242A **Grayson** 69.05 304 P P 06 04 09.8 +0.2
baz=103
Y42A **Garnett, Star** 69.15 306 P P 06 04 10.7 +0.5
baz=104
V42A **Cord** 69.31 308 P P 06 04 11.5 +0.3
baz=104
U42A **Revenden** 69.33 309 P P 06 04 11.6 +0.3
baz=105
MICGM **Minsk** 69.34 30 eP P 06 04 11.0 +0.1
MICGM e 06 04 19.0
MICGM eS S 06 13 15.0 -2.6
MICGM ePS PnS 06 13 34.0 -8.7
MICGM eScS ScS 06 14 44.0 +32
MICGM eSS SS 06 17 50.0 +5.4
MICGM eSSS SSS 06 19 46.0
MICGM eLQ LQ 06 27 24.0
MICGM eLR LR 06 32 08.0
MICGM LRM MLR 06 36 08.0
comp=Z,2.5nm,14.0s
MICGM LRM MLR 06 36 12.0
comp=E,3.7nm,14.0s
MNK **Minsk** 69.34 30 eP P 06 04 14.0 +3.1
MNK e 06 04 19.0
MNK eS S 06 13 15.0 -2.6
MNK eSS SS 06 17 50.0 +5.4
MNK MLR MLR
comp=Z,2µm,14.0s
MNK MLR MLR
comp=E,4µm,14.0s
CUKAN **kangal_SIVAS** 69.45 48 i P P 06 04 12.0 -0.2
Q42A **Golden Eagle** 69.47 311 P P 06 04 12.2 +0.2
baz=106
AKCD **Akcadag** 69.51 49 i P P 06 04 10.9 -1.6
P42A **Winchester** 69.52 312 P P 06 04 12.9 +0.6
baz=107
SCO **Scoresbysund** 69.53 2 i P P 06 04 12.6 +0.9
comp=E,25nm,1.1s
SCO **Scoresbysund** 69.53 2 i P P 06 04 12.6 +0.9
SCO pmax pmax
comp=Z,25nm,1.1s
441A **DeRidder** 69.65 302 P P 06 04 13.4 +0.1
baz=102
241A **Mo Tay, Goldon** 69.68 304 P P 06 04 13.7 +0.2
baz=102
341A **Kurthwood** 69.75 303 P P 06 04 14.2 +0.3
baz=102
141A **Papa Simpson,** 69.79 304 P P 06 04 14.4 +0.2
baz=102
Y41A **Eaglette Beard** 69.83 306 P P 06 04 13.8 -0.6
baz=103
W41B **Gary Mavity, V** 69.84 307 P P 06 04 14.3 -0.1
baz=104
Z41A **Richland Creek** 69.85 305 P P 06 04 14.7 +0.3
baz=103
U41A **Viola** 69.86 309 P P 06 04 14.1 -0.4
baz=104
WHAR **Wooly Hollow** 69.90 307 eP P 06 04 15.4 +0.6
comp=Z,23nm,1.2s
V41A **Mountainview** 69.91 308 P P 06 04 14.8 -0.1
baz=104
T41A **Mountain View** 69.91 309 P P 06 04 14.8 -0.1
baz=105
X201 **Greenbrier Sit** 69.96 307 eP P 06 04 15.6 +0.5
comp=Z,28nm,1.3s
X301 **Greenbrier Sit** 69.97 307 eP P 06 04 16.1 +0.8
comp=Z,21nm,1.2s
S41A **Jillco Farms,** 70.04 310 P P 06 04 15.6 0.0
baz=105
O41A **Passleys Farm,** 70.07 313 P P 06 04 15.8 +0.1
baz=106
P41A **Barry, Barry** 70.08 312 P P 06 04 15.8 +0.1
baz=106
KEMA **Kemeye** 70.20 48 i P P 06 04 15.6 -1.1
SUSE **Susehri** 70.24 47 i P P 06 04 15.7 -1.4
440A **Kirbyville** 70.30 302 P P 06 04 17.2 -0.1
baz=101
Z40A **Long Farm, Mag** 70.34 305 P P 06 04 17.6 +0.1
baz=102
L41A **Preston** 70.36 315 P P 06 04 17.4 0.0
baz=107
340A **Bronson** 70.37 303 P P 06 04 17.7 -0.1
baz=101
K41A **Shullsburg** 70.38 315 P P 06 04 17.0 -0.6
baz=108
Y40A **Okolona** 70.40 306 P P 06 04 17.0 -0.9
baz=103
J41A **Loganville** 70.41 316 P P 06 04 17.5 -0.2
baz=108
JFWS **Jewell Farm** 70.43 316 eP P 06 04 17.8 -0.1
JFWS pmax pmax
comp=Z,14nm,0.8s
JFWS MLR MLR
comp=Z,1µm,19.0s
JFWS **Jewell Farm** 70.43 316 eP P 06 04 17.8 -0.1
comp=Z,14nm,0.8s
JFWS LR LR
comp=Z,1µm,19.0s
V40A **Witts Springs** 70.44 308 P P 06 04 17.4 -0.8
baz=104
W40A **Ferguson Farm,** 70.50 307 P P 06 04 18.1 -0.3
baz=103
T40A **Mansfield** 70.53 309 P P 06 04 17.9 -0.7
baz=104,SNR=8.8
U40A **Yellville** 70.59 308 P P 06 04 18.1 -1.0
baz=104
R40A **Maddies Statio** 70.62 310 P P 06 04 18.4 -0.7
baz=105,SNR=6.4
S40A **Lebanon** 70.62 310 P P 06 04 17.8 -1.4
baz=104,SNR=11
Q40A **Laux Farm, Aux** 70.65 311 P P 06 04 18.0 -1.4
baz=105,SNR=6.1
COWI **Conover** 70.71 319 eP P 06 04 19.5 0.0
comp=Z,12nm,0.7s
COWI LR LR
comp=Z,1µm,21.0s
MIAR **Mount Ida** 70.76 306 P P 06 04 19.3 -0.7
baz=103
MIAR **Mount Ida** 70.76 306 eP P 06 04 20.4 +0.3
MIAR pmax pmax
comp=Z,55nm,1.9s
MIAR MLR MLR
comp=Z,1µm,21.0s
MIAR **Mount Ida** 70.76 306 eP P 06 04 20.4 +0.3
comp=Z,55nm,1.9s
MIAR LR LR
comp=Z,1µm,21.0s
P40A **Paris** 70.77 312 P P 06 04 19.4 -0.6
baz=105
O40A **La Belle** 70.80 312 P P 06 04 19.8 -0.4
baz=106
539A **Cross D Ranch,** 70.83 302 P P 06 04 20.3 -0.2
baz=100
VSU **Vasula** 70.83 26 ceP P 06 04 21.8 +1.9
VSU pmax pmax
comp=Z,86nm,1.7s
L40A **Anamosa** 70.87 315 P P 06 04 20.6 0.0
baz=107
339A **Huntington** 70.91 303 P P 06 04 20.2 -0.8
baz=101
J40A **Soldiers Grove** 70.92 316 P P 06 04 20.7 -0.2
baz=108
239A **Gary** 70.97 304 P P 06 04 21.4 +0.1
baz=101
K40A **Colesburg** 71.00 315 P P 06 04 20.6 -0.7
baz=107
KELT **Kelkit** 71.00 48 i P P 06 04 19.0 -2.7
139A **Bunkhouse Ranc** 71.03 304 P P 06 04 21.0 -0.8
baz=102
Y39A **Lockesburg** 71.05 306 P P 06 04 21.6 -0.2
baz=102
ANN **Anapa** 71.07 43 eP P 06 04 19.9 -1.8
ANN e 06 06 54.3
ANN eS S 06 13 34.4 -3.8
ANN e 06 14 22.8
ANN eSS SS 06 18 07.9 -3.7
ANN pmax pmax
comp=Z,127nm,1.2s
ANN MLR MLR
comp=Z,838nm,21.0s
W39A **Magazine** 71.07 307 P P 06 04 21.4 -0.5
baz=103
NATX **Nacogdoches** 71.08 303 eP P 06 04 22.6 +0.5
NATX LR LR
comp=Z,2µm,20.0s
U39A **Green Forest** 71.09 308 P P 06 04 21.7 -0.4
baz=103
V39A **Pettigrew** 71.10 308 P P 06 04 21.9 -0.3
baz=103
T39A **Clever** 71.16 309 P P 06 04 21.9 -0.6
baz=104
X39A **Fountain Ranch** 71.18 306 P P 06 04 22.0 -0.6
baz=102
R39A **Chumby, Stover** 71.21 310 P P 06 04 21.7 -1.0
baz=104,SNR=6.9
S39A **Bolivar** 71.28 310 P P 06 04 22.7 -0.4
baz=104
P39B **Salisbury** 71.29 312 P P 06 04 23.1 -0.1
baz=105
638A **Rosharon** 71.33 301 P P 06 04 22.6 -1.0
baz=100
O39A **Kirksville** 71.33 312 P P 06 04 23.3 -0.1
baz=105
Q39A **Willow Grove F** 71.34 311 P P 06 04 23.6 +0.1
baz=104
M39A **Webster** 71.39 314 P P 06 04 23.6 -0.2
baz=106
L39A **Vinton** 71.44 314 P P 06 04 23.4 -0.7
baz=106
N39A **Derby Farms, D** 71.47 313 P P 06 04 22.9 -1.3
baz=106,SNR=6.3
538A **Harpers Horsep** 71.50 302 P P 06 04 24.1 -0.5
baz=100
238A **Jacksonville** 71.51 303 P P 06 04 24.0 -0.7
baz=101
K39A **Oelwein** 71.53 315 P P 06 04 24.4 -0.1
baz=106
338A **Crockett** 71.55 303 P P 06 04 24.3 -0.6
baz=100
Y38A **Idabel** 71.56 305 P P 06 04 24.4 -0.5
baz=102
438A **Sam Houston St** 71.58 302 P P 06 04 24.6 -0.5
baz=100
J39A **Decorah** 71.58 316 P P 06 04 24.4 -0.5
baz=107
W38A **Poteau** 71.63 307 P P 06 04 25.2 -0.1
baz=102
V38A **Canehill** 71.71 308 P P 06 04 25.7 -0.1
baz=102
S38A **Stockton** 71.71 309 P P 06 04 25.1 -0.7
baz=103
X38A **Whitesboro** 71.79 306 P P 06 04 25.4 -0.9
baz=102
VAF **Ylistaro** 71.80 21 P P 06 04 26.9 +1.2
VAF pmax pmax
comp=Z,49nm,1.0s
Q38A **Cooks Store, C** 71.81 311 P P 06 04 25.7 -0.6
baz=104
U38A **Gravette** 71.82 308 P P 06 04 25.7 -0.7
baz=103
R38A **Fenwick Farm,** 71.84 310 P P 06 04 25.4 -1.2
baz=104,SNR=6.3
T38A **Diamond** 71.88 309 P P 06 04 25.5 -1.3
baz=103
SUMG **Summit** 71.96 356 i P P 06 04 27.0 0.0
comp=Z,43nm,1.1s
SUMG **Summit** 71.96 356 eP P 06 04 27.1 0.0
SUMG pmax pmax
comp=Z,28nm,0.8s
SUMG **Summit** 71.96 356 eP P 06 04 27.1 0.0
comp=Z,28nm,0.8s
N38A **Joes South For** 71.98 313 P P 06 04 27.1 -0.2
baz=105
O38A **Galt** 71.98 312 P P 06 04 27.6 +0.3
baz=104
337A **Centerville** 72.03 303 P P 06 04 27.7 -0.1
baz=100
237A **Washetta, Mont** 72.08 303 P P 06 04 27.5 -0.6
baz=100
637A **Eagle Lake** 72.09 301 P P 06 04 27.4 -0.8
baz=99
J38A **Wedel Dairy, R** 72.11 316 P P 06 04 27.8 -0.3
baz=106
M38A **Pleasantville** 72.11 313 P P 06 04 27.8 -0.3
baz=105
L38A **Oak Wood Farm,** 72.13 314 P P 06 04 27.3 -0.9
baz=106
K38A **Parkersburg** 72.14 315 P P 06 04 27.3 -0.9
baz=106
137A **Heron Place, G** 72.15 304 P P 06 04 27.9 -0.6
baz=101
Z37A **Pogue Cattle C** 72.15 305 P P 06 04 27.9 -0.5
baz=101
FINES **FINESS Array B** 72.17 24 P P 06 04 28.0 0.0
comp=Z,31nm,0.9s,baz=225,slow=3.5,SNR=75
FINES LR LR 06 32 22.6
comp=Z,2µm,22.0s,baz=234,slow=33
FINES **FINESS Array B** 72.17 24 P P 06 04 28.0 0.0
FINES pmax pmax
comp=Z,31nm,0.9s
FIA1 **FINESS Array S** 72.18 24 eP P 06 04 28.4 +0.4
comp=Z,65nm,1.1s
537A **Green Hill Far** 72.18 301 P P 06 04 28.1 -0.6
baz=100
I38A **Scanlan Farm,** 72.22 316 P P 06 04 28.0 -0.6
baz=107
SCIA **State Center** 72.25 314 PFAKE 06 04 40.0 +11
SCIA LR LR
comp=Z,1µm,22.0s
SOC **Sochi** 72.27 44 eP P 06 04 28.4 -0.6
SOC e 06 07 05.6
SOC ePPP PPP 06 08 54.0
SOC eS S 06 13 53.1 +0.9
SOC eSS SS 06 18 28.5 -1.7
SOC pmax pmax
comp=Z,67nm,1.1s
SOC MLR MLR
comp=Z,710nm,21.0s
V37A **Hulbert** 72.30 307 P P 06 04 28.2 -1.1
baz=102
W37B **Quinton** 72.37 307 P P 06 04 28.9 -0.9
baz=102
T37A **Cheneyville 18** 72.38 309 P P 06 04 28.5 -1.3
baz=103,SNR=5.8
U37A **Salina** 72.39 308 P P 06 04 29.9 0.0
baz=102

Q37A	Longview Farm, baz=104	72.42	311	P		P	06 04 29.2	-0.8
VNA1	Neumayer--Stat	72.43	174	P		P	06 04 31.2	+1.8
S37A	Fort Scott baz=103	72.45	309	P		P	06 04 30.0	-0.2
O37A	Wolven Farm, M baz=104	72.50	312	P		P	06 04 30.3	-0.1
P37A	Lathrop baz=104	72.51	311	P		P	06 04 30.1	-0.4
R37A	Teagarden Farm baz=103	72.58	310	P		P	06 04 30.0	-0.9
C38A	Sawbill Land. baz=108	72.62	320	P		P	06 04 30.2	-0.8
736A	Circle Diamond baz=99	72.65	300	P		P	06 04 31.5	0.0
N37A	Lee Faris, Mou baz=104	72.69	313	P		P	06 04 31.4	-0.1
L37A	Phoenix Point, baz=105	72.70	314	P		P	06 04 31.4	-0.2
436A	Wall Ranch, Ga baz=100	72.70	302	P		P	06 04 31.3	-0.5
M37A	Trindle Farm, baz=104	72.73	313	P		P	06 04 31.5	-0.3
136A	Ennis baz=100	72.77	304	P		P	06 04 32.1	-0.1
H37A	Dierke Farm, C baz=106	72.77	317	P		P	06 04 31.9	-0.1
K37A	Belmond baz=105	72.78	315	P		P	06 04 31.9	-0.2
TUL1	Leonard baz=102	72.82	307	P		P	06 04 32.3	-0.1
TUL1	Leonard comp=Z,24nm,0.9s	72.82	307	*e*P		P	06 04 31.8	-0.6
536A	Bastrop baz=99	72.82	301	P		P	06 04 32.3	-0.3
Z36A	Blue Ridge baz=100	72.83	305	P		P	06 04 31.8	-0.8
EYMN	Ely baz=108	72.83	320	P		P	06 04 32.4	+0.1
EYMN	Ely comp=Z,13nm,1.2s	72.83	320	*e*P		P	06 04 32.1	-0.2
EYMN	comp=Z,999nm,21.0s			LR		LR		
J37A	Redenius Farm, baz=105	72.87	315	P		P	06 04 31.8	-0.8
U36A	Oologah baz=102	72.87	308	P		P	06 04 32.2	-0.5
SPMN	Marine on St. baz=107	72.88	317	P		P	06 04 32.1	-0.5
SPMN	Marine on St. comp=Z,34nm,1.4s	72.88	317	*e*P		P	06 04 32.8	+0.2
V36A	Jenks baz=102	72.91	307	P		P	06 04 32.1	-0.9
HOMI	Horasan	72.94	48	*i* P		P	06 04 32.6	-0.8
I37A	Lemond, Waseca baz=106	72.95	316	P		P	06 04 32.4	-0.6
E37A	Wrenshall baz=107	73.00	319	P		P	06 04 32.7	-0.6
X36A	Centrahoma baz=101	73.01	306	P		P	06 04 32.8	-0.8
W36A	Wetumka baz=101	73.01	306	P		P	06 04 33.3	-0.3
S36A	Lake Cedric, C baz=102	73.04	309	P		P	06 04 33.5	-0.2
O36A	Bolckow baz=104	73.10	312	P		P	06 04 33.7	-0.3
T36A	Boggs Farm, Ca baz=102	73.12	308	P		P	06 04 33.9	-0.3
P36A	Good Intent, A baz=103	73.16	311	P		P	06 04 33.6	-0.8
KVTX	Kingsville	73.16	298	PFAKE			06 04 50.0	+15
KVTX	comp=Z,643nm,20.0s			LR		LR		
D37A	Cotton baz=107	73.19	319	P		P	06 04 33.9	-0.6
DAGI	Agillar	73.20	47	*i* P		P	06 04 33.8	-0.9
Q36A	Arnold C. Orve baz=103	73.20	311	P		P	06 04 33.0	-1.7
C37A	Embarrass baz=108	73.21	320	P		P	06 04 32.8	-1.7
535A	Dale baz=99	73.25	301	P		P	06 04 33.9	-1.1
035A	Encino baz=98	73.27	298	P		P	06 04 33.5	-1.7
M36A	Felix, Anita baz=104	73.29	313	P		P	06 04 34.6	-0.5
335A	Moody baz=99	73.32	302	P		P	06 04 34.9	-0.6
635A	Leesville baz=98	73.32	300	P		P	06 04 34.9	-0.7
K36A	Gilmore City baz=105	73.33	314	P		P	06 04 35.1	-0.2
L36A	Harn Buss Farm baz=104	73.35	314	P		P	06 04 34.8	-0.7
435B	Jarrell baz=99	73.38	302	P		P	06 04 35.8	0.0
I36A	Fitzsimmons Fa baz=105	73.38	316	P		P	06 04 35.2	-0.4
J36A	Seneca 1, Swea baz=105	73.43	315	P		P	06 04 35.3	-0.6
WHTX	Lake Whitney, baz=100	73.46	303	P		P	06 04 35.8	-0.5
WHTX	Lake Whitney, comp=Z,54nm,1.5s	73.46	303	*e*P		P	06 04 36.4	+0.1
H36A	Jessenland, He baz=106	73.47	316	P		P	06 04 36.2	+0.1
X35A	Drake baz=100	73.48	306	P		P	06 04 35.9	-0.4
135A	Vickery Place, baz=100	73.52	304	P		P	06 04 36.4	-0.2
Z35A	Perchaven, San baz=100	73.52	304	P		P	06 04 34.9	-1.7
G36A	St. Michael baz=106	73.52	317	P		P	06 04 35.4	-1.0
W35A	Tecumseh baz=101	73.54	306	P		P	06 04 35.5	-1.2
F36A	Milaca baz=106	73.54	318	P		P	06 04 36.0	-0.5
E36A	McGregor baz=107	73.55	319	P		P	06 04 36.2	-0.3
T35A	Sooner Cattle baz=102	73.59	308	P		P	06 04 36.6	-0.4
S35A	Otter Creek Ra baz=102	73.59	309	P		P	06 04 36.6	-0.3
Q35A	Mercer Eighty, baz=102	73.62	310	P		P	06 04 35.9	-1.2
V35A	Meyer Ranch, C baz=101	73.62	307	P		P	06 04 36.8	-0.4
R35A	Emporia Munici baz=102	73.63	310	P		P	06 04 37.0	-0.2
C36A	Pine Crest Far baz=107	73.64	320	P		P	06 04 37.1	+0.1
U35A	Pawnee baz=101	73.65	308	P		P	06 04 37.2	-0.1
D36A	Goodland baz=107	73.68	319	P		P	06 04 37.1	-0.2
CHVG	Ch'k'valeri	73.72	46	P		P	06 04 39.7	+2.1
934A	Benavides baz=98	73.72	298	P		P	06 04 37.1	-0.8
P35A	Duane Minner, baz=103,SNR=6.7	73.75	311	P		P	06 04 36.8	-1.1
N35A	Tabor baz=103	73.77	312	P		P	06 04 37.4	-0.5
034A	Hebbronville baz=97	73.80	298	P		P	06 04 37.3	-1.1
834A	Tilden baz=98	73.82	299	P		P	06 04 37.5	-1.0
O35A	Humboldt baz=103	73.83	312	P		P	06 04 37.7	-0.7
K35A	Storm Lake baz=104	73.91	314	P		P	06 04 38.9	+0.2
734A	La Parita Cree baz=98	73.92	300	P		P	06 04 38.3	-0.8
434A	Burnet baz=99	73.96	302	P		P	06 04 38.9	-0.4
L35A	Bielow Farm, R baz=104	73.99	314	P		P	06 04 39.1	-0.1
I35A	Creekview Farm baz=104	74.01	316	P		P	06 04 39.1	-0.2
334A	Lometa baz=99	74.01	302	P		P	06 04 39.2	-0.4
G35A	Watkins baz=105	74.02	317	P		P	06 04 39.2	-0.1
534A	Blanco baz=98	74.02	301	P		P	06 04 39.3	-0.3
234A	Clairette baz=99	74.03	303	P		P	06 04 39.2	-0.5
SNAA	Sanae	74.04	172	P		P	06 04 39.8	+0.8
SNAA	Sanae comp=Z,27nm,1.0s	74.04	172	*e*P		P	06 04 39.8	+0.8
SNAA					pmax	pmax		
Y34A	Reagan Ranch, baz=100	74.04	305	P		P	06 04 39.4	-0.3
J35A	Milford baz=104	74.05	315	P		P	06 04 39.1	-0.5
KSU1	Kansas State U baz=102	74.11	310	P		P	06 04 38.5	-1.4
KSU1	Kansas State U comp=Z,15nm,0.9s	74.11	310	*e*P		P	06 04 40.5	+0.5
KSU1					LR	LR		
H35A	Sunnyside Ranc baz=105,SNR=10	74.12	316	P		P	06 04 39.1	-0.8
OBN	Obninsk	74.12	32	*c*eP		P	06 04 41.6	+2.0
OBN	comp=Z,67nm,1.7s				pmax	pmax		
OBN	Obninsk comp=Z,108nm,1.6s	74.12	32	*e*P		P	06 04 41.3	+1.6
OBN					LR	LR		
T34A	McClaskey Farm baz=101	74.14	308	P		P	06 04 39.7	-0.5
V34A	Guthrie baz=100	74.18	307	P		P	06 04 39.7	-0.8
V34A	Guthrie comp=Z,36nm,1.3s	74.18	307	*e*P		P	06 04 41.6	+1.1
S34A	Willow Spring baz=101	74.21	309	P		P	06 04 40.1	-0.5
X34A	Smith Ranch, M baz=100	74.21	306	P		P	06 04 40.1	-0.6
VSR	Storozhevoye	74.22	37	*e*P		P	06 04 40.3	0.0
VSR	comp=Z,70nm,1.4s				pmax	pmax		
VSR					MLR	MLR		
D35A	Remer baz=106	74.23	319	P		P	06 04 39.7	-0.8
F35A	Swanville baz=105	74.25	318	P		P	06 04 40.3	-0.4
W34A	Bridge Creek, baz=100	74.28	306	P		P	06 04 40.6	-0.4
W34A	Bridge Creek, comp=Z,55nm,1.1s	74.28	306	*e*P		P	06 04 41.7	+0.6
NEY	Neytrino	74.30	45	*e*P		P	06 04 41.3	+0.1
NEY	comp=Z,7.0nm,0.8s				pmax	pmax		
U34A	Anderson Ranch baz=101	74.30	308	P		P	06 04 40.9	-0.3
Q34A	Chapman baz=102	74.32	310	P		P	06 04 41.0	-0.2
C35A	Jirik Farms, M baz=106	74.36	320	P		P	06 04 41.4	+0.2
P34A	Walnut Farm, R baz=102	74.37	311	P		P	06 04 41.7	+0.2
B35A	Bob, Littlefor baz=107	74.38	320	P		P	06 04 41.3	-0.1
933A	Laredo baz=97	74.39	298	P		P	06 04 41.7	-0.1
N34A	Lincoln baz=103	74.40	312	P		P	06 04 41.6	0.0
O34A	Beatrice baz=102	74.40	312	P		P	06 04 41.9	+0.2
AKH	Akhalkalaki	74.43	47	P		P	06 04 32.1	-10
AKH	Akhalkalaki	74.43	47	*e*P		P	06 04 32.1	-10
R34A	Isabella, Hill baz=101	74.44	310	P		P	06 04 42.2	+0.3
KIV	Kislovodsk SNR=13	74.45	44	*i* P		P	06 04 41.7	-0.2
KIV	Kislovodsk	74.45	44	*c i*P		P	06 04 41.7	-0.2
KIV				*e**PP		sP	06 04 44.3	-2.1
KIV				*e**SP		pP	06 04 48.2	+3.0
KIV				*e*			06 04 57.8	
KIV				*eS*		S	06 14 17.0	0.0
KIV				*e*			06 15 01.1	
KIV				*eSS*		SS	06 18 58.1	-5.4
KIV	comp=Z,118nm,1.3s				pmax	pmax		
KIV					MLR	MLR		
KIV	comp=Z,670nm,20.0s Kislovodsk SNR=16	74.45	44	P		P	06 04 41.8	-0.2
KIV	SNR=16			P		P	06 04 41.8	-0.2
KIV	Kislovodsk comp=Z,109nm,1.2s	74.45	44	*e*P		P	06 04 43.1	+1.1
KIV					LR	LR		
KVAR	comp=Z,787nm,22.0s Kislovodsk Arr	74.45	44	P		P	06 04 42.2	+0.2
533A	comp=Z,73nm,1.1s,baz=248,slow=6.7,SNR=16 Kerrville baz=98	74.51	301	P		P	06 04 42.3	-0.2
K34A	Le Mars baz=103	74.52	314	P		P	06 04 42.9	+0.6
KBZ	Khabaz comp=Z,48nm,1.0s,baz=250,slow=3.5,SNR=36	74.54	45	P		P	06 04 43.0	+0.6
KBZ	Khabaz comp=Z,48nm,1.0s	74.54	45	P	pmax	P	06 04 43.0	+0.6
633A	Saathoff Ranch baz=98	74.55	300	P		P	06 04 42.6	-0.1
733A	Divot King Ran baz=98	74.55	299	P		P	06 04 42.9	+0.2
L34A	Svendsen Farm, baz=103	74.56	313	P		P	06 04 42.9	+0.4
J34A	George baz=104	74.56	315	P		P	06 04 42.3	-0.2
833A	Chaparral WMA, baz=97	74.58	299	P		P	06 04 42.7	-0.2
333A	Richland Sprin baz=98	74.64	302	P		P	06 04 43.3	+0.1
433A	Art baz=98	74.65	302	P		P	06 04 43.1	-0.2
ONI	Oni	74.67	46	P		P	06 04 42.9	-0.4
ONI	Oni	74.67	46	*e*P		P	06 04 42.8	-0.4
I34A	Hadley baz=104	74.67	316	P		P	06 04 43.3	+0.2
233A	Rising Star baz=99	74.68	303	P		P	06 04 43.0	-0.4
F34A	Alexandria baz=105	74.69	317	P		P	06 04 43.6	+0.4
X33A	Lawton baz=100	74.75	306	P		P	06 04 44.0	+0.2
Z33A	Whitaker Ranch baz=99	74.76	304	P		P	06 04 43.6	-0.2
Y33A	Hilltop Ranch, baz=99	74.76	305	P		P	06 04 43.7	-0.2
U33A	Lingo Farm, Me baz=100	74.76	307	P		P	06 04 43.7	-0.2
H34A	Spellman Lake, baz=104	74.77	316	P		P	06 04 43.9	+0.2
133A	Hamilton Ranch baz=99	74.78	303	P		P	06 04 44.0	0.0
V33A	Lossen Ranch, baz=100	74.79	307	P		P	06 04 44.0	-0.1
G34A	Benson baz=104	74.81	317	P		P	06 04 44.0	+0.1
E34A	Wadena baz=105	74.82	318	P		P	06 04 43.6	-0.4
W33A	Caddo, Fort Co baz=100	74.82	306	P		P	06 04 44.3	0.0
ABPO	Ambohimpanom	74.88	110	*e*P		P	06 04 45.9	+0.9
ABPO	comp=Z,55nm,1.4s				pmax	pmax		
ABPO	Ambohimpanom comp=Z,55nm,1.4s	74.88	110	*e*P		P	06 04 45.9	+0.9
S33A	Kaszmaul Farm, baz=101	74.89	309	P		P	06 04 44.6	+0.1
MOS	Moscow	74.92	32	*e*P		P	06 04 41.0	-3.3
MOS	comp=Z,140nm,1.4s				pmax	pmax		
MOS	comp=Z,300nm,2.0s				pmax	pmax		
MOS	comp=Z,700nm,18.0s				MLR	MLR		
C34A	RKJ Ranch, Bem baz=106	74.95	319	P		P	06 04 45.2	+0.5
GOF	Gofitskoye	74.96	43	*e*P		P	06 04 47.4	+2.6
NCK	Nalchik	74.98	45	*c i*P		P	06 04 45.3	+0.3
NCK	comp=Z,67nm,1.0s				pmax	pmax		
D34A	Park Rapids baz=105	74.98	319	P		P	06 04 43.8	-1.1
R33A	Olander Ranch,	75.00	309	P		P	06 04 45.1	-0.1
	baz=101							
WMOK	Wichita Mounta baz=100	75.01	306	P		P	06 04 44.1	-1.2
WMOK	Wichita Mounta	75.01	306	*e*P		P	06 04 45.1	-0.2
WMOK	comp=Z,8.0nm,0.9s				pmax	pmax		
WMOK					MLR	MLR		
WMOK	comp=Z,1µm,21.0s Wichita Mounta comp=Z,7.7nm,0.9s	75.01	306	*e*P		P	06 04 45.1	-0.2
WMOK					LR	LR		
B34A	comp=Z,1µm,21.0s Aery, Baudette baz=106	75.01	320	P		P	06 04 44.4	-0.6
Q33A	Connelly Farm, baz=101	75.02	310	P		P	06 04 44.5	-0.8
ZEI	Tsey	75.03	46	*e*P		P	06 04 46.3	+0.8
ZEI	comp=Z,97nm,1.1s				pmax	pmax		
JOF	Joensuu	75.04	24	P		P	06 04 45.1	+0.3
JOF	comp=Z,36nm,1.0s				pmax	pmax		
O33A	Hebron baz=102	75.05	311	P		P	06 04 45.0	-0.5
832A	Faith Ranch, C baz=97	75.09	299	P		P	06 04 45.0	-0.9
GNI	Garni comp=Z,26nm,0.9s,baz=316,slow=2.4,SNR=11	75.09	49	P		P	06 04 46.3	+0.4
GNI	Garni SNR=6.6	75.09	49	*i* P		P	06 04 45.4	-0.5
GNI	Garni	75.09	49	*e*P		P	06 04 46.5	+0.6
GNI	comp=Z,56nm,1.2s				pmax	pmax		
GNI	comp=Z,827nm,20.0s				MLR	MLR		
GNI	Garni SNR=12	75.09	49	P		P	06 04 45.8	-0.1
GNI	Garni comp=Z,56nm,1.2s	75.09	49	*e*P		P	06 04 46.5	+0.6
GNI	comp=Z,827nm,20.0s				LR	LR		
ECSD	EROS Data Cent baz=103,SNR=12	75.13	315	P		P	06 04 44.1	-1.7
ECSD	EROS Data Cent comp=Z,15nm,0.9s	75.13	315	*e*P		P	06 04 46.3	+0.5
ECSD	comp=Z,885nm,20.0s				LR	LR		
JCT	Junction City baz=98	75.22	301	P		P	06 04 45.9	-0.7
JCT	Junction City comp=Z,36nm,1.0s	75.22	301	*e*P		P	06 04 46.9	+0.2
JCT					pmax	pmax		
JCT	comp=Z,956nm,19.0s				MLR	MLR		
JCT	Junction City comp=Z,36nm,1.0s	75.22	301	*e*P		P	06 04 46.9	+0.2
JCT	comp=Z,956nm,19.0s				LR	LR		
I33A	Coleman baz=103	75.33	315	P		P	06 04 46.5	-0.5
G33A	Ortonville baz=104,SNR=5.4	75.35	317	P		P	06 04 45.6	-1.4
X32A	Elmer baz=99	75.37	305	P		P	06 04 46.7	-0.7
E33A	Westby DABS, E baz=104	75.37	318	P		P	06 04 46.9	-0.3
GUDG	Gudauri	75.38	46	P		P	06 04 45.5	-2.0
ABTX	Abilene, Hawle baz=98	75.39	303	P		P	06 04 46.9	-0.7
ABTX	Abilene, Hawle comp=Z,75nm,1.4s	75.39	303	*e*P		P	06 04 47.6	0.0
F33A	5 Mile Ranch, baz=104	75.40	317	P		P	06 04 46.9	-0.4
TBLG	Delisi	75.41	47	P		P	06 04 46.4	-1.2
TBLG	Delisi	75.41	47	*e*P		P	06 04 46.3	-1.2
D33A	AnnSam, Waubun baz=105	75.43	319	P		P	06 04 47.1	-0.4
H33A	Prehn Over Nor baz=103,SNR=6.2	75.44	316	P		P	06 04 46.5	-1.1
W32A	Sentinel baz=99	75.44	306	P		P	06 04 47.0	-0.8
U32A	Winter Ranch, baz=100	75.46	307	P		P	06 04 47.4	-0.4
T32A	Huddler Ranch, baz=100	75.53	308	P		P	06 04 47.6	-0.7
C33A	Trail baz=105	75.54	319	P		P	06 04 47.8	-0.2
B33A	Robert and Kas baz=105	75.55	320	P		P	06 04 48.1	-0.1
Q32A	Meitler Ranch, baz=101	75.58	310	P		P	06 04 48.3	-0.3
R32A	Long Quarter, baz=100	75.59	309	P		P	06 04 48.6	0.0
O32A	Brockman Farm, baz=101	75.60	311	P		P	06 04 48.4	-0.2
A33A	Warroad baz=106	75.60	321	P		P	06 04 48.5	+0.1
S32A	Newby Ranch, P baz=100	75.63	309	P		P	06 04 48.7	-0.2
MSF	Maaselka	75.71	20	P		P	06 04 50.4	+1.8
MSF	comp=Z,42nm,1.4s				pmax	pmax		
N32A	Stulken Farm, baz=101	75.72	312	P		P	06 04 48.7	-0.6
P32A	Huiting Farm, baz=101	75.72	311	P		P	06 04 49.1	-0.2
BGNE	Belgrade baz=102	75.74	313	P		P	06 04 48.7	-0.7
BGNE	Belgrade comp=Z,34nm,0.8s	75.74	313	*e*P		P	06 04 49.5	+0.2
AGMN	Agassiz Nation baz=105,SNR=16	75.74	320	P		P	06 04 47.7	-1.5
AGMN	Agassiz Nation comp=Z,18nm,0.9s	75.74	320	*e*P		P	06 04 47.9	-1.3
AGMN	comp=Z,919nm,21.0s				LR	LR		
VRH	Novokhopyorsk	75.75	37	*e*P		P	06 04 49.6	+0.5
VRH	comp=Z,20nm,0.9s				pmax	pmax		
L32A	Elgin baz=102	75.75	313	P		P	06 04 49.0	-0.4
UMR	Umm Al-Rimmam	75.79	60	P		P	06 04 49.4	-0.4
UMR				P		P	06 04 49.4	-0.4
NVL	N'lazarevskaya	75.80	168	*e*P		P	06 04 53.9	+4.9
KULLO	Kullorsuaq comp=Z,52nm,1.2s	75.82	352	*i* P		P	06 04 46.7	-2.4
KULLO	Kullorsuaq	75.82	352	*e*P		P	06 04 46.7	-2.4
KULLO	comp=Z,52nm,1.2s				pmax	pmax		
K32A	Verdigre baz=102	75.86	314	P		P	06 04 49.4	-0.7
H32A	Carlson Farm, baz=103,SNR=21	75.88	316	P		P	06 04 48.7	-1.5
DAG	Danmarks Havn comp=Z,37nm,1.0s	75.91	2	*i* P		P	06 04 50.0	+0.4
DAG	Danmarks Havn	75.91	2	*i* P		P	06 04 50.0	+0.4
DAG	comp=Z,37nm,1.0s				pmax	pmax		
J32A	Parkston baz=102	75.92	315	P		P	06 04 49.9	-0.5
F32A	Veblen baz=103	75.98	317	P		P	06 04 50.1	-0.5
G32A	Webster baz=103	76.09	317	P		P	06 04 50.6	-0.7
E32A	Braaten, Kindr baz=104	76.11	318	P		P	06 04 51.3	0.0
B32A	Ashes, Strandq baz=104,SNR=11	76.20	320	P		P	06 04 50.5	-1.3
D32A	Dogwood Acres, baz=104	76.20	318	P		P	06 04 51.1	-0.7
ULM	Lac du Bonnet	76.26	322	*e*P		P	06 04 52.0	-0.1
ULM	Lac du Bonnet	76.26	322	*e*P		P	06 04 52.0	-0.1
A32A	Rocking H Ranc baz=105,SNR=12	76.30	320	P		P	06 04 51.2	-1.2
M31A	Lambtecht Ranc baz=101	76.33	312	P		P	06 04 52.6	-0.2
O31A	Woolen Ranch, baz=100	76.37	311	P		P	06 04 51.9	-1.1
L31A	Butterfield Fa baz=101	76.39	313	P		P	06 04 52.5	-0.6
K31A	O'Neill baz=102	76.42	314	P		P	06 04 53.2	-0.1
CBKS	Cedar Bluff baz=100	76.45	310	P		P	06 04 53.5	-0.1
CBKS	Cedar Bluff comp=Z,44nm,1.4s	76.45	310	*e*P	pmax	P	06 04 52.8	-0.7

CBKS MLR MLR
comp=Z,1μm,21.0s
CBKS Cedar Bluff 76.45 310 *e*P **P 06 04 52.8 -0.7**
comp=Z,44nm,1.4s
CBKS LR LR
comp=Z,1μm,21.0s
J31A Geddes 76.54 314 P **P 06 04 53.5 -0.4**
baz=102
I31A Royce, Wessing 76.55 315 P **P 06 04 53.7 -0.2**
baz=102
H31A Wolsey 76.60 316 P **P 06 04 53.5 -0.7**
baz=102
ARA0 ARCESS Array S 76.62 17 *e*P **P 06 04 54.3 +0.5**
ARCES ARCESS Array B 76.62 17 P **P 06 04 54.0 +0.3**
comp=Z,4.6nm,0.7s,baz=235,slow=4.3,SNR=11
E31A Nome 76.65 318 P **P 06 04 54.3 -0.2**
baz=103
F31A Hecla 76.74 317 P **P 06 04 54.2 -0.8**
baz=103
C31A Landman Farms, 76.83 319 P **P 06 04 53.8 -1.6**
baz=103,SNR=10
ZAIG Zacatecas 76.86 293 *e*P **P 06 04 57.7 +1.2**
comp=Z,47nm,2.0s
SUSD Miller 76.93 315 P **P 06 04 55.6 -0.5**
baz=102
K30A Basset 77.05 314 P **P 06 04 56.3 -0.6**
baz=101
J30A Dallas 77.09 314 P **P 06 04 56.7 -0.3**
baz=101
F30A Leola 77.26 317 P **P 06 04 57.0 -1.0**
baz=102
C30A Mose, Pekin 77.30 319 P **P 06 04 57.4 -0.7**
baz=103
B30A Myrvik Farm, E 77.37 320 P **P 06 04 57.3 -1.1**
baz=103,SNR=13
AMTX Amarillo 77.39 305 P **P 06 04 58.6 -0.4**
baz=98
AMTX Amarillo 77.39 305 *e*P **P 06 04 59.3 +0.4**
comp=Z,20nm,1.3s
A30A Hoffart Farm, 77.46 320 P **P 06 04 58.3 -0.6**
baz=103,SNR=5.2
KLMR Klimovskoe 77.70 27 *e*P **P 06 04 57.4 -2.6**
KLMR *e* 06 05 08.6
KLMR pmax pmax
comp=Z,106nm,1.3s
G29A Hoven 77.75 316 P **P 06 05 01.1 +0.4**
baz=101
FCC Fort Churchill 77.78 330 *e*P **P 06 05 00.9 +0.4**
FCC pmax pmax
comp=Z,20nm,1.0s
FCC Fort Churchill 77.78 330 *e*P **P 06 05 00.9 +0.4**
comp=Z,20nm,1.0s
F29A Eureka 77.81 317 P **P 06 05 00.6 -0.4**
baz=101
B29A Wagenman Farm, 78.04 319 P **P 06 05 02.0 -0.2**
baz=102
APA Apatity 78.04 20⇓ *i*P **P 06 05 03.3 +1.6**
APA *i* 06 08 02.0
APA *i*S **S 06 14 53.0 -2.4**
APA pmax pmax
comp=Z,29nm,1.1s
A29A Manning Farm, 78.06 320 P **P 06 05 01.5 -0.8**
baz=102,SNR=8.7
MDND Maddock 78.07 319 P **P 06 05 02.3 -0.1**
baz=102
MSTX Muleshoe 78.17 304 P **P 06 05 03.5 +0.2**
baz=97
MSTX Muleshoe 78.17 304 *e*P **P 06 05 03.5 +0.2**
comp=Z,96nm,1.5s
TXAR Lajitas Array 78.42 300 P **P 06 05 04.9 0.0**
comp=Z,5.5nm,1.0s,baz=116,slow=5.3,SNR=29
TX31 Lajitas Ar. Si 78.42 300 *e*P **P 06 05 03.8 -1.0**
OGNE Ogallala 78.54 312 P **P 06 05 05.4 +0.1**
baz=99
OGNE Ogallala 78.54 312 *e*P **P 06 05 06.2 +1.0**
comp=Z,182nm,1.9s
OGNE LR LR
comp=Z,2μm,22.0s
LVZ Lovozero 78.61 20 *e*P **P 06 05 06.9 +1.9**
LVZ pmax pmax
comp=Z,119nm,1.7s
LVZ Lovozero 78.61 20 *e*P **P 06 05 06.1 +1.1**
comp=Z,74nm,1.1s
LVZ LR LR
comp=Z,2μm,20.0s
B28A Dugan Ranch, T 78.69 319 P **P 06 05 06.5 +0.7**
baz=102
KSCO Kaye Shedlock' 78.71 310 P **P 06 05 07.2 +0.9**
baz=98
KSCO Kaye Shedlock' 78.71 310 *e*P **P 06 05 07.4 +1.1**
comp=Z,71nm,1.3s
A28A Rude Farm, Bot 78.72 320 P **P 06 05 06.5 +0.5**
baz=102
A27A Ledoux Ranch, 79.36 320 P **P 06 05 09.9 +0.4**
baz=101
D26A Manning 79.81 318 P **P 06 05 12.0 +0.1**
baz=100
T25A Trinidad 79.86 307 P **P 06 05 12.7 0.0**
baz=96
T25A Trinidad 79.86 307 *e*P **P 06 05 13.9 +1.2**
comp=Z,20nm,1.3s
A26A Wade Farm, Ken 79.87 320 P **P 06 05 12.8 +0.5**
baz=100
B26A Jensen Ranch, 79.90 319 P **P 06 05 13.1 +0.6**
baz=100
HPIG 79.98 297 *e*P **P 06 05 14.1 +0.6**
comp=Z,15nm,1.1s
MNTX Cornudas Mount 80.11 302 P **P 06 05 13.8 -0.1**
baz=95
MNTX Cornudas Mount 80.11 302 *e*P **P 06 05 13.7 -0.3**
comp=Z,17nm,0.9s
MNTX LR LR
comp=Z,764nm,20.0s
H25A Fruitdale 80.23 315 P **P 06 05 14.8 +0.5**
baz=98
KBS Kingsbay 80.39 7 PFAKE 06 05 30.0 +16
KBS LR LR
comp=Z,1μm,20.0s
SPITS Spitsbergen Ar 80.41 8 P **P 06 05 15.3 +0.7**
comp=Z,6.9nm,0.9s,baz=104,slow=6.1,SNR=2.9
SPITS LR LR 06 35 02.1
comp=Z,1μm,18.4s,baz=220,slow=31
C25A Freed Ranch, W 80.47 318 P **P 06 05 15.8 +0.3**
baz=99
RSSD Black Hills 80.47 315 P **P 06 05 15.7 -0.1**
baz=98
RSSD Black Hills 80.47 315 *e*P **P 06 05 16.7 +0.9**
RSSD pmax pmax
comp=Z,55nm,1.8s
RSSD Black Hills 80.47 315 *e*P **P 06 05 16.7 +0.9**
comp=Z,55nm,1.8s
B25A Knox Farm, Ray 80.50 319 P **P 06 05 15.3 -0.4**
baz=99
A25A Svangstu Ranch 80.57 319 P **P 06 05 16.4 +0.4**
baz=100
Q24A Divide 80.65 309 P **P 06 05 17.3 +0.2**
baz=96
SDCO Great Sand Dun 80.79 308 P **P 06 05 17.9 +0.1**
baz=96
SDCO Great Sand Dun 80.79 308 *e*P **P 06 05 18.6 +0.8**
comp=Z,30nm,1.1s
SDCO LR LR
comp=Z,692nm,19.0s
FFC Flin Flon 80.93 325 *e*P **P 06 05 17.5 -0.3**
FFC pmax pmax
comp=Z,16nm,1.0s
FFC MLR MLR
comp=Z,1μm,20.0s
FFC Flin Flon 80.93 325 *e*P **P 06 05 17.5 -0.3**
comp=Z,16nm,1.0s
FFC LR LR
comp=Z,1μm,20.0s
ISCO Idaho Springs 81.10 310 P **P 06 05 19.2 -0.2**
baz=96
ISCO Idaho Springs 81.10 310 *e*P **P 06 05 21.2 +1.8**
ISCO pmax pmax
comp=Z,24nm,1.4s
ISCO MLR MLR
comp=Z,1μm,20.0s
ISCO Idaho Springs 81.10 310 *e*P **P 06 05 21.2 +1.8**
comp=Z,24nm,1.4s
ISCO LR LR
comp=Z,1μm,20.0s
PHWY Pilot Hill 81.15 312 *e*P **P 06 05 20.3 +0.6**
comp=Z,18nm,1.2s
DGMT Dagmar 81.21 319 P **P 06 05 20.5 +1.0**
baz=99
DGMT Dagmar 81.21 319 *e*P **P 06 05 20.4 +1.0**
comp=Z,51nm,0.9s
DGMT LR LR
comp=Z,1μm,21.0s
ANMO Albuquerque 81.29 305 P **P 06 05 21.0 +0.5**
baz=95
ANMO Albuquerque 81.29 305 *e*P **P 06 05 21.4 +1.0**
ANMO pmax pmax
comp=Z,31nm,1.3s
ANMO MLR MLR
comp=Z,2μm,22.0s
ANMO Albuquerque 81.29 305 *e*P **P 06 05 21.4 +1.0**
comp=Z,31nm,1.3s
ANMO LR LR
comp=Z,2μm,22.0s
BNM Barren Site 81.37 304 *e*P **P 06 05 22.0 +1.1**
LPM Los Pinos Moun 81.38 304 *e*P **P 06 05 21.8 +0.9**
N23A Red Feather La 81.47 311 P **P 06 05 21.9 +0.6**
baz=96
N23A Red Feather La 81.47 311 *e*P **P 06 05 22.4 +1.0**
comp=Z,30nm,1.0s
Y22D IRIS PASSCAL I 81.60 304 P **P 06 05 22.1 +0.1**
baz=94
LAZ Ladron 81.81 304 *e*P **P 06 05 24.4 +1.2**
S22A 4UR Ranch, Cre 81.84 308 P **P 06 05 23.2 -0.2**
baz=95
S22A 4UR Ranch, Cre 81.84 308 *e*P **P 06 05 24.1 +0.7**
comp=Z,11nm,0.9s
SMCO Snowmass 82.08 309 *e*P **P 06 05 25.9 +1.1**
comp=Z,54nm,1.4s
K22A Casper 82.09 313 P **P 06 05 24.2 -0.3**
baz=96
K22A Casper 82.09 313 *e*P **P 06 05 24.6 +0.2**
comp=Z,29nm,1.4s
121A Cookes Peak, D 82.21 303 P **P 06 05 26.0 +0.7**
baz=94
121A Cookes Peak, D 82.21 303 *e*P **P 06 05 26.6 +1.3**
comp=Z,24nm,1.4s
LAO LASA Array 82.33 317 PFAKE 06 05 40.0 +15
LAO LR LR
comp=Z,354nm,19.0s
SYO Syowa Base 82.43 161⇑ *e*P **P 06 05 25.2 -0.2**
SYO Syowa Base 82.43 161⇑ *i*PP PP 06 08 33.2 -1.1
NAZ Nazwa, Dubai 82.46 65 P **P 06 05 27.3 +0.8**
ASHO Ashiyiah 82.81 65 *i*P **P 06 05 28.1 -0.3**
SNR=6.2
ASHO Ashiyiah 82.81 65 P **P 06 05 28.5 +0.2**
ASHO P **P 06 05 28.5 +0.2**
HATD Hatta, Dubai 82.88 65 *i*P **P 06 05 28.4 -0.3**
SNR=9.2
UOSS Minazif 82.95 65 *e*P **P 06 05 29.4 +0.4**
comp=Z,69nm,1.1s
MVCO Mesa Verde 83.12 307 P **P 06 05 30.4 +0.4**
baz=94
MVCO Mesa Verde 83.12 307 *e*P **P 06 05 31.2 +1.2**
comp=Z,87nm,1.5s
MVCO LR LR
comp=Z,637nm,20.0s
O20A White River Ci 83.14 310 P **P 06 05 30.6 +0.6**
baz=95
O20A White River Ci 83.14 310 *e*P **P 06 05 30.6 +0.6**
comp=Z,32nm,1.0s
ARQ Araqi 83.18 67 P **P 06 05 31.1 +0.8**
SNR=11
PV01 Paradox Valley 83.24 308 *e*P **P 06 05 32.0 +1.4**
319A Douglas 83.41 301 *e*P **P 06 05 32.4 +1.0**
comp=Z,27nm,1.1s
PV04 Paradox Valley 83.53 308 *e*P **P 06 05 32.8 +0.8**
PV10 Paradox Valley 83.63 308 *e*P **P 06 05 34.2 +1.6**
PV05 Paradox Valley 83.66 308 *e*P **P 06 05 33.5 +0.8**
PV09 Paradox Valley 83.71 308 *e*P **P 06 05 34.5 +1.4**
HOQ Hoqain 83.91 67 P **P 06 05 32.9 -1.2**
SNR=5.2
W18A Petrified Fore 83.99 305 *e*P **P 06 05 36.2 +1.7**
comp=Z,38nm,1.2s
RLMT Red Lodge 84.29 315 P **P 06 05 36.0 +0.1**
baz=94
RLMT Red Lodge 84.29 315 *e*P **P 06 05 35.9 +0.1**
comp=Z,26nm,1.0s
RLMT LR LR
comp=Z,754nm,21.0s
BW06 Boulder Array 84.33 313 P **P 06 05 36.1 +0.1**
baz=94
BW06 Boulder Array 84.33 313 *e*P **P 06 05 36.4 +0.3**
comp=Z,15nm,1.1s
BW06 LR LR
comp=Z,2μm,22.0s
PD31 Pinedale Array 84.33 313 *e*P **P 06 05 36.0 0.0**
PDAR Pinedale Array 84.33 313 P **P 06 05 35.4 -0.7**
comp=Z,1.8nm,0.7s,baz=101,slow=6.2,SNR=13
PDAR LR LR 06 37 46.1
comp=Z,2μm,21.7s,baz=119,slow=32
SMDO Samad 84.58 67 P **P 06 05 38.8 +1.2**
SNR=7.7
GCMT Greycliff 84.62 316 *e*P **P 06 05 38.0 +0.6**
P18A Preston Nutter 84.65 310 *e*P **P 06 05 38.9 +1.1**
comp=Z,26nm,0.3s
TUC Tucson 84.73 302 P **P 06 05 38.2 0.0**
baz=92
TUC Tucson 84.73 302 *e*P **P 06 05 39.0 +0.9**
TUC pmax pmax
comp=Z,13nm,1.0s
TUC MLR MLR
comp=Z,1μm,19.0s
TUC Tucson 84.73 302 *e*P **P 06 05 39.0 +0.9**
comp=Z,13nm,1.0s
TUC LR LR
comp=Z,1μm,19.0s
HSIG 84.76 299 *e*P **P 06 05 39.1 +0.9**
comp=Z,24nm,1.0s
SRU San Rafael Swe 84.83 309 *e*P **P 06 05 39.9 +1.3**
SRU pmax pmax
comp=Z,78nm,1.9s
SRU San Rafael Swe 84.83 309 *e*P **P 06 05 39.9 +1.3**
comp=Z,78nm,1.9s
EGMT Eagleton 84.85 318 PFAKE 06 05 50.0 +12
EGMT LR LR
comp=Z,10μm,22.0s
P17A Butcher Ranch, 85.02 309 *e*P **P 06 05 40.7 +1.2**
comp=Z,29nm,1.4s
LKWY Lake 85.06 314 PFAKE 06 05 50.0 +10
LKWY LR LR
comp=Z,2μm,19.0s
WSAR Wadi Sarin 85.11 67 P **P 06 05 40.6 +0.5**
comp=Z,16nm,1.1s,baz=272,slow=7.3,SNR=5.5
LOHW Long Hollow 85.14 314 *e*P **P 06 05 40.0 -0.2**
comp=Z,113nm,1.8s
GEYT Alibeck 85.15 52 P **P 06 05 39.8 -0.2**
comp=Z,6.6nm,0.6s,baz=272,slow=7.3,SNR=11
GEYT LR LR 06 45 19.9
comp=Z,577nm,21.7s,baz=220,slow=37
H17A Grant Village 85.17 314 *e*P **P 06 05 42.0 +1.7**
comp=Z,77nm,1.8s
FLWY Flagg Ranch 85.24 314 *e*P **P 06 05 41.0 +0.3**
comp=Z,59nm,1.4s
SNOW Snow King Moun 85.25 313 *e*P **P 06 05 41.2 +0.5**
comp=Z,44nm,1.1s
MOOW Moose Ponds 85.25 314 *e*P **P 06 05 41.2 +0.5**
comp=Z,54nm,1.6s
REDW Red Top Meadow 85.31 313 *e*P **P 06 05 41.6 +0.6**
comp=Z,50nm,1.2s
YPP Pitchstone Pla 85.33 314 *e*P **P 06 05 42.5 +1.4**
comp=Z,50nm,1.6s
WUAZ Wupatki 85.35 305 P **P 06 05 41.3 0.0**
baz=92
WUAZ Wupatki 85.35 305 *e*P **P 06 05 42.6 +1.3**
comp=Z,31nm,0.9s
WUAZ LR LR
comp=Z,1μm,22.0s
YFT Old Faithful 85.36 314 *e*P **P 06 05 43.5 +2.3**
comp=Z,103nm,1.5s
X16A Lo Mia Camp, P 85.36 304 *e*P **P 06 05 43.0 +1.7**
comp=Z,24nm,1.0s
TMUT Trail Mountain 85.37 309 *e*P **P 06 05 42.5 +1.0**
comp=Z,65nm,1.7s
TPAW Teton Pass 85.39 313 *e*P **P 06 05 41.8 +0.3**
comp=Z,34nm,1.0s
YHH Holmes Hill 85.39 315 *e*P **P 06 05 42.5 +1.0**
comp=Z,34nm,1.0s
IMW Indian Meadow 85.40 314 *e*P **P 06 05 42.0 +0.4**
comp=Z,50nm,1.4s
AHID Auburn Hatcher 85.46 313 *e*P **P 06 05 42.0 +0.2**
comp=Z,38nm,1.2s
AHID LR LR
comp=Z,2μm,21.0s
YMR Madison River 85.46 315 *e*P **P 06 05 42.7 +1.0**
comp=Z,54nm,1.0s
TCUT Toone Canyon 85.61 311 *e*P **P 06 05 43.4 +0.8**
comp=Z,39nm,0.9s
JLU Jordanelle 85.62 310 *e*P **P 06 05 43.7 +1.1**
comp=Z,23nm,1.1s
YHB Horse Butte 85.63 315 *e*P **P 06 05 43.8 +1.3**
comp=Z,145nm,2.0s
HWUT Hardware Ranch 85.75 311 *e*P **P 06 05 43.3 +0.1**
comp=Z,21nm,0.8s
HWUT LR LR
comp=Z,2μm,20.0s
AKTO Aktyubinsk 85.77 40 P **P 06 05 43.1 +0.3**
comp=Z,26nm,1.1s,baz=260,slow=4.7,SNR=28
SOKR Solikamsk 85.79 30*d* *i*P **P 06 05 42.5 -0.1**
SOKR S **S 06 16 16.7 +1.2**
SOKR pmax pmax
comp=Z,38nm,1.1s
SOKR MLR MLR
comp=Z,1μm,18.0s
QLMT Earthquake Lak 85.80 315 *e*P **P 06 05 45.2 +1.8**
CTU Camp Tracy 85.85 311 *e*P **P 06 05 44.0 +0.3**
comp=Z,44nm,1.0s
SRIG Santa Rosalia 85.85 297 *e*P **P 06 05 45.2 +1.5**
comp=Z,87nm,1.9s
BOZ Bozeman (W) 85.98 316 P **P 06 05 43.4 -0.8**
baz=93
BOZ Bozeman (W) 85.98 316 *e*P **P 06 05 44.2 0.0**
BOZ pmax pmax
comp=Z,38nm,1.8s
BOZ MLR MLR
comp=Z,855nm,21.0s
BOZ Bozeman (W) 85.98 316 *e*P **P 06 05 44.2 0.0**
comp=Z,38nm,1.8s
BOZ LR LR
comp=Z,855nm,21.0s
NLU North Lily Min 86.07 310 *e*P **P 06 05 46.1 +1.3**
comp=Z,25nm,1.2s
MTPU Mount Pierson 86.09 308 *e*P **P 06 05 44.9 -0.3**
comp=Z,36nm,0.9s
MSU Marysvale 86.10 308 *e*P **P 06 05 46.2 +1.2**
MSU Marysvale 86.10 308 *e*P **P 06 05 46.2 +1.2**
U15A North Rim 86.12 306 *e*P **P 06 05 45.1 -0.2**
comp=Z,28nm,1.4s
PKCU Pink Cliffs 86.17 307 *e*P **P 06 05 45.2 -0.3**
comp=Z,20nm,1.1s
HRY Holter Researc 86.18 317 *e*P **P 06 05 45.9 +0.9**
214A Organ Pipe Nat 86.44 302 P **P 06 05 45.4 -1.2**
baz=91
214A Organ Pipe Nat 86.44 302 *e*P **P 06 05 47.8 +1.2**
comp=Z,71nm,1.4s
ARU Arti 86.48 34 P **P 06 05 46.6 +0.4**
comp=Z,11nm,0.6s,baz=260,slow=4.4,SNR=28
ARU Arti 86.48 34*c* *i*P **P 06 05 46.4 +0.2**
ARU 06 09 08.4
ARU PPP PPP 06 11 02.6
ARU S S 06 16 12.6 -10
ARU pmax pmax
comp=Z,52nm,1.2s
ARU MLR MLR
comp=Z,884nm,21.0s
ARU Arti 86.48 34 *e*P **P 06 05 47.0 +0.8**
comp=Z,108nm,1.6s
ARU LR LR
comp=Z,884nm,20.0s
KNB Kanab 86.56 307 *e*P **P 06 05 49.0 +1.7**
KNB pmax pmax
comp=Z,16nm,1.3s
KNB Kanab 86.56 307 *e*P **P 06 05 49.0 +1.7**
comp=Z,16nm,1.3s
LRM Limekiln Ridge 86.57 316 *e*P **P 06 05 48.2 +1.0**
DUG Dugway, Tooele 86.64 310 P **P 06 05 47.4 -0.2**
baz=92
DUG Dugway, Tooele 86.64 310 *e*P **P 06 05 48.0 +0.5**
DUG pmax pmax
comp=Z,20nm,1.0s
DUG MLR MLR
comp=Z,911nm,20.0s
DUG Dugway, Tooele 86.64 310 *e*P **P 06 05 48.0 +0.5**
comp=Z,20nm,1.0s
DUG LR LR
comp=Z,911nm,20.0s
Y14A Wickenburg 86.64 304 *e*P **P 06 05 48.9 +1.3**
comp=Z,118nm,1.4s
DLMT Dillon 86.65 315 *e*P **P 06 05 48.4 +0.9**
comp=Z,86nm,1.6s
HVU Hansel Valley 86.66 312 *e*P **P 06 05 48.0 +0.3**
HVU pmax pmax
comp=Z,21nm,1.0s
HVU Hansel Valley 86.66 312 *e*P **P 06 05 48.0 +0.3**
comp=Z,21nm,1.0s
MCMT McKenzie Canyo 86.81 315 *e*P **P 06 05 48.8 +0.4**
BGU Big Grassy Mou 86.83 311 *e*P **P 06 05 49.1 +0.6**
comp=Z,87nm,1.7s
LCMT Little Creek M 86.90 307 *e*P **P 06 05 48.9 0.0**
comp=Z,8.2nm,1.3s
ABKAR Akbulak array 86.95 41 *e*P **P 06 05 49.1 +0.4**
CCUT Cedar City 87.01 307 *e*P **P 06 05 49.7 +0.2**
comp=Z,28nm,1.0s
CHMT Chamberlain Mo 87.16 317 *e*P **P 06 05 49.9 -0.1**
113A Mohawk Valley, 87.26 303 *e*P **P 06 05 50.3 -0.2**
comp=Z,12nm,1.1s
SLMT Seeley Lake 87.33 317 *e*P **P 06 05 52.3 +1.5**
W13A Hualapai Mount 87.39 305 *e*P **P 06 05 52.6 +1.2**
comp=Z,19nm,1.3s
EDM Edmonton 87.42 323 *e*P **P 06 05 50.8 -0.1**
EDM pmax pmax
comp=Z,95nm,1.3s
EDM Edmonton 87.42 323 *e*P **P 06 05 50.8 -0.1**
comp=Z,95nm,1.3s
MSO Missoula 87.63 317 P **P 06 05 52.1 0.0**
baz=91
MSO Missoula 87.63 317 *e*P **P 06 05 52.2 0.0**
comp=Z,16nm,1.1s
SVE Sverdlovsk 87.64 33 *e*P **P 06 05 53.0 +1.2**
SVE *e*S S 06 16 21.4 -12
SVE pmax pmax
comp=Z,32nm,1.2s
WALA Waterton Lakes 87.66 319 *e*P **P 06 05 53.0 +0.7**
comp=Z,48nm,1.4s
SWMT Swartz Lake 87.68 317 *e*P **P 06 05 53.0 +0.6**
YBMT Yellow Bay 87.70 318 *e*P **P 06 05 53.6 +1.1**
Y12C Blythe 87.91 304 P **P 06 05 54.0 +0.4**
baz=90
Y12C Blythe 87.91 304 *e*P **P 06 05 55.2 +1.6**
comp=Z,21nm,1.0s
HLID Hailey 87.91 313 P **P 06 05 53.6 -0.1**
baz=91
HLID Hailey 87.91 313 *e*P **P 06 05 54.4 +0.7**
comp=Z,51nm,1.8s
HLID LR LR
comp=Z,2μm,22.0s
NEE2 Needles Airpor 87.99 305 P **P 06 05 53.7 -0.3**
baz=90
GLA Glamis 88.16 303 P **P 06 05 55.0 +0.1**
baz=90
GLA Glamis 88.16 303 *e*P **P 06 05 55.6 +0.7**
GLA pmax pmax
comp=Z,23nm,1.3s
GLA Glamis 88.16 303 *e*P **P 06 05 55.6 +0.7**
comp=Z,23nm,1.3s
BSMT Basoo Peak 88.22 318 *e*P **P 06 05 55.1 +0.1**
YKA Yellowknife Ar 88.35 332 P **P 06 05 53.7 -1.3**
comp=Z,3.4nm,0.8s,baz=93,slow=5.3,SNR=20
YKA LR LR 06 41 10.7
comp=Z,144nm,20.9s,baz=180,slow=33
YKA Yellowknife Ar 88.35 332 P **P 06 05 53.7 -1.3**
YKA pmax pmax
comp=Z,4.0nm,0.8s
LDFC Landfair 88.39 305 *e*P **P 06 05 57.5 +1.4**
comp=Z,36nm,1.0s
IRM Iron Mountain 88.42 304 P **P 06 05 56.2 0.0**
baz=90
SHPR Sheep Range 88.44 306 *e*P **P 06 05 57.9 +1.6**
comp=Z,14nm,1.1s
ELK Elko 88.50 311 *e*P **P 06 05 56.8 +0.2**
ELK pmax pmax
comp=Z,11nm,1.3s
ELK Elko 88.50 311 *e*P **P 06 05 56.8 +0.2**
comp=Z,11nm,1.3s
BC3 Big Chuckawall 88.68 303 P **P 06 05 57.3 -0.2**
baz=90
R11A Troy Canyon, C 88.77 308 P **P 06 05 57.7 -0.2**
baz=90
R11A Troy Canyon, C 88.77 308 *e*P **P 06 05 58.6 +0.7**
comp=Z,13nm,1.1s
GMRC Granite Mounta 88.85 305 P **P 06 05 58.4 +0.2**
baz=90
MFID Camas Ranch 88.94 313 *e*P **P 06 05 58.4 -0.1**
comp=Z,5.6nm,1.0s

TUQ Turquoise Moun 89.06 305 P P 06 05 59.6 +0.4
baz=90
BELC Belle Mtn. Jos 89.13 304 P P 06 05 59.6 0.0
baz=89
IKP In-Ko-Pah, Jac 89.24 302 P P 06 06 00.9 +0.8
baz=89
TPNV Topopah Spring 89.31 307 P P 06 06 00.8 +0.4
baz=89
TPNV Topopah Spring 89.31 307 eP P 06 06 01.5 +1.1
TPNV pmax pmax
comp=Z,23nm,1.4s
TPNV Topopah Spring 89.31 307 eP P 06 06 01.5 +1.1
comp=Z,23nm,1.4s
HEC Hector,Ludlow 89.40 305 P P 06 06 01.2 +0.5
baz=89
MONP2 Monument Peak 89.50 303 P P 06 06 01.3 -0.1
baz=89
TPFO Pinyon Flats 89.52 303 P P 06 06 01.2 -0.2
baz=89
PFO Pinyon Flats O 89.52 303 P P 06 06 01.6 +0.1
baz=89
PFO Pinyon Flats O 89.52 303 eP P 06 06 00.7 -0.7
PFO pmax pmax
comp=Z,33nm,1.6s
PFO MLR MLR
comp=Z,942nm,19.0s
PFO Pinyon Flats O 89.52 303 eP P 06 06 00.7 -0.7
comp=Z,33nm,1.6s
PFO LR LR
comp=Z,942nm,19.0s
BAR Barrett 89.71 303 eP P 06 06 02.9 +0.7
comp=Z,16nm,1.1s
GSC Goldstone, Bar 89.78 305 P P 06 06 03.5 +1.0
baz=89
GSC Goldstone, Bar 89.78 305 eP P 06 06 03.5 +1.0
GSC pmax pmax
comp=Z,12nm,1.0s
GSC Goldstone, Bar 89.78 305 eP P 06 06 03.5 +1.0
comp=Z,12nm,1.0s
NEW Newport 89.79 318 P P 06 06 02.0 -0.2
baz=89
NEW Newport 89.79 318 PFAKE 06 06 10.0 +7.8
NEW LR LR
comp=Z,1μm,20.0s
FURC Furnace Creek, 89.81 306 P P 06 06 03.5 +1.0
baz=89
F10A Beach Ranch, E 89.90 316 eP P 06 06 04.0 +1.1
BMO Blue Mountains 89.98 315 eP P 06 06 03.7 +0.4
BMO pmax pmax
comp=Z,21nm,1.0s
BMO MLR MLR
comp=Z,1μm,22.0s
BMO Blue Mountains 89.98 315 eP P 06 06 03.7 +0.4
comp=Z,21nm,1.0s
BMO LR LR
comp=Z,1μm,22.0s
MURC Murrieta 90.13 303 P P 06 06 04.4 +0.2
baz=89
GRAC Grapevine Rang 90.20 307 P P 06 06 04.7 +0.3
baz=89
MPMC Manual Prospec 90.32 306 P P 06 06 05.3 +0.1
baz=89
LRMC Laurel Mtn Rad 90.49 305 P P 06 06 05.8 -0.1
baz=88
BFSC Mount Baldy Ra 90.50 304 P P 06 06 05.8 -0.2
baz=88
MAW Mawson 90.57 157 P P 06 06 07.7 +2.4
comp=Z,6.6nm,0.8s,baz=239,slow=2.6,SNR=10
MAW LR LR 06 40 28.3
comp=Z,461nm,18.2s,baz=260,slow=31
MAW Mawson 90.57 157 eP P 06 06 07.5 +2.2
MAW pmax pmax
comp=Z,12nm,1.3s
MAW Mawson 90.57 157 eP P 06 06 07.5 +2.2
comp=Z,12nm,1.3s
EDW2 Edwards Air Fo 90.76 305 P P 06 06 07.0 -0.1
baz=88
QSPA South Pole Qui 90.97 180 eP P 06 06 08.2 +0.7
QSPA ePcP PcP 06 06 08.7 +0.3
QSPA LR LR
comp=Z,571nm,21.0s
WVOR Wild Horse Val 91.02 312 PFAKE 06 06 20.0 +12
WVOR LR LR
comp=Z,1μm,21.0s
ISA Isabella, Lake 91.13 306 P P 06 06 07.9 -0.9
baz=88
CIS Catalina Islan 91.16 303 P P 06 06 07.7 -1.3
baz=88
SCI2 San Clemente I 91.28 303 P P 06 06 09.0 -0.5
baz=88
HAWA Hanford 91.49 316 PFAKE 06 06 20.0 +10
HAWA LR LR
comp=Z,885nm,20.0s
ZRNK Zerenda 92.57 37 eP P 06 06 15.7 +0.7
ZRNK Zerenda 92.57 37 eP P 06 06 15.7 +0.7
LON Longmire 93.03 317 eP P 06 06 17.6 +0.3
LON pmax pmax
comp=Z,12nm,1.0s
LON Longmire 93.03 317 eP P 06 06 17.6 +0.3
comp=Z,12nm,1.0s
BRVK Borovoye 93.33 37 ceP P 06 06 19.6 +1.1
BRVK pmax pmax
comp=Z,7.0nm,1.1s
BRVK Borovoye 93.33 37 PFAKE 06 06 30.0 +12
BRVK LR LR
comp=Z,475nm,19.0s
BVAR Borovoye Array 93.40 37 P P 06 06 20.4 +1.6
comp=Z,1.8nm,0.9s,baz=256,slow=5.8,SNR=6.9
BVAR PP PP 06 10 11.7 +9.0
comp=Z,1.5nm,0.8s,baz=270,slow=1.5,SNR=3.6
NLWA Neilton Lookou 94.38 317 PFAKE 06 06 40.0 +17
NLWA LR LR
comp=Z,1μm,20.0s
OTUK Ortayu 95.18 42 P P 06 06 30.8 +3.7
OTUK pmax pmax
comp=Z,6.0nm,2.3s
DLBC Dease Lake 96.33 329 eP P 06 06 33.9 +1.7
comp=Z,11nm,1.2s
EKS2 Erkin-Say 96.91 47 PFAKE 06 06 50.0 +15
EKS2 LR LR
comp=Z,670nm,19.0s
AAK Ala-Archa 97.43 47 eP Pdif 06 06 37.9 +0.1
AAK pmax pmax
comp=Z,12nm,1.2s
AAK Ala-Archa 97.43 47 PFAKE 06 06 50.0 +12
AAK LR LR
comp=Z,756nm,22.0s
NRIK Noril'sk 97.45 19 LR LR 06 51 59.6
comp=Z,762nm,18.4s,baz=295,slow=36
WRAK Wrangell Islan 98.00 327 PFAKE 06 06 50.0 +10
WRAK LR LR
comp=Z,972nm,21.0s
TKM2 Tokmak 2 98.19 47 PFAKE 06 06 50.0 +8.8
TKM2 LR LR
comp=Z,464nm,19.0s
KURBB Kurchatov Arra 98.77 39 P Pdif 06 06 44.9 +1.6
comp=Z,4.6nm,1.1s,baz=289,slow=5.1,SNR=16
KURBB PP PP 06 10 41.0 -3.3
comp=Z,3.4nm,0.9s,baz=282,slow=7.6,SNR=7.4
KURK Kurchatov 98.80 38 eP Pdif 06 06 45.1 +1.7
KURK 06 10 41.0
KURK pmax pmax
comp=Z,7.0nm,1.0s
KURK MLR MLR
comp=Z,999nm,19.0s
KURK Kurchatov 98.80 38 eP Pdif 06 06 45.0 +1.6
comp=Z,7.0nm,1.0s
KURK PP PP 06 10 41.0 -3.5
KURK LR LR
comp=Z,999nm,19.0s
KSH Kashi 98.99 50 eP Pdif 06 06 45.9 +1.2
KSH epP sP 06 06 49.9 +0.6
KSH esP pP 06 06 51.7 +3.6
KSH ePP PP 06 10 49.5 +2.9
KSH S S 06 18 12.2 -3.7
KSH sS sS 06 18 20.4 -1.1
KSH pmax pmax
comp=Z,23nm,1.8s
KSH pmax pmax
comp=Z,91nm,4.0s
KSH LR LR
comp=Z,210nm,8.4s
KSH LR LR
comp=Z,300nm,13.3s
KSH LR LR
comp=Z,930nm,29.9s
EGAK Eagle 99.50 337 PFAKE 06 07 00.0 +14
EGAK LR LR
comp=Z,501nm,20.0s
ZALV Zalesovo Beam 101.63 34 PP PP 06 11 05.3 -0.6
comp=Z,0.6nm,0.4s,baz=285,slow=5.7,SNR=3.5
ILAR Eielson Array 101.71 338 P Pdif 06 06 57.1 +1.0
comp=Z,0.2nm,0.6s,baz=69,slow=5.0,SNR=3.8
COLA College 102.02 338 PFAKE 06 07 10.0 +13
COLA LR LR
comp=Z,594nm,21.0s
MKAR Makanchi Array 102.08 42 P Pdif 06 06 59.0 +0.9
comp=Z,0.2nm,0.2s,baz=298,slow=3.1,SNR=3.6
MKAR PP PP 06 11 03.5 -6.1
comp=Z,1.6nm,0.8s,baz=298,slow=2.6,SNR=3.9
SBA Scott Base 102.80 183 PFAKE 06 07 10.0 +9.4
SBA LR LR
comp=Z,361nm,19.0s
CAST Castle Rocks 104.36 338 ePdif Pdif 06 07 09.7 +1.8
TIXI Tiksi 105.83 8 PFAKE 06 11 40.0
TIXI LR LR
comp=Z,609nm,22.0s
WMQ Urumqi 106.56 44 Pdif Pdif 06 07 20.1 +1.9
WMQ PP PP 06 11 48.0 +4.9
WMQ SS SS 06 26 48.5 +1.4
WMQ AMB AMB
comp=Z,110nm,5.2s
WMQ LR LR
comp=Z,830nm,15.9s
WMQ LR LR
comp=Z,870nm,20.1s
WMQ LR LR
comp=Z,1μm,27.6s
RKT Rikitea 107.38 246 eLR LR 06 42 54.4
comp=Z,700nm,24.8s
KDAK Kodiak Island 107.62 333 PFAKE 06 11 40.0
KDAK LR LR
comp=Z,391nm,20.0s
CASY Casey 108.06 163 PFAKE 06 11 40.0
CASY LR LR
comp=Z,124nm,19.0s
BILL Bilibino 110.63 355 PFAKE 06 11 50.0
BILL LR LR
comp=Z,580nm,21.0s
TLY Talaya 112.87 31 i PKIKP PKiKP 06 11 51.1 +11
TLY pmax pmax
comp=Z,8.0nm,0.8s
TLY Talaya 112.87 31 PFAKE 06 11 50.0
TLY LR LR
comp=Z,1μm,20.0s
LSA Lhasa 113.28 57 PFAKE 06 11 50.0
LSA LR LR
comp=Z,642nm,21.0s
ZAK Zakamensk 113.39 32 ePKIKP PKiKP 06 11 43.4 +1.7
ZAK pmax pmax
comp=Z,3.0nm,1.8s
YAK Yakutsk 114.66 12 PFAKE 06 12 00.0 +16
YAK LR LR
comp=Z,613nm,20.0s
SONA1 Songino Array 116.51 33 ePKPdf PKPdf 06 11 48.4 +0.5
SONM Songino Array 116.51 34 PKP PKPdf 06 11 47.9 +0.1
comp=Z,1.4nm,0.7s,baz=285,slow=2.8,SNR=8.4
GTA Gaotai 116.63 44 ePKP PKPdf 06 11 50.6 +2.3
MA2 Magadan 119.65 2 PFAKE 06 12 10.0 +17
MA2 LR LR
comp=Z,2μm,19.0s
TBI Tubuai 120.46 243 eSS SS 06 30 02.1 +10
comp=Z,492nm,34.0s
TBI Tubuai 120.46 243 eLQ LQ 06 43 47.3
comp=Z,792nm,41.0s
TBI eLR LR 06 49 01.2
comp=Z,822nm,26.2s
LZH Lanzhou 120.96 46 ePKP PKPdf 06 11 59.2 +2.4
LZH sPKP 06 12 03.8
LZH PP PP 06 13 32.0 +6.6
LZH SKKS 06 20 16.3
LZH eSS SKKSdf 06 29 50.2 +2.6
LZH AMB AMB
comp=Z,170nm,9.5s
LZH LR LR
comp=Z,660nm,18.2s
LZH LR LR
comp=Z,310nm,18.5s
LZH LR LR
comp=Z,1μm,20.1s
PPT2 Papeete2 121.74 250 eSS SS 06 30 07.8 -1.1
comp=Z,342nm,27.8s
PPT2 Papeete2 121.74 250 eLQ LQ 06 44 03.7
comp=Z,2μm,29.8s
PPT2 eLR LR 06 49 39.3
comp=Z,545nm,22.2s
HIA Hailar 122.16 26 PFAKE 06 12 10.0 +11
HIA LR LR
comp=Z,1μm,20.0s
CHTO Chiang Mai 122.92 67 PFAKE 06 12 10.0 +9.2
CHTO LR LR
comp=Z,278nm,19.0s
CMAR Chiang Mai Arr 123.00 67 PKP PKPdf 06 12 01.2 +0.2
comp=Z,2.0nm,0.3s,baz=285,slow=5.5,SNR=13
CMAR PP PP 06 13 51.0 +11
comp=Z,0.6nm,0.3s,baz=329,slow=4.2,SNR=4.3
CM01 Chiang Mai Arr 123.02 67 ePKPdf PKPdf 06 12 01.9 +1.0
CD2 Chengdu 123.14 52 PKP PKPdf 06 11 59.5 -1.5
CD2 sPKP 06 12 04.2
CD2 PP PP 06 13 38.7 -1.6
CD2 SKS SKSdf 06 19 11.5 -1.9
CD2 SKKS SKKSac 06 20 36.3 -3.9
CD2 SS SS 06 30 24.6 -1.0
CD2 AMB AMB
comp=Z,140nm,6.2s
CD2 LR LR
comp=Z,460nm,15.9s
CD2 LR LR
comp=Z,450nm,16.3s
CD2 LR LR
comp=Z,530nm,16.3s
HHC Hu-ho-hao-te 123.61 38 ePKP PKPdf 06 12 03.5 +1.8
HHC PP PP 06 13 49.4 +6.4
HHC AMB AMB
comp=Z,100nm,8.6s
HHC LR LR
comp=Z,870nm,18.0s
HHC LR LR
comp=Z,810nm,19.0s
HHC LR LR
comp=Z,950nm,20.0s
PEA0 Petropavlovsk- 126.06 357 ePKPdf PKPdf 06 12 07.1 +1.2
PETK Petropavlovsk- 126.06 357 PKP PKPdf 06 12 06.3 +0.5
comp=Z,3.3nm,0.7s,baz=39,slow=2.8,SNR=5.6
PET Petropavlovsk 126.09 356 ePKIKP PKPdf 06 12 06.3 +0.5
PET pmax pmax
comp=Z,35nm,2.5s
PET Petropavlovsk 126.09 356 PFAKE 06 12 20.0 +14
PET LR LR
comp=Z,430nm,21.0s
KLR Kul'dur 126.63 18 PKP PKPdf 06 12 07.0 0.0
comp=Z,3.9nm,0.9s,baz=337,slow=4.9,SNR=7.9
BJI Beijing 126.86 36 PKP PKPdf 06 12 07.2 -0.5
BJI PP PP 06 14 04.2 -0.2
BJI SS SS 06 31 12.4 +1.3
BJI AMB AMB
comp=Z,100nm,6.5s
BJI LR LR
comp=Z,650nm,18.6s
BJI LR LR
comp=Z,370nm,16.2s
BJI LR LR
comp=Z,800nm,47.4s
BJT Baijiatuau 126.87 36 PFAKE 06 12 20.0 +12
BJT LR LR
comp=Z,1μm,20.0s
GYA Guiyang 127.27 55 ePdif Pdif 06 08 50.0 -0.7
GYA PKP PKiKP 06 12 08.2 -1.4
GYA PP PP 06 14 11.8 +3.7
GYA AMB AMB
comp=Z,140nm,8.0s
ENH Enshi 127.85 50 ePKPdf PKPdf 06 12 11.0 +1.0
ENH LR LR
comp=Z,674nm,20.0s
MDJ Mudanjiang 129.91 22 PKP PKPdf 06 12 13.3 -0.1
MDJ sPKP 06 12 17.7
MDJ PP PP 06 14 24.3 +0.3
MDJ AMB AMB
comp=Z,76nm,6.7s
MDJ LR LR
comp=Z,560nm,22.5s
MDJ LR LR
comp=Z,140nm,24.4s
MDJ LR LR
comp=Z,600nm,18.7s
MDJ Mudanjiang 129.91 22 PFAKE 06 12 30.0 +17
MDJ LR LR
comp=Z,631nm,20.0s
USRK Ussuriysk Ar. 131.14 21 PKP PKPdf 06 12 16.8 +1.0
comp=Z,4.2nm,1.0s,baz=341,slow=3.5,SNR=6.5
WHN Wuhan 131.34 47 ePKP PKPdf 06 12 17.9 +1.4
WHN LR LR
comp=Z,3μm,20.7s
WHN LR LR
comp=Z,970nm,17.9s
WHN LR LR
comp=Z,1μm,20.8s
YSS Yuzh-Sakhalins 131.40 10 PFAKE 06 12 30.0 +14
YSS LR LR
comp=Z,315nm,20.0s
QIZ Qiongzhong 132.73 63 PKP PKPdf 06 12 18.4 -1.1
QIZ PP PP 06 14 41.6 -2.3
QIZ AMB AMB
comp=Z,56nm,4.2s
QIZ LR LR
comp=Z,360nm,21.6s
QIZ LR LR
comp=Z,490nm,20.7s
QIZ Qiongzhong 132.73 63 PFAKE 06 12 30.0 +11
QIZ LR LR
comp=Z,486nm,19.0s
NWAO Narrogin (SRO) 133.31 137 PFAKE 06 12 30.0 +10
NWAO LR LR
comp=Z,563nm,19.0s
INCN Inchon 134.40 30 PFAKE 06 12 30.0 +7.8
INCN LR LR
comp=Z,642nm,20.0s
KSAR Wonju Array Be 135.05 29 PP PP 06 14 59.8 +2.6
KSRS Korea Array 135.06 29 PP PP 06 14 59.8 +2.5
comp=Z,1.1nm,0.7s,baz=314,slow=5.9,SNR=5.5
ERM Erimo 136.25 11 PFAKE 06 12 40.0 +15
ERM LR LR
comp=Z,575nm,19.0s
KSM Kuching 136.69 87 PFAKE 06 12 40.0 +13
KSM LR LR
comp=Z,266nm,21.0s
YHNB Yeheng 139.76 49 PFAKE 06 12 40.0 +7.5
YHNB LR LR
comp=Z,709nm,22.0s
MIDW Midway 139.80 318 PFAKE 06 12 40.0 +7.7
MIDW LR LR
comp=Z,735nm,20.0s
MAJO Matsushiro 140.10 19 PFAKE 06 12 40.0 +7.3
MAJO LR LR
comp=Z,637nm,21.0s
MJAR Matsushiro Arr 140.10 19 PKP PKPdf 06 12 34.3 +1.6
comp=Z,2.1nm,0.6s,baz=323,slow=2.6,SNR=7.2
RAO Raoul Island 140.84 221 PFAKE 06 12 50.0 +16
RAO LR LR
comp=Z,3μm,21.0s
MBWA Marble Bar 141.34 124 PFAKE 06 12 50.0 +15
MBWA LR LR
comp=Z,947nm,20.0s
BBOO Buckleboo 144.24 154 ePKPdf PKPdf 06 12 40.3 +0.1
MYLDM Lahad Datu 144.47 80 ePKPdf PKPdf 06 12 40.5 -0.6
CAN Canberra 145.50 173 ePKIKP PKPab 06 12 42.5 0.0
CAN MLR MLR
comp=Z,655nm,19.0s
CAN Canberra 145.50 173 ePKPdf PKPab 06 12 42.5 0.0
CAN LR LR
comp=Z,655nm,19.0s
KAPI Kappang 146.00 98 PFAKE 06 13 00.0 +15
KAPI LR LR
comp=Z,313nm,22.0s
STKA Stephens Creek 147.19 161 PKPbc PKPab 06 12 48.0 -1.0
comp=Z,17nm,1.0s,baz=218,slow=1.1,SNR=14
STKA Stephens Creek 147.19 161 ePKPbc PKPab 06 12 47.6 -1.4
FITZ Fitzroy Crossi 147.69 124 ePKPbc PKPab 06 12 50.0 -1.4
LUWI Luwuk 149.22 91 ePKPbc PKPab 06 12 54.7 -3.0
SOEI Soe 149.57 108 ePKPab PKPab 06 13 00.4 +1.2
ASAR Alice Springs 150.41 141 PKP PKPdf 06 12 52.1 +1.4
comp=Z,4.0nm,0.9s,baz=223,slow=1.5,SNR=11
ASAR PKPbc PKiKP 06 12 57.0 +0.2
comp=Z,16nm,0.9s,baz=209,slow=2.0,SNR=49
AS31 Alice Springs 150.42 141 ePKPbc PKPbc 06 12 56.7 +0.7
AS01 Alice Springs 150.45 141 ePKPdf PKPdf 06 12 50.9 +0.1
AS01 ePKPbc PKiKP 06 12 57.4 +0.5
MSVF Nonsavu 150.69 234 ePKIKP PKPbc 06 12 58.4 +1.6
MSVF Nonsavu 150.69 234 ePKPbc PKPbc 06 12 58.4 +1.6
DAV Davao City (W) 150.98 74 PFAKE 06 13 00.0 +2.4
DAV LR LR
comp=Z,375nm,21.0s
WRA Warramunga Arr 153.32 136 PKP PKPdf 06 12 55.4 +0.2
comp=Z,3.5nm,0.8s,baz=246,slow=1.8,SNR=5.6
WRA PKPbc PKiKP 06 13 02.6 -0.2
comp=Z,3.5nm,0.8s,baz=242,slow=1.3,SNR=13
WRA Warramunga Arr 153.32 136 PKIKP PKPdf 06 12 55.4 +0.2
WRA 06 13 02.6
WRA pmax pmax
comp=Z,4.0nm,0.8s
WRA pmax pmax
comp=Z,4.0nm,0.8s
WRAB Tennant Creek 153.34 136 PFAKE 06 13 10.0 -4.6
WRAB LR LR
comp=Z,930nm,22.0s
DZM Mont Dzumac 155.50 210 eLR LR 07 05 13.6
comp=Z,722nm,22.5s
CTAO Charters Tower 159.64 160 PFAKE 06 13 10.0 +6.6
CTAO LR LR
comp=Z,896nm,19.0s
GUMO Guam 163.22 31 PFAKE 06 13 20.0 +13
GUMO LR LR
comp=Z,413nm,21.0s
HNR Honiara 169.41 217 PFAKE 06 13 20.0 +7.9
HNR LR LR
comp=Z,482nm,20.0s
PMG Port Moresby 169.42 143 PFAKE 06 13 20.0 +7.9
PMG LR LR
comp=Z,576nm,20.0s

NIED ***08*** *05:54:00, 30.40N×131.30E, h20km, Mw3.8 Best double couple: M0 5.77000×10^14 NP1:φ=54.00000°, δ=6.00000°, λ=-87.00000°. NP2:φ=231.00000°, δ=84.00000°, λ=-90.00000°.*

IDC ***08*** *05:54:11.6±1.2, 30.30N×130.79E, h0km, mb3.9/5, mb1 3.9/7, mb1mx3.6/50, mbtmp3.8/7, ML3.1/2, Error ellipse: s-maj=65.9km s-min=18.8km az=79.0*

ISCJB ***08*** *05:54:14.0±1.1, 30.34N±0.04×131.28E±0.07, h32km±6km, mb3.9/5, Error ellipse: s-maj=10.6km s-min=6.5km az=24.1*

JMA ***08*** *05:54:14.0±0.2, 30.35N×131.28E, h29km±1km, M3.7*

JMA Felt I J1.

ISC 08 05:54:15.2±1.6, 30.37N±0.06×131.17E±0.09, h29km±9km, n18, σ0=89/22, mb4.0/5, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
JTN	Tanegashima 3	0.33	331	P	Pb	05 54 22.6	-0.5
JTN				eS	Sb	05 54 29.1	+0.7
JYAK	Yakushimahirau	0.58	258	P	Pb	05 54 27.1	+0.1
JYAK				S	Sn	05 54 36.4	+0.3
JTSR	Tashiro 2	0.83	345	P	Pn	05 54 30.1	-0.8
JTSR				S	Sb	05 54 41.7	-0.2
JKC	Kuchinoerabu	0.85	277	P	Pn	05 54 31.2	0.0
JKC				eS	Sn	05 54 43.8	+1.2
JNAR	Kushima--Naru	1.16	4	P	Pn	05 54 35.3	-0.2
JNN	Nakanoshima	1.24	245	P	Pb	05 54 37.4	-0.6
JNN				eS	Sb	05 54 53.0	-0.5
JSU	Suzuyama	1.29	332	P	Pn	05 54 37.0	-0.3
JSU				eS	Sb	05 54 54.7	-0.4
JTZ	Takazaki	1.53	357	P	Pn	05 54 40.5	-0.1
JNU	Nakatsue	2.76	355	Pn	Pn	05 54 57.8	+0.3
	3.4nm,0.3s,baz=190,slow=11,SNR=13						
JNU				Sn	Sn	05 55 30.3	+0.4
	3.2nm,0.3s,baz=168,slow=15,SNR=2.3						
KLR	Kul'dur	18.85	1	P	Pn	05 58 35.4	+2.0
	0.1nm,0.3s,baz=172,slow=7.1,SNR=4.0						
SONM	Songino Array	25.79	320	P	P	05 59 44.7	+1.0
	0.3nm,0.4s,baz=122,slow=7.0,SNR=1.9						
H11N2	WAKE ISLAND Hy	33.93	100	T	T	06 36 53.7	
	baz=296,slow=75,SNR=41						
H11N1	WAKE ISLAND Hy	33.93	100	T	T	06 36 53.2	
	baz=296,slow=75,SNR=42						
H11N3	WAKE ISLAND Hy	33.94	100	T	T	06 36 54.3	
	baz=296,slow=75,SNR=57						

BVAR Borovoye Array 49.03 316 P **P 06 02 58.1 -1.2**
0.5nm,0.3s,baz=88,slow=12,SNR=3.5
WRA Warramunga Arr 50.11 176 P **P 06 03 07.6 -0.3**
0.6nm,0.4s,baz=356,slow=8.0,SNR=8.8
ASAR Alice Springs 53.79 177 P **P 06 03 36.5 +1.4**
0.5nm,0.4s,baz=12,slow=13,SNR=8.7
FINES FINESS Array B 70.55 331 P **P 06 05 25.8 -1.3**
3.7nm,0.7s,baz=59,slow=5.2,SNR=5.4

*IDC **08** 06:07:22.6±1.2,29.67S×176.11W,h0km,mb3.9/2, mb1 4.3/3,mb1mx3.6/29,mbtmp3.9/3,ML3.5/1,MS3.7/1, Ms1 3.7/1,ms1mx2.9/29, Error ellipse: s-maj=41.3km s-min=24.4km az=5.0*
ISC 08 06:07:26.7±1.1,29.7S±0.1×176.23W±0.10,h28km,n8, σ0s86/9,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island 1.54 288**			Pn	**Pb**	**06 07 54.0**	**-0.6**
	228nm,0.3s,baz=66,slow=20,SNR=6.5						
RAO				Sn	**Sb**	**06 08 14.6**	**+0.8**
	334nm,0.3s,baz=257,slow=23,SNR=4.4						
URZ	**Urewera 10.14 211**			Pn	**Pn**	**06 09 50.0**	**-0.3**
	0.4nm,0.3s,baz=18,slow=18,SNR=4.1						
URZ				Sn	**Sn**	**06 11 42.9**	**-0.1**
	1.7nm,0.3s,baz=78,slow=22,SNR=13						
WRA	**Warramunga Arr 45.61 271**			P	**P**	**06 15 45.3**	**+0.6**
	1.4nm,1.1s,baz=113,slow=7.9,SNR=6.8						
GUMO	**Guam 57.11 313**			LR	LR	06 36 39.2	
	comp=Z,79nm,21.4s,baz=164,slow=31						
TXAR	**Lajitas Array 90.74 56**			P	**P**	**06 20 27.7**	**+0.3**
	0.6nm,1.0s,baz=194,slow=4.8,SNR=4.5						
FINES	**FINESS Array B 145.03 341**			PKPbc	**PKPbc**	**06 26 59.1**	**-0.9**
	0.3nm,0.5s,baz=85,slow=2.9,SNR=2.9						
AKASG	**Malin Array Be 151.67 325**			PKPbc	**PKPbc**	**06 27 17.2**	**-0.8**
	0.8nm,0.5s,baz=44,slow=2.8,SNR=2.8						
TORD	**Torodi Ar. Bea 163.38 173**			PKPab	**PKPab**	**06 28 19.3**	**+1.2**
	0.4nm,0.8s,baz=230,slow=1.1,SNR=2.5						

*IDC **08** 06:10:50.9±1.3,33.27S×178.44W,h0km,mb4.1/2, mb1 4.4/3,mb1mx3.8/33,mbtmp4.2/3,ML4.1/1,Error ellipse: s-maj=42.2km s-min=33.3km az=140.0*
*ISCJB **08** 06:10:55.9±5.3,33.6S±0.2×178.6W±0.8,h41km,mb4.0/2, Error ellipse: s-maj=99.8km s-min=16.2km az=15.7*
ISC 08 06:10:56.7±1.5,33.5S±0.2×178.5W±0.3,h41km,n6, σ1s49/9,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera 5.92 216**			Pn	**Pn**	**06 12 21.5**	**-0.3**
	4.1nm,0.3s,baz=323,slow=5.1,SNR=12						
URZ				Sn	**Sn**	**06 13 27.5**	**-0.7**
	3.6nm,0.3s,baz=308,slow=6.9,SNR=10						
ASAR	**Alice Springs 42.59 271**			P	**P**	**06 18 49.7**	**+0.7**
	2.0nm,0.7s,baz=112,slow=7.5,SNR=13						
ASAR				PcP	**PcP**	**06 20 41.7**	**+1.0**
	0.2nm,0.3s,baz=131,slow=3.8,SNR=3.3						
WRA	**Warramunga Arr 43.86 276**			P	**P**	**06 18 59.7**	**+0.5**
	1.9nm,0.5s,baz=117,slow=8.1,SNR=22						
FINES	**FINESS Array B 147.88 338**			PKPbc	**PKPbc**	**06 30 37.3**	**+0.8**
	0.9nm,0.5s,baz=34,slow=3.9,SNR=8.1						
NOA	**NORSAR Array B 151.74 350**			PKPbc	**PKPbc**	**06 30 45.1**	**-1.0**
	0.2nm,0.5s,baz=25,slow=3.1,SNR=2.3						
NOA				PKPab	**PKPab**	**06 30 52.4**	**-2.6**
	0.9nm,0.7s,baz=38,slow=5.9,SNR=3.8						
TORD	**Torodi Ar. Bea 159.73 181**			PKPab	**PKPab**	**06 31 31.8**	**+1.6**
	0.5nm,0.8s,baz=198,slow=2.8,SNR=2.6						

*GUC **08** 06:16:36.6±0.5,34.03S×72.50W,h14km±4km,ML2.9*
ISC 08 06:16:40.2±3.1,34.13S±0.05×72.4W±0.2,h24km±20km, n13,σ2s60/22,2D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu 0.43 127**			*i* P	**Pb**	**06 16 47.9**	**-1.4**
CHPI				*i* S	**Sb**	**06 16 56.1**	**+0.7**
NICH	**Los Niches 1.31 132**			*i* P	**Pn**	**06 17 02.9**	**-0.1**
NICH				*i* S	**Sb**	**06 17 23.0**	**+2.4**
RCDM	**Rinconada Maip 1.49 65**			*i* P	**Pn**	**06 17 04.1**	**-1.4**
RCDM				*i* S	**Sb**	**06 17 25.3**	**-0.4**
ROC1	**El Roble 1.65 46**			*e*P	**Pb**	**06 17 10.9**	**+0.8**
ROC1				*e*S	**Sb**	**06 17 34.2**	**+3.8**
ROCH	**El Roble 1.65 46**			*i* P	**Pn**	**06 17 06.7**	**-1.2**
ROCH				*i* S	**Sb**	**06 17 30.1**	**-0.5**
ROCH				AML	AML	06 17 43.6	
	comp=E,170nm,0.8s						
CLCH	**Cerro Calan 1.73 65**			*i* P	**Pn**	**06 17 08.6**	**-0.3**
CLCH				*i* S	**Sb**	**06 17 32.5**	**-0.3**
CLCH				AML	AML	06 17 44.8	
	comp=N,211nm,0.8s						
PEL	**Peldehue 1.75 56**			*i* P	**Pn**	**06 17 08.3**	**-0.8**
PEL				*i* S	**Sb**	**06 17 32.7**	**-0.6**
PEL				AML	AML	06 17 42.5	
	comp=E,218nm,0.4s						
FCH	**Farellones 1.95 66**			*i* P	**Pn**	**06 17 12.4**	**+0.3**
FCH				*i* S	**Sb**	**06 17 39.5**	**+0.2**
AUSP	**Uspallata 3.18 54**			*e*P	**Pb**	**06 17 37.7**	**+1.6**
AUSP				⇓*e*S	**Sb**	**06 18 19.3**	**+4.7**
ASAL	**Salagasta 3.37 64**			*e*P	**Pb**	**06 17 42.9**	**+3.5**
ASAL				*e*S	Sb	06 18 26.6	+6.6
RTLS	**Leoncito 3.51 49**			*e*P	**Pb**	**06 17 39.8**	**-2.0**
RTLS				*e*S	Sb	06 18 30.6	+6.5
ACHE	**Chepes 5.69 60**			*e*P	Pb	06 18 11.8	-7.1
ACHE				*e*S	**Sb**	**06 19 19.4**	**-7.2**
AGUA	**GUANDACOL 5.71 37**			⇓*e*P	Pn	06 18 08.1	+4.4
AGUA				*e*S	**Sb**	**06 19 27.7**	**+0.4**

*IDC **08** 06:17:43.0±0.7,0.86N×26.40W,h0km,mb3.9/14, mb1 4.1/15,mb1mx3.9/45,mbtmp3.9/15,ML3.6/1,MS4.1/7, Ms1 4.1/7,ms1mx3.7/32,Error ellipse: s-maj=25.6km s-min=17.2km az=154.0*
*ISCJB **08** 06:17:43.9±0.5,0.8N±0.1×26.37W±0.09,h17km,mb4.2/23, MS4.1/6,Error ellipse: s-maj=17.1km s-min=10.2km az=149.6*
*NEIC **08** 06:17:44.6±0.3,0.80N×26.39W,h10km,mb4.6/9,Error ellipse: s-maj=12.1km s-min=7.6km az=145.0*
ISC 08 06:17:45.6±0.6,0.8N±0.1×26.4W±0.1,h17km,n39, σ0s88/27,mb4.2/23,MS4.1/6,2C,Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RCBR	**Riachuelo 11.53 235**			Pn	**Pn**	**06 20 28.1**	**-1.5**
	0.4nm,0.3s,baz=63,slow=10,SNR=8.8						
RCBR				Sn	Sn	06 22 26.2	-12
	0.2nm,0.3s,baz=68,slow=15,SNR=1.0						
RCBR				LR	LR	06 23 48.3	
	comp=Z,737nm,20.8s,baz=113,slow=32						
RCBR	**Riachuelo 11.53 235**			*e*Pn	**Pn**	**06 20 29.6**	**0.0**
RCBR					Sn	06 22 26.2	-12
SACV	**Santiago Islan 14.36 11**			*e*Pn	**Pn**	**06 21 09.5**	**+1.2**
H10N3	**ASCENSION HYDR14.65 126**			T	T	06 36 15.4	
	baz=305,slow=75,SNR=32						
H10N2	**ASCENSION HYDR14.65 126**			T	T	06 36 14.8	
	baz=305,slow=75,SNR=27						
H10N1	**ASCENSION HYDR14.67 126**			T	T	06 36 15.9	
	baz=305,slow=75,SNR=26						
H10S3	**ASCENSION HYDR15.19 130**			T	T	06 36 53.8	
	baz=309,slow=76,SNR=9.9						
H10S1	**ASCENSION HYDR15.19 130**			T	T	06 36 55.0	
	baz=309,slow=76,SNR=9.3						
H10S2	**ASCENSION HYDR15.21 130**			T	T	06 36 54.3	
	baz=309,slow=76,SNR=9.3						
DBIC	**Dimbokro 22.28 74**			P	**P**	**06 22 42.5**	**+0.2**
	10nm,0.9s,baz=257,slow=7.6,SNR=4.0						
DBIC				LR	LR	06 29 31.9	
	comp=Z,453nm,20.2s,baz=255,slow=32						
BDFB	**Brasilia 26.87 232**			LR	LR	06 32 50.5	
	comp=Z,557nm,18.6s,baz=347,slow=34						
TORD	**Torodi Ar. Bea 30.43 65**			P	**P**	**06 23 56.8**	**-0.7**
	3.6nm,1.2s,baz=260,slow=10.0,SNR=4.4						
TORD				LR	LR	06 34 33.8	
	comp=Z,223nm,20.4s,baz=305,slow=33						
SAML	**Samuel 37.88 254**			*e*P	**P**	**06 25 02.7**	**+0.6**
	4.8nm,1.3s						
MDT	**Midelt 37.90 31**			LR	LR	06 40 49.1	
	comp=Z,269nm,18.2s,baz=53,slow=37						
TAM	**Tamanrasset 37.97 53**			*e*P	P	06 25 11.0	+8.1
	10nm,1.5s						
CPUP	**Villa Florida 40.20 226**			LR	LR	06 41 40.0	

	comp=Z,366nm,18.0s,baz=62,slow=36						
ESDC	**Sonseca Array 43.79 25**			P	**P**	**06 25 50.4**	**-0.1**
	0.2nm,0.3s,baz=210,slow=9.6,SNR=2.8						
LPAZ	**La Paz 44.52 246**			P	**P**	**06 25 59.5**	**+2.0**
	1.1nm,0.9s,baz=60,slow=7.7,SNR=5.6						
LPAZ				LR	LR	06 43 49.6	
	comp=Z,353nm,19.7s,baz=94,slow=35						
MATP	**Matopo 57.70 115**			P	**P**	**06 27 35.6**	**-0.3**
	6.1nm,1.1s,baz=259,slow=10,SNR=2.7						
PDG	**Podgorica 58.23 39**			⇑*i*P	P	06 27 47.7	+8.6
GERES	**GERESS Array B 58.98 30**			P	**P**	**06 27 44.2**	**-0.1**
	0.2nm,0.2s,baz=277,slow=7.8,SNR=2.0						
MLR	**Muntele Rosu 63.94 38**			⇑*i*P	P	06 28 26.5	+8.5
NOA	**NORSAR Array B 66.59 19**			P	**P**	**06 28 34.0**	**-0.7**
	0.3nm,0.6s,baz=222,slow=6.1,SNR=2.1						
BRTR	**Keskin Array B 66.82 47**			P	**P**	**06 28 36.5**	**-0.3**
	1.0nm,0.6s,baz=234,slow=4.3,SNR=5.7						
KIEV	**Kiev 68.31 34**			*e*P	**P**	**06 28 46.8**	**+1.0**
	17nm,1.2s						
AKASG	**Malin Array Be 68.32 34**			P	**P**	**06 28 45.2**	**-0.7**
	0.3nm,0.4s,baz=239,slow=7.2,SNR=5.3						
FINES	**FINESS Array B 72.27 24**			P	**P**	**06 29 10.0**	**+0.1**
	1.6nm,0.9s,baz=160,slow=4.4,SNR=4.4						
KBZ	**Khabaz 74.60 45**			P	**P**	**06 29 24.4**	**+0.5**
	0.9nm,0.6s,baz=275,slow=12,SNR=2.2						
AGMN	**Agassiz Nation 75.84 320**			*e*P	**P**	**06 29 29.5**	**-1.5**
	3.6nm,0.8s						
MSTX	**Muleshoe 78.25 304**			*e*P	**P**	**06 29 45.4**	**+0.3**
	1.6nm,0.5s						
TXAR	**Lajitas Array 78.50 300**			P	**P**	**06 29 46.2**	**-0.3**
	2.0nm,1.0s,baz=112,slow=6.0,SNR=14						
SDCO	**Great Sand Dun 80.89 308**			*e*P	**P**	**06 29 59.7**	**+0.2**
	2.3nm,0.3s						
PDAR	**Pinedale Array 84.42 313**			P	**P**	**06 30 16.9**	**-0.8**
	2.6nm,1.2s,baz=70,slow=8.5,SNR=4.2						
EDM	**Edmonton 87.53 323**			*e*P	**P**	**06 30 32.1**	**-0.5**
	12nm,1.0s						
HLID	**Hailey 88.01 313**			*e*P	**P**	**06 30 37.0**	**+1.6**
	2.2nm,1.1s						
YKA	**Yellowknife Ar 88.47 332**			P	**P**	**06 30 36.6**	**-0.2**
	0.7nm,1.0s,baz=94,slow=5.1,SNR=3.4						
QSPA	**South Pole Qui 90.86 180**			*e*P	**P**	**06 30 49.1**	**+1.1**
	13nm,1.1s						
STKA	**Stephens Creek 147.07 161**			PKPbc	**PKPbc**	**06 37 28.2**	**0.0**
	2.2nm,0.7s,baz=193,slow=4.1,SNR=3.2						
ASAR	**Alice Springs 150.31 141**			PKPbc	**PKPbc**	**06 37 36.6**	**-0.3**
	2.3nm,0.9s,baz=203,slow=2.4,SNR=8.9						

*NIED **08** 06:19:00,37.90N×144.20E,h5km,Mw3.8 Best double couple: M0 5.59000×10^14 NP1:φ1 9.00000°,δ20.00000°, λ-112.00000°. NP2:φ2 222.00000°,δ71.00000°, λ-82.00000°.*
*ISCJB **08** 06:19:06.2±0.9,37.82N±0.05×144.33E±0.07,h33km, mb3.8/4,MS4.4/1,Error ellipse: s-maj=8.6km s-min=7.8km az=157.4*
*JMA **08** 06:19:07.4±0.2,37.93N×144.25E,h37km,M3.8*
*IDC **08** 06:19:08.8±1.7,37.70N×144.39E,h35km±8km,mb3.6/3, mb1 3.8/7,mb1mx3.5/41,mbtmp3.8/7,ML3.7/3,MS4.4/1, Ms1 4.5/1,ms1mx2.9/36,Error ellipse: s-maj=40.9km s-min=20.0km az=61.0*
ISC 08 06:19:07.2±1.1,37.81N±0.06×144.42E±0.09,h35km,n25, σ1s79/27,mb3.8/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato 2.50 301**			P	**Pn**	**06 19 44.7**	**-0.7**
JIO	**Ouri 2.51 286**			P	**Pn**	**06 19 44.9**	**-0.5**
JIO				*e*S	**Sn**	**06 20 12.4**	**-2.4**
MIYJ	**Miyakonagasawa 2.69 312**			P	**Pn**	**06 19 47.0**	**-1.0**
MIYJ				*e*S	**Sn**	**06 20 16.9**	**-2.5**
JMK	**Ichinoseki 2.76 295**			P	**Pn**	**06 19 48.4**	**-0.5**
JOM	**Ohasama 2.96 305**			P	**Pn**	**06 19 51.6**	**-0.1**
JFT	**Otama 3.25 266**			S	**Sn**	**06 20 32.2**	**-1.1**
JYK	**Kaneyama 3.38 290**			P	**Pn**	**06 19 58.0**	**+0.6**
JYK				*e*S	**Sn**	**06 20 35.8**	**-0.5**
JANG	**Nango 3.41 319**			P	**Pn**	**06 19 57.2**	**-0.7**
JRY	**Ryogami san 4.77 250**			P	**Pn**	**06 20 16.6**	**0.0**
MJAR	**Matsushiro Arr 5.12 258**			Pn	**Pn**	**06 20 22.7**	**+1.3**
	3.6nm,0.3s,baz=71,slow=9.5,SNR=17						
MJAR				Sn	**Sn**	**06 21 19.6**	**+0.3**
	1.5nm,0.3s,baz=91,slow=8.7,SNR=5.5						
MAT	**Matsushiro 5.12 258**			P	**Pn**	**06 20 22.9**	**+1.5**
MAT				S	**Sn**	**06 21 19.3**	**0.0**
JHJ	**Hachijo jima 2 6.02 220**			Pn	**Pn**	**06 20 33.8**	**0.0**
	14nm,0.3s,baz=103,slow=22,SNR=5.7						
JHJ				Sn	**Sn**	**06 21 35.1**	**-6.4**
	8.0nm,0.3s,baz=64,slow=16,SNR=2.4						
ASAJ	**Asahikawa 6.45 348**			Sn	**Sn**	**06 21 51.0**	**-0.8**
	baz=61,slow=19						
USRK	**Ussuriysk Ar. 11.35 308**			Pn	**Pn**	**06 21 48.9**	**+2.2**
	0.2nm,0.3s,baz=116,slow=15,SNR=3.9						
KLR	**Kul'dur 14.63 325**			Pn	**P**	**06 22 35.6**	**-1.7**
	0.1nm,0.3s,baz=142,slow=17,SNR=3.0						
SEY	**Seymchan 25.62 8**			pP	pP	06 24 44.3	+1.4
	1.5nm,0.8s,baz=170,slow=10,SNR=3.4						
H11N2	**WAKE ISLAND Hy 26.58 126**			T	T	06 52 31.0	
	baz=318,slow=76,SNR=18						
H11N1	**WAKE ISLAND Hy 26.59 126**			T	T	06 52 30.7	
	baz=318,slow=76,SNR=11						
H11N3	**WAKE ISLAND Hy 26.60 126**			T	T	06 52 31.0	
	baz=318,slow=76,SNR=14						
ZALV	**Zalesovo Beam 43.17 312**			pPcP	PcP	06 29 04.4	+11
	0.5nm,0.4s,baz=72,slow=4.6,SNR=4.4						
MKAR	**Makanchi Array 45.74 302**			P	**P**	**06 27 26.3**	**+1.3**
	0.5nm,0.4s,baz=83,slow=12,SNR=3.6						
MKAR				pP	**pP**	**06 27 37.3**	**+2.1**
	0.8nm,0.6s,baz=83,slow=15,SNR=2.9						
ILAR	**Eielson Array 47.55 33**			LR	LR	06 50 14.0	
	comp=Z,395nm,19.9s,baz=72,slow=39						
WRA	**Warramunga Arr 58.23 191**			P	**P**	**06 28 58.6**	**+0.6**
	1.1nm,0.5s,baz=8.6,slow=7.0,SNR=21						
WRA				pP	**pP**	**06 29 08.7**	**0.0**
	0.8nm,0.7s,baz=10,slow=7.0,SNR=2.9						
ASAR	**Alice Springs 61.95 191**			P	**P**	**06 29 24.6**	**+1.1**
	0.3nm,0.5s,baz=12,slow=8.3,SNR=4.4						
ASAR				pP	**pP**	**06 29 35.0**	**+0.8**
	0.2nm,0.5s,baz=11,slow=8.4,SNR=1.5						
NB2	**NORSAR Subarra 74.37 338**			P	pP	06 30 52.9	+1.0
	comp=Z,0.4nm,0.5s,baz=36,slow=6.2						

*ISCJB **08** 06:23:35.2±0.7,51.76N±0.10×171.59W±0.05,h44km, mb3.8/12,Error ellipse: s-maj=14.0km s-min=3.4km az=167.3*
*NEIC **08** 06:23:36.5,51.69N×171.60W,h25km,mb3.7/2, ML3.9(AEIC),After AEIC.*
*IDC **08** 06:23:41.8±6.5,52.20N×171.80W,h88km±58km,mb3.6/12, mb1 3.7/14,mb1mx3.5/47,mbtmp3.8/14,ML3.8/1,Error ellipse: s-maj=29.2km s-min=15.3km az=1.0*
ISC 08 06:23:36.5±0.8,51.9N±0.1×171.65W±0.04,h44km,n46, σ1s43/44,mb3.9/12,Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOSE	**Korovin Southe 1.56 289**			P	**Pn**	**06 24 02.8**	**+1.0**
KOSE				S	**Sn**	**06 24 22.8**	**+2.0**
KOFP	**Korovin Flat P 1.57 286**			P	**Pn**	**06 24 02.4**	**+0.5**
KONE	**Korovin Northe 1.61 290**			P	**Pn**	**06 24 03.5**	**+1.0**
KOKL	**Mount Kliuchef 1.64 288**			P	**Pn**	**06 24 03.5**	**+0.6**
NIKH	**Nikolski High 2.04 56**			P	**Pn**	**06 24 08.1**	**-0.4**
NIKH				S	**Sn**	**06 24 33.2**	**+0.5**
OKWR	**Okmok West Rim 2.63 52**			P	**Pn**	**06 24 17.8**	**+1.3**
OKAK	**Okmok 2.64 48**			P	**Pn**	**06 24 16.9**	**+0.3**
OKTU	**Okmok Mt. Tuli 2.68 54**			P	**Pn**	**06 24 18.8**	**+1.6**
OKER	**Okmok East Rim 2.71 52**			P	**Pn**	**06 24 19.2**	**+1.5**
GSMY	**Great Sitkin M 2.73 276**			P	**Pn**	**06 24 18.8**	**+0.9**
GSTD	**Great Sitkin T 2.79 276**			P	**Pn**	**06 24 19.5**	**+0.8**
GSTD				S	**Sn**	**06 24 52.8**	**+1.7**
GSCK	**Great Sitkin C 2.80 275**			P	**Pn**	**06 24 19.4**	**+0.6**
ETKA	**Kagalaska Isla 2.95 272**			P	**Pn**	**06 24 20.9**	**+0.1**
ADAG	**Mount Adagdak 3.07 274**			P	**Pn**	**06 24 23.4**	**+0.9**
KIKV	**Kanaga Island 3.42 273**			P	**Pn**	**06 24 28.1**	**+0.7**
MSOM	**Makushin Julie 3.46 54**			P	**Pn**	**06 24 28.5**	**+0.7**
MCIR	**Makushin Cirqu 3.56 52**			P	**Pn**	**06 24 29.6**	**+0.3**
UNV	**Unalaska Valle 3.70 55**			P	**Pn**	**06 24 32.1**	**+0.9**
UNV				S	**Sn**	**06 25 15.4**	**+2.0**
TAFP	**Tanaga Falls P 3.92 273**			P	**Pn**	**06 24 34.3**	**0.0**
ZRO	**Akutan Zero 4.09 55**			P	**Pn**	**06 24 37.9**	**+1.3**
AKUT	**Akutan 4.22 55**			P	**Pn**	**06 24 38.3**	**0.0**
WESP	**Westdahl Peak 4.93 55**			P	**Pn**	**06 24 48.2**	**0.0**
SPIA	**Saint Paul Isl 5.39 8**			P	**Pn**	**06 24 55.7**	**+1.4**
SDPT	**Sand Point 7.51 58**			P	**Pn**	**06 25 22.6**	**-0.8**

ILAR Eielson Array 18.17 35 P **P 06 27 42.7 -2.4**
0.1nm,0.3s,baz=230,slow=11,SNR=5.8
PETK Petropavlovsk- 18.64 286 P **P 06 27 50.4 +0.1**
baz=76,slow=15,SNR=1.8
COLD Coldfoot 18.69 26 *e*P **Pn 06 27 55.5 +4.1**
1.5nm,0.9s
SEY Seymchan 22.00 314 P **P 06 28 25.3 -1.2**
0.4nm,0.3s,baz=152,slow=5.3,SNR=5.2
DLBC Dease Lake 24.35 58 P **P 06 28 52.2 +2.1**
2.1nm,0.5s,baz=193,slow=9.1,SNR=7.0
DLBC Dease Lake 24.35 58 *e*P **P 06 28 52.2 +2.1**
4.5nm,0.8s
INK Inuvik 24.55 34 P **P 06 28 50.6 -1.0**
4.4nm,1.1s,baz=254,slow=8.3,SNR=9.3
YKA Yellowknife Ar 31.63 48 P **P 06 29 54.7 -0.3**
0.3nm,0.3s,baz=274,slow=9.1,SNR=11
H11N2 WAKE ISLAND Hy 36.20 216 T T 07 09 04.8
baz=21,slow=76,SNR=36
H11N3 WAKE ISLAND Hy 36.20 216 T T 07 09 04.8
baz=21,slow=76,SNR=26
H11N1 WAKE ISLAND Hy 36.21 216 T T 07 09 06.2
baz=21,slow=76,SNR=25
H11S1 WAKE ISLAND Hy 37.39 215 T T 07 10 35.5
baz=19
H11S2 WAKE ISLAND Hy 37.41 215 T T 07 10 36.3
baz=19,slow=74,SNR=17
H11S3 WAKE ISLAND Hy 37.41 215 T T 07 10 36.3
baz=19,slow=74,SNR=21
PDAR Pinedale Array 41.88 77 P **P 06 31 23.4 +0.8**
0.4nm,0.5s,baz=280,slow=5.4,SNR=3.5
TXAR Lajitas Array 54.17 87 P **P 06 32 58.0 +0.5**
0.4nm,0.5s,baz=301,slow=5.9,SNR=10
ARCES ARCESS Array B 58.27 353 P **P 06 33 23.4 -2.6**
1.5nm,0.8s,baz=33,slow=7.4,SNR=4.4
MKAR Makanchi Array 63.12 312 P **P 06 33 57.4 -2.0**
0.5nm,0.3s,baz=39,slow=6.8,SNR=5.7
FINES FINESS Array B 66.16 351 P **P 06 34 16.7 -2.2**
0.3nm,0.3s,baz=15,slow=7.9,SNR=4.9
NOA NORSAR Array B 67.43 358 P **P 06 34 25.7 -1.3**
0.3nm,0.5s,baz=3.0,slow=6.3,SNR=2.4
CMAR Chiang Mai Arr 75.35 281 P **P 06 35 16.2 +0.9**
1.2nm,0.3s,baz=25,slow=7.8,SNR=4.3
ASAR Alice Springs 89.00 228 P **P 06 36 26.8 +0.3**
1.4nm,0.6s,baz=26,slow=4.8,SNR=15

WEL 08 06:29:24.3±0.2,43.50S×172.81E,h13km±1km,ML3.5/17, 4C-2D,Error ellipse: s-maj=1.8km s-min=0.7km az=90.0, Offshore. Looks unusual. Low frequency, long coda., South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las 0.16 241**			P*	Pg	06 29 28.0	-0.1
CRLZ				S*	Sg	06 29 30.6	-0.1
CRLZ				AML	AML	06 29 33.0	
MQZ	**McQueen's Vall 0.24 209**			⇑P*	Pg	06 29 29.6	+0.1
MQZ				S*	Sg	06 29 33.5	+0.7
MQZ				AML	AML	06 29 34.2	
OXZ	**Oxford 0.59 287**			⇓P*	Pg	06 29 35.6	-0.3
OXZ				S*	Sg	06 29 43.4	-0.2
OXZ				AML	AML	06 29 43.9	
OXZ				AML	AML	06 29 43.9	
OXZ				AML	AML	06 29 45.7	
LTZ	**Lake Taylor 0.82 331**			P*	Pg	06 29 39.7	-0.4
LTZ				S*	Sg	06 29 50.8	-0.1
LTZ				AML	AML	06 29 52.2	
KHZ	**Kahutara 1.21 27**			P*	Pn	06 29 45.5	-1.4
KHZ				AML	AML	06 30 08.2	
KHZ				AML	AML	06 30 08.2	
KHZ				AML	AML	06 30 09.0	
INZ	**Inchbonnie 1.27 307**			*e*PN	Pn	06 29 46.7	-1.0
RPZ	**Rata Peaks 1.29 260**			Pn	**Pn**	06 29 47.1	-1.0
RPZ				AML	AML	06 30 13.9	
RPZ				AML	AML	06 30 16.3	
WVZ	**Waitaha Valley 1.57 285**			PN	Pn	06 29 52.0	0.0
WVZ				AML	AML	06 30 23.5	
THZ	**Tophouse 1.74 2**			⇑PN	Pn	06 29 53.0	-1.2
THZ				AML	AML	06 30 25.5	
THZ				AML	AML	06 30 25.9	
DSZ	**Denniston Nort 1.90 337**			⇑PN	Pn	06 29 56.0	-0.6
DSZ				AML	AML	06 30 27.9	
DSZ				AML	AML	06 30 27.9	
DSZ				AML	AML	06 30 29.2	
DSZ				AML	AML	06 30 29.2	
LBZ	**Lake Benmore 2.10 244**			PN	Pn	06 29 59.0	-0.2
LBZ				AML	AML	06 30 36.9	
LBZ				AML	AML	06 35 14.0	
FOZ	**Fox Glacier 2.18 268**			PN	Pn	06 30 01.1	+0.9
FOZ				AML	AML	06 30 17.9	
FOZ				AML	AML	06 30 43.8	
ODZ	**Otahua Downs 2.19 224**			⇑PN	Pn	06 29 59.9	-0.6
ODZ				AML	AML	06 30 35.4	
ODZ				AML	AML	06 30 35.4	
ODZ				AML	AML	06 30 35.4	
ODZ				AML	AML	06 30 35.5	
NNZ	**Nelson 2.32 11**			⇓PN	Pn	06 30 01.7	-0.5
DUWZ	**D'Urville Isla 2.82 17**			AML	AML	06 30 20.6	
WKZ	**Wanaka 3.04 243**			AML	AML	06 31 08.3	
EAZ	**Earnscleugh 3.05 234**			PN	Pn	06 30 11.6	-0.7
EAZ				AML	AML	06 31 58.6	
TUZ	**Tuapeka 3.34 222**			PN	Pn	06 30 15.8	-0.4
TUZ				AML	AML	06 31 16.7	

JAG			eS	Sn	06 38 59.7	-1.4
JFY	**Yanaizu**	**1.76 303**	P	Pn	06 38 39.1	-0.5
BSO3	**Boso 3**	**1.87 207**	P	Pn	06 38 40.2	-0.6
BSO1	**Boso 1**	**1.87 195**	P	Pn	06 38 39.8	-0.8
JKT	**Katashina**	**1.88 280**	P	Pn	06 38 40.8	-0.6
JIO	**Ouri**	**1.99 355**	P	Pn	06 38 40.0	-2.7
MJAR	**Matsushiro Arr**	**2.70 273**	P	Pn	06 38 52.4	-0.1
	9.6nm,0.3s,baz=100,slow=8.9,SNR=55					
MJAR			S	Sb	06 39 30.1	-0.6
	19nm,0.3s,baz=82,slow=26,SNR=7.0					
MJAR			LR	LR	06 40 04.8	
	comp=Z,356nm,19.6s,baz=100,slow=45					
MAT	**Matsushiro**	**2.70 273**	P	Pn	06 38 53.0	+0.4
MAT			eS	Sn	06 39 25.1	-0.8
JHJ	**Hachijo jima 2**	**3.65 204**	P	Pn	06 39 04.5	-1.0
	36nm,0.3s,baz=347,slow=19,SNR=13					
JHJ			S	Sn	06 39 47.0	-2.1
	70nm,0.3s,baz=234,slow=21,SNR=7.8					
JHJ			LR	LR	06 39 59.6	
	comp=Z,161nm,19.1s,baz=286,slow=31					
JNU	**Nakatsue**	**9.40 252**	P	Pn	06 40 27.5	+3.0
	0.6nm,0.3s,baz=79,slow=19,SNR=2.9					
JNU			LR	LR	06 44 03.5	
	comp=Z,284nm,19.9s,baz=120,slow=38					
USRK	**Ussuriysk Ar.**	**10.62 320**	P	Pn	06 40 47.6	+6.4
	0.2nm,0.3s,baz=134,slow=14,SNR=8.8					
USRK			LR	LR	06 44 33.7	
	comp=Z,219nm,18.4s,baz=112,slow=36					
KSRS	**Korea Array**	**10.96 279**	P	Pn	06 40 48.4	+2.5
	baz=112,slow=12,SNR=3.8					
KLR	**Kul'dur**	**14.62 334**	P	P	06 41 42.8	+0.3
	0.1nm,0.3s,baz=138,slow=17,SNR=2.1					
MA2	**Magadan**	**23.88 12**	P	P	06 43 26.1	+3.3
	19nm,1.1s,baz=187,slow=10,SNR=7.1					
SEY	**Seymchan**	**27.32 11**	P	P	06 43 56.2	+2.3
	4.9nm,0.9s,baz=214,slow=9.7,SNR=6.6					
H11N2	**WAKE ISLAND Hy**	**27.76 120**	T	T	07 12 44.1	
	baz=313,slow=75,SNR=48					
H11N1	**WAKE ISLAND Hy**	**27.77 120**	T	T	07 12 46.8	
	baz=313,slow=75,SNR=53					
H11N3	**WAKE ISLAND Hy**	**27.78 120**	T	T	07 12 45.7	
	baz=313,slow=75,SNR=44					
SONM	**Songino Array**	**28.20 305**	P	P	06 44 03.3	+1.1
	3.3nm,0.8s,baz=99,slow=8.5,SNR=12					
H11S1	**WAKE ISLAND Hy**	**28.46 122**	T	T	07 13 37.9	
	baz=314,slow=76,SNR=35					
H11S3	**WAKE ISLAND Hy**	**28.46 122**	T	T	07 13 36.8	
	baz=314,slow=76,SNR=27					
H11S2	**WAKE ISLAND Hy**	**28.47 122**	T	T	07 13 38.7	
	baz=314,slow=76,SNR=23					
CMAR	**Chiang Mai Arr**	**41.47 256**	LR	LR	07 05 21.3	
	comp=Z,82nm,19.6s,baz=290,slow=40					
ZALV	**Zalesovo Beam**	**42.38 313**	P	P	06 46 03.6	0.0
	0.7nm,0.3s,baz=98,slow=7.6,SNR=2.4					
MKAR	**Makanchi Array**	**44.52 303**	P	P	06 46 20.9	-0.1
	0.9nm,0.8s,baz=84,slow=12,SNR=5.7					
KURBB	**Kurchatov Arra**	**46.44 308**	P	P	06 46 35.4	-0.8
	0.8nm,0.6s,baz=87,slow=7.9,SNR=7.6					
ILAR	**Eielson Array**	**49.91 32**	P	P	06 47 06.3	+3.5
	1.5nm,0.9s,baz=263,slow=6.1,SNR=14					
BVAR	**Borovoye Array**	**51.04 313**	P	P	06 47 12.6	+1.2
	0.3nm,0.3s,baz=72,slow=6.7,SNR=2.8					
WRA	**Warramunga Arr**	**56.52 188**	P	P	06 47 49.9	-2.0
	2.0nm,1.1s,baz=5.8,slow=7.0,SNR=14					
WRA			LR	LR	07 11 14.0	
	comp=Z,280nm,20.2s,baz=210,slow=35					
ASAR	**Alice Springs**	**60.24 188**	P	P	06 48 16.6	-1.2
	0.4nm,0.6s,baz=15,slow=6.9,SNR=5.5					
YKA	**Yellowknife Ar**	**64.24 30**	P	P	06 48 43.3	-0.9
	0.5nm,0.8s,baz=306,slow=7.2,SNR=4.0					
FINES	**FINESS Array B**	**69.37 332**	P	P	06 49 16.7	-0.2
	1.2nm,0.8s,baz=46,slow=8.1,SNR=3.8					
NB2	**NORSAR Subarra**	**74.75 337**	P	P	06 49 52.1	+2.8
	comp=Z,0.5nm,0.5s,baz=40,slow=5.9					
NOA	**NORSAR Array B**	**74.75 337**	P	P	06 49 48.6	-0.7
	comp=Z,0.8nm,0.8s,baz=38,slow=5.9,SNR=2.6					
NOA			LR	LR	07 25 26.2	
	comp=Z,53nm,20.7s,baz=65,slow=38					
AKASG	**Malin Array Be**	**74.82 322**	P	P	06 49 48.4	-1.3
	comp=Z,0.1nm,0.3s,baz=45,slow=6.1,SNR=3.7					
BRTR	**Keskin Array B**	**79.31 312**	P	P	06 50 14.4	-1.1
	comp=Z,0.3nm,0.3s,baz=61,slow=12,SNR=2.3					

*ISCJB **08** 06:49:23.2±0.7,36.91N±0.03×140.78E±0.08,h13km±5km, mb3.7/1,Error ellipse: s-maj=10.8km s-min=4.2km az=16.2*
*JMA **08** 06:49:23.9,36.93N×140.67E,h7km±1km,M3.5 Broadband fault plane solution: P waves. NP1: ϕs133.00000°,δ54.00000°,λ-72.00000°. NP2: ϕs284.00000°,δ40.00000°,λ-113.00000°. Principal axes: T Plg7.0000°, Azm210.0000°; N Plg14.0000°, Azm302.0000°; P Plg74.0000°, Azm94.0000°;*
JMA Felt I J1.
*IDC **08** 06:49:24.9±2.8,36.47N×140.65E,h0km,mb3.7/1, mb1 3.8/2,mb1mx3.3/42,mbtmp3.6/2,ML2.0/1 Error ellipse: s-maj=52.1km s-min=27.1km az=42.0*
ISC 08 06:49:23.7±1.0,36.92N±0.03×140.69E±0.05,h11km±9km, n18,σ0s54/21,7C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**25**	⇑P	**Pg**	**06 49 28.0**	**0.0**
ONAJ				eS	**Sg**	**06 49 30.8**	**-0.1**
JHO	**Hitachi**	**0.33**	**198**	⇑P	**Pg**	**06 49 30.2**	**-0.1**
JHO				eS	**Sg**	**06 49 34.8**	**+0.1**
JFK	**Kawauchi**	**0.47**	**18**	⇑P	**Pg**	**06 49 32.8**	**-0.1**
JFK				eS	**Sg**	**06 49 39.2**	**+0.2**
JSB	**Shiboa**	**0.62**	**274**	⇑P	**Pb**	**06 49 36.4**	**-0.3**
JSB				S	**Sb**	**06 49 45.0**	**-0.4**
JFT	**Otama**	**0.66**	**334**	⇑P	**Pg**	**06 49 36.5**	**0.0**
JFT				S	**Sg**	**06 49 45.4**	**+0.2**
JYT	**Yasato**	**0.80**	**210**	⇑P	**Pg**	**06 49 38.8**	**-0.4**
JYT				S	**Sb**	**06 49 50.2**	**-0.4**
JFY	**Yanaizu**	**0.93**	**302**	⇓P	**Pg**	**06 49 41.4**	**-0.2**
JFY				S	**Sg**	**06 49 53.2**	**-0.5**
JMM	**Marumori**	**0.94**	**5**	⇑P	**Pg**	**06 49 41.2**	**-0.7**
JMM				S	**Sg**	**06 49 54.0**	**-0.2**
MJAR	**Matsushiro Arr**	**2.03**	**260**	Pn	**Pn**	**06 49 59.1**	**+1.1**
	11nm,0.3s,baz=86,slow=15,SNR=43						
MJAR				Sn	**Sb**	**06 50 25.6**	**-0.5**
	20nm,0.3s,baz=80,slow=29,SNR=20						
MAT	**Matsushiro**	**2.03**	**260**	P	**Pn**	**06 49 59.3**	**+1.3**
MAT				S	**Sb**	**06 50 26.4**	**+0.3**
USRK	**Ussuriysk Ar.**	**9.83**	**320**	Pn	Pn	06 51 52.7	+7.8
	0.1nm,0.3s,baz=114,slow=14,SNR=4.7						
H11N2	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	07 25 07.1	
	baz=317,slow=75,SNR=48						
H11N1	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	07 25 07.5	
	baz=317,slow=75,SNR=42						
H11N3	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	07 25 08.5	
	baz=317,slow=75,SNR=42						
H11S1	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	07 25 59.3	
	baz=314,slow=76,SNR=80						
H11S3	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	07 25 59.8	
	baz=314,slow=76,SNR=33						
H11S2	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	07 26 00.9	
	baz=314,slow=76,SNR=52						
WRA	**Warramunga Arr**	**56.88**	**187**	P	**P**	**06 59 08.2**	**-0.5**
	0.5nm,0.6s,baz=3.1,slow=7.2,SNR=14						

*AZER **08** 07:21:27.6±99.0,37.33N×49.99E,h5km±6km,Error ellipse: s-maj=69.6km s-min=5.7km az=328.0*
*CSEM **08** 07:21:30.1±0.5,36.85N×50.76E,h2km,ML3.3,Error ellipse: s-maj=12.1km s-min=9.2km az=15.0*
*TEH **08** 07:21:32.4,36.84N×50.97E,h7km,ML3.4*
ISC 08 07:21:24.2±1.4,37.15N±0.03×50.71E±0.04,h7km±12km, n47,σ2s00/57,8C-9D,Caspian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THKV	**Tehran--Karaj**	**1.23**	**174**	*e*Pg	**Pg**	**07 21 47.4**	**-0.5**
CHTH	**Charan**	**1.28**	**165**	*e*Pg	**Pg**	**07 21 48.4**	**-0.3**
CHTH				*e*Sg	**Sg**	**07 22 03.5**	**-1.8**
IMHD	**Mahdasht**	**1.46**	**181**	*e*Pg	**Pn**	**07 21 50.8**	**-0.2**
IMHD				*e*Sg	**Sn**	**07 22 09.0**	**-1.4**
IMHD				eAMB	AMB	07 22 10.9	
	comp=Z,15μm,0.1s						
IMHD	**Mahdasht**	**1.46**	**181**	*e*Pg	**Pn**	**07 21 50.8**	**-0.2**
IMHD				*e*Sg	**Sn**	**07 22 09.0**	**-1.4**
IAFJ	**Afjeh**	**1.52**	**148**	*e*Pg	**Pg**	**07 21 53.8**	**+0.5**
IAFJ				eAMB	AMB	07 22 19.1	
	comp=Z,6μm,0.1s						
IAFJ	**Afjeh**	**1.52**	**148**	*e*Pg	**Pg**	**07 21 53.8**	**+0.5**
IPRN	**Peran**	**1.59**	**124**	*e*Pn	**Pg**	**07 21 55.4**	**+0.8**
IPRN				eAMB	AMB	07 22 24.4	
	comp=Z,13μm,0.1s						
IRAZ	**Razeghan**	**1.85**	**200**	*e*Pn	**Pn**	**07 21 56.0**	**-0.5**
IRAZ				eAMB	AMB	07 22 19.5	
	comp=Z,8μm,0.1s						
IRAZ	**Razeghan**	**1.85**	**200**	*e*Pn	**Pn**	**07 21 56.0**	**-0.5**
IDMV	**Damavand**	**1.89**	**145**	*e*Pn	**Pb**	**07 22 00.1**	**+0.9**
IDMV				eAMB	AMB	07 22 02.9	
	comp=Z,2μm,0.1s						
IDMV	**Damavand**	**1.89**	**145**	*e*Pn	**Pb**	**07 22 00.1**	**+0.9**
IALA	**Alasht**	**1.99**	**122**	*e*Pn	**Pg**	**07 22 01.9**	**-0.5**
IALA				eAMB	AMB	07 22 38.1	
	comp=Z,6μm,0.2s						
IALA	**Alasht**	**1.99**	**122**	*e*Pn	**Pg**	**07 22 01.9**	**-0.5**
ASTR	**Astara**	**2.08**	**313**	⇑P	**Pn**	**07 21 58.7**	**-0.7**
ASTR				⇑S	**Sn**	**07 22 23.5**	**-2.1**
LKRN	**Lenkeran, Azer**	**2.19**	**316**	⇑P	**Pn**	**07 22 00.6**	**-0.3**
	SNR=3.2						
LKRN				⇓S	**Sn**	**07 22 26.3**	**-1.9**
IFIR	**Firoozkooh**	**2.23**	**132**	eAMB	AMB	07 22 11.2	
	comp=Z,3μm,0.1s						
IFIR				*e*Pn	**Pg**	**07 22 06.0**	**-0.9**
IVRN	**Varamin**	**2.30**	**159**	eAMB	AMB	07 22 39.8	
	comp=Z,5μm,0.2s						
IVRN				*e*Pn	**Pb**	**07 22 06.1**	**+0.1**
LRK	**Lerik**	**2.40**	**309**	P	**Pn**	**07 22 03.7**	**-0.4**
	SNR=9.9						
LRK				⇓S	**Sn**	**07 22 30.6**	**-3.2**
ISRB	**Sarab**	**2.52**	**287**	eAMB	AMB	07 22 11.6	
	comp=Z,3μm,0.1s						
ISRB				*e*Pn	**Pn**	**07 22 06.4**	**+0.7**
IGLO	**Ghaloghah**	**2.58**	**103**	*e*Pn	**Pb**	**07 22 11.0**	**+0.1**
IGLO				*e*Sg	**Sg**	**07 22 44.6**	**-2.5**
IGLO				eAMB	AMB	07 23 05.7	
	comp=Z,2μm,0.2s						
ASAO	**Ashtian**	**2.65**	**192**	*e*Pn	**Pn**	**07 22 10.6**	**+3.0**
GHVR	**GHOM**	**2.70**	**170**	*e*Pn	**Pn**	**07 22 10.4**	**+2.3**
GLBA	**Cililabad**	**2.78**	**320**	⇑P	**Pn**	**07 22 09.1**	**0.0**
	SNR=3.7						
GLBA				⇓S	**Sn**	**07 22 40.8**	**-2.1**
IHRS	**Heris**	**3.14**	**293**	*e*Pn	**Pb**	**07 22 21.0**	**+0.6**
IHRS				eAMB	AMB	07 22 27.1	
	comp=Z,952nm,0.2s						
IHRS	**Heris**	**3.14**	**293**	*e*Pn	**Pb**	**07 22 21.0**	**+0.6**
SNGE	**Sanandaj**	**3.41**	**234**	*e*Pn	Pn	07 22 23.1	+5.1
IKLH	**Kolahrood**	**3.88**	**169**	*e*Pn	**Pn**	**07 22 26.4**	**+1.9**
IKLH				eAMB	AMB	07 23 29.7	
	comp=Z,536nm,0.2s						
IKLH	**Kolahrood**	**3.88**	**169**	*e*Pn	**Pn**	**07 22 26.4**	**+1.9**
ZRD	**Zardab**	**3.92**	**324**	⇓S	**Sn**	**07 23 09.9**	**-1.2**
ATGJ	**Altiaghaj**	**3.96**	**340**	⇑P	**Pn**	**07 22 27.2**	**+1.8**
ATGJ				⇓S	**Sn**	**07 23 13.5**	**+1.3**
IVIS	**Veis**	**4.08**	**231**	*e*Pn	**Pb**	**07 22 39.7**	**+3.2**
IVIS				eAMB	AMB	07 23 43.2	
	comp=Z,175nm,0.3s						
IVIS	**Veis**	**4.08**	**231**	*e*Pn	**Pb**	**07 22 39.7**	**+3.2**
ISHB	**Shabestar**	**4.20**	**287**	*e*Pn	**Pb**	**07 22 39.7**	**+1.2**
ISHB				eAMB	AMB	07 22 41.3	
	comp=Z,654nm,0.3s						
IMRD	**Marand**	**4.26**	**293**	*e*Pn	**Pb**	**07 22 42.5**	**+3.0**
IMRD				eAMB	AMB	07 22 48.7	
	comp=Z,859nm,0.2s						
IMRD	**Marand**	**4.26**	**293**	*e*Pn	**Pb**	**07 22 42.5**	**+3.0**
IDHR	**Dehrash**	**4.28**	**236**	*e*Pn	**Pb**	**07 22 37.4**	**-2.4**
IDHR				eAMB	AMB	07 23 49.1	
	comp=Z,271nm,0.4s						
IDHR	**Dehrash**	**4.28**	**236**	*e*Pn	**Pb**	**07 22 37.4**	**-2.4**
IZEF	**Zefreh**	**4.44**	**162**	*e*Pn	**Pn**	**07 22 35.2**	**+3.0**
IZEF				eAMB	AMB	07 24 16.2	
	comp=Z,169nm,0.0s						
IZEF	**Zefreh**	**4.44**	**162**	*e*Pn	**Pn**	**07 22 35.2**	**+3.0**
IPIR	**Pirpir**	**4.45**	**178**	*e*Pn	**Pn**	**07 22 36.3**	**+3.9**
IPIR				eAMB	AMB	07 23 43.7	
	comp=Z,181nm,0.3s						
IPIR	**Pirpir**	**4.45**	**178**	*e*Pn	**Pn**	**07 22 36.3**	**+3.9**
XNQ	**Khinaliq**	**4.49**	**334**	⇓P	**Pn**	**07 22 35.1**	**+2.3**
	SNR=4.2						
XNQ				⇓S	**Sn**	**07 23 23.9**	**-1.5**
NASN	**Na'in**	**4.67**	**158**	*e*Pn	**Pn**	**07 22 37.7**	**+2.4**
QSAR	**Qusar**	**4.76**	**337**	⇑P	**Pn**	**07 22 38.9**	**+2.6**
	SNR=5.5						
SEKA	**Sheki**	**4.89**	**327**	⇑P	**Pn**	**07 22 39.8**	**+1.7**
SEKA				⇑S	**Sn**	**07 23 32.4**	**-2.7**
SHGR	**Shooshtar-Gavs**	**5.27**	**198**	*e*Pn	Pn	07 22 39.7	-3.6
ZKTA	**Zakatala**	**5.49**	**326**	⇓P	**Pn**	**07 22 48.0**	**+1.6**
	SNR=2.7						
ZKTA				⇓S	**Sn**	**07 23 46.9**	**-2.9**

*IDC **08** 07:31:43.0±2.7,1.19N×98.55E,h0km,mb3.5/6,mb1 3.8/7, mb1mx3.6/50,mbtmp3.7/7,ML4.2/1,Error ellipse: s-maj=115.5km s-min=20.1km az=59.0*
*ISCJB **08** 07:31:47.0±0.5,1.88N±0.05×99.14E±0.04,h10km, mb3.5/6,Error ellipse: s-maj=8.1km s-min=4.8km az=40.5*
*DJA **08** 07:31:47.9±0.2,2°N±2°×9°E±°,h10km,M4.2/12,mB6.0/2, mb4.3/1,MLv4.1/12,Mw(mB)5.6/2*
ISC 08 07:31:47.8±0.7,1.76N±0.06×99.10E±0.05,h10km,n19, σ1s36/20,mb3.6/6,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBSI	**Sibolga**	**0.30**	**225**	P	**Pb**	**07 31 56.1**	**+0.8**
MNSI	**Mandailing Nat**	**1.07**	**153**	P	**Pb**	**07 32 07.0**	**-1.6**
MNSI				S	**Sn**	**07 32 25.1**	**+1.1**
GSI	**Gunungsitoli**	**1.59**	**253**	P	**Pn**	**07 32 15.8**	**-0.3**
GSI				S	**Sb**	**07 32 37.8**	**+0.3**
TSI	**Tuntungan**	**1.81**	**343**	P	**Pg**	**07 32 22.2**	**-0.3**
BKNI	**Bangkinang**	**2.41**	**126**	P	**Pn**	**07 32 28.9**	**+1.5**
BKNI				S	**Sn**	**07 32 59.2**	**+2.3**
TPTI		**2.43**	**308**	P	**Pn**	**07 32 27.4**	**-0.2**
TPTI				S	**Sn**	**07 32 57.4**	**0.0**
SDSI	**Sungai Dareh**	**3.55**	**139**	P	**Pn**	**07 32 43.4**	**+0.4**
MLSI	**Meulaboh, Aceh**	**3.66**	**313**	P	**Pn**	**07 32 45.3**	**+0.7**
TPRI	**Tanjung Pinang**	**5.49**	**99**	P	**Pn**	**07 33 09.8**	**0.0**
CMAR	**Chiang Mai Arr**	**16.59**	**359**	P	**P**	**07 35 44.9**	**+1.6**
	0.3nm,0.3s,baz=188,slow=10,SNR=4.3						
H08S2	**Diego Garcia H**	**28.14**	**250**	T	T	08 05 17.1	
	baz=72,slow=75,SNR=12						
H08S3	**Diego Garcia H**	**28.14**	**250**	T	T	08 05 17.1	
	baz=72,slow=75,SNR=15						
H08S1	**Diego Garcia H**	**28.16**	**250**	T	T	08 05 18.6	
	baz=72,slow=75,SNR=20						
WRA	**Warramunga Arr**	**40.74**	**124**	P	**P**	**07 39 27.0**	**-2.3**
	0.8nm,0.7s,baz=299,slow=9.0,SNR=5.6						
ASAR	**Alice Springs**	**42.24**	**129**	P	**P**	**07 39 39.1**	**-2.6**
	0.3nm,0.7s,baz=302,slow=7.5,SNR=3.5						
SONM	**Songino Array**	**46.33**	**7**	P	**P**	**07 40 15.4**	**+1.3**
	0.5nm,0.7s,baz=206,slow=9.6,SNR=2.8						
MKAR	**Makanchi Array**	**47.19**	**344**	P	**P**	**07 40 19.7**	**-1.0**
	0.5nm,0.8s,baz=152,slow=6.5,SNR=3.4						
KURBB	**Kurchatov Arra**	**51.71**	**343**	P	**P**	**07 40 54.8**	**-0.3**
	0.4nm,0.5s,baz=160,slow=6.5,SNR=4.5						
ZALV	**Zalesovo Beam**	**53.33**	**350**	P	**P**	**07 41 08.0**	**+0.9**
	0.8nm,0.5s,baz=138,slow=7.3,SNR=3.5						

*FUNV **08** 07:33:15.2,9.06N×70.86W,h35km,MW3.6*
ISC 08 07:33:13.9±1.2,9.08N±0.03×70.84W±0.03,h32km±13km, n34,σ1s31/45,1C-6D,Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDV	**Santo Domingo**	**0.28**	**134**	⇑*e*P	**Pn**	**07 33 22.7**	**+0.8**
SDV				*e*S	**Sn**	**07 33 28.9**	**+1.7**
VIGV	**El Vigia**	**0.57**	**246**	⇓*e*P	**Pn**	**07 33 27.0**	**+1.1**
VIGV				*e*S	**Sn**	**07 33 34.9**	**+0.7**
SOCV	**Socops**	**0.79**	**181**	⇓*e*P	**Pb**	**07 33 29.1**	**-0.2**
SOCV				*e*S	**Sb**	**07 33 39.5**	**-0.2**
QARV	**Quebrada Arrib**	**1.16**	**15**	⇓*e*P	**Pb**	**07 33 36.0**	**+0.4**
QARV				*e*S	**Sb**	**07 33 50.1**	**-0.3**
CURV	**Curarigua**	**1.27**	**43**	*e*P	**Pn**	**07 33 36.1**	**+0.6**
CURV				*e*S	**Sn**	**07 33 52.2**	**+0.7**
SANV	**Sanarito**	**1.35**	**72**	*e*P	**Pn**	**07 33 37.9**	**+1.2**
SANV				*e*S	**Sn**	**07 33 54.6**	**+1.0**
DABV	**Dabajuro**	**1.84**	**6**	⇓*i*P	**Pn**	**07 33 44.2**	**+0.8**
DABV				*e*S	**Sn**	**07 34 05.0**	**-0.7**
TEPV	**Terepaima**	**1.84**	**61**	*e*P	**Pn**	**07 33 44.3**	**+0.9**
TEPV				*e*S	**Sn**	**07 34 05.4**	**-0.3**
SIQV	**Siquisique**	**1.86**	**33**	*e*P	**Pn**	**07 33 43.8**	**+0.2**
SIQV				*e*S	**Sn**	**07 34 05.8**	**-0.3**
CAPV	**Capacho**	**1.90**	**231**	*e*P	**Pn**	**07 33 44.6**	**+0.3**
VIRV	**Villa del Rosa**	**2.10**	**313**	⇓*i*P	**Pn**	**07 33 46.3**	**-0.6**
VIRV				*e*S	**Sn**	**07 34 10.8**	**-1.1**
CBRI	**Barrientos, No**	**2.37**	**235**	*e*P	**Pn**	**07 33 50.6**	**-0.1**
GRMC	**Gramalote, San**	**2.37**	**235**	*e*P	**Pn**	**07 33 52.0**	**+1.2**
ELOV	**Elorza**	**2.46**	**147**	⇓*i*P	**Pn**	**07 33 51.8**	**-0.1**
MAPV	**Macapo**	**2.46**	**72**	*e*P	**Pn**	**07 33 52.9**	**+1.0**
OCAC	**Ocana**	**2.59**	**251**	*e*P	**Pn**	**07 33 55.9**	**+2.1**
BAUV	**El Baul**	**2.76**	**93**	*e*P	**Pn**	**07 33 55.8**	**-0.2**
BAUV				*e*S	**Sn**	**07 34 26.9**	**-1.4**
MONV	**Montecano**	**2.98**	**16**	*e*P	**Pn**	**07 33 59.1**	**0.0**
MONV				*e*S	**Sn**	**07 34 32.0**	**-1.8**
TURV	**Turiamo**	**3.25**	**65**	*e*P	**Pn**	**07 34 03.2**	**+0.5**
BARC	**Barichara**	**3.39**	**223**	*e*P	**Pn**	**07 34 05.2**	**+0.4**
BRRC	**Barranca, Sant**	**3.46**	**236**	*e*P	**Pn**	**07 34 03.9**	**-1.6**
FUNV	**FUNVISIS**	**4.20**	**70**	*e*P	**Pn**	**07 34 16.6**	**+0.7**
SJCC	**San Jacinto, C**	**4.36**	**281**	*e*P	**Pn**	**07 34 21.2**	**+3.1**
MERV	**Las Mercedes**	**4.49**	**87**	*e*P	**Pn**	**07 34 20.0**	**+0.3**
BIRV	**Birongo**	**4.71**	**72**	*e*P	**Pn**	**07 34 22.5**	**-0.3**
MOTC	**Monteria, Cord**	**4.78**	**267**	*e*P	**Pn**	**07 34 23.9**	**+0.1**
CUPV	**Cœpira**	**5.07**	**79**	*e*P	**Pn**	**07 34 28.0**	**+0.1**
CHIC	**Chingaza**	**5.27**	**213**	*e*P	**Pn**	**07 34 27.8**	**-3.1**
NORC	**Norcasia**	**5.31**	**229**	*e*P	**Pn**	**07 34 26.5**	**-4.6**
HELC	**Santa Helena**	**5.46**	**239**	*e*P	**Pn**	**07 34 33.2**	**-0.4**
PRGV	**PARIAGUAN**	**6.12**	**92**	*e*P	**Pn**	**07 34 41.3**	**-1.0**
PCRV	**Puerto La Cruz**	**6.21**	**79**	*e*P	**Pn**	**07 34 43.9**	**+0.4**
SJAC	**San Juan de Ar**	**6.54**	**208**	*e*P	Pn	07 34 41.1	-7.0
PRAC	**Prado**	**6.68**	**217**	*e*P	**Pn**	**07 34 50.4**	**+0.5**

IDC 08 07:37:49.7±6.6,17.93S×176.13W,h0km,mb3.8/3, mb1 4.1/3,mb1mx3.6/31,mbtmp3.8/3,MS3.4/4,Ms1 3.4/4, ms1mx3.0/34,Error ellipse: s-maj=296.8km s-min=36.3km az=142.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**5.79**	**47**	LR	LR	07 40 44.6	
	comp=Z,97nm,20.6s,baz=235,slow=30						
STKA	**Stephens Creek**	**40.52**	**242**	LR	LR	08 01 06.8	
	comp=Z,234nm,18.7s,baz=26,slow=34						
WRA	**Warramunga Arr**	**46.76**	**259**	P	P	07 46 21.8	+0.6
	1.0nm,1.1s,baz=96,slow=8.5,SNR=2.9						
ASAR	**Alice Springs**	**46.87**	**254**	P	P	07 46 20.8	-1.3
	2.2nm,0.7s,baz=84,slow=8.4,SNR=12						
KSRS	**Korea Array**	**76.17**	**317**	LR	LR	08 16 57.5	
	comp=Z,40nm,21.9s,baz=151,slow=31						
ILAR	**Eielson Array**	**85.43**	**12**	P	P	07 50 27.6	-1.2
	1.4nm,1.2s,baz=224,slow=6.2,SNR=5.0						
YKA	**Yellowknife Ar**	**93.45**	**24**	LR	LR	08 25 52.4	
	comp=Z,6.2nm,20.5s,baz=180,slow=31						
BRTR	**Keskin Array B**	**146.31**	**316**	PKPbc	PKPab	07 57 34.0	+0.3
	2.0nm,0.9s,baz=96,slow=1.4,SNR=7.2						

IDC 08 07:52:10.3±6.5,27.67S×175.18W,h0km,mb3.4/2, mb1 3.7/2,mb1mx3.5/28,mbtmp3.4/2,Error ellipse: s-maj=341.2km s-min=96.1km az=162.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**45.80**	**263**	P	P	08 00 34.0	-0.2
	0.2nm,0.5s,baz=101,slow=7.6,SNR=4.6						
WRA	**Warramunga Arr**	**46.56**	**268**	P	P	08 00 40.1	-0.1
	0.6nm,0.7s,baz=109,slow=7.5,SNR=4.8						
FINES	**FINESS Array B**	**143.35**	**343**	PKP	PKPdf	08 11 45.6	-0.4
	0.5nm,0.5s,baz=50,slow=2.2,SNR=6.4						

*CSEM **08** 08:08:55.8±0.2,40.77N×23.65E,h2km,ML1.6,Error ellipse: s-maj=3.6km s-min=2.9km az=86.0*
*ATH **08** 08:08:55.8,40.76N×23.65E,h13km±5km,ML1.6/7,Error ellipse: s-maj=5.4km s-min=0.7km az=302.0*
*BEO **08** 08:08:58.2±1.1,40.88N×23.68E,h0km,M1.7/4*
**THE 08 08:08:55.8,40.76N×23.64E,h11km±3km,ML1.8/7,Error ell

PAIG				S	Sg	08 09 23.1	+0.3		
PAIG	**Paliouri**	**0.83**	**178**	P	Pb	08 09 12.2	-0.1		
PAIG				S	Sb	08 09 23.4	-0.1		
GRG	**Griva**	**0.96**	**282**	P	Pg	08 09 14.2	-0.1		
GRG				S	Sn	08 09 28.1	-0.8		
GRG	**Griva**	**0.96**	**282**	P	Pb	08 09 14.6	+0.1		
GRG				S	Sn	08 09 28.1	-0.8		
GRG	**Griva**	**0.96**	**282**	P	Pb	08 09 14.6	+0.1		
GRG				S	Sn	08 09 28.2	-0.7		
VAY	**Valandovo**	**0.98**	**305**	*e*Pg	Pb	08 09 15.0	+0.2		
VAY	**Valandovo**	**0.98**	**305**	*e*Pg	Pb	08 09 15.0	+0.2		
XOR	**Xorichti**	**1.44**	**194**	P	Pn	08 09 21.4	-0.4		
XOR	**Xorichti**	**1.44**	**194**	P	Pn	08 09 21.4	-0.4		
VTS	**Vitosha**	**1.86**	**350**	*e*Pg	Pb	08 09 29.5	-0.3		
VTS				*e*Sg	Sb	08 09 53.5	+0.4		
VTS	**Vitosha**	**1.86**	**350**	*e*Pg	Pb	08 09 29.5	-0.3		
BARS	**Barje**	**2.46**	**327**	*e*Pn	Pn	08 09 37.5	+1.6		
BARS				*e*Sg	Sg	08 10 13.5	-1.5		
BARS	**Barje**	**2.46**	**327**	*e*Pn	Pn	08 09 37.5	+1.6		
BARS				*e*Sg	Sg	08 10 13.5	-1.5		
ZAPS	**Zavoj**	**2.62**	**344**	*e*Pn	Pb	08 09 41.2	-1.5		
ZAPS				*e*Sn	Sb	08 10 12.7	-2.2		

BUC 08 08:10:17.0±1.4, 47°03'N×22°28'E, h5$^{km}_{\pm 4}$, MD2.6/2, 10C-4D, Error ellipse: s-maj=11.8km s-min=4.4km az=347.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DRGR		**0.38**	**129**	⇑*i*P	Pg	08 10 25.1	+0.7
DRGR				S	Sg	08 10 30.1	+0.7
DRGR		**0.38**	**129**	⇑*i*P	Pg	08 10 25.1	+0.7
DRGR				*i* S	Sg	08 10 30.1	+0.7
SIRR	**Siria**	**0.87**	**209**	⇑*i*P	Pb	08 10 34.9	+0.3
SIRR	**Siria**	**0.87**	**209**	⇑*i*P	Pb	08 10 34.9	+0.3
CJR	**Cluj-Napoca**	**0.96**	**109**	⇑*i*P	Pb	08 10 36.3	+0.2
CJR	**Cluj-Napoca**	**0.96**	**109**	⇑*i*P	Pb	08 10 36.3	+0.2
CJR				*i* S	Sn	08 10 50.8	-0.4
BZS	**Buzias**	**1.49**	**198**	⇓*i*P	Pb	08 10 44.7	-0.3
BZS	**Buzias**	**1.49**	**198**	⇓*i*P	Pb	08 10 44.7	-0.3
BZS				*i* S	Sg	08 11 05.3	+0.6
GZR	**Gura Zlata**	**1.67**	**168**	⇑*i*P	Pb	08 10 47.9	-0.4
GZR	**Gura Zlata**	**1.67**	**168**	⇑*i*P	Pb	08 10 47.9	-0.4
GZR				*i* S	Sg	08 11 11.3	+0.6
BURAR	**Bucovina Array**	**2.08**	**73**	⇓*i*P	Pn	08 10 53.8	+1.2
BURAR				S	Sb	08 11 21.0	-0.5
BURAR	**Bucovina Array**	**2.08**	**73**	⇓*i*P	Pn	08 10 53.8	+1.2
BURAR				*i* S	Sb	08 11 21.0	-0.5
MDVR	**Moldovita**	**2.28**	**190**	S	Sn	08 11 25.5	+1.7
MDVR	**Moldovita**	**2.28**	**190**	*i* S	Sn	08 11 25.5	+1.7
VOIR		**2.50**	**129**	⇑*i*P	Pn	08 11 00.2	+1.9
VOIR		**2.50**	**129**	⇑*i*P	Pn	08 11 00.2	+1.9
VOIR				*i* S	Sb	08 11 31.5	-1.9

*ISCJB **08** 08:13:18.8±1.0, 29°.5S±0°.1×176°.5W±0°.1, h21^{km}, mb4.3/10, MS3.6/2, Error ellipse: s-maj=18.2km s-min=12.8km az=22.0*
*IDC **08** 08:13:18.7±0.9, 29°.11S×176°.70W, h0^{km}, mb4.2/7, mb1 4.4/7, mb1mx4.0/34, mbtmp4.2/7, MS3.6/5, Ms1 3.6/5, ms1mx3.2/29, Error ellipse: s-maj=34.9km s-min=20.9km az=167.0*
*NEIC **08** 08:13:20.1±0.7, 29°.25S×176°.71W, h10^{km}, mb4.6/3, Error ellipse: s-maj=18.2km s-min=16.6km az=96.0*
ISC 08 08:13:22.1±0.8, 29°.3S±0°.1×176°.65W±0°.09, h21^{km}, n26, σ1^{s}43/26, mb4.3/10, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.11**	**274**	Pn	**Pb**	**08 13 42.9**	**+0.3**
	205nm,0.3s,baz=107,slow=20,SNR=3.0						
RAO				Sn	**Sn**	**08 13 57.1**	**0.0**
	387nm,0.3s,baz=114,slow=20,SNR=3.9						
RAO	**Raoul Island**	**1.11**	**274**	*e*Pn	**Pn**	**08 13 42.4**	**0.0**
RAO				Sn	**Sn**	**08 13 57.1**	**0.0**
URZ	**Urewera**	**10.29**	**209**	LR	LR	08 19 51.0	
	comp=Z,263nm,18.2s,baz=26,slow=37						
URZ	**Urewera**	**10.29**	**209**	*e*Pn	**Pn**	**08 15 46.9**	**-1.6**
DZM	**Mont Dzumac**	**16.86**	**292**	Pn	**P**	**08 17 23.2**	**+4.3**
	0.2nm,0.3s,baz=113,slow=18,SNR=4.1						
DZM				LR	LR	08 22 38.1	
	comp=Z,144nm,18.9s,baz=149,slow=33						
RAR	**Rarotonga**	**17.27**	**66**	LR	LR	08 22 39.2	
	comp=Z,131nm,20.6s,baz=231,slow=33						
PPT	**Papeete**	**27.39**	**71**	LR	LR	08 29 02.0	
	comp=Z,72nm,18.8s,baz=189,slow=34						
CTA	**Charters Tower**	**34.81**	**277**	P	**P**	**08 20 11.3**	**-0.4**
	2.4nm,0.6s,baz=99,slow=18,SNR=3.0						
STKA	**Stephens Creek**	**35.87**	**255**	P	**P**	**08 20 20.4**	**-0.2**
	5.0nm,0.8s,baz=94,slow=10,SNR=7.7						
ASAR	**Alice Springs**	**44.35**	**265**	P	**P**	**08 21 29.8**	**-1.4**
	1.9nm,0.8s,baz=98,slow=7.9,SNR=21						
ASAR				LR	LR	08 40 34.7	
	comp=Z,163nm,18.1s,baz=114,slow=37						
WRAB	**Tennant Creek**	**45.24**	**270**	*e*P	**P**	**08 21 37.1**	**-1.1**
	6.9nm,0.9s						
WRA	**Warramunga Arr**	**45.24**	**270**	P	**P**	**08 21 36.5**	**-1.7**
	5.9nm,1.1s,baz=110,slow=8.1,SNR=31						
CASY	**Casey**	**56.61**	**208**	*e*P	**P**	**08 23 02.5**	**-0.7**
	0.9nm,0.6s						
QSPA	**South Pole Qui**	**60.76**	**180**	*e*P	**P**	**08 23 34.7**	**+2.5**
	21nm,1.2s						
MAW	**Mawson**	**73.70**	**200**	P	**P**	**08 24 55.3**	**+1.4**
	3.2nm,1.0s,baz=146,slow=11,SNR=3.7						
MJAR	**Matsushiro Arr**	**78.06**	**324**	P	**P**	**08 25 17.0**	**-2.2**
	1.8nm,0.8s,baz=168,slow=6.0,SNR=4.9						
KSRS	**Korea Array**	**84.31**	**319**	P	**P**	**08 25 52.0**	**-0.4**
	0.9nm,0.7s,baz=140,slow=7.7,SNR=4.2						
KSAR	**Wonju Array Be**	**84.33**	**319**	P	**P**	**08 25 52.0**	**-0.5**
FINES	**FINESS Array B**	**144.54**	**341**	PKP	**PKPab**	**08 32 53.5**	**-1.3**
	1.3nm,0.7s,baz=90,slow=3.8,SNR=5.1						
KBZ	**Khabaz**	**145.47**	**305**	PKPbc	**PKPab**	**08 33 00.1**	**+1.4**
	2.0nm,0.8s,baz=156,slow=5.6,SNR=3.1						
HFS	**Hagfors**	**148.43**	**350**	PKPbc	**PKPbc**	**08 33 06.5**	**0.0**
	1.9nm,0.8s,baz=72,slow=4.7,SNR=4.5						
ASF	**Jabal al Asfar**	**151.10**	**284**	PKPbc	**PKPbc**	**08 33 14.0**	**-0.1**
	1.3nm,0.5s,baz=88,slow=6.0,SNR=3.1						
AKASG	**Malin Array Be**	**151.14**	**325**	PKPbc	**PKPbc**	**08 33 12.1**	**-1.3**
	0.8nm,0.5s,baz=49,slow=3.2,SNR=3.1						
MMAI	**Mount Meron Ar**	**152.39**	**286**	PKPbc	**PKPbc**	**08 33 17.4**	**+0.5**
	1.0nm,0.4s,baz=52,slow=3.3,SNR=4.9						
BRTR	**Keskin Array B**	**153.10**	**301**	PKPbc	**PKPbc**	**08 33 18.4**	**0.0**
	0.3nm,0.4s,baz=119,slow=2.5,SNR=2.9						
BRTR				PKPab	**PKPab**	**08 33 30.1**	**+0.1**
	0.9nm,0.7s,baz=134,slow=3.6,SNR=5.2						
TORD	**Torodi Ar. Bea**	**163.81**	**174**	PKPab	**PKPab**	**08 34 16.7**	**+0.3**
	0.6nm,0.9s,baz=198,slow=4.9,SNR=3.6						

*IDC **08** 08:14:10.2±1.0, 22°.89N×64°.49E, h0^{km}, mb3.9/7, mb1 4.1/8, mb1mx3.6/64, mbtmp3.9/8, ML4.1/1, MS3.2/2, Ms1 3.2/2, ms1mx2.6/56, Error ellipse: s-maj=33.9km s-min=20.5km az=26.0*
*OMAN **08** 08:14:20.1±0.1, 23°.08N×63°.79E, h26^{km}, Error ellipse: s-maj=2.7km s-min=2.3km az=334.0*
*DSN **08** 08:14:23.9±2.3, 24°.01N×63°.61E, h15^{km}, Error ellipse: s-maj=73.1km s-min=11.5km az=26.0*
ISC 08 08:14:16.2±1.1, 23°.2N±0°.2×64°.13E±0°.08, h35^{km}, n25, σ2^{s}56/24, mb3.9/7, Off coast of Pakistan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WBK	**Wadi Bani Khal**	**4.79**	**264**	P	**Pn**	**08 15 26.7**	**+0.8**
	14nm,0.2s,SNR=66						
WBK				S	**Sn**	**08 16 19.2**	**-1.0**
WSAR	**Wadi Sarin**	**5.06**	**272**	Pn	**Pn**	**08 15 30.2**	**+0.7**
	5.8nm,0.3s,baz=100,slow=5.1,SNR=161						
WSAR				Sn	**Sn**	**08 16 22.7**	**-4.1**
	5.0nm,0.3s,baz=278,slow=23,SNR=7.0						
BIDO	**Bidbid**	**5.53**	**275**	P	**Pn**	**08 15 37.1**	**+1.1**
	SNR=24						
BIDO				S	**Sn**	**08 16 36.2**	**-2.1**
SMDO	**Samad**	**5.60**	**270**	P	**Pn**	**08 15 37.8**	**+0.8**
	SNR=22						
JMDO	**Jabal Madar**	**5.62**	**263**	P	**Pn**	**08 15 39.1**	**+1.8**
HATD	**Hatta, Dubai**	**7.49**	**284**	P	**Pn**	**08 16 03.6**	**+0.6**
HATD	**Hatta, Dubai**	**7.49**	**284**	P	**Pn**	**08 16 03.8**	**+0.8**
ASHO	**Ashiyiah**	**7.53**	**283**	*i* P	**Pn**	**08 16 05.3**	**+1.6**
	SNR=12						
ASHO	**Ashiyiah**	**7.53**	**283**	P	**Pn**	**08 16 04.9**	**+1.3**
	SNR=12						
BANOM	**Banah**	**7.63**	**293**	*i* P	**Pn**	**08 16 04.9**	**-0.1**
	SNR=18						
BANOM				S	**Sn**	**08 17 23.7**	**-6.6**
FAQ	**Al Faqa, Dubai**	**7.96**	**283**	*i* P	**Pn**	**08 16 11.6**	**+2.1**
	SNR=19						
FAQ	**Al Faqa, Dubai**	**7.96**	**283**	S	**Sn**	**08 17 38.1**	**-0.3**
AAK	**Ala-Archa**	**21.24**	**22**	LR	LR	08 29 00.0	
	comp=Z,76nm,21.3s,baz=213,slow=42						
PALK	**Pallekele**	**22.45**	**132**	LR	LR	08 26 30.3	
	comp=Z,52nm,18.7s,baz=296,slow=34						
GNI	**Garni**	**23.55**	**320**	P	**P**	**08 19 27.6**	**+4.1**
	6.9nm,0.5s,baz=127,slow=5.1,SNR=4.5						
KBZ	**Khabaz**	**26.95**	**325**	P	**P**	**08 19 58.1**	**+3.9**
	2.3nm,0.8s,baz=153,slow=11,SNR=5.4						
MKAR	**Makanchi Array**	**27.74**	**27**	P	**P**	**08 19 60.0**	**-1.4**
	0.2nm,0.3s,baz=193,slow=7.1,SNR=2.3						
H08N2	**Diego Garcia H**	**30.08**	**166**	T	T	08 51 25.4	
	baz=347,slow=75,SNR=23						
H08N3	**Diego Garcia H**	**30.09**	**166**	T	T	08 51 25.7	
	baz=347,slow=75,SNR=20						
H08N1	**Diego Carcia H**	**30.10**	**166**	T	T	08 51 27.7	
	baz=347,slow=75,SNR=24						
BRTR	**Keskin Array B**	**30.61**	**310**	P	**P**	**08 20 29.8**	**+2.7**
	0.2nm,0.3s,baz=129,slow=11,SNR=3.0						
TORD	**Torodi Ar. Bea**	**59.78**	**272**	P	**P**	**08 24 19.4**	**+1.2**
	1.1nm,0.8s,baz=56,slow=6.0,SNR=7.2						
WRA	**Warramunga Arr**	**80.77**	**116**	P	**P**	**08 26 24.1**	**-2.4**
	1.4nm,0.8s,baz=310,slow=4.5,SNR=7.2						
ASAR	**Alice Springs**	**82.21**	**120**	P	**P**	**08 26 31.3**	**-2.8**
	0.5nm,0.8s,baz=323,slow=6.2,SNR=5.1						
TXAR	**Lajitas Array**	**126.49**	**347**	PKP	**PKPdf**	**08 33 16.8**	**+0.5**
	0.1nm,0.5s,baz=339,slow=2.3,SNR=2.6						

*ISCJB **08** 08:20:39.8±0.5, 1°.27N±0°.07×124°.26E±0°.07, h250^{km}, mb3.5/9, Error ellipse: s-maj=10.4km s-min=8.3km az=34.9*
*IDC **08** 08:20:40.5±7.6, 1°.15N×124°.00E, h246$^{km}_{\pm 79}$, mb3.2/8, mb1 3.3/8, mb1mx3.1/46, mbtmp3.8/8, MS3.4/1, Ms1 3.4/1, ms1mx2.5/20, Error ellipse: s-maj=43.6km s-min=12.4km az=76.0*
*DJA **08** 08:20:46.9±0.9, 1°.N±7°×12°.4E±°, h215$^{km}_{\pm 9}$, M3.8/6, mb3.6/1, MLv3.8/6*
ISC 08 08:20:40.9±0.7, 1°.10N±0°.08×124°.25E±0°.07, h250^{km}, n16, σ1^{s}74/19, mb3.5/9, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KMSI	**Cibinong**	**0.59**	**207**	P	**Pn**	**08 21 15.9**	**+1.8**
MRSI	**Marisa**	**2.39**	**255**	P	Pn	08 21 31.3	+4.2
MRSI				S	**S**	**08 22 03.8**	**+0.3**
LUWI	**Luwuk**	**2.59**	**215**	P	**Pn**	**08 21 29.6**	**+0.5**
LUWI				S	**S**	**08 22 04.5**	**-2.8**
SANI	**Sanana**	**3.58**	**151**	P	**Pn**	**08 21 40.2**	**+0.3**
SANI				S	**S**	**08 22 23.3**	**-3.5**
LBMI	**Labuha**	**3.69**	**118**	P	**Pn**	**08 21 43.0**	**+1.9**
LBMI				S	**S**	**08 22 28.9**	**+0.1**
TTSI	**Tana Toraja**	**6.05**	**227**	P	**Pn**	**08 22 12.3**	**+2.6**
TGY	**Tagaytay City**	**13.32**	**346**	LR	LR	08 29 08.1	
	comp=Z,155nm,18.3s,baz=48,slow=38						
WRA	**Warramunga Arr**	**23.14**	**155**	P	**P**	**08 25 26.2**	**+0.8**
	1.7nm,0.3s,baz=337,slow=9.8,SNR=34						
ASAR	**Alice Springs**	**26.35**	**160**	P	**P**	**08 25 55.5**	**+1.1**
	0.2nm,0.4s,baz=340,slow=7.6,SNR=6.3						
ASAR				PcP	**PcP**	**08 29 13.8**	**+0.3**
	0.2nm,0.3s,baz=344,slow=2.4,SNR=3.6						
STKA	**Stephens Creek**	**36.69**	**155**	P	**P**	**08 27 25.9**	**+1.6**
	1.0nm,0.5s,baz=315,slow=16,SNR=3.2						
MJAR	**Matsushiro Arr**	**37.56**	**19**	P	**P**	**08 27 30.7**	**-0.8**
	1.0nm,0.6s,baz=204,slow=8.1,SNR=3.6						
USRK	**Ussuriysk Ar.**	**43.46**	**8**	P	**P**	**08 28 19.7**	**+0.2**
	0.8nm,0.8s,baz=198,slow=7.7,SNR=5.7						
SONM	**Songino Array**	**49.05**	**344**	P	**P**	**08 29 04.1**	**+1.0**
	0.5nm,0.6s,baz=144,slow=8.4,SNR=3.5						
MKAR	**Makanchi Array**	**58.35**	**327**	P	**P**	**08 30 08.5**	**-1.6**
	0.4nm,0.3s,baz=124,slow=7.9,SNR=7.8						
KURBB	**Kurchatov Arra**	**62.65**	**329**	P	**P**	**08 30 37.4**	**-1.6**
	0.5nm,0.4s,baz=127,slow=5.3,SNR=3.7						
AKTO	**Aktyubinsk**	**74.19**	**323**	P	**P**	**08 31 48.5**	**-1.8**
	0.5nm,0.4s,baz=82,slow=9.1,SNR=4.2						

*SJA **08** 08:50:29.7±1.2, 34°.33S×70°.28W, h20^{km}, ML2.3, MW2.8*
*GUC **08** 08:50:32.5±0.4, 34°.05S×70°.02W, h39$^{km}_{\pm 2}$, ML2.2*
ISC 08 08:50:28.9±3.1, 34°.3S±0°.1×70°.24W±0°.06, h10$^{km}_{\pm 12}$, n11, σ1^{s}30/20, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CLCH	**Cerro Calan**	**0.93**	**345**	*i* P	**Pg**	**08 50 47.4**	**+0.5**
CLCH				*i* S	**Sg**	**08 50 58.7**	**-0.3**
CLCH				AML	AML	08 51 01.6	
	comp=E,199nm,0.8s						
FCH	**Farellones**	**0.97**	**358**	*i* P	**Pg**	**08 50 47.4**	**-0.2**
FCH				*i* S	**Sg**	**08 50 59.1**	**-1.1**
PEL	**Peldehue**	**1.21**	**342**	*i* P	**Pn**	**08 50 51.5**	**-0.5**
PEL				*i* S	**Sb**	**08 51 06.1**	**-1.5**
PEL				AML	AML	08 51 11.4	
	comp=E,81nm,0.3s						
ROC1	**El Roble**	**1.47**	**334**	*e*P	**Pg**	**08 50 57.6**	**+0.5**
ROC1				*e*S	**Sg**	**08 51 17.9**	**+1.7**
ROCH	**El Roble**	**1.47**	**334**	*i* P	**Pb**	**08 50 56.8**	**+0.3**
ROCH				*i* S	**Sn**	**08 51 14.8**	**-0.3**
ROCH				AML	AML	08 51 19.1	
	comp=E,64nm,0.9s						
AAGR	**Agrelo**	**1.69**	**45**	*e*P	**Pb**	**08 50 59.9**	**-0.3**
ARCO	**CERRO ARCO**	**1.82**	**37**	*e*P	**Pb**	**08 51 02.2**	**-0.2**
ARCO				*e*S	**Sb**	**08 51 26.8**	**+1.5**
ARCO				IAML		08 51 28.0	
	comp=Z,28nm,0.2s						
ASAL	**Salagasta**	**2.07**	**35**	*e*P	**Pb**	**08 51 06.8**	**+0.1**
ASAL				*e*S	**Sn**	**08 51 31.2**	**+1.4**
AUSP	**Uspallata**	**2.19**	**19**	*e*P	**Pb**	**08 51 09.3**	**+0.5**
AUSP				*e*S	**Sb**	**08 51 36.2**	**+0.1**
RTLS	**Leoncito**	**2.61**	**18**	*e*P	**Pb**	**08 51 17.4**	**+1.3**
RTLS				*e*S	**Sb**	**08 51 48.7**	**+0.3**
AMOG	**MOGNA**	**3.66**	**24**	*e*P	**Pb**	**08 51 30.2**	**-3.5**

*AZER **08** 08:53:54.8±0.2, 37°.73N×48°.60E, h2^{km}, Error ellipse: s-maj=5.8km s-min=3.7km az=296.0*
*CSEM **08** 08:53:56.0±0.2, 37°.62N×48°.77E, h2^{km}, ML3.5, Error ellipse: s-maj=7.2km s-min=3.6km az=57.0*
*TEH **08** 08:53:59.0, 37°.52N×48°.96E, h6^{km}, ML3.5*
ISC 08 08:53:55.9±1.3, 37°.61N±0°.03×48°.76E±0°.03, h0^{km}±11^{km}, n43, σ0^{s}67/65, 8C-11D, Northwestern Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ISRB	**Sarab**	**0.89**	**284**	*e*Pg	**Pg**	**08 54 13.0**	**0.0**
ISRB				*e*AMB	AMB	08 54 14.9	
	comp=Z,13μm,0.1s						
ISRB	**Sarab**	**0.89**	**284**	*e*Pg	**Pg**	**08 54 13.0**	**0.0**
ASTR	**Astara**	**0.94**	**2**	⇓P	**Pg**	**08 54 13.7**	**-0.4**
	SNR=15						
ASTR				⇑S	**Sb**	**08 54 28.2**	**0.0**
ASTR	**Astara**	**0.94**	**2**	P	**Pg**	**08 54 13.7**	**-0.4**
	SNR=15						
ASTR				S	**Sb**	**08 54 28.2**	**0.0**
LRK	**Lerik**	**1.08**	**342**	⇑P	**Pg**	**08 54 16.0**	**-0.6**
	SNR=22						
LRK				⇓S	**Sg**	**08 54 31.0**	**+0.3**
LRK	**Lerik**	**1.08**	**342**	P	**Pg**	**08 54 16.0**	**-0.6**
	SNR=22						
LRK				S	**Sg**	**08 54 31.0**	**+0.3**
LKRN	**Lenkeran, Azer**	**1.09**	**1**	⇑P	**Pg**	**08 54 16.5**	**-0.4**
	SNR=28						
LKRN				⇓S	**Sb**	**08 54 32.3**	**-0.2**
LKRN	**Lenkeran, Azer**	**1.09**	**1**	P	**Pg**	**08 54 16.5**	**-0.4**
	SNR=28						
LKRN				S	**Sb**	**08 54 32.3**	**-0.2**
GRMI	**Germi**	**1.37**	**331**	*e*Pg	**Pn**	**08 54 21.1**	**-1.4**
IHRS	**Heris**	**1.53**	**298**	*e*Pn	**Pn**	**08 54 24.3**	**-0.4**
IHRS				*e*AMB	AMB	08 54 25.2	
	comp=Z,8μm,0.1s						
IHRS	**Heris**	**1.53**	**298**	*e*Pn	**Pn**	**08 54 24.3**	**-0.4**
GLBA	**Clilabad**	**1.65**	**350**	⇑P	**Pn**	**08 54 25.8**	**-0.4**
	SNR=13						
GLBA				⇓S	**Sg**	**08 54 49.7**	**+0.7**
GLBA	**Clilabad**	**1.65**	**350**	P	**Pn**	**08 54 25.8**	**-0.4**
	SNR=13						
GLBA				S	**Sg**	**08 54 49.7**	**+0.7**
ITBZ	**Tabriz**	**2.16**	**287**	*e*Pn	**Pb**	**08 54 35.5**	**-0.4**
ITBZ				*e*AMB	AMB	08 55 07.7	
	comp=Z,1μm,0.1s						
ITBZ	**Tabriz**	**2.16**	**287**	*e*Pn	**Pb**	**08 54 35.5**	**-0.4**
IRAZ	**Razeghan**	**2.40**	**156**	*e*Pn	**Pn**	**08 54 36.1**	**-0.5**
IRAZ				*e*Sg	**Sb**	**08 55 09.5**	**-0.8**
IRAZ				*e*AMB	AMB	08 55 11.8	
	comp=Z,2μm,0.3s						
IRAZ	**Razeghan**	**2.40**	**156**	*e*Pn	**Pn**	**08 54 36.1**	**-0.5**
IRAZ				*e*Sg	**Sb**	**08 55 09.5**	**-0.8**
THKV	**Tehran--Karaj**	**2.40**	**134**	*e*Pn	**Pn**	**08 54 35.5**	**-1.2**
THKV				*e*Sg	**Sb**	**08 55 09.0**	**-1.4**
IMHD	**Mahdasht**	**2.46**	**141**	*e*Pn	**Pn**	**08 54 37.3**	**-0.1**
IMHD				*e*Sg	**Sn**	**08 55 09.8**	**+1.6**
IMHD				*e*AMB	AMB	08 55 18.1	
	comp=N,3μm,0.1s						
IMHD	**Mahdasht**	**2.46**	**141**	*e*Pn	**Pn**	**08 54 37.3**	**-0.1**
ISHB	**Shabestar**	**2.57**	**286**	*e*Pn	**Pb**	**08 54 43.4**	**+0.3**
ISHB				*e*AMB	AMB	08 55 20.6	
	comp=Z,2μm,0.2s						
IMRD	**Marand**	**2.65**	**295**	*e*Pn	**Pb**	**08 54 45.0**	**+0.7**
IMRD				*e*AMB	AMB	08 55 25.0	
	comp=Z,4μm,0.3s						
SNGE	**Sanandaj**	**2.76**	**205**	*e*Pn	**Pn**	**08 54 42.3**	**+0.7**
NAX	**Nakhchivan**	**3.00**	**302**	⇑P	**Pn**	**08 54 45.3**	**+0.5**
NAX				⇓S	**Sn**	**08 55 21.3**	**-0.2**
NAX	**Nakhchivan**	**3.00**	**302**	P	**Pn**	**08 54 45.3**	**+0.5**
NAX				S	**Sn**	**08 55 21.3**	**-0.2**
IPRN	**Peran**	**3.18**	**114**	*e*Pn	**Pn**	**08 54 46.7**	**-0.6**
IPRN				*e*AMB	AMB	08 55 27.9	
	comp=Z,2μm,0.1s						
DAMV	**Damavand**	**3.25**	**126**	*e*Pn	**Pn**	**08 54 47.0**	**-1.5**
IDMV	**Damavand**	**3.33**	**127**	*e*Pn	**Pb**	**08 54 57.2**	**+1.2**
IVRN	**Varamin**	**3.55**	**137**	*e*Pn	**Pn**	**08 54 52.4**	**+0.1**
IVRN				*e*AMB	AMB	08 56 02.7	
	comp=Z,323nm,0.3s						
IVRN	**Varamin**	**3.55**	**137**	*e*Pn	**Pn**	**08 54 52.4**	**+0.1**
GANJ	**Ganja**	**3.57**	**329**	⇓P	**Pn**	**08 54 52.9**	**+0.3**
	SNR=3.7						
GANJ				⇓S	**Sn**	**08 55 34.9**	**-0.6**
GANJ	**Ganja**	**3.57**	**329**	P	**Pn**	**08 54 52.9**	**+0.3**
	SNR=3.7						
GANJ				S	**Sn**	**08 55 34.9**	**-0.6**
XNQ	**Khinaliq**	**3.59**	**353**	⇑P	**Pn**	**08 54 53.4**	**+0.4**
XNQ				⇓S	**Sn**	**08 55 36.8**	**+0.7**
XNQ	**Khinaliq**	**3.59**	**353**	P	**Pn**	**08 54 53.4**	**+0.4**
XNQ				S	**Sn**	**08 55 36.8**	**+0.7**
IALA	**Alasht**	**3.59**	**114**	*e*Pn	**Pn**	**08 54 52.5**	**-0.6**
IALA				*e*AMB	AMB	08 55 38.1	
	comp=E,1μm,0.1s						
IALA				*e*AMB	AMB	08 55 41.0	
	comp=Z,611nm,0.1s						
IALA	**Alasht**	**3.59**	**114**	*e*Pn	**Pn**	**08 54 52.5**	**-0.6**
SEKA	**Sheki**	**3.79**	**342**	⇑P	**Pn**	**08 54 55.5**	**-0.1**
SEKA				⇑S	**Sn**	**08 55 42.3**	**+1.4**
SEKA	**Sheki**	**3.79**	**342**	P	**Pn**	**08 54 55.5**	**-0.1**
SEKA				S	**Sn**	**08 55 42.3**	**+1.4**
GDB	**GEDABAY**	**3.88**	**324**	⇓P	**Pn**	**08 54 56.5**	**-0.5**
	SNR=3.5						
GDB	**GEDABAY**	**3.88**	**324**	P	**Pn**	**08 54 56.5**	**-0.5**
	SNR=3.5						
IGLO	**Ghaloghah**	**4.21**	**104**	*e*Pn	**Pn**	**08 55 00.9**	**-0.6**
IGLO				*e*AMB	AMB	08 55 56.5	
	comp=Z,410nm,0.2s						
QZX	**Qazax, Azerbai**	**4.33**	**324**	⇓P	**Pn**	**08 55 02.8**	**-0.2**
	SNR=4.3						
QZX				⇓S	**Sn**	**08 55 53.6**	**-0.5**
QZX	**Qazax, Azerbai**	**4.33**	**324**	P	**Pn**	**08 55 02.8**	**-0.2**
	SNR=4.3						
QZX				S	**Sn**	**08 55 53.6**	**-0.5**

*IDC **08** 09:00:47.4±1.1, 29°.11S×176°.08W, h0^{km}, mb4.0/5, mb1 4.2/5, mb1mx3.8/36, mbtmp3.9/5, Error ellipse: s-maj=57.0km s-min=20.1km az=166.0*
*NEIC **08** 09:00:48.0±0.6, 29°.14S×175°.99W, h10^{km}, mb4

MSVF	Nonsavu	12.95	335	*e*Pn	Pn	09 12 14.9	-3.6	
RAR	Rarotonga	17.16	64	P	Pn	09 13 09.0	-5.1	
	1.9nm,0.3s,baz=237,slow=11,SNR=4.6							
RAR				S	Sn	09 15 55.2	-29	
	0.4nm,0.3s,baz=80,slow=18,SNR=1.8							
RAR				LR	LR	09 18 48.0		
	comp=Z,196nm,20.6s,baz=251,slow=34							
DZM	Mont Dzumac	17.23	292	P	P	09 13 19.4	+2.8	
	0.6nm,0.3s,baz=172,slow=14,SNR=6.7							
DZM				LR	LR	09 19 19.7		
	comp=Z,490nm,18.8s,baz=101,slow=35							
DZM	Mont Dzumac	17.23	292	*e*P	P	09 13 20.7	+4.1	
	60nm,1.4s							
DZM				*e*LR	LR	09 17 24.3		
	698nm,25.6s							
RPZ	Rata Peaks	17.24	212	P	P	09 13 16.3	-0.2	
	1.2nm,0.3s,baz=38,slow=18,SNR=3.8							
TBI	Tubuai	24.83	82	*e*LR	LR	09 20 37.3		
	390nm,29.8s							
PPT2	Papeete2	27.24	70	*e*LR	LR	09 21 43.0		
	257nm,25.0s							
PPT	Papeete	27.25	70	LR	LR	09 24 25.6		
	comp=Z,132nm,18.9s,baz=236,slow=34							
HNR	Honiara	29.97	307	*e*P	P	09 15 20.8	-1.8	
CTA	Charters Tower	35.12	277	P	P	09 16 08.8	+1.0	
	8.2nm,0.7s,baz=102,slow=11,SNR=16							
CTAO	Charters Tower	35.12	277	*e*P	P	09 16 06.8	-1.0	
	47nm,0.7s							
STKA	Stephens Creek	36.05	256	P	P	09 16 16.7	+1.1	
	8.2nm,0.6s,baz=97,slow=10,SNR=31							
STKA				LR	LR	09 30 26.0		
	comp=Z,267nm,18.5s,baz=47,slow=35							
BBOO	Buckleboo	40.55	253	*e*P	P	09 16 53.6	+0.1	
	4.9nm,0.6s							
ASAR	Alice Springs	44.59	265	P	P	09 17 25.4	-1.1	
	1.9nm,0.5s,baz=101,slow=6.4,SNR=31							
ASAR				LR	LR	09 35 46.6		
	comp=Z,318nm,18.9s,baz=106,slow=36							
WRAB	Tennant Creek	45.51	271	*e*P	P	09 17 33.6	-0.2	
	12nm,0.8s							
WRA	Warramunga Arr	45.52	271	P	P	09 17 32.7	-1.2	
	12nm,0.7s,baz=109,slow=7.7,SNR=72							
VNDA	Vanda	48.96	186	LR	LR	09 35 40.2		
	comp=Z,38nm,19.6s,baz=196,slow=32							
FITZ	Fitzroy Crossi	53.81	269	*e*P	P	09 18 36.7	-0.3	
	5.5nm,0.9s							
CASY	Casey	56.44	208	*e*P	P	09 18 57.1	+1.7	
	0.8nm,0.9s							
GUMO	Guam	57.01	313	LR	LR	09 40 11.1		
	comp=Z,36nm,19.5s,baz=142,slow=33							
QSPA	South Pole Qui	60.43	180	*e*P	P	09 19 26.1	+2.7	
	12nm,0.9s							
PMSA	Palmer Station	72.32	155	*e*P	P	09 20 39.6	+0.4	
	60nm,1.2s							
MAW	Mawson	73.48	200	P	P	09 20 46.9	+0.8	
	1.6nm,0.7s,baz=121,slow=12,SNR=5.3							
MJAR	Matsushiro Arr	78.49	324	P	P	09 21 15.1	0.0	
	3.5nm,0.7s,baz=162,slow=6.2,SNR=10.0							
MAJO	Matsushiro	78.49	324	*e*P	P	09 21 16.3	+1.3	
	7.8nm,0.9s							
PLCA	Paso Flores	81.94	132	LR	LR	09 52 28.5		
	comp=Z,86nm,18.0s,baz=274,slow=32							
LPIG	La Paz	82.94	57	LR	LR	09 52 04.9		
	comp=Z,69nm,18.6s,baz=210,slow=32							
USRK	Ussuriysk Ar.	87.37	326	P	P	09 22 01.6	+0.8	
	1.3nm,0.6s,baz=145,slow=5.1,SNR=7.8							
TXAR	Lajitas Array	90.79	56	P	P	09 22 17.1	-0.4	
	0.2nm,0.8s,baz=224,slow=7.6,SNR=2.7							
ENH	Enshi	92.39	304	*e*P	P	09 22 26.7	+1.9	
	12nm,0.9s							
NEW	Newport	93.95	35	*e*P	P	09 22 31.1	-0.5	
	2.0nm,0.7s							
PDAR	Pinedale Array	94.63	43	LR	LR	10 00 00.6		
	2.5nm,18.6s,baz=252,slow=32							
ILAR	Eielson Array	96.91	12	P	P	09 22 45.3	+0.7	
	0.2nm,0.7s,baz=206,slow=7.7,SNR=3.2							
MKAR	Makanchi Array	118.41	310	PKP	PKPdf	09 28 00.8	-0.5	
	0.2nm,0.2s,baz=66,slow=3.5,SNR=2.9							
ARCES	ARCESS Array B	138.18	349	PKP	PKPdf	09 28 39.0	+0.9	
	2.4nm,1.0s,baz=69,slow=4.9,SNR=3.0							
FINES	FINESS Array B	144.95	341	PKP	PKPbc	09 28 49.7	+0.1	
	4.5nm,0.6s,baz=37,slow=4.8,SNR=26							
KBZ	Khabaz	145.89	305	PKPbc	PKPab	09 28 54.5	+0.8	
	1.4nm,0.5s,baz=141,slow=6.5,SNR=4.3							
NB2	NORSAR Subarra	148.24	353	PKP	PKPbc	09 28 59.3	-0.1	
	comp=Z,1.5nm,0.7s,baz=5.6,slow=2.8							
NOA	NORSAR Array B	148.24	353	PKP	PKPdf	09 28 57.5	+1.4	
	comp=Z,0.8nm,0.8s,baz=14,slow=4.3,SNR=12							
NOA				PKPbc	PKPbc	09 28 59.7	+0.3	
	comp=Z,1.6nm,0.7s,baz=14,slow=4.3,SNR=11							
AKASG	Malin Array Be	151.57	325	PKPbc	PKPbc	09 29 07.9	+0.1	
	comp=Z,2.7nm,0.5s,baz=45,slow=2.9,SNR=13							
BRTR	Keskin Array B	153.50	300	PKPbc	PKPbc	09 29 12.3	-0.3	
	comp=Z,0.5nm,0.7s,baz=128,slow=2.2,SNR=3.4							
BRTR				PKPab	PKPab	09 29 25.9	+0.8	
	comp=Z,1.0nm,0.8s,baz=123,slow=5.0,SNR=5.0							
TORD	Torodi Ar. Bea	163.45	173	PKPab	PKPab	09 30 09.4	+1.2	
	comp=Z,2.1nm,0.8s,baz=191,slow=4.4,SNR=11							

*IDC **08** 09:19:02.2±1.0,29.00S×176.84W,h0km,mb4.2/5,*
mb1 4.3/6,mb1mx4.0/22,mbtmp4.2/6,ML3.4/1,MS3.4/4,
Ms1 3.4/4,ms1mx3.1/32,Error ellipse: s-maj=42.4km
s-min=17.9km az=154.0
*NEIC **08** 09:19:03.5±0.6,28.95S×176.95W,h10km,mb4.8/4,Error*
ellipse: s-maj=15.7km s-min=11.1km az=116.0

ISC 08 09:19:07.3±0.7,29.07S±0.08×176.92W±0.10,h36km,n38,
σ1s71/28,mb4.3/9,1C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	0.89	258	Pn	Pn	09 19 24.4	+1.1
	875nm,0.3s,baz=79,slow=11,SNR=24						
RAO				Sn	Sn	09 19 38.8	+3.8
	3µm,0.3s,baz=288,slow=23,SNR=11						
RAO	Raoul Island	0.89	258	*e*Pg	Pn	09 19 22.4	-0.8
RAO				*e*Sg	Sn	09 19 36.5	+1.5
URZ	Urewera	10.42	207	Pn	Pn	09 21 32.7	-1.4
	0.3nm,0.3s,baz=135,slow=13,SNR=3.0						
URZ				Sn	Sn	09 23 25.9	-3.7
	1.0nm,0.3s,baz=330,slow=20,SNR=4.2						
MSVF	Nonsavu	12.19	337	*e*Pn	Pn	09 21 55.3	-3.2
SNZO	South Karori	13.99	207	*e*Pn	Pn	09 22 22.4	-0.5
DZM	Mont Dzumac	16.54	291	LR	LR	09 27 59.0	
	comp=Z,248nm,19.6s,baz=128,slow=32						
DZM	Mont Dzumac	16.54	291	*e*LR	LR	09 27 18.4	
	216nm,22.6s						
RAR	Rarotonga	17.37	67	LR	LR	09 27 35.5	
	comp=Z,100nm,20.6s,baz=255,slow=30						
TBI	Tubuai	25.25	83	*e*LR	LR	09 30 48.7	
	132nm,26.5s						
PPT2	Papeete2	27.52	71	*e*LR	LR	09 31 48.6	
	113nm,23.0s						
PPT	Papeete	27.52	71	LR	LR	09 33 22.7	
	comp=Z,62nm,19.7s,baz=238,slow=31						
STKA	Stephens Creek	35.71	255	P	P	09 26 03.4	+0.9
	2.7nm,0.7s,baz=93,slow=14,SNR=7.5						
ASAR	Alice Springs	44.14	265	P	P	09 27 12.3	-0.2
	2.1nm,0.6s,baz=99,slow=6.4,SNR=31						
WRAB	Tennant Creek	45.01	270	*e*P	P	09 27 19.1	-0.3
	2.1nm,0.4s						
WRA	Warramunga Arr	45.01	270	P	P	09 27 19.0	-0.5
	1.6nm,0.3s,baz=110,slow=6.2,SNR=32						
FITZ	Fitzroy Crossi	53.32	268	*e*P	P	09 28 23.4	+0.3
	6.1nm,1.0s						
MBWA	Marble Bar	57.32	262	*e*P	P	09 28 49.5	-2.4
	84nm,1.3s						
QSPA	South Pole Qui	61.03	180	*e*P	P	09 29 19.7	+2.6
	14nm,1.0s						
KAPI	Kappang	64.32	279	LR	LR	09 58 36.2	
	comp=Z,34nm,18.7s,baz=50,slow=37						
SYO	Syowa Base	78.61	193	*e*P	P	09 31 03.6	-1.2
USRK	Ussuriysk Ar.	86.58	326	P	P	09 31 48.6	+2.1
	1.2nm,0.8s,baz=200,slow=3.8,SNR=5.9						
ILAR	Eielson Array	96.43	12	P	P	09 32 32.1	+0.2
	0.2nm,0.8s,baz=215,slow=7.7,SNR=2.7						
NRIK	Norilʹsk	118.81	336	PKP	PKPdf	09 37 49.6	-1.1
	2.7nm,0.6s,baz=135,slow=4.3,SNR=2.5						
KURK	Kurchatov	120.81	314	PKP	PKPdf	09 37 55.3	+0.2
KURBB	Kurchatov Arra	120.85	314	PKP	PKPdf	09 37 55.3	+0.1
	0.4nm,0.6s,baz=114,slow=2.1,SNR=3.9						
H10S3	ASCENSION HYDR	38.50	153	T	T	12 14 31.1	
	baz=204,slow=74,SNR=7.6						
H10S2	ASCENSION HYDR	38.50	153	T	T	12 14 31.5	
	baz=204,slow=74,SNR=9.4						
H10S1	ASCENSION HYDR	38.52	153	T	T	12 14 32.5	
	baz=204,slow=74,SNR=7.8						
H10N3	ASCENSION HYDR	39.58	153	T	T	12 15 15.4	
	baz=204,slow=75,SNR=3.7						
H10N1	ASCENSION HYDR	39.58	153	T	T	12 15 42.3	
	baz=204,slow=75,SNR=3.8						
H10N2	ASCENSION HYDR	39.59	153	T	T	12 15 16.8	
	baz=204,slow=75,SNR=3.3						
FINES	FINESS Array B	144.21	341	PKP	PKPbc	09 38 37.2	+0.4
	1.3nm,0.5s,baz=41,slow=2.9,SNR=10						
KBZ	Khabaz	145.13	306	PKPbc	PKPdf	09 38 41.5	+0.8
	1.5nm,0.7s,baz=102,slow=4.7,SNR=4.5						
NB2	NORSAR Subarra	147.57	353	PKP	PKPbc	09 38 47.2	+0.1
	comp=Z,2.9nm,1.2s,baz=17,slow=2.6						
NOA	NORSAR Array B	147.57	353	PKP	PKPdf	09 38 44.0	-0.4
	comp=Z,0.3nm,0.5s,baz=14,slow=4.3,SNR=4.0						
NOA				PKPbc	PKPbc	09 38 47.0	-0.1
	comp=Z,1.4nm,0.8s,baz=15,slow=4.4,SNR=5.7						
AKASG	Malin Array Be	150.79	325	PKPbc	PKPbc	09 38 56.3	+0.9
	comp=Z,1.4nm,0.5s,baz=46,slow=3.0,SNR=4.8						
BRTR	Keskin Array B	152.76	301	PKPbc	PKPbc	09 39 00.8	+0.3
	comp=Z,0.4nm,0.6s,baz=134,slow=3.6,SNR=3.8						
TORD	Torodi Ar. Bea	164.10	175	PKPab	PKPab	09 40 03.0	+2.3
	comp=Z,0.2nm,0.6s,baz=213,slow=2.5,SNR=3.1						

IDC 08 09:22:11.6±5.0,28.16S×176.55W,h0km,mb3.8/2,
mb1 4.1/2,mb1mx3.6/21,mbtmp3.8/2,Error ellipse:
s-maj=118.5km s-min=37.5km az=123.0,Kermadec
Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.62	228	Pn	Pb	09 22 42.2	-0.1
	94nm,0.3s,baz=90,slow=20,SNR=1.6						
RAO				Sn	Sn	09 23 02.5	-0.4
	173nm,0.3s,baz=66,slow=20,SNR=2.1						
ASAR	Alice Springs	44.55	264	P	P	09 30 25.4	-0.1
	0.8nm,0.6s,baz=102,slow=7.6,SNR=7.9						
WRA	Warramunga Arr	45.34	269	P	P	09 30 31.6	-0.2
	1.7nm,0.9s,baz=109,slow=8.0,SNR=5.0						
FINES	FINESS Array B	143.45	342	PKP	PKPdf	09 41 46.3	-1.2
	0.8nm,0.6s,baz=31,slow=8.3,SNR=3.4						

*ISCJB **08** 09:24:10.5±0.7,6.80N±0.04×73.07W±0.05,h164km±6km,*
Error ellipse: s-maj=10.1km s-min=4.3km az=37.6
*FUNV **08** 09:24:12.0,6.70N×73.06W,h159km,MW2.5*
*RSNC **08** 09:24:12.4±0.8,6.78N×73.09W,h154km±6km,ML2.3*

ISC 08 09:24:10.6±1.4,6.78N±0.05×73.05W±0.05,h165km±9km,
n20,σ1s90/32,2C,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BARC	Barichara	0.23	214	*i*P	Pn	09 24 32.9	-0.1
BARC				*e*S	Sn	09 24 48.5	-1.7
BARC				*i*		09 24 51.0	
	comp=Z,44nm,0.3s						
BRRC	Barranca, Sant	0.73	297	*e*P	Pn	09 24 34.8	0.0
BRRC				*i*		09 24 36.5	
	comp=Z,48nm,0.1s						
BRRC				*e*S	Sn	09 24 52.4	-1.0
RUSC	La Rusia	0.88	182	*e*P	Pn	09 24 36.4	-0.1
RUSC				*i*		09 24 38.0	
	comp=Z,13nm,0.5s						
RUSC				*e*S	Sn	09 24 56.2	-0.1
CBRI	Barrientos, No	0.96	15	*e*P	Pn	09 24 37.3	+0.5
CBRI				*i*		09 25 01.5	
	comp=Z,20nm,0.7s						
GRMC	Gramalote, San	0.96	15	*e*P	Pn	09 24 38.7	+2.0
GRMC				*e*S	Sn	09 24 58.6	+1.8
GRMC				*i*		09 25 01.1	
	comp=Z,24nm,0.4s						
CAPV	Capacho	1.30	34	*e*P	Pn	09 24 40.8	+1.1
CAPV				*e*S	Sn	09 25 01.5	-0.6
OCAC	Ocana	1.47	350	*e*P	Pn	09 24 41.9	+0.7
OCAC				*i*		09 25 08.9	
	comp=Z,35nm,0.4s						
NORC	Norcasia	2.17	236	*e*P	Pn	09 24 48.4	-0.2
NORC				*e*S	Sn	09 25 17.1	-1.0
NORC				*i*		09 25 20.8	
	comp=Z,4.4nm,0.2s						
CHIC	Chingaza	2.24	198	*e*P	Pn	09 24 51.0	+1.1
CHIC				*e*S	Sn	09 25 21.0	+0.9
CHIC				*i*		09 25 28.2	
	comp=Z,11nm,0.4s						
ROSC	El Rosal	2.30	213	*e*S	Sn	09 25 21.5	+0.1
HELC	Santa Helena	2.53	257	*e*P	Pn	09 24 53.9	+0.8
HELC				*e*S	Sn	09 25 25.6	-0.4
HELC				*i*		09 25 30.3	
	comp=Z,18nm,0.4s						
SOCV	Socops	2.64	55	*e*P	Pn	09 24 55.1	+0.9
SOCV				*e*S	Sn	09 25 26.8	-1.2
VIGV	El Vigia	2.65	39	*e*P	Pn	09 24 55.1	+0.8
VIGV				*e*S	Sn	09 25 26.4	-1.7
DBBC	Dabeiba	3.14	275	*e*P	Pn	09 25 01.1	+0.7
DBBC				*i*		09 25 04.6	
	comp=Z,2.2nm,0.2s						
PRAC	Prado	3.55	211	*e*P	Pn	09 25 05.9	+0.3
PRAC				*i*		09 25 08.6	
	comp=Z,35nm,0.2s						
PRAC				*e*S	Sn	09 25 47.9	-0.4
SJAC	San Juan de Ar	3.60	194	*e*P	Pn	09 25 06.2	0.0
VIRV	Villa del Rosa	3.75	10	*e*P	Pn	09 25 08.1	0.0
VIRV				*e*S	Sn	09 25 51.7	-1.3
SANV	Sanarito	4.41	52	*e*P	Pn	09 25 17.8	+1.2
CURV	Curarigua	4.44	43	*e*P	Pn	09 25 17.7	+0.7
BAUV	El Baul	5.41	66	*e*P	Pn	09 25 29.2	-0.5

KRSC 08 09:35:39.9±2.5,52.69N×160.76E,h16km±11km,ML3.9,
Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPN	Mys Shipunski	0.60	313	*i* P	Pb	09 35 52.9	+0.8
SPN				*e*S	Sg	09 35 59.5	-0.3
NLC	Nalytchevo	0.98	300	*i* P	Pb	09 35 58.6	+0.1
NLC				*e*S	Sb	09 36 09.8	-1.4
DALK	Dalny	1.26	286	*e*P	Pb	09 36 03.2	-0.1
DALK				S	Sb	09 36 18.3	-1.0
SDLR	Sedlovina	1.27	298	*i* P	Pb	09 36 03.5	-0.2
UGLR	Uglovaya	1.28	295	*i* P	Pb	09 36 03.6	-0.1
UGLR				S	Sb	09 36 18.4	-1.6
SMAR	Somma	1.31	297	P	Pn	09 36 03.1	-0.8
PET	Petropavlovsk	1.32	285	*i* P	Pn	09 36 03.9	+0.2
PET				S	Sn	09 36 19.2	-1.7
AVH	Avacha	1.35	296	*i* P	Pb	09 36 04.8	-0.1
AVH				*e*S	Sn	09 36 21.4	-0.5
KRER	Koryakskii	1.36	298	*i* P	Pb	09 36 05.1	0.0
RUS	Russkaya	1.39	260	*i* P	Pb	09 36 05.5	-0.1
RUS				S	Sn	09 36 22.1	-0.7
KOK	Koryaka	1.42	296	P	Pb	09 36 06.3	+0.3
KRX	Arik	1.44	299	*e*P	Pn	09 36 05.6	+0.1
KRX				S	Sn	09 36 21.5	-2.6
KRMR	Karymshinskiy	1.60	276	*e*P	Pn	09 36 08.3	+0.7
KRMR				*e*S	Sn	09 36 26.1	-1.8
GRL	Gorelyy	1.64	266	*e*P	Pb	09 36 10.1	+0.2
ASAK	Asacha	1.77	261	*i* P	Pb	09 36 11.9	-0.2
ASAK				*e*S	Sn	09 36 33.1	+0.8
MKZ	Mys Kozlova	1.96	17	*e*P	Pb	09 36 13.9	-1.3
MKZ				*e*S	Sn	09 36 36.8	+0.1
GNL	Ganaly	1.97	302	*i* P	Pb	09 36 14.8	-0.7
GNL				S	Sn	09 36 38.4	+1.2
KZV	Kizimen	2.44	354	*e*P	Pb	09 36 22.3	-1.3
KZV				*e*S	Sb	09 36 51.9	-1.6
TUMD	Tumrok D	2.52	355	P	Pn	09 36 22.5	+2.2
TUMD				S	Sn	09 36 51.8	+1.0
TUMR	Tumrok	2.62	352	*e*P	Pb	09 36 24.6	-2.0
TUMR				*e*S	Sn	09 36 54.7	+1.4
PAU	Pauzhetka	2.73	245	P	Pb	09 36 26.5	-1.8
KMNR	Kamenistaya	3.09	355	P	Pb	09 36 32.9	-1.6
KMNR				S	Sb	09 37 10.9	-1.0
BZMR	Bezymyannaya	3.25	357	P	Pn	09 36 33.8	+3.3
KPT	Kopyto	3.30	355	P	Pb	09 36 34.9	-3.2
ZLN	Zelenaya	3.33	0	P	Pb	09 36 35.1	-3.6
LGNR	Loginova	3.40	359	P	Pb	09 36 36.8	-3.1
LGNR				S	Sb	09 37 17.6	-3.5
CIRR	Tsirk	3.43	360	P	Pn	09 36 36.4	+3.5
ESO	Esso	3.46	340	*e*P	Pn	09 36 35.9	+2.8
KRSR	Krestovskiy	3.54	358	P	Pn	09 36 38.1	+3.8
KLY	Klyuchi	3.63	359	S	Sb	09 37 23.5	-3.9
KBG	Krutoberegovo	3.75	17	S	Sn	09 37 24.5	+3.7
BDR	Baidarnaya	3.89	4	P	Pb	09 36 44.0	-4.2
BDR				S	Sb	09 37 32.0	-3.1
SMKR	Semkarok	3.92	6	P	Pn	09 36 43.7	+4.2
SRKR	Sorokina	3.98	3	P	Pn	09 36 44.9	+4.6
BKI	Bering	3.98	49	P	Pn	09 36 42.9	+2.7
BKI				*e*S	Sn	09 37 23.5	-3.0

IDC 08 09:40:43.4±8.9,53.14N×171.38E,h90km±50km,mb3.0/3,
mb1 3.2/4,mb1mx2.9/69,mbtmp3.3/4,ML2.3/1,MS2.6/1,
Ms1 2.6/1,ms1mx2.2/12,Error ellipse: s-maj=207.3km
s-min=24.3km az=168.0,Near Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PETK	Petropavlovsk-	8.23	275	P	Pn	09 42 40.5	+0.6
	0.2nm,0.3s,baz=83,slow=18,SNR=1.2						
PETK				S	Sn	09 44 11.2	-0.1
	0.2nm,0.3s,baz=99,slow=18,SNR=1.1						
MA2	Magadan	13.09	308	LR	LR	09 48 47.2	
	comp=Z,28nm,20.5s,baz=112,slow=37						
ILAR	Eielson Array	23.96	45	P	P	09 45 48.5	-0.5
	0.5nm,0.9s,baz=254,slow=8.9,SNR=5.0						
H11N2	WAKE ISLAND Hy	33.53	188	T	T	10 22 37.1	
	baz=5.9,slow=76,SNR=23						
H11N3	WAKE ISLAND Hy	33.54	188	T	T	10 22 37.9	
	baz=5.9,slow=76,SNR=26						
H11N1	WAKE ISLAND Hy	33.54	188	T	T	10 22 35.8	
	baz=5.9,slow=76,SNR=29						
H11S1	WAKE ISLAND Hy	34.75	188	T	T	10 24 07.2	
	baz=5.8,slow=76,SNR=26						
H11S3	WAKE ISLAND Hy	34.77	188	T	T	10 24 07.6	
	baz=5.8,slow=76,SNR=24						
H11S2	WAKE ISLAND Hy	34.77	188	T	T	10 24 07.8	
	baz=5.8,slow=76,SNR=18						
YKA	Yellowknife Ar	38.38	46	P	P	09 47 55.5	+0.2
	0.3nm,0.7s,baz=288,slow=7.7,SNR=4.5						
SONM	Songino Array	40.41	290	P	P	09 48 12.5	-0.1
	0.3nm,0.4s,baz=79,slow=7.5,SNR=2.6						

*HEL **08** 09:50:40.6±0.4,67.66N×34.07E,h0km,ML2.5,Explosion*
*NAO **08** 09:50:41.7±1.4,67.64N×33.90E,ML2.8*
*KOLA **08** 09:50:41.1,67.64N×33.98E,h0km*
*CSEM **08** 09:50:43.9±0.4,67.54N×33.25E,h1km,ML2.3,Error*
ellipse: s-maj=8.7km s-min=7.1km az=80.0,Mining
explosion.

ISC 08 09:50:39.8±2.7,67.64N±0.04×34.1E±0.1,h0km,n41,
σ1s72/66,Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
APA	Apatity	0.29	256	P	Pg	09 50 45.2	-0.1
APZ9	Apatity	0.29	256	Pg	Pg	09 50 45.7	+0.5
APZ9				Lg	Lg	09 50 48.5	
APZ9	Apatity	0.29	256	Pg	Pg	09 50 45.7	+0.5
APZ9				Lg	Lg	09 50 48.5	
APZ9	Apatity	0.29	256	Pg	Pg	09 50 45.7	+0.5
	SNR=91						
APZ9				Lg	Lg	09 50 48.5	
APA0	Apatity Array	0.44	266	Pg	Pg	09 50 48.3	+0.2
	baz=88,slow=16						
APA0				Lg	Lg	09 50 53.5	
	baz=86,slow=37						
APA0				Rg	Rg	09 50 55.4	
	baz=82,slow=37						
APA0	Apatity Array	0.44	266	Pg	Pg	09 50 48.3	+0.2
	baz=88,slow=16						
APA0				Lg	Lg	09 50 53.5	
	baz=86,slow=37						
APA0				Rg	Rg	09 50 55.4	
	baz=82,slow=37						
APA0	Apatity Array	0.44	266	P	Pg	09 50 47.9	-0.2
APA0	Apatity Array	0.44	266	Pg	Pg	09 50 48.3	+0.2
	SNR=90						
APA0				Lg	Lg	09 50 53.5	
	SNR=50						
VRF	Varrio	1.73	276	PG	Pn	09 51 11.1	0.0
	baz=88						
VRF				MSG		09 51 31.4	
	comp=Z,50nm,0.2s						
VRF				SG	Sn	09 51 32.6	-1.2
VRF	Varrio	1.73	276	Pg	Pn	09 51 11.1	0.0
VRF				Sg	Sn	09 51 32.6	-1.2
KU6	Riekki	2.33	228	PB	Pn	09 51 20.9	+1.6
KU6				MSG		09 51 49.5	
	comp=Z,18nm,0.2s						
KU6				SG	Sb	09 51 51.6	-0.3
KU6	Riekki	2.33	228	Pb	Pn	09 51 20.9	+1.6
KU6				Sg	Sb	09 51 51.6	-0.3
MSF	Maaselka	2.66	232	PG	Pn	09 51 26.7	+2.9
MSF				SG	Sb	09 52 02.5	+1.1
MSF	Maaselka	2.66	232	Pg	Pn	09 51 26.7	+2.9
MSF				Sg	Sb	09 52 02.5	+1.1
SGF	Sodankyl	2.93	270	PB	Pn	09 51 30.4	+2.9
SGF				SG	Sb	09 52 10.0	+1.0
SGF	Sodankyl	2.93	270	Pb	Pn	09 51 30.4	+2.9
SGF				Sg	Sb	09 52 10.0	+1.0
RNF	Rovaniemi	3.34	256	PN	Pn	09 51 33.8	+0.6
RNF	Rovaniemi	3.34	256	Pn	Pn	09 51 33.7	+0.6
ARA0	ARCESS Array S	3.69	305	Pn	Pn	09 51 38.9	+0.9
	baz=123,slow=16						
ARA0				Sn	Sn	09 52 19.9	-2.3
	baz=121,slow

FIA0				Lg	Lg	09 54 17.2		
	baz=32,slow=28							
FIA0	**FINESS Array S**	**7.12 213**	Pn	**Pn**	**09 52 25.4**	**+0.5**		
	baz=23,slow=14							
FIA0				Sn	**Sn**	**09 53 43.4**	**-3.0**	
	baz=34,slow=22							
FIA0				Lg	Lg	09 54 17.2		
	baz=32,slow=28							
FIA0	**FINESS Array S**	**7.12 213**	Pn	**Pn**	**09 52 25.5**	**+0.5**		
	SNR=50							
FIA0				Sn	**Sn**	**09 53 43.4**	**-3.0**	
	SNR=50							
FIA0				Lg	Lg	09 54 17.2		
	SNR=5.0							

*IDC **08** 09:51:06.1±0.5, 12°.81N × 122°.46E, h0km, mb4.1/23, mb1 4.3/23, mb1mx4.1/52, mbtmp4.1/23, MS3.4/11, Ms1 3.4/11, ms1mx3.1/55, Error ellipse: s-maj=22.8km s-min=11.9km az=66.0*

*ISCJB **08** 09:51:07.3±0.3, 12°.88N±0°.04 × 122°.53E±0°.05, h16km, mb4.2/25, MS3.4/10, Error ellipse: s-maj=7.6km s-min=4.1km az=144.3*

*NEIC **08** 09:51:11.4±0.3, 12°.78N × 122°.43E, h35km, mb4.7/2, Error ellipse: s-maj=15.8km s-min=7.4km az=62.0*

ISC 08 09:51:08.5±0.5, 12°.87N±0°.04 × 122°.52E±0°.05, h16km, n49, σ1§29/48, mb4.3/25, MS3.3/10, 4C-4D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GQP	**Guinayangan**	**1.03 356**		↑*i*P		**Pb**		**09 51 24.9**	**-3.1**
GQP				*i* S		**Sb**		**09 51 40.3**	**-1.0**
MMPH	**Masbate**	**1.20 115**		*e*P		**Pn**		**09 51 29.0**	**-1.6**
MMPH				*e*S		**Sb**		**09 51 45.5**	**-0.6**
RCP	**Roxas**	**1.32 170**		‖*e*P		**Pn**		**09 51 32.4**	**0.0**
LQP	**Lukban**	**1.56 322**		‖*e*P		**Pn**		**09 51 33.0**	**-2.8**
PGP	**Puerto Galera**	**1.65 293**		‖*e*P		**Pn**		**09 51 35.8**	**-1.0**
PGP				*i* S		**Sb**		**09 51 58.8**	**-0.4**
TGY	**Tagaytay City**	**1.96 309**		Pn		**Pn**		**09 51 40.5**	**-0.8**
	180nm,0.3s,baz=146,slow=6.5,SNR=25								
TGY	**Tagaytay City**	**1.96 309**		↑*e*P		**Pn**		**09 51 40.5**	**-0.8**
JAP	**San Jose, Anti**	**2.18 195**		‖*e*P		**Pb**		**09 51 46.2**	**-1.5**
LLP	**Lapu-Lapu**	**2.91 151**		*e*P		**Pn**		**09 51 56.2**	**+2.0**
LLP				*e*S		**Sb**		**09 52 33.2**	**-2.3**
PLP	**Palo**	**2.95 125**		‖*e*P		**Pn**		**09 51 54.3**	**-0.4**
PCPH	**Palayan**	**3.01 333**		↑*e*P		**Pn**		**09 51 58.5**	**+3.0**
SNPH	**Sibulan**	**3.58 169**		*i* P		**Pn**		**09 52 02.4**	**-1.1**
DAV	**Davao City (W)**	**6.51 152**		LR	LR			09 56 09.2	
	comp=Z,259nm,19.2s,baz=84,slow=47								
CMAR	**Chiang Mai Arr**	**23.36 287**		P		**P**		**09 56 16.6**	**+0.1**
	1.3nm,0.3s,baz=94,slow=7.0,SNR=13								
CMAR				LR	LR			10 05 10.2	
	comp=Z,42nm,18.6s,baz=120,slow=36								
KSAR	**Wonju Array Be**	**24.93 10**		P		**P**		**09 56 31.0**	**-0.1**
KSRS	**Korea Array**	**24.95 10**		P		**P**		**09 56 31.0**	**-0.2**
	1.6nm,0.8s,baz=187,slow=9.0,SNR=4.6								
KSRS				LR	LR			10 05 37.7	
	comp=Z,52nm,20.1s,baz=190,slow=35								
MJAR	**Matsushiro Arr**	**27.46 28**		LR	LR			10 08 07.4	
	comp=Z,35nm,18.7s,baz=145,slow=37								
USRK	**Ussuriysk Ar.**	**32.26 13**		P		**P**		**09 57 36.5**	**+0.2**
	3.5nm,0.7s,baz=178,slow=4.3,SNR=5.3								
WRAB	**Tennant Creek**	**34.62 160**		*e*P		**P**		**09 57 56.0**	**-1.1**
WRA	**Warramunga Arr**	**34.62 160**		P		**P**		**09 57 55.9**	**-1.3**
	1.5nm,0.4s,baz=330,slow=11,SNR=40								
KLR	**Kul'dur**	**37.05 10**		P		**P**		**09 58 19.8**	**+2.1**
	1.2nm,0.6s,baz=214,slow=7.3,SNR=6.6								
SONM	**Songino Array**	**37.37 342**		LR	LR			10 14 31.0	
	comp=Z,74nm,19.7s,baz=158,slow=38								
ASAR	**Alice Springs**	**37.98 163**		P		**P**		**09 58 25.6**	**-0.3**
	3.5nm,0.5s,baz=343,slow=7.3,SNR=88								
ASAR				LR	LR			10 14 48.3	
	comp=Z,46nm,20.2s,baz=66,slow=38								
CTA	**Charters Tower**	**40.23 144**		P		**P**		**09 58 45.6**	**+0.8**
	5.4nm,0.9s,baz=324,slow=7.2,SNR=3.4								
BBOO	**Buckleboo**	**47.23 164**		*e*P		**P**		**09 59 40.5**	**-0.5**
	7.1nm,0.5s								
MKAR	**Makanchi Array**	**47.75 323**		P		**P**		**09 59 45.3**	**+0.4**
	3.1nm,0.8s,baz=106,slow=11,SNR=8.2								
STKA	**Stephens Creek**	**48.11 158**		P		**P**		**09 59 47.6**	**-0.1**
	2.4nm,0.6s,baz=337,slow=10,SNR=10.0								
PETK	**Petropavlovsk-**	**48.92 27**		P		**P**		**09 59 55.0**	**+1.2**
	2.1nm,0.7s,baz=222,slow=1.9,SNR=3.5								
PETK				LR	LR			10 19 24.1	
	comp=Z,22nm,21.3s,baz=212,slow=35								
PETK	**Petropavlovsk-**	**48.92 27**		P		**P**		**09 59 55.0**	**+1.2**
YAK	**Yakutsk**	**49.35 4**		LR	LR			10 21 38.7	
	comp=Z,25nm,18.5s,baz=165,slow=37								
ZALV	**Zalesovo Beam**	**50.61 332**		P		**P**		**10 00 08.5**	**+1.9**
	0.9nm,0.5s,baz=126,slow=7.3,SNR=3.2								
EKS2	**Erkin-Say**	**51.40 315**		*e*P		**P**		**10 00 14.4**	**+1.5**
KURK	**Kurchatov**	**51.86 326**		P		**P**		**10 00 16.5**	**+0.5**
KURBB	**Kurchatov Arra**	**51.86 326**		P		**P**		**10 00 16.5**	**+0.5**
	6.1nm,0.8s,baz=123,slow=7.3,SNR=2.3								
ABKAR	**Akbulak array**	**62.51 319**		*e*P		**P**		**10 01 31.1**	**-0.4**
	2.1nm,0.6s								
AKTO	**Aktyubinsk**	**63.98 320**		P		**P**		**10 01 42.6**	**+1.4**
	1.5nm,0.7s,baz=93,slow=6.4,SNR=5.0								
KBZ	**Khabaz**	**73.75 312**		LR	LR			10 39 46.7	
	comp=Z,43nm,18.2s,baz=56,slow=40								
ILAR	**Eielson Array**	**78.72 26**		P		**P**		**10 03 09.9**	**-0.1**
	0.3nm,0.6s,baz=245,slow=5.0,SNR=4.4								
ARCES	**ARCESS Array B**	**80.48 339**		P		**P**		**10 03 18.9**	**-0.6**
	2.2nm,0.6s,baz=56,slow=6.6,SNR=4.1								
BRTR	**Keskin Array B**	**81.05 309**		P		**P**		**10 03 22.5**	**-0.8**
	0.8nm,0.7s,baz=116,slow=6.6,SNR=4.4								
FINES	**FINESS Array B**	**81.86 331**		P		**P**		**10 03 26.6**	**-0.3**
	2.6nm,0.6s,baz=69,slow=7.7,SNR=4.6								
FINES				LR	LR			10 42 54.0	
	comp=Z,47nm,18.1s,baz=32,slow=38								
AKASG	**Malin Array Be**	**82.23 320**		P		**P**		**10 03 27.7**	**-1.3**
	1.7nm,0.6s,baz=67,slow=4.7,SNR=3.7								
MLR	**Muntele Rosu**	**85.48 315**		P		**P**		**10 03 46.7**	**+0.7**
	1.7nm,0.7s,baz=62,slow=3.1,SNR=9.7								
NOA	**NORSAR Array B**	**88.80 333**		P		**P**		**10 04 02.4**	**+0.8**
	0.7nm,0.6s,baz=67,slow=4.7,SNR=3.7								
NOA				LR	LR			10 45 56.4	
	comp=Z,31nm,18.4s,baz=55,slow=37								
GERES	**GERESS Array B**	**92.38 321**		P		**P**		**10 04 20.4**	**+1.7**
	0.1nm,0.2s,baz=210,slow=4.6,SNR=3.6								
YKA	**Yellowknife Ar**	**92.85 23**		P		**P**		**10 04 20.3**	**-0.1**
	0.2nm,0.4s,baz=307,slow=4.5,SNR=3.4								
VNDA	**Vanda**	**92.98 172**		P		**P**		**10 04 20.9**	**+0.3**
	1.4nm,1.0s,baz=319,slow=6.8,SNR=4.2								
TORD	**Torodi Ar. Bea**	**115.89 292**		PKP		**PKPdf**		**10 09 50.1**	**-1.5**
	0.3nm,0.9s,baz=41,slow=3.9,SNR=2.7								
PLCA	**Paso Flores**	**149.97 160**		PKPbc		**PKPbc**		**10 10 59.2**	**+0.5**
	2.2nm,1.0s,baz=201,slow=8.6,SNR=5.2								

*ISCJB **08** 10:13:23.8±0.4, 39°.48N±0°.01 × 23°.76E±0°.02, h12km±2km, mb3.5/8, MS3.5/2, Error ellipse: s-maj=2.3km s-min=1.8km az=29.0*

*IDC **08** 10:13:23.3±1.0, 39°.39N × 23°.63E, h0km, mb3.5/8, mb1 3.6/11, mb1mx3.4/49, mbtmp3.5/11, ML3.4/3, MS3.5/2, Ms1 3.5/2, ms1mx2.4/47, Error ellipse: s-maj=17.7km s-min=16.2km az=163.0*

*ATH **08** 10:13:23.6, 39°.47N × 23°.73E, h29km, ML3.5/16, Error ellipse: s-maj=1.2km s-min=0.8km az=231.0*

*THE **08** 10:13:24.4, 39°.48N × 23°.75E, h10km, ML3.6/21, Error ellipse: s-maj=0.9km s-min=0.5km az=269.0*

*CSEM **08** 10:13:24.0±0.1, 39°.47N × 23°.74E, h10km, ML3.5, Error ellipse: s-maj=2.2km s-min=1.7km az=122.0*

ISC 08 10:13:24.0±1.0, 39°.47N±0°.01 × 23°.74E±0°.01, h8km±7km, n258, σ0§94/328, mb3.6/8, 16C-3D, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AOS	**Alonnisos**	**0.32 160**		P		**Pg**		**10 13 30.3**	**0.0**
AOS				S		**Sb**		**10 13 36.1**	**-1.2**
AOS	**Alonnisos**	**0.32 160**		P		**Pg**		**10 13 30.3**	**0.0**
AOS				S		**Sb**		**10 13 36.1**	**-1.2**
AOS	**Alonnisos**	**0.32 160**		P		**Pb**		**10 13 32.0**	**+0.1**
AOS				S		**Sb**		**10 13 36.3**	**-1.0**
AOS				AML	AML			10 13 37.2	
	comp=E,19856μm,0.6s								
AOS				AML	AML			10 13 37.8	
	comp=N,10254μm,0.3s								
SKIA	**Skiathos**	**0.37 215**		P		**Pb**		**10 13 32.1**	**-0.7**
SKIA				S		**Sb**		**10 13 37.8**	**-1.0**
SKIA	**Skiathos**	**0.37 215**		P		**Pb**		**10 13 32.1**	**-0.7**
SKIA				S		**Sb**		**10 13 37.7**	**-1.0**
SKIA	**Skiathos**	**0.37 215**		P		**Pb**		**10 13 32.4**	**-0.4**
SKIA				S		**Sb**		**10 13 37.7**	**-1.0**
SKIA				AML	AML			10 13 38.3	
	comp=E,33909μm,0.5s								
SKIA				AML	AML			10 13 39.0	
	comp=N,19303μm,0.3s								
NEO	**Neokhori**	**0.43 248**		P		**Pg**		**10 13 32.5**	**+0.1**
NEO				S		**Sg**		**10 13 38.9**	**+0.9**
NEO	**Neokhori**	**0.43 248**		P		**Pg**		**10 13 32.5**	**+0.1**
NEO				S		**Sg**		**10 13 38.2**	**+0.1**
NEO	**Neokhori**	**0.43 248**		P		**Pg**		**10 13 32.3**	**-0.1**
NEO				S		**Sg**		**10 13 38.2**	**+0.1**
NEO				AML	AML			10 13 39.9	
	comp=E,16789μm,0.3s								
NEO				AML	AML			10 13 43.6	
	comp=N,20316μm,0.3s								
XOR	**Xorichti**	**0.44 256**		P		**Pg**		**10 13 32.7**	**+0.2**
XOR				S		**Sb**		**10 13 39.5**	**-1.2**
XOR	**Xorichti**	**0.44 256**		P		**Pg**		**10 13 32.7**	**+0.2**
XOR				S		**Sb**		**10 13 39.5**	**-1.2**
XOR	**Xorichti**	**0.44 256**		P		**Pg**		**10 13 33.1**	**+0.7**
XOR				S		**Sb**		**10 13 40.1**	**-0.6**
XOR				AML	AML			10 13 41.6	
	comp=E,13039μm,0.3s								
XOR				AML	AML			10 13 44.0	
	comp=N,14878μm,0.2s								
PAIG	**Paliouri**	**0.46 354**		P		**Pg**		**10 13 32.2**	**-0.7**
PAIG				S		**Sb**		**10 13 40.5**	**-0.8**
PAIG	**Paliouri**	**0.46 354**		P		**Pg**		**10 13 32.2**	**-0.7**
PAIG				S		**Sb**		**10 13 40.5**	**-0.8**
FYTO	**Fytoko, Volos**	**0.62 265**		P		**Pg**		**10 13 36.1**	**+0.1**
FYTO				S		**Sb**		**10 13 45.6**	**-0.4**
FYTO	**Fytoko, Volos**	**0.62 265**		P		**Pg**		**10 13 36.1**	**+0.1**
FYTO				S		**Sg**		**10 13 43.9**	**-0.2**
FYTO	**Fytoko, Volos**	**0.62 265**		P		**Pb**		**10 13 37.1**	**0.0**
FYTO				S		**Sg**		**10 13 43.9**	**-0.2**
FYTO				AML	AML			10 13 48.1	
	comp=N,6237μm,0.3s								
FYTO				AML	AML			10 13 50.0	
	comp=E,3778μm,0.5s								
SMIA	**Simia**	**0.72 215**		P		**Pb**		**10 13 38.7**	**-0.1**
SMIA				S		**Sb**		**10 13 49.3**	**+0.5**
SMIA	**Simia**	**0.72 215**		P		**Pb**		**10 13 38.4**	**-0.4**
SMIA				S		**Sb**		**10 13 49.3**	**+0.5**
SMIA	**Simia**	**0.72 215**		P		**Pb**		**10 13 38.4**	**-0.4**
OUR	**Ouranopolis**	**0.88 12**		P		**Pb**		**10 13 41.4**	**-0.2**
OUR				S		**Sb**		**10 13 54.3**	**+0.8**
OUR	**Ouranopolis**	**0.88 12**		P		**Pb**		**10 13 41.4**	**-0.2**
PLG	**Polygyros**	**0.93 346**		P		**Pg**		**10 13 41.5**	**-0.4**
PLG				S		**Sb**		**10 13 54.8**	**-0.1**
PLG	**Polygyros**	**0.93 346**		P		**Pg**		**10 13 41.5**	**-0.4**
PLG				S		**Sb**		**10 13 54.8**	**-0.1**
ATAL	**Atalanti**	**0.96 216**		P		**Pb**		**10 13 42.6**	**-0.2**
ATAL				S		**Sn**		**10 13 57.2**	**-0.3**
ATAL	**Atalanti**	**0.96 216**		P		**Pb**		**10 13 42.6**	**-0.2**
ATAL				S		**Sb**		**10 13 55.5**	**-0.1**
ATAL	**Atalanti**	**0.96 216**		P		**Pn**		**10 13 43.2**	**-0.6**
ATAL				S		**Sb**		**10 13 55.5**	**-0.1**
ATAL				AML	AML			10 13 57.9	
	comp=N,6008μm,0.5s								
ATAL				AML	AML			10 14 05.7	
	comp=E,5530μm,1.0s								
LKR	**Lokris**	**1.00 215**		P		**Pg**		**10 13 43.1**	**-0.1**
LKR				S		**Sn**		**10 13 57.8**	**-0.8**
LKR	**Lokris**	**1.00 215**		P		**Pg**		**10 13 43.1**	**-0.1**
LKR	**Lokris**	**1.00 215**		P		**Pg**		**10 13 43.3**	**+0.1**
EREA	**Eretria**	**1.06 172**		P		**Pb**		**10 13 44.5**	**-0.1**
EREA				S		**Sn**		**10 14 00.6**	**+0.5**
EREA	**Eretria**	**1.06 172**		P		**Pb**		**10 13 44.5**	**-0.1**
EREA				S		**Sb**		**10 13 58.4**	**-0.2**
EREA	**Eretria**	**1.06 172**		P		**Pn**		**10 13 45.2**	**0.0**
EREA				S		**Sb**		**10 13 58.4**	**-0.2**
EREA				AML	AML			10 14 09.4	
	comp=E,5636μm,0.6s								
EREA				AML	AML			10 14 11.5	
	comp=N,5833μm,0.6s								
LRSO	**Larissa Observ**	**1.06 281**		P		**Pg**		**10 13 44.1**	**-0.2**
LRSO				S		**Sn**		**10 13 59.8**	**-0.3**
LRSO	**Larissa Observ**	**1.06 281**		P		**Pg**		**10 13 44.1**	**-0.2**
LRSO				S		**Sn**		**10 13 59.8**	**-0.3**
LIT	**Litokhoron**	**1.15 304**		P		**Pb**		**10 13 45.2**	**-0.9**
LIT				S		**Sb**		**10 14 01.0**	**-0.2**
LIT	**Litokhoron**	**1.15 304**		P		**Pb**		**10 13 45.2**	**-0.9**
LIT				S		**Sb**		**10 14 01.0**	**-0.2**
AGG	**Agios Georgios**	**1.18 248**		P		**Pb**		**10 13 45.6**	**-1.1**
AGG				S		**Sg**		**10 14 02.3**	**+0.3**
AGG	**Agios Georgios**	**1.18 248**		P		**Pb**		**10 13 45.7**	**-1.0**
AGG				S		**Sg**		**10 14 02.3**	**+0.3**
AGG	**Agios Georgios**	**1.18 248**		P		**Pb**		**10 13 45.7**	**-1.0**
LIA	**Limnos Island**	**1.19 69**		P		**Pb**		**10 13 45.8**	**-1.0**
LIA				S		**Sn**		**10 14 03.0**	**-0.4**
LIA	**Limnos Island**	**1.19 69**		P		**Pb**		**10 13 45.8**	**-1.0**
LIA				S		**Sg**		**10 14 02.3**	**-0.1**
HORT	**Hortiatis**	**1.23 337**		P		**Pn**		**10 13 46.5**	**-1.1**
HORT	**Hortiatis**	**1.23 337**		P		**Pn**		**10 13 46.5**	**-1.1**
THE	**Thessaloniki**	**1.30 333**		P		**Pn**		**10 13 47.3**	**-1.2**
THE	**Thessaloniki**	**1.30 333**		P		**Pn**		**10 13 47.6**	**-0.9**
THE	**Thessaloniki**	**1.30 333**		P		**Pn**		**10 13 47.6**	**-0.9**
VILL	**Platees**	**1.31 196**		P		**Pn**		**10 13 48.2**	**-0.4**
VIL2				S		**Sg**		**10 14 02.2**	**+1.1**
VIL2				AML	AML			10 14 11.6	
	comp=E,6288μm,0.7s								
VIL2				AML	AML			10 14 18.6	
	comp=N,8584μm,0.8s								
THL	**Klokotos Trika**	**1.34 275**		P		**Pn**		**10 13 47.8**	**-1.1**
THL				S		**Sn**		**10 14 06.7**	**-0.2**
THL	**Klokotos Trika**	**1.34 275**		P		**Pn**		**10 13 47.8**	**-1.1**
THL				S		**Sn**		**10 14 06.7**	**-0.2**
VILL	**Villia**	**1.35 194**		P		**Pn**		**10 13 48.2**	**-0.9**
VILL	**Villia**	**1.35 194**		P		**Pn**		**10 13 48.2**	**-0.9**
VILL				S		**Sg**		**10 14 07.2**	**-0.1**
PROD	**Prodromos**	**1.38 209**		P		**Pn**		**10 13 47.6**	**-1.9**
PROD				S		**Sb**		**10 14 06.7**	**-1.9**
PROD	**Prodromos**	**1.38 209**		P		**Pn**		**10 13 47.6**	**-1.9**
PROD				S		**Sb**		**10 14 06.7**	**-1.0**
PROD				AML	AML			10 14 11.2	
	comp=E,3013μm,0.6s								
PROD				AML	AML			10 14 15.7	
	comp=N,1799μm,0.3s								
SOH	**Sokhos**	**1.38 348**		P		**Pn**		**10 13 48.9**	**-0.7**
SOH				S		**Sg**		**10 14 08.4**	**0.0**
SOH	**Sokhos**	**1.38 348**		P		**Pn**		**10 13 48.9**	**-0.7**
SOH				S		**Sg**		**10 14 08.4**	**0.0**
DSF	**Desfina**	**1.42 222**		P		**Pn**		**10 13 48.9**	**-1.2**
DSF	**Desfina**	**1.42 222**		P		**Pn**		**10 13 48.9**	**-1.2**
DSF				S		**Sn**		**10 14 06.9**	**-2.1**
DSF	**Desfina**	**1.42 222**		P		**Pn**		**10 13 48.5**	**-1.6**
DSF				S		**Sn**		**10 14 07.0**	**-2.1**
DSF				AML	AML			10 14 15.5	
	comp=E,2649μm,0.3s								
DSF				AML	AML			10 14 15.6	
	comp=N,1598μm,0.3s								
PTL	**Penteli**	**1.42 176**		P		**Pn**		**10 13 49.5**	**-0.7**
PTL	**Penteli**	**1.42 176**		P		**Pn**		**10 13 49.5**	**-0.7**
PTL				S		**Sn**		**10 14 07.5**	**-1.6**
PTL	**Penteli**	**1.42 176**		P		**Pn**		**10 13 49.2**	**-1.0**
PTL				S		**Sn**		**10 14 07.5**	**-1.6**
PTL				AML	AML			10 14 18.9	
	comp=E,1801μm,0.5s								
PTL				AML	AML			10 14 19.0	
	comp=N,1538μm,0.5s								
ATH	**Athens Observa**	**1.50 181**		P		**Pn**		**10 13 50.6**	**-0.5**
ATH				S		**Sn**		**10 14 10.5**	**-0.3**
ATH	**Athens Observa**	**1.50 181**		P		**Pn**		**10 13 50.8**	**-0.3**
ATH				S		**Sn**		**10 14 10.5**	**-0.3**
ATHU	**Athens Univers**	**1.50 179**		P		**Pn**		**10 13 50.4**	**-0.8**
ATHU				S		**Sg**		**10 14 12.3**	**0.0**
ATHU	**Athens Univers**	**1.50 179**		P		**Pn**		**10 13 50.4**	**-0.8**
ATHU				S		**Sn**		**10 14 10.3**	**-0.7**
ATHU	**Athens Univers**	**1.50 179**		P		**Pn**		**10 13 49.8**	**-1.5**
ATHU				S		**Sn**		**10 14 10.3**	**-0.7**
ATHU				AML	AML			10 14 18.6	
	comp=N,884μm,0.4s								
ATHU				AML	AML			10 14 22.7	
	comp=E,501μm,0.5s								
LTK	**Loutraki**	**1.57 203**		P		**Pn**		**10 13 51.4**	**-0.7**
LTK				S		**Sb**		**10 14 12.9**	**-0.3**
LTK	**Loutraki**	**1.57 203**		P		**Pn**		**10 13 51.4**	**-0.7**
LTK				S		**Sb**		**10 14 12.9**	**-0.3**
LTK	**Loutraki**	**1.57 203**		P		**Pn**		**10 13 51.4**	**-0.7**
LTK				AML	AML			10 14 23.7	
	comp=N,2183μm,0.5s								
LTK				AML	AML			10 14 27.2	
	comp=E,1715μm,1.0s								
EVR	**Evrytania**	**1.60 250**		P		**Pn**		**10 13 52.0**	**-0.6**
EVR	**Evrytania**	**1.60 250**		P		**Pn**		**10 13 52.0**	**-0.6**
EVR	**Evrytania**	**1.60 250**		P		**Pn**		**10 13 51.7**	**-0.9**
VLY	**Voula,Athens**	**1.62 178**		P		**Pn**		**10 13 52.2**	**-0.6**
VLY	**Voula,Athens**	**1.62 178**		P		**Pn**		**10 13 52.2**	**-0.6**
VLY				S		**Sn**		**10 14 13.1**	**-0.7**
VLY	**Voula,Athens**	**1.62 178**		P		**Pn**		**10 13 51.9**	**-0.9**
VLY				S		**Sn**		**10 14 13.1**	**-0.7**
VLY				AML	AML			10 14 20.5	
	comp=E,2901μm,0.5s								
VLY				AML	AML			10 14 24.2	
	comp=N,2877μm,0.5s								
KAVA	**Kavala**	**1.64 21**		P		**Pn**		**10 13 51.6**	**-1.5**
KAVA	**Kavala**	**1.64 21**		P		**Pn**		**10 13 51.6**	**-1.5**
KALE	**Kalithea**	**1.65 230**		P		**Pn**		**10 13 52.5**	**-0.8**
KALE	**Kalithea**	**1.65 230**		P		**Pn**		**10 13 52.8**	**-0.5**
KALE	**Kalithea**	**1.65 230**		P		**Pn**		**10 13 52.8**	**-0.5**
SRS	**Serrai**	**1.65 356**		P		**Pn**		**10 13 52.1**	**-1.2**
SRS	**Serrai**	**1.65 356**		P		**Pn**		**10 13 52.1**	**-1.2**
THAL	**Thalero**	**1.66 211**		P		**Pn**		**10 13 52.7**	**-0.7**
THAL	**Thalero**	**1.66 211**		P		**Pn**		**10 13 52.7**	**-0.7**
THAL				S		**Sn**		**10 14 13.0**	**-1.9**
THAL	**Thalero**	**1.66 211**		P		**Pn**		**10 13 52.5**	**-0.9**
THAL				S		**Sn**		**10 14 13.0**	**-1.9**
THAL				AML	AML			10 14 23.1	
	comp=E,2267μm,0.5s								
THAL				AML	AML			10 14 23.9	
	comp=N,1751μm,0.3s								
SIGR	**SIGRI**	**1.66 98**		P		**Pn**		**10 13 52.9**	**-0.5**
SIGR	**SIGRI**	**1.66 98**		P		**Pn**		**10 13 52.9**	**-0.5**
ANX	**Ano Chora**	**1.67 239**		P		**Pn**		**10 13 53.1**	**-0.5**
ANX	**Ano Chora**	**1.67 239**		P		**Pn**		**10 13 53.1**	**-0.5**
SERG	**Sergoula**	**1.68 232**		P		**Pn**		**10 13 53.1**	**-0.7**
SERG	**Sergoula**	**1.68 232**		P		**Pn**		**10 13 53.3**	**-0.5**
SMTH	**Samothraki Isl**	**1.70 53**		P		**Pn**		**10 13 52.3**	**-1.7**
SMTH				S		**Sn**		**10 14 15.3**	**-0.7**
SMTH	**Samothraki Isl**	**1.70 53**		P		**Pn**		**10 13 52.3**	**-1.7**
SMTH				S		**Sn**		**10 14 15.3**	**-0.7**
TRIZ	**Trizonia**	**1.71 230**		P		**Pn**		**10 13 53.2**	**-0.8**
TRIZ				S		**Sn**		**10 14 13.7**	**-2.3**
KZN	**Kozani**	**1.73 300**		P		**Pn**		**10 13 53.6**	**-0.8**
KZN	**Kozani**	**1.73 300**		P		**Pn**		**10 13 54.1**	**-0.3**
GRG	**Griva**	**1.80 326**		P		**Pn**		**10 13 54.9**	**-0.5**
GRG	**Griva**	**1.80 326**		P		**Pn**		**10 13 54.9**	**-0.5**
KNT	**Kendrikon**	**1.81 339**		P		**Pn**		**10 13 55.0**	**-0.5**
KNT	**Kendrikon**	**1.81 339**		P		**Pn**		**10 13 55.0**	**-0.5**
GADA	**Gvkgeada**	**1.81 66**		*e*PN		**Pn**		**10 13 54.4**	**-1.1**
GADA	**Gvkgeada**	**1.81 66**		*e*Pn		**Pn**		**10 13 54.4**	**-1.1**
BOZC	**Bozcaada**	**1.82 78**		*i* P		**Pn**		**10 13 54.6**	**-1.1**
BOZC				*i* S		**Sn**		**10 14 19.1**	**+0.1**
LAKA	**Lakka**	**1.84 229**		P		**Pn**		**10 13 55.8**	**-0.1**
LAKA	**Lakka**	**1.84 229**		P		**Pn**		**10 13 55.8**	**-0.1**
LAKA	**Lakka**	**1.84 229**		P		**Pn**		**10 13 56.0**	**+0.1**
NVR	**Nevrokopi**	**1.88 3**		P		**Pn**		**10 13 55.6**	**-0.9**
NVR	**Nevrokopi**	**1.88 3**		P		**Pn**		**10 13 55.6**	**-0.9**
KLV	**Kalavryta, Ach**	**1.89 222**		P		**Pn**		**10 13 56.0**	**-0.6**
KLV	**Kalavryta, Ach**	**1.89 222**		P		**Pn**		**10 13 56.3**	**-0.3**
KLV				S		**Sn**		**10 14 18.0**	**-2.7**
**KLV

ZKS	Zakynthos	2.91	234	P	Pn	10 14 10.9	+0.2	
BALY	Balya	3.01	84	*i* P	Pn	10 14 12.1	+0.1	
BALY	Balya	3.01	84	P	Pn	10 14 12.1	+0.1	
PYL	PYLOS	3.01	212	P	Pn	10 14 12.9	+0.9	
PYL	PYLOS	3.01	212	P	Pn	10 14 12.9	+0.9	
SKO	Skopje	3.05	326	*e*Pn	Pn	10 14 01.8	-11	
VTS	Vitosha	3.14	353	P	Pn	10 14 14.2	+0.2	
VTS	Vitosha	3.14	353	⇓*i*P	Pn	10 14 14.1	+0.1	
VTS	Vitosha	3.14	353	P	Pn	10 14 14.2	+0.2	
MRMT	Marmara Adasi	3.17	68	*e*PN	Pn	10 14 15.0	+0.8	
MRMT	Marmara Adasi	3.17	68	*e*Pn	Pn	10 14 15.0	+0.8	
BALB	Balikesir	3.21	86	*e*PN	Pn	10 14 16.5	+1.9	
BALB	Balikesir	3.21	86	*e*Pn	Pn	10 14 16.5	+1.9	
EDC	Edincik	3.29	73	*e*PN	Pn	10 14 18.2	+2.4	
EDC	Edincik	3.29	73	*e*Pn	Pn	10 14 18.2	+2.4	
THR5	Thira Island,	3.30	157	P	Pn	10 14 15.9	-0.1	
THR5	Thira Island,	3.30	157	P	Pn	10 14 15.9	-0.1	
ANKY	Antikythira Is	3.61	186	P	Pn	10 14 19.2	-1.1	
ANKY	Antikythira Is	3.61	186	P	Pn	10 14 19.2	-1.1	
BARS	Barje	3.64	337	⇑*i*Pn	Pn	10 14 20.4	-0.3	
ARMT	Armutlu	4.08	73	*e*PN	Pn	10 14 26.7	0.0	
ARMT	Armutlu	4.08	73	*e*Pn	Pn	10 14 26.7	0.0	
IDI	Anoyia	4.28	167	Pn	Pn	10 14 29.3	-0.1	
	comp=E,8.3nm,0.3s,baz=343,slow=11,SNR=40							
IVAS	Ivanjica	4.91	328	*e*Pn	Pn	10 14 38.3	+0.2	
GRUS	Gruza	4.96	334	⇑*i*Pn	Pn	10 14 38.4	-0.4	
KUBS	Kucevo	5.17	343	*i* Pn	Pn	10 14 39.4	-2.3	
TRUS	Trudelj	5.36	333	*e*Pn	Pn	10 14 44.0	-0.3	
DIVS	Divibare	5.41	330	*e*Pn	Pn	10 14 45.5	+0.5	
MDVR	Moldovita	5.52	345	⇑*i*P	Pn	10 14 45.3	-1.2	
MDVR	Moldovita	5.52	345	⇑*i*P	Pn	10 14 45.3	-1.2	
ARR	Arges	5.93	6	⇑*i*P	Pn	10 14 51.4	-0.8	
ARR	Arges	5.93	6	⇑*i*P	Pn	10 14 51.4	-0.8	
TEKS	Tekeris	5.96	330	*e*Pn	Pn	10 14 53.1	+0.5	
LOT	Lotru	5.97	0	⇑*i*P	Pn	10 14 52.9	+0.1	
LOT	Lotru	5.97	0	⇑*i*P	Pn	10 14 52.9	+0.1	
TLB	Topalu	6.03	31	⇑*i*P	Pn	10 14 53.4	-0.1	
TLB	Topalu	6.03	31	⇑*i*P	Pn	10 14 53.4	-0.1	
TIRR	Tirgusor	6.08	33	⇑*i*P	Pn	10 14 54.2	+0.1	
TIRR	Tirgusor	6.08	33	⇑*i*P	Pn	10 14 54.2	+0.1	
MLR	Muntele Rosu	6.23	14	Pn	Pn	10 14 59.3	+2.9	
	comp=E,0.3nm,0.3s,baz=324,slow=9.1,SNR=11							
MLR				Lg	Lg	10 16 50.1		
	comp=E,0.0nm,0.3s,baz=179,slow=17,SNR=3.4							
MLR				LR	LR	10 17 49.6		
	comp=E,9.7nm,21.8s,baz=224,slow=42							
MLR	Muntele Rosu	6.23	14	⇑*i*P	Pn	10 15 00.8	+4.4	
DOPR	Dopca	6.61	10	⇓*i*P	Pn	10 15 03.8	+2.4	
DOPR	Dopca	6.61	10	⇓*i*P	Pn	10 15 03.8	+2.4	
PLOR	Plostina	6.73	18	⇑*i*P	Pn	10 15 05.5	+2.4	
PLOR	Plostina	6.73	18	⇑*i*P	Pn	10 15 05.5	+2.4	
BRTR	Keskin Array B	7.65	85	Pn	Pn	10 15 20.4	+4.6	
	comp=E,0.1nm,0.3s,baz=289,slow=9.0,SNR=3.5							
BRTR				Lg	Lg	10 17 30.3		
	comp=E,0.1nm,0.3s,baz=149,slow=45,SNR=2.7							
UDBI	Udbina	7.79	313	*e*Pn	Pn	10 15 20.4	+2.6	
ESDC	Sonseca Array	21.33	279	P	P	10 18 12.8	+1.5	
	comp=E,0.3nm,0.3s,baz=73,slow=12,SNR=4.4							
HFS	Hagfors	21.63	346	P	P	10 18 17.1	+2.7	
	comp=E,0.6nm,0.5s,baz=154,slow=10,SNR=5.0							
NB2	NORSAR Subarra	22.95	344	P	P	10 18 28.4	-0.1	
	comp=Z,2.2nm,0.8s,baz=151,slow=11							
NB2	NORSAR Subarra	22.95	344	P	P	10 18 28.4	-0.1	
	comp=Z,2.2nm,0.8s,SNR=4.7							
NOA	NORSAR Array B	22.95	344	P	P	10 18 28.4	-0.1	
	comp=Z,0.7nm,0.7s,baz=153,slow=13,SNR=3.0							
EKA	Eskdalemuir Ar	23.93	320	P	P	10 18 37.2	-1.0	
	comp=Z,1.8nm,0.6s,baz=106,slow=9.2,SNR=6.2							
GEYT	Alibeck	26.78	82	P	P	10 19 06.1	+1.7	
	comp=Z,0.9nm,0.4s,baz=304,slow=16,SNR=2.8							
TORD	Torodi Ar. Bea	32.65	223	P	P	10 19 55.9	-0.6	
	comp=Z,0.3nm,0.3s,baz=35,slow=9.3,SNR=8.2							
KURBB	Kurchatov Arra	39.44	55	P	P	10 20 54.5	+0.2	
	comp=Z,0.3nm,0.3s,baz=281,slow=8.6,SNR=4.7							
DBIC	Dimbokro	41.57	226	LR	LR	10 39 41.9		
	comp=Z,32nm,18.2s,baz=134,slow=38							
MKAR	Makanchi Array	42.48	60	P	P	10 21 20.2	+0.7	
	comp=Z,0.6nm,0.5s,baz=271,slow=6.3,SNR=7.2							
LSZ	Lusaka	54.62	175	LR	LR	10 49 04.2		
	comp=Z,80nm,18.2s,baz=222,slow=39							

JMA 08 10:14:29.1, 32°.43N×130°.46E, h10km±1km, M0.3, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHD	Hondo	0.28	277	P	Pg	10 14 34.8	+0.1
JHD				*e*S	Sg	10 14 39.1	+0.7
JZO	Okuchi	0.31	158	P	Pg	10 14 35.6	+0.2
JZO				*e*S	Sg	10 14 39.8	+0.3
JIU2	Izumi 2	0.32	69	P	Pg	10 14 35.7	+0.2
JIU2				*e*S	Sg	10 14 40.2	+0.4
JTA	Tamana	0.54	7	P	Pg	10 14 39.9	+0.4
JTA				*e*S	Sg	10 14 47.2	+0.6

JMA 08 10:16:35.6±0.1, 36°.61N×137°.85E, h16km±1km, M0.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JNG	Nsakai	0.29	135	P	Pg	10 16 41.8	0.0
JNG				S	Sg	10 16 45.4	-0.6
MAT	Matsushiro	0.29	103	P	Pg	10 16 41.2	-0.7
MAT				S	Sg	10 16 45.3	-0.9
MAT	Matsushiro	0.29	103	P	Pg	10 16 41.3	-0.6
MAT				S	Sg	10 16 45.3	-0.9

*NIED **08** 10:18:00, 37°.60N×143°.60E, h5km, Mw3.4 Best double couple: Mo1.31000×10^14 NP1:φ=227.00000°, δ=47.00000°, λ=-52.00000°. NP2:φ=358.00000°, δ=55.00000°, λ=-124.00000°.*

*IDC **08** 10:18:23.5±1.5, 37°.53N×143°.89E, h0km, mb3.5/4, mb1 3.7/7, mb1mx3.4/54, mbtmp3.7/7, ML3.5/2, Error ellipse: s-maj=35.4km s-min=24.1km az=107.0*

*ISCJB **08** 10:18:26.8±0.7, 37°.58N±0°.04×143°.67E±0°.06, h35km, mb3.6/4, Error ellipse: s-maj=6.4km s-min=5.7km az=12.1*

*JMA **08** 10:18:27.4±0.1, 37°.61N×143°.61E, h42km, M3.5*

ISC 08 10:18:28.6±1.2, 37°.57N±0°.05×143°.64E±0°.09, h35km, n25, σ1=48°/35, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	2.02	297	P	Pn	10 18 59.6	-0.5
JIO				S	Sn	10 19 23.2	-0.8
OFUJ	Ofunato	2.16	315	P	Pn	10 19 01.2	-1.0
OFUJ				S	Sn	10 19 26.8	-0.9
JFK	Kawauchi	2.21	266	P	Pn	10 19 02.4	-0.4
JFK				*e*S	Sn	10 19 27.5	-1.5
JMK	Ichinoseki	2.35	307	P	Pn	10 19 04.2	-0.5
JMK				S	Sn	10 19 32.1	-0.3
JOU	Okura	2.48	290	P	Pn	10 19 06.7	+0.1
JOU				S	Sn	10 19 35.8	+0.1
JFT	Otama	2.63	270	P	Pn	10 19 08.7	+0.2
JFT				S	Sn	10 19 39.0	-0.2
JOM	Ohasama	2.65	317	P	Pn	10 19 08.4	-0.4
JOM				S	Sn	10 19 39.0	-0.7
JYK	Kaneyama	2.91	299	P	Pn	10 19 12.8	+0.3
JYK				*e*S	Sn	10 19 46.6	+0.3
JRG	Rokugo	2.98	309	S	Sn	10 19 48.8	+0.8
JANG	Nango	3.25	330	P	Pn	10 19 17.2	+0.1
JAG	Ashikaga	3.54	252	P	Pn	10 19 21.0	-0.1
JAG				S	Sn	10 20 00.5	-1.3
JTM	Tenmabayashi	3.78	329	*e*S	Sn	10 20 07.3	-0.4
JRY	Ryogami san	4.11	249	P	Pn	10 19 28.5	-0.4
JRY				S	Sn	10 20 13.3	-2.5
MJAR	Matsushiro Ar	4.46	258	Pn	Pn	10 19 35.5	+1.7
	1.6nm,0.3s,baz=90,slow=15,SNR=11						
MAT	Matsushiro	4.47	258	P	Pn	10 19 35.6	+1.8
MAT				S	Sn	10 20 27.2	+2.6
JCH	Churui	5.04	358	P	Pn	10 19 40.4	-1.3
JCH				*e*S	Sn	10 20 35.3	-3.4
JHJ	Hachijo jima 2	5.45	217	Pn	Pn	10 19 46.7	-0.6
	4.8nm,0.3s,baz=350,slow=20,SNR=6.2						
JHJ				Sn	Sn	10 20 43.8	-4.9
	2.0nm,0.3s,baz=52,slow=18,SNR=2.4						
ASAJ	Asahikawa	6.59	353	Pn	Pn	10 20 03.1	+0.2
	baz=199,slow=6.8						
H11N2	WAKE ISLAND Hy	26.94	125	T	T	10 51 20.1	
	baz=320,slow=76						
H11N1	WAKE ISLAND Hy	26.95	125	T	T	10 51 22.8	
	baz=320						
H11N3	WAKE ISLAND Hy	26.96	125	T	T	10 51 17.9	
	baz=320,slow=76						
MKAR	Makanchi Array	45.34	302	P	P	10 26 45.2	+2.0
	0.6nm,0.7s,baz=82,slow=10,SNR=3.0						
KURBB	Kurchatov Arra	47.07	308	P	P	10 26 57.3	+0.6
	1.1nm,0.5s,baz=82,slow=7.9,SNR=10						
ILAR	Eielson Array	48.09	33	P	P	10 27 03.9	-0.5
	0.3nm,0.8s,baz=277,slow=7.2,SNR=3.4						
WRA	Warramunga Arr	57.87	190	P	P	10 28 17.1	+0.2
	0.3nm,0.7s,baz=8.9,slow=7.4,SNR=4.5						

*IDC **08** 10:24:29.9±1.4, 29°.84S×176°.25W, h0km, mb4.1/5, mb1 4.3/6, mb1mx3.9/28, mbtmp4.1/6, ML3.6/1, Error ellipse: s-maj=38.9km s-min=23.4km az=16.0*

*ISCJB **08** 10:24:31.6±1.1, 30°.01S±0°.07×176°.2W±0°.1, h24km, mb4.1/9, Error ellipse: s-maj=14.4km s-min=10.2km az=164.5*

*NEIC **08** 10:24:32.2±1.1, 29°.78S×176°.38W, h10km, mb4.3/5, Error ellipse: s-maj=24.2km s-min=17.6km az=222.0*

ISC 08 10:24:34.3±1.1, 29°.85S±0°.09×176°.37W±0°.09, h24km, n15, σ1=52°/19, mb4.3/9, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.48	293	Pn	Pb	10 25 00.4	-0.7
	59nm,0.3s,baz=287,slow=19,SNR=1.5						
RAO				Sn	Sb	10 25 20.7	+1.4
	163nm,0.3s,baz=106,slow=22,SNR=3.9						
RAO	Raoul Island	1.48	293	*e*Pn	Pn	10 24 58.7	-0.7
RAO				*e*Sn	Sb	10 25 20.6	+1.2
URZ	Urewera	9.98	211	Pn	Pn	10 26 53.4	-2.8
	0.6nm,0.3s,baz=270,slow=5.2,SNR=13						
URZ				Sn	Sn	10 28 46.9	-0.6
	2.6nm,0.3s,baz=200,slow=22,SNR=12						
URZ	Urewera	9.98	211	*e*Pn	Pn	10 26 53.9	-2.3
URZ				*e*Sn	Sn	10 28 48.2	+0.7
CTA	Charters Tower	35.12	277	P	P	10 31 25.2	-0.9
	2.7nm,0.4s,baz=106,slow=7.4,SNR=2.6						
CTAO	Charters Tower	35.12	277	*e*P	P	10 31 25.7	-0.4
	11nm,0.4s						
STKA	Stephens Creek	35.98	256	P	P	10 31 35.0	+1.5
	3.5nm,0.6s,baz=90,slow=13,SNR=12						
ASAR	Alice Springs	44.56	266	P	P	10 32 43.5	-1.1
	0.4nm,0.4s,baz=106,slow=7.9,SNR=18						
WRAB	Tennant Creek	45.49	271	*e*P	P	10 32 51.8	-0.3
	2.4nm,0.6s						
WRA	Warramunga Arr	45.50	271	P	P	10 32 51.5	-0.5
	2.1nm,0.5s,baz=110,slow=8.0,SNR=33						
FITZ	Fitzroy Crossi	53.78	269	*e*P	P	10 33 56.0	+0.8
	1.2nm,0.7s						
CASY	Casey	56.29	208	*e*P	P	10 34 14.6	+2.0
	0.5nm,0.9s						
QSPA	South Pole Qui	60.26	180	*e*P	P	10 34 43.2	+2.6
	4.8nm,0.8s						
TXAR	Lajitas Array	90.90	56	P	P	10 37 34.9	-1.5
	0.3nm,0.8s,baz=216,slow=7.6,SNR=4.1						
TORD	Torodi Ar. Bea	163.29	173	PKPab	PKPab	10 45 25.9	0.0
	1.5nm,0.7s,baz=188,slow=4.2,SNR=9.6						

*IDC **08** 10:31:41.7±1.5, 28°.99S×176°.39W, h0km, mb4.0/2, mb1 4.2/2, mb1mx3.7/29, mbtmp4.0/2, MS3.5/5, Ms1 3.5/5, ms1mx3.1/32, Error ellipse: s-maj=70.5km s-min=27.1km az=173.0*

*NEIC **08** 10:31:43.1±0.6, 29°.21S×176°.43W, h10km, mb4.2/3, Error ellipse: s-maj=13.3km s-min=12.4km az=180.0*

ISC 08 10:31:44.7±1.0, 29°.4S±0°.1×176°.41W±0°.09, h21km, n16, σ1=30°/15, mb4.1/5, MS3.4/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.32	274	Pn	Pn	10 32 08.3	+0.3
	136nm,0.3s,baz=78,slow=20,SNR=2.4						
RAO				Sn	Sb	10 32 26.4	+1.1
	411nm,0.3s,baz=107,slow=23,SNR=8.7						
RAO	Raoul Island	1.32	274	*e*Pg	Pn	10 32 08.0	0.0
RAO				*e*Sg	Sb	10 32 25.7	+0.3
URZ	Urewera	10.39	210	Pn	Pn	10 34 12.8	+0.4
	0.6nm,0.3s,baz=139,slow=9.3,SNR=2.0						
URZ				Sn	Sn	10 36 05.2	-3.0
	0.8nm,0.3s,baz=351,slow=19,SNR=2.0						
DZM	Mont Dzumac	17.06	291	LR	LR	10 41 09.0	
	comp=Z,282nm,18.9s,baz=102,slow=34						
RAR	Rarotonga	17.07	65	LR	LR	10 41 03.8	
	comp=Z,54nm,20.0s,baz=252,slow=33						
TARA	Tarawa	32.20	340	*e*P	P	10 38 09.0	-2.4
	1.4nm,0.2s						
ASAR	Alice Springs	44.56	265	P	P	10 39 56.0	+0.5
	1.4nm,0.7s,baz=105,slow=7.0,SNR=28						
ASAR				LR	LR	10 58 24.8	
	comp=Z,157nm,18.2s,baz=94,slow=36						
WRAB	Tennant Creek	45.45	270	*e*P	P	10 40 03.1	+0.6
	2.2nm,0.8s						
WRA	Warramunga Arr	45.46	270	P	P	10 40 02.9	+0.4
	1.5nm,0.6s,baz=109,slow=7.8,SNR=12						
SBA	Scott Base	49.19	185	*e*P	P	10 40 31.9	+1.1
	1.1nm,0.8s						
VNDA	Vanda	49.28	186	LR	LR	10 57 44.3	
	comp=Z,45nm,20.9s,baz=219,slow=32						
GUMO	Guam	56.74	313	LR	LR	11 06 22.8	
	comp=Z,18nm,18.3s,baz=150,slow=37						
FINES	FINESS Array B	144.62	341	PKP	PKPdf	10 51 19.6	+0.6
	1.1nm,0.8s,baz=48,slow=2.8,SNR=4.4						
MMAI	Mount Meron Ar	152.60	286	PKPbc	PKPbc	10 51 39.6	-0.4
	0.5nm,0.4s,baz=95,slow=7.2,SNR=1.4						
BRTR	Keskin Array B	153.29	301	PKPbc	PKPbc	10 51 41.7	+0.3
	0.5nm,0.5s,baz=116,slow=2.9,SNR=3.6						
TORD	Torodi Ar. Bea	163.78	173	PKPab	PKPab	10 52 40.0	+1.1
	0.6nm,0.9s,baz=200,slow=11,SNR=2.8						

*IDC **08** 10:36:40.3±1.1, 51°.84N×171°.65W, h0km, mb4.0/9, mb1 4.2/10, mb1mx3.7/70, mbtmp4.0/10, ML3.7/1, MS3.1/6, Ms1 3.1/6, ms1mx2.7/58, Error ellipse: s-maj=33.7km s-min=20.2km az=172.0*

*ISCJB **08** 10:36:43.3±0.7, 51°.59N±0°.09×171°.39W±0°.06, h27km, mb4.1/12, MS3.1/6, Error ellipse: s-maj=13.8km s-min=4.4km az=166.5*

*NEIC **08** 10:36:45.4, 51°.48N×171°.33W, h34km, mb4.1/2, ML3.8(AEIC), After AEIC.*

ISC 08 10:36:44.7±0.9, 51°.7N±0°.1×171°.47W±0°.05, h27km, n41, σ1=27°/34, mb4.1/12, MS3.1/6, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KOSE	Korovin Southe	1.70	292	P	Pn	10 37 14.5	+1.9
KOFP	Korovin Flat P	1.71	289	P	Pn	10 37 13.8	+1.0
KOKL	Mount Kliuchef	1.78	290	P	Pb	10 37 16.6	-0.1
NIKH	Nikolski High	2.02	51	P	Pn	10 37 17.5	+0.4
NIKH				S	Sn	10 37 43.1	+1.7
OKWR	Okmok West Rim	2.62	48	P	Pn	10 37 27.1	+1.8
OKWE	Okmok W'ng Wal	2.62	47	P	Pn	10 37 27.1	+1.8
OKAK	Okmok	2.64	45	P	Pn	10 37 25.8	+0.2
OKTU	Okmok Mt. Tuli	2.66	51	P	Pn	10 37 27.1	+1.2
GSTD	Great Sitkin T	2.91	278	P	Pn	10 37 30.6	+1.3
GSTD				S	Sn	10 38 04.5	+1.1
GSCK	Great Sitkin C	2.92	277	P	Pn	10 37 30.8	+1.5
ADAG	Mount Adagdak	3.19	276	P	Pn	10 37 34.5	+1.4
MSOM	Makushin Julie	3.44	51	P	Pn	10 37 37.9	+1.4
MTBL	Makushin Table	3.66	51	P	Pn	10 37 40.8	+1.2
UNV	Unalaska Valle	3.68	53	P	Pn	10 37 40.7	+0.9
UNV				S	Sn	10 38 23.3	+1.1
AKUT	Akutan	4.20	53	P	Pn	10 37 48.2	+1.3
ILAR	Eielson Array	18.20	35	P	P	10 40 52.8	-2.4
	0.1nm,0.3s,baz=231,slow=8.7,SNR=8.0						
SKAG	Skagway	21.60	55	*e*P	P	10 41 32.6	+0.5
	6.6nm,0.8s						
SKAG				*e*S	S	10 45 30.2	+0.5
MA2	Magadan	22.43	305	LR	LR	10 49 38.8	
	comp=Z,31nm,20.7s,baz=114,slow=35						
DLBC	Dease Lake	24.32	58	P	P	10 42 01.7	+1.8
	3.8nm,0.5s,baz=277,slow=9.0,SNR=14						
DLBC				LR	LR	10 51 23.5	
	comp=Z,41nm,19.2s,baz=234,slow=36						
INK	Inuvik	24.59	33	P	P	10 42 00.1	-2.0
	1.5nm,0.5s,baz=213,slow=8.5,SNR=4.5						
YKA	Yellowknife Ar	31.63	48	P	P	10 43 04.5	-0.5
	1.3nm,0.9s,baz=273,slow=9.1,SNR=8.1						
YAK	Yakutsk	32.61	312	LR	LR	10 57 05.1	
	comp=Z,20nm,18.6s,baz=88,slow=38						
H11N2	WAKE ISLAND Hy	36.17	216	T	T	11 22 18.0	
	baz=22,slow=76,SNR=6.9						
H11N3	WAKE ISLAND Hy	36.17	216	T	T	11 22 18.6	
	baz=22,slow=76,SNR=7.1						
H11N1	WAKE ISLAND Hy	36.19	216	T	T	11 22 19.5	
	baz=22,slow=76,SNR=6.2						
H11S1	WAKE ISLAND Hy	37.36	216	T	T	11 23 57.9	
	baz=22,slow=76,SNR=5.6						
H11S2	WAKE ISLAND Hy	37.38	216	T	T	11 23 44.4	
	baz=22,slow=76,SNR=7.2						
H11S3	WAKE ISLAND Hy	37.38	216	T	T	11 23 49.1	
	baz=22,slow=76,SNR=7.2						
PDAR	Pinedale Array	41.80	77	P	P	10 44 32.6	+0.6
	1.6nm,0.9s,baz=299,slow=6.1,SNR=8.1						
PV01	Paradox Valley	45.17	82	*e*P	P	10 44 59.7	+0.4
TUC	Tucson	47.59	90	*e*P	P	10 45 18.5	+0.3
	2.2nm,0.9s						
SONM	Songino Array	50.50	300	LR	LR	11 08 02.8	
	comp=Z,36nm,18.9s,baz=54,slow=37						
TXAR	Lajitas Array	54.07	87	P	P	10 46 06.3	-0.7
	1.6nm,0.9s,baz=302,slow=5.2,SNR=16						
KURK	Kurchatov	61.97	317	P	P	10 47 00.9	-0.9
KURBB	Kurchatov Arra	62.07	317	P	P	10 47 00.9	-1.6
	3.8nm,0.2s,baz=42,slow=6.4,SNR=4.2						
MKAR	Makanchi Array	63.28	312	P	P	10 47 09.2	-1.5
	0.3nm,0.4s,baz=59,slow=6.8,SNR=2.6						
BRVK	Borovoye	63.46	324	*e*P	P	10 47 11.3	-0.4
	5.4nm,0.6s						
AKTO	Aktyubinsk	69.89	329	P	P	10 47 52.7	-0.1
	0.8nm,0.6s,baz=45,slow=8.6,SNR=3.0						
VRAC	Vranov	79.09	355	LR	LR	11 25 28.3	
	comp=Z,17nm,18.7s,baz=144,slow=37						
BRTR	Keskin Array B	86.31	341	LR	LR	11 36 08.9	
	comp=Z,12nm,18.2s,baz=108,slow=41						
ASAR	Alice Springs	89.00	228	P	P	10 49 36.8	-0.1
	0.7nm,0.5s,baz=24,slow=4.8,SNR=18						

SOME 08 10:37:54.3, 44°.83N×81°.37E, h5km, 1C-1D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DJR	Jarkent	1.23	247	*e*P	Pg	10 38 17.6	-0.4
	3.4nm,0.2s						
DJR				*e*S	Sb	10 38 34.3	-0.1
	4.3nm,0.2s						
KAPS	Kapalarasan	1.50	288	*e*P	Pn	10 38 22.1	+0.3
	8.7nm,0.2s						
KAPS				*e*S	Sg	10 38 42.9	+0.6
	13nm,0.3s						
SHLS	Shalkode	1.99	213	⇑*i*P	Pg	10 38 31.8	-0.6
	4.8nm,0.1s						
SHLS				⇓*i*S	Sg	10 38 59.2	+1.0
	20nm,0.4s						
ARXS	Arharly	2.61	257	*e*P	Pb	10 38 42.1	+0.5
	3.1nm,0.4s						
ARXS				*e*S	Sg	10 39 16.2	-1.8
	17nm,0.3s						
ZHN	Zhinishke	2.69	233	*e*P	Pb	10 38 44.0	+1.0
ZHN				*e*S	Sg	10 39 19.6	-1.2
	21nm,0.1s						
SATY	Saty	2.78	231	*e*P	Pb	10 38 45.5	+1.1
	5.5nm,0.1s						
SATY				*e*S	Sg	10 39 22.4	-1.1
	25nm,0.3s						
CHKK	Chushkaly	3.28	254	*e*P	Pb	10 38 53.3	+0.4
	2.0nm,0.4s						
CHKK				*e*S	Sb	10 39 36.1	+3.0
	6.3nm,0.3s						
KUU	Kurty	3.73	257	*e*P	Pb	10 39 01.7	+1.1
	1.3nm,0.4s						
KUU				*e*S	Sb	10 39 49.8	+3.8
	2.6nm,0.2s						

IDC 08 10:38:05.0±1.1, 29°.50S×178°.91W, h296km±15km, mb2.6/2, mb1 3.0/3, mb1mx2.8/29, mbtmp3.5/3, Error ellipse: s-maj=42.6km s-min=23.1km az=123.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	0.90	75	P	Pn	10 38 44.4	-0.1
	216nm,0.3s,baz=52,slow=23,SNR=5.1						
RAO				S	S	10 39 07.7	-8.2
	114nm,0.3s,baz=116,slow=21,SNR=2.2						
URZ	Urewera	9.34	200	P	Pn	10 40 16.1	+1.2
	0.6nm,0.3s,baz=264,slow=4.3,SNR=8.0						
URZ				S	S	10 41 59.6	-1.2
	2.1nm,0.3s,baz=261,slow=24,SNR=12						
ASAR	Alice Springs	42.37	266	P	P	10 45 30.8	-0.3
	0.2nm,0.6s,baz=103,slow=6.5,SNR=7.5						
WRA	Warramunga Arr	43.27	272	P	P	10 45 38.2	-0.1
	0.2nm,0.3s,baz=109,slow=8.0,SNR=6.0						
FINES	FINESS Array B	144.03	340	PKP	PKPab	10 57 03.2	+0.2
	1.2nm,0.5s,baz=35,slow=5.1,SNR=9.1						
HFS	Hagfors	148.20	348	PKPbc	PKPbc	10 57 15.4	-0.1
	0.4nm,0.4s,baz=63,slow=6.6,SNR=4.0						

**IDC 08

JHJ	**Hachijo jima 2**	**5.54**	**356**	P		**P**	**11 05 51.4**	**-0.3**
	5.2nm,0.3s,baz=262,slow=22,SNR=8.9							
JHJ				S		**S**	**11 07 02.2**	**-3.7**
	4.0nm,0.3s,baz=73,slow=19,SNR=3.2							
BSO1	**Boso 1**	**7.09**	**5**	P		**P**	**11 06 07.7**	**+1.2**
BSO1				*e*S		**S**	**11 07 32.4**	**-0.9**
BSO3	**Boso 3**	**7.21**	**2**	P		**P**	**11 06 08.4**	**+0.3**
BSO3				*e*S		**S**	**11 07 33.1**	**-3.0**
BSO4	**Boso 4**	**7.39**	**1**	P		**P**	**11 06 12.1**	**+2.0**
BSO4				S		**S**	**11 07 39.5**	**-0.4**
JIE	**Ise**	**7.44**	**337**	P		**P**	**11 06 12.2**	**+1.4**
JKN2	**Miekihoku**	**7.47**	**334**	P		**P**	**11 06 13.5**	**+2.5**
JOD2	**Odawara 2**	**7.73**	**353**	P		**P**	**11 06 15.6**	**+1.8**
JHU	**Hanno**	**8.29**	**355**	P		**P**	**11 06 19.0**	**-0.7**
JRY	**Ryogami san**	**8.49**	**353**	P		**P**	**11 06 22.6**	**+0.7**
JYT	**Yasato**	**8.63**	**360**	P		**P**	**11 06 23.4**	**+0.2**
JAG	**Ashikaga**	**8.85**	**356**	P		**P**	**11 06 24.7**	**-0.9**
MJAR	**Matsushiro Arr**	**9.11**	**350**	P		**P**	**11 06 28.0**	**-0.3**
	0.6nm,0.3s,baz=180,slow=9.1,SNR=9.8							
USRK	**Ussuriysk Ar.**	**17.87**	**340**	P		**P**	**11 08 01.4**	**+0.6**
	0.1nm,0.3s,baz=177,slow=11,SNR=6.8							
WRA	**Warramunga Arr**	**47.58**	**188**	P		**P**	**11 12 12.2**	**-0.2**
	0.8nm,0.3s,baz=6.9,slow=7.7,SNR=47							
WRA				PcP		**PcP**	**11 13 33.7**	**+0.7**
	0.2nm,0.4s,baz=1.3,slow=3.9,SNR=3.1							
MKAR	**Makanchi Array**	**48.84**	**309**	P		**P**	**11 12 20.9**	**-0.6**
	0.2nm,0.3s,baz=76,slow=6.1,SNR=2.7							
MKAR				ScP		**ScP**	**11 16 45.8**	**-0.3**
	0.2nm,0.2s,baz=94,slow=3.4,SNR=3.2							
ASAR	**Alice Springs**	**51.31**	**187**	P		**P**	**11 12 38.6**	**-1.3**
	0.2nm,0.3s,baz=354,slow=4.5,SNR=12							
BVAR	**Borovoye Array**	**56.52**	**317**	P		**P**	**11 13 16.5**	**0.0**
	1.0nm,0.5s,baz=81,slow=8.7,SNR=6.0							
ILAR	**Eielson Array**	**58.13**	**29**	P		**P**	**11 13 28.6**	**+1.2**
	0.1nm,0.3s,baz=252,slow=5.5,SNR=5.9							
YKA	**Yellowknife Ar**	**72.54**	**28**	P		**P**	**11 14 59.4**	**+1.4**
	0.4nm,0.6s,baz=297,slow=5.7,SNR=3.7							
FINES	**FINESS Array B**	**76.75**	**333**	P		**P**	**11 15 21.8**	**0.0**
	0.4nm,0.4s,baz=47,slow=6.1,SNR=4.2							
TORD	**Torodi Ar. Bea**	**122.96**	**310**	PKP		**PKPdf**	**11 22 23.1**	**+0.3**
	0.2nm,0.6s,baz=357,slow=3.0,SNR=2.3							

*ISK **08** 11:06:15.6,39°.07N×27°.42E,h8km,MD2.8*
*ISCJB **08** 11:06:16.4±0.8,39°.10N±0°.02×27°.59E±0°.04,h1km±6km, Error ellipse: s-maj=6.0km s-min=3.8km az=15.6*
*DDA **08** 11:06:17.6,39°.06N×27°.58E,h7km,Ml2.5*
*CSEM **08** 11:06:17.0±0.2,39°.08N×27°.56E,h10km,MD2.8, Error ellipse: s-maj=6.7km s-min=4.2km az=86.0*

ISC 08 11:06:16.6±1.3,39°.07N±0°.02×27°.54E±0°.04,h6km±11km, n29,σ0°62/45,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.63**	**25**	*e*PG		**Pg**	**11 06 28.9**	**+0.3**
BALB	**Balikesir**	**0.63**	**25**	*e*Pg		**Pg**	**11 06 29.0**	**+0.3**
BALY	**Balya**	**0.67**	**5**	*i* P		**Pg**	**11 06 29.8**	**+0.2**
BALY	**Balya**	**0.67**	**5**	P		**Pg**	**11 06 29.8**	**+0.2**
IZM	**Izmir**	**0.70**	**198**	*e*PG		**Pg**	**11 06 29.4**	**-0.8**
MANT	**Manisa**	**0.98**	**126**	*i* P		**Pg**	**11 06 35.1**	**-0.3**
MANT				*i* S		**Sb**	**11 06 49.8**	**+0.3**
MANT	**Manisa**	**0.98**	**126**	P		**Pg**	**11 06 35.2**	**-0.3**
MANT				S		**Sb**	**11 06 49.8**	**+0.3**
URLA	**Izmir**	**1.02**	**227**	*i* P		**Pn**	**11 06 37.9**	**+0.3**
URLA				*i* S		**Sn**	**11 06 52.6**	**+0.3**
URLA	**Izmir**	**1.02**	**227**	P		**Pn**	**11 06 37.9**	**+0.3**
URLA				S		**Sn**	**11 06 52.6**	**+0.3**
KULA	**Kula-Manisa**	**1.03**	**122**	*e*PN		**Pn**	**11 06 37.5**	**-0.3**
KULA				*e*SN		**Sn**	**11 06 53.3**	**+0.7**
KULA	**Kula-Manisa**	**1.03**	**122**	*e*Pn		**Pn**	**11 06 37.5**	**-0.3**
KULA				*e*Sn		**Sn**	**11 06 53.3**	**+0.7**
DGB	**¯zmir**	**1.14**	**207**	*i* P		**Pn**	**11 06 39.9**	**+0.7**
DGB				*i* S		**Sn**	**11 06 55.4**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.15**	**166**	*e*PN		**Pg**	**11 06 38.3**	**-0.5**
AYDB				*e*SN		**Sn**	**11 06 55.4**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.15**	**166**	*e*Pn		**Pg**	**11 06 38.3**	**-0.5**
AYDB				*e*Sn		**Sn**	**11 06 55.4**	**-0.2**
ZEY	**¯zmir**	**1.16**	**225**	*i* P		**Pn**	**11 06 39.7**	**+0.3**
ZEY				*i* S		**Sn**	**11 06 56.7**	**+1.1**
EDC	**Edincik**	**1.30**	**11**	*e*PN		**Pn**	**11 06 41.2**	**-0.2**
EDC				*e*SN		**Sn**	**11 06 59.3**	**+0.2**
EDC	**Edincik**	**1.30**	**11**	*e*Pn		**Pn**	**11 06 41.2**	**-0.2**
EDC				*e*Sn		**Sn**	**11 06 59.3**	**+0.2**
KRBG	**Karabiga-Canak**	**1.33**	**352**	*e*PN		**Pn**	**11 06 40.5**	**-1.3**
KRBG	**Karabiga-Canak**	**1.33**	**352**	*e*Pn		**Pn**	**11 06 40.6**	**-1.3**
KCTX	**Karacabey (Bur**	**1.35**	**28**	*e*PN		**Pn**	**11 06 41.2**	**-0.9**
KCTX				*e*SN		**Sg**	**11 07 00.9**	**+0.9**
KCTX	**Karacabey (Bur**	**1.35**	**28**	*e*Pn		**Pn**	**11 06 41.2**	**-0.9**
KCTX				*e*Sn		**Sg**	**11 07 00.9**	**+0.9**
MRMT	**Marmara Adasi**	**1.53**	**2**	*e*PN		**Pn**	**11 06 43.8**	**-0.8**
MRMT				*e*SN		**Sb**	**11 07 05.1**	**-0.1**
MRMT	**Marmara Adasi**	**1.53**	**2**	*e*Pn		**Pn**	**11 06 43.8**	**-0.8**
MRMT				*e*Sn		**Sb**	**11 07 05.1**	**-0.1**
TVSB	**Tavsanli**	**1.54**	**75**	*e*PN		**Pb**	**11 06 45.2**	**-0.4**
TVSB	**Tavsanli**	**1.54**	**75**	*e*Pn		**Pb**	**11 06 45.2**	**-0.4**
RKY	**Sarkoy-Tekirda**	**1.64**	**350**	*e*PN		**Pn**	**11 06 45.1**	**-1.0**
RKY	**Sarkoy-Tekirda**	**1.64**	**350**	*e*Pn		**Pn**	**11 06 45.1**	**-1.0**
ARMT	**Armutlu**	**1.81**	**34**	*e*PN		**Pn**	**11 06 48.8**	**+0.5**
ARMT	**Armutlu**	**1.81**	**34**	*e*Pn		**Pn**	**11 06 48.8**	**+0.5**

IDC 08 11:25:39.8±1.7,0°.97S×127°.34E,h0km,mb3.7/4, mb1 3.9/5,mb1mx3.6/27,mbtmp3.8/5,ML3.5/1,Error ellipse: s-maj=106.0km s-min=23.8km az=67.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**17.11**	**185**	Pn		Pn	**11 29 40.8**	**+0.3**
	0.1nm,0.3s,baz=0,slow=7.1,SNR=3.6							
WRA	**Warramunga Arr**	**20.06**	**160**	P		P	11 30 13.6	-1.3
	1.2nm,0.6s,baz=340,slow=11,SNR=12							
ASAR	**Alice Springs**	**23.44**	**165**	P		P	11 30 50.5	-0.4
	1.2nm,0.6s,baz=345,slow=11,SNR=17							
STKA	**Stephens Creek**	**33.56**	**158**	P		P	11 32 23.0	+1.4
	1.6nm,0.7s,baz=330,slow=8.1,SNR=4.0							
MKAR	**Makanchi Array**	**61.76**	**327**	P		P	11 36 00.1	-0.2
	0.7nm,0.4s,baz=121,slow=6.6,SNR=5.8							

*IDC **08** 11:42:02.9±4.0,37°.22N×72°.40E,h165km±26km,mb3.2/5, mb1 3.2/12,mb1mx3.1/45,mbtmp3.7/12, Error ellipse: s-maj=45.0km s-min=20.6km az=145.0*
*ISCJB **08** 11:42:04.6±0.8,37°.34N±0°.08×72°.4E±0°.1,h200km, mb3.3/5, Error ellipse: s-maj=12.7km s-min=9.6km az=30.7*

ISC 08 11:42:04.5±0.8,37°.25N±0°.07×72°.35E±0°.08,h200km,n14, σ2°59/17,mb3.4/5,Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
THN	**Thein Dam**	**5.55**	**149**	*e*P		**Pn**	**11 43 27.0**	**+1.1**
THN				*e*S		**Sn**	**11 44 26.0**	**-4.2**
AAK	**Ala-Archa**	**5.63**	**16**	P		**Pn**	**11 43 26.6**	**-0.4**
	0.8nm,0.3s,baz=161,slow=4.8,SNR=3.4							
AAK				S		**Sn**	**11 44 28.9**	**-3.4**
	2.3nm,0.3s,baz=320,slow=23,SNR=16							
GEYT	**Alibeck**	**11.31**	**278**	P		**Pn**	**11 44 39.8**	**-0.8**
	0.6nm,0.3s,baz=104,slow=18,SNR=4.2							
GEYT				S		**Sn**	**11 46 41.2**	**-5.6**
	0.6nm,0.3s,baz=88,slow=30,SNR=3.2							
MKAR	**Makanchi Array**	**12.05**	**35**	P		**Pn**	**11 44 48.5**	**-1.4**
	0.1nm,0.3s,baz=214,slow=10.0,SNR=2.2							
KURBB	**Kurchatov Arra**	**14.08**	**16**	P		**P**	**11 45 15.7**	**-1.3**
	0.1nm,0.3s,baz=206,slow=11,SNR=4.3							
BVAR	**Borovoye Array**	**15.83**	**356**	P		**Pn**	**11 45 36.9**	**+0.4**
	0.3nm,0.3s,baz=159,slow=12,SNR=4.8							
AKTO	**Aktyubinsk**	**16.71**	**327**	P		**Pn**	**11 45 48.3**	**+1.2**
	1.1nm,0.3s,baz=100,slow=7.5,SNR=11							
ZALV	**Zalesovo Beam**	**18.79**	**23**	P		**Pn**	**11 46 10.1**	**-1.4**
	0.5nm,0.3s,baz=222,slow=11,SNR=5.8							
FINES	**FINESS Array B**	**37.48**	**325**	P		**P**	**11 49 00.5**	**+2.1**
	0.5nm,0.4s,baz=122,slow=15,SNR=1.8							
ARCES	**ARCESS Array B**	**40.87**	**337**	P		**P**	**11 49 28.6**	**+2.2**
	1.5nm,0.8s,baz=119,slow=10,SNR=8.9							
NB2	**NORSAR Subarra**	**44.44**	**322**	P		**P**	**11 49 57.1**	**+1.9**
	comp=Z,0.5nm,0.5s,baz=93,slow=7.9							
NOA	**NORSAR Array B**	**44.44**	**322**	P		**P**	**11 49 56.9**	**+1.6**
	comp=Z,0.7nm,0.6s,baz=94,slow=7.7,SNR=4.4							
TORD	**Torodi Ar. Bea**	**66.81**	**269**	P		**P**	**11 52 37.2**	**+2.2**
	comp=Z,0.8nm,1.1s,baz=54,slow=7.7,SNR=3.5							
YKA	**Yellowknife Ar**	**80.44**	**3**	P		**P**	**11 53 55.7**	**+2.2**
	comp=Z,0.2nm,0.4s,baz=347,slow=4.9,SNR=3.9							

IDC 08 11:42:19.2±5.1,28°.57S×176°.45W,h0km,mb3.2/2, mb1 3.5/2,mb1mx3.3/18,mbtmp3.2/2,Error ellipse: s-maj=349.5km s-min=67.3km az=164.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.60**	**264**	P		P	11 50 33.1	-0.3
	0.4nm,1.0s,baz=103,slow=8.0,SNR=4.4							
WRA	**Warramunga Arr**	**45.43**	**270**	P		P	11 50 40.0	0.0
	0.6nm,0.9s,baz=110,slow=8.1,SNR=4.6							
BRTR	**Keskin Array B**	**152.85**	**302**	PKPbc		PKPbc	12 02 18.4	-0.1
	0.4nm,0.5s,baz=160,slow=4.6,SNR=2.6							

*ISCJB **08** 11:46:07.3±0.8,9°.44N±0°.04×73°.20W±0°.03,h106km±12km, Error ellipse: s-maj=6.3km s-min=5.0km az=146.8*
*RSNC **08** 11:46:09.5±0.6,9°.36N×73°.32W,h112km±9km,ML2.0*
*FUNV **08** 11:46:09.6,9°.39N×73°.10W,h12km,MW2.8*

ISC 08 11:46:07.2±1.7,9°.43N±0°.04×73°.22W±0°.04,h116km±19km, n14,σ1°16/25,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
OCAC	**Ocana**	**1.19**	**185**	*e*P		**Pn**	**11 46 32.2**	**+1.1**
OCAC				*i*			11 46 34.0	
	comp=Z,18nm,0.2s							
OCAC				*e*S		**Sn**	**11 46 49.4**	**+0.3**
VIRV	**Villa del Rosa**	**1.33**	**37**	*e*P		**Pn**	**11 46 33.6**	**+1.1**
VIRV				*e*S		**Sn**	**11 46 50.9**	**-0.8**
GRMC	**Gramalote, San**	**1.75**	**166**	*e*P		**Pn**	**11 46 37.1**	**-0.5**
GRMC				*e*S		**Sn**	**11 46 57.6**	**-3.1**
GRMC				*i*			11 46 59.5	
	comp=Z,26nm,0.3s							
CBRI	**Barrientos, No**	**1.75**	**166**	*e*P		**Pn**	**11 46 38.7**	**+1.1**
CBRI				*e*S		**Sn**	**11 47 01.4**	**+0.6**
VIGV	**El Vigia**	**1.92**	**108**	*e*P		**Pn**	**11 46 40.4**	**+0.8**
VIGV				*e*S		**Sn**	**11 47 02.7**	**-1.5**
SJCC	**San Jacinto, C**	**1.99**	**284**	*e*P		**Pn**	**11 46 40.7**	**+0.2**
SJCC				*e*S		**Sn**	**11 47 05.6**	**-0.2**
SJCC				*i*			11 47 08.9	
	comp=Z,9.8nm,0.4s							
BRRC	**Barranca, Sant**	**2.36**	**192**	*e*P		**Pn**	**11 46 45.5**	**+0.4**
BRRC				*e*S		**Sn**	**11 47 13.9**	**-0.3**
BRRC				*i*			11 47 16.6	
	comp=Z,7.2nm,0.4s							
BTLC	**Betulia, Santa**	**2.50**	**181**	*e*P		**Pn**	**11 46 48.3**	**+1.2**
MOTC	**Monteria, Cord**	**2.50**	**255**	*e*P		**Pn**	**11 46 47.2**	**+0.3**
MOTC				*e*S		**Sn**	**11 47 16.1**	**-1.4**
MOTC				*i*			11 47 20.1	
	comp=Z,3.2nm,0.4s							
SOCV	**Socops**	**2.59**	**116**	*e*P		**Pn**	**11 46 48.9**	**+0.8**
SOCV				*e*S		**Sn**	**11 47 18.1**	**-1.5**
BARC	**Barichara**	**2.82**	**179**	*e*P		**Pn**	**11 46 52.0**	**+0.7**
BARC				*e*S		**Sn**	**11 47 25.4**	**+0.2**
BARC				*i*			11 47 31.2	
	comp=Z,6.1nm,0.4s							
DABV	**Dabajuro**	**2.94**	**59**	*e*P		**Pn**	**11 46 53.7**	**+1.1**
CURV	**Curarigua**	**3.26**	**79**	*e*P		**Pn**	**11 46 57.9**	**+0.9**
CURV				*e*S		**Sn**	**11 47 34.5**	**-0.9**
MONV	**Montecano**	**4.06**	**52**	*e*S		**Sn**	**11 47 53.2**	**-1.0**

*ISCJB **08** 11:51:56.2±0.7,6°.82N±0°.04×73°.08W±0°.05,h161km±6km, Error ellipse: s-maj=10.1km s-min=4.4km az=35.3*
*FUNV **08** 11:51:56.9,6°.76N×73°.08W,h176km,MW2.6*
*RSNC **08** 11:51:58.5±0.8,6°.79N×73°.10W,h147km±5km,ML2.6*

ISC 08 11:51:56.3±1.4,6°.80N±0°.05×73°.06W±0°.06,h162km±9km, n20,σ1°901/33,1C,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.23**	**300**	*e*P		**Pn**	**11 52 18.8**	**+0.4**
BARC	**Barichara**	**0.24**	**210**	*i* P		**Pn**	**11 52 19.4**	**0.0**
BARC				*e*S		**Sn**	**11 52 33.6**	**-1.7**
BARC				*i*			11 52 35.0	
	comp=Z,111nm,0.3s							
GIRC	**Giron, Santand**	**0.31**	**335**	*e*P		**Pn**	**11 52 18.6**	**+0.1**
BRRC	**Barranca, Sant**	**0.71**	**295**	*e*P		**Pn**	**11 52 20.3**	**+0.1**
BRRC				*e*S		**Sn**	**11 52 37.1**	**-1.3**
BRRC				*i*			11 52 40.2	
	comp=Z,69nm,0.2s							
RUSC	**La Rusia**	**0.90**	**181**	*e*P		**Pn**	**11 52 22.2**	**+0.2**
RUSC				*e*S		**Sn**	**11 52 41.0**	**-0.8**
RUSC				*i*			11 52 42.2	
	comp=Z,47nm,0.2s							
GRMC	**Gramalote, San**	**0.95**	**16**	*e*P		**Pn**	**11 52 23.9**	**+1.9**
GRMC				*e*S		**Sn**	**11 52 43.2**	**+1.4**
GRMC				*i*			11 52 45.4	
	comp=Z,47nm,0.3s							
CBRI	**Barrientos, No**	**0.95**	**16**	*e*P		**Pn**	**11 52 22.8**	**+0.8**
CAPV	**Capacho**	**1.29**	**351**	*e*P		**Pn**	**11 52 26.3**	**+1.3**
CAPV				*e*S		**Sn**	**11 52 48.5**	**+1.3**
OCAC	**Ocana**	**1.45**	**350**	*e*P		**Pn**	**11 52 27.1**	**+0.6**
OCAC				*e*S		**Sn**	**11 52 48.6**	**-1.2**
OCAC				*i*			11 52 53.7	
	comp=Z,56nm,0.3s							
NORC	**Norcasia**	**2.17**	**236**	*e*P		**Pn**	**11 52 34.3**	**0.0**
NORC				*e*S		**Sn**	**11 53 02.8**	**-0.8**
CHIC	**Chingaza**	**2.26**	**197**	*e*P		**Pn**	**11 52 36.2**	**+0.6**
CHIC				*e*S		**Sn**	**11 53 05.7**	**-0.2**
CHIC				*i*			11 53 13.9	
	comp=Z,18nm,0.5s							
HELC	**Santa Helena**	**2.52**	**256**	*e*P		**Pn**	**11 52 40.3**	**+1.6**
HELC				*e*S		**Sn**	**11 53 11.1**	**-0.3**
VIGV	**El Vigia**	**2.63**	**40**	*e*P		**Pn**	**11 52 40.8**	**+1.1**
VIGV				*e*S		**Sn**	**11 53 11.9**	**-1.4**
SOCV	**Socops**	**2.64**	**56**	*e*P		**Pn**	**11 52 41.1**	**+1.3**
SOCV				*e*S		**Sn**	**11 53 13.1**	**-0.3**
TOLC	**Tolima**	**3.14**	**226**	*e*P		**Pn**	**11 52 47.2**	**+0.9**
PRAC	**Prado**	**3.56**	**211**	*e*P		**Pn**	**11 52 51.9**	**+0.5**
PRAC				*e*S		**Sn**	**11 53 34.2**	**0.0**
SJAC	**San Juan de Ar**	**3.61**	**194**	*e*P		**Pn**	**11 52 52.4**	**+0.3**
SJAC				*i*			11 53 39.8	
	comp=Z,23nm,0.6s							
VIRV	**Villa del Rosa**	**3.74**	**10**	*e*P		**Pn**	**11 52 53.4**	**-0.1**
VIRV				*e*S		**Sn**	**11 53 36.6**	**-1.5**
CURV	**Curarigua**	**4.43**	**44**	*e*P		**Pn**	**11 53 01.9**	**-0.7**
BAUV	**El Baul**	**5.41**	**66**	*e*P		**Pn**	**11 53 15.2**	**-0.2**

IDC 08 11:58:36.8±3.1,19°.05S×178°.35W,h0km,mb4.0/2, mb1 4.3/2,mb1mx3.6/32,mbtmp4.0/2,Error ellipse: s-maj=179.2km s-min=39.5km az=150.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**44.49**	**261**	P		P	12 06 49.9	-0.4
	1.4nm,0.5s,baz=97,slow=8.1,SNR=33							
ASAR	**Alice Springs**	**44.55**	**255**	P		P	12 06 50.2	-0.5
	1.7nm,0.7s,baz=86,slow=8.2,SNR=26							
ASAR				PcP		PP	12 08 35.7	+1.1
	0.2nm,0.4s,baz=104,slow=4.1,SNR=4.0							
ARCES	**ARCESS Array B**	**127.44**	**350**	PKP		PKPdf	12 17 41.4	-1.7
	2.0nm,0.9s,baz=11,slow=1.8,SNR=3.9							
BRTR	**Keskin Array B**	**145.62**	**314**	PKPbc		PKPab	12 18 18.0	-0.1
	0.2nm,0.3s,baz=0.0,slow=3.0,SNR=2.7							
GERES	**GERESS Array B**	**148.72**	**345**	PKPbc		PKPbc	12 18 25.2	-1.1
	0.4nm,0.6s,baz=40,slow=4.4,SNR=3.7							

*CSEM **08** 12:12:07.8±0.3,42°.03N×7°.60E,h40km,ML3.3/12, Error ellipse: s-maj=6.9km s-min=5.9km az=56.0*
*GEN **08** 12:12:07.1,42°.07N×7°.67E,h4km,ML2.9*
*LDG **08** 12:12:08.5±0.4,41°.99N×7°.65E,h25km,Md2.6/4,Ml3.1/11, Error ellipse: s-maj=8.5km s-min=5.2km az=174.0*
*ROM **08** 12:12:08.8±0.2,42°.17N×8°.20E,h39km,Ml2.5/4, Error ellipse: s-maj=2.0km s-min=0.0km az=180.0*

ISC 08 12:12:05.8±2.2,42°.00N±0°.04×7°.61E±0°.04,h27km±21km, n42,σ1°53/72,Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PGF	**Pioggiola**	**1.17**	**61**	*e*Pn		**Pn**	**12 12 27.2**	**+0.8**
PGF				*e*Sn		**Sb**	**12 12 41.3**	**-0.8**
	99nm,0.2s							
PGF	**Pioggiola**	**1.17**	**61**	*e*Pn		**Pn**	**12 12 27.2**	**+0.8**
PGF				*e*Sn		**Sb**	**12 12 41.3**	**-0.8**
	50nm,0.2s							
LMR	**La Mourre**	**1.56**	**329**	*e*Pn		**Pn**	**12 12 32.4**	**+0.6**
LMR				*e*Sn		**Sn**	**12 12 50.0**	**-1.2**
	41nm,0.2s							
LMR	**La Mourre**	**1.56**	**329**	*e*Pn		**Pn**	**12 12 32.4**	**+0.6**
LMR				*e*Sn		**Sn**	**12 12 50.0**	**-1.2**
	20nm,0.2s							
FRF	**La Foret Royal**	**1.72**	**336**	*e*Pn		**Pn**	**12 12 34.7**	**+0.8**
FRF				*e*Sn		**Sn**	**12 12 53.7**	**-1.2**
	30nm,0.2s							
FRF	**La Foret Royal**	**1.72**	**336**	*e*Pn		**Pn**	**12 12 34.7**	**+0.8**
FRF				*e*Sn		**Sn**	**12 12 53.7**	**-1.2**
	15nm,0.2s							
NEGI	**Seborga**	**1.85**	**2**	Pn		**Pn**	**12 12 36.3**	**+0.5**
NEGI				S		**Sn**	**12 12 56.1**	**-2.2**
NEGI	**Seborga**	**1.85**	**2**	Pn		**Pn**	**12 12 36.3**	**+0.5**
NEGI				S		**Sn**	**12 12 56.1**	**-2.2**
SBF	**Sospel**	**1.87**	**356**	*e*Pn		**Pn**	**12 12 36.5**	**+0.4**
SBF				*e*Sn		**Sn**	**12 12 57.3**	**-1.5**
	46nm,0.2s							
SBF	**Sospel**	**1.87**	**356**	*e*Pn		**Pn**	**12 12 36.5**	**+0.4**
SBF				*e*Sn		**Sn**	**12 12 57.3**	**-1.5**
	23nm,0.2s							
IMI	**Imperia**	**1.92**	**6**	Pn		**Pn**	**12 12 37.5**	**+0.7**
IMI				Sn		**Sn**	**12 12 58.1**	**-2.0**
	39nm,0.1s							
IMI	**Imperia**	**1.92**	**6**	P		**Pn**	**12 12 37.5**	**+0.7**
IMI				Sn		**Sn**	**12 12 58.1**	**-2.0**
	39nm,0.1s							
RORO	**Rocca Rossa**	**2.14**	**9**	Pn		**Pn**	**12 12 40.5**	**+0.8**
RORO				Sn		**Sn**	**12 13 03.6**	**-1.8**
RORO	**Rocca Rossa**	**2.14**	**9**	P		**Pn**	**12 12 40.5**	**+0.8**
RORO				Sn		**Sn**	**12 13 03.6**	**-1.8**
ENR	**Entracque**	**2.23**	**356**	Pn		**Pn**	**12 12 42.6**	**+1.5**
ENR				Sn		**Sn**	**12 13 07.4**	**-0.4**
	28nm,0.1s							
ENR	**Entracque**	**2.23**	**356**	P		**Pn**	**12 12 42.6**	**+1.5**
ENR				Sn		**Sn**	**12 13 07.4**	**-0.4**
	28nm,0.1s							
STV	**Sant Anna di V**	**2.26**	**355**	Pn		**Pn**	**12 12 42.8**	**+1.4**
STV				Sn		**Sn**	**12 13 07.5**	**-0.9**
	28nm,0.1s							
STV	**Sant Anna di V**	**2.26**	**355**	Pn		**Pn**	**12 12 42.8**	**+1.4**
STV				Sn		**Sn**	**12 13 07.5**	**-0.9**
	28nm,0.1s							
SMRF	**Simiane la Rot**	**2.48**	**324**	*e*Pn		**Pn**	**12 12 46.3**	**+1.9**
SMRF				*e*Sn		**Sn**	**12 13 16.3**	**+2.5**
	7.3nm,0.3s							
SMRF	**Simiane la Rot**	**2.48**	**324**	*e*Pn		**Pn**	**12 12 46.3**	**+1.9**
PZZ	**Stroppo**	**2.53**	**352**	Pn		**Pn**	**12 12 47.6**	**+2.3**
PZZ				Sn		**Sn**	**12 13 16.1**	**+0.8**
PZZ	**Stroppo**	**2.53**	**352**	P		**Pn**	**12 12 47.4**	**+2.1**
PZZ				Sn		**Sn**	**12 13 16.1**	**+0.8**
PCP	**Piancastagn**	**2.63**	**15**	P		**Pn**	**12 12 48.0**	**+1.5**
MBDF	**Montbardon**	**2.80**	**348**	*e*Pn		**Pn**	**12 12 51.6**	**+2.7**
MBDF				*e*Sn		**Sn**	**12 13 21.6**	**-0.2**
	11nm,0.2s							
MBDF	**Montbardon**	**2.80**	**348**	*e*Pn		**Pn**	**12 12 51.6**	**+2.7**
MBDF				*e*Sn		**Sn**	**12 13 21.6**	**-0.2**
	5.3nm,0.2s							
VSL	**Villasalto**	**2.84**	**151**	Pn		**Pn**	**12 12 50.8**	**+1.5**
VSL				Sn		**Sn**	**12 13 21.7**	**-0.9**
	11nm,0.3s							
VSL	**Villasalto**	**2.84**	**151**	Pn		**Pn**	**12 12 50.8**	**+1.5**
VSL				Sn		**Sn**	**12 13 21.7**	**-0.9**
	11nm,0.3s							
BHB	**Bricherasio**	**2.85**	**355**	P		**Pn**	**12 12 51.3**	**+1.7**
RSP	**Reno Superiore**	**3.16**	**356**	P		**Pn**	**12 12 55.1**	**+1.3**
ORIF	**Oris-en-Rattie**	**3.18**	**337**	*e*Pn		**Pn**	**12 12 56.3**	**+2.2**
ORIF	**Oris-en-Rattie**	**3.18**	**337**	*e*Pn		**Pn**	**12 12 56.3**	**+2.2**
LASF	**Ste Croix**	**3

mb3.0/3,**mb1 3.3**/4,**mb1mx3.0**/41,**mbtmp3.6**/4,**Error ellipse: s-maj=113.6km s-min=22.3km az=145.0,Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.82**	**61**	P	Pn	12 49 25.9	+1.4
	11nm,0.3s,baz=177,slow=3.6,SNR=33						
AFI				S	S	12 50 12.5	0.0
	31nm,0.3s,baz=37,slow=22,SNR=14						
WRA	**Warramunga Arr**	**48.05**	**257**	P	P	12 56 39.4	-0.3
	0.2nm,0.5s,baz=90,slow=7.5,SNR=9.2						
WRA				PcP	PcP	12 58 03.7	-0.2
	0.3nm,0.5s,baz=94,slow=3.5,SNR=4.8						
ASAR	**Alice Springs**	**48.32**	**252**	P	P	12 56 41.6	-0.2
	0.8nm,0.4s,baz=90,slow=7.7,SNR=38						
ASAR				PcP	PcP	12 58 04.2	-0.7
	0.4nm,0.7s,baz=90,slow=5.7,SNR=4.0						
ILAR	**Eielson Array**	**83.19**	**12**	P	P	13 00 22.5	-0.6
	0.2nm,0.6s,baz=212,slow=4.9,SNR=3.4						
BRTR	**Keskin Array B**	**145.34**	**319**	PKPbc	PKPab	13 07 34.5	-0.1
	0.7nm,0.5s,baz=90,slow=1.2,SNR=4.6						

IDC ***08*** *12:50:17.6±1.0,29.92S×176.24W,h0km,mb4.0/4, mb1 4.2/5,mb1mx3.8/34,mbtmp4.0/5,ML3.6/1,MS3.2/3, Ms1 3.2/3,ms1mx2.8/26,Error ellipse: s-maj=37.9km s-min=27.0km az=148.0*

NEIC ***08*** *12:50:19.4±0.6,29.82S×176.26W,h10km,mb4.7/4,Error ellipse: s-maj=13.8km s-min=12.8km az=220.0*

ISCJB ***08*** *12:50:20.4±1.3,30.09S±0.07×176.3W±0.1,h24km, mb4.3/7,MS3.0/2,Error ellipse: s-maj=18.7km s-min=10.1km az=172.7*

ISC 08 12:50:21.6±0.9,29.96S±0.08×176.27W±0.09,h24km,**n27,** σ1§**04**/**26**,**mb4.2**/**7**,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.60**	**296**	Sn	**Sn**	**12 51 09.2**	**+0.8**
	211nm,0.3s,baz=107,slow=19,SNR=5.6						
RAO	**Raoul Island**	**1.60**	**296**	*e*Pn	**Pn**	**12 50 46.6**	**-1.8**
RAO				*e*Sn	**Sb**	**12 51 11.6**	**+1.2**
URZ	**Urewera**	**9.93**	**212**	Pn	**Pn**	**12 52 40.3**	**-2.5**
	0.5nm,0.3s,baz=343,slow=20,SNR=4.9						
URZ				Sn	**Sn**	**12 54 33.4**	**+0.1**
	1.9nm,0.3s,baz=252,slow=22,SNR=8.4						
URZ	**Urewera**	**9.93**	**212**	*e*Pn	**Pn**	**12 52 42.8**	**+0.1**
URZ				*e*Sn	**Sn**	**12 54 33.0**	**-0.4**
DZM	**Mont Dzumac**	**17.40**	**293**	LR	LR	13 00 02.4	
	comp=Z,120nm,18.5s,baz=152,slow=34						
DZM	**Mont Dzumac**	**17.40**	**293**	*e*LR	LR	12 58 33.0	
	213nm,26.6s						
TBI	**Tubuai**	**24.81**	**81**	*e*LR	LR	13 01 36.0	
	132nm,31.8s						
PPT2	**Papeete2**	**27.28**	**69**	*e*LR	LR	13 02 40.0	
	90nm,26.2s						
PPT	**Papeete**	**27.29**	**69**	LR	LR	13 04 38.5	
	comp=Z,16nm,19.5s,baz=26,slow=32						
CTA	**Charters Tower**	**35.22**	**277**	P	**P**	**12 57 14.2**	**0.0**
	2.8nm,0.7s,baz=80,slow=11,SNR=3.5						
CTAO	**Charters Tower**	**35.22**	**277**	*e*P	**P**	**12 57 15.1**	**+0.9**
	19nm,0.8s						
STKA	**Stephens Creek**	**36.04**	**256**	P	**P**	**12 57 22.2**	**+1.0**
	1.9nm,0.8s,baz=84,slow=9.7,SNR=4.3						
ASAR	**Alice Springs**	**44.63**	**266**	P	**P**	**12 58 32.1**	**-0.4**
	0.8nm,0.6s,baz=100,slow=7.3,SNR=7.9						
ASAR				PcP	**PcP**	**13 00 15.0**	**-0.1**
	0.5nm,0.9s,baz=112,slow=4.1,SNR=2.7						
ASAR				LR	LR	13 16 07.9	
	comp=Z,55nm,19.1s,baz=101,slow=35						
WRAB	**Tennant Creek**	**45.58**	**271**	*e*P	**P**	**12 58 39.9**	**-0.1**
	1.8nm,0.6s						
WRA	**Warramunga Arr**	**45.59**	**271**	P	**P**	**12 58 39.5**	**-0.5**
	1.8nm,0.5s,baz=110,slow=7.6,SNR=16						
FITZ	**Fitzroy Crossi**	**53.87**	**269**	*e*P	**P**	**12 59 43.4**	**+0.3**
	6.1nm,1.0s						
QSPA	**South Pole Qui**	**60.15**	**180**	*e*P	**P**	**13 00 29.2**	**+2.1**
	6.7nm,0.7s						
MAJO	**Matsushiro**	**78.76**	**324**	*e*P	**P**	**13 02 22.5**	**+0.4**
MKAR	**Makanchi Array**	**118.64**	**310**	PKP	**PKPdf**	**13 09 06.7**	**-0.7**
	0.5nm,0.8s,baz=69,slow=4.1,SNR=3.7						
ZALV	**Zalesovo Beam**	**118.71**	**318**	PKP	**PKPdf**	**13 09 07.1**	**-0.1**
	0.3nm,0.3s,baz=134,slow=4.2,SNR=2.6						
KURK	**Kurchatov**	**121.83**	**314**	PKP	**PKPdf**	**13 09 13.0**	**-0.2**
KURBB	**Kurchatov Arra**	**121.87**	**314**	PKP	**PKPdf**	**13 09 13.0**	**-0.3**
	0.6nm,0.7s,baz=97,slow=1.6,SNR=8.2						
BVAR	**Borovoye Array**	**127.14**	**316**	PKP	**PKPdf**	**13 09 23.7**	**+0.3**
	0.9nm,0.8s,baz=56,slow=5.6,SNR=4.8						
FINES	**FINESS Array B**	**145.23**	**341**	PKPbc	**PKPbc**	**13 09 55.2**	**-1.0**
	1.1nm,0.6s,baz=29,slow=4.4,SNR=5.5						
AKASG	**Malin Array Be**	**151.84**	**325**	PKPbc	**PKPbc**	**13 10 12.0**	**-2.0**
	0.5nm,0.4s,baz=48,slow=2.8,SNR=5.2						
BRTR	**Keskin Array B**	**153.70**	**300**	PKPbc	**PKPbc**	**13 10 19.0**	**+0.3**
	0.4nm,0.6s,baz=147,slow=3.4,SNR=2.4						
TORD	**Torodi Ar. Bea**	**163.16**	**173**	PKPab	**PKPab**	**13 11 13.4**	**+0.8**
	1.7nm,0.8s,baz=180,slow=3.8,SNR=7.3						

NIED ***08*** *13:05:00,39.50N×142.90E,h14km,Mw3.6 Best double couple: M○2.42000×10^14 NP1:φs324.00000°,δ8.00000°, λ-9.00000°. NP2:φs64.00000°,δ89.00000°,λ-98.00000°.*

JMA 08 13:05:56.1±0.1,39.51N×142.95E,h14km±2km,**M3.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.88**	**275**	P	Pg	13 06 12.5	-0.6
MIYJ				*e*S	Sg	13 06 24.3	-0.3
JTH	**Tanohata**	**0.94**	**297**	P	Pb	13 06 13.8	-0.4
OFUJ	**Ofunato**	**1.08**	**247**	P	Pb	13 06 15.9	-0.7
JOM	**Ohasama**	**1.28**	**269**	P	Pn	13 06 19.3	-0.3
JOM				*e*S	Sb	13 06 35.8	-0.6
JKZ	**Kuzumaki**	**1.34**	**291**	P	Pn	13 06 20.5	+0.1
JKZ				S	Sb	13 06 37.4	-0.5
JANG	**Nango**	**1.40**	**308**	P	Pn	13 06 20.7	-0.5
JMK	**Ichinoseki**	**1.46**	**248**	P	Pn	13 06 22.1	+0.2
JMK				S	Sn	13 06 40.6	-0.2
JIO	**Ouri**	**1.63**	**230**	P	Pn	13 06 24.9	+0.5
JRG	**Rokugo**	**1.80**	**267**	P	Pb	13 06 27.9	-0.9
JRG				S	Sb	13 06 52.1	+0.9
JAH	**Hinai**	**1.91**	**292**	P	Pb	13 06 29.6	-1.0
JAH				S	Sb	13 06 54.5	+0.2
JTM	**Tenmabayashi**	**1.93**	**312**	P	Pn	13 06 29.0	+0.6
JTM				S	Sn	13 06 53.4	+1.0

NIED ***08*** *13:08:00,38.40N×142.20E,h23km,Mw4.4 Best double couple: M○3.88000×10^15 NP1:φs296.00000°,δ51.00000°, λ-144.00000°. NP2:φs181.00000°,δ62.00000°, λ-45.00000°.*

MOS ***08*** *13:08:41.9±1.2,38.35N×142.26E,h26km,mb4.5/34,Error ellipse: s-maj=8.9km s-min=6.1km az=95.6*

JMA ***08*** *13:08:42.5±0.1,38.43N×142.20E,h30km±1km,M4.5 JMA Felt II J1.*

ISCJB ***08*** *13:08:42.1±0.8,38.35N±0.03×142.18E±0.04,h25km±5km, mb4.5/70,MS4.2/4,Error ellipse: s-maj=5.6km s-min=3.7km az=38.4*

IDC ***08*** *13:08:43.7±0.5,38.33N×142.10E,h26km±2km,mb4.0/26, mb1 4.2/29,mb1mx4.1/56,mbtmp4.2/29,ML3.3/2,Error ellipse: s-maj=11.9km s-min=11.1km az=136.0*

NEIC ***08*** *13:08:45.2±0.2,38.37N×142.20E,h35km,mb4.8/25,Error ellipse: s-maj=6.7km s-min=4.5km az=140.0*

ISC 08 13:08:44.0±0.5,38.36N±0.04×142.16E±0.04,h27km±2km, **h27**km:**pP-P,n172,**σ1§**69**/201,**mb4.5**/70,**MS4.2**/4,**6C,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.65**	**279**	P	**Pb**	**13 08 55.4**	**-1.4**
JIO				S	**Sb**	**13 09 04.1**	**-1.3**
OFUJ	**Ofunato**	**0.82**	**332**	P	**Pb**	**13 08 57.0**	**-2.7**
OFUJ				S	**Sb**	**13 09 07.2**	**-3.2**
JMK	**Ichinoseki**	**0.95**	**309**	P	**Pn**	**13 08 59.5**	**-2.0**
JMK				S	**Sb**	**13 09 11.7**	**-2.3**
JOU	**Okura**	**1.18**	**271**	P	**Pn**	**13 09 03.8**	**-0.9**
JOU				S	**Sn**	**13 09 19.5**	**-0.4**
JMM	**Marumori**	**1.19**	**246**	P	**Pn**	**13 09 03.5**	**-1.3**
JMM				S	**Sn**	**13 09 19.6**	**-0.4**
JOM	**Ohasama**	**1.30**	**329**	P	**Pn**	**13 09 04.6**	**-1.9**
JOM				S	**Sn**	**13 09 20.8**	**-2.2**
JFK	**Kawauchi**	**1.42**	**226**	P	**Pn**	**13 09 06.5**	**-1.6**
JFK				S	**Sn**	**13 09 24.2**	**-1.7**
JYK	**Kaneyama**	**1.52**	**292**	P	**Pn**	**13 09 08.5**	**-0.9**
JRG	**Rokugo**	**1.58**	**312**	P	**Pn**	**13 09 09.1**	**-1.2**
MJAR	**Matsushiro Arr**	**3.63**	**241**	*e*P	**Pn**	**13 09 39.0**	**+0.5**
	11nm,0.3s,baz=35,slow=15,SNR=56						
MJAR				Sn	**Sb**	**13 10 25.8**	**-5.3**
	11nm,0.3s,baz=66,slow=9.4,SNR=4.3						
MAJO	**Matsushiro**	**3.63**	**241**	*e*P	**Pn**	**13 09 39.5**	**+1.0**
MAJO				*e*		13 10 20.0	
MAJO	**Matsushiro**	**3.63**	**241**	*e*Pn	**Pn**	**13 09 39.5**	**+1.0**
MAJO				*e*Sn	**Sn**	**13 10 19.9**	**-0.5**
MAT	**Matsushiro**	**3.63**	**241**	P	**Pn**	**13 09 39.1**	**+0.6**
MAT				S	**Sb**	**13 10 27.2**	**-3.9**
MJB9	**Matsu-Tunnel**	**3.63**	**241**	*e*Pn	**Pn**	**13 09 39.6**	**+1.1**
ERM	**Erimo**	**3.73**	**11**	*e*P	**Pn**	**13 09 37.5**	**-2.3**
ERM				*e*		13 10 22.6	
ERM	**Erimo**	**3.73**	**11**	*e*Pn	**Pn**	**13 09 37.5**	**-2.3**
ERM				*e*Sn	**Sn**	**13 10 22.6**	**-0.2**
INU	**Inuyama**	**5.10**	**236**	*e*Pn	**Pn**	**13 10 00.7**	**+2.0**
JHJ2	**Mitsune**	**5.57**	**201**	*e*Pn	**Pn**	**13 10 01.9**	**-3.2**
JHJ2				*e*Sn	**Sn**	**13 11 06.7**	**-1.5**
JHJ	**Hachijo jima 2**	**5.57**	**201**	Pn	**Pn**	**13 10 04.7**	**-0.4**
	97nm,0.3s,baz=299,slow=1.1,SNR=56						
JHJ				Sn	**Sn**	**13 11 06.5**	**-1.8**
	67nm,0.3s,baz=93,slow=21,SNR=10						
ASAJ	**Asahikawa**	**5.76**	**3**	Pn	**Pn**	**13 10 07.5**	**-0.3**
ASAJ	**Asahikawa**	**5.76**	**3**	Pn	**Pn**	**13 10 07.5**	**-0.3**
	3.5nm,0.6s						
KUR	**Kuril'sk**	**8.08**	**30**	*e*P	**Pn**	**13 10 37.4**	**-2.1**
KUR				*e*S	**Sn**	**13 12 02.7**	**-7.2**
KUR				pmax	pmax		
	comp=Z,26nm,0.6s						
KUR				pmax	pmax		
	comp=N,11nm,0.3s						
KUR				pmax	pmax		
	comp=E,16nm,0.4s						
KUR				smax	smax		
	comp=N,37nm,0.6s						
KUR				smax	smax		
	comp=E,25nm,0.7s						
YSS	**Yuzh-Sakhalins**	**8.60**	**3**	*e*P	**Pn**	**13 10 45.7**	**-1.0**
YSS				*e*S	**Sn**	**13 12 18.4**	**-4.3**
YSS				pmax	pmax		
	comp=Z,10.0nm,0.8s						
YSS	**Yuzh-Sakhalins**	**8.60**	**3**	*e*Pn	**Pn**	**13 10 45.8**	**-0.9**
	comp=Z,18nm,0.8s						
USRK	**Ussuriysk Ar.**	**9.62**	**311**	Pn	**Pn**	**13 11 03.5**	**+2.8**
	comp=Z,0.3nm,0.3s,baz=122,slow=14,SNR=5.7						
JNU	**Nakatsue**	**10.55**	**244**	Pn	**Pn**	**13 11 16.8**	**+3.3**
	comp=Z,0.5nm,0.3s,baz=121,slow=7.7,SNR=6.7						
KSRS	**Korea Array**	**11.29**	**270**	Pn	**Pn**	**13 11 26.9**	**+3.5**
	comp=Z,0.4nm,0.3s,baz=79,slow=14,SNR=8.0						
KSRS	**Korea Array**	**11.29**	**270**	P	**Pn**	**13 11 27.0**	**+3.5**
MDJ	**Mudanjiang**	**11.31**	**308**	P	**Pn**	**13 11 26.5**	**+2.8**
MDJ				S	**Sn**	**13 13 31.2**	**+2.1**
MDJ				PcP	**PcP**	**13 17 17.0**	**-0.1**
MDJ				ScP	**ScP**	**13 20 46.3**	**-1.5**
MDJ				PcS	**PcS**	**13 20 50.5**	**-0.3**
MDJ	**Mudanjiang**	**11.31**	**308**	ScS	ScS	13 24 23.2	+0.1
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,52nm,5.8s						
MDJ				LR	LR		
	comp=N,440nm,14.9s						
MDJ				LR	LR		
	comp=E,1μm,17.8s						
MDJ				LR	LR		
	comp=Z,2μm,17.2s						
KSAR	**Wonju Array Be**	**11.32**	**270**	P	**Pn**	**13 11 27.0**	**+3.0**
KSAR	**Wonju Array Be**	**11.32**	**270**	Pn	**Pn**	**13 11 26.9**	**+3.0**
KLR	**Kul'dur**	**13.20**	**329**	Pn	**Pn**	**13 11 53.8**	**+4.2**
	comp=Z,0.2nm,0.3s,baz=141,slow=12,SNR=6.0						
PETK	**Petropavlovsk-**	**18.25**	**31**	P	**P**	**13 12 57.3**	**+2.1**
	comp=Z,0.1nm,0.3s,baz=169,slow=8.1,SNR=3.4						
MA2	**Magadan**	**21.94**	**12**	P	**P**	**13 13 35.5**	**+0.3**
	comp=Z,6.0nm,0.7s,baz=200,slow=10.0,SNR=6.2						
HHC	**Hu-ho-hao-te**	**23.65**	**286**	*e*P	**P**	**13 13 53.3**	**+0.1**
HHC				pP	sP	13 14 04.8	+0.4
HHC				sP	pP	13 14 09.8	+8.8
HHC				S	**S**	**13 18 01.1**	**-5.1**
HHC				pmax	pmax		
	comp=Z,17nm,0.7s						
HHC				pmax	pmax		
	comp=Z,76nm,10.1s						
HHC				LR	LR		
	comp=N,250nm,19.1s						
HHC				LR	LR		
	comp=E,710nm,19.3s						
HHC				LR	LR		
	comp=Z,880nm,17.3s						
YAK	**Yakutsk**	**24.92**	**346**	*e*P	**P**	**13 14 09.9**	**+5.4**
YAK				pmax	pmax		
	comp=Z,24nm,0.9s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.1s						
YAK				pmax	pmax		
	comp=N,9.0nm,1.0s						
YAK	**Yakutsk**	**24.92**	**346**	*e*P	**P**	**13 14 09.5**	**+5.0**
	comp=N,28nm,0.9s						
SEY	**Seymchan**	**25.38**	**11**	P	**P**	**13 14 09.3**	**+0.6**
	comp=N,3.6nm,0.7s,baz=199,slow=6.5,SNR=16						
BOD	**Bodaibo**	**26.75**	**326**	*e*P	**P**	**13 14 19.8**	**-1.3**
BOD				pmax	pmax		
	comp=Z,5.0nm,0.9s						
SONA1	**Songino Array**	**27.56**	**302**	*e*P	**P**	**13 14 31.6**	**+2.9**
SONM	**Songino Array**	**27.57**	**302**	P	**P**	**13 14 29.9**	**+1.2**
	comp=Z,0.6nm,0.3s,baz=227,slow=8.2,SNR=4.1						
ENH	**Enshi**	**28.06**	**263**	*e*P	**P**	**13 14 31.8**	**-1.4**
	comp=Z,16nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**28.35**	**124**	T	T	13 44 13.1	
	baz=320,slow=75,SNR=4674						
H11N1	**WAKE ISLAND Hy**	**28.36**	**124**	T	T	13 44 55.2	
	SNR=314						
H11N3	**WAKE ISLAND Hy**	**28.37**	**124**	T	T	13 44 18.6	
	baz=314,slow=75,SNR=318						
H11S1	**WAKE ISLAND Hy**	**29.12**	**126**	T	T	13 45 49.6	
	baz=318,slow=76,SNR=722						
H11S3	**WAKE ISLAND Hy**	**29.12**	**126**	T	T	13 45 43.8	
	baz=318,slow=76,SNR=1255						
H11S2	**WAKE ISLAND Hy**	**29.13**	**126**	T	T	13 45 48.5	
	baz=318,slow=76,SNR=659						
ZAK	**Zakamensk**	**29.94**	**306**	*e*P	**P**	**13 14 49.4**	**-0.4**
LZH	**Lanzhou**	**30.45**	**278**	*e*P	**P**	**13 14 52.0**	**-2.6**
LZH				pP	sP	13 15 04.2	-1.7
LZH				sP	pP	13 15 09.6	+7.0
LZH				PP	**PnPn**	**13 15 52.3**	**-1.2**
LZH				pmax	pmax		
	comp=Z,23nm,1.1s						
LZH				pmax	pmax		
	comp=Z,81nm,4.8s						
LZH				LR	LR		
	comp=N,320nm,12.9s						
LZH				LR	LR		
	comp=E,350nm,13.2s						
LZH				LR	LR		
	comp=Z,440nm,16.4s						
GYA	**Guiyang**	**32.04**	**259**	*e*P	**P**	**13 15 08.0**	**-0.6**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**32.28**	**268**	*e*P	**P**	**13 15 09.8**	**-0.8**
BILL	**Bilibino**	**32.59**	**17**	*e*P	**P**	**13 15 16.3**	**+3.5**
BILL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GTA	**Gaotai**	**32.76**	**285**	*e*P	**P**	**13 15 15.6**	**+0.8**
GTA				pP	sP	13 15 26.9	+0.7
GTA				sP	pP	13 15 32.6	+10
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
QIZ	**Qiongzhong**	**34.02**	**245**	P	**P**	**13 15 26.1**	**+0.3**
QIZ				sP	**sP**	**13 15 41.8**	**+4.6**
QIZ				S	**S**	**13 20 48.8**	**-0.8**
QIZ				SS	**SS**	**13 23 17.3**	**+0.1**
QIZ				pmax	pmax		
	comp=Z,4.0nm,1.8s						
QIZ				LR	LR		
	comp=N,170nm,18.9s						
QIZ				LR	LR		
	comp=E,180nm,22.1s						
QIZ				LR	LR		
	comp=Z,340nm,20.0s						
WMQ	**Urumqi**	**40.79**	**296**	*e*P	**P**	**13 16 24.8**	**+1.9**
WMQ				pP	sP	13 16 37.0	+2.5
WMQ				sP	pP	13 16 41.3	+10
WMQ				pmax	pmax		
	comp=Z,32nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,160nm,3.9s						
ZAA0	**Zalesovo Array**	**41.48**	**311**	*e*P	**P**	**13 16 28.4**	**0.0**
ZALV	**Zalesovo Beam**	**41.48**	**311**	P	**P**	**13 16 28.1**	**-0.2**
	comp=Z,1.9nm,0.5s,baz=85,slow=7.1,SNR=8.9						
ZALV				pP	**pP**	**13 16 35.8**	**-0.7**
	comp=Z,9.3nm,0.7s,baz=86,slow=7.2,SNR=15						
CMAR	**Chiang Mai Arr**	**42.41**	**255**	P	**P**	**13 16 35.8**	**-0.6**
	comp=Z,0.6nm,0.3s,baz=46,slow=6.4,SNR=3.4						
MK31	**Makanchi Array**	**43.93**	**301**	*e*P	**P**	**13 16 49.4**	**+1.0**
MK31	**Makanchi Array**	**43.93**	**301**	*e*P	**P**	**13 16 49.4**	**+1.0**
MKAR	**Makanchi Array**	**43.93**	**301**	P	**P**	**13 16 48.5**	**+0.1**
	comp=Z,0.9nm,0.5s,baz=83,slow=10,SNR=10						
MKAR				pP	**pP**	**13 16 56.0**	**-0.7**
	comp=Z,14nm,0.8s,baz=86,slow=7.9,SNR=49						
MAKZ	**Makanchi**	**44.14**	**301**	*e*P	**P**	**13 16 50.8**	**+0.7**
MAKZ	**Makanchi**	**44.14**	**301**	*e*P	**P**	**13 16 50.8**	**+0.7**
	comp=Z,12nm,0.8s						
KURK	**Kurchatov**	**45.60**	**307**	P	**P**	**13 17 01.7**	**+0.1**
KURK				*PP	**pP**	**13 17 09.0**	**-0.8**
KURK				pmax	pmax		
	comp=Z,6.0nm,0.6s						
KURK				pmax	pmax		
	comp=Z,28nm,0.6s						
KURK	**Kurchatov**	**45.60**	**307**	*e*P	**P**	**13 17 01.2**	**-0.4**
	comp=Z,33nm,0.8s						
KURBB	**Kurchatov Arra**	**45.67**	**307**	P	**P**	**13 17 01.7**	**-0.4**
	comp=Z,6.1nm,0.6s,baz=81,slow=7.9,SNR=32						
KURBB				pP	**pP**	**13 17 09.0**	**-1.4**
	comp=Z,28nm,0.6s,baz=80,slow=8.1,SNR=40						
BPAW	**Bear Paw Mtn.**	**46.30**	**34**	*e*P	**P**	**13 17 10.8**	**+3.9**
	comp=Z,23nm,1.4s						
PDGK	**Podgornoye**	**46.70**	**297**	P	**P**	**13 17 12.0**	**+1.7**
PDGK				pmax	pmax		
	comp=Z,7.0nm,1.2s						
RAMN	**Ramite**	**47.51**	**273**	*e*P	**P**	**13 17 17.0**	**-0.2**
	comp=Z,36nm,0.7s						
GUN	**Gumba**	**47.63**	**275**	*e*P	**P**	**13 17 18.7**	**+0.5**
	comp=Z,48nm,0.7s						
COLA	**College**	**47.65**	**33**	*i* P	**P**	**13 17 17.3**	**-0.1**
COLA				pmax	pmax		
	comp=Z,3.0nm,1.2s						
IL1	**Eielson Array**	**48.06**	**33**	*e*P	**P**	**13 17 20.0**	**-0.7**
ILAR	**Eielson Array**	**48.06**	**33**	P	**P**	**13 17 20.5**	**-0.2**
	comp=Z,1.5nm,0.9s,baz=266,slow=6.0,SNR=14						
ILAR				pP	**pP**	**13 17 29.1**	**+0.1**
	comp=Z,2.3nm,0.7s,baz=269,slow=6.3,SNR=18						
ILB	**Eielson Array**	**48.06**	**33**	*e*P	**P**	**13 17 21.0**	**+0.3**
KKN	**Kakani**	**48.15**	**275**	*e*P	**P**	**13 17 22.0**	**-0.1**
	comp=Z,46nm,0.7s						
PKIN	**Phulchoki**	**48.16**	**275**	*e*P	**P**	**13 17 21.8**	**-0.5**
GKN	**Gorkha**	**48.55**	**276**	*e*P	**P**	**13 17 25.0**	**-0.2**
	comp=Z,28nm,0.6s						
DOT	**Dot Lake**	**49.38**	**34**	*e*P	**P**	**13 17 29.8**	**-1.1**
	comp=Z,16nm,1.4s						
KOLN	**Koldanda**	**49.48**	**276**	*e*P	**P**	**13 17 32.3**	**0.0**
	comp=Z,18nm,0.7s						
TKM2	**Tokmak 2**	**49.53**	**298**	*e*P	**P**	**13 17 31.8**	**-0.8**
TKM2				pmax	pmax		
	comp=Z,8.0nm,0.7s						
TKM2	**Tokmak 2**	**49.53**	**298**	*e*P	**P**	**13 17 31.8**	**-0.8**
	comp=Z,8.3nm,0.7s						
PYUN	**Piuthan**	**49.80**	**277**	*e*P	**P**	**13 17 34.7**	**-0.1**
	comp=Z,21nm,0.5s						
BVAR	**Borovoye Array**	**50.13**	**312**	P	**P**	**13 17 36.5**	**-0.1**
	comp=Z,0.9nm,0.5s,baz=56,slow=8.7,SNR=6.5						
BVAR				pP	**pP**	**13 17 44.8**	**-0.2**
	comp=Z,3.8nm,0.5s,baz=71,slow=7.9,SNR=18						
BVAR				PcP	**PcP**	**13 18 55.6**	**-0.2**
	comp=Z,2.3nm,0.5s,baz=102,slow=4.5,SNR=5.4						
OTUK	**Ortayu**	**50.14**	**305**	P	**P**	**13 17 40.1**	**+3.2**
OTUK				pmax	pmax		
	comp=Z,9.0nm,0.8s						
BRVK	**Borovoye**	**50.19**	**312**	*i* P	**P**	**13 17 36.8**	**-0.3**
BRVK				*i* *PP	**pP**	**13 17 45.1**	**-0.3**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BRVK	**Borovoye**	**50.19**	**312**	*e*P	**P**	**13 17 35.4**	**-1.7**
	comp=Z,15nm,0.8s						
AAK	**Ala-Archa**	**50.39**	**298**	*i* eP	**P**	**13 17 39.9**	**+0.9**
AAK				*i* *PP	**pP**	**13 17 48.3**	**+0.9**
AAK				*i* *SP	**sP**	**13 17 52.5**	**+1.8**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ZRNK	**Zerenda**	**50.96**	**312**	*e*P	**P**	**13 17 43.0**	**+0.1**
ZRNK	**Zerenda**	**50.96**	**312**	*e*P	**P**	**13 17 43.0**	**+0.1**
	comp=Z,6.9nm,0.8s						
HYT	**Haines Junctio**	**52.89**	**37**	*e*P	**P**	**13 17 59.6**	**+2.3**
	comp=Z,4.9nm,1.0s						
INK	**Inuvik**	**52.94**	**28**	P	**P**	**13 17 58.0**	**+0.6**
	comp=Z,0.8nm,0.5s,baz=280,slow=6.1,SNR=3.8						
INK	**Inuvik**	**52.94**	**28**	P	**P**	**13 17 58.0**	**+0.6**
INK				pmax	pmax		
	comp=Z,1.0nm,0.5s						
SVE	**Sverdlovsk**	**54.55**	**318**	*e*P	**pP**	**13 18 18.1**	**+0.3**
SVE				pmax	pmax		
	comp=Z,24nm,1.0s						
ARU	**Arti**	**55.77**	**318**	P	**P**	**13 18 18.1**	**-0.1**
	comp=Z,1.6nm,0.3s,baz=27,slow=4.5,SNR=4.1						
ARU				pP	**pP**	**13 18 25.5**	**-1.1**
	comp=Z,6.0nm,0.5s,baz=74,slow=4.2,SNR=4.6						
ARU	**Arti**	**55.77**	**318**	*c* *P	P	13 18 25.4	+7.2
ARU						13 19 22.1	
ARU		

NOA pmax pmax
comp=Z,3.0nm,0.8s
NOA pmax pmax
comp=Z,3.0nm,1.0s
NBO02 NORSAR Array S 73.30 338 *e*P **P 13 20 12.5 -0.1**
AKASG Malin Array Be 73.61 322 P **P 13 20 13.9 -0.7**
comp=Z,1.2nm,0.4s,baz=45,slow=6.1,SNR=6.7
AKASG pP **pP 13 20 22.5 -0.8**
comp=Z,5.0nm,0.7s,baz=45,slow=6.3,SNR=7.7
KIEV Kiev 73.63 322 *e*P **P 13 20 14.2 -0.5**
KIEV pmax pmax
comp=Z,10.0nm,0.9s
KIEV Kiev 73.63 322 *e*P **P 13 20 14.2 -0.5**
comp=Z,9.6nm,0.9s
SFJD Kangerlussuaq 74.52 5 *e*P **P 13 20 20.4 +0.8**
SFJD pmax pmax
comp=Z,28nm,0.8s
SFJD Kangerlussuaq 74.52 5 *e*P **P 13 20 20.4 +0.8**
comp=Z,28nm,0.8s
HWUT Hardware Ranch 75.90 48 *e*P **P 13 20 29.1 +0.7**
comp=Z,4.9nm,1.1s
BW06 Boulder Array 76.32 46 *e*P **P 13 20 30.3 -0.4**
PDAR Pinedale Array 76.32 46 P **P 13 20 30.9 +0.1**
comp=Z,1.5nm,0.7s,baz=274,slow=3.0,SNR=14
PDAR pP **pP 13 20 39.0 -0.4**
comp=Z,1.4nm,0.5s,baz=273,slow=1.1,SNR=9.6
BUR08 Bucovina Ar. S 77.63 322 *e*P **P 13 20 38.0 +0.2**
LCMT Little Creek M 77.77 52 *e*P **P 13 20 39.8 +0.9**
comp=Z,4.4nm,1.2s
MTPU Mount Pierson 77.78 51 *e*P **P 13 20 39.4 +0.2**
comp=Z,2.5nm,0.9s
KOLS Kolonicke sedl 78.10 324 *e*P P 13 20 49.4 +9.1
KOLS Kolonicke sedl 78.10 324 *e* P 13 20 49.4 +9.1
SRU San Rafael Swe 78.10 49 *e*P **P 13 20 41.2 +0.5**
SRU pmax pmax
comp=Z,5.0nm,0.6s
SRU San Rafael Swe 78.10 49 *e*P **P 13 20 41.2 +0.5**
comp=Z,4.6nm,0.6s
BRTR Keskin Array B 78.42 312 P **P 13 20 42.3 -0.1**
comp=Z,0.6nm,0.6s,baz=90,slow=5.8,SNR=2.4
BRTR pP **pP 13 20 50.5 -0.7**
comp=Z,1.2nm,0.9s,baz=71,slow=4.2,SNR=3.0
CRVS Cervenica-Dubn 78.49 325 *e* sP 13 20 57.2 +2.8
U15A North Rim 78.73 52 *e*P **P 13 20 45.2 +0.8**
comp=Z,7.8nm,1.4s
PV10 Paradox Valley 79.46 49 *e*P **P 13 20 49.1 +0.8**
PV05 Paradox Valley 79.62 49 *e*P **P 13 20 48.5 -0.7**
DPC Dobruska-Polom 79.65 328 *e*P **P 13 20 51.1 +2.2**
DPC *e*pP **pP 13 20 58.5 +0.9**
DPC Dobruska-Polom 79.65 328 *e*P **P 13 20 51.1 +2.2**
DPC *e* 13 20 58.5
Y14A Wickenburg 79.86 55 *e*P **P 13 20 48.7 -1.6**
comp=Z,61nm,0.3s
VYHS Vyhne 79.97 326 *e* P 13 21 00.2 +10
BRG Berggiesshubel 80.22 330 *e*P P 13 21 00.3 +8.5
comp=Z,7.2nm,0.9s
BRG Berggiesshubel 80.22 330 *e*P P 13 21 00.3 +8.5
BRG pmax pmax
comp=Z,7.0nm,0.9s
CLL Collm 80.24 330 *e*P **P 13 20 52.0 0.0**
CLL *i* 13 21 00.6
comp=Z,14nm,1.0s
CLL *e*PP **PP 13 23 58.0 +4.1**
CLL Collm 80.24 330 *e*P **P 13 20 51.1 -0.9**
CLL pmax pmax
comp=Z,11nm,1.0s
CLL Collm 80.24 330 *e*P **P 13 20 51.1 -0.9**
comp=Z,11nm,1.0s
X16A Lo Mia Camp, P 80.55 54 *e*P **P 13 20 55.0 +0.8**
comp=Z,6.5nm,1.5s
S22A 4UR Ranch, Cre 81.18 48 *e*P **P 13 20 58.8 +1.2**
comp=Z,3.3nm,1.1s
MMAI Mount Meron Ar 81.68 306 P **P 13 21 00.1 0.0**
comp=Z,1.3nm,0.6s,baz=324,slow=2.0,SNR=2.8
KHC Kasperske Hory 81.72 329 *e*P **P 13 21 00.0 0.0**
KHC *e*pP **pP 13 21 08.7 -0.1**
KHC Kasperske Hory 81.72 329 *e*P **P 13 21 00.0 0.0**
KHC *e* 13 21 08.7
GERES GERESS Array B 81.90 329 P **P 13 21 00.2 -0.7**
comp=Z,0.4nm,0.5s,baz=5.7,slow=6.7,SNR=5.5
GERES pP **pP 13 21 08.6 -1.2**
comp=Z,2.5nm,1.0s,baz=35,slow=4.9,SNR=6.2
GERES GERESS Array B 81.90 329 P **P 13 21 00.3 -0.7**
GERES *PP **pP 13 21 08.6 -1.2**
GERES pmax pmax
comp=Z,1.0nm,0.5s
GERES pmax pmax
comp=Z,3.0nm,1.0s
ANMO Albuquerque 83.28 50 *e*P **P 13 21 08.0 -0.6**
ANMO pmax pmax
comp=Z,2.0nm,1.1s
BFO Black Forest 84.44 331 *i* P **P 13 21 14.7 +0.7**
FUORN Ofenpass-Fuorn 85.08 329 *e*P **P 13 21 18.0 +0.5**
comp=Z,13nm,1.0s
TX31 Lajitas Ar. Si 88.85 53 *e*P **P 13 21 35.9 -0.1**
TXAR Lajitas Array 88.85 53 P **P 13 21 35.9 -0.1**
comp=Z,0.9nm,0.7s,baz=303,slow=3.6,SNR=15
TXAR pP **pP 13 21 45.3 +0.5**
comp=Z,1.3nm,0.8s,baz=297,slow=3.3,SNR=8.9
H06S1 SOCORRO T 91.09 65 T T 15 01 20.6
SNR=6.9
SNAA Sanae 142.19 197 *e*PKHKP PKPpre 13 28 03.8
SNAA Sanae 142.19 197 *e*PKPpre PKPpre 13 28 03.8
LPAZ La Paz 145.51 59 PKPbc **PKPdf 13 28 20.6 -0.2**
comp=Z,4.1nm,0.8s,baz=327,slow=2.1,SNR=12
LPAZ pPKPbc pPKPbc 13 28 30.2 +0.2
comp=Z,4.7nm,0.8s,baz=11,slow=1.2,SNR=8.5
SIV San Ignacio 149.77 49 PKPbc **PKPbc 13 28 31.3 -0.6**
comp=Z,2.0nm,0.7s,baz=214,slow=1.1,SNR=6.2
PLCA Paso Flores 154.74 106 PKPab **PKPab 13 28 57.3 -0.3**
comp=Z,1.4nm,0.9s,baz=220,slow=4.6,SNR=3.3
TRQA Tornquist 161.03 97 *e*PKPab **PKPab 13 29 24.8 0.0**

JMA 08 13:09:28.7±0.1, 38°27N×141°81E, h55km±1km, M4.1,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.41**	**297**	P		Pn	13 09 39.4	+0.1
JIO				S		Sn	13 09 46.9	0.0
OFUJ	**Ofunato**	**0.82**	**352**	P		Pn	13 09 44.1	-0.1
OFUJ				S		Sn	13 09 55.3	-0.2
JMK	**Ichinoseki**	**0.82**	**326**	P		Pn	13 09 44.5	+0.3
JMK				S		Sn	13 09 55.7	+0.1
JMM	**Marumori**	**0.90**	**244**	P		Pn	13 09 45.0	-0.2
JMM				S		Sn	13 09 56.6	-0.7
JOU	**Okura**	**0.91**	**276**	S		Sn	13 09 57.9	+0.3
JFK	**Kawauchi**	**1.17**	**220**	S		Sn	13 10 03.1	-0.7

*NIED **08** 13:10:00, 39°.90N×142°.20E, h47km, Mw4.9 Best double couple: M0 2.45000×10^16 NP1:φs 188.00000°, δ18.00000°, λ72.00000°. NP2:φs 27.00000°, δ73.00000°, λ96.00000°.*
*BJI **08** 13:10:44.0, 39°.75N×142°.53E, h49km, mb5.1/71, mB5.0/48, Ms4.4/68, Ms7 4.2/64*
*MOS **08** 13:10:46.9±1.0, 39°.90N×142°.08E, h47km, mb5.4/94, MS4.0/15, Error ellipse: s-maj=6.5km s-min=3.8km az=108.6*
*ISCJB **08** 13:10:47.8±0.3, 39°.87N±0°.02×142°.13E±0°.02, h55km±2km, mb5.1/209, MS4.2/40, Error ellipse: s-maj=3.6km s-min=2.6km az=142.4*
*JMA **08** 13:10:47.8±0.1, 39°.84N×142°.25E, h43km±1km, M4.9 JMA Felt III J1.*
*GCMT **08** 13:10:48.8±0.3, 39°.92N×142°.21E, h43km±1km, MW5.0/79, Moment Tensor Solution. s44,c52; s79,c115; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr 2.58±.15; Mθθ -0.47±.10; Mφφ -2.11±.09; Mrθ 1.39±.08; Mθφ -0.65±.06; Mφr 1.96±.09; Best double couple: M0 3.43200×10^16 NP1:φs 30.00000°, δ67.00000°, λ97.00000°. NP2: φs 191.00000°, δ24.00000°, λ73.00000°. Principal axes: T 3.5950, Plg67.0000°, Azm313.0000°; N -0.3280, Plg7.0000°, Azm207.0000°; P -3.2680, Plg22.0000°, Azm114.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **08** 13:10:48.8±0.5, 39°.87N×142°.10E, h51km±4km, mb5.0/78 Error ellipse: s-maj=4.4km s-min=3.0km az=141.0*
NEIC Felt at Misawa. Recorded [3 JMA] in Aomori and Iwate.
*IDC **08** 13:10:49.8±1.8, 39°.86N×142°.18E, h61km±16km, mb4.7/42, mb1 4.7/48, mb1mx4.7/58, mbtmp4.9/48, MS4.0/17, Ms1 3.9/17, ms1mx3.9/26, Error ellipse: s-maj=11.5km s-min=10.1km az=120.0*
ISC 08 13:10:47.7±0.4, 39°.89N±0°.03×142°.21E±0°.04, h47km±3km, h46km:pP-P, n710, σ1s55/767, mb5.1/217, MS4.3/41, 58C-16D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.27**	**280**	P		Pn	13 10 56.6	+0.3
JTH				S		Sn	13 11 02.7	+0.3
MIYJ	**Miyakonagasawa**	**0.43**	**224**	P		Pn	13 10 57.6	-0.4
MIYJ				*i* S		Sn	13 11 04.5	-0.8
JKZ	**Kuzumaki**	**0.68**	**278**	P		Pn	13 11 02.0	+0.8
JKZ				S		Sn	13 11 11.8	+0.9
JANG	**Nango**	**0.72**	**312**	P		Pn	13 11 02.0	+0.4
JANG				S		Sn	13 11 12.0	+0.3
JOM	**Ohasama**	**0.82**	**240**	P		Pn	13 11 03.1	+0.1
JOM				S		Sn	13 11 13.9	-0.2
OFUJ	**Ofunato**	**0.91**	**208**	P		Pn	13 11 03.8	-0.4
OFUJ				S		Sn	13 11 15.0	-1.2
JMK	**Ichinoseki**	**1.21**	**220**	P		Pn	13 11 08.3	+0.1
JMK				S		Sn	13 11 23.2	-0.3
JAH	**Hinai**	**1.25**	**284**	P		Pn	13 11 09.8	+1.1
JAH				S		Sn	13 11 25.3	+1.0
JTM	**Tenmabayashi**	**1.25**	**316**	P		Pn	13 11 09.7	+0.9
JTM				S		Sn	13 11 26.3	+1.9
JRG	**Rokugo**	**1.31**	**248**	P		Pn	13 11 10.3	+0.7
JRG				S		Sn	13 11 27.1	+1.1
ERM	**Erimo**	**2.24**	**18**	*e*P		Pn	13 11 23.5	+1.2
ERM				*e*			13 11 51.4	
ERM	**Erimo**	**2.24**	**18**	*e*Pn		Pn	13 11 23.5	+1.2
ERM				*e*Sn		Sn	13 11 51.4	+2.7
ASAJ	**Asahikawa**	**4.23**	**4**	*e*Pn		Pn	13 11 50.5	+0.8
ASAJ				*e*Sn		Sn	13 12 39.6	+1.9
MJB9	**Matsu-Tunnel**	**4.59**	**225**	*e*Pn		Pn	13 11 56.1	+1.5
MAJO	**Matsushiro**	**4.59**	**225**	*e*P		Pn	13 11 53.2	-1.4
MAJO				*e*			13 12 47.2	
MAJO	**Matsushiro**	**4.59**	**225**	*e*Pn		Pn	13 11 53.2	-1.4
MAJO				*e*Sn		Sn	13 12 47.2	+0.4
MAT	**Matsushiro**	**4.59**	**225**	P		Pn	13 11 57.8	+3.1
MAT				*e*S		Sn	13 12 54.9	+8.1
MJAR	**Matsushiro Arr**	**4.59**	**225**	P		Pn	13 11 57.3	+2.7
	18nm,0.3s,baz=28,slow=13,SNR=14							
MJAR				S		Sn	13 12 55.3	+8.5
	baz=22,slow=12,SNR=2.6							
MJAR				LR		LR	13 14 00.9	
	comp=Z,1μm,21.4s,baz=45,slow=42							
INU	**Inuyama**	**6.13**	**224**	*e*Pn		Pn	13 12 19.1	+3.4
KUR	**Kuril'sk**	**6.78**	**36**	*e*P		Pn	13 12 26.0	+1.5
KUR				*i* S		Sn	13 13 36.2	-4.1
KUR				pmax	pmax			
	comp=Z,119nm,1.0s							
KUR				pmax	pmax			
	comp=E,64nm,0.7s							
KUR				pmax	pmax			
	comp=N,62nm,0.6s							
KUR				smax	smax			
	comp=E,726nm,2.9s							
KUR				smax	smax			
	comp=E,204nm,0.5s							
KUR				smax	smax			
	comp=N,113nm,0.6s							
JHJ	**Hachijo jima 2**	**7.03**	**197**	P		Pn	13 12 29.8	+1.7
	comp=N,20nm,0.3s,baz=40,slow=17,SNR=1.8							
JHJ				S		Sn	13 13 42.9	-3.9
	comp=N,30nm,0.3s,baz=73,slow=20,SNR=3.8							
JHJ2	**Mitsune**	**7.03**	**197**	*e*Pn		Pn	13 12 26.4	-1.7
JHJ2				*e*Sn		Sn	13 13 43.3	-3.5
YSS	**Yuzh-Sakhalins**	**7.07**	**3**	*e*P		Pn	13 12 29.5	+0.9
YSS				*e*S		Sn	13 13 52.1	+4.6
YSS				pmax	pmax			
	comp=Z,130nm,0.7s							
YSS				smax	smax			
	comp=N,210nm,1.4s							
YSS				MLR	MLR			
	comp=Z,800nm,12.0s							
YSS	**Yuzh-Sakhalins**	**7.07**	**3**	*e*Pn		Pn	13 12 28.8	+0.2
VLA	**Vladivostok**	**8.39**	**296**	*e*P		Pn	13 12 49.5	+2.8
USRK	**Ussuriysk Ar.**	**8.74**	**303**	P		Pn	13 12 54.8	+3.4
	comp=Z,11nm,0.3s,baz=108,slow=13,SNR=60							
USRK				LR		LR	13 16 11.4	
	comp=Z,2μm,18.4s,baz=143,slow=37							
MSHR	**Mys Shultsa**	**8.75**	**291**	*e*P		Pn	13 12 52.8	+1.2
HABR	**Khabarovsk**	**10.00**	**331**	*e*P		Pn	13 13 06.7	-1.9
HABR				*e*S		Sn	13 14 57.0	-2.3
HABR				pmax	pmax			
	comp=N,10.0nm,1.5s							
HABR				pmax	pmax			
	comp=Z,20nm,1.4s							
HABR				pmax	pmax			
	comp=E,7.0nm,0.7s							
HABR				MLR	MLR			
	comp=Z,726nm,14.0s							
MDJ	**Mudanjiang**	**10.47**	**301**	P		Pn	13 13 18.9	+3.7
MDJ				S		Sn	13 15 17.5	+6.4
MDJ				PcP		PcP	13 19 17.5	+0.3
MDJ				ScP		ScP	13 22 46.0	+0.4
MDJ				PcS		PcS	13 22 51.3	+0.6
MDJ				pmax	pmax			
	comp=Z,300nm,1.0s							
MDJ				pmax	pmax			
	comp=Z,320nm,5.1s							
MDJ				LR	LR			
	comp=Z,440nm,16.3s							
MDJ				LR	LR			
	comp=Z,1μm,16.3s							
MDJ				LR	LR			
	comp=Z,2μm,18.6s							
MDJ	**Mudanjiang**	**10.47**	**301**	*e*Pn		Pn	13 13 15.5	+0.3
	comp=Z,321nm,1.0s							
TYV	**Tymovskoe**	**10.98**	**1**	*e*P		Pn	13 13 22.0	0.0
TYV				*e*S		Sn	13 15 24.0	+0.7
TYV				pmax	pmax			
	comp=Z,11nm,0.8s							
TYV				smax	smax			
	comp=E,800nm,10.0s							
TYV				MLR	MLR			
	comp=N,1μm,20.0s							
TYV				MLR	MLR			
	comp=Z,2μm,20.0s							
JNU	**Nakatsue**	**11.34**	**237**	P		Pn	13 13 28.8	+1.6
	comp=Z,1.3nm,0.3s,baz=58,slow=8.6,SNR=9.9							
JNU				LR		LR	13 18 36.0	
	comp=Z,651nm,18.1s,baz=44,slow=41							
KSRS	**Korea Array**	**11.43**	**262**	P		Pn	13 13 32.7	+4.4
	comp=Z,2.5nm,0.3s,baz=74,slow=13,SNR=35							
KSRS				LR		LR	13 17 41.5	
	comp=Z,841nm,18.3s,baz=80,slow=36							
KS01	**Wonju Array Si**	**11.45**	**262**	*e*Pn		Pn	13 13 29.9	+1.3
KS15	**Wonju Array Si**	**11.46**	**262**	*e*Pn		Pn	13 13 32.0	+3.3
KSAR	**Wonju Array Be**	**11.46**	**262**	P		Pn	13 13 32.7	+4.0
KSAR	**Wonju Array Be**	**11.46**	**262**	P		Pn	13 13 32.7	+4.0
KLR	**Kul'dur**	**11.94**	**325**	P		Pn	13 13 37.1	+2.0
	comp=Z,0.4nm,0.3s,baz=124,slow=13,SNR=12							
KLR				LR		LR	13 18 16.3	
	comp=Z,1μm,19.4s,baz=140,slow=37							
CN2	**Changchun**	**13.09**	**293**	*e*P		Pn	13 13 53.1	+2.2
CN2				*e*S		Sn	13 16 11.2	-3.8
CN2				pmax	pmax			
	comp=Z,20nm,1.0s							
CN2				LR	LR			
	comp=Z,400nm,16.0s							
CN2				LR	LR			
	comp=Z,900nm,16.0s							
CN2				LR	LR			
	comp=Z,900nm,19.0s							
NKL	**Nikolayevsk**	**13.30**	**356**	*e*P		Pn	13 13 52.0	-1.7
NKL				*e*			13 16 20.0	
NKL				pmax	pmax			
	comp=N,30nm,1.0s							
NKL				pmax	pmax			
	comp=Z,30nm,1.0s							
NKL				MLR	MLR			
	comp=N,300nm,17.0s							
NKL				MLR	MLR			
	comp=E,800nm,17.0s							
NKL				MLR	MLR			
	comp=Z,600nm,17.0s							
SNY	**Shenyang**	**14.24**	**284**	⇓P		Pn	13 14 09.3	+2.9
SNY				S		Sn	13 16 44.3	+1.5
SNY				pmax	pmax			
	comp=Z,370nm,1.2s							
SNY				pmax	pmax			
	comp=Z,420nm,10.8s							
SNY				LR	LR			
	comp=Z,1μm,17.3s							
SNY				LR	LR			
	comp=Z,2μm,17.1s							
SKR	**Severo-Kuril's**	**14.54**	**38**	*e*P		P	13 14 17.0	+1.0
SKR				MLR	MLR			
	comp=Z,300nm,17.0s							
DL2	**Dalian**	**15.94**	**273**	P		P	13 14 31.2	-0.4
DL2				sP		sP	13 14 46.3	-2.2
DL2				*e*S		Sn	13 17 27.1	+2.7
DL2				pmax	pmax			
	comp=Z,63nm,0.8s							
DL2				pmax	pmax			
	comp=Z,160nm,6.7s							
DL2				LR	LR			
	comp=Z,290nm,10.1s							
DL2				LR	LR			
	comp=Z,540nm,15.9s							
DL2				LR	LR			
	comp=Z,770nm,22.0s							
PEA0	**Petropavlovsk-**	**16.93**	**34**	*e*Pn		Pn	13 14 36.7	-4.4
PETK	**Petropavlovsk-**	**16.93**	**34**	P		P	13 14 43.1	+0.5
	comp=Z,0.2nm,0.3s,baz=198,slow=9.3,SNR=5.1							
PETK				LR		LR	13 21 36.2	
	comp=Z,225nm,18.1s,baz=221,slow=38							
PET	**Petropavlovsk**	**17.29**	**35**	*e*P		P	13 14 46.8	+0.4
JOW	**Kunigami**	**17.44**	**226**	*e*Pn		Pn	13 14 43.1	-4.4
	comp=Z,56nm,0.9s							
HIA	**Hailar**	**18.49**	**308**	*e*P		P	13 14 57.8	-1.9
HIA				pmax	pmax			
	comp=Z,50nm,0.8s							
HIA	**Hailar**	**18.49**	**308**	*e*P		P	13 14 57.8	-1.9
	comp=Z,50nm,0.8s							
BJI	**Beijing**	**19.94**	**279**	P		P	13 15 13.5	-2.1
BJI				S		S	13 18 50.8	-6.5
BJI				pmax	pmax			
	comp=Z,23nm,1.3s							
BJI				LR	LR			
	comp=Z,180nm,11.5s							
BJI				LR	LR			
	comp=Z,560nm,18.0s							
BJI				LR	LR			
	comp=Z,670nm,31.2s							
BJT	**Baijiatuan**	**19.95**	**279**	*e*P		P	13 15 14.1	-1.6
BJT				pmax	pmax			
	comp=Z,47nm,0.7s							
BJT	**Baijiatuan**	**19.95**	**279**	*e*P		P	13 15 14.1	-1.6
	comp=Z,47nm,0.7s							
TIA	**Tai'an**	**20.07**	**267**	⇓P		P	13 15 16.3	-0.8
TIA				pmax	pmax			
	comp=Z,150nm,0.9s							
TIA				LR	LR			
	comp=Z,480nm,12.6s							
TIA				LR	LR			
	comp=Z,870nm,16.8s							
TIA				LR	LR			
	comp=Z,950nm,17.8s							
CLNS	**Chul'man**	**20.39**	**332**	*e*P		P	13 15 20.2	-0.2
CLNS				pmax	pmax			
	comp=Z,70nm,0.9s							
CLNS				pmax	pmax			
	comp=N,38nm,0.8s							
CLNS				pmax	pmax			
	comp=E,18nm,0.8s							
NJ2	**Nanjing**	**20.42**	**255**	*e*P		P	13 15 19.8	-1.1
NJ2				pP		pP	13 15 32.8	+0.9
NJ2				sP		sP	13 15 38.2	+0.4
NJ2				S		S	13 19 07.2	+0.3
NJ2				sS		sS	13 19 24.4	-0.4
NJ2				pmax	pmax			
	comp=E,90nm,0.8s							
NJ2				LR	LR			
	comp=E,620nm,17.1s							
NJ2				LR	LR			
	comp=E,1μm,20.6s							
NJ2				LR	LR			
	comp=E,760nm,20.6s							
MA2	**Magadan**	**20.43**	**13**	P		P	13 15 20.6	-0.2
	comp=E,40nm,0.7s,baz=200,slow=8.9,SNR=24							
CIT	**Chita**	**23.16**	**311**	*e*P		P	13 15 50.9	+1.0
CIT				*e*			13 16 22.9	
YHNB	**Yeheng**	**23.17**	**235**	*e*P		P	13 15 47.1	-3.2
	comp=E,48nm,1.0s							
HHC	**Hu-ho-hao-te**	**23.32**	**282**	*e*P		P	13 15 50.2	-1.4
HHC				pP		pP	13 16 04.4	+1.2
HHC				sP		sP	13 16 11.7	+2.7
HHC				S		S	13 19 52.9	-7.9
HHC				pmax	pmax			
	comp=E,25nm,0.8s							
HHC				pmax	pmax			
	comp=E,75nm,7.5s							
HHC				LR	LR			
	comp=E,190nm,18.2s							
HHC				LR	LR			
	comp=E,710nm,18.8s							
HHC				LR	LR			
	comp=E,880nm,18.2s							
YAK	**Yakutsk**	**23.45**	**345**	P		P	13 15 51.2	-1.3
	comp=E,73nm,0.5s,baz=352,slow=9.4,SNR=30							
YAK	**Yakutsk**	**23.45**	**345**	*ce*P		P	13 15 50.7	-1.8
YAK				*e*PP		pP	13 15 59.8	-4.4
YAK				*e*S		S	13 19 57.6	-4.6
YAK				*e*SS		sS	13 20 18.2	-4.5
YAK				*e*SSS		SSS	13 20 47.5	
YAK				pmax	pmax			
	comp=E,20nm,1.0s							
YAK				pmax	pmax			
	comp=Z,165nm,1.0s							
YAK				pmax	pmax			
	comp=N,86nm,1.0s							
YAK				pmax	pmax			
	comp=Z,36nm,0.8s							
YAK				pmax	pmax			
	comp=E,24nm,0.8s							
YAK				pmax	pmax			
	comp=N,30nm,0.9s							
YAK				smax	smax			
	comp=E,94nm,2.0s							
YAK				smax	smax			
	comp=N,103nm,1.8s							
YAK				MLR	MLR			
	comp=E,209nm,17.0s							
YAK				MLR	MLR			
	comp=Z,349nm,15.0s							
YAK				MLR	MLR			
	comp=N,291nm,18.0s							
YAK	**Yakutsk**	**23.45**	**345**	*e*P		P	13 15 50.7	-1.8
	comp=N,321nm,1.3s							
SEY	**Seymchan**	**23.87**	**12**	P		P	13 15 57.1	+0.6
	comp=N,71nm,0.9s,baz=199,slow=8.2,SNR=37							
SSLB	**Suanglung**	**24.07**	**235**	*e*P		P	13 15 53.7	-5.1
	comp=N,15nm,0.6s							
YULB	**Yu-li**	**24.15**	**233**	*e*P		P	13 15 55.0	-4.4
	comp=N,21nm,0.8s							
WHN	**Wuhan**	**24.52**	**256**	⇑P		P	13 16 02.1	-0.6
WHN				S		S	13 20 17.4	-2.6
WHN				pmax	pmax			
	comp=N,82nm,0.8s							
WHN				LR	LR			
	comp=N,400nm,7.5s							
WHN				LR	LR			
	comp=N,1μm,14.7s							
WHN				LR	LR			
	comp=N,930nm,15.1s							
BOD	**Bodaibo**	**25.52**	**324**	⇑*i*P		P	13 16 11.6	+0.1
BOD				pmax	pmax			
	comp=Z,57nm,1.0s							
GUMO	**Guam**	**26.30**	**174**	LR		LR	13 25 59.1	
	comp=Z,254nm,20.6s,baz=17,slow=35							
SONA1	**Songino Array**	**26.82**	**299**	*e*P		P	13 16 23.2	-0.4
SONM	**Songino Array**	**26.82**	**299**	P		P	13 16 24.0	+0.4
	comp=Z,14nm,0.6s,baz=93,slow=9.2,SNR=32							
SONM				LR		LR	13 27 35.5	
	comp=Z,936nm,18.4s,baz=100,slow=38							
XAN	**Xi'an**	**27.13**	**268**	P		P	13 16 25.6	-0.8
XAN				pP		pP	13 16 36.7	-1.9
XAN				S		S	13 20 52.5	-9.0
XAN				pmax	pmax			
	comp=Z,16nm,0.6s							
XAN				pmax	pmax			
	comp=Z,69nm,4.9s							
XAN				LR	LR			
	comp=Z,400nm,15.2s							
XAN				LR	LR			
	comp=Z,460nm,16.2s							
ENH	**Enshi**	**28.31**	**260**	*e*P		P	13 16 36.0	-1.0
	comp=Z,69nm,0.7s							
IRK	**Irkutsk**	**28.73**	**308**	*e*P		P	13 16 37.9	-2.6

IRK pmax pmax
comp=Z,41nm,1.4s
TLY Talaya 29.02 307 P **P** **13 16 43.6 +0.5**
comp=Z,16nm,0.8s,baz=97,slow=6.7,SNR=10
TLY Talaya 29.02 307 *e*P **P** **13 16 43.6 +0.5**
TLY pmax pmax
comp=Z,28nm,1.0s
TLY Talaya 29.02 307 *e*P **P** **13 16 43.4 +0.3**
comp=Z,28nm,1.0s
ZAK Zakamensk 29.09 304 *e*P **P** **13 16 43.5 -0.2**
ZAK pmax pmax
comp=Z,33nm,1.0s
H11N2 WAKE ISLAND Hy 29.20 126 T T 13 47 20.5
baz=319,slow=75,SNR=129
H11N1 WAKE ISLAND Hy 29.21 126 T T 13 47 19.8
baz=319,slow=75,SNR=109
H11N3 WAKE ISLAND Hy 29.22 126 T T 13 47 23.4
baz=319,slow=75,SNR=82
H11S1 WAKE ISLAND Hy 30.01 128 T T 13 48 30.4
baz=320,slow=76,SNR=38
H11S3 WAKE ISLAND Hy 30.01 128 T T 13 48 28.7
baz=320,slow=76,SNR=37
H11S2 WAKE ISLAND Hy 30.02 128 T T 13 48 30.9
baz=320,slow=76,SNR=40
LZH Lanzhou 30.32 275 *e*P **P** **13 16 56.2 +1.3**
LZH pP pP 13 17 09.5 +2.3
LZH sP sP 13 17 16.3 +3.5
LZH PP **PnPn** **13 17 55.0 +0.8**
LZH *e*S **S** **13 21 49.3 -2.6**
LZH sS sS 13 22 12.3 -0.3
LZH *e*SS **SnSn** **13 23 30.0 +0.5**
LZH pmax pmax
comp=Z,53nm,1.3s
LZH pmax pmax
comp=Z,110nm,5.0s
LZH LR LR
comp=Z,250nm,12.7s
LZH LR LR
comp=Z,500nm,13.0s
LZH LR LR
comp=Z,690nm,15.6s
MOY Mondy 30.66 306 *e*P **P** **13 16 58.2 +0.5**
MOY pmax pmax
comp=Z,40nm,1.8s
BILL Bilibino 31.11 17 *de*P **P** **13 17 02.0 +0.7**
BILL *e* 13 18 05.7
BILL *e*S **S** **13 21 58.3 -5.0**
BILL pmax pmax
comp=Z,23nm,1.7s
BILL MLR MLR
comp=Z,109nm,17.0s
TGY Tagaytay City 31.76 222 LR LR 13 29 53.3
comp=Z,108nm,21.6s,baz=34,slow=36
CD2 Chengdu 32.39 266 *e*P **P** **13 17 12.0 -1.0**
CD2 pP pP 13 17 25.6 +0.2
CD2 sP sP 13 17 32.2 +1.2
CD2 S **S** **13 22 21.9 -2.3**
CD2 sS sS 13 22 45.5 +0.6
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,140nm,5.2s
CD2 LR LR
comp=Z,340nm,12.3s
CD2 LR LR
comp=Z,330nm,20.5s
CD2 LR LR
comp=Z,350nm,18.5s
GYA Guiyang 32.41 257 *e*P **P** **13 17 14.2 +0.9**
GYA pP pP 13 17 28.4 +2.8
GYA PP **PnPn** **13 18 22.0 +0.7**
GYA PcP **PcP** **13 20 01.2 +1.3**
GYA S **S** **13 22 22.4 -2.2**
GYA sS sS 13 22 46.6 +1.3
GYA ScP **ScP** **13 23 39.8 +0.1**
GYA SS **SnSn** **13 24 19.0 -1.4**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,550nm,17.4s
GYA LR LR
comp=Z,480nm,17.9s
GYA LR LR
comp=Z,460nm,17.6s
GTA Gaotai 32.42 283 *e*P **P** **13 17 13.8 +0.5**
GTA pP pP 13 17 25.5 -0.2
GTA sP sP 13 17 31.1 -0.2
GTA PcP **PcP** **13 20 00.8 +1.1**
GTA S **S** **13 22 25.5 +0.9**
GTA sS sS 13 22 44.0 -1.4
GTA ScP **ScP** **13 23 41.7 +2.1**
GTA PcS **PcS** **13 23 44.9 0.0**
GTA SS **SnSn** **13 24 25.2 +4.7**
GTA pmax pmax
comp=Z,10.0nm,1.2s
GTA pmax pmax
comp=Z,96nm,5.2s
GTA LR LR
comp=Z,350nm,16.6s
GTA LR LR
comp=Z,740nm,17.6s
GTA LR LR
comp=Z,990nm,17.6s
TIXI Tiksi 32.54 352 P **P** **13 17 13.5 -0.3**
comp=Z,12nm,0.7s,baz=144,slow=1.6,SNR=10.0
TIXI Tiksi 32.54 352 *e*P **P** **13 17 13.0 -0.8**
TIXI pmax pmax
comp=Z,17nm,0.8s
KMI Kunming 36.09 258 P **P** **13 17 45.3 0.0**
KMI pP sP 13 18 00.8 -2.5
KMI sP pP 13 18 07.9 +10
KMI PP **PP** **13 19 12.4 +4.5**
KMI pmax pmax
comp=Z,32nm,0.9s
KMI pmax pmax
comp=Z,170nm,4.0s
KMI LR LR
comp=Z,330nm,17.3s
KMI LR LR
comp=Z,300nm,14.8s
KMI LR LR
comp=Z,440nm,17.3s
WMQ Urumqi 40.18 294 ⇑ *i*P **P** **13 18 20.5 +1.1**
WMQ sP sP 13 18 37.1 -0.4
WMQ PcP **PcP** **13 20 19.6 -3.2**
WMQ PcS **PcS** **13 24 13.2 0.0**
WMQ pmax pmax
comp=Z,99nm,1.0s
WMQ pmax pmax
comp=Z,340nm,3.5s
WMQ LR LR
comp=Z,280nm,23.4s
WMQ LR LR
comp=Z,340nm,25.7s
WMQ LR LR
comp=Z,490nm,28.4s
SKNT Sakolnakorn 40.21 247 P **P** **13 18 20.2 +0.5**
comp=Z,32nm,1.0s
UBPT Khong Chiam 40.33 243 P **P** **13 18 21.8 +1.0**
comp=Z,32nm,1.5s
ZAA0 Zalesovo Array 40.51 310 *e*P **P** **13 18 21.8 0.0**
ZALV Zalesovo Beam 40.51 310 P **P** **13 18 22.5 +0.7**
comp=Z,31nm,0.5s,baz=91,slow=7.7,SNR=61
ZALV PcP **PcP** **13 20 23.9 +0.4**
comp=Z,8.0nm,0.5s,baz=100,slow=3.3,SNR=7.3
NRIK Noril'sk 40.96 334 P **P** **13 18 25.6 +0.2**
comp=Z,18nm,0.6s,baz=114,slow=8.2,SNR=11
KKM Kota Kinabalu 41.01 222 *e*P **P** **13 18 27.8 +1.3**
comp=Z,17nm,0.9s
NVS Novosibirsk 41.37 311 *e*P **P** **13 18 28.8 -0.1**
NVS *e* 13 20 26.3
NVS pmax pmax
comp=E,13nm,0.9s
NVS pmax pmax
comp=Z,21nm,0.9s
KHON Khomkaen 41.45 247 P **P** **13 18 30.4 +0.4**
comp=Z,24nm,0.8s,comp=Z,802nm
LOEI Loei 41.79 250 P **P** **13 18 30.3 -2.5**
comp=Z,25nm,0.9s
UTTA Uttaradit 42.16 251 P **P** **13 18 36.1 +0.4**
comp=Z,9.2nm,0.9s
LAMP Lampang 42.33 252 P **P** **13 18 38.1 +0.9**
comp=Z,12nm,1.0s,comp=Z,91nm
CHAI Chaiyaphum 42.34 247 P **P** **13 18 37.1 -0.1**
comp=Z,17nm,0.9s,comp=Z,167nm
PBKT Sadao Pong 42.62 249 P **P** **13 18 39.8 +0.3**
comp=Z,20nm,1.1s
LSA Lhasa 42.64 273 P **P** **13 18 41.6 +1.4**
LSA pmax pmax
comp=Z,30nm,1.0s
LSA Lhasa 42.64 273 *e*P **P** **13 18 39.5 -0.7**
LSA pmax pmax
comp=Z,24nm,0.6s
LSA Lhasa 42.64 273 *e*P **P** **13 18 39.5 -0.7**
comp=Z,24nm,0.6s
CMMT Chiang Mai 42.65 253 P **P** **13 18 40.1 +0.3**
comp=Z,30nm,0.8s,comp=Z,769nm
CHTO Chiang Mai 42.66 253 P **P** **13 18 40.2 +0.4**
comp=Z,133nm,0.9s
CHTO Chiang Mai 42.66 253 *e*P **P** **13 18 40.1 +0.3**
CHTO pmax pmax
comp=Z,25nm,0.9s
CHTO Chiang Mai 42.66 253 P **P** **13 18 40.4 +0.6**
SNR=8.0
CHTO Chiang Mai 42.66 253 *e*P **P** **13 18 40.1 +0.3**
comp=Z,25nm,0.9s
TT01 Tatalina 42.73 36 *e*P **P** **13 18 41.6 +1.6**
GTOI Gorontalo 42.81 209 P sP 13 19 01.5 +2.3
CMAR Chiang Mai Arr 42.88 253 P **P** **13 18 42.3 +0.7**
comp=Z,9.2nm,0.8s,baz=46,slow=6.3,SNR=42
CMAR PcP **PcP** **13 20 32.8 +0.9**
comp=Z,4.0nm,0.9s,baz=23,slow=3.0,SNR=5.9
CMAR LR LR 13 38 29.5
comp=Z,124nm,18.1s,baz=45,slow=39
CM01 Chiang Mai Arr 42.89 253 *e*P **P** **13 18 42.1 +0.4**
SUKH Sukhothai 42.99 251 P **P** **13 18 43.0 +0.5**
comp=Z,16nm,0.8s,comp=Z,142nm
MK01 Makanchi Array 43.19 300 *e*P **P** **13 18 43.0 -0.9**
MK31 Makanchi Array 43.19 300 *i* P **P** **13 18 43.7 -0.2**
MK31 pmax pmax
comp=Z,28nm,0.6s
MK31 Makanchi Array 43.19 300 *e*P **P** **13 18 44.4 +0.5**
MKAR Makanchi Array 43.19 300 P **P** **13 18 44.4 +0.5**
comp=Z,21nm,0.4s,baz=86,slow=11,SNR=102
MRSI Marisa 43.37 210 P **P** **13 18 46.0 +0.5**
comp=Z,96nm,1.0s,comp=Z,6μm
MAKZ Makanchi 43.40 300 *i* P **P** **13 18 44.8 -0.7**
MAKZ pmax pmax
comp=Z,47nm,0.8s
SRAK Srakaew 43.59 245 P **P** **13 18 44.8 -2.5**
comp=Z,176nm,1.0s,comp=Z,1μm
CHBT CHBT 44.26 244 P **P** **13 18 53.9 +1.2**
comp=Z,64nm,1.2s
RSO Reoubt South 44.30 40 *e*P **P** **13 18 54.5 +1.7**
UMPA Umpang Tak 44.38 251 P **P** **13 18 56.0 +2.3**
comp=Z,19nm,1.0s,comp=Z,146nm
PPLA Purkeypile 44.49 37 *e*P **P** **13 18 56.6 +2.4**
comp=Z,59nm,1.7s
KDAK Kodiak Island 44.58 44 *i* P **P** **13 18 56.0 +1.2**
KURK Kurchatov 44.71 306 P **P** **13 18 56.8 +0.8**
KURK 13 20 38.1
KURK pmax pmax
comp=Z,35nm,0.4s
KURK pmax pmax
comp=Z,8.0nm,0.8s
KURK Kurchatov 44.71 306 P **P** **13 18 56.8 +0.8**
KURK PcP **PcP** **13 20 38.0 +0.4**
KURBB Kurchatov Arra 44.79 306 P **P** **13 18 56.8 +0.2**
comp=Z,35nm,0.4s,baz=83,slow=9.7,SNR=62
KURBB PcP **PcP** **13 20 38.0 +0.2**
comp=Z,8.4nm,0.8s,baz=87,slow=3.6,SNR=4.6
KTH Kantishna Hill 45.05 36 *e*P **P** **13 18 58.8 +0.3**
comp=Z,25nm,1.0s
TRF Thorofare Moun 45.34 36 *e*P **P** **13 19 02.6 +1.7**
comp=Z,14nm,1.2s
COLD Coldfoot 45.37 30 *e*P **P** **13 19 01.4 +0.5**
comp=Z,12nm,0.9s
SRDT SRDT 45.42 248 P P 13 19 08.7 +6.7
PCI Palu 45.46 212 P **P** **13 19 02.5 +0.2**
comp=Z,63nm,1.2s,comp=Z,777nm
RC01 Rabbit Creek A 45.73 39 *e*P **P** **13 19 05.5 +1.6**
comp=Z,18nm,0.8s
MCK McKinley 45.93 35 *e*P **P** **13 19 07.0 +1.5**
MCK pmax pmax
comp=Z,9.0nm,0.8s
MCK McKinley 45.93 35 *e*P **P** **13 19 07.0 +1.5**
comp=Z,9.3nm,0.8s
SEW Seward 45.96 40 *e*P **P** **13 19 07.1 +1.3**
comp=Z,15nm,1.0s
PMR Palmer 45.98 38 *e*P **P** **13 19 06.6 +0.8**
PMR pmax pmax
comp=Z,8.0nm,0.7s
PMR Palmer 45.98 38 *e*P **P** **13 19 06.6 +0.8**
comp=Z,7.6nm,0.7s
RND Reindeer 45.98 36 *e*P **P** **13 19 06.6 +0.7**
RND pmax pmax
comp=Z,16nm,0.9s
RND Reindeer 45.98 36 *e*P **P** **13 19 06.6 +0.7**
comp=Z,16nm,0.9s
PHET Kaeng Krachan 46.04 246 P **P** **13 19 08.1 +1.3**
comp=Z,29nm,0.7s,comp=Z,220nm
PDGK Podgornoye 46.05 296 P **P** **13 19 06.9 +0.3**
PDGK pmax pmax
comp=Z,36nm,1.0s
WRH Wood River Hil 46.26 34 *e*P **P** **13 19 09.6 +1.6**
comp=Z,11nm,0.8s
SML Sawmill 46.34 38 *e*P **P** **13 19 08.2 -0.5**
SML pmax pmax
comp=Z,4.0nm,0.8s
SML Sawmill 46.34 38 *e*P **P** **13 19 08.2 -0.5**
comp=Z,4.5nm,0.8s
COLA College 46.34 34 *e*P **P** **13 19 08.9 +0.3**
COLA pmax pmax
comp=Z,20nm,0.8s
COLA College 46.34 34 *e*P **P** **13 19 08.9 +0.3**
comp=Z,20nm,0.8s
ILAR Eielson Array 46.76 34 P **P** **13 19 13.2 +1.2**
comp=Z,9.7nm,0.7s,baz=266,slow=6.1,SNR=38
ILAR LR LR 13 39 23.9
comp=Z,69nm,21.5s,baz=275,slow=37
RAMN Ramite 47.48 272 *e*P **P** **13 19 18.8 +0.4**
comp=Z,191nm,0.8s
PAX Paxson 47.55 36 *e*P **P** **13 19 19.2 +1.0**
PAX pmax pmax
comp=Z,7.0nm,1.0s
PAX Paxson 47.55 36 *e*P **P** **13 19 19.2 +1.0**
comp=Z,6.8nm,1.0s
GUN Gumba 47.55 273 *e*P **P** **13 19 19.7 +0.7**
comp=Z,231nm,0.7s
DIV Divide 47.64 39 *e*P **P** **13 19 18.9 0.0**
comp=Z,40nm,1.3s
EYAK Cordova Ski Ar 47.73 39 *e*P **P** **13 19 21.6 +2.1**
comp=Z,16nm,0.8s
KSM Kuching 47.99 225 *e*P **P** **13 19 20.6 -1.5**
comp=Z,16nm,1.2s
KKN Kakani 48.07 274 *e*P **P** **13 19 23.5 +0.6**
comp=Z,184nm,0.6s
PKIN Phulchoki 48.09 273 *e*P **P** **13 19 24.0 +0.9**
comp=Z,62nm,0.6s
DOT Dot Lake 48.10 35 *e*P **P** **13 19 21.0 -1.4**
comp=Z,18nm,0.8s
BMRM Bremner River 48.23 39 *e*P **P** **13 19 23.8 +0.4**
comp=Z,15nm,0.9s
BMRM *e*PcP **PcP** **13 20 50.7 +0.8**
DMN Daman 48.30 274 *e*P **P** **13 19 25.2 +0.5**
comp=Z,38nm,0.5s
MENT Mentasta 48.35 36 *e*P **P** **13 19 26.8 +2.5**
comp=Z,11nm,0.8s
GKN Gorkha 48.46 274 *e*P **P** **13 19 26.1 +0.3**
comp=Z,73nm,0.5s
CHKZ Chkalovo 48.85 311 *i* P **P** **13 19 27.6 -0.7**
CHKZ pmax pmax
comp=Z,29nm,0.6s
TKM2 Tokmak 2 48.87 296 *e*P **P** **13 19 29.9 +1.0**
TKM2 pmax pmax
comp=Z,73nm,0.8s
TKM2 Tokmak 2 48.87 296 *e*P **P** **13 19 29.9 +1.0**
comp=Z,73nm,0.8s
BVA0 Borovoye Array 49.15 311 *i* P **P** **13 19 30.3 -0.3**
BVA0 pmax pmax
comp=Z,18nm,0.7s
BVAR Borovoye Array 49.15 311 P **P** **13 19 31.2 +0.6**
comp=Z,18nm,0.6s,baz=70,slow=8.5,SNR=30
BVAR PcP **PcP** **13 20 54.1 +0.8**
comp=Z,4.7nm,0.6s,baz=77,slow=3.2,SNR=3.9
EGAK Eagle 49.20 33 *e*P **P** **13 19 32.1 +1.3**
comp=Z,18nm,0.8s
BRVK Borovoye 49.20 311 *ce*P **P** **13 19 31.4 +0.4**
BRVK pmax pmax
comp=Z,79nm,1.0s
BRVK Borovoye 49.20 311 *e*P **P** **13 19 31.6 +0.7**
comp=Z,32nm,1.0s
KAPI Kappang 49.24 210 *e*P **P** **13 19 33.2 +1.6**
comp=Z,35nm,1.1s
OTUK Ortayu 49.30 304 P **P** **13 19 32.2 +0.3**
OTUK pmax pmax
comp=Z,27nm,1.0s
KOLN Koldanda 49.37 275 *e*P **P** **13 19 33.5 +0.6**
comp=Z,117nm,0.8s
SURT Suratani 49.39 243 P **P** **13 19 34.2 +1.4**
comp=Z,16nm,0.8s,comp=Z,312nm
FRU Bishkek 49.58 297 ⇑ *i*P **P** **13 19 34.0 0.0**
FRU *e* 13 19 47.0
TRTT Trang 49.58 242 P **P** **13 19 35.5 +1.2**
comp=Z,27nm,0.9s
PYUN Piuthan 49.67 275 *e*P **P** **13 19 35.8 +0.6**
comp=Z,124nm,0.8s
AAK Ala-Archa 49.73 297 P **P** **13 19 36.0 +0.7**
comp=Z,14nm,0.4s,baz=75,slow=5.0,SNR=16
AAK Ala-Archa 49.73 297 *c i*P **P** **13 19 35.7 +0.3**
AAK pmax pmax
comp=Z,47nm,0.8s
AAK Ala-Archa 49.73 297 P **P** **13 19 35.8 +0.5**
SNR=8.5
AAK Ala-Archa 49.73 297 *e*P **P** **13 19 36.1 +0.7**
comp=Z,18nm,0.8s
KSH Kashi 49.86 292 *e*P **P** **13 19 40.9 +4.5**
KSH *e*pP sP 13 19 56.7 +2.0
KSH *e*sP pP 13 20 04.1 +15
KSH *e*PP **PP** **13 21 38.1 +6.9**
KSH PcS **PcS** **13 24 55.4 +2.1**
KSH S **S** **13 26 46.4 +3.4**
KSH ScS **ScS** **13 29 24.1 +0.3**
KSH pmax pmax
comp=Z,88nm,3.6s
KSH LR LR
comp=Z,800nm,14.6s
KSH LR LR
comp=Z,720nm,16.0s
KSH LR LR
comp=Z,440nm,14.7s
ZRNK Zerenda 49.98 311 *e*P **P** **13 19 37.6 +0.7**
ZRNK pmax pmax
comp=Z,44nm,0.8s
ZRNK Zerenda 49.98 311 *e*P **P** **13 19 37.6 +0.7**
comp=Z,44nm,0.8s
DAWY Dawson 50.08 34 *e*P **P** **13 19 38.2 +0.7**
comp=Z,4.8nm,1.1s
EKS2 Erkin-Say 50.21 297 *e*P **P** **13 19 38.9 -0.1**
EKS2 pmax pmax
comp=Z,26nm,0.7s
EKS2 Erkin-Say 50.21 297 *e*P **P** **13 19 38.9 -0.1**
comp=Z,26nm,0.7s
PKDT Phuket 50.46 243 P **P** **13 19 42.3 +1.3**
comp=Z,93nm,0.8s,comp=Z,5μm
KULM Kulim 50.82 238 *e*P **P** **13 19 44.0 +0.3**
comp=Z,35nm,1.1s
MNAS Manas 51.15 297 *i* P **P** **13 19 46.0 -0.1**
MNAS pmax pmax
comp=Z,65nm,0.6s
IPM Ipoh 51.18 237 *e*P **P** **13 19 45.9 -0.5**
comp=Z,32nm,1.1s
INK Inuvik 51.57 28 P **P** **13 19 50.2 +1.6**
comp=Z,15nm,0.7s,baz=293,slow=6.3,SNR=23
INK Inuvik 51.57 28 *e*P **P** **13 19 49.5 +0.9**
comp=Z,17nm,0.8s
HYT Haines Junctio 51.65 38 *e*P **P** **13 19 48.6 -0.9**
comp=Z,29nm,0.9s
SOEI Soe 52.12 203 P sP 13 20 14.3 +2.5
KK31 Karatay Array 52.27 298 *i* P **P** **13 19 54.1 -0.2**
KK31 pmax pmax
comp=Z,25nm,0.6s
KKAR Karatay Array 52.27 298 *e*P **P** **13 19 54.2 -0.1**
KKAR Karatay Array 52.27 298 *e*P **P** **13 19 54.2 -0.1**
SVE Sverdlovsk 53.45 317 *d i*P **P** **13 20 03.9 +1.2**
SVE pmax pmax
comp=Z,139nm,0.8s
SVE MLR MLR
comp=Z,747nm,17.0s
NDI New Delhi 53.79 279 *e*P P 13 19 59.0 -6.6
PSI Prapat 53.81 238 *e*P **P** **13 20 05.3 -0.7**
PSI pmax pmax
comp=Z,20nm,0.9s
PSI Prapat 53.81 238 *e*P **P** **13 20 05.3 -0.7**
comp=Z,20nm,0.9s
BKNI Bangkinang 54.35 234 P **P** **13 20 10.7 +0.9**
comp=Z,108nm,0.7s
MLSI Meulaboh, Aceh 54.40 242 P **P** **13 20 09.4 -0.8**
comp=Z,74nm,0.8s
SOKR Solikamsk 54.46 321 *c i*P **P** **13 20 09.3 -0.7**
SOKR pmax pmax
comp=Z,70nm,1.2s
ARU Arti 54.66 317 P **P** **13 20 12.2 +0.7**
comp=Z,100nm,0.7s,baz=73,slow=4.6,SNR=80
ARU Arti 54.66 317 *c i*P **P** **13 20 12.1 +0.6**
ARU *PP **pP** **13 20 26.0 +1.4**
ARU 13 21 12.9
ARU 13 22 14.8
ARU PPP PPP 13 23 25.8
ARU S **S** **13 27 50.0 +2.1**
ARU SS **SS** **13 31 28.7 -1.9**
ARU pmax pmax
comp=Z,139nm,1.0s
ARU MLR MLR
comp=Z,622nm,18.0s
ARU Arti 54.66 317 *e*P **P** **13 20 11.8 +0.3**
comp=Z,102nm,0.7s
SDSI Sungai Dareh 55.10 233 P **P** **13 20 16.0 +0.8**
comp=Z,69nm,0.9s
GSI Gunungsitoli 55.82 238 P **P** **13 20 20.6 +0.2**
comp=Z,64nm,1.1s
GSI Gunungsitoli 55.82 238 *e*P **P** **13 20 19.7 -0.7**
comp=Z,71nm,1.1s
DLBC Dease Lake 56.01 39 P **P** **13 20 23.7 +2.4**
comp=Z,3.3nm,0.8s,baz=253,slow=8.1,SNR=6.9
DLBC Dease Lake 56.01 39 *e*P **P** **13 20 22.8 +1.5**
comp=Z,6.6nm,0.9s
LHSI Lahat 56.16 229 P **P** **13 20 23.1 +0.3**
AB31 Akbulak array 56.60 309 *i* P **P** **13 20 25.5 -0.1**
AB31 pmax pmax
comp=Z,37nm,0.5s
ABKAR Akbulak array 56.60 309 *e*P **P** **13 20 26.1 +0.5**
KBL Kabul 57.01 290 *e*P **P** **13 20 28.5 -0.5**
KBL pmax pmax
comp=Z,62nm,0.8s
KBL Kabul 57.01 290 *e*P **P** **13 20 28.5 -0.5**
comp=Z,62nm,0.8s
AKTO Aktyubinsk 57.26 311 P **P** **13 20 30.4 +0.2**
comp=Z,39nm,0.8s,baz=85,slow=8.1,SNR=32
SPA0 Spitsbergen Ar 57.85 349 *e*P **P** **13 20 34.7 +0.8**
HSPB Hornsund (broa 58.79 348 *e*P **P** **13 20 41.5 +1.0**
HYB Hyderabad 58.94 267 *i* P **P** **13 20 43.0 +0.6**
RES Resolute Bay 59.68 15 P **P** **13 20 46.6 -0.1**
comp=Z,19nm,0.8s,baz=347,slow=5.1,SNR=3.9
WRAB Tennant Creek 59.96 189 *c i*P **P** **13 20 48.4 -0.9**
WRAB Tennant Creek 59.96 189 *e*P **P** **13 20 48.4 -0.9**
comp=Z,13nm,0.8s
WB2 Warramunga Arr 59.97 189 *e*P **P** **13 20 48.0 -1.3**
comp=Z,16nm,0.8s
WRA Warramunga Arr 59.97 189 P **P** **13 20 48.5 -0.9**
comp=Z,12nm,0.5s,baz=7.1,slow=6.9,SNR=34
APA Apatity 60.35 335 ⇓ *i*P **P** **13 20 50.0 -1.4**
APA *i* 13 21 07.5
APA pmax pmax
comp=Z,10.0nm,0.8s
APA MLR MLR
comp=Z,500nm,14.0s
YKA Yellowknife Ar 61.03 31 P **P** **13 20 56.8 +0.7**
comp=Z,4.3nm,0.7s,baz=300,slow=6.5,SNR=20
YKA LR LR 13 51 04.3
comp=Z,4.7nm,18.7s,baz=0.0,slow=40
HAMF Hammerfest 61.33 340 *e*P **P** **13 20 58.3 +0.3**
HAMF IAmb IAmb 13 20 58.6
comp=Z,19nm,0.8s
ARA0 ARCESS Array S 61.55 339 *e*P **P** **13 20 58.5 -1.1**
ARCES ARCESS Array B 61.55 339 P **P** **13 21 00.0 +0.5**
comp=Z,5.7nm,0.6s,baz=56,slow=8.2,SNR=24
ARE0 ARCESS Array S 61.55 339 *e*P **P** **13 21 00.2 +0.7**
ARE0 IAmb IAmb 13 21 01.4
comp=Z,16nm,1.1s
KLMR Klimovskoe 61.69 327 *e*P **P** **13 20 58.1 -2.4**
KLMR *e* 13 21 39.1
KLMR pmax pmax
comp=Z,73nm,1.4s
KTK1 Kautokeino 62.51 339 *e*P **P** **13 21 06.3 +0.4**
KTK1 IAmb IAmb 13 21 07.3
comp=Z,24nm,0.9s

SGF Sodankyl 62.57 337 P P 13 21 09.4 +3.1
SGF pmax pmax
comp=Z,39nm,0.9s
MSF Maaselka 62.73 335 P P 13 21 08.0 +0.6
MSF pmax pmax
comp=Z,38nm,1.1s
DAG Danmarks Havn 62.98 355⇑ iP P 13 21 09.4 +0.4
comp=Z,18nm,0.8s
DAG Danmarks Havn 62.98 355⇑ iP P 13 21 09.4 +0.4
DAG pmax pmax
comp=Z,14nm,0.8s
GEYT Alibeck 63.02 298 P P 13 21 10.2 +0.3
comp=Z,27nm,0.9s,baz=9.5,slow=3.6,SNR=37
KIF Kilpisjarvi 63.17 340 eP P 13 21 10.7 +0.4
TRO Tromso 63.22 341 eP P 13 21 11.2 +0.6
TRO IAmb IAmb 13 21 12.2
comp=Z,26nm,0.8s
AS01 Alice Springs 63.69 188 eP P 13 21 13.3 -1.0
AS31 Alice Springs 63.70 188 eP P 13 21 12.6 -1.8
comp=Z,9nm,0.9s
ASAR Alice Springs 63.70 188 P P 13 21 14.0 -0.3
comp=Z,7.3nm,0.8s,baz=2.4,slow=7.9,SNR=36
ASAR LR LR 13 48 26.9
comp=Z,131nm,21.6s,baz=14,slow=36
JOF Joensuu 63.75 332 P P 13 21 14.9 +0.7
JOF pmax pmax
comp=Z,46nm,1.0s
MOS Moscow 65.34 323 eP P 13 21 25.1 +0.4
MOS e 13 21 45.4
MOS pmax pmax
comp=Z,90nm,1.3s
STEI Steigen 65.38 341 eP P 13 21 25.4 +0.6
STEI IAmb IAmb 13 21 26.1
comp=Z,16nm,0.8s
EIDS Eidsvold 65.45 171 eP P 13 21 27.1 +1.4
comp=Z,4.7nm,0.6s
LOF Lofoten 65.66 341 eP P 13 21 26.8 +0.2
LOF IAmb IAmb 13 21 27.0
comp=Z,33nm,1.1s
DZM Mont Dzumac 65.66 155 LR LR 13 46 40.9
comp=Z,204nm,21.9s,baz=2.5,slow=33
DZM Mont Dzumac 65.66 155 eLR LR 13 41 23.3
comp=Z,376nm,22.4s
VRH Novokhopyorsk 65.89 317 eP P 13 21 28.3 -0.1
VRH pmax pmax
comp=Z,70nm,0.6s
OBN Obninsk 66.19 323 *d iP* **P 13 21 30.7 +0.5**
OBN *e* 13 21 54.6
OBN *i* 13 23 55.6
OBN pmax pmax
comp=Z,65nm,0.8s
OBN MLR MLR
comp=Z,339nm,16.0s
OBN Obninsk 66.19 323 eP P 13 21 29.5 -0.7
comp=Z,62nm,0.8s
FIA1 FINESS Array S 66.58 332 eP P 13 21 32.6 0.0
FINES FINESS Array B 66.59 332 P P 13 21 33.0 +0.4
comp=Z,35nm,0.7s,baz=46,slow=8.2,SNR=72
FINES FINESS Array B 66.59 332 P P 13 21 33.0 +0.4
FINES pmax pmax
comp=Z,35nm,0.7s
VAF Ylistaro 66.69 334 P P 13 21 33.7 +0.5
VAF pmax pmax
comp=Z,29nm,0.9s
VSR Storozhevoye 67.21 318 eP P 13 21 36.5 -0.2
VSR pmax pmax
comp=Z,40nm,0.7s
SUMG Summit 67.83 0⇑ iP P 13 21 42.1 +1.2
comp=Z,26nm,0.6s
SUMG Summit 67.83 0⇑ iP P 13 21 42.1 +1.2
SUMG pmax pmax
comp=Z,26nm,0.6s
SUMG Summit 67.83 0 eP P 13 21 41.5 +0.7
comp=Z,29nm,0.8s
SEKA Sheki 68.38 306 P P 13 21 42.7 -1.7
SEKA S S 13 30 38.8 -3.4
AFI Afiamalu 68.51 131 LR LR 13 44 31.7
comp=Z,118nm,21.9s,baz=352,slow=30
MNGR Mingechevir, A 68.69 306 P P 13 21 44.7 -1.6
MNGR S S 13 30 42.3 -3.5
LKRN Lenkeran, Azer 68.79 303 P P 13 21 45.3 -1.6
LKRN S S 13 30 43.6 -3.4
GANJ Ganja 69.24 306 P P 13 21 48.0 -1.7
GANJ S S 13 30 48.8 -3.6
GUDG Gudauri 69.32 308 P P 13 21 51.2 +0.7
SCO Scoresbysund 69.34 354 *i* **P P 13 21 50.7 +1.0**
comp=Z,4.4nm,0.9s
SCO Scoresbysund 69.34 354 *i* **P P 13 21 50.7 +1.0**
SCO pmax pmax
comp=Z,4.0nm,0.9s
ZEI Tsey 69.48 309 eP P 13 21 49.2 -2.2
ZEI pmax pmax
comp=Z,63nm,0.5s
KVAR Kislovodsk Arr 69.51 311 P P 13 21 52.6 +1.2
comp=Z,91nm,0.8s,baz=7.0,slow=2.3,SNR=29
KIV Kislovodsk 69.52 311 *i* **P P 13 21 52.6 +1.2**
SNR=30
KIV Kislovodsk 69.52 311 *c iP* **P 13 21 52.7 +1.2**
KIV *e**SP **pP 13 22 05.1 +0.2**
KIV *e* 13 22 08.7
KIV *e*SS SS 13 35 22.8 -0.3
KIV pmax pmax
comp=Z,120nm,0.8s
KIV MLR MLR
comp=Z,205nm,18.0s
KIV Kislovodsk 69.52 311 P P 13 21 52.6 +1.2
SNR=34
KIV Kislovodsk 69.52 311 eP P 13 21 52.7 +1.3
comp=Z,163nm,0.9s
KBZ Khabaz 69.53 310 P P 13 21 52.4 +1.0
comp=Z,58nm,0.9s,baz=58,slow=5.1,SNR=57
KBZ LR LR 13 57 27.3
comp=Z,147nm,18.5s,baz=45,slow=40
TBLG Delisi 69.59 308 P P 13 21 52.7 +0.8
TBLG Delisi 69.59 308 eP P 13 21 52.7 +0.8
SWMT Swartz Lake 69.80 45 eP P 13 21 55.0 +1.8
ONI Oni 69.87 309 P P 13 21 55.2 +1.5
ONI Oni 69.87 309 eP P 13 21 55.1 +1.5
NEY Neytrino 69.91 310 *d iP* **P 13 21 55.3 +1.3**
NEY pmax pmax
comp=Z,7.0nm,0.8s
GNI Garni 70.51 306 P P 13 21 58.7 +1.0
comp=Z,14nm,0.8s,baz=163,slow=14,SNR=3.6
AKH Akhalkalaki 70.54 308⇑ iP P 13 21 59.4 +1.5
AKH Akhalkalaki 70.54 308 P P 13 21 59.4 +1.5
AKH S P 13 21 58.1 +0.2
AKH Akhalkalaki 70.54 308 eP P 13 21 59.3 +1.4
CHVG Ch'k'valeri 70.60 310 P P 13 21 58.1 0.0
NAX Nakhchivan 70.61 305 P P 13 21 56.6 -1.6
NAX S S 13 31 05.0 -3.6
NACGM Naroch 70.69 326 *e* **P 13 21 59.0 +0.7**
NACGM eLR LR 13 54 34.0
WSAR Wadi Sarin 70.75 284 P P 13 22 00.3 +1.1
comp=Z,10nm,0.9s,baz=78,slow=4.6,SNR=5.2
FFC Flin Flon 70.97 34 eP P 13 22 01.5 +1.4
FCC Fort Churchill 71.17 27 eP P 13 22 02.0 +0.9
FCC pmax pmax
comp=Z,17nm,1.1s
FCC Fort Churchill 71.17 27 eP P 13 22 02.0 +0.9
comp=Z,17nm,1.1s
PAHR Pah Rah Range 71.36 54 eP P 13 22 05.0 +2.2
comp=Z,21nm,1.7s
STKA Stephens Creek 71.41 181 P P 13 22 03.2 +0.4
comp=Z,1.8nm,0.7s,baz=338,slow=11,SNR=3.6
STKA LR LR 13 56 03.8
comp=Z,26nm,20.2s,baz=25,slow=38
UOSS Minazif 71.54 287 eP P 13 22 03.9 -0.1
comp=Z,35nm,0.8s
NC405 NORSAR Array S 71.59 337 eP P 13 22 04.3 +0.7
MOL Molde 71.60 340 eP P 13 22 04.7 +1.1
MOL IAmb IAmb 13 22 05.2
comp=Z,13nm,0.7s
NC303 NORSAR Array S 71.60 337 eP P 13 22 04.4 +0.6
HATD Hatta, Dubai 71.67 287 *i* **P P 13 22 05.3 +0.6**
SNR=11
LRM Limekiln Ridge 71.68 45 eP P 13 22 06.5 +1.7
NC204 NORSAR Array S 71.74 338 eP P 13 22 05.8 +1.1
NB201 NORSAR Array S 71.77 337 eP P 13 22 05.4 +0.6
NB2 NORSAR Subarra 71.80 337 P P 13 22 05.4 +0.4
comp=Z,24nm,0.7s,baz=38,slow=6.2
NB2 NORSAR Subarra 71.80 337 P P 13 22 05.4 +0.4
baz=38,slow=6.2
NOA NORSAR Array B 71.80 337 P P 13 22 05.3 +0.4
comp=Z,23nm,0.7s,baz=38,slow=6.0,SNR=78
NOA PP **PP 13 24 47.4 +3.2**
comp=Z,1.4nm,0.9s,baz=43,slow=8.5,SNR=3.3
ASHO Ashiyiah 71.80 287 *i* **P P 13 22 05.9 +0.3**
SNR=7.2
DLMT Dillon 71.89 46 *eP* **P 13 22 05.4 -0.5**
comp=Z,14nm,1.2s
NBO02 NORSAR Array S 71.90 337 eP P 13 22 06.0 +0.4
NBO00 NORSAR Array S 71.93 337 eP P 13 22 06.3 +0.5
NC602 NORSAR Array S 71.94 337 eP P 13 22 06.2 +0.4
ANN Anapa 72.01 314 eP P 13 22 06.6 +0.2
ANN pmax pmax
comp=Z,46nm,0.9s
ANN MLR MLR
comp=Z,205nm,20.0s
NAO01 NORSAR Array S 72.05 337 eP P 13 22 06.7 +0.2
AKN Aaknes 72.07 340 eP P 13 22 07.2 +0.7
FAQ Al Faqa, Dubai 72.11 287 P P 13 22 07.5 +0.1
BOZ Bozeman (W) 72.24 45 P P 13 22 09.4 +1.3
baz=309
BOZ Bozeman (W) 72.24 45 eP P 13 22 09.9 +1.9
BOZ pmax pmax
comp=Z,6.0nm,0.9s
BOZ Bozeman (W) 72.24 45 eP P 13 22 09.9 +1.9
comp=Z,5.8nm,0.9s
ARQ Araqi 72.25 286 P P 13 22 09.0 +0.7
SNR=6.8
AKASG Malin Array Be 72.43 322 P P 13 22 09.1 +0.3
comp=Z,28nm,0.6s,baz=44,slow=6.3,SNR=67
AKASG Malin Array Be 72.43 322 P P 13 22 09.1 +0.3
AKASG pmax pmax
comp=Z,30nm,0.5s
KIEV Kiev 72.44 322 *c iP* **P 13 22 08.9 0.0**
KIEV pmax pmax
comp=Z,48nm,1.0s
KIEV Kiev 72.44 322 eP P 13 22 08.7 -0.2
comp=Z,41nm,0.9s
SUW Suwalki 72.82 327 eP P 13 22 11.7 +0.6
SUW Suwalki 72.82 327 eP P 13 22 11.7 +0.6
SFJD Kangerlussuaq 72.99 5 eP P 13 22 13.0 +1.1
SFJD pmax pmax
comp=Z,18nm,0.8s
SFJD Kangerlussuaq 72.99 5 eP P 13 22 13.0 +1.1
comp=Z,18nm,0.8s
FOO Floro 73.07 340 eP P 13 22 13.2 +0.8
HYA Hoyanger 73.12 339 eP P 13 22 13.2 +0.5
HYA IAmb IAmb 13 22 14.2
comp=Z,31nm,0.8s
KONO Kongsberg 73.39 337 eP P 13 22 14.8 +0.4
SUE Sulen 73.59 340 eP P 13 22 15.8 +0.3
SIM Simferopol' 73.73 315 *deP* **P 13 22 17.8 +1.1**
SIM pmax pmax
comp=Z,38nm,0.8s
SIM MLR MLR
comp=Z,200nm,18.0s
BER Bergen 74.01 339 eP P 13 22 19.0 +1.1
BER *e* 13 23 33.3
ODD1 Odda 74.04 338 eP P 13 22 19.6 +1.3
BLS5 Blasjo 74.50 338 eP P 13 22 21.6 +0.7
R11A Troy Canyon, C 74.53 53 P P 13 22 23.1 +1.4
baz=309
R11A Troy Canyon, C 74.53 53 eP P 13 22 23.4 +1.8
comp=Z,8.7nm,1.5s
MPMC Manual Prospec 74.76 56 P P 13 22 24.5 +1.4
baz=308
A26A Wade Farm, Ken 74.97 38 P P 13 22 25.2 +1.4
baz=314
TPNV Topopah Spring 74.99 54 P P 13 22 25.4 +1.1
baz=309
LRMC Laurel Mtn Rad 75.00 56 P P 13 22 25.0 +0.6
baz=308
KMY Karmoy 75.02 339 eP P 13 22 25.0 +1.1
DUG Dugway, Tooele 75.03 50 P P 13 22 25.3 +0.8
baz=310
DUG Dugway, Tooele 75.03 50 eP P 13 22 26.5 +2.0
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG Dugway, Tooele 75.03 50 eP P 13 22 26.5 +2.0
comp=Z,3.6nm,0.8s
STAV Stavanger 75.12 338 eP P 13 22 25.2 +0.7
KIS Kishinev 75.13 319 eP pP 13 22 40.0 +1.7
KIS LRM MLR 13 57 45.0
comp=Z,300nm,20.0s
EDW2 Edwards Air Fo 75.17 57 P P 13 22 26.1 +0.9
baz=308
SNART Snartemo 75.18 337 eP P 13 22 25.3 +0.5
BSD Bornholm Skovb 75.23 332⇓ iP P 13 22 25.3 +0.2
comp=Z,30nm,1.0s
BSD Bornholm Skovb 75.23 332⇑ iP P 13 22 25.3 +0.2
BSD pmax pmax
comp=Z,30nm,1.0s
BW06 Boulder Array 75.23 46 P P 13 22 26.5 +0.7
baz=311
BW06 Boulder Array 75.23 46 eP P 13 22 27.0 +1.3
PD31 Pinedale Array 75.23 46 eP P 13 22 27.0 +1.3
PDAR Pinedale Array 75.23 46 P P 13 22 26.9 +1.2
comp=Z,3.1nm,0.7s,baz=258,slow=2.0,SNR=16
BEL Belsk 75.40 327 eP P 13 22 27.6 +1.4
BEL Belsk 75.40 327 eP P 13 22 27.6 +1.4
LVV L'vov 75.44 324 eP P 13 22 26.8 +0.3
SHPR Sheep Range 75.95 54 eP P 13 22 30.8 +1.0
comp=Z,6.3nm,1.0s
B28A Dugan Ranch, T 76.07 38 P P 13 22 31.2 +1.1
baz=315
TUQ Turquoise Moun 76.14 55 P P 13 22 32.2 +1.3
baz=309
KWP Kalwaria Pacla 76.18 324 eP P 13 22 32.0 +1.3
KWP Kalwaria Pacla 76.18 324 eP P 13 22 32.0 +1.3
A29A Manning Farm, 76.26 37 P P 13 22 31.9 +0.7
baz=316
TLCR 76.37 318⇓ iP P 13 22 32.8 +0.9
CCUT Cedar City 76.39 52 eP P 13 22 33.6 +1.2
comp=Z,16nm,1.7s
BUR08 Bucovina Ar. S 76.45 322 eP P 13 22 33.4 +1.0
BURAR Bucovina Array 76.46 322⇑ iP P 13 22 33.6 +1.1
MSU Marysvale 76.49 51 eP P 13 22 35.3 +2.4
MSU Marysvale 76.49 51 eP P 13 22 35.3 +2.4
B29A Wagenman Farm, 76.53 37 P P 13 22 33.7 +0.9
baz=316
TESR Tescani 76.54 320⇑ iP P 13 22 33.8 +1.0
A30A Haffart Farm, 76.67 36 P P 13 22 34.4 +0.8
baz=317
P17A Butcher Ranch, 76.71 49 eP P 13 22 36.0 +1.9
comp=Z,20nm,1.5s
KSRV Kasrt alli 76.71 306 eP P 13 22 35.6 +1.6
GMRC Granite Mounta 76.72 56 P P 13 22 35.2 +1.0
baz=310
CFR Carcaliu 76.73 318⇑ iP P 13 22 34.5 +0.7
CFR Carcaliu 76.73 318 P P 13 22 34.3 +0.5
CFR pmax pmax
comp=Z,24nm,1.0s
ULM Lac du Bonnet 76.78 34 P P 13 22 34.4 +0.3
comp=Z,5.4nm,0.8s,baz=314,slow=7.0,SNR=5.3
ULM LR LR 14 00 20.7
comp=Z,46nm,18.2s,baz=330,slow=39
MTPU Mount Pierson 76.79 51 eP P 13 22 37.3 +2.5
comp=Z,6.6nm,1.2s
LCMT Little Creek M 76.81 53 eP P 13 22 36.8 +2.1
comp=Z,5.3nm,1.0s
KOLS Kolonicke sedl 76.88 324 eP P 13 22 35.5 +0.8
KOLS pmax pmax
comp=Z,12nm,0.9s
KOLS Kolonicke sedl 76.88 324 eP P 13 22 35.5 +0.8
PLOR Plostina 77.01 320⇑ iP P 13 22 36.3 +0.8
B30A Myrvik Farm, E 77.01 37 P P 13 22 36.3 +0.8
baz=317
OJC Ojcow 77.02 326 eP P 13 22 36.6 +1.1
OJC Ojcow 77.02 326 eP P 13 22 36.6 +1.1
OJC Ojcow 77.02 326 eP P 13 22 36.5 +1.1
comp=Z,46nm,0.9s
SRU San Rafael Swe 77.08 50 eP P 13 22 37.9 +1.7
SRU pmax pmax
comp=Z,7.0nm,0.8s
SRU San Rafael Swe 77.08 50 eP P 13 22 37.9 +1.7
comp=Z,6.9nm,0.8s
TIRR Tirgusor 77.08 318⇑ iP P 13 22 36.5 +0.7
TIRR Tirgusor 77.08 318 eP P 13 22 36.6 +0.7
TIRR pmax pmax
comp=Z,15nm,0.9s
TIRR Tirgusor 77.08 318 eP P 13 22 36.5 +0.7
comp=Z,15nm,0.9s
UZH Uzhgorod 77.09 324 eP P 13 22 35.8 0.0
UZH *e* 13 22 50.6
HARR Harsova 77.17 318⇑ iP P 13 22 37.3 +0.9
TLB Topalu 77.19 318⇓ iP P 13 22 37.3 +0.9
ARCR ARCALIA 77.25 322⇑ iP P 13 22 38.6 +1.8
CRVS Cervenica-Dubn 77.27 324 eP P 13 22 38.1 +1.2
CRVS Cervenica-Dubn 77.27 324 eP P 13 22 38.1 +1.2
RSSD Black Hills 77.29 43 P P 13 22 37.9 +0.5
baz=314
RSSD Black Hills 77.29 43 eP P 13 22 38.4 +1.0
RSSD pmax pmax
comp=Z,6.0nm,0.9s
RSSD Black Hills 77.29 43 eP P 13 22 38.4 +1.0
comp=Z,6.3nm,0.9s
TRPA Tarpa 77.34 323⇑ eP P 13 22 38.7 +1.4
NIE Niedzica 77.40 325 eP P 13 22 39.1 +1.5
NIE Niedzica 77.40 325 eP P 13 22 39.1 +1.5
BR131 Keskin Array S 77.43 311 eP P 13 22 38.9 +0.8
BRTR Keskin Array B 77.43 311 P P 13 22 38.8 +0.6
comp=Z,5.8nm,0.6s,baz=74,slow=4.0,SNR=24
C30A Mose, Pekin 77.49 37 P P 13 22 38.4 +0.2
baz=317
DOPR Dopca 77.55 320⇑ iP P 13 22 40.0 +1.5
ISR Istrita 77.58 319⇓ iP P 13 22 40.0 +1.3
MLR Muntele Rosu 77.61 320 P P 13 22 40.2 +1.2
comp=Z,1.3nm,0.4s,baz=45,slow=3.7,SNR=11
MLR Muntele Rosu 77.61 320⇑ iP P 13 22 39.9 +0.9
MLR Muntele Rosu 77.61 320 eP P 13 22 39.7 +0.7
MLR pmax pmax
comp=Z,18nm,1.1s
MLR Muntele Rosu 77.61 320 eP P 13 22 39.7 +0.7
comp=Z,18nm,1.1s
DRWC Darouich 77.67 307 eP pP 13 22 55.7 +2.6
O20A White River Ci 77.72 48 eP P 13 22 41.2 +1.4
ANTO Ankara 77.82 312 eP P 13 22 41.3 +1.1
ANTO pmax pmax
comp=Z,33nm,0.8s
ANTO Ankara 77.82 312 P P 13 22 41.2 +1.0
SNR=8.6
ANTO Ankara 77.82 312 eP P 13 22 41.3 +1.1
comp=Z,33nm,0.8s
BR231 Keskin MP Ara 77.85 312 eP P 13 22 38.9 -1.5
B32A Ashes, Strandq 77.87 36 P P 13 22 40.3 +0.1
baz=318
SECR 77.87 319⇑ iP P 13 22 41.4 +1.1
CJR Cluj-Napoca 77.88 322⇓ iP P 13 22 41.7 +1.3
LANS Liptovska Anna 77.96 326 eP P 13 22 42.5 +1.7
LANS Liptovska Anna 77.96 326 eP P 13 22 42.5 +1.7
LANS *e* 13 55 26.3
A33A Warroad 77.97 35 P P 13 22 41.0 +0.3
baz=318
KSP Ksiaz 78.00 328 eP P 13 22 42.0 +1.1
KSP Ksiaz 78.00 328 eP P 13 22 42.0 +1.1
OKC Ostrava-Krasne 78.01 327⇑ eP P 13 22 42.3 +1.3
OKC AMS AMS 13 59 40.0
comp=Z,300nm,19.0s
OKC Ostrava-Krasne 78.01 327 eP P 13 22 42.3 +1.3
OKC MLR MLR
comp=Z,300nm,19.0s
KECS Kecovo 78.01 325 eP P 13 22 42.3 +1.3
KECS pmax pmax
comp=Z,4.0nm,1.0s
KECS Kecovo 78.01 325 eP P 13 22 42.3 +1.3
VOIR 78.09 320⇓ iP P 13 22 43.0 +1.3
VOIR 78.09 320 P P 13 22 42.9 +1.3
DRGR 78.24 322⇑ iP P 13 22 43.5 +1.1
DRGR 78.24 322 P P 13 22 43.5 +1.1
DRGR pmax pmax
comp=Z,31nm,1.4s
MORC Moravsky Berou 78.31 327⇑ iP P 13 22 44.0 +1.2
MORC Moravsky Berou 78.31 327 eP P 13 22 43.9 +1.2
MORC pmax pmax
comp=Z,115nm,0.9s
MORC Moravsky Berou 78.31 327 eP P 13 22 43.9 +1.2
comp=Z,115nm,0.9s
ARR Arges 78.35 320⇓ iP P 13 22 44.9 +1.9
DPC Dobruska-Polom 78.37 328⇑ iP P 13 22 44.5 +1.5
DPC *es*P **sP 13 23 02.7 +0.7**
DPC AMS AMS 13 59 10.0
comp=Z,200nm,19.7s
DPC Dobruska-Polom 78.37 328⇑ iP P 13 22 44.5 +1.5
DPC *e* 13 23 02.7
DPC MLR MLR
comp=Z,200nm,19.7s
UPC Upice 78.38 328⇑ iP P 13 22 44.2 +1.2
UPC AMS AMS 14 00 00.0
comp=Z,300nm,19.1s
UPC Upice 78.38 328⇑ iP P 13 22 44.2 +1.2
UPC MLR MLR
comp=Z,300nm,19.1s
KRLC Kraliky 78.39 328⇑ eP P 13 22 44.3 +1.1
KRLC Kraliky 78.39 328 eP P 13 22 44.3 +1.1
PV10 Paradox Valley 78.43 49 eP P 13 22 46.0 +2.1
N23A Red Feather La 78.49 46 eP P 13 22 46.3 +2.1
PV05 Paradox Valley 78.59 50 eP P 13 22 46.7 +1.9
E31A Nome 78.60 38 P P 13 22 44.8 +0.4
baz=317
B34A Aery, Baudette 78.63 35 P P 13 22 44.7 +0.2
baz=319
PSZ Piszkesteto 78.70 325⇓ iP P 13 22 46.3 +1.4
PSZ Piszkesteto 78.70 325 eP P 13 22 46.5 +1.6
PSZ Piszkesteto 78.70 325 eP P 13 22 46.5 +1.6
PSZ Piszkesteto 78.70 325⇑ eP P 13 22 46.1 +1.2
LOT Lotru 78.71 321⇑ iP P 13 22 46.1 +1.0
VYHS Vyhne 78.73 325 eP P 13 22 46.2 +1.2
VYHS pmax pmax
comp=Z,9.0nm,0.9s
VYHS Vyhne 78.73 325 eP P 13 22 46.2 +1.2
RABH Abou Rabah 78.76 306 eP P 13 22 46.2 +0.8
BRG Berggiesshubel 78.91 330 eP P 13 22 46.6 +0.7
comp=Z,14nm,0.9s
BRG Berggiesshubel 78.91 330 eP P 13 22 46.6 +0.7
BRG pmax pmax
comp=Z,14nm,0.9s
WUAZ Wupatki 78.93 53 P P 13 22 48.1 +1.6
baz=311
WUAZ Wupatki 78.93 53 eP P 13 22 48.5 +1.9
CLL Collm 78.93 330⇑ iP P 13 22 46.5 +0.5
comp=Z,25nm,0.8s
CLL *e* 13 22 51.0
CLL Collm 78.93 330⇑ iP P 13 22 46.5 +0.5
CLL *e* 13 22 51.0
CLL pmax pmax
comp=Z,25nm,0.8s
CLL Collm 78.93 330 eP P 13 22 46.6 +0.5
PVCC Panska Ves 78.94 329⇑ iP P 13 22 47.4 +1.3
PVCC *e*PCP **PcP 13 22 54.6 0.0**
PVCC AMS AMS 14 00 20.0
comp=Z,300nm,19.3s
PVCC Panska Ves 78.94 329⇑ iP P 13 22 47.4 +1.3
PVCC *e* 13 22 54.6
PVCC MLR MLR
comp=Z,300nm,19.3s
VRAC Vranov 79.06 327⇓ iP P 13 22 47.8 +0.9
VRAC Vranov 79.06 327 P P 13 22 47.7 +0.9
SIRR Siria 79.12 323⇑ iP P 13 22 48.7 +1.5
B35A Bob, Littlefor 79.13 34 P P 13 22 47.3 +0.2
baz=320
GOPC GO Pecny, Ondr 79.33 329⇑ iP P 13 22 49.5 +1.2
GOPC AMS AMS 14 00 00.0
comp=Z,300nm,18.4s
GOPC GO Pecny, Ondr 79.33 329⇑ iP P 13 22 49.5 +1.2
GOPC MLR MLR
comp=Z,300nm,18.4s
PRU Pruhonice 79.37 329⇑ iP P 13 22 49.6 +1.1
PRU *e*PCP **PcP 13 22 54.1 -2.4**
PRU AMS AMS 14 00 00.0
comp=Z,300nm,21.7s
PRU Pruhonice 79.37 329⇑ iP P 13 22 49.6 +1.1
PRU *e* 13 22 54.1
PRU MLR MLR
comp=Z,300nm,21.7s
ISCO Idaho Springs 79.42 47 P P 13 22 50.6 +1.3
baz=314
ISCO Idaho Springs 79.42 47 eP P 13 22 51.3 +2.0
ISCO pmax pmax
comp=Z,5.0nm,1.0s
ISCO Idaho Springs 79.42 47 eP P 13 22 51.3 +2.0
comp=Z,4.8nm,1.0s
D34A Park Rapids 79.45 36 P P 13 22 49.1 +0.2
baz=319
E33A Westby DABS, E 79.52 37 P P 13 22 49.7 +0.4
baz=318
C35A Jirik Farms, M 79.52 35 P P 13 22 49.1 -0.2
baz=320
MVCO Mesa Verde 79.53 50 P P 13 22 51.0 +1.1
baz=313
MVCO Mesa Verde 79.53 50 eP P 13 22 51.4 +1.5
comp=Z,4.5nm,0.8s
TREC Trest 79.53 328⇑ eP P 13 22 50.4 +1.0

TREC					AMS	AMS	14 00 00.0		
	comp=Z,200nm,20.8s								
TREC	**Trest**	**79.53**	**328**	*e*P		**P**	**13 22 50.4**	**+1.0**	
TREC					MLR	MLR			
	comp=Z,200nm,20.8s								
BZS	**Buzias**	**79.62**	**322**	⇑ *i*P		**P**	**13 22 50.6**	**+0.7**	
SUSD	**Miller**	**79.63**	**40**	P		**P**	**13 22 50.5**	**+0.4**	
	baz=317								
ZALF	**Zalf**	**79.67**	**304**	*e*P		**P**	**13 22 51.4**	**+1.0**	
G32A	**Webster**	**79.74**	**38**	P		**P**	**13 22 51.1**	**+0.5**	
	baz=318								
I30A	**Oacoma**	**79.78**	**40**	P		**P**	**13 22 51.4**	**+0.5**	
	baz=317								
H31A	**Wolsey**	**79.84**	**39**	P		**P**	**13 22 51.4**	**+0.3**	
	baz=317								
F33A	**5 Mile Ranch,**	**79.88**	**37**	P		**P**	**13 22 51.7**	**+0.4**	
	baz=318								
TOTH	**TOTAH**	**79.95**	**305**	*e*P		**P**	**13 22 52.9**	**+0.9**	
C36A	**Pine Crest Far**	**79.98**	**34**	P		**P**	**13 22 51.9**	**+0.1**	
	baz=320								
MOX	**Moxa**	**79.99**	**331**	P		**P**	**13 22 52.7**	**+0.9**	
MOX					pmax	pmax			
	comp=Z,13nm,1.4s								
NKC	**Novy Kostel**	**80.00**	**330**	⇑ *e*P		**P**	**13 22 53.0**	**+1.1**	
NKC	**Novy Kostel**	**80.00**	**330**	*e*P		**P**	**13 22 53.0**	**+1.1**	
S22A	**4UR Ranch, Cre**	**80.14**	**49**	P		**P**	**13 22 55.2**	**+2.0**	
	baz=313								
S22A	**4UR Ranch, Cre**	**80.14**	**49**	*e*P		**P**	**13 22 55.0**	**+1.7**	
SALA	**Sala**	**80.19**	**304**	*e*P		**P**	**13 22 50.6**	**-2.8**	
MDVR	**Moldovita**	**80.19**	**321**	⇑ *i*P		**P**	**13 22 53.7**	**+0.6**	
MPEP	**Malo Peshtene**	**80.24**	**319**	P		**P**	**13 22 53.5**	**+0.2**	
C37A	**Embarrass**	**80.28**	**34**	P		**P**	**13 22 53.6**	**+0.2**	
	baz=321								
G33A	**Ortonville**	**80.29**	**38**	P		**P**	**13 22 54.4**	**+0.9**	
	baz=318								
EYMN	**Ely**	**80.41**	**33**	P		**P**	**13 22 54.4**	**+0.3**	
	baz=321								
EYMN	**Ely**	**80.41**	**33**	*e*P		**P**	**13 22 54.0**	**-0.1**	
ASF	**Jabal al Asfar**	**80.43**	**304**	P		**P**	**13 22 55.1**	**+0.5**	
	comp=Z,2.8nm,0.6s,baz=130,slow=0.9,SNR=6.3								
ASF	**Jabal al Asfar**	**80.43**	**304**	P		**P**	**13 22 55.1**	**+0.5**	
ASF					pmax	pmax			
	comp=Z,1.0nm,0.3s								
KHC	**Kasperske Hory**	**80.44**	**329**	⇑ *i*P		**P**	**13 22 55.2**	**+0.9**	
KHC				*e*PCP		**PcP**	**13 22 59.8**	**-1.4**	
KHC				*e*pP		**pP**	**13 23 08.0**	**0.0**	
KHC				*ex*		x	13 25 48.0		
KHC					AMS	AMS	14 00 50.0		
	comp=Z,300nm,18.6s								
KHC	**Kasperske Hory**	**80.44**	**329**	⇑ *i*P		**P**	**13 22 55.2**	**+0.9**	
KHC				*e*			13 23 08.0		
KHC					MLR	MLR			
	comp=Z,300nm,18.6s								
KHC	**Kasperske Hory**	**80.44**	**329**	*e*P		**P**	**13 22 55.2**	**+0.9**	
CONA	**Conrad Observa**	**80.44**	**327**	*i* P		**P**	**13 22 55.7**	**+1.3**	
	comp=Z,18nm,1.0s,SNR=11								
H33A	**Prehn Over Nor**	**80.53**	**38**	P		**P**	**13 22 55.3**	**+0.5**	
	baz=318								
OGNE	**Ogallala**	**80.58**	**44**	*e*P		**P**	**13 22 57.1**	**+1.8**	
J31A	**Geddes**	**80.58**	**40**	P		**P**	**13 22 55.6**	**+0.5**	
	baz=317								
GEC2	**GERESS Array S**	**80.61**	**328**	*e*P		**P**	**13 22 56.0**	**+0.7**	
GEC2	**GERESS Array S**	**80.61**	**328**	*e*P		**P**	**13 22 56.0**	**+0.7**	
GERES	**GERESS Array B**	**80.61**	**328**	P		**P**	**13 22 55.8**	**+0.5**	
	comp=Z,4.1nm,0.5s,baz=39,slow=5.1,SNR=32								
GERES					PP	**PP**	**13 25 51.7**	**-6.9**	
	comp=Z,1.4nm,0.9s,baz=52,slow=6.9,SNR=3.6								
GEA0	**GERESS Array S**	**80.62**	**328**	*e*P		**P**	**13 22 55.8**	**+0.5**	
G34A	**Benson**	**80.63**	**37**	P		**P**	**13 22 56.4**	**+1.1**	
	baz=319								
C38A	**Sawbill Land.**	**80.68**	**33**	P		**P**	**13 22 55.6**	**0.0**	
	baz=321								
E36A	**McGregor**	**80.75**	**35**	P		**P**	**13 22 56.2**	**+0.2**	
	baz=320								
CSS	**Mathiatis**	**80.80**	**308**	*e*P		**P**	**13 22 57.0**	**+0.6**	
MMAI	**Mount Meron Ar**	**80.82**	**305**	P		**P**	**13 22 58.0**	**+1.4**	
	comp=Z,4.7nm,0.6s,baz=40,slow=6.6,SNR=7.9								
SDCO	**Great Sand Dun**	**80.91**	**48**	P		**P**	**13 22 58.2**	**+0.8**	
	baz=314								
SDCO	**Great Sand Dun**	**80.91**	**48**	*e*P		**P**	**13 22 58.8**	**+1.5**	
GRFO	**Grafenberg**	**80.91**	**330**	*e*P		**P**	**13 22 58.5**	**+1.7**	
GRFO	**Grafenberg**	**80.91**	**330**	*e*P		**P**	**13 22 58.5**	**+1.7**	
RZN	**Rozhen**	**80.95**	**318**	P		**P**	**13 22 57.5**	**+0.1**	
VTS	**Vitosha**	**81.07**	**319**	⇑ *i*P		**P**	**13 22 59.1**	**+1.1**	
VTS	**Vitosha**	**81.07**	**319**	*e*P		**P**	**13 22 59.0**	**+1.1**	
VTS	**Vitosha**	**81.07**	**319**	P		**P**	**13 22 58.0**	**+0.1**	
VTS	**Vitosha**	**81.07**	**319**	*e*P		**P**	**13 22 59.0**	**+1.1**	
ARSA	**Arzberg**	**81.11**	**326**	*i* P		**P**	**13 22 58.9**	**+0.9**	
	comp=Z,7.1nm,0.8s,SNR=5.1								
MOA	**Molln**	**81.17**	**327**	*i* P		**P**	**13 22 59.1**	**+0.9**	
	comp=Z,15nm,1.2s								
ECSD	**EROS Data Cent**	**81.30**	**39**	P		**P**	**13 22 59.4**	**+0.4**	
	baz=318								
ECSD	**EROS Data Cent**	**81.30**	**39**	*e*P		**P**	**13 22 59.8**	**+0.9**	
L31A	**Butterfield Fa**	**81.35**	**41**	P		**P**	**13 22 59.9**	**+0.6**	
	baz=317								
H35A	**Sunnyside Ranc**	**81.42**	**37**	P		**P**	**13 23 00.4**	**+0.8**	
	baz=319								
MMB	**Musomiste**	**81.54**	**318**	P		**P**	**13 23 00.0**	**-0.3**	
KKB	**Krupnik**	**81.66**	**319**	P		**P**	**13 23 01.0**	**+0.1**	
PERS	**Pernice**	**81.77**	**326**	*i* P		**P**	**13 23 02.2**	**+0.7**	
SOKA	**Soboth**	**81.77**	**326**	*i* P		**P**	**13 23 02.3**	**+0.8**	
	comp=Z,27nm,0.9s,SNR=18								
T25A	**Trinidad**	**81.95**	**48**	P		**P**	**13 23 04.1**	**+1.3**	
	baz=315								
T25A	**Trinidad**	**81.95**	**48**	*e*P		**P**	**13 23 04.4**	**+1.6**	
MEM	**Membach**	**82.04**	**334**	P		**P**	**13 23 03.5**	**+0.8**	
	comp=Z,11nm,1.4s								
OBKA	**Obir**	**82.11**	**326**	*i* P		**P**	**13 23 03.7**	**+0.4**	
	comp=Z,8.3nm,0.7s								
LEGS	**Legarje**	**82.22**	**326**	*i* P		**P**	**13 23 04.1**	**+0.3**	
ANMO	**Albuquerque**	**82.28**	**51**	P		**P**	**13 23 06.0**	**+1.4**	
	baz=314								
ANMO	**Albuquerque**	**82.28**	**51**	*e*P		**P**	**13 23 06.6**	**+2.1**	
ANMO	**Albuquerque**	**82.28**	**51**	*e*P		**P**	**13 23 06.6**	**+2.1**	
MYKA	**Terra Mystica**	**82.40**	**327**	*i* P		**P**	**13 23 04.9**	**+0.2**	
	comp=Z,7.2nm,0.5s,SNR=7.6								
SCHQ	**Schefferville**	**82.42**	**16**	P		**P**	**13 23 06.1**	**+1.4**	
	comp=Z,3.8nm,0.6s,baz=327,slow=6.3,SNR=3.9								
BCLA	**Clavier**	**82.44**	**334**	P		**P**	**13 23 05.2**	**+0.4**	
LJU	**Ljubljana**	**82.49**	**326**	*i* P		**P**	**13 23 05.4**	**+0.3**	
LENM	**Lemitar**	**82.51**	**51**	*e*P		P	13 23 11.2	±5.5	
BOJS	**Bojanci**	**82.60**	**325**	*i* P		**P**	**13 23 06.0**	**+0.3**	
I37A	**Lemond, Waseca**	**82.60**	**37**	P		**P**	**13 23 06.6**	**+0.9**	
	baz=320								
WATA	**Walderalm**	**82.68**	**329**	*e*P		**P**	**13 23 06.9**	**+0.6**	
	comp=Z,17nm,1.2s								
WTTA	**Wattenberg**	**82.71**	**329**	*i* P		**P**	**13 23 07.3**	**+0.8**	
	comp=Z,9.6nm,0.7s								
ABTA	**Abfaltersbach**	**82.77**	**328**	*i* P		**P**	**13 23 06.4**	**-0.3**	
	comp=Z,16nm,1.2s,SNR=5.1								
MOTA	**Moosalm**	**82.86**	**329**	*i* P		**P**	**13 23 07.8**	**+0.6**	
	comp=Z,21nm,1.0s,SNR=9.3								
RETA	**Reutte**	**82.88**	**329**	*i* P		**P**	**13 23 08.1**	**+0.8**	
	comp=Z,30nm,1.1s,SNR=11								
319A	**Douglas**	**82.99**	**55**	*e*P		**P**	**13 23 10.0**	**+1.8**	
J37A	**Redenius Farm,**	**83.07**	**37**	P		**P**	**13 23 08.7**	**+0.5**	
	baz=320								
BFO	**Black Forest**	**83.12**	**331**	*i* P		**P**	**13 23 09.2**	**+0.8**	
PDG	**Podgorica**	**83.13**	**321**	⇑ *i*P		**P**	**13 23 09.1**	**+0.6**	
K36A	**Gilmore City**	**83.16**	**38**	P		**P**	**13 23 09.2**	**+0.5**	
	baz=320								
FETA	**Feichten**	**83.27**	**329**	*i* P		**P**	**13 23 10.1**	**+0.7**	
	comp=Z,23nm,1.2s,SNR=6.9								
CBKS	**Cedar Bluff**	**83.33**	**44**	P		**P**	**13 23 09.8**	**+0.1**	
	baz=317								
EIL	**Elat**	**83.34**	**303**	P		**P**	**13 23 10.4**	**+0.6**	
	comp=Z,10nm,0.8s,baz=349,slow=8.2,SNR=8.0								
P32A	**Huiting Farm,**	**83.34**	**43**	P		**P**	**13 23 09.8**	**0.0**	
	baz=318								
DAVA	**Damuels**	**83.39**	**330**	*i* P		**P**	**13 23 10.4**	**+0.5**	
	comp=Z,28nm,0.9s,SNR=7.2								
K37A	**Belmond**	**83.45**	**38**	P		**P**	**13 23 10.7**	**+0.5**	
	baz=320								
N34A	**Lincoln**	**83.52**	**41**	P		**P**	**13 23 10.6**	**0.0**	
	baz=319								
FUORN	**Ofenpass-Fuorn**	**83.78**	**329**	*e*P		**P**	**13 23 13.1**	**+1.0**	
Q32A	**Meitler Ranch,**	**83.83**	**43**	P		**P**	**13 23 12.3**	**0.0**	
	baz=318								
M36A	**Felix, Anita**	**83.89**	**39**	P		**P**	**13 23 12.8**	**+0.3**	
	baz=320								
J39A	**Decorah**	**83.91**	**36**	P		**P**	**13 23 12.3**	**-0.2**	
	baz=321								
O34A	**Beatrice**	**83.91**	**41**	P		**P**	**13 23 12.4**	**-0.2**	
	baz=319								
N35A	**Tabor**	**83.93**	**40**	P		**P**	**13 23 13.2**	**+0.5**	
	baz=319								
AGG	**Agios Georgios**	**84.15**	**317**	*e*P		**P**	**13 23 13.4**	**-0.5**	
AGG	**Agios Georgios**	**84.15**	**317**	*e*P		**P**	**13 23 13.4**	**-0.5**	
Q33A	**Connelly Farm,**	**84.20**	**43**	P		**P**	**13 23 14.3**	**+0.2**	
	baz=318								
TUE	**Stuetta**	**84.26**	**329**	*e*P		**P**	**13 23 15.4**	**+0.9**	
P34A	**Walnut Farm, R**	**84.32**	**42**	P		**P**	**13 23 14.6**	**0.0**	
	baz=319								
J41A	**Loganville**	**84.64**	**35**	P		**P**	**13 23 16.4**	**+0.1**	
	baz=322								
K40A	**Colesburg**	**84.66**	**36**	P		**P**	**13 23 16.2**	**-0.1**	
	baz=322								
M38A	**Pleasantville**	**84.69**	**38**	P		**P**	**13 23 17.4**	**+0.9**	
	baz=321								
N37A	**Lee Faris, Mou**	**84.71**	**39**	P		**P**	**13 23 17.4**	**+0.8**	
	baz=320								
L39A	**Vinton**	**84.71**	**37**	P		**P**	**13 23 16.9**	**+0.3**	
	baz=321								
Q34A	**Chapman**	**84.72**	**42**	P		**P**	**13 23 17.4**	**+0.6**	
	baz=319								
O36A	**Bolckow**	**84.82**	**40**	P		**P**	**13 23 17.7**	**+0.5**	
	baz=320								
P36A	**Good Intent, A**	**85.08**	**41**	P		**P**	**13 23 18.9**	**+0.4**	
	baz=320								
AMTX	**Amarillo**	**85.11**	**48**	P		**P**	**13 23 20.0**	**+1.2**	
	baz=316								
AMTX	**Amarillo**	**85.11**	**48**	*e*P		**P**	**13 23 20.4**	**+1.6**	
K41A	**Shullsburg**	**85.11**	**36**	P		**P**	**13 23 18.9**	**+0.2**	
	baz=322								
L40A	**Anamosa**	**85.12**	**37**	P		**P**	**13 23 19.0**	**+0.4**	
	baz=322								
M39A	**Webster**	**85.14**	**38**	P		**P**	**13 23 19.0**	**+0.3**	
	baz=321								
SENIN	**Lac Senin/Sane**	**85.14**	**331**	*e*P		**P**	**13 23 19.6**	**+0.7**	
N38A	**Joes South For**	**85.16**	**39**	P		**P**	**13 23 19.3**	**+0.5**	
	baz=321								
MNTX	**Cornudas Mount**	**85.18**	**52**	P		**P**	**13 23 20.3**	**+1.1**	
	baz=315								
MNTX	**Cornudas Mount**	**85.18**	**52**	*e*P		**P**	**13 23 20.6**	**+1.5**	
O37A	**Wolven Farm, M**	**85.19**	**40**	P		**P**	**13 23 19.7**	**+0.6**	
	baz=320								
Q35A	**Mercer Eighty,**	**85.24**	**42**	P		**P**	**13 23 19.3**	**-0.1**	
	baz=319								
LAST	**Lasithi**	**85.26**	**313**	*e*P		**P**	**13 23 20.1**	**+0.6**	
PPT2	**Papeete2**	**85.38**	**117**	*e*LR		LR	13 50 01.7		
	comp=Z,301nm,22.2s,baz=327								
PPT2	**Papeete2**	**85.38**	**117**	*e*T		T	14 57 32.3		
	comp=Z,12nm,0.3s								
PAE	**Paea**	**85.43**	**117**	*e*T		T	14 57 35.0		
	comp=Z,1.6nm,0.3s								
L41A	**Preston**	**85.44**	**36**	P		**P**	**13 23 20.6**	**+0.3**	
	baz=322								
N39A	**Derby Farms, D**	**85.44**	**38**	P		**P**	**13 23 20.7**	**+0.4**	
	baz=321								
IDI	**Anoyia**	**85.50**	**313**	P		**P**	**13 23 20.3**	**-0.5**	
	comp=Z,9.6nm,0.4s,baz=352,slow=0.8,SNR=20								
IDI	**Anoyia**	**85.50**	**313**	*e*P		**P**	**13 23 20.0**	**-0.8**	
P37A	**Lathrop**	**85.54**	**40**	P		**P**	**13 23 21.1**	**+0.3**	
	baz=320								
R35A	**Emporia Munici**	**85.56**	**42**	P		**P**	**13 23 22.1**	**+1.1**	
	baz=319								
O38A	**Galt**	**85.56**	**39**	P		**P**	**13 23 21.4**	**+0.5**	
	baz=321								
VLDQ	**Val d'Or**	**85.57**	**25**	*e*P		**P**	**13 23 20.5**	**-0.3**	
LOR	**Lormes**	**85.63**	**333**	*e*P		**P**	**13 23 20.8**	**-0.3**	
LOR					pmax	pmax			
	comp=Z,20nm,0.8s								
LDF	**La Druitiere**	**85.79**	**336**	*e*P		**P**	**13 23 21.4**	**-0.5**	
LDF					pmax	pmax			
	comp=Z,65nm,1.8s								
P38A	**Dawn**	**85.91**	**40**	P		**P**	**13 23 23.1**	**+0.5**	
	baz=321								
R36A	**Gordon, Harris**	**85.92**	**42**	P		**P**	**13 23 23.0**	**+0.3**	
	baz=320								
SSF	**Saint Saulge**	**85.93**	**333**	*e*P		**P**	**13 23 22.4**	**-0.2**	
SSF					pmax	pmax			
	comp=Z,24nm,0.9s								
S35A	**Otter Creek Ra**	**85.98**	**43**	P		**P**	**13 23 23.7**	**+0.7**	
	baz=319								
LPL	**La Plagne**	**86.07**	**330**	*e*P		**P**	**13 23 23.4**	**-0.2**	
LPL					pmax	pmax			
	comp=Z,11nm,0.8s								
LPG	**La Plagne**	**86.08**	**330**	*e*P		**P**	**13 23 22.1**	**-1.6**	
LPG					pmax	pmax			
	comp=Z,12nm,0.7s								
SMF	**Signal de Mont**	**86.17**	**333**	*e*P		**P**	**13 23 23.6**	**-0.2**	
SMF					pmax	pmax			
	comp=Z,11nm,0.9s								
AVF	**Avril sur Loir**	**86.22**	**333**	*e*P		**P**	**13 23 23.9**	**-0.1**	
AVF					pmax	pmax			
	comp=Z,34nm,0.7s								
R37A	**Teagarden Farm**	**86.27**	**41**	P		**P**	**13 23 24.4**	**-0.1**	
	baz=320								
O40A	**La Belle**	**86.33**	**38**	P		**P**	**13 23 25.2**	**+0.5**	
	baz=322								
Q38A	**Cooks Store, C**	**86.38**	**40**	P		**P**	**13 23 25.1**	**+0.1**	
	baz=320								
T35A	**Sooner Cattle**	**86.45**	**43**	P		**P**	**13 23 26.3**	**+0.9**	
	baz=319								
MEH	**Mehetia**	**86.62**	**117**	*e*T		T	14 59 04.2		
	comp=Z,52nm,0.3s								
Q39A	**Willow Grove F**	**86.63**	**40**	P		**P**	**13 23 26.9**	**+0.7**	
	baz=321								
T36A	**Boggs Farm, Ca**	**86.68**	**43**	P		**P**	**13 23 26.9**	**+0.5**	
	baz=319								
S37A	**Fort Scott**	**86.69**	**42**	P		**P**	**13 23 26.7**	**+0.2**	
	baz=320								
P40A	**Paris**	**86.71**	**39**	P		**P**	**13 23 27.0**	**+0.4**	
	baz=321								
O41A	**Passleys Farm,**	**86.81**	**38**	P		**P**	**13 23 27.5**	**+0.4**	
	baz=322								
TIP	**Timpagrande**	**86.84**	**321**	*e*P		**P**	**13 23 27.8**	**+0.4**	
WMOK	**Wichita Mounta**	**86.84**	**46**	P		**P**	**13 23 27.9**	**+0.6**	
	baz=318								
P41A	**Barry, Barry**	**87.07**	**38**	P		**P**	**13 23 28.9**	**+0.6**	
	baz=322								
T37A	**Cheneyville 18**	**87.13**	**42**	P		**P**	**13 23 29.1**	**+0.4**	
	baz=320								
R39A	**Chumby, Stover**	**87.17**	**40**	P		**P**	**13 23 29.0**	**+0.1**	
	baz=321								
S38A	**Stockton**	**87.26**	**41**	P		**P**	**13 23 29.0**	**-0.3**	
	baz=320								
VIVF	**Saint-Julien-l**	**87.40**	**331**	*e*P		**P**	**13 23 29.8**	**-0.1**	
VIVF					pmax	pmax			
	comp=Z,84nm,2.4s								
P42A	**Winchester**	**87.48**	**38**	P		**P**	**13 23 30.7**	**+0.4**	
	baz=322								
S39A	**Bolivar**	**87.51**	**41**	P		**P**	**13 23 30.4**	**-0.1**	
	baz=321								
T38A	**Diamond**	**87.52**	**42**	P		**P**	**13 23 30.8**	**+0.3**	
	baz=320								
MFF	**Saint Martin d**	**87.56**	**335**	*e*P		**P**	**13 23 30.7**	**+0.2**	
MFF					pmax	pmax			
	comp=Z,16nm,0.8s								
R40A	**Maddies Statio**	**87.57**	**40**	P		**P**	**13 23 31.0**	**+0.3**	
	baz=321								
TX31	**Lajitas Ar. Si**	**87.89**	**53**	*e*P		**P**	**13 23 33.8**	**+1.2**	
TXAR	**Lajitas Array**	**87.89**	**53**	P		**P**	**13 23 33.5**	**+0.9**	
	comp=Z,1.4nm,0.7s,baz=288,slow=3.5,SNR=11								
V37A	**Hulbert**	**87.95**	**43**	P		**P**	**13 23 33.5**	**+0.9**	
	baz=320								
S40A	**Lebanon**	**87.99**	**40**	P		**P**	**13 23 32.9**	**+0.1**	
	baz=321								
TRQ	**Mont Tremblant**	**88.18**	**25**	*e*P		**P**	**13 23 34.2**	**+0.6**	
HHAR	**Hobbs**	**88.28**	**42**	*e*P		**P**	**13 23 34.9**	**+0.7**	
CAF	**Calviac**	**88.28**	**333**	*e*P		**P**	**13 23 34.4**	**+0.3**	
CAF					pmax	pmax			
	comp=Z,6.0nm,0.6s								
Q43A	**New Douglas**	**88.30**	**38**	P		**P**	**13 23 34.8**	**+0.6**	
	baz=323								
T40A	**Mansfield**	**88.33**	**41**	P		**P**	**13 23 34.6**	**+0.2**	
	baz=321								
V38A	**Canehill**	**88.36**	**43**	P		**P**	**13 23 34.9**	**+0.4**	
	baz=320								
S41A	**Jillco Farms,**	**88.37**	**40**	P		**P**	**13 23 34.8**	**+0.2**	
	baz=322								
U39A	**Green Forest**	**88.44**	**42**	P		**P**	**13 23 35.1**	**+0.2**	
	baz=321								
Q44A	**Meyer Farm, Va**	**88.65**	**37**	P		**P**	**13 23 36.5**	**+0.7**	
	baz=323								
LFF	**La Frestale**	**88.73**	**334**	*e*P		**P**	**13 23 36.5**	**+0.4**	
LFF					pmax	pmax			
	comp=Z,15nm,1.0s								
V39A	**Pettigrew**	**88.77**	**42**	P		**P**	**13 23 36.6**	**+0.1**	
	baz=321								
U40A	**Yellville**	**88.78**	**41**	P		**P**	**13 23 36.8**	**+0.3**	
	baz=321								
T41A	**Mountain View**	**88.79**	**40**	P		**P**	**13 23 36.9**	**+0.4**	
	baz=322								
R44A	**Waltonville**	**89.14**	**38**	P		**P**	**13 23 38.7**	**+0.6**	
	baz=323								
S43A	**Fulton Ridge,**	**89.20**	**39**	P		**P**	**13 23 39.1**	**+0.6**	
	baz=323								
333A	**Richland Sprin**	**89.24**	**49**	P		**P**	**13 23 39.8**	**+1.0**	
	baz=318								
U41A	**Viola**	**89.26**	**41**	P		**P**	**13 23 39.7**	**+1.0**	
	baz=322								
TBI	**Tubuai**	**89.46**	**121**	*e*LR		LR	13 51 44.3		
	comp=Z,191nm,29.0s,baz=324								
TBI	**Tubuai**	**89.46**	**121**	*e*T		T	15 02 34.5		
	comp=Z,17nm,0.3s								
V41A	**Mountainview**	**89.58**	**41**	P		**P**	**13 23 40.3**	**0.0**	
	baz=322								
PBMO	**Poplar Bluff**	**89.66**	**40**	*e*P		**P**	**13 23 41.9**	**+1.2**	
MIAR	**Mount Ida**	**89.80**	**43**	P		**P**	**13 23 41.7**	**+0.3**	
	baz=321								
MIAR	**Mount Ida**	**89.80**	**43**	*e*P		**P**	**13 23 42.1**	**+0.7**	
MIAR	**Mount Ida**	**89.80**	**43**	*e*P		**P**	**13 23 42.0**	**+0.7**	
X201	**Greenbrier Sit**	**89.85**	**42**	*e*P		**P**	**13 23 42.8**	**+1.3**	
X301	**Greenbrier Sit**	**89.88**	**42**	*e*P		**P**	**13 23 43.0**	**+1.3**	
WHAR	**Wooly Hollow**	**89.89**	**42**	*e*P		**P**	**13 23 43.0**	**+1.2**	
ACSO	**Alum Creek Sta**	**90.24**	**33**	*e*P		**P**	**13 23 44.4**	**+1.1**	
NCB	**Newcomb**	**90.28**	**25**	*e*P		**P**	**13 23 44.4**	**+0.9**	
H06N1	**SOCORRO T-PHAS**	**90.31**	**65**	T		T	15 04 35.5		
	SNR=7.0								
M54A	**Oil Creek Stat**	**90.49**	**30**	P		**P**	**13 23 45.2**	**+0.7**	
	baz=329								
ES19	**SONSECA Array**	**94.95**	**334**	*e*P		**P**	**13 24 05.1**	**0.0**	
ESDC	**Sonseca Array**	**95.00**	**334**	P		**P**	**13 24 05.6**	**+0.3**	
	comp=Z,1.3nm,0.5s,baz=18,slow=4.3,SNR=11								
RKT	**Rikitea**	**99.25**	**112**	*e*LR		LR	13 56 51.1		
	comp=Z,264nm,27.8s								
TORD	**Torodi Ar. Bea**	**115.73**	**317**	PKP		**PKPdf**	**13 29 24.8**	**-0.6**	
	comp=Z,1.5nm,0.9s,baz=9.3,slow=2.2,SNR=5.5								
TORD				PP		**PP**	**13 30 24.0**	**-3.8**	
	comp=Z,6.7nm,0.9s,baz=26,slow=7.2,SNR=7.8								
MAW	**Mawson**	**122.38**	**206**	PKP		**PKPdf**	**13 29 36.2**	**-0.2**	
	comp=Z,2.6nm,0.7s,baz=6.7,slow=3.4,SNR=6.1								
DBIC	**Dimbokro**	**124.59**	**319**	PKP		**PKPdf**	**13 29 42.2**	**-0.2**	
	comp=Z,2.8nm,0.7s,baz=350,slow=5.3,SNR=3.6								
PTGA	**Pitinga**	**136.10**	**33**	PKP		**PKPdf**	**13 30 04.8**	**+0.5**	
	comp=Z,3.0nm,0.8s,baz=279,slow=4.4,SNR=6.4								
SNAA	**Sanae**	**143.66**	**198**	PKiKP		PKPab	13 30 13.1	+0.1	
SNAA	**Sanae**	**143.66**	**198**	*e*PKiKP		PKPab	13 30 13.1	+0.1	
SNAA	**Sanae**	**143.66**	**198**	*e*PKPdf		PKPab	13 30 13.1	+0.1	
LPAZ	**La Paz**	**144.66**	**57**	PKP		PKPbc	13 30 19.3	+0.1	
	comp=Z,2.3nm,0.6s,baz=130,slow=1.3,SNR=3.5								
VNA1	**Neumayer--Stat**	**145.63**	**197**	PKiKP		**PKPdf**	**13 30 19.5**	**0.0**	
RCBR	**Riachuelo**	**146.04**	**357**	PKPbc		**PKPbc**	**13 30 22.9**	**0.0**	
	comp=Z,9.8nm,1.0s,baz=358,slow=2.6,SNR=4.6								
SIV	**San Ignacio**	**148.72**	**47**	PKPbc		**PKPbc**	**13 30 30.7**	**+0.5**	
	comp=Z,11nm,0.7s,baz=286,slow=1.1,SNR=15								
USHA	**Ushuaia**	**154.69**	**136**	PKPbc		**PKPbc**	**13 30 40.0**	**-2.8**	
	comp=Z,53nm,0.8s,baz=23,slow=7.1,SNR=7.8								

OMAN ***08*** *13:10:48.7±99.0, 27.89N×53.12E, h26km±99km, Error ellipse: s-maj=1007.0km s-min=44.6km az=312.0*
IDC ***08*** *13:10:53.4±1.4, 27.18N×53.45E, h0km, mb3.7/7, mb1 3.8/8, mb1mx3.5/51, mbtmp3.8/8,

IKLH					*e*AMB	AMB	13 13 11.2	
	comp=Z,126nm,0.1s							
IKLH	**Kolahrood**	**6.45**	**346**	*e*Pn	**Pn**	**13 12 30.5**	**+0.6**
KHMZ	**Khomeyn**	**7.32**	**336**	*e*Pn	**Pn**	**13 12 42.7**	**+1.0**
ATD	**Arta Tunnel**	**18.39**	**215**	LR	LR	13 23 01.0	
	comp=Z,43nm,20.4s,baz=230,slow=39						
KVAR	**Kislovodsk Arr**	**18.98**	**335**	LR	LR	13 24 05.1	
	comp=Z,23nm,18.2s,baz=38,slow=42						
BRTR	**Keskin Array B**	**20.77**	**312**	P	**P**	**13 15 36.2**	**+0.3**
	comp=Z,1.2nm,0.6s,baz=128,slow=10,SNR=6.5						
AKTO	**Aktyubinsk**	**23.61**	**7**	P	**P**	**13 16 05.0**	**-0.6**
	comp=Z,0.6nm,0.4s,baz=145,slow=1.8,SNR=3.6						
BVAR	**Borovoye Array**	**28.85**	**21**	P	**P**	**13 16 50.6**	**-2.4**
	comp=Z,0.2nm,0.4s,baz=187,slow=8.7,SNR=1.4						
ZALV	**Zalesovo Beam**	**35.41**	**32**	P	**P**	**13 17 50.4**	**-0.1**
	comp=Z,0.4nm,0.3s,baz=238,slow=8.3,SNR=1.0						
FINES	**FINESS Array B**	**38.99**	**339**	P	**P**	**13 18 20.4**	**-0.4**
	comp=Z,0.6nm,0.3s,baz=142,slow=9.5,SNR=9.0						
TORD	**Torodi Ar. Bea**	**50.22**	**265**	P	**P**	**13 19 51.2**	**+0.1**
	comp=Z,0.9nm,0.5s,baz=66,slow=8.4,SNR=15						
DBIC	**Dimbokro**	**58.84**	**261**	P	**P**	**13 20 53.6**	**-0.2**
	comp=Z,3.5nm,0.6s,baz=53,slow=5.5,SNR=4.2						

*CSEM **08** 13:11:32.1,40°.33N×27°.08E,h8km,MD2.8*
ISK 08 13:11:32.1,40°.33N×27°.08E,h8km,MD2.8,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KRBG	**Karabiga-Canak**	**0.18**	**69**	*e*PG	Pg	13 11 36.1	+0.3
KRBG				*e*SG	Sg	13 11 39.5	+1.1
KRBG	**Karabiga-Canak**	**0.18**	**69**	*e*Pg	Pg	13 11 36.1	+0.3
KRBG				*e*Sg	Sg	13 11 39.5	+1.2
LPK	**Lapseki**	**0.25**	**280**	*e*PG	Pg	13 11 37.3	+0.2
LPK	**Lapseki**	**0.25**	**280**	*e*Pg	Pg	13 11 37.3	+0.3
RKY	**Sarkoy-Tekirda**	**0.37**	**12**	*e*PG	Pb	13 11 40.2	-0.7
RKY				*e*SG	Sg	13 11 45.4	+1.2
RKY	**Sarkoy-Tekirda**	**0.37**	**12**	*e*Pg	Pb	13 11 40.2	-0.7
RKY				*e*Sg	Sg	13 11 45.4	+1.2
GELI	**Tayfur-Gelibol**	**0.47**	**279**	*e*PG	Pg	13 11 41.6	+0.5
GELI	**Tayfur-Gelibol**	**0.47**	**279**	*e*Pg	Pg	13 11 41.6	+0.5
MRMT	**Marmara Adasi**	**0.48**	**55**	*e*PG	Sg	13 11 41.6	+0.2
MRMT				*e*SG	Sg	13 11 48.8	+1.1
MRMT	**Marmara Adasi**	**0.48**	**55**	*e*Pg	Pg	13 11 41.6	+0.1
MRMT				*e*Sg	Sg	13 11 48.8	+1.0
GONE	**Gonen-Balikesi**	**0.55**	**121**	*e*PG	Pb	13 11 43.4	-0.5
GONE	**Gonen-Balikesi**	**0.55**	**121**	*e*Pg	Pb	13 11 43.4	-0.5
ERIK	**Erikli-Kesan**	**0.55**	**309**	*e*PG	Pb	13 11 43.4	-0.6
ERIK	**Erikli-Kesan**	**0.55**	**309**	*e*Pg	Pb	13 11 43.4	-0.6
EDC	**Edincik**	**0.60**	**88**	*e*PG	Pb	13 11 44.5	-0.4
EDC	**Edincik**	**0.60**	**88**	*e*Pg	Pb	13 11 44.5	-0.4
EZN	**Ezine**	**0.77**	**229**	*e*PG	Pb	13 11 47.3	-0.4
EZN	**Ezine**	**0.77**	**229**	*e*Pg	Pb	13 11 47.3	-0.3
ENEZ	**Enez**	**0.81**	**300**	*e*PG	Pg	13 11 47.9	+0.2
ENEZ	**Enez**	**0.81**	**300**	*e*Pg	Pg	13 11 47.9	+0.2
GADA	**Gvkgeada**	**0.91**	**262**	*e*PG	Pb	13 11 50.1	-0.1
GADA	**Gvkgeada**	**0.91**	**262**	*e*Pg	Pb	13 11 50.1	-0.1
ALN	**Alexandroupoli**	**0.97**	**306**	*e*PG	Pb	13 11 51.2	+0.1
ALN	**Alexandroupoli**	**0.97**	**306**	*e*Pg	Pb	13 11 51.2	+0.1
ARMT	**Armutlu**	**1.38**	**80**	*e*PN	Pg	13 11 59.2	+0.6
ARMT	**Armutlu**	**1.38**	**80**	*e*Pn	Pg	13 11 59.2	+0.6
SIGR	**SIGRI**	**1.46**	**221**	*e*PN	Pb	13 11 59.5	0.0
SIGR	**SIGRI**	**1.46**	**221**	*e*Pn	Pb	13 11 59.5	0.0
IZI	**Iznik**	**1.83**	**89**	*e*PN	Pn	13 12 04.5	+0.5
IZI	**Iznik**	**1.83**	**89**	*e*Pn	Pn	13 12 04.5	+0.6

*NIED **08** 13:24:00,38°.40N×141°.90E,h35km,Mw4.0 Best double couple: M0λ1.28000×10^15 NP1:φs355.00000°,δ45.00000°, λ126.00000°. NP2:φs130.00000°,δ55.00000°,λ60.00000°.*
JMA 08 13:24:19.5,38°.44N×141°.84E,h56km±1km,M3.8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.39**	**272**	P	Pn	13 24 30.0	+0.1
JIO				S	Sn	13 24 37.3	-0.2
OFUJ	**Ofunato**	**0.65**	**348**	P	Pn	13 24 33.0	0.0
OFUJ				S	Sn	13 24 42.6	-0.1
JMK	**Ichinoseki**	**0.70**	**317**	P	Pn	13 24 33.8	+0.2
JMK				S	Sn	13 24 44.0	+0.2
JOU	**Okura**	**0.93**	**266**	P	Pn	13 24 36.5	+0.1
JOU				S	Sn	13 24 49.0	+0.1
JMM	**Marumori**	**1.00**	**236**	P	Pn	13 24 37.1	-0.3
JMM				S	Sn	13 24 50.0	-0.7
JOM	**Ohasama**	**1.12**	**338**	P	Pn	13 24 39.2	+0.3
JOM				S	Sn	13 24 54.1	+0.7
JYK	**Kaneyama**	**1.25**	**293**	P	Pn	13 24 41.1	+0.3
JYK				S	Sn	13 24 57.0	+0.3
JFK	**Kawauchi**	**1.32**	**216**	P	Pn	13 24 41.4	-0.3
JFK				S	Sn	13 24 57.7	-0.5
JRG	**Rokugo**	**1.34**	**316**	P	Pn	13 24 42.3	+0.4
JYS	**Shirataka**	**1.41**	**262**	P	Pn	13 24 43.2	+0.3
JYS				S	Sn	13 25 00.9	+0.4
JFT	**Otama**	**1.50**	**233**	P	Pn	13 24 44.6	+0.5
JFT				S	Sn	13 25 02.7	0.0
MAT	**Matsushiro**	**3.46**	**238**	P	Pn	13 25 12.5	+1.7
MAT				S	Sn	13 25 58.2	+7.7

*DDA **08** 13:24:48.4,39°.16N×29°.05E,h7km,Ml2.8*
*ISK **08** 13:24:48.6,39°.13N×29°.11E,h5km,MD2.8*
*ISCJB **08** 13:24:49.5±0.5,39°.09N±0°.04×29°.10E±0°.04,h11km±5km, Error ellipse: s-maj=6.8km s-min=4.2km az=153.4*
*CSEM **08** 13:24:49.5±0.1,39°.10N×29°.10E,h8km,MD2.8,Error ellipse: s-maj=3.2km s-min=2.7km az=132.0*
ISC 08 13:24:48.9±0.9,39°.11N±0°.02×29°.12E±0°.03,h17km±10km, n37,σ0s60/50,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.23**	**105**	*e*PG	**Pb**	**13 24 54.8**	**+0.1**
GEDZ				*e*SG	**Sb**	**13 24 58.9**	**+0.3**
GEDZ	**Gediz**	**0.23**	**105**	*e*Pg	**Pb**	**13 24 54.8**	**+0.1**
GEDZ				*e*Sg	**Sb**	**13 24 58.9**	**+0.3**
GDZ	**Gediz**	**0.28**	**93**	*i* P	**Pb**	**13 24 55.9**	**+0.3**
GDZ				*i* S	**Sb**	**13 25 00.2**	**+0.2**
GDZ	**Gediz**	**0.28**	**93**	P	**Pb**	**13 24 55.9**	**+0.3**
GDZ				S	**Sb**	**13 25 00.2**	**+0.2**
DEMI	**Demirci**	**0.32**	**259**	*i* P	**Pg**	**13 24 56.0**	**+0.2**
DEMI				*i* S	**Sg**	**13 25 00.2**	**-0.4**
DEMI	**Demirci**	**0.32**	**259**	P	**Pg**	**13 24 56.0**	**+0.2**
DEMI				S	**Sg**	**13 25 00.2**	**-0.4**
TVSB	**Tavsanli**	**0.43**	**37**	*e*PG	**Pb**	**13 24 57.8**	**-0.4**
TVSB	**Tavsanli**	**0.43**	**37**	*e*Pg	**Pb**	**13 24 57.8**	**-0.4**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*PG	**Pb**	**13 25 03.3**	**+0.8**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*Pg	**Pb**	**13 25 03.3**	**+0.8**
MANT	**Manisa**	**0.76**	**216**	*i* P	**Pg**	**13 25 03.1**	**-0.7**
MANT				*i* S	**Sg**	**13 25 13.2**	**-0.7**
MANT	**Manisa**	**0.76**	**216**	P	**Pg**	**13 25 03.1**	**-0.7**
MANT				S	**Sg**	**13 25 13.1**	**-0.7**
KHL	**Karahalli**	**0.84**	**158**	*e*PG	**Pn**	**13 25 06.1**	**+0.1**
KHL	**Karahalli**	**0.84**	**158**	*e*Pg	**Pn**	**13 25 06.1**	**+0.1**
BALB	**Balikesir**	**1.10**	**299**	*e*PN	**Pg**	**13 25 10.5**	**+0.3**
BALB	**Balikesir**	**1.10**	**299**	*e*Pn	**Pg**	**13 25 10.5**	**+0.3**
IGD	**Bursa**	**1.16**	**3**	*i* P	**Pb**	**13 25 09.8**	**-0.6**
IGD				*i* S	**Sb**	**13 25 24.3**	**-0.9**
CAVI	**Cavuskoy**	**1.23**	**27**	*e*PN	**Pg**	**13 25 12.9**	**+0.2**
CAVI	**Cavuskoy**	**1.23**	**27**	*e*Pn	**Pg**	**13 25 12.9**	**+0.2**
IZI	**Iznik**	**1.26**	**12**	*e*PN	**Pg**	**13 25 12.9**	**-0.4**
IZI	**Iznik**	**1.26**	**12**	*e*Pn	**Pg**	**13 25 12.9**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*PN	**Pg**	**13 25 13.8**	**+0.3**
MDNY				*e*SN	**Sg**	**13 25 31.9**	**+1.7**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*Pn	**Pg**	**13 25 13.8**	**+0.3**
MDNY				*e*Sn	**Sg**	**13 25 31.9**	**+1.7**
BORA	**Eskisehir**	**1.29**	**53**	*i* P	**Pg**	**13 25 13.8**	**0.0**
BORA				*i* S	**Sg**	**13 25 30.9**	**+0.2**
BORA	**Eskisehir**	**1.29**	**53**	P	**Pg**	**13 25 13.8**	**0.0**
BORA				S	**Sg**	**13 25 30.9**	**+0.2**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*PN	**Pg**	**13 25 14.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*Pn	**Pg**	**13 25 14.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*PN	**Pg**	**13 25 16.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*Pn	**Pg**	**13 25 16.9**	**0.0**
ARMT	**Armutlu**	**1.47**	**352**	*e*PN	**Pg**	**13 25 16.9**	**-0.4**
ARMT	**Armutlu**	**1.47**	**352**	*e*Pn	**Pg**	**13 25 16.9**	**-0.4**
EDC	**Edincik**	**1.57**	**322**	*e*PN	**Pg**	**13 25 18.4**	**-0.9**
EDC	**Edincik**	**1.57**	**322**	*e*Pn	**Pg**	**13 25 18.4**	**-0.9**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pg**	**13 25 20.6**	**-1.1**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pg**	**13 25 20.6**	**-1.1**
HRT	**Hereke**	**1.77**	**14**	*e*PN	**Pb**	**13 25 20.6**	**-0.2**
HRT	**Hereke**	**1.77**	**14**	*e*Pn	**Pb**	**13 25 20.6**	**-0.2**

*IDC **08** 13:26:16.9±1.0,27°.81S×70°.22W,h0km,mb4.0/3, mb1 4.3/4,mb1mx3.9/32,mbtmp4.1/4,ML5.2/1,MS3.1/2, Ms1 3.1/2,ms1mx2.9/18,Error ellipse: s-maj=41.1km s-min=34.8km az=69.0*
*ISCJB **08** 13:26:27.5±0.4,27°.35S±0°.03×70°.27W±0°.06,h87km±5km, mb3.9/4,Error ellipse: s-maj=9.6km s-min=4.4km az=178.5*
*NEIC **08** 13:26:27.0,27°.32S×70°.52W,h80km,mb4.5/1,After GUC.*
NEIC Felt [III] at Alto del Carmen, Caldera, Copiapo, Freirina, Tierra Amarilla and Vallenar.
*GUC **08** 13:26:27.7±0.6,27°.32S×70°.53W,h80km±8km,ML4.5*
*SJA **08** 13:26:29.1±0.9,27°.44S×70°.06W,h154km±18km,ML4.0, MW4.0*
ISC 08 13:26:27.8±0.7,27°.36S±0°.04×70°.28W±0°.06,h79km±6km, n38,σ1s67/47,mb4.0/4,1C-16D,Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**0.07**	**267**	*i*P	**Pn**	**13 26 39.4**	**+0.2**
CPCH				*i* S	**Sn**	**13 26 48.5**	**+0.9**
VACH	**Vallenar**	**1.29**	**199**	*i*P	**Pn**	**13 26 51.5**	**+1.1**
VACH				*i* S	**Sn**	**13 27 08.7**	**+1.3**
LCO	**Las Campanas**	**1.69**	**193**	*e*P	**Pn**	**13 26 56.9**	**+0.9**
LCO	**Las Campanas**	**1.69**	**193**	*i*P	**Pn**	**13 26 56.9**	**+0.9**
LCO				*i* S	**Sn**	**13 27 18.3**	**+1.2**
LCO				IAML		13 27 20.2	
	comp=E,4μm,0.3s						
LCO	**Las Campanas**	**1.69**	**193**	*e*Pn	**Pn**	**13 26 56.8**	**+0.9**
LCO				*e*Sn	**Sn**	**13 27 15.6**	**-1.6**
VCA	**Vinchina**	**2.29**	**127**	*e*P	**Pn**	**13 27 06.8**	**+3.1**
VCA				*e*S	**Sn**	**13 27 33.3**	**+2.1**
VCA				IAML		13 27 40.0	
	comp=Z,586nm,0.3s						
AGUA	**GUANDACOL**	**2.64**	**144**	*e*P	**Pn**	**13 27 11.4**	**+3.0**
PB14	**IPOC Station P**	**2.72**	**358**	*e*P	**Pn**	**13 27 10.4**	**+0.7**
PB14				*i* S	**Sn**	**13 27 42.1**	**+0.3**
PB14				IAML		13 27 46.5	
	comp=E,853nm,0.3s						
TLL	**Tololo Astrono**	**2.84**	**189**	*e*P	**Pn**	**13 27 11.8**	**+0.5**
TLL				*e*S	**Sn**	**13 27 45.7**	**+1.1**
TLL				IAML		13 28 09.5	
	comp=N,3μm,0.6s						
PB10	**IPOC Station P**	**3.83**	**356**	*e*P	**Pn**	**13 27 24.1**	**-0.4**
PB10				IAML		13 28 32.4	
	comp=E,451nm,0.9s						
AMOG	**MOGNA**	**3.90**	**157**	*e*P	**Pn**	**13 27 26.8**	**+1.4**
CYA	**Choya**	**4.10**	**106**	*e*P	**Pn**	**13 27 29.1**	**+0.9**
CYA				IAML		13 27 29.9	
	comp=Z,64nm,0.3s						
AVFE	**Valle Fertil**	**4.12**	**144**	*e*P	**Pn**	**13 27 29.8**	**+1.4**
RTLL	**Cerro Villicun**	**4.26**	**159**	*e*P	**Pn**	**13 27 31.8**	**+1.4**
RTLL				*e*S	**Sn**	**13 28 18.9**	**0.0**
RTLS	**Leoncito**	**4.51**	**169**	*e*P	**Pn**	**13 27 35.9**	**+1.9**
RTLS				*e*S	Sn	13 28 53.4	+28
RTCV	**Cerro Valdivia**	**4.74**	**162**	*e*P	**Pn**	**13 27 38.3**	**+1.5**
RTCV				*e*S	Sn	13 28 12.7	-18
LVC	**Limon Verde**	**4.88**	**15**	Pn	**Pn**	**13 27 39.6**	**+0.4**
	comp=Z,81nm,0.3s,baz=177,slow=6.9,SNR=69						
LVC				Sn	**Sn**	**13 28 35.4**	**+0.7**
	comp=Z,376nm,0.3s,baz=88,slow=19,SNR=6.1						
LVC				Lg	Lg	13 28 56.1	
	comp=Z,946nm,0.3s,baz=305,slow=9.0,SNR=4.8						
AUSP	**Uspallata**	**4.91**	**171**	*e*P	**Pn**	**13 27 41.0**	**+1.6**
AUSP				*e*S	Sn	13 28 14.4	-21
ACHE	**Chepes**	**4.93**	**141**	*e*P	**Pn**	**13 27 40.5**	**+0.9**
ASAL	**Salagasta**	**5.37**	**167**	*e*P	**Pn**	**13 27 46.6**	**+1.1**
ARCO	**CERRO ARCO**	**5.59**	**168**	*e*P	**Pn**	**13 27 49.7**	**+1.1**
ARCO				IAML		13 29 27.9	
	comp=Z,133nm,0.5s						
AZAP	**Zapla**	**5.64**	**58**	*e*P	**Pn**	**13 27 50.6**	**+1.3**
AAGR	**Agrelo**	**5.85**	**168**	*e*P	**Pn**	**13 27 53.1**	**+1.1**
AAGR				*e*S	Sn	13 28 31.8	-26
TCA	**Tanti**	**6.35**	**130**	*e*P	**Pn**	**13 27 58.0**	**-0.9**
TCA				IAML		13 29 32.0	
	comp=Z,33nm,0.6s						
SUCO	**SUCO**	**7.57**	**143**	*e*P	**Pn**	**13 28 15.0**	**-0.5**
SUCO				IAML		13 30 02.1	
	comp=Z,35nm,0.6s						
LPAZ	**La Paz**	**11.19**	**11**	LR	LR	13 33 59.7	
	comp=Z,54nm,21.1s,baz=257,slow=40						
CPUP	**Villa Florida**	**11.61**	**88**	Pn	**Pn**	**13 29 06.8**	**-3.7**
	comp=Z,0.2nm,0.3s,baz=266,slow=14,SNR=1.8						
CPUP				LR	LR	13 33 55.4	
	comp=Z,135nm,19.6s,baz=207,slow=40						
TRQA	**Tornquist**	**12.75**	**149**	*e*Pn	**Pn**	**13 29 22.8**	**-3.1**
TRQA				*e*Sn	**Sn**	**13 31 41.1**	**-4.9**
PLCA	**Paso Flores**	**13.35**	**181**	Pn	Pn	13 29 25.8	-8.2
	comp=Z,0.1nm,0.3s,baz=40,slow=13,SNR=2.5						
SNAA	**Sanae**	**57.21**	**160**	*e*P	**P**	**13 36 06.2**	**-0.3**
QSPA	**South Pole Qui**	**62.86**	**180**	P	**P**	**13 36 45.6**	**+0.4**
	comp=Z,4.6nm,0.9s						
QSPA				*e*pP	**pP**	**13 37 07.9**	**+2.3**
TXAR	**Lajitas Array**	**64.81**	**328**	P	**P**	**13 36 60.0**	**+1.6**
	comp=Z,1.0nm,0.9s,baz=145,slow=9.0,SNR=9.0						
PDAR	**Pinedale Array**	**78.59**	**332**	P	**P**	**13 38 22.7**	**+1.7**
	comp=Z,0.4nm,0.6s,baz=160,slow=4.7,SNR=4.4						
TORD	**Torodi Ar. Bea**	**80.51**	**70**	P	**P**	**13 38 31.6**	**-0.2**
	comp=Z,3.1nm,0.8s,baz=270,slow=5.9,SNR=18						
ASAR	**Alice Springs**	**124.16**	**207**	PKP	**PKPdf**	**13 45 17.5**	**-0.5**
	comp=Z,0.6nm,0.7s,baz=141,slow=1.6,SNR=10.0						
WRA	**Warramunga Arr**	**127.28**	**210**	PKP	**PKPdf**	**13 45 23.8**	**-0.2**
	comp=Z,0.8nm,0.6s,baz=160,slow=1.6,SNR=10.0						
ZALV	**Zalesovo Beam**	**147.73**	**28**	PKPbc	**PKPab**	**13 46 03.7**	**-1.8**
	comp=Z,3.8nm,0.7s,baz=298,slow=3.2,SNR=14						
MKAR	**Makanchi Array**	**150.98**	**41**	PKPbc	**PKPbc**	**13 46 11.6**	**+0.2**
	comp=Z,3.0nm,0.8s,baz=324,slow=2.3,SNR=23						

GUC 08 13:43:33.0±0.5,27°.64S×70°.40W,h70km,ML3.7,2C,Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**0.28**	**81**	*i*P	Pn	13 43 44.1	0.0
CPCH				*i* S	Sn	13 43 52.6	+0.4
VACH	**Vallenar**	**0.99**	**199**	*e*P	Pn	13 43 51.6	+0.2
VACH				*i* S	Sn	13 44 05.5	+0.4
LCO	**Las Campanas**	**1.39**	**191**	*i*P	Pn	13 43 57.8	+1.0
LCO				*i* S	Sn	13 44 16.2	+1.5
LCO				IAML		13 44 21.6	
	comp=E,1μm,0.4s						
TLL	**Tololo Astrono**	**2.55**	**188**	*e*P	Pn	13 44 13.2	+0.9
TLL				*e*S	Sn	13 44 43.3	+1.0
TLL				AML	AML	13 45 00.5	
	comp=E,619nm,0.5s						

*ISCJB **08** 13:54:28.5±0.6,51°.42N±0°.03×16°.15E±0°.03,h0km,Error ellipse: s-maj=4.5km s-min=2.7km az=13.6*
*WAR **08** 13:54:30.2,51°.48N×16°.11E,h1km,Mw2.6*
*PRU **08** 13:54:30.6,51°.45N×16°.12E,h0km*
*CSEM **08** 13:54:31.0±0.7,51°.41N×16°.17E,h1km,ML2.8,Error ellipse: s-maj=11.5km s-min=8.3km az=167.0*
*VIE **08** 13:54:32.6±1.1,51°.27N×16°.17E,h0km,mb2.3/5,ML2.8/5, Error ellipse: s-maj=9.1km s-min=6.8km az=89.0, Suspected Mining induced.*
ISC 08 13:54:29.8±1.1,51°.47N±0°.05×16°.09E±0°.02,h0km,n29, σ0s87/65,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.64**	**169**	*e*Pg	**Pg**	**13 54 42.4**	**+0.3**
KSP				*e*Sg	**Sg**	**13 54 51.0**	**+0.6**
KSP	**Ksiaz**	**0.64**	**169**	*e*Pg	**Pg**	**13 54 42.4**	**+0.3**
KSP				*e*Sg	**Sg**	**13 54 51.0**	**+0.6**
KSP	**Ksiaz**	**0.64**	**169**	*e*Pg	**Pg**	**13 54 42.4**	**+0.3**
KSP				*e*Sg	**Sg**	**13 54 51.0**	**+0.6**
UPC	**Upice**	**0.97**	**183**	*e*PG	**Pg**	**13 54 48.5**	**+0.2**
UPC				*e*SG	**Sg**	**13 55 01.2**	**+0.4**
	comp=Z,75nm,0.3s						
DPC	**Dobruska-Polom**	**1.13**	**173**	*e*PG	**Pg**	**13 54 51.2**	**-0.3**
DPC				*e*SG	**Sg**	**13 55 05.8**	**-0.3**
	comp=Z,37nm,0.5s						
PVCC	**Panska Ves**	**1.35**	**226**	*e*PG	**Pg**	**13 54 55.6**	**0.0**
PVCC				*e*SG	**Sn**	**13 55 14.4**	**-0.1**
	comp=Z,158nm,0.3s						
KRLC	**Kraliky**	**1.47**	**162**	*e*PG	**Pn**	**13 54 57.3**	**-0.2**
KRLC				*e*SG	**Sg**	**13 55 16.0**	**-0.8**
BRG	**Berggiesshubel**	**1.48**	**247**	PN	**Pn**	**13 54 56.8**	**-0.8**
BRG				PG	**Pb**	**13 54 58.5**	**+0.4**
BRG				SG	**Sn**	**13 55 18.4**	**+0.7**
	87nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.77**	**209**	*e*PG	**Pb**	**13 55 02.9**	**-0.2**
GOPC				*e*SG	**Sg**	**13 55 26.7**	**+0.2**
PRU	**Pruhonice**	**1.78**	**214**	*e*PG	**Pb**	**13 55 02.9**	**-0.4**
PRU				*e*SG	**Sg**	**13 55 27.4**	**+0.4**
	comp=Z,20nm,0.3s						
MORC	**Moravsky Berou**	**1.93**	**151**	*e*Pn	**Pn**	**13 55 03.0**	**-0.9**
MORC				*e*Sg	**Sn**	**13 55 28.5**	**-0.4**
CLL	**Collm**	**1.94**	**266**	*e*Pn	**Pn**	**13 55 03.0**	**-1.0**
CLL				*e*Pg	**Pb**	**13 55 06.0**	**0.0**
CLL				*e*		13 55 09.0	
CLL				*i*		13 55 10.4	
CLL				*e*		13 55 20.0	
CLL				*e*Sg	**Sg**	**13 55 32.0**	**-0.2**
	comp=Z,26nm,0.5s						
OKC	**Ostrava-Krasne**	**2.10**	**141**	*e*PN	**Pn**	**13 55 05.0**	**-1.1**
OKC				*e*PG	**Pb**	**13 55 08.6**	**0.0**
OKC				*e*SG	**Sb**	**13 55 35.1**	**0.0**
	comp=Z,31nm,0.7s						
VRAC	**Vranov**	**2.19**	**171**	*e*Pn	**Pn**	**13 55 07.7**	**+0.3**
VRAC				*e*Sg	**Sg**	**13 55 39.1**	**-1.0**
TREC	**Trest**	**2.21**	**190**	*e*PN	**Pn**	**13 55 08.8**	**+1.0**
TREC				*e*PG	**Pg**	**13 55 11.6**	**-0.6**
TREC				*e*SG	**Sg**	**13 55 40.7**	**-0.2**
	comp=Z,21nm,0.3s						
NKC	**Novy Kostel**	**2.62**	**243**	*e*PN	**Pn**	**13 55 13.8**	**+0.4**
NKC				*e*PG	**Pg**	**13 55 19.4**	**-0.6**
NKC				*e*SG	**Sg**	**13 55 54.6**	**+0.6**
	comp=Z,43nm,0.3s						
OJC	**Ojcow**	**2.66**	**117**	*e*Pg	**Pb**	**13 55 19.3**	**+1.0**
OJC				*e*Sg	**Sg**	**13 55 54.6**	**-0.6**
OJC	**Ojcow**	**2.66**	**117**	*e*Pg	**Pb**	**13 55 19.3**	**+1.0**
OJC				*e*Sg	**Sg**	**13 55 54.6**	**-0.6**
OJC	**Ojcow**	**2.66**	**117**	*e*Pg	**Pb**	**13 55 19.3**	**+1.0**
OJC				*e*Sg	**Sg**	**13 55 54.6**	**-0.6**
KHC	**Kasperske Hory**	**2.85**	**216**	*e*PN	**Pn**	**13 55 16.5**	**0.0**
KHC				*e*PG	**Pb**	**13 55 22.2**	**+0.8**
KHC				*e*SN	**Sn**	**13 55 51.0**	**-0.4**
KHC				*e*SG	**Sg**	**13 56 01.2**	**+0.1**
	comp=Z,13nm,0.3s						
LANS	**Liptovska Anna**	**3.17**	**136**	*e*Pg	**Pg**	**13 55 32.3**	**+1.7**
LANS				*e*Sg	**Sg**	**13 56 09.7**	**-2.0**
LANS	**Liptovska Anna**	**3.17**	**136**	*e*PG	**Pg**	**13 55 32.3**	**+1.7**
LANS				*e*SG	**Sg**	**13 56 09.7**	**-2.0**
VYHS	**Vyhne**	**3.47**	**148**	*e*Pg	**Pg**	**13 55 35.4**	**-0.8**
VYHS				*e*Sg	**Sg**	**13 56 19.5**	**-1.6**
VYHS	**Vyhne**	**3.47**	**148**	*e*PG	**Pg**	**13 55 35.4**	**-0.8**
VYHS				*e*SG	**Sg**	**13 56 19.5**	**-1.6**
VYHS				*e*LG	Lg	13 56 30.3	
CONA	**Conrad Observa**	**3.55**	**183**	Pn	**Pn**	**13 55 26.1**	**-0.1**
	comp=Z,0.7nm,0.2s						
CONA				Sg	**Sg**	**13 56 21.9**	**-1.9**
	comp=Z,12nm,0.5s						
MOA	**Molln**	**3.82**	**199**	Pn	**Pn**	**13 55 30.1**	**+0.3**
	comp=Z,1.3nm,0.2s						
MOA				Sg	**Sg**	**13 56 32.0**	**-0.3**
	comp=Z,9.5nm,0.4s						
KECS	**Kecovo**	**4.12**	**135**	*e*Pg	**Pg**	**13 55 50.0**	**+1.3**
KECS				*e*Sg	**Sg**	**13 56 41.0**	**-1.1**
KECS	**Kecovo**	**4.12**	**135**	*e*PG	**Pg**	**13 55 50.0**	**+1.3**
KECS				*e*SG	**Sg**	**13 56 41.0**	**-1.1**
KECS				*e*LG	Lg	13 56 50.2	
ARSA	**Arzberg**	**4.24**	**185**	Pn	**Pn**	**13 55 36.7**	**+1.1**
	comp=Z,1.3

PB08	**IPOC Station P**	**1.58 264**	⇑*i*P	**Pn**	**14 04 24.0**	**+1.2**
PB08			*i* S	**Sn**	**14 04 49.8**	**+0.3**
PB11	**IPOC Station P**	**2.06 275**	⇑*i*P	**Pn**	**14 04 27.6**	**+0.3**
PB11			*i* S	**Sn**	**14 04 57.1**	**-0.4**
MOCB	**Mochara**	**2.15 127**	⇑*i*Pn	**Pn**	**14 04 30.0**	**+1.5**
MOCB			⇑*i*Sn	**Sn**	**14 05 00.6**	**+0.8**
MNMC	**Minye Minye**	**2.16 292**	⇑*i*P	**Pn**	**14 04 29.4**	**+0.9**
MNMC			*e*S	**Sn**	**14 04 60.0**	**+0.2**
PB01	**IPOC Station P**	**2.16 240**	⇑*i*P	**Pn**	**14 04 28.5**	**+0.2**
PB01			*i* S	**Sn**	**14 04 59.0**	**-0.5**
PB01			IAML		14 05 00.9	
	comp=E,1μm,0.1s					
HMBC	**Humberstone**	**2.28 262**	⇑*i*P	**Pn**	**14 04 29.2**	**-0.4**
HMBC			*i* S	**Sn**	**14 05 00.4**	**-1.4**
HMBC			IAML		14 05 04.2	
	comp=E,2μm,0.4s					
PB09	**IPOC Station P**	**2.45 222**	*e*P	**Pn**	**14 04 32.8**	**+1.3**
PB09			IAML		14 05 07.8	
	comp=N,958nm,0.8s					
PSGC	**Pisagua**	**2.51 278**	⇑*i*P	**Pn**	**14 04 31.9**	**-0.3**
PSGC			*i* S	**Sn**	**14 05 04.6**	**-1.8**
PB07	**IPOC Station P**	**2.85 232**	⇑*i*P	**Pn**	**14 04 36.0**	**0.0**
PB07			*i* S	**Sn**	**14 05 11.8**	**-1.6**
PB07			IAML		14 05 15.7	
	comp=N,530nm,0.4s					
LVC	**Limon Verde**	**2.94 207**	P	**Pn**	**14 04 38.3**	**+1.0**
	comp=N,333nm,0.3s,baz=46,slow=13,SNR=64					
LVC			S	**Sn**	**14 05 15.6**	**-0.3**
	comp=N,450nm,0.3s,baz=181,slow=18,SNR=20					
PB12	**IPOC Station P**	**3.01 296**	⇑*i*P	**Pn**	**14 04 37.5**	**-0.4**
PB12			*i* S	**Sn**	**14 05 15.0**	**-1.7**
BBOJ	**La Paz, Jacaqu**	**3.06 347**	⇑*i*Pn	**Pn**	**14 04 41.1**	**+2.2**
BBOJ			⇑*i*Sn	**Sn**	**14 05 19.1**	**+0.6**
	comp=N,100nm,0.8s					
BBOE	**La Paz, Chanca**	**3.18 351**	⇑*i*Pn	**Pn**	**14 04 42.5**	**+2.1**
BBOE			*e*Sn	**Sn**	**14 05 22.0**	**+0.8**
PB06	**IPOC Station P**	**3.34 215**	IAML		14 05 24.0	
	comp=E,457nm,0.1s					
PB04	**IPOC Station P**	**3.42 226**	IAML		14 05 27.7	
	comp=N,634nm,0.6s					
BBOD	**La Paz, Gloria**	**3.48 342**	⇑*i*Pn	**Pn**	**14 04 45.9**	**+1.8**
BBOD			⇑*i*Sn	**Sn**	**14 05 30.1**	**+2.4**
	comp=N,218nm,0.8s					
LPAZ	**La Paz**	**3.71 350**	*e*P	**Pn**	**14 04 48.4**	**+1.3**
LPAZ			*e*S	**Sn**	**14 05 31.4**	**-1.6**
LPAZ	**La Paz**	**3.71 350**	P	**Pn**	**14 04 48.4**	**+1.3**
	comp=N,22nm,0.3s,baz=153,slow=6.0,SNR=364					
LPAZ			S	**Sn**	**14 05 33.2**	**+0.1**
	comp=N,3.9nm,0.3s,baz=85,slow=25,SNR=6.8					
LPAZ	**La Paz**	**3.71 350**	⇑*i*Pn	**Pn**	**14 04 48.3**	**+1.3**
LPAZ			*e*Sn	**Sn**	**14 05 32.3**	**-0.7**
HJA	**Humahuaca**	**3.75 149**	*e*P	**Pn**	**14 04 48.9**	**+1.7**
HJA			*e*S	**Sn**	**14 05 35.0**	**+1.5**
BBOB	**La Paz, Bander**	**3.86 351**	⇓*i*Pn	**Pn**	**14 04 49.5**	**+0.8**
BBOB			⇑*i*Sn	**Sn**	**14 05 35.7**	**-0.4**
AZAP	**Zapla**	**4.79 153**	*e*P	**Pn**	**14 05 00.1**	**0.0**
AZAP			*e*S	**Sn**	**14 05 55.7**	**-1.0**
ASTB	**Santa Barbara**	**4.86 145**	*e*P	**Pn**	**14 05 00.9**	**0.0**
ASTB			*e*S	**Sn**	**14 05 57.6**	**-0.5**
SLA	**San Lorenzo**	**5.07 159**	*e*P	**Pn**	**14 05 04.5**	**+0.9**
SIV	**San Ignacio**	**7.27 58**	P	**Pn**	**14 05 30.2**	**-1.9**
	comp=N,20nm,0.3s,baz=257,slow=12,SNR=168					
SIV			S	**Sn**	**14 06 49.6**	**-4.9**
	baz=204,slow=13,SNR=4.1					
SIV	**San Ignacio**	**7.27 58**	⇑*i*Pn	**Pn**	**14 05 29.8**	**-2.3**
ACHE	**Chepes**	**11.17 176**	*e*P	**Pn**	**14 06 20.4**	**-2.2**
ACHE			*e*S	Sn	14 08 17.2	-10
CPUP	**Villa Florida**	**11.28 126**	P	**Pn**	**14 06 22.9**	**-1.1**
	comp=N,0.7nm,0.3s,baz=299,slow=11,SNR=11					
MRA	**San Martin**	**12.50 173**	*e*P	**Pn**	**14 06 36.5**	**-3.1**
MRA			IAML		14 06 40.7	
	comp=Z,7.3nm,0.5s					
ATAH	**Atahualpa**	**16.58 319**	P	**Pn**	**14 07 31.8**	**+1.6**
	comp=Z,0.7nm,0.3s,baz=125,slow=19,SNR=4.7					
PLCA	**Paso Flores**	**20.86 187**	P	**P**	**14 08 16.3**	**+1.3**
	comp=Z,5.5nm,0.6s,baz=22,slow=11,SNR=18					
RCBR	**Riachuelo**	**33.75 70**	P	**P**	**14 10 11.3**	**-0.3**
	comp=Z,9.8nm,1.0s,baz=236,slow=8.5,SNR=4.4					
TXAR	**Lajitas Array**	**60.17 324**	P	**P**	**14 13 34.7**	**-0.8**
	comp=Z,0.3nm,0.6s,baz=151,slow=8.0,SNR=3.8					
TORD	**Torodi Ar. Bea**	**75.58 70**	P	**P**	**14 15 10.3**	**-1.5**
	comp=Z,2.2nm,0.4s,baz=253,slow=5.2,SNR=57					
VNDA	**Vanda**	**78.58 190**	P	**P**	**14 15 29.6**	**+2.1**
	comp=Z,0.5nm,0.7s,baz=56,slow=2.6,SNR=3.5					
YKA	**Yellowknife Ar**	**90.20 340**	P	**P**	**14 16 25.5**	**-0.3**
	comp=Z,1.7nm,0.6s,baz=131,slow=4.6,SNR=16					
ASAR	**Alice Springs**	**131.87 207**	PKP	**PKPdf**	**14 22 38.9**	**+0.1**
	comp=Z,0.6nm,0.5s,baz=137,slow=1.7,SNR=26					
WRA	**Warramunga Arr**	**134.94 210**	PKP	**PKPdf**	**14 22 44.9**	**+0.2**
	comp=Z,0.6nm,0.3s,baz=151,slow=1.8,SNR=17					
MKAR	**Makanchi Array**	**143.62 36**	PKP	PKPbc	14 22 58.4	+0.8
	comp=Z,0.5nm,0.7s,baz=343,slow=2.5,SNR=4.3					
SONM	**Songino Array**	**151.76 9**	PKPbc	**PKPbc**	**14 23 20.1**	**+0.5**
	comp=Z,1.6nm,0.5s,baz=331,slow=0.4,SNR=6.8					

IDC 08 14:22:38.3±10.0, 20.21°S×167.76°E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.5/22, mbtmpg3.6/4, ML3.0/1, Error ellipse: s-maj=184.5km s-min=40.8km az=94.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.22 213**		Pn	Pn	14 23 16.0	-0.5
	4.1nm,0.3s,baz=78,slow=9.5,SNR=69						
DZM				Sn	Sn	14 23 45.5	+0.7
	16nm,0.3s,baz=119,slow=23,SNR=17						
STKA	**Stephens Creek**	**26.15 238**		P	P	14 28 15.5	+1.1
	0.6nm,0.5s,baz=90,slow=13,SNR=3.2						
WRA	**Warramunga Arr**	**31.36 265**		P	P	14 29 00.3	-0.7
	0.6nm,0.9s,baz=95,slow=8.4,SNR=5.1						
ASAR	**Alice Springs**	**31.55 257**		P	P	14 29 02.6	0.0
	0.8nm,0.7s,baz=85,slow=8.9,SNR=16						

GUC 08 14:29:19.1±0.7, 22.70°S×69.17°W, h85km±4km, ML3.7, 5C, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB06	**IPOC Station P**	**0.38 268**		⇑*i*P	Pn	14 29 32.8	+0.1
PB06				*i* S	Sn	14 29 43.2	+0.5
PB06				IAML		14 29 44.0	
	comp=E,5μm,0.1s						
PB09	**IPOC Station P**	**0.90 355**		⇑*i*P	Pn	14 29 38.3	+0.8
PB09				*i* S	Sn	14 29 52.6	+1.4
PB09				IAML		14 29 53.3	
	comp=E,5μm,0.5s						
PB04	**IPOC Station P**	**0.98 291**		⇑*i*P	Pn	14 29 38.8	+0.3
PB04				*i* S	Sn	14 29 54.1	+1.2
PB04				IAML		14 29 59.7	
	comp=E,1μm,0.4s						
PB07	**IPOC Station P**	**1.17 325**		⇑*i*P	Pn	14 29 41.3	+0.6
PB07				*i* S	Sn	14 29 58.0	+1.1
PB07				IAML		14 29 58.6	
	comp=E,2μm,0.6s						
PB10	**IPOC Station P**	**1.52 237**		*e*P	Pn	14 29 45.6	+0.7
PB10				*i* S	Sn	14 30 05.4	+1.1
PB01	**IPOC Station P**	**1.67 350**		⇑*i*P	Pn	14 29 47.2	+0.2

*ISK **08** 14:34:09.7, 38.14°N×26.83°E, h10km, MD2.5*
*ISCJB **08** 14:34:10.2±0.4, 38.17°N±0.02°×26.82°E±0.03, h5km±4km, Error ellipse: s-maj=3.9km s-min=2.8km az=140.9*
*THE **08** 14:34:10.3, 38.17°N×26.79°E, h3km±2km, ML2.4/4, Error ellipse: s-maj=2.8km s-min=0.9km az=256.0*
*CSEM **08** 14:34:10.2±0.1, 38.16°N×26.81°E, h10km, MD2.5, Error ellipse: s-maj=2.7km s-min=2.1km az=56.0*
*DDA **08** 14:34:10.0, 38.13°N×26.76°E, h8km, Md2.5*
ISC 08 14:34:10.2±0.9, 38.16°N±0.02°×26.81°E±0.02, h10km±6km, n41, σ0.944/67, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DGB	**˜zmir**	**0.12 153**		*i* P	**Pg**	**14 34 13.1**	**0.0**
DGB				*i* S	**Sg**	**14 34 15.3**	**+0.1**
ZEY	**˜zmir**	**0.26 288**		*i* P	**Pg**	**14 34 15.1**	**-0.4**
ZEY				*i* S	**Sg**	**14 34 19.1**	**+0.2**
URLA	**Izmir**	**0.26 319**		*i* P	**Pg**	**14 34 15.2**	**-0.4**
URLA				*i* S	**Sg**	**14 34 19.4**	**+0.2**
URLA	**Izmir**	**0.26 319**		P	**Pg**	**14 34 15.2**	**-0.4**
URLA				S	**Sg**	**14 34 19.4**	**+0.2**
IZM	**Izmir**	**0.43 56**		*e*PG	**Pg**	**14 34 18.8**	**+0.2**
IZM				*e*SG	**Sg**	**14 34 25.2**	**+0.9**
SMG	**Samos**	**0.45 178**		P	**Pg**	**14 34 19.1**	**0.0**
SMG				S	**Sb**	**14 34 26.3**	**-0.8**
SMG	**Samos**	**0.45 178**		P	**Pg**	**14 34 19.1**	**0.0**
SMG				S	**Sb**	**14 34 26.3**	**-0.8**
GCAM	**G?zelcaml?**	**0.57 144**		*i* P	**Pg**	**14 34 21.5**	**+0.2**
GCAM				*i* S	**Sg**	**14 34 29.5**	**+0.8**
GCAM	**G?zelcaml?**	**0.57 144**		P	**Pg**	**14 34 21.5**	**+0.2**
GCAM				S	**Sg**	**14 34 29.5**	**+0.8**
CHOS	**Chios island**	**0.64 291**		*e*PG	**Pg**	**14 34 22.7**	**+0.1**
CHOS	**Chios island**	**0.64 291**		P	**Pg**	**14 34 22.1**	**-0.5**
CHOS				S	**Sg**	**14 34 31.5**	**+0.5**
CHOS	**Chios island**	**0.64 291**		P	**Pg**	**14 34 22.1**	**-0.5**
CHOS	**Chios island**	**0.64 291**		*e*Pg	**Pg**	**14 34 22.7**	**+0.1**
CHOS				S	**Sg**	**14 34 31.5**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**0.88 104**		*e*PG	**Pg**	**14 34 27.2**	**0.0**
AYDB				*e*SG	**Sg**	**14 34 39.0**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**0.88 104**		*e*Pg	**Pg**	**14 34 27.2**	**0.0**
AYDB				*e*Sg	**Sg**	**14 34 39.0**	**+0.4**
DKL	**Dikili**	**0.91 5**		*e*PG	**Pb**	**14 34 28.4**	**+0.3**
DKL	**Dikili**	**0.91 5**		*e*Pg	**Pb**	**14 34 28.4**	**+0.3**
AKS	**Akhisar**	**1.06 47**		*e*PG	**Pg**	**14 34 30.2**	**-0.5**
AKS	**Akhisar**	**1.06 47**		*e*Pg	**Pg**	**14 34 30.2**	**-0.5**
AYVA	**Ayvalik**	**1.15 355**		*i* S	**Sn**	**14 34 48.8**	**+0.7**
AYVA	**Ayvalik**	**1.15 355**		S	**Sn**	**14 34 48.8**	**+0.7**
PRK	**Paraskevi**	**1.16 339**		P	**Pb**	**14 34 32.4**	**0.0**
PRK				S	**Sb**	**14 34 47.5**	**0.0**
PRK	**Paraskevi**	**1.16 339**		P	**Pb**	**14 34 32.4**	**0.0**
PRK				S	**Sb**	**14 34 47.5**	**0.0**
BODT	**Bodrum**	**1.17 160**		*e*PN	**Pb**	**14 34 31.7**	**-0.8**
BODT	**Bodrum**	**1.17 160**		P	**Pb**	**14 34 32.5**	**0.0**
BODT				S	**Sn**	**14 34 48.5**	**-0.1**
BODT	**Bodrum**	**1.17 160**		*e*Pn	**Pb**	**14 34 31.7**	**-0.8**
BODT	**Bodrum**	**1.17 160**		P	**Pb**	**14 34 32.5**	**0.0**
BODT				S	**Sn**	**14 34 48.5**	**-0.1**
MANT	**Manisa**	**1.41 76**		*i* S	**Sb**	**14 34 54.2**	**-0.7**
MANT	**Manisa**	**1.41 76**		S	**Sb**	**14 34 54.2**	**-0.7**
APE	**Apeiranthos**	**1.49 223**		*e*PN	**Pn**	**14 34 37.3**	**+0.2**
APE	**Apeiranthos**	**1.49 223**		P	**Pn**	**14 34 37.3**	**+0.2**
APE				S	**Sb**	**14 34 57.5**	**+0.5**
APE	**Apeiranthos**	**1.49 223**		P	**Pn**	**14 34 37.3**	**+0.2**
APE				S	**Sb**	**14 34 57.5**	**+0.5**
KULA	**Kula-Manisa**	**1.50 76**		*e*PN	**Pn**	**14 34 36.4**	**-0.8**
KULA	**Kula-Manisa**	**1.50 76**		P	**Pb**	**14 34 38.2**	**+0.1**
KULA				S	**Sb**	**14 34 57.2**	**0.0**
KULA	**Kula-Manisa**	**1.50 76**		*e*Pn	**Pn**	**14 34 36.4**	**-0.8**
KULA	**Kula-Manisa**	**1.50 76**		P	**Pb**	**14 34 38.2**	**+0.1**
KULA				S	**Sb**	**14 34 57.2**	**0.0**

*ATH **08** 14:35:47.6, 38.88°N×23.18°E, h4km±2km, ML1.4/10, Error ellipse: s-maj=2.4km s-min=0.6km az=114.0*
*CSEM **08** 14:35:47.9±0.1, 38.89°N×23.18°E, h2km, ML1.4, Error ellipse: s-maj=2.8km s-min=1.9km az=111.0*
THE 08 14:35:48.0, 38.89°N×23.19°E, h3km±2km, ML1.4/12, Error ellipse: s-maj=2.3km s-min=0.5km az=105.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SMIA	**Simia**	**0.02**	**114**	P	Pg	14 35 48.4	-0.3
SMIA				S	Sg	14 35 49.2	+0.1
SMIA	**Simia**	**0.02**	**114**	P	Pg	14 35 48.4	-0.3
SMIA				S	Sg	14 35 49.2	+0.1
SMIA	**Simia**	**0.02**	**114**	P	Pg	14 35 48.4	-0.3
SMIA				S	Sg	14 35 49.3	+0.1
SMIA				AML	AML	14 35 49.3	
	comp=E,17599μm,0.3s						
SMIA				AML	AML	14 35 49.4	
	comp=N,19340μm,0.2s						
ATAL	**Atalanti**	**0.23**	**214**	P	Pg	14 35 52.2	-0.3
ATAL				S	Sg	14 35 56.0	+0.5
ATAL	**Atalanti**	**0.23**	**214**	P	Pg	14 35 52.2	-0.3
ATAL				S	Sg	14 35 55.3	-0.2
ATAL	**Atalanti**	**0.23**	**214**	P	Pg	14 35 52.2	-0.3
ATAL				S	Sg	14 35 55.3	-0.2
ATAL				AML	AML	14 35 56.4	
	comp=E,405μm,0.3s						
ATAL				AML	AML	14 35 56.5	
	comp=N,194μm,0.3s						
LKR	**Lokris**	**0.28**	**212**	P	Pg	14 35 53.0	-0.3
LKR				S	Sg	14 35 57.7	+0.8
LKR	**Lokris**	**0.28**	**212**	P	Pg	14 35 53.1	-0.2
LKR				S	Sg	14 35 57.5	+0.6
LKR	**Lokris**	**0.28**	**212**	P	Pg	14 35 53.1	-0.2
LKR				S	Sg	14 35 57.5	+0.6
LKR				AML	AML	14 35 57.7	
	comp=E,288μm,0.2s						
LKR				AML	AML	14 35 59.2	
	comp=N,174μm,0.2s						
SKIA	**Skiathos**	**0.35**	**38**	P	Pg	14 35 55.0	+0.2
SKIA				S	Sg	14 36 00.1	+0.7
SKIA	**Skiathos**	**0.35**	**38**	P	Pg	14 35 54.8	0.0
SKIA				S	Sg	14 36 00.1	+0.7
SKIA	**Skiathos**	**0.35**	**38**	P	Pg	14 35 54.8	0.0
SKIA				S	Sg	14 36 00.4	+0.9
SKIA				AML	AML	14 36 00.4	
	comp=N,116μm,0.2s						
SKIA				AML	AML	14 36 01.0	
	comp=E,157μm,0.2s						
NEO	**Neokhori**	**0.42**	**4**	P	Pg	14 35 56.0	-0.1
NEO				S	Sg	14 36 01.6	0.0
NEO	**Neokhori**	**0.42**	**4**	P	Pg	14 35 56.2	+0.1
NEO				S	Sg	14 36 01.6	0.0
NEO	**Neokhori**	**0.42**	**4**	P	Pg	14 35 56.2	+0.1
NEO				S	Sg	14 36 01.5	-0.1
NEO				AML	AML	14 36 03.8	
	comp=E,174μm,0.2s						
NEO				AML	AML	14 36 05.2	
	comp=N,272μm,0.2s						
XOR	**Xorichti**	**0.48**	**1**	P	Pg	14 35 57.3	+0.1
XOR				S	Sg	14 36 04.1	+0.7
XOR	**Xorichti**	**0.48**	**1**	P	Pg	14 35 57.5	+0.3
XOR				S	Sg	14 36 03.6	+0.2
XOR	**Xorichti**	**0.48**	**1**	P	Pg	14 35 57.5	+0.3
XOR				S	Sg	14 36 03.6	+0.2
XOR				AML	AML	14 36 04.2	
	comp=N,116μm,0.2s						
XOR				AML	AML	14 36 08.2	
	comp=E,73μm,0.2s						
FYTO	**Fytoko, Volos**	**0.56**	**340**	P	Pg	14 35 58.5	-0.2
FYTO				S	Sg	14 36 06.9	+1.0
FYTO	**Fytoko, Volos**	**0.56**	**340**	P	Pg	14 35 58.5	-0.2
FYTO				S	Sg	14 36 06.9	+1.0
AOS	**Alonnisos**	**0.61**	**62**	P	Pg	14 35 58.9	-0.8
AOS				S	Sg	14 36 07.9	+0.3
AOS	**Alonnisos**	**0.61**	**62**	P	Pg	14 35 58.9	-0.8
AOS				S	Sg	14 36 07.6	0.0
AOS	**Alonnisos**	**0.61**	**62**	P	Pg	14 35 58.8	-0.9
AOS				S	Sg	14 36 07.5	-0.1
PROD	**Prodromos**	**0.67**	**200**	P	Pg	14 36 00.6	-0.2
PROD				S	Sg	14 36 08.4	-1.0
PROD	**Prodromos**	**0.67**	**200**	P	Pg	14 36 00.6	-0.2
PROD				S	Sg	14 36 08.4	-1.0
PROD				AML	AML	14 36 12.9	
	comp=E,47μm,0.1s						
PROD				AML	AML	14 36 12.9	
	comp=N,46μm,0.1s						
VIL2	**Platees**	**0.68**	**175**	P	Pg	14 36 01.3	+0.3
VIL2				S	Sb	14 36 11.9	-0.3
VIL2				AML	AML	14 36 16.1	
	comp=E,49μm,0.4s						
VIL2				AML	AML	14 36 17.4	
	comp=N,122μm,0.5s						
AGG	**Agios Georgios**	**0.68**	**282**	P	Pg	14 36 00.1	-1.0
AGG				S	Sg	14 36 11.0	+1.1
AGG	**Agios Georgios**	**0.68**	**282**	P	Pg	14 36 00.1	-1.0
AGG				S	Sg	14 36 10.9	+1.0
AGG	**Agios Georgios**	**0.68**	**282**	P	Pg	14 35 59.5	-1.6
AGG				S	Sg	14 36 10.9	+1.0
AGG				AML	AML	14 36 13.1	
	comp=N,87μm,0.3s						
AGG				AML	AML	14 36 16.4	
	comp=E,73μm,0.5s						
DSF	**Desfina**	**0.70**	**228**	P	Pg	14 36 00.6	-0.8
DSF				S	Sg	14 36 10.7	+0.2
DSF	**Desfina**	**0.70**	**228**	P	Pg	14 36 00.6	-0.8
DSF				S	Sg	14 36 10.7	+0.2
DSF	**Desfina**	**0.70**	**228**	P	Pg	14 36 00.2	-1.3
DSF				S	Sg	14 36 10.7	+0.2
DSF				AML	AML	14 36 12.4	
	comp=N,80μm,0.2s						
DSF				AML	AML	14 36 14.7	
	comp=E,60μm,0.2s						
VILL	**Villia**	**0.73**	**172**	P	Pg	14 36 01.4	-0.6
VILL				S	Sb	14 36 13.1	-0.7
VILL	**Villia**	**0.73**	**172**	P	Pg	14 36 01.4	-0.6
VILL				S	Sg	14 36 11.9	+0.5
LTK	**Loutraki**	**0.88**	**191**	P	Pg	14 36 05.2	+0.3
LTK				S	Sb	14 36 17.4	-0.7
LTK	**Loutraki**	**0.88**	**191**	P	Pg	14 36 05.2	+0.3
LTK				S	Sb	14 36 17.4	-0.7
KALE	**Kalithea**	**0.96**	**239**	P	Pg	14 36 05.9	-0.5
KALE				S	Sb	14 36 20.2	-0.2
KALE	**Kalithea**	**0.96**	**239**	P	Pg	14 36 05.9	-0.5
KALE				S	Sb	14 36 20.2	-0.2
SERG	**Sergoula**	**1.00**	**242**	P	Pb	14 36 07.8	-0.2
SERG				S	Sg	14 36 20.9	+0.7
SERG	**Sergoula**	**1.00**	**242**	P	Pb	14 36 07.8	-0.2
SERG				S	Sg	14 36 20.9	+0.7
VLY	**Voula,Athens**	**1.14**	**155**	P	Pb	14 36 10.1	-0.2
VLY				S	Sg	14 36 24.8	+0.2
VLY	**Voula,Athens**	**1.14**	**155**	P	Pb	14 36 10.1	-0.2
VLY				S	Sg	14 36 24.8	+0.2

IDC 08 14:37:13.3±5.9, 27.40°S×175.11°W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/18, mbtmp3.5/2, Error ellipse: s-maj=236.1km s-min=97.3km az=160.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**45.90**	**263**	P	P	14 45 37.4	-0.6
	0.3nm,0.4s,baz=105,slow=7.8,SNR=12						
WRA	**Warramunga Arr**	**46.63**	**268**	P	P	14 45 44.1	+0.4
	0.3nm,0.3s,baz=108,slow=0.8,SNR=15						
FINES	**FINESS Array B**	**143.11**	**343**	PKP	PKPdf	14 56 47.6	-1.0
	2.2nm,1.0s,baz=12,slow=7.5,SNR=3.7						

*ISCJB **08** 14:37:44.8±0.7, 37.99N±0.03°×34.85E±0.04, h4km±6km, Error ellipse: s-maj=5.5km s-min=4.9km az=176.5*
*CSEM **08** 14:37:44.7±0.3, 37.99N×34.84E, h10km, MD2.6, Error ellipse: s-maj=6.3km s-min=5.3km az=35.0*
*ISK **08** 14:37:44.3, 37.97N×34.86E, h6km, MD2.6*
*DDA **08** 14:37:44.3, 38.05N×34.83E, h8km, Md2.9*
ISC 08 14:37:44.8±1.0, 38.02N±0.03°×34.82E±0.03, h9km±8km, n26, σ0.989/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NIG	**Nigde**	**0.19**	**299**	*e*PG	**Pg**	**14 37 49.5**	**+0.5**
NIG	**Nigde**	**0.19**	**299**	*e*Pg	**Pg**	**14 37 49.5**	**+0.5**
YAHY	**KAYSERI_Yahyal**	**0.43**	**79**	*i* P	**Pg**	**14 37 53.3**	**0.0**
YAHY				*i* S	**Sg**	**14 37 59.2**	**+0.2**
YAHY	**KAYSERI_Yahyal**	**0.43**	**79**	P	**Pg**	**14 37 53.3**	**0.0**
YAHY				S	**Sg**	**14 37 59.2**	**+0.2**
AKO	**Adana**	**0.74**	**138**	*i* P	**Pg**	**14 37 58.8**	**-0.3**
AKO				*i* S	**Sb**	**14 38 10.0**	**-0.1**
KARA	**Karaisali**	**0.78**	**166**	*e*PG	**Pg**	**14 37 58.7**	**-1.1**
KARA				*e*SG	**Sg**	**14 38 09.2**	**-0.6**
KARA	**Karaisali**	**0.78**	**166**	*e*Pg	**Pg**	**14 37 58.7**	**-1.1**
KARA				*e*Sg	**Sg**	**14 38 09.2**	**-0.6**
AVNS	**Nevsehir-Avano**	**0.79**	**1**	*i* S	**Sn**	**14 38 13.7**	**-0.5**
AVNS	**Nevsehir-Avano**	**0.79**	**1**	S	**Sn**	**14 38 13.7**	**-0.5**
KERG	**Konya-Eregli**	**0.82**	**223**	*i* P	**Pg**	**14 38 00.5**	**0.0**
KERG				*i* S	**Sb**	**14 38 13.2**	**+0.8**
KERG	**Konya-Eregli**	**0.82**	**223**	P	**Pg**	**14 38 00.5**	**0.0**
KERG				S	**Sb**	**14 38 13.1**	**+0.8**
KOZT	**Kozan**	**0.96**	**124**	*e*PG	**Pg**	**14 38 02.1**	**-1.1**
KOZT	**Kozan**	**0.96**	**124**	*e*Pg	**Pg**	**14 38 02.1**	**-1.1**
AKSY	**AKSARAY - Alti**	**1.05**	**307**	*i* P	**Pg**	**14 38 03.9**	**-1.1**
AKSY				*i* S	**Sn**	**14 38 20.6**	**+0.1**
AKSY	**AKSARAY - Alti**	**1.05**	**307**	P	**Pg**	**14 38 03.9**	**-1.1**
AKSY				S	**Sn**	**14 38 20.6**	**+0.1**
DED	**Mersin**	**1.05**	**181**	*i* S	**Sg**	**14 38 19.1**	**+0.4**
MERS	**Mersin**	**1.17**	**192**	*e*PN	**Pb**	**14 38 06.7**	**-0.5**
MERS	**Mersin**	**1.17**	**192**	*e*Pn	**Pb**	**14 38 06.7**	**-0.5**
ANDN	**Andirin**	**1.28**	**109**	*i* P	Pg	14 38 20.0	+11
ANDN				*i* S	**Sn**	**14 38 29.6**	**+3.4**
ANDN	**Andirin**	**1.28**	**109**	P	Pg	14 38 20.0	+11
SARI	**SarD1z-Kayseri**	**1.32**	**72**	*e*PN	**Pg**	**14 38 09.8**	**-0.3**
KMRS	**Kahramanmaras**	**1.72**	**107**	*e*PN	**Pn**	**14 38 14.8**	**-0.1**
KMRS	**Kahramanmaras**	**1.72**	**107**	*e*Pn	**Pn**	**14 38 14.8**	**-0.1**
HCB	**Kahramanmara˜**	**1.78**	**111**	*i* P	Pn	14 38 07.9	-7.8
HCB				*i* S	Sn	14 38 12.8	-26
TAHT	**Tahtakopru-Hat**	**1.96**	**146**	*e*PN	**Pn**	**14 38 18.8**	**+0.5**
TAHT	**Tahtakopru-Hat**	**1.

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**2.44**	**258**	P	Pn	15 06 26.0	+1.0
ONAJ	**Iwakimizuishiy**	**2.55**	**291**	P	Pn	15 06 27.6	+1.0
JFK	**Kawauchi**	**2.60**	**297**	P	Pn	15 06 27.7	+0.5
JHO	**Hitachi**	**2.62**	**279**	P	Pn	15 06 28.3	+0.8
BSO1	**Boso 1**	**2.79**	**236**	P	Pn	15 06 30.2	+1.0
JRY	**Ryogami san**	**3.96**	**268**	P	Pn	15 06 47.3	+1.5
JRY				*eS*	Sn	15 07 32.0	+1.0
MAT	**Matsushiro**	**4.51**	**275**	P	Pn	15 06 55.6	+2.3
MAT				*eS*	Sn	15 07 44.3	-0.2

IDC 08 15:18:24.4±5.5, 28°.62S×176°.71W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/18, mbtmp3.7/2, Error ellipse: s-maj=259.4km s-min=85.8km az=163.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.36**	**265**	P	P	15 26 36.0	-0.8
	1.5nm,1.2s,baz=102,slow=6.6,SNR=5.7						
WRA	**Warramunga Arr**	**45.19**	**270**	P	P	15 26 43.9	+0.4
	0.7nm,0.7s,baz=110,slow=7.9,SNR=8.1						
FINES	**FINESS Array B**	**143.84**	**342**	PKP	PKPdf	15 38 00.3	-0.7
	1.0nm,0.8s,baz=76,slow=5.9,SNR=3.3						

*IDC **08** 15:28:55.7±1.3, 29°.36S×176°.15W, h0km, mb4.1/3, mb1 4.3/3, mb1mx3.8/20, mbtmp4.1/3, MS3.5/1, Ms1 3.5/1, ms1mx2.7/24, Error ellipse: s-maj=60.2km s-min=24.5km az=177.0*

*NEIC **08** 15:28:56.8±1.1, 29°.75S×176°.22W, h10km, mb4.3/2, Error ellipse: s-maj=22.9km s-min=22.1km az=60.0*

ISC 08 15:28:59.9±1.3, 29°.7S±0°.2×176°.3W±0°.1, h28km, n16, σ1s33/13, mb4.2/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.47**	**289**	Pn	**Pb**	**15 29 26.4**	**-0.2**
	338nm,0.3s,baz=126,slow=20,SNR=6.7						
RAO				Sn	**Sb**	**15 29 44.9**	**+0.1**
	485nm,0.3s,baz=106,slow=23,SNR=3.5						
RAO				LR	LR	15 29 46.2	
	comp=Z,202nm,20.0s,baz=248,slow=33						
URZ	**Urewera**	**10.09**	**211**	Pn	**Pn**	**15 31 21.7**	**-1.3**
	0.4nm,0.3s,baz=258,slow=4.7,SNR=7.1						
DZM	**Mont Dzumac**	**17.26**	**292**	LR	LR	15 38 15.5	
	comp=Z,153nm,18.6s,baz=156,slow=32						
DZM	**Mont Dzumac**	**17.26**	**292**	*e*LR	LR	15 37 07.3	
	140nm,26.1s						
TBI	**Tubuai**	**24.83**	**82**	*e*LR	LR	15 39 59.5	
	81nm,27.2s						
PPT2	**Papeete2**	**27.25**	**70**	*e*LR	LR	15 41 11.8	
	88nm,24.8s						
CTAO	**Charters Tower**	**35.14**	**277**	*e*P	**P**	**15 35 49.6**	**-1.8**
	4.2nm,0.5s						
STKA	**Stephens Creek**	**36.04**	**256**	P	**P**	**15 36 01.7**	**+2.7**
	4.1nm,0.8s,baz=97,slow=11,SNR=9.4						
ASAR	**Alice Springs**	**44.60**	**266**	P	**P**	**15 37 10.6**	**+0.6**
	0.9nm,0.5s,baz=99,slow=7.3,SNR=22						
WRAB	**Tennant Creek**	**45.52**	**271**	*e*P	**P**	**15 37 18.0**	**+0.6**
	1.3nm,0.7s						
WRA	**Warramunga Arr**	**45.53**	**271**	P	**P**	**15 37 17.3**	**-0.1**
	2.3nm,0.7s,baz=109,slow=8.1,SNR=14						
FINES	**FINESS Array B**	**145.00**	**341**	PKP	**PKPbc**	**15 48 32.2**	**-0.9**
	1.4nm,0.6s,baz=83,slow=4.4,SNR=8.4						
NB2	**NORSAR Subarra**	**148.29**	**353**	PKP	**PKPbc**	**15 48 42.2**	**-0.7**
	comp=Z,0.4nm,0.6s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**148.29**	**353**	PKPbc	**PKPbc**	**15 48 43.0**	**+0.1**
	comp=Z,1.0nm,0.8s,baz=14,slow=2.9,SNR=5.3						
AKASG	**Malin Array Be**	**151.62**	**325**	PKPbc	**PKPbc**	**15 48 50.4**	**-0.9**
	comp=Z,2.1nm,0.6s,baz=49,slow=3.0,SNR=8.9						
TORD	**Torodi Ar. Bea**	**163.39**	**173**	PKPab	**PKPab**	**15 49 53.0**	**+1.7**
	comp=Z,0.7nm,0.8s,baz=190,slow=4.0,SNR=3.6						

*IDC **08** 15:43:43.9±0.8, 33°.84N×87°.02E, h0km, mb3.5/9, mb1 3.7/12, mb1mx3.5/45, mbtmp3.6/12, ML3.2/3, MS3.0/3, Ms1 3.0/3, ms1mx2.4/36, Error ellipse: s-maj=34.5km s-min=16.5km az=54.0*

*ISCJB **08** 15:43:46.8±0.7, 34°.0N±0°.1×87°.1E±0°.2, h33km, mb3.5/7, MS2.9/3, Error ellipse: s-maj=23.0km s-min=11.0km az=150.4*

ISC 08 15:43:49.1±0.9, 33°.9N±0°.1×87°.1E±0°.2, h35km, n14, σ0s35/13, mb3.7/7, MS3.2/3, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**13.37**	**346**	Pn	**Pn**	**15 46 56.2**	**0.0**
	0.1nm,0.3s,baz=169,slow=14,SNR=7.3						
KURBB	**Kurchatov Arra**	**17.83**	**342**	P	**Pn**	**15 47 53.5**	**-0.7**
	0.1nm,0.3s,baz=157,slow=12,SNR=5.3						
CMAR	**Chiang Mai Arr**	**18.69**	**142**	P	**P**	**15 48 04.2**	**-0.3**
	0.1nm,0.3s,baz=326,slow=11,SNR=7.7						
SONM	**Songino Array**	**20.09**	**40**	P	**P**	**15 48 20.0**	**+0.3**
	1.1nm,0.9s,baz=249,slow=12,SNR=4.2						
ZALV	**Zalesovo Beam**	**20.09**	**356**	P	**P**	**15 48 19.3**	**-0.1**
	1.1nm,0.5s,baz=177,slow=10,SNR=4.0						
ZALV				LR	LR	15 56 13.4	
	comp=Z,12nm,20.6s,baz=70,slow=37						
FINES	**FINESS Array B**	**47.09**	**325**	P	**P**	**15 52 17.5**	**+0.3**
	0.5nm,0.6s,baz=92,slow=11,SNR=2.8						
ARCES	**ARCESS Array B**	**48.77**	**336**	LR	LR	16 13 58.0	
	comp=Z,29nm,20.9s,baz=272,slow=37						
HFS	**Hagfors**	**53.14**	**323**	P	**P**	**15 53 03.6**	**+0.6**
	0.9nm,0.6s,baz=90,slow=5.8,SNR=4.4						
NB2	**NORSAR Subarra**	**54.27**	**324**	P	**P**	**15 53 11.1**	**-0.3**
	comp=Z,0.9nm,0.8s,baz=82,slow=7.4						
NOA	**NORSAR Array B**	**54.27**	**324**	P	**P**	**15 53 11.2**	**-0.1**
	comp=Z,1.3nm,0.8s,baz=83,slow=7.2,SNR=6.1						
GERES	**GERESS Array B**	**54.96**	**309**	P	**P**	**15 53 16.6**	**-0.1**
	comp=Z,0.5nm,0.6s,baz=72,slow=5.9,SNR=4.7						
GERES				LR	LR	16 20 18.9	
	comp=Z,21nm,18.6s,baz=288,slow=40						
WRA	**Warramunga Arr**	**69.96**	**133**	P	**P**	**15 54 57.1**	**0.0**
	comp=Z,0.2nm,0.5s,baz=325,slow=6.7,SNR=7.2						
ASAR	**Alice Springs**	**72.54**	**135**	P	**P**	**15 55 12.7**	**+0.1**
	comp=Z,0.3nm,1.0s,baz=331,slow=5.3,SNR=3.5						
TORD	**Torodi Ar. Bea**	**79.00**	**278**	P	**P**	**15 55 50.1**	**+0.2**
	comp=Z,0.3nm,0.7s,baz=52,slow=4.8,SNR=3.4						

IDC 08 15:59:36.4±2.8, 30°.05S×176°.15W, h0km, mb3.2/2, mb1 3.6/3, mb1mx3.4/23, mbtmp3.5/3, ML3.2/1, Error ellipse: s-maj=51.7km s-min=36.1km az=99.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.74**	**297**	Pn	Pn	16 00 07.8	-0.1
	106nm,0.3s,baz=204,slow=20,SNR=3.4						
RAO				Sn	Sn	16 00 27.7	-3.0
	349nm,0.3s,baz=19,slow=20,SNR=7.5						
URZ	**Urewera**	**9.91**	**212**	Pn	Pn	16 01 59.5	-0.6
	0.2nm,0.3s,baz=265,slow=5.6,SNR=2.7						
URZ				Sn	Sn	16 03 52.8	+0.8
	0.6nm,0.3s,baz=155,slow=21,SNR=7.1						
ASAR	**Alice Springs**	**44.73**	**266**	P	P	16 07 52.0	+0.3
	0.2nm,0.6s,baz=102,slow=7.7,SNR=3.1						
WRA	**Warramunga Arr**	**45.69**	**271**	P	P	16 07 59.1	-0.3
	0.5nm,0.7s,baz=101,slow=7.6,SNR=13						
FINES	**FINESS Array B**	**145.35**	**341**	PKPbc	PKPbc	16 19 14.5	-0.9
	0.7nm,0.8s,baz=90,slow=3.8,SNR=4.0						

*ISCJB **08** 16:01:40.2±0.8, 29°.4S±0°.2×176°.00W±0°.09, h36km, mb4.0/7, MS3.5/6, Error ellipse: s-maj=22.1km s-min=10.7km az=174.6*

*IDC **08** 16:01:45.4±3.5, 28°.91S×176°.39W, h58km±29km, mb3.7/7, mb1 4.0/7, mb1mx3.7/21, mbtmp3.9/7, MS3.5/8, Ms1 3.5/8, ms1mx3.2/34, Error ellipse: s-maj=51.2km s-min=26.6km az=161.0*

ISC 08 16:01:41.9±0.8, 29°.2S±0°.2×176°.1W±0°.1, h36km, n22, σ1s23/15, mb4.0/7, MS3.5/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.62**	**269**	P	**Pn**	**16 02 08.4**	**+0.5**
	137nm,0.3s,baz=51,slow=18,SNR=5.6						
RAO				S	**Sn**	**16 02 28.8**	**+1.3**
	799nm,0.3s,baz=107,slow=19,SNR=7.7						
RAR	**Rarotonga**	**16.75**	**65**	LR	LR	16 11 43.8	
	comp=Z,85nm,19.2s,baz=246,slow=35						
DZM	**Mont Dzumac**	**17.29**	**290**	LR	LR	16 10 18.8	
	comp=Z,269nm,19.7s,baz=146,slow=30						
DZM	**Mont Dzumac**	**17.29**	**290**	*e*P	P	16 05 56.5	+15
	40nm,1.4s						
DZM				*e*LR	LR	16 10 03.6	
	373nm,25.6s						
RPZ	**Rata Peaks**	**17.75**	**212**	P	**Pn**	**16 05 45.0**	**-1.1**
	0.2nm,0.3s,baz=6.4,slow=10,SNR=2.2						
TBI	**Tubuai**	**24.53**	**82**	*e*LR	LR	16 12 32.2	
	242nm,28.8s						
PPT2	**Papeete2**	**26.86**	**70**	*e*LQ	LQ	16 12 29.5	
	197nm,24.0s						
PPT2				*e*LR	LR	16 13 31.4	
	185nm,28.0s						
PPT	**Papeete**	**26.87**	**70**	LR	LR	16 16 39.7	
	comp=Z,42nm,19.8s,baz=224,slow=33						
HNR	**Honiara**	**29.89**	**306**	LR	LR	16 17 09.0	
	comp=Z,80nm,21.6s,baz=212,slow=31						
STKA	**Stephens Creek**	**36.39**	**255**	P	**P**	**16 08 42.9**	**0.0**
	3.9nm,1.1s,baz=76,slow=12,SNR=4.0						
STKA				LR	LR	16 23 00.4	
	comp=Z,153nm,18.1s,baz=33,slow=35						
ASAR	**Alice Springs**	**44.87**	**265**	P	**P**	**16 09 51.6**	**-1.4**
	1.9nm,0.7s,baz=106,slow=7.8,SNR=15						
ASAR				LR	LR	16 28 45.0	
	comp=Z,148nm,18.0s,baz=116,slow=36						
WRA	**Warramunga Arr**	**45.76**	**270**	P	**P**	**16 09 58.2**	**-1.9**
	0.9nm,0.5s,baz=108,slow=8.0,SNR=14						
MJAR	**Matsushiro Arr**	**78.26**	**324**	LR	LR	16 48 32.6	
	comp=Z,14nm,18.4s,baz=155,slow=36						
TXAR	**Lajitas Array**	**90.34**	**56**	P	**P**	**16 14 40.8**	**+1.2**
	0.5nm,0.9s,baz=217,slow=6.0,SNR=6.4						
PDAR	**Pinedale Array**	**94.13**	**43**	P	**P**	**16 14 57.4**	**+0.5**
	0.2nm,0.4s,baz=225,slow=10.0,SNR=3.0						
PDAR				LR	LR	16 53 43.1	
	comp=Z,29nm,18.3s,baz=110,slow=33						
CMAR	**Chiang Mai Arr**	**94.61**	**288**	P	**P**	**16 15 00.5**	**+1.1**
	0.3nm,0.7s,baz=148,slow=5.3,SNR=3.8						
ILAR	**Eielson Array**	**96.42**	**12**	P	**P**	**16 15 05.4**	**-1.1**
	0.4nm,0.8s,baz=220,slow=4.0,SNR=4.9						
FINES	**FINESS Array B**	**144.59**	**342**	PKP	**PKPab**	**16 21 11.9**	**-0.6**
	2.4nm,0.8s,baz=54,slow=2.4,SNR=6.2						
NB2	**NORSAR Subarra**	**147.82**	**353**	PKP	**PKPbc**	**16 21 21.6**	**-0.8**
	comp=Z,1.4nm,0.7s,baz=6.6,slow=2.8						
NOA	**NORSAR Array B**	**147.82**	**353**	PKPbc	**PKPbc**	**16 21 21.9**	**-0.4**
	comp=Z,1.9nm,0.7s,baz=13,slow=4.5,SNR=9.5						
AKASG	**Malin Array Be**	**151.34**	**325**	PKPbc	**PKPbc**	**16 21 30.8**	**-0.5**
	comp=Z,0.8nm,0.5s,baz=41,slow=2.4,SNR=7.0						
TORD	**Torodi Ar. Bea**	**163.86**	**172**	PKPab	**PKPab**	**16 22 36.2**	**+2.0**
	comp=Z,1.2nm,0.7s,baz=190,slow=4.7,SNR=6.3						

IDC 08 16:03:02.6±1.3, 16°.22S×173°.66W, h0km, mb3.9/4, mb1 4.2/5, mb1mx3.8/30, mbtmp4.0/5, ML2.8/1, Error ellipse: s-maj=76.3km s-min=25.4km az=163.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.06**	**113**	Pn	Pn	16 06 21.7	-1.4
	0.5nm,0.3s,baz=302,slow=15,SNR=3.0						
STKA	**Stephens Creek**	**43.41**	**241**	P	P	16 11 09.0	+1.7
	0.8nm,0.5s,baz=94,slow=13,SNR=4.9						
WRA	**Warramunga Arr**	**49.42**	**257**	P	P	16 11 53.4	-1.2
	0.7nm,0.8s,baz=94,slow=8.0,SNR=6.9						
ASAR	**Alice Springs**	**49.62**	**253**	P	P	16 11 55.6	-0.6
	5.6nm,0.6s,baz=89,slow=7.8,SNR=63						
TXAR	**Lajitas Array**	**81.28**	**56**	P	P	16 15 21.5	+0.3
	0.3nm,0.8s,baz=238,slow=5.2,SNR=2.7						

IDC 08 16:07:15.7±999.0, 33°.95N×82°.68W, h0km, Error ellipse: s-maj=1574.0km s-min=331.7km az=161.0, Georgia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I10CA	**LAC DU BONNET**	**18.98**	**333**	*i*		17 57 18.1	
	baz=143,slow=317,SNR=2.0						
I18DK	**QAANAAQ INFRAS**	**34.03**	**4**	*i*		20 37 50.0	
	baz=194,slow=320,SNR=1.4						
I53US	**FAIRBANKS INFR**	**49.34**	**329**	*i*		21 11 30.0	
	baz=98,slow=322,SNR=0.9						

IDC 08 16:20:37.9±4.7, 15°.98S×174°.28W, h115km±75km, mb4.0/6, mb1 4.1/7, mb1mx3.6/33, mbtmp4.4/7, ML4.7/1, Error ellipse: s-maj=67.5km s-min=31.6km az=46.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.18**	**50**	P	Pn	16 21 26.4	0.0
	77nm,0.3s,baz=243,slow=4.5,SNR=77						
AFI				S	Sn	16 21 59.5	-4.4
	136nm,0.3s,baz=245,slow=17,SNR=9.5						
URZ	**Urewera**	**23.46**	**197**	P	P	16 25 36.9	-0.1
	4.8nm,0.3s,baz=177,slow=0.4,SNR=9.2						
RPZ	**Rata Peaks**	**30.33**	**201**	P	P	16 26 38.7	+0.2
	6.5nm,0.7s,baz=242,slow=1.4,SNR=2.3						
STKA	**Stephens Creek**	**43.01**	**240**	P	P	16 28 26.4	+0.2
	4.0nm,0.8s,baz=76,slow=9.7,SNR=7.1						
WRA	**Warramunga Arr**	**48.89**	**257**	P	P	16 29 12.7	+0.2
	1.0nm,0.4s,baz=93,slow=7.4,SNR=39						
ASAR	**Alice Springs**	**49.13**	**252**	P	P	16 29 13.6	-0.7
	4.5nm,0.7s,baz=90,slow=7.6,SNR=78						
VNDA	**Vanda**	**62.72**	**186**	P	P	16 30 50.2	0.0
	1.4nm,0.9s,baz=359,slow=7.0,SNR=6.3						

IDC 08 16:28:39.7±5.6, 19°.99S×169°.09E, h97km±40km, mb3.8/5, mb1 3.9/6, mb1mx3.5/27, mbtmp4.1/6, MS3.2/1, Ms1 3.2/1, ms1mx2.5/29, Error ellipse: s-maj=43.7km s-min=42.0km az=7.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.22**	**229**	P	Pn	16 29 29.0	+0.5
	17nm,0.3s,baz=37,slow=20,SNR=250						
DZM				S	Sn	16 30 06.2	+0.1
	77nm,0.3s,baz=50,slow=16,SNR=23						
CTA	**Charters Tower**	**21.45**	**266**	P	P	16 33 21.8	+1.5
	2.6nm,0.4s,baz=97,slow=12,SNR=8.6						
STKA	**Stephens Creek**	**27.33**	**239**	P	P	16 34 17.0	+1.4
	1.3nm,0.9s,baz=75,slow=13,SNR=5.1						
STKA				LR	LR	16 44 12.4	
	comp=Z,50nm,18.2s,baz=204,slow=34						
WRA	**Warramunga Arr**	**32.62**	**264**	P	P	16 35 01.4	-1.1
	1.1nm,0.5s,baz=90,slow=8.5,SNR=23						
ASAR	**Alice Springs**	**32.81**	**257**	P	P	16 35 03.9	-0.3
	5.9nm,0.8s,baz=86,slow=9.0,SNR=102						
MAW	**Mawson**	**77.69**	**202**	P	P	16 40 25.3	0.0
	0.7nm,0.3s,baz=104,slow=3.1,SNR=4.2						
ARCES	**ARCESS Array B**	**125.75**	**345**	PKP	PKPdf	16 47 28.5	-0.8
	3.1nm,1.0s,baz=67,slow=3.0,SNR=4.1						
GERES	**GERESS Array B**	**145.08**	**331**	PKPbc	PKPbc	16 48 04.7	-0.7
	0.4nm,0.6s,baz=42,slow=1.6,SNR=3.3						

*ISCJB **08** 16:41:35.2±0.3, 6°.79N±0°.03×73°.05W±0°.04, h164km±2km, mb3.5/11, Error ellipse: s-maj=7.1km s-min=3.4km az=37.3*

*FUNV **08** 16:41:36.2, 6°.77N×73°.17W, h169km, MW3.7*

*IDC **08** 16:41:36.2±0.6, 6°.72N×72°.96W, h163km±4km, mb3.3/11, mb1 3.5/14, mb1mx3.4/32, mbtmp3.8/14, Error ellipse: s-maj=14.8km s-min=10.5km az=135.0*

*RSNC **08** 16:41:37.9±1.0, 6°.77N×73°.09W, h146km±4km, ML4.1*

ISC 08 16:41:36.1±0.5, 6°.79N±0°.04×73°.05W±0°.04, h163km±4km, n54, σ1s05/82, mb3.5/11, 3C-9D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.23**	**214**	*i* P	**Pn**	**16 41 57.9**	**-0.5**
BARC				*e*S	**Sn**	**16 42 12.9**	**-2.5**
BARC				*i*		16 42 14.7	
	comp=Z,2μm,0.4s						
GIRC	**Giron, Santand**	**0.32**	**334**	*e*P	**Pn**	**16 41 58.0**	**-0.4**
PAMC	**Pamplona, Colo**	**0.65**	**32**	*e*P	**Pn**	**16 42 00.5**	**+0.2**
PAMC				*e*S	**Sn**	**16 42 17.1**	**-1.7**
BRRC	**Barranca, Sant**	**0.73**	**296**	⇑*i*P	**Pn**	**16 41 59.8**	**-0.4**
BRRC				*i*		16 42 00.2	
	comp=Z,3μm,0.2s						
BRRC				*e*S	**Sn**	**16 42 16.8**	**-1.9**
RUSC	**La Rusia**	**0.89**	**182**	⇑*i*P	**Pn**	**16 42 01.7**	**-0.2**
RUSC				*e*S	**Sn**	**16 42 19.7**	**-1.9**
RUSC				*i*		16 42 21.8	
	comp=Z,1μm,0.4s						
CBRI	**Barrientos, No**	**0.96**	**15**	*i* P	**Pn**	**16 42 02.4**	**+0.4**
CBRI				*e*S	**Sn**	**16 42 20.1**	**-1.9**
CBRI				*i*		16 42 26.1	
	comp=Z,1μm,0.5s						
GRMC	**Gramalote, San**	**0.96**	**15**	*i* P	**Pn**	**16 42 03.7**	**+1.7**
GRMC				*e*S	**Sn**	**16 42 22.9**	**+1.0**
GRMC				*i*		16 42 24.4	
	comp=Z,2μm,0.4s						
CAPV	**Capacho**	**1.30**	**34**	⇑*i*P	**Pn**	**16 42 05.8**	**+0.8**
CAPV				*e*S	**Sn**	**16 42 27.3**	**+0.1**
OCAC	**Ocana**	**1.47**	**350**	*e*P	**Pn**	**16 42 06.4**	**-0.2**
OCAC				*e*S	**Sn**	**16 42 28.5**	**-1.5**
OCAC				*i*		16 42 34.4	
	comp=Z,2μm,0.3s						
NORC	**Norcasia**	**2.18**	**236**	*e*P	**Pn**	**16 42 13.6**	**-0.6**
NORC				*e*S	**Sn**	**16 42 41.9**	**-1.7**
CHIC	**Chingaza**	**2.25**	**198**	*e*P	**Pn**	**16 42 15.5**	**+0.1**
CHIC				*e*S	**Sn**	**16 42 44.7**	**-1.0**
CHIC				*i*		16 42 55.2	
	comp=Z,437nm,0.4s						
ROSC	**El Rosal**	**2.31**	**213**	P	**Pn**	**16 42 17.6**	**+1.6**
	comp=Z,40nm,0.3s,baz=317,slow=15,SNR=22						
ROSC				S	**Sn**	**16 42 45.0**	**-1.9**
	comp=Z,228nm,0.3s,baz=0.0,slow=17,SNR=19						
ROSC	**El Rosal**	**2.31**	**213**	*e*P	**Pn**	**16 42 17.0**	**+1.0**
ROSC				*i*		16 42 55.1	
	comp=Z,1μm,0.5s						
HELC	**Santa Helena**	**2.53**	**257**	*e*P	**Pn**	**16 42 19.4**	**+0.7**
HELC				*e*S	**Sn**	**16 42 50.6**	**-0.9**
SOCV	**Socops**	**2.64**	**55**	⇓*i*P	**Pn**	**16 42 20.0**	**+0.4**
SOCV				*e*S	**Sn**	**16 42 52.5**	**-0.8**
VIGV	**El Vigia**	**2.64**	**39**	⇓*i*P	**Pn**	**16 42 20.1**	**+0.5**
VIGV				*e*S	**Sn**	**16 42 52.1**	**-1.2**
VILC	**Villavicencio,**	**2.73**	**194**	*e*P	**Pn**	**16 42 20.7**	**-0.2**
VILC				*e*S	**Sn**	**16 42 54.8**	**-0.9**
VILC				*i*		16 43 01.4	
	comp=Z,306nm,0.5s						
TOLC	**Tolima**	**3.14**	**226**	*e*P	**Pn**	**16 42 27.1**	**+0.9**
DBBC	**Dabeiba**	**3.15**	**274**	*e*P	**Pn**	**16 42 25.8**	**-0.2**
SDV	**Santo Domingo**	**3.18**	**49**	P	**Pn**	**16 42 27.1**	**+0.7**
	comp=Z,49nm,0.3s,baz=225,slow=5.1,SNR=169						
SDV				S	**Sn**	**16 43 05.4**	**-0.1**
	comp=Z,27nm,0.3s,baz=261,slow=23,SNR=13						
SDV	**Santo Domingo**	**3.18**	**49**	*e*P	**Pn**	**16 42 27.1**	**+0.7**
SDV	**Santo Domingo**	**3.18**	**49**	⇓*i*P	**Pn**	**16 42 27.0**	**+0.7**
ELOV	**Elorza**	**3.55**	**86**	⇓*e*P	**Pn**	**16 42 31.8**	**+0.9**
PRAC	**Prado**	**3.56**	**211**	*e*P	**Pn**	**16 42 31.4**	**+0.2**
PRAC				*e*S	**Sn**	**16 43 12.7**	**-1.3**
SJAC	**San Juan de Ar**	**3.60**	**194**	*e*P	**Pn**	**16 42 31.4**	**-0.5**
SJAC				*i*		16 43 27.4	
	comp=Z,484nm,0.5s						
VIRV	**Villa del Rosa**	**3.75**	**10**	⇓*i*P	**Pn**	**16 42 32.4**	**-1.1**
VIRV				*e*S	**Sn**	**16 43 15.2**	**-3.0**
QARV	**Quebrada Arrib**	**4.22**	**36**	*e*S	**Sn**	**16 43 26.8**	**-2.4**
SANV	**Sanarito**	**4.40**	**52**	⇓*e*P	**Pn**	**16 42 41.8**	**-0.3**
CURV	**Curarigua**	**4.43**	**43**	⇓*e*P	**Pn**	**16 42 42.4**	**-0.1**
DABV	**Dabajuro**	**4.75**	**30**	*e*P	**Pn**	**16 42 46.6**	**+0.1**
TEPV	**Terepaima**	**4.95**	**50**	*e*P	**Pn**	**16 42 49.2**	**0.0**
SIQV	**Siquisique**	**5.00**	**40**	⇓*i*P	**Pn**	**16 42 48.7**	**-1.1**
MAPV	**Macapo**	**5.46**	**56**	⇓*i*P	**Pn**	**16 42 55.7**	**-0.2**
MONV	**Montecano**	**5.97**	**30**	*e*P	**Pn**	**16 43 01.5**	**-1.0**
TURV	**Turiamo**	**6.31**	**54**	*e*P	**Pn**	**16 43 06.9**	**-0.2**
CUPV	**Cœpira**	**7.88**	**65**	*e*P	**Pn**	**16 43 27.1**	**-1.0**
PCRV	**Puerto La Cruz**	**8.98**	**67**	*e*P	**Pn**	**16 43 41.4**	**-1.2**
PTGA	**Pitinga**	**15.04**	**119**	P	**Pn**	**16 45 00.9**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=331,slow=19,SNR=2.1						
PTGA				S	**Sn**	**16 47 48.5**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=336,slow=20,SNR=2.4						
LPAZ	**La Paz**	**23.44**	**168**	P	**P**	**16 46 29.0**	**-2.5**
	comp=Z,0.3nm,0.4s,baz=306,slow=17,SNR=1.9						
LPAZ				pP	**pP**	**16 47 02.6**	**0.0**
	comp=Z,1.3nm,0.7s,baz=351,slow=9.6,SNR=4.0						
TXAR	**Lajitas Array**	**36.54**	**312**	P	**P**	**16 48 26.8**	**+0.5**
	comp=Z,0.1nm,0.4s,baz=125,slow=8.9,SNR=2.9						
TXAR				pP	**pP**	**16 49 02.7**	**+1.4**
	comp=Z,0.2nm,0.7s,baz=114,slow=6.2,SNR=2.7						
PDAR	**Pinedale Array**	**48.15**	**324**	P	**P**	**16 50 01.0**	**+0.9**
	comp=Z,0.2nm,0.4s,baz=125,slow=8.9,SNR=2.7						
YKA	**Yellowknife Ar**	**63.32**	**340**	P	**P**	**16 51 48.0**	**+0.5**
	comp=Z,1.5nm,0.6s,baz=133,slow=6.9,SNR=18						
YKA				pP	**pP**	**16 52 26.3**	**+0.4**
	comp=Z,0.3nm,0.5s,baz=138,slow=6.4,SNR=2.9						
YKA				sP	**sP**	**16 52 44.8**	**+1.2**
	comp=Z,0.1nm,0.3s,baz=101,slow=8.2,SNR=1.5						
DBIC	**Dimbokro**	**67.67**	**86**	P	**P**	**16 52 15.8**	**-0.5**
	comp=Z,1.6nm,0.5s,baz=265,slow=9.3,SNR=3.6						
INK	**Inuvik**	**

RAR Rarotonga 17.28 68 P **Pn 16 51 13.5 -5.8**
0.8nm,0.3s,baz=232,slow=12,SNR=3.8
RAR S Sn 16 54 05.7 -25
0.8nm,0.3s,baz=120,slow=20,SNR=2.9
RAR LR LR 16 56 02.1
comp=Z,568nm,21.3s,baz=248,slow=31
RAR Rarotonga 17.28 68 *e*P **Pn 16 51 19.3 0.0**
RAR Rarotonga 17.28 68 *e*Pn **Pn 16 51 19.3 0.0**
RAR S Sn 16 54 05.7 -25
RPZ Rata Peaks 17.67 210 P **Pn 16 51 21.3 -2.7**
1.2nm,0.3s,baz=37,slow=16,SNR=7.5
TBI Tubuai 25.21 84 *e*LQ LQ 16 57 30.3
436nm,28.8s
TBI *e*LR LR 16 58 51.8
861nm,29.2s,baz=251
TBI Tubuai 25.21 84 *e*T T 17 18 13.4
6.9nm,0.3s
PAE Paea 27.40 72 *e*T T 17 21 02.1
2.7nm,0.3s
PPT2 Papeete2 27.43 72 *e*LQ LQ 16 58 19.9
721nm,25.5s
PPT2 *e*LR LR 16 59 49.8
923nm,26.8s,baz=237
PPT Papeete 27.45 72 LR LR 17 01 07.0
comp=Z,248nm,20.8s,baz=242,slow=30
HNR Honiara 29.11 307 P **P 16 53 19.2 +0.9**
42nm,0.6s,baz=201,slow=12,SNR=3.3
CTAO Charters Tower 34.55 276 *e*P **P 16 54 03.8 -2.4**
CTAO pmax pmax
comp=Z,22nm,1.0s
CTAO Charters Tower 34.55 276 *e*P **P 16 54 03.8 -2.4**
comp=Z,22nm,1.0s
STKA Stephens Creek 35.78 255 P **P 16 54 16.7 +0.1**
comp=Z,6.0nm,0.8s,baz=96,slow=8.4,SNR=9.5
STKA LR LR 17 07 03.0
comp=Z,452nm,20.5s,baz=81,slow=33
STKA Stephens Creek 35.78 255 *e*P **P 16 54 17.7 +1.1**
comp=Z,3.6nm,1.0s
RKT Rikitea 37.96 91 *e*LR LR 17 04 45.0
comp=Z,474nm,28.2s
AS01 Alice Springs 44.14 265 *e*P **P 16 55 24.8 -1.3**
AS31 Alice Springs 44.18 265 *e*P **P 16 55 25.6 -0.8**
comp=Z,3.2nm,0.9s
ASAR Alice Springs 44.18 265 P **P 16 55 26.1 -0.4**
comp=Z,12nm,1.0s,baz=96,slow=7.5,SNR=99
ASAR PcP **PcP 16 57 11.3 +0.4**
comp=Z,0.9nm,0.6s,baz=119,slow=4.0,SNR=4.3
ASAR LR LR 17 13 17.0
comp=Z,786nm,18.4s,baz=112,slow=35
WB2 Warramunga Arr 45.02 270 *e*P **P 16 55 32.9 -0.3**
comp=Z,18nm,0.9s
WRAB Tennant Creek 45.03 270 *e*P **P 16 55 31.2 -2.0**
WRAB *e* 16 57 14.7
WRAB pmax pmax
comp=Z,20nm,0.9s
WRAB Tennant Creek 45.03 270 *e*P **P 16 55 31.2 -2.0**
comp=Z,20nm,0.9s
WRAB *e*PcP **PcP 16 57 14.7 +0.9**
WRA Warramunga Arr 45.04 270 P **P 16 55 32.8 -0.5**
comp=Z,16nm,0.9s,baz=110,slow=7.8,SNR=41
WRA PcP **PcP 16 57 14.0 +0.1**
comp=Z,4.4nm,1.0s,baz=115,slow=3.6,SNR=5.4
FORT Forrest 47.38 253 *e*P **P 16 55 47.6 -4.0**
comp=Z,164nm,0.8s
SBA Scott Base 49.61 184 *e*P **P 16 56 11.4 +3.4**
SBA pmax pmax
comp=Z,19nm,1.1s
SBA Scott Base 49.61 184 *e*P **P 16 56 11.4 +3.4**
comp=Z,19nm,1.1s
VNDA Vanda 49.69 186 P **P 16 56 09.7 +1.1**
comp=Z,1.5nm,0.9s,baz=350,slow=6.7,SNR=7.4
VNDA LR LR 17 13 54.6
comp=Z,89nm,20.3s,baz=6.5,slow=32
VNDA Vanda 49.69 186 *e*P **P 16 56 11.3 +2.7**
VNDA pmax pmax
comp=Z,15nm,1.6s
VNDA Vanda 49.69 186 *e*P **P 16 56 11.3 +2.7**
comp=Z,15nm,1.6s
FITZ Fitzroy Crossi 53.35 268 *e*P **P 16 56 34.6 -2.2**
comp=Z,11nm,0.9s
CASY Casey 56.92 207 *e*P **P 16 57 00.5 -1.4**
comp=Z,5.1nm,0.9s
MBWA Marble Bar 57.37 262 P **P 16 57 02.6 -3.2**
comp=Z,16nm,0.9s
MBWA *e*PcP **PcP 16 57 56.8 -2.7**
MIR Mirnyy 63.90 206 *i* P **P 16 57 50.0 +0.5**
MIR pmax pmax
comp=Z,4.0nm,1.0s
MAW Mawson 74.05 200 P **P 16 58 54.1 +1.6**
comp=Z,2.3nm,0.5s,baz=144,slow=9.8,SNR=7.3
MAW LR LR 17 31 11.7
comp=Z,195nm,18.7s,baz=65,slow=36
MAW Mawson 74.05 200 *e*P **P 16 58 54.0 +1.5**
comp=Z,2.2nm,1.0s
SBUM Sibu 74.55 282 *e*P **P 16 58 55.7 -0.6**
KSM Kuching 75.71 280 *e*P **P 16 59 03.3 +0.2**
MJAR Matsushiro Arr 77.57 324 P **P 16 59 12.8 -0.2**
comp=Z,5.9nm,0.9s,baz=169,slow=6.6,SNR=9.4
MJAR LR LR 17 28 05.6
comp=Z,40nm,21.9s,baz=215,slow=32
MJAR Matsushiro Arr 77.57 324 P **P 16 59 12.9 -0.2**
MJAR pmax pmax
comp=Z,8.0nm,1.0s
MJAR MLR MLR
comp=Z,40nm,21.9s
SYO Syowa Base 78.79 193‖ *e*P **P 16 59 18.0 -1.4**
SYO Syowa Base 78.79 193‖ *e*PcP **PcP 16 59 26.8 -1.3**
JNU Nakatsue 79.09 318 P **P 16 59 21.4 -0.1**
comp=Z,12nm,1.1s,baz=307,slow=3.3,SNR=4.5
JNU LR LR 17 28 54.2
comp=Z,50nm,20.1s,baz=121,slow=32
SNAA Sanae 79.63 178 P **P 16 59 20.0 -4.1**
SNAA Sanae 79.63 178 *e*P **P 16 59 23.3 -0.7**
SNAA pmax pmax
comp=Z,5.0nm,0.9s
SNAA Sanae 79.63 178 *e*P **P 16 59 23.2 -0.7**
comp=Z,4.8nm,0.9s
ASAJ Asahikawa 81.56 332 P **P 16 59 37.1 +2.6**
comp=Z,6.0nm,0.8s,baz=174,slow=9.2
PLCA Paso Flores 82.82 133 P **P 16 59 43.1 +1.5**
comp=Z,0.8nm,0.5s,baz=209,slow=19,SNR=2.2
PLCA LR LR 17 28 10.4
comp=Z,102nm,19.0s,baz=264,slow=30
YSS Yuzh-Sakhalins 83.83 334‖ *e*P **P 16 59 48.5 +2.3**
YSS pmax pmax
comp=Z,20nm,0.9s
YSS MLR MLR
comp=Z,100nm,19.0s
YSS Yuzh-Sakhalins 83.83 334 *e*P **P 16 59 47.8 +1.6**
KSRS Korea Array 83.84 319 P **P 16 59 47.8 +1.3**
comp=Z,3.2nm,1.0s,baz=144,slow=5.5,SNR=9.9
KSRS LR LR 17 35 13.7
comp=Z,38nm,19.0s,baz=132,slow=34
KSAR Wonju Array Be 83.86 319 P **P 16 59 47.8 +1.2**
KSAR Wonju Array Be 83.86 319 P **P 16 59 47.8 +1.2**
KS01 Wonju Array Si 83.87 319 *e*P **P 16 59 47.4 +0.7**
PFO Pinyon Flats O 84.48 47 LR LR 17 31 29.5
comp=Z,50nm,19.4s,baz=292,slow=32
PEA0 Petropavlovsk- 84.61 345 *e*P **P 16 59 51.0 +1.0**
PETK Petropavlovsk- 84.61 345 P **P 16 59 51.5 +1.5**
comp=Z,12nm,0.8s,baz=117,slow=7.0,SNR=14
PETK LR LR 17 34 22.7
comp=Z,38nm,18.7s,baz=161,slow=33
MSHR Mys Shultsa 85.69 324 *c e*P **P 16 59 56.7 +1.0**
USRK Ussuriysk Ar. 86.45 326 P **P 17 00 00.8 +1.4**
comp=Z,4.6nm,0.8s,baz=97,slow=4.4,SNR=13
TPNV Topopah Spring 86.75 44 *e*P **P 17 00 03.0 +1.7**
TPNV Topopah Spring 86.75 44 *e*P **P 17 00 03.0 +1.7**
TUC Tucson 87.42 51 *e*P **P 17 00 05.8 +1.2**
TUC pmax pmax
comp=Z,17nm,1.5s
TUC Tucson 87.42 51 *e*P **P 17 00 05.8 +1.2**
comp=Z,17nm,1.5s
HABR Khabarovsk 88.21 330 *c e*P **P 17 00 07.4 -0.4**
HABR *e**PP **pP 17 00 17.9 -1.3**
HABR *e**SP **sP 17 00 21.9 -1.4**
HABR *e* 17 03 34.0
HABR *e*S **SKSac 17 10 32.1 -1.3**
HABR *e*S **S 17 10 46.9 -2.6**
HABR *e*SS **SS 17 16 38.4 -1.4**
HABR *e*SSS SSS 17 20 13.1
HABR MLR MLR
comp=Z,99nm,20.0s
CN2 Changchun 89.54 322 *e*P **P 17 00 14.4 +0.2**
CN2 pmax pmax
comp=Z,10.0nm,0.9s

TIA Tai'an 89.67 312 ⇑P **P 17 00 16.1 +1.1**
TIA pmax pmax
comp=Z,20nm,1.1s
MTPU Mount Pierson 89.95 46 *e*P **P 17 00 19.0 +2.2**
KLR Kul'dur 90.23 329 P **P 17 00 19.0 +1.7**
comp=Z,2.3nm,0.7s,baz=168,slow=2.3,SNR=9.6
KLR LR LR 17 37 47.3
comp=Z,49nm,19.2s,slow=34
TX31 Lajitas Ar. Si 90.76 57 *e*P **P 17 00 20.6 +0.2**
TXAR Lajitas Array 90.76 57 P **P 17 00 21.1 +0.7**
comp=Z,0.8nm,0.9s,baz=204,slow=6.4,SNR=5.4
TXAR LR LR 17 35 24.8
comp=Z,54nm,18.2s,baz=0.0,slow=32
ENH Enshi 91.56 304 *e*P **P 17 00 22.0 -2.0**
comp=Z,11nm,0.9s
GYA Guiyang 91.65 299 *e*P **P 17 00 26.0 +1.4**
GYA pmax pmax
comp=Z,10.0nm,1.0s
ANMO Albuquerque 91.88 51 *c e*P **P 17 00 26.5 +0.9**
ANMO pmax pmax
comp=Z,2.0nm,1.4s
NNA Nana 92.89 105 LR LR 17 34 03.2
comp=Z,54nm,18.8s,baz=262,slow=30
NEW Newport 93.59 35 LR LR 17 34 47.0
comp=Z,59nm,20.4s,baz=204,slow=30
CMAR Chiang Mai Arr 93.83 289 P **P 17 00 36.2 +1.5**
comp=Z,0.3nm,0.4s,baz=147,slow=5.4,SNR=3.0
ATAH Atahualpa 93.97 100 LR LR 17 33 02.9
comp=Z,92nm,21.8s,baz=226,slow=29
PDAR Pimedale Array 94.38 43 P **P 17 00 37.5 +0.6**
comp=Z,0.3nm,0.5s,baz=218,slow=4.0,SNR=2.6
PDAR LR LR 17 40 07.9
comp=Z,115nm,18.0s,baz=245,slow=34
TRF Thorofare Moun 94.42 12 *e*P **P 17 00 35.5 -1.0**
SEY Seymchan 94.74 346 P **P 17 00 38.2 +0.5**
comp=Z,2.7nm,0.8s,baz=259,slow=1.6,SNR=6.5
HHC Hu-ho-hao-te 95.89 314 *e*P **P 17 00 45.9 +2.1**
HHC pP sP 17 00 59.4 +0.1
HHC sP pP 17 01 04.4 +9.2
HHC Hu-ho-hao-te 95.89 314 S **S 17 11 57.3 -2.0**
HHC pmax pmax
comp=Z,18nm,0.7s
HHC pmax pmax
comp=Z,93nm,8.4s
HHC LR LR
comp=N,100nm,18.2s
HHC LR LR
comp=E,120nm,17.4s
HHC LR LR
comp=Z,82nm,20.6s
HDA Harding Lake 95.91 13 *e*P **P 17 00 42.7 -0.4**
CD2 Chengdu 96.11 302 *e*P **P 17 00 44.8 -0.1**
ILAR Eielson Array 96.25 12 P **P 17 00 44.5 -0.2**
comp=Z,0.2nm,0.6s,baz=248,slow=5.9,SNR=4.6
ILAR Eielson Array 96.25 12 P **P 17 00 44.5 -0.2**
ILAR pmax pmax
comp=Z,1.0nm,1.0s
BILL Bilibino 97.45 354 *e*P Pdif 17 00 51.8 +1.7
BILL pmax pmax
comp=Z,1.0nm,0.9s
BILL MLR MLR
comp=Z,86nm,19.0s
LPAZ La Paz 97.86 113 LR LR 17 38 50.7
comp=Z,28nm,18.4s,baz=246,slow=32
LZH Lanzhou 98.61 306 *e*P Pdif 17 00 56.5 +0.3
LZH pP sP 17 01 10.2 -1.5
LZH sP pP 17 01 15.6 +7.9
LZH PP **PP 17 05 00.3 +2.6**
LZH pmax pmax
comp=Z,15nm,1.5s
LZH pmax pmax
comp=Z,78nm,9.3s
LZH LR LR
comp=N,170nm,17.5s
LZH LR LR
comp=E,160nm,17.2s
LZH LR LR
comp=Z,220nm,19.4s
YAK Yakutsk 100.23 337 *i* P **Pdif 17 01 03.1 +0.6**
YAK pmax pmax
comp=Z,2.0nm,0.9s
MKAR Makanchi Array 117.54 310 PKP **PKPdf 17 06 01.9 -0.7**
comp=Z,2.1nm,0.8s,baz=64,slow=5.5,SNR=16
ZALV Zalesovo Beam 117.55 319 PKP **PKPdf 17 06 01.9 -0.5**
comp=Z,1.5nm,0.8s,baz=225,slow=1.3,SNR=6.4
NVS Novosibirsk 118.63 320 *e*PKIKP **PKPdf 17 06 03.2 -1.2**
KSH Kashi 120.30 301 *e*PKP **PKPdf 17 06 12.6 +4.3**
KSH *es*PKP 17 06 28.1
KSH *e*PP PP 17 07 47.1 +12
KSH PKS **PKSdf 17 09 48.4 +3.4**
KSH SKS **SKSdf 17 13 19.8 +2.2**
KSH SKKS **SKKSac 17 14 35.4 +3.8**
KSH AMB AMB
comp=Z,110nm,4.6s
KSH LR LR
comp=N,190nm,8.3s
KSH LR LR
comp=E,180nm,13.9s
KSH LR LR
comp=Z,170nm,6.0s
KURK Kurchatov 120.70 314 *e*PKIKP **PKPdf 17 06 07.8 -0.7**
KURK Kurchatov 120.70 314 *e*PKPdf **PKPdf 17 06 07.8 -0.7**
KKAR Karatay Array 125.04 304 *e*PKIKP **PKPdf 17 06 17.2 +0.1**
KKAR Karatay Array 125.04 304 *e*PKPdf **PKPdf 17 06 17.1 +0.1**
BRVK Borovoye 126.06 317 *e*PKIKP **PKPdf 17 06 18.2 -0.5**
BRVK Borovoye 126.06 317 *e*PKPdf **PKPdf 17 06 18.2 -0.5**
KBS Kingsbay 129.73 358 *e*PKIKP **PKPdf 17 06 28.8 +3.8**
KBS pmax pmax
comp=Z,141nm,1.7s
ARU Arti 132.53 322 *i* PKIKP **PKPdf 17 06 31.2 +0.3**
ARU 17 08 54.6
ARU SS SS 17 26 26.0 -6.3
GEYT Alibeck 133.78 296 PKP **PKPdf 17 06 34.2 +0.2**
comp=Z,2.0nm,0.7s,baz=270,slow=3.0,SNR=5.7
H10S3 ASCENSION HYDR 138.65 153 T T 19 42 48.2
baz=204,slow=75,SNR=6.1
H10S2 ASCENSION HYDR 138.65 153 T T 19 42 44.0
baz=204,slow=75,SNR=5.5
H10S1 ASCENSION HYDR 138.66 153 T T 19 42 44.0
baz=204,slow=75,SNR=8.2
H10N3 ASCENSION HYDR 139.72 152 T T 19 43 32.9
baz=204,slow=75,SNR=3.8
H10N1 ASCENSION HYDR 139.73 152 T T 19 43 39.6
baz=204,slow=75,SNR=3.3
H10N2 ASCENSION HYDR 139.74 152 T T 19 43 41.9
baz=204,slow=75,SNR=2.8
KLMR Klimovskoe 139.88 333 *e*PKIKP **PKPdf 17 06 44.3 -0.1**
KLMR pmax pmax
comp=Z,6.0nm,1.0s
TBLG Delisi 144.04 302 P **PKPdf 17 06 52.1 -0.5**
TBLG Delisi 144.04 302 *e*PKIKP **PKPdf 17 06 52.0 -0.5**
FINES FINESS Array B 144.05 341 PKP **PKPab 17 06 49.6 +0.3**
comp=Z,5.0nm,0.8s,baz=66,slow=4.8,SNR=18
GUDG Gudauri 144.13 303 P **PKPab 17 06 50.4 -0.2**
OBN Obninsk 144.47 327‖ *e*PKIKP PKPbc 17 06 51.4 +0.1
OBN *i* 17 07 03.5
OBN *e* 17 10 17.1
OBN pmax pmax
comp=Z,25nm,1.1s
ZEI Tsey 144.50 304 *i* PKIKP **PKPab 17 06 52.1 +0.2**
NCK Nalchik 144.59 305 *e*PKIKP **PKPab 17 06 50.8 -1.2**
ONI Oni 144.85 304 P **PKPab 17 06 52.2 -0.9**
ONI Oni 144.85 304 *e*PKIKP **PKPab 17 06 52.1 -0.9**
BGD Bogdanovka 144.94 302 P **PKPdf 17 06 54.8 +0.4**
AKH Akhalkalaki 145.00 302 P **PKPdf 17 06 54.7 +0.3**
VSR Storozhevoye 145.04 320 *e*PKIKP **PKPbc 17 06 52.5 -0.8**
VSR pmax pmax
comp=Z,10.0nm,0.7s
KBZ Khabaz 145.04 306 PKPbc **PKPdf 17 06 54.4 +0.3**
comp=Z,6.8nm,1.1s,baz=140,slow=12,SNR=11
KIV Kislovodsk 145.15 306‖ *i*PKIKP **PKPdf 17 06 54.9 +0.5**
KIV *e* 17 07 05.7
KIV pmax pmax
comp=Z,21nm,1.2s
KIV MLR MLR
comp=Z,40nm,19.0s
KIV Kislovodsk 145.15 306 *e*PKPdf **PKPbc 17 06 53.3 -0.7**
NEY Neytrino 145.26 305 *e*PKIKP **PKPdf 17 06 56.6 +1.8**
CHVG Ch'k'valeri 145.83 304 P **PKPab 17 06 56.5 -0.1**
VSU Vasula 146.22 338 *e*PKP2 **PKPbc 17 06 56.6 -0.2**
NB2 NORSAR Subarra 147.40 353 PKP **PKPbc 17 06 59.3 -0.8**
comp=Z,6.0nm,0.9s,baz=20,slow=4.1
NOA NORSAR Array B 147.40 353 PKPbc **PKPbc 17 07 00.4 +0.3**
comp=Z,5.5nm,0.9s,baz=16,slow=3.0,SNR=14
KONO Kongsberg 148.93 354 *c i*PKP2 **PKPab 17 07 09.1 +0.9**
KONO pmax pmax
comp=Z,292nm,2.5s
AKASG Malin Array Be 150.66 325 PKPbc **PKPbc 17 07 08.5 -0.1**
comp=Z,19nm,0.8s,baz=47,slow=2.8,SNR=45
AKASG PKPab **PKPab 17 07 14.8 -0.8**
comp=Z,5.4nm,0.7s,baz=46,slow=3.3,SNR=7.3
BRTR Keskin Array B 152.69 301 PKPbc **PKPbc 17 07 14.1 +0.2**
comp=Z,5.0nm,0.9s,baz=116,slow=2.9,SNR=22
BRTR PKPab **PKPab 17 07 23.6 -1.1**
comp=Z,5.3nm,0.9s,baz=110,slow=1.4,SNR=11
KOLS Kolonicke sedl 155.17 329 *e*PKP2 **PKPab 17 07 35.2 +0.5**
KOLS Kolonicke sedl 155.17 329 *e*PKP **PKPab 17 07 35.2 +0.5**
OKC Ostrava-Krasne 156.16 335 *e*PKPAB **PKPab 17 07 39.1 +0.3**
OKC Ostrava-Krasne 156.16 335 *e*PKP2 **PKPab 17 07 39.1 +0.3**
KECS Kecovo 156.30 330 *e*PKP2 **PKPab 17 07 43.0 +3.5**
KECS Kecovo 156.30 330 *e*PKP **PKPab 17 07 43.0 +3.5**
UPC Upice 156.31 339 *e*PKPAB **PKPab 17 07 41.1 +1.6**
UPC *ex* x 17 07 53.0
UPC Upice 156.31 339 *e*PKP2 **PKPab 17 07 41.1 +1.6**
DPC Dobruska-Polom 156.35 339 *e*PKPAB **PKPab 17 07 40.5 +0.8**
DPC *ex* x 17 07 53.5
DPC Dobruska-Polom 156.35 339 *e*PKP2 **PKPab 17 07 40.5 +0.8**
CLL Collm 156.41 344 *i* PKPab **PKPab 17 07 39.3 -0.6**
comp=Z,8.0nm,1.3s
CLL *ep*PKPab **pPKPab 17 07 49.0 -2.3**
CLL LmV 18 23 00.0
comp=Z,100nm,19.1s
CLL Collm 156.41 344 *i* PKP2 **PKPab 17 07 39.3 -0.6**
CLL pmax pmax
comp=Z,8.0nm,1.3s
BRG Berggiesshubel 156.58 343 *e*PKP **PKPab 17 07 40.3 -0.3**
comp=Z,6.2nm,1.2s
BRG Berggiesshubel 156.58 343 *e*PKP2 **PKPab 17 07 40.3 -0.3**
BRG pmax pmax
comp=Z,6.0nm,1.2s
VYHS Vyhne 156.98 333 *e*PKP2 **PKPab 17 07 42.9 +0.4**
VYHS Vyhne 156.98 333 *e*PKP **PKPab 17 07 42.9 +0.4**
KHC Kasperske Hory 158.26 341 *e*PKPAB **PKPab 17 07 48.2 +0.2**
KHC *ex* x 17 08 01.3
KHC Kasperske Hory 158.26 341 *e*PKP2 **PKPab 17 07 48.2 +0.2**
GERES GERESS Array B 158.48 341 PKPab **PKPab 17 07 47.7 -1.3**
comp=Z,0.3nm,0.2s,baz=4.8,slow=3.2,SNR=5.1
CONA Conrad Observa 158.58 336 *i* PKPab **PKPab 17 07 49.6 +0.2**
comp=Z,6.4nm,1.3s
MOA Molln 159.19 338 *i* PKPab **PKPab 17 07 53.1 +1.1**
comp=Z,3.7nm,1.1s
SOKA Soboth 159.94 335 *i* PKPab **PKPab 17 07 55.8 +0.4**
comp=Z,3.1nm,1.1s
MOTA Moosalm 160.56 343 *i* pPKPab **PKPab 17 08 00.8 +2.6**
comp=Z,2.6nm,0.8s
ABTA Abfaltersbach 160.72 340 *i* PKPab **PKPab 17 07 58.7 -0.1**
comp=Z,4.5nm,0.9s
TORD Torodi Ar. Bea 164.28 175 PKPab **PKPab 17 08 14.5 -0.4**
comp=Z,1.5nm,0.9s,baz=172,slow=4.2,SNR=3.7

*IDC **08** 16:50:03.6±3.4,54.°86N×164.°10E,h0km,mb3.2/2,*
mb1 3.5/3,mb1mx3.1/50,mbtmp3.2/3,ML2.1/1,Error
ellipse: s-maj=197.0km s-min=25.3km az=151.0
*KRSC **08** 16:50:06.8±0.6,55.°93N×162.°32E,h55km±13km,ML3.5*

ISC 08 16:50:07.8±1.4,55.°95N±0.°03×162.°28E±0.°03,h24km±13km,
n33,σ1.°19/53,Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBG	**Krutoberegovo**	**0.39**	**38**	*i* P	**Pn**	**16 50 18.4**	**+0.6**
KBG				*i* S	**Sn**	**16 50 26.1**	**+1.7**
SMKR	**Semkarok**	**0.78**	**325**	*i* P	**Pn**	**16 50 23.4**	**+0.1**
SMKR				*e*S	**Sn**	**16 50 34.8**	**+0.6**
ZLN	**Zelenaya**	**0.83**	**275**	*i* P	**Pn**	**16 50 24.2**	**+0.2**
ZLN				*i* S	**Sn**	**16 50 35.7**	**+0.2**
BDR	**Baidarnaya**	**0.86**	**316**	*i* P	**Pn**	**16 50 24.8**	**+0.4**
BDR				*e*S	**Sn**	**16 50 37.4**	**+1.2**
CIRR	**Tsirk**	**0.87**	**281**	*i* P	**Pb**	**16 50 24.5**	**+0.2**
CIRR				*i* S	**Sn**	**16 50 36.7**	**0.0**
LGNR	**Loginova**	**0.90**	**279**	*i* P	**Pb**	**16 50 25.2**	**+0.3**
LGNR				*i* S	**Sn**	**16 50 37.8**	**+0.3**
SRKR	**Sorokina**	**0.94**	**319**	*i* P	**Pb**	**16 50 25.8**	**+0.4**
SRKR				*e*S	**Sn**	**16 50 38.4**	**+0.3**
KLY	**Klyuchi**	**0.98**	**292**	*i* P	**Pn**	**16 50 24.4**	**-1.5**
KLY				*i* S	**Sb**	**16 50 36.6**	**-1.9**
KRSR	**Krestovskiy**	**0.99**	**286**	*i* P	**Pn**	**16 50 25.8**	**-0.5**
KRSR				*i* S	**Sb**	**16 50 38.4**	**-0.7**
BZMR	**Bezymyannaya**	**1.00**	**270**	*e*P	**Pn**	**16 50 26.5**	**0.0**
BZMR				*e*S	**Sn**	**16 50 39.9**	**0.0**
KPT	**Kopyto**	**1.16**	**272**	*e*P	**Pn**	**16 50 28.9**	**+0.4**
KPT				*e*S	**Sb**	**16 50 44.2**	**+0.5**
KMNR	**Kamenistaya**	**1.17**	**261**	P	**Pb**	**16 50 29.3**	**0.0**
KMNR				S	**Sb**	**16 50 45.1**	**+1.1**
KOZ	**Kozyrevsk**	**1.35**	**275**	*e*P	**Pb**	**16 50 32.3**	**-0.1**
KOZ				*e*S	**Sb**	**16 50 50.1**	**+0.8**
TUMR	**Tumrok**	**1.38**	**242**	*e*P	**Pb**	**16 50 32.8**	**-0.2**
TUMR				*e*S	**Sb**	**16 50 50.3**	**+0.1**
MKZ	**Mys Kozlova**	**1.43**	**193**	*e*P	**Pn**	**16 50 32.2**	**0.0**
MKZ				*e*S	**Sn**	**16 50 50.1**	**-0.1**
ESO	**Esso**	**2.01**	**271**	*e*P	**Pn**	**16 50 41.2**	**+1.0**
ESO				*e*S	**Sn**	**16 51 05.3**	**+0.7**
BKI	**Bering**	**2.23**	**108**	*e*P	**Pn**	**16 50 43.7**	**+0.6**
BKI				*e*S	**Sn**	**16 51 09.7**	**-0.1**
SPN	**Mys Shipunski**	**3.15**	**206**	*e*P	**Pn**	**16 50 56.2**	**+0.4**
SPN				*e*S	**Sn**	**16 51 31.0**	**-1.5**
SDLR	**Sedlovina**	**3.33**	**218**	P	**Pn**	**16 50 58.8**	**+0.4**
SDLR				S	**Sn**	**16 51 37.3**	**+0.2**
KRER	**Koryakskii**	**3.35**	**219**	P	**Pn**	**16 51 00.6**	**+1.8**
GNL	**Ganaly**	**3.38**	**230**	*e*P	**Pn**	**16 51 00.6**	**+1.6**
AVH	**Avacha**	**3.39**	**219**	P	**Pn**	**16 51 01.0**	**+1.8**
AVH				S	**Sn**	**16 51 41.3**	**+2.7**
UGLR	**Uglovaya**	**3.41**	**218**	P	**Pn**	**16 51 01.2**	**+1.8**
DALK	**Dalny**	**3.58**	**217**	*e*P	**Pn**	**16 51 03.0**	**+1.4**
DALK				*e*S	**Sn**	**16 51 43.0**	**-0.1**
PET	**Petropavlovsk**	**3.62**	**217**	P	**Pn**	**16 51 03.5**	**+1.3**
PET				S	**Sn**	**16 51 44.4**	**+0.4**
PETK	**Petropavlovsk-**	**3.90**	**225**	Pn	**Pn**	**16 51 08.4**	**+2.2**
	0.6nm,0.3s,baz=62,slow=16,SNR=14						
PETK				Sn	**Sb**	**16 51 59.2**	**-3.4**
	0.3nm,0.3s,baz=83,slow=34,SNR=2.9						
RUS	**Russkaya**	**4.16**	**214**	P	**Pn**	**16 51 10.8**	**+1.1**
ASAK	**Asacha**	**4.41**	**218**	P	**Pn**	**16 51 15.6**	**+2.5**
ILAR	**Eielson Array**	**25.94**	**49**	P	**P**	**16 55 37.7**	**0.0**
	0.4nm,0.8s,baz=264,slow=9.9,SNR=4.8						
H11N2	**WAKE ISLAND Hy 36.33 173**			T	T	17 35 56.2	
	baz=357,slow=76,SNR=12						
H11N3	**WAKE ISLAND Hy 36.35 173**			T	T	17 35 57.6	
	baz=357,slow=76,SNR=7.5						
H11N1	**WAKE ISLAND Hy 36.35 173**			T	T	17 35 52.2	
	baz=357,slow=76						
YKA	**Yellowknife Ar**	**40.22**	**46**	P	**P**	**16 57 40.4**	**-1.4**
	0.2nm,0.5s,baz=297,slow=8.2,SNR=2.4						

IDC 08 17:03:10.7±5.6,7.°27S×129.°29E,h226km±59km,mb2.9/1,
mb1 2.9/4,mb1mx2.7/40,mbtmp3.5/4,Error ellipse:
s-maj=57.1km s-min=28.2km az=68.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.35**	**198**	P	Pn	17 05 46.3	-0.3
	0.1nm,0.3s,baz=17,slow=9.9,SNR=9.1						
FITZ				S	S	17 07 51.0	-1.2
	0.3nm,0.3s,baz=168,slow=19,SNR=5.7						
WRA	**Warramunga Arr**	**13.52**	**159**	P	P	17 06 15.1	-0.6
	0.3nm,0.3s,baz=338,slow=12,SNR=16						
WRA				S	S	17 08 34.4	-9.1
	0.2nm,0.3s,baz=334,slow=22,SNR=7.0						
ASAR	**Alice Springs**	**16.90**	**165**	P	P	17 06 53.7	+0.8
	0.1nm,0.3s,baz=349,slow=10,SNR=20						
ASAR				S	S	17 09 57.9	+0.2
	0.0nm,0.3s,baz=0.8,slow=25,SNR=4.0						
MKAR	**Makanchi Array**	**68.06**	**327**	P	P	17 13 45.8	-0.1
	0.2nm,0.4s,baz=113,slow=7.9,SNR=5.7						

IDC 08 17:15:51.6±1.8,28.°56S×176.°95W,h0km,mb3.8/2,
mb1 4.1/2,mb1mx3.6/33,mbtmp3.8/2,MS3.4/5,Ms1 3.4/5,
ms1mx3.0/26,Error ellipse: s-maj=51.7km
s-min=26.6km az=139.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.09**	**231**	Pn	Pn	17 16 14.6	+0.5
	233nm,0.3s,baz=97,slow=17,SNR=4.5						
RAO				Sn	Sn	17 16 30.5	+0.5
	539nm,0.3s,baz=20,slow=22,SNR=7.1						
DZM	**Mont Dzumac**	**16.34**	**290**	LR	LR	17 24 31.4	

comp=Z,143nm,19.6s,baz=168,slow=32
HNR Honiara 28.87 307 LR LR 17 31 18.9
comp=Z,65nm,19.6s,baz=354,slow=32
STKA Stephens Creek 35.82 254 LR LR 17 35 25.1
comp=Z,64nm,19.8s,baz=28,slow=33
ASAR Alice Springs 44.16 265 P P 17 24 01.9 -0.4
0.9nm,0.6s,baz=101,slow=6.6,SNR=28
ASAR LR LR 17 41 41.8
comp=Z,81nm,18.6s,baz=102,slow=35
WRA Warramunga Arr 44.98 270 P P 17 24 08.7 -0.3
1.0nm,0.7s,baz=109,slow=7.8,SNR=8.7
GUMO Guam 55.85 313 LR LR 17 50 02.3
comp=Z,22nm,18.7s,baz=116,slow=37
FINES FINESS Array B 143.72 341 PKP PKPdf 17 35 27.0 -0.9
0.9nm,0.8s,baz=108,slow=1.8,SNR=2.9
AKASG Malin Array Be 150.35 325 PKPbc PKPbc 17 35 45.0 +0.4
0.6nm,0.4s,baz=52,slow=2.8,SNR=3.8
TORD Torodi Ar. Bea 164.61 175 PKPab PKPab 17 36 52.0 -0.9
0.5nm,0.8s,baz=196,slow=4.2,SNR=3.5

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*MOS **08** 17:23:38.6±0.8,43˚.56N×45˚.53E,h155km,mb4.0/22,Error ellipse: s-maj=5.6km s-min=5.0km az=32.0*
*ISCJB **08** 17:23:38.5±0.1,43˚.51N±0˙.02×45˚.53E±0˙.02,h155km±1km, mb3.9/34,Error ellipse: s-maj=3.9km s-min=1.9km az=29.1*
*IDC **08** 17:23:39.6±0.6,43˚.50N×45˚.36E,h154km±5km,mb3.5/16, mb1 3.5/23,mb1mx3.3/51,mbtmp3.9/23,MS2.9/1, Ms1 2.9/1,ms1mx2.0/38,Error ellipse: s-maj=13.1km s-min=6.6km az=177.0*
*NEIC **08** 17:23:39.4±0.2,43˚.50N×45˚.50E,mb4.1/25,Error ellipse: s-maj=5.4km s-min=3.3km az=183.0*
NEIC Felt at Alkhan-Yurt, Groznyy, Gudermes and Komsomol'skoye.
*CSEM **08** 17:23:39.2±0.1,43˚.47N×45˚.49E,h158km,mb4.0/27,Error ellipse: s-maj=3.1km s-min=2.1km az=34.0*
*AZER **08** 17:23:40.4±0.0,43˚.46N×45˚.64E,h36km,Error ellipse: s-maj=4.4km s-min=0.4km az=327.0*

ISC 08 17:23:39.5±0.4,43˚.52N±0˙.03×45˚.50E±0˙.02,h158km±3km, h157km:pP-P,n338,σ1°37/476,mb4.0/34,45C-36D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
GRO	**Groznyy**	**0.27 138**		⇑*i*P			**Pn**	**17 24 00.6**	**-0.3**
GRO	**Groznyy**	**0.27 138**		⇑*i*P			**Pn**	**17 24 00.6**	**-0.3**
GROC	**Groznyy**	**0.38 146**		*e*P			**Pn**	**17 24 00.3**	**-1.0**
GROC				*e*				17 24 15.0	
GROC					pmax	pmax			
	comp=Z,227nm,0.6s								
GROC					smax	smax			
	comp=N,697nm,0.5s								
GROC					smax	smax			
	comp=E,2μm,0.5s								
GROC					smax	smax			
	comp=E,2μm,0.6s								
GROC	**Groznyy**	**0.38 146**		*e*P			**Pn**	**17 24 00.3**	**-1.0**
	comp=E,227nm,0.6s								
GROC				*e*S			**Sn**	**17 24 15.0**	**-2.9**
	comp=E,697nm,0.5s								
TRKR	**Terskaya**	**0.59 290**		⇑*i*P			**Pn**	**17 24 02.0**	**-0.2**
TRKR				*i*S			**Sn**	**17 24 19.2**	**-0.4**
TRKR	**Terskaya**	**0.59 290**		*i*P			**Pn**	**17 24 02.0**	**-0.2**
TRKR				*i*S			**Sn**	**17 24 19.2**	**-0.4**
KMGR	**Komgaron**	**0.66 225**		⇓*i*P			**Pn**	**17 24 01.9**	**-0.8**
KMGR				*e*S			**Sn**	**17 24 19.0**	**-1.4**
KMGR	**Komgaron**	**0.66 225**		*i*P			**Pn**	**17 24 01.9**	**-0.8**
KMGR				*e*S			**Sn**	**17 24 19.0**	**-1.4**
BTKR	**Batakoyurt**	**0.71 258**		⇑*i*P			**Pn**	**17 24 03.0**	**0.0**
BTKR				*i*S			**Sn**	**17 24 20.9**	**0.0**
BTKR	**Batakoyurt**	**0.71 258**		*i*P			**Pn**	**17 24 03.0**	**0.0**
BTKR				*i*S			**Sn**	**17 24 20.9**	**0.0**
VLKR	**Vladikavkaz**	**0.77 232**		⇑*i*P			**Pn**	**17 24 02.7**	**-0.7**
VLKR				*e*S			**Sn**	**17 24 20.3**	**-1.3**
VLKR	**Vladikavkaz**	**0.77 232**		*i*P			**Pn**	**17 24 02.7**	**-0.7**
VLKR				*e*S			**Sn**	**17 24 20.3**	**-1.3**
PRTR	**Priterechnaya**	**0.92 285**		⇑*i*P			**Pn**	**17 24 04.3**	**0.0**
PRTR				*i*S			**Sn**	**17 24 23.2**	**-0.2**
PRTR	**Priterechnaya**	**0.92 285**		*i*P			**Pn**	**17 24 04.3**	**0.0**
PRTR				*i*S			**Sn**	**17 24 23.2**	**-0.2**
ARNR	**Ardon**	**0.95 249**		⇑*i*P			**Pn**	**17 24 04.7**	**0.0**
ARNR				*e*S			**Sn**	**17 24 23.0**	**-0.9**
ARNR	**Ardon**	**0.95 249**		*i*P			**Pn**	**17 24 04.7**	**0.0**
ARNR				*e*S			**Sn**	**17 24 23.0**	**-0.9**
STDR	**Stavd-Durt**	**1.06 262**		⇓*i*P			**Pn**	**17 24 05.6**	**+0.1**
STDR				*e*S			**Sn**	**17 24 24.0**	**-1.5**
STDR	**Stavd-Durt**	**1.06 262**		*i*P			**Pn**	**17 24 05.6**	**+0.1**
STDR				*e*S			**Sn**	**17 24 24.0**	**-1.5**
DBC	**Dubki**	**1.09 117**		⇑*i*P			Pn	17 24 15.1	+9.2
DBC				*i*S			**Sn**	**17 24 33.7**	**+7.6**
DBC					pmax	pmax			
	comp=Z,210nm,0.1s								
DBC	**Dubki**	**1.09 117**		*i*P			Pn	17 24 15.1	+9.2
	comp=Z,210nm,0.1s								
DBC				*i*S			**Sn**	**17 24 33.7**	**+7.6**
LACR	**Lac**	**1.12 232**		⇑*i*P			**Pn**	**17 24 04.9**	**-1.3**
LACR				*e*S			**Sn**	**17 24 23.6**	**-3.1**
LACR	**Lac**	**1.12 232**		*i*P			**Pn**	**17 24 04.9**	**-1.3**
LACR				*e*S			**Sn**	**17 24 23.6**	**-3.1**
KORR	**Kora**	**1.13 248**		⇓*i*P			**Pn**	**17 24 05.8**	**-0.4**
KORR				*e*S			**Sn**	**17 24 24.3**	**-2.4**
KORR	**Kora**	**1.13 248**		*i*P			**Pn**	**17 24 05.8**	**-0.4**
KORR				*e*S			**Sn**	**17 24 24.3**	**-2.4**
KRNR	**Karanay**	**1.24 124**		⇓*i*P			**Pn**	**17 24 06.2**	**-1.1**
KRNR				*e*S			**Sn**	**17 24 26.0**	**-2.5**
KRNR					pmax	pmax			
	comp=Z,181nm,0.2s								
KRNR	**Karanay**	**1.24 124**		*i*P			**Pn**	**17 24 06.2**	**-1.1**
	comp=Z,181nm,0.2s								
KRNR				*e*S			**Sn**	**17 24 26.0**	**-2.5**
LSNR	**Lesken**	**1.25 259**		⇓*i*P			**Pn**	**17 24 07.0**	**-0.2**
LSNR				*i*S			**Sn**	**17 24 27.7**	**-0.8**
GUDG	**Gudauri**	**1.30 216**		P			**Pn**	**17 24 07.1**	**-0.8**
GUDG				S			**Sn**	**17 24 27.3**	**-2.4**
XNZR	**Khunzakh**	**1.32 138**		P			**Pn**	**17 24 08.0**	**-0.1**
XNZR				S			**Sn**	**17 24 28.0**	**-1.9**
XNZR	**Khunzakh**	**1.32 138**		P			**Pn**	**17 24 08.0**	**-0.1**
XNZR				S			**Sn**	**17 24 28.0**	**-1.9**
BUJR	**Buynaksk**	**1.36 120**		⇑*i*P			**Pn**	**17 24 08.2**	**-0.2**
BUJR				*e*S			**Sn**	**17 24 30.5**	**0.0**
BUJR	**Buynaksk**	**1.36 120**		*i*P			**Pn**	**17 24 08.2**	**-0.2**
BUJR				*e*S			**Sn**	**17 24 30.5**	**0.0**
ZEI	**Tsey**	**1.38 239**		⇑*i*P			**Pn**	**17 24 07.6**	**-1.1**
ZEI				*e*S			**Sn**	**17 24 28.1**	**-3.0**
ZEI	**Tsey**	**1.38 239**		*e*P			**Pn**	**17 24 07.4**	**-1.3**
NCK	**Nalchik**	**1.39 270**		⇓*i*P			**Pn**	**17 24 08.2**	**-0.4**
NCK				*i*S			**Sn**	**17 24 29.7**	**-1.2**
NCK	**Nalchik**	**1.39 270**		*i*P			**Pn**	**17 24 08.2**	**-0.4**
NCK				*i*S			**Sn**	**17 24 29.7**	**-1.2**
ARKR	**Arakani**	**1.43 129**		⇓*i*P			**Pn**	**17 24 08.7**	**-0.3**
ARKR				*e*S			**Sn**	**17 24 31.0**	**-0.6**
ARKR					pmax	pmax			
	comp=Z,348nm,0.2s								
ARKR	**Arakani**	**1.43 129**		*i*P			**Pn**	**17 24 08.7**	**-0.3**
	comp=Z,348nm,0.2s								
ARKR				*e*S			**Sn**	**17 24 31.0**	**-0.6**
DIGR	**Digorskoe uzhe**	**1.54 247**		⇓*i*P			**Pn**	**17 24 09.2**	**-1.1**
DIGR				*e*S			**Sn**	**17 24 30.6**	**-3.3**
DIGR	**Digorskoe uzhe**	**1.54 247**		*i*P			**Pn**	**17 24 09.2**	**-1.1**
DIGR				*e*S			**Sn**	**17 24 30.6**	**-3.3**
DUS	**Dusheti**	**1.55 203**		P			**Pn**	**17 24 10.6**	**+0.3**
DUS				S			**Sn**	**17 24 33.9**	**+0.1**
DUS	**Dusheti**	**1.55 203**		*e*P			**Pn**	**17 24 10.6**	**+0.3**
DUS				*e*S			**Sn**	**17 24 33.9**	**+0.1**
DUS	**Dusheti**	**1.55 203**		*e*P			**Pn**	**17 24 10.6**	**+0.3**
DUS				*e*S			**Sn**	**17 24 33.9**	**+0.1**
GNBR	**Gunib**	**1.56 136**		*e*P			**Pn**	**17 24 10.2**	**-0.2**
GNBR				*e*				17 24 32.7	
GNBR					pmax	pmax			
	comp=Z,420nm,0.1s								
GNBR					smax	smax			
	comp=N,2μm,0.2s								
GNBR					smax	smax			
	comp=E,3μm,0.5s								
GNBR					smax	smax			
	comp=E,3μm,0.5s								
GNBR	**Gunib**	**1.56 136**		*e*P			**Pn**	**17 24 10.2**	**-0.2**
	comp=E,420nm,0.1s								
GNBR				*e*S			**Sn**	**17 24 32.7**	**-1.3**
	comp=E,2μm,0.2s								
ONI	**Oni**	**1.77 239**		P			**Pn**	**17 24 12.8**	**+0.1**
ONI				S			**Sn**	**17 24 37.8**	**-0.3**
ONI	**Oni**	**1.77 239**		*e*P			**Pn**	**17 24 12.7**	**+0.1**
ONI				*e*S			**Sn**	**17 24 37.7**	**-0.3**
ONI	**Oni**	**1.77 239**		*e*P			**Pn**	**17 24 12.7**	**+0.1**
ONI				*e*S			**Sn**	**17 24 37.7**	**-0.3**
KMKR	**Kumukh**	**1.82 139**		*i*P			**Pn**	**17 24 13.0**	**-0.3**
KMKR				*i*S			**Sn**	**17 24 37.0**	**-2.3**
KMKR					pmax	pmax			
	comp=Z,138nm,0.3s								
KMKR	**Kumukh**	**1.82 139**		*i*P			**Pn**	**17 24 13.0**	**-0.3**
	comp=Z,138nm,0.3s								
KMKR				*i*S			**Sn**	**17 24 37.0**	**-2.3**
PYA1	**Pyatigorsk**	**1.82 288**		*i*P			**Pn**	**17 24 12.8**	**-0.4**
PYA1	**Pyatigorsk**	**1.82 288**		*i*P			**Pn**	**17 24 12.8**	**-0.4**
SEAG	**Tbilisi Sea**	**1.83 197**		P			**Pn**	**17 24 13.7**	**+0.4**
SEAG				S			**Sn**	**17 24 38.8**	**-0.4**
TBLG	**Delisi**	**1.88 198**		P			**Pn**	**17 24 14.1**	**+0.3**
TBLG				S			**Sn**	**17 24 39.7**	**-0.4**
TBLG	**Delisi**	**1.88 198**		*e*P			**Pn**	**17 24 14.0**	**+0.3**
TBLG				*e*S			**Sn**	**17 24 39.6**	**-0.4**
TBLG	**Delisi**	**1.88 198**		*e*P			**Pn**	**17 24 14.0**	**+0.3**
TBLG				S			**Sn**	**17 24 39.7**	**-0.4**
KBZ	**Khabaz**	**1.90 277**		P			**Pn**	**17 24 12.8**	**-1.1**
	comp=Z,33nm,0.3s,baz=114,slow=11,SNR=590								
KBZ					S		**Sn**	**17 24 37.9**	**-2.6**
	comp=Z,48nm,0.3s,baz=297,slow=19,SNR=13								
KBZ					LR	LR		17 24 57.4	
	comp=Z,43nm,20.4s,baz=75,slow=43								
BEYR	**Belyy Ugol+**	**2.01 285**		⇑*i*P			**Pn**	**17 24 14.5**	**-0.7**
BEYR	**Belyy Ugol+**	**2.01 285**		*i*P			**Pn**	**17 24 14.5**	**-0.7**
NEY	**Neytrino**	**2.04 263**		*e*P			**Pn**	**17 24 15.5**	**-0.3**
NEY				*e*S			**Sn**	**17 24 42.4**	**-1.3**
NEY	**Neytrino**	**2.04 263**		*e*P			**Pn**	**17 24 15.5**	**-0.3**
NEY				*e*S			**Sn**	**17 24 42.4**	**-1.3**
ZKTA	**Zakatala**	**2.06 156**		⇓P			**Pn**	**17 24 14.9**	**-0.9**
	SNR=21								
ZKTA				⇑S			**Sn**	**17 24 41.9**	**-1.8**
URKR	**Urkarakh**	**2.07 130**		⇓*i*P			**Pn**	**17 24 16.0**	**-0.1**
URKR				*e*S			**Sn**	**17 24 43.0**	**-1.2**
URKR					pmax	pmax			
	comp=Z,272nm,0.2s								
URKR	**Urkarakh**	**2.07 130**		*i*P			**Pn**	**17 24 16.0**	**-0.1**
	comp=Z,272nm,0.2s								
URKR				*e*S			**Sn**	**17 24 43.0**	**-1.2**
KVAR	**Kislovodsk Arr**	**2.08 283**		P			**Pn**	**17 24 15.5**	**-0.7**
	baz=86,slow=13								
KVAR				S			**Sn**	**17 24 42.1**	**-2.3**
	baz=210,slow=20,SNR=16								
KIV	**Kislovodsk**	**2.09 283**		*e*P			**Pn**	**17 24 15.5**	**-0.7**
	SNR=180								
KIV				S			**Sn**	**17 24 41.0**	**-3.4**
KIV	**Kislovodsk**	**2.09 283**		*e*P			**Pn**	**17 24 17.0**	**+0.8**
KIV				*i*S			**Sn**	**17 24 42.2**	**-2.3**
KIV					pmax	pmax			
	comp=Z,170nm,0.5s								
KIV					smax	smax			
	comp=N,388nm,0.8s								
KIV					smax	smax			
	comp=N,235nm,0.6s								
KIV	**Kislovodsk**	**2.09 283**		*e*Pn			**Pn**	**17 24 15.5**	**-0.7**
KIV	**Kislovodsk**	**2.09 283**		*e*P			**Pn**	**17 24 17.0**	**+0.8**
	comp=N,170nm,0.5s								
KIV				*i*S			**Sn**	**17 24 42.2**	**-2.3**
	comp=N,235nm,0.6s								
KIV	**Kislovodsk**	**2.09 283**		*e*Pn			**Pn**	**17 24 15.5**	**-0.7**
KIV				*e*Sn			**Sn**	**17 24 40.4**	**-4.0**
GOF	**Gofitskoye**	**2.34 312**		⇑*e*P			**Pn**	**17 24 18.9**	**-0.2**
GOF				*e*S			**Sn**	**17 24 48.7**	**-1.0**
GOF					pmax	pmax			
	comp=Z,364nm,0.5s								
GOF					pmax	pmax			
	comp=N,424nm,0.6s								
GOF					pmax	pmax			
	comp=E,514nm,0.4s								
GOF	**Gofitskoye**	**2.34 312**		*e*P			**Pn**	**17 24 18.9**	**-0.2**
	comp=E,424nm,0.6s								
GOF				*e*S			**Sn**	**17 24 48.7**	**-1.0**
QZX	**Qazax, Azerbai**	**2.46 182**		⇓P			**Pn**	**17 24 19.8**	**-0.8**
	SNR=16								
QZX				⇑S			**Sn**	**17 24 50.6**	**-1.8**
QZX	**Qazax, Azerbai**	**2.46 182**		P			**Pn**	**17 24 19.8**	**-0.8**
	SNR=16								
QZX				S			**Sn**	**17 24 50.6**	**-1.8**
DRN	**Derbent**	**2.56 125**		*e*P			**Pn**	**17 24 22.2**	**+0.5**
DRN				*e*				17 24 53.9	
DRN	**Derbent**	**2.56 125**		*e*P			**Pn**	**17 24 22.2**	**+0.5**
DRN				*e*S			**Sn**	**17 24 53.9**	**-0.4**
AKH	**Akhalkalaki**	**2.58 216**		P			**Pn**	**17 24 22.7**	**+0.4**
AKH	**Akhalkalaki**	**2.58 216**		*e*P			**Pn**	**17 24 22.6**	**+0.4**
AKH	**Akhalkalaki**	**2.58 216**		*e*P			**Pn**	**17 24 22.6**	**+0.4**
AKT	**Akhty**	**2.62 140**		*e*P			**Pn**	**17 24 22.5**	**-0.1**
AKT				*e*				17 24 54.0	
AKT					pmax	pmax			
	comp=Z,127nm,0.2s								
AKT					smax	smax			
	comp=E,2μm,0.5s								
AKT					smax	smax			
	comp=N,2μm,0.4s								
AKT					smax	smax			
	comp=E,2μm,0.2s								
AKT	**Akhty**	**2.62 140**		*e*P			**Pn**	**17 24 22.5**	**-0.1**
	comp=E,127nm,0.2s								
AKT				*e*S			**Sn**	**17 24 54.0**	**-1.9**
	comp=E,2μm,0.4s								
CHVG	**Ch'k'valeri**	**2.63 253**		P			**Pn**	**17 24 24.1**	**+1.5**
CHVG				S			**Sn**	**17 24 57.7**	**+1.9**
SEKA	**Sheki**	**2.63 151**		⇓P			**Pn**	**17 24 22.1**	**-0.6**
	SNR=82								
SEKA				⇓S			**Sn**	**17 24 53.2**	**-2.8**
SEKA	**Sheki**	**2.63 151**		P			**Pn**	**17 24 22.1**	**-0.6**
	SNR=82								
SEKA				S			**Sn**	**17 24 53.2**	**-2.8**
BGD	**Bogdanovka**	**2.66 213**		P			**Pn**	**17 24 23.2**	**0.0**
GDB	**GEDABAY**	**2.80 176**		⇓P			**Pn**	**17 24 24.4**	**-0.6**
	SNR=22								
GDB				⇑S			**Sn**	**17 24 57.4**	**-2.6**
GDB	**GEDABAY**	**2.80 176**		P			**Pn**	**17 24 24.4**	**-0.6**
	SNR=22								
GDB				S			**Sn**	**17 24 57.4**	**-2.6**
QSAR	**Qusar**	**2.86 134**		⇑P			**Pn**	**17 24 26.1**	**+0.6**
	SNR=58								
GANJ	**Ganja**	**2.94 168**		⇑P			**Pn**	**17 24 25.8**	**-0.6**
	SNR=7.0								
GANJ				⇓S			**Sn**	**17 25 00.0**	**-2.8**
GANJ	**Ganja**	**2.94 168**		P			**Pn**	**17 24 25.8**	**-0.6**
	SNR=7.0								
GANJ				S			**Sn**	**17 25 00.0**	**-2.8**
MNGR	**Mingechevir, A**	**2.99 156**		⇓P			**Pn**	**17 24 26.3**	**-0.7**
	SNR=8.6								
MNGR				⇑S			**Sn**	**17 25 03.5**	**-0.3**
MNGR	**Mingechevir, A**	**2.99 156**		P			**Pn**	**17 24 26.3**	**-0.7**
	SNR=8.6								
MNGR				S			**Sn**	**17 25 03.5**	**-0.3**
XNQ	**Khinaliq**	**3.05 139**		⇑P			**Pn**	**17 24 28.2**	**+0.1**
	SNR=13								
XNQ				⇓S			**Sn**	**17 25 03.8**	**-1.9**
XNQ	**Khinaliq**	**3.05 139**		P			**Pn**	**17 24 28.2**	**+0.1**
	SNR=13								
XNQ				S			**Sn**	**17 25 03.8**	**-1.9**
QUBA	**Quba, Azerbaij**	**3.10 133**		⇓P			**Pn**	**17 24 28.8**	**+0.4**
	SNR=12								
QUBA				⇑S			**Sn**	**17 25 05.1**	**-1.2**
QUBA	**Quba, Azerbaij**	**3.10 133**		P			**Pn**	**17 24 28.8**	**+0.4**
	SNR=12								
QUBA				S			**Sn**	**17 25 05.1**	**-1.2**
QBL	**Gabala**	**3.10 145**		⇑P			**Pn**	**17 24 29.1**	**+0.6**
	SNR=7.4								
QBL				⇑S			**Sn**	**17 25 05.5**	**-1.0**
QBL	**Gabala**	**3.10 145**		P			**Pn**	**17 24 29.1**	**+0.6**
	SNR=7.4								
QBL				S			**Sn**	**17 25 05.5**	**-1.0**
IML	**Ismayilli**	**3.38 143**		⇑P			**Pn**	**17 24 31.7**	**-0.3**
	SNR=11								
IML				⇑S			**Sn**	**17 25 10.7**	**-2.0**
IML	**Ismayilli**	**3.38 143**		P			**Pn**	**17 24 31.7**	**-0.3**
	SNR=11								
IML				S			**Sn**	**17 25 10.7**	**-2.0**
GNI	**Garni**	**3.42 190**		P			**Pn**	**17 24 32.7**	**+0.1**
	comp=E,2.3nm,0.3s,baz=27,slow=17,SNR=3.6								
GNI				S			Sn	17 25 22.0	+8.1
	comp=E,5.6nm,0.3s,baz=352,slow=20,SNR=4.6								
GNI	**Garni**	**3.42 190**		*e*Pn			**Pn**	**17 24 30.2**	**-2.4**
GNI	**Garni**	**3.42 190**		*e*Pn			**Pn**	**17 24 30.2**	**-2.4**
BRDA	**Brd**	**3.49 158**		⇓P			**Pn**	**17 24 34.5**	**+1.1**
	SNR=9.4								
BRDA				⇓S			**Sn**	**17 25 13.5**	**-1.7**
BRDA	**Brd**	**3.49 158**		P			**Pn**	**17 24 34.5**	**+1.1**
	SNR=9.4								
BRDA				S			**Sn**	**17 25 13.5**	**-1.7**
SIZA	**Siyzn**	**3.51 133**		⇓P			**Pn**	**17 24 34.0**	**+0.3**
	SNR=3.6								
SIZA				⇑S			**Sn**	**17 25 14.6**	**-1.2**
SIZA	**Siyzn**	**3.51 133**		P			**Pn**	**17 24 34.0**	**+0.3**
	SNR=3.6								
SIZA				S			**Sn**	**17 25 14.6**	**-1.2**
PQL	**Pirkuli**	**3.57 139**		⇓P			**Pn**	**17 24 34.4**	**-0.2**
	SNR=5.6								
PQL				⇓S			**Sn**	**17 25 15.6**	**-1.7**
PQL	**Pirkuli**	**3.57 139**		P			**Pn**	**17 24 34.4**	**-0.2**
	SNR=5.6								
PQL				S			**Sn**	**17 25 15.6**	**-1.7**
ZRD	**Zardab**	**3.62 153**		⇑P			**Pn**	**17 24 35.3**	**+0.2**
	SNR=25								
ZRD				⇑S			**Sn**	**17 25 17.6**	**-0.7**
ZRD	**Zardab**	**3.62 153**		P			**Pn**	**17 24 35.3**	**+0.2**
	SNR=25								
ZRD				S			**Sn**	**17 25 17.6**	**-0.7**
ATGJ	**Altiaghaj**	**3.68 135**		⇑P			**Pn**	**17 24 36.1**	**+0.1**
	SNR=8.8								
ATGJ				⇑S			**Sn**	**17 25 18.2**	**-1.7**
ATGJ	**Altiaghaj**	**3.68 135**		P			**Pn**	**17 24 36.1**	**+0.1**
	SNR=8.8								
ATGJ				S			**Sn**	**17 25 18.2**	**-1.7**
KDMR	**Kurdemir**	**3.72 147**		⇓S			**Sn**	**17 25 18.9**	**-1.7**
KDMR	**Kurdemir**	**3.72 147**		S			**Sn**	**17 25 18.9**	**-1.7**
GBS	**Qobustan**	**3.93 138**		⇓P			**Pn**	**17 24 40.2**	**+1.1**
	SNR=14								
GBS				⇓S			**Sn**	**17 25 24.0**	**-1.5**
GBS	**Qobustan**	**3.93 138**		P			**Pn**	**17 24 40.2**	**+1.1**
	SNR=14								
GBS				S			**Sn**	**17 25 24.0**	**-1.5**
SAAT	**Saatly**	**4.26 148**		⇓S			**Sn**	**17 25 28.6**	**-4.4**
SAAT	**Saatly**	**4.26 148**		S			**Sn**	**17 25 28.6**	**-4.4**
ALIB	**Äli-Bayra**	**4.42 142**		⇓P			**Pn**	**17 24 46.9**	**+1.5**
	SNR=8.4								
ALIB	**Äli-Bayra**	**4.42 142**		P			**Pn**	**17 24 46.9**	**+1.5**
	SNR=8.4								
NDR	**Nardaran**	**4.45 130**		⇑P			**Pn**	**17 24 46.0**	**+0.2**
	SNR=6.7								
NDR				⇓S			**Sn**	**17 25 35.6**	**-1.8**
NDR	**Nardaran**	**4.45 130**		P			**Pn**	**17 24 46.0**	**+0.2**
	SNR=6.7								
NDR				S			**Sn**	**17 25 35.6**	**-1.8**
GLBA	**Clilabad**	**4.79 152**		⇑P			**Pn**	**17 24 50.1**	**-0.2**
	SNR=5.0								
GLBA				⇓S			**Sn**	**17 25 43.2**	**-2.4**
GLBA	**Clilabad**	**4.79 152**		P			**Pn**	**17 24 50.1**	**-0.2**
	SNR=5.0								
GLBA				S			**Sn**	**17 25 43.2**	**-2.4**
LRK	**Lerik**	**5.32 155**		⇓P			**Pn**	**17 24 57.2**	**-0.3**
	SNR=5.1								
LRK	**Lerik**	**5.32 155**		P			**Pn**	**17 24 57.2**	**-0.3**
	SNR=5.1								
LKRN	**Lenkeran, Azer**	**5.41 152**		⇓P			**Pn**	**17 24 57.5**	**-0.9**
	SNR=2.9								
LKRN	**Lenkeran, Azer**	**5.41 152**		P			**Pn**	**17 24 57.5**	**-0.9**
	SNR=2.9								
ANN	**Anapa**	**5.94 285**		*e*P			**Pn**	**17 25 06.8**	**+1.4**
ANN				*e*S			**Sn**	**17 26 15.3**	**+2.5**
ANN					pmax	pmax			
	comp=Z,25nm,0.8s								
ANN	**Anapa**	**5.94 285**		*e*P			**Pn**	**17 25 06.8**	**+1.4**
	comp=Z,25nm,0.8s								
ANN				*e*S			**Sn**	**17 26 15.3**	**+2.5**
BRTR	**Keskin Array B**	**9.66 251**		P			**Pn**	**17 25 55.0**	**0.0**
	comp=Z,0.1nm,0.3s,baz=57,slow=14,SNR=8.0								
BRTR	**Keskin Array B**	**9.66 251**		P			**Pn**	**17 25 55.0**	**0.0**
BRTR	**Keskin Array B**	**9.66 251**		P			**Pn**	**17 25 55.0**	**0.0**
BR231	**Keskin MP Arra**	**10.20 253**		*e*Pn			Pn	17 25 55.5	-6.6
AKTK	**Aktyubinsk**	**10.99 47**		P			**Pn**	**17 26 10.0**	**-2.2**
	comp=Z,2.0nm,0.3s								
AKTO	**Aktyubinsk**	**10.99 47**		P			**Pn**	**17 26 10.0**	**-2.2**
	comp=Z,1.5nm,0.3s,baz=238,slow=13,SNR=11								
AKTO					S		**Sn**	**17 28 05.4**	**-8.3**
	comp=Z,1.0nm,0.3s,baz=240,slow=20,SNR=7.5								
GEYT	**Alibeck**	**11.08 116**		P			**Pn**	**17 26 09.8**	**-3.7**
	comp

comp=Z,13nm,0.7s
AGG Agios Georgios 17.97 263 *e*P **Pn** **17 27 39.6 +0.2**
comp=Z,13nm,0.7s
AGG Agios Georgios 17.97 263 *e*P **Pn** **17 27 39.6 +0.2**
comp=Z,13nm,0.7s
KKAR Karatay Array 18.19 83 *e*P **P** **17 27 40.8 +0.6**
KKAR Karatay Array 18.19 83 *e*P **P** **17 27 40.8 +0.6**
KKAR Karatay Array 18.19 83 *e*P **P** **17 27 40.8 +0.6**
ZRNK Zerenda 18.20 51 *e*P **P** **17 27 40.9 +0.7**
ZRNK eS **S** **17 30 54.5 -5.6**
ZRNK pmax pmax
comp=Z,3.0nm,0.8s
ZRNK Zerenda 18.20 51 *e*P **P** **17 27 40.9 +0.7**
comp=Z,3.4nm,0.8s
ZRNK Zerenda 18.20 51 *e*P **P** **17 27 40.9 +0.7**
comp=Z,3.4nm,0.8s
ZRNK eS **S** **17 30 54.5 -5.6**
BRVK Borovoye 18.96 51 ⇑*i*P **Pn** **17 27 50.1 -0.8**
BRVK pmax pmax
comp=Z,5.0nm,0.9s
BRVK Borovoye 18.96 51 *i* P **Pn** **17 27 50.1 -0.8**
comp=Z,5.0nm,0.9s
BVAR Borovoye Array 19.01 51 P **P** **17 27 50.2 +1.2**
comp=Z,0.2nm,0.3s,baz=237,slow=10,SNR=8.4
BVAR S **S** **17 31 14.6 -1.6**
comp=Z,0.3nm,0.3s,baz=255,slow=22,SNR=4.2
VYHS Vyhne 19.13 294 *e*P **P** **17 27 51.4 +1.1**
VYHS Vyhne 19.13 294 *e*P **P** **17 27 51.4 +1.1**
VYHS Vyhne 19.13 294 *e*P **P** **17 27 51.4 +1.1**
PDG Podgorica 19.21 276 ⇓*i*P **Pn** **17 27 53.2 -0.7**
PDG Podgorica 19.21 276 ⇓*i*P **Pn** **17 27 53.2 -0.7**
OTUK Ortayu 19.22 66 P **P** **17 27 52.5 +1.2**
OTUK pmax pmax
comp=Z,5.0nm,0.5s
OTUK Ortayu 19.22 66 P **P** **17 27 52.5 +1.2**
comp=Z,5.0nm,0.5s
VOSK Vostochnaya 19.25 53 *e*P **P** **17 27 52.0 +0.5**
VOSK pmax pmax
comp=Z,5.0nm,0.7s
VOSK Vostochnaya 19.25 53 *e*P **P** **17 27 52.0 +0.5**
comp=Z,5.3nm,0.7s
VOSK Vostochnaya 19.25 53 *e*P **P** **17 27 52.0 +0.5**
comp=Z,5.3nm,0.7s
BANOM Banah 19.64 150 P **P** **17 27 56.7 +0.7**
MNAS Manas 19.75 84 P **P** **17 27 57.6 +0.4**
MNAS pmax pmax
comp=Z,6.0nm,0.8s
MNAS Manas 19.75 84 P **P** **17 27 57.6 +0.4**
comp=Z,6.0nm,0.8s
MORC Moravsky Berou 20.12 298 ⇑*i*P **P** **17 28 01.8 +0.9**
MORC Moravsky Berou 20.12 298 *e*P **P** **17 28 00.9 0.0**
MORC pmax pmax
comp=Z,13nm,0.7s
MORC Moravsky Berou 20.12 298 *e*P **P** **17 28 00.9 0.0**
comp=Z,13nm,0.7s
MORC Moravsky Berou 20.12 298 *e*P **P** **17 28 00.9 0.0**
comp=Z,13nm,0.7s
KBL Kabul 20.31 108 *e*P **P** **17 28 03.2 -0.2**
KBL pmax pmax
comp=Z,11nm,1.4s
KBL Kabul 20.31 108 *e*P **P** **17 28 03.2 -0.2**
comp=Z,11nm,1.4s
KBL Kabul 20.31 108 *e*P **P** **17 28 03.1 -0.2**
comp=Z,11nm,1.4s
FAQ Al Faqa, Dubai 20.48 153 P **P** **17 28 05.0 +0.1**
UOSS Minazif 20.50 151 *e*P **P** **17 28 05.6 +0.4**
comp=Z,26nm,1.4s
UOSS Minazif 20.50 151 *e*P **P** **17 28 05.6 +0.4**
comp=Z,26nm,1.4s
EKS2 Erkin-Say 20.63 83 *e*P **P** **17 28 07.6 +1.0**
EKS2 pmax pmax
comp=Z,2.0nm,0.6s
EKS2 Erkin-Say 20.63 83 *e*P **P** **17 28 07.6 +1.0**
comp=Z,2.2nm,0.6s
EKS2 Erkin-Say 20.63 83 *e*P **P** **17 28 07.6 +1.0**
comp=Z,2.2nm,0.6s
ASHO Ashiyiah 20.69 152 *i* P **P** **17 28 07.7 +0.4**
SNR=10.0
AAK Ala-Archa 21.16 82 P **P** **17 28 13.7 +1.4**
comp=Z,1.8nm,0.4s,baz=270,slow=8.1,SNR=4.0
AAK LR LR 17 37 25.8
comp=Z,31nm,18.8s,baz=207,slow=39
AAK Ala-Archa 21.16 82 P **P** **17 28 13.5 +1.3**
AAK *i *PP **pP** **17 28 43.3 +3.3**
AAK pmax pmax
comp=Z,4.0nm,0.8s
AAK Ala-Archa 21.16 82 *e*P **P** **17 28 11.8 -0.4**
comp=Z,3.9nm,0.6s
AAK Ala-Archa 21.16 82 *e*P **P** **17 28 11.8 -0.4**
comp=Z,3.9nm,0.6s
FIA1 FINESS Array S 21.34 334 *e*P **P** **17 28 14.5 +0.6**
FIA1 FINESS Array S 21.34 334 *e*P **P** **17 28 14.5 +0.6**
FINES FINESS Array B 21.34 334 P **P** **17 28 14.3 +0.5**
comp=Z,1.8nm,0.4s,baz=141,slow=10,SNR=30
TKM2 Tokmak 2 21.89 81 *e*P **P** **17 28 20.5 +0.5**
TKM2 pmax pmax
comp=Z,6.0nm,0.7s
TKM2 Tokmak 2 21.89 81 *e*P **P** **17 28 20.5 +0.5**
comp=Z,6.1nm,0.7s
TKM2 Tokmak 2 21.89 81 *e*P **P** **17 28 20.5 +0.5**
comp=Z,6.1nm,0.7s
TIP Timpagrande 21.96 268 *e*P **P** **17 28 20.6 0.0**
comp=Z,16nm,2.0s
TIP Timpagrande 21.96 268 *e*P **P** **17 28 20.6 0.0**
comp=Z,16nm,2.0s
CUC Castrocucco 22.37 271 *e*P **P** **17 28 24.3 -0.3**
comp=Z,2.6nm,0.9s
CUC Castrocucco 22.37 271 *e*P **P** **17 28 24.3 -0.3**
comp=Z,2.6nm,0.9s
GEA0 GERESS Array S 22.55 295 *e*P **P** **17 28 27.2 +0.9**
GEA0 GERESS Array S 22.55 295 *e*P **P** **17 28 27.2 +0.9**
GEC2 GERESS Array S 22.55 295 *e*P **P** **17 28 27.6 +1.3**
GEC2 pmax pmax
comp=Z,4.0nm,1.3s
GEC2 GERESS Array S 22.55 295 *e*P **P** **17 28 27.6 +1.3**
comp=Z,4.4nm,1.3s
GEC2 GERESS Array S 22.55 295 *e*P **P** **17 28 27.6 +1.3**
comp=Z,4.4nm,1.3s
GERES GERESS Array B 22.55 295 P **P** **17 28 26.9 +0.6**
comp=Z,1.0nm,0.4s,baz=102,slow=9.4,SNR=13
GERES pP **pP** **17 28 56.9 +1.8**
comp=Z,1.1nm,0.8s,baz=80,slow=9.6,SNR=3.9
TRI Trieste 22.62 287 *e*P **P** **17 28 27.7 +0.8**
TRI pmax pmax
comp=Z,13nm,0.9s
TRI Trieste 22.62 287 *e*P **P** **17 28 27.7 +0.8**
comp=Z,12nm,0.9s
TRI Trieste 22.62 287 *e*P **P** **17 28 27.7 +0.8**
comp=Z,12nm,0.9s
KHC Kasperske Hory 22.64 296 *e*P **P** **17 28 28.3 +1.2**
KHC pmax pmax
comp=Z,1.0nm,0.9s
KHC Kasperske Hory 22.64 296 *e*P **P** **17 28 28.3 +1.2**
comp=Z,1.2nm,0.9s
KHC Kasperske Hory 22.64 296 *e*P **P** **17 28 28.3 +1.2**
comp=Z,1.2nm,0.9s
WSAR Wadi Sarin 22.95 148 P **P** **17 28 31.8 +1.7**
comp=Z,5.0nm,0.9s,baz=349,slow=3.7,SNR=4.3
CLL Collm 23.18 301 *e*P **P** **17 28 32.3 +0.4**
CLL pmax pmax
comp=Z,6.0nm,1.3s
CLL Collm 23.18 301 *e*P **P** **17 28 32.3 +0.4**
comp=Z,5.5nm,1.3s
CLL Collm 23.18 301 *e*P **P** **17 28 32.3 +0.4**
comp=Z,5.5nm,1.3s
KURBB Kurchatov Arra 23.45 61 P **P** **17 28 35.7 +1.4**
comp=Z,1.2nm,0.2s,baz=268,slow=11,SNR=7.8
KURBB pP **pP** **17 29 05.6 +1.1**
comp=Z,3.2nm,0.8s,baz=269,slow=10,SNR=7.8
KURK Kurchatov 23.51 61 P **P** **17 28 35.7 +0.8**
KURK *PP **pP** **17 29 05.6 +0.4**
KURK pmax pmax
comp=Z,1.0nm,0.2s
KURK pmax pmax
comp=Z,3.0nm,0.8s
KURK Kurchatov 23.51 61 P **P** **17 28 35.7 +0.8**
comp=Z,1.0nm,0.2s
KURK Kurchatov 23.51 61 *e*pP pP 17 29 08.3 +3.1
VAF Ylistaro 23.61 334 P **P** **17 28 36.4 +0.8**
VAF Ylistaro 23.61 334 P **P** **17 28 36.4 +0.8**
MOX Moxa 23.99 299 P **P** **17 28 40.8 +1.5**
MOX pmax pmax
comp=Z,4.0nm,0.7s
MOX Moxa 23.99 299 P **P** **17 28 40.8 +1.5**
comp=Z,4.0nm,0.7s
MSF Maaselka 24.21 344 P **P** **17 28 41.3 +0.2**
MSF pmax pmax
comp=Z,6.0nm,1.9s
MSF Maaselka 24.21 344 P **P** **17 28 41.3 +0.2**
comp=Z,6.0nm,1.9s
FUORN Ofenpass-Fuorn 24.95 289 *e*P **P** **17 28 49.9 +1.5**
comp=Z,16nm,1.7s
FUORN Ofenpass-Fuorn 24.95 289 *e*P **P** **17 28 49.9 +1.5**
comp=Z,16nm,1.7s
HFS Hagfors 25.39 322 P **P** **17 28 52.2 +0.4**
comp=Z,2.3nm,0.6s,baz=136,slow=10.0,SNR=16
HFS pP **pP** **17 29 24.1 -0.5**
comp=Z,3.6nm,0.6s,baz=122,slow=11,SNR=7.4
MAKZ Makanchi 25.78 70 *e*P **P** **17 28 56.8 +1.2**
MAKZ *e*PP **pP** **17 29 28.6 +0.3**
MAKZ Makanchi 25.78 70 *e*P **P** **17 28 56.8 +1.2**
MAKZ epP **pP** **17 29 28.6 +0.3**
MAKZ Makanchi 25.78 70 *e*P **P** **17 28 56.8 +1.2**
MAKZ epP **pP** **17 29 28.6 +0.3**
MK31 Makanchi Array 25.99 70 *e*P **P** **17 28 58.6 +1.1**
MK31 *e*PP **pP** **17 29 29.9 -0.3**
MK31 Makanchi Array 25.99 70 *e*P **P** **17 28 58.6 +1.1**
MK31 epP **pP** **17 29 29.9 -0.3**
MK31 Makanchi Array 25.99 70 *e*P **P** **17 28 58.6 +1.1**
MK31 epP **pP** **17 29 29.9 -0.3**
MKAR Makanchi Array 25.99 70 P **P** **17 28 58.6 +1.1**
comp=Z,1.8nm,0.3s,baz=267,slow=8.9,SNR=53
MKAR pP **pP** **17 29 31.3 +1.1**
comp=Z,2.3nm,0.5s,baz=267,slow=9.3,SNR=14
MKAR Makanchi Array 25.99 70 *e*P **P** **17 28 58.2 +0.7**
MKAR epP **pP** **17 29 29.5 -0.7**
MKAR Makanchi Array 25.99 70 *e*P **P** **17 28 58.2 +0.7**
MKAR epP **pP** **17 29 29.5 -0.7**
MK01 Makanchi Array 26.00 70 *e*P **P** **17 28 58.8 +1.2**
MK01 epP **pP** **17 29 30.2 -0.1**
MK01 Makanchi Array 26.00 70 *e*P **P** **17 28 58.8 +1.2**
MK01 epP **pP** **17 29 30.2 -0.1**
NC602 NORSAR Array S 26.61 322 *e*P **P** **17 29 03.4 +0.6**
NC602 NORSAR Array S 26.61 322 *e*P **P** **17 29 03.4 +0.6**
NC405 NORSAR Array S 26.69 323 *e*P **P** **17 29 04.3 +0.7**
NC405 epP **pP** **17 29 35.4 -0.9**
NC405 NORSAR Array S 26.69 323 *e*P **P** **17 29 04.3 +0.7**
NC405 epP **pP** **17 29 35.4 -0.9**
NB201 NORSAR Array S 26.85 323 *e*P **P** **17 29 05.1 +0.1**
NB201 epP **pP** **17 29 36.7 -1.1**
NB201 NORSAR Array S 26.85 323 *e*P **P** **17 29 05.1 +0.1**
NB201 epP **pP** **17 29 36.7 -1.1**
NB2 NORSAR Subarra 26.88 323 P **P** **17 29 04.5 -0.8**
comp=Z,1.5nm,0.6s,baz=115,slow=9.3
NB2 NORSAR Subarra 26.88 323 P **P** **17 29 04.5 -0.8**
comp=Z,1.5nm,0.6s,SNR=4.0
NOA NORSAR Array B 26.88 323 P **P** **17 29 05.4 +0.1**
comp=Z,0.9nm,0.7s,baz=121,slow=8.8,SNR=4.6
NOA pP **pP** **17 29 38.3 +0.2**
comp=Z,1.4nm,0.5s,baz=118,slow=9.6,SNR=7.7
NC303 NORSAR Array S 26.89 323 *e*P **P** **17 29 06.5 +1.2**
NC303 epP **pP** **17 29 36.6 -1.6**
NC303 NORSAR Array S 26.89 323 *e*P **P** **17 29 06.5 +1.2**
NC303 epP **pP** **17 29 36.6 -1.6**
NAO01 NORSAR Array S 26.95 322 *e*P **P** **17 29 05.3 -0.5**
NAO01 epP **pP** **17 29 37.1 -1.5**
NAO01 NORSAR Array S 26.95 322 *e*P **P** **17 29 05.3 -0.5**
NAO01 epP **pP** **17 29 37.1 -1.5**
NBO02 NORSAR Array S 27.04 323 *e*P **P** **17 29 06.0 -0.7**
NBO02 epP **pP** **17 29 39.4 -0.2**
NBO02 NORSAR Array S 27.04 323 *e*P **P** **17 29 06.0 -0.7**
NBO02 epP **pP** **17 29 39.4 -0.2**
NBO00 NORSAR Array S 27.07 322 *e*P **P** **17 29 06.9 0.0**
NBO00 epP **pP** **17 29 39.4 -0.4**
NBO00 NORSAR Array S 27.07 322 *e*P **P** **17 29 06.9 0.0**
NBO00 epP **pP** **17 29 39.4 -0.4**
KONO Kongsberg 27.09 319 *e*P **P** **17 29 07.5 +0.4**
KONO pmax pmax
comp=Z,25nm,1.5s
KONO Kongsberg 27.09 319 *e*P **P** **17 29 07.4 +0.4**
comp=Z,25nm,1.5s
KONO Kongsberg 27.09 319 *e*P **P** **17 29 07.5 +0.4**
comp=Z,25nm,1.5s
NC204 NORSAR Array S 27.18 323 *e*P **P** **17 29 08.6 +0.6**
NC204 epP **pP** **17 29 42.0 +1.2**
NC204 NORSAR Array S 27.18 323 *e*P **P** **17 29 08.6 +0.6**
NC204 epP **pP** **17 29 42.0 +1.2**
ZAA0 Zalesovo Array 27.61 54 *e*P **P** **17 29 12.2 +0.4**
ZAA0 Zalesovo Array 27.61 54 *e*P **P** **17 29 12.2 +0.4**
ZALV Zalesovo Beam 27.61 54 P **P** **17 29 12.4 +0.6**
comp=Z,0.5nm,0.3s,baz=278,slow=10,SNR=4.5
ZALV pP **pP** **17 29 45.1 +0.4**
comp=Z,0.8nm,0.5s,baz=265,slow=9.7,SNR=3.5
ARCES ARCESS Array B 28.02 345 P **P** **17 29 16.2 +0.9**
comp=Z,0.4nm,0.6s,baz=152,slow=9.8,SNR=3.9
ARCES pP **pP** **17 29 49.4 +1.1**
comp=Z,2.3nm,0.5s,baz=146,slow=9.8,SNR=5.9
WMQ Urumqi 30.28 75 *e*P **P** **17 29 38.2 +2.5**
WMQ pmax pmax
comp=Z,7.0nm,0.5s
WMQ pmax pmax
comp=Z,100nm,6.4s
PYUN Piuthan 33.75 105 *e*P **P** **17 30 07.4 +1.1**
KOLN Koldanda 34.38 104 *e*P **P** **17 30 12.5 +0.8**
comp=Z,4.4nm,0.3s
GKN Gorkha 34.97 103 *e*P **P** **17 30 17.7 +1.0**
comp=Z,4.3nm,0.3s
PKIN Phulchoki 35.77 103 *e*P **P** **17 30 24.7 +1.1**
comp=Z,4.2nm,0.5s
SPA0 Spitsbergen Ar 36.63 350 *e*P **P** **17 30 29.7 -0.4**
SPA0 Spitsbergen Ar 36.63 350 *e*P **P** **17 30 29.7 -0.4**
RAMN Ramite 37.00 103 *e*P **P** **17 30 34.8 +0.7**
comp=Z,3.0nm,0.3s
LSA Lhasa 38.67 95 *e*P **P** **17 30 48.7 +0.4**
LSA pmax pmax
comp=Z,3.0nm,0.8s
LSA Lhasa 38.67 95 *e*P **P** **17 30 48.7 +0.4**
comp=Z,2.6nm,0.8s
LSA Lhasa 38.67 95 *e*P **P** **17 30 48.7 +0.4**
comp=Z,2.6nm,0.8s
TLY Talaya 39.10 57 *e*P **P** **17 30 53.2 +2.1**
TLY pmax pmax
comp=Z,2.0nm,1.1s
TLY Talaya 39.10 57 *e*P **P** **17 30 53.2 +2.1**
comp=Z,2.0nm,1.1s
TLY Talaya 39.10 57 *e*P **P** **17 30 53.4 +2.3**
comp=Z,3.0nm,0.9s
GTA Gaotai 40.30 77 *e*P **P** **17 31 01.0 -0.3**
GTA pP pP 17 31 13.2 -23
GTA sP sP 17 31 18.1 -35
GTA pmax pmax
comp=Z,2.0nm,1.0s
SONM Songino Array 41.80 62 P **P** **17 31 13.6 +0.2**
comp=Z,0.2nm,0.3s,baz=278,slow=10.0,SNR=2.7
SONM pP **pP** **17 31 49.2 +1.2**
comp=Z,0.5nm,0.6s,baz=292,slow=7.6,SNR=2.7
LZH Lanzhou 44.63 79 *e*P **P** **17 31 38.6 +2.3**
LZH pP pP 17 32 12.3 +1.0
LZH sP sP 17 32 29.5 +0.5
LZH PP **PP** **17 33 25.5 +2.0**
LZH pmax pmax
comp=Z,17nm,1.3s
LZH pmax pmax
comp=Z,43nm,5.6s
HHC Hu-ho-hao-te 47.86 69 *e*P **P** **17 32 01.9 +0.5**
HHC pP pP 17 32 37.3 +0.5
HHC sP sP 17 32 56.0 +1.6
HHC S **S** **17 38 45.6 -0.7**
HHC ScS **ScS** **17 41 35.7 -2.5**
HHC pmax pmax
comp=Z,12nm,0.8s
HHC pmax pmax
comp=Z,42nm,6.6s
TOA0 Torodi Ar. Sit 48.20 245 *e*P **P** **17 32 03.7 -0.5**
TOA0 Torodi Ar. Sit 48.20 245 *e*P **P** **17 32 03.7 -0.5**
TORD Torodi Ar. Bea 48.20 245 P **P** **17 32 03.8 -0.4**
comp=Z,1.9nm,0.5s,baz=34,slow=8.3,SNR=18
CHTO Chiang Mai 50.92 101 *e*P **P** **17 32 24.8 +0.1**
CHTO pmax pmax
comp=Z,3.0nm,0.7s
CHTO Chiang Mai 50.92 101 *e*P **P** **17 32 24.8 +0.1**
comp=Z,2.6nm,0.7s
CHTO Chiang Mai 50.92 101 *e*P **P** **17 32 24.8 +0.1**
comp=Z,2.6nm,0.7s
CM31 Chiang Mai Arr 51.15 102 *e*P **P** **17 32 26.0 -0.5**
CM31 Chiang Mai Arr 51.15 102 *e*P **P** **17 32 26.0 -0.5**
CMAR Chiang Mai Arr 51.16 102 P **P** **17 32 27.0 +0.6**
comp=Z,1.1nm,0.5s,baz=303,slow=8.0,SNR=10
CM01 Chiang Mai Arr 51.19 102 *e*P **P** **17 32 27.1 +0.4**
CM01 Chiang Mai Arr 51.19 102 *e*P **P** **17 32 27.1 +0.4**
DBIC Dimbokro 57.30 245 P **P** **17 33 10.5 -0.4**
comp=Z,5.6nm,1.1s,baz=36,slow=8.4,SNR=3.7
KSRS Korea Array 60.54 65 P **P** **17 33 33.3 +0.4**
comp=Z,0.7nm,0.4s,baz=296,slow=6.8,SNR=4.9
YKA Yellowknife Ar 73.13 350 P **P** **17 34 52.9 +0.7**
comp=Z,0.4nm,0.5s,baz=8.4,slow=5.7,SNR=3.8

IDC ***08*** *17:27:15.1±2.8, 39.09N×142.38E, h0km, mb3.7/4, mb1 3.7/6, mb1mx3.4/49, mbtmp3.7/6, ML3.0/2, MS3.7/5, Ms1 3.7/5, ms1mx2.9/47, Error ellipse: s-maj=68.4km s-min=25.1km az=77.0*

ISCJB ***08*** *17:27:25.6±0.7, 38.83N±0.03×141.71E±0.08, h82km±4km, mb3.6/4, Error ellipse: s-maj=11.1km s-min=5.2km az=11.4*

JMA ***08*** *17:27:27.5, 38.87N×141.60E, h74km±1km, M3.2 Broadband fault plane solution: P waves. NP1: ϕs205.00000°, δ57.00000°, λ76.00000°. NP2:ϕs49.00000°, δ36.00000°, λ110.00000°. Principal axes: T Plg74.0000°, Azm77.0000°; N Plg12.0000°, Azm213.0000°; P Plg11.0000°, Azm305.0000°;*

JMA Felt I J1.

ISC 08 17:27:26.5±1.1, 38.83N±0.04×141.71E±0.08, h78km±7km, n29, σ0.56/32, mb3.6/4, 7C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.25**	**352**	⇑P	**Pn**	**17 27 38.7**	**+0.4**
OFUJ				S	**Sn**	**17 27 46.9**	**-0.1**
JMK	**Ichinoseki**	**0.40**	**288**	⇑P	**Pn**	**17 27 39.1**	**-0.1**
JMK				S	**Sn**	**17 27 47.4**	**-1.2**
JIO	**Ouri**	**0.47**	**217**	P	**Pn**	**17 27 40.3**	**+0.5**
JIO				S	**Sn**	**17 27 49.5**	**-0.1**
JOM	**Ohasama**	**0.72**	**333**	P	**Pn**	**17 27 42.2**	**0.0**
JOM				S	**Sn**	**17 27 53.0**	**-0.9**
JOU	**Okura**	**0.94**	**241**	⇑P	**Pn**	**17 27 45.0**	**+0.2**
JOU				S	**Sn**	**17 27 58.4**	**0.0**
JRG	**Rokugo**	**1.01**	**304**	⇓P	**Pn**	**17 27 45.4**	**-0.1**
JYK	**Kaneyama**	**1.06**	**275**	⇑P	**Pn**	**17 27 46.0**	**-0.1**
JYK				S	**Sn**	**17 28 00.3**	**-0.5**
JMM	**Marumori**	**1.21**	**217**	⇑P	**Pn**	**17 27 48.1**	**+0.2**
JMM				S	**Sn**	**17 28 03.7**	**-0.3**
JYS	**Shirataka**	**1.43**	**245**	⇑P	**Pn**	**17 27 51.2**	**+0.4**
JYS				S	**Sn**	**17 28 09.1**	**0.0**
JANG	**Nango**	**1.55**	**354**	⇓P	**Pn**	**17 27 52.2**	**-0.1**
JANG				S	**Sn**	**17 28 11.2**	**-0.7**
JYA	**Atsumi**	**1.58**	**262**	P	**Pn**	**17 27 53.0**	**+0.2**
JYA				S	**Sn**	**17 28 12.3**	**-0.4**
JAH	**Hinai**	**1.59**	**329**	⇓P	**Pn**	**17 27 53.3**	**+0.4**
JAH				S	**Sn**	**17 28 13.1**	**+0.2**
JFK	**Kawauchi**	**1.60**	**205**	⇑P	**Pn**	**17 27 53.8**	**+0.7**
JFK				S	**Sn**	**17 28 13.5**	**+0.2**
MJAR	**Matsushiro Arr**	**3.60**	**232**	Pn	**Pn**	**17 28 19.5**	**-0.5**
	0.5nm,0.3s,baz=44,slow=12,SNR=5.8						
JHJ	**Hachijo jima 2**	**5.91**	**196**	Pn	**Pn**	**17 28 50.5**	**-1.0**
	1.9nm,0.3s,baz=58,slow=19,SNR=12						
JHJ				Sn	**Sn**	**17 29 56.2**	**-1.6**
	6.3nm,0.3s,baz=255,slow=23,SNR=6.4						
H11N2	**WAKE ISLAND Hy 28.91**	**124**		T	T	18 03 53.0	
	baz=317,slow=75,SNR=46						
H11N1	**WAKE ISLAND Hy 28.92**	**124**		T	T	18 03 55.4	
	baz=317,slow=75,SNR=65						
H11N3	**WAKE ISLAND Hy 28.93**	**124**		T	T	18 03 54.5	
	baz=317,slow=75,SNR=61						
H11S1	**WAKE ISLAND Hy 29.68**	**126**		T	T	18 04 46.0	
	baz=318,slow=76,SNR=25						
H11S3	**WAKE ISLAND Hy 29.68**	**126**		T	T	18 04 41.0	
	baz=318,slow=76,SNR=32						
H11S2	**WAKE ISLAND Hy 29.69**	**126**		T	T	18 04 42.5	
	baz=318,slow=76,SNR=30						
ZALV	**Zalesovo Beam**	**40.90**	**311**	P	**P**	**17 35 00.9**	**+0.2**
	0.5nm,0.4s,baz=92,slow=8.0,SNR=3.9						
ZALV				LR	LR	17 54 35.1	
	comp=Z,54nm,18.9s,baz=70,slow=40						
MKAR	**Makanchi Array**	**43.39**	**301**	P	**P**	**17 35 21.5**	**+0.4**
	0.7nm,0.7s,baz=86,slow=9.7,SNR=6.9						
KURBB	**Kurchatov Arra**	**45.10**	**307**	P	**P**	**17 35 34.7**	**+0.1**
	1.0nm,0.6s,baz=80,slow=8.2,SNR=6.9						
WRA	**Warramunga Arr**	**58.87**	**188**	P	**P**	**17 37 17.6**	**+0.5**
	0.2nm,0.6s,baz=6.6,slow=7.4,SNR=4.8						
GEYT	**Alibeck**	**63.18**	**298**	LR	LR	18 09 02.7	
	comp=Z,68nm,19.0s,baz=250,slow=40						
AKASG	**Malin Array Be**	**73.03**	**322**	LR	LR	18 14 54.6	
	comp=Z,35nm,18.5s,baz=75,slow=39						
GERES	**GERESS Array B**	**81.31**	**328**	LR	LR	18 19 11.1	
	comp=Z,52nm,21.1s,baz=12,slow=38						
KEST	**Kesra**	**93.74**	**323**	LR	LR	18 27 57.2	
	comp=Z,92nm,19.8s,baz=276,slow=39						

GEN ***08*** *17:27:32.4, 41.87N×7.72E, h29km, ML3.0*

CSEM ***08*** *17:27:34.4±0.3, 42.06N×7.64E, h30km, ML3.3/11, Error ellipse: s-maj=6.2km s-min=5.6km az=153.0*

LDG ***08*** *17:27:34.7, 41.98N×7.69E, h30km*

ROM ***08*** *17:27:35.0±0.2, 42.10N×7.93E, h38km±1km, Ml2.8/3, Error ellipse: s-maj=2.9km s-min=0.0km az=180.0*

STR ***08*** *17:27:40.8±0.4, 42.52N×7.33E, h10km, Ml3.1, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 08 17:27:30.2±1.6, 42.02N±0.04×7.65E±0.03, h13km±12km, n79, σ1.951/128, Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PGF	**Pioggiola**	**1.13**	**62**	*e*Pn	**Pn**	**17 27 53.4**	**+1.5**
PGF				*e*Sn	**Sn**	**17 28 07.4**	**0.0**
	165nm,0.2s						
PGF	**Pioggiola**	**1.13**	**62**	*e*Pn	**Pn**	**17 27 53.4**	**+1.5**
PGF				*e*Sn	**Sn**	**17 28 07.4**	**0.0**
	83nm,0.2s						
LMR	**La Mourre**	**1.56**	**328**	*e*Pn	**Pb**	**17 27 59.0**	**0.0**
LMR				*e*Sn	**Sn**	**17 28 16.3**	**-1.5**
	128nm,0.3s						
LMR	**La Mourre**	**1.56**	**328**	*e*Pn	**Pb**	**17 27 59.0**	**0.0**
LMR				*e*Sn	**Sn**	**17 28 16.3**	**-1.5**
	64nm,0.3s						
FRF	**La Foret Royal**	**1.71**	**335**	*e*Pn	**Pb**	**17 28 01.1**	**-0.4**
FRF				*e*Sn	**Sn**	**17 28 19.6**	**-1.9**
	33nm,0.2s						
FRF	**La Foret Royal**	**1.71**	**335**	*e*Pn	**Pb**	**17 28 01.1**	**-0.4**
FRF				*e*Sn	**Sn**	**17 28 19.6**	**-1.9**
	16nm,0.2s						
REVF	**Revere**	**1.73**	**353**	Pn	**Pg**	**17 28 02.9**	**-0.6**
REVF	**Revere**	**1.73**	**353**	Pg	**Pg**	**17 28 04.1**	**+0.6**
REVF				Sg	**Sn**	**17 28 21.1**	**-1.0**
REVF	**Revere**	**1.73**	**353**	Pn	**Pg**	**17 28 02.9**	**-0.6**
REVF	**Revere**	**1.73**	**353**	Pg	**Pg**	**17 28 04.1**	**+0.6**
REVF				Sg	**Sn**	**17 28 21.1**	**-1.0**
NEGI	**Seborga**	**1.83**	**1**	Pn	**Pb**	**17 28 03.6**	**0.0**
NEGI	**Seborga**	**1.83**	**1**	Pg	**Pb**	**17 28 02.7**	**-0.9**
NEGI	**Seborga**	**1.83**	**1**	Pn	**Pb**	**17 28 03.6**	**0.0**
NEGI				S	**Sn**	**17 28 22.4**	**-2.1**
SBF	**Sospel**	**1.85**	**355**	*e*Pn	**Pb**	**17 28 02.9**	**-1.1**
SBF				*e*Sn	**Sn**	**17 28 23.2**	**-1.9**
	29nm,0.2s						
SBF	**Sospel**	**1.85**	**355**	*e*Pn	**Pb**	**17 28 02.9**	**-1.1**
SBF				*e*Sn	**Sn**	**17 28 23.2**	**-1.9**
	14nm,0.2s						
LUCF	**Luceram**	**1.89**	**353**	Pn	**Pb**	**17 28 04.5**	**-0.1**
LUCF	**Luceram**	**1.89**	**353**	Pg	**Pg**	**17 28 05.9**	**-0.5**
LUCF				Sg	**Sn**	**17 28 25.0**	**-1.0**
LUCF	**Luceram**	**1.89**	**353**	Pn	**Pb**	**17 28 04.5**	**-0.1**
LUCF	**Luceram**	**1.89**	**353**	Pg	**Pg**	**17 28 05.9**	**-0.5**
LUCF				Sg	**Sn**	**17 28 25.0**	**-1.0**
IMI	**Imperia**	**1.90**	**5**	P	**Pb**	**17 28 03.5**	**-1.3**
IMI				S	**Sn**	**17 28 24.3**	**-2.0**
MVIF	**Mont Vial**	**1.91**	**349**	Pn	**Pb**	**17 28 04.6**	**-0.5**
MVIF	**Mont Vial**	**1.91**	**349**	Pg	**Pg**	**17 28 07.6**	**+0.7**
MVIF				Sg	**Sn**	**17 28 26.4**	**-0.3**
MVIF	**Mont Vial**	**1.91**	**349**	Pn	**Pb**	**17 28 04.6**	**-0.5**
MVIF	**Mont Vial**	**1.91**	**349**	Pg	**Pg**	**17 28 07.6**	**+0.7**
MVIF				Sg	**Sn**	**17 28 26.4**	**-0.3**
LEPF	**PUYLOUBIER**	**2.08**	**317**	Pn	**Pb**	**17 28 06.8**	**-1.0**
LEPF				Sg	**Sn**	**17 28 31.7**	**+1.1**
LEPF	**PUYLOUBIER**	**2.08**	**317**	Pn	**Pb**	**17 28 06.8**	**-1.0**
LEPF				Sg	**Sn**	**17 28 31.7**	**+1.1**
RORO	**Rocca Rossa**	**2.11**	**8**	Pn	**Pb**	**17 28 06.8**	**-1.6**
RORO				Sn	**Sn**	**17 28 30.1**	**-1.4**
RORO	**Rocca Rossa**	**2.11**	**8**	P	**Pn**	**17 28 06.4**	**+1.1**
RORO	**Rocca Rossa**	**2.11**	**8**	Pn	**Pb**	**17 28 06.8**	**-1.6**
RORO				S	**Sn**	**17 28 29.7**	**-1.8**

RORO			Sn	**Sn**	**17 28 30.1**	**-1.4**
ENR	**Entracque**	**2.21 356**	Pn	**Pb**	**17 28 09.3**	**-0.9**
ENR			Sn	**Sn**	**17 28 33.4**	**-0.7**
ENR	**Entracque**	**2.21 356**	P	**Pb**	**17 28 08.9**	**-1.3**
ENR	**Entracque**	**2.21 356**	Pn	**Pb**	**17 28 09.3**	**-0.9**
ENR			Sn	**Sn**	**17 28 33.4**	**-0.7**
STV	**Sant Anna di V**	**2.24 354**	Pn	**Pb**	**17 28 09.4**	**-1.2**
STV			Sn	**Sn**	**17 28 33.8**	**-0.8**
STV	**Sant Anna di V**	**2.24 354**	P	**Pb**	**17 28 09.1**	**-1.5**
STV	**Sant Anna di V**	**2.24 354**	Pn	**Pb**	**17 28 09.4**	**-1.2**
STV			Sn	**Sn**	**17 28 33.8**	**-0.8**
SMRF	**Simiane la Rot**	**2.48 323**	*e*Pn	**Pb**	**17 28 13.8**	**-0.9**
SMRF			*e*Sn	**Sn**	**17 28 41.1**	**+0.5**
	15nm,0.3s					
SMRF	**Simiane la Rot**	**2.48 323**	*e*Pn	**Pb**	**17 28 13.8**	**-0.9**
SMRF			*e*Sn	**Sn**	**17 28 41.1**	**+0.5**
	7.4nm,0.3s					
DOI	**San Damiano**	**2.50 353**	Pn	**Pb**	**17 28 13.2**	**-1.9**
DOI			Sn	**Sn**	**17 28 40.7**	**-0.5**
	38nm,0.2s					
DOI	**San Damiano**	**2.50 353**	Pn	**Pb**	**17 28 13.2**	**-1.9**
DOI			Sn	**Sn**	**17 28 40.7**	**-0.5**
	38nm,0.2s					
PZZ	**Stroppo**	**2.52 351**	Pn	**Pb**	**17 28 13.8**	**-1.6**
PZZ			Sn	**Sn**	**17 28 42.5**	**+0.9**
	40nm,0.3s					
PZZ	**Stroppo**	**2.52 351**	P	**Pn**	**17 28 12.6**	**+1.6**
PZZ	**Stroppo**	**2.52 351**	Pn	**Pb**	**17 28 13.8**	**-1.6**
PZZ			S	**Sn**	**17 28 41.7**	**+0.1**
PZZ			Sn	**Sn**	**17 28 42.5**	**+0.9**
	40nm,0.3s					
SASS	**Sassa**	**2.56 60**	Pn	**Pn**	**17 28 13.0**	**+1.5**
SASS	**Sassa**	**2.56 60**	Pn	**Pn**	**17 28 13.0**	**+1.5**
PCP	**Piancastagn**	**2.60 14**	P	**Pn**	**17 28 13.4**	**+1.3**
PCP			S	**Sn**	**17 28 41.7**	**-1.9**
MBDF	**Montbardon**	**2.78 347**	*e*Pn	**Pb**	**17 28 18.0**	**-1.9**
MBDF			*e*Sn	**Sn**	**17 28 47.9**	**-0.3**
	12nm,0.3s					
MBDF	**Montbardon**	**2.78 347**	*e*Pn	**Pb**	**17 28 18.0**	**-1.9**
MBDF			*e*Sn	**Sn**	**17 28 47.9**	**-0.3**
	6.1nm,0.3s					
BHB	**Bricheracio**	**2.83 354**	P	**Pn**	**17 28 17.1**	**+1.8**
BHB			S	**Sn**	**17 28 48.0**	**-1.3**
VSL	**Villasalto**	**2.84 152**	Pn	**Pn**	**17 28 17.4**	**+2.1**
VSL			Sn	**Sn**	**17 28 48.3**	**-1.1**
	29nm,0.5s					
VSL	**Villasalto**	**2.84 152**	Pn	**Pn**	**17 28 17.4**	**+2.1**
RRL	**Rocca Remolon**	**2.97 348**	P	**Pb**	**17 28 21.1**	**-2.0**
RRL			S	**Sn**	**17 28 53.7**	**+0.8**
RSP	**Reno Superiore**	**3.14 355**	P	**Pn**	**17 28 21.6**	**+2.1**
RSP			S	**Sn**	**17 28 55.7**	**-1.3**
ORIF	**Oris-en-Rattie**	**3.17 337**	*e*Pn	**Pn**	**17 28 22.9**	**+2.9**
ORIF			*e*Sn	**Sn**	**17 28 57.2**	**-0.5**
	6.0nm,0.3s					
ORIF	**Oris-en-Rattie**	**3.17 337**	*e*Pn	**Pn**	**17 28 22.9**	**+2.9**
ORIF			*e*Sn	**Sn**	**17 28 57.2**	**-0.5**
	3.0nm,0.3s					
LASF	**Ste Croix**	**3.46 308**	*e*Pn	**Pn**	**17 28 25.5**	**+1.7**
LASF			*e*Sn	**Sn**	**17 29 02.1**	**-2.6**
	14nm,0.3s					
LASF	**Ste Croix**	**3.46 308**	*e*Pn	**Pn**	**17 28 25.5**	**+1.7**
LSD	**Lago del Serru**	**3.46 354**	P	**Pb**	**17 28 28.1**	**-3.4**
LPG	**La Plagne**	**3.54 350**	*e*P	**Pb**	**17 28 30.7**	**-2.2**
LPG			*e*Sn	**Sn**	**17 29 10.0**	**+3.0**
	5.9nm,0.4s					
LPL	**La Plagne**	**3.56 350**	*e*P	**Pb**	**17 28 30.8**	**-2.4**
LPL			*e*Sn	**Sn**	**17 29 09.7**	**+2.3**
	2.0nm,0.3s					
VIVF	**Saint-Julien-l**	**3.57 324**	*e*Pn	**Pn**	**17 28 27.0**	**+1.6**
VIVF	**Saint-Julien-l**	**3.57 324**	*e*Pn	**Pn**	**17 28 27.0**	**+1.6**
MTLF	**Montolieu**	**4.22 290**	*e*Pn	**Pn**	**17 28 35.1**	**+0.8**
MTLF			*e*Sn	**Sn**	**17 29 20.6**	**-2.8**
	12nm,0.3s					
MTLF	**Montolieu**	**4.22 290**	*e*Pn	**Pn**	**17 28 35.1**	**+0.8**
LBL	**Lubilhac**	**4.53 317**	Pn	**Pn**	**17 28 40.6**	**+2.0**
LBL	**Lubilhac**	**4.53 317**	Pn	**Pn**	**17 28 40.6**	**+2.0**
CABF	**La Chapelle**	**4.73 347**	*e*Pn	**Pn**	**17 28 44.9**	**+3.6**
CABF	**La Chapelle**	**4.73 347**	*e*Pn	**Pn**	**17 28 44.9**	**+3.6**
PLDF	**La Plantade**	**4.90 325**	Pn	**Pn**	**17 28 45.5**	**+1.8**
PLDF	**La Plantade**	**4.90 325**	Pn	**Pn**	**17 28 45.5**	**+1.8**
CAF	**Calviac**	**5.00 307**	*e*Pn	**Pn**	**17 28 46.9**	**+1.9**
CAF	**Calviac**	**5.00 307**	*e*Pn	**Pn**	**17 28 46.9**	**+1.9**
EPF	**Esparros**	**5.50 283**	*e*Pn	**Pn**	**17 28 53.0**	**+1.1**
EPF			*e*Sn	**Sn**	**17 29 54.2**	**-0.8**
	7.8nm,0.4s					
EPF	**Esparros**	**5.50 283**	*e*Pn	**Pn**	**17 28 53.0**	**+1.1**
EPF			*e*Sn	**Sn**	**17 29 54.2**	**-0.8**
	3.9nm,0.4s					
TCF	**Toulx Ste Croi**	**5.79 319**	*e*Pn	**Pn**	**17 28 57.6**	**+1.7**
TCF	**Toulx Ste Croi**	**5.79 319**	*e*Pn	**Pn**	**17 28 57.6**	**+1.7**
LFF	**La Frestale**	**5.81 302**	*e*Pn	**Pn**	**17 28 57.8**	**+1.7**
LFF	**La Frestale**	**5.81 302**	*e*Pn	**Pn**	**17 28 57.8**	**+1.7**
ETSF	**Etsaut**	**6.14 281**	*e*Pn	**Pn**	**17 29 02.1**	**+1.4**
ETSF			*e*Sn	**Sn**	**17 30 09.7**	**-1.1**
	2.2nm,0.2s					
ETSF	**Etsaut**	**6.14 281**	*e*Pn	**Pn**	**17 29 02.1**	**+1.4**
ETSF			*e*Sn	**Sn**	**17 30 09.7**	**-1.1**
	1.1nm,0.2s					

GUC 08 17:27:33.5±0.6, 20°28S×69°18W, h89km±3km, ML3.7, 5C-4D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB08	**IPOC Station P**	**0.14**	**12**	⇓*i*P	Pn	17 27 47.0	+0.3
PB08				*i* S	Sn	17 27 57.2	+0.8
PB08				IAML		17 27 58.5	
	comp=N,3μm,0.1s						
HMBC	**Humberstone**	**0.66**	**270**	⇑*i*P	Pn	17 27 49.7	0.0
HMBC				*i* S	Sn	17 28 02.5	+0.7
PB11	**IPOC Station P**	**0.68**	**319**	⇓*i*P	Pn	17 27 50.2	+0.2
PB11				*i* S	Sn	17 28 03.2	+1.1
PB01	**IPOC Station P**	**0.81**	**200**	⇑*i*P	Pn	17 27 51.7	+0.5
PB01				*i* S	Sn	17 28 05.2	+0.8
PB01				IAML		17 28 06.3	
	comp=N,3μm,0.2s						
PSGC	**Pisagua**	**1.11**	**307**	⇑*i*P	Pn	17 27 54.8	+0.3
PSGC				*i* S	Sn	17 28 11.2	+0.9
MNMC	**Minye Minye**	**1.20**	**341**	⇓*i*P	Pn	17 27 56.3	+0.5
MNMC				*e*S	Sn	17 28 13.7	+1.1
PB09	**IPOC Station P**	**1.51**	**182**	⇑*i*P	Pn	17 28 00.7	+1.1
PB09				*i* S	Sn	17 28 20.9	+1.7
PB09				IAML		17 28 22.9	
	comp=E,2μm,0.6s						
PB07	**IPOC Station P**	**1.58**	**204**	⇑*i*P	Pn	17 28 00.9	+0.4
PB07				*i* S	Sn	17 28 22.1	+1.2
PB07				IAML		17 28 23.6	
	comp=N,764nm,0.2s						
PB12	**IPOC Station P**	**1.98**	**327**	⇓*i*P	Pn	17 28 05.3	-0.2
PB12				*i* S	Sn	17 28 30.5	+0.7
PB12				IAML		17 28 39.5	
	comp=E,2μm,0.2s						
PB04	**IPOC Station P**	**2.24**	**204**	*e*P	Pn	17 28 09.7	+0.7
PB04				*e*S	Sn	17 28 37.8	+1.8
LVC	**Limon Verde**	**2.34**	**174**	*e*P	Pn	17 28 11.5	+1.0
LVC				*i* S	Sn	17 28 40.6	+1.9
PB06	**IPOC Station P**	**2.44**	**188**	*e*P	Pn	17 28 12.7	+0.9
PB06				*i* S	Sn	17 28 42.6	+1.6
PB06				IAML		17 28 47.7	
	comp=E,299nm,0.1s						

WEL 08 17:30:17.8±0.1, 43°60S×172°77E, h8km, ML3.7/15, 4C-3D, Error ellipse: s-maj=1.2km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.10**	**282**	PG	Pg	17 30 20.3	+0.1
CRLZ				SG	Sg	17 30 22.0	+0.2
CRLZ				AML	AML	17 30 22.1	
CRLZ				AML	AML	17 30 22.5	
CRLZ				AML	AML	17 30 22.5	
MQZ	**McQueen's Vall**	**0.14**	**216**	⇑PG	Pg	17 30 21.0	+0.3
MQZ				SG	Sg	17 30 23.2	+0.5
MQZ				AML	AML	17 30 23.4	
OXZ	**Oxford**	**0.59**	**297**	⇓P*	Pg	17 30 29.3	0.0
OXZ				AML	AML	17 30 38.0	
OXZ				AML	AML	17 30 38.0	
OXZ				AML	AML	17 30 39.7	
OXZ				AML	AML	17 30 39.8	
LTZ	**Lake Taylor**	**0.89**	**336**	P*	Pg	17 30 34.9	0.0
LTZ				S*	Sb	17 30 47.1	-0.5
LTZ				AML	AML	17 30 48.1	
RPZ	**Rata Peaks**	**1.25**	**264**	⇑P*	Pn	17 30 40.3	-1.3
RPZ				AML	AML	17 30 59.4	
RPZ				AML	AML	17 31 01.3	
INZ	**Inchbonnie**	**1.30**	**312**	⇓P*	Pn	17 30 42.2	-0.1
KHZ	**Kahutara**	**1.31**	**26**	⇑P*	Pn	17 30 40.8	-1.6
KHZ				AML	AML	17 30 46.5	
WVZ	**Waitaha Valley**	**1.57**	**289**	PN	Pn	17 30 46.0	0.0
WVZ				AML	AML	17 30 58.8	
THZ	**Tophouse**	**1.84**	**3**	⇑PN	Pn	17 30 48.2	-1.5
THZ				AML	AML	17 31 19.4	
THZ				AML	AML	17 31 23.9	
DSZ	**Denniston Nort**	**1.98**	**339**	AML	AML	17 31 18.7	
DSZ				AML	AML	17 31 18.7	
DSZ				AML	AML	17 31 19.3	
DSZ				AML	AML	17 31 19.4	
LBZ	**Lake Benmore**	**2.02**	**246**	PN	Pn	17 30 51.4	-0.9
LBZ				AML	AML	17 31 28.4	
LBZ				AML	AML	17 31 29.7	
BSWZ	**Blackbirch Sta**	**2.05**	**24**	PN	Pn	17 30 51.4	-1.3
ODZ	**Otahua Downs**	**2.10**	**226**	PN	Pn	17 30 51.8	-1.5
ODZ				AML	AML	17 31 30.5	
ODZ				AML	AML	17 31 30.5	
ODZ				AML	AML	17 31 32.1	
ODZ				AML	AML	17 31 32.1	
FOZ	**Fox Glacier**	**2.15**	**271**	PN	Pn	17 30 54.0	0.0
FOZ				AML	AML	17 31 35.2	
TUWZ	**Tuamarina**	**2.33**	**22**	PN	Pn	17 30 54.8	-1.7
NNZ	**Nelson**	**2.42**	**11**	PN	Pn	17 30 56.7	-1.0
TCW	**Tory Channel**	**2.63**	**26**	*e*Pn	Pn	17 30 58.7	-2.0
WKZ	**Wanaka**	**2.96**	**244**	AML	AML	17 30 35.3	
EAZ	**Earnscleugh**	**2.97**	**235**	⇓PN	Pn	17 31 04.1	-1.1
EAZ				AML	AML	17 31 53.6	
EAZ				AML	AML	17 31 55.4	
TUZ	**Tuapeka**	**3.25**	**222**	*e*PN	Pn	17 31 07.8	-1.3
TUZ				AML	AML	17 32 04.3	
TUZ				AML	AML	17 34 12.8	

*IDC **08** 17:37:04.7±1.9, 36°.94N×141°.02E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.3/44, mbtmp3.5/5, ML3.3/2, Error ellipse: s-maj=36.8km s-min=22.2km az=62.0*
*JMA **08** 17:37:07.7, 36°.90N×140°.79E, h11km±1km, M3.4 Broadband fault plane solution: P waves. NP1: φs=347.00000°, δ53.00000°, λ-114.00000°. NP2: φs=204.00000°, δ43.00000°, λ-61.00000°. Principal axes: T Plg5.0000°, Azm94.0000°; N Plg19.0000°, Azm2.0000°; P Plg70.0000°, Azm198.0000°;*
JMA Felt I J1.

ISC 08 17:37:07.0±1.2, 36°.88N±0°.03×140°.66E±0°.05, h7km±9km, n20, σ0°85/23, mb3.5/3, 4C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**27**	⇓P	**Pg**	**17 37 12.0**	**+0.1**
ONAJ				S	**Sg**	**17 37 15.2**	**-0.1**
JHO	**Hitachi**	**0.28**	**195**	⇑P	**Pb**	**17 37 14.4**	**+0.1**
JHO				S	**Sb**	**17 37 18.9**	**-0.3**
JFK	**Kawauchi**	**0.51**	**20**	⇓P	**Pg**	**17 37 16.7**	**-0.3**
JSB	**Shiboa**	**0.60**	**278**	⇑P	**Pn**	**17 37 21.9**	**0.0**
JFT	**Otama**	**0.69**	**338**	⇑P	**Pb**	**17 37 21.5**	**+0.2**
JFT				S	**Sb**	**17 37 31.3**	**+0.3**
JYT	**Yasato**	**0.75**	**210**	P	**Pn**	**17 37 23.1**	**-0.9**
JYT				S	**Sn**	**17 37 34.5**	**-1.1**
JFY	**Yanaizu**	**0.93**	**305**	⇑P	**Pn**	**17 37 26.5**	**+0.1**
JFY				S	**Sn**	**17 37 39.9**	**0.0**
JMM	**Marumori**	**0.99**	**6**	P	**Pg**	**17 37 25.6**	**-0.4**
JMM				S	**Sg**	**17 37 38.4**	**-0.4**
MJAR	**Matsushiro Arr**	**2.00**	**261**	Pn	**Pb**	**17 37 43.8**	**+0.1**
	9.3nm,0.3s,baz=78,slow=16,SNR=83						
MJAR				Sn	**Sg**	**17 38 12.6**	**+1.3**
	15nm,0.3s,baz=79,slow=29,SNR=5.8						
MAT	**Matsushiro**	**2.00**	**261**	P	**Pg**	**17 37 44.2**	**-1.1**
MAT				S	**Sg**	**17 38 12.4**	**+1.1**
JHJ	**Hachijo jima 2**	**3.82**	**191**	Pn	**Pn**	**17 38 07.2**	**+1.0**
	4.8nm,0.3s,baz=78,slow=16,SNR=9.4						
JHJ				Sn	**Sn**	**17 38 53.5**	**+2.1**
	5.3nm,0.3s,baz=90,slow=20,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	18 12 48.2	
	baz=312,slow=75,SNR=159						
H11N1	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	18 12 48.8	
	baz=312,slow=75,SNR=207						
H11N3	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	18 12 49.6	
	baz=312,slow=75,SNR=170						
H11S1	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	18 13 40.8	
	baz=314,slow=75,SNR=439						
H11S3	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	18 13 40.3	
	baz=314,slow=75,SNR=564						
H11S2	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	18 13 42.1	
	baz=314,slow=75,SNR=304						
MKAR	**Makanchi Array**	**43.69**	**302**	P	**P**	**17 45 12.8**	**+0.4**
	0.3nm,0.7s,baz=74,slow=7.4,SNR=2.8						
WRA	**Warramunga Arr**	**56.83**	**187**	P	**P**	**17 46 51.3**	**-0.8**
	0.5nm,0.6s,baz=3.7,slow=7.2,SNR=14						
ASAR	**Alice Springs**	**60.56**	**187**	P	**P**	**17 47 17.5**	**-0.5**
	0.4nm,1.0s,baz=1.6,slow=10,SNR=3.1						

*NSSC **08** 17:44:57.5±1.7, 33°.73N×35°.97E, h10km±8km, ML1.6*
*ISCJB **08** 17:44:58.1±0.5, 33°.73N±0°.02×36°.03E±0°.04, h9km±5km, Error ellipse: s-maj=5.2km s-min=4.0km az=8.2*
*CSEM **08** 17:44:58.5, 33°.71N×36°.08E, h0km, ML3.0*
*GRAL **08** 17:44:58.5±0.3, 33°.71N×36°.08E, h0km±34km, MD3.0*

ISC 08 17:44:57.9±1.1, 33°.73N±0°.02×36°.06E±0°.03, h9km±15km, n16, σ0°63/28, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RCY	**Rachaya**	**0.30**	**220**	*e*P	**Pg**	**17 45 03.8**	**-0.2**
RCY				*e*S	**Sg**	**17 45 07.8**	**-0.3**
BHL	**Bhannes**	**0.38**	**297**	*e*P	**Pg**	**17 45 05.7**	**+0.2**
BHL	**Bhannes**	**0.38**	**297**	*e*P	**Pg**	**17 45 05.7**	**+0.2**
DQRL	**Deir Qamar**	**0.41**	**267**	*e*P	**Pg**	**17 45 06.1**	**0.0**
DQRL				*e*S	**Sg**	**17 45 11.7**	**+0.2**
DQRL	**Deir Qamar**	**0.41**	**267**	*e*P	**Pg**	**17 45 06.1**	**0.0**
DQRL				*e*S	**Sg**	**17 45 11.7**	**+0.2**
MARH	**Ras Al Marh**	**0.46**	**49**	*e*P	**Pg**	**17 45 07.9**	**+0.9**
MARH				*e*S	**Sb**	**17 45 15.6**	**+0.2**
MARH				AML	AML	17 45 19.1	
	comp=N,127nm,0.4s						
MARH				AML	AML	17 45 22.1	
	comp=E,122nm,0.4s						
TOTH	**TOTAH**	**0.48**	**140**	*e*P	**Pg**	**17 45 07.8**	**+0.5**
TOTH				*e*S	**Sb**	**17 45 15.3**	**-0.4**
TOTH				AML	AML	17 45 19.1	
	comp=N,34nm,0.5s						
TOTH				AML	AML	17 45 22.8	
	comp=E,39nm,0.4s						
HWQ	**Hawqa**	**0.56**	**350**	*e*P	**Pg**	**17 45 08.8**	**+0.1**
HWQ	**Hawqa**	**0.56**	**350**	*e*P	**Pg**	**17 45 08.9**	**+0.1**
FKH	**Fakeheh**	**0.59**	**29**	*e*P	**Pg**	**17 45 09.3**	**-0.1**
FKH				*e*S	**Sg**	**17 45 17.2**	**0.0**
FKH	**Fakeheh**	**0.59**	**29**	*e*P	**Pg**	**17 45 09.3**	**-0.1**
FKH				*e*S	**Sg**	**17 45 17.2**	**0.0**
HAWK	**Haweek**	**0.84**	**20**	*e*P	**Pg**	**17 45 13.7**	**-0.5**
HAWK				*e*S	**Sb**	**17 45 27.2**	**+1.0**
HAWK				AML	AML	17 45 29.8	
	comp=E,13nm,0.3s						
HAWK				AML	AML	17 45 31.3	
	comp=N,17nm,0.5s						
ROOS	**tl_alroos**	**1.11**	**66**	*e*P	**Pg**	**17 45 19.9**	**+0.6**
ROOS				*e*S	**Sb**	**17 45 34.8**	**+0.9**
SALA	**Sala**	**1.16**	**151**	*e*P	**Pg**	**17 45 20.4**	**+0.1**
SALA				*e*S	**Sb**	**17 45 36.1**	**+0.6**
SALA				AML	AML	17 45 41.1	
	comp=E,2.7nm,0.5s						
SALA				AML	AML	17 45 42.8	
	comp=N,22nm,0.5s						
BIDA	**Albida**	**1.30**	**9**	*e*P	**Pg**	**17 45 21.7**	**-1.2**
BIDA				*e*S	**Sg**	**17 45 38.5**	**-1.3**
BIDA				AML	AML	17 45 47.7	
	comp=E,35nm,0.4s						
BIDA				AML	AML	17 45 49.8	
	comp=N,20nm,0.6s						
ZALF	**Zalf**	**1.33**	**127**	*e*P	**Pg**	**17 45 23.0**	**-0.5**
ZALF				*e*S	**Sg**	**17 45 39.5**	**-1.3**

IDC 08 17:56:08.3±2.9, 32°.40S×178°.28W, h0km, mb3.8/2, mb1 4.1/3, mb1mx3.7/25, mbtmp3.8/3, ML3.7/1, Error ellipse: s-maj=71.3km s-min=45.1km az=124.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.96**	**212**	Pn	Pn	17 57 51.0	-0.5
	1.2nm,0.3s,baz=0.0,slow=11,SNR=7.0						
URZ				Sn	Sn	17 59 07.4	-3.9
	1.4nm,0.3s,baz=137,slow=20,SNR=13						
ASAR	**Alice Springs**	**42.80**	**269**	P	P	18 04 08.0	-0.1
	0.4nm,0.4s,baz=109,slow=7.0,SNR=5.3						
WRA	**Warramunga Arr**	**43.97**	**274**	P	P	18 04 17.5	-0.1
	1.0nm,0.4s,baz=114,slow=7.9,SNR=20						
FINES	**FINESS Array B**	**146.93**	**339**	PKPbc	PKPbc	18 15 51.2	-0.8
	0.7nm,0.4s,baz=36,slow=2.9,SNR=8.7						

IDC 08 18:11:54.5±2.3, 28°.11S×176°.71W, h0km, mb3.7/3, mb1 3.8/3, mb1mx3.6/33, mbtmp3.7/3, Error ellipse: s-maj=77.7km s-min=24.2km az=131.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.56**	**223**	Pn	Pn	18 12 23.4	0.0
	118nm,0.3s,baz=66,slow=20,SNR=3.1						
RAO				Sn	Sg	18 12 45.9	+1.3
	238nm,0.3s,baz=59,slow=19,SNR=3.8						
STKA	**Stephens Creek**	**36.15**	**254**	P	P	18 18 58.4	-0.3
	3.9nm,1.1s,baz=69,slow=8.6,SNR=3.9						
ASAR	**Alice Springs**	**44.42**	**264**	P	P	18 20 06.8	-0.4
	0.2nm,0.6s,baz=100,slow=7.7,SNR=10						
WRA	**Warramunga Arr**	**45.20**	**269**	P	P	18 20 13.8	+0.3
	0.7nm,0.7s,baz=108,slow=7.8,SNR=5.0						
FINES	**FINESS Array B**	**143.36**	**342**	PKP	PKPbc	18 31 27.5	+0.2
	1.0nm,0.6s,baz=45,slow=4.1,SNR=4.8						
NOA	**NORSAR Array B**	**146.64**	**353**	PKPbc	PKPbc	18 31 37.3	-0.2
	0.9nm,0.8s,baz=14,slow=4.4,SNR=3.1						
AKASG	**Malin Array Be**	**150.10**	**326**	PKPbc	PKPbc	18 31 46.4	-0.4
	0.3nm,0.3s,baz=48,slow=1.9,SNR=4.8						
AKASG				PKPab	PKPab	18 31 52.2	-0.5
	1.0nm,0.4s,baz=48,slow=1.5,SNR=6.6						

IDC 08 18:17:44.6±2.8, 28°.04S×176°.75W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/30, mbtmp3.6/2, MS3.2/1, Ms1 3.2/1, ms1mx2.6/30, Error ellipse: s-maj=74.7km s-min=28.0km az=123.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.58**	**220**	Pn	Pn	18 18 14.2	+0.2
	167nm,0.3s,baz=71,slow=17,SNR=5.1						
RAO				Sn	Sn	18 18 35.3	+0.1
	264nm,0.3s,baz=30,slow=20,SNR=3.7						
ASAR	**Alice Springs**	**44.39**	**264**	P	P	18 25 57.0	-0.2
	0.4nm,0.5s,baz=103,slow=7.2,SNR=17						
WRA	**Warramunga Arr**	**45.17**	**269**	P	P	18 26 03.6	+0.2
	0.7nm,0.5s,baz=108,slow=7.9,SNR=8.1						
GUMO	**Guam**	**55.63**	**313**	LR	LR	18 50 09.6	
	comp=Z,21nm,18.4s,baz=108,slow=35						
FINES	**FINESS Array B**	**149.28**	**342**	PKP	PKPbc	18 37 17.5	+0.3
	0.6nm,0.6s,baz=85,slow=2.9,SNR=3.7						
NB2	**NORSAR Subarra**	**146.57**	**353**	PKP	PKPbc	18 37 27.6	+0.1
	comp=Z,0.6nm,0.6s,baz=7.8,slow=2.9						
NOA	**NORSAR Array B**	**146.57**	**353**	PKPbc	PKPbc	18 37 27.1	-0.4
	comp=Z,0.9nm,0.7s,baz=13,slow=4.4,SNR=4.2						

*MOS **08** 18:20:02.6±1.0, 52°.16N×171°.79W, h33km, mb4.6/34, Error ellipse: s-maj=9.7km s-min=7.9km az=145.3*
*ISCJB **08** 18:20:03.9±0.1, 52°.13N±0°.03×171°.66W±0°.02, h44km, mb4.4/123, MS3.4/15, Error ellipse: s-maj=4.8km s-min=2.0km az=173.6*
*NEIC **08** 18:20:06.5±0.3, 52°.17N×171°.72W, h51km±3km, mb4.4/130, ML4.4(AEIC), Error ellipse: s-maj=5.1km s-min=2.0km az=166.0*
*IDC **08** 18:20:09.5±5.1, 52°.25N×171°.74W, h79km±45km, mb3.8/17, mb1 4.0/19, mb1mx3.8/53, mbtmp4.1/19, ML4.0/2, MS3.3/14, Ms1 3.3/14, ms1mx3.1/44, Error ellipse: s-maj=25.0km s-min=11.3km az=172.0*

ISC 08 18:20:05.4±0.5, 52°.04N±0°.09×171°.64W±0°.04, h44km, n452, σ1°05/455, mb4.4/123, MS3.3/15, 1D, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOSE	**Korovin Southe**	**1.51**	**283**	P	**Pn**	**18 20 30.7**	**+0.7**
KOFP	**Korovin Flat P**	**1.53**	**280**	P	**Pn**	**18 20 30.5**	**+0.2**
KONE	**Korovin Northe**	**1.57**	**284**	P	**Pn**	**18 20 31.1**	**+0.4**
KOKL	**Mount Kliuchef**	**1.60**	**281**	*e*Pn	**Pn**	**18 20 31.5**	**+0.3**
NIKH	**Nikolski High**	**1.94**	**60**	*e*Pn	**Pn**	**18 20 34.8**	**-1.1**
NIKH				*e*Sn	**Sn**	**18 20 58.1**	**-1.0**
OKRE	**Okmok R'deer P**	**2.58**	**53**	P	**Pn**	**18 20 45.0**	**+0.4**
GSMY	**Great Sitkin M**	**2.73**	**272**	*e*Pn	**Pn**	**18 20 46.8**	**+0.2**
GSTR	**Great Sitkin T**	**2.73**	**273**	*e*Pn	**Pn**	**18 20 47.0**	**+0.3**
GSTR				*e*Sn	**Sn**	**18 21 17.8**	**-0.6**
GSTD	**Great Sitkin T**	**2.78**	**272**	*e*Pn	**Pn**	**18 20 47.4**	**-0.1**
GSTD				*e*Sn	**Sn**	**18 21 22.1**	**+2.3**
**

DHY **Denali Highway** 16.95 40 *e*Pn Pn 18 23 58.3 -0.9
comp=Z,7.4nm,1.0s
BMRM **Bremner River** 17.28 48 *e*Pn Pn 18 24 01.4 -1.7
comp=Z,15nm,1.1s
WRH **Wood River Hil** 17.43 35 *e*Pn P 18 24 06.3 +0.6
comp=Z,5.4nm,0.9s
CCB **Clear Creek Bu** 17.63 35 *e*Pn Pn 18 24 05.9 -1.4
comp=Z,6.4nm,1.2s
MDM **Murphy Dome** 17.66 34 *e*Pn P 18 24 08.5 +0.2
comp=Z,23nm,1.6s
PAX **Paxson** 17.67 42 *e*P P 18 24 09.2 +0.6
PAX pmax pmax
comp=Z,5.0nm,0.8s
PAX **Paxson** 17.67 42 *e*Pn P 18 24 09.2 +0.6
comp=Z,5.2nm,0.8s
HDA **Harding Lake** 17.80 36 *e*Pn Pn 18 24 07.5 -2.1
comp=Z,55nm,1.4s
ILAR **Eielson Array** 18.02 35 P Pn 18 24 11.2 -1.0
comp=Z,0.4nm,0.3s,baz=224,slow=10.0,SNR=18
ILAR LR LR 18 31 29.4
comp=Z,62nm,18.2s,baz=262,slow=38
ILB **Eielson Array** 18.02 35 *e*P Pn 18 24 11.7 -0.6
IL1 **Eielson Array** 18.02 35 *e*P Pn 18 24 11.6 -0.7
PET **Petropavlovsk** 18.05 285 *e*P Pn 18 24 10.7 -1.9
PET pmax pmax
comp=Z,42nm,1.1s
PET **Petropavlovsk** 18.05 285 *e*P Pn 18 24 10.7 -1.9
comp=Z,42nm,1.1s
BALM **Baldy** 18.35 49 *e*P P 18 24 15.8 -0.2
BALM pmax pmax
comp=Z,5.0nm,0.5s
BALM **Baldy** 18.35 49 *e*P P 18 24 15.8 -0.2
comp=Z,5.2nm,0.5s
COLD **Coldfoot** 18.52 27 *e*P Pn 18 24 20.6 +2.4
comp=Z,7.4nm,1.3s
DOT **Dot Lake** 18.54 41 *e*P P 18 24 15.1 -3.0
comp=Z,18nm,1.1s
PEA1 **Petropavlovsk-** 18.60 285 *e*P Pn 18 24 19.6 +0.2
PEA0 **Petropavlovsk-** 18.60 285 *e*P Pn 18 24 19.6 +0.3
PEA0B **Petropavlovsk-** 18.60 285 *e*P Pn 18 24 19.6 +0.3
comp=Z,22nm,1.0s
PETK **Petropavlovsk-** 18.60 285 P Pn 18 24 19.6 +0.2
comp=Z,1.2nm,0.3s,baz=84,slow=14,SNR=23
PETK LR LR 18 31 46.2
comp=Z,54nm,19.7s,baz=88,slow=38
PCA **Pinnacle** 19.13 53 *e*P Pn 18 24 26.9 +1.2
comp=Z,78nm,0.6s
BILL **Bilibino** 19.27 335↓ *e*P Pn 18 24 29.3 +2.0
BILL pmax pmax
comp=Z,4.0nm,0.5s
BILL **Bilibino** 19.27 335 *e*P Pn 18 24 29.4 +2.1
comp=Z,42nm,1.6s
YKU2 **Yakutat** 19.32 55 *e*P Pn 18 24 31.1 +3.3
comp=Z,378nm,1.2s
DHAK **Deception Hill** 20.01 56 *e*P P 18 24 34.5 +0.5
comp=Z,14nm,0.8s
EGAK **Eagle** 20.18 39 *e*P P 18 24 35.6 -0.2
comp=Z,6.1nm,0.8s
DAWY **Dawson** 20.61 42 *e*P Pn 18 24 42.9 -0.3
comp=Z,4.2nm,1.0s
SKAG **Skagway** 21.52 56 *e*P P 18 24 51.3 +1.1
comp=Z,9.9nm,0.7s
SEY **Seymchan** 21.88 314 P P 18 24 54.4 +0.2
comp=Z,1.9nm,0.6s,baz=112,slow=13,SNR=10
DLBC **Dease Lake** 24.25 58 P P 18 25 19.4 +1.4
comp=Z,7.9nm,0.7s,baz=272,slow=9.4,SNR=15
DLBC **Dease Lake** 24.25 58 *e*P P 18 25 20.2 +2.2
comp=Z,8.3nm,0.8s
INK **Inuvik** 24.40 34 P P 18 25 17.8 -1.3
comp=Z,1.8nm,0.5s,baz=250,slow=8.8,SNR=6.0
INK **Inuvik** 24.40 34 *e*P P 18 25 17.8 -1.3
comp=Z,3.2nm,0.8s
OFR **Olym-F Res Ctr** 30.23 79 *e*P P 18 26 12.8 +1.3
ASAJ **Asahikawa** 31.14 274 *e*P P 18 26 20.4 +0.8
comp=Z,36nm,1.6s
E03A **Lebam** 31.36 81 *e*P P 18 26 22.3 +0.7
comp=Z,32nm,1.3s
B05A **Bryant** 31.47 77 P P 18 26 24.1 +1.6
baz=296
YKA **Yellowknife Ar** 31.51 48 P P 18 26 21.9 -0.7
comp=Z,1.0nm,0.5s,baz=273,slow=7.9,SNR=14
YKA PcP PcP 18 29 14.3 -0.1
comp=Z,0.1nm,0.4s,baz=302,slow=3.2,SNR=3.8
YKA LR LR 18 39 55.4
comp=Z,15nm,20.9s,baz=180,slow=38
YKB5 **Yellowknife Ar** 31.51 48 *e*P P 18 26 21.6 -1.0
YKB5 *e*PcP PcP 18 29 14.0 -0.4
ERM **Erimo** 31.92 270 *e*P P 18 26 26.0 -0.5
ERM pmax pmax
comp=Z,46nm,1.1s
ERM **Erimo** 31.92 270 *e*P P 18 26 26.0 -0.5
comp=Z,46nm,1.1s
YAK **Yakutsk** 32.34 311 *e*P P 18 26 29.5 -0.4
YAK pmax pmax
comp=Z,4.0nm,0.6s
YAK **Yakutsk** 32.34 311 *e*P P 18 26 29.5 -0.4
comp=Z,3.7nm,0.6s
F04A **Amboy** 32.35 81 *e*P P 18 26 32.5 +2.3
comp=Z,20nm,1.3s
B08A **Colville Reser** 33.09 75 *e*P P 18 26 38.2 +1.4
comp=Z,5.8nm,0.6s
I04A **Tendick Farm,** 33.44 84 P P 18 26 41.7 +1.9
baz=302
G06A **Carlson Farm,** 33.79 81 *e*P P 18 26 42.9 0.0
comp=Z,12nm,1.3s
D08A **Wollman Farm,** 33.93 77 *e*P P 18 26 43.9 -0.2
comp=Z,29nm,1.7s
C09A **Chrisman Ranch** 33.97 76 *e*P P 18 26 45.9 +1.4
comp=Z,5.9nm,0.8s
J05D **Fort Rock, OR** 34.44 84 P P 18 26 50.6 +1.9
baz=303
NEW **Newport** 34.45 74 LR LR 18 38 33.5
comp=Z,46nm,18.7s,baz=291,slow=32
NEW **Newport** 34.45 74 P P 18 26 49.6 +1.0
baz=298
NEW **Newport** 34.45 74 *e*P P 18 26 49.7 +1.1
NEW pmax pmax
comp=Z,11nm,0.9s
NEW **Newport** 34.45 74 *e*P P 18 26 49.7 +1.1
comp=Z,11nm,0.9s
EDM **Edmonton** 34.56 64 *e*P P 18 26 49.7 +0.3
EDM pmax pmax
comp=Z,11nm,0.8s
EDM **Edmonton** 34.56 64 *e*P P 18 26 49.7 +0.3
comp=Z,10nm,0.8s
G08A **Pilot Rock** 34.78 80 *e*P P 18 26 52.3 +0.8
comp=Z,2.3nm,0.6s
N02D **Trinity Center** 34.82 89 P P 18 26 53.9 +2.0
baz=306
M04C **Macdoel** 34.90 87 P P 18 26 54.5 +2.0
baz=305
K05A **Summer Lake** 34.95 85 *e*P P 18 26 55.5 +2.3
comp=Z,10nm,0.8s
F10A **Beach Ranch, E** 35.48 78 *e*P P 18 26 56.8 -0.7
comp=Z,3.0nm,0.7s
MOD **Modoc Plateau** 35.77 86 *e*P P 18 27 01.6 +1.4
comp=Z,7.6nm,0.9s
O03D **Paynes Creek** 35.78 89 P P 18 27 01.6 +1.5
baz=306
WALA **Waterton Lakes** 35.98 71 *e*P P 18 27 02.2 +0.4
comp=Z,7.0nm,1.0s
BMO **Blue Mountains** 36.01 79 *e*P P 18 27 02.5 +0.4
comp=Z,3.7nm,1.3s
BSMT **Basson Peak** 36.02 74 *e*P P 18 27 03.4 +1.1
BLMT **Blacktail Moun** 36.20 73 *e*P P 18 27 04.4 +0.6
H11N2 **WAKE ISLAND Hy** 36.34 216 T T 19 05 38.2
baz=20,slow=76,SNR=160
H11N3 **WAKE ISLAND Hy** 36.35 216 T T 19 05 36.7
baz=20,slow=76,SNR=141
H11N1 **WAKE ISLAND Hy** 36.36 216 T T 19 05 37.8
baz=20,slow=76,SNR=138
ORV **Oroville** 36.40 90 *e*P P 18 27 06.6 +1.2
ORV pmax pmax
comp=Z,4.0nm,1.0s
ORV **Oroville** 36.40 90 *e*P P 18 27 06.6 +1.2
comp=Z,4.3nm,1.0s
YBMT **Yellow Bay** 36.48 73 *e*P P 18 27 06.4 +0.3
WVOR **Wild Horse Val** 36.50 84 *e*P P 18 27 06.8 +0.4
WVOR pmax pmax
comp=Z,8.0nm,0.8s
WVOR **Wild Horse Val** 36.50 84 *e*P P 18 27 06.8 +0.4
comp=Z,8.0nm,0.8s
SWMT **Swartz Lake** 36.66 74 *e*P P 18 27 08.1 +0.5
MSO **Missoula** 37.03 75 P P 18 27 11.4 +0.7
baz=300
SLMT **Seeley Lake** 37.09 74 *e*P P 18 27 11.5 +0.2
JPC **Peters Creek,** 37.37 93 *e*PcP PcP 18 29 32.9 +1.2

CHMT **Chamberlain Mo** 37.39 74 *e*P P 18 27 14.4 +0.4
H11S1 **WAKE ISLAND Hy** 37.54 215 T T 19 07 07.4
baz=20,slow=76,SNR=225
H11S2 **WAKE ISLAND Hy** 37.56 215 T T 19 07 06.2
baz=20,slow=76,SNR=238
H11S3 **WAKE ISLAND Hy** 37.56 215 T T 19 07 05.6
baz=20,slow=76,SNR=220
USRK **Ussuriysk Ar.** 37.59 281 P P 18 27 14.9 -0.5
comp=Z,1.3nm,0.7s,baz=70,slow=8.6,SNR=3.7
USRK LR LR 18 42 23.8
comp=Z,48nm,21.3s,baz=34,slow=36
PAHR **Pah Rah Range** 37.62 88 *e*P P 18 27 17.9 +2.0
comp=Z,7.4nm,0.7s
MFID **Camas Ranch** 37.68 80 *e*P P 18 27 17.1 +0.8
comp=Z,2.9nm,0.8s
CMB **Columbia Colle** 38.02 91 *e*P P 18 27 21.1 +1.9
CMB pmax pmax
comp=Z,7.0nm,1.4s
CMB **Columbia Colle** 38.02 91 *e*P P 18 27 21.1 +1.9
comp=Z,6.8nm,1.4s
YERR **Yerington** 38.14 89 *e*P P 18 27 21.9 +1.5
comp=Z,7.7nm,0.7s
SAO **San Andreas Ge** 38.17 93 *e*P P 18 27 21.6 +1.2
SAO pmax pmax
comp=Z,17nm,1.3s
SAO **San Andreas Ge** 38.17 93 *e*P P 18 27 21.6 +1.2
comp=Z,17nm,1.3s
MJAR **Matsushiro Arr** 38.28 266 P P 18 27 21.4 +0.1
comp=Z,1.6nm,0.4s,baz=50,slow=7.6,SNR=11
MJAR LR LR 18 41 09.2
comp=Z,46nm,21.3s,baz=60,slow=33
MAJO **Matsushiro** 38.28 266 *e*P P 18 27 21.2 -0.2
MAJO pmax pmax
comp=Z,21nm,1.1s
MAJO **Matsushiro** 38.28 266 *e*P P 18 27 21.1 -0.2
comp=Z,21nm,1.1s
MAT **Matsushiro** 38.28 266 P P 18 27 20.9 -0.4
MJB9 **Matsu-Tunnel** 38.28 266 *e*P P 18 27 21.4 +0.1
comp=Z,5.4nm,1.1s
WAKR **Walker** 38.32 90 *e*P P 18 27 23.6 +1.8
comp=Z,22nm,1.6s
LRM **Limekiln Ridge** 38.43 75 *e*P P 18 27 23.4 +0.6
HLID **Hailey** 38.45 79 P P 18 27 23.7 +0.8
baz=304
HLID **Hailey** 38.45 79 *e*P P 18 27 23.5 +0.6
BMN **Battle Mountai** 38.52 85 *e*P P 18 27 24.4 +0.9
BMN pmax pmax
comp=Z,3.0nm,0.8s
BMN **Battle Mountai** 38.52 85 *e*P P 18 27 24.4 +0.9
comp=Z,2.6nm,0.8s
MCMT **McKenzie Canyo** 38.72 77 *e*P P 18 27 25.6 +0.4
TVH1 **TV Hill, Hawth** 38.76 89 *e*P P 18 27 27.5 +1.7
comp=Z,15nm,1.3s
BOZ **Bozeman (W)** 39.01 75 P P 18 27 28.0 +0.4
baz=302,SNR=8.3
BOZ **Bozeman (W)** 39.01 75 *e*P P 18 27 28.1 +0.6
BOZ pmax pmax
comp=Z,4.0nm,0.6s
BOZ **Bozeman (W)** 39.01 75 *e*P P 18 27 28.1 +0.6
comp=Z,4.2nm,0.6s
ELK **Elko** 39.56 84 *e*P P 18 27 33.4 +1.2
ELK pmax pmax
comp=Z,3.0nm,0.6s
ELK **Elko** 39.56 84 *e*P P 18 27 33.4 +1.2
comp=Z,2.7nm,0.6s
PAGB **Antelope Grade** 39.57 94 *e*P P 18 27 33.2 +1.1
comp=Z,7.2nm,0.6s
YMR **Madison River** 39.93 76 *e*P P 18 27 36.0 +0.7
comp=Z,16nm,0.4s
YHH **Holmes Hill** 39.93 76 *e*P P 18 27 35.4 0.0
comp=Z,8.5nm,0.6s
YNR **Norris Junctio** 40.08 76 *e*P P 18 27 37.5 +1.0
comp=Z,44nm,1.0s
VES **Vestal, Richgr** 40.22 93 P P 18 27 38.4 +0.9
baz=311
IMW **Indian Meadow** 40.37 77 *e*P P 18 27 39.9 +0.9
comp=Z,3.0nm,0.8s
PKM **Mcpherson Peak** 40.39 94 P P 18 27 40.2 +1.0
baz=312
HVU **Hansel Valley** 40.46 81 *e*P P 18 27 40.4 +0.8
HVU pmax pmax
comp=Z,5.0nm,0.7s
HVU **Hansel Valley** 40.46 81 *e*P P 18 27 40.4 +0.8
comp=Z,5.2nm,0.7s
GRAC **Grapevine Rang** 40.54 90 P P 18 27 42.0 +1.8
baz=310,SNR=5.5
MOOW **Moose Ponds** 40.57 77 *e*P P 18 27 41.6 +1.0
comp=Z,12nm,2.0s
RLMT **Red Lodge** 40.70 74 P P 18 27 42.5 +0.9
baz=303,SNR=5.9
RLMT **Red Lodge** 40.70 74 *e*P P 18 27 42.5 +0.9
comp=Z,18nm,1.3s
ISA **Isabella, Lake** 40.71 92 P P 18 27 42.8 +1.1
baz=311
ISA **Isabella, Lake** 40.71 92 *e*P P 18 27 42.0 +0.4
ISA pmax pmax
comp=Z,6.0nm,0.9s
ISA **Isabella, Lake** 40.71 92 *e*P P 18 27 42.0 +0.4
comp=Z,5.8nm,0.9s
REDW **Red Top Meadow** 40.72 77 *e*P P 18 27 42.5 +0.7
comp=Z,7.4nm,1.3s
R11A **Troy Canyon, C** 40.79 87 P P 18 27 43.3 +0.9
baz=309,SNR=8.4
R11A **Troy Canyon, C** 40.79 87 *e*P P 18 27 43.0 +0.6
comp=Z,2.3nm,0.6s
BGU **Big Grassy Mou** 40.80 82 *e*P P 18 27 43.3 +0.8
comp=Z,6.3nm,1.4s
DAC **Darwin (Calif)** 40.86 91 *e*P P 18 27 44.2 +1.2
DAC pmax pmax
comp=Z,3.0nm,0.6s
DAC **Darwin (Calif)** 40.86 91 *e*P P 18 27 44.2 +1.2
comp=Z,3.0nm,0.6s
SPUT **South Promonto** 40.93 81 *e*P P 18 27 44.7 +1.2
comp=Z,2.0nm,0.7s
MPMC **Manual Prospec** 41.06 91 P P 18 27 46.1 +1.4
baz=311
BOD **Bodaibo** 41.11 308 *e*P P 18 27 42.8 -1.7
BOD pmax pmax
comp=Z,3.0nm,1.8s
TPNV **Topopah Spring** 41.26 89 P P 18 27 47.5 +1.2
baz=310,SNR=8.3
TPNV **Topopah Spring** 41.26 89 *e*P P 18 27 47.3 +1.0
TPNV pmax pmax
comp=Z,6.0nm,0.7s
TPNV **Topopah Spring** 41.26 89 *e*P P 18 27 47.3 +1.0
comp=Z,5.8nm,0.7s
HWUT **Hardware Ranch** 41.30 80 *e*P P 18 27 46.3 -0.3
comp=Z,7.7nm,1.5s
DUG **Dugway, Tooele** 41.37 83 P P 18 27 48.1 +1.0
baz=307,SNR=5.9
DUG **Dugway, Tooele** 41.37 83 *e*P P 18 27 47.8 +0.7
DUG pmax pmax
comp=Z,4.0nm,0.9s
DUG **Dugway, Tooele** 41.37 83 *e*P P 18 27 47.8 +0.7
comp=Z,4.3nm,0.9s
LAO **LASA Array** 41.64 70 *e*P P 18 27 51.4 +2.3
comp=Z,12nm,0.9s
TCUT **Toone Canyon** 41.68 81 *e*P P 18 27 50.0 +0.2
comp=Z,7.8nm,0.6s
BW06 **Boulder Array** 41.84 77 P P 18 27 51.3 +0.3
baz=305,SNR=12
BW06 **Boulder Array** 41.84 77 *e*P P 18 27 51.4 +0.4
comp=Z,7.1nm,0.6s
PD31 **Pinedale Array** 41.84 77 *e*P P 18 27 51.6 +0.5
PDAR **Pinedale Array** 41.84 77 P P 18 27 51.7 +0.7
comp=Z,5.3nm,0.5s,baz=296,slow=4.9,SNR=51
PDAR LR LR 18 44 36.9
comp=Z,40nm,18.4s,baz=316,slow=35
JLU **Jordanelle** 41.96 81 *e*P P 18 27 53.0 +1.0
comp=Z,2.7nm,0.5s
NLU **North Lily Min** 41.97 82 *e*P P 18 27 53.2 +1.1
comp=Z,5.2nm,1.0s
GSC **Goldstone, Bar** 41.98 91 P P 18 27 53.6 +1.5
baz=311,SNR=9.1
GSC **Goldstone, Bar** 41.98 91 *e*P P 18 27 53.2 +1.2
GSC pmax pmax
comp=Z,8.0nm,0.6s
GSC **Goldstone, Bar** 41.98 91 *e*P P 18 27 53.2 +1.2
comp=Z,8.2nm,0.6s
BFSC **Mount Baldy Ra** 42.15 93 P P 18 27 55.1 +1.5
baz=312
MPU **Maple Canyon** 42.20 82 *e*P P 18 27 54.8 +0.9
comp=Z,4.4nm,0.8s
A25A **Svangstu Ranch** 42.24 66 P P 18 27 54.3 +0.3
baz=302
TUQ **Turquoise Moun** 42.44 90 P P 18 27 57.3 +1.4
baz=311

TCRU **Three Creeks R** 42.56 84 *e*P P 18 27 58.7 +1.7
comp=Z,17nm,0.4s
HEC **Hector,Ludlow** 42.58 91 P P 18 27 58.4 +1.4
baz=312
CCUT **Cedar City** 42.66 86 *e*P P 18 27 57.5 -0.2
comp=Z,2.2nm,0.7s
MSU **Marysvale** 42.79 84 *e*P P 18 28 00.2 +1.4
MSU **Marysvale** 42.79 84 *e*P P 18 28 00.2 +1.4
SZCU **Shurtz Canyon** 42.80 86 *e*P P 18 27 59.5 +0.6
comp=Z,4.1nm,1.1s
TMUT **Trail Mountain** 42.90 83 *e*P P 18 28 01.2 +1.4
comp=Z,7.1nm,0.9s
GMRC **Granite Mounta** 43.02 91 P P 18 28 01.8 +1.2
baz=312
MTPU **Mount Pierson** 43.08 85 *e*P P 18 28 02.4 +1.2
comp=Z,5.9nm,1.2s
P17A **Butcher Ranch,** 43.08 82 *e*P P 18 28 02.1 +1.0
comp=Z,3.8nm,0.8s
LDFC **Landfair** 43.17 90 *e*P P 18 28 02.3 +0.5
comp=Z,9.9nm,0.6s
P18A **Preston Nutter** 43.28 81 *e*P P 18 28 03.7 +0.8
comp=Z,9.6nm,1.1s
PFO **Pinyon Flats O** 43.31 93 P P 18 28 04.4 +1.4
baz=313
PFO **Pinyon Flats O** 43.31 93 *e*P P 18 28 03.4 +0.5
PFO pmax pmax
comp=Z,7.0nm,1.4s
PFO **Pinyon Flats O** 43.31 93 *e*P P 18 28 03.4 +0.5
comp=Z,7.4nm,1.4s
KNB **Kanab** 43.33 86 *e*P P 18 28 04.3 +1.2
KNB pmax pmax
comp=Z,3.0nm,0.5s
KNB **Kanab** 43.33 86 *e*P P 18 28 04.3 +1.2
comp=Z,3.2nm,0.5s
BELC **Belle Mtn. Jos** 43.34 92 P P 18 28 04.4 +1.2
baz=312
SRU **San Rafael Swe** 43.43 82 *e*P P 18 28 03.2 -0.7
SRU pmax pmax
comp=Z,6.0nm,0.8s
SRU **San Rafael Swe** 43.43 82 *e*P P 18 28 03.2 -0.7
comp=Z,6.0nm,0.8s
K22A **Casper** 43.73 76 P P 18 28 06.3 0.0
baz=306
K22A **Casper** 43.73 76 *e*P P 18 28 06.0 -0.3
comp=Z,5.5nm,0.9s
IRM **Iron Mountain** 43.76 91 P P 18 28 07.6 +1.1
baz=312
BAR **Barrett** 43.81 94 *e*P P 18 28 07.8 +0.9
comp=Z,11nm,1.2s
BC3 **Big Chuckawall** 43.90 92 P P 18 28 08.4 +0.7
baz=313
W13A **Hualapai Mount** 43.91 89 *e*P P 18 28 08.7 +0.8
comp=Z,3.6nm,0.6s
U15A **North Rim** 44.03 87 *e*P P 18 28 10.1 +1.2
comp=Z,5.7nm,0.6s
KSRS **Korea Array** 44.05 275 P P 18 28 08.9 +0.3
comp=Z,1.1nm,0.7s,baz=52,slow=7.1,SNR=6.2
KSRS LR LR 18 45 13.7
comp=Z,27nm,19.4s,baz=42,slow=34
KSAR **Wonju Array Be** 44.08 275 P P 18 28 08.9 0.0
KSAR **Wonju Array Be** 44.08 275 P P 18 28 08.9 0.0
IKP **In-Ko-Pah, Jac** 44.18 94 P P 18 28 11.4 +1.6
baz=313
O20A **White River Ci** 44.20 80 P P 18 28 10.5 +0.4
baz=308,SNR=7.2
O20A **White River Ci** 44.20 80 *e*P P 18 28 10.4 +0.4
comp=Z,5.5nm,0.7s
RSSD **Black Hills** 44.35 72 *e*P P 18 28 11.8 +0.5
RSSD pmax pmax
comp=Z,4.0nm,1.1s
RSSD **Black Hills** 44.35 72 *e*P P 18 28 11.8 +0.5
comp=Z,4.4nm,1.1s
Y12C **Blythe** 44.41 91 P P 18 28 12.6 +1.0
baz=312
Y12C **Blythe** 44.41 91 *e*P P 18 28 12.0 +0.4
comp=Z,6.5nm,0.7s
PV09 **Paradox Valley** 44.66 82 *e*P P 18 28 14.5 +0.6
PV10 **Paradox Valley** 44.80 82 *e*P P 18 28 14.9 0.0
PV05 **Paradox Valley** 44.95 82 *e*P P 18 28 16.1 0.0
JNU **Nakatsue** 45.06 268 LR LR 18 44 41.4
comp=Z,49nm,21.5s,baz=126,slow=33
JNU **Nakatsue** 45.06 268 *e*P P 18 28 16.1 -0.7
comp=Z,19nm,1.0s
N23A **Red Feather La** 45.12 77 P P 18 28 18.2 +0.7
baz=308
N23A **Red Feather La** 45.12 77 *e*P P 18 28 18.0 +0.5
comp=Z,4.4nm,0.8s
PHWY **Pilot Hill** 45.17 76 *e*P P 18 28 18.0 +0.1
comp=Z,7.9nm,1.4s
B30A **Myrvik Farm, E** 45.18 64 P P 18 28 18.3 +0.7
baz=304
WUAZ **Wupatki** 45.19 87 P P 18 28 19.0 +1.0
baz=311
WUAZ **Wupatki** 45.19 87 *e*P P 18 28 18.8 +0.8
comp=Z,5.8nm,0.7s
Y14A **Wickenburg** 45.23 90 *e*P P 18 28 18.9 +0.7
comp=Z,9.3nm,0.8s
PV01 **Paradox Valley** 45.24 82 *e*P P 18 28 18.9 +0.5
113A **Mohawk Valley,** 45.54 92 *e*P P 18 28 20.7 +0.1
comp=Z,3.1nm,0.6s
X16A **Lo Mia Camp, P** 45.87 88 *e*P P 18 28 24.3 +0.9
comp=Z,1.9nm,0.7s
C31A **Landman Farms,** 45.88 64 P P 18 28 24.5 +1.5
baz=304
W18A **Petrified Fore** 46.46 86 P P 18 28 28.8 +0.7
baz=312
W18A **Petrified Fore** 46.46 86 *e*P P 18 28 28.3 +0.2
comp=Z,6.9nm,0.6s
A33A **Warroad** 46.53 62 P P 18 28 27.3 -0.8
baz=304
S22A **4UR Ranch, Cre** 46.55 81 *e*P P 18 28 30.4 +1.6
comp=Z,10nm,1.5s
SDCO **Great Sand Dun** 47.35 80 P P 18 28 35.9 +0.8
baz=310
SDCO **Great Sand Dun** 47.35 80 *e*P P 18 28 34.5 -0.6
comp=Z,2.2nm,0.8s
D34A **Park Rapids** 47.70 64 P P 18 28 36.5 -0.8
baz=306
TUC **Tucson** 47.70 90 P P 18 28 38.6 +1.0
baz=314
TUC **Tucson** 47.70 90 *e*P P 18 28 37.6 0.0
TUC pmax pmax
comp=Z,4.0nm,0.7s
TUC **Tucson** 47.70 90 *e*P P 18 28 37.6 0.0
comp=Z,3.7nm,0.7s
B35A **Bob, Littlefor** 47.76 62 P P 18 28 36.8 -0.9
baz=306
C35A **Jirik Farms, M** 48.01 63 P P 18 28 38.6 -1.1
baz=306
KSCO **Kaye Shedlock'** 48.29 77 *e*P P 18 28 43.3 +1.2
comp=Z,69nm,1.5s
D35A **Remer** 48.33 63 P P 18 28 41.5 -0.7
baz=306
T25A **Trinidad** 48.41 80 P P 18 28 43.8 +0.7
baz=311,SNR=8.7
T25A **Trinidad** 48.41 80 *e*P P 18 28 43.9 +0.7
comp=Z,14nm,1.0s
LAZ **Ladron** 48.54 85 *e*P P 18 28 44.7 +0.6
ANMO **Albuquerque** 48.59 84 *e*P P 18 28 45.0 +0.4
ANMO pmax pmax
comp=Z,4.0nm,1.4s
ANMO **Albuquerque** 48.59 84 *e*P P 18 28 45.0 +0.4
comp=Z,4.4nm,1.4s
C36A **Pine Crest Far** 48.60 62 P P 18 28 43.3 -1.0
baz=306
ECSD **EROS Data Cent** 48.90 68 P P 18 28 45.5 -1.1
baz=308
ECSD **EROS Data Cent** 48.90 68 *e*P P 18 28 46.1 -0.5
comp=Z,6.9nm,1.4s
LPM **Los Pinos Moun** 48.91 85 *e*P P 18 28 47.8 +0.8
C37A **Embarrass** 48.97 62 P P 18 28 46.3 -0.8
baz=307
M31A **Lambtecht Ranc** 49.00 72 P P 18 28 47.8 +0.4
baz=309
BNM **Barren Site** 49.02 85 *e*P P 18 28 48.1 +0.2
E36A **McGregor** 49.11 63 P P 18 28 47.3 -0.8
baz=307
EYMN **Ely** 49.22 61 P P 18 28 48.7 -0.3
baz=307
EYMN **Ely** 49.22 61 *e*P P 18 28 48.6 -0.4
comp=Z,5.8nm,1.1s
319A **Douglas** 49.27 89 *e*P P 18 28 50.5 +0.7
comp=Z,3.0nm,0.6s
F36A **Milaca** 49.35 64 P P 18 28 49.9 -0.1
baz=308
121A **Cookes Peak, D** 49.40 87 P P 18 28 51.6 +0.9
baz=313

BGNE	**Belgrade** baz=309	49.44	72	P	P	18 28 51.7	+1.0
BGNE	**Belgrade** comp=Z,23nm,0.6s	49.44	72	*e*P	P	18 28 51.8	+1.0
C38A	**Sawbill Land.** baz=307	49.47	61	P	P	18 28 50.2	-0.8
SONA0	**Songino Array** comp=Z,2.3nm,1.2s	50.26	300	*e*P	P	18 28 56.1	-0.9
SONM	**Songino Array** comp=Z,0.4nm,0.5s,baz=65,slow=8.1,SNR=3.3	50.26	300	P	P	18 28 56.2	-0.9
SONM				LR	LR	18 50 04.8	
SONM	**Songino Array** comp=Z,43nm,21.6s,baz=45,slow=36	50.26	300	P	P	18 28 56.2	-0.9
SONM				pmax	pmax		
SONM	comp=Z,1.0nm,0.7s			MLR	MLR		
O33A	comp=Z,43nm,21.7s **Hebron** baz=310	50.62	73	P	P	18 28 59.2	-0.5
Q32A	**Meitler Ranch,** baz=311,SNR=5.3	50.74	74	P	P	18 29 00.3	-0.3
J37A	**Redenius Farm,** baz=309	50.91	67	P	P	18 29 01.2	-0.6
R32A	**Long Quarter,** baz=311	51.02	75	P	P	18 29 02.7	0.0
Q33A	**Connelly Farm,** baz=311,SNR=5.8	51.16	74	P	P	18 29 03.4	-0.5
P34A	**Walnut Farm, R** baz=311	51.41	73	P	P	18 29 05.5	-0.2
MNTX	**Cornudas Mount** baz=314	51.45	86	P	P	18 29 06.5	+0.5
MNTX	**Cornudas Mount** comp=Z,2.1nm,0.7s	51.45	86	*e*P	P	18 29 06.2	+0.1
J38A	**Wedel Dairy, R** baz=310	51.51	66	P	P	18 29 05.7	-0.6
AMTX	**Amarillo** baz=312	51.56	80	P	P	18 29 07.2	+0.2
T32A	**Huddler Ranch,** baz=312	51.70	76	P	P	18 29 07.8	-0.1
HHC	**Hu-ho-hao-te**	51.73	290	*e*P	P	18 29 08.2	+0.1
HHC				pP	pP	18 29 20.7	+0.2
HHC				sP	sP	18 29 26.0	+0.4
HHC				S	S	18 36 23.7	-2.9
HHC	comp=Z,19nm,0.7s			pmax	pmax		
HHC	comp=Z,79nm,6.2s			pmax	pmax		
HHC	comp=N,78nm,13.3s			LR	LR		
HHC	comp=E,100nm,14.3s			LR	LR		
HHC	comp=Z,35nm,14.2s			LR	LR		
Q34A	**Chapman** baz=311	51.74	73	P	P	18 29 07.8	-0.4
M37A	**Trindle Farm,** baz=310	51.83	69	P	P	18 29 07.9	-0.8
P35A	**Duane Minner,** baz=311	51.89	72	P	P	18 29 08.9	-0.4
J39A	**Decorah** baz=310	51.94	66	P	P	18 29 08.2	-1.3
R34A	**Isabella, Hill** baz=311	51.97	74	P	P	18 29 09.4	-0.4
L38A	**Oak Wood Farm,** baz=310	51.99	68	P	P	18 29 09.2	-0.7
U32A	**Winter Ranch,** baz=312	52.18	77	P	P	18 29 11.2	-0.3
P36A	**Good Intent, A** baz=311	52.31	72	P	P	18 29 11.8	-0.6
S34A	**Willow Spring** baz=312	52.44	75	P	P	18 29 12.8	-0.5
L39A	**Vinton** baz=310	52.55	67	P	P	18 29 13.0	-1.1
O37A	**Wolven Farm, M** baz=311	52.57	70	P	P	18 29 13.8	-0.5
U33A	**Lingo Farm, Me** baz=312	52.68	77	P	P	18 29 14.6	-0.6
T34A	**McClaskey Farm** baz=312,SNR=6.8	52.84	75	P	P	18 29 15.5	-0.9
M39A	**Webster** baz=311	52.86	68	P	P	18 29 15.8	-0.6
W32A	**Sentinel** baz=313	52.88	79	P	P	18 29 17.1	+0.4
S35A	**Otter Creek Ra** baz=312	52.92	74	P	P	18 29 16.5	-0.5
R36A	**Gordon, Harris** baz=312	52.98	73	P	P	18 29 16.9	-0.5
V33A	**Lossen Ranch,** baz=312	52.99	77	P	P	18 29 17.2	-0.2
U34A	**Anderson Ranch** baz=312	53.03	76	P	P	18 29 17.7	0.0
P38A	**Dawn** baz=311	53.28	71	P	P	18 29 18.3	-1.2
T35A	**Sooner Cattle** baz=312	53.32	75	P	P	18 29 19.4	-0.4
X32A	**Elmer** baz=313	53.33	79	P	P	18 29 20.4	+0.5
W33A	**Caddo, Fort Co** baz=313	53.33	78	P	P	18 29 20.3	+0.4
WMOK	**Wichita Mounta** baz=313,SNR=8.6	53.42	79	P	P	18 29 20.7	+0.1
WMOK	**Wichita Mounta** comp=Z,6.0nm,0.8s	53.42	79	*e*P	P	18 29 20.5	-0.1
WMOK				pmax	pmax		
WMOK	**Wichita Mounta** comp=Z,5.9nm,0.8s	53.42	79	*e*P	P	18 29 20.5	-0.1
L41A	**Preston** baz=311	53.43	66	P	P	18 29 19.2	-1.4
Q38A	**Cooks Store, C** baz=312	53.67	71	P	P	18 29 21.6	-0.8
S37A	**Fort Scott** baz=312	53.76	73	P	P	18 29 22.6	-0.4
O40A	**La Belle** baz=312	53.92	69	P	P	18 29 23.1	-1.1
Q39A	**Willow Grove F** baz=312,SNR=5.9	53.99	71	P	P	18 29 23.3	-1.4
R38A	**Fenwick Farm,** baz=312	54.02	72	P	P	18 29 23.7	-1.2
T37A	**Cheneyville 18** baz=312	54.13	74	P	P	18 29 24.9	-0.8
LTX	**Lajitas**	54.16	87	*e*P	P	18 29 26.6	+0.4
LTX				*e*		18 30 30.8	
LTX	**Lajitas**	54.16	87	*e*P	P	18 29 26.6	+0.4
LTX				*e*PcP	PcP	18 30 30.8	+0.5
TXAR	**Lajitas Array** comp=Z,4.6nm,0.7s,baz=300,slow=5.2,SNR=66	54.16	87	P	P	18 29 26.6	+0.4
TXAR				PcP	PcP	18 30 30.8	+0.5
TXAR	comp=Z,0.4nm,0.5s,baz=240,slow=1.8,SNR=3.9			LR	LR	18 50 34.2	
P40A	comp=Z,23nm,20.4s,baz=0.0,slow=34 **Paris** baz=312,SNR=6.9	54.21	70	P	P	18 29 25.2	-1.1
W35A	**Tecumseh** baz=313	54.29	77	P	P	18 29 26.9	0.0
ABTX	**Abilene, Hawle** baz=314	54.34	81	P	P	18 29 27.4	+0.1
S38A	**Stockton** baz=312,SNR=6.3	54.39	73	P	P	18 29 25.8	-1.8
V36A	**Jenks** baz=313	54.42	76	P	P	18 29 27.5	-0.4
U37A	**Salina** baz=313	54.49	75	P	P	18 29 27.9	-0.5
Q40A	**Laux Farm, Aux** baz=312	54.55	70	P	P	18 29 28.0	-0.8
T38A	**Diamond** baz=313	54.56	73	P	P	18 29 28.1	-0.8
Y34A	**Reagan Ranch,** baz=314	54.57	79	P	P	18 29 29.1	+0.1
W36A	**Wetumka** baz=313	54.69	76	P	P	18 29 29.2	-0.6
S39A	**Bolivar** baz=312	54.69	72	P	P	18 29 28.3	-1.5
133A	**Hamilton Ranch** baz=314	54.79	81	P	P	18 29 31.0	+0.4
V37A	**Hulbert** baz=313	54.83	75	P	P	18 29 30.5	-0.4
U38A	**Gravette** baz=313	54.90	74	P	P	18 29 30.5	-0.9
R40A	**Maddies Statio** baz=312	54.91	71	P	P	18 29 30.2	-1.2
Y35A	**Marietta** baz=314	55.04	78	P	P	18 29 32.8	+0.4
T39A	**Clever** baz=313	55.11	73	P	P	18 29 31.5	-1.4
W37B	**Quinton** baz=313,SNR=6.0	55.16	76	P	P	18 29 33.0	-0.3
233A	**Rising Star** baz=314	55.21	81	P	P	18 29 33.9	+0.2
V38A	**Canehill** baz=313	55.28	75	P	P	18 29 33.3	-0.8
134A	**White-Moore Ra** baz=314	55.32	80	P	P	18 29 35.0	+0.6
U39A	**Green Forest** baz=313	55.48	73	P	P	18 29 34.3	-1.2
Y36A	**Durant** baz=314	55.50	78	P	P	18 29 35.9	+0.2
Q42A	**Golden Eagle** baz=312	55.50	69	P	P	18 29 35.1	-0.5
T40A	**Mansfield** baz=313	55.53	72	P	P	18 29 34.1	-1.7
X37A	**Clayton** baz=314,SNR=9.1	55.57	76	P	P	18 29 36.1	-0.1
333A	**Richland Sprin** baz=315	55.64	82	P	P	18 29 36.8	0.0
S41A	**Jillco Farms,** baz=313	55.69	71	P	P	18 29 35.3	-1.7
135A	**Vickery Place,** baz=314	55.74	80	P	P	18 29 37.7	+0.2
V39A	**Pettigrew** baz=313	55.75	74	P	P	18 29 37.0	-0.6
W38A	**Poteau** baz=314	55.76	75	P	P	18 29 37.2	-0.3
X38A	**Whitesboro** baz=314	55.84	76	P	P	18 29 38.1	-0.1
U40A	**Yellville** baz=313	55.87	73	P	P	18 29 37.0	-1.3
433A	**Art** baz=315	55.97	82	P	P	18 29 39.0	-0.2
T41A	**Mountain View** baz=313	56.04	72	P	P	18 29 39.0	-0.6
334A	**Lometa** baz=315	56.09	81	P	P	18 29 40.3	+0.4
WHTX	**Lake Whitney,** baz=315	56.11	80	P	P	18 29 40.7	+0.7
W39A	**Magazine** baz=314	56.11	75	P	P	18 29 39.7	-0.4
V40A	**Witts Springs** baz=314,SNR=5.8	56.26	74	P	P	18 29 39.6	-1.6
X39A	**Fountain Ranch** baz=314,SNR=8.1	56.38	76	P	P	18 29 41.7	-0.3
U41A	**Viola** baz=313	56.43	72	P	P	18 29 40.6	-1.7
434A	**Burnet** baz=315	56.43	82	P	P	18 29 42.2	-0.3
W40A	**Ferguson Farm,** baz=314	56.53	74	P	P	18 29 42.4	-0.7
SCHQ	**Schefferville** comp=Z,52nm,21.3s,baz=308,slow=35	56.63	42	LR	LR	18 53 09.8	
S43A	**Fulton Ridge,** baz=313	56.67	70	P	P	18 29 43.0	-1.0
V41A	**Mountainview** baz=314	56.67	73	P	P	18 29 42.9	-1.2
MIAR	**Mount Ida** baz=314	56.68	75	P	P	18 29 43.6	-0.5
MIAR	**Mount Ida**	56.68	75	*e*P	P	18 29 43.9	-0.2
MIAR	comp=Z,7.0nm,0.8s			pmax	pmax		
MIAR	**Mount Ida** comp=Z,6.9nm,0.8s	56.68	75	*e*P	P	18 29 43.9	-0.2
ZAA1	**Zalesovo Array**	56.71	317	*e*P	P	18 29 45.6	+1.6
ZALV	**Zalesovo Beam** comp=Z,0.3nm,0.3s,baz=54,slow=7.3,SNR=2.6	56.71	317	P	P	18 29 45.7	+1.6
ZALV				LR	LR	18 56 16.2	
534A	comp=Z,28nm,18.3s,baz=70,slow=38 **Blanco** baz=315	56.86	82	P	P	18 29 45.4	-0.1
X301	**Greenbrier Sit** comp=Z,5.7nm,0.8s	56.90	74	*e*P	P	18 29 44.9	-0.8
W41B	**Gary Mavity, V** baz=314	57.04	74	P	P	18 29 45.7	-0.9
X40A	**Basin Creek Fa** baz=314	57.16	75	P	P	18 29 47.2	-0.3
832A	**Faith Ranch, C** baz=316	57.18	85	P	P	18 29 48.5	+0.8
ARA0	**ARCESS Array S**	58.09	353	*e*P	P	18 29 52.5	-1.1
ARCES	**ARCESS Array B** comp=Z,2.7nm,0.8s,baz=9.8,slow=7.4,SNR=3.5	58.09	353	P	P	18 29 52.5	-1.1
034A	**Hebbronville** baz=317	58.85	85	P	P	18 30 00.3	+0.9
LZH	**Lanzhou**	59.40	290	*e*P	P	18 30 02.4	-1.0
LZH				pP	pP	18 30 14.0	-1.9
LZH				sP	sP	18 30 19.0	-2.0
LZH				*e*PP	PP	18 32 15.5	+1.0
LZH	comp=Z,18nm,1.1s			pmax	pmax		
LZH	comp=Z,45nm,7.5s			pmax	pmax		
LZH	comp=N,97nm,14.5s			LR	LR		
LZH	comp=E,100nm,15.2s			LR	LR		
LZH	comp=Z,140nm,18.5s			LR	LR		
541A	**Lake Charles** baz=316	60.06	79	P	P	18 30 06.2	-1.6
244A	**Avery, Jackson** baz=316	60.15	75	P	P	18 30 08.1	-0.3
Z47A	**Carrollton** baz=316	60.89	72	P	P	18 30 12.5	-0.9
Z48A	**Northport** baz=316	61.06	72	P	P	18 30 13.4	-1.2
147A	**Livingston** baz=316	61.14	73	P	P	18 30 14.3	-0.8
KURK	**Kurchatov**	61.68	317	*e*P	P	18 30 17.3	-1.1
KURK	**Kurchatov**	61.68	317	*e*P	P	18 30 17.3	-1.1
248A	**Dixon Mills** baz=316	61.87	73	P	P	18 30 20.3	+0.3
WMQ	**Urumqi**	62.62	307	*e*P	P	18 30 25.9	+0.9
WMQ				pP	pP	18 30 39.4	+1.8
WMQ	comp=Z,7.0nm,0.5s			pmax	pmax		
WMQ	comp=Z,100nm,5.1s			pmax	pmax		
WMQ	comp=Z,130nm,20.7s			LR	LR		
448A	**Bay Minette** baz=317	62.63	74	P	P	18 30 25.1	0.0
MK32	**Makanchi Array**	63.01	312	*e*P	P	18 30 25.5	-1.9
MKAR	**Makanchi Array** comp=Z,0.3nm,0.3s,baz=47,slow=6.3,SNR=8.2	63.01	312	P	P	18 30 25.5	-1.9
MKAR	comp=Z,19nm,19.0s,baz=13,slow=38			LR	LR	19 00 30.5	
KMSC	**Kings Mountain** baz=317	63.39	66	P	P	18 30 29.7	-0.4
ZRNK	**Zerenda**	63.71	324	*e*P	P	18 30 31.3	-0.7
ZRNK	comp=Z,2.0nm,0.9s			pmax	pmax		
ZRNK	**Zerenda** comp=Z,2.3nm,0.9s	63.71	324	*e*P	P	18 30 31.3	-0.7
FIA0	**FINESS Array S**	65.99	351	*e*P	P	18 30 45.1	-1.5
FIA0	**FINESS Array S**	65.99	351	*e*P	P	18 30 45.0	-1.5
FINES	**FINESS Array B** comp=Z,0.4nm,0.5s,baz=13,slow=8.6,SNR=4.2	65.99	351	P	P	18 30 45.0	-1.5
NB200	**NORSAR Array S**	67.25	358	*e*P	P	18 30 53.5	-1.2
NOA	**NORSAR Array B** comp=Z,0.3nm,0.5s,baz=3.3,slow=6.5,SNR=2.9	67.25	358	P	P	18 30 53.5	-1.2
KSH	**Kashi**	71.55	311	*e*P	P	18 31 24.4	+2.6
KSH				*e*pP	pP	18 31 37.1	+2.5
KSH				*e*sP	PcP	18 31 42.6	+1.7
KSH				S	S	18 40 40.2	+2.7
KSH				SKS	SKSac	18 41 19.5	-2.0
KSH	comp=Z,56nm,3.5s			pmax	pmax		
CHTO	**Chiang Mai**	75.05	281	*e*P	P	18 31 40.5	-2.0
CHTO	comp=Z,3.0nm,0.6s			pmax	pmax		
CHTO	**Chiang Mai** comp=Z,2.5nm,0.6s	75.05	281	*e*P	P	18 31 40.5	-2.0
CM31	**Chiang Mai Arr**	75.32	281	*e*P	P	18 31 43.5	-0.5
CMAR	**Chiang Mai Arr** comp=Z,5.8nm,0.7s,baz=26,slow=6.7,SNR=38	75.32	281	P	P	18 31 44.0	0.0
CM01	**Chiang Mai Arr**	75.34	281	*e*P	P	18 31 43.8	-0.4
GUN	**Gumba** comp=Z,13nm,0.3s	75.64	297	*e*P	P	18 31 45.0	-1.2
RAMN	**Ramite** comp=Z,6.2nm,0.3s	75.99	296	*e*P	P	18 31 47.1	-1.0
KKN	**Kakani** comp=Z,5.2nm,0.3s	76.06	297	*e*P	P	18 31 47.5	-0.9
PKIN	**Phulchoki**	76.16	297	*e*P	P	18 31 48.7	-0.4
GKN	**Gorkha** comp=Z,11nm,0.4s	76.25	298	*e*P	P	18 31 48.5	-0.9
DMN	**Daman** comp=Z,6.4nm,0.4s	76.30	297	*e*P	P	18 31 49.2	-0.6
KOLN	**Koldanda**	77.00	298	*e*P	P	18 31 52.6	-1.1
PYUN	**Piuthan**	77.07	299	*e*P	P	18 31 53.1	-1.0
WR1	**Warramunga Arr** comp=Z,8.7nm,0.5s	85.71	230	*e*P	P	18 32 38.9	-0.6
WRA	**Warramunga Arr** comp=Z,23nm,1.6s	85.71	230	P	P	18 32 38.9	-0.6
AS01	**Alice Springs** comp=Z,0.6nm,0.4s,baz=33,slow=5.7,SNR=7.7	89.10	228	*e*P	P	18 32 56.2	+0.5
AS31	**Alice Springs** comp=Z,1.1nm,0.8s	89.12	228	*e*P	P	18 32 56.1	+0.2
ASAR	**Alice Springs** comp=Z,3.7nm,0.8s,baz=32,slow=4.8,SNR=30	89.12	228	P	P	18 32 56.3	+0.4
PLCA	**Paso Flores** comp=Z,0.9nm,0.6s,baz=311,slow=5.9,SNR=4.4	126.97	111	PKP	PKPdf	18 39 03.6	-0.2
BOSA	**Boshof** comp=Z,1.9nm,1.0s,baz=358,slow=2.4,SNR=5.5	153.42	325	PKPbc	PKPbc	18 39 58.3	-0.3

IDC 08 18:21:59.7±6.5, 27.62S×176.84W, h0km, mb3.8/2, mb1 4.1/2, mb1mx3.6/30, mbtmp3.8/2, Error ellipse: s-maj=284.4km s-min=102.3km az=161.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs** 0.4nm,0.7s,baz=102,slow=7.7,SNR=9.2	44.35	264	P	P	18 30 11.7	-0.3
WRA	**Warramunga Arr** 0.5nm,0.8s,baz=109,slow=7.8,SNR=4.8	45.09	269	P	P	18 30 17.9	0.0
FINES	**FINESS Array B** 1.3nm,0.9s,baz=111,slow=3.1,SNR=3.0	142.86	342	PKP	PKPdf	18 41 34.0	-0.5

*IDC **08** 18:40:49.4±1.5, 2.76S×129.80E, h0km, mb3.9/3, mb1 4.1/5, mb1mx3.7/35, mbtmp3.9/5, ML4.1/2, MS2.8/1, Ms1 2.8/1, ms1mx2.4/40, Error ellipse: s-maj=97.8km s-min=13.2km az=74.0*

*ISCJB **08** 18:40:51.6±0.5, 2.89S±0.04×129.61E±0.05, h28km, mb4.6/10, Error ellipse: s-maj=7.5km s-min=6.2km az=157.8*

*DJA **08** 18:40:54.2±1.0, 3.3°S±9.3×12.9°E±°, h13km±10km, M4.0/5, mb4.1/2, MLv3.9/5*

*NEIC **08** 18:40:56.9±1.2, 2.90S×129.59E, h62km±13km, mb4.3/11, Error ellipse: s-maj=11.0km s-min=8.7km az=219.0*

ISC 08 18:40:53.4±0.6, 2.90S±0.06×129.56E±0.05, h28km, n30, σ1s77/35, mb4.6/10, Seram

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSAI	**Masohi**	0.77	235	P	Pn	18 41 06.7	-1.8
MSAI				S	Sb	18 41 15.6	-2.9
FAKI	**Fak Fak**	2.68	91	P	Pb	18 41 39.7	-1.1
FAKI				S	Sb	18 42 15.0	+1.7
FAKI	**Fak Fak**	2.68	91	*e*Pn	Pb	18 41 38.5	-2.3
LBMI	**Labuha**	3.04	317	P	Pn	18 41 41.2	+1.5
LBMI				S	Sn	18 42 18.0	+2.7
SANI	**Sanana**	3.67	283	P	Pn	18 41 47.7	-0.6
LUWI	**Luwuk**	7.03	285	*e*Pn	Pn	18 42 33.8	-0.7
SOEI	**Soe**	8.61	217	*e*Pn	Pn	18 43 00.8	+4.5
MMRI	**Maumere**	9.25	232	*e*Pn	Pn	18 43 08.5	+3.5
KAPI	**Kappang** comp=Z,62nm,21.4s,baz=76,slow=38	10.01	258	LR	LR	18 47 19.1	
FITZ	**Fitzroy Crossi** 0.4nm,0.3s,baz=13,slow=14,SNR=6.0	15.59	194	Pn	P	18 44 34.2	-1.2
FITZ	**Fitzroy Crossi** 36nm,1.8s	15.59	194	*e*Pn	P	18 44 34.0	-1.3
JAGI	**Jajag, Banyuwa** 69nm,1.6s	16.30	249	*e*Pn	P	18 44 43.0	-0.3
WRAB	**Tennant Creek** 11nm,0.8s	17.57	165	*e*Pn	P	18 44 56.4	-0.9
WR1	**Warramunga Arr** 28nm,1.5s	17.57	165	*e*Pn	P	18 44 56.4	-0.9
WR1				*e*S	Sn	18 48 14.1	+2.6
WRA	**Warramunga Arr** 0.9nm,0.3s,baz=344,slow=12,SNR=38	17.57	165	P	P	18 44 56.4	-0.9
WRA	0.1nm,0.3s,baz=350,slow=23,SNR=3.4			S	Sn	18 48 14.1	+2.6
SBUM	**Sibu** 7.2nm,1.3s	18.13	287	*e*P	P	18 45 05.2	+1.7
KSM	**Kuching** 7.9nm,1.2s	19.73	282	*e*P	Pn	18 45 23.5	+0.8
AS31	**Alice Springs** 6.1nm,0.6s	21.07	169	*e*P	P	18 45 36.1	+0.5
ASAR	**Alice Springs** 5.0nm,0.4s,baz=350,slow=8.9,SNR=70	21.07	169	P	P	18 45 36.4	+0.8
ASAR	1.2nm,0.9s,baz=349,slow=23,SNR=5.0			S	Sn	18 49 34.3	-1.6
ASAR	0.4nm,0.5s,baz=359,slow=1.4,SNR=6.7			PcP	PcP	18 49 43.2	+1.4
AS01	**Alice Springs**	21.08	169	*e*P	P	18 45 36.1	+0.5
GUMO	**Guam** 108nm,1.1s	22.34	42	*e*P	P	18 45 50.3	+1.1
GSI	**Gunungsitoli** 19nm,1.4s	32.25	277	*e*P	P	18 47 18.6	-1.2
MSVF	**Nonsavu** 92nm,2.0s	49.75	111	*e*P	P	18 49 41.6	-2.3
MK32	**Makanchi Array**	64.59	326	*e*P	P	18 51 28.7	+0.5
MKAR	**Makanchi Array** 0.3nm,0.4s,baz=114,slow=7.0,SNR=5.1	64.59	326	P	P	18 51 28.7	+0.5
SMY	**Shemya** 419nm,1.7s	66.85	28	*e*P	P	18 51 41.4	-1.3
AAK	**Ala-Archa** 8.8nm,1.6s	67.16	319	*e*P	P	18 51 45.4	+0.3
EKS2	**Erkin-Say** 6.0nm,1.5s	67.64	319	*e*P	P	18 51 47.3	-0.8
ZALV	**Zalesovo Beam** 0.3nm,0.4s,baz=126,slow=6.2,SNR=3.7	67.74	333	P	P	18 51 48.1	-0.2
ZAA1	**Zalesovo Array**	67.74	333	*e*P	P	18 51 48.1	-0.2

*IDC **08** 18:51:21.8±2.4, 5.94S×130.59E, h0km, mb3.9/1, mb1 4.1/4, mb1mx3.5/35, mbtmp3.9/4, ML4.1/3, Error ellipse: s-maj=110.7km s-min=27.2km az=77.0*

*ISCJB **08** 18:51:32.1±0.7, 6.25S±0.05×130.36E±0.07, h124km, mb4.3/3, Error ellipse: s-maj=10.1km s-min=6.7km az=173.7*

*NEIC **08** 18:51:32.2±0.8, 6.01S×130.27E, h124km±10km, mb4.7/2, Error ellipse: s-maj=11.8km s-min=9.6km az=135.0*

ISC 08 18:51:31.6±0.8, 6.11S±0.06×130.44E±0.07, h124km, n18, σ2s95/20, mb4.6/3, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAUI	**Saumlaki**	2.05	155	*e*Pn	Pn	18 52 09.1	+3.2
SAUI				*e*Sn	Sn	18 52 31.6	-0.6
FAKI	**Fak Fak**	3.65	30	*e*Pn	Pn	18 52 27.6	+1.0
FAKI				*e*Sn	Sn	18 53 03.9	-5.3
MTN	**Manton Dam**	6.72	174	*e*Pn	Pn	18 53 10.2	+2.3
MTN				*e*Sn	Sn	18 54 21.1	-2.0
SOEI	**Soe**	7.11	239	*e*Pn	Pn	18 53 11.7	-1.5
SOEI				*e*Sn	Sn	18 54 35.3	+2.7
KAPI	**Kappang**	10.69	275	*e*Pn	Pn	18 53 53.7	-7.8
FITZ	**Fitzroy Crossi** 1.6nm,0.3s,baz=28,slow=10,SNR=80	12.81	201	Pn	Pn	18 54 28.8	-0.5
FITZ	0.3nm,0.3s,baz=108,slow=19,SNR=3.7			Sn	Sn	18 56 44.7	-5.7
WRA	**Warramunga Arr** 0.7nm,0.3s,baz=340,slow=14,SNR=30	14.26	165	Pn	Pn	18 54 46.0	-2.0
WRA	0.8nm,0.3s,baz=333,slow=22,SNR=7.2			Sn	Sn	18 57 14.2	-11
WR1	**Warramunga Arr**	14.26	165	*e*Pn	Pn	18 54 46.0	-2.0
WR1				*e*Sn	Sn	18 57 14.2	-11
WB2	**Warramunga Arr**	14.27	165	*e*Pn	Pn	18 54 44.9	-3.2
COEN	**Coen**	14.76	123	*e*Pn	Pn	18 54 56.5	+2.1
AS31	**Alice Springs** 0.9nm,0.6s	17.77	170	*e*P	Pn	18 55 33.5	+2.2
AS31				*e*S	S	18 58 40.7	-8.0
ASAR	**Alice Springs** 0.4nm,0.3s,baz=349,slow=12,SNR=42	17.77	170	P	P	18 55 32.7	+2.3
ASAR	0.2nm,0.3s,baz=349,slow=26,SNR=5.3			S	S	18 58 43.4	-5.3
AS01	**Alice Springs**	17.78	169	*e*P	Pn	18 55 33.1	+1.7
RABL	**Rabaul** 32nm,1.2s	21.72	86	*e*P	P	18 56 14.7	+1.5
CISI	**Cisompet, Garu** 77nm,1.5s	22.51	265	*e*P	P	18 56 21.2	-0.1
BFZ	**Birch Farm**	53.43	137	*e*PcP	PcP	19 01 45.1	+0.7
MK32	**Makanchi Array**	67.73	326	*e*P	P	19 02 20.9	+5.1
MKAR	**Makanchi Array** 0.5nm,0.4s,baz=121,slow=8.1,SNR=12	67.73	326	P	P	19 02 20.9	+5.1

*CSEM **08** 18:53:13.8±0.3, 43.93N×5.48W, h12km, ML2.7/8, Error ellipse: s-maj=8.1km s-min=3.5km az=162.0*

MDD 08 18:53:15.1±1.6, 43.91N×5.46W, h20km, mbLg2.2/8, 1C,

Error ellipse: s-maj=14.5km s-min=7.4km az=174.0, PRXIMO,Spain

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EARI	**Arriondas**	**0.64**	**163**	⇑Pg	Pb	18 53 27.8	+0.3
	2.9nm,0.1s,SNR=18						
EARI				Lg	Lg	18 53 36.4	
	32nm,0.1s,SNR=36						
EARI	**Arriondas**	**0.64**	**163**	Pg	Pb	18 53 27.8	+0.3
	2.9nm,0.1s,SNR=18						
EARI				Lg	Lg	18 53 36.4	
	32nm,0.1s,SNR=36						
EPON	**Pontenova**	**1.36**	**245**	Pg	Pb	18 53 39.6	-0.2
	1.0nm,0.1s,SNR=11						
EPON				Sn	Sn	18 53 56.5	+0.1
	3.9nm,0.1s,SNR=11						
EPON				Lg	Lg	18 53 59.2	
	8.3nm,0.2s,SNR=7.9						
EPON	**Pontenova**	**1.36**	**245**	Pg	Pb	18 53 39.6	-0.2
	1.0nm,0.1s,SNR=11						
EPON				Sn	Sn	18 53 56.5	+0.2
	3.9nm,0.1s,SNR=11						
EPON				Lg	Lg	18 53 59.2	
	8.3nm,0.2s,SNR=7.9						
ELAN	**Lanestosa**	**1.62**	**114**	Pn	Pn	18 53 42.8	+0.3
	0.5nm,0.2s,SNR=7.1						
ELAN				Pg	Pb	18 53 45.1	+0.8
	0.8nm,0.2s,SNR=7.9						
ELAN				Lg	Lg	18 54 06.0	
	6.5nm,0.2s,SNR=6.4						
ELAN	**Lanestosa**	**1.62**	**114**	Pn	Pn	18 53 42.8	+0.3
	0.5nm,0.2s,SNR=7.1						
ELAN	**Lanestosa**	**1.62**	**114**	Pg	Pb	18 53 45.1	+0.8
	0.8nm,0.2s,SNR=7.9						
ELAN				Lg	Lg	18 54 06.0	
	6.5nm,0.2s,SNR=6.4						
ECAL	**Calabor**	**2.18**	**206**	Pn	Pn	18 53 50.9	+0.7
	0.1nm,0.1s,SNR=7.9						
ECAL				Pg	Pb	18 53 55.4	+1.5
	1.9nm,0.2s,SNR=7.9						
ECAL				Sn	Sn	18 54 18.3	+1.6
	2.5nm,0.2s,SNR=7.9						
ECAL				Lg	Lg	18 54 24.6	
	12nm,0.2s,SNR=9.6						
ECAL	**Calabor**	**2.18**	**206**	Pn	Pn	18 53 50.9	+0.6
	0.1nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**2.18**	**206**	Pg	Pb	18 53 55.4	+1.5
	1.9nm,0.2s,SNR=7.9						
ECAL				Sn	Sn	18 54 18.3	+1.6
	2.5nm,0.2s,SNR=7.9						
ECAL				Lg	Lg	18 54 24.6	
	12nm,0.2s,SNR=9.6						
EAGO	**Agolada(Pontev**	**2.21**	**241**	Pn	Pn	18 53 51.0	+0.3
	0.3nm,0.1s,SNR=7.9						
EAGO				Sn	Sn	18 54 15.4	-2.0
	2.6nm,0.1s,SNR=7.9						
EAGO				Lg	Lg	18 54 25.0	
	2.6nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**2.21**	**241**	Pn	Pn	18 53 51.0	+0.3
	0.3nm,0.1s,SNR=7.9						
EAGO				Lg	Lg	18 54 25.0	
	2.6nm,0.1s,SNR=7.9						
PBRG	**Braganca**	**2.31**	**205**	*e*Sn	Sb	18 54 25.4	+1.4
PBRG				A	A	18 54 29.5	
	6.4nm,0.4s						
PBRG	**Braganca**	**2.31**	**205**	Lg	Lg	18 54 25.4	
	3.2nm,0.4s						
PBRG	**Braganca**	**2.31**	**205**	*e*Sn	Sb	18 54 25.4	+1.4
	6.4nm,0.4s						
EMAZ	**Mazaricos**	**2.73**	**251**	Sn	Sn	18 54 28.9	-1.4
	1.0nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**2.73**	**251**	Sn	Sn	18 54 28.9	-1.4
	1.0nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**2.80**	**224**	Pn	Pn	18 53 58.7	0.0
	0.3nm,0.1s,SNR=7.9						
ELOB				Sn	Sn	18 54 32.5	+0.6
	0.6nm,0.1s,SNR=7.9						
ELOB				Lg	Lg	18 54 43.0	
	1.7nm,0.2s,SNR=5.1						
ELOB	**Lobios**	**2.80**	**224**	Pn	Pn	18 53 58.7	0.0
	0.3nm,0.1s,SNR=7.9						
ELOB				Sn	Sn	18 54 32.5	+0.6
	0.6nm,0.1s,SNR=7.9						
ELOB				Lg	Lg	18 54 43.0	
	1.7nm,0.2s,SNR=5.1						
PGAV	**Gavieira, Arco**	**2.83**	**228**	*e*Pn	Pn	18 54 00.2	+0.9
PGAV				*e*Sn	Sn	18 54 33.3	+0.4
PGAV				*e*Sg	Sb	18 54 45.1	+5.8
PGAV				A	A	18 54 47.7	
	5.9nm,0.5s						
PGAV	**Gavieira, Arco**	**2.83**	**228**	*e*Pn	Pn	18 54 00.2	+0.9
PGAV				*e*Sn	Sn	18 54 33.3	+0.4
PGAV				*e*Sg	Sb	18 54 45.1	+5.8
	5.9nm,0.5s						
EALK	**Alkurruntz**	**2.96**	**102**	Pn	Pn	18 54 00.6	-0.3
	0.2nm,0.1s,SNR=7.9						
EALK				Sn	Sn	18 54 33.4	-2.4
	1.1nm,0.1s,SNR=7.9						
EALK				Lg	Lg	18 54 46.4	
	0.7nm,0.2s,SNR=4.0						
EALK	**Alkurruntz**	**2.96**	**102**	Pn	Pn	18 54 00.6	-0.3
	0.2nm,0.1s,SNR=7.9						
EALK				Lg	Lg	18 54 46.4	
	0.7nm,0.2s,SNR=4.0						
MVO	**Moncorvo**	**2.98**	**203**	*e*Pg	Pb	18 54 11.9	+4.4
MVO				*e*Sg	Sb	18 54 49.6	+6.2
MVO				A	A	18 54 53.1	
	6.4nm,0.8s						
MVO	**Moncorvo**	**2.98**	**203**	Pn	Pn	18 53 59.1	-2.1
	0.2nm,0.1s,SNR=7.9						
MVO				Pg	Pb	18 54 04.2	-3.3
	0.7nm,0.2s,SNR=7.9						
MVO				Sn	Sn	18 54 37.0	+0.6
	0.7nm,0.1s,SNR=7.9						
MVO				Lg	Lg	18 54 48.9	
	2.3nm,0.1s,SNR=5.6						
MVO	**Moncorvo**	**2.98**	**203**	Pn	Pn	18 53 59.1	-2.1
	0.2nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**2.98**	**203**	*e*Pg	Pb	18 54 11.9	+4.4
MVO				Sn	Sn	18 54 37.0	+0.6
	0.7nm,0.1s,SNR=7.9						
MVO				Lg	Lg	18 54 48.9	
	2.3nm,0.1s,SNR=5.6						
MVO				*e*Sg	Sb	18 54 49.6	+6.2
	6.4nm,0.8s						
POLO	**Lamas de Olo**	**3.06**	**215**	*e*Sg	Sb	18 54 51.1	+5.2
POLO				A	A	18 54 51.6	
	1.7nm,0.4s						
POLO	**Lamas de Olo**	**3.06**	**215**	*e*Sg	Sb	18 54 51.1	+5.2
	1.7nm,0.4s						
EORO	**Oroz-Betelu**	**3.19**	**107**	Pn	Pn	18 54 04.0	-0.1
	0.2nm,0.1s,SNR=4.0						
EORO				Lg	Lg	18 54 51.6	
	0.6nm,0.1s,SNR=7.9						
EORO	**Oroz-Betelu**	**3.19**	**107**	Pn	Pn	18 54 04.1	-0.1
	0.2nm,0.1s,SNR=4.0						
EORO				Lg	Lg	18 54 51.6	
	0.6nm,0.1s,SNR=7.9						
GUD	**Guadarrama**	**3.41**	**163**	Pn	Pn	18 54 06.4	-0.8
	0.3nm,0.2s,SNR=7.9						
GUD				Sn	Sn	18 54 45.1	-2.0
	0.2nm,0.1s,SNR=7.9						
GUD	**Guadarrama**	**3.41**	**163**	Pn	Pn	18 54 06.4	-0.8
	0.3nm,0.2s,SNR=7.9						
MTE	**Manteigas**	**3.83**	**205**	*e*Sg	Sb	18 55 17.6	+10
MTE	**Manteigas**	**3.83**	**205**	Lg	Lg	18 55 17.6	
MTE	**Manteigas**	**3.83**	**205**	*e*Sg	Sb	18 55 17.6	+10
EPLA	**Plasencia**	**3.87**	**187**	Sn	Sn	18 54 54.2	-4.2
	0.2nm,0.1s,SNR=7.9						
EPLA				Lg	Lg	18 55 15.8	
	1.6nm,0.2s,SNR=7.9						
EPLA	**Plasencia**	**3.87**	**187**	Lg	Lg	18 55 15.8	
	1.6nm,0.2s,SNR=7.9						
ECHI	**Chisagues Biel**	**4.31**	**105**	Sn	Sn	18 55 05.4	-4.0
	1.3nm,0.1s,SNR=7.9						
ESDC	**Sonseca Array**	**4.38**	**165**	Lg	Lg	18 55 30.5	
	baz=344,slow=29,SNR=7.9						
ESDC	**Sonseca Array**	**4.38**	**165**	Lg	Lg	18 55 30.5	
	SNR=7.9						

CSEM ***08*** *18:54:03.6±0.6, 43.°77N×5.°62W, h15km, ML2.9/7, Error ellipse: s-maj=10.5km s-min=5.9km az=162.0*
MDD 08 18:54:05.7±1.6, 43.°51N×5.°62W, h27km±12km, mbLg2.2/8, 1C, Error ellipse: s-maj=16.5km s-min=6.8km az=5.0, PRXIMO,Spain

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EARI	**Arriondas**	**0.37**	**125**	⇑Pg	Pb	18 54 13.2	-0.8
	20nm,0.1s,SNR=18						
EARI				Lg	Lg	18 54 21.4	
	67nm,0.2s,SNR=13						
EARI	**Arriondas**	**0.37**	**125**	Pg	Pb	18 54 13.2	-0.8
	20nm,0.1s,SNR=18						
EARI				Lg	Lg	18 54 21.4	
	67nm,0.2s,SNR=13						
EPON	**Pontenova**	**1.13**	**261**	Pg	Pb	18 54 27.6	+1.0
	2.7nm,0.1s,SNR=7.9						
EPON				Lg	Lg	18 54 41.7	
	8.1nm,0.1s,SNR=6.3						
EPON	**Pontenova**	**1.13**	**261**	Pg	Pb	18 54 27.6	+1.0
	2.7nm,0.1s,SNR=7.9						
EPON				Lg	Lg	18 54 41.7	
	8.1nm,0.1s,SNR=6.3						
ELAN	**Lanestosa**	**1.62**	**99**	Pn	Pn	18 54 33.3	+0.7
	1.0nm,0.1s,SNR=7.9						
ELAN				Sn	Sn	18 54 49.1	-3.4
	7.2nm,0.2s,SNR=7.9						
ELAN	**Lanestosa**	**1.62**	**99**	Pn	Pn	18 54 33.3	+0.8
	1.0nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**1.77**	**208**	Lg	Lg	18 55 05.8	
	4.0nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**1.77**	**208**	Lg	Lg	18 55 05.8	
	4.0nm,0.2s,SNR=7.9						
PBRG	**Braganca**	**1.90**	**206**	*e*Sg	Sb	18 55 13.6	+11
PBRG				A	A	18 55 15.6	
	12nm,0.5s						
PBRG	**Braganca**	**1.90**	**206**	Lg	Lg	18 55 13.6	
	6.1nm,0.5s						
PBRG	**Braganca**	**1.90**	**206**	*e*Sg	Sb	18 55 13.6	+11
	12nm,0.5s						
EAGO	**Agolada(Pontev**	**1.94**	**249**	Sn	Sn	18 55 01.0	+0.6
	4.7nm,0.1s,SNR=7.9						
EAGO				Lg	Lg	18 55 08.3	
	3.4nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**1.94**	**249**	Sn	Sn	18 55 01.0	+0.6
	4.7nm,0.1s,SNR=7.9						
EAGO				Lg	Lg	18 55 08.3	
	3.4nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**2.44**	**228**	Lg	Lg	18 55 25.8	
	4.0nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**2.44**	**228**	Lg	Lg	18 55 25.8	
	4.0nm,0.1s,SNR=7.9						
PGAV	**Gavieira, Arco**	**2.49**	**232**	*e*Sn	Sn	18 55 16.8	+2.7
PGAV				*e*Sg	Sb	18 55 30.4	+10
PGAV				A	A	18 55 33.0	
	9.2nm,0.5s						
PGAV	**Gavieira, Arco**	**2.49**	**232**	*e*Sn	Sn	18 55 16.8	+2.7
PGAV				*e*Sg	Sb	18 55 30.4	+10
	9.2nm,0.5s						
EMAZ	**Mazaricos**	**2.52**	**258**	Sn	Sn	18 55 14.2	-0.4
	3.6nm,0.1s,SNR=7.9						
EMAZ				Lg	Lg	18 55 26.3	
	3.7nm,0.2s,SNR=7.9						
EMAZ	**Mazaricos**	**2.52**	**258**	Sn	Sn	18 55 14.2	-0.4
	3.6nm,0.1s,SNR=7.9						
EMAZ				Lg	Lg	18 55 26.3	
	3.7nm,0.2s,SNR=7.9						
PCAB	**Cabril**	**2.53**	**225**	*e*Sg	Sb	18 55 28.9	+7.7
PCAB	**Cabril**	**2.53**	**225**	Lg	Lg	18 55 28.9	
PCAB	**Cabril**	**2.53**	**225**	*e*Sg	Sb	18 55 28.9	+7.7
MVO	**Moncorvo**	**2.57**	**204**	*e*Sg	Sb	18 55 34.1	+12
MVO				A	A	18 55 39.4	
	10nm,0.3s						
MVO	**Moncorvo**	**2.57**	**204**	Lg	Lg	18 55 27.6	
	8.4nm,0.2s,SNR=7.9						
MVO	**Moncorvo**	**2.57**	**204**	Lg	Lg	18 55 27.6	
	8.4nm,0.2s,SNR=7.9						
MVO				*e*Sg	Sb	18 55 34.1	+12
	10nm,0.3s						
POLO	**Lamas de Olo**	**2.68**	**218**	*e*Sn	Sb	18 55 26.8	+1.4
POLO				*e*Sg	Sn	18 55 37.2	+19
POLO				A	A	18 55 40.2	
	2.6nm,0.3s						
POLO	**Lamas de Olo**	**2.68**	**218**	*e*Sn	Sb	18 55 26.8	+1.4
POLO				*e*Sg	Sn	18 55 37.2	+19
	2.6nm,0.3s						
PVRL	**Vila Real**	**2.72**	**215**	*e*Sg	Sb	18 55 37.3	+11
PVRL	**Vila Real**	**2.72**	**215**	Lg	Lg	18 55 37.3	
PVRL	**Vila Real**	**2.72**	**215**	*e*Sg	Sb	18 55 37.3	+11
EALK	**Alkurruntz**	**3.01**	**94**	Sn	Sn	18 55 18.5	-8.5
	2.4nm,0.2s,SNR=7.9						
GUD	**Guadarrama**	**3.07**	**159**	Sn	Sn	18 55 28.1	-0.4
	0.9nm,0.2s,SNR=7.9						
GUD				Lg	Lg	18 55 43.4	
	1.9nm,0.1s,SNR=7.9						
IELO	**Elcoad**	**3.28**	**100**	Sn	Sn	18 55 28.0	-5.4
	0.7nm,0.1s,SNR=7.9						
MTE	**Manteigas**	**3.43**	**205**	*e*Sg	Sb	18 56 02.7	+16
MTE	**Manteigas**	**3.43**	**205**	Lg	Lg	18 56 02.7	
MTE	**Manteigas**	**3.43**	**205**	*e*Sg	Sb	18 56 02.7	+16
EPLA	**Plasencia**	**3.46**	**186**	Sn	Sb	18 55 45.5	-2.5
	0.9nm,0.1s,SNR=7.9						
EPLA				Lg	Lg	18 55 56.1	
	6.6nm,0.4s,SNR=7.9						
EPLA	**Plasencia**	**3.46**	**186**	Sn	Sb	18 55 45.5	-2.5
	0.9nm,0.1s,SNR=7.9						
EPLA				Lg	Lg	18 55 56.1	
	6.6nm,0.4s,SNR=7.9						
ESDC	**Sonseca Array**	**4.03**	**161**	Lg	Lg	18 56 15.0	
	baz=343,slow=29,SNR=7.9						
ESDC	**Sonseca Array**	**4.03**	**161**	Lg	Lg	18 56 15.0	
	SNR=7.9						
ECHI	**Chisagues Biel**	**4.34**	**99**	Sn	Sn	18 55 53.6	-6.3
	1.0nm,0.1s,SNR=7.9						
EPOB	**Poblet**	**5.41**	**111**	Pn	Pn	18 55 21.3	-3.3
	0.6nm,0.1s,SNR=7.9						
EPOB				Sn	Sn	18 56 19.2	-6.8
	0.2nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**5.75**	**146**	Sn	Sn	18 56 28.6	-6.0
	1.0nm,0.2s,SNR=7.9						
CFON	**Fontmartina**	**6.20**	**104**	Pn	Pn	18 55 30.5	-4.9
	1.6nm,0.2s,SNR=7.9						

MEX 08 18:57:04.7±0.6, 30.°32N×109.°62W, h5km, MD3.8, Sonora

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
319A	**Douglas**	**1.09**	**15**	*e*P	Pg	18 57 22.2	-3.4
319A				*e*S	Sg	18 57 37.4	-2.4
CGIG		**1.42**	**88**	*e*P	Pn	18 57 27.6	-3.7
CGIG				*e*S	Sb	18 57 46.2	-4.0
214A	**Organ Pipe Nat**	**3.19**	**302**	*e*P	Pn	18 57 53.0	-2.5

MEX 08 19:05:24.4±0.6, 14.°20N×93.°08W, h20km±999km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.26**	**24**	*i* P	Pn	19 05 58.8	-2.0
CCIG				*i* S	Sn	19 06 25.2	-2.9
TGIG		**2.56**	**359**	*i* P	Pn	19 06 02.8	-2.1
TGIG				*i* S	Sn	19 06 31.9	-3.6

ISCJB ***08*** *19:07:14.8±0.4, 24.°45N±0.°02×122.°18E±0.°01, h7km±3km, Error ellipse: s-maj=3.0km s-min=2.2km az=173.7*
JMA ***08*** *19:07:14.9, 24.°38N×122.°10E, h25km±4km, M2.5*
TAP ***08*** *19:07:16.4, 24.°45N×122.°00E, h8km, ML3.2, D*
ISC 08 19:07:14.8±1.0, 24.°40N±0.°02×122.°14E±0.°02, h14km±8km, n49, σ0.°79/89, 2C-1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TWC	**Suao**	**0.34**	**309**	⇓*i* P	Pg	19 07 21.5	-0.3
	baz=319						
TWC				S	Sg	19 07 25.3	-1.1
	baz=319						
ENA	**Nanau**	**0.36**	**275**	⇑*i* P	Pg	19 07 22.1	-0.1
	baz=263						
ENA				*i* S	Sg	19 07 26.4	-0.8
	baz=263						
EGS		**0.48**	**337**	P	Pg	19 07 24.4	0.0
	baz=351						
EGS				S	Sg	19 07 32.2	+1.3
	baz=351						
ILA	**Ilan**	**0.51**	**316**	P	Pg	19 07 25.2	+0.3
	baz=323						
ILA				S	Sg	19 07 31.9	+0.2
	baz=323						
TWE	**Neicheng**	**0.54**	**307**	P	Pg	19 07 25.2	-0.2
	baz=312						
TWE				S	Sg	19 07 31.4	-1.2
	baz=312						
ENTT	**Nioudou**	**0.57**	**295**	P	Pg	19 07 25.9	-0.2
	baz=295						
ENTT				S	Sg	19 07 32.8	-0.9
	baz=295						
TWD	**Chiawan**	**0.59**	**238**	P	Pg	19 07 26.6	+0.2
	baz=224						
TWD				*e*S	Sn	19 07 37.6	-0.6
	baz=224						
TWB1	**Santiao Chiao**	**0.62**	**347**	*e*P	Pg	19 07 27.3	+0.3
	baz=359						
TWB1				*e*S	Sg	19 07 36.2	+0.9
	baz=359						
HWA	**Hwalien**	**0.64**	**229**	*e*P	Pn	19 07 29.2	-0.3
	baz=216						
NNS	**Nan Shan**	**0.70**	**274**	P	Pg	19 07 28.2	-0.3
	baz=268						
NNS				S	Sg	19 07 36.8	-1.0
	baz=268						
JYNG	**Yonagunijimaku**	**0.74**	**86**	P	Pb	19 07 29.4	-0.1
JYNG				S	Sb	19 07 39.7	+0.3
NWF	**Wu-fen Shan**	**0.74**	**334**	P	Pb	19 07 29.8	+0.1
	baz=341						
NWF				S	Sb	19 07 39.0	-0.7
	baz=341						
NSK	**Sanguang**	**0.76**	**291**	⇑*i* P	Pb	19 07 29.6	-0.3
	baz=290						
NSK				S	Sb	19 07 38.4	-1.8
	baz=290						
TWA	**Mucha**	**0.77**	**319**	*e*P	Pg	19 07 30.8	+1.0
	baz=324						
TWA				S	Sb	19 07 39.6	-0.7
	baz=324						
YOJ	**Yonaguni jima**	**0.80**	**85**	P	Pb	19 07 30.6	+0.1
YOJ				S	Sb	19 07 41.7	+0.5
TAP1	**Taipei**	**0.85**	**319**	*e*P	Pb	19 07 31.8	+0.4
	baz=322						
TAP1				*e*S	Sb	19 07 42.5	-0.1
	baz=322						
TAP	**Taipei**	**0.86**	**318**	*e*S	Sb	19 07 42.4	-0.5
	baz=322						
ESL	**Shilin**	**0.87**	**228**	P	Pg	19 07 32.0	+0.3
	baz=218						
ESL				S	Sn	19 07 45.7	+0.6
	baz=218						
TWT	**Tachien**	**0.89**	**261**	*e*P	Pg	19 07 32.4	+0.3
	baz=255						
TWT				S	Sg	19 07 44.2	+0.4
	baz=255						
TWS1	**Kuangyinshan**	**0.96**	**317**	*e*P	Pg	19 07 34.3	+0.9
	baz=320						
TWS1				*e*S	Sb	19 07 46.2	+0.4
	baz=320						
TWY	**Chenhua**	**1.00**	**331**	P	Pn	19 07 34.9	+0.4
	baz=336						
TWY				*e*S	Sb	19 07 46.7	-0.4
	baz=336						
NCU	**National Centr**	**1.04**	**304**	*e*S	Sb	19 07 47.8	-0.3
	baz=304						
NSTT	**Nanjuang**	**1.06**	**283**	P	Pg	19 07 35.7	+0.4
	baz=280						
NSTT				S	Sb	19 07 48.5	-0.3
	baz=280						
EHY	**Hungye**	**1.16**	**220**	*e*P	Pg	19 07 37.5	+0.3
	baz=213						
EHY				*e*S	Sg	19 07 54.4	+2.0
	baz=213						
PCYT	**Pengchaiyu**	**1.23**	**357**	*e*P	Pg	19 07 40.3	+1.8
	baz=3.0						
SMLT	**Sun Moon Lake**	**1.24**	**246**	*e*P	Pg	19 07 39.1	+0.3
	baz=240						
SMLT				*e*S	Sg	19 07 55.6	+0.6
	baz=240						
TWQ1	**Liyutan**	**1.25**	**268**	*e*P	Pg	19 07 39.4	+0.6
	baz=264						
TWQ1				*e*S	Sg	19 07 56.5	+1.4
	baz=264						
NSY	**Sanyi**	**1.25**	**271**	*e*P	Pg	19 07 41.0	+1.9
	baz=268						
NSY				*e*S	Sn	19 07 54.7	0.0
	baz=268						
TYC	**Yuchr**	**1.27**	**247**	*e*P	Pg	19 07 39.1	-0.1
	baz=242						
TYC				*e*S	Sg	19 07 55.5	-0.3
	baz=242						
TWF1	**Yuli**	**1.29**	**217**	*e*P	Pg	19 07 39.5	-0.3
	baz=210						
TWF1				*e*S	Sg	19 07 58.6	+1.9
	baz=210						
YUS	**Yu-Shan**	**1.41**	**230**	*e*P	Pg	19 07 41.8	-0.3
	baz=224						
YUS				*e*S	Sg	19 08 01.1	+0.6
	baz=224						
WNT	**Mingjian**	**1.43**	**249**	*e*P	Pg	19 07 43.5	+1.2
	baz=244						
WNT				*e*S	Sg	19 08 01.8	+1.0
	baz=244						
IRIF	**Iriomote-Funau**	**1.45**	**92**	P	Pn	19 07 39.9	-0.8
IRIF				S	Sn	19 07 58.7	-0.9
CHKT	**Chengkung**	**1.47**	**209**	*e*S	Sg	19 08 01.7	-0.6
	baz=203						
ALS	**Alishan**	**1.51**	**234**	*e*P	Pg	19 07 43.6	-0.2
	baz=229						
ALS				*e*S	Sg	19 08 04.0	+0.5
	baz=229						
CHN5	**Tsauling**	**1.56**	**239**	*e*P	Pg	19 07 44.8	+0.1
	baz=234						
CHN5				*e*S	Sg	19 08 06.0	+1.0
	baz=234						
ELDTW	**Lidau**	**1.58**	**221**	*e*P	Pg	19 07 45.2	0.0
	baz=215						
WGK	**Gukeng**	**1.61**	**244**	*e*P	Pg	19 07 45.5	-0.1
	baz=239						
WGK				*e*S	Sg	19 08 06.5	-0.1
	baz=239						
JKRS	**Kuro-shima**	**1.71**	**95**	P	Pn	19 07 43.9	-0.4
JKRS				S	Sn	19 08 06.3	+0.3
CHN4	**Tsaushan**	**1.76**	**234**	*e*P	Pb	19 07 47.3	+0.4
	baz=229						
CHN4				*e*S	Sg	19 08 11.3	-0.1
	baz=229						
STYT	**Tauyuan**	**1.76**	**226**	*e*P	Pb	19 07 47.5	+0.5
	baz=221						
STYT				*e*S	Sg	19 08 10.6	-1.0
	baz=221						
WTP	**Ta-pu**	**1.81**	**231**	*e*P	Pb	19 07 48.5	+0.8
	baz=226						
WTP				*e*S	Sg	19 08 11.5	-1.5
	baz=226						
JIJ	**Ishigaki jima**	**1.83**	**91**	P	Pn	19 07 45.3	-0.6
JIJ				S	Sn	19 08 07.5	-1.3
TWK	**Hsinying**	**1.88**	**234**	*e*S	Sb	19 08 13.5	+1.0
	baz=229						
CHN1	**Nanshi**	**1.91**	**231**	*e*P	Pb	19 07 49.8	+0.3
	baz=226						
CHN1				*e*S	Sg	19 08 15.7	-0.5
	baz=226						
SGST	**Jiashian**	**1.94**	**228**	*e*P	Pb	19 07 50.4	+0.5
	baz=223						
JISG	**Ishigakijimahi**	**1.99**	**84**	P	Pn	19 07 47.2	-0.9
JISG				S	Sn	19 08 11.4	-1.4
SSD	**Sandimen**	**2.15**	**220**	*e*P	Pb	19 07 54.2	+0.6
	baz=216						
JTJ	**Tarama**	**2.35**	**84**	P	Pn	19 07 53.2	+0.2
JTJ		

RDWB	**Redoubt West**	0.48	298	P		Pn	19 20 45.2	-0.5
RDWB				S		Sn	19 20 57.3	-0.4
RDJH	**Redoubt Jeurge**	0.52	309	P		Pn	19 20 46.1	+0.1
ILIM	**Iliamna**	0.52	249	P		Pn	19 20 46.0	+0.1
BGRM	**Barrier Glacie**	0.54	336	P		Pn	19 20 46.4	+0.3
NCT	**North Crescent**	0.56	302	eP	n	Pn	19 20 46.1	-0.1
IVE	**Iliamna Volcan**	0.58	245	P		Pn	19 20 46.3	-0.1
INE	**Iliamna NE**	0.58	249	P		Pn	19 20 46.7	+0.2
ILS	**Iliamna Low So**	0.63	241	P		Pn	19 20 46.7	-0.1
HOM	**Homer**	0.63	164	eP	n	Pn	19 20 47.3	+0.5
HOM				eS	n	Sn	19 21 00.4	+1.0
BRLK	**Bradley Lake**	0.75	132	eP	n	Pn	19 20 48.3	+0.5
CNPM	**China Poot**	0.83	153	eP	n	Pn	19 20 49.2	+0.6
CNPM				eS	n	Sn	19 21 03.3	+0.6
OPT	**Oil Point**	0.88	226	eP	n	Pn	19 20 49.1	0.0
SLKM	**Skilak Lake**	0.91	74	eP	n	Pn	19 20 50.0	+0.7
SPU	**Mount Spurr**	0.92	358	eP	n	Pn	19 20 49.9	+0.4
SPU				eS	n	Sn	19 21 04.3	0.0
SPCR	**Spurr Chakacha**	0.94	353	P		Pn	19 20 50.2	+0.4
SPCR				S		Sn	19 21 05.3	+0.5
CKL	**Chakachamna La**	0.95	349	P		Pn	19 20 50.3	+0.5
SPWE	**Spurr West**	1.05	345	P		Pn	19 20 51.6	+0.7
VOGL	**Vogel Lake**	1.06	46	P		Pn	19 20 52.9	+2.1
AUE	**Augustine Isla**	1.15	218	P		Pn	19 20 51.7	-0.2
AUL	**Augustine Lava**	1.15	220	P		Pn	19 20 51.9	-0.1
AUL				S		Sn	19 21 09.1	+0.4
AUSE	**Augustine SEas**	1.17	218	P		Pn	19 20 51.9	-0.2
AUI	**Augustine Isla**	1.19	219	P		Pn	19 20 52.3	-0.1
AUI				S		Sn	19 21 09.0	-0.4
STLK	**Strandline Lak**	1.24	3	P		Pn	19 20 53.8	+0.8
FIB	**Fire Island**	1.27	44	eP	n	Pn	19 20 55.0	+1.8
SEW	**Seward**	1.27	96	eP	n	Pn	19 20 53.8	+0.4
SEW				eS	n	Sn	19 21 10.1	-1.0
SUA	**Susitna One**	1.34	26	eP	n	Pn	19 20 55.3	+1.0
SUA				eS	n	Sn	19 21 13.0	+0.2
RC01	**Rabbit Creek A**	1.38	52	eP	n	Pn	19 20 55.2	+0.6
RC01				eS	n	Sn	19 21 14.2	+0.8
CDD	**Cape Douglas**	1.59	213	P		Pn	19 20 56.6	-0.6
MCNL	**McNeil River**	1.61	229	P		Pn	19 20 56.8	-0.7
FOPK	**Fourpeaked Vol**	1.69	207	P		Pn	19 20 57.8	-0.7
KAPH	**Katmai Pasha**	2.07	217	P		Pn	19 21 02.9	-0.4
KNK	**Knik Glacier**	2.07	55	eP	n	Pn	19 21 03.5	+0.2
KNK				eS	n	Sn	19 21 29.3	+0.3
GHO	**Glory Hole Cre**	2.12	43	eP	n	Pn	19 21 04.3	+0.3
KAHC	**Katmai Hardscr**	2.24	225	P		Pn	19 21 05.1	-0.6
CUT	**Chulitna**	2.30	20	eP	n	Pn	19 21 07.0	+0.8
SML	**Sawmill**	2.35	47	eP	n	Pn	19 21 07.2	+0.1
SML				eS	n	Sn	19 21 31.1	-4.5
KAWH	**Katmai**	2.38	219	P		Pn	19 21 06.8	-0.5
KDAK	**Kodiak Island**	2.51	187	eP	n	Pn	19 21 07.7	-1.3
KAKN	**Katmai Knife C**	2.53	220	P		Pn	19 21 08.9	-0.5
KVTA	**Katmai Vly 10**	2.54	223	P		Pn	19 21 09.1	-0.4
KABR	**Katmai Barrier**	2.64	217	P		Pn	19 21 10.1	-0.7
PPLA	**Purkeypile**	2.64	358	eP	n	Pn	19 21 11.4	+0.5
KELA	**Mount Kelaz**	2.66	228	P		Pn	19 21 10.5	-0.6
HIN	**Hinchinbrook I**	2.73	85	P		Pn	19 21 12.2	+0.3
SCM	**Sheep Creek Mo**	2.75	53	eP	n	Pn	19 21 12.6	+0.3
VLZ	**Valdez**	2.91	70	eP	n	Pn	19 21 14.1	-0.2
HUR	**Hurricane**	2.94	21	P		Pn	19 21 16.2	+1.5
EYAK	**Cordova Ski Ar**	3.10	82	eP	n	Pn	19 21 17.9	+1.0
CAST	**Castle Rocks**	3.16	359	eP	n	Pn	19 21 17.8	+0.1
DIV	**Divide**	3.17	72	eP	n	Pn	19 21 17.7	-0.2
KLU	**Klutina**	3.21	65	eP	n	Pn	19 21 18.3	0.0
TT01	**Tatalina**	3.28	326	eP	n	Pn	19 21 18.9	-0.3
TRF	**Thorofare Moun**	3.29	13	eP	n	Pn	19 21 19.7	+0.1
KTH	**Kantishna Hill**	3.33	8	eP	n	Pn	19 21 20.5	+0.4
PLK1	**Peulik 1**	3.44	226	P		Pn	19 21 21.1	+0.0
RND	**Reindeer**	3.48	24	eP	n	Pn	19 21 22.7	+0.7
PLK4	**Peulik 4**	3.48	223	P		Pn	19 21 22.1	0.0
DHY	**Denali Highway**	3.57	36	eP	n	Pn	19 21 23.8	+0.5
CHUM	**Lake Minchumin**	3.63	358	P		Pn	19 21 23.9	0.0
PS11	**TAPS Pump St11**	3.64	57	eP	n	Pn	19 21 24.8	+0.8
BMRM	**Bremner River**	3.70	76	eP	n	Pn	19 21 24.4	-0.6
MCK	**McKinley**	3.76	21	eP	n	Pn	19 21 26.5	+0.8
BPAW	**Bear Paw Mtn.**	3.88	6	eP	n	Pn	19 21 26.7	-0.6
NICHA	**Nichawak Mount**	3.99	87	P		Pn	19 21 29.5	+0.7
BWN	**Browne**	4.09	16	eP	n	Pn	19 21 31.1	+1.0
SUCK	**Suckling Hills**	4.10	89	P		Pn	19 21 31.4	+1.1
PAX	**Paxson**	4.12	46	eP	n	Pn	19 21 31.4	+0.7
PAX				eS	n	Sn	19 22 17.9	+0.1
VRDI	**Verde Repeater**	4.29	73	P		Pn	19 21 32.6	-0.4
PS10	**TAPS Pump St10**	4.32	40	P		Pn	19 21 34.2	+1.0
KHIT	**Khitrov Hills**	4.34	84	P		Pn	19 21 34.0	+0.4
CRQM	**Cirque**	4.40	80	P		Pn	19 21 35.5	+1.0
MCARA	**McCarthy VSAT**	4.53	72	P		Pn	19 21 36.3	+0.3
NEA	**Nenana**	4.53	2	P		Pn	19 21 36.7	+0.7
WRH	**Wood River Hil**	4.59	22	eP	n	Pn	19 21 37.0	+0.2
WRH				eS	n	Sn	19 22 28.7	-0.3
KULT	**Kultieth River**	4.61	86	P		Pn	19 21 38.4	+1.1
PTPK	**Patty Peak**	4.76	75	P		Pn	19 21 39.6	+0.2
HDA	**Harding Lake**	4.77	27	eP	n	Pn	19 21 39.9	+0.6
HDA				eS	n	Sn	19 22 32.3	-1.0
ISLE	**Juniper Island**	4.79	82	P		Pn	19 21 40.6	+0.9
KIAG	**Kiagna River**	4.79	78	P		Pn	19 21 40.5	+0.8
CCB	**Clear Creek Bu**	4.80	22	eP	n	Pn	19 21 39.8	+0.1
BALM	**Baldy**	4.80	77	eP	n	Pn	19 21 39.6	-0.3
MLY	**Manley**	4.82	6	eP	n	Pn	19 21 40.7	+0.7
BAGL	**Bagley Icefiel**	4.91	83	P		Pn	19 21 42.4	+1.2
COLA	**College**	5.00	21	eP	n	Pn	19 21 43.0	+0.6
MDM	**Murphy Dome**	5.02	19	eP	n	Pn	19 21 43.0	+0.3
DOT	**Dot Lake**	5.04	44	eP	n	Pn	19 21 43.4	+0.3
ILAR	**Eielson Array**	5.10	25	P		Pn	19 21 44.0	+0.3
	21nm,0.3s,baz=209,slow=14,SNR=475							
ILAR				S		Sn	19 22 40.4	-0.9
	4.9nm,0.3s,baz=210,slow=23,SNR=8.3							
ILB	**Eielson Array**	5.10	25	eP	n	Pn	19 21 43.8	+0.1
ILB				eS	n	Sn	19 22 40.0	-1.3
IL1	**Eielson Array**	5.10	25	eP	n	Pn	19 21 43.5	-0.2
IL1				eS	n	Sn	19 22 40.3	-1.0
BARN	**Barnard Glacie**	5.14	77	P		Pn	19 21 45.4	+1.0
SAMH	**Samovar Hills**	5.59	87	P		Pn	19 21 51.4	+0.9
BCA3	**Beaver Creek A**	5.61	56	eP	n	Pn	19 21 51.1	+0.5
PS06	**TAPS Pump Stn6**	5.70	9	eP	n	Pn	19 21 52.6	+0.7
IM3	**Indian Mountai**	5.79	353	P		Pn	19 21 53.0	-0.2
PCA	**Pinnacle**	5.85	87	eP	n	Pn	19 21 55.0	+1.0
EGAK	**Eagle**	6.74	43	eP	n	Pn	19 22 05.1	+0.1
FYU	**Fort Yukon**	7.00	23	eP	n	Pn	19 22 09.9	+0.3
FYU				eS	n	Sn	19 23 24.2	-3.4
DAWY	**Dawson**	7.01	52	eP	n	Pn	19 22 10.2	+0.5
COLD	**Coldfoot**	7.03	6	eP	n	Pn	19 22 10.1	+0.1
DHAK	**Deception Hill**	7.07	94	eP	n	Pn	19 22 10.9	+0.3
DHAK				eS	n	Sn	19 23 24.5	-4.8
HYT	**Haines Junctio**	7.16	79	eP	n	Pn	19 22 12.7	+0.8
HYT				eS	n	Sn	19 23 28.8	-2.8
BM3	**Burnt Mountain**	7.88	21	eP	n	Pn	19 22 20.9	-0.6
SKAG	**Skagway**	8.42	88	eP	n	Pn	19 22 26.7	-2.0
UNV	**Unalaska Valle**	10.18	237	eP	n	Pn	19 22 51.8	-1.0
WRAK	**Wrangell Islan**	11.00	102	eP	n	Pn	19 23 04.1	+0.3
CRAG	**Craig**	11.12	107	eP	n	Pn	19 23 06.2	+0.8
INK	**Inuvik**	11.32	37	P		Pn	19 23 09.2	+1.2
	0.8nm,0.3s,baz=240,slow=13,SNR=8.4							
INK	**Inuvik**	11.32	37	eP	n	Pn	19 23 08.1	0.0
DLBC	**Dease Lake**	11.34	90	P		Pn	19 23 10.8	+2.3
	0.4nm,0.3s,baz=260,slow=12,SNR=7.1							
DLBC				S		Sn	19 25 10.6	-2.5
	0.3nm,0.3s,baz=270,slow=20,SNR=2.7							
DLBC	**Dease Lake**	11.34	90	eP	n	Pn	19 23 07.9	-0.6
DLBC				eS	n	Sn	19 25 10.6	-2.5
DIB	**Dawson Inlet,**	12.80	115	eP	n	Pn	19 23 26.8	-0.9
YKW3	**Yellowknife Ar**	17.86	66	eP		P	19 24 28.1	-2.5
YKA	**Yellowknife Ar**	17.88	67	P		P	19 24 32.2	+1.3
	0.3nm,0.3s,baz=276,slow=9.8,SNR=10							
YKB5	**Yellowknife Ar**	17.88	67	eP		P	19 24 27.9	-3.0
LON	**Longmire**	22.22	114	eP		P	19 25 11.9	-5.9
	4.1nm,1.1s							
RES	**Resolute Bay**	24.81	32	LR		LR	19 37 16.7	
	comp=Z,23nm,20.0s,baz=140,slow=41							
PDAR	**Pinedale Array**	30.96	105	P		P	19 26 38.8	+1.5
	0.2nm,0.4s,baz=336,slow=4.2,SNR=3.1							
LTX	**Lajitas**	44.60	112	eP		P	19 28 34.2	+2.3
TXAR	**Lajitas Array**	44.60	112	P		P	19 28 34.2	+2.3
	0.5nm,0.6s,baz=320,slow=6.1,SNR=7.4							
ARA0	**ARCESS Array S**	50.48	1	eP		P	19 29 17.9	+1.3
ARCES	**ARCESS Array B**	50.48	1	P		P	19 29 17.9	+1.3
	1.0nm,0.5s,baz=342,slow=5.7,SNR=16							
SONA0	**Songino Array**	55.04	306	eP		P	19 29 50.5	-0.2
SONM	**Songino Array**	55.04	306	P		P	19 29 50.5	-0.2
	0.2nm,0.4s,baz=12,slow=7.4,SNR=3.6							

NIED ***08*** *19:40:00,24.4N×121.9E,h32km,Mw4.0 Best double couple: Ms1.32000×10^15 NP1:φ=251.00000°,δ10.00000°, λ74.00000°. NP2:φ=86.00000°,δ81.00000°,λ93.00000°.*
BJI ***08*** *19:40:53.6,24.43N×121.89E,h9km,ML3.5/5*
JMA ***08*** *19:40:54.1±0.1,24.35N×121.86E,h42km±2km,M3.5*
ISCJB ***08*** *19:40:55.0±0.3,24.39N±0.02×122.00E±0.02,h18km±3km, mb3.4/5,MS3.3/2,Error ellipse: s-maj=3.1km s-min=2.1km az=144.6*
TAP ***08*** *19:40:54.6,24.39N×121.92E,h24km,ML4.1,B*
IDC ***08*** *19:40:58.5±1.3,24.69N×120.70E,h0km,mb3.4/5, mb1 3.5/6,mb1mx3.3/38,mbtmp3.5/6,ML3.6/1,MS3.0/3, Ms1 3.0/3,ms1mx2.5/35,Error ellipse: s-maj=67.2km s-min=23.4km az=68.0*

ISC 08 19:40:54.7±0.9,24.38N±0.02×121.97E±0.02,h17km±6km, n85,σ0.979/133,mb3.4/5,11C-5D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	0.21	283	⇑iP		Pg		19 40 59.9	+0.1
	baz=282								
EHP	**Heping Village**	0.22	252	P		Pb		19 41 00.7	+0.5
EHP	baz=244			eS		Sb		19 41 04.9	+1.0
TWC	**Suao**	0.25	335	⇑iP		Pb		19 41 00.8	-0.1
TWC	baz=345			S		Sb		19 41 04.4	-0.5
ILA	**Ilan**	0.43	333	P		Pb		19 41 04.1	+0.2
ILA	baz=332			iS		Sb		19 41 10.3	+0.2
TWE	**Neicheng**	0.44	321	⇓iP		Pb		19 41 03.7	-0.2
TWE	baz=327			iS		Sg		19 41 09.6	0.0
ENTT	**Nioudou**	0.45	306	⇓iP		Pg		19 41 03.8	-0.1
TWD	baz=308 **Chiawan**	0.45	229	P		Pg		19 41 03.9	0.0
TWD	baz=227			S		Sb		19 41 11.3	+0.7
EGS		0.47	356	⇑iP		Pb		19 41 04.7	+0.2
EGS	baz=3.0			S		Sb		19 41 11.0	0.0
HWA	baz=3.0 **Hwalien**	0.52	220	⇑iP		Pb		19 41 05.7	+0.4
NNS	baz=214 **Nan Shan**	0.54	276	P		Pg		19 41 05.2	-0.5
NNS	baz=282			iS		Sg		19 41 12.6	-0.4
TWB1	baz=282 **Santiao Chiao**	0.63	2	⇑iP		Pb		19 41 07.3	+0.1
TWB1	baz=360			iS		Sb		19 41 15.6	-0.1
NSK	baz=360 **Sanguang**	0.63	298	⇓iP		Pg		19 41 06.6	-0.6
NSK	baz=300			iS		Sg		19 41 14.6	-1.0
ESF	baz=300 **Shoufeng Towns**	0.66	220	eP		Pg		19 41 07.4	-0.3
WHF	baz=216 **Hehuan Shan**	0.68	250	⇑iP		Pg		19 41 07.9	-0.4
TWA	baz=254 **Mucha**	0.69	330	P		Pb		19 41 08.3	0.0
TWA	baz=325			eS		Sb		19 41 18.0	+0.3
NWF	baz=325 **Wu-fen Shan**	0.71	346	⇑P		Pb		19 41 08.8	+0.2
NWF	baz=343			eS		Sb		19 41 18.8	+0.6
TWT	baz=343 **Tachien**	0.73	260	⇑iP		Pg		19 41 09.1	-0.1
TWT	baz=259			S		Sg		19 41 19.2	+0.3
ESL	baz=259 **Shilin**	0.74	221	⇑P		Pb		19 41 08.3	-0.9
ESL	baz=233			eS		Sb		19 41 20.5	+1.4
TAP1	baz=233 **Taipei**	0.77	329	⇓iP		Pg		19 41 09.9	+0.1
TAP1	baz=325			iS		Sg		19 41 20.4	+0.4
TEGC	baz=325 **Jichi Village**	0.77	210	eP		Pn		19 41 10.6	-0.2
TAP	baz=206 **Taipei**	0.78	328	eP		Pg		19 41 09.9	-0.1
TAP	baz=325			S		Sg		19 41 20.6	+0.2
TWS1	baz=325 **Kuangyinshan**	0.88	325	P		Pg		19 41 11.7	-0.1
TWS1	baz=338			S		Sn		19 41 24.2	-0.3
JYNG	baz=338 **Yonagunijimaku**	0.90	85	P		Pg		19 41 12.0	-0.2
JYNG				S		Sn		19 41 25.1	+0.1
NSTT	**Nanjuang**	0.92	286	P		Pb		19 41 12.3	+0.1
NSTT	baz=287			S		Sb		19 41 24.1	+0.1
NCU	baz=287 **National Centr**	0.92	310	P		Pg		19 41 12.5	-0.2
NCU	baz=298			S		Sn		19 41 25.7	0.0
TWY	baz=298 **Chenhua**	0.95	340	eP		Pg		19 41 13.0	-0.3
TWY	baz=343			S		Sg		19 41 25.9	0.0
YOJ	baz=343 **Yonaguni jima**	0.95	85	P		Pg		19 41 13.0	-0.3
YOJ				S		Sn		19 41 26.7	+0.2
YOJ	**Yonaguni jima**	0.95	85	P		Pg		19 41 13.0	-0.3
YOJ	baz=78			S		Sn		19 41 26.5	0.0
HSN	baz=78 **Hsinchu**	1.00	295	P		Pn		19 41 13.9	-0.1
HSN	baz=299			S		Sn		19 41 27.6	0.0
EHY	baz=299 **Hungye**	1.05	214	⇑eP		Pb		19 41 12.4	-2.1
TWQ1	baz=211 **Liyutan**	1.09	269	⇓iP		Pg		19 41 15.7	-0.1
TWQ1	baz=268			S		Sn		19 41 30.3	+0.4
SMLT	baz=268 **Sun Moon Lake**	1.09	243	eP		Pb		19 41 14.9	-0.3
SMLT	baz=234			eS		Sb		19 41 29.4	+0.2
NSY	baz=234 **Sanyi**	1.10	272	P		Pn		19 41 15.8	+0.5
NSY	baz=272			eS		Sg		19 41 32.4	+1.9
TYC	baz=272 **Yuchr**	1.12	245	P		Pn		19 41 14.9	-0.7
TYC	baz=252			eS		Sb		19 41 29.5	-0.4
TWF1	baz=252 **Yuli**	1.19	211	eP		Pn		19 41 14.5	-2.1
TCU	baz=220 **Taichung**	1.20	259	eP		Pb		19 41 17.2	+0.2
TCU	baz=258			S		Sg		19 41 33.6	0.0
PCYT	baz=258 **Pengchaiyu**	1.25	4	eP		Pn		19 41 16.5	-0.9
WNT	baz=8.0 **Mingjian**	1.27	247	eP		Pb		19 41 18.4	+0.1
WNT	baz=246			eS		Sg		19 41 36.8	+0.8
YUS	baz=246 **Yu-Shan**	1.28	227	⇑iP		Pn		19 41 17.8	-0.5
YUS	baz=210			eS		Sb		19 41 33.9	-1.1
ALS	baz=210 **Alishan**	1.37	231	P		Pn		19 41 19.2	-0.1
ALS	baz=217			eS		Sg		19 41 39.4	+0.3
CHKT	baz=217 **Chengkung**	1.39	204	eP		Pn		19 41 17.8	-1.4
CHN5	baz=186 **Tsauling**	1.41	237	iP		Pb		19 41 20.5	-0.2
CHN5	baz=235			eS		Sg		19 41 41.7	+1.3
WGK	baz=235 **Gukeng**	1.46	242	P		Pb		19 41 21.2	-0.2
WGK	baz=240			eS		Sb		19 41 41.0	+1.4
	baz=240								
ELDTW	**Lidau**	1.47	216	eP		Pn		19 41 18.7	-1.8
	baz=203								
CHN2	**Minshiung**	1.60	239	P		Pb		19 41 23.7	-0.2
CHN2	baz=237			eS		Sg		19 41 46.3	-0.2
	baz=237								
IRIF	**Iriomote-Funau**	1.61	91	P		Pn		19 41 22.3	0.0
IRIF				S		Sn		19 41 42.8	+0.1
CHN4	**Tsaushan**	1.62	231	P		Pn		19 41 23.4	+0.9
CHN4	baz=230			iS		Sg		19 41 46.3	-0.8
	baz=230								
WTCT	**Ta-ch'eng**	1.62	252	eP		Pn		19 41 21.7	-0.9
STYT	baz=249 **Tauyuan**	1.64	223	P		Pn		19 41 22.9	+0.1
STYT	baz=209			eS		Sb		19 41 46.2	+1.2
	baz=209								
CHY	**Chiayi**	1.66	238	P		Pb		19 41 24.2	-0.7
CHY	baz=237			S		Sb		19 41 46.6	+1.1
	baz=237								
WTP	**Ta-pu**	1.68	228	P		Pn		19 41 23.8	+0.5
WTP	baz=226			S		Sb		19 41 46.8	+0.8
	baz=226								
HATJ	**Hateruma jima**	1.71	100	P		Pn		19 41 23.7	0.0
TWK	**Hsinying**	1.75	231	eP		Pn		19 41 25.0	+0.7
TWG	baz=229 **Pinlang**	1.75	208	eP		Pn		19 41 22.4	-2.0
WSF	baz=195 **Szhu**	1.76	246	eP		Pn		19 41 24.5	+0.1
WSF	baz=244			eS		Sb		19 41 48.6	+0.3
	baz=244								
CHN1	**Nanshi**	1.77	228	eP		Pn		19 41 25.3	+0.7
CHN1	baz=227			eS		Sb		19 41 49.8	+1.0
	baz=227								
TTN	**Taitung**	1.78	205	eP		Pb		19 41 26.9	0.0
SGST	baz=204 **Jiashian**	1.81	225	P		Pn		19 41 26.2	+1.1
SGST	baz=210			S		Sb		19 41 49.8	+0.1
	baz=210								
JKRS	**Kuro-shima**	1.87	94	P		Pn		19 41 26.5	+0.6
JKRS				S		Sn		19 41 50.1	+1.0
CHN8	**Yiju**	1.91	238	eP		Pn		19 41 27.4	+1.0
CHN8	baz=222			eS		Sb		19 41 52.9	+0.3
	baz=222								
CHN3	**Shinhua**	1.96	229	eP		Pb		19 41 29.1	-0.9
JIJ	baz=228 **Ishigaki jima**	1.98	90	P		Pn		19 41 27.4	-0.1
JIJ				S		Sn		19 41 51.3	-0.6
ECL	**Taimali**	2.00	208	eP		Pn		19 41 26.9	-0.9
SCLT	baz=196 **Jiali**	2.02	234	eP		Pn		19 41 29.4	+1.4
SCLT	baz=232			eS		Sb		19 41 55.3	-0.5
	baz=232								
SSD	**Sandimen**	2.04	217	P		Pn		19 41 29.8	+1.6
SSD	baz=216			eS		Sn		19 41 54.8	+1.6
	baz=216								
TAI1	**Yung-k'ang**	2.08	230	eP		Pb		19 41 30.8	-1.2
TAI1	baz=229			eS		Sn		19 41 56.1	+1.9
	baz=229								
TWM1	**Shoushan**	2.10	223	eP		Pb		19 41 31.2	-1.1
JISG	baz=221 **Ishigakijimahi**	2.15	84	P		Pn		19 41 29.6	-0.1
JISG				S		Sn		19 41 55.7	-0.2
EAST	**Anshuo**	2.24	208	eP		Pn		19 41 31.8	+0.7
PNG	baz=197 **Penghu**	2.35	250	eP		Pn		19 41 31.3	-1.2
PNG	baz=249			eS		Sn		19 42 00.1	-0.8
	baz=249								
SCZT	**Fangliau**	2.35	212	eP		Pn		19 41 33.8	+1.3
WDGT	baz=199 **Dungji**	2.39	243	eP		Pn		19 41 32.5	-0.5
JTJ	baz=239 **Tarama**	2.50	83	P		Pn		19 41 35.8	+1.1
JTJ				S		Sn		19 42 05.4	+0.6
TWK1	**Hengchun**	2.65	204	eP		Pn		19 41 38.2	+1.6
JIRB	baz=194 **Irabujima**	2.95	81	P		Pn		19 41 41.8	+1.0
JIKM	**Ikemajima**	3.03	79	P		Pn		19 41 43.2	+1.3
KNM	**Kinmen**	3.22	271	eP		Pn		19 41 45.2	+0.7
JNU	baz=267 **Nakatsue**	11.70	40	LR		LR		19 48 59.6	
	comp=Z,18nm,20.0s,baz=232,slow=39								
KSRS	**Korea Array**	13.99	20	Pn		P		19 44 20.8	+0.7
	0.3nm,0.3s,baz=202,slow=12,SNR=7.1								
SONM	**Songino Array**	26.47	336	P		P		19 46 31.3	+0.2
	0.2nm,0.4s,baz=144,slow=10.0,SNR=2.5								
SONM				LR		LR		19 58 10.1	
	comp=Z,34nm,18.5s,baz=166,slow=40								
MKAR	**Makanchi Array**	38.70	315	P		P		19 48 16.2	-1.4
	0.3nm,0.4s,baz=100,slow=10.0,SNR=6.2								
ZALV	**Zalesovo Beam**	40.47	327	P		P		19 48 31.6	-0.7
	0.2nm,0.3s,baz=129,slow=5.7,SNR=2.3								
ASAR	**Alice Springs**	49.14	165	P		P		19 49 53.0	+11
	0.2nm,0.5s,baz=336,slow=9.6,SNR=12								
DZM	**Mont Dzumac**	63.24	133	LR		LR		20 16 06.7	
	comp=Z,49nm,18.9s,baz=12,slow=33								
FINES	**FINESS Array B**	71.64	330	P		P		19 52 14.8	-0.3
	0.7nm,0.8s,baz=35,slow=5.1,SNR=4.2								

IDC 08 19:54:01.8±3.7,5.81S×151.07E,h0km,mb3.0/2, mb1 3.4/2,mb1mx3.1/31,mbtmp3.1/2,Error ellipse: s-maj=154.5km s-min=48.9km az=118.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	21.49	228	P		P		19 58 52.5	+0.2
	0.5nm,0.7s,baz=54,slow=10,SNR=4.1								
ASAR	**Alice Springs**	24.25	221	P		P		19 59 20.9	+0.1
	0.4nm,0.8s,baz=58,slow=9.8,SNR=5.5								
TORD	**Torodi Ar. Bea**	148.95	286	PKPbc		PKPbc		20 13 52.0	-0.8
	0.4nm,0.6s,baz=90,slow=2.9,SNR=3.5								

JMA 08 19:57:13.2±0.2,37.59N×144.47E,h16km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	2.61	290	P		Pn		19 57 56.0	+1.3
JIO				S		Sn		19 58 27.7	+1.6
OFUJ	**Ofunato**	2.66	305	P		Pn		19 57 56.5	+1.1

n14,σ1°15/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.35**	**240**	P	**Pn**	**20 02 32.9**	**-0.6**
CHOJ				*e*S	**Sg**	**20 02 51.4**	**-0.5**
ONAJ	**Iwakimizuishiy**	**1.41**	**301**	P	**Pn**	**20 02 34.0**	**-0.3**
JHO	**Hitachi**	**1.42**	**280**	P	**Pn**	**20 02 33.8**	**-0.6**
JHO				S	**Sn**	**20 02 53.5**	**+0.3**
JFK	**Kawauchi**	**1.51**	**311**	P	**Pn**	**20 02 35.7**	**-0.1**
JMM	**Marumori**	**1.91**	**321**	*e*S	**Sn**	**20 03 04.8**	**-0.6**
JFT	**Otama**	**1.94**	**306**	P	**Pn**	**20 02 42.2**	**+0.5**
JFT				S	**Sn**	**20 03 07.0**	**+0.8**
JAG	**Ashikaga**	**2.30**	**272**	P	**Pn**	**20 02 46.7**	**+0.1**
JAG				S	**Sn**	**20 03 14.4**	**-0.6**
JMK	**Ichinoseki**	**2.71**	**342**	P	**Pn**	**20 02 51.3**	**-0.9**
JMK				*e*S	**Sn**	**20 03 23.3**	**-1.8**
JRY	**Ryogami san**	**2.77**	**263**	P	**Pn**	**20 02 53.0**	**-0.1**
JRY				*e*S	**Sn**	**20 03 25.9**	**-0.9**
JOD2	**Odawara 2**	**2.84**	**248**	P	**Pn**	**20 02 54.0**	**0.0**
JOD2				S	**Sn**	**20 03 27.8**	**-0.6**
MJAR	**Matsushiro Arr**	**3.30**	**274**	Pn	**Pn**	**20 03 01.6**	**+1.2**
	0.6nm,0.3s,baz=109,slow=9.1,SNR=8.5						
MJAR				Sn	**Sn**	**20 03 37.1**	**-2.7**
	0.9nm,0.3s,baz=120,slow=9.7,SNR=7.1						
MJAR				LR	LR	20 04 44.6	
	comp=Z,29nm,19.3s,baz=240,slow=41						
MAT	**Matsushiro**	**3.31**	**274**	P	**Pn**	**20 03 02.4**	**+2.0**
MAT				S	**Sn**	**20 03 38.2**	**-1.7**
SONM	**Songino Array**	**28.74**	**305**	P	**P**	**20 08 07.7**	**+1.4**
	0.4nm,0.6s,baz=111,slow=8.1,SNR=3.6						
MKAR	**Makanchi Array**	**45.07**	**303**	P	**P**	**20 10 24.8**	**+0.1**
	0.2nm,0.2s,baz=94,slow=8.7,SNR=2.6						

*IDC **08** 20:10:09.0±3.1, 78°.38N×6°.80E, h0km, mb3.6/3, mb1 3.6/5, mb1mx3.3/54, mbtmp3.5/5, ML2.7/2, MS2.9/11, Ms1 2.9/11, ms1mx2.7/47, Error ellipse: s-maj=46.7km s-min=22.5km az=138.0*

*CSEM **08** 20:10:11.9±0.7, 78°.24N×8°.70E, h2km, ML2.9, Error ellipse: s-maj=13.7km s-min=9.4km az=100.0*

*BER **08** 20:10:14.0±4.1, 78°.27N×8°.68E, h0km±19km, MD2.4, ML2.9, ML2.9(NAO)*

*NAO **08** 20:10:15.1±3.2, 78°.28N×9°.54E, h3km±18km, ML2.9*

ISC 08 20:10:12.2±1.3, 78°.29N±0°.05×8°.55E±0°.08, h10km, n39, σ1°88/44, mb3.5/3, MS2.9/6, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**0.93**	**45**	Pg	**Pg**	**20 10 29.3**	**-0.8**
KBS				Lg	Lg	20 10 42.1	
KBS	**Kingsbay**	**0.93**	**45**	*e*P	**Pg**	**20 10 29.2**	**-0.8**
KBS				*e*Pg	**Pb**	**20 10 30.1**	**-0.4**
KBS				Lg	Lg	20 10 42.1	
KBS				IAML		20 10 44.1	
	comp=Z,465nm,0.3s						
KBS	**Kingsbay**	**0.93**	**45**	Pg	**Pg**	**20 10 29.3**	**-0.8**
KBS				Lg	Lg	20 10 42.1	
BRBA	**Barentsburg A**	**1.19**	**98**	Pg	**Pb**	**20 10 34.7**	**-0.1**
BRBA				Lg	Lg	20 10 47.9	
	SNR=30						
SPA0	**Spitsbergen Ar**	**1.61**	**90**	Pn	**Pb**	**20 10 41.5**	**-0.4**
	baz=259,slow=16						
SPA0	**Spitsbergen Ar**	**1.61**	**90**	Pn	**Pb**	**20 10 41.5**	**-0.4**
	baz=259,slow=16						
SPA0				*e*		20 10 48.3	
SPA0				*e*Sg	**Sg**	**20 11 04.1**	**+0.2**
SPA0	**Spitsbergen Ar**	**1.61**	**90**	Pn	**Pb**	**20 10 41.5**	**-0.4**
	SNR=358						
SPA0				*e*Sg	**Sg**	**20 11 04.1**	**+0.2**
	SNR=90						
SPITS	**Spitsbergen Ar**	**1.61**	**90**	Pn	**Pb**	**20 10 41.5**	**-0.4**
	baz=279,slow=12,SNR=660						
SPITS				Sn	**Sg**	**20 11 04.0**	**+0.2**
	baz=221,slow=20,SNR=53						
SPITS				LR	LR	20 11 22.2	
	comp=Z,123nm,18.4s,baz=270,slow=37						
HSP	**Hornsund**	**1.98**	**127**	Pn	**Pn**	**20 10 45.2**	**-0.5**
HSP				Sn	**Sn**	**20 11 10.2**	**-0.4**
HSPB	**Hornsund (broa**	**1.98**	**127**	Pn	**Pn**	**20 10 45.2**	**-0.5**
HSPB				*e*Pg	**Pg**	**20 10 51.8**	**+1.7**
HSPB				Sn	**Sn**	**20 11 10.2**	**-0.4**
HSPB	**Hornsund (broa**	**1.98**	**127**	Pn	**Pn**	**20 10 45.2**	**-0.5**
HSPB	**Hornsund (broa**	**1.98**	**127**	*e*Pg	**Pb**	**20 10 47.3**	**-1.0**
HSPB				Sn	**Sn**	**20 11 10.2**	**-0.4**
HSPB				*e*Sg	**Sb**	**20 11 12.9**	**-0.1**
HOPEN	**Hopen**	**4.01**	**108**	Pn	**Pn**	**20 11 13.5**	**-0.1**
HOPEN				Sn	**Sn**	**20 12 00.8**	**+0.1**
HOPEN	**Hopen**	**4.01**	**108**	Pn	**Pn**	**20 11 13.5**	**-0.1**
HOPEN				*e*S	**Sn**	**20 12 00.9**	**+0.3**
HOPEN				IAML		20 12 03.1	
	comp=Z,51nm,0.3s						
HOPEN	**Hopen**	**4.01**	**108**	Pn	**Pn**	**20 11 13.5**	**-0.1**
HOPEN				*e*S	**Sn**	**20 12 00.9**	**+0.3**
	SNR=49						
BJO1	**Bjornoya**	**4.53**	**142**	Pn	**Pn**	**20 11 22.2**	**+1.6**
BJO	**Bjornoya**	**4.55**	**141**	Pn	**Pn**	**20 11 22.2**	**+1.3**
BJO	**Bjornoya**	**4.55**	**141**	Pn	**Pn**	**20 11 22.2**	**+1.3**
JMIC	**Jan Mayen**	**8.56**	**220**	Pn	Pn	20 12 10.0	-6.0
	comp=Z,6.0nm,0.3s,baz=158,slow=0.4,SNR=7.5						
JMIC				Sn	Sn	20 13 39.5	-13
	baz=347,slow=15,SNR=3.2						
ARA0	**ARCESS Array S**	**9.90**	**143**	Pn	**Pn**	**20 12 35.5**	**+1.1**
	baz=340,slow=12						
ARA0				Sn	**Sn**	**20 14 18.4**	**-7.0**
	baz=350,slow=22						
ARA0	**ARCESS Array S**	**9.90**	**143**	Pn	**Pn**	**20 12 35.5**	**+1.1**
	baz=340,slow=12						
ARA0				Sn	**Sn**	**20 14 18.4**	**-7.0**
	baz=350,slow=22						
ARA0	**ARCESS Array S**	**9.90**	**143**	Pn	**Pn**	**20 12 35.5**	**+1.1**
	SNR=2.4						
ARCES	**ARCESS Array B**	**9.90**	**143**	Pn	**Pn**	**20 12 33.8**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=339,slow=9.6,SNR=7.7						
ARCES				Sn	**Sn**	**20 14 20.6**	**-4.8**
	comp=Z,0.2nm,0.3s,baz=355,slow=18,SNR=3.3						
ARCES				LR	LR	20 16 21.9	
	comp=Z,46nm,21.2s,baz=321,slow=37						
NOA	**NORSAR Array B**	**17.36**	**176**	LR	LR	20 19 50.6	
	comp=Z,14nm,21.6s,baz=185,slow=33						
FIA0	**FINESS Array S**	**17.80**	**152**	P	**P**	**20 14 20.4**	**0.0**
FIA0	**FINESS Array S**	**17.80**	**152**	P	**P**	**20 14 20.4**	**0.0**
FIA0	**FINESS Array S**	**17.80**	**152**	P	**P**	**20 14 20.4**	**0.0**
FINES	**FINESS Array B**	**17.80**	**152**	P	**P**	**20 14 20.4**	**0.0**
	comp=Z,0.0nm,0.3s,baz=3.3,slow=9.7,SNR=2.5						
FINES				LR	LR	20 22 52.3	
	comp=Z,9.3nm,18.3s,baz=324,slow=42						
HFS	**Hagfors**	**18.32**	**172**	LR	LR	20 20 42.0	
	comp=Z,31nm,18.4s,baz=10,slow=34						
SFJD	**Kangerlussuaq**	**19.73**	**268**	LR	LR	20 22 48.1	
	comp=Z,66nm,19.7s,baz=15,slow=39						
RES	**Resolute Bay**	**21.40**	**315**	LR	LR	20 22 58.4	
	comp=Z,48nm,20.5s,baz=19,slow=36						
NRIK	**Noril'sk**	**21.72**	**70**	LR	LR	20 25 27.0	
	comp=Z,39nm,18.4s,baz=354,slow=42						
OBN	**Obninsk**	**25.20**	**141**	LR	LR	20 25 45.8	
	comp=Z,24nm,19.4s,baz=270,slow=37						
FRB	**Frobisher Bay**	**26.23**	**281**	LR	LR	20 25 46.2	
	comp=Z,44nm,20.8s,baz=28,slow=36						
SCHQ	**Schefferville**	**34.08**	**272**	LR	LR	20 29 53.6	
	comp=Z,41nm,20.8s,baz=324,slow=35						
KBZ	**Khabaz**	**37.20**	**137**	P	**P**	**20 17 24.4**	**+1.4**
	comp=Z,0.4nm,0.4s,baz=321,slow=6.4,SNR=1.8						
BRTR	**Keskin Array B**	**40.02**	**149**	P	**P**	**20 17 48.0**	**+1.0**
	comp=Z,0.3nm,0.4s,baz=346,slow=9.8,SNR=3.5						
MKAR	**Makanchi Array**	**41.36**	**93**	P	**P**	**20 17 59.5**	**+1.7**
	comp=Z,0.8nm,0.7s,baz=352,slow=6.1,SNR=5.7						
SONM	**Songino Array**	**45.20**	**70**	LR	LR	20 40 19.2	
	comp=Z,23nm,19.7s,baz=50,slow=40						

*IDC **08** 20:10:10.8±0.7, 19°.20S×167°.99E, h0km, mb4.3/16, mb1 4.5/17, mb1mx4.3/38, mbtmp4.3/17, ML4.6/1, MS3.4/3, Ms1 3.4/3, ms1mx2.9/31, Error ellipse: s-maj=24.5km s-min=15.5km az=127.0*

*ISCJB **08** 20:10:13.0±0.3, 19°.26S±0°.04×167°.89E±0°.05, h26km, mb4.8/47, MS3.3/3, Error ellipse: s-maj=7.1km s-min=5.9km az=23.4*

*NEIC **08** 20:10:16.0±0.2, 19°.23S×167°.92E, h35km, mb5.0/34, Error ellipse: s-maj=6.8km s-min=6.4km az=100.0*

ISC 08 20:10:14.8±0.4, 19°.29S±0°.06×167°.90E±0°.07, h26km, n119, σ1°05/115, mb4.8/47, MS3.3/3, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.09**	**206**	Pn	**Pn**	**20 11 01.4**	**-0.5**
	67nm,0.3s,baz=76,slow=9.3,SNR=466						
DZM				Sn	**Sn**	**20 11 37.3**	**-0.7**
	71nm,0.3s,baz=134,slow=24,SNR=14						
DZM	**Mont Dzumac**	**3.09**	**206**	*e*Pn	**Pn**	**20 11 00.3**	**-1.6**
DZM				*e*Sn	**Sn**	**20 11 35.4**	**-2.7**
MSVF	**Nonsavu**	**9.75**	**83**	*e*Pn	**Pn**	**20 12 33.3**	**-0.2**
HNR	**Honiara**	**12.46**	**321**	*e*Pn	**Pn**	**20 13 10.0**	**-0.5**
RAO	**Raoul Island**	**16.28**	**130**	*e*Pn	**P**	**20 14 04.4**	**-0.1**
	3jum,1.9s						
OUZ	**Omahuta**	**16.65**	**164**	*e*Pn	**P**	**20 14 10.1**	**+1.5**
	74nm,1.5s						
EIDS	**Eidsvold**	**16.69**	**246**	*e*Pn	**P**	**20 14 09.7**	**+0.6**
	31nm,1.6s						
HIZ	**Hauiti**	**20.09**	**164**	*e*P	**P**	**20 14 47.1**	**+0.7**
	519nm,1.7s						
AFI	**Afiamalu**	**20.19**	**78**	LR	LR	20 21 23.6	
	comp=Z,87nm,21.6s,baz=268,slow=34						
CTA	**Charters Tower**	**20.40**	**264**	P	Pn	20 14 51.8	-0.3
	8.3nm,0.9s,baz=96,slow=14,SNR=4.8						
PMG	**Port Moresby**	**22.34**	**293**	LR	LR	20 22 35.9	
	comp=Z,112nm,19.6s,baz=190,slow=33						
SNZO	**South Karori**	**22.71**	**167**	*e*P	**P**	**20 15 12.6**	**-1.9**
	255nm,1.6s						
THZ	**Tophouse**	**22.80**	**170**	*e*P	**P**	**20 15 15.0**	**-0.6**
	251nm,1.9s						
MQZ	**McQueen's Vall**	**24.67**	**172**	*e*P	**P**	**20 15 33.1**	**-0.4**
	167nm,1.7s						
STKA	**Stephens Creek**	**26.75**	**237**	P	**P**	**20 15 54.1**	**+1.7**
	2.1nm,0.6s,baz=64,slow=9.7,SNR=10						
STKA	**Stephens Creek**	**26.75**	**237**	*e*P	**P**	**20 15 54.6**	**+2.1**
	4.1nm,1.4s						
BBOO	**Buckleboo**	**31.48**	**238**	*e*P	**P**	**20 16 35.5**	**+1.0**
	59nm,1.6s						
WB2	**Warramunga Arr**	**31.58**	**263**	*e*P	**P**	**20 16 34.0**	**-1.5**
	36nm,1.9s						
WRAB	**Tennant Creek**	**31.58**	**263**	*e*P	**P**	**20 16 38.3**	**+2.8**
	15nm,1.2s						
WR1	**Warramunga Arr**	**31.59**	**263**	*e*P	**P**	**20 16 35.4**	**-0.3**
	34nm,1.8s						
WR1				*e*PcP	**PcP**	**20 19 27.7**	**-0.1**
WRA	**Warramunga Arr**	**31.59**	**263**	P	**P**	**20 16 35.4**	**-0.3**
	0.7nm,0.3s,baz=81,slow=6.0,SNR=24						
WRA				PcP	**PcP**	**20 19 27.7**	**-0.1**
	0.7nm,0.8s,baz=103,slow=2.5,SNR=3.5						
AS01	**Alice Springs**	**31.84**	**256**	*e*P	**P**	**20 16 37.9**	**+0.1**
AS31	**Alice Springs**	**31.89**	**256**	*e*P	**P**	**20 16 37.6**	**-0.6**
	5.2nm,0.5s						
ASAR	**Alice Springs**	**31.89**	**256**	P	**P**	**20 16 38.4**	**+0.1**
	4.6nm,0.6s,baz=82,slow=8.5,SNR=75						
ASAR				PcP	**PcP**	**20 19 27.0**	**-1.6**
	0.7nm,1.0s,baz=108,slow=3.0,SNR=3.7						
ASAR				LR	LR	20 29 34.5	
	comp=Z,101nm,18.8s,baz=105,slow=36						
MTN	**Manton Dam**	**35.86**	**275**	*e*P	**P**	**20 17 13.2**	**+0.5**
	132nm,1.9s						
FITZ	**Fitzy Crossi**	**39.98**	**265**	P	**P**	**20 17 47.7**	**+0.2**
	8.7nm,0.7s,baz=135,slow=9.1,SNR=17						
JOHN	**Johnston Islan**	**42.12**	**33**	*e*P	**P**	**20 18 05.2**	**+0.2**
	200nm,1.1s						
MBWA	**Marble Bar**	**45.10**	**259**	*e*P	**P**	**20 18 29.7**	**+0.5**
	60nm,1.6s						
MMRI	**Maumere**	**45.43**	**277**	*e*P	**P**	**20 18 31.6**	**-0.3**
	62nm,1.3s						
NWAO	**Narrogin (SRO)**	**47.07**	**243**	*e*P	**P**	**20 18 45.1**	**+0.6**
	49nm,1.6s						
UGM	**Wanagama**	**56.68**	**273**	*e*P	**P**	**20 19 55.5**	**-1.0**
	528nm,1.8s						
KKM	**Kota Kinabalu**	**56.77**	**291**	*e*P	**P**	**20 19 58.2**	**+1.0**
	17nm,1.1s						
VNDA	**Vanda**	**58.34**	**182**	P	**P**	**20 20 08.2**	**+1.0**
	1.4nm,0.8s,baz=10,slow=6.6,SNR=7.6						
VNDA	**Vanda**	**58.34**	**182**	*e*P	**P**	**20 20 08.0**	**+0.9**
SBA	**Scott Base**	**58.60**	**180**	*e*P	**P**	**20 20 11.2**	**+2.2**
	5.4nm,0.9s						
JHJ2	**Mitsune**	**58.61**	**332**	*e*P	**P**	**20 20 06.7**	**-2.9**
	211nm,1.4s						
KSM	**Kuching**	**60.15**	**283**	*e*P	**P**	**20 20 19.0**	**-1.7**
	5.4nm,0.7s						
MJAR	**Matsushiro Arr**	**62.22**	**333**	P	**P**	**20 20 33.2**	**-1.0**
	0.9nm,0.6s,baz=162,slow=8.0,SNR=4.0						
KS15	**Wonju Array Si**	**67.85**	**326**	*e*P	**P**	**20 21 12.3**	**+1.6**
KS01	**Wonju Array Si**	**67.87**	**326**	*e*P	**P**	**20 21 12.1**	**+1.2**
YSS	**Yuzh-Sakhalins**	**69.72**	**342**	*e*P	**P**	**20 21 23.4**	**+1.2**
	11nm,0.9s						
IPM	**Ipoh**	**69.86**	**282**	*e*P	**P**	**20 21 24.1**	**+0.3**
	27nm,1.4s						
PSI	**Prapat**	**71.18**	**280**	*e*P	**P**	**20 21 31.3**	**-0.8**
GSI	**Gunungsitoli**	**71.91**	**278**	*e*P	**P**	**20 21 36.6**	**+0.3**
	15nm,0.9s						
PEA0	**Petropavlovsk-**	**72.63**	**354**	*e*P	**P**	**20 21 39.9**	**+0.2**
PETK	**Petropavlovsk-**	**72.63**	**354**	P	**P**	**20 21 40.2**	**+0.5**
	4.4nm,0.8s,baz=122,slow=7.6,SNR=6.1						
PEA1	**Petropavlovsk-**	**72.64**	**354**	*e*P	**P**	**20 21 40.2**	**+0.5**
LHMI	**Lhok Sumawe**	**73.90**	**282**	*e*P	**P**	**20 21 48.8**	**+0.7**
	108nm,1.0s						
ENH	**Enshi**	**74.73**	**310**	*e*P	**P**	**20 21 52.6**	**0.0**
	8.4nm,1.3s						
CM01	**Chiang Mai Arr**	**77.34**	**295**	*e*P	**P**	**20 22 07.9**	**+0.1**
CM31	**Chiang Mai Arr**	**77.37**	**295**	*e*P	**P**	**20 22 06.4**	**-1.5**
CMAR	**Chiang Mai Arr**	**77.37**	**295**	P	**P**	**20 22 09.1**	**+1.2**
	1.3nm,0.8s,baz=128,slow=4.5,SNR=9.3						
CHTO	**Chiang Mai**	**77.53**	**295**	*e*P	**P**	**20 22 07.9**	**-0.8**
	9.3nm,1.6s						
MAW	**Mawson**	**77.91**	**202**	P	**P**	**20 22 11.7**	**+1.7**
	3.6nm,0.9s,baz=145,slow=6.9,SNR=4.5						
MAW	**Mawson**	**77.91**	**202**	*e*P	**P**	**20 22 10.7**	**+0.7**
	1.0nm,1.1s						
MA2	**Magadan**	**79.82**	**351**	P	**P**	**20 22 20.1**	**-0.3**
	2.6nm,0.4s,baz=99,slow=4.5,SNR=3.6						
SEY	**Seymchan**	**82.86**	**353**	P	**P**	**20 22 36.5**	**+0.1**
	2.3nm,0.7s,baz=139,slow=4.9,SNR=11						
SONA0	**Songino Array**	**86.50**	**324**	*e*P	**P**	**20 22 55.9**	**+0.5**
	5.7nm,1.0s						
SONM	**Songino Array**	**86.50**	**324**	P	**P**	**20 22 55.9**	**+0.5**
	4.4nm,0.9s,baz=141,slow=4.9,SNR=20						
SONA1	**Songino Array**	**86.51**	**324**	*e*P	**P**	**20 22 55.1**	**-0.3**
TRF	**Thorofare Moun**	**88.68**	**17**	*e*P	**P**	**20 23 03.9**	**-1.6**
	24nm,1.9s						
SNAA	**Sanae**	**89.05**	**183**	*e*P	**P**	**20 23 07.6**	**+0.3**
BALM	**Baldy**	**89.42**	**22**	*e*P	**P**	**20 23 09.4**	**+0.4**
	6.0nm,0.6s						
CCB	**Clear Creek Bu**	**90.30**	**17**	*e*P	**P**	**20 23 11.2**	**-1.6**
	2.9nm,1.0s						
MDM	**Mtuhiy Dome**	**90.42**	**17**	*e*P	**P**	**20 23 11.4**	**-2.1**
	7.1nm,1.2s						
ILAR	**Eielson Array**	**90.66**	**18**	P	**P**	**20 23 13.1**	**-1.5**
	2.4nm,0.8s,baz=234,slow=5.8,SNR=24						
ILB	**Eielson Array**	**90.66**	**18**	*e*P	**P**	**20 23 12.5**	**-2.1**
TPNV	**Topopah Spring**	**90.66**	**51**	*e*P	**P**	**20 23 15.4**	**-0.1**
	22nm,1.9s						
COLD	**Coldfoot**	**91.65**	**15**	*e*P	**P**	**20 23 19.5**	**+0.4**
	4.4nm,0.8s						
EGAK	**Eagle**	**92.39**	**19**	*e*P	**P**	**20 23 22.4**	**-0.1**
	4.4nm,1.1s						
DLBC	**Dease Lake**	**92.67**	**28**	P	**P**	**20 23 24.3**	**+0.2**
	0.8nm,0.3s,baz=230,slow=7.9,SNR=3.8						
DLBC	**Dease Lake**	**92.67**	**28**	*e*P	**P**	**20 23 24.0**	**-0.1**
	5.3nm,1.1s						
LTX	**Lajitas**	**97.90**	**62**	*e*P	**P**	**20 23 48.1**	**-0.6**
TXAR	**Lajitas Array**	**97.90**	**62**	P	**P**	**20 23 48.1**	**-0.6**
	0.3nm,0.7s,baz=219,slow=5.6,SNR=4.7						
YKA	**Yellowknife Ar**	**101.29**	**28**	P	**Pdif**	**20 24 02.4**	**-0.5**
	0.4nm,0.6s,baz=259,slow=5.5,SNR=3.7						
ARU	**Arti**	**116.54**	**324**	PKP	**PKPdf**	**20 28 55.9**	**-0.2**
	1.5nm,0.6s,baz=280,slow=9.4,SNR=4.7						
ARU	**Arti**	**116.54**	**324**	*e*PKPdf	**PKPdf**	**20 28 55.5**	**-0.5**
ARA0	**ARCESS Array S**	**124.79**	**345**	*e*PKPdf	**PKPdf**	**20 29 11.2**	**-0.4**
ARCES	**ARCESS Array B**	**124.79**	**345**	PKP	**PKPdf**	**20 29 11.2**	**-0.4**
	2.0nm,0.7s,baz=117,slow=0.5,SNR=13						
FIA0	**FINESS Array S**	**130.15**	**337**	*e*PKPdf	**PKPdf**	**20 29 22.3**	**+0.4**
FINES	**FINESS Array B**	**130.15**	**337**	PKP	**PKPdf**	**20 29 22.3**	**+0.4**
	1.5nm,0.8s,baz=37,slow=4.8,SNR=6.8						
AKASG	**Malin Array Be**	**134.79**	**324**	PKP	**PKPdf**	**20 29 30.5**	**-0.6**
	0.4nm,0.4s,baz=60,slow=4.9,SNR=4.1						
NB200	**NORSAR Array S**	**135.15**	**344**	*e*PKPdf	**PKPdf**	**20 29 31.4**	**-0.1**
NOA	**NORSAR Array B**	**135.15**	**344**	PKP	**PKPdf**	**20 29 31.4**	**-0.1**
	0.4nm,0.7s,baz=39,slow=2.2,SNR=3.6						
KOLS	**Kolonicke sedl**	**139.55**	**325**	*e*PKP	**PKPdf**	**20 29 41.4**	**+1.4**
STHS	**Stebnicka Huta**	**139.82**	**326**	*e*PKP	**PKPdf**	**20 29 42.3**	**+1.9**
CRVS	**Cervenica-Dubn**	**140.00**	**325**	*e*PKP	**PKPdf**	**20 29 42.4**	**+1.6**
DPC	**Dobruska-Polom**	**141.66**	**331**	*e*PKP	**PKPdf**	**20 29 40.5**	**-3.3**
CONA	**Conrad Observa**	**143.52**	**328**	*e*PKPdf	**PKPdf**	**20 29 45.7**	**-1.5**
	4.9nm,1.0s						
KHC	**Kasperske Hory**	**143.78**	**331**	*e*PKP	PKPbc	20 29 45.8	+0.6
KHC	**Kasperske Hory**	**143.78**	**331**	*e*PKPdf	PKPbc	20 29 45.7	+0.6
GEC2	**GERESS Array S**	**143.93**	**331**	*e*PKPdf	PKPbc	20 29 46.3	+0.6
GERES	**GERESS Array B**	**143.93**	**331**	PKP	PKPbc	20 29 46.3	+0.6
	2.6nm,0.9s,baz=48,slow=2.0,SNR=17						
GEA0	**GERESS Array S**	**143.93**	**331**	*e*PKPpre	PKPbc	20 29 45.6	-0.1
ARSA	**Arzberg**	**144.15**	**327**	*e*PKPdf	PKPbc	20 29 46.9	+0.6
	3.0nm,0.9s						
MOA	**Molln**	**144.36**	**329**	*i* PKPdf	**PKPdf**	**20 29 48.0**	**-0.6**
	6.5nm,0.6s,SNR=6.3						
PERS	**Pernice**	**144.76**	**327**	*i* PKPbc	**PKPdf**	**20 29 48.7**	**-0.7**
SOKA	**Soboth**	**144.78**	**327**	*i* PKPdf	**PKPdf**	**20 29 48.8**	**-0.6**
	8.1nm,0.6s,SNR=8.6						
LEGS	**Legarje**	**145.11**	**326**	*i* PKPbc	**PKPdf**	**20 29 50.0**	**0.0**
OBKA	**Obir**	**145.14**	**327**	*i* PKPdf	**PKPdf**	**20 29 49.7**	**-0.4**
	12nm,1.0s						
KBA	**Koelnbreinsper**	**145.35**	**329**	*i* PKPdf	**PKPdf**	**20 29 50.4**	**-0.2**
	14nm,0.9s,SNR=8.4						
BOJS	**Bojanci**	**145.43**	**325**	*i* PKPbc	**PKPab**	**20 29 51.4**	**+0.7**
LJU	**Ljubljana**	**145.46**	**327**	*i* PKPbc	**PKPab**	**20 29 51.2**	**+0.5**
MYKA	**Terra Mystica**	**145.51**	**328**	*i* PKPab	**PKPab**	**20 29 50.8**	**-0.3**
	9.7nm,0.7s,SNR=7.1						
CWF	**Charnwood Fore**	**145.57**	**348**	*e*PKPdf	**PKPbc**	**20 29 50.7**	**-0.2**
ABTA	**Alfaltersbach**	**145.99**	**329**	*i* PKPab	**PKPbc**	**20 29 52.1**	**-0.2**
	19nm,0.8s,SNR=12						
WATA	**Walderalm**	**146.00**	**331**	*i* PKPab	**PKPab**	**20 29 52.7**	**-0.3**
	18nm,1.0s						
WTTA	**Wattenberg**	**146.03**	**331**	*i* PKPab	**PKPab**	**20 29 52.9**	**-0.2**
	13nm,1.0s						
MOTA	**Moosalm**	**146.21**	**331**	*i* PKPab	**PKPab**	**20 29 53.3**	**-0.5**
	18nm,0.9s,SNR=12						
RETA	**Reutte**	**146.26**	**332**	*i* PKPab	**PKPab**	**20 29 53.6**	**-0.2**
	4.9nm,0.6s						
FETA	**Feichten**	**146.62**	**331**	*i* PKPab	**PKPab**	**20 29 54.8**	**-0.6**
	14nm,0.9s,SNR=7.4						
DAVA	**Damuels**	**146.81**	**332**	*i* PKPab	**PKPab**	**20 29 55.3**	**-0.7**
	9.6nm,0.8s,SNR=5.4						
TUE	**Stuetta**	**147.66**	**332**	*e*PKPbc	**PKPbc**	**20 29 57.8**	**+0.5**
TIP	**Timpagrande**	**148.17**	**315**	*e*PKPbc	**PKPbc**	**20 29 59.7**	**+1.0**
KEST	**Kesra**	**154.99**	**315**	PKPbc	**PKPbc**	**20 30 15.8**	**+1.2**
	7.5nm,1.1s,baz=347,slow=5.9,SNR=3.5						
KEST	**Kesra**	**154.99**	**315**	*e*PKPbc	**PKPbc**	**20 30 15.3**	**+0.7**
ESDC	**Sonseca Array**	**158.50**	**343**	PKPab	**PKPab**	**20 30 45.0**	**0.0**
	0.5nm,0.6s,baz=12,slow=3.8,SNR=5.2						
TORD	**Torodi Ar. Bea**	**165.42**	**247**	PKP	**PKPdf**	**20 30 17.9**	**+0.1**
	0.6nm,0.8s,baz=75,slow=1.6,SNR=3.0						
TOA1	**Torodi Ar. Sit**	**165.42**	**247**	*e*PKPdf	**PKPdf**	**20 30 17.9**	**+0.1**

WEL 08 20:13:14.7±0.3, 37°.84S×176°.30E, h152km±3km, ML3.6/18, 5C-4D, Error ellipse: s-maj=3.9km s-min=3.3km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.77**	**124**	PN	Pn	20 13 38.0	+0.1
URZ				SN	Sn	20 13 55.3	-0.1
URZ				AML	AML	20 13 56.5	
RTZ	**Ruatahuna**	**0.95**	**146**	PN	Pn	20 13 39.6	+0.3
RTZ				SN	Sn	20 13

RPZ	**Rata Peaks**	**1.27**	**259**	P*	Pn	20 27 14.1	-1.7
RPZ				AML	AML	20 27 33.3	
RPZ				AML	AML	20 27 41.9	
WVZ	**Waitaha Valley**	**1.54**	**285**	PN	Pn	20 27 19.5	-0.2
WVZ				AML	AML	20 27 44.6	
THZ	**Tophouse**	**1.73**	**3**	⇑PN	Pn	20 27 20.8	-1.5
THZ				AML	AML	20 27 45.7	
THZ				AML	AML	20 27 46.9	
DSZ	**Denniston Nort**	**1.88**	**337**	PN	Pn	20 27 23.6	-0.8
DSZ				AML	AML	20 27 48.9	
DSZ				AML	AML	20 27 48.9	
DSZ				AML	AML	20 27 56.3	
DSZ				AML	AML	20 27 56.3	
BSWZ	**Blackbirch Sta**	**1.95**	**25**	PN	Pn	20 27 24.0	-1.3
LBZ	**Lake Benmore**	**2.07**	**243**	PN	Pn	20 27 26.0	-0.9
LBZ				AML	AML	20 28 04.9	
LBZ				AML	AML	20 35 13.7	
FOZ	**Fox Glacier**	**2.15**	**268**	PN	Pn	20 27 28.4	+0.4
FOZ				AML	AML	20 27 55.8	
FOZ				AML	AML	20 27 56.4	
ODZ	**Otahua Downs**	**2.18**	**224**	⇑PN	Pn	20 27 27.1	-1.3
ODZ				AML	AML	20 28 01.3	
ODZ				AML	AML	20 28 06.3	
ODZ				AML	AML	20 28 09.4	
ODZ				AML	AML	20 28 11.3	
TUWZ	**Tuamarina**	**2.23**	**23**	PN	Pn	20 27 26.9	-2.3
NNZ	**Nelson**	**2.32**	**11**	PN	Pn	20 27 29.3	-0.9
NNZ				AML	AML	20 29 59.8	
TCW	**Tory Channel**	**2.54**	**27**	PN	Pn	20 27 31.5	-1.8
QRZ	**Quartz Range**	**2.67**	**356**	PN	Pn	20 27 34.9	-0.2
QRZ				AML	AML	20 28 06.1	
QRZ				AML	AML	20 28 06.1	
QRZ				AML	AML	20 28 09.7	
QRZ				AML	AML	20 28 29.7	
CAW	**Cannon Point**	**2.93**	**36**	PN	Pn	20 27 36.7	-2.0
JCZ	**Jackson Bay**	**2.94**	**257**	*e*PN	Pn	20 27 38.7	-0.3
JCZ				AML	AML	20 28 13.3	
JCZ				AML	AML	20 28 34.3	
WKZ	**Wanaka**	**3.01**	**242**	PN	Pn	20 27 38.9	-1.0
WKZ				AML	AML	20 30 11.5	
WKZ				AML	AML	20 30 11.5	
EAZ	**Earnscleugh**	**3.03**	**234**	⇓PN	Pn	20 27 38.9	-1.2
EAZ				AML	AML	20 28 29.5	
EAZ				AML	AML	20 28 30.5	
TUZ	**Tuapeka**	**3.33**	**221**	⇓PN	Pn	20 27 42.9	-1.3
TUZ				AML	AML	20 28 48.0	
TUZ				AML	AML	20 28 48.1	
TUZ				AML	AML	20 28 53.1	
MRZ	**Mangatainoka R**	**3.52**	**37**	PN	Pn	20 27 44.1	-2.7
MRZ				AML	AML	20 28 11.9	
MRZ				AML	AML	20 28 54.8	
BFZ	**Birch Farm**	**3.82**	**44**	*e*PN	Pn	20 27 48.4	-2.6
MLZ	**Mavora Lakes**	**3.82**	**239**	PN	Pn	20 27 49.8	-1.3
SYZ	**Scrubby Hill**	**3.99**	**219**	PN	Pn	20 27 52.5	-0.7

*IDC **08** 20:29:04.7±6.0,28.°91S×175.°25W,h0km,mb3.7/3, mb1 4.1/6,mb1mx3.8/26,mbtmp4.0/6,ML4.0/3,Error ellipse: s-maj=97.9km s-min=48.6km az=80.0*
*NEIC **08** 20:29:11.4±0.9,29.°19S×175.°91W,h10km,mb5.0/12, Error ellipse: s-maj=18.3km s-min=10.3km az=94.0*
*ISCJB **08** 20:29:13.3±0.8,29.°31S±0.°07×175.°97W±0.°09,h33km, mb4.5/11,Error ellipse: s-maj=12.2km s-min=10.3km az=152.0*

ISC 08 20:29:15.8±1.0,**29.°28S**±0.°10×**176.°0W**±0.°1,**h35**km,**n22,** σ1^{s}**41**/24,**mb4.7**/11,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.65**	**270**	Pn	**Pn**	**20 29 42.9**	**+0.7**
	77nm,0.3s,baz=96,slow=18,SNR=3.0						
RAO				Sn	**Sn**	**20 30 01.7**	**-0.5**
	145nm,0.3s,baz=72,slow=20,SNR=2.5						
URZ	**Urewera**	**10.62**	**211**	Pn	**Pn**	**20 31 45.1**	**-0.2**
	0.4nm,0.3s,baz=90,slow=19,SNR=2.8						
URZ				Sn	**Sn**	**20 33 40.3**	**-2.7**
	0.3nm,0.3s,baz=61,slow=19,SNR=3.2						
BKZ	**Black Stump Fm**	**11.64**	**210**	*e*Pn	**Pn**	**20 31 58.0**	**-1.3**
BFZ	**Birch Farm**	**13.01**	**207**	*e*Pn	**Pn**	**20 32 19.6**	**+1.5**
THZ	**Tophouse**	**15.35**	**213**	*e*Pn	**Pn**	**20 32 49.5**	**-0.4**
	189nm,1.6s						
KHZ	**Kahutara**	**15.58**	**210**	*e*Pn	**Pn**	**20 32 52.2**	**-0.5**
	245nm,1.9s						
OXZ	**Oxford**	**16.97**	**211**	*e*Pn	**Pn**	**20 33 07.2**	**-3.2**
	176nm,1.9s						
MQZ	**McQueen's Vall**	**17.01**	**209**	*e*Pn	**Pn**	**20 33 08.9**	**-1.8**
	136nm,1.7s						
RPZ	**Rata Peaks**	**17.73**	**212**	P	**P**	**20 33 22.2**	**+1.8**
	0.6nm,0.3s,baz=69,slow=14,SNR=3.6						
ODZ	**Otahua Downs**	**18.94**	**210**	*e*P	**P**	**20 33 33.7**	**0.0**
	168nm,1.8s						
PYZ	**Puysegur Point**	**21.63**	**214**	*e*P	**P**	**20 34 04.2**	**+1.3**
	118nm,1.0s						
STKA	**Stephens Creek**	**36.41**	**255**	P	**P**	**20 36 18.6**	**+1.6**
	2.0nm,0.9s,baz=98,slow=14,SNR=3.6						
STKA	**Stephens Creek**	**36.41**	**255**	*e*P	**P**	**20 36 18.8**	**+1.8**
	2.4nm,1.3s						
PATS	**Pohnpei**	**43.57**	**321**	*e*P	**P**	**20 37 15.3**	**-1.2**
	232nm,1.9s						
AS31	**Alice Springs**	**44.89**	**265**	*e*P	**P**	**20 37 27.3**	**+0.1**
	1.0nm,1.0s						
ASAR	**Alice Springs**	**44.89**	**265**	P	**P**	**20 37 26.9**	**-0.4**
	0.4nm,0.7s,baz=104,slow=7.3,SNR=7.5						
WR1	**Warramunga Arr**	**45.78**	**270**	*e*P	**P**	**20 37 33.8**	**-0.5**
	14nm,1.4s						
WRA	**Warramunga Arr**	**45.78**	**270**	P	**P**	**20 37 33.8**	**-0.5**
	0.4nm,0.5s,baz=109,slow=6.2,SNR=6.7						
VNDA	**Vanda**	**49.39**	**186**	*e*P	**P**	**20 38 02.1**	**+0.6**
	5.8nm,1.8s						
CASY	**Casey**	**56.92**	**208**	*e*P	**P**	**20 38 57.9**	**+0.8**
	18nm,1.7s						
CISI	**Cisompet, Garu**	**74.28**	**270**	*e*P	**P**	**20 40 50.0**	**0.0**
	48nm,1.1s						
SNCC	**San Nicolas Is**	**82.04**	**45**	*e*P	**P**	**20 41 31.4**	**-1.1**
	40nm,0.8s						

*CSEM **08** 20:35:56.9,35.°08N×28.°89E,h17km,ML1.9/3*
*ATH **08** 20:35:56.9,35.°08N×28.°89E,h17km±7km,ML1.9/2,Error ellipse: s-maj=7.5km s-min=1.4km az=350.0*
*DDA **08** 20:36:10.1,34.°30N×29.°06E,h154km,Md3.3*

ISC 08 20:35:55.5±1.9,**35.°01N**±0.°08×**28.°97E**±0.°04,**h15**km±12km, **n14,**σ1^{s}**51**/26,**Eastern Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSL	**Kastellorizon**	**1.24**	**23**	P	**Pb**	**20 36 19.6**	**+1.0**
KSL				S	**Sg**	**20 36 36.5**	**+0.9**
KSL				AML	AML	20 36 48.5	
	comp=N,67μm,0.9s						
KSL				AML	AML	20 36 56.8	
	comp=E,137μm,1.0s						
AKAS	**Kas**	**1.32**	**23**	*i* P	**Pb**	**20 36 21.2**	**+1.0**
AKAS				*i* S	**Sg**	**20 36 40.0**	**+1.7**
ARG	**Arkhangelos**	**1.39**	**330**	P	**Pg**	**20 36 21.9**	**-0.4**
ARG				S	**Sg**	**20 36 39.0**	**-1.3**
KARP	**Karpathos**	**1.58**	**290**	P	**Pg**	**20 36 25.5**	**-0.3**
KARP				S	**Sg**	**20 36 45.7**	**-0.7**
KARP	**Karpathos**	**1.58**	**290**	P	**Pg**	**20 36 25.5**	**-0.3**
KARP				S	**Sg**	**20 36 45.7**	**-0.7**
KARP				AML	AML	20 36 48.4	
	comp=N,86μm,0.3s						
KARP				AML	AML	20 36 51.0	
	comp=E,84μm,0.3s						
TURN	**Turunc**	**1.88**	**351**	*i* P	**Pb**	**20 36 29.9**	**+0.3**
TURN				*i* S	**Sg**	**20 36 55.6**	**-0.6**
GOLH	**Golhisar**	**2.27**	**12**	*i* P	**Pb**	**20 36 35.9**	**-0.4**
GOLH				*i* S	**Sb**	**20 37 05.2**	**+0.9**
BDRM	**Kayabasi**	**2.40**	**329**	*i* P	**Pn**	**20 36 35.5**	**+1.2**
BDRM				*i* S	**Sb**	**20 37 04.6**	**-3.1**
LAST	**Lasithi**	**2.87**	**274**	P	**Pn**	**20 36 42.8**	**+2.0**
LAST	**Lasithi**	**2.87**	**274**	P	**Pn**	**20 36 42.8**	**+2.0**
GAZI	**Gazipasa**	**2.98**	**65**	*i* P	**Pn**	**20 36 40.8**	**-1.5**
GAZI				*i* S	**Sn**	**20 37 14.2**	**-3.6**
ERMK	**Ermenek**	**3.59**	**62**	*i* P	**Pn**	**20 36 52.2**	**+1.3**
ERMK				*i* S	**Sn**	**20 37 34.0**	**+0.9**
KDHN	**Kadinhani**	**4.32**	**35**	*i* P	**Pn**	**20 37 02.1**	**+1.4**
KDHN				*i* S	**Sn**	**20 37 51.5**	**+0.7**
KERG	**Konya-Eregli**	**4.81**	**59**	*i* P	**Pn**	**20 37 07.1**	**-0.4**
KERG				*i* S	**Sn**	**20 38 02.7**	**-0.2**

*IDC **08** 20:36:41.5±3.1,29.°37S×175.°75W,h0km,mb3.8/3, mb1 4.1/4,mb1mx3.8/31,mbtmp4.0/4,ML3.5/1,MS3.1/1, Ms1 3.1/1,ms1mx2.5/32,Error ellipse: s-maj=57.7km s-min=52.2km az=155.0*
*NEIC **08** 20:36:41.2±0.6,29.°49S×175.°73W,h10km,mb5.0/16, Error ellipse: s-maj=16.4km s-min=10.8km az=130.0*
*ISCJB **08** 20:36:42.7±0.5,29.°66S±0.°06×175.°73W±0.°07,h33km, mb4.7/15,Error ellipse: s-maj=9.7km s-min=7.2km az=44.6*

ISC 08 20:36:44.9±0.7,**29.°57S**±0.°09×**175.°76W**±0.°08,**h35**km,**n29,** σ1^{s}**68**/29,**mb4.9**/15,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.91**	**279**	Pn	**Pn**	**20 37 15.2**	**+0.3**
	177nm,0.3s,baz=119,slow=19,SNR=5.0						
RAO				Sn	**Sn**	**20 37 37.2**	**-0.6**
	264nm,0.3s,baz=90,slow=20,SNR=3.8						
URZ	**Urewera**	**10.49**	**212**	Pn	**Pn**	**20 39 13.6**	**+0.8**
	0.4nm,0.3s,baz=221,slow=8.5,SNR=5.0						
URZ				Sn	**Sn**	**20 41 08.5**	**-0.6**
	0.7nm,0.3s,baz=145,slow=17,SNR=5.7						
OUZ	**Omahuta**	**10.61**	**235**	*e*Pn	**Pn**	**20 39 14.5**	**+0.1**
THZ	**Tophouse**	**15.24**	**214**	*e*Pn	**Pn**	**20 40 19.4**	**+1.9**
	182nm,1.7s						
KHZ	**Kahutara**	**15.45**	**211**	*e*Pn	**Pn**	**20 40 19.4**	**-0.8**
	78nm,1.3s						
MQZ	**McQueen's Vall**	**16.87**	**210**	*e*Pn	**Pn**	**20 40 37.1**	**-1.1**
	117nm,1.6s						
DZM	**Mont Dzumac**	**17.67**	**291**	LR	LR	20 45 58.9	
	comp=Z,56nm,20.0s,baz=54,slow=32						
DZM	**Mont Dzumac**	**17.67**	**291**	*e*Pn	**Pn**	**20 40 44.8**	**-3.5**
	66nm,1.9s						
WKZ	**Wanaka**	**19.42**	**214**	*e*P	**P**	**20 41 06.8**	**-1.2**
	215nm,1.7s						
MLZ	**Mavora Lakes**	**20.25**	**214**	*e*P	Pn	20 41 19.2	0.0
STKA	**Stephens Creek**	**36.56**	**255**	P	**P**	**20 43 51.4**	**+3.9**
	3.0nm,1.1s,baz=97,slow=11,SNR=4.0						
BBOO	**Buckleboo**	**41.07**	**253**	*e*P	**P**	**20 44 28.1**	**+2.9**
	52nm,1.8s						
PATS	**Pohnpei**	**43.95**	**321**	*e*P	**P**	**20 44 48.8**	**+0.1**
	209nm,1.9s						
AS01	**Alice Springs**	**45.07**	**265**	*e*P	**P**	**20 44 57.7**	**0.0**
AS31	**Alice Springs**	**45.11**	**265**	*e*P	**P**	**20 44 58.5**	**+0.5**
	1.2nm,1.0s						
ASAR	**Alice Springs**	**45.11**	**265**	P	**P**	**20 44 59.4**	**+1.4**
	0.4nm,0.5s,baz=97,slow=6.4,SNR=14						
WB2	**Warramunga Arr**	**46.02**	**270**	*e*P	**P**	**20 45 02.8**	**-2.4**
WRAB	**Tennant Creek**	**46.02**	**270**	*e*P	**P**	**20 45 03.1**	**-2.2**
	14nm,1.0s						
WR1	**Warramunga Arr**	**46.02**	**270**	*e*P	**P**	**20 45 06.3**	**+1.1**
	35nm,1.8s						
WRA	**Warramunga Arr**	**46.03**	**270**	P	**P**	**20 45 06.3**	**+1.1**
	1.0nm,0.9s,baz=110,slow=7.7,SNR=10						
HPAH	**Hawaii Prepara**	**52.97**	**24**	*e*P	**P**	**20 45 59.2**	**+1.1**
	215nm,1.4s						
KSM	**Kuching**	**76.79**	**279**	*e*P	**P**	**20 48 32.1**	**-1.3**
	6.7nm,1.2s						
CHRN	**Cochrane**	**77.04**	**137**	*e*P	**P**	**20 48 32.3**	**-2.0**
	11nm,0.5s						
SNCC	**San Nicolas Is**	**82.08**	**45**	*e*P	**P**	**20 49 00.2**	**-1.5**
	74nm,1.1s						
PAGB	**Antelope Grade**	**83.34**	**42**	*e*P	**P**	**20 49 08.6**	**+0.4**
	9.9nm,1.2s						
ISA	**Isabella, Lake**	**84.35**	**44**	*e*P	**P**	**20 49 12.4**	**-1.1**
	26nm,1.9s						
U15A	**North Rim**	**88.65**	**46**	*e*P	**P**	**20 49 35.1**	**+0.3**
	3.0nm,0.8s						
OBSR	**Observation Ro**	**90.33**	**34**	*e*P	**P**	**20 49 42.6**	**+0.3**
FINES	**FINESS Array B**	**145.00**	**342**	PKP	**PKPdf**	**20 56 19.6**	**+1.9**
	0.4nm,0.6s,baz=90,slow=5.7,SNR=4.7						

*NIED **08** 20:49:00,39.°10N×142.°40E,h23km,Mw3.6 Best double couple: M0 2.94000×10^{14} NP1:φs 296.00000°,δ 28.00000°, λ -122.00000°. NP2:φs 151.00000°,δ 67.00000°, λ -74.00000°.*
*JMA **08** 20:49:02.8±0.1,39.°07N×142.°40E,h28km±1km,M3.7*
*IDC **08** 20:49:05.0±2.4,38.°97N×142.°35E,h44km±24km,mb3.4/7, mb1 3.6/10,mb1mx3.3/53,mbtmp3.7/10,ML3.6/2,MS2.5/2, Ms1 2.5/2,ms1mx2.2/36,Error ellipse: s-maj=30.6km s-min=15.8km az=97.0*

ISC 08 20:49:01.0±1.8,**39.°03N**±0.°04×**142.°43E**±0.°07,**h13**km±10km, **n28,**σ1^{s}**10**/29,**mb3.7**/7,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.59**	**276**	P	**Pn**	**20 49 14.1**	**-1.1**
OFUJ				S	**Sb**	**20 49 22.0**	**+0.4**
MIYJ	**Miyakonagasawa**	**0.73**	**320**	P	**Pg**	**20 49 15.4**	**+0.3**
MIYJ				S	**Sg**	**20 49 24.4**	**-0.2**
JMK	**Ichinoseki**	**0.95**	**266**	P	**Pn**	**20 49 19.5**	**-0.5**
JMK				S	**Sg**	**20 49 31.4**	**-0.2**
JOM	**Ohasama**	**0.99**	**297**	P	**Pb**	**20 49 20.1**	**+0.1**
JOM				S	**Sb**	**20 49 32.8**	**-0.2**
JTH	**Tanohata**	**1.01**	**335**	P	**Pb**	**20 49 20.0**	**-0.4**
JIO	**Ouri**	**1.02**	**236**	P	**Pg**	**20 49 20.2**	**-0.4**
JKZ	**Kuzumaki**	**1.28**	**319**	P	**Pn**	**20 49 24.7**	**0.0**
JKZ				S	**Sb**	**20 49 40.4**	**-1.1**
JRG	**Rokugo**	**1.44**	**285**	P	**Pb**	**20 49 27.8**	**0.0**
JRG				S	**Sb**	**20 49 46.7**	**+0.6**
JANG	**Nango**	**1.52**	**333**	P	**Pn**	**20 49 28.4**	**+0.5**
JANG				S	**Sn**	**20 49 47.7**	**+0.1**
MJAR	**Matsushiro Arr**	**4.16**	**235**	P	**Pn**	**20 50 06.0**	**+1.8**
	2.0nm,0.3s,baz=43,slow=10,SNR=24						
MAT	**Matsushiro**	**4.16**	**235**	P	**Pn**	**20 50 07.0**	**+2.7**
MAT				S	**Sn**	**20 50 54.9**	**+2.1**
ASAJ	**Asahikawa**	**5.09**	**1**	P	**Pn**	**20 50 18.1**	**+1.1**
	baz=209,slow=8.4						
JHJ	**Hachijo jima 2**	**6.27**	**201**	P	**Pn**	**20 50 33.3**	**+0.1**
	8.2nm,0.3s,baz=99,slow=22,SNR=5.8						
JHJ				S	**Sn**	**20 51 42.5**	**-2.3**
	4.0nm,0.3s,baz=66,slow=19,SNR=4.4						
JNU	**Nakatsue**	**11.04**	**241**	LR	LR	20 56 17.1	
	comp=Z,30nm,19.4s,baz=306,slow=39						
KSRS	**Korea Array**	**11.52**	**267**	LR	LR	20 56 08.9	
	comp=Z,16nm,20.2s,baz=350,slow=37						
SEY	**Seymchan**	**24.69**	**11**	P	**P**	**20 54 22.9**	**+1.5**
	0.9nm,0.5s,baz=0.4,slow=17,SNR=4.9						
H11N2	**WAKE ISLAND Hy**	**28.56**	**125**	T	T	21 25 17.6	
	baz=317,slow=75,SNR=32						
H11N1	**WAKE ISLAND Hy**	**28.57**	**125**	T	T	21 25 22.3	
	baz=317,slow=75,SNR=31						
H11N3	**WAKE ISLAND Hy**	**28.58**	**125**	T	T	21 25 19.0	
	baz=317,slow=75,SNR=34						
H11S1	**WAKE ISLAND Hy**	**29.34**	**127**	T	T	21 26 22.2	
	baz=318,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy**	**29.35**	**127**	T	T	21 26 22.8	
	baz=318,slow=76,SNR=20						
H11S2	**WAKE ISLAND Hy**	**29.36**	**127**	T	T	21 26 22.4	
	baz=318,slow=76,SNR=11						
ZALV	**Zalesovo Beam**	**41.20**	**311**	P	**P**	**20 56 44.5**	**-0.6**
	0.5nm,0.4s,baz=82,slow=11,SNR=2.5						
MKAR	**Makanchi Array**	**43.77**	**301**	P	**P**	**20 57 06.2**	**0.0**
	0.6nm,0.7s,baz=86,slow=9.1,SNR=5.6						
ILAR	**Eielson Array**	**47.39**	**33**	P	**P**	**20 57 35.3**	**+0.7**
	0.6nm,0.7s,baz=261,slow=6.7,SNR=6.1						
WRA	**Warramunga Arr**	**59.14**	**189**	P	**P**	**20 59 00.5**	**-1.0**
	0.6nm,0.4s,baz=6.7,slow=7.0,SNR=20						
ASAR	**Alice Springs**	**62.87**	**189**	P	**P**	**20 59 26.1**	**-0.7**
	0.3nm,0.7s,baz=8.9,slow=9.6,SNR=3.9						
AKASG	**Malin Array Be**	**73.22**	**322**	P	**P**	**21 00 30.7**	**-0.8**
	0.6nm,0.4s,baz=45,slow=6.8,SNR=4.7						

MEX 08 20:51:18.7±0.5,**15.°35N×93.°10W,h89**km±15km,**MD3.7, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.31**	**45**	*i* P	Pn	20 51 41.0	-1.2
CCIG				*e*S	Sn	20 51 57.9	-1.9
TGIG		**1.42**	**359**	*i* P	Pn	20 51 42.3	-1.2
TGIG				*i* S	Sn	20 52 00.5	-1.6

*ISCJB **08** 20:54:04.8±0.7,17.°91S±0.°04×178.°58W±0.°03, h573km±8km,mb4.7/195,Error ellipse: s-maj=7.1km s-min=3.8km az=157.2*
*MOS **08** 20:54:04.2±0.9,17.°85S×178.°54W,h562km,mb4.6/44, Error ellipse: s-maj=10.4km s-min=7.8km az=136.2*
*IDC **08** 20:54:05.1±1.2,17.°97S×178.°42W,h568km±13km, mb4.0/26,mb1 4.1/28,mb1mx3.9/44,mbtmp4.8/28,Error ellipse: s-maj=12.0km s-min=9.8km az=139.0*
*NEIC **08** 20:54:06.8±0.4,17.°92S×178.°57W,h586km±5km, mb4.7/160,Error ellipse: s-maj=5.2km s-min=3.1km az=148.0*

ISC 08 20:54:06.3±0.6,**17.°97S**±0.°06×**178.°42W**±0.°05, **h587**km±6km,**n519,**σ1^{s}**28**/550,**mb4.7**/195,**19C-5D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MSVF	**Nonsavu**	**3.37**	**273**	*c* *i* P	**P**	**20 55 27.4**	**+0.7**
MSVF	**Nonsavu**	**3.37**	**273**	*e*P	**P**	**20 55 27.8**	**+1.1**
AFI	**Afiamalu**	**7.56**	**59**	P	**P**	**20 55 58.7**	**-2.4**
	13nm,0.3s,baz=126,slow=15,SNR=5.0						
AFI				S	**S**	**20 57 29.2**	**-5.9**
	2.0nm,0.3s,baz=240,slow=20,SNR=2.0						
AFI	**Afiamalu**	**7.56**	**59**	*e*P	**P**	**20 56 00.8**	**-0.4**
AFI				*e*S	**S**	**20 57 29.2**	**-5.9**
NIUE	**Niue**	**8.13**	**99**	P	**P**	**20 56 06.7**	**+0.2**
	baz=8.1,SNR=7.7						
DZM	**Mont Dzumac**	**14.80**	**251**	P	**P**	**20 57 12.4**	**-0.7**
	2.1nm,0.3s,baz=83,slow=16,SNR=24						
DZM				S	**S**	**20 59 46.4**	**+0.4**
	0.2nm,0.3s,baz=216,slow=19,SNR=2.6						
OUZ	**Omahuta**	**18.59**	**201**	*e*P	**P**	**20 57 50.0**	**+2.2**
	137nm,1.7s						
URZ	**Urewera**	**20.59**	**190**	P	**P**	**20 58 04.0**	**-1.8**
	13nm,0.8s,baz=143,slow=19,SNR=3.7						
URZ				S	**S**	**21 01 12.5**	**-6.6**
	10nm,0.8s,baz=229,slow=20,SNR=2.1						
HNR	**Honiara**	**22.64**	**289**	P	**P**	**20 58 24.0**	**-0.5**
	33nm,0.4s,baz=194,slow=4.2,SNR=3.4						
HNR	**Honiara**	**22.64**	**289**	P	**P**	**20 58 24.0**	**-0.5**
HNR				pmax	pmax		
	comp=Z,33nm,0.4s						
SNZO	**South Karori**	**24.00**	**193**	*e*P	**P**	**20 58 36.9**	**+0.7**
	comp=Z,129nm,1.3s						
THZ	**Tophouse**	**24.85**	**196**	*e*P	**P**	**20 58 44.1**	**+0.3**
	comp=Z,175nm,1.9s						
KHZ	**Kahutara**	**25.32**	**194**	*e*P	**P**	**20 58 47.5**	**-0.2**
	comp=Z,112nm,1.4s						
LTZ	**Lake Taylor**	**25.97**	**196**	*e*P	**P**	**20 58 53.2**	**-0.4**
	comp=Z,167nm,1.8s						
LBZ	**Lake Benmore**	**28.03**	**198**	*e*P	**P**	**20 59 10.0**	**-1.5**
	comp=Z,231nm,1.9s						
ODZ	**Otahua Downs**	**28.50**	**196**	*e*P	**P**	**20 59 15.9**	**+0.3**
	comp=Z,152nm,1.6s						
XMAS	**Kiritimati**	**28.68**	**48**	*e*P	**P**	**20 59 17.7**	**+0.1**
	comp=Z,162nm,1.2s						
WKZ	**Wanaka**	**28.77**	**199**	*e*P	**P**	**20 59 17.4**	**-0.6**
	comp=Z,228nm,1.5s						
EIDS	**Eidsvold**	**29.24**	**250**	P	**P**	**20 59 21.8**	**-0.5**
	baz=29,SNR=5.6						
EIDS	**Eidsvold**	**29.24**	**250**	*e*P	**P**	**20 59 21.7**	**-0.5**
	comp=Z,42nm,0.8s						
ARMA	**Armidale**	**29.90**	**240**	P	**P**	**20 59 28.7**	**+0.6**
	baz=30,SNR=15						
ARMA	**Armidale**	**29.90**	**240**	*e*P	**P**	**20 59 28.6**	**+0.6**
	comp=Z,32nm,0.8s						
MGCD	**Mangrove Creek**	**31.25**	**235**	P	**P**	**20 59 40.4**	**+1.0**
	baz=31,SNR=5.0						
RMQ	**Roma**	**31.47**	**249**	P	**P**	**20 59 42.1**	**+0.7**
	baz=32,SNR=26						
RABL	**Rabaul**	**31.88**	**292**	*e*P	**P**	**20 59 43.2**	**-1.8**
	comp=Z,44nm,0.6s						
CNB	**Canberra Magne**	**33.38**	**232**	P	**P**	**20 59 58.4**	**+0.9**
	baz=34,SNR=36						
CTA	**Charters Tower**	**33.43**	**261**	P	**P**	**20 59 57.8**	**-0.2**
	comp=Z,41nm,0.7s,baz=96,slow=10,SNR=48						
CTA				PcP	**PcP**	**21 02 20.8**	**-1.0**
	comp=Z,4.2nm,0.8s,baz=60,slow=8.1,SNR=3.2						
CTAO	**Charters Tower**	**33.43**	**261**	*e*P	**P**	**20 59 57.8**	**-0.2**
CTAO				pmax	pmax		
	comp=Z,50nm,0.8s						
CTAO	**Charters Tower**	**33.43**	**261**	*e*P	**P**	**20 59 57.8**	**-0.2**
	comp=Z,50nm,0.8s						
CAN	**Canberra**	**33.66**	**233**	*e*P	**P**	**21 00 00.1**	**+0.3**
CAN				pmax	pmax		
	comp=Z,36nm,0.9s						
CAN	**Canberra**	**33.66**	**233**	*e*P	**P**	**21 00 00.1**	**+0.3**
	comp=Z,36nm,0.9s						
PATS	**Pohnpei**	**33.69**	**315**	*e*P	**P**	**20 59 59.9**	**-0.3**
	comp=Z,255nm,2.0s						
PMG	**Port Moresby**	**34.46**	**280**	P	**P**	**21 00 07.1**	**+0.5**
	comp=Z,143nm,0.8s,baz=87,slow=4.8,SNR=27						
PMG	**Port Moresby**	**34.46**	**280**	*e*P	**P**	**21 00 07.2**	**+0.5**
PMG				pmax	pmax		
	comp=Z,174nm,0.9s						
PMG	**Port Moresby**	**34.46**	**280**	*e*P	**P**	**21 00 07.2**	**+0.5**
	comp=Z,174nm,0.9s						
CMSA	**Cobar Meteorol**	**35.11**	**240**	P	**P**	**21 00 12.3**	**+0.4**
	baz=35,SNR=52						
MTSU	**Mount Surprise**	**35.39**	**264**	P	**P**	**21 00 14.1**	**-0.3**
	baz=35,SNR=21						
QLP	**Quilpie**	**35.50**	**249**	P	**P**	**21 00 15.1**	**-0.1**
	baz=36,SNR=47						
JOHN	**Johnston Islan**	**35.58**	**15**	*e*P	**P**	**21 00 15.3**	**-0.5**
	comp=Z,156nm,0.8s						
COEN	**Coen**	**37.09**	**270**	P	**P**	**21 00

comp=Z,4.9nm,1.1s,baz=89,slow=15,SNR=12
KDU **Kakadu** 47.55 269 P P 21 01 50.0 -0.1
baz=48,SNR=8.4
GUMO **Guam** 47.90 308 P P 21 01 52.3 -0.4
comp=Z,72nm,0.6s,baz=156,slow=7.6,SNR=7.2
MTN **Manton Dam** 48.79 268 P P 21 01 58.9 -0.4
baz=49,SNR=5.5
MTN **Manton Dam** 48.79 268 eP P 21 01 58.0 -1.3
comp=Z,56nm,0.8s
WRKA **Warakurna** 49.81 252 P P 21 02 06.7 -0.1
baz=50,SNR=86
FORT **Forrest** 49.97 245 P P 21 02 07.1 -0.7
baz=50,SNR=44
FORT **Forrest** 49.97 245 eP P 21 02 06.8 -1.0
comp=Z,665nm,0.6s
SIJI **Sorong** 52.24 283 P P 21 02 24.4 0.0
comp=Z,93nm,0.4s,baz=359,slow=12,SNR=2.9
PALU **Palau** 52.87 294 P P 21 02 29.7 +0.8
baz=53,SNR=5.2
FITZ **Fitzroy Crossi** 53.01 261 P P 21 02 29.8 0.0
comp=Z,8.9nm,0.6s,baz=78,slow=3.7,SNR=20
FITZ **Fitzroy Crossi** 53.01 261 P P 21 02 30.0 +0.2
baz=53,SNR=12
FITZ **Fitzroy Crossi** 53.01 261 eP P 21 02 29.5 -0.3
comp=Z,12nm,0.8s
KMBL **Kambalda** 55.27 244 P P 21 02 44.8 -0.7
baz=55,SNR=7.8
SOEI **Soe** 56.06 270 eP P 21 02 52.3 +1.0
comp=Z,119nm,0.8s
MBWA **Marble Bar** 58.05 256 eP P 21 03 03.9 -0.8
comp=Z,107nm,1.5s
MMRI **Maumere** 58.29 271 eP P 21 03 05.3 -1.0
comp=Z,40nm,0.6s
MEEK **Meekatharra** 58.40 249 P P 21 03 06.3 -0.7
baz=58,SNR=8.9
KLBR **Kellerberrin** 58.79 244 P P 21 03 09.1 -0.4
baz=59,SNR=28
NWAO **Narrogin (SRO)** 59.17 242 P P 21 03 11.9 -0.1
baz=59,SNR=11
NWAO P P 21 03 11.9 -0.1
baz=59,SNR=11
NWAO **Narrogin (SRO)** 59.17 242 eP P 21 03 11.4 -0.6
NWAO pmax pmax
comp=Z,17nm,0.8s
NWAO **Narrogin (SRO)** 59.17 242 eP P 21 03 11.4 -0.6
comp=Z,17nm,0.8s
RKGY **Rocky Gully** 59.33 240 P P 21 03 13.4 +0.4
baz=59,SNR=5.4
BLDU **Ballidu** 59.75 245 P P 21 03 15.3 -0.6
baz=60,SNR=25
LUWI **Luwuk** 60.10 279 eP P 21 03 19.1 +0.6
comp=Z,141nm,1.2s
SBA **Scott Base** 60.36 184 eP P 21 03 21.2 +2.1
SBA pmax pmax
comp=Z,5.0nm,0.9s
SBA **Scott Base** 60.36 184 eP P 21 03 21.2 +2.1
comp=Z,4.8nm,0.9s
VNDA **Vanda** 60.38 185 P P 21 03 20.6 +1.4
comp=Z,1.4nm,0.8s,baz=5.6,slow=10.0,SNR=8.8
VNDA **Vanda** 60.38 185 eP P 21 03 20.8 +1.6
VNDA pmax pmax
comp=Z,15nm,2.0s
VNDA **Vanda** 60.38 185 eP P 21 03 20.8 +1.6
comp=Z,15nm,2.0s
MORW **Morawa** 60.45 246 P P 21 03 19.9 -0.6
baz=60,SNR=13
KAPI **Kappang** 61.69 274 P P 21 03 28.7 -0.2
comp=Z,14nm,0.8s,baz=113,slow=10.0,SNR=4.6
KAPI **Kappang** 61.69 274 eP P 21 03 28.8 -0.1
comp=Z,34nm,1.2s
GIRL **Giralia** 62.87 253 P P 21 03 36.6 +0.3
baz=63,SNR=10
JAGI **Jajag, Banyuwa** 66.03 269 eP P 21 03 55.1 -1.3
comp=Z,71nm,0.8s
CASY **Casey** 66.08 205 eP P 21 03 56.1 +0.3
comp=Z,13nm,1.0s
MYLDM **Lahad Datu** 66.31 284 eP P 21 03 59.9 +1.7
comp=Z,34nm,1.2s
MJAR **Matsushiro Arr** 67.95 323 P P 21 04 07.3 -0.4
comp=Z,5.8nm,0.7s,baz=162,slow=5.9,SNR=15
MAJO **Matsushiro** 67.95 323 eP P 21 04 07.8 +0.1
MAJO pmax pmax
comp=Z,47nm,1.0s
MAJO **Matsushiro** 67.95 323 eP P 21 04 07.3 -0.4
comp=Z,8.0nm,1.0s
MAT **Matsushiro** 67.95 323 P P 21 04 07.5 -0.2
MJB9 **Matsu-Tunnel** 67.95 323 eP P 21 04 06.5 -1.2
comp=Z,2.1nm,1.0s
KKM **Kota Kinabalu** 68.75 284 eP P 21 04 13.0 -0.1
comp=Z,18nm,0.7s
UGM **Wanagama** 69.63 268 eP P 21 04 18.2 -0.2
comp=Z,355nm,1.6s
JNU **Nakatsue** 70.17 316 P P 21 04 20.6 -0.5
comp=Z,4.5nm,0.8s,baz=39,slow=3.0,SNR=3.7
JNU **Nakatsue** 70.17 316 eP P 21 04 20.3 -0.8
comp=Z,42nm,1.6s
SMY **Shemya** 70.70 355 eP P 21 04 23.8 +0.2
SMY pmax pmax
comp=Z,212nm,1.3s
SMY **Shemya** 70.70 355 eP P 21 04 23.8 +0.2
comp=Z,212nm,1.3s
YOJ **Yonaguni jima** 70.97 305 eP P 21 04 26.3 +0.4
YOJ pmax pmax
comp=Z,223nm,1.4s
YOJ **Yonaguni jima** 70.97 305 eP P 21 04 26.3 +0.4
comp=Z,223nm,1.4s
NIKH **Nikolski High** 71.13 6 eP P 21 04 25.4 -0.8
comp=Z,100nm,1.1s
SBUM **Sibu** 71.20 279 eP P 21 04 27.9 +0.3
comp=Z,12nm,0.9s
YULB **Yu-li** 71.79 303 eP P 21 04 29.7 -1.1
comp=Z,12nm,0.5s
NACB **Ninganchiao** 71.94 304 eP P 21 04 30.7 -0.9
comp=Z,1µm,0.3s
SSLB **Suanglung** 72.26 303 eP P 21 04 32.1 -1.4
comp=Z,39nm,0.5s
CISI **Cisompet, Garu** 72.31 268 eP P 21 04 32.5 -1.6
comp=Z,42nm,0.7s
YHNB **Yeheng** 72.36 304 eP P 21 04 33.6 -0.5
comp=Z,121nm,0.9s
KSM **Kuching** 72.68 277 eP P 21 04 36.5 +0.4
comp=Z,66nm,0.8s
YSS **Yuzh-Sakhalins** 73.46 333 eP P 21 04 39.8 0.0
YSS pmax pmax
comp=Z,5.0nm,1.1s
PEA0 **Petropavlovsk-** 73.73 345 eP P 21 04 41.3 +0.1
PETK **Petropavlovsk-** 73.73 345 P P 21 04 41.1 -0.1
comp=Z,5.3nm,0.6s,baz=127,slow=6.9,SNR=9.7
PEA1 **Petropavlovsk-** 73.74 345 eP P 21 04 41.1 -0.1
KSRS **Korea Array** 74.74 318 P P 21 04 48.5 +1.3
comp=Z,1.6nm,0.7s,baz=127,slow=6.2,SNR=6.1
KS15 **Wonju Array Si** 74.75 318 eP P 21 04 48.3 +1.0
KSAR **Wonju Array Be** 74.75 318 P P 21 04 48.5 +1.2
KSAR **Wonju Array Be** 74.75 318 P P 21 04 48.5 +1.2
KS01 **Wonju Array Si** 74.77 318 eP P 21 04 47.9 +0.5
SCZ2 **Santa Cruz Isl** 76.16 47 P P 21 04 56.7 +1.5
baz=237
PKM **Mcpherson Peak** 76.53 46 P P 21 04 58.9 +1.5
baz=237
USRK **Ussuriysk Ar.** 76.66 326 P P 21 04 59.6 +1.9
comp=Z,1.5nm,0.6s,baz=114,slow=4.0,SNR=4.9
MWC **Mount Wilson** 77.39 48 eP P 21 05 03.0 +0.9
MWC pmax pmax
comp=Z,18nm,0.8s
MWC **Mount Wilson** 77.39 48 eP P 21 05 03.0 +0.9
comp=Z,18nm,0.8s
VES **Vestal, Richgr** 77.54 46 P P 21 05 04.1 +1.4
baz=237
MURC **Murrieta** 77.67 48 P P 21 05 04.7 +1.2
baz=239
BFSC **Mount Baldy Ra** 77.68 48 P P 21 05 04.8 +1.2
baz=238
EDW2 **Edwards Air Fo** 77.78 47 P P 21 05 05.4 +1.4
baz=238
MONP2 **Monument Peak** 77.86 49 P P 21 05 06.1 +1.4
baz=239
ISA **Isabella, Lake** 77.86 46 P P 21 05 05.9 +1.4
baz=237
ISA **Isabella, Lake** 77.86 46 eP P 21 05 05.8 +1.3
ISA pmax pmax
comp=Z,21nm,0.9s
ISA **Isabella, Lake** 77.86 46 eP P 21 05 05.8 +1.3
comp=Z,21nm,0.9s
CMB **Columbia Colle** 77.89 43 eP P 21 05 05.4 +0.9
CMB pmax pmax
comp=Z,18nm,1.0s
CMB **Columbia Colle** 77.89 43 eP P 21 05 05.4 +0.9
comp=Z,18nm,1.0s
IKP **In-Ko-Pah, Jac** 77.97 50 P P 21 05 06.7 +1.6
baz=240,SNR=6.1
WDC **Whiskeytown Da** 78.00 40 eP P 21 05 06.4 +1.4
WDC pmax pmax
comp=Z,22nm,1.3s
WDC **Whiskeytown Da** 78.00 40 eP P 21 05 06.4 +1.4
comp=Z,22nm,1.3s
AFDM **Forest Hills D** 78.03 42 eP P 21 05 06.0 +0.8
comp=Z,17nm,1.0s
ORV **Oroville** 78.04 41 eP P 21 05 05.8 +0.5
ORV pmax pmax
comp=Z,14nm,1.1s
ORV **Oroville** 78.04 41 eP P 21 05 05.8 +0.5
comp=Z,14nm,1.1s
N02D **Trinity Center** 78.13 40 P P 21 05 07.2 +1.4
baz=234
PFO **Pinyon Flats O** 78.20 49 P P 21 05 07.5 +1.1
comp=Z,4.3nm,0.7s,baz=280,slow=7.3,SNR=5.4
PFO **Pinyon Flats O** 78.20 49 P P 21 05 07.5 +1.1
baz=239
PFO **Pinyon Flats O** 78.20 49 eP P 21 05 07.5 +1.1
comp=Z,13nm,1.2s
TPFO **Pinon Flats** 78.20 49 P P 21 05 07.5 +1.0
baz=239
O03D **Paynes Creek** 78.28 41 P P 21 05 07.7 +1.0
baz=234
M02C **Callahan** 78.29 39 P P 21 05 07.9 +1.2
baz=233
L02D **Cave Junction,** 78.30 38 P P 21 05 08.0 +1.3
baz=233
LRMC **Laurel Mtn Rad** 78.31 47 P P 21 05 08.3 +1.3
baz=238
SWSC **Sam W. Stewart** 78.34 50 P P 21 05 08.3 +1.3
baz=240,SNR=5.1
KDAK **Kodiak Island** 78.46 14 iP P 21 05 07.4 +0.4
CWC **Cottonwood Cre** 78.55 46 P P 21 05 09.3 +1.0
baz=238
YBH **Yreka Blue Hor** 78.58 39 eP P 21 05 09.7 +1.5
YBH pmax pmax
comp=Z,21nm,0.8s
YBH **Yreka Blue Hor** 78.58 39 eP P 21 05 09.7 +1.5
comp=Z,21nm,0.8s
BELC **Belle Mtn. Jos** 78.73 49 P P 21 05 10.4 +1.2
baz=239,SNR=8.3
MPMC **Manual Prospec** 78.75 46 P P 21 05 10.7 +1.3
baz=238
WAKR **Walker** 78.77 43 eP P 21 05 10.8 +1.4
comp=Z,21nm,0.9s
TIN **Tinemaha, Big** 78.78 45 P P 21 05 10.7 +1.3
baz=237
DAC **Darwin (Calif)** 78.80 46 eP P 21 05 10.2 +0.6
DAC pmax pmax
comp=Z,25nm,1.7s
DAC **Darwin (Calif)** 78.80 46 eP P 21 05 10.2 +0.6
comp=Z,25nm,1.7s
GSC **Goldstone, Bar** 78.83 47 P P 21 05 10.9 +1.3
baz=239
GSC **Goldstone, Bar** 78.83 47 eP P 21 05 10.8 +1.1
GSC pmax pmax
comp=Z,32nm,1.8s
GSC **Goldstone, Bar** 78.83 47 eP P 21 05 10.8 +1.1
comp=Z,32nm,1.8s
HEC **Hector,Ludlow** 78.92 48 P P 21 05 11.3 +1.2
baz=239,SNR=5.3
BC3 **Big Chuckawall** 78.95 49 P P 21 05 11.6 +1.3
baz=240
HUMO **Hull Mountain** 78.95 38 eP P 21 05 11.6 +1.5
comp=Z,21nm,1.1s
PNTR **Pine Nut** 78.99 43 eP P 21 05 12.0 +1.3
comp=Z,33nm,0.9s
TVH3 **East Aurora ar** 79.09 44 eP P 21 05 12.2 +1.1
comp=Z,11nm,1.0s
GLA **Glamis** 79.10 50 P P 21 05 13.0 +1.8
baz=240
GLA **Glamis** 79.10 50 eP P 21 05 12.3 +1.2
GLA pmax pmax
comp=Z,17nm,0.9s
GLA **Glamis** 79.10 50 eP P 21 05 12.3 +1.2
comp=Z,17nm,0.9s
M04C **Macdoel** 79.13 39 P P 21 05 12.5 +1.3
baz=234
YERR **Yerington** 79.17 43 eP P 21 05 12.5 +1.0
comp=Z,32nm,1.1s
TVH1 **TV Hill, Hawth** 79.19 44 eP P 21 05 13.0 +1.2
comp=Z,20nm,1.1s
GRAC **Grapevine Rang** 79.33 45 P P 21 05 13.7 +1.5
baz=238
GMRC **Granite Mounta** 79.37 48 P P 21 05 13.6 +1.0
baz=239,SNR=5.3
I03D **Drain, OR** 79.39 37 P P 21 05 13.2 +1.0
baz=233
FURC **Furnace Creek,** 79.40 46 P P 21 05 13.6 +1.1
baz=238
IRM **Iron Mountain** 79.42 49 P P 21 05 14.4 +1.7
baz=240,SNR=7.5
PAHR **Pah Rah Range** 79.47 42 eP P 21 05 13.8 +0.8
comp=Z,24nm,1.2s
TUQ **Turquoise Moun** 79.52 47 P P 21 05 14.6 +1.3
baz=239
Y12C **Blythe** 79.67 50 P P 21 05 15.5 +1.5
baz=240
Y12C **Blythe** 79.67 50 eP P 21 05 15.4 +1.5
comp=Z,12nm,0.8s
113A **Mohawk Valley,** 79.74 51 eP P 21 05 15.6 +1.2
comp=Z,9.9nm,0.9s
I04A **Tendick Farm,** 79.99 38 P P 21 05 16.2 +0.7
baz=233,SNR=6.1
214A **Organ Pipe Nat** 80.06 52 P P 21 05 17.9 +1.7
baz=242
CN2 **Changchun** 80.06 322 eP P 21 05 16.7 +0.9
TPNV **Topopah Spring** 80.07 46 P P 21 05 17.6 +1.3
baz=239,SNR=9.2
TPNV **Topopah Spring** 80.07 46 eP P 21 05 17.5 +1.3
TPNV pmax pmax
comp=Z,9.0nm,0.9s
TPNV **Topopah Spring** 80.07 46 eP P 21 05 17.5 +1.3
comp=Z,9.3nm,0.9s
MOD **Modoc Plateau** 80.14 40 eP P 21 05 17.5 +1.1
comp=Z,20nm,0.7s
KLR **Kul'dur** 80.16 329 eP P 21 05 17.1 +0.9
K05A **Summer Lake** 80.25 39 eP P 21 05 18.4 +1.3
comp=Z,41nm,1.0s
CNPM **China Poot** 80.34 14 eP P 21 05 17.4 +0.5
comp=Z,12nm,0.7s
J05D **Fort Rock, OR** 80.38 38 P P 21 05 19.3 +1.6
baz=234,SNR=27
SHPR **Sheep Range** 80.59 47 eP P 21 05 20.2 +1.3
comp=Z,8.8nm,1.0s
WHN **Wuhan** 80.63 306 eP P 21 05 19.2 +0.1
BRLK **Bradley Lake** 80.64 14 eP P 21 05 18.3 -0.2
comp=Z,18nm,0.8s
W13A **Hualapai Mount** 80.79 49 eP P 21 05 21.3 +1.2
comp=Z,7.2nm,1.1s
Y14A **Wickenburg** 80.86 50 eP P 21 05 21.8 +1.5
comp=Z,45nm,1.0s
RSO **Redoubt South** 80.86 13 eP P 21 05 19.5 -0.3
I05D **Terrebonne, OR** 80.93 38 P P 21 05 21.4 +1.0
baz=234
DIB **Dawson Inlet,** 81.19 26 eP P 21 05 22.5 +1.2
comp=Z,17nm,1.0s
R11A **Troy Canyon, C** 81.24 45 P P 21 05 23.4 +1.1
baz=239,SNR=13
R11A **Troy Canyon, C** 81.24 45 eP P 21 05 23.3 +1.0
comp=Z,8.8nm,1.1s
BMN **Battle Mountai** 81.26 43 eP P 21 05 23.3 +1.0
BMN pmax pmax
comp=Z,22nm,1.0s
BMN **Battle Mountai** 81.26 43 eP P 21 05 23.3 +1.0
comp=Z,22nm,1.0s
LVP **Lakeview Peak** 81.35 36 eP P 21 05 23.6 +1.1
OOW **Octopus West** 81.41 34 eP P 21 05 24.8 +2.0
WVOR **Wild Horse Val** 81.46 40 eP P 21 05 24.3 +1.1
WVOR pmax pmax
comp=Z,27nm,0.9s
WVOR **Wild Horse Val** 81.46 40 eP P 21 05 24.3 +1.1
comp=Z,27nm,0.9s
G05D **Wamic, OR** 81.47 37 P P 21 05 23.9 +0.8
baz=234
TDL **Tradedollar La** 81.63 36 eP P 21 05 25.4 +1.4
SPU **Mount Spurr** 81.66 13 eP P 21 05 22.8 -0.9
TUC **Tucson** 81.75 52 P P 21 05 27.0 +2.1
baz=243
TUC **Tucson** 81.75 52 eP P 21 05 26.7 +1.8
TUC pmax pmax
comp=Z,19nm,1.1s
TUC **Tucson** 81.75 52 eP P 21 05 26.7 +1.8
comp=Z,19nm,1.1s
G06A **Carlson Farm,** 81.86 37 eP P 21 05 26.2 +1.1
comp=Z,9.4nm,0.9s
RC01 **Rabbit Creek A** 82.08 14 eP P 21 05 25.7 -0.1
comp=Z,18nm,1.1s
LON **Longmire** 82.09 35 eP P 21 05 27.0 +0.7
LON pmax pmax
comp=Z,29nm,1.8s
LON **Longmire** 82.09 35 eP P 21 05 27.0 +0.7
comp=Z,29nm,1.8s
SUA **Susitna One** 82.19 13 eP P 21 05 26.2 -0.3
comp=Z,19nm,0.8s
X16A **Lo Mia Camp, P** 82.23 50 eP P 21 05 29.3 +1.8
comp=Z,19nm,1.0s
D05A **Enumclaw** 82.26 35 eP P 21 05 28.8 +1.8
comp=Z,40nm,1.1s
CCUT **Cedar City** 82.36 47 eP P 21 05 29.0 +0.9
comp=Z,13nm,0.9s
IPM **Ipoh** 82.42 277 eP P 21 05 29.0 +0.4
comp=Z,30nm,0.8s
319A **Douglas** 82.47 54 eP P 21 05 30.8 +2.2
comp=Z,24nm,0.9s
KNB **Kanab** 82.48 47 eP P 21 05 30.2 +1.6
KNB pmax pmax
comp=Z,14nm,0.9s
KNB **Kanab** 82.48 47 eP P 21 05 30.2 +1.6
comp=Z,14nm,0.9s
TT01 **Tatalina** 82.51 10 eP P 21 05 28.6 +0.7
TTA **Tatalina** 82.53 10 eP P 21 05 29.0 +0.9
TTA pmax pmax
comp=Z,12nm,1.0s
TTA **Tatalina** 82.53 10 eP P 21 05 29.0 +0.9
comp=Z,12nm,1.0s
U15A **North Rim** 82.57 48 eP P 21 05 31.1 +1.9
comp=Z,26nm,0.8s
SZCU **Shurtz Canyon** 82.57 47 eP P 21 05 30.9 +1.8
PMR **Palmer** 82.66 14 eP P 21 05 28.5 -0.1
PMR pmax pmax
comp=Z,23nm,1.3s
PMR **Palmer** 82.66 14 eP P 21 05 28.5 -0.1
comp=Z,23nm,1.3s
ELK **Elko** 82.71 43 eP P 21 05 30.9 +1.1
ELK pmax pmax
comp=Z,9.0nm,1.0s
ELK **Elko** 82.71 43 eP P 21 05 30.9 +1.1
comp=Z,9.4nm,1.0s
WUAZ **Wupatki** 82.79 49 P P 21 05 31.5 +1.3
baz=242
WUAZ **Wupatki** 82.79 49 eP P 21 05 32.0 +1.8
comp=Z,18nm,1.0s
A04D **Lummi Island** 82.80 33 P P 21 05 30.7 +1.1
baz=232
B05A **Bryant** 82.85 34 P P 21 05 30.7 +0.8
baz=233
G08A **Pilot Rock** 82.86 38 eP P 21 05 31.3 +1.0
comp=Z,29nm,1.3s
DIV **Divide** 83.06 15 eP P 21 05 30.7 -0.1
comp=Z,18nm,0.7s
HAWA **Hanford** 83.16 37 eP P 21 05 33.2 +1.6
comp=Z,18nm,0.8s
BMRM **Bremner River** 83.22 16 eP P 21 05 31.5 0.0
comp=Z,14nm,0.7s
X18A **Snowflake** 83.37 51 eP P 21 05 34.6 +1.5
comp=Z,7.4nm,0.8s
MTPU **Mount Pierson** 83.41 47 eP P 21 05 35.5 +2.0
comp=Z,12nm,0.9s
CRQM **Urque** 83.43 17 eP P 21 05 33.4 +0.6
comp=Z,22nm,1.0s
WRAK **Wrangell Islan** 83.57 24 eP P 21 05 34.3 +1.1
comp=Z,77nm,0.3s
BMO **Blue Mountains** 83.60 39 eP P 21 05 34.7 +0.8
comp=Z,5.5nm,0.9s
CAST **Castle Rocks** 83.69 12 eP P 21 05 32.5 -1.3
comp=Z,19nm,0.7s
MFID **Camas Ranch** 83.72 41 eP P 21 05 35.9 +1.3
comp=Z,13nm,0.9s
MAW **Mawson** 83.80 200 P P 21 05 34.9 +0.5
comp=Z,4.9nm,0.7s,baz=116,slow=7.9,SNR=8.9
MAW **Mawson** 83.80 200 eP P 21 05 35.4 +1.0
comp=Z,1.9nm,1.0s
SEY **Seymchan** 83.83 347 P P 21 05 34.3 -0.2
comp=Z,5.9nm,0.6s,baz=140,slow=5.7,SNR=22
SKNT **Sakolnakorn** 83.88 290 P P 21 05 36.6 +0.9
comp=Z,26nm,1.1s
PSI **Prapat** 83.88 275 eP P 21 05 35.5 -0.5
PSI pmax pmax
comp=Z,29nm,1.0s
PSI **Prapat** 83.88 275 eP P 21 05 35.5 -0.5
comp=Z,29nm,1.0s
BALM **Baldy** 83.88 17 eP P 21 05 35.1 +0.2
BALM pmax pmax
comp=Z,14nm,0.9s
BALM **Baldy** 83.88 17 eP P 21 05 35.1 +0.2
comp=Z,14nm,0.9s
D08A **Wollman Farm,** 83.88 36 eP P 21 05 36.3 +1.1
comp=Z,17nm,0.8s
DUG **Dugway, Tooele** 84.03 45 P P 21 05 37.0 +0.8
baz=241
KTH **Kantishna Hill** 84.04 12 eP P 21 05 34.7 -0.9
comp=Z,13nm,0.9s
TRF **Thorofare Moun** 84.07 12 eP P 21 05 35.1 -0.8
comp=Z,24nm,0.7s
121A **Cookes Peak, D** 84.12 53 P P 21 05 38.5 +1.7
baz=244
F10A **Beach Ranch, E** 84.25 38 eP P 21 05 37.2 +0.1
comp=Z,28nm,1.0s
ENH **Enshi** 84.30 304 eP P 21 05 35.8 -1.8
comp=Z,23nm,0.8s
RND **Reindeer** 84.33 13 eP P 21 05 36.6 -0.4
RND pmax pmax
comp=Z,26nm,0.8s
RND **Reindeer** 84.33 13 eP P 21 05 36.6 -0.4
comp=Z,26nm,0.8s
DHY **Denali Highway** 84.36 14 eP P 21 05 36.9 -0.4
comp=Z,30nm,1.8s
B08A **Colville Reser** 84.39 35 eP P 21 05 37.9 +0.3
comp=Z,12nm,0.8s
ZAIG **Zacatecas** 84.45 64 eP P 21 05 40.6 +1.8
comp=Z,10nm,1.0s
BPAW **Bear Paw Mtn.** 84.52 12 eP P 21 05 38.6 +0.8
comp=Z,15nm,1.7s
MCK **McKinley** 84.60 13 eP P 21 05 38.2 -0.1
MCK pmax pmax
comp=Z,23nm,1.1s
MCK **McKinley** 84.60 13 eP P 21 05 38.2 -0.1
comp=Z,23nm,1.1s
C09A **Chrisman Ranch** 84.66 36 eP P 21 05 39.8 +0.8
comp=Z,14nm,1.0s
HLID **Hailey** 84.68 41 P P 21 05 40.4 +1.1
baz=239
HLID **Hailey** 84.68 41 eP P 21 05 40.9 +1.6
comp=Z,9.7nm,0.8s
TMUT **Trail Mountain** 84.68 46 eP P 21 05 41.3 +1.7
comp=Z,9.5nm,0.8s
GSI **Gunungsitoli** 84.69 273 eP P 21 05 40.9 +1.1
comp=Z,41nm,0.9s
TRTT **Trang** 84.75 280 P P 21 05 42.1 +2.0
comp=Z,41nm,0.9s
BWN **Browne** 84.88 12 eP P 21 05 39.1 -0.5
comp=Z,37nm,1.2s
GYA **Guiyang** 85.06 300 eP P 21 05 42.0 +0.5
GYA pP pP 21 07 46.8 -0.3
GYA sP sP 21 08 43.2 -3.0
GYA PP PP 21 09 12.0 +2.0
GYA SKS SKSac 21 15 10.4 -0.6
GYA S S 21 15 23.6 +0.5
GYA **Guiyang** 85.06 300 sS sS 21 19 03.0 -4.0
GYA pmax pmax
comp=Z,10.0nm,1.0s
SRU **San Rafael Swe** 85.07 46 eP P 21 05 42.3 +1.0
SRU pmax pmax
comp=Z,9.0nm,0.8s
SRU **San Rafael Swe** 85.07 46 eP P 21 05 42.3 +1.0
comp=Z,8.5nm,0.8s
HYT **Haines Junctio** 85.11 19 eP P 21 05 41.9 +0.9
comp=Z,7.5nm,1.0s
TCUT **Toone Canyon** 85.41 44 eP P 21 05 44.1 +1.1
comp=Z,14nm,0.8s
WRH **Wood River Hil** 85.43 13 eP P 21 05 41.6 -0.6
comp=Z,16nm,1.0s
HWUT **Hardware Ranch** 85.54 44 eP P 21 05 44.0 +0.4
comp=Z,9.4nm,0.3s
NEW **Newport** 85.56 36 P P 21 05 43.7 +0.4
baz=237
PV05 **Paradox Valley** 85.59 48 eP P 21 05 45.2 +1.3
HDA **Harding Lake** 85.62 13 eP P 21 05 42.5 -0.7
comp=Z,119nm,1.8s
MNTX **Cornudas Mount** 85.62 55 P P 21 05 45.7 +1.7

baz=246
MNTX Cornudas Mount 85.62 55 *e*P P 21 05 45.6 +1.7
comp=Z,11nm,1.3s
CCB Clear Creek Bu 85.64 13 *e*P P 21 05 42.5 -0.7
comp=Z,21nm,1.3s
BNM Barren Site 85.68 52 *e*P P 21 05 45.3 +0.8
PV09 Paradox Valley 85.75 47 *e*P P 21 05 45.9 +1.1
PV10 Paradox Valley 85.76 48 *e*P P 21 05 45.4 +0.6
COLA College 85.83 13 *i* P P 21 05 43.9 -0.2
COLA pmax pmax
comp=Z,29nm,1.5s
DLBC Dease Lake 85.89 23 *e*P P 21 05 45.3 +0.7
comp=Z,7.4nm,0.9s
IL1 Eielson Array 85.95 13 *e*P P 21 05 43.9 -0.8
ILAR Eielson Array 85.95 13 P P 21 05 43.9 -0.8
comp=Z,6.0nm,0.9s,baz=231,slow=5.5,SNR=38
ILAR PP PP 21 09 18.4 +2.4
comp=Z,1.9nm,1.0s,baz=216,slow=6.7,SNR=5.9
ILB Eielson Array 85.95 13 *e*P P 21 05 43.5 -1.2
LTX Lajitas 86.04 58 *e*P P 21 05 48.3 +2.2
LTX Lajitas 86.04 58 *e*P P 21 05 48.2 +2.2
TX31 Lajitas Ar. Si 86.04 58 *e*P P 21 05 48.0 +2.0
TXAR Lajitas Array 86.04 58 P P 21 05 48.2 +2.2
comp=Z,13nm,0.8s,baz=220,slow=6.1,SNR=131
ANMO Albuquerque 86.14 52 P P 21 05 47.7 +1.1
baz=245
ANMO Albuquerque 86.14 52*c* *i*P P 21 05 47.3 +0.8
ANMO pmax pmax
comp=Z,7.0nm,1.0s
ANMO Albuquerque 86.14 52 *e*P P 21 05 47.4 +0.8
comp=Z,6.6nm,1.0s
XAN Xi'an 86.29 307 P P 21 05 48.1 +1.0
XAN pmax pmax
comp=Z,19nm,1.0s
MCMT McKenzie Canyo 86.29 40 *e*P P 21 05 48.3 +1.2
BILL Bilibino 86.49 354|| *e*P P 21 05 47.7 +0.5
BILL pmax pmax
comp=Z,10.0nm,1.1s
MSO Missoula 86.64 38 P P 21 05 49.3 +0.8
baz=239
MSO Missoula 86.64 38 *e*P P 21 05 49.0 +0.5
comp=Z,3.8nm,0.6s
BSMT Bassoo Peak 86.67 37 *e*P P 21 05 49.1 +0.3
TPAW Teton Pass 86.84 42 *e*P P 21 05 50.9 +1.2
comp=Z,9.3nm,0.9s
REDW Red Top Meadow 86.84 42 *e*P P 21 05 50.9 +1.2
comp=Z,19nm,1.0s
SNOW Snow King Moun 86.95 42 *e*P P 21 05 51.5 +1.3
comp=Z,20nm,1.0s
LRM Limekiln Ridge 87.03 40 *e*P P 21 05 51.3 +0.7
IMW Indian Meadow 87.04 42 *e*P P 21 05 51.8 +1.1
comp=Z,15nm,0.8s
S22A 4UR Ranch, Cre 87.06 49 P P 21 05 52.0 +1.1
baz=245
S22A 4UR Ranch, Cre 87.06 49 *e*P P 21 05 52.1 +1.2
comp=Z,11nm,1.2s
CHMT Chamberlain Mo 87.09 39 *e*P P 21 05 51.0 +0.3
MOOW Moose Ponds 87.09 42 *e*P P 21 05 51.9 +1.1
comp=Z,4.9nm,0.9s
LOHW Long Hollow 87.12 42 *e*P P 21 05 52.1 +1.1
comp=Z,6.5nm,0.7s
DAWY Dawson 87.15 16 *e*P P 21 05 50.6 +0.2
comp=Z,12nm,1.3s
EGAK Eagle 87.27 15 *e*P P 21 05 51.1 +0.2
comp=Z,5.5nm,0.9s
FLWY Flagg Ranch 87.28 42 *e*P P 21 05 53.3 +1.6
comp=Z,19nm,1.0s
HHC Hu-ho-hao-te 87.31 314 *e*P P 21 05 50.6 -1.2
HHC pP pP 21 08 00.1 +1.7
HHC sP sP 21 08 59.6 +2.4
HHC S S 21 15 40.1 -3.6
HHC pmax pmax
comp=Z,15nm,0.7s
HHC pmax pmax
comp=Z,87nm,8.4s
BW06 Boulder Array 87.40 43 P P 21 05 53.0 +0.6
baz=243
BW06 Boulder Array 87.40 43 *e*P P 21 05 52.8 +0.4
PD31 Pinedale Array 87.40 43 *e*P P 21 05 52.6 +0.3
PD31 *e*PP PP 21 09 25.9 -2.5
PDAR Pinedale Array 87.40 43 P P 21 05 53.0 +0.6
comp=Z,5.7nm,0.6s,baz=221,slow=3.3,SNR=44
PDAR PP PP 21 09 26.4 -1.9
comp=Z,2.8nm,1.2s,baz=226,slow=7.7,SNR=5.1
COLD Coldfoot 87.47 11 *e*P P 21 05 52.2 +0.4
comp=Z,9.1nm,1.0s
KMI Kunming 87.85 297 P P 21 05 55.9 +1.1
KMI pP pP 21 07 59.9 -1.7
KMI S S 21 15 49.0 -0.6
KMI pmax pmax
comp=Z,7.0nm,0.9s
KMI pmax pmax
comp=Z,25nm,3.1s
KMI LR LR
comp=N,40nm,4.3s
KMI LR LR
comp=E,73nm,6.1s
KMI LR LR
comp=Z,68nm,5.7s
SDCO Great Sand Dun 88.01 49 P P 21 05 56.3 +0.9
baz=246
LAMP Lampang 88.30 290 P P 21 05 58.6 +1.8
LAMP Lampang 88.30 290 P P 21 05 58.6 +1.8
comp=Z,5.1nm,0.9s
MSTX Muleshoe 88.54 54 P P 21 05 58.5 +0.8
baz=247
MSTX Muleshoe 88.54 54 *e*P P 21 05 58.6 +0.8
comp=Z,18nm,1.0s
T25A Trinidad 88.56 50 P P 21 05 58.9 +1.1
baz=246
832A Faith Ranch, C 88.65 60 P P 21 05 59.5 +1.3
baz=249
RLMT Red Lodge 88.67 41 P P 21 05 59.2 +1.0
baz=243
RLMT Red Lodge 88.67 41 *e*P P 21 06 00.0 +1.8
comp=Z,12nm,1.0s
ISCO Idaho Springs 88.78 47 P P 21 05 59.9 +1.0
baz=246
CM01 Chiang Mai Arr 88.87 290 *e*P P 21 06 00.2 +0.8
CM31 Chiang Mai Arr 88.89 290 *e*P P 21 06 00.6 +1.0
CMAR Chiang Mai Arr 88.89 290 P P 21 06 01.0 +1.5
comp=Z,6.1nm,0.9s,baz=111,slow=2.7,SNR=33
CMAR PP PP 21 09 45.7 +5.5
comp=Z,0.6nm,0.7s,baz=128,slow=7.1,SNR=4.9
933A Laredo 88.99 61 P P 21 06 01.5 +1.7
baz=249
CMMT Chiang Mai 89.01 290 P P 21 06 01.3 +1.2
comp=Z,10nm,0.9s
N23A Red Feather La 89.01 46 P P 21 06 00.9 +0.9
baz=245
N23A Red Feather La 89.01 46 *e*P P 21 06 01.2 +1.2
comp=Z,13nm,1.0s
CHTO Chiang Mai 89.01 290 P P 21 06 01.3 +1.2
comp=Z,46nm,0.9s
CHTO Chiang Mai 89.01 290 *e*P P 21 06 00.9 +0.8
CHTO pmax pmax
comp=Z,7.0nm,0.8s
CHTO Chiang Mai 89.01 290 *e*P P 21 06 00.9 +0.8
comp=Z,7.1nm,0.8s
034A Hebbronville 89.29 61 P P 21 06 03.0 +1.8
baz=250
K22A Casper 89.36 45 P P 21 06 02.1 +0.7
baz=245
PHWY Pilot Hill 89.51 46 *e*P P 21 06 01.8 -0.5
comp=Z,13nm,0.7s
JCT Junction City 89.58 58 P P 21 06 03.3 +0.8
baz=249
JCT Junction City 89.58 58 *e*P P 21 06 03.8 +1.3
JCT pmax pmax
comp=Z,7.0nm,0.8s
JCT Junction City 89.58 58 *e*P P 21 06 03.8 +1.3
comp=Z,7.5nm,0.8s
633A Saathoff Ranch 89.72 59 P P 21 06 04.7 +1.5
baz=249
035A Encino 89.73 62 P P 21 06 05.2 +2.0
baz=250
834A Tilden 89.77 60 P P 21 06 04.6 +1.2
baz=250
533A Kerrville 90.05 58 P P 21 06 06.0 +1.2
baz=249
EDM Edmonton 90.21 33 *e*P P 21 06 05.0 +0.1
EDM pmax pmax
comp=Z,7.0nm,0.6s
EDM Edmonton 90.21 33 *e*P P 21 06 05.0 +0.1
comp=Z,7.2nm,0.6s
433A Art 90.25 58 P P 21 06 06.6 +1.1
baz=249

ABTX Abilene, Hawle 90.47 56 P P 21 06 07.6 +1.0
baz=249
ABTX Abilene, Hawle 90.47 56 *e*P P 21 06 07.4 +0.8
comp=Z,17nm,1.0s
534A Blanco 90.49 59 P P 21 06 08.0 +1.3
baz=250
333A Richland Sprin 90.53 57 P P 21 06 07.4 +0.5
baz=249
SNAA Sanae 90.54 179 P P 21 06 05.0 -1.2
SNAA Sanae 90.54 179*c* *i*P P 21 06 06.4 +0.2
SNAA Sanae 90.54 179 *e*P P 21 06 06.2 0.0
233A Rising Star 90.84 57 P P 21 06 09.4 +1.0
baz=249
434A Burnet 90.93 58 P P 21 06 09.8 +1.1
baz=250
133A Hamilton Ranch 91.04 56 P P 21 06 10.1 +0.9
baz=249
334A Lometa 91.13 57 P P 21 06 10.7 +1.1
baz=250
LAO LASA Array 91.26 41 P P 21 06 11.5 +1.5
baz=245
LAO LASA Array 91.26 41 *e*P P 21 06 12.2 +2.2
comp=Z,16nm,0.9s
VNA1 Neumayer--Stat 91.35 177 P P 21 06 10.9 +1.1
X32A Elmer 91.39 54 P P 21 06 11.6 +0.9
baz=249
Z33A Whitaker Ranch 91.39 56 P P 21 06 11.8 +0.9
baz=250
RSSD Black Hills 91.61 44 P P 21 06 12.4 +0.6
baz=247
RSSD Black Hills 91.61 44 *e*P P 21 06 12.2 +0.4
RSSD pmax pmax
comp=Z,9.0nm,1.0s
RSSD Black Hills 91.61 44 *e*P P 21 06 12.2 +0.4
comp=Z,9.1nm,1.0s
W32A Sentinel 91.67 54 P P 21 06 12.9 +0.8
baz=249
WMOK Wichita Mounta 91.89 54 P P 21 06 13.7 +0.6
baz=250
INK Inuvik 91.95 15 P P 21 06 11.9 -0.6
comp=Z,5.8nm,0.9s,baz=225,slow=7.5,SNR=7.1
INK Inuvik 91.95 15 *e*P P 21 06 11.9 -0.6
comp=Z,8.0nm,1.0s
V32A Arapaho 92.03 53 P P 21 06 15.4 +1.7
baz=249
H25A Fruitdale 92.10 44 P P 21 06 15.2 +1.3
baz=247
W33A Caddo, Fort Co 92.27 54 P P 21 06 16.1 +1.3
baz=250
Y34A Reagan Ranch, 92.41 55 P P 21 06 16.6 +1.1
baz=250
X34A Smith Ranch, M 92.57 55 P P 21 06 17.3 +1.1
baz=250
T32A Huddler Ranch, 92.63 52 P P 21 06 17.4 +1.0
baz=250
X35A Drake 93.17 55 P P 21 06 20.0 +1.1
baz=251
R32A Long Quarter, 93.22 51 P P 21 06 20.2 +1.1
baz=250
DGMT Dagmar 93.25 40 P P 21 06 19.9 +0.9
baz=247
Q32A Meitler Ranch, 93.53 50 P P 21 06 21.6 +1.1
baz=250
Y36A Durant 93.55 56 P P 21 06 21.6 +1.0
baz=251
SONA0 Songino Array 93.59 319 *e*P P 21 06 21.3 +0.6
comp=Z,2.2nm,1.2s
SONM Songino Array 93.59 319 P P 21 06 21.3 +0.6
comp=Z,0.4nm,0.6s,baz=126,slow=3.4,SNR=4.6
R33A Olander Ranch, 93.72 51 P P 21 06 22.5 +1.2
baz=250
Q33A Connelly Farm, 94.06 50 P P 21 06 23.9 +1.0
baz=250
S34A Willow Spring 94.17 52 P P 21 06 24.2 +0.8
baz=251
R34A Isabella, Hill 94.26 51 P P 21 06 24.8 +1.0
baz=251
P33A Williams Farm, 94.31 50 P P 21 06 25.4 +1.4
baz=250
YKA Yellowknife Ar 94.39 25 P P 21 06 23.7 0.0
comp=Z,2.3nm,0.8s,baz=241,slow=4.4,SNR=13
YKA PP PP 21 10 19.1 -2.7
comp=Z,0.5nm,0.9s,baz=245,slow=7.4,SNR=3.0
YKB5 Yellowknife Ar 94.39 25 *e*P P 21 06 23.4 -0.4
X37A Clayton 94.49 55 P P 21 06 26.2 +1.3
baz=251
Q34A Chapman 94.69 51 P P 21 06 27.0 +1.3
baz=251
P34A Walnut Farm, R 94.98 50 P P 21 06 28.5 +1.5
baz=251
P35A Duane Minner, 95.57 50 P P 21 06 30.7 +1.0
baz=252
T37A Cheneyville 18 95.63 53 P P 21 06 30.8 +0.8
baz=252
H32A Carlson Farm, 96.17 45 P P 21 06 32.8 +0.5
baz=251
P36A Good Intent, A 96.19 50 P P 21 06 33.4 +1.0
baz=252
ECSD EROS Data Cent 96.48 46 P P 21 06 34.6 +0.9
baz=252
H33A Prehn Over Nor 96.69 45 P P 21 06 35.3 +0.6
baz=252
R38A Fenwick Farm, 96.72 52 P P 21 06 35.6 +0.7
baz=253
P37A Lathrop 96.81 51 P P 21 06 36.2 +0.9
baz=252
Q38A Cooks Store, C 97.17 51 P P 21 06 38.3 +1.4
baz=253
F33A 5 Mile Ranch, 97.36 44 P P 21 06 38.6 +1.1
baz=252
R39A Chumby, Stover 97.41 52 P P 21 06 39.2 +1.3
baz=253
S40A Lebanon 97.61 53 P P 21 06 39.7 +0.8
baz=253
S41A Jillco Farms, 98.19 53 P P 21 06 42.6 +1.1
baz=254
O40A La Belle 98.79 51 P P 21 06 45.0 +0.9
baz=254
F36A Milaca 99.22 45 P Pdif 21 06 46.4 +0.6
baz=254
K39A Oelwein 99.48 48 P Pdif 21 06 48.0 +0.9
baz=254
SWET Sewanee 102.11 57 *e*Pdif Pdif 21 07 04.6 +5.6
MK32 Makanchi Array 109.17 314 *e*PKiKP PKiKP 21 11 29.4 -0.8
MKAR Makanchi Array 109.17 314 PKiKP PKiKP 21 11 29.4 -0.8
comp=Z,0.5nm,0.5s,baz=220,slow=0.9,SNR=10
KSH Kashi 113.10 306 *e*PKP PKiKP 21 11 36.4 -1.7
KSH *e*PP PP 21 12 44.8 +5.4
KSH *es*PKP 21 14 51.5
KSH SKS SKSdf 21 17 52.6 -2.7
KSH SKKS SKKSac 21 18 35.4 -4.7
KSH Kashi 113.10 306 SS SS 21 27 47.1 +6.4
KSH AMB AMB
comp=Z,63nm,4.5s
BRVK Borovoye 116.94 321 *e*PKiKP PKPdf 21 11 44.8 -0.1
ZRNK Zerenda 117.72 321 *e*PKiKP PKPdf 21 11 45.7 -0.7
ZRNK Zerenda 117.72 321 *e*PKPdf PKPdf 21 11 45.7 -0.7
ARU Arti 122.89 326 *i* PKiKP PKPdf 21 11 55.7 -0.5
ARU 21 13 41.9
ARU 21 18 11.6
GEYT Alibeck 127.06 304 PKP PKPdf 21 12 04.6 -0.3
comp=Z,2.5nm,0.8s,baz=58,slow=3.6,SNR=6.5
FIA0 FINESS Array S 133.24 344 *e*PKiKP PKPdf 21 12 14.0 -1.8
FIA0 *e* 21 14 51.7
FIA0 FINESS Array S 133.24 344 *e*PKPdf PKPdf 21 12 14.0 -1.8
FIA0 *e*SKPbc SKPab 21 14 51.7 -0.8
FINES FINESS Array B 133.24 344 PKP PKPdf 21 12 14.0 -1.8
comp=Z,0.3nm,0.5s,baz=325,slow=3.0,SNR=4.1
FINES SKPbc SKPab 21 14 51.7 -0.8
comp=Z,1.2nm,0.6s,baz=28,slow=4.5,SNR=7.3
KIV Kislovodsk 136.89 316 *i* PKiKP PKPdf 21 12 22.9 -0.3
KIV pmax pmax
comp=Z,1.0nm,0.9s
LEOM Leova 144.04 328 ⇑ *i*P PKPdf 21 12 36.3 +0.5
TLCR 144.62 326 ⇑ *i*P PKPab 21 12 38.0 +0.1
BUR08 Bucovina Ar. S 144.65 332 *e*PKPdf PKPab 21 12 38.2 +0.1
BURAR Bucovina Array 144.66 332 ⇑ *i*P PKPab 21 12 38.8 +0.6
TESR Tescani 144.80 329 ⇑ *i*P PKPbc 21 12 37.9 +0.1
BR101 Keskin Array S 144.82 315 *e*PKPdf PKPbc 21 12 38.5 +0.2
BR131 Keskin Array S 144.82 315 *e*PKPdf PKPbc 21 12 38.3 +0.1
BRTR Keskin Array B 144.82 315 PKP PKPbc 21 12 38.5 +0.2
comp=Z,5.4nm,0.9s,baz=145,slow=3.0,SNR=31
STHS Stebnicka Huta 144.84 338 *e*PKiKP PKPab 21 12 38.9 +0.2
STHS Stebnicka Huta 144.84 338 *e*PKP PKPab 21 12 38.9 +0.2
KOLS Kolonicke sedl 144.85 336 *e*PKiKP PKPab 21 12 38.8 0.0
KOLS Kolonicke sedl 144.85 336 *e*PKP PKPab 21 12 38.8 0.0

CFR Carcaliu 144.98 327 ⇑ *i*P PKPbc 21 12 38.8 +0.5
CRVS Cervenica-Dubn 145.19 337 *e*PKP2 PKPab 21 12 39.7 -0.4
CRVS Cervenica-Dubn 145.19 337 *e*PKP2 PKPab 21 12 39.7 -0.4
PLOR Plostina 145.27 329 ⇓ *i*P PKPbc 21 12 39.2 -0.1
TIRR Tirgusor 145.31 325 ⇑ *i*P PKPbc 21 12 39.9 +0.6
ANTO Ankara 145.31 316 *e*PKiKP PKPdf 21 12 38.1 -0.3
ANTO Ankara 145.31 316 *e*PKPdf PKPdf 21 12 38.0 -0.3
BR231 Keskin MP Arra 145.34 315 *e*PKPdf PKPdf 21 12 38.8 +0.3
TLB Topalu 145.42 326 ⇑ *i*P PKPab 21 12 40.6 -0.5
CLL Collm 145.52 347 ⇑ *i*PKPbc PKPbc 21 12 40.2 +0.5
comp=Z,6.0nm,1.1s
CLL *i* 21 12 50.2
CLL Collm 145.52 347 ⇑ *i*PKP2 PKPbc 21 12 40.2 +0.5
CLL pmax pmax
comp=Z,6.0nm,1.1s
CLL Collm 145.52 347 *e*PKPdf PKPdf 21 12 38.6 +0.4
UPC Upice 145.54 344 *e*PKP PKPbc 21 12 40.4 +0.6
UPC Upice 145.54 344 *e*PKP2 PKPbc 21 12 40.4 +0.6
DPC Dobruska-Polom 145.60 343 *e*PKP PKPbc 21 12 40.8 +0.7
DPC *ex* x 21 12 43.1
DPC Dobruska-Polom 145.60 343 *e*PKP2 PKPbc 21 12 40.8 +0.7
KRLC Kraliky 145.72 343 *e*PKP PKPab 21 12 41.4 -0.8
KRLC Kraliky 145.72 343 *e*PKP2 PKPab 21 12 41.4 -0.8
DOPR Dopca 145.80 330 ⇑ *i*P PKPab 21 12 42.1 -0.5
MLR Muntele Rosu 145.88 329 ⇓ *i*P PKPdf 21 12 39.4 +0.2
MLR Muntele Rosu 145.88 329 *e*PKiKP PKPbc 21 12 41.0 -0.1
MLR Muntele Rosu 145.88 329 *e*PKPdf PKPbc 21 12 41.0 -0.1
MBAR Mbarara 145.89 240 *e*PKiKP PKPbc 21 12 42.0 -0.1
MBAR Mbarara 145.89 240 *e*PKPdf PKPbc 21 12 42.0 -0.1
CJR Cluj-Napoca 146.06 332 ⇑ *i*P PKPbc 21 12 42.5 +1.0
VOIR 146.35 330 ⇑ *i*P PKPbc 21 12 42.8 +0.4
DRGR 146.39 333 ⇑ *i*P PKPbc 21 12 43.1 +0.7
VYHS Vyhne 146.47 339 *e*PKP2 PKPbc 21 12 43.5 +1.0
VYHS Vyhne 146.47 339 *e*PKP PKPbc 21 12 43.5 +1.0
ARR Arges 146.60 330 ⇓ *i*P PKPbc 21 12 44.3 +1.3
CSS Mathiatis 147.11 307 *e*PKPbc PKPbc 21 12 44.4 -0.2
KHC Kasperske Hory 147.43 345 *e*PKP PKPbc 21 12 45.7 +0.7
KHC *ex* x 21 12 48.7
KHC Kasperske Hory 147.43 345 *e*PKP2 PKPbc 21 12 45.7 +0.7
KHC Kasperske Hory 147.43 345 *e*PKPbc PKPbc 21 12 45.7 +0.7
GZR Gura Zlata 147.44 332 ⇑ *i*P PKPbc 21 12 44.8 -0.4
GERES GERESS Array B 147.67 345 PKPbc PKPbc 21 12 46.0 +0.3
comp=Z,1.7nm,0.5s,baz=24,slow=3.3,SNR=23
GEA0 GERESS Array S 147.67 345 *e*PKPbc PKPbc 21 12 46.0 +0.2
BZS Buzias 147.78 333 ⇓ *i*P PKPbc 21 12 46.3 +0.3
VTS Vitosha 149.33 328 ⇑ *i*P PKPbc 21 12 50.7 +0.6
VTS Vitosha 149.33 328 *e*PKPbc PKPbc 21 12 49.6 -0.5
CRES Cresnjev 149.92 340 *i* PKPbc PKPbc 21 12 51.5 +0.4
CRNS Crni Vrh 150.06 342 *i* PKPbc PKPbc 21 12 51.5 0.0
BOJS Bojanci 150.27 340 *i* PKPbc PKPbc 21 12 52.8 +0.8
FUORN Ofenpass-Fuorn 150.54 348 *e*PKPbc PKPbc 21 12 53.3 +0.4
FUORN *e*PKPab PKPab 21 13 03.3 +1.0
PDG Podgorica 151.35 332 ⇑ *i*P PKPbc 21 12 54.0 -0.5
ES19 SONSECA Array 157.83 11 *e*PKPab PKPab 21 13 33.3 -0.1
ESDC Sonseca Array 157.84 11 PKPab PKPab 21 13 33.2 -0.3
comp=Z,0.5nm,0.6s,baz=339,slow=5.1,SNR=7.1
TORD Torodi Ar. Bea 175.21 181 PKP PKPdf 21 13 09.7 -0.8
comp=Z,0.7nm,0.9s,baz=158,slow=0.8,SNR=3.6
TORD PKPab PKPab 21 14 50.6 +0.1
comp=Z,0.4nm,0.8s,baz=194,slow=3.0,SNR=3.5
TOA1 Torodi Ar. Sit 175.21 181 *e*PKPdf PKPdf 21 13 09.7 -0.8
TOA1 *e*PKPab PKPab 21 14 50.6 0.0

NIED ***08*** *20:55:00.36°90N×141°20E,h44km,Mw3.7 Best double couple: M₀4.18000×10¹⁴ NP1:φ₀143.00000°, δ24.00000°, λ159.00000°. NP2:φ₀252.00000°, δ82.00000°, λ68.00000°.*
ISCJB ***08*** *20:55:31.8±0.7,36°83N±0°03×141°28E±0°06,h46km±5km, mb3.7/8,MS3.8/2,Error ellipse: s-maj=8.1km s-min=5.2km az=18.6*
JMA ***08*** *20:55:33.6±0.1,36°87N×141°12E,h50km±1km,M3.6*
JMA Felt II J1.
NEIC ***08*** *20:55:33.0±1.0,36°80N×141°33E,h45km±9km,mb4.4/2, Error ellipse: s-maj=12.6km s-min=8.9km az=108.0*
IDC ***08*** *20:55:34.1±2.3,36°79N×141°16E,h45km±23km,mb3.4/6, mb1 3.6/9,mb1mx3.3/50,mbtmp3.7/9,ML3.5/2,MS3.8/2, Ms1 3.8/2,ms1mx2.6/28,Error ellipse: s-maj=27.8km s-min=19.0km az=101.0*
ISC 08 20:55:31.4±1.5,36°82N±0°04×141°35E±0°06,h30km±10km, n41,σ1s28/47,mb3.6/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.52**	**303**	P	**Pb**	**20 55 42.9**	**+0.6**
ONAJ				S	**Sb**	**20 55 49.3**	**-0.4**
JHO	**Hitachi**	**0.66**	**252**	P	**Pn**	**20 55 44.9**	**+0.2**
JHO				S	**Sb**	**20 55 52.8**	**-0.7**
JFK	**Kawauchi**	**0.67**	**325**	P	**Pn**	**20 55 45.0**	**+0.2**
JFK				S	**Sb**	**20 55 52.7**	**-0.9**
JFT	**Otama**	**1.07**	**311**	P	**Pn**	**20 55 50.8**	**+0.5**
JFT				S	**Sn**	**20 56 03.1**	**-1.1**
JMM	**Marumori**	**1.13**	**337**	P	**Pn**	**20 55 51.6**	**+0.4**
JMM				S	**Sn**	**20 56 04.6**	**-1.1**
JFY	**Yanaizu**	**1.44**	**294**	P	**Pn**	**20 55 55.2**	**-0.2**
JFY				*e*S	**Sn**	**20 56 10.7**	**-2.6**
JAG	**Ashikaga**	**1.58**	**256**	P	**Pn**	**20 55 57.2**	**-0.1**
JAG				S	**Sn**	**20 56 14.5**	**-2.2**
MJAR	**Matsushiro Arr**	**2.54**	**265**	P	**Pn**	**20 56 11.2**	**+0.6**
	5.1nm,0.3s,baz=67,slow=9.5,SNR=34						
MJAR				S	**Sn**	**20 56 42.4**	**+1.9**
	6.6nm,0.3s,baz=153,slow=37,SNR=9.1						
MJAR				LR	LR	20 57 18.9	
	comp=Z,44nm,19.9s,baz=75,slow=44						
MAJO	**Matsushiro**	**2.54**	**265**	*e*Pn	**Pn**	**20 56 11.6**	**+0.9**
MAJO				*e*Sn	**Sn**	**20 56 40.1**	**-0.4**
MAT	**Matsushiro**	**2.54**	**265**	P	**Pn**	**20 56 11.5**	**+0.9**
MAT				S	**Sn**	**20 56 39.9**	**-0.6**
MJB9	**Matsu-Tunnel**	**2.54**	**265**	*e*Pn	**Pn**	**20 56 11.4**	**+0.8**
MJB9				*e*Sn	**Sn**	**20 56 40.0**	**-0.6**
INU	**Inuyama**	**3.81**	**249**	*e*Pn	**Pn**	**20 56 30.1**	**+2.2**
JHJ2	**Mitsune**	**3.91**	**199**	*e*Pn	**Pn**	**20 56 31.4**	**+2.0**
JHJ2				*e*Sn	**Sn**	**20 57 12.2**	**-2.0**
JHJ	**Hachijo jima 2**	**3.91**	**200**	P	**Pn**	**20 56 30.5**	**+1.1**
	18nm,0.3s,baz=328,slow=19,SNR=14						
JHJ				S	**Sn**	**20 57 14.9**	**+0.7**
	23nm,0.3s,baz=37,slow=20,SNR=8.5						
ERM	**Erimo**	**5.37**	**15**	*e*Pn	**Pn**	**20 56 51.5**	**+2.1**
ERM				*e*Sn	**Sn**	**20 57 48.2**	**-2.0**
ASAJ	**Asahikawa**	**7.35**	**7**	P	**Pn**	**20 57 17.6**	**+1.0**
	baz=216,slow=11						
ASAJ	**Asahikawa**	**7.35**	**7**	*e*Pn	**Pn**	**20 57 15.8**	**-0.8**
USRK	**Ussuriysk Ar.**	**10.25**	**319**	P	Pn	20 58 01.8	+5.4
	0.3nm,0.3s,baz=121,slow=13,SNR=9.6						
ANA2	**Anatahan**	**20.76**	**168**	*e*P	**P**	**21 00 07.2**	**-2.6**
SEY	**Seymchan**	**27.01**	**11**	P	**P**	**21 01 13.2**	**+2.9**
	1.8nm,0.8s,baz=223,slow=6.5,SNR=7.0						
SONA1	**Songino Array**	**27.86**	**304**	*e*P	**P**	**21 01 18.5**	**+0.2**
SONA0	**Songino Array**	**27.86**	**304**	*e*P	**P**	**21 01 18.8**	**+0.5**
	3.7nm,1.5s						
SONM	**Songino Array**	**27.86**	**304**	P	**P**	**21 01 18.8**	**+0.5**
	0.4nm,0.5s,baz=114,slow=10,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**28.08**	**120**	T	T	21 31 02.5	
	baz=313,slow=75,SNR=68						
H11N1	**WAKE ISLAND Hy**	**28.09**	**120**	T	T	21 31 03.0	
	baz=313,slow=75,SNR=68						
H11N3	**WAKE ISLAND Hy**	**28.10**	**120**	T	T	21 31 02.5	
	baz=313,slow=75,SNR=68						
H11S1	**WAKE ISLAND Hy**	**28.79**	**122**	T	T	21 32 14.3	
	baz=314,slow=75,SNR=88						
H11S3	**WAKE ISLAND Hy**	**28.79**	**123**	T	T	21 32 15.4	
	baz=314,slow=75,SNR=48						
H11S2	**WAKE ISLAND Hy**	**28.80**	**122**	T	T	21 32 14.8	
	baz=314,slow=75,SNR=53						
CM01	**Chiang Mai Arr**	**41.40**	**255**	*e*P	**P**	**21 03 14.5**	**-0.7**
ZAA0	**Zalesovo Array**	**42.02**	**313**	*e*P	**P**	**21 03 18.6**	**-1.2**
ZAA1	**Zalesovo Array**	**42.02**	**313**	*e*P	**P**	**21 03 19.1**	**-0.6**
ZALV	**Zalesovo Beam**	**42.02**	**313**	P	**P**	**21 03 19.1**	**-0.6**
	0.8nm,0.8s,baz=77,slow=6.7,SNR=3.8						
MK01	**Makanchi Array**	**44.19**	**302**	*e*P	**P**	**21 03 38.2**	**+0.8**
MK32	**Makanchi Array**	**44.19**	**302**	*e*P	**P**	**21 03 37.1**	**-0.3**
MKAR	**Makanchi Array**	**44.19**	**302**	P	**P**	**21 03 37.1**	**-0.3**
	0.3nm,0.6s,baz=90,slow=10,SNR=3.1						
ILAR	**Eielson Array**	**49.70**	**32**	P	**P**	**21 04 21.9**	**+1.7**
	0.3nm,0.8s,baz=278,slow=6.3,SNR=4.1						
BVAR	**Borovoye Array**	**50.68**	**312**	LR	LR	21 25 26.9	
	comp=Z,94nm,21.8s,baz=264,slow=35						
WR1	**Warramunga Arr**	**56.84**	**188**	*e*P	**P**	**21 05 13.4**	**+0.2**
	35nm,1.8s						
WRA	**Warramunga Arr**	**56.84**	**188**	P	**P**	**21 05 13.4**	**+0.2**
	0.8nm,0.7s,baz=7.0,slow=7.4,SNR=3.4						

WRA LR LR 21 28 36.5
comp=Z,82nm,18.8s,baz=135,slow=35
ABKAR Akbulak array 58.04 310 *eP* **P 21 05 20.8 -0.5**

NEIC ***08*** *21:02:43.5±2.3,29.32S×176.73W,h3km±13km,mb4.6/2, Error ellipse: s-maj=13.5km s-min=11.2km az=130.0*
ISCJB ***08*** *21:02:46.7±0.6,29.48S±0.08×176.83W±0.08,h31km, mb4.3/14,MS3.9/14,Error ellipse: s-maj=12.4km s-min=10.0km az=18.4*
IDC ***08*** *21:02:51.6±2.0,29.14S×177.07W,h49km±14km,mb4.1/12, mb1 4.2/12,mb1mx4.1/21,mbtmp4.3/12,MS3.7/15, Ms1 3.8/15,ms1mx3.6/33,Error ellipse: s-maj=24.1km s-min=21.7km az=101.0*
ISC 08 21:02:48.3±0.5,29.41S±0.08×176.88W±0.07,h31km,n90, σ1§46/76,mb4.4/14,MS3.9/14,6C-4D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.92**	**279**	P		P	**Pn**	**21 03 05.3**	**+0.2**
	2μm,0.3s,baz=98,slow=7.8,SNR=58								
RAO				S			**Sb**	**21 03 18.0**	**+0.3**
	4μm,0.3s,baz=90,slow=20,SNR=14								
RAO	**Raoul Island**	**0.92**	**279**	*e*Pg			**Pn**	**21 03 04.1**	**-1.0**
RAO				*e*Sg			**Sb**	**21 03 18.4**	**+0.7**
URZ	**Urewera**	**10.14**	**208**	P			**Pn**	**21 05 10.4**	**-1.4**
	1.0nm,0.3s,baz=135,slow=13,SNR=5.9								
URZ				S			**Sn**	**21 06 59.5**	**-4.9**
	3.3nm,0.3s,baz=61,slow=23,SNR=10								
DZM	**Mont Dzumac**	**16.70**	**292**	P			**P**	**21 06 41.6**	**-0.6**
	0.4nm,0.3s,baz=111,slow=6.8,SNR=4.2								
DZM				LR			LR	21 11 52.7	
	comp=Z,881nm,18.6s,baz=146,slow=33								
DZM	**Mont Dzumac**	**16.70**	**292**	*e*P			**P**	**21 06 43.1**	**+0.9**
	64nm,1.6s								
DZM				*e*LR			LR	21 10 39.3	
	958nm,23.4s								
RPZ	**Rata Peaks**	**17.23**	**211**	P			**Pn**	**21 06 47.0**	**+0.4**
	2.5nm,0.3s,baz=1.7,slow=1.0,SNR=5.7								
RAR	**Rarotonga**	**17.47**	**66**	P			**Pn**	**21 06 44.8**	**-4.8**
	2.6nm,0.3s,baz=165,slow=1.7,SNR=6.4								
RAR				LR			LR	21 11 13.1	
	comp=Z,306nm,21.5s,baz=242,slow=29								
TBI	**Tubuai**	**25.26**	**83**	*e*LR			LR	21 14 28.0	
	449nm,27.8s,baz=253								
PPT2	**Papeete2**	**27.59**	**71**	*e*LR			LR	21 15 26.5	
	456nm,26.2s,baz=248								
PPT	**Papeete**	**27.60**	**71**	LR			LR	21 18 49.7	
	comp=Z,42nm,18.4s,baz=200,slow=35								
CTA	**Charters Tower**	**34.62**	**277**	P			**P**	**21 09 34.8**	**-0.1**
	7.1nm,0.6s,baz=111,slow=12,SNR=11								
STKA	**Stephens Creek**	**35.66**	**255**	P			**P**	**21 09 43.7**	**0.0**
	2.4nm,0.5s,baz=108,slow=10,SNR=8.0								
STKA				LR			LR	21 23 04.8	
	comp=Z,264nm,18.6s,baz=80,slow=34								
ASAR	**Alice Springs**	**44.15**	**265**	P			**P**	**21 10 53.8**	**-0.5**
	5.3nm,0.6s,baz=98,slow=6.4,SNR=62								
ASAR				PcP			**PcP**	**21 12 38.8**	**-0.2**
	0.6nm,0.6s,baz=111,slow=5.1,SNR=3.0								
WRA	**Warramunga Arr**	**45.05**	**271**	P			**P**	**21 11 00.4**	**-1.1**
	6.1nm,0.7s,baz=110,slow=7.9,SNR=48								
VNDA	**Vanda**	**49.18**	**186**	P			**P**	**21 11 37.2**	**+4.3**
	0.7nm,0.7s,baz=2.5,slow=5.9,SNR=4.8								
CASY	**Casey**	**56.47**	**208**	*e*P			**P**	**21 12 27.9**	**+1.1**
	3.0nm,0.8s								
MAW	**Mawson**	**73.57**	**200**	P			**P**	**21 14 20.3**	**+2.4**
	3.0nm,0.8s,baz=109,slow=6.9,SNR=5.7								
MAW				LR			LR	21 46 23.2	
	comp=Z,92nm,18.0s,baz=241,slow=35								
MJAR	**Matsushiro Arr**	**78.00**	**324**	P			**P**	**21 14 42.4**	**-1.2**
	1.8nm,0.7s,baz=158,slow=6.5,SNR=6.0								
SYO	**Syowa Base**	**78.30**	**193**⇑	*e*P			**P**	**21 14 45.6**	**+0.8**
SYO	**Syowa Base**	**78.30**	**193**⇓	*e*PcP			**PcP**	**21 14 51.7**	**-2.4**
PLCA	**Paso Flores**	**82.46**	**133**	LR			LR	21 48 04.3	
	comp=Z,78nm,18.0s,baz=276,slow=33								
LPIG	**La Paz**	**83.18**	**58**	LR			LR	21 43 11.8	
	comp=Z,57nm,21.8s,baz=225,slow=29								
KSRS	**Korea Array**	**84.23**	**319**	P			**P**	**21 15 17.7**	**+1.0**
	1.3nm,0.8s,baz=157,slow=5.9,SNR=4.6								
KSRS				LR			LR	21 50 44.4	
	comp=Z,20nm,19.2s,baz=143,slow=34								
KSAR	**Wonju Array Be**	**84.25**	**319**	P			**P**	**21 15 17.7**	**+0.9**
PETK	**Petropavlovsk-**	**85.11**	**345**	P			**P**	**21 15 20.2**	**-0.5**
	2.5nm,0.6s,baz=121,slow=7.6,SNR=5.3								
USRK	**Ussuriysk Ar.**	**86.88**	**326**	P			**P**	**21 15 30.2**	**+0.5**
	4.0nm,0.7s,baz=134,slow=3.1,SNR=13								
TXAR	**Lajitas Array**	**91.03**	**57**	P			**P**	**21 15 51.0**	**+1.2**
	0.5nm,0.9s,baz=188,slow=2.5,SNR=4.0								
TXAR				LR			LR	21 47 26.8	
	comp=Z,27nm,21.8s,baz=0.0,slow=29								
BBB	**Bella Bella**	**91.77**	**28**	LR			LR	21 52 53.1	
	comp=Z,39nm,18.3s,baz=146,slow=33								
ENH	**Enshi**	**91.86**	**304**	*e*P			**P**	**21 15 52.0**	**-1.5**
	2.5nm,0.4s								
CMAR	**Chiang Mai Arr**	**94.00**	**289**	LR			LR	22 01 12.8	
	comp=Z,11nm,18.0s,baz=205,slow=37								
NEW	**Newport**	**94.00**	**35**	LR			LR	21 54 55.0	
	comp=Z,36nm,18.3s,baz=203,slow=33								
PDAR	**Pinedale Array**	**94.75**	**43**	LR			LR	21 55 55.2	
	comp=Z,56nm,18.2s,baz=250,slow=34								
DLBC	**Dease Lake**	**95.83**	**23**	LR			LR	21 50 24.9	
	comp=Z,20nm,20.2s,baz=278,slow=30								
ILAR	**Eielson Array**	**96.75**	**12**	P			**P**	**21 16 14.8**	**-0.4**
	0.4nm,0.7s,baz=225,slow=5.9,SNR=5.1								
LPAZ	**La Paz**	**97.65**	**113**	LR			LR	21 54 18.9	
	comp=Z,56nm,18.5s,baz=186,slow=32								
TEIG	**Tepich**	**98.50**	**72**	LR			LR	21 49 28.2	
	comp=Z,1μm,21.2s,baz=273,slow=28								
MKAR	**Makanchi Array**	**117.88**	**310**	PKP			**PKPdf**	**21 21 30.9**	**-0.5**
	0.6nm,0.7s,baz=198,slow=1.9,SNR=5.4								
KURK	**Kurchatov**	**121.07**	**314**	PKP			**PKPdf**	**21 21 37.0**	**-0.3**
KURBB	**Kurchatov Arra**	**121.11**	**314**	PKP			**PKPdf**	**21 21 37.0**	**-0.4**
	1.3nm,0.7s,baz=112,slow=1.9,SNR=17								
KKAR	**Karatay Array**	**125.33**	**304**	*e*PKPdf			**PKPdf**	**21 21 46.4**	**+0.5**
BVAR	**Borovoye Array**	**126.37**	**316**	PKP			**PKPdf**	**21 21 47.8**	**+0.3**
	1.7nm,0.6s,baz=94,slow=1.3,SNR=13								
AKTO	**Aktyubinsk**	**134.15**	**313**	PKP			**PKPdf**	**21 22 03.1**	**+0.7**
	1.1nm,0.6s,baz=21,slow=0.8,SNR=3.7								
ARCES	**ARCESS Array B**	**137.82**	**348**	PKhKP			PKPpre	21 21 59.3	
	1.2nm,0.7s,baz=354,slow=2.8,SNR=3.4								
H10S3	**ASCENSION HYDR**	**138.19**	**153**	T			T	23 57 57.6	
	baz=204,slow=74,SNR=6.9								
H10S2	**ASCENSION HYDR**	**138.19**	**153**	T			T	23 58 01.4	
	baz=204,slow=74,SNR=4.5								
H10S1	**ASCENSION HYDR**	**138.20**	**153**	T			T	23 57 56.0	
	baz=204,slow=74,SNR=6.7								
H10N3	**ASCENSION HYDR**	**139.26**	**153**	T			T	23 59 10.2	
	baz=203,slow=74,SNR=6.6								
H10N1	**ASCENSION HYDR**	**139.27**	**153**	T			T	23 59 08.7	
	baz=203,slow=74,SNR=4.9								
H10N2	**ASCENSION HYDR**	**139.28**	**153**	T			T	23 59 08.9	
	baz=203,slow=74,SNR=5.8								
GUDG	**Gudauri**	**144.42**	**303**	P			**PKPdf**	**21 22 21.4**	**-0.3**
FINES	**FINESS Array B**	**144.54**	**341**	PKP			**PKPab**	**21 22 19.1**	**-0.3**
	7.0nm,0.6s,baz=57,slow=1.1,SNR=56								
ONI	**Oni**	**145.15**	**303**	P			**PKPdf**	**21 22 23.3**	**+0.6**
BGD	**Bogdanovka**	**145.22**	**301**	P			**PKPdf**	**21 22 24.1**	**+1.0**
EAK	**Akyaka**	**145.28**	**300**	*i* P			**PKPdf**	**21 22 24.2**	**+1.1**
AKH	**Akhalkalaki**	**145.28**	**301**⇑	*i*P			**PKPdf**	**21 22 24.3**	**+1.2**
AKH	**Akhalkalaki**	**145.28**	**301**	P			**PKPdf**	**21 22 24.0**	**+0.9**
KBZ	**Khabaz**	**145.35**	**305**	PKPbc			**PKPab**	**21 22 23.3**	**+0.4**
	4.1nm,0.8s,baz=144,slow=1.4,SNR=10								
KIV	**Kislovodsk**	**145.46**	**306**	*e*PKPdf			**PKPbc**	**21 22 23.5**	**+0.2**
EPOS	**Posof**	**145.84**	**301**	*i* P			**PKPab**	**21 22 26.0**	**+0.9**
TUTA	**Tutak**	**146.00**	**298**	*i* P			**PKPab**	**21 22 26.8**	**+0.9**
DAGI	**Agillar**	**146.50**	**301**	*i* P			**PKPab**	**21 22 27.7**	**+0.1**
DBOC	**Borcka**	**146.65**	**301**	*i* P			**PKPab**	**21 22 28.0**	**-0.1**
ERZM	**Erzurum**	**147.07**	**299**	*i* P			**PKPbc**	**21 22 28.3**	**-0.1**
KOPT	**Kop Dagi**	**147.72**	**299**	*i* P			**PKPab**	**21 22 32.2**	**-0.4**
NB2	**NORSAR Subarra**	**147.91**	**353**	PKP			**PKPbc**	**21 22 29.3**	**-0.4**
	comp=Z,2.0nm,0.6s,baz=16,slow=2.9								
NOA	**NORSAR Array B**	**147.91**	**353**	PKPbc			**PKPbc**	**21 22 29.4**	**-0.3**
	comp=Z,6.2nm,1.0s,baz=15,slow=4.4,SNR=14								
KELT	**Kelkit**	**148.64**	**300**	*i* P			**PKPbc**	**21 22 34.2**	**+1.6**
ZALF	**Zalf**	**150.59**	**286**	*e*P			**PKPbc**	**21 22 39.0**	**+1.6**
ROOS	**tl_alroos**	**150.66**	**288**	*e*P			**PKPab**	**21 22 41.4**	**-3.1**
RABH	**Abou Rabah**	**150.73**	**289**	*e*P			**PKPbc**	**21 22 40.8**	**+3.1**
DRWC	**Darouich**	**151.07**	**293**	*e*P			**PKPab**	**21 22 43.4**	**-2.8**
AKASG	**Malin Array Be**	**151.08**	**325**	PKPbc			**PKPbc**	**21 22 37.9**	**+0.1**
	comp=Z,5.4nm,0.6s,baz=48,slow=2.8,SNR=18								
SALA	**Sala**	**151.09**	**285**	*e*P			**PKPbc**	**21 22 40.4**	**+1.7**
BTCH	**Batrach**	**151.28**	**292**	*e*P			**PKPbc**	**21 22 39.1**	**+0.2**
MARH	**Ras Al Marh**	**151.33**	**288**	*e*P			**PKPbc**	**21 22 41.1**	**+1.7**
TOTH	**TOTAH**	**151.37**	**286**	*e*P			**PKPbc**	**21 22 40.4**	**+1.3**
HAWK	**Haweek**	**151.39**	**289**	*e*P			**PKPbc**	**21 22 41.6**	**+2.3**
BIDA	**Albida**	**151.44**	**290**	*e*P			**PKPbc**	**21 22 39.6**	**+0.3**
TCHB	**Talchebab**	**151.73**	**285**	*e*P			**PKPbc**	**21 22 41.4**	**+1.4**
BRTR	**Keskin Array B**	**152.96**	**301**	PKPbc			**PKPbc**	**21 22 42.2**	**-0.5**
	comp=Z,1.3nm,0.6s,baz=147,slow=4.8,SNR=7.9								
BRTR				PKPab			**PKPab**	**21 22 54.6**	**+0.5**
	comp=Z,2.9nm,0.7s,baz=146,slow=4.0,SNR=11								
TESR	**Tescani**	**154.94**	**319**⇑	*i*P			**PKPab**	**21 23 01.7**	**-0.3**
BURAR	**Bucovina Array**	**155.06**	**323**⇓	*i*P			**PKPab**	**21 23 02.9**	**+0.3**
DOPR	**Dopca**	**155.57**	**320**⇑	*i*P			**PKPab**	**21 23 07.1**	**+0.7**
ARR	**Arges**	**156.75**	**319**⇓	*i*P			**PKPab**	**21 23 10.4**	**+0.5**
DRGR		**156.89**	**324**⇑	*i*P			**PKPab**	**21 23 10.7**	**+0.3**
MDVR	**Moldovita**	**158.74**	**321**⇓	*i*P			**PKPab**	**21 23 17.6**	**-0.9**
KHC	**Kasperske Hory**	**158.75**	**341**	*e*PKPAB			**PKPab**	**21 23 18.5**	**+0.2**
GERES	**GERESS Array B**	**158.97**	**340**	PKPab			**PKPab**	**21 23 18.1**	**-1.2**
	comp=Z,0.3nm,0.6s,baz=36,slow=1.8,SNR=5.6								
PDG	**Podgorica**	**161.62**	**319**⇑	*i*P			**PKPab**	**21 23 31.5**	**+0.5**
TORD	**Torodi Ar. Bea**	**163.76**	**175**	PKPab			**PKPab**	**21 23 42.5**	**+1.6**
	comp=Z,0.8nm,0.7s,baz=177,slow=4.3,SNR=5.7								

ISCJB ***08*** *21:09:18.2±0.6,44.17N±0.02×72.03W±0.03,h8km±4km, Error ellipse: s-maj=4.1km s-min=3.5km az=179.7*
OTT ***08*** *21:09:19.1±0.2,44.12N×71.99W,h5km,MN2.8/21, Vermont, U.S. 114km south from Coaticook, Qc Northern Appalachians Seismic Zone.*
NEIC ***08*** *21:09:19.8,44.09N×72.04W,h11km,MN2.6(WES),After WES.*
NEIC Felt [III] at Haverhill, Lisbon, North Haverhill, Piermont and Woodsville and [II] at Bath. Also felt at Franconia, Littleton, Lyme, Monroe and Washington. Felt [IV] at Wells River, [III] at Newbury and South Ryegate and [II] at Bradford and East Ryegate, Vermont. Also felt at East Corinth, Enosburg Falls, Groton, Saint Johnsbury and Springfield. Felt at Portland, Maine and at East Weymouth and Somerville, Massachusetts. Also felt at Montreal, Quebec.
ISC 08 21:09:17.2±1.2,44.13N±0.03×71.98W±0.02,h5km±10km, n36,σ1§37/59,Vermont-New Hampshire region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HNH	**Hanover**	**0.48**	**207**	*e*Pg			**Pb**	**21 09 27.7**	**-0.4**
MDV	**Middlebury**	**0.88**	**262**	*e*Pg			**Pb**	**21 09 34.9**	**0.0**
MOQ	**Mont Orford**	**1.20**	**351**	Pg			**Pn**	**21 09 41.2**	**+0.6**
MOQ				SG			**Sg**	**21 09 56.5**	**+0.8**
MOQ				Trac				21 10 00.6	
	comp=Z,20nm,0.1s								
FRNY	**Flat Rock**	**1.35**	**302**	PG			**Pg**	**21 09 43.3**	**+0.2**
FRNY				SG			**Sn**	**21 10 01.0**	**+0.1**
FRNY				Trac				21 10 07.5	
	comp=Z,18nm,0.1s								
FRNY	**Flat Rock**	**1.35**	**302**	*e*Pn			**Pg**	**21 09 43.9**	**+0.8**
ACCN	**Adirondack Com**	**1.43**	**239**	*e*Pn			**Pb**	**21 09 44.3**	**-0.1**
NCB	**Newcomb**	**1.62**	**265**	PN			**Pb**	**21 09 47.2**	**-0.4**
NCB				SN			**Sb**	**21 10 08.8**	**+0.3**
NCB				Trac				21 10 11.1	
	comp=Z,0.8nm,0.3s								
NCB	**Newcomb**	**1.62**	**265**	*e*Pn			**Pb**	**21 09 47.2**	**-0.4**
HRV	**Adam Dziewonsk**	**1.65**	**169**	*e*Pn			**Pg**	**21 09 48.2**	**-0.7**
HRV				*e*Sn			**Sg**	**21 10 09.7**	**-0.7**
WVL	**Waterville**	**1.72**	**75**	PN			**Pg**	**21 09 50.7**	**+0.5**
WVL				SN			**Sg**	**21 10 12.4**	**-0.1**
WVL	**Waterville**	**1.72**	**75**	*e*Pn			**Pg**	**21 09 51.2**	**+0.9**
MNTQ	**Montreal, Queb**	**1.80**	**320**	SG			**Sg**	**21 10 14.8**	**-0.2**
MNTQ				SG			**Sb**	**21 10 15.3**	**+1.8**
MNTQ				Trac				21 10 18.5	
	comp=Z,15nm,0.1s								
TRY	**Troy**	**1.86**	**222**	*e*Pn			**Pg**	**21 09 52.3**	**-0.6**
QUA2	**Belchertown**	**1.87**	**188**	*e*Pn			**Pb**	**21 09 52.1**	**+0.2**
LONY	**Lake Ozonia**	**1.93**	**286**	PN			**Pb**	**21 09 52.4**	**-0.5**
LONY				SN			**Sb**	**21 10 16.4**	**-0.8**
LONY				Trac				21 10 19.6	
	comp=Z,21nm,0.1s								
LONY	**Lake Ozonia**	**1.93**	**286**	*e*Pn			**Pb**	**21 09 52.4**	**-0.5**
PKME	**Peaks-Kenny Pk**	**2.23**	**59**	PN			**Pb**	**21 09 57.1**	**-0.8**
PKME				SN			**Sn**	**21 10 23.2**	**+0.6**
PKME				LG			Lg	21 10 31.1	
PKME				Trac				21 10 33.6	
	comp=Z,57nm,0.1s								
WBO	**Williamsburg**	**2.51**	**291**	PN			**Pn**	**21 09 59.5**	**+0.9**
WBO				SN			**Sn**	**21 10 30.2**	**+0.6**
WBO				Trac				21 10 37.3	
	comp=Z,11nm,0.1s								
ALFO	**Alfred**	**2.55**	**307**	PN			**Pb**	**21 10 01.5**	**-1.9**
ALFO				SN			**Sn**	**21 10 31.6**	**+1.1**
ALFO				LG			Lg	21 10 39.3	
ALFO				Trac				21 10 42.9	
	comp=Z,8.7nm,0.2s								
DPQ	**Saint Jean**	**2.61**	**348**	PN			**Pn**	**21 10 02.0**	**+2.0**
DPQ				SN			**Sn**	**21 10 32.8**	**+0.7**
DPQ				Trac				21 10 41.3	
	comp=Z,7.3nm,0.1s								
TRQ	**Mont Tremblant**	**2.77**	**320**	PN			**Pn**	**21 10 04.1**	**+1.8**
TRQ				SN			**Sn**	**21 10 37.4**	**+1.2**
TRQ				Trac				21 10 49.5	
	comp=Z,6.9nm,0.1s								
TRQ	**Mont Tremblant**	**2.77**	**320**	*e*Pn			**Pb**	**21 10 06.9**	**-0.4**
BCLQ	**Boischatel**	**2.85**	**11**	PN			**Pn**	**21 10 05.1**	**+1.8**
BCLQ				SN			**Sn**	**21 10 39.0**	**+1.0**
BCLQ				LG			Lg	21 10 48.9	
BCLQ				Trac				21 10 57.8	
	comp=Z,5.0nm,0.1s								
GAC	**Glen Almond**	**2.94**	**304**	PN			**Pn**	**21 10 06.4**	**+1.9**
GAC				PN			**Pb**	**21 10 07.6**	**-2.4**
GAC				SN			**Sn**	**21 10 41.1**	**+0.9**
GAC				SN			**Sb**	**21 10 41.2**	**-5.0**
GAC				LG			Lg	21 10 52.9	
GAC				Trac				21 10 54.3	
	comp=Z,12nm,0.3s								
GAC				Trac				21 10 54.3	
	comp=Z,9.6nm,0.2s								
KGNO	**Kingston**	**3.25**	**273**	SN			**Sn**	**21 10 48.1**	**+0.4**
KGNO				LG			Lg	21 11 00.5	
BINY	**Binghamton**	**3.51**	**238**	PN			**Pn**	**21 10 13.6**	**+1.2**
BINY				SN			**Sn**	**21 10 54.0**	**-0.3**
BINY				LG			Lg	21 11 07.5	
BINY				Trac				21 11 10.6	
	comp=Z,17nm,0.3s								
PLVO	**Plevna**	**3.75**	**286**	PN			**Pn**	**21 10 16.4**	**+0.7**
PLVO				SN			**Sn**	**21 11 00.4**	**+0.2**
PLVO				LG			Lg	21 11 13.5	
PLVO				Trac				21 11 14.6	
	comp=Z,5.6nm,0.1s								
GGN	**Saint George**	**3.80**	**73**	PN			**Pn**	**21 10 18.1**	**+1.8**
GGN				SN			**Sn**	**21 11 01.7**	**+0.4**
GGN				LG			Lg	21 11 19.9	
GGN				Trac				21 11 23.6	
	comp=Z,11nm,0.2s								
A21	**Saint Andre**	**3.91**	**23**	PN			**Pn**	**21 10 18.5**	**+0.6**
A21				SN			**Sn**	**21 11 02.4**	**-1.8**
A21				Trac				21 11 26.1	
	comp=Z,5.0nm,0.2s								
A21				LG			Lg	21 11 26.9	
PEMO	**Pembroke**	**4.05**	**294**	PN			**Pn**	**21 10 21.5**	**+1.7**
PEMO				Trac				21 11 31.3	
	comp=Z,3.9nm,0.2s								
DELO	**Deloro Mine**	**4.06**	**277**	PN			**Pn**	**21 10 22.0**	**+2.0**
DELO				SN			**Sn**	**21 11 06.8**	**-1.1**
DELO				Trac				21 11 23.5	
	comp=Z,7.0nm,0.2s								
DELO				LG			Lg	21 11 26.1	
CRLO	**Chalk River**	**4.27**	**298**	PN			**Pn**	**21 10 24.3**	**+1.5**
CRLO				SN			**Sn**	**21 11 12.7**	**-0.4**
CRLO				Trac				21 11 30.1	
	comp=Z,6.5nm,0.2s								
WLVO	**Wesleyville**	**4.63**	**270**	PN			**Pn**	**21 10 29.7**	**+2.0**
WLVO				LG			Lg	21 11 43.1	
WLVO				Trac				21 11 50.6	
	comp=Z,15nm,0.3s								
DMCQ	**Dolbeau-Mistas**	**4.83**	**359**	PN			**Pn**	**21 10 29.1**	**-1.5**
DMCQ				Trac				21 11 39.7	
	comp=Z,0.4nm,0.0s								
BATG	**Bathurst New B**	**5.20**	**51**	PN			**Pn**	**21 10 37.2**	**+1.5**
BATG				SN			**Sn**	**21 11 33.2**	**-2.8**
BATG				LG			Lg	21 12 06.0	
BATG				Trac				21 12 11.9	
	comp=Z,4.5nm,0.3s								
EEO	**Eldee**	**5.59**	**299**	SN			**Sn**	**21 11 44.2**	**-1.3**
EEO				LG			Lg	21 12 11.6	
EEO				Trac				21 12 20.5	
	comp=Z,2.7nm,0.2s								

SJA ***08*** *21:21:59.2±0.7,21.02S×67.89W,h291km±103km,ML3.9*
IDC ***08*** *21:22:02.8±0.8,21.20S×67.67W,h147km±10km,mb3.7/5, mb1 3.7/8,mb1mx3.5/23,mbtmp4.1/8,Error ellipse: s-maj=22.2km s-min=10.1km az=105.0*
GUC ***08*** *21:22:04.3±0.6,21.18S×68.17W,h169km±7km,ML4.0*
ISC 08 21:22:02.4±0.8,21.15S±0.05×67.76W±0.08, h147km±10km,n26,σ1§74/38,mb4.1/5,6C-2D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**1.62**	**273**⇓	*i*P			**Pn**	**21 22 33.7**	**+0.5**
PB01				*i* S			**Sn**	**21 22 56.1**	**-0.6**
PB08	**IPOC Station P**	**1.65**	**307**⇑	*i*P			**Pn**	**21 22 35.8**	**+1.9**
PB08				*i* S			**Sn**	**21 22 59.6**	**+1.8**
PB08				IAML				21 22 59.8	
	comp=N,757nm,0.4s								
LVC	**Limon Verde**	**1.80**	**216**	P			**Pn**	**21 22 36.6**	**+1.1**
	comp=N,1μm,0.3s,baz=40,slow=9.0,SNR=500								
LVC				S			**Sn**	**21 23 01.4**	**+0.5**
	comp=N,1μm,0.3s,baz=285,slow=20,SNR=54								
PB07	**IPOC Station P**	**2.06**	**254**⇓	*i*P			**Pn**	**21 22 38.5**	**+0.2**
PB07				*i* S			**Sn**	**21 23 04.3**	**-1.5**
PB07				IAML				21 23 05.7	
	comp=N,2μm,0.4s								
HMBC	**Humberstone**	**2.17**	**293**⇑	*i*P			**Pn**	**21 22 40.0**	**+0.4**
HMBC				*i* S			**Sn**	**21 23 07.2**	**-1.0**
HMBC				IAML				21 23 08.7	
	comp=N,1μm,0.2s								
PB11	**IPOC Station P**	**2.25**	**308**⇑	*i*P			**Pn**	**21 22 41.4**	**+0.8**
PB06	**IPOC Station P**	**2.29**	**227**⇑	*i*P			**Pn**	**21 22 41.4**	**+0.4**
PB06				*i* S			**Sn**	**21 23 10.2**	**-0.4**
PB06				IAML				21 23 11.3	
	comp=E,1μm,0.3s								
PB04	**IPOC Station P**	**2.52**	**242**	*e*P			**Pn**	**21 22 44.1**	**+0.3**
PB04				*i* S			**Sn**	**21 23 12.9**	**-2.7**
MNMC	**Minye Minye**	**2.65**	**319**⇑	*i*P			**Pn**	**21 22 47.1**	**+1.5**
MNMC				*i* S			**Sn**	**21 23 19.6**	**+0.8**
PSGC	**Pisagua**	**2.70**	**304**	*e*P			**Pn**	**21 22 46.1**	**0.0**
PSGC				*e*S			**Sn**	**21 23 17.9**	**-1.8**
PB12	**IPOC Station P**	**3.50**	**316**⇑	*i*P			**Pn**	**21 22 55.6**	**-0.6**
PB12				*i* S			**Sn**	**21 23 35.4**	**-2.4**
LPAZ	**La Paz**	**4.85**	**356**	P			**Pn**	**21 23 17.4**	**+2.9**
	comp=E,5.7nm,0.3s,baz=164,slow=8.9,SNR=107								
LPAZ				S			**Sn**	**21 24 12.8**	**+2.3**
	baz=82,slow=19,SNR=1.1								
FSA	**Cafayete**	**5.20**	**162**	*e*P			**Pn**	**21 23 21.1**	**+2.5**
FSA				IAML				21 23 25.3	
	comp=Z,9.1nm,0.3s								
AHML	**Horco Molle**	**6.03**	**159**	*e*P			**Pn**	**21 23 31.8**	**+2.2**
AHML				IAML				21 23 33.1	
	comp=Z,18nm,0.5s								
VCA	**Vinchina**	**7.56**	**183**	*e*P			**Pn**	**21 23 50.6**	**+0.4**
VCA				IAML				21 23 55.7	
	comp=Z,13nm,0.3s								
SIV	**San Ignacio**	**8.16**	**52**	P			**Pn**	**21 23 57.8**	**-0.2**
	comp=Z,3.9nm,0.3s,baz=252,slow=13,SNR=50								
SIV				S			**Sn**	**21 25 24.9**	**-4.0**
	comp=Z,0.2nm,0.3s,baz=259,slow=18,SNR=5.8								
AMOG	**MOGNA**	**9.77**	**184**

ILAR			ScP	**ScP**	**21 37 03.2**	**-2.8**
	0.3nm,0.6s,baz=297,slow=4.0,SNR=4.0						
ARCES	**ARCESS Array B**	**66.83 338**	P	**P**	**21 33 14.9**	**-0.7**
	1.0nm,0.7s,baz=67,slow=8.0,SNR=4.1						
FINES	**FINESS Array B**	**70.14 330**	P	**P**	**21 33 35.5**	**-0.8**
	0.6nm,0.4s,baz=67,slow=5.7,SNR=18						
AKASG	**Malin Array Be**	**73.52 319**	P	**P**	**21 33 55.9**	**-0.7**
	0.6nm,0.3s,baz=61,slow=5.9,SNR=2.7						
YKA	**Yellowknife Ar**	**74.12 26**	P	**P**	**21 34 00.9**	**+0.9**
	0.8nm,0.7s,baz=309,slow=5.6,SNR=6.6						
NB2	**NORSAR Subarra**	**76.38 334**	P	**P**	**21 34 11.5**	**-1.5**
	comp=Z,1.4nm,0.7s,baz=51,slow=5.9						
NOA	**NORSAR Array B**	**76.38 334**	P	**P**	**21 34 12.0**	**-1.0**
	comp=Z,1.0nm,0.6s,baz=50,slow=5.6,SNR=6.7						
PDAR	**Pinedale Array**	**88.94 39**	P	**P**	**21 35 19.8**	**+1.2**
	comp=Z,1.1nm,0.7s,baz=0.0,slow=0.1,SNR=4.7						
ULM	**Lac du Bonnet**	**90.02 28**	P	**P**	**21 35 22.6**	**-0.5**
	comp=Z,3.1nm,0.7s,baz=331,slow=4.7,SNR=3.8						

*ISCJB **08** 21:25:24.2±0.6, 14.20°N±0.10°×120.9°E±0.2, h211km±5km, mb3.6/13, Error ellipse: s-maj=25.9km s-min=15.6km az=167.6*
*IDC **08** 21:25:25.1±0.5, 14.18°N×120.79°E, h203km±4km, mb3.4/13, mb1 3.5/13, mb1mx3.3/41, mbtmp3.9/13, Error ellipse: s-maj=20.4km s-min=10.7km az=71.0*

ISC 08 21:25:25.1±0.8, 14.2°N±0.1°×120.8°E±0.2, h206km±6km, n17, σ0^{s}73/18, mb3.6/13, 2C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGY	**Tagaytay City**	**0.14**	**139**	P	**Pn**	**21 25 52.1**	**0.0**
	291nm,0.3s,baz=36,slow=1.7,SNR=10						
TGY				S	**S**	**21 26 13.2**	**-0.1**
	169nm,0.3s,baz=204,slow=2.6,SNR=6.2						
TGY	**Tagaytay City**	**0.14**	**139**	↑*iP*	**Pn**	**21 25 52.2**	**0.0**
TGY				*i* S	**S**	**21 26 13.4**	**+0.1**
LQP	**Lukban**	**0.68**	**98**	↓*eP*	Pn	21 26 05.4	+11
PCPH	**Palayan**	**1.37**	**10**	↓*eP*	**Pn**	**21 25 57.8**	**-0.5**
CMAR	**Chiang Mai Arr**	**21.43**	**284**	P	**P**	**21 29 57.4**	**-0.1**
	1.0nm,0.7s,baz=95,slow=7.9,SNR=6.7						
KSRS	**Korea Array**	**24.00**	**14**	P	**P**	**21 30 21.9**	**+0.9**
	1.1nm,0.6s,baz=204,slow=11,SNR=4.1						
USRK	**Ussuriysk Ar.**	**31.37**	**15**	P	**P**	**21 31 27.9**	**+1.4**
	0.9nm,0.6s,baz=178,slow=12,SNR=5.0						
SONM	**Songino Array**	**35.62**	**343**	P	**P**	**21 32 03.2**	**-0.1**
	1.4nm,0.5s,baz=160,slow=10,SNR=9.7						
KLR	**Kul'dur**	**36.06**	**12**	P	**P**	**21 32 07.7**	**+0.8**
	2.4nm,0.6s,baz=240,slow=5.9,SNR=11						
WRA	**Warramunga Arr**	**36.44**	**158**	P	**P**	**21 32 10.0**	**-0.4**
	0.8nm,0.3s,baz=341,slow=8.6,SNR=19						
ASAR	**Alice Springs**	**39.75**	**161**	P	**P**	**21 32 38.8**	**+0.7**
	0.5nm,0.3s,baz=334,slow=7.4,SNR=23						
MKAR	**Makanchi Array**	**45.71**	**323**	P	**P**	**21 33 25.9**	**+0.2**
	0.4nm,0.2s,baz=111,slow=8.1,SNR=13						
ZALV	**Zalesovo Beam**	**48.67**	**332**	P	**P**	**21 33 48.2**	**-0.2**
	2.0nm,0.3s,baz=122,slow=6.9,SNR=14						
KURBB	**Kurchatov Arra**	**49.85**	**326**	P	**P**	**21 33 57.9**	**+0.5**
	4.0nm,0.6s,baz=134,slow=7.8,SNR=44						
ARCES	**ARCESS Array B**	**78.66**	**339**	P	**P**	**21 37 03.8**	**-0.2**
	0.7nm,0.6s,baz=81,slow=7.5,SNR=7.9						
FINES	**FINESS Array B**	**79.91**	**331**	P	**P**	**21 37 10.7**	**-0.1**
	0.4nm,0.5s,baz=44,slow=5.8,SNR=4.5						
YKA	**Yellowknife Ar**	**92.26**	**23**	P	**P**	**21 38 09.9**	**-1.6**
	0.5nm,0.8s,baz=308,slow=4.5,SNR=3.1						

BUC 08 21:29:09.2±1.2, 45.47°N×26.37°E, h2km±13km, MD2.1/2, 4C-6D, Error ellipse: s-maj=2.6km s-min=1.9km az=123.0, Romania

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MLR	**Muntele Rosu**	**0.30**	**274**	↓*iP*	Pg	21 29 16.1	+1.1
MLR	**Muntele Rosu**	**0.30**	**274**	S	Sb	21 29 21.0	-1.9
MLR	**Muntele Rosu**	**0.30**	**274**	↓*iP*	Pg	21 29 16.1	+1.1
MLR				*i* S	Sb	21 29 21.0	-1.9
ISR	**Istrita**	**0.37**	**161**	↓*iP*	Pb	21 29 17.9	-0.7
ISR	**Istrita**	**0.37**	**161**	S	Sg	21 29 22.2	+1.0
ISR	**Istrita**	**0.37**	**161**	↓*iP*	Pb	21 29 17.9	-0.7
ISR				*i* S	Sg	21 29 22.2	+1.0
PLOR	**Plostina**	**0.42**	**27**	↑*iP*	Pg	21 29 18.4	+1.0
PLOR	**Plostina**	**0.42**	**27**	S	Sb	21 29 25.2	-1.2
PLOR	**Plostina**	**0.42**	**27**	↑*iP*	Pg	21 29 18.4	+1.0
PLOR				*i* S	Sb	21 29 25.2	-1.2
VRI	**Vrincioaia**	**0.47**	**32**	↑*iP*	Pb	21 29 19.4	-0.8
VRI				S	Sb	21 29 27.0	-0.5
VRI	**Vrincioaia**	**0.47**	**32**	↑*iP*	Pb	21 29 19.4	-0.8
VRI				*i* S	Sb	21 29 27.0	-0.5
VOIR		**0.93**	**268**	↓*iP*	Pn	21 29 29.6	+0.2
VOIR				S	Sb	21 29 42.0	+1.0
VOIR		**0.93**	**268**	↓*iP*	Pn	21 29 29.6	+0.2
VOIR				*i* S	Sb	21 29 42.0	+1.0

*IDC **08** 21:43:35.0±1.3, 36.11°N×142.15°E, h0km, mb3.4/2, mb1 3.3/4, mb1mx3.2/47, mbtmp3.4/4, ML3.3/2, Error ellipse: s-maj=13.9km s-min=4.1km az=88.0*
*JMA **08** 21:43:42.9±0.2, 36.43°N×141.55°E, h66km±4km, M3.0*

ISC 08 21:43:39.3±1.6, 36.29°N±0.06°×141.9°E±0.1, h19km, n10, σ1^{s}82/15, Near coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.99**	**234**	P	**Pg**	**21 44 00.4**	**+1.8**
JHO	**Hitachi**	**1.08**	**288**	P	**Pb**	**21 43 58.8**	**-0.6**
JHO				S	**Sb**	**21 44 11.2**	**-1.9**
ONAJ	**Iwakimizuishiy**	**1.17**	**314**	P	**Pn**	**21 44 00.1**	**-0.6**
ONAJ				S	**Sb**	**21 44 12.6**	**-3.1**
JFK	**Kawauchi**	**1.33**	**324**	P	**Pb**	**21 44 02.5**	**-1.1**
JAG	**Ashikaga**	**1.94**	**275**	P	**Pn**	**21 44 11.6**	**+0.4**
MJAR	**Matsushiro Arr**	**2.94**	**276**	Pn	**Pn**	**21 44 26.3**	**+1.2**
	5.6nm,0.3s,baz=108,slow=8.6,SNR=45						
MJAR				Sn	**Sn**	**21 44 58.3**	**-1.6**
	2.1nm,0.3s,baz=51,slow=9.9,SNR=7.5						
MAT	**Matsushiro**	**2.94**	**276**	P	**Pn**	**21 44 27.0**	**+1.9**
MAT				S	**Sn**	**21 44 58.9**	**-1.1**
JHJ	**Hachijo jima 2**	**3.59**	**209**	Pn	**Pn**	**21 44 31.2**	**-2.7**
	3.9nm,0.3s,baz=251,slow=23,SNR=3.8						
JHJ				Sn	**Sn**	**21 45 15.2**	**-0.7**
	17nm,0.3s,baz=122,slow=23,SNR=10						
SONM	**Songino Array**	**28.49**	**305**	P	**P**	**21 49 35.4**	**+1.9**
	0.6nm,0.7s,baz=86,slow=8.0,SNR=4.1						
MKAR	**Makanchi Array**	**44.81**	**303**	P	**P**	**21 51 52.8**	**+0.9**
	0.2nm,0.6s,baz=79,slow=7.5,SNR=2.7						

*ISCJB **08** 21:44:43.1±1.1, 37.11°N±0.04°×141.07°E±0.06, h6km±5km, mb3.4/3, Error ellipse: s-maj=8.7km s-min=5.5km az=19.0*
*IDC **08** 21:44:43.1±1.8, 37.08°N×141.13°E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.4/41, mbtmp3.5/4, ML3.6/1, Error ellipse: s-maj=33.0km s-min=27.7km az=87.0*
*JMA **08** 21:44:45.1, 37.12°N×140.92°E, h9km±1km, M3.4*
JMA Felt II J1.

ISC 08 21:44:44.3±1.6, 37.11°N±0.04°×141.00°E±0.06, h4km±10km, n13, σ0^{s}80/22, mb3.4/3, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**267**	P	**Pg**	**21 44 47.5**	**0.0**
ONAJ				*e*S	**Sg**	**21 44 49.5**	**-0.1**
JFK	**Kawauchi**	**0.28**	**339**	↑P	**Pg**	**21 44 50.2**	**+0.5**
JFK				*e*S	**Sg**	**21 44 54.1**	**+0.8**
JHO	**Hitachi**	**0.60**	**215**	P	**Pg**	**21 44 56.1**	**+0.2**
JHO				*e*S	**Sg**	**21 45 04.4**	**+0.7**
JFT	**Otama**	**0.67**	**308**	↑P	**Pg**	**21 44 57.3**	**+0.2**
JFT				*e*S	**Sg**	**21 45 06.0**	**+0.2**
JMM	**Marumori**	**0.77**	**348**	↑P	**Pg**	**21 44 59.3**	**+0.1**
JMM				*e*S	**Sg**	**21 45 09.5**	**+0.3**
JSB	**Shiboa**	**0.87**	**261**	P	**Pg**	**21 45 01.6**	**+0.5**
JSB				*e*S	**Sg**	**21 45 12.8**	**+0.4**
JFY	**Yanaizu**	**1.07**	**286**	P	**Pg**	**21 45 04.5**	**-0.4**
JFY				*e*S	**Sg**	**21 45 17.8**	**-1.0**
MJAR	**Matsushiro Arr**	**2.31**	**257**	Pn	**Pn**	**21 45 24.4**	**+1.3**
	13nm,0.3s,baz=83,slow=16,SNR=20						
MJAR				Sn	**Sn**	**21 45 53.9**	**+1.9**
	7.6nm,0.3s,baz=81,slow=31,SNR=5.8						
MAT	**Matsushiro**	**2.31**	**257**	P	**Pb**	**21 45 25.1**	**-1.4**
MAT				S	**Sb**	**21 45 54.8**	**-0.6**
ASAJ	**Asahikawa**	**7.11**	**9**	Pn	**Pn**	**21 46 29.1**	**+0.1**
	baz=161,slow=18						
SONM	**Songino Array**	**27.47**	**304**	P	**P**	**21 50 31.7**	**+0.2**
	0.3nm,0.4s,baz=119,slow=8.2,SNR=3.2						
MKAR	**Makanchi Array**	**43.80**	**302**	P	**P**	**21 52 51.0**	**-0.1**
	0.4nm,0.7s,baz=87,slow=9.9,SNR=4.3						
WRA	**Warramunga Arr**	**57.09**	**187**	P	**P**	**21 54 30.9**	**-0.8**
	0.3nm,0.5s,baz=4.1,slow=7.3,SNR=7.8						

*ISCJB **08** 22:01:51.3±1.4, 36.5°N±0.1°×70.6°E±0.2, h100km, mb3.3/1, Error ellipse: s-maj=24.1km s-min=12.4km az=147.1*
*IDC **08** 22:02:01.5±14.0, 35.83°N×72.31°E, h257km±248km, mb3.1/2, mb1 2.9/3, mb1mx2.6/30, mbtmp3.7/3, ML3.4/1, Error ellipse: s-maj=638.2km s-min=72.8km az=129.0*

ISC 08 22:01:53.3±1.4, 36.6°N±0.1°×70.6°E±0.2, h100km, n4, σ1^{s}47/5, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THN	**Thein Dam**	**5.88**	**133**	*e*P	**Pn**	**22 03 18.6**	**+0.7**
THN				*e*S	**Sn**	**22 04 23.0**	**-0.9**
MKAR	**Makanchi Array**	**13.41**	**37**	P	**Pn**	**22 05 00.3**	**+0.8**
	0.2nm,0.3s,baz=214,slow=12,SNR=7.8						
ZALV	**Zalesovo Beam**	**19.98**	**25**	P	**P**	**22 06 15.9**	**-1.5**
	1.4nm,0.3s,baz=219,slow=12,SNR=7.7						
TORD	**Torodi Ar. Bea**	**65.43**	**268**	P	**P**	**22 12 25.8**	**0.0**
	0.3nm,0.6s,baz=57,slow=5.9,SNR=4.3						

*ISK **08** 22:07:04.8, 39.09°N×29.22°E, h5km, ML2.4*
*CSEM **08** 22:07:05.9±0.1, 39.06°N×29.17°E, h2km, ML3.3, Error ellipse: s-maj=3.7km s-min=2.8km az=146.0*
*DDA **08** 22:07:05.5, 39.11°N×29.12°E, h11km, Ml3.3*

ISC 08 22:07:05.8±0.9, 39.08°N±0.02°×29.15°E±0.02, h10km±9km, n68, σ0^{s}85/86, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GDZ	**Gediz**	**0.26**	**87**	*i* P	**Pg**	**22 07 11.7**	**+0.5**
GDZ				*i* S	**Sg**	**22 07 15.7**	**+0.9**
GDZ	**Gediz**	**0.26**	**87**	P	**Pg**	**22 07 11.7**	**+0.5**
GDZ				S	**Sg**	**22 07 15.7**	**+0.9**
DEMI	**Demirci**	**0.34**	**264**	*i* P	**Pg**	**22 07 12.6**	**0.0**
DEMI				*i* S	**Sg**	**22 07 17.1**	**+0.1**
DEMI	**Demirci**	**0.34**	**264**	P	**Pg**	**22 07 12.6**	**0.0**
DEMI				S	**Sg**	**22 07 17.1**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**33**	*e*PG	**Pg**	**22 07 13.6**	**-1.0**
TVSB				*e*SG	**Sg**	**22 07 20.1**	**-0.4**
TVSB	**Tavsanli**	**0.45**	**33**	*e*Pg	**Pg**	**22 07 13.6**	**-1.0**
TVSB				*e*Sg	**Sg**	**22 07 20.1**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**214**	*e*PG	**Pg**	**22 07 19.1**	**+0.1**
KULA	**Kula-Manisa**	**0.68**	**214**	*e*Pg	**Pg**	**22 07 19.1**	**+0.1**
MANT	**Manisa**	**0.74**	**218**	*i* P	**Pg**	**22 07 19.2**	**-1.1**
MANT				*i* S	**Sg**	**22 07 29.1**	**-1.0**
MANT	**Manisa**	**0.74**	**218**	P	**Pg**	**22 07 19.2**	**-1.1**
MANT				S	**Sg**	**22 07 29.0**	**-1.0**
KHL	**Karahalli**	**0.81**	**158**	*e*PG	**Pg**	**22 07 21.1**	**-0.3**
KHL				*e*SG	**Sb**	**22 07 33.3**	**+0.2**
KHL	**Karahalli**	**0.81**	**158**	*e*Pg	**Pg**	**22 07 21.1**	**-0.3**
KHL				*e*Sg	**Sb**	**22 07 33.3**	**+0.2**
AKHS	**Akhisar**	**1.06**	**260**	*i* P	**Pg**	**22 07 25.9**	**-0.2**
AKHS				*i* S	**Sb**	**22 07 40.6**	**+0.5**
AKHS	**Akhisar**	**1.06**	**260**	P	**Pg**	**22 07 25.9**	**-0.2**
AKHS				S	**Sb**	**22 07 40.6**	**+0.5**
BALB	**Balikesir**	**1.13**	**300**	*e*PN	**Pn**	**22 07 28.3**	**+0.6**
BALB	**Balikesir**	**1.13**	**300**	*e*Pn	**Pn**	**22 07 28.3**	**+0.6**
IGD	**Bursa**	**1.19**	**2**	*i* P	**Pb**	**22 07 26.4**	**-2.1**
IGD				*i* S	**Sb**	**22 07 43.8**	**-0.1**
IZI	**Iznik**	**1.28**	**11**	*e*PN	**Pg**	**22 07 30.4**	**-0.1**
IZI	**Iznik**	**1.28**	**11**	*e*Pn	**Pg**	**22 07 30.4**	**-0.1**
BORA	**Eskisehir**	**1.29**	**51**	*i* P	**Pn**	**22 07 29.9**	**-0.1**
BORA				*i* S	**Sg**	**22 07 47.3**	**-0.1**
BORA	**Eskisehir**	**1.29**	**51**	P	**Pn**	**22 07 29.9**	**-0.1**
BORA				S	**Sg**	**22 07 47.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**351**	*e*PN	**Pg**	**22 07 30.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**351**	*e*Pn	**Pg**	**22 07 30.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.33**	**333**	*e*PN	**Pg**	**22 07 32.4**	**+1.0**
KCTX	**Karacabey (Bur**	**1.33**	**333**	*e*Pn	**Pg**	**22 07 32.4**	**+1.0**
BALY	**Balya**	**1.35**	**300**	*i* P	**Pn**	**22 07 30.8**	**-0.1**
BALY	**Balya**	**1.35**	**300**	P	**Pn**	**22 07 30.8**	**-0.1**
ESKT	**Eskisehir**	**1.39**	**71**	*e*PN	**Pn**	**22 07 31.6**	**+0.1**
ESKT	**Eskisehir**	**1.39**	**71**	*i* P	**Pg**	**22 07 33.4**	**+0.8**
ESKT				*i* S	**Sg**	**22 07 50.6**	**-0.1**
ESKT	**Eskisehir**	**1.39**	**71**	*e*Pn	**Pn**	**22 07 31.6**	**+0.1**
SEYT	**Eskypehyr**	**1.39**	**71**	P	**Pg**	**22 07 33.4**	**+0.8**
SEYT				S	**Sg**	**22 07 50.6**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**18**	*e*PN	**Pb**	**22 07 32.4**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**18**	*e*Pn	**Pb**	**22 07 32.4**	**-0.2**
GONE	**Gonen-Balikesi**	**1.49**	**311**	*e*PN	**Pb**	**22 07 33.8**	**+0.3**
GONE	**Gonen-Balikesi**	**1.49**	**311**	*e*Pn	**Pb**	**22 07 33.8**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**221**	*e*PN	**Pg**	**22 07 34.8**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**221**	*e*Pn	**Pg**	**22 07 34.8**	**+0.2**
ARMT	**Armutlu**	**1.50**	**352**	*e*PN	**Pb**	**22 07 33.9**	**+0.1**
ARMT	**Armutlu**	**1.50**	**352**	*e*Pn	**Pb**	**22 07 33.9**	**+0.1**
EDC	**Edincik**	**1.61**	**322**	*e*PN	**Pg**	**22 07 36.2**	**-0.5**
EDC	**Edincik**	**1.61**	**322**	*e*Pn	**Pg**	**22 07 36.2**	**-0.5**
GULT	**Gulveren**	**1.72**	**38**	*e*PN	**Pb**	**22 07 37.0**	**-0.5**
GULT	**Gulveren**	**1.72**	**38**	*e*Pn	**Pb**	**22 07 37.0**	**-0.5**
HRT	**Hereke**	**1.79**	**13**	*e*PN	**Pb**	**22 07 38.0**	**-0.7**
HRT	**Hereke**	**1.79**	**13**	*e*Pn	**Pb**	**22 07 38.0**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.88**	**78**	*e*PN	**Pn**	**22 07 38.5**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.88**	**78**	*e*Pn	**Pn**	**22 07 38.5**	**+0.3**
MRMT	**Marmara Adasi**	**1.94**	**322**	*e*PN	**Pb**	**22 07 40.7**	**-0.5**
MRMT	**Marmara Adasi**	**1.94**	**322**	*e*Pn	**Pb**	**22 07 40.7**	**-0.5**
KRBG	**Karabiga-Canak**	**1.94**	**313**	*e*PN	**Pb**	**22 07 40.7**	**-0.5**
KRBG	**Karabiga-Canak**	**1.94**	**313**	*e*Pn	**Pb**	**22 07 40.7**	**-0.5**
ISK	**Istanbul-Kandi**	**1.99**	**358**	*e*PN	**Pb**	**22 07 41.0**	**-1.1**
ISK	**Istanbul-Kandi**	**1.99**	**358**	*e*Pn	**Pb**	**22 07 41.0**	**-1.1**
MDUB	**Mudurnu**	**2.11**	**48**	*e*PN	**Pn**	**22 07 42.1**	**+0.8**
MDUB	**Mudurnu**	**2.11**	**48**	*e*Pn	**Pn**	**22 07 42.1**	**+0.8**
BGKT	**Bogazkoy**	**2.12**	**352**	*e*PN	**Pb**	**22 07 42.9**	**-1.5**
BGKT	**Bogazkoy**	**2.12**	**352**	*e*Pn	**Pb**	**22 07 42.9**	**-1.5**
KLYT	**Kilyos**	**2.17**	**358**	*e*PN	**Pb**	**22 07 43.7**	**-1.6**
KLYT	**Kilyos**	**2.17**	**358**	*e*Pn	**Pb**	**22 07 43.7**	**-1.6**
SAHE	**Sakarya_HENDEK**	**2.21**	**36**	*i* P	**Pg**	**22 07 47.3**	**-0.8**
SAHE				*i* S	**Sg**	**22 08 15.8**	**-1.0**
RKY	**Sarkoy-Tekirda**	**2.21**	**317**	*e*PN	**Pb**	**22 07 45.0**	**-0.9**
RKY	**Sarkoy-Tekirda**	**2.21**	**317**	*e*Pn	**Pb**	**22 07 45.0**	**-0.9**
CTKS	**Kestanelik-??a**	**2.21**	**347**	*e*PN	**Pn**	**22 07 44.2**	**+1.6**
CTKS	**Kestanelik-??a**	**2.21**	**347**	*e*Pn	**Pn**	**22 07 44.2**	**+1.6**
GELI	**Tayfur-Gelibol**	**2.45**	**303**	*e*PN	**Pb**	**22 07 48.5**	**-1.4**
GELI	**Tayfur-Gelibol**	**2.45**	**303**	*e*Pn	**Pb**	**22 07 48.5**	**-1.4**
ALN	**Alexandroupoli**	**3.00**	**308**	*e*PN	**Pn**	**22 07 55.8**	**+2.5**
ALN	**Alexandroupoli**	**3.00**	**308**	*e*Pn	**Pn**	**22 07 55.8**	**+2.5**

MEX 08 22:11:32.5±0.3, 16.87°N×99.49W, h40km±5km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ACX	**Acapulco**	**0.35**	**271**	*i* P	Pn	22 11 41.3	0.0
ACX				*i* S	Sn	22 11 47.3	-0.3
ACP2	**Acapulco**	**0.38**	**271**	*i* P	Pn	22 11 40.2	-1.4
ACP2				*e*S	Sn	22 11 46.5	-1.6
CAIG	**El Cayaco**	**0.77**	**284**	*i* P	Pn	22 11 45.3	-1.5
CAIG				*e*S	Sn	22 11 55.2	-2.0
MEIG	**Mezcala**	**1.06**	**353**	*e*P	Pn	22 11 49.2	-1.8
MEIG				*e*S	Sn	22 12 02.4	-2.3
TLIG	**Tlapa**	**1.12**	**52**	*e*P	Pn	22 11 50.2	-1.7
TLIG				*i* S	Sn	22 12 04.3	-1.9
PNIG	**Pinotepa**	**1.39**	**110**	*e*P	Pn	22 11 53.7	-1.7
PNIG				*i* S	Sn	22 12 10.2	-2.4
ZIIG	**Zihuatanejo**	**2.02**	**292**	*e*P	Pn	22 12 03.1	-1.1
ZIIG				*i* S	Sn	22 12 25.3	-2.9

IDC 08 22:12:29.7±17.0, 28.28°S×176.07W, h0km, mb3.8/3, mb1 3.9/3, mb1mx3.6/18, mbtmp3.8/3, MS3.0/1, Ms1 3.0/1, ms1mx2.5/32, Error ellipse: s-maj=380.5km s-min=70.2km az=118.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.89**	**239**	Pn	Pn	22 13 03.2	0.0
	82nm,0.3s,baz=45,slow=20,SNR=2.7						
RAO				Sn	Sn	22 13 19.8	-8.0
	121nm,0.3s,baz=90,slow=20,SNR=3.4						
URZ	**Urewera**	**11.47**	**208**	LR	LR	22 19 53.1	
	comp=Z,63nm,18.4s,baz=322,slow=39						
STKA	**Stephens Creek**	**36.65**	**254**	P	P	22 19 38.0	-0.1
	1.9nm,0.9s,baz=117,slow=16,SNR=3.2						
ASAR	**Alice Springs**	**44.96**	**264**	P	P	22 20 46.5	-0.4
	0.5nm,0.5s,baz=98,slow=6.7,SNR=8.1						
WRA	**Warramunga Arr**	**45.76**	**269**	P	P	22 20 53.3	+0.1
	0.6nm,0.5s,baz=110,slow=7.7,SNR=7.7						

*IDC **08** 22:22:59.4±1.5, 29.79°S×176.03°W, h0km, mb4.1/4, mb1 4.3/5, mb1mx4.0/21, mbtmp4.1/5, ML3.6/1, MS3.0/1, Ms1 3.0/1, ms1mx2.5/29, Error ellipse: s-maj=42.8km s-min=24.8km az=145.0*
*NEIC **08** 22:23:01.2±4.2, 29.76°S×176.01°W, h14km±25km, mb4.8/13, Error ellipse: s-maj=10.8km s-min=9.6km az=122.0*
*ISCJB **08** 22:23:02.3±0.6, 29.85°S±0.08°×176.0W±0.1°, h33km, mb4.7/18, Error ellipse: s-maj=16.1km s-min=8.5km az=32.5*

ISC 08 22:23:04.9±0.7, 29.69S±0.09°×176.19W±0.09, h35km, n27, σ0^{s}96/28, mb4.6/18, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.57**	**286**	Pn	**Pn**	**22 23 31.4**	**+1.1**
	334nm,0.3s,baz=86,slow=17,SNR=10						
RAO				Sn	**Sn**	**22 23 46.1**	**-3.3**
	2μm,0.3s,baz=82,slow=10,SNR=40						
URZ	**Urewera**	**10.20**	**211**	Pn	**Pn**	**22 25 27.4**	**-1.3**
	0.5nm,0.3s,baz=68,slow=19,SNR=3.9						
URZ				Sn	**Sn**	**22 27 22.3**	**+0.5**
	0.8nm,0.3s,baz=30,slow=18,SNR=2.3						
RAR	**Rarotonga**	**17.04**	**64**	LR	LR	22 33 15.5	
	comp=Z,51nm,19.1s,baz=252,slow=36						
EIDS	**Eidsvold**	**29.29**	**270**	P	**P**	**22 29 04.8**	**+0.8**
	2.7nm,0.3s						
CTAO	**Charters Tower**	**35.26**	**277**	*e*P	**P**	**22 29 57.5**	**+1.1**
	23nm,0.7s						
STKA	**Stephens Creek**	**36.17**	**256**	P	**P**	**22 30 05.3**	**+1.1**
	1.2nm,0.5s,baz=84,slow=11,SNR=5.6						
PMG	**Port Moresby**	**39.75**	**293**	*e*P	**P**	**22 30 35.1**	**+0.7**
	5.6nm,0.6s						
ASAR	**Alice Springs**	**44.73**	**265**	P	**P**	**22 31 15.2**	**+0.2**
	2.6nm,0.6s,baz=99,slow=7.7,SNR=43						
WRAB	**Tennant Creek**	**45.65**	**271**	*e*P	**P**	**22 31 22.6**	**+0.3**
	2.2nm,0.7s						
WRA	**Warramunga Arr**	**45.65**	**270**	P	**P**	**22 31 22.1**	**-0.3**
	1.6nm,0.5s,baz=110,slow=7.8,SNR=24						
POHA	**Pohakuloa**	**53.04**	**25**	*e*P	**P**	**22 32 17.6**	**-1.3**
	77nm,0.3s						
CASY	**Casey**	**56.50**	**208**	*e*P	**P**	**22 32 42.4**	**-0.7**
GUMO	**Guam**	**57.11**	**313**	*e*P	**P**	**22 32 48.6**	**+0.6**
	8.8nm,0.5s						
MAJO	**Matsushiro**	**78.57**	**324**	*e*P	**P**	**22 35 02.5**	**-0.3**
	2.0nm,0.6s						
BJT	**Baijiatuan**	**93.52**	**315**	*e*P	**P**	**22 36 16.4**	**-0.5**
	5.1nm,0.4s						
PMR	**Palmer**	**93.56**	**13**	*e*P	**P**	**22 36 16.1**	**-0.4**
	1.6nm,0.4s						
FLWY	**Flagg Ranch**	**94.67**	**41**	*e*P	**P**	**22 36 21.8**	**-0.6**
	6.7nm,0.5s						
CHTO	**Chiang Mai**	**94.83**	**289**	*e*P	**P**	**22 36 24.0**	**+0.5**
	0.5nm,0.4s						
WALA	**Waterton Lakes**	**96.02**	**36**	*e*P	**P**	**22 36 27.9**	**-0.5**
	1.8nm,0.6s						
COLA	**College**	**96.81**	**12**	*

1.0nm,0.8s,baz=343,slow=0.9,SNR=4.3
GEYT Alibeck 127.16 304 PKP **PKPdf 23 12 16.8 +0.2**
0.5nm,0.5s,baz=91,slow=6.2,SNR=2.6
BURAR Bucovina Array 144.60 332⇓*i*P **PKPab 23 12 49.6 +0.6**
TESR Tescani 144.76 330⇑*i*P **PKPab 23 12 48.8 -0.7**
BRTR Keskin Array B 144.86 315 PKP **PKPab 23 12 49.3 -1.0**
1.9nm,0.8s,baz=134,slow=3.6,SNR=9.8
VRI Vrincioaia 145.18 329⇑*i*P **PKPab 23 12 50.5 -0.7**
PLOR Plostina 145.23 329⇓*i*P **PKPab 23 12 50.6 -0.8**
CLL Collm 145.38 348⇑*i*P **PKPab 23 12 50.3 -1.4**
comp=Z,6.0nm,0.7s
TLB Topalu 145.40 326⇑*i*P **PKPab 23 12 51.1 -0.9**
BRG Berggiesshubel 145.59 346 *e*PKP PKPdf 23 12 41.1 -8.8
comp=Z,7.9nm,1.4s
BRG Berggiesshubel 145.59 346 *e*P **PKPab 23 12 50.8 -1.7**
comp=Z,2.6nm,0.9s
MLR Muntele Rosu 145.84 329⇑*i*P **PKPdf 23 12 49.6 -1.1**
VOIR 146.31 330⇑*i*P **PKPab 23 12 54.3 -1.4**
DRGR 146.32 334⇓*i*P **PKPab 23 12 53.5 -2.2**
ARR Arges 146.56 330⇓*i*P **PKPab 23 12 55.0 -1.7**
GERES GERESS Array B 147.54 345 PKPbc **PKPbc 23 12 56.5 -0.3**
comp=Z,1.7nm,0.7s,baz=28,slow=3.1,SNR=16
BZS Buzias 147.72 334⇑*i*P **PKPbc 23 12 57.0 -0.2**

*IDC **08** 23:01:27.5±3.0,29.˚52S×176.˚05W,h0km,mb3.9/3, mb1 4.1/4,mb1mx3.8/23,mbtmp4.0/4,ML3.3/1,MS2.8/3, Ms1 2.8/3,ms1mx2.6/32,Error ellipse: s-maj=54.4km s-min=50.9km az=19.0*
*NEIC **08** 23:01:30.3±0.6,29.˚69S×176.˚21W,h10km,mb4.7/8,Error ellipse: s-maj=16.0km s-min=10.3km az=139.0*
*ISCJB **08** 23:01:31.3±0.7,29.˚75S±0.˚07×176.˚26W±0.˚08,h28km, mb4.5/11,MS3.0/1,Error ellipse: s-maj=10.9km s-min=8.7km az=38.8*
ISC 08 23:01:33.4±0.8,**29.˚62S**±0.˚09×**176.˚36W**±0.˚08,**h28**km,**n18,** σ0**68/19,mb4.6/11,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.41**	**285**	Pn	**Pn**	**23 01 57.8**	**+0.5**
	73nm,0.3s,baz=302,slow=19,SNR=3.1						
RAO				Sn	**Sb**	**23 02 16.7**	**0.0**
	287nm,0.3s,baz=68,slow=19,SNR=4.1						
RAO	**Raoul Island**	**1.41**	**285**	*e*Pn	**Pb**	**23 01 59.0**	**-0.1**
RAO				*e*Sn	**Sb**	**23 02 15.7**	**-1.0**
URZ	**Urewera**	**10.18**	**210**	Pn	**Pn**	**23 03 57.3**	**-0.3**
	0.3nm,0.3s,baz=129,slow=18,SNR=2.2						
URZ				Sn	**Sn**	**23 05 51.2**	**+0.5**
	0.1nm,0.3s,baz=350,slow=19,SNR=2.1						
URZ				LR	LR	23 09 12.1	
	comp=Z,33nm,18.5s,baz=94,slow=45						
RAR	**Rarotonga**	**17.15**	**65**	LR	LR	23 10 56.2	
	comp=Z,20nm,18.9s,baz=147,slow=34						
FUNA	**Funafuti**	**21.40**	**348**	P	**P**	**23 06 20.6**	**+1.6**
	45nm,0.6s						
PPT	**Papeete**	**27.24**	**70**	LR	LR	23 16 29.5	
	comp=Z,35nm,18.6s,baz=188,slow=34						
STKA	**Stephens Creek**	**36.05**	**256**	P	**P**	**23 08 32.7**	**+0.2**
	3.0nm,0.7s,baz=90,slow=10,SNR=4.4						
PMG	**Port Moresby**	**39.59**	**293**	*e*P	**P**	**23 09 02.0**	**-0.5**
	5.3nm,0.4s						
ASAR	**Alice Springs**	**44.58**	**265**	P	**P**	**23 09 44.2**	**+0.9**
	0.8nm,0.7s,baz=97,slow=7.3,SNR=9.3						
WRA	**Warramunga Arr**	**45.51**	**271**	P	**P**	**23 09 50.8**	**+0.1**
	0.8nm,0.6s,baz=110,slow=7.6,SNR=5.4						
MIDW	**Midway**	**57.52**	**359**	*e*P	**P**	**23 11 20.6**	**+0.4**
	12nm,0.5s						
YSS	**Yuzh-Sakhalins**	**84.68**	**333**	*e*P	**P**	**23 14 03.5**	**-0.8**
	2.8nm,0.4s						
CMB	**Columbia Colle**	**85.23**	**41**	*e*P	**P**	**23 14 06.8**	**-0.6**
	5.5nm,0.9s						
HWUT	**Hardware Ranch**	**92.70**	**43**	*e*P	**P**	**23 14 43.2**	**+0.2**
	0.6nm,0.6s						
SDCO	**Great Sand Dun**	**94.21**	**49**	*e*P	**P**	**23 14 50.3**	**+0.2**
	0.8nm,0.3s						
COLA	**College**	**96.78**	**12**	*e*P	**P**	**23 15 00.2**	**-0.5**
	0.9nm,0.4s						
INK	**Inuvik**	**102.66**	**15**	*e*Pdif	**Pdif**	**23 15 27.0**	**+0.1**
FINES	**FINESS Array B**	**144.89**	**341**	PKP	**PKPab**	**23 21 05.3**	**-0.9**
	1.3nm,0.9s,baz=258,slow=1.8,SNR=5.3						

*CSEM **08** 23:10:52.1,40˚.11N×28˚.17E,h7km,MD2.6*
DDA 08 23:10:52.1,40˚.11N×28˚.17E,h7km,**Md2.6,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BALY	**Balya**	**0.56**	**229**	*i*P	Pg	23 11 02.9	0.0
BALY				*i*S	Sg	23 11 10.6	+0.5
BALY	**Balya**	**0.56**	**229**	P	Pg	23 11 02.9	0.0
BALY				S	Sg	23 11 10.6	+0.5
IGD	**Bursa**	**0.81**	**78**	*i*P	Pg	23 11 07.8	+0.2
IGD				*i*S	Sg	23 11 18.6	+0.5
DEMI	**Demirci**	**1.14**	**158**	*i*P	Pn	23 11 14.6	0.0
DEMI				*i*S	Sn	23 11 30.2	-0.4
DEMI	**Demirci**	**1.14**	**158**	P	Pn	23 11 14.6	0.0
DEMI				S	Sn	23 11 30.2	-0.4
GDZ	**Gediz**	**1.44**	**135**	*i*P	Pg	23 11 19.9	+0.2
GDZ				*i*S	Sg	23 11 39.6	+1.4
GDZ	**Gediz**	**1.44**	**135**	P	Pg	23 11 19.9	+0.3
GDZ				S	Sg	23 11 39.6	+1.3
MANT	**Manisa**	**1.64**	**169**	*i*P	Pb	23 11 22.8	-0.1
MANT				*i*S	Sn	23 11 42.7	-0.4
MANT	**Manisa**	**1.64**	**169**	P	Pb	23 11 22.8	0.0
MANT				S	Sn	23 11 42.7	-0.4

*ISCJB **08** 23:22:00.3±0.8,10˚.7S±0˚.1×109˚.9E±0˚.1,h10km,mb3.9/10, MS3.7/2,Error ellipse: s-maj=23.3km s-min=8.2km az=135.5*
*NEIC **08** 23:22:02.6±0.8,10˚.53S×109˚.89E,h10km,mb4.0/3,Error ellipse: s-maj=26.3km s-min=10.4km az=222.0*
*IDC **08** 23:22:02.2±1.7,10˚.29S×110˚.11E,h0km,mb3.9/7, mb1 4.0/8,mb1mx3.8/38,mbtmp3.9/8,ML4.0/1,MS3.6/2, Ms1 3.6/2,ms1mx2.7/40,Error ellipse: s-maj=84.5km s-min=17.1km az=48.0*
ISC 08 23:22:02.0±0.8,**10.˚7S**±0˚.1×**109.˚8E**±0˚.1,**h10**km,**n15,** σ1**56/15,mb4.0/10,South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CISI	**Cisompet, Garu**	**3.69**	**327**	*e*Pn	**Pn**	**23 22 57.4**	**-1.9**
CISI				*e*Pg	**Pg**	**23 23 14.5**	**+1.7**
JAGI	**Jajag, Banyuwa**	**4.81**	**63**	*e*Pn	**Pn**	**23 23 14.2**	**-0.4**
MBWA	**Marble Bar**	**14.11**	**139**	*e*Pn	**Pn**	**23 25 20.2**	**-1.9**
FITZ	**Fitzroy Crossi**	**17.00**	**117**	Pn	**Pn**	**23 25 58.7**	**-1.3**
	0.4nm,0.3s,baz=293,slow=7.9,SNR=17						
FITZ				Sn	Sn	23 28 54.8	-14
	0.3nm,0.3s,baz=184,slow=13,SNR=5.7						
WRA	**Warramunga Arr**	**25.34**	**114**	P	**P**	**23 27 30.4**	**+1.0**
	1.1nm,0.7s,baz=287,slow=11,SNR=7.2						
ASAR	**Alice Springs**	**26.33**	**122**	P	**P**	**23 27 39.9**	**+1.5**
	1.1nm,0.7s,baz=299,slow=9.0,SNR=13						
CMAR	**Chiang Mai Arr**	**30.89**	**340**	P	**P**	**23 28 19.2**	**+0.2**
	1.4nm,0.7s,baz=174,slow=8.6,SNR=8.6						
STKA	**Stephens Creek**	**36.13**	**131**	P	**P**	**23 29 07.2**	**+2.7**
	2.2nm,0.9s,baz=300,slow=13,SNR=3.0						
ENH	**Enshi**	**40.73**	**360**	*e*P	**P**	**23 29 42.9**	**-0.3**
	1.7nm,0.4s						
SONM	**Songino Array**	**58.34**	**357**	P	**P**	**23 31 56.2**	**-1.3**
	0.6nm,0.5s,baz=176,slow=7.1,SNR=3.3						
SONM				LR	LR	00 01 35.0	
	comp=Z,30nm,18.3s,baz=56,slow=41						
MKAR	**Makanchi Array**	**62.30**	**339**	P	**P**	**23 32 24.2**	**-0.2**
	0.7nm,0.5s,baz=146,slow=8.0,SNR=12						
ABKAR	**Akbulak array**	**73.99**	**329**	*e*P	**P**	**23 33 38.2**	**+0.4**
	0.6nm,0.6s						
AFI	**Afiamalu**	**76.36**	**102**	LR	LR	00 08 07.9	
	comp=Z,61nm,18.4s,baz=160,slow=36						
BRTR	**Keskin Array B**	**86.34**	**311**	P	**P**	**23 34 46.0**	**+1.1**
	0.2nm,0.3s,baz=128,slow=8.1,SNR=4.3						
XMAS	**Kiritimati**	**93.06**	**89**	*e*P	**P**	**23 35 14.9**	**-1.9**
	0.3nm,0.4s						

*NIED **08** 23:23:00,37˚.40N×141˚.40E,h80km,Mw3.4 Best double couple: M0 1.44000×10^14 NP1:φs198.00000°,δ57.00000°, λ-24.00000°. NP2:φs302.00000°,δ70.00000°, λ-144.00000°.*
JMA 08 23:23:37.9±0.1,**37˚.44N×141˚.44E,h44**km±2km,**M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.46**	**261**	P	Pn	23 23 48.2	-0.1
JFK				S	Sn	23 23 55.1	-0.6
ONAJ	**Iwakimizuishiy**	**0.61**	**237**	P	Pn	23 23 50.2	-0.1
ONAJ				S	Sn	23 23 58.5	-0.7
JMM	**Marumori**	**0.67**	**310**	P	Pn	23 23 51.1	+0.1
JFT	**Otama**	**0.88**	**275**	P	Pn	23 23 54.6	+0.7
JFT				*e*S	Sn	23 24 06.0	+0.4
JIO	**Ouri**	**1.01**	**356**	P	Pn	23 23 55.9	+0.2
JIO				*e*S	Sn	23 24 08.0	-0.8
JHO	**Hitachi**	**1.08**	**220**	P	Pn	23 23 56.0	-0.6
JOU	**Okura**	**1.11**	**327**	P	Pn	23 23 57.1	+0.1
JOU				*e*S	Sn	23 24 11.6	+0.4
JYS	**Shirataka**	**1.34**	**306**	P	Pn	23 24 00.7	+0.6
JYS				*e*S	Sn	23 24 17.5	+0.7
JFY	**Yanaizu**	**1.38**	**269**	P	Pn	23 24 01.4	+0.7
JMK	**Ichinoseki**	**1.52**	**354**	P	Pn	23 24 02.9	+0.3
JMK				*e*S	Sn	23 24 21.0	-0.2
MAT	**Matsushiro**	**2.74**	**252**	P	Pn	23 24 21.0	+1.6
MAT				S	Sn	23 24 57.2	+6.0

*MOS **08** 23:31:22.3±1.0,17˚.45S×179˚.03W,h507km,mb4.8/21, Error ellipse: s-maj=8.9km s-min=7.6km az=76.5*
*IDC **08** 23:31:22.9±1.0,17˚.56S×178˚.94W,h513km±10km, mb4.2/24,mb1 4.3/27,mb1mx4.2/36,mbtmp5.1/27,Error ellipse: s-maj=11.2km s-min=9.5km az=132.0*
*BJI **08** 23:31:22.2,17˚.33S×178˚.46W,h524km,mb4.7/33, mB4.8/22*
*ISCJB **08** 23:31:24.4±0.1,17˚.58S±0˚.04×179˚.07W±0˚.03,h539km, mb4.7/74,Error ellipse: s-maj=5.6km s-min=3.0km az=153.5*
*NEIC **08** 23:31:24.7±0.5,17˚.50S×179˚.06W,h530km±5km,mb4.9/30, Error ellipse: s-maj=6.3km s-min=3.8km az=151.0*
ISC 08 23:31:25.2±0.3,**17˚.58S**±0˚.06×**179˚.00W**±0˚.05,**h539**km, **n676,** σ0**95/684,mb4.8/74,59C-10D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MSVF	**Nonsavu**	**2.82**	**266**	*e*P	**P**	**23 32 39.4**	**+1.1**
MSVF	**Nonsavu**	**2.82**	**266**	*e*P	**P**	**23 32 39.4**	**+1.1**
AFI	**Afiamalu**	**7.85**	**63**	P	**P**	**23 33 17.3**	**-4.0**
	41nm,0.3s,baz=274,slow=23,SNR=25						
AFI				S	S	23 34 46.9	-10
	2.9nm,0.3s,baz=288,slow=19,SNR=2.8						
AFI	**Afiamalu**	**7.85**	**63**	*e*P	**P**	**23 33 17.6**	**-3.7**
AFI				S	S	23 34 46.9	-9.5
AFI	**Afiamalu**	**7.85**	**63**	*e*P	**P**	**23 33 17.6**	**-3.7**
AFI				S	S	23 34 46.9	-10
NIUE	**Niue**	**8.74**	**101**	P	**P**	**23 33 29.1**	**-1.0**
	baz=8.6,SNR=7.1						
DZM	**Mont Dzumac**	**14.41**	**250**	P	**P**	**23 34 28.0**	**-0.9**
	3.3nm,0.3s,baz=72,slow=19,SNR=22						
DZM	**Mont Dzumac**	**14.41**	**250**	*e*P	**P**	**23 34 26.8**	**-2.0**
RAR	**Rarotonga**	**18.49**	**104**	P	**P**	**23 35 07.4**	**-0.7**
	1.5nm,0.3s,baz=257,slow=11,SNR=7.0						
RAR	**Rarotonga**	**18.49**	**104**	*e*P	**P**	**23 35 08.7**	**+0.6**
RAR				pmax	pmax		
	comp=Z,58nm,1.1s						
RAR	**Rarotonga**	**18.49**	**104**	*e*P	**P**	**23 35 08.7**	**+0.6**
	comp=Z,58nm,1.1s						
TARA	**Tarawa**	**20.43**	**336**	*e*P	**P**	**23 35 24.7**	**-1.1**
	comp=Z,12nm,0.7s						
OXZ	**Oxford**	**26.77**	**195**	*e*P	**P**	**23 36 21.3**	**-0.6**
	comp=Z,23nm,0.6s						
RPZ	**Rata Peaks**	**27.38**	**196**	P	**P**	**23 36 25.8**	**-1.5**
	comp=Z,14nm,0.5s,baz=350,slow=2.2,SNR=9.0						
PAE	**Paea**	**28.03**	**95**	*e*P	**P**	**23 36 32.9**	**-0.4**
	comp=Z,18nm,1.3s						
PPT2	**Papeete2**	**28.04**	**95**	*e*P	**P**	**23 36 33.3**	**-0.2**
	comp=Z,42nm,1.2s						
PPT	**Papeete**	**28.04**	**94**	P	**P**	**23 36 32.3**	**-1.1**
	comp=Z,39nm,0.7s,baz=35,slow=5.8,SNR=6.1						
TIAR	**Tiarei**	**28.26**	**94**	*e*P	**P**	**23 36 35.0**	**-0.3**
	comp=Z,12nm,0.9s						
TVO	**Taravao**	**28.33**	**95**	*e*P	**P**	**23 36 35.8**	**-0.2**
	comp=Z,9.1nm,0.7s						
XMAS	**Kiritimati**	**28.84**	**50**	*e*P	**P**	**23 36 42.2**	**+1.8**
	comp=Z,0.4nm,0.6s						
EIDS	**Eidsvold**	**28.85**	**249**	P	**P**	**23 36 40.1**	**-0.3**
	baz=29,SNR=24						
EIDS	**Eidsvold**	**28.85**	**249**	*e*P	**P**	**23 36 40.1**	**-0.3**
	comp=Z,38nm,0.6s						
KWAJ	**Kwajalein Atol**	**29.36**	**332**	*i* P	**P**	**23 36 44.6**	**-0.3**
ARMA	**Armidale**	**29.62**	**239**	P	**P**	**23 36 48.0**	**+0.8**
	baz=30,SNR=77						
ARMA	**Armidale**	**29.62**	**239**	*e*P	**P**	**23 36 47.3**	**+0.1**
	comp=Z,64nm,0.6s						
MLZ	**Mavora Lakes**	**29.72**	**198**	*e*P	**P**	**23 36 47.9**	**+0.2**
	comp=Z,52nm,0.7s						
MGCD	**Mangrove Creek**	**31.02**	**234**	P	**P**	**23 37 00.0**	**+0.9**
	baz=31,SNR=78						
RMQ	**Roma**	**31.11**	**248**	P	**P**	**23 37 00.6**	**+0.7**
	baz=31,SNR=80						
CTA	**Charters Tower**	**32.95**	**260**	P	**P**	**23 37 15.4**	**-0.2**
	comp=Z,31nm,0.7s,baz=86,slow=10,SNR=41						
CTAO	**Charters Tower**	**32.95**	**260**	*e*P	**P**	**23 37 15.5**	**-0.2**
CTAO				pmax	pmax		
	comp=Z,35nm,0.7s						
CTAO	**Charters Tower**	**32.95**	**260**	*e*P	**P**	**23 37 15.5**	**-0.2**
	comp=Z,35nm,0.7s						
CNB	**Canberra Magne**	**33.19**	**232**	P	**P**	**23 37 18.3**	**+0.8**
	baz=33,SNR=95						
CAN	**Canberra**	**33.46**	**232**	*e*P	**P**	**23 37 20.2**	**+0.4**
CAN				pmax	pmax		
	comp=Z,25nm,0.7s						
CAN	**Canberra**	**33.46**	**232**	*e*P	**P**	**23 37 20.2**	**+0.4**
	comp=Z,25nm,0.7s						
YNG	**Young**	**33.53**	**234**	P	**P**	**23 37 20.9**	**+0.6**
	baz=34,SNR=14						
PMG	**Port Moresby**	**33.85**	**279**⇓*i*P		**P**	**23 37 24.3**	**+1.0**
PMG				pmax	pmax		
	comp=Z,154nm,1.0s						
CMSA	**Cobar Meteorol**	**34.83**	**240**	P	**P**	**23 37 31.5**	**+0.3**
	baz=35,SNR=195						
MTSU	**Mount Surprise**	**34.89**	**263**	P	**P**	**23 37 31.7**	**-0.3**
	baz=35,SNR=25						
QLP	**Quilpie**	**35.13**	**249**	P	**P**	**23 37 33.8**	**-0.1**
	baz=35,SNR=89						
COEN	**Coen**	**36.54**	**270**	P	**P**	**23 37 46.1**	**+0.4**
	baz=37,SNR=29						
COEN	**Coen**	**36.54**	**270**	*e*P	**P**	**23 37 46.1**	**+0.4**
	comp=Z,29nm,0.8s						
TOO	**Toolangi**	**36.94**	**230**	P	**P**	**23 37 49.3**	**+0.6**
	baz=37,SNR=44						
MOO	**Moorlands**	**37.95**	**222**	P	**P**	**23 37 57.3**	**+0.4**
	baz=38,SNR=3.4						
STKA	**Stephens Creek**	**38.30**	**241**	P	**P**	**23 38 00.2**	**+0.4**
	comp=Z,54nm,0.4s,baz=87,slow=7.4,SNR=280						
STKA	**Stephens Creek**	**38.30**	**241**	P	**P**	**23 38 00.5**	**+0.7**
	baz=38,SNR=176						
STKA	**Stephens Creek**	**38.30**	**241**	*e*P	**P**	**23 38 00.6**	**+0.7**
	comp=Z,20nm,1.0s						
QIS	**Mount Isa**	**39.16**	**259**	P	**P**	**23 38 06.3**	**-0.8**
	baz=39,SNR=3.9						
ARPS	**Mount Arapiles**	**39.40**	**233**	P	**P**	**23 38 08.8**	**+0.2**
	baz=40,SNR=18						
HTT	**Hallett**	**40.83**	**239**	P	**P**	**23 38 20.7**	**+0.4**
	baz=41,SNR=34						
BBOO	**Buckleboo**	**43.08**	**241**	P	**P**	**23 38 38.0**	**+0.1**
	baz=43,SNR=199						
BBOO	**Buckleboo**	**43.08**	**241**	*e*P	**P**	**23 38 37.9**	**+0.1**
	comp=Z,118nm,1.0s						
WB2	**Warramunga Arr**	**44.13**	**259**	*e*P	**P**	**23 38 45.2**	**-1.0**
	comp=Z,26nm,0.8s						
WRAB	**Tennant Creek**	**44.13**	**259**	*d i*P	**P**	**23 38 45.0**	**-1.3**
WRAB				pmax	pmax		
	comp=Z,42nm,0.9s						
WRAB	**Tennant Creek**	**44.13**	**259**	*e*P	**P**	**23 38 44.9**	**-1.3**
	comp=Z,20nm,0.8s						
WRA	**Warramunga Arr**	**44.14**	**259**	P	**P**	**23 38 45.1**	**-1.3**
	comp=Z,7.8nm,0.3s,baz=92,slow=7.9,SNR=131						
WRA				ScP	**ScP**	**23 43 22.0**	**+1.7**
	comp=Z,2.1nm,0.7s,baz=89,slow=4.0,SNR=5.5						
WRA				S	**S**	**23 44 37.0**	**-3.4**
	comp=Z,1.8nm,0.9s,baz=90,slow=14,SNR=5.9						
AS01	**Alice Springs**	**44.30**	**254**	*e*P	**P**	**23 38 46.8**	**-0.7**
AS31	**Alice Springs**	**44.34**	**254**	*e*P	**P**	**23 38 47.6**	**-0.3**
	comp=Z,51nm,0.6s						
ASAR	**Alice Springs**	**44.34**	**254**	P	**P**	**23 38 47.6**	**-0.3**
	comp=Z,141nm,0.5s,baz=88,slow=8.1,SNR=1718						
ASAR				ScP	**ScP**	**23 43 23.4**	**+2.3**
	comp=Z,3.0nm,0.7s,baz=99,slow=4.3,SNR=7.5						
ASAR				S	**S**	**23 44 40.8**	**-2.4**
	comp=Z,6.8nm,1.0s,baz=84,slow=16,SNR=24						
ASAR	**Alice Springs**	**44.34**	**254**	P	**P**	**23 38 47.6**	**-0.3**
ASAR				S	**S**	**23 44 40.8**	**-2.4**
ASAR				pmax	pmax		
	comp=Z,137nm,0.5s						
ASAR				pmax	pmax		
	comp=N,3.0nm,0.7s						
ASAR				smax	smax		
	comp=N,7.0nm,1.0s						
KDU	**Kakadu**	**47.00**	**269**	P	**P**	**23 39 07.7**	**-0.5**
	baz=47,SNR=25						
GUMO	**Guam**	**47.23**	**309**	*e*P	**P**	**23 39 10.3**	**+0.4**
GUMO				pmax	pmax		
	comp=Z,141nm,0.7s						
GUMO	**Guam**	**47.23**	**309**	*e*P	**P**	**23 39 10.3**	**+0.4**
	comp=Z,141nm,0.7s						
MTN	**Manton Dam**	**48.25**	**268**	P	**P**	**23 39 17.1**	**-0.4**
	baz=48,SNR=11						
MTN	**Manton Dam**	**48.25**	**268**	*e*P	**P**	**23 39 17.2**	**-0.4**
	comp=Z,52nm,0.8s						
SARN	**Sarigan**	**48.62**	**313**	*e*P	**P**	**23 39 20.2**	**-0.1**
WRKA	**Warakurna**	**49.41**	**252**	P	**P**	**23 39 26.0**	**-0.1**
	baz=50,SNR=360						
FORT	**Forrest**	**49.64**	**244**	P	**P**	**23 39 27.1**	**-0.5**
	baz=50,SNR=99						
FORT	**Forrest**	**49.64**	**244**	*e*P	**P**	**23 39 27.1**	**-0.5**
	comp=Z,54nm,0.6s						
KMBL	**Kambalda**	**54.95**	**244**	P	**P**	**23 40 04.8**	**-0.9**
	baz=55,SNR=13						
SOEI	**Soe**	**55.51**	**270**	*e*P	**P**	**23 40 10.5**	**+0.5**
	comp=Z,77nm,0.7s						
MEEK	**Meekatharra**	**58.02**	**249**	P	**P**	**23 40 26.3**	**-0.7**
	baz=58,SNR=14						
KLBR	**Kellerberrin**	**58.47**	**243**	P	**P**	**23 40 29.6**	**-0.3**
	baz=59,SNR=36						
NWAO	**Narrogin (SRO)**	**58.87**	**242**	P	**P**	**23 40 32.2**	**-0.4**
	baz=59,SNR=7.3						
NWAO				P	**P**	**23 40 32.2**	**-0.4**
	baz=59,SNR=7.3						
RKGY	**Rocky Gully**	**59.05**	**240**	P	**P**	**23 40 33.7**	**+0.1**
	baz=59,SNR=5.2						
BLDU	**Ballidu**	**59.41**	**244**	P	**P**	**23 40 35.5**	**-0.7**
	baz=60,SNR=20						
MORW	**Morawa**	**60.10**	**246**	P	**P**	**23 40 40.2**	**-0.6**
	baz=60,SNR=5.5						
SBA	**Scott Base**	**60.71**	**183**	*e*P	**P**	**23 40 45.8**	**+1.9**
SBA				pmax	pmax		
	comp=Z,9.0nm,1.0s						
SBA	**Scott Base**	**60.71**	**183**	*e*P	**P**	**23 40 45.8**	**+1.9**
	comp=Z,8.8nm,1.0s						
VNDA	**Vanda**	**60.72**	**185**	P	**P**	**23 40 44.9**	**+0.8**
	comp=Z,1.9nm,0.5s,baz=357,slow=8.2,SNR=16						
VNDA				ScP	**ScP**	**23 44 33.4**	**+2.3**
	comp=Z,1.7nm,0.8s,baz=317,slow=6.7,SNR=7.4						
VNDA	**Vanda**	**60.72**	**185**	*e*P	**P**	**23 40 45.1**	**+1.0**
VNDA				pmax	pmax		
	comp=Z,9.0nm,1.4s						
VNDA	**Vanda**	**60.72**	**185**	*e*P	**P**	**23 40 45.1**	**+1.0**
	comp=Z,8.6nm,1.4s						
VNDA				ScP	**ScP**	**23 44 33.4**	**+2.3**
GIRL	**Giralia**	**62.45**	**253**	P	**P**	**23 40 57.3**	**+1.0**
	baz=63,SNR=5.3						
JHJ2	**Mitsune**	**63.94**	**322**	*e*P	**P**	**23 41 05.2**	**-0.3**
	comp=Z,142nm,0.5s						
JHJ	**Hachijo jima 2**	**63.97**	**322**	P	**P**	**23 41 05.7**	**0.0**
	comp=Z,102nm,0.4s,baz=207,slow=4.8,SNR=12						
JAGI	**Jajag, Banyuwa**	**65.49**	**269**	*e*P	**P**	**23 41 14.6**	**-1.2**
	comp=Z,31nm,0.9s						
CASY	**Casey**	**66.20**	**205**	*e*P	**P**	**23 41 19.4**	**+0.2**
	comp=Z,26nm,1.0s						
MJAR	**Matsushiro Arr**	**67.31**	**324**	P	**P**	**23 41 26.2**	**-0.4**
	comp=Z,25nm,0.5s,baz=160,slow=6.4,SNR=61						
MJAR	**Matsushiro Arr**	**67.31**	**324**	P	**P**	**23 41 26.2**	**-0.4**
MJAR				pmax	pmax		
	comp=Z,24nm,0.6s						
MAJO	**Matsushiro**	**67.31**	**324***c i*P		**P**	**23 41 26.4**	**-0.2**
MAJO				pmax	pmax		
	comp=Z,118nm,0.8s						
MAJO	**Matsushiro**	**67.31**	**324**	*e*P	**P**	**23 41 26.5**	**-0.2**
	comp=Z,35nm,0.5s						
MAT	**Matsushiro**	**67.31**	**324**	P	**P**	**23 41 26.3**	**-0.3**
MJB9	**Matsu-Tunnel**	**67.32**	**324**	*e*P	**P**	**23 41 26.5**	**-0.1**
ERM	**Erimo**	**68.83**	**331**	P	**P**	**23 41 36.2**	**+0.6**
KUR	**Kuril'sk**	**69.39**	**336**	*e*P	**P**	**23 41 40.2**	**+1.3**
JNU	**Nakatsue**	**69.52**	**317**	P	**P**	**23 41 40.0**	**0.0**
	comp=Z,9.6nm,0.7s,baz=195,slow=1.0,SNR=8.4						
ASAJ	**Asahikawa**	**70.72**	**332**	P	**P**	**23 41 48.3**	**+1.4**
	comp=Z,19nm,0.5s,baz=202,slow=7.3,SNR=12						
YULB	**Yu-li**	**71.12**	**303**	*e*P	**P**	**23 41 45.4**	**-4.3**
SKR	**Severo-Kuril's**	**71.41**	**344**	*i* P	**P**	**23 41 50.8**	**+0.1**
UNV	**Unalaska Valle**	**71.94**	**8**	*e*P	**P**	**23 41 52.6**	**-1.2**
KSM	**Kuching**	**72.08**	**277**	*e*P	**P**	**23 41 56.5**	**+0.9**
YSS	**Yuzh-Sakhalins**	**72.87**	**334**⇑*e*P		**P**	**23 41 59.8**	**+0.5**
YSS				pmax	pmax		
	comp=Z,30nm,1.3s						
PET	**Petropavlovsk**	**72.92**	**346**	*e*P	**P**	**23 41 58.7**	**-0.7**
PET

baz=233
O03D Paynes Creek 78.35 41 P P 23 42 30.5 +0.5
baz=235
TPFO Pinon Flats 78.37 49 P P 23 42 30.7 +0.3
baz=240
LRMC Laurel Mtn Rad 78.45 47 P P 23 42 31.0 +0.3
baz=239
SWSC Sam W. Stewart 78.51 50 P P 23 42 31.4 +0.4
baz=240
NKL Nikolayevsk 78.56 337 eP P 23 42 30.0 -0.6
YBH Yreka Blue Hor 78.63 39 eP P 23 42 32.1 +0.6
YBH Yreka Blue Hor 78.63 39 eP P 23 42 32.0 +0.6
CWC Cottonwood Cre 78.68 46 P P 23 42 32.5 +0.6
baz=238
WAKR Walker 78.87 44 eP P 23 42 34.0 +1.0
MPMC Manual Prospec 78.89 47 P P 23 42 33.4 +0.3
baz=239
BELC Belle Mtn. Jos 78.89 49 P P 23 42 33.5 +0.3
baz=240
TIN Tinemaha, Big 78.90 45 P P 23 42 33.3 +0.3
baz=238
DAC Darwin (Calif) 78.93 46 eP P 23 42 34.0 +0.6
DAC Darwin (Calif) 78.93 46 eP P 23 42 34.0 +0.6
GSC Goldstone, Bar 78.97 47 P P 23 42 33.7 +0.3
baz=239
GSC Goldstone, Bar 78.97 47 eP P 23 42 34.1 +0.6
GSC Goldstone, Bar 78.97 47 eP P 23 42 34.1 +0.6
HUMO Hull Mountain 79.00 39 eP P 23 42 33.9 +0.6
comp=Z,52nm,1.0s
HEC Hector Ludlow 79.07 48 P P 23 42 34.0 +0.1
baz=240
BC3 Big Chuckawall 79.11 50 P P 23 42 34.5 +0.3
baz=240
M04C Macdoel 79.19 40 P P 23 42 34.9 +0.4
baz=235
GLA Glamis 79.28 50 P P 23 42 35.8 +0.8
baz=241
I03D Drain, OR 79.41 38 P P 23 42 35.9 +0.4
baz=233
CN2 Changchun 79.42 323 eP P 23 42 36.3 +0.8
CN2 pmax pmax
comp=Z,30nm,0.9s
GRAC Grapevine Rang 79.46 46 P P 23 42 36.7 +0.8
baz=239
GMRC Granite Mounta 79.52 48 P P 23 42 36.8 +0.3
baz=240
FURC Furnace Creek, 79.53 46 P P 23 42 36.9 +0.7
baz=239
KLR Kul'dur 79.55 330 P P 23 42 36.7 +0.7
comp=Z,4.2nm,0.6s,baz=104,slow=4.9,SNR=11
PAHR Pah Rah Range 79.56 43 eP P 23 42 36.9 +0.4
IRM Iron Mountain 79.58 49 P P 23 42 37.3 +0.6
baz=240
SHOC Shoshone, Teco 79.65 47 P P 23 42 37.5 +0.5
baz=240
TUQ Turquoise Moun 79.66 48 P P 23 42 37.6 +0.4
baz=240
Y12C Blythe 79.84 50 P P 23 42 38.5 +0.6
baz=241
Y12C Blythe 79.84 50 eP P 23 42 39.0 +1.1
WHN Wuhan 79.96 306 ⇑P P 23 42 39.4 +0.8
WHN pmax pmax
comp=Z,34nm,1.0s
I04A Tendick Farm, 80.02 38 P P 23 42 38.6 -0.1
baz=234
LDFC Landfair 80.06 48 eP P 23 42 40.4 +1.1
CNPM China Poot 80.10 14 eP P 23 42 38.6 -0.1
MOD Modoc Plateau 80.20 40 eP P 23 42 40.1 +0.3
TPNV Topopah Spring 80.20 46 P P 23 42 40.3 +0.4
baz=239
TPNV Topopah Spring 80.20 46 eP P 23 42 40.5 +0.5
TPNV Topopah Spring 80.20 46 eP P 23 42 40.5 +0.5
214A Organ Pipe Nat 80.25 52 P P 23 42 41.1 +0.9
baz=242
214A Organ Pipe Nat 80.25 52 eP P 23 42 41.0 +0.7
comp=Z,53nm,1.3s
K05A Summer Lake 80.30 39 eP P 23 42 41.2 +0.8
BRLK Bradley Lake 80.39 14 eP P 23 42 39.6 -0.7
J05D Fort Rock, OR 80.42 39 P P 23 42 41.5 +0.6
baz=235,SNR=15
SVW2 Sparrevohn 80.63 11 eP P 23 42 40.4 -1.0
SHPR Sheep Range 80.73 47 eP P 23 42 43.8 +1.0
MA2 Magadan 80.73 345 P P 23 42 41.2 -0.8
comp=Z,10nm,0.6s,baz=145,slow=4.5,SNR=14
E03A Lebam 81.01 35 eP P 23 42 44.5 +0.8
DIB Dawson Inlet, 81.08 26 eP P 23 42 44.6 +0.7
BMN Battle Mountai 81.35 43 eP P 23 42 46.4 +0.5
BMN Battle Mountai 81.35 43 eP P 23 42 46.4 +0.5
NLWA Neilton Lookou 81.36 34 eP P 23 42 45.9 +0.3
R11A Troy Canyon, C 81.36 45 P P 23 42 46.4 +0.4
baz=240
SPU Mount Spurr 81.41 13 eP P 23 42 44.2 -1.3
WVOR Wild Horse Val 81.52 41 eP P 23 42 46.9 +0.2
WVOR Wild Horse Val 81.52 41 eP P 23 42 46.9 +0.2
RC01 Rabbit Creek A 81.84 14 eP P 23 42 47.1 -0.5
SUA Susitna One 81.94 13 eP P 23 42 47.3 -1.0
TUC Tucson 81.95 53 eP P 23 42 50.5 +1.5
TUC Tucson 81.95 53 eP P 23 42 50.5 +1.5
LON Longmire 82.10 36 eP P 23 42 53.2 +3.8
LON Longmire 82.10 36 eP P 23 42 53.2 +3.8
TT01 Tatalina 82.23 10 eP P 23 42 49.7 +0.1
TTA Tatalina 82.25 10 eP P 23 42 50.3 +0.5
TTA Tatalina 82.25 10 eP P 23 42 50.3 +0.5
D05A Enumclaw 82.26 35 eP P 23 42 51.1 +1.0
LCMT Little Creek M 82.32 47 eP P 23 42 51.8 +0.9
EYAK Cordova Ski Ar 82.34 16 eP P 23 42 49.7 -0.4
PMR Palmer 82.42 14 eP P 23 42 50.0 -0.5
PMR Palmer 82.42 14 eP P 23 42 50.0 -0.5
CCUT Cedar City 82.50 47 eP P 23 42 51.8 -0.1
KNB Kanab 82.62 48 eP P 23 42 53.6 +1.2
KNB Kanab 82.62 48 eP P 23 42 53.6 +1.2
A04D Lummi Island 82.78 34 P P 23 42 53.0 +0.3
baz=233
SML Sawmill 82.79 14 eP P 23 42 51.9 -0.6
SML Sawmill 82.79 14 eP P 23 42 51.9 -0.6
ELK Elko 82.80 43 eP P 23 42 53.6 +0.3
ELK Elko 82.80 43 eP P 23 42 53.6 +0.3
DIV Divide 82.83 16 eP P 23 42 52.0 -0.7
B05A Bryant 82.84 34 P P 23 42 53.2 +0.2
baz=234
G08A Pilot Rock 82.90 38 eP P 23 42 53.9 +0.3
PPLA Purkeypile 82.93 12 eP P 23 42 51.8 -1.5
WUAZ Wupatki 82.96 49 P P 23 42 54.7 +0.5
baz=243
WUAZ Wupatki 82.96 49 eP P 23 42 55.2 +1.1
BMRM Bremner River 83.00 16 eP P 23 42 53.1 -0.5
SCM Sheep Creek Mo 83.05 15 eP P 23 42 53.1 -0.7
SCM Sheep Creek Mo 83.05 15 eP P 23 42 53.1 -0.7
KLU Klutina 83.11 15 eP P 23 42 53.3 -0.8
BJI Beijing 83.16 316 P P 23 42 55.5 +0.7
BJI pmax pmax
comp=Z,18nm,0.7s
HAWA Hanford 83.18 37 eP P 23 42 55.1 +0.3
PKCU Pink Cliffs 83.18 47 eP P 23 42 57.3 +1.9
CRQM Cirque 83.22 17 eP P 23 42 54.4 -0.4
SEY Seymchan 83.33 347 P P 23 42 54.8 -0.3
comp=Z,49nm,0.6s,baz=150,slow=5.6,SNR=147
CAST Castle Rocks 83.42 12 eP P 23 42 53.7 -1.9
WRAK Wrangell Islan 83.44 24 eP P 23 42 56.3 +0.6
PCA Pinnacle 83.51 18 eP P 23 42 55.8 -0.4
MTPU Mount Pierson 83.55 47 eP P 23 42 58.9 +1.6
ENH Enshi 83.62 304 eP P 23 42 58.2 +0.8
comp=Z,18nm,0.9s
BMO Blue Mountains 83.64 39 eP P 23 42 57.2 -0.1
BALM Baldy 83.67 17 eP P 23 42 56.6 -0.4
BALM Baldy 83.67 17 eP P 23 42 56.6 -0.4
KTH Kantishna Hill 83.78 12 eP P 23 42 55.6 -1.8
MFID Camas Ranch 83.79 41 eP P 23 42 58.3 +0.3
TRF Thorofare Moun 83.81 13 eP P 23 42 56.3 -1.4
D08A Wollman Farm, 83.90 37 eP P 23 42 58.6 +0.3
MAW Mawson 83.98 200 P P 23 42 58.7 +0.3
comp=Z,3.9nm,0.7s,baz=128,slow=7.6,SNR=8.6
RND Reindeer 84.08 13 eP P 23 42 58.0 -0.9
RND Reindeer 84.08 13 eP P 23 42 58.0 -0.9
DHY Denali Highway 84.12 14 eP P 23 42 58.3 -0.9
GSI Gunungsitoli 84.12 273 eP P 23 43 01.4 +1.2
121A Cookes Peak, D 84.33 53 eP P 23 43 01.4 +0.4
comp=Z,5.2nm,0.9s
PMSA Palmer Station 84.33 157 eP P 23 43 01.6 +1.4
LLLB Lillooet 84.34 33 eP P 23 43 00.3 -0.1
MCK McKinley 84.35 13 eP P 23 42 59.5 -0.7
MCK McKinley 84.35 13 eP P 23 42 59.5 -0.7
GYA Guiyang 84.39 300 eP P 23 43 02.0 +0.6
GYA pP pP 23 44 56.4 -1.9
GYA sP sP 23 45 48.2 -4.9
GYA PP **PP** **23 46 28.0 +1.5**
GYA SKS **SKSac** **23 52 33.6 -0.5**
GYA S **S** **23 52 44.9 +1.8**
GYA sS sS 23 56 06.1 -5.5
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.9s
B08A Colville Reser 84.40 35 eP P 23 43 00.4 -0.4
PAX Paxson 84.48 15 eP P 23 42 59.8 -1.1
PAX Paxson 84.48 15 eP P 23 42 59.8 -1.1
HLID Hailey 84.75 41 P P 23 43 03.2 +0.4
baz=240,SNR=15
HLID Hailey 84.75 41 eP P 23 43 03.5 +0.7
TMUT Trail Mountain 84.81 46 eP P 23 43 04.6 +1.2
HYT Haines Junctio 84.93 19 eP P 23 43 03.4 +0.2
WRH Wood River Hil 85.18 13 eP P 23 43 03.0 -1.2
SRU San Rafael Swe 85.20 47 eP P 23 43 05.7 +0.6
SRU San Rafael Swe 85.20 47 eP P 23 43 05.7 +0.6
CCB Clear Creek Bu 85.39 13 eP P 23 43 03.8 -1.3
DOT Dot Lake 85.39 15 eP P 23 43 04.6 -0.7
TCUT Toone Canyon 85.52 44 eP P 23 43 07.4 +0.7
NEW Newport 85.58 36 P P 23 43 06.1 -0.4
baz=238
NEW Newport 85.58 36 eP P 23 43 06.2 -0.4
NEW Newport 85.58 36 eP P 23 43 06.2 -0.4
COLA College 85.58 13 eP P 23 43 04.6 -1.4
COLA pmax pmax
comp=Z,13nm,0.9s
COLA College 85.58 13 eP P 23 43 04.6 -1.4
comp=Z,13nm,0.9s
XAN Xi'an 85.61 308 P P 23 43 08.1 +1.0
XAN pmax pmax
comp=Z,27nm,1.0s
IL1 Eielson Array 85.70 13 eP P 23 43 04.5 -2.2
ILAR Eielson Array 85.70 13 P P 23 43 05.2 -1.4
comp=Z,6.3nm,0.4s,baz=227,slow=5.2,SNR=69
ILAR PP **PP** **23 46 38.9 +2.9**
comp=Z,1.6nm,0.9s,baz=223,slow=7.0,SNR=5.8
ILB Eielson Array 85.70 13 eP P 23 43 05.2 -1.4
DLBC Dease Lake 85.75 23 eP P 23 43 07.5 +0.3
MNTX Cornudas Mount 85.85 55 P P 23 43 08.8 +0.6
baz=247
MNTX Cornudas Mount 85.85 55 eP P 23 43 08.9 +0.7
BNM Barren Site 85.88 52 eP P 23 43 09.3 +0.7
PV09 Paradox Valley 85.90 48 eP P 23 43 09.3 +0.7
PV10 Paradox Valley 85.91 48 eP P 23 43 08.8 +0.1
BILL Bilibino 86.05 354 *c* iP P 23 43 08.1 -0.2
BILL eS **SKSac** 23 52 46.9 +4.6
BILL pmax pmax
comp=Z,21nm,0.9s
PV01 Paradox Valley 86.14 48 eP P 23 43 09.9 +0.2
TX31 Lajitas Ar. Si 86.30 58 eP P 23 43 11.5 +1.0
TXAR Lajitas Array 86.30 58 P P 23 43 11.7 +1.2
comp=Z,7.0nm,0.8s,baz=219,slow=6.1,SNR=88
ANMO Albuquerque 86.33 52 P P 23 43 10.9 +0.2
baz=246
ANMO Albuquerque 86.33 52 *c* iP P 23 43 10.8 +0.2
ANMO pmax pmax
comp=Z,6.0nm,1.1s
ANMO Albuquerque 86.33 52 eP P 23 43 10.9 +0.2
MCMT McKenzie Canyo 86.36 41 eP P 23 43 11.4 +0.8
HHC Hu-ho-hao-te 86.64 315 eP P 23 43 14.1 +2.2
HHC pP pP 23 45 13.0 +3.4
HHC S **S** **23 53 05.2 +1.2**
HHC pmax pmax
comp=Z,19nm,0.9s
HHC pmax pmax
comp=Z,83nm,8.4s
MSO Missoula 86.68 39 eP P 23 43 11.6 -0.3
BSMT Bassoo Peak 86.70 37 eP P 23 43 11.9 -0.1
DLMT Dillon 86.77 40 eP P 23 43 08.6 -3.8
comp=Z,8.3nm,0.8s
TPAW Teton Pass 86.92 43 eP P 23 43 14.2 +0.9
REDW Red Top Meadow 86.93 43 eP P 23 43 13.8 +0.5
DAWY Dawson 86.93 16 eP P 23 43 12.4 -0.2
SNOW Snow King Moun 87.04 43 eP P 23 43 14.6 +0.8
EGAK Eagle 87.05 15 eP P 23 43 12.5 -0.5
LRM Limekiln Ridge 87.08 40 eP P 23 43 14.3 +0.3
IMW Indian Meadow 87.12 42 eP P 23 43 15.1 +0.8
CHMT Chamberlain Mo 87.13 39 eP P 23 43 13.8 -0.4
MOOW Moose Ponds 87.18 42 eP P 23 43 15.1 +0.6
KMI Kunming 87.18 297 P P 23 43 16.5 +1.6
KMI pmax pmax
comp=Z,10.0nm,0.8s
COLD Coldfoot 87.20 11 eP P 23 43 13.5 -0.2
LOHW Long Hollow 87.20 43 eP P 23 43 15.2 +0.6
S22A 4UR Ranch, Cre 87.22 49 P P 23 43 15.2 +0.3
baz=245
S22A 4UR Ranch, Cre 87.22 49 eP P 23 43 15.7 +0.8
O20A White River Ci 87.23 46 P P 23 43 14.9 +0.1
baz=244
O20A White River Ci 87.23 46 eP P 23 43 15.3 +0.5
QLMT Earthquake Lak 87.25 41 eP P 23 43 16.0 +1.3
FLWY Flagg Ranch 87.36 42 eP P 23 43 16.6 +1.3
BW06 Boulder Array 87.50 44 P P 23 43 15.8 -0.2
baz=243,SNR=8.0
BW06 Boulder Array 87.50 44 eP P 23 43 16.2 +0.2
PD31 Pinedale Array 87.50 44 eP P 23 43 16.1 +0.1
PDAR Pinedale Array 87.50 44 P P 23 43 15.8 -0.3
comp=Z,5.9nm,0.7s,baz=220,slow=3.5,SNR=40
BOZ Bozeman (W) 87.50 40 P P 23 43 16.2 +0.3
baz=242
BOZ Bozeman (W) 87.50 40 eP P 23 43 16.1 +0.3
BOZ Bozeman (W) 87.50 40 eP P 23 43 16.1 +0.3
SDCO Great Sand Dun 88.18 50 P P 23 43 19.3 0.0
baz=246
CMAR Chiang Mai Arr 88.25 290 P P 23 43 21.3 +1.6
comp=Z,3.6nm,1.0s,baz=110,slow=2.8,SNR=17
CD2 Chengdu 88.42 303 P P 23 43 20.8 +0.5
CD2 pP pP 23 45 15.6 -3.1
CD2 SKS **SKSac** **23 52 59.1 +0.9**
CD2 S **S** **23 53 22.4 +1.5**
CD2 sS sS 23 56 48.1 -3.7
CD2 SS **SS** **23 59 29.1 +1.4**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.8s
T25A Trinidad 88.73 50 P P 23 43 21.9 0.0
baz=247
T25A Trinidad 88.73 50 eP P 23 43 22.1 +0.2
MSTX Muleshoe 88.75 54 P P 23 43 21.9 0.0
baz=248
MSTX Muleshoe 88.75 54 eP P 23 43 22.1 +0.2
Q24A Divide 88.92 49 P P 23 43 23.2 +0.3
baz=246
ISCO Idaho Springs 88.93 48 P P 23 43 23.1 +0.3
baz=246
832A Faith Ranch, C 88.93 60 P P 23 43 23.2 +0.5
baz=250,SNR=7.7
YAK Yakutsk 89.06 338 eP P 23 43 23.4 +0.9
YAK pmax pmax
comp=Z,13nm,0.8s
N23A Red Feather La 89.14 46 P P 23 43 24.2 +0.4
baz=246,SNR=6.3
933A Laredo 89.28 61 P P 23 43 25.3 +1.0
baz=250
K22A Casper 89.47 45 P P 23 43 25.3 +0.2
baz=246
733A Divot King Ran 89.64 60 P P 23 43 26.3 +0.3
baz=250
JCT Junction City 89.84 58 P P 23 43 26.9 0.0
baz=250
JCT Junction City 89.84 58 eP P 23 43 27.3 +0.4
JCT Junction City 89.84 58 eP P 23 43 27.3 +0.4
AMTX Amarillo 89.93 53 P P 23 43 27.3 -0.1
baz=248
633A Saathoff Ranch 89.99 59 P P 23 43 28.4 +0.8
baz=250,SNR=6.0
533A Kerrville 90.32 59 P P 23 43 29.4 +0.3
baz=250
433A Art 90.51 58 P P 23 43 30.0 0.0
baz=250,SNR=14
ABTX Abilene, Hawle 90.71 56 P P 23 43 30.9 0.0
baz=250,SNR=5.3
ABTX Abilene, Hawle 90.71 56 eP P 23 43 31.3 +0.4
534A Blanco 90.76 59 P P 23 43 31.5 +0.3
baz=250,SNR=8.9
333A Richland Sprin 90.79 57 P P 23 43 31.5 +0.2
baz=250
SNAA Sanae 90.94 179 P P 23 43 30.4 -0.9
SNAA Sanae 90.94 179 P P 23 43 30.7 -0.6
233A Rising Star 91.09 57 P P 23 43 32.8 +0.1
baz=250
635A Leesville 91.12 60 P P 23 43 33.7 +0.9
baz=251
434A Burnet 91.19 58 P P 23 43 33.1 -0.1
baz=250,SNR=7.9
133A Hamilton Ranch 91.28 56 P P 23 43 33.6 +0.1
baz=250
LAO LASA Array 91.33 41 P P 23 43 34.5 +1.0
baz=246
LAO LASA Array 91.33 41 eP P 23 43 34.4 +0.9
334A Lometa 91.39 58 P P 23 43 34.1 0.0
baz=250,SNR=6.7
X32A Elmer 91.61 54 P P 23 43 35.2 +0.2
baz=250
Z33A Whitaker Ranch 91.63 56 P P 23 43 35.2 +0.1
baz=250
234A Clairette 91.70 57 P P 23 43 35.5 +0.1
baz=250
INK Inuvik 91.72 15 P P 23 43 33.9 -0.8
comp=Z,6.7nm,0.7s,baz=223,slow=4.9,SNR=9.1
RSSD Black Hills 91.72 44 P P 23 43 35.2 -0.3
baz=247
RSSD Black Hills 91.72 44 eP P 23 43 35.5 0.0
RSSD Black Hills 91.72 44 eP P 23 43 35.5 0.0
W32A Sentinel 91.88 54 P P 23 43 36.3 +0.1
baz=250,SNR=6.1
134A White-Moore Ra 91.93 57 P P 23 43 37.1 +0.6
baz=250
V32A Arapaho 92.24 53 P P 23 43 38.2 +0.4
baz=250
U32A Winter Ranch, 92.50 53 P P 23 43 39.2 +0.2
baz=250
Y34A Reagan Ranch, 92.65 55 P P 23 43 40.1 +0.3
baz=251
T32A Huddler Ranch, 92.83 52 P P 23 43 41.1 +0.6
baz=250
SONM Songino Array 92.94 319 P P 23 43 40.6 -0.3
comp=Z,1.1nm,0.4s,baz=134,slow=5.1,SNR=10.0
S32A Newby Ranch, P 92.99 51 P P 23 43 41.5 +0.2
baz=250
BOD Bodaibo 93.10 330 eP P 23 43 36.2 -5.0
BOD pmax pmax
comp=Z,4.0nm,1.7s
DGMT Dagmar 93.31 40 P P 23 43 42.7 +0.3
baz=247
DGMT Dagmar 93.31 40 eP P 23 43 43.2 +0.7
T33A Patterson Ranc 93.31 52 P P 23 43 42.6 -0.1
baz=251
R32A Long Quarter, 93.41 51 P P 23 43 43.3 +0.2
baz=250
X35A Drake 93.41 55 P P 23 43 42.7 -0.5
baz=251
Q32A Meitler Ranch, 93.71 50 P P 23 43 44.7 +0.2
baz=250
Y36A Durant 93.79 56 P P 23 43 45.2 +0.3
baz=252
D26A Manning 93.86 42 P P 23 43 45.4 +0.4
baz=248
R33A Olander Ranch, 93.91 51 P P 23 43 45.6 +0.2
baz=251
EFI East Falkland 94.04 148 P P 23 43 44.3 -1.5
EFI pmax pmax
comp=Z,76nm,1.5s
Q33A Connelly Farm, 94.24 51 P P 23 43 47.2 +0.3
baz=251
YKA Yellowknife Ar 94.27 25 P P 23 43 45.7 -0.7
comp=Z,3.8nm,0.7s,baz=244,slow=4.5,SNR=28
O32A Brockman Farm, 94.33 49 P P 23 43 47.5 +0.1
baz=251
S34A Willow Spring 94.36 52 P P 23 43 47.7 +0.2
baz=251
GTA Gaotai 94.39 310 eP P 23 43 48.6 +0.8
GTA pmax pmax
comp=Z,5.0nm,1.1s
P33A Williams Farm, 94.49 50 P P 23 43 48.3 +0.2
baz=251
T35A Sooner Cattle 94.56 53 P P 23 43 49.2 +0.7
baz=252
O33A Hebron 94.77 50 P P 23 43 49.5 +0.2
baz=251
W37B Quinton 94.84 55 P P 23 43 49.5 -0.2
baz=252
Q34A Chapman 94.88 51 P P 23 43 50.4 +0.6
baz=252
S35A Otter Creek Ra 94.95 52 P P 23 43 50.7 +0.6
baz=252
P34A Walnut Farm, R 95.16 50 P P 23 43 51.6 +0.5
baz=252
KSU1 Kansas State U 95.18 51 P P 23 43 51.6 +0.5
baz=252
O34A Beatrice 95.46 50 P P 23 43 52.4 0.0
baz=252
T37A Cheneyville 18 95.84 53 P P 23 43 54.2 0.0
baz=252
V38A Canehill 95.86 54 P P 23 43 54.6 +0.3
baz=253
TLY Talaya 96.02 322 eP P 23 43 54.9 +0.2
TLY pmax pmax
comp=Z,5.0nm,1.4s
H32A Carlson Farm, 96.29 45 P P 23 43 55.0 -1.0
baz=252
T38A Diamond 96.29 53 P P 23 43 56.1 -0.2
baz=253
P36A Good Intent, A 96.37 51 P P 23 43 56.8 +0.2
baz=253
V39A Pettigrew 96.44 55 Pdiff P 23 43 56.8 -0.2
baz=253
G32A Webster 96.48 45 Pdiff P 23 43 56.8 -0.1
baz=252
N36A Muff Farm, Cla 96.91 49 Pdiff P 23 43 59.1 +0.2
baz=253
R38A Fenwick Farm, 96.92 52 Pdiff P 23 43 58.7 -0.3
baz=253
P37A Lathrop 97.00 51 Pdiff P 23 43 59.5 +0.1
baz=253
U40A Yellville 97.20 54 Pdiff Pdif 23 44 00.5 +0.1
baz=254
S39A Bolivar 97.22 53 Pdiff Pdif 23 44 00.3 0.0
baz=254
W41B Gary Mavity, V 97.35 56 Pdiff P 23 44 01.2 +0.3
baz=254
Q38A Cooks Store, C 97.36 52 Pdiff P 23 44 01.0 0.0
baz=254
R39A Chumby, Stover 97.61 52 Pdiff P 23 44 02.2 +0.1
baz=254
445A Amite 97.67 60 Pdiff Pdif 23 44 02.1 -0.4
baz=254
T40A Mansfield 97.68 54 Pdiff P 23 44 02.6 +0.1
baz=254
P39B Salisbury 98.15 51 Pdiff Pdif 23 44 04.2 -0.3
baz=254
R40A Maddies Statio 98.19 53 Pdiff P 23 44 05.3 +0.6
baz=254
T41A Mountain View 98.24 54 Pdiff Pdif 23 44 04.5 -0.4
baz=254
L40A Anamosa 99.95 49 Pdiff **Pdif** 23 44 11.7 -0.7
baz=255
R44A Waltonville 100.60 53 Pdiff **Pdif** 23 44 14.7 -0.7
baz=256
ZALV Zalesovo Beam 107.63 322 PKiKP **PKiKP** 23 48 49.5 -1.3
comp=Z,1.4nm,0.6s,baz=187,slow=0.7,SNR=10
MKAR Makanchi Array 108.50 314 Pdiff **Pdif** 23 44 52.5 +2.2
comp=Z,0.4nm,0.6s,baz=56,slow=4.5,SNR=3.9
MKAR PKiKP **PKiKP** 23 48 51.5 -1.1
comp=Z,1.5nm,0.5s,baz=207,slow=0.6,SNR=24
O56A Blue Knob Stat 108.99 53 PKiKP **PKiKP** 23 48 53.4 -0.4
baz=263
KSH Kashi 112.43 306 ePKP **PKiKP** 23 49 00.2 -0.3
KSH ePP PP 23 50 06.8 +10
KSH PKS **PKSdf** **23 52 35.6 -1.6**
KSH SKS **SKSdf** **23 55 21.8 +0.1**
KSH SKKS **SKKSac** **23 56 02.7 0.0**
KSH AMB AMB
comp=Z,84nm,5.8s
ARU Arti 122.27 326 *i* PKiKP **PKPdf** 23 49 18.2 -0.5
ARU 23 51 04.2
ARU PPP PPP 23 53 48.2
ARU 23 55 37.5
ABKAR Akbulak array 123.31 318 ePKPdf **PKPdf** **23 49 20.4 -0.5**
ARCES ARCESS Array B 125.89 350 PKP **PKPdf** **23 49 24.2 -1.1**
comp=Z,3.1nm,0.8s,baz=75,slow=0.7,SNR=19
GEYT Alibeck 126.39 304 PKP **PKPdf** **23 49 26.6 -0.6**
comp=Z,3.1nm,0.7s,baz=119,slow=1.9,SNR=11
KLMR Klimovskoe 128.84 337 ePKiKP **PKPdf** **23 49 28.9 -2.2**
KLMR pmax pmax
comp=Z,4.0nm,0.7s

FINES	**FINESS Array B**	**132.72 344**	PKhKP	PKPpre	23 49 22.8			
	comp=Z,0.7nm,0.6s,baz=40,slow=3.2,SNR=6.6							
FINES			PKP	**PKPdf**	**23 49 37.5**	**-0.9**		
	comp=Z,1.4nm,0.5s,baz=50,slow=3.0,SNR=7.9							
FINES			SKPbc	**SKPab**	**23 52 17.6**	**-0.1**		
	comp=Z,3.7nm,0.7s,baz=64,slow=4.4,SNR=14							
OBN	**Obninsk**	**133.75 332**‖	*e*PKIKP	**PKPdf**	**23 49 40.6**	**+0.1**		
OBN			*e*		23 52 18.3			
OBN			pmax	pmax				
	comp=Z,17nm,1.7s							
NB2	**NORSAR Subarra**	**135.98 353**	PKP	PKPpre	23 49 33.2			
	comp=Z,0.5nm,0.5s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**135.98 353**	PKhKP	PKPpre	23 49 32.5			
	comp=Z,0.2nm,0.6s,baz=220,slow=13,SNR=5.7							
NOA			PKP	**PKPdf**	**23 49 45.2**	**+0.5**		
	comp=Z,0.9nm,0.6s,baz=14,slow=4.0,SNR=5.9							
NOA			SKPab	**SKPab**	**23 52 34.1**	**+2.0**		
	comp=Z,1.3nm,0.7s,baz=14,slow=3.2,SNR=5.1							
KIV	**Kislovodsk**	**136.23 316**	*e*PKIKP	**PKPdf**	**23 49 45.4**	**-0.3**		
KIV			*e*		23 52 35.6			
KIV			pmax	pmax				
	comp=Z,6.0nm,1.4s							
KIV			pmax	pmax				
	comp=Z,3.0nm,0.9s							
AKASG	**Malin Array Be**	**140.01 332**	PKhKP	PKPpre	23 49 44.1			
	comp=Z,1.5nm,0.4s,baz=44,slow=4.1,SNR=7.7							
AKASG			PKP	**PKPdf**	**23 49 52.0**	**-0.2**		
	comp=Z,3.0nm,0.5s,baz=41,slow=2.6,SNR=8.3							
AKASG			SKP		23 52 37.8			
	comp=Z,0.3nm,0.3s,baz=34,slow=2.2,SNR=5.7							
SORM	**Soroca**	**142.23 330**⇑	*i*P	PKPpre	23 49 52.2			
SORM	**Soroca**	**142.23 330** ⇑	PKHKP	PKPpre	23 49 52.2			
LVV	**L'vov**	**142.88 335**	*e*PKHKP	PKPpre	23 49 53.7			
DRWC	**Darouich**	**143.30 308**	*e*P	**PKPdf**	**23 50 05.8**	**+7.2**		
LEOM	**Leova**	**143.42 328**⇑	*i*P	PKPab	23 49 56.8	+0.1		
LEOM	**Leova**	**143.42 328** ⇑	PKIKP	PKPab	23 49 56.8	+0.1		
KWP	**Kalwaria Pacla**	**143.54 336**	*i* P	PKPbc	23 49 57.3	0.0		
KWP	**Kalwaria Pacla**	**143.54 336**⇑	*i*PKIKP	PKPbc	23 49 57.3	0.0		
KFRA	**Kufra**	**143.69 306**	*e*P	**PKPdf**	**23 49 59.4**	**+0.1**		
ZALF	**Zalf**	**143.97 302**	*e*P	**PKPdf**	**23 50 00.1**	**+0.3**		
TLCR		**143.99 326**⇑	*i*P	**PKPdf**	**23 49 59.6**	**+0.2**		
TLCR		**143.99 326** ⇑	PKIKP	**PKPdf**	**23 49 59.6**	**+0.2**		
BURAR	**Bucovina Array**	**144.06 332**⇑	*i*P	**PKPdf**	**23 49 59.9**	**+0.2**		
BURAR	**Bucovina Array**	**144.06 332** ⇑	PKIKP	**PKPdf**	**23 49 59.9**	**+0.2**		
OJC	**Ojcow**	**144.11 339**	*e*P	PKPbc	23 49 58.8	-0.2		
OJC	**Ojcow**	**144.11 339**	*e*PKIKP	PKPbc	23 49 58.8	-0.2		
BIDA	**Albida**	**144.13 306**	*e*P	**PKPab**	**23 49 59.9**	**0.0**		
BRTR	**Keskin Array B**	**144.15 315**	PKP	PKPbc	23 49 59.5	-0.1		
	comp=Z,6.1nm,0.4s,baz=109,slow=2.6,SNR=67							
TESR	**Tescani**	**144.19 329**⇑	*i*P	**PKPab**	**23 49 59.6**	**-0.1**		
HAWK	**Haweek**	**144.22 305**	*e*P	**PKPdf**	**23 50 00.5**	**+0.1**		
STHS	**Stebnicka Huta**	**144.27 337**	*e*PKIKP	**PKPab**	**23 50 00.2**	**+0.3**		
STHS	**Stebnicka Huta**	**144.27 337**	*e*PKP	**PKPab**	**23 50 00.2**	**+0.3**		
KOLS	**Kolonicke sedl**	**144.28 336**	*e*PKIKP	**PKPab**	**23 49 59.9**	**0.0**		
KOLS	**Kolonicke sedl**	**144.28 336**	*e*PKP	**PKPab**	**23 49 59.9**	**0.0**		
MARH	**Ras Al Marh**	**144.32 304**	*e*P	**PKPab**	**23 50 01.1**	**+0.1**		
CFR	**Carcaliu**	**144.35 326**⇑	*i*P	PKPbc	23 49 59.8	-0.1		
CFR	**Carcaliu**	**144.35 326** ⇑	PKIKP	PKPbc	23 49 59.8	-0.1		
UZH	**Uzhgorod**	**144.51 335**	*e*PKIKP	PKPbc	23 50 00.5	+0.2		
UZH			*e*		23 52 51.3			
SALA	**Sala**	**144.51 302**	*e*P	**PKPab**	**23 50 01.6**	**0.0**		
ODBI	**Odobesti**	**144.51 328**⇑	*i*P	**PKPab**	**23 50 01.7**	**+0.8**		
TOTH	**TOTAH**	**144.57 303**	*e*P	**PKPab**	**23 50 01.4**	**-0.2**		
VRI	**Vrincioaia**	**144.61 328**⇑	*i*P	PKPbc	23 50 00.9	+0.2		
VRI	**Vrincioaia**	**144.61 328** ⇑	PKIKP	PKPbc	23 50 00.9	+0.2		
NIE	**Niedzica**	**144.61 338**	*e*P	**PKPab**	**23 50 01.2**	**0.0**		
NIE	**Niedzica**	**144.61 338**	*e*PKIKP	**PKPab**	**23 50 01.2**	**0.0**		
CRVS	**Cervenica-Dubn**	**144.62 337**	*e*PKIKP	**PKPab**	**23 50 01.1**	**-0.1**		
CRVS	**Cervenica-Dubn**	**144.62 337**	*e*PKP	**PKPab**	**23 50 01.1**	**-0.1**		
KSP	**Ksiaz**	**144.64 343**	*e*P	PKPbc	23 50 00.9	+0.2		
KSP	**Ksiaz**	**144.64 343**	*e*PKIKP	PKPbc	23 50 00.9	+0.3		
ANTO	**Ankara**	**144.65 316**	*e*PKIKP	PKPbc	23 50 01.4	+0.3		
ANTO	**Ankara**	**144.65 316**	*e*PKPbc	PKPbc	23 50 01.4	+0.3		
PLOR	**Plostina**	**144.66 328**⇑	*i*P	PKPbc	23 50 00.9	0.0		
PLOR	**Plostina**	**144.66 328** ⇑	PKIKP	PKPbc	23 50 01.0	+0.1		
TIRR	**Tirgusor**	**144.68 325**⇑	*i*P	PKPbc	23 50 01.0	+0.1		
TIRR	**Tirgusor**	**144.68 325** ⇑	PKIKP	PKPbc	23 50 01.0	+0.1		
TIRR	**Tirgusor**	**144.68 325**	*e*PKPbc	**PKPdf**	**23 50 00.7**	**0.0**		
HARR	**Harsova**	**144.79 326**⇑	*i*P	**PKPab**	**23 50 01.8**	**-0.2**		
HARR	**Harsova**	**144.79 326** ⇑	PKIKP	**PKPab**	**23 50 01.8**	**-0.2**		
TLB	**Topalu**	**144.79 326**⇑	*i*P	**PKPab**	**23 50 01.8**	**-0.2**		
TLB	**Topalu**	**144.79 326** ⇑	PKIKP	**PKPab**	**23 50 01.8**	**-0.2**		
ARCR	**ARCALIA**	**144.85 332**⇑	*i*P	**PKPab**	**23 50 02.7**	**+0.5**		
OKC	**Ostrava-Krasne**	**144.98 341**	*e*PKP	PKPbc	23 50 01.9	+0.2		
OKC	**Ostrava-Krasne**	**144.98 341**	*e*PKIKP	PKPbc	23 50 01.9	+0.2		
MANR	**Mangalia**	**145.00 324**‖	*i*P	**PKPab**	**23 50 02.8**	**0.0**		
UPC	**Upice**	**145.02 343**	*e*PKP	**PKPab**	**23 50 02.3**	**-0.4**		
UPC	**Upice**	**145.02 343**	*e*PKIKP	**PKPab**	**23 50 02.3**	**-0.4**		
CLL	**Collm**	**145.02 347**⇑	*i*PKPbc	**PKPbc**	**23 50 01.7**	**-0.1**		
	comp=Z,55nm,0.6s							
CLL			*i*		23 50 02.6			
	comp=Z,38nm,0.6s							
CLL			*i* SKPbc	**SKiKP**	**23 52 51.7**	**+1.5**		
	comp=Z,9.0nm,1.5s							
CLL	**Collm**	**145.02 347**⇑	*i*PKIKP	**PKPbc**	**23 50 01.7**	**-0.1**		
CLL			*i*		23 52 51.7			
CLL			pmax	pmax				
	comp=Z,55nm,0.6s							
DPC	**Dobruska-Polom**	**145.07 343**	*e*PKP	**PKPab**	**23 50 02.5**	**-0.5**		
DPC			*ep*PKP	**pPKPdf**	**23 52 06.8**	**-1.2**		
DPC	**Dobruska-Polom**	**145.07 343**	*e*PKIKP	**PKPab**	**23 50 02.5**	**-0.5**		
LANS	**Liptovska Anna**	**145.13 339**	*e*PKIKP	**PKPab**	**23 50 03.3**	**+0.1**		
LANS	**Liptovska Anna**	**145.13 339**	*e*PKP	**PKPab**	**23 50 03.3**	**+0.1**		
TCHB	**Talchebab**	**145.14 302**	*e*P	**PKPbc**	**23 50 03.4**	**+0.2**		
KRLC	**Kraliky**	**145.14 342**	*e*PKP	**PKPbc**	**23 50 02.4**	**0.0**		
KRLC	**Kraliky**	**145.14 342**	*e*PKIKP	**PKPbc**	**23 50 02.4**	**0.0**		
DOPR	**Dopca**	**145.19 330**⇑	*i*P	**PKPab**	**23 50 03.3**	**-0.3**		
BRG	**Berggiesshubel**	**145.21 346**	*i* PKP	**PKPbc**	**23 50 02.3**	**-0.1**		
	comp=Z,27nm,0.8s							
BRG	**Berggiesshubel**	**145.21 346**	*i* PKIKP	**PKPbc**	**23 50 02.3**	**-0.1**		
BRG			pmax	pmax				
	comp=Z,27nm,0.8s							
ISR	**Istrita**	**145.22 328**⇑	*i*P	**PKPab**	**23 50 03.5**	**-0.2**		
ISR	**Istrita**	**145.22 328** ⇑	PKP2	**PKPab**	**23 50 03.5**	**-0.2**		
MORC	**Moravsky Berou**	**145.22 341**⇑	*i*P	**PKPbc**	**23 50 02.7**	**+0.2**		
MORC	**Moravsky Berou**	**145.22 341** ⇑	PKIKP	**PKPbc**	**23 50 02.7**	**+0.2**		
MLR	**Muntele Rosu**	**145.26 329**⇑	*i*P	**PKPbc**	**23 50 02.5**	**-0.4**		
MLR	**Muntele Rosu**	**145.26 329** ⇑	PKIKP	**PKPbc**	**23 50 02.5**	**-0.4**		
KECS	**Kecovo**	**145.33 337**	*e*PKP2	**PKPab**	**23 50 03.4**	**-0.6**		
KECS	**Kecovo**	**145.33 337**	*e*PKP	**PKPab**	**23 50 03.4**	**-0.6**		
PVCC	**Panska Ves**	**145.38 345**	*e*PKP	**PKPbc**	**23 50 03.2**	**+0.3**		
PVCC	**Panska Ves**	**145.38 345**	*e*PKP2	**PKPbc**	**23 50 03.2**	**+0.3**		
CJR	**Cluj-Napoca**	**145.47 332**⇑	*i*P	**PKPbc**	**23 50 03.9**	**+0.6**		
CJR	**Cluj-Napoca**	**145.47 332** ⇑	PKP2	**PKPbc**	**23 50 03.9**	**+0.6**		
SECR		**145.52 328**‖	*i*P	**PKPbc**	**23 50 04.0**	**+0.5**		
SULR		**145.67 327**⇑	*i*P	**PKPab**	**23 50 05.3**	**-0.1**		
VOIR		**145.74 329**‖	*i*P	**PKPbc**	**23 50 03.8**	**-0.4**		
VOIR		**145.74 329** ‖	PKIKP	**PKPbc**	**23 50 03.8**	**-0.4**		
DRGR		**145.79 333**⇑	*i*P	**PKPbc**	**23 50 04.4**	**+0.1**		
DRGR		**145.79 333** ⇑	PKP2	**PKPbc**	**23 50 04.4**	**+0.1**		
PRU	**Pruhonice**	**145.88 344**	*e*PKP	**PKPbc**	**23 50 04.3**	**0.0**		
PRU			*ex*		x 23 50 06.1			
PRU	**Pruhonice**	**145.88 344**	*e*PKIKP	**PKPbc**	**23 50 04.3**	**0.0**		
PRU			*e*		23 50 06.1			
GOPC	**GO Pecny, Ondr**	**145.89 344**	*e*PKP	**PKPbc**	**23 50 04.6**	**+0.2**		
GOPC			*ex*		x 23 50 06.5			
GOPC	**GO Pecny, Ondr**	**145.89 344**	*e*PKP2	**PKPbc**	**23 50 04.6**	**+0.2**		
VYHS	**Vyhne**	**145.91 339**	*e*PKP2	**PKPbc**	**23 50 04.9**	**+0.4**		
VYHS	**Vyhne**	**145.91 339**	*e*PKP	**PKPbc**	**23 50 04.9**	**+0.4**		
VRAC	**Vranov**	**145.93 342**⇑	*i*P	**PKPbc**	**23 50 05.0**	**+0.5**		
VRAC	**Vranov**	**145.93 342** ⇑	PKP2	**PKPbc**	**23 50 05.0**	**+0.5**		
ARR	**Arges**	**145.99 330**⇑	*i*P	**PKPdf**	**23 50 03.9**	**+0.9**		
PSZ	**Piszkesteto**	**146.02 337**‖	*e*PKIKP	**PKPdf**	**23 50 03.7**	**+0.8**		
PSZ			*e*		23 50 05.3			
PSZ	**Piszkesteto**	**146.02 337**‖	*e*PKP	**PKPdf**	**23 50 03.7**	**+0.8**		
PSZ			*e*PKPbc	**PKPbc**	**23 50 05.3**	**+0.4**		
PSZ	**Piszkesteto**	**146.02 337**	*ex*	**PKPbc**	**23 50 04.8**	**-0.1**		
NKC	**Novy Kostel**	**146.15 347**	*e*PKP	**PKPbc**	**23 50 05.3**	**+0.2**		
NKC	**Novy Kostel**	**146.15 347**	*e*PKP2	**PKPbc**	**23 50 05.3**	**+0.2**		
TREC	**Trest**	**146.26 343**	*e*PKP	**PKPbc**	**23 50 05.4**	**0.0**		
TREC	**Trest**	**146.26 343**	*e*PKIKP	**PKPbc**	**23 50 05.4**	**0.0**		
LOT	**Lotru**	**146.34 331**⇑	*i*P	**PKPdf**	**23 50 04.4**	**+0.8**		
SMOL	**Smolenice**	**146.37 340**	*e*PKP2	**PKPbc**	**23 50 06.5**	**+0.8**		
SMOL	**Smolenice**	**146.37 340**	*e*PKP	**PKPbc**	**23 50 06.5**	**+0.8**		
CSS	**Mathiatis**	**146.44 307**	P	**PKPbc**	**23 50 05.7**	**-0.7**		
CSS	**Mathiatis**	**146.44 307**	*e*PKPbc	**PKPbc**	**23 50 05.9**	**-0.5**		
CSS			*e*PKPab	**PKPab**	**23 50 09.4**	**+0.6**		
BUD	**Budapest**	**146.70 338**⇑	*ex*	**PKPbc**	**23 50 06.8**	**+0.2**		
MEM	**Membach**	**146.81 354**	PKPbc	**PKPbc**	**23 50 06.7**	**-0.1**		
SZH	**Strazhica**	**146.81 326**	*i* P	**PKPbc**	**23 50 06.9**	**-0.2**		
GZR	**Gura Zlata**	**146.84 331**⇑	*i*P	**PKPbc**	**23 50 06.6**	**-0.6**		
GZR	**Gura Zlata**	**146.84 331** ⇑	PKIKP	**PKPbc**	**23 50 06.6**	**-0.6**		
KHC	**Kasperske Hory**	**146.92 345**	*e*PKP	**PKPdf**	**23 50 04.5**	**+0.1**		
KHC			*ex*		x 23 50 07.5			
KHC			*ex*		x 23 50 10.5			
KHC	**Kasperske Hory**	**146.92 345**	*e*PKIKP	**PKPdf**	**23 50 03.7**	**-0.7**		
KHC			*e*		23 50 10.9			
KHC	**Kasperske Hory**	**146.92 345**	*e*PKPdf	**PKPdf**	**23 50 03.7**	**-0.7**		
KHC			*e*PKPbc	**PKPbc**	**23 50 07.6**	**+0.3**		
KHC			*e*PKPab	**PKPab**	**23 50 10.9**	**+0.6**		
SNF	**Seneffe**	**147.04 356**	PKPbc	**PKPbc**	**23 50 07.3**	**-0.1**		
SNF			PKPab	**PKPab**	**23 50 10.4**	**-0.3**		
BCLA	**Clavier**	**147.06 355**	PKPbc	**PKPbc**	**23 50 06.2**	**-1.3**		
BCLA			PKPab	**PKPab**	**23 50 10.2**	**-0.5**		
CSKK	**Cs˘ˇtkako**	**147.08 338**⇑	*ex*	**PKPbc**	**23 50 07.4**	**-0.3**		
GERES	**GERESS Array B**	**147.15 344**	PKPbc	**PKPbc**	**23 50 07.9**	**-0.1**		
	comp=Z,15nm,0.7s,baz=22,slow=3.1,SNR=119							
BZS	**Buzias**	**147.19 333**⇑	*i*P	**PKPbc**	**23 50 07.9**	**-0.1**		
BZS	**Buzias**	**147.19 333** ⇑	PKP2	**PKPbc**	**23 50 07.9**	**-0.1**		
CONA	**Conrad Observa**	**147.38 341**	*i* PKPbc	**PKPbc**	**23 50 08.8**	**+0.2**		
	comp=Z,24nm,0.7s,SNR=20							
DOU	**Dourbes**	**147.43 356**	PKPbc	**PKPbc**	**23 50 08.6**	**+0.1**		
WLF	**Walferdange**	**147.72 354**	PKPbc	**PKPbc**	**23 50 09.9**	**+0.7**		
WLF	**Walferdange**	**147.72 354**	*e*PKP2	**PKPbc**	**23 50 09.3**	**0.0**		
WLF	**Walferdange**	**147.72 354**	*e*PKPbc	**PKPbc**	**23 50 09.3**	**0.0**		
MDVR	**Moldovita**	**147.80 332**⇑	*i*P	**PKPbc**	**23 50 09.6**	**-0.1**		
MPEP	**Malo Peshtene**	**147.89 328**	*i* P	**PKPbc**	**23 50 08.5**	**-1.4**		
MOA	**Molln**	**147.91 343**	*i* PKPbc	**PKPbc**	**23 50 09.7**	**-0.2**		
	comp=Z,7.8nm,0.7s,SNR=8.2							
ARSA	**Arzberg**	**148.08 341**	*i* PKPbc	**PKPbc**	**23 50 09.9**	**-0.4**		
	comp=Z,11nm,1.3s,SNR=8.1							
KDZ	**Kurdzhali**	**148.18 324**	*i* P	**PKPbc**	**23 50 10.5**	**-0.2**		
LANF	**Langenberg**	**148.19 351**	PKP	**PKPbc**	**23 50 10.9**	**+0.4**		
ALN	**Alexandroupoli**	**148.31 322**	P	**PKPbc**	**23 50 10.2**	**-0.8**		
BEHE	**Becsehely**	**148.37 339**⇑	*ex*	**PKPbc**	**23 50 10.9**	**-0.1**		
RZN	**Rozhen**	**148.54 325**	*i* P	**PKPbc**	**23 50 11.5**	**-0.3**		
KSL	**Kastellorizon**	**148.68 312**	P	**PKPbc**	**23 50 11.4**	**-0.7**		
VTS	**Vitosha**	**148.71 327**	P	**PKPbc**	**23 50 12.1**	**-0.1**		
VTS	**Vitosha**	**148.71 327**⇑	*i*P	**PKPbc**	**23 50 12.2**	**0.0**		
VTS	**Vitosha**	**148.71 327** ⇑	*i* P	**PKPbc**	**23 50 12.0**	**-0.1**		
SOKA	**Soboth**	**148.75 341**	*i* PKPbc	**PKPbc**	**23 50 11.4**	**-0.6**		
	comp=Z,8.0nm,0.7s,SNR=9.7							
BFO	**Black Forest**	**148.75 351**	*e*PKPdf	**PKPdf**	**23 50 09.1**	**+1.7**		
BFO			*e*PKPbc	**PKPbc**	**23 50 11.9**	**-0.1**		
BFO			*e*PKPab	**PKPab**	**23 50 17.4**	**-0.4**		
PERS	**Pernice**	**148.76 341**	*i* PKPbc	**PKPbc**	**23 50 11.4**	**-0.7**		
PERS			*i* PKPab	**PKPab**	**23 50 17.4**	**-0.5**		
WLS	**Welschbruch**	**148.81 352**	PKP	**PKPbc**	**23 50 12.2**	**+0.1**		
KBA	**Koelnbreinsper**	**148.87 344**	*i* PKPbc	**PKPbc**	**23 50 11.6**	**-0.9**		
	comp=Z,10nm,0.5s,SNR=10							
SMTH	**Samothraki Isl**	**148.88 322**	P	**PKPbc**	**23 50 11.7**	**-0.8**		
OBKA	**Obir**	**149.05 342**	*i* PKPbc	**PKPbc**	**23 50 11.9**	**-0.8**		
	comp=Z,7.3nm,1.1s							
WATA	**Walderalm**	**149.07 346**	*i* PKPbc	**PKPbc**	**23 50 12.5**	**-0.4**		
	comp=Z,11nm,0.5s,SNR=7.2							
YER	**Yerkesik**	**149.09 315**	P	**PKPbc**	**23 50 13.1**	**-0.1**		
RETA	**Reutte**	**149.11 347**	*i* PKPbc	**PKPbc**	**23 50 12.6**	**-0.3**		
	comp=Z,7.9nm,0.4s,SNR=8.8							
KAVA	**Kavala**	**149.12 324**	P	**PKPbc**	**23 50 12.6**	**-0.4**		
WTTA	**Wattenberg**	**149.13 346**	*i* PKPbc	**PKPbc**	**23 50 12.9**	**-0.1**		
	comp=Z,29nm,0.7s,SNR=10							
MMB	**Musomiste**	**149.15 326**	*i* P	**PKPbc**	**23 50 12.6**	**-0.5**		
THEF	**They Montfort**	**149.16 353**	PKP	**PKPbc**	**23 50 13.1**	**+0.2**		
MOTA	**Moosalm**	**149.17 347**	*i* PKPbc	**PKPbc**	**23 50 12.7**	**-0.5**		
	comp=Z,7.1nm,0.5s,SNR=14							
MYKA	**Terra Mystica**	**149.20 343**	*i* PKPbc	**PKPbc**	**23 50 12.2**	**-1.0**		
	comp=Z,14nm,0.5s,SNR=11							
NVR	**Nevrokopi**	**149.24 325**	P	**PKPbc**	**23 50 12.8**	**-0.6**		
KKB	**Krupnik**	**149.30 327**	*i* P	**PKPbc**	**23 50 13.0**	**-0.4**		
VNDS	**Vrh nad Dolski**	**149.37 341**	*i* PKPbc	**PKPbc**	**23 50 13.1**	**-0.4**		
MOF	**Molkenrain**	**149.39 352**	PKP	**PKPbc**	**23 50 13.4**	**-0.2**		
ABTA	**Abfaltersbach**	**149.40 344**	*i* PKPbc	**PKPbc**	**23 50 12.8**	**-0.8**		
	comp=Z,23nm,0.6s,SNR=15							
LIA	**Limnos Island**	**149.45 322**	P	**PKPbc**	**23 50 13.3**	**-0.5**		
LJU	**Ljubljana**	**149.47 341**	*i* PKPbc	**PKPbc**	**23 50 13.5**	**-0.2**		
LJU			*i* PKPab	**PKPab**	**23 50 20.0**	**-0.8**		
SIGR	**SIGRI**	**149.48 320**	P	**PKPbc**	**23 50 12.8**	**-1.1**		
DAVA	**Damuels**	**149.49 348**	*i* PKPbc	**PKPbc**	**23 50 13.7**	**-0.2**		
	comp=Z,18nm,0.8s,SNR=7.8							
SRS	**Serrai**	**149.55 325**	P	**PKPbc**	**23 50 12.8**	**-1.3**		
FETA	**Feichten**	**149.56 347**	*i* PKPbc	**PKPbc**	**23 50 14.0**	**-0.1**		
	comp=Z,23nm,1.1s,SNR=9.7							
ARG	**Arkhangelos**	**149.67 313**	P	**PKPbc**	**23 50 14.1**	**-0.4**		
SMG	**Samos**	**149.74 317**	P	**PKPbc**	**23 50 13.9**	**-0.7**		
JAVS	**Javornik**	**149.75 342**	*i* PKPbc	**PKPbc**	**23 50 13.8**	**-0.7**		
JAVS			*i* PKPab	**PKPab**	**23 50 20.8**	**-1.3**		
CHOS	**Chios island**	**149.85 319**	P	**PKPbc**	**23 50 14.6**	**-0.4**		
KNT	**Kendrikon**	**149.89 326**	P	**PKPbc**	**23 50 13.6**	**-1.3**		
LOMF	**Lomont**	**149.93 352**	PKP	**PKPbc**	**23 50 15.2**	**+0.4**		
PLG	**Polygyros**	**150.14 324**	P	**PKPbc**	**23 50 14.2**	**-1.3**		
GRG	**Griva**	**150.30 326**	P	**PKPbc**	**23 50 14.8**	**-1.1**		
TUE	**Stuetta**	**150.37 348**	*e*PKPdf	**PKPdf**	**23 50 10.8**	**+0.6**		
TUE			*e*PKPbc	**PKPbc**	**23 50 14.1**	**0.0**		
UDBI	**Udbina**	**150.41 338**	P	**PKPbc**	**23 50 15.7**	**-0.3**		
NVLJ	**Novalja**	**150.68 340**	P	**PKPbc**	**23 50 16.0**	**-0.5**		
KARP	**Karpathos**	**150.69 313**	P	**PKPbc**	**23 50 16.6**	**-0.3**		
AOS	**Alonnisos**	**150.69 322**	P	**PKPbc**	**23 50 15.2**	**-1.6**		
PDG	**Podgorica**	**150.75 332**⇑	*i*P	**PKPbc**	**23 50 16.4**	**-0.4**		
LIT	**Litokhoron**	**150.86 325**	P	**PKPbc**	**23 50 15.8**	**-1.4**		
SKIA	**Skiathos**	**150.94 322**	P	**PKPbc**	**23 50 16.1**	**-1.3**		
XOR	**Xorichti**	**150.96 323**	P	**PKPbc**	**23 50 16.1**	**-1.3**		
FNA	**Florina**	**150.97 327**	P	**PKPbc**	**23 50 16.8**	**-0.6**		
SMIA	**Simia**	**151.28 322**	P	**PKPbc**	**23 50 17.4**	**-0.8**		
TIR	**Tirane**	**151.30 330**⇑	*i*P	**PKPbc**	**23 50 17.6**	**-0.5**		
TIR	**Tirane**	**151.30 330**	*e*PKIKP	**PKPbc**	**23 50 17.6**	**-0.5**		
TIR			*e*		23 50 29.1			
TIR	**Tirane**	**151.30 330**	*e*PKPbc	**PKPbc**	**23 50 17.6**	**-0.5**		
TIR			*e*PKPab	**PKPab**	**23 50 29.1**	**+0.5**		
NEST	**Nestorio**	**151.41 327**	P	**PKPbc**	**23 50 18.0**	**-0.5**		
PTL	**Penteli**	**151.42 320**	P	**PKPbc**	**23 50 17.1**	**-1.4**		
THR6	**Thira Island,**	**151.46 316**	P	**PKPbc**	**23 50 17.5**	**-1.1**		
THL	**Klokotos Trika**	**151.49 324**	P	**PKPbc**	**23 50 16.9**	**-1.7**		
ATAL	**Atalanti**	**151.51 322**	P	**PKPbc**	**23 50 17.5**	**-1.2**		
PENT	**Pentalofos**	**151.52 326**	P	**PKPbc**	**23 50 18.0**	**-0.8**		
ATHU	**Athens Univers**	**151.52 320**	P	**PKPbc**	**23 50 17.3**	**-1.4**		
LKR	**Lokris**	**151.55 322**	P	**PKPbc**	**23 50 17.4**	**-1.3**		
AGO	**Saint Agoulin**	**151.55 357**	PKP	**PKPbc**	**23 50 18.7**	**+0.2**		
KPRO	**Kipourio**	**151.57 326**	P	**PKPbc**	**23 50 18.6**	**-0.2**		
VLY	**Voula,Athens**	**151.59 320**	P	**PKPbc**	**23 50 17.2**	**-1.7**		
PLDF	**La Plantade**	**151.61 356**	PKP	**PKPbc**	**23 50 18.7**	**0.0**		
VILL	**Villia**	**151.68 321**	P	**PKPbc**	**23 50 17.6**	**-1.5**		
AGG	**Agios Georgios**	**151.69 323**	P	**PKPbc**	**23 50 17.7**	**-1.4**		
PYM	**Petit Puy Mans**	**151.86 357**	PKP	**PKPbc**	**23 50 19.6**	**+0.3**		
NPS	**Neapolis**	**151.91 314**	P	**PKPbc**	**23 50 19.4**	**-0.3**		
LTK	**Loutraki**	**151.98 321**	P	**PKPbc**	**23 50 18.2**	**-1.5**		
DSF	**Desfina**	**151.99 322**	P	**PKPbc**	**23 50 18.3**	**-1.5**		
EVR	**Evrytania**	**152.06 324**	P	**PKPbc**	**23 50 19.6**	**-0.4**		
LAST	**Lasithi**	**152.06 314**	P	**PKPbc**	**23 50 20.0**	**-0.1**		
JAN	**Janina**	**152.06 326**	P	**PKPbc**	**23 50 19.4**	**-0.5**		
DID	**Didima**	**152.15 320**	P	**PKPbc**	**23 50 18.5**	**-1.7**		
ANX	**Ano Chora**	**152.22 323**	P	**PKPbc**	**23 50 20.4**	**+0.1**		
KALE	**Kalithea**	**152.23 323**	P	**PKPbc**	**23 50 19.6**	**-0.7**		
SERG	**Sergoula**	**152.26 323**	P	**PKPbc**	**23 50 19.9**	**-0.5**		
KRND	**KRANIDI**	**152.28 320**	P	**PKPbc**	**23 50 19.2**	**-1.2**		
DSL	**Palaion Diasel**	**152.30 325**	P	**PKPbc**	**23 50 20.0**	**-0.4**		
LBL	**Lubilhac**	**152.37 357**	PKP	**PKPbc**	**23 50 20.7**	**+0.3**		
IDI	**Anoyia**	**152.39 314**	P	**PKPbc**	**23 50 19.4**	**-1.4**		
GUR	**Goura**	**152.41 322**	P	**PKPbc**	**23 50 19.9**	**-0.9**		
LAKA	**Lakka**	**152.42 322**	P	**PKPbc**	**23 50 20.9**	**+0.2**		
PVO	**Paravola**	**152.42 324**	P	**PKPbc**	**23 50 20.7**	**0.0**		
IGT	**Igoumenitsa**	**152.43 326**	P	**PKPbc**	**23 50 20.0**	**-0.7**		
KLV	**Kalavryta, Ach**	**152.45 322**	P	**PKPbc**	**23 50 19.7**	**-1.1**		
KEK	**Kerkira**	**152.57 327**	P	**PKPbc**	**23 50 20.4**	**-0.6**		
SIVA	**Sivas**	**152.60 314**	P	**PKPbc**	**23 50 21.6**	**+0.5**		
PDO	**Prodromos**	**152.63 324**	P	**PKPbc**	**23 50 21.0**	**-0.1**		
DRO	**Drossia**	**152.77 322**	P	**PKPbc**	**23 50 21.6**	**+0.1**		

	2.8nm,1.1s,baz=216,slow=6.2,SNR=16							
MNTX	**Cornudas Mount**	**90.72**	**54**	*e*P		**P**	**00 07 11.4**	**0.0**
	5.3nm,1.2s							
G08A	**Pilot Rock**	**90.86**	**36**	*e*P		**P**	**00 07 12.8**	**+0.9**
	10nm,1.1s							
CMIG	**Matias Romero**	**91.00**	**71**	P		**P**	**00 07 13.1**	**+0.1**
	5.4nm,1.0s,baz=261,slow=4.5,SNR=5.8							
MFID	**Camas Ranch**	**91.28**	**39**	*e*P		**P**	**00 07 14.0**	**+0.1**
	5.3nm,1.0s							
TMUT	**Trail Mountain**	**91.37**	**45**	*e*P		**P**	**00 07 16.0**	**+1.3**
	5.4nm,0.9s							
BMO	**Blue Mountains**	**91.43**	**38**	*e*P		**P**	**00 07 14.2**	**-0.3**
	15nm,1.8s							
SRU	**San Rafael Swe**	**91.67**	**45**	*e*P		**P**	**00 07 16.2**	**+0.3**
	7.4nm,1.1s							
D08A	**Wollman Farm,**	**92.08**	**35**	*e*P		**P**	**00 07 17.9**	**+0.6**
	14nm,1.1s							
HLID	**Hailey**	**92.16**	**40**	*e*P		**P**	**00 07 18.5**	**+0.4**
	3.3nm,1.0s							
GYA	**Guiyang**	**92.52**	**299**	P		**P**	**00 07 20.2**	**+0.2**
GYA				pP		pP	00 07 27.4	-1.7
GYA				PP		**PP**	**00 11 04.0**	**+2.1**
GYA				SKS		**SKSac**	**00 17 51.8**	**-0.1**
GYA				S		**S**	**00 18 20.2**	**-2.4**
GYA				SS		**SS**	**00 24 35.0**	**-0.2**
GYA				pmax		pmax		
	comp=Z,20nm,1.0s							
GYA				pmax		pmax		
	comp=Z,120nm,7.6s							
GYA				LR		LR		
	comp=N,520nm,20.2s							
GYA				LR		LR		
	comp=E,500nm,21.4s							
GYA				LR		LR		
	comp=Z,490nm,20.8s							
MA2	**Magadan**	**92.93**	**344**	LR		LR	00 44 58.1	
	comp=Z,24nm,19.8s,baz=126,slow=33							
MCMT	**McKenzie Canyo**	**93.83**	**40**	*e*P		**P**	**00 07 23.2**	**-2.6**
BW06	**Boulder Array**	**94.46**	**43**	*e*P		**P**	**00 07 27.5**	**-1.2**
PDAR	**Pinedale Array**	**94.46**	**43**	P		**P**	**00 07 28.4**	**-0.3**
	0.5nm,0.7s,baz=229,slow=5.7,SNR=5.4							
BOZ	**Bozeman (W)**	**95.02**	**39**	*e*P		**P**	**00 07 31.1**	**0.0**
	5.1nm,1.0s							
ILAR	**Eielson Array**	**96.78**	**12**	P		**P**	**00 07 37.2**	**-1.3**
	1.2nm,0.9s,baz=217,slow=5.0,SNR=7.9							
HHC	**Hu-ho-hao-te**	**96.81**	**313**	*e*P		**P**	**00 07 40.1**	**+0.8**
CD2	**Chengdu**	**96.99**	**301**	*e*P		**P**	**00 07 40.0**	**-0.3**
LPAZ	**La Paz**	**97.03**	**113**	P		**P**	**00 07 40.8**	**-0.8**
	0.6nm,0.7s,baz=236,slow=3.6,SNR=2.6							
RSSD	**Black Hills**	**98.53**	**44**	*e*P		Pdif	00 07 47.2	0.0
	11nm,1.4s							
LZH	**Lanzhou**	**99.50**	**306**	*e*P		**Pdif**	**00 07 53.2**	**+1.6**
LZH				pP		pP	00 07 59.8	-0.9
LZH				sP		sP	00 08 02.5	-1.5
LZH				*e*PP		**PP**	**00 11 59.5**	**+3.6**
LZH				pmax		pmax		
	comp=Z,16nm,1.5s							
LZH				pmax		pmax		
	comp=Z,78nm,9.3s							
LZH				LR		LR		
	comp=N,160nm,17.5s							
LZH				LR		LR		
	comp=E,150nm,16.9s							
LZH				LR		LR		
	comp=Z,230nm,19.5s							
WMQ	**Urumqi**	**113.96**	**308**	*e*PKP		**PKiKP**	**00 12 47.7**	**+0.4**
MKAR	**Makanchi Array**	**118.45**	**310**	PKP		**PKPdf**	**00 12 53.1**	**-2.7**
	0.9nm,0.9s,baz=104,slow=2.5,SNR=5.0							
KSH	**Kashi**	**121.18**	**301**	*e*PKP		**PKPdf**	**00 13 00.3**	**-1.1**
KSH				*es*PKP			00 13 14.5	
KSH				*e*PP		**PP**	**00 14 37.8**	**+5.5**
KSH				PKS		**PKSdf**	**00 16 36.0**	**-2.1**
KSH				SKS		**SKSdf**	**00 20 08.3**	**-3.3**
KSH				SKKS		**SKKSac**	**00 21 25.4**	**-4.2**
KSH				SS		**SS**	**00 31 07.7**	**+3.4**
KSH				AMB		AMB		
	comp=Z,22nm,3.4s							
KSH				LR		LR		
	comp=N,120nm,5.7s							
KSH				LR		LR		
	comp=E,52nm,5.3s							
KSH				LR		LR		
	comp=Z,150nm,6.0s							
ZRNK	**Zerenda**	**127.75**	**316**	*e*PKPdf		**PKPdf**	**00 13 13.2**	**-0.2**
DGRG	**David-gareji**	**144.47**	**301**	P		PKPdf	00 13 55.2	+10
FIA1	**FINESS Array S**	**144.89**	**342**	*e*PKPdf		**PKPab**	**00 13 42.6**	**-1.3**
FIA1				*e*PKPdf		PKPbc	00 13 43.1	-0.8
FINES	**FINESS Array B**	**144.89**	**342**	PKP		**PKPab**	**00 13 42.3**	**-1.6**
	7.0nm,1.0s,baz=73,slow=3.7,SNR=20							
ONI	**Oni**	**145.74**	**303**	P		**PKPdf**	**00 13 45.3**	**-1.6**
KBZ	**Khabaz**	**145.94**	**305**	PKPbc		**PKPdf**	**00 13 46.4**	**-0.7**
	1.6nm,0.7s,baz=122,slow=4.2,SNR=3.5							
NC303	**NORSAR Array S**	**147.95**	**353**	*e*PKPbc		**PKPbc**	**00 13 52.5**	**-0.5**
NB2	**NORSAR Subarra**	**148.15**	**353**	PKP		**PKPbc**	**00 13 52.5**	**-1.1**
	comp=Z,4.4nm,1.0s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**148.15**	**353**	PKPbc		**PKPbc**	**00 13 52.3**	**-1.3**
	comp=Z,3.6nm,0.9s,baz=14,slow=4.3,SNR=8.1							
NBO02	**NORSAR Array S**	**148.18**	**354**	*e*PKPbc		**PKPbc**	**00 13 53.2**	**-0.4**
AKASG	**Malin Array Be**	**151.57**	**325**	PKPbc		**PKPbc**	**00 14 01.3**	**-0.9**
	comp=Z,2.7nm,0.6s,baz=48,slow=2.8,SNR=13							
AK11	**Malin Array Si**	**151.61**	**325**	*e*PKPbc		**PKPbc**	**00 14 02.2**	**0.0**
BRTR	**Keskin Array B**	**153.57**	**301**	PKPbc		**PKPbc**	**00 14 07.7**	**+0.4**
	comp=Z,1.0nm,1.1s,baz=101,slow=1.5,SNR=3.6							
BR231	**Keskin MP Arra**	**154.18**	**301**	*e*PKPbc		**PKPbc**	**00 14 10.1**	**+1.6**
ESDC	**Sonseca Array**	**168.07**	**30**	PKPab		**PKPab**	**00 15 21.1**	**-1.6**
	comp=Z,0.3nm,0.5s,baz=294,slow=4.0,SNR=5.2							
ES19	**SONSECA Array**	**168.08**	**30**	*e*PKPab		**PKPab**	**00 15 22.2**	**-0.5**

*JMA **09** 00:28:25.8±0.1,23˚.59N×121˚.59E,h47km±2km,M3.1*
*ISCJB **09** 00:28:26.9±0.3,23˚.57N±0˚.02×121˚.67E±0˚.02,h37km±7km, Error ellipse: s-maj=3.6km s-min=2.2km az=150.2*
*TAP **09** 00:28:26.6,23.59N×121.60E,h43km, ML3.6,C*

ISC 09 00:28:27.2±1.0,23˚.58N±0˚.02×121˚.64E±0˚.02,h34km±2km, n61,σ0s81/106,13C-2D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.16**	**326**	P		P	**Pb**	**00 28 34.5**	**+0.9**
	baz=337								
TEGC				S		**Sb**	**00 28 40.8**	**+2.8**	
	baz=337								
EHY	**Hungye**	**0.30**	**256**	⇑*i*P		**Pn**	**00 28 34.7**	**-0.4**	
	baz=261								
EHY				S		**Sn**	**00 28 40.4**	**+0.8**	
	baz=261								
ESL	**Shilin**	**0.30**	**322**	P		**Pn**	**00 28 34.4**	**-0.7**	
	baz=318								
ESL				S		**Sn**	**00 28 39.9**	**+0.1**	
	baz=318								
ESF	**Shoufeng Towns**	**0.32**	**338**	*e*P		**Pb**	**00 28 35.4**	**+0.1**	
	baz=334								
TWF1	**Yuli**	**0.38**	**235**	*i* P		**Pb**	**00 28 35.7**	**-0.5**	
	baz=239								
TWF1				*e*S		**Sb**	**00 28 42.1**	**-0.4**	
	baz=239								
HWA	**Hwalien**	**0.40**	**356**	P		**Pb**	**00 28 36.0**	**-0.4**	
	baz=4.0								
HWA				S		**Sn**	**00 28 43.9**	**+1.1**	
	baz=4.0								
WDT	**Danda**	**0.50**	**291**	⇑*i*P		**Pb**	**00 28 37.4**	**-0.7**	
	baz=297								
WDT				*i* S		**Sb**	**00 28 44.5**	**-1.1**	
	baz=297								
TWD	**Chiawan**	**0.50**	**356**	*i* P		**Pb**	**00 28 37.1**	**-0.9**	
	baz=350								
TWD				S		**Sn**	**00 28 45.9**	**+0.4**	
	baz=350								
CHKT	**Chengkung**	**0.54**	**208**	⇑P		**Pn**	**00 28 37.7**	**-0.7**	
	baz=197								
CHKT				S		**Sb**	**00 28 45.8**	**-0.4**	
	baz=197								
YUS	**Yu-Shan**	**0.64**	**262**	⇑*i*P		**Pn**	**00 28 40.0**	**-0.2**	
	baz=265								
YUS				S		**Sb**	**00 28 48.7**	**-0.7**	
	baz=265								
WHF	**Hehuan Shan**	**0.66**	**329**	⇑P		**Pn**	**00 28 39.3**	**-1.2**	
	baz=331								
WHF				S		**Sn**	**00 28 48.0**	**-1.9**	
	baz=331								
ELDTW	**Lidau**	**0.69**	**236**	*e*P		**Pn**	**00 28 39.4**	**-1.2**	
	baz=229								
SMLT	**Sun Moon Lake**	**0.74**	**294**	⇑*i*P		**Pn**	**00 28 40.9**	**-0.5**	
	baz=297								
SMLT				S		**Sn**	**00 28 50.9**	**-0.7**	
	baz=297								
ALS	**Alishan**	**0.77**	**265**	⇑*i*P		**Pn**	**00 28 41.9**	**0.0**	
	baz=271								
ALS				S		**Sn**	**00 28 52.0**	**-0.4**	
	baz=271								
TYC	**Yuchr**	**0.79**	**295**	⇑*i*P		**Pn**	**00 28 41.6**	**-0.3**	
	baz=295								
TYC				S		**Sn**	**00 28 52.1**	**-0.3**	
	baz=295								
TWT	**Tachien**	**0.80**	**328**	⇑*i*P		**Pn**	**00 28 41.9**	**-0.3**	
	baz=328								
TWT				S		**Sn**	**00 28 51.7**	**-1.3**	
	baz=328								
ENA	**Nanau**	**0.85**	**6**	*e*P		**Pn**	**00 28 41.8**	**-1.1**	
	baz=15								
CHN5	**Tsauling**	**0.88**	**272**	⇑*i*P		**Pn**	**00 28 43.5**	**+0.3**	
	baz=271								
CHN5				*i* S		**Sn**	**00 28 55.7**	**+0.8**	
	baz=271								
NNS	**Nan Shan**	**0.89**	**344**	*e*P		**Pn**	**00 28 42.8**	**-0.7**	
	baz=353								
STYT	**Tauyuan**	**0.91**	**243**	*e*P		**Pn**	**00 28 43.5**	**-0.1**	
	baz=241								
STYT				*e*S		**Sn**	**00 28 55.9**	**+0.4**	
	baz=241								
TWG	**Pinlang**	**0.91**	**215**	*e*P		**Pn**	**00 28 42.2**	**-1.5**	
	baz=213								
WNT	**Mingjian**	**0.92**	**289**	P		**Pn**	**00 28 44.2**	**+0.4**	
	baz=289								
WNT				*e*S		**Sb**	**00 28 57.1**	**+0.2**	
	baz=289								
CHN4	**Tsaushan**	**0.98**	**257**	*e*P		**Pn**	**00 28 44.9**	**+0.3**	
	baz=256								
CHN4				*e*S		**Sb**	**00 28 59.4**	**+0.7**	
	baz=256								
WGK	**Gukeng**	**0.99**	**277**	*e*P		**Pn**	**00 28 45.0**	**+0.2**	
	baz=276								
WGK				*e*S		**Sn**	**00 28 58.6**	**+1.1**	
	baz=276								
WTP	**Ta-pu**	**1.00**	**251**	*e*P		**Pn**	**00 28 45.4**	**+0.5**	
	baz=258								
WTP				*e*S		**Sn**	**00 28 58.8**	**+1.0**	
	baz=258								
TWC	**Suao**	**1.05**	**11**	*e*P		**Pn**	**00 28 44.8**	**-0.7**	
	baz=19								
TWC				*e*S		**Sn**	**00 28 59.6**	**+0.7**	
	baz=19								
TCU	**Taichung**	**1.05**	**303**	P		**Pn**	**00 28 46.3**	**+0.8**	
	baz=303								
TCU				*e*S		**Sb**	**00 29 01.5**	**+1.0**	
	baz=303								
ENTT	**Nioudou**	**1.06**	**356**	*e*P		**Pn**	**00 28 44.7**	**-1.0**	
	baz=357								
CHN2	**Minshiung**	**1.07**	**268**	*e*P		**Pn**	**00 28 46.7**	**+0.9**	
	baz=267								
CHN2				*e*S		**Sb**	**00 29 01.7**	**+0.8**	
	baz=267								
SGST	**Jiashian**	**1.09**	**243**	*e*P		**Pn**	**00 28 47.0**	**+1.0**	
	baz=234								
SGST				*e*S		**Sb**	**00 29 02.1**	**+0.6**	
	baz=234								
CHN1	**Nanshi**	**1.09**	**249**	⇓P		**Pn**	**00 28 46.8**	**+0.7**	
	baz=249								
CHN1				*e*S		**Sn**	**00 29 01.2**	**+1.1**	
	baz=249								
TWK	**Hsinying**	**1.10**	**254**	*e*P		**Pn**	**00 28 46.9**	**+0.7**	
	baz=253								
TWQ1	**Liyutan**	**1.10**	**314**	⇑*i*P		**Pn**	**00 28 46.8**	**+0.6**	
	baz=314								
TWQ1				S		**Sb**	**00 29 01.8**	**-0.2**	
	baz=314								
CHY	**Chiayi**	**1.12**	**266**	*e*P		**Pn**	**00 28 46.2**	**-0.3**	
	baz=265								
CHY				*e*S		**Sb**	**00 29 02.2**	**-0.2**	
	baz=265								
NSK	**Sanguang**	**1.12**	**347**	⇑*i*P		**Pn**	**00 28 46.1**	**-0.5**	
	baz=357								
NSK				*i* S		**Sn**	**00 28 59.9**	**-1.1**	
	baz=357								
TWE	**Neicheng**	**1.14**	**1**	*e*P		**Pn**	**00 28 45.8**	**-1.0**	
	baz=355								
NSY	**Sanyi**	**1.16**	**316**	⇑P		**Pn**	**00 28 47.6**	**+0.6**	
	baz=316								
NSY				*e*S		**Sb**	**00 29 03.1**	**-0.4**	
	baz=316								
NSTT	**Nanjuang**	**1.20**	**331**	*e*P		**Pn**	**00 28 47.9**	**+0.3**	
	baz=319								
NSTT				*e*S		**Sn**	**00 29 03.9**	**+1.1**	
	baz=319								
SSD	**Sandimen**	**1.24**	**228**	*e*P		**Pn**	**00 28 48.8**	**+0.7**	
	baz=228								
SSD				*e*S		**Sb**	**00 29 05.7**	**-0.2**	
	baz=228								
WTCT	**Ta-ch'eng**	**1.28**	**283**	*e*P		**Pn**	**00 28 48.8**	**+0.1**	
	baz=272								
WTCT				*e*S		**Sn**	**00 29 05.8**	**+1.3**	
	baz=272								
EGS		**1.29**	**12**	*e*P		**Pn**	**00 28 49.3**	**+0.5**	
	baz=21								
EGS				*e*S		**Sb**	**00 29 07.4**	**+0.1**	
	baz=21								
CHN8	**Yiju**	**1.33**	**260**	*e*P		**Pn**	**00 28 49.7**	**+0.3**	
	baz=260								
CHN8				*e*S		**Sn**	**00 29 06.9**	**+1.0**	
	baz=260								
TWM1	**Shoushan**	**1.35**	**236**	*e*P		**Pb**	**00 28 51.9**	**-0.1**	
	baz=237								
TAW	**Tawu**	**1.39**	**210**	*e*P		**Pn**	**00 28 50.2**	**0.0**	
	baz=209								
EAST	**Anshuo**	**1.39**	**212**	*e*P		**Pn**	**00 28 49.1**	**-1.2**	
	baz=206								
TWA	**Mucha**	**1.40**	**358**	*e*P		**Pn**	**00 28 49.6**	**-0.7**	
	baz=358								
TWB1	**Santiao Chiao**	**1.46**	**13**	*e*P		**Pn**	**00 28 51.8**	**+0.6**	
	baz=13								
JYNG	**Yonaguni jima**	**1.48**	**54**	P		**Pn**	**00 28 51.5**	**+0.1**	
JYNG				S		**Sn**	**00 29 09.9**	**+0.3**	
NWF	**Wu-fen Shan**	**1.49**	**5**	*e*P		**Pn**	**00 28 51.5**	**-0.3**	
	baz=354								
NWF				*e*S		**Sn**	**00 29 11.5**	**+1.4**	
	baz=354								
SCZT	**Fangliau**	**1.52**	**218**	*e*P		**Pn**	**00 28 53.1**	**+1.0**	
	baz=210								
TWS1	**Kuangyinshan**	**1.53**	**353**	*e*P		**Pn**	**00 28 52.9**	**+0.8**	
	baz=6.0								
YOJ	**Yonaguni jima**	**1.53**	**55**	P		**Pn**	**00 28 52.3**	**+0.1**	
YOJ				*e*S		**Sn**	**00 29 11.1**	**+0.2**	
YOJ	**Yonaguni jima**	**1.53**	**55**	⇓*i*P		**Pn**	**00 28 52.5**	**+0.3**	
	baz=56								
WDGT	**Dungji**	**1.84**	**261**	*e*P		**Pn**	**00 28 55.8**	**-0.6**	
	baz=260								
WDGT				*e*S		**Sn**	**00 29 16.6**	**-2.0**	
	baz=260								
PNG	**Penghu**	**1.91**	**270**	P		**Pn**	**00 28 56.8**	**-0.6**	
	baz=269								
PNG				*e*S		**Sn**	**00 29 18.8**	**-1.4**	
	baz=269								
HATJ	**Hateruma jima**	**2.04**	**76**	P		**Pn**	**00 28 59.3**	**+0.1**	
HATJ				*e*S		**Sn**	**00 29 23.1**	**-0.4**	
IRIF	**Iriomote-Funau**	**2.06**	**68**	P		**Pn**	**00 28 59.8**	**+0.4**	
IRIF				S		**Sn**	**00 29 24.4**	**+0.5**	
JKRS	**Kuro-shima**	**2.27**	**73**	P		**Pn**	**00 29 02.6**	**+0.3**	
JKRS				*e*S		**Sn**	**00 29 29.8**	**+0.7**	
JIJ	**Ishigaki jima**	**2.42**	**71**	P		**Pn**	**00 29 04.4**	**0.0**	
JIJ				S		**Sn**	**00 29 31.8**	**-1.1**	
JISG	**Ishigakijimahi**	**2.64**	**67**	P		**Pn**	**00 29 07.1**	**-0.3**	
JISG				S		**Sn**	**00 29 37.1**	**-1.2**	
JTJ	**Tarama**	**2.99**	**69**	P		**Pn**	**00 29 12.7**	**+0.4**	
JTJ				S		**Sn**	**00 29 46.9**	**-0.1**	

*NIED **09** 00:39:00,37˚.40N×142˚.60E,h5km,Mw3.5 Best double couple: M0≥2.06000×10^14 NP1:φs=249.00000°,δ44.00000°, λ-76.00000°. NP2:φs=50.00000°,δ48.00000°, λ-103.00000°.*
*JMA **09** 00:39:01.0±0.4,37˚.45N×142˚.57E,h6km±5km,M3.8*
*ISCJB **09** 00:39:02.1±1.0,37˚.42N±0˚.05×142˚.62E±0˚.08,h21km, mb3.4/3,Error ellipse: s-maj=9.1km s-min=6.3km az=14.6*
*IDC **09** 00:39:02.1±4.4,37˚.71N×142˚.68E,h0km,mb3.5/3, mb1 3.6/4,mb1mx3.3/37,mbtmp3.4/4,ML3.1/1,Error ellipse: s-maj=108.1km s-min=28.0km az=154.0*

ISC 09 00:39:04.3±1.3,37˚.48N±0˚.06×142˚.50E±0˚.08,h21km,n15, σ1s31/22,mb3.5/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.30**	**266**	P		P	**Pn**	**00 39 26.3**	**-1.0**
JFK				*e*S			**Sn**	**00 39 44.1**	**0.0**
JIO	**Ouri**	**1.33**	**317**	P		P	**Pn**	**00 39 27.1**	**-0.6**
JMM	**Marumori**	**1.41**	**286**	P		P	**Pn**	**00 39 27.7**	**-1.1**
JMM				S			**Sb**	**00 39 47.2**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.41**	**255**	P		P	**Pn**	**00 39 26.9**	**-1.9**
JOU	**Okura**	**1.70**	**302**	P		P	**Pn**	**00 39 32.8**	**0.0**
JOU				*e*S			**Sb**	**00 39 55.1**	**-0.8**
JFT	**Otama**	**1.72**	**272**	P		P	**Pn**	**00 39 33.3**	**+0.2**
JMK	**Ichinoseki**	**1.78**	**326**	P		P	**Pn**	**00 39 33.8**	**-0.1**
JMK				*e*S			**Sb**	**00 39 57.5**	**-0.7**
JOM	**Ohasama**	**2.21**	**335**	P		P	**Pn**	**00 39 39.2**	**-0.5**
JOM				S			**Sn**	**00 40 08.0**	**+1.7**
JYK	**Kaneyama**	**2.22**	**311**	P		P	**Pn**	**00 39 40.0**	**+0.1**
MJAR	**Matsushiro Arr**	**3.56**	**256**	Pn		P	**Pn**	**00 40 01.1**	**+2.7**
	1.4nm,0.3s,baz=88,slow=16,SNR=6.8								
MJAR				Sn			**Sb**	**00 40 46.9**	**-2.5**
	0.9nm,0.3s,baz=64,slow=12,SNR=5.9								
MAT	**Matsushiro**	**3.56**	**256**	P		P	**Pn**	**00 40 00.7**	**+2.3**
MAT				*e*S			**Sn**	**00 40 40.9**	**+1.0**
JHJ	**Hachijo jima 2**	**4.88**	**208**	Sn			**Sn**	**00 41 12.7**	**+0.3**
	11nm,0.3s,baz=252,slow=23,SNR=3.9								
SONM	**Songino Array**	**28.26**	**303**	P		P	**P**	**00 44 57.2**	**+1.1**
	0.4nm,0.4s,baz=87,slow=9.1,SNR=2.7								
ILAR	**Eielson Array**	**48.65**	**33**	P		P	**P**	**00 47 45.3**	**-1.1**
	0.2nm,0.8s,baz=265,slow=6.9,SNR=4.1								
FINES	**FINESS Array B**	**68.82**	**333**	P		P	**P**	**00 50 06.8**	**+0.1**
	0.6nm,0.7s,baz=50,slow=13,SNR=3.7								

WEL 09 00:45:21.2±0.4,37˚.09S×177˚.09E,h127km±5km,ML3.5/7, 1C,Error ellipse: s-maj=4.7km s-min=4.5km az=0.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**0.86**	**141**			PN	Pn	00 45 42.5	0.0
HAZ						SN	Sn	00 45 58.2	-0.5
HAZ						AML	AML	00 46 02.9	
RUGZ	**Raukumara Rang**	**0.99**	**152**			PN	Pn	00 45 44.2	+0.4
RUGZ						SN	Sn	00 45 58.9	-2.0
MXZ	**Matakaoa Point**	**1.07**	**116**			PN	Pn	00 45 44.4	-0.1
MXZ						SN	Sn	00 46 03.1	+1.0
URZ	**Urewera**	**1.16**	**179**	⇑		PN	Pn	00 45 45.6	+0.2
WMGZ	**Waiomatatini S**	**1.28**	**125**			PN	Pn	00 45 46.3	-0.2
WMGZ						SN	Sn	00 46 06.3	+0.4
WMGZ						AML	AML	00 46 07.2	
MWZ	**Matawai**	**1.28**	**165**			PN	Pn	00 45 47.1	+0.4
MWZ						SN	Sn	00 46 06.6	+0.4
MWZ						AML	AML	00 46 13.3	
PUZ	**Puketiti**	**1.34**	**137**			SN	Sn	00 46 06.4	-0.9
MUGZ	**Murupara**	**1.41**	**190**			PN	Pn	00 45 48.3	+0.3
CNGZ	**Carnagh Statio**	**1.65**	**148**			PN	Pn	00 45 50.5	-0.2
KNZ	**Kokohu**	**1.98**	**167**			PN	Pn	00 45 53.5	-1.2
NMHZ	**Naumai**	**2.01**	**186**			PN	Pn	00 45 55.7	+0.5
NMHZ						AML	AML	00 46 31.7	
NMHZ						AML	AML	00 46 43.2	
BKZ	**Black Stump Fm**	**2.12**	**193**			PN	Pn	00 45 56.4	-0.2
MHGZ	**Mahia Peninsul**	**2.15**	**163**			PN	Pn	00 45 56.0	-0.8
ARHZ	**Aropaoanui**	**2.17**	**182**			PN	Pn	00 45 56.6	-0.4
ARHZ						AML	AML	00 46 35.4	
MCHZ	**McNeill Hill**	**2.37**	**187**			PN	Pn	00 45 59.4	-0.1
KWHZ	**Kaweka Forest**	**2.39**	**193**			AML	AML	00 46 40.3	
KWHZ						AML	AML	00 46 41.5	
MOVZ	**Moawhango**	**2.54**	**204**			PN	Pn	00 46 00.6	-1.2
CKHZ	**Cape Kidnapper**	**2.56**	**180**			PN	Pn	00 46 00.6	-1.4
CKHZ						AML	AML	00 46 33.2	
KRHZ	**Kereru**	**2.61**	**192**			PN	Pn	00 46 01.4	-1.2
KAHZ	**Kahuranaki**	**2.70**	**184**			PN	Pn	00 46 02.6	-1.3
PNHZ	**Pukenui**	**2.90**	**194**			PN	Pn	00 46 04.4	-2.0
PXZ	**Pawanui**	**2.94**	**183**			PN	Pn	00 46 04.6	-2.2
TSZ	**Takapari Road**	**3.09**	**196**			PN	Pn	00 46 06.4	-2.5

*NIED **09** 00:46:00,37˚.40N×142˚.50E,h8km,Mw3.8 Best double couple: M0≥5.81000×10^14 NP1:φs=79.00000°,δ34.00000°, λ-93.00000°. NP2:φs=262.00000°,δ57.00000°, λ-88.00000°.*
*JMA **09** 00:46:07.7±0.2,37˚.38N×142˚.48E,h16km±4km,M3.9*
*ISCJB **09** 00:46:09.8±0.7,37˚.32N±0˚.05×142˚.40E±0˚.06,h24km, mb3.9/8,Error ellipse: s-maj=7.2km s-min=6.4km az=40.0*
*IDC **09** 00:46:16.0±2.9,37˚.12N×142˚.26E,h59km±26km,mb3.7/8, mb1 3.8/12,mb1mx3.5/52,mbtmp3.9/12,ML3.2/4,MS3.0/1, Ms1 3.0/1,ms1mx2.3/53,Error ellipse: s-maj=28.1km s-min=13.1km az=90.0*

ISC 09 00:46:12.0±0.8,37˚.35N±0˚.05×142˚.20E±0˚.07,h24km,n30, σ1s74/27,mb4.0/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.06**	**272**	P		P	**Pn**	**00 46 30.8**	**-0.5**
ONAJ	**Iwakimizuishiy**	**1.15**	**258**	P		P	**Pb**	**00 46 32.2**	**-0.9**
JMM	**Marumori**	**1.23**	**295**	P		P	**Pn**	**00 46 32.9**	**-0.8**
JMM				*e*S			**Sb**	**00 46 51.0**	**+1.0**
JIO	**Ouri**	**1.30**	**329**	P		P	**Pn**	**00 46 32.5**	**-2.1**
JIO				*e*S			**Sn**	**00 46 49.9**	**-1.2**
JFT	**Otama**	**1.49**	**277**	P		P	**Pb**	**00 46 38.0**	**-1.0**
JFT				*e*S			**Sb**	**00 46 59.4**	**

0.4nm,0.5s,baz=72,slow=4.5,SNR=4.4

IDC ***09*** *00:53:13.2±0.5,28°.87S×176°.76W,h0km,mb4.7/19, mb1 4.9/20,mb1mx4.7/36,mbtmp4.7/20,ML4.7/1,MS5.0/16, Ms1 5.0/16,ms1mx4.9/23,Error ellipse: s-maj=20.1km s-min=13.8km az=155.0*

GCMT ***09*** *00:53:15.0±0.1,28°.94S×176°.36W,h14km,MW5.4/120, Moment Tensor Solution. s104,c179; s120,c219; Duration: 152 Moment tensor: Scale 1017Nm; Mrr1.15±.02; Mθθ0.03±.02; Mϕϕ-1.18±.02; Mrθ0.20±.04; Mθϕ-0.29±.01; Mϕr0.81±.04; Best double couple: M☐1.46200×1017 NP1:ϕ±13.00000°,δ63.00000°, λ91.00000°. NP2:ϕ±192.00000°,δ28.00000°,λ89.00000°. Principal axes: T 1.4140, Plg72.0000°, Azm285.0000°; N 0.0940, Plg1.0000°, Azm193.0000°; P -1.5090, Plg17.0000°, Azm103.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI ***09*** *00:53:15.3,29°.15S×176°.84W,h17km,mb5.3/39, mB5.7/39,Ms5.2/40,Ms7 4.9/41*

NEIC ***09*** *00:53:15.0±0.2,28°.96S×176°.69W,h10km,mb5.2/94, Error ellipse: s-maj=7.9km s-min=4.7km az=138.0*

ISCJB ***09*** *00:53:16.8±0.2,29°.09S±0°.04×176°.81W±0°.04,h33km, mb5.2/120,MS5.0/40,Error ellipse: s-maj=6.7km s-min=3.9km az=143.8*

MOS ***09*** *00:53:17.2±1.2,28°.90S×176°.78W,h33km,mb5.2/48, MS5.1/17,Error ellipse: s-maj=10.8km s-min=8.7km az=71.0*

ISC 09 00:53:17.9±0.3,29°.15S±0°.05×176°.46W±0°.05,h36km, n433,σ2s03/445,mb5.2/120,MS5.0/40,23C-12D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.28**	**265**	Pn		**Pn**	**00 53 36.6**	**-2.7**
	2μm,0.3s,baz=102,slow=6.4,SNR=21							
RAO				Sn		**Sn**	**00 53 58.6**	**+3.4**
	6μm,0.3s,baz=235,slow=23,SNR=12							
RAO				LR		LR	00 54 06.0	
	comp=Z,30μm,21.0s,baz=168,slow=49							
RAO	**Raoul Island**	**1.28**	**265**	*e*P		**Pn**	**00 53 39.1**	**-0.1**
RAO							00 53 58.6	
RAO	**Raoul Island**	**1.28**	**265**	*e*Pn		**Pn**	**00 53 39.1**	**-0.1**
RAO				Sn		**Sn**	**00 53 58.6**	**+3.4**
MXZ	**Matakaoa Point**	**9.46**	**206**	*e*Pn		**Pn**	**00 55 35.5**	**+3.9**
MXZ				*e*ScP		**ScP**	**01 05 15.4**	**-2.0**
HAZ	**Te Kaha**	**9.84**	**208**	PN		Pn	00 55 31.6	-5.1
HAZ				SN		**Sn**	**00 57 24.5**	**-1.5**
OUZ	**Omahuta**	**10.37**	**232**	*e*Pn		**Pn**	**00 55 45.6**	**+1.5**
MWZ	**Matawai**	**10.44**	**207**	*e*PN		Pn	00 55 38.7	-6.3
MWZ				SN		**Sn**	**00 57 36.0**	**-4.8**
URZ	**Urewera**	**10.55**	**209**	Pn		Pn	00 55 40.8	-5.7
	2.1nm,0.3s,baz=271,slow=4.6,SNR=8.3							
URZ				Sn		**Sn**	**00 57 35.5**	**-7.7**
	5.0nm,0.3s,baz=193,slow=21,SNR=5.7							
URZ	**Urewera**	**10.55**	**209**	*e*Pn		**Pn**	**00 55 45.5**	**-1.0**
	28nm,0.5s							
URZ				Sn		**Sn**	**00 57 35.5**	**-7.7**
URZ				Sn		Sn	00 57 44.2	+0.9
URZ	**Urewera**	**10.55**	**209**	PN		Pn	00 55 40.0	-6.5
URZ				SN		**Sn**	**00 57 35.8**	**-7.5**
BKZ	**Black Stump Fm**	**11.57**	**208**	*e*Pn		**Pn**	**00 56 03.8**	**+3.3**
NIUE	**Niue**	**11.66**	**32**	P		Pn	00 55 54.7	-7.0
	baz=11,SNR=3.8							
MSVF	**Nonsavu**	**12.43**	**335**	*e*P		**Pn**	**00 56 10.7**	**-1.6**
MSVF	**Nonsavu**	**12.43**	**335**	*e*Pn		**Pn**	**00 56 10.7**	**-1.6**
SNZO	**South Karori**	**14.11**	**208**	*e*P		**Pn**	**00 56 37.6**	**+2.5**
NNZ	**Nelson**	**14.62**	**212**	*e*PN		Pn	00 56 36.3	-5.7
NNZ				SN		Sn	00 59 06.6	-16
THZ	**Tophouse**	**15.27**	**212**	*e*Pn		**Pn**	**00 56 51.7**	**+0.9**
	77nm,0.8s							
THZ				*e*Sn		Sn	00 59 27.2	-11
KHZ	**Kahutara**	**15.52**	**209**	PN		Pn	00 56 43.9	-10
KHZ				SN		Sn	00 59 30.1	-14
AFI	**Afiamalu**	**15.77**	**17**	Pn		**Pn**	**00 56 54.0**	**-3.4**
	3.1nm,0.3s,baz=97,slow=7.6,SNR=3.2							
AFI				Sn		Sn	00 59 33.8	-17
	2.7nm,0.3s,baz=16,slow=23,SNR=3.4							
AFI				LR		LR	01 03 26.2	
	comp=Z,1μm,19.4s,baz=200,slow=39							
AFI	**Afiamalu**	**15.77**	**17**	P		**Pn**	**00 56 54.0**	**-3.4**
AFI				pmax		pmax		
	comp=Z,3.0nm,0.3s							
AFI				MLR		MLR		
	comp=Z,1μm,19.4s							
AFI	**Afiamalu**	**15.77**	**17**	*e*Pn		**Pn**	**00 56 56.1**	**-1.4**
	comp=Z,60nm,0.7s							
AFI				Sn		Sn	00 59 33.8	-17
OXZ	**Oxford**	**16.90**	**210**	*e*Pn		**Pn**	**00 57 10.7**	**-0.8**
	comp=Z,78nm,0.8s							
OXZ				*e*Sn		Sn	01 00 03.8	-14
OXZ	**Oxford**	**16.90**	**210**	PN		Pn	00 57 02.6	-8.9
DZM	**Mont Dzumac**	**16.95**	**291**	Pn		**P**	**00 57 13.3**	**-0.7**
	comp=Z,0.7nm,0.3s,baz=98,slow=19,SNR=5.3							
DZM				LR		LR	01 02 36.5	
	comp=Z,11μm,18.2s,baz=120,slow=34							
DZM	**Mont Dzumac**	**16.95**	**291**	*e*P		**P**	**00 57 13.7**	**-0.3**
	comp=Z,272nm,1.6s							
DZM				*e*LQ		LQ	01 00 34.2	
	comp=Z,5μm,28.8s							
DZM				*e*LR		LR	01 01 14.6	
	comp=Z,12μm,25.6s							
DZM	**Mont Dzumac**	**16.95**	**291**	*e*Pn		**Pn**	**00 57 11.0**	**-1.4**
	comp=Z,177nm,1.5s							
RAR	**Rarotonga**	**17.03**	**66**	P		**Pn**	**00 57 09.8**	**-3.5**
	comp=Z,2.7nm,0.3s,baz=239,slow=9.9,SNR=9.1							
RAR				S		Sn	01 00 03.6	-18
	comp=Z,2.3nm,0.3s,baz=91,slow=14,SNR=3.7							
RAR				LR		LR	01 04 32.2	
	comp=Z,4μm,18.4s,baz=244,slow=40							
RAR	**Rarotonga**	**17.03**	**66**	*e*P		**Pn**	**00 57 10.2**	**-3.1**
RAR				pmax		pmax		
	comp=Z,118nm,1.0s							
RAR	**Rarotonga**	**17.03**	**66**	*e*Pn		**Pn**	**00 57 10.2**	**-3.1**
	comp=Z,118nm,1.0s							
RAR				S		Sn	01 00 03.6	-18
RPZ	**Rata Peaks**	**17.64**	**211**	P		**Pn**	**00 57 14.1**	**-6.6**
	comp=Z,1.6nm,0.3s,baz=297,slow=3.7,SNR=4.5							
RPZ				S		Sn	01 00 17.9	-18
	comp=Z,1.3nm,0.3s,baz=326,slow=9.2,SNR=5.2							
RPZ				LR		LR	01 04 47.5	
	comp=Z,6μm,19.0s,baz=36,slow=39							
RPZ	**Rata Peaks**	**17.64**	**211**	*e*Pn		**P**	**00 57 23.4**	**+2.0**
	comp=Z,58nm,0.8s							
RPZ				S		Sn	01 00 17.9	-18
ODZ	**Otahua Downs**	**18.87**	**209**	*e*P		**P**	**00 57 34.1**	**-0.8**
	comp=Z,235nm,1.7s							
TBI	**Tubuai**	**24.86**	**83**	*e*LQ		LQ	01 03 21.7	
	comp=Z,3μm,29.0s							
TBI				*e*LR		LR	01 04 31.2	
	comp=Z,4μm,31.8s,baz=250							
TBI	**Tubuai**	**24.86**	**83**	*e*T		T	01 24 20.5	
	comp=Z,14nm,0.3s							
PAE	**Paea**	**27.12**	**71**	*e*T		T	01 27 02.5	
	comp=Z,6.0nm,0.3s							
PPT2	**Papeete2**	**27.16**	**71**	*e*LQ		LQ	01 04 15.6	
	comp=Z,4μm,24.0s							
PPT2				*e*LR		LR	01 05 39.0	
	comp=Z,5μm,31.0s,baz=238							
PPT	**Papeete**	**27.17**	**71**	LR		LR	01 07 45.2	
	comp=Z,μm,19.6s,baz=246,slow=32							
ARMA	**Armidale**	**27.68**	**259**	*e*P		**P**	**00 59 04.1**	**+1.4**
	comp=Z,49nm,1.5s							
EIDS	**Eidsvold**	**29.05**	**270**	P		**P**	**00 59 14.2**	**-0.6**
	baz=29,SNR=4.0							
EIDS	**Eidsvold**	**29.05**	**270**	*e*P		**P**	**00 59 14.4**	**-0.5**
	comp=Z,18nm,0.9s							
HNR	**Honiara**	**29.56**	**307**	LR		LR	01 10 25.4	
	comp=Z,2μm,18.5s,baz=150,slow=35							
RMQ	**Roma**	**30.82**	**266**	P		**P**	**00 59 30.8**	**+0.3**
	baz=31,SNR=11							
CMSA	**Cobar Meteorol**	**32.65**	**256**	P		**P**	**00 59 46.1**	**-0.5**
	baz=33,SNR=12							
QLP	**Quilpie**	**34.74**	**265**	P		**P**	**01 00 03.9**	**-0.9**
	baz=35,SNR=4.6							
CTA	**Charters Tower**	**34.96**	**276**	P		**P**	**01 00 05.2**	**-1.6**
	comp=Z,7.9nm,0.4s,baz=102,slow=11,SNR=15							
CTAO	**Charters Tower**	**34.96**	**276**	*e*P		**P**	**01 00 06.5**	**-0.2**
CTAO				pmax		pmax		
	comp=Z,166nm,2.0s							
CTAO	**Charters Tower**	**34.96**	**276**	*e*P		**P**	**01 00 06.5**	**-0.2**
	comp=Z,166nm,2.0s							
STKA	**Stephens Creek**	**36.08**	**255**	P		**P**	**01 00 15.0**	**-1.2**
	comp=Z,10nm,0.7s,baz=83,slow=11,SNR=11							
STKA				LR		LR	01 14 28.6	
	comp=Z,5μm,18.0s,baz=89,slow=36							
STKA	**Stephens Creek**	**36.08**	**255**	P		**P**	**01 00 15.1**	**-1.2**
	baz=36,SNR=13							
STKA	**Stephens Creek**	**36.08**	**255**	*e*P		**P**	**01 00 15.4**	**-0.9**
MTSU	**Mount Surprise**	**37.41**	**278**	P		**P**	**01 00 26.1**	**-1.6**
	baz=37,SNR=14							
RKT	**Rikitea**	**37.58**	**91**	*e*S		S	01 06 05.2	-11
	comp=Z,495nm,27.8s							
RKT				*e*LR		LR	01 10 17.9	
	comp=Z,3μm,32.8s,baz=250							
HTT	**Hallett**	**38.15**	**252**	P		**P**	**01 00 32.5**	**-1.4**
	baz=38,SNR=17							
TAOE	**Nuku Hiva Isla**	**39.58**	**67**	*e*LR		LR	01 11 25.4	
	comp=Z,2μm,22.9s							
COEN	**Coen**	**40.25**	**283**	P		**P**	**01 00 49.8**	**-1.7**
	baz=40,SNR=4.7							
BBOO	**Buckleboo**	**40.61**	**252**	P		**P**	**01 00 52.6**	**-1.8**
	baz=41,SNR=8.7							
AS01	**Alice Springs**	**44.49**	**265**	*e*P		**P**	**01 01 23.3**	**-2.8**
AS31	**Alice Springs**	**44.53**	**265**	*e*P		**P**	**01 01 24.6**	**-1.7**
	comp=Z,5.2nm,0.9s							
ASAR	**Alice Springs**	**44.53**	**265**	P		**P**	**01 01 23.8**	**-2.6**
	comp=Z,8.2nm,0.5s,baz=107,slow=7.6,SNR=39							
ASAR				PcP		**PcP**	**01 03 09.3**	**+0.1**
	comp=Z,3.9nm,0.6s,baz=110,slow=3.9,SNR=5.2							
ASAR				LR		LR	01 19 46.4	
	comp=Z,6μm,18.4s,baz=110,slow=36							
WC3	**Warramunga Arr**	**45.38**	**270**	P		**P**	**01 01 30.4**	**-2.6**
	baz=45							
WB2	**Warramunga Arr**	**45.40**	**270**	P		**P**	**01 01 31.4**	**-1.9**
	baz=45							
WB2	**Warramunga Arr**	**45.40**	**270**	*e*P		**P**	**01 01 31.1**	**-2.2**
	comp=Z,28nm,0.9s							
WRAB	**Tennant Creek**	**45.41**	**270**	*e*P		**P**	**01 01 31.3**	**-2.0**
WRAB				pmax		pmax		
	comp=Z,28nm,0.8s							
WRAB	**Tennant Creek**	**45.41**	**270**	*e*P		**P**	**01 01 31.1**	**-2.2**
	comp=Z,20nm,0.7s							
WRA	**Warramunga Arr**	**45.41**	**270**	P		**P**	**01 01 31.1**	**-2.3**
	comp=Z,22nm,0.7s,baz=108,slow=7.8,SNR=30							
WRA				PcP		**PcP**	**01 03 12.4**	**+0.1**
	comp=Z,3.2nm,0.9s,baz=115,slow=2.1,SNR=4.7							
WRA				LR		LR	01 19 50.5	
	comp=Z,2μm,18.2s,baz=120,slow=35							
FORT	**Forrest**	**47.68**	**254**	P		**P**	**01 01 48.5**	**-2.5**
	baz=48,SNR=14							
FORT	**Forrest**	**47.68**	**254**	*e*P		**P**	**01 01 48.7**	**-2.2**
	comp=Z,294nm,0.8s							
WRKA	**Warakurna**	**48.98**	**261**	P		**P**	**01 01 58.0**	**-3.2**
	baz=49,SNR=24							
SBA	**Scott Base**	**49.39**	**185**	*e*P		**P**	**01 02 06.6**	**+3.2**
SBA				pmax		pmax		
	comp=Z,56nm,1.3s							
SBA	**Scott Base**	**49.39**	**185**	*e*P		**P**	**01 02 06.6**	**+3.2**
	comp=Z,56nm,1.3s							
VNDA	**Vanda**	**49.48**	**186**	P		**P**	**01 02 07.3**	**+3.2**
	comp=Z,2.3nm,0.7s,baz=1.5,slow=6.3,SNR=14							
VNDA	**Vanda**	**49.48**	**186**	*e*P		**P**	**01 02 07.5**	**+3.4**
VNDA				pmax		pmax		
	comp=Z,23nm,1.5s							
VNDA	**Vanda**	**49.48**	**186**	*e*P		**P**	**01 02 07.5**	**+3.4**
	comp=Z,23nm,1.5s							
FITZ	**Fitzroy Crossi**	**53.72**	**268**	P		**P**	**01 02 34.7**	**-2.0**
	comp=Z,6.7nm,0.7s,baz=79,slow=4.1,SNR=10.0							
CASY	**Casey**	**56.87**	**208**	*e*P		**P**	**01 02 58.2**	**-0.4**
	comp=Z,36nm,1.0s							
MBWA	**Marble Bar**	**57.71**	**262**	*e*P		**P**	**01 03 03.0**	**-2.3**
	comp=Z,22nm,0.9s							
GIRL	**Giralia**	**61.90**	**258**	P		**P**	**01 03 33.4**	**-0.7**
	baz=62,SNR=3.7							
MIR	**Mirnyy**	**63.84**	**206**	*e*P		**P**	**01 03 48.0**	**+1.8**
MIR				pmax		pmax		
	comp=Z,6.0nm,1.4s							
MAW	**Mawson**	**73.95**	**200**	P		**P**	**01 04 51.1**	**+2.1**
	comp=Z,5.9nm,0.7s,baz=128,slow=9.8,SNR=11							
MAW				LR		LR	01 37 47.0	
	comp=Z,2μm,18.6s,baz=107,slow=36							
MAW	**Mawson**	**73.95**	**200**	P		**P**	**01 04 50.8**	**+1.8**
	baz=74,SNR=6.1							
MAW	**Mawson**	**73.95**	**200**	*e*P		**P**	**01 04 51.1**	**+2.1**
	comp=Z,24nm,1.9s							
SBUM	**Sibu**	**74.97**	**281**	*e*P		**P**	**01 04 57.0**	**+1.1**
	comp=Z,48nm,1.8s							
INU	**Inuyama**	**77.71**	**323**	*e*P		**P**	**01 05 10.7**	**-0.2**
	comp=Z,88nm,2.0s							
MJAR	**Matsushiro Arr**	**78.00**	**324**	P		**P**	**01 05 10.8**	**-1.7**
	comp=Z,4.9nm,0.8s,baz=155,slow=5.0,SNR=7.8							
MAJO	**Matsushiro**	**78.00**	**324**	*e*P		**P**	**01 05 11.2**	**-1.3**
MAJO				pmax		pmax		
	comp=Z,35nm,0.9s							
MAJO	**Matsushiro**	**78.00**	**324**	*e*P		**P**	**01 05 11.8**	**-0.7**
	comp=Z,16nm,1.0s							
MAT	**Matsushiro**	**78.00**	**324**	P		**P**	**01 05 10.0**	**-2.5**
MAT				S		**S**	**01 15 08.2**	**+4.6**
MJB9	**Matsu-Tunnel**	**78.00**	**324**	*e*P		**P**	**01 05 11.8**	**-0.7**
	comp=Z,3.9nm,1.0s							
SYO	**Syowa Base**	**78.63**	**192**	*e*P		**P**	**01 05 15.3**	**-0.3**
SNAA	**Sanae**	**79.36**	**178**	P		**P**	**01 05 19.9**	**+0.2**
SNAA	**Sanae**	**79.36**	**178**	*e*P		**P**	**01 05 19.9**	**+0.2**
SNAA				pmax		pmax		
	comp=Z,38nm,1.5s							
SNAA	**Sanae**	**79.36**	**178**	*e*P		**P**	**01 05 19.9**	**+0.2**
	comp=Z,38nm,1.5s							
JNU	**Nakatsue**	**79.53**	**317**	*e*P		**P**	**01 05 21.0**	**0.0**
	comp=Z,52nm,1.4s							
VNA1	**Neumayer--Stat**	**80.13**	**176**	P		**P**	**01 05 24.1**	**+0.4**
KUR	**Kuril'sk**	**80.84**	**335**	*e*P		**P**	**01 05 26.8**	**-0.9**
KUR				*e*S		**S**	**01 15 34.4**	**+1.2**
KUR				MLR		MLR		
	comp=E,626nm,19.0s							
KUR				MLR		MLR		
	comp=Z,800nm,19.0s							
ASAJ	**Asahikawa**	**81.97**	**332**	*e*P		**P**	**01 05 34.9**	**+1.2**
	comp=Z,102nm,1.8s							
QZH	**Quanzhou**	**82.36**	**304**	*i*P		P	01 05 26.0	-10
QZH	**Quanzhou**	**82.36**	**304**	S		**S**	**01 15 42.7**	**-7.1**
QZH				pmax		pmax		
	comp=Z,690nm,5.8s							
QZH				LR		LR		
	comp=N,1μm,17.5s							
QZH				LR		LR		
	comp=E,650nm,14.7s							
QZH				LR		LR		
	comp=Z,960nm,17.1s							
PLCA	**Paso Flores**	**82.37**	**132**	P		**P**	**01 05 39.0**	**+2.7**
	comp=Z,6.1nm,1.1s,baz=223,slow=6.2,SNR=4.5							
PLCA	**Paso Flores**	**82.37**	**132**	P		**P**	**01 05 39.0**	**+2.7**
PLCA				pmax		pmax		
	comp=Z,6.0nm,1.1s							
PLCA	**Paso Flores**	**82.37**	**132**	*e*P		**P**	**01 05 36.7**	**+0.4**
PLCA				*e*PcP		**PcP**	**01 05 43.2**	**+1.7**
LPIG	**La Paz**	**82.73**	**57**	LR		LR	01 37 27.6	
	comp=Z,1μm,18.3s,baz=208,slow=32							
MURC	**Murrita**	**83.90**	**46**	P		**P**	**01 05 45.4**	**+1.3**
	baz=229							
MONP2	**Monument Peak**	**83.93**	**47**	P		**P**	**01 05 45.8**	**+1.3**
	baz=230							
IKP	**In-Ko-Pah, Jac**	**83.98**	**47**	P		**P**	**01 05 45.2**	**+0.7**
	baz=230							
BFSC	**Mount Baldy Ra**	**84.03**	**45**	P		**P**	**01 05 46.6**	**+1.8**
	baz=229							
VES	**Vestal, Richgr**	**84.22**	**43**	P		**P**	**01 05 46.4**	**+0.9**
	baz=228							
YSS	**Yuzh-Sakhalins**	**84.22**	**333**	*i*P		**P**	**01 05 44.7**	**-0.6**
YSS				*e*S		**S**	**01 16 09.7**	**+2.0**
YSS				*e*SS		**SS**	**01 21 36.0**	**-2.4**
YSS				pmax		pmax		
	comp=Z,30μm,0.8s							
YSS				pmax		pmax		
	comp=Z,300nm,7.0s							
YSS	**Yuzh-Sakhalins**	**84.22**	**333**	*e*P		**P**	**01 05 49.6**	**+4.3**
	comp=Z,24nm,0.8s							
EDW2	**Edwards Air Fo**	**84.24**	**45**	P		**P**	**01 05 46.5**	**+0.7**
	baz=229							
KSRS	**Korea Array**	**84.28**	**319**	P		**P**	**01 05 46.6**	**+0.7**
	comp=Z,2.4nm,0.8s,baz=276,slow=38,SNR=3.1							
KSRS				LR		LR	01 41 17.8	
	comp=Z,229nm,18.1s,baz=133,slow=34							
KSAR	**Wonju Array Be**	**84.29**	**319**	P		**P**	**01 05 46.6**	**+0.7**
KSAR	**Wonju Array Be**	**84.29**	**319**	P		**P**	**01 05 46.5**	**+0.7**
SSE	**Sheshan**	**84.31**	**310**	*e*P		**P**	**01 05 47.9**	**+1.8**
SSE				S		**S**	**01 16 12.8**	**+3.5**
SSE				pmax		pmax		
	comp=Z,34nm,0.7s							
SSE				pmax		pmax		
	comp=Z,240nm,6.9s							
SSE				LR		LR		
	comp=Z,140nm,22.9s							
SSE				LR		LR		
	comp=Z,200nm,22.9s							
SSE				LR		LR		
	comp=Z,320nm,23.9s							
KS01	**Wonju Array Si**	**84.31**	**319**	*e*P		**P**	**01 05 46.5**	**+0.5**
PFO	**Pinyon Flats O**	**84.37**	**47**	P		**P**	**01 05 48.0**	**+1.4**
	comp=Z,5.2nm,0.9s,baz=244,slow=3.2,SNR=6.7							
PFO	**Pinyon Flats O**	**84.37**	**47**	*e*P		**P**	**01 05 48.0**	**+1.4**
PFO				pmax		pmax		
	comp=Z,32nm,1.5s							
PFO	**Pinyon Flats O**	**84.37**	**47**	*e*P		**P**	**01 05 48.0**	**+1.4**
	comp=Z,32nm,1.5s							
TPFO	**Pinon Flats**	**84.37**	**47**	P		**P**	**01 05 48.0**	**+1.4**
	baz=230							
ISA	**Isabella, Lake**	**84.47**	**44**	*e*P		**P**	**01 05 49.4**	**+2.4**
ISA				pmax		pmax		
	comp=Z,36nm,1.5s							
ISA	**Isabella, Lake**	**84.47**	**44**	*e*P		**P**	**01 05 49.4**	**+2.4**
	comp=Z,36nm,1.5s							
PET	**Petropavlovsk**	**84.65**	**345**	*e*P		**P**	**01 05 44.7**	**-2.6**
PET				*e*S		**S**	**01 16 09.1**	**-2.6**
PET				pmax		pmax		
	comp=Z,300nm,12.3s							
PET				pmax		pmax		
	comp=Z,300nm,7.3s							
PET				MLR		MLR		
	comp=Z,700nm,21.0s							
PET				MLR		MLR		
	comp=Z,700nm,20.0s							
LRMC	**Laurel Mtn Rad**	**84.83**	**44**	P		**P**	**01 05 50.2**	**+1.3**
	baz=229							
BELC	**Belle Mtn. Jos**	**84.92**	**47**	P		**P**	**01 05 50.3**	**+1.0**
	baz=230							
CMB	**Columbia Colle**	**84.94**	**41**	*e*P		**P**	**01 05 50.8**	**+1.5**
CMB				pmax		pmax		
	comp=Z,13nm,1.0s							
CMB	**Columbia Colle**	**84.94**	**41**	*e*P		**P**	**01 05 50.8**	**+1.5**
	comp=Z,12nm,1.0s							
PEA0	**Petropavlovsk-**	**84.95**	**345**	*e*P		**P**	**01 05 48.3**	**-0.6**
PETK	**Petropavlovsk-**	**84.95**	**345**	P		**P**	**01 05 47.9**	**-0.9**
	comp=Z,3.9nm,0.8s,baz=131,slow=6.6,SNR=8.0							
PETK				LR		LR	01 42 32.0	
	comp=Z,348nm,18.1s,baz=162,slow=35							
BC3	**Big Chuckawall**	**85.04**	**47**	P		**P**	**01 05 51.5**	**+1.6**
	baz=230							
GLA	**Glamis**	**85.06**	**48**	P		**P**	**01 05 51.6**	**+1.6**
	baz=231							
GLA	**Glamis**	**85.06**	**48**	*e*P		**P**	**01 05 52.4**	**+2.4**
GLA				pmax		pmax		
	comp=Z,16nm,1.0s							
GLA	**Glamis**	**85.06**	**48**	*e*P		**P**	**01 05 52.4**	**+2.4**
	comp=Z,16nm,1.0s							
AFDM	**Forest Hills D**	**85.23**	**40**	*e*P		**P**	**01 05 52.4**	**+1.8**
	comp=Z,16nm,1.2s							
HEC	**Hector,Ludlow**	**85.24**	**46**	P		**P**	**01 05 52.4**	**+1.5**
	baz=230							
GSC	**Goldstone, Bar**	**85.25**	**45**	P		**P**	**01 05 52.5**	**+1.5**
	baz=229							
GSC	**Goldstone, Bar**	**85.25**	**45**	*e*P		**P**	**01 05 52.1**	**+1.2**
GSC				pmax		pmax		
	comp=Z,19nm,1.1s							
GSC	**Goldstone, Bar**	**85.25**	**45**	*e*P		**P**	**01 05 52.1**	**+1.2**
	comp=Z,19nm,1.1s							
MPMC	**Manuel Prospec**	**85.33**	**44**	P		**P**	**01 05 52.8**	**+1.4**
	baz=229							
ORV	**Oroville**	**85.35**	**39**	*e*P		**P**	**01 05 53.2**	**+2.0**
ORV				pmax		pmax		
	comp=Z,46nm,1.8s							
ORV	**Oroville**	**85.35**	**39**	*e*P		**P**	**01 05 53.2**	**+2.0**
	comp=Z,46nm,1.8s							
WDC	**Whiskeytown Da**	**85.50**	**38**	*e*P		**P**	**01 05 54.1**	**+2.2**
WDC				pmax		pmax		
	comp=Z,85nm,2.0s							
WDC	**Whiskeytown Da**	**85.50**	**38**	*e*P		**P**	**01 05 54.1**	**+2.2**
	comp=Z,85nm,2.0s							
IRM	**Iron Mountain**	**85.56**	**47**	P		**P**	**01 05 54.3**	**+1.9**
	baz=230							
113A	**Mohawk Valley,**	**85.58**	**49**	*e*P		**P**	**01 05 53.7**	**+1.2**
	comp=Z,14nm,1.2s							
GMRC	**Granite Mounta**	**85.63**	**46**	P		**P**	**01 05 54.3**	**+1.4**
	baz=230							
QIZ	**Qiongzhong**	**85.69**	**294**	P		**P**	**01 05 55.5**	**+2.2**
QIZ				PP		**PP**	**01 09 13.8**	**+0.8**
QIZ				S		**S**	**01 16 27.7**	**+4.2**
QIZ				pmax		pmax		
	comp=Z,10.0nm,1.2s							
QIZ				pmax		pmax		
	comp=Z,230nm,12.8s							
QIZ				LR		LR		
	comp=Z,190nm,15.0s							
QIZ				LR		LR		
	comp=Z,280nm,15.8s							
Y12C	**Blythe**	**85.70**	**48**	*e*P		**P**	**01 05 54.7**	**+1.6**
	comp=Z,50nm,1.8s							
214A	**Organ Pipe Nat**	**85.70**	**50**	P		**P**	**01 05 54.2**	**+0.9**
	baz=232							
214A	**Organ Pipe Nat**	**85.70**	**50**	*e*P		**P**	**01 05 54.1**	**+0.9**
	comp=Z,188nm,1.6s							
WAKR	**Walker**	**85.80**	**41**	*e*P		**P**	**01 05 55.1**	**+1.4**
	comp=Z,76nm,1.8s							
TUQ	**Turquoise Moun**	**85.89**	**45**	P

MDJ pmax pmax
comp=Z,9.0nm,0.8s
MDJ pmax pmax
comp=Z,190nm,9.9s
MDJ LR LR
comp=Z,200nm,23.0s
MDJ LR LR
comp=Z,240nm,21.2s
MDJ LR LR
comp=Z,390nm,21.2s
LCMT Little Creek M 88.56 46 *e*P **P 01 06 09.2 +2.2**
comp=Z,14nm,1.2s
WHN Wuhan 88.68 306 ⇓ *i*P **P 01 06 10.5 +3.0**
WHN S **S 01 16 43.7 -8.1**
WHN pmax pmax
comp=Z,930nm,6.0s
WHN LR LR
comp=Z,1µm,18.2s
U15A North Rim 88.80 47 *e*P **P 01 06 09.7 +1.3**
comp=Z,34nm,1.3s
CCUT Cedar City 88.82 45 *e*P **P 01 06 10.0 +1.6**
comp=Z,33nm,1.7s
KNB Kanab 88.83 46 *e*P **P 01 06 10.0 +1.7**
KNB pmax pmax
comp=Z,46nm,1.4s
KNB Kanab 88.83 46 *e*P **P 01 06 10.0 +1.7**
comp=Z,46nm,1.4s
WUAZ Wupatki 88.83 48 *e*P **P 01 06 11.2 +2.8**
comp=Z,21nm,1.1s
DL2 Dalian 88.95 316 P P 01 06 14.7 +6.1
DL2 pmax pmax
comp=Z,27nm,1.0s
DL2 LR LR
comp=Z,410nm,18.2s
DL2 LR LR
comp=Z,530nm,20.0s
X18A Snowflake 89.17 49 *e*P **P 01 06 12.5 +2.4**
comp=Z,56nm,1.9s
PKCU Pink Cliffs 89.41 46 *e*P **P 01 06 11.6 +0.3**
comp=Z,47nm,1.6s
121A Cookes Peak, D 89.46 52 *e*P **P 01 06 13.6 +2.1**
comp=Z,37nm,1.7s
SNY Shenyang 89.70 320 ⇑ P **P 01 06 10.1 -1.9**
SNY pmax pmax
comp=Z,10.0nm,0.6s
SNY pmax pmax
comp=Z,320nm,10.6s
SNY LR LR
comp=Z,350nm,18.5s
SNY LR LR
comp=Z,170nm,13.9s
SNY LR LR
comp=Z,410nm,15.7s
ELK Elko 89.72 42 *e*P **P 01 06 13.4 +0.9**
ELK pmax pmax
comp=Z,10.0nm,1.4s
ELK Elko 89.72 42 *e*P **P 01 06 13.4 +0.9**
comp=Z,10.0nm,1.4s
G06A Carlson Farm, 89.75 36 *e*P **P 01 06 13.4 +1.1**
comp=Z,21nm,1.1s
MTPU Mount Pierson 89.86 45 *e*P **P 01 06 14.9 +1.5**
comp=Z,77nm,1.9s
CN2 Changchun 89.97 322 *e*P **P 01 06 12.5 -0.8**
CN2 PP **PP 01 09 48.3 +1.3**
CN2 *e*S **S 01 16 58.2 -5.1**
CN2 pmax pmax
comp=Z,10.0nm,1.4s
CN2 pmax pmax
comp=Z,100nm,3.0s
CN2 LR LR
comp=Z,300nm,18.0s
CN2 LR LR
comp=Z,300nm,18.0s
CN2 LR LR
comp=Z,200nm,20.0s
NKL Nikolayevsk 90.03 336 *e*P **P 01 06 12.0 -1.3**
NKL *e* 01 06 25.0
NKL *e*S **SKSac 01 16 42.0 +1.0**
NKL *e* 01 17 07.0
NKL pmax pmax
comp=Z,20nm,0.9s
TIA Tai'an 90.11 312 ⇑ P **P 01 06 14.6 +0.4**
TIA pmax pmax
comp=Z,30nm,1.4s
TIA pmax pmax
comp=Z,420nm,8.0s
TIA LR LR
comp=Z,300nm,24.0s
TIA LR LR
comp=Z,300nm,24.0s
TIA LR LR
comp=Z,550nm,30.0s
MSU Marysvale 90.15 45 *e*P **P 01 06 16.0 +1.4**
MSU Marysvale 90.15 45 *e*P **P 01 06 16.0 +1.4**
D05A Enumclaw 90.44 34 *e*P **P 01 06 17.9 +2.5**
comp=Z,91nm,1.5s
TX31 Lajitas Ar. Si 90.58 57 *e*P **P 01 06 18.4 +1.8**
TXAR Lajitas Array 90.58 57 P **P 01 06 18.4 +1.7**
comp=Z,8.3nm,1.1s,baz=210,slow=6.8,SNR=20
KLR Kul'dur 90.64 329 LR LR 01 42 12.5
comp=Z,323nm,20.0s,baz=175,slow=33
KLR Kul'dur 90.64 329 *c i*P **P 01 06 16.2 -0.1**
G08A Pilot Rock 90.65 37 *e*P **P 01 06 18.5 +1.9**
comp=Z,34nm,1.4s
MNTX Cornudas Mount 90.66 54 P **P 01 06 18.2 +1.3**
baz=236
MNTX Cornudas Mount 90.66 54 *e*P **P 01 06 17.7 +0.8**
comp=Z,14nm,1.3s
LAZ Ladron 90.98 51 *e*P **P 01 06 20.6 +2.1**
CMIG Matias Romero 91.08 71 P **P 01 06 21.4 +2.3**
comp=Z,5.5nm,1.1s,baz=182,slow=6.7,SNR=4.5
MFID Camas Ranch 91.10 39 *e*P **P 01 06 20.4 +1.7**
comp=Z,13nm,1.4s
BNM Barren Site 91.18 51 *e*P **P 01 06 21.3 +1.8**
TMUT Trail Mountain 91.23 45 *e*P **P 01 06 21.5 +1.8**
comp=Z,9.2nm,1.0s
BMO Blue Mountains 91.23 38 *e*P **P 01 06 20.2 +0.9**
comp=Z,10nm,1.1s
LPM Los Pinos Moun 91.27 51 *e*P **P 01 06 21.8 +1.9**
SRU San Rafael Swe 91.54 45 *e*P **P 01 06 23.0 +2.0**
SRU pmax pmax
comp=Z,16nm,1.3s
SRU San Rafael Swe 91.54 45 *e*P **P 01 06 23.0 +2.0**
comp=Z,16nm,1.3s
P17A Butcher Ranch, 91.62 45 *e*P **P 01 06 24.2 +2.8**
comp=Z,38nm,1.8s
ANMO Albuquerque 91.75 51 P **P 01 06 23.1 +1.0**
baz=236
ANMO Albuquerque 91.75 51 *e*P **P 01 06 22.9 +0.8**
ANMO pmax pmax
comp=Z,16nm,1.8s
ANMO Albuquerque 91.75 51 *e*P **P 01 06 23.1 +1.0**
comp=Z,8.3nm,1.0s
HVU Hansel Valley 91.81 42 *e*P **P 01 06 24.0 +1.9**
HVU pmax pmax
comp=Z,34nm,1.6s
HVU Hansel Valley 91.81 42 *e*P **P 01 06 23.9 +1.9**
comp=Z,34nm,1.6s
D08A Wollman Farm, 91.86 35 *e*P **P 01 06 23.6 +1.6**
comp=Z,17nm,1.0s
HLID Hailey 91.98 40 P **P 01 06 23.8 +0.9**
baz=231
HLID Hailey 91.98 40 *e*P **P 01 06 23.8 +0.9**
comp=Z,7.0nm,1.1s
F10A Beach Ranch, E 92.01 37 *e*P **P 01 06 23.6 +0.7**
comp=Z,14nm,1.0s
ENH Enshi 92.02 304 *e*P **P 01 06 23.6 +0.4**
comp=Z,63nm,1.0s
PV10 Paradox Valley 92.04 47 *e*P **P 01 06 26.4 +3.0**
PV09 Paradox Valley 92.05 46 *e*P **P 01 06 24.0 +0.5**
GYA Guiyang 92.10 299 P **P 01 06 25.4 +1.6**
GYA pP pP 01 06 32.0 -3.2
GYA PP **PP 01 10 08.3 +3.9**
GYA S **S 01 17 24.2 +0.4**
GYA SS **SS 01 23 36.5 +2.1**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,7.8s
GYA LR LR
comp=Z,540nm,20.2s
GYA LR LR
comp=Z,520nm,21.4s
GYA LR LR
comp=Z,490nm,20.8s
TCUT Toone Canyon 92.21 43 *e*P **P 01 06 24.8 +0.6**
comp=Z,53nm,1.5s

RC01 Rabbit Creek A 92.51 13 *e*P **P 01 06 25.0 +0.3**
comp=Z,9.1nm,0.9s
933A Laredo 92.93 60 P **P 01 06 28.7 +1.2**
baz=239
BJI Beijing 92.98 315 P **P 01 06 28.0 +0.7**
BJI pmax pmax
comp=Z,9.0nm,0.8s
BJI pmax pmax
comp=Z,220nm,9.7s
BJI LR LR
comp=Z,220nm,19.7s
BJI LR LR
comp=Z,190nm,17.3s
S22A 4UR Ranch, Cre 93.09 48 P **P 01 06 29.7 +1.3**
baz=235
S22A 4UR Ranch, Cre 93.09 48 *e*P **P 01 06 29.5 +1.1**
comp=Z,12nm,1.4s
034A Hebbronville 93.10 61 P **P 01 06 30.3 +2.0**
baz=239
LVC Limon Verde 93.35 118 *e*P **P 01 06 32.0 +1.9**
comp=Z,33nm,1.8s
MCMT McKenzie Canyo 93.65 40 *e*P **P 01 06 32.6 +1.9**
MSTX Muleshoe 93.74 53 *e*P **P 01 06 31.5 +0.3**
comp=Z,9.3nm,0.8s
SMCO Snowmass 93.82 47 *e*P **P 01 06 31.8 0.0**
comp=Z,5.7nm,0.9s
REDW Red Top Meadow 93.90 42 *e*P **P 01 06 32.3 +0.4**
comp=Z,41nm,1.8s
JCT Junction City 94.03 57 *e*P **P 01 06 33.1 +0.6**
JCT pmax pmax
comp=Z,9.0nm,1.0s
JCT Junction City 94.03 57 *e*P **P 01 06 33.1 +0.6**
comp=Z,8.8nm,1.0s
CMAR Chiang Mai Arr 94.26 289 P **P 01 06 34.6 +0.8**
comp=Z,1.0nm,0.3s,baz=175,slow=39,SNR=3.8
BW06 Boulder Array 94.31 43 *e*P **P 01 06 33.5 -0.2**
PDAR Pinedale Array 94.31 43 P **P 01 06 33.7 0.0**
comp=Z,0.9nm,0.8s,baz=210,slow=5.1,SNR=5.9
PDAR LR LR 01 45 26.4
comp=Z,840nm,18.0s,baz=251,slow=33
T25A Trinidad 94.35 50 *e*P **P 01 06 31.4 -2.6**
comp=Z,12nm,1.5s
FLWY Flagg Ranch 94.42 41 *e*P **P 01 06 38.8 +4.6**
comp=Z,60nm,1.9s
XAN Xi'an 94.44 307 P **P 01 06 33.2 -1.1**
XAN SKS **SKSac 01 17 08.1 +1.3**
XAN pmax pmax
comp=Z,9.0nm,1.5s
XAN pmax pmax
comp=Z,150nm,11.2s
XAN LR LR
comp=Z,250nm,18.3s
XAN LR LR
comp=Z,340nm,20.3s
XAN LR LR
comp=Z,560nm,19.3s
KMI Kunming 94.47 296 P **P 01 06 36.6 +1.7**
KMI pmax pmax
comp=Z,14nm,0.6s
KMI pmax pmax
comp=Z,140nm,4.8s
KMI LR LR
comp=Z,200nm,18.9s
KMI LR LR
comp=Z,280nm,19.4s
KMI LR LR
comp=Z,420nm,20.8s
TRF Thorofare Moun 94.59 11 *e*P **P 01 06 34.5 0.0**
comp=Z,31nm,1.9s
433A Art 94.69 57 P **P 01 06 36.0 +0.5**
baz=239
RND Reindeer 94.81 12 *e*P **P 01 06 35.9 +0.6**
RND pmax pmax
comp=Z,7.0nm,1.0s
RND Reindeer 94.81 12 *e*P **P 01 06 35.9 +0.6**
comp=Z,7.4nm,1.0s
BOZ Bozeman (W) 94.84 40 P **P 01 06 36.5 +0.6**
baz=233
BOZ Bozeman (W) 94.84 40 *e*P **P 01 06 37.2 +1.2**
BOZ pmax pmax
comp=Z,18nm,1.4s
BOZ Bozeman (W) 94.84 40 *e*P **P 01 06 37.2 +1.2**
comp=Z,18nm,1.4s
SEY Seymchan 95.07 346 *c e*P **P 01 06 35.5 -0.9**
WRH Wood River Hil 95.92 12 *e*P **P 01 06 39.8 -0.4**
comp=Z,8.2nm,1.1s
CCB Clear Creek Bu 96.13 12 *e*P **P 01 06 40.8 -0.3**
comp=Z,5.3nm,1.1s
COLA College 96.33 12 *e*P **P 01 06 41.5 -0.6**
COLA pmax pmax
comp=Z,3.0nm,1.0s
HHC Hu-ho-hao-te 96.34 313 *e*P **P 01 06 42.1 -0.8**
HHC SKS **SKSac 01 17 21.3 +4.6**
HHC S **S 01 17 55.7 -4.6**
HHC pmax pmax
comp=Z,32nm,1.3s
HHC pmax pmax
comp=Z,97nm,7.4s
HHC LR LR
comp=Z,250nm,18.1s
HHC LR LR
comp=Z,310nm,18.9s
HHC LR LR
comp=Z,360nm,18.5s
IL1 Eielson Array 96.41 12 *e*P **P 01 06 41.1 -1.4**
ILAR Eielson Array 96.41 12 P **P 01 06 41.5 -1.0**
comp=Z,1.1nm,0.9s,baz=218,slow=5.8,SNR=8.4
CD2 Chengdu 96.57 302 *e*P **P 01 06 44.2 +0.1**
CD2 sP pP 01 06 53.2 -2.3
CD2 SKS **SKSac 01 17 19.5 +1.3**
CD2 S **ScS 01 18 03.7 +0.7**
CD2 sS sS 01 18 14.9 -6.7
CD2 SS **SS 01 24 38.8 +1.1**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.8s
LPAZ La Paz 97.42 113 P Pdif 01 06 50.6 +1.5
comp=Z,1.1nm,0.8s,baz=167,slow=5.2,SNR=4.7
LPAZ La Paz 97.42 113 *e*P **P 01 06 48.0 -1.0**
LPAZ pmax pmax
comp=Z,5.0nm,1.3s
LPAZ La Paz 97.42 113 *e*P **P 01 06 48.0 -1.0**
comp=Z,5.4nm,1.3s
RSSD Black Hills 98.39 44 *e*P Pdif 01 06 53.1 +0.9
RSSD pmax pmax
comp=Z,6.0nm,1.0s
RSSD Black Hills 98.39 44 *e*P Pdif 01 06 53.1 +0.9
comp=Z,5.7nm,1.0s
LZH Lanzhou 99.06 306 *e*P **Pdif 01 06 56.9 +1.6**
LZH pP pP 01 07 01.3 -5.5
LZH sP sP 01 07 06.0 -4.9
LZH PP **PP 01 11 00.2 +2.0**
LZH SKS **SKSac 01 17 33.0 +2.0**
LZH S **S 01 18 23.2 -0.6**
LZH sS ScS 01 18 33.0 +9.1
LZH SS **SS 01 25 15.0 +2.1**
LZH pmax pmax
comp=Z,27nm,1.5s
LZH pmax pmax
comp=Z,130nm,8.7s
LZH LR LR
comp=Z,700nm,17.0s
LZH LR LR
comp=Z,570nm,17.1s
LZH LR LR
comp=Z,950nm,19.5s
WMQ Urumqi 113.51 308 *e*PKP **PKiKP 01 11 51.8 -0.3**
WMQ PP **PP 01 12 45.3 +0.9**
WMQ SKS **SKSdf 01 18 57.4 -4.0**
WMQ SS **SS 01 28 32.5 +3.4**
WMQ AMB AMB
comp=Z,170nm,7.0s
WMQ LR LR
comp=Z,150nm,15.4s
WMQ LR LR
comp=Z,250nm,12.8s
WMQ LR LR
comp=Z,410nm,20.3s
MK01 Makanchi Array 117.98 310 *e*PKPdf **PKPdf 01 11 59.5 -1.1**
ZALV Zalesovo Beam 117.99 319 PKP **PKPdf 01 11 59.2 -1.0**
comp=Z,0.7nm,0.3s,baz=318,slow=2.0,SNR=3.6
MKAR Makanchi Array 117.99 310 PKP **PKPdf 01 11 58.9 -1.7**
comp=Z,1.3nm,0.7s,baz=73,slow=3.2,SNR=6.5
KSH Kashi 120.75 301 *e*PKP **PKPdf 01 12 07.4 +1.2**
KSH PKS **PKSdf 01 15 43.1 +0.1**

KSH SKS **SKSdf 01 19 14.4 -1.2**
KSH SKKS **SKKSac 01 20 32.9 +1.2**
KSH AMB AMB
comp=Z,28nm,3.5s
KSH LR LR
comp=Z,130nm,8.5s
KSH LR LR
comp=Z,97nm,5.5s
KSH LR LR
comp=Z,97nm,6.7s
KURK Kurchatov 121.15 314 PKIKP **PKPdf 01 12 05.1 -1.3**
KURK pmax pmax
comp=Z,1.0nm,0.2s
KURK Kurchatov 121.15 314 *e*PKPdf **PKPdf 01 12 05.5 -0.9**
KURBB Kurchatov Arra 121.19 314 PKP **PKPdf 01 12 05.1 -1.4**
comp=Z,1.8nm,0.8s,baz=102,slow=1.8,SNR=13
FRU Bishkek 122.48 304 *e*PKIKP PKPdf 01 12 21.0 +12
AAK Ala-Archa 122.53 304 *e*PKIKP **PKPdf 01 12 08.3 -1.3**
EKS2 Erkin-Say 123.05 304 *e*PKIKP **PKPdf 01 12 13.4 +2.8**
EKS2 Erkin-Say 123.05 304 *e*PKPdf **PKPdf 01 12 13.3 +2.8**
KKAR Karatay Array 125.49 304 *e*PKIKP **PKPdf 01 12 15.0 -0.1**
KKAR Karatay Array 125.49 304 *e*PKPdf **PKPdf 01 12 15.0 -0.1**
BVAR Borovoye Array 126.44 316 PKP **PKPdf 01 12 15.8 -0.7**
comp=Z,1.4nm,0.5s
BRVK Borovoye 126.50 316 *e*PKIKP **PKPdf 01 12 17.0 +0.3**
BRVK Borovoye 126.50 316 *e*PKPdf **PKPdf 01 12 17.0 +0.3**
ZRNK Zerenda 127.27 316 *e*PKIKP **PKPdf 01 12 17.6 -0.6**
ZRNK Zerenda 127.27 316 *e*PKPdf **PKPdf 01 12 17.6 -0.6**
ARU Arti 132.96 322 PKP **PKPdf 01 12 29.8 +1.0**
comp=Z,1.3nm,0.4s
ARU Arti 132.96 322 *i* PKIKP **PKPdf 01 12 28.1 -0.7**
ARU 01 14 50.2
ARU Arti 132.96 322 *e*PKPdf **PKPdf 01 12 30.1 +1.3**
ABKAR Akbulak array 133.10 312 *e*PKPdf **PKPdf 01 12 30.4 +1.1**
GEYT Gilbeck 134.23 296 PKHKP PKPpre 01 12 26.9
comp=Z,0.7nm,0.5s,baz=2,1,slow=40,SNR=2.9
AKTO Aktyubinsk 134.23 313 PKP **PKPdf 01 12 32.8 +1.4**
comp=Z,2.2nm,0.7s,baz=71,slow=4.2,SNR=5.0
SCO Scoresbysund 136.20 12 *i* P **PKPdf 01 12 30.1 -4.4**
SCO *i* S **PKPdf 01 12 32.2 -2.3**
SCO Scoresbysund 136.20 12 *i* PKIKP **PKPdf 01 12 30.1 -4.4**
ARCES ARCESS Array B 137.64 349 PKhKP PKPpre 01 12 29.0
comp=Z,1.8nm,0.8s,baz=29,slow=2.8,SNR=3.8
ARCES PKP **PKiKP 01 12 38.5 -0.7**
comp=Z,1.7nm,0.7s,baz=50,slow=1.9,SNR=5.1
H10S3 ASCENSION HYDR 138.25 152 T T 03 48 40.5
baz=204,slow=74,SNR=14
H10S2 ASCENSION HYDR 138.25 152 T T 03 48 47.4
baz=204,slow=74,SNR=9.9
H10S1 ASCENSION HYDR 138.27 152 T T 03 48 42.3
baz=204,slow=74,SNR=7.1
H10N3 ASCENSION HYDR 139.32 152 T T 03 49 40.3
baz=204,slow=75,SNR=7.9
H10N1 ASCENSION HYDR 139.33 152 T T 03 49 41.1
baz=204,slow=75,SNR=12
H10N2 ASCENSION HYDR 139.34 152 T T 03 50 11.4
baz=204,slow=75,SNR=5.3
KLMR Klimovskoe 140.27 333 *e*PKIKP **PKPdf 01 12 39.4 -2.8**
KLMR pmax pmax
comp=Z,16nm,1.4s
MOS Moscow 144.03 327 *e*PKHKP PKPpre 01 12 26.5
MOS *e* 01 12 45.6
FIA1 FINESS Array S 144.41 342 *e*PKPdf **PKPab 01 12 45.8 -2.0**
FIA1 *e*PKPdf PKPbc 01 12 47.0 -1.1
FINES FINESS Array B 144.41 342 PKP **PKPab 01 12 47.6 -0.1**
comp=Z,4.4nm,0.6s,baz=65,slow=2.9,SNR=27
TBLG Delisi 144.49 302 P **PKPab 01 12 48.1 -0.7**
TBLG Delisi 144.49 302 *e*PKIKP **PKPab 01 12 48.1 -0.7**
GUDG Gudauri 144.58 303 P **PKPdf 01 12 50.3 -0.4**
GNI Garni 144.66 299 PKP **PKPdf 01 12 50.6 -0.3**
comp=Z,11nm,0.8s,baz=193,slow=2.2,SNR=7.4
GNI Garni 144.66 299 *e*PKPdf **PKPdf 01 12 51.1 +0.2**
OBN Obninsk 144.88 327 *e*PKIKP **PKPab 01 12 47.9 -1.8**
OBN *e* 01 16 05.1
OBN pmax pmax
comp=Z,21nm,0.9s
OBN MLR MLR
comp=Z,209nm,19.0s
OBN Obninsk 144.88 327 *e*PKPdf **PKPab 01 12 48.6 -1.1**
ZEI Tsey 144.95 304 *i* PKIKP **PKPab 01 12 50.1 -0.6**
ZEI pmax pmax
comp=Z,115nm,1.3s
GOF Gofitskoye 145.11 308 ⇑ *e*PKIKP **PKPab 01 12 51.1 +0.2**
GOF pmax pmax
comp=Z,24nm,0.8s
ONI Oni 145.31 304 P **PKPbc 01 12 51.6 -0.1**
ONI Oni 145.31 304 *e*PKIKP **PKPbc 01 12 51.5 -0.1**
AKH Akhalkalaki 145.46 302 ⇓ *i*P **PKPdf 01 12 52.3 0.0**
VSR Storozhevoye 145.48 320 *e*PKP2 **PKPdf 01 12 50.1 -1.6**
VSR pmax pmax
comp=Z,40nm,0.9s
KBZ Khabaz 145.50 306 PKPbc **PKPab 01 12 52.4 +0.1**
comp=Z,6.4nm,0.8s,baz=75,slow=3.5,SNR=16
KVAR Kislovodsk Arr 145.59 306 PKPbc **PKPab 01 12 52.9 0.0**
comp=Z,13nm,0.8s,baz=258,slow=5.2,SNR=10
KIV Kislovodsk 145.60 306 *c e*PKIKP **PKPdf 01 12 51.5 -0.8**
KIV *e* 01 16 17.0
KIV pmax pmax
comp=Z,20nm,1.0s
KIV Kislovodsk 145.60 306 *e*PKPbc **PKPbc 01 12 52.7 +0.1**
NEY Neytrino 145.72 305 *e*PKPbc **PKPbc 01 12 53.1 0.0**
CHVG Ch'k'valeri 146.28 304 P **PKPbc 01 12 55.0 +0.4**
VSU Vasula 146.60 338 *e*PKP2 **PKPbc 01 12 54.2 -0.8**
NC303 NORSAR Array S 147.50 353 *e*PKPdf **PKPbc 01 12 56.4 -1.1**
NC405 NORSAR Array S 147.57 353 *e*PKPdf **PKPbc 01 12 57.6 0.0**
NB201 NORSAR Array S 147.68 353 *e*PKPdf **PKPbc 01 12 57.2 -0.8**
NB2 NORSAR Subarra 147.69 353 PKP **PKPbc 01 12 56.7 -1.4**
comp=Z,16nm,1.2s,baz=16,slow=3.2
NOA NORSAR Array B 147.69 353 PKPbc **PKPbc 01 12 57.2 -0.9**
comp=Z,3.4nm,0.7s,baz=14,slow=4.5,SNR=19
NBO02 NORSAR Array S 147.72 353 *e*PKPdf **PKPbc 01 12 57.0 -1.1**
SOC Sochi 147.78 306 *i* PKP2 **PKPab 01 13 00.1 -1.1**
SOC pmax pmax
comp=Z,10.0nm,0.8s
ANN Anapa 149.01 310 *e*PKP2 **PKPbc 01 13 00.7 -1.2**
MICGM Minsk 149.14 332 *e*P **PKPbc 01 13 02.0 +0.1**
MICGM *e*LR LR 02 23 50.0
MNK Minsk 149.14 332 *e*PKP2 **PKPbc 01 13 02.0 +0.1**
NACGM Naroch 149.29 333 *e* **PKPbc 01 13 02.0 -0.3**
NACGM *e*LR LR 02 12 06.0
AKASG Malin Array Be 151.08 325 PKPbc **PKPbc 01 13 05.9 -0.8**
comp=Z,7.0nm,0.6s,baz=45,slow=2.9,SNR=20
AKBB Malin Array Si 151.08 325 *e*PKIKP **PKPdf 01 13 01.1 +0.2**
AKBB Malin Array Si 151.08 325 *e*PKPdf **PKPdf 01 13 01.1 +0.2**
AK11 Malin Array Si 151.12 325 *e*PKPbc **PKPbc 01 13 05.7 -1.2**
SIM Simferopol' 151.16 312 *i* PKIKP **PKPbc 01 13 07.4 +0.3**
SIM pmax pmax
comp=Z,20nm,0.8s
SUW Suwalki 151.33 336 *e*PKP **PKPbc 01 13 07.0 -0.2**
SUW Suwalki 151.33 336 *e*PKIKP **PKPbc 01 13 07.0 -0.2**
BSD Bornholm Skovb 152.79 346 *i* P **PKPab 01 13 17.4 -4.0**
SORM Soroca 153.08 322 ⇓ *i*P **PKPbc 01 13 10.5 -0.8**
SORM Soroca 153.08 322 ⇓ PKIKP **PKPbc 01 13 10.5 -0.8**
BR131 Keskin Array S 153.14 301 *e*PKPbc **PKPbc 01 13 13.0 +1.0**
BRTR Keskin Array B 153.14 301 PKPbc **PKPbc 01 13 11.7 -0.3**
comp=Z,2.3nm,0.9s,baz=142,slow=4.6,SNR=13
MILM Milestii Mici 153.51 319 ⇑ *i*P **PKPbc 01 13 12.1 -0.2**
ANTO Ankara 153.74 302 *e*PKIKP **PKPbc 01 13 14.9 +1.7**
ANTO Ankara 153.74 302 *e*PKPbc **PKPbc 01 13 14.9 +1.7**
BR231 Keskin MP Arra 153.76 302 *e*pPKPdf **PKPbc 01 13 12.5 -0.8**
CSS Mathiatis 154.15 291 *e*PKPbc **PKPbc 01 13 15.0 +0.8**
TESR Tescani 154.97 320 ⇓ *i*P **PKPab 01 13 29.9 -1.1**
TIRR Tirgusor 155.03 314 ⇓ *i*P PKPab 01 13 21.2 -10
TIRR Tirgusor 155.03 314 ⇓ PKIKP PKPab 01 13 21.2 -10
BUR08 Bucovina Ar. S 155.06 324 *e*PKPbc PKPab 01 13 19.2 -12
BURAR Bucovina Array 155.07 324 ⇑ *i*P PKPab 01 13 16.4 -15
BURAR Bucovina Array 155.07 324 ⇑ PKIKP PKPab 01 13 16.4 -15
TLB Topalu 155.20 315 ⇑ *i*P PKPab 01 13 17.6 -14
TLB Topalu 155.20 315 ⇑ PKIKP PKPab 01 13 17.6 -14
VRI Vrincioaia 155.30 319 ⇓ *i*P **PKPab 01 13 33.3 +0.8**
VRI Vrincioaia 155.30 319 ⇓ PKP2 **PKPab 01 13 33.3 +0.8**
PSN Preselentsi 155.55 313 *i* P **PKPab 01 13 36.7 +3.1**
KOLS Kolonicke sedl 155.58 329 *e*PKIKP PKPdf 01 13 18.1 +11
KOLS Kolonicke sedl 155.58 329 *e* PKPdf 01 13 18.0 +11
STHS Stebnicka Huta 155.67 331 *e*PKIKP **PKPdf 01 13 04.1 -3.5**
STHS Stebnicka Huta 155.67 331 *e*PKP **PKPdf 01 13 04.1 -3.5**
STHS *e* 01 13 34.4
UZH Uzhgorod 155.80 329 *e*PKIKP PKPdf 01 13 17.9 +10
UZH *e* 01 13 24.5
UZH *e* 01 13 31.5
UZH *e* 01 13 34.5
MLR Muntele Rosu 155.96 319 ⇓ *i*P PKPdf 01 13 18.9 +11
MLR Muntele Rosu 155.96 319 *e*PKP2 **PKPab 01 13 34.2 -1.3**

MLR	**Muntele Rosu**	**155.96**	**319**	*e*PKPab	**PKPab**	**01 13 34.2**	**-1.3**
CRVS	**Cervenica-Dubn**	**155.97**	**330**	*e*PKP2	**PKPab**	**01 13 34.8**	**-0.4**
CRVS	**Cervenica-Dubn**	**155.97**	**330**	*e*PKP	**PKPab**	**01 13 34.8**	**-0.4**
NIE	**Niedzica**	**156.06**	**332**	*e*PKP	**PKPdf**	**01 13 09.6**	**+1.5**
NIE	**Niedzica**	**156.06**	**332**	*e*PKIKP	**PKPdf**	**01 13 09.6**	**+1.5**
PRD	**Provadia**	**156.28**	**313**	*i* P	**PKPab**	**01 13 38.4**	**+1.7**
VOIR		**156.51**	**320**	⇑*i*P	**PKPab**	**01 13 38.6**	**+0.9**
VOIR		**156.51**	**320**	⇑PKP2	**PKPab**	**01 13 38.6**	**+0.9**
OKC	**Ostrava-Krasne**	**156.54**	**336**	*e*PKPAB	**PKPab**	**01 13 39.7**	**+2.1**
OKC				AMS	AMS	02 28 30.0	
	comp=Z,400nm,20.4s						
OKC	**Ostrava-Krasne**	**156.54**	**336**	*e*PKP2	**PKPab**	**01 13 39.7**	**+2.1**
OKC				MLR	MLR		
	comp=Z,400nm,20.4s						
LANS	**Liptovska Anna**	**156.60**	**333**	*e*PKP2	**PKPab**	**01 13 38.9**	**+0.9**
LANS	**Liptovska Anna**	**156.60**	**333**	*e*PKP	**PKPab**	**01 13 38.9**	**+0.9**
UPC	**Upice**	**156.68**	**340**	*e*PKPAB	**PKPab**	**01 13 40.5**	**+2.3**
UPC				AMS	AMS	02 31 40.0	
	comp=Z,300nm,19.9s						
UPC	**Upice**	**156.68**	**340**	*e*PKP2	**PKPab**	**01 13 40.5**	**+2.3**
UPC				MLR	MLR		
	comp=Z,300nm,19.9s						
KECS	**Kecovo**	**156.71**	**331**	*e*PKP2	**PKPab**	**01 13 36.7**	**-1.7**
KECS	**Kecovo**	**156.71**	**331**	*e*PKP	**PKPab**	**01 13 36.7**	**-1.7**
DPC	**Dobruska-Polom**	**156.72**	**339**	*e*PKPAB	**PKPab**	**01 13 41.4**	**+3.0**
DPC				*ex*	x	01 13 52.1	
DPC				*e*PP	**PP**	**01 17 12.1**	**-4.1**
DPC				AMS	AMS	02 33 50.0	
	comp=Z,200nm,17.2s						
DPC	**Dobruska-Polom**	**156.72**	**339**	*e*PKP2	**PKPab**	**01 13 41.4**	**+3.0**
DPC				*e*		01 17 12.1	
DPC				MLR	MLR		
	comp=Z,200nm,17.2s						
CLL	**Collm**	**156.75**	**345**	*e*PKPdf	**PKPdf**	**01 13 10.0**	**+1.1**
CLL				*e*PKPab	**PKPab**	**01 13 38.0**	**-0.4**
	comp=Z,16nm,1.6s						
CLL				*e*		01 13 50.0	
CLL				*e*		01 14 19.0	
CLL				*e*PP	**PP**	**01 17 14.0**	**-2.2**
CLL				*e*		01 18 02.0	
CLL				*e*(PPP)		01 21 24.0	
CLL				*e*SKKSac	SKKSac	01 24 06.0	+3.0
CLL				*e*PSKS		01 27 35.0	
CLL				*e*		01 28 31.0	
CLL				*e*		01 30 37.0	
CLL				*e*		01 32 05.0	
CLL				*e*SS	**SS**	**01 37 00.0**	**-5.4**
CLL				*e*SSS	SSS	01 43 06.0	
CLL				*e*SSSS		01 46 06.0	
CLL				Lm	MLR	02 31 00.0	
	comp=N,200nm,19.1s						
CLL				Lm	MLR	02 31 00.0	
	comp=E,200nm,19.2s						
CLL				Lm	MLR	02 31 00.0	
	comp=Z,300nm,19.7s						
CLL	**Collm**	**156.75**	**345**	*e*PKIKP	**PKPdf**	**01 13 10.0**	**+1.1**
CLL				pmax	pmax		
	comp=Z,16nm,1.6s						
CLL				MLR	MLR		
	comp=Z,300nm,19.7s						
ARR	**Arges**	**156.78**	**320**	⇑*i*P	**PKPab**	**01 13 34.9**	**-4.0**
MORC	**Moravsky Berou**	**156.81**	**337**	*e*PKP2	**PKPab**	**01 13 37.6**	**-1.2**
MORC	**Moravsky Berou**	**156.81**	**337**	*e*PKPab	**PKPab**	**01 13 37.6**	**-1.2**
KRLC	**Kraliky**	**156.81**	**338**	*e*PKPAB	**PKPab**	**01 13 41.5**	**+2.7**
KRLC	**Kraliky**	**156.81**	**338**	*e*PKP2	**PKPab**	**01 13 41.5**	**+2.7**
DRGR		**156.89**	**325**	⇑*i*P	PKPdf	01 13 23.5	+14
BRG	**Berggiesshubel**	**156.93**	**343**	*e*PKP	**PKPab**	**01 13 41.0**	**+1.8**
	comp=Z,14nm,1.4s						
BRG	**Berggiesshubel**	**156.93**	**343**	*e*PKP2	**PKPab**	**01 13 41.0**	**+1.8**
BRG				pmax	pmax		
	comp=Z,14nm,1.5s						
PVCC	**Panska Ves**	**157.08**	**342**	*e*PKPAB	**PKPab**	**01 13 41.0**	**+1.1**
PVCC				*e*PP	**PP**	**01 17 15.8**	**-2.3**
PVCC				AMS	AMS	02 29 10.0	
	comp=Z,300nm,16.9s						
PVCC	**Panska Ves**	**157.08**	**342**	*e*PKP2	**PKPab**	**01 13 41.0**	**+1.1**
PVCC				*e*		01 17 15.8	
PVCC				MLR	MLR		
	comp=Z,300nm,16.9s						
VYHS	**Vyhne**	**157.38**	**333**	*e*PKP2	**PKPab**	**01 13 40.9**	**-0.4**
VYHS	**Vyhne**	**157.38**	**333**	*e*PKP	**PKPab**	**01 13 40.9**	**-0.4**
VRAC	**Vranov**	**157.53**	**337**	⇑*i*P	**PKPab**	**01 13 40.7**	**-1.2**
VRAC	**Vranov**	**157.53**	**337**	⇑PKP2	**PKPab**	**01 13 40.7**	**-1.2**
GOPC	**GO Pecny, Ondr**	**157.57**	**341**	*e*PKPAB	**PKPab**	**01 13 43.2**	**+1.2**
GOPC				*e*PP	**PP**	**01 17 18.2**	**-2.6**
GOPC				AMS	AMS	02 35 10.0	
	comp=Z,400nm,17.6s						
GOPC	**GO Pecny, Ondr**	**157.57**	**341**	*e*PKP2	**PKPab**	**01 13 43.2**	**+1.2**
GOPC				*e*		01 17 18.2	
GOPC				MLR	MLR		
	comp=Z,400nm,17.6s						
PRU	**Pruhonice**	**157.57**	**341**	*e*PKPAB	**PKPab**	**01 13 43.8**	**+1.8**
PRU				*e*PP	**PP**	**01 17 18.9**	**-1.9**
PRU				*e*SKKS		01 27 46.5	
PRU				AMS	AMS	02 30 20.0	
	comp=Z,500nm,16.5s						
PRU	**Pruhonice**	**157.57**	**341**	*e*PKP2	**PKPab**	**01 13 43.8**	**+1.8**
PRU				*e*		01 17 18.9	
PRU				MLR	MLR		
	comp=Z,500nm,16.5s						
NKC	**Novy Kostel**	**157.88**	**345**	*e*PKPAB	**PKPab**	**01 13 45.4**	**+2.0**
NKC				AMS	AMS	02 34 50.0	
	comp=Z,500nm,16.2s						
NKC	**Novy Kostel**	**157.88**	**345**	*e*PKP2	**PKPab**	**01 13 45.4**	**+2.0**
NKC				MLR	MLR		
	comp=Z,500nm,16.2s						
SMOL	**Smolenice**	**157.91**	**335**	*e*PKP2	**PKPab**	**01 13 42.7**	**-0.8**
SMOL	**Smolenice**	**157.91**	**335**	*e*PKP	**PKPab**	**01 13 42.7**	**-0.8**
MPEP	**Malo Peshtene**	**158.48**	**317**	*i* P	**PKPab**	**01 13 47.0**	**+0.8**
KHC	**Kasperske Hory**	**158.62**	**342**	*e*PKPAB	**PKPab**	**01 13 46.4**	**-0.2**
KHC				*ex*	x	01 13 58.4	
KHC				*e*PP	**PP**	**01 17 21.3**	**-5.3**
KHC				AMS	AMS	02 35 40.0	
	comp=Z,500nm,18.1s						
KHC	**Kasperske Hory**	**158.62**	**342**	*e*PKP2	**PKPab**	**01 13 46.4**	**-0.2**
KHC				*e*		01 17 21.3	
KHC				MLR	MLR		
	comp=Z,500nm,18.1s						
KHC	**Kasperske Hory**	**158.62**	**342**	*e*PKPab	**PKPab**	**01 13 48.9**	**+2.2**
MDVR	**Moldovita**	**158.76**	**322**	⇓*i*P	**PKPab**	**01 13 47.9**	**+0.5**
GERES	**GERESS Array B**	**158.84**	**341**	PKPab	**PKPab**	**01 13 48.8**	**+1.1**
	comp=Z,0.9nm,0.8s,baz=90,slow=1.3,SNR=6.7						
VTS	**Vitosha**	**159.23**	**316**	⇓*i*P	**PKPab**	**01 13 46.5**	**-3.2**
VTS	**Vitosha**	**159.23**	**316**	⇓PKP2	**PKPab**	**01 13 46.5**	**-3.2**
VTS	**Vitosha**	**159.23**	**316**	*i* P	**PKPab**	**01 13 50.8**	**+1.1**
VTS	**Vitosha**	**159.23**	**316**	*e*PKPab	**PKPab**	**01 13 50.2**	**+0.5**
MMB	**Musomiste**	**159.44**	**313**	*i* P	**PKPab**	**01 13 51.2**	**+0.7**
LAST	**Lasithi**	**160.50**	**294**	*e*PKPab	**PKPab**	**01 13 57.6**	**+2.1**
AGG	**Agios Georgios**	**161.61**	**307**	*e*PKP2	**PKPab**	**01 13 58.8**	**-1.3**
AGG	**Agios Georgios**	**161.61**	**307**	*e*PKPab	**PKPab**	**01 13 58.8**	**-1.3**
FUORN	**Ofenpass-Fuorn**	**161.78**	**345**	*e*PKPab	**PKPab**	**01 14 03.1**	**+2.4**
TIP	**Timpagrande**	**165.19**	**316**	*e*PKPab	**PKPab**	**01 14 18.4**	**+2.6**
ESDC	**Sonseca Array**	**167.81**	**29**	PKP	**PKPdf**	**01 13 22.0**	**+1.6**
	comp=Z,0.1nm,0.4s,baz=320,slow=5.7,SNR=4.2						
ESDC				PKPab	**PKPab**	**01 14 28.1**	**+0.8**
	comp=Z,1.8nm,1.1s,baz=320,slow=3.6,SNR=5.0						
ES19	**SONSECA Array**	**167.82**	**28**	*e*PKPab	**PKPab**	**01 14 27.7**	**+0.5**

*ISCJB **09** 00:55:03.5±0.5, 6°.58N±0°.09×127°.30E±0°.07, h100km, mb4.2/17, Error ellipse: s-maj=13.9km s-min=6.7km az=31.7*
*MAN **09** 00:55:03, 6°.59N×127°.18E, h130km, mb4.9, ML3.8, MS3.8*
*NEIC **09** 00:55:07.7±0.9, 6°.47N×127°.02E, h119km±7km, mb4.4/7, Error ellipse: s-maj=12.4km s-min=7.2km az=65.0*
*IDC **09** 00:55:07.8±3.0, 6°.46N×127°.01E, h118km±21km, mb3.8/11, mb1 3.8/11, mb1mx3.6/48, mbtmp4.1/11, Error ellipse: s-maj=50.1km s-min=12.5km az=67.0*

ISC 09 00:55:05.4±0.7, 6°.5N±0°.1×127°.18E±0°.10, h100km, n23, σ0§81/27, mb4.2/17, 1C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**1.01**	**295**	*e*P		**Pn**		**00 55 26.2**	**+0.3**
MATI				*e*S		**Sn**		**00 55 40.1**	**-1.3**
DAV	**Davao City (W)**	**1.68**	**289**	P		**Pn**		**00 55 35.6**	**+1.7**
	2µm,0.3s,baz=197,slow=0.3,SNR=61								
DAV				S		**Sn**		**00 55 56.9**	**+1.3**
	249nm,0.3s,baz=48,slow=23,SNR=21								
DMPH	**Davao City--Mi**	**1.75**	**289**	⇑*i*P		**Pn**		**00 55 36.1**	**+1.3**
DMPH				*e*S		**Sn**		**00 55 57.8**	**+0.7**
BUKP	**Musuan**	**2.50**	**303**	*e*P		**Pn**		**00 55 44.2**	**-0.3**
BUKP				*e*S		**Sn**		**00 56 14.7**	**+0.2**
IPIL	**Ipil**	**4.74**	**286**	*e*P		**Pn**		**00 56 13.9**	**-0.7**
GUMO	**Guam**	**18.78**	**67**	*e*P		**Pn**		**00 59 19.5**	**+1.0**
	12nm,0.4s								
FITZ	**Fitzroy Crossi**	**24.51**	**184**	P		**P**		**01 00 15.2**	**-0.3**
	1.7nm,0.5s,baz=5.3,slow=8.3,SNR=8.0								
WRA	**Warramunga Arr**	**27.22**	**165**	P		**P**		**01 00 41.7**	**+1.6**
	0.3nm,0.4s,baz=343,slow=10,SNR=4.3								
CMAR	**Chiang Mai Arr**	**29.95**	**296**	P		**P**		**01 01 04.7**	**+0.2**
	0.8nm,0.4s,baz=104,slow=7.3,SNR=4.7								
ASAR	**Alice Springs**	**30.71**	**168**	P		**P**		**01 01 11.3**	**+0.3**
	0.3nm,0.4s,baz=340,slow=6.8,SNR=4.7								
NWAO	**Narrogin (SRO)**	**40.35**	**193**	P		**P**		**01 02 32.8**	**-0.6**
	18nm,1.1s,baz=39,slow=5.8,SNR=4.4								
MKAR	**Makanchi Array**	**55.55**	**324**	P		**P**		**01 04 30.9**	**+0.4**
	4.7nm,0.5s,baz=119,slow=7.8,SNR=74								
ZALV	**Zalesovo Beam**	**58.34**	**332**	P		**P**		**01 04 49.9**	**0.0**
	1.7nm,0.5s,baz=131,slow=6.4,SNR=8.0								
EKS2	**Erkin-Say**	**59.13**	**316**	*e*P		**P**		**01 04 56.0**	**+0.2**
	2.3nm,0.8s								
KURK	**Kurchatov**	**59.66**	**326**	*e*P		**P**		**01 04 59.0**	**-0.1**
	22nm,0.6s								
KKAR	**Karatay Array**	**61.53**	**316**	*e*P		**P**		**01 05 11.7**	**-0.3**
	4.5nm,0.8s								
BRVK	**Borovoye**	**65.33**	**326**	*e*P		**P**		**01 05 37.0**	**+0.2**
	2.8nm,0.5s								
GEYT	**Alibeck**	**69.52**	**308**	P		**P**		**01 06 04.0**	**+0.4**
	1.8nm,0.4s,baz=108,slow=4.8,SNR=8.0								
ABKAR	**Akbulak array**	**70.30**	**320**	*e*P		**P**		**01 06 07.8**	**-0.3**
	1.0nm,0.4s								
ARU	**Arti**	**72.84**	**327**	*e*P		**P**		**01 06 22.9**	**-0.3**
	2.6nm,0.6s								
ARCES	**ARCESS Array B**	**88.00**	**340**	P		**P**		**01 07 43.8**	**-0.2**
	1.2nm,0.8s,baz=86,slow=5.9,SNR=5.0								
BRTR	**Keskin Array B**	**88.60**	**310**	P		**P**		**01 07 46.5**	**-1.1**
	0.6nm,0.5s,baz=108,slow=4.0,SNR=5.7								
FINES	**FINESS Array B**	**89.60**	**332**	P		**P**		**01 07 51.1**	**-0.5**
	0.4nm,0.6s,baz=64,slow=4.4,SNR=3.6								

MAN 09 01:03:06, 7°.05N×126°.68E, h41km, mb3.9, ML2.7, MS2.3, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.43**	**257**	*e*P		Pn		01 03 18.2	+2.3
MATI				*e*S		Sn		01 03 26.8	+3.8
DMPH	**Davao City--Mi**	**1.17**	**272**	⇑*e*P		Pn		01 03 27.1	+1.3
DMPH				*e*S		Sn		01 03 46.5	+5.9
BUKP	**Musuan**	**1.81**	**297**	*e*P		Pn		01 03 36.1	+1.4
BUKP				*e*S		Sn		01 03 58.1	+1.7

IDC 09 01:04:53.4±5.0, 28°.44S×176°.54W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/26, mbtmp3.7/2, Error ellipse: s-maj=136.1km s-min=36.0km az=133.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.45**	**236**	Pn		Pn		01 05 20.6	-0.3
	140nm,0.3s,baz=9.0,slow=19,SNR=5.0								
RAO				Sn		Sn		01 05 42.1	+1.4
	313nm,0.3s,baz=100,slow=23,SNR=6.6								
ASAR	**Alice Springs**	**44.53**	**264**	P		P		01 13 07.0	-0.1
	0.6nm,0.5s,baz=102,slow=7.3,SNR=7.5								
WRA	**Warramunga Arr**	**45.34**	**269**	P		P		01 13 13.6	0.0
	0.7nm,0.8s,baz=107,slow=8.4,SNR=4.0								
FINES	**FINESS Array B**	**143.72**	**342**	PKP		PKPdf		01 24 29.0	-0.7
	1.1nm,0.8s,baz=56,slow=2.5,SNR=4.3								

*NEIC **09** 01:09:35.4±0.7, 28°.75S×176°.39W, h10km, mb4.5/3, Error ellipse: s-maj=22.3km s-min=15.4km az=141.0*
*ISCJB **09** 01:09:36.4±0.9, 28°.8S±0°.1×176°.4W±0°.1, h29km, mb4.5/7, MS4.1/4, Error ellipse: s-maj=21.3km s-min=11.8km az=158.4*
*IDC **09** 01:09:37.1±2.3, 28°.38S×176°.92W, h0km, mb4.3/3, mb1 4.5/3, mb1mx4.0/20, mbtmp4.3/3, MS4.1/4, Ms1 4.1/4, ms1mx3.6/34, Error ellipse: s-maj=73.4km s-min=24.6km az=130.0*

ISC 09 01:09:38.5±0.8, 28°.8S±0°.2×176°.5W±0°.1, h29km, n23, σ1§17/20, mb4.4/7, MS4.2/4, 2D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.35**	**252**	Pn		**Pn**		**01 10 01.6**	**+0.1**
	689nm,0.3s,baz=303,slow=16,SNR=9.1								
RAO				Sn		**Sb**		**01 10 19.6**	**-0.6**
	884nm,0.3s,baz=217,slow=20,SNR=8.3								
KHZ	**Kahutara**	**15.79**	**208**	*e*Pn		**Pn**		**01 13 18.7**	**0.0**
PPT	**Papeete**	**27.06**	**71**	LR		LR		01 23 58.3	
	comp=Z,172nm,21.4s,baz=192,slow=32								
CTAO	**Charters Tower**	**34.93**	**276**	*e*P		**P**		**01 16 28.4**	**+0.4**
	25nm,0.7s								
STKA	**Stephens Creek**	**36.17**	**255**	P		**P**		**01 16 39.4**	**+0.8**
	2.3nm,0.6s,baz=130,slow=9.0,SNR=3.6								
ASAR	**Alice Springs**	**44.57**	**265**	P		**P**		**01 17 48.0**	**-0.2**
	3.6nm,0.8s,baz=112,slow=7.8,SNR=24								
WRAB	**Tennant Creek**	**45.42**	**270**	*e*P		**P**		**01 17 54.7**	**-0.2**
	4.3nm,0.8s								
WRA	**Warramunga Arr**	**45.42**	**270**	P		**P**		**01 17 54.2**	**-0.8**
	5.7nm,0.8s,baz=109,slow=7.7,SNR=16								
FITZ	**Fitzroy Crossi**	**53.74**	**268**	LR		LR		01 39 30.1	
	comp=Z,308nm,18.6s,slow=34								
CASY	**Casey**	**57.15**	**207**	*e*P		**P**		**01 19 22.4**	**+0.1**
	0.7nm,0.6s								
KKM	**Kota Kinabalu**	**73.38**	**287**	*e*P		**P**		**01 21 08.3**	**0.0**
SYO	**Syowa Base**	**78.94**	**192**	⇓*e*PcP		**PcP**		**01 21 45.2**	**-2.3**
JNU	**Nakatsue**	**79.31**	**317**	LR		LR		01 54 32.8	
	comp=Z,108nm,18.0s,baz=124,slow=34								
SNAA	**Sanae**	**79.67**	**178**	*e*P		**P**		**01 21 44.0**	**+0.9**
PFO	**Pinyon Flats O**	**84.15**	**47**	LR		LR		01 53 52.6	
	comp=Z,75nm,18.1s,baz=214,slow=32								
CMB	**Columbia Colle**	**84.70**	**41**	*e*P		**P**		**01 22 09.1**	**-0.6**
	6.1nm,0.5s								
TKM2	**Tokmak 2**	**121.62**	**305**	⇓*e*PKP		**PKPdf**		**01 28 28.8**	**-0.9**
ARU	**Arti**	**132.72**	**322**	*e*PKPdf		**PKPdf**		**01 28 47.9**	**-2.2**
FINES	**FINESS Array B**	**144.11**	**342**	PKP		**PKPdf**		**01 29 10.9**	**+0.1**
	1.6nm,0.6s,baz=82,slow=4.2,SNR=13								
GNI	**Garni**	**144.51**	**300**	*e*PKPdf		**PKPab**		**01 29 10.1**	**-0.7**
NB2	**NORSAR Subarra**	**147.39**	**353**	PKP		**PKPab**		**01 29 21.2**	**+0.4**
	comp=Z,0.7nm,0.7s,baz=17,slow=2.6								
AKASG	**Malin Array Be**	**150.82**	**326**	PKPbc		**PKPbc**		**01 29 29.1**	**+1.3**
	comp=Z,0.4nm,0.2s,baz=46,slow=3.1,SNR=6.5								
BRTR	**Keskin Array B**	**152.99**	**302**	PKPbc		**PKPbc**		**01 29 36.0**	**+2.7**
	comp=Z,0.4nm,0.7s,baz=125,slow=6.2,SNR=5.2								

*IDC **09** 01:13:25.4±2.5, 39°.30N×73°.42E, h0km, mb3.6/5, mb1 3.7/10, mb1mx3.5/42, mbtmp3.6/10, ML3.2/5, MS4.3/1, Ms1 4.3/1, ms1mx2.7/54, Error ellipse: s-maj=41.6km s-min=17.7km az=134.0*
*KRNET **09** 01:13:27.5±0.1, 39°.60N×73°.19E, h18km, mb3.6*
*NNC **09** 01:13:33.6±2.5, 39°.77N×73°.24E, h0km, mb4.0, mpv3.6, Error ellipse: s-maj=21.5km s-min=15.7km az=172.0*

ISC 09 01:13:26.7±1.4, 39°.61N±0°.05×73°.26E±0°.03, h6km±9km, n28, σ2§10/44, mb3.6/5, 25C-9D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OHH	**Osh**	**0.98**	**338**	⇑*i*P		**Pg**		**01 13 46.5**	**+0.9**
	baz=342								
OHH				⇑*i*S		**Sn**		**01 14 01.0**	**-0.5**
	baz=342								
DRK	**Karamyk**	**1.14**	**264**	⇓*i*P		**Pg**		**01 13 48.8**	**+0.2**
	baz=264								
DRK				⇓*i*S		**Sg**		**01 14 03.9**	**+0.6**
	baz=264								
BTK	**Batken**	**1.93**	**284**	⇓*i*P		**Pg**		**01 14 02.8**	**-1.0**
	baz=285								
BTK				⇓*i*S		**Sg**		**01 14 28.6**	**-0.3**
	baz=285								
KSH	**Kashi**	**2.10**	**92**	Pg		**Pn**		**01 14 01.2**	**-1.4**
KSH				Sg		**Sn**		**01 14 26.7**	**-2.4**
KSH				smax		smax			
	comp=N,270nm,0.5s								
KSH				smax		smax			
	comp=E,280nm,0.6s								
ARLS	**Aral**	**2.39**	**19**	⇑*i*P		**Pb**		**01 14 11.9**	**+1.6**
	baz=21								
ARLS				⇑*i*S		**Sb**		**01 14 42.6**	**+2.5**
	baz=21								
ARK	**Arkit**	**2.40**	**336**	⇑*i*P		**Pb**		**01 14 10.9**	**+0.5**
	baz=338								
ARK				⇑*i*S		**Sb**		**01 14 40.8**	**+0.5**
	baz=338								
AML	**Almayashu**	**2.54**	**7**	⇓*i*P		**Pb**		**01 14 14.7**	**+1.7**
	baz=8.0								
AML				⇓*i*S		**Sg**		**01 14 51.5**	**+3.1**
	baz=8.0								
UCH	**Uchtor**	**2.78**	**20**	⇑*i*P		**Pb**		**01 14 18.3**	**+1.2**
	baz=21								
UCH				⇑*i*S		**Sg**		**01 14 57.1**	**+1.0**
	baz=21								
MNAS	**Manas**	**2.93**	**349**	⇑*i*P		**Pb**		**01 14 19.4**	**-0.1**
	baz=350								
MNAS				⇑*i*S		**Sb**		**01 14 54.1**	**-1.5**
	baz=350								
MNAS	**Manas**	**2.93**	**349**	⇑Pn		**Pb**		**01 14 20.3**	**+0.8**
	comp=E,22nm,0.4s								
MNAS				⇑Lg		Lg		01 15 03.4	
EKS2	**Erkin-Say**	**3.07**	**7**	⇑*i*P		**Pb**		**01 14 22.8**	**+0.9**
	baz=8.0								
EKS2				⇑*i*S		**Sg**		**01 15 04.6**	**-0.9**
	baz=8.0								
AAK	**Ala-Archa**	**3.17**	**17**	Pn		**Pb**		**01 14 24.1**	**+0.6**
	comp=E,8.4nm,0.3s,baz=176,slow=11,SNR=46								
AAK				Sn		**Sg**		**01 15 06.3**	**-2.1**
	comp=E,5.3nm,0.3s,baz=344,slow=17,SNR=9.9								
AAK	**Ala-Archa**	**3.17**	**17**	⇑Pn		**Pb**		**01 14 23.7**	**+0.3**
	comp=E,31nm,0.6s								
AAK				⇑Lg		Lg		01 15 06.9	
	comp=E,9.7nm,0.4s								
BOOM	**Boomskoye usch**	**3.52**	**34**	⇑*e*P		**Pb**		**01 14 27.1**	**-2.4**
	baz=35								
BOOM				⇑*i*S		**Sb**		**01 15 10.1**	**-2.5**
	baz=35								
TKM2	**Tokmak 2**	**3.75**	**27**	⇓Pn		**Pb**		**01 14 30.8**	**-2.7**
	comp=E,7.2nm,0.5s								
TKM2				⇑Pg		**Pg**		**01 14 38.4**	**-0.1**
	comp=E,7.2nm,0.5s								
TKM2				⇑Lg		Lg		01 15 29.2	
	comp=E,20nm,0.6s								
KK31	**Karatay Array**	**4.06**	**330**	Pn		**Pb**		**01 14 35.6**	**-3.0**
	comp=E,1.7nm,0.2s,baz=149,slow=11,SNR=13								
KK31				⇑Pg		**Pg**		**01 14 44.6**	**+0.2**
	comp=E,6.0nm,0.4s,baz=154,slow=16,SNR=6.3								
KK31				⇑Sn		**Sb**		**01 15 23.1**	**-4.8**
	comp=E,17nm,0.3s,baz=158,slow=24,SNR=4.3								
KK31				⇑Lg		Lg		01 15 37.6	
KNDC	**Almaty**	**4.55**	**37**	⇓Pg		**Pg**		**01 14 54.1**	**+0.2**
KNDC				⇑Lg		Lg		01 15 57.6	
GEYT	**Alibeck**	**11.94**	**267**	Pn		**Pn**		**01 16 16.7**	**-0.9**
	comp=E,0.1nm,0.3s,baz=57,slow=5.5,SNR=6.8								
GEYT				Sn		**Sn**		**01 18 34.9**	**+3.8**
	comp=E,0.3nm,0.3s,baz=107,slow=18,SNR=3.3								
AB31	**Akbulak array**	**13.53**	**320**	⇑Pn		**Pn**		**01 16 39.7**	**+0.7**
	comp=E,1.4nm,0.8s,baz=128,slow=13,SNR=13								
AB31				⇓Sn		**Sn**		**01 19 04.0**	**-5.7**
	comp=E,1.3nm,0.7s,baz=135,slow=23,SNR=2.9								
BVAR	**Borovoye Array**	**13.56**	**353**	Pn		**Pn**		**01 16 41.5**	**+2.0**
	comp=E,0.1nm,0.3s,baz=169,slow=12,SNR=4.2								
AKTO	**Aktyubinsk**	**15.24**	**320**	Pn		**P**		**01 17 04.0**	**-3.4**
	comp=E,0.1nm,0.3s,baz=117,slow=14,SNR=2.3								
ZALV	**Zalesovo Beam**	**16.35**	**25**	Pn		**P**		**01 17 19.7**	**0.0**
	comp=E,0.1nm,0.3s,baz=219,slow=11,SNR=2.4								
BRTR	**Keskin Array B**	**30.33**	**283**	P		**P**		**01 19 41.0**	**+1.8**
	comp=E,0.4nm,0.6s,baz=81,slow=9.2,SNR=3.3								
FINES	**FINESS Array B**	**35.98**	**323**	P		**P**		**01 20 30.3**	**+2.2**
	comp=E,0.4nm,0.3s,baz=116,slow=9.4,SNR=13								
ARCES	**ARCESS Array B**	**39.00**	**336**	P		**P**		**01 20 55.6**	**+2.0**
	comp=E,0.9nm,0.6s,baz=111,slow=9.2,SNR=6.9								
NOA	**NORSAR Array B**	**43.03**	**321**	P		**P**		**01 21 28.1**	**+1.2**
	comp=E,0.3nm,0.4s,baz=92,slow=8.1,SNR=2.5						

NB2	**NORSAR Subarra**	**147.60**	**353**	PKP	**PKPbc**	**01 46 17.4**	**+0.5**
	comp=Z,0.9nm,0.7s,baz=16,slow=3.2						
NOA	**NORSAR Array B**	**147.60**	**353**	PKPbc	**PKPbc**	**01 46 17.9**	**+1.0**
	comp=Z,2.0nm,1.0s,baz=8.3,slow=4.9,SNR=5.9						
AKASG	**Malin Array Be**	**151.02**	**325**	PKPbc	**PKPbc**	**01 46 26.5**	**+0.8**
	comp=Z,2.3nm,0.8s,baz=38,slow=2.7,SNR=6.4						
BRTR	**Keskin Array B**	**153.13**	**301**	PKPbc	**PKPbc**	**01 46 32.4**	**+1.3**
	comp=Z,0.4nm,0.6s,baz=134,slow=4.4						
BRTR				PKPab	**PKPab**	**01 46 42.6**	**-0.2**
	comp=Z,1.3nm,0.6s,baz=131,slow=3.4,SNR=7.4						
TORD	**Torodi Ar. Bea**	**164.09**	**173**	PKPab	**PKPab**	**01 47 29.3**	**-1.0**
	comp=Z,0.5nm,0.9s,baz=191,slow=6.9,SNR=2.4						

IDC 09 01:28:45.8±3.1, 28°49S×176°58W, h0km, mb4.0/2, mb1 4.3/2, mb1mx3.7/39, mbtmp4.0/2, Error ellipse: s-maj=113.8km s-min=27.8km az=140.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.40**	**237**	Pn	Pb	01 29 12.8	0.0
	390nm,0.3s,baz=99,slow=18,SNR=9.2						
RAO				Sn	Sn	01 29 32.8	+1.1
	1μm,0.3s,baz=271,slow=23,SNR=4.2						
ASAR	**Alice Springs**	**44.49**	**264**	P	P	01 36 58.5	-0.6
	1.4nm,0.6s,baz=97,slow=6.9,SNR=5.7						
WRA	**Warramunga Arr**	**45.31**	**270**	P	P	01 37 05.2	-0.5
	1.1nm,0.7s,baz=110,slow=8.1,SNR=4.7						
FINES	**FINESS Array B**	**143.75**	**342**	PKP	PKPbc	01 48 20.1	+0.4
	1.3nm,0.8s,baz=65,slow=2.4,SNR=3.1						
BRTR	**Keskin Array B**	**152.71**	**302**	PKPbc	PKPbc	01 48 44.7	-0.1
	0.3nm,0.7s,baz=62,slow=3.9,SNR=2.6						
BRTR				PKPab	PKPab	01 48 56.3	+0.8
	0.6nm,0.6s,baz=79,slow=3.3,SNR=4.2						

*IDC **09** 01:34:47.1±1.4, 29°.57S×176°.52W, h0km, mb4.1/2, mb1 4.4/3, mb1mx3.8/32, mbtmp4.2/3, ML3.5/1, MS3.7/1, Ms1 3.7/1, ms1mx3.1/25, Error ellipse: s-maj=36.3km s-min=25.4km az=21.0*

*ISCJB **09** 01:34:48.8±0.9, 29°.74S±0°.08×176°.45W±0°.10, h21km, mb4.5/6, Error ellipse: s-maj=12.4km s-min=11.4km az=155.5*

*NEIC **09** 01:34:49.4±0.6, 29°.73S×176°.67W, h10km, mb4.3/2, Error ellipse: s-maj=13.7km s-min=13.1km az=161.0*

ISC 09 01:34:50.5±0.9, 29°.62S±0°.10×176°.53W±0°.10, h21km, n12, σ1s75/14, mb4.5/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.26**	**287**	Pn	**Pb**	**01 35 12.3**	**-1.3**
	180nm,0.3s,baz=86,slow=9.0,SNR=6.6						
RAO				Sn	**Sn**	**01 35 32.1**	**+2.8**
	253nm,0.3s,baz=270,slow=20,SNR=3.5						
RAO				LR	LR	01 36 02.4	
	comp=Z,1μm,18.3s,baz=344,slow=60						
URZ	**Urewera**	**10.10**	**210**	Pn	**Pn**	**01 37 12.1**	**-2.2**
	0.4nm,0.3s,baz=117,slow=14,SNR=2.4						
URZ				Sn	**Sn**	**01 39 10.0**	**+3.0**
	0.6nm,0.3s,baz=143,slow=20,SNR=3.9						
DZM	**Mont Dzumac**	**17.06**	**292**	LR	LR	01 44 48.8	
	comp=Z,237nm,18.2s,baz=122,slow=35						
CTAO	**Charters Tower**	**34.95**	**277**	*e*P	**P**	**01 41 41.0**	**-0.2**
	24nm,0.6s						
ASAR	**Alice Springs**	**44.43**	**265**	P	**P**	**01 43 00.2**	**0.0**
	1.9nm,0.8s,baz=110,slow=8.2,SNR=9.2						
WRA	**Warramunga Arr**	**45.35**	**271**	P	**P**	**01 43 06.6**	**-0.9**
	2.6nm,0.7s,baz=107,slow=8.6,SNR=3.1						
CASY	**Casey**	**56.42**	**208**	*e*P	**P**	**01 44 29.3**	**-0.8**
	1.1nm,1.0s						
TUC	**Tucson**	**87.63**	**51**	*e*P	**P**	**01 47 38.7**	**+1.2**
	12nm,1.5s						
BOZ	**Bozeman (W)**	**95.24**	**40**	*e*P	**P**	**01 48 13.7**	**+1.1**
	1.8nm,0.6s						
FINES	**FINESS Array B**	**144.83**	**341**	PKP	**PKPab**	**01 54 22.4**	**-1.8**
	0.7nm,0.6s,baz=57,slow=5.1,SNR=5.6						
BRTR	**Keskin Array B**	**153.33**	**300**	PKPbc	**PKPbc**	**01 54 47.8**	**+0.6**
	0.3nm,0.5s,baz=122,slow=2.6,SNR=3.4						
BRTR				PKPab	**PKPab**	**01 54 58.7**	**-0.6**
	0.5nm,0.7s,baz=87,slow=3.7,SNR=5.5						
TORD	**Torodi Ar. Bea**	**163.53**	**174**	PKPab	**PKPab**	**01 55 45.0**	**+1.5**
	1.5nm,1.0s,baz=157,slow=2.5,SNR=4.8						

*IDC **09** 01:36:22.1±0.5, 3°.86N×126°.55E, h0km, mb4.3/20, mb1 4.4/20, mb1mx4.2/46, mbtmp4.3/20, MS3.6/1, Ms1 3.6/1, ms1mx3.0/49, Error ellipse: s-maj=28.6km s-min=11.6km az=84.0*

*ISCJB **09** 01:36:32.5±0.3, 3°.83N±0°.04×126°.76E±0°.06, h100km, mb4.5/49, Error ellipse: s-maj=8.4km s-min=5.1km az=160.5*

*NEIC **09** 01:36:33.5±1.1, 3°.86N×126°.73E, h92km±10km, mb4.5/20, Error ellipse: s-maj=10.9km s-min=6.3km az=63.0*

ISC 09 01:36:34.2±0.4, 3°.77N±0°.06×126°.78E±0°.08, h100km, n77, σ1s98/80, mb4.5/49, 1C-1D, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MATI	**Mati**	**3.20**	**351**	*e*P	Pn	01 37 16.1	-6.6
MATI				*e*S	**Sn**	**01 38 00.8**	**+0.7**
DAV	**Davao City (W)**	**3.49**	**340**	Lg	Lg	01 38 07.9	
	69nm,0.3s,baz=228,slow=18,SNR=4.1						
DMPH	**Davao City--Mi**	**3.53**	**339**	*e*P	**Pn**	**01 37 25.4**	**-1.6**
KCP	**Kidapawan**	**3.64**	**332**	*e*P	**Pn**	**01 37 23.9**	**-4.7**
CTBH	**Cotabato--PC H**	**4.26**	**324**	*e*P	Pn	01 37 30.9	-6.0
CTBH				*i* S	**Sn**	**01 38 25.2**	**-0.4**
BUKP	**Musuan**	**4.43**	**337**	*e*P	Pn	01 37 34.4	-4.8
BUKP				*e*S	**Sn**	**01 38 33.6**	**+3.8**
CGP	**Cagayan de Oro**	**5.10**	**336**	*e*P	**Pn**	**01 37 48.4**	**+0.1**
PAGZ	**Pagadian**	**5.28**	**320**	*e*P	**Pn**	**01 37 46.0**	**-4.7**
LUWI	**Luwuk**	**6.23**	**220**	*e*Pn	**Pn**	**01 38 04.5**	**+0.8**
MYLDM	**Lahad Datu**	**8.37**	**280**	*e*Pn	**Pn**	**01 38 32.1**	**-0.7**
FAKI	**Fak Fak**	**8.60**	**140**	*e*Pn	**Pn**	**01 38 36.5**	**+0.6**
KKM	**Kota Kinabalu**	**10.77**	**283**	*e*Pn	**Pn**	**01 39 04.3**	**-1.2**
	23nm,0.8s						
TGY	**Tagaytay City**	**11.78**	**331**	LR	LR	01 44 08.7	
	comp=Z,308nm,21.5s,baz=148,slow=40						
SBUM	**Sibu**	**14.60**	**265**	*e*Pn	**P**	**01 39 56.6**	**-3.0**
SSLB	**Suanglung**	**20.69**	**345**	*e*P	**P**	**01 41 03.5**	**-2.8**
	11nm,0.7s						
FITZ	**Fitzroy Crossi**	**21.76**	**183**	P	**P**	**01 41 17.1**	**-0.7**
	3.1nm,0.5s,baz=357,slow=7.4,SNR=8.2						
WRAB	**Tennant Creek**	**24.70**	**163**	*e*P	**P**	**01 41 46.6**	**+0.5**
	12nm,0.8s						
WRA	**Warramunga Arr**	**24.70**	**163**	P	**P**	**01 41 46.3**	**+0.1**
	5.8nm,0.8s,baz=342,slow=10,SNR=16						
WB2	**Warramunga Arr**	**24.71**	**163**	*e*P	**P**	**01 41 46.5**	**+0.3**
	15nm,0.8s						
ASAR	**Alice Springs**	**28.14**	**166**	P	**P**	**01 42 17.4**	**+0.4**
	0.2nm,0.3s,baz=339,slow=9.9,SNR=4.0						
GYA	**Guiyang**	**29.67**	**321**	*e*P	**P**	**01 42 31.7**	**+0.9**
GYA				pP	pP	01 42 51.0	-2.2
GYA				PP	**PnPn**	**01 43 31.2**	**+0.5**
GYA				S	**S**	**01 47 20.0**	**+0.5**
GYA				sS	sS	01 47 53.4	-5.0
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CMAR	**Chiang Mai Arr**	**30.90**	**300**	P	**P**	**01 42 38.5**	**-3.1**
	comp=Z,0.9nm,0.3s,baz=112,slow=7.1,SNR=2.5						
KMI	**Kunming**	**31.39**	**315**	P	**P**	**01 42 47.5**	**+1.4**
KMI				pmax	pmax		
	comp=Z,23nm,0.5s						
KMI				pmax	pmax		
	comp=Z,100nm,4.7s						
KMI				LR	LR		
	comp=N,250nm,16.6s						
KMI				LR	LR		
	comp=E,250nm,18.4s						
KMI				LR	LR		
	comp=Z,250nm,16.5s						
KS15	**Wonju Array Si**	**33.53**	**2**	*e*P	**P**	**01 43 01.9**	**-2.5**
KSAR	**Wonju Array Be**	**33.53**	**2**	P	**P**	**01 43 01.7**	**-2.6**
KSRS	**Korea Array**	**33.55**	**2**	P	**P**	**01 43 01.7**	**-2.7**
	comp=Z,5.3nm,0.9s,baz=178,slow=9.8,SNR=8.9						
KS01	**Wonju Array Si**	**33.57**	**2**	*e*P	**P**	**01 43 02.6**	**-2.0**
MJAR	**Matsushiro Arr**	**34.27**	**16**	P	**P**	**01 43 06.9**	**-3.9**
	comp=Z,1.0nm,0.5s,baz=186,slow=9.4,SNR=4.3						
XAN	**Xi'an**	**34.41**	**333**	P	**P**	**01 43 09.3**	**-2.7**
XAN				pP	pP	01 43 15.5	-19
XAN				pmax	pmax		
	comp=Z,7.0nm,0.8s						
CD2	**Chengdu**	**34.65**	**324**	*e*P	**P**	**01 43 13.9**	**-0.2**
BJI	**Beijing**	**37.36**	**347**	P	**P**	**01 43 36.6**	**-0.5**
BJI				pmax	pmax		
	comp=Z,13nm,0.6s						
NWAO	**Narrogin (SRO)**	**37.60**	**193**	P	**P**	**01 43 38.5**	**-0.7**
	comp=Z,12nm,1.0s,baz=255,slow=9.6,SNR=3.4						
STKA	**Stephens Creek**	**38.14**	**159**	P	**P**	**01 43 45.0**	**+1.2**
	comp=Z,7.3nm,0.8s,baz=332,slow=10,SNR=7.4						
STKA	**Stephens Creek**	**38.14**	**159**	*e*P	**P**	**01 43 45.5**	**+1.7**
	comp=Z,8.6nm,1.8s						
LZH	**Lanzhou**	**38.50**	**330**	*e*P	**P**	**01 43 49.7**	**+2.7**
LZH				pP	pP	01 44 10.0	+0.1
LZH				sP	sP	01 44 20.1	-1.3
LZH				PP	**PnPn**	**01 45 23.0**	**+3.0**
LZH				pmax	pmax		
	comp=Z,20nm,1.2s						
LZH				pmax	pmax		
	comp=Z,75nm,5.3s						
LZH				LR	LR		
	comp=N,320nm,13.5s						
LZH				LR	LR		
	comp=E,300nm,13.2s						
LZH				LR	LR		
	comp=Z,380nm,17.3s						
HHC	**Hu-ho-hao-te**	**39.38**	**342**	*e*P	**P**	**01 43 57.0**	**+2.8**
HHC				pmax	pmax		
	comp=Z,15nm,0.9s						
HHC				pmax	pmax		
	comp=Z,140nm,5.2s						
CN2	**Changchun**	**39.89**	**358**	*e*P	**P**	**01 43 56.8**	**-1.4**
CN2				*e*pP	pP	01 44 14.8	-6.5
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
USRK	**Ussuriysk Ar.**	**40.53**	**6**	P	**P**	**01 44 02.5**	**-0.9**
	comp=Z,3.4nm,0.6s,baz=183,slow=5.8,SNR=14						
MDJ	**Mudanjiang**	**40.76**	**3**	P	**P**	**01 44 06.0**	**+0.6**
MDJ				pP	pP	01 44 25.2	-3.3
MDJ				sP	sP	01 44 34.6	-5.4
MDJ				pmax	pmax		
	comp=Z,7.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,77nm,5.6s						
LSA	**Lhasa**	**42.45**	**311**	*e*P	**P**	**01 44 19.9**	**-0.1**
	comp=Z,4.1nm,0.6s						
KLR	**Kul'dur**	**45.50**	**5**	P	**P**	**01 44 42.5**	**-0.9**
	comp=Z,4.3nm,0.5s,baz=201,slow=3.9,SNR=26						
SONM	**Songino Array**	**47.28**	**341**	P	**P**	**01 44 56.7**	**-0.9**
	comp=Z,1.6nm,0.5s,baz=158,slow=8.5,SNR=9.5						
SONM				PcP	**PcP**	**01 46 28.8**	**+1.6**
	comp=Z,0.9nm,0.7s,baz=141,slow=4.8,SNR=2.6						
SONA1	**Songino Array**	**47.29**	**341**	*e*P	**P**	**01 44 57.1**	**-0.6**
WMQ	**Urumqi**	**52.73**	**325**	*e*P	**P**	**01 45 39.5**	**+0.7**
WMQ				pP	pP	01 45 56.5	-6.4
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,86nm,6.6s						
PETK	**Petropavlovsk-**	**55.38**	**22**	P	**P**	**01 45 57.6**	**-0.2**
	comp=Z,1.9nm,0.6s,baz=175,slow=2.4,SNR=4.3						
MK01	**Makanchi Array**	**57.54**	**325**	*e*P	**P**	**01 46 12.2**	**-1.1**
MKAR	**Makanchi Array**	**57.55**	**325**	P	**P**	**01 46 12.3**	**-1.1**
	comp=Z,2.2nm,0.4s,baz=117,slow=7.4,SNR=28						
MKAR				ScP	**ScP**	**01 51 06.1**	**+9.4**
	comp=Z,0.7nm,0.8s,baz=116,slow=5.5,SNR=3.9						
MKAR	**Makanchi Array**	**57.55**	**325**	*e*P	**P**	**01 46 13.5**	**0.0**
YAK	**Yakutsk**	**58.17**	**2**	P	**P**	**01 46 17.1**	**-0.3**
	comp=Z,27nm,0.5s,baz=13,slow=1.5,SNR=4.9						
MA2	**Magadan**	**58.66**	**14**	P	**P**	**01 46 20.5**	**-0.3**
	comp=Z,2.9nm,0.4s,baz=207,slow=6.2,SNR=4.4						
TKM2	**Tokmak 2**	**59.75**	**319**	*e*P	**P**	**01 46 28.9**	**0.0**
	comp=Z,2.1nm,0.6s						
ZAA0	**Zalesovo Array**	**60.58**	**333**	*e*P	**P**	**01 46 33.1**	**-1.0**
ZALV	**Zalesovo Beam**	**60.58**	**333**	P	**P**	**01 46 32.7**	**-1.4**
	comp=Z,1.3nm,0.4s,baz=114,slow=6.7,SNR=4.9						
EKS2	**Erkin-Say**	**60.86**	**318**	*e*P	**P**	**01 46 36.5**	**+0.1**
	comp=Z,2.2nm,0.5s						
KURK	**Kurchatov**	**61.74**	**327**	*e*P	**P**	**01 46 41.6**	**-0.4**
	comp=Z,74nm,0.6s						
SEY	**Seymchan**	**61.99**	**13**	P	**P**	**01 46 43.9**	**+0.4**
	comp=Z,3.3nm,0.8s,baz=220,slow=5.9,SNR=14						
KKAR	**Karatay Array**	**63.24**	**317**	*e*P	**P**	**01 46 51.7**	**-0.5**
	comp=Z,1.8nm,0.6s						
BRVK	**Borovoye**	**67.39**	**327**	*e*P	**P**	**01 47 18.1**	**-0.6**
	comp=Z,9.9nm,0.9s						
TIXI	**Tiksi**	**67.81**	**1**	P	**P**	**01 47 21.1**	**+0.1**
	comp=Z,2.9nm,0.4s,baz=192,slow=3.8,SNR=5.2						
ZRNK	**Zerenda**	**68.04**	**327**	*e*P	**P**	**01 47 21.9**	**-0.9**
	comp=Z,6.6nm,0.8s						
NRIK	**Noril'sk**	**70.41**	**346**	P	**P**	**01 47 37.7**	**+0.6**
	comp=Z,2.5nm,0.5s,baz=84,slow=5.7,SNR=3.8						
ABKAR	**Akbulak array**	**72.16**	**321**	*e*P	**P**	**01 47 46.7**	**-1.3**
	comp=Z,0.7nm,0.4s						
ARU	**Arti**	**74.93**	**328**	*e*P	**P**	**01 48 03.5**	**-0.7**
	comp=Z,3.8nm,0.7s						
SUA	**Susitna One**	**83.11**	**29**	*e*P	**P**	**01 48 50.1**	**+1.3**
	comp=Z,8.1nm,0.8s						
KTH	**Kantishna Hill**	**83.21**	**27**	*e*P	**P**	**01 48 51.1**	**+1.8**
	comp=Z,16nm,1.4s						
COLD	**Coldfoot**	**83.84**	**23**	*e*P	**P**	**01 48 53.7**	**+1.3**
	comp=Z,11nm,1.3s						
MCK	**McKinley**	**84.11**	**26**	*e*P	**P**	**01 48 54.2**	**+0.4**
	comp=Z,20nm,1.5s						
COLA	**College**	**84.64**	**25**	*e*P	**P**	**01 48 56.2**	**-0.1**
	comp=Z,2.4nm,0.7s						
CCB	**Clear Creek Bu**	**84.65**	**26**	*e*P	**P**	**01 48 57.5**	**+1.0**
	comp=Z,7.2nm,1.2s						
IL1	**Eielson Array**	**85.05**	**25**	*e*P	**P**	**01 48 58.5**	**0.0**
ILAR	**Eielson Array**	**85.05**	**25**	P	**P**	**01 48 59.0**	**+0.5**
	comp=Z,1.1nm,0.9s,baz=252,slow=5.2,SNR=8.9						
DIV	**Divide**	**85.49**	**29**	*e*P	**P**	**01 49 02.4**	**+1.5**
	comp=Z,11nm,1.0s						
ARCES	**ARCESS Array B**	**90.43**	**340**	P	**P**	**01 49 23.4**	**-0.8**
	comp=Z,2.5nm,0.9s,baz=78,slow=6.0,SNR=7.9						
FINES	**FINESS Array B**	**91.83**	**332**	P	**P**	**01 49 29.8**	**-0.9**
	comp=Z,1.4nm,0.8s,baz=54,slow=3.7,SNR=3.9						
TXAR	**Lajitas Array**	**121.54**	**52**	PKP	**PKPdf**	**01 55 18.9**	**+2.0**
	comp=Z,0.6nm,0.6s,baz=222,slow=1.7,SNR=4.2						
TORD	**Torodi Ar. Bea**	**122.96**	**288**	PKP	**PKPdf**	**01 55 20.7**	**+0.9**
	comp=Z,0.7nm,0.8s,baz=98,slow=1.3,SNR=8.5						
JCT	**Junction City**	**124.00**	**49**	*e*PKPdf	**PKPdf**	**01 55 23.9**	**+2.3**

*IDC **09** 01:46:58.8±9.0, 51°.83N×173°.41W, h0km, mb3.9/6, mb1 4.2/7, mb1mx3.6/56, mbtmp3.8/7, ML4.0/1, Error ellipse: s-maj=163.6km s-min=50.3km az=76.0*

*ISCJB **09** 01:47:11.0±0.6, 51°.75N±0°.09×171°.58W±0°.05, h35km, mb3.9/8, Error ellipse: s-maj=13.5km s-min=3.4km az=170.4*

*NEIC **09** 01:47:12.6, 51°.74N×171°.59W, h26km, mb4.0/7, ML3.8(AEIC), After AEIC.*

ISC 09 01:47:12.4±0.9, 51°.9N±0°.1×171°.64W±0°.04, h35km, n40, σ1s24/39, mb3.9/8, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOSE	**Korovin Southe**	**1.57**	**289**	P	**Pn**	**01 47 38.7**	**+1.0**
KOSE				S	**Sn**	**01 47 58.3**	**+1.5**
KOFP	**Korovin Flat P**	**1.58**	**287**	P	**Pn**	**01 47 38.5**	**+0.6**
KONE	**Korovin Northe**	**1.62**	**290**	P	**Pn**	**01 47 39.4**	**+1.0**
KOKL	**Mount Kliuchef**	**1.65**	**288**	P	**Pn**	**01 47 39.6**	**+0.7**
KOWE	**Korovin West**	**1.69**	**289**	P	**Pn**	**01 47 40.3**	**+0.9**
NIKH	**Nikolski High**	**2.04**	**56**	P	**Pn**	**01 47 44.3**	**+0.2**
NIKH				S	**Sn**	**01 48 09.3**	**+0.9**
OKTU	**Okmok Mt. Tuli**	**2.67**	**54**	P	**Pn**	**01 47 54.3**	**+1.4**
OKER	**Okmok East Rim**	**2.71**	**52**	P	**Pn**	**01 47 54.4**	**+1.0**
GSMY	**Great Sitkin M**	**2.74**	**276**	P	**Pn**	**01 47 54.5**	**+0.7**
GSTD	**Great Sitkin T**	**2.80**	**276**	P	**Pn**	**01 47 55.1**	**+0.5**
GSTD				S	**Sn**	**01 48 28.0**	**+0.8**
GSCK	**Great Sitkin C**	**2.81**	**275**	P	**Pn**	**01 47 55.3**	**+0.6**
ETKA	**Kagalaska Isla**	**2.96**	**272**	P	**Pn**	**01 47 57.8**	**+1.0**
ADAG	**Mount Adagdak**	**3.08**	**274**	P	**Pn**	**01 47 59.9**	**+1.4**
MSOM	**Makushin Julie**	**3.46**	**53**	P	**Pn**	**01 48 04.6**	**+1.0**
MTBL	**Makushin Table**	**3.67**	**53**	P	**Pn**	**01 48 07.4**	**+0.7**
UNV	**Unalaska Valle**	**3.70**	**55**	P	**Pn**	**01 48 08.1**	**+1.1**
UNV				S	**Sn**	**01 48 52.0**	**+2.8**
TAFP	**Tanaga Falls P**	**3.93**	**273**	P	**Pn**	**01 48 10.7**	**+0.5**
TAFP				S	**Sn**	**01 48 56.4**	**+1.4**
AKRB	**Akutan Reef Bi**	**4.07**	**54**	P	**Pn**	**01 48 13.6**	**+1.6**
AKUT	**Akutan**	**4.22**	**55**	P	**Pn**	**01 48 14.8**	**+0.9**
SPIA	**Saint Paul Isl**	**5.40**	**8**	P	**Pn**	**01 48 30.9**	**+0.7**
ILAR	**Eielson Array**	**18.17**	**35**	P	**Pn**	**01 51 20.1**	**-1.4**
	0.2nm,0.3s,baz=227,slow=9.1,SNR=10						
EGAK	**Eagle**	**20.32**	**39**	*e*P	**P**	**01 51 44.0**	**-1.0**
	1.9nm,0.6s						
DAWY	**Dawson**	**20.74**	**41**	*e*P	**P**	**01 51 50.1**	**+0.4**
	1.1nm,0.6s						
DLBC	**Dease Lake**	**24.35**	**58**	P	**P**	**01 52 26.9**	**+0.2**
	5.0nm,0.8s,baz=287,slow=12,SNR=10						
DLBC	**Dease Lake**	**24.35**	**58**	*e*P	**P**	**01 52 27.8**	**+1.1**
	8.1nm,0.9s						
INK	**Inuvik**	**24.55**	**34**	P	**P**	**01 52 24.8**	**-3.5**
	1.5nm,0.5s,baz=227,slow=9.1,SNR=4.5						
INK	**Inuvik**	**24.55**	**34**	*e*P	**P**	**01 52 25.9**	**-2.4**
	2.1nm,0.6s						
YKA	**Yellowknife Ar**	**31.63**	**48**	P	**P**	**01 53 30.4**	**-1.2**
	0.4nm,0.4s,baz=273,slow=7.9,SNR=6.1						
NEW	**Newport**	**34.49**	**74**	P	**P**	**01 53 57.3**	**+0.5**
	2.6nm,0.6s,baz=342,slow=19,SNR=3.4						
NEW	**Newport**	**34.49**	**74**	*e*P	**P**	**01 53 57.0**	**+0.2**
	4.3nm,0.9s						
H11N2	**WAKE ISLAND Hy**	**36.20**	**216**	T	T	02 32 38.8	
	baz=21,slow=76,SNR=27						
H11N3	**WAKE ISLAND Hy**	**36.20**	**216**	T	T	02 32 42.1	
	baz=21,slow=76,SNR=26						
H11N1	**WAKE ISLAND Hy**	**36.22**	**216**	T	T	02 32 40.7	
	baz=21,slow=76,SNR=22						
H11S1	**WAKE ISLAND Hy**	**37.39**	**215**	T	T	02 34 16.2	
	baz=21,slow=75,SNR=26						
H11S2	**WAKE ISLAND Hy**	**37.41**	**215**	T	T	02 34 09.7	
	baz=21,slow=75,SNR=24						
H11S3	**WAKE ISLAND Hy**	**37.41**	**215**	T	T	02 34 09.5	
	baz=21,slow=75,SNR=18						
BW06	**Boulder Array**	**41.88**	**77**	*e*P	**P**	**01 54 59.0**	**-0.2**
	2.0nm,0.9s						
PDAR	**Pinedale Array**	**41.88**	**77**	P	**P**	**01 54 59.2**	**0.0**
	0.9nm,0.7s,baz=318,slow=4.0,SNR=9.9						
TUC	**Tucson**	**47.70**	**90**	*e*P	**P**	**01 55 45.9**	**+0.4**
	2.3nm,0.8s						
TXAR	**Lajitas Array**	**54.16**	**87**	P	**P**	**01 56 34.1**	**-0.1**
	0.7nm,0.6s,baz=289,slow=5.1,SNR=4.8						

IDC 09 01:51:44.8±3.0, 29°.18S×176°.83W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/34, mbtmp4.0/3, Error ellipse: s-maj=180.0km s-min=32.4km az=171.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.95**	**265**	Pn	Pn	01 52 05.3	-0.2
	396nm,0.3s,baz=118,slow=8.2,SNR=13						
RAO				Sn	Sn	01 52 20.5	+0.7
	748nm,0.3s,baz=114,slow=20,SNR=10						
CTA	**Charters Tower**	**34.64**	**277**	P	P	01 58 37.5	+1.4
	2.6nm,0.7s,baz=117,slow=14,SNR=2.5						
ASAR	**Alice Springs**	**44.21**	**265**	P	P	01 59 55.7	-0.3
	1.0nm,0.6s,baz=100,slow=6.5,SNR=12						
WRA	**Warramunga Arr**	**45.09**	**270**	P	P	02 00 02.1	-0.9
	1.5nm,0.8s,baz=110,slow=7.9,SNR=4.8						
FINES	**FINESS Array B**	**144.33**	**341**	PKP	PKPbc	02 11 21.1	+0.5
	1.3nm,0.6s,baz=65,slow=1.9,SNR=12						

*IDC **09** 01:53:54.4±0.7, 29°.00S×176°.94W, h0km, mb4.6/10, mb1 4.7/11, mb1mx4.4/33, mbtmp4.6/11, ML4.9/1, MS4.4/12, Ms1 4.4/12, ms1mx4.1/26, Error ellipse: s-maj=27.2km s-min=15.4km az=149.0*

*NEIC **09** 01:53:56.7±4.0, 29°.14S×176°.90W, h18km±23km, mb4.8/14, Error ellipse: s-maj=13.4km s-min=8.4km az=88.0*

*GCMT **09** 01:53:56.7±0.3, 29°.06S×176°.73W, h26km, MW5.1/75, Moment Tensor Solution. s60,c78; s75,c98; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}5.22±.24; $M_{\theta\theta}$-0.51±.18; $M_{\phi\phi}$-4.71±.16; $M_{r\theta}$0.30±.35; $M_{r\phi}$-0.92±.10; $M_{\theta\phi}$3.88±.28; Best double couple: $M_0$6.38400×10^{16} NP1:$\phi_{s\theta}$8.00000°, δ64.00000°, λ86.00000°. NP2: ϕ_s196.00000°, δ26.00000°, λ97.00000°. Principal axes: T 6.5560, Plg71.0000°, Azm270.0000°; N -0.3410, Plg3.0000°, Azm9.0000°; P -6.2120, Plg19.0000°, Azm100.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **09** 01:53:58.3±0.5, 29°.25S±0°.07×177°.0W±0°.1, h36km, mb4.9/27, MS4.5/10 Error ellipse: s-maj=13.5km s-min=8.8km az=20.4*

*MOS **09** 01:54:00.0±2.5, 28°.91S×177°.26W, h33km, mb4.8/17, Error ellipse: s-maj=15.4km s-min=13.8km az=24.0*

ISC 09 01:53:59.4±0.5, 29°.14S±0°.08×176°.82W±0°.08, h36km, n190, σ1s38/178, mb4.9/27, MS4.6/10, 13C-7D, Kermadec Islands region

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

ASAR			LR	LR	02 19 42.8		
	comp=Z,2µm,19.1s,baz=98,slow=35						
ASAR	**Alice Springs**	**44.22 265**	P	**P**	**02 02 03.6**	**-1.8**	
ASAR			pmax	pmax			
	comp=Z,8.0nm,0.9s						
ASAR			MLR	MLR			
	comp=Z,2µm,19.1s						
WB2	**Warramunga Arr**	**45.09 270**	*e*P	**P**	**02 02 10.7**	**-1.6**	
	comp=Z,13nm,0.9s						
WRAB	**Tennant Creek**	**45.09 270**	*e*P	**P**	**02 02 10.7**	**-1.6**	
WRAB			pmax	pmax			
	comp=Z,9.0nm,0.8s						
WRAB	**Tennant Creek**	**45.09 270**	*e*P	**P**	**02 02 10.7**	**-1.6**	
	comp=Z,9.1nm,0.8s						
WRA	**Warramunga Arr**	**45.10 270**	P	**P**	**02 02 10.3**	**-2.1**	
	comp=Z,5.9nm,0.6s,baz=110,slow=8.0,SNR=28						
WRA			LR	LR	02 19 56.9		
	comp=Z,536nm,18.2s,baz=115,slow=35						
FORT	**Forrest**	**47.38 254**	*e*P	**P**	**02 02 29.0**	**-1.1**	
	comp=Z,152nm,0.6s						
VNDA	**Vanda**	**49.45 186**	LR	LR	02 21 05.4		
	comp=Z,202nm,19.7s,baz=27,slow=33						
FITZ	**Fitzroy Crossi**	**53.41 268**	P	**P**	**02 03 14.8**	**-1.0**	
	comp=Z,8.2nm,1.0s,baz=207,slow=13,SNR=3.3						
GUMO	**Guam**	**56.34 314**	LR	LR	02 24 36.6		
	comp=Z,102nm,22.0s,baz=182,slow=33						
CASY	**Casey**	**56.73 208**	*e*P	**P**	**02 03 38.6**	**-0.6**	
	comp=Z,22nm,0.9s						
MAW	**Mawson**	**73.84 200**	P	**P**	**02 05 31.8**	**+1.9**	
	comp=Z,5.6nm,1.0s,baz=115,slow=6.1,SNR=7.4						
MAW			LR	LR	02 38 40.7		
	comp=Z,331nm,18.4s,baz=68,slow=36						
MAW	**Mawson**	**73.84 200**	*e*P	**P**	**02 05 31.1**	**+1.2**	
	comp=Z,3.3nm,1.2s						
MJAR	**Matsushiro Arr**	**77.81 324**	P	**P**	**02 05 51.7**	**-1.2**	
	comp=Z,2.2nm,0.8s,baz=161,slow=5.8,SNR=4.1						
SYO	**Syowa Base**	**78.57 193**‖	*e*P	**P**	**02 05 55.6**	**-1.1**	
SYO	**Syowa Base**	**78.57 193**‖	*e*pP	P	02 06 01.9	+5.2	
SNAA	**Sanae**	**79.38 178**	P	**P**	**02 06 01.1**	**-0.2**	
SNAA	**Sanae**	**79.38 178**	*e*P	**P**	**02 06 00.3**	**-1.0**	
SNAA	**Sanae**	**79.38 178**	*e*P	**P**	**02 06 00.3**	**-1.0**	
	comp=Z,563nm,1.2s						
VNA1	**Neumayer--Stat**	**80.16 176**	P	P	02 06 13.8	+8.4	
PLCA	**Paso Flores**	**82.61 133**	LR	LR	02 34 16.4		
	comp=Z,144nm,20.5s,baz=300,slow=29						
YSS	**Yuzh-Sakhalins**	**84.07 333**‖	*e*P	**P**	**02 06 28.2**	**+2.2**	
YSS			pmax	pmax			
	comp=Z,20nm,1.0s						
PETK	**Petropavlovsk-**	**84.86 345**	P	**P**	**02 06 30.8**	**+0.9**	
	comp=Z,4.4nm,0.7s,baz=124,slow=6.8,SNR=8.1						
USRK	**Ussuriysk Ar.**	**86.69 326**	P	**P**	**02 06 39.7**	**+0.5**	
	comp=Z,6.5nm,0.8s,baz=154,slow=4.0,SNR=17						
MDJ	**Mudanjiang**	**88.18 325**	P	**P**	**02 06 47.6**	**+1.3**	
MDJ			pmax	pmax			
	comp=Z,5.0nm,0.4s						
MDJ			pmax	pmax			
	comp=Z,140nm,8.9s						
CN2	**Changchun**	**89.77 322**	*e*P	**P**	**02 06 54.3**	**+0.5**	
CN2			PP	**PP**	**02 10 29.8**	**+2.9**	
CN2	**Changchun**	**89.77 322**	*e*S	**S**	**02 17 43.6**	**+0.7**	
CN2			pmax	pmax			
	comp=Z,20nm,1.2s						
CN2			pmax	pmax			
	comp=Z,100nm,3.0s						
TIA	**Tai'an**	**89.88 312**	*e*P	**P**	**02 06 56.1**	**+1.6**	
TIA			pmax	pmax			
	comp=Z,10.0nm,1.0s						
GYA	**Guiyang**	**91.83 299**	*e*P	**P**	**02 07 04.2**	**+0.2**	
GYA			pmax	pmax			
	comp=Z,10.0nm,1.0s						
HLID	**Hailey**	**92.18 40**	*e*P	**P**	**02 07 07.4**	**+2.1**	
	comp=Z,0.8nm,0.6s						
KMI	**Kunming**	**94.18 296**	P	**P**	**02 07 15.2**	**+0.2**	
KMI			pmax	pmax			
	comp=Z,8.0nm,0.5s						
KMI			pmax	pmax			
	comp=Z,140nm,6.0s						
HHC	**Hu-ho-hao-te**	**96.11 314**	*e*P	**P**	**02 07 23.6**	**+0.3**	
HHC			pmax	pmax			
	comp=Z,21nm,1.4s						
HHC			pmax	pmax			
	comp=Z,130nm,7.8s						
IL1	**Eielson Array**	**96.47 12**	*e*P	**P**	**02 07 25.0**	**+0.8**	
ILAR	**Eielson Array**	**96.47 12**	P	**P**	**02 07 24.3**	**+0.1**	
	comp=Z,0.6nm,0.8s,baz=235,slow=5.0,SNR=6.4						
BILL	**Bilibino**	**97.70 354**	*e*P	**P**	**02 07 28.8**	**-0.9**	
BILL			*e*		02 11 25.4		
BILL			pmax	pmax			
	comp=Z,4.0nm,1.2s						
LZH	**Lanzhou**	**98.80 306**	*e*P	**P**	**02 07 32.0**	**-3.7**	
LZH			pP	Pdif	02 07 38.3	+2.6	
LZH			sP	PcP	02 07 41.0	+5.3	
LZH			*e*PP	**PP**	**02 11 36.5**	**-1.2**	
LZH			pmax	pmax			
	comp=Z,15nm,1.5s						
LZH			pmax	pmax			
	comp=Z,72nm,9.4s						
LZH			LR	LR			
	comp=N,150nm,17.5s						
LZH			LR	LR			
	comp=E,150nm,17.0s						
LZH			LR	LR			
	comp=Z,200nm,19.6s						
MK01	**Makanchi Array**	**117.74 310**	*e*PKPdf	**PKPdf**	**02 12 41.5**	**0.0**	
MKAR	**Makanchi Array**	**117.75 310**	PKP	**PKPdf**	**02 12 41.2**	**-0.4**	
	comp=Z,1.2nm,0.8s,baz=96,slow=1.2,SNR=7.7						
ZALV	**Zalesovo Beam**	**117.77 319**	PKP	**PKPdf**	**02 12 41.4**	**+0.1**	
	comp=Z,0.3nm,0.3s,baz=126,slow=2.6,SNR=3.2						
KSH	**Kashi**	**120.48 301**	*e*PKP	**PKPdf**	**02 12 45.7**	**-1.5**	
KSH			*es*PKP		02 12 59.9		
KSH			*e*PP	PP	02 14 23.6	+8.9	
KSH			SKS	**SKSdf**	**02 19 52.6**	**-4.0**	
KSH			SKKS	**SKKSac**	**02 21 11.3**	**0.0**	
TKM2	**Tokmak 2**	**121.53 305**	*e*PKIKP	**PKPdf**	**02 12 49.4**	**+0.2**	
TKM2	**Tokmak 2**	**121.53 305**	*e*PKPdf	**PKPdf**	**02 12 49.4**	**+0.2**	
EKS2	**Erkin-Say**	**122.79 304**	*e*PKIKP	**PKPdf**	**02 12 51.7**	**+0.2**	
EKS2	**Erkin-Say**	**122.79 304**	*e*PKPdf	**PKPdf**	**02 12 51.7**	**+0.2**	
BVAR	**Borovoye Array**	**126.22 316**	PKP	**PKPdf**	**02 12 58.3**	**+0.7**	
	comp=Z,2.8nm,0.8s,baz=114,slow=1.8,SNR=15						
BRVK	**Borovoye**	**126.28 316**	*e*PKIKP	**PKPdf**	**02 12 58.4**	**+0.7**	
BRVK	**Borovoye**	**126.28 316**	*e*PKPdf	**PKPdf**	**02 12 58.4**	**+0.7**	
ZRNK	**Zerenda**	**127.05 316**	*e*PKIKP	**PKPdf**	**02 12 59.5**	**+0.3**	
ZRNK	**Zerenda**	**127.05 316**	*e*PKPdf	**PKPdf**	**02 12 59.5**	**+0.3**	
GEYT	**Alibeck**	**133.95 296**	PKP	**PKPdf**	**02 13 15.1**	**+2.2**	
	comp=Z,1.8nm,0.7s,baz=142,slow=3.4,SNR=4.0						
FIA1	**FINESS Array S**	**144.30 341**	*e*PKPdf	**PKPab**	**02 13 29.0**	**+0.1**	
FINES	**FINESS Array B**	**144.30 341**	PKP	**PKPab**	**02 13 28.9**	**+0.1**	
	comp=Z,1.1nm,0.7s,baz=58,slow=4.7,SNR=40						
GNI	**Garni**	**144.38 299**	*e*PKIKP	**PKPdf**	**02 13 31.6**	**-0.3**	
GNI	**Garni**	**144.38 299**	*e*PKPdf	**PKPdf**	**02 13 31.6**	**-0.3**	
ZEI	**Tsey**	**144.69 304**	*i* PKIKP	PKPbc	02 13 31.6	+0.3	
ZEI			pmax	pmax			
	comp=Z,31nm,0.5s						
OBN	**Obninsk**	**144.71 327**	*e*PKIKP	**PKPab**	**02 13 29.6**	**-0.9**	
OBN			pmax	pmax			
	comp=Z,20nm,1.1s						
OBN	**Obninsk**	**144.71 327**	*e*PKPdf	PKPbc	02 13 30.8	+0.2	
GOF	**Gofitskoye**	**144.86 308**‖	*e*PKIKP	**PKPab**	**02 13 30.7**	**-0.8**	
ONI	**Oni**	**145.04 304**	P	**PKPdf**	**02 13 33.3**	**+0.5**	
ONI	**Oni**	**145.04 304**	*e*PKIKP	**PKPdf**	**02 13 33.3**	**+0.5**	
CLDR	**Caldiran**	**145.09 298**	*e*P	**PKPdf**	**02 13 33.8**	**+0.5**	
BGD	**Bogdanovka**	**145.13 301**	P	**PKPdf**	**02 13 34.4**	**+1.2**	
AKH	**Akhalkalaki**	**145.19 302**‖	*i* PP	**PKPdf**	**02 13 35.2**	**+1.9**	
KBZ	**Khabaz**	**145.24 306**	PKPbc	PKPbc	**02 13 32.7**	**0.0**	
	comp=Z,6.4nm,0.9s,baz=105,slow=5.6,SNR=14						
VSR	**Storozhevoye**	**145.27 320**	*e*PKIKP	**PKPdf**	**02 13 32.9**	**+0.1**	
VSR			pmax	pmax			
	comp=Z,30nm,1.0s						
HKR	**Hakkari**	**145.31 295**	*e*P	**PKPbc**	**02 13 32.6**	**-0.9**	
KIV	**Kislovodsk**	**145.34 306**	*e*PKIKP	**PKPbc**	**02 13 31.9**	**-1.3**	
KIV			pmax	pmax			
	comp=Z,14nm,1.1s						
KIV	**Kislovodsk**	**145.34 306**	*e*PKPdf	**PKPab**	**02 13 33.6**	**+0.2**	
CUKT	**Cukurca**	**145.43 294**	*e*P	**PKPab**	**02 13 34.5**	**+0.5**	
VANB	**Van**	**145.54 297**	*e*P	**PKPab**	**02 13 34.4**	**0.0**	
KARS	**Kars**	**145.59 300**	*e*P	**PKPab**	**02 13 35.3**	**+0.8**	
CHVG	**Ch'k'valeri**	**146.02 304**	P	**PKPab**	**02 13 36.3**	**+0.5**	
SENK	**Senkaya-Erzuru**	**146.15 300**	*e*P	**PKPdf**	**02 13 33.5**	**-1.5**	
EZM	**Erzurum**	**146.99 299**	*e*P	**PKPab**	**02 13 39.5**	**-0.5**	
NB2	**NORSAR Subarra1**	**147.65 353**	PKP	**PKPbc**	**02 13 39.7**	**+0.3**	
	comp=Z,7.4nm,0.9s,baz=13,slow=3.4						
NOA	**NORSAR Array B**	**147.65 353**	PKPbc	**PKPbc**	**02 13 39.2**	**-0.2**	
	comp=Z,4.9nm,0.9s,baz=14,slow=4.3,SNR=13						
YEDI	**Yedisu-Bingol**	**147.67 299**	*e*P	**PKPbc**	**02 13 40.7**	**+0.4**	
PTK	**Pertek**	**148.62 298**	*e*P	**PKPbc**	**02 13 44.4**	**+1.5**	
ROOS	**tl_alroos**	**150.62 289**	*e*P	**PKPdf**	**02 13 40.0**	**-2.3**	
RABH	**Abou Rabath**	**150.69 289**	*e*P	**PKPbc**	**02 13 48.2**	**+0.3**	
KMRS	**Kahramanmaras**	**150.74 295**	*e*P	**PKPbc**	**02 13 45.3**	**-2.6**	
KVT	**Kavak**	**150.76 303**	*e*P	**PKPbc**	**02 13 47.1**	**-0.8**	
AKASG	**Malin Array Be**	**150.89 325**	PKPbc	**PKPbc**	**02 13 47.9**	**+0.2**	
	comp=Z,8.4nm,0.7s,baz=47,slow=2.7,SNR=26						
KIEV	**Kiev**	**150.91 325**	*e*PKIKP	**PKPbc**	**02 13 45.7**	**-2.1**	
KIEV	**Kiev**	**150.91 325**	*e*PKPbc	**PKPbc**	**02 13 45.7**	**-2.1**	
SARI	**SarD1z-Kayseri**	**151.00 297**	*e*P	**PKPbc**	**02 13 49.7**	**+1.0**	
SUW	**Suwalki**	**151.19 335**	*e*PKP	**PKPbc**	**02 13 49.5**	**+1.2**	
SUW	**Suwalki**	**151.19 335**	*e*PKIKP	**PKPbc**	**02 13 49.5**	**+1.2**	
BTCH	**Batrach**	**151.23 292**	*e*P	**PKPbc**	**02 13 49.5**	**+0.3**	
MARH	**Ras Al Marh**	**151.30 288**	*e*P	**PKPbc**	**02 13 50.4**	**+0.7**	
TOTH	**TOTAH**	**151.34 287**	*e*P	**PKPbc**	**02 13 47.7**	**-1.8**	
HAWK	**Haweek**	**151.35 289**	*e*P	**PKPbc**	**02 13 49.8**	**+0.3**	
BIDA	**Albida**	**151.40 290**	*e*P	**PKPbc**	**02 13 49.1**	**-0.5**	
KOZT	**Kozan**	**151.59 296**	*e*P	**PKPbc**	**02 13 53.8**	**+3.9**	
TCHB	**Talchebab**	**151.71 285**	*e*P	**PKPbc**	**02 13 51.6**	**+1.3**	
CORM	**Corum**	**152.02 302**	*e*P	PKPdf	02 13 34.7	-10	
MERS	**Mersin**	**152.70 295**	*e*P	**PKPbc**	**02 13 51.3**	**-1.1**	
BR131	**Keskin Array S**	**152.87 301**	*e*PKPbc	**PKPbc**	**02 13 53.5**	**+0.6**	
BRTR	**Keskin Array B**	**152.87 301**	PKPbc	**PKPbc**	**02 13 53.0**	**+0.2**	
	comp=Z,1.7nm,0.8s,baz=125,slow=3.4,SNR=10						
BRTR			PKPab	**PKPab**	**02 14 02.2**	**-1.8**	
	comp=Z,1.2nm,0.5s,baz=145,slow=6.0,SNR=4.7						
SORM	**Soroca**	**152.88 321**‖	*i* P	**PKPbc**	**02 13 53.3**	**+0.9**	
ANTO	**Ankara**	**153.47 302**	*e*PKIKP	**PKPbc**	**02 13 55.0**	**+0.9**	
ANTO	**Ankara**	**153.47 302**	*e*PKPbc	**PKPbc**	**02 13 55.0**	**+0.9**	
BR231	**Keskin MP Arra**	**153.49 302**	*e*PKPbc	**PKPbc**	**02 13 53.4**	**-0.8**	
CSS	**Mathiatis**	**153.86 291**	*e*PKPab	**PKPab**	**02 14 08.8**	**+0.6**	
LVV	**L'vov**	**153.98 328**	*e*PKP2	**PKPab**	**02 14 08.3**	**+0.2**	
LEF	**Lefka**	**154.20 291**	*e*P	**PKPbc**	**02 13 55.6**	**-0.1**	
KWP	**Kalwaria Pacla**	**154.71 329**	*e*PKP	**PKPab**	**02 14 12.3**	**+1.0**	
KWP	**Kalwaria Pacla**	**154.71 329**	*e*PKP2	**PKPab**	**02 14 12.3**	**+1.0**	
TESR	**Tescani**	**154.76 320**‖	*i* P	**PKPab**	**02 14 12.2**	**+0.6**	
TIRR	**Tirgusor**	**154.80 314**‖	*i* P	**PKPab**	**02 14 13.6**	**+1.8**	
TIRR	**Tirgusor**	**154.80 314**	*e*PKP2	**PKPab**	**02 14 12.3**	**+0.5**	
TIRR	**Tirgusor**	**154.80 314**	*e*PKPab	**PKPab**	**02 14 12.3**	**+0.5**	
BURAR	**Bucovina Array**	**154.88 323**‖	*i* P	**PKPab**	**02 14 10.0**	**-2.2**	
VRI	**Vrincioaia**	**155.09 319**‖	*i* P	**PKPab**	**02 14 13.6**	**+0.6**	
PLOR	**Plostina**	**155.14 319**‖	*i* P	**PKPab**	**02 14 13.9**	**+0.6**	
KOLS	**Kolonicke sedl**	**155.42 329**	*e*PKP2	**PKPab**	**02 14 12.2**	**-2.1**	
KOLS	**Kolonicke sedl**	**155.42 329**	*e*PKP	**PKPab**	**02 14 12.2**	**-2.1**	
STHS	**Stebnicka Huta**	**155.51 331**	*e*PKP2	**PKPab**	**02 14 15.7**	**+1.0**	
STHS	**Stebnicka Huta**	**155.51 331**	*e*PKP	**PKPab**	**02 14 15.7**	**+1.0**	
UZH	**Uzhgorod**	**155.63 328**	*e*PKP2	**PKPab**	**02 14 15.3**	**+0.1**	
MLR	**Muntele Rosu**	**155.75 318**‖	*i* P	**PKPab**	**02 14 14.1**	**-1.9**	
DOPR	**Dopca**	**155.79 320**‖	*i* P	**PKPab**	**02 14 17.6**	**+1.5**	
CRVS	**Cervenica-Dubn**	**155.80 330**	*e*PKP2	**PKPab**	**02 14 15.7**	**-0.3**	
CRVS	**Cervenica-Dubn**	**155.80 330**	*e*PKP	**PKPab**	**02 14 15.7**	**-0.3**	
KSP	**Ksiaz**	**156.18 339**	*e*PKP	**PKPab**	**02 14 18.7**	**+1.2**	
KSP	**Ksiaz**	**156.18 339**	*e*PKP2	**PKPab**	**02 14 18.7**	**+1.2**	
VOIR		**156.30 319**‖	*i* P	**PKPab**	**02 14 13.4**	**-4.9**	
OKC	**Ostrava-Krasne**	**156.41 335**	*e*PKPAB	**PKPab**	**02 14 19.1**	**+0.6**	
OKC	**Ostrava-Krasne**	**156.41 335**	*e*PKP2	**PKPab**	**02 14 19.1**	**+0.6**	
LANS	**Liptovska Anna**	**156.45 333**	*e*PKP2	**PKPab**	**02 14 20.5**	**+1.7**	
LANS	**Liptovska Anna**	**156.45 333**	*e*PKP	**PKPab**	**02 14 20.5**	**+1.7**	
KECS	**Kecovo**	**156.54 330**	*e*PKP2	**PKPab**	**02 14 20.2**	**+1.1**	
KECS	**Kecovo**	**156.54 330**	*e*PKP	**PKPab**	**02 14 20.2**	**+1.1**	
UPC	**Upice**	**156.56 339**	*e*PKPAB	**PKPab**	**02 14 20.8**	**+1.7**	
UPC	**Upice**	**156.56 339**	*e*PKP2	**PKPab**	**02 14 20.8**	**+1.7**	
ARR	**Arges**	**156.57 320**‖	*i* P	**PKPab**	**02 14 21.6**	**+2.1**	
DPC	**Dobruska-Polom**	**156.60 338**	*e*PKPAB	**PKPab**	**02 14 20.9**	**+1.5**	
DPC			*ex*	x	02 14 29.5		
DPC	**Dobruska-Polom**	**156.60 338**	*e*PKP2	**PKPab**	**02 14 20.9**	**+1.5**	
DRGR		**156.71 324**‖	*i* P	**PKPab**	**02 14 19.9**	**-0.1**	
PVCC	**Panska Ves**	**156.97 341**	*e*PKPAB	**PKPab**	**02 14 22.5**	**+1.6**	
PVCC	**Panska Ves**	**156.97 341**	*e*PKP2	**PKPab**	**02 14 22.5**	**+1.6**	
VYHS	**Vyhne**	**157.23 332**	*e*PKP2	**PKPab**	**02 14 23.4**	**+1.3**	
VYHS	**Vyhne**	**157.23 332**	*e*PKP	**PKPab**	**02 14 23.4**	**+1.3**	
VRAC	**Vranov**	**157.40 337**‖	*i* P	**PKPab**	**02 14 23.4**	**+0.6**	
PRU	**Pruhonice**	**157.46 341**	*e*PKPAB	**PKPab**	**02 14 24.4**	**+1.4**	
PRU	**Pruhonice**	**157.46 341**	*e*PKP2	**PKPab**	**02 14 24.4**	**+1.4**	
NKC	**Novy Kostel**	**157.79 344**	*e*PKPAB	**PKPab**	**02 14 25.9**	**+1.4**	
NKC	**Novy Kostel**	**157.79 344**	*e*PKP2	**PKPab**	**02 14 25.9**	**+1.4**	
KHC	**Kasperske Hory**	**158.51 341**	*e*PKPAB	**PKPab**	**02 14 28.2**	**+0.6**	
KHC			*ep*PKP	pPKP	02 14 36.5		
KHC	**Kasperske Hory**	**158.51 341**	*e*PKP2	**PKPab**	**02 14 28.2**	**+0.6**	
MDVR	**Moldovita**	**158.56 322**‖	*i* P	**PKPab**	**02 14 28.5**	**+0.4**	
GERES	**GERESS Array B**	**159.73 341**	PKPab	**PKPab**	**02 14 29.2**	**+0.5**	
	comp=Z,0.4nm,0.5s,baz=54,slow=3.4,SNR=8.4						
VTS	**Vitosha**	**159.01 315**‖	*i* P	**PKPab**	**02 14 32.3**	**+2.1**	
WLF	**Walferdange**	**159.38 355**	*e*PKIKP	**PKPdf**	**02 13 54.3**	**+0.7**	
WLF	**Walferdange**	**159.38 355**	*e*PKPdf	**PKPdf**	**02 13 54.3**	**+0.7**	
PDG	**Podgorica**	**161.44 320**‖	*i* P	**PKPab**	**02 14 41.9**	**+1.3**	
TORD	**Torodi Ar. Bea**	**164.03 175**	PKP	**PKPdf**	**02 14 00.9**	**+1.4**	
	comp=Z,1.2nm,1.1s,baz=214,slow=1.6,SNR=3.7						
TORD			PKPab	**PKPab**	**02 14 52.8**	**+0.4**	
	comp=Z,0.9nm,0.8s,baz=171,slow=2.3,SNR=5.8						
TIP	**Timpagrande**	**164.97 315**	*e*PKPdf	**PKPdf**	**02 13 59.1**	**-0.6**	
TIP			*e*PKPab	**PKPab**	**02 14 55.2**	**-1.1**	

*IDC **09** 02:06:51.3±1.0,29°.48S×176°.16W,h0km,mb4.2/3, mb1 4.3/3,mb1mx3.9/27,mbtmp4.2/3,Error ellipse: s-maj=47.3km s-min=22.4km az=178.0*
*NEIC **09** 02:06:51.9±0.4,29°.95S×176°.16W,h10km,mb4.6/9,Error ellipse: s-maj=12.5km s-min=8.6km az=133.0*
ISC 09 02:06:52.1±0.6,29°.8S±0°.1×176°.23W±0°.08,h10km,n29, σ1°34/30,mb4.5/12,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
RAO	**Raoul Island**	**1.56**	**289**	Pn		**Pg**		**02 07 21.4**	**-0.7**
	321nm,0.3s,baz=16,slow=12,SNR=5.5								
RAO				Sn		**Sg**		**02 07 42.6**	**+0.3**
	1µm,0.3s,baz=77,slow=20,SNR=7.4								
URZ	**Urewera**	**10.12**	**211**	Pn		Pn		02 09 14.8	-2.6
	1.5nm,0.3s,baz=256,slow=5.0,SNR=6.9								
URZ				Sn		Sn		02 11 03.3	-7.6
	1.0nm,0.3s,baz=29,slow=23,SNR=5.8								
KHZ	**Kahutara**	**15.08**	**210**	*e*Pn		**Pn**		**02 10 22.8**	**-2.4**
	110nm,0.8s								
RPZ	**Rata Peaks**	**17.23**	**213**	P		**Pn**		**02 10 50.1**	**-2.7**
	1.1nm,0.3s,baz=346,slow=17,SNR=4.4								
CTAO	**Charters Tower**	**35.23**	**277**	*e*P		**P**		**02 13 48.0**	**+1.1**
	22nm,0.6s								
STKA	**Stephens Creek**	**36.12**	**256**	P		**P**		**02 13 56.9**	**+2.4**
	2.6nm,0.6s,baz=110,slow=13,SNR=8.0								
PMG	**Port Moresby**	**39.75**	**293**	*e*P		**P**		**02 14 25.0**	**-0.2**
	26nm,1.1s								
ASAR	**Alice Springs**	**44.69**	**265**	P		**P**		**02 15 06.2**	**+0.8**
	0.7nm,0.4s,baz=106,slow=8.0,SNR=14								
ASAR				PcP		**PP**		**02 16 49.6**	**-0.1**
	0.8nm,0.6s,baz=119,slow=4.0,SNR=6.0								
WRAB	**Tennant Creek**	**45.61**	**271**	*e*P		**P**		**02 15 12.8**	**0.0**
	6.0nm,0.8s								
WRA	**Warramunga Arr**	**45.62**	**271**	P		**P**		**02 15 12.5**	**-0.4**
	2.4nm,0.5s,baz=112,slow=7.1,SNR=22								
CASY	**Casey**	**56.42**	**208**	*e*P		P		02 16 27.6	-5.8
	1.2nm,0.8s								
SNAA	**Sanae**	**78.74**	**178**	*e*P		**P**		**02 18 55.5**	**+1.0**
CMB	**Columbia Colle**	**85.27**	**41**	*e*P		**P**		**02 19 29.8**	**+0.7**
	9.5nm,0.7s								
TUC	**Tucson**	**87.52**	**50**	*e*P		**P**		**02 19 40.0**	**-0.3**
	2.0nm,0.8s								
ANMO	**Albuquerque**	**91.98**	**50**	*e*P		**P**		**02 20 01.4**	**0.0**
	0.9nm,0.8s								
HLID	**Hailey**	**92.33**	**40**	*e*P		**P**		**02 20 03.1**	**+0.4**
	1.6nm,0.9s								
BOZ	**Bozeman (W)**	**95.15**	**40**	*e*P		**P**		**02 20 15.7**	**+0.1**
	2.0nm,1.0s								
TKM2	**Tokmak 2**	**122.30**	**304**	*e*PKPdf		**PKPdf**		**02 25 47.6**	**+0.1**
FINES	**FINESS Array B**	**145.06**	**341**	PKP		**PKPdf**		**02 26 28.6**	**-0.4**
	2.3nm,0.5s,baz=61,slow=2.9,SNR=27								
GNI	**Garni**	**145.13**	**298**	*e*PKPbc		**PKPdf**		**02 26 29.8**	**-0.3**
OBN	**Obninsk**	**145.51**	**327**	PKPbc		**PKPdf**		**02 26 29.6**	**-0.3**
	15nm,0.5s,baz=191,slow=17,SNR=7.2								
OBN	**Obninsk**	**145.51**	**327**	*e*PKPbc		**PKPdf**		**02 26 30.6**	**+0.6**
NB2	**NORSAR Subarra1**	**148.33**	**353**	PKP		**PKPab**		**02 26 37.9**	**-3.3**
	comp=Z,1.0nm,0.7s,baz=7.3,slow=2.9								
NOA	**NORSAR Array B**	**148.33**	**353**	PKPbc		**PKPab**		**02 26 38.4**	**-2.8**
	comp=Z,1.4nm,0.7s,baz=13,slow=4.3,SNR=5.5								
HFS	**Hagfors**	**148.90**	**350**	PKPbc		**PKPbc**		**02 26 38.4**	**-1.1**
	comp=Z,2.1nm,0.8s,baz=170,slow=0.9,SNR=4.6								
AKASG	**Malin Array Be**	**151.70**	**325**	PKPbc		**PKPbc**		**02 26 47.1**	**+0.7**
	comp=Z,1.9nm,0.6s,baz=46,slow=2.9,SNR=6.5								
KIEV	**Kiev**	**151.71**	**325**	*e*PKPbc		**PKPbc**		**02 26 46.7**	**+0.2**
KIEV				*e*PKPab		**PKPab**		**02 26 55.7**	**+0.4**
MMAI	**Mount Meron Ar**	**152.86**	**285**	PKPbc		**PKPbc**		**02 26 49.5**	**-0.2**
	comp=Z,0.4nm,0.4s,baz=109,slow=6.6,SNR=3.5								
TORD	**Torodi Ar. Bea**	**163.35**	**173**	PKPab		**PKPab**		**02 27 48.2**	**+2.0**
	comp=Z,4.0nm,0.7s,baz=187,slow=4.1,SNR=37								

MAN 09 02:08:19,17°.48N×122°.62E,h30km,mb3.7,ML2.4,MS2.0, 1D,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
CVP	**Callao Caves**	**0.79**	**286**	‖ *i* P		Pb		02 08 35.0	+0.8
SGCP	**Mt. Cagua**	**0.93**	**324**	*e*P		Pb		02 08 36.5	0.0
SGCP				*e*S		Sn		02 08 48.5	+0.1
APYP	**Conner**	**1.36**	**286**	*e*P		Pb		02 08 43.1	-0.8
APYP				*e*S		Sb		02 09 00.5	-0.4
BALP	**Baler**	**2.00**	**210**	*e*P		Pn		02 08 52.5	+1.8
BALP				*e*S		Sn		02 09 15.4	+0.6

IDC 09 02:09:57.6±4.5,28°.56S×177°.08W,h0km,mb3.5/2, mb1 3.8/2,mb1mx3.6/24,mbtmp3.5/2,Error ellipse: s-maj=103.8km s-min=30.4km az=120.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
RAO	**Raoul Island**	**1.01**	**227**	Pn		Pn		02 10 19.4	+0.4
	327nm,0.3s,baz=73,slow=13,SNR=7.2								
RAO				Sn		Sn		02 10 34.0	+0.1
	785nm,0.3s,baz=122,slow=18,SNR=9.6								
ASAR	**Alice Springs**	**44.04**	**265**	P		P		02 18 07.5	0.0
	0.3nm,0.4s,baz=97,slow=7.6,SNR=3.7								
WRA	**Warramunga Arr**	**44.87**	**270**	P		P		02 18 13.9	-0.1
	0.6nm,0.6s,baz=110,slow=7.8,SNR=2.7								
FINES

YKA	**Yellowknife Ar**	**94.63**	**25**	LR	LR	03 03 21.1	
	comp=Z,15nm,18.6s,baz=180,slow=33						
PLCA	**Paso Flores**	**94.81**	**135**	LR	LR	02 58 10.0	
	comp=Z,93nm,21.3s,baz=294,slow=30						
FINES	**FINESS Array B**	**130.88**	**343**	PP	PP	02 32 38.9	+3.2
	1.5nm,0.9s,baz=20,slow=6.1,SNR=4.7						
BRTR	**Keskin Array B**	**141.30**	**314**	PKP	**PKPdf**	**02 30 40.1**	**0.0**
	0.7nm,0.9s,baz=154,slow=6.9,SNR=3.5						
CSS	**Mathiatis**	**143.44**	**307**	*e*PKPdf	**PKPdf**	**02 30 45.6**	**+1.8**
PRU	**Pruhonice**	**144.03**	**342**	*e*PKP	**PKPdf**	**02 30 50.5**	**+6.1**
TREC	**Trest**	**144.34**	**340**	*e*PKP	**PKPdf**	**02 30 51.4**	**+6.4**
KHC	**Kasperske Hory**	**145.09**	**342**	*e*PKP	**PKPdf**	**02 30 53.1**	**+6.8**
KHC	**Kasperske Hory**	**145.09**	**342**	*e*PKPbc	**PKPab**	**02 30 45.9**	**+0.1**
GERES	**GERESS Array B**	**145.30**	**342**	PKPbc	**PKPbc**	**02 30 46.5**	**0.0**
	0.7nm,0.6s,baz=54,slow=3.4,SNR=6.1						
CONA	**Conrad Observa**	**145.40**	**339**	*i* pPKPbc	pPKPbc	02 30 54.5	+0.4
	12nm,0.9s						
MOA	**Molln**	**146.00**	**340**	*i* pPKPdf	pPKPdf	02 30 56.2	+1.1
	16nm,1.5s						
WLF	**Walferdange**	**146.30**	**350**	*e*PKPbc	**PKPab**	**02 30 50.1**	**-0.1**
SOKA	**Soboth**	**146.76**	**338**	*i* pPKPdf	pPKPdf	02 30 57.7	+1.1
	4.4nm,0.6s						
BFO	**Black Forest**	**147.18**	**347**	*e*PKPbc	**PKPbc**	**02 30 52.6**	**+0.5**
MYKA	**Terra Mystica**	**147.28**	**340**	*i* pPKPdf	pPKPdf	02 30 58.9	+1.5
	6.8nm,0.6s						
MOTA	**Moosalm**	**147.41**	**343**	*i* pPKPdf	pPKPdf	02 30 59.6	+2.0
	10nm,0.8s						
ABTA	**Abfaltersbach**	**147.54**	**341**	*e*pPKPdf	pPKPdf	02 30 59.8	+1.9
	4.6nm,0.6s						
FETA	**Feichten**	**147.81**	**343**	*i* pPKPdf	pPKPdf	02 31 01.2	+2.9
	15nm,1.1s						
DAVOX	**Davos/Dischmat**	**148.26**	**344**	PKPbc	**PKPbc**	**02 30 56.3**	**+1.0**
	3.3nm,0.6s,baz=214,slow=5.6,SNR=5.1						
AQU	**L'Aquila**	**151.05**	**336**	*e*PKPbc	**PKPbc**	**02 31 02.5**	**+0.3**
AQU				*e*PKPab	**PKPab**	**02 31 10.0**	**+0.3**
TIP	**Timpagrande**	**152.07**	**328**	*e*PKPbc	**PKPbc**	**02 31 05.2**	**+0.6**

*NIED **09** 02:11:00,36.50N×140.90E,h5km,Mw3.7 Best double couple: M◎3.40000×10^14 NP1:φ◎9.00000°,δ39.00000°, λ-30.00000°. NP2:φ◎123.00000°,δ72.00000°, λ-125.00000°.*

JMA 09 02:11:20.8,36.53N×140.83E,h18km±1km,M3.8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.23**	**291**	P	Pg	02 11 26.0	-0.1
JHO				S	Sg	02 11 29.3	-0.5
ONAJ	**Iwakimizuishiy**	**0.57**	**357**	P	Pg	02 11 31.7	-0.5
ONAJ				S	Sg	02 11 39.7	-0.2
JYT	**Yasato**	**0.59**	**240**	P	Pg	02 11 32.3	-0.3
JYT				S	Sb	02 11 40.7	0.0
JFK	**Kawauchi**	**0.84**	**2**	P	Pb	02 11 35.6	-1.2
JFK				S	Sb	02 11 47.4	-0.3
JSB	**Shiboa**	**0.85**	**301**	P	Pg	02 11 37.3	-0.1
JSB				S	Sg	02 11 49.1	+0.4
MAT	**Matsushiro**	**2.11**	**271**	P	Pn	02 11 56.1	+0.8
MAT				S	Sn	02 12 22.5	+1.4

ROM 09 02:12:33.5±0.1,42.62N×13.30E,h7km±2km,Md1.7/3, Ml1.0/3,Error ellipse: s-maj=0.8km s-min=0.4km az=28.0,Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RM29	**Verrico (Monte**	**0.10**	**228**	Pg	Pg	02 12 36.1	+0.3
RM29				Sg	Sg	02 12 37.8	+0.4
	111nm,0.4s						
TERO	**Teramo**	**0.23**	**90**	Pg	Pg	02 12 38.8	+0.8
TERO				Sg	Sg	02 12 42.6	+1.5
	14nm,0.2s						
NRCA	**Norcia**	**0.25**	**327**	Pg	Pg	02 12 39.2	+0.7
NRCA				Sg	Sg	02 12 43.5	+1.7
	12nm,0.1s						

IDC 09 02:23:14.7±2.7,29.62S×176.67W,h0km,mb3.6/2, mb1 3.9/2,mb1mx3.6/17,mbtmp3.6/2,Error ellipse: s-maj=107.3km s-min=34.4km az=20.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.15**	**288**	Pn	Pn	02 23 39.2	+1.1
	168nm,0.3s,baz=222,slow=22,SNR=5.1						
RAO				Sn	Sb	02 23 53.5	+0.7
	297nm,0.3s,baz=137,slow=21,SNR=5.9						
ASAR	**Alice Springs**	**44.31**	**266**	P	P	02 31 26.6	0.0
	0.8nm,0.3s,baz=101,slow=6.3,SNR=6.7						
WRA	**Warramunga Arr**	**45.23**	**271**	P	P	02 31 33.6	-0.4
	0.7nm,0.7s,baz=113,slow=8.1,SNR=4.1						
FINES	**FINESS Array B**	**144.80**	**341**	PKP	PKPbc	02 42 52.0	0.0
	0.9nm,0.6s,baz=62,slow=4.5,SNR=6.2						

*CSEM **09** 02:27:13.3±0.1,45.12N×14.87E,h2km,ML3.0,Error ellipse: s-maj=2.5km s-min=2.1km az=27.0*
*ROM **09** 02:27:13.4±0.2,45.08N×14.93E,h9km,Ml3.0/11,Error ellipse: s-maj=5.2km s-min=3.2km az=55.0*
*VIE **09** 02:27:14.3±0.9,45.17N×14.89E,h6km,mb2.4/9,ML2.8/11, Error ellipse: s-maj=6.5km s-min=4.8km az=176.0*
*PRU **09** 02:27:14.9,45.14N×15.12E,h11km*
*LDG **09** 02:27:16.0±0.2,45.34N×14.85E,h2km,Ml2.9/7,Error ellipse: s-maj=6.2km s-min=3.6km az=154.0*

ISC 09 02:27:13.5±1.0,45.11N±0.02×14.87E±0.02,h7km±9km, n126,σt=1.22/179,5C-2D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOJS	**Bojanci**	**0.48**	**34**	⇑*i* Pg	**Pg**	**02 27 22.2**	**-0.6**
BOJS				*i* Sg	**Sg**	**02 27 29.1**	**0.0**
	comp=Z,224nm,0.1s						
BOJS	**Bojanci**	**0.48**	**34**	⇑*i* Pg	**Pg**	**02 27 22.2**	**-0.6**
BOJS				*i* Sg	**Sg**	**02 27 29.1**	**0.0**
	comp=Z,224nm,0.1s						
NVLJ	**Novalja**	**0.54**	**180**	*i* Pg	**Pg**	**02 27 23.1**	**-0.9**
NVLJ				Sg	**Sg**	**02 27 31.6**	**+0.5**
NVLJ	**Novalja**	**0.54**	**180**	*i* Pg	**Pg**	**02 27 23.1**	**-0.9**
NVLJ				Sg	**Sg**	**02 27 31.5**	**+0.5**
OZLJ	**Ozalj**	**0.66**	**39**	*e*Pg	**Pg**	**02 27 25.9**	**-0.4**
OZLJ				Sg	**Sg**	**02 27 34.4**	**-0.5**
OZLJ	**Ozalj**	**0.66**	**39**	*e*Pg	**Pg**	**02 27 25.8**	**-0.4**
OZLJ				Sg	**Sg**	**02 27 34.4**	**-0.5**
CEY	**Cerknica**	**0.71**	**334**	⇓*i* Pg	**Pg**	**02 27 26.1**	**-1.0**
CEY				*e*Sg	**Sg**	**02 27 36.4**	**+0.1**
SKDS	**Skadanscina**	**0.75**	**306**	*i* Pg	**Pg**	**02 27 26.6**	**-1.3**
SKDS				*i* Sg	**Sg**	**02 27 38.6**	**+1.0**
	comp=Z,68nm,0.1s						
SKDS	**Skadanscina**	**0.75**	**306**	*i* Pg	**Pg**	**02 27 26.6**	**-1.3**
SKDS				*i* Sg	**Sg**	**02 27 38.6**	**+1.0**
	comp=Z,68nm,0.1s						
CRES	**Cresnjev**	**0.83**	**30**	⇓*i* Pg	**Pg**	**02 27 28.6**	**-0.9**
CRES				*e*Sg	**Sg**	**02 27 39.0**	**-1.3**
UDBI	**Udbina**	**0.86**	**132**	*e*Pg	**Pg**	**02 27 29.5**	**-0.5**
UDBI				Sg	**Sg**	**02 27 40.0**	**-1.2**
UDBI	**Udbina**	**0.86**	**132**	*e*Pg	**Pg**	**02 27 29.5**	**-0.5**
UDBI				Sg	**Sg**	**02 27 39.9**	**-1.2**
PDKS	**Podkum**	**0.96**	**5**	*i* Pg	**Pg**	**02 27 31.1**	**-0.9**
PDKS				*i* Sg	**Sg**	**02 27 44.4**	**-0.1**
	comp=Z,58nm,0.1s						
PDKS	**Podkum**	**0.96**	**5**	*i* Pg	**Pg**	**02 27 31.1**	**-0.9**
PDKS				*i* Sg	**Sg**	**02 27 44.4**	**-0.1**
	comp=Z,58nm,0.1s						
LJU	**Ljubljana**	**0.97**	**346**	⇑*i* Pg	**Pg**	**02 27 31.2**	**-0.9**
LJU				*e*Sg	**Sg**	**02 27 44.8**	**+0.1**
TRI	**Trieste**	**0.99**	**308**	⇑*e*Pg	**Pg**	**02 27 31.1**	**-1.3**
TRI				*e*Sg	**Sb**	**02 27 46.7**	**+0.6**
GOLS	**Golise**	**1.05**	**30**	*i* Pg	**Pg**	**02 27 33.4**	**-0.3**
GOLS				*i* Sg	**Sg**	**02 27 46.7**	**-0.6**
	comp=Z,186nm,0.4s						
GOLS	**Golise**	**1.05**	**30**	*i* Pg	**Pg**	**02 27 33.4**	**-0.3**
GOLS				*i* Sg	**Sg**	**02 27 46.7**	**-0.6**
	comp=Z,186nm,0.4s						
ZAG	**Zagreb**	**1.07**	**47**	*e*Pg	**Pg**	**02 27 33.4**	**-0.6**
ZAG				*e*Sg	**Sg**	**02 27 47.5**	**-0.3**
SISC	**Sisak**	**1.12**	**70**	*e*Pg	**Pg**	**02 27 34.4**	**-0.6**
SISC				Sg	**Sg**	**02 27 49.1**	**-0.5**
SISC	**Sisak**	**1.12**	**70**	*e*Pg	**Pg**	**02 27 34.4**	**-0.6**
SISC				Sg	**Sg**	**02 27 49.1**	**-0.5**
SABO	**M.te Sabotino**	**1.25**	**315**	Pn	**Pg**	**02 27 35.6**	**-1.9**
SABO				Sn	**Sn**	**02 27 55.0**	**+0.4**
	comp=Z,425nm,0.6s						
SABO	**M.te Sabotino**	**1.25**	**315**	*e*Pg	**Pg**	**02 27 35.5**	**-1.9**
SABO				*e*Sg	**Sb**	**02 27 54.7**	**+0.9**
SABO	**M.te Sabotino**	**1.25**	**315**	Pn	**Pg**	**02 27 35.6**	**-1.9**
SABO				Sn	**Sn**	**02 27 55.0**	**+0.4**
	comp=Z,425nm,0.6s						
DRE	**Drenchia**	**1.37**	**322**	*e*Pg	**Pn**	**02 27 39.6**	**+0.4**
DRE				*e*Sg	**Sn**	**02 27 59.1**	**+1.4**
OBKA	**Obir**	**1.42**	**351**	Pg	**Pn**	**02 27 40.0**	**+0.1**
	comp=Z,12nm,0.1s,SNR=39						
OBKA				Sg	**Sn**	**02 28 00.9**	**+1.9**
	comp=Z,127nm,0.3s						
MRAK	**Mrakovica**	**1.44**	**93**	⇑*i* Pg	**Pn**	**02 27 40.2**	**+0.1**
MRAK				*e*Sg	**Sb**	**02 27 59.4**	**+0.1**
COLI	**Coloredo**	**1.47**	**315**	*e*Pg	**Pn**	**02 27 40.6**	**+0.2**
COLI				*e*Sg	**Sg**	**02 28 02.6**	**+1.9**
SOKA	**Soboth**	**1.58**	**4**	Pg	**Pn**	**02 27 41.8**	**-0.2**
	comp=Z,8.5nm,0.2s,SNR=22						
SOKA				Sg	**Sg**	**02 28 03.5**	**-0.7**
	comp=Z,42nm,0.3s						
VINO	**Villanova**	**1.60**	**317**	Pn	**Pn**	**02 27 42.8**	**+0.5**
VINO				Sn	**Sg**	**02 28 05.9**	**+0.9**
VINO	**Villanova**	**1.60**	**317**	*e*Pg	**Pn**	**02 27 42.6**	**+0.3**
VINO				*e*Sg	**Sg**	**02 28 05.6**	**+0.6**
VINO	**Villanova**	**1.60**	**317**	Pn	**Pn**	**02 27 42.8**	**+0.5**
VINO				Sn	**Sg**	**02 28 05.9**	**+0.9**
BAD	**Bernadia**	**1.61**	**315**	*e*Pg	**Pn**	**02 27 43.1**	**+0.7**
BUA	**Buia**	**1.66**	**313**	*e*Pg	**Pn**	**02 27 44.0**	**+1.0**
LSR	**Lussari**	**1.66**	**326**	*e*Pg	**Pn**	**02 27 44.1**	**+0.8**
PTCC	**Patocco-Chiusa**	**1.68**	**321**	Pn	**Pn**	**02 27 44.0**	**+0.6**
	comp=Z,125nm,0.9s						
PTCC	**Patocco-Chiusa**	**1.68**	**321**	Pn	**Pn**	**02 27 44.0**	**+0.6**
	comp=Z,125nm,0.9s						
BLY	**Banja Luka**	**1.68**	**101**	Pn	**Pn**	**02 27 43.1**	**-0.3**
	comp=Z,148nm,0.6s						
BLY	**Banja Luka**	**1.68**	**101**	Pn	**Pn**	**02 27 43.1**	**-0.3**
	comp=Z,148nm,0.6s						
BLY				*e*Sn	**Sn**	**02 28 05.2**	**0.0**
ACOM	**Acomizza, Ital**	**1.73**	**327**	Pn	**Pn**	**02 27 45.2**	**+1.0**
	comp=Z,281nm,0.9s						
ACOM	**Acomizza, Ital**	**1.73**	**327**	*e*Pn	**Pn**	**02 27 45.1**	**+0.9**
ACOM				*e*Sn	**Sg**	**02 28 09.4**	**+0.4**
ACOM	**Acomizza, Ital**	**1.73**	**327**	Pn	**Pn**	**02 27 45.2**	**+1.0**
	comp=Z,281nm,0.9s						
MPRI	**Monte Prat**	**1.74**	**311**	*e*Pn	**Pn**	**02 27 44.9**	**+0.7**
MYKA	**Terra Mystica**	**1.75**	**331**	Pn	**Pb**	**02 27 46.1**	**+0.1**
	comp=Z,13nm,0.4s,SNR=7.1						
MYKA				Sg	**Sg**	**02 28 10.7**	**+0.9**
	comp=Z,49nm,0.4s						
FUSE	**Fusea**	**1.85**	**316**	*e*Pn	**Pn**	**02 27 46.3**	**+0.6**
PLRO	**Paularo**	**1.88**	**321**	*e*Pn	**Pn**	**02 27 47.5**	**+1.3**
MLNI	**Malnisio**	**1.90**	**304**	*e*Pn	**Pn**	**02 27 46.8**	**+0.4**
STAL	**STALIGIAL**	**1.91**	**308**	Pn	**Pn**	**02 27 46.7**	**+0.2**
	comp=Z,213nm,0.4s						
STAL	**STALIGIAL**	**1.91**	**308**	Pn	**Pn**	**02 27 46.7**	**+0.2**
	comp=Z,213nm,0.4s						
BEHE	**Becsehely**	**1.91**	**44**	*e*Pn	**Pn**	**02 27 46.8**	**+0.3**
BEHE				*e*Sn	**Sn**	**02 28 10.8**	**0.0**
ZOU	**Zoufplan**	**1.97**	**318**	*e*Pn	**Pn**	**02 27 48.2**	**+0.7**
FSSB	**Fossombrone**	**2.06**	**227**	Pn	**Pn**	**02 27 49.2**	**+0.6**
	comp=Z,82nm,0.4s						
FSSB	**Fossombrone**	**2.06**	**227**	Pn	**Pn**	**02 27 49.2**	**+0.6**
	comp=Z,82nm,0.4s						
FVI	**Forni Avoltri**	**2.09**	**316**	Pn	**Pn**	**02 27 49.8**	**+0.7**
FVI	**Forni Avoltri**	**2.09**	**316**	Pn	**Pn**	**02 27 49.8**	**+0.7**
MPAG	**Monte Paganucc**	**2.11**	**226**	Pn	**Pn**	**02 27 50.0**	**+0.6**
	comp=Z,214nm,1.9s						
MPAG	**Monte Paganucc**	**2.11**	**226**	Pn	**Pn**	**02 27 50.0**	**+0.6**
	comp=Z,214nm,1.9s						
ARSA	**Arzberg**	**2.19**	**12**	Pn	**Pn**	**02 27 50.5**	**0.0**
	comp=Z,9.5nm,0.5s,SNR=10.0						
ARSA				Sn	**Sn**	**02 28 17.4**	**-0.5**
	comp=Z,18nm,0.4s						
FRON	**Frontone**	**2.21**	**225**	Pn	**Pn**	**02 27 51.5**	**+0.8**
	comp=Z,72nm,0.9s						
FRON	**Frontone**	**2.21**	**225**	Pn	**Pn**	**02 27 51.5**	**+0.8**
	comp=Z,72nm,0.9s						
KBA	**Konbreinsper**	**2.24**	**332**	Pn	**Pn**	**02 27 52.6**	**+1.4**
	comp=Z,3.4nm,0.2s						
CGRP	**Cima Grappa**	**2.29**	**291**	Pn	**Pn**	**02 27 52.5**	**+0.5**
	comp=Z,85nm,0.5s						
CGRP	**Cima Grappa**	**2.29**	**291**	Pn	**Pn**	**02 27 52.5**	**+0.5**
	comp=Z,85nm,0.5s						
SNTG	**Esanatoglia**	**2.31**	**218**	Pn	**Pn**	**02 27 52.3**	**+0.2**
SNTG	**Esanatoglia**	**2.31**	**218**	Pn	**Pn**	**02 27 52.3**	**+0.2**
DOB	**Doboj**	**2.32**	**98**	*e*Pn	**Pn**	**02 27 52.7**	**+0.5**
DOB				*e*Sn	**Sn**	**02 28 21.5**	**+0.5**
ABTA	**Abfaltersbach**	**2.33**	**316**	Pn	**Pn**	**02 27 53.3**	**+1.0**
	comp=Z,5.0nm,0.3s,SNR=9.9						
ABTA				Sg	**Sg**	**02 28 28.0**	**-0.2**
	comp=Z,18nm,0.3s						
PARC	**Parchiule**	**2.38**	**233**	Pn	**Pn**	**02 27 53.3**	**+0.2**
	comp=Z,32nm,0.6s						
PARC	**Parchiule**	**2.38**	**233**	Pn	**Pn**	**02 27 53.3**	**+0.2**
	comp=Z,32nm,0.6s						
MOA	**Molln**	**2.78**	**352**	Pn	**Pn**	**02 27 59.7**	**+1.2**
	comp=Z,2.1nm,0.3s						
MOA				Sn	**Sn**	**02 28 33.0**	**+0.7**
	comp=Z,7.2nm,0.5s						
CONA	**Conrad Observa**	**2.91**	**13**	Pn	**Pn**	**02 28 00.5**	**+0.2**
	comp=Z,1.1nm,0.2s						
TEKS	**Tekeris**	**3.36**	**98**	*e*Pn	**Pn**	**02 28 07.4**	**+0.9**
BRY	**Bratogost**	**3.44**	**128**	*e*Pn	**Pn**	**02 28 09.1**	**+1.4**
MOTA	**Moosalm**	**3.44**	**312**	Pn	**Pn**	**02 28 09.6**	**+1.9**
	comp=Z,3.4nm,0.3s						
FETA	**Feichten**	**3.46**	**305**	Pn	**Pn**	**02 28 10.6**	**+2.6**
	comp=Z,0.4nm,0.2s						
FETA	**Feichten**	**3.46**	**305**	Pg	**Pg**	**02 28 18.5**	**-1.3**
	comp=Z,2.1nm,0.3s						
TREB	**Trebinje**	**3.47**	**132**	*e*Pn	**Pn**	**02 28 08.6**	**+0.7**
TREB				*e*Sn	**Sn**	**02 28 49.3**	**+0.1**
UPM	**Unac-Piva**	**3.47**	**122**	*e*Pn	**Pn**	**02 28 08.8**	**+0.7**
BBLS	**Lazići**	**3.47**	**109**	*e*Pn	**Pn**	**02 28 10.4**	**+2.3**
RETA	**Reutte**	**3.71**	**311**	Pn	**Pn**	**02 28 13.7**	**+2.3**
	comp=Z,0.2nm,0.1s						
RETA				Sn	**Sn**	**02 28 57.6**	**+2.2**
	comp=Z,7.1nm,0.4s						
HCY	**Herceg Novi**	**3.73**	**134**	*e*Pn	**Pn**	**02 28 12.7**	**+1.1**
SMOL	**Smolenice**	**3.84**	**26**	*e*Sg	**Sg**	**02 29 16.1**	**-0.6**
SMOL	**Smolenice**	**3.84**	**26**	*e*SG	**Sg**	**02 29 16.1**	**-0.6**
IVAS	**Ivanjica**	**4.08**	**110**	*e*Pn	**Pn**	**02 28 20.8**	**+4.3**
KHC	**Kasperske Hory**	**4.12**	**348**	*e*PN	**Pn**	**02 28 17.9**	**+0.9**
KHC				*e*PG	**Pb**	**02 28 29.0**	**+2.6**
KHC				*e*SN	**Sn**	**02 29 04.6**	**-0.9**
KHC				*e*SG	**Sg**	**02 29 26.9**	**+1.0**
PDG	**Podgorica**	**4.15**	**129**	*e*Pn	**Pn**	**02 28 17.4**	**+0.1**
DRME	**Dracevica, Mon**	**4.28**	**131**	*e*Pn	**Pn**	**02 28 20.1**	**+1.0**
DRME				*e*Sn	**Sn**	**02 29 09.2**	**0.0**
GRUS	**Gruza**	**4.36**	**104**	*e*Pn	**Pn**	**02 28 21.7**	**+1.6**
GOPC	**GO Pecny, Ondr**	**4.81**	**359**	*e*SN	**Sn**	**02 29 20.8**	**-1.6**
PRU	**Pruhonice**	**4.89**	**358**	*e*PN	**Pn**	**02 28 27.0**	**-0.5**
PRU				*e*SN	**Sn**	**02 29 22.9**	**-1.4**
SBF	**Sospel**	**5.46**	**259**	*e*Pn	**Pn**	**02 28 36.7**	**+1.3**
SBF				*e*Sn	**Sn**	**02 29 36.9**	**-1.6**
	comp=Z,0.7nm,0.1s						
SBF	**Sospel**	**5.46**	**259**	*e*Pn	**Pn**	**02 28 36.7**	**+1.3**
BARS	**Barje**	**5.51**	**112**	*e*Pn	**Pn**	**02 28 36.8**	**+0.8**
LPG	**La Plagne**	**5.74**	**277**	*e*Pn	**Pn**	**02 28 40.3**	**+0.9**
LPG				*e*Sn	**Sn**	**02 29 42.4**	**-3.3**
	comp=Z,0.6nm,0.1s						
LPG	**La Plagne**	**5.74**	**277**	*e*Pn	**Pn**	**02 28 40.3**	**+0.9**
LPL	**La Plagne**	**5.75**	**277**	*e*Pn	**Pn**	**02 28 40.9**	**+1.3**
LPL	**La Plagne**	**5.75**	**277**	*e*Pn	**Pn**	**02 28 40.9**	**+1.3**
MBDF	**Montbardon**	**5.76**	**269**	*e*Pn	**Pn**	**02 28 39.8**	**+0.2**
MBDF				*e*Sn	**Sn**	**02 29 43.0**	**-3.1**
	comp=Z,2.7nm,0.5s						
MBDF	**Montbardon**	**5.76**	**269**	*e*Pn	**Pn**	**02 28 39.8**	**+0.2**
BRG	**Berggiesshubel**	**5.81**	**354**	SN	**Sn**	**02 29 44.1**	**-2.7**
BRG				SG	**Sg**	**02 30 20.3**	**+0.5**
	comp=Z,5.4nm,1.1s						
FRF	**La Foret Royal**	**6.10**	**258**	*e*Sn	**Sn**	**02 29 52.0**	**-2.1**
	comp=Z,0.9nm,0.2s						
STHS	**Stebnicka Huta**	**6.12**	**43**	*e*Sg	**Sg**	**02 30 29.7**	**-0.1**
STHS	**Stebnicka Huta**	**6.12**	**43**	*e*SG	**Sg**	**02 30 29.7**	**-0.1**
HINF	**Hinteralfeld**	**6.17**	**299**	*e*Sn	**Sn**	**02 29 50.6**	**-5.2**
	comp=Z,3.4nm,0.4s						
CDF	**Champ du Feu**	**6.18**	**305**	*e*Pn	**Pn**	**02 28 43.9**	**-1.3**
CDF	**Champ du Feu**	**6.18**	**305**	*e*Pn	**Pn**	**02 28 43.9**	**-1.3**
LMR	**La Mourre**	**6.26**	**257**	*e*Pn	**Pn**	**02 28 45.5**	**-0.8**
LMR	**La Mourre**	**6.26**	**257**	*e*Pn	**Pn**	**02 28 45.5**	**-0.8**
CABF	**La Chapelle**	**6.32**	**287**	*e*Pn	**Pn**	**02 28 46.1**	**-1.0**
CABF	**La Chapelle**	**6.32**	**287**	*e*Pn	**Pn**	**02 28 46.1**	**-1.0**
CLL	**Collm**	**6.33**	**349**	*e*Pn	**Pn**	**02 28 48.0**	**+0.8**
CLL				*e*Sg	**Sg**	**02 30 37.0**	**+0.3**
	comp=Z,6.0nm,0.9s						
KOLS	**Kolonicke sedl**	**6.34**	**50**	*e*SG	Sg	02 30 47.0	+10
ORIF	**Oris-en-Rattie**	**6.38**	**271**	*e*Pn	**Pn**	**02 28 48.8**	**+0.8**
ORIF				*e*Sn	**Sn**	**02 29 58.8**	**-2.3**
	comp=Z,6.3nm,0.5s						
ORIF	**Oris-en-Rattie**	**6.38**	**271**	*e*Pn	**Pn**	**02 28 48.8**	**+0.8**
HAU	**Haudompre**	**6.55**	**299**	*e*Pn	**Pn**	**02 28 49.7**	**-0.6**
HAU	**Haudompre**	**6.55**	**299**	*e*Pn	**Pn**	**02 28 49.7**	**-0.6**
SMRF	**Simiane la Rot**	**6.74**	**264**	*e*Pn	**Pn**	**02 28 53.3**	**+0.4**
SMRF	**Simiane la Rot**	**6.74**	**264**	*e*Pn	**Pn**	**02 28 53.3**	**+0.4**
VIVF	**Saint-Julien-l**	**7.24**	**272**	*e*Pn	**Pn**	**02 28 59.1**	**-0.6**
VIVF	**Saint-Julien-l**	**7.24**	**272**	*e*Pn	**Pn**	**02 28 59.1**	**-0.6**
SMF	**Signal de Mont**	**7.85**	**285**	*e*Pn	**Pn**	**02 29 08.7**	**+0.6**
SMF				*e*Sn	**Sn**	**02 30 31.5**	**-5.7**
	comp=Z,2.2nm,0.3s						
SMF	**Signal de Mont**	**7.85**	**285**	*e*Pn	**Pn**	**02 29 08.7**	**+0.6**
LOR	**Lormes**	**7.94**	**290**	*e*Pn	**Pn**	**02 29 09.1**	**-0.3**
	baz=115						
LOR	**Lormes**	**7.94**	**290**	*e*Pn	**Pn**	**02 29 09.1**	**-0.3**
	baz=115						
AVF	**Avril sur Loir**	**8.20**	**286**	*e*Pn	**Pn**	**02 29 13.1**	**+0.2**
AVF	**Avril sur Loir**	**8.20**	**286**	*e*Pn	**Pn**	**02 29 13.1**	**+0.2**

ISC 09 02:29:05.6±1.5,45.11N±0.03×14.83E±0.08,h5km±24km, n5,σ◎45/10,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOJS	**Bojanci**	**0.49**	**37**	*i* Pg	**Pg**	**02 29 14.8**	**-0.3**
BOJS				*i* Sg	**Sg**	**02 29 23.5**	**+0.1**
NVLJ	**Novalja**	**0.55**	**177**	*i* Pg	**Pg**	**02 29 15.7**	**-0.4**
NVLJ				Sg	**Sg**	**02 29 24.1**	**+0.8**
OZLJ	**Ozalj**	**0.67**	**41**	*e*Pg	**Pg**	**02 29 18.8**	**+0.3**
OZLJ				Sg	**Sg**	**02 29 27.1**	**-0.1**
VISS	**Visnje**	**0.69**	**0**	*i* Pg	**Pg**	**02 29 18.7**	**-0.2**
VISS				*i* Sg	**Sb**	**02 29 30.0**	**0.0**
UDBI	**Udbina**	**0.88**	**131**	*e*Pg	**Pg**	**02 29 22.5**	**0.0**
UDBI				Sg	**Sg**	**02 29 33.6**	**-0.3**
OBKA	**Obir**	**1.41**	**352**	*e*Pg	**Pg**	**02 29 32.8**	**+0.2**
	3.4nm,0.2s						
OBKA				*e*Sg	Sn	02 29 52.8	+1.8
	19nm,0.3s						
SOKA	**Soboth**	**1.57**	**5**	*i* Pg	Pb	02 29 35.1	0.0
	1.4nm,0.2s						
SOKA				*e*Sn	Sb	02 29 55.2	-0.2
	3.4nm,0.2s						
MYKA	**Terra Mystica**	**1.73**	**332**	*e*Pg	Pb	02 29 37.8	-0.1
	2.8nm,0.3s						
MYKA				*e*Sg	Sg	02 30 03.4	+2.2
	9.1nm,0.5s						

*NNC **09** 02:39:49.5±1.1,44.62N×79.40E,h0km,mb2.7,mpv2.5, Error ellipse: s-maj=15.3km s-min=6.1km az=103.0*
*SOME **09** 02:39:50.1,44.67N×79.32E,h15km*

ISC 09 02:39:49.7±1.2,44.63N±0.03×79.29E±0.03,h3km±12km, n20,σ◎84/37,7C-3D,Eastern Kazakhstan

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

mb1 3.6/4, mb1mx3.4/31, mbtmp3.5/4, ML3.1/1, Error ellipse: s-maj=49.9km s-min=28.9km az=53.0

ISC 09 02:49:23.5±3.1, 36°40′N±0°05×142°30′E±0°08, h0km±18km, n16, σ1§45/26, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.36**	**240**	P	**Pn**	**02 49 48.9**	**-0.7**
CHOJ				*eS*	**Sb**	**02 50 07.5**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.39**	**301**	P	**Pn**	**02 49 49.4**	**-0.8**
ONAJ				*eS*	**Sg**	**02 50 09.5**	**+1.2**
JHO	**Hitachi**	**1.41**	**279**	P	**Pn**	**02 49 49.8**	**-0.6**
JHO				*eS*	**Sb**	**02 50 09.7**	**+0.6**
JFK	**Kawauchi**	**1.50**	**311**	S	**Sb**	**02 50 10.8**	**-0.8**
JMM	**Marumori**	**1.90**	**321**	*eS*	**Sb**	**02 50 20.9**	**-2.2**
JFT	**Otama**	**1.93**	**306**	P	**Pb**	**02 49 58.2**	**-1.3**
JFT				S	**Sb**	**02 50 23.8**	**-0.3**
BSO1	**Boso 1**	**2.05**	**212**	P	**Pn**	**02 49 57.1**	**-1.5**
BSO1				*eS*	**Sn**	**02 50 23.8**	**-0.8**
JAG	**Ashikaga**	**2.30**	**271**	P	**Pn**	**02 50 02.5**	**0.0**
JAG				*eS*	**Sn**	**02 50 31.0**	**-0.5**
JMK	**Ichinoseki**	**2.69**	**342**	P	**Pn**	**02 50 07.7**	**-0.2**
JMK				*eS*	**Sn**	**02 50 39.1**	**-2.0**
JRY	**Ryogami san**	**2.77**	**263**	P	**Pn**	**02 50 07.9**	**-1.2**
JRY				*eS*	**Sn**	**02 50 41.1**	**-2.2**
JOD2	**Odawara 2**	**2.85**	**247**	P	**Pn**	**02 50 09.9**	**-0.2**
JOD2				*eS*	**Sn**	**02 50 44.1**	**-1.0**
MJAR	**Matsushiro Arr**	**3.30**	**274**	Pn	**Pn**	**02 50 17.3**	**+0.9**
	2.4nm,0.3s,baz=90,slow=8.3,SNR=14						
MJAR				Sn	**Sn**	**02 50 57.5**	**+1.2**
	2.0nm,0.3s,baz=121,slow=32,SNR=6.4						
MAT	**Matsushiro**	**3.30**	**274**	P	**Pn**	**02 50 17.1**	**+0.7**
MAT				*eS*	**Sn**	**02 50 54.2**	**-2.1**
ZALV	**Zalesovo Beam**	**42.87**	**313**	P	**P**	**02 57 26.2**	**+3.0**
	0.4nm,0.3s,baz=87,slow=8.8,SNR=3.2						
MKAR	**Makanchi Array**	**45.06**	**303**	P	**P**	**02 57 43.2**	**+2.2**
	0.9nm,1.0s,baz=81,slow=10.0,SNR=4.2						
WRA	**Warramunga Arr**	**56.54**	**189**	P	P	02 59 13.0	+5.4
	0.4nm,0.8s,baz=359,slow=7.3,SNR=3.3						

JMA 09 02:51:42.1±0.1, 37°30N×141°23E, h39km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.29**	**283**	P	Pn	02 51 50.0	-0.4
JFK				S	Sn	02 51 55.4	-1.3
ONAJ	**Iwakimizuishiy**	**0.40**	**240**	P	Pn	02 51 51.2	-0.2
ONAJ				S	Sn	02 51 57.7	-0.4
JMM	**Marumori**	**0.66**	**329**	P	Pn	02 51 54.8	-0.3
JMM				*eS*	Sn	02 52 04.0	-0.3
JFT	**Otama**	**0.74**	**287**	P	Pn	02 51 56.8	+0.7
JFT				S	Sn	02 52 06.9	+0.7
JHO	**Hitachi**	**0.87**	**218**	P	Pn	02 51 57.1	-0.7
JSB	**Shiboa**	**1.10**	**253**	P	Pn	02 52 01.9	+0.9
JSB				*eS*	Sn	02 52 16.9	+2.0
JOU	**Okura**	**1.15**	**337**	P	Pn	02 52 02.4	+0.6
JOU				*eS*	Sn	02 52 18.1	+1.8
JIO	**Ouri**	**1.16**	**5**	P	Pn	02 52 01.4	-0.4
JIO				*eS*	Sn	02 52 15.8	-0.5
JFY	**Yanaizu**	**1.22**	**275**	P	Pn	02 52 03.4	+0.7
JFY				*eS*	Sn	02 52 19.7	+1.8
JYS	**Shirataka**	**1.30**	**315**	P	Pn	02 52 04.9	+1.1
JYS				*eS*	Sn	02 52 22.1	+2.1
MAT	**Matsushiro**	**2.54**	**254**	P	Pn	02 52 21.9	+1.1
MAT				*eS*	Sn	02 52 53.9	+3.5

ECX 09 03:12:06.5±0.5, 31°.89N×115°.00W, h8km, MD2.7, ML2.9
MEX 09 03:12:09.6±0.6, 31°.87N×115°.02W, h16km±12km, MD3.8

ISC 09 03:12:06.0±2.6, 31°90N±0°05×115°06W±0°08, h17km±16km, n11, σ0§58/19, 1C-2D, Baja California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.52**	**347**	*eP*	**Pn**	**03 12 19.4**	**+0.6**
MBIG				*eS*	**Sn**	**03 12 25.8**	**-1.4**
CPBX	**Cerro Prieto**	**0.56**	**339**	*eP*	**Pn**	**03 12 19.8**	**+0.6**
CPBX				*eS*	**Sn**	**03 12 28.0**	**-0.1**
CPBX				IAML		03 12 32.1	
	comp=N,2μm,0.5s						
CPBX				⇓*e*		03 12 32.1	
SPX	**San Pedro Mart**	**0.92**	**202**	*eP*	**Pb**	**03 12 23.3**	**-0.3**
SPX				*eS*	**Sb**	**03 12 35.9**	**+0.2**
ZAX	**El Zacaton**	**1.10**	**250**	*eP*	**Pb**	**03 12 26.1**	**-0.5**
ZAX				*eS*	**Sn**	**03 12 41.8**	**+0.2**
ZAX				IAML		03 12 42.8	
	comp=E,215nm,0.3s						
RMX	**La Rumorosa**	**1.11**	**310**	⇓*eP*	**Pb**	**03 12 26.5**	**-0.4**
RMX				*eS*	**Sn**	**03 12 42.6**	**+0.6**
RMX				⇑*e*		03 12 45.8	
IKP	**In-Ko-Pah, Jac**	**1.16**	**311**	*eP*	**Pb**	**03 12 27.7**	**0.0**
ECNX	**Esteban Cantu**	**1.33**	**260**	*eP*	**Pb**	**03 12 30.2**	**-0.4**
CBX	**Cerro Bola**	**1.42**	**287**	*eP*	**Pb**	**03 12 31.9**	**-0.3**
CBX				*eS*	**Sn**	**03 12 48.7**	**-0.9**
CBX	**Cerro Bola**	**1.42**	**287**	*eP*	**Pb**	**03 12 31.9**	**-0.3**
CBX				*eS*	**Sg**	**03 12 52.0**	**0.0**
CBX				IAML		03 12 56.6	
	comp=E,216nm,0.2s						
CBX				*e*		03 12 56.6	
TJIG	**Tijuana**	**1.47**	**292**	*eP*	**Pn**	**03 12 32.1**	**+0.4**
TJIG				*i* S	**Sn**	**03 12 50.7**	**+0.1**
TJIG	**Tijuana**	**1.47**	**292**	*eP*	**Pn**	**03 12 32.1**	**+0.4**

NIED 09 03:40:00, 38°.30N×141°.90E, h62km, Mw3.8 Best double couple: M◎5.14000×10^14 NP1:φs167.00000°, δ11.00000°, λ-165.00000°. NP2:φs62.00000°, δ87.00000°, λ-80.00000°.
ISCJB 09 03:40:14.5±0.9, 38°.29N±0°.04×141°.97E±0°.09, h69km±7km, mb3.6/3, Error ellipse: s-maj=12.9km s-min=5.6km az=18.3
IDC 09 03:40:14.6±3.0, 38°.28N×142°.17E, h58km±25km, mb3.5/3, mb1 3.6/7, mb1mx3.2/45, mbtmp3.7/7, ML3.0/3, Error ellipse: s-maj=45.7km s-min=20.0km az=88.0
JMA 09 03:40:16.0±0.1, 38°.33N×141°.89E, h63km±1km, M3.9
JMA Felt I J1.

ISC 09 03:40:14.7±1.5, 38°26N±0°05×142°03E±0°10, h56km±12km, n26, σ0§87/33, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.57**	**290**	P	**Pn**	**03 40 27.8**	**+0.6**
JIO				S	**Sn**	**03 40 36.0**	**-0.2**
OFUJ	**Ofunato**	**0.87**	**341**	P	**Pn**	**03 40 31.4**	**+0.5**
OFUJ				S	**Sn**	**03 40 42.5**	**-0.3**
JMK	**Ichinoseki**	**0.94**	**318**	P	**Pn**	**03 40 32.2**	**+0.4**
JMK				S	**Sn**	**03 40 43.7**	**-0.7**
JMM	**Marumori**	**1.05**	**248**	P	**Pn**	**03 40 33.7**	**+0.4**
JMM				S	**Sn**	**03 40 46.6**	**-0.5**
JOU	**Okura**	**1.08**	**276**	P	**Pn**	**03 40 33.9**	**+0.2**
JOU				S	**Sn**	**03 40 47.0**	**-0.8**
JFK	**Kawauchi**	**1.28**	**226**	P	**Pn**	**03 40 37.4**	**+1.0**
JFK				S	**Sn**	**03 40 53.5**	**+1.0**
JOM	**Ohasama**	**1.34**	**335**	P	**Pn**	**03 40 37.5**	**+0.3**
JOM				S	**Sn**	**03 40 53.5**	**-0.5**
JYK	**Kaneyama**	**1.47**	**297**	P	**Pn**	**03 40 38.9**	**0.0**
JYK				*eS*	**Sn**	**03 40 56.0**	**-1.0**
JFT	**Otama**	**1.53**	**242**	P	**Pn**	**03 40 40.9**	**+1.1**
JFT				S	**Sn**	**03 40 58.8**	**+0.2**
JYS	**Shirataka**	**1.55**	**269**	P	**Pn**	**03 40 40.4**	**+0.4**
JYS				S	**Sn**	**03 40 58.8**	**-0.2**
JRG	**Rokugo**	**1.57**	**317**	P	**Pn**	**03 40 40.4**	**+0.1**
JRG				S	**Sn**	**03 41 00.4**	**+0.8**
JYA	**Atsumi**	**1.85**	**281**	P	**Pn**	**03 40 44.2**	**+0.1**
MJAR	**Matsushiro Arr**	**3.49**	**242**	P	**Pn**	**03 41 08.6**	**+2.0**
	1.9nm,0.3s,baz=32,slow=13,SNR=30						
MAT	**Matsushiro**	**3.49**	**242**	P	**Pn**	**03 41 08.4**	**+1.8**
MAT				*eS*	**Sn**	**03 41 46.6**	**-0.1**
JHJ	**Hachijo jima 2**	**5.45**	**200**	P	**Pn**	**03 41 32.2**	**-1.1**
	2.4nm,0.3s,baz=66,slow=20,SNR=2.2						
JHJ				S	**Sn**	**03 42 32.5**	**-2.2**
	13nm,0.3s,baz=120,slow=23,SNR=5.6						
ASAJ	**Asahikawa**	**5.87**	**4**	P	**Pn**	**03 41 39.1**	**+0.1**
	baz=211,slow=12						
USRK	**Ussuriysk Ar.**	**9.61**	**311**	P	**Pn**	**03 42 31.0**	**+0.8**
	0.4nm,0.3s,baz=120,slow=14,SNR=6.7						
H11N2	**WAKE ISLAND Hy 28.38**	**124**		T	T	04 16 30.4	
	baz=316,slow=75,SNR=65						
H11N1	**WAKE ISLAND Hy 28.39**	**124**		T	T	04 16 31.3	
	baz=316,slow=75,SNR=84						
H11N3	**WAKE ISLAND Hy 28.40**	**124**		T	T	04 16 31.8	
	baz=316,slow=75,SNR=71						
H11S1	**WAKE ISLAND Hy 29.14**	**126**		T	T	04 17 26.3	
	baz=318,slow=76,SNR=19						
H11S3	**WAKE ISLAND Hy 29.14**	**126**		T	T	04 17 29.3	
	baz=318,slow=76,SNR=27						
H11S2	**WAKE ISLAND Hy 29.16**	**126**		T	T	04 17 26.8	
	baz=318,slow=76,SNR=20						
MKAR	**Makanchi Array**	**43.90**	**301**	P	**P**	**03 48 15.6**	**-0.1**
	0.6nm,0.7s,baz=84,slow=8.7,SNR=5.1						
WRA	**Warramunga Arr**	**58.34**	**189**	P	**P**	**03 50 04.2**	**+0.1**
	0.7nm,0.4s,baz=6.5,slow=6.8,SNR=13						
FINES	**FINESS Array B**	**67.96**	**332**	P	**P**	**03 51 06.8**	**-0.5**
	0.6nm,0.8s,baz=30,slow=6.6,SNR=3.3						

NIED 09 03:46:00, 36°.70N×142°.10E, h23km, Mw3.7 Best double couple: M◎3.65000×10^14 NP1:φs189.00000°, δ20.00000°, λ85.00000°. NP2:φs15.00000°, δ70.00000°, λ92.00000°.
IDC 09 03:46:24.8±4.2, 36°.72N×142°.31E, h0km, mb3.6/3, mb1 3.5/6, mb1mx3.3/44, mbtmp3.6/6, ML3.7/2, MS2.8/3, Ms1 2.8/3, ms1mx2.5/49, Error ellipse: s-maj=75.4km s-min=31.0km az=109.0
ISCJB 09 03:46:26.6±0.9, 36°.68N±0°.04×142°.16E±0°.09, h19km, mb3.4/3, Error ellipse: s-maj=10.2km s-min=6.2km az=4.2
JMA 09 03:46:28.5±0.4, 36°.70N×142°.06E, h38km, M3.7

ISC 09 03:46:28.2±1.5, 36°74N±0°06×142°04E±0°10, h19km, n21, σ1§29/24, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.06**	**290**	P	**Pn**	**03 46 47.5**	**-0.5**
JFK	**Kawauchi**	**1.12**	**304**	P	**Pn**	**03 46 48.5**	**-0.4**
JHO	**Hitachi**	**1.19**	**264**	P	**Pn**	**03 46 49.3**	**-0.5**
JMM	**Marumori**	**1.50**	**319**	P	**Pb**	**03 46 54.3**	**-1.1**
JFT	**Otama**	**1.57**	**300**	P	**Pb**	**03 46 55.9**	**-0.6**
JFT				S	**Sb**	**03 47 15.7**	**-0.3**
JIO	**Ouri**	**1.80**	**342**	P	**Pn**	**03 46 58.7**	**+0.6**
JIO				*eS*	**Sb**	**03 47 21.4**	**-1.2**
JOU	**Okura**	**1.96**	**326**	P	**Pb**	**03 47 01.6**	**-1.6**
JFY	**Yanaizu**	**1.98**	**290**	P	**Pb**	**03 47 02.1**	**-1.5**
JAG	**Ashikaga**	**2.10**	**262**	P	**Pn**	**03 47 02.8**	**+0.4**
JYS	**Shirataka**	**2.15**	**314**	P	**Pb**	**03 47 04.9**	**-1.7**
JYS				*eS*	**Sb**	**03 47 32.0**	**-0.9**
BSO1	**Boso 1**	**2.25**	**203**	P	**Pn**	**03 47 04.0**	**+0.1**
JMK	**Ichinoseki**	**2.30**	**344**	P	**Pn**	**03 47 06.2**	**+1.2**
MJAR	**Matsushiro Arr**	**3.09**	**267**	Pn	**Pn**	**03 47 18.0**	**+2.1**
	7.7nm,0.3s,baz=93,slow=9.3,SNR=86						
MJAR				LR	LR	03 48 43.4	
	comp=Z,101nm,18.6s,baz=110,slow=42						
MAT	**Matsushiro**	**3.09**	**267**	P	**Pn**	**03 47 18.0**	**+2.1**
MAT				*eS*	**Sn**	**03 47 54.2**	**+1.9**
JHJ	**Hachijo jima 2**	**4.06**	**208**	Pn	**Pn**	**03 47 29.5**	**+0.2**
	11nm,0.3s,baz=322,slow=24,SNR=12						
JHJ				Sn	**Sn**	**03 48 13.7**	**-2.6**
	28nm,0.3s,baz=278,slow=19,SNR=3.6						
ASAJ	**Asahikawa**	**7.38**	**3**	Pn	**Pn**	**03 48 14.7**	**-0.1**
	baz=118,slow=16						
USRK	**Ussuriysk Ar.**	**10.68**	**317**	LR	LR	03 53 11.0	
	comp=Z,64nm,19.1s,baz=114,slow=38						
KSRS	**Korea Array**	**11.30**	**278**	LR	LR	03 53 24.0	
	comp=Z,53nm,19.1s,baz=64,slow=36						
SONM	**Songino Array**	**28.36**	**304**	P	**P**	**03 52 22.4**	**+1.3**
	1.3nm,0.9s,baz=92,slow=9.5,SNR=5.7						
ZALV	**Zalesovo Beam**	**42.48**	**313**	P	**P**	**03 54 22.4**	**+0.6**
	0.3nm,0.3s,baz=80,slow=11,SNR=2.7						
MKAR	**Makanchi Array**	**44.70**	**302**	P	**P**	**03 54 40.6**	**+0.7**
	0.2nm,0.5s,baz=84,slow=9.6,SNR=3.2						

IDC 09 03:47:40.2±1.0, 29°.29S×176°.09W, h0km, mb4.2/5, mb1 4.4/5, mb1mx4.0/26, mbtmp4.2/5, MS3.2/3, Ms1 3.2/3, ms1mx2.8/21, Error ellipse: s-maj=50.7km s-min=20.5km az=170.0
ISCJB 09 03:47:41.5±0.9, 29°.80S±0°.07×175°.99W±0°.09, h28km, mb4.3/8, MS3.7/1, Error ellipse: s-maj=11.8km s-min=10.0km az=174.1
NEIC 09 03:47:41.1±0.5, 29°.67S×176°.08W, h10km, mb4.4/3, Error ellipse: s-maj=15.4km s-min=11.3km az=131.0

ISC 09 03:47:44.0±0.7, 29°66S±0°09×176°13W±0°09, h28km, n27, σ1§10/26, mb4.4/8, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.61**	**284**	Pn	**Pn**	**03 48 11.3**	**+0.7**
	342nm,0.3s,baz=91,slow=10,SNR=11						
RAO				LR	LR	03 48 14.2	
	comp=Z,118nm,21.7s,baz=193,slow=21						
RAO				Sn	**Sb**	**03 48 32.5**	**-0.6**
	620nm,0.3s,baz=96,slow=22,SNR=4.5						
URZ	**Urewera**	**10.25**	**211**	Pn	**Pn**	**03 50 06.9**	**-2.3**
	0.4nm,0.3s,baz=318,slow=15,SNR=3.7						
URZ				Sn	**Sn**	**03 52 04.1**	**+0.9**
	3.1nm,0.3s,baz=66,slow=22,SNR=12						
URZ				LR	LR	03 55 07.4	
	comp=Z,52nm,19.3s,baz=214,slow=42						
URZ	**Urewera**	**10.25**	**211**	*e*Pn	**Pn**	**03 50 07.8**	**-1.5**
URZ				Sn	**Sn**	**03 52 04.1**	**+0.9**
KHZ	**Kahutara**	**15.22**	**210**	*e*Pn	**Pn**	**03 51 15.5**	**-1.4**
DZM	**Mont Dzumac**	**17.40**	**292**	LR	LR	03 56 10.9	
	comp=Z,40nm,19.5s,baz=202,slow=30						
DZM	**Mont Dzumac**	**17.40**	**292**	*e*LR	LR	03 55 56.7	
	211nm,26.0s						
TBI	**Tubuai**	**24.64**	**82**	*e*LR	LR	03 58 38.7	
	106nm,30.0s						
PPT2	**Papeete2**	**27.06**	**70**	*e*LR	LR	03 59 46.2	
	114nm,29.0s						
CTA	**Charters Tower**	**35.30**	**277**	P	**P**	**03 54 37.2**	**+0.3**
	2.6nm,0.5s,baz=76,slow=16,SNR=5.7						
STKA	**Stephens Creek**	**36.23**	**256**	P	**P**	**03 54 46.6**	**+1.9**
	4.2nm,0.7s,baz=101,slow=8.0,SNR=8.8						
ASAR	**Alice Springs**	**44.78**	**265**	P	**P**	**03 55 55.5**	**-0.1**
	1.2nm,0.6s,baz=101,slow=7.6,SNR=22						
ASAR				LR	LR	04 13 21.3	
	comp=Z,93nm,19.1s,baz=162,slow=34						
WRAB	**Tennant Creek**	**45.70**	**270**	*e*P	**P**	**03 56 02.5**	**-0.3**
	5.4nm,0.9s						
WRA	**Warramunga Arr**	**45.71**	**270**	P	**P**	**03 56 01.8**	**-1.1**
	3.0nm,0.7s,baz=110,slow=7.8,SNR=16						
FORT	**Forrest**	**47.81**	**254**	*e*P	**P**	**03 56 18.7**	**-0.5**
CASY	**Casey**	**56.55**	**208**	*e*P	**P**	**03 57 23.5**	**-0.1**
	1.4nm,1.1s						
TPAW	**Teton Pass**	**94.11**	**41**	*e*P	**P**	**04 01 00.0**	**-0.1**
	1.7nm,0.6s						
ILAR	**Eielson Array**	**96.85**	**12**	P	**P**	**04 01 10.2**	**-1.5**
	0.4nm,0.7s,baz=229,slow=5.5,SNR=5.4						
MKAR	**Makanchi Array**	**118.54**	**310**	PKP	**PKPdf**	**04 06 28.3**	**-0.6**
	0.6nm,0.7s,baz=98,slow=2.7,SNR=4.5						
KURK	**Kurchatov**	**121.71**	**314**	*e*PKPdf	**PKPdf**	**04 06 34.5**	**-0.3**
BVAR	**Borovoye Array**	**127.00**	**316**	PKP	**PKPdf**	**04 06 44.8**	**-0.1**
	0.8nm,0.7s,baz=222,slow=2.0,SNR=4.3						
ARCES	**ARCESS Array B**	**138.19**	**349**	PKP	**PKPdf**	**04 07 06.9**	**+1.4**
	0.7nm,0.6s,baz=41,slow=3.9,SNR=5.1						
FINES	**FINESS Array B**	**144.98**	**342**	PKP	**PKPab**	**04 07 16.8**	**-0.4**
	2.7nm,0.7s,baz=47,slow=3.4,SNR=12						
NB2	**NORSAR Subarra**	**148.23**	**353**	PKP	**PKPbc**	**04 07 26.8**	**+0.1**
	comp=Z,1.1nm,0.7s,baz=8.7,slow=2.9						
NOA	**NORSAR Array B**	**148.23**	**353**	PKPbc	**PKPbc**	**04 07 26.9**	**+0.1**
	comp=Z,1.7nm,0.7s,baz=11,slow=4.5,SNR=6.3						
AKASG	**Malin Array Be**	**151.66**	**325**	PKPbc	**PKPbc**	**04 07 35.5**	**+0.2**
	comp=Z,2.9nm,0.6s,baz=45,slow=2.9,SNR=12						
BRTR	**Keskin Array B**	**153.65**	**300**	PKPbc	**PKPbc**	**04 07 41.4**	**+1.0**
	comp=Z,0.2nm,0.4s,baz=104,slow=3.0,SNR=3.2						
TORD	**Torodi Ar. Bea**	**163.45**	**173**	PKPab	**PKPab**	**04 08 37.9**	**+2.2**
	comp=Z,0.6nm,0.7s,baz=204,slow=3.6,SNR=5.8						

IDC 09 03:56:40.0±2.2, 35°.86N×141°.47E, h0km, mb3.5/3, mb1 3.5/4, mb1mx3.3/41, mbtmp3.4/4, ML3.0/1, Error ellipse: s-maj=58.3km s-min=26.4km az=54.0
ISCJB 09 03:56:49.6±0.8, 35°.74N±0°.05×140°.72E±0°.09, h45km, mb3.4/3, Error ellipse: s-maj=10.8km s-min=6.8km az=159.9
JMA 09 03:56:50.1±0.1, 35°.73N×140°.58E, h49km±2km, M2.4

ISC 09 03:56:49.5±1.1, 35°71N±0°05×140°71E±0°08, h45km, n12, σ1§20/15, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.12**	**93**	P	**Pn**	**03 56 58.7**	**+1.8**
JCN	**Nagara**	**0.50**	**235**	P	**Pn**	**03 57 01.0**	**+0.5**
JCN				S	**Sn**	**03 57 09.6**	**+1.3**
JYT	**Yasato**	**0.66**	**321**	P	**Pn**	**03 57 02.5**	**-0.1**
JYT				S	**Sn**	**03 57 11.6**	**-0.4**
BSO4	**Boso 4**	**0.78**	**203**	P	**Pn**	**03 57 04.2**	**+0.1**
JHO	**Hitachi**	**0.91**	**353**	P	**Pn**	**03 57 06.5**	**+0.6**
BSO3	**Boso 3**	**0.92**	**190**	P	**Pn**	**03 57 06.1**	**+0.3**
BSO1	**Boso 1**	**1.08**	**168**	P	**Pn**	**03 57 08.9**	**+1.2**
MJAR	**Matsushiro Arr**	**2.19**	**293**	Pn	**Pn**	**03 57 25.1**	**+1.7**
	2.6nm,0.3s,baz=103,slow=14,SNR=23						
MJAR				Sn	Sn	03 57 58.4	+9.1
	1.2nm,0.3s,baz=118,slow=22,SNR=6.2						
MAT	**Matsushiro**	**2.19**	**293**	P	**Pn**	**03 57 24.7**	**+1.3**
MAT				*eS*	**Sn**	**03 57 50.6**	**+1.3**
ZALV	**Zalesovo Beam**	**42.40**	**313**	P	**P**	**04 04 38.3**	**-1.0**
	0.4nm,0.4s,baz=71,slow=9.3,SNR=2.7						
MKAR	**Makanchi Array**	**44.35**	**303**	P	**P**	**04 04 55.6**	**+0.4**
	0.2nm,0.6s,baz=85,slow=9.8,SNR=2.6						
WRA	**Warramunga Arr**	**55.67**	**187**	P	**P**	**04 06 19.6**	**-1.7**
	0.7nm,1.0s,baz=2.7,slow=7.3,SNR=3.4						

ISCJB 09 04:15:13.6±0.3, 50°.30N±0°.03×18°.58E±0°.02, h0km, Error ellipse: s-maj=4.0km s-min=1.9km az=14.3
SIGU 09 04:15:13.7±0.1, 50°.18N±0°.01×18°.70E±0°.01, h4km, mb3.0/10
IPEC 09 04:15:14.9±0.2, 50°.21N×18°.72E, h4km±1km, ML2.6/3, Error ellipse: s-maj=2.3km s-min=1.1km az=168.0
CSEM 09 04:15:14.9±0.2, 50°.27N×18°.65E, h2km, ML3.2, Error ellipse: s-maj=6.1km s-min=3.0km az=13.0
WAR 09 04:15:15.1, 50°.20N×18°.70E, h1km, Mw3.2
BGR 09 04:15:15.4±0.3, 50°.26N×18°.68E, h1km, ML3.2/12, Error ellipse: s-maj=6.7km s-min=3.3km az=5.0
IDC 09 04:15:15.9±0.9, 50°.12N×18°.62E, h0km, mb1 3.2/5, mb1mx3.1/37, mbtmp3.1/5, ML2.9/5, Error ellipse: s-maj=14.3km s-min=7.5km az=135.0
VIE 09 04:15:17.9±1.3, 49°.83N×18°.65E, h0km, mb2.1/4, ML2.8/4, Error ellipse: s-maj=13.1km s-min=8.6km az=153.0, Suspected Mining induced.

ISC 09 04:15:13.8±0.6, 50°25N±0°02×18°66E±0°01, h0km, n107, σ1§37/171, 20C-6D, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAC	**Raciborz**	**0.34**	**240**	*e*Pg	**Pb**	**04 15 23.4**	**+0.7**
RAC				*e*Sg	**Sb**	**04 15 28.6**	**-0.1**
OKC	**Ostrava-Krasne**	**0.53**	**218**	⇑*i*PG	**Pb**	**04 15 25.3**	**-0.6**
OKC				*e*SG	**Sg**	**04 15 30.9**	**+0.1**
	comp=Z,353nm,0.9s						
OKC	**Ostrava-Krasne**	**0.53**	**218**	*e*Pg	**Pb**	**04 15 25.4**	**-0.6**
OKC				*e*Sg	**Sb**	**04 15 33.9**	**-0.3**
OKC	**Ostrava-Krasne**	**0.53**	**218**	Pg	**Pb**	**04 15 25.4**	**-0.5**
OKC				Sg	**Sb**	**04 15 33.9**	**-0.3**
OJC	**Ojcow**	**0.73**	**92**	*e*Pg	**Pg**	**04 15 28.4**	**+0.6**
OJC				*e*Sg	**Sg**	**04 15 38.1**	**+0.8**
OJC	**Ojcow**	**0.73**	**92**	*e*Pg	**Pb**	**04 15 28.7**	**-0.8**
OJC				*e*Sg	**Sg**	**04 15 38.3**	**+1.0**
OJC	**Ojcow**	**0.73**	**92**	*e*Pg	**Pg**	**04 15 28.4**	**+0.6**
OJC				*e*Sg	**Sg**	**04 15 38.1**	**+0.8**
OJC	**Ojcow**	**0.73**	**92**	*e*Pg	**Pg**	**04 15 28.4**	**+0.6**
OJC				*e*Sg	**Sg**	**04 15 38.1**	**+0.8**
MORC	**Moravsky Berou**	**0.86**	**237**	⇑*i*P	**Pb**	**04 15 31.6**	**0.0**
MORC				S	**Sb**	**04 15 43.7**	**-0.1**
MORC	**Moravsky Berou**	**0.86**	**237**	*e*Pg	**Pb**	**04 15 31.3**	**-0.4**
MORC				*e*Sg	**Sb**	**04 15 43.9**	**+0.2**
MORC	**Moravsky Berou**	**0.86**	**237**	Pg	**Pb**	**04 15 31.3**	**-0.4**
MORC	**Moravsky Berou**	**0.86**	**237**	⇑*i*P	**Pb**	**04 15 31.6**	**0.0**
MORC				*e*Sg	**Sb**	**04 15 42.7**	**-1.1**
	128nm,0.5s						
MORC				S	**Sb**	**04 15 43.7**	**-0.1**
KRLC	**Kraliky**	**1.22**	**262**	*e*PG	**Pb**	**04 15 37.4**	**-0.3**
KRLC				*e*SG	**Sb**	**04 15 53.6**	**-0.4**
LANS	**Liptovska Anna**	**1.22**	**154**	*e*Pg	**Pg**	**04 15 37.3**	**+0.1**
LANS				*e*Sg	**Sb**	**04 15 54.5**	**+0.4**
LANS	**Liptovska Anna**	**1.22**	**154**	*e*PG	**Pg**	**04 15 37.3**	**+0.1**
LANS				*e*SG	**Sb**	**04 15 54.5**	**+0.4**
NIE	**Niedzica**	**1.35**	**128**	*e*Pg	**Pg**	**04 15 39.6**	**-0.1**
NIE				*e*Sg	**Sg**	**04 15 56.6**	**-0.6**
NIE	**Niedzica**	**1.35**	**128**	*e*Pg	**Pg**	**04 15 39.6**	**-0.1**
NIE				*e*Sg	**Sg**	**04 15 56.6**	**-0.6**
NIE	**Niedzica**	**1.35**	**128**

	0.5nm,0.2s								
BRG	**Berggiesshubel**	**3.07**	**283**		PG		**Pg**	**04 16 12.8**	**+0.2**
BRG					SG		**Sg**	**04 16 53.3**	**+0.9**
	23nm,0.5s								
BRG	**Berggiesshubel**	**3.07**	**283**	*e*	Pg		**Pg**	**04 16 13.5**	**+0.9**
BRG				*e*	Sg		**Sg**	**04 16 54.8**	**+2.5**
BRG	**Berggiesshubel**	**3.07**	**283**		Pg		**Pg**	**04 16 13.5**	**+0.9**
BRG					Sg		**Sg**	**04 16 54.8**	**+2.5**
MUKU	**Mukachevo**	**3.19**	**123**	*e*	Pn		**Pb**	**04 16 10.5**	**-0.8**
MUKU					Pnm			04 16 11.7	
MUKU					eSn		**Sb**	**04 16 51.7**	**+1.0**
MUKU					Snm			04 16 55.3	
MUKU					Snm			04 16 55.3	
SHIU	**Shidnytsya**	**3.22**	**107**	*e*	Pn		**Pb**	**04 16 10.9**	**-1.0**
BERU	**Beregovo**	**3.31**	**126**	*e*	Pn		**Pb**	**04 16 12.4**	**-0.8**
BRIU	**Brid**	**3.44**	**122**	*e*	Pn		**Pb**	**04 16 14.3**	**-1.2**
KHC	**Kasperske Hory**	**3.48**	**253**	*e*	PN		**Pn**	**04 16 10.2**	**+1.0**
KHC					ePG		**Pg**	**04 16 19.0**	**-1.5**
KHC					eSG		**Sg**	**04 17 03.5**	**-2.1**
	comp=Z,20nm,0.5s								
LVV	**L'vov**	**3.49**	**95**	*e*	Pn		**Pb**	**04 16 15.7**	**-0.7**
LVV					Pnm			04 16 17.7	
LVV					eSn		**Sb**	**04 17 01.7**	**+2.3**
LVV					Snm			04 17 02.9	
GERES	**GERESS Array B**	**3.52**	**248**		Pn		**Pn**	**04 16 10.3**	**+0.5**
	0.3nm,0.3s,baz=71,slow=15,SNR=6.5								
GERES					Lg		Lg	04 17 06.2	
	5.9nm,0.3s,baz=73,slow=28,SNR=20								
TRSU	**Trosnyk**	**3.55**	**126**	*e*	Pn		**Pb**	**04 16 16.0**	**-1.5**
TRSU					Pnm			04 16 17.0	
TRSU					eSn		**Sb**	**04 17 01.8**	**+0.7**
TRSU					Snm			04 17 06.6	
KORU	**Korolevo**	**3.61**	**124**	*e*	Pn		**Pb**	**04 16 16.9**	**-1.5**
KORU					Pnm			04 16 20.9	
MEZ	**Mezhgor'ye**	**3.62**	**117**	*e*	Pn		**Pb**	**04 16 17.4**	**-1.2**
MEZ					Pnm			04 16 20.4	
MEZ					eSn		**Sb**	**04 17 04.2**	**+1.1**
MEZ					Snm			04 17 05.8	
CLL	**Collm**	**3.74**	**289**	*e*	Pg		**Pg**	**04 16 26.0**	**+0.6**
CLL				*e*				04 16 30.0	
CLL					eSg		**Sg**	**04 17 16.0**	**+2.1**
	comp=Z,45nm,1.2s								
CLL	**Collm**	**3.74**	**289**	*e*	Pg		**Pg**	**04 16 26.1**	**+0.6**
CLL	**Collm**	**3.74**	**289**		Pg		**Pg**	**04 16 26.1**	**+0.6**
MOA	**Molln**	**3.76**	**232**		Pn		**Pn**	**04 16 14.9**	**+1.9**
	comp=Z,1.5nm,0.3s								
MOA					Sg		**Sg**	**04 17 11.9**	**-2.6**
	comp=Z,16nm,0.6s								
WET	**Wettzell**	**3.91**	**256**	*e*	Pg		**Pg**	**04 16 29.0**	**+0.3**
WET					eSg		**Sg**	**04 17 18.7**	**-0.7**
WET	**Wettzell**	**3.91**	**256**		Pg		**Pg**	**04 16 29.0**	**+0.3**
WET					Sg		**Sg**	**04 17 18.7**	**-0.7**
NKC	**Novy Kostel**	**3.98**	**272**	*e*	SG		**Sg**	**04 17 21.7**	**0.0**
	comp=Z,17nm,0.4s								
WERN	**Wernitzgruen**	**4.03**	**273**	*e*	Sg		**Sg**	**04 17 22.8**	**-0.3**
WERN	**Wernitzgruen**	**4.03**	**273**		Sg		**Sg**	**04 17 22.8**	**-0.3**
WERD	**Werda**	**4.07**	**275**	*e*	Sg		**Sg**	**04 17 23.7**	**-0.8**
WERD	**Werda**	**4.07**	**275**		Sg		**Sg**	**04 17 23.7**	**-0.8**
STNU	**Starunia**	**4.11**	**110**	*e*	Pn		**Pb**	**04 16 25.6**	**-1.4**
STNU					eSn		**Sb**	**04 17 18.8**	**+1.6**
PLN	**Plauen**	**4.17**	**276**	*e*	Sg		**Sg**	**04 17 26.1**	**-1.5**
NSLU	**Nyzhne Selyshc**	**4.32**	**116**	*e*	Pn		**Pn**	**04 16 19.5**	**-1.2**
NSLU					Pnm			04 16 21.2	
DRGR		**4.39**	**141**	⇑	iP		**Pn**	**04 16 22.2**	**+0.5**
DRGR		**4.39**	**141**	⇑	iP		**Pn**	**04 16 22.2**	**+0.5**
MOX	**Moxa**	**4.52**	**278**	*e*	Sg		**Sg**	**04 17 40.6**	**+1.8**
MOX	**Moxa**	**4.52**	**278**		Sg		**Sg**	**04 17 40.6**	**+1.8**
KSV	**Kosov**	**4.62**	**112**	*e*	Sn		**Sb**	**04 17 33.2**	**+1.3**
KSV					Snm			04 17 35.8	
BZS	**Buzias**	**5.05**	**156**	⇑	iP		**Pn**	**04 16 30.7**	**0.0**
BZS	**Buzias**	**5.05**	**156**	⇑	iP		**Pn**	**04 16 30.7**	**0.0**
BURAR	**Bucovina Array**	**5.07**	**119**	⇑	iP		**Pn**	**04 16 31.8**	**+0.8**
BURAR	**Bucovina Array**	**5.07**	**119**	⇑	iP		**Pn**	**04 16 31.8**	**+0.8**
HORU	**Horodok**	**5.15**	**99**	*e*	Pn		**Pb**	**04 16 42.7**	**-1.9**
HORU					eSn		**Sb**	**04 17 49.5**	**+2.6**
KMPD	**K-Podol'skiy**	**5.37**	**105**	*e*	Pn		**Pb**	**04 16 47.1**	**-1.3**
KMPD					eSn		**Sb**	**04 17 55.5**	**+2.2**
BSD	**Bornholm Skovb**	**5.37**	**336**	*i*	P		**Pn**	**04 16 36.0**	**+0.9**
BSD				*i*	S		**Sn**	**04 17 34.6**	**-3.0**
BSD	**Bornholm Skovb**	**5.37**	**336**	*i*	P		**Pn**	**04 16 36.0**	**+0.9**
BSD				*i*	S		**Sn**	**04 17 34.6**	**-3.0**
NDNU	**Novodnistrovsk**	**5.92**	**103**	*e*	Sn		**Sb**	**04 18 12.0**	**+2.8**
NDNU					Snm			04 18 13.0	
NVLJ	**Novalja**	**6.25**	**206**	*e*	Pg		**Pg**	**04 17 16.9**	**+3.6**
VOIR		**6.46**	**136**	⇓	iP		**Pn**	**04 16 52.9**	**+2.8**
VOIR		**6.46**	**136**	⇓	iP		**Pn**	**04 16 52.9**	**+2.8**
AKASG	**Malin Array Be**	**6.76**	**82**		Pn		**Pn**	**04 16 53.9**	**-0.3**
	comp=Z,0.7nm,0.3s,baz=275,slow=14,SNR=3.9								
AKASG					Lg		Lg	04 18 42.8	
	comp=Z,2.6nm,0.3s,baz=306,slow=5.5,SNR=6.1								
DAVOX	**Davos/Dischmat**	**6.79**	**243**		Lg		Lg	04 18 53.2	
	comp=Z,0.6nm,0.3s,baz=40,slow=22,SNR=5.2								
NACGM	**Naroch**	**6.80**	**44**	*e*			**Sn**	**04 18 10.0**	**-2.7**
MLR	**Muntele Rosu**	**6.83**	**131**	⇓	iP		**Pn**	**04 16 58.0**	**+2.7**
MLR	**Muntele Rosu**	**6.83**	**131**	⇓	iP		**Pn**	**04 16 58.0**	**+2.7**
VRI	**Vrincioaia**	**6.96**	**126**	⇑	iP		**Pn**	**04 17 00.8**	**+3.8**
CFR	**Carcaliu**	**8.16**	**125**	⇑	iP		**Pn**	**04 17 16.0**	**+2.6**
CFR	**Carcaliu**	**8.16**	**125**	⇑	iP		**Pn**	**04 17 16.0**	**+2.6**
HFS	**Hagfors**	**10.30**	**346**		Pn		**Pn**	**04 17 41.8**	**-0.8**
	comp=Z,0.1nm,0.3s,baz=161,slow=15,SNR=3.3								
HFS					Sn		**Sn**	**04 19 32.6**	**-6.0**
	comp=Z,0.1nm,0.3s,baz=156,slow=19,SNR=2.5								
NOA	**NORSAR Array B**	**11.59**	**342**		Pn		**Pn**	**04 17 59.0**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=152,slow=12,SNR=4.3								
FINES	**FINESS Array B**	**11.96**	**17**		Pn		**Pn**	**04 18 03.5**	**-1.7**
	comp=Z,0.2nm,0.3s,baz=202,slow=15,SNR=11								
FINES					Sn		Sn	04 20 10.0	-9.2
	comp=Z,0.4nm,0.3s,baz=195,slow=20,SNR=6.6								

*ISCJB **09** 04:29:27.7±0.5,38.°14N±0.°03×57.°19E±0.°05,h10km,Error ellipse: s-maj=5.1km s-min=4.6km az=0.2*
*CSEM **09** 04:29:28.9±0.3,38.°09N×57.°15E,h2km,ML3.7,Error ellipse: s-maj=6.2km s-min=6.0km az=39.0*
*TEH **09** 04:29:30.5,38.°10N×57.°16E,h6km,ML3.7*
*NNC **09** 04:29:31.2±10.0,38.°33N×57.°19E,h0km,mb3.8,Error ellipse: s-maj=92.1km s-min=52.4km az=33.0*
ISC 09 04:29:29.5±0.8,38.°09N±0.°05×57.°14E±0.°04,h10km,n24,
σ1°33/31,2C-3D,Iran-Turkmenistan border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BJRD	**Bojnurd**	**0.44**	**152**	*e*	Pg	**Pg**	**04 29 36.6**	**-1.6**
BJRD				*e*	Sg	**Sg**	**04 29 42.8**	**-1.2**
MRVT	**Maraveh tapeh**	**0.94**	**243**	*e*	Pg	**Pg**	**04 29 45.6**	**-1.9**
MRVT				*e*	Sg	**Sg**	**04 29 58.8**	**-0.9**
ISFR	**Sfrayin**	**1.24**	**146**	*e*	Pg	**Pn**	**04 29 52.2**	**-0.9**
ISFR				*e*	AMB	AMB	04 30 13.5	
	comp=Z,21μm,0.2s							
IEMG	**Emamgholi**	**1.37**	**119**	*e*	Pg	**Pn**	**04 29 54.1**	**-0.9**
IEMG				*e*	AMB	AMB	04 29 55.9	
	comp=Z,12μm,0.1s							
IEMG	**Emamgholi**	**1.37**	**119**	*e*	Pg	**Pn**	**04 29 54.1**	**-0.9**
IKRD	**Kardeh**	**1.71**	**140**	*e*	AMB	AMB	04 30 12.2	
	comp=Z,5μm,0.1s							
IAKL	**Akhelmad**	**1.96**	**139**	*e*	AMB	AMB	04 30 10.4	
	comp=Z,4μm,0.2s							
IAKL				*e*	Pn	**Pn**	**04 30 04.4**	**+1.3**
IAKL				*e*	Sg	**Sb**	**04 30 32.5**	**+2.3**
IPAY	**Payeh**	**2.21**	**137**	*e*	AMB	AMB	04 30 46.3	
	comp=Z,4μm,0.2s							
IPAY				*e*	Pn	**Pn**	**04 30 08.1**	**+1.7**
SHRO	**Shahrood**	**2.28**	**204**	*e*	Pn	**Pn**	**04 30 08.0**	**+0.7**
IMOG	**Moghan**	**2.65**	**138**	*e*	Pn	**Pn**	**04 30 14.0**	**+1.5**
IMOG				*e*	AMB	AMB	04 30 56.3	
	comp=Z,2μm,0.2s							
IMOG	**Moghan**	**2.65**	**138**	*e*	Pn	**Pn**	**04 30 14.0**	**+1.5**
IMYA	**Miami**	**2.94**	**126**	*e*	Pn	**Pn**	**04 30 18.1**	**+1.7**
IMYA				*e*	AMB	AMB	04 31 13.2	
	comp=Z,2μm,0.2s							
IMYA	**Miami**	**2.94**	**126**	*e*	Pn	**Pn**	**04 30 18.1**	**+1.7**
IANJ	**Anjilo**	**3.68**	**226**	*e*	Pn	**Pn**	**04 30 27.3**	**+0.6**
IANJ				*e*	AMB	AMB	04 31 38.4	
	comp=Z,633nm,0.4s							
IANJ	**Anjilo**	**3.68**	**226**	*e*	Pn	**Pn**	**04 30 27.3**	**+0.6**
ISHM	**Shahmirzad**	**3.83**	**235**	*e*	Pn	**Pn**	**04 30 30.3**	**+1.5**
ISHM				*e*	AMB	AMB	04 31 43.7	
	comp=Z,1μm,0.2s							
IALA	**Alasht**	**4.00**	**241**	*e*	Pn	**Pn**	**04 30 32.8**	**+1.7**
IALA				*e*	AMB	AMB	04 31 26.1	
	comp=Z,2μm,0.2s							
IALA	**Alasht**	**4.00**	**241**	*e*	Pn	**Pn**	**04 30 32.8**	**+1.7**
KK31	**Karatay Array**	**11.33**	**60**	⇑	Pn	**Pn**	**04 32 11.4**	**+0.1**
	comp=Z,0.6nm,0.4s,baz=7.7,slow=10,SNR=4.6							
KK31				⇓	Sn	**Sn**	**04 34 17.9**	**0.0**
	comp=Z,1.0nm,0.5s							
KK31	**Karatay Array**	**11.33**	**60**		Pn	**Pn**	**04 32 11.4**	**+0.1**
	comp=Z,0.6nm,0.4s,SNR=4.6							
KK31					Sn	**Sn**	**04 34 17.9**	**0.0**
	comp=Z,1.0nm,0.5s							
AB31	**Akbulak array**	**11.34**	**9**		Pn	**Pn**	**04 32 12.1**	**+0.6**
	comp=Z,0.6nm,0.4s,baz=196,slow=13,SNR=12							
AB31				⇓	Sn	**Sn**	**04 34 15.5**	**-2.7**
	comp=Z,0.7nm,0.5s,baz=196,slow=23							
AB31	**Akbulak array**	**11.34**	**9**		Pn	**Pn**	**04 32 12.1**	**+0.6**
	comp=Z,0.6nm,0.4s,baz=196,SNR=12							
AKTO	**Aktyubinsk**	**12.36**	**3**	⇓	Pn	**Pn**	**04 32 25.8**	**+0.5**
	comp=Z,1.5nm,0.5s							
AKTO				⇑	Sn	**Sn**	**04 34 43.5**	**+0.4**
	comp=Z,1.6nm,0.8s							
AKTO	**Aktyubinsk**	**12.36**	**3**		Pn	**Pn**	**04 32 25.8**	**+0.5**
	comp=Z,1.5nm,0.5s							
AKTO					Sn	**Sn**	**04 34 43.5**	**+0.4**
	comp=Z,1.6nm,0.8s							

*ISCJB **09** 04:37:04.4±0.4,24.°22N±0.°01×121.°86E±0.°02,h5km±2km, Error ellipse: s-maj=2.7km s-min=2.0km az=136.3*
*TAP **09** 04:37:04.8,24.°25N×121.°79E,h20km,ML4.0,B*
*JMA **09** 04:37:04.4,24.°19N×121.°74E,h21km±1km,M3.3*
ISC 09 04:37:05.0±0.9,24.°23N±0.°02×121.°83E±0.°02,h13km±7km,
n69,σ0°74/113,12C-7D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
EHP	**Heping Village**	**0.12**	**315**		P	**Pb**	**04 37 09.3**	**+0.2**
	baz=324							
EHP				*i*	S	**Sb**	**04 37 11.9**	**0.0**
	baz=324							
ENA	**Nanau**	**0.22**	**337**	⇑	*i*P	**Pg**	**04 37 09.8**	**0.0**
	baz=346							
TWD	**Chiawan**	**0.26**	**236**	⇑	*i*P	**Pg**	**04 37 10.9**	**+0.4**
	baz=231							
TWD				*i*	S	**Sg**	**04 37 15.0**	**+0.8**
	baz=231							
HWA	**Hwalien**	**0.32**	**220**	*e*	P	**Pb**	**04 37 12.7**	**+0.1**
	baz=219							
TWC	**Suao**	**0.38**	**2**	⇓	*i*P	**Pg**	**04 37 12.8**	**+0.2**
	baz=5.0							
TWC				*i*	S	**Sg**	**04 37 18.3**	**+0.4**
	baz=5.0							
ESF	**Shoufeng Towns**	**0.46**	**220**	*e*	P	**Pg**	**04 37 14.4**	**+0.3**
	baz=215							
NNS	**Nan Shan**	**0.47**	**297**	⇑	*i*P	**Pg**	**04 37 14.0**	**-0.3**
	baz=296							
NNS					S	**Sg**	**04 37 20.1**	**-0.6**
	baz=296							
ENTT	**Nioudou**	**0.48**	**330**	⇑	*i*P	**Pg**	**04 37 14.1**	**-0.3**
	baz=325							
ENTT				*i*	S	**Sg**	**04 37 20.7**	**-0.2**
	baz=325							
TWE	**Neicheng**	**0.52**	**343**	⇑	*i*P	**Pg**	**04 37 15.0**	**-0.2**
	baz=346							
TWE				*i*	S	**Sg**	**04 37 21.9**	**-0.1**
	baz=346							
WHF	**Hehuan Shan**	**0.53**	**261**	⇑	*i*P	**Pg**	**04 37 15.2**	**-0.2**
	baz=257							
ILA	**Ilan**	**0.54**	**352**	*e*	P	**Pg**	**04 37 14.9**	**-0.8**
	baz=349							
ESL	**Shilin**	**0.55**	**222**	*e*	P	**Pg**	**04 37 15.7**	**-0.1**
	baz=223							
ESL				*e*	S	**Sb**	**04 37 23.9**	**-0.2**
	baz=223							
TWT	**Tachien**	**0.60**	**273**	⇑	*i*P	**Pg**	**04 37 16.9**	**+0.1**
	baz=270							
TWT					S	**Sg**	**04 37 24.8**	**0.0**
	baz=270							
EGS		**0.62**	**8**	⇑	P	**Pg**	**04 37 17.5**	**+0.3**
	baz=17							
NSK	**Sanguang**	**0.62**	**316**	⇑	*i*P	**Pg**	**04 37 16.7**	**-0.5**
	baz=317							
NSK				*i*	S	**Sg**	**04 37 24.8**	**-0.7**
	baz=317							
TWA	**Mucha**	**0.79**	**343**		P	**Pg**	**04 37 20.4**	**+0.2**
	baz=345							
TWA					S	**Sg**	**04 37 30.6**	**0.0**
	baz=345							
WDT	**Danda**	**0.79**	**234**	⇓	*i*P	**Pg**	**04 37 19.9**	**-0.5**
	baz=231							
WDT					S	**Sb**	**04 37 31.7**	**+0.2**
	baz=231							
TWB1	**Santiao Chiao**	**0.79**	**10**	⇑	P	**Pg**	**04 37 20.4**	**0.0**
	baz=13							
TWB1					S	**Sg**	**04 37 30.1**	**-0.7**
	baz=13							
NWF	**Wu-fen Shan**	**0.84**	**357**	⇑	P	**Pb**	**04 37 21.4**	**-0.1**
	baz=349							
NWF					S	**Sg**	**04 37 32.0**	**-0.5**
	baz=349							
EHY	**Hungye**	**0.85**	**213**	*e*	P	**Pb**	**04 37 20.1**	**-1.5**
	baz=220							
TAP1	**Taipei**	**0.86**	**341**		P	**Pg**	**04 37 22.1**	**+0.5**
	baz=341							
TAP1				*e*	S	**Sb**	**04 37 32.8**	**-0.3**
	baz=341							
NSTT	**Nanjuang**	**0.86**	**298**	⇑	*i*P	**Pb**	**04 37 21.2**	**-0.5**
	baz=297							
NSTT					S	**Sb**	**04 37 32.2**	**-1.0**
	baz=297							
TAP	**Taipei**	**0.86**	**340**	*e*	P	**Pg**	**04 37 21.9**	**+0.2**
	baz=333							
SMLT	**Sun Moon Lake**	**0.92**	**248**	*e*	P	**Pb**	**04 37 22.0**	**-0.8**
	baz=239							
SMLT				*e*	S	**Sg**	**04 37 35.0**	**+0.2**
	baz=239							
NCU	**National Centr**	**0.95**	**322**	*e*	P	**Pb**	**04 37 23.3**	**+0.1**
	baz=321							
NCU					S	**Sn**	**04 37 37.2**	**-0.1**
	baz=321							
TYC	**Yuchr**	**0.95**	**251**	*e*	P	**Pb**	**04 37 22.2**	**-1.0**
	baz=241							
TYC				*e*	S	**Sb**	**04 37 34.8**	**-0.9**
	baz=241							
TWS1	**Kuangyinshan**	**0.95**	**337**	*e*	P	**Pb**	**04 37 23.4**	**+0.1**
	baz=337							
TWS1				*e*	S	**Sn**	**04 37 37.0**	**-0.4**
	baz=337							
HSN	**Hsinchu**	**0.97**	**306**	*e*	P	**Pb**	**04 37 23.4**	**-0.3**
	baz=301							
HSN				*e*	S	**Sn**	**04 37 38.5**	**+0.5**
	baz=301							
TWQ1	**Liyutan**	**0.97**	**277**		P	**Pg**	**04 37 24.0**	**+0.2**
	baz=275							
TWQ1					S	**Sg**	**04 37 37.1**	**+0.6**
	baz=275							
NSY	**Sanyi**	**1.00**	**281**	*e*	P	**Pg**	**04 37 24.5**	**+0.3**
	baz=279							
NSY				*e*	S	**Sg**	**04 37 37.9**	**+0.6**
	baz=279							
TWF1	**Yuli**	**1.00**	**210**	*e*	P	**Pb**	**04 37 22.2**	**-1.9**
	baz=219							
JYNG	**Yonagunijimaku**	**1.04**	**77**		P	**Pn**	**04 37 25.2**	**0.0**
JYNG					S	**Sn**	**04 37 40.0**	**+0.5**
TCU	**Taichung**	**1.06**	**266**	⇓	eP	**Pg**	**04 37 25.6**	**+0.2**
	baz=263							
TCU					S	**Sn**	**04 37 40.9**	**+0.8**
	baz=263							
TWY	**Chenhua**	**1.07**	**349**	*e*	P	**Pn**	**04 37 25.6**	**0.0**
	baz=335							
TWY				*e*	S	**Sn**	**04 37 40.4**	**+0.1**
	baz=335							
YUS	**Yu-Shan**	**1.09**	**228**	⇓	*i*P	**Pb**	**04 37 25.3**	**-0.6**
	baz=225							
YUS				*e*	S	**Sg**	**04 37 41.0**	**+0.6**
	baz=225							
YOJ	**Yonaguni jima**	**1.10**	**77**		P	**Pb**	**04 37 26.0**	**+0.1**
YOJ				*e*	S	**Sn**	**04 37 41.4**	**+0.4**
YOJ	**Yonaguni jima**	**1.10**	**77**	⇓	*i*P	**Pb**	**04 37 25.9**	**+0.1**
	baz=69							
YOJ				*e*	S	**Sn**	**04 37 41.6**	**+0.6**
	baz=69							
WNT	**Mingjian**	**1.11**	**252**	*e*	P	**Pb**	**04 37 25.7**	**-0.3**
	baz=249							
WNT				*e*	S	**Sn**	**04 37 42.3**	**+1.1**
	baz=249							
ALS	**Alishan**	**1.18**	**233**	⇓	*i*P	**Pn**	**04 37 26.8**	**-0.6**
	baz=230							
ALS				*e*	S	**Sg**	**04 37 44.1**	**+0.9**
	baz=230							
CHKT	**Chengkung**	**1.20**	**201**	*e*	P	**Pn**	**04 37 25.8**	**-1.6**
	baz=188							
CHN5	**Tsauling**	**1.23**	**240**	*e*	P	**Pb**	**04 37 28.0**	**0.0**
	baz=223							
CHN5				*e*	S	**Sg**	**04 37 46.1**	**+1.5**
	baz=223							
ELDTW	**Lidau**	**1.27**	**216**	*e*	P	**Pn**	**04 37 27.0**	**-1.6**
	baz=201							
WGK	**Gukeng**	**1.28**	**246**	*e*	P	**Pb**	**04 37 29.1**	**+0.2**
	baz=241							
CHN2	**Minshiung**	**1.42**	**241**	*e*	P	**Pg**	**04 37 32.1**	**-0.2**
	baz=239							
CHN2				*e*	S	**Sg**	**04 37 53.0**	**+2.2**
	baz=239							
CHN4	**Tsaushan**	**1.43**	**233**	*e*	P	**Pb**	**04 37 31.1**	**-0.3**
	baz=230							
CHN4				*e*	S	**Sg**	**04 37 53.0**	**+1.9**
	baz=230							
STYT	**Tauyuan**	**1.45**	**223**	⇓	P	**Pn**	**04 37 30.4**	**-0.5**
	baz=220							
CHY	**Chiayi**	**1.48**	**241**	*e*	P	**Pb**	**04 37 32.5**	**+0.2**
	baz=238							
CHY				*e*	S	**Sg**	**04 37 52.6**	**0.0**
	baz=238							
WTP	**Ta-pu**	**1.48**	**229**	*e*	P	**Pn**	**04 37 31.8**	**+0.5**
	baz=227							
WTP				*e*	S	**Sg**	**04 37 53.0**	**+0.3**
	baz=227							
TWK	**Hsinying**	**1.56**	**233**	*e*	P	**Pn**	**04 37 32.3**	**-0.1**
	baz=228							
TWG	**Pinlang**	**1.56**	**207**	*e*	P	**Pn**	**04 37 30.1**	**-2.3**
	baz=190							
CHN1	**Nanshi**	**1.58**	**229**	*e*	P	**Pn**	**04 37 33.1**	**+0.4**
	baz=227							
CHN1				*e*	S	**Sg**	**04 37 55.7**	**-0.3**
	baz=227							
WSF	**Szhu**	**1.59**	**249**	*e*	P	**Pn**	**04 37 33.4**	**+0.7**
	baz=246							
WSF				*e*	S	**Sg**	**04 37 55.8**	**-0.3**
	baz=246							
SGST	**Jiashian**	**1.61**	**225**	*e*	P	**Pb**	**04 37 34.0**	**-0.6**
	baz=223							
SGST				*e*	S	**Sg**	**04 37 56.7**	**-0.3**
	baz=223							
CHN8	**Yiju**	**1.72**	**240**	*e*	P	**Pn**	**04 37 35.5**	**+0.9**
	baz=236							
IRIF	**Iriomote-Funau**	**1.73**	**86**		P	**Pn**	**04 37 34.7**	**0.0**
IRIF					eS	**Sn**	**04 37 57.1**	**+0.4**
HATJ	**Hateruma jima**	**1.81**	**95**		P	**Pn**	**04 37 36.4**	**+0.6**
HATJ					eS	**Sb**	**04 37 59.8**	**-0.7**
ECL	**Taimali**	**1.81**	**207**	*e*	P	**Pn**	**04 37 35.5**	**-0.2**
	baz=192							
SSD	**Sandimen**	**1.84**	**217**	*e*	P	**Pn**	**04 37 36.7**	**+0.5**
	baz=225							
SSD				*e*	S	**Sb**	**04 38 01.0**	**-0.3**
	baz=225							
TWM1	**Shoushan**	**1.90**	**223**	*e*	P	**Pn**	**04 37 37.9**	**+0.8**
	baz=219							
JKRS	**Kuro-shima**	**1.99**	**89**		P	**Pn**	**04 37 37.3**	**-0.9**
JKRS					eS	**Sb**	**04 38 04.6**	**-1.0**
EAST	**Anshuo**	**2.04**	**206**	*e*	P	**Pn**	**04 37 37.9**	**-1.2**
	baz=193							
TAW	**Tawu**	**2.05**	**205**	*e*	P	**Pn**	**04 37 39.0**	**0.0**
	baz=192							
JIJ	**Ishigaki jima**	**2.11**	**86**		P	**Pn**	**04 37 39.9**	**0.0**
JIJ					S	**Sn**	**04 38 07.6**	**+1.6**
SCZT	**Fangliau**	**2.15**	**211**	*e*	P	**Pn**	**04 37 41.4**	**+0.8**
	baz=192							
PNG	**Penghu**	**2.19**	**253**	*e*	P	**Pn**	**04 37 41.3**	**+0.4**
	baz=249							
WDGT	**Dungji**	**2.21**	**245**	*e*	P	**Pn**	**04 37 40.8**	**-0.5**
	baz=241							
JISG	**Ishigakijimahi**	**2.29**	**80**		P	**Pn**	**04 37 41.6**	**-0.8**
JISG					S	**Sn**	**04 38 12.1**	**+1.7**
JTJ	**Tarama**	**2.65**	**80**	*e*	S	**Sn**	**04 38 21.0**	**+1.7**
KNM	**Kinmen**	**3.11**	**274**	*e*	P	**Pn**	**04 37 53.6**	**0.0**
	baz=269							

*ISCJB **09** 04:37:58.8±0.5,29.°99S±0.°06×176.°10W±0.°07,h10km, mb4.5/19,MS3.4/3,Error ellipse: s-maj=9.2km s-min=7.8km az=44.5*
*IDC **09** 04:37:59.4±0.8,29.°62S×176.°09W,h0km,mb4.4/10, mb1 4.6/11,mb1mx4.3/31,mbtmp4.4/11,ML3.7/1,MS3.3/6, Ms1 3.3/6,ms1mx3.1/26,Error ellipse: s-maj=33.7km s-min=18.1km az=173.0*
*NEIC **09** 04:38:00.5±0.3,29.°88S×176.°13W,h10km,mb4.6/8,Error ellipse: s-maj=10.1km s-min=7.2km az=148.0*
ISC 09 04:38:00.5±0.5,29.°80S±0.°08×176.°19W±0.°06,h10km,n49,
σ0°83/47,mb4.5/19,MS3.3/3,Kermadec Islands region

| Code | Station Name | Δ° | AZ

BOZ	**Bozeman (W)**	**95.16**	**40**	*eP*		**P**		**04 51 24.4**	**+0.3**
ILAR	**Eielson Array**	**97.00**	**12**	P		**P**		**04 51 30.8**	**-1.0**
	0.6nm,0.8s,baz=220,slow=5.6,SNR=6.7								
MKAR	**Makanchi Array**	**118.59**	**310**	PKP		**PKPdf**		**04 56 47.2**	**-1.3**
	0.4nm,0.7s,baz=228,slow=1.5,SNR=3.8								
KURK	**Kurchatov**	**121.77**	**314**	PKP		**PKPdf**		**04 56 54.4**	**0.0**
KURBB	**Kurchatov Arra**	**121.81**	**314**	PKP		**PKPdf**		**04 56 54.4**	**-0.1**
	0.6nm,0.7s,baz=103,slow=1.9,SNR=5.2								
TKM2	**Tokmak 2**	**122.35**	**304**	*e*PKPdf		**PKPdf**		**04 56 55.6**	**-0.5**
KKAR	**Karatay Array**	**126.05**	**304**	*e*PKPdf		**PKPdf**		**04 57 02.9**	**-0.1**
BVAR	**Borovoye Array**	**127.07**	**316**	PKP		**PKPdf**		**04 57 04.8**	**+0.3**
	0.7nm,0.7s,baz=93,slow=3.0,SNR=3.5								
FINES	**FINESS Array B**	**145.10**	**341**	PKP		**PKPdf**		**04 57 36.2**	**-1.3**
	5.1nm,0.7s,baz=62,slow=3.1,SNR=37								
KBZ	**Khabaz**	**146.07**	**305**	PKPbc		**PKPab**		**04 57 40.4**	**-0.8**
	0.6nm,0.4s,baz=93,slow=4.2,SNR=4.1								
NB2	**NORSAR Subarra**	**148.37**	**353**	PKP		**PKPbc**		**04 57 46.1**	**-0.5**
	comp=Z,1.5nm,0.6s,baz=8.9,slow=2.9								
NOA	**NORSAR Array B**	**148.37**	**353**	PKPbc		**PKPbc**		**04 57 46.3**	**-0.3**
	comp=Z,2.7nm,0.8s,baz=13,slow=4.4,SNR=7.7								
AKASG	**Malin Array Be**	**151.75**	**325**	PKPbc		**PKPbc**		**04 57 54.8**	**-0.2**
	comp=Z,3.9nm,0.6s,baz=46,slow=2.9,SNR=14								
KIEV	**Kiev**	**151.76**	**325**	*e*PKPbc		**PKPbc**		**04 57 54.9**	**-0.2**
BRTR	**Keskin Array B**	**153.68**	**300**	PKPbc		**PKPbc**		**04 58 00.9**	**+1.0**
	comp=Z,0.3nm,0.4s,baz=152,slow=5.6,SNR=3.8								
BRTR				PKPab		**PKPab**		**04 58 14.1**	**+1.4**
	comp=Z,0.6nm,0.6s,baz=100,slow=4.1,SNR=4.1								
TORD	**Torodi Ar. Bea**	**163.31**	**173**	PKPab		**PKPab**		**04 58 56.4**	**+1.9**
	comp=Z,1.0nm,0.7s,baz=189,slow=5.7,SNR=8.3								

*SJA **09** 04:40:29.3±1.0, 34°.70S×68°.85W, h14km±28km, ML4.0, MW3.6*
*GUC **09** 04:40:35.4±0.6, 34°.46S×69°.03W, h20km±453km, ML3.3*
ISC 09 04:40:32.7±4.3, **34°.6S**±0°.1×**68°.92W**±0°.07, **h8**km±21km, **n19**, σ0§**86**/31, **1C-8D, Mendoza Province**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
AAGR	**Agrelo**	**1.48**	**3**	*e*P		**Pn**	**04 40 59.8**	**0.0**
FCH	**Farellones**	**1.69**	**317**	⇓*i*P		**Pn**	**04 41 02.1**	**-0.7**
FCH				*i* S		**Sn**	**04 41 23.3**	**-1.5**
FCH				IAML			04 41 25.2	
	comp=E,557nm,0.6s							
ARCO	**CERRO ARCO**	**1.73**	**360**	*e*P		**Pn**	**04 41 02.9**	**-0.3**
ARCO				⇓*e*S		**Sg**	**04 41 27.8**	**-0.3**
ARCO				IAML			04 41 29.2	
	comp=Z,2μm,0.2s							
ANTU	**Antumapu**	**1.74**	**305**	*e*P		**Pn**	**04 41 02.9**	**-0.4**
ANTU				*i* S		**Sn**	**04 41 23.9**	**-1.8**
CLCH	**Cerro Calan**	**1.78**	**311**	⇓*i*P		**Pn**	**04 41 03.9**	**0.0**
CLCH				*i* S		**Sn**	**04 41 25.7**	**-1.2**
CLCH				IAML			04 41 32.7	
	comp=N,1μm,0.7s							
RCDM	**Rinconada Maip**	**1.90**	**304**	⇑*i*P		**Pn**	**04 41 05.9**	**+0.3**
RCDM				*i* S		**Sn**	**04 41 29.1**	**-0.7**
ASAL	**Salagasta**	**1.98**	**2**	*e*P		**Pn**	**04 41 06.7**	**+0.1**
ASAL				⇓*e*S		**Sb**	**04 41 33.4**	**-0.5**
PEL	**Peldehue**	**2.05**	**314**	⇓*i*P		**Pn**	**04 41 08.1**	**+0.6**
PEL				*i* S		**Sn**	**04 41 32.8**	**-0.5**
PEL				IAML			04 41 35.3	
	comp=N,363nm,0.4s							
ROC1	**El Roble**	**2.36**	**312**	*e*P		**Pn**	**04 41 12.8**	**+0.7**
ROC1				*e*S		**Sn**	**04 41 43.5**	**+2.1**
ROCH	**El Roble**	**2.36**	**312**	⇓*i*P		**Pn**	**04 41 12.8**	**+0.7**
ROCH				*i* S		**Sn**	**04 41 42.8**	**+1.4**
ROCH				IAML			04 41 45.4	
	comp=N,274nm,0.5s							
AUSP	**Uspallata**	**2.37**	**350**	*e*P		**Pn**	**04 41 12.9**	**+0.6**
AUSP				*e*S		**Sb**	**04 41 45.5**	**0.0**
ACAN	**Cantantal**	**2.71**	**33**	⇓*e*P		**Pn**	**04 41 16.7**	**+0.1**
RTCV	**Cerro Valdivia**	**2.72**	**7**	*e*P		**Pn**	**04 41 16.3**	**-0.5**
RTCV				⇓*e*S		**Sb**	**04 41 55.4**	**+0.2**
RTLS	**Leoncito**	**2.78**	**353**	*e*P		**Pn**	**04 41 18.5**	**+0.6**
RTLS				*e*S		**Sb**	**04 41 58.4**	**+1.1**
RTLL	**Cerro Villicun**	**3.25**	**7**	*e*P		**Pn**	**04 41 24.4**	**+0.3**
AMOG	**MOGNA**	**3.64**	**6**	*e*P		**Pn**	**04 41 29.5**	**0.0**
ACHE	**Chepes**	**3.89**	**30**	*e*P		**Pn**	**04 41 33.2**	**+0.2**
AVFE	**Valle Fertil**	**4.09**	**18**	*e*P		**Pn**	**04 41 35.9**	**+0.2**
AVFE				IAML			04 42 53.9	
	comp=Z,132nm,0.3s							
AGUA	**GUANDACOL**	**5.08**	**4**	*e*P		**Pn**	**04 41 50.1**	**+0.8**

IDC 09 04:48:35.5±2.1, **28°.97S**×**175°.97W**, **h0**km, **mb3.6**/2, **mb1 3.9**/2, **mb1mx3.6**/25, **mbtmp3.6**/2, **Error ellipse: s-maj=86.8km s-min=29.8km az=2.0, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RAO	**Raoul Island**	**1.73**	**260**	Pn		Pb	04 49 08.4	+0.3
	121nm,0.3s,baz=108,slow=10,SNR=7.0							
RAO				Sn		Sb	04 49 30.6	+0.1
	238nm,0.3s,baz=195,slow=22,SNR=7.1							
ASAR	**Alice Springs**	**44.98**	**265**	P		P	04 56 50.9	-1.9
	0.2nm,0.3s,baz=104,slow=8.6,SNR=5.3							
WRA	**Warramunga Arr**	**45.84**	**270**	P		P	04 56 59.8	+0.1
	0.5nm,0.4s,baz=111,slow=7.7,SNR=8.0							
FINES	**FINESS Array B**	**144.37**	**342**	PKP		PKPdf	05 08 13.8	+0.9
	0.5nm,0.6s,baz=57,slow=5.1,SNR=5.9							
TORD	**Torodi Ar. Bea**	**164.11**	**172**	PKPab		PKPab	05 09 34.2	-0.4
	0.6nm,0.8s,baz=170,slow=4.4,SNR=2.9							

*GUC **09** 05:10:02.2±0.4, 33°.96S×72°.26W, h36km±2km, ML2.9*
ISC 09 05:10:03.7±3.1, **33°.9S**±0°.1×**72°.1W**±0°.1, **h17**km, **n12**, σ1§**85**/23, **4C-1D, Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RCDM	**Rinconada Maip**	**1.17**	**70**	⇑*i*P		**Pb**	**05 10 24.0**	**-1.5**
RCDM				*i* S		**Sb**	**05 10 40.5**	**+0.1**
ANTU	**Antumapu**	**1.29**	**76**	*e*P		**Pb**	**05 10 26.2**	**-1.2**
ANTU				*i* S		**Sb**	**05 10 44.1**	**+0.4**
ANTU				IAML			05 10 47.8	
	comp=E,515nm,0.3s							
ROC1	**El Roble**	**1.31**	**46**	*e*P		**Pb**	**05 10 26.5**	**-1.4**
ROC1				*e*S		**Sb**	**05 10 44.7**	**+0.2**
ROCH	**El Roble**	**1.31**	**46**	⇓*i*P		**Pb**	**05 10 26.6**	**-1.4**
ROCH				*i* S		**Sb**	**05 10 45.3**	**+0.6**
ROCH				IAML			05 10 52.9	
	comp=N,346nm,0.4s							
CLCH	**Cerro Calan**	**1.42**	**70**	⇑*i*P		**Pb**	**05 10 28.2**	**-1.5**
CLCH				*i* S		**Sb**	**05 10 47.9**	**+0.4**
CLCH				IAML			05 11 00.1	
	comp=N,230nm,0.6s							
PEL	**Peldehue**	**1.42**	**58**	⇑*i*P		**Pb**	**05 10 28.1**	**-1.6**
PEL				*i* S		**Sb**	**05 10 48.1**	**+0.5**
PEL				IAML			05 10 58.1	
	comp=E,238nm,0.5s							
FCH	**Farellones**	**1.63**	**70**	⇑*i*P		**Pb**	**05 10 31.6**	**-2.0**
FCH				*i* S		**Sb**	**05 10 53.9**	**-0.1**
FCH				IAML			05 10 58.5	
	comp=E,252nm,0.2s							
AUSP	**Uspallata**	**2.84**	**55**	*e*P		**Pb**	**05 10 50.7**	**-3.4**
AUSP				*e*S		**Sb**	**05 11 30.3**	**+1.5**
ASAL	**Salagasta**	**3.05**	**66**	*e*P		**Pb**	**05 10 56.7**	**-0.8**
ASAL				*e*S		**Sb**	**05 11 38.1**	**+3.6**
RTLS	**Leoncito**	**3.17**	**49**	*e*P		**Pn**	**05 10 54.6**	**+1.6**
RTLS				*e*S		**Sg**	**05 11 43.7**	**-1.9**
RTLL	**Cerro Villicun**	**4.01**	**51**	*e*P		**Pn**	**05 11 05.3**	**+1.0**
RTLL				*e*S		**Sb**	**05 12 05.8**	**+3.7**
AVFE	**Valle Fertil**	**5.11**	**52**	*e*P		**Pn**	**05 11 21.1**	**+1.6**
AVFE				IAML			05 11 29.3	
	comp=Z,3.4nm,0.3s							

*IDC **09** 05:30:06.8±1.5, 6°.58N×72°.74W, h158km±12km, mb3.1/1, mb1 3.1/3, mb1mx2.7/27, mbtmp3.4/3, Error ellipse: s-maj=48.1km s-min=16.9km az=130.0*
*ISCJB **09** 05:30:08.9±1.1, 6°.78N±0°.04×73°.21W±0°.07, h141km±9km, mb3.3/1, Error ellipse: s-maj=11.3km s-min=5.5km az=17.9*
*RSNC **09** 05:30:09.7±1.1, 6°.78N×73°.20W, h137km±7km, ML3.2*
ISC 09 05:30:06.2±1.1, **6°.79N**±0°.05×**73°.07W**±0°.07, **h160**km±7km, **n19**, σ1§**40**/31, **3C-2D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BARC	**Barichara**	**0.23**	**209**	⇓*i*P		**Pn**	**05 30 28.4**	**+0.2**
BARC				*e*S		**Sn**	**05 30 43.0**	**-1.8**
BARC				*i*			05 30 44.0	
	comp=Z,618nm,0.2s							
GIRC	**Giron, Santand**	**0.31**	**337**	⇓*i*P		**Pn**	**05 30 28.6**	**+0.3**
PAMC	**Pamplona, Colo**	**0.66**	**34**	*e*P		**Pn**	**05 30 31.2**	**+1.1**
PAMC				*e*S		**Sn**	**05 30 48.0**	**-0.5**
BRRC	**Barranca, Sant**	**0.71**	**296**	⇑*i*P		**Pn**	**05 30 30.3**	**+0.4**
BRRC				*i*			05 30 30.6	
	comp=Z,814nm,0.1s							
RUSC	**La Rusia**	**0.89**	**181**	*e*P		**Pn**	**05 30 32.3**	**+0.6**
RUSC				*e*S		**Sn**	**05 30 50.1**	**-1.2**
RUSC				*i*			05 30 52.2	
	comp=Z,245nm,0.3s							
GRMC	**Gramalote, San**	**0.96**	**16**	⇑*i*P		**Pn**	**05 30 35.4**	**+3.5**
GRMC				*e*S		**Sn**	**05 30 53.4**	**+1.9**
GRMC				*i*			05 30 56.1	
	comp=Z,219nm,0.1s							
CBRI	**Barrientos, No**	**0.96**	**17**	⇑*i*P		**Pn**	**05 30 33.1**	**+1.2**
CBRI				*e*S		**Sn**	**05 30 50.6**	**-1.0**
CBRI				*i*			05 30 53.2	
	comp=Z,319nm,0.4s							
OCAC	**Ocana**	**1.46**	**350**	*e*P		**Pn**	**05 30 37.1**	**+0.8**
OCAC				*e*S		**Sn**	**05 30 58.5**	**-1.0**
OCAC				*i*			05 31 00.7	
	comp=Z,214nm,0.1s							
NORC	**Norcasia**	**2.16**	**236**	*e*P		**Pn**	**05 30 43.6**	**-0.3**
NORC				*e*S		**Sn**	**05 31 11.0**	**-2.0**
NORC				*i*			05 31 14.2	
	comp=Z,20nm,0.2s							
CHIC	**Chingaza**	**2.25**	**197**	*e*P		**Pn**	**05 30 46.4**	**+1.2**
CHIC				*e*S		**Sn**	**05 31 15.6**	**+0.1**
CHIC				*i*			05 31 20.0	
	comp=Z,50nm,0.3s							
ROSC	**El Rosal**	**2.30**	**213**	P		**Pn**	**05 30 48.4**	**+2.4**
	comp=Z,8.0nm,0.3s,baz=18,slow=20,SNR=61							
ROSC				S		**Sn**	**05 31 17.6**	**+1.1**
	comp=Z,24nm,0.3s,baz=156,slow=19,SNR=13							
HELC	**Santa Helena**	**2.51**	**256**	*e*P		**Pn**	**05 30 48.9**	**+0.6**
HELC				*e*S		**Sn**	**05 31 19.1**	**-1.7**
HELC				*i*			05 31 28.1	
	comp=Z,132nm,0.4s							
VILC	**Villavicencio,**	**2.73**	**193**	*e*P		**Pn**	**05 30 52.0**	**+1.2**
VILC				*e*S		**Sn**	**05 31 25.3**	**-0.1**
VILC				*i*			05 31 30.8	
	comp=Z,38nm,0.4s							
DBBC	**Dabeiba**	**3.12**	**274**	*e*P		**Pn**	**05 30 56.9**	**+1.3**
SDV	**Santo Domingo**	**3.19**	**49**	P		**Pn**	**05 30 55.5**	**-1.1**
	comp=Z,1.6nm,0.3s,baz=223,slow=9.5,SNR=3.0							
PRAC	**Prado**	**3.55**	**211**	*e*P		**Pn**	**05 31 01.7**	**+0.7**
PRAC				*e*S		**Sn**	**05 31 43.3**	**-0.4**
PRAC				*i*			05 31 49.5	
	comp=Z,172nm,0.2s							
LPAZ	**La Paz**	**23.45**	**168**	P		**P**	**05 35 00.1**	**-1.9**
	comp=Z,0.7nm,0.5s,baz=0.0,slow=4.0,SNR=4.6							
ASAR	**Alice Springs**	**149.13**	**234**	PKPbc		**PKPbc**	**05 49 37.4**	**+0.8**
	comp=Z,0.4nm,0.7s,baz=120,slow=3.3,SNR=4.7							
WRA	**Warramunga Arr**	**150.36**	**241**	PKPbc		**PKPbc**	**05 49 40.5**	**+0.9**
	comp=Z,0.3nm,0.4s,baz=108,slow=2.8,SNR=8.3							

*AZER **09** 05:35:43.3±0.1, 37°.77N×47°.72E, h4km, Error ellipse: s-maj=5.0km s-min=0.7km az=324.0*
*TEH **09** 05:35:45.5, 37°.79N×47°.52E, h4km, ML3.6*
*CSEM **09** 05:35:46.3±0.2, 37°.72N×47°.62E, h2km, ML3.5, Error ellipse: s-maj=7.8km s-min=3.7km az=79.0*
*THR **09** 05:35:46.2±0.5, 37°.90N×47°.52E, h42km±4km, ML3.5*
ISC 09 05:35:45.4±1.1, **37°.78N**±0°.02×**47°.54E**±0°.03, **h13**km±10km, **n78**, σ1§**76**/117, **16C-25D, Northwestern Iran**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
GRMI	**Germi**	**1.06**	**15**	*e*Pg		**Pg**	**05 36 04.6**	**-1.3**
GRMI				AML		AML	05 36 26.6	
	comp=N,1μm,0.2s							
GRMI	**Germi**	**1.06**	**15**	*e*Pg		**Pg**	**05 36 04.6**	**-1.3**
LRK	**Lerik**	**1.06**	**36**	⇓P		**Pg**	**05 36 05.3**	**-0.7**
	SNR=79							
LRK				⇓S		**Sn**	**05 36 21.0**	**0.0**
LRK	**Lerik**	**1.06**	**36**	P		**Pg**	**05 36 05.3**	**-0.7**
	SNR=79							
LRK				S		**Sn**	**05 36 21.0**	**0.0**
ITBZ	**Tabriz**	**1.19**	**293**	*e*Sg		**Sb**	**05 36 22.5**	**-0.8**
ITBZ				*e*Pg		**Pb**	**05 36 06.0**	**-2.0**
ITBZ				*e*AMB		AMB	05 36 24.9	
	comp=Z,16μm,0.1s							
ASTR	**Astara**	**1.25**	**51**	⇑P		**Pn**	**05 36 08.5**	**-0.2**
	SNR=102							
ASTR				⇓S		**Sn**	**05 36 26.4**	**+1.0**
ASTR	**Astara**	**1.25**	**51**	P		**Pn**	**05 36 08.5**	**-0.2**
	SNR=102							
ASTR				S		**Sn**	**05 36 26.4**	**+1.0**
LKRN	**Lenkeran, Azer**	**1.34**	**46**	⇓P		**Pn**	**05 36 10.1**	**+0.2**
	SNR=99							
LKRN				⇑S		**Sg**	**05 36 29.7**	**+1.0**
LKRN	**Lenkeran, Azer**	**1.34**	**46**	P		**Pn**	**05 36 10.1**	**+0.2**
	SNR=99							
LKRN				S		**Sg**	**05 36 29.7**	**+1.0**
ZNJK	**Zanjan**	**1.44**	**140**	*e*Pg		**Pg**	**05 36 14.4**	**+1.3**
ZNJK				AML		AML	05 36 35.6	
	comp=N,1μm,0.2s							
ZNJK	**Zanjan**	**1.44**	**140**	*e*Pg		**Pg**	**05 36 14.4**	**+1.3**
ISHB	**Shabestar**	**1.60**	**289**	*e*Pg		**Pn**	**05 36 13.2**	**-0.5**
ISHB				*e*AMB		AMB	05 36 14.2	
	comp=Z,15μm,0.2s							
ISHB				*e*Sg		**Sb**	**05 36 35.8**	**+0.6**
GLBA	**Clilabad**	**1.60**	**24**	⇑P		**Pg**	**05 36 15.6**	**-0.6**
	SNR=20							
GLBA				⇑S		**Sg**	**05 36 40.0**	**+3.0**
GLBA	**Clilabad**	**1.60**	**24**	P		**Pg**	**05 36 15.6**	**-0.6**
	SNR=20							
GLBA				S		**Sg**	**05 36 40.0**	**+3.0**
IMRD	**Marand**	**1.72**	**303**	*e*Pn		**Pn**	**05 36 15.7**	**+0.4**
IMRD				*e*AMB		AMB	05 36 16.5	
	comp=Z,36μm,0.1s							
IMRD				*e*Sg		**Sb**	**05 36 38.5**	**-0.1**
IMRD	**Marand**	**1.72**	**303**	*e*Pn		**Pn**	**05 36 15.7**	**+0.4**
NAX	**Nakhchivan**	**2.12**	**311**	⇓Pn		**Pb**	**05 36 23.3**	**-0.5**
	SNR=4.9							
NAX				⇑Sn		**Sg**	**05 36 54.0**	**+0.3**
NAX	**Nakhchivan**	**2.12**	**311**	Pn		**Pb**	**05 36 23.3**	**-0.5**
	SNR=4.9							
NAX				Sn		**Sg**	**05 36 54.0**	**+0.3**
ALIB	**Äli-Bayra**	**2.45**	**27**	⇓Pn		**Pn**	**05 36 29.9**	**+1.7**
	SNR=3.2							
ALIB				⇑Sn		**Sb**	**05 37 00.7**	**+1.1**
ALIB	**Äli-Bayra**	**2.45**	**27**	Pn		**Pn**	**05 36 26.9**	**+1.7**
	SNR=3.2							
ALIB				Sn		**Sb**	**05 37 00.7**	**+1.1**
BRDA	**Brd**	**2.49**	**354**	⇓Pn		**Pn**	**05 36 28.0**	**+2.3**
	SNR=8.7							
BRDA				⇓Sn		**Sb**	**05 37 03.0**	**+2.4**
BRDA	**Brd**	**2.49**	**354**	Pn		**Pn**	**05 36 28.0**	**+2.3**
	SNR=8.7							
BRDA				Sn		**Sb**	**05 37 03.0**	**+2.4**
ZRD	**Zardab**	**2.50**	**3**	⇑Pn		**Pn**	**05 36 28.1**	**+2.4**
	SNR=8.2							
ZRD				⇓Sn		**Sb**	**05 37 02.3**	**+1.6**
ZRD	**Zardab**	**2.50**	**3**	Pn		**Pn**	**05 36 28.1**	**+2.4**
	SNR=8.2							
ZRD				Sn		**Sb**	**05 37 02.3**	**+1.6**
KDMR	**Kurdemir**	**2.64**	**11**	⇓Sn		**Sb**	**05 37 04.8**	**0.0**
KDMR	**Kurdemir**	**2.64**	**11**	Sn		**Sb**	**05 37 04.8**	**0.0**
HKZM	**Kohzaman**	**2.64**	**155**	*e*Pn		**Pn**	**05 36 28.3**	**+0.3**
HKZM				*e*AMB		AMB	05 37 14.1	
	comp=Z,99nm,0.2s							
HKZM	**Kohzaman**	**2.64**	**155**	*e*Pn		**Pn**	**05 36 28.3**	**+0.3**
SNGE	**Sanandaj**	**2.69**	**183**	*e*Pn		**Pn**	**05 36 30.3**	**+1.7**
SNGE				AML		AML	05 37 09.6	
	comp=E,118nm,0.4s							
SNGE	**Sanandaj**	**2.69**	**183**	*e*Pn		**Pn**	**05 36 30.3**	**+1.7**
GBS	**Qobustan**	**2.96**	**21**	⇑Pn		**Pn**	**05 36 34.9**	**+2.7**
	SNR=2.8							
GBS				⇓Sn		**Sb**	**05 37 13.7**	**-0.4**
GBS	**Qobustan**	**2.96**	**21**	Pn		**Pn**	**05 36 34.9**	**+2.7**
	SNR=2.8							
GBS				Sn		**Sb**	**05 37 13.7**	**-0.4**
GANJ	**Ganja**	**3.01**	**342**	⇓Pn		**Pb**	**05 36 37.2**	**-1.8**
	SNR=14							
GANJ				⇓Sn		**Sb**	**05 37 17.4**	**+1.8**
GANJ	**Ganja**	**3.01**	**342**	Pn		**Pb**	**05 36 37.2**	**-1.8**
	SNR=14							
GANJ				Sn		**Sb**	**05 37 17.4**	**+1.8**
IML	**Ismayilli**	**3.05**	**9**	⇓Pn		**Pb**	**05 36 36.8**	**-2.8**
	SNR=7.8							
IML				⇑Sn		**Sb**	**05 37 15.9**	**-0.8**
IML	**Ismayilli**	**3.05**	**9**	Pn		**Pb**	**05 36 36.8**	**-2.8**
	SNR=7.8							
IML				Sn		**Sb**	**05 37 15.9**	**-0.8**
IRAZ	**Razeghan**	**3.05**	**140**	*e*Pn		**Pn**	**05 36 34.2**	**+0.6**
IRAZ				*e*AMB		AMB	05 37 23.8	
	comp=Z,4μm,0.2s							
IRAZ	**Razeghan**	**3.05**	**140**	*e*Pn		**Pn**	**05 36 34.2**	**+0.6**
PQL	**Pirkuli**	**3.11**	**15**	⇑Pn		**Pn**	**05 36 37.7**	**+3.3**
PQL				⇓Sn		**Sb**	**05 37 17.8**	**-0.8**
PQL	**Pirkuli**	**3.11**	**15**	Pn		**Pn**	**05 36 37.7**	**+3.3**
PQL				Sn		**Sb**	**05 37 17.8**	**-0.8**
QBL	**Gabala**	**3.17**	**4**	⇓Pn		**Pb**	**05 36 38.5**	**-3.1**
QBL				⇓Sn		**Sb**	**05 37 20.1**	**0.0**
QBL	**Gabala**	**3.17**	**4**	Pn		**Pb**	**05 36 38.5**	**-3.1**
QBL				Sn		**Sb**	**05 37 20.1**	**0.0**
IDHR	**Dehrash**	**3.21**	**197**	*e*AMB		AMB	05 37 33.9	
	comp=Z,1μm,0.4s							
HAGD	**Aghdareh**	**3.23**	**156**	*e*Pn		**Pn**	**05 36 36.7**	**+0.7**
HAGD				*e*AMB		AMB	05 37 33.9	
	comp=Z,99nm,0.2s							
HAGD	**Aghdareh**	**3.23**	**156**	*e*Pn		**Pn**	**05 36 36.7**	**+0.7**
GDB	**GEDABAY**	**3.25**	**335**	⇑Pn		**Pb**	**05 36 40.1**	**-2.9**
GDB				⇓Sn		**Sb**	**05 37 23.6**	**+1.1**
GDB	**GEDABAY**	**3.25**	**335**	Pn		**Pb**	**05 36 40.1**	**-2.9**
GDB				Sn		**Sb**	**05 37 23.6**	**+1.1**
ATGJ	**Altiaghaj**	**3.26**	**19**	⇓Sn		**Sb**	**05 37 21.7**	**-1.1**
ATGJ	**Altiaghaj**	**3.26**	**19**	Sn		**Sb**	**05 37 21.7**	**-1.1**
XNQ	**Khinaliq**	**3.42**	**8**	⇑Pn		**Pn**	**05 36 41.0**	**+2.4**
	SNR=7.6							
XNQ				⇓Sn		**Sb**	**05 37 26.0**	**-1.5**
XNQ	**Khinaliq**	**3.42**	**8**	Pn		**Pn**	**05 36 41.0**	**+2.4**
	SNR=7.6							
XNQ				Sn		**Sb**	**05 37 26.0**	**-1.5**
CHTH	**Charan**	**3.43**	**122**	*e*Pn		**Pn**	**05 36 40.1**	**+1.2**
CHTH				AML		AML	05 37 34.5	
	comp=N,97nm,0.5s							
CHTH	**Charan**	**3.43**	**122**	*e*Pn		**Pn**	**05 36 40.1**	**+1.2**
SEKA	**Sheki**	**3.43**	**356**	⇓Pn		**Pn**	**05 36 40.2**	**+1.5**
	SNR=6.2							
SEKA				⇓Sn		**Sb**	**05 37 26.5**	**-1.3**
SEKA	**Sheki**	**3.43**	**356**	Pn		**Pn**	**05 36 40.2**	**+1.5**
	SNR=6.2							
SEKA				Sn		**Sb**	**05 37 26.5**	**-1.3**
SIZA	**Siyzn**	**3.45**	**17**	⇓Pn		**Pn**	**05 36 41.4**	**+2.4**
	SNR=3.3							
SIZA				⇓Sn		**Sb**	**05 37 25.9**	**-2.5**
SIZA	**Siyzn**	**3.45**	**17**	Pn		**Pn**	**05 36 41.4**	**+2.4**
	SNR=3.3							
SIZA				Sn		**Sb**	**05 37 25.9**	**-2.5**
IGHG	**Ghaleghazi**	**3.54**	**193**	*e*Pn		**Pn**	**05 36 44.9**	**-3.1**
IGHG				*e*AMB		AMB	05 37 47.7	
	comp=Z,1μm,0.5s							
IGHG	**Ghaleghazi**	**3.54**	**193**	*e*Pn		**Pb**	**05 36 44.9**	**-3.1**
QUBA	**Quba, Azerbaij**	**3.64**	**11**	⇑Pn		**Pn**	**05 36 43.8**	**+2.2**
	SNR=3.5							
QUBA				⇑Sn		**Sb**	**05 37 29.9**	**-3.9**
QUBA	**Quba, Azerbaij**	**3.64**	**11**	Pn		**Pn**	**05 36 43.8**	**+2.2**
	SNR=3.5							
QUBA				Sn		**Sb**	**05 37 29.9**	**-3.9**
HSAM	**Samen**	**3.67**	**166**	*e*Pn		**Pn**	**05 36 43.3**	**+1.2**
HSAM				*e*AMB		AMB	05 37 44.5	
	comp=Z,99nm,0.4s							
HSAM	**Samen**	**3.67**	**166**	*e*Pn		**Pn**	**05 36 43.3**	**+1.2**
QZX	**Qazax, Azerbai**	**3.68**	**333**	⇑Sn		**Sb**	**05 37 33.6**	**-1.2**
QZX	**Qazax, Azerbai**	**3.68**	**333**	Sn		**Sb**	**05 37 33.6**	**-1.2**
ASAO	**Ashtian**	**3.80**	**147**	*e*Pn		**Pn**	**05 36 45.2**	**+1.2**
ASAO	**Ashtian**	**3.80**	**147**	*e*Pn		**Pn**	**05 36 45.

*KLM **09** 05:51:38.5,4.°21S±129.°81E,h42km,mb5.7,MS6.3*
*ISCJB **09** 05:51:39.1±0.4,4.°15S±0.°02±129.°43E±0.°02,h40km±3km,*
mb5.5/206,MS5.0/192,Error ellipse: s-maj=3.6km
s-min=2.8km az=145.0

ISC 09 05:51:40.0±0.4,4.°15S±0.°03×129.°42E±0.°03,h33km±2km,
h33km:pP-P,n1014,σ1.9s39/1015,mb5.5/214,MS5.0/193,
42C-23D,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**0.61**	**127**	P		**Pb**	**05 51 50.4**	**-1.9**
MSAI	**Masohi**	**0.94**	**328**	P		**Pn**	**05 51 54.3**	**-2.6**
MSAI				S		**Sn**	**05 52 06.4**	**-2.8**
FAKI	**Fak Fak**	**3.08**	**67**	P		**Pn**	**05 52 25.9**	**-0.4**
FAKI	**Fak Fak**	**3.08**	**67**	*e*Pn		**Pn**	**05 52 26.6**	**+0.3**
SIJI	**Sorong**	**3.75**	**30**	Pn		**Pn**	**05 52 35.9**	**+0.3**
	29nm,0.3s,baz=270,slow=24,SNR=40							
SIJI				Sn		**Sn**	**05 53 19.0**	**+0.4**
	18nm,0.3s,baz=270,slow=24,SNR=11							
LBMI	**Labuha**	**3.98**	**331**	P		**Pn**	**05 52 39.6**	**+0.8**
LBMI				S		**Sn**	**05 53 24.7**	**+0.3**
SANI	**Sanana**	**4.01**	**301**	P		**Pn**	**05 52 38.7**	**-0.5**
SANI				S		**Sn**	**05 53 22.8**	**-2.4**
SAUI	**Saumlaki**	**4.24**	**154**	P		**Pn**	**05 52 45.4**	**+3.1**
SAUI	**Saumlaki**	**4.24**	**154**	*e*Pn		**Pn**	**05 52 45.6**	**+3.3**
KDI	**Kendari**	**6.79**	**271**	P		**Pn**	**05 53 18.7**	**+1.3**
KMSI	**Cibinong**	**7.18**	**311**	P		**Pn**	**05 53 23.8**	**+1.0**
	2μm,0.7s,14μm14nm							
LUWI	**Luwuk**	**7.33**	**295**	P		**Pn**	**05 53 26.8**	**+2.0**
LUWI	**Luwuk**	**7.33**	**295**	*e*Pn		**Pn**	**05 53 26.9**	**+2.2**
SOEI	**Soe**	**7.56**	**222**	P		**Pn**	**05 53 31.7**	**+3.6**
SOEI	**Soe**	**7.56**	**222**	*e*Pn		**Pn**	**05 53 31.9**	**+3.8**
BATI	**Baumata**	**8.29**	**223**	P		**Pn**	**05 53 42.0**	**+3.9**
MMRI	**Maumere**	**8.41**	**238**	P		**Pn**	**05 53 43.7**	**+4.0**
MMRI	**Maumere**	**8.41**	**238**	*e*Pn		**Pn**	**05 53 43.8**	**+4.0**
MRSI	**Marisa**	**8.78**	**301**	P		**Pn**	**05 53 46.5**	**+1.8**
MTN	**Manton Dam**	**8.80**	**169**	P		**Pn**	**05 53 46.8**	**+1.8**
	baz=8.8,SNR=25							
MTN	**Manton Dam**	**8.80**	**169**	*e*Pn		**Pn**	**05 53 46.8**	**+1.8**
KDU	**Kakadu**	**9.00**	**161**	P		**Pn**	**05 53 47.2**	**-0.6**
	baz=9.0,SNR=28							
SPSI	**Sidrap Palu**	**9.63**	**271**	P		**Pn**	**05 54 00.2**	**+3.8**
TTSI	**Tana Toraja**	**9.65**	**276**	P		**Pn**	**05 54 00.3**	**+3.7**
KAPI	**Kappang**	**9.68**	**265**	Pn		**Pn**	**05 53 59.9**	**+2.9**
	9.1nm,0.3s,baz=118,slow=6.9,SNR=37							
KAPI				LR		LR	05 57 27.4	
	comp=Z,5μm,19.0s,baz=91,slow=37							
KAPI	**Kappang**	**9.68**	**265**	*e*Pn		**Pn**	**05 54 00.9**	**+3.9**
PCI	**Palu**	**10.10**	**288**	P		**Pn**	**05 54 07.0**	**+4.1**
GENI	**Genyem**	**10.84**	**82**	P		**Pn**	**05 54 13.0**	**0.0**
JAY	**Jayapura**	**11.38**	**82**	P		Pn	05 54 27.1	+6.7
DAV	**Davao City (W)**	**11.79**	**341**	LR		LR	06 00 14.4	
	comp=Z,1μm,18.1s,baz=262,slow=44							
PLAI	**Plampang**	**12.47**	**248**	P		P	05 54 41.0	-5.7
PALU	**Palau**	**12.48**	**24**	P		**Pn**	**05 54 36.2**	**+0.7**
	baz=12,SNR=11							
TWSI	**Taliwang, Sumb**	**13.27**	**249**	P		**P**	**05 54 55.6**	**+0.1**
TSM	**Tawau**	**14.27**	**306**	⇓P		**P**	**05 55 03.4**	**-3.3**
MYLDM	**Lahad Datu**	**14.31**	**310**	⇑P		**Pn**	**05 55 03.7**	**+3.2**
MYLDM	**Lahad Datu**	**14.31**	**310**	*e*Pn		**Pn**	**05 55 03.5**	**+2.9**
FITZ	**Fitzroy Crossi**	**14.35**	**195**	Pn		**Pn**	**05 54 56.6**	**-4.3**
	1.7nm,0.3s,baz=7.8,slow=10.0,SNR=14							
FITZ				LR		LR	06 00 38.9	
	comp=Z,4μm,20.2s,baz=24,slow=38							
FITZ	**Fitzroy Crossi**	**14.35**	**195**	*e*Pn		**Pn**	**05 54 59.6**	**-1.3**
BBKI	**Banjar Baru**	**14.56**	**272**	P		**P**	**05 55 07.1**	**-2.9**
SRBI	**Singaraja**	**14.66**	**254**	P		**P**	**05 55 10.4**	**-0.6**
DNP	**Denpasar**	**14.82**	**252**	P		**P**	**05 55 16.0**	**+3.2**
MTKI	**Muara Teweh, K**	**14.86**	**282**	P		**P**	**05 55 11.1**	**-2.2**
	282nm,0.7s							
ABJI	**Asem Bagus**	**15.53**	**256**	P		**P**	**05 55 20.9**	**+0.2**
SDKM	**Sandakan**	**15.61**	**308**	⇓P		**P**	**05 55 20.3**	**-1.4**
JAGI	**Jajag, Banyuwa**	**15.77**	**253**	P		**P**	**05 55 23.3**	**-0.1**
JAGI	**Jajag, Banyuwa**	**15.77**	**253**	*e*Pn		**Pn**	**05 55 21.0**	**+1.2**
	366nm,1.0s							
GMJI	**Gumukmas**	**16.40**	**255**	P		**P**	**05 55 31.7**	**+1.3**
WRAB	**Tennant Creek**	**16.41**	**163**	*e*P		**Pn**	**05 55 26.5**	**-1.4**
WRAB				pmax	pmax			
	comp=Z,112nm,0.8s							
WRAB	**Tennant Creek**	**16.41**	**163**	*e*Pn		**Pn**	**05 55 26.5**	**-1.4**
	comp=Z,112nm,0.8s							
WRA	**Warramunga Arr**	**16.41**	**163**	Pn		**Pn**	**05 55 22.8**	**-5.2**
	comp=Z,3.1nm,0.3s,baz=346,slow=13,SNR=49							
WRA				LR		LR	06 02 13.5	
	comp=Z,4μm,20.8s,baz=340,slow=39							
WB2	**Warramunga Arr**	**16.41**	**163**	*e*Pn		**Pn**	**05 55 24.9**	**-3.1**
	comp=Z,141nm,0.8s							
KKM	**Kota Kinabalu**	**16.63**	**307**	⇓P		**P**	**05 55 33.0**	**0.0**
KKM	**Kota Kinabalu**	**16.63**	**307**	*e*Pn		**Pn**	**05 55 29.8**	**-1.1**
	comp=Z,198nm,1.0s							
KDM	**Kudat**	**16.70**	**311**	⇑P		**P**	**05 55 33.4**	**-0.2**
COEN	**Coen**	**16.70**	**127**	P		**Pn**	**05 55 29.2**	**-2.5**
	baz=17,SNR=67							
COEN	**Coen**	**16.70**	**127**	*e*Pn		**Pn**	**05 55 29.5**	**-2.2**
	comp=Z,154nm,0.6s							
GRJI	**Gresik**	**17.08**	**260**	P		**P**	**05 55 41.9**	**+3.9**
TBJI	**Tambak Boyo**	**17.69**	**261**	P		P	05 55 52.2	+7.5
PBKI	**Pangkalan Bun**	**17.78**	**274**	P		**P**	**05 55 47.0**	**+1.3**
BTM	**Bintulu**	**17.89**	**294**	⇓P		**P**	**05 55 49.4**	**+2.5**
PWJI	**Pagerwojo**	**17.93**	**257**	P		**P**	**05 55 49.6**	**+2.2**
MANU	**Manus Island**	**18.04**	**84**	*e*Pn		**P**	**05 55 49.2**	**+0.6**
	comp=Z,151nm,1.0s							
PMG	**Port Moresby**	**18.36**	**107**	P		**P**	**05 55 51.7**	**-0.5**
	comp=Z,2.3nm,0.3s,baz=307,slow=8.7,SNR=11							
PMG				LR		LR	06 04 36.3	
	comp=Z,2μm,18.7s,baz=294,slow=42							
PMG	**Port Moresby**	**18.36**	**107**	*e*P		**P**	**05 55 51.5**	**-0.7**
PMG				pmax	pmax			
	comp=Z,177nm,1.1s							
PMG	**Port Moresby**	**18.36**	**107**	*e*P		**P**	**05 55 51.5**	**-0.7**
	comp=Z,177nm,1.1s							
SBUM	**Sibu**	**18.40**	**291**	⇓P		**Pn**	**05 55 55.1**	**+2.3**
SBUM	**Sibu**	**18.40**	**291**	*e*P		**Pn**	**05 55 54.2**	**+1.5**
	comp=Z,164nm,0.9s							
STKI	**Sintang**	**18.41**	**283**	P		**Pn**	**05 55 54.3**	**+1.4**
UWJI	**Ujung Watu**	**18.53**	**262**	P		Pn	05 56 03.3	+8.9
PCJI	**Pacitan**	**18.57**	**257**	P		**Pn**	**05 55 54.9**	**0.0**
WOJI	**Wonogiri, Jawa**	**18.75**	**258**	P		**Pn**	**05 55 59.3**	**+2.2**
QIS	**Mount Isa**	**19.08**	**150**	P		**P**	**05 55 59.9**	**-0.1**
	baz=19,SNR=142							
UGM	**Wanagama**	**19.16**	**258**	P		**Pn**	**05 56 03.4**	**+1.4**
UGM	**Wanagama**	**19.16**	**258**	*e*P		**P**	**05 56 00.4**	**-0.5**
	comp=Z,239nm,0.8s							
GQP	**Guinayangan**	**19.23**	**339**	⇓*e*P		**Pn**	**05 56 07.3**	**+4.6**
MBWA	**Marble Bar**	**19.35**	**208**	P		**Pn**	**05 56 04.2**	**-0.1**
	SNR=13							
MBWA	**Marble Bar**	**19.35**	**208**	*e*P		**Pn**	**05 56 04.1**	**-0.1**
	comp=Z,135nm,0.9s							
LQP	**Lukban**	**19.76**	**337**	⇑*e*P		**Pn**	**05 56 14.2**	**+4.9**
AS31	**Alice Springs**	**19.88**	**168**	*e*P		**P**	**05 56 09.2**	**+0.5**
	comp=Z,60nm,0.5s							
ASAR	**Alice Springs**	**19.88**	**168**	P		**P**	**05 56 09.2**	**+0.4**
	comp=Z,14nm,0.3s,baz=349,slow=10,SNR=263							
ASAR				S		**S**	**05 59 50.1**	**-0.8**
	baz=351,slow=23,SNR=4.9							
ASAR				PcP		**PcP**	**06 00 25.1**	**-0.3**
	comp=Z,1.4nm,0.3s,baz=360,slow=2.0,SNR=5.2							
ASAR				LR		LR	06 03 10.6	
	comp=Z,4μm,21.7s,baz=346,slow=35							
AS01	**Alice Springs**	**19.89**	**168**	*e*P		**P**	**05 56 09.4**	**+0.6**
KSM	**Kuching**	**19.90**	**286**	⇑P		**Pn**	**05 56 10.7**	**-0.1**
KSM	**Kuching**	**19.90**	**286**	*e*P		**Pn**	**05 56 10.1**	**-0.7**
	comp=Z,461nm,0.8s							
TGY	**Tagaytay City**	**19.99**	**335**	LR		LR	06 04 16.9	
	comp=Z,3μm,19.0s,baz=108,slow=38							
MTSU	**Mount Surprise**	**20.14**	**135**	P		**P**	**05 56 11.6**	**+0.1**
	baz=20,SNR=161							
WRKA	**Warakurna**	**20.79**	**183**	P		**P**	**05 56 19.6**	**+1.0**
	baz=21,SNR=407							
CMJI	**Cimerak**	**21.17**	**259**	P		P	05 56 30.9	+8.2
CISI	**Cisompet, Garu**	**21.75**	**260**	P		**P**	**05 56 29.2**	**+0.1**
CISI	**Cisompet, Garu**	**21.75**	**260**	*e*P		**P**	**05 56 27.3**	**-1.8**
	comp=Z,151nm,0.7s							
CNJI	**Cibinong**	**22.40**	**261**	P		**P**	**05 56 39.2**	**+3.3**
BOLP	**Bolinao**	**22.46**	**335**	*e*P		**P**	**05 56 36.6**	**+0.1**
CBJI	**Citeko**	**22.59**	**263**	P		**P**	**05 56 42.0**	**+4.0**
RABL	**Rabaul**	**22.68**	**91**	*e*P		**P**	**05 56 38.4**	**-0.7**
	comp=Z,1μm,1.8s							
CTA	**Charters Tower**	**22.80**	**135**	P		**P**	**05 56 40.1**	**-0.1**
	comp=Z,53nm,0.7s,baz=304,slow=10,SNR=54							
CTA				S		**S**	**06 00 52.2**	**+4.9**
	comp=Z,6.3nm,0.8s,baz=245,slow=20,SNR=2.9							
CTA				LR		LR	06 07 16.1	
	comp=Z,1μm,19.0s,baz=314,slow=41							
CTAO	**Charters Tower**	**22.80**	**135**	*e*P		**P**	**05 56 40.1**	**-0.1**
CTAO				pmax	pmax			
	comp=Z,158nm,1.1s							
CTAO				MLR		MLR		
	comp=Z,3μm,21.0s							
CTAO	**Charters Tower**	**22.80**	**135**	*e*P		**P**	**05 56 40.1**	**-0.1**
	comp=Z,158nm,1.1s							
CTAO				LR		LR		
	comp=Z,3μm,21.0s							
PPBI	**Pangkal Pinang**	**23.33**	**274**	P		**P**	**05 56 45.5**	**-0.1**
GUMO	**Guam**	**23.36**	**41**	P		**P**	**05 56 46.2**	**+0.4**
	comp=Z,81nm,0.9s,baz=257,slow=3.8,SNR=5.2							
GUMO				LR		LR	06 05 57.0	
	comp=Z,701nm,21.1s,baz=218,slow=37							
GUMO	**Guam**	**23.36**	**41**	*e*P		**P**	**05 56 44.8**	**-1.0**
GUMO				pmax	pmax			
	comp=Z,194nm,1.1s							
GUMO	**Guam**	**23.36**	**41**	*e*P		**P**	**05 56 44.8**	**-1.0**
	comp=Z,194nm,1.1s							
GIRL	**Giralia**	**23.54**	**217**	P		**P**	**05 56 49.3**	**+1.7**
	baz=24,SNR=44							
CGJI	**Cibinong**	**23.75**	**263**	P		**P**	**05 56 47.2**	**-2.4**
XMIS	**Christmas Isla**	**24.39**	**254**	*e*P		**P**	**05 56 54.9**	**-0.7**
	comp=Z,75nm,0.9s							
KASI	**Kota Agung**	**24.87**	**266**	P		**P**	**05 56 58.0**	**-2.0**
TPRI	**Tanjung Pinang**	**25.38**	**281**	P		**P**	**05 57 05.8**	**+1.2**
LHSI	**Lahat**	**25.84**	**270**	P		**P**	**05 57 07.6**	**-1.1**
MYKOM	**Kota Tinggi**	**26.23**	**283**	⇑P		**P**	**05 57 13.2**	**+0.9**
MYKOM	**Kota Tinggi**	**26.23**	**283**	*e*P		**P**	**05 57 12.2**	**0.0**
	comp=Z,115nm,0.7s							
QLP	**Quilpie**	**26.43**	**149**	P		**P**	**05 57 13.9**	**0.0**
	baz=26,SNR=18							
FORT	**Forrest**	**26.52**	**183**	P		**P**	**05 57 14.6**	**0.0**
	baz=27,SNR=41							
FORT	**Forrest**	**26.52**	**183**	*e*P		**P**	**05 57 14.3**	**-0.4**
	comp=Z,1μm,0.9s							
KGM	**Kluang**	**26.80**	**283**	⇑P		**P**	**05 57 18.7**	**+1.3**
MORW	**Morawa**	**27.85**	**206**	P		**P**	**05 57 26.3**	**-0.3**
	baz=28,SNR=5.3							
KTGM	**Kuala Trenggan**	**27.89**	**290**	⇑P		**P**	**05 57 27.7**	**+0.4**
KMBL	**Kembala**	**27.99**	**194**	P		**P**	**05 57 27.6**	**-0.3**
	baz=28,SNR=92							
TWG	**Pinlang**	**28.02**	**343**	*e*P		**P**	**05 57 26.1**	**-2.1**
	comp=Z,171nm,0.8s							
YULB	**Yu-li**	**28.50**	**344**	*e*P		**P**	**05 57 32.0**	**-0.5**
	comp=Z,21nm,0.8s							
TPUB	**Ta-pu**	**28.60**	**343**	*e*P		**P**	**05 57 32.6**	**-0.8**
	comp=Z,60nm,0.8s							
BKNI	**Bangkinang**	**28.71**	**278**	P		**P**	**05 57 36.9**	**+2.4**
BKNI	**Bangkinang**	**28.71**	**278**	*e*P		**P**	**05 57 33.8**	**-0.7**
	comp=Z,130nm,1.1s							
FRIM	**Kepong**	**28.73**	**284**	⇑P		**P**	**05 57 35.3**	**+0.6**
RMQ	**Roma**	**28.91**	**142**	P		**P**	**05 57 37.4**	**+1.2**
	baz=29,SNR=5.2							
BLDU	**Ballidu**	**28.93**	**203**	P		**P**	**05 57 36.6**	**+0.3**
	baz=29,SNR=7.9							
SSLB	**Suanglung**	**28.97**	**344**	*e*P		**P**	**05 57 35.4**	**-1.3**
	comp=Z,94nm,1.2s							
YOJ	**Yonaguni jima**	**29.12**	**348**	*e*P		**P**	**05 57 37.6**	**-0.3**
YOJ				pmax	pmax			
	comp=Z,135nm,0.7s							
YOJ	**Yonaguni jima**	**29.12**	**348**	*e*P		**P**	**05 57 37.6**	**-0.3**
	comp=Z,135nm,0.7s							
BBOO	**Buckleboo**	**29.18**	**168**	P		**P**	**05 57 38.3**	**-0.1**
	baz=29,SNR=47							
BBOO	**Buckleboo**	**29.18**	**168**	*e*P		**P**	**05 57 38.4**	**-0.1**
	comp=Z,56nm,1.0s							
KLBR	**Kellerberrin**	**29.42**	**201**	P		**P**	**05 57 40.4**	**-0.2**
	baz=30,SNR=39							
EIDS	**Eidsvold**	**29.63**	**138**	P		**P**	**05 57 42.5**	**0.0**
	baz=30,SNR=5.0							
EIDS	**Eidsvold**	**29.63**	**138**	*e*P		**P**	**05 57 41.9**	**-0.6**
	comp=Z,103nm,1.8s							
IPM	**Ipoh**	**29.64**	**286**	⇓P		**P**	**05 57 43.7**	**+1.0**
IPM	**Ipoh**	**29.64**	**286**	*e*P		**P**	**05 57 42.8**	**0.0**
	comp=Z,308nm,0.8s							
YHNB	**Yeheng**	**29.70**	**345**	*e*P		**P**	**05 57 43.0**	**-0.2**
	comp=Z,59nm,0.7s							
YHNB				LR		LR		
	comp=Z,707nm,20.0s							
STKA	**Stephens Creek**	**29.86**	**159**	P		**P**	**05 57 44.8**	**+0.3**
	comp=Z,8.3nm,0.4s,baz=338,slow=8.8,SNR=25							
STKA				LR		LR	06 10 26.7	
	comp=Z,4μm,19.0s,baz=328,slow=38							
STKA	**Stephens Creek**	**29.86**	**159**	P		**P**	**05 57 44.8**	**+0.3**
	baz=30,SNR=7.4							
STKA	**Stephens Creek**	**29.86**	**159**	*e*P		**P**	**05 57 44.5**	**0.0**
STKA				pmax	pmax			
	comp=Z,12nm,1.1s							
STKA	**Stephens Creek**	**29.86**	**159**	*e*P		**P**	**05 57 44.5**	**0.0**
	comp=Z,12nm,1.1s							
QIZ	**Qiongzhong**	**30.04**	**321**	P		**P**	**05 57 47.0**	**+0.8**
QIZ				S		**S**	**06 02 42.7**	**+0.2**
QIZ				pmax	pmax			
	comp=Z,25nm,1.5s							
QIZ				pmax	pmax			
	comp=Z,320nm,5.9s							
QIZ				LR	LR			
	comp=Z,970nm,16.8s							
QIZ				LR	LR			
	comp=Z,780nm,13.8s							
QIZ	**Qiongzhong**	**30.04**	**321**	*e*P		**P**	**05 57 47.0**	**+0.8**
	comp=Z,59nm,1.4s							
QIZ				LR	LR			
	comp=Z,698nm,19.0s							
MNSI	**Mandailing Nat**	**30.22**	**279**	P		**P**	**05 57 46.7**	**-1.2**
KULM	**Kulim**	**30.23**	**288**	⇑P		**P**	**05 57 48.9**	**+0.9**
KULM	**Kulim**	**30.23**	**288**	*e*P		**P**	**05 57 47.8**	**-0.2**
	comp=Z,322nm,1.5s							
KULM				LR	LR			
	comp=Z,2μm,19.0s							
HTT	**Hallett**	**30.45**	**164**	P		**P**	**05 57 50.0**	**+0.2**
	baz=31,SNR=12							
UBPT	**Khong Chiam**	**30.59**	**310**	P		**P**	**05 57 51.6**	**+0.5**
	comp=Z,74nm,1.2s,comp=Z,777nm							
HNR	**Honiara**	**30.75**	**101**	LR		LR	06 12 03.1	
	comp=Z,852nm,19.8s,baz=271,slow=40							
NWAO	**Narrogin (SRO)**	**30.81**	**200**	P		**P**	**05 57 52.7**	**-0.2**
	comp=Z,20nm,0.7s,baz=261,slow=7.2,SNR=20							
NWAO	**Narrogin (SRO)**	**30.81**	**200**	P		**P**	**05 57 52.8**	**-0.1**
	baz=31,SNR=20							
NWAO				P		**P**	**05 57 52.8**	**-0.1**
	baz=31,SNR=20							
NWAO	**Narrogin (SRO)**	**30.81**	**200**	*e*P		**P**	**05 57 52.9**	**-0.1**
NWAO				pmax	pmax			
	comp=Z,49nm,1.3s							
NWAO				MLR	MLR			
	comp=Z,2μm,19.0s							
NWAO	**Narrogin (SRO)**	**30.81**	**200**	*e*P		**P**	**05 57 52.9**	**-0.1**
	comp=Z,49nm,1.3s							
NWAO				LR	LR			
	comp=Z,2μm,19.0s							
JOW	**Kunigami**	**30.82**	**358**	*e*P		**P**	**05 57 53.3**	**+0.3**
	comp=Z,143nm,0.9s							
PATS	**Pohnpei**	**30.84**	**69**	*e*P		**P**	**05 57 53.8**	**+0.5**
	comp=Z,44nm,0.9s							
SKLT	**Songkhla**	**30.87**	**291**	P		**P**	**05 57 54.0**	**+0.4**
	comp=Z,106nm,1.1s,comp=Z,1μm							
CMSA	**Cobar Meteorol**	**31.24**	**153**	P		**P**	**05 57 57.1**	**+0.3**
	baz=31,SNR=12							
PSI	**Prapat**	**31.25**	**282**	P		**P**	**05 57 55.7**	**-1.5**
	comp=Z,52nm,0.8s,baz=112,slow=5.0,SNR=36							
PSI				PcP		**PcP**	**06 00 50.9**	**-0.6**
	comp=Z,10nm,0.8s,baz=196,slow=3.3,SNR=3.7							
PSI	**Prapat**	**31.25**	**282**	*e*P		**P**	**05 57 56.0**	**-1.2**
PSI							06 00 50.9	
PSI				pmax	pmax			
	comp=Z,72nm,0.9s							
PSI	**Prapat**	**31.25**	**282**	*e*P		**P**	**05 57 56.0**	**-1.2**
	comp=Z,72nm,0.9s							
PSI				PcP		**PcP**	**06 00 50.9**	**-0.6**
GZH	**Guangzhou**	**31.29**	**331**	P		**P**	**05 58 00.6**	**+3.4**
GZH				S		**S**	**06 03 09.4**	**+7.3**
GZH				LR	LR			
	comp=Z,3μm,27.1s							
CHBT	**CHBT**	**31.73**	**302**	P		**P**	**05 58 02.6**	**+1.5**
	comp=Z,123nm,1.0s							
TRTT	**Trang**	**31.96**	**292**	P		**P**	**05 58 03.7**	**+0.4**
	comp=Z,146nm,1.2s,comp=Z,3μm							
GSI	**Gunungsitoli**	**32.28**	**279**	P		**P**	**05 58 04.7**	**-1.4**
GSI	**Gunungsitoli**	**32.28**	**279**	*e*P		**P**	**05 58 04.1**	**-2.0**
	comp=Z,50nm,0.6s							
RKGY	**Rocky Gully**	**32.43**	**199**	P		**P**	**05 58 08.5**	**+1.3**
	baz=33,SNR=6.2							
SURA	**Surathani**	**32.51**	**294**	P		**P**	**05 58 08.7**	**+0.6**
	comp=Z,75nm,1.4s							
KCSI	**Kotacane, Aceh**	**32.53**	**283**	P		**P**	**05 58 09.4**	**+1.1**
TPTI		**33.05**	**282**	P		**P**	**05 58 11.9**	**-0.9**
SURT	**Suratani**	**33.19**	**293**	P		**P**	**05 58 14.4**	**+0.3**
	comp=Z,71nm,1.1s,comp=Z,703nm							
COCO	**West Island**	**33.20**	**254**	PFAKE			05 58 30.0	+16
COCO				LR		LR		
	comp=Z,2μm,20.0s							
PKDT	**Phuket**	**33.24**	**291**	P		**P**	**05 58 14.4**	**-0.1**
	comp=Z,218nm,0.7s,comp=Z,2μm							
KHON	**Khonkaen**	**33.26**	**308**	P		**P**	**05 58 15.2**	**+0.6**
	comp=Z,182nm,0.7s							
ARMA	**Armidale**	**33.50**	**144**	P		**P**	**05 58 17.4**	**+0.7**
	baz=34,SNR=9.5							
ARMA	**Armidale**	**33.50**	**144**	*e*P		**P**	**05 58 18.4**	**+1.8**
	comp=Z,19nm,0.9s							
CHAI	**Chaiyaphum**	**33.67**	**307**	P		**P**	**05 58 18.4**	**+0.2**
	comp=Z,39nm,0.8s,comp=Z,360nm							
MLSI	**Meulaboh, Aceh**	**34.03**	**284**	P		**P**	**05 58 20.4**	**-1.0**
ARPS	**Mount Arapiles**	**34.41**	**162**	P		**P**	**05 58 25.5**	**+1.1**
	baz=34,SNR=24							
YNG	**Young**	**34.80**	**152**	P		**P**	**05 58 28.4**	**+0.7**
	baz=35,SNR=15							
PBKT	**Sadao Pong**	**34.85**	**307**	P		**P**	**05 58 28.8**	**+0.4**
	comp=Z,37nm,1.1s,comp=Z,821nm							
SRDT	**SRDT**	**35.22**	**302**	P		**P**	**05 58 32.8**	**+1.2**
	comp=Z,192nm,1.1s,comp=Z,6μm							
MGCD	**Mangrove Creek**	**35.30**	**148**	P		**P**	**05 58 34.0**	**+2.0**
	baz=35,SNR=12							
UTTA	**Uttaradit**	**35.84**	**308**	P		**P**	**05 58 37.5**	**+0.6**
	comp=Z,46nm,0.8s,comp=Z,371nm							
CAN	**Canberra**	**35.92**	**152**	*e*P		**P**	**05 58 38.5**	**+1.0**
CAN				pmax	pmax			
	comp=Z,70nm,0.9s							
CAN				MLR	MLR			
	comp=Z,3μm,21.0s							
CAN	**Canberra**	**35.92**	**152**	*e*P		**P**	**05 58 38.5**	**+1.0**
	comp=Z,70nm,0.9s							
CAN				LR	LR			
	comp=Z,3μm,21.0s							
SSE	**Sheshan**	**35.92**	**348**	*e*P		**P**	**05 58 40.1**	**+2.7**
SSE				pP		**pP**	**05 58 46.0**	**-0.9**
SSE				S		**S**	**06 04 18.0**	**+4.4**
SSE				sS		**sS**	**06 04 27.5**	**-1.8**
SSE				pmax	pmax			
	comp=Z,34nm,0.9s							
SSE				pmax	pmax			
	comp=Z,230nm,6.0s							
SSE				LR	LR			
	comp=Z,540nm,16.3s							
SSE				LR	LR			
	comp=Z,740nm,16.3s							
SSE				LR	LR			
	comp=Z,820nm,22.6s							
CNB	**Canberra Magne**	**36.08**	**152**	P		**P**	**05 58 40.3**	**+1.4**
	baz=36,SNR=7.3							
UMPA	**Umpang Tak**	**36.37**	**305**	P		**P**	**05 58 41.7**	**+0.2**
	comp=Z,22nm,0.8s							
TOO	**Toolangi**	**36.37**	**158**	P		**P**	**05 58 42.7**	**+1.5**
	baz=36,SNR=5.3							
SUKH	**Sukhothai**	**36.42**	**307**	P		**P**	**05 58 42.6**	**+0.7**
	comp=Z,75nm,0.7s,comp=Z,538nm							
LAMP	**Lampang**	**37.00**	**308**	P		**P**	**05 58 47.9**	**+1.1**
	comp=Z,44nm,0.7s,comp=Z,340nm							
JNU	**Nakatsue**	**37.09**	**2**	P		**P**	**05 58 47.2**	**-0.2**
	comp=Z,65nm,0.8s,baz=215,slow=2.5,SNR=30							
JNU				LR		LR	06 13 19.1	
	comp=Z,2μm,19.6s,baz=129,slow=35							
JNU	**Nakatsue**	**37.09**	**2**	*e*P		**P**	**05 58 47.3**	**-0.1**
	comp=Z,158nm,0.9s							
NJ2	**Nanjing**	**37.38**	**345**	*e*P		**P**	**05 58 50.4**	**+0.6**

DZM eLR LR 06 10 16.9
comp=Z,1μm,23.8s
DZM Mont Dzumac 40.05 120 eP **P 05 59 11.0 -1.5**
comp=Z,43nm,1.0s
MAJO Matsushiro 41.31 11c iP **P 05 59 21.7 -0.9**
MAJO pmax pmax
comp=Z,912nm,0.8s
MAJO Matsushiro 41.31 11 eP **P 05 59 21.8 -0.8**
comp=Z,173nm,0.8s
MAJO LR LR
comp=Z,1μm,21.0s
MAT Matsushiro 41.31 11 P **P 05 59 20.6 -2.0**
MAT S S 06 05 24.4 -10
MJAR Matsushiro Arr 41.31 11 P **P 05 59 21.7 -0.9**
comp=Z,97nm,0.8s,baz=185,slow=9.6,SNR=183
MJAR LR LR 06 14 51.9
comp=Z,1μm,21.1s,baz=185,slow=34
MJB9 Matsu-Tunnel 41.31 11 eP **P 05 59 21.9 -0.7**
comp=Z,44nm,0.8s
KS15 Wonju Array Si 41.41 358 eP **P 05 59 24.3 +0.9**
KSAR Wonju Array Be 41.41 358 P **P 05 59 24.0 +0.7**
KSAR Wonju Array Be 41.41 358 P **P 05 59 24.0 +0.7**
KSRS Korea Array 41.41 358 P **P 05 59 24.0 +0.6**
comp=Z,26nm,0.8s,baz=173,slow=10,SNR=82
KSRS LR LR 06 15 43.0
comp=Z,1μm,21.2s,baz=171,slow=35
KS01 Wonju Array Si 41.44 358 eP **P 05 59 23.5 -0.1**
INCN Inchon 41.50 357 P **P 05 59 25.3 +1.2**
SNR=5.5
INCN P **P 05 59 25.3 +1.2**
SNR=5.5
INCN Inchon 41.50 357 eP **P 05 59 25.6 +1.4**
comp=Z,108nm,0.9s
INCN LR LR
comp=Z,930nm,19.0s
TIA Tai'an 41.77 345 eP **P 05 59 25.9 -0.5**
TIA S **S 06 05 38.7 -2.9**
TIA SS **SS 06 08 53.0 +4.5**
TIA pmax pmax
comp=Z,10.0nm,1.0s
TIA pmax pmax
comp=Z,450nm,6.0s
TIA LR LR
comp=Z,500nm,17.0s
TIA LR LR
comp=Z,500nm,15.0s
TIA LR LR
comp=Z,480nm,17.0s
CD2 Chengdu 42.61 327 P **P 05 59 33.4 0.0**
CD2 pP pP 05 59 39.5 -3.6
CD2 PP **PP 06 01 12.7 0.0**
CD2 PcS **PcS 06 05 16.9 -0.6**
CD2 S **S 06 05 56.8 +2.4**
CD2 sS sS 06 06 07.3 -3.0
CD2 SS **SS 06 09 09.1 +3.7**
CD2 pmax pmax
comp=Z,60nm,0.6s
CD2 pmax pmax
comp=Z,440nm,6.8s
CD2 LR LR
comp=Z,1μm,20.9s
CD2 LR LR
comp=Z,910nm,16.5s
CD2 LR LR
comp=Z,860nm,18.1s
XAN Xi'an 42.63 335 P **P 05 59 32.8 -0.7**
XAN pP pP 05 59 42.7 -0.5
XAN PP **PP 06 01 16.2 +3.4**
XAN S **S 06 05 49.9 -4.6**
XAN sS sS 06 06 16.4 +5.9
XAN ScS **ScS 06 09 28.7 -4.0**
XAN pmax pmax
comp=Z,35nm,0.8s
XAN pmax pmax
comp=Z,210nm,7.0s
XAN LR LR
comp=Z,1μm,29.5s
XAN LR LR
comp=Z,940nm,31.5s
DL2 Dalian 43.44 351⇑ iP P 05 59 49.8 +10
DL2 S S 06 06 24.1 +18
DL2 ScS **ScS 06 09 29.5 -7.9**
DL2 pmax pmax
comp=Z,79nm,0.8s
DL2 pmax pmax
comp=Z,330nm,5.7s
DL2 LR LR
comp=N,510nm,18.2s
DL2 LR LR
comp=E,660nm,19.3s
DL2 LR LR
comp=Z,1μm,16.1s
TARA Tarawa 43.81 84 PFAKE 06 00 00.0 +17
TARA LR LR
comp=Z,88nm,21.0s
TIY Taiyuan 44.55 341 eP **P 05 59 48.8 -0.1**
TIY S **S 06 06 16.9 -5.6**
TIY pmax pmax
comp=Z,46nm,0.7s
TIY pmax pmax
comp=Z,290nm,5.9s
TIY LR LR
comp=Z,810nm,18.7s
TIY LR LR
comp=Z,180nm,10.8s
TIY LR LR
comp=Z,530nm,19.2s
BJT Baijiatuau 45.61 346 eP **P 05 59 57.2 0.0**
BJT MLR MLR
comp=Z,791nm,19.0s
BJT Baijiatuau 45.61 346 eP **P 05 59 57.2 0.0**
BJT LR LR
comp=Z,791nm,19.0s
BJI Beijing 45.63 346 P **P 05 59 57.0 -0.3**
BJI PP **PP 06 01 45.7 +1.1**
BJI S **S 06 06 34.3 -3.6**
BJI pmax pmax
comp=Z,32nm,0.7s
BJI LR LR
comp=Z,550nm,20.4s
BJI LR LR
comp=Z,500nm,17.3s
BJI LR LR
comp=Z,590nm,31.6s
SNY Shenyang 46.07 354⇓ iP **P 06 00 01.1 +0.3**
SNY S **S 06 06 42.9 -1.2**
SNY pmax pmax
comp=Z,19nm,0.5s
SNY pmax pmax
comp=Z,600nm,5.7s
SNY LR LR
comp=Z,970nm,20.3s
SNY LR LR
comp=Z,500nm,16.4s
SNY LR LR
comp=Z,1μm,18.5s
MSHR Mys Shultsa 46.54 2ce eP **P 06 00 05.5 +1.1**
LZH Lanzhou 46.64 331⇑ iP **P 06 00 06.3 +0.7**
LZH pP pP 06 00 12.8 -2.6
LZH sP sP 06 00 15.5 -3.8
LZH PP **PP 06 01 56.0 +0.3**
LZH S **S 06 06 51.2 -1.7**
LZH SS **SS 06 10 15.1 -4.5**
LZH pmax pmax
comp=Z,76nm,1.0s
LZH pmax pmax
comp=Z,500nm,6.4s
LZH LR LR
comp=Z,690nm,15.6s
LZH LR LR
comp=Z,720nm,14.0s
LZH LR LR
comp=Z,2μm,17.2s
VLA Vladivostok 47.10 2⇑ iP **P 06 00 10.5 +1.7**
VLA pmax pmax
comp=Z,40nm,1.0s
ERM Erimo 47.62 14 eP **P 06 00 13.4 +0.5**
ERM pmax pmax
comp=Z,51nm,1.0s
ERM MLR MLR
comp=Z,2μm,22.0s
ERM Erimo 47.62 14 eP **P 06 00 13.3 +0.5**
comp=Z,50nm,1.0s
ERM LR LR
comp=Z,2μm,22.0s
HHC Hu-ho-hao-te 47.67 342 eP **P 06 00 13.7 +0.2**
HHC S **S 06 07 06.7 -0.7**
HHC pmax pmax
comp=Z,40nm,1.1s
HHC pmax pmax
comp=Z,390nm,6.0s
HHC LR LR
comp=Z,490nm,15.0s
HHC LR LR
comp=Z,540nm,15.4s
HHC LR LR
comp=Z,490nm,15.0s
CN2 Changchun 47.87 356 eP **P 06 00 13.8 -1.0**
CN2 eS **S 06 07 06.7 -3.1**
CN2 pmax pmax
comp=Z,20nm,0.6s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,600nm,18.0s
CN2 LR LR
comp=Z,500nm,18.0s
CN2 LR LR
comp=Z,1μm,20.0s
BTO Baotou 47.96 340 eP **P 06 00 16.1 +0.4**
USRK Ussuriysk Ar. 48.19 2 P **P 06 00 17.6 +0.4**
comp=Z,21nm,0.7s,baz=185,slow=7.1,SNR=66
USRK LR LR 06 21 25.0
comp=Z,1μm,19.2s,baz=147,slow=37
MDJ Mudanjiang 48.55 0 P **P 06 00 20.8 +0.8**
MDJ pP pP 06 00 23.8 -6.1
MDJ sP sP 06 00 25.1 -8.7
MDJ PP **PP 06 02 13.6 +0.4**
MDJ S **S 06 07 19.0 -0.4**
MDJ ScS **ScS 06 10 11.6 +1.3**
MDJ SS **SS 06 10 48.9 -1.0**
MDJ pmax pmax
comp=Z,26nm,1.0s
MDJ pmax pmax
comp=Z,160nm,4.8s
MDJ LR LR
comp=Z,660nm,22.6s
MDJ LR LR
comp=Z,670nm,25.1s
MDJ LR LR
comp=Z,870nm,19.6s
MDJ Mudanjiang 48.55 0 eP **P 06 00 20.9 +0.9**
comp=Z,81nm,1.0s
MDJ LR LR
comp=Z,927nm,20.0s
MSVF Nonsavu 49.45 110 eP **P 06 00 27.9 +0.3**
MSVF Nonsavu 49.45 110 PFAKE 06 00 40.0 +12
MSVF LR LR
comp=Z,967nm,19.0s
ASAJ Asahikawa 49.49 12 P **P 06 00 27.9 +0.6**
comp=Z,31nm,0.8s
ASAJ Asahikawa 49.49 12 eP **P 06 00 28.0 +0.8**
comp=Z,108nm,1.4s
FUNA Funafuti 49.63 98 PFAKE 06 00 40.0 +11
FUNA LR LR
comp=Z,5μm,20.0s
LSA Lhasa 49.77 315 P **P 06 00 30.9 +0.6**
LSA pmax pmax
comp=Z,72nm,0.8s
LSA pmax pmax
comp=Z,180nm,7.1s
LSA LR LR
comp=Z,450nm,24.2s
LSA Lhasa 49.77 315 eP **P 06 00 31.1 +0.8**
LSA pmax pmax
comp=Z,53nm,0.8s
LSA MLR MLR
comp=Z,518nm,22.0s
LSA Lhasa 49.77 315 eP **P 06 00 31.1 +0.8**
comp=Z,53nm,0.8s
LSA LR LR
comp=Z,518nm,22.0s
PALK Pallekele 49.93 283 P **P 06 00 29.8 -1.4**
comp=Z,7.1nm,0.7s,baz=119,slow=4.6,SNR=4.1
PALK PcP **PcP 06 01 51.8 +0.5**
comp=Z,15nm,0.7s,baz=123,slow=2.0,SNR=5.8
CHLP Challavanipeta 50.04 298 eP **P 06 00 31.5 -0.4**
CHLP lAmb lAmb 06 00 32.9
comp=Z,69nm,0.9s
GTA Gaotai 51.22 331⇑ P **P 06 00 40.8 +0.2**
GTA pP pP 06 00 47.5 -3.0
GTA sP sP 06 00 50.6 -3.8
GTA PcP **PcP 06 01 56.1 +0.5**
GTA ScP **ScP 06 05 50.9 +1.0**
GTA S **S 06 07 57.2 0.0**
GTA ScS **ScS 06 10 28.8 -0.2**
GTA SS **SS 06 11 30.7 -2.4**
GTA pmax pmax
comp=Z,67nm,0.8s
GTA pmax pmax
comp=Z,240nm,7.6s
GTA LR LR
comp=Z,560nm,24.7s
GTA LR LR
comp=Z,640nm,20.9s
GTA LR LR
comp=Z,710nm,26.6s
RAMN Ramite 51.64 309 eP **P 06 00 43.7 -0.4**
comp=Z,245nm,0.6s
PVM Polavaram 51.75 296 eP **P 06 00 43.8 -1.0**
PVM lAmb lAmb 06 00 45.4
comp=Z,58nm,0.9s
KUR Kuril'sk 51.85 17 eP **P 06 00 44.6 -0.4**
KUR i S **S 06 07 58.7 -6.6**
KUR MLR MLR
comp=Z,790nm,19.0s
YSS Yuzh-Sakhalins 52.23 12αe eP **P 06 00 47.8 -0.1**
YSS e*SP **pP 06 00 56.8 -0.9**
YSS e 06 02 06.6
YSS e 06 02 43.0
YSS eS **S 06 08 07.2 -3.3**
YSS pmax pmax
comp=Z,30nm,0.8s
YSS pmax pmax
comp=Z,300nm,5.6s
YSS MLR MLR
comp=Z,700nm,16.0s
YSS MLR MLR
comp=N,500nm,18.0s
YSS MLR MLR
comp=E,300nm,20.0s
YSS Yuzh-Sakhalins 52.23 12 eP **P 06 00 47.8 -0.1**
comp=E,34nm,0.7s
YSS LR LR
comp=Z,723nm,21.0s
SKHT Srikalahasti 52.43 291 eP **P 06 00 48.6 -1.3**
SKHT lAmb lAmb 06 00 50.1
comp=Z,98nm,0.8s
HABR Khabarovsk 52.64 5 eP **P 06 00 49.1 -1.7**
HABR e*PP **pP 06 00 59.2 -1.5**
HABR e*SP **sP 06 01 03.2 -1.4**
HABR e 06 01 58.8
HABR e 06 02 48.6
HABR ePPP PPP 06 03 52.6
HABR eS **S 06 08 14.8 -1.2**
HABR e*SS **sS 06 08 31.8 -0.5**
HABR e 06 10 35.9
HABR eSS **SS 06 11 55.1 +0.2**
HABR eSSS SSS 06 13 42.2
HABR pmax pmax
comp=E,8.0nm,0.9s
HABR pmax pmax
comp=N,10.0nm,0.9s
HABR pmax pmax
comp=Z,39nm,0.9s
HABR MLR MLR
comp=Z,471nm,18.0s
GUN Gumba 52.67 310 eP **P 06 00 51.1 -0.8**
comp=Z,200nm,0.6s
PKIN Phulchoki 52.88 309 eP **P 06 00 52.6 -0.8**
KKN Kakani 53.07 309 eP **P 06 00 53.9 -0.8**
comp=Z,123nm,1.0s
DMN Daman 53.12 309 eP **P 06 00 54.5 -0.6**
comp=Z,166nm,0.9s
KLR Kul'dur 53.20 2 P **P 06 00 55.2 +0.2**
comp=Z,25nm,0.9s,baz=216,slow=3.1,SNR=4.4
KLR S **S 06 08 22.8 -0.9**
comp=Z,0.3nm,0.3s,baz=320,slow=22,SNR=5.4
KLR LR LR 06 21 20.3
comp=Z,922nm,21.3s,baz=165,slow=34
RCLA Racherla 53.62 293 eP **P 06 00 56.7 -1.9**
RCLA lAmb lAmb 06 00 58.3
comp=Z,99nm,0.8s
NJS Nagarjunasagar 53.63 294 eP **P 06 00 57.1 -1.6**
NJS lAmb lAmb 06 00 58.5
comp=Z,85nm,0.8s
GKN Gorkha 53.67 309 eP **P 06 00 58.2 -0.9**
comp=Z,149nm,0.8s
LBZ Lake Benmore 53.72 144 eP **P 06 00 59.8 +0.8**
comp=Z,192nm,1.6s
HIA Hailar 53.86 352 eP **P 06 01 01.4 +1.5**
HIA MLR MLR
comp=Z,755nm,19.0s
HIA Hailar 53.86 352 eP **P 06 01 01.4 +1.5**
HIA LR LR
comp=Z,755nm,19.0s
SRLM Srisailam 53.87 293 eP **P 06 00 59.1 -1.4**
SRLM lAmb lAmb 06 01 00.2
comp=Z,101nm,1.0s
THZ Tophouse 53.91 140 eP **P 06 01 00.8 +0.4**
comp=Z,244nm,1.7s
KOLN Koldanda 54.37 309 eP **P 06 01 03.6 -0.6**
comp=Z,232nm,0.8s
RPR Rampur 54.38 297 eP **P 06 01 03.1 -1.0**
RPR lAmb lAmb 06 01 04.2
comp=Z,82nm,0.9s
HYB Hyderabad 54.58 295 i P **P 06 01 04.0 -1.7**
HYB epP **pP 06 01 14.5 -1.1**
HYBB Hyderabad (bro 54.58 295 eP **P 06 01 04.6 -1.1**
HYBB lAmb lAmb 06 01 05.4
comp=Z,112nm,0.9s
KHZ Kahutara 54.65 141 eP **P 06 01 05.5 -0.2**
comp=Z,177nm,1.6s
MQZ McQueen's Vall 54.79 143 eP **P 06 01 07.7 +1.0**
comp=Z,227nm,1.9s
SNZO South Karori 54.83 139 PFAKE 06 01 20.0 +13
SNZO LR LR
comp=Z,2μm,21.0s
PYUN Piuthan 55.00 309 eP **P 06 01 08.2 -0.6**
comp=Z,362nm,0.9s
BKZ Black Stump Fm 55.02 136 eP **P 06 01 08.8 +0.2**
comp=Z,34nm,0.8s
URZ Urewera 55.05 135 eP **P 06 01 08.7 0.0**
comp=Z,37nm,0.9s
SRSP Sriramsagar 55.25 296 eP **P 06 01 08.6 -2.0**
SRSP lAmb lAmb 06 01 10.2
comp=Z,88nm,0.9s
SONM Songino Array 55.58 341 P **P 06 01 12.1 -0.4**
comp=Z,16nm,0.7s,baz=149,slow=8.3,SNR=69
SONM PcP **PcP 06 02 12.4 +0.4**
comp=Z,10nm,0.7s,baz=158,slow=4.6,SNR=3.8
SONM LR LR 06 26 21.5
comp=Z,450nm,19.8s,baz=151,slow=38
SONA1 Songino Array 55.58 341 eP **P 06 01 13.1 +0.5**
MXZ Matakaoa Point 55.61 133 eP **P 06 01 14.1 +1.3**
comp=Z,185nm,1.2s
TYV Tymovskoe 55.97 10 eP **P 06 01 15.0 0.0**
TYV eS **S 06 09 00.5 -0.3**
TYV pmax pmax
comp=Z,53nm,1.0s
TYV pmax pmax
comp=Z,600nm,6.0s
TYV smax smax
comp=N,700nm,8.0s
KLRI Killari 56.55 295 eP **P 06 01 17.9 -2.0**
KLRI lAmb lAmb 06 01 19.1
comp=Z,93nm,0.8s
ZAK Zakamensk 58.80 341 eP **P 06 01 33.8 -1.4**
ZAK pmax pmax
comp=Z,29nm,1.6s
POO Poona 59.18 294⇓ iP **P 06 01 35.0 -3.4**
comp=Z,17nm,1.0s
TLY Talaya 59.81 342 LR LR 06 30 34.8
comp=Z,264nm,18.7s,baz=142,slow=39
TLY Talaya 59.81 342c iP **P 06 01 42.8 +0.8**
TLY eS **S 06 09 49.1 -2.1**
TLY pmax pmax
comp=Z,43nm,1.4s
TLY MLR MLR
comp=Z,278nm,17.0s
TLY Talaya 59.81 342 eP **P 06 01 43.2 +1.2**
comp=Z,27nm,0.9s
NDI New Delhi 59.82 307 eP P 06 01 34.5 -8.0
IRK Irkutsk 60.10 342 eP **P 06 01 43.6 -0.4**
IRK pmax pmax
comp=Z,161nm,1.8s
MIDW Midway 60.44 54 PFAKE 06 02 00.0 +13
MIDW LR LR
comp=Z,713nm,22.0s
MOY Mondy 60.66 340 eP **P 06 01 49.2 +1.2**
MOY pmax pmax
comp=Z,161nm,2.4s
WMQ Urumqi 60.71 326 P **P 06 01 49.2 +0.8**
WMQ pP pP 06 01 54.8 -3.7
WMQ sP sP 06 01 58.2 -4.1
WMQ PcP **PcP 06 02 31.5 -0.8**
WMQ S **S 06 10 00.8 -2.4**
WMQ ScS SKKSac 06 11 36.5 -0.5
WMQ pmax pmax
comp=Z,120nm,1.0s
WMQ pmax pmax
comp=Z,380nm,6.0s
WMQ LR LR
comp=Z,900nm,16.0s
WMQ LR LR
comp=Z,810nm,13.2s
WMQ LR LR
comp=Z,1μm,25.0s
PEA0 Petropavlovsk- 61.82 19 eP **P 06 01 56.3 +0.6**
PEA0B Petropavlovsk- 61.82 19 eP **P 06 01 57.1 +1.4**
comp=Z,51nm,1.0s
PETK Petropavlovsk- 61.82 19 P **P 06 01 56.1 +0.4**
comp=Z,34nm,0.7s,baz=187,slow=4.9,SNR=54
PETK LR LR 06 25 01.1
comp=Z,672nm,21.7s,baz=204,slow=32
PET Petropavlovsk 62.06 20 eP **P 06 02 00.6 +3.3**
PET eS **S 06 10 21.7 +1.9**
PET eSS **SS 06 14 30.5 +7.4**
PET pmax pmax
comp=Z,300nm,16.5s
PET Petropavlovsk 62.06 20 PFAKE 06 02 10.0 +13
PET LR LR
comp=Z,720nm,20.0s
THN Thein Dam 62.55 310 eP P 06 01 56.0 -5.0
BOD Bodaibo 63.01 351 eP **P 06 02 03.5 0.0**
BOD pmax pmax
comp=Z,80nm,1.8s
CASY Casey 63.41 188 eP **P 06 02 06.2 +0.2**
comp=Z,28nm,0.8s
CASY LR LR
comp=Z,193nm,21.0s
PDGK Podgornoye 65.21 322 i P **P 06 02 18.1 -0.1**
PDGK pmax pmax
comp=Z,42nm,0.7s
MK01 Makanchi Array 65.53 326 eP **P 06 02 20.1 -0.2**
MK31 Makanchi Array 65.55 326 i P **P 06 02 19.9 -0.5**
MK31 pmax pmax
comp=Z,50nm,0.6s
MK31 Makanchi Array 65.55 326 eP **P 06 02 20.0 -0.4**
MKAR Makanchi Array 65.55 326 P **P 06 02 19.8 -0.6**
comp=Z,90nm,0.7s,baz=123,slow=7.8,SNR=492
MKAR S **S 06 11 04.0 +0.5**
comp=Z,0.4nm,0.6s,baz=108,slow=7.8,SNR=3.1
MKAR LR LR 06 31 16.4
comp=Z,195nm,21.1s,baz=110,slow=36
MKAR Makanchi Array 65.55 326 eP **P 06 02 20.0 -0.4**
MKAR S **S 06 11 04.0 +0.5**
KSH Kashi 65.55 317 eP **P 06 02 21.3 +0.6**
KSH epP pP 06 02 27.5 -3.3
KSH esP sP 06 02 30.2 -4.5
KSH ePP **PP 06 04 47.5 +2.2**
KSH S **S 06 11 03.4 -0.6**
KSH ScS **SKSac 06 12 11.4 -2.7**
KSH SS **SS 06 15 18.5 +0.2**
KSH pmax pmax
comp=Z,25nm,0.7s
KSH pmax pmax
comp=Z,250nm,5.7s
KSH LR LR
comp=Z,250nm,11.5s
KSH LR LR
comp=Z,260nm,9.1s
KSH LR LR
comp=Z,440nm,16.9s
MAKZ Makanchi 65.73 326 eP **P 06 02 20.9 -0.7**
MAKZ Makanchi 65.73 326 eP **P 06 02 20.9 -0.7**
MAKZ epP **P 06 02 21.2 -0.3**
MA2 Magadan 65.74 12 P **P 06 02 22.2 +0.8**

comp=Z,40nm,0.8s,baz=188,slow=4.4,SNR=7.8
MA2 Magadan 65.74 12 P **P 06 02 22.2 +0.8**
MA2 MLR MLR
comp=Z,2µm,20.0s
MA2 Magadan 65.74 12 P **P 06 02 22.2 +0.8**
MA2 LR LR
comp=Z,2µm,20.0s
YAK Yakutsk 66.00 0 P **P 06 02 22.9 0.0**
YAK S **S 06 11 08.8 +0.6**
comp=Z,10nm,0.4s,baz=360,slow=2.3,SNR=3.0
YAK Yakutsk 66.00 0 *e*P **P 06 02 23.1 +0.2**
YAK *e**PP **pP 06 02 32.7 -0.3**
YAK *e* 06 02 50.7
YAK *e* 06 04 52.7
YAK *e*S **S 06 11 05.5 -2.7**
YAK *e**SS **sS 06 11 29.3 +4.4**
YAK *e* 06 12 14.1
YAK *e*SS **SS 06 15 26.2 +2.1**
YAK pmax pmax
comp=Z,210nm,1.1s
YAK pmax pmax
comp=N,53nm,1.0s
YAK pmax pmax
comp=E,17nm,1.3s
YAK pmax pmax
comp=Z,31nm,1.1s
YAK pmax pmax
comp=N,17nm,1.4s
YAK pmax pmax
comp=E,12nm,1.3s
YAK smax smax
comp=N,352nm,4.2s
YAK smax smax
comp=E,439nm,5.6s
YAK Yakutsk 66.00 0 *e*P **P 06 02 23.2 +0.3**
comp=E,191nm,0.8s
YAK S **S 06 11 08.8 +0.6**
YAK LR LR
comp=Z,800nm,20.0s
TKM2 Tokmak 2 67.44 320 *e*P **P 06 02 32.6 -0.2**
TKM2 pmax pmax
comp=Z,33nm,0.8s
TKM2 MLR MLR
comp=Z,294nm,20.0s
TKM2 Tokmak 2 67.44 320 *e*P **P 06 02 32.6 -0.2**
comp=Z,33nm,0.8s
TKM2 LR LR
comp=Z,294nm,20.0s
AAK Ala-Archa 68.01 319*c i*P **P 06 02 36.6 +0.2**
AAK pmax pmax
comp=Z,56nm,1.1s
AAK Ala-Archa 68.01 319 P **P 06 02 36.6 +0.2**
SNR=16
AAK Ala-Archa 68.01 319 *e*P **P 06 02 36.8 +0.4**
comp=Z,23nm,0.9s
AAK LR LR
comp=Z,478nm,22.0s
EKS2 Erkin-Say 68.49 319 *e*P **P 06 02 39.8 +0.4**
EKS2 pmax pmax
comp=Z,38nm,0.9s
EKS2 MLR MLR
comp=Z,534nm,21.0s
EKS2 Erkin-Say 68.49 319 *e*P **P 06 02 39.8 +0.4**
comp=Z,38nm,0.9s
EKS2 LR LR
comp=Z,534nm,21.0s
KBL Kabul 68.51 310 *e*P **P 06 02 39.3 -0.4**
KBL pmax pmax
comp=Z,25nm,0.8s
KBL Kabul 68.51 310 *e*P **P 06 02 39.3 -0.4**
comp=Z,25nm,0.8s
ZAA0 Zalesovo Array 68.79 334 *e*P **P 06 02 40.3 -0.5**
ZALV Zalesovo Beam 68.79 334 P **P 06 02 39.9 -0.9**
comp=Z,55nm,0.7s,baz=116,slow=4.8,SNR=172
SEY Seymchan 69.13 11 P **P 06 02 43.9 +1.1**
comp=Z,67nm,0.8s
SEY S **S 06 11 49.1 +3.2**
comp=Z,0.2nm,0.3s,baz=3.1,slow=20,SNR=7.4
MNAS Manas 69.25 318 *i*P **P 06 02 43.5 -0.6**
MNAS pmax pmax
comp=Z,33nm,1.0s
KURBB Kurchatov Arra 69.80 328 PKP2bc **P'P'bc 06 30 51.7 +0.6**
comp=Z,0.8nm,0.9s,baz=305,slow=3.8,SNR=6.5
KURK Kurchatov 69.80 328 *e*P **P 06 02 46.9 -0.2**
KURK MLR MLR
comp=Z,778nm,19.0s
KURK Kurchatov 69.80 328 *e*P **P 06 02 46.9 -0.2**
comp=Z,1µm,0.8s
KURK ⇑*e* 06 30 51.7
KURK LR LR
comp=Z,778nm,19.0s
NVS Novosibirsk 70.08 334⇑*i*P **P 06 02 48.3 -0.4**
NVS *i* 06 02 58.3
NVS *e* 06 11 57.0
NVS pmax pmax
comp=N,29nm,0.7s
NVS pmax pmax
comp=E,33nm,0.7s
NVS pmax pmax
comp=Z,56nm,0.7s
KK31 Karatay Array 70.84 318 *i*P **P 06 02 53.1 -0.6**
KK31 pmax pmax
comp=Z,14nm,0.8s
KKAR Karatay Array 70.84 318 *e*P **P 06 02 53.3 -0.4**
KKAR Karatay Array 70.84 318 *e*P **P 06 02 53.3 -0.4**
XMAS Kiritimati 73.34 87 PFAKE 06 03 20.0 +11
XMAS LR LR
comp=Z,7.0nm,21.0s
WSAR Wadi Sarin 74.12 295 P **P 06 03 12.8 -0.8**
comp=Z,24nm,0.9s,baz=116,slow=9.0,SNR=11
SMDO Samad 74.61 295 P **P 06 03 16.0 -0.6**
SNR=9.7
BIDO Bidbid 74.63 296 P **P 06 03 16.4 -0.2**
SNR=9.9
BIDO P **P 06 03 16.4 -0.2**
SNR=9.9
VOSK Vostochnaya 74.91 328 P **P 06 03 16.6 -1.0**
VOSK pmax pmax
comp=Z,68nm,0.6s
VNDA Vanda 75.33 173 P **P 06 03 19.2 -0.4**
comp=Z,15nm,0.8s,baz=322,slow=6.6,SNR=46
VNDA LR LR 06 36 15.2
comp=Z,507nm,19.1s,baz=340,slow=36
VNDA Vanda 75.33 173 *e*P **P 06 03 20.0 +0.4**
VNDA pmax pmax
comp=Z,15nm,0.8s
VNDA Vanda 75.33 173 *e*P **P 06 03 20.0 +0.4**
comp=Z,15nm,0.8s
BVA0 Borovoye Array 75.36 328 *i*P **P 06 03 19.7 -0.5**
BVA0 pmax pmax
comp=Z,78nm,1.0s
HOQ Hoqain 75.38 296 P **P 06 03 21.0 +0.1**
SNR=11
BRVK Borovoye 75.44 328*c i*P **P 06 03 20.8 +0.2**
BRVK *i* *PP **pP 06 03 30.9 0.0**
BRVK pmax pmax
comp=Z,239nm,0.8s
BRVK Borovoye 75.44 328 *e*P **P 06 03 20.4 -0.2**
comp=Z,85nm,0.8s
BRVK LR LR
comp=Z,210nm,21.0s
CHKZ Chkalovo 75.55 328 *i*P **P 06 03 20.8 -0.4**
CHKZ pmax pmax
comp=Z,73nm,0.8s
TIXI Tiksi 75.66 360*ce*P **P 06 03 20.6 -0.9**
TIXI pmax pmax
comp=Z,37nm,0.8s
TIXI Tiksi 75.66 360 *e*P **P 06 03 21.0 -0.5**
comp=Z,30nm,0.7s
TIXI LR LR
comp=Z,1µm,20.0s
ARQ Araqi 76.04 295 P **P 06 03 24.7 0.0**
SNR=5.3
ZRNK Zerenda 76.07 327 *e*P **P 06 03 24.2 0.0**
ZRNK pmax pmax
comp=Z,90nm,0.7s
ZRNK Zerenda 76.07 327 *e*P **P 06 03 24.2 0.0**
comp=Z,90nm,0.7s
SBA Scott Base 76.22 172 *e*P **P 06 03 25.1 +0.5**
SBA pmax pmax
comp=Z,45nm,1.5s
SBA MLR MLR
comp=Z,588nm,19.0s
SBA Scott Base 76.22 172 *e*P **P 06 03 25.1 +0.5**
comp=Z,44nm,1.5s
SBA LR LR
comp=Z,588nm,19.0s
BILL Bilibino 76.49 13⇑*i*P **P 06 03 28.0 +1.7**
BILL *e* 06 03 37.4
BILL *e* 06 06 19.3
BILL pmax pmax
comp=Z,6.0nm,1.0s
BILL MLR MLR
comp=Z,784nm,20.0s
BILL Bilibino 76.49 13 PFAKE 06 03 40.0 +14
BILL LR LR
comp=Z,711nm,20.0s
UOSS Minazif 76.63 297 *e*P **P 06 03 28.1 +0.1**
comp=Z,167nm,2.0s
HATD Hatta, Dubai 76.67 297 P **P 06 03 27.9 -0.3**
ASHO Ashiyiah 76.71 296 *i*P **P 06 03 27.9 -0.5**
SNR=9.0
ASHO Ashiyiah 76.71 296 P **P 06 03 28.0 -0.5**
SNR=5.3
ASHO P **P 06 03 28.0 -0.5**
SNR=5.3
NIKH Nikolski High 76.79 33 *e*P **P 06 03 28.8 +0.5**
comp=Z,48nm,0.6s
NAZ Nazwa, Dubai 77.12 297 *i*P **P 06 03 30.4 -0.4**
SNR=5.1
FAQ Al Faqa, Dubai 77.14 296 P **P 06 03 30.5 -0.4**
MAW Mawson 77.38 201 P **P 06 03 31.2 -0.1**
comp=Z,10nm,0.9s,baz=90,slow=4.1,SNR=17
MAW Mawson 77.38 201 P **P 06 03 31.3 0.0**
baz=77,SNR=9.5
MAW Mawson 77.38 201 *e*P **P 06 03 31.3 0.0**
MAW pmax pmax
comp=Z,5.0nm,1.1s
MAW Mawson 77.38 201 *e*P **P 06 03 31.3 0.0**
comp=Z,4.7nm,1.1s
GEYT Alibeck 77.95 310 P **P 06 03 35.7 +0.5**
comp=Z,14nm,0.8s,baz=132,slow=2.2,SNR=18
GEYT LR LR 06 44 43.0
comp=Z,170nm,19.2s,baz=135,slow=41
UNV Unalaska Valle 78.44 33 *e*P **P 06 03 38.3 +0.9**
comp=Z,97nm,1.4s
NRIK Noril'sk 78.67 346 P **P 06 03 38.6 +0.1**
comp=Z,20nm,0.7s,baz=135,slow=6.4,SNR=26
AKUT Akutan 78.95 33 *e*P **P 06 03 40.8 +0.6**
comp=Z,156nm,1.2s
AB31 Akbulak array 79.94 321 *i*P **P 06 03 44.8 -1.0**
AB31 pmax pmax
comp=Z,33nm,0.6s
ABKAR Akbulak array 79.94 321 *e*P **P 06 03 44.9 -0.8**
PPT2 Papeete2 80.19 107 *e*S **S 06 13 45.0 -6.3**
comp=Z,539nm,27.0s
PPT2 Papeete2 80.19 107 *e*LQ LQ 06 25 27.6
comp=Z,597nm,36.5s
PPT2 *e*LR LR 06 28 53.4
comp=Z,357nm,24.2s
TBI Tubuai 80.22 113 *e*S **S 06 13 45.8 -5.5**
comp=Z,351nm,29.2s
TBI Tubuai 80.22 113 *e*LQ LQ 06 25 28.6
comp=Z,461nm,27.0s
TBI *e*LR LR 06 28 53.5
comp=Z,316nm,35.2s
OPO Ambohidratompo 81.34 252 P **P 06 03 53.9 -0.2**
comp=Z,11nm,0.7s,baz=58,slow=1.9,SNR=12
AKTO Aktyubinsk 81.48 322 *i*P **P 06 03 53.7 -0.3**
AKTO pmax pmax
comp=Z,49nm,0.7s
SVE Sverdlovsk 82.05 329*d i*P **P 06 03 56.9 0.0**
SVE *e*S **S 06 14 04.3 -4.6**
SVE pmax pmax
comp=Z,104nm,0.9s
SDPT Sand Point 82.25 33 *e*P **P 06 03 58.5 +0.6**
comp=Z,608nm,1.8s
ARU Arti 83.00 328*c i*P **P 06 04 01.1 -0.7**
ARU 06 07 08.5
ARU S **S 06 14 18.6 -0.1**
ARU pmax pmax
comp=Z,47nm,0.7s
ARU Arti 83.00 328 *e*P **P 06 04 01.7 -0.1**
comp=Z,48nm,0.7s
ARU LR LR
comp=Z,307nm,20.0s
CHGN Chignik 83.65 32 *e*P **P 06 04 05.1 -0.1**
SOKR Solikamsk 84.86 331*c i*P **P 06 04 08.4 -2.8**
SOKR pmax pmax
comp=Z,45nm,0.6s
SOKR MLR MLR
comp=Z,243nm,16.0s
QSPA South Pole Qui 85.81 180 *e*P **P 06 04 15.0 -1.1**
QSPA LR LR
comp=Z,918nm,21.0s
DAMY Dhamar 86.23 285 *e*P **P 06 04 20.7 +1.3**
comp=Z,90nm,0.8s
SVW2 Sparrevohn 86.41 28 *e*P **P 06 04 20.1 +1.1**
comp=Z,64nm,1.3s
OHAK Old Harbor 86.62 32 *e*P **P 06 04 20.3 +0.3**
comp=Z,71nm,1.0s
TT01 Tatalina 86.69 26 *e*P **P 06 04 20.9 +0.6**
TTA Tatalina 86.70 26 *e*P **P 06 04 20.9 +0.4**
TTA pmax pmax
comp=Z,81nm,1.5s
TTA Tatalina 86.70 26 *e*P **P 06 04 20.9 +0.4**
comp=Z,81nm,1.5s
KDAK Kodiak Island 87.11 32 *e*P **P 06 04 23.1 +0.7**
KDAK pmax pmax
comp=Z,178nm,0.9s
KDAK MLR MLR
comp=Z,399nm,22.0s
KDAK Kodiak Island 87.11 32 *e*P **P 06 04 23.1 +0.7**
comp=Z,178nm,0.9s
KDAK LR LR
comp=Z,399nm,22.0s
ATD Arta Tunnel 87.47 282 P **P 06 04 26.3 +1.1**
comp=Z,42nm,0.8s,baz=297,slow=20,SNR=5.9
RSO Redoubt South 87.61 29 *e*P **P 06 04 25.2 +0.2**
HOM Homer 87.98 30 *e*P **P 06 04 27.0 +0.4**
comp=Z,141nm,0.8s
SPU Mount Spurr 88.09 28 *e*P **P 06 04 28.1 +1.0**
CNPM China Poot 88.16 30 *e*P **P 06 04 27.9 +0.5**
comp=Z,67nm,1.0s
BRLK Bradley Lake 88.38 30 *e*P **P 06 04 29.4 +0.9**
comp=Z,61nm,1.2s
PPLA Purkeypile 88.39 27 *e*P **P 06 04 29.5 +0.8**
comp=Z,30nm,1.3s
CAST Castle Rocks 88.55 26 *e*P **P 06 04 30.2 +1.0**
comp=Z,7.5nm,0.9s
GNI Garni 88.58 310*c i*P **P 06 04 30.9 +0.8**
GNI pmax pmax
comp=Z,51nm,0.9s
GNI Garni 88.58 310 *e*P **P 06 04 31.4 +1.3**
comp=Z,36nm,0.8s
GNI LR LR
comp=Z,202nm,19.0s
TBLG Delisi 88.77 312 P **P 06 04 31.2 +0.4**
TBLG Delisi 88.77 312 *e*P **P 06 04 31.1 +0.4**
SUA Susitna One 88.77 28 *e*P **P 06 04 30.9 +0.5**
comp=Z,26nm,0.8s
GUDG Gudauri 89.05 313 P **P 06 04 32.7 +0.4**
KTH Kantishna Hill 89.09 26 *e*P **P 06 04 31.7 -0.1**
comp=Z,13nm,0.8s
SEW Seward 89.15 30 *e*P **P 06 04 32.1 +0.1**
comp=Z,32nm,0.9s
RC01 Rabbit Creek A 89.18 29 *e*P **P 06 04 32.0 -0.2**
comp=Z,27nm,0.8s
TRF Thorofare Moun 89.35 26 *e*P **P 06 04 33.3 +0.2**
comp=Z,16nm,1.1s
ZEI Tsey 89.50 313 *e*P **P 06 04 33.8 -0.6**
ZEI pmax pmax
comp=Z,37nm,0.5s
PMR Palmer 89.55 28 *e*P **P 06 04 33.1 -0.8**
PMR pmax pmax
comp=Z,18nm,1.0s
PMR Palmer 89.55 28 *e*P **P 06 04 33.1 -0.8**
comp=Z,18nm,1.0s
BGD Bogdanovka 89.57 311 P **P 06 04 35.7 +0.9**
AKH Akhalkalaki 89.66 311⇓*i*P **P 06 04 36.6 +1.4**
AKH Akhalkalaki 89.66 311 P **P 06 04 33.7 -1.5**
AKH Akhalkalaki 89.66 311 *e*P **P 06 04 33.6 -1.5**
TAOE Nuku Hiva Isla 89.79 99 *e*LR LR 06 32 59.7
comp=Z,432nm,22.9s
NCK Nalchik 89.80 313*d i*P **P 06 04 35.4 -0.1**
NCK pmax pmax
comp=Z,15nm,0.8s
ONI Oni 89.81 313 P **P 06 04 35.1 -0.6**
ONI Oni 89.81 313 *e*P **P 06 04 35.1 -0.6**
SML Sawmill 89.96 28 *e*P **P 06 04 35.8 -0.1**
SML pmax pmax
comp=Z,32nm,0.8s
SML Sawmill 89.96 28 *e*P **P 06 04 35.8 -0.1**
comp=Z,32nm,0.8s
RND Reindeer 89.98 26 *e*P **P 06 04 36.0 0.0**
RND pmax pmax
comp=Z,26nm,0.8s
RND Reindeer 89.98 26 *e*P **P 06 04 36.0 0.0**
comp=Z,26nm,0.8s
MCK McKinley 89.99 26 *e*P **P 06 04 35.8 -0.2**
MCK pmax pmax
comp=Z,34nm,1.2s
MCK McKinley 89.99 26 *e*P **P 06 04 35.8 -0.2**
comp=Z,34nm,1.2s
COLD Coldfoot 90.08 23 *e*P **P 06 04 36.7 +0.5**
comp=Z,15nm,0.8s
KBZ Khabaz 90.33 314 P **P 06 04 37.2 -0.7**
comp=Z,9.0nm,0.7s,baz=113,slow=4.3,SNR=16
GOF Gofitskoye 90.35 315⇑*e*P **P 06 04 36.6 -1.4**
NEY Neytrino 90.41 313⇑*i*P **P 06 04 40.5 +1.9**
NEY pmax pmax
comp=Z,5.0nm,0.9s
SCM Sheep Creek Mo 90.44 28 *e*P **P 06 04 38.3 +0.1**
SCM pmax pmax
comp=Z,14nm,0.8s
SCM Sheep Creek Mo 90.44 28 *e*P **P 06 04 38.3 +0.1**
comp=Z,14nm,0.8s
WRH Wood River Hil 90.48 25 *e*P **P 06 04 37.3 -0.9**
comp=Z,36nm,1.3s
KIV Kislovodsk 90.50 314⇑*i*P **P 06 04 38.2 -0.7**
KIV *e* 06 08 19.5
KIV pmax pmax
comp=Z,6.0nm,0.8s
KIV MLR MLR
comp=Z,132nm,19.0s
KIV Kislovodsk 90.50 314 PFAKE 06 04 50.0 +11
KIV LR LR
comp=Z,167nm,19.0s
DHY Denali Highway 90.59 27 *e*P **P 06 04 38.7 -0.2**
comp=Z,14nm,0.7s
CCB Clear Creek Bu 90.62 25 *e*P **P 06 04 37.7 -1.2**
comp=Z,20nm,0.9s
COLA College 90.64 25 *e*P **P 06 04 38.8 -0.1**
COLA pmax pmax
comp=Z,9.0nm,0.7s
COLA MLR MLR
comp=Z,497nm,22.0s
COLA College 90.64 25 *e*P **P 06 04 38.8 -0.1**
comp=Z,9.1nm,0.7s
COLA LR LR
comp=Z,497nm,22.0s
HDA Harding Lake 90.96 26 *e*P **P 06 04 39.5 -1.0**
comp=Z,15nm,0.8s
ILAR Eielson Array 91.03 25 P **P 06 04 39.4 -1.3**
comp=Z,5.2nm,0.8s,baz=293,slow=4.4,SNR=39
ILAR PKKPbc **PKKPdf 06 22 04.2 +0.4**
comp=Z,1.4nm,0.7s,baz=33,slow=1.5,SNR=16
ILB Eielson Array 91.03 25 *e*P **P 06 04 39.5 -1.3**
IL1 Eielson Array 91.03 25 *e*P **P 06 04 39.5 -1.3**
KLU Klutina 91.06 29 *e*P **P 06 04 41.3 +0.2**
comp=Z,8.1nm,0.8s
DIV Divide 91.09 29 *e*P **P 06 04 41.7 +0.4**
comp=Z,15nm,0.8s
PAX Paxson 91.44 27 *e*P **P 06 04 42.8 0.0**
PAX pmax pmax
comp=Z,37nm,1.3s
PAX Paxson 91.44 27 *e*P **P 06 04 42.8 0.0**
comp=Z,37nm,1.3s
BMRM Bremner River 91.64 29 *e*P **P 06 04 44.2 +0.5**
comp=Z,23nm,1.2s
VRH Novokhopyorsk 91.76 321 *e*P **P 06 04 42.4 -2.0**
VRH pmax pmax
comp=Z,10.0nm,0.7s
KMBO Kilima Mbogo 92.08 269 P **P 06 04 46.4 -0.7**
comp=Z,8.6nm,1.0s,baz=58,slow=9.0,SNR=11
KMBO Kilima Mbogo 92.08 269 *e*P **P 06 04 47.5 +0.4**
KMBO pmax pmax
comp=Z,17nm,1.2s
KMBO MLR MLR
comp=Z,432nm,20.0s
KMBO Kilima Mbogo 92.08 269 *e*P **P 06 04 47.5 +0.4**
comp=Z,17nm,1.2s
KMBO LR LR
comp=Z,432nm,20.0s
DOT Dot Lake 92.14 26 *e*P **P 06 04 45.8 -0.2**
comp=Z,24nm,0.9s
MENT Mentasta 92.23 27 *e*P **P 06 04 46.7 +0.2**
comp=Z,9.8nm,1.0s
CRQM Cirque 92.34 29 *e*P **P 06 04 47.9 +0.8**
comp=Z,12nm,0.7s
BALM Baldy 92.74 29 *e*P **P 06 04 49.3 +0.4**
BALM pmax pmax
comp=Z,11nm,0.8s
BALM Baldy 92.74 29 *e*P **P 06 04 49.3 +0.4**
comp=Z,11nm,0.8s
VSR Storozhevoye 93.36 321 *e*P **P 06 04 50.2 -1.6**
VSR pmax pmax
comp=Z,10.0nm,1.5s
EGAK Eagle 93.48 25 *e*P **P 06 04 52.0 0.0**
comp=Z,18nm,1.1s
EGAK LR LR
comp=Z,351nm,22.0s
KLMR Klimovskoe 93.55 331 *e*P **P 06 04 49.2 -3.2**
KLMR pmax pmax
comp=Z,19nm,0.7s
PCA Pinnacle 93.73 30 *e*P **P 06 04 55.3 +1.8**
comp=Z,30nm,0.6s
DAWY Dawson 94.22 26 *e*P **P 06 04 55.7 +0.1**
comp=Z,29nm,1.1s
ANN Anapa 94.31 314 *e*P **P 06 04 54.8 -1.5**
ANN pmax pmax
comp=Z,33nm,0.8s
OBN Obninsk 95.01 325*ce*P **P 06 04 57.5 -1.8**
OBN *e* 06 08 54.7
OBN pmax pmax
comp=Z,20nm,0.8s
OBN Obninsk 95.01 325 PFAKE 06 05 10.0 +11
OBN LR LR
comp=Z,244nm,20.0s
HYT Haines Junctio 95.10 29 *e*P **P 06 05 00.2 +0.4**
comp=Z,18nm,1.5s
LVZ Lovozero 95.62 338 *e*P **P 06 05 00.2 -1.7**
LVZ Lovozero 95.62 338 *e*P **P 06 05 00.2 -1.7**
comp=Z,20nm,0.9s
LVZ LR LR
comp=Z,553nm,22.0s
APA Apatity 96.11 337⇓*i*P **P 06 05 01.9 -2.2**
APA pmax pmax
comp=Z,12nm,0.8s
APA MLR MLR
comp=Z,500nm,23.0s
INK Inuvik 96.45 22 *e*P **P 06 05 04.9 -0.6**
INK pmax pmax
comp=Z,30nm,1.3s
INK Inuvik 96.45 22 *e*P **P 06 05 04.9 -0.6**
comp=Z,30nm,1.3s
BR131 Keskin Array S 97.08 309 *e*P **P 06 05 08.2 -1.1**
BRTR Keskin Array B 97.08 309 P **P 06 05 07.8 -1.5**
comp=Z,4.3nm,0.8s,baz=126,slow=5.2,SNR=26
CSS Mathiatis 97.35 305 *e*P **P 06 05 10.0 -0.4**
comp=Z,3.3nm,0.8s
CSS LR LR
comp=Z,54nm,19.0s
ANTO Ankara 97.73 310 PFAKE 06 05 20.0 +7.8
ANTO LR LR
comp=Z,165nm,22.0s
BR231 Keskin MP Arra 97.75 309 *e*P **P 06 05 08.6 -3.6**
WRAK Wrangell Islan 98.00 34 *e*P Pdif 06 05 13.8 +0.9
comp=Z,6.5nm,0.8s
WRAK LR LR
comp=Z,468nm,21.0s
MSF Maaselka 98.01 336 P Pdif 06 05 13.7 +1.0
MSF pmax pmax
comp=Z,12nm,1.4s
SNAA Sanae 98.28 194 P **P 06 05 13.6 -0.4**
SNAA Sanae 98.28 194 *e*P **P 06 05 13.2 -0.8**
SNAA pmax pmax
comp=Z,37nm,1.8s
SNAA Sanae 98.28 194 *e*P **P 06 05 13.2 -0.8**
comp=Z,37nm,1.8s
MBAR Mbarara 98.62 269 PFAKE 06 05 30.0 +13
MBAR LR LR
comp=Z,927nm,22.0s
ARA0 ARCESS Array S 98.72 340 *e*P **P 06 05 14.5 -1.4**
ARCES ARCESS Array B 98.72 340 P **P 06 05 14.6 -1.2**
comp=Z,11nm,0.7s,baz=83,slow=4.7,SNR=40
ARCES PKKPbc **PKKPbc 06 21 44.8 -2.2**
comp=Z,0.9nm,0.6s,baz=262,slow=2.5,SNR=10.0
ARE0 ARCESS Array S 98.72 340 *e*P **P 06 05 15.0 -0.8**

comp=Z,24nm,1.0s
SGF Sodankyl 98.76 338 P Pdif 06 05 17.2 +1.2
SGF pmax pmax
comp=Z,12nm,0.8s
KBS Kingsbay 99.18 350 PFAKE 06 05 30.0 +12
KBS LR LR
comp=Z,518nm,22.0s
AKASG Malin Array Be 99.66 321 P **Pdif 06 05 18.6 -1.8**
comp=Z,0.8nm,0.5s,baz=76,slow=4.0,SNR=6.5
AKBB Malin Array Si 99.66 321 *e*P **Pdif 06 05 21.7 +1.3**
AKBB pmax pmax
comp=Z,7.0nm,0.6s
AKBB Malin Array Si 99.66 321 *e*Pdif **Pdif 06 05 21.7 +1.3**
comp=Z,6.8nm,0.6s
KIEV Kiev 99.67 321 PFAKE 06 05 30.0 +10
KIEV LR LR
comp=Z,377nm,20.0s
LSZ Lusaka 99.71 254 *e*P **Pdif 06 05 20.3 -1.3**
LSZ pmax pmax
comp=Z,9.0nm,0.9s
LSZ MLR MLR
comp=Z,453nm,21.0s
LSZ Lusaka 99.71 254 *e*Pdif **Pdif 06 05 20.3 -1.3**
comp=Z,8.8nm,0.9s
LSZ LR LR
comp=Z,453nm,21.0s
SUF Sumiainen 99.75 333 P **Pdif 06 05 18.9 -1.6**
SUF pmax pmax
comp=Z,15nm,1.4s
FIA1 FINESS Array S 100.00 332 *e*Pdif **Pdif 06 05 20.1 -1.5**
comp=Z,8.5nm,0.8s
FINES FINESS Array B 100.00 332 P **PP 06 05 20.1 -1.6**
comp=Z,6.9nm,0.7s,baz=100,slow=5.8,SNR=30
FINES PP **PP 06 09 27.6 +0.7**
comp=Z,2.5nm,0.8s,baz=90,slow=9.5,SNR=4.1
FINES LR LR 06 57 03.3
comp=Z,273nm,18.6s,baz=68,slow=39
MICGM Minsk 100.06 325 *e* **Pdif 06 05 20.0 -2.1**
MNK Minsk 100.06 325 *e*P **Pdif 06 05 20.0 -2.1**
BOSA Boshof 100.39 240 P **Pdif 06 05 23.1 -1.3**
comp=Z,4.4nm,0.8s,baz=98,slow=2.7,SNR=8.1
TIRR Tirgusor 100.75 314 ⇓ *i*P **Pdif 06 05 26.4 +1.0**
TIRR Tirgusor 100.75 314 ⇓ P **Pdif 06 05 26.4 +1.0**
CFR Carcaliu 100.89 315 ⇑ *i*P **Pdif 06 05 26.4 +0.4**
CFR Carcaliu 100.89 315 ⇑ P **Pdif 06 05 26.4 +0.4**
VAF Ylistaro 101.25 334 P **Pdif 06 05 26.0 -1.1**
VAF pmax pmax
comp=Z,21nm,1.3s
TESR Tescani 101.79 317 ⇑ *i*P **Pdif 06 05 29.5 -0.5**
PLOR Plostina 101.86 316 ⇑ *i*P **Pdif 06 05 28.5 -1.9**
PLOR Plostina 101.86 316 ⇑ P **Pdif 06 05 28.5 -1.9**
MLR Muntele Rosu 102.39 316 ⇓ *i*P **Pdif 06 05 32.5 -0.4**
MLR Muntele Rosu 102.39 316 ⇓ P **Pdif 06 05 32.5 -0.4**
MLR Muntele Rosu 102.39 316 *e*Pdif **Pdif 06 05 32.5 -0.4**
BURAR Bucovina Array 102.62 318 ⇑ *i*P **Pdif 06 05 33.6 -0.2**
BURAR Bucovina Array 102.62 318 ⇑ P **Pdif 06 05 33.6 -0.2**
BUR08 Bucovina Ar. S 102.63 318 *e*Pdif **Pdif 06 05 33.9 0.0**
VOIR 103.03 316 ⇓ *i*P **Pdif 06 05 36.7 +1.1**
VOIR 103.03 316 ⇓ P **Pdif 06 05 36.7 +1.1**
ARR Arges 103.33 316 ⇑ *i*P **Pdif 06 05 37.3 +0.4**
SUR Sutherland 103.36 236 PFAKE 06 05 50.0 +12
SUR LR LR
comp=Z,1μm,21.0s
SANT Santorini 103.69 306 PFAKE 06 05 50.0 +11
SANT LR LR
comp=Z,150nm,19.0s
LOT Lotru 103.92 316 ⇓ *i*P **Pdif 06 05 39.2 -0.4**
NLWA Neilton Lookou 104.34 42 PFAKE 06 05 50.0 +8.7
NLWA LR LR
comp=Z,409nm,21.0s
UZH Uzhgorod 104.40 319 *e*P **Pdif 06 05 40.5 -1.0**
DRGR 104.44 317 ⇓ *i*P **Pdif 06 05 41.8 -0.1**
DRGR 104.44 317 ⇓ P **Pdif 06 05 41.8 -0.1**
CRVS Cervenica-Dubn 104.89 319 *i* P **Pdif 06 05 44.5 +0.7**
CRVS Cervenica-Dubn 104.89 319 *e*PDIFF **Pdif 06 05 44.5 +0.7**
YKA Yellowknife Ar 105.46 26 Pdiff **Pdif 06 05 45.7 -0.2**
comp=Z,0.7nm,0.7s,baz=295,slow=4.4,SNR=5.3
YKA PKIKP **PKiKP 06 09 59.0 -0.3**
comp=Z,1.7nm,0.7s,baz=296,slow=1.7,SNR=19
YKA PKKPbc **PKKPbc 06 21 23.1 -3.8**
comp=Z,1.3nm,0.6s,baz=129,slow=2.5,SNR=4.2
PSZ Piszkesteto 106.11 319 PFAKE 06 10 10.0
PSZ LR LR
comp=Z,400nm,20.0s
VYHS Vyhne 106.68 319 *i* P **Pdif 06 05 52.0 +0.3**
VYHS Vyhne 106.68 319 *e*PDIFF **Pdif 06 05 52.0 +0.3**
NC405 NORSAR Array S 106.74 333 *e*Pdif **Pdif 06 05 50.9 -0.8**
OKC Ostrava-Krasne 106.81 321 AMS AMS 07 05 10.0
comp=Z,300nm,19.4s
NB2 NORSAR Subarra 106.99 333 P **Pdif 06 05 51.0 -1.9**
comp=Z,3.1nm,0.7s,baz=68,slow=4.6
NOA NORSAR Array B 106.99 333 Pdiff **Pdif 06 05 51.5 -1.4**
comp=Z,2.9nm,0.7s,baz=68,slow=4.6,SNR=14
TIR Tirane 107.38 312 PFAKE 06 10 20.0
TIR LR LR
comp=Z,499nm,19.0s
HAWA Hanford 107.45 43 PFAKE 06 10 20.0
HAWA LR LR
comp=Z,418nm,19.0s
DPC Dobruska-Polom 107.81 322 AMS AMS 07 06 00.0
comp=Z,400nm,21.3s
UPC Upice 107.96 322 AMS AMS 07 06 20.0
comp=Z,400nm,20.6s
KONO Kongsberg 108.29 332 PFAKE 06 10 20.0
KONO LR LR
comp=Z,676nm,21.0s
NEW Newport 108.59 40 PFAKE 06 10 20.0
NEW LR LR
comp=Z,340nm,21.0s
TREC Trest 108.62 321 AMS AMS 07 06 50.0
comp=Z,400nm,19.9s
PVCC Panska Ves 108.84 322 AMS AMS 07 05 20.0
comp=Z,300nm,18.1s
GOPC GO Pecny, Ondr 108.88 322 AMS AMS 07 07 00.0
comp=Z,300nm,18.5s
WVOR Wild Horse Val 108.92 47 PFAKE 06 10 20.0
WVOR LR LR
comp=Z,390nm,22.0s
PRU Pruhonice 109.01 322 AMS AMS 07 07 20.0
comp=Z,300nm,15.8s
TSUM Tsumeb 109.09 248 PFAKE 06 10 20.0
TSUM LR LR
comp=Z,324nm,20.0s
BRG Berggiesshubel 109.12 323 *e*P **PKiKP 06 10 06.8 +0.3**
comp=Z,3.5nm,0.9s
BMO Blue Mountains 109.32 44 PFAKE 06 10 20.0
BMO LR LR
comp=Z,707nm,22.0s
CLL Collm 109.54 323 *e*PS PS 06 20 06.0 -0.3
CLL *e*PPS PPS 06 21 35.0
CLL *e*SSS SSS 06 30 06.0
CLL LmV 07 10 00.0
comp=Z,500nm,19.2s
SOKA Soboth 109.62 318 *i* PKiKP **PKiKP 06 10 06.9 -0.8**
comp=Z,3.3nm,1.0s
KHC Kasperske Hory 109.86 321 AMS AMS 07 08 10.0
comp=Z,300nm,18.5s
GERES GERESS Array B 109.87 321 PKiKP **PKiKP 06 10 07.8 -0.4**
comp=Z,1.7nm,0.6s,baz=71,slow=1.8,SNR=14
GEA0 GERESS Array S 109.88 321 *e*PKiKP **PKiKP 06 10 07.8 -0.3**
TIP Timpagrande 110.12 310 PFAKE 06 10 20.0
TIP LR LR
comp=Z,602nm,19.0s
NKC Novy Kostel 110.22 322 AMS AMS 07 05 00.0
comp=Z,500nm,24.0s
CUC Castrocucco 110.66 311 PFAKE 06 10 20.0
CUC LR LR
comp=Z,344nm,20.0s
MFID Camas Ranch 110.70 45 *e*PKiKP **PKiKP 06 10 10.9 +1.0**
CEL Celeste 110.96 309 PFAKE 06 10 20.0
CEL LR LR
comp=Z,887nm,22.0s
MPMC Manual Prospec 111.04 53 P **PKiKP 06 10 11.8 +0.9**
baz=281
MSO Missoula 111.06 41 *e*PKiKP **PKiKP 06 10 10.5 0.0**
ABTA Abfaltersbach 111.26 319 *i* PKiKP **PKiKP 06 10 09.8 -1.0**
comp=Z,4.5nm,0.7s
CHMT Chamberlain Mo 111.48 41 *e*PKiKP **PKiKP 06 10 11.4 0.0**
HLID Hailey 111.66 45 P **PKiKP 06 10 13.0 +1.2**
baz=286
HLID Hailey 111.66 45 *e*PKiKP **PKiKP 06 10 13.2 +1.4**
HLID LR LR
comp=Z,372nm,21.0s
WTTA Wattenberg 111.67 320 *i* PKiKP **PKiKP 06 10 11.5 -0.2**
comp=Z,4.1nm,0.5s

AQU L'Aquila 111.88 314 PFAKE 06 10 20.0
AQU LR LR
comp=Z,461nm,21.0s
MOTA Moosalm 111.99 320 *i* PKiKP **PKiKP 06 10 11.6 -0.7**
comp=Z,4.4nm,0.7s
R11A Troy Canyon, C 112.07 50 P **PKiKP 06 10 13.8 +1.1**
baz=283
R11A Troy Canyon, C 112.07 50 *e*PKiKP **PKiKP 06 10 13.9 +1.1**
PFO Pinyon Flats O 112.32 55 P **PKiKP 06 10 14.1 +0.8**
baz=280
PFO Pinyon Flats O 112.32 55 PFAKE 06 10 30.0
PFO LR LR
comp=Z,822nm,19.0s
TPFO Pinon Flats 112.32 55 P **PKiKP 06 10 14.4 +1.1**
baz=280
MCMT McKenzie Canyo 112.38 43 *e*PKiKP **PKiKP 06 10 14.5 +1.3**
WDD Wied Dalam 112.53 307 PFAKE 06 10 30.0
WDD LR LR
comp=Z,430nm,19.0s
BELC Belle Mtn. Jos 112.62 55 P **PKiKP 06 10 15.4 +1.5**
baz=281
GMRC Granite Mounta 112.75 54 P **PKiKP 06 10 15.5 +1.5**
baz=281
DAVA Damuels 112.80 320 *i* PKiKP **PKiKP 06 10 13.6 -0.2**
comp=Z,8.2nm,0.9s
SHPR Sheep Range 112.80 52 *e*PKiKP **PKiKP 06 10 15.8 +1.6**
BOZ Bozeman (W) 112.95 42 P **PKiKP 06 10 14.7 +0.5**
baz=289
BOZ Bozeman (W) 112.95 42 *e*PKiKP **PKiKP 06 10 14.2 0.0**
BOZ MLR MLR
comp=Z,322nm,19.0s
BOZ Bozeman (W) 112.95 42 *e*PKPdf **PKiKP 06 10 14.2 0.0**
BOZ LR LR
comp=Z,322nm,19.0s
CLTB Caltabellotta 113.18 309 PFAKE 06 10 30.0
CLTB LR LR
comp=Z,284nm,19.0s
EGMT Eagleton 113.35 39 PFAKE 06 10 30.0
EGMT LR LR
comp=Z,527μm,22.0s
BFO Black Forest 113.41 321 PFAKE 06 10 30.0
BFO LR LR
comp=Z,414nm,19.0s
TUE Stuetta 113.42 319 PFAKE 06 10 30.0
TUE LR LR
comp=Z,497nm,19.0s
VLC Villacollemand 113.47 317 PFAKE 06 10 30.0
VLC LR LR
comp=Z,224nm,20.0s
DUG Dugway, Tooele 113.71 48 *e*PKiKP **PKiKP 06 10 16.9 +1.1**
DUG MLR MLR
comp=Z,399nm,19.0s
DUG Dugway, Tooele 113.71 48 *e*PKiKP **PKiKP 06 10 16.9 +1.1**
DUG LR LR
comp=Z,399nm,19.0s
TPAW Teton Pass 114.09 44 *e*PKiKP **PKiKP 06 10 17.9 +1.3**
W13A Hualapai Mount 114.11 53 *e*PKiKP **PKiKP 06 10 18.6 +1.8**
LKWY Lake 114.12 43 PFAKE 06 10 30.0 +13
LKWY LR LR
comp=Z,1μm,20.0s
REDW Red Top Meadow 114.20 44 *e*PKPdf PKPdf 06 10 16.9 +0.1
AHID Auburn Hatcher 114.21 45 PFAKE 06 10 30.0 +13
AHID LR LR
comp=Z,410nm,20.0s
WLF Walferdange 114.22 323 PFAKE 06 10 30.0 +14
WLF LR LR
comp=Z,371nm,21.0s
HWUT Hardware Ranch 114.23 46 *e*PKiKP **PKiKP 06 10 17.3 +0.5**
HWUT LR LR
comp=Z,555nm,21.0s
SNOW Snow King Moun 114.23 44 *e*PKiKP **PKiKP 06 10 17.8 +0.9**
LOHW Long Hollow 114.29 44 *e*PKPdf PKPdf 06 10 17.8 +0.9
MSU Marysvale 114.63 49 *e*PKiKP PKPdf 06 10 19.3 +1.6
MSU Marysvale 114.63 49 *e*PKiKP **PKiKP 06 10 19.3 +1.6**
RLMT Red Lodge 114.69 42 PFAKE 06 10 30.0 +12
RLMT LR LR
comp=Z,404nm,20.0s
MTPU Mount Pierson 114.75 50 *e*PKiKP **PKiKP 06 10 20.3 +2.2**
FFC Flin Flon 114.81 30 *i* PKiKP PKPdf 06 10 19.9 +2.7
FFC Flin Flon 114.81 30 PFAKE 06 10 30.0 +13
FFC LR LR
comp=Z,404nm,21.0s
U15A North Rim 115.07 52 *e*PKiKP **PKPdf 06 10 19.9 +1.2**
TMUT Trail Mountain 115.15 48 *e*PKiKP **PKPdf 06 10 19.9 +1.1**
BW06 Boulder Array 115.29 44 *e*PKiKP **PKPdf 06 10 19.1 +0.2**
BW06 LR LR
comp=Z,512nm,20.0s
PD31 Pinedale Array 115.29 44 *e*PKiKP **PKiKP 06 10 17.9 -1.0**
PDAR Pinedale Array 115.29 44 PKP **PKPdf 06 10 18.8 -0.1**
comp=Z,1.7nm,0.8s,baz=237,slow=1.6,SNR=13
PDAR PKKPbc **PKKPbc 06 20 53.1 -1.6**
comp=Z,1.4nm,0.8s,baz=96,slow=6.0,SNR=9.0
VSL Villasalto 115.59 312 PFAKE 06 10 30.0 +11
VSL LR LR
comp=Z,539nm,19.0s
214A Organ Pipe Nat 115.65 57 P **PKPdf 06 10 20.2 +0.6**
baz=282
BNI Bardonecchia 115.67 319 PFAKE 06 10 30.0 +11
BNI LR LR
comp=Z,411nm,20.0s
SRU San Rafael Swe 115.71 48 *e*PKiKP **PKPdf 06 10 20.7 +1.0**
SRU San Rafael Swe 115.71 48 *e*PKPdf **PKPdf 06 10 20.7 +1.0**
FCC Fort Churchill 116.00 24 *e*PKiKP **PKPdf 06 10 19.0 -0.4**
FCC Fort Churchill 116.00 24 *e*PKPdf **PKPdf 06 10 19.0 -0.4**
WUAZ Wupatki 116.02 52 P **PKPdf 06 10 21.4 +1.0**
baz=284
WUAZ Wupatki 116.02 52 *e*PKPdf **PKPdf 06 10 21.5 +1.1**
WUAZ LR LR
comp=Z,385nm,20.0s
LAO LASA Array 116.08 39 P **PKPdf 06 10 21.2 +1.1**
baz=294
LAO LASA Array 116.08 39 *e*PKPdf **PKPdf 06 10 21.1 +1.0**
LAO LR LR
comp=Z,393nm,20.0s
X16A Lo Mia Camp, P 116.23 54 *e*PKPdf **PKPdf 06 10 21.6 +0.7**
ESK Eskdalemuir 116.43 332 *e*PKiKP **PKPdf 06 10 20.3 0.0**
ESK MLR MLR
comp=Z,1μm,19.0s
ESK Eskdalemuir 116.43 332 *e*PKPdf **PKPdf 06 10 20.3 0.0**
ESK LR LR
comp=Z,1μm,19.0s
DGMT Dagmar 116.58 37 PFAKE 06 10 30.0 +9.1
DGMT LR LR
comp=Z,485nm,19.0s
PV09 Paradox Valley 116.93 49 *e*PKPdf **PKPdf 06 10 23.3 +1.1**
SSB Saint Sauveur 116.98 319 PFAKE 06 10 30.0 +8.2
SSB LR LR
comp=Z,483nm,19.0s
PV10 Paradox Valley 117.03 49 *e*PKPdf **PKPdf 06 10 23.3 +1.0**
O20A White River Ci 117.08 47 P **PKPdf 06 10 23.6 +1.2**
baz=289
O20A White River Ci 117.08 47 *e*PKPdf **PKPdf 06 10 23.3 +1.0**
PV04 Paradox Valley 117.13 49 *e*PKPdf **PKPdf 06 10 22.9 +0.4**
TUC Tucson 117.25 56 P **PKPdf 06 10 23.6 +0.9**
baz=283
TUC Tucson 117.25 56 *e*PKiKP **PKPdf 06 10 23.8 +1.1**
TUC MLR MLR
comp=Z,762nm,22.0s
TUC Tucson 117.25 56 *e*PKPdf **PKPdf 06 10 23.8 +1.1**
TUC LR LR
comp=Z,762nm,22.0s
SFJD Kangerlussuaq 117.27 0 PFAKE 06 10 30.0 +8.4
SFJD LR LR
comp=Z,378nm,20.0s
W18A Petrified Fore 117.41 52 P **PKPdf 06 10 24.3 +1.2**
baz=285
W18A Petrified Fore 117.41 52 *e*PKPdf **PKPdf 06 10 24.5 +1.4**
K22A Casper 117.43 44 P **PKPdf 06 10 23.0 +0.1**
baz=292
K22A Casper 117.43 44 *e*PKPdf **PKPdf 06 10 22.8 -0.1**
PV01 Paradox Valley 117.46 49 *e*PKPdf **PKPdf 06 10 23.6 +0.5**
MVCO Mesa Verde 117.79 50 P **PKPdf 06 10 24.8 +0.9**
baz=287
MVCO Mesa Verde 117.79 50 PFAKE 06 10 40.0 +16
MVCO LR LR
comp=Z,496nm,20.0s
N23A Red Feather La 118.47 45 P **PKPdf 06 10 26.0 +0.9**
baz=291
N23A Red Feather La 118.47 45 *e*PKPdf **PKPdf 06 10 25.8 +0.7**
RSSD Black Hills 118.53 41 P **PKPdf 06 10 24.7 -0.3**
baz=294
RSSD Black Hills 118.53 41 *e*PKiKP **PKPdf 06 10 24.8 -0.3**
RSSD Black Hills 118.53 41 *e*PKPdf **PKPdf 06 10 24.8 -0.3**
PHWY Pilot Hill 118.66 45 *e*PKPdf **PKPdf 06 10 25.4 -0.1**
319A Douglas 118.71 56 *e*PKPdf **PKPdf 06 10 26.9 +1.3**

S22A 4UR Ranch, Cre 118.89 49 P **PKPdf 06 10 27.5 +1.5**
baz=289
S22A 4UR Ranch, Cre 118.89 49 *e*PKPdf **PKPdf 06 10 27.5 +1.5**
ISCO Idaho Springs 119.09 46 P **PKPdf 06 10 26.8 +0.4**
baz=291
ISCO Idaho Springs 119.09 46 *e*PKIKP **PKPdf 06 10 27.1 +0.7**
ISCO MLR MLR
comp=Z,447nm,19.0s
ISCO Idaho Springs 119.09 46 *e*PKPdf **PKPdf 06 10 27.1 +0.7**
ISCO LR LR
comp=Z,447nm,19.0s
A29A Manning Farm, 119.25 35 P **PKPdf 06 10 26.0 0.0**
baz=301
USHA Ushuaia 119.38 168 PKP **PKPdf 06 10 26.2 +0.2**
comp=Z,27nm,0.7s,baz=160,slow=4.3,SNR=5.1
MDND Maddock 119.58 36 *e*PKPdf **PKPdf 06 10 25.9 -0.7**
121A Cookes Peak, D 119.66 55 P **PKPdf 06 10 28.5 +1.0**
baz=285
121A Cookes Peak, D 119.66 55 *e*PKPdf **PKPdf 06 10 27.8 +0.3**
LAZ Ladron 119.66 53 *e*PKPdf **PKPdf 06 10 28.6 +1.2**
A30A Hoffart Farm, 119.77 34 P **PKPdf 06 10 26.8 -0.2**
baz=302
SDCO Great Sand Dun 119.88 48 P **PKPdf 06 10 28.8 +0.8**
baz=290
SDCO Great Sand Dun 119.88 48 *e*PKPdf **PKPdf 06 10 28.6 +0.6**
SDCO LR LR
comp=Z,357nm,20.0s
B30A Myrvik Farm, E 120.01 35 P **PKPdf 06 10 27.1 -0.4**
baz=302
ANMO Albuquerque 120.04 52 P **PKPdf 06 10 28.9 +0.8**
baz=288
ANMO Albuquerque 120.04 52 *e*PKIKP **PKPdf 06 10 28.4 +0.2**
ANMO MLR MLR
comp=Z,630nm,19.0s
ANMO Albuquerque 120.04 52 *e*PKPdf **PKPdf 06 10 28.4 +0.2**
ANMO LR LR
comp=Z,630nm,19.0s
LPM Los Pinos Muon 120.09 53 *e*PKPdf **PKPdf 06 10 29.2 +0.9**
BNM Barren Site 120.14 53 *e*PKPdf **PKPdf 06 10 29.4 +1.0**
ULM Lac du Bonnet 120.37 32 PKP **PKPdf 06 10 26.7 -1.4**
comp=Z,2.0nm,0.6s,baz=9.5,slow=4.1,SNR=4.1
ULM PKKPbc **PKKPab 06 20 34.9 -1.4**
comp=Z,2.2nm,0.6s,baz=157,slow=2.8,SNR=3.1
ULM Lac du Bonnet 120.37 32 *e*PKIKP **PKPdf 06 10 27.8 -0.3**
ULM Lac du Bonnet 120.37 32 *e*PKPdf **PKPdf 06 10 27.8 -0.3**
ULM PKKPbc **PKKPab 06 20 34.9 -1.4**
B31A Greenbush Farm 120.41 34 P **PKPdf 06 10 27.6 -0.6**
baz=302
C31A Landman Farms, 120.69 35 P **PKPdf 06 10 28.8 0.0**
baz=302
A32A Rocking H Ranc 120.78 33 P **PKPdf 06 10 28.2 -0.7**
baz=304
T25A Trinidad 120.90 49 P **PKPdf 06 10 30.7 +0.9**
baz=290
T25A Trinidad 120.90 49 *e*PKPdf **PKPdf 06 10 30.4 +0.6**
B32A Ashes, Strandq 121.05 34 P **PKPdf 06 10 28.8 -0.7**
baz=303
OGNE Ogallala 121.18 44 PFAKE 06 10 40.0 +10
OGNE LR LR
comp=Z,514nm,19.0s
A33A Warroad 121.38 33 P **PKPdf 06 10 29.4 -0.7**
baz=305
F31A Hecla 121.38 37 P **PKPdf 06 10 29.8 -0.4**
baz=300
AGMN Agassiz Nation 121.48 34 P **PKPdf 06 10 29.2 -1.1**
baz=304
AGMN Agassiz Nation 121.48 34 *e*PKPdf **PKPdf 06 10 29.4 -0.9**
AGMN LR LR
comp=Z,857nm,22.0s
KSCO Kaye Shedlock' 121.53 46 *e*PKPdf **PKPdf 06 10 31.3 +0.5**
C33A Trail 121.83 34 P **PKPdf 06 10 30.7 -0.3**
baz=304
MNTX Cornudas Mount 121.85 55 P **PKPdf 06 10 32.2 +0.7**
baz=286
MNTX Cornudas Mount 121.85 55 *e*PKPdf **PKPdf 06 10 32.1 +0.5**
MNTX LR LR
comp=Z,538nm,19.0s
B34A Aery, Baudette 122.03 33 P **PKPdf 06 10 30.7 -0.6**
baz=305
F32A Veblen 122.05 37 P **PKPdf 06 10 31.4 0.0**
baz=301
K30A Basset 122.06 41 P **PKPdf 06 10 31.6 -0.1**
baz=297
D34A Park Rapids 122.53 35 P **PKPdf 06 10 32.4 +0.1**
baz=304
F33A 5 Mile Ranch, 122.57 36 P **PKPdf 06 10 32.0 -0.5**
baz=302
B35A Bob, Littlefor 122.61 33 P **PKPdf 06 10 32.0 -0.4**
baz=306
TAM Tamanrasset 122.75 294 *e*PKIKP **PKPdf 06 10 34.3 +0.7**
TAM MLR MLR
comp=Z,843nm,19.0s
TAM Tamanrasset 122.75 294 *e*PKPdf **PKPdf 06 10 34.3 +0.7**
TAM LR LR
comp=Z,843nm,19.0s
I32A Karley and Nic 122.79 39 P **PKPdf 06 10 33.1 +0.1**
baz=300
L31A Butterfield Fa 122.80 41 P **PKPdf 06 10 32.7 -0.4**
baz=298
G33A Ortonville 122.82 37 P **PKPdf 06 10 32.9 0.0**
baz=302
C35A Jirik Farms, M 122.86 34 P **PKPdf 06 10 32.1 -0.8**
baz=305
H33A Prehn Over Nor 122.90 38 P **PKPdf 06 10 33.4 +0.2**
baz=301
K32A Verdigre 123.14 40 P **PKPdf 06 10 33.6 -0.1**
baz=299
D35A Remer 123.17 34 P **PKPdf 06 10 32.9 -0.7**
baz=305
I33A Coleman 123.19 38 P **PKPdf 06 10 33.2 -0.5**
baz=301
MSTX Muleshoe 123.24 52 P **PKPdf 06 10 34.4 +0.1**
baz=290
MSTX Muleshoe 123.24 52 *e*PKPdf **PKPdf 06 10 34.7 +0.4**
E35A Pequot Lakes 123.27 35 P **PKPdf 06 10 33.5 -0.3**
baz=304
C36A Pine Crest Far 123.45 33 P **PKPdf 06 10 33.7 -0.4**
baz=307
J33A Davis 123.45 39 P **PKPdf 06 10 34.1 -0.2**
baz=300
ECSD EROS Data Cent 123.47 39 P **PKPdf 06 10 33.6 -0.7**
baz=301
ECSD EROS Data Cent 123.47 39 *e*PKPdf **PKPdf 06 10 34.0 -0.2**
ECSD LR LR
comp=Z,379nm,19.0s
H34A Spellman Lake, 123.50 37 P **PKPdf 06 10 34.7 +0.4**
baz=302
F35A Swanville 123.56 36 P **PKPdf 06 10 33.9 -0.5**
baz=304
D36A Goodland 123.61 34 P **PKPdf 06 10 33.8 -0.6**
baz=306
BGNE Belgrade 123.61 42 P **PKPdf 06 10 34.7 +0.1**
baz=298
BGNE Belgrade 123.61 42 *e*PKPdf **PKPdf 06 10 34.7 +0.1**
CBKS Cedar Bluff 123.67 45 *e*PKIKP **PKPdf 06 10 34.6 -0.2**
CBKS MLR MLR
comp=Z,477nm,22.0s
CBKS Cedar Bluff 123.67 45 *e*PKPdf **PKPdf 06 10 34.6 -0.2**
CBKS LR LR
comp=Z,477nm,22.0s
AMTX Amarillo 123.77 50 P **PKPdf 06 10 36.0 +0.8**
baz=291
AMTX Amarillo 123.77 50 *e*PKPdf **PKPdf 06 10 35.9 +0.6**
C37A Embarrass 123.82 33 P **PKPdf 06 10 34.3 -0.5**
baz=307
TX31 Lajitas Ar. Si 123.92 57 *e*PKPdf **PKPdf 06 10 35.5 -0.2**
TX31 *e*PKPdf **PKiKP 06 10 35.7 -0.2**
TXAR Lajitas Array 123.92 57 PKP **PKPdf 06 10 35.6 0.0**
comp=Z,5.1nm,0.8s,baz=227,slow=1.7,SNR=28
TXAR PKKPbc **PKKPbc 06 20 22.0 -0.3**
comp=Z,0.3nm,0.7s,baz=131,slow=5.4,SNR=5.1
E36A McGregor 123.94 34 P **PKPdf 06 10 34.4 -0.6**
baz=306
G35A Watkins 123.97 36 P **PKPdf 06 10 34.6 -0.5**
baz=304
D37A Cotton 124.03 33 P **PKPdf 06 10 34.7 -0.5**
baz=307
H35A Sunnyside Ranc 124.05 37 P **PKPdf 06 10 35.4 +0.1**
baz=303
EYMN Ely 124.05 32 P **PKPdf 06 10 34.9 -0.4**
baz=308
EYMN Ely 124.05 32 *e*PKPdf **PKPdf 06 10 35.0 -0.3**
EYMN LR LR
comp=Z,601nm,22.0s
O32A Brockman Farm, 124.06 43 P **PKPdf 06 10 35.1 -0.4**
baz=297
P32A Huiting Farm, 124.12 44 P **PKPdf 06 10 35.9 +0.3**

baz=296
M33A Taylor Creek F 124.17 41 P PKPdf 06 10 35.4 -0.3
baz=299
F36A Milaca 124.17 35 P PKPdf 06 10 35.3 -0.2
baz=305
K34A Le Mars 124.33 40 P PKPdf 06 10 35.2 -0.7
baz=301
Q32A Meitler Ranch, 124.43 45 P PKPdf 06 10 36.5 +0.3
baz=296
R32A Long Quarter, 124.57 45 P PKPdf 06 10 37.2 +0.7
baz=296
O33A Hebron 124.61 43 P PKPdf 06 10 36.0 -0.5
baz=298
H36A Jessenland, He 124.66 37 P PKPdf 06 10 37.3 +0.9
baz=304
I36A Fitzsimmons Fa 124.91 37 P PKPdf 06 10 37.3 +0.3
baz=303
Q33A Connelly Farm, 124.93 44 P PKPdf 06 10 37.6 +0.3
baz=297
T32A Huddler Ranch, 124.94 47 P PKPdf 06 10 38.0 +0.7
baz=295
SPMN Marine on St. 124.95 35 P PKPdf 06 10 37.1 +0.1
baz=305
SPMN Marine on St. 124.95 35 ePKPdf PKPdf 06 10 36.8 -0.2
L35A Bielow Farm, R 124.97 40 P PKPdf 06 10 37.3 +0.1
baz=301
ES19 SONSECA Array 125.01 317 ePKPdf PKPdf 06 10 37.5 +0.2
ESDC Sonseca Array 125.06 317 PKP PKPdf 06 10 37.0 -0.5
comp=Z,0.7nm,0.6s,baz=28,slow=3.5,SNR=7.2
J36A Seneca 1, Swea 125.09 38 P PKPdf 06 10 37.3 -0.1
baz=303
R33A Olander Ranch, 125.13 45 P PKPdf 06 10 38.0 +0.4
baz=296
O34A Beatrice 125.16 42 P PKPdf 06 10 37.2 -0.5
baz=299
M35A Neola 125.20 41 P PKPdf 06 10 37.7 0.0
baz=300
H37A Dierke Farm, C 125.25 36 P PKPdf 06 10 37.7 0.0
baz=305
I37A Lemond, Waseca 125.28 37 P PKPdf 06 10 37.9 +0.2
baz=304
P34A Walnut Farm, R 125.37 43 P PKPdf 06 10 38.2 +0.1
baz=298
K36A Gilmore City 125.39 39 P PKPdf 06 10 38.0 +0.1
baz=302
PAB San Pablo 125.39 317 PFAKE 06 10 50.0 +12
PAB LR LR
comp=Z,750nm,20.0s
V32A Arapaho 125.45 48 P PKPdf 06 10 39.6 +1.3
baz=294
L36A Harm Buss Farm 125.53 40 P PKPdf 06 10 38.4 +0.2
baz=302
J37A Redenius Farm, 125.58 38 P PKPdf 06 10 38.1 -0.2
baz=303
Q34A Chapman 125.59 44 P PKPdf 06 10 38.3 -0.1
baz=298
R34A Isabella, Hill 125.65 45 P PKPdf 06 10 38.6 0.0
baz=297
KSU1 Kansas State U 125.73 44 P PKPdf 06 10 38.8 0.0
baz=298
KSU1 Kansas State U 125.73 44 ePKPdf PKPdf 06 10 39.0 +0.3
KSU1 LR LR
comp=Z,506nm,19.0s
K37A Belmond 125.82 38 P PKPdf 06 10 37.9 -0.9
baz=303
I38A Scanlan Farm, 125.91 36 P PKPdf 06 10 38.7 -0.2
baz=305
P35A Duane Minner, 125.93 43 P PKPdf 06 10 39.0 -0.1
baz=299
N36A Muff Farm, Cla 126.00 41 P PKPdf 06 10 39.2 0.0
baz=301
WMOK Wichita Mounta 126.03 49 P PKPdf 06 10 39.6 +0.1
baz=293
WMOK Wichita Mounta 126.03 49 ePKIKP PKPdf 06 10 39.6 +0.1
WMOK MLR MLR
comp=Z,726nm,19.0s
WMOK Wichita Mounta 126.03 49 ePKPdf PKPdf 06 10 39.6 +0.1
WMOK LR LR
comp=Z,726nm,19.0s
ABTX Abilene, Hawle 126.16 52 P PKPdf 06 10 40.6 +0.8
baz=291
ABTX Abilene, Hawle 126.16 52 ePKPdf PKPdf 06 10 40.4 +0.6
U34A Anderson Ranch 126.26 47 ePKPdf PKPdf 06 10 39.9 0.0
X33A Lawton 126.32 50 P PKPdf 06 10 40.5 +0.5
baz=293
MVO Moncorvo 126.37 320 ePKPdf PKPdf 06 10 40.8 +0.8
R35A Emporia Munici 126.38 44 P PKPdf 06 10 39.9 -0.1
baz=298
P36A Good Intent, A 126.44 42 P PKPdf 06 10 39.7 -0.3
baz=300
COWI Conover 126.47 33 ePKPdf PKPdf 06 10 39.9 0.0
COWI LR LR
comp=Z,478nm,21.0s
ZAIG Zacatecas 126.48 65 ePKPdf PKPdf 06 10 42.9 +2.0
V34A Guthrie 126.53 48 P PKPdf 06 10 41.3 +0.9
baz=295
V34A Guthrie 126.53 48 ePKPdf PKPdf 06 10 41.4 +1.0
SCIA State Center 126.55 39 ePKPdf PKPdf 06 10 40.6 +0.4
SCIA LR LR
comp=Z,433nm,19.0s
Q36A Arnold C. Orve 126.58 43 P PKPdf 06 10 40.2 -0.1
baz=299
J39A Decorah 126.68 37 P PKPdf 06 10 40.0 -0.4
baz=305
PGAV Gavieira, Arco 126.73 321 ePKPdf PKPdf 06 10 41.2 +0.5
POLO Lamas de Olo 126.75 320 ePKPdf PKPdf 06 10 41.6 +0.9
JCT Junction City 126.77 55 P PKPdf 06 10 41.8 +0.7
baz=290
JCT Junction City 126.77 55 ePKIKP PKPdf 06 10 41.6 +0.6
JCT MLR MLR
comp=Z,531nm,21.0s
JCT Junction City 126.77 55 ePKPdf PKPdf 06 10 41.6 +0.6
JCT LR LR
comp=Z,531nm,21.0s
X34A Smith Ranch, M 126.81 49 P PKPdf 06 10 42.0 +1.1
baz=294
M38A Pleasantville 126.83 40 P PKPdf 06 10 40.8 0.0
baz=303
R36A Gordon, Harris 126.86 44 P PKPdf 06 10 39.4 -1.5
baz=298
O37A Wolven Farm, M 126.87 41 P PKPdf 06 10 41.2 +0.3
baz=301
U35A Pawnee 126.88 47 P PKPdf 06 10 41.7 +0.7
baz=296
K39A Oelwein 126.93 37 P PKPdf 06 10 40.3 -0.6
baz=305
233A Rising Star 126.97 53 P PKPdf 06 10 41.9 +0.6
baz=291
P37A Lathrop 127.03 42 P PKPdf 06 10 40.7 -0.5
baz=300
V35A Meyer Ranch, C 127.06 47 P PKPdf 06 10 41.8 +0.5
baz=296
MTE Manteigas 127.10 319 ePKPdf PKPdf 06 10 42.2 +0.8
MTE Manteigas 127.10 319 PFAKE 06 10 50.0 +8.6
MTE LR LR
comp=Z,567nm,20.0s
Y34A Reagan Ranch, 127.12 50 P PKPdf 06 10 42.3 +0.7
baz=294
333A Richland Sprin 127.14 53 P PKPdf 06 10 42.0 +0.3
baz=291
T36A Boggs Farm, Ca 127.18 46 P PKPdf 06 10 41.8 +0.2
baz=297
L39A Vinton 127.19 38 P PKPdf 06 10 41.0 -0.4
baz=304
433A Art 127.26 54 P PKPdf 06 10 42.2 +0.3
baz=290
W35A Tecumseh 127.30 48 P PKPdf 06 10 42.4 +0.6
baz=295
832A Faith Ranch, C 127.33 57 P PKPdf 06 10 43.2 +1.1
baz=288
K40A Colesburg 127.39 37 P PKPdf 06 10 41.4 -0.3
baz=305
134A White-Moore Ra 127.41 52 P PKPdf 06 10 42.9 +0.8
baz=292
M39A Webster 127.44 39 P PKPdf 06 10 42.1 +0.2
baz=304
533A Kerrville 127.53 55 P PKPdf 06 10 43.3 +0.8
baz=290
P38A Dawn 127.55 42 P PKPdf 06 10 41.4 -0.8
baz=301
N39A Derby Farms, D 127.56 40 P PKPdf 06 10 42.4 +0.3
baz=303
234A Clairette 127.57 52 P PKPdf 06 10 43.3 +0.8
baz=292
S37A Fort Scott 127.60 44 P PKPdf 06 10 42.4 +0.1
baz=299
633A Saathoff Ranch 127.62 56 P PKPdf 06 10 43.4 +0.8
baz=289
TOA0 Torodi Ar. Sit 127.65 283 ePKPdf PKPdf 06 10 42.5 -0.5
TORD Torodi Ar. Bea 127.65 283 PKP PKPdf 06 10 42.7 -0.3
comp=Z,12nm,0.6s,baz=73,slow=1.8,SNR=76
J41A Loganville 127.66 36 P PKPdf 06 10 42.1 -0.2
baz=307
Y35A Marietta 127.69 50 P PKPdf 06 10 43.5 +0.9
baz=294
L40A Anamosa 127.70 38 P PKPdf 06 10 42.2 -0.1
baz=305
V36A Jenks 127.71 47 P PKPdf 06 10 43.3 +0.7
baz=296
334A Lometa 127.74 53 P PKPdf 06 10 43.2 +0.4
baz=291
733A Divot King Ran 127.76 57 P PKPdf 06 10 44.0 +1.1
baz=289
TUL1 Leonard 127.76 47 ePKPdf PKPdf 06 10 43.6 +0.9
SCHQ Schefferville 127.78 12 PKP PKPdf 06 10 41.9 -0.3
comp=Z,1.7nm,0.5s,baz=140,slow=3.8,SNR=7.0
W36A Wetumka 127.78 48 P PKPdf 06 10 43.0 +0.2
baz=296
JFWS Jewell Farm 127.79 36 ePKIKP PKPdf 06 10 42.3 -0.2
JFWS MLR MLR
comp=Z,536nm,20.0s
JFWS Jewell Farm 127.79 36 ePKPdf PKPdf 06 10 42.3 -0.2
JFWS LR LR
comp=Z,536nm,20.0s
833A Chaparral WMA, 127.80 57 P PKPdf 06 10 43.9 +0.9
baz=288
O39A Kirksville 127.87 40 P PKPdf 06 10 42.4 -0.4
baz=302
PBAR Barrancos 127.89 317 ePKPdf PKPdf 06 10 43.5 +0.6
434A Burnet 127.90 54 P PKPdf 06 10 43.5 +0.3
baz=291
PESTR Estremoz 127.92 318 ePKPdf PKPdf 06 10 43.0 +0.1
X36A Centrahoma 127.93 49 P PKPdf 06 10 44.0 +0.9
baz=295
K41A Shullsburg 127.94 37 P PKPdf 06 10 42.5 -0.3
baz=306
534A Blanco 128.01 55 P PKPdf 06 10 44.0 +0.7
baz=290
R38A Fenwick Farm, 128.03 43 P PKPdf 06 10 43.0 -0.2
baz=300
WHTX Lake Whitney, 128.12 52 P PKPdf 06 10 44.3 +0.8
baz=292
WHTX Lake Whitney, 128.12 52 ePKPdf PKPdf 06 10 44.7 +1.2
933A Laredo 128.12 58 P PKPdf 06 10 45.4 +1.8
baz=288
Q39A Willow Grove F 128.22 42 P PKPdf 06 10 44.1 +0.7
baz=301
V37A Hulbert 128.25 47 P PKPdf 06 10 44.2 +0.6
baz=297
Y36A Durant 128.26 49 P PKPdf 06 10 44.6 +0.9
baz=295
S38A Stockton 128.30 44 P PKPdf 06 10 43.6 0.0
baz=299
T38A Diamond 128.32 45 P PKPdf 06 10 44.6 +0.8
baz=299
W37B Quinton 128.37 47 P PKPdf 06 10 45.0 +1.1
baz=296
Z36A Blue Ridge 128.41 50 P PKPdf 06 10 45.0 +1.0
baz=294
U38A Gravette 128.53 46 P PKPdf 06 10 43.9 -0.3
baz=298
R39A Chumby, Stover 128.55 43 P PKPdf 06 10 44.7 +0.6
baz=301
X37A Clayton 128.65 48 P PKPdf 06 10 45.4 +1.0
baz=296
S39A Bolivar 128.67 44 P PKPdf 06 10 44.6 +0.2
baz=300
Y37A Hugo 128.73 49 P PKPdf 06 10 45.4 +0.9
baz=295
535A Dale 128.74 54 P PKPdf 06 10 45.9 +1.2
baz=291
V38A Canehill 128.79 46 P PKPdf 06 10 44.6 -0.1
baz=298
034A Hebbronville 128.79 58 P PKPdf 06 10 47.1 +2.2
baz=288
MESJ Messejana 128.86 317 ePKPdf PKPdf 06 10 45.7 +1.0
HHAR Hobbs 128.92 45 ePKPdf PKPdf 06 10 45.2 +0.3
T39A Clever 128.96 44 P PKPdf 06 10 45.0 0.0
baz=300
O41A Passleys Farm, 129.01 40 P PKPdf 06 10 44.9 -0.1
baz=304
X38A Whitesboro 129.02 48 P PKPdf 06 10 46.3 +1.1
baz=296
PMST Lisbon--Monsan 129.05 318 ePKPdf PKPdf 06 10 48.8 +3.8
R40A Maddies Statio 129.09 42 P PKPdf 06 10 45.5 +0.3
baz=301
P41A Barry, Barry 129.14 40 P PKPdf 06 10 45.8 +0.6
baz=304
U39A Green Forest 129.20 45 P PKPdf 06 10 45.1 -0.3
baz=299
S40A Lebanon 129.28 43 P PKPdf 06 10 46.1 +0.5
baz=301
KVTX Kingsville 129.31 58 PFAKE 06 11 00.0 +14
KVTX LR LR
comp=Z,875nm,20.0s
V39A Pettigrew 129.34 46 P PKPdf 06 10 46.4 +0.6
baz=298
636A Smothers Creek 129.35 55 P PKPdf 06 10 48.3 +2.4
baz=291
237A Washetta, Mont 129.40 51 P PKPdf 06 10 46.9 +0.9
baz=294
Y38A Mabel 129.42 49 P PKPdf 06 10 46.1 +0.3
baz=296
T40A Mansfield 129.50 44 P PKPdf 06 10 46.0 0.0
baz=300
W39A Magazine 129.54 47 P PKPdf 06 10 46.1 0.0
baz=298
X39A Fountain Ranch 129.62 48 P PKPdf 06 10 47.2 +1.0
baz=297
P42A Winchester 129.65 40 P PKPdf 06 10 46.7 +0.6
baz=304
U40A Yellville 129.66 45 P PKPdf 06 10 45.7 -0.6
baz=300
RTC Rabat Centre 129.71 312 PFAKE 06 11 00.0 +14
RTC LR LR
comp=Z,1µm,20.0s
HDIL Hopedale 129.76 38 PFAKE 06 11 00.0 +14
HDIL LR LR
comp=Z,512nm,22.0s
S41A Jillco Farms, 129.80 43 P PKPdf 06 10 46.7 +0.1
baz=301
V40A Witts Springs 129.95 45 P PKPdf 06 10 47.6 +0.7
baz=299
MIAR Mount Ida 130.00 47 P PKPdf 06 10 48.1 +1.1
baz=298
MIAR Mount Ida 130.00 47 ePKIKP PKPdf 06 10 48.0 +1.0
MIAR MLR MLR
comp=Z,468nm,22.0s
MIAR Mount Ida 130.00 47 ePKPdf PKPdf 06 10 48.0 +1.0
MIAR LR LR
comp=Z,468nm,22.0s
338A Crockett 130.05 52 P PKPdf 06 10 48.4 +1.2
baz=294
T41A Mountain View 130.07 44 P PKPdf 06 10 47.1 0.0
baz=301
U41A Viola 130.32 44 P PKPdf 06 10 47.5 0.0
baz=300
NATX Nacogdoches 130.39 51 ePKPdf PKPdf 06 10 49.2 +1.4
NATX LR LR
comp=Z,672nm,19.0s
V41A Mountainview 130.43 45 P PKPdf 06 10 47.7 -0.1
baz=300
VLDQ Val d'Or 130.51 23 ePKPdf PKPdf 06 10 46.5 -1.1
X201 Greenbrier Sit 130.52 46 ePKPdf PKPdf 06 10 48.5 +0.6
WLAR White Oak Lake 130.73 48 ePKPdf PKPdf 06 10 49.6 +1.2
UALR University of 130.79 46 ePKPdf PKPdf 06 10 49.0 +0.6
U42A Revenden 130.79 44 P PKPdf 06 10 48.0 -0.4
baz=301
Q44A Meyer Farm, Va 130.89 40 P PKPdf 06 10 49.1 +0.5
baz=305
V42A Cord 130.96 45 P PKPdf 06 10 48.2 -0.6
baz=300
Y41A Eaglette Beard 131.01 48 P PKPdf 06 10 49.7 +0.7
baz=298
PBMO Poplar Bluff 131.12 43 ePKPdf PKPdf 06 10 49.0 0.0
SFIN Lafayette 131.21 37 ePKPdf PKPdf 06 10 50.2 +1.1
R44A Waltonville 131.22 41 P PKPdf 06 10 50.2 +1.0
baz=304
OLIL Olney 131.57 40 ePKPdf PKPdf 06 10 50.2 +0.4
PARMO Parma 131.64 43 ePKPdf PKPdf 06 10 50.6 +0.6
341A Kurthwood 131.72 51 P PKPdf 06 10 51.9 +1.5
baz=295
PLCA Paso Flores 131.73 160 PKP PKPdf 06 10 50.9 +0.6
comp=Z,3.2nm,0.6s,baz=345,slow=0.8,SNR=9.5
Z42A Norrel Spur, H 131.78 48 P PKPdf 06 10 49.9 -0.5
baz=298
AAM Ann Arbor 131.93 33 PFAKE 06 11 00.0 +10
AAM LR LR
comp=Z,543nm,19.0s
Y43A Makayla and Ka 132.23 47 P PKPdf 06 10 52.0 +0.8
baz=299
BLO Bloomington 132.29 38 ePKIKP PKPdf 06 10 51.7 +0.5
BLO Bloomington 132.29 38 ePKPdf PKPdf 06 10 51.7 +0.5
143A Socs Landing, 132.46 48 P PKPdf 06 10 52.3 +0.7
baz=296
X44A Crenshaw 132.50 46 P PKPdf 06 10 51.9 +0.1
baz=301
Z44A Pea Ridge, Bel 132.90 47 P PKPdf 06 10 53.2 +0.7
baz=299
WCI Wyandotte Cave 133.01 39 ePKIKP PKPdf 06 10 53.9 +1.3
WCI Wyandotte Cave 133.01 39 ePKPdf PKPdf 06 10 53.9 +1.3
WVT Waverly 133.23 42 ePKIKP PKPdf 06 10 54.1 +1.1
WVT Waverly 133.23 42 ePKPdf PKPdf 06 10 54.1 +1.1
Y45A Yeager Farm, C 133.25 46 P PKPdf 06 10 53.3 +0.1
baz=301
VBMS Vicksburg 133.34 48 ePKPdf PKPdf 06 10 54.7 +1.3
344A Westbrook Farm 133.54 49 P PKPdf 06 10 55.1 +1.4
baz=298
ACSO Alum Creek Sta 133.71 35 ePKPdf PKPdf 06 10 54.0 +0.2
ACSO LR LR
comp=Z,409nm,19.0s
Y46A Houston 133.73 45 P PKPdf 06 10 55.1 +1.1
baz=301
345A Thompson Farm, 134.14 49 P PKPdf 06 10 56.2 +1.4
baz=298
DBIC Dimbokro 134.43 275 PKP PKPdf 06 10 55.4 -0.5
comp=Z,6.8nm,0.6s,baz=82,slow=0.4,SNR=6.1
DBIC SKPbc SKPab 06 14 28.3 +1.6
comp=Z,8.3nm,0.9s,baz=267,slow=22,SNR=3.6
Y47A UCPARC, Winfie 134.43 45 P PKPdf 06 10 55.0 -0.4
baz=302
LONY Lake Ozonia 134.51 24 PFAKE 06 11 10.0 +15
LONY LR LR
comp=Z,339nm,20.0s
M54A Oil Creek Stat 134.60 31 P PKPdf 06 10 55.5 -0.1
baz=317
Z48A Northport 134.92 45 P PKPdf 06 10 56.4 +0.1
baz=302
LRAL Lakeview Retre 135.50 45 ePKPdf PKPdf 06 10 57.8 +0.4
MDV Middlebury 135.59 23 ePKPdf PKPdf 06 10 57.9 +0.7
BINY Binghamton 135.85 27 PFAKE 06 11 10.0 +12
BINY LR LR
comp=Z,555nm,21.0s
PKME Peaks-Kenny Pk 135.90 19 PFAKE 06 11 10.0 +12
PKME LR LR
comp=Z,668nm,22.0s
SSPA Standing Stone 136.15 30 ePKPdf PKPdf 06 10 58.5 +0.2
TKL Tuckaleechee C 136.17 40 ePKIKP PKPdf 06 11 00.2 +1.6
TKL Tuckaleechee C 136.17 40 ePKPdf PKPdf 06 11 00.2 +1.6
HNH Hanover 136.18 23 ePKPdf PKPdf 06 10 59.9 +1.5
WVL Waterville 136.39 20 ePKPdf PKPdf 06 10 58.8 +0.2
BRAL Brewton 136.43 48 PFAKE 06 11 10.0 +11
BRAL LR LR
comp=Z,622nm,21.0s
BLA Blacksburg 137.22 36 PFAKE 06 11 10.0 +9.4
BLA LR LR
comp=Z,393nm,21.0s
GOGA Godfrey 137.73 42 ePKIKP PKPdf 06 11 01.0 -0.5
GOGA MLR MLR
comp=Z,603nm,20.0s
GOGA Godfrey 137.73 42 ePKPdf PKPdf 06 11 00.9 -0.5
GOGA LR LR
comp=Z,603nm,20.0s
CBN Corbin Frederi 138.22 32 PFAKE 06 11 10.0 +7.7
CBN LR LR
comp=Z,459nm,20.0s
AAGR Agrelo 139.13 156 eP PKPpre 06 10 59.8
ASAL Salagasta 139.56 156 eP PKPpre 06 10 57.0
AUSP Uspallata 139.65 155 eP PKPpre 06 10 56.7
TEIG Tepich 139.98 63 PFAKE 06 11 20.0 +14
TEIG LR LR
comp=Z,19nm,20.0s
PAYG Puerto Ayora 140.03 96 PFAKE 06 11 20.0 +14
PAYG LR LR
comp=Z,2µm,19.0s
CNNC Cliffs of the 140.06 36 PFAKE 06 11 20.0 +14
CNNC LR LR
comp=Z,595nm,21.0s
NHSC New Hope 140.09 40 PFAKE 06 11 20.0 +14
NHSC LR LR
comp=Z,370nm,19.0s
MRA San Martin 140.89 160 eP PKPpre 06 11 02.8
LCO Las Campanas 141.78 151 PFAKE 06 11 20.0 +11
LCO LR LR
comp=Z,2µm,20.0s
ASCN Ascension 141.93 252 PFAKE 06 11 20.0 +10
ASCN LR LR
comp=Z,1µm,21.0s
TCA Tanti 142.26 160 eP PKPpre 06 11 04.4
AGUA GUANDACOL 142.40 154 eP PKPpre 06 11 05.9
CYA Choya 144.44 157 eP PKPab 06 11 11.1 -0.9
AHML Horco Molle 146.09 156 eP PKPdf 06 11 16.6 -0.1
HDC Heredia 146.24 78 ePKPdf PKPdf 06 11 17.4 +0.1
PB10 IPOC Station P 146.30 146 ePKPdf PKPbc 06 11 18.6 +0.4
PB10 ePKPbc PKPab 06 11 19.5 +0.5
FSA Cafayete 146.42 154 eP PKPbc 06 11 18.4 -0.4
PB04 IPOC Station P 147.45 145 ePKPbc PKPbc 06 11 22.4 +0.6
LVC Limon Verde 147.93 147 ePKPbc PKPbc 06 11 23.6 +0.4
LVC LR LR
comp=Z,1µm,21.0s
PB01 IPOC Station P 148.84 144 ePKPdf PKPdf 06 11 21.7 +0.2
PB01 ePKPbc PKPbc 06 11 23.7 -1.6
PB01 ePKPab PKiKP 06 11 26.7 0.0
BBSR BB Station 148.97 24 ePKPbc PKPbc 06 11 26.2 +1.0
BBSR LR LR
comp=Z,918nm,21.0s
CPUP Villa Florida 149.00 168 PKPbc PKPbc 06 11 25.3 -0.2
comp=Z,25nm,0.8s,baz=194,slow=1.6,SNR=63
CPUP Villa Florida 149.00 168 ePKIKP PKPdf 06 11 22.2 +0.8
CPUP e 06 11 26.1
CPUP Villa Florida 149.00 168 ePKPdf PKPdf 06 11 22.2 +0.8
CPUP ePKPbc PKPbc 06 11 26.1 +0.6
HJA Humahuaca 149.19 153 eP PKPdf 06 11 23.7 +1.3
NNA Nana 149.36 122 PKPbc PKPbc 06 11 27.4 +0.7
comp=Z,21nm,0.7s,baz=244,slow=11,SNR=7.5
NNA Nana 149.36 122 ePKPdf PKPbc 06 11 25.0 -1.7
NNA LR LR
comp=Z,931nm,22.0s
ATAH Atahualpa 150.06 112 PKPbc PKPbc 06 11 30.9 +1.9
comp=Z,23nm,0.7s,baz=217,slow=2.4,SNR=7.8
MTDJ Mount Denham 150.15 60 PFAKE 06 11 40.0 +5.3
MTDJ LR LR
comp=Z,757nm,19.0s
SACV Santiago Islan 151.35 294 ePKPbc PKPbc 06 11 31.4 -0.1
SACV LR LR
comp=Z,245nm,22.0s
GTBY Guantanamo Bay 151.41 55 PFAKE 06 11 40.0 +0.3
GTBY LR LR
comp=Z,461nm,19.0s
OTAV Otavalo 151.88 97 ePKPdf PKPdf 06 11 27.7 +0.8
OTAV LR LR
comp=Z,1µm,19.0s
SPB Sao Paulo 152.25 186 PFAKE 06 11 40.0 -2.9
SPB LR LR
comp=Z,527nm,19.0s
CMBC Cumbal 152.60 96 eP PKPdf 06 11 26.6 -1.3
SOLC Bahia Solano 153.20 84 eP PKPbc 06 11 36.3 +0.6
LPAZ La Paz 153.28 140 PKP PKPdf 06 11 29.8 +0.7
comp=Z,5.4nm,0.9s,baz=213,slow=0.9,SNR=17
LPAZ PKPbc PKiKP 06 11 37.8 +1.1
comp=Z,10nm,0.7s,baz=141,slow=3.0,SNR=22
LPAZ La Paz 153.28 140 ePKIKP PKPdf 06 11 30.3 +1.3
LPAZ 06 11 37.8
LPAZ La Paz 153.28 140 ePKPdf PKPdf 06 11 30.3 +1.3
LPAZ PKPbc PKiKP 06 11 37.8 +1.1
GRTK Grand Turk 153.62 47 PFAKE 06 11 40.0 +3.7
GRTK LR LR
comp=Z,797nm,20.0s
POPC Popayan, Colom 153.90 93 eP PKPdf 06 11 30.8 +1.2
DBBC Dabeiba 154.34 82 eP PKPbc 06 11 36.3 -1.9
SDDR Presa de Saban 154.97 52 PFAKE 06 11 40.0 +0.6
SDDR LR LR
comp=Z,1µm,22.0s
HELC Santa Helena 155.07 84 eP PKPdf 06 11 28.0 -3.3
HELC Santa Helena 155.07 84 ePKPdf PKPdf 06 11 31.4 +0.1
HELC ePKPbc PKPbc 06 11 41.9
HELC ePKPab PKPab 06 11 57.3 +1.5
PRAC Prado 155.75 90 ePKPdf PKPdf 06 11 32.0 +0.2

NORC	Norcasia	155.76	86	eP		PKPdf	06 11 32.2	+0.3
ROSC	El Rosal	156.32	87	PKP		PKPdf	06 11 33.1	0.0
	comp=Z,4.1nm,0.6s,baz=109,slow=9.3,SNR=5.3							
ROSC				PKPab		PKPab	06 12 02.8	+1.5
	comp=Z,11nm,0.5s,baz=68,slow=17,SNR=9.0							
ROSC	El Rosal	156.32	87	eP		PKPdf	06 11 34.9	+1.9
ROSC	El Rosal	156.32	87	ePKPdf		PKPdf	06 11 34.2	+1.2
ROSC				PKPab		PKPab	06 12 02.8	+1.5
BRRC	Barranca, Sant	156.79	82	eP		PKPdf	06 11 30.8	-2.4
CHIC	Chingaza	156.91	88	eP		PKPdf	06 11 30.8	-3.0
OCAC	Ocana	157.03	79	eP		PKPdf	06 11 30.8	-2.9
BARC	Barichara	157.37	83	eP		PKPdf	06 11 30.8	-3.4
RUSC	La Rusia	157.52	85	eP		PKPdf	06 11 30.8	-3.9
RUSC	La Rusia	157.52	85	ePKPdf		PKPdf	06 11 34.9	+0.2
GRMC	Gramalote, San	157.62	80	eP		PKPdf	06 11 30.3	-4.1
CBRI	Barrientos, No	157.62	80	eP		PKPdf	06 11 34.9	+0.5
AGP	Aguadilla	158.48	48	ePKPab		PKPab	06 12 10.6	+0.8
CELP	Cerrillos	159.10	47	ePKPab		PKPab	06 12 13.1	+0.6
SJG	San Juan	159.39	46	ePKP2		PKPab	06 12 14.6	+0.9
SJG				MLR		MLR		
	comp=Z,707nm,22.0s							
SJG	San Juan	159.39	46	ePKPab		PKPab	06 12 14.6	+0.9
SJG				LR		LR		
	comp=Z,707nm,22.0s							
SDV	Santo Domingo	159.53	76	ePKPdf		PKPdf	06 11 36.7	0.0
SDV				LR		LR		
	comp=Z,795nm,20.0s							
BDFB	Brasilia	160.17	187	PKP		PKPdf	06 11 37.6	+0.3
	comp=Z,4.0nm,0.9s							
BDFB				PKPab		PKPab	06 12 17.6	+0.5
SAML	Samuel	161.91	136	PFAKE			06 11 50.0	+11
SAML				LR		LR		
	comp=Z,1μm,19.0s							
RCBR	Riachuelo	162.31	236	PFAKE			06 11 50.0	+10
RCBR				LR		LR		
	comp=Z,502nm,21.0s							
ANWB	Willy Bob	162.65	38	PFAKE			06 11 50.0	+10
ANWB				LR		LR		
	comp=Z,449nm,20.0s							
FDF	Fort de France	165.20	44	PFAKE			06 11 50.0	+7.9
FDF				LR		LR		
	comp=Z,1μm,21.0s							
GRGR	Grenville	166.47	53	PFAKE			06 11 50.0	+6.9
GRGR				LR		LR		
	comp=Z,653nm,20.0s							
BBGH	Gun Hill	167.41	44	PFAKE			06 11 50.0	+6.2
BBGH				LR		LR		
	comp=Z,1μm,20.0s							
PTGA	Pitinga	169.44	117	PKP		PKPdf	06 11 44.8	-0.4
	comp=Z,3.5nm,0.7s,baz=342,slow=2.0,SNR=7.0							
PTGA				PKPab		PKPab	06 12 58.6	+0.4
	comp=Z,3.6nm,0.9s,baz=180,slow=5.8,SNR=3.3							

IDC 09 05:53:17.7±19.0, 6.88N×94.01E, h0km, mb4.0/3, mb1 4.0/3, mb1mx3.6/49, mbtmp4.0/3, Error ellipse: s-maj=581.9km s-min=123.5km az=117.0, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
H08S3	Diego Garcia H	25.86	237	T	T		06 25 37.9	
	baz=54,slow=75,SNR=7.2							
H08S2	Diego Garcia H	25.86	236	T	T		06 25 36.7	
	baz=54,slow=75,SNR=6.9							
H08S1	Diego Garcia H	25.88	236	T	T		06 25 39.8	
	baz=54,slow=75,SNR=4.7							
MKAR	Makanchi Array	41.02	348	P	P		06 01 02.5	-0.2
	1.0nm,0.7s,baz=151,slow=7.8,SNR=7.2							
ZALV	Zalesovo Beam	47.52	353	P	P		06 01 54.5	-0.1
	1.5nm,0.4s,baz=178,slow=7.9,SNR=6.2							
FINES	FINESS Array B	73.52	332	P	P		06 04 52.2	0.0
	0.6nm,0.4s,baz=108,slow=4.5,SNR=11							

*ISCJB **09** 06:00:04.0±0.2, 23.61S×0.03×66.89W×0.04, h196km, mb4.6/91, Error ellipse: s-maj=5.2km s-min=3.2km az=156.2*

*NEIC **09** 06:00:04.8±0.5, 23.66S×66.82W, h188km±4km, mb4.8/88, Error ellipse: s-maj=6.3km s-min=4.8km az=64.0*

*IDC **09** 06:00:05.3±0.9, 23.59S×66.81W, h192km±7km, mb4.1/12, mb1 4.2/18, mb1mx4.1/28, mbtmp4.6/18, MS3.9/3, Ms1 3.8/3, ms1mx3.1/26, Error ellipse: s-maj=13.6km s-min=10.9km az=15.0*

*SJA **09** 06:00:05.3±0.8, 23.64S×66.97W, h198km±17km, ML4.1, MW3.9*

ISC 09 06:00:05.2±0.3, 23.71S±0.04×66.92W±0.06, h196km, n304, σ1.02/314, mb4.8/91, 10D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
HJA	Humahuaca	1.48	70	eP	Pn		06 00 40.5	+1.6
HJA				IAML			06 00 41.2	
	comp=Z,732nm,0.5s							
AZAP	Zapla	1.77	107	eP	Pn		06 00 43.0	+1.5
LVC	Limon Verde	2.13	301	P	Pn		06 00 46.4	+1.1
	comp=Z,4μm,0.3s,baz=124,slow=6.6,SNR=223							
LVC				S	Sn		06 01 16.1	-0.2
	comp=Z,1μm,0.3s,baz=132,slow=5.8,SNR=7.2							
LVC	Limon Verde	2.13	301	ePn	Pn		06 00 46.2	+0.9
LVC				eSn	Sn		06 01 16.5	+0.2
ASTB	Santa Barbara	2.27	96	eP	Pn		06 00 47.8	+1.3
FSA	Cafayete	2.54	161	eP	Pn		06 00 51.2	+1.7
FSA				eS	Sn		06 01 25.3	+1.2
PB04	IPOC Station P	3.27	294	ePn	Pn		06 00 58.5	+0.3
PB04				eSn	Sn		06 01 37.9	-1.6
PB10	IPOC Station P	3.34	273	ePn	Pn		06 00 59.2	+0.4
PB10				eSn	Sn		06 01 38.5	-2.1
AHML	Horco Molle	3.38	155	eP	Pn		06 01 00.8	+1.5
AHML				eS	Sn		06 01 42.2	+0.5
PB01	IPOC Station P	3.56	318	ePn	Pn		06 01 01.6	0.0
PB01				eSn	Sn		06 01 43.8	-2.0
CYA	Choya	4.82	168	eP	Pn		06 01 18.7	+1.4
CYA				eS	Sn		06 02 14.5	+0.5
VCA	Vinchina	5.13	193	eP	Pn		06 01 23.2	+1.8
LCO	Las Campanas	6.27	212	ePn	Pn		06 01 34.6	-1.6
LCO				eSn	Sn		06 02 45.8	-2.4
LPAZ	La Paz	7.47	351	eP	Pn		06 01 52.3	0.0
LPAZ	La Paz	7.47	351	P	Pn		06 01 52.4	0.0
	comp=Z,1.9nm,0.3s,baz=136,slow=5.9,SNR=58							
LPAZ				S	Sn		06 03 14.2	-2.9
	comp=Z,1.4nm,0.3s,baz=319,slow=15,SNR=8.5							
LPAZ	La Paz	7.47	351	ePn	Pn		06 01 52.3	0.0
LPAZ				eSn	Sn		06 03 17.1	-0.1
RTLL	Cerro Villicun	7.71	190	eP	Pn		06 01 53.8	-0.9
RTLL				eS	Sn		06 03 16.2	-5.6
TCA	Tanti	7.87	165	eP	Pn		06 01 56.2	-0.6
TCA				IAML			06 01 58.4	
	comp=Z,27nm,0.5s							
CPUP	Villa Florida	9.08	109	P	Pn		06 02 11.7	-0.9
	comp=Z,0.5nm,0.3s,baz=291,slow=11,SNR=57							
CPUP	Villa Florida	9.08	109	ePn	Pn		06 02 11.5	-1.1
SIV	San Ignacio	9.45	37	P	Pn		06 02 15.3	-2.2
	comp=Z,4.2nm,0.3s,baz=230,slow=12,SNR=62							
SIV				S	Sn		06 03 53.1	-10
	comp=Z,0.4nm,0.3s,baz=225,slow=15,SNR=3.7							
ROC1	El Roble	9.91	200	ePn	Pn		06 02 23.1	-0.4
PLCA	Paso Flores	17.24	189	P	Pn		06 03 54.8	+0.2
	comp=Z,0.1nm,0.3s,baz=44,slow=10,SNR=5.2							
PLCA	Paso Flores	17.24	189	eP	Pn		06 03 54.8	+0.2
	comp=Z,33nm,1.8s							
BDFB	Brasilia	19.52	69	P	P		06 04 18.1	+0.1
BDFB	Brasilia	19.52	69	eP	P		06 04 19.0	+1.0
	comp=Z,183nm,0.8s							
ATAH	Atahualpa	19.83	324	LR	LR		06 12 40.0	
	comp=Z,110nm,21.3s,baz=62,slow=38							
PTGA	Pitinga	23.82	17	P	P		06 04 59.0	-1.5
	comp=Z,9.0nm,0.4s,baz=210,slow=21,SNR=40							
PTGA	Pitinga	23.82	17	eP	P		06 04 59.1	-1.5
	comp=Z,39nm,1.4s							
CHIC	Chingaza	28.94	346	eP	P		06 05 46.5	-0.3
RUSC	La Rusia	30.03	348	eP	P		06 05 54.8	-1.7
RUSC	La Rusia	30.03	348	eP	P		06 05 56.0	-0.6
	comp=Z,5.2nm,1.0s							
NORC	Norcasia	30.11	344	eP	P		06 05 55.8	-1.0
BARC	Barichara	30.73	348	eP	P		06 06 00.2	-2.2
HELC	Santa Helena	30.89	343	eP	P		06 06 01.7	-2.2
HELC	Santa Helena	30.89	343	eP	P		06 06 02.4	-1.5
	comp=Z,28nm,1.2s							
CBRI	Barrientos, No	31.76	349	eP	P		06 06 06.1	-5.3
RCBR	Riachuelo	34.73	64	P	P		06 06 35.7	-1.4
	comp=Z,6.7nm,0.6s,baz=224,slow=12,SNR=8.7							
RCBR	Riachuelo	34.73	64	eP	P		06 06 36.2	-0.8
	comp=Z,41nm,1.3s							
FDF	Fort de France	38.62	9	eP	P		06 07 09.2	-0.5
	comp=Z,79nm,1.1s							
PMSA	Palmer Station	41.10	178	LR	LR		06 23 53.0	
	comp=Z,166nm,18.2s,baz=49,slow=35							
CELP	Cerrillos	41.53	0	eP	P		06 07 32.4	-1.2
SMRT	St. Maarten	41.68	6	eP	P		06 07 33.8	-1.0
	comp=Z,67nm,1.0s							
TEIG	Tepich	48.38	333	eP	P		06 08 27.0	-0.5
	comp=Z,2.7nm,1.8s							
RGRS	Roger Stewart	57.71	347	eP	P		06 09 36.2	+0.8
	comp=Z,742nm,0.5s							
NHSC	New Hope	57.90	347	eP	P		06 09 37.7	+1.0
	comp=Z,287nm,1.8s							
GOGA	Godfrey	58.95	344	eP	P		06 09 43.9	-0.1
	comp=Z,50nm,1.8s							
JSC	Jenkinsville	59.26	346	eP	P		06 09 46.6	+0.5
	comp=Z,12nm,0.8s							
LRAL	Lakeview Retre	59.59	340	eP	P		06 09 47.8	-0.6
	comp=Z,15nm,0.7s							
SNAA	Sanae	59.60	161	eP	P		06 09 49.1	+1.1
	comp=Z,12nm,1.5s							
736A	Circle Diamond	59.87	329	P	P		06 09 52.1	+1.8
	baz=148							
834A	Tilden	59.88	328	P	P		06 09 51.7	+1.2
	baz=146							
244A	Avery, Jackson	59.92	337	P	P		06 09 51.4	+0.8
	baz=155							
342A	Flagon Creek P	59.94	335	P	P		06 09 52.0	+1.3
	baz=153							
637A	Eagle Lake	59.94	330	P	P		06 09 52.3	+1.5
	baz=149							
Z47A	Carrollton	60.08	340	P	P		06 09 51.4	-0.3
	baz=158							
Z48A	Northport	60.08	340	P	P		06 09 51.3	-0.5
	baz=158							
KMSC	Kings Mountain	60.11	346	P	P		06 09 52.3	+0.5
	baz=165							
KMSC	Kings Mountain	60.11	346	eP	P		06 09 52.1	+0.2
	comp=Z,39nm,1.6s							
145A	Houston Renfro	60.16	338	P	P		06 09 52.4	+0.1
	baz=156							
Z46A	Louisville	60.36	339	P	P		06 09 54.0	+0.3
	baz=157							
833A	Chaparral WMA,	60.46	327	P	P		06 09 55.5	+1.0
	baz=146							
734A	La Parita Cree	60.48	328	P	P		06 09 55.7	+1.1
	baz=146							
Y47A	UCPARC, Winfie	60.66	340	P	P		06 09 55.4	-0.2
	baz=158							
241A	Mo Tay, Goldon	60.74	335	P	P		06 09 57.8	+1.6
	baz=153							
Y46A	Houston	60.96	339	P	P		06 09 57.5	-0.2
	baz=157							
CPCT	Cooper Cave	61.16	344	eP	P		06 09 58.4	-0.6
	comp=Z,6.2nm,0.9s							
TKL	Tuckaleechee C	61.16	344	eP	P		06 09 58.6	-0.5
	comp=Z,23nm,1.0s							
Y45A	Yeager Farm, C	61.17	339	P	P		06 09 59.3	+0.2
	baz=156							
633A	Saathoff Ranch	61.29	328	P	P		06 10 00.7	+0.7
	baz=146							
SWET	Sewanee	61.31	342	eP	P		06 09 59.7	-0.4
	comp=Z,5.3nm,0.8s							
337A	Centerville	61.35	332	P	P		06 10 01.8	+1.5
	baz=150							
534A	Blanco	61.43	329	P	P		06 10 01.0	+0.1
	baz=147							
X45A	UM Field Stati	61.63	339	P	P		06 10 01.4	-0.8
	baz=156							
OXF	Oxford	61.72	339	eP	P		06 10 01.8	-0.9
	comp=Z,22nm,0.7s							
434A	Buret	61.99	330	P	P		06 10 05.0	+0.3
	baz=147							
Z40A	Long Farm, Mag	62.02	335	P	P		06 10 06.0	+1.3
	baz=152							
X43A	Marvell	62.22	338	P	P		06 10 06.1	0.0
	baz=155							
WLAR	White Oak Lake	62.29	335	eP	P		06 10 07.8	+1.3
	comp=Z,32nm,0.7s							
433A	Art	62.33	329	P	P		06 10 07.2	+0.3
	baz=147							
JCT	Junction City	62.44	328	P	P		06 10 08.4	+0.6
	baz=146							
JCT	Junction City	62.44	328	eP	P		06 10 08.3	+0.6
	comp=Z,37nm,0.7s							
WHTX	Lake Whitney,	62.61	331	P	P		06 10 09.0	+0.3
	baz=148							
WHTX	Lake Whitney,	62.61	331	eP	P		06 10 09.3	+0.5
	comp=Z,25nm,1.2s							
WVT	Wavy	62.72	341	eP	P		06 10 08.5	-0.8
	comp=Z,22nm,0.7s							
333A	Richland Sprin	62.75	329	P	P		06 10 09.8	+0.1
	baz=147							
234A	Clairette	62.93	330	P	P		06 10 10.9	+0.1
	baz=148							
MIAR	Mount Ida	63.23	335	P	P		06 10 12.6	-0.2
	baz=153							
MIAR	Mount Ida	63.23	335	eP	P		06 10 12.6	-0.2
	comp=Z,86nm,1.9s							
Z36A	Blue Ridge	63.26	332	P	P		06 10 13.4	+0.4
	baz=150							
233A	Rising Star	63.29	330	P	P		06 10 13.4	+0.1
	baz=147							
W41B	Gary Mavity, V	63.30	337	P	P		06 10 13.1	-0.1
	baz=154							
134A	White-Moore Ra	63.38	331	P	P		06 10 14.0	+0.2
	baz=148							
X39A	Fountain Ranch	63.40	335	P	P		06 10 14.1	+0.2
	baz=152							
X301	Greenbrier Sit	63.41	337	eP	P		06 10 14.0	+0.1
	comp=Z,26nm,1.6s							
WHAR	Wooly Hollow	63.41	337	eP	P		06 10 13.7	-0.2
	comp=Z,25nm,1.6s							
X201	Greenbrier Sit	63.44	337	eP	P		06 10 14.0	-0.1
	comp=Z,49nm,1.8s							
TXAR	Lajitas Array	63.49	324	P	P		06 10 15.2	+0.5
	comp=Z,1.1nm,0.7s,baz=151,slow=7.4,SNR=15							
TX31	Lajitas Ar. Si	63.49	324	eP	P		06 10 15.5	+0.8
Y37A	Hugo	63.54	334	P	P		06 10 15.5	+0.7
	baz=150							
W40A	Ferguson Farm,	63.61	336	P	P		06 10 15.5	+0.3
	baz=153							
133A	Hamilton Ranch	63.79	330	P	P		06 10 16.6	+0.1
	baz=147							
PARMO	Parma	63.80	340	eP	P		06 10 16.8	+0.3
V41A	Mountainview	63.81	337	P	P		06 10 15.8	-0.8
	baz=154							
X38A	Whitesboro	63.82	335	P	P		06 10 17.1	+0.5
	baz=151							
W39A	Magazine	63.88	336	P	P		06 10 17.4	+0.4
	baz=152							
X37A	Clayton	63.97	334	P	P		06 10 18.0	+0.4
	baz=151							
MVL	Millersville	63.99	352	eP	P		06 10 18.0	+0.4
	comp=Z,9.3nm,0.9s							
Z34A	Collier Ranch,	63.99	331	P	P		06 10 18.3	+0.6
	baz=148							
U42A	Revenden	64.00	338	P	P		06 10 17.1	-0.6
	baz=155							
W38A	Poteau	64.05	335	P	P		06 10 18.6	+0.5
	baz=152							
V40A	Witts Springs	64.07	337	P	P		06 10 17.6	-0.7
	baz=154							
PBMO	Poplar Bluff	64.12	339	eP	P		06 10 18.3	-0.2
	comp=Z,18nm,0.6s							
MCWV	Mont Chateau	64.19	349	eP	P		06 10 19.0	+0.1
	comp=Z,25nm,1.7s							
U41A	Viola	64.23	338	P	P		06 10 18.5	-0.8
	baz=154							
WCI	Wyandotte Cave	64.24	343	eP	P		06 10 18.2	-1.1
	comp=Z,15nm,0.6s							
Z33A	Whitaker Ranch	64.29	331	P	P		06 10 20.0	+0.2
	baz=148							
X36A	Centrahoma	64.35	333	P	P		06 10 19.5	-0.5
	baz=150							
V39A	Pettigrew	64.40	336	P	P		06 10 20.7	+0.2
	baz=153							
X35A	Drake	64.46	333	P	P		06 10 20.6	-0.2
	baz=149							
W37B	Quinton	64.47	334	P	P		06 10 21.3	+0.5
	baz=151							
U40A	Yellville	64.57	337	P	P		06 10 21.5	0.0
	baz=154							
SIUC	Southern Illin	64.60	341	eP	P		06 10 20.8	-0.8
	comp=Z,14nm,0.9s							
V38A	Canehill	64.71	336	P	P		06 10 22.4	+0.1
	baz=152							
S43A	Fulton Ridge,	64.73	340	P	P		06 10 21.7	-0.8
	baz=156							
W36A	Wetumka	64.79	334	P	P		06 10 22.8	-0.1
	baz=150							
T41A	Mountain View	64.81	338	P	P		06 10 22.4	-0.6
	baz=155							
U39A	Green Forest	64.82	337	P	P		06 10 23.0	-0.1
	baz=153							
SSPA	Standing Stone	64.83	351	eP	P		06 10 23.4	+0.4
	comp=Z,39nm,1.6s							
HHAR	Hobbs	64.90	336	eP	P		06 10 23.7	0.0
	comp=Z,8.3nm,0.7s							
V37A	Hulbert	65.01	335	P	P		06 10 24.4	+0.1
	baz=151							
T40A	Mansfield	65.17	338	P	P		06 10 25.1	-0.3
	baz=154							
BLO	Bloomington	65.19	343	eP	P		06 10 24.6	-0.8
	comp=Z,25nm,0.9s							
U38A	Gravette	65.21	336	P	P		06 10 25.6	0.0
	baz=152							
X33A	Lawton	65.24	332	P	P		06 10 25.6	-0.3
	baz=148							
V36A	Jenks	65.24	334	P	P		06 10 25.7	0.0
	baz=151							
S41A	Jillco Farms,	65.30	338	P	P		06 10 25.7	-0.4
	baz=155							
ACSO	Alum Creek Sta	65.35	347	eP	P		06 10 26.1	-0.3
	comp=Z,33nm,1.3s							
T39A	Clever	65.36	337	P	P		06 10 26.3	-0.2
	baz=153							
BRYW	Bryant College	65.44	356	eP	P		06 10 26.9	-0.1
	comp=Z,30nm,0.8s							
U37A	Salina	65.46	335	P	P		06 10 27.2	0.0
	baz=152							
WMOK	Wichita Mounta	65.53	331	eP	P		06 10 27.7	0.0
	comp=Z,7.4nm,0.9s							
S40A	Lebanon	65.56	338	P	P		06 10 27.5	-0.3
	baz=154							
V35A	Meyer Ranch, C	65.58	334	P	P		06 10 27.5	-0.5
	baz=150							
T38A	Diamond	65.70	336	P	P		06 10 28.6	-0.1
	baz=152							
W33A	Caddo, Fort Co	65.74	332	P	P		06 10 29.6	+0.6
	baz=148							
S39A	Bolivar	65.93	337	P	P		06 10 30.0	-0.2
	baz=154							
T37A	Cheneyville 18	66.01	336	P	P		06 10 30.7	0.0
	baz=152							
HRV	Adam Dziewonsk	66.03	356	eP	P		06 10 31.2	+0.5
	comp=Z,87nm,1.9s							
W32A	Sentinel	66.06	331	P	P		06 10 31.2	+0.1
	baz=148							
U35A	Pawnee	66.06	334	P	P		06 10 31.3	+0.2
	baz=150							
S38A	Stockton	66.09	337	P	P		06 10 30.9	-0.3
	baz=153							
Q42A	Golden Eagle	66.11	340	P	P		06 10 30.3	-1.0
	baz=156							
R40A	Maddies Statio	66.11	338	P	P		06 10 30.7	-0.6
	baz=155							
BINY	Binghamton	66.11	353	eP	P		06 10 32.0	+0.7
	comp=Z,43nm,1.4s							
V33A	Lossen Ranch,	66.23	332	P	P		06 10 32.4	+0.2
	baz=149							
T36A	Boggs Farm, Ca	66.32	335	P	P		06 10 32.5	-0.2
	baz=151							
R39A	Chumby, Stover	66.39	338	P	P		06 10 32.6	-0.5
	baz=154							
TRY	Troy	66.40	355	eP	P		06 10 34.0	+1.0
	comp=Z,26nm,0.8s							
U34A	Anderson Ranch	66.44	333	P	P		06 10 33.4	-0.1
	baz=149							
U34A	Anderson Ranch	66.44	333	eP	P		06 10 33.6	+0.1
	comp=Z,22nm,1.0s							
SFIN	Lafayette	66.47	343	P	P		06 10 32.3	-1.2
	baz=160							
SFIN	Lafayette	66.47	343	eP	P		06 10 32.3	-1.2
	comp=Z,66nm,2.0s							
S37A	Fort Scott	66.54	336	P	P		06 10 33.9	-0.1
	baz=152							
R38A	Fenwick Farm,	66.58	337	P	P		06 10 34.1	-0.2
	baz=153							
P42A	Winchester	66.66	340	P	P		06 10 33.5	-1.3
	baz=157							
Q40A	Laux Farm, Aux	66.68	339	P	P		06 10 34.9	0.0
	baz=155							
S36A	Lake Cedric, C	66.79	336	P	P		06 10 35.9	+0.2
	baz=151							
MMNY	Mt. Morris Dam	66.88	351	eP	P		06 10 36.4	+0.3
P41A	Barry, Barry	66.97	340	P	P		06 10 35.7	-1.0
	baz=156							
Q39A	Willow Grove F	67.03	338	P	P		06 10 36.7	-0.4
	baz=154							
R37A	Teagarden Farm	67.03	336	P	P		06 10 36.9	-0.2
	baz=152							
S35A	Otter Creek Ra	67.04	335	P	P		06 10 37.0	-0.2
	baz=151							
Q38A	Cooks Store, C	67.17	338	P	P		06 10 37.9	-0.1
	baz=153							
HDIL	Hopedale	67.25	342	P	P		06 10 37.3	-1.1
	baz=158							
HDIL	Hopedale	67.25	342	eP	P		06 10 37.5	-0.9
	comp=Z,14nm,0.8s							
O41A	Passleys Farm,	67.31	340	P	P		06 10 38.0	-0.9
	baz=156							
P39B	Salisbury	67.35	339	P	P		06 10 39.0	-0.1
	baz=154							
Q37A	Longview Farm,	67.39	337	P	P		06 10 39.7	+0.3
	baz=153							
O40A	La Belle	67.63	340	P	P		06 10 40.4	-0.4
	baz=155							
DBIC	Dimbokro	67.64	72	P	P		06 10 40.5	-1.0
	comp=Z,6.9nm,0.7s,baz=206,slow=8.4,SNR=8.3							
DBIC	Dimbokro	67.64	72	eP	P		06 10 41.0	-0.5
	comp=Z,66nm,1.7s							
O38A	Galt	68.16	338	P	P		06 10 44.0	-0.2
	baz=154							
GGN	Saint George	68.50	0	eP	P		06 10 46.5	+0.5
	comp=Z,18nm,1.4s							
N39A	Derby Farms, D	68.52	339	P	P		06 10 46.0	-0.4
	baz=155							
PKME	Peaks-Kenny Pk	68.68	358	eP	P		06 10 47.3	+0.1
	comp=Z,72nm,1.8s							
O36A	Bolckow	68.69	337	P	P		06 10 46.9	-0.6
	baz=152							
N37A	Lee Faris, Mou	68.98	338	P	P		06 10 49.2	-0.1
	baz=153							
M38A	Pleasantville	69.23	339	P	P		06 10 50.4	-0.4
	baz=154							
LMN	Caledonia Moun	69.26	2	eP	P		06 10 50.5	-0.3
	comp=Z,11nm,0.6s							
K41A	Shullsburg	69.43	342	P	P		06 10 51.6	-0.3
	baz=157							
L39A	Vinton	69.49	340	P	P		06 10 51.7	-0.7
	baz=156							
M37A	Trindle Farm,	69.50	339	P	P		06 10

J33A	**Davis** baz=151	**72.20**	**337**	P		**P**	**06 11 08.5**	**-0.1**
H36A	**Jessenland, He** baz=154	**72.31**	**340**	P		**P**	**06 11 09.5**	**+0.3**
WUAZ	**Wupatki** baz=138	**72.39**	**323**	P		**P**	**06 11 12.1**	**+2.0**
ECSD	**EROS Data Cent** comp=Z,11nm,0.9s	**72.44**	**338**	*e*P		**P**	**06 11 09.7**	**-0.4**
SPMN	**Marine on St.** baz=155	**72.55**	**341**	P		**P**	**06 11 10.4**	**-0.2**
SPMN	**Marine on St.** comp=Z,26nm,1.4s	**72.55**	**341**	*e*P		**P**	**06 11 11.0**	**+0.3**
DRLN	**Deer Lake** comp=Z,21nm,0.9s	**73.12**	**6**	*e*P		**P**	**06 11 13.7**	**-0.2**
H33A	**Prehn Over Nor** baz=152	**73.32**	**338**	P		**P**	**06 11 15.7**	**+0.5**
F36A	**Milaca** baz=155	**73.34**	**341**	P		**P**	**06 11 15.0**	**-0.3**
G33A	**Ortonville** baz=152	**73.67**	**339**	P		**P**	**06 11 17.2**	**0.0**
SYO	**Syowa Base**	**73.79**	**159**	‖*e*P		**P**	**06 11 17.6**	**-0.1**
D37A	**Cotton** baz=156	**74.20**	**342**	P		**P**	**06 11 20.4**	**+0.2**
O20A	**White River Ci** baz=141	**74.28**	**328**	P		**P**	**06 11 22.6**	**+1.4**
GMRC	**Granite Mounta** baz=134	**74.31**	**320**	P		**P**	**06 11 23.4**	**+2.0**
SRU	**San Rafael Swe** comp=Z,4.9nm,0.6s	**74.62**	**326**	*e*P		**P**	**06 11 24.8**	**+1.6**
EYMN	**Ely** comp=Z,9.2nm,1.3s	**74.67**	**343**	*e*P		**P**	**06 11 22.6**	**-0.3**
MTPU	**Mount Pierson** comp=Z,24nm,1.8s	**74.69**	**324**	*e*P		**P**	**06 11 25.2**	**+1.4**
HEC	**Hector,Ludlow** baz=134	**74.74**	**320**	P		**P**	**06 11 26.1**	**+2.3**
F31A	**Hecla** baz=150	**74.87**	**338**	P		**P**	**06 11 24.5**	**+0.4**
P18A	**Preston Nutter** comp=Z,14nm,0.3s	**74.88**	**327**	*e*P		**P**	**06 11 26.6**	**+1.9**
CCUT	**Cedar City** comp=Z,5.2nm,0.8s	**74.97**	**323**	*e*P		**P**	**06 11 26.4**	**+1.2**
MSU	**Marysvale**	**75.04**	**325**	*e*P		**P**	**06 11 27.4**	**+1.9**
SHPR	**Sheep Range** comp=Z,10nm,1.8s	**75.23**	**322**	*e*P		**P**	**06 11 28.6**	**+2.0**
GSC	**Goldstone, Bar** comp=Z,11nm,1.6s	**75.34**	**320**	*e*P		**P**	**06 11 28.1**	**+0.8**
B35A	**Bob, Littlefor** baz=155	**75.66**	**342**	P		**P**	**06 11 28.4**	**-0.2**
TPNV	**Topopah Spring** comp=Z,15nm,1.8s	**76.16**	**321**	*e*P		**P**	**06 11 33.7**	**+1.8**
AGMN	**Agassiz Nation** baz=153	**76.23**	**341**	P		**P**	**06 11 31.9**	**+0.1**
AGMN	**Agassiz Nation** comp=Z,8.5nm,0.8s	**76.23**	**341**	*e*P		**P**	**06 11 32.0**	**+0.2**
TOA0	**Torodi Ar. Sit** comp=Z,12nm,0.6s	**76.40**	**69**	*e*P		**P**	**06 11 32.8**	**-0.7**
TORD	**Torodi Ar. Bea** comp=Z,8.0nm,0.5s,baz=260,slow=5.6,SNR=39	**76.40**	**69**	P		**P**	**06 11 32.6**	**-0.9**
B32A	**Ashes, Strandq** baz=152	**76.53**	**340**	P		**P**	**06 11 33.4**	**-0.1**
A33A	**Warroad** baz=153	**76.66**	**341**	P		**P**	**06 11 34.2**	**0.0**
R11A	**Troy Canyon, C** comp=Z,4.4nm,1.4s	**76.77**	**323**	*e*P		**P**	**06 11 37.5**	**+2.1**
BW06	**Boulder Array**	**76.94**	**329**	*e*P		**P**	**06 11 36.8**	**+0.5**
PD31	**Pinedale Array**	**76.94**	**329**	*e*P		**P**	**06 11 37.2**	**+1.0**
PDAR	**Pinedale Array** comp=Z,1.0nm,0.5s,baz=128,slow=7.5,SNR=5.9	**76.94**	**329**	P		**P**	**06 11 36.5**	**+0.2**
HWUT	**Hardware Ranch** comp=Z,4.2nm,0.6s	**77.03**	**327**	*e*P		**P**	**06 11 38.0**	**+1.4**
MDND	**Maddock** baz=149	**77.05**	**338**	P		**P**	**06 11 37.4**	**+1.0**
MDND	**Maddock** comp=Z,493nm,0.8s	**77.05**	**338**	*e*P		**P**	**06 11 37.3**	**+0.8**
B30A	**Myrvik Farm, E** baz=151	**77.15**	**339**	P		**P**	**06 11 37.6**	**+0.7**
A31A	**Linda, St. Vin** baz=152	**77.21**	**340**	P		**P**	**06 11 37.4**	**+0.2**
SPUT	**South Promonto** comp=Z,24nm,1.0s	**77.25**	**327**	*e*P		**P**	**06 11 39.4**	**+1.5**
TSUM	**Tsumeb** comp=Z,3.9nm,0.9s	**77.66**	**106**	*e*P		**P**	**06 11 41.0**	**+0.2**
AHID	**Auburn Hatcher** comp=Z,7.4nm,0.6s	**77.67**	**328**	*e*P		**P**	**06 11 41.5**	**+1.2**
HVU	**Hansel Valley** comp=Z,5.2nm,1.0s	**77.76**	**327**	*e*P		**P**	**06 11 42.3**	**+1.6**
B28A	**Dugan Ranch, T** baz=149	**77.83**	**338**	P		**P**	**06 11 41.3**	**+0.6**
A29A	**Manning Farm,** baz=150	**77.86**	**339**	P		**P**	**06 11 41.4**	**+0.5**
ULM	**Lac du Bonnet** comp=Z,11nm,0.6s,baz=152,slow=6.4,SNR=12	**77.98**	**341**	P		**P**	**06 11 41.1**	**-0.4**
ULM	**Lac du Bonnet** comp=Z,11nm,0.6s	**77.98**	**341**	*e*P		**P**	**06 11 41.5**	**+0.1**
REDW	**Red Top Meadow** comp=Z,25nm,1.8s	**78.00**	**329**	*e*P		**P**	**06 11 43.7**	**+1.6**
LOHW	**Long Hollow** comp=Z,3.4nm,0.6s	**78.08**	**329**	*e*P		**P**	**06 11 43.6**	**+1.1**
SCHQ	**Schefferville** comp=Z,3.6nm,0.6s,baz=198,slow=6.9,SNR=5.1	**78.22**	**0**	P		**P**	**06 11 42.6**	**-0.1**
SCHQ	**Schefferville** comp=Z,27nm,1.8s	**78.22**	**0**	*e*P		**P**	**06 11 43.2**	**+0.5**
A27A	**Ledoux Ranch,** baz=148	**78.56**	**338**	P		**P**	**06 11 46.0**	**+1.2**
HLID	**Hailey** baz=137	**79.89**	**327**	P		**P**	**06 11 54.6**	**+2.3**
HLID	**Hailey** comp=Z,4.3nm,0.6s	**79.89**	**327**	*e*P		**P**	**06 11 54.4**	**+2.1**
MCMT	**McKenzie Canyo**	**80.06**	**329**	*e*P		**P**	**06 11 54.4**	**+1.2**
DLMT	**Dillon** comp=Z,9.1nm,1.5s	**80.33**	**329**	*e*P		**P**	**06 11 56.4**	**+1.8**
BOSA	**Boshof** comp=Z,5.3nm,0.7s,baz=268,slow=3.0,SNR=13	**80.80**	**117**	P		**P**	**06 11 58.0**	**+0.4**
BOSA					LR	LR	06 45 12.8	
BOSA	**Boshof** comp=Z,155nm,21.2s,baz=92,slow=34	**80.80**	**117**	*e*P		**P**	**06 11 58.1**	**+0.6**
MAW	**Mawson** comp=Z,4.6nm,0.9s,baz=184,slow=6.6,SNR=6.7	**81.69**	**163**	P		**P**	**06 12 02.5**	**+1.3**
MAW	**Mawson** comp=Z,7.4nm,1.9s	**81.69**	**163**	*e*P		**P**	**06 12 02.4**	**+1.1**
SLMT	**Seeley Lake**	**82.15**	**330**	*e*P		**P**	**06 12 05.1**	**+1.0**
WDC	**Whiskeytown Da** comp=Z,22nm,1.6s	**82.24**	**321**	*e*P		**P**	**06 12 03.7**	**-0.8**
BMO	**Blue Mountains** comp=Z,13nm,1.7s	**82.26**	**326**	*e*P		**P**	**06 12 05.7**	**+1.0**
LBTB	**Lobatse** comp=Z,41nm,1.9s	**82.44**	**114**	*e*P		**P**	**06 12 06.9**	**+0.7**
K05A	**Summer Lake** comp=Z,45nm,2.0s	**82.71**	**323**	*e*P		**P**	**06 12 09.0**	**+1.8**
TAM	**Tamanrasset** comp=Z,12nm,1.2s	**84.20**	**62**	*e*P		**P**	**06 12 15.7**	**+0.6**
FCC	**Fort Churchill** comp=Z,9.3nm,0.8s	**85.20**	**346**	*e*P		**P**	**06 12 19.4**	**+0.4**
PAB	**San Pablo** comp=Z,9.1nm,1.2s	**85.82**	**43**	*e*P		**P**	**06 12 23.5**	**+0.8**
ESDC	**Sonseca Array** comp=Z,1.3nm,0.7s,baz=246,slow=4.2,SNR=6.2	**86.14**	**44**	P		**P**	**06 12 24.7**	**+0.4**
YKA	**Yellowknife Ar** comp=Z,2.4nm,0.5s,baz=135,slow=4.6,SNR=60	**93.88**	**340**	P		**P**	**06 12 59.9**	**+0.1**
GSTR	**Great Sitkin T**	**120.01**	**318**	*e*PKPdf		**PKPdf**	**06 18 31.5**	**-0.7**
KBZ	**Khabaz** comp=Z,2.2nm,0.9s,baz=237,slow=2.7,SNR=4.5	**120.05**	**52**	PKP		**PKPdf**	**06 18 32.6**	**+0.1**
AS01	**Alice Springs**	**128.73**	**205**	*e*PKPdf		**PKPdf**	**06 18 50.2**	**+0.2**
ASAR	**Alice Springs** comp=Z,1.4nm,0.8s,baz=154,slow=2.6,SNR=9.8	**128.75**	**205**	PKP		**PKPdf**	**06 18 50.0**	**+0.1**
ABKAR	**Akbulak array**	**131.48**	**44**	*e*PKPdf		**PKPdf**	**06 18 55.2**	**+1.0**
WB2	**Warramunga Arr**	**131.91**	**207**	*e*PKPdf		**PKPdf**	**06 18 56.5**	**+0.5**
WRA	**Warramunga Arr** comp=Z,0.8nm,0.5s,baz=157,slow=1.8,SNR=16	**131.91**	**207**	PKP		**PKPdf**	**06 18 56.3**	**+0.3**
WRA				SKPbc		**SKPbc**	**06 22 03.5**	**-0.1**
SEY	**Seymchan** comp=Z,1.5nm,0.6s,baz=156,slow=3.7,SNR=16	**132.85**	**337**	PKP		**PKPdf**	**06 18 57.0**	**+0.7**
ZRNK	**Zerenda**	**135.79**	**37**	*e*PKPdf		**PKPdf**	**06 19 03.5**	**+1.3**
ZAA0	**Zalesovo Array**	**143.11**	**28**	*e*PKPpre		PKPpre	06 19 12.7	
ZAA0				*e*PKPdf		PKPbc	06 19 13.0	+0.1
ZALV	**Zalesovo Beam** comp=Z,3.7nm,0.6s,baz=290,slow=4.1,SNR=17	**143.11**	**28**	PKP		PKPbc	06 19 12.9	0.0
KSH	**Kashi**	**144.97**	**54**	*e*PKP		PKPbc	06 19 18.6	-0.5
KSH				*e*PPKP		pPKPdf	06 20 15.8	+5.5
KSH				*e*sPKP			06 20 39.7	
KSH				*e*PP		PP	06 22 48.8	+9.2
KSH				SKS		**SKSdf**	**06 26 03.8**	**-6.3**
MAKZ	**Makanchi**	**146.07**	**39**	*e*PKPdf		**PKPbc**	**06 19 21.9**	**-0.2**
MK31	**Makanchi Array**	**146.26**	**39**	*e*PKPdf		**PKPbc**	**06 19 22.2**	**-0.5**
MKAR	**Makanchi Array** comp=Z,11nm,0.6s,baz=318,slow=2.5,SNR=79	**146.26**	**39**	*e*PKPbc		**PKPbc**	**06 19 21.9**	**-0.8**
MKAR	**Makanchi Array**	**146.28**	**39**	*e*PKPdf		**PKPab**	**06 19 23.1**	**-0.7**
MK01	**Makanchi Array**	**146.28**	**39**	*e*PKPdf		**PKPbc**	**06 19 22.1**	**-0.5**
KLR	**Kul'dur**	**150.60**	**335**	PKPbc		**PKPbc**	**06 19 33.9**	**+0.2**
TLY	**Talaya**	**151.15**	**12**	*e*PKPbc		**PKPbc**	**06 19 36.0**	**+1.1**
USRK	**Ussuriysk Ar.** comp=Z,2.0nm,0.6s,baz=143,slow=41,SNR=4.4	**154.35**	**327**	PKPbc		**PKPbc**	**06 19 42.8**	**+0.6**
SONA1	**Songino Array**	**155.33**	**11**	*e*PKPdf		**PKPdf**	**06 19 35.0**	**-0.2**
SONA1				*e*PKPdif		PKPab	06 19 44.9	-16
SONA1				*e*PKPab		PKPab	06 20 02.2	+0.9
SONM	**Songino Array** comp=Z,1.1nm,0.9s,baz=258,slow=0.7,SNR=4.5	**155.34**	**11**	PKP		**PKPdf**	**06 19 34.7**	**-0.5**
SONM				PKPab		**PKPab**	**06 20 02.1**	**+0.7**
LZH	**Lanzhou** comp=Z,1.6nm,0.7s,baz=318,slow=3.0,SNR=7.6	**165.31**	**31**	*e*PKP		**PKPdf**	**06 19 47.6**	**+1.0**
LZH				pPKP		pPKPdf	06 20 39.0	+1.2
LZH				PKP		**PKPab**	**06 20 48.0**	**+2.8**
LZH				sPKP			06 20 59.5	

WEL 09 06:15:46.5±0.2, 43°.63S×172°.82E, h5km, ML3.6/10, 1C-2D, Error ellipse: s-maj=1.8km s-min=0.8km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MQZ	**McQueen's Vall**	**0.14**	**235**	⇑PG	Pg	06 15 49.5	+0.2
MQZ				SG	Sg	06 15 51.8	+0.5
MQZ				AML	AML	06 15 52.0	
CRLZ	**Canterbury Las**	**0.15**	**290**	⇓PG	Pg	06 15 49.5	0.0
CRLZ				AML	AML	06 15 49.9	
CRLZ				AML	AML	06 15 50.1	
CRLZ				SG	Sg	06 15 51.8	+0.4
CRLZ				AML	AML	06 15 52.0	
OXZ	**Oxford**	**0.64**	**298**	‖P*	Pg	06 15 58.0	0.0
OXZ				SG	Sg	06 16 07.8	+0.7
OXZ				AML	AML	06 16 10.0	
OXZ				AML	AML	06 16 10.0	
LTZ	**Lake Taylor**	**0.93**	**335**	P*	Pg	06 16 04.6	+0.2
LTZ				S*	Sb	06 16 17.2	-0.6
LTZ				AML	AML	06 16 20.5	
RPZ	**Rata Peaks**	**1.28**	**265**	P*	Pg	06 16 09.2	-1.9
KHZ	**Kahutara**	**1.32**	**24**	P*	Pn	06 16 09.8	-1.8
INZ	**Inchbonnie**	**1.35**	**311**	*e*PN	Pn	06 16 11.3	-0.7
WVZ	**Waitaha Valley**	**1.61**	**289**	*e*PN	Pn	06 16 14.4	-1.2
WVZ				AML	AML	06 16 36.7	
THZ	**Tophouse**	**1.86**	**2**	*e*PN	Pn	06 16 17.7	-1.5
THZ				AML	AML	06 16 47.1	
DSZ	**Denniston Nort**	**2.02**	**338**	AML	AML	06 16 51.0	
LBZ	**Lake Benmore**	**2.04**	**247**	AML	AML	06 16 52.7	
LBZ				AML	AML	06 16 54.1	
ODZ	**Otahua Downs**	**2.11**	**227**	PN	Pn	06 16 20.7	-1.7
ODZ				AML	AML	06 16 53.8	
ODZ				AML	AML	06 16 56.8	
ODZ				AML	AML	06 16 56.8	
ODZ				AML	AML	06 16 58.4	
FOZ	**Fox Glacier**	**2.18**	**271**	AML	AML	06 16 50.9	
FOZ				AML	AML	06 16 51.8	

*CSEM **09** 06:15:52.1, 38°.73N×26°.73W, h5km, ML1.7*
PDA 09 06:15:52.1±0.5, 38°.73N×26°.73W, h5km, MD3.5, ML1.7, Error ellipse: s-maj=5.3km s-min=1.7km az=28.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ADH	**Angra Heroismo**	**0.40**	**260**	*e*P	Pg	06 15 58.8	-1.1
ADH				*e*S	Sg	06 16 04.2	-0.9
ADH				A	A	06 16 04.9	
	24nm,0.1s						
ADH	**Angra Heroismo**	**0.40**	**260**	*e*P	Pg	06 15 58.8	-1.1
ADH				*e*S	Sg	06 16 04.2	-0.9
PGRA	**Graciosa**	**1.02**	**288**	*e*S	Sg	06 16 20.3	-4.7
PGRA				A	A	06 16 22.1	
	9.8nm,0.2s						
PGRA	**Graciosa**	**1.02**	**288**	*e*S	Sg	06 16 20.3	-4.7
PMAN	**Manadas**	**1.07**	**265**	*e*P	Pg	06 16 08.8	-3.8
PMAN				*e*S	Sg	06 16 21.5	-5.0
PMAN				A	A	06 16 22.4	
	15nm,0.2s						
PMAN	**Manadas**	**1.07**	**265**	*e*P	Pg	06 16 08.8	-3.8
PMAN				*e*S	Sg	06 16 21.5	-5.0
ROSA	**Rosais**	**1.18**	**270**	*e*P	Pg	06 16 10.5	-4.3
ROSA				*e*S	Sg	06 16 24.4	-5.7
ROSA				A	A	06 16 25.9	
	12nm,0.2s						
ROSA	**Rosais**	**1.18**	**270**	*e*P	Pg	06 16 10.5	-4.3
ROSA				*e*S	Sg	06 16 24.4	-5.7
CMLA	**Cha da Macela**	**1.35**	**135**	*e*S	Sb	06 16 28.4	-7.1
CMLA	**Cha da Macela**	**1.35**	**135**	*e*S	Sb	06 16 28.4	-7.1
PCAN	**Candelaria**	**1.40**	**260**	*e*S	Sb	06 16 29.6	-7.3
PCAN				A	A	06 16 33.1	
	2.8nm,0.1s						
PCAN	**Candelaria**	**1.40**	**260**	*e*S	Sb	06 16 29.6	-7.3

WEL 09 06:16:37.6±0.4, 40°.20S×173°.52E, h175km±3km, ML3.6/17, 4C, Error ellipse: s-maj=3.6km s-min=2.7km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DUWZ	**D'Urville Isla**	**0.67**	**153**	⇑PN	Pn	06 17 02.8	+0.1
DUWZ				SN	Sn	06 17 20.9	-1.2
NNZ	**Nelson**	**1.02**	**186**	⇑PN	Pn	06 17 04.7	-0.2
NNZ				SN	Sn	06 17 25.4	-0.8
TCW	**Tory Channel**	**1.16**	**151**	PN	Pn	06 17 07.2	+1.2
TCW				SN	Sn	06 17 26.6	-1.6
TCW				AML	AML	06 17 27.5	
WAZ	**Wanganui**	**1.21**	**69**	PN	Pn	06 17 06.9	+0.4
KIW	**Kapiti Island**	**1.25**	**122**	PN	Pn	06 17 06.7	0.0
KIW				AML	AML	06 17 27.2	
KIW				AML	AML	06 17 28.9	
TUWZ	**Tuamarina**	**1.27**	**166**	PN	Pn	06 17 07.0	+0.1
TUWZ				AML	AML	06 17 29.4	
TUWZ				AML	AML	06 17 31.2	
OGWZ	**Otaki Gorge**	**1.40**	**117**	PN	Pn	06 17 06.8	+0.5
OGWZ				AML	AML	06 17 32.7	
OGWZ				AML	AML	06 17 32.8	
WEL	**Wellington**	**1.44**	**139**	PN	Pn	06 17 08.6	+0.1
WEL				AML	AML	06 17 32.9	
WEL				AML	AML	06 17 32.9	
WEL				AML	AML	06 17 33.3	
VRZ	**Vera Road**	**1.44**	**42**	PN	Pn	06 17 07.2	-1.3
CAW	**Cannon Point**	**1.48**	**128**	PN	Pn	06 17 08.9	0.0
CAW				AML	AML	06 17 33.7	
CAW				AML	AML	06 17 33.7	
BSWZ	**Blackbirch Sta**	**1.53**	**170**	PN	Pn	06 17 09.9	+0.5
BHW	**Baring Head**	**1.58**	**140**	PN	Pn	06 17 09.7	-0.2
BHW				AML	AML	06 17 34.0	
BHW				AML	AML	06 17 34.7	
THZ	**Tophouse**	**1.63**	**196**	PN	Pn	06 17 09.9	-0.5
MRZ	**Mangatainoka R**	**1.64**	**107**	PN	Pn	06 17 10.3	-0.1
MRZ				AML	AML	06 17 36.1	
MRZ				AML	AML	06 17 36.4	
MSWZ	**Moikau Station**	**1.79**	**133**	PN	Pn	06 17 11.8	-0.2
MSWZ				AML	AML	06 17 36.8	
MSWZ				AML	AML	06 17 37.9	
WNVZ	**Wahianoa**	**1.82**	**62**	PN	Pn	06 17 11.9	-0.7
FWVZ	**Far West T-bar**	**1.83**	**59**	PN	Pn	06 17 11.9	-0.9
TSZ	**Takapari Road**	**1.88**	**86**	PN	Pn	06 17 12.3	-0.6
TSZ				AML	AML	06 17 13.0	
TIWZ	**Tintock**	**1.89**	**108**	PN	Pn	06 17 12.9	-0.2
TIWZ				AML	AML	06 17 40.1	
TIWZ				AML	AML	06 17 40.2	
MOVZ	**Moawhango**	**1.89**	**66**	PN	Pn	06 17 12.0	-1.2
PLWZ	**Palliser**	**1.89**	**137**	PN	Pn	06 17 12.8	-0.4
PLWZ				AML	AML	06 17 38.9	
PLWZ				AML	AML	06 17 39.5	
WTVZ	**West Tongariro**	**1.93**	**56**	PN	Pn	06 17 12.7	-1.0
DSZ	**Denniston Nort**	**2.02**	**220**	⇑PN	Pn	06 17 13.9	-0.6
TRWZ	**Traveller**	**2.03**	**127**	PN	Pn	06 17 14.6	0.0
TRWZ				AML	AML	06 17 43.9	
TRWZ				AML	AML	06 17 44.0	
PNHZ	**Pukenui**	**2.08**	**83**	PN	Pn	06 17 14.5	-0.7
PNHZ				AML	AML	06 17 14.8	
PNHZ				AML	AML	06 17 47.0	
BHHZ	**Black Hill Sta**	**2.08**	**71**	PN	Pn	06 17 13.9	-1.4
BFZ	**Birch Farm**	**2.13**	**104**	PN	Pn	06 17 15.3	-0.4
BFZ				AML	AML	06 17 42.8	
BFZ				AML	AML	06 17 45.1	
CPWZ	**Castlepoint**	**2.16**	**110**	AML	AML	06 17 47.3	
KHZ	**Kahutara**	**2.21**	**180**	AML	AML	06 16 38.6	
KHZ				AML	AML	06 16 42.0	
KHZ				AML	AML	06 16 42.0	
KHZ				⇑PN	Pn	06 17 16.1	-0.5
WPHZ	**Waipukurau**	**2.24**	**87**	PN	Pn	06 17 16.3	-0.7
KRHZ	**Kereru**	**2.26**	**77**	PN	Pn	06 17 16.2	-1.0
BKZ	**Black Stump Fm**	**2.52**	**67**	PN	Pn	06 17 18.7	-1.6
PXZ	**Pawanui**	**2.57**	**87**	PN	Pn	06 17 19.9	-0.8

IDC 09 06:29:41.9±9.4, 19°.58S×178°.13W, h562km±106km, mb2.7/3, mb1 3.1/3, mb1mx2.8/23, mbtmp3.7/3, Error ellipse: s-maj=151.8km s-min=40.5km az=160.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**44.62**	**261**	P	P	06 37 04.9	-0.2
	0.6nm,0.4s,baz=97,slow=7.8,SNR=15						
ASAR	**Alice Springs**	**44.62**	**256**	P	P	06 37 05.2	0.0
	1.3nm,0.7s,baz=96,slow=7.7,SNR=15						
ASAR				PcP	PcP	06 38 35.3	-0.5
	0.3nm,0.5s,baz=106,slow=4.0,SNR=4.0						
TXAR	**Lajitas Array**	**86.66**	**57**	P	P	06 41 26.7	-0.1
	0.1nm,0.6s,baz=204,slow=5.9,SNR=2.9						
GERES	**GERESS Array B**	**149.29**	**345**	PKPbc	PKPbc	06 48 27.3	-0.4
	0.3nm,0.4s,baz=16,slow=1.9,SNR=4.1						

*DDA **09** 06:34:53.7, 36°.61N×28°.41E, h6km, Md2.6*
*ISCJB **09** 06:34:54.8±0.8, 36°.55N±0°.05×28°.38E±0°.05, h28km±5km, Error ellipse: s-maj=8.4km s-min=6.0km az=11.4*
*CSEM **09** 06:34:54.8±0.2, 36°.56N×28°.38E, h26km±2km, MD2.7, Error ellipse: s-maj=4.2km s-min=3.0km az=1.0*
*ISK **09** 06:34:54.2, 36°.55N×28°.38E, h24km, MD2.7*
ISC 09 06:34:54.4±1.1, 36°.56N±0°.04×28°.38E±0°.03, h29km±9km, n21, σ0°.52/34, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DALY	**Dalyan (Mu˘la**	**0.34**	**40**	*e*PG	**Pb**	**06 35 02.2**	**-0.1**
DALY				*e*SG	**Sn**	**06 35 08.5**	**-0.9**
DALY	**Dalyan (Mu˘la**	**0.34**	**40**	*e*Pg	**Pb**	**06 35 02.2**	**-0.1**
DALY				*e*Sg	**Sn**	**06 35 08.5**	**-0.9**
TURN	**Turunc**	**0.36**	**30**	*i* P	**Pb**	**06 35 02.4**	**-0.3**
TURN				*i* S	**Sb**	**06 35 08.0**	**-0.3**
YER	**Yerkesik**	**0.58**	**353**	*e*PG	**Pn**	**06 35 06.5**	**-0.3**
YER				*e*SG	**Sn**	**06 35 15.9**	**+0.4**
YER	**Yerkesik**	**0.58**	**353**	*e*Pg	**Pn**	**06 35 06.5**	**-0.3**
YER				*e*Sg	**Sn**	**06 35 15.9**	**+0.4**
BDRM	**Kayabasi**	**0.91**	**304**	*i* P	**Pn**	**06 35 11.7**	**+0.4**
BDRM				*i* S	**Sn**	**06 35 23.5**	**+0.1**
BDRM	**Kayabasi**	**0.91**	**304**	P	**Pn**	**06 35 11.7**	**+0.4**
BDRM				S	**Sn**	**06 35 23.5**	**+0.1**
BODT	**Bodrum**	**0.99**	**301**	*e*PG	**Pb**	**06 35 13.1**	**0.0**
BODT	**Bodrum**	**0.99**	**301**	*e*Pg	**Pb**	**06 35 13.1**	**0.0**
AKAS	**Kas**	**1.04**	**108**	*i* P	**Pn**	**06 35 13.3**	**+0.2**
AKAS				*i* S	**Sn**	**06 35 27.5**	**+0.6**
AKAS	**Kas**	**1.04**	**108**	P	**Pn**	**06 35 13.4**	**+0.2**
AKAS				S	**Sn**	**06 35 27.5**	**+0.6**
GLHS	**Glhisar (BURDU**	**1.08**	**56**	*e*PN	**Pb**	**06 35 14.4**	**-0.2**
GLHS	**Glhisar (BURDU**	**1.08**	**56**	*e*Pn	**Pb**	**06 35 14.4**	**-0.2**
GOLH	**Golhisar**	**1.17**	**54**	*i* P	**Pb**	**06 35 15.6**	**-0.4**
GOLH				*i* S	**Sb**	**06 35 31.7**	**+0.9**
GOLH	**Golhisar**	**1.17**	**54**	P	**Pb**	**06 35 15.6**	**-0.4**
GOLH				S	**Sb**	**06 35 31.7**	**+0.9**
DNZL	**Cakiroluk**	**1.25**	**25**	*i* P	**Pb**	**06 35 16.9**	**-0.6**
DNZL				*i* S	**Sn**	**06 35 31.9**	**-0.2**
DNZL	**Cakiroluk**	**1.25**	**25**	P	**Pb**	**06 35 16.9**	**-0.6**
DNZL				S	**Sn**	**06 35 32.0**	**-0.2**
KARP	**Karpathos**	**1.41**	**225**	*e*PN	**Pb**	**06 35 19.2**	**-0.9**
KARP	**Karpathos**	**1.41**	**225**	*e*Pn	**Pb**	**06 35 19.2**	**-0.9**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**345**	*e*PN	**Pn**	**06 35 18.9**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**345**	*e*Pn	**Pn**	**06 35 18.9**	**+0.2**

*ISK **09** 06:39:42.8, 39°.24N×28°.85E, h2km, MD2.8*
*DDA **09** 06:39:43.0, 39°.23N×28°.91E, h12km, Md2.7*
*CSEM **09** 06:39:43.6±0.1, 39°.23N×28°.87E, h5km, MD2.7, Error ellipse: s-maj=2.3km s-min=2.1km az=162.0*
ISC 09 06:39:43.5±0.9, 39°.23N±0°.02×28°.88E±0°.02, h12km±9km, n72, σ0°.67/88, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.23**	**213**	*i* P	**Pg**	**06 39 48.6**	**+0.2**
DEMI				*i* S	**Sg**	**06 39 51.9**	**+0.2**
DEMI	**Demirci**	**0.23**	**213**	P	**Pg**	**06 39 48.6**	**+0.2**
DEMI				S	**Sg**	**06 39 51.9**	**+0.2**
GEDZ	**Gediz**	**0.46**	**114**	*e*PG	**Pg**	**06 39 52.6**	**+0.1**
GEDZ	**Gediz**	**0.46**	**114**	*e*Pg	**Pg**	**06 39 52.6**	**+0.1**
GDZ	**Gediz**	**0.49**	**107**	*i* P	**Pg**	**06 39 52.9**	**-0.3**
GDZ				*i* S	**Sg**	**06 39 59.1**	**-0.6**
GDZ	**Gediz**	**0.49**	**107**	P	**Pg**	**06 39 52.9**	**-0.3**
GDZ				S	**Sg**	**06 39 59.1**	**-0.6**
TVSB

GULT	**Gulveren**	**1.74**	**46**	*e*Pn	**Pb**	**06 40 15.0**	**-0.4**
ISK	**Istanbul-Kandi**	**1.84**	**4**	*e*PN	**Pb**	**06 40 16.3**	**-0.7**
ISK	**Istanbul-Kandi**	**1.84**	**4**	*e*Pn	**Pb**	**06 40 16.3**	**-0.7**
BGKT	**Bogazkoy**	**1.95**	**358**	*e*PN	**Pb**	**06 40 18.1**	**-0.8**
BGKT	**Bogazkoy**	**1.95**	**358**	*e*Pn	**Pb**	**06 40 18.1**	**-0.8**
RKY	**Sarkoy-Tekirda**	**1.95**	**319**	*e*PN	**Pn**	**06 40 17.6**	**+1.1**
RKY	**Sarkoy-Tekirda**	**1.95**	**319**	*e*Pn	**Pn**	**06 40 17.6**	**+1.1**
DGB	**˙zmir**	**1.96**	**234**	*i* P	**Pb**	**06 40 19.6**	**+0.5**
DGB				*i* S	**Sg**	**06 40 45.9**	**-0.5**
KLYT	**Kilyos**	**2.02**	**4**	*e*PN	**Pn**	**06 40 18.9**	**+1.5**
KLYT	**Kilyos**	**2.02**	**4**	*e*Pn	**Pn**	**06 40 18.9**	**+1.5**
SVRH	**Sivrihisar-ESK**	**2.06**	**83**	*e*PN	**Pb**	**06 40 20.0**	**-0.9**
SVRH	**Sivrihisar-ESK**	**2.06**	**83**	*e*Pn	**Pb**	**06 40 20.0**	**-0.9**
MDUB	**Mudurnu**	**2.17**	**55**	*e*PN	**Pn**	**06 40 21.3**	**+1.7**
MDUB	**Mudurnu**	**2.17**	**55**	*e*Pn	**Pn**	**06 40 21.3**	**+1.7**

GUC ***09*** *06:42:27.5±0.3, 34˚.07S×72˚.22W, h18km±2km, ML2.8*
ISC 09 06:42:24.8±3.4, 34˚.06S±0˚.04×72˚.4W±0˚.2, h10km±21km, n16, σ1º91/22, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.46**	**136**	*i* P	**Pb**	**06 42 35.5**	**+0.5**
CHPI				*i* S	**Sb**	**06 42 41.7**	**-0.2**
NICH	**Los Niches**	**1.34**	**135**	*i* P	**Pb**	**06 42 50.3**	**+0.2**
NICH				*i* S	**Sg**	**06 43 07.9**	**-0.1**
ANTU	**Antumapu**	**1.54**	**72**	*i* P	**Pb**	**06 42 53.4**	**-0.1**
ROC1	**El Roble**	**1.57**	**47**	*e*P	**Pg**	**06 42 56.1**	**+1.1**
ROC1				*e*S	**Sg**	**06 43 17.0**	**+1.5**
ROCH	**El Roble**	**1.58**	**47**	*i* P	**Pb**	**06 42 55.3**	**+1.0**
ROCH				*i* S	**Sg**	**06 43 16.3**	**+0.7**
ROCH				IAML		06 43 25.2	
	comp=N,174nm,0.4s						
ROCH				*e*		06 43 33.5	
CLCH	**Cerro Calan**	**1.68**	**67**	*i* P	**Pb**	**06 42 55.7**	**-0.1**
CLCH				*i* S	**Sg**	**06 43 17.2**	**-1.5**
CLCH				IAML		06 43 30.4	
	comp=E,232nm,0.5s						
PEL	**Peldehue**	**1.69**	**58**	*i* P	**Pb**	**06 42 56.1**	**0.0**
PEL				*i* S	**Sg**	**06 43 17.9**	**-1.2**
PEL				IAML		06 43 27.9	
	comp=N,238nm,1.2s						
AUSP	**Uspallata**	**3.11**	**55**	*e*P	**Pb**	**06 43 22.7**	**+2.3**
AUSP				*e*S	**Sg**	**06 44 01.8**	**-3.0**
AAGR	**Agrelo**	**3.12**	**73**	*e*P	**Pb**	**06 43 22.6**	**+2.0**
ARCO	**CERRO ARCO**	**3.13**	**68**	*e*P	**Pg**	**06 43 24.0**	**-0.8**
ARCO				IAML		06 43 26.7	
	comp=Z,26nm,0.5s						
ASAL	**Salagasta**	**3.31**	**65**	*e*P	**Pg**	**06 43 27.2**	**-1.2**
ASAL				*e*S	**Sg**	**06 44 15.5**	**+4.2**
RTLS	**Leoncito**	**3.44**	**50**	*e*P	**Pb**	**06 43 25.9**	**-0.2**
RTLV	**Cerro Valdivia**	**3.90**	**57**	*e*P	**Pb**	**06 43 35.3**	**+1.4**
RTLL	**Cerro Villicun**	**4.28**	**52**	*e*P	**Pb**	**06 43 36.1**	**-4.1**
AMOG	**MOGNA**	**4.53**	**48**	*e*P	Pn	06 43 38.8	+5.2
AGUA	**GUANDACOL**	**5.64**	**37**	*e*P	Pn	06 43 54.5	+5.7

IDC 09 06:53:15.6±1.5, 28˚.32S×177˚.02W, h0km, mb4.2/3, mb1 4.4/3, mb1mx4.0/38, mbtmp4.2/3, Error ellipse: s-maj=58.6km s-min=20.0km az=134.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.22**	**220**	Pn	Pb	06 53 39.5	0.0
	102nm,0.3s,baz=258,slow=18,SNR=4.4						
RAO				Sn	Sn	06 53 58.0	+0.9
	254nm,0.3s,baz=46,slow=20,SNR=5.5						
STKA	**Stephens Creek**	**35.83**	**254**	P	P	07 00 17.2	+0.2
	6.1nm,0.8s,baz=104,slow=9.5,SNR=10						
ASAR	**Alice Springs**	**44.12**	**264**	P	P	07 01 25.9	-0.2
	2.0nm,0.7s,baz=97,slow=8.0,SNR=24						
WRA	**Warramunga Arr**	**44.92**	**270**	P	P	07 01 31.6	-0.9
	2.5nm,0.8s,baz=108,slow=7.7,SNR=8.9						
MKAR	**Makanchi Array**	**117.08**	**311**	PKP	PKPdf	07 12 02.4	0.0
	0.9nm,1.0s,baz=87,slow=2.7,SNR=3.7						
KURBB	**Kurchatov Arra**	**120.26**	**314**	PKP	PKPdf	07 12 08.5	+0.2
	0.3nm,0.3s,baz=104,slow=1.9,SNR=4.2						
FINES	**FINESS Array B**	**143.47**	**342**	PKP	PKPdf	07 12 50.3	-1.2
	1.4nm,0.9s,baz=44,slow=11,SNR=4.6						
KBZ	**Khabaz**	**144.62**	**307**	PKP	PKPdf	07 12 55.1	+1.0
	3.2nm,0.9s,baz=2.5,slow=3.8,SNR=6.7						
NB2	**NORSAR Subarra**	**146.82**	**353**	PKP	PKPab	07 13 05.4	+5.0
	comp=Z,5.5nm,1.0s,baz=9.3,slow=3.7						
NOA	**NORSAR Array B**	**146.82**	**353**	PKPbc	PKPbc	07 12 59.1	0.0
	comp=Z,0.7nm,0.9s,baz=15,slow=3.7,SNR=2.4						
AKASG	**Malin Array Be**	**150.12**	**326**	PKPbc	PKPbc	07 13 08.4	+0.4
	comp=Z,0.5nm,0.4s,baz=47,slow=2.7,SNR=5.5						
ESDC	**Sonseca Array**	**167.30**	**25**	PKPab	PKPab	07 14 25.9	-2.5
	comp=Z,0.6nm,0.5s,baz=325,slow=4.4,SNR=5.0						

IDC ***09*** *06:53:43.8±0.4, 21˚.16S×174˚.50W, h0km, mb5.0/32, mb1 5.0/33, mb1mx5.0/43, mbtmp4.9/33, ML5.1/1, MS5.3/19, Ms1 5.3/19, ms1mx5.2/26, Error ellipse: s-maj=15.3km s-min=12.9km az=124.0*

ISCJB ***09*** *06:53:45.6±0.1, 21˚.28S±0˚.03×174˚.44W±0˚.02, h20km, mb5.4/282, MS5.6/535, Error ellipse: s-maj=4.5km s-min=2.6km az=146.9*

BJI ***09*** *06:53:45.9, 20˚.85S×174˚.24W, h15km, mb5.4/53, mB6.0/63, Ms5.6/74, Ms7 5.4/68*

NEIC ***09*** *06:53:46.9±0.1, 21˚.21S×174˚.54W, h16km, mb5.5/228, MS5.6/299, MW5.9, MW5.8, Error ellipse: s-maj=4.2km s-min=2.2km az=133.0, Moment Tensor Solution. s17 Moment tensor: Scale 10¹⁷Nm; Mrr5.09; Mθθ0.43; Mθθ-5.52; Mtθ-1.58; Mθφ-2.55; Mφr-0.66; Best double couple: M₀6.20000×10¹⁷ NP1:φ₁216.00000°, δ53.00000°, λ111.00000°. NP2:φ₂4.00000°, δ42.00000°, λ65.00000°. Principal axes: T 5.5800, Plg73.0000°, Azm182.0000°; N 1.0100, Plg16.0000°, Azm23.0000°; P -6.5900, Plg6.0000°, Azm291.0000°;*

NEIC Felt at Vaini.

GCMT ***09*** *06:53:46.9±0.1, 21˚.43S×173˚.94W, h18km, MW5.8/135, Moment Tensor Solution. s117,c242; s135,c411; Duration: ≥≈0 Moment tensor: Scale 10¹⁷Nm; Mrr5.69±.06; Mθθ-0.66±.05; Mφφ-5.03±.05; Mtθ1.95±.12; Mθφ-2.65±.03; Mφr3.15±.11; Best double couple: M₀7.04000×10¹⁷ NP1:φ₁29.00000°, δ61.00000°, λ94.00000°. NP2:φ₂201.00000°, δ29.00000°, λ83.00000°. Principal axes: T 6.7580, Plg74.0000°, Azm309.0000°; N 0.5660, Plg3.0000°, Azm207.0000°; P -7.3220, Plg16.0000°, Azm116.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC ***09*** *06:53:47.0±0.0, 21˚.22S×174˚.49W, h15km, Moment Tensor Solution. s12 Moment tensor: Scale 10¹⁷Nm; Mrr4.26; Mθθ2.51; Mφφ-6.77; Mtθ3.47; Mθφ-3.00; Mφr3.00; Best double couple: M₀7.90000×10¹⁷ NP1:φ₁44.00000°, δ68.00000°, λ123.00000°. NP2:φ₂162.00000°, δ39.00000°, λ35.00000°. Principal axes: T 6.9900, Plg54.0000°, Azm356.0000°; N 1.8500, Plg31.0000°, Azm211.0000°; P -8.8400, Plg17.0000°, Azm110.0000°;*

MOS ***09*** *06:53:48.4±1.1, 21˚.11S×174˚.61W, h33km, mb5.6/67, MS5.5/86 Error ellipse: s-maj=9.4km s-min=7.0km az=71.7*

ISC 09 06:53:48.4±0.4, 21˚.31S±0˚.04×174˚.37W±0˚.05, h29km±2km, h29km:pP-P, n1387, σ1º61/1178, mb5.5/280, MS5.6/535, 59C-27D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.76**	**19**	Pn	Pn	06 55 32.5	-7.0
	56nm,0.3s,baz=150,slow=2.4,SNR=26						
AFI				Sn	Sn	06 56 53.6	-13
	70nm,0.3s,baz=40,slow=22,SNR=8.1						
AFI				LR	LR	06 58 25.5	
	comp=Z,17μm,19.8s,baz=194,slow=37						
MSVF	**Nonsavu**	**7.98**	**295**	*e*P	Pn	06 55 48.0	+5.5
MSVF	**Nonsavu**	**7.98**	**295**	*e*Pn	Pn	06 55 48.0	+5.5
RAO	**Raoul Island**	**8.53**	**201**	Pn	**Pn**	**06 55 47.4**	**-2.5**
	75nm,0.3s,baz=26,slow=22,SNR=1.8						
RAO				Sn	**Sn**	**06 57 23.1**	**-2.1**
	132nm,0.3s,baz=278,slow=21,SNR=4.8						
RAO				LR	LR	06 58 57.7	
	comp=Z,10μm,18.2s,baz=27,slow=36						
RAO	**Raoul Island**	**8.53**	**201**	*e*P	**Pn**	**06 55 49.1**	**-0.9**
RAO				*e*SN	**Sn**	**06 57 24.8**	**-0.4**
RAO	**Raoul Island**	**8.53**	**201**	*e*Pn	**Pn**	**06 55 49.0**	**-0.9**
RAO				*e*Sn	**Sn**	**06 57 24.8**	**-0.4**
RAR	**Rarotonga**	**13.61**	**92**	Pn	Pn	06 56 50.2	-9.3
	28nm,0.3s,baz=249,slow=11,SNR=23						
RAR				Sn	Sn	06 59 07.3	-22
	6.7nm,0.3s,baz=68,slow=23,SNR=4.8						
RAR				LR	LR	07 02 45.1	
	comp=Z,11μm,18.2s,baz=236,slow=39						
OUZ	**Omahuta**	**17.42**	**215**	*e*Pn	**Pn**	**06 57 49.2**	**0.0**
	120nm,1.3s						
DZM	**Mont Dzumac**	**17.85**	**264**	P	**P**	**06 57 55.4**	**+0.2**
	1.8nm,0.3s,baz=83,slow=17,SNR=14						
DZM				LR	LR	07 03 44.4	
	comp=Z,20μm,19.7s,baz=94,slow=34						
DZM	**Mont Dzumac**	**17.85**	**264**	*e*P	**P**	**06 57 56.0**	**+0.8**
	400nm,1.4s						
DZM				*e*LR	LR	07 02 01.0	
	19μm,21.0s						
DZM	**Mont Dzumac**	**17.85**	**264**	*e*Pn	**P**	**06 57 55.4**	**+0.2**
	88nm,0.8s						
URZ	**Urewera**	**18.42**	**202**	P	**P**	**06 58 01.2**	**-0.1**
	6.1nm,0.3s,baz=301,slow=6.3,SNR=13						
URZ				S	Sn	07 01 14.6	-12
	2.2nm,0.3s,baz=255,slow=23,SNR=4.8						
URZ	**Urewera**	**18.42**	**202**	*e*P	**Pn**	**06 58 01.5**	**0.0**
	64nm,0.7s						
URZ				S	Sn	07 01 14.6	-12
BKZ	**Black Stump Fm**	**19.45**	**202**	*e*P	**P**	**06 58 13.1**	**+0.5**
	55nm,0.7s						
BKZ				*e*Sn	S	07 01 39.7	-11
HIZ	**Hauiti**	**19.50**	**206**	*e*P	**Pn**	**06 58 14.4**	**0.0**
	180nm,0.9s						
BFZ	**Birch Farm**	**20.89**	**200**	*e*P	**P**	**06 58 29.2**	**+1.0**
	179nm,0.8s						
BFZ				LR	LR		
	comp=Z,16μm,18.0s						
SNZO	**South Karori**	**21.98**	**202**	*e*P	**P**	**06 58 41.0**	**+1.2**
	comp=Z,229nm,1.1s						
SNZO				LR	LR		
	comp=Z,11μm,19.0s						
THZ	**Tophouse**	**23.04**	**205**	*e*P	**P**	**06 58 51.2**	**0.0**
THZ				LR	LR		
	comp=Z,14μm,21.0s						
TBI	**Tubuai**	**23.13**	**100**	*e*P	**P**	**06 58 51.2**	**-1.0**
	comp=Z,309nm,1.1s						
TBI				*e*S	**S**	**07 02 56.0**	**-5.8**
	comp=Z,16μm,27.6s						
TBI				*e*LR	LR	07 04 20.6	
	comp=Z,23μm,29.0s,baz=275						
TBI	**Tubuai**	**23.13**	**100**	*e*T	T	07 22 36.2	
	comp=Z,13nm,0.3s						
KHZ	**Kahutara**	**23.37**	**203**	*e*P	**P**	**06 58 53.5**	**-0.8**
	comp=Z,235nm,1.4s						
KHZ				LR	LR		
	comp=Z,9μm,19.0s						
PAE	**Paea**	**23.64**	**85**	*e*P	**P**	**06 58 55.6**	**-1.7**
	comp=Z,39nm,1.2s						
PAE	**Paea**	**23.64**	**85**	*e*T	T	07 23 10.2	
	comp=Z,11nm,0.3s						
PPT2	**Papeete2**	**23.66**	**85**	*e*P	**P**	**06 58 56.3**	**-1.3**
	comp=Z,194nm,1.3s						
PPT2				*e*S	**S**	**07 03 04.9**	**-5.8**
	comp=Z,19μm,27.6s						
PPT2				*e*LR	LR	07 04 31.0	
	comp=Z,26μm,27.5s,baz=254						
PPT2	**Papeete2**	**23.66**	**85**	*e*T	T	07 23 13.0	
	comp=Z,8.4nm,0.3s						
PPT	**Papeete**	**23.67**	**85**	LR	LR	07 07 59.2	
	comp=Z,7μm,18.0s,baz=264,slow=36						
PPT	**Papeete**	**23.67**	**85**	*e*P	**P**	**06 58 56.3**	**-1.3**
PPT	**Papeete**	**23.67**	**85**	*e*P	**P**	**06 58 56.3**	**-1.3**
TIAR	**Tiarei**	**23.88**	**85**	*e*P	**P**	**06 58 58.0**	**-1.6**
	comp=Z,60nm,1.0s						
TIAR	**Tiarei**	**23.88**	**85**	*e*T	T	07 23 28.7	
	comp=Z,6.4nm,0.3s						
TVO	**Taravao**	**23.92**	**86**	*e*P	**P**	**06 58 58.5**	**-1.5**
	comp=Z,66nm,1.3s						
TVO	**Taravao**	**23.92**	**86**	*e*T	T	07 23 31.8	
	comp=Z,3.0nm,0.4s						
LTZ	**Lake Taylor**	**24.16**	**205**	*e*P	**P**	**06 59 03.0**	**+1.0**
	comp=Z,139nm,0.9s						
LTZ				LR	LR		
	comp=Z,12μm,20.0s						
CRLZ	**Canterbury Las**	**24.70**	**203**	PFAKE		06 59 20.0	+13
CRLZ				LR	LR		
	comp=Z,10μm,19.0s						
OXZ	**Oxford**	**24.71**	**204**	*e*P	**P**	**06 59 06.8**	**-0.1**
	comp=Z,155nm,1.0s						
OXZ				LR	LR		
	comp=Z,9μm,18.0s						
MQZ	**McQueen's Vall**	**24.81**	**203**	*e*P	**P**	**06 59 08.6**	**+0.8**
	comp=Z,88nm,1.1s						
MQZ				LR	LR		
	comp=Z,11μm,19.0s						
MEH	**Mehetia**	**25.01**	**87**	*e*P	**P**	**06 59 08.7**	**-1.2**
	comp=Z,98nm,1.5s						
MEH	**Mehetia**	**25.01**	**87**	*e*T	T	07 24 53.9	
	comp=Z,40nm,0.3s						
RPZ	**Rata Peaks**	**25.42**	**205**	P	**P**	**06 59 13.7**	**+0.2**
	comp=Z,25nm,0.7s,baz=9.9,slow=3.9,SNR=3.7						
RPZ				LR	LR	07 09 07.3	
	comp=Z,17μm,19.1s,baz=22,slow=36						
RPZ	**Rata Peaks**	**25.42**	**205**	*e*P	**P**	**06 59 13.6**	**+0.2**
	comp=Z,84nm,0.6s						
TARA	**Tarawa**	**25.73**	**330**	PFAKE		06 59 30.0	+14
TARA				LR	LR		
	comp=Z,18μm,20.0s						
FOZ	**Fox Glacier**	**25.78**	**207**	*e*P	**P**	**06 59 17.6**	**+1.0**
	comp=Z,308nm,0.9s						
FOZ				LR	LR		
	comp=Z,20μm,18.0s						
LHI	**Lord Howe Isla**	**25.81**	**241**	PFAKE		06 59 30.0	+13
LHI				LR	LR		
	comp=Z,7μm,22.0s						
LBZ	**Lake Benmore**	**26.33**	**206**	*e*P	**P**	**06 59 22.9**	**+1.2**
	comp=Z,291nm,1.7s						
LBZ				LR	LR		
	comp=Z,22μm,18.0s						
ODZ	**Otahua Downs**	**26.70**	**204**	*e*P	**P**	**06 59 26.8**	**+1.9**
	comp=Z,93nm,1.1s						
ODZ				*e*pP	**pP**	**06 59 32.3**	**-1.2**
ODZ				LR	LR		
	comp=Z,11μm,18.0s						
WKZ	**Wanaka**	**27.17**	**206**	*e*P	**P**	**06 59 30.1**	**+0.9**
	comp=Z,338nm,1.3s						
WKZ				LR	LR		
	comp=Z,15μm,19.0s						
HNR	**Honiara**	**27.38**	**292**	PFAKE		06 59 40.0	+8.6
HNR				LR	LR		
	comp=Z,10μm,18.0s						
MLZ	**Mavora Lakes**	**27.98**	**207**	*e*P	**P**	**06 59 37.3**	**+0.8**
	comp=Z,96nm,1.0s						
MLZ				LR	LR		
	comp=Z,14μm,20.0s						
DCZ	**Deep Cove**	**28.47**	**208**	*e*P	**P**	**06 59 41.6**	**+0.9**
	comp=Z,120nm,1.2s						
DCZ				LR	LR		
	comp=Z,8μm,19.0s						
XMAS	**Kiritimati**	**28.52**	**38**	PFAKE		06 59 50.0	+8.5
XMAS				LR	LR		
	comp=Z,9μm,18.0s						
ARMA	**Armidale**	**31.81**	**246**	P	**P**	**07 00 10.8**	**+0.1**
	baz=32,SNR=5.1						
ARMA	**Armidale**	**31.81**	**246**	*e*P	**P**	**07 00 09.9**	**-0.8**
	comp=Z,26nm,1.1s						
ARMA				LR	LR		
	comp=Z,9μm,18.0s						
EIDS	**Eidsvold**	**31.92**	**256**	P	**P**	**07 00 11.5**	**-0.1**
	baz=32,SNR=5.9						
EIDS	**Eidsvold**	**31.92**	**256**	*e*P	**P**	**07 00 10.8**	**-0.8**
	comp=Z,29nm,1.0s						
EIDS				LR	LR		
	comp=Z,9μm,18.0s						
MGCD	**Mangrove Creek**	**32.75**	**241**	P	**P**	**07 00 20.0**	**+1.3**
	baz=33,SNR=5.8						
RMQ	**Roma**	**34.02**	**254**	P	**P**	**07 00 30.1**	**+0.1**
	baz=34,SNR=8.5						
KWAJ	**Kwajalein Atol**	**34.77**	**328**	PFAKE		07 00 50.0	+14
KWAJ				LR	LR		
	comp=Z,9μm,19.0s						
CAN	**Canberra**	**34.93**	**238**	*e*P	**P**	**07 00 36.8**	**-0.9**
CAN				pmax	pmax		
	comp=Z,100nm,1.7s						
CAN				MLR	MLR		
	comp=Z,6μm,19.0s						
CAN	**Canberra**	**34.93**	**238**	*e*P	**P**	**07 00 36.8**	**-0.9**
CAN				LR	LR		
	comp=Z,100nm,1.7s						
TAOE	**Nuku Hiva Isla**	**35.20**	**75**	*e*LR	LR	07 09 46.2	
	comp=Z,13μm,29.2s,baz=245						
TAOE	**Nuku Hiva Isla**	**35.20**	**75**	PFAKE		07 00 50.0	+10
TAOE				LR	LR		
	comp=Z,5μm,18.0s						
RKT	**Rikitea**	**36.45**	**100**	*e*S	**S**	**07 06 29.2**	**-1.7**
	comp=Z,1μm,28.5s						
RKT				*e*LQ	LQ	07 09 03.2	
	comp=Z,3μm,27.5s						
RKT				*e*LR	LR	07 10 11.5	
	comp=Z,16μm,31.8s,baz=268						
RKT	**Rikitea**	**36.45**	**100**	*e*T	T	07 39 14.5	
	comp=Z,11nm,0.3s						
RABL	**Rabaul**	**36.67**	**293**	PFAKE		07 01 00.0	+7.1
RABL				LR	LR		
	comp=Z,6μm,22.0s						
CTA	**Charters Tower**	**36.79**	**265**	P	**P**	**07 00 57.1**	**+3.3**
CTA				pmax	pmax		
	comp=Z,33nm,0.8s						
CTAO	**Charters Tower**	**36.79**	**265**	*e*P	**P**	**07 00 53.0**	**-0.8**
CTAO				pmax	pmax		
	comp=Z,25nm,0.9s						
CTAO				MLR	MLR		
	comp=Z,8μm,18.0s						
CTAO	**Charters Tower**	**36.79**	**265**	*e*P	**P**	**07 00 53.0**	**-0.8**
	comp=Z,25nm,0.9s						
CTAO				LR	LR		
	comp=Z,8μm,18.0s						
CMSA	**Cobar Meteorol**	**37.01**	**246**	P	**P**	**07 00 54.6**	**-0.9**
	baz=37,SNR=12						
QLP	**Quilpie**	**38.08**	**254**	P	**P**	**07 01 02.4**	**-2.2**
	baz=38,SNR=16						
JOHN	**Johnston Islan**	**38.10**	**8**	PFAKE		07 01 20.0	+15
JOHN				LR	LR		
	comp=Z,4μm,18.0s						
PATS	**Pohnpei**	**38.75**	**313**	PFAKE		07 01 20.0	+10
PATS				LR	LR		
	comp=Z,6μm,20.0s						
PMG	**Port Moresby**	**38.83**	**282**	P	**P**	**07 01 10.6**	**-0.5**
	comp=Z,57nm,0.8s,baz=92,slow=6.4,SNR=11						
PMG	**Port Moresby**	**38.83**	**282**	*ce*P	**P**	**07 01 10.4**	**-0.7**
PMG				pmax	pmax		
	comp=Z,305nm,1.0s						
PMG				MLR	MLR		
	comp=Z,66μm,17.0s						
PMG	**Port Moresby**	**38.83**	**282**	*e*P	**P**	**07 01 10.1**	**-0.9**
	comp=Z,78nm,0.9s						
PMG				LR	LR		
	comp=Z,16μm,18.0s						
MTSU	**Mount Surprise**	**38.94**	**267**	P	**P**	**07 01 10.4**	**-1.6**
	baz=39,SNR=11						
STKA	**Stephens Creek**	**40.52**	**246**	P	**P**	**07 01 23.7**	**-1.2**
	comp=Z,7.9nm,0.5s,baz=90,slow=11,SNR=23						
STKA				LR	LR	07 16 55.5	
	comp=Z,5μm,18.3s,baz=80,slow=34						
STKA	**Stephens Creek**	**40.52**	**246**	P	**P**	**07 01 23.9**	**-1.1**
	baz=41,SNR=21						
STKA	**Stephens Creek**	**40.52**	**246**	*e*P	**P**	**07 01 23.8**	**-1.2**
	comp=Z,5.5nm,0.9s						
PTCN	**Pitcairn Islan**	**40.74**	**104**	PFAKE		07 01 40.0	+13
PTCN				LR	LR		
	comp=Z,5μm,20.0s						
COEN	**Coen**	**41.02**	**273**	P	**P**	**07 01 29.2**	**0.0**
	baz=41,SNR=13						
COEN	**Coen**	**41.02**	**273**	*e*P	**P**	**07 01 27.9**	**-1.4**
	comp=Z,40nm,0.9s						
COEN				LR	LR		
	comp=Z,7μm,20.0s						
MANU	**Manus Island**	**41.89**	**292**	PFAKE		07 01 50.0	+14
MANU				LR	LR		
	comp=Z,7μm,18.0s						
QIS	**Mount Isa**	**42.87**	**262**	P	**P**	**07 01 43.7**	**-0.7**
	baz=43,SNR=4.5						
HTT	**Hallett**	**42.88**	**243**	P	**P**	**07 01 43.2**	**-1.2**
	baz=43,SNR=9.3						
HPAH	**Hawaii Prepara**	**44.96**	**25**	PFAKE		07 02 10.0	+8.9
HPAH				LR	LR		
	comp=Z,2μm,19.0s						
BBOO	**Buckleboo**	**45.24**	**245**	*e*P	**P**	**07 02 01.3**	**-2.0**
	comp=Z,49nm,1.1s						
BBOO				LR	LR		
	comp=Z,8μm,19.0s						
KIP	**Kipapa**	**45.38**	**22**	*e*P	**P**	**07 02 04.8**	**+0.5**
JAY	**Jayapura**	**47.52**	**287**	P	**P**	**07 02 20.2**	**-1.2**
	comp=Z,81nm,0.8s,comp=Z,1μm						
AS01	**Alice Springs**	**47.60**	**257**	*e*P	**P**	**07 02 20.3**	**-1.6**
AS31	**Alice Springs**	**47.64**	**257**	*e*P	**P**	**07 02 20.8**	**-1.4**
	comp=Z,18nm,0.9s						
AS31				LR	LR		
	comp=Z,100nm,18.0s						
ASAR	**Alice Springs**	**47.64**	**257**	P	**P**	**07 02 20.6**	**-1.7**
	comp=Z,31nm,0.8s,baz=90,slow=8.3,SNR=97						
ASAR				PcP	**PcP**	**07 03 51.4**	**-0.3**
	comp=Z,5.1nm,0.6s,baz=109,slow=4.4,SNR=5.0						
ASAR				S	**S**	**07 09 12.3**	**-4.0**
	comp=Z,1.9nm,0.9s,baz=96,slow=14,SNR=6.3						
ASAR				LR	LR	07 21 41.2	
	comp=Z,6μm,18.2s,baz=100,slow=35						
WR0	**Warramunga Arr**	**47.66**	**262**	PFAKE		07 02 30.0	+7.6
WR0				LR	LR		
	comp=Z,6μm,20.0s						
WR9	**Warramunga Arr**	**47.68**	**262**	PFAKE		07 02 30.0	+7.4
WR9				LR	LR		
	comp=Z,6μm,19.0s						
WR8	**Warramunga Arr**	**47.70**	**262**	PFAKE		07 02 30.0	+7.3
WR8				LR	LR		
	comp=Z,6μm,20.0s						
WR7	**Warramunga Arr**	**47.72**	**262**	PFAKE		07 02 30.0	+7.1
WR7				LR	LR		
	comp=Z,6μm,19.0s						
WR6	**Warramunga Arr**	**47.74**	**262**	PFAKE		07 02 30.0	+7.0
WR6				LR	LR		
	comp=Z,6μm,19.0s						
WR5	**Warramunga Arr**	**47.76**	**262**	PFAKE		07 02 30.0	+6.8
WR5				LR	LR		
	comp=Z,6μm,19.0s						
WR4	**Warramunga Arr**	**47.78**	**262**	PFAKE		07 02 30.0	+6.6
WR4				LR	LR		
	comp=Z,6μm,19.0s						
WR3	**Warramunga Arr**	**47.80**	**262**	PFAKE		07 02 30.0	+6.5
WR3				LR	LR		
	comp=Z,6μm,20.0s						
WC3	**Warramunga Arr**	**47.81**	**262**	PFAKE		07 02 30.0	+6.4
WC3				LR	LR		
	comp=Z,8μm,20.0s						
WR2	**Warramunga Arr**	**47

WC4 LR LR
comp=Z,7µm,19.0s
WR1 Warramunga Arr 47.85 262 PFAKE 07 02 40.0 +16
WR1 LR LR
comp=Z,7µm,19.0s
WRA Warramunga Arr 47.85 262 P **P** **07 02 22.1 -1.7**
comp=Z,36nm,0.9s,baz=98,slow=6.2,SNR=48
WRA PcP **PcP** **07 03 52.3 -0.1**
comp=Z,6.5nm,0.8s,baz=102,slow=3.2,SNR=3.6
WRA LR LR 07 22 21.0
comp=Z,6µm,18.5s,baz=105,slow=36
WC1 Warramunga Arr 47.85 262 PFAKE 07 02 40.0 +16
WC1 LR LR
comp=Z,5µm,19.0s
GENI Genyem 47.97 287 P **P** **07 02 25.0 +0.2**
MIDW Midway 49.32 357 PFAKE 07 02 50.0 +15
MIDW LR LR
comp=Z,6µm,19.0s
FORT Forrest 52.10 247 P **P** **07 02 56.6 +0.6**
baz=52,SNR=7.5
FORT Forrest 52.10 247 *e*P **P** **07 02 54.3 -1.7**
comp=Z,614nm,0.8s
WRKA Warakurna 52.51 254 P **P** **07 02 56.6 -2.6**
baz=52,SNR=54
MTN Manton Dam 52.56 270 P **P** **07 02 57.9 -1.6**
baz=52,SNR=3.5
MTN Manton Dam 52.56 270 *e*P **P** **07 02 57.8 -1.8**
comp=Z,39nm,1.0s
MTN LR LR
comp=Z,8µm,20.0s
GUMO Guam 52.96 307 P **P** **07 03 01.2 -1.3**
comp=Z,62nm,0.8s,baz=165,slow=15,SNR=4.4
GUMO Guam 52.96 307 P **P** **07 03 01.2 -1.3**
GUMO LR LR
comp=Z,3µm,22.0s
FAKI Fak Fak 54.99 282 *e*P **P** **07 03 15.9 -1.5**
comp=Z,104nm,1.3s
FAKI LR LR
comp=Z,4µm,18.0s
FITZ Fitzroy Crossi 56.28 262 P **P** **07 03 24.8 -1.8**
baz=56,SNR=12
FITZ Fitzroy Crossi 56.28 262 *e*P **P** **07 03 24.9 -1.8**
comp=Z,40nm,1.3s
FITZ LR LR
comp=Z,8µm,19.0s
SBA Scott Base 57.32 185 *e*P **P** **07 03 36.2 +3.1**
SBA pmax pmax
comp=Z,69nm,1.1s
SBA Scott Base 57.32 185 *e*P **P** **07 03 36.1 +3.1**
comp=Z,69nm,1.1s
KMBL Kambalda 57.32 246 P **P** **07 03 35.2 +1.4**
baz=57,SNR=5.9
VNDA Vanda 57.43 186 P **P** **07 03 35.1 +1.2**
comp=Z,14nm,0.9s,baz=4.7,slow=6.9,SNR=43
VNDA LR LR 07 28 23.4
comp=Z,1µm,18.4s,baz=20,slow=36
VNDA Vanda 57.43 186 *e*P **P** **07 03 36.3 +2.4**
comp=Z,18nm,0.9s
SOEI Soe 59.91 271 *e*P **P** **07 03 51.6 -0.6**
comp=Z,110nm,0.8s
SOEI LR LR
comp=Z,5µm,21.0s
KLBR Kellerberrin 60.79 245 P **P** **07 03 57.7 -0.2**
baz=61,SNR=18
MEEK Meekatharra 60.85 251 P **P** **07 03 57.4 -1.0**
baz=61,SNR=9.7
MBWA Marble Bar 60.98 257 *e*P **P** **07 03 58.0 -1.3**
comp=Z,43nm,0.9s
MBWA LR LR
comp=Z,5µm,19.0s
NWAO Narrogin (SRO) 61.04 243 P **P** **07 04 00.2 +0.6**
baz=61,SNR=4.5
NWAO P **P** **07 04 00.2 +0.6**
baz=61,SNR=4.5
NWAO Narrogin (SRO) 61.04 243 PFAKE 07 04 10.0 +10
NWAO LR LR
comp=Z,4µm,19.0s
BLDU Ballidu 61.82 246 P **P** **07 04 03.7 -1.2**
baz=62,SNR=12
MMRI Maumere 62.17 271 PFAKE 07 04 20.0 +13
MMRI LR LR
comp=Z,2µm,18.0s
MORW Morawa 62.66 247 P **P** **07 04 10.3 -0.3**
baz=63,SNR=6.6
CASY Casey 64.69 206 *e*P **P** **07 04 24.8 +1.5**
comp=Z,38nm,0.9s
CASY LR LR
comp=Z,2µm,18.0s
DAV Davao City (W) 65.30 289 PFAKE 07 04 40.0 +12
DAV LR LR
comp=Z,2µm,18.0s
GIRL Giralia 65.60 254 P **P** **07 04 29.7 -0.2**
baz=66,SNR=8.2
QSPA South Pole Qui 68.76 180 *e*P **P** **07 04 50.7 +1.3**
QSPA *e*pP **pP** **07 04 51.8 -6.9**
QSPA LR LR
comp=Z,2µm,21.0s
MIR Mirnyy 71.69 205 *i* P **P** **07 05 10.0 +2.9**
MIR pmax pmax
comp=Z,6.0nm,1.8s
INU Inuyama 72.79 320 *e*P **P** **07 05 13.9 -0.3**
comp=Z,37nm,1.2s
INU LR LR
comp=Z,2µm,18.0s
MJAR Matsushiro Arr 72.91 322 P **P** **07 05 13.1 -1.8**
comp=Z,14nm,0.8s,baz=158,slow=5.9,SNR=30
MAJO Matsushiro 72.91 322 *e*P **P** **07 05 13.9 -1.0**
comp=Z,57nm,1.0s
MAJO LR LR
comp=Z,1µm,21.0s
MAT Matsushiro 72.91 322 P **P** **07 05 13.1 -1.7**
MAT S **S** **07 14 37.4 -2.1**
MJB9 Matsu-Tunnel 72.91 322 *e*P **P** **07 05 14.0 -0.9**
comp=Z,15nm,1.0s
MJB9 LR LR
comp=Z,400nm,21.0s
KKM Kota Kinabalu 73.25 284 *e*P **P** **07 05 17.0 -0.4**
comp=Z,25nm,1.0s
JOW Kunigami 73.31 308 PFAKE 07 05 30.0 +13
JOW LR LR
comp=Z,3µm,21.0s
UGM Wanagama 73.33 268 PFAKE 07 05 30.0 +12
UGM LR LR
comp=Z,3µm,20.0s
ERM Erimo 74.24 328 *de*P **P** **07 05 22.4 -0.1**
ERM pmax pmax
comp=Z,40nm,1.6s
ERM Erimo 74.24 328 PFAKE 07 05 30.0 +7.5
ERM LR LR
comp=Z,4µm,20.0s
KUR Kuril'sk 74.62 333 *c i* P **P** **07 05 22.9 -1.7**
KUR *e*S **S** **07 14 58.7 +0.4**
KUR pmax pmax
comp=Z,97nm,1.5s
KUR pmax pmax
comp=Z,583nm,6.8s
KUR MLR MLR
comp=N,1µm,17.0s
KUR MLR MLR
comp=E,1µm,17.0s
KUR MLR MLR
comp=Z,2µm,17.0s
UNV Unalaska Valle 75.15 5 PFAKE 07 05 40.0 +13
UNV LR LR
comp=Z,2µm,21.0s
JNU Nakatsue 75.22 315 P **P** **07 05 28.6 +0.1**
comp=Z,12nm,1.0s,baz=142,slow=18,SNR=4.5
JNU LR LR 07 34 12.9
comp=Z,599nm,21.1s,baz=129,slow=32
JNU Nakatsue 75.22 315 *e*P **P** **07 05 29.1 +0.7**
comp=Z,82nm,1.3s
SNCC San Nicolas Is 75.36 45 PFAKE 07 05 40.0 +11
SNCC LR LR
comp=Z,3µm,20.0s
AKUT Akutan 75.50 5 PFAKE 07 05 40.0 +11
AKUT LR LR
comp=Z,2µm,22.0s
SCZ2 Santa Cruz Isl 75.75 44 P **P** **07 05 31.9 +0.4**
baz=232
SCI2 San Clemente I 75.85 46 P **P** **07 05 32.7 +0.7**
baz=233
SBC Santa Barbara 75.97 44 P **P** **07 05 33.4 +0.8**
baz=232
CISI Cisompet, Garu 75.97 267 PFAKE 07 05 40.0 +6.7
CISI LR LR
comp=Z,3µm,21.0s
YOJ Yonaguni jima 75.99 303 PFAKE 07 05 40.0 +7.0
YOJ LR LR
comp=Z,3µm,19.0s
ASAJ Asahikawa 76.10 330 *e*P **P** **07 05 33.7 +0.5**
comp=Z,151nm,1.5s
ASAJ LR LR
comp=Z,3µm,21.0s
PKM Mcpherson Peak 76.19 44 P **P** **07 05 34.9 +0.8**
baz=232
BLG Laguna Peak, P 76.19 45 P **P** **07 05 34.0 +0.1**
baz=232
CIS Catalina Islan 76.19 46 P **P** **07 05 34.6 +0.7**
baz=233
SMMC Simmler 76.33 43 P **P** **07 05 35.5 +0.7**
baz=231
SAO San Andreas Ge 76.34 41 *e*P **P** **07 05 35.7 +0.9**
SAO pmax pmax
comp=Z,62nm,1.0s
SAO MLR MLR
comp=Z,5µm,18.0s
SAO San Andreas Ge 76.34 41 *e*P **P** **07 05 35.7 +0.9**
comp=Z,62nm,1.0s
SAO LR LR
comp=Z,5µm,18.0s
MCCM Marconi Confer 76.38 39 PFAKE 07 05 50.0 +15
MCCM LR LR
comp=Z,3µm,19.0s
FMP Fort Macarthur 76.46 45 P **P** **07 05 35.5 +0.1**
baz=233
TWG Pinlang 76.69 301 PFAKE 07 05 50.0 +13
TWG LR LR
comp=Z,8µm,19.0s
OSI Osito Audit: C 76.72 44 P **P** **07 05 37.4 +0.4**
baz=232
OSI Osito Audit: C 76.72 44 PFAKE 07 05 50.0 +13
OSI LR LR
comp=Z,2µm,18.0s
DECC Green Verdugo 76.76 45 P **P** **07 05 37.4 +0.2**
baz=233
109C Camp Elliot, M 76.76 47 P **P** **07 05 37.5 +0.3**
baz=234
YULB Yu-li 76.79 302 PFAKE 07 05 50.0 +12
YULB LR LR
comp=Z,2µm,20.0s
PASC Pasadena Art C 76.81 45 PFAKE 07 05 50.0 +13
PASC LR LR
comp=Z,2µm,19.0s
HOPS Hopland Field 76.83 39 *e*P **P** **07 05 38.4 +1.0**
comp=Z,81nm,1.2s
HOPS LR LR
comp=Z,4µm,19.0s
KSM Kuching 76.88 277 *e*P **P** **07 05 39.0 +0.6**
comp=Z,27nm,0.9s
KSM LR LR
comp=Z,2µm,20.0s
MWC Mount Wilson 76.92 45 *e*P **P** **07 05 38.8 +0.5**
MWC pmax pmax
comp=Z,29nm,0.9s
MWC MLR MLR
comp=Z,2µm,20.0s
MWC Mount Wilson 76.92 45 *e*P **P** **07 05 38.8 +0.5**
comp=Z,29nm,0.9s
MWC LR LR
comp=Z,2µm,20.0s
BAR Barrett 76.94 47 PFAKE 07 05 50.0 +12
BAR LR LR
comp=Z,1µm,19.0s
NACB Ninganchiao 76.95 303 *e*P **P** **07 05 38.2 -0.2**
comp=Z,40nm,0.8s
NACB LR LR
comp=Z,2µm,20.0s
ARVC Arvin 76.97 44 P **P** **07 05 38.2 -0.1**
baz=232
XMIS Christmas Isla 77.00 264 PFAKE 07 05 50.0 +11
XMIS LR LR
comp=Z,4µm,18.0s
SLBS Sierra La Lagu 77.02 58 PFAKE 07 05 50.0 +11
SLBS LR LR
comp=Z,4µm,18.0s
SRIG Santa Rosalia 77.12 54 PFAKE 07 05 50.0 +11
SRIG LR LR
comp=Z,4µm,18.0s
MURC Murrieta 77.12 46 P **P** **07 05 39.4 +0.1**
baz=234
BFSC Mount Baldy Ra 77.20 45 P **P** **07 05 39.6 -0.2**
baz=233
MONP2 Monument Peak 77.23 47 P **P** **07 05 40.2 +0.1**
baz=234
VES Vestal, Richgr 77.24 43 P **P** **07 05 40.1 +0.3**
baz=232,SNR=27
SSLB Suanglung 77.26 302 PFAKE 07 05 50.0 +10
SSLB LR LR
comp=Z,2µm,19.0s
SDPT Sand Point 77.27 8 PFAKE 07 05 50.0 +11
SDPT LR LR
comp=Z,2µm,18.0s
TPUB Ta-pu 77.28 301 *e*P **P** **07 05 39.4 -0.9**
comp=Z,51nm,0.9s
TPUB LR LR
comp=Z,2µm,20.0s
KMRM Mail Ridge 77.28 37 *e*P **P** **07 05 40.8 +0.7**
comp=Z,86nm,1.0s
KMRM LR LR
comp=Z,5µm,18.0s
IKP In-Ko-Pah, Jac 77.30 47 P **P** **07 05 40.6 +0.3**
baz=234
EDW2 Edwards Air Fo 77.36 45 P **P** **07 05 40.9 +0.3**
baz=233,SNR=5.4
YHNB Yeheng 77.38 303 *e*P **P** **07 05 40.8 -0.2**
comp=Z,29nm,0.9s
YHNB LR LR
comp=Z,2µm,20.0s
RCTC Rector, Farmer 77.43 43 P **P** **07 05 40.9 0.0**
baz=232
TATO Taipei 77.44 303 PFAKE 07 05 50.0 +8.8
TATO LR LR
comp=Z,2µm,20.0s
JCC Jacoby Creek, 77.50 37 PFAKE 07 05 50.0 +8.9
JCC LR LR
comp=Z,4µm,19.0s
ISA Isabella, Lake 77.53 44 P **P** **07 05 42.0 +0.5**
baz=232,SNR=6.1
ISA Isabella, Lake 77.53 44 *e*P **P** **07 05 42.5 +1.0**
ISA pmax pmax
comp=Z,54nm,1.1s
ISA MLR MLR
comp=Z,2µm,18.0s
ISA Isabella, Lake 77.53 44 *e*P **P** **07 05 42.5 +1.0**
comp=Z,54nm,1.1s
ISA LR LR
comp=Z,2µm,18.0s
PFO Pinyon Flats O 77.63 46 P **P** **07 05 43.0 +0.8**
comp=Z,7.0nm,0.8s,baz=233,slow=4.1,SNR=6.3
PFO Pinyon Flats O 77.63 46 P **P** **07 05 42.5 +0.2**
baz=234
PFO Pinyon Flats O 77.63 46 *e*P **P** **07 05 42.9 +0.7**
PFO pmax pmax
comp=Z,34nm,1.2s
PFO MLR MLR
comp=Z,2µm,19.0s
PFO Pinyon Flats O 77.63 46 *e*P **P** **07 05 42.9 +0.7**
comp=Z,34nm,1.2s
PFO LR LR
comp=Z,2µm,19.0s
TPFO Pinon Flats 77.63 46 P **P** **07 05 42.5 +0.2**
baz=234
PET Petropavlovsk 77.64 344 *c i* P **P** **07 05 40.1 -1.5**
PET *e* 07 05 52.1
PET *e*S **S** **07 15 30.7 -0.5**
PET pmax pmax
comp=Z,900nm,10.5s
PET pmax pmax
comp=Z,800nm,12.1s
PET Petropavlovsk 77.64 344 PFAKE 07 05 50.0 +8.4
PET LR LR
comp=Z,2µm,20.0s
SWSC Sam W. Stewart 77.69 47 P **P** **07 05 42.5 +0.2**
baz=235
BBRC Big Bear Solar 77.70 46 P **P** **07 05 43.0 +0.3**
baz=234
KHMM Horse Mountain 77.71 37 PFAKE 07 05 50.0 +7.5
KHMM LR LR
comp=Z,4µm,18.0s
CMB Columbia Colle 77.80 41 *e*P **P** **07 05 43.4 +0.4**
CMB pmax pmax
comp=Z,52nm,1.3s
CMB MLR MLR
comp=Z,4µm,18.0s
CMB Columbia Colle 77.80 41 *e*P **P** **07 05 43.4 +0.4**
comp=Z,52nm,1.3s
CMB LR LR
comp=Z,4µm,18.0s
LRMC Laurel Mtn Rad 77.93 44 P **P** **07 05 44.0 +0.2**
baz=233
PEA0 Petropavlovsk- 77.97 343 *e*P **P** **07 05 43.1 -0.4**
PEA0B Petropavlovsk- 77.97 343 *e*P **P** **07 05 43.8 +0.3**
comp=Z,266nm,1.5s
PEA0B LR LR
comp=Z,2µm,20.0s
PETK Petropavlovsk- 77.97 343 P **P** **07 05 42.8 -0.7**
comp=Z,10nm,0.7s,baz=116,slow=6.6,SNR=14
PETK LR LR 07 37 46.0
comp=Z,1µm,19.2s,baz=162,slow=34
RRX Edison Barstow 78.01 45 P **P** **07 05 44.5 +0.3**
baz=234
AFDM Forest Hills D 78.03 40 *e*P **P** **07 05 44.9 +0.7**
comp=Z,62nm,1.3s
AFDM LR LR
comp=Z,3µm,19.0s
ORV Oroville 78.11 39 *e*P **P** **07 05 44.4 -0.2**
ORV pmax pmax
comp=Z,32nm,1.1s
ORV MLR MLR
comp=Z,2µm,19.0s
ORV Oroville 78.11 39 *e*P **P** **07 05 44.4 -0.2**
comp=Z,32nm,1.1s
ORV LR LR
comp=Z,2µm,19.0s
BELC Belle Mtn. Jos 78.17 46 P **P** **07 05 45.6 +0.3**
baz=234,SNR=9.9
YSS Yuzh-Sakhalins 78.18 332 *oe*P **P** **07 05 45.0 +0.3**
YSS *e* 07 05 52.2
YSS *e**PP **PcP** **07 05 55.2 +1.0**
YSS *e**SP **sP** **07 05 59.5 +2.0**
YSS *e* 07 08 38.8
YSS *e*S **S** **07 15 33.2 -4.1**
YSS *e* 07 15 47.5
YSS *e*PS **ScS** **07 16 00.0 -2.5**
YSS *e*SS **SS** **07 20 33.7 -6.5**
YSS pmax pmax
comp=Z,20nm,1.0s
YSS pmax pmax
comp=Z,1µm,5.8s
YSS Yuzh-Sakhalins 78.18 332 *e*P **P** **07 05 44.9 +0.1**
comp=Z,86nm,0.9s
YSS LR LR
comp=Z,1µm,20.0s
WDC Whiskeytown Da 78.18 38 *e*P **P** **07 05 44.3 -0.7**
WDC pmax pmax
comp=Z,60nm,1.2s
WDC MLR MLR
comp=Z,4µm,19.0s
WDC Whiskeytown Da 78.18 38 *e*P **P** **07 05 44.3 -0.7**
comp=Z,60nm,1.2s
WDC LR LR
comp=Z,4µm,19.0s
CWC Cottonwood Cre 78.25 43 P **P** **07 05 45.6 -0.1**
baz=232
BC3 Big Chuckawall 78.33 47 P **P** **07 05 46.1 0.0**
baz=235
N02D Trinity Center 78.35 37 P **P** **07 05 46.7 +0.7**
baz=228,SNR=7.5
GSC Goldstone, Bar 78.39 45 P **P** **07 05 46.7 +0.3**
baz=234,SNR=10.0
GSC Goldstone, Bar 78.39 45 *e*P **P** **07 05 46.9 +0.5**
GSC pmax pmax
comp=Z,48nm,1.3s
GSC MLR MLR
comp=Z,2µm,20.0s
GSC Goldstone, Bar 78.39 45 *e*P **P** **07 05 46.9 +0.5**
comp=Z,48nm,1.3s
GSC LR LR
comp=Z,2µm,20.0s
MPMC Manual Prospec 78.40 44 P **P** **07 05 46.6 +0.1**
baz=233,SNR=23
GLA Glamis 78.42 48 P **P** **07 05 46.7 +0.2**
baz=235
GLA Glamis 78.42 48 *e*P **P** **07 05 48.3 +1.8**
GLA pmax pmax
comp=Z,61nm,1.3s
GLA MLR MLR
comp=Z,1µm,19.0s
GLA Glamis 78.42 48 *e*P **P** **07 05 48.3 +1.8**
comp=Z,61nm,1.3s
GLA LR LR
comp=Z,1µm,19.0s
O03D Paynes Creek 78.42 38 P **P** **07 05 45.8 -0.6**
baz=229,SNR=17
HEC Hector,Ludlow 78.42 45 P **P** **07 05 46.6 +0.1**
baz=234,SNR=6.8
DAC Darwin (Calif) 78.47 44 *e*P **P** **07 05 47.7 +0.8**
DAC pmax pmax
comp=Z,72nm,1.6s
DAC MLR MLR
comp=Z,3µm,19.0s
DAC Darwin (Calif) 78.47 44 *e*P **P** **07 05 47.7 +0.8**
comp=Z,72nm,1.6s
DAC LR LR
comp=Z,3µm,19.0s
MLAC Mammoth, Mammo 78.51 42 P **P** **07 05 46.7 -0.4**
baz=232
TIN Tinemaha, Big 78.53 43 P **P** **07 05 46.9 -0.3**
baz=232
M02C Callahan 78.55 37 P **P** **07 05 47.5 +0.4**
baz=228,SNR=7.0
L02D Cave Junction, 78.64 36 P **P** **07 05 48.0 +0.5**
baz=228
WAKR Walker 78.68 41 *e*P **P** **07 05 49.2 +1.2**
comp=Z,74nm,1.0s
WAKR LR LR
comp=Z,4µm,18.0s
IRM Iron Mountain 78.83 47 P **P** **07 05 48.7 0.0**
baz=235,SNR=9.2
GMRC Granite Mounta 78.85 46 P **P** **07 05 49.1 +0.1**
baz=234,SNR=8.3
YBH Yreka Blue Hor 78.85 37 *e*P **P** **07 05 49.8 +1.1**
YBH pmax pmax
comp=Z,77nm,1.3s
YBH MLR MLR
comp=Z,4µm,19.0s
YBH Yreka Blue Hor 78.85 37 *e*P **P** **07 05 49.8 +1.1**
comp=Z,77nm,1.3s
YBH LR LR
comp=Z,4µm,19.0s
HSIG 78.99 53 PFAKE 07 06 00.0 +10
HSIG LR LR
comp=Z,3µm,18.0s
113A Mohawk Valley, 78.99 48 *e*P **P** **07 05 50.1 +0.6**
comp=Z,35nm,1.3s
113A LR LR
comp=Z,2µm,20.0s
Y12C Blythe 79.02 47 P **P** **07 05 49.9 +0.1**
baz=235
Y12C Blythe 79.02 47 PFAKE 07 06 00.0 +10
Y12C LR LR
comp=Z,2µm,19.0s
GRAC Grapevine Rang 79.05 43 P **P** **07 05 50.3 +0.4**
baz=233,SNR=28
FURC Furnace Creek, 79.05 44 P **P** **07 05 49.9 +0.1**
baz=233,SNR=9.3
TUQ Turquoise Moun 79.05 45 P **P** **07 05 50.0 -0.1**
baz=234
SHOC Shoshone, Teco 79.09 45 P **P** **07 05 50.2 0.0**
baz=234
214A Organ Pipe Nat 79.21 50 P **P** **07 05 50.9 0.0**
baz=237
214A Organ Pipe Nat 79.21 50 *e*P **P** **07 05 51.2 +0.3**
comp=Z,120nm,1.2s
HUMO Hull Mountain 79.30 36 *e*P **P** **07 05 53.1 +1.9**
comp=Z,55nm,1.4s
HUMO LR LR
comp=Z,3µm,19.0s
M04C Macdoel 79.38 37 P **P** **07 05 52.4 +0.7**
baz=229,SNR=5.6
LASM Arnica Sink 79.40 37 P **P** **07 05 52.8 +0.9**
PAHR Pah Rah Range 79.47 40 PFAKE 07 06 00.0 +7.8
PAHR LR LR
comp=Z,3µm,19.0s
NEE2 Needles Airpor 79.54 46 P **P** **07 05 52.3 -0.2**
baz=235
TPNV Topopah Spring 79.73 44 P **P** **07 05 54.0 +0.2**
baz=234,SNR=23
TPNV Topopah Spring 79.73 44 *e*P **P** **07 05 54.3 +0.5**
TPNV pmax pmax
comp=Z,45nm,1.0s

TPNV MLR MLR
comp=Z,3μm,18.0s
TPNV Topopah Spring 79.73 44 *e*P **P 07 05 54.3 +0.5**
comp=Z,44nm,1.0s
TPNV LR LR
comp=Z,3μm,18.0s
KSRS Korea Array 79.77 317 P **P 07 05 53.9 +0.2**
comp=Z,8.8nm,0.9s,baz=139,slow=5.9,SNR=27
KSAR Wonju Array Be 79.78 317 P **P 07 05 53.9 +0.1**
KSAR Wonju Array Be 79.78 317 P **P 07 05 53.9 +0.1**
KS01 Wonju Array Si 79.80 317 *e*P **P 07 05 53.7 -0.2**
I03D Drain, OR 79.82 35 P **P 07 05 53.9 +0.1**
baz=228
K04D Chiloquin, OR 79.98 37 P **P 07 05 55.0 +0.1**
baz=229
Y14A Wickenburg 80.17 48 *e*P **P 07 05 56.8 +0.7**
comp=Z,77nm,1.0s
Y14A LR LR
comp=Z,7μm,20.0s
SHPR Sheep Range 80.18 45 PFAKE 07 06 10.0 +14
SHPR LR LR
comp=Z,2μm,20.0s
OHAK Old Harbor 80.21 11 *e*P **P 07 05 55.9 +0.3**
comp=Z,142nm,1.8s
OHAK LR LR
comp=Z,2μm,20.0s
W13A Hualapai Mount 80.22 46 *e*P **P 07 05 57.4 +0.9**
comp=Z,26nm,1.2s
W13A LR LR
comp=Z,2μm,20.0s
MOD Modoc Plateau 80.33 38 *e*P **P 07 05 57.2 +0.4**
comp=Z,36nm,0.9s
MOD LR LR
comp=Z,3μm,19.0s
I04A Tendick Farm, 80.39 35 P **P 07 05 57.1 +0.1**
baz=228,SNR=8.7
COR Corvallis 80.45 34 PFAKE 07 06 10.0 +13
COR LR LR
comp=Z,4μm,19.0s
K05A Summer Lake 80.52 37 *e*P **P 07 05 59.1 +1.2**
comp=Z,89nm,1.1s
K05A LR LR
comp=Z,4μm,19.0s
J05D Fort Rock, OR 80.70 36 P **P 07 05 58.9 +0.1**
baz=229,SNR=28
SSE Sheshan 80.83 308 ⇑P **P 07 05 58.7 -0.9**
SSE S **S 07 16 08.4 +2.3**
SSE sS **SKSac 07 16 15.1 -1.1**
SSE pmax pmax
comp=Z,19nm,0.7s
SSE pmax pmax
comp=Z,620nm,11.1s
SSE LR LR
comp=Z,670nm,22.7s
SSE LR LR
comp=Z,810nm,22.8s
SSE LR LR
comp=Z,1μm,21.9s
TUC Tucson 80.85 50 P **P 07 06 00.2 +0.4**
baz=238
TUC Tucson 80.85 50 *e*P **P 07 06 00.5 +0.7**
TUC pmax pmax
comp=Z,20nm,1.0s
TUC MLR MLR
comp=Z,4μm,18.0s
TUC Tucson 80.85 50 *e*P **P 07 06 00.5 +0.7**
comp=Z,20nm,1.0s
TUC LR LR
comp=Z,4μm,18.0s
KDAK Kodiak Island 80.87 12 *e*P **P 07 05 59.7 +0.6**
KDAK pmax pmax
comp=Z,219nm,1.0s
KDAK MLR MLR
comp=Z,4μm,19.0s
KDAK Kodiak Island 80.87 12 *e*P **P 07 05 59.7 +0.6**
comp=Z,219nm,1.0s
KDAK LR LR
comp=Z,4μm,19.0s
G03D McMinnville, O 80.89 34 P **P 07 06 00.2 +0.6**
baz=227
VLA Vladivostok 80.93 323 *b i*P **P 07 05 58.3 -1.5**
VLA *i* 07 06 04.0
VLA *i* *SP **sP 07 06 12.3 -0.3**
VLA *i* 07 09 02.8
VLA *e*S **S 07 16 04.7 -1.9**
VLA pmax pmax
comp=Z,90nm,3.2s
R11A Troy Canyon, C 80.98 43 P **P 07 06 00.5 0.0**
baz=234,SNR=13
R11A Troy Canyon, C 80.98 43 *e*P **P 07 06 01.0 +0.5**
comp=Z,14nm,1.1s
R11A LR LR
comp=Z,3μm,19.0s
MSHR Mys Shultsa 80.99 323 *ce*P **P 07 06 00.8 +0.7**
TYV Tymovskoe 81.21 334 *e*P **P 07 06 00.5 -0.6**
TYV pmax pmax
comp=Z,1μm,8.0s
TYV pmax pmax
comp=Z,44nm,1.0s
BMN Battle Mountai 81.22 40 *e*P **P 07 06 02.5 +0.8**
BMN pmax pmax
comp=Z,44nm,1.3s
BMN MLR MLR
comp=Z,4μm,18.0s
BMN Battle Mountai 81.22 40 *e*P **P 07 06 02.5 +0.8**
comp=Z,44nm,1.3s
BMN LR LR
comp=Z,4μm,18.0s
F03A Seaside 81.23 33 PFAKE 07 06 10.0 +8.6
F03A LR LR
comp=Z,2μm,18.0s
I05D Terrebonne, OR 81.33 35 P **P 07 06 02.1 +0.1**
baz=229,SNR=12
319A Douglas 81.45 52 *e*P **P 07 06 04.0 +1.0**
comp=Z,53nm,1.4s
319A LR LR
comp=Z,5μm,18.0s
X16A Lo Mia Camp, P 81.52 48 *e*P **P 07 06 04.7 +1.2**
comp=Z,32nm,1.2s
X16A LR LR
comp=Z,2μm,18.0s
USRK Ussuriysk Ar. 81.57 324 P **P 07 06 02.8 -0.4**
comp=Z,3.9nm,0.6s,baz=146,slow=3.7,SNR=20
F04D Rainier, OR 81.61 33 P **P 07 06 03.8 +0.4**
baz=228
WVOR Wild Horse Val 81.62 38 *e*P **P 07 06 04.1 +0.4**
WVOR pmax pmax
comp=Z,37nm,1.0s
WVOR MLR MLR
comp=Z,4μm,19.0s
WVOR Wild Horse Val 81.62 38 *e*P **P 07 06 04.1 +0.4**
comp=Z,37nm,1.0s
WVOR LR LR
comp=Z,4μm,19.0s
E03A Lebam 81.65 33 *e*P **P 07 06 06.2 +2.7**
comp=Z,74nm,1.1s
E03A LR LR
comp=Z,2μm,18.0s
LCMT Little Creek M 81.73 45 PFAKE 07 06 20.0 +16
LCMT LR LR
comp=Z,2μm,19.0s
F04A Amboy 81.82 34 PFAKE 07 06 20.0 +16
F04A LR LR
comp=Z,2μm,18.0s
LVP Lakeview Peak 81.92 34 P **P 07 06 05.9 +0.7**
MAW Mawson 81.93 199 P **P 07 06 06.3 +1.5**
comp=Z,18nm,1.0s,baz=127,slow=6.2,SNR=18
MAW LR LR 07 41 34.2
comp=Z,2μm,18.2s,baz=110,slow=35
MAW Mawson 81.93 199 P **P 07 06 06.4 +1.5**
baz=82,SNR=14
MAW Mawson 81.93 199 *e*P **P 07 06 06.6 +1.7**
comp=Z,7.4nm,1.0s
G05D Wamic, OR 81.94 35 P **P 07 06 04.9 -0.3**
baz=229
CCUT Cedar City 81.96 45 *e*P **P 07 06 06.0 +0.3**
comp=Z,59nm,1.5s
CCUT LR LR
comp=Z,2μm,18.0s
HPIG 81.98 57 *e*P **P 07 06 06.7 +0.6**
comp=Z,16nm,1.2s
HPIG LR LR
comp=Z,5μm,18.0s
U15A North Rim 82.04 46 *e*P **P 07 06 07.6 +1.4**
comp=Z,61nm,1.3s
U15A LR LR
comp=Z,1μm,20.0s
NLWA Neilton Lookou 82.08 32 *e*P **P 07 06 07.0 +1.1**
comp=Z,46nm,1.3s
NLWA LR LR
comp=Z,2μm,18.0s
ERK Elk Rock 82.11 33 P **P 07 06 07.2 +1.0**
WUAZ Wupatki 82.16 47 P **P 07 06 07.2 +0.5**
baz=237
WUAZ Wupatki 82.16 47 PFAKE 07 06 20.0 +13
WUAZ LR LR
comp=Z,2μm,18.0s
PSUT Pine Spring 82.20 44 PFAKE 07 06 20.0 +13
PSUT LR LR
comp=Z,2μm,18.0s
G06A Carlson Farm, 82.30 35 *e*P **P 07 06 07.8 +0.7**
comp=Z,59nm,1.3s
MOIG Morelia 82.34 66 *e*P P 07 06 13.7 +5.5
comp=Z,28nm,0.6s
MOIG LR LR
comp=Z,3μm,18.0s
ZAIG Zacatecas 82.55 62 *e*P **P 07 06 10.7 +1.5**
comp=Z,6.8nm,1.0s
ZAIG LR LR
comp=Z,1μm,22.0s
PKCU Pink Cliffs 82.59 45 PFAKE 07 06 20.0 +11
PKCU LR LR
comp=Z,2μm,19.0s
DIB Dawson Inlet, 82.59 24 *e*P **P 07 06 08.9 +0.5**
comp=Z,30nm,1.2s
DIB LR LR
comp=Z,1μm,18.0s
ELK Elko 82.61 41 *e*P **P 07 06 09.8 +0.7**
ELK pmax pmax
comp=Z,33nm,1.4s
ELK Elko 82.61 41 *e*P **P 07 06 09.8 +0.7**
comp=Z,33nm,1.4s
X18A Snowflake 82.62 49 *e*P **P 07 06 10.1 +0.9**
comp=Z,17nm,1.1s
X18A LR LR
comp=Z,2μm,18.0s
LON Longmire 82.68 33 *e*P **P 07 06 09.6 +0.5**
LON pmax pmax
comp=Z,30nm,1.0s
LON MLR MLR
comp=Z,1μm,19.0s
LON Longmire 82.68 33 *e*P **P 07 06 09.6 +0.5**
comp=Z,30nm,1.0s
LON LR LR
comp=Z,1μm,19.0s
CNPM China Poot 82.75 12 *e*P **P 07 06 10.0 +0.9**
comp=Z,69nm,1.0s
CNPM LR LR
comp=Z,3μm,19.0s
HOM Homer 82.80 11 *e*P **P 07 06 08.2 -1.1**
comp=Z,138nm,1.0s
HOM LR LR
comp=Z,2μm,18.0s
HABR Khabarovsk 82.86 329 *ce*P **P 07 06 08.3 -1.5**
HABR *e**PP **pP 07 06 18.7 -0.5**
HABR *e**SP **sP 07 06 22.9 +0.2**
HABR *e*PPP PPP 07 11 09.6
HABR *e*S **S 07 16 24.5 -1.7**
HABR *e*SS **SS 07 21 48.0 -2.1**
HABR *e*SSS SSS 07 25 16.6
HABR pmax pmax
comp=N,4.0nm,0.7s
HABR pmax pmax
comp=E,10.0nm,1.4s
HABR pmax pmax
comp=Z,41nm,1.4s
HABR pmax pmax
comp=Z,176nm,1.6s
HABR MLR MLR
comp=Z,2μm,18.0s
JBO Jordan Butte 82.87 35 P **P 07 06 10.4 +0.3**
D05A Enumclaw 82.88 33 *e*P **P 07 06 10.3 +0.3**
comp=Z,168nm,1.1s
D05A LR LR
comp=Z,2μm,18.0s
MYKOM Kota Tinggi 82.99 275 *e*P **P 07 06 09.4 -1.9**
comp=Z,43nm,1.0s
MYKOM LR LR
comp=Z,2μm,20.0s
MTPU Mount Pierson 83.00 45 *e*P **P 07 06 12.9 +1.6**
comp=Z,87nm,1.2s
MTPU LR LR
comp=Z,2μm,18.0s
NJ2 Nanjing 83.03 308 *e*P **P 07 06 12.3 +1.2**
NJ2 sP **pP 07 06 19.4 -1.1**
NJ2 S **S 07 16 33.7 +5.0**
NJ2 pmax pmax
comp=Z,20nm,0.9s
NJ2 pmax pmax
comp=Z,1μm,8.1s
NJ2 LR LR
comp=Z,1μm,20.1s
NJ2 LR LR
comp=Z,2μm,22.2s
NJ2 LR LR
comp=Z,1μm,18.4s
TRW Toppenish Ridg 83.03 34 P **P 07 06 11.8 +0.9**
BRLK Bradley Lake 83.04 12 *e*P **P 07 06 10.9 +0.4**
comp=Z,78nm,1.1s
BRLK LR LR
comp=Z,2μm,19.0s
W18A Petrified Fore 83.08 48 P **P 07 06 11.6 0.0**
baz=238
W18A Petrified Fore 83.08 48 PFAKE 07 06 20.0 +8.4
W18A LR LR
comp=Z,2μm,20.0s
GZH Guangzhou 83.08 298 P **P 07 06 11.9 +0.3**
GZH PP **PP 07 09 26.9 +3.8**
GZH S **S 07 16 30.4 +0.8**
GZH SS **SS 07 21 59.9 +5.5**
GZH pmax pmax
comp=Z,2μm,8.0s
121A Cookes Peak, D 83.13 51 P **P 07 06 11.5 -0.4**
baz=240
121A Cookes Peak, D 83.13 51 *e*P **P 07 06 13.0 +1.1**
comp=Z,29nm,1.2s
PGC Sidney 83.14 31 *e*P **P 07 06 12.2 +0.9**
comp=Z,41nm,1.0s
PGC LR LR
comp=Z,2μm,18.0s
MDJ Mudanjiang 83.16 323 P **P 07 06 13.0 +1.5**
MDJ pP PcP 07 06 16.3 +0.3
MDJ sP pP 07 06 17.6 -3.3
MDJ PP **PP 07 09 19.1 -4.2**
MDJ S **S 07 16 32.6 +3.1**
MDJ SS **SS 07 21 58.1 +3.3**
MDJ pmax pmax
comp=Z,33nm,1.2s
MDJ pmax pmax
comp=Z,1μm,7.9s
MDJ LR LR
comp=Z,840nm,21.3s
MDJ LR LR
comp=Z,1μm,22.0s
MDJ LR LR
comp=Z,2μm,21.3s
MDJ Mudanjiang 83.16 323 *e*P **P 07 06 11.9 +0.4**
comp=Z,91nm,1.2s
MDJ LR LR
comp=Z,2μm,21.0s
G08A Pilot Rock 83.24 36 *e*P **P 07 06 12.9 +0.9**
comp=Z,62nm,1.1s
G08A LR LR
comp=Z,3μm,19.0s
MSU Marysvale 83.27 44 *e*P **P 07 06 13.9 +1.3**
MSU Marysvale 83.27 44 *e*P **P 07 06 13.9 +1.3**
RSO Redoubt South 83.36 11 *e*P **P 07 06 12.2 -0.2**
MCW Mount Constitu 83.46 31 P **P 07 06 14.5 +1.4**
MCW Mount Constitu 83.46 31 P **P 07 06 14.5 +1.4**
SVW2 Sparrevohn 83.51 9 *e*P **P 07 06 11.8 -1.1**
comp=Z,28nm,1.3s
SVW2 LR LR
comp=Z,2μm,18.0s
B05A Bryant 83.55 32 P **P 07 06 13.3 -0.1**
baz=228,SNR=20
A04D Lummi Island 83.55 32 P **P 07 06 13.1 -0.3**
baz=228,SNR=6.9
BBB Bella Bella 83.56 27 P **P 07 06 11.7 -1.6**
comp=Z,19nm,1.1s,baz=235,slow=5.3,SNR=7.5
BBB Bella Bella 83.56 27 P **P 07 06 11.7 -1.6**
BBB LR LR
comp=Z,2μm,19.0s
E07A Sunnyside 83.57 34 *e*P **P 07 06 14.8 +1.2**
comp=Z,76nm,1.0s
E07A LR LR
comp=Z,4μm,18.0s
LTY Liberty 83.60 34 *e*P **P 07 06 14.3 +0.5**
comp=Z,39nm,1.1s
LTY LR LR
comp=Z,2μm,19.0s
BENWA Benson Ranch 83.62 35 P **P 07 06 12.8 -1.0**
SEW Seward 83.63 12 *e*P **P 07 06 13.6 +0.1**
comp=Z,58nm,1.1s
SEW LR LR
comp=Z,2μm,18.0s
HAWA Hanford 83.63 35 *e*P **P 07 06 13.9 0.0**
comp=Z,77nm,1.2s
HAWA LR LR
comp=Z,4μm,19.0s
MID Middleton Isla 83.67 14 PFAKE 07 06 30.0 +16
MID LR LR
comp=Z,2μm,18.0s
TLIG Tlapa 83.70 69 PFAKE 07 06 30.0 +15
TLIG LR LR
comp=Z,2μm,20.0s
NKL Nikolayevsk 83.74 335 *i* P **P 07 06 13.5 -0.7**
NKL *e* 07 06 23.2
NKL *e*S **S 07 16 35.5 +0.6**
NKL pmax pmax
comp=Z,1μm,9.0s
NKL smax smax
comp=E,600nm,11.0s
DUG Dugway, Tooele 83.81 43 P **P 07 06 15.0 -0.2**
baz=236
DUG Dugway, Tooele 83.81 43 *e*P **P 07 06 15.7 +0.5**
DUG pmax pmax
comp=Z,64nm,1.8s
DUG Dugway, Tooele 83.81 43 *e*P **P 07 06 15.7 +0.5**
comp=Z,64nm,1.8s
MFID Camas Ranch 83.85 39 *e*P **P 07 06 15.6 +0.3**
comp=Z,60nm,1.1s
MFID LR LR
comp=Z,2μm,18.0s
BMO Blue Mountains 83.88 37 *e*P **P 07 06 15.4 +0.1**
comp=Z,39nm,1.1s
BMO LR LR
comp=Z,3μm,19.0s
UNM Universidad Na 83.91 67 PFAKE 07 06 30.0 +14
UNM LR LR
comp=Z,2μm,20.0s
C06D Leavenworth 83.92 33 P **P 07 06 15.1 -0.3**
baz=229
GPW Glacier Peak 83.93 33 P **P 07 06 16.4 +0.7**
B06A Marblemount 84.02 32 *e*P **P 07 06 16.0 +0.2**
comp=Z,45nm,1.3s
B06A LR LR
comp=Z,2μm,18.0s
BGU Big Grassy Mou 84.08 42 *e*P **P 07 06 18.1 +1.5**
comp=Z,39nm,1.7s
BGU LR LR
comp=Z,3μm,18.0s
CRAG Craig 84.13 22 *e*P **P 07 06 16.4 +0.2**
comp=Z,52nm,1.4s
CRAG LR LR
comp=Z,1μm,20.0s
NLU North Lily Min 84.14 43 *e*P **P 07 06 17.9 +0.9**
comp=Z,43nm,1.8s
SPU Mount Spurr 84.15 11 *e*P **P 07 06 15.8 -0.5**
PAYG Puerto Ayora 84.24 88 PFAKE 07 06 30.0 +12
PAYG LR LR
comp=Z,3μm,18.0s
WTV Waterville 84.26 34 P **P 07 06 17.7 +0.5**
QIZ Qiongzhong 84.29 293 P **P 07 06 18.9 +1.0**
QIZ PP **PP 07 09 33.0 -0.1**
QIZ SS SS 07 22 14.4 +2.0
QIZ LR LR
comp=Z,560nm,19.0s
QIZ LR LR
comp=Z,1μm,24.6s
QIZ Qiongzhong 84.29 293 PFAKE 07 06 30.0 +12
QIZ LR LR
comp=Z,1μm,20.0s
TMUT Trail Mountain 84.33 44 *e*P **P 07 06 19.2 +1.1**
comp=Z,76nm,1.0s
TMUT LR LR
comp=Z,3μm,20.0s
D08A Wollman Farm, 84.38 34 *e*P **P 07 06 18.4 +0.7**
comp=Z,62nm,1.0s
D08A LR LR
comp=Z,4μm,19.0s
E09A Wood Farm, Sta 84.45 35 *e*P **P 07 06 18.6 +0.5**
comp=Z,41nm,1.0s
E09A LR LR
comp=Z,2μm,19.0s
MPU Maple Canyon 84.45 43 *e*P **P 07 06 19.6 +1.0**
comp=Z,27nm,1.0s
RC01 Rabbit Creek A 84.49 12 *e*P **P 07 06 18.6 +0.7**
comp=Z,52nm,1.1s
RC01 LR LR
comp=Z,2μm,19.0s
MNTX Cornudas Mount 84.49 53 P **P 07 06 18.3 -0.4**
baz=241
MNTX Cornudas Mount 84.49 53 *e*P **P 07 06 19.2 +0.6**
comp=Z,13nm,0.9s
MNTX LR LR
comp=Z,2μm,18.0s
LAZ Ladron 84.54 50 *e*P **P 07 06 20.1 +1.0**
SAW Saint Andrews 84.54 34 P **P 07 06 19.1 +0.5**
F10A Beach Ranch, E 84.61 36 *e*P **P 07 06 18.9 -0.2**
comp=Z,64nm,1.0s
F10A LR LR
comp=Z,3μm,19.0s
SUA Susitna One 84.65 11 *e*P **P 07 06 18.8 -0.1**
comp=Z,55nm,1.0s
SUA LR LR
comp=Z,2μm,20.0s
SPUT South Promonto 84.66 42 PFAKE 07 06 30.0 +10
SPUT LR LR
comp=Z,4μm,18.0s
TX31 Lajitas Ar. Si 84.67 56 *e*P **P 07 06 20.3 +0.5**
TXAR Lajitas Array 84.67 56 P **P 07 06 19.6 -0.1**
comp=Z,4.3nm,1.1s,baz=218,slow=8.1,SNR=20
TXAR LR LR 07 38 05.4
comp=Z,1μm,18.7s,baz=0.0,slow=31
DL2 Dalian 84.67 315 ⇑*i*P **P 07 06 19.2 -0.1**
DL2 S **S 07 16 48.4 +3.5**
DL2 pmax pmax
comp=Z,47nm,1.0s
DL2 pmax pmax
comp=Z,1μm,8.8s
DL2 LR LR
comp=Z,910nm,18.2s
DL2 LR LR
comp=Z,870nm,17.7s
DL2 LR LR
comp=Z,1μm,18.9s
SRU San Rafael Swe 84.68 45 *e*P **P 07 06 20.5 +0.8**
SRU pmax pmax
comp=Z,101nm,1.5s
SRU MLR MLR
comp=Z,2μm,20.0s
SRU San Rafael Swe 84.68 45 *e*P **P 07 06 20.5 +0.8**
comp=Z,101nm,1.5s
SRU LR LR
comp=Z,2μm,20.0s
HVU Hansel Valley 84.73 41 *e*P **P 07 06 20.2 +0.4**
HVU pmax pmax
comp=Z,38nm,1.0s
HVU MLR MLR
comp=Z,4μm,18.0s
HVU Hansel Valley 84.73 41 *e*P **P 07 06 20.2 +0.4**
comp=Z,38nm,1.0s
HVU LR LR
comp=Z,4μm,18.0s
P17A Butcher Ranch, 84.73 44 *e*P **P 07 06 21.8 +1.8**
comp=Z,70nm,1.2s
P17A LR LR
comp=Z,3μm,20.0s
CTU Camp Tracy 84.76 43 *e*P **P 07 06 20.3 +0.3**
comp=Z,51nm,1.0s
CTU LR LR
comp=Z,13μm,20.0s
HLID Hailey 84.77 39 P **P 07 06 19.9 -0.1**
baz=234
HLID Hailey 84.77 39 *e*P **P 07 06 21.0 +1.0**
comp=Z,40nm,1.0s
HLID LR LR
comp=Z,1μm,19.0s
BNM Barren Site 84.78 50 *e*P **P 07 06 21.4 +1.0**
EYAK Cordova Ski Ar 84.81 14 *e*P **P 07 06 19.9 +0.4**

comp=Z,41nm,1.0s
EYAK LR LR
comp=Z,2µm,20.0s
GAMB Gambell 84.83 1 PFAKE 07 06 30.0 +10
GAMB LR LR
comp=Z,2µm,20.0s
LPM Los Pinos Moun 84.86 50 *eP* **P 07 06 21.7 +1.0**
JLU Jordanelle 84.90 43 *eP* **P 07 06 21.5 +0.7**
comp=Z,31nm,1.2s
JLU LR LR
comp=Z,3µm,18.0s
KLR Kul'dur 84.98 328 P **P 07 06 19.5 -1.2**
comp=Z,1.0nm,0.6s,baz=156,slow=4.9,SNR=11
KLR Kul'dur 84.98 328 P **P 07 06 19.5 -1.2**
KLR pmax pmax
comp=Z,2.0nm,1.0s
B08A Colville Reser 85.00 33 *eP* **P 07 06 21.0 +0.2**
comp=Z,26nm,1.0s
B08A LR LR
comp=Z,1µm,18.0s
MVCO Mesa Verde 85.02 47 P **P 07 06 21.1 -0.4**
baz=239
MVCO Mesa Verde 85.02 47 *eP* **P 07 06 22.3 +0.8**
comp=Z,33nm,1.4s
MVCO LR LR
comp=Z,2µm,19.0s
SNY Shenyang 85.03 318 ⇓P **P 07 06 22.4 +1.3**
SNY S **S 07 16 49.2 +0.8**
SNY SS **SS 07 22 24.8 +2.2**
SNY pmax pmax
comp=Z,27nm,1.6s
SNY pmax pmax
comp=Z,1µm,8.3s
SNY LR LR
comp=Z,1µm,17.4s
SNY LR LR
comp=Z,1µm,17.1s
SNY LR LR
comp=Z,2µm,17.4s
CN2 Changchun 85.04 321 *eP* **P 07 06 20.6 -0.5**
CN2 *es*P pP 07 06 31.7 +1.2
CN2 S **S 07 16 40.0 -8.4**
CN2 pmax pmax
comp=Z,40nm,1.8s
CN2 pmax pmax
comp=Z,800nm,4.0s
CN2 LR LR
comp=Z,500nm,18.0s
CN2 LR LR
comp=Z,900nm,18.0s
CN2 LR LR
comp=Z,1µm,20.0s
PMR Palmer 85.06 12 *eP* **P 07 06 19.7 -1.1**
PMR pmax pmax
comp=Z,37nm,1.0s
PMR MLR MLR
comp=Z,2µm,18.0s
PMR Palmer 85.06 12 *eP* **P 07 06 19.7 -1.1**
comp=Z,37nm,1.0s
PMR LR LR
comp=Z,2µm,18.0s
PV05 Paradox Valley 85.07 46 *eP* **P 07 06 22.7 +1.0**
BKNI Bangkinang 85.07 272 PFAKE 07 06 30.0 +8.0
BKNI LR LR
comp=Z,2µm,20.0s
P18A Preston Nutter 85.14 44 *eP* **P 07 06 22.7 +0.5**
comp=Z,27nm,1.0s
P18A LR LR
comp=Z,3µm,19.0s
WRAK Wrangell Islan 85.15 22 *eP* **P 07 06 22.5 +1.2**
comp=Z,35nm,1.2s
WRAK LR LR
comp=Z,1µm,19.0s
TT01 Tatalina 85.18 8 *eP* **P 07 06 21.8 +0.5**
C09A Chrisman Ranch 85.19 34 *eP* **P 07 06 22.4 +0.6**
comp=Z,49nm,1.2s
C09A LR LR
comp=Z,3µm,18.0s
TTA Tatalina 85.20 8 *eP* **P 07 06 22.7 +1.1**
TTA pmax pmax
comp=Z,52nm,1.1s
TTA Tatalina 85.20 8 *eP* **P 07 06 22.7 +1.1**
comp=Z,52nm,1.1s
TCUT Toone Canyon 85.21 42 *eP* **P 07 06 23.2 +0.8**
comp=Z,157nm,1.2s
TCUT LR LR
comp=Z,3µm,19.0s
LLLB Lillooet 85.22 30 *eP* **P 07 06 22.7 +0.7**
comp=Z,42nm,1.1s
LLLB LR LR
comp=Z,2µm,18.0s
PV10 Paradox Valley 85.27 46 *eP* **P 07 06 24.0 +1.3**
PV09 Paradox Valley 85.27 46 *eP* **P 07 06 23.5 +0.7**
ANMO Albuquerque 85.30 50 P **P 07 06 22.9 +0.1**
baz=240
ANMO Albuquerque 85.30 50*c i*P **P 07 06 22.8 -0.1**
ANMO pmax pmax
comp=Z,48nm,2.5s
ANMO MLR MLR
comp=Z,2µm,16.0s
ANMO Albuquerque 85.30 50 *eP* **P 07 06 23.5 +0.6**
comp=Z,32nm,1.0s
ANMO LR LR
comp=Z,2µm,18.0s
DIV Divide 85.33 13 *eP* **P 07 06 22.6 +0.4**
comp=Z,65nm,1.0s
DIV LR LR
comp=Z,2µm,20.0s
PV04 Paradox Valley 85.37 46 *eP* **P 07 06 23.5 +0.4**
HWUT Hardware Ranch 85.38 42 *eP* **P 07 06 23.2 +0.1**
comp=Z,18nm,1.0s
HWUT LR LR
comp=Z,4µm,18.0s
YKU2 Yakutat 85.41 17 PFAKE 07 06 30.0 +7.5
YKU2 LR LR
comp=Z,2µm,18.0s
SML Sawmill 85.42 12 *eP* **P 07 06 22.9 +0.2**
SML pmax pmax
comp=Z,70nm,1.3s
SML MLR MLR
comp=Z,2µm,19.0s
SML Sawmill 85.42 12 *eP* **P 07 06 22.9 +0.2**
comp=Z,70nm,1.3s
SML LR LR
comp=Z,2µm,19.0s
BMRM Bremner River 85.44 14 *eP* **P 07 06 23.3 +0.5**
comp=Z,81nm,1.2s
BMRM LR LR
comp=Z,2µm,20.0s
PV01 Paradox Valley 85.46 46 *eP* **P 07 06 24.1 +0.4**
DHAK Deception Hill 85.46 18 *eP* **P 07 06 24.1 +1.3**
comp=Z,98nm,1.3s
DHAK LR LR
comp=Z,2µm,18.0s
PNT Penticton 85.47 32 *eP* **P 07 06 23.6 +0.4**
PNT Penticton 85.47 32 *eP* **P 07 06 23.6 +0.4**
MA2 Magadan 85.50 343 P **P 07 06 22.5 -0.5**
comp=Z,2.4nm,0.4s,baz=136,slow=6.8,SNR=6.8
CRQM Cirque 85.60 15 *eP* **P 07 06 24.4 +0.6**
comp=Z,44nm,1.0s
CRQM LR LR
comp=Z,3µm,20.0s
KLU Klutina 85.62 13 *eP* **P 07 06 24.1 +0.4**
comp=Z,55nm,1.3s
KLU LR LR
comp=Z,2µm,20.0s
SCM Sheep Creek Mo 85.64 12 *eP* **P 07 06 24.3 +0.5**
SCM pmax pmax
comp=Z,90nm,1.0s
SCM MLR MLR
comp=Z,1µm,21.0s
SCM Sheep Creek Mo 85.64 12 *eP* **P 07 06 24.3 +0.5**
comp=Z,90nm,1.0s
SCM LR LR
comp=Z,1µm,21.0s
WHN Wuhan 85.67 305 ⇑*i*P **P 07 06 23.9 -0.7**
WHN sP **sP 07 06 39.3 +1.9**
WHN S **S 07 16 53.6 -1.6**
WHN pmax pmax
comp=Z,330nm,1.9s
WHN pmax pmax
comp=Z,1µm,4.4s
WHN LR LR
comp=Z,3µm,17.8s
WHN LR LR
comp=Z,4µm,21.9s
WHN LR LR

comp=Z,3µm,17.7s
PPLA Purkeypile 85.74 10 *eP* **P 07 06 25.0 +0.6**
comp=Z,28nm,1.1s
PPLA LR LR
comp=Z,2µm,20.0s
PCA Pinnacle 85.75 16 *eP* **P 07 06 25.0 +0.7**
comp=Z,102nm,1.3s
PCA LR LR
comp=Z,3µm,20.0s
BALM Baldy 86.03 15 *eP* **P 07 06 26.2 +0.4**
BALM pmax pmax
comp=Z,49nm,1.1s
BALM MLR MLR
comp=Z,3µm,19.0s
BALM Baldy 86.03 15 *eP* **P 07 06 26.2 +0.4**
comp=Z,49nm,1.1s
BALM LR LR
comp=Z,3µm,19.0s
NEW Newport 86.09 34 P **P 07 06 25.4 -0.9**
comp=Z,4.7nm,0.9s,baz=228,slow=5.7,SNR=5.1
NEW Newport 86.09 34 P **P 07 06 26.0 -0.3**
baz=232
NEW Newport 86.09 34 *eP* **P 07 06 27.0 +0.7**
NEW pmax pmax
comp=Z,42nm,1.5s
NEW MLR MLR
comp=Z,4µm,19.0s
NEW Newport 86.09 34 *eP* **P 07 06 27.0 +0.7**
comp=Z,42nm,1.5s
NEW LR LR
comp=Z,4µm,19.0s
PLCA Paso Flores 86.24 132 P **P 07 06 28.6 +1.1**
comp=Z,5.6nm,0.9s,baz=267,slow=10,SNR=6.2
PLCA Paso Flores 86.24 132 *eP* **P 07 06 29.2 +1.7**
PLCA pmax pmax
comp=Z,78nm,1.5s
PLCA Paso Flores 86.24 132 *eP* **P 07 06 29.2 +1.7**
comp=Z,78nm,1.5s
CAST Castle Rocks 86.25 10 *eP* **P 07 06 25.7 -1.0**
comp=Z,24nm,0.9s
CAST LR LR
comp=Z,2µm,21.0s
AHID Auburn Hatcher 86.31 41 *eP* **P 07 06 28.3 +0.6**
comp=Z,62nm,1.7s
AHID LR LR
comp=Z,3µm,19.0s
TIA Tai'an 86.34 311 ⇓P **P 07 06 29.0 +1.2**
TIA SKS **SKSac 07 16 54.8 +2.6**
TIA S **ScS 07 17 06.0 -4.1**
TIA pmax pmax
comp=Z,30nm,1.1s
TIA pmax pmax
comp=Z,1µm,8.0s
TIA LR LR
comp=Z,810nm,21.0s
TIA LR LR
comp=Z,800nm,21.0s
TIA LR LR
comp=Z,1µm,25.0s
MCMT McKenzie Canyo 86.42 39 *eP* **P 07 06 29.0 +0.7**
S22A 4UR Ranch, Cre 86.44 47 P **P 07 06 28.5 -0.2**
baz=240
S22A 4UR Ranch, Cre 86.44 47 *eP* **P 07 06 29.3 +0.7**
comp=Z,25nm,1.1s
S22A LR LR
comp=Z,2µm,19.0s
KTH Kantishna Hill 86.56 10 *eP* **P 07 06 27.7 -0.6**
comp=Z,50nm,1.1s
KTH LR LR
comp=Z,3µm,22.0s
TRF Thorofare Moun 86.57 11 *eP* **P 07 06 28.4 0.0**
comp=Z,89nm,1.0s
TRF LR LR
comp=Z,3µm,18.0s
IPM Ipoh 86.59 276 *eP* **P 07 06 29.4 -0.1**
comp=Z,43nm,0.9s
IPM LR LR
comp=Z,2µm,22.0s
SKAG Skagway 86.61 19 *eP* **P 07 06 29.6 +1.1**
comp=Z,59nm,1.0s
SKAG LR LR
comp=Z,1µm,20.0s
UBPT Khong Chiam 86.61 288 P **P 07 06 32.0 +2.5**
comp=Z,25nm,1.2s,comp=Z,826nm
SYO Syowa Base 86.65 192⇓*e*P **P 07 06 27.9 -0.9**
SYO Syowa Base 86.65 192⇓*e*X sP 07 06 41.0 -0.7
O20A White River Ci 86.72 45 P **P 07 06 29.4 -0.3**
baz=239
O20A White River Ci 86.72 45 *eP* **P 07 06 30.0 +0.2**
comp=Z,14nm,1.0s
O20A LR LR
comp=Z,1µm,18.0s
CMIG Matias Romero 86.72 70 P **P 07 06 30.9 +0.9**
comp=Z,1.9nm,0.7s,baz=179,slow=4.1,SNR=4.1
DHY Denali Highway 86.76 12 *eP* **P 07 06 29.7 +0.3**
comp=Z,36nm,1.1s
DHY LR LR
comp=Z,2µm,19.0s
RND Reindeer 86.78 11 *eP* **P 07 06 29.4 0.0**
RND pmax pmax
comp=Z,89nm,1.1s
RND MLR MLR
comp=Z,2µm,20.0s
RND Reindeer 86.78 11 *eP* **P 07 06 29.4 0.0**
comp=Z,89nm,1.1s
RND LR LR
comp=Z,2µm,20.0s
REDW Red Top Meadow 86.79 41 *eP* **P 07 06 30.4 +0.2**
comp=Z,28nm,1.3s
REDW LR LR
comp=Z,3µm,18.0s
TPAW Teton Pass 86.80 41 *eP* **P 07 06 30.6 +0.4**
comp=Z,12nm,0.9s
TPAW LR LR
comp=Z,3µm,18.0s
DLMT Dillon 86.87 38 *eP* **P 07 06 30.8 +0.5**
comp=Z,51nm,1.5s
DLMT LR LR
comp=Z,2µm,19.0s
SNOW Snow King Moun 86.90 41 *eP* **P 07 06 31.2 +0.6**
comp=Z,28nm,1.1s
SNOW LR LR
comp=Z,3µm,18.0s
MSO Missoula 86.95 37 P **P 07 06 30.0 -0.7**
baz=234
MSO Missoula 86.95 37 *eP* **P 07 06 35.1 +4.5**
comp=Z,28nm,1.5s
MSO LR LR
comp=Z,3µm,22.0s
IMW Indian Meadow 87.03 40 *eP* **P 07 06 32.0 +0.7**
comp=Z,30nm,1.4s
IMW LR LR
comp=Z,2µm,18.0s
PAX Paxson 87.05 13 *eP* **P 07 06 30.5 -0.2**
PAX pmax pmax
comp=Z,22nm,1.0s
PAX MLR MLR
comp=Z,2µm,20.0s
PAX Paxson 87.05 13 *eP* **P 07 06 30.5 -0.2**
comp=Z,22nm,1.0s
PAX LR LR
comp=Z,2µm,20.0s
MOOW Moose Ponds 87.06 41 *eP* **P 07 06 31.8 +0.4**
comp=Z,40nm,2.0s
MOOW LR LR
comp=Z,3µm,18.0s
SMCO Snowmass 87.06 46 *eP* **P 07 06 32.2 +0.5**
comp=Z,12nm,1.0s
MCK McKinley 87.07 11 *eP* **P 07 06 30.1 -0.6**
MCK pmax pmax
comp=Z,113nm,1.1s
MCK MLR MLR
comp=Z,2µm,18.0s
MCK McKinley 87.07 11 *eP* **P 07 06 30.1 -0.6**
comp=Z,113nm,1.1s
MCK LR LR
comp=Z,2µm,18.0s
LOHW Long Hollow 87.08 41 *eP* **P 07 06 31.7 +0.2**
comp=Z,9.5nm,1.0s
LOHW LR LR
comp=Z,3µm,18.0s
SNAA Sanae 87.08 177 P **P 07 06 31.5 +0.5**
SNAA Sanae 87.08 177⇓*e*P **P 07 06 31.7 +0.7**
SNAA Sanae 87.08 177 *eP* **P 07 06 31.6 +0.6**
comp=Z,35nm,1.3s
SNAA LR LR
comp=Z,3µm,21.0s
BSMT Bassoo Peak 87.08 36 *eP* **P 07 06 31.3 -0.1**

832A Faith Ranch, C 87.08 58 P **P 07 06 31.1 -0.5**
baz=244
HYT Haines Junctio 87.10 17 *eP* **P 07 06 32.2 +1.1**
comp=Z,35nm,1.2s
HYT LR LR
comp=Z,2µm,20.0s
LRM Limekiln Ridge 87.21 38 *eP* **P 07 06 32.5 +0.4**
KULM Kulim 87.24 277 PFAKE 07 06 40.0 +7.3
KULM LR LR
comp=Z,1µm,21.0s
QLMT Earthquake Lak 87.25 39 *eP* **P 07 06 33.3 +1.0**
BW06 Boulder Array 87.26 42 P **P 07 06 31.7 -0.7**
baz=238
BW06 Boulder Array 87.26 42 *eP* **P 07 06 32.2 -0.2**
comp=Z,12nm,0.9s
BW06 LR LR
comp=Z,3µm,18.0s
PD31 Pinedale Array 87.26 42 *eP* **P 07 06 32.6 +0.2**
PDAR Pinedale Array 87.26 42 P **P 07 06 31.8 -0.7**
comp=Z,3.1nm,0.8s,baz=206,slow=3.7,SNR=16
PDAR LR LR 07 41 22.0
comp=Z,2µm,18.4s,baz=250,slow=33
FLWY Flagg Ranch 87.28 40 *eP* **P 07 06 33.1 +0.6**
comp=Z,22nm,1.2s
FLWY LR LR
comp=Z,2µm,18.0s
YPP Pitchstone Pla 87.31 40 PFAKE 07 06 40.0 +7.3
YPP LR LR
comp=Z,2µm,18.0s
YHB Horse Butte 87.35 40 PFAKE 07 06 40.0 +7.2
YHB LR LR
comp=Z,2µm,19.0s
933A Laredo 87.35 59 P **P 07 06 32.3 -0.6**
baz=244
SDCO Great Sand Dun 87.35 48 P **P 07 06 32.5 -0.6**
baz=241
SDCO Great Sand Dun 87.35 48 *eP* **P 07 06 33.3 +0.3**
comp=Z,8.0nm,1.1s
SDCO LR LR
comp=Z,2µm,18.0s
CHMT Chamberlain Mo 87.38 37 *eP* **P 07 06 32.8 0.0**
MENT Mentasta 87.39 13 *eP* **P 07 06 32.9 +0.6**
comp=Z,63nm,1.3s
MENT LR LR
comp=Z,2µm,20.0s
YFT Old Faithful 87.39 40 *eP* **P 07 06 33.0 -0.1**
comp=Z,34nm,1.6s
YFT LR LR
comp=Z,2µm,19.0s
SLMT Seeley Lake 87.44 37 *eP* **P 07 06 32.7 -0.3**
YMR Madison River 87.44 40 *eP* **P 07 06 33.9 +0.7**
comp=Z,24nm,1.3s
YMR LR LR
comp=Z,2µm,18.0s
MSTX Muleshoe 87.50 52 P **P 07 06 33.2 -0.5**
baz=242
MSTX Muleshoe 87.50 52 *eP* **P 07 06 34.0 +0.3**
comp=Z,34nm,0.9s
MSTX LR LR
comp=Z,3µm,18.0s
DLBC Dease Lake 87.51 22 P **P 07 06 33.8 +0.8**
comp=Z,14nm,0.9s,baz=220,slow=5.9,SNR=16
DLBC Dease Lake 87.51 22 *eP* **P 07 06 34.2 +1.2**
comp=Z,29nm,1.1s
DLBC LR LR
comp=Z,1µm,18.0s
H17A Grant Village 87.52 40 P **P 07 06 33.7 0.0**
baz=237
H17A Grant Village 87.52 40 PFAKE 07 06 50.0 +16
H17A LR LR
comp=Z,2µm,19.0s
BOZ Bozeman (W) 87.56 39 P **P 07 06 33.7 0.0**
baz=236
BOZ Bozeman (W) 87.56 39 *eP* **P 07 06 34.1 +0.4**
BOZ pmax pmax
comp=Z,20nm,1.0s
BOZ MLR MLR
comp=Z,3µm,19.0s
BOZ Bozeman (W) 87.56 39 *eP* **P 07 06 34.1 +0.4**
comp=Z,20nm,1.0s
BOZ LR LR
comp=Z,3µm,19.0s
833A Chaparral WMA, 87.56 58 P **P 07 06 33.3 -0.6**
baz=244
YHH Holmes Hill 87.57 40 PFAKE 07 06 50.0 +16
YHH LR LR
comp=Z,2µm,18.0s
034A Hebbronville 87.59 60 P **P 07 06 33.8 -0.3**
baz=245
YNR Norris Junctio 87.63 40 PFAKE 07 06 50.0 +16
YNR LR LR
comp=Z,2µm,19.0s
LKWY Lake 87.72 40 PFAKE 07 06 50.0 +15
LKWY LR LR
comp=Z,4µm,18.0s
VNA1 Neumayer--Stat 87.77 175 P **P 07 06 35.9 +1.8**
733A Divot King Ran 87.81 58 P **P 07 06 34.6 -0.5**
baz=244
T25A Trinidad 87.81 49 P **P 07 06 34.6 -0.7**
baz=241
T25A Trinidad 87.81 49 *eP* **P 07 06 34.5 -0.7**
comp=Z,9.2nm,1.1s
T25A LR LR
comp=Z,2µm,19.0s
035Z Hargill 87.83 61 P **P 07 06 34.6 -0.6**
baz=245
WRH Wood River Hil 87.90 11 *eP* **P 07 06 34.0 -0.7**
comp=Z,144nm,1.4s
WRH LR LR
comp=Z,2µm,20.0s
PSI Prapat 87.94 274 *eP* **P 07 06 35.6 -0.6**
PSI pmax pmax
comp=Z,44nm,1.0s
PSI MLR MLR
comp=Z,3µm,20.0s
PSI Prapat 87.94 274 *eP* **P 07 06 35.6 -0.6**
comp=Z,44nm,1.0s
PSI LR LR
comp=Z,3µm,20.0s
DOT Dot Lake 87.94 13 *eP* **P 07 06 35.3 +0.4**
comp=Z,143nm,1.2s
934A Benavides 87.95 59 P **P 07 06 35.8 0.0**
baz=245
SKLT Songkhla 87.95 278 P **P 07 06 38.5 +2.4**
comp=Z,50nm,1.2s,comp=Z,2µm
SKLT Songkhla 87.95 278 P **P 07 06 38.5 +2.4**
comp=Z,50nm,1.2s
SEY Seymchan 87.97 345 P **P 07 06 34.3 -0.7**
comp=Z,6.4nm,0.8s,baz=132,slow=5.3,SNR=25
035A Encino 88.01 60 P **P 07 06 35.5 -0.5**
baz=245
HDA Harding Lake 88.05 12 *eP* **P 07 06 35.1 -0.3**
comp=Z,38nm,1.1s
HDA LR LR
comp=Z,2µm,19.0s
HRY Holter Researc 88.07 38 *eP* **P 07 06 36.7 +0.7**
NVL N'lazarevskaya 88.07 182 *eP* P 07 06 49.0 +13
NVL *eS* **S 07 17 18.7 +1.5**
NVL MLR MLR
comp=Z,1µm,15.0s
CCB Clear Creek Bu 88.11 11 *eP* **P 07 06 34.4 -1.2**
comp=Z,116nm,1.6s
CCB LR LR
comp=Z,2µm,20.0s
834A Tilden 88.15 59 P **P 07 06 36.3 -0.4**
baz=245
JCT Junction City 88.18 56 P **P 07 06 36.2 -0.6**
baz=244
JCT Junction City 88.18 56 *eP* **P 07 06 38.1 +1.2**
JCT pmax pmax
comp=Z,19nm,1.2s
JCT MLR MLR
comp=Z,2µm,18.0s
JCT Junction City 88.18 56 *eP* **P 07 06 38.1 +1.2**
comp=Z,19nm,1.2s
JCT LR LR
comp=Z,2µm,18.0s
Q24A Divide 88.19 47 P **P 07 06 36.3 -0.7**
baz=241
Q24A Divide 88.19 47 *eP* **P 07 06 36.6 -0.4**
comp=Z,8.2nm,1.0s
Q24A LR LR
comp=Z,2µm,20.0s
633A Saathoff Ranch 88.22 58 P **P 07 06 36.2 -0.9**
baz=244
WALA Waterton Lakes 88.27 35 *eP* **P 07 06 38.2 +1.2**
comp=Z,32nm,1.0s

WALA LR LR
comp=Z,3µm,18.0s
ISCO Idaho Springs 88.29 46 P **P 07 06 36.7 -0.8**
baz=240
ISCO Idaho Springs 88.29 46 *e*P **P 07 06 37.8 +0.3**
ISCO pmax pmax
comp=Z,24nm,1.9s
ISCO MLR MLR
comp=Z,1µm,20.0s
ISCO Idaho Springs 88.29 46 *e*P **P 07 06 37.8 +0.3**
comp=Z,24nm,1.9s
ISCO LR LR
comp=Z,1µm,20.0s
COLA College 88.31 11 *e*P **P 07 06 36.7 +0.2**
COLA pmax pmax
comp=Z,147nm,1.5s
COLA MLR MLR
comp=Z,2µm,21.0s
COLA College 88.31 11 *e*P **P 07 06 36.7 +0.2**
comp=Z,147nm,1.5s
COLA LR LR
comp=Z,2µm,21.0s
IL1 Eielson Array 88.39 11 *e*P **P 07 06 36.8 -0.2**
ILAR Eielson Array 88.39 11 P **P 07 06 35.8 -1.2**
comp=Z,8.4nm,0.8s,baz=212,slow=4.7,SNR=42
ILAR LR LR 07 39 56.4
comp=Z,768nm,20.9s,baz=214,slow=31
ILB Eielson Array 88.39 11 *e*P **P 07 06 36.6 -0.4**
KVTX Kingsville 88.43 60 PFAKE 07 06 50.0 +12
KVTX LR LR
comp=Z,1µm,18.0s
734A La Parita Cree 88.45 58 P **P 07 06 37.6 -0.5**
baz=245
SKNT Sakolnakorn 88.58 289 P **P 07 06 40.7 +1.7**
comp=Z,96nm,1.9s
SKNT Sakolnakorn 88.58 289 P **P 07 06 40.7 +1.7**
533A Kerrville 88.60 57 P **P 07 06 37.8 -1.0**
baz=244
N23A Red Feather La 88.61 45 P **P 07 06 37.8 -1.1**
baz=240
N23A Red Feather La 88.61 45 *e*P **P 07 06 39.2 +0.3**
comp=Z,12nm,1.1s
N23A LR LR
comp=Z,1µm,18.0s
GSI Gunungsitoli 88.65 272 *e*P **P 07 06 39.4 -0.1**
comp=Z,134nm,0.9s
GSI LR LR
comp=Z,4µm,21.0s
RLMT Red Lodge 88.70 40 P **P 07 06 39.1 -0.1**
baz=238
RLMT Red Lodge 88.70 40 *e*P **P 07 06 40.1 +0.9**
comp=Z,4.5nm,0.7s
RLMT LR LR
comp=Z,2µm,18.0s
AMTX Amarillo 88.72 52 P **P 07 06 38.6 -0.8**
baz=243
AMTX Amarillo 88.72 52 *e*P **P 07 06 39.7 +0.4**
comp=Z,17nm,0.9s
AMTX LR LR
comp=Z,4µm,18.0s
835A Beeville 88.79 59 P **P 07 06 39.1 -0.6**
baz=245
CCIG Comitan 88.83 72 PFAKE 07 06 50.0 +10
CCIG LR LR
comp=Z,1µm,19.0s
634A China Grove, S 88.84 58 P **P 07 06 39.1 -0.9**
baz=245
433A Art 88.85 56 P **P 07 06 39.1 -0.9**
baz=244
BJT Baijiatuau 88.86 314 *e*P **P 07 06 40.8 +1.0**
BJT MLR MLR
comp=Z,2µm,18.0s
BJT Baijiatuau 88.86 314 *e*P **P 07 06 40.8 +1.0**
BJT LR LR
comp=Z,2µm,18.0s
BJI Beijing 88.87 314 P **P 07 06 39.8 0.0**
BJI PP **PP 07 10 09.1 -0.6**
BJI SS SS 07 23 18.9 0.0
BJI pmax pmax
comp=Z,25nm,2.1s
BJI pmax pmax
comp=Z,880nm,4.2s
BJI LR LR
comp=Z,930nm,20.9s
BJI LR LR
comp=Z,710nm,21.4s
BJI LR LR
comp=Z,1µm,21.4s
534A Blanco 89.02 57 P **P 07 06 40.0 -0.8**
baz=245
735A Kenedy 89.05 59 P **P 07 06 40.1 -0.9**
baz=245
TRTT Trang 89.05 279 P **P 07 06 43.8 +2.5**
comp=Z,96nm,1.3s
TRTT Trang 89.05 279 P **P 07 06 43.8 +2.5**
comp=Z,96nm,1.3s
K22A Casper 89.11 43 P **P 07 06 40.3 -0.8**
baz=240
K22A Casper 89.11 43 *e*P **P 07 06 41.8 +0.7**
comp=Z,26nm,1.4s
K22A LR LR
comp=Z,4µm,18.0s
PHWY Pilot Hill 89.13 45 *e*P **P 07 06 42.2 +0.7**
PHWY LR LR
comp=Z,1µm,18.0s
333A Richland Sprin 89.17 56 P **P 07 06 40.5 -1.0**
baz=244
ABTX Abilene, Hawle 89.23 55 P **P 07 06 41.3 -0.4**
baz=244
ABTX Abilene, Hawle 89.23 55 *e*P **P 07 06 42.8 +1.1**
comp=Z,28nm,1.1s
ABTX LR LR
comp=Z,4µm,18.0s
635A Leesville 89.30 58 P **P 07 06 41.2 -0.9**
baz=245
ENH Enshi 89.31 303 *e*P **P 07 06 44.1 +1.9**
comp=Z,323nm,1.4s
ENH LR LR
comp=Z,1µm,19.0s
DAWY Dawson 89.34 15 *e*P **P 07 06 41.8 +0.2**
comp=Z,50nm,1.1s
DAWY LR LR
comp=Z,2µm,19.0s
434A Burnet 89.51 57 P **P 07 06 42.1 -1.0**
baz=245
233A Rising Star 89.54 55 P **P 07 06 42.2 -1.0**
baz=245
EGAK Eagle 89.55 14 *e*P **P 07 06 42.3 -0.1**
comp=Z,80nm,1.5s
EGAK LR LR
comp=Z,2µm,20.0s
736A Circle Diamond 89.68 59 P **P 07 06 43.5 -0.4**
baz=246
535A Dale 89.73 58 P **P 07 06 43.6 -0.5**
baz=245
334A Lometa 89.76 56 P **P 07 06 43.6 -0.6**
baz=245
133A Hamilton Ranch 89.78 55 P **P 07 06 43.7 -0.6**
baz=245
636A Smothers Creek 89.91 58 P **P 07 06 44.1 -0.9**
baz=246
KSCO Kaye Shedlock' 89.94 48 P **P 07 06 44.4 -0.7**
baz=242
KSCO Kaye Shedlock' 89.94 48 *e*P **P 07 06 44.1 -1.0**
comp=Z,22nm,1.1s
KSCO LR LR
comp=Z,1µm,18.0s
GYA Guiyang 90.01 298↓ *i*P **P 07 06 46.9 +1.3**
GYA PP **PP 07 10 22.0 +2.8**
GYA SKS **SKSac 07 17 15.4 +0.5**
GYA S **S 07 17 37.3 +0.2**
GYA SS **SS 07 23 39.9 +3.7**
GYA pmax pmax
comp=Z,50nm,1.0s
GYA pmax pmax
comp=Z,160nm,8.9s
GYA LR LR
comp=Z,4µm,21.2s
GYA LR LR
comp=Z,3µm,22.4s
GYA LR LR
comp=Z,2µm,21.8s
435B Jarrell 90.03 57 P **P 07 06 45.0 -0.5**
baz=245
COLD Coldfoot 90.09 9 *e*P **P 07 06 45.9 +1.0**
comp=Z,20nm,1.0s
COLD LR LR
comp=Z,1µm,19.0s
234A Clairette 90.12 56 P **P 07 06 44.9 -1.0**
baz=245
Z33A Whitaker Ranch 90.18 54 P **P 07 06 45.5 -0.7**
baz=245
BILL Bilibino 90.22 353↓ *e*P **P 07 06 45.7 +0.2**
BILL *e* 07 10 21.2
BILL *e*PPP PPP 07 12 17.1
BILL pmax pmax
comp=Z,15nm,1.3s
BILL Bilibino 90.22 353 *e*P **P 07 06 46.5 +1.0**
comp=Z,26nm,1.2s
BILL LR LR
comp=Z,4µm,20.0s
X32A Elmer 90.28 53 P **P 07 06 46.3 -0.3**
baz=244
SURT Suratani 90.29 279 P **P 07 06 51.3 +4.3**
comp=Z,25nm,0.7s,comp=Z,352nm
SURT Suratani 90.29 279 P **P 07 06 51.3 +4.3**
comp=Z,25nm,0.7s
FYU Fort Yukon 90.31 11 PFAKE 07 07 00.0 +14
FYU LR LR
comp=Z,1µm,19.0s
TIY Taiyuan 90.36 311 *e*P **P 07 06 46.5 -0.5**
TIY S **S 07 17 44.2 +4.4**
TIY pmax pmax
comp=Z,540nm,5.2s
TIY LR LR
comp=Z,660nm,17.3s
TIY LR LR
comp=Z,960nm,18.2s
TIY LR LR
comp=Z,1µm,19.2s
335A Moody 90.36 57 P **P 07 06 46.3 -0.7**
baz=245
134A White-Moore Ra 90.40 55 P **P 07 06 46.5 -0.7**
baz=245
Y33A Hilltop Ranch, 90.60 54 P **P 07 06 47.4 -0.7**
baz=245
W32A Sentinel 90.61 52 P **P 07 06 47.5 -0.6**
baz=244
WHTX Lake Whitney, 90.64 56 P **P 07 06 47.8 -0.4**
baz=245
WHTX Lake Whitney, 90.64 56 *e*P **P 07 06 48.5 +0.2**
comp=Z,16nm,0.4s
WHTX LR LR
comp=Z,2µm,19.0s
436A Wall Ranch, Ga 90.64 57 P **P 07 06 48.0 -0.3**
baz=246
AUSP Uspallata 90.72 125 *e*P **P 07 06 50.0 +0.8**
537A Green Hill Far 90.74 58 P **P 07 06 47.6 -1.2**
baz=246
AAGR Agrelo 90.77 126 *e*P **P 07 06 52.1 +2.9**
WMOK Wichita Mounta 90.79 53 P **P 07 06 48.2 -0.8**
baz=245
WMOK Wichita Mounta 90.79 53 PFAKE 07 07 00.0 +11
WMOK LR LR
comp=Z,1µm,18.0s
336A Riesel 90.86 57 P **P 07 06 47.5 -1.8**
baz=246
Z34A Collier Ranch, 90.86 54 P **P 07 06 48.4 -0.9**
baz=245
135A Vickery Place, 90.91 55 P **P 07 06 48.7 -0.8**
baz=245
X33A Lawton 90.92 53 P **P 07 06 48.8 -0.8**
baz=245
RTLS Leoncito 90.97 125 *e*P **P 07 06 51.3 +0.9**
EDM Edmonton 90.98 32 *e*P **P 07 06 50.6 +1.2**
EDM pmax pmax
comp=Z,64nm,1.4s
EDM MLR MLR
comp=Z,2µm,18.0s
EDM Edmonton 90.98 32 *e*P **P 07 06 50.6 +1.2**
comp=Z,64nm,1.4s
EDM LR LR
comp=Z,2µm,18.0s
ASAL Salagasta 90.98 126↓ *e*P **P 07 06 52.8 +2.6**
***V32A* Arapaho 91.02 52** P **P 07 06 50.3 +0.3**
baz=244
LCO Las Campanas 91.07 122 *e*P **P 07 06 51.7 +0.8**
comp=Z,177nm,2.0s
LCO LR LR
comp=Z,2µm,18.0s
PBKT Sadao Pong 91.10 287 P **P 07 06 53.1 +2.4**
comp=Z,52nm,1.4s,comp=Z,1µm
PBKT Sadao Pong 91.10 287 P **P 07 06 53.1 +2.4**
comp=Z,52nm,1.4s
437A Phatom Ranch, 91.18 57 P **P 07 06 52.4 +1.5**
baz=246
LOEI Loei 91.18 288 P **P 07 06 51.6 +0.4**
comp=Z,22nm,1.8s,comp=Z,528nm
LOEI Loei 91.18 288 P **P 07 06 51.6 +0.4**
comp=Z,22nm,1.8s
W33A Caddo, Fort Co 91.20 53 P **P 07 06 50.8 0.0**
baz=245
Y34A Reagan Ranch, 91.23 54 P **P 07 06 51.3 +0.3**
baz=245
OGNE Ogallala 91.24 46 PFAKE 07 07 00.0 +9.0
OGNE LR LR
comp=Z,2µm,18.0s
LAO LASA Array 91.33 40 P **P 07 06 50.5 -0.8**
baz=240
LAO LASA Array 91.33 40 *e*P **P 07 06 53.0 +1.8**
comp=Z,61nm,1.3s
LAO LR LR
comp=Z,1µm,18.0s
XAN Xi'an 91.33 306 P **P 07 06 53.3 +1.7**
XAN pP sP 07 07 02.9 -1.6
XAN SKS **SKSac 07 17 21.5 -0.5**
XAN S **S 07 17 48.9 +0.1**
XAN SS **SS 07 23 50.1 -4.9**
XAN pmax pmax
comp=Z,52nm,1.3s
XAN pmax pmax
comp=Z,560nm,9.2s
XAN LR LR
comp=Z,740nm,18.3s
XAN LR LR
comp=Z,970nm,22.4s
XAN LR LR
comp=Z,1µm,24.4s
U32A Winter Ranch, 91.34 51 P **P 07 06 50.2 -1.3**
baz=245
HIA Hailar 91.34 323 *e*P **P 07 06 52.4 +1.2**
HIA pmax pmax
comp=Z,102nm,1.9s
HIA MLR MLR
comp=Z,2µm,20.0s
HIA Hailar 91.34 323 *e*P **P 07 06 52.4 +1.2**
comp=Z,102nm,1.9s
HIA LR LR
comp=Z,2µm,20.0s
Z35A Perchaven, San 91.35 55 P **P 07 06 50.3 -1.3**
baz=246
RSSD Black Hills 91.41 43 P **P 07 06 50.7 -1.2**
baz=242
RSSD Black Hills 91.41 43 *e*P **P 07 06 52.4 +0.5**
RSSD pmax pmax
comp=Z,23nm,1.2s
RSSD MLR MLR
comp=Z,3µm,18.0s
RSSD Black Hills 91.41 43 *e*P **P 07 06 52.4 +0.5**
comp=Z,23nm,1.2s
RSSD LR LR
comp=Z,3µm,18.0s
X34A Smith Ranch, M 91.44 53 P **P 07 06 50.8 -1.2**
baz=245
RTCV Cerro Valdivia 91.53 125 *e*P **P 07 06 55.6 +2.9**
136A Ennis 91.55 56 P **P 07 06 51.0 -1.6**
baz=246
337A Centerville 91.58 57 P **P 07 06 51.6 -1.1**
baz=246
V33A Lossen Ranch, 91.62 52 P **P 07 06 52.2 -0.6**
baz=245
438A Sam Houston St 91.67 58 P **P 07 06 52.4 -0.7**
baz=246
T32A Huddler Ranch, 91.73 51 P **P 07 06 52.1 -1.3**
baz=245
Y35A Marietta 91.75 54 P **P 07 06 52.3 -1.2**
baz=246
W34A Bridge Creek, 91.75 53 P **P 07 06 53.7 +0.3**
baz=245
W34A Bridge Creek, 91.75 53 *e*P **P 07 06 53.8 +0.4**
comp=Z,35nm,1.1s
W34A LR LR
comp=Z,2µm,18.0s
RTLL Cerro Villicun 91.81 125↓ *e*P **P 07 06 55.8 +1.8**
CBKS Cedar Bluff 91.86 49 P **P 07 06 53.0 -0.8**
baz=244
CBKS Cedar Bluff 91.86 49 PFAKE 07 07 10.0 +16
CBKS LR LR
comp=Z,2µm,18.0s
UTTA Uttaradit 91.90 288 P **P 07 06 56.9 +2.5**
comp=Z,8.9nm,1.3s,comp=Z,137nm
UTTA Uttaradit 91.90 288 P **P 07 06 56.9 +2.5**
comp=Z,8.9nm,1.3s
237A Washetta, Mont 91.92 56 P **P 07 06 54.4 +0.2**
baz=246
SRDT SRDT 91.94 285 P **P 07 06 59.0 +4.3**
comp=Z,88nm,1.8s
SRDT SRDT 91.94 285 P **P 07 06 59.0 +4.3**
comp=Z,88nm,1.8s
S32A Newby Ranch, P 91.95 50 P **P 07 06 53.6 -0.7**
baz=245
Z36A Blue Ridge 91.95 55 P **P 07 06 53.5 -0.8**
baz=246
X35A Drake 92.00 54 P **P 07 06 53.4 -1.2**
baz=246
U33A Lingo Farm, Me 92.01 52 P **P 07 06 54.9 +0.3**
baz=245
539A Cross D Ranch, 92.01 59 P **P 07 06 53.9 -0.8**
baz=247
338A Crockett 92.05 57 P **P 07 06 53.6 -1.2**
baz=246
T33A Patterson Ranc 92.19 51 P **P 07 06 55.0 -0.4**
baz=245
V34A Guthrie 92.19 52 P **P 07 06 54.3 -1.1**
baz=245
V34A Guthrie 92.19 52 *e*P **P 07 06 56.1 +0.7**
comp=Z,18nm,1.1s
V34A LR LR
comp=Z,3µm,18.0s
137A Heron Place, G 92.20 56 P **P 07 06 56.4 +0.9**
baz=246
439A Center Grove, 92.25 58 P **P 07 06 54.5 -1.2**
baz=247
Y36A Durant 92.32 55 P **P 07 06 55.0 -1.0**
baz=246
HHC Hu-ho-hao-te 92.36 313 *e*P **P 07 06 56.4 +0.2**
HHC SKS **SKSac 07 17 29.3 +1.6**
HHC S **ScS 07 18 02.6 +2.5**
HHC pmax pmax
comp=Z,28nm,1.5s
HHC pmax pmax
comp=Z,570nm,8.3s
HHC LR LR
comp=Z,1µm,18.8s
HHC LR LR
comp=Z,1µm,18.5s
HHC LR LR
comp=Z,2µm,17.2s
TGUH Tegucigalpa,Un 92.37 76 *e*P **P 07 06 57.5 +0.9**
comp=Z,18nm,1.0s
TGUH LR LR
comp=Z,1µm,22.0s
W35A Tecumseh 92.39 53 P **P 07 06 55.6 -0.8**
baz=246
R32A Long Quarter, 92.42 50 P **P 07 06 55.7 -0.7**
baz=245
U34A Anderson Ranch 92.43 52 P **P 07 06 57.5 +1.0**
baz=245
U34A Anderson Ranch 92.43 52 *e*P **P 07 06 57.5 +1.0**
comp=Z,18nm,1.0s
U34A LR LR
comp=Z,3µm,18.0s
238A Jacksonville 92.45 57 P **P 07 06 56.1 -0.6**
baz=247
X36A Centrahoma 92.54 54 P **P 07 06 56.0 -1.0**
baz=246
S33A Kaszmaul Farm, 92.58 51 P **P 07 06 57.5 +0.3**
baz=245
NNA Nana 92.58 104 PFAKE 07 07 10.0 +12
NNA LR LR
comp=Z,1µm,18.0s
AGUA GUANDACOL 92.61 123 *e*P **P 07 06 59.9 +2.1**
SUKH Sukhothai 92.62 288 P **P 07 06 59.7 +1.9**
comp=Z,15nm,0.9s,comp=Z,101nm
SUKH Sukhothai 92.62 288 P **P 07 06 59.7 +1.9**
comp=Z,15nm,0.9s
V35A Meyer Ranch, C 92.67 53 P **P 07 06 58.6 +0.9**
baz=246
NATX Nacogdoches 92.72 57 PFAKE 07 07 10.0 +12
NATX LR LR
comp=Z,4µm,18.0s
O31A Woolen Ranch, 92.73 48 P **P 07 06 58.2 +0.3**
baz=244
KMI Kunming 92.75 296 P **P 07 07 00.7 +2.2**
KMI pP pP 07 07 04.9 -3.1
KMI sP sP 07 07 06.7 -4.7
KMI PP **PP 07 10 43.0 +2.0**
KMI S **S 07 18 03.7 +1.5**
KMI sS sS 07 18 12.9 -5.1
KMI SS **SS 07 24 12.6 -3.3**
KMI pmax pmax
comp=Z,32nm,1.1s
KMI pmax pmax
comp=Z,550nm,5.0s
KMI LR LR
comp=Z,1µm,22.6s
KMI LR LR
comp=Z,2µm,22.0s
KMI LR LR
comp=Z,3µm,20.8s
Q32A Meitler Ranch, 92.77 49 P **P 07 06 57.6 -0.5**
baz=245
Y37A Hugo 92.86 55 P **P 07 06 58.3 -0.2**
baz=246
W36A Wetumka 92.87 53 P **P 07 06 58.4 -0.2**
baz=246
R33A Olander Ranch, 92.89 50 P **P 07 06 58.4 -0.2**
baz=245
T34A McClaskey Farm 92.93 51 P **P 07 06 59.0 +0.2**
baz=246
239A Gary 92.97 57 P **P 07 06 59.1 0.0**
baz=247
U35A Pawnee 92.99 52 P **P 07 06 59.0 -0.1**
baz=246
LAMP Lampang 93.00 289 P **P 07 07 01.7 +2.2**
comp=Z,20nm,0.7s,comp=Z,152nm
LAMP Lampang 93.00 289 P **P 07 07 01.7 +2.2**
comp=Z,20nm,0.7s
P32A Huiting Farm, 93.01 49 P **P 07 06 58.7 -0.5**
baz=245
Z38A Mt. Pleasant 93.05 56 P **P 07 06 58.7 -0.7**
baz=247
VCA Vinchina 93.16 122 *e*P **P 07 07 02.9 +2.5**
340A Bronson 93.19 58 P **P 07 06 59.1 -1.0**
baz=247
S34A Willow Spring 93.26 51 P **P 07 06 58.6 -1.7**
baz=246
Q33A Connelly Farm, 93.28 49 P **P 07 06 59.7 -0.7**
baz=245
X37A Clayton 93.29 54 P **P 07 06 59.9 -0.6**
baz=247
V36A Jenks 93.34 53 P **P 07 06 59.8 -0.9**
baz=246
TRQA Tornquist 93.36 133 PFAKE 07 07 10.0 +9.0
TRQA LR LR
comp=Z,2µm,19.0s
T35A Sooner Cattle 93.38 52 P **P 07 06 60.0 -0.9**
baz=246
DGMT Dagmar 93.39 39 P **P 07 07 00.2 -0.5**
baz=242
DGMT Dagmar 93.39 39 *e*P **P 07 07 03.0 +2.3**
comp=Z,93nm,1.0s
DGMT LR LR
comp=Z,3µm,19.0s
R34A Isabella, Hill 93.41 50 P **P 07 07 00.0 -1.0**
baz=246
W37B Quinton 93.46 54 P **P 07 07 00.5 -0.8**
baz=247
PB10 IPOC Station P 93.50 117 PFAKE 07 07 10.0 +8.1
PB10 LR LR
comp=Z,1µm,21.0s
TUL1 Leonard 93.50 53 P **P 07 07 01.1 -0.4**
baz=246
TUL1 Leonard 93.50 53 *e*P **P 07 07 02.2 +0.7**
comp=Z,15nm,1.0s
TUL1 LR LR
comp=Z,3µm,18.0s
O32A Brockman Farm, 93.50 48 P **P 07 07 00.7 -0.7**
baz=245
Y38A Idabel 93.52 55 P **P 07 07 01.2 -0.3**
baz=247

CM01	**Chiang Mai Arr**	**93.56**	**288**	*e*P		**P**	**07 07 03.4**	**+1.3**
P33A	**Williams Farm,** baz=246	**93.56**	**49**	P		**P**	**07 07 02.0**	**+0.3**
CMAR	**Chiang Mai Arr** comp=Z,10nm,0.9s,baz=306,slow=30,SNR=4.6	**93.58**	**288**	P		**P**	**07 07 01.7**	**-0.5**
K30A	**Basset** baz=244	**93.62**	**45**	P		**P**	**07 07 02.3**	**+0.4**
TEIG	**Tepich**	**93.70**	**70**	PFAKE			07 07 10.0	+7.3
TEIG	comp=Z,1µm,22.0s			LR	LR			
CMMT	**Chiang Mai** comp=Z,35nm,1.1s,comp=Z,634nm	**93.71**	**289**	P		**P**	**07 07 04.4**	**+1.6**
CMMT	**Chiang Mai**	**93.71**	**289**	P		**P**	**07 07 04.4**	**+1.6**
CHTO	**Chiang Mai** comp=Z,110nm,1.6s,comp=Z,2µm	**93.71**	**289**	P		**P**	**07 07 04.4**	**+1.6**
CHTO	**Chiang Mai**	**93.71**	**289**	*e*P		**P**	**07 07 03.8**	**+1.0**
CHTO	comp=Z,41nm,1.1s			pmax	pmax			
CHTO	comp=Z,1µm,21.0s			MLR	MLR			
CHTO	**Chiang Mai** comp=Z,41nm,1.1s	**93.71**	**289**	*e*P		**P**	**07 07 03.8**	**+1.0**
CHTO	comp=Z,1µm,21.0s			LR	LR			
X38A	**Whitesboro** baz=247	**93.73**	**54**	P		**P**	**07 07 01.7**	**-0.8**
U36A	**Oologah** baz=246	**93.74**	**52**	P		**P**	**07 07 01.8**	**-0.8**
542A	**Morse** baz=248	**93.75**	**59**	P		**P**	**07 07 01.6**	**-1.2**
D26A	**Manning** baz=243	**93.77**	**41**	P		**P**	**07 07 02.8**	**+0.3**
HDC	**Heredia**	**93.81**	**81**	PFAKE			07 07 20.0	+16
HDC	comp=Z,1µm,18.0s			LR	LR			
S35A	**Otter Creek Ra** baz=246	**93.83**	**51**	P		**P**	**07 07 03.4**	**+0.5**
Q34A	**Chapman** baz=246	**93.89**	**50**	P		**P**	**07 07 02.7**	**-0.5**
T36A	**Boggs Farm, Ca** baz=246	**93.90**	**52**	P		**P**	**07 07 02.7**	**-0.5**
O33A	**Hebron** baz=246	**93.91**	**48**	P		**P**	**07 07 02.8**	**-0.5**
L31A	**Butterfield Fa** baz=245	**93.93**	**46**	P		**P**	**07 07 02.4**	**-0.9**
V37A	**Hulbert** baz=247	**93.98**	**53**	P		**P**	**07 07 03.1**	**-0.6**
J30A	**Dallas** baz=245	**93.99**	**45**	P		**P**	**07 07 03.0**	**-0.5**
Y39A	**Lockesburg** baz=247	**94.01**	**55**	P		**P**	**07 07 04.7**	**+0.9**
BGNE	**Belgrade** baz=245	**94.07**	**47**	P		**P**	**07 07 05.7**	**+1.7**
BGNE	**Belgrade** comp=Z,31nm,0.8s	**94.07**	**47**	*e*P		**P**	**07 07 04.4**	**+0.4**
BGNE	comp=Z,2µm,20.0s			LR	LR			
CD2	**Chengdu**	**94.09**	**301**	P		**P**	**07 07 03.9**	**-0.5**
CD2				sP		pP	07 07 10.2	-3.7
CD2				PP		**PP**	**07 10 50.0**	**-1.3**
CD2				SKS		**SKSac**	**07 17 38.4**	**+0.9**
CD2				S		**ScS**	**07 18 14.2**	**-0.6**
CD2				sS		sS	07 18 22.1	-7.2
CD2				SS		**SS**	**07 24 35.8**	**+1.1**
CD2	comp=Z,40nm,0.6s			pmax	pmax			
CD2	comp=Z,740nm,5.4s			pmax	pmax			
CD2	comp=Z,1µm,17.3s			LR	LR			
CD2	comp=Z,2µm,19.9s			LR	LR			
CD2	comp=Z,990nm,23.3s			LR	LR			
W38A	**Poteau** baz=247	**94.12**	**54**	P		**P**	**07 07 03.4**	**-0.9**
YAK	**Yakutsk** comp=Z,15nm,0.4s,baz=324,slow=1.7,SNR=3.9	**94.16**	**337**	P		**P**	**07 07 03.3**	**-0.5**
YAK	comp=Z,840nm,19.2s,baz=115,slow=34			LR	LR		07 47 05.1	
YAK	**Yakutsk**	**94.16**	**337**	*e*P		**P**	**07 07 02.4**	**-1.4**
YAK				*e**PP		**pP**	**07 07 13.7**	**+0.4**
YAK				*e*			07 10 46.9	
YAK				*e*S		**SKSac**	**07 17 35.4**	**-0.8**
YAK				*e*			07 18 11.6	
YAK	comp=Z,8.0nm,0.9s			pmax	pmax			
YAK	comp=N,5.0nm,1.3s			pmax	pmax			
YAK	comp=E,9.0nm,1.6s			pmax	pmax			
YAK	comp=Z,398nm,5.9s			pmax	pmax			
YAK	comp=E,214nm,5.4s			pmax	pmax			
YAK	comp=N,206nm,4.8s			smax	smax			
YAK	comp=N,80nm,4.4s			smax	smax			
YAK	comp=E,179nm,5.7s			MLR	MLR			
YAK	comp=Z,1µm,18.0s			MLR	MLR			
YAK	comp=E,903nm,24.0s			MLR	MLR			
YAK	comp=N,751nm,20.0s			MLR	MLR			
YAK	**Yakutsk** comp=N,30nm,1.1s	**94.16**	**337**	*e*P		**P**	**07 07 03.8**	**0.0**
R35A	**Emporia Munici** baz=246	**94.17**	**51**	P		**P**	**07 07 03.8**	**-0.8**
K31A	**O'Neill** baz=245	**94.18**	**46**	P		**P**	**07 07 04.1**	**-0.3**
241A	**Mo Tay, Goldon** baz=248	**94.18**	**57**	P		**P**	**07 07 06.2**	**+1.5**
KSU1	**Kansas State U** baz=246	**94.19**	**50**	P		**P**	**07 07 04.1**	**-0.5**
KSU1	**Kansas State U**	**94.19**	**50**	PFAKE			07 07 20.0	+15
KSU1	comp=Z,2µm,19.0s			LR	LR			
INK	**Inuvik** comp=Z,8.7nm,0.9s,baz=223,slow=6.0,SNR=13	**94.20**	**14**	P		**P**	**07 07 03.2**	**-0.6**
INK	**Inuvik**	**94.20**	**14**	*e*P		**P**	**07 07 04.0**	**+0.2**
INK	comp=Z,32nm,1.3s			pmax	pmax			
INK	comp=Z,2µm,19.0s			MLR	MLR			
INK	**Inuvik** comp=Z,32nm,1.3s	**94.20**	**14**	*e*P		**P**	**07 07 04.0**	**+0.2**
INK	comp=Z,2µm,19.0s			LR	LR			
U37A	**Salina** baz=247	**94.20**	**53**	P		**P**	**07 07 04.4**	**-0.3**
X39A	**Fountain Ranch** baz=247	**94.21**	**55**	P		**P**	**07 07 05.0**	**+0.2**
P34A	**Walnut Farm, R** baz=246	**94.22**	**49**	P		**P**	**07 07 04.5**	**-0.2**
A25A	**Svangstu Ranch** baz=242	**94.25**	**39**	P		**P**	**07 07 05.8**	**+1.2**
PB04	**IPOC Station P**	**94.34**	**116**	PFAKE			07 07 20.0	+14
PB04	comp=Z,2µm,21.0s			LR	LR			
S36A	**Lake Cedric, C** baz=247	**94.37**	**51**	P		**P**	**07 07 04.9**	**-0.5**
Q35A	**Mercer Eighty,** baz=246	**94.51**	**50**	P		**P**	**07 07 05.4**	**-0.6**
V38A	**Canehill** baz=247	**94.52**	**53**	P		**P**	**07 07 05.8**	**-0.4**
O34A	**Beatrice** baz=246	**94.58**	**49**	P		**P**	**07 07 05.6**	**-0.7**
T37A	**Cheneyville 18** baz=247	**94.63**	**52**	P		**P**	**07 07 06.3**	**-0.3**
MIAR	**Mount Ida** baz=248	**94.64**	**55**	P		**P**	**07 07 06.2**	**-0.5**
MIAR	**Mount Ida**	**94.64**	**55**	PFAKE			07 07 20.0	+13
MIAR	comp=Z,2µm,18.0s			LR	LR			
WLAR	**White Oak Lake**	**94.67**	**56**	PFAKE			07 07 20.0	+13
WLAR	comp=Z,4µm,18.0s			LR	LR			
K32A	**Verdigre** baz=246	**94.72**	**46**	P		**P**	**07 07 07.1**	**+0.2**
W39A	**Magazine** baz=248	**94.73**	**54**	P		**P**	**07 07 07.1**	**0.0**
Z41A	**Richland Creek** baz=248	**94.74**	**56**	P		**P**	**07 07 07.1**	**-0.1**
U38A	**Gravette** baz=247	**94.76**	**53**	P		**P**	**07 07 07.4**	**+0.2**
TCA	**Tanti**	**94.76**	**126**	*e*P		**P**	**07 07 08.5**	**+0.9**
M33A	**Taylor Creek F** baz=246	**94.79**	**47**	P		**P**	**07 07 07.2**	**-0.1**
F29A	**Eureka** baz=244	**94.85**	**43**	P		**P**	**07 07 07.1**	**-0.4**
A26A	**Wade Farm, Ken** baz=243	**94.86**	**39**	P		**P**	**07 07 07.1**	**-0.3**
S37A	**Fort Scott** baz=247	**94.94**	**51**	P		**P**	**07 07 08.1**	**+0.1**
HHAR	**Hobbs** comp=Z,14nm,1.4s	**95.03**	**53**	*e*P		P	07 07 14.0	+5.5
HHAR	comp=Z,3µm,18.0s			LR	LR			
T38A	**Diamond** baz=247	**95.06**	**52**	P		**P**	**07 07 08.3**	**-0.3**
V39A	**Pettigrew** baz=248	**95.08**	**54**	P		**P**	**07 07 08.4**	**-0.4**
O35A	**Humboldt** baz=247	**95.16**	**49**	P		**P**	**07 07 08.6**	**-0.4**
R37A	**Teagarden Farm** baz=247	**95.16**	**51**	P		**P**	**07 07 09.3**	**+0.3**
CYA	**Choya**	**95.18**	**123**	*e*P		**P**	**07 07 10.9**	**+1.4**
LVC	**Limon Verde** comp=Z,19nm,1.1s,baz=17,slow=11,SNR=2.2	**95.25**	**117**	P		**P**	**07 07 10.9**	**+0.5**
LVC	**Limon Verde**	**95.25**	**117**	P		**P**	**07 07 10.9**	**+0.5**
LVC	comp=Z,2µm,21.0s			LR	LR			
A27A	**Ledoux Ranch,** baz=244	**95.36**	**39**	P		**P**	**07 07 09.6**	**-0.1**
P36A	**Good Intent, A** baz=247	**95.40**	**50**	P		**P**	**07 07 11.7**	**+1.6**
U39A	**Green Forest** baz=248	**95.41**	**53**	P		**P**	**07 07 10.3**	**+0.1**
PB01	**IPOC Station P**	**95.44**	**115**	*e*pP		**pP**	**07 07 19.6**	**-0.8**
PB01	comp=Z,2µm,20.0s			LR	LR			
L34A	**Svendsen Farm,** baz=246	**95.51**	**47**	P		**P**	**07 07 10.3**	**-0.2**
OTAV	**Otavalo**	**95.61**	**92**	PFAKE			07 07 20.0	+7.8
OTAV	comp=Z,2µm,18.0s			LR	LR			
I32A	**Karley and Nic** baz=246	**95.62**	**45**	P		**P**	**07 07 10.9**	**-0.1**
G31A	**Conde** baz=246	**95.63**	**44**	P		**P**	**07 07 12.1**	**+1.1**
Q37A	**Longview Farm,** baz=247	**95.65**	**51**	P		**P**	**07 07 11.5**	**+0.2**
B28A	**Dugan Ranch, T** baz=244	**95.66**	**40**	P		**P**	**07 07 12.2**	**+1.1**
J33A	**Davis** baz=246	**95.66**	**46**	P		**P**	**07 07 11.1**	**-0.1**
UALR	**University of**	**95.66**	**55**	PFAKE			07 07 20.0	+8.6
UALR	comp=Z,2µm,20.0s			LR	LR			
V40A	**Witts Springs** baz=248	**95.68**	**54**	P		**P**	**07 07 11.6**	**+0.1**
T39A	**Clever** baz=248	**95.73**	**53**	P		**P**	**07 07 11.3**	**-0.4**
O36A	**Bolckow** baz=247	**95.77**	**49**	P		**P**	**07 07 12.7**	**+0.9**
R38A	**Fenwick Farm,** baz=248	**95.78**	**51**	P		**P**	**07 07 11.8**	**-0.1**
CCAR	**Cane Creek**	**95.78**	**56**	PFAKE			07 07 20.0	+8.0
CCAR	comp=Z,4µm,20.0s			LR	LR			
X301	**Greenbrier Sit**	**95.79**	**55**	PFAKE			07 07 20.0	+8.0
X301	comp=Z,4µm,18.0s			LR	LR			
X201	**Greenbrier Sit**	**95.84**	**55**	PFAKE			07 07 20.0	+7.8
X201	comp=Z,4µm,18.0s			LR	LR			
YKA	**Yellowknife Ar** comp=Z,2.9nm,0.8s,baz=236,slow=4.2,SNR=19	**95.86**	**24**	P		**P**	**07 07 10.9**	**-0.6**
YKA	comp=Z,110nm,19.3s,baz=180,slow=32			LR	LR		07 45 36.1	
YKB5	**Yellowknife Ar**	**95.86**	**24**	*e*P		**P**	**07 07 11.7**	**+0.2**
MDND	**Maddock** baz=245	**95.86**	**41**	P		**P**	**07 07 12.2**	**+0.3**
MDND	**Maddock** comp=Z,32nm,1.0s	**95.86**	**41**	*e*P		**P**	**07 07 12.8**	**+0.8**
F31A	**Hecla** baz=246	**95.86**	**43**	P		**P**	**07 07 11.6**	**-0.4**
U40A	**Yellville** baz=248	**95.87**	**53**	P		**P**	**07 07 11.9**	**-0.4**
YKW3	**Yellowknife Ar** comp=Z,7.1nm,0.9s	**95.89**	**24**	*e*P		**P**	**07 07 11.8**	**+0.1**
WHAR	**Wooly Hollow**	**95.90**	**55**	PFAKE			07 07 20.0	+7.6
WHAR	comp=Z,4µm,18.0s			LR	LR			
A28A	**Rude Farm, Bot** baz=244	**95.91**	**40**	P		**P**	**07 07 12.1**	**-0.1**
LZH	**Lanzhou**	**95.97**	**306**	*e*P		**P**	**07 07 14.6**	**+1.6**
LZH				pP		pP	07 07 19.3	-3.2
LZH				sP		sP	07 07 21.5	-4.4
LZH				PP		**PP**	**07 11 08.0**	**+2.1**
LZH				SKS		**SKSac**	**07 17 48.0**	**+0.4**
LZH				sS		sS	07 18 38.2	-7.4
LZH				SS		**SS**	**07 25 04.5**	**+3.1**
LZH	comp=Z,31nm,1.0s			pmax	pmax			
LZH	comp=Z,310nm,6.5s			pmax	pmax			
LZH	comp=Z,1µm,18.0s			LR	LR			
LZH	comp=Z,1µm,17.4s			LR	LR			
LZH	comp=Z,1µm,19.3s			LR	LR			
K34A	**Le Mars** baz=247	**95.99**	**47**	P		**P**	**07 07 12.4**	**-0.4**
P37A	**Lathrop** baz=248	**96.00**	**50**	P		**P**	**07 07 12.6**	**-0.2**
S39A	**Bolivar** baz=248	**96.02**	**52**	P		**P**	**07 07 12.4**	**-0.6**
N36A	**Muff Farm, Cla** baz=247	**96.04**	**49**	P		**P**	**07 07 14.6**	**+1.6**
ECSD	**EROS Data Cent** baz=246	**96.06**	**45**	P		**P**	**07 07 13.0**	**0.0**
ECSD	**EROS Data Cent** comp=Z,29nm,1.1s	**96.06**	**45**	*e*P		**P**	**07 07 12.8**	**-0.3**
ECSD	comp=Z,2µm,18.0s			LR	LR			
I33A	**Coleman** baz=246	**96.06**	**45**	P		**P**	**07 07 11.7**	**-1.3**
FSA	**Lafayette**	**96.11**	**121**	*e*P		P	07 07 20.0	+6.0
L35A	**Bielow Farm, R** baz=247	**96.14**	**47**	P		**P**	**07 07 12.8**	**-0.6**
VBMS	**Vicksburg**	**96.15**	**58**	PFAKE			07 07 30.0	+16
VBMS	comp=Z,2µm,18.0s			LR	LR			
Q38A	**Cooks Store, C** baz=248	**96.28**	**51**	P		**P**	**07 07 14.3**	**+0.2**
H33A	**Prehn Over Nor** baz=246	**96.35**	**45**	P		**P**	**07 07 14.7**	**+0.3**
O37A	**Wolven Farm, M** baz=248	**96.36**	**49**	P		**P**	**07 07 15.4**	**+0.9**
E31A	**Nome** baz=246	**96.38**	**42**	P		**P**	**07 07 14.1**	**-0.3**
R39A	**Chumby, Stover** baz=248	**96.46**	**52**	P		**P**	**07 07 15.8**	**+0.9**
A29A	**Manning Farm,** baz=245	**96.54**	**40**	P		**P**	**07 07 16.1**	**+1.1**
U41A	**Viola** baz=249	**96.56**	**54**	P		**P**	**07 07 17.6**	**+2.1**
K35A	**Storm Lake** baz=247	**96.59**	**47**	P		**P**	**07 07 17.1**	**+1.6**
P38A	**Dawn** baz=248	**96.59**	**50**	P		**P**	**07 07 16.4**	**+0.9**
L36A	**Harm Buss Farm** baz=248	**96.74**	**48**	P		**P**	**07 07 17.7**	**+1.6**
G33A	**Ortonville** baz=247	**96.76**	**44**	P		**P**	**07 07 17.1**	**+1.0**
Q39A	**Willow Grove F** baz=248	**96.78**	**51**	P		**P**	**07 07 19.3**	**+2.9**
M37A	**Trindle Farm,** baz=248	**96.89**	**48**	P		**P**	**07 07 17.8**	**+0.9**
H34A	**Spellman Lake,** baz=247	**96.98**	**45**	P		**P**	**07 07 18.1**	**+1.0**
R40A	**Maddies Statio** baz=249	**97.02**	**52**	P		Pdif	07 07 19.0	+1.4
A30A	**Hoffart Farm,** baz=246	**97.10**	**40**	P		Pdif	07 07 18.7	+1.0
P39B	**Salisbury** baz=248	**97.10**	**50**	P		Pdif	07 07 18.0	+0.1
F33A	**5 Mile Ranch,** baz=247	**97.11**	**44**	P		Pdif	07 07 18.7	+0.9
B31A	**Greenbush Farm** baz=246	**97.29**	**41**	P		**P**	**07 07 18.2**	**-0.3**
G34A	**Benson** baz=247	**97.30**	**44**	P		Pdif	07 07 19.5	+0.9
J36A	**Seneca 1, Swea** baz=248	**97.43**	**46**	P		Pdif	07 07 19.5	+0.2
FFC	**Flin Flon**	**97.51**	**34**	PFAKE			07 07 30.0	+11
FFC	comp=Z,2µm,18.0s			LR	LR			
MET	**Memphis--Engin**	**97.63**	**55**	PFAKE			07 07 30.0	+10
MET	comp=Z,2µm,18.0s			LR	LR			
SCIA	**State Center**	**97.67**	**48**	PFAKE			07 07 30.0	+10
SCIA	comp=Z,2µm,18.0s			LR	LR			
K37A	**Belmond** baz=248	**97.69**	**47**	P		Pdif	07 07 22.0	+1.5
F34A	**Alexandria** baz=248	**97.76**	**44**	P		**P**	**07 07 20.2**	**-0.4**
N39A	**Derby Farms, D** baz=249	**97.79**	**49**	P		Pdif	07 07 21.1	+0.1
OXF	**Oxford**	**97.83**	**56**	PFAKE			07 07 30.0	+8.8
OXF	comp=Z,4µm,18.0s			LR	LR			
PBMO	**Poplar Bluff**	**97.84**	**54**	PFAKE			07 07 30.0	+8.8
PBMO	comp=Z,2µm,18.0s			LR	LR			
O40A	**La Belle** baz=249	**97.96**	**50**	Pdiff		**P**	**07 07 20.5**	**-1.2**
G35A	**Watkins** baz=248	**98.04**	**45**	Pdiff		Pdif	07 07 22.9	+0.9
H36A	**Jessenland, He** baz=248	**98.17**	**45**	Pdiff		Pdif	07 07 22.8	+0.2
C33A	**Trail** baz=248	**98.18**	**42**	Pdiff		Pdif	07 07 23.5	+1.0
A32A	**Rocking H Ranc** baz=247	**98.19**	**41**	Pdiff		Pdif	07 07 23.5	+1.0
F35A	**Swanville** baz=248	**98.22**	**44**	Pdiff		Pdif	07 07 23.0	+0.2
M39A	**Webster** baz=249	**98.24**	**49**	Pdiff		Pdif	07 07 23.1	+0.1
K38A	**Parkersburg** baz=249	**98.24**	**48**	Pdiff		Pdif	07 07 23.8	+0.8
PVMO	**Portageville**	**98.26**	**54**	PFAKE			07 07 40.0	+17
PVMO	comp=Z,3µm,18.0s			LR	LR			
AGMN	**Agassiz Nation** baz=248	**98.33**	**41**	Pdiff		Pdif	07 07 23.5	+0.3
AGMN	**Agassiz Nation** comp=Z,11nm,0.6s	**98.33**	**41**	*e*P		Pdif	07 07 25.9	+2.7
AGMN	comp=Z,800nm,20.0s			LR	LR			
HALT	**Halls**	**98.36**	**55**	PFAKE			07 07 40.0	+16
HALT	comp=Z,2945µm,18.0s			LR	LR			
BOD	**Bodaibo**	**98.51**	**329**	*e*P		Pdif	07 07 35.1	+11
BRAL	**Brewton**	**98.55**	**60**	PFAKE			07 07 40.0	+15
BRAL	comp=Z,1µm,19.0s			LR	LR			
SONA1	**Songino Array**	**98.61**	**318**	*e*P		Pdif	07 07 25.3	+0.7
SONM	**Songino Array** comp=Z,0.2nm,0.3s,baz=49,slow=2.9,SNR=5.2	**98.61**	**318**	P		**P**	**07 07 24.3**	**-0.3**
SONM	comp=Z,569nm,18.5s,baz=111,slow=35			LR	LR		07 51 42.2	
SONM	**Songino Array**	**98.61**	**318**	P		**P**	**07 07 24.3**	**-0.3**
SONM	comp=Z,1.0nm,0.6s			pmax	pmax			
SONM	comp=Z,569nm,18.5s			MLR	MLR			
LPAZ	**La Paz** comp=Z,0.7nm,0.8s,baz=4.1,slow=0.4,SNR=4.1	**98.61**	**111**	P		Pdif	07 07 28.0	+2.0
O41A	**Passleys Farm,** baz=250	**98.67**	**50**	Pdiff		Pdif	07 07 27.0	+2.1
Y47A	**UCPARC, Winfie** baz=250	**98.83**	**57**	Pdiff		Pdif	07 07 27.0	+1.3
A33A	**Warroad** baz=248	**98.86**	**41**	Pdiff		**P**	**07 07 23.8**	**-1.7**
P42A	**Winchester** baz=250	**98.88**	**51**	Pdiff		Pdif	07 07 26.6	+0.8
Z48A	**Northport** baz=250	**98.89**	**58**	Pdiff		**P**	**07 07 23.9**	**-2.1**
F36A	**Milaca** baz=249	**98.91**	**44**	Pdiff		Pdif	07 07 26.7	+0.9
D35A	**Remer** baz=249	**99.01**	**43**	Pdiff		**Pdif**	**07 07 25.1**	**-1.1**
I38A	**Scanlan Farm,** baz=249	**99.04**	**46**	Pdiff		**Pdif**	**07 07 27.3**	**+0.8**
SIUC	**Southern Illin**	**99.07**	**53**	PFAKE			07 07 40.0	+13
SIUC	comp=Z,2µm,19.0s			LR	LR			
ULM	**Lac du Bonnet** comp=Z,3µm,18.6s,baz=257,slow=33	**99.07**	**40**	LR		LR	07 48 28.2	
SPMN	**Marine on St.**	**99.15**	**45**	PFAKE			07 07 40.0	+13
SPMN	comp=Z,2µm,18.0s			LR	LR			
B34A	**Aery, Baudette** baz=248	**99.15**	**42**	Pdiff		**Pdif**	**07 07 25.8**	**-1.1**
LRAL	**Lakeview Retre**	**99.22**	**58**	PFAKE			07 07 40.0	+13
LRAL	comp=Z,2µm,18.0s			LR	LR			
J39A	**Decorah** baz=250	**99.22**	**47**	Pdiff		**Pdif**	**07 07 27.4**	**+0.2**
O42A	**Bath** baz=250	**99.28**	**51**	Pdiff		**Pdif**	**07 07 29.0**	**+1.5**
C35A	**Jirik Farms, M** baz=249	**99.28**	**42**	Pdiff		**Pdif**	**07 07 26.3**	**-1.1**
E36A	**McGregor** baz=249	**99.32**	**44**	Pdiff		**Pdif**	**07 07 25.1**	**-2.5**
K40A	**Colesburg** baz=250	**99.39**	**48**	Pdiff		**Pdif**	**07 07 29.5**	**+1.5**
WVT	**Waverly**	**99.59**	**55**	PFAKE			07 07 40.0	+11
WVT	comp=Z,2µm,18.0s			LR	LR			
D36A	**Goodland** baz=249	**99.61**	**43**	Pdiff		**Pdif**	**07 07 31.1**	**+2.2**
B35A	**Bob, Littlefor** baz=249	**99.68**	**42**	Pdiff		**Pdif**	**07 07 30.8**	**+1.6**
K41A	**Shullsburg** baz=250	**99.94**	**48**	Pdiff		**Pdif**	**07 07 29.9**	**-0.5**
HDIL	**Hopedale** baz=251	**99.97**	**50**	Pdiff		**Pdif**	**07 07 30.0**	**-0.6**
HDIL	**Hopedale**	**99.97**	**50**	PFAKE			07 07 40.0	+9.4
HDIL	comp=Z,3µm,19.0s			LR	LR			
C36A	**Pine Crest Far** baz=250	**100.02**	**43**	Pdiff		**Pdif**	**07 07 31.6**	**+0.9**
D37A	**Cotton** baz=250	**100.08**	**43**	Pdiff		**Pdif**	**07 07 31.2**	**+0.2**
JFWS	**Jewell Farm**	**100.08**	**48**	PFAKE			07 07 40.0	+8.9
JFWS	comp=Z,2µm,19.0s			LR	LR			
GTA	**Gaotai**	**100.12**	**308**	*e*P		**Pdif**	**07 07 33.3**	**+1.8**
GTA				pP		pP	07 07 38.1	-3.0
GTA				sP		sP	07 07 40.4	-4.1
GTA				PP		**PP**	**07 11 41.7**	**+4.1**
GTA				SKS		**SKSac**	**07 18 09.5**	**+1.0**
GTA				S		**Sdif**	**07 19 04.6**	**-0.3**
GTA				sS		sS	07 19 12.2	-8.6
GTA	comp=Z,6.0nm,1.2s			pmax	pmax			
GTA	comp=Z,290nm,9.0s			LR	LR			
GTA	comp=Z,510nm,20.9s			LR	LR			
GTA	comp=Z,790nm,20.9s			LR	LR			
GTA	comp=Z,1µm,20.0s			LR	LR			
PRAC	**Prado**	**100.17**	**90**	PFAKE			07 07 40.0	+7.7
PRAC	comp=Z,800nm,19.0s			LR	LR			
OLIL	**Olney**	**100.24**	**52**	PFAKE			07 07 40.0	+8.1
OLIL	comp=Z,3µm,19.0s			LR	LR			
USIN	**University of**	**100.31**	**53**	PFAKE			07 07 40.0	+7.8
USIN	comp=Z,3µm,18.0s			LR	LR			
TIXI	**Tiksi**	**100.42**	**344**	*e*P		**Pdif**	**07 07 31.7**	**-0.2**
TIXI	comp=Z,8.0nm,2.7s			pmax	pmax			
TIXI	**Tiksi**	**100.42**	**344**	PFAKE			07 07 40.0	+8.1
TIXI	comp=Z,2µm,21.0s			LR	LR			
HELC	**Santa Helena**	**100.44**	**87**	PFAKE			07 07 50.0	+16
HELC	comp=Z,2µm,22.0s			LR	LR			
SWET	**Sewanee**	**100.76**	**56**	PFAKE			07 07 50.0	+16

SWET LR LR
comp=Z,600nm,20.0s
EYMN Ely 100.94 43 PFAKE 07 07 50.0 +15
EYMN LR LR
comp=Z,2µm,18.0s
ROSC El Rosal 101.10 89 PFAKE 07 07 50.0 +13
ROSC LR LR
comp=Z,1µm,18.0s
WCI Wyandotte Cave 101.42 53 PFAKE 07 07 50.0 +13
WCI LR LR
comp=Z,3µm,19.0s
ZAK Zakamensk 101.42 320 *eP* **Pdif 07 07 38.0 +1.0**
ZAK pmax pmax
comp=Z,3.0nm,1.4s
ZAK pmax pmax
comp=Z,3.0nm,2.0s
SFIN Lafayette 101.50 51 PFAKE 07 07 50.0 +13
SFIN LR LR
comp=Z,2µm,18.0s
BLO Bloomington 101.54 52 PFAKE 07 07 50.0 +12
BLO LR LR
comp=Z,3µm,19.0s
TLY Talaya 101.64 321 *eP* **Pdif 07 07 47.3 +9.5**
TLY *e* 07 11 47.2
TLY *e* 07 18 11.5
TLY pmax pmax
comp=Z,10.0nm,1.8s
TLY MLR MLR
comp=Z,686nm,18.0s
TLY Talaya 101.64 321 PFAKE 07 07 50.0 +12
TLY LR LR
comp=Z,2µm,20.0s
COWI Conover 101.86 45 PFAKE 07 07 50.0 +11
COWI LR LR
comp=Z,2µm,18.0s
CPCT Cooper Cave 101.92 57 PFAKE 07 07 50.0 +11
CPCT LR LR
comp=Z,1µm,18.0s
GOGA Godfrey 102.14 59 PFAKE 07 07 50.0 +10
GOGA LR LR
comp=Z,3µm,18.0s
DWPF Disney Wildern 102.22 65 PFAKE 07 07 50.0 +9.1
DWPF LR LR
comp=Z,1µm,18.0s
TKL Tuckaleechee C 102.57 57 PFAKE 07 07 50.0 +7.7
TKL LR LR
comp=Z,2µm,18.0s
MTDJ Mount Denham 102.58 75 PFAKE 07 08 00.0 +17
MTDJ LR LR
comp=Z,800nm,18.0s
RUSC La Rusia 102.62 89 PFAKE 07 08 00.0 +16
RUSC LR LR
comp=Z,400nm,18.0s
TZTN Tazewell 103.00 56 PFAKE 07 08 00.0 +16
TZTN LR LR
comp=Z,2µm,19.0s
FCC Fort Churchill 103.08 32 PFAKE 07 08 00.0 +16
FCC LR LR
comp=Z,2µm,18.0s
LSA Lhasa 103.97 297 PFAKE 07 08 00.0 +11
LSA LR LR
comp=Z,800nm,20.0s
KMSC Kings Mountain 104.33 58 PFAKE 07 08 00.0 +10
KMSC LR LR
comp=Z,2µm,18.0s
ACSO Alum Creek Sta 104.46 52 PFAKE 07 08 00.0 +9.4
ACSO LR LR
comp=Z,2µm,18.0s
AAM Ann Arbor 104.53 50 PFAKE 07 08 00.0 +9.1
AAM LR LR
comp=Z,3µm,18.0s
NHSC New Hope 104.69 60 PFAKE 07 08 00.0 +8.2
NHSC LR LR
comp=Z,3µm,18.0s
GTBY Guantanamo Bay 105.28 74 PFAKE 07 12 20.0
GTBY LR LR
comp=Z,900nm,18.0s
BLA Blacksburg 105.60 56 PFAKE 07 12 20.0
BLA LR LR
comp=Z,2µm,18.0s
SDV Santo Domingo 105.92 87 PFAKE 07 12 20.0
SDV LR LR
comp=Z,1µm,21.0s
SAML Samuel 106.09 107 PFAKE 07 12 20.0
SAML LR LR
comp=Z,600nm,20.0s
PALK Pallekele 106.48 271 PFAKE 07 12 20.0
PALK LR LR
comp=Z,2µm,20.0s
MCWV Mont Chateau 106.65 53 PFAKE 07 12 20.0
MCWV LR LR
comp=Z,1µm,19.0s
ALLY Alegheny Colle 106.90 51 PFAKE 07 12 20.0
ALLY LR LR
comp=Z,3µm,18.0s
CNNC Cliffs of the 107.08 58 PFAKE 07 12 20.0
CNNC LR LR
comp=Z,2µm,18.0s
ERPA Erie 107.12 51 PFAKE 07 12 20.0
ERPA LR LR
comp=Z,3µm,19.0s
RES Resolute Bay 107.64 16 PFAKE 07 12 20.0
RES LR LR
comp=Z,2µm,19.0s
CBN Corbin Frederi 108.18 55 PFAKE 07 12 30.0
CBN LR LR
comp=Z,2µm,20.0s
SADO Sadowa 108.31 48 PFAKE 07 12 30.0
SADO LR LR
comp=Z,2µm,18.0s
SSPA Standing Stone 108.33 53 PFAKE 07 12 30.0
SSPA LR LR
comp=Z,2µm,19.0s
SDDR Presa de Saban 108.45 76 PFAKE 07 12 30.0
SDDR LR LR
comp=Z,1µm,20.0s
MVL Millersville 109.35 54 PFAKE 07 12 30.0
MVL LR LR
comp=Z,3µm,18.0s
SDD Santo Domingo 109.55 77 PFAKE 07 12 30.0
SDD LR LR
comp=Z,1µm,20.0s
PLVO Plevna 109.80 48 PFAKE 07 12 30.0
PLVO LR LR
comp=Z,2µm,18.0s
PSUB Penn St. - Bra 110.01 54 PFAKE 07 12 30.0
PSUB LR LR
comp=Z,4µm,18.0s
WMQ Urumqi 110.03 310 *e*PKP **PKiKP 07 12 13.4 -3.7**
WMQ PP **PP 07 12 51.3 +0.4**
WMQ SKS **SKSac 07 18 58.0 +5.1**
WMQ SKKS **SKSdf 07 19 18.9 -8.3**
WMQ Urumqi 110.03 310 SS SS 07 28 08.2 -6.6
WMQ AMB AMB
comp=Z,250nm,7.9s
WMQ LR LR
comp=N,600nm,20.4s
WMQ LR LR
comp=E,910nm,20.8s
WMQ LR LR
comp=Z,1µm,23.5s
BINY Binghamton 110.05 51 PFAKE 07 12 30.0
BINY LR LR
comp=Z,3µm,18.0s
VLDQ Val d'Or 110.09 45 PFAKE 07 12 30.0
VLDQ LR LR
comp=Z,2µm,20.0s
KSPA Keystone Colle 110.09 52 PFAKE 07 12 30.0
KSPA LR LR
comp=Z,3µm,18.0s
BRNJ Basking Ridge 110.82 53 PFAKE 07 12 30.0
BRNJ LR LR
comp=Z,4µm,18.0s
ODNJ Ogdensburg 110.86 53 PFAKE 07 12 30.0
ODNJ LR LR
comp=Z,2µm,18.0s
PAL Palisades 111.37 53 PFAKE 07 12 30.0
PAL LR LR
comp=Z,3µm,18.0s
LONY Lake Ozonia 111.48 49 PFAKE 07 12 30.0
LONY LR LR
comp=Z,2µm,19.0s
SPB Sao Paulo 111.73 128 PFAKE 07 12 30.0
SPB LR LR
comp=Z,2µm,18.0s

TRY Troy 111.83 51 PFAKE 07 12 30.0
TRY LR LR
comp=Z,5µm,18.0s
ACCN Adirondack Com 111.94 51 PFAKE 07 12 30.0
ACCN LR LR
comp=Z,3µm,18.0s
MPR Mayaguez 112.01 78 PFAKE 07 12 30.0
MPR LR LR
comp=Z,800nm,19.0s
YLE Yale 112.14 53 PFAKE 07 12 30.0
YLE LR LR
comp=Z,4µm,18.0s
FRNY Flat Rock 112.21 49 PFAKE 07 12 30.0
FRNY LR LR
comp=Z,2µm,18.0s
PTGA Pitinga 112.38 100 PFAKE 07 12 30.0
PTGA LR LR
comp=Z,1µm,22.0s
QUA2 Belchertown 112.72 52 PFAKE 07 12 30.0
QUA2 LR LR
comp=Z,3µm,18.0s
SJG San Juan 112.89 79 PFAKE 07 12 40.0
SJG LR LR
comp=Z,700nm,18.0s
HNH Hanover 112.98 50 PFAKE 07 12 30.0
HNH LR LR
comp=Z,3µm,18.0s
HUMP Col San Antoni 113.17 79 PFAKE 07 12 40.0
HUMP LR LR
comp=Z,800nm,21.0s
ZALV Zalesovo Beam 113.25 321 PKiKP **PKiKP 07 12 22.9 +0.1**
comp=Z,1.2nm,0.5s,baz=14,slow=0.7,SNR=5.4
BRYW Bryant College 113.27 52 PFAKE 07 12 40.0
BRYW LR LR
comp=Z,4µm,18.0s
HRV Adam Dziewonsk 113.34 52 PFAKE 07 12 40.0
HRV LR LR
comp=Z,3µm,18.0s
FFD Franklin Falls 113.40 51 PFAKE 07 12 40.0
FFD LR LR
comp=Z,3µm,19.0s
WES Weston 113.49 52 PFAKE 07 12 40.0
WES LR LR
comp=Z,5µm,18.0s
BCX Boston College 113.60 52 PFAKE 07 12 40.0
BCX LR LR
comp=Z,6µm,19.0s
MKAR Makanchi Array 114.22 313 PKiKP **PKiKP 07 12 25.4 +0.4**
comp=Z,0.8nm,0.4s,baz=129,slow=1.0,SNR=13
MAKZ Makanchi 114.44 313 PFAKE 07 12 40.0 +15
MAKZ LR LR
comp=Z,700nm,20.0s
LMQ La Malbaie 114.78 46 PFAKE 07 12 40.0 +14
LMQ LR LR
comp=Z,2µm,19.0s
WVL Waterville 114.96 50 PFAKE 07 12 40.0 +14
WVL LR LR
comp=Z,4µm,18.0s
PKME Peaks-Kenny Pk 115.28 49 PFAKE 07 12 40.0 +13
PKME LR LR
comp=Z,3µm,18.0s
GRGR Grenville 115.32 86 PFAKE 07 12 40.0 +12
GRGR LR LR
comp=Z,700nm,20.0s
SABA Saba 115.42 80 PFAKE 07 12 40.0 +12
SABA LR LR
comp=Z,1µm,18.0s
SMRT St. Maarten 115.69 80 PFAKE 07 12 40.0 +11
SMRT LR LR
comp=Z,600nm,19.0s
BDFB Brasilia 115.83 120 PFAKE 07 12 40.0 +11
BDFB LR LR
comp=Z,2µm,20.0s
GDHS Morne Mazeau, 116.42 82 PFAKE 07 12 40.0 +10
GDHS LR LR
comp=Z,1µm,18.0s
EMMW East Machias 116.53 50 PFAKE 07 12 40.0 +11
EMMW LR LR
comp=Z,5µm,22.0s
KURK Kurchatov 116.89 317 PKIKP **PKPdf 07 12 30.3 +0.4**
KURK pmax pmax
comp=Z,1.0nm,0.6s
KURK Kurchatov 116.89 317 PKP **PKPdf 07 12 30.2 +0.4**
KURBB Kurchatov Arra 116.95 317 PKP **PKPdf 07 12 30.2 +0.2**
comp=Z,1.4nm,0.6s,baz=99,slow=1.9,SNR=7.0
GGN Saint George 117.00 49 PFAKE 07 12 40.0 +10
GGN LR LR
comp=Z,3µm,19.0s
SCHQ Schefferville 117.21 38 PFAKE 07 12 40.0 +10
SCHQ LR LR
comp=Z,2µm,19.0s
BBSR BB Station 117.27 64 PFAKE 07 12 40.0 +8.8
BBSR LR LR
comp=Z,900nm,18.0s
KSH Kashi 118.14 304 *e*PKP **PKPdf 07 12 32.6 -0.3**
KSH PKS **PKSdf 07 16 08.9 -0.7**
KSH SKS **SKSdf 07 19 43.5 +0.4**
KSH AMB AMB
comp=Z,53nm,3.6s
KSH LR LR
comp=Z,290nm,12.8s
KSH LR LR
comp=Z,810nm,17.6s
KSH LR LR
comp=Z,1µm,21.2s
LMN Caledonia Moun 118.47 49 PFAKE 07 12 50.0 +17
LMN LR LR
comp=Z,2µm,18.0s
TKM2 Tokmak 2 118.67 308 PFAKE 07 12 50.0 +16
TKM2 LR LR
comp=Z,1µm,22.0s
AAK Ala-Archa 119.47 308 ⇓ *i*PKIKP **PKPdf 07 12 35.7 +0.3**
AAK MLR MLR
comp=Z,2µm,20.0s
AAK Ala-Archa 119.47 308 PFAKE 07 12 50.0 +15
AAK LR LR
comp=Z,800nm,20.0s
EKS2 Erkin-Say 120.00 308 *e*PKIKP **PKPdf 07 12 36.8 +0.4**
EKS2 MLR MLR
comp=Z,700nm,20.0s
EKS2 Erkin-Say 120.00 308 *e*PKPdf **PKPdf 07 12 36.8 +0.4**
EKS2 LR LR
comp=Z,700nm,20.0s
BRVK Borovoye 121.94 320 *d i*PKIKP **PKPdf 07 12 39.7 +0.1**
BRVK pmax pmax
comp=Z,18nm,1.2s
BRVK MLR MLR
comp=Z,3µm,21.0s
BRVK Borovoye 121.94 320 PFAKE 07 12 50.0 +10
BRVK LR LR
comp=Z,1µm,21.0s
SFJD Kangerlussuaq 122.40 23 PFAKE 07 12 50.0 +10
SFJD LR LR
comp=Z,2µm,19.0s
KKAR Karatay Array 122.40 308 *e*PKIKP **PKPdf 07 12 41.5 +0.7**
KKAR Karatay Array 122.40 308 *e*PKPdf **PKPdf 07 12 41.5 +0.7**
ZRNK Zerenda 122.72 320 *e*PKIKP **PKPdf 07 12 41.1 0.0**
ZRNK MLR MLR
comp=Z,1µm,21.0s
ZRNK Zerenda 122.72 320 *e*PKPdf **PKPdf 07 12 41.1 0.0**
ZRNK LR LR
comp=Z,1µm,21.0s
SUMG Summit 123.11 14 *e*PKIKP **PKPdf 07 12 42.0 +0.2**
SUMG MLR MLR
comp=Z,1µm,19.0s
SUMG Summit 123.11 14 *e*PKPdf **PKPdf 07 12 42.0 +0.2**
SUMG LR LR
comp=Z,1µm,19.0s
KBL Kabul 123.26 298 *e*PKIKP **PKPdf 07 12 43.6 +0.6**
KBL MLR MLR
comp=Z,900nm,20.0s
KBL Kabul 123.26 298 *e*PKPdf **PKPdf 07 12 43.5 +0.6**
KBL LR LR
comp=Z,900nm,20.0s
DRLN Deer Lake 123.30 44 PFAKE 07 12 50.0 +7.7
DRLN LR LR
comp=Z,3µm,18.0s
SUR Sutherland 124.67 196 PFAKE 07 13 00.0 +14
SUR LR LR
comp=Z,2µm,19.0s
SVE Sverdlovsk 126.57 326 *e*PKIKP **PKPdf 07 12 49.5 +1.2**
SVE pmax pmax
comp=Z,30nm,1.5s
BOSA Boshof 126.87 202 PKP **PKPdf 07 12 49.3 -0.8**
comp=Z,3.8nm,0.9s,baz=164,slow=3.6,SNR=4.5

SOKR Solikamsk 127.48 330 *i* PKIKP **PKPdf 07 12 48.2 -1.7**
SOKR pmax pmax
comp=Z,12nm,1.0s
ARU Arti 127.78 326 *i* PKIKP **PKPdf 07 12 50.1 -0.5**
ARU 07 14 48.5
ARU 07 19 58.5
ARU SP SP 07 24 53.0 -1.6
ARU SS **SS 07 31 53.1 -10**
ARU MLR MLR
comp=Z,2µm,21.0s
ARU Arti 127.78 326 *e*PKPdf **PKPdf 07 12 51.1 +0.5**
ARU LR LR
comp=Z,2µm,21.0s
ABKAR Akbulak array 129.00 317 *e*PKPdf **PKPdf 07 12 54.0 +0.8**
LVZ Lovozero 130.01 346 PFAKE 07 13 10.0 +15
LVZ LR LR
comp=Z,1µm,20.0s
ARCES ARCESS Array B 130.29 351 PKP **PKPdf 07 12 54.6 -0.4**
comp=Z,2.2nm,0.8s,baz=17,slow=1.3,SNR=11
ARE0 ARCESS Array S 130.29 351 *e*PKPdf **PKPdf 07 12 55.6 +0.5**
ARE0 LR LR
comp=Z,900nm,20.0s
RCBR Riachuelo 131.15 119 PFAKE 07 13 10.0 +12
RCBR LR LR
comp=Z,2µm,18.0s
GEYT Alibeck 132.08 302 PKP **PKPdf 07 12 59.0 -0.5**
comp=Z,1.7nm,0.2s,baz=298,slow=3.2,SNR=2.7
BORG Borgarnes 133.07 15 PFAKE 07 13 10.0 +10
BORG LR LR
comp=Z,800nm,20.0s
KLMR Klimovskoe 133.94 338 *e*PKIKP **PKPdf 07 13 00.0 -2.2**
KLMR pmax pmax
comp=Z,15nm,1.1s
LSZ Lusaka 137.43 213 PFAKE 07 13 20.0 +10
LSZ LR LR
comp=Z,2µm,19.0s
FIA1 FINESS Array S 137.45 346 *e*PKPdf **PKPdf 07 13 10.0 +1.3**
TSUM Tsumeb 138.07 197 PFAKE 07 13 20.0 +8.6
TSUM LR LR
comp=Z,1µm,19.0s
MOS Moscow 138.18 333 *e*PKIKP **PKPdf 07 13 09.9 -0.3**
MOS MLR MLR
comp=Z,2µm,21.0s
VRH Novokhopyorsk 139.01 326 *e*PKIKP **PKPdf 07 13 11.2 -0.7**
VRH pmax pmax
comp=Z,8.0nm,0.5s
OBN Obninsk 139.04 333 *d i*PKIKP **PKPdf 07 13 13.4 +1.6**
OBN pmax pmax
comp=Z,13µm,1.1s
OBN MLR MLR
comp=Z,1µm,20.0s
OBN Obninsk 139.04 333 PFAKE 07 13 20.0 +8.2
OBN LR LR
comp=Z,1µm,20.0s
VSU Vasula 139.87 343 ⇓ *i*PKIKP **PKPdf 07 13 15.2 +2.0**
VSU MLR MLR
comp=Z,3µm,20.0s
NC303 NORSAR Array S 139.92 356 *e*PKPpre PKPpre 07 13 06.6
NC405 NORSAR Array S 140.00 355 *e*PKPdf **PKPdf 07 13 13.6 +0.2**
VSR Storozhevoye 140.33 327 *e*PKIKP **PKPdf 07 13 11.2 -3.1**
VSR pmax pmax
comp=Z,20nm,2.0s
TBLG Delisi 141.37 311 P **PKPdf 07 13 15.1 -1.4**
TBLG Delisi 141.37 311 *e*PKIKP **PKPdf 07 13 15.1 -1.4**
KONO Kongsberg 141.59 357 PFAKE 07 13 30.0 +14
KONO LR LR
comp=Z,1µm,19.0s
GNI Garni 141.87 308 PFAKE 07 13 30.0 +12
GNI LR LR
comp=Z,800nm,20.0s
KMBO Kilima Mbogo 141.88 238 *e*PKIKP **PKPdf 07 13 16.0 -2.6**
KMBO MLR MLR
comp=Z,1µm,20.0s
KMBO Kilima Mbogo 141.88 238 *e*PKPdf **PKPdf 07 13 16.0 -2.6**
KMBO LR LR
comp=Z,1µm,20.0s
KIV Kislovodsk 141.94 315 ⇑ *e*PKIKP **PKPdf 07 13 16.2 -1.4**
KIV pmax pmax
comp=Z,5.0nm,1.0s
KIV Kislovodsk 141.94 315 PFAKE 07 13 30.0 +12
KIV LR LR
comp=Z,1µm,20.0s
AKH Akhalkalaki 142.35 311 P PKPpre 07 13 02.2
AKH Akhalkalaki 142.35 311 *e*PKHKP PKPpre 07 13 02.2
DAMY Dhamar 142.59 266 PFAKE 07 13 30.0 +10
DAMY LR LR
comp=Z,2µm,20.0s
MICGM Minsk 142.83 339 *e* **PKPdf 07 13 18.0 -0.7**
MICGM *e*LR LR 08 08 07.0
MNIK Minsk 142.83 339 *e*PKIKP **PKPdf 07 13 18.0 -0.7**
NACGM Naroch 142.86 340 *e* **PKPdf 07 13 21.0 +2.3**
NACGM *e*LR LR 08 08 20.0
SOC Sochi 144.03 316 *e*PKIKP PKPbc 07 13 19.5 +0.4
SOC *e* 07 16 32.9
SOC *e*SS SS 07 35 12.5 -5.3
SOC pmax pmax
comp=Z,5.0nm,0.4s
SOC pmax pmax
comp=Z,8.0nm,0.4s
EZM Erzurum 144.40 309 *e*P **PKPdf 07 13 23.1 +0.9**
SUW Suwalki 144.72 342 *e*PKP PKPbc 07 13 21.2 +0.3
SUW Suwalki 144.72 342 *e*PKIKP PKPbc 07 13 21.2 +0.3
MUD Monsted U'grnd 144.80 357 *i* P **PKPdf 07 13 22.3 +0.3**
MUD Monsted U'grnd 144.80 357 *i* PKIKP **PKPdf 07 13 22.3 +0.3**
ANN Anapa 144.87 319 *i* PKIKP **PKPab 07 13 20.1 -1.5**
ANN *e* 07 16 48.4
ANN *e*SSS SSS 07 40 51.5
ANN pmax pmax
comp=Z,252nm,1.4s
ANN pmax pmax
comp=N,72nm,1.5s
ANN pmax pmax
comp=E,30nm,1.5s
ANN pmax pmax
comp=N,318nm,7.1s
ANN pmax pmax
comp=E,163nm,7.3s
ANN pmax pmax
comp=Z,829nm,7.1s
ANN MLR MLR
comp=E,773nm,23.0s
ANN MLR MLR
comp=N,825nm,23.0s
ANN MLR MLR
comp=Z,691nm,23.0s
KLNR Kaliningrad 144.97 345 ⇑ *e*PKIKP **PKPab 07 13 21.3 -0.4**
YEDI Yedisu-Bingol 145.16 309 *e*P **PKPdf 07 13 23.6 +0.2**
COP Copenhagen 145.30 353 *i* P **PKPbc 07 13 22.0 -0.7**
COP Copenhagen 145.30 353 *i* PKIKP **PKPbc 07 13 22.0 -0.7**
AKASG Malin Array Be 145.31 333 PKPbc **PKPbc 07 13 21.7 -1.2**
comp=Z,5.5nm,0.4s,baz=38,slow=3.6,SNR=51
AKBB Malin Array Si 145.31 333 *e*PKIKP **PKPdf 07 13 23.3 +0.2**
AKBB Malin Array Si 145.31 333 *e*PKPbc **PKPdf 07 13 23.3 +0.2**
KIEV Kiev 145.32 333 *c i*PKP2 **PKPbc 07 13 20.6 -2.3**
KIEV Kiev 145.32 333 *e*PKPbc **PKPdf 07 13 23.5 +0.4**
AK11 Malin Array Si 145.35 333 *e*PKPbc **PKPab 07 13 23.8 +0.6**
ESK Eskdalemuir 145.40 9 *e*PKIKP **PKPbc 07 13 22.9 -0.2**
ESK MLR MLR
comp=Z,2µm,20.0s
ESK Eskdalemuir 145.40 9 *e*PKPbc **PKPbc 07 13 22.9 -0.2**
ESK LR LR
comp=Z,2µm,20.0s
BSD Bornholm Skovb 145.53 351 *i* P **PKPdf 07 13 22.3 -1.0**
BSD Bornholm Skovb 145.53 351 *i* PKP2 **PKPdf 07 13 22.3 -1.0**
LLD Lille Linde 145.67 353 *i* P **PKPbc 07 13 23.8 -0.1**
LLD Lille Linde 145.67 353 *i* PKIKP **PKPbc 07 13 23.8 -0.1**
FURI Furi 145.87 254 PFAKE 07 13 40.0 +13
FURI LR LR
comp=Z,1µm,20.0s
MAZI Mazidag 145.89 306 *e*P **PKPdf 07 13 24.2 -0.5**
KBSD Kabsdagh 145.96 305 *e*P **PKPab 07 13 26.5 +0.5**
ROSA Rosais 146.17 52 PFAKE 07 13 40.0 +13
ROSA LR LR
comp=Z,1µm,20.0s
PTK Pertek 146.19 309 *e*P **PKPdf 07 13 25.7 +0.5**
MZRK Al-Mazaregh 146.21 303 *e*P **PKPab 07 13 27.9 +0.9**
RGN Rugen 146.31 352 *e*PKPdf **PKPab 07 13 26.8 +0.2**
RGN LR LR
comp=Z,2µm,20.0s
SVRC Sivrice-ELAZID 146.44 308 *e*P **PKPbc 07 13 27.0 0.0**
SFNV Sufian 146.46 304 *e*P **PKPab 07 13 28.0 0.0**
SIM Simferopol' 146.76 322 *ce*PKP2 **PKPbc 07 13 27.9 +0.4**
SIM 07 16 54.5
SIM pmax pmax

comp=Z,73nm,0.8s
SIM pmax pmax

comp=Z,870nm,10.4s
DSB Dublin 146.81 13 PFAKE 07 13 40.0 +11
DSB LR LR

comp=Z,1μm,18.0s
GKP Gorka Klasztor 146.87 347 *e*PKP **PKPbc 07 13 27.6 +0.1**
GKP Gorka Klasztor 146.87 347 *e*PKP2 **PKPbc 07 13 27.6 +0.1**
VAL Valentia 147.03 18 *e*P **PKPdf 07 13 25.3 -0.7**
VAL Valentia 147.03 18 *e*P **PKPdf 07 13 25.3 -0.7**
MBAR Mbarara 147.19 232 *e*PKP2 **PKPab 07 13 31.4 -0.2**
MBAR MLR MLR

comp=Z,2μm,19.0s
MBAR Mbarara 147.19 232 *e*PKPbc **PKPab 07 13 31.4 -0.2**
MBAR LR LR

comp=Z,2μm,19.0s
BEL Belsk 147.33 343 *e*PKP **PKPab 07 13 30.8 +0.1**
BEL Belsk 147.33 343 *e*PKP2 **PKPab 07 13 30.8 +0.1**
KVT Kavak 147.61 314 *e*P **PKPbc 07 13 28.8 -1.3**
SORM Soroca 147.61 331 ⇑*i*P **PKPbc 07 13 29.3 -0.5**
SORM Soroca 147.61 331 ⇑PKP2 **PKPbc 07 13 29.3 -0.5**
DARE Darende-Malaty 147.69 309 *e*P **PKPdf 07 13 27.0 -0.7**
SNOP Sinop 147.70 317 *e*P **PKPdf 07 13 28.8 +1.4**
LVV L'vov 148.03 337 *e*PKP2 **PKPbc 07 13 31.9 +1.0**
LVV MLR MLR

comp=N,1μm,19.0s
LVV MLR MLR

comp=E,700nm,19.0s
LVV MLR MLR

comp=Z,1μm,19.0s
CWF Charnwood Fore 148.17 8 PFAKE 07 13 40.0 +6.0
CWF LR LR

comp=Z,1μm,21.0s
KIS Kishinev 148.22 329 *e*PKP **PKPdf 07 13 29.0 +0.9**
KIS M M 07 13 29.5

comp=Z,300nm,2.0s
KIS Kishinev 148.22 329 *i* PsP 07 13 49.0
KIS *e*SKP **SKPdf 07 16 50.0 -10**
KIS Kishinev 148.22 329 *e*PP PP 07 17 12.0 +12
KIS *e*SKKS 07 23 52.0
KIS LRM MLR 08 17 44.0

comp=Z,2μm,20.0s
KIS Kishinev 148.22 329 *e*PKIKP **PKPdf 07 13 29.0 +0.9**
KIS pmax pmax

comp=Z,300nm,2.0s
KIS MLR MLR

comp=N,1μm,20.0s
KIS MLR MLR

comp=E,600nm,20.0s
KIS MLR MLR

comp=Z,2μm,20.0s
KIS MLR MLR

comp=Z,2μm,20.0s
GAZ Gaziantep 148.42 307 *e*P **PKPab 07 13 34.5 -1.2**
BZK Bozkurt 148.49 317 *e*P **PKPdf 07 13 28.8 +0.1**
CMLA Cha da Macela 148.51 52 PFAKE 07 13 40.0 +4.0
CMLA LR LR

comp=Z,2μm,18.0s
KMRS Kahramanmaras 148.52 308 *e*P **PKPdf 07 13 28.3 -0.7**
KWP Kalwaria Pacla 148.66 338 *e*PKP **PKPbc 07 13 32.8 +0.2**
KWP Kalwaria Pacla 148.66 338 *e*PKP2 **PKPbc 07 13 32.8 +0.2**
BNN Bunyan 148.75 311 *e*P **PKPdf 07 13 29.3 -0.1**
TOS Tosya 148.96 316 *e*P **PKPbc 07 13 32.7 -1.0**
CORM Corum 148.98 314 *e*P **PKPab 07 13 36.1 -1.9**
DRWC Darouich 149.02 306 *e*P **PKPdf 07 13 22.9 -7.0**
OJC Ojcow 149.06 342 *e*PKP **PKPdf 07 13 29.8 +0.4**
OJC Ojcow 149.06 342 *e*PKIKP **PKPdf 07 13 29.8 +0.4**
OJC Ojcow 149.06 342 *e*PKPbc **PKPbc 07 13 34.3 +0.8**
RABH Abou Rabah 149.31 302 *e*P **PKPdf 07 13 28.7 -1.7**
KOZT Kozan 149.32 308 *e*P **PKPbc 07 13 35.3 +0.7**
ROZS Il_alroos 149.32 301 *e*P **PKPbc 07 13 33.7 -1.1**
STHS Stebnicka Huta 149.33 340 *e*PKP2 **PKPbc 07 13 36.0 +1.7**
STHS *e* 07 17 05.7
STHS Stebnicka Huta 149.33 340 *e*PKP **PKPbc 07 13 36.0 +1.7**
STHS *e* 07 13 46.3
STHS *e*PP **PP 07 17 05.7 0.0**
BUR08 Bucovina Ar. S 149.35 334 *e*PKPbc **PKPbc 07 13 35.4 +0.9**
KSP Ksiaz 149.36 347 *e*PKP **PKPdf 07 13 31.9 +2.1**
KSP Ksiaz 149.36 347 *e*PKIKP **PKPdf 07 13 32.0 +2.1**
BURAR Bucovina Array 149.36 334 ⇓*i*P **PKPbc 07 13 33.3 -1.2**
BURAR Bucovina Array 149.36 334 ⇓PKP2 **PKPbc 07 13 33.3 -1.2**
BTCH Batrach 149.38 305 *e*P **PKPbc 07 13 33.2 -1.6**
KOLS Kolonicke sedl 149.40 338 *e*PKIKP **PKPdf 07 13 32.1 +2.1**
KOLS *e* 07 13 36.6
KOLS *e* 07 13 46.7
KOLS Kolonicke sedl 149.40 338 *e*PKP **PKPdf 07 13 32.1 +2.1**
KOLS *e* 07 13 36.6
KOLS *e* 07 13 46.7
KOLS *e*SKSDF 07 20 17.0
TAHT Tahtakopru-Hat 149.47 306 *e*P **PKPab 07 13 40.6 +0.7**
TLCR 149.50 327 ⇑*i*P **PKPbc 07 13 34.7 0.0**
TLCR 149.50 327 ⇑PKP2 **PKPbc 07 13 34.7 0.0**
CLL Collm 149.51 351 *e*PKPdf **PKPdf 07 13 30.0 -0.1**
CLL *e* 07 13 35.0
CLL pmax pmax

comp=Z,82nm,1.6s
CLL MLR MLR

comp=Z,1μm,20.5s
CLL Collm 149.51 351 *e*PKPbc **PKPbc 07 13 35.5 +0.9**
CLL LR LR

comp=Z,1μm,20.0s
CEYT Ceyhan 149.56 308 *e*P **PKPbc 07 13 37.3 +2.2**
TESR Tescani 149.59 331 ⇓*i*P **PKPdf 07 13 29.3 -1.1**
ZALF Zalf 149.62 299 *e*P **PKPdf 07 13 32.6 +1.7**
NIE Niedzica 149.62 341 *e*PKP **PKPbc 07 13 32.7 -2.3**
UZH Uzhgorod 149.65 338 *i* PKP2 **PKPbc 07 13 35.1 +0.1**
CRVS Cervenica-Dubn 149.70 339 *e*PKP2 **PKPbc 07 13 37.2 +2.0**
CRVS Cervenica-Dubn 149.70 339 *e*PKP **PKPbc 07 13 37.1 +1.9**
CRVS *e*SKSDF 07 20 23.0
UPC Upice 149.74 347 ⇑*e*PKP **PKPbc 07 13 37.1 +1.9**
UPC *e*pPKP **PKPab 07 13 46.6 +6.1**
UPC *ex* x 07 27 24.4
UPC *e*SS SS 07 36 22.2 +1.6
UPC AMS AMS 08 25 00.0

comp=Z,1μm,19.2s
UPC Upice 149.74 347 *e*PKP2 **PKPbc 07 13 37.1 +1.9**
UPC *e*SS SS 07 36 22.2 +1.6
UPC MLR MLR

comp=Z,1μm,19.2s
BRG Berggiesshubel 149.78 350 *e*PKP **PKPdf 07 13 31.3 +0.8**
comp=Z,17nm,1.7s
BRG *e* 07 13 46.3

comp=Z,98nm,1.4s
BRG Berggiesshubel 149.78 350 *e*PKHKP **PKPdf 07 13 31.3 +0.8**
BRG pmax pmax

comp=Z,17nm,1.7s
DPC Dobruska-Polom 149.82 346 ⇑*e*PKP **PKPbc 07 13 37.3 +1.8**
DPC *e*pPKP **PKPab 07 13 47.1 +6.2**
DPC *e*SKP 07 17 08.2
DPC *ex* x 07 27 19.3
DPC AMS AMS 08 23 00.0

comp=Z,1μm,20.2s
DPC Dobruska-Polom 149.82 346 *e*PKP2 **PKPbc 07 13 37.3 +1.8**
DPC *e* 07 17 08.2
DPC MLR MLR

comp=Z,1μm,20.2s
BIDA Albida 149.83 304 *e*P **PKPdf 07 13 27.9 -3.3**
CFR Carcaliu 149.85 327 ⇓*i*P **PKPbc 07 13 36.9 +1.3**
CFR Carcaliu 149.85 327 ⇓PKP2 **PKPbc 07 13 36.9 +1.3**
OKC Ostrava-Krasne 149.85 344 ⇑*e*PKP **PKPbc 07 13 37.3 +1.8**
OKC *e*SKP 07 17 06.1
OKC *e*SS SS 07 36 23.2 +1.2
OKC AMS AMS 08 27 10.0

comp=Z,800nm,20.3s
OKC Ostrava-Krasne 149.85 344 *e*PKP2 **PKPbc 07 13 37.3 +1.8**
OKC *e* 07 17 06.1
OKC *e*SS SS 07 36 23.2 +1.2
OKC MLR MLR

comp=Z,800nm,20.3s
BR131 Keskin Array S 149.87 314 *e*PKPbc **PKPbc 07 13 36.6 +0.5**
BRTR Keskin Array B 149.87 314 PKPbc **PKPbc 07 13 35.8 -0.3**
comp=Z,10nm,0.9s,baz=134,slow=2.3,SNR=20
HAWK Haweek 149.92 303 *e*P **PKPbc 07 13 34.2 -2.1**
NIG Nigde 149.94 310 *e*P **PKPbc 07 13 37.0 +0.6**
KRLC Kraliky 149.97 346 ⇑*e*PKP **PKPbc 07 13 37.6 +1.8**
KRLC *e*pPKP **PKPab 07 13 47.3 +5.8**
KRLC *ex* x 07 13 56.1
KRLC Kraliky 149.97 346 *e*PKP2 **PKPbc 07 13 37.6 +1.8**
KARA Karaisali 149.97 308 *e*P **PKPdf 07 13 33.5 +2.2**
KAMT Kaman 149.99 313 *e*P **PKPbc 07 13 35.0 -1.4**
PVCC Panska Ves 150.00 349 ⇑*e*PKP **PKPbc 07 13 37.8 +2.0**
PVCC *e*pPKP **PKPab 07 13 47.8 +6.2**
PVCC AMS AMS 08 29 20.0

comp=Z,1μm,19.6s
PVCC Panska Ves 150.00 349 *e*PKP2 **PKPbc 07 13 37.8 +2.0**
PVCC MLR MLR

comp=Z,1μm,19.6s
MARH Ras Al Marh 150.00 302 *e*P **PKPdf 07 13 33.3 +1.4**
BMR Baia Mare 150.01 335 ⇑*i*P **PKPab 07 13 43.6 +1.9**
BMR Baia Mare 150.01 335 ⇑PKP2 **PKPab 07 13 43.6 +1.9**
MORC Moravsky Berou 150.06 344 ⇑*i*P **PKPbc 07 13 36.1 +0.8**
MORC Moravsky Berou 150.06 344 *e*PKPdf **PKPdf 07 13 33.1 +2.1**
MORC *e*PKPbc **PKiKP 07 13 37.8 +0.8**
MORC LR LR

comp=Z,5μm,20.0s
PLOR Plostina 150.08 330 ⇑*i*P **PKPbc 07 13 37.2 +1.0**
PLOR Plostina 150.08 330 ⇑PKP2 **PKPbc 07 13 37.2 +1.0**
LANS Liptovska Anna 150.11 342 *e*PKP2 **PKPbc 07 13 38.9 +2.7**
LANS Liptovska Anna 150.11 342 *e*PKP **PKPbc 07 13 38.9 +2.7**
ARCR ARCALIA 150.14 334 ⇑*i*P **PKPab 07 13 46.5 +4.2**
SALA Sala 150.16 299 *e*P **PKPdf 07 13 28.7 -3.3**
TIRR Tirgusor 150.21 326 ⇑*i*P **PKPbc 07 13 37.8 +1.3**
TIRR Tirgusor 150.21 326 *e*PKP2 **PKPbc 07 13 37.3 +0.8**
TIRR MLR MLR

comp=Z,1μm,21.0s
TIRR Tirgusor 150.21 326 *e*PKPbc **PKPbc 07 13 37.3 +0.8**
TIRR LR LR

comp=Z,1μm,21.0s
TOTH TOTAH 150.24 300 *e*P **PKPdf 07 13 31.1 -0.8**
HARR Harsova 150.29 327 ⇓*i*P **PKPbc 07 13 37.3 +0.6**
HARR Harsova 150.29 327 ⇓PKIKP **PKPbc 07 13 37.3 +0.6**
SERE Sereflikochisa 150.29 313 *e*P **PKPbc 07 13 38.4 +1.3**
TLB Topalu 150.31 327 ⇑*i*P **PKPbc 07 13 38.2 +1.5**
TLB Topalu 150.31 327 ⇑PKIKP **PKPbc 07 13 38.2 +1.5**
ANTO Ankara 150.36 315 *e*PKIKP **PKPbc 07 13 38.9 +1.8**
ANTO MLR MLR

comp=Z,1μm,21.0s
ANTO Ankara 150.36 315 *e*PKPbc **PKPbc 07 13 38.9 +1.8**
ANTO LR LR

comp=Z,1μm,21.0s
LOD Lodumlu 150.37 315 *e*P **PKPbc 07 13 36.5 -0.7**
KECS Kecovo 150.39 340 *e*PKIKP **PKPbc 07 13 38.5 +1.7**
KECS *e* 07 13 47.5
KECS Kecovo 150.39 340 *e*PKP **PKPbc 07 13 38.5 +1.7**
KECS *e* 07 13 47.5
BR231 Keskin MP Arra 150.39 315 *e*PKPbc **PKPbc 07 13 38.8 +1.6**
AFSR Af'ar-Bala (A 150.39 314 *e*P **PKPbc 07 13 35.8 -1.5**
MERS Mersin 150.52 308 *e*P **PKPbc 07 13 39.1 +1.5**
PRU Pruhonice 150.52 348 ⇑*e*PKP **PKPbc 07 13 38.7 +1.6**
PRU *e*pPKP **PKPab 07 13 48.6 +4.9**
PRU *ex* x 07 13 57.6
PRU *e*SKP 07 17 06.2
PRU *ex* x 07 27 28.7
PRU *e*SS SS 07 36 26.4 -2.9
PRU AMS AMS 08 31 10.0

comp=Z,1μm,19.1s
PRU Pruhonice 150.52 348 *e*PKIKP **PKPbc 07 13 38.7 +1.6**
PRU *e* 07 13 48.6
PRU *e*SS SS 07 36 26.4 -2.9
PRU MLR MLR

comp=Z,1μm,19.1s
GOPC GO Pecny, Ondr 150.55 348 ⇑*e*PKP **PKPbc 07 13 39.0 +1.8**
GOPC *e*pPKP **PKPab 07 13 48.7 +4.8**
GOPC *ex* x 07 13 58.0
GOPC *e*SKP 07 17 07.2
GOPC *ex* x 07 27 30.0
GOPC *e*SS SS 07 36 30.7 +1.1
GOPC AMS AMS 08 24 00.0

comp=Z,1μm,21.5s
GOPC GO Pecny, Ondr 150.55 348 *e*PKIKP **PKPbc 07 13 39.0 +1.8**
GOPC *e* 07 13 48.7
GOPC *e*SS SS 07 36 30.7 +1.1
GOPC MLR MLR

comp=Z,1μm,21.5s
MANR Mangalia 150.55 325 ⇑*i*P **PKPbc 07 13 39.4 +2.1**
DOPR Dopca 150.57 331 ⇑*i*P **PKPbc 07 13 38.0 +0.6**
NKC Novy Kostel 150.64 351 ⇑*e*PKP **PKPbc 07 13 39.2 +1.8**
NKC *e*PKPAB **PKPab 07 13 47.3 +3.1**
NKC AMS AMS 08 30 10.0

comp=Z,1μm,20.5s
NKC Novy Kostel 150.64 351 *e*PKIKP **PKPbc 07 13 39.2 +1.8**
NKC *e* 07 13 47.3
NKC MLR MLR

comp=Z,1μm,20.5s
ISR Istrita 150.67 329 ⇓*i*P **PKPbc 07 13 39.2 +1.5**
ISR Istrita 150.67 329 ⇓PKIKP **PKPbc 07 13 39.2 +1.5**
MLR Muntele Rosu 150.68 330 ⇓*i*P **PKPbc 07 13 39.7 +1.9**
MLR Muntele Rosu 150.68 330 *e*PKIKP **PKPdf 07 13 33.0 +0.7**
MLR *e* 07 13 39.1
MLR MLR MLR

comp=Z,2μm,21.0s
MLR Muntele Rosu 150.68 330 *e*PKPdf **PKPdf 07 13 33.0 +0.7**
MLR *e*PKPbc **PKiKP 07 13 39.0 +0.6**
MLR LR LR

comp=Z,2μm,21.0s
VRAC Vranov 150.73 345 ⇑*i*P **PKPbc 07 13 35.9 -1.7**
VRAC Vranov 150.73 345 ⇑PKIKP **PKPbc 07 13 35.9 -1.7**
CJR Cluj-Napoca 150.75 334 ⇑*i*P **PKPbc 07 13 38.8 +1.0**
CJR Cluj-Napoca 150.75 334 ⇑PKIKP **PKPbc 07 13 38.9 +1.1**
MEM Membach 150.76 360 PKPbc **PKPbc 07 13 37.8 +0.2**
TCHB Talchebab 150.79 299 *e*P **PKPdf 07 13 27.4 -5.3**
SNF Seneffe 150.84 2 PKPbc **PKPbc 07 13 39.4 +1.6**
PSN Preselentsi 150.86 325 *i* P **PKPdf 07 13 31.2 -1.2**
VYHS Vyhne 150.88 342 *e*PKIKP **PKPbc 07 13 39.8 +1.8**
VYHS Vyhne 150.88 342 *e*PKP **PKPbc 07 13 39.8 +1.8**
VYHS *e* 07 14 05.6
CHBY Cihanbeyli 150.93 312 *e*P **PKPbc 07 13 38.5 -0.1**
BCLA Clavier 150.95 0 PKPbc **PKPbc 07 13 38.8 +0.7**
TREC Trest 150.99 347 ⇑*e*PKP **PKPbc 07 13 39.6 +1.3**
TREC *ex* x 07 13 49.8
TREC AMS AMS 08 20 50.0

comp=Z,2μm,20.7s
TREC Trest 150.99 347 *e*PKIKP **PKPbc 07 13 39.6 +1.3**
TREC *e* 07 13 49.8
TREC MLR MLR

comp=Z,2μm,20.7s
DRGR 151.04 335 ⇓*i*P **PKPbc 07 13 37.8 -0.7**
DRGR 151.04 335 ⇓PKIKP **PKPbc 07 13 37.8 -0.7**
PSZ Piszkesteto 151.07 340 ⇑*i*P **PKPbc 07 13 40.1 +1.5**
PSZ Piszkesteto 151.07 340 *e*PKIKP **PKPdf 07 13 34.3 +1.6**
PSZ *e* 07 13 39.8
PSZ MLR MLR

comp=Z,1μm,21.0s
PSZ Piszkesteto 151.07 340 *e*PKPdf **PKPdf 07 13 34.3 +1.6**
PSZ *e*PKPbc **PKiKP 07 13 39.8 +0.7**
PSZ LR LR

comp=Z,1μm,21.0s
PSZ Piszkesteto 151.07 340 *e*PKPdf **PKPdf 07 13 34.1 +1.3**
MDUB Mudurnu 151.08 317 *e*P **PKPbc 07 13 37.0 -1.8**
VOIR 151.13 331 ⇑*i*P **PKPbc 07 13 40.5 +1.7**
VOIR 151.13 331 ⇑PKIKP **PKPbc 07 13 40.5 +1.7**
SMOL Smolenice 151.26 344 *e* **PKPab 07 13 51.1 +4.3**
DOU Dourbes 151.26 1 PKPbc **PKPbc 07 13 38.8 0.0**
GRFO Grafenberg 151.33 352 *e*PKIKP **PKPbc 07 13 40.9 +1.9**
GRFO MLR MLR

comp=Z,1μm,20.0s
GRFO Grafenberg 151.33 352 *e*PKPbc **PKPbc 07 13 40.9 +1.9**
GRFO LR LR

comp=Z,1μm,20.0s
ARR Arges 151.37 331 ⇑*i*P **PKPdf 07 13 34.5 +1.2**
KIZT Kizilcal 151.47 314 *e*P **PKPbc 07 13 41.4 +1.5**
LADK Ladik-KONYA 151.47 312 *e*P **PKPdf 07 13 36.8 +3.0**
KHC Kasperske Hory 151.53 349 *e*PKPDF **PKPdf 07 13 34.0 +0.7**
KHC ⇑*e*PKP **PKiKP 07 13 41.1 +1.1**
KHC *e*PKPAB **PKPab 07 13 50.1 +2.1**
KHC *ex* x 07 14 00.5
KHC *e*SKP 07 17 10.8
KHC *ex* x 07 27 35.8
KHC *e*SS SS 07 36 38.2 -2.3
KHC AMS AMS 08 26 50.0

comp=Z,1μm,17.9s
KHC Kasperske Hory 151.53 349 *e*PKIKP **PKPdf 07 13 34.0 +0.7**
KHC *e* 07 13 41.1
KHC *e* 07 13 50.1
KHC *e*SS SS 07 36 38.2 -2.3
KHC MLR MLR

comp=Z,1μm,17.9s
KHC Kasperske Hory 151.53 349 *e*PKPdf **PKPdf 07 13 34.0 +0.7**
KHC *e*PKPbc **PKiKP 07 13 41.5 +1.5**
KHC LR LR

comp=Z,500nm,19.0s
GULT Gulveren 151.53 318 *e*P **PKPdf 07 13 36.3 +2.6**
SACV Santiago Islan 151.54 98 PFAKE 07 13 50.0 +1.0
SACV LR LR

comp=Z,500nm,21.0s
SILT Sile 151.65 320 *e*P **PKPdf 07 13 30.6 -3.1**
LOT Lotru 151.69 332 ⇑*i*P **PKPbc 07 13 39.5 -0.6**
WLF Walferdange 151.70 359 PKPbc **PKPbc 07 13 41.0 +1.2**
WLF Walferdange 151.70 359 *e*PKIKP **PKPbc 07 13 42.0 +2.2**
WLF MLR MLR

comp=Z,1μm,18.0s
WLF Walferdange 151.70 359 *e*PKPbc **PKPbc 07 13 42.0 +2.2**
WLF LR LR

comp=Z,1μm,18.0s
GEC2 GERESS Array S 151.78 349 *e*PKIKP **PKPdf 07 13 35.3 +1.4**
GEC2 *e* 07 13 41.6
GEC2 MLR MLR

comp=Z,1μm,18.0s
GEC2 GERESS Array S 151.78 349 *e*PKPdf **PKPdf 07 13 35.3 +1.4**
GEC2 *e*PKPbc **PKiKP 07 13 41.6 +1.0**
GEC2 LR LR

comp=Z,1μm,18.0s
GERES GERESS Array B 151.78 349 PKPbc **PKPbc 07 13 39.6 -0.6**
comp=Z,5.7nm,1.0s,baz=0.0,slow=1.7,SNR=25
GEA0 GERESS Array S 151.78 349 *e*PKPdf **PKPdf 07 13 33.6 -0.2**
GEA0 *e*PKPbc **PKiKP 07 13 41.6 +1.0**
LFK Lefkose 151.88 306 *e*P **PKPbc 07 13 40.9 +0.1**
ADVT Abdulvahap 152.01 318 *e*P **PKPbc 07 13 39.6 -1.3**
CSS Mathiatis 152.15 305 *e*PKPbc **PKPbc 07 13 42.7 +1.3**
CSS LR LR

comp=Z,300nm,22.0s
GZR Gura Zlata 152.15 334 ⇑*i*P **PKPdf 07 13 36.2 +1.7**
GZR Gura Zlata 152.15 334 ⇑PKIKP **PKPdf 07 13 36.2 +1.7**
HRFI Mount Harif 152.17 294 *e*P **PKPbc 07 13 41.5 -0.1**
CONA Conrad Observa 152.19 345 *i* PKPdf **PKPdf 07 13 34.1 -0.4**
comp=Z,63nm,1.3s
CTKS Kestanelik-??a 152.27 321 *e*P **PKPbc 07 13 42.7 +1.3**
EIL Elat 152.31 293 *e*P **PKPab 07 13 53.6 +1.7**
SZH Strazhica 152.32 327 P **PKPdf 07 13 33.3 -1.4**
LANF Langenberg 152.34 357 PKP **PKPab 07 13 52.4 +1.1**
LEF Lefka 152.43 306 *e*P **PKPbc 07 13 42.4 +0.4**
BZS Buzias 152.44 335 ⇑*i*P **PKPdf 07 13 34.1 -0.7**
BZS Buzias 152.44 335 ⇑PKIKP **PKPdf 07 13 34.1 -0.7**
STU Stuttgart 152.45 355 *e*PKIKP **PKPbc 07 13 43.1 +1.5**
STU MLR MLR

comp=Z,2μm,21.0s
STU Stuttgart 152.45 355 *e*PKPbc **PKPbc 07 13 43.1 +1.5**
STU LR LR

comp=Z,2μm,21.0s
ARMT Armutlu 152.47 319 *e*P **PKPbc 07 13 40.9 -1.0**
MOA Molln 152.62 347 *i* PKPdf **PKPdf 07 13 34.3 -0.7**
comp=Z,46nm,1.3s
TVSB Tavsanli 152.75 317 *e*P **PKPbc 07 13 40.1 -2.6**
SUTC Sutluce-Ispart 152.77 312 *e*P **PKPbc 07 13 42.9 +0.1**
ARSA Arzberg 152.91 345 *i* PKPdf **PKPdf 07 13 34.3 -1.2**
comp=Z,32nm,1.4s
WLS Welschbruch 152.92 357 PKP **PKPab 07 13 54.0 +0.2**
BFO Black Forest 152.95 356 *e*PKIKP **PKPdf 07 13 36.4 +0.9**
BFO *e* 07 13 43.5
BFO MLR MLR

comp=Z,1μm,20.0s
BFO Black Forest 152.95 356 *e*PKPdf **PKPdf 07 13 36.4 +0.9**
BFO *e*PKPbc **PKiKP 07 13 43.5 +0.5**
BFO LR LR

comp=Z,1μm,20.0s
ECH Echery 153.13 358 PKP **PKPab 07 13 53.5 -1.2**
THEF They Montfort 153.14 359 PKP **PKPab 07 13 53.2 -1.5**
MPEP Malo Peshtene 153.33 330 *i* P **PKPdf 07 13 35.0 -1.2**
KOGS Kog 153.47 343 *e*PKPdf **PKPdf 07 13 35.0 -1.3**
KOGS *e* 07 14 06.5
KOGS *e*PP **PP 07 17 26.9 -2.4**
MOF Molkenrain 153.49 358 PKP **PKPab 07 13 54.0 -2.3**
KBA Koelnbreinsper 153.54 348 *i* PKPdf **PKPdf 07 13 35.4 -1.2**
comp=Z,33nm,1.2s
RETA Reutte 153.56 352 *i* PKPdf **PKPdf 07 13 36.0 -0.4**
comp=Z,19nm,0.9s
SOKA Soboth 153.56 345 *i* PKPdf **PKPdf 07 13 35.4 -1.1**
comp=Z,54nm,1.4s
WTTA Wattenberg 153.66 351 *i* PKPdf **PKPdf 07 13 36.0 -0.7**
comp=Z,23nm,0.9s
KDZ Kurdzhali 153.74 325 *i* P **PKPdf 07 13 35.0 -1.8**
OBKA Obir 153.83 346 *i* PKPdf **PKPdf 07 13 35.6 -1.3**
comp=Z,19nm,1.0s
DAVA Damuels 153.86 353 *i* PKPdf **PKPdf 07 13 36.7 -0.3**
comp=Z,39nm,1.2s
ABTA Abfaltersbach 154.01 349 *i* PKPdf **PKPdf 07 13 35.6 -1.6**
comp=Z,21nm,0.8s
FETA Feichten 154.02 352 *i* PKPdf **PKPdf 07 13 36.9 -0.3**
comp=Z,20nm,1.0s
VTS Vitosha 154.16 329 ⇑*i*P **PKPdf 07 13 36.9 -0.7**
VTS Vitosha 154.16 329 *e*PKIKP **PKPdf 07 13 38.4 +0.8**
VTS MLR MLR

comp=Z,2μm,20.0s
VTS Vitosha 154.16 329 *i* P **PKPdf 07 13 36.8 -0.8**
VTS Vitosha 154.16 329 *e*PKPdf **PKPdf 07 13 38.4 +0.8**
VTS LR LR

comp=Z,2μm,20.0s
LJU Ljubljana 154.28 346 *e*PKPdf **PKPdf 07 13 37.0 -0.4**
LJU *e* 07 14 08.1
LJU *e* 07 17 18.3
FUORN Ofenpass-Fuorn 154.47 353 *e*PKPdf **PKPdf 07 13 38.8 +0.7**
FUORN *e*PKPbc **PKiKP 07 13 48.0 +1.6**
FUORN LR LR

comp=Z,2μm,20.0s
BOJS Bojanci 154.61 344 *i* PKPdf **PKPdf 07 13 37.4 -0.5**
MMB Musomiste 154.66 327 *i* P **PKPdf 07 13 35.9 -2.3**
TUE Stuetta 154.72 354 *e*PKPdf **PKPdf 07 13 39.1 +0.8**
TUE *e*PKPbc **PKiKP 07 13 48.5 +1.6**
TUE LR LR

comp=Z,2μm,19.0s
TRI Trieste 154.76 347 PFAKE 07 13 50.0 +3.3
TRI LR LR

comp=Z,1μm,20.0s
KKB Krupnik 154.77 328 *i* P **PKPdf 07 13 38.0 -0.3**
YER Yerkesik 154.81 314 PFAKE 07 13 50.0 +2.8
YER LR LR

comp=Z,4μm,18.0s
SENIN Lac Senin/Sane 154.97 357 *e*PKPbc **PKPab 07 13 57.8 -5.0**
SENIN LR LR

comp=Z,2μm,20.0s
PDG Podgorica 156.03 335 ⇑*i*P **PKPab 07 14 01.1 -6.1**
SSB Saint Sauveur 156.08 2 PFAKE 07 13 50.0 +10
SSB LR LR

comp=Z,1μm,19.0s
BNI Bardonecchia 156.31 358 PFAKE 07 13 50.0 +10
BNI LR LR

comp=Z,2μm,20.0s
PGAV Gavieira, Arco 156.31 26 *e*PKPdf **PKPdf 07 13 42.2 +1.8**
PGAV Gavieira, Arco 156.31 26 *e*SS SS 07 37 41.3 +7.9
PGAV Gavieira, Arco 156.31 26 *e*LR LR 08 12 36.2
comp=Z,1μm,18.0s
KARP Karpathos 156.41 312 PFAKE 07 13 50.0 +9.3
KARP LR LR

comp=Z,200nm,20.0s
TIR Tirane 156.68 332 PFAKE 07 13 50.0 +9.2
TIR LR LR

comp=Z,2μm,20.0s
PMOZ Porto Moniz, M 156.72 56 *e*PKPdf PKPdf 07 13 49.6 +8.3
VLC Villacollemand 156.87 351 PFAKE 07 13 50.0 +9.0
VLC LR LR

comp=Z,700nm,20.0s
POLO Lamas de Olo 157.00 27 *e*PKPdf **PKPdf 07 13 47.8 +6.4**
PBRG Braganca 157.06 24 *e*PKPdf **PKPdf 07 13 46.6 +5.2**
PVRL Vila Real 157.12 27 *e*PKPdf PKPdf 07 13 56.4 +15
AGG Agios Georgios 157.26 325 PFAKE 07 13 50.0 +8.3
AGG LR LR

comp=Z,3μm,22.0s
MVO Moncorvo 157.49 26 *e*PKPdf **PKPdf 07 13 46.6 +4.7**
MVO Moncorvo 157.49 26 *e*SS SS 07 37 53.1 +7.2
MVO Moncorvo 157.49 26 *e*LR LR 08 12 43.5
comp=Z,1μm,18.0s
PVIS Viseu 157.50 28 *e*PKPdf PKPdf 07 13 52.5 +11

PCAS	**Casmilo, Conde**	**157.77**	**30**	*e*PKPdf	**PKPdf**	**07 13 46.6**	**+4.4**
PCAS	**Casmilo, Conde**	**157.77**	**30**	*e*SS	SS	07 37 54.8	+5.8
LAST	**Lasithi**	**157.78**	**313**	PFAKE		07 13 50.0	+7.5
LAST				LR	LR		
	comp=Z,700nm,21.0s						
MTE	**Manteigas**	**157.91**	**28**	*e*PKPdf	**PKPdf**	**07 13 46.5**	**+4.0**
MTE	**Manteigas**	**157.91**	**28**	*e*SS	SS	07 38 00.6	+10
MTE	**Manteigas**	**157.91**	**28**	*e*LR	LR	08 12 21.6	
	comp=Z,1μm,18.0s						
MTE	**Manteigas**	**157.91**	**28**	PFAKE		07 13 50.0	+7.5
MTE				LR	LR		
	comp=Z,1μm,19.0s						
AQU	**L'Aquila**	**158.02**	**344**	PFAKE		07 13 50.0	+7.5
AQU				LR	LR		
	comp=Z,1μm,20.0s						
PMAFR	**Mafra**	**158.25**	**33**	*e*PKPdf	**PKPdf**	**07 13 42.7**	**-0.2**
PMAFR	**Mafra**	**158.25**	**33**	*e*SS	SS	07 38 03.2	+8.9
PMST	**Lisbon--Monsan**	**158.46**	**33**	*e*PKPdf	**PKPdf**	**07 13 49.0**	**+5.9**
LIS	**Lisbon**	**158.49**	**33**	*e*P	**PKPdf**	**07 13 43.1**	**0.0**
LIS				AMS	AMS	08 23 13.6	
	comp=Z,2μm,17.6s						
PMTG	**Montargil**	**158.68**	**31**	*e*PKPdf	**PKPdf**	**07 13 48.1**	**+4.7**
PMTG	**Montargil**	**158.68**	**31**	*e*SS	SS	07 38 14.3	+16
PMRV	**Marv??o**	**158.78**	**29**	*e*PKPdf	**PKPdf**	**07 13 42.2**	**-1.3**
PMRV	**Marv??o**	**158.78**	**29**	*e*LR	LR	08 12 04.7	
	comp=Z,1μm,20.0s						
PESTR	**Estremoz**	**159.14**	**30**	*e*PKPdf	**PKPdf**	**07 13 46.3**	**+2.4**
PESTR	**Estremoz**	**159.14**	**30**	*e*SS	SS	07 38 17.9	+14
EVO	**Evora**	**159.20**	**31**	*e*PKPdf	**PKPdf**	**07 13 45.8**	**+1.8**
PNCL	**Nicolau / Gran**	**159.27**	**33**	*e*PKPdf	**PKPdf**	**07 13 47.0**	**+2.9**
PNCL	**Nicolau / Gran**	**159.27**	**33**	*e*SS	SS	07 38 11.7	+6.6
CUC	**Castrocucco**	**159.45**	**337**	PFAKE		07 14 00.0	+16
CUC				LR	LR		
	comp=Z,1μm,20.0s						
PTEO	**Sao Teotonio**	**159.60**	**34**	*e*PKPdf	**PKPdf**	**07 13 51.1**	**+6.6**
MESJ	**Messejana**	**159.63**	**33**	*e*P	**PKPdf**	**07 13 44.4**	**-0.1**
MESJ				AMS	AMS	08 24 23.6	
	comp=Z,1μm,19.9s						
MESJ	**Messejana**	**159.63**	**33**	*e*PKPdf	**PKPdf**	**07 13 46.9**	**+2.4**
PBEJ	**Beja**	**159.67**	**32**	*e*PKPdf	**PKPdf**	**07 13 41.6**	**-3.0**
TIP	**Timpagrande**	**159.79**	**334**	PFAKE		07 14 00.0	+15
TIP				LR	LR		
	comp=Z,1μm,22.0s						
MORF	**Marmelete**	**159.81**	**35**	*e*P	**PKPdf**	**07 13 44.5**	**-0.3**
MORF				AMS	AMS	08 24 48.8	
	comp=Z,1μm,22.1s						
MORF	**Marmelete**	**159.81**	**35**	*e*PKPdf	**PKPdf**	**07 13 46.9**	**+2.1**
PCVE	**Castro Verde**	**159.89**	**33**	*e*PKPdf	**PKPdf**	**07 13 47.8**	**+3.0**
PCVE	**Castro Verde**	**159.89**	**33**	*e*SS	SS	07 38 19.1	+7.4
PAB	**San Pablo**	**159.92**	**23**	PFAKE		07 14 00.0	+15
PAB				LR	LR		
	comp=Z,1μm,18.0s						
ES19	**SONSECA Array**	**159.94**	**22**	*e*PKPdf	**PKPdf**	**07 13 47.0**	**+2.1**
ESDC	**Sonseca Array**	**159.94**	**22**	PKP	**PKPdf**	**07 13 46.9**	**+2.0**
	comp=Z,0.2nm,0.3s,baz=358,slow=1.7,SNR=6.8						
ESLA	**Sonseca Array**	**159.94**	**22**	PFAKE		07 14 00.0	+15
ESLA				LR	LR		
	comp=Z,1μm,19.0s						
PBAR	**Barrancos**	**159.95**	**30**	*e*PKPdf	**PKPdf**	**07 13 50.1**	**+5.2**
PBAR	**Barrancos**	**159.95**	**30**	*e*SS	SS	07 38 19.7	+7.5
PBDV	**Barranco-do-Ve**	**160.24**	**34**	*e*PKPdf	**PKPdf**	**07 13 51.4**	**+6.1**
TOA0	**Torodi Ar. Sit**	**171.06**	**155**	*e*PKPdf	**PKPdf**	**07 13 54.6**	**0.0**
TOA0				*e*PKPab	**PKPab**	**07 15 14.8**	**+1.2**
TORD	**Torodi Ar. Bea**	**171.06**	**155**	PKP	**PKPdf**	**07 13 54.5**	**-0.2**
	comp=Z,3.2nm,1.1s,baz=291,slow=0.3,SNR=9.1						
TORD				PKPab	**PKPab**	**07 15 14.3**	**+0.7**
	comp=Z,3.6nm,1.0s,baz=228,slow=2.5,SNR=4.4						
TAM	**Tamanrasset**	**178.52**	**4**	*e*PKIKP	**PKPdf**	**07 13 57.0**	**+0.1**
TAM	**Tamanrasset**	**178.52**	**4**	*e*PKPdf	**PKPdf**	**07 13 57.0**	**+0.1**

*IDC **09** 07:08:17.8±0.4,21°.10S×174°.62W,h0km,mb4.8/21, mb1 4.9/22,mb1mx4.9/29,mbtmp4.8/22,ML5.0/1,MS5.0/14, Ms1 5.0/14,ms1mx4.7/36,Error ellipse: s-maj=17.3km s-min=14.9km az=123.0*

*NEIC **09** 07:08:18.8±2.9,21°.16S×174°.64W,h10km±17km, mb5.4/182,MS5.3/143,Error ellipse: s-maj=5.1km s-min=3.3km az=145.0*

*BJI **09** 07:08:18.4,21°.20S×174°.60W,h14km,mb5.4/48, mB5.7/36,Ms5.5/33,Ms7 5.2/33*

*GCMT **09** 07:08:18.8±0.1,21°.35S×173°.94W,h20km,MW5.6/127, Moment Tensor Solution. s71,c97; s127,c316; Duration: 1ŧ5 Moment tensor: Scale 10^17^Nm; Mrr2.50±.07; Mθθ0.04±.04; Mϕϕ-2.54±.05; Mrθ0.22±.08; Mθϕ-0.59±.02; Mrϕ0.92±.07; Best double couple: Mo2.75100×10^17^ NP1:ϕs13.00000°,δ55.00000°, λ90.00000°. NP2:ϕs192.00000°,δ35.00000°,λ89.00000°. Principal axes: T 2.6660, Plg80.0000°, Azm285.0000°; N 0.1680, Plg0.0000°, Azm192.0000°; P -2.8360, Plg10.0000°, Azm102.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*ISCJB **09** 07:08:19.9±0.1,21°.26S±0°.04×174°.54W±0°.03,h27km, mb5.3/226,MS5.3/167 Error ellipse: s-maj=6.1km s-min=3.1km az=144.6*

*MOS **09** 07:08:21.8±1.2,21°.11S×174°.61W,h33km,mb5.3/59, MS5.3/25,Error ellipse: s-maj=10.5km s-min=7.4km az=64.9*

ISC 09 07:08:21.3±0.3,21°.12S±0°.06×174°.42W±0°.05,h27km, n910,σt$43/830,mb5.3/225,MS5.3/167,42C-18D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NIUE	**Niue**	**4.68**	**65**	P	Pn	07 09 22.6	-7.6
	baz=4.5,SNR=44						
AFI	**Afiamalu**	**7.60**	**20**	Pn	**Pn**	**07 10 06.0**	**-4.4**
	36nm,0.3s,baz=202,slow=3.1,SNR=30						
AFI				Sn	Sn	07 11 25.6	-10
	23nm,0.3s,baz=36,slow=19,SNR=2.8						
AFI				LR	LR	07 12 46.8	
	comp=Z,5μm,18.5s,baz=192,slow=35						
AFI	**Afiamalu**	**7.60**	**20**	P	**Pn**	**07 10 06.9**	**-3.6**
AFI				pmax	pmax		
	comp=Z,335nm,1.0s						
MSVF	**Nonsavu**	**7.87**	**294**	*e*P	Pn	07 10 21.5	+7.4
MSVF	**Nonsavu**	**7.87**	**294**	*e*Pn	Pn	07 10 21.5	+7.4
DZM	**Mont Dzumac**	**17.83**	**263**	P	**P**	**07 12 31.2**	**+3.0**
	comp=Z,1.1nm,0.3s,baz=76,slow=18,SNR=14						
DZM				LR	LR	07 18 28.1	
	comp=Z,11μm,18.9s,baz=96,slow=35						
DZM	**Mont Dzumac**	**17.83**	**263**	*e*P	**P**	**07 12 31.2**	**+3.0**
	comp=Z,153nm,1.4s						
DZM				eLR	LR	07 16 42.1	
	comp=Z,9μm,22.3s						
DZM	**Mont Dzumac**	**17.83**	**263**	*e*Pn	**Pn**	**07 12 25.2**	**-2.4**
	comp=Z,58nm,0.9s						
DZM				P	**P**	**07 12 31.2**	**+3.0**
URZ	**Urewera**	**18.58**	**201**	P	**P**	**07 12 34.5**	**-1.7**
	comp=Z,4.4nm,0.3s,baz=290,slow=2.9,SNR=18						
URZ				S	Sn	07 15 46.0	-18
	comp=Z,1.4nm,0.3s,baz=151,slow=19,SNR=5.1						
URZ				LR	LR	07 18 57.6	
	comp=Z,5μm,19.2s,baz=25,slow=34						
URZ	**Urewera**	**18.58**	**201**	*e*P	**P**	**07 12 35.0**	**-1.3**
	comp=Z,39nm,0.7s						
URZ				S	Sn	07 15 46.0	-18
BKZ	**Black Stump Fm**	**19.60**	**201**	*e*P	**Pn**	**07 12 52.1**	**+3.1**
	comp=Z,51nm,1.0s						
HIZ	**Hauiti**	**19.64**	**206**	*e*P	**P**	**07 12 46.1**	**-1.8**
	comp=Z,604nm,1.5s						
BFZ	**Birch Farm**	**21.05**	**200**	*e*P	**P**	**07 13 03.9**	**+0.7**
	comp=Z,77nm,0.9s						
SNZO	**South Karori**	**22.13**	**202**	PFAKE		07 13 30.0	+15
SNZO				LR	LR		
	comp=Z,5μm,19.0s						
THZ	**Tophouse**	**23.19**	**205**	*e*P	**P**	**07 13 31.1**	**+5.1**
	comp=Z,383nm,2.0s						
TBI	**Tubuai**	**23.20**	**100**	*e*P	**P**	**07 13 21.5**	**-4.6**
	comp=Z,366nm,1.2s						
TBI				eLQ	LQ	07 17 53.0	
	comp=Z,2μm,25.0s						
TBI				eLR	LR	07 18 51.8	
	comp=Z,9μm,29.0s,baz=273						
TBI	**Tubuai**	**23.20**	**100**	*e*T	T	07 37 05.3	
	comp=Z,6.5nm,0.3s						
KHZ	**Kahutara**	**23.52**	**203**	*e*P	**P**	**07 13 26.8**	**-2.3**
	comp=Z,60nm,0.8s						
PAE	**Paea**	**23.67**	**86**	*e*P	**P**	**07 13 26.5**	**-4.3**
	comp=Z,14nm,0.9s						
PAE	**Paea**	**23.67**	**86**	*e*T	T	07 37 30.8	
	comp=Z,6.0nm,0.3s						
PPT2	**Papeete2**	**23.69**	**86**	*e*P	**P**	**07 13 27.0**	**-4.1**
	comp=Z,115nm,1.3s						
PPT2				eLQ	LQ	07 17 54.6	
	comp=Z,5μm,28.5s						
PPT2				eLR	LR	07 19 00.8	
	comp=Z,11μm,27.8s,baz=255						
PPT2	**Papeete2**	**23.69**	**86**	*e*T	T	07 37 40.9	
	comp=Z,8.1nm,0.3s						
PPT	**Papeete**	**23.69**	**86**	P	**P**	**07 13 28.6**	**-2.5**
	comp=Z,41nm,0.7s,baz=82,slow=2.8,SNR=9.2						
PPT				LR	LR	07 22 32.2	
	comp=Z,2μm,18.3s,baz=268,slow=36						
PPT	**Papeete**	**23.69**	**86**	*e*P	**P**	**07 13 29.4**	**-1.7**
TIAR	**Tiarei**	**23.91**	**86**	*e*P	**P**	**07 13 29.0**	**-4.1**
	comp=Z,27nm,0.9s						
TVO	**Taravao**	**23.95**	**86**	*e*P	**P**	**07 13 29.3**	**-4.3**
	comp=Z,22nm,0.9s						
TVO	**Taravao**	**23.95**	**86**	*e*T	T	07 37 59.8	
	comp=Z,1.7nm,0.3s						
LTZ	**Lake Taylor**	**24.31**	**204**	*e*P	**P**	**07 13 34.3**	**-2.3**
	comp=Z,96nm,0.8s						
OXZ	**Oxford**	**24.86**	**204**	*e*P	**P**	**07 13 39.1**	**-2.5**
	comp=Z,89nm,0.9s						
MQZ	**McQueen's Vall**	**24.96**	**203**	*e*P	**P**	**07 13 42.5**	**0.0**
	comp=Z,122nm,1.5s						
MEH	**Mehetia**	**25.04**	**87**	*e*T	T	07 39 21.2	
	comp=Z,32nm,0.3s						
TARA	**Tarawa**	**25.55**	**329**	PFAKE		07 14 00.0	+12
TARA				LR	LR		
	comp=Z,557nm,19.0s						
RPZ	**Rata Peaks**	**25.57**	**205**	P	**P**	**07 13 44.8**	**-3.3**
	comp=Z,25nm,0.8s,baz=333,slow=4.5,SNR=4.5						
RPZ				LR	LR	07 23 50.4	
	comp=Z,6μm,18.5s,baz=30,slow=36						
RPZ	**Rata Peaks**	**25.57**	**205**	*e*P	**P**	**07 13 46.3**	**-1.7**
	comp=Z,512nm,2.0s						
FOZ	**Fox Glacier**	**25.93**	**207**	*e*P	**P**	**07 13 51.9**	**+0.7**
	comp=Z,362nm,1.1s						
LBZ	**Lake Benmore**	**26.48**	**205**	*e*P	**P**	**07 13 55.2**	**-1.0**
	comp=Z,354nm,1.9s						
HNR	**Honiara**	**27.28**	**291**	*e*P	**P**	**07 13 58.4**	**-5.3**
HNR				pmax	pmax		
	comp=Z,334nm,1.1s						
HNR				MLR	MLR		
	comp=Z,2μm,22.0s						
HNR	**Honiara**	**27.28**	**291**	*e*P	**P**	**07 13 58.4**	**-5.3**
	comp=Z,334nm,1.1s						
HNR				LR	LR		
	comp=Z,2μm,22.0s						
WKZ	**Wanaka**	**27.31**	**206**	*e*P	**P**	**07 14 02.5**	**-1.3**
	comp=Z,247nm,1.4s						
MLZ	**Mavora Lakes**	**28.12**	**207**	*e*P	**P**	**07 14 10.5**	**-0.5**
	comp=Z,92nm,1.0s						
DCZ	**Deep Cove**	**28.61**	**208**	*e*P	**P**	**07 14 14.6**	**-0.7**
	comp=Z,252nm,1.7s						
ARMA	**Armidale**	**31.85**	**246**	*e*P	**P**	**07 14 41.7**	**-2.5**
	comp=Z,17nm,1.1s						
EIDS	**Eidsvold**	**31.93**	**256**	P	**P**	**07 14 44.9**	**0.0**
	baz=32,SNR=3.8						
EIDS	**Eidsvold**	**31.93**	**256**	*e*P	**P**	**07 14 43.2**	**-1.7**
	comp=Z,33nm,1.4s						
RMQ	**Roma**	**34.03**	**254**	P	**P**	**07 15 03.9**	**+0.6**
	baz=34,SNR=7.4						
CAN	**Canberra**	**34.99**	**238**	P	**P**	**07 15 10.1**	**-1.4**
CAN	**Canberra**	**34.99**	**238**	PFAKE		07 15 20.0	+8.5
CAN				LR	LR		
	comp=Z,4μm,19.0s						
TAOE	**Nuku Hiva Isla**	**35.19**	**75**	*e*LR	LR	07 24 19.0	
	comp=Z,6μm,29.6s,baz=245						
RKT	**Rikitea**	**36.52**	**101**	*e*S	**S**	**07 20 58.4**	**-7.1**
	comp=Z,998nm,25.5s						
RKT				eLR	LR	07 24 44.4	
	comp=Z,6μm,32.0s,baz=268						
RKT	**Rikitea**	**36.52**	**101**	*e*T	T	07 53 43.6	
	comp=Z,5.2nm,0.3s						
CTAO	**Charters Tower**	**36.77**	**264**	*e*P	**P**	**07 15 26.0**	**-0.9**
CTAO				pmax	pmax		
	comp=Z,20nm,1.2s						
CTAO				MLR	MLR		
	comp=Z,5μm,19.0s						
CTAO	**Charters Tower**	**36.77**	**264**	*e*P	**P**	**07 15 26.0**	**-0.9**
CTAO				LR	LR		
	comp=Z,20nm,1.2s						
	comp=Z,5μm,19.0s						
CMSA	**Cobar Meteorol**	**37.05**	**245**	P	**P**	**07 15 28.1**	**-1.0**
	baz=37,SNR=13						
QLP	**Quilpie**	**38.09**	**254**	P	**P**	**07 15 37.4**	**-0.6**
	baz=38,SNR=8.4						
PMG	**Port Moresby**	**38.75**	**282**	P	**P**	**07 15 42.3**	**-1.4**
	comp=Z,41nm,0.9s,baz=103,slow=4.1,SNR=6.5						
PMG	**Port Moresby**	**38.75**	**282**	*e*P	**P**	**07 15 41.6**	**-2.1**
PMG				pmax	pmax		
	comp=Z,113nm,0.7s						
PMG	**Port Moresby**	**38.75**	**282**	*e*P	**P**	**07 15 41.1**	**-2.6**
	comp=Z,53nm,0.9s						
PMG				LR	LR		
	comp=Z,3μm,19.0s						
MTSU	**Mount Surprise**	**38.91**	**267**	P	**P**	**07 15 45.5**	**+0.5**
	baz=39,SNR=7.0						
MCQ	**Macquarie Isla**	**38.94**	**205**	*e*P	**P**	**07 15 44.2**	**-0.5**
MCQ				pmax	pmax		
	comp=Z,262nm,1.4s						
MCQ	**Macquarie Isla**	**38.94**	**205**	*e*P	**P**	**07 15 44.1**	**-0.5**
	comp=Z,262nm,1.4s						
STKA	**Stephens Creek**	**40.56**	**245**	P	**P**	**07 15 57.2**	**-1.3**
	comp=Z,6.4nm,0.7s,baz=90,slow=10,SNR=12						
STKA				LR	LR	07 30 51.9	
	comp=Z,3μm,19.2s,baz=81,slow=34						
STKA	**Stephens Creek**	**40.56**	**245**	P	**P**	**07 15 57.6**	**-0.9**
	baz=41,SNR=8.9						
STKA	**Stephens Creek**	**40.56**	**245**	*e*P	**P**	**07 15 56.8**	**-1.8**
	comp=Z,6.9nm,1.4s						
COEN	**Coen**	**40.97**	**273**	P	**P**	**07 16 02.0**	**-0.1**
	baz=41,SNR=5.5						
COEN	**Coen**	**40.97**	**273**	*e*P	**P**	**07 16 01.5**	**-0.6**
	comp=Z,23nm,0.9s						
HTT	**Hallett**	**42.92**	**243**	P	**P**	**07 16 17.2**	**-0.7**
	baz=43,SNR=6.0						
BBOO	**Buckleboo**	**45.29**	**244**	P	**P**	**07 16 34.8**	**-2.0**
	baz=45,SNR=12						
BBOO	**Buckleboo**	**45.29**	**244**	*e*P	**P**	**07 16 34.9**	**-2.0**
	comp=Z,31nm,1.1s						
AS01	**Alice Springs**	**47.60**	**257**	*e*P	**P**	**07 16 51.4**	**-3.8**
AS31	**Alice Springs**	**47.64**	**257**	*e*P	**P**	**07 16 54.3**	**-1.2**
	comp=Z,5.8nm,0.7s						
ASAR	**Alice Springs**	**47.64**	**257**	P	**P**	**07 16 53.5**	**-2.0**
	comp=Z,15nm,0.8s,baz=92,slow=7.6,SNR=53						
ASAR				LR	LR	07 36 14.9	
	comp=Z,2μm,18.6s,baz=86,slow=35						
WB2	**Warramunga Arr**	**47.82**	**262**	*e*P	**P**	**07 16 55.7**	**-1.3**
	comp=Z,18nm,0.8s						
WRAB	**Tennant Creek**	**47.83**	**262**	*e*P	**P**	**07 16 54.4**	**-2.6**
WRAB				pmax	pmax		
	comp=Z,39nm,0.8s						
WRAB	**Tennant Creek**	**47.83**	**262**	*e*P	**P**	**07 16 55.2**	**-1.8**
	comp=Z,17nm,0.8s						
WRAB				LR	LR		
	comp=Z,3μm,20.0s						
WRA	**Warramunga Arr**	**47.83**	**262**	P	**P**	**07 16 54.9**	**-2.1**
	comp=Z,16nm,1.1s,baz=91,slow=6.0,SNR=60						
WRA				PcP	**PcP**	**07 18 26.4**	**+0.7**
	comp=Z,4.6nm,0.8s,baz=94,slow=3.2,SNR=4.8						
WRA				LR	LR	07 36 45.4	
	comp=Z,3μm,19.2s,baz=75,slow=36						
MIDW	**Midway**	**49.13**	**357**	PFAKE		07 17 20.0	+13
MIDW				LR	LR		
	comp=Z,2μm,19.0s						
FORT	**Forrest**	**52.13**	**247**	*e*P	**P**	**07 17 27.0**	**-2.5**
	comp=Z,295nm,0.7s						
MTN	**Manton Dam**	**52.52**	**270**	P	**P**	**07 17 32.5**	**-0.1**
	baz=53,SNR=4.7						
MTN	**Manton Dam**	**52.52**	**270**	*e*P	**P**	**07 17 30.8**	**-1.8**
	comp=Z,150nm,2.0s						
WRKA	**Warakurna**	**52.52**	**254**	P	**P**	**07 17 30.7**	**-1.9**
	baz=53,SNR=20						
GUMO	**Guam**	**52.81**	**307**	PFAKE		07 17 50.0	+15
GUMO				LR	LR		
	comp=Z,2μm,20.0s						
FITZ	**Fitzroy Crossi**	**56.26**	**262**	P	**P**	**07 17 59.7**	**-0.1**
	baz=56,SNR=11						
FITZ	**Fitzroy Crossi**	**56.26**	**262**	*e*P	**P**	**07 17 58.4**	**-1.4**
	comp=Z,54nm,1.6s						
SBA	**Scott Base**	**57.50**	**185**	*e*P	**P**	**07 18 10.3**	**+2.7**
SBA				pmax	pmax		
	comp=Z,78nm,1.6s						
SBA				MLR	MLR		
	comp=Z,2μm,19.0s						
SBA	**Scott Base**	**57.50**	**185**	*e*P	**P**	**07 18 10.3**	**+2.7**
	comp=Z,78nm,1.6s						
SBA				LR	LR		
	comp=Z,2μm,19.0s						
VNDA	**Vanda**	**57.61**	**186**	P	**P**	**07 18 10.3**	**+1.9**
	comp=Z,7.1nm,0.9s,baz=10,slow=7.2,SNR=28						
VNDA	**Vanda**	**57.61**	**186**	*e*P	**P**	**07 18 08.0**	**-0.5**
VNDA				pmax	pmax		
	comp=Z,14nm,1.1s						
VNDA	**Vanda**	**57.61**	**186**	*e*P	**P**	**07 18 08.0**	**-0.5**
	comp=Z,14nm,1.1s						
SOEI	**Soe**	**59.87**	**271**	*e*P	**P**	**07 18 23.8**	**-1.5**
	comp=Z,55nm,0.8s						
KLBR	**Kellerberrin**	**60.83**	**245**	P	**P**	**07 18 32.0**	**+0.5**
	baz=61,SNR=11						
MEEK	**Meekatharra**	**60.88**	**251**	P	**P**	**07 18 31.4**	**-0.5**
	baz=61,SNR=6.9						
MBWA	**Marble Bar**	**60.98**	**257**	*e*P	**P**	**07 18 30.2**	**-2.5**
	comp=Z,25nm,0.8s						
MBWA				LR	LR		
	comp=Z,3μm,19.0s						
NWAO	**Narrogin (SRO)**	**61.09**	**243**	PFAKE		07 18 40.0	+6.8
NWAO				LR	LR		
	comp=Z,2μm,19.0s						
MORW	**Morawa**	**62.69**	**247**	P	**P**	**07 18 44.4**	**+0.4**
	baz=63,SNR=5.5						
CASY	**Casey**	**64.84**	**206**	*e*P	**P**	**07 18 57.0**	**-0.5**
	comp=Z,45nm,1.1s						
CASY				LR	LR		
	comp=Z,169nm,19.0s						
DAV	**Davao City (W)**	**65.20**	**289**	PFAKE		07 19 10.0	+9.3
DAV				LR	LR		
	comp=Z,2μm,20.0s						
GIRL	**Giralia**	**65.61**	**254**	P	**P**	**07 19 04.2**	**+1.0**
	baz=66,SNR=4.1						
KAPI	**Kappang**	**65.68**	**274**	PFAKE		07 19 10.0	+6.2
KAPI				LR	LR		
	comp=Z,1μm,19.0s						
QSPA	**South Pole Qui**	**68.95**	**180**	*e*P	**P**	**07 19 23.3**	**-0.6**
	comp=Z,35nm,1.0s						
QSPA				LR	LR		
	comp=Z,2μm,19.0s						
TGY	**Tagaytay City**	**72.48**	**293**	LR	LR	07 51 02.8	
	comp=Z,325nm,18.9s,baz=188,slow=36						
MJAR	**Matsushiro Arr**	**72.74**	**322**	P	**P**	**07 19 47.2**	**+0.1**
	comp=Z,10nm,0.7s,baz=160,slow=5.7,SNR=25						
MAJO	**Matsushiro**	**72.74**	**322**	*e* /P	**P**	**07 19 47.0**	**-0.1**
MAJO				pmax	pmax		
	comp=Z,92nm,0.9s						
MAJO	**Matsushiro**	**72.74**	**322**	*e*P	**P**	**07 19 45.9**	**-1.2**
	comp=Z,19nm,0.8s						
MAJO				LR	LR		
	comp=Z,1μm,19.0s						
MAT	**Matsushiro**	**72.74**	**322**	P	**P**	**07 19 46.8**	**-0.3**
MJB9	**Matsu-Tunnel**	**72.74**	**322**	*e*P	**P**	**07 19 46.2**	**-0.9**
	comp=Z,4.8nm,0.8s						
KKM	**Kota Kinabalu**	**73.16**	**283**	PFAKE		07 20 00.0	+10
KKM				LR	LR		
	comp=Z,822nm,19.0s						
ERM	**Erimo**	**74.06**	**328**	PFAKE		07 20 10.0	+15
ERM				LR	LR		
	comp=Z,2μm,20.0s						
SCZ2	**Santa Cruz Isl**	**75.65**	**44**	P	**P**	**07 20 05.8**	**+1.7**
	baz=232						
PKM	**Mcpherson Peak**	**76.08**	**44**	P	**P**	**07 20 08.1**	**+1.3**
	baz=232						
SMMC	**Simmler**	**76.23**	**43**	P	**P**	**07 20 08.6**	**+1.2**
	baz=231						
SAO	**San Andreas Ge**	**76.23**	**41**	*e*P	**P**	**07 20 08.3**	**+0.9**
SAO				pmax	pmax		
	comp=Z,26nm,1.0s						
SAO	**San Andreas Ge**	**76.23**	**41**	*e*P	**P**	**07 20 08.3**	**+0.9**
	comp=Z,26nm,1.0s						
OSI	**Osito Audit: C**	**76.62**	**44**	P	**P**	**07 20 12.3**	**+2.6**
	baz=232						
109C	**Camp Elliot, M**	**76.67**	**47**	P	**P**	**07 20 11.2**	**+1.2**
	baz=234						
KSM	**Kuching**	**76.82**	**277**	*e*P	**P**	**07 20 09.9**	**-1.3**
	comp=Z,15nm,0.7s						
KSM				LR	LR		
	comp=Z,2μm,20.0s						
MWC	**Mount Wilson**	**76.82**	**45**	*e*P	**P**	**07 20 11.7**	**+0.7**
MWC				pmax	pmax		
	comp=Z,17nm,1.0s						
MWC	**Mount Wilson**	**76.82**	**45**	*e*P	**P**	**07 20 11.7**	**+0.7**
	comp=Z,17nm,1.0s						
ARVC	**Arvin**	**76.86**	**44**	P	**P**	**07 20 11.9**	**+0.9**
	baz=232						
MURC	**Murrieta**	**77.03**	**46**	P	**P**	**07 20 12.6**	**+0.6**
	baz=234						
BFSC	**Mount Baldy Ra**	**77.09**	**45**	P	**P**	**07 20 13.3**	**+0.7**
	baz=233						
MONP2	**Monument Peak**	**77.13**	**47**	P	**P**	**07 20 13.7**	**+0.8**
	baz=234						
VES	**Vestal, Richgr**	**77.14**	**43**	P	**P**	**07 20 13.3**	**+0.8**
	baz=232						
TPUB	**Ta-pu**	**77.15**	**301**	*e*P	**P**	**07 20 11.1**	**-1.8**
	comp=Z,34nm,0.8s						
KMRM	**Mail Ridge**	**77.16**	**37**	*e*P	**P**	**07 20 13.7**	**+1.1**
	comp=Z,50nm,1.0s						
IKP	**In-Ko-Pah, Jac**	**77.21**	**47**	P	**P**	**07 20 13.8**	**+0.7**
	baz=234						
YHNB	**Yeheng**	**77.24**	**303**	PFAKE		07 20 20.0	+6.5
YHNB				LR	LR		
	comp=Z,2μm,20.0s						
EDW2	**Edwards Air Fo**	**77.26**	**45**	P	**P**	**07 20 14.2**	**+0.9**
	baz=233						
RCTC	**Rector, Farmer**	**77.32**	**43**	P	**P**	**07 20 15.3**	**+1.7**
	baz=232						
ISA	**Isabella, Lake**	**77.42**	**44**	P	**P**	**07 20 15.3**	**+1.1**
	baz=232						
ISA	**Isabella, Lake**	**77.42**

comp=Z,24nm,1.1s
WDC Whiskeytown Da 78.06 38 *e*P **P 07 20 18.4 +0.8**
comp=Z,24nm,1.1s
BELC Belle Mtn. Jos 78.07 46 P **P 07 20 18.6 +0.7**
baz=234
CWC Cottonwood Cre 78.14 43 P **P 07 20 19.3 +1.0**
baz=233
N02D Trinity Center 78.23 37 P **P 07 20 19.9 +1.2**
baz=228
BC3 Big Chuckawall 78.24 47 P **P 07 20 20.0 +1.1**
baz=235
GSC Goldstone, Bar 78.29 45 P **P 07 20 20.0 +0.9**
baz=234
GSC Goldstone, Bar 78.29 45 *e*P **P 07 20 21.0 +1.9**
GSC pmax pmax
comp=Z,31nm,1.6s
GSC Goldstone, Bar 78.29 45 *e*P **P 07 20 21.0 +1.9**
comp=Z,31nm,1.6s
MPMC Manual Prospec 78.30 44 P **P 07 20 20.0 +0.8**
baz=233
O03D Paynes Creek 78.30 38 P **P 07 20 19.9 +0.8**
baz=229
GLA Glamis 78.32 48 P **P 07 20 19.8 +0.5**
baz=235
GLA Glamis 78.32 48 *e*P **P 07 20 20.3 +1.0**
GLA pmax pmax
comp=Z,14nm,0.9s
GLA Glamis 78.32 48 *e*P **P 07 20 20.3 +1.0**
comp=Z,14nm,0.9s
HEC Hector,Ludlow 78.32 45 P **P 07 20 19.7 +0.4**
baz=234,SNR=17
DAC Darwin (Calif) 78.36 44 *e*P **P 07 20 20.3 +0.7**
DAC pmax pmax
comp=Z,19nm,1.4s
DAC Darwin (Calif) 78.36 44 *e*P **P 07 20 20.3 +0.7**
comp=Z,19nm,1.4s
MLAC Mammoth, Mammo 78.40 42 P **P 07 20 20.6 +0.8**
baz=232
M02C Callahan 78.42 37 P **P 07 20 20.7 +1.0**
baz=228
TIN Tinemaha, Big 78.42 43 P **P 07 20 21.0 +1.1**
baz=232
WAKR Walker 78.57 41 *e*P **P 07 20 21.9 +1.2**
comp=E,25nm,0.9s
YBH Yreka Blue Hor 78.73 37 *e*P **P 07 20 22.6 +1.2**
YBH pmax pmax
comp=E,74nm,1.5s
YBH Yreka Blue Hor 78.73 37 *e*P **P 07 20 22.6 +1.2**
comp=E,74nm,1.5s
IRM Iron Mountain 78.73 47 P **P 07 20 22.5 +1.0**
baz=235
GMRC Granite Mounta 78.75 46 P **P 07 20 22.8 +1.1**
baz=234
Y12C Blythe 78.93 47 P **P 07 20 23.7 +1.2**
baz=235
Y12C Blythe 78.93 47 *e*P **P 07 20 24.0 +1.5**
comp=E,17nm,1.3s
GRAC Grapevine Rang 78.94 43 P **P 07 20 23.8 +1.2**
baz=233
FURC Furnace Creek, 78.94 44 P **P 07 20 23.8 +1.3**
baz=233
TUQ Turquoise Moun 78.95 45 P **P 07 20 23.7 +0.9**
baz=234
SHOC Shoshone, Teco 78.99 45 P **P 07 20 23.7 +0.9**
baz=234
214A Organ Pipe Nat 79.12 50 P **P 07 20 24.6 +0.9**
baz=237
214A Organ Pipe Nat 79.12 50 *e*P **P 07 20 24.1 +0.4**
comp=E,41nm,1.0s
HUMO Hull Mountain 79.18 36 *e*P **P 07 20 24.6 +0.9**
comp=E,21nm,1.2s
M04C Macdoel 79.25 37 P **P 07 20 25.4 +1.1**
baz=229
LDFC Landfair 79.29 46 *e*P **P 07 20 26.3 +1.7**
comp=Z,53nm,1.3s
PAHR Pah Rah Range 79.35 40 *e*P **P 07 20 25.5 +0.6**
comp=Z,33nm,1.3s
PMSA Palmer Station 79.37 156 LR LR 07 47 16.0
comp=Z,647nm,19.5s,baz=238,slow=29
KSRS Korea Array 79.60 317 P **P 07 20 28.1 +2.0**
comp=E,8.3nm,1.0s,baz=136,slow=5.3,SNR=27
KSAR Wonju Array Be 79.62 317 P **P 07 20 28.1 +1.9**
KSAR Wonju Array Be 79.62 317 P **P 07 20 28.1 +1.9**
TPNV Topopah Spring 79.63 44 P **P 07 20 27.5 +1.0**
baz=234,SNR=18
TPNV Topopah Spring 79.63 44 *e*P **P 07 20 27.5 +1.0**
TPNV pmax pmax
comp=Z,14nm,0.9s
TPNV Topopah Spring 79.63 44 *e*P **P 07 20 27.5 +1.0**
comp=Z,14nm,0.9s
KS01 Wonju Array Si 79.64 317 *e*P **P 07 20 26.7 +0.4**
I03D Drain, OR 79.69 35 P **P 07 20 27.5 +1.0**
baz=228
SHPR Sheep Range 80.08 45 *e*P **P 07 20 29.6 +0.7**
comp=Z,20nm,1.2s
Y14A Wickenburg 80.08 48 *e*P **P 07 20 30.2 +1.3**
comp=Z,43nm,1.0s
W13A Hualapai Mount 80.12 46 *e*P **P 07 20 30.7 +1.4**
comp=Z,22nm,1.5s
MOD Modoc Plateau 80.20 38 *e*P **P 07 20 30.4 +0.9**
comp=Z,19nm,0.8s
I04A Tendick Farm, 80.27 35 P **P 07 20 30.8 +1.1**
baz=228
K05A Summer Lake 80.40 37 *e*P **P 07 20 31.9 +1.3**
comp=Z,43nm,1.0s
INCN Inchon 80.45 316 PFAKE 07 20 40.0 +9.3
INCN LR LR
comp=Z,957nm,19.0s
J05D Fort Rock, OR 80.57 36 P **P 07 20 32.5 +1.1**
baz=229
KDAK Kodiak Island 80.69 12 *e*P **P 07 20 32.4 +0.9**
KDAK pmax pmax
comp=Z,563nm,1.9s
KDAK MLR MLR
comp=Z,665nm,19.0s
KDAK Kodiak Island 80.69 12 *e*P **P 07 20 32.4 +0.9**
comp=Z,563nm,1.9s
KDAK LR LR
comp=Z,665nm,19.0s
VLA Vladivostok 80.75 323⇑ *i*P **P 07 20 32.0 -0.2**
VLA *i* *PP **sP 07 20 43.5 -0.5**
VLA *i* 07 23 33.2
VLA *e*S **S 07 30 37.1 -1.2**
VLA pmax pmax
comp=Z,25nm,1.5s
TUC Tucson 80.76 50 P **P 07 20 33.8 +1.2**
baz=238
TUC Tucson 80.76 50 *e*P **P 07 20 33.6 +1.0**
TUC pmax pmax
comp=Z,46nm,1.9s
TUC MLR MLR
comp=Z,1μm,19.0s
TUC Tucson 80.76 50 *e*P **P 07 20 33.6 +1.0**
comp=Z,46nm,1.9s
TUC LR LR
comp=Z,1μm,19.0s
G03D McMinnville, O 80.76 34 P **P 07 20 33.6 +1.4**
baz=228
MSHR Mys Shultsa 80.82 323 *ce*P **P 07 20 34.0 +1.5**
R11A Troy Canyon, C 80.88 43 P **P 07 20 33.9 +0.6**
baz=234,SNR=15
R11A Troy Canyon, C 80.88 43 *e*P **P 07 20 34.2 +1.0**
comp=Z,23nm,1.5s
TYV Tymovskoe 81.02 334 *e*P **P 07 20 36.8 +3.4**
TYV pmax pmax
comp=Z,100nm,1.6s
TYV pmax pmax
comp=Z,500nm,5.0s
BMN Battle Mountai 81.10 40 *e*P **P 07 20 35.7 +1.3**
BMN pmax pmax
comp=Z,55nm,1.8s
BMN Battle Mountai 81.10 40 *e*P **P 07 20 35.7 +1.3**
comp=Z,55nm,1.8s
I05D Terrebonne, OR 81.20 35 P **P 07 20 36.0 +1.3**
baz=229
319A Douglas 81.36 52 *e*P **P 07 20 36.6 +0.7**
comp=Z,13nm,1.0s
USRK Ussuriysk Ar. 81.40 324 P **P 07 20 37.5 +1.9**
comp=Z,2.7nm,0.6s,baz=113,slow=4.4,SNR=22
X16A Lo Mia Camp, P 81.42 48 *e*P **P 07 20 38.1 +1.9**
comp=Z,11nm,1.1s
WVOR Wild Horse Val 81.50 38 *e*P **P 07 20 37.2 +0.8**
WVOR pmax pmax
comp=Z,22nm,1.0s
WVOR MLR MLR
comp=Z,1μm,20.0s
WVOR Wild Horse Val 81.50 38 *e*P **P 07 20 37.2 +0.8**
comp=Z,22nm,1.0s
WVOR LR LR
comp=Z,1μm,20.0s
LCMT Little Creek M 81.63 45 *e*P **P 07 20 38.9 +1.6**
comp=Z,25nm,1.6s
USHA Ushuaia 81.75 146 LR LR 07 47 03.3
comp=Z,4μm,20.6s,baz=228,slow=28
G05D Wamic, OR 81.81 35 P **P 07 20 39.1 +1.3**
baz=229
CCUT Cedar City 81.85 45 *e*P **P 07 20 39.3 +0.8**
comp=Z,23nm,1.4s
U15A North Rim 81.94 46 *e*P **P 07 20 40.4 +1.4**
comp=Z,16nm,1.1s
NLWA Neilton Lookou 81.94 32 *e*P **P 07 20 40.5 +2.1**
NLWA LR LR
comp=Z,646nm,22.0s
WUAZ Wupatki 82.06 47 P **P 07 20 40.5 +0.9**
baz=237
WUAZ Wupatki 82.06 47 *e*P **P 07 20 41.4 +1.8**
comp=Z,13nm,1.2s
WUAZ LR LR
comp=Z,754nm,20.0s
MAW Mawson 82.09 199 P **P 07 20 39.8 +0.9**
comp=Z,13nm,1.0s,baz=111,slow=5.7,SNR=14
MAW Mawson 82.09 199 P **P 07 20 39.9 +0.9**
baz=82,SNR=10.0
MAW Mawson 82.09 199 *e*P **P 07 20 40.1 +1.2**
comp=Z,10nm,1.4s
G06A Carlson Farm, 82.17 35 *e*P **P 07 20 41.1 +1.4**
comp=Z,29nm,1.2s
PKCU Pink Cliffs 82.49 45 *e*P **P 07 20 45.4 +3.5**
comp=Z,86nm,1.7s
ELK Elko 82.50 41 *e*P **P 07 20 42.6 +0.8**
ELK pmax pmax
comp=Z,21nm,1.7s
ELK Elko 82.50 41 *e*P **P 07 20 42.6 +0.8**
comp=Z,21nm,1.7s
X18A Snowflake 82.53 49 *e*P **P 07 20 43.8 +1.7**
comp=Z,22nm,1.6s
LON Longmire 82.55 33 *e*P **P 07 20 42.6 +0.9**
LON pmax pmax
comp=Z,14nm,1.1s
LON Longmire 82.55 33 *e*P **P 07 20 42.6 +0.9**
comp=Z,14nm,1.1s
HABR Khabarovsk 82.68 329 *e*P **P 07 20 41.0 -1.2**
HABR *e**PP **pP 07 20 51.5 +0.6**
HABR *e*SP **sP 07 20 55.6 +1.6**
HABR *e* 07 23 50.4
HABR *e*PPP PPP 07 25 41.8
HABR *e*S **S 07 30 56.3 -1.6**
HABR *e*SS **SS 07 36 19.2 -1.7**
HABR *e*SSS SSS 07 39 47.2
HABR pmax pmax
comp=Z,50nm,1.5s
HABR pmax pmax
comp=E,8.0nm,0.8s
HABR pmax pmax
comp=N,7.0nm,0.8s
HABR pmax pmax
comp=Z,57nm,1.3s
D05A Enumclaw 82.75 33 *e*P **P 07 20 43.9 +1.3**
comp=Z,145nm,1.4s
BRLK Bradley Lake 82.87 12 *e*P **P 07 20 44.0 +1.0**
comp=Z,68nm,1.4s
NJ2 Nanjing 82.88 308 *e*P **P 07 20 45.4 +1.8**
NJ2 pP **pP 07 20 53.1 +0.8**
NJ2 pmax pmax
comp=Z,27nm,0.7s
MTPU Mount Pierson 82.90 45 *e*P **P 07 20 46.1 +2.0**
comp=Z,125nm,2.0s
MYKOM Kota Tinggi 82.93 275 *e*P **P 07 20 43.5 -0.9**
comp=Z,136nm,1.9s
MDJ Mudanjiang 82.98 323 P **P 07 20 45.2 +1.3**
MDJ pmax pmax
comp=Z,19nm,0.8s
MDJ pmax pmax
comp=Z,410nm,7.2s
MDJ Mudanjiang 82.98 323 *e*P **P 07 20 44.9 +1.0**
comp=Z,63nm,1.3s
MDJ LR LR
comp=Z,2μm,19.0s
W18A Petrified Fore 82.98 48 P **P 07 20 45.1 +0.7**
baz=238
121A Cookes Peak, D 83.05 51 P **P 07 20 45.5 +0.7**
baz=240
121A Cookes Peak, D 83.05 51 *e*P **P 07 20 44.8 0.0**
comp=Z,25nm,1.5s
G08A Pilot Rock 83.11 36 *e*P **P 07 20 45.6 +0.9**
comp=Z,23nm,0.9s
MSU Marysvale 83.17 44 *e*P **P 07 20 46.6 +1.3**
MSU Marysvale 83.17 44 *e*P **P 07 20 46.6 +1.3**
RSO Redoubt South 83.18 11 *e*P **P 07 20 45.8 +1.0**
B05A Bryant 83.41 32 P **P 07 20 47.3 +1.3**
baz=228
A04D Lummi Island 83.42 32 P **P 07 20 47.4 +1.4**
baz=228
E07A Sunnyside 83.44 34 *e*P **P 07 20 48.4 +2.1**
comp=Z,82nm,1.4s
LTY Liberty 83.47 34 *e*P **P 07 20 47.3 +0.9**
comp=Z,27nm,1.2s
HAWA Hanford 83.50 35 *e*P **P 07 20 47.8 +1.2**
comp=Z,29nm,1.0s
HAWA LR LR
comp=Z,2μm,19.0s
NKL Nikolayevsk 83.55 335 *e*P **P 07 20 46.8 +0.2**
NKL pmax pmax
comp=Z,50nm,1.4s
DUG Dugway, Tooele 83.70 43 P **P 07 20 48.7 +0.9**
baz=236
DUG Dugway, Tooele 83.70 43 *e*P **P 07 20 48.8 +0.9**
DUG pmax pmax
comp=Z,8.0nm,1.1s
DUG MLR MLR
comp=Z,871nm,21.0s
DUG Dugway, Tooele 83.70 43 *e*P **P 07 20 48.8 +0.9**
comp=Z,8.3nm,1.1s
DUG LR LR
comp=Z,871nm,21.0s
MFID Camas Ranch 83.73 39 *e*P **P 07 20 48.8 +0.8**
comp=Z,25nm,1.2s
BMO Blue Mountains 83.76 37 *e*P **P 07 20 48.6 +0.6**
comp=Z,85nm,1.9s
BMO LR LR
comp=Z,1μm,19.0s
B06A Marblemount 83.88 32 *e*P **P 07 20 49.4 +1.0**
comp=Z,31nm,0.3s
CRAG Craig 83.98 22 *e*P **P 07 20 49.8 +1.1**
comp=Z,83nm,1.8s
SPU Mount Spurr 83.98 11 *e*P **P 07 20 48.8 +0.1**
NLU North Lily Min 84.03 43 *e*P **P 07 20 50.4 +0.7**
comp=Z,5.8nm,1.1s
QIZ Qiongzhong 84.18 293 PFAKE 07 21 00.0 +9.4
QIZ LR LR
comp=Z,630nm,19.0s
TMUT Trail Mountain 84.23 44 *e*P **P 07 20 52.4 +1.5**
comp=Z,43nm,1.0s
D08A Wollman Farm, 84.25 34 *e*P **P 07 20 51.1 +0.8**
comp=Z,20nm,0.8s
PAYG Puerto Ayora 84.28 89 PFAKE 07 21 00.0 +8.7
PAYG LR LR
comp=Z,1μm,19.0s
RC01 Rabbit Creek A 84.31 12 *e*P **P 07 20 50.9 +0.6**
comp=Z,136nm,1.8s
E09A Wood Farm, Sta 84.33 35 *e*P **P 07 20 51.3 +0.6**
comp=Z,23nm,1.1s
MPU Maple Canyon 84.35 43 *e*P **P 07 20 52.2 +0.9**
comp=Z,11nm,0.9s
MNTX Coudas Mount 84.41 53 P **P 07 20 52.4 +0.8**
baz=241
MNTX Cornudas Mount 84.41 53 *e*P **P 07 20 52.8 +1.2**
comp=Z,24nm,1.5s
MNTX LR LR
comp=Z,952nm,19.0s
LAZ Ladron 84.45 50 *e*P **P 07 20 52.8 +0.9**
SUA Susitna One 84.47 11 *e*P **P 07 20 50.8 -0.5**
comp=Z,18nm,0.8s
F10A Beach Ranch, E 84.49 36 *e*P **P 07 20 52.0 +0.3**
comp=Z,33nm,0.9s
DL2 Dalian 84.51 315⇑ *i*P **P 07 20 52.6 +0.8**
DL2 S **S 07 31 18.3 +1.5**
DL2 pmax pmax
comp=Z,47nm,0.8s
DL2 pmax pmax
comp=Z,440nm,6.9s
DL2 LR LR
comp=Z,910nm,18.8s
DL2 LR LR
comp=Z,920nm,18.0s
DL2 LR LR
comp=Z,1μm,18.6s
COCO West Island 84.54 259 PFAKE 07 21 00.0 +7.4
COCO LR LR
comp=Z,2μm,19.0s
SRU San Rafael Swe 84.58 45 *e*P **P 07 20 53.7 +1.2**
SRU pmax pmax
comp=Z,26nm,1.1s
SRU San Rafael Swe 84.58 45 *e*P **P 07 20 53.7 +1.2**
comp=Z,26nm,1.1s
TX31 Lajitas Ar. Si 84.60 56 *e*P **P 07 20 53.8 +1.1**
TXAR Lajitas Array 84.60 56 P **P 07 20 53.4 +0.7**
comp=Z,2.5nm,1.0s,baz=216,slow=6.2,SNR=12
TXAR LR LR 07 52 39.3
comp=Z,581nm,19.0s,baz=0.0,slow=31
HVU Hansel Valley 84.61 41 *e*P **P 07 20 53.5 +0.9**
HVU pmax pmax
comp=Z,8.0nm,0.8s
HVU Hansel Valley 84.61 41 *e*P **P 07 20 53.5 +0.9**
comp=Z,8.3nm,0.8s
P17A Butcher Ranch, 84.63 44 *e*P **P 07 20 53.6 +1.0**
comp=Z,17nm,1.0s
EYAK Cordova Ski Ar 84.64 14 *e*P **P 07 20 52.5 +0.6**
comp=Z,47nm,1.5s
CTU Camp Tracy 84.65 43 *e*P **P 07 20 54.0 +1.2**
comp=Z,30nm,0.9s
HLID Hailey 84.65 39 P **P 07 20 53.8 +1.1**
baz=234,SNR=32
HLID Hailey 84.65 39 *e*P **P 07 20 53.7 +1.1**
comp=Z,13nm,0.8s
HLID LR LR
comp=Z,639nm,19.0s
BNM Barren Site 84.69 50 *e*P **P 07 20 54.9 +1.7**
LPM Los Pinos Moun 84.77 50 *e*P **P 07 20 55.0 +1.4**
JLU Jordanelle 84.79 43 *e*P **P 07 20 54.6 +1.0**
comp=Z,26nm,1.6s
CN2 Changchun 84.87 321 *e*P **P 07 20 51.8 -1.7**
CN2 *es*P pP 07 21 02.9 +0.6
CN2 *e*S S 07 31 11.1 -9.1
CN2 pmax pmax
comp=Z,50nm,1.5s
CN2 pmax pmax
comp=Z,400nm,3.0s
CN2 LR LR
comp=Z,600nm,18.0s
CN2 LR LR
comp=Z,800nm,18.0s
CN2 LR LR
comp=Z,700nm,20.0s
B08A Colville Reser 84.87 33 *e*P **P 07 20 54.2 +0.7**
comp=Z,37nm,1.5s
PMR Palmer 84.89 12 *e*P **P 07 20 53.6 +0.4**
PMR pmax pmax
comp=Z,98nm,1.8s
PMR Palmer 84.89 12 *e*P **P 07 20 53.6 +0.4**
comp=Z,98nm,1.8s
MVCO Mesa Verde 84.93 47 P **P 07 20 55.3 +1.0**
baz=239
MVCO Mesa Verde 84.93 47 *e*P **P 07 20 55.0 +0.7**
comp=Z,23nm,1.5s
MVCO LR LR
comp=Z,2μm,19.0s
PV05 Paradox Valley 84.97 46 *e*P **P 07 20 56.4 +1.8**
WRAK Wrangell Islan 85.00 22 *e*P **P 07 20 55.0 +1.2**
comp=Z,60nm,1.6s
WRAK LR LR
comp=Z,942nm,19.0s
TT01 Tatalina 85.00 8 *e*P **P 07 20 55.0 +1.2**
BKNI Bangkinang 85.03 272 *e*P **P 07 20 53.5 -1.6**
comp=Z,78nm,0.5s
TTA Tatalina 85.03 8 *e*P **P 07 20 55.8 +1.8**
TTA pmax pmax
comp=Z,91nm,1.8s
TTA Tatalina 85.03 8 *e*P **P 07 20 55.8 +1.8**
comp=Z,91nm,1.8s
P18A Preston Nutter 85.03 44 *e*P **P 07 20 55.8 +0.9**
comp=Z,16nm,1.0s
C09A Chrisman Ranch 85.06 34 *e*P **P 07 20 56.4 +1.9**
comp=Z,46nm,1.5s
LLLB Lillooet 85.08 31 *e*P **P 07 20 56.0 +1.4**
comp=Z,18nm,1.0s
TCUT Toone Canyon 85.10 43 *e*P **P 07 20 56.5 +1.3**
comp=Z,26nm,0.9s
DIV Divide 85.16 14 *e*P **P 07 20 55.6 +0.9**
comp=Z,27nm,0.9s
PV10 Paradox Valley 85.17 46 *e*P **P 07 20 56.2 +0.6**
PV09 Paradox Valley 85.17 46 *e*P **P 07 20 57.1 +1.5**
ANMO Albuquerque 85.21 50 P **P 07 20 56.4 +0.7**
baz=240
ANMO Albuquerque 85.21 50 *e*P **P 07 20 56.6 +0.9**
ANMO pmax pmax
comp=Z,14nm,1.0s
ANMO MLR MLR
comp=Z,329nm,19.0s
ANMO Albuquerque 85.21 50 *e*P **P 07 20 56.6 +0.9**
comp=Z,14nm,1.0s
ANMO LR LR
comp=Z,329nm,19.0s
SML Sawmill 85.25 12 *e*P **P 07 20 56.2 +1.1**
SML pmax pmax
comp=Z,48nm,1.5s
SML Sawmill 85.25 12 *e*P **P 07 20 56.2 +1.1**
comp=Z,48nm,1.5s
PV04 Paradox Valley 85.27 46 *e*P **P 07 20 57.2 +1.3**
HWUT Hardware Ranch 85.27 42 *e*P **P 07 20 56.8 +0.9**
comp=Z,10.0nm,0.9s
HWUT LR LR
comp=Z,943nm,22.0s
BMRM Bremner River 85.28 14 *e*P **P 07 20 56.3 +1.1**
comp=Z,113nm,1.6s
DHAK Deception Hill 85.29 18 *e*P **P 07 20 55.7 +0.3**
comp=Z,185nm,1.8s
MA2 Magadan 85.31 343 *e*P **P 07 20 55.3 -0.1**
MA2 Magadan 85.31 343 PFAKE 07 21 10.0 +15
MA2 LR LR
comp=Z,2μm,19.0s
PNT Penticton 85.34 32 P **P 07 20 56.6 +0.8**
PNT Penticton 85.34 32 P **P 07 20 56.6 +0.8**
PV01 Paradox Valley 85.36 46 *e*P **P 07 20 57.6 +1.1**
CRQM Cirque 85.43 15 *e*P **P 07 20 57.6 +1.4**
comp=Z,98nm,1.7s
KLU Klutina 85.45 13 *e*P **P 07 20 57.2 +1.1**
comp=Z,63nm,1.8s
SCM Sheep Creek Mo 85.47 13 *e*P **P 07 20 57.3 +1.1**
SCM pmax pmax
comp=Z,30nm,0.8s
SCM Sheep Creek Mo 85.47 13 *e*P **P 07 20 57.3 +1.1**
comp=Z,30nm,0.8s
WHN Wuhan 85.53 305⇑P **P 07 20 59.5 +2.3**
PCA Pinnacle 85.58 16 *e*P **P 07 20 57.2 +0.4**
comp=Z,156nm,1.8s
BALM Baldy 85.86 15 *e*P **P 07 20 59.3 +1.0**
BALM pmax pmax
comp=Z,117nm,1.9s
BALM Baldy 85.86 15 *e*P **P 07 20 59.3 +1.0**
comp=Z,117nm,1.9s
NEW Newport 85.96 34 P **P 07 21 00.1 +1.2**
baz=232
NEW Newport 85.96 34 *e*P **P 07 20 59.3 +0.4**
NEW pmax pmax
comp=Z,14nm,1.4s
NEW MLR MLR
comp=Z,2μm,19.0s
NEW Newport 85.96 34 *e*P **P 07 20 59.3 +0.4**
comp=Z,14nm,1.4s
NEW LR LR
comp=Z,2μm,19.0s
CAST Castle Rocks 86.07 10 *e*P **P 07 20 58.5 -0.7**
comp=Z,112nm,2.0s
TIA Tai'an 86.19 311⇑P **P 07 21 01.3 +1.0**
TIA pmax pmax
comp=Z,30nm,1.5s
AHID Auburn Hatcher 86.19 41 *e*P **P 07 21 01.1 +0.6**
AHID LR LR
comp=Z,1μm,19.0s
MCMT McKenzie Canyo 86.30 39 *e*P **P 07 21 01.2 +0.2**
S22A 4UR Ranch, Cre 86.34 47 P **P 07 21 02.3 +0.8**
baz=240
S22A 4UR Ranch, Cre 86.34 47 *e*P **P 07 21 02.8 +1.4**
comp=Z,17nm,1.4s
KTH Kantishna Hill 86.39 10 *e*P **P 07 21 00.3 -0.4**
comp=Z,36nm,1.3s
PLCA Paso Flores 86.39 132 P **P 07 21 01.7 +0.2**
comp=Z,1.8nm,0.8s,baz=236,slow=3.6,SNR=3.1
PLCA LR LR 07 52 42.9
comp=Z,461nm,19.8s,baz=291,slow=31

TRF	**Thorofare Moun**	86.40	11	*e*P		P		07 21 01.1	+0.2
	comp=Z,324nm,2.0s								
SKAG	**Skagway**	86.44	19	*e*P		P		07 21 01.9	+0.9
	comp=Z,126nm,1.7s								
IPM	**Ipoh**	86.53	276	*e*P		P		07 21 00.2	-2.4
	comp=Z,41nm,1.1s								
DHY	**Denali Highway**	86.59	12	*e*P		P		07 21 01.9	0.0
	comp=Z,98nm,1.9s								
O20A	**White River Ci**	86.61	45	P		P		07 21 03.8	+1.2
	baz=239								
O20A	**White River Ci**	86.61	45	*e*P		P		07 21 02.5	-0.1
	comp=Z,9.2nm,1.1s								
RND	**Reindeer**	86.61	11	*e*P		P		07 21 02.5	+0.7
RND				pmax		pmax			
	comp=Z,73nm,1.2s								
RND	**Reindeer**	86.61	11	*e*P		P		07 21 02.5	+0.7
	comp=Z,72nm,1.2s								
REDW	**Red Top Meadow**	86.67	41	*e*P		P		07 21 03.6	+0.7
	comp=Z,24nm,1.5s								
DLMT	**Dillon**	86.75	38	*e*P		P		07 21 03.6	+0.5
	comp=Z,22nm,1.6s								
SNOW	**Snow King Moun**	86.79	41	*e*P		P		07 21 04.0	+0.5
	comp=Z,12nm,0.9s								
MSO	**Missoula**	86.82	37	P		P		07 21 04.8	+1.5
	baz=234								
MSO	**Missoula**	86.82	37	*e*P		P		07 21 06.4	+3.1
	comp=Z,20nm,1.8s								
SYO	**Syowa Base**	86.83	192⇑	*e*P		P		07 21 01.2	-1.7
PAX	**Paxson**	86.87	13	*e*P		P		07 21 03.8	+0.6
PAX				pmax		pmax			
	comp=Z,80nm,1.9s								
PAX	**Paxson**	86.87	13	*e*P		P		07 21 03.8	+0.6
	comp=Z,80nm,1.9s								
MCK	**McKinley**	86.90	11	*e*P		P		07 21 03.5	+0.3
MCK				pmax		pmax			
	comp=Z,35nm,0.9s								
MCK	**McKinley**	86.90	11	*e*P		P		07 21 03.5	+0.3
	comp=Z,35nm,0.9s								
IMW	**Indian Meadow**	86.91	40	*e*P		P		07 21 05.0	+0.9
	comp=Z,6.2nm,1.0s								
HYT	**Haines Junctio**	86.94	17	*e*P		P		07 21 05.4	+1.8
	comp=Z,73nm,1.8s								
BSMT	**Bassoo Peak**	86.96	36	*e*P		P		07 21 04.8	+0.8
832A	**Faith Ranch, C**	87.02	58	P		P		07 21 05.3	+0.7
	baz=244								
LRM	**Limekiln Ridge**	87.09	38	*e*P		P		07 21 04.9	+0.1
BW06	**Boulder Array**	87.15	42	P		P		07 21 05.9	+0.7
	baz=238								
BW06	**Boulder Array**	87.15	42	*e*P		P		07 21 06.1	+0.9
	comp=Z,8.1nm,1.1s								
PD31	**Pinedale Array**	87.15	42	*e*P		P		07 21 06.1	+0.9
PDAR	**Pinedale Array**	87.15	42	P		P		07 21 06.1	+0.9
	comp=Z,3.5nm,0.9s,baz=199,slow=3.1,SNR=13								
KULM	**Kulim**	87.18	277	PFAKE				07 21 20.0	+14
KULM				LR		LR			
	comp=Z,1μm,19.0s								
MENT	**Mentasta**	87.22	14	*e*P		P		07 21 03.5	-1.3
	comp=Z,150nm,2.0s								
CHMT	**Chamberlain Mo**	87.26	37	*e*P		P		07 21 06.2	+0.7
SDCO	**Great Sand Dun**	87.26	48	P		P		07 21 06.3	+0.4
	baz=241								
SDCO	**Great Sand Dun**	87.26	48	PFAKE				07 21 20.0	+14
SDCO				LR		LR			
	comp=Z,763nm,19.0s								
SNAA	**Sanae**	87.27	177	*e*P		P		07 21 04.6	-0.6
SNAA				pmax		pmax			
	comp=Z,24nm,1.2s								
SNAA	**Sanae**	87.27	177	*e*P		P		07 21 04.6	-0.6
	comp=Z,24nm,1.2s								
933A	**Laredo**	87.29	59	P		P		07 21 06.3	+0.4
	baz=245								
DLBC	**Dease Lake**	87.35	22	*e*P		P		07 21 06.8	+1.3
	comp=Z,64nm,1.9s								
H17A	**Grant Village**	87.41	40	P		P		07 21 07.3	+0.9
	baz=237								
MSTX	**Muleshoe**	87.42	52	P		P		07 21 07.0	+0.5
	baz=242								
MSTX	**Muleshoe**	87.42	52	*e*P		P		07 21 07.3	+0.7
	comp=Z,102nm,1.9s								
BOZ	**Bozeman (W)**	87.44	39	P		P		07 21 07.2	+0.8
	baz=236,SNR=5.5								
BOZ	**Bozeman (W)**	87.44	39	*e*P		P		07 21 07.4	+1.0
BOZ				pmax		pmax			
	comp=Z,34nm,2.0s								
BOZ				MLR		MLR			
	comp=Z,1μm,19.0s								
BOZ	**Bozeman (W)**	87.44	39	*e*P		P		07 21 07.4	+1.0
	comp=Z,34nm,2.0s								
BOZ				LR		LR			
	comp=Z,1μm,19.0s								
833A	**Chaparral WMA,**	87.50	58	P		P		07 21 07.3	+0.4
	baz=244								
034A	**Hebbronville**	87.53	60	P		P		07 21 07.2	+0.1
	baz=245								
LKWY	**Lake**	87.60	40	PFAKE				07 21 20.0	+13
LKWY				LR		LR			
	comp=Z,732nm,19.0s								
T25A	**Trinidad**	87.72	49	P		P		07 21 08.7	+0.7
	baz=241								
T25A	**Trinidad**	87.72	49	*e*P		P		07 21 07.3	-0.8
	comp=Z,8.7nm,1.4s								
WRH	**Wood River Hil**	87.72	11	*e*P		P		07 21 07.5	+0.4
	comp=Z,169nm,1.6s								
733A	**Divot King Ran**	87.75	58	P		P		07 21 08.4	+0.3
	baz=244								
DOT	**Dot Lake**	87.77	13	*e*P		P		07 21 08.2	+0.8
	comp=Z,322nm,2.0s								
SEY	**Seymchan**	87.78	345	P		P		07 21 07.4	0.0
	comp=Z,6.0nm,0.9s,baz=140,slow=4.8,SNR=22								
HDA	**Harding Lake**	87.88	12	*e*P		P		07 21 08.0	+0.1
	comp=Z,100nm,1.9s								
PSI	**Prapat**	87.88	274	*e*P		P		07 21 08.4	-0.8
PSI				pmax		pmax			
	comp=Z,110nm,1.9s								
PSI	**Prapat**	87.88	274	*e*P		P		07 21 08.4	-0.8
	comp=Z,110nm,1.9s								
SKLT	**Songkhla**	87.89	278	P		P		07 21 11.7	+2.6
	comp=Z,52nm,1.9s								
CCB	**Clear Creek Bu**	87.94	11	*e*P		P		07 21 08.2	+0.1
	comp=Z,125nm,1.8s								
VNA1	**Neumayer--Stat**	87.96	175	P		P		07 21 07.8	-0.6
834A	**Tilden**	88.09	59	P		P		07 21 09.8	+0.1
	baz=245								
Q24A	**Divide**	88.09	47	P		P		07 21 10.2	+0.3
	baz=241								
JCT	**Junction City**	88.11	56	P		P		07 21 10.7	+0.9
	baz=244								
COLA	**College**	88.14	11	*e*P		P		07 21 09.8	+0.8
COLA				pmax		pmax			
	comp=Z,143nm,1.8s								
COLA				MLR		MLR			
	comp=Z,1μm,19.0s								
COLA	**College**	88.14	11	*e*P		P		07 21 09.8	+0.8
	comp=Z,143nm,1.8s								
COLA				LR		LR			
	comp=Z,1μm,19.0s								
WALA	**Waterton Lakes**	88.14	35	*e*P		P		07 21 10.5	+0.9
	comp=Z,26nm,1.5s								
633A	**Saathoff Ranch**	88.16	58	P		P		07 21 10.4	+0.3
	baz=245								
ISCO	**Idaho Springs**	88.19	46	P		P		07 21 10.5	+0.1
	baz=241								
ISCO	**Idaho Springs**	88.19	46	PFAKE				07 21 20.0	+10
ISCO				LR		LR			
	comp=Z,928nm,19.0s								
IL1	**Eielson Array**	88.22	11	*e*P		P		07 21 09.7	+0.2
ILAR	**Eielson Array**	88.22	11	P		P		07 21 09.6	+0.1
	comp=Z,4.5nm,0.9s,baz=217,slow=5.2,SNR=41								
ILB	**Eielson Array**	88.22	11	*e*P		P		07 21 10.0	+0.6
SKNT	**Sakolnakorn**	88.48	289	P		P		07 21 13.5	+1.7
	comp=Z,75nm,1.6s								
533A	**Kerrville**	88.53	57	P		P		07 21 11.1	-0.8
	baz=245								
RLMT	**Red Lodge**	88.58	40	PFAKE				07 21 20.0	+8.1
RLMT				LR		LR			
	comp=Z,525nm,19.0s								
GSI	**Gunungsitoli**	88.61	272	*e*P		P		07 21 13.1	+0.6
	comp=Z,372nm,1.9s								
AMTX	**Amarillo**	88.64	52	P		P		07 21 13.6	+1.3
	baz=243								
AMTX	**Amarillo**	88.64	52	*e*P		P		07 21 13.0	+0.7
	comp=Z,19nm,1.4s								
BJT	**Baijiatuau**	88.71	314	*e*P		P		07 21 12.2	-0.2
BJT				MLR		MLR			
	comp=Z,2μm,19.0s								
BJT	**Baijiatuau**	88.71	314	*e*P		P		07 21 12.2	-0.2
BJT				LR		LR			
	comp=Z,2μm,19.0s								
BJI	**Beijing**	88.71	314	P		P		07 21 13.5	+1.2
BJI				S		S		07 31 57.4	-0.2
BJI				pmax		pmax			
	comp=Z,24nm,1.3s								
BJI				LR		LR			
	comp=Z,230nm,20.3s								
BJI				LR		LR			
	comp=Z,1μm,18.8s								
BJI				LR		LR			
	comp=Z,1μm,17.3s								
433A	**Art**	88.78	56	P		P		07 21 13.1	+0.2
	baz=245								
534A	**Blanco**	88.95	57	P		P		07 21 14.0	+0.2
	baz=245								
TRTT	**Trang**	88.98	279	P		P		07 21 16.7	+2.4
	comp=Z,109nm,1.2s								
K22A	**Casper**	89.00	43	P		P		07 21 13.4	-0.5
	baz=240								
K22A	**Casper**	89.00	43	*e*P		P		07 21 14.2	+0.3
	comp=Z,9.0nm,1.1s								
333A	**Richland Sprin**	89.11	56	P		P		07 21 14.8	+0.3
	baz=245								
ABTX	**Abilene, Hawle**	89.16	55	P		P		07 21 16.0	+1.3
	baz=244								
DAWY	**Dawson**	89.18	15	*e*P		P		07 21 14.6	+0.5
	comp=Z,101nm,1.8s								
ENH	**Enshi**	89.18	303	*e*P		P		07 21 15.8	+0.9
	comp=Z,214nm,1.6s								
ENH				LR		LR			
	comp=Z,986nm,20.0s								
635A	**Leesville**	89.24	58	P		P		07 21 16.6	+1.6
	baz=245								
EGAK	**Eagle**	89.38	14	*e*P		P		07 21 16.0	+1.1
	comp=Z,112nm,1.9s								
EGAK				LR		LR			
	comp=Z,1μm,19.0s								
434A	**Burnet**	89.44	57	P		P		07 21 17.0	+0.9
	baz=245								
233A	**Rising Star**	89.47	55	P		P		07 21 17.1	+0.9
	baz=245								
736A	**Circle Diamond**	89.62	59	P		P		07 21 17.1	+0.2
	baz=246								
535A	**Dale**	89.66	58	P		P		07 21 17.7	+0.6
	baz=245								
334A	**Lometa**	89.69	56	P		P		07 21 17.8	+0.6
	baz=245								
133A	**Hamilton Ranch**	89.71	55	P		P		07 21 18.5	+1.3
	baz=245								
KSCO	**Kaye Shedlock'**	89.84	48	P		P		07 21 18.3	+0.4
	baz=242								
GYA	**Guiyang**	89.88	298⇑	*i*P		P		07 21 19.6	+1.2
GYA				pP		pP		07 21 26.0	-1.1
GYA				SKS		**SKSac**		07 31 46.2	-1.5
GYA				S		**S**		07 32 07.8	-1.7
GYA				SS		**SS**		07 38 07.9	0.0
GYA				pmax		pmax			
	comp=Z,20nm,1.0s								
GYA				pmax		pmax			
	comp=Z,120nm,8.2s								
GYA				LR		LR			
	comp=Z,640nm,21.0s								
GYA				LR		LR			
	comp=Z,580nm,22.1s								
GYA				LR		LR			
	comp=Z,590nm,21.6s								
COLD	**Coldfoot**	89.92	9	*e*P		P		07 21 18.4	+1.1
	comp=Z,40nm,1.9s								
435B	**Jarrell**	89.97	57	P		P		07 21 19.1	+0.6
	baz=245								
BILL	**Bilibino**	90.03	353	*ce*P		P		07 21 18.2	+0.3
BILL				pmax		pmax			
	comp=Z,7.0nm,1.7s								
BILL	**Bilibino**	90.03	353	PFAKE				07 21 30.0	+12
BILL				LR		LR			
	comp=Z,2μm,20.0s								
234A	**Clairette**	90.05	56	P		P		07 21 20.1	+1.3
	baz=245								
Z33A	**Whitaker Ranch**	90.11	54	P		P		07 21 20.4	+1.3
	baz=245								
X32A	**Elmer**	90.20	53	P		P		07 21 19.2	-0.3
	baz=244								
TIY	**Taiyuan**	90.21	311	*e*P		P		07 21 20.6	+1.0
TIY				S		**S**		07 32 13.7	+1.8
TIY				pmax		pmax			
	comp=Z,340nm,4.2s								
TIY				LR		LR			
	comp=Z,640nm,14.2s								
TIY				LR		LR			
	comp=Z,810nm,18.1s								
TIY				LR		LR			
	comp=Z,830nm,16.6s								
SURT	**Suratani**	90.22	279	P		P		07 21 25.5	+5.5
	comp=Z,12nm,2.2s								
134A	**White-Moore Ra**	90.33	55	P		P		07 21 20.8	+0.6
	baz=245								
Y33A	**Hilltop Ranch,**	90.52	54	P		P		07 21 21.0	0.0
	baz=245								
W32A	**Sentinel**	90.53	52	P		P		07 21 21.8	+0.7
	baz=244								
WHTX	**Lake Whitney,**	90.57	56	P		P		07 21 22.2	+0.9
	baz=245								
436A	**Wall Ranch, Ga**	90.58	57	P		P		07 21 22.2	+0.9
	baz=246								
WMOK	**Wichita Mounta**	90.72	53	P		P		07 21 21.9	0.0
	baz=245								
WMOK	**Wichita Mounta**	90.72	53	PFAKE				07 21 30.0	+8.1
WMOK				LR		LR			
	comp=Z,1μm,19.0s								
336A	**Riesel**	90.79	57	P		P		07 21 23.2	+0.9
	baz=246								
135A	**Vickery Place,**	90.84	55	P		P		07 21 22.8	+0.3
	baz=246								
EDM	**Edmonton**	90.84	32	*e*P		P		07 21 22.7	+0.6
EDM				pmax		pmax			
	comp=Z,82nm,1.8s								
EDM	**Edmonton**	90.84	32	*e*P		P		07 21 22.7	+0.6
	comp=Z,82nm,1.8s								
X33A	**Lawton**	90.84	53	P		P		07 21 22.8	+0.3
	baz=245								
V32A	**Arapaho**	90.94	52	P		P		07 21 23.6	+0.7
	baz=245								
PBKT	**Sadao Pong**	91.00	287	P		P		07 21 26.0	+2.4
	comp=Z,53nm,1.4s								
LOEI	**Loei**	91.09	288	P		P		07 21 24.4	+0.4
	comp=Z,13nm,1.8s								
W33A	**Caddo, Fort Co**	91.12	53	P		P		07 21 23.8	0.0
	baz=245								
OGNE	**Ogallala**	91.14	46	PFAKE				07 21 40.0	+16
OGNE				LR		LR			
	comp=Z,702nm,19.0s								
HIA	**Hailar**	91.17	323	PFAKE				07 21 30.0	+6.3
HIA				LR		LR			
	comp=Z,1μm,20.0s								
XAN	**Xi'an**	91.19	306	P		P		07 21 25.3	+1.1
XAN				pP		sP		07 21 35.3	-0.8
XAN				sP		pP		07 21 40.3	+7.3
XAN				pmax		pmax			
	comp=Z,42nm,1.5s								
XAN				pmax		pmax			
	comp=Z,320nm,10.4s								
LCO	**Las Campanas**	91.20	122	PFAKE				07 21 40.0	+15
LCO				LR		LR			
	comp=Z,2μm,19.0s								
LAO	**LASA Array**	91.21	40	P		P		07 21 24.3	+0.3
	baz=240								
LAO	**LASA Array**	91.21	40	*e*P		P		07 21 24.5	+0.5
	comp=Z,29nm,1.4s								
LAO				LR		LR			
	comp=Z,554nm,20.0s								
U32A	**Winter Ranch,**	91.25	51	P		P		07 21 25.4	+1.0
	baz=245								
Z35A	**Perchaven, San**	91.28	55	P		P		07 21 25.5	+1.0
	baz=246								
RSSD	**Black Hills**	91.31	43	P		P		07 21 25.7	+1.0
	baz=242								
RSSD	**Black Hills**	91.31	43	*e*P		P		07 21 24.4	-0.3
RSSD				pmax		pmax			
	comp=Z,11nm,1.2s								
RSSD	**Black Hills**	91.31	43	*e*P		P		07 21 24.4	-0.3
	comp=Z,11nm,1.2s								
X34A	**Smith Ranch, M**	91.37	53	P		P		07 21 26.2	+1.3
	baz=245								
136A	**Ennis**	91.48	56	P		P		07 21 26.4	+0.9
	baz=246								
V33A	**Lossen Ranch,**	91.54	52	P		P		07 21 26.4	+0.7
	baz=245								
T32A	**Huddler Ranch,**	91.65	51	P		P		07 21 26.6	+0.4
	baz=245								
W34A	**Bridge Creek,**	91.67	53	P		P		07 21 27.3	+1.0
	baz=245								
CBKS	**Cedar Bluff**	91.77	49	PFAKE				07 21 40.0	+13
CBKS				LR		LR			
	comp=Z,252nm,21.0s								
UTTA	**Uttaradit**	91.80	288	P		P		07 21 30.1	+2.8
	comp=Z,5.5nm,1.1s								
Z36A	**Blue Ridge**	91.88	55	P		P		07 21 27.0	-0.4
	baz=246								
U33A	**Lingo Farm, Me**	91.92	52	P		P		07 21 28.2	+0.7
	baz=245								
T33A	**Patterson Ranc**	92.10	51	P		P		07 21 28.7	+0.4
	baz=245								
V34A	**Guthrie**	92.11	52	P		P		07 21 29.7	+1.3
	baz=246								
HHC	**Hu-ho-hao-te**	92.20	313	*e*P		P		07 21 29.6	+0.8
HHC				pmax		pmax			
	comp=Z,29nm,1.3s								
HHC				pmax		pmax			
	comp=Z,190nm,7.4s								
Y36A	**Durant**	92.25	55	P		P		07 21 30.6	+1.6
	baz=246								
W35A	**Tecumseh**	92.31	53	P		P		07 21 30.6	+1.3
	baz=246								
R32A	**Long Quarter,**	92.33	50	P		P		07 21 31.0	+1.7
	baz=245								
U34A	**Anderson Ranch**	92.35	52	P		P		07 21 31.1	+1.7
	baz=246								
X36A	**Centrahoma**	92.47	54	P		P		07 21 30.7	+0.6
	baz=246								
SUKH	**Sukhothai**	92.53	288	P		P		07 21 33.2	+2.6
	comp=Z,7.0nm,0.9s								
V35A	**Meyer Ranch, C**	92.59	53	P		P		07 21 31.2	+0.7
	baz=246								
KMI	**Kunming**	92.63	296	P		P		07 21 33.9	+2.6
KMI				pmax		pmax			
	comp=Z,34nm,1.5s								
KMI				pmax		pmax			
	comp=Z,280nm,6.9s								
KMI				LR		LR			
	comp=Z,570nm,18.6s								
KMI				LR		LR			
	comp=Z,1μm,20.6s								
KMI				LR		LR			
	comp=Z,1μm,20.6s								
NATX	**Nacogdoches**	92.65	57	PFAKE				07 21 40.0	+9.1
NATX				LR		LR			
	comp=Z,821nm,21.0s								
Q32A	**Meitler Ranch,**	92.68	49	P		P		07 21 31.3	+0.4
	baz=245								
UMPA	**Umpang Tak**	92.76	286	P		P		07 21 35.8	+4.0
	comp=Z,5.9nm,1.0s								
Y37A	**Hugo**	92.78	55	P		P		07 21 32.4	+0.9
	baz=246								
R33A	**Olander Ranch,**	92.80	50	P		P		07 21 31.9	+0.4
	baz=245								
T34A	**McClaskey Farm**	92.84	51	P		P		07 21 32.1	+0.4
	baz=246								
LAMP	**Lampang**	92.90	289	P		P		07 21 35.0	+2.6
U35A	**Pawnee**	92.91	52	P		P		07 21 34.0	+2.0
	baz=246								
Q33A	**Connelly Farm,**	93.20	49	P		P		07 21 33.4	+0.1
	baz=246								
X37A	**Clayton**	93.22	54	P		P		07 21 35.4	+1.9
	baz=247								
V36A	**Jenks**	93.26	53	P		P		07 21 35.0	+1.3
	baz=246								
DGMT	**Dagmar**	93.28	39	P		P		07 21 35.4	+1.9
	baz=242								
DGMT	**Dagmar**	93.28	39	*e*P		P		07 21 35.4	+1.9
DGMT				LR		LR			
	comp=Z,711nm,19.0s								
T35A	**Sooner Cattle**	93.30	52	P		P		07 21 34.5	+0.7
	baz=246								
R34A	**Isabella, Hill**	93.33	50	P		P		07 21 34.9	+1.0
	baz=246								
W37B	**Quinton**	93.39	54	P		P		07 21 34.9	+0.6
	baz=247								
O32A	**Brockman Farm,**	93.41	48	P		P		07 21 36.0	+1.7
	baz=245								
TUL1	**Leonard**	93.42	53	P		P		07 21 35.7	+1.3
	baz=246								
Y38A	**Idabel**	93.44	55	P		P		07 21 35.8	+1.3
	baz=247								
P33A	**Williams Farm,**	93.47	49	P		P		07 21 36.0	+1.4
	baz=246								
CMAR	**Chiang Mai Arr**	93.49	288	P		P		07 21 35.8	+0.7
	comp=Z,8.7nm,0.9s,baz=119,slow=3.0,SNR=23								
CMAR	**Chiang Mai Arr**	93.49	288	P		P		07 21 35.8	+0.7
CMAR				pmax		pmax			
	comp=Z,4.0nm,0.3s								
TRQA	**Tornquist**	93.52	133	PFAKE				07 21 50.0	+15
TRQA				LR		LR			
	comp=Z,1μm,20.0s								
K30A	**Basset**	93.53	45	P		P		07 21 35.2	+0.5
	baz=245								
CHTO	**Chiang Mai**	93.61	289	PFAKE				07 21 50.0	+14
CHTO				LR		LR			
	comp=Z,1μm,20.0s								
D26A	**Manning**	93.66	41	P		P		07 21 35.5	+0.3
	baz=243								
X38A	**Whitesboro**	93.66	54	P		P		07 21 35.5	-0.1
	baz=247								
U36A	**Oologah**	93.66	52	P		P		07 21 36.1	+0.7
	baz=247								
TEIG	**Tepich**	93.68	70	PFAKE				07 21 50.0	+14
TEIG				LR		LR			
	comp=Z,28nm,21.0s								
S35A	**Otter Creek Ra**	93.75	51	P		P		07 21 36.2	+0.4
	baz=246								
Q34A	**Chapman**	93.80	50	P		P		07 21 38.1	+2.0
	baz=246								
O33A	**Hebron**	93.82	48	P		P		07 21 37.5	+1.4
	baz=246								
T36A	**Boggs Farm, Ca**	93.82	52	P		P		07 21 37.2	+1.0
	baz=246								
J30A	**Dallas**	93.88	45	P		P		07 21 36.5	+0.2
	baz=245								
V37A	**Hulbert**	93.90	53	P		P		07 21 37.5	+1.0
	baz=247								
CD2	**Chengdu**	93.96	301	P		P		07 21 36.5	-0.6
CD2				pP		pP		07 21 44.3	-1.5
CD2				PP		**PP**		07 25 22.2	-1.3
CD2				SKS		**SKSac**		07 32 09.3	-1.1
CD2				S		**S**		07 32 45.0	-0.9
CD2				sS		sS		07 32 58.4	-2.1
CD2				SS		**SS**		07 39 05.8	-0.5
CD2				pmax		pmax			
	comp=Z,10.0nm,0.6s								
CD2				pmax		pmax			
	comp=Z,160nm,5.6s								
YAK	**Yakutsk**	93.97	337	PFAKE				07 21 50.0	+14
YAK				LR		LR			
	comp=Z,1μm,19.0s								
BGNE	**Belgrade**	93.98	47	P		P		07 21 38.6	+1.7
	baz=245								
INK	**Inuvik**	94.03	14	P		P		07 21 35.7	-0.7
	comp=Z,5.9nm,1.0s,baz=226,slow=6.2,SNR=12								
INK	**Inuvik**	94.03	14	*e*P		P		07 21 36.6	+0.2
INK				pmax		pmax			
	comp=Z,37nm,1.6s								
INK	**Inuvik**	94.03	14	*e*P		P		07 21 36.6	+0.2
	comp=Z,37nm,1.6s								
K31A	**O'Neill**	94.08	46	P		P		07 21 38.1	+0.8
	baz=245								
R35A

MIAR **Mount Ida** **94.56** **55** P **P** **07 21 37.9 -1.7**
baz=248
MIAR **Mount Ida** **94.56** **55** PFAKE 07 21 50.0 +10
MIAR LR LR
comp=Z,344nm,20.0s
U38A **Gravette** **94.68** **53** P **P** **07 21 41.1 +0.9**
baz=247
A26A **Wade Farm, Ken** **94.74** **39** P **P** **07 21 41.8 +1.6**
baz=243
F29A **Eureka** **94.74** **43** P **P** **07 21 40.8 +0.5**
baz=245
T38A **Diamond** **94.97** **52** P **P** **07 21 42.8 +1.3**
baz=247
V39A **Pettigrew** **95.00** **54** P **P** **07 21 43.9 +2.1**
baz=248
Y41A **Eaglette Beard** **95.05** **56** P **P** **07 21 43.1 +1.2**
baz=248
R37A **Teagarden Farm** **95.08** **51** P **P** **07 21 42.3 +0.3**
baz=247
M34A **Aspy Farms, Fr** **95.09** **47** P **P** **07 21 42.0 +0.1**
baz=246
A27A **Ledoux Ranch,** **95.24** **39** P **P** **07 21 42.4 -0.1**
baz=244
P36A **Good Intent, A** **95.31** **50** P **P** **07 21 43.7 +0.7**
baz=247
LVC **Limon Verde** **95.38** **117** PFAKE 07 22 00.0 +16
LVC LR LR
comp=Z,1µm,22.0s
S38A **Stockton** **95.49** **52** P **P** **07 21 45.1 +1.3**
baz=248
J33A **Davis** **95.56** **46** P **P** **07 21 45.1 +1.1**
baz=246
Q37A **Longview Farm,** **95.56** **51** P **P** **07 21 45.1 +1.0**
baz=248
T39A **Clever** **95.65** **53** P **P** **07 21 44.2 -0.4**
baz=248
OTAV **Otavalo** **95.65** **92** PFAKE 07 22 00.0 +14
OTAV LR LR
comp=Z,272nm,22.0s
R38A **Fenwick Farm,** **95.70** **51** P **P** **07 21 45.4 +0.6**
baz=248
YKA **Yellowknife Ar** **95.70** **24** P **P** **07 21 45.4 +1.2**
comp=Z,3.4nm,0.9s,baz=236,slow=4.3,SNR=13
YKA **Yellowknife Ar** **95.70** **24** P **P** **07 21 45.4 +1.2**
YKA pmax pmax
comp=Z,4.0nm,0.9s
YKB5 **Yellowknife Ar** **95.70** **24** *e*P **P** **07 21 44.3 +0.1**
YKW3 **Yellowknife Ar** **95.74** **24** *e*P **P** **07 21 45.3 +1.0**
comp=Z,6.3nm,1.1s
MDND **Maddock** **95.74** **41** *e*P **P** **07 21 45.5 +0.8**
comp=Z,11nm,1.0s
F31A **Hecla** **95.75** **43** P **P** **07 21 45.7 +0.8**
baz=246
A28A **Rude Farm, Bot** **95.80** **40** P **P** **07 21 46.8 +1.8**
baz=245
LZH **Lanzhou** **95.82** **306** *e*P **P** **07 21 47.2 +1.6**
LZH pP pP 07 21 55.0 +0.6
LZH sP sP 07 21 58.5 +1.0
LZH PP **PP** **07 25 41.3 +3.3**
LZH SKS **SKSac** **07 32 20.1 -0.3**
LZH *e*S **S** **07 32 59.2 -2.9**
LZH sS sS 07 33 14.0 -2.7
LZH *e*SS **SS** **07 39 33.2 +0.4**
LZH pmax pmax
comp=Z,43nm,1.4s
LZH pmax pmax
comp=Z,210nm,7.9s
LZH LR LR
comp=Z,540nm,16.3s
LZH LR LR
comp=Z,650nm,16.5s
LZH LR LR
comp=Z,900nm,18.0s
S39A **Bolivar** **95.94** **52** P **P** **07 21 46.5 +0.6**
baz=248
ECSD **EROS Data Cent** **95.96** **45** P **P** **07 21 46.9 +1.1**
baz=247
ECSD **EROS Data Cent** **95.96** **45** *e*P **P** **07 21 45.9 +0.1**
comp=Z,18nm,1.4s
ECSD LR LR
comp=Z,744nm,19.0s
B29A **Wagenman Farm,** **96.16** **40** P **P** **07 21 46.8 +0.2**
baz=245
Q38A **Cooks Store, C** **96.20** **51** P **P** **07 21 47.0 0.0**
baz=248
R39A **Chumby, Stover** **96.38** **51** P **P** **07 21 48.1 +0.2**
baz=248
A29A **Manning Farm,** **96.42** **40** P **P** **07 21 48.7 +0.8**
baz=245
HOPE **Hope Point** **96.67** **157** PFAKE 07 22 00.0 +11
HOPE LR LR
comp=Z,961nm,19.0s
C31A **Landman Farms,** **96.87** **41** P **P** **07 21 51.6 +1.8**
baz=246
H34A **Spellman Lake,** **96.88** **45** P **P** **07 21 51.4 +1.4**
baz=247
R40A **Maddies Statio** **96.93** **52** P **P** **07 21 51.3 +0.9**
baz=249
A30A **Hoffart Farm,** **96.99** **40** P **P** **07 21 51.9 +1.5**
baz=246
F33A **5 Mile Ranch,** **97.00** **44** P Pdif 07 21 51.6 +1.0
baz=247
P39B **Salisbury** **97.02** **50** P Pdif 07 21 52.0 +1.1
baz=249
B31A **Greenbush Farm** **97.17** **41** P Pdif 07 21 52.4 +1.1
baz=246
FFC **Flin Flon** **97.38** **34** PFAKE 07 22 00.0 +7.9
FFC LR LR
comp=Z,1µm,19.0s
SCIA **State Center** **97.57** **48** PFAKE 07 22 10.0 +17
SCIA LR LR
comp=Z,966nm,19.0s
F34A **Alexandria** **97.65** **44** P Pdif 07 21 53.5 0.0
baz=248
B32A **Ashes, Strandq** **97.84** **41** P Pdif 07 21 55.3 +1.0
baz=247
G35A **Watkins** **97.94** **45** Pdiff Pdif 07 21 55.7 +0.9
baz=248
A32A **Rocking H Ranc** **98.07** **41** Pdiff Pdif 07 21 55.7 +0.4
baz=247
F35A **Swanville** **98.12** **44** Pdiff Pdif 07 21 56.9 +1.3
baz=248
AGMN **Agassiz Nation** **98.22** **41** PFAKE 07 22 10.0 +14
AGMN LR LR
comp=Z,596nm,19.0s
Q42A **Golden Eagle** **98.42** **52** Pdiff **P** **07 21 56.6 -0.5**
baz=250
SONA1 **Songino Array** **98.44** **318** *e*P **P** **07 21 56.6 -0.6**
SONM **Songino Array** **98.44** **318** P Pdif 07 21 58.5 +1.4
comp=Z,0.6nm,0.4s,baz=132,slow=4.1,SNR=3.2
BRAL **Brewton** **98.50** **60** PFAKE 07 22 10.0 +12
BRAL LR LR
comp=Z,880nm,19.0s
LPAZ **La Paz** **98.72** **111** P Pdif 07 22 02.9 +3.2
comp=Z,0.6nm,0.7s,baz=305,slow=0.1,SNR=4.2
LPAZ LR LR 07 59 45.6
comp=Z,749nm,18.4s,baz=256,slow=31
A33A **Warroad** **98.75** **41** Pdiff Pdif 07 21 59.4 +1.0
baz=248
P42A **Winchester** **98.79** **51** Pdiff Pdif 07 21 59.9 +1.1
baz=250
O42A **Bath** **99.19** **51** Pdiff **Pdif** **07 22 00.6 +0.2**
baz=250
HDIL **Hopedale** **99.88** **50** PFAKE 07 22 20.0 +16
HDIL LR LR
comp=Z,1µm,19.0s
C36A **Pine Crest Far** **99.91** **43** Pdiff **Pdif** **07 22 04.2 +0.6**
baz=250
GTA **Gaotai** **99.97** **308** *e*P **Pdif** **07 22 04.6 +0.4**
GTA pP pP 07 22 10.9 -2.1
GTA sP sP 07 22 14.3 -1.8
GTA pmax pmax
comp=Z,4.0nm,1.3s
JFWS **Jewell Farm** **99.98** **48** PFAKE 07 22 20.0 +16
JFWS LR LR
comp=Z,592nm,20.0s
TIXI **Tiksi** **100.23** **344** PFAKE 07 22 20.0 +16
TIXI LR LR
comp=Z,950nm,19.0s
EYMN **Ely** **100.83** **43** PFAKE 07 22 20.0 +12
EYMN LR LR
comp=Z,956nm,19.0s
C38A **Sawbill Land.** **100.89** **43** Pdiff **Pdif** **07 22 07.5 -0.4**
baz=251
TLY **Talaya** **101.47** **321** PFAKE 07 22 20.0 +10
TLY LR LR
comp=Z,798nm,20.0s
COWI **Conover** **101.76** **45** PFAKE 07 22 20.0 +8.2
COWI LR LR
comp=Z,937nm,19.0s
GOGA **Godfrey** **102.08** **59** PFAKE 07 22 30.0 +17
GOGA LR LR
comp=Z,420nm,19.0s
MTDJ **Mount Denham** **102.57** **75** PFAKE 07 22 30.0 +14
MTDJ LR LR
comp=Z,714nm,19.0s
LSA **Lhasa** **103.85** **297** PFAKE 07 22 30.0 +7.9
LSA LR LR
comp=Z,696nm,20.0s
ACSO **Alum Creek Sta** **104.38** **52** PFAKE 07 22 40.0 +16
ACSO LR LR
comp=Z,692nm,19.0s
AAM **Ann Arbor** **104.44** **50** PFAKE 07 22 40.0 +16
AAM LR LR
comp=Z,1µm,19.0s
NHSC **New Hope** **104.64** **60** PFAKE 07 22 40.0 +15
NHSC LR LR
comp=Z,697nm,19.0s
GTBY **Guantanamo Bay** **105.27** **74** PFAKE 07 26 50.0
GTBY LR LR
comp=Z,403nm,20.0s
BLA **Blacksburg** **105.53** **56** PFAKE 07 26 50.0
BLA LR LR
comp=Z,702nm,19.0s
SDV **Santo Domingo** **105.95** **86** PFAKE 07 27 00.0
SDV LR LR
comp=Z,1µm,20.0s
CNNC **Cliffs of the** **107.02** **58** PFAKE 07 27 00.0
CNNC LR LR
comp=Z,572nm,19.0s
CBN **Corbin Frederi** **108.11** **55** PFAKE 07 27 00.0
CBN LR LR
comp=Z,610nm,19.0s
SDDR **Presa de Saban** **108.45** **76** PFAKE 07 27 00.0
SDDR LR LR
comp=Z,1µm,20.0s
DGAR **Diego Garcia** **108.53** **254** PFAKE 07 27 00.0
DGAR LR LR
comp=Z,2µm,20.0s
WMQ **Urumqi** **109.88** **310** *e*PKP **PKiKP** **07 26 47.7 -2.5**
WMQ PP **PP** **07 27 26.4 +3.4**
WMQ AMB AMB
comp=Z,98nm,4.8s
WMQ LR LR
comp=N,440nm,17.8s
WMQ LR LR
comp=E,400nm,20.2s
WMQ LR LR
comp=Z,330nm,17.9s
BINY **Binghamton** **109.97** **51** PFAKE 07 27 00.0
BINY LR LR
comp=Z,769nm,19.0s
LONY **Lake Ozonia** **111.39** **49** PFAKE 07 27 10.0
LONY LR LR
comp=Z,870nm,20.0s
SPB **Sao Paulo** **111.88** **128** PFAKE 07 27 10.0
SPB LR LR
comp=Z,830nm,19.0s
SJG **San Juan** **112.89** **79** PFAKE 07 27 10.0
SJG LR LR
comp=Z,489nm,20.0s
ZALV **Zalesovo Beam** **113.08** **321** PKiKP **PKiKP** **07 26 55.0 -0.9**
comp=Z,1.7nm,0.6s,baz=128,slow=1.0,SNR=6.8
MKAR **Makanchi Array** **114.07** **313** PKiKP PKPdf 07 26 57.4 -0.6
comp=Z,0.5nm,0.5s,baz=181,slow=0.9,SNR=8.5
MKAR PKKPbc **PKKPbc** **07 37 41.9 +1.7**
comp=Z,0.2nm,0.5s,baz=286,slow=3.8,SNR=2.5
GRGR **Grenville** **115.34** **86** PFAKE 07 27 10.0 +8.7
GRGR LR LR
comp=Z,574nm,19.0s
FDF **Fort de France** **116.57** **84** PFAKE 07 27 20.0 +16
FDF LR LR
comp=Z,343nm,19.0s
KURK **Kurchatov** **116.73** **317** PFAKE 07 27 10.0 +7.1
KURK LR LR
comp=Z,2µm,21.0s
ANWB **Willy Bob** **116.78** **80** PFAKE 07 27 20.0 +16
ANWB LR LR
comp=Z,514nm,19.0s
BBSR **BB Station** **117.22** **64** PFAKE 07 27 20.0 +16
BBSR LR LR
comp=Z,267nm,19.0s
KSH **Kashi** **118.00** **304** *e*PKP **PKPdf** **07 27 04.7 -1.2**
KSH *e*PP **PP** **07 28 23.5 +2.7**
KSH PKS **PKSdf** **07 30 40.1 -2.6**
KSH SKS **SKSdf** **07 34 12.3 -4.1**
KSH SKKS **SKKSac** **07 35 11.7 -7.8**
KSH SS **SS** **07 44 31.6 -2.2**
KSH LR LR
comp=Z,360nm,13.2s
KSH LR LR
comp=Z,190nm,10.9s
KSH LR LR
comp=Z,230nm,8.3s
TKM2 **Tokmak 2** **118.52** **308** PFAKE 07 27 20.0 +13
TKM2 LR LR
comp=Z,605nm,20.0s
AAK **Ala-Archa** **119.32** **308** PFAKE 07 27 20.0 +12
AAK LR LR
comp=Z,808nm,21.0s
EKS2 **Erkin-Say** **119.85** **308** PFAKE 07 27 20.0 +11
EKS2 LR LR
comp=Z,637nm,20.0s
BRVK **Borovoye** **121.77** **320** *e*PKIKP **PKPdf** **07 27 13.3 +0.8**
BRVK MLR MLR
comp=Z,685nm,22.0s
BRVK **Borovoye** **121.77** **320** *e*PKPdf **PKPdf** **07 27 13.3 +0.8**
BRVK LR LR
comp=Z,685nm,22.0s
KBS **Kingsbay** **122.07** **359** PFAKE 07 27 20.0 +7.5
KBS LR LR
comp=Z,527nm,20.0s
SFJD **Kangerlussuaq** **122.25** **23** PFAKE 07 27 30.0 +17
SFJD LR LR
comp=Z,1µm,19.0s
KKAR **Karatay Array** **122.26** **308** *e*PKIKP **PKPdf** **07 27 13.8 0.0**
KKAR **Karatay Array** **122.26** **308** *e*PKPdf **PKPdf** **07 27 13.8 0.0**
ZRNK **Zerenda** **122.55** **320** *e*PKIKP **PKPdf** **07 27 13.7 -0.4**
ZRNK **Zerenda** **122.55** **320** *e*PKPdf **PKPdf** **07 27 13.7 -0.4**
SUMG **Summit** **122.95** **14** *i* P PKPdf 07 27 25.9 +11
ABPO **Ambohimpanom** **122.96** **229** PFAKE 07 27 30.0 +14
ABPO LR LR
comp=Z,399nm,21.0s
KBL **Kabul** **123.13** **298** *e*PKIKP **PKPdf** **07 27 14.8 -1.2**
KBL **Kabul** **123.13** **298** *e*PKPdf **PKPdf** **07 27 14.8 -1.2**
SUR **Sutherland** **124.84** **196** PFAKE 07 27 30.0 +11
SUR LR LR
comp=Z,3µm,20.0s
SVE **Sverdlovsk** **126.39** **326** *e*PKIKP **PKPdf** **07 27 21.7 +0.4**
SVE pmax pmax
comp=Z,23nm,1.7s
ARU **Arti** **127.61** **326** *i* PKIKP **PKPdf** **07 27 23.5 -0.1**
ARU 07 34 31.9
ARU **Arti** **127.61** **326** *e*PKPdf **PKPdf** **07 27 23.6 0.0**
ARU LR LR
comp=Z,2µm,22.0s
ABKAR **Akbulak array** **128.84** **317** *e*PKPdf **PKPdf** **07 27 25.8 -0.4**
LVZ **Lovozero** **129.83** **346** PFAKE 07 27 40.0 +12
LVZ LR LR
comp=Z,1µm,20.0s
ARA0 **ARCESS Array S** **130.10** **351** *e*PKPdf **PKPdf** **07 27 28.5 +0.4**
ARCES **ARCESS Array B** **130.10** **351** PKP **PKPdf** **07 27 28.3 +0.3**
comp=Z,1.1nm,0.5s,baz=11,slow=1.2,SNR=8.4
RCBR **Riachuelo** **131.28** **119** PFAKE 07 27 40.0 +8.0
RCBR LR LR
comp=Z,866nm,19.0s
GEYT **Alibeck** **131.94** **302** PKP **PKPdf** **07 27 33.1 +0.6**
comp=Z,2.3nm,0.7s,baz=59,slow=1.2,SNR=3.8
BORG **Borgarnes** **132.90** **15** PFAKE 07 27 50.0 +17
BORG LR LR
comp=Z,761nm,21.0s
KLMR **Klimovskoe** **133.76** **338** *e*PKIKP **PKPdf** **07 27 34.7 -0.4**
KLMR pmax pmax
comp=Z,13nm,1.3s
FIA1 **FINESS Array S** **137.26** **346** *e*PKPdf **PKPdf** **07 27 40.8 -0.8**
FINES **FINESS Array B** **137.26** **346** PKhKP PKPpre 07 27 37.1
comp=Z,1.3nm,0.8s,baz=64,slow=6.6,SNR=4.7
TSUM **Tsumeb** **138.24** **197** PFAKE 07 28 00.0 +15
TSUM LR LR
comp=Z,1µm,19.0s
VRH **Novokhopyorsk** **138.84** **326** *e*PKIKP **PKPdf** **07 27 48.8 +3.9**
VRH pmax pmax
comp=Z,10.0nm,0.6s
OBN **Obninsk** **138.86** **333** ⇑ *i* PKIKP **PKPdf** **07 27 45.6 +0.8**
OBN pmax pmax
comp=Z,5.0nm,1.0s
OBN **Obninsk** **138.86** **333** PFAKE 07 28 00.0 +15
OBN LR LR
comp=Z,1µm,20.0s
VSU **Vasula** **139.68** **343** *c* PKIKP **PKPdf** **07 27 47.0 +0.8**
NB2 **NORSAR Subarra** **139.92** **356** PKP PKPpre 07 27 39.5
comp=Z,13nm,2.0s,baz=17,slow=2.6
NOA **NORSAR Array B** **139.92** **356** PKhKP PKPpre 07 27 38.9
comp=Z,0.8nm,0.7s,baz=16,slow=4.6,SNR=4.6
NBO02 **NORSAR Array S** **139.94** **356** *e*PKPdf **PKPdf** **07 27 46.9 +0.2**
VSR **Storozhevoye** **140.15** **327** *e*PKIKP **PKPdf** **07 27 46.8 -0.5**
VSR pmax pmax
comp=Z,10.0nm,1.6s
KONO **Kongsberg** **141.41** **357** PFAKE 07 28 00.0 +11
KONO LR LR
comp=Z,1µm,20.0s
GNI **Garni** **141.72** **309** PFAKE 07 28 00.0 +9.3
GNI LR LR
comp=Z,1µm,20.0s
KBZ **Khabaz** **141.73** **315** PKP **PKPdf** **07 27 52.3 +1.9**
comp=Z,0.5nm,0.5s,baz=47,slow=16,SNR=2.5
KIV **Kislovodsk** **141.78** **315** PFAKE 07 28 00.0 +9.4
KIV LR LR
comp=Z,1µm,20.0s
KMBO **Kilima Mbogo** **141.95** **238** PFAKE 07 28 00.0 +8.0
KMBO LR LR
comp=Z,976nm,19.0s
NEY **Neytrino** **142.04** **314** ⇑ *i* PKIKP **PKPdf** **07 27 53.6 +2.4**
SOC **Sochi** **143.87** **316** *e*PKIKP **PKPdf** **07 27 53.5 -0.7**
SOC *e* 07 31 02.6
SOC *e*PPP PPP 07 34 23.2
SOC pmax pmax
comp=Z,4.0nm,0.4s
SOC pmax pmax
comp=Z,7.0nm,0.5s
EZM **Erzurum** **144.25** **310** *e*P **PKPdf** **07 27 55.0 -0.3**
SUW **Suwalki** **144.53** **342** *e*PKP **PKPdf** **07 27 54.3 -0.7**
SUW **Suwalki** **144.53** **342** *e*PKIKP **PKPdf** **07 27 54.3 -0.7**
MUD **Monsted U'grnd** **144.62** **357** *i* P PKPbc 07 27 53.7 -0.1
MUD **Monsted U'grnd** **144.62** **357** *i* PKIKP PKPbc 07 27 53.7 -0.1
ANN **Anapa** **144.71** **319** *i* PKIKP **PKPab** **07 27 54.2 -0.1**
ANN pmax pmax
comp=Z,88nm,1.4s
KLNR **Kaliningrad** **144.78** **345** *ce*PKIKP **PKPab** **07 27 54.0 -0.3**
BNGB **Bing¶ll** **145.07** **309** *e*P **PKPdf** **07 27 57.6 +1.1**
COP **Copenhagen** **145.11** **353** *i* P **PKPbc** **07 27 55.1 -0.3**
COP **Copenhagen** **145.11** **353** *i* PKP2 **PKPbc** **07 27 55.1 -0.3**
AKASG **Malin Array Be** **145.12** **334** PKPbc **PKPbc** **07 27 55.3 -0.3**
comp=Z,9.2nm,0.5s,baz=38,slow=3.8,SNR=70
KIEV **Kiev** **145.14** **334** *e*PKP2 **PKPbc** **07 27 55.2 -0.5**
KIEV MLR MLR
comp=Z,1µm,22.0s
KIEV **Kiev** **145.14** **334** *e*PKPbc **PKPbc** **07 27 55.2 -0.5**
KIEV LR LR
comp=Z,1µm,22.0s
AK11 **Malin Array Si** **145.16** **334** *e*PKPbc **PKPbc** **07 27 55.3 -0.5**
ESK **Eskdalemuir** **145.22** **9** *e*PKIKP **PKPdf** **07 27 56.2 0.0**
ESK MLR MLR
comp=Z,1µm,20.0s
ESK **Eskdalemuir** **145.22** **9** *e*PKPbc **PKPdf** **07 27 56.1 0.0**
ESK LR LR
comp=Z,1µm,20.0s
BSD **Bornholm Skovb** **145.34** **351** *i* P **PKPbc** **07 27 55.4 -0.7**
BSD **Bornholm Skovb** **145.34** **351** *i* PKP2 **PKPbc** **07 27 55.4 -0.7**
LLD **Lille Linde** **145.48** **353** *i* P **PKPab** **07 27 57.7 +0.9**
LLD **Lille Linde** **145.48** **353** *i* PKIKP **PKPab** **07 27 57.7 +0.9**
MAZI **Mazidag** **145.75** **306** *e*P **PKPdf** **07 27 57.8 0.0**
KBSD **Kabsdagh** **145.82** **305** *e*P **PKPab** **07 27 59.3 +0.5**
PTK **Pertek** **146.04** **309** *e*P **PKPab** **07 28 01.0 +1.2**
SFNV **Sufian** **146.32** **304** *e*P **PKPab** **07 28 03.2 +2.5**
ILIC **ilic-Erzincan** **146.42** **310** *e*P **PKPab** **07 28 01.6 +0.5**
SIM **Simferopol'** **146.59** **322** *ce*PKP2 **PKPab** **07 28 01.4 0.0**
SIM pmax pmax
comp=Z,28nm,0.8s
SIM pmax pmax
comp=Z,370nm,10.4s
GKP **Gorka Klasztor** **146.69** **347** *e*PKP **PKPbc** **07 28 00.6 +0.3**
GKP **Gorka Klasztor** **146.69** **347** *e*PKP2 **PKPbc** **07 28 00.6 +0.3**
BEL **Belsk** **147.14** **343** *e*PKP **PKPbc** **07 28 01.9 +0.2**
BEL **Belsk** **147.14** **343** *e*PKP2 **PKPbc** **07 28 01.9 +0.2**
MBAR **Mbarara** **147.28** **232** *e*PKP2 **PKPbc** **07 28 03.2 -0.2**
MBAR MLR MLR
comp=Z,615nm,20.0s
MBAR **Mbarara** **147.28** **232** *e*PKPdf **PKPbc** **07 28 03.2 -0.2**
MBAR LR LR
comp=Z,615nm,20.0s
SORM **Soroca** **147.43** **331** ⇓ *i* P **PKPbc** **07 28 02.7 +0.1**
SORM **Soroca** **147.43** **331** ⇓ PKP2 **PKPbc** **07 28 02.7 +0.1**
SNOP **Sinop** **147.53** **317** *e*P **PKPab** **07 28 04.5 -0.7**
DARE **Darende-Malaty** **147.54** **309** *e*P **PKPbc** **07 28 04.1 +0.7**
LVV **L'vov** **147.85** **337** *e*PKP2 **PKPbc** **07 28 03.1 -0.6**
CWF **Charnwood Fore** **148.00** **8** *e*PKPbc **PKPbc** **07 28 04.8 +0.8**
KIS **Kishinev** **148.04** **329** *e*PKP **PKPbc** **07 28 03.0 -1.3**
KIS M M 07 28 03.5
comp=Z,2,200nm,2.0s
KIS **Kishinev** **148.04** **329** *e*PsP 07 28 22.0
KIS LRM MLR 08 32 24.0
comp=Z,700nm,20.0s
KIS **Kishinev** **148.04** **329** *e*PKIKP **PKPbc** **07 28 03.0 -1.3**
KIS pmax pmax
comp=Z,200nm,2.0s
KIS MLR MLR
comp=E,600nm,20.0s
KIS MLR MLR
comp=Z,900nm,20.0s
KIS MLR MLR
comp=Z,700nm,20.0s
SARI **SarD1z-Kayseri** **148.37** **310** *e*P **PKPbc** **07 28 06.3 +0.6**
CMLA **Cha da Macela** **148.43** **51** PFAKE 07 28 10.0 +1.0
CMLA LR LR
comp=Z,2µm,19.0s
KWP **Kalwaria Pacla** **148.47** **339** *e*PKP **PKPbc** **07 28 03.7 -1.7**
KWP **Kalwaria Pacla** **148.47** **339** *e*PKIKP **PKPbc** **07 28 03.7 -1.7**
CORM **Corum** **148.82** **314** *e*P **PKPbc** **07 28 07.6 +0.9**
OJC **Ojcow** **148.87** **342** *e*PKP **PKPdf** **07 28 02.6 +0.2**
OJC **Ojcow** **148.87** **342** *e*PKIKP **PKPdf** **07 28 02.6 +0.2**
OJC **Ojcow** **148.87** **342** *e*PKPbc **PKPbc** **07 28 06.5 +0.2**
DRWC **Darouich** **148.88** **307** *e*P **PKPab** **07 28 12.5 +1.6**
STHS **Stebnicka Huta** **149.14** **340** *e*PKP2 **PKPbc** **07 28 09.0 +1.9**
STHS **Stebnicka Huta** **149.14** **340** *e*PKP **PKPbc** **07 28 09.0 +1.9**
STHS *e* 07 28 13.6
BUR08 **Bucovina Ar. S** **149.16** **334** *e*PKPbc **PKPbc** **07 28 07.3 0.0**
KSP **Ksiaz** **149.17** **347** *e*PKP **PKPbc** **07 28 05.0 -2.1**
KSP **Ksiaz** **149.17** **347** *e*PKIKP **PKPbc** **07 28 05.0 -2.1**
KOZT **Kozan** **149.17** **309** *e*P **PKPbc** **07 28 07.4 -0.2**
RABH **Abou Rabah** **149.18** **302** *e*P **PKPab** **07 28 13.1 +1.0**
BURAR **Bucovina Array** **149.18** **334** ⇑ *i* P **PKPbc** **07 28 08.2 +0.8**
BURAR **Bucovina Array** **149.18** **334** ⇑ PKP2 **PKPbc** **07 28 08.2 +0.8**
ROOS **tl_alroos** **149.19** **302** *e*P **PKPab** **07 28 11.7 -0.6**
WTSB **Winterswijk** **149.20** **359** *e*PKP **PKPbc** **07 28 07.2 +0.1**
KOLS **Kolonicke sedl** **149.21** **338** *e*PKIKP **PKPdf** **07 28 04.5 +1.5**
KOLS *e* 07 28 08.5
KOLS **Kolonicke sedl** **149.21** **338** *e*PKP **PKPdf** **07 28 04.5 +1.5**
KOLS *e* 07 28 08.5
BTCH **Batrach** **149.24** **306** *e*P **PKPbc** **07 28 08.7 +0.8**
CLL **Collm** **149.32** **351** *e*PKPdf **PKPdf** **07 28 03.0 -0.1**
CLL *i* PKPbc **PKPbc** **07 28 07.2 -0.2**
comp=Z,111nm,1.8s
CLL *i* 07 28 15.8
CLL *i* 07 28 18.3
comp=Z,122nm,1.6s
CLL *e*PP **PP** **07 31 42.0 +3.3**
CLL *e*PSKS 07 43 00.0
CLL **Collm** **149.32** **351** *e*PKPbc **PKPbc** **07 28 08.4 +0.9**
TAHT **Tahtakopru-Hat** **149.33** **306** *e*P **PKPbc** **07 28 09.0 +1.0**
TESR **Tescani** **149.41** **331** ⇑ *i* P **PKPbc** **07 28 08.6 +0.8**
NIE **Niedzica** **149.43** **341** *e*PKP **PKPdf** **07 28 05.0 +1.6**
UZH **Uzhgorod** **149.46** **338** *e*PKHKP PKPpre 07 28 05.1
UZH *e* 07 28 12.1
ZALF **Zalf** **149.49** **299** *e*P **PKPab** **07 28 16.1 +2.6**
CRVS **Cervenica-Dubn** **149.51** **339** *e*PKP **PKPdf** **07 28 04.8 +1.3**
CRVS *e* 07 28 09.0
UPC **Upice** **149.54** **347** ⇑ *e*PKP **PKPbc** **07 28 09.7 +1.7**
UPC *ep*PKP **PKPab** **07 28 19.4 +6.4**
UPC **Upice** **149.54** **347** *e*PKP2 **PKPbc** **07 28 09.7 +1.7**
BRG **Berggiesshubel** **149.59** **350** *e*PKP **PKPdf** **07 28 04.4 +0.9**
comp=Z,14nm,1.4s
BRG *i* 07 28 09.5
comp=Z,80nm,1.7s
BRG *i* 07 28 18.8

comp=Z,78nm,1.4s
comp=N,899nm,18.4s
comp=E,606nm,22.1s
comp=Z,1μm,20.6s

DPC	**Dobruska-Polom**	**149.63**	**346**	*e*PKPDF	**PKPdf**	**07 28 04.6**	**+0.9**
DPC			⇑	*e*PKP	**PKiKP**	**07 28 09.9**	**+0.6**
DPC				*ep*PKP	**PKPab**	**07 28 19.7**	**+6.3**
DPC				*ex*		07 28 31.2	
OKC	**Ostrava-Krasne**	**149.66**	**344**	⇑*e*PKP	**PKPbc**	**07 28 09.6**	**+1.3**
OKC	**Ostrava-Krasne**	**149.66**	**344**	*e*PKP2	**PKPbc**	**07 28 09.6**	**+1.3**
CFR	**Carcaliu**	**149.67**	**328**	⇓*i*P	**PKPbc**	**07 28 09.0**	**+0.5**
CFR	**Carcaliu**	**149.67**	**328**	⇓PKP2	**PKPbc**	**07 28 09.0**	**+0.5**
BIDA	**Albida**	**149.69**	**304**	*e*P	**PKPbc**	**07 28 09.1**	**+0.1**
BR131	**Keskin Array S**	**149.71**	**314**	*e*PKPbc	**PKPbc**	**07 28 09.2**	**+0.2**
BRTR	**Keskin Array B**	**149.71**	**314**	PKPbc	**PKPbc**	**07 28 09.2**	**+0.2**
	comp=Z,7.0nm,0.7s,baz=0.0,slow=1.2,SNR=6.5						
KRLC	**Kraliky**	**149.78**	**346**	⇑*e*PKP	**PKPbc**	**07 28 09.8**	**+1.1**
KRLC				*ep*PKP	**PKPab**	**07 28 20.0**	**+6.0**
KRLC	**Kraliky**	**149.78**	**346**	*e*PKP2	**PKPbc**	**07 28 09.8**	**+1.1**
NIG	**Nigde**	**149.79**	**310**	*e*P	**PKPbc**	**07 28 10.1**	**+0.7**
PVCC	**Panska Ves**	**149.81**	**349**	⇑*e*PKP	**PKPbc**	**07 28 10.4**	**+1.7**
PVCC				*ep*PKP	**PKPab**	**07 28 20.1**	**+6.0**
PVCC	**Panska Ves**	**149.81**	**349**	*e*PKP2	**PKPbc**	**07 28 10.4**	**+1.7**
MARH	**Ras Al Marh**	**149.87**	**302**	*e*P	**PKPbc**	**07 28 10.4**	**+0.6**
MORC	**Moravsky Berou**	**149.87**	**344**	⇑*i*P	**PKPdf**	**07 28 04.7**	**+0.6**
MORC	**Moravsky Berou**	**149.87**	**344**	*e*PKIKP	**PKPdf**	**07 28 03.7**	**-0.4**
MORC				*e*		07 28 10.5	
MORC	**Moravsky Berou**	**149.87**	**344**	*e*PKPdf	**PKPdf**	**07 28 03.7**	**-0.4**
MORC				*e*PKPbc	**PKiKP**	**07 28 10.5**	**+0.6**
PLOR	**Plostina**	**149.90**	**330**	⇓*i*P	**PKPbc**	**07 28 09.8**	**+0.7**
PLOR	**Plostina**	**149.90**	**330**	⇓PKP2	**PKPbc**	**07 28 09.8**	**+0.7**
LANS	**Liptovska Anna**	**149.92**	**342**	*e*PKP2	**PKPbc**	**07 28 10.8**	**+1.7**
LANS	**Liptovska Anna**	**149.92**	**342**	*e*PKP	**PKPbc**	**07 28 10.8**	**+1.7**
TIRR	**Tirgusor**	**150.03**	**326**	⇑*i*P	**PKPbc**	**07 28 09.8**	**+0.4**
TIRR	**Tirgusor**	**150.03**	**326**	⇑PKP2	**PKPbc**	**07 28 09.8**	**+0.4**
TIRR	**Tirgusor**	**150.03**	**326**	*e*PKPbc	**PKPbc**	**07 28 10.2**	**+0.8**
TOTH	**TOTAH**	**150.11**	**301**	*e*P	**PKPbc**	**07 28 10.2**	**+0.2**
HARR	**Harsova**	**150.12**	**327**	⇓*i*P	**PKPbc**	**07 28 11.9**	**+2.3**
HARR	**Harsova**	**150.12**	**327**	⇓PKP2	**PKPbc**	**07 28 11.9**	**+2.3**
TLB	**Topalu**	**150.13**	**327**	⇓*i*P	**PKPbc**	**07 28 10.4**	**+0.8**
TLB	**Topalu**	**150.13**	**327**	⇓PKIKP	**PKPbc**	**07 28 10.5**	**+0.8**
KECS	**Kecovo**	**150.20**	**340**	*e*PKIKP	**PKPbc**	**07 28 11.4**	**+1.7**
KECS				*e*		07 28 17.8	
KECS	**Kecovo**	**150.20**	**340**	*e*PKP	**PKPbc**	**07 28 11.4**	**+1.7**
KECS				*e*		07 28 17.8	
ANTO	**Ankara**	**150.20**	**315**	*e*PKIKP	**PKPbc**	**07 28 10.8**	**+0.7**
ANTO				MLR	MLR		
	comp=Z,867nm,21.0s						
ANTO	**Ankara**	**150.20**	**315**	*e*PKPbc	**PKPbc**	**07 28 10.8**	**+0.7**
ANTO				LR	LR		
	comp=Z,867nm,21.0s						
BR231	**Keskin MP Arra**	**150.23**	**315**	*e*PKPdf	**PKPdf**	**07 28 04.5**	**-0.5**
BR231				*e*PKPbc	**PKPbc**	**07 28 09.8**	**-0.4**
PRU	**Pruhonice**	**150.34**	**348**	⇑*e*PKP	**PKPbc**	**07 28 11.3**	**+1.3**
PRU				*ex*		07 28 21.1	
PRU	**Pruhonice**	**150.34**	**348**	*e*PKIKP	**PKPbc**	**07 28 11.3**	**+1.3**
PRU				*e*		07 28 21.1	
GOPC	**GO Pecny, Ondr**	**150.36**	**348**	⇑*e*PKP	**PKPbc**	**07 28 11.2**	**+1.1**
GOPC				*ep*PKP	**PKPab**	**07 28 21.3**	**+4.9**
GOPC	**GO Pecny, Ondr**	**150.36**	**348**	*e*PKIKP	**PKPbc**	**07 28 11.2**	**+1.1**
GOPC				*e*		07 28 21.3	
MERS	**Mersin**	**150.37**	**308**	*e*P	**PKPbc**	**07 28 10.1**	**-0.5**
DOPR	**Dopca**	**150.39**	**331**	⇑*i*P	**PKPbc**	**07 28 12.5**	**+2.2**
HGN	**Heimansgroeve**	**150.42**	**360**	*e*PKP	**PKPbc**	**07 28 10.5**	**+0.4**
NKC	**Novy Kostel**	**150.45**	**351**	⇑*e*PKP	**PKPbc**	**07 28 11.6**	**+1.3**
NKC				*ex*	x	07 28 21.6	
NKC	**Novy Kostel**	**150.45**	**351**	*e*PKIKP	**PKPbc**	**07 28 11.6**	**+1.3**
NKC				*e*		07 28 21.6	
ISR	**Istrita**	**150.49**	**329**	⇑*i*P	**PKPbc**	**07 28 11.8**	**+1.2**
ISR	**Istrita**	**150.49**	**329**	⇑PKIKP	**PKPbc**	**07 28 11.8**	**+1.2**
MLR	**Muntele Rosu**	**150.50**	**330**	⇑*i*P	**PKPbc**	**07 28 10.2**	**-0.5**
MLR	**Muntele Rosu**	**150.50**	**330**	*e*PKIKP	**PKPdf**	**07 28 05.4**	**+0.1**
MLR				*e*		07 28 11.5	
MLR	**Muntele Rosu**	**150.50**	**330**	*e*PKPdf	**PKPdf**	**07 28 05.4**	**+0.1**
MLR				*e*PKPbc	**PKiKP**	**07 28 11.5**	**+0.1**
VRAC	**Vranov**	**150.54**	**345**	⇑*i*P	**PKPbc**	**07 28 11.4**	**+0.9**
VRAC	**Vranov**	**150.54**	**345**	⇑PKIKP	**PKPbc**	**07 28 11.4**	**+0.9**
MEM	**Membach**	**150.57**	**359**	PKPbc	**PKPbc**	**07 28 12.4**	**+1.9**
SNF	**Seneffe**	**150.66**	**2**	PKPbc	**PKPbc**	**07 28 11.7**	**+1.1**
TCHB	**Talchebab**	**150.66**	**299**	*e*P	**PKPbc**	**07 28 10.9**	**-0.5**
VYHS	**Vyhne**	**150.69**	**342**	*e*PKIKP	**PKPbc**	**07 28 11.5**	**+0.6**
VYHS				*e*		07 28 21.6	
VYHS	**Vyhne**	**150.69**	**342**	*e*PKP	**PKPbc**	**07 28 11.5**	**+0.6**
VYHS				*e*		07 28 21.6	
BCLA	**Clavier**	**150.76**	**0**	PKPbc	**PKPbc**	**07 28 09.0**	**-2.0**
TREC	**Trest**	**150.80**	**347**	*e*PKP	**PKPbc**	**07 28 12.4**	**+1.3**
TREC	**Trest**	**150.80**	**347**	*e*PKIKP	**PKPbc**	**07 28 12.4**	**+1.3**
DRGR		**150.85**	**335**	⇓*i*P	**PKPbc**	**07 28 13.3**	**+1.9**
DRGR		**150.85**	**335**	⇓PKIKP	**PKPbc**	**07 28 13.3**	**+1.9**
PSZ	**Piszkesteto**	**150.88**	**340**	⇑*e*PKP	**PKPbc**	**07 28 12.8**	**+1.3**
PSZ	**Piszkesteto**	**150.88**	**340**	*e*PKIKP	**PKPdf**	**07 28 06.5**	**+0.7**
PSZ				*e*		07 28 12.8	
PSZ				MLR	MLR		
	comp=Z,1μm,20.0s						
PSZ	**Piszkesteto**	**150.88**	**340**	*e*PKPdf	**PKPdf**	**07 28 06.5**	**+0.7**
PSZ				*e*PKPbc	**PKPbc**	**07 28 12.8**	**+1.3**
PSZ				LR	LR		
	comp=Z,1μm,20.0s						
MDUB	**Mudurnu**	**150.91**	**317**	*e*P	**PKPbc**	**07 28 12.6**	**+0.8**
VOIR		**150.95**	**331**	⇓*i*P	**PKPbc**	**07 28 12.5**	**+0.8**
VOIR		**150.95**	**331**	⇓PKIKP	**PKPbc**	**07 28 12.5**	**+0.8**
DOU	**Dourbes**	**151.08**	**1**	PKPbc	**PKPbc**	**07 28 13.0**	**+1.3**
GRFO	**Grafenberg**	**151.15**	**352**	*e*PKIKP	**PKPbc**	**07 28 13.5**	**+1.6**
GRFO	**Grafenberg**	**151.15**	**352**	*e*PKPbc	**PKPbc**	**07 28 13.5**	**+1.6**
ARR	**Arges**	**151.19**	**331**	⇓*i*P	**PKPbc**	**07 28 13.7**	**+1.5**
KIZT	**Kizilcal**	**151.31**	**314**	*e*P	**PKPbc**	**07 28 13.1**	**+0.3**
LADK	**Ladik-KONYA**	**151.32**	**312**	*e*P	**PKPbc**	**07 28 12.0**	**-0.8**
KHC	**Kasperske Hory**	**151.34**	**349**	*e*PKPDF	**PKPdf**	**07 28 07.0**	**+0.6**
KHC			⇑	*e*PKP	**PKiKP**	**07 28 13.5**	**+0.6**
KHC				*e*PKPAB	**PKPab**	**07 28 21.2**	**+0.7**
KHC	**Kasperske Hory**	**151.34**	**349**	*e*PKIKP	**PKPdf**	**07 28 07.0**	**+0.6**
KHC				*e*		07 28 13.5	
KHC				*e*		07 28 21.2	
KHC	**Kasperske Hory**	**151.34**	**349**	*e*PKPdf	**PKPdf**	**07 28 07.8**	**+1.5**
KHC				*e*PKPbc	**PKiKP**	**07 28 13.6**	**+0.7**
GULT	**Gulveren**	**151.37**	**318**	*e*P	**PKPbc**	**07 28 12.3**	**-0.5**
KONT	**Konya--Tatoy**	**151.44**	**312**	*e*P	**PKPbc**	**07 28 11.3**	**-1.8**
WLF	**Walferdange**	**151.52**	**359**	PKPbc	**PKPbc**	**07 28 14.4**	**+1.6**
WLF	**Walferdange**	**151.52**	**359**	*e*PKIKP	**PKPbc**	**07 28 14.3**	**+1.6**
WLF				MLR	MLR		
	comp=Z,1μm,21.0s						
WLF	**Walferdange**	**151.52**	**359**	*e*PKPbc	**PKPbc**	**07 28 14.3**	**+1.6**
WLF				LR	LR		
	comp=Z,1μm,21.0s						
GEC2	**GERESS Array S**	**151.59**	**349**	*e*PKIKP	**PKPdf**	**07 28 08.2**	**+1.3**
GEC2				*e*		07 28 14.0	
GEC2	**GERESS Array S**	**151.59**	**349**	*e*PKPdf	**PKPdf**	**07 28 08.2**	**+1.3**
GEC2				*e*PKPbc	**PKiKP**	**07 28 14.0**	**+0.5**
GERES	**GERESS Array B**	**151.59**	**349**	PKP	**PKPdf**	**07 28 07.2**	**+0.3**
	comp=Z,0.3nm,0.6s,baz=297,slow=3.9,SNR=8.0						
GERES				PKPbc	**PKPbc**	**07 28 13.1**	**0.0**
	comp=Z,3.1nm,0.9s,baz=40,slow=1.7,SNR=21						
GERES				PKPab	**PKPab**	**07 28 21.6**	**0.0**
	comp=Z,2.4nm,0.7s,baz=29,slow=3.0,SNR=12						
GEA0	**GERESS Array S**	**151.60**	**349**	*e*PKPdf	**PKPdf**	**07 28 06.8**	**-0.1**
GEA0				*e*PKPbc	**PKiKP**	**07 28 14.2**	**+0.7**
SACV	**Santiago Islan**	**151.60**	**98**	PFAKE		07 28 20.0	-2.6
SACV				LR	LR		
	comp=Z,504nm,21.0s						
LFK	**Lefkose**	**151.74**	**306**	*e*P	**PKPbc**	**07 28 12.6**	**-1.2**
GZR	**Gura Zlata**	**151.97**	**334**	⇑*i*P	**PKPdf**	**07 28 08.7**	**+1.2**
GZR	**Gura Zlata**	**151.97**	**334**	⇑PKIKP	**PKPdf**	**07 28 08.7**	**+1.2**
CONA	**Conrad Observa**	**152.00**	**345**	*i* PKPdf	**PKPdf**	**07 28 08.5**	**+1.0**
	comp=Z,44nm,1.6s						
CSS	**Mathiatis**	**152.01**	**305**	*e*PKPdf	**PKPdf**	**07 28 07.3**	**-0.5**
CSS				*e*PKPbc	**PKiKP**	**07 28 15.1**	**+0.4**
CSS				LR	LR		
	comp=Z,252nm,21.0s						
HRFI	**Mount Harif**	**152.06**	**295**	*e*P	**PKPbc**	**07 28 14.7**	**0.0**
LANF	**Langenberg**	**152.15**	**357**	PKP	**PKPbc**	**07 28 14.7**	**+0.5**
EIL	**Elat**	**152.20**	**294**	*e*P	**PKPbc**	**07 28 14.7**	**-0.3**
BZS	**Buzias**	**152.25**	**335**	⇓*i*P	**PKPbc**	**07 28 14.6**	**+0.1**
BZS	**Buzias**	**152.25**	**335**	⇓PKIKP	**PKPbc**	**07 28 14.6**	**+0.1**
STU	**Stuttgart**	**152.26**	**355**	*e*PKIKP	**PKPbc**	**07 28 15.7**	**+1.2**
STU	**Stuttgart**	**152.26**	**355**	*e*PKPbc	**PKPbc**	**07 28 15.7**	**+1.2**
LEF	**Lefka**	**152.28**	**306**	*e*P	**PKPdf**	**07 28 08.7**	**+0.5**
ARMT	**Armutlu**	**152.31**	**320**	*e*P	**PKPbc**	**07 28 12.8**	**-2.0**
MOA	**Molln**	**152.43**	**347**	*i* PKPdf	**PKPdf**	**07 28 08.4**	**+0.3**
	comp=Z,14nm,1.2s						
TVSB	**Tavsanli**	**152.59**	**317**	*e*P	**PKPbc**	**07 28 14.5**	**-1.2**
SUTC	**Sutluce-Ispart**	**152.62**	**312**	*e*P	**PKPbc**	**07 28 13.1**	**-2.7**
ARSA	**Arzberg**	**152.72**	**345**	*i* PKPdf	**PKPdf**	**07 28 07.9**	**-0.6**
	comp=Z,13nm,1.6s						
BFO	**Black Forest**	**152.77**	**356**	*e*PKIKP	**PKPbc**	**07 28 16.3**	**+0.6**
BFO				MLR	MLR		
	comp=Z,1μm,20.0s						
BFO	**Black Forest**	**152.77**	**356**	*e*PKPbc	**PKPbc**	**07 28 16.3**	**+0.6**
BFO				LR	LR		
	comp=Z,1μm,20.0s						
MDVR	**Moldovita**	**152.90**	**334**	⇑*i*P	**PKPdf**	**07 28 08.4**	**-0.5**
ECH	**Echery**	**152.94**	**358**	PKP	**PKPbc**	**07 28 17.3**	**+1.2**
THEF	**They Montfort**	**152.96**	**359**	PKP	**PKPbc**	**07 28 16.7**	**+0.6**
MOF	**Molkenrain**	**153.31**	**358**	PKP	**PKPbc**	**07 28 17.4**	**+0.5**
KBA	**Koelnbreinsper**	**153.35**	**348**	*i* PKPdf	**PKPdf**	**07 28 08.5**	**-1.1**
	comp=Z,15nm,1.2s						
RETA	**Reutte**	**153.37**	**352**	*i* PKPdf	**PKPdf**	**07 28 09.0**	**-0.6**
	comp=Z,10nm,1.4s						
SOKA	**Soboth**	**153.37**	**345**	*i* PKPdf	**PKPdf**	**07 28 08.8**	**-0.7**
	comp=Z,29nm,1.9s						
MOTA	**Moosalm**	**153.46**	**352**	*i* PKPdf	**PKPdf**	**07 28 10.4**	**+0.6**
	comp=Z,11nm,1.2s						
DAVA	**Damuels**	**153.67**	**353**	*i* pPKPdf	**PKPdf**	**07 28 11.4**	**+1.3**
	comp=Z,18nm,1.4s						
MYKA	**Terra Mystica**	**153.72**	**347**	*i* PKPdf	**PKPdf**	**07 28 10.4**	**+0.3**
	comp=Z,17nm,1.3s						
ABTA	**Abfaltersbach**	**153.82**	**349**	*i* PKPdf	**PKPdf**	**07 28 09.0**	**-1.2**
	comp=Z,22nm,1.3s						
FETA	**Feichten**	**153.83**	**352**	*i* PKPdf	**PKPdf**	**07 28 11.2**	**+0.9**
	comp=Z,15nm,1.1s						
LJU	**Ljubljana**	**154.09**	**346**	*i* PKPdf	**PKPdf**	**07 28 10.6**	**+0.1**
LJU				*e*PKPbc	**PKiKP**	**07 28 18.8**	**+0.1**
LJU				*e*PKPab	**PKPab**	**07 28 29.2**	**-2.9**
FUORN	**Ofenpass-Fuorn**	**154.28**	**353**	*e*PKPbc	**PKPbc**	**07 28 20.1**	**+0.8**
BOJS	**Bojanci**	**154.42**	**344**	*e*PKPdf	**PKPdf**	**07 28 11.1**	**+0.2**
TUE	**Stuetta**	**154.53**	**354**	*e*PKPdf	**PKPdf**	**07 28 11.0**	**-0.4**
TUE				*e*PKPbc	**PKiKP**	**07 28 20.8**	**+0.9**
TUE				*e*PKPab	**PKPab**	**07 28 34.7**	**+0.5**
TUE				LR	LR		
	comp=Z,1μm,19.0s						
SSB	**Saint Sauveur**	**155.89**	**2**	PFAKE		07 28 20.0	+7.0
SSB				LR	LR		
	comp=Z,1μm,19.0s						
BNI	**Bardonecchia**	**156.12**	**358**	PFAKE		07 28 20.0	+6.5
BNI				LR	LR		
	comp=Z,2μm,20.0s						
TIR	**Tirane**	**156.49**	**332**	PFAKE		07 28 30.0	-13
TIR				LR	LR		
	comp=Z,2μm,20.0s						
VLC	**Villacollemand**	**156.69**	**351**	PFAKE		07 28 30.0	-13
VLC				LR	LR		
	comp=Z,678nm,20.0s						
SANT	**Santorini**	**156.95**	**316**	PFAKE		07 28 30.0	-15
SANT				LR	LR		
	comp=Z,640nm,19.0s						
MTE	**Manteigas**	**157.77**	**27**	PFAKE		07 28 30.0	+14
MTE				LR	LR		
	comp=Z,1μm,19.0s						
AQU	**L'Aquila**	**157.84**	**344**	PFAKE		07 28 30.0	+14
AQU				LR	LR		
	comp=Z,1μm,19.0s						
CUC	**Castrocucco**	**159.26**	**337**	PFAKE		07 28 30.0	+13
CUC				LR	LR		
	comp=Z,1μm,21.0s						
TIP	**Timpagrande**	**159.61**	**334**	PFAKE		07 28 30.0	+12
TIP				LR	LR		
	comp=Z,1μm,22.0s						
PAB	**San Pablo**	**159.76**	**23**	*e*PKIKP	**PKPdf**	**07 28 17.8**	**-0.2**
PAB				MLR	MLR		
	comp=Z,1μm,19.0s						
PAB	**San Pablo**	**159.76**	**23**	*e*PKPdf	**PKPdf**	**07 28 17.8**	**-0.2**
PAB				LR	LR		
	comp=Z,1μm,19.0s						
ES19	**SONSECA Array**	**159.78**	**22**	*e*PKPdf	**PKPdf**	**07 28 18.1**	**+0.1**
ES19				*e*PKPab	**PKPab**	**07 28 56.4**	**-0.5**
ESDC	**Sonseca Array**	**159.78**	**22**	PKP	**PKPdf**	**07 28 19.2**	**+1.2**
	comp=Z,0.1nm,0.3s,baz=347,slow=3.2,SNR=4.3						
ESDC				PKPab	**PKPab**	**07 28 57.9**	**+1.0**
	comp=Z,0.2nm,0.3s,baz=102,slow=29,SNR=3.7						
CEL	**Celeste**	**160.74**	**335**	PFAKE		07 28 30.0	+11
CEL				LR	LR		
	comp=Z,1μm,19.0s						
VSL	**Villasalto**	**161.40**	**351**	PFAKE		07 28 30.0	+10
VSL				LR	LR		
	comp=Z,1μm,19.0s						
CLTB	**Caltabellotta**	**162.32**	**340**	PFAKE		07 28 30.0	+9.2
CLTB				LR	LR		
	comp=Z,814nm,20.0s						
DBIC	**Dimbokro**	**162.43**	**143**	PKPab	**PKPab**	**07 29 11.4**	**+2.4**
	comp=Z,6.2nm,0.8s,baz=185,slow=4.1,SNR=2.9						
WDD	**Wied Dalam**	**163.38**	**334**	PFAKE		07 28 30.0	+8.2
WDD				LR	LR		
	comp=Z,2μm,19.0s						
TOA0	**Torodi Ar. Sit**	**171.24**	**154**	*e*PKPdf	**PKPdf**	**07 28 26.6**	**-1.5**
TORD	**Torodi Ar. Bea**	**171.24**	**154**	PKP	**PKPdf**	**07 28 27.5**	**-0.6**
	comp=Z,2.3nm,1.1s,baz=266,slow=2.4,SNR=8.1						
TORD				PKPab	**PKPab**	**07 29 50.4**	**+2.7**
	comp=Z,1.5nm,0.8s,baz=215,slow=4.5,SNR=4.2						
TAM	**Tamanrasset**	**178.34**	**2**	PFAKE		07 28 40.0	+10
TAM				LR	LR		
	comp=Z,1μm,19.0s						

*IDC **09** 07:14:00.3±1.3,29.°52S×176.°75W,h0km,mb4.2/4, mb1 4.3/4,mb1mx3.9/27,mbtmp4.2/4,Error ellipse: s-maj=58.6km s-min=22.4km az=180.0*
*NEIC **09** 07:14:02.2±0.9,29.°50S×176.°77W,h10km,mb4.5/5,Error ellipse: s-maj=21.0km s-min=10.0km az=103.0*
*ISCJB **09** 07:14:03.6±1.1,29.°60S±0.°06×176.°8W±0.°1,h31km, mb4.5/8,Error ellipse: s-maj=15.3km s-min=8.7km az=169.5*

ISC 09 07:14:06.1±0.8,29.°59S±0.°08×176.°9W±0.°1,h31km,n24,
σ1s54/25,mb4.3/8,1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.95**	**291**	Pn		**Pn**		**07 14 23.2**	**0.0**
	617nm,0.3s,baz=88,slow=8.0,SNR=18								
RAO				Sn			**Sb**	**07 14 37.1**	**+1.0**
	2μm,0.3s,baz=120,slow=20,SNR=12								
URZ	**Urewera**	**9.97**	**208**	Sn		**Sn**		**07 18 18.9**	**+1.1**
	1.8nm,0.3s,baz=255,slow=8.5,SNR=6.0								
MSVF	**Nonsavu**	**12.68**	**338**	*e*Pn		**Pn**		**07 17 04.2**	**-0.2**
THZ	**Tophouse**	**14.68**	**211**	*e*Pn		**Pn**		**07 17 27.8**	**-3.8**
KHZ	**Kahutara**	**14.94**	**208**	*e*Pn		**Pn**		**07 17 31.4**	**-3.5**
OXZ	**Oxford**	**16.32**	**210**	*e*P		**P**		**07 17 55.1**	**-0.4**
RPZ	**Rata Peaks**	**17.06**	**211**	*e*P		**P**		**07 18 03.8**	**0.0**
	41nm,1.3s								
ODZ	**Otahua Downs**	**18.29**	**209**	*e*P		**Pn**		**07 18 19.2**	**+1.8**
	85nm,2.0s								
CTAO	**Charters Tower**	**34.62**	**277**	*e*P		**P**		**07 20 53.1**	**+0.5**
	20nm,1.0s								
STKA	**Stephens Creek**	**35.59**	**256**	P		**P**		**07 21 01.6**	**+0.7**
	3.2nm,0.9s,baz=71,slow=5.1,SNR=4.2								
ASAR	**Alice Springs**	**44.11**	**266**	P		**P**		**07 22 11.5**	**-0.3**
	1.5nm,0.6s,baz=101,slow=6.1,SNR=20								
WRAB	**Tennant Creek**	**45.02**	**271**	*e*P		**P**		**07 22 18.2**	**-0.8**
	6.7nm,1.1s								
WRA	**Warmunga Arr**	**45.03**	**271**	P		**P**		**07 22 18.2**	**-0.9**
	1.8nm,0.5s,baz=110,slow=8.1,SNR=24								
FORT	**Forrest**	**47.17**	**254**	*e*P		**P**		**07 22 34.7**	**-1.2**
	173nm,1.1s								
CASY	**Casey**	**56.29**	**208**	*e*P		**P**		**07 23 45.5**	**+2.1**
	3.1nm,1.3s								
SYO	**Syowa Base**	**78.11**	**193**	⇓*ep*P		**P**		**07 26 04.6**	**+3.0**
USRK	**Ussuriysk Ar.**	**87.02**	**326**	P		**P**		**07 26 48.1**	**-0.1**
	1.2nm,0.5s,baz=158,slow=2.1,SNR=4.4								
MKAR	**Makanchi Array**	**117.98**	**310**	PKP		**PKPdf**		**07 32 49.1**	**-0.4**
	0.3nm,0.7s,baz=79,slow=3.1,SNR=2.4								
ARCES	**ARCESS Array B**	**138.00**	**348**	PKP		**PKPdf**		**07 33 26.2**	**-0.5**
	1.0nm,0.8s,baz=299,slow=2.5,SNR=3.9								
FINES	**FINESS Array B**	**144.71**	**341**	PKP		**PKPab**		**07 33 36.9**	**-0.9**
	2.3nm,0.6s,baz=65,slow=2.7,SNR=20								
KBZ	**Khabaz**	**145.44**	**305**	PKPbc		**PKPdf**		**07 33 40.3**	**-0.5**
	1.5nm,0.6s,baz=240,slow=1.1,SNR=4.2								
NB2	**NORSAR Subarra**	**148.09**	**353**	PKP		**PKPbc**		**07 33 47.2**	**-0.8**
	comp=Z,1.3nm,0.5s,baz=13,slow=4.6								
NOA	**NORSAR Array B**	**148.09**	**353**	PKPbc		**PKPdf**		**07 33 45.2**	**+0.4**
	comp=Z,0.3nm,0.6s,baz=2.9,slow=3.8,SNR=4.1								
AKASG	**Malin Array Be**	**151.22**	**324**	PKPbc		**PKPbc**		**07 33 55.4**	**-0.5**
	comp=Z,1.6nm,0.5s,baz=45,slow=3.2,SNR=8.9								

*ISK **09** 07:19:21.9,37.°20N×28.°13E,h6km,MD2.6*
*ISCJB **09** 07:19:22.7±0.6,37.°24N±0.°04×28.°16E±0.°04,h0km,Error ellipse: s-maj=5.8km s-min=4.1km az=14.6*

*CSEM **09** 07:19:22.9±0.3,37.°23N×28.°14E,h2km,MD2.6,Error ellipse: s-maj=8.9km s-min=6.0km az=16.0,Suspected Mining explosion.*
*DDA **09** 07:19:23.4,37.°24N×28.°16E,h7km,Md2.6,Suspected Mining explosion.*

ISC 09 07:19:23.1±0.9,37.°24N±0.°03×28.°14E±0.°03,h0km,n19,
σ0s98/28,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.15**	**132**	*e*PG		**Pg**		**07 19 25.3**	**-0.6**
YER				*e*SG		**Sg**		**07 19 27.7**	**-0.2**
YER	**Yerkesik**	**0.15**	**132**	*e*Pg		**Pg**		**07 19 25.3**	**-0.6**
YER				*e*Sg		**Sg**		**07 19 27.7**	**-0.2**
TURN	**Turunc**	**0.52**	**134**	*i* P		**Pg**		**07 19 31.4**	**-1.6**
TURN				*i* S		**Sg**		**07 19 40.5**	**+0.9**
BDRM	**Kayabasi**	**0.58**	**253**	*i* P		**Pg**		**07 19 34.4**	**+0.1**
BDRM				*i* S		**Sb**		**07 19 44.5**	**-0.6**
BDRM	**Kayabasi**	**0.58**	**253**	P		**Pg**		**07 19 34.4**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.58**	**136**	*e*PG		**Pg**		**07 19 33.4**	**-0.9**
DALY	**Dalyan (Mu¨la**	**0.58**	**136**	*e*Pg		**Pg**		**07 19 33.4**	**-0.9**
BODT	**Bodrum**	**0.69**	**256**	*e*PG		**Pg**		**07 19 35.2**	**-1.0**
BODT	**Bodrum**	**0.69**	**256**	*e*Pg		**Pg**		**07 19 35.2**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**0.74**	**344**	*e*PG		**Pg**		**07 19 37.1**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.74**	**344**	*e*Pg		**Pg**		**07 19 37.1**	**-0.1**
DNZL	**Cakiroluk**	**0.85**	**57**	*i* P		**Pg**		**07 19 38.2**	**-1.1**
DNZL				*i* S		**Sg**		**07 19 51.0**	**+0.7**
DNZL	**Cakiroluk**	**0.85**	**57**	P		**Pg**		**07 19 38.2**	**-1.1**
DNZL				S		**Sg**		**07 19 51.0**	**+0.7**
GCAM	**G?zelcaml?**	**0.86**	**303**	*i* P		**Pb**		**07 19 40.5**	**-0.4**
GCAM				*i* S		**Sn**		**07 19 55.9**	**+0.2**
GCAM	**G?zelcaml?**	**0.86**	**303**	P		**Pb**		**07 19 40.5**	**-0.4**
GOLH	**Golhisar**	**1.13**	**89**	*i* P		**Pn**		**07 19 46.1**	**-0.1**
GOLH				*i* S		**Sn**		**07 20 03.5**	**+1.0**
GOLH	**Golhisar**	**1.13**	**89**	P

*CSEM **09** 07:37:59.4±0.2, 37.22N×28.25E, h8km, MD2.7, Error ellipse: s-maj=4.7km s-min=3.5km az=16.0*
*DDA **09** 07:37:59.3, 37.22N×28.25E, h7km, Md2.6*
ISC 09 07:37:59.3±1.2,**37°23N**±0.03×**28°23E**±0.02,**h2**km±11km, **n27**,σ1§05/40,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.10**	**153**	*e*PG	**Pg**	**07 38 01.0**	**-0.3**
YER				*e*SG	**Sg**	**07 38 02.9**	**+0.2**
YER	**Yerkesik**	**0.10**	**153**	*e*Pg	**Pg**	**07 38 01.0**	**-0.3**
YER				*e*Sg	**Sg**	**07 38 02.9**	**+0.2**
TURN	**Turunc**	**0.47**	**139**	*i* P	**Pg**	**07 38 07.5**	**-0.8**
TURN				*i* S	**Sg**	**07 38 14.8**	**+0.6**
DALY	**Dalyan (Mu¨la**	**0.53**	**140**	*e*PG	**Pg**	**07 38 09.1**	**-0.5**
DALY				*e*SG	**Sg**	**07 38 16.9**	**+0.4**
DALY	**Dalyan (Mu¨la**	**0.53**	**140**	*e*Pg	**Pg**	**07 38 09.1**	**-0.5**
DALY				*e*Sg	**Sg**	**07 38 16.9**	**+0.4**
BDRM	**Kayabasi**	**0.65**	**256**	*i* P	**Pg**	**07 38 12.3**	**+0.6**
BDRM				*i* S	**Sb**	**07 38 22.2**	**-0.5**
BDRM	**Kayabasi**	**0.65**	**256**	P	**Pg**	**07 38 12.3**	**+0.6**
BDRM				S	**Sb**	**07 38 22.2**	**-0.5**
BODT	**Bodrum**	**0.75**	**258**	*e*PG	**Pg**	**07 38 13.3**	**-0.4**
BODT	**Bodrum**	**0.75**	**258**	*e*Pg	**Pg**	**07 38 13.3**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.77**	**340**	*e*PG	**Pg**	**07 38 14.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.77**	**340**	*e*Pg	**Pg**	**07 38 14.1**	**+0.1**
DNZL	**Cakiroluk**	**0.80**	**55**	*i* P	**Pg**	**07 38 14.0**	**-0.7**
DNZL				*i* S	**Sb**	**07 38 26.8**	**-0.6**
DNZL	**Cakiroluk**	**0.80**	**55**	P	**Pg**	**07 38 14.0**	**-0.7**
DNZL				S	**Sb**	**07 38 26.8**	**-0.6**
GCAM	**G?zelcaml?**	**0.92**	**301**	*i* P	**Pn**	**07 38 18.8**	**-0.4**
GCAM				*i* S	**Sb**	**07 38 30.2**	**-0.4**
GCAM	**G?zelcaml?**	**0.92**	**301**	P	**Pn**	**07 38 18.8**	**-0.4**
GCAM				S	**Sb**	**07 38 30.2**	**-0.4**
GLHS	**Glhisar (BURDU**	**1.02**	**94**	*e*PG	**Pg**	**07 38 18.8**	**-0.1**
GLHS	**Glhisar (BURDU**	**1.02**	**94**	*e*Pg	**Pg**	**07 38 18.8**	**-0.1**
GOLH	**Golhisar**	**1.07**	**89**	*i* P	**Pg**	**07 38 19.9**	**+0.1**
GOLH				*i* S	**Sn**	**07 38 38.9**	**+2.1**
GOLH	**Golhisar**	**1.07**	**89**	P	**Pg**	**07 38 19.9**	**+0.1**
KULA	**Kula-Manisa**	**1.33**	**15**	*e*PN	**Pg**	**07 38 24.2**	**-0.6**
KULA	**Kula-Manisa**	**1.33**	**15**	*e*Pn	**Pg**	**07 38 24.3**	**-0.6**
ELL	**Elmali**	**1.43**	**109**	*e*PN	**Pn**	**07 38 25.6**	**-0.8**
ELL	**Elmali**	**1.43**	**109**	*e*Pn	**Pn**	**07 38 25.6**	**-0.8**
AKAS	**Kas**	**1.49**	**131**	*i* P	**Pb**	**07 38 27.4**	**-0.3**
AKAS				*i* S	**Sg**	**07 38 52.1**	**+5.0**
AKAS	**Kas**	**1.49**	**131**	P	**Pb**	**07 38 27.5**	**-0.3**
KARP	**Karpathos**	**1.88**	**207**	*e*PN	**Pn**	**07 38 31.5**	**-1.1**
KARP	**Karpathos**	**1.88**	**207**	*e*Pn	**Pn**	**07 38 31.5**	**-1.1**

*ISK **09** 07:38:40.9, 39.32N×27.62E, h5km, MD3.0*
*ISCJB **09** 07:38:41.0±0.3, 39.33N±0.02×27.68E±0.03, h0km, Error ellipse: s-maj=3.3km s-min=3.1km az=163.4*
*CSEM **09** 07:38:41.1±0.1, 39.32N×27.65E, h1km, MD3.0, Error ellipse: s-maj=3.6km s-min=3.0km az=80.0, Suspected Mining explosion.*
*DDA **09** 07:38:41.4, 39.34N×27.67E, h7km, Md3.0, Suspected Mining explosion.*
ISC 09 07:38:41.1±0.8,**39°32N**±0.02×**27°64E**±0.02,**h0**km,**n63**, σ0§58/79,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.37**	**29**	*e*PG	**Pg**	**07 38 48.5**	**+0.3**
BALB				*e*SG	**Sg**	**07 38 54.6**	**+1.5**
BALB	**Balikesir**	**0.37**	**29**	*e*Pg	**Pg**	**07 38 48.5**	**+0.3**
BALB				*e*Sg	**Sg**	**07 38 54.6**	**+1.5**
BALY	**Balya**	**0.42**	**358**	*i* P	**Pg**	**07 38 49.7**	**+0.5**
BALY				*i* S	**Sg**	**07 38 55.3**	**+0.5**
BALY	**Balya**	**0.42**	**358**	P	**Pg**	**07 38 49.7**	**+0.5**
BALY				S	**Sg**	**07 38 55.3**	**+0.5**
AKS	**Akhisar**	**0.46**	**163**	*e*PG	**Pg**	**07 38 50.5**	**+0.8**
AKS	**Akhisar**	**0.46**	**163**	*e*Pg	**Pg**	**07 38 50.6**	**+0.8**
GONE	**Gonen-Balikesi**	**0.73**	**3**	*e*PG	**Pg**	**07 38 55.4**	**+0.3**
GONE	**Gonen-Balikesi**	**0.73**	**3**	*e*Pg	**Pg**	**07 38 55.4**	**+0.3**
AYVA	**Ayvalik**	**0.74**	**270**	*i* P	**Pb**	**07 38 57.2**	**+0.4**
AYVA				*i* S	**Sn**	**07 39 09.1**	**-1.6**
AYVA	**Ayvalik**	**0.74**	**270**	P	**Pb**	**07 38 57.2**	**+0.4**
KNL	**Bal¨–kesir**	**0.96**	**355**	*i* P	**Pg**	**07 38 59.3**	**-0.2**
KNL				*i* S	**Sg**	**07 39 12.3**	**+0.4**
EDC	**Edincik**	**1.04**	**9**	*e*PG	**Pg**	**07 39 01.2**	**+0.1**
EDC	**Edincik**	**1.04**	**9**	*e*Pg	**Pg**	**07 39 01.2**	**+0.1**
MANT	**Manisa**	**1.09**	**139**	*i* P	**Pg**	**07 39 01.0**	**-0.4**
MANT				*i* S	**Sg**	**07 39 16.2**	**+0.1**
MANT	**Manisa**	**1.09**	**139**	P	**Pg**	**07 39 01.5**	**-0.4**
MANT				S	**Sg**	**07 39 16.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.10**	**30**	*e*PN	**Pg**	**07 39 02.5**	**+0.4**
KCTX	**Karacabey (Bur**	**1.10**	**30**	*e*Pn	**Pg**	**07 39 02.5**	**+0.4**
KRBG	**Karabiga-Canak**	**1.11**	**346**	*e*PN	**Pg**	**07 39 02.5**	**+0.2**
KRBG	**Karabiga-Canak**	**1.11**	**346**	*e*Pn	**Pg**	**07 39 02.6**	**+0.2**
KULA	**Kula-Manisa**	**1.13**	**135**	*e*PN	**Pb**	**07 39 03.4**	**-0.1**
KULA	**Kula-Manisa**	**1.13**	**135**	*e*Pn	**Pb**	**07 39 03.4**	**-0.1**
EZN	**Ezine**	**1.14**	**297**	*e*PN	**Pb**	**07 39 03.0**	**-0.5**
EZN	**Ezine**	**1.14**	**297**	*e*Pn	**Pb**	**07 39 03.1**	**-0.5**
LPK	**Lapseki**	**1.26**	**328**	*e*PN	**Pg**	**07 39 04.6**	**-0.5**
LPK	**Lapseki**	**1.26**	**328**	*e*Pn	**Pg**	**07 39 04.6**	**-0.5**
URLA	**Izmir**	**1.26**	**221**	*i* P	**Pn**	**07 39 05.9**	**0.0**
URLA				*i* S	**Sn**	**07 39 23.8**	**+0.3**
URLA	**Izmir**	**1.26**	**221**	P	**Pn**	**07 39 05.9**	**0.0**
URLA				S	**Sn**	**07 39 23.8**	**+0.3**
MRMT	**Marmara Adasi**	**1.29**	**358**	*e*PN	**Pg**	**07 39 06.0**	**+0.3**
MRMT	**Marmara Adasi**	**1.29**	**358**	*e*Pn	**Pg**	**07 39 06.0**	**+0.3**
BOZC	**Bozcaada**	**1.34**	**294**	*i* P	**Pg**	**07 39 06.4**	**-0.3**
BOZC				*i* S	**Sn**	**07 39 25.7**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.38**	**172**	*e*PN	**Pb**	**07 39 07.5**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.38**	**172**	*e*Pn	**Pb**	**07 39 07.5**	**-0.3**
SIGR	**SIGRI**	**1.39**	**266**	*e*PN	**Pn**	**07 39 07.4**	**-0.3**
SIGR	**SIGRI**	**1.39**	**266**	*e*Pn	**Pn**	**07 39 07.4**	**-0.3**
GELI	**Tayfur-Gelibol**	**1.41**	**321**	*e*PN	**Pn**	**07 39 07.5**	**-0.4**
GELI	**Tayfur-Gelibol**	**1.41**	**321**	*e*Pn	**Pn**	**07 39 07.5**	**-0.4**
TVSB	**Tavsanli**	**1.42**	**84**	*e*PN	**Pg**	**07 39 08.3**	**+0.1**
TVSB	**Tavsanli**	**1.42**	**84**	*e*Pn	**Pg**	**07 39 08.3**	**+0.1**
RKY	**Sarkoy-Tekirda**	**1.42**	**346**	*e*PN	**Pn**	**07 39 08.1**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.42**	**346**	*e*Pn	**Pn**	**07 39 08.1**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.42**	**42**	*e*PN	**Pg**	**07 39 08.6**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.42**	**42**	*e*Pn	**Pg**	**07 39 08.6**	**+0.3**
GDZ	**Gediz**	**1.45**	**98**	*i* P	**Pn**	**07 39 08.7**	**+0.1**
GDZ				*i* S	**Sb**	**07 39 28.3**	**+0.3**
GDZ	**Gediz**	**1.45**	**98**	P	**Pn**	**07 39 08.7**	**+0.1**
GDZ				S	**Sb**	**07 39 28.3**	**+0.3**
IGD	**Bursa**	**1.53**	**51**	*i* P	**Pn**	**07 39 07.4**	**-2.2**
IGD				*i* S	**Sn**	**07 39 28.2**	**-2.1**
CHOS	**Chios island**	**1.55**	**234**	*e*PN	**Pn**	**07 39 09.8**	**-0.1**
CHOS	**Chios island**	**1.55**	**234**	*e*Pn	**Pn**	**07 39 09.8**	**-0.1**
ARMT	**Armutlu**	**1.56**	**36**	*e*PN	**Pb**	**07 39 10.7**	**-0.2**
ARMT	**Armutlu**	**1.56**	**36**	*e*Pn	**Pb**	**07 39 10.7**	**-0.2**
GADA	**Gvkgeada**	**1.60**	**304**	*e*PN	**Pn**	**07 39 10.4**	**-0.2**
GADA	**Gvkgeada**	**1.60**	**304**	*e*Pn	**Pn**	**07 39 10.5**	**-0.2**
ERIK	**Erikli-Kesan**	**1.61**	**328**	*e*PN	**Pn**	**07 39 10.0**	**-0.7**
ERIK	**Erikli-Kesan**	**1.61**	**328**	*e*Pn	**Pn**	**07 39 10.0**	**-0.7**
KESN	**Edirne-Kesan**	**1.68**	**334**	*i* P	**Pn**	**07 39 12.5**	**+0.4**
KESN				*i* S	**Sn**	**07 39 34.2**	**-0.3**
KESN	**Edirne-Kesan**	**1.68**	**334**	P	**Pn**	**07 39 12.5**	**+0.4**
KESN				S	**Sn**	**07 39 34.2**	**-0.3**
IZI	**Iznik**	**1.74**	**54**	*e*PN	**Pn**	**07 39 12.3**	**-0.3**
IZI	**Iznik**	**1.74**	**54**	*e*Pn	**Pn**	**07 39 12.3**	**-0.3**
ENEZ	**Enez**	**1.82**	**322**	*e*PN	**Pn**	**07 39 13.3**	**-0.3**
ENEZ	**Enez**	**1.82**	**322**	*e*Pn	**Pn**	**07 39 13.4**	**-0.3**
ALN	**Alexandroupoli**	**2.00**	**323**	*e*PN	**Pn**	**07 39 15.9**	**-0.2**
ALN	**Alexandroupoli**	**2.00**	**323**	*e*Pn	**Pn**	**07 39 15.9**	**-0.2**
CTKS	**Kestanelik-??a**	**2.03**	**19**	*e*PN	**Pn**	**07 39 17.0**	**+0.5**
CTKS	**Kestanelik-??a**	**2.03**	**19**	*e*Pn	**Pn**	**07 39 17.0**	**+0.5**

*ISCJB **09** 07:39:54.0±1.3, 37.28N±0.04×141.29E±0.06, h8km±7km, mb3.8/14, Error ellipse: s-maj=9.0km s-min=5.8km az=37.8*
*JMA **09** 07:39:56.0±0.1, 37.30N×141.16E, h11km±1km, M3.5*
JMA Felt I J1.
*IDC **09** 07:40:01.0±3.5, 37.24N×141.07E, h50km±33km, mb3.6/14, mb1 3.7/15, mb1mx3.5/60, mbtmp3.8/15, ML3.2/1, Error ellipse: s-maj=22.3km s-min=19.6km az=142.0*
ISC 09 07:39:56.1±1.5,**37°28N**±0.04×**141°16E**±0.07,**h12**km±9km, **n28**,σ0§69/26,**mb3.8**/14,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.34**	**239**	P	**Pg**	**07 40 02.8**	**-0.1**
ONAJ				*e*S	**Sg**	**07 40 07.9**	**+0.5**
JMM	**Marumori**	**0.66**	**334**	P	**Pg**	**07 40 08.2**	**-0.7**
JMM				S	**Sg**	**07 40 17.4**	**-0.2**
JFT	**Otama**	**0.70**	**291**	P	**Pg**	**07 40 09.6**	**-0.1**
JFT				*e*S	**Sb**	**07 40 19.4**	**-0.5**
JHO	**Hitachi**	**0.81**	**216**	P	**Pg**	**07 40 11.1**	**-0.7**
JHO				*e*S	**Sb**	**07 40 22.6**	**-0.6**
JSB	**Shiboa**	**1.04**	**253**	P	**Pb**	**07 40 16.2**	**+0.2**
JSB				*e*S	**Sn**	**07 40 30.4**	**-0.6**
MJAR	**Matsushiro Arr**	**2.48**	**254**	P	**Pn**	**07 40 37.5**	**+1.2**
	5.9nm,0.3s,baz=82,slow=17,SNR=27						
MJAR				S	**Sb**	**07 41 10.8**	**-0.2**
	7.0nm,0.3s,baz=86,slow=27,SNR=11						
USRK	**Ussuriysk Ar.**	**9.81**	**318**	P	Pn	07 42 22.2	+5.3
	baz=131,slow=15,SNR=7.9						
KSRS	**Korea Array**	**10.54**	**275**	P	Pn	07 42 33.6	+6.7
	0.1nm,0.3s,baz=93,slow=13,SNR=14						
MA2	**Magadan**	**23.16**	**12**	P	**P**	**07 45 02.3**	**+0.1**
	4.3nm,0.7s,baz=187,slow=14,SNR=4.5						
SEY	**Seymchan**	**26.59**	**11**	P	**P**	**07 45 35.4**	**+1.4**
	3.6nm,1.0s,baz=194,slow=8.2,SNR=7.5						
SONM	**Songino Array**	**27.48**	**304**	P	**P**	**07 45 43.5**	**+1.1**
	0.4nm,0.3s,baz=77,slow=6.2,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**28.45**	**121**	T	T	08 15 33.9	
	baz=314,slow=75,SNR=770						
H11N1	**WAKE ISLAND Hy**	**28.45**	**121**	T	T	08 15 34.5	
	baz=314,slow=75,SNR=863						
H11N3	**WAKE ISLAND Hy**	**28.46**	**121**	T	T	08 15 35.2	
	baz=314,slow=75,SNR=900						
H11S1	**WAKE ISLAND Hy**	**29.16**	**123**	T	T	08 16 26.4	
	baz=315,slow=76,SNR=149						
H11S3	**WAKE ISLAND Hy**	**29.16**	**123**	T	T	08 16 26.0	
	baz=315,slow=76,SNR=100						
H11S2	**WAKE ISLAND Hy**	**29.18**	**123**	T	T	08 16 23.0	
	baz=315,slow=76,SNR=75						
ZALV	**Zalesovo Beam**	**41.60**	**312**	P	**P**	**07 47 43.2**	**-0.5**
	1.2nm,0.6s,baz=96,slow=7.4,SNR=5.0						
MKAR	**Makanchi Array**	**43.82**	**302**	P	**P**	**07 48 01.6**	**-0.4**
	1.3nm,0.8s,baz=89,slow=11,SNR=11						
KURBB	**Kurchatov Arra**	**45.69**	**309**	P	**P**	**07 48 16.1**	**-0.6**
	2.6nm,0.9s,baz=82,slow=8.4,SNR=13						
ILAR	**Eielson Array**	**49.40**	**32**	P	**P**	**07 48 45.5**	**+0.1**
	1.3nm,0.8s,baz=272,slow=6.5,SNR=17						
WRA	**Warramunga Arr**	**57.27**	**188**	P	**P**	**07 49 42.8**	**-0.8**
	0.5nm,0.8s,baz=5.5,slow=7.4,SNR=4.0						
ARCES	**ARCESS Array B**	**63.70**	**339**	P	**P**	**07 50 26.6**	**-0.5**
	0.9nm,0.8s,baz=62,slow=8.5,SNR=2.6						
YKA	**Yellowknife Ar**	**63.70**	**30**	P	**P**	**07 50 27.5**	**+0.3**
	0.5nm,0.8s,baz=309,slow=7.1,SNR=3.2						
FINES	**FINESS Array B**	**68.51**	**332**	P	**P**	**07 50 56.9**	**-1.1**
	1.9nm,0.9s,baz=64,slow=4.4,SNR=5.5						
NOA	**NORSAR Array B**	**73.89**	**337**	P	**P**	**07 51 30.2**	**-0.5**
	1.1nm,0.9s,baz=37,slow=6.1,SNR=2.5						
PDAR	**Pinedale Array**	**77.64**	**45**	P	**P**	**07 51 53.1**	**+0.3**
	0.1nm,0.3s,baz=350,slow=4.6,SNR=2.7						
TXAR	**Lajitas Array**	**90.13**	**52**	P	**P**	**07 52 57.1**	**+0.5**
	0.4nm,0.8s,baz=270,slow=2.5,SNR=4.0						

*ISCJB **09** 07:42:39.5±1.0, 36.04N±0.04×141.4E±0.1, h45km±9km, mb3.8/6, Error ellipse: s-maj=13.6km s-min=6.9km az=2.4*
*JMA **09** 07:42:39.3±0.1, 36.05N×141.41E, h51km±2km, M3.3*
*IDC **09** 07:42:49.1±4.9, 35.74N×140.48E, h87km±31km, mb3.5/6, mb1 3.6/7, mb1mx3.2/53, mbtmp3.9/7, Error ellipse: s-maj=77.7km s-min=12.4km az=73.0*
ISC 09 07:42:40.3±1.8,**36°04N**±0.04×**141°41E**±0.09,**h31**km±12km, **n17**,σ1§40/23,**mb3.8/6**,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.56**	**234**	P	**Pb**	**07 42 51.4**	**-0.3**
CHOJ				S	**Sb**	**07 43 00.3**	**+0.8**
JHO	**Hitachi**	**0.89**	**310**	P	**Pn**	**07 42 55.5**	**-1.2**
JYT	**Yasato**	**1.00**	**281**	P	**Pn**	**07 42 57.2**	**-1.1**
JYT				S	**Sn**	**07 43 09.8**	**-1.6**
ONAJ	**Iwakimizuishiy**	**1.17**	**335**	P	**Pn**	**07 42 59.3**	**-1.4**
ONAJ				*e*S	**Sn**	**07 43 14.8**	**-0.9**
JFK	**Kawauchi**	**1.40**	**342**	P	**Pn**	**07 43 02.4**	**-1.3**
JFK				*e*S	**Sn**	**07 43 19.9**	**-1.3**
BSO3	**Boso 3**	**1.44**	**211**	P	**Pn**	**07 43 03.8**	**-0.2**
JAG	**Ashikaga**	**1.63**	**284**	P	**Pn**	**07 43 06.4**	**-0.5**
JFT	**Otama**	**1.71**	**330**	P	**Pn**	**07 43 08.3**	**+0.2**
MJAR	**Matsushiro Arr**	**2.64**	**282**	P	**Pn**	**07 43 21.8**	**+1.0**
	2.5nm,0.3s,baz=108,slow=8.4,SNR=8.6						
MAT	**Matsushiro**	**2.64**	**282**	P	**Pn**	**07 43 21.4**	**+0.6**
MAT				*e*S	**Sn**	**07 43 51.6**	**-0.2**
JHJ	**Hachijo jima 2**	**3.21**	**205**	P	**Pn**	**07 43 28.4**	**-0.1**
	54nm,0.3s,baz=333,slow=21,SNR=16						
JHJ				S	**Sn**	**07 44 02.8**	**-3.0**
	38nm,0.3s,baz=345,slow=23,SNR=9.9						
ZALV	**Zalesovo Beam**	**42.59**	**313**	P	**P**	**07 50 33.0**	**-0.3**
	0.8nm,0.5s,baz=92,slow=7.9,SNR=3.1						
NRIK	**Noril'sk**	**44.17**	**336**	P	**P**	**07 50 49.2**	**+3.4**
	1.8nm,0.3s,baz=93,slow=7.0,SNR=4.2						
MKAR	**Makanchi Array**	**44.65**	**303**	P	**P**	**07 50 48.7**	**-1.3**
	0.4nm,0.6s,baz=85,slow=11,SNR=3.7						
KURBB	**Kurchatov Arra**	**46.62**	**309**	P	**P**	**07 51 04.6**	**-0.9**
	1.6nm,0.5s,baz=82,slow=7.6,SNR=8.7						
WRA	**Warramunga Arr**	**56.07**	**188**	P	**P**	**07 52 16.1**	**-0.5**
	0.4nm,0.4s,baz=1.8,slow=7.7,SNR=10						
ASAR	**Alice Springs**	**59.80**	**188**	P	**P**	**07 52 43.4**	**+0.8**
	0.1nm,0.4s,baz=8.9,slow=6.6,SNR=2.5						

*ISCJB **09** 07:45:13.7±0.6, 39.73N×30.22E±0.04, h6km±7km, Error ellipse: s-maj=5.8km s-min=4.7km az=163.8*
*CSEM **09** 07:45:13.8±0.3, 39.75N×30.26E, h10km, MD2.5, Error ellipse: s-maj=7.5km s-min=6.2km az=31.0*
*ISK **09** 07:45:13.5, 39.67N×30.21E, h17km, MD2.6*
*DDA **09** 07:45:14.1, 39.81N×30.28E, h7km, Md2.5*
ISC 09 07:45:13.5±1.0,**39.77N**±0.03×**30.25E**±0.02,**h6**km±9km, **n26**,σ0§86/39,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORA	**Eskisehir**	**0.19**	**56**	*i* P	**Pg**	**07 45 17.2**	**-0.2**
BORA				*i* S	**Sg**	**07 45 21.2**	**+1.3**
BORA	**Eskisehir**	**0.19**	**56**	P	**Pg**	**07 45 17.2**	**-0.2**
BORA				S	**Sg**	**07 45 21.2**	**+1.3**
ESKT	**Eskisehir**	**0.53**	**118**	*e*PG	**Pg**	**07 45 24.0**	**+0.3**
ESKT				*e*SG	**Sb**	**07 45 32.2**	**-1.1**
ESKT	**Eskisehir**	**0.53**	**118**	*i* P	**Pg**	**07 45 23.4**	**-0.2**
ESKT				*i* S	**Sb**	**07 45 32.4**	**-0.8**
ESKT	**Eskisehir**	**0.53**	**118**	*e*Pg	**Pg**	**07 45 24.0**	**+0.3**
ESKT				*e*Sg	**Sb**	**07 45 32.2**	**-1.1**
SEYT	**Eskypehyr**	**0.53**	**118**	P	**Pg**	**07 45 23.5**	**-0.2**
SEYT				S	**Sb**	**07 45 32.4**	**-0.8**
TVSB	**Tavsanli**	**0.69**	**242**	*e*PG	**Pg**	**07 45 26.0**	**-0.7**
TVSB				*e*SG	**Sg**	**07 45 35.2**	**-0.3**
TVSB	**Tavsanli**	**0.69**	**242**	*e*Pg	**Pg**	**07 45 26.0**	**-0.7**
TVSB				*e*Sg	**Sg**	**07 45 35.3**	**-0.3**
GULT	**Gulveren**	**0.69**	**17**	*e*PG	**Pn**	**07 45 29.3**	**-0.6**
GULT				*e*SG	**Sn**	**07 45 41.1**	**+0.1**
GULT	**Gulveren**	**0.69**	**17**	*e*Pg	**Pn**	**07 45 29.3**	**-0.6**
IZI	**Iznik**	**0.82**	**314**	*e*PG	**Pb**	**07 45 30.9**	**+0.7**
IZI	**Iznik**	**0.82**	**314**	*e*Pg	**Pb**	**07 45 30.9**	**+0.7**
GDZ	**Gediz**	**0.90**	**221**	*i* P	**Pn**	**07 45 32.6**	**-0.3**
GDZ				*i* S	**Sn**	**07 45 48.3**	**+2.0**
GDZ	**Gediz**	**0.90**	**221**	P	**Pn**	**07 45 32.6**	**-0.3**
IGD	**Bursa**	**0.94**	**302**	*i* P	**Pg**	**07 45 30.3**	**-1.2**
IGD				*i* S	**Sb**	**07 45 46.0**	**+1.1**
SVRH	**Sivrihisar-ESK**	**1.04**	**108**	*e*PG	**Pb**	**07 45 33.8**	**-0.1**
SAHE	**Sakarya_HENDEK**	**1.17**	**23**	*i* P	**Pb**	**07 45 35.6**	**-0.6**
SAHE				*i* S	**Sn**	**07 45 54.0**	**+1.2**
SAHE	**Sakarya_HENDEK**	**1.17**	**23**	P	**Pb**	**07 45 35.6**	**-0.6**
BOLV	**Bolvadin**	**1.19**	**152**	*i* P	**Pn**	**07 45 36.9**	**+0.1**
BOLV				*i* S	**Sn**	**07 45 55.2**	**+1.9**
BOLV	**Bolvadin**	**1.19**	**152**	P	**Pn**	**07 45 36.9**	**+0.1**
ARMT	**Armutlu**	**1.32**	**307**	*e*PN	**Pn**	**07 45 38.2**	**-0.4**
ARMT	**Armutlu**	**1.32**	**307**	*e*Pn	**Pn**	**07 45 38.2**	**-0.4**
SILT	**Sile**	**1.45**	**342**	*e*PN	**Pb**	**07 45 41.0**	**+0.1**
SILT	**Sile**	**1.45**	**342**	*e*Pn	**Pb**	**07 45 41.0**	**+0.1**
KIZT	**Kizilcal**	**1.55**	**125**	*e*PN	**Pn**	**07 45 40.5**	**-1.2**
KIZT	**Kizilcal**	**1.55**	**125**	*e*Pn	**Pn**	**07 45 40.5**	**-1.2**

*IDC **09** 07:46:20.7±1.2, 35.03N×25.43E, h0km, mb3.6/8, mb1 3.6/12, mb1mx3.5/47, mbtmp3.5/12, ML3.9/3, Error ellipse: s-maj=23.0km s-min=8.3km az=16.0*
*THE **09** 07:46:21.4, 34.96N×25.29E, h1km, ML3.6/8, Error ellipse: s-maj=1.3km s-min=0.4km az=166.0*

*ATH **09** 07:46:21.5, 34.99N×25.28E, h18km±1km, ML3.5/5, Error ellipse: s-maj=2.6km s-min=1.0km az=357.0*
*ISCJB **09** 07:46:21.2±0.7, 34.92N±0.04×25.30E±0.02, h11km±3km, mb3.5/8, Error ellipse: s-maj=6.9km s-min=3.1km az=174.4*
*ISK **09** 07:46:21.4, 34.88N×25.01E, h44km, ML3.3*
*CSEM **09** 07:46:22.5±0.3, 35.02N×25.26E, h5km, ML3.5, Error ellipse: s-maj=8.1km s-min=3.4km az=179.0*
ISC 09 07:46:22.1±0.9,**34°98N**±0.04×**25°28E**±0.02,**h14**km±6km, **n105**,σ1§39/140,**mb3.6**/8,**Crete**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAST	**Lasithi**	**0.24**	**41**	P	**Pg**	**07 46 26.8**	**-0.7**
LAST				S	**Sg**	**07 46 31.1**	**0.0**
LAST	**Lasithi**	**0.24**	**41**	P	**Pg**	**07 46 26.8**	**-0.7**
LAST				S	**Sg**	**07 46 31.5**	**+0.4**
LAST	**Lasithi**	**0.24**	**41**	P	**Pg**	**07 46 26.8**	**-0.7**
IACM	**Heraklion**	**0.37**	**332**	P	**Pg**	**07 46 29.4**	**-0.3**
IACM				S	**Sb**	**07 46 35.8**	**-0.3**
IACM	**Heraklion**	**0.37**	**332**	P	**Pg**	**07 46 29.7**	**0.0**
IACM				S	**Sb**	**07 46 35.8**	**-0.3**
IACM	**Heraklion**	**0.37**	**332**	P	**Pg**	**07 46 29.7**	**0.0**
IACM				S	**Sb**	**07 46 36.2**	**+0.1**
SIVA	**Sivas**	**0.39**	**276**	P	**Pg**	**07 46 29.4**	**-0.6**
SIVA				S	**Sg**	**07 46 36.0**	**+0.6**
SIVA	**Sivas**	**0.39**	**276**	P	**Pg**	**07 46 29.4**	**-0.6**
SIVA				S	**Sg**	**07 46 35.3**	**-0.1**
SIVA	**Sivas**	**0.39**	**276**	P	**Pg**	**07 46 29.4**	**-0.6**
SIVA				S	**Sg**	**07 46 35.3**	**-0.1**
SIVA				AML	AML	07 46 38.2	
	comp=E,42595μm,0.3s						
SIVA				AML	AML	07 46 39.2	
	comp=N,24256μm,0.5s						
NPS	**Neapolis**	**0.39**	**44**	P	**Pg**	**07 46 29.6**	**-0.5**
NPS				S	**Sb**	**07 46 36.4**	**-0.4**
NPS	**Neapolis**	**0.39**	**44**	P	**Pg**	**07 46 29.6**	**-0.5**
NPS				S	**Sb**	**07 46 36.4**	**-0.4**
NPS	**Neapolis**	**0.39**	**44**	P	**Pg**	**07 46 29.3**	**-0.8**
NPS				S	**Sb**	**07 46 36.8**	**+0.1**
NPS				AML	AML	07 46 37.6	
	comp=N,19220μm,0.2s						
NPS				AML	AML	07 46 38.1	
	comp=E,30754μm,0.2s						
TMBK	**Timbaki Herakl**	**0.43**	**283**	P	**Pg**	**07 46 30.4**	**-0.4**
TMBK				S	**Sb**	**07 46 37.7**	**-0.2**
IDI	**Anoyia**	**0.45**	**314**	Pg	**Pg**	**07 46 30.1**	**-0.9**
	comp=E,130nm,0.3s,baz=166,slow=11,SNR=1017						
IDI				Lg	Lg	07 46 37.6	
	comp=E,675nm,0.3s,baz=29,

SUTC	**Sutluce-Ispart**	**5.25**	**60**	*e*Pn		**Pn**	07 47 43.6	**+3.3**
GAZI	**Gazipasa**	**5.87**	**76**	*i* P		**Pn**	07 47 48.1	**-0.5**
GAZI				*i* S		**Sn**	07 48 49.2	**-6.4**
GAZI	**Gazipasa**	**5.87**	**76**	P		**Pn**	07 47 48.1	**-0.5**
BRTR	**Keskin Array B**	**8.17**	**52**	Pn		**Pn**	07 48 19.3	**-1.1**
	comp=N,0.1nm,0.3s,baz=231,slow=10,SNR=3.5							
MMAI	**Mount Meron Ar**	**8.63**	**100**	Pn		**Pn**	07 48 26.7	**+0.1**
	comp=N,1.5nm,0.3s,baz=272,slow=12,SNR=4.5							
AKASG	**Malin Array Be**	**15.97**	**9**	Pn		**Pn**	07 50 06.2	**0.0**
	comp=N,1.0nm,0.3s,baz=199,slow=11,SNR=4.8							
GERES	**GERESS Array B**	**16.29**	**332**	Pn		**P**	07 50 13.1	**-0.4**
	comp=N,0.1nm,0.3s,baz=150,slow=14,SNR=5.2							
ESDC	**Sonseca Array**	**23.67**	**290**	P		**P**	07 51 36.6	**+3.4**
	comp=N,0.3nm,0.3s,baz=76,slow=9.6,SNR=6.9							
FINES	**FINESS Array B**	**26.49**	**1**	P		**P**	07 51 57.3	**-1.4**
	comp=N,0.3nm,0.5s,baz=168,slow=9.8,SNR=3.4							
TORD	**Torodi Ar. Bea**	**30.45**	**230**	P		**P**	07 52 35.7	**+1.3**
	comp=N,0.8nm,0.5s,baz=38,slow=8.3,SNR=6.4							
ARCES	**ARCESS Array B**	**34.61**	**0**	P		**P**	07 53 11.0	**+0.7**
	comp=N,1.1nm,0.9s,baz=169,slow=7.4,SNR=3.5							
KURBB	**Kurchatov Arra**	**41.16**	**51**	P		**P**	07 54 06.2	**+0.4**
	comp=N,0.6nm,0.7s,baz=277,slow=9.0,SNR=4.8							
MKAR	**Makanchi Array**	**43.79**	**56**	P		**P**	07 54 27.8	**+0.4**
	comp=N,0.5nm,0.5s,baz=264,slow=7.6,SNR=8.6							
ZALV	**Zalesovo Beam**	**45.06**	**46**	P		**P**	07 54 36.9	**-0.4**
	comp=N,0.3nm,0.3s,baz=269,slow=7.6,SNR=2.1							
SONM	**Songino Array**	**59.52**	**51**	P		**P**	07 56 23.8	**-1.3**
	comp=N,0.6nm,0.7s,baz=294,slow=4.3,SNR=2.6							

IDC 09 07:49:21.9±5.9, 28°.80S×175°.80W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.6/29, mbtmp3.5/2, Error ellipse: s-maj=317.6km s-min=58.8km az=159.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ASAR	**Alice Springs**	**45.14**	**264**	P		P	07 57 39.9	-0.6
	0.4nm,0.6s,baz=100,slow=7.7,SNR=7.8							
WRA	**Warramunga Arr**	**45.99**	**269**	P		P	07 57 47.6	+0.4
	0.5nm,0.5s,baz=109,slow=8.1,SNR=9.6							
AKASG	**Malin Array Be**	**151.12**	**326**	PKPbc		PKPbc	08 09 16.4	-0.3
	0.6nm,0.4s,baz=47,slow=2.9,SNR=5.8							

*ISCJB **09** 07:52:32.4±0.7, 6°.80N±0°.05×73°.06W±0°.06, h160km±6km, Error ellipse: s-maj=11.4km s-min=5.7km az=37.4*
*RSNC **09** 07:52:34.7±0.8, 6°.76N×73°.10W, h147km±5km, ML2.4*
*FUNV **09** 07:52:36.7, 7°.03N×72°.93W, h162km, MW2.5*
ISC 09 07:52:30.5±1.5, 6°.82N±0°.05×73°.03W±0°.06, h174km±9km, n21, σ2°30/33, 2D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BARC	**Barichara**	**0.27**	**214**	*e*P		**Pn**	**07 52 54.6**	**+0.4**
BARC				*e*S		**Sn**	**07 53 09.5**	**-2.9**
BARC				*i*			07 53 12.4	
	comp=Z,64nm,0.4s							
BRRC	**Barranca, Sant**	**0.73**	**293**	*i* P		**Pn**	**07 52 56.5**	**+0.7**
BRRC				*i*			07 52 56.7	
	comp=Z,70nm,0.2s							
BRRC				*e*S		**Sn**	**07 53 13.9**	**-1.4**
RUSC	**La Rusia**	**0.92**	**183**	*e*P		**Pn**	**07 52 58.3**	**+0.7**
RUSC				*e*S		**Sn**	**07 53 16.7**	**-1.9**
RUSC				*i*			07 53 18.4	
	comp=Z,28nm,0.3s							
CBRI	**Barrientos, No**	**0.92**	**15**	*e*P		**Pn**	**07 52 59.1**	**+1.8**
CBRI				*e*S		**Sn**	**07 53 17.6**	**-0.4**
CBRI				*i*			07 53 22.9	
	comp=Z,24nm,0.5s							
GRMC	**Gramalote, San**	**0.92**	**14**	*i* P		**Pn**	**07 53 00.4**	**+3.2**
GRMC				*e*S		**Sn**	**07 53 19.8**	**+1.8**
GRMC				*i*			07 53 21.0	
	comp=Z,28nm,0.3s							
CAPV	**Capacho**	**1.26**	**34**	*e*P		**Pn**	**07 53 01.7**	**+1.7**
CAPV				*e*S		**Sn**	**07 53 21.7**	**-1.2**
OCAC	**Ocana**	**1.44**	**349**	*e*P		**Pn**	**07 53 03.3**	**+1.7**
OCAC				*e*S		**Sn**	**07 53 26.2**	**+0.5**
OCAC				*i*			07 53 31.7	
	comp=Z,41nm,0.4s							
NORC	**Norcasia**	**2.21**	**236**	*e*P		**Pn**	**07 53 10.2**	**+0.5**
NORC				*e*S		**Sn**	**07 53 38.3**	**-1.6**
CHIC	**Chingaza**	**2.28**	**198**	*e*P		**Pn**	**07 53 12.6**	**+1.8**
CHIC				*i*			07 53 13.5	
	comp=Z,11nm,0.4s							
HELC	**Santa Helena**	**2.56**	**256**	*e*P		**Pn**	**07 53 16.1**	**+2.1**
HELC				*i*			07 53 53.2	
	comp=Z,15nm,0.3s							
VIGV	**El Vigia**	**2.60**	**39**	*e*P		**Pn**	**07 53 15.9**	**+1.8**
VIGV				*e*S		**Sn**	**07 53 45.5**	**-2.6**
SOCV	**Socops**	**2.60**	**56**	*e*P		**Pn**	**07 53 16.7**	**+2.6**
SOCV				*e*S		**Sn**	**07 53 44.8**	**-3.2**
SDV	**Santo Domingo**	**3.14**	**49**	*e*P		**Pn**	**07 53 23.3**	**+2.5**
DBBC	**Dabeiba**	**3.16**	**274**	*e*P		**Pn**	**07 53 22.4**	**+1.4**
ELOV	**Elorza**	**3.53**	**87**	*e*P		**Pn**	**07 53 28.2**	**+2.7**
PRAC	**Prado**	**3.59**	**211**	*e*P		**Pn**	**07 53 28.4**	**+2.0**
SJAC	**San Juan de Ar**	**3.64**	**195**	*e*P		**Pn**	**07 53 28.1**	**+1.1**
VIRV	**Villa del Rosa**	**3.71**	**10**	*e*P		**Pn**	**07 53 28.9**	**+1.1**
VIRV				*e*S		**Sn**	**07 54 08.5**	**-4.2**
QARV	**Quebrada Arrib**	**4.18**	**36**	*e*P		**Pn**	**07 53 35.3**	**+1.4**
SANV	**Sanarito**	**4.37**	**52**	*e*P		**Pn**	**07 53 38.9**	**+2.6**
CURV	**Curarigua**	**4.39**	**44**	*e*P		**Pn**	**07 53 37.9**	**+1.3**
CURV				*e*S		**Sn**	**07 54 23.1**	**-5.2**

*BJI **09** 07:55:22.6, 16°.63N×147°.62E, h54km, mb4.8/26, mB5.0/16, Ms4.8/10, Ms7 4.5/10*
*ISCJB **09** 07:55:26.6±0.2, 17°.00N±0°.03×147°.07E±0°.03, h48km, mb4.8/143, MS4.5/3, Error ellipse: s-maj=5.4km s-min=4.1km az=138.7*
*MOS **09** 07:55:26.0±0.9, 16°.99N×147°.05E, h44km, mb5.0/58, Error ellipse: s-maj=9.6km s-min=5.8km az=92.7*
*IDC **09** 07:55:29.1±2.0, 16°.95N×147°.12E, h61km±18km, mb4.2/29, mb1 4.3/31, mb1mx4.2/47, mbtmp4.5/31, Error ellipse: s-maj=15.5km s-min=9.5km az=91.0*
*NEIC **09** 07:55:29.9±0.6, 16°.92N×147°.08E, h67km±5km, mb4.8/103, Error ellipse: s-maj=4.3km s-min=3.5km az=122.0*
ISC 09 07:55:27.9±0.4, 16°.92N±0°.05×147°.21E±0°.06, h48km, n246, σ1°.03/261, mb4.8/146, MS4.5/3, 10C, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SARN	**Sarigan**	**1.38**	**261**	*e*Pn		**Pn**	**07 55 52.1**	**+1.3**
ANA2	**Anatahan**	**1.54**	**248**	*e*Pn		**Pn**	**07 55 54.1**	**+1.1**
GUMO	**Guam**	**4.01**	**215**	P		**Pn**	**07 56 26.6**	**-0.2**
	38nm,0.3s,baz=131,slow=4.4,SNR=38							
GUMO				S		**Sn**	**07 57 14.4**	**+1.9**
	89nm,0.3s,baz=140,slow=22,SNR=5.9							
JHJ	**Hachijo jima 2**	**17.46**	**339**	P		**Pn**	**07 59 27.3**	**-0.7**
	4.5nm,0.3s,baz=200,slow=15,SNR=3.2							
JAY	**Jayapura**	**20.35**	**199**	P		**P**	**08 00 00.5**	**0.0**
	1.4nm,0.4s,baz=104,slow=19,SNR=2.7							
INU	**Inuyama**	**20.48**	**336**	*e*P		Pn	08 00 02.4	-1.8
	30nm,0.8s							
MJAR	**Matsushiro Arr**	**21.11**	**340**	P		**P**	**08 00 07.9**	**-0.6**
	18nm,0.8s,baz=174,slow=11,SNR=56							
MJAR				S		**S**	**08 03 58.8**	**-2.0**
	4.9nm,1.0s,baz=163,slow=14,SNR=9.4							
MJAR	**Matsushiro Arr**	**21.11**	**340**	P		**P**	**08 00 07.9**	**-0.6**
MJAR				S		**S**	**08 03 58.8**	**-2.0**
MJAR				pmax		pmax		
	comp=Z,16nm,0.8s							
MJAR				smax		smax		
	comp=N,5.0nm,1.0s							
MAJO	**Matsushiro**	**21.11**	**340**	*e*P		**P**	**08 00 08.1**	**-0.4**
MAJO				*e*S		**S**	**08 04 00.1**	**-0.7**
MAJO				pmax		pmax		
	comp=Z,36nm,0.6s							
MAJO	**Matsushiro**	**21.11**	**340**	*e*P		**P**	**08 00 08.1**	**-0.4**
	comp=Z,36nm,0.6s							
MAJO				*e*S		**S**	**08 04 00.1**	**-0.7**
MAT	**Matsushiro**	**21.11**	**340**	P		**P**	**08 00 07.4**	**-1.1**
MAT				*e*S		**S**	**08 03 59.2**	**-1.6**
MJB9	**Matsu-Tunnel**	**21.11**	**340**	*e*P		**P**	**08 00 08.3**	**-0.2**
	comp=Z,9.2nm,0.5s							
MJB9				*e*S		**S**	**08 04 00.2**	**-0.7**
JNU	**Nakatsue**	**21.84**	**321**	P		**P**	**08 00 17.8**	**+1.4**
	comp=Z,5.4nm,0.7s,baz=106,slow=7.2,SNR=6.0							
FAKI	**Fak Fak**	**24.63**	**218**	*e*P		**P**	**08 00 44.6**	**+0.5**
	comp=Z,124nm,1.5s							
TWG	**Pinlang**	**25.25**	**288**	*e*P		**P**	**08 00 47.5**	**-2.1**
	comp=Z,137nm,1.4s							
YHNB	**Yeheng**	**25.32**	**292**	*e*P		**P**	**08 00 49.7**	**-0.6**
	comp=Z,28nm,0.7s							
SSLB	**Suanglung**	**25.52**	**290**	*e*P		**P**	**08 00 51.2**	**-0.9**
	comp=Z,12nm,0.6s							
KSRS	**Korea Array**	**26.59**	**324**	P		**P**	**08 00 59.7**	**-1.9**
	comp=Z,5.7nm,0.7s,baz=141,slow=9.0,SNR=22							
KS15	**Wonju Array Si**	**26.61**	**324**	*e*P		**P**	**08 01 01.2**	**-0.5**
KSAR	**Wonju Array Be**	**26.61**	**324**	P		**P**	**08 00 59.7**	**-2.0**
KSAR	**Wonju Array Be**	**26.61**	**324**	P		**P**	**08 00 59.7**	**-2.0**
KS01	**Wonju Array Si**	**26.62**	**324**	*e*P		**P**	**08 01 01.0**	**-0.9**
ASAJ	**Asahikawa**	**27.39**	**353**	P		**P**	**08 01 08.4**	**-0.3**
	comp=Z,9.6nm,0.9s,baz=238,slow=10.0,SNR=6.3							
ASAJ	**Asahikawa**	**27.39**	**353**	*e*P		**P**	**08 01 09.8**	**+1.1**
	comp=Z,20nm,1.1s							
VLA	**Vladivostok**	**29.19**	**337**	*e*P		**P**	**08 01 24.8**	**+0.1**
VLA				pmax		pmax		
	comp=Z,15nm,0.9s							
USRK	**Ussuriysk Ar.**	**30.08**	**338**	P		**P**	**08 01 32.9**	**+0.3**
	comp=Z,1.7nm,0.5s,baz=152,slow=9.8,SNR=7.1							
YSS	**Yuzh-Sakhalins**	**30.17**	**354**	*e*P		**P**	**08 01 33.8**	**+0.4**
YSS				pmax		pmax		
	comp=Z,60nm,0.8s							
CN2	**Changchun**	**32.52**	**330**	*e*P		**P**	**08 01 53.6**	**-0.5**
TYV	**Tymovskoe**	**34.06**	**355**	*e*P		**P**	**08 02 07.8**	**+0.4**
TYV				pmax		pmax		
	comp=Z,11nm,0.8s							
NKL	**Nikolayevsk**	**36.51**	**353**	*e*P		**P**	**08 02 29.0**	**+0.6**
NKL				pmax		pmax		
	comp=Z,40nm,1.0s							
PETK	**Petropavlovsk-**	**37.04**	**11**	P		**P**	**08 02 33.5**	**+0.6**
	comp=Z,2.2nm,0.9s,baz=193,slow=4.4,SNR=2.7							
PETK	**Petropavlovsk-**	**37.04**	**11**	P		**P**	**08 02 33.5**	**+0.6**
PETK				pmax		pmax		
	comp=Z,3.0nm,1.0s							
SBUM	**Sibu**	**37.27**	**251**	*e*P		**P**	**08 02 35.2**	**-0.2**
	comp=Z,6.9nm,0.6s							
GYA	**Guiyang**	**38.71**	**291**	P		**P**	**08 02 47.0**	**-0.6**
GYA				pmax		pmax		
	comp=Z,10.0nm,1.0s							
WRAB	**Tennant Creek**	**38.74**	**200**	*e*P		**P**	**08 02 49.0**	**+1.3**
WRAB				pmax		pmax		
	comp=Z,21nm,0.6s							
WB2	**Warramunga Arr**	**38.75**	**200**	*e*P		**P**	**08 02 46.7**	**-1.1**
	comp=Z,11nm,0.8s							
WRA	**Warramunga Arr**	**38.75**	**200**	P		**P**	**08 02 47.0**	**-0.8**
	comp=Z,7.3nm,0.6s,baz=20,slow=8.7,SNR=25							
HHC	**Hu-ho-hao-te**	**38.87**	**315**	*e*P		**P**	**08 02 50.4**	**+1.7**
HHC				pmax		pmax		
	comp=Z,15nm,1.0s							
HHC				pmax		pmax		
	comp=Z,86nm,5.2s							
KSM	**Kuching**	**39.41**	**251**	*e*P		**P**	**08 02 52.2**	**-1.3**
	comp=Z,14nm,0.7s							
FITZ	**Fitzroy Crossi**	**40.77**	**212**	*e*P		**P**	**08 03 03.6**	**-1.0**
	comp=Z,49nm,2.0s							
CD2	**Chengdu**	**41.83**	**298**	*e*P		**P**	**08 03 12.2**	**-1.1**
CD2				pP		pP	08 03 25.7	-0.5
CD2				sP		sP	08 03 32.0	+0.2
CD2				PcS		**PcS**	**08 08 59.2**	**-1.2**
CD2				S		**S**	**08 09 26.4**	**-1.4**
CD2				sS		sS	08 09 49.8	+0.4
CD2				SS		**SS**	**08 12 35.0**	**-0.3**
CD2				pmax		pmax		
	comp=Z,20nm,0.5s							
CD2				pmax		pmax		
	comp=Z,160nm,5.2s							
KMI	**Kunming**	**42.15**	**289**	P		**P**	**08 03 16.2**	**0.0**
KMI				pmax		pmax		
	comp=Z,10.0nm,0.6s							
KMI				LR		LR		
	comp=Z,340nm,17.2s							
KMI				LR		LR		
	comp=Z,490nm,18.1s							
KMI				LR		LR		
	comp=Z,430nm,17.8s							
AS01	**Alice Springs**	**42.37**	**198**	*e*P		**P**	**08 03 17.0**	**-0.6**
AS31	**Alice Springs**	**42.38**	**198**	*e*P		**P**	**08 03 18.1**	**+0.3**
	comp=Z,1.5nm,0.6s							
ASAR	**Alice Springs**	**42.38**	**198**	P		**P**	**08 03 17.9**	**+0.2**
	comp=Z,1.8nm,0.6s,baz=19,slow=9.9,SNR=25							
ASAR				ScP		**ScP**	**08 08 56.8**	**-0.5**
	comp=Z,0.6nm,1.0s,baz=132,slow=1.9,SNR=5.0							
ASAR	**Alice Springs**	**42.38**	**198**	P		**P**	**08 03 18.0**	**+0.2**
ASAR				pmax		pmax		
	comp=Z,2.0nm,0.6s							
ASAR				pmax		pmax		
	comp=N,1.0nm,1.0s							
MA2	**Magadan**	**42.67**	**3**	P		**P**	**08 03 20.4**	**+0.8**
	comp=N,4.1nm,0.5s,baz=177,slow=13,SNR=6.0							
LZH	**Lanzhou**	**42.83**	**305**	*e*P		**P**	**08 03 20.2**	**-1.3**
LZH				pP		pP	08 03 33.8	-0.7
LZH				sP		sP	08 03 40.0	-0.1
LZH				PP		**PP**	**08 05 02.3**	**+0.8**
LZH				pmax		pmax		
	comp=N,23nm,1.3s							
LZH				pmax		pmax		
	comp=N,97nm,5.6s							
LZH				LR		LR		
	comp=N,390nm,14.2s							
LZH				LR		LR		
	comp=N,400nm,14.0s							
LZH				LR		LR		
	comp=N,480nm,17.8s							
SONM	**Songino Array**	**45.42**	**322**	P		**P**	**08 03 41.0**	**-1.0**
	comp=N,2.9nm,0.5s,baz=135,slow=8.4,SNR=12							
SONM	**Songino Array**	**45.42**	**322**	P		**P**	**08 03 41.0**	**-1.0**
SONM				pmax		pmax		
	comp=Z,3.0nm,0.5s							
SONA1	**Songino Array**	**45.42**	**322**	*e*P		**P**	**08 03 42.4**	**+0.3**
GSTR	**Great Sitkin T**	**45.50**	**31**	*e*P		**P**	**08 03 42.5**	**+0.1**
CM01	**Chiang Mai Arr**	**45.89**	**279**	*e*P		**P**	**08 03 46.5**	**+0.5**
CM31	**Chiang Mai Arr**	**45.90**	**279**	*e*P		**P**	**08 03 45.9**	**-0.2**
CMAR	**Chiang Mai Arr**	**45.90**	**279**	P		**P**	**08 03 45.8**	**-0.3**
	comp=Z,5.6nm,0.7s,baz=72,slow=6.6,SNR=18							
SEY	**Seymchan**	**46.10**	**3**	*e*P		**P**	**08 03 48.2**	**+1.2**
YAK	**Yakutsk**	**46.73**	**349**	*e*P		**P**	**08 03 52.5**	**+0.6**
YAK				pmax		pmax		
	comp=Z,32nm,0.9s							
YAK				pmax		pmax		
	comp=N,18nm,1.3s							
YAK				pmax		pmax		
	comp=E,4.0nm,1.1s							
YAK	**Yakutsk**	**46.73**	**349**	*e*P		**P**	**08 03 52.0**	**+0.1**
	comp=E,62nm,0.5s							
KULM	**Kulm**	**47.00**	**261**	*e*P		**P**	**08 03 55.6**	**+0.9**
	comp=E,56nm,1.6s							
ZAK	**Zakamensk**	**48.42**	**324**	*e*P		**P**	**08 04 02.4**	**-3.0**
ZAK				pmax		pmax		
	comp=Z,2.0nm,1.9s							
PSI	**Prapat**	**49.44**	**259**	*e*P		**P**	**08 04 13.5**	**-0.2**
PSI				pmax		pmax		
	comp=Z,17nm,1.1s							
PSI	**Prapat**	**49.44**	**259**	*e*P		**P**	**08 04 13.5**	**-0.2**
	comp=Z,17nm,1.1s							
BBOO	**Buckleboo**	**50.59**	**192**	*e*P		**P**	**08 04 21.3**	**-0.6**
	comp=Z,93nm,1.9s							
GSI	**Gunungsitoli**	**51.22**	**258**	*e*P		**P**	**08 04 26.4**	**-0.6**
	comp=Z,60nm,0.7s							
BILL	**Bilibino**	**52.53**	**9**	*e*P		**P**	**08 04 35.8**	**-0.2**
BILL				pmax		pmax		
	comp=Z,9.0nm,1.0s							
TIXI	**Tiksi**	**55.79**	**353**	*e*P		**P**	**08 05 01.8**	**+2.2**
TIXI				pmax		pmax		
	comp=Z,4.0nm,0.8s							
TIXI	**Tiksi**	**55.79**	**353**	*e*P		**P**	**08 05 01.0**	**+1.4**
	comp=Z,5.1nm,1.0s							
WMQ	**Urumqi**	**56.55**	**312**	*e*P		**P**	**08 05 06.3**	**+0.6**
WMQ				pP		sP	08 05 21.5	-3.1
WMQ				pmax		pmax		
	comp=Z,9.0nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,140nm,4.3s							
SVW2	**Sparrevohn**	**59.69**	**28**	*e*P		**P**	**08 05 28.5**	**+1.3**
	comp=Z,10.0nm,1.0s							
TT01	**Tatalina**	**60.18**	**26**	*e*P		**P**	**08 05 31.0**	**+0.5**
TTA	**Tatalina**	**60.19**	**26**	*e*P		**P**	**08 05 30.3**	**-0.4**
TTA				pmax		pmax		
	comp=Z,6.0nm,0.7s							
TTA	**Tatalina**	**60.19**	**26**	*e*P		**P**	**08 05 30.3**	**-0.4**
	comp=Z,5.6nm,0.7s							
ZAA0	**Zalesovo Array**	**60.29**	**323**	*e*P		**P**	**08 05 30.2**	**-1.2**
ZALV	**Zalesovo Beam**	**60.29**	**323**	P		**P**	**08 05 30.2**	**-1.2**
	comp=Z,7.2nm,0.7s,baz=117,slow=7.9,SNR=20							
MK01	**Makanchi Array**	**60.71**	**314**	*e*P		**P**	**08 05 34.1**	**-0.5**
MK31	**Makanchi Array**	**60.72**	**314**	*e*P		**P**	**08 05 34.1**	**-0.5**
MK31	**Makanchi Array**	**60.72**	**314**	*e*P		**P**	**08 05 34.1**	**-0.5**
MKAR	**Makanchi Array**	**60.72**	**314**	P		**P**	**08 05 34.1**	**-0.5**
	comp=Z,1.9nm,0.6s,baz=92,slow=7.4,SNR=24							
MAKZ	**Makanchi**	**60.94**	**314**	*e*P		**P**	**08 05 35.8**	**-0.3**
MAKZ				pmax		pmax		
	comp=Z,20nm,1.7s							
MAKZ	**Makanchi**	**60.94**	**314**	*e*P		**P**	**08 05 35.8**	**-0.3**
	comp=Z,20nm,1.7s							
HOM	**Homer**	**61.07**	**31**	*e*P		**P**	**08 05 36.3**	**-0.3**
	comp=Z,68nm,1.0s							
CNPM	**China Poot**	**61.23**	**31**	*e*P		**P**	**08 05 37.8**	**0.0**
	comp=Z,20nm,0.9s							
NVS	**Novosibirsk**	**61.38**	**324**	*e*P		**P**	**08 05 38.3**	**-0.5**
BRLK	**Bradley Lake**	**61.47**	**31**	*e*P		**P**	**08 05 39.1**	**-0.3**
	comp=Z,85nm,1.9s							
PPLA	**Purkeypile**	**61.81**	**27**	*e*P		**P**	**08 05 42.7**	**+0.8**
	comp=Z,6.9nm,0.8s							
SUA	**Susitna One**	**62.02**	**29**	*e*P		**P**	**08 05 43.4**	**+0.2**
	comp=Z,18nm,1.3s							
CAST	**Castle Rocks**	**62.03**	**26**	*e*P		**P**	**08 05 43.7**	**+0.6**
	comp=Z,17nm,0.7s							
SEW	**Seward**	**62.26**	**30**	*e*P		**P**	**08 05 44.6**	**0.0**
	comp=Z,15nm,0.9s							
RC01	**Rabbit Creek A**	**62.38**	**29**	*e*P		**P**	**08 05 45.5**	**+0.1**
	comp=Z,18nm,0.9s							
PDGK	**Podgornoye**	**62.44**	**310**	P		**P**	**08 05 47.9**	**+1.7**
PDGK				pmax		pmax		
	comp=Z,18nm,0.9s							
KTH	**Kantishna Hill**	**62.57**	**26**	*e*P		**P**	**08 05 47.0**	**+0.3**
	comp=Z,29nm,0.9s							
PMR	**Palmer**	**62.80**	**29**	*e*P		**P**	**08 05 47.8**	**-0.4**
PMR				pmax		pmax		
	comp=Z,10.0nm,1.2s							
PMR	**Palmer**	**62.80**	**29**	*e*P		**P**	**08 05 47.8**	**-0.4**
	comp=Z,10.0nm,1.2s							
TRF	**Thorofare Moun**	**62.81**	**27**	*e*P		**P**	**08 05 48.3**	**-0.2**
	comp=Z,16nm,0.9s							
SML	**Sawmill**	**63.22**	**29**	*e*P		**P**	**08 05 51.3**	**+0.2**
SML				pmax		pmax		
	comp=Z,31nm,1.0s							
SML	**Sawmill**	**63.22**	**29**	*e*P		**P**	**08 05 51.3**	**+0.2**
	comp=Z,31nm,1.0s							
RND	**Reindeer**	**63.41**	**27**	*e*P		**P**	**08 05 51.9**	**-0.5**
RND				pmax		pmax		
	comp=Z,12nm,0.8s							
RND	**Reindeer**	**63.41**	**27**	*e*P		**P**	**08 05 51.9**	**-0.5**
	comp=Z,12nm,0.8s							
MCK	**McKinley**	**63.47**	**27**	*e*P		**P**	**08 05 52.4**	**-0.3**
MCK				pmax		pmax		
	comp=Z,6.0nm,0.8s							
MCK	**McKinley**	**63.47**	**27**	*e*P		**P**	**08 05 52.4**	**-0.3**
	comp=Z,6.4nm,0.8s							
SCM	**Sheep Creek Mo**	**63.69**	**29**	*e*P		**P**	**08 05 54.8**	**+0.6**
SCM				pmax		pmax		
	comp=Z,28nm,0.9s							
SCM	**Sheep Creek Mo**	**63.69**	**29**	*e*P		**P**	**08 05 54.8**	**+0.6**
	comp=Z,28nm,0.9s							
NRIK	**Noril'sk**	**63.76**	**340**	P		**P**	**08 05 55.0**	**+0.5**
	comp=Z,5.4nm,0.5s,baz=118,slow=9.1,SNR=9.0							
COLD	**Coldfoot**	**64.02**	**23**	*e*P		**P**	**08 05 57.0**	**+0.8**
	comp=Z,9.0nm,0.7s							
WRH	**Wood River Hil**	**64.03**	**26**	*e*P		**P**	**08 05 55.9**	**-0.4**
	comp=Z,14nm,0.7s							
EYAK	**Cordova Ski Ar**	**64.15**	**30**	*e*P		**P**	**08 05 57.5**	**+0.3**
	comp=Z,9.5nm,0.7s							
CCB	**Clear Creek Bu**	**64.19**	**26**	*e*P		**P**	**08 05 56.8**	**-0.6**
	comp=Z,13nm,1.4s							
COLA	**College**	**64.23**	**25**	*e*P		**P**	**08 05 58.3**	**+0.7**
COLA				pmax		pmax		
	comp=Z,11nm,0.7s							
COLA	**College**	**64.23**	**25**	*e*P		**P**	**08 05 58.3**	**+0.7**
	comp=Z,11nm,0.7s							
DIV	**Divide**	**64.26**	**30**	*e*P		**P**	**08 05 58.7**	**+0.7**
	comp=Z,9.7nm,1.0s							
KLU	**Klutina**	**64.27**	**29**	*e*P		**P**	**08 05 58.7**	**+0.7**
	comp=Z,10nm,1.0s							
ILAR	**Eielson Array**	**64.61**	**26**	P		**P**	**08 05 58.9**	**-1.2**
	comp=Z,8.7nm,0.8s,baz=248,slow=6.1,SNR=91							
ILB	**Eielson Array**	**64.61**	**26**	*e*P		**P**	**08 05 58.9**	**-1.2**
IL1	**Eielson Array**	**64.61**	**26**	*e*P		**P**	**08 05 58.6**	**-1.5**
BMRM	**Bremner River**	**64.79**	**30**	*e*P		**P**	**08 06 01.4**	**0.0**
	comp=Z,7.3nm,0.9s							
PAX	**Paxson**	**64.79**	**28**	*e*P		**P**	**08 06 01.7**	**+0.2**
PAX				pmax		pmax		
	comp=Z,10.0nm,0.7s							
PAX	**Paxson**	**64.79**	**28**	*e*P		**P**	**08 06 01.7**	**+0.2**
	comp=Z,10.0nm,0.7s							
KSH	**Kashi**	**65.07**	**306**	*e*P		P	08 06 08.2	+4.5
KSH				*e*pP		sP	08 06 21.6	-1.2
KSH				*e*sP		PcP	08 06 27.0	-9.3
KSH				*e*PP		**PP**	**08 08 33.8**	**+6.6**
KSH				S		**S**	**08 14 47.2**	**+4.3**
KSH				ScS		**ScS**	**08 15 55.6**	**+0.5**
KSH			

K05A	**Summer Lake**	80.09	48	*e*P		P	08 07 34.0	+1.0	
	comp=Z,14nm,1.0s								
ORV	**Oroville**	80.40	52	*e*P		P	08 07 34.9	+0.3	
ORV				pmax	pmax				
	comp=Z,9.0nm,1.0s								
ORV	**Oroville**	80.40	52	*e*P		P	08 07 34.9	+0.3	
	comp=Z,9.0nm,1.0s								
AFDM	**Forest Hills D**	80.95	52	*e*P		P	08 07 38.1	+0.6	
	comp=Z,6.3nm,0.9s								
NEW	**Newport**	81.26	42	P		P	08 07 39.5	+0.5	
	comp=Z,8.8nm,0.9s,baz=306,slow=3.6								
NEW	**Newport**	81.26	42	*e*P		P	08 07 39.6	+0.5	
NEW				pmax	pmax				
	comp=Z,13nm,1.0s								
NEW	**Newport**	81.26	42	*e*P		P	08 07 39.6	+0.5	
	comp=Z,13nm,1.0s								
CMB	**Columbia Colle**	81.62	53	*e*P		P	08 07 41.8	+0.6	
CMB				pmax	pmax				
	comp=Z,6.0nm,0.8s								
CMB	**Columbia Colle**	81.62	53	*e*P		P	08 07 41.8	+0.6	
	comp=Z,6.4nm,0.8s								
WVOR	**Wild Horse Val**	81.77	48	*e*P		P	08 07 42.2	+0.2	
WVOR				pmax	pmax				
	comp=Z,10.0nm,1.1s								
WVOR	**Wild Horse Val**	81.77	48	*e*P		P	08 07 42.2	+0.2	
	comp=Z,10nm,1.1s								
PAHR	**Pah Rah Range**	81.94	51	*e*P		P	08 07 43.8	+0.9	
	comp=Z,6.9nm,1.2s								
BMO	**Blue Mountains**	82.06	46	*e*P		P	08 07 43.6	+0.2	
BMO				pmax	pmax				
	comp=Z,12nm,1.2s								
BMO	**Blue Mountains**	82.06	46	*e*P		P	08 07 43.6	+0.2	
	comp=Z,12nm,1.2s								
EDM	**Edmonton**	82.14	37	*e*P		P	08 07 44.2	+0.6	
EDM				pmax	pmax				
	comp=Z,12nm,0.8s								
EDM	**Edmonton**	82.14	37	*e*P		P	08 07 44.2	+0.6	
	comp=Z,12nm,0.8s								
BSMT	**Bassoo Peak**	82.88	42	*e*P		P	08 07 48.5	+0.7	
BMN	**Battle Mountai**	83.34	50	*e*P		P	08 07 51.0	+0.8	
BMN				pmax	pmax				
	comp=Z,9.0nm,1.2s								
BMN	**Battle Mountai**	83.34	50	*e*P		P	08 07 51.0	+0.8	
	comp=Z,8.7nm,1.2s								
MFID	**Camas Ranch**	83.48	47	*e*P		P	08 07 51.1	+0.2	
	comp=Z,12nm,1.0s								
KLMR	**Klimovskoe**	83.69	332	*e*P		P	08 07 49.8	-1.5	
KLMR				*e*			08 11 01.5		
KLMR				pmax	pmax				
	comp=Z,9.0nm,1.1s								
SLMT	**Seeley Lake**	83.90	43	*e*P		P	08 07 53.0	0.0	
CHMT	**Chamberlain Mo**	84.16	43	*e*P		P	08 07 54.7	+0.4	
HLID	**Hailey**	84.42	46	*e*P		P	08 07 56.2	+0.6	
	comp=Z,4.5nm,1.0s								
ARA0	**ARCESS Array S**	84.61	343	*e*P		P	08 07 55.9	-0.1	
ARCES	**ARCESS Array B**	84.61	343	P		P	08 07 55.8	-0.1	
	comp=Z,3.1nm,0.6s,baz=47,slow=5.3,SNR=14								
ARE0	**ARCESS Array S**	84.61	343	*e*P		P	08 07 55.7	-0.2	
	comp=Z,10.0nm,0.9s								
ELK	**Elko**	84.69	49	*e*P		P	08 07 57.9	+0.7	
ELK				pmax	pmax				
	comp=Z,6.0nm,1.1s								
ELK	**Elko**	84.69	49	*e*P		P	08 07 57.9	+0.7	
	comp=Z,6.3nm,1.1s								
LRM	**Limekiln Ridge**	85.03	44	*e*P		P	08 07 59.1	+0.3	
TPNV	**Topopah Spring**	85.08	53	*e*P		P	08 07 59.2	0.0	
TPNV				pmax	pmax				
	comp=Z,3.0nm,0.9s								
TPNV	**Topopah Spring**	85.08	53	*e*P		P	08 07 59.1	0.0	
	comp=Z,3.2nm,0.9s								
DLMT	**Dillon**	85.08	44	*e*P		P	08 07 59.0	+0.1	
	comp=Z,2.2nm,0.8s								
MCMT	**McKenzie Canyo**	85.09	45	*e*P		P	08 07 59.3	+0.1	
HRY	**Holter Researc**	85.14	43	*e*P		P	08 08 00.0	+0.8	
R11A	**Troy Canyon, C**	85.16	52	*e*P		P	08 08 00.0	+0.4	
	comp=Z,4.1nm,1.0s								
SGF	**Sodankyl**	85.50	341	P		P	08 08 04.0	+3.6	
SGF				pmax	pmax				
	comp=Z,13nm,1.0s								
BOZ	**Bozeman (W)**	85.63	44	*e*P		P	08 08 02.1	+0.4	
BOZ				pmax	pmax				
	comp=Z,26nm,1.8s								
BOZ	**Bozeman (W)**	85.63	44	*e*P		P	08 08 02.1	+0.4	
	comp=Z,26nm,1.8s								
QLMT	**Earthquake Lak**	86.04	44	*e*P		P	08 08 04.1	+0.3	
SHPR	**Sheep Range**	86.05	53	*e*P		P	08 08 04.9	+1.0	
	comp=Z,4.0nm,1.3s								
HVU	**Hansel Valley**	86.13	48	*e*P		P	08 08 05.3	+1.0	
HVU				pmax	pmax				
	comp=Z,11nm,1.1s								
HVU	**Hansel Valley**	86.13	48	*e*P		P	08 08 05.3	+1.0	
	comp=Z,11nm,1.1s								
JOF	**Joensuu**	86.22	336	P		P	08 08 04.0	0.0	
JOF				pmax	pmax				
	comp=Z,7.0nm,1.2s								
YHB	**Horse Butte**	86.22	44	*e*P		P	08 08 06.1	+1.4	
	comp=Z,14nm,1.0s								
YMR	**Madison River**	86.41	44	*e*P		P	08 08 06.0	+0.3	
DUG	**Dugway, Tooele**	86.62	49	*e*P		P	08 08 07.2	+0.5	
DUG				pmax	pmax				
	comp=Z,9.0nm,1.1s								
DUG	**Dugway, Tooele**	86.62	49	*e*P		P	08 08 07.2	+0.5	
	comp=Z,8.5nm,1.1s								
IMW	**Indian Meadow**	86.69	45	*e*P		P	08 08 08.3	+1.2	
	comp=Z,8.5nm,0.9s								
FLWY	**Flagg Ranch**	86.79	45	*e*P		P	08 08 09.0	+1.5	
	comp=Z,12nm,0.8s								
SNOW	**Snow King Moun**	86.97	45	*e*P		P	08 08 07.8	-0.6	
	comp=Z,3.0nm,0.6s								
AHID	**Auburn Hatcher**	86.97	46	*e*P		P	08 08 09.1	+0.7	
	comp=Z,8.7nm,0.9s								
LOHW	**Long Hollow**	87.02	45	*e*P		P	08 08 08.8	+0.2	
	comp=Z,3.1nm,0.8s								
HWUT	**Hardware Ranch**	87.04	47	*e*P		P	08 08 09.2	+0.4	
	comp=Z,8.8nm,1.0s								
CCUT	**Cedar City**	87.08	52	*e*P		P	08 08 09.1	0.0	
	comp=Z,8.0nm,1.2s								
CTU	**Camp Tracy**	87.22	48	*e*P		P	08 08 09.1	-0.6	
	comp=Z,35nm,1.4s								
NLU	**North Lily Min**	87.24	49	*e*P		P	08 08 10.2	+0.4	
	comp=Z,5.1nm,1.0s								
LCMT	**Little Creek M**	87.35	52	*e*P		P	08 08 11.0	+0.7	
	comp=Z,4.0nm,1.2s								
RLMT	**Red Lodge**	87.38	44	*e*P		P	08 08 11.8	+1.4	
	comp=Z,5.7nm,0.9s								
JLU	**Jordanelle**	87.47	48	*e*P		P	08 08 10.2	-0.7	
	comp=Z,8.6nm,1.0s								
MSU	**Marysvale**	87.65	51	*e*P		P	08 08 11.4	-0.4	
MSU	**Marysvale**	87.65	51	*e*P		P	08 08 11.4	-0.4	
FFC	**Flin Flon**	87.81	33	*e*P		P	08 08 12.0	+0.1	
FFC				pmax	pmax				
	comp=Z,9.0nm,0.8s								
FFC	**Flin Flon**	87.81	33	*e*P		P	08 08 12.0	+0.1	
	comp=Z,8.6nm,0.8s								
BW06	**Boulder Array**	88.03	46	*e*P		P	08 08 13.4	-0.2	
PDAR	**Pinedale Array**	88.03	46	P		P	08 08 12.3	-1.2	
	comp=Z,0.6nm,0.6s,baz=278,slow=2.1,SNR=6.2								
TMUT	**Trail Mountain**	88.09	50	*e*P		P	08 08 14.6	+0.6	
	comp=Z,5.4nm,1.0s								
U15A	**North Rim**	88.26	52	*e*P		P	08 08 15.7	+0.9	
	comp=Z,4.9nm,1.0s								
KBZ	**Khabaz**	88.41	315	P		P	08 08 14.4	-0.6	
	comp=Z,3.2nm,0.9s,baz=100,slow=1.2,SNR=6.4								
KIV	**Kislovodsk**	88.47	316	*e*P		P	08 08 15.1	-0.3	
KIV				pmax	pmax				
	comp=Z,6.0nm,0.9s								
Y14A	**Wickenburg**	88.54	55	*e*P		P	08 08 16.2	+0.3	
	comp=Z,23nm,1.3s								
SRU	**San Rafael Swe**	88.66	50	*e*P		P	08 08 16.8	+0.3	
SRU				pmax	pmax				
	comp=Z,6.0nm,0.9s								
SRU	**San Rafael Swe**	88.66	50	*e*P		P	08 08 16.8	+0.3	
	comp=Z,6.0nm,0.9s								
FIA1	**FINESS Array S**	89.09	336	*e*P		P	08 08 16.7	-1.1	
	comp=Z,4.6nm,0.8s								
FINES	**FINESS Array B**	89.09	336	P		P	08 08 16.4	-1.3	
	comp=Z,2.9nm,0.7s,baz=80,slow=4.3,SNR=16								
WUAZ	**Wupatki**	89.27	53	*e*P		P	08 08 20.5	+1.0	
	comp=Z,8.1nm,1.1s								
PV09	**Paradox Valley**	89.89	50	*e*P		P	08 08 23.0	+0.6	
PV10	**Paradox Valley**	90.00	50	*e*P		P	08 08 23.4	+0.4	
PV01	**Paradox Valley**	90.44	50	*e*P		P	08 08 25.0	+0.1	
N23A	**Red Feather La**	91.24	47	*e*P		P	08 08 29.9	+1.2	
	comp=Z,12nm,1.0s								
ANMO	**Albuquerque**	93.22	52⇑	*e*P		P	08 08 38.6	+0.8	
ANMO				pmax	pmax				
	comp=Z,3.0nm,1.7s								
NOA	**NORSAR Array B**	94.72	340	P		P	08 08 43.7	-0.3	
	comp=Z,0.7nm,0.9s,baz=45,slow=4.4,SNR=2.3								
BRTR	**Keskin Array B**	96.37	315	P		P	08 08 49.4	-2.7	
	comp=Z,1.3nm,1.0s,baz=351,slow=1.6,SNR=4.5								
TXAR	**Lajitas Array**	97.64	56	P		P	08 08 57.6	-0.4	
	comp=Z,0.2nm,0.7s,baz=270,slow=4.5,SNR=3.1								
KECS	**Kecovo**	99.49	327	*i* P		Pdif	08 09 05.2	-0.5	
KECS	**Kecovo**	99.49	327	*e*PDIFF		Pdif	08 09 05.2	-0.5	
VYHS	**Vyhne**	100.33	328	*i* P		Pdif	08 09 12.2	+2.7	
VYHS	**Vyhne**	100.33	328	*e*L		L	08 12 58.5		
VYHS	**Vyhne**	100.33	328	*e*PDIFF		Pdif	08 09 12.2	+2.7	
SNAA	**Sanae**	122.47	191	*e*PKIKP		PKPdf	08 14 16.4	-0.9	
SNAA	**Sanae**	122.47	191	*e*PKPdf		PKPdf	08 14 16.4	-0.9	
TORD	**Torodi Ar. Bea**	134.68	309	PKP		PKPdf	08 14 41.3	-0.8	
	comp=Z,0.5nm,0.5s,baz=40,slow=4.8,SNR=2.7								
DBIC	**Dimbokro**	143.77	308	PKP		PKPbc	08 14 56.7	+0.3	
	comp=Z,1.4nm,0.4s,baz=53,slow=5.1,SNR=5.1								
LVC	**Limon Verde**	145.60	105	*e*PKPdf		PKPab	08 15 03.2	+0.5	
LPAZ	**La Paz**	146.16	94	PKPbc		PKPdf	08 15 03.2	-0.3	
LPAZ				*e*PKPdf		PKPbc	08 15 03.9	-0.6	
	comp=Z,2.5nm,0.7s,baz=328,slow=2.6,SNR=9.9								
LPAZ	**La Paz**	146.16	94	PKPbc		PKPdf	08 15 03.2	-0.3	
TRQA	**Tornquist**	146.86	135	*e*PKPbc		PKPbc	08 15 05.0	-0.2	
SAML	**Samuel**	149.37	79	*e*PKPbc		PKPbc	08 15 12.1	-0.5	

SJA 09 08:02:08.3±1.0, 31°44S×69°18W, h99km±7km, ML1.3, MW2.2,3D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
RTLS	**Leoncito**	0.38	196	*e*P		Pn	08 02 24.7	+1.1
RTLS				*e*S		Sn	08 02 37.3	+2.4
RTLL	**Cerro Villicun**	0.61	80	*e*P		Pn	08 02 25.6	+0.7
RTLL				⇓*e*S		Sn	08 02 38.0	+0.6
AMOG	**MOGNA**	0.77	50	*e*P		Pn	08 02 27.3	+0.9
AMOG				*e*S		Sn	08 02 41.1	+1.2
AUSP	**Uspallata**	0.81	193	*e*P		Pn	08 02 28.0	+1.0
AUSP				⇓*e*S		Sn	08 02 41.9	+1.0
ASAL	**Salagasta**	1.19	166	*e*P		Pn	08 02 31.7	+0.9
ASAL				⇓*e*S		Sn	08 02 49.5	+1.6
ARCO	**CERRO ARCO**	1.42	172	*e*P		Pn	08 02 34.6	+0.9
ARCO				IAML			08 02 35.0	
	comp=Z,3.0nm,0.2s							
ARCO				*e*S		Sn	08 02 54.6	+1.8

*ISCJB **09** 08:11:27.4±0.8, 36°.94N±0°.06×27°.52E±0°.07, h9km±7km, Error ellipse: s-maj=11.1km s-min=6.8km az=40.5*
*ISK **09** 08:11:27.6, 37°.02N×27°.36E, h16km, MD2.7*
*CSEM **09** 08:11:28.7±0.2, 37°.00N×27°.43E, h5km, MD2.7, Error ellipse: s-maj=5.7km s-min=4.9km az=22.0*
*DDA **09** 08:11:28.2, 36°.97N×27°.39E, h5km, Md2.5*
ISC 09 08:11:28.0±1.0, 37°.02N±0°.05×27°.55E±0°.04, h10km±7km, n15,σ1§34/22, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
BDRM	**Kayabasi**	0.10	299	*i* P		Pg	08 11 30.6	-0.1
BDRM				*i* S		Sg	08 11 32.6	0.0
BDRM	**Kayabasi**	0.10	299	P		Pg	08 11 30.6	-0.1
BDRM				S		Sg	08 11 32.6	0.0
BODT	**Bodrum**	0.20	283	*e*PG		Pg	08 11 31.2	-1.0
BODT				*e*SG		Sg	08 11 33.6	-1.5
BODT	**Bodrum**	0.20	283	*e*Pg		Pg	08 11 31.2	-1.0
BODT				*e*Sg		Sg	08 11 33.6	-1.5
NIS1	**Nisyros Isl.**	0.51	216	*e*PG		Pg	08 11 37.0	-1.0
NIS1	**Nisyros Isl.**	0.51	216	*e*Pg		Pg	08 11 37.0	-1.0
YER	**Yerkesik**	0.60	78	*e*PG		Pb	08 11 42.5	+1.9
YER	**Yerkesik**	0.60	78	*e*Pg		Pb	08 11 42.5	+1.9
GCAM	**G?zelcaml?**	0.73	340	*i* P		Pb	08 11 43.0	+0.2
GCAM				*i* S		Sn	08 11 55.2	-0.4
GCAM	**G?zelcaml?**	0.73	340	P		Pb	08 11 43.0	+0.2
GCAM				S		Sn	08 11 55.2	-0.4
TURN	**Turunc**	0.85	99	*i* P		Pg	08 11 41.5	-2.9
TURN				*i* S		Sg	08 11 54.2	-1.4
DALY	**Dalyan (Mu¨la**	0.90	102	*e*PG		Pn	08 11 48.3	+1.5
DALY	**Dalyan (Mu¨la**	0.90	102	*e*Pg		Pn	08 11 48.3	+1.5
AYDB	**Zeytinkoy-Aydi**	0.97	16	*e*PG		Pb	08 11 47.5	+0.5
AYDB	**Zeytinkoy-Aydi**	0.97	16	*e*Pg		Pb	08 11 47.5	+0.5

IDC 09 08:12:32.8±8.9, 23°.02S×177°.02W, h553km±94km, mb3.0/5, mb1 3.2/5, mb1mx2.9/31, mbtmp3.9/5, Error ellipse: s-maj=48.1km s-min=29.2km az=59.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ASAR	**Alice Springs**	44.89	259	P		P	08 19 59.5	+0.9
	1.1nm,0.5s,baz=94,slow=7.6,SNR=18							
WRA	**Warramunga Arr**	45.21	264	P		P	08 19 59.9	-1.3
	0.9nm,0.3s,baz=97,slow=7.7,SNR=42							
VNDA	**Vanda**	55.50	185	P		P	08 21 15.1	-0.1
	0.3nm,0.4s,baz=354,slow=6.7,SNR=5.9							
SEY	**Seymchan**	89.03	347	P		P	08 24 28.9	+0.4
	1.2nm,0.7s,baz=161,slow=3.2,SNR=4.9							
ILAR	**Eielson Array**	90.56	12	P		P	08 24 35.6	0.0
	0.2nm,0.5s,baz=216,slow=4.9,SNR=5.1							
HFS	**Hagfors**	142.16	351	PKP		PKPdf	08 30 59.3	-2.5
	1.6nm,0.9s,baz=92,slow=4.5,SNR=6.3							
AKASG	**Malin Array Be**	145.65	330	PKPbc		PKPbc	08 31 08.9	-0.8
	1.5nm,0.4s,baz=45,slow=4.3,SNR=6.4							
BRTR	**Keskin Array B**	149.18	310	PKPbc		PKPbc	08 31 19.1	-0.4
	0.6nm,0.5s,baz=116,slow=3.4,SNR=3.0							
MMAI	**Mount Meron Ar**	149.80	296	PKPbc		PKPbc	08 31 21.3	+0.2
	0.4nm,0.3s,baz=132,slow=4.1,SNR=3.2							

*ISCJB **09** 08:13:05.3±0.9, 37°.27N±0°.03×141°.29E±0°.05, h1km±5km, mb3.8/13, Error ellipse: s-maj=6.8km s-min=4.5km az=29.6*
*IDC **09** 08:13:06.4±0.8, 37°.24N×141°.14E, h0km, mb3.8/13, mb1 3.9/14, mb1mx3.7/66, mbtmp3.8/14, ML3.4/1, Error ellipse: s-maj=23.2km s-min=18.2km az=109.0*
*JMA **09** 08:13:07.5±0.1, 37°.29N×141°.17E, h14km±1km, M3.7*
JMA Felt I J1.
ISC 09 08:13:06.7±1.6, 37°.27N±0°.04×141°.19E±0°.06, h5km±9km, n33,σ1§15/36, mb3.8/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JFK	**Kawauchi**	0.27	290	P		Pg	08 13 12.7	+0.7
JFK				S		Sg	08 13 16.7	+1.2
ONAJ	**Iwakimizuishiy**	0.36	242	P		Pb	08 13 14.4	-1.2
ONAJ				S		Sb	08 13 19.7	-1.9
JMM	**Marumori**	0.67	332	P		Pg	08 13 19.7	+0.1
JMM				S		Sg	08 13 28.8	+0.5
JFT	**Otama**	0.72	290	P		Pb	08 13 21.1	-0.7
JFT				S		Sb	08 13 31.0	-1.1
JHO	**Hitachi**	0.83	217	P		Pg	08 13 22.6	0.0
JHO				S		Sb	08 13 34.2	-0.8
JSB	**Shiboa**	1.06	254	P		Pn	08 13 27.8	-0.5
JSB				S		Sn	08 13 42.1	-1.4
JOU	**Okura**	1.17	339	P		Pg	08 13 28.6	-0.5
JOU				S		Sg	08 13 44.3	0.0
JIO	**Ouri**	1.19	6	P		Pg	08 13 28.3	-1.2
JIO				S		Sg	08 13 44.3	-0.6
JFY	**Yanaizu**	1.19	277	P		Pb	08 13 29.4	-0.4
JFY				S		Sb	08 13 45.2	-0.4
MJAR	**Matsushiro Arr**	2.50	254	Pn		Pn	08 13 49.5	+1.4
	8.7nm,0.3s,baz=82,slow=16,SNR=48							
MJAR				Sn		Sb	08 14 21.6	-1.6
	13nm,0.3s,baz=86,slow=28,SNR=9.6							
MAT	**Matsushiro**	2.50	254	P		Pn	08 13 49.0	+0.9
MAT				S		Sb	08 14 23.2	0.0
USRK	**Ussuriysk Ar.**	9.83	318	Pn		Pn	08 15 33.6	+5.0
	0.1nm,0.3s,baz=123,slow=12,SNR=6.2							
KSRS	**Korea Array**	10.56	275	Pn		Pn	08 15 43.8	+5.0
	0.1nm,0.3s,baz=98,slow=13,SNR=6.8							
MA2	**Magadan**	23.16	12	P		P	08 18 14.1	+0.3
	2.7nm,0.6s,baz=196,slow=13,SNR=4.3							
SEY	**Seymchan**	26.59	11	P		P	08 18 47.3	+1.7
	0.6nm,0.3s,baz=179,slow=7.7,SNR=5.9							
H11N2	**WAKE ISLAND Hy**	28.42	121	T		T	08 48 45.1	
	baz=314,slow=75,SNR=321							
H11N1	**WAKE ISLAND Hy**	28.43	121	T		T	08 48 45.8	
	baz=314,slow=75,SNR=449							
H11N3	**WAKE ISLAND Hy**	28.44	121	T		T	08 48 46.4	
	baz=314,slow=75,SNR=354							
H11S1	**WAKE ISLAND Hy**	29.14	123	T		T	08 49 46.8	
	baz=315,slow=75,SNR=79							
H11S3	**WAKE ISLAND Hy**	29.14	123	T		T	08 49 38.8	
	baz=315,slow=75,SNR=78							
H11S2	**WAKE ISLAND Hy**	29.15	123	T		T	08 49 40.3	
	baz=315,slow=75,SNR=38							
ZALV	**Zalesovo Beam**	41.62	312	P		P	08 20 55.0	-0.6
	1.4nm,0.7s,baz=102,slow=6.8,SNR=5.5							
MKAR	**Makanchi Array**	43.84	302	P		P	08 21 13.3	-0.5
	1.1nm,0.7s,baz=88,slow=9.4,SNR=12							
ILAR	**Eielson Array**	49.39	32	P		P	08 21 57.2	+0.2
	0.8nm,0.8s,baz=270,slow=6.5,SNR=9.9							
WRA	**Warramunga Arr**	57.27	188	P		P	08 22 54.5	-0.9
	0.7nm,0.9s,baz=5.3,slow=7.3,SNR=7.3							
ASAR	**Alice Springs**	61.00	188	P		P	08 23 22.4	+1.3
	0.5nm,0.9s,baz=18,slow=13,SNR=4.2							
ARCES	**ARCESS Array B**	63.71	339	P		P	08 23 41.2	+2.4
	0.9nm,0.8s,baz=61,slow=7.5,SNR=3.7							
FINES	**FINESS Array B**	68.52	332	P		P	08 24 08.9	-0.9
	1.3nm,0.6s,baz=46,slow=11,SNR=6.0							
HFS	**Hagfors**	73.80	336	P		P	08 24 43.3	+1.5
	0.5nm,0.5s,baz=77,slow=6.5,SNR=3.6							
NOA	**NORSAR Array B**	73.90	337	P		P	08 24 44.9	+2.4
	0.5nm,0.6s,baz=41,slow=5.9,SNR=3.8							
PDAR	**Pinedale Array**	77.62	45	P		P	08 25 05.1	+0.7
	0.3nm,0.6s,baz=291,slow=7.6,SNR=2.6							
BRTR	**Keskin Array B**	78.56	311	P		P	08 25 08.1	-1.4
	0.5nm,0.5s,baz=132,slow=2.1,SNR=3.7							
LPAZ	**La Paz**	146.72	59	PKPbc		PKPbc	08 32 50.9	-0.1
	0.6nm,0.5s,baz=339,slow=7.2,SNR=3.3							

*ISCJB **09** 08:14:27.2±0.7, 35°.88N±0°.05×140°.91E±0°.09, h48km±4km, mb3.8/10, MS3.7/1, Error ellipse: s-maj=13.1km s-min=7.0km az=163.1*
*JMA **09** 08:14:28.1±0.1, 35°.90N×140°.82E, h40km±1km, M3.4*
*IDC **09** 08:14:30.6±2.8, 35°.82N×140°.72E, h59km±23km, mb3.6/10, mb1 3.6/13, mb1mx3.4/72, mbtmp3.8/13, ML3.6/2, MS3.6/1, Ms1 3.6/1, ms1mx2.9/55, Error ellipse: s-maj=33.7km s-min=11.6km az=77.0*
ISC 09 08:14:28.6±1.0, 35°.92N±0°.05×140°.99E±0°.07, h36km±1km, n18,σ1§63/22, mb3.9/10, 1C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CHOJ	**Chosi**	0.24	206	⇑P		Pn	08 14 35.1	-1.7
CHOJ				S		Sn	08 14 41.0	-3.1
JYT	**Yasato**	0.71	296	⇓P		Pn	08 14 40.1	-2.0
JYT				S		Sn	08 14 49.1	-2.7
JHO	**Hitachi**	0.77	334	P		Pn	08 14 42.3	-0.5
JHO				S		Sn	08 14 52.5	-0.7
MJAR	**Matsushiro Arr**	2.33	286	P		Pn	08 15 04.0	-0.4
	19nm,0.3s,baz=104,slow=8.3,SNR=9.4							
MAT	**Matsushiro**	2.33	286	P		Pn	08 15 04.3	-0.1
MAT				*e*S		Sn	08 15 31.0	-0.8
JHJ	**Hachijo jima 2**	2.97	200	P		Pn	08 15 12.5	-0.6
	21nm,0.3s,baz=106,slow=20,SNR=9.2							
JHJ				S		Sn	08 15 46.0	-1.5
	54nm,0.3s,baz=179,slow=23,SNR=10							
USRK	**Ussuriysk Ar.**	10.76	323	P		Pn	08 17 02.0	+2.0
	0.1nm,0.3s,baz=148,slow=13,SNR=3.2							
SONM	**Songino Array**	28.14	306	P		P	08 20 16.7	-0.6
	0.8nm,0.6s,baz=96,slow=12,SNR=2.7							
ZALV	**Zalesovo Beam**	42.42	313	P		P	08 22 19.3	-0.1
	0.6nm,0.3s,baz=101,slow=9.1,SNR=3.4							
MKAR	**Makanchi Array**	44.43	303	P		P	08 22 34.6	-1.2
	2.2nm,0.6s,baz=87,slow=10.0,SNR=16							
KURBB	**Kurchatov Arra**	46.42	309	P		P	08 22 49.2	-2.2
	1.8nm,0.4s,baz=85,slow=7.7,SNR=9.2							
ILAR	**Eielson Array**	50.62	32	P		P	08 23 24.8	+1.3
	0.3nm,0.7s,baz=270,slow=5.9,SNR=4.1							
BVAR	**Borovoye Array**	51.07	313	P		P	08 23 25.5	-1.7
	1.2nm,0.5s,baz=86,slow=9.1,SNR=6.0							
WRA	**Warramunga Arr**	55.91	188	P		P	08 24

CKHZ				AML	AML	08 21 53.1		
BHHZ	**Black Hill Sta**	**2.45**	**205**	PN	**Pn**	**08 21 18.1**	**+0.9**	
MOVZ	**Moawhango**	**2.49**	**210**	PN	**Pn**	**08 21 18.7**	**+0.9**	
KRHZ	**Kereru**	**2.50**	**198**	PN	**Pn**	**08 21 18.3**	**+0.4**	
KRHZ				AML	AML	08 21 51.2		
KRHZ				AML	AML	08 21 52.3		
KAHZ	**Kahuranaki**	**2.55**	**189**	PN	**Pn**	**08 21 19.5**	**+0.9**	
KAHZ				AML	AML	08 21 54.1		
KAHZ				AML	AML	08 21 55.0		
PXZ	**Pawanui**	**2.79**	**188**	⇑PN	**Pn**	**08 21 21.6**	**+0.3**	
PXZ				AML	AML	08 21 57.9		
PXZ				AML	AML	08 21 57.9		
PXZ				AML	AML	08 21 58.6		
PXZ				AML	AML	08 21 58.6		
PNHZ	**Pukenui**	**2.80**	**199**	PN	**Pn**	**08 21 21.9**	**+0.3**	
PNHZ				AML	AML	08 21 57.6		
PNHZ				AML	AML	08 22 00.0		
WPHZ	**Waipukurau**	**2.89**	**194**	AML	AML	08 22 01.5		
WPHZ				AML	AML	08 22 04.5		
TSZ	**Takapari Road**	**3.00**	**201**	PN	**Pn**	**08 21 24.2**	**+0.1**	
ANWZ	**Angora Road**	**3.26**	**192**	PN	**Pn**	**08 21 27.5**	**0.0**	
ANWZ				AML	AML	08 22 09.3		
ANWZ				AML	AML	08 22 09.6		
PRWZ	**Pori Road**	**3.46**	**198**	AML	AML	08 22 13.5		
PRWZ				AML	AML	08 22 15.4		
BFZ	**Birch Farm**	**3.52**	**194**	PN	**Pn**	**08 21 30.4**	**-0.4**	
BFZ				AML	AML	08 22 13.5		
BFZ				AML	AML	08 22 13.6		
BFZ				AML	AML	08 22 15.3		
MRZ	**Mangatainoka R**	**3.67**	**202**	PN	**Pn**	**08 21 31.9**	**-0.7**	
MRZ				SN	**Sn**	**08 22 14.3**	**-1.8**	
MRZ				AML	AML	08 22 16.8		
HOWZ	**Holdsworth Sta**	**3.90**	**201**	PN	**Pn**	**08 21 34.3**	**-1.4**	
OGWZ	**Otaki Gorge**	**3.94**	**205**	PN	**Pn**	**08 21 35.5**	**-0.6**	
OGWZ				AML	AML	08 22 23.2		
OGWZ				AML	AML	08 22 52.3		
CAW	**Cannon Point**	**4.23**	**204**	PN	**Pn**	**08 21 38.7**	**-1.3**	
TRWZ	**Traveller**	**4.33**	**197**	PN	**Pn**	**08 21 40.0**	**-1.2**	
MSWZ	**Moikau Station**	**4.46**	**201**	PN	Pn	08 21 41.3	-1.7	
PLWZ	**Palliser**	**4.60**	**200**	PN	Pn	08 21 42.9	-1.9	
TCW	**Tory Channel**	**4.61**	**210**	PN	**Pn**	**08 21 43.5**	**-1.5**	
TUWZ	**Tuamarina**	**4.94**	**212**	PN	**Pn**	**08 21 47.6**	**-1.7**	
NNZ	**Nelson**	**5.02**	**217**	*e*PN	**Pn**	**08 21 48.6**	**-1.7**	
BSWZ	**Blackbirch Sta**	**5.20**	**210**	PN	**Pn**	**08 21 51.8**	**-1.0**	
KHZ	**Kahutara**	**5.93**	**209**	PN	Pn	08 22 00.2	-2.2	
RAO	**Raoul Island**	**8.91**	**28**	LR	LR	08 26 16.6		
	comp=Z,292nm,19.4s,baz=351,slow=36							
ASAR	**Alice Springs**	**39.51**	**277**	P	**P**	**08 27 54.6**	**+1.7**	
	0.3nm,0.7s,baz=119,slow=8.4,SNR=5.1							
WRA	**Warramunga Arr**	**41.15**	**283**	P	**P**	**08 28 07.0**	**+0.5**	
	0.2nm,0.3s,baz=121,slow=8.2,SNR=9.6							
AKASG	**Malin Array Be**	**153.68**	**311**	PKPbc	**PKPab**	**08 40 30.9**	**+0.3**	
	0.9nm,0.5s,baz=101,slow=1.9,SNR=4.5							

*GUC **09** 08:25:48.6±0.4, 33°.81S×71°.86W, h20km±3km, ML2.5*
ISC 09 08:25:48.4±2.0, 33°.81S±0°.06×71°.84W±0°.08, h17km±13km, n15, σ1$41/26, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.60**	**193**	*i* P		**Pb**		**08 25 60.0**	**-0.4**
CHPI				*i* S		**Sb**		**08 26 08.4**	**-0.1**
ANTU	**Antumapu**	**1.04**	**77**	*i* P		**Pb**		**08 26 07.4**	**-0.5**
ANTU				*i* S		**Sn**		**08 26 21.8**	**-0.5**
ANTU				IAML				08 26 23.8	
	comp=N,254nm,0.2s								
ROC1	**El Roble**	**1.08**	**40**	*e*P		**Pb**		**08 26 08.7**	**-0.1**
ROC1				⇓*e*S		**Sg**		**08 26 25.8**	**+2.2**
ROCH	**El Roble**	**1.09**	**40**	*i* P		**Pb**		**08 26 08.6**	**-0.2**
ROCH				*i* S		**Sn**		**08 26 23.9**	**+0.1**
ROCH				IAML				08 26 29.9	
	comp=N,234nm,0.6s								
CLCH	**Cerro Calan**	**1.17**	**70**	*i* P		**Pn**		**08 26 09.7**	**-0.3**
CLCH				*i* S		**Sb**		**08 26 25.3**	**+0.3**
CLCH				IAML				08 26 32.7	
	comp=N,142nm,0.2s								
PEL	**Peldehue**	**1.17**	**56**	*i* P		**Pn**		**08 26 09.6**	**-0.5**
PEL				*i* S		**Sn**		**08 26 25.6**	**-0.1**
FCH	**Farellones**	**1.38**	**70**	*i* P		**Pn**		**08 26 13.6**	**+0.4**
FCH				*i* S		**Sg**		**08 26 32.9**	**-0.3**
FCH				IAML				08 26 37.6	
	comp=E,177nm,0.2s								
AUSP	**Uspallata**	**2.60**	**53**	*e*P		**Pb**		**08 26 34.7**	**0.0**
AUSP				*e*S		**Sg**		**08 27 11.1**	**-0.9**
ARCO	**CERRO ARCO**	**2.62**	**69**	*e*P		**Pb**		**08 26 35.4**	**+0.4**
ARCO				IAML				08 26 41.1	
	comp=Z,18nm,0.4s								
ARCO				*e*S		**Sg**		**08 27 14.9**	**+2.2**
AAGR	**Agrelo**	**2.62**	**75**	*e*P		**Pb**		**08 26 35.5**	**+0.5**
ASAL	**Salagasta**	**2.80**	**65**	*e*P		**Pb**		**08 26 37.9**	**-0.1**
ASAL				*e*S		**Sg**		**08 27 16.6**	**-1.8**
RTLS	**Leoncito**	**2.94**	**48**	*e*P		**Pb**		**08 26 40.4**	**0.0**
RTLS				*e*S		**Sg**		**08 27 20.6**	**-2.2**
RTLL	**Cerro Villicun**	**3.77**	**50**	*e*P		**Pb**		**08 26 50.4**	**-4.1**
RTLL				*e*S		**Sb**		**08 27 30.4**	**+0.5**
AMOG	**MOGNA**	**4.03**	**46**	*e*P		**Pn**		**08 26 51.9**	**+2.6**
AVFE	**Valle Fertil**	**4.87**	**51**	*e*P		Pb		08 27 08.5	-4.7
AVFE				IAML				08 28 14.2	
	comp=Z,2.8nm,0.3s								

IDC 09 08:33:08.5±1.8, 24°.84S×175°.48W, h0km, mb3.9/6, mb1 4.2/6, mb1mx3.9/27, mbtmp3.9/6, Error ellipse: s-maj=77.1km s-min=26.3km az=151.0, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.23**	**249**	P		P		08 40 31.3	+0.9
	1.0nm,0.6s,baz=94,slow=11,SNR=4.2								
ASAR	**Alice Springs**	**45.95**	**260**	P		P		08 41 33.1	-0.5
	0.6nm,0.5s,baz=94,slow=6.8,SNR=16								
WRA	**Warramunga Arr**	**46.45**	**266**	P		P		08 41 36.6	-0.9
	1.4nm,0.5s,baz=104,slow=8.2,SNR=10								
MJAR	**Matsushiro Arr**	**75.06**	**323**	P		P		08 44 52.7	+0.5
	1.4nm,0.7s,baz=161,slow=5.7,SNR=4.1								
TXAR	**Lajitas Array**	**87.48**	**56**	P		P		08 45 58.5	0.0
	0.6nm,1.0s,baz=197,slow=3.9,SNR=4.6								
ILAR	**Eielson Array**	**92.04**	**12**	P		P		08 46 18.3	-0.5
	0.4nm,0.8s,baz=220,slow=5.5,SNR=4.2								
AKASG	**Malin Array Be**	**147.92**	**330**	PKPbc		PKPbc		08 52 54.0	-1.5
	0.3nm,0.3s,baz=41,slow=3.6,SNR=4.3								
BRTR	**Keskin Array B**	**151.41**	**308**	PKPbc		PKPbc		08 53 05.0	+0.3
	1.7nm,1.0s,baz=174,slow=1.1,SNR=6.2								

IDC 09 08:50:37.2±4.4, 28°.53S×177°.07W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.7/29, mbtmp3.8/3, Error ellipse: s-maj=99.5km s-min=29.8km az=118.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.04**	**226**	Pn		Pn		08 50 59.2	+0.2
	439nm,0.3s,baz=59,slow=17,SNR=15								
RAO				Sn		Sn		08 51 15.2	+1.0
	827nm,0.3s,baz=84,slow=18,SNR=9.2								
STKA	**Stephens Creek**	**35.73**	**254**	P		P		08 57 37.1	-0.7
	1.1nm,0.8s,baz=98,slow=15,SNR=2.4								
ASAR	**Alice Springs**	**44.06**	**265**	P		P		08 58 47.1	0.0
	0.8nm,0.6s,baz=98,slow=6.9,SNR=12								
WRA	**Warramunga Arr**	**44.88**	**270**	P		P		08 58 53.8	0.0
	1.7nm,0.8s,baz=110,slow=8.0,SNR=11								
FINES	**FINESS Array B**	**143.65**	**341**	PKP		PKPdf		09 10 13.2	-0.2
	2.2nm,0.9s,baz=73,slow=4.8,SNR=7.7								

*ISCJB **09** 08:51:11.7±0.6, 15°.35S±0°.07×71°.87W±0°.08, h133km, mb3.7/7, Error ellipse: s-maj=13.9km s-min=6.9km az=139.7*
*IDC **09** 08:51:13.2±2.1, 15°.11S×71°.59W, h114km±19km, mb3.5/6, mb1 3.8/11, mb1mx3.6/41, mbtmp4.0/11, MS4.2/2, Ms1 4.2/2, ms1mx3.1/21, Error ellipse: s-maj=29.7km s-min=16.1km az=28.0*
ISC 09 08:51:13.7±0.6, 15°.40S±0°.08×71°.94W±0°.08, h133km, n22, σ2$05/22, mb3.9/7, Southern Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**3.77**	**104**	P		**Pn**		**08 52 13.3**	**+2.2**
	5.4nm,0.3s,baz=319,slow=8.3,SNR=166								
LPAZ				S		**Sn**		**08 52 58.7**	**+3.2**
	1.1nm,0.3s,baz=179,slow=15,SNR=5.0								
NNA	**Nana**	**5.85**	**305**	P		**Pn**		**08 52 38.7**	**+0.4**
	6.9nm,0.3s,baz=171,slow=4.2,SNR=16								
NNA				S		**Sn**		**08 53 41.4**	**-2.9**
	7.5nm,0.3s,baz=20,slow=12,SNR=8.6								
LVC	**Limon Verde**	**7.72**	**159**	P		**Pn**		**08 53 05.4**	**+1.7**
	203nm,0.3s,baz=18,slow=6.7,SNR=93								
LVC				S		**Sn**		**08 54 29.0**	**-0.9**
	432nm,0.3s,baz=188,slow=21,SNR=20								
SIV	**San Ignacio**	**10.49**	**95**	P		**Pn**		**08 53 37.9**	**-2.7**
	0.5nm,0.3s,baz=270,slow=20,SNR=10.0								
CPUP	**Villa Florida**	**17.44**	**131**	P		**P**		**08 55 07.4**	**-0.6**
	0.1nm,0.3s,baz=325,slow=12,SNR=6.2								
PTGA	**Pitinga**	**18.77**	**40**	P		**P**		**08 55 19.7**	**-3.0**
	0.9nm,0.3s,baz=21,slow=8.6,SNR=9.2								
BDFB	**Brasilia**	**23.06**	**94**	P		**P**		**08 56 06.0**	**-1.8**
	2.3nm,0.4s,baz=258,slow=7.7								
PLCA	**Paso Flores**	**25.27**	**178**	P		**P**		**08 56 25.9**	**-1.7**
	4.1nm,1.1s,baz=43,slow=6.1,SNR=3.1								
TXAR	**Lajitas Array**	**54.00**	**325**	P		**P**		**09 00 25.4**	**+1.0**
	0.3nm,0.6s,baz=148,slow=7.8,SNR=4.7								
TXAR				LR		LR		09 23 21.5	
	comp=Z,196nm,18.1s,baz=0.0,slow=36								
PDAR	**Pinedale Array**	**67.42**	**331**	P		**P**		**09 01 56.2**	**+1.1**
	0.3nm,0.5s,baz=126,slow=10,SNR=2.8								
TORD	**Torodi Ar. Bea**	**78.17**	**73**	P		**P**		**09 02 57.0**	**-1.9**
	1.6nm,0.7s,baz=244,slow=4.8,SNR=7.4								
RAR	**Rarotonga**	**82.58**	**250**	LR		LR		09 30 45.5	
	comp=Z,116nm,21.6s,baz=70,slow=29								
ESDC	**Sonseca Array**	**83.61**	**46**	P		**P**		**09 03 26.4**	**-1.0**
	0.9nm,0.6s,baz=252,slow=5.1,SNR=8.5								
YKA	**Yellowknife Ar**	**84.52**	**342**	P		**P**		**09 03 31.8**	**+0.5**
	1.3nm,0.7s,baz=135,slow=5.1,SNR=12								
WRA	**Warramunga Arr**	**136.39**	**217**	PKP		**PKPdf**		**09 10 23.3**	**+2.7**
	0.6nm,0.8s,baz=148,slow=1.9,SNR=4.4								
ZALV	**Zalesovo Beam**	**137.46**	**20**	PKP		**PKPdf**		**09 10 23.1**	**+1.6**
	1.2nm,0.7s,baz=276,slow=4.3,SNR=4.6								
KURBB	**Kurchatov Arra**	**137.57**	**28**	PKP		**PKPdf**		**09 10 23.9**	**+2.1**
	0.3nm,0.3s,baz=55,slow=3.5,SNR=3.3								
MKAR	**Makanchi Array**	**142.06**	**29**	PKhKP		PKPpre		09 10 27.1	
	0.2nm,0.4s,baz=347,slow=5.0,SNR=3.6								
USRK	**Ussuriysk Ar.**	**144.83**	**330**	PKP		PKPbc		09 10 35.8	+1.4
	0.5nm,0.4s,baz=36,slow=6.6,SNR=3.0								
MJAR	**Matsushiro Arr**	**145.91**	**314**	PKPbc		**PKPbc**		**09 10 39.1**	**+1.1**
	1.6nm,0.6s,baz=63,slow=1.3,SNR=8.0								
SONM	**Songino Array**	**147.63**	**2**	PKPbc		**PKPbc**		**09 10 44.3**	**+1.6**
	2.1nm,0.7s,baz=315,slow=2.1,SNR=6.9								
KSRS	**Korea Array**	**151.85**	**325**	PKPbc		**PKPbc**		**09 10 55.5**	**+2.3**
	2.0nm,0.7s,baz=10,slow=1.5,SNR=7.6								

*SOME **09** 09:10:31.4, 44°.70N×82°.07E, h15km*
*NNC **09** 09:10:34.1±1.1, 44°.87N×81°.87E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=15.5km s-min=4.6km az=117.0*
ISC 09 09:10:33.0±3.5, 44°.80N±0°.06×82°.08E±0°.10, h12km±29km, n10, σ1$04/19, 8C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.70**	**255**	*e*P		**Pn**		**09 11 02.4**	**-0.2**
	36nm,0.3s								
DJR				*e*S		**Sn**		**09 11 24.6**	**+0.3**
	41nm,0.4s								
KAPS	**Kapalarasan**	**1.99**	**285**	*e*P		**Pn**		**09 11 07.7**	**+1.3**
	14nm,0.4s								
KAPS				*e*S		**Sb**		**09 11 34.1**	**+0.3**
	17nm,0.6s								
MK31	**Makanchi Array**	**2.00**	**4**	⇑Pn		**Pb**		**09 11 08.2**	**-1.1**
	8.3nm,0.4s,baz=186,slow=14								
MK31				⇓Sn		**Sb**		**09 11 34.9**	**+0.9**
	7.8nm,0.4s,baz=189,slow=28								
MAKZ	**Makanchi**	**2.01**	**358**	⇑Pn		**Pn**		**09 11 08.0**	**+1.3**
	4.9nm,0.3s								
MAKZ				⇓Sn		**Sb**		**09 11 34.9**	**+0.6**
	14nm,0.6s								
SHLS	**Shalkode**	**2.29**	**225**	*e*P		**Pn**		**09 11 12.1**	**+1.4**
	22nm,0.3s								
SHLS				*e*S		**Sb**		**09 11 41.5**	**-1.1**
	66nm,0.4s								
PDGK	**Podgornoye**	**2.38**	**233**	⇓Pn		**Pn**		**09 11 12.6**	**+0.8**
	13nm,0.6s								
PDGK				⇑Sn		**Sb**		**09 11 44.4**	**-0.7**
	21nm,0.5s								
ZHN	**Zhinishke**	**3.10**	**239**	*e*P		**Pb**		**09 11 26.8**	**-1.3**
	7.4nm,0.2s								
ZHN				*e*S		**Sb**		**09 12 06.1**	**+0.3**
	10nm,0.3s								
ARXS	**Arharly**	**3.10**	**261**	*e*P		**Pb**		**09 11 27.2**	**-0.9**
	11nm,0.3s								
ARXS				*e*S		**Sb**		**09 12 05.9**	**+0.1**
	22nm,0.5s								
TKM2	**Tokmak 2**	**5.05**	**250**	⇑Pg		**Pb**		**09 12 02.7**	**+1.3**
	2.8nm,0.6s								
TKM2				⇑Lg		Lg		09 13 10.1	
	4.2nm,0.8s								
KURBB	**Kurchatov Arra**	**6.29**	**339**	⇑Pn		**Pn**		**09 12 05.3**	**-0.3**
	0.9nm,0.4s								
KURBB				⇑Sn		**Sn**		**09 13 15.8**	**-1.5**
	3.0nm,0.6s								
KURBB				⇑Lg		Lg		09 13 49.0	
	7.0nm,0.8s								

*NEIC **09** 09:13:36.4, 14°.31N×92°.92W, h20km, MD4.3(MEX), After MEX.*
MEX 09 09:13:36.3±0.6, 14°.32N×92°.93W, h19km±131km, MD4.3, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.10**	**21**	*e*P		Pn		09 14 08.6	-1.9
CCIG				*i* S		Sn		09 14 32.5	-3.7
CCIG	**Comitan**	**2.10**	**21**	*e*P		Pn		09 14 09.0	-1.6
CCIG				*i* S		Sn		09 14 33.4	-2.9
HUIG	**Huatulco**	**3.39**	**296**	*e*P		Pn		09 14 25.3	-2.9
HUIG				*e*S		Sn		09 15 03.8	-4.1
HUIG	**Huatulco**	**3.39**	**296**	*e*P		Pn		09 14 24.1	-4.0
VHO	**Vista Hermosa**	**4.57**	**307**	*e*P		Pn		09 14 42.2	-2.4
VHO	**Vista Hermosa**	**4.57**	**307**	*e*P		Pn		09 14 42.2	-2.4
TEIG	**Tepich**	**7.37**	**36**	*e*Pn		Pn		09 15 20.7	-2.2
	2.4nm,0.3s								

*GUC **09** 09:17:19.5±0.3, 34°.04S×71°.98W, h33km±3km, ML3.0*
*ISCJB **09** 09:17:20.0±1.0, 34°.06S±0°.04×72°.0W±0°.1, h25km±9km, Error ellipse: s-maj=14.4km s-min=6.5km az=10.2*
ISC 09 09:17:19.7±1.4, 34°.05S±0°.04×71°.99W±0°.09, h25km±15km, n20, σ1$98/31, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.34**	**182**	*i* P		**Pb**		**09 17 27.2**	**-0.1**
CHPI				*i* S		**Sb**		**09 17 33.1**	**+0.6**
NICH	**Los Niches**	**1.14**	**147**	*i* P		**Pn**		**09 17 39.6**	**-0.4**
NICH				*i* S		**Sb**		**09 17 54.9**	**-0.1**
ANTU	**Antumapu**	**1.23**	**67**	*i* P		**Pn**		**09 17 40.8**	**-0.4**
ANTU				*i* S		**Sb**		**09 17 57.3**	**-0.3**
ANTU				IAML				09 18 04.7	
	comp=E,589nm,0.2s								
ROC1	**El Roble**	**1.34**	**37**	*e*P		**Pb**		**09 17 43.3**	**-1.1**
ROC1				*e*S		**Sb**		**09 18 01.4**	**+0.2**
ROCH	**El Roble**	**1.35**	**37**	*i* P		**Pn**		**09 17 43.1**	**0.0**
ROCH				*i* S		**Sb**		**09 18 01.2**	**-0.2**
ROCH				IAML				09 18 09.8	
	comp=N,482nm,0.3s								
CLCH	**Cerro Calan**	**1.37**	**62**	*i* P		**Pn**		**09 17 43.4**	**+0.1**
CLCH				*i* S		**Sb**		**09 18 01.4**	**-0.5**
CLCH				IAML				09 18 16.5	
	comp=N,354nm,0.7s								
TALC	**Talca**	**1.38**	**168**	*i* P		**Pn**		**09 17 43.7**	**+0.4**
TALC				*i* S		**Sb**		**09 18 01.9**	**0.0**
PEL	**Peldehue**	**1.41**	**51**	*i* P		**Pn**		**09 17 44.0**	**+0.1**
PEL				*i* S		**Sb**		**09 18 02.6**	**-0.4**
FCH	**Farellones**	**1.59**	**63**	*i* P		**Pb**		**09 17 47.4**	**-1.1**
FCH				*i* S		**Sb**		**09 18 08.4**	**+0.1**
AAGR	**Agrelo**	**2.81**	**71**	*e*P		**Pb**		**09 18 08.7**	**-0.5**
ARCO	**CERRO ARCO**	**2.82**	**66**	*e*P		**Pb**		**09 18 10.6**	**+1.1**
ARCO				IAML				09 18 15.9	
	comp=Z,53nm,0.3s								
AUSP	**Uspallata**	**2.84**	**51**	*e*P		**Pb**		**09 18 07.2**	**-2.7**
AUSP				*e*S		**Sb**		**09 18 46.9**	**+2.6**
ASAL	**Salagasta**	**3.01**	**62**	*e*P		**Pb**		**09 18 13.7**	**+1.0**
ASAL				*e*S		**Sb**		**09 18 54.4**	**+5.3**
RTLS	**Leoncito**	**3.19**	**46**	*e*P		**Pb**		**09 18 12.7**	**-3.1**
RTCV	**Cerro Valdivia**	**3.63**	**54**	*e*P		**Pb**		**09 18 19.1**	**-4.1**
RTLL	**Cerro Villicun**	**4.02**	**48**	*e*P		**Pn**		**09 18 22.1**	**+2.5**
AMOG	**MOGNA**	**4.28**	**45**	*e*P		**Pn**		**09 18 25.3**	**+2.0**
ACAN	**Cantantal**	**4.40**	**68**	⇓*e*P		**Pb**		**09 18 32.4**	**-3.8**
AVFE	**Valle Fertil**	**5.11**	**50**	*e*P		**Pn**		**09 18 36.4**	**+1.7**
AVFE				IAML				09 18 46.0	
	comp=Z,3.7nm,0.3s								
AGUA	**GUANDACOL**	**5.44**	**34**	*e*P		**Pn**		**09 18 41.0**	**+1.7**

IDC 09 09:21:46.2±2.9, 20°.61S×175°.02W, h0km, mb3.6/3, mb1 4.0/4, mb1mx3.7/34, mbtmp3.8/4, ML4.0/1, Error ellipse: s-maj=129.2km s-min=26.3km az=140.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.34**	**25**	Pn		Pn		09 23 33.8	-1.1
	2.2nm,0.3s,baz=258,slow=19,SNR=3.4								
AFI				Sn		Sn		09 24 53.9	-5.1
	2.3nm,0.3s,baz=18,slow=19,SNR=3.4								
ASAR	**Alice Springs**	**47.21**	**256**	P		P		09 30 20.6	-0.5
	1.1nm,0.9s,baz=92,slow=7.7,SNR=10								
ASAR				PcP		PcP		09 31 52.2	-0.5
	0.5nm,0.9s,baz=123,slow=3.9,SNR=4.1								
WRA	**Warramunga Arr**	**47.35**	**261**	P		P		09 30 22.2	0.0
	0.3nm,0.3s,baz=95,slow=8.0,SNR=18								
ILAR	**Eielson Array**	**87.83**	**12**	P		P		09 34 37.1	+0.3
	0.2nm,0.6s,baz=221,slow=8.0,SNR=3.8								
AKASG	**Malin Array Be**	**144.41**	**333**	PKP		PKPbc		09 41 22.9	+0.2
	0.2nm,0.3s,baz=40,slow=4.6,SNR=6.1								
BRTR	**Keskin Array B**	**148.94**	**314**	PKPbc		PKPbc		09 41 36.6	+0.2
	0.5nm,0.5s,baz=114,slow=3.0,SNR=3.8								
GERES	**GERESS Array B**	**150.97**	**348**	PKPbc		PKPbc		09 41 40.5	-0.5
	0.3nm,0.6s,baz=25,slow=2.8,SNR=2.9								
GERES				PKPab		PKPab		09 41 48.3	-0.1
	0.2nm,0.3s,baz=290,slow=3.8,SNR=4.2								

*IDC **09** 09:27:41.8±1.1, 4°.26S×134°.03E, h0km, mb4.0/4, mb1 4.2/8, mb1mx3.9/39, mbtmp4.1/8, ML4.0/4, MS3.6/2, Ms1 3.6/2, ms1mx2.9/36, Error ellipse: s-maj=64.7km s-min=17.9km az=72.0*
*ISCJB **09** 09:27:43.2±0.9, 4°.42S±0°.07×133°.8E±0°.1, h21km, mb3.9/4, Error ellipse: s-maj=20.7km s-min=10.3km az=2.8*
ISC 09 09:27:45.7±1.3, 4°.54S±0°.10×133°.9E±0°.2, h21km, n9, σ2$87/11, mb4.0/4, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**14.02**	**111**	LR		LR		09 37 49.4	
	comp=Z,228nm,21.8s,baz=257,slow=43								
WRA	**Warramunga Arr**	**15.31**	**178**	Pn		**Pn**		**09 31 21.0**	**+0.3**
	0.2nm,0.3s,baz=357,slow=13,SNR=9.2								
WRA				Sn		**Sn**		**09 34 03.5**	**-6.4**
	0.3nm,0.3s,baz=8.5,slow=22,SNR=4.0								
FITZ	**Fitzroy Crossi**	**15.71**	**210**	Pn		**Pn**		**09 31 27.8**	**+1.9**
	0.7nm,0.3s,baz=33,slow=8.1,SNR=14								
FITZ				Sn		**Sn**		**09 34 18.0**	**-1.6**
	0.2nm,0.3s,baz=3.4,slow=17,SNR=2.6								
ASAR	**Alice Springs**	**19.01**	**180**	P		**Pn**		**09 32 08.6**	**+1.5**
	0.8nm,0.3s,baz=5.0,slow=10.0,SNR=42								
ASAR				S		**Sn**		**09 35 39.6**	**0.0**
	0.1nm,0.3s,baz=2.1,slow=28,SNR=4.1								
ASAR				LR		LR		09 39 56.5	
	comp=Z,190nm,20.7s,baz=157,slow=38								
CTA	**Charters Tower**	**19.59**	**143**	P		**P**		**09 32 12.4**	**-0.2**
	0.6nm,0.3s,baz=312,slow=13,SNR=5.8								
STKA	**Stephens Creek**	**28.14**	**166**	P		**P**		**09 33 39.0**	**+2.6**
	1.1nm,0.6s,baz=323,slow=15,SNR=2.4								
MKAR	**Makanchi Array**	**68.39**	**325**	P		**P**		**09 38 45.9**	**0.0**
	1.1nm,0.6s,baz=109,slow=7.9,SNR=10								
ZALV	**Zalesovo Beam**	**71.18**	**332**	P		**P**		**09 39 00.4**	**-2.4**
	0.4nm,0.4s,baz=124,slow=5.4,SNR=2.5								
KURBB	**Kurchatov Arra**	**72.53**	**327**	P		**P**		**09 39 09.0**	**-2.0**
	1.2nm,0.7s,baz=125,slow=4.9,SNR=13								

*ISCJB **09** 09:43:37.3±0.8,

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**34.96**	**254**	P	P	09 57 56.5	0.0
	2.6nm,0.8s,baz=71,slow=9.9,SNR=3.0						
ASAR	**Alice Springs**	**43.26**	**265**	P	P	09 59 05.5	-0.5
	0.8nm,0.4s,baz=101,slow=6.9,SNR=22						
WRA	**Warramunga Arr**	**44.07**	**270**	P	P	09 59 12.8	+0.2
	1.8nm,0.7s,baz=110,slow=7.7,SNR=3.2						
FINES	**FINESS Array B**	**143.35**	**341**	PKP	PKPdf	10 10 38.0	-0.2
	0.3nm,0.4s,baz=101,slow=2.9,SNR=3.4						
NOA	**NORSAR Array B**	**146.87**	**352**	PKPbc	PKPdf	10 10 45.1	+0.8
	0.6nm,0.7s,baz=15,slow=1.5,SNR=3.2						
AKASG	**Malin Array Be**	**149.77**	**325**	PKPbc	PKPbc	10 10 53.7	-0.3
	1.2nm,0.7s,baz=51,slow=3.4,SNR=4.2						

*ISCJB **09** 10:01:05.3±0.4,4.7°47S±0.04×153.27E±0.06,h55km, mb4.5/29,MS3.4/9,Error ellipse: s-maj=8.8km s-min=5.6km az=22.8*
*NEIC **09** 10:01:09.9±0.8,4.45S×153.11E,h79km±7km,mb4.6/13, Error ellipse: s-maj=10.4km s-min=5.7km az=100.0*
*IDC **09** 10:01:09.7±0.6,4.50S×153.13E,h77km±4km,mb4.0/17, mb1 4.1/20,mb1mx4.0/43,mbtmp4.4/20,MS3.4/11, Ms1 3.4/11,ms1mx3.2/40,Error ellipse: s-maj=17.3km s-min=8.9km az=110.0*

ISC 09 10:01:07.3±0.5,4.49S±0.05×153.21E±0.07,h55km,n62, σ19s45/65,mb4.4/29,MS3.4/9,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**1.08**	**286**	*e*Pn	**Pn**	**10 01 28.5**	**+2.3**
RABL				*e*Sn	**Sn**	**10 01 41.7**	**+1.4**
MANU	**Manus Island**	**6.32**	**292**	*e*Pn	**Pn**	**10 02 39.3**	**+1.4**
PMG	**Port Moresby**	**7.74**	**231**	P	**Pn**	**10 02 60.0**	**+2.6**
	4.6nm,0.3s,baz=46,slow=11,SNR=11						
PMG				S	**Sn**	**10 04 24.6**	**+0.8**
	19nm,0.3s,baz=96,slow=18,SNR=11						
PMG	**Port Moresby**	**7.74**	**231**	*e*Pn	**Pn**	**10 02 59.0**	**+1.5**
PMG				*e*Sn	**Sn**	**10 04 24.0**	**+0.3**
HNR	**Honiara**	**8.30**	**127**	LR	LR	10 06 31.4	
	comp=Z,394nm,21.6s,baz=296,slow=38						
PATS	**Pohnpei**	**12.35**	**24**	*e*Pn	**Pn**	**10 04 01.8**	**+1.3**
COEN	**Coen**	**13.65**	**226**	*e*Pn	**Pn**	**10 04 20.8**	**+2.5**
CTA	**Charters Tower**	**16.92**	**203**	P	**P**	**10 05 02.8**	**+1.0**
	0.2nm,0.3s,baz=24,slow=12,SNR=6.7						
CTAO	**Charters Tower**	**16.92**	**203**	*e*Pn	**P**	**10 05 03.0**	**+1.3**
	21nm,1.1s						
GUMO	**Guam**	**19.77**	**335**	P	**Pn**	**10 05 35.3**	**+0.3**
	2.5nm,0.3s,baz=62,slow=9.6,SNR=5.4						
GUMO				LR	LR	10 12 06.8	
	comp=Z,58nm,19.4s,baz=154,slow=33						
GUMO	**Guam**	**19.77**	**335**	*e*P	**P**	**10 05 32.7**	**-0.4**
	165nm,1.1s						
EIDS	**Eidsvold**	**20.86**	**185**	*e*P	Pn	10 05 46.8	-1.0
	30nm,1.4s						
DZM	**Mont Dzumac**	**21.68**	**145**	P	**P**	**10 05 55.8**	**+2.0**
	9.4nm,0.7s,baz=302,slow=11,SNR=11						
DZM				LR	LR	10 13 09.4	
	comp=Z,138nm,18.0s,baz=303,slow=33						
DZM	**Mont Dzumac**	**21.68**	**145**	*e*P	**P**	**10 05 54.0**	**+0.2**
	86nm,1.9s						
MTN	**Manton Dam**	**23.33**	**248**	*e*P	**P**	**10 06 10.0**	**-0.9**
	78nm,1.4s						
MTN				*e*S	**S**	**10 10 16.9**	**-2.8**
WRAB	**Tennant Creek**	**23.94**	**229**	*e*P	**P**	**10 06 16.1**	**-0.5**
	28nm,0.8s						
WB2	**Warramunga Arr**	**23.95**	**229**	*e*P	**P**	**10 06 16.1**	**-0.5**
	27nm,0.8s						
WRA	**Warramunga Arr**	**23.95**	**229**	P	**P**	**10 06 16.0**	**-0.7**
	19nm,0.6s,baz=52,slow=10.0,SNR=133						
WRA				S	**S**	**10 10 27.3**	**-2.4**
	5.0nm,0.9s,baz=38,slow=13,SNR=5.7						
H11S3	**WAKE ISLAND Hy**	**26.42**	**30**	T	T	10 34 29.8	
	baz=208,slow=75,SNR=96						
H11S2	**WAKE ISLAND Hy**	**26.43**	**30**	T	T	10 34 32.4	
	baz=208,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**26.44**	**30**	T	T	10 34 29.4	
	baz=208,slow=75,SNR=18						
AS01	**Alice Springs**	**26.62**	**222**	*e*P	**P**	**10 06 40.5**	**-0.4**
AS31	**Alice Springs**	**26.65**	**223**	*e*P	**P**	**10 06 41.2**	**+0.1**
	3.6nm,0.3s						
ASAR	**Alice Springs**	**26.65**	**223**	P	**P**	**10 06 40.0**	**-1.1**
	3.3nm,0.7s,baz=55,slow=9.2,SNR=24						
ASAR				S	**S**	**10 11 11.8**	**-0.9**
	0.3nm,0.5s,baz=272,slow=16,SNR=3.2						
STKA	**Stephens Creek**	**29.35**	**200**	P	**P**	**10 07 05.0**	**-0.1**
	10nm,1.0s,baz=1.4,slow=6.6,SNR=11						
STKA				LR	LR	10 18 48.0	
	comp=Z,212nm,18.9s,baz=186,slow=36						
STKA	**Stephens Creek**	**29.35**	**200**	*e*P	**P**	**10 07 05.0**	**-0.1**
	8.1nm,1.6s						
FITZ	**Fitzroy Crossi**	**30.16**	**241**	P	**P**	**10 07 11.1**	**-1.3**
	5.9nm,0.3s,baz=50,slow=7.1,SNR=42						
FITZ	**Fitzroy Crossi**	**30.16**	**241**	*e*P	**P**	**10 07 10.8**	**-1.6**
	5.4nm,0.4s						
KAPI	**Kappang**	**33.34**	**268**	LR	LR	10 24 29.5	
	comp=Z,67nm,18.1s,baz=120,slow=42						
FORT	**Forrest**	**35.28**	**219**	*e*P	**P**	**10 07 56.3**	**-0.8**
	229nm,1.0s						
JNU	**Nakatsue**	**42.97**	**332**	P	**P**	**10 09 00.6**	**-0.6**
	7.4nm,0.8s,baz=31,slow=6.9,SNR=5.8						
MJAR	**Matsushiro Arr**	**43.16**	**342**	LR	LR	10 25 52.0	
	comp=Z,19nm,20.8s,baz=140,slow=34						
CISI	**Cisompet, Garu**	**45.23**	**264**	*e*P	**P**	**10 09 17.4**	**-2.3**
	32nm,0.7s						
KSRS	**Korea Array**	**47.91**	**333**	P	**P**	**10 09 40.0**	**-0.1**
	1.7nm,0.6s,baz=153,slow=8.5,SNR=7.1						
KSAR	**Wonju Array Be**	**47.91**	**333**	P	**P**	**10 09 40.0**	**-0.2**
ASAJ	**Asahikawa**	**49.31**	**350**	P	**P**	**10 09 52.3**	**+1.4**
	2.2nm,0.7s,baz=47,slow=22,SNR=4.0						
USRK	**Ussuriysk Ar.**	**52.09**	**341**	P	**P**	**10 10 10.9**	**-0.8**
	0.9nm,0.4s,baz=189,slow=9.7,SNR=4.5						
GYA	**Guiyang**	**54.53**	**307**	P	**P**	**10 10 30.2**	**0.0**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KLR	**Kul'dur**	**56.66**	**343**	P	**P**	**10 10 44.8**	**-0.1**
	comp=Z,1.2nm,0.4s,baz=162,slow=5.1,SNR=8.3						
KLR				pP	**sP**	**10 11 05.3**	**-0.8**
	comp=Z,2.7nm,0.7s,baz=131,slow=4.2,SNR=5.7						
KMI	**Kunming**	**57.15**	**304**	P	**P**	**10 10 49.3**	**+0.2**
KMI				pmax	pmax		
	comp=Z,18nm,0.5s						
KMI				pmax	pmax		
	comp=Z,94nm,5.5s						
PETK	**Petropavlovsk-**	**57.51**	**3**	P	**P**	**10 10 51.2**	**+0.4**
	comp=Z,0.6nm,0.4s,baz=163,slow=7.0,SNR=7.3						
PETK				pP	**sP**	**10 11 12.0**	**0.0**
	comp=Z,3.0nm,0.8s,baz=160,slow=5.7,SNR=3.8						
PETK				sP	pP	10 11 18.2	+13
	comp=Z,4.0nm,0.9s,baz=152,slow=7.0,SNR=3.4						
PETK				LR	LR	10 32 44.9	
	comp=Z,20nm,20.3s,baz=194,slow=33						
CMAR	**Chiang Mai Arr**	**58.11**	**295**	P	**P**	**10 10 56.6**	**+0.9**
	comp=Z,1.7nm,0.5s,baz=120,slow=5.8,SNR=7.5						
CMAR				pP	**sP**	**10 11 15.9**	**-1.0**
	comp=Z,0.9nm,0.3s,baz=322,slow=42,SNR=1.6						
HHC	**Hu-ho-hao-te**	**59.03**	**324**	*e*P	**P**	**10 11 03.1**	**+1.3**
HHC				pmax	pmax		
	comp=Z,29nm,1.1s						
HHC				pmax	pmax		
	comp=Z,86nm,6.4s						
GTA	**Gaotai**	**65.70**	**317**	*e*P	**P**	**10 11 46.1**	**-0.4**
GTA				pP	sP	10 12 07.7	-0.2
GTA				sP	PcP	10 12 16.4	-1.1
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
SONM	**Songino Array**	**66.28**	**328**	P	**P**	**10 11 50.0**	**0.0**
	comp=Z,1.1nm,0.5s,baz=126,slow=9.1,SNR=3.2						
SONM				PcP	**PcP**	**10 12 17.6**	**-2.1**
	comp=Z,1.3nm,0.7s,baz=144,slow=5.5,SNR=3.6						
SONM				LR	LR	10 38 58.8	
	comp=Z,38nm,21.6s,baz=50,slow=34						
YAK	**Yakutsk**	**68.75**	**348**	LR	LR	10 39 35.4	
	comp=Z,24nm,19.9s,baz=154,slow=34						
VNDA	**Vanda**	**73.13**	**178**	P	**P**	**10 12 31.7**	**+0.3**
	comp=Z,2.0nm,0.8s,baz=340,slow=6.9,SNR=8.7						
VNDA	**Vanda**	**73.13**	**178**	*e*P	**P**	**10 12 31.8**	**+0.3**
	comp=Z,7.4nm,1.2s						
WMQ	**Urumqi**	**75.79**	**317**	*e*P	**P**	**10 12 48.6**	**+1.0**
WMQ				pmax	pmax		
	comp=Z,10.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,79nm,4.2s						
MK01	**Makanchi Array**	**80.34**	**319**	*e*P	**P**	**10 13 11.3**	**-1.5**
MKAR	**Makanchi Array**	**80.36**	**319**	P	**P**	**10 13 11.9**	**-0.9**
	comp=Z,0.5nm,0.5s,baz=92,slow=7.9,SNR=11						
MKAR				pP	**sP**	**10 13 33.0**	**-1.5**
	comp=Z,1.0nm,0.8s,baz=115,slow=5.5,SNR=4.1						
ILAR	**Eielson Array**	**81.72**	**22**	P	**P**	**10 13 17.9**	**-1.8**
	comp=Z,0.4nm,0.8s,baz=277,slow=4.7,SNR=4.5						
ILAR				pP	**sP**	**10 13 39.2**	**-2.2**
	comp=Z,0.6nm,0.6s,baz=247,slow=6.2,SNR=4.1						
H02N1	**VAN INLET T-PH**	**84.23**	**36**	T	T	11 46 49.0	
H02S1	**DAWSON INLET T**	**84.26**	**36**	T	T	11 46 50.0	
	SNR=38						
EKS2	**Erkin-Say**	**85.27**	**313**	*e*P	**P**	**10 13 38.2**	**-0.4**
	comp=Z,2.6nm,0.6s						
MAW	**Mawson**	**86.01**	**203**	P	**P**	**10 13 40.9**	**-0.6**
	comp=Z,1.5nm,0.6s,baz=114,slow=3.3,SNR=4.0						
AKTO	**Aktyubinsk**	**96.74**	**320**	LR	LR	11 01 04.2	
	comp=Z,7.5nm,18.1s,baz=88,slow=37						
PDAR	**Pinedale Array**	**98.34**	**48**	LR	LR	10 56 24.6	
	comp=Z,31nm,18.8s,baz=260,slow=34						
GERES	**GERESS Array B**	**124.00**	**329**	PKP	**PKPdf**	**10 19 59.5**	**-0.2**
	comp=Z,0.2nm,0.5s,baz=81,slow=3.4,SNR=2.7						
GERES				pPKP	**pPKPdf**	**10 20 20.9**	**+4.8**
	comp=Z,0.9nm,0.8s,baz=70,slow=1.6,SNR=4.8						
LPAZ	**La Paz**	**134.21**	**118**	PKP	**PKPdf**	**10 20 21.8**	**+1.1**
	comp=Z,0.6nm,0.8s,baz=307,slow=6.0,SNR=3.7						
CPUP	**Villa Florida**	**137.42**	**138**	PKP	**PKPdf**	**10 20 26.6**	**+1.0**
	comp=Z,1.3nm,0.8s,baz=304,slow=6.4,SNR=3.2						
TORD	**Torodi Ar. Bea**	**150.59**	**289**	PKPbc	**PKPbc**	**10 20 53.2**	**-1.0**
	comp=Z,2.3nm,0.4s,baz=74,slow=2.4,SNR=30						
TORD				PKPab	**PKPab**	**10 21 00.7**	**-0.4**
	comp=Z,1.7nm,0.5s,baz=61,slow=1.9,SNR=7.2						
TORD				pPKPbc	**pPKPbc**	**10 21 14.7**	**+4.1**
	comp=Z,14nm,0.9s,baz=63,slow=2.0,SNR=16						

*ISK **09** 10:01:38.0,38.45N×34.16E,h5km,MD2.6*
*DDA **09** 10:01:39.4,38.44N×34.10E,h7km,Md2.5*
*CSEM **09** 10:01:39.3±0.2,38.44N±34.14E,h2km,MD2.5,Error ellipse: s-maj=4.2km s-min=3.3km az=72.0*

ISC 09 10:01:39.3±1.2,38.44N±0.03×34.14E±0.03,h6km±10km, n26,σ0s34/35,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKSY	**AKSARAY - Alti**	**0.36**	**305**	*i* P	**Pg**	**10 01 45.9**	**-0.4**
AKSY				*i* S	**Sg**	**10 01 51.2**	**+0.1**
AKSY	**AKSARAY - Alti**	**0.36**	**305**	P	**Pg**	**10 01 45.9**	**-0.4**
AKSY				S	**Sg**	**10 01 51.2**	**+0.1**
NIG	**Nigde**	**0.50**	**132**	*e*PG	**Pg**	**10 01 48.7**	**-0.2**
NIG	**Nigde**	**0.50**	**132**	*e*Pg	**Pg**	**10 01 48.7**	**-0.2**
SULT	**Sultanhani-AKS**	**0.55**	**244**	*e*PG	**Pg**	**10 01 50.1**	**+0.3**
SULT				*e*SG	**Sb**	**10 01 58.9**	**-0.6**
SULT	**Sultanhani-AKS**	**0.55**	**244**	*e*Pg	**Pg**	**10 01 50.1**	**+0.3**
SULT				*e*Sg	**Sb**	**10 01 58.9**	**-0.6**
SERE	**Sereflikochisa**	**0.67**	**318**	*e*PG	**Pg**	**10 01 52.5**	**+0.3**
SERE	**Sereflikochisa**	**0.67**	**318**	*e*Pg	**Pg**	**10 01 52.5**	**+0.3**
YESY	**Yesilyurt**	**0.73**	**205**	*e*PG	**Pg**	**10 01 53.3**	**0.0**
YESY	**Yesilyurt**	**0.73**	**205**	*e*Pg	**Pg**	**10 01 53.3**	**0.0**
KAMT	**Kaman**	**0.98**	**340**	*e*PG	**Pg**	**10 01 57.5**	**-0.5**
KAMT	**Kaman**	**0.98**	**340**	*e*Pg	**Pg**	**10 01 57.6**	**-0.5**
CHBY	**Cihanbeyli**	**0.99**	**278**	*e*PG	**Pg**	**10 01 58.3**	**+0.1**
CHBY	**Cihanbeyli**	**0.99**	**278**	*e*Pg	**Pg**	**10 01 58.3**	**+0.1**
KERG	**Konya-Eregli**	**1.03**	**181**	*i* P	**Pg**	**10 01 59.0**	**0.0**
KERG	**Konya-Eregli**	**1.03**	**181**	P	**Pg**	**10 01 59.0**	**0.0**
CDAG	**Cicekdag**	**1.19**	**9**	*i* P	**Pg**	**10 02 02.2**	**+0.1**
CDAG				*i* S	**Sn**	**10 02 19.4**	**+0.1**
CDAG	**Cicekdag**	**1.19**	**9**	P	**Pg**	**10 02 02.2**	**+0.1**
CDAG				S	**Sn**	**10 02 19.4**	**+0.1**
KKUL	**Konya-Kulu**	**1.20**	**308**	*i* P	**Pg**	**10 02 02.2**	**0.0**
KKUL				*i* S	**Sn**	**10 02 19.2**	**-0.2**
KKUL	**Konya-Kulu**	**1.20**	**308**	P	**Pg**	**10 02 02.2**	**0.0**
KKUL				S	**Sn**	**10 02 19.2**	**-0.2**
KOZT	**Kozan**	**1.65**	**125**	*e*PN	**Pn**	**10 02 09.1**	**+0.3**
KOZT	**Kozan**	**1.65**	**125**	*e*Pn	**Pn**	**10 02 09.1**	**+0.3**
CORM	**Corum**	**1.77**	**12**	*e*PN	**Pn**	**10 02 11.3**	**+0.6**
CORM	**Corum**	**1.77**	**12**	*e*Pn	**Pn**	**10 02 11.3**	**+0.6**
COAL	**Corum-Alaca**	**1.92**	**20**	*i* P	**Pb**	**10 02 14.7**	**-0.2**
COAL				*i* S	**Sg**	**10 02 41.5**	**+0.4**
COAL	**Corum-Alaca**	**1.92**	**20**	P	**Pb**	**10 02 14.6**	**-0.2**

*ISCJB **09** 10:16:51.6±0.9,10.°2S±0.1×164.4E±0.1,h29km, mb3.8/7, MS3.7/4,Error ellipse: s-maj=20.6km s-min=14.5km az=150.6*
*IDC **09** 10:16:58.4±3.4,10.°92S×164.39E,h74km±28km,mb3.5/7, mb1 3.8/9,mb1mx3.6/34,mbtmp3.9/9,MS3.7/5,Ms1 3.7/5, ms1mx3.3/21,Error ellipse: s-maj=26.9km s-min=19.4km az=61.0*

ISC 09 10:16:53.7±1.0,10.°8S±0.1×164.5E±0.1,h29km,n19, σ2s61/12,mb3.9/7,MS3.7/4,Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**4.65**	**286**	P	**Pn**	**10 18 04.0**	**+2.0**
	18nm,0.3s,baz=164,slow=5.8,SNR=6.1						
HNR				S	**Sn**	**10 19 00.4**	**+5.3**
	22nm,0.3s,baz=175,slow=7.4,SNR=4.0						
HNR	**Honiara**	**4.65**	**286**	P	**Pn**	**10 18 03.0**	**+0.9**
HNR				S	**Sb**	**10 19 06.0**	**-4.2**
DZM	**Mont Dzumac**	**11.39**	**171**	P	**Pn**	**10 19 35.6**	**+0.9**
	0.6nm,0.3s,baz=315,slow=9.6,SNR=14						
PMG	**Port Moresby**	**17.10**	**273**	LR	LR	10 26 08.5	
	comp=Z,263nm,19.0s,baz=133,slow=32						
AFI	**Afiamalu**	**23.41**	**100**	LR	LR	10 29 32.0	
	comp=Z,152nm,18.1s,baz=192,slow=32						
H11S2	**WAKE ISLAND Hy**	**29.16**	**4**	T	T	10 53 15.3	
	baz=184,slow=76,SNR=44						
H11S3	**WAKE ISLAND Hy**	**29.16**	**4**	T	T	10 53 14.2	
	baz=184,slow=76,SNR=24						
H11S1	**WAKE ISLAND Hy**	**29.18**	**4**	T	T	10 53 15.3	
	baz=184,slow=76,SNR=23						
H11N1	**WAKE ISLAND Hy**	**30.39**	**5**	T	T	10 54 42.7	
	baz=184,slow=76,SNR=22						
H11N3	**WAKE ISLAND Hy**	**30.39**	**5**	T	T	10 54 31.8	
	baz=184,slow=76,SNR=23						
H11N2	**WAKE ISLAND Hy**	**30.41**	**5**	T	T	10 54 32.1	
	baz=184,slow=76,SNR=23						
WRA	**Warramunga Arr**	**30.41**	**249**	P	**P**	**10 23 02.4**	**-1.4**
	0.6nm,0.8s,baz=80,slow=9.2,SNR=5.5						
WRA				LR	LR	10 35 07.1	
	comp=Z,216nm,20.0s,baz=155,slow=36						
ASAR	**Alice Springs**	**31.80**	**242**	P	**P**	**10 23 14.6**	**-1.5**
	0.2nm,0.3s,baz=66,slow=10,SNR=4.1						
ASAR				LR	LR	10 34 14.7	
	comp=Z,170nm,21.4s,baz=157,slow=33						
FITZ	**Fitzroy Crossi**	**38.24**	**254**	P	**P**	**10 24 09.5**	**-2.2**
	2.3nm,0.7s,baz=85,slow=11,SNR=3.7						
USRK	**Ussuriysk Ar.**	**62.15**	**334**	P	**P**	**10 27 12.5**	**+0.2**
	0.9nm,0.6s,baz=115,slow=8.6,SNR=5.1						
VNDA	**Vanda**	**66.75**	**181**	P	**P**	**10 27 42.2**	**+0.4**
	0.9nm,0.9s,baz=334,slow=6.2,SNR=4.8						
ILAR	**Eielson Array**	**83.66**	**19**	P	**P**	**10 29 19.2**	**0.0**
	0.7nm,0.8s,baz=211,slow=4.9,SNR=6.9						
MKAR	**Makanchi Array**	**92.47**	**317**	P	**P**	**10 30 01.2**	**-0.9**
	0.6nm,0.6s,baz=98,slow=7.5,SNR=6.8						
TXAR	**Lajitas Array**	**96.80**	**62**	LR	LR	11 09 03.4	
	comp=Z,25nm,18.4s,baz=0.0,slow=32						

IDC 09 10:22:42.3±1.8,29.°78S×176.16W,h0km,mb3.4/2, mb1 3.6/2,mb1mx3.4/26,mbtmp3.4/2,MS3.0/1,Ms1 3.0/1, ms1mx2.6/9,Error ellipse: s-maj=67.9km s-min=27.1km az=23.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.62**	**288**	Pn	Pb	10 23 13.2	+0.1
	135nm,0.3s,baz=359,slow=21,SNR=3.1						
RAO				Sn	Sg	10 23 34.4	0.0
	488nm,0.3s,baz=55,slow=20,SNR=7.4						
URZ	**Urewera**	**10.13**	**212**	LR	LR	10 29 00.7	
	comp=Z,80nm,21.3s,baz=251,slow=37						
ASAR	**Alice Springs**	**44.74**	**265**	P	P	10 30 56.8	-0.9
	0.1nm,0.5s,baz=105,slow=7.3,SNR=3.6						
WRA	**Warramunga Arr**	**45.68**	**271**	P	P	10 31 04.8	-0.3
	0.6nm,0.5s,baz=112,slow=6.6,SNR=10						
FINES	**FINESS Array B**	**145.09**	**341**	PKPbc	PKPbc	10 42 19.4	-1.0
	0.9nm,0.7s,baz=46,slow=6.0,SNR=6.7						
TORD	**Torodi Ar. Bea**	**163.33**	**173**	PKPab	PKPab	10 43 38.2	+0.3
	0.7nm,0.7s,baz=190,slow=4.2,SNR=3.1						

IDC 09 10:36:16.9±6.5,19.°40S×175.98W,h0km,mb3.6/3, mb1 4.0/4,mb1mx3.7/31,mbtmp3.8/4,ML3.5/1,Error ellipse: s-maj=268.9km s-min=23.8km az=141.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**6.78**	**37**	Pn	Pn	10 37 57.7	-0.2
	1.0nm,0.3s,baz=48,slow=22,SNR=2.2						
AFI				Sn	Sn	10 39 17.9	+2.0
	1.0nm,0.3s,baz=59,slow=21,SNR=2.5						
ASAR	**Alice Springs**	**46.62**	**255**	P	P	10 44 46.8	-0.6
	0.9nm,0.8s,baz=97,slow=8.0,SNR=10						
WRA	**Warramunga Arr**	**46.64**	**261**	P	P	10 44 47.9	+0.3
	0.9nm,0.8s,baz=95,slow=8.2,SNR=14						
ILAR	**Eielson Array**	**86.83**	**12**	P	P	10 49 02.8	-0.1
	0.3nm,0.6s,baz=195,slow=5.6,SNR=3.3						

*ISCJB **09** 10:37:57.4±2.4,29.°94S±0.08×176.°9W±0.2,h24km, mb3.9/3,Error ellipse: s-maj=30.2km s-min=9.3km az=167.8*
*IDC **09** 10:38:00.5±8.1,29.°84S×177.°01W,h28km±52km,mb3.7/3, mb1 4.0/4,mb1mx3.6/26,mbtmp4.0/4,ML3.3/1,MS3.8/1, Ms1 3.8/1,ms1mx2.9/23,Error ellipse: s-maj=35.3km s-min=25.0km az=72.0*

ISC 09 10:37:58.6±1.5,29.°79S±0.10×176.°9W±0.2,h24km,n10, σ0s64/11,mb4.1/3,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.07**	**299**	Pn	**Pn**	**10 38 18.0**	**-0.1**
	145nm,0.3s,baz=104,slow=19,SNR=4.6						
RAO				Sn	**Sn**	**10 38 32.5**	**+0.2**
	1µm,0.3s,baz=50,slow=19,SNR=11						
RAO				LR	LR	10 38 41.5	
	comp=Z,808nm,18.9s,baz=338,slow=42						
URZ	**Urewera**	**9.82**	**209**	Pn	**Pn**	**10 40 19.0**	**+0.7**
	0.3nm,0.3s,baz=264,slow=5.4,SNR=2.7						
URZ				Sn	**Sn**	**10 42 07.0**	**-0.9**
	0.7nm,0.3s,baz=214,slow=22,SNR=3.8						
DZM	**Mont Dzumac**	**16.87**	**293**	LR	LR	10 47 07.5	
	comp=Z,304nm,18.7s,baz=114,slow=33						
STKA	**Stephens Creek**	**35.59**	**256**	P	**P**	**10 44 54.9**	**+0.6**
	1.7nm,0.7s,baz=92,slow=7.8,SNR=3.9						
ASAR	**Alice Springs**	**44.15**	**266**	P	**P**	**10 46 05.2**	**-0.4**
	0.5nm,0.6s,baz=104,slow=8.0,SNR=5.9						
WRA	**Warramunga Arr**	**45.08**	**271**	P	**P**	**10 46 12.4**	**-0.6**
	2.5nm,0.7s,baz=111,slow=7.4,SNR=21						
FINES	**FINESS Array B**	**144.90**	**341**	PKP	**PKPab**	**10 57 32.2**	**+0.1**
	2.2nm,0.8s,baz=46,slow=4.0,SNR=8.1						
NOA	**NORSAR Array B**	**148.28**	**353**	PKPbc	**PKPab**	**10 57 44.2**	**-1.0**
	0.6nm,0.8s,baz=33,slow=2.7,SNR=2.8						
AKASG	**Malin Array Be**	**151.40**	**324**	PKPbc	**PKPbc**	**10 57 50.3**	**+0.4**
	1.6nm,0.8s,baz=51,slow=2.7,SNR=3.8						
BRTR	**Keskin Array B**	**153.17**	**300**	PKPab	**PKPab**	**10 58 06.4**	**+0.1**
	0.3nm,0.4s,baz=101,slow=3.9,SNR=3.6						

*ISCJB **09** 10:57:34.5±0.3,3.°39N±0.03×75.°88W±0.03,h192km±2km, mb4.0/33,Error ellipse: s-maj=5.5km s-min=4.4km az=19.6*
*RSNC **09** 10:57:35.6±0.8,3.°41N×75.°95W,h183km±5km,ML3.8*
*NEIC **09** 10:57:35.0±0.5,3.°33N×75.°88W,h183km±5km,mb4.3/26, Error ellipse: s-maj=9.3km s-min=6.0km az=69.0*
NEIC Felt at Bogota.
*IDC **09** 10:57:37.2±1.0,3.°45N×75.°72W,h201km±9km,mb3.7/11, mb1 3.9/14,mb1mx3.6/32,mbtmp4.3/14,Error ellipse: s-maj=15.7km s-min=9.2km az=70.0*

ISC 09 10:57:35.2±0.6,3.°38N±0.04×75.°92W±0.04,h183km±6km, n258,σ0s84/267,mb4.1/34,Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRAC	**Prado**	**1.08**	**72**	*e*P	**Pn**	**10 58 03.9**	**+0.1**
PRAC	**Prado**	**1.08**	**72**	*e*Pn	**Pn**	**10 58 04.0**	**+0.1**
POPC	**Popayan, Colom**	**1.12**	**222**	*e*P	**Pn**	**10 58 03.8**	**-0.6**
POPC				*e*S	**Sn**	**10 58 26.4**	**-0.5**
POPC				*i*		10 58 30.6	
	comp=Z,1µm,0.2s						
TOLC	**Tolima**	**1.34**	**26**	*e*P	**Pn**	**10 58 06.5**	**+0.2**
MALC	**Bahia Malaga**	**1.55**	**294**	*e*P	**Pn**	**10 58 07.7**	**-0.2**
MALC				*i*		10 58 10.4	
	comp=Z,3µm,0.5s						
GUYC	**Guyana, Colomb**	**1.91**	**16**	*e*P	**Pn**	**10 58 12.2**	**+0.2

BDFB	**Brasilia** comp=Z,6.8nm,0.6s	33.46 125	P		P	11 03 58.0	+0.6
BDFB	**Brasilia** comp=Z,16nm,1.0s	33.46 125	*e*P		P	11 03 57.5	+0.2
Z40A	**Long Farm, Mag** baz=148	33.93 333	P		P	11 04 01.5	+0.5
W45A	**Hickory Valley** baz=156	33.93 340	P		P	11 04 01.2	+0.1
633A	**Saathoff Ranch** baz=135	34.06 322	P		P	11 04 02.8	+0.5
336A	**Riesel** baz=141	34.13 327	P		P	11 04 03.7	+0.8
WVT	**Waverly** comp=Z,5.5nm,0.6s	34.40 343	*e*P		P	11 04 04.9	-0.2
Y40A	**Okolona** baz=148	34.51 334	P		P	11 04 07.1	+1.0
X41A	**Kaden, Bauxite** baz=150	34.60 335	P		P	11 04 07.2	+0.4
Z38A	**Mt. Pleasant** baz=145	34.66 331	P		P	11 04 08.0	+0.7
X40A	**Basin Creek Fa** baz=149	34.73 335	P		P	11 04 08.7	+0.8
Y39A	**Lockesburg** baz=147	34.81 333	P		P	11 04 09.3	+0.6
334A	**Lometa** baz=139	34.86 325	P		P	11 04 09.4	+0.3
433A	**Art** baz=137	34.93 324	P		P	11 04 09.9	+0.1
MIAR	**Mount Ida** baz=148	35.09 334	P		P	11 04 11.1	0.0
333A	**Richland Sprin** baz=138	35.29 325	P		P	11 04 13.2	+0.3
X39A	**Fountain Ranch** baz=147	35.30 333	P		P	11 04 13.6	+0.7
V42A	**Cord** baz=153	35.30 338	P		P	11 04 12.8	0.0
234A	**Clairette** baz=139	35.31 326	P		P	11 04 13.2	+0.2
Y37A	**Hugo** baz=145	35.56 331	P		P	11 04 16.2	+1.2
V41A	**Mountainview** baz=151	35.58 337	P		P	11 04 15.6	+0.4
U42A	**Revenden** baz=153	35.73 339	P		P	11 04 16.2	-0.2
W39A	**Magazine** baz=148	35.73 335	P		P	11 04 16.9	+0.4
233A	**Rising Star** baz=138	35.75 325	P		P	11 04 17.6	+0.8
X38A	**Whitesboro** baz=146	35.75 333	P		P	11 04 17.6	+0.8
PBMO	**Poplar Bluff** comp=Z,5.7nm,0.8s	35.83 340	*e*P		P	11 04 17.3	0.0
V40A	**Witts Springs** baz=150,SNR=5.5	35.86 336	P		P	11 04 17.5	-0.1
X37A	**Clayton** baz=146	35.94 332	P		P	11 04 19.1	+0.8
W38A	**Poteau** baz=147	35.95 334	P		P	11 04 18.6	+0.3
U41A	**Viola** baz=152	35.98 338	P		P	11 04 18.2	-0.4
S45A	**Carrier Mills** baz=158	36.06 343	P		P	11 04 19.5	+0.3
133A	**Hamilton Ranch** baz=139	36.20 326	P		P	11 04 20.7	+0.1
Y35A	**Marietta** baz=143	36.20 330	P		P	11 04 20.4	-0.1
V39A	**Pettigrew** baz=149	36.22 335	P		P	11 04 20.8	+0.1
S44A	**Carbondale** baz=157	36.28 342	P		P	11 04 21.6	+0.6
U40A	**Yellville** baz=151	36.35 337	P		P	11 04 22.2	+0.4
X36A	**Centrahoma** baz=144	36.39 331	P		P	11 04 22.4	+0.3
W37B	**Quinton** baz=146	36.42 333	P		P	11 04 22.6	+0.2
S43A	**Fulton Ridge,** baz=156	36.43 341	P		P	11 04 22.5	+0.1
T41A	**Mountain View** baz=153	36.54 338	P		P	11 04 23.3	0.0
X35A	**Drake** baz=143	36.56 330	P		P	11 04 23.9	+0.4
V38A	**Canehill** baz=148,SNR=5.1	36.57 334	P		P	11 04 23.1	-0.5
Y34A	**Reagan Ranch,** baz=142	36.61 329	P		P	11 04 24.5	+0.5
ABTX	**Abilene, Hawle** baz=138	36.62 325	P		P	11 04 24.7	+0.6
U39A	**Green Forest** baz=150	36.62 336	P		P	11 04 24.6	+0.5
HHAR	**Hobbs** comp=Z,5.5nm,0.8s	36.73 335	*e*P		P	11 04 24.7	-0.2
R44A	**Waltonville** baz=158	36.73 343	P		P	11 04 25.2	+0.3
W36A	**Wetumka** baz=145	36.79 332	P		P	11 04 25.8	+0.3
TXAR	**Lajitas Array** comp=Z,0.4nm,0.5s,baz=149,slow=9.5,SNR=11	36.88 317	P		P	11 04 28.3	+1.9
TXAR	comp=Z,0.2nm,0.4s,baz=138,slow=4.9,SNR=4.6		PcP		PcP	11 06 44.8	+0.6
V37A	**Hulbert** baz=147	36.91 334	P		P	11 04 26.2	-0.2
T40A	**Mansfield** baz=152	36.91 338	P		P	11 04 26.6	+0.1
BLO	**Bloomington** comp=Z,13nm,0.6s	36.91 346	*e*P		P	11 04 26.9	+0.4
S41A	**Jillco Farms,** baz=153	37.01 339	P		P	11 04 27.1	-0.3
U38A	**Gravette** baz=148	37.05 335	P		P	11 04 27.7	0.0
Y33A	**Hilltop Ranch,** baz=140	37.10 328	P		P	11 04 28.6	+0.4
W35A	**Tecumseh** baz=144	37.11 331	P		P	11 04 28.8	+0.5
X34A	**Smith Ranch, M** baz=142	37.15 329	P		P	11 04 28.5	0.0
V36A	**Jenks** baz=146	37.19 333	P		P	11 04 29.4	+0.6
TUL1	**Leonard** baz=146	37.22 333	P		P	11 04 29.5	+0.3
TUL1	**Leonard** comp=Z,12nm,0.7s	37.22 333	*e*P		P	11 04 29.2	+0.1
S40A	**Lebanon** baz=152	37.30 338	P		P	11 04 30.6	+0.8
Q44A	**Meyer Farm, Va** baz=158	37.32 343	P		P	11 04 29.8	-0.1
U37A	**Salina** baz=147	37.33 334	P		P	11 04 30.5	+0.5
N59A	**State Game Lan** baz=180	37.37 0	P		P	11 04 30.5	+0.2
X33A	**Lawton** baz=141	37.45 329	P		P	11 04 31.6	+0.6
T38A	**Diamond** baz=149	37.52 336	P		P	11 04 31.4	-0.2
Q43A	**New Douglas** baz=157	37.56 342	P		P	11 04 30.8	-1.1
U36A	**Oologah** baz=146	37.59 333	P		P	11 04 32.7	+0.5
W34A	**Bridge Creek,** baz=143	37.62 330	P		P	11 04 32.9	+0.4
S39A	**Bolivar** baz=151	37.69 337	P		P	11 04 32.7	-0.3
WMOK	**Wichita Mounta** baz=141	37.75 328	P		P	11 04 33.8	+0.2
WMOK	**Wichita Mounta** comp=Z,3.4nm,0.8s	37.75 328	*e*P		P	11 04 33.6	+0.1
X32A	**Elmer** baz=140	37.77 328	P		P	11 04 34.6	+0.8
Q42A	**Golden Eagle** baz=156	37.79 341	P		P	11 04 33.7	-0.2
R40A	**Maddies Statio** baz=153	37.83 339	P		P	11 04 33.6	-0.5
T37A	**Cheneyville 18** baz=148	37.85 335	P		P	11 04 34.2	-0.2
S38A	**Stockton** baz=150	37.87 336	P		P	11 04 34.0	-0.6
W33A	**Caddo, Fort Co** baz=142	37.91 329	P		P	11 04 35.1	+0.2
V34A	**Guthrie** baz=143	37.97 331	P		P	11 04 35.7	+0.3
U35A	**Pawnee** baz=145	38.03 332	P		P	11 04 36.1	+0.2
M54A	**Oil Creek Stat** baz=174	38.11 355	P		P	11 04 38.0	+1.5
R39A	**Chumby, Stover** baz=152	38.13 338	P		P	11 04 36.0	-0.7
SFIN	**Lafayette** comp=Z,22nm,0.5s	38.20 346	*e*P		P	11 04 37.0	-0.2
SFIN			*e*PcP		PcP	11 06 47.6	-0.3
T36A	**Boggs Farm, Ca** baz=147	38.22 334	P		P	11 04 37.4	0.0
W32A	**Sentinel** baz=140,SNR=7.5	38.29 328	P		P	11 04 38.4	+0.3
V33A	**Lossen Ranch,** baz=142	38.34 330	P		P	11 04 38.4	-0.1
P42A	**Winchester** baz=156	38.35 342	P		P	11 04 37.9	-0.6
R38A	**Fenwick Farm,** baz=150	38.35 337	P		P	11 04 38.1	-0.4
S37A	**Fort Scott** baz=149	38.35 336	P		P	11 04 38.4	-0.2
T35A	**Sooner Cattle** baz=146	38.38 333	P		P	11 04 39.1	+0.3
Q40A	**Laux Farm, Aux** baz=154	38.38 340	P		P	11 04 38.2	-0.6
U34A	**Andreason Ranch** baz=144	38.46 331	P		P	11 04 39.7	+0.2
S36A	**Lake Cedric, C** baz=148	38.65 335	P		P	11 04 40.6	-0.4
P41A	**Barry, Barry** baz=155	38.66 341	P		P	11 04 40.3	-0.7
U33A	**Lingo Farm, Me** baz=143	38.74 331	P		P	11 04 41.3	-0.5
Q39A	**Willow Grove F** baz=152	38.75 339	P		P	11 04 40.8	-1.0
T34A	**McClaskey Farm** baz=145	38.77 332	P		P	11 04 42.3	+0.2
P40A	**Paris** baz=154	38.85 340	P		P	11 04 42.3	-0.4
Q38A	**Cooks Store, C** baz=151	38.91 338	P		P	11 04 42.8	-0.4
HDIL	**Hopedale** baz=158	38.93 344	P		P	11 04 42.8	-0.6
P39B	**Salisbury** baz=153	39.06 339	P		P	11 04 43.7	-0.8
S34A	**Willow Spring** baz=145	39.29 333	P		P	11 04 46.1	-0.3
O40A	**La Belle** baz=154	39.33 341	P		P	11 04 46.2	-0.4
MSTX	**Muleshoe** baz=135	39.40 324	P		P	11 04 48.2	+0.7
MSTX	**Muleshoe** comp=Z,1.9nm,0.5s	39.40 324	*e*P		P	11 04 48.3	+0.8
AMTX	**Amarillo** baz=137	39.43 326	P		P	11 04 48.4	+0.8
P38A	**Dawn** baz=152	39.46 338	P		P	11 04 47.5	-0.3
MNTX	**Cornudas Mount** baz=130,SNR=6.9	39.51 319	P		P	11 04 49.5	+1.1
MNTX	**Cornudas Mount** comp=Z,3.7nm,0.9s	39.51 319	*e*P		P	11 04 48.6	+0.3
S33A	**Kaszmaul Farm,** baz=144	39.62 332	P		P	11 04 48.9	-0.2
O39A	**Kirksville** baz=154	39.67 340	P		P	11 04 49.0	-0.5
P37A	**Lathrop** baz=150	39.74 338	P		P	11 04 49.1	-1.0
R34A	**Isabella, Hill** baz=146	39.85 333	P		P	11 04 50.8	-0.2
O38A	**Galt** baz=152	39.88 339	P		P	11 04 50.6	-0.6
P36A	**Good Intent, A** baz=149	40.10 337	P		P	11 04 52.6	-0.5
S32A	**Newby Ranch, P** baz=143	40.15 331	P		P	11 04 53.7	+0.3
R33A	**Olander Ranch,** baz=145	40.19 333	P		P	11 04 53.6	-0.2
Q34A	**Chapman** baz=146	40.23 334	P		P	11 04 53.7	-0.4
KSU1	**Kansas State U** baz=147	40.23 335	P		P	11 04 53.3	-0.8
M39A	**Webster** baz=155	40.65 341	P		P	11 04 56.9	-0.6
L41A	**Preston** baz=157	40.68 343	P		P	11 04 56.9	-0.8
Q33A	**Connelly Farm,** baz=145	40.68 334	P		P	11 04 57.3	-0.6
P34A	**Walnut Farm, R** baz=147	40.70 335	P		P	11 04 57.0	-1.0
L40A	**Anamosa** baz=156	40.88 343	P		P	11 04 58.8	-0.6
RCBR	**Riachuelo** comp=Z,0.9nm,0.4s	41.00 103	*e*P		P	11 04 59.1	-1.7
Q32A	**Meitler Ranch,** baz=144	41.00 333	P		P	11 05 00.4	-0.1
K41A	**Shullsburg** baz=158	41.12 344	P		P	11 05 01.6	+0.3
O34A	**Beatrice** baz=148	41.18 336	P		P	11 05 01.2	-0.6
JFWS	**Jewell Farm** comp=Z,11nm,0.6s	41.39 344	*e*P		P	11 05 03.1	-0.4
K40A	**Colesburg** baz=157	41.44 343	P		P	11 05 03.1	-0.8
O33A	**Hebron** baz=146	41.46 335	P		P	11 05 03.8	-0.4
M36A	**Felix, Anita** baz=151	41.53 338	P		P	11 05 04.1	-0.6
J41A	**Loganville** baz=159	41.74 345	P		P	11 05 05.6	-0.8
O32A	**Brockman Farm,** baz=145	41.91 334	P		P	11 05 07.1	-0.7
J40A	**Soldiers Grove** baz=158	41.97 344	P		P	11 05 07.5	-0.7
J39A	**Decorah** baz=156,SNR=12	42.19 343	P		P	11 05 08.8	-1.2
ANMO	**Albuquerque** baz=131	42.30 322	P		P	11 05 12.8	+1.5
ANMO	**Albuquerque** comp=Z,4.5nm,0.7s	42.30 322	*e*P		P	11 05 13.0	+1.7
LAZ	**Ladron**	42.37 321	*e*P		P	11 05 14.2	+2.3
I38A	**Scanlan Farm,** baz=156,SNR=6.8	43.02 343	P		P	11 05 15.7	-1.0
J36A	**Seneca 1, Swea** baz=152	43.02 340	P		P	11 05 15.3	-1.4
I37A	**Lemond, Waseca** baz=154	43.32 342	P		P	11 05 18.1	-1.0
TUC	**Tucson** baz=124	43.56 315	P		P	11 05 22.6	+1.4
SDCO	**Great Sand Dun** baz=134,SNR=5.7	43.63 325	P		P	11 05 23.4	+1.4
SDCO	**Great Sand Dun** comp=Z,2.1nm,0.7s	43.63 325	*e*P		P	11 05 24.1	+2.1
H37A	**Dierke Farm, C** baz=155	43.69 342	P		P	11 05 21.6	-0.4
H36A	**Jessenland, He** baz=154	44.00 341	P		P	11 05 23.8	-0.6
PLCA	**Paso Flores** comp=Z,3.6nm,0.8s,baz=16,slow=8.6,SNR=8.8	44.17 174	P		P	11 05 26.6	+0.7
ECSD	**EROS Data Cent** baz=150	44.17 338	P		P	11 05 24.6	-1.3
OGNE	**Ogallala** baz=141	44.18 331	P		P	11 05 24.5	-1.6
SPMN	**Marine on St.** baz=156	44.24 343	P		P	11 05 25.7	-0.7
SPMN	**Marine on St.** comp=Z,7.0nm,0.4s	44.24 343	*e*P		P	11 05 25.7	-0.7
S22A	**4UR Ranch, Cre** baz=133	44.39 324	P		P	11 05 29.0	+0.9
S22A	**4UR Ranch, Cre** comp=Z,1.4nm,0.7s	44.39 324	*e*P		P	11 05 28.5	+0.4
214A	**Organ Pipe Nat** baz=122	44.81 314	P		P	11 05 32.0	+0.9
MVCO	**Mesa Verde** baz=131	45.02 323	P		P	11 05 34.2	+1.2
F36A	**Milaca** baz=155	45.03 343	P		P	11 05 32.2	-0.4
ISCO	**Idaho Springs** baz=136	45.14 327	P		P	11 05 35.1	+1.1
X16A	**Lo Mia Camp, P** comp=Z,2.6nm,0.7s	45.20 317	*e*P		P	11 05 34.3	-0.1
F35A	**Swanville** baz=153	45.35 342	P		P	11 05 34.2	-0.9
I30A	**Oacoma** baz=146	45.41 336	P		P	11 05 35.6	-0.1
H31A	**Wolsey** baz=148	45.51 337	P		P	11 05 35.4	-1.0
E36A	**McGregor** baz=155,SNR=5.8	45.54 343	P		P	11 05 36.2	-0.5
WUAZ	**Wupatki** baz=126	45.80 319	P		P	11 05 40.5	+1.5
WUAZ	**Wupatki** comp=Z,3.6nm,0.9s	45.80 319	*e*P		P	11 05 38.5	-0.5
D37A	**Cotton** baz=157	45.90 344	P		P	11 05 39.1	-0.4
D36A	**Goodland** baz=156	46.12 344	P		P	11 05 40.5	-0.6
D35A	**Remer** baz=155	46.29 343	P		P	11 05 41.7	-0.8
C37A	**Embarrass** baz=157	46.36 345	P		P	11 05 42.7	-0.4
EYMN	**Ely** baz=158	46.39 346	P		P	11 05 42.6	-0.6
C36A	**Pine Crest Far** baz=156	46.56 344	P		P	11 05 44.5	-0.1
G29A	**Hoven** baz=146	46.67 337	P		P	11 05 44.8	-0.8
C35A	**Jirik Farms, M** baz=155	46.83 343	P		P	11 05 46.2	-0.4
C34A	**RKJ Ranch, Bem** baz=154	47.05 343	P		P	11 05 47.6	-0.8
B35A	**Bob, Littlefor** baz=156	47.35 344	P		P	11 05 50.1	-0.6
SRU	**San Rafael Swe** comp=Z,3.3nm,1.0s	47.47 323	*e*P		P	11 05 51.7	-0.3
RSSD	**Black Hills** baz=140	47.57 333	P		P	11 05 53.8	+1.1
RSSD	**Black Hills** comp=Z,5.5nm,0.6s	47.57 333	*e*P		P	11 05 53.3	+0.6
IRM	**Iron Mountain** baz=121	47.63 315	P		P	11 05 54.2	+1.1
K22A	**Casper** baz=137	47.67 329	P		P	11 05 53.9	+0.4
B34A	**Aery, Baudette** baz=154	47.73 343	P		P	11 05 52.7	-0.9
AGMN	**Agassiz Nation** baz=153,SNR=5.3	47.92 342	P		P	11 05 54.2	-0.8
AGMN	**Agassiz Nation** comp=Z,6.4nm,0.6s	47.92 342	*e*P		P	11 05 54.6	-0.4
C31A	**Landman Farms,** baz=150	48.08 340	P		P	11 05 54.8	-1.4
BELC	**Belle Mtn. Jos** baz=120	48.15 314	P		P	11 05 57.9	+0.6
B32A	**Ashes, Strandq** baz=152,SNR=6.2	48.22 342	P		P	11 05 56.6	-0.7
GMRC	**Granite Mounta** baz=121	48.31 315	P		P	11 05 59.2	+0.7
B31A	**Greenbush Farm** baz=150	48.60 341	P		P	11 05 59.7	-0.6
A32A	**Rocking H Ranc** baz=152	48.66 342	P		P	11 05 59.5	-1.2
HEC	**Hector,Ludlow** baz=121	48.81 315	P		P	11 06 02.8	+0.5
TUQ	**Turquoise Moun** baz=122	48.84 316	P		P	11 06 02.3	-0.2
B30A	**Myrvik Farm, E** baz=150	48.85 340	P		P	11 06 01.7	-0.5
BBRC	**Big Bear Solar** baz=120	48.95 314	P		P	11 06 02.9	-0.5
D26A	**Manning** baz=144	49.18 336	P		P	11 06 03.1	-1.7
B29A	**Wagenman Farm,** baz=148,SNR=5.7	49.21 340	P		P	11 06 04.8	-0.2
A30A	**Hoffart Farm,** baz=150	49.26 341	P		P	11 06 04.3	-1.0
BW06	**Boulder Array**	49.34 327	*e*P		P	11 06 06.3	0.0
PDAR	**Pinedale Array** comp=Z,0.6nm,0.5s,baz=130,slow=8.5,SNR=8.1	49.34 327	P		P	11 06 07.0	+0.8
GSC	**Goldstone, Bar** baz=121	49.39 315	P		P	11 06 07.5	+0.9
DUG	**Duguay, Tooele** baz=128	49.52 323	P		P	11 06 08.4	+0.7
SCI2	**San Clemente I** baz=117	49.53 312	P		P	11 06 08.5	+0.9
A29A	**Manning Farm,** baz=149,SNR=6.5	49.56 340	P		P	11 06 07.0	-0.6
IMW	**Indian Meadow** comp=Z,11nm,0.6s	50.84 328	*e*P		P	11 06 18.7	+1.1
BOZ	**Bozeman (W)** baz=133,SNR=6.3	52.39 329	P		P	11 06 29.4	+0.5
BOZ	**Bozeman (W)** comp=Z,2.8nm,0.6s	52.39 329	*e*P		P	11 06 29.0	+0.1
YKA	**Yellowknife Ar** comp=Z,1.4nm,0.4s,baz=135,slow=6.2,SNR=26	65.57 341	P		P	11 07 58.2	-0.8
DBIC	**Dimbokro** comp=Z,4.3nm,0.6s,baz=258,slow=6.8,SNR=8.1	70.82 84	P		P	11 08 31.9	-0.7
TORD	**Torodi Ar. Bea** comp=Z,1.8nm,0.6s,baz=284,slow=6.3,SNR=10	77.18 77	P		P	11 09 08.2	-1.3
ILAR	**Eielson Array** comp=Z,0.5nm,0.6s,baz=123,slow=3.7,SNR=13	78.91 336	P		P	11 09 17.8	-0.3
LZH	**Lanzhou**	140.74 0	*e*PKP		PKPdf	11 16 44.0	0.0
LZH			pPKP		pPKPdf	11 17 30.5	-1.2
LZH			sPKP			11 17 50.6	
LZH	comp=N,93nm,17.9s		LR		LR		
LZH	comp=E,100nm,18.0s		LR		LR		
LZH	comp=Z,130nm,20.1s		LR		LR		
ASAR	**Alice Springs** comp=Z,0.1nm,0.3s,baz=136,slow=4.2,SNR=4.3	144.83 232	PKPbc		PKPbc	11 16 50.7	-0.2
WRA	**Warramunga Arr** comp=Z,0.4nm,0.8s,baz=115,slow=2.7,SNR=3.9	146.21 238	PKPbc		PKPdf	11 16 53.7	0.0

*IDC **09** 11:25:31.9±2.4, 38°.93N×142°.65E, h0km, mb3.7/3, mb1 3.7/6, mb1mx3.4/54, mbtmp3.6/6, ML3.0/3, MS3.6/1, Ms1 3.6/1, ms1mx2.3/50, Error ellipse: s-maj=52.4km s-min=27.0km az=73.0*

*ISCJB **09** 11:25:40.5±1.0, 38°.65N±0°.04×141°.9E±0°.1, h56km±7km, mb3.7/3, MS3.5/1, Error ellipse: s-maj=14.4km s-min=6.9km az=11.9*

*JMA **09** 11:25:42.2±0.1, 38°.70N×141°.80E, h53km±1km, M3.3*

JMA Felt II J1.

ISC 09 11:25:41.9±1.3, 38°.68N±0°.05×141°.89E±0°.10, h52km±10km, n16, σ1s13/23, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	0.43	337	P		Pn	11 25 52.6	+0.1
OFUJ				S		Sn	11 25 59.6	-0.5
JIO	**Ouri**	0.48	242	P		Pn	11 25 52.9	-0.1
JIO				S		Sn	11 26 00.1	-0.9
JMK	**Ichinoseki**	0.59	298	P		Pn	11 25 54.0	-0.3
JMK				S		Sn	11 26 02.3	-0.9
JOM	**Ohasama**	0.92	330	P		Pn	11 25 58.4	-0.1
JOM				S		Sn	11 26 09.9	-0.9
JOU	**Okura**	1.01	252	P		Pn	11 25 59.4	-0.4
JOU				S		Sn	11 26 12.1	-0.9
JMM	**Marumori**	1.19	227	P		Pn	11 26 01.5	-0.6
JMM				*e*S		Sn	11 26 15.5	-1.7
JRG	**Rokugo**	1.21	307	P		Pn	11 26 01.9	-0.6
JYK	**Kaneyama**	1.22	282	P		Pn	11 26 02.1	-0.5
JYS	**Shirataka**	1.50	253	P		Pn	11 26 06.4	-0.1
JYS				S		Sn	11 26 24.8	-0.1
MJAR	**Matsushiro Arr** 0.9nm,0.3s,baz=42,slow=12,SNR=8.5	3.62	235	Pn		Pn	11 26 37.1	+1.7
JHJ	**Hachijo jima 2** 0.9nm,0.3s,baz=122,slow=12,SNR=4.3	5.81	198	Pn		Pn	11 27 06.2	+0.8
JHJ	2.3nm,0.3s,baz=237,slow=17,SNR=3.4			Sn		Sn	11 28 09.3	-1.4
KSRS	**Korea Array** 0.1nm,0.3s,baz=82,slow=14,SNR=3.1	11.08	268	Pn		Pn	11 28 20.8	+3.3
TGY	**Tagaytay City** comp=Z,125nm,21.4s,baz=219,slow=35	30.70	223	LR		LR	11 43 35.7	
MKAR	**Makanchi Array** 0.5nm,0.4s,baz=82,slow=10,SNR=5.5	43.58	301	P		P	11 33 40.5	-0.2
KURBB	**Kurchatov Arra** 1.6nm,0.6s,baz=83,slow=8.2,SNR=14	45.30	307	P		P	11 33 53.8	-0.5
WRA	**Warramunga Arr** 0.3nm,0.8s,baz=5.4,slow=7.1,SNR=3.1	58.74	188	P		P	11 35 33.8	-0.7

*ISCJB **09** 11:37:00.3±0.8, 1°.97N±0°.09×99°.31E±0°.07, h100km, mb3.7/4, Error ellipse: s-maj=12.5km s-min=9.4km az=10.7*

*IDC **09** 11:37:03.5±1.9, 1°.97N×99°.32E, h120km±9km, mb3.4/4, mb1 3.6/5, mb1mx3.2/47, mbtmp3.8/5, Error ellipse: s-maj=118.1km s-min=17.8km az=58.0*

*DJA **09** 11:37:05.1±1.0, 2°.N±4°×9°.9E±°, h110km±9km, M3.0/6, MLv3.0/6*

ISC 09 11:37:02.9±1.0, 1°.94N±0°.07×99°.11E±0°.08, h100km, n12, σ2s6s/12, mb3.8/4, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat** 8.0nm,0.3s,baz=331,slow=13,SNR=24	0.87	348	P		Pn	11 37 24.9	+2.6
PSI	9.1nm,0.3s,baz=62,slow=22,SNR=33			S		Sn	11 37 40.4	+3.8

MNSI	**Mandailing Nat**	**1.23**	**157**	P	**Pn**	11 37 29.7	**+3.7**
GSI	**Gunungsitoli**	**1.66**	**248**	P	**Pn**	11 37 33.1	**+1.9**
GSI				S	**Sn**	11 37 54.1	**+1.5**
TPTI		**2.33**	**304**	P	**Pn**	11 37 41.2	**+1.4**
TPTI				S	**Sn**	11 38 08.2	**+0.1**
CMAR	**Chiang Mai Arr**	**16.41**	**359**	P	**Pn**	11 40 47.7	**+0.2**
	0.2nm,0.3s,baz=193,slow=11,SNR=4.0						
H08S2	**Diego Garcia H**	**28.21**	**250**	T	T	12 10 28.8	
	baz=74,slow=74						
H08S3	**Diego Garcia H**	**28.21**	**250**	T	T	12 10 16.1	
	baz=74,slow=74						
H08S1	**Diego Garcia H**	**28.23**	**250**	T	T	12 09 58.6	
	baz=74						
WRA	**Warramunga Arr**	**40.83**	**124**	P	**P**	11 44 32.2	**-2.9**
	0.8nm,0.4s,baz=303,slow=8.9,SNR=16						
ASAR	**Alice Springs**	**42.35**	**129**	P	**P**	11 44 44.7	**-2.8**
	0.4nm,0.5s,baz=305,slow=7.9,SNR=7.9						
MKAR	**Makanchi Array**	**47.02**	**344**	P	**P**	11 45 22.6	**-1.6**
	0.3nm,0.3s,baz=152,slow=6.0,SNR=3.8						
ZALV	**Zalesovo Beam**	**53.16**	**349**	P	**P**	11 46 09.1	**-1.3**
	0.7nm,0.4s,baz=164,slow=8.1,SNR=4.8						

*IDC **09** 11:43:53.9±5.8,24.˙96S×179.˙96E,h452km±64km,mb3.6/8, mb1 3.7/9,mb1mx3.4/32,mbtmp4.4/9,Error ellipse: s-maj=37.2km s-min=18.3km az=38.0*

*ISCJB **09** 11:43:57.1±1.2,25.˙2S±0.˙2×179.˙9E±0.˙2,h501km,mb3.9/7, Error ellipse: s-maj=24.5km s-min=19.8km az=136.1*

ISC 09 11:43:58.1±1.3,25.˙2S±0.˙2×179.˙9E±0.˙2,h501km,n10, σ1§24/10,mb4.0/7,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**13.24**	**190**	P	**P**	**11 46 47.6**	**-2.0**
	1.8nm,0.3s,baz=101,slow=5.9,SNR=8.5						
RPZ	**Rata Peaks**	**19.84**	**199**	P	**P**	**11 47 55.0**	**-0.1**
	25nm,0.9s,baz=64,slow=3.0,SNR=6.5						
CTA	**Charters Tower**	**31.40**	**272**	P	**P**	**11 49 37.9**	**+0.2**
	7.8nm,0.3s,baz=97,slow=9.7,SNR=22						
STKA	**Stephens Creek**	**34.17**	**250**	P	**P**	**11 50 01.7**	**+0.7**
	2.2nm,0.4s,baz=95,slow=11,SNR=15						
ASAR	**Alice Springs**	**41.74**	**262**	P	**P**	**11 51 02.6**	**-0.4**
	2.1nm,0.4s,baz=95,slow=7.6,SNR=130						
WRA	**Warramunga Arr**	**42.23**	**268**	P	**P**	**11 51 06.0**	**-1.0**
	5.3nm,0.3s,baz=99,slow=6.8,SNR=306						
FITZ	**Fitzroy Crossi**	**50.64**	**267**	P	**P**	**11 52 10.6**	**-0.2**
	4.4nm,0.7s,baz=78,slow=6.2,SNR=14						
VNDA	**Vanda**	**53.09**	**185**	P	**P**	**11 52 29.8**	**+2.2**
	0.4nm,0.5s,baz=10,slow=7.8,SNR=6.4						
TXAR	**Lajitas Array**	**91.20**	**58**	P	**P**	**11 56 09.2**	**-0.5**
	0.9nm,0.8s,baz=213,slow=6.3,SNR=11						
TORD	**Torodi Ar. Bea**	**167.90**	**188**	PKPab	**PKPab**	**12 04 18.0**	**+0.2**
	0.4nm,0.6s,baz=179,slow=5.8,SNR=2.8						

*MOS **09** 11:44:08.6±0.8,24.˙94S×179.˙86E,h484km,mb4.6/23, Error ellipse: s-maj=11.5km s-min=10.1km az=148.7*

*IDC **09** 11:44:08.5±1.3,24.˙91S×179.99W,h476km±13km, mb3.9/20,mb1 4.0/22,mb1mx4.0/33,mbtmp4.8/22,Error ellipse: s-maj=12.6km s-min=11.4km az=71.0*

*NEIC **09** 11:44:09.8±0.5,24.˙97S×179.˙89E,h487km±6km,mb4.5/67, Error ellipse: s-maj=5.5km s-min=4.1km az=144.0*

*ISCJB **09** 11:44:10.2±0.2,25.˙00S±0.˙04×179.˙79E±0.˙04,h501km, mb4.5/83,Error ellipse: s-maj=5.6km s-min=4.0km az=136.6*

ISC 09 11:44:10.7±0.3,24.˙96S±0.˙05×179.˙93E±0.˙06,h501km, n238,σ1§07/255,mb4.5/83,5C-5D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**4.68**	**156**	S	**S**	**11 46 43.1**	**-0.4**
	83nm,0.3s,baz=75,slow=20,SNR=2.3						
MSVF	**Nonsavu**	**7.40**	**346**	*e*P	**P**	**11 46 00.4**	**-0.8**
MSVF				*e*S	**S**	**11 47 31.5**	**-0.2**
MSVF	**Nonsavu**	**7.40**	**346**	*e*P	**P**	**11 46 00.4**	**-0.8**
MSVF				*e*S	**S**	**11 47 31.4**	**-0.2**
QUZ	**Omahuta**	**11.60**	**207**	*e*P	**P**	**11 46 42.9**	**-1.9**
DZM	**Mont Dzumac**	**12.70**	**280**	P	**P**	**11 46 57.5**	**+0.7**
	1.4nm,0.3s,baz=72,slow=17,SNR=8.2						
DZM	**Mont Dzumac**	**12.70**	**280**	*e*P	**P**	**11 46 56.2**	**-0.6**
URZ	**Urewera**	**13.47**	**190**	P	**P**	**11 47 02.4**	**-2.2**
	5.4nm,0.3s,baz=246,slow=0.8,SNR=14						
URZ				S	**S**	**11 49 25.6**	**-2.4**
	3.2nm,0.3s,baz=242,slow=24,SNR=9.7						
URZ	**Urewera**	**13.47**	**190**	*e*P	**P**	**11 47 04.4**	**-0.2**
URZ				*e*S	**S**	**11 49 27.8**	**-0.3**
AFI	**Afiamalu**	**13.49**	**37**	P	P	11 46 57.7	-7.5
	2.5nm,0.3s,baz=133,slow=9.3,SNR=3.3						
AFI				S	S	11 49 18.9	-10
	7.9nm,0.3s,baz=25,slow=17,SNR=6.9						
AFI	**Afiamalu**	**13.49**	**37**	*e*P	**P**	**11 47 03.3**	**-1.9**
AFI				*e*S	S	11 49 18.6	-10
AFI	**Afiamalu**	**13.49**	**37**	*e*P	**P**	**11 47 03.3**	**-1.9**
AFI				*e*		11 48 49.9	
AFI				*e*S	S	11 49 18.6	-10
BKZ	**Black Stump Fm**	**14.46**	**191**	*e*P	**P**	**11 47 15.4**	**+0.3**
BKZ				*e*S	**S**	**11 49 49.6**	**+2.6**
SNZO	**South Karori**	**16.87**	**194**	*e*P	**P**	**11 47 39.2**	**-0.9**
	116nm,0.8s						
KHZ	**Kahutara**	**18.19**	**195**	*e*P	**P**	**11 47 51.4**	**-1.0**
	56nm,0.6s						
LTZ	**Lake Taylor**	**18.86**	**198**	*e*P	**P**	**11 47 57.8**	**-0.9**
	77nm,0.9s						
RAR	**Rarotonga**	**19.04**	**83**	P	**P**	**11 47 58.8**	**-1.8**
	0.6nm,0.3s,baz=346,slow=4.2,SNR=3.7						
RAR				S	S	11 50 55.8	-12
	4.7nm,0.3s,baz=109,slow=4.6,SNR=5.6						
OXZ	**Oxford**	**19.43**	**198**	*e*P	**P**	**11 48 02.3**	**-1.5**
	117nm,0.7s						
RPZ	**Rata Peaks**	**20.07**	**199**	P	**P**	**11 48 09.0**	**-0.7**
	33nm,0.7s,baz=14,slow=0.9,SNR=17						
RPZ	**Rata Peaks**	**20.07**	**199**	*e*P	**P**	**11 48 09.2**	**-0.5**
	24nm,0.5s						
HNR	**Honiara**	**24.50**	**306**	P	**P**	**11 48 48.5**	**-1.3**
	99nm,0.7s,baz=84,slow=2.2,SNR=6.1						
EIDS	**Eidsvold**	**26.09**	**263**	*e*P	**P**	**11 49 04.2**	**+0.3**
	36nm,0.8s						
CTA	**Charters Tower**	**31.43**	**272**	P	**P**	**11 49 51.4**	**+0.9**
	53nm,0.7s,baz=98,slow=11,SNR=43						
CTAO	**Charters Tower**	**31.43**	**272**	*e*P	**P**	**11 49 50.7**	**+0.2**
CTAO				pmax	pmax		
	comp=Z,55nm,0.8s						
CTAO	**Charters Tower**	**31.43**	**272**	*e*P	**P**	**11 49 50.7**	**+0.2**
	comp=Z,55nm,0.8s						
STKA	**Stephens Creek**	**34.28**	**250**	P	**P**	**11 50 14.5**	**0.0**
	comp=Z,10nm,0.6s,baz=96,slow=12,SNR=28						
STKA	**Stephens Creek**	**34.28**	**250**	*e*P	**P**	**11 50 14.0**	**-0.5**
	comp=Z,2.5nm,0.6s						
PMG	**Port Moresby**	**34.79**	**291**	P	**P**	**11 50 19.0**	**+0.1**
	comp=Z,35nm,0.9s,baz=137,slow=3.4,SNR=7.0						
PMG	**Port Moresby**	**34.79**	**291**	*d*iP	**P**	**11 50 18.5**	**-0.5**
PMG				pmax	pmax		
	comp=Z,149nm,0.9s						
PMG	**Port Moresby**	**34.79**	**291**	*e*P	**P**	**11 50 19.1**	**+0.1**
	comp=Z,41nm,0.9s						
COEN	**Coen**	**36.23**	**281**	*e*P	**P**	**11 50 31.4**	**+0.4**
	comp=Z,39nm,0.9s						
BBOO	**Buckleboo**	**38.98**	**248**	*e*P	**P**	**11 50 52.6**	**-0.7**
	comp=Z,25nm,0.8s						
AS01	**Alice Springs**	**41.77**	**262**	*e*P	**P**	**11 51 16.0**	**+0.2**
ASAR	**Alice Springs**	**41.81**	**262**	P	**P**	**11 51 16.1**	**0.0**
	comp=Z,20nm,0.8s,baz=98,slow=7.8,SNR=60						
ASAR				ScP	**ScP**	**11 56 05.3**	**+2.2**
	comp=Z,1.9nm,0.9s,baz=116,slow=3.5,SNR=7.6						
ASAR				S	**S**	**11 56 56.0**	**-1.3**
	comp=Z,0.8nm,0.8s,baz=101,slow=14,SNR=4.8						
WB2	**Warramunga Arr**	**42.27**	**267**	*e*P	**P**	**11 51 18.6**	**-1.2**
	comp=Z,37nm,0.8s						
WRAB	**Tennant Creek**	**42.27**	**267**	*d*iP	**P**	**11 51 19.1**	**-0.7**
WRAB				pmax	pmax		
	comp=Z,66nm,0.9s						
WRAB	**Tennant Creek**	**42.27**	**267**	*e*P	**P**	**11 51 19.4**	**-0.5**
	comp=Z,39nm,1.0s						
WRA	**Warramunga Arr**	**42.28**	**267**	P	**P**	**11 51 19.4**	**-0.4**
	comp=Z,30nm,0.6s,baz=103,slow=8.1,SNR=50						
WRA				ScP	**ScP**	**11 56 07.7**	**+2.6**
	comp=Z,6.9nm,0.9s,baz=102,slow=4.3,SNR=13						
WRA				S	**S**	**11 57 01.2**	**-2.8**
	comp=Z,5.6nm,1.0s,baz=102,slow=14,SNR=9.4						
JAY	**Jayapura**	**43.88**	**294**	P	**P**	**11 51 32.1**	**-0.4**
	comp=Z,1.7nm,0.7s,baz=94,slow=21,SNR=8.1						
FORT	**Forrest**	**45.89**	**251**	*e*P	**P**	**11 51 46.9**	**-0.8**
	comp=Z,485nm,0.7s						
FITZ	**Fitzroy Crossi**	**50.69**	**266**	P	**P**	**11 52 23.8**	**+0.1**
	comp=Z,32nm,0.8s,baz=131,slow=8.7,SNR=29						
FITZ	**Fitzroy Crossi**	**50.69**	**266**	*e*P	**P**	**11 52 23.9**	**+0.1**
	comp=Z,30nm,0.8s						
SBA	**Scott Base**	**53.32**	**183**	*e*P	**P**	**11 52 42.7**	**+1.0**
SBA				pmax	pmax		
	comp=Z,12nm,0.9s						
SBA	**Scott Base**	**53.32**	**183**	*e*P	**P**	**11 52 42.7**	**+1.0**
	comp=Z,12nm,0.9s						
VNDA	**Vanda**	**53.32**	**185**	P	**P**	**11 52 42.3**	**+0.6**
	comp=Z,2.3nm,0.6s,baz=4.8,slow=7.6,SNR=20						
VNDA	**Vanda**	**53.32**	**185**	*e*P	**P**	**11 52 42.9**	**+1.1**
VNDA				pmax	pmax		
	comp=Z,18nm,2.0s						
VNDA	**Vanda**	**53.32**	**185**	*e*P	**P**	**11 52 42.9**	**+1.1**
	comp=Z,18nm,2.0s						
NWAO	**Narrogin (SRO)**	**54.74**	**246**	P	**P**	**11 52 51.5**	**-1.1**
	comp=Z,9.8nm,0.8s,baz=346,slow=5.9,SNR=4.5						
SOEI	**Soe**	**54.88**	**276**	*e*P	**P**	**11 52 54.4**	**+0.5**
	comp=Z,115nm,1.1s						
MBWA	**Marble Bar**	**55.13**	**261**	*e*P	**P**	**11 52 54.4**	**-1.1**
	comp=Z,48nm,0.8s						
CASY	**Casey**	**59.13**	**206**	*e*P	**P**	**11 53 21.8**	**-0.3**
	comp=Z,3.7nm,0.9s						
QSPA	**South Pole Qui**	**65.12**	**180**	*e*P	**P**	**11 54 02.4**	**+1.1**
	comp=Z,15nm,0.9s						
SBUM	**Sibu**	**70.97**	**282**	*e*P	**P**	**11 54 37.7**	**+0.1**
	comp=Z,5.4nm,0.9s						
KSM	**Kuching**	**72.23**	**280**	*e*P	**P**	**11 54 44.9**	**-0.1**
	comp=Z,18nm,0.8s						
MJAR	**Matsushiro Arr**	**72.74**	**326**	P	**P**	**11 54 46.9**	**-0.6**
	comp=Z,2.8nm,0.9s,baz=161,slow=5.6,SNR=10.0						
MJAR	**Matsushiro Arr**	**72.74**	**326**	P	**P**	**11 54 46.9**	**-0.6**
MJAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MAJO	**Matsushiro**	**72.74**	**326**	⇑*i*P	**P**	**11 54 47.5**	**0.0**
MAJO				pmax	pmax		
	comp=Z,19nm,0.9s						
MAW	**Mawson**	**76.74**	**201**	P	**P**	**11 55 10.0**	**+0.6**
	comp=Z,7.8nm,0.7s,baz=137,slow=8.5,SNR=16						
MAW	**Mawson**	**76.74**	**201**	*e*P	**P**	**11 55 10.4**	**+0.9**
	comp=Z,2.1nm,0.8s						
KSRS	**Korea Array**	**79.02**	**320**	P	**P**	**11 55 23.1**	**+0.8**
	comp=Z,1.4nm,0.7s,baz=135,slow=5.6,SNR=7.0						
KSAR	**Wonju Array Be**	**79.03**	**320**	P	**P**	**11 55 23.1**	**+0.7**
KSAR	**Wonju Array Be**	**79.03**	**320**	P	**P**	**11 55 23.1**	**+0.7**
PETK	**Petropavlovsk-**	**80.11**	**347**	P	**P**	**11 55 27.3**	**-0.4**
	comp=Z,2.3nm,0.6s,baz=121,slow=7.4,SNR=5.5						
PETK	**Petropavlovsk-**	**80.11**	**347**	P	**P**	**11 55 27.3**	**-0.4**
PETK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
USRK	**Ussuriysk Ar.**	**81.62**	**327**	P	**P**	**11 55 36.6**	**+1.0**
	comp=Z,1.6nm,0.5s,baz=134,slow=8.3,SNR=4.6						
SYO	**Syowa Base**	**81.97**	**193**	⇑*e*P	**P**	**11 55 35.2**	**-2.0**
SBC	**Santa Barbara**	**82.26**	**46**	P	**P**	**11 55 40.7**	**+1.5**
	baz=233						
PKM	**Mcpherson Peak**	**82.46**	**46**	P	**P**	**11 55 41.6**	**+1.1**
	baz=233						
BLG	**Laguna Peak, P**	**82.48**	**47**	P	**P**	**11 55 41.6**	**+1.2**
	baz=233						
109C	**Camp Elliot, M**	**83.09**	**49**	P	**P**	**11 55 44.6**	**+1.2**
	baz=234						
MURC	**Murrieta**	**83.44**	**48**	P	**P**	**11 55 46.1**	**+0.9**
	baz=234						
BFSC	**Mount Baldy Ra**	**83.50**	**48**	P	**P**	**11 55 46.0**	**+0.4**
	baz=234						
VES	**Vestal, Richgr**	**83.51**	**46**	P	**P**	**11 55 46.4**	**+0.9**
	baz=233						
MONP2	**Monument Peak**	**83.56**	**49**	P	**P**	**11 55 47.0**	**+0.9**
	baz=235,SNR=8.8						
WHN	**Wuhan**	**83.60**	**308**	⇓P	**P**	**11 55 45.0**	**-1.0**
SNAA	**Sanae**	**83.61**	**179**	⇑*e*P	**P**	**11 55 45.7**	**+0.2**
SNAA				pmax	pmax		
	comp=Z,148nm,1.0s						
SNAA	**Sanae**	**83.61**	**179**	*e*P	**P**	**11 55 45.3**	**-0.2**
	comp=Z,13nm,1.8s						
IKP	**In-Ko-Pah, Jac**	**83.64**	**50**	P	**P**	**11 55 47.1**	**+0.7**
	baz=235						
EDW2	**Edwards Air Fo**	**83.66**	**47**	P	**P**	**11 55 47.0**	**+0.7**
	baz=234,SNR=5.7						
ISA	**Isabella, Lake**	**83.80**	**46**	P	**P**	**11 55 48.0**	**+1.0**
	baz=233						
ISA	**Isabella, Lake**	**83.80**	**46**	*e*P	**P**	**11 55 48.0**	**+1.0**
ISA				pmax	pmax		
	comp=Z,13nm,0.8s						
ISA	**Isabella, Lake**	**83.80**	**46**	*e*P	**P**	**11 55 48.0**	**+1.0**
	comp=Z,13nm,0.8s						
PFO	**Pinyon Flats O**	**83.95**	**49**	P	**P**	**11 55 48.6**	**+0.7**
	baz=235,SNR=5.6						
PFO	**Pinyon Flats O**	**83.95**	**49**	*e*P	**P**	**11 55 48.6**	**+0.7**
PFO				pmax	pmax		
	comp=Z,12nm,1.1s						
PFO	**Pinyon Flats O**	**83.95**	**49**	*e*P	**P**	**11 55 48.6**	**+0.7**
	comp=Z,12nm,1.1s						
TPFO	**Pinon Flats**	**83.95**	**49**	P	**P**	**11 55 48.5**	**+0.6**
	baz=235,SNR=5.9						
CMB	**Columbia Colle**	**84.02**	**43**	*e*P	**P**	**11 55 48.6**	**+0.6**
CMB				pmax	pmax		
	comp=Z,7.0nm,0.9s						
CMB	**Columbia Colle**	**84.02**	**43**	*e*P	**P**	**11 55 48.6**	**+0.6**
	comp=Z,7.0nm,0.9s						
SWSC	**Sam W. Stewart**	**84.02**	**50**	P	**P**	**11 55 49.1**	**+1.0**
	baz=235,SNR=5.6						
LRMC	**Laurel Mtn Rad**	**84.21**	**47**	P	**P**	**11 55 49.5**	**+0.4**
	baz=234,SNR=6.3						
AFDM	**Forest Hills D**	**84.22**	**42**	*e*P	**P**	**11 55 49.5**	**+0.5**
	comp=Z,8.4nm,1.0s						
ORV	**Oroville**	**84.28**	**42**	*e*P	**P**	**11 55 49.6**	**+0.4**
ORV				pmax	pmax		
	comp=Z,10.0nm,1.0s						
ORV	**Oroville**	**84.28**	**42**	*e*P	**P**	**11 55 49.6**	**+0.4**
	comp=Z,10nm,1.0s						
N02D	**Trinity Center**	**84.46**	**40**	P	**P**	**11 55 51.5**	**+1.4**
	baz=230						
VNA1	**Neumayer--Stat**	**84.48**	**177**	P	**P**	**11 55 50.5**	**+0.9**
BELC	**Belle Mtn. Jos**	**84.49**	**49**	P	**P**	**11 55 51.6**	**+1.1**
	baz=235,SNR=12						
CWC	**Cottonwood Cre**	**84.52**	**46**	P	**P**	**11 55 51.6**	**+0.9**
	baz=234						
O03D	**Paynes Creek**	**84.56**	**41**	P	**P**	**11 55 51.6**	**+1.0**
	baz=231						
M02C	**Callahan**	**84.65**	**39**	P	**P**	**11 55 52.4**	**+1.4**
	baz=230						
BC3	**Big Chuckawall**	**84.66**	**49**	P	**P**	**11 55 52.6**	**+1.2**
	baz=235,SNR=6.4						
MPMC	**Manual Prospec**	**84.68**	**46**	P	**P**	**11 55 52.4**	**+0.8**
	baz=234						
GSC	**Goldstone, Bar**	**84.69**	**47**	P	**P**	**11 55 51.7**	**+0.2**
	baz=234,SNR=7.1						
GSC	**Goldstone, Bar**	**84.69**	**47**	*e*P	**P**	**11 55 51.8**	**+0.4**
GSC				pmax	pmax		
	comp=Z,11nm,1.0s						
GSC	**Goldstone, Bar**	**84.69**	**47**	*e*P	**P**	**11 55 51.8**	**+0.4**
	comp=Z,11nm,1.0s						
CN2	**Changchun**	**84.70**	**324**	*e*P	**P**	**11 55 53.2**	**+2.0**
L02D	**Cave Junction,**	**84.71**	**38**	P	**P**	**11 55 52.8**	**+1.5**
	baz=229						
HEC	**Hector,Ludlow**	**84.73**	**48**	P	**P**	**11 55 52.5**	**+0.8**
	baz=235						
GLA	**Glamis**	**84.76**	**50**	P	**P**	**11 55 53.2**	**+1.4**
	baz=236,SNR=5.3						
WAKR	**Walker**	**84.89**	**43**	*e*P	**P**	**11 55 53.5**	**+0.9**
	comp=Z,8.3nm,1.0s						
IRM	**Iron Mountain**	**85.16**	**49**	P	**P**	**11 55 55.1**	**+1.4**
	baz=236,SNR=10						
GMRC	**Granite Mounta**	**85.16**	**48**	P	**P**	**11 55 54.5**	**+0.7**
	baz=235,SNR=6.4						
GRAC	**Grapevine Rang**	**85.31**	**46**	P	**P**	**11 55 55.3**	**+0.9**
	baz=234						
FURC	**Furnace Creek,**	**85.33**	**46**	P	**P**	**11 55 55.5**	**+1.1**
	baz=234						
113A	**Mohawk Valley,**	**85.34**	**51**	*e*P	**P**	**11 55 56.0**	**+1.5**
	comp=Z,9.9nm,1.0s						
TUQ	**Turquoise Moun**	**85.36**	**48**	P	**P**	**11 55 55.7**	**+1.0**
	baz=235						
Y12C	**Blythe**	**85.36**	**50**	P	**P**	**11 55 55.6**	**+1.0**
	baz=236						
Y12C	**Blythe**	**85.36**	**50**	*e*P	**P**	**11 55 55.6**	**+1.0**
	comp=Z,9.8nm,1.0s						
SHOC	**Shoshone, Teco**	**85.39**	**47**	P	**P**	**11 55 55.9**	**+1.2**
	baz=235						
M04C	**Macdoel**	**85.48**	**40**	P	**P**	**11 55 56.2**	**+1.0**
	baz=231						
214A	**Organ Pipe Nat**	**85.57**	**52**	P	**P**	**11 55 57.2**	**+1.4**
	baz=237						
214A	**Organ Pipe Nat**	**85.57**	**52**	*e*P	**P**	**11 55 56.5**	**+0.8**
	comp=Z,18nm,1.0s						
214A				*e*pP	**pP**	**11 57 46.0**	**-0.2**
PAHR	**Pah Rah Range**	**85.66**	**42**	*e*P	**P**	**11 55 56.9**	**+0.8**
	comp=Z,3.7nm,0.8s						
LDFC	**Landfair**	**85.70**	**48**	*e*P	**P**	**11 55 57.4**	**+1.0**
	comp=Z,17nm,0.8s						
I03D	**Drain, OR**	**85.85**	**37**	P	**P**	**11 55 57.9**	**+1.2**
	baz=230						
TPNV	**Topopah Spring**	**86.01**	**46**	P	**P**	**11 55 58.6**	**+0.7**
	baz=235,SNR=7.9						
TPNV	**Topopah Spring**	**86.01**	**46**	*e*P	**P**	**11 55 58.8**	**+0.9**
TPNV				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TPNV	**Topopah Spring**	**86.01**	**46**	*e*P	**P**	**11 55 58.8**	**+0.9**
	comp=Z,7.2nm,0.8s						
I04A	**Tendick Farm,**	**86.44**	**38**	P	**P**	**11 56 00.4**	**+0.8**
	baz=230						
MOD	**Modoc Plateau**	**86.45**	**40**	*e*P	**P**	**11 56 00.1**	**+0.3**
	comp=Z,7.6nm,1.1s						
SHPR	**Sheep Range**	**86.47**	**47**	*e*P	**P**	**11 56 01.2**	**+1.1**
	comp=Z,2.6nm,0.9s						
Y14A	**Wickenburg**	**86.51**	**50**	*e*P	**P**	**11 56 01.0**	**+0.8**
	comp=Z,16nm,0.8s						
W13A	**Hualapai Mount**	**86.54**	**49**	*e*P	**P**	**11 56 01.4**	**+0.9**
	comp=Z,16nm,1.8s						
K05A	**Summer Lake**	**86.62**	**39**	*e*P	**P**	**11 56 01.9**	**+1.2**
	comp=Z,17nm,1.2s						
J05D	**Fort Rock, OR**	**86.77**	**39**	P	**P**	**11 56 02.8**	**+1.5**
	baz=231						
TUC	**Tucson**	**87.21**	**52**	P	**P**	**11 56 05.5**	**+1.9**
	baz=238						
TUC	**Tucson**	**87.21**	**52**	*e*P	**P**	**11 56 05.0**	**+1.4**
TUC				pmax	pmax		
	comp=Z,12nm,1.0s						
TUC	**Tucson**	**87.21**	**52**	*e*P	**P**	**11 56 05.0**	**+1.4**
	comp=Z,12nm,1.0s						
GYA	**Guiyang**	**87.23**	**301**	*e*P	**P**	**11 56 05.2**	**+1.4**
GYA				pP	pP	11 57 56.6	+1.8
GYA				sP	sP	11 58 45.2	-0.6
GYA				PP	**PP**	**11 59 40.4**	**+3.2**
GYA				SKS	**SKSac**	**12 05 44.0**	**+0.4**
GYA				S	**S**	**12 06 03.5**	**+1.8**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
R11A	**Troy Canyon, C**	**87.24**	**45**	P	**P**	**11 56 04.1**	**+0.3**
	baz=235						
I05D	**Terrebonne, OR**	**87.38**	**38**	P	**P**	**11 56 05.3**	**+1.3**
	baz=231						
BMN	**Battle Mountai**	**87.42**	**43**	*e*P	**P**	**11 56 04.7**	**+0.3**
BMN				pmax	pmax		
	comp=Z,6.0nm,1.0s						
BMN	**Battle Mountai**	**87.42**	**43**	*e*P	**P**	**11 56 04.7**	**+0.3**
	comp=Z,6.1nm,1.0s						
MA2	**Magadan**	**87.59**	**346**	*e*P	**P**	**11 56 02.9**	**-1.6**
WVOR	**Wild Horse Val**	**87.76**	**41**	*e*P	**P**	**11 56 06.7**	**+0.8**
WVOR				pmax	pmax		
	comp=Z,10.0nm,1.1s						
WVOR	**Wild Horse Val**	**87.76**	**41**	*e*P	**P**	**11 56 06.7**	**+0.8**
	comp=Z,10nm,1.1s						
319A	**Douglas**	**87.82**	**54**	*e*P	**P**	**11 56 08.1**	**+1.6**
X16A	**Lo Mia Camp, P**	**87.86**	**50**	*e*P	**P**	**11 56 08.0**	**+1.3**
	comp=Z,7.7nm,1.0s						
LCMT	**Little Creek M**	**88.03**	**47**	*e*P	**P**	**11 56 08.8**	**+1.4**
	comp=Z,6.9nm,1.2s						
CCUT	**Cedar City**	**88.25**	**47**	*e*P	**P**	**11 56 08.1**	**-0.4**
	comp=Z,4.1nm,1.0s						
G06A	**Carlson Farm,**	**88.33**	**37**	*e*P	**P**	**11 56 07.7**	**-0.7**
	comp=Z,19nm,1.0s						
HPIG		**88.35**	**59**	*e*P	**P**	**11 56 09.6**	**+0.4**
	comp=Z,6.1nm,0.7s						
U15A	**North Rim**	**88.36**	**48**	*e*P	**P**	**11 56 09.8**	**+0.7**
	comp=Z,1.1nm,1.2s						
WUAZ	**Wupatki**	**88.50**	**49**	P	**P**	**11 56 10.4**	**+0.8**
	baz=238						
WUAZ	**Wupatki**	**88.50**	**49**	*e*P	**P**	**11 56 10.0**	**+0.4**
	comp=Z,8.7nm,1.2s						
LON	**Longmire**	**88.65**	**36**	*e*P	**P**	**11 56 10.0**	**+0.1**
LON				pmax	pmax		
	comp=Z,3.0nm,0.8s						
LON	**Longmire**	**88.65**	**36**	*e*P	**P**	**11 56 10.0**	**+0.1**
	comp=Z,3.9nm,0.8s						
D05A	**Emunclaw**	**88.83**	**35**	*e*P	**P**	**11 56 11.4**	**+0.7**
	comp=Z,20nm,0.9s						
PKCU	**Pink Cliffs**	**88.89**	**47**	*e*P	**P**	**11 56 13.2**	**+1.6**
	comp=Z,5.8nm,0.8s						
G08A	**Pilot Rock**	**89.30**	**38**	*e*P	**P**	**11 56 13.4**	**+0.4**
	comp=Z,15nm,1.3s						
MTPU	**Mount Pierson**	**89.30**	**47**	*e*P	**P**	**11 56

	baz=242							
833A	**Chaparral WMA,**	**93.92**	**61**	P	**P**	**11 56 35.3**	**+0.7**	
	baz=244							
034A	**Hebbronville**	**93.94**	**62**	P	**P**	**11 56 35.9**	**+1.2**	
	baz=244							
LZH	**Lanzhou**	**93.97**	**308**	⇑P	**P**	**11 56 35.1**	**+0.2**	
LZH				pP	pP	11 58 27.5	+0.7	
LZH				sP	sP	11 59 15.3	-2.2	
LZH				PP	**PP**	**12 00 32.4**	**+2.7**	
LZH				pmax	pmax			
	comp=Z,18nm,1.3s							
LZH				pmax	pmax			
	comp=Z,45nm,9.2s							
T25A	**Trinidad**	**94.17**	**51**	P	**P**	**11 56 36.3**	**+0.5**	
	baz=242							
EGAK	**Eagle**	**94.39**	**16**	*e*P	**P**	**11 56 36.0**	**+0.2**	
	comp=Z,9.9nm,1.5s							
ISCO	**Idaho Springs**	**94.60**	**48**	P	**P**	**11 56 38.5**	**+0.7**	
	baz=241							
533A	**Kerrville**	**94.97**	**59**	P	**P**	**11 56 40.0**	**+0.6**	
	baz=244							
433A	**Art**	**95.22**	**59**	P	**P**	**11 56 41.0**	**+0.5**	
	baz=244							
534A	**Blanco**	**95.39**	**60**	P	**P**	**11 56 41.5**	**+0.2**	
	baz=244							
334A	**Lometa**	**96.13**	**58**	P	**P**	**11 56 45.1**	**+0.5**	
	baz=245							
W39A	**Magazine**	**101.11**	**56**	Pdiff	**Pdif**	**11 57 08.2**	**+1.6**	
	baz=247							
TLY	**Talaya**	**101.21**	**322**	*e*P	**Pdif**	**11 57 06.0**	**-0.7**	
W41B	**Gary Mavity, V**	**102.27**	**57**	Pdiff	**Pdif**	**11 57 12.8**	**+1.0**	
	baz=248							
H33A	**Prehn Over Nor**	**102.64**	**47**	Pdiff	**Pdif**	**11 57 15.2**	**+1.9**	
	baz=248							
MKAR	**Makanchi Array**	**112.82**	**312**	PKiKP	**PKiKP**	**12 01 49.8**	**-0.3**	
	comp=Z,0.2nm,0.2s,baz=62,slow=3.4,SNR=2.4							
MKAR				PKKPbc	**PKKPbc**	**12 12 39.4**	**-0.5**	
	comp=Z,0.3nm,0.8s,baz=278,slow=4.0,SNR=4.8							
BVAR	**Borovoye Array**	**121.19**	**318**	PKP	**PKPdf**	**12 02 05.0**	**-0.9**	
	comp=Z,1.0nm,0.4s,baz=209,slow=2.2,SNR=5.4							
AKTO	**Aktyubinsk**	**129.01**	**316**	PKP	**PKPdf**	**12 02 20.5**	**-0.4**	
	comp=Z,0.8nm,0.6s,baz=53,slow=4.4,SNR=3.9							
GEYT	**Alibeck**	**129.44**	**300**	SKPbc	SKPbc	12 05 00.4	+3.4	
	comp=Z,1.7nm,0.5s,baz=114,slow=6.6,SNR=4.8							
ARCES	**ARCESS Array B**	**132.91**	**348**	PKP	**PKPdf**	**12 02 26.9**	**-0.9**	
	comp=Z,1.0nm,0.6s,baz=41,slow=2.2,SNR=6.6							
ARCES				SKPbc	**SKPbc**	**12 05 09.3**	**+1.0**	
	comp=Z,3.5nm,0.8s,baz=28,slow=5.5,SNR=9.8							
MOS	**Moscow**	**138.79**	**328**	*e*PKIKP	**PKPdf**	**12 02 39.1**	**+0.1**	
SHEL	**Horse Pasture**	**138.95**	**172**	*i* PKIKP	**PKPdf**	**12 02 39.7**	**-0.9**	
FINES	**FINESS Array B**	**139.43**	**341**	PKhKP	PKPpre	12 02 32.2		
	comp=Z,0.5nm,0.4s,baz=51,slow=3.8,SNR=7.5							
FINES				PKP	**PKiKP**	**12 02 41.6**	**-0.9**	
	comp=Z,0.5nm,0.5s,baz=113,slow=4.4,SNR=4.9							
FINES				SKPbc	**SKPbc**	**12 05 29.2**	**+1.2**	
	comp=Z,4.2nm,0.8s,baz=83,slow=6.0,SNR=17							
FINES	**FINESS Array B**	**139.43**	**341**	PKHKP	PKPpre	12 02 32.2		
FINES						12 02 41.6		
FINES						12 05 29.2		
FINES				pmax	pmax			
	comp=Z,1.0nm,0.4s							
FINES				pmax	pmax			
	comp=Z,1.0nm,0.5s							
FINES				pmax	pmax			
	comp=N,4.0nm,0.8s							
OBN	**Obninsk**	**139.64**	**328**	*e*PKIKP	**PKPdf**	**12 02 36.9**	**-3.6**	
OBN				pmax	pmax			
	comp=Z,4.0nm,0.8s							
NB2	**NORSAR Subarra**	**143.12**	**351**	PKP	PKPab	12 02 43.8	-0.4	
	comp=Z,1.5nm,0.9s,baz=14,slow=3.2							
NOA	**NORSAR Array B**	**143.12**	**351**	PKP	PKPab	12 02 44.0	-0.3	
	comp=Z,1.9nm,0.8s,baz=14,slow=2.4,SNR=6.4							
AKASG	**Malin Array Be**	**145.82**	**326**	PKPbc	**PKPdf**	**12 02 52.1**	**+0.5**	
	comp=Z,0.9nm,0.4s,baz=45,slow=4.2,SNR=4.6							
KIEV	**Kiev**	**145.83**	**326**	⇑*e*PKIKP	**PKPdf**	**12 02 51.4**	**-0.2**	
BR131	**Keskin Array S**	**148.16**	**306**	*e*PKPbc	**PKPbc**	**12 02 59.8**	**-0.3**	
BR131				*e*PKPab	**PKPab**	**12 03 05.3**	**+0.5**	
BRTR	**Keskin Array B**	**148.16**	**306**	PKPbc	**PKPbc**	**12 02 59.8**	**-0.3**	
	comp=Z,1.7nm,0.7s,baz=144,slow=3.7,SNR=8.4							
BR231	**Keskin MP Arra**	**148.75**	**306**	*e*PKPdf	**PKPbc**	**12 03 00.7**	**-0.7**	
BR231				*e*PKPbc	**PKPab**	**12 03 06.2**	**-1.1**	
BUR08	**Bucovina Ar. S**	**149.79**	**325**	*e*PKPbc	**PKPbc**	**12 03 04.6**	**+0.9**	
BUR08				*e*PKPab	**PKPab**	**12 03 12.3**	**+1.0**	
CLL	**Collm**	**151.85**	**342**	*i* PKPbc	**PKPbc**	**12 03 08.2**	**+0.1**	
	comp=Z,6.0nm,0.8s							
CLL	**Collm**	**151.85**	**342**	*i* PKIKP	**PKPbc**	**12 03 08.2**	**+0.1**	
CLL				pmax	pmax			
	comp=Z,6.0nm,0.8s							
BRG	**Berggiesshubel**	**151.97**	**341**	*e*PKP	**PKPbc**	**12 03 08.8**	**+0.4**	
	comp=Z,2.2nm,0.6s							
BRG	**Berggiesshubel**	**151.97**	**341**	*e*PKIKP	**PKPbc**	**12 03 08.8**	**+0.4**	
BRG				pmax	pmax			
	comp=Z,2.0nm,0.6s							
ES19	**SONSECA Array**	**164.96**	**11**	*e*PKPab	**PKPab**	**12 04 16.8**	**-0.1**	
ESDC	**Sonseca Array**	**164.97**	**12**	PKPab	**PKPab**	**12 04 16.1**	**-0.8**	
	comp=Z,0.1nm,0.3s,baz=337,slow=2.3,SNR=5.2							
TORD	**Torodi Ar. Bea**	**168.13**	**188**	PKP	**PKPdf**	**12 03 19.8**	**-0.3**	
	comp=Z,0.6nm,0.9s,baz=276,slow=2.8,SNR=3.0							
TORD				PKPab	**PKPab**	**12 04 31.4**	**+0.1**	
	comp=Z,2.0nm,0.6s,baz=176,slow=4.2,SNR=11							

*ISCJB **09** 12:05:18.7±0.9,36.08N±0.03×21.51E±0.04,h23km±7km, mb3.5/6,Error ellipse: s-maj=6.7km s-min=5.0km az=141.1*

*CSEM **09** 12:05:18.1±0.5,36.09N×21.51E,h10km,ML3.5,Error ellipse: s-maj=10.2km s-min=5.9km az=36.0*

*ATH **09** 12:05:19.7,36.16N×21.66E,h29km±2km,ML3.4/5,Error ellipse: s-maj=2.6km s-min=1.4km az=48.0*

*THE **09** 12:05:20.6,36.18N×21.65E,h12km,ML3.5/9,Error ellipse: s-maj=1.4km s-min=0.7km az=235.0*

*IDC **09** 12:05:26.8±4.2,36.27N×21.86E,h98km±45km,mb3.2/7, mb1 3.2/8,mb1mx3.1/30,mbtmp3.5/8,MS2.9/2,Ms1 2.8/2, ms1mx2.4/19,Error ellipse: s-maj=29.5km s-min=19.1km az=140.0*

ISC 09 12:05:20.2±1.4,36.16N±0.05×21.60E±0.05,h32km±10km, n114,σ1§59/139,mb3.5/6,1D,Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYL	**PYLOS**	**0.74**	**9**	P	**Pb**	**12 05 33.9**	**-0.7**
PYL				S	**Sn**	**12 05 45.0**	**+0.2**
PYL	**PYLOS**	**0.74**	**9**	P	**Pb**	**12 05 34.0**	**-0.7**
PYL				S	**Sn**	**12 05 44.9**	**+0.2**
PYL	**PYLOS**	**0.74**	**9**	P	**Pb**	**12 05 34.0**	**-0.7**
PYL				S	**Sn**	**12 05 44.9**	**+0.2**
ITM	**Ithomi**	**1.05**	**15**	P	**Pn**	**12 05 39.1**	**+0.3**
ITM				S	**Sb**	**12 05 54.5**	**+1.2**
ITM	**Ithomi**	**1.05**	**15**	P	**Pn**	**12 05 39.1**	**+0.3**
ITM				S	**Sb**	**12 05 54.1**	**+0.8**
ITM	**Ithomi**	**1.05**	**15**	P	**Pn**	**12 05 38.9**	**+0.1**
ITM				S	**Sb**	**12 05 54.1**	**+0.8**
ITM				AML	AML	12 06 00.3	
	comp=N,3908μm,0.7s						
ITM				AML	AML	12 06 01.0	
	comp=E,3310μm,0.4s						
KYTH	**Kithira**	**1.18**	**85**	P	**Pb**	**12 05 41.6**	**-0.4**
KYTH				S	**Sb**	**12 05 57.7**	**+0.7**
KYTH	**Kithira**	**1.18**	**85**	P	**Pb**	**12 05 41.6**	**-0.4**
KYTH				S	**Sb**	**12 05 57.7**	**+0.7**
KYTH	**Kithira**	**1.18**	**85**	P	**Pb**	**12 05 42.6**	**+0.6**
VLI	**Veliai**	**1.22**	**62**	P	**Pb**	**12 05 42.1**	**-0.5**
VLI				S	**Sb**	**12 05 59.2**	**+1.2**
VLI	**Veliai**	**1.22**	**62**	P	**Pb**	**12 05 42.5**	**-0.1**
VLI				S	**Sb**	**12 05 59.2**	**+1.2**
VLI	**Veliai**	**1.22**	**62**	P	**Pb**	**12 05 42.5**	**-0.1**
VLI				S	**Sb**	**12 05 56.5**	**-1.5**
VLI				AML	AML	12 06 02.5	
	comp=E,3494μm,0.7s						
VLI				AML	AML	12 06 06.3	
	comp=N,2286μm,1.1s						
VLX	**Vlachokerasia**	**1.36**	**27**	P	**Pb**	**12 05 44.3**	**-0.9**
VLX				S	**Sb**	**12 06 03.0**	**+0.7**
VLX	**Vlachokerasia**	**1.36**	**27**	P	**Pb**	**12 05 44.5**	**-0.7**
VLX				S	**Sb**	**12 06 03.0**	**+0.7**
VLX	**Vlachokerasia**	**1.36**	**27**	P	**Pb**	**12 05 44.5**	**-0.7**
VLX				S	**Sb**	**12 06 01.2**	**-1.0**
VLX				AML	AML	12 06 10.3	
	comp=N,4813μm,0.7s						
VLX				AML	AML	12 06 10.4	
	comp=E,3934μm,0.6s						
AMT	**Artemida-Makis**	**1.37**	**4**	P	**Pb**	**12 05 44.8**	**-0.5**
AMT	**Artemida-Makis**	**1.37**	**4**	P	**Pb**	**12 05 44.8**	**-0.5**
AMT	**Artemida-Makis**	**1.37**	**4**	P	**Pn**	**12 05 43.4**	**+0.2**
ANKY	**Antikythira Is**	**1.41**	**101**	P	**Pb**	**12 05 45.0**	**-1.0**
ANKY	**Antikythira Is**	**1.41**	**101**	P	**Pb**	**12 05 45.0**	**-1.0**
ANKY	**Antikythira Is**	**1.41**	**101**	P	**Pb**	**12 05 45.3**	**-0.7**
TRIP	**Tripoli**	**1.47**	**21**	P	**Pb**	**12 05 47.0**	**+0.1**
TRIP				S	**Sb**	**12 06 06.0**	**+0.7**
TRIP	**Tripoli**	**1.47**	**21**	P	**Pb**	**12 05 47.0**	**+0.1**
TRIP				S	**Sb**	**12 06 06.0**	**+0.7**
TRIP				AML	AML	12 06 13.4	
	comp=N,1805μm,0.8s						
TRIP				AML	AML	12 06 19.6	
	comp=E,2022μm,0.7s						
ZKS	**Zakynthos**	**1.67**	**337**	P	**Pn**	**12 05 47.6**	**+0.4**
ZKS	**Zakynthos**	**1.67**	**337**	P	**Pn**	**12 05 47.8**	**+0.6**
ZKS	**Zakynthos**	**1.67**	**337**	P	**Pn**	**12 05 47.8**	**+0.6**
ZKS				AML	AML	12 06 13.4	
	comp=E,1146μm,0.3s						
ZKS				AML	AML	12 06 20.8	
	comp=N,2325μm,0.4s						
KRND	**KRANIDI**	**1.75**	**45**	P	**Pb**	**12 05 51.8**	**+0.2**
KRND	**KRANIDI**	**1.75**	**45**	P	**Pb**	**12 05 51.8**	**+0.2**
VTN	**Vitineika**	**1.78**	**350**	P	**Pb**	**12 05 52.6**	**+0.4**
VTN	**Vitineika**	**1.78**	**350**	P	**Pb**	**12 05 52.6**	**+0.4**
DRO	**Drossia**	**1.79**	**3**	P	**Pn**	**12 05 50.5**	**+1.5**
DRO				S	**Sb**	**12 06 13.5**	**-0.9**
DRO	**Drossia**	**1.79**	**3**	P	**Pn**	**12 05 50.4**	**+1.5**
DRO				S	**Sb**	**12 06 13.5**	**-0.9**
DRO	**Drossia**	**1.79**	**3**	P	**Pn**	**12 05 50.4**	**+1.5**
DID	**Didima**	**1.88**	**44**	P	**Pn**	**12 05 51.0**	**+0.8**
DID	**Didima**	**1.88**	**44**	P	**Pn**	**12 05 51.0**	**+0.8**
DID	**Didima**	**1.88**	**44**	P	**Pn**	**12 05 50.3**	**+0.1**
RLS	**Riolos of Patr**	**1.90**	**357**	P	**Pn**	**12 05 52.3**	**+1.9**
RLS	**Riolos of Patr**	**1.90**	**357**	P	**Pn**	**12 05 52.3**	**+1.9**
KLV	**Kalavryta, Ach**	**1.93**	**13**	P	**Pn**	**12 05 52.8**	**+1.9**
KLV				S	**Sb**	**12 06 16.6**	**-1.9**
KLV	**Kalavryta, Ach**	**1.93**	**13**	P	**Pn**	**12 05 52.8**	**+1.9**
KLV				S	**Sb**	**12 06 16.6**	**-1.9**
KLV	**Kalavryta, Ach**	**1.93**	**13**	P	**Pb**	**12 05 53.0**	**-1.8**
AXS	**Araxos**	**2.04**	**355**	P	**Pn**	**12 05 53.1**	**+0.8**
AXS	**Araxos**	**2.04**	**355**	P	**Pn**	**12 05 53.1**	**+0.8**
KFL	**Anninata**	**2.05**	**342**	P	**Pn**	**12 05 54.0**	**+1.5**
KFL	**Anninata**	**2.05**	**342**	P	**Pn**	**12 05 54.0**	**+1.5**
THAL	**Thalero**	**2.06**	**24**	P	**Pn**	**12 05 54.3**	**+1.7**
THAL	**Thalero**	**2.06**	**24**	P	**Pn**	**12 05 54.4**	**+1.7**
IMMV	**Iera Moni Meta**	**2.06**	**109**	P	**Pn**	**12 05 53.5**	**+0.9**
IMMV	**Iera Moni Meta**	**2.06**	**109**	P	**Pn**	**12 05 53.5**	**+0.9**
IMMV	**Iera Moni Meta**	**2.06**	**109**	P	**Pn**	**12 05 53.1**	**+0.5**
LAKA	**Lakka**	**2.10**	**8**	P	**Pb**	**12 05 55.7**	**-1.9**
LAKA	**Lakka**	**2.10**	**8**	P	**Pb**	**12 05 55.7**	**-1.9**
LTK	**Loutraki**	**2.16**	**30**	P	**Pn**	**12 05 55.2**	**+1.2**
LTK	**Loutraki**	**2.16**	**30**	P	**Pn**	**12 05 55.2**	**+1.2**
LTK	**Loutraki**	**2.16**	**30**	P	**Pb**	**12 05 56.3**	**-2.3**
VLS	**Valsamata**	**2.17**	**339**	P	**Pn**	**12 05 55.7**	**+1.6**
VLS	**Valsamata**	**2.17**	**339**	P	**Pn**	**12 05 55.7**	**+1.6**
TRIZ	**Trizonia**	**2.23**	**10**	P	**Pb**	**12 05 57.7**	**-2.2**
VAM	**Vamos**	**2.25**	**109**	P	**Pn**	**12 05 56.1**	**+0.9**
VAM	**Vamos**	**2.25**	**109**	P	**Pn**	**12 05 56.1**	**+0.9**
KALE	**Kalithea**	**2.27**	**11**	P	**Pn**	**12 05 58.1**	**+2.5**
KALE	**Kalithea**	**2.27**	**11**	P	**Pn**	**12 05 58.1**	**+2.5**
DSF	**Desfina**	**2.37**	**18**	P	**Pn**	**12 05 58.2**	**+1.3**
DSF	**Desfina**	**2.37**	**18**	P	**Pn**	**12 05 58.2**	**+1.3**
DSF	**Desfina**	**2.37**	**18**	P	**Pn**	**12 05 58.2**	**+1.3**
VILL	**Villia**	**2.42**	**34**	P	**Pn**	**12 05 56.8**	**-0.9**
VLY	**Voula,Athens**	**2.44**	**46**	P	**Pn**	**12 05 59.1**	**+1.3**
VLY	**Voula,Athens**	**2.44**	**46**	P	**Pn**	**12 05 59.1**	**+1.3**
VIL2	**Platees**	**2.44**	**33**	P	**Pn**	**12 05 56.8**	**-1.1**
PVO	**Paravola**	**2.45**	**359**	P	**Pn**	**12 06 00.4**	**+2.4**
PVO				S	**Sn**	**12 06 30.3**	**+3.4**
PVO	**Paravola**	**2.45**	**359**	P	**Pn**	**12 06 00.4**	**+2.4**
PVO				S	**Sn**	**12 06 30.3**	**+3.4**
PVO	**Paravola**	**2.45**	**359**	P	**Pb**	**12 06 01.8**	**-1.8**
PDO	**Prodromos**	**2.46**	**352**	P	**Pn**	**12 06 00.4**	**+2.3**
PDO	**Prodromos**	**2.46**	**352**	P	**Pn**	**12 06 00.4**	**+2.3**
PDO	**Prodromos**	**2.46**	**352**	P	**Pb**	**12 06 01.5**	**-2.2**
LKR	**Lokris**	**2.73**	**24**	P	**Pn**	**12 06 03.2**	**+1.4**
LKR	**Lokris**	**2.73**	**24**	P	**Pn**	**12 06 03.2**	**+1.4**
LKD2	**Lefkada island**	**2.73**	**344**	P	**Pn**	**12 06 04.0**	**+2.2**
LKD2				S	**Sn**	**12 06 37.5**	**+3.7**
LKD2	**Lefkada island**	**2.73**	**344**	P	**Pn**	**12 06 04.0**	**+2.2**
LKD2				S	**Sn**	**12 06 37.5**	**+3.7**
LKD2	**Lefkada island**	**2.73**	**344**	P	**Pn**	**12 06 04.5**	**+2.7**
IDI	**Anoyia**	**2.82**	**107**	P	**Pn**	**12 06 03.1**	**0.0**
IDI	**Anoyia**	**2.82**	**107**	P	**Pn**	**12 06 03.1**	**0.0**
AGG	**Agios Georgios**	**2.92**	**11**	P	**Pn**	**12 06 06.3**	**+1.9**
AGG				S	**Sn**	**12 06 41.2**	**+2.8**
AGG	**Agios Georgios**	**2.92**	**11**	P	**Pn**	**12 06 06.3**	**+1.9**
AGG				S	**Sn**	**12 06 41.2**	**+2.8**
DSL	**Palaion Diasel**	**2.99**	**353**	P	**Pn**	**12 06 07.5**	**+1.9**
DSL				S	**Sn**	**12 06 43.6**	**+3.3**
DSL	**Palaion Diasel**	**2.99**	**353**	P	**Pn**	**12 06 07.4**	**+1.9**
DSL				S	**Sn**	**12 06 43.6**	**+3.3**
DSL	**Palaion Diasel**	**2.99**	**353**	P	**Pn**	**12 06 07.4**	**+1.9**
THL	**Klokotos Trika**	**3.41**	**5**	P	**Pn**	**12 06 12.8**	**+1.6**
THL	**Klokotos Trika**	**3.41**	**5**	P	**Pn**	**12 06 12.8**	**+1.6**
KPRO	**Kipourio**	**3.79**	**357**	P	**Pn**	**12 06 19.0**	**+2.5**
KPRO	**Kipourio**	**3.79**	**357**	P	**Pn**	**12 06 19.0**	**+2.5**
LIT	**Litokhoron**	**4.00**	**10**	P	**Pn**	**12 06 21.6**	**+2.3**
LIT	**Litokhoron**	**4.00**	**10**	P	**Pn**	**12 06 21.6**	**+2.3**
TAR1	**Taranto**	**5.52**	**323**	*e*Pn	**Pn**	**12 06 40.5**	**+0.3**
SG1	**Sgolgore (BA)**	**6.06**	**322**	*e*Pn	**Pn**	**12 06 47.7**	**+0.1**
BAI	**Bari**	**6.17**	**325**	*e*Pn	**Pn**	**12 06 49.9**	**+0.9**
CDT	**Castel del Mon**	**6.44**	**321**	*e*Pn	**Pn**	**12 06 52.8**	**-0.1**
BOVS	**Bovan**	**7.47**	**1**	*e*Pn	**Pn**	**12 07 06.2**	**-0.7**
BOLS	**Boljevac**	**7.66**	**2**	*e*Pn	**Pn**	**12 07 06.9**	**-2.7**
GRUS	**Gruza**	**7.75**	**355**	‖*i* Pn	**Pn**	**12 07 09.7**	**-1.1**
BBLS	**Lazići**	**7.88**	**348**	*e*Pn	**Pn**	**12 07 10.7**	**-1.9**
DIVS	**Divibare**	**8.02**	**352**	*e*Pn	**Pn**	**12 07 12.9**	**-1.7**
TEKS	**Tekeris**	**8.53**	**350**	*e*Pn	**Pn**	**12 07 20.1**	**-1.3**
UDBI	**Udbina**	**9.46**	**334**	*e*Pn	**Pn**	**12 07 34.3**	**0.0**
UDBI				Sn	Sn	12 09 09.7	-10
BRTR	**Keskin Array B**	**10.15**	**66**	P	**Pn**	**12 07 46.1**	**+2.2**
	comp=N,0.1nm,0.3s,baz=270,slow=14,SNR=3.7						
GERES	**GERESS Array B**	**13.94**	**338**	LR	LR	12 15 23.5	
	comp=N,58nm,18.8s,baz=90,slow=43						
KBZ	**Khabaz**	**17.97**	**59**	LR	LR	12 18 56.4	
	comp=N,24nm,18.5s,baz=44,slow=46						
ESDC	**Sonseca Array**	**20.45**	**288**	P	Pn	12 09 59.6	+2.4
	comp=N,0.5nm,0.5s,baz=83,slow=9.9,SNR=5.4						
FINES	**FINESS Array B**	**25.46**	**5**	P	**P**	**12 10 44.9**	**-0.2**
	comp=N,0.6nm,0.6s,baz=187,slow=9.8,SNR=4.8						
NOA	**NORSAR Array B**	**25.76**	**348**	P	**P**	**12 10 46.8**	**-1.1**
	comp=N,1.1nm,0.9s,baz=158,slow=13,SNR=2.9						
TORD	**Torodi Ar. Bea**	**29.07**	**223**	P	**P**	**12 11 19.7**	**+1.9**
	comp=N,0.5nm,0.7s,baz=36,slow=8.5,SNR=3.5						
ARCES	**ARCESS Array B**	**33.50**	**2**	P	**P**	**12 11 54.8**	**-1.5**
	comp=N,0.5nm,0.7s,baz=185,slow=9.7,SNR=3.5						
MKAR	**Makanchi Array**	**45.65**	**57**	P	**P**	**12 13 36.0**	**-1.8**
	comp=N,0.2nm,0.3s,baz=278,slow=7.3,SNR=4.0						
ZALV	**Zalesovo Beam**	**46.42**	**47**	P	**P**	**12 13 41.8**	**-1.8**
	comp=N,0.7nm,0.5s,baz=285,slow=12,SNR=4.2						

*IDC **09** 12:20:45.0±0.6,29.60S×176.68W,h0km,mb4.6/15, mb1 4.7/17,mb1mx4.6/32,mbtmp4.6/17,ML4.1/2,MS4.4/9, Ms1 4.4/9,ms1mx3.9/37,Error ellipse: s-maj=22.1km s-min=15.7km az=172.0*

*NEIC **09** 12:20:47.2±0.2,29.66S×176.88W,h10km,mb4.9/32, Error ellipse: s-maj=8.2km s-min=5.7km az=151.0*

*ISCJB **09** 12:20:48.2±3.0,29.68S±0.05×176.99W±0.06, h24km±20km,mb4.9/62,MS4.5/12,Error ellipse: s-maj=9.7km s-min=7.4km az=37.1*

*MOS **09** 12:20:50.0±0.9,29.56S×176.98W,h33km,mb5.0/32, MS4.6/6,Error ellipse: s-maj=13.5km s-min=9.9km az=93.0*

*BJI **09** 12:20:55.3,29.09S×177.11W,h59km,mb5.2/27, mB5.4/19,Ms5.2/14,Ms7 4.8/13*

ISC 09 12:20:50.6±0.6,29.84S±0.05×176.86W±0.06,h35km±2km, h35km:pP-P,n210,σ1§70/215,mb4.9/62,MS4.6/13,15C-2D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.09**	**302**	Pn	**Pn**	**12 21 10.2**	**+0.8**
	148nm,0.3s,baz=336,slow=20,SNR=12						
RAO				Sn	**Sn**	**12 21 24.6**	**+1.3**
	637nm,0.3s,baz=126,slow=19,SNR=10						
RAO	**Raoul Island**	**1.09**	**302**	*e*Pn	**Pn**	**12 21 10.0**	**+0.5**
RAO				*e*Sn	**Sn**	**12 21 19.1**	**-4.3**
RAO				Sn	**Sn**	**12 21 24.6**	**+1.3**
URZ	**Urewera**	**9.78**	**209**	Pn	**Pn**	**12 23 07.2**	**-1.5**
	1.2nm,0.3s,baz=301,slow=3.2,SNR=10.0						
URZ				Sn	**Sn**	**12 24 58.8**	**+1.6**
	2.7nm,0.3s,baz=295,slow=23,SNR=6.3						
URZ	**Urewera**	**9.78**	**209**	*e*Pn	Pn	12 23 10.7	+2.0
URZ				*e*Sn	**Sn**	**12 25 00.2**	**+3.0**
MSVF	**Nonsavu**	**12.91**	**338**	*e*P	**Pn**	**12 23 51.0**	**-0.9**
MSVF	**Nonsavu**	**12.91**	**338**	*e*Pn	**Pn**	**12 23 51.0**	**-0.9**
KHZ	**Kahutara**	**14.74**	**209**	*e*Pn	Pn	12 24 11.4	-5.2
KHZ				*e*Sn	**Sn**	**12 26 51.1**	**-7.5**
AFI	**Afiamalu**	**16.53**	**18**	Pn	**Pn**	**12 24 39.4**	**-0.6**
	1.5nm,0.3s,baz=214,slow=11,SNR=3.0						
AFI				Sn	Sn	12 27 18.4	-24
	2.0nm,0.3s,baz=36,slow=19,SNR=2.9						
RPZ	**Rata Peaks**	**16.87**	**212**	P	**P**	**12 24 44.9**	**-0.9**
	2.1nm,0.3s,baz=54,slow=1.2,SNR=11						
RPZ				S	**Sn**	**12 27 40.1**	**-10**
	0.5nm,0.3s,baz=357,slow=19,SNR=2.1						
DZM	**Mont Dzumac**	**16.88**	**293**	Pn	**P**	**12 24 49.6**	**+3.4**
	0.8nm,0.3s,baz=109,slow=16,SNR=12						
DZM				LR	LR	12 29 47.2	
	comp=Z,1μm,20.5s,baz=114,slow=32						
DZM	**Mont Dzumac**	**16.88**	**293**	*e*P	**P**	**12 24 49.0**	**+2.9**
	236nm,1.4s						
DZM				*e*LR	LR	12 28 52.0	
	2μm,26.2s						
DZM	**Mont Dzumac**	**16.88**	**293**	*e*Pn	**Pn**	**12 24 42.1**	**-2.3**
	278nm,1.7s						
RAR	**Rarotonga**	**17.63**	**65**	P	**Pn**	**12 24 50.6**	**-3.0**
	2.4nm,0.3s,baz=46,slow=16,SNR=3.4						
RAR				S	Sn	12 27 38.1	-31
	1.3nm,0.3s,baz=91,slow=18,SNR=3.4						
RAR				LR	LR	12 30 31.4	
	comp=Z,1μm,19.4s,baz=244,slow=34						
RAR	**Rarotonga**	**17.63**	**65**	*e*Pn	**Pn**	**12 24 50.6**	**-3.0**
	407nm,2.0s						
RAR				S	Sn	12 27 38.1	-31
TBI	**Tubuai**	**25.30**	**82**	*e*LQ	LQ	12 31 02.1	
	540nm,26.0s						
TBI				*e*LR	LR	12 32 00.9	
	940nm,20.8s,baz=250						
PPT2	**Papeete2**	**27.72**	**70**	*e*LQ	LQ	12 31 49.2	
	682nm,24.0s						
PPT2				*e*LR	LR	12 33 14.0	
	646nm,21.0s,baz=238						
PPT	**Papeete**	**27.73**	**70**	LR	LR	12 35 23.4	
	comp=Z,667nm,21.3s,baz=241,slow=32						
EIDS	**Eidsvold**	**28.71**	**271**	*e*P	**P**	**12 26 42.9**	**-1.8**
EIDS				*e*pP	**pP**	**12 26 54.6**	**0.0**
HNR	**Honiara**	**29.71**	**308**	LR	LR	12 37 48.2	
	comp=Z,253nm,19.0s,baz=170,slow=34						
CTAO	**Charters Tower**	**34.70**	**278**	P	**P**	**12 27 38.7**	**+1.3**
CTAO				pmax	pmax		
	comp=Z,86nm,1.1s						
CTAO	**Charters Tower**	**34.70**	**278**	P	**P**	**12 27 38.6**	**+1.3**
	comp=Z,86nm,1.1s						
STKA	**Stephens Creek**	**35.57**	**256**	P	**P**	**12 27 46.6**	**+1.8**
	comp=Z,21nm,0.8s,baz=97,slow=10.0,SNR=33						
STKA				LR	LR	12 42 32.2	
	comp=Z,993nm,18.1s,baz=150,slow=36						
STKA	**Stephens Creek**	**35.57**	**256**	*e*P	**P**	**12 27 45.0**	**+0.2**
	comp=Z,4.8nm,0.8s						
RKT	**R

comp=Z,21nm,1.7s
GSC Goldstone, Bar 85.98 45 *e*P **P** **12 33 28.4 +0.9**
comp=Z,21nm,1.7s
PSI Prapat 86.36 275 P **P** **12 33 29.2 -0.7**
comp=Z,7.2nm,0.9s,baz=179,slow=9.6,SNR=4.8
PSI Prapat 86.36 275 *e*P **P** **12 33 28.2 -1.7**
PSI pmax pmax
comp=Z,14nm,1.1s
PSI Prapat 86.36 275 *e*P **P** **12 33 28.2 -1.7**
comp=Z,14nm,1.1s
VLA Vladivostok 86.50 325⇑*e*P **P** **12 33 27.7 -2.0**
VLA pmax pmax
comp=Z,9.0nm,1.0s
GSI Gunungsitoli 86.79 273 *e*P **P** **12 33 30.8 -1.0**
comp=Z,25nm,0.9s
LDFC Landfair 86.90 46 *e*P **P** **12 33 32.6 +0.6**
comp=Z,15nm,1.1s
USRK Ussuriysk Ar. 87.25 326 P **P** **12 33 32.9 -0.4**
comp=Z,2.9nm,0.8s,baz=198,slow=5.6,SNR=10.0
TPNV Topopah Spring 87.40 44 *e*P **P** **12 33 34.4 -0.1**
TPNV pmax pmax
comp=Z,10.0nm,1.2s
TPNV Topopah Spring 87.40 44 *e*P **P** **12 33 34.4 -0.1**
comp=Z,9.7nm,1.2s
Y14A Wickenburg 87.52 48 *e*P **P** **12 33 35.2 +0.2**
W13A Hualapai Mount 87.68 47 *e*P **P** **12 33 36.1 +0.2**
SHPR Sheep Range 87.78 45 *e*P **P** **12 33 37.1 +0.8**
comp=Z,19nm,1.7s
TUC Tucson 87.99 51 *e*P **P** **12 33 38.2 +0.9**
TUC *e**PP **sP** **12 33 52.2 -0.1**
TUC Tucson 87.99 51 *e*P **P** **12 33 38.2 +0.9**
TUC *e*pP **sP** **12 33 52.2 -0.1**
MDJ Mudanjiang 88.73 325 P **P** **12 33 41.0 +0.7**
MDJ pP sP 12 33 55.6 +0.2
MDJ sP pP 12 34 01.4 +10
MDJ PP **PP** **12 37 05.3 -4.6**
MDJ S **S** **12 44 23.1 -1.6**
MDJ sS sS 12 44 47.9 +4.9
MDJ pmax pmax
comp=Z,9.0nm,1.0s
MDJ pmax pmax
comp=Z,73nm,3.4s
MDJ LR LR
comp=Z,93nm,20.8s
MDJ LR LR
comp=Z,110nm,20.1s
MDJ LR LR
comp=Z,190nm,20.1s
X16A Lo Mia Camp, P 88.84 49 *e*P **P** **12 33 41.9 +0.5**
comp=Z,6.1nm,1.3s
LCMT Little Creek M 89.29 46 *e*P **P** **12 33 44.0 +0.7**
comp=Z,4.9nm,1.1s
U15A North Rim 89.53 47 *e*P **P** **12 33 44.7 0.0**
comp=Z,8.7nm,1.1s
WUAZ Wupatki 89.55 48 *e*P **P** **12 33 44.2 -0.5**
comp=Z,7.5nm,1.1s
CCUT Cedar City 89.56 45 *e*P **P** **12 33 43.8 -0.9**
comp=Z,10nm,1.5s
WVOR Wild Horse Val 89.66 39 *e*P **P** **12 33 45.1 +0.1**
WVOR *e**PP **sP** **12 33 59.9 -0.1**
WVOR Wild Horse Val 89.66 39 *e*P **P** **12 33 45.1 +0.1**
WVOR epP **sP** **12 33 59.9 -0.1**
CN2 Changchun 90.30 322 *e*P **P** **12 33 47.8 +0.1**
CN2 eS **S** **12 44 34.6 -4.8**
CN2 pmax pmax
comp=Z,20nm,1.0s
CN2 pmax pmax
comp=Z,100nm,3.0s
TIA Tai'an 90.32 312 ⇑P **P** **12 33 49.2 +1.2**
TIA pmax pmax
comp=Z,40nm,1.2s
NKL Nikolayevsk 90.52 336 *e*P **P** **12 33 48.0 -0.5**
MTPU Mount Pierson 90.59 46 *e*P **P** **12 33 50.6 +0.9**
comp=Z,8.7nm,1.3s
TX31 Lajitas Ar. Si 91.25 57 *e*P **P** **12 33 52.4 -0.2**
TXAR Lajitas Array 91.25 57 P **P** **12 33 52.0 -0.7**
comp=Z,1.1nm,1.0s,baz=199,slow=7.3,SNR=6.6
G08A Pilot Rock 91.41 37 *e*P **P** **12 33 53.4 +0.4**
comp=Z,6.3nm,1.0s
MFID Camas Ranch 91.85 40 *e*P **P** **12 33 55.6 +0.5**
comp=Z,4.1nm,1.1s
TMUT Trail Mountain 91.96 45 *e*P **P** **12 33 56.6 +0.6**
comp=Z,9.4nm,1.5s
ENH Enshi 92.11 304 *e*P **P** **12 33 57.6 +1.1**
comp=Z,52nm,1.2s
GYA Guiyang 92.14 299 P **P** **12 33 57.5 +0.7**
GYA pmax pmax
comp=Z,10.0nm,1.0s
SRU San Rafael Swe 92.27 45 *e*P **P** **12 33 56.8 -0.5**
SRU pmax pmax
comp=Z,4.0nm,1.1s
SRU San Rafael Swe 92.27 45 *e*P **P** **12 33 56.8 -0.5**
comp=Z,4.3nm,1.1s
ANMO Albuquerque 92.45 51 *e*P **P** **12 33 58.7 +0.5**
ANMO pmax pmax
comp=Z,10.0nm,1.8s
ANMO Albuquerque 92.45 51 *e*P **P** **12 33 58.7 +0.5**
comp=Z,10nm,1.8s
HLID Hailey 92.74 40 *e*P **P** **12 33 59.1 -0.2**
comp=Z,2.5nm,1.0s
MA2 Magadan 93.02 344 *e*P **P** **12 34 00.1 +0.2**
BJI Beijing 93.22 315 P **P** **12 34 02.1 +0.8**
BJI pmax pmax
comp=Z,10.0nm,0.9s
BJI LR LR
comp=Z,92nm,5.1s
BJI LR LR
comp=Z,64nm,4.0s
CM01 Chiang Mai Arr 94.12 289 *e*P **P** **12 34 07.2 +1.2**
CMAR Chiang Mai Arr 94.15 289 P **P** **12 34 07.3 +1.1**
comp=Z,0.7nm,0.5s,baz=139,slow=3.3,SNR=6.3
MCMT McKenzie Canyo 94.41 40 *e*P **P** **12 34 07.3 +0.3**
KMI Kunming 94.46 296 P **P** **12 34 08.1 +0.4**
KMI pmax pmax
comp=Z,31nm,0.5s
KMI pmax pmax
comp=Z,76nm,4.0s
PDAR Pinedale Array 95.05 43 P **P** **12 34 09.0 -1.0**
comp=Z,0.3nm,0.5s,baz=224,slow=4.7,SNR=3.3
PDAR Pinedale Array 95.05 43 P **P** **12 34 09.0 -1.0**
SEY Seymchan 95.66 346⇑*e*P **P** **12 34 09.4 -2.6**
MCK McKinley 95.84 12 *e*P **P** **12 34 12.2 -0.6**
MCK McKinley 95.84 12 *e*P **P** **12 34 12.2 -0.6**
HHC Hu-ho-hao-te 96.56 314 *e*P **P** **12 34 17.4 +0.6**
HHC pmax pmax
comp=Z,29nm,1.5s
HHC pmax pmax
comp=Z,110nm,8.2s
CD2 Chengdu 96.63 302 *e*P **P** **12 34 16.4 -0.9**
COLA College 97.08 12 *e*P **P** **12 34 17.4 -0.9**
COLA pmax pmax
comp=Z,2.0nm,0.9s
ILAR Eielson Array 97.16 12 P **P** **12 34 16.9 -1.9**
comp=Z,0.7nm,1.0s,baz=224,slow=4.0,SNR=4.1
BILL Bilibino 98.39 354 *e*P **P** **12 34 23.3 -0.9**
BILL pmax pmax
comp=Z,3.0nm,1.3s
LZH Lanzhou 99.18 306 *e*P **Pdif** **12 34 29.0 +0.2**
LZH pP sP 12 34 45.0 +1.1
LZH sP pP 12 34 51.2 +11
LZH PP **PP** **12 38 33.5 +1.4**
LZH pmax pmax
comp=Z,16nm,1.3s
LZH pmax pmax
comp=Z,75nm,9.5s
LZH LR LR
comp=Z,150nm,17.5s
LZH LR LR
comp=Z,160nm,17.2s
LZH LR LR
comp=Z,210nm,19.4s
ZAK Zakamensk 106.40 319 *e*P **Pdif** **12 35 00.6 +0.2**
WMQ Urumqi 113.66 308 *e*PKP **PKiKP** **12 39 28.3 +3.0**
WMQ PP **PP** **12 40 24.2 +5.8**
WMQ AMB AMB
comp=Z,110nm,3.9s
WMQ LR LR
comp=Z,260nm,21.6s
WMQ LR LR
comp=Z,290nm,24.2s
WMQ LR LR
comp=Z,240nm,18.8s
MKAR Makanchi Array 118.17 310 PKP **PKPdf** **12 39 33.2 -0.6**
comp=Z,1.5nm,0.9s,baz=72,slow=4.0,SNR=9.1
ZALV Zalesovo Beam 118.27 318 PKP **PKPdf** **12 39 32.7 -1.0**
comp=Z,0.7nm,0.6s,baz=215,slow=1.8,SNR=4.2

KSH Kashi 120.81 301 *e*PKP **PKPdf** **12 39 42.4 +3.2**
KSH *e*PP **PP** **12 41 14.1 +5.7**
KSH PKS **PKSdf** **12 43 17.8 +1.8**
KSH AMB AMB
comp=Z,40nm,4.1s
KSH LR LR
comp=Z,730nm,9.9s
KSH LR LR
comp=Z,270nm,10.2s
KSH LR LR
comp=Z,99nm,5.8s
KURK Kurchatov 121.37 314 PKIKP **PKPdf** **12 39 38.9 -0.9**
KURK pmax pmax
comp=Z,3.0nm,1.0s
KURK Kurchatov 121.37 314 PKP **PKPdf** **12 39 38.9 -0.9**
KURBB Kurchatov Arra 121.41 314 PKP **PKPdf** **12 39 38.9 -0.9**
comp=Z,2.2nm,0.9s,baz=100,slow=2.0,SNR=19
AAK Ala-Archa 122.62 304⇑*i* PKIKP **PKPdf** **12 39 42.4 -0.3**
KKAR Karatay Array 125.58 304 *e*PKIKP **PKPdf** **12 39 48.2 +0.1**
KKAR Karatay Array 125.58 304 *e*PKPdf **PKPdf** **12 39 48.2 +0.1**
BVAR Borovoye Array 126.69 316 PKP **PKPdf** **12 39 49.8 -0.1**
comp=Z,4.1nm,0.9s,baz=90,slow=3.0,SNR=13
BRVK Borovoye 126.76 316 *e*PKIKP **PKPdf** **12 39 48.5 -1.5**
BRVK Borovoye 126.76 316 *e*PKPdf **PKPdf** **12 39 48.5 -1.5**
ARU Arti 133.28 321 PKP **PKPdf** **12 40 01.9 -0.4**
comp=Z,2.1nm,0.7s,baz=94,slow=14,SNR=3.4
ARU Arti 133.28 321 *i* PKIKP **PKPdf** **12 40 03.4 +1.1**
ARU 12 42 25.2
ABKAR Akbulak array 133.29 311 *e*PKPdf **PKPdf** **12 40 02.8 +0.2**
GEYT Alibeck 134.22 295 PKP **PKPdf** **12 40 03.7 -1.0**
comp=Z,1.3nm,0.6s,baz=309,slow=6.9,SNR=2.8
AKTO Aktyubinsk 134.45 313 PKP **PKPdf** **12 40 04.9 +0.2**
comp=Z,3.3nm,0.9s,baz=66,slow=4.4,SNR=8.3
H10S3 ASCENSION HYDR 137.80 153 T T 15 13 40.5
baz=203,slow=75,SNR=3.4
H10S2 ASCENSION HYDR 137.80 153 T T 15 13 35.8
baz=203,slow=75,SNR=3.7
H10S1 ASCENSION HYDR 137.81 153 T T 15 13 32.6
baz=203,slow=75,SNR=3.8
ARCES ARCESS Array B 138.25 348 PKP **PKPdf** **12 40 10.8 -0.4**
comp=Z,1.5nm,1.0s,baz=163,slow=5.1,SNR=4.4
H10N3 ASCENSION HYDR 138.88 153 T T 15 14 58.2
baz=204,slow=75,SNR=5.1
H10N1 ASCENSION HYDR 138.88 153 T T 15 15 00.5
baz=204,slow=75,SNR=3.7
H10N2 ASCENSION HYDR 138.89 153 T T 15 15 02.7
baz=204,slow=75,SNR=5.3
KLMR Klimovskoe 140.72 333 *e*PKIKP **PKPdf** **12 40 15.6 -0.3**
KLMR pmax pmax
comp=Z,2.0nm,0.6s
VRH Novokhopyorsk 144.30 318 *e*PKHKP PKPpre 12 40 19.0
VRH pmax pmax
comp=Z,10.0nm,0.4s
TBLG Delisi 144.55 301 P **PKPdf** **12 40 22.5 -0.9**
TBLG Delisi 144.55 301 *e*PKIKP **PKPdf** **12 40 22.5 -0.9**
GUDG Gudauri 144.66 302 P **PKPdf** **12 40 24.1 +0.2**
GNI Garni 144.68 298 PKP PKPbc 12 40 22.8 0.0
comp=Z,4.8nm,0.4s,baz=297,slow=2.3,SNR=2.3
FINES FINESS Array B 144.95 341 PKP **PKPbc** **12 40 21.5 -1.2**
comp=Z,8.3nm,0.9s,baz=70,slow=6.3,SNR=24
ZEI Tsey 145.04 303 *i* PKIKP **PKPbc** **12 40 23.4 -0.5**
ZEI pmax pmax
comp=Z,31nm,0.4s
NCK Nalchik 145.15 304⇑*e*PKIKP **PKPdf** **12 40 24.6 +0.2**
GOF Gofitskoye 145.25 307⇑*e*PKIKP **PKPbc** **12 40 22.0 -2.2**
OBN Obninsk 145.26 326*ce*PKIKP **PKPbc** **12 40 23.2 -0.7**
OBN pmax pmax
comp=Z,54nm,1.0s
ONI Oni 145.39 303 P **PKPab** **12 40 26.1 +1.0**
ONI Oni 145.39 303 *e*PKIKP **PKPab** **12 40 26.0 +1.0**
BGD Bogdanovka 145.45 300 P **PKPab** **12 40 26.8 +1.3**
AKH Akhalkalaki 145.51 301 P **PKPdf** **12 40 23.8 -1.5**
AKH Akhalkalaki 145.51 301 *e*PKP2 **PKPdf** **12 40 23.8 -1.5**
KBZ Khabaz 145.61 305 PKPbc **PKPbc** **12 40 25.0 -0.4**
comp=Z,6.3nm,1.0s,baz=82,slow=3.4,SNR=13
KIV Kislovodsk 145.72 305*ce*PKIKP **PKPab** **12 40 25.9 -0.4**
KIV pmax pmax
comp=Z,16nm,1.0s
KIV Kislovodsk 145.72 305 *e*PKPbc **PKPab** **12 40 26.9 +0.6**
VSR Storozhevoye 145.77 319 *e*PKIKP **PKPdf** **12 40 24.9 -0.2**
VSR pmax pmax
comp=Z,60nm,1.3s
NEY Neytrino 145.82 304⇑*i* PKP2 **PKPab** **12 40 28.8 +2.0**
CHVG Ch'k'valeri 146.37 303 P **PKPab** **12 40 30.4 +1.7**
NB2 NORSAR Subarra 148.33 353 PKP **PKPbc** **12 40 31.1 -1.5**
comp=Z,12nm,1.4s,baz=10,slow=3.2
NOA NORSAR Array B 148.33 353 PKPbc **PKPbc** **12 40 31.8 -0.8**
comp=Z,4.1nm,0.9s,baz=16,slow=4.4,SNR=9.2
ANN Anapa 149.17 308 *i* PKP2 **PKPbc** **12 40 36.4 +1.2**
ANN pmax pmax
comp=Z,51nm,1.1s
ANN MLR MLR
comp=Z,287nm,22.0s
MICGM Minsk 149.58 331 *e* **PKPbc** **12 40 35.0 -0.9**
MNK Minsk 149.58 331 *e*PKP2 **PKPbc** **12 40 35.0 -0.9**
NACGM Naroch 149.75 333 *e* **PKPbc** **12 40 35.0 -1.3**
NACGM eLR LR 13 34 05.0
KONO Kongsberg 149.87 353⇑*e*PKHKP PKPpre 12 40 31.9
AKASG Malin Array Be 151.44 324 PKPbc **PKPbc** **12 40 40.1 -0.3**
comp=Z,8.4nm,0.7s,baz=49,slow=2.4,SNR=9.8
KIEV Kiev 151.45 324*c i* PKIKP **PKPbc** **12 40 39.5 -1.0**
KIEV Kiev 151.45 324 *e*PKPbc **PKPbc** **12 40 40.2 -0.3**
BRTR Keskin Array B 153.19 300 PKPbc **PKPbc** **12 40 45.0 +0.1**
comp=Z,1.5nm,0.9s,baz=104,slow=3.2,SNR=7.7
ANTO Ankara 153.79 300 *e*PKIKP **PKPdf** **12 40 38.5 +0.2**
ANTO *e* 12 40 47.3
ANTO Ankara 153.79 300 *e*PKPdf **PKPdf** **12 40 38.5 +0.2**
ANTO *e*PKPbc **PKiKP** **12 40 47.3 +1.1**
UZH Uzhgorod 156.19 327 *e*PKIKP **PKPdf** **12 40 38.5 -2.6**
UZH *e* 12 40 48.3
CRVS Cervenica-Dubn 156.38 329 *e*PKP2 **PKPab** **12 41 09.7 -0.2**
CRVS Cervenica-Dubn 156.38 329 *e*PKP **PKPab** **12 41 09.7 -0.2**
UPC Upice 157.19 338 *e*PKPAB **PKPab** **12 41 13.3 0.0**
UPC Upice 157.19 338 *e*PKP2 **PKPab** **12 41 13.3 0.0**
DPC Dobruska-Polom 157.23 338 *e*PKPAB **PKPab** **12 41 13.4 -0.1**
DPC Dobruska-Polom 157.23 338 *e*PKP2 **PKPab** **12 41 13.4 -0.1**
CLL Collm 157.32 344 *e*PKPdf **PKPdf** **12 40 45.0 +2.5**
CLL *e*PKPab **PKPab** **12 41 14.0 +0.2**
CLL *ep*PKPab **pPKPab** **12 41 24.0 -0.9**
CLL LmV 13 35 00.0
comp=Z,200nm,21.5s
CLL Collm 157.32 344 *e*PKIKP **PKPdf** **12 40 45.0 +2.5**
CLL MLR MLR
comp=Z,200nm,21.5s
BRG Berggiesshubel 157.48 342 *e*(P) **PKPab** **12 41 14.0 -0.5**
comp=Z,10nm,1.4s
BRG Berggiesshubel 157.48 342 *e*PKP2 **PKPab** **12 41 14.0 -0.5**
BRG pmax pmax
comp=Z,10.0nm,1.5s
VYHS Vyhne 157.83 332 *e*PKP2 **PKPab** **12 41 14.5 -1.6**
VYHS Vyhne 157.83 332 *e*PKP **PKPab** **12 41 14.5 -1.6**
PRU Pruhonice 158.10 340 *e*PKPAB **PKPab** **12 41 16.6 -0.6**
PRU Pruhonice 158.10 340 *e*PKP2 **PKPab** **12 41 16.6 -0.6**
KHC Kasperske Hory 159.15 340 *e*PKPAB **PKPab** **12 41 21.5 -0.3**
KHC *ex* x 12 41 34.6
KHC Kasperske Hory 159.15 340 *e*PKP2 **PKPab** **12 41 21.5 -0.3**
GERES GERESS Array B 159.37 340 PKPab **PKPab** **12 41 20.6 -2.3**
comp=Z,0.2nm,0.3s,baz=27,slow=3.3,SNR=5.7
TORD Torodi Ar. Bea 163.34 175 PKP **PKPdf** **12 40 51.0 +0.7**
comp=Z,1.3nm,1.0s,baz=241,slow=1.1,SNR=6.0
TORD PKPab **PKPab** **12 41 41.7 +0.9**
comp=Z,2.1nm,1.0s,baz=234,slow=1.9,SNR=4.6
CEL Celeste 166.51 312 *e*PKPab **PKPab** **12 41 55.0 +0.5**
ESDC Sonseca Array 168.58 29 PKP **PKPdf** **12 40 53.4 -0.4**
comp=Z,0.1nm,0.4s,baz=302,slow=1.9,SNR=4.1
ESDC PKPab **PKPab** **12 42 01.4 -2.2**
comp=Z,0.1nm,0.3s,baz=318,slow=1.7,SNR=2.7

*IDC **09** 12:26:55.0±2.1, 28°.36S×176°.21W, h0km, mb3.6/2, mb1 3.8/2, mb1mx3.6/38, mbtmp3.6/2, Error ellipse: s-maj=60.4km s-min=34.3km az=157.0, Kermadec Islands region*

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.74**	**239**	Pn	Pn	12 27 27.1	+0.6
	158nm,0.3s,baz=82,slow=22,SNR=4.0						
RAO				Sn	Sn	12 27 48.4	-1.0
	429nm,0.3s,baz=118,slow=21,SNR=4.1						
URZ	**Urewera**	**11.34**	**208**	Pn	Pn	12 29 28.3	-10
	0.2nm,0.3s,baz=246,slow=20,SNR=3.9						
URZ				Sn	Sn	12 31 27.6	-18
	0.8nm,0.3s,baz=252,slow=20,SNR=4.6						

ASAR Alice Springs 44.82 264 P P 12 35 10.4 -0.7
0.3nm,0.4s,baz=106,slow=8.0,SNR=9.8
WRA Warramunga Arr 45.63 269 P P 12 35 17.7 +0.2
0.4nm,0.5s,baz=109,slow=6.4,SNR=9.2
FINES FINESS Array B 143.73 342 PKP PKPdf 12 46 31.8 +0.5
0.6nm,0.5s,baz=60,slow=3.4,SNR=5.9
TORD Torodi Ar. Bea 164.74 172 PKPab PKPab 12 47 56.3 -0.6
0.5nm,0.9s,baz=194,slow=4.8,SNR=2.4

*IDC **09** 12:29:35.4±2.5, 54°.14N×87°.19E, h0km, mb1 3.2/3, mb1mx3.1/54, mbtmp3.2/3, ML3.0/3, Error ellipse: s-maj=21.0km s-min=13.8km az=62.0*
*NNC **09** 12:29:36.0±4.9, 54°.16N×86°.79E, h0km, mb3.6, mpv3.1, Error ellipse: s-maj=37.5km s-min=23.3km az=55.0*
ISC 09 12:29:37.1±4.0, 54°.4N±0°.2×87°.1E±0°.2, h35km, n10, σ1§17/16, 10C-2D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.39**	**254**	*i*		12 38 39.7	
	baz=81,slow=320,SNR=7.6						
ZALV	**Zalesovo Beam**	**1.39**	**254**	Pn	**Pn**	**12 30 00.3**	**+0.3**
	0.6nm,0.3s,baz=81,slow=14,SNR=6.2						
ZALV				Lg	Lg	12 30 20.8	
	5.6nm,0.3s,baz=80,slow=26,SNR=8.8						
KURBB	**Kurchatov Arra**	**6.42**	**238**	Pn	**Pn**	**12 31 10.8**	**+1.7**
	0.2nm,0.3s,baz=55,slow=14,SNR=15						
KURBB				Sn	**Sn**	**12 32 22.4**	**+1.3**
	0.1nm,0.3s,baz=55,slow=21,SNR=6.2						
KURBB				Lg	Lg	12 32 58.2	
	0.1nm,0.3s,baz=60,slow=28,SNR=8.6						
KURBB	**Kurchatov Arra**	**6.42**	**238**	⇑Pn	**Pn**	**12 31 10.5**	**+1.5**
	1.6nm,0.4s						
KURBB				⇓Sn	**Sn**	**12 32 22.3**	**+1.3**
	17nm,0.6s						
KURBB				⇑Lg	Lg	12 32 54.5	
	22nm,0.7s						
MK31	**Makanchi Array**	**8.15**	**204**	⇑Pn	**Pn**	**12 31 32.2**	**-0.7**
	0.2nm,0.2s,baz=29,slow=16,SNR=5.3						
MK31				Sn	**Sn**	**12 33 03.0**	**-0.8**
	0.3nm,0.3s,baz=27,slow=27,SNR=5.2						
MK31				⇑Lg	Lg	12 33 45.8	
	15nm,1.2s,baz=32,slow=32,SNR=4.9						
MKAR	**Makanchi Array**	**8.15**	**204**	Pn	**Pn**	**12 31 33.7**	**+0.7**
	0.2nm,0.3s,baz=26,slow=14,SNR=6.6						
MKAR				Sn	**Sn**	**12 33 04.3**	**+0.5**
	0.3nm,0.3s,baz=24,slow=26,SNR=5.6						
MKAR				Lg	Lg	12 33 48.1	
	0.1nm,0.3s,baz=29,slow=30,SNR=7.5						
MAKZ	**Makanchi**	**8.22**	**205**	⇓Pn	**Pn**	**12 31 32.8**	**-0.9**
	0.8nm,1.1s						
MAKZ				⇑Sn	**Sn**	**12 33 04.6**	**-0.7**
	2.3nm,0.8s						
MAKZ				⇑Lg	Lg	12 33 46.5	
	12nm,1.2s						
VOSK	**Vostochnaya**	**9.73**	**267**	⇑Pn	**Pn**	**12 31 55.1**	**+0.7**
	1.6nm,0.6s						
VOSK				⇑Sn	**Sn**	**12 33 41.1**	**-1.3**
	11nm,1.1s						
BVA0	**Borovoye Array**	**10.00**	**269**	⇑Pn	**Pn**	**12 31 59.0**	**+0.9**
	1.6nm,1.0s,baz=159,slow=18,SNR=3.1						
BVA0				⇑Sn	**Sn**	**12 33 47.1**	**-1.8**
	2.3nm,0.8s,baz=73,slow=22,SNR=5.4						
BVAR	**Borovoye Array**	**10.00**	**269**	Pn	Pn	12 32 01.1	+3.0
	0.3nm,0.3s,baz=70,slow=14,SNR=4.1						
BVAR				Sn	**Sn**	**12 33 49.0**	**+0.1**
	0.3nm,0.3s,baz=74,slow=23,SNR=4.3						

*ISCJB **09** 12:42:25.7±0.6, 16°.19N±0°.02×96°.01W±0°.02, h11km±4km, mb4.8/168, MS4.5/28, Error ellipse: s-maj=3.3km s-min=2.9km az=161.1*
*IDC **09** 12:42:28.9±4.7, 15°.99N×96°.29W, h33km±34km, mb4.3/24, mb1 4.4/26, mb1mx4.3/39, mbtmp4.4/26, ML3.8/2, MS4.3/18, Ms1 4.3/18, ms1mx4.1/36, Error ellipse: s-maj=24.1km s-min=10.8km az=59.0*
*NEIC **09** 12:42:29.1±0.7, 16°.06N×96°.06W, h26km±4km, mb4.9/143, MD5.3(MEX), Error ellipse: s-maj=3.9km s-min=3.0km az=216.0*
NEIC Felt [IV] at Huatulco and [II] at Oaxaca. Also felt at Pochutla, Puerto Escondido and Santa Lucia del Camino.
*GCMT **09** 12:42:29.1±0.3, 16°.01N×96°.32W, h19km±1km, MW5.1/84, Moment Tensor Solution. s26,c32; s84,c127; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.91±.14; $M_{\theta\theta}$-3.24±.13; $M_{\phi\phi}$2.34±.09; $M_{r\theta}$-3.08±.43; $M_{\theta\phi}$0.26±.08; $M_{\phi r}$2.96±.42; Best double couple: M_o5.16500×10^{16} NP1:ϕ_{s}312.00000°, δ84.00000°, λ122.00000°. NP2: ϕ_{s}51.00000°, δ33.00000°, λ11.00000°. Principal axes: T 5.0640, Plg42.0000°, Azm252.0000°; N 0.2080, Plg32.0000°, Azm128.0000°; P -5.2670, Plg31.0000°, Azm16.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **09** 12:42:29.7±0.9, 16°.19N×96°.09W, h38km, mb5.1/59, MS4.5/9 Error ellipse: s-maj=9.4km s-min=4.6km az=103.5*
*MEX **09** 12:42:29.2±0.9, 15°.87N×96°.42W, h27km±8km, MD5.3*
*BJI **09** 12:42:30.7, 16°.20N×96°.00W, h37km, mB5.1/4, Ms5.2/4, Ms7 4.8/4*
ISC 09 12:42:28.8±0.4, 16°.12N±0°.03×96°.11W±0°.03, h26km±2km, h25km:pP-P, n896, σ1§34/909, mb4.9/169, MS4.5/28, 4C-6D, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.35**	**180**	*e*P	**Pb**	**12 42 35.4**	**-1.2**
HUIG				*e*S	**Sb**	**12 42 40.2**	**-1.7**
HUIG	**Huatulco**	**0.35**	**180**	*e*P	**Pb**	**12 42 35.4**	**-1.2**
HUIG				*e*S	**Sb**	**12 42 40.2**	**-1.7**
PANG	**Puerto Angel**	**0.57**	**218**	*e*P	Pb	12 42 33.8	-6.4
PANG				*i* S	Sb	12 42 37.9	-10
OXBJ	**Oaxaca**	**1.11**	**328**	*e*P	**Pn**	**12 42 48.1**	**-0.8**
OXBJ				*e*S	**Sn**	**12 43 02.8**	**-0.7**
VHO	**Vista Hermosa**	**1.12**	**328**	*e*P	**Pn**	**12 42 48.1**	**-0.8**
VHO				*e*S	**Sn**	**12 43 03.2**	**-0.5**
VHO	**Vista Hermosa**	**1.12**	**328**	*e*P	**Pn**	**12 42 48.1**	**-0.8**
VHO				*e*S	**Sn**	**12 43 03.2**	**-0.5**
CMIG	**Matias Romero**	**1.52**	**50**	Pn	**Pb**	**12 42 57.0**	**+0.7**
	373nm,0.3s,baz=237,slow=9.7,SNR=719						
CMIG				Lg	Lg	12 43 21.3	
	2μm,0.3s,baz=232,slow=16,SNR=16						
CMIG				LR	LR	12 43 45.0	
	comp=Z,11μm,19.0s,baz=240,slow=44						
PNIG	**Pinotepa**	**1.96**	**278**	*e*P	Pn	12 42 54.3	-6.0
PNIG				*e*S	**Sn**	**12 43 16.1**	**-8.0**
PNIG	**Pinotepa**	**1.96**	**278**	*e*P	Pn	12 42 54.2	-6.1
PNIG				*e*S	**Sn**	**12 43 16.1**	**-8.0**
TUIG	**Tuzandepetl**	**2.50**	**40**	*e*P	**Pb**	**12 43 10.8**	**-2.1**
TUIG				*e*P	**Pb**	**12 43 10.8**	**-2.1**
TUIG				*e*S	**Sb**	**12 43 44.4**	**+1.2**
TUIG	**Tuzandepetl**	**2.50**	**40**	*e*P	**Pb**	**12 43 10.8**	**-2.1**
TUIG				*e*S	**Sn**	**12 43 39.7**	**+2.3**
TUIG				*e*S	**Sb**	**12 43 44.4**	**+1.2**
TPIG	**Tehuac#an**	**2.58**	**333**	*e*P	**Pn**	**12 43 10.0**	**+0.9**
TPIG				*e*S	**Sn**	**12 43 40.3**	**+0.6**
TPIG	**Tehuac#an**	**2.58**	**333**	*e*P	**Pn**	**12 43 10.0**	**+0.9**
TPIG				*e*S	**Sn**	**12 43 40.3**	**+0.6**
TLIG	**Tlapa**	**2.76**	**302**	*e*P	**Pn**	**12 43 09.1**	**-2.3**
TLIG				*e*S	**Sn**	**12 43 39.9**	**-4.1**
TLIG	**Tlapa**	**2.76**	**302**	*e*Pn	**Pn**	**12 43 12.4**	**+1.0**
TLIG				*e*Sn	**Sn**	**12 43 46.1**	**+2.2**
TGIG		**2.94**	**77**	*e*P	**Pb**	**12 43 17.3**	**-3.2**
TGIG				*e*S	**Sb**	**12 43 55.1**	**-1.0**
TGIG		**2.94**	**77**	*e*P	**Pb**	**12 43 17.3**	**-3.2**
TGIG				*e*S	**Sb**	**12 43 55.1**	**-1.0**
LVIG	**Laguna Verde**	**3.60**	**355**	*e*P	**Pn**	**12 43 23.2**	**+0.3**
LVIG	**Laguna Verde**	**3.60**	**355**	*e*P	**Pn**	**12 43 22.5**	**-0.3**
ACX	**Acapulco**	**3.67**	**282**	*e*P	Pn	12 43 18.8	-5.1
ACX	**Acapulco**	**3.67**	**282**	*e*P	Pn	12 43 18.8	-5.1
ACP2	**Acapulco**	**3.70**	**282**	*e*P	Pn	12 43 17.1	-7.2
PPM	**Popocatepetl**	**3.79**	**321**	*e*P	**Pn**	**12 43 27.8**	**+1.8**
PPM	**Popocatepetl**	**3.79**	**321**	*e*P	**Pn**	**12 43 27.8**	**+1.8**
PPM	**Popocatepetl**	**3.79**	**321**	*e*P	**Pn**	**12 43 27.8**	**+1.8**
MEIG	**Mezcala**	**3.81**	**299**	*e*P	**Pn**	**12 43 23.4**	**-2.5**
MEIG	**Mezcala**	**3.81**	**299**	*e*P	**Pn**	**12 43 23.4**	**-2.5**
CCIG	**Comitan**	**3.82**	**87**	*e*P	**Pn**	**12 43 28.5**	**+2.4**
CCIG				*e*S	**Sb**	**12 44 16.8**	**-4.7**
CCIG	**Comitan**	**3.82**	**87**	*e*Pn	Pb	12 43 31.2	-4.4
CCIG				*e*S	**Sb**	**12 44 16.8**	**-4.7**
YAIG	**Yautepec**	**3.92**	**314**	*e*P	**Pn**	**12 43 27.8**	**+0.3**

YAIG Yautepec 3.92 314 eP Pn 12 43 27.8 +0.3
CAIG El Cayaco 4.09 284 i P Pn 12 43 24.6 -5.1
CAIG eS Sn 12 44 09.6 -7.1
CAIG El Cayaco 4.09 284 i P Pn 12 43 24.6 -5.1
CAIG eS Sn 12 44 03.9 -13
MZVM 4.26 316 eP Pn 12 43 33.7 +1.7
UNM Universidad Na 4.33 318 eP Pn 12 43 34.4 +1.2
UNM Universidad Na 4.33 318 eP Pn 12 43 30.8 -2.4
UNM Universidad Na 4.33 318 ePn Pn 12 43 34.4 +1.2
ARIG Puente Sto Nin 4.58 299 eP Pn 12 43 34.5 -2.0
SCIG Sabancuy 5.49 58 i P Pn 12 43 50.6 +1.8
SCIG Sabancuy 5.49 58 i P Pn 12 43 44.1 -4.7
MOIG Morelia 5.99 307 ePn Pn 12 43 56.8 +0.7
TEIG Tepich 8.49 60 Pn Pn 12 44 31.0 +0.9
1.4nm,0.3s,baz=269,slow=24,SNR=30
TEIG Sn Sn 12 46 07.6 +2.4
2.3nm,0.3s,baz=0.3,slow=21,SNR=6.3
TEIG LR LR 12 48 46.4
comp=Z,29nm,21.6s,baz=180,slow=43
TEIG Tepich 8.49 60 ePn Pn 12 44 30.7 +0.5
TEIG eSn Sn 12 46 07.0 +1.8
TGUH Tegucigalpa,Un 8.78 102 ePn Pn 12 44 38.4 +4.3
ZAIG Zacatecas 8.99 318 ePn Pn 12 44 39.1 +1.9
035Z Hargill 10.45 350 P Pn 12 44 56.7 -0.3
baz=169
035A Encino 10.92 351 P Pn 12 45 02.8 -0.7
baz=170
034A Hebbronville 11.15 348 P Pn 12 45 07.4 +0.8
baz=167
934A Benavides 11.64 349 P Pn 12 45 14.2 +0.9
baz=168
933A Laredo 11.81 346 P Pn 12 45 17.5 +1.9
baz=165,SNR=7.8
834A Tilden 12.16 350 P Pn 12 45 21.7 +1.3
baz=169,SNR=5.5
835A Beeville 12.21 353 P Pn 12 45 21.5 +0.4
baz=172
833A Chaparral WMA, 12.52 347 P Pn 12 45 26.3 +1.0
baz=165,SNR=7.9
737A Port Lavaca 12.59 359 P Pn 12 45 26.3 0.0
baz=178
832A Faith Ranch, C 12.62 344 P Pn 12 45 27.3 +0.6
baz=163
738A Farr-Stevens R 12.67 2 P Pn 12 45 26.8 -0.5
baz=182
735A Kenedy 12.77 353 P Pn 12 45 28.0 -0.7
baz=172
736A Circle Diamond 12.80 356 P Pn 12 45 29.2 0.0
baz=176
734A La Parita Cree 12.87 350 P Pn 12 45 30.1 0.0
baz=169
733A Divot King Ran 12.88 347 P Pn 12 45 30.8 +0.6
baz=166,SNR=6.6
638A Rosharon 13.25 3 P Pn 12 45 35.8 +0.6
baz=182
637A Eagle Lake 13.26 359 P Pn 12 45 34.2 -1.2
baz=179
635A Leesville 13.29 354 P Pn 12 45 35.1 -0.8
baz=173
636A Smothers Creek 13.33 356 P Pn 12 45 36.5 +0.2
baz=176
634A China Grove, S 13.36 352 P Pn 12 45 36.5 -0.3
baz=170
633A Saathoff Ranch 13.57 349 P Pn 12 45 39.6 -0.1
baz=167,SNR=11
537A Green Hill Far 13.90 359 P Pn 12 45 43.2 -0.9
baz=179
535A Dale 13.91 355 P Pn 12 45 43.9 -0.4
baz=174
536A Bastrop 13.92 357 P Pn 12 45 44.0 -0.4
baz=176
HPIG 13.95 322 ePn Pn 12 45 46.9 +1.8
539A Cross D Ranch, 13.98 5 P Pn 12 45 44.8 -0.4
baz=185
534A Blanco 14.01 351 P Pn 12 45 45.3 -0.4
baz=170,SNR=44
534A S Sn 12 48 20.1 -0.4
baz=170
538A Harpers Horsep 14.05 2 P Pn 12 45 45.8 -0.4
baz=182
533A Kerrville 14.14 350 P Pn 12 45 46.9 -0.7
baz=168,SNR=5.6
540A Vidor 14.16 8 P Pn 12 45 46.8 -0.8
baz=188
645A Chauvin 14.21 20 P Pn 12 45 47.3 -1.1
baz=202
543A St. Martinvill 14.44 15 P Pn 12 45 51.0 -0.5
baz=196
438A Sam Houston St 14.57 2 P Pn 12 45 53.1 -0.3
baz=182
646A Port Sulphur 14.59 22 P Pn 12 45 52.8 -0.8
baz=204
436A Wall Ranch, Ga 14.60 358 P Pn 12 45 53.0 -0.7
baz=177
437A Phantom Ranch, 14.64 360 P Pn 12 45 53.6 -0.7
baz=180
435B Jarrell 14.66 355 P Pn 12 45 53.8 -0.7
baz=174
439A Center Grove, 14.66 5 P Pn 12 45 53.8 -0.7
baz=185
JCT Junction City 14.69 347 P Pn 12 45 54.8 -0.1
baz=166,SNR=13
JCT Junction City 14.69 347 eP Pn 12 45 55.2 +0.2
JCT Junction City 14.69 347 ePn Pn 12 45 55.2 +0.2
440A Kirbyville 14.69 7 P Pn 12 45 53.7 -1.2
baz=188
434A Burnet 14.76 353 P Pn 12 45 55.0 -0.9
baz=172,SNR=11
441A DeRidder 14.81 10 P Pn 12 45 55.6 -0.8
baz=191
433A Art 14.82 350 P Pn 12 45 55.8 -0.9
baz=169,SNR=31
TXAR Lajitas Array 14.88 333 Pn Pn 12 45 58.8 +1.2
0.1nm,0.3s,baz=148,slow=12,SNR=16
TXAR LR LR 12 51 42.8
comp=Z,1µm,19.7s,baz=0.0,slow=37
TX31 Lajitas Ar. Si 14.88 333 ePn Pn 12 45 58.1 +0.6
442A Mamou 14.91 12 P Pn 12 45 55.4 -2.5
baz=194
SLBS Sierra La Lagu 15.02 302 ePn Pn 12 46 00.3 +0.7
337A Centerville 15.13 1 P Pn 12 45 59.3 -1.5
baz=181
335A Moody 15.14 356 P Pn 12 45 59.4 -1.6
baz=175
338A Crockett 15.19 3 P Pn 12 46 00.9 -0.7
baz=183,SNR=15
339A Huntington 15.21 5 P Pn 12 46 00.7 -1.2
baz=185
336A Riesel 15.21 358 P Pn 12 46 00.6 -1.3
baz=177
334A Lometa 15.27 353 P Pn 12 46 01.8 -0.9
baz=172,SNR=14
333A Richland Sprin 15.36 351 P Pn 12 46 03.3 -0.6
baz=169,SNR=14
340A Bronson 15.36 7 P Pn 12 46 02.2 -1.7
baz=188
341A Kurthwood 15.38 10 P Pn 12 46 02.9 -1.2
baz=190
445A Amite 15.47 19 P Pn 12 46 04.2 -1.1
baz=201
LPIG La Paz 15.51 303 Pn P 12 46 08.2 -1.8
17nm,0.3s,baz=194,slow=3.7,SNR=4.6
LPIG LR LR 12 51 01.3
comp=Z,975nm,20.5s,baz=126,slow=33
342A Flagon Creek P 15.57 12 P Pn 12 46 05.3 -1.4
baz=193,SNR=9.9
NATX Nacogdoches 15.63 5 P Pn 12 46 06.4 -0.9
baz=185,SNR=5.4
NATX Nacogdoches 15.63 5 ePn Pn 12 46 07.4 +0.1
150nm,1.1s
237A Washetta, Mont 15.81 1 P Pn 12 46 08.9 -0.8
baz=181
238A Jacksonville 15.84 3 P Pn 12 46 09.0 -1.1
baz=183,SNR=10
WHTX Lake Whitney, 15.85 356 P Pn 12 46 09.4 -0.8
baz=175,SNR=9.7
WHTX Lake Whitney, 15.85 356 ePn Pn 12 46 10.6 +0.4
161nm,1.1s
446A Poplarville 15.85 22 P Pn 12 46 09.3 -0.9
baz=204,SNR=6.8
239A Gary 15.90 5 P Pn 12 46 09.6 -1.2
baz=186,SNR=6.9
234A Clairette 15.92 354 P Pn 12 46 10.4 -0.7
baz=173,SNR=18
240A Hunter Patters 15.99 7 P Pn 12 46 11.1 -0.9
baz=188
233A Rising Star 16.03 351 P Pn 12 46 11.8 -0.7
baz=170,SNR=16
344A Westbrook Farm 16.03 17 P Pn 12 46 11.7 -0.8
baz=199
241A Mo Tay, Goldon 16.10 10 P Pn 12 46 13.2 -0.1
baz=191
345A Thompson Farm, 16.11 19 P Pn 12 46 13.2 -0.2
baz=201,SNR=5.7
447A Lucedale 16.12 24 P Pn 12 46 14.4 +0.8
baz=206
243A Waterproof 16.25 14 P Pn 12 46 13.3 -1.9
baz=196
242A Grayson 16.27 12 P Pn 12 46 13.8 -1.8
baz=193,SNR=6.9
136A Ennis 16.29 359 P Pn 12 46 14.5 -1.3
baz=178
346A Big Creek Wild 16.36 21 P Pn 12 46 15.4 -1.4
baz=203
135A Vickery Place, 16.41 356 P Pn 12 46 16.3 -1.1
baz=175
137A Heron Place, G 16.41 1 P Pn 12 46 15.5 -1.8
baz=181
134A White-Moore Ra 16.48 354 P Pn 12 46 17.5 -0.7
baz=173,SNR=10
138A Matatall Enter 16.49 3 P Pn 12 46 17.6 -0.8
baz=183,SNR=7.7
448A Bay Minette 16.56 26 P Pn 12 46 17.5 -1.7
baz=205
139A Bunkhouse Ranc 16.56 5 P Pn 12 46 18.4 -0.9
baz=186,SNR=16
244A Avery, Jackson 16.60 16 P Pn 12 46 18.8 -0.9
baz=198,SNR=8.3
140A Cam and Jess, 16.61 8 P Pn 12 46 19.0 -0.9
baz=188,SNR=10.0
133A Hamilton Ranch 16.61 352 P Pn 12 46 19.2 -0.7
baz=170,SNR=14
141A Papa Simpson, 16.67 9 P Pn 12 46 19.8 -0.8
baz=190,SNR=12
347A Saraland 16.71 23 P Pn 12 46 19.5 -1.6
baz=206
ABTX Abilene, Hawle 16.74 350 P Pn 12 46 21.1 -0.5
baz=168,SNR=21
142A Monroe 16.79 12 P Pn 12 46 21.1 -1.0
baz=194
VBMS Vicksburg 16.81 17 P Pn 12 46 21.3 -1.1
baz=199
VBMS Vicksburg 16.81 17 ePn Pn 12 46 22.6 +0.1
108nm,1.0s
245A Little AP, Sta 16.82 19 P Pn 12 46 21.5 -1.0
baz=201
348A Jackson 16.96 25 P Pn 12 46 24.5 +0.1
baz=208
Z37A Pogue Cattle C 17.01 1 P Pn 12 46 24.0 -0.9
baz=181
143A Sos Landing, 17.05 14 P Pn 12 46 24.4 -1.1
baz=195
Z36A Blue Ridge 17.08 359 P Pn 12 46 24.7 -1.0
baz=179,SNR=13
Z38A Mt. Pleasant 17.09 3 P Pn 12 46 25.1 -0.8
baz=184,SNR=10
BRAL Brewton 17.11 27 eP Pn 12 46 25.4 -0.8
Z39A Irene McRaven, 17.14 5 P Pn 12 46 24.9 -1.6
baz=186
Z35A Perchaven, San 17.17 357 P Pn 12 46 25.0 -1.9
baz=176
Z40A Long Farm, Mag 17.24 8 P Pn 12 46 27.3 -0.5
baz=189,SNR=5.6
Z34A Collier Ranch, 17.25 355 P Pn 12 46 27.5 -0.5
baz=174
Z33A Whitaker Ranch 17.26 352 P Pn 12 46 27.7 -0.4
baz=171,SNR=13
247A Quitman 17.27 22 P Pn 12 46 27.0 -1.1
baz=205
Z41A Richland Creek 17.32 9 P Pn 12 46 28.0 -0.8
baz=190,SNR=25
145A Houston Renfro 17.34 18 P Pn 12 46 27.3 -1.7
baz=200
Z42A Norrel Spur, H 17.49 12 P Pn 12 46 30.2 -0.6
baz=193
CLNB Carlsbad 17.55 338 ePn P 12 46 32.9 +0.2
Z43A Armstrong Fami 17.58 14 P Pn 12 46 31.5 -0.5
baz=195
248A Dixon Mills 17.63 24 P Pn 12 46 31.8 -0.8
baz=207
146A Union 17.64 20 P Pn 12 46 31.4 -1.4
baz=203
MNTX Cornudas Mount 17.66 333 P Pn 12 46 33.0 0.0
baz=149,SNR=51
MNTX Cornudas Mount 17.66 333 ePn P 12 46 33.5 -0.3
85nm,1.5s
WLAR White Oak Lake 17.70 8 ePn P 12 46 34.4 +0.2
259nm,1.1s
Y36A Durant 17.70 360 P Pn 12 46 33.4 -0.2
baz=179
Y35A Marietta 17.73 357 P Pn 12 46 33.0 -0.9
baz=177,SNR=13
Y38A Idabel 17.78 4 P Pn 12 46 33.2 -1.2
baz=184,SNR=15
Y37A Hugo 17.79 1 P Pn 12 46 33.9 -0.7
baz=181
Y34A Reagan Ranch, 17.82 356 P Pn 12 46 34.7 -0.4
baz=175,SNR=14
Y39A Lockesburg 17.84 5 P Pn 12 46 34.5 -0.6
baz=186,SNR=17
Z44A Pea Ridge, Bel 17.84 16 P Pn 12 46 34.5 -0.7
baz=198
MTDJ Mount Denham 17.87 81 eP P 12 46 37.4 +1.0
78nm,1.2s
147A Livingston 17.95 22 P P 12 46 37.2 +0.2
baz=205,SNR=5.9
Y33A Hilltop Ranch, 17.96 353 P Pn 12 46 36.4 -0.2
baz=172,SNR=14
Y41A Eaglette Beard 17.96 9 P Pn 12 46 36.3 -0.4
baz=191,SNR=17
Y40A Okolona 18.00 8 P Pn 12 46 36.6 -0.5
baz=189,SNR=6.9
Y42A Garnett, Star 18.07 12 P Pn 12 46 37.5 -0.5
baz=193,SNR=6.8
DWPF Disney Wildern 18.07 46 eP Pn 12 46 37.8 -0.3
92nm,0.9s
DWPF eSn Sn 12 49 59.2 +0.2
Z45A Winona 18.13 17 P Pn 12 46 37.6 -1.1
baz=200
CCAR Cane Creek 18.15 12 ePn P 12 46 41.7 +2.6
726nm,2.0s
Z46A Louisville 18.19 20 P Pn 12 46 38.5 -1.1
baz=202
X35A Drake 18.22 358 P Pn 12 46 39.2 -0.7
baz=177,SNR=15
CPRX Cap Rock 18.24 339 ePn P 12 46 41.2 +0.8
Y43A Makayla and Ka 18.32 14 P P 12 46 40.2 -0.9
baz=196
X36A Centrahoma 18.38 359 P P 12 46 41.5 -0.2
baz=179,SNR=21
X39A Fountain Ranch 18.40 5 P P 12 46 41.8 -0.1
baz=186,SNR=37
X37A Clayton 18.40 2 P P 12 46 41.7 -0.3
baz=182,SNR=33
X32A Elmer 18.45 352 P P 12 46 42.4 -0.1
baz=170,SNR=25
X34A Smith Ranch, M 18.47 356 P Pn 12 46 42.9 0.0
baz=175,SNR=10
X33A Lawton 18.47 354 P P 12 46 42.8 +0.1
baz=173,SNR=38
MIAR Mount Ida 18.49 7 P P 12 46 42.8 -0.1
baz=188,SNR=51
MIAR Mount Ida 18.49 7 eP P 12 46 43.0 +0.1
MIAR eS Sn 12 50 05.0 -4.1
MIAR Mount Ida 18.49 7 eP P 12 46 43.0 +0.1
MIAR eS Sn 12 50 05.0 -4.1
Z47A Carrollton 18.49 22 P P 12 46 42.1 -0.9
baz=205
X38A Whitesboro 18.51 3 P Pn 12 46 43.7 +0.3
baz=184,SNR=80
X40A Basin Creek Fa 18.53 9 P P 12 46 43.0 -0.3
baz=190,SNR=10
Y44A Strider, Charl 18.54 16 P Pn 12 46 44.0 +0.2
baz=198,SNR=14
X41A Kaden, Bauxite 18.58 9 P P 12 46 43.9 0.0
baz=191
Y45A Yeager Farm, C 18.64 17 P Pn 12 46 45.0 +0.1
baz=200
WMOK Wichita Mounta 18.70 353 P P 12 46 45.0 -0.3
baz=172,SNR=47
WMOK Wichita Mounta 18.70 353 eP P 12 46 44.6 -0.6
WMOK pmax pmax
comp=Z,75nm,1.3s
WMOK Wichita Mounta 18.70 353 eP P 12 46 44.6 -0.6
comp=Z,75nm,1.3s
LRAL Lakeview Retre 18.75 24 eP Pn 12 46 46.2 -0.1
comp=Z,32nm,0.9s
LRAL eSn Sn 12 50 09.2 -6.3
MSTX Muleshoe 18.76 343 P P 12 46 46.0 -0.1
baz=160,SNR=37
MSTX Muleshoe 18.76 343 eP Pn 12 46 46.6 0.0
comp=Z,194nm,1.3s
Z48A Northport 18.84 23 P P 12 46 46.1 -0.7
baz=206
Y46A Houston 18.86 19 P P 12 46 47.3 +0.3
baz=202,SNR=8.4
UALR University of 18.88 10 eP Pn 12 46 48.7 +0.8
comp=Z,156nm,1.0s
X43A Marvell 18.91 13 P P 12 46 47.9 +0.4
baz=195
W38A Poteau 18.93 4 P Pn 12 46 48.8 +0.3
baz=184,SNR=19
W36A Wetumka 18.94 360 P Pn 12 46 48.4 -0.3
baz=180,SNR=18
W37B Quinton 18.95 2 P Pn 12 46 48.8 0.0
baz=182,SNR=18
W35A Tecumseh 18.97 358 P Pn 12 46 48.6 -0.3
baz=178,SNR=24
TIGA Tifton 19.05 35 P P 12 46 48.7 -0.4
baz=219
W33A Caddo, Fort Co 19.07 354 P Pn 12 46 50.1 -0.2
baz=173,SNR=16
X44A Crenshaw 19.07 15 P P 12 46 49.3 0.0
baz=198
W34A Bridge Creek, 19.09 356 P P 12 46 49.8 +0.2
baz=175,SNR=5.2
W34A Bridge Creek, 19.09 356 eP Pn 12 46 51.0 +0.5
comp=Z,79nm,0.8s
W39A Magazine 19.11 6 P Pn 12 46 50.3 -0.4
baz=187,SNR=22
W32A Sentinel 19.13 352 P P 12 46 50.4 +0.4
baz=171,SNR=14
W40A Ferguson Farm, 19.19 8 P P 12 46 50.7 +0.2
baz=189,SNR=7.9
X45A UM Field Stati 19.20 17 P P 12 46 50.7 0.0
baz=200,SNR=11
Y47A UCPARC, Winfie 19.21 21 P P 12 46 51.0 +0.2
baz=204
OXF Oxford 19.28 17 eP P 12 46 52.1 +0.5
OXF pmax pmax
comp=Z,138nm,1.1s
OXF Oxford 19.28 17 eP P 12 46 52.1 +0.5
comp=Z,138nm,1.1s
W41B Gary Mavity, V 19.29 10 P Pn 12 46 52.4 -0.4
baz=191,SNR=16
X301 Greenbrier Sit 19.33 9 eP P 12 46 52.6 +0.5
comp=Z,175nm,1.3s
X301 eS Sn 12 50 27.9 -1.5
AMTX Amarillo 19.34 346 P P 12 46 53.0 +0.6
baz=164
AMTX Amarillo 19.34 346 eP Pn 12 46 53.6 0.0
comp=Z,64nm,0.9s
319A Douglas 19.36 324 eP Pn 12 46 54.8 +0.9
comp=Z,58nm,1.0s
X201 Greenbrier Sit 19.39 9 eP Pn 12 46 54.2 +0.2
comp=Z,82nm,0.9s
WHAR Wooly Hollow 19.39 9 eP Pn 12 46 54.4 +0.3
comp=Z,92nm,0.9s
121A Cookes Peak, D 19.47 329 P Pn 12 46 55.5 +0.3
baz=144,SNR=14
121A Cookes Peak, D 19.47 329 eP Pn 12 46 55.9 +0.7
comp=Z,76nm,1.0s
V35A Meyer Ranch, C 19.57 358 P P 12 46 54.6 -0.3
baz=178,SNR=11
V36A Jenks 19.59 0 P P 12 46 54.9 0.0
baz=180,SNR=29
V34A Guthrie 19.68 357 P P 12 46 55.4 -0.5
baz=176,SNR=18
V34A Guthrie 19.68 357 eP P 12 46 56.7 +0.7
comp=Z,103nm,1.0s
V32A Arapaho 19.70 353 P P 12 46 56.7 +0.5
baz=172
V37A Hulbert 19.70 2 P P 12 46 55.9 -0.3
baz=183,SNR=66
TUL1 Leonard 19.71 1 P P 12 46 56.0 -0.3
baz=181,SNR=30
TUL1 Leonard 19.71 1 eP P 12 46 57.0 +0.7
comp=Z,136nm,0.9s
V33A Lossen Ranch, 19.72 355 P P 12 46 56.0 -0.4
baz=174,SNR=20
V38A Canehill 19.72 4 P P 12 46 56.8 +0.4
baz=185,SNR=32
V39A Pettigrew 19.76 6 P P 12 46 57.5 +0.6
baz=187,SNR=52
V40A Witts Springs 19.82 8 P P 12 46 58.3 +0.7
baz=189,SNR=50
V41A Mountainview 19.90 9 P P 12 46 58.7 +0.3
baz=191,SNR=67
W45A Hickory Valley 19.95 17 P P 12 46 58.1 -0.7
baz=200
HBAR Harrisburg 19.96 13 eP Pn 12 47 00.9 +0.1
V42A Cord 20.05 11 P P 12 47 00.3 +0.2
baz=193,SNR=56
HHAR Hobbs 20.17 5 eP P 12 47 02.1 +0.7
comp=Z,295nm,1.8s
U35A Pawnee 20.18 359 P P 12 47 01.1 -0.2
baz=178,SNR=11
U36A Oologah 20.20 1 P P 12 47 01.3 -0.3
baz=181,SNR=9.6
U37A Salina 20.22 2 P P 12 47 01.7 -0.2
baz=183,SNR=22
U34A Anderson Ranch 20.27 357 P P 12 47 02.3 -0.1
baz=176,SNR=12
U34A Anderson Ranch 20.27 357 eP P 12 47 02.7 +0.2
comp=Z,258nm,1.4s
U38A Gravette 20.30 4 P P 12 47 02.7 +0.1
baz=185,SNR=26
BNM Barren Site 20.30 334 eP Pn 12 47 04.6 -0.5
U33A Lingo Farm, Me 20.31 355 P P 12 47 02.4 -0.5
baz=174,SNR=27
U39A Green Forest 20.32 6 P P 12 47 03.1 +0.1
baz=187,SNR=62
U32A Winter Ranch, 20.34 353 P P 12 47 03.4 +0.1
baz=172,SNR=5.4
Y22D IRIS PASSCAL I 20.36 333 P P 12 47 04.3 +0.8
baz=149
U40A Yellville 20.36 8 P P 12 47 04.2 +0.8
baz=189,SNR=90
V44A Blytheville 20.40 15 P P 12 47 03.3 -0.5
baz=197
LPM Los Pinos Moun 20.44 334 eP Pn 12 47 06.0 -0.6
U41A Viola 20.48 10 P P 12 47 05.1 +0.4
baz=191,SNR=49
GNAR Gosnell 20.50 14 eP P 12 47 05.3 +0.5
V45A Humboldt 20.56 17 P P 12 47 05.0 -0.5
baz=200
U42A Revenden 20.61 11 P P 12 47 06.2 +0.1
baz=193,SNR=40
GOGA Godfrey 20.66 31 eP P 12 47 07.0 +0.4
GOGA eS S 12 50 50.9 -5.4
GOGA pmax pmax
comp=Z,102nm,0.8s
GOGA Godfrey 20.66 31 eP P 12 47 07.0 +0.4
comp=Z,102nm,0.8s
GOGA eS S 12 50 50.9 -5.4
T35A Sooner Cattle 20.72 359 P P 12 47 06.9 -0.4
baz=179,SNR=53
LAZ Ladron 20.73 333 eP Pn 12 47 09.5 -0.6
T34A McClaskey Farm 20.84 358 P P 12 47 08.1 -0.5
baz=177,SNR=21
T36A Boggs Farm, Ca 20.86 1 P P 12 47 08.4 -0.4
baz=180,SNR=24
T38A Diamond 20.89 4 P P 12 47 09.1 -0.1
baz=185,SNR=57
TUC Tucson 20.91 323 P P 12 47 09.7 +0.3
baz=137
TUC Tucson 20.91 323 eP Pn 12 47 11.1 -1.0
TUC pmax pmax
comp=Z,51nm,1.1s
TUC Tucson 20.91 323 eP Pn 12 47 11.1 -1.0
comp=Z,51nm,1.1s
ANMO Albuquerque 20.92 336 P P 12 47 09.9 +0.2
baz=151
ANMO Albuquerque 20.92 336 di P P 12 47 10.3 +0.7
ANMO pmax pmax
comp=Z,37nm,1.7s
T37A Cheneyville 18 20.95 3 P P 12 47 09.7 0.0
baz=183,SNR=20
T39A Clever 20.96 6 P P 12 47 09.9 0.0
baz=187,SNR=26
T33A Patterson Ranc 20.97 355 P P 12 47 09.8 -0.1
baz=174,SNR=19
SWET Sewanee 21.09 24 eP P 12 47 11.9 +0.6

comp=Z,9.3nm,0.8s
T32A **Huddler Ranch,** 21.12 354 P P 12 47 11.6 -0.1
baz=172,SNR=11
PBMO **Poplar Bluff** 21.19 13 eP P 12 47 13.1 +0.8
comp=Z,86nm,1.0s
T40A **Mansfield** 21.19 8 P P 12 47 12.5 +0.1
baz=189,SNR=23
T41A **Mountain View** 21.20 10 P P 12 47 12.4 0.0
baz=191,SNR=64
WVT **Waverly** 21.25 19 eP P 12 47 13.0 0.0
WVT pmax pmax
comp=Z,131nm,1.3s
WVT **Waverly** 21.25 19 eP P 12 47 13.0 0.0
comp=Z,131nm,1.3s
SJCC **San Jacinto, C** 21.30 104 eP P 12 47 14.4 +0.7
S33A **Kaszmaul Farm,** 21.46 356 P P 12 47 14.2 -1.1
baz=175
S35A **Otter Creek Ra** 21.48 360 P P 12 47 15.1 -0.3
baz=179,SNR=31
S38A **Stockton** 21.52 5 P P 12 47 15.7 -0.2
baz=186,SNR=33
S34A **Willow Spring** 21.52 358 P P 12 47 15.0 -0.8
baz=177
S36A **Lake Cedric, C** 21.52 1 P P 12 47 15.4 -0.5
baz=181,SNR=12
S37A **Fort Scott** 21.59 3 P P 12 47 16.1 -0.5
baz=183,SNR=31
S39A **Bolivar** 21.63 6 P P 12 47 16.7 -0.3
baz=187,SNR=32
S40A **Lebanon** 21.63 8 P P 12 47 17.1 0.0
baz=189,SNR=37
S32A **Newby Ranch, P** 21.64 354 P P 12 47 16.9 -0.3
baz=172,SNR=5.7
S41A **Jillco Farms,** 21.73 9 P P 12 47 18.3 +0.1
baz=191,SNR=22
CPCT **Cooper Cave** 21.86 26 eP P 12 47 19.6 +0.1
comp=Z,19nm,1.1s
214A **Organ Pipe Nat** 21.89 319 P P 12 47 20.7 +0.8
baz=132,SNR=14
214A **Organ Pipe Nat** 21.89 319 eP P 12 47 21.2 +1.3
comp=Z,309nm,1.4s
S43A **Fulton Ridge,** 22.02 13 P P 12 47 20.6 -0.7
baz=195,SNR=14
R38A **Fenwick Farm,** 22.07 5 P P 12 47 21.2 -0.5
baz=186,SNR=30
R34A **Isabella, Hill** 22.12 358 P P 12 47 22.0 -0.4
baz=177,SNR=8.7
R35A **Emporia Munici** 22.12 360 P P 12 47 22.2 -0.1
baz=180,SNR=9.1
R36A **Gordon, Harris** 22.13 1 P P 12 47 21.9 -0.5
baz=181,SNR=22
R37A **Teagarden Farm** 22.14 3 P P 12 47 21.5 -1.0
baz=183,SNR=14
X18A **Snowflake** 22.15 328 eP P 12 47 24.7 +1.8
comp=Z,110nm,1.4s
R33A **Olander Ranch,** 22.16 356 P P 12 47 22.6 -0.2
baz=175,SNR=13
T25A **Trinidad** 22.19 342 P P 12 47 24.4 +1.1
baz=158,SNR=77
T25A **Trinidad** 22.19 342 eP P 12 47 24.7 +1.4
comp=Z,276nm,1.6s
R39A **Chumby, Stover** 22.27 6 P P 12 47 23.9 -0.1
baz=188,SNR=26
S44A **Carbondale** 22.33 14 P P 12 47 24.2 -0.3
baz=197,SNR=11
R32A **Long Quarter,** 22.34 355 P P 12 47 23.9 -0.7
baz=173,SNR=7.1
R40A **Maddies Statio** 22.34 8 P P 12 47 24.2 -0.5
baz=190,SNR=63
SIUC **Southern Illin** 22.36 14 eP P 12 47 24.6 -0.2
comp=Z,80nm,1.0s
SIUC eSn Sn 12 51 48.6 +6.6
TKL **Tuckaleechee C** 22.36 27 P P 12 47 27.1 +2.2
comp=Z,8.3nm,0.7s,baz=184,slow=10.0,SNR=8.4
TKL LR LR 12 57 51.5
comp=Z,321nm,21.9s,baz=208,slow=41
TKL **Tuckaleechee C** 22.36 27 eP P 12 47 24.2 -0.8
TKL pmax pmax
comp=Z,68nm,1.3s
TKL **Tuckaleechee C** 22.36 27 eP P 12 47 24.1 -0.8
comp=Z,68nm,1.3s
HELC **Santa Helena** 22.45 114 eP P 12 47 31.3 +4.8
JSC **Jenkinsville** 22.48 34 eP P 12 47 30.1 +3.9
JSC pmax pmax
comp=Z,72nm,1.2s
JSC **Jenkinsville** 22.48 34 eP P 12 47 30.1 +3.9
comp=Z,72nm,1.2s
S45A **Carrier Mills** 22.48 16 P P 12 47 25.6 -0.6
baz=199,SNR=11
W18A **Petrified Fore** 22.51 330 P P 12 47 27.3 +0.5
baz=144,SNR=9.1
W18A **Petrified Fore** 22.51 330 eP P 12 47 28.6 +1.8
comp=Z,59nm,1.3s
Q35A **Mercer Eighty,** 22.65 0 P P 12 47 27.2 -0.8
baz=180,SNR=18
Q37A **Longview Farm,** 22.72 3 P P 12 47 27.5 -1.2
baz=184
Q34A **Chapman** 22.73 358 P P 12 47 27.6 -1.2
baz=178
Q36A **Arnold C. Orve** 22.76 1 P P 12 47 27.8 -1.3
baz=182
CBKS **Cedar Bluff** 22.83 353 P P 12 47 29.8 -0.1
baz=171,SNR=14
CBKS **Cedar Bluff** 22.83 353 eP P 12 47 30.1 +0.2
CBKS pmax pmax
comp=Z,261nm,1.5s
CBKS **Cedar Bluff** 22.83 353 eP P 12 47 30.1 +0.2
comp=Z,261nm,1.5s
X16A **Lo Mia Camp, P** 22.84 326 eP P 12 47 32.2 +2.0
comp=Z,22nm,0.8s
Q33A **Connelly Farm,** 22.84 357 P P 12 47 29.2 -0.9
baz=176,SNR=6.6
Q38A **Cooks Store, C** 22.86 5 P P 12 47 29.6 -0.5
baz=186,SNR=20
Q32A **Meitler Ranch,** 22.89 355 P P 12 47 29.8 -0.7
baz=174,SNR=12
R44A **Waltonville** 22.90 14 P P 12 47 30.1 -0.4
baz=197,SNR=22
KSU1 **Kansas State U** 22.90 359 P P 12 47 29.4 -1.2
baz=179,SNR=8.8
KSU1 **Kansas State U** 22.90 359 eP P 12 47 29.8 -0.8
comp=Z,63nm,0.9s
USIN **University of** 23.00 17 eP P 12 47 31.1 -0.6
comp=Z,115nm,1.0s
Q39A **Willow Grove F** 23.00 6 P P 12 47 30.5 -1.2
baz=188,SNR=26
113A **Mohawk Valley,** 23.03 319 eP P 12 47 32.7 +0.7
comp=Z,24nm,1.0s
GUYC **Guyana, Colomb** 23.03 116 eP P 12 47 37.5 +4.8
Q40A **Laux Farm, Aux** 23.06 8 P P 12 47 31.3 -0.9
baz=190,SNR=20
SDCO **Great Sand Dun** 23.08 341 P P 12 47 32.7 -0.2
baz=156,SNR=41
SDCO **Great Sand Dun** 23.08 341 eP P 12 47 32.1 -0.8
comp=Z,33nm,1.3s
KMSC **Kings Mountain** 23.11 32 P P 12 47 31.8 -1.0
baz=218
KMSC **Kings Mountain** 23.11 32 eP P 12 47 32.6 -0.2
comp=Z,69nm,1.3s
TZTN **Tazewell** 23.20 26 eP P 12 47 35.0 +1.3
comp=Z,52nm,1.0s
Q42A **Golden Eagle** 23.23 11 P P 12 47 33.7 -0.2
baz=194
P33A **Williams Farm,** 23.27 357 P P 12 47 33.1 -1.3
baz=176
NORC **Norcasia** 23.32 114 eP P 12 47 40.3 +5.2
P35A **Duane Minner,** 23.32 0 P P 12 47 33.9 -1.0
baz=180,SNR=17
P34A **Walnut Farm, R** 23.35 359 P P 12 47 34.4 -0.8
baz=178,SNR=21
Y14A **Wickenburg** 23.37 322 eP P 12 47 36.4 +0.9
comp=Z,300nm,1.5s
TOLC **Tolima** 23.41 117 eP P 12 47 41.5 +5.2
Q43A **New Douglas** 23.42 13 P P 12 47 35.5 -0.3
baz=195
P36A **Good Intent, A** 23.43 2 P P 12 47 35.2 -0.7
baz=182,SNR=19
P37A **Lathrop** 23.43 3 P P 12 47 35.0 -1.0
baz=184,SNR=15
P39B **Salisbury** 23.47 7 P P 12 47 35.7 -0.5
baz=188,SNR=25
OTAV **Otavalo** 23.51 130 eP P 12 47 47.1 +10
OTAV **Otavalo** 23.51 130 eP P 12 47 42.1 +4.7
comp=Z,28nm,1.0s
KSCO **Kaye Shedlock'** 23.51 347 P P 12 47 36.5 -0.4
baz=164
KSCO **Kaye Shedlock'** 23.51 347 eP P 12 47 36.9 0.0
P32A **Huiting Farm,** 23.52 355 P P 12 47 36.4 -0.4
baz=174,SNR=8.4
P38A **Dawn** 23.53 5 P P 12 47 35.8 -1.0
baz=186,SNR=11
S22A **4UR Ranch, Cre** 23.53 338 P P 12 47 37.4 +0.1
baz=153,SNR=14
S22A **4UR Ranch, Cre** 23.53 338 eP P 12 47 38.5 +1.2
comp=Z,76nm,1.6s
Q44A **Meyer Farm, Va** 23.54 14 P P 12 47 36.3 -0.7
baz=197,SNR=13
P40A **Paris** 23.59 8 P P 12 47 36.9 -0.6
baz=190,SNR=23
OLIL **Olney** 23.60 16 eP P 12 47 38.1 +0.5
comp=Z,108nm,1.0s
WUAZ **Wupatki** 23.65 328 P P 12 47 39.3 +1.0
baz=141,SNR=36
WUAZ **Wupatki** 23.65 328 eP P 12 47 40.6 +2.3
comp=Z,72nm,1.1s
WCI **Wyandotte Cave** 23.66 20 eP P 12 47 38.3 +0.1
WCI pmax pmax
comp=Z,101nm,0.9s
WCI **Wyandotte Cave** 23.66 20 eP P 12 47 38.3 +0.1
comp=Z,101nm,0.9s
MVCO **Mesa Verde** 23.70 335 P P 12 47 38.9 +0.1
baz=149,SNR=40
MVCO **Mesa Verde** 23.70 335 eP P 12 47 39.6 +0.8
comp=Z,192nm,1.5s
P41A **Barry, Barry** 23.88 10 P P 12 47 39.7 -0.5
baz=192,SNR=13
GLA **Glamis** 23.89 318 P P 12 47 40.7 +0.2
baz=130,SNR=8.9
GLA **Glamis** 23.89 318 eP P 12 47 41.4 +0.9
GLA pmax pmax
comp=Z,45nm,1.1s
GLA **Glamis** 23.89 318 eP P 12 47 41.4 +0.9
comp=Z,45nm,1.1s
O33A **Hebron** 23.90 357 P P 12 47 40.3 -0.2
baz=176,SNR=7.7
P42A **Winchester** 23.92 11 P P 12 47 40.1 -0.5
baz=194,SNR=11
O36A **Bolckow** 23.95 2 P P 12 47 40.4 -0.5
baz=183
O34A **Beatrice** 23.98 359 P P 12 47 40.9 -0.3
baz=178,SNR=13
O37A **Wolven Farm, M** 24.02 4 P P 12 47 41.0 -0.6
baz=184,SNR=5.8
O38A **Galt** 24.02 5 P P 12 47 41.1 -0.5
baz=186
O35A **Humboldt** 24.06 0 P P 12 47 41.4 -0.5
baz=180
Q24A **Divide** 24.10 343 P P 12 47 43.3 +0.6
baz=158,SNR=12
Q24A **Divide** 24.10 343 eP P 12 47 44.1 +1.4
comp=Z,41nm,1.4s
O31A **Woolen Ranch,** 24.11 354 P P 12 47 42.6 +0.2
baz=172
O32A **Brockman Farm,** 24.13 356 P P 12 47 42.4 -0.2
baz=175
Y12C **Blythe** 24.16 320 P P 12 47 42.5 -0.4
baz=132
Y12C **Blythe** 24.16 320 eP P 12 47 43.6 +0.7
comp=Z,34nm,1.4s
O40A **La Belle** 24.20 8 P P 12 47 42.9 -0.3
baz=190,SNR=18
PRAC **Prado** 24.23 118 eP P 12 47 49.9 +6.1
PRAC **Prado** 24.23 118 eP P 12 47 50.3 +6.5
comp=Z,161nm,1.3s
O39A **Kirksville** 24.25 7 P P 12 47 43.5 -0.2
baz=188,SNR=11
CBRI **Barrientos, No** 24.27 107 eP P 12 47 48.8 +4.5
O41A **Passleys Farm,** 24.34 10 P P 12 47 44.4 -0.1
baz=192,SNR=33
BARC **Barichara** 24.36 110 eP P 12 47 49.9 +4.7
BLO **Bloomington** 24.45 18 eP P 12 47 46.4 +0.8
BLO pmax pmax
comp=Z,171nm,1.4s
BLO **Bloomington** 24.45 18 eP P 12 47 46.4 +0.8
comp=Z,171nm,1.4s
SWSC **Sam W. Stewart** 24.45 317 P P 12 47 46.1 +0.4
baz=129,SNR=6.5
IKP **In-Ko-Pah, Jac** 24.48 316 P P 12 47 46.4 +0.5
baz=128
PV01 **Paradox Valley** 24.52 336 eP P 12 47 47.7 +1.2
O42A **Bath** 24.56 11 P P 12 47 46.3 -0.2
baz=194
N33A **J Bar K, Exete** 24.56 358 P P 12 47 46.8 +0.3
baz=177
N37A **Lee Faris, Mou** 24.61 3 P P 12 47 47.1 +0.2
baz=184
N36A **Muff Farm, Cla** 24.63 2 P P 12 47 47.3 +0.1
baz=182,SNR=5.4
N32A **Stulken Farm,** 24.63 356 P P 12 47 47.4 +0.2
baz=175
N34A **Lincoln** 24.63 359 P P 12 47 47.2 0.0
baz=179,SNR=5.4
N35A **Tabor** 24.66 1 P P 12 47 47.6 +0.2
baz=181,SNR=7.3
BC3 **Big Chuckawall** 24.68 319 P P 12 47 47.8 0.0
baz=130,SNR=35
PV05 **Paradox Valley** 24.69 335 eP P 12 47 49.3 +1.3
N38A **Joes South For** 24.71 5 P P 12 47 47.8 -0.1
baz=186
N31A **Bailey Ranch,** 24.74 355 P P 12 47 48.6 +0.4
baz=175
RUSC **La Rusia** 24.75 112 eP P 12 47 51.1 +2.0
RUSC **La Rusia** 24.75 112 eP P 12 47 52.4 +3.3
comp=Z,82nm,1.6s
CHIC **Chingaza** 24.76 115 eP P 12 47 51.1 +2.0
IRM **Iron Mountain** 24.81 320 P P 12 47 49.8 +0.9
baz=132,SNR=44
U15A **North Rim** 24.82 328 eP P 12 47 51.1 +1.8
MONP2 **Monument Peak** 24.83 316 P P 12 47 49.3 -0.1
baz=128,SNR=11
SMCO **Snowmass** 24.86 340 eP P 12 47 51.5 +1.7
comp=Z,29nm,1.1s
N39A **Derby Farms, D** 24.87 7 P P 12 47 49.0 -0.2
baz=188,SNR=9.5
BAR **Barrett** 24.87 315 eP P 12 47 50.4 +0.9
comp=Z,25nm,1.4s
PV04 **Paradox Valley** 24.88 336 eP P 12 47 50.8 +1.1
NEE2 **Needles Airpor** 24.91 322 P P 12 47 49.7 0.0
baz=134
PV10 **Paradox Valley** 24.92 335 eP P 12 47 50.5 +0.4
ISCO **Idaho Springs** 25.01 342 P P 12 47 51.5 +0.5
baz=158,SNR=32
ISCO **Idaho Springs** 25.01 342 eP P 12 47 52.0 +1.0
ISCO pmax pmax
comp=Z,31nm,0.9s
ISCO **Idaho Springs** 25.01 342 eP P 12 47 52.0 +1.0
comp=Z,31nm,0.9s
HDIL **Hopedale** 25.06 12 P P 12 47 50.9 -0.2
baz=195
HDIL **Hopedale** 25.06 12 eP P 12 47 51.7 +0.7
comp=Z,89nm,1.4s
PV09 **Paradox Valley** 25.06 335 eP P 12 47 53.0 +1.5
BLA **Blacksburg** 25.18 30 eP P 12 47 52.8 +0.5
BLA pmax pmax
comp=Z,61nm,1.0s
BLA **Blacksburg** 25.18 30 eP P 12 47 52.8 +0.5
comp=Z,60nm,1.0s
BELC **Belle Mtn. Jos** 25.25 319 P P 12 47 53.2 +0.3
baz=130,SNR=13
M37A **Trindle Farm,** 25.26 4 P P 12 47 53.6 +0.8
baz=184,SNR=10
SJAC **San Juan de Ar** 25.26 118 eP P 12 48 00.1 +6.9
M31A **Lambtecht Ranc** 25.26 355 P P 12 47 53.1 +0.2
baz=173,SNR=5.2
M35A **Neola** 25.26 1 P P 12 47 52.9 0.0
baz=181
BGNE **Belgrade** 25.26 356 P P 12 47 53.0 +0.1
baz=175
BGNE **Belgrade** 25.26 356 eP P 12 47 52.5 -0.4
comp=Z,129nm,1.5s
OGNE **Ogallala** 25.26 349 P P 12 47 53.0 0.0
baz=166,SNR=8.1
OGNE **Ogallala** 25.26 349 eP P 12 47 55.9 +2.9
comp=Z,303nm,1.5s
M36A **Felix, Anita** 25.27 2 P P 12 47 52.8 -0.2
baz=183,SNR=8.0
109C **Camp Elliot, M** 25.29 315 P P 12 47 52.7 -0.6
baz=126
TPFO **Pinon Flats** 25.29 317 P P 12 47 53.2 -0.2
baz=129,SNR=6.2
M34A **Aspy Farms, Fr** 25.30 359 P P 12 47 53.4 +0.2
baz=179
PFO **Pinyon Flats O** 25.30 317 P P 12 47 52.6 -0.8
comp=Z,9.6nm,1.0s,baz=114,slow=5.0,SNR=9.1
PFO LR LR 12 57 21.4
comp=Z,587nm,20.4s,baz=130,slow=35
PFO **Pinyon Flats O** 25.30 317 P P 12 47 53.8 +0.4
baz=129
PFO **Pinyon Flats O** 25.30 317 eP P 12 47 54.7 +1.3
comp=Z,21nm,1.1s
M38A **Pleasantville** 25.34 5 P P 12 47 53.1 -0.4
baz=186,SNR=7.4
M33A **Taylor Creek F** 25.38 358 P P 12 47 54.3 +0.4
baz=178
SFIN **Lafayette** 25.41 16 P P 12 47 54.1 -0.1
baz=200,SNR=14
SFIN **Lafayette** 25.41 16 eP P 12 47 54.5 +0.3
comp=Z,50nm,0.8s
LDFC **Landfair** 25.41 322 eP P 12 47 56.5 +2.1
comp=Z,31nm,0.9s
M39A **Webster** 25.50 7 P P 12 47 54.5 -0.5
baz=189,SNR=19
GMRC **Granite Mounta** 25.55 320 P P 12 47 56.6 +0.9
baz=132,SNR=12
L34A **Svendsen Farm,** 25.76 360 P P 12 47 57.3 0.0
baz=179,SNR=5.4
LCMT **Little Creek M** 25.76 327 eP P 12 47 59.4 +1.8
comp=Z,10nm,0.9s
MURC **Murrieta** 25.78 316 P P 12 47 57.6 0.0
baz=128
SCIA **State Center** 25.82 5 eP P 12 47 58.6 +0.7
comp=Z,103nm,0.9s
L32A **Elgin** 25.85 357 P P 12 47 58.4 +0.2
baz=176
SDV **Santo Domingo** 25.87 103 P P 12 48 01.3 +2.4
comp=Z,20nm,0.7s,baz=276,slow=3.2,SNR=23
SDV LR LR 13 00 30.3
comp=Z,667nm,18.4s,baz=244,slow=42
SDV **Santo Domingo** 25.87 103 eP P 12 48 01.2 +2.4
SDV **Santo Domingo** 25.87 103 eP P 12 48 01.3 +2.4
comp=Z,36nm,1.0s
L35A **Bielow Farm, R** 25.91 1 P P 12 47 57.9 -0.8
baz=181,SNR=5.7
L36A **Harm Buss Farm** 25.92 2 P P 12 47 58.5 -0.3
baz=183,SNR=15
L33A **Hoskins** 25.98 358 P P 12 47 59.3 0.0
baz=177
HEC **Hector,Ludlow** 26.00 320 P P 12 48 00.4 +0.7
baz=131,SNR=5.3
L37A **Phoenix Point,** 26.00 4 P P 12 47 59.2 -0.3
baz=185,SNR=17
BBRC **Big Bear Solar** 26.00 318 P P 12 48 00.4 +0.4
baz=129
MTPU **Mount Pierson** 26.03 330 eP P 12 48 02.0 +1.7
comp=Z,31nm,0.9s
L31A **Butterfield Fa** 26.07 355 P P 12 48 00.7 +0.5
baz=174
L38A **Oak Wood Farm,** 26.07 5 P P 12 48 00.0 -0.2
baz=187,SNR=25
N23A **Red Feather La** 26.12 343 P P 12 48 01.7 +0.7
baz=158,SNR=9.7
N23A **Red Feather La** 26.12 343 eP P 12 48 02.3 +1.3
comp=Z,50nm,1.3s
TUQ **Turquoise Moun** 26.14 321 P P 12 48 01.3 +0.2
baz=132,SNR=11
SRU **San Rafael Swe** 26.15 334 eP P 12 48 02.5 +1.3
SRU pmax pmax
comp=Z,14nm,1.0s
SRU **San Rafael Swe** 26.15 334 eP P 12 48 02.5 +1.3
comp=Z,14nm,1.0s
L39A **Vinton** 26.16 7 P P 12 48 00.3 -0.6
baz=189,SNR=9.5
O20A **White River Ci** 26.16 339 P P 12 48 01.9 +0.7
baz=153,SNR=9.9
O20A **White River Ci** 26.16 339 eP P 12 48 02.9 +1.7
comp=Z,35nm,1.0s
L40A **Anamosa** 26.19 8 P P 12 48 00.9 -0.4
baz=190,SNR=16
CCUT **Cedar City** 26.23 328 eP P 12 48 03.1 +1.1
comp=Z,14nm,1.1s
L41A **Preston** 26.31 9 P P 12 48 02.1 -0.3
baz=192,SNR=16
SCI2 **San Clemente I** 26.33 314 P P 12 48 03.1 +0.4
baz=124
PHWY **Pilot Hill** 26.36 344 eP P 12 48 04.3 +1.1
comp=Z,29nm,1.4s
MSU **Marysvale** 26.40 331 eP P 12 48 05.2 +1.7
MSU **Marysvale** 26.40 331 eP P 12 48 05.2 +1.7
K33A **Hardington** 26.41 359 P P 12 48 03.4 +0.1
baz=178
SHPR **Sheep Range** 26.43 324 eP P 12 48 05.3 +1.5
comp=Z,16nm,1.1s
RRX **Edison Barstow** 26.44 319 P P 12 48 04.8 +1.1
baz=130
K36A **Gilmore City** 26.47 3 P P 12 48 03.2 -0.6
baz=183
BFSC **Mount Baldy Ra** 26.47 317 P P 12 48 03.8 -0.2
baz=128
K34A **Le Mars** 26.48 0 P P 12 48 03.7 -0.2
baz=180,SNR=6.6
CIS **Catalina Islan** 26.48 315 P P 12 48 02.8 -1.2
baz=125
K32A **Verdigre** 26.50 357 P P 12 48 03.1 -1.0
baz=176
K35A **Storm Lake** 26.52 1 P P 12 48 03.7 -0.6
baz=182
P17A **Butcher Ranch,** 26.55 334 eP P 12 48 06.3 +1.6
comp=Z,21nm,1.1s
K38A **Parkersburg** 26.59 6 P P 12 48 04.6 -0.3
baz=187,SNR=12
GSC **Goldstone, Bar** 26.59 320 P P 12 48 05.8 +0.7
baz=131,SNR=6.0
GSC **Goldstone, Bar** 26.59 320 eP P 12 48 06.2 +1.1
GSC pmax pmax
comp=Z,15nm,1.1s
GSC **Goldstone, Bar** 26.59 320 eP P 12 48 06.2 +1.1
comp=Z,15nm,1.1s
ACSO **Alum Creek Sta** 26.60 23 eP P 12 48 05.8 +0.7
comp=Z,205nm,1.8s
TMUT **Trail Mountain** 26.60 333 eP P 12 48 07.6 +2.2
comp=Z,20nm,1.0s
K30A **Basset** 26.64 354 P P 12 48 05.7 +0.3
baz=172
K37A **Belmond** 26.64 4 P P 12 48 04.8 -0.6
baz=185,SNR=12
SHOC **Shoshone, Teco** 26.67 321 P P 12 48 06.2 +0.5
baz=132
MWC **Mount Wilson** 26.72 316 eP P 12 48 07.8 +1.4
MWC pmax pmax
comp=Z,21nm,1.2s
MWC **Mount Wilson** 26.72 316 eP P 12 48 07.8 +1.4
comp=Z,21nm,1.2s
K39A **Oelwein** 26.74 7 P P 12 48 05.8 -0.5
baz=189,SNR=11
K40A **Colesburg** 26.83 8 P P 12 48 06.7 -0.4
baz=190,SNR=13
K41A **Shullsburg** 26.86 10 P P 12 48 07.2 -0.1
baz=192,SNR=8.3
DECC **Green Verdugo** 26.93 316 P P 12 48 08.4 +0.4
baz=127
J34A **George** 27.07 0 P P 12 48 09.0 -0.2
baz=180
EDW2 **Edwards Air Fo** 27.08 318 P P 12 48 09.0 -0.5
baz=128
J33A **Davis** 27.12 359 P P 12 48 09.3 -0.4
baz=178
J36A **Seneca 1, Swea** 27.16 3 P P 12 48 09.5 -0.6
baz=184,SNR=6.3
SNCC **San Nicolas Is** 27.16 313 P P 12 48 08.9 -1.2
baz=123
J35A **Milford** 27.17 1 P P 12 48 09.2 -0.9
baz=182
JFWS **Jewell Farm** 27.17 9 eP P 12 48 10.4 +0.3
JFWS pmax pmax
comp=Z,39nm,0.7s
JFWS **Jewell Farm** 27.17 9 eP P 12 48 10.4 +0.3
comp=Z,40nm,0.7s
J31A **Geddes** 27.18 356 P P 12 48 10.4 +0.2
baz=174
J37A **Redenius Farm,** 27.19 4 P P 12 48 09.5 -0.7
baz=185
J32A **Parkston** 27.20 357 P P 12 48 09.9 -0.5
baz=176
LRMC **Laurel Mtn Rad** 27.26 319 P P 12 48 10.9 -0.2
baz=130,SNR=5.6
J30A **Dallas** 27.27 355 P P 12 48 10.6 -0.4
baz=173
J38A **Wedel Dairy, R** 27.29 6 P P 12 48 10.4 -0.7
baz=188,SNR=14
BLG **Laguna Peak, P** 27.33 315 P P 12 48 11.3 -0.4
baz=125
TPNV **Topopah Spring** 27.37 323 P P 12 48 12.7 +0.5
baz=134,SNR=8.1
TPNV **Topopah Spring** 27.37 323 eP P 12 48 14.2 +2.0

TPNV pmax pmax
comp=Z,18nm,1.0s
TPNV Topopah Spring 27.37 323 eP P 12 48 14.2 +2.0
comp=Z,18nm,1.0s
J39A Decorah 27.39 7 P P 12 48 11.5 -0.5
baz=189
OSI Osito Audit: C 27.40 316 P P 12 48 12.4 +0.1
baz=127
FURC Furnace Creek, 27.40 322 P P 12 48 13.3 +1.1
baz=132,SNR=6.5
MPMC Manual Prospec 27.51 320 P P 12 48 14.1 +0.6
baz=131,SNR=13
ECSD EROS Data Cent 27.53 359 P P 12 48 12.8 -0.5
baz=179,SNR=12
ECSD EROS Data Cent 27.53 359 eP P 12 48 13.8 +0.4
comp=Z,20nm,0.9s
J40A Soldiers Grove 27.57 8 P P 12 48 13.7 0.0
baz=191,SNR=10.0
J41A Loganville 27.65 10 P P 12 48 14.1 -0.3
baz=192,SNR=11
SCZ2 Santa Cruz Isl 27.65 314 P P 12 48 15.0 +0.5
baz=124
I35A Creekview Farm 27.66 2 P P 12 48 14.2 -0.4
baz=182
DAC Darwin (Calif) 27.71 320 eP P 12 48 16.6 +1.3
DAC pmax pmax
comp=Z,2.0nm,0.7s
DAC Darwin (Calif) 27.71 320 eP P 12 48 16.6 +1.3
comp=Z,1.9nm,0.7s
ARVC Arvin 27.77 317 P P 12 48 16.4 +0.8
baz=127
I34A Hadley 27.83 0 P P 12 48 15.8 -0.3
baz=180
I32A Karley and Nic 27.84 358 P P 12 48 15.7 -0.4
baz=177
I33A Coleman 27.84 359 P P 12 48 15.9 -0.3
baz=178
I30A Oacoma 27.85 355 P P 12 48 16.3 +0.1
baz=173
I36A Fitzsimmons Fa 27.87 3 P P 12 48 15.5 -0.8
baz=184
ISA Isabella, Lake 27.87 318 P P 12 48 17.0 +0.4
baz=129
I31A Royce, Wessing 27.90 356 P P 12 48 16.6 -0.1
baz=175
I37A Lemond, Waseca 27.90 4 P P 12 48 16.1 -0.5
baz=185
K22A Casper 27.91 343 P P 12 48 16.9 0.0
baz=158,SNR=7.2
K22A Casper 27.91 343 eP P 12 48 17.8 +0.9
comp=Z,64nm,1.6s
CTU Camp Tracy 27.99 334 eP P 12 48 20.0 +2.3
CTU epP sP 12 48 36.7 +8.1
R11A Troy Canyon, C 27.99 326 P P 12 48 18.5 +0.8
baz=137,SNR=10
R11A Troy Canyon, C 27.99 326 eP P 12 48 19.6 +1.8
comp=Z,30nm,1.9s
I38A Scanlan Farm, 28.02 6 P P 12 48 17.6 -0.1
baz=188,SNR=6.3
DUG Dugway, Tooele 28.05 332 P P 12 48 19.0 +0.8
baz=144,SNR=8.3
DUG Dugway, Tooele 28.05 332 eP P 12 48 20.5 +2.3
DUG pmax pmax
comp=Z,16nm,1.2s
DUG Dugway, Tooele 28.05 332 eP P 12 48 20.5 +2.3
comp=Z,16nm,1.2s
GRAC Grapevine Rang 28.05 322 P P 12 48 18.9 +0.8
baz=132
CWC Cottonwood Cre 28.12 320 P P 12 48 19.6 +0.7
baz=130
TCUT Toone Canyon 28.21 335 eP P 12 48 21.6 +1.9
comp=Z,118nm,1.4s
PKM Mcpherson Peak 28.29 316 P P 12 48 20.4 -0.1
baz=126
H32A Carlson Farm, 28.32 358 P P 12 48 19.9 -0.5
baz=177
SUSD Miller 28.34 356 P P 12 48 20.6 0.0
baz=174
H31A Wolsey 28.34 356 P P 12 48 20.6 +0.1
baz=175
VES Vestal, Richgr 28.37 318 P P 12 48 22.1 +1.1
baz=128
N54A Moraine State 28.42 26 P P 12 48 21.4 +0.1
baz=214
H36A Jessenland, He 28.43 3 P P 12 48 21.0 -0.3
baz=184
H34A Spellman Lake, 28.46 0 P P 12 48 21.8 +0.2
baz=181
H33A Prehn Over Nor 28.48 359 P P 12 48 21.6 -0.2
baz=179
O56A Blue Knob Stat 28.49 29 P P 12 48 21.2 -0.8
baz=217
H37A Dierke Farm, C 28.50 5 P P 12 48 22.0 0.0
baz=186
H35A Sunnyside Ranc 28.51 2 P P 12 48 22.2 +0.1
baz=182
HWUT Hardware Ranch 28.68 335 eP P 12 48 24.6 +0.8
comp=Z,9.6nm,1.0s
SJG San Juan 28.69 82 LR LR 13 01 27.2
comp=Z,484nm,18.6s,baz=266,slow=39
RSSD Black Hills 28.71 348 P P 12 48 24.7 +0.5
baz=164
RSSD Black Hills 28.71 348 eP P 12 48 25.7 +1.6
RSSD pmax pmax
comp=Z,9.0nm,1.1s
RSSD Black Hills 28.71 348 eP P 12 48 25.7 +1.6
comp=Z,9.4nm,1.1s
BGU Big Grassy Mou 28.73 333 eP P 12 48 26.5 +2.2
comp=Z,22nm,1.5s
RCTC Rector, Farmer 28.76 319 P P 12 48 25.0 +0.6
baz=128
ALLY Alegheny Colle 28.93 25 eP P 12 48 26.9 +1.1
comp=Z,169nm,1.8s
BW06 Boulder Array 28.95 339 P P 12 48 26.2 -0.1
baz=152
BW06 Boulder Array 28.95 339 eP P 12 48 26.9 +0.7
PD31 Pinedale Array 28.95 339 eP P 12 48 27.0 +0.7
PDAR Pinedale Array 28.95 339 P P 12 48 26.9 +0.7
comp=Z,1.2nm,0.6s,baz=132,slow=11,SNR=11
G33A Ortonville 28.99 360 P P 12 48 26.1 -0.2
baz=179
ATAH Atahualpa 29.01 141 P P 12 48 25.6 -1.6
comp=Z,6.1nm,0.8s,baz=343,slow=19,SNR=3.2
M54A Oil Creek Stat 29.01 26 P P 12 48 26.6 +0.1
baz=214,SNR=8.7
G34A Benson 29.04 1 P P 12 48 26.0 -0.7
baz=181
G35A Watkins 29.04 2 P P 12 48 26.0 -0.8
baz=183
G31A Conde 29.07 357 P P 12 48 26.6 -0.4
baz=176
G32A Webster 29.07 358 P P 12 48 26.7 -0.4
baz=177
G36A St. Michael 29.09 3 P P 12 48 27.0 -0.2
baz=184
H25A Fruitdale 29.11 349 P P 12 48 28.1 +0.6
baz=165
SPMN Marine on St. 29.15 5 P P 12 48 27.4 -0.3
baz=186,SNR=11
SPMN Marine on St. 29.15 5 eP P 12 48 27.8 0.0
comp=Z,33nm,0.8s
G29A Hoven 29.16 354 P P 12 48 27.3 -0.6
baz=172
HVU Hansel Valley 29.32 334 eP P 12 48 31.2 +1.6
HVU pmax pmax
comp=Z,23nm,1.3s
HVU Hansel Valley 29.32 334 eP P 12 48 31.2 +1.6
comp=Z,23nm,1.3s
MLAC Mammoth, Mammc 29.35 321 P P 12 48 29.7 -0.2
baz=131
F34A Alexandria 29.59 1 P P 12 48 30.9 -0.8
baz=182
ELK Elko 29.61 330 eP P 12 48 34.0 +1.8
ELK pmax pmax
comp=Z,7.0nm,1.2s
ELK Elko 29.61 330 eP P 12 48 34.0 +1.8
comp=Z,7.0nm,1.2s
F33A 5 Mile Ranch, 29.63 360 P P 12 48 31.1 -0.9
baz=180
F32A Veblen 29.67 359 P P 12 48 31.4 -1.0
baz=178
F35A Swanville 29.68 2 P P 12 48 32.1 -0.3
baz=183
F31A Hecla 29.70 357 P P 12 48 31.8 -0.9
baz=176
F30A Leola 29.73 356 P P 12 48 32.3 -0.6
baz=174
F36A Milaca 29.73 4 P P 12 48 32.3 -0.6
baz=185,SNR=9.4
F29A Eureka 29.79 355 P P 12 48 32.6 -0.8
baz=173
REDW Red Top Meadow 29.92 338 eP P 12 48 35.9 +1.0
comp=Z,37nm,1.2s
SNOW Snow King Moun 29.97 338 eP P 12 48 36.5 +1.1
comp=Z,68nm,1.4s
LOHW Long Hollow 30.05 339 eP P 12 48 37.1 +1.1
comp=Z,22nm,1.0s
TPAW Teton Pass 30.07 338 eP P 12 48 37.7 +1.4
comp=Z,41nm,1.4s
MOOW Moose Ponds 30.22 339 eP P 12 48 38.8 +1.3
comp=Z,9.2nm,0.9s
WAKR Walker 30.28 322 eP P 12 48 40.0 +1.9
comp=Z,26nm,1.5s
E33A Westby DABS, E 30.29 0 P P 12 48 36.9 -1.0
baz=180
E34A Wadena 30.31 1 P P 12 48 37.5 -0.5
baz=182,SNR=5.3
N59A State Game Lan 30.34 31 P P 12 48 38.0 -0.4
baz=221
BMN Battle Mountai 30.38 327 eP P 12 48 40.7 +1.8
BMN pmax pmax
comp=Z,14nm,1.4s
BMN Battle Mountai 30.38 327 eP P 12 48 40.7 +1.8
comp=Z,14nm,1.4s
E35A Pequot Lakes 30.38 2 P P 12 48 38.8 +0.2
baz=183,SNR=7.0
E31A Nome 30.39 358 P P 12 48 37.8 -0.9
baz=176
E36A McGregor 30.40 4 P P 12 48 38.6 -0.2
baz=185,SNR=8.2
IMW Indian Meadow 30.42 339 eP P 12 48 40.6 +1.2
comp=Z,31nm,1.7s
COWI Conover 30.45 10 eP P 12 48 39.2 -0.1
comp=Z,90nm,1.9s
FLWY Flagg Ranch 30.50 339 eP P 12 48 42.2 +2.2
comp=Z,56nm,1.8s
E37A Wrenshall 30.51 5 P P 12 48 39.7 -0.1
baz=187
CMB Columbia Colle 30.55 320 eP P 12 48 41.4 +1.1
CMB pmax pmax
comp=Z,12nm,1.3s
CMB Columbia Colle 30.55 320 eP P 12 48 41.4 +1.1
comp=Z,12nm,1.3s
MMNY Mt. Morris Dam 30.76 27 eP P 12 48 42.2 +0.2
D34A Park Rapids 30.89 1 P P 12 48 42.3 -0.8
baz=182
D35A Remer 30.92 3 P P 12 48 43.1 -0.3
baz=184,SNR=11
D33A AnnSam, Waubun 30.93 0 P P 12 48 42.7 -0.8
baz=180
RLMT Red Lodge 30.96 342 P P 12 48 44.3 +0.3
baz=155,SNR=10
RLMT Red Lodge 30.96 342 eP P 12 48 44.8 +0.8
comp=Z,46nm,1.3s
PAHR Pah Rah Range 31.05 324 eP P 12 48 46.7 +1.9
comp=Z,58nm,2.0s
D36A Goodland 31.06 4 P P 12 48 44.2 -0.4
baz=185,SNR=6.9
D37A Cotton 31.10 5 P P 12 48 44.5 -0.4
baz=187,SNR=6.9
YMR Madison River 31.10 339 eP P 12 48 47.4 +2.1
comp=Z,29nm,1.3s
D26A Manning 31.27 352 P P 12 48 46.6 +0.1
baz=168
QLMT Earthquake Lak 31.41 339 eP P 12 48 50.4 +2.4
C34A RKJ Ranch, Bem 31.46 2 P P 12 48 47.8 -0.3
baz=182
HLID Hailey 31.48 334 P P 12 48 49.1 +0.5
baz=145,SNR=18
HLID Hailey 31.48 334 eP P 12 48 49.6 +1.0
comp=Z,17nm,1.2s
C35A Jirik Farms, M 31.54 3 P P 12 48 48.5 -0.3
baz=184,SNR=8.8
C30A Mose, Pekin 31.55 357 P P 12 48 49.1 +0.1
baz=176
C31A Landman Farms, 31.61 358 P P 12 48 49.3 -0.1
baz=177,SNR=5.5
C32A Crookston 31.62 359 P P 12 48 48.8 -0.7
baz=179
LAO LASA Array 31.62 347 P P 12 48 50.0 +0.3
baz=161
LAO LASA Array 31.62 347 eP P 12 48 50.4 +0.7
comp=Z,27nm,1.4s
C36A Pine Crest Far 31.66 4 P P 12 48 49.9 -0.1
baz=186,SNR=7.9
C37A Embarrass 31.69 5 P P 12 48 49.5 -0.6
baz=187
C38A Sawbill Land. 31.76 6 P P 12 48 50.0 -0.8
baz=189
MDND Maddock 31.77 356 P P 12 48 51.0 +0.1
baz=174
MCMT McKenzie Canyo 31.91 337 eP P 12 48 54.8 +2.3
SADO Sadowa 31.95 23 eP P 12 48 52.0 -0.4
comp=Z,93nm,1.4s
EYMN Ely 31.96 6 P P 12 48 52.0 -0.6
baz=188
EYMN Ely 31.96 6 eP P 12 48 52.6 +0.1
comp=Z,25nm,1.1s
MFID Camas Ranch 31.97 332 eP P 12 48 54.1 +1.3
comp=Z,20nm,1.4s
C25A Freed Ranch, W 32.05 351 P P 12 48 53.9 +0.5
baz=167
B33A Robert and Kas 32.07 1 P P 12 48 53.1 -0.4
baz=181
AGMN Agassiz Nation 32.09 0 P P 12 48 53.5 -0.1
baz=180,SNR=20
AGMN Agassiz Nation 32.09 0 eP P 12 48 53.7 +0.1
comp=Z,54nm,1.0s
ORV Oroville 32.19 322 eP P 12 48 56.6 +2.0
ORV pmax pmax
comp=Z,19nm,1.5s
ORV Oroville 32.19 322 eP P 12 48 56.6 +2.0
comp=Z,19nm,1.5s
BOZ Bozeman (W) 32.19 339 P P 12 48 55.3 +0.6
baz=151,SNR=13
BOZ Bozeman (W) 32.19 339 eP P 12 48 55.5 +0.7
BOZ pmax pmax
comp=Z,35nm,1.6s
BOZ Bozeman (W) 32.19 339 eP P 12 48 55.5 +0.7
comp=Z,35nm,1.6s
B32A Ashes, Strandq 32.19 359 P P 12 48 54.7 +0.1
baz=179
B35A Bob, Littlefor 32.21 3 P P 12 48 54.4 -0.3
baz=184,SNR=9.5
B31A Greenbush Farm 32.24 358 P P 12 48 55.1 +0.2
baz=177
DLMT Dillon 32.28 338 eP P 12 48 57.1 +1.6
comp=Z,57nm,1.3s
B30A Myvik Farm, E 32.29 357 P P 12 48 55.8 +0.3
baz=176
B34A Aery, Baudette 32.30 2 P P 12 48 55.0 -0.5
baz=182,SNR=5.8
B29A Wagenman Farm, 32.37 356 P P 12 48 56.5 +0.4
baz=174,SNR=6.3
B28A Dugan Ranch, T 32.43 355 P P 12 48 57.0 +0.4
baz=172
B26A Jensen Ranch, 32.56 352 P P 12 48 58.5 +0.6
baz=169
WVOR Wild Horse Val 32.57 328 eP P 12 48 59.0 +0.9
WVOR pmax pmax
comp=Z,28nm,1.3s
WVOR Wild Horse Val 32.57 328 eP P 12 48 59.0 +0.9
comp=Z,28nm,1.3s
B25A Knox Farm, Ray 32.58 351 P P 12 48 58.5 +0.4
baz=167
LRM Limekiln Ridge 32.62 339 eP P 12 48 59.9 +1.2
A32A Rocking H Ranc 32.71 360 P P 12 48 58.9 -0.2
baz=179
A33A Warroad 32.73 1 P P 12 48 59.3 0.0
baz=181,SNR=8.6
A31A Linda, St. Vin 32.74 359 P P 12 48 58.9 -0.4
baz=178
A30A Hoffart Farm, 32.78 357 P P 12 48 59.9 +0.2
baz=176,SNR=6.5
A29A Manning Farm, 32.81 356 P P 12 49 00.2 +0.2
baz=174,SNR=6.2
O03D Paynes Creek 32.84 322 P P 12 49 00.1 -0.3
baz=130
A28A Rude Farm, Bot 32.88 355 P P 12 49 00.7 +0.1
baz=173
DGMT Dagmar 32.94 350 P P 12 49 01.4 +0.2
baz=166
DGMT Dagmar 32.94 350 eP P 12 49 02.1 +1.0
comp=Z,72nm,2.0s
PLVO Plevna 32.99 25 eP P 12 49 01.7 +0.2
comp=Z,22nm,0.9s
PLVO epP pP 12 49 08.6 -0.7
A27A Ledoux Ranch, 33.01 354 P P 12 49 01.5 -0.3
baz=171
MOD Modoc Plateau 33.06 326 eP P 12 49 03.5 +1.1
comp=Z,9.7nm,0.9s
LONY Lake Ozonia 33.73 28 eP P 12 49 08.3 +0.3
comp=Z,24nm,1.1s
BMO Blue Mountains 33.76 332 eP P 12 49 08.8 +0.3
comp=Z,28nm,1.5s
CHMT Chamberlain Mo 33.85 339 eP P 12 49 09.9 +0.6
MSO Missoula 34.02 338 P P 12 49 11.0 +0.3
baz=148,SNR=8.5
MSO Missoula 34.02 338 eP P 12 49 11.6 +0.9
comp=Z,21nm,1.3s
ULM Lac du Bonnet 34.04 0 P P 12 49 09.6 -1.1
comp=Z,7.9nm,0.8s,baz=187,slow=7.6,SNR=10
ULM LR LR 13 04 48.9
comp=Z,279nm,19.6s,baz=156,slow=39
ULM Lac du Bonnet 34.04 0 eP P 12 49 10.6 -0.1
ULM pmax pmax
comp=Z,26nm,1.0s
ULM Lac du Bonnet 34.04 0 eP P 12 49 10.6 -0.1
comp=Z,26nm,1.0s
M02C Callahan 34.15 323 P P 12 49 12.2 +0.3
baz=130
SLMT Seeley Lake 34.21 339 eP P 12 49 13.0 +0.6
F10A Beach Ranch, E 34.61 334 eP P 12 49 16.5 +0.7
comp=Z,33nm,0.9s
SWMT Swartz Lake 34.62 338 eP P 12 49 16.6 +0.8
G08A Pilot Rock 34.85 331 eP P 12 49 18.6 +0.7
comp=Z,12nm,1.2s
JTMT Jette 34.92 338 eP P 12 49 19.6 +1.1
YBMT Yellow Bay 34.93 339 eP P 12 49 20.2 +1.7
TRQ Mont Tremblant 34.99 26 eP P 12 49 19.2 +0.2
BLMT Blacktail Moun 35.17 339 eP P 12 49 21.4 +0.6
BSMT Bassoo Peak 35.19 338 eP P 12 49 21.9 +1.0
BSMT epP sP 12 49 36.1 +4.4
I05D Terrebonne, OR 35.30 328 P P 12 49 22.1 +0.4
baz=135
VLDQ Val d'Or 35.40 22 eP P 12 49 22.4 -0.1
comp=Z,31nm,1.1s
I04A Tendick Farm, 35.48 326 P P 12 49 23.2 -0.2
baz=133
WALA Waterton Lakes 35.92 340 eP P 12 49 28.2 +1.1
comp=Z,10nm,1.0s
WALA epP sP 12 49 37.9 -0.1
I03D Drain, OR 35.92 326 P P 12 49 27.3 +0.3
baz=132
G05D Wamic, OR 35.94 329 P P 12 49 26.9 -0.2
baz=136
NEW Newport 36.41 336 P P 12 49 30.8 -0.3
baz=144
C09A Chrisman Ranch 36.49 335 eP P 12 49 32.9 +1.0
comp=Z,37nm,1.4s
G03D McMinnville, O 36.90 327 P P 12 49 35.5 +0.2
baz=133
LTY Liberty 37.11 332 eP P 12 49 38.3 +1.1
comp=Z,34nm,1.4s
LON Longmire 37.26 330 eP P 12 49 39.5 +1.1
LON pmax pmax
comp=Z,10.0nm,1.1s
LON Longmire 37.26 330 eP P 12 49 39.5 +1.1
comp=Z,10nm,1.1s
F04D Rainier, OR 37.37 329 P P 12 49 39.6 +0.3
baz=134
B08A Colville Reser 37.37 334 eP P 12 49 40.9 +1.5
comp=Z,21nm,1.4s
LMQ La Malbaie 37.88 29 eP P 12 49 44.1 +0.5
comp=Z,56nm,1.8s
B05A Bryant 38.50 332 P P 12 49 48.6 -0.2
baz=138
NLWA Neilton Lookou 38.71 330 eP P 12 49 51.3 +0.7
comp=Z,24nm,1.3s
PTGA Pitinga 39.41 112 eP P 12 49 58.5 +1.6
comp=Z,23nm,1.1s
EDM Edmonton 39.42 344 eP P 12 49 57.0 +0.5
EDM pmax pmax
comp=Z,26nm,1.1s
EDM Edmonton 39.42 344 eP P 12 49 57.0 +0.5
comp=Z,26nm,1.1s
SAML Samuel 41.02 125 eP P 12 50 12.1 +2.0
comp=Z,31nm,1.3s
LPAZ La Paz 42.41 138 P P 12 50 21.6 -0.6
comp=Z,2.6nm,0.9s,baz=346,slow=9.1,SNR=8.4
LPAZ La Paz 42.41 138 eP P 12 50 22.6 +0.4
LPAZ pmax pmax
comp=Z,8.0nm,0.8s
LPAZ La Paz 42.41 138 eP P 12 50 22.6 +0.4
comp=Z,8.0nm,0.8s
FCC Fort Churchill 42.60 2 eP P 12 50 23.3 +0.8
FCC Fort Churchill 42.60 2 eP P 12 50 23.3 +0.8
SCHQ Schefferville 44.75 24 P P 12 50 39.2 -0.8
comp=Z,8.4nm,0.7s,baz=227,slow=5.5,SNR=6.0
SCHQ LR LR 13 12 36.7
comp=Z,344nm,18.2s,baz=250,slow=40
SCHQ Schefferville 44.75 24 eP P 12 50 39.6 -0.4
DRLN Deer Lake 45.53 35 eP P 12 50 46.1 0.0
LVC Limon Verde 46.80 145 P P 12 50 56.8 -0.1
comp=Z,13nm,0.9s,baz=173,slow=1.1,SNR=3.7
YKA Yellowknife Ar 48.12 349 P P 12 51 05.7 -0.4
comp=Z,1.8nm,0.5s,baz=155,slow=7.6,SNR=23
DLBC Dease Lake 49.14 337 eP P 12 51 16.8 +2.6
LCO Las Campanas 51.15 151 eP P 12 51 30.3 +0.3
LCO epP pP 12 51 37.1 -0.8
FSA Cafayete 51.20 145 eP P 12 51 29.3 -1.0
VCA Vinchina 52.12 149 eP P 12 51 45.7 +8.5
AGUA GUANDACOL 52.60 149 eP P 12 51 40.5 -0.1
CYA Choya 53.13 146 eP P 12 51 43.7 -0.9
HYT Haines Junctio 53.57 336 eP P 12 51 49.6 +2.2
AMOG MOGNA 53.80 150 eP P 12 51 49.8 +0.4
RTLS Leoncito 54.15 152 eP P 12 51 51.5 -0.8
PCA Pinnacle 54.24 335 eP P 12 51 55.0 +2.7
AUSP Uspallata 54.46 152 eP P 12 51 55.2 +0.7
RTCV Cerro Valdivia 54.55 151 eP P 12 51 55.0 +0.1
ACHE Chepes 54.87 149 eP P 12 51 56.7 -0.6
ASAL Salagasta 55.02 152 eP P 12 51 58.5 +0.2
ACAN Cantantal 55.52 150 eP P 12 52 02.7 +0.8
DAWY Dawson 56.25 339 eP P 12 52 07.0 +0.3
MRA San Martin 56.36 149 eP P 12 52 07.0 -0.9
BMRM Bremner River 56.52 334 eP P 12 52 11.1 +2.4
CPUP Villa Florida 56.59 138 P P 12 52 07.1 -2.4
comp=Z,2.2nm,0.9s,baz=312,slow=7.2,SNR=4.2
BDFB Brasilia 57.01 121 P P 12 52 13.3 +0.5
comp=Z,3.1nm,0.7s,baz=90,slow=2.0
MENT Mentasta 57.20 336 eP P 12 52 14.6 +1.1
EGAK Eagle 57.30 339 eP P 12 52 14.3 +0.3
INK Inuvik 57.32 344 P P 12 52 14.2 +0.2
comp=Z,12nm,0.9s,baz=132,slow=6.2,SNR=18
KLU Klutina 57.34 334 eP P 12 52 16.1 +1.5
DOT Dot Lake 57.71 337 eP P 12 52 17.6 +0.5
PAX Paxson 57.90 336 eP P 12 52 18.8 +0.4
PAX e*PP sP 12 52 30.9 +1.3
PAX pmax pmax
comp=Z,9.0nm,1.0s
PAX Paxson 57.90 336 eP P 12 52 18.8 +0.4
comp=Z,9.4nm,1.0s
PAX epP sP 12 52 30.9 +1.3
PMR Palmer 58.75 333 eP P 12 52 25.0 +0.8
PMR Palmer 58.75 333 eP P 12 52 25.0 +0.8
HDA Harding Lake 59.19 337 eP P 12 52 27.7 +0.4
ILAR Eielson Array 59.35 337 P P 12 52 28.4 -0.1
comp=Z,8.7nm,1.0s,baz=130,slow=4.9,SNR=66
ILAR LR LR 13 21 52.5
comp=Z,394nm,18.1s,baz=146,slow=40
ILB Eielson Array 59.35 337 eP P 12 52 28.7 +0.3
RND Reindeer 59.45 335 eP P 12 52 30.2 +1.0
RND Reindeer 59.45 335 eP P 12 52 30.2 +1.0
CCB Clear Creek Bu 59.63 337 eP P 12 52 29.8 -0.6
MCK McKinley 59.63 336 eP P 12 52 31.1 +0.7
MCK McKinley 59.63 336 eP P 12 52 31.1 +0.7
WRH Wood River Hil 59.66 337 eP P 12 52 30.6 +0.1
COLA College 59.76 337 eP P 12 52 31.5 +0.3
COLA College 59.76 337 eP P 12 52 31.5 +0.3
SPU Mount Spurr 59.86 332 eP P 12 52 32.8 +0.8
TRF Thorofare Moun 60.05 335 eP P 12 52 34.0 +0.6
KTH Kantishna Hill 60.35 335 eP P 12 52 35.6 +0.3
PPLA Purkeypile 60.60 334 eP P 12 52 37.3 +0.1
comp=Z,0.9nm,0.4s
PLCA Paso Flores 61.34 158 P P 12 52 41.1 -1.2
comp=Z,7.1nm,0.8s,baz=347,slow=8.8,SNR=9.4
PLCA Paso Flores 61.34 158 eP P 12 52 41.9 -0.5
COLD Coldfoot 61.73 339 eP P 12 52 45.8 +1.2
TRQA Tornquist 62.70 150 eP P 12 52 51.1 -0.4
PGAV Gavieira, Arco 77.83 50 eLR LR 13 19 58.2
comp=Z,314nm,20.0s

BILL Bilibino 78.01 338 *c iP* **P 12 54 25.3 +0.6**
BILL pmax pmax
comp=Z,47nm,2.5s
PCAS Casmilo, Conde 78.02 52 *e*P **P 12 54 26.5 +1.2**
comp=Z,37nm,1.4s
PTEO Sao Teotonio 78.33 54 *e*P **P 12 54 30.1 +3.1**
comp=Z,31nm,1.1s
PMTG Montargil 78.42 53 *e*P **P 12 54 28.0 +0.5**
comp=Z,25nm,1.6s
MTE Manteigas 78.67 51 *e*P **P 12 54 29.7 +0.8**
comp=Z,27nm,1.6s
MTE Manteigas 78.67 51 *e*LR LR 13 20 46.0
comp=Z,372nm,20.0s
PCBR Castelo Branco 78.83 52 *e*P **P 12 54 31.1 +1.4**
comp=Z,26nm,1.5s
MVO Moncorvo 78.90 50 *e*P **P 12 54 31.0 +0.8**
comp=Z,30nm,1.5s
MVO Moncorvo 78.90 50 *e*LR LR 13 19 53.1
comp=Z,271nm,20.0s
PMRV Marv??o 78.98 52 *e*P **P 12 54 31.7 +1.1**
comp=Z,19nm,1.4s
PMRV Marv??o 78.98 52 *e*LR LR 13 21 28.6
comp=Z,405nm,20.0s
PBRG Braganca 78.98 50 *e*P **P 12 54 31.3 +0.7**
comp=Z,27nm,1.4s
PBAR Barrancos 79.51 53 *e*P **P 12 54 34.0 +0.5**
comp=Z,29nm,1.6s
PAB San Pablo 81.25 51 *e*P **P 12 54 43.8 +0.8**
PAB pmax pmax
comp=Z,28nm,1.4s
PAB San Pablo 81.25 51 *e*P **P 12 54 43.8 +0.8**
comp=Z,28nm,1.4s
ESDC Sonseca Array 81.51 51 P **P 12 54 44.5 +0.3**
comp=Z,3.8nm,0.9s,baz=294,slow=5.1,SNR=20
ESDC LR LR 13 27 54.0
comp=Z,252nm,19.8s,baz=290,slow=33
LDF La Druitiere 81.97 42 *e*P **P 12 54 46.8 +0.4**
LDF pmax pmax
comp=Z,25nm,1.2s
LFF La Frestale 83.52 45 *e*P **P 12 54 54.8 +0.2**
LFF pmax pmax
comp=Z,14nm,1.0s
KONO Kongsberg 83.94 29⇑ *e*P **P 12 54 58.2 +1.8**
KONO pmax pmax
comp=Z,193nm,1.7s
RJF Les Rejaudoux 83.95 45 *e*P **P 12 54 56.7 -0.1**
RJF pmax pmax
comp=Z,31nm,1.6s
TCF Toulx Ste Croi 84.12 44 *e*P **P 12 54 57.9 +0.2**
TCF pmax pmax
comp=Z,22nm,1.4s
NB2 NORSAR Subarra 84.16 28 P **P 12 54 58.9 +1.3**
comp=Z,22nm,1.1s,baz=298,slow=5.3
NB2 NORSAR Subarra 84.16 28 P **P 12 54 58.9 +1.3**
baz=298,slow=5.3
NOA NORSAR Array B 84.16 28 P **P 12 54 58.6 +1.0**
comp=Z,12nm,1.1s,baz=294,slow=4.7,SNR=10
NOA LR LR 13 32 55.4
comp=Z,71nm,21.2s,baz=80,slow=36
AVF Avril sur Loir 84.73 43 *e*P **P 12 55 00.4 -0.3**
AVF pmax pmax
comp=Z,17nm,1.4s
SSF Saint Saulge 84.74 43 *e*P **P 12 55 01.9 +1.1**
SSF pmax pmax
comp=Z,20nm,1.3s
BCLA Clavier 84.81 39 P **P 12 55 02.2 +1.2**
comp=Z,10nm,1.7s
LOR Lormes 84.91 42 *e*P **P 12 55 01.8 +0.2**
LOR pmax pmax
comp=Z,23nm,1.2s
SEY Seymchan 85.17 335 P **P 12 55 02.2 -0.4**
comp=Z,1.8nm,0.7s,baz=34,slow=3.5,SNR=8.0
MEM Membach 85.17 39 P **P 12 55 04.1 +1.3**
comp=Z,11nm,1.6s
ARCES ARCESS Array B 85.35 17 P **P 12 55 02.5 -0.9**
comp=Z,4.4nm,1.0s,baz=258,slow=6.1,SNR=5.7
ARCES LR LR 13 37 14.1
comp=Z,156nm,18.9s,baz=313,slow=38
ARCES ARCESS Array B 85.35 17 P **P 12 55 02.5 -0.9**
ARCES pmax pmax
comp=Z,5.0nm,1.0s
ARCES MLR MLR
comp=Z,157nm,18.9s
SSB Saint Sauveur 85.99 44 *e*P **P 12 55 07.9 +0.8**
SSB *e**PP **sP 12 55 18.1 -0.4**
SSB pmax pmax
comp=Z,11nm,1.4s
SSB Saint Sauveur 85.99 44 *e*P **P 12 55 07.9 +0.8**
comp=Z,11nm,1.4s
SSB *e*pP **sP 12 55 18.1 -0.4**
VIVF Saint-Julien-l 86.21 44 *e*P **P 12 55 08.8 +0.6**
VIVF pmax pmax
comp=Z,13nm,1.5s
PETK Petropavlovsk- 86.64 325 P **P 12 55 10.1 0.0**
comp=Z,1.8nm,1.0s,baz=69,slow=13,SNR=3.5
CDF Champ du Feu 86.70 40 *e*P **P 12 55 10.7 +0.1**
CDF pmax pmax
comp=Z,7.0nm,1.2s
TIXI Tiksi 87.34 347 P **P 12 55 11.8 -1.3**
comp=Z,1.7nm,0.7s,baz=50,slow=5.0,SNR=6.9
TIXI Tiksi 87.34 347 *e*P **P 12 55 12.8 -0.3**
TIXI pmax pmax
comp=Z,5.0nm,1.3s
TIXI Tiksi 87.34 347 *e*P **P 12 55 12.7 -0.4**
comp=Z,5.2nm,1.1s
MA2 Magadan 87.40 332 *e*P **P 12 55 13.8 +0.2**
CLL Collm 89.01 36⇑ *i*P **P 12 55 22.3 +0.9**
CLL *e* 12 55 30.0
CLL Collm 89.01 36⇑ *i*P **P 12 55 22.3 +0.9**
CLL *e* 12 55 30.0
CLL MLR MLR
comp=Z,200nm,21.5s
NKC Novy Kostel 89.14 38 AMS AMS 13 36 30.0
comp=Z,300nm,17.2s
DBIC Dimbokro 89.37 83 LR LR 13 29 46.1
comp=Z,99nm,21.5s,baz=224,slow=32
SUF Sumiainen 89.51 23 P **P 12 55 25.2 +1.7**
BRG Berggiesshubel 89.73 37 *e*P **P 12 55 25.6 +0.8**
comp=Z,8.2nm,1.3s
BRG Berggiesshubel 89.73 37 *e*P **P 12 55 25.6 +0.8**
BRG pmax pmax
comp=Z,8.0nm,1.3s
FINES FINESS Array B 90.23 24 P **P 12 55 26.6 -0.4**
comp=Z,1.9nm,1.0s,baz=339,slow=4.9,SNR=5.2
FINES LR LR 13 38 13.4
comp=Z,121nm,19.3s,baz=318,slow=37
PVCC Panska Ves 90.24 37 AMS AMS 13 38 00.0
comp=Z,200nm,22.1s
KHC Kasperske Hory 90.27 38 *e*P **P 12 55 28.8 +1.4**
KHC AMS AMS 13 36 40.0
comp=Z,400nm,16.7s
KHC Kasperske Hory 90.27 38 *e*P **P 12 55 28.8 +1.4**
KHC MLR MLR
comp=Z,400nm,16.7s
GERES GERESS Array B 90.46 38 P **P 12 55 28.3 -0.1**
comp=Z,0.2nm,0.3s,baz=318,slow=3.6,SNR=9.5
GERES LR LR 13 37 19.1
comp=Z,352nm,18.5s,baz=288,slow=36
PRU Pruhonice 90.46 37 *e*P **P 12 55 29.1 +0.8**
PRU AMS AMS 13 37 20.0
comp=Z,300nm,19.6s
PRU Pruhonice 90.46 37 *e*P **P 12 55 29.1 +0.8**
PRU MLR MLR
comp=Z,300nm,19.6s
GOPC GO Pecny, Ondr 90.64 37 AMS AMS 13 37 30.0
comp=Z,300nm,22.0s
UPC Upice 91.08 36 *e*P **P 12 55 32.3 +1.2**
UPC AMS AMS 13 36 20.0
comp=Z,300nm,21.7s
UPC Upice 91.08 36 *e*P **P 12 55 32.3 +1.2**
UPC MLR MLR
comp=Z,300nm,21.7s
TREC Trest 91.32 38 AMS AMS 13 35 50.0
comp=Z,300nm,21.5s
DPC Dobruska-Polom 91.32 36 *e*P **P 12 55 33.3 +1.0**
DPC AMS AMS 13 38 20.0
comp=Z,200nm,21.4s
DPC Dobruska-Polom 91.32 36 *e*P **P 12 55 33.3 +1.0**
DPC MLR MLR
comp=Z,200nm,21.4s
VSU Vasula 92.25 26 *de*P **P 12 55 38.9 +2.6**
VSU pmax pmax
comp=Z,23nm,1.2s
MORC Moravsky Berou 92.29 36 P **P 12 55 39.0 +2.2**
OKC Ostrava-Krasne 92.60 36 AMS AMS 13 38 30.0
comp=Z,200nm,10.9s

KEST Kesra 92.75 52 LR LR 13 34 38.4
comp=Z,158nm,19.4s,baz=252,slow=34
VYHS Vyhne 93.65 37 *e*P **P 12 55 44.0 +0.9**
VYHS pmax pmax
comp=Z,4.0nm,1.3s
VYHS Vyhne 93.65 37 *e*P **P 12 55 44.0 +0.9**
TORD Torodi Ar. Bea 93.71 75 P **P 12 55 43.5 -0.5**
comp=Z,0.8nm,1.0s,baz=287,slow=5.7,SNR=2.9
TORD LR LR 13 34 03.9
comp=Z,255nm,21.8s,baz=260,slow=33
TAM Tamanrasset 94.16 65 *e*P **P 12 55 47.6 +1.5**
TAM pmax pmax
comp=Z,1.0nm,0.7s
TAM Tamanrasset 94.16 65 *e*P **P 12 55 47.6 +1.5**
comp=Z,1.3nm,0.7s
YAK Yakutsk 94.17 340 *e*P **P 12 55 45.3 +0.2**
YAK pmax pmax
comp=Z,12nm,0.9s
NRIK Noril'sk 94.73 359 LR LR 13 44 59.9
comp=Z,106nm,18.0s,baz=18,slow=40
KOLS Kolonicke sedl 95.39 36 *e*P **P 12 55 51.9 +0.9**
KOLS Kolonicke sedl 95.39 36 *e*P **P 12 55 51.9 +0.9**
KLMR Klimovskoe 95.49 20 *e*P **P 12 55 49.8 -1.4**
KLMR *e* 12 59 39.8
KLMR pmax pmax
comp=Z,7.0nm,1.2s
OBN Obninsk 98.54 25⇓ *e*P Pdif 12 56 05.5 +0.4
OBN pmax pmax
comp=Z,4.0nm,0.7s
HHC Hu-ho-hao-te 117.77 337 *e*PKP **PKPdf 13 01 14.0 +0.7**
WMQ Urumqi 120.25 357 *e*PKP **PKPdf 13 01 18.2 +0.3**
WMQ PP **PP 13 02 47.8 +5.6**
WMQ PKS **PKSdf 13 04 50.8 -3.8**
WMQ AMB AMB
comp=Z,110nm,5.2s
WMQ LR LR
comp=Z,240nm,28.6s
WMQ LR LR
comp=Z,340nm,28.6s
WMQ LR LR
comp=Z,280nm,26.8s
GEYT Alibeck 121.03 24 PKP **PKPdf 13 01 17.7 -1.9**
comp=Z,1.2nm,0.5s,baz=101,slow=7.5,SNR=2.6
KSH Kashi 124.16 7 *e*PKP **PKPdf 13 01 27.4 +1.7**
KSH *es*PKP 13 01 41.1
KSH *e*PP PP 13 03 17.4 +8.5
KSH SKS **SKSdf 13 08 34.4 -1.9**
KSH SKKS **SKKSac 13 10 05.4 -2.1**
KSH SS **SS 13 20 01.4 +3.9**
KSH AMB AMB
comp=Z,26nm,3.7s
KSH LR LR
comp=Z,300nm,7.6s
KSH LR LR
comp=Z,220nm,6.4s
KSH LR LR
comp=Z,110nm,7.0s
LZH Lanzhou 124.75 340 *e*PKP **PKPdf 13 01 27.5 +0.6**
LZH sPKP 13 01 44.7
LZH LR LR
comp=Z,170nm,18.0s
LZH LR LR
comp=Z,170nm,18.1s
LZH LR LR
comp=Z,230nm,20.2s
BOSA Boshof 124.84 114 PKP **PKPdf 13 01 25.1 -2.1**
comp=Z,3.2nm,0.8s,baz=316,slow=0.6,SNR=6.6
MAW Mawson 126.78 170 PKP **PKPdf 13 01 27.9 -1.6**
comp=Z,3.5nm,0.9s,baz=243,slow=1.0,SNR=7.3
MAW Mawson 126.78 170 PKIKP **PKPdf 13 01 27.9 -1.6**
MAW pmax pmax
comp=Z,5.0nm,0.8s
CD2 Chengdu 129.49 338 PKP **PKPdf 13 01 35.5 -0.5**
WRA Warramunga Arr 132.02 258 PKP **PKPdf 13 01 39.6 -1.3**
comp=Z,2.6nm,0.9s,baz=82,slow=2.5,SNR=12
GYA Guiyang 132.24 332 *e*Pdif **Pdif 12 58 34.7 -1.1**
GYA PP **PP 13 04 05.8 +3.4**
GYA AMB AMB
comp=Z,120nm,8.0s
ASAR Alice Springs 132.57 253 PKP **PKPdf 13 01 40.2 -1.6**
comp=Z,1.4nm,0.8s,baz=104,slow=2.6,SNR=11
KMI Kunming 135.08 335 PKP **PKPdf 13 01 46.5 -0.4**
CMAR Chiang Mai Arr 142.58 336 PKP **PKPdf 13 01 57.6 -2.8**
comp=Z,0.7nm,0.7s,baz=307,slow=2.2,SNR=5.6
ABPO Ambohimpanom 144.97 100 *i* PKIKP **PKPdf 13 02 05.7 +0.9**
MBWA Marble Bar 145.72 256 *e*PKPdf **PKPdf 13 02 03.4 -2.4**
HYB Hyderabad 146.26 9 *i* PKP **PKPdf 13 02 07.0 +0.1**
KSM Kuching 148.59 301 *e*PKPdf **PKPdf 13 02 10.6 -0.2**

*IDC **09** 12:46:52.6±1.6, 0.˚50S×133.˚49E, h0km, mb3.7/3, mb1 3.8/6, mb1mx3.5/40, mbtmp3.7/6, ML3.5/3, MS3.7/2, Ms1 3.7/2, ms1mx3.0/40, Error ellipse: s-maj=45.7km s-min=21.5km az=78.0*
*ISCJB **09** 12:46:54.7±1.2, 0.˚6S±0.˚1×133.˚46E±0.˚09, h28km, mb3.7/3, MS3.8/2, Error ellipse: s-maj=17.6km s-min=12.7km az=18.2*
ISC 09 12:46:56.9±1.6, 0.˚6S±0.˚2×133.˚4E±0.˚1, h28km, n8, σ1s00/7, mb3.5/3, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**2.17**	**262**	Pn		**Pn**	**12 47 31.4**	**+0.3**
	13nm,0.3s,baz=41,slow=11,SNR=2.4							
SIJI				Sn		**Sn**	**12 47 56.8**	**-0.3**
	11nm,0.3s,baz=270,slow=20,SNR=4.1							
FITZ	**Fitzroy Crossi**	**19.03**	**203**	P		**Pn**	**12 51 17.5**	**-0.1**
	0.1nm,0.3s,baz=25,slow=12,SNR=5.1							
WRA	**Warramunga Arr**	**19.28**	**177**	P		**P**	**12 51 19.6**	**0.0**
	0.1nm,0.3s,baz=355,slow=10,SNR=8.8							
ASAR	**Alice Springs**	**22.97**	**179**	P		**P**	**12 51 59.5**	**+0.2**
	0.7nm,0.5s,baz=357,slow=10,SNR=21							
SONM	**Songino Array**	**53.63**	**338**	LR		LR	13 19 54.2	
	comp=Z,58nm,21.3s,baz=78,slow=37							
MKAR	**Makanchi Array**	**64.91**	**324**	P		**P**	**12 57 35.1**	**+1.3**
	0.2nm,0.5s,baz=128,slow=6.8,SNR=2.7							
KURBB	**Kurchatov Arra**	**68.97**	**326**	P		**P**	**12 57 58.1**	**-1.4**
	0.7nm,0.2s,baz=108,slow=5.0,SNR=4.6							
KBZ	**Khabaz**	**90.76**	**314**	LR		LR	13 48 03.3	
	comp=Z,50nm,18.0s,baz=342,slow=40							

*IDC **09** 12:54:18.9±0.6, 29.˚28S×176.˚23W, h0km, mb4.6/17, mb1 4.8/17, mb1mx4.7/29, mbtmp4.6/17, MS4.4/14, Ms1 4.4/14, ms1mx4.1/38, Error ellipse: s-maj=25.5km s-min=15.5km az=169.0*
*GCMT **09** 12:54:20.9±0.2, 29.˚22S×175.˚93W, h12km, MW5.1/101, Moment Tensor Solution. s50,c67; s101,c154; Duration: 0 Moment tensor: Scale 10^16^Nm; Mrr=5.18±.09; Mθθ0.46±.10; Mϕϕ4.72±.08; Mrθ0.21±.38; Mϕθ0.62±.09; Mϕr-0.91±.28; Best double couple: M=5.07900×10^16^ NP1:ϕ=5.00000°, δ50.00000°, λ-94.00000°. NP2: ϕ=191.00000°, δ40.00000°, λ-85.00000°. Principal axes: T 4.8830, Plg5.0000°, Azm98.0000°; N 0.3870, Plg3.0000°, Azm7.0000°; P -5.2740, Plg84.0000°, Azm244.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **09** 12:54:20.9±0.2, 29.˚32S×176.˚32W, h10km, mb5.3/66 Error ellipse: s-maj=7.6km s-min=4.3km az=154.0*
*ISCJB **09** 12:54:22.4±0.2, 29.˚36S±0.˚05×176.˚36W±0.˚04, h28km, mb5.2/95, MS4.6/19, Error ellipse: s-maj=8.0km s-min=4.1km az=158.9*
*BJI **09** 12:54:22.9, 29.˚30S×176.˚40W, h24km, mb5.2/28, mB5.6/25, Ms5.2/21, Ms7 4.8/22*
*MOS **09** 12:54:23.5±1.2, 29.˚24S×176.˚42W, h33km, mb5.2/26, MS4.8/5, Error ellipse: s-maj=10.8km s-min=9.3km az=136.3*
ISC 09 12:54:23.2±0.3, 29.˚39S±0.˚06×176.˚19W±0.˚05, h28km, n315, σ1s54/316, mb5.3/94, MS4.7/19, 9C-6D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.51**	**275**	Pn		**Pn**	**12 54 48.3**	**-0.1**
	754nm,0.3s,baz=90,slow=19,SNR=27							
RAO				Sn		**Sn**	**12 55 04.4**	**-2.8**
	880nm,0.3s,baz=311,slow=19,SNR=11							
RAO	**Raoul Island**	**1.51**	**275**	*e*Pn		**Pn**	**12 54 48.0**	**-0.4**
RAO				*e*Sn		**Sb**	**12 55 08.5**	**+0.9**
OUZ	**Omahuta**	**10.41**	**233**	Pn		**Pn**	**12 56 51.3**	**+0.7**
URZ	**Urewera**	**10.45**	**210**	Pn		Pn	12 56 45.0	-6.1
	1.1nm,0.3s,baz=319,slow=9.3,SNR=15							
URZ				Sn		**Sn**	**12 58 41.9**	**-5.3**
	6.0nm,0.3s,baz=88,slow=22,SNR=14							
URZ				LR		LR	13 00 47.0	
	comp=Z,1μm,21.1s,baz=26,slow=37							
MSVF	**Nonsavu**	**12.74**	**334**	*e*P		**Pn**	**12 57 22.9**	**+0.1**
MSVF	**Nonsavu**	**12.74**	**334**	*e*Pn		**Pn**	**12 57 22.9**	**+0.1**
KHZ	**Kahutara**	**15.41**	**210**	*e*Pn		**Pn**	**12 57 57.9**	**-0.7**
	108nm,0.9s							
KHZ				*e*Sn		Sn	13 00 34.4	-14
AFI	**Afiamalu**	**15.94**	**16**	Pn		**Pn**	**12 57 59.1**	**-6.7**
	1.2nm,0.3s,baz=331,slow=19,SNR=3.6							
AFI				Sn		Sn	13 00 44.5	-17
	1.4nm,0.3s,baz=30,slow=20,SNR=2.9							
RAR	**Rarotonga**	**16.92**	**65**	Pn		Pn	12 58 10.8	-7.3
	0.4nm,0.3s,baz=20,slow=15,SNR=4.2							
RAR				Sn		Sn	13 01 02.3	-23
	1.0nm,0.3s,baz=120,slow=19,SNR=2.7							
RAR				LR		LR	13 02 48.8	
	comp=Z,1μm,20.4s,baz=236,slow=30							
RAR	**Rarotonga**	**16.92**	**65**	P		**P**	**12 58 20.1**	**+0.2**
RAR				pmax		pmax		
	comp=Z,100nm,1.5s							
RAR	**Rarotonga**	**16.92**	**65**	*e*Pn		**Pn**	**12 58 16.5**	**-1.6**
RAR				Sn		Sn	13 01 02.3	-23
DZM	**Mont Dzumac**	**17.25**	**291**	Pn		**P**	**12 58 26.7**	**+3.1**
	comp=Z,0.4nm,0.3s,baz=111,slow=10,SNR=9.3							
DZM				LR		LR	13 03 41.9	
	comp=Z,2μm,19.6s,baz=112,slow=33							
DZM	**Mont Dzumac**	**17.25**	**291**	*e*P		**P**	**12 58 26.2**	**+2.6**
	comp=Z,140nm,1.3s							
DZM				*e*LQ		LQ	13 01 48.6	
	comp=Z,2μm,29.0s							
DZM				*e*LR		LR	13 02 30.9	
	comp=Z,5μm,26.9s							
DZM	**Mont Dzumac**	**17.25**	**291**	*e*P		**Pn**	**12 58 21.2**	**-1.1**
	comp=Z,241nm,1.7s							
RPZ	**Rata Peaks**	**17.55**	**212**	P		**Pn**	**12 58 20.2**	**-5.7**
	comp=Z,1.2nm,0.3s,baz=112,slow=5.4,SNR=5.1							
RPZ				S		Sn	13 01 25.9	-15
	comp=Z,1.1nm,0.3s,baz=29,slow=15,SNR=4.3							
RPZ				LR		LR	13 05 40.6	
	comp=Z,791nm,20.4s,baz=33,slow=39							
TBI	**Tubuai**	**24.67**	**82**	*e*LQ		LQ	13 05 02.3	
	comp=Z,1μm,29.8s							
TBI				*e*LR		LR	13 05 32.3	
	comp=Z,3μm,28.2s							
PAE	**Paea**	**26.98**	**70**	*e*P		**P**	**13 00 04.3**	**+1.5**
	comp=Z,22nm,1.2s							
PPT2	**Papeete2**	**27.02**	**70**	*e*P		**P**	**13 00 04.8**	**+1.6**
	comp=Z,71nm,1.3s							
PPT2				*e*LQ		LQ	13 05 12.5	
	comp=Z,1μm,25.5s							
PPT2				*e*LR		LR	13 06 32.7	
	comp=Z,3μm,27.5s							
PPT	**Papeete**	**27.03**	**70**	LR		LR	13 09 52.9	
	comp=Z,648nm,18.4s,baz=244,slow=35							
TIAR	**Tiarei**	**27.23**	**70**	*e*P		**P**	**13 00 06.4**	**+1.4**
	comp=Z,20nm,1.0s							
EIDS	**Eidsvold**	**29.28**	**270**	P		**P**	**13 00 25.0**	**+1.8**
	baz=30,SNR=5.2							
EIDS	**Eidsvold**	**29.28**	**270**	*e*P		**P**	**13 00 23.1**	**-0.1**
	comp=Z,26nm,1.1s							
RMQ	**Roma**	**31.03**	**267**	P		**P**	**13 00 41.4**	**+2.7**
	baz=31,SNR=4.1							
CMSA	**Cobar Meteorol**	**32.81**	**257**	P		**P**	**13 00 56.0**	**+1.7**
	baz=33,SNR=14							
QLP	**Quilpie**	**34.94**	**265**	P		**P**	**13 01 13.8**	**+0.9**
	baz=35,SNR=4.0							
CTA	**Charters Tower**	**35.21**	**277**	P		**P**	**13 01 15.0**	**-0.3**
	comp=Z,5.5nm,0.5s,baz=94,slow=11,SNR=17							
CTA				LR		LR	13 13 17.6	
	comp=Z,971nm,21.0s,baz=137,slow=32							
CTA	**Charters Tower**	**35.21**	**277**	P		**P**	**13 01 15.4**	**+0.1**
	baz=36							
CTAO	**Charters Tower**	**35.21**	**277**	*e*P		**P**	**13 01 12.3**	**-3.0**
	comp=Z,51nm,0.8s							
STKA	**Stephens Creek**	**36.24**	**255**	P		**P**	**13 01 24.6**	**+0.6**
	comp=Z,27nm,1.0s,baz=75,slow=8.2,SNR=16							
STKA				LR		LR	13 15 38.4	
	comp=Z,2μm,18.0s,baz=106,slow=35							
STKA	**Stephens Creek**	**36.24**	**255**	P		**P**	**13 01 24.6**	**+0.6**
	baz=37,SNR=12							
STKA	**Stephens Creek**	**36.24**	**255**	*e*P		**P**	**13 01 23.9**	**-0.2**
	comp=Z,8.4nm,1.1s							
RKT	**Rikitea**	**37.35**	**90**	*e*LR		LR	13 11 25.6	
	comp=Z,2μm,28.0s							
MTSU	**Mount Surprise**	**37.67**	**278**	P		**P**	**13 01 36.5**	**+0.1**
	baz=38,SNR=6.5							
HTT	**Hallett**	**38.30**	**252**	P		**P**	**13 01 41.9**	**+0.4**
	baz=39,SNR=11							
TAOE	**Nuku Hiva Isla**	**39.47**	**66**	*e*LR		LR	13 12 17.3	
	comp=Z,1μm,27.5s							
PMG	**Port Moresby**	**39.63**	**293**	LR		LR	13 16 01.9	
	comp=Z,346nm,20.7s,baz=178,slow=33							
BBOO	**Buckleboo**	**40.76**	**253**	P		**P**	**13 02 01.9**	**-0.1**
	baz=41,SNR=7.5							
BBOO	**Buckleboo**	**40.76**	**253**	*e*P		**P**	**13 02 01.8**	**-0.1**
	comp=Z,31nm,1.0s							
QIS	**Mount Isa**	**40.82**	**272**	P		**P**	**13 02 01.1**	**-1.6**
	baz=41							
AS01	**Alice Springs**	**44.70**	**265**	*e*P		**P**	**13 02 33.7**	**-0.4**
AS31	**Alice Springs**	**44.74**	**265**	*e*P		**P**	**13 02 33.1**	**-1.4**
	comp=Z,3.7nm,1.2s							
ASAR	**Alice Springs**	**44.74**	**265**	P		**P**	**13 02 33.7**	**-0.7**
	comp=Z,2.8nm,0.5s,baz=102,slow=6.6,SNR=59							
ASAR				LR		LR	13 21 07.3	
	comp=Z,2μm,18.1s,baz=136,slow=36							
ASAR	**Alice Springs**	**44.74**	**265**	P		**P**	**13 02 33.7**	**-0.7**
ASAR				pmax		pmax		
	comp=Z,4.0nm,0.7s							
ASAR				MLR		MLR		
	comp=Z,2μm,18.1s							
WRAB	**Tennant Creek**	**45.64**	**270**	⇓*e*P		**P**	**13 02 39.6**	**-2.0**
WRAB				pmax		pmax		
	comp=Z,28nm,0.8s							
WRAB	**Tennant Creek**	**45.64**	**270**	*e*P		**P**	**13 02 41.2**	**-0.4**
	comp=Z,17nm,1.0s							
WRA	**Warramunga Arr**	**45.65**	**270**	P		**P**	**13 02 40.3**	**-1.3**
	comp=Z,15nm,0.9s,baz=110,slow=6.2,SNR=52							
WRA				LR		LR	13 21 02.9	
	comp=Z,414nm,18.1s,baz=110,slow=35							
WB0	**Warramunga Arr**	**45.66**	**270**	P		**P**	**13 02 40.6**	**-1.1**
	baz=46							
FORT	**Forrest**	**47.83**	**254**	P		**P**	**13 02 58.4**	**-0.2**
	baz=48							
SBA	**Scott Base**	**49.16**	**185**	*e*P		**P**	**13 03 10.6**	**+2.5**
SBA				pmax		pmax		
	comp=Z,95nm,1.5s							
SBA	**Scott Base**	**49.16**	**185**	*e*P		**P**	**13 03 10.6**	**+2.5**
	comp=Z,95nm,1.5s							
WRKA	**Warakurna**	**49.17**	**261**	P		**P**	**13 03 08.0**	**-1.0**
	baz=50,SNR=17							
VNDA	**Vanda**	**49.26**	**186**	*e*P		**P**	**13 03 11.1**	**+2.2**
VNDA	**Vanda**	**49.26**	**186**	*e*P		**P**	**13 03 11.1**	**+2.2**
MTN	**Manton Dam**	**51.40**	**277**	P		**P**	**13 03 25.6**	**-0.3**
	baz=52,SNR=4.7							
KNRA	**Kununurra**	**52.21**	**273**	P		**P**	**13 03 31.5**	**-0.5**
	baz=52							
FITZ	**Fitzroy Crossi**	**53.94**	**268**	P		**P**	**13 03 43.9**	**-0.9**
	comp=Z,19nm,1.1s,baz=126,slow=4.2,SNR=8.0							
FITZ	**Fitzroy Crossi**	**53.94**	**268**	P		**P**	**13 03 44.4**	**-0.3**
	baz=54,SNR=6.5							
FITZ	**Fitzroy Crossi**	**53.94**	**268**	*e*P		**P**	**13 03 44.6**	**-0.1**
KLBR	**Kellerberrin**	**56.16**	**250**	P		**P**	**13 03 59.7**	**-0.9**
	baz=56,SNR=5.4							
CASY	**Casey**	**56.76**	**208**	*e*P		**P**	**13 04 04.6**	**+0.3**
	comp=Z,64nm,1.5s							
MBWA	**Marble Bar**	**57.90**	**262**	*e*P		**P**	**13 04 12.1**	**-1.0**
	comp=Z,39nm,1.4s							
QSPA	**South Pole Qui**	**60.72**	**180**	*e*P		**P**	**13 04 34.0**	**+1.9**
	comp=Z,50nm,1.1s							
MAW	**Mawson**	**73.79**	**200**	P		**P**	**13 05 56.1**	**+1.5**
	comp=Z,4.8nm,0.8s,baz=88,slow=2.6,SNR=6.5							
MAW	**Mawson**	**73.79**	**200**	*e*P		**P**	**13 05 56.3**	**+1.7**
JHJ	**Hachijo jima 2**	**74.87**	**323**	LR		LR	13 31 57.9	
	comp=Z,102nm,21.8s,baz=117,slow=30							
KSM	**Kuching**	**76.39**	**280**	*e*P		**P**	**13 06 10.4**	**-0.1**
	comp=Z,12nm,1.1s							
MJAR	**Matsushiro Arr**	**78.33**	**324**	P		**P**	**13 06 19.7**	**-1.1**
	comp=Z,1.7nm,0.8s,baz=157,slow=5.4,SNR=5.6							
MAJO	**Matsushiro**	**78.33**	**324**	⇓*e*P		**P**	**13 06 17.6**	**-3.2**
MAJO				pmax		pmax		
	comp=Z,12nm,1.2s							
MAJO	**Matsushiro**	**78.33**	**324**	*e*P		**P**	**13 06 20.9**	**0.0**
MJB9	**Matsu-Tunnel**	**78.34**	**324**	*e*P		**P**	**13 06 20.6**	**-0.3**
SYO	**Syowa Base**	**78.44**	**192**	⇑*e*P		**P**	**13 06 20.0**	**-1.0**

SYO	**Syowa Base**	**78.44**	**192**	⇑ *i*PcP	**PcP**		**13 06 32.7**	**+2.5**
SNAA	**Sanae**	**79.11**	**178**	P	**P**		**13 06 25.3**	**+0.5**
SNAA	**Sanae**	**79.11**	**178**	⇑ *e*P	**P**		**13 06 24.5**	**-0.3**
SNAA	**Sanae**	**79.11**	**178**	*e*P	**P**		**13 06 25.4**	**+0.6**
	comp=Z,36nm,1.3s							
VNA1	**Neumayer--Stat**	**79.87**	**176**	P	**P**		**13 06 29.4**	**+0.5**
NVL	**N'lazarevskaya**	**79.96**	**183**	*e*P	P		13 06 43.2	+14
TPUB	**Ta-pu**	**80.21**	**304**	*e*P	**P**		**13 06 30.5**	**-0.9**
	comp=Z,51nm,1.3s							
ERM	**Erimo**	**80.34**	**330**	⇑ *e*P	**P**		**13 06 29.6**	**-2.0**
ERM				pmax	pmax			
	comp=Z,44nm,1.3s							
PLCA	**Paso Flores**	**82.03**	**132**	LR	LR		13 33 54.4	
	comp=Z,206nm,22.0s,baz=316,slow=29							
UNV	**Unalaska Valle**	**83.32**	**6**	*e*P	**P**		**13 06 48.1**	**+1.2**
MURC	**Murrieta**	**83.90**	**46**	P	**P**		**13 06 51.0**	**+0.4**
	baz=229							
SWSC	**Sam W. Stewart**	**84.36**	**47**	P	P		**13 06 52.8**	**-0.1**
	baz=230							
PFO	**Pinyon Flats O**	**84.38**	**46**	*e*P	**P**		**13 06 53.7**	**+0.6**
PFO	**Pinyon Flats O**	**84.38**	**46**	*e*P	**P**		**13 06 53.7**	**+0.6**
ISA	**Isabella, Lake**	**84.48**	**44**	P	**P**		**13 06 54.8**	**+1.2**
	baz=228							
ISA	**Isabella, Lake**	**84.48**	**44**	*e*P	**P**		**13 06 55.2**	**+1.6**
ISA				pmax	pmax			
	comp=Z,58nm,1.8s							
ISA	**Isabella, Lake**	**84.48**	**44**	*e*P	**P**		**13 06 55.1**	**+1.6**
	comp=Z,58nm,1.8s							
KSRS	**Korea Array**	**84.61**	**319**	P	**P**		**13 06 55.3**	**+1.2**
	comp=Z,2.1nm,0.9s,baz=128,slow=9.5,SNR=3.3							
KSAR	**Wonju Array Be**	**84.63**	**319**	P	**P**		**13 06 55.3**	**+1.2**
KSAR	**Wonju Array Be**	**84.63**	**319**	P	**P**		**13 06 55.3**	**+1.2**
LRMC	**Laurel Mtn Rad**	**84.84**	**44**	P	**P**		**13 06 56.1**	**+0.6**
	baz=228							
BELC	**Belle Mtn. Jos**	**84.92**	**46**	P	**P**		**13 06 56.5**	**+0.7**
	baz=230							
CMB	**Columbia Colle**	**84.97**	**41**	*e*P	**P**		**13 06 56.8**	**+0.9**
CMB	**Columbia Colle**	**84.97**	**41**	*e*P	**P**		**13 06 56.8**	**+0.9**
BC3	**Big Chuckawall**	**85.04**	**47**	P	**P**		**13 06 58.3**	**+1.8**
	baz=230							
GLA	**Glamis**	**85.06**	**48**	P	**P**		**13 06 58.2**	**+1.7**
	baz=230							
GLA	**Glamis**	**85.06**	**48**	*e*P	**P**		**13 06 57.7**	**+1.2**
GLA				pmax	pmax			
	comp=Z,26nm,1.3s							
GLA	**Glamis**	**85.06**	**48**	*e*P	**P**		**13 06 57.6**	**+1.2**
	comp=Z,26nm,1.3s							
PETK	**Petropavlovsk-**	**85.25**	**345**	P	**P**		**13 06 56.7**	**-0.1**
	comp=Z,1.2nm,0.7s,baz=109,slow=9.6,SNR=7.5							
HEC	**Hector,Ludlow**	**85.25**	**46**	P	**P**		**13 06 58.2**	**+0.8**
	baz=229							
GSC	**Goldstone, Bar**	**85.26**	**45**	P	**P**		**13 06 58.0**	**+0.6**
	baz=229							
GSC	**Goldstone, Bar**	**85.26**	**45**	*e*P	**P**		**13 06 58.1**	**+0.6**
GSC	**Goldstone, Bar**	**85.26**	**45**	*e*P	**P**		**13 06 58.1**	**+0.6**
AFDM	**Forest Hills D**	**85.27**	**40**	*e*P	**P**		**13 06 58.0**	**+0.6**
MPMC	**Manual Prospec**	**85.34**	**44**	P	**P**		**13 06 59.0**	**+1.0**
	baz=228							
ORV	**Oroville**	**85.40**	**39**	*e*P	**P**		**13 06 58.7**	**+0.8**
ORV				pmax	pmax			
	comp=Z,34nm,1.6s							
ORV	**Oroville**	**85.40**	**39**	*e*P	**P**		**13 06 58.7**	**+0.8**
	comp=Z,34nm,1.6s							
DAC	**Darwin (Calif)**	**85.43**	**44**	*e*P	**P**		**13 06 59.3**	**+0.9**
DAC				pmax	pmax			
	comp=Z,43nm,2.0s							
DAC	**Darwin (Calif)**	**85.43**	**44**	*e*P	**P**		**13 06 59.3**	**+0.9**
	comp=Z,43nm,2.0s							
WDC	**Whiskeytown Da**	**85.55**	**38**	*e*P	**P**		**13 06 59.9**	**+1.2**
WDC				pmax	pmax			
	comp=Z,32nm,1.2s							
WDC	**Whiskeytown Da**	**85.55**	**38**	*e*P	**P**		**13 06 59.9**	**+1.2**
	comp=Z,32nm,1.2s							
IRM	**Iron Mountain**	**85.56**	**47**	P	**P**		**13 06 60.0**	**+1.0**
	baz=230							
113A	**Mohawk Valley,**	**85.57**	**49**	*e*P	**P**		**13 07 00.1**	**+1.1**
GMRC	**Granite Mounta**	**85.64**	**46**	P	**P**		**13 07 00.7**	**+1.2**
	baz=230							
214A	**Organ Pipe Nat**	**85.69**	**50**	P	**P**		**13 07 00.5**	**+0.9**
	baz=232							
214A	**Organ Pipe Nat**	**85.69**	**50**	*e*P	**P**		**13 07 00.2**	**+0.5**
	comp=Z,140nm,1.6s							
Y12C	**Blythe**	**85.70**	**47**	*e*P	**P**		**13 07 00.7**	**+1.1**
WAKR	**Walker**	**85.84**	**41**	*e*P	**P**		**13 07 01.3**	**+0.9**
	comp=Z,71nm,1.6s							
QIZ	**Qiongzhong**	**86.00**	**294**	P	**P**		**13 07 02.2**	**+0.8**
QIZ				S	**S**		**13 17 36.9**	**+3.1**
QIZ				pmax	pmax			
	comp=Z,9.0nm,1.7s							
QIZ				LR	LR			
	comp=Z,170nm,39.4s							
L02D	**Cave Junction,**	**86.12**	**36**	P	**P**		**13 07 04.1**	**+2.6**
	baz=224							
LDFC	**Landfair**	**86.17**	**46**	*e*P	**P**		**13 07 03.4**	**+1.3**
	comp=Z,85nm,1.5s							
YBH	**Yreka Blue Hor**	**86.28**	**37**	*e*P	**P**		**13 07 03.4**	**+1.0**
YBH	**Yreka Blue Hor**	**86.28**	**37**	*e*P	**P**		**13 07 03.4**	**+1.0**
TPNV	**Topopah Spring**	**86.68**	**44**	P	**P**		**13 07 05.8**	**+1.2**
	baz=229							
TPNV	**Topopah Spring**	**86.68**	**44**	*e*P	**P**		**13 07 05.8**	**+1.2**
TPNV	**Topopah Spring**	**86.68**	**44**	*e*P	**P**		**13 07 05.8**	**+1.2**
PAHR	**Pah Rah Range**	**86.69**	**40**	*e*P	**P**		**13 07 04.7**	**+0.2**
Y14A	**Wickenburg**	**86.80**	**48**	*e*P	**P**		**13 07 07.1**	**+2.0**
	comp=Z,99nm,1.3s							
PSI	**Prapat**	**86.90**	**275**	P	**P**		**13 07 04.9**	**-1.2**
	comp=Z,3.5nm,0.4s,baz=186,slow=7.4,SNR=6.8							
PSI	**Prapat**	**86.90**	**275**	*e*P	**P**		**13 07 05.6**	**-0.6**
PSI				pmax	pmax			
	comp=Z,21nm,1.1s							
PSI	**Prapat**	**86.90**	**275**	*e*P	**P**		**13 07 05.6**	**-0.6**
	comp=Z,21nm,1.1s							
W13A	**Hualapai Mount**	**86.96**	**47**	*e*P	**P**		**13 07 06.5**	**+0.4**
	comp=Z,12nm,1.2s							
SHPR	**Sheep Range**	**87.06**	**45**	*e*P	**P**		**13 07 07.8**	**+1.3**
USRK	**Ussuriysk Ar.**	**87.20**	**326**	P	**P**		**13 07 07.2**	**+0.5**
	comp=Z,3.3nm,0.9s,baz=83,slow=7.9,SNR=5.2							
TUC	**Tucson**	**87.26**	**50**	P	**P**		**13 07 09.0**	**+1.5**
	baz=233							
TUC	**Tucson**	**87.26**	**50**	*e*P	**P**		**13 07 09.1**	**+1.7**
TUC	**Tucson**	**87.26**	**50**	*e*P	**P**		**13 07 09.1**	**+1.7**
GSI	**Gunungsitoli**	**87.34**	**273**	*e*P	**P**		**13 07 08.8**	**+0.7**
	comp=Z,104nm,1.5s							
MOD	**Modoc Plateau**	**87.68**	**38**	*e*P	**P**		**13 07 09.5**	**+0.2**
K05A	**Summer Lake**	**87.94**	**37**	*e*P	**P**		**13 07 10.8**	**+0.3**
	comp=Z,32nm,1.2s							
R11A	**Troy Canyon, C**	**87.99**	**43**	P	**P**		**13 07 11.4**	**+0.5**
	baz=230							
R11A	**Troy Canyon, C**	**87.99**	**43**	*e*P	**P**		**13 07 10.4**	**-0.4**
X16A	**Lo Mia Camp, P**	**88.11**	**48**	*e*P	**P**		**13 07 13.3**	**+1.8**
	comp=Z,21nm,1.3s							
J05D	**Fort Rock, OR**	**88.15**	**37**	P	**P**		**13 07 13.1**	**+1.7**
	baz=226							
BMN	**Battle Mountai**	**88.40**	**41**	*e*P	**P**		**13 07 13.2**	**+0.4**
BMN	**Battle Mountai**	**88.40**	**41**	*e*P	**P**		**13 07 13.2**	**+0.4**
LCMT	**Little Creek M**	**88.57**	**45**	*e*P	**P**		**13 07 14.0**	**+0.4**
	comp=Z,17nm,1.3s							
MDJ	**Mudanjiang**	**88.70**	**325**	P	P		13 07 19.0	+5.2
MDJ				pmax	pmax			
	comp=Z,8.0nm,0.8s							
MDJ				pmax	pmax			
	comp=Z,81nm,5.8s							
U15A	**North Rim**	**88.80**	**46**	*e*P	**P**		**13 07 15.4**	**+0.5**
	comp=Z,32nm,1.3s							
WUAZ	**Wupatki**	**88.83**	**48**	*e*P	**P**		**13 07 15.9**	**+1.0**
CCUT	**Cedar City**	**88.83**	**45**	*e*P	**P**		**13 07 15.6**	**+0.7**
	comp=Z,20nm,1.4s							
HABR	**Khabarovsk**	**88.95**	**330**	*e*P	**P**		**13 07 12.1**	**-2.7**
HABR				*e**PP	**pP**		**13 07 22.6**	**-1.3**
HABR				*e**SP	**sP**		**13 07 26.6**	**-0.5**
HABR				*e*			13 10 41.2	
HABR				*e*S	**SKSac**		**13 17 38.2**	**-4.0**
HABR				*e*S	**SKKSac**		**13 17 52.8**	**-1.0**
HABR				*e*SS	**SS**		**13 23 51.8**	**-2.9**
HABR				*e*SSS	SSS		13 27 25.3	
HABR				MLR	MLR			
	comp=Z,284nm,18.0s							
WVOR	**Wild Horse Val**	**88.95**	**39**	*e*P	**P**		**13 07 15.9**	**+0.7**
WVOR	**Wild Horse Val**	**88.95**	**39**	*e*P	**P**		**13 07 15.9**	**+0.7**
TRQA	**Tornquist**	**89.02**	**134**	*e*P	**P**		**13 07 15.5**	**-0.3**
X18A	**Snowflake**	**89.16**	**49**	*e*P	**P**		**13 07 20.0**	**+3.5**
	comp=Z,48nm,2.0s							
SKNT	**Sakolnakorn**	**89.66**	**290**	P	**P**		**13 07 21.0**	**+2.0**
	comp=Z,43nm,1.1s							
ELK	**Elko**	**89.75**	**42**	*e*P	**P**		**13 07 19.5**	**+0.3**
ELK				pmax	pmax			
	comp=Z,14nm,1.7s							
ELK	**Elko**	**89.75**	**42**	*e*P	**P**		**13 07 19.5**	**+0.3**
	comp=Z,14nm,1.7s							
NLWA	**Neilton Lookou**	**89.76**	**33**	*e*P	**P**		**13 07 18.5**	**-0.3**
	comp=Z,28nm,1.1s							
G06A	**Carlson Farm,**	**89.82**	**36**	*e*P	**P**		**13 07 18.4**	**-0.7**
	comp=Z,64nm,1.6s							
MTPU	**Mount Pierson**	**89.87**	**45**	*e*P	**P**		**13 07 22.0**	**+2.1**
	comp=Z,43nm,1.7s							
MSU	**Marysvale**	**90.16**	**45**	*e*P	**P**		**13 07 22.4**	**+1.2**
MSU	**Marysvale**	**90.16**	**45**	*e*P	**P**		**13 07 22.4**	**+1.2**
LON	**Longmire**	**90.29**	**34**	*e*P	**P**		**13 07 22.1**	**+0.8**
LON				pmax	pmax			
	comp=Z,11nm,1.2s							
LON	**Longmire**	**90.29**	**34**	*e*P	**P**		**13 07 22.1**	**+0.8**
	comp=Z,11nm,1.2s							
KHON	**Khomkaen**	**90.30**	**289**	P	**P**		**13 07 26.0**	**+4.0**
CN2	**Changchun**	**90.30**	**322**	*e*P	**P**		**13 07 21.0**	**-0.4**
CN2				pmax	pmax			
	comp=Z,10.0nm,0.8s							
TIA	**Tai'an**	**90.45**	**312**	⇓P	**P**		**13 07 23.2**	**+0.9**
TIA				pmax	pmax			
	comp=Z,20nm,1.2s							
D05A	**Enumclaw**	**90.51**	**34**	*e*P	**P**		**13 07 23.0**	**+0.8**
	comp=Z,68nm,1.1s							
TX31	**Lajitas Ar. Si**	**90.53**	**56**	*e*P	**P**		**13 07 23.7**	**+0.8**
TXAR	**Lajitas Array**	**90.53**	**56**	P	**P**		**13 07 23.6**	**+0.7**
	comp=Z,2.7nm,1.0s,baz=214,slow=4.8,SNR=18							
TXAR				LR	LR		13 42 28.7	
	comp=Z,161nm,18.4s,baz=0.0,slow=32							
MNTX	**Cornudas Mount**	**90.62**	**54**	P	**P**		**13 07 23.4**	**+0.3**
	baz=236							
MNTX	**Cornudas Mount**	**90.62**	**54**	*e*P	**P**		**13 07 23.8**	**+0.6**
	comp=Z,11nm,1.1s							
G08A	**Pilot Rock**	**90.71**	**36**	*e*P	**P**		**13 07 24.3**	**+0.9**
	comp=Z,39nm,1.3s							
PGC	**Sidney**	**90.87**	**32**	*e*P	**P**		**13 07 25.0**	**+1.2**
	comp=Z,25nm,1.1s							
LAZ	**Ladron**	**90.95**	**51**	*e*P	**P**		**13 07 26.4**	**+1.4**
KLR	**Kul'dur**	**90.97**	**329**	⇓*e*P	**P**		**13 07 22.2**	**-2.1**
MFID	**Camas Ranch**	**91.14**	**39**	*e*P	**P**		**13 07 25.8**	**+0.4**
	comp=Z,20nm,1.4s							
BNM	**Barren Site**	**91.16**	**51**	*e*P	**P**		**13 07 26.4**	**+0.5**
HAWA	**Hanford**	**91.17**	**35**	*e*P	**P**		**13 07 25.9**	**+0.6**
	comp=Z,36nm,1.2s							
B05A	**Bryant**	**91.22**	**33**	P	**P**		**13 07 25.8**	**+0.3**
	baz=225							
TMUT	**Trail Mountain**	**91.24**	**45**	*e*P	**P**		**13 07 26.5**	**+0.2**
	comp=Z,16nm,1.2s							
LPM	**Los Pinos Moun**	**91.25**	**51**	*e*P	**P**		**13 07 28.9**	**+2.6**
BMO	**Blue Mountains**	**91.29**	**38**	*e*P	**P**		**13 07 26.6**	**+0.5**
	comp=Z,21nm,1.4s							
SRU	**San Rafael Swe**	**91.55**	**45**	*e*P	**P**		**13 07 28.6**	**+1.0**
SRU				pmax	pmax			
	comp=Z,19nm,1.2s							
SRU	**San Rafael Swe**	**91.55**	**45**	*e*P	**P**		**13 07 28.6**	**+1.0**
	comp=Z,19nm,1.2s							
ANMO	**Albuquerque**	**91.73**	**50**	P	**P**		**13 07 28.6**	**+0.1**
	baz=235							
ANMO	**Albuquerque**	**91.73**	**50**	*e*P	**P**		**13 07 29.3**	**+0.8**
ANMO				pmax	pmax			
	comp=Z,9.0nm,1.1s							
ANMO	**Albuquerque**	**91.73**	**50**	*e*P	**P**		**13 07 29.3**	**+0.8**
	comp=Z,8.6nm,1.1s							
PV05	**Paradox Valley**	**91.83**	**47**	*e*P	**P**		**13 07 29.3**	**+0.4**
HVU	**Hansel Valley**	**91.84**	**42**	*e*P	**P**		**13 07 30.2**	**+1.4**
HVU				pmax	pmax			
	comp=Z,39nm,1.6s							
HVU	**Hansel Valley**	**91.84**	**42**	*e*P	**P**		**13 07 30.1**	**+1.4**
	comp=Z,39nm,1.6s							
D08A	**Wollman Farm,**	**91.93**	**35**	*e*P	**P**		**13 07 29.5**	**+0.6**
	comp=Z,39nm,1.2s							
HLID	**Hailey**	**92.03**	**40**	P	**P**		**13 07 29.8**	**+0.2**
	baz=230							
HLID	**Hailey**	**92.03**	**40**	*e*P	**P**		**13 07 30.6**	**+1.0**
	comp=Z,12nm,1.1s							
PV01	**Paradox Valley**	**92.19**	**47**	*e*P	**P**		**13 07 30.9**	**+0.3**
ENH	**Enshi**	**92.34**	**304**	P	**P**		**13 07 29.8**	**-1.4**
	comp=Z,148nm,1.6s							
GYA	**Guiyang**	**92.42**	**299**	P	**P**		**13 07 34.0**	**+2.2**
GYA				pP	pP		13 07 40.4	-0.5
GYA				PP	**PP**		**13 11 17.2**	**+3.9**
GYA				SKS	**SKSac**		**13 18 04.6**	**+1.0**
GYA				S	**S**		**13 18 34.8**	**+0.8**
GYA				SS	**SS**		**13 24 49.0**	**+2.9**
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
GYA				pmax	pmax			
	comp=Z,120nm,8.1s							
GYA				LR	LR			
	comp=Z,540nm,21.0s							
GYA				LR	LR			
	comp=Z,480nm,22.1s							
GYA				LR	LR			
	comp=Z,490nm,21.6s							
LVC	**Limon Verde**	**93.03**	**118**	P	P		**13 07 36.2**	**+1.1**
	comp=Z,18nm,0.9s,baz=226,slow=6.1,SNR=5.1							
LVC	**Limon Verde**	**93.03**	**118**	*e*P	**P**		**13 07 35.8**	**+0.7**
	comp=Z,24nm,1.1s							
S22A	**4UR Ranch, Cre**	**93.09**	**48**	P	**P**		**13 07 34.9**	**+0.1**
	baz=235							
S22A	**4UR Ranch, Cre**	**93.09**	**48**	*e*P	**P**		**13 07 35.3**	**+0.4**
	comp=Z,6.9nm,1.1s							
MCMT	**McKenzie Canyo**	**93.70**	**40**	*e*P	**P**		**13 07 38.2**	**+0.8**
MSTX	**Muleshoe**	**93.71**	**53**	P	**P**		**13 07 38.8**	**+1.2**
	baz=237							
MSTX	**Muleshoe**	**93.71**	**53**	*e*P	**P**		**13 07 38.3**	**+0.8**
	comp=Z,9.4nm,0.9s							
REDW	**Red Top Meadow**	**93.93**	**42**	*e*P	**P**		**13 07 39.4**	**+0.9**
	comp=Z,29nm,1.4s							
TPAW	**Teton Pass**	**93.95**	**41**	*e*P	**P**		**13 07 39.8**	**+1.2**
	comp=Z,4.4nm,1.0s							
SDCO	**Great Sand Dun**	**93.95**	**49**	P	**P**		**13 07 39.2**	**+0.4**
	baz=236							
SDCO	**Great Sand Dun**	**93.95**	**49**	*e*P	**P**		**13 07 40.7**	**+1.9**
	comp=Z,5.7nm,1.4s							
SNOW	**Snow King Moun**	**94.05**	**42**	*e*P	**P**		**13 07 39.1**	**+0.1**
	comp=Z,13nm,0.9s							
DLMT	**Dillon**	**94.17**	**39**	*e*P	**P**		**13 07 40.4**	**+1.0**
	comp=Z,15nm,1.2s							
IMW	**Indian Meadow**	**94.20**	**41**	*e*P	**P**		**13 07 40.0**	**+0.2**
	comp=Z,4.6nm,0.9s							
BW06	**Boulder Array**	**94.33**	**43**	*e*P	**P**		**13 07 41.4**	**+1.1**
PDAR	**Pinedale Array**	**94.33**	**43**	P	**P**		**13 07 40.3**	**0.0**
	comp=Z,1.7nm,0.9s,baz=203,slow=6.1,SNR=8.5							
PDAR				LR	LR		13 45 35.8	
	comp=Z,232nm,18.6s,baz=189,slow=33							
FLWY	**Flagg Ranch**	**94.45**	**41**	*e*P	**P**		**13 07 41.7**	**+0.8**
	comp=Z,17nm,1.1s							
CM01	**Chiang Mai Arr**	**94.53**	**288**	*e*P	**P**		**13 07 42.6**	**+1.1**
LRM	**Limekiln Ridge**	**94.53**	**39**	*e*P	**P**		**13 07 41.2**	**0.0**
CMAR	**Chiang Mai Arr**	**94.56**	**288**	P	**P**		**13 07 43.1**	**+1.4**
	comp=Z,1.1nm,0.8s,baz=160,slow=2.9,SNR=7.3							
433A	**Art**	**94.63**	**57**	P	**P**		**13 07 42.4**	**+0.7**
	baz=239							
XAN	**Xi'an**	**94.77**	**306**	P	**P**		**13 07 45.4**	**+3.1**
XAN				pmax	pmax			
	comp=Z,6.0nm,1.3s							
XAN				pmax	pmax			
	comp=Z,88nm,6.5s							
XAN				LR	LR			
	comp=Z,280nm,16.3s							
XAN				LR	LR			
	comp=Z,250nm,17.3s							
KMI	**Kunming**	**94.78**	**296**	P	**P**		**13 07 44.8**	**+2.0**
KMI				pmax	pmax			
	comp=Z,22nm,0.6s							
KMI				pmax	pmax			
	comp=Z,130nm,4.3s							
KMI				LR	LR			
	comp=Z,230nm,18.7s							
KMI				LR	LR			
	comp=Z,190nm,16.8s							
KMI				LR	LR			
	comp=Z,260nm,18.2s							
CHMT	**Chamberlain Mo**	**94.78**	**38**	*e*P	**P**		**13 07 43.5**	**+1.2**
BOZ	**Bozeman (W)**	**94.88**	**39**	P	**P**		**13 07 43.2**	**+0.5**
	baz=232							
BOZ	**Bozeman (W)**	**94.88**	**39**	*e*P	**P**		**13 07 43.5**	**+0.8**
BOZ				pmax	pmax			
	comp=Z,14nm,1.1s							
BOZ	**Bozeman (W)**	**94.88**	**39**	*e*P	**P**		**13 07 43.5**	**+0.8**
	comp=Z,14nm,1.1s							
SEY	**Seymchan**	**95.37**	**346**	⇑*e*P	**P**		**13 07 43.7**	**-0.5**
WRH	**Wood River Hil**	**96.11**	**12**	*e*P	**P**		**13 07 47.7**	**+0.1**
	comp=Z,12nm,1.2s							
CCB	**Clear Creek Bu**	**96.33**	**12**	*e*P	**P**		**13 07 48.4**	**-0.2**
	comp=Z,6.9nm,1.1s							
COLA	**College**	**96.52**	**12**	*e*P	**P**		**13 07 48.5**	**-0.9**
COLA				pmax	pmax			
	comp=Z,4.0nm,1.0s							
ILAR	**Eielson Array**	**96.61**	**12**	P	**P**		**13 07 49.4**	**-0.5**
	comp=Z,1.3nm,0.9s,baz=222,slow=5.2,SNR=11							
IL1	**Eielson Array**	**96.61**	**12**	*e*P	**P**		**13 07 49.3**	**-0.6**
HHC	**Hu-ho-hao-te**	**96.67**	**313**	*e*P	**P**		**13 07 53.6**	**+2.7**
HHC				S	**S**		**13 19 13.8**	**+3.3**
HHC				pmax	pmax			
	comp=Z,20nm,1.4s							
HHC				pmax	pmax			
	comp=Z,130nm,7.1s							
HHC				LR	LR			
	comp=Z,180nm,17.6s							
HHC				LR	LR			
	comp=Z,390nm,17.8s							
HHC				LR	LR			
	comp=Z,190nm,18.4s							
CD2	**Chengdu**	**96.89**	**301**	*e*P	**P**		**13 07 52.2**	**+0.1**
CD2				sP	pP		13 08 01.6	+0.4
CD2				PP	**PP**		**13 11 47.7**	**-0.3**
CD2				SKS	**SKSac**		**13 18 27.8**	**+0.5**
CD2				S	**ScS**		**13 19 13.5**	**+0.4**
CD2				sS	sS		13 19 25.2	-2.6
CD2				SS	**SS**		**13 25 51.3**	**+1.8**
CD2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
CD2				pmax	pmax			
	comp=Z,120nm,6.6s							
LPAZ	**La Paz**	**97.11**	**113**	P	Pdif		13 07 55.4	+1.1
	comp=Z,1.5nm,0.8s,baz=200,slow=2.5,SNR=5.5							
LPAZ	**La Paz**	**97.11**	**113**	*e*P	Pdif		13 07 56.7	+2.4
LPAZ				pmax	pmax			
	comp=Z,8.0nm,1.1s							
LPAZ	**La Paz**	**97.11**	**113**	*e*P	Pdif		13 07 56.7	+2.4
	comp=Z,8.0nm,1.1s							
BILL	**Bilibino**	**98.02**	**353**	*e*P	Pdif		13 07 56.4	+0.2
BILL				pmax	pmax			
	comp=Z,2.0nm,0.9s							
RSSD	**Black Hills**	**98.41**	**44**	*e*P	Pdif		13 08 00.7	+1.9
RSSD				pmax	pmax			
	comp=Z,9.0nm,1.0s							
RSSD	**Black Hills**	**98.41**	**44**	*e*P	Pdif		13 08 00.7	+1.9
	comp=Z,9.3nm,1.0s							
LZH	**Lanzhou**	**99.39**	**306**	*e*P	**Pdif**		**13 08 02.8**	**-0.5**
LZH				pP	pP		13 08 09.3	-3.1
LZH				sP	sP		13 08 12.0	-3.7
LZH				PP	**PP**		**13 12 09.0**	**+1.8**
LZH				pmax	pmax			
	comp=Z,20nm,1.5s							
LZH				pmax	pmax			
	comp=Z,97nm,9.3s							
LZH				LR	LR			
	comp=Z,250nm,17.5s							
LZH				LR	LR			
	comp=Z,190nm,18.0s							
LZH				LR	LR			
	comp=Z,280nm,19.5s							
WMQ	**Urumqi**	**113.84**	**308**	*e*PKP	**PKiKP**		**13 12 56.3**	**-3.0**
WMQ				PP	**PP**		**13 13 54.4**	**+1.2**
WMQ				PKS	**PKSdf**		**13 16 35.6**	**-0.3**
WMQ				AMB	AMB			
	comp=Z,120nm,5.9s							
WMQ				LR	LR			
	comp=Z,380nm,22.9s							
WMQ				LR	LR			
	comp=Z,380nm,26.0s							
WMQ				LR	LR			
	comp=Z,310nm,20.2s							
MK01	**Makanchi Array**	**118.31**	**310**	*e*PKPdf	**PKPdf**		**13 13 06.7**	**-1.1**
ZAA0	**Zalesovo Array**	**118.32**	**318**	*e*PKPdf	**PKPdf**		**13 13 06.2**	**-1.2**
ZALV	**Zalesovo Beam**	**118.32**	**318**	PKP	**PKPdf**		**13 13 06.2**	**-1.2**
	comp=Z,0.3nm,0.3s,baz=262,slow=2.2,SNR=4.5							
MKAR	**Makanchi Array**	**118.33**	**310**	PKP	**PKPdf**		**13 13 06.5**	**-1.2**
	comp=Z,1.2nm,0.7s,baz=60,slow=2.9,SNR=8.8							
KSH	**Kashi**	**121.08**	**301**	*e*PKP	**PKPdf**		**13 13 13.1**	**-0.3**
KSH				*es*PKP			13 13 26.7	
KSH				*e*PP	**PP**		**13 14 49.1**	**+5.3**
KSH				PKS	**PKSdf**		**13 16 48.1**	**-2.1**
KSH				SKKS			13 21 36.2	
KSH				AMB	AMB			
	comp=Z,36nm,5.0s							
KSH				LR	LR			
	comp=Z,240nm,9.2s							
KSH				LR	LR			
	comp=Z,130nm,8.9s							
KSH				LR	LR			
	comp=Z,130nm,6.8s							
KURK	**Kurchatov**	**121.48**	**314**	PKIKP	**PKPdf**		**13 13 11.7**	**-1.9**
KURK				pmax	pmax			
	comp=Z,2.0nm,0.7s							
KURK	**Kurchatov**	**121.48**	**314**	PKP	**PKPdf**		**13 13 11.7**	**-1.9**
KURBB	**Kurchatov Arra**	**121.53**	**314**	PKP	**PKPdf**		**13 13 11.7**	**-2.0**
	comp=Z,1.6nm,0.7s,baz=105,slow=1.9,SNR=16							
KKAR	**Karatay Array**	**125.82**	**304**	*e*PKPdf	**PKPdf**		**13 13 22.2**	**0.0**
KKAR	**Karatay Array**	**125.82**	**304**	*e*PKPdf	**PKPdf**		**13 13 22.2**	**0.0**
VOSK	**Vostochnaya**	**126.41**	**316**	*e*PKIKP	**PKPdf**		**13 13

KIEV	**Kiev**	**151.42**	**325**	*e*PKIKP	**PKPbc**	**13 14 12.8**	**-1.3**
KIEV	**Kiev**	**151.42**	**325**	*e*PKPbc	**PKPbc**	**13 14 12.8**	**-1.3**
BRTR	**Keskin Array B**	**153.47**	**301**	PKPbc	**PKPbc**	**13 14 18.4**	**-0.8**
	comp=Z,1.4nm,0.9s,baz=134,slow=3.6,SNR=6.2						
BRTR				PKPab	**PKPab**	**13 14 30.8**	**-0.9**
	comp=Z,1.1nm,0.7s,baz=140,slow=2.7,SNR=5.5						
ANTO	**Ankara**	**154.06**	**301**	*e*PKIKP	**PKPdf**	**13 14 12.3**	**0.0**
ANTO				*e*		13 14 20.9	
ANTO				*e*		13 14 33.2	
ANTO	**Ankara**	**154.06**	**301**	*e*PKPdf	**PKPdf**	**13 14 12.2**	**0.0**
ANTO				*e*PKPbc	**PKiKP**	**13 14 20.9**	**+0.4**
ANTO				*e*PKPab	**PKPab**	**13 14 33.2**	**-0.8**
BR231	**Keskin MP Arra**	**154.08**	**301**	*e*PKPbc	**PKPbc**	**13 14 19.6**	**-0.9**
KOLS	**Kolonicke sedl**	**155.91**	**329**	*e*PKIKP	**PKPdf**	**13 14 15.2**	**+0.7**
KOLS	**Kolonicke sedl**	**155.91**	**329**	*e*PKP	**PKPdf**	**13 14 15.2**	**+0.7**
UZH	**Uzhgorod**	**156.12**	**329**	*e*PKP2	**PKPab**	**13 14 49.1**	**+6.7**
CLL	**Collm**	**157.05**	**345**	*e*PKPab	**PKPab**	**13 14 46.0**	**-0.2**
	comp=Z,21nm,1.7s						
CLL				*ep*PKPab	**pPKPab**	**13 14 57.0**	**+1.7**
CLL				LmV		14 39 00.0	
	comp=Z,300nm,20.1s						
CLL	**Collm**	**157.05**	**345**	*e*PKP2	**PKPab**	**13 14 46.0**	**-0.2**
CLL				pmax	pmax		
	comp=Z,21nm,1.7s						
CLL				MLR	MLR		
	comp=Z,300nm,20.1s						
BRG	**Berggiesshubel**	**157.23**	**343**	*e*PKP	**PKPdf**	**13 14 17.6**	**+1.5**
	comp=Z,22nm,1.9s						
BRG				*e*		13 14 27.3	
	comp=Z,44nm,2.3s						
BRG	**Berggiesshubel**	**157.23**	**343**	*e*PKIKP	**PKPdf**	**13 14 17.6**	**+1.5**
BRG				*e*		13 14 27.3	
BRG				pmax	pmax		
	comp=Z,23nm,2.0s						
VYHS	**Vyhne**	**157.70**	**333**	*e*PKP2	**PKPab**	**13 14 49.1**	**-0.1**
VYHS	**Vyhne**	**157.70**	**333**	*e*PKP	**PKPab**	**13 14 49.1**	**-0.1**
KHC	**Kasperske Hory**	**158.92**	**342**	*e*PKPDF	**PKPdf**	**13 14 17.0**	**-1.3**
KHC				*ex*	x	13 15 06.0	
KHC	**Kasperske Hory**	**158.92**	**342**	*e*PKIKP	**PKPdf**	**13 14 17.0**	**-1.3**
TORD	**Torodi Ar. Bea**	**163.72**	**173**	PKPab	**PKPab**	**13 15 15.6**	**-0.5**
	comp=Z,3.1nm,0.9s,baz=189,slow=4.1,SNR=7.8						
ESDC	**Sonseca Array**	**167.91**	**30**	PKPab	**PKPab**	**13 15 34.7**	**+0.4**
	comp=Z,1.2nm,0.8s,baz=316,slow=3.7,SNR=8.0						
ES19	**SONSECA Array**	**167.92**	**30**	*e*PKPab	**PKPab**	**13 15 35.5**	**+1.3**

*NNC **09** 12:57:52.4±0.9, 42°.87N×78°.01E, h2km±5km, mb3.3, mpv3.0, Error ellipse: s-maj=11.2km s-min=2.2km az=176.0*
*ISCJB **09** 12:57:53.1±0.5, 42°.83N±0°.02×77°.96E±0°.02, h6km±3km, Error ellipse: s-maj=3.9km s-min=2.7km az=166.7*
*KRNET **09** 12:57:53.1±0.1, 42°.79N×77°.98E, h26km, mb2.9*
*SOME **09** 12:57:53.0, 42°.78N×78°.00E, h20km*

ISC 09 12:57:53.2±0.9, 42°.82N±0°.03×77°.98E±0°.02, h15km±7km, n35, σ0s86/64, 31C-6D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ANVS	**Anan'yevo**	**0.23**	**262**	⇑*i*P	**Pg**	**12 57 58.5**	**0.0**
	baz=268						
ANVS				⇑*i*S	**Sg**	**12 58 02.6**	**+0.5**
	baz=268						
SATY	**Saty**	**0.40**	**52**	⇑*i*P	**Pg**	**12 58 01.1**	**-0.2**
	730nm,0.1s						
SATY				⇑*i*S	**Sg**	**12 58 07.2**	**+0.4**
	1um,0.1s						
PRZ	**Przheval'sk**	**0.46**	**137**	⇑*i*P	**Pb**	**12 58 02.9**	**-0.1**
	baz=136						
PRZ				⇑*i*S	**Sb**	**12 58 09.7**	**+0.1**
	baz=136						
ZHN	**Zhinishke**	**0.49**	**43**	*e*P	**Pg**	**12 58 02.5**	**-0.4**
	78nm,0.1s						
ZHN				*e*S	**Sg**	**12 58 09.6**	**+0.1**
	729nm,0.2s						
KURS	**Kuram**	**0.69**	**12**	*e*P	**Pg**	**12 58 06.3**	**-0.3**
	1.6nm,0.1s						
KURS				*e*S	**Sg**	**12 58 15.6**	**-0.2**
	20nm,0.2s						
KOTS	**Kotyrbulak**	**0.76**	**304**	*e*P	**Pb**	**12 58 07.2**	**-1.0**
	52nm,0.1s						
KOTS				*e*S	**Sg**	**12 58 17.0**	**-1.1**
	84nm,0.2s						
MDOK	**Medeo**	**0.77**	**297**	⇑*e*P	**Pb**	**12 58 07.3**	**-0.9**
	40nm,0.2s						
MDOK				*e*S	**Sb**	**12 58 17.6**	**-1.0**
	105nm,0.3s						
TNSS	**Tian-Shan**	**0.79**	**287**	*e*P	**Pg**	**12 58 08.1**	**-0.6**
	15nm,0.1s						
TNSS				*e*S	**Sg**	**12 58 18.6**	**-0.6**
	59nm,0.1s						
KNDC	**Almaty**	**0.84**	**299**	⇑S	**Sb**	**12 58 20.6**	**-0.1**
	53nm,0.5s						
AAA	**Alma-Ata**	**0.88**	**301**	*e*P	**Pb**	**12 58 09.8**	**-0.4**
	120nm,0.1s						
AAA				*e*S	**Sb**	**12 58 21.7**	**-0.1**
	529nm,0.1s						
KDJ	**Kajisay**	**0.90**	**221**	⇑*i*P	**Pb**	**12 58 09.8**	**-0.8**
	baz=222						
KDJ				⇑*i*S	**Sb**	**12 58 21.6**	**-0.9**
	baz=222						
IZV	**Izvestkoviy**	**1.03**	**283**	*e*P	**Pb**	**12 58 11.9**	**-0.9**
	47nm,0.1s						
IZV				*e*S	**Sb**	**12 58 25.2**	**-0.8**
	239nm,0.2s						
PDGK	**Podgornoye**	**1.22**	**65**	⇑*i*P	**Pn**	**12 58 15.1**	**-0.5**
	baz=64						
PDGK				⇑*i*S	**Sb**	**12 58 31.3**	**0.0**
	baz=64						
PDGK	**Podgornoye**	**1.22**	**65**	⇑P	**Pn**	**12 58 14.8**	**-0.7**
	10nm,0.3s						
PDGK				⇑S	**Sb**	**12 58 31.2**	**-0.2**
	29nm,0.4s						
CHKK	**Chushkaly**	**1.27**	**326**	*e*P	**Pn**	**12 58 16.4**	**-0.1**
	42nm,0.2s						
CHKK				*e*S	**Sn**	**12 58 33.5**	**+0.3**
	122nm,0.3s						
KTBS	**Karatobe**	**1.30**	**314**	*e*P	**Pn**	**12 58 17.1**	**+0.2**
	18nm,0.2s						
KTBS				*e*S	**Sn**	**12 58 34.0**	**-0.1**
	24nm,0.4s						
ARXS	**Arharly**	**1.40**	**356**	*e*P	**Pn**	**12 58 18.6**	**+0.3**
	46nm,0.3s						
ARXS				*e*S	**Sn**	**12 58 36.7**	**+0.2**
	90nm,0.4s						
ULHL	**Ulahol**	**1.40**	**247**	⇑*i*P	**Pn**	**12 58 18.2**	**-0.2**
	baz=247						
ULHL				⇑*i*S	**Sn**	**12 58 36.5**	**-0.2**
	baz=247						
SHLS	**Shalkode**	**1.44**	**76**	*e*P	**Pb**	**12 58 19.6**	**-0.1**
	38nm,0.3s						
SHLS				*e*S	**Sg**	**12 58 39.4**	**-0.3**
	50nm,0.3s						
KST	**Kastek**	**1.50**	**279**	*e*P	**Pn**	**12 58 20.3**	**+0.7**
	7.4nm,0.3s						
KST				*e*S	**Sb**	**12 58 39.7**	**+0.2**
	41nm,0.6s						
KUU	**Kurty**	**1.61**	**313**	*e*P	**Pb**	**12 58 22.2**	**-0.3**
	39nm,0.2s						
KUU				*e*S	**Sb**	**12 58 42.9**	**+0.2**
	114nm,0.2s						
DGS	**Degeres**	**1.67**	**286**	*e*P	**Pb**	**12 58 23.4**	**-0.3**
	8.1nm,0.2s						
DGS				*e*S	**Sb**	**12 58 44.8**	**+0.2**
	85nm,0.4s						
TKM2	**Tokmak 2**	**1.75**	**274**	⇑*i*P	**Pb**	**12 58 24.9**	**-0.3**
	baz=275						
TKM2				⇑*i*S	**Sb**	**12 58 47.3**	**+0.3**
	baz=275						
TKM2	**Tokmak 2**	**1.75**	**274**	⇓P	**Pb**	**12 58 24.9**	**-0.3**
	11nm,0.3s						
TKM2				⇑S	**Sb**	**12 58 48.2**	**+1.1**
	14nm,0.5s						
DJR	**Jarkent**	**2.01**	**40**	*e*P	**Pb**	**12 58 28.7**	**-0.7**
	24nm,0.3s						
DJR				*e*S	**Sb**	**12 58 54.8**	**+0.5**
	79nm,0.3s						
KZA	**Kyzart**	**2.15**	**251**	⇓*i*P	**Pn**	**12 58 30.2**	**+1.4**
	baz=252						
KZA				⇓*i*S	**Sb**	**12 58 57.1**	**-1.5**
	baz=252						
KBK	**Karagaybulak**	**2.24**	**267**	⇑*i*P	**Pb**	**12 58 32.3**	**-1.1**
	baz=268						
KBK				⇑*i*S	**Sb**	**12 59 00.6**	**-0.3**
	baz=268						
CHMS	**Chumysh**	**2.38**	**276**	⇑*i*P	**Pb**	**12 58 34.3**	**-1.4**
	baz=276						
AAK	**Ala-Archa**	**2.57**	**267**	⇑*i*P	**Pb**	**12 58 37.6**	**-1.5**
	baz=268						
AAK	**Ala-Archa**	**2.57**	**267**	⇑Pg	**Pb**	**12 58 38.3**	**-0.8**
	3.8nm,0.3s						
AAK				⇓Lg	Lg	12 59 12.5	
	7.7nm,0.3s						
KAPS	**Kapalarasan**	**2.66**	**21**	*e*P	**Pb**	**12 58 40.6**	**+0.1**
	2.9nm,0.2s						
KAPS				*e*S	**Sb**	**12 59 14.5**	**+1.4**
	15nm,0.4s						
ARLS	**Aral**	**2.87**	**252**	⇑*e*P	**Pn**	**12 58 39.3**	**+0.8**
	baz=252						
ARLS				⇑*e*S	**Sn**	**12 59 13.2**	**+0.3**
	baz=252						
MNAS	**Manas**	**4.05**	**267**	⇓Pg	**Pb**	**12 59 07.3**	**+3.0**
	0.8nm,0.4s						
MNAS				⇓Lg	Lg	13 00 00.0	
	1.7nm,0.4s						
MK31	**Makanchi Array**	**5.02**	**36**	⇑Pn	**Pn**	**12 59 08.0**	**+0.1**
	0.2nm,0.3s,baz=211,slow=15,SNR=5.6						
MK31				⇑Sn	**Sn**	**13 00 05.8**	**+0.1**
	0.6nm,0.5s						
MK31				⇑Lg	Lg	13 00 27.5	
	0.2nm,0.2s,baz=219,slow=30,SNR=8.4						
KK31	**Karatay Array**	**5.49**	**276**	⇑Pg	**Pb**	**12 59 31.7**	**+3.0**
	0.4nm,0.3s,baz=90,slow=15,SNR=6.4						
KK31				⇑Lg	Lg	13 00 43.9	
	1.1nm,0.4s,baz=101,slow=27,SNR=6.5						

*ISCJB **09** 13:06:35.1±0.7, 40°.13N±0°.04×27°.70E±0°.04, h1km±7km, Error ellipse: s-maj=7.3km s-min=4.5km az=18.2*
*CSEM **09** 13:06:35.7±0.1, 40°.17N×27°.72E, h8km, MD2.6, Error ellipse: s-maj=2.2km s-min=1.4km az=19.0*
*DDA **09** 13:06:35.2, 40°.28N×27°.68E, h19km, Md2.4*
*ISK **09** 13:06:35.2, 40°.16N×27°.72E, h7km, MD2.6*

ISC 09 13:06:35.8±0.9, 40°.18N±0°.03×27°.71E±0°.02, h11km±8km, n42, σ0s62/48, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KNL	**Bal˜–kesir**	**0.17**	**303**	*i*P	**Pg**	**13 06 39.1**	**-0.5**
KNL				*i*S	**Sg**	**13 06 42.6**	**+0.5**
EDC	**Edincik**	**0.20**	**35**	*e*PG	**Pg**	**13 06 40.0**	**-0.2**
EDC	**Edincik**	**0.20**	**35**	*e*Pg	**Pg**	**13 06 40.0**	**-0.2**
KRBG	**Karabiga-Canak**	**0.38**	**304**	*e*PG	**Pg**	**13 06 43.4**	**0.0**
KRBG				*e*SG	**Sg**	**13 06 49.3**	**+0.8**
KRBG	**Karabiga-Canak**	**0.38**	**304**	*e*Pg	**Pg**	**13 06 43.4**	**0.0**
KRBG				*e*Sg	**Sg**	**13 06 49.3**	**+0.8**
MRMT	**Marmara Adasi**	**0.43**	**348**	*e*PG	**Pg**	**13 06 44.5**	**+0.1**
MRMT				*e*SG	**Sb**	**13 06 51.6**	**-0.6**
MRMT	**Marmara Adasi**	**0.43**	**348**	*e*Pg	**Pg**	**13 06 44.5**	**+0.1**
MRMT				*e*Sg	**Sb**	**13 06 51.6**	**-0.6**
KCTX	**Karacabey (Bur**	**0.50**	**80**	*e*PG	**Pg**	**13 06 45.1**	**-0.4**
KCTX	**Karacabey (Bur**	**0.50**	**80**	*e*Pg	**Pg**	**13 06 45.2**	**-0.4**
BALB	**Balikesir**	**0.55**	**166**	*e*PG	**Pg**	**13 06 46.2**	**-0.3**
BALB	**Balikesir**	**0.55**	**166**	*e*Pg	**Pg**	**13 06 46.2**	**-0.3**
RKY	**Sarkoy-Tekirda**	**0.65**	**322**	*e*PG	**Pg**	**13 06 48.4**	**-0.1**
RKY	**Sarkoy-Tekirda**	**0.65**	**322**	*e*Pg	**Pg**	**13 06 48.4**	**-0.1**
LPK	**Lapseki**	**0.75**	**285**	*e*PG	**Pb**	**13 06 50.4**	**-0.6**
LPK	**Lapseki**	**0.75**	**285**	*e*Pg	**Pb**	**13 06 50.4**	**-0.6**
MDNY	**Mudanya-Bursa**	**0.92**	**78**	*e*PG	**Pb**	**13 06 53.4**	**-0.4**
MDNY	**Mudanya-Bursa**	**0.92**	**78**	*e*Pg	**Pb**	**13 06 53.4**	**-0.4**
ARMT	**Armutlu**	**0.96**	**66**	*e*PG	**Pb**	**13 06 54.0**	**-0.5**
ARMT	**Armutlu**	**0.96**	**66**	*e*Pg	**Pb**	**13 06 54.0**	**-0.5**
GELI	**Tayfur-Gelibol**	**0.97**	**283**	*e*PG	**Pb**	**13 06 54.3**	**-0.4**
GELI	**Tayfur-Gelibol**	**0.97**	**283**	*e*Pg	**Pb**	**13 06 54.3**	**-0.4**
ERIK	**Erikli-Kesan**	**1.04**	**299**	*e*PG	**Pn**	**13 06 56.0**	**-0.4**
ERIK	**Erikli-Kesan**	**1.04**	**299**	*e*Pg	**Pn**	**13 06 56.0**	**-0.4**
EZN	**Ezine**	**1.12**	**252**	*e*PN	**Pb**	**13 06 56.9**	**-0.3**
EZN	**Ezine**	**1.12**	**252**	*e*Pn	**Pb**	**13 06 56.9**	**-0.3**
IGD	**Bursa**	**1.14**	**85**	*i*P	Pn	13 07 03.9	+6.1
IGD				*i*S	**Sn**	**13 07 14.5**	**+1.0**
CTKS	**Kestanelik-??a**	**1.22**	**29**	*e*PN	**Pg**	**13 06 59.0**	**-0.2**
CTKS	**Kestanelik-??a**	**1.22**	**29**	*e*Pn	**Pg**	**13 06 59.0**	**-0.2**
ENEZ	**Enez**	**1.31**	**296**	*e*PN	**Pg**	**13 07 00.8**	**-0.3**
ENEZ	**Enez**	**1.31**	**296**	*e*Pn	**Pg**	**13 07 00.8**	**-0.3**
IZI	**Iznik**	**1.36**	**83**	*e*PN	**Pb**	**13 07 00.8**	**-0.5**
IZI	**Iznik**	**1.36**	**83**	*e*Pn	**Pb**	**13 07 00.8**	**-0.5**
GADA	**Gvkgeada**	**1.39**	**271**	*e*PN	**Pb**	**13 07 01.6**	**-0.2**
GADA	**Gvkgeada**	**1.39**	**271**	*e*Pn	**Pb**	**13 07 01.6**	**-0.2**
ALN	**Alexandroupoli**	**1.46**	**300**	*e*PN	**Pb**	**13 07 02.6**	**-0.4**
ALN	**Alexandroupoli**	**1.46**	**300**	*e*Pn	**Pb**	**13 07 02.6**	**-0.4**
TVSB	**Tavsanli**	**1.53**	**118**	*e*PN	**Pb**	**13 07 03.6**	**-0.7**
TVSB	**Tavsanli**	**1.53**	**118**	*e*Pn	**Pb**	**13 07 03.6**	**-0.7**
GDZ	**Gediz**	**1.75**	**128**	*i*P	**Pb**	**13 07 06.7**	**-1.3**
GDZ				*i*S	**Sg**	**13 07 34.2**	**+2.2**
GDZ	**Gediz**	**1.75**	**128**	P	**Pb**	**13 07 06.7**	**-1.3**
KULA	**Kula-Manisa**	**1.82**	**156**	*e*PN	**Pn**	**13 07 07.5**	**+0.4**
KULA	**Kula-Manisa**	**1.82**	**156**	*e*Pn	**Pn**	**13 07 07.5**	**+0.4**

*DJA **09** 13:26:56.9±0.4, 9°.3×10°.8E±°, h10km, M4.8/18, mb4.9/6, mB5.4/5, MLv4.7/18, Mw(mB)4.8/5*
*NEIC **09** 13:26:58.9±1.0, 8°.90S×108°.45E, h35km±9km, mb4.8/10, Error ellipse: s-maj=11.3km s-min=7.8km az=218.0*
NEIC Felt at Bandung and Cilacap.
*MOS **09** 13:26:58.2±0.8, 8°.68S×108°.74E, h39km, mb4.8/31, Error ellipse: s-maj=16.6km s-min=8.0km az=113.3*
*ISCJB **09** 13:26:59.0±0.4, 8°.98S±0°.05×108°.52E±0°.04, h55km, mb4.6/53, MS4.2/7, Error ellipse: s-maj=8.1km s-min=4.2km az=24.3*
*IDC **09** 13:27:01.6±0.7, 8°.73S×108°.69E, h51km±4km, mb4.1/20, mb1 4.1/22, mb1mx3.9/51, mbtmp4.3/22, MS4.0/5, Ms1 4.0/5, ms1mx3.5/60, Error ellipse: s-maj=22.4km s-min=10.5km az=58.0*

ISC 09 13:27:01.3±0.5, 8°.91S±0°.07×108°.54E±0°.05, h55km, n122, σ1s75/130, mb4.6/53, MS4.3/7, 10C, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMJI	**Cimerak**	**1.12**	**355**	P	**Pn**	**13 27 18.9**	**-1.9**
CISI	**Cisompet, Garu**	**1.52**	**332**	P	**Pn**	**13 27 24.6**	**-1.7**
CISI	**Cisompet, Garu**	**1.52**	**332**	*e*Pn	**Pn**	**13 27 24.3**	**-2.0**
CISI				*e*Sn	**Sn**	**13 27 39.0**	**-6.0**
CNJI	**Cibinong**	**2.11**	**319**	P	**Pn**	**13 27 32.6**	**-1.7**
UGM	**Wanagama**	**2.19**	**63**	P	**Pn**	**13 27 34.0**	**-1.4**
UGM	**Wanagama**	**2.19**	**63**	*e*Pn	**Pn**	**13 27 33.0**	**-2.4**
LEM	**Lembang**	**2.26**	**336**	P	Pn	13 27 43.0	+6.6
WOJI	**Wonogiri, Jawa**	**2.58**	**66**	P	**Pn**	**13 27 40.5**	**-0.2**
PCJI	**Pacitan**	**2.70**	**75**	P	**Pn**	**13 27 40.8**	**-1.5**
PCJI				S	**Sn**	**13 28 17.7**	**+3.9**
SKJI	**Sukabumi**	**2.73**	**314**	P	**Pn**	**13 27 41.9**	**-0.7**
SKJI				S	**Sn**	**13 28 15.1**	**+0.7**
DBJI	**Dramaga**	**2.93**	**323**	P	**Pn**	**13 27 46.2**	**+0.7**
XMIS	**Christmas Isla**	**3.25**	**241**	*e*Pn	Pn	13 27 44.6	-5.3
XMIS				*e*Sn	Sn	13 28 17.7	-10
NGJI	**Ngawi**	**3.27**	**62**	P	Pn	13 27 54.6	+4.5
PWJI	**Pagerwojo**	**3.34**	**75**	P	**Pn**	**13 27 50.7**	**-0.4**
UWJI	**Ujung Watu**	**3.43**	**44**	P	**Pn**	**13 27 53.5**	**+1.2**
CGJI	**Cibinong**	**3.63**	**309**	P	**Pn**	**13 27 53.5**	**-1.5**
GMJI	**Gumukmas**	**4.89**	**83**	P	**Pn**	**13 28 14.1**	**+1.8**
JAGI	**Jajag, Banyuwa**	**5.56**	**86**	P	**Pn**	**13 28 21.3**	**-0.3**
	75nm,0.5s,3µm						
JAGI	**Jajag, Banyuwa**	**5.56**	**86**	*e*Pn	**Pn**	**13 28 21.4**	**-0.3**
JAGI				*e*Sn	**Sn**	**13 29 21.8**	**-2.4**
PPBI	**Pangkal Pinang**	**7.11**	**340**	P	**Pn**	**13 28 46.9**	**+4.1**
KSI	**Kapahiang**	**7.88**	**311**	P	Pn	13 29 09.0	+16
TWSI	**Taliwang, Sumb**	**8.24**	**89**	P	**Pn**	**13 28 57.5**	**-0.8**
PLAI	**Plampang**	**9.13**	**90**	P	**Pn**	**13 29 09.9**	**-0.5**
	65nm,0.9s						
STKI	**Sintang**	**9.38**	**18**	P	Pn	13 29 17.2	+3.3
MTKI	**Muara Teweh, K**	**10.13**	**39**	P	**Pn**	**13 29 22.8**	**-1.3**
KAPI	**Kappang**	**11.78**	**72**	P	**Pn**	**13 29 46.3**	**-0.4**
	0.7nm,0.3s,baz=248,slow=6.4,SNR=4.0						
KAPI				LR	LR	13 34 32.8	
	comp=Z,544nm,19.6s,baz=242,slow=39						
SBUM	**Sibu**	**11.86**	**18**	*e*Pn	Pn	13 29 51.0	+3.2
TTSI	**Tana Toraja**	**12.63**	**63**	P	**P**	**13 30 05.9**	**-2.2**
PCI	**Palu**	**13.77**	**55**	P	**P**	**13 30 19.0**	**-1.7**
MRSI	**Marisa**	**16.28**	**56**	P	**P**	**13 30 49.5**	**+0.9**
FITZ	**Fitzroy Crossi**	**18.96**	**121**	P	**P**	**13 31 18.7**	**+0.5**
	0.2nm,0.3s,baz=198,slow=2.8,SNR=4.1						
TGY	**Tagaytay City**	**25.96**	**28**	LR	LR	13 43 47.9	
	comp=Z,104nm,18.9s,baz=124,slow=39						
WRA	**Warramunga Arr**	**27.24**	**117**	P	**P**	**13 32 40.5**	**-0.1**
	3.0nm,0.9s,baz=291,slow=11,SNR=11						
WRAB	**Tennant Creek**	**27.25**	**117**	⇑*i*P	**P**	**13 32 40.7**	**+0.1**
WRAB				pmax	pmax		
	comp=Z,6.0nm,0.5s						
WRAB	**Tennant Creek**	**27.25**	**117**	*e*P	**P**	**13 32 39.4**	**-1.2**
ASAR	**Alice Springs**	**28.35**	**124**	P	**P**	**13 32 50.6**	**+0.2**
	comp=Z,1.5nm,0.6s,baz=300,slow=8.9,SNR=21						
ASAR				PcP	**PcP**	**13 36 03.6**	**+1.4**
	comp=Z,0.4nm,0.4s,baz=305,slow=2.1,SNR=7.4						
ASAR	**Alice Springs**	**28.35**	**124**	P	**P**	**13 32 50.6**	**+0.2**
ASAR						13 36 03.6	
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
CMAR	**Chiang Mai Arr**	**28.79**	**341**	P	**P**	**13 32 54.9**	**+0.7**
	comp=Z,0.5nm,0.4s,baz=178,slow=8.6,SNR=4.6						
CMAR				pP	**pP**	**13 33 06.1**	**-2.0**
	comp=Z,0.9nm,0.6s,baz=177,slow=8.5,SNR=2.1						
CMAR				LR	LR	13 46 04.1	
	comp=Z,102nm,18.7s,baz=156,slow=40						
KMI	**Kunming**	**34.29**	**351**	P	**P**	**13 33 46.1**	**+3.3**
KMI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,88nm,4.4s						
KMI				LR	LR		
	comp=N,230nm,18.7s						
KMI				LR	LR		
	comp=E,190nm,16.8s						
KMI				LR	LR		
	comp=Z,260nm,18.2s						
GYA	**Guiyang**	**35.20**	**357**	P	**P**	**13 33 52.8**	**+2.4**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
H08S2	**Diego Garcia H**	**35.69**	**269**	T	T	14 11 51.0	
	baz=93,slow=75,SNR=22						
H08S3	**Diego Garcia H**	**35.70**	**269**	T	T	14 11 34.9	
	baz=93,slow=75,SNR=25						
H08S1	**Diego Garcia H**	**35.70**	**269**	T	T	14 11 36.0	
	baz=93,slow=75,SNR=30						
STKA	**Stephens Creek**	**38.24**	**131**	P	**P**	**13 34 16.8**	**+0.6**
	comp=Z,4.2nm,0.6s,baz=293,slow=8.6,SNR=7.8						
STKA				pP	**pP**	**13 34 28.7**	**-1.7**
	comp=Z,3.4nm,0.6s,baz=300,slow=5.9,SNR=3.4						
STKA	**Stephens Creek**	**38.24**	**131**	P	**P**	**13 34 16.8**	**+0.6**
STKA				*PP	**pP**	**13 34 28.7**	**-1.7**
STKA				pmax	pmax		
	comp=Z,5.0nm,0.7s						
STKA				pmax	pmax		
	comp=Z,3.0nm,0.6s						
STKA	**Stephens Creek**	**38.24**	**131**	*e*P	**P**	**13 34 17.5**	**+1.3**
	comp=Z,7.7nm,1.9s						
CD2	**Chengdu**	**39.85**	**354**	*e*P	**P**	**13 34 31.5**	**+1.8**
CD2				pP	pP	13 34 42.0	-1.9
CD2				PP	**PnPn**	**13 36 04.3**	**-1.6**
CD2				PcS	**PcS**	**13 40 25.8**	**+0.7**
CD2				S	**S**	**13 40 36.1**	**+5.6**
CD2				sS	sS	13 40 54.1	-0.4
CD2				SS	**SnSn**	**13 43 35.9**	**+1.8**
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.4s						
PKIN	**Phulchoki**	**42.63**	**329**	*e*P	**P**	**13 34 53.8**	**+1.0**
GKN	**Gorkha**	**43.37**	**329**	*e*P	**P**	**13 34 58.5**	**-0.1**
KOLN	**Koldanda**	**43.73**	**327**	*e*P	**P**	**13 35 01.2**	**-0.4**
	comp=Z,6.3nm,0.3s						
PYUN	**Piuthan**	**44.32**	**327**	*e*P	**P**	**13 35 06.2**	**-0.1**
LZH	**Lanzhou**	**44.97**	**355**	*e*P	P	13 35 17.0	+5.7
LZH				pP	pP	13 35 28.3	+2.6
LZH				sP	sP	13 35 32.0	-0.1
LZH				PP	**PP**	**13 37 03.2**	**+5.8**
LZH				pmax	pmax		
	comp=Z,21nm,1.2s						
LZH				pmax	pmax		
	comp=Z,78nm,7.5s						
LZH				LR	LR		
	comp=N,350nm,14.5s						
LZH				LR	LR		
	comp=E,360nm,14.0s						
LZH				LR	LR		
	comp=Z,430nm,17.8s						
GTA	**Gaotai**	**48.75**	**351**	*e*P	**P**	**13 35 41.9**	**+1.2**
GTA				pP	pP	13 35 47.3	-8.0
GTA				sP	sP	13 35 50.5	-11
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
HHC	**Hu-ho-hao-te**	**49.58**	**3**	*e*P	**P**	**13 35 51.3**	**+4.2**
HHC				pmax	pmax		
	comp=Z,15nm,1.2s						
HHC				pmax	pmax		
	comp=Z,100nm,6.0s						
MAJO	**Matsushiro**	**53.11**	**30**	*e*P	**P**	**13 36 09.9**	**-3.6**
MAJO				pmax	pmax		
	comp=Z,28nm,0.8s						
MAJO	**Matsushiro**	**53.11**	**30**	*e*P	**P**	**13 36 09

RPZ	**Rata Peaks**	**64.11**	**134**	P		**P**	**13 37 32.8**	**+2.8**
	comp=Z,9.5nm,0.9s,baz=286,slow=7.4,SNR=2.2							
KURK	**Kurchatov**	**64.80**	**339**	P		P	13 37 30.5	-3.7
KURK	**Kurchatov**	**64.80**	**339**	P		P	13 37 30.5	-3.7
OTUK	**Ortayu**	**65.25**	**334**	P		**P**	**13 37 36.9**	**-0.3**
OTUK				pmax	pmax			
	comp=Z,7.0nm,0.8s							
ZAA0	**Zalesovo Array**	**65.75**	**345**	*eP*		**P**	**13 37 39.9**	**-0.3**
ZALV	**Zalesovo Beam**	**65.75**	**345**	P		**P**	**13 37 39.5**	**-0.8**
	comp=Z,2.8nm,0.3s,baz=108,slow=4.8,SNR=17							
ZALV				pP		**pP**	**13 37 51.8**	**-3.6**
	comp=Z,1.4nm,0.4s,baz=168,slow=5.9,SNR=3.9							
ZALV	**Zalesovo Beam**	**65.75**	**345**	P		**P**	**13 37 39.5**	**-0.8**
ZALV				*PP		**pP**	**13 37 51.8**	**-3.6**
ZALV				pmax	pmax			
	comp=Z,2.0nm,0.4s							
ZALV				pmax	pmax			
	comp=Z,1.0nm,0.4s							
GEYT	**Alibeck**	**66.19**	**318**	P		**P**	**13 37 43.8**	**+0.3**
	comp=Z,1.8nm,0.6s,baz=116,slow=3.4,SNR=3.3							
GEYT				pP		**pP**	**13 37 58.9**	**+0.2**
	comp=Z,1.4nm,0.3s,baz=97,slow=7.6,SNR=2.4							
BOD	**Bodaibo**	**66.64**	**3**	*eP*		P	13 37 35.6	-10
BOD				pmax	pmax			
	comp=Z,5.0nm,1.5s							
VOSK	**Vostochnaya**	**69.25**	**337**	*eP*		**P**	**13 38 02.5**	**+0.1**
VOSK				pmax	pmax			
	comp=Z,10.0nm,1.4s							
VOSK	**Vostochnaya**	**69.25**	**337**	*eP*		**P**	**13 38 02.5**	**+0.1**
	comp=Z,9.9nm,1.4s							
BVA0	**Borovoye Array**	**69.71**	**337**	P		**P**	**13 38 05.4**	**+0.2**
BVA0				pmax	pmax			
	comp=Z,5.0nm,0.7s							
BRVK	**Borovoye**	**69.78**	**337**	*ceP*		**P**	**13 38 05.6**	**0.0**
BRVK				pmax	pmax			
	comp=Z,20nm,1.0s							
BRVK	**Borovoye**	**69.78**	**337**	*eP*		**P**	**13 38 06.0**	**+0.4**
	comp=Z,10nm,1.2s							
CHKZ	**Chkalovo**	**70.12**	**337**	*i P*		**P**	**13 38 07.4**	**-0.3**
CHKZ				pmax	pmax			
	comp=Z,10.0nm,0.8s							
ZRNK	**Zerenda**	**70.20**	**336**	*i P*		**P**	**13 38 07.9**	**-0.4**
ZRNK				pmax	pmax			
	comp=Z,9.0nm,0.9s							
ZRNK	**Zerenda**	**70.20**	**336**	*eP*		**P**	**13 38 08.3**	**+0.1**
	comp=Z,7.4nm,0.6s							
RAO	**Raoul Island**	**71.37**	**118**	P		**P**	**13 38 15.7**	**-0.2**
	comp=Z,244nm,0.4s,baz=154,slow=22,SNR=4.4							
AB31	**Akbulak array**	**71.82**	**329**	*ceP*		**P**	**13 38 18.1**	**0.0**
AB31				pmax	pmax			
	comp=Z,2.0nm,0.4s							
ABKAR	**Akbulak array**	**71.82**	**329**	*eP*		**P**	**13 38 16.8**	**-1.3**
YAK	**Yakutsk**	**72.61**	**10**	P		**P**	**13 38 21.7**	**-0.8**
	comp=Z,6.6nm,0.3s,baz=306,slow=17,SNR=8.0							
YAK	**Yakutsk**	**72.61**	**10**	*eP*		**P**	**13 38 21.2**	**-1.3**
YAK				pmax	pmax			
	comp=Z,17nm,0.9s							
YAK				pmax	pmax			
	comp=N,5.0nm,1.1s							
YAK				pmax	pmax			
	comp=E,2.0nm,1.0s							
YAK	**Yakutsk**	**72.61**	**10**	*eP*		P	13 38 18.3	-4.2
	comp=E,18nm,0.7s							
VNDA	**Vanda**	**73.83**	**170**	P		**P**	**13 38 30.6**	**+1.0**
	comp=E,0.7nm,0.8s,baz=302,slow=6.6,SNR=3.9							
PETK	**Petropavlovsk-**	**74.52**	**28**	P		**P**	**13 38 33.9**	**-0.1**
	comp=E,1.8nm,0.4s,baz=157,slow=1.6,SNR=9.9							
PETK				pP		**PcP**	**13 38 47.7**	**-0.5**
	comp=E,1.4nm,0.5s,baz=150,slow=1.0,SNR=3.1							
MA2	**Magadan**	**76.11**	**21**	P		**P**	**13 38 43.2**	**+0.2**
	comp=E,1.4nm,0.6s,baz=91,slow=10,SNR=2.5							
ARU	**Arti**	**76.99**	**334**	*c iP*		**P**	**13 38 48.0**	**0.0**
ARU							13 41 40.3	
ARU				S		**S**	**13 48 34.3**	**+2.3**
ARU				SS		**SS**	**13 53 28.1**	**-2.1**
ARU				pmax	pmax			
	comp=Z,7.0nm,1.7s							
KBZ	**Khabaz**	**79.08**	**318**	P		**P**	**13 39 00.8**	**+1.0**
	comp=Z,1.2nm,0.6s,baz=101,slow=3.6,SNR=3.5							
SEY	**Seymchan**	**79.09**	**19**	P		**P**	**13 38 59.7**	**+0.2**
	comp=Z,0.9nm,0.6s,baz=237,slow=5.8,SNR=6.1							
SEY				pP		**pP**	**13 39 13.9**	**-1.2**
	comp=Z,1.2nm,0.5s,baz=209,slow=6.1,SNR=3.7							
KVAR	**Kislovodsk Arr**	**79.30**	**318**	LR		LR	14 18 40.0	
	comp=Z,508nm,18.4s,slow=39							
KIV	**Kislovodsk**	**79.31**	**318**	*eP*		**P**	**13 38 59.5**	**-1.8**
KIV				pmax	pmax			
	comp=Z,3.0nm,0.8s							
MMAI	**Mount Meron Ar**	**80.94**	**305**	LR		LR	14 18 06.5	
	comp=Z,176nm,19.7s,baz=165,slow=38							
TIXI	**Tiksi**	**81.51**	**6**	P		**P**	**13 39 11.0**	**-1.3**
	comp=Z,1.7nm,0.4s,baz=158,slow=4.4,SNR=5.5							
TIXI	**Tiksi**	**81.51**	**6**	*eP*		**P**	**13 39 11.3**	**-1.0**
TIXI				pmax	pmax			
	comp=Z,4.0nm,1.0s							
TIXI	**Tiksi**	**81.51**	**6**	*eP*		**P**	**13 39 11.0**	**-1.3**
	comp=Z,3.6nm,0.7s							
VRH	**Novokhopyorsk**	**82.81**	**324**	*eP*		**P**	**13 39 19.6**	**+0.1**
VRH				pmax	pmax			
	comp=Z,20nm,0.8s							
BRTR	**Keskin Array B**	**84.23**	**312**	P		**P**	**13 39 28.2**	**+0.9**
	comp=Z,0.9nm,0.9s,baz=131,slow=3.8,SNR=5.6							
VSR	**Storozhevoye**	**84.30**	**324**	*eP*		**P**	**13 39 27.1**	**-0.1**
VSR				pmax	pmax			
	comp=Z,7.0nm,0.9s							
BR231	**Keskin MP Arra**	**84.90**	**311**	*eP*		**P**	**13 39 28.6**	**-2.1**
BILL	**Bilibino**	**86.79**	**19**	*eP*		**P**	**13 39 38.9**	**-0.4**
BILL				pmax	pmax			
	comp=Z,3.0nm,1.2s							
OBN	**Obninsk**	**87.14**	**327**	*eP*		**P**	**13 39 41.4**	**+0.2**
OBN				pmax	pmax			
	comp=Z,8.0nm,0.9s							
KLMR	**Klimovskoe**	**87.76**	**333**	*eP*		**P**	**13 39 43.3**	**-0.7**
KLMR				pmax	pmax			
	comp=Z,12nm,1.5s							
ARCES	**ARCESS Array B**	**95.84**	**339**	pP		pP	13 40 36.5	-0.8
	comp=Z,1.4nm,0.9s,baz=82,slow=4.3,SNR=2.3							
TXAR	**Lajitas Array**	**143.61**	**52**	PKP		PKPab	13 46 29.4	+2.0
	comp=Z,0.1nm,0.5s,baz=337,slow=0.9,SNR=4.5							
TXAR				sPKP			13 46 51.4	
	comp=Z,0.3nm,0.8s,baz=235,slow=1.7,SNR=3.5							

IDC 09 13:28:26.8±1.4, **51°.10S×139°.55E, h0km, mb3.7/3, mb1 4.0/4, mb1mx3.7/36, mbtmp3.8/4, ML4.0/1, MS4.0/1, Ms1 4.0/1, ms1mx3.2/39, Error ellipse: s-maj=110.8km s-min=24.6km az=85.0, Western Indian-Antarctic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**19.27**	**5**	P	Pn	13 32 54.6	+0.8
	0.3nm,0.3s,baz=149,slow=9.4,SNR=6.1						
NWAO	**Narrogin (SRO)**	**24.43**	**309**	LR	LR	13 41 49.1	
	comp=Z,299nm,18.6s,baz=298,slow=33						
H01W1	**Cape Leeuwin H**	**24.46**	**302**	T	T	13 59 06.0	
	baz=139,slow=75,SNR=249						
H01W2	**Cape Leeuwin H**	**24.47**	**302**	T	T	13 59 11.0	
	baz=139,slow=75,SNR=254						
H01W3	**Cape Leeuwin H**	**24.48**	**302**	T	T	13 59 05.0	
	baz=139,slow=75,SNR=302						
ASAR	**Alice Springs**	**27.73**	**349**	P	P	13 34 16.5	-0.5
	0.6nm,0.7s,baz=169,slow=9.3,SNR=5.8						
VNDA	**Vanda**	**27.81**	**170**	P	P	13 34 17.1	-0.1
	1.1nm,1.0s,baz=326,slow=10,SNR=4.0						
WRA	**Warramunga Arr**	**31.36**	**351**	P	P	13 34 48.5	-0.6
	0.8nm,0.6s,baz=177,slow=7.9,SNR=7.8						
H08S2	**Diego Garcia H**	**69.74**	**283**	T	T	14 55 01.0	
	baz=142,slow=76,SNR=25						
H08S1	**Diego Garcia H**	**69.75**	**283**	T	T	14 55 29.4	
	baz=142,slow=76,SNR=25						
H08S3	**Diego Garcia H**	**69.76**	**283**	T	T	14 55 19.5	
	baz=142,slow=76,SNR=27						
H08N1	**Diego Carcia H**	**71.67**	**283**	T	T	14 58 01.0	
	baz=144,slow=76,SNR=3.8						
H08N3	**Diego Garcia H**	**71.68**	**283**	T	T	14 58 01.9	
	baz=144,slow=76,SNR=13						
H08N2	**Diego Garcia H**	**71.69**	**283**	T	T	14 58 09.0	
	baz=144,slow=76,SNR=6.9						
ARCES	**ARCESS Array B**	**144.78**	**326**	PKP	PKPab	13 48 02.1	-0.9
	1.0nm,0.5s,baz=90,slow=2.4,SNR=5.6						
GERES	**GERESS Array B**	**145.75**	**288**	PKPbc	PKPbc	13 48 07.1	+0.1
	1.8nm,0.8s,baz=123,slow=4.9,SNR=9.9						

*NIED **09** 13:35:00, 38°.20N×141°.70E, h32km, Mw3.7 Best double couple: M0 4.26000×10^14 NP1:φs=260.00000°, δ46.00000°, λ167.00000°. NP2:φs=359.00000°, δ81.00000°, λ45.00000°.*
*ISCJB **09** 13:35:25.0±0.8, 38°.17N±0°.04×141°.73E±0°.09, h58km±6km, mb3.7/5, Error ellipse: s-maj=12.4km s-min=4.8km az=22.9.*
*JMA **09** 13:35:26.3±0.1, 38°.17N×141°.68E, h51km±1km, M3.7*
JMA Felt I J1.
*IDC **09** 13:35:26.8±2.3, 38°.19N×141°.78E, h60km±19km, mb3.4/5, mb1 3.5/9, mb1mx3.2/61, mbtmp3.7/9, Error ellipse: s-maj=35.3km s-min=14.6km az=96.0*

ISC 09 13:35:25.8±1.4, **38°.15N**±0°.05×**141°.73E**±0°.09, **h47**km±12km, **n25**, σ0°65/33, **mb3.8/5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.42**	**315**	P	**Pn**	**13 35 36.4**	**+0.4**
JIO				S	**Sn**	**13 35 43.2**	**0.0**
JMM	**Marumori**	**0.80**	**249**	P	**Pn**	**13 35 40.5**	**-0.2**
JMM				S	**Sn**	**13 35 50.8**	**-0.7**
JOU	**Okura**	**0.87**	**284**	P	**Pn**	**13 35 41.9**	**+0.2**
JOU				S	**Sn**	**13 35 53.2**	**-0.1**
JMK	**Ichinoseki**	**0.89**	**333**	P	**Pn**	**13 35 42.3**	**+0.3**
JMK				S	**Sn**	**13 35 53.7**	**-0.1**
OFUJ	**Ofunato**	**0.93**	**357**	P	**Pn**	**13 35 42.6**	**+0.1**
OFUJ				S	**Sn**	**13 35 54.1**	**-0.6**
JFK	**Kawauchi**	**1.04**	**221**	P	**Pn**	**13 35 44.3**	**+0.3**
JFK				S	**Sn**	**13 35 56.8**	**-0.6**
JFT	**Otama**	**1.27**	**241**	P	**Pn**	**13 35 47.7**	**+0.5**
JFT				S	**Sn**	**13 36 03.2**	**+0.1**
JYS	**Shirataka**	**1.31**	**273**	P	**Pn**	**13 35 48.0**	**+0.3**
JYS				*eS*	**Sn**	**13 36 04.2**	**+0.1**
JYK	**Kaneyama**	**1.32**	**306**	P	**Pn**	**13 35 48.0**	**+0.2**
JOM	**Ohasama**	**1.36**	**346**	P	**Pn**	**13 35 48.8**	**+0.4**
JOM				*eS*	**Sn**	**13 36 05.4**	**+0.1**
JRG	**Rokugo**	**1.51**	**326**	P	**Pn**	**13 35 51.2**	**+0.8**
JYA	**Atsumi**	**1.65**	**286**	P	**Pn**	**13 35 52.6**	**+0.3**
JFY	**Yanaizu**	**1.77**	**246**	P	**Pn**	**13 35 54.8**	**+0.8**
JFY				*eS*	**Sn**	**13 36 15.6**	**+0.3**
MJAR	**Matsushiro Arr**	**3.24**	**241**	P	**Pn**	**13 36 15.8**	**+1.7**
	1.5nm,0.3s,baz=49,slow=11,SNR=17						
JHJ	**Hachijo jima 2**	**5.27**	**198**	P	**Pn**	**13 36 43.2**	**+1.2**
	3.8nm,0.3s,baz=166,slow=23,SNR=13						
ASAJ	**Asahikawa**	**5.99**	**6**	P	**Pn**	**13 36 52.0**	**+0.1**
ASAJ				S	**Sn**	**13 38 00.1**	**+0.9**
USRK	**Ussuriysk Ar.**	**9.51**	**313**	P	**Pn**	**13 37 41.4**	**+1.4**
	0.3nm,0.3s,baz=127,slow=15,SNR=4.4						
H11N2	**WAKE ISLAND Hy**	**28.52**	**123**	T	T	14 11 32.7	
	baz=316,slow=75,SNR=50						
H11N1	**WAKE ISLAND Hy**	**28.53**	**123**	T	T	14 11 30.2	
	baz=316,slow=75,SNR=64						
H11N3	**WAKE ISLAND Hy**	**28.54**	**123**	T	T	14 11 31.8	
	baz=316,slow=75,SNR=64						
ZALV	**Zalesovo Beam**	**41.35**	**311**	P	**P**	**13 43 05.9**	**-1.0**
	0.8nm,0.4s,baz=80,slow=11,SNR=4.5						
MKAR	**Makanchi Array**	**43.75**	**301**	P	**P**	**13 43 26.3**	**-0.2**
	0.3nm,0.4s,baz=88,slow=9.1,SNR=4.1						
KURBB	**Kurchatov Arra**	**45.52**	**307**	P	**P**	**13 43 40.1**	**-0.3**
	0.6nm,0.3s,baz=83,slow=8.1,SNR=11						
WRA	**Warramunga Arr**	**58.20**	**188**	P	**P**	**13 45 15.1**	**-0.1**
	0.3nm,0.4s,baz=5.7,slow=7.2,SNR=8.9						
FINES	**FINESS Array B**	**67.94**	**332**	P	**P**	**13 46 19.0**	**-0.4**
	0.7nm,0.7s,baz=19,slow=10,SNR=2.8						

*IDC **09** 13:36:48.9±1.4, 35°.20N×141°.47E, h0km, mb3.7/5, mb1 3.7/8, mb1mx3.4/63, mbtmp3.7/8, ML3.2/3, Error ellipse: s-maj=41.4km s-min=17.8km az=82.0*
*ISCJB **09** 13:36:50.7±0.9, 35°.19N±0°.05×141°.4E±0°.1, h27km, mb3.8/5, Error ellipse: s-maj=12.4km s-min=7.0km az=9.2*

ISC 09 13:36:52.6±1.0, **35°.14N**±0°.07×**141°.41E**±0°.08, **h27**km, **n12**, σ1°21/13, **mb3.8/5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.43**	**214**	Pn	**Pn**	**13 37 31.1**	**+0.6**
	20nm,0.3s,baz=173,slow=5.2,SNR=10						
JHJ				Sn	**Sn**	**13 37 58.5**	**-0.9**
	32nm,0.3s,baz=74,slow=23,SNR=4.7						
MJAR	**Matsushiro Arr**	**2.95**	**299**	Pn	**Pn**	**13 37 38.0**	**+0.2**
	3.0nm,0.3s,baz=115,slow=8.1,SNR=7.2						
MJAR				Sn	**Sn**	**13 38 10.1**	**-2.2**
	2.7nm,0.3s,baz=130,slow=12,SNR=4.8						
MAT	**Matsushiro**	**2.95**	**299**	P	**Pn**	**13 37 37.8**	**0.0**
MAT				S	**Sb**	**13 38 21.3**	**+1.1**
ASAJ	**Asahikawa**	**9.01**	**5**	Pn	**Pn**	**13 38 59.1**	**-1.8**
	0.3nm,0.3s,baz=257,slow=15,SNR=1.2						
ASAJ				Sn	**Sn**	**13 40 42.6**	**+1.2**
H11S1	**WAKE ISLAND Hy**	**27.88**	**120**	T	T	14 12 54.2	
	baz=312,slow=75,SNR=214						
H11S3	**WAKE ISLAND Hy**	**27.88**	**120**	T	T	14 12 37.7	
	baz=312,slow=75,SNR=230						
H11S2	**WAKE ISLAND Hy**	**27.90**	**120**	T	T	14 12 38.9	
	baz=312,slow=75,SNR=232						
MKAR	**Makanchi Array**	**45.14**	**304**	P	**P**	**13 45 06.5**	**-0.3**
	0.2nm,0.2s,baz=92,slow=9.4,SNR=2.9						
KURBB	**Kurchatov Arra**	**47.18**	**309**	P	**P**	**13 45 22.9**	**+0.2**
	0.4nm,0.4s,baz=85,slow=7.8,SNR=6.1						
WRA	**Warramunga Arr**	**55.19**	**188**	P	**P**	**13 46 23.1**	**0.0**
	0.9nm,0.4s,baz=2.2,slow=7.6,SNR=23						
ASAR	**Alice Springs**	**58.92**	**188**	P	**P**	**13 46 51.0**	**+1.6**
	0.4nm,0.7s,baz=7.4,slow=6.3,SNR=4.1						
FINES	**FINESS Array B**	**70.48**	**333**	P	**P**	**13 48 04.8**	**+0.4**
	1.1nm,0.8s,baz=90,slow=6.0,SNR=3.3						

*NIED **09** 13:41:00, 38°.90N×141°.90E, h62km, Mw3.9 Best double couple: M0 9.27000×10^14 NP1:φs=182.00000°, δ16.00000°, λ70.00000°. NP2:φs=23.00000°, δ75.00000°, λ95.00000°.*
*ISCJB **09** 13:41:42.4±0.6, 38°.90N±0°.04×141°.92E±0°.08, h60km±3km, mb4.1/20, MS4.8/1, Error ellipse: s-maj=11.7km s-min=5.1km az=25.7*
*JMA **09** 13:41:42.7±0.1, 38°.88N×141°.99E, h49km±1km, M3.9*
JMA Felt III J1.
*NEIC **09** 13:41:45.5±0.9, 38°.98N×141°.85E, h69km±6km, mb4.5/3, Error ellipse: s-maj=15.4km s-min=6.6km az=132.0*
NEIC Recorded [3 JMA] in Miyagi.
*IDC **09** 13:41:45.2±1.9, 38°.94N×141°.80E, h66km±16km, mb3.8/17, mb1 3.8/24, mb1mx3.7/68, mbtmp4.0/24, MS3.8/2, Ms1 3.8/2, ms1mx3.0/75, Error ellipse: s-maj=22.8km s-min=15.9km az=140.0*

ISC 09 13:41:42.8±1.1, **38°.88N**±0°.05×**142°.01E**±0°.08, **h50**km±8km, **n50**, σ1°66/53, **mb4.1/20, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.33**	**308**	P	**Pn**	**13 41 52.0**	**-0.3**
OFUJ				S	**Sn**	**13 41 58.4**	**-0.7**
JMK	**Ichinoseki**	**0.62**	**277**	P	**Pn**	**13 41 55.2**	**-0.3**
JMK				S	**Sn**	**13 42 04.0**	**-0.7**
JIO	**Ouri**	**0.66**	**231**	P	**Pn**	**13 41 55.7**	**-0.4**
JIO				S	**Sn**	**13 42 04.6**	**-1.1**
JOM	**Ohasama**	**0.81**	**317**	P	**Pn**	**13 41 57.8**	**-0.3**
JOM				S	**Sn**	**13 42 08.7**	**-0.6**
JOU	**Okura**	**1.17**	**245**	P	**Pn**	**13 42 02.5**	**-0.4**
JRG	**Rokugo**	**1.19**	**296**	P	**Pn**	**13 42 02.8**	**-0.3**
JYK	**Kaneyama**	**1.29**	**272**	P	**Pn**	**13 42 04.2**	**-0.2**
JMM	**Marumori**	**1.39**	**224**	P	**Pn**	**13 42 05.3**	**-0.5**
JMM				*eS*	**Sn**	**13 42 21.6**	**-1.4**
JANG	**Nango**	**1.54**	**346**	P	**Pn**	**13 42 07.4**	**-0.6**
ERM	**Erimo**	**3.26**	**15**	*ePn*	**Pn**	**13 42 33.3**	**+2.0**
ERM				*eSn*	**Sn**	**13 43 10.4**	**+1.5**
MJAR	**Matsushiro Arr**	**3.81**	**233**	P	**Pn**	**13 42 40.5**	**+1.6**
	7.1nm,0.3s,baz=37,slow=12,SNR=74						
MJAR				LR	LR	13 44 19.0	
	comp=Z,144nm,18.7s,baz=95,slow=42						
MAJO	**Matsushiro**	**3.81**	**233**	*ePn*	**Pn**	**13 42 40.3**	**+1.3**
MAJO				*eSn*	**Sn**	**13 43 24.5**	**+2.0**
MAT	**Matsushiro**	**3.81**	**233**	P	**Pn**	**13 42 40.0**	**+1.0**
MAT				S	**Sn**	**13 43 29.0**	**+6.5**
ASAJ	**Asahikawa**	**5.26**	**5**	P	**Pn**	**13 42 59.2**	**+0.5**
JHJ	**Hachijo jima 2**	**6.02**	**198**	P	**Pn**	**13 43 10.3**	**+1.0**
	7.5nm,0.3s,baz=56,slow=19,SNR=12						
JHJ				S	**Sn**	**13 44 14.1**	**-2.8**
	17nm,0.3s,baz=257,slow=22,SNR=7.1						
USRK	**Ussuriysk Ar.**	**9.20**	**309**	P	**Pn**	**13 43 53.5**	**+0.6**
	0.8nm,0.3s,baz=123,slow=14,SNR=23						
JNU	**Nakatsue**	**10.68**	**241**	P	**Pn**	**13 44 15.7**	**+2.5**
	0.3nm,0.3s,baz=94,slow=2.8,SNR=3.6						
KSRS	**Korea Array**	**11.18**	**267**	P	**Pn**	**13 44 23.7**	**+3.8**
	0.3nm,0.3s,baz=82,slow=15,SNR=5.6						
KSAR	**Wonju Array Be**	**11.21**	**267**	P	**Pn**	**13 44 23.7**	**+3.3**
KLR	**Kul'dur**	**12.70**	**328**	P	**Pn**	**13 44 40.5**	**-0.1**
	0.1nm,0.3s,baz=114,slow=10.0,SNR=3.4						
PETK	**Petropavlovsk-**	**17.87**	**32**	P	**P**	**13 45 48.3**	**+0.5**
	0.4nm,0.3s,baz=164,slow=13,SNR=3.0						
MA2	**Magadan**	**21.46**	**12**	P	**P**	**13 46 27.6**	**+1.0**
	2.4nm,0.7s,baz=175,slow=16,SNR=3.0						
SEY	**Seymchan**	**24.90**	**11**	P	**P**	**13 47 02.4**	**+1.7**
	2.1nm,0.9s,baz=196,slow=6.8,SNR=9.8						
SONM	**Songino Array**	**27.20**	**301**	P	**P**	**13 47 20.6**	**-1.2**
	1.0nm,0.9s,baz=95,slow=4.6,SNR=3.5						
ENH	**Enshi**	**28.00**	**262**	*eP*	**P**	**13 47 25.6**	**-3.4**
	7.1nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**28.74**	**124**	T	T	14 17 58.8	
	baz=317,slow=75,SNR=96						
H11N1	**WAKE ISLAND Hy**	**28.75**	**124**	T	T	14 18 02.6	
	baz=317,slow=75,SNR=197						
H11N3	**WAKE ISLAND Hy**	**28.76**	**124**	T	T	14 18 01.3	
	baz=317,slow=75,SNR=145						
H11S1	**WAKE ISLAND Hy**	**29.52**	**126**	T	T	14 19 05.5	
	baz=318,slow=76,SNR=47						
H11S3	**WAKE ISLAND Hy**	**29.52**	**126**	T	T	14 18 58.1	
	baz=318,slow=76,SNR=74						
H11S2	**WAKE ISLAND Hy**	**29.54**	**126**	T	T	14 18 53.1	
	baz=318,slow=76,SNR=29						
ZALV	**Zalesovo Beam**	**41.04**	**311**	P	**P**	**13 49 20.4**	**-0.6**
	2.4nm,0.5s,baz=89,slow=7.4,SNR=14						
MKAR	**Makanchi Array**	**43.56**	**301**	P	**P**	**13 49 41.6**	**-0.1**
	3.2nm,0.6s,baz=85,slow=9.6,SNR=35						
KURK	**Kurchatov**	**45.19**	**307**	P	**P**	**13 49 54.2**	**-0.2**
KURBB	**Kurchatov Arra**	**45.26**	**307**	P	**P**	**13 49 54.2**	**-0.8**
	6.9nm,0.5s,baz=81,slow=8.1,SNR=45						
ILAR	**Eielson Array**	**47.70**	**33**	P	**P**	**13 50 15.2**	**+1.3**
	0.6nm,0.6s,baz=266,slow=5.9,SNR=8.8						
TKM2	**Tokmak 2**	**49.19**	**297**	*eP*	**P**	**13 50 25.2**	**-0.8**
	1.9nm,0.5s						
BVAR	**Borovoye Array**	**49.70**	**311**	P	**P**	**13 50 29.3**	**-0.2**
	3.0nm,0.5s,baz=70,slow=7.7,SNR=18						
BVAR				PcP	**PcP**	**13 51 50.2**	**+0.1**
	1.2nm,0.5s,baz=114,slow=1.8,SNR=4.7						
ARU	**Arti**	**55.30**	**318**	P	**P**	**13 51 10.7**	**-0.3**
	2.7nm,0.4s,baz=93,slow=2.7,SNR=9.9						
ABKAR	**Akbulak array**	**57.12**	**309**	*eP*	**P**	**13 51 22.4**	**-1.6**
	3.8nm,0.6s						
AKTO	**Aktyubinsk**	**57.80**	**311**	P	**P**	**13 51 27.9**	**-0.9**
	3.2nm,0.8s,baz=69,slow=11,SNR=9.4						
ARCES	**ARCESS Array B**	**62.44**	**339**	P	**P**	**13 52 00.3**	**+0.1**
	0.9nm,0.7s,baz=44,slow=11,SNR=3.9						
FINES	**FINESS Array B**	**67.41**	**332**	P	**P**	**13 52 32.3**	**-0.2**
	1.9nm,0.6s,baz=40,slow=10.0,SNR=10						
KBZ	**Khabaz**	**70.06**	**310**	P	**P**	**13 52 49.5**	**+0.1**
	1.8nm,0.7s,baz=45,slow=6.5,SNR=4.4						
NB2	**NORSAR Subarra**	**72.67**	**337**	P	**P**	**13 53 04.5**	**-0.4**
	comp=Z,0.9nm,0.8s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**72.67**	**337**	P	**P**	**13 53 04.6**	**-0.4**
	comp=Z,1.3nm,0.8s,baz=39,slow=5.7,SNR=3.9						
AKASG	**Malin Array Be**	**73.13**	**322**	P	**P**	**13 53 07.0**	**-0.8**
	comp=Z,1.0nm,0.4s,baz=46,slow=6.1,SNR=3.7						
BRTR	**Keskin Array B**	**77.98**	**312**	P	**P**	**13 53 34.1**	**-1.9**
	comp=Z,0.3nm,0.5s,baz=36,slow=7.8,SNR=3.0						
DAVOX	**Davos/Dischmat**	**84.59**	**329**	LR	LR	14 33 23.0	
	comp=Z,489nm,22.0s,baz=82,slow=37						
TXAR	**Lajitas Array**	**88.63**	**53**	P	**P**	**13 54 32.1**	**+1.3**
	comp=Z,0.2nm,0.7s,baz=315,slow=4.5,SNR=2.9						

*IDC **09** 13:42:56.1±1.0, 28°.89S×176°.77W, h0km, mb4.3/6, mb1 4.3/7, mb1mx3.9/41, mbtmp4.3/7, ML4.2/1, Error ellipse: s-maj=37.1km s-min=18.2km az=148.0*
*NEIC **09** 13:42:57.2±0.8, 29°.05S×176°.85W, h10km, mb4.4/1, Error ellipse: s-maj=25.9km s-min=15.9km az=123.0*

ISC 09 13:43:00.6±0.8, **29°.23S**±0°.10×**176°.72W**±0°.10, **h36**km, **n22**, σ1°50/25, **mb4.3/7, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.04**	**268**	Pn	**Pn**	**13 43 18.8**	**+0.2**
	450nm,0.3s,ba

CUSAR	**Sarkisla-SIVAS**	**1.25**	**103**	*i* P	**Pb**	**13**	**46**	**42.2 0.0**
CUSAR				*i* S	**Sg**	**13**	**47**	**02.2 +3.1**
CUSAR	**Sarkisla-SIVAS**	**1.25**	**103**	P	**Pb**	**13**	**46**	**42.2 0.0**
BNN	**Bunyan**	**1.25**	**133**	*e*PN	**Pn**	**13**	**46**	**41.4 -0.6**
BNN	**Bunyan**	**1.25**	**133**	*e*Pn	**Pn**	**13**	**46**	**41.4 -0.6**
NIG	**Nigde**	**1.60**	**182**	*e*PN	**Pn**	**13**	**46**	**46.8 -0.1**
NIG	**Nigde**	**1.60**	**182**	*e*Pn	**Pn**	**13**	**46**	**46.8 -0.1**
SULT	**Sultanhani-AKS**	**1.76**	**211**	*e*PN	**Pn**	**13**	**46**	**49.2 +0.3**
SULT	**Sultanhani-AKS**	**1.76**	**211**	*e*Pn	**Pn**	**13**	**46**	**49.2 +0.3**

*IDC **09** 13:47:20.8±0.6,3.˚45S×131.˚15E, h0km, mb4.1/15, mb1 4.2/16, mb1mx4.0/51, mbtmp4.1/16, ML2.6/1, Error ellipse: s-maj=27.2km s-min=12.9km az=73.0*
*ISCJB **09** 13:47:22.6±0.4, 3.˚50S±0.˚04×131.˚25E±0.˚04, h24km, mb4.2/19, Error ellipse: s-maj=6.2km s-min=5.2km az=155.5*
*DJA **09** 13:47:24.6±0.3,4.˚S±4.˚×13.˚1E±.˚, h10km, M4.6/7, mB5.5/2, mb4.7/6, MLv4.5/7, Mw(mB)5.0/2*
*NEIC **09** 13:47:26.5±1.1,3.˚41S×131.˚27E, h41km±11km, mb4.2/3, Error ellipse: s-maj=11.7km s-min=9.8km az=97.0*

ISC 09 13:47:23.7±0.5,3.˚61S±0.˚05×131.˚29E±0.˚05, h24km, n40, σ2872/46, mb4.1/19, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FAKI	**Fak Fak**	**1.18**	**55**	P			**Pn**	**13 47 45.0**	**+0.3**
FAKI				S			**Sb**	**13 48 02.5**	**+2.2**
FAKI	**Fak Fak**	**1.18**	**55**	*e*Pn			**Pn**	**13 47 44.8**	**+0.1**
FAKI				*e*Sn			**Sb**	**13 48 01.1**	**+0.9**
BNDI	**Bandanaira**	**1.65**	**237**	P			**Pb**	**13 47 53.6**	**+0.2**
MSAI	**Masohi**	**2.37**	**276**	P			**Pb**	**13 48 03.8**	**-1.9**
SIJI	**Sorong** baz=0.6,slow=10,SNR=3.9	**2.72**	**360**	Pn			**Pn**	**13 48 04.0**	**-2.0**
SIJI				Sn			**Sn**	**13 48 35.1**	**-3.0**
	24nm,0.3s,baz=270,slow=23,SNR=6.3								
NLAI	**Namlea**	**4.20**	**275**	P			**Pn**	**13 48 27.1**	**+0.9**
NLAI				S			**Sn**	**13 49 16.0**	**+1.5**
LBMI	**Labuha**	**4.80**	**308**	P			**Pn**	**13 48 33.7**	**-0.8**
SANI	**Sanana**	**5.51**	**286**	P			**Pn**	**13 48 45.7**	**+1.4**
GENI	**Genyem**	**8.93**	**84**	P			**Pn**	**13 49 33.7**	**+2.5**
SOEI	**Soe** 75nm,0.9s	**9.27**	**228**	*e*Pn			**Pn**	**13 49 40.4**	**+4.4**
SOEI				*e*Sn			**Sn**	**13 51 19.4**	**-0.3**
JAY	**Jayapura** 0.1nm,0.3s,baz=267,slow=23,SNR=3.8	**9.47**	**84**	Pn			**Pn**	**13 49 40.6**	**+1.9**
BATI	**Baumata**	**10.01**	**229**	P			**Pn**	**13 49 50.2**	**+4.1**
MRSI	**Marisa** 18nm,0.6s,6μm	**10.19**	**293**	P			**Pn**	**13 49 51.3**	**+2.8**
FITZ	**Fitzroy Crossi** 1.2nm,0.3s,baz=36,slow=11,SNR=40	**15.43**	**201**	Pn			**Pn**	**13 50 57.2**	**-2.8**
FITZ				Sn			**Sn**	**13 53 45.9**	**-4.4**
	0.9nm,0.3s,baz=266,slow=15,SNR=5.0								
BBKI	**Banjar Baru**	**16.41**	**270**	P			**P**	**13 51 20.6**	**+5.3**
WRA	**Warramunga Arr** 0.9nm,0.3s,baz=353,slow=13,SNR=42	**16.51**	**170**	Pn			**Pn**	**13 51 09.8**	**-4.0**
WRA				Sn			**Sn**	**13 54 09.9**	**-6.6**
	1.3nm,0.3s,baz=353,slow=23,SNR=7.1								
MTKI	**Muara Teweh, K**	**16.59**	**279**	P			**P**	**13 51 22.0**	**+4.8**
ASAR	**Alice Springs** 15nm,0.6s,baz=352,slow=11,SNR=120	**20.10**	**173**	P			Pn	13 51 58.0	+0.2
ASAR				S			**S**	**13 55 36.8**	**-3.9**
	1.7nm,0.7s,baz=353,slow=24,SNR=4.4								
STKI	**Sintang**	**20.13**	**280**	P			Pn	13 52 01.5	+3.3
KSM	**Kuching** 13nm,0.6s	**21.57**	**283**	*e*P			**P**	**13 52 06.4**	**-5.4**
CTA	**Charters Tower** 2.8nm,0.7s,baz=322,slow=14,SNR=4.0	**21.94**	**139**	P			**P**	**13 52 19.0**	**+3.3**
FORT	**Forrest** 220nm,0.6s	**27.20**	**186**	*e*P			**P**	**13 53 02.2**	**-3.4**
STKA	**Stephens Creek** 2.0nm,0.6s,baz=355,slow=7.2,SNR=6.2	**29.74**	**162**	P			**P**	**13 53 30.1**	**+1.8**
CMAR	**Chiang Mai Arr** 1.3nm,0.7s,baz=135,slow=7.9,SNR=11	**38.68**	**306**	P			**P**	**13 54 44.6**	**-1.2**
USRK	**Ussuriysk Ar.** 0.9nm,0.5s,baz=184,slow=8.9,SNR=4.2	**47.60**	**1**	P			**P**	**13 55 56.5**	**-1.1**
SONM	**Songino Array** 0.6nm,0.7s,baz=145,slow=5.4,SNR=5.3	**55.68**	**340**	P			**P**	**13 56 58.2**	**+0.1**
MKAR	**Makanchi Array** 2.6nm,0.6s,baz=119,slow=8.3,SNR=34	**66.14**	**325**	P			**P**	**13 58 09.0**	**-0.2**
TKM2	**Tokmak 2** 1.8nm,0.6s	**68.23**	**319**	*e*P			**P**	**13 58 20.4**	**-2.4**
SEY	**Seymchan** 0.8nm,0.6s,baz=193,slow=6.9,SNR=3.7	**68.26**	**10**	P			**P**	**13 58 22.9**	**+0.7**
ZALV	**Zalesovo Beam** 1.5nm,0.6s,baz=106,slow=7.0,SNR=6.9	**69.15**	**333**	P			**P**	**13 58 26.7**	**-1.2**
KURK	**Kurchatov** 33nm,0.8s	**70.33**	**328**	*e*P			**P**	**13 58 34.3**	**-1.0**
VNDA	**Vanda** 1.3nm,0.6s,baz=328,slow=6.6,SNR=10	**75.64**	**173**	P			**P**	**13 59 07.9**	**+1.6**
BVAR	**Borovoye Array** 1.9nm,0.8s,baz=177,slow=9.9,SNR=11	**75.91**	**327**	P			**P**	**13 59 08.1**	**-0.2**
MAW	**Mawson** 0.6nm,0.5s,baz=79,slow=8.5,SNR=6.6	**78.56**	**201**	P			**P**	**13 59 24.6**	**+1.8**
ABKAR	**Akbulak array** 0.6nm,0.5s	**80.68**	**321**	*e*P			**P**	**13 59 32.5**	**-2.2**
AKTO	**Aktyubinsk** 1.3nm,0.9s,baz=105,slow=4.3,SNR=3.8	**82.20**	**322**	P			**P**	**13 59 44.5**	**+1.6**
ILAR	**Eielson Array** 0.3nm,0.8s,baz=262,slow=4.8,SNR=3.4	**89.75**	**25**	P			**P**	**14 00 20.1**	**+0.3**
ARCES	**ARCESS Array B** 1.3nm,0.8s,baz=84,slow=9.2,SNR=3.5	**98.86**	**340**	P			**P**	**14 01 00.3**	**-1.1**
TORD	**Torodi Ar. Bea** 0.6nm,0.6s,baz=52,slow=2.0,SNR=4.1	**129.33**	**284**	PKP			**PKPdf**	**14 06 31.7**	**+0.5**
CPUP	**Villa Florida** 1.2nm,0.5s,baz=162,slow=3.0,SNR=5.1	**149.09**	**165**	PKPbc			**PKPbc**	**14 07 12.3**	**+1.6**

*IDC **09** 13:51:55.7±1.2,29.˚39S×176.˚05W, h0km, mb4.1/4, mb1 4.3/6, mb1mx3.9/42, mbtmp4.3/6, ML3.8/2, Error ellipse: s-maj=34.4km s-min=23.5km az=177.0*
*NEIC **09** 13:51:56.5±1.1,29.˚45S×175.˚96W, h10km, mb4.4/1, Error ellipse: s-maj=21.9km s-min=19.3km az=116.0*

ISC 09 13:51:60.0±1.2,29.˚5S±0.˚1×176.˚2W±0.˚1, h28km, n12, σ1915/14, mb4.1/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 263nm,0.3s,baz=137,slow=15,SNR=8.4	**1.56**	**278**	Pn			**Pb**	**13 52 27.8**	**-0.4**
RAO				Sn			**Sb**	**13 52 47.8**	**+0.3**
	436nm,0.3s,baz=57,slow=22,SNR=10								
URZ	**Urewera** 0.4nm,0.3s,baz=273,slow=2.1,SNR=4.4	**10.40**	**211**	Pn			**Pn**	**13 54 25.8**	**-1.5**
URZ				Sn			**Sn**	**13 56 23.1**	**+0.2**
	1.8nm,0.3s,baz=276,slow=24,SNR=14								
RPZ	**Rata Peaks** 0.6nm,0.3s,baz=71,slow=5.4,SNR=2.6	**17.51**	**212**	P			**Pn**	**13 56 02.2**	**+0.1**
CTA	**Charters Tower** 3.1nm,0.8s,baz=113,slow=13,SNR=3.6	**35.26**	**277**	P			**P**	**13 58 54.1**	**+1.6**
CTAO	**Charters Tower** 3.0nm,0.5s	**35.26**	**277**	*e*P			**P**	**13 58 52.4**	**-0.1**
STKA	**Stephens Creek** 0.4nm,0.4s,baz=105,slow=8.0,SNR=3.0	**36.26**	**255**	P			**P**	**13 59 02.4**	**+1.4**
ASAR	**Alice Springs** 1.0nm,0.5s,baz=100,slow=6.4,SNR=16	**44.78**	**265**	P			**P**	**14 00 10.9**	**-0.5**
WRA	**Warramunga Arr** 2.0nm,0.5s,baz=109,slow=7.6,SNR=24	**45.69**	**270**	P			**P**	**14 00 17.6**	**-1.1**
FINES	**FINESS Array B** 1.2nm,0.9s,baz=46,slow=4.0,SNR=3.0	**144.80**	**342**	PKP			**PKPab**	**14 11 31.6**	**-0.9**
NOA	**NORSAR Array B** 0.9nm,0.7s,baz=13,slow=4.4,SNR=3.3	**148.05**	**353**	PKPbc			**PKPbc**	**14 11 42.1**	**-0.2**
HFS	**Hagfors** 2.2nm,0.9s,baz=323,slow=2.2,SNR=3.8	**148.62**	**351**	PKPbc			**PKPbc**	**14 11 42.6**	**-1.2**
TORD	**Torodi Ar. Bea** 0.4nm,0.9s,baz=199,slow=5.6,SNR=2.5	**163.64**	**173**	PKPab			**PKPab**	**14 12 54.4**	**+1.9**

*ISCJB **09** 13:54:16.9±1.4,29.˚48S±0.˚03×177.˚10W±0.˚03, h9km±8km, mb5.6/210, MS5.7/210, Error ellipse: s-maj=5.5km s-min=3.7km az=137.1*
*IDC **09** 13:54:17.7±0.3,29.˚10S×177.˚22W, h0km, mb5.4/32, mb1 5.4/33, mb1mx5.3/36, mbtmp5.4/33, ML5.5/1, MS5.6/20, Ms1 5.6/20, ms1mx5.3/34, Error ellipse: s-maj=13.4km s-min=12.1km az=176.0*
*BJI **09** 13:54:17.3,28.˚76S×176.˚42W, h13km, mb5.7/60, mB6.0/69, Ms5.8/75, Ms7 5.7/70*
*NEIC **09** 13:54:20.0±0.0,29.˚39S×177.˚12W, h19km, Moment Tensor Solution. s12 Moment tensor: Scale 1017Nm; Mrr4.07; Mθθ-1.06; Mφφ-3.01; Mrθ2.88; Mθφ-0.90; Mrφ8.07; Best double couple: Mo9.30000×1017 NP1:ϕs19.00000°, δ78.00000°, λ89.00000°. NP2:ϕs202.00000°, δ11.00000°, λ92.00000°. Principal axes: T 9.6900, Plg57.0000°, Azm289.0000°; N -0.7100, Plg0.0000°, Azm20.0000°; P -8.9800, Plg33.0000°, Azm110.0000°;*
*MOS **09** 13:54:22.4±1.0,28.˚95S×177.˚24W, h33km, mb5.7/85, MS5.8/45 Error ellipse: s-maj=8.8km s-min=7.1km az=83.0*
*GCMT **09** 13:54:23.6±0.1,29.˚12S×176.˚77W, h25km, MW5.9/123, Moment Tensor Solution. s123,c249; s103,c285; Duration: 2s1 Moment tensor: Scale 1017Nm; Mrr4.68±.07; Mθθ-0.44±.05; Mφφ-4.24±.06; Mrθ1.92±.14; Mθφ-0.75±.04; Mφr7.10±.21; Best double couple: Mo8.63800×1017 NP1:ϕs14.00000°, δ74.00000°, λ92.00000°. NP2:ϕs188.00000°, δ16.00000°, λ84.00000°. Principal axes: T 8.7960, Plg61.0000°, Azm287.0000°; N -0.3140, Plg2.0000°, Azm194.0000°; P -8.4800, Plg29.0000°, Azm103.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **09** 13:54:23.6,29.˚39S×177.˚12W, h19km, mb5.6/134, MS5.7/148, MW5.9, MW5.7, Moment Tensor Solution. s37 Moment tensor: Scale 1017Nm; Mrr3.40; Mθθ-0.62; Mφφ-2.78; Mrθ0.59; Mθφ-0.19; Mφr2.34; Best double couple: Mo4.00000×1017 NP1:ϕs182.00000°, δ26.00000°, λ83.00000°. NP2:ϕs10.00000°, δ64.00000°, λ94.00000°. Principal axes: T 4.2400, Plg71.0000°, Azm288.0000°; N -0.6300, Plg3.0000°, Azm189.0000°; P -3.6200, Plg19.0000°, Azm97.0000°; After WEL.*

ISC 09 13:54:20.1±0.4,29.˚25S±0.˚04×176.˚93W±0.˚04, h19km±1km, h19km: pP-P, n1097, σ1376/1050, mb5.6/209, MS5.7/215, 103C-41D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 14μm,0.3s,baz=149,slow=1.7,SNR=133	**0.86**	**270**	Pn			**Pn**	**13 54 37.9**	**+0.7**
RAO	**Raoul Island**	**0.86**	**270**	*e*Pn			**Pn**	**13 54 37.9**	**+0.7**
RAO				*e*Sg			**Sb**	**13 54 43.8**	**-3.8**
URZ	**Urewera** 2.1nm,0.3s,baz=278,slow=5.2,SNR=9.5	**10.26**	**207**	Pn			Pn	13 56 40.9	-5.4
URZ				Sn			**Sn**	**13 58 35.9**	**-4.9**
	47nm,0.3s,baz=160,slow=15,SNR=8.3								
URZ	**Urewera**	**10.26**	**207**	*e*Pn			Pn	13 56 41.5	-4.8
URZ				*e*Sn			**Sn**	**13 58 34.8**	**-6.0**
URZ				Sn			Sn	13 58 35.9	-4.9
KNZ	**Kokohu**	**10.72**	**203**	*e*Pn			Pn	13 56 46.9	-5.7
NMHZ	**Naumai**	**11.10**	**206**	Sn			**Sn**	**13 58 56.2**	**-5.4**
BKZ	**Black Stump Fm**	**11.29**	**207**	*e*Pn			**Pn**	**13 56 57.0**	**-3.4**
OTVZ	**Oturere**	**11.63**	**210**	Pn			**Pn**	**13 57 06.0**	**+0.8**
NIUE	**Niue** baz=12	**11.97**	**34**	P			**Pn**	**13 57 08.4**	**-1.4**
MSVF	**Nonsavu**	**12.35**	**337**	*ce*P			**Pn**	**13 57 16.0**	**+1.0**
MSVF				pmax			pmax		
	comp=Z,68nm,0.9s								
MSVF	**Nonsavu**	**12.35**	**337**	*e*Pn			**Pn**	**13 57 15.9**	**+0.8**
BFZ	**Birch Farm**	**12.70**	**204**	*e*Pn			Pn	13 57 13.8	-5.8
MRZ	**Mangatainoka R**	**12.93**	**206**	*e*Pn			Pn	13 57 16.2	-6.6
MRZ				Sn			Sn	13 59 33.2	-13
SNZO	**South Karori**	**13.83**	**207**	*e*Pn			**Pn**	**13 57 35.0**	**0.0**
TCW	**Tory Channel**	**13.92**	**209**	Sn			Sn	13 59 57.9	-12
TUWZ	**Tuamarina**	**14.24**	**209**	Pn			Pn	13 57 35.4	-5.3
TUWZ				Sn			Sn	14 00 04.7	-13
NNZ	**Nelson**	**14.31**	**211**	*e*Pn			**Pn**	**13 57 39.3**	**-2.3**
BSWZ	**Blackbirch Sta**	**14.51**	**209**	Sn			Sn	14 00 12.3	-12
THZ	**Tophouse**	**14.96**	**211**	*e*Pn			**Pn**	**13 57 46.0**	**-4.6**
THZ				Sn			Sn	14 00 21.1	-15
KHZ	**Kahutara** comp=Z,234nm,0.9s	**15.23**	**208**	*e*Pn			**Pn**	**13 57 48.0**	**-6.0**
KHZ				Sn			Sn	14 00 25.8	-16
KHZ				*e*Sn			Sn	14 00 28.4	-14
AFI	**Afiamalu** comp=Z,2.2nm,0.3s,baz=119,slow=8.6,SNR=4.3	**16.00**	**18**	Pn			Pn	13 57 57.1	-7.1
AFI				Sn			Sn	14 00 47.3	-14
	comp=Z,9.6nm,0.3s,baz=36,slow=22,SNR=5.3								
AFI	**Afiamalu**	**16.00**	**18**	P			**Pn**	**13 58 02.2**	**-2.0**
AFI				pmax			pmax		
	comp=Z,256nm,1.1s								
AFI	**Afiamalu** comp=Z,256nm,1.1s	**16.00**	**18**	Pn			**Pn**	**13 58 02.2**	**-2.0**
AFI				Sn			Sn	14 00 47.3	-14
LTZ	**Lake Taylor** comp=Z,256nm,1.2s	**16.06**	**210**	*e*Pn			**Pn**	**13 58 01.1**	**-3.8**
CRLZ	**Canterbury Las** comp=Z,554nm,1.8s	**16.56**	**208**	*e*Pn			**Pn**	**13 58 08.9**	**-2.3**
DZM	**Mont Dzumac** comp=Z,1.0nm,0.3s,baz=136,slow=11,SNR=42	**16.59**	**292**	Pn			**P**	**13 58 15.7**	**+1.4**
DZM				Sn			**S**	**14 01 30.7**	**+3.6**
	comp=Z,0.4nm,0.3s,baz=141,slow=21,SNR=1.6								
DZM				LR			LR	14 03 26.3	
	comp=Z,70μm,20.3s,baz=137,slow=34								
DZM	**Mont Dzumac** comp=Z,944nm,1.6s	**16.59**	**292**	*e*P			**P**	**13 58 14.3**	**+0.1**
DZM				*e*LR			LR	14 02 03.2	
	comp=Z,81μm,22.6s								
DZM	**Mont Dzumac** comp=Z,625nm,1.4s	**16.59**	**292**	*e*Pn			**P**	**13 58 14.4**	**+0.1**
DZM				Sn			**S**	**14 01 30.7**	**+3.6**
OXZ	**Oxford** comp=Z,336nm,0.5s	**16.60**	**209**	*e*Pn			**Pn**	**13 58 06.5**	**-5.2**
OXZ				Sn			Sn	14 00 57.2	-18
MQZ	**McQueen's Vall** comp=Z,77nm,0.7s	**16.66**	**207**	*e*Pn			**Pn**	**13 58 06.0**	**-6.4**
MQZ				Sn			Sn	14 00 57.8	-19
WVZ	**Waitaha Valley**	**16.99**	**212**	*e*Pn			**Pn**	**13 58 13.4**	**-3.1**
RPZ	**Rata Peaks** comp=Z,15nm,0.3s,baz=67,slow=3.9,SNR=26	**17.34**	**210**	P			**Pn**	**13 58 19.3**	**-1.8**
RPZ	**Rata Peaks** comp=Z,138nm,0.6s	**17.34**	**210**	*e*P			**Pn**	**13 58 16.7**	**-4.3**
RAR	**Rarotonga** comp=Z,3.1nm,0.3s,baz=236,slow=6.3,SNR=16	**17.45**	**67**	P			**Pn**	**13 58 18.0**	**-4.5**
RAR				LR			LR	14 03 34.7	
	comp=Z,20μm,21.4s,baz=236,slow=32								
RAR	**Rarotonga**	**17.45**	**67**	*e*P			**Pn**	**13 58 18.9**	**-3.6**
RAR				pmax			pmax		
	comp=Z,505nm,1.1s								
RAR	**Rarotonga** comp=Z,505nm,1.1s	**17.45**	**67**	*e*P			**Pn**	**13 58 18.9**	**-3.6**
LBZ	**Lake Benmore** comp=Z,51nm,0.7s	**18.26**	**211**	*e*Pn			**Pn**	**13 58 29.1**	**-3.2**
ODZ	**Otahua Downs** comp=Z,118nm,0.8s	**18.58**	**209**	P			**P**	**13 58 32.2**	**-3.7**
JCZ	**Jackson Bay**	**18.67**	**214**	Pn			**P**	**13 58 33.6**	**-3.5**
WKZ	**Wanaka**	**19.13**	**212**	Pn			**P**	**13 58 37.6**	**-4.4**
MLZ	**Mavora Lakes** comp=Z,150nm,1.2s	**19.95**	**212**	*e*P			**P**	**13 58 48.9**	**-2.1**
DCZ	**Deep Cove**	**20.48**	**213**	PFAKE				13 59 10.0	+11
DCZ				LR			LR		
	comp=Z,13μm,19.0s								
LHI	**Lord Howe Isla** comp=Z,874nm,0.9s	**20.82**	**258**	*e*P			Pn	13 59 02.5	-0.5
LHI				LR			LR		
	comp=Z,32μm,21.0s								
FUNA	**Funafuti**	**20.93**	**349**	PFAKE				13 59 20.0	+16
FUNA				LR			LR		
	comp=Z,24μm,19.0s								
TBI	**Tubuai** comp=Z,361nm,1.3s	**25.29**	**83**	*e*P			**P**	**13 59 43.4**	**-2.0**
TBI				*e*S			**S**	**14 04 05.8**	**-4.7**
	comp=Z,5μm,25.9s								
TBI				*e*LR			LR	14 05 50.8	
	comp=Z,33μm,28.5s,baz=248								
TBI	**Tubuai** comp=Z,40nm,0.3s	**25.29**	**83**	*e*T			T	14 25 31.9	
ARMA	**Armidale** baz=27,SNR=26	**27.25**	**260**	P			**P**	**14 00 05.5**	**+2.2**
ARMA	**Armidale** comp=Z,95nm,1.0s	**27.25**	**260**	*e*P			**P**	**14 00 03.6**	**+0.3**
RIV	**Riverview** baz=28	**27.51**	**252**	P			**P**	**14 00 07.7**	**+2.3**
PAE	**Paea** comp=Z,29nm,1.4s	**27.55**	**71**	*e*P			**P**	**14 00 04.8**	**-1.1**
PAE	**Paea** comp=Z,24nm,0.3s	**27.55**	**71**	*e*T			T	14 28 20.6	
PPT2	**Papeete2** comp=Z,105nm,1.4s	**27.58**	**71**	*e*P			**P**	**14 00 05.7**	**-0.6**
PPT2				*e*S			**S**	**14 04 44.6**	**-2.4**
	comp=Z,3μm,23.2s								
PPT2				*e*LR			LR	14 07 02.0	
	comp=Z,26μm,23.2s,baz=237								
PPT2	**Papeete2** comp=Z,18nm,0.3s	**27.58**	**71**	*e*T			T	14 28 24.4	
PPT	**Papeete** comp=Z,143nm,1.3s,baz=125,slow=5.9,SNR=4.6	**27.59**	**71**	P			**P**	**14 00 09.0**	**+2.6**
PPT				LR			LR	14 08 38.5	
	comp=Z,12μm,21.6s,baz=252,slow=31								
PPT	**Papeete** comp=Z,89nm,1.2s	**27.59**	**71**	P			**P**	**14 00 09.0**	**+2.6**
PPT				pmax			pmax		
TIAR	**Tiarei** comp=Z,35nm,1.1s	**27.79**	**71**	*e*P			**P**	**14 00 07.3**	**-0.8**
EIDS	**Eidsvold** baz=29,SNR=34	**28.63**	**270**	P			**P**	**14 00 16.6**	**+1.1**
EIDS	**Eidsvold** comp=Z,122nm,1.1s	**28.63**	**270**	*e*P			**P**	**14 00 12.5**	**-3.0**
MEH	**Mehetia** comp=Z,35nm,1.1s	**28.70**	**73**	*e*P			**P**	**14 00 15.2**	**-1.0**
CNB	**Canberra Magne** baz=29,SNR=23	**29.04**	**249**	P			**P**	**14 00 21.0**	**+1.8**
HNR	**Honiara** comp=Z,143nm,0.8s,baz=206,slow=2.9,SNR=9.8	**29.29**	**308**	P			**P**	**14 00 20.8**	**-0.6**
HNR	**Honiara** comp=Z,250nm,1.0s	**29.29**	**308**	*e*P			**P**	**14 00 20.0**	**-1.5**
HNR	**Honiara**	**29.29**	**308**	*e*P			**P**	**14 00 18.5**	**-3.0**
HNR				LR			LR		
	comp=Z,9μm,19.0s								
CAN	**Canberra** baz=29	**29.34**	**249**	P			**P**	**14 00 23.0**	**+1.3**
CAN	**Canberra**	**29.34**	**249**	*e*P			**P**	**14 00 21.6**	**-0.2**
CAN				pmax			pmax		
	comp=Z,122nm,0.9s								
CAN				MLR			MLR		
	comp=Z,19μm,21.0s								
CAN	**Canberra** comp=Z,122nm,0.9s	**29.34**	**249**	*e*P			**P**	**14 00 21.6**	**-0.2**
CAN				LR			LR		
	comp=Z,19μm,21.0s								
YNG	**Young** baz=30,SNR=25	**29.81**	**251**	P			**P**	**14 00 27.7**	**+1.7**
RMQ	**Roma** baz=30,SNR=91	**30.39**	**267**	P			**P**	**14 00 33.2**	**+2.0**
VAH	**Vaihoa** comp=Z,37nm,0.2s	**30.39**	**69**	*e*T			T	14 31 54.0	
MOO	**Moorlands** baz=32,SNR=7.8	**31.68**	**236**	P			**P**	**14 00 43.8**	**+1.5**
TAU	**Tasmania Unive**	**31.69**	**235**	*e*P			**P**	**14 00 39.9**	**-2.6**
TAU				pmax			pmax		
	comp=Z,148nm,1.0s								
TAU				MLR			MLR		
	comp=Z,27μm,21.0s								
TAU	**Tasmania Unive** comp=Z,148nm,1.0s	**31.69**	**235**	*e*P			**P**	**14 00 39.9**	**-2.6**
TAU				LR			LR		
	comp=Z,27μm,21.0s								
TARA	**Tarawa**	**31.94**	**341**	*e*P			**P**	**14 00 43.3**	**-1.5**
TARA				LR			LR		
	comp=Z,712nm,19.0s								
CMSA	**Cobar Meteorol** baz=32,SNR=35	**32.22**	**256**	P			**P**	**14 00 48.2**	**+1.0**
TOO	**Toolangi** baz=32,SNR=11	**32.28**	**245**	P			**P**	**14 00 49.0**	**+1.4**
QLP	**Quilpie** baz=34,SNR=16	**34.31**	**265**	P			**P**	**14 01 06.6**	**+1.1**
CTA	**Charters Tower** comp=Z,107nm,0.9s,baz=99,slow=9.8,SNR=76	**34.56**	**277**	P			**P**	**14 01 08.4**	**+0.7**
CTA				LR			LR	14 13 34.3	
	comp=Z,31μm,20.2s,baz=88,slow=34								
CTAO	**Charters Tower**	**34.56**	**277**	*e*P			**P**	**14 01 08.4**	**+0.7**
CTAO				pmax			pmax		
	comp=Z,122nm,0.9s								
CTAO				MLR			MLR		
	comp=Z,45μm,20.0s								
CTAO	**Charters Tower** comp=Z,122nm,0.9s	**34.56**	**277**	*e*P			**P**	**14 01 08.4**	**+0.7**
CTAO				LR			LR		
	comp=Z,45μm,20.0s								
ARPS	**Mount Arapiles** baz=35,SNR=9.6	**35.17**	**247**	P			**P**	**14 01 14.4**	**+1.6**
STKA	**Stephens Creek** comp=Z,67nm,0.8s,baz=96,slow=9.7,SNR=25	**35.65**	**255**	P			**P**	**14 01 17.4**	**+0.4**
STKA				ScP			**ScP**	**14 07 33.0**	**+2.5**
	comp=Z,8.7nm,0.7s,baz=86,slow=7.1,SNR=2.8								
STKA				LR			LR	14 14 09.5	
	comp=Z,22μm,21.1s,baz=94,slow=34								
STKA	**Stephens Creek** baz=36,SNR=32	**35.65**	**255**	P			**P**	**14 01 17.0**	**0.0**
STKA	**Stephens Creek** comp=Z,21nm,1.0s	**35.65**	**255**	*e*P			**P**	**14 01 17.0**	**0.0**
STKA				ScP			**ScP**	**14 07 33.0**	**+2.5**
XMAS	**Kiritimati**	**36.28**	**34**	PFAKE				14 01 40.0	+17
XMAS				LR			LR		
	comp=Z,7.0nm,21.0s								
HTT	**Hallett** baz=38,SNR=61	**37.73**	**252**	P			**P**	**14 01 34.2**	**-0.5**
RKT	**Rikitea** comp=Z,3μm,28.8s	**37.99**	**91**	*e*S			**S**	**14 07 26.2**	**-2.2**
RKT				*e*LR			LR	14 11 47.5	
	comp=Z,19μm,28.2s,baz=258								
RKT	**Rikitea** comp=Z,3.3nm,0.3s	**37.99**	**91**	*e*T			T	14 41 25.7	
RABL	**Rabaul** comp=Z,108nm,0.6s	**38.45**	**305**	*e*P			**P**	**14 01 39.3**	**-1.7**
PMG	**Port Moresby** comp=Z,74nm,0.9s,baz=62,slow=2.0,SNR=5.8	**38.98**	**293**	PcP			**PcP**	**14 03 56.6**	**+0.9**
PMG				ScP			**S**	**14 07 46.8**	**+3.4**
	comp=Z,14nm,0.8s,baz=259,slow=11,SNR=3.5								
PMG				LR			LR	14 15 08.0	
	comp=Z,20μm,21.8s,baz=130,slow=32								
TAOE	**Nuku Hiva Isla** comp=Z,2μm,24.7s	**40.00**	**67**	*e*S			**S**	**14 07 57.8**	**-1.2**
TAOE				*e*LR			L

POHA Pohakuloa 52.92 26 PFAKE 14 03 50.0 +15
POHA LR LR
comp=Z,5μm,22.0s
FITZ Fitzroy Crossi 53.30 269 P **P** **14 03 36.9 -1.2**
comp=Z,28nm,0.4s,baz=83,slow=4.4,SNR=3.3
FITZ LR LR 14 25 53.4
comp=Z,9μm,18.8s,baz=120,slow=36
KIP Kipapa 53.58 22 *dP* **P** **14 03 41.2 +1.3**
KIP Kipapa 53.58 22 *eP* **P** **14 03 41.7 +1.8**
comp=Z,213nm,1.2s
KIP LR LR
comp=Z,5μm,20.0s
RKGY Rocky Gully 55.46 246 P **P** **14 03 52.8 -0.9**
baz=55,SNR=8.2
KLBR Kellerberrin 55.60 250 P **P** **14 03 53.8 -1.0**
baz=56,SNR=7.7
NWAO Narrogin (SRO) 55.68 248 P **P** **14 03 52.7 -2.6**
comp=Z,30nm,0.9s,baz=344,slow=3.4,SNR=6.4
NWAO LR LR 14 27 14.0
comp=Z,7μm,18.5s,baz=330,slow=36
NWAO Narrogin (SRO) 55.68 248 *eP* **P** **14 03 50.7 -4.6**
NWAO pmax pmax
comp=Z,88nm,1.3s
NWAO Narrogin (SRO) 55.68 248 *eP* **P** **14 03 50.7 -4.6**
comp=Z,88nm,1.3s
GUMO Guam 56.34 314 P **P** **14 03 59.2 -0.9**
comp=Z,134nm,0.9s,baz=172,slow=9.2,SNR=9.9
GUMO LR LR 14 25 57.0
comp=Z,3μm,21.4s,baz=143,slow=34
GUMO Guam 56.34 314 *eP* **P** **14 03 57.8 -2.2**
comp=Z,219nm,1.1s
CASY Casey 56.59 208 *eP* **P** **14 04 00.8 -0.4**
comp=Z,214nm,0.8s
CASY LR LR
comp=Z,735nm,20.0s
SIJI Sorong 56.79 290 P **P** **14 04 02.8 -0.7**
comp=Z,31nm,0.2s,baz=11,slow=23,SNR=2.8
SIJI PP **PP** **14 06 05.8 -4.1**
comp=Z,43nm,0.3s,baz=167,slow=17,SNR=3.9
MIDW Midway 57.14 360 PFAKE 14 04 20.0 +15
MIDW LR LR
comp=Z,5μm,20.0s
MBWA Marble Bar 57.28 262 PFAKE 14 04 20.0 +13
MBWA LR LR
comp=Z,21μm,20.0s
MORW Morawa 57.75 252 P **P** **14 04 08.7 -1.3**
baz=58
SOEI Soe 58.12 277 *eP* **P** **14 04 10.9 -2.1**
comp=Z,276nm,1.1s
RPN Rapa Nui 58.85 106 PFAKE 14 04 30.0 +12
RPN LR LR
comp=Z,2μm,22.0s
MMRI Maumere 60.42 277 P **P** **14 04 29.0 +0.3**
comp=Z,190nm,1.2s,comp=Z,2μm
MMRI Maumere 60.42 277 *eP* **P** **14 04 26.4 -2.3**
comp=Z,262nm,1.2s
QSPA South Pole Qui 60.86 180 PFAKE 14 04 50.0 +19
QSPA LR LR
comp=Z,8μm,19.0s
GIRL Giralia 61.47 259 P **P** **14 04 35.8 +0.1**
baz=61,SNR=4.1
KDI Kendari 62.40 282 P **P** **14 04 42.1 0.0**
comp=Z,57nm,1.1s
PLAI Plampang 64.21 274 P **P** **14 04 53.2 -0.9**
comp=Z,203nm,0.9s,comp=Z,2μm
KAPI Kappang 64.33 279 P **P** **14 04 52.9 -2.0**
comp=Z,21nm,0.9s,baz=266,slow=8.2,SNR=5.6
KAPI Kappang 64.33 279 *eP* **P** **14 04 52.6 -2.3**
comp=Z,194nm,1.4s
KAPI LR LR
comp=Z,5μm,22.0s
TWSI Taliwang, Sumb 65.03 274 P **P** **14 04 58.5 -1.0**
comp=Z,77nm,0.8s,comp=Z,1μm
TTSI Tana Toraja 65.26 281 P **P** **14 05 00.9 -0.1**
comp=Z,90nm,1.2s,comp=Z,1μm
MRSI Marisa 65.30 285 P **P** **14 05 01.9 +0.7**
comp=Z,38nm,1.2s,comp=Z,7μm
DAV Davao City (W) 66.00 294 P **P** **14 05 04.1 -1.6**
comp=Z,195nm,0.4s,baz=87,slow=4.7,SNR=2.0
DAV Davao City (W) 66.00 294 P **P** **14 05 04.1 -1.6**
DAV LR LR
comp=Z,3μm,22.0s
PCI Palu 66.35 283 P **P** **14 05 08.6 +0.6**
comp=Z,173nm,1.2s,comp=Z,2μm
SRBI Singaraja 66.79 274 P **P** **14 05 10.2 -0.6**
comp=Z,122nm,1.0s,comp=Z,2μm
JAGI Jajag, Banyuwa 67.53 273 P **P** **14 05 14.3 -1.3**
comp=Z,132nm,1.1s,comp=Z,2μm
JAGI Jajag, Banyuwa 67.53 273 P **P** **14 05 12.9 -2.6**
comp=Z,102nm,0.9s
JAGI *e*PcP **PcP** **14 05 41.9 -0.9**
ABJI Asem Bagus 67.78 273 P **P** **14 05 17.2 +0.1**
comp=Z,98nm,0.9s,comp=Z,2μm
GMJI Gumukmas 68.24 273 P **P** **14 05 19.2 -0.8**
comp=Z,99nm,1.0s,comp=Z,2μm
CBIJ Chichi jima 68.36 321 P **P** **14 05 20.1 -0.3**
JCJ Chichijima 68.36 321 P **P** **14 05 20.1 -0.3**
comp=Z,50nm,0.3s,baz=248,slow=22,SNR=2.4
BBKI Banjar Baru 69.34 278 P **P** **14 05 26.9 0.0**
comp=Z,152nm,1.2s,comp=Z,2μm
PWJI Pagerwojo 69.79 272 P **P** **14 05 28.9 -0.7**
comp=Z,84nm,1.2s,comp=Z,2μm
PCJI Pacitan 70.26 272 P **P** **14 05 31.8 -0.7**
comp=Z,260nm,1.1s,comp=Z,3μm
TBJI Tambak Boyo 70.76 273 P **P** **14 05 33.0 +0.1**
comp=Z,2μm,0.8s,comp=Z,83μm
NGJI Ngawi 70.40 272 P **P** **14 05 33.6 +0.2**
comp=Z,60nm,1.4s,comp=Z,4μm
WOJI Wonogiri, Jawa 70.65 272 P **P** **14 05 35.6 +0.7**
comp=Z,187nm,1.2s,comp=Z,5μm
MYLDM Lahad Datu 70.72 288 ⇑P **P** **14 05 36.7 +1.4**
MYLDM Lahad Datu 70.72 288 ⇑P **P** **14 05 36.7 +1.4**
TSM Tawau 70.76 287 ⇓P **P** **14 05 36.9 +1.3**
TSM Tawau 70.76 287 ⇓P **P** **14 05 36.9 +1.3**
UGM Wanagama 70.96 272 P **P** **14 05 36.4 -0.5**
comp=Z,200nm,1.3s
PBKI Pangkalan Bun 72.47 277 P **P** **14 05 45.6 -0.3**
comp=Z,256nm,1.2s,comp=Z,4μm
CMJI Cimerak 72.84 271 P **P** **14 05 47.9 -0.1**
comp=Z,116nm,1.0s,comp=Z,2μm
PMSA Palmer Station 72.93 156 PFAKE 14 06 00.0 +12
PMSA LR LR
comp=Z,6μm,22.0s
KDM Kudat 73.05 288 ⇓P **P** **14 05 49.0 -0.2**
KDM Kudat 73.05 288 ⇓P **P** **14 05 49.0 -0.2**
KKM Kota Kinabalu 73.09 287 PFAKE 14 06 00.0 +10
KKM LR LR
comp=Z,3μm,22.0s
CISI Cisompet, Garu 73.50 271 P **P** **14 05 49.7 -2.3**
comp=Z,167nm,1.0s
MAW Mawson 73.71 200 P **P** **14 05 53.5 +1.2**
comp=Z,52nm,0.9s,baz=123,slow=7.2,SNR=59
MAW LR LR 14 37 38.3
comp=Z,6μm,19.7s,baz=118,slow=35
MAW Mawson 73.71 200 P **P** **14 05 53.1 +0.8**
baz=74,SNR=39
MAW Mawson 73.71 200 *eP* **P** **14 05 53.1 +0.8**
comp=Z,40nm,1.4s
TGY Tagaytay City 73.82 297 P **P** **14 05 53.8 0.0**
comp=Z,57nm,0.4s,baz=100,slow=23,SNR=1.9
TGY LR LR 14 37 10.5
comp=Z,1μm,19.5s,baz=116,slow=35
STKI Sintang 74.01 279 P **P** **14 05 54.9 -0.1**
comp=Z,98nm,0.9s,comp=Z,6μm
CNJI Cibinong 74.21 270 P **P** **14 05 56.3 +0.2**
comp=Z,185nm,1.0s,comp=Z,2μm
JHJ2 Mitsune 74.34 323 *eP* **P** **14 05 55.2 -1.2**
comp=Z,860nm,2.0s
JHJ Hachijo jima 2 74.36 323 LR LR 14 33 44.9
comp=Z,2μm,21.5s,baz=156,slow=32
SBUM Sibu 74.58 282 *eP* **P** **14 05 57.3 -1.0**
comp=Z,82nm,1.2s
DBJI Dramaga 74.90 271 P **P** **14 05 59.9 -0.3**
comp=Z,160nm,1.1s
KSM Kuching 75.73 280 *eP* **P** **14 06 02.7 -2.2**
comp=Z,81nm,1.1s
KSM LR LR
comp=Z,5μm,20.0s
CGJI Cibinong 75.80 270 P **P** **14 06 02.0 -3.3**
comp=Z,136nm,1.4s,comp=Z,2μm
USHA Ushuaia 76.34 146 LR LR 14 31 18.6
comp=Z,16μm,21.9s,baz=146,slow=29
JOW Kunigami 76.59 311 *eP* **P** **14 06 09.4 0.0**
comp=Z,69nm,1.0s
KASI Kota Agung 77.36 271 P **P** **14 06 12.6 -1.5**
comp=Z,95nm,0.9s,comp=Z,2μm
INU Inuyama 77.54 323 *eP* **P** **14 06 14.2 -0.4**
comp=Z,32nm,0.8s
MJAR Matsushiro Arr 77.84 324 P **P** **14 06 14.8 -1.5**
comp=Z,26nm,0.9s,baz=160,slow=6.2,SNR=48
MJAR LR LR 14 37 17.6
comp=Z,855nm,20.1s,baz=155,slow=33
MJAR Matsushiro Arr 77.84 324 P **P** **14 06 14.8 -1.5**
MJAR pmax pmax
comp=Z,25nm,0.9s
MAJO Matsushiro 77.84 324 *eP* **P** **14 06 16.1 -0.2**
MAJO pmax pmax
comp=Z,44nm,1.0s
MAJO MLR MLR
comp=Z,3μm,22.0s
MAJO Matsushiro 77.84 324 *eP* **P** **14 06 16.1 -0.2**
comp=Z,44nm,1.0s
MAJO LR LR
comp=Z,3μm,22.0s
MAT Matsushiro 77.84 324 P **P** **14 06 14.6 -1.7**
MAT S **S** **14 16 09.0 +0.8**
MJB9 Matsu-Tunnel 77.84 324 *eP* **P** **14 06 16.2 -0.1**
comp=Z,12nm,1.1s
SYO Syowa Base 78.44 193 ⇑*i*X **P** **14 06 18.2 -1.0**
SYO Syowa Base 78.44 193 ⇑*i*PcP **PcP** **14 06 31.2 +2.8**
TWG Pinlang 78.98 304 *eP* **P** **14 06 26.1 +3.2**
comp=Z,98nm,0.8s
SNAA Sanae 79.27 178 P **P** **14 06 24.7 +0.8**
SNAA Sanae 79.27 178 ⇑*e*P **P** **14 06 24.5 +0.6**
SNAA Sanae 79.27 178 *eP* **P** **14 06 23.8 -0.1**
comp=Z,83nm,1.1s
JNU Nakatsue 79.33 318 P **P** **14 06 22.9 -1.6**
comp=Z,17nm,0.7s,baz=24,slow=1.2,SNR=12
JNU LR LR 14 36 55.4
comp=Z,782nm,21.8s,baz=128,slow=32
JNU Nakatsue 79.33 318 *eP* **P** **14 06 27.4 +2.8**
comp=Z,268nm,1.5s
TPUB Ta-pu 79.60 304 *eP* **P** **14 06 24.2 -2.1**
comp=Z,46nm,0.9s
SSLB Suanglung 79.66 305 *eP* **P** **14 06 25.6 -1.0**
comp=Z,48nm,1.2s
ERM Erimo 79.90 331 *eP* **P** **14 06 30.7 +3.3**
ERM pmax pmax
comp=Z,61nm,1.1s
ERM MLR MLR
comp=Z,8μm,20.0s
ERM Erimo 79.90 331 *eP* **P** **14 06 30.7 +3.3**
comp=Z,61nm,1.1s
ERM LR LR
comp=Z,8μm,20.0s
YHNB Yeheng 79.91 306 PFAKE 14 06 40.0 +12
YHNB LR LR
comp=Z,2μm,22.0s
VNA1 Neumayer--Stat 80.06 176 P **P** **14 06 28.0 0.0**
NVL N'lazarevskaya 80.07 183 *eP* **P** **14 06 31.5 +3.4**
NVL *e**SP **sP** **14 06 40.5 +3.9**
NVL *e*S **S** **14 16 33.4 +2.3**
NVL *e*SS **SS** **14 21 49.9 +10**
KUR Kuril'sk 80.76 336 *c iP* **P** **14 06 32.1 +0.2**
KUR *i* S **S** **14 16 36.6 -2.1**
KUR pmax pmax
comp=Z,99nm,1.6s
KUR pmax pmax
comp=Z,381nm,6.4s
COCO West Island 80.90 261 PFAKE 14 06 50.0 +16
COCO LR LR
comp=Z,7μm,21.0s
MYKOM Kota Tinggi 81.47 277 *eP* **P** **14 06 35.8 -0.7**
comp=Z,99nm,1.1s
ASAJ Asahikawa 81.86 332 *eP* **P** **14 06 38.7 +0.9**
comp=Z,166nm,1.1s
SMY Shemya 82.00 355 *eP* **P** **14 06 38.3 -0.1**
SMY pmax pmax
comp=Z,176nm,1.1s
SMY Shemya 82.00 355 *eP* **P** **14 06 38.3 -0.1**
comp=Z,176nm,1.1s
QZH Quanzhou 82.07 304 ⇑*i*P P 14 06 30.2 -9.2
NIKH Nikolski High 82.18 5 *eP* **P** **14 06 39.9 +0.7**
comp=Z,159nm,0.9s
SNCC San Nicolas Is 82.58 45 P **P** **14 06 43.4 +1.5**
baz=228
PLCA Paso Flores 82.61 133 P **P** **14 06 44.9 +2.6**
comp=Z,16nm,0.9s,baz=244,slow=7.0,SNR=11
PLCA Paso Flores 82.61 133 *eP* **P** **14 06 45.2 +2.9**
PLCA pmax pmax
comp=Z,73nm,1.4s
PLCA Paso Flores 82.61 133 *eP* **P** **14 06 45.2 +2.9**
comp=Z,73nm,1.4s
SCZ2 Santa Cruz Isl 83.01 45 P **P** **14 06 45.3 +1.1**
baz=228
SCI2 San Clemente I 83.01 46 P **P** **14 06 45.5 +1.3**
baz=228
SKR Severo-Kuril's 83.08 343 ⇓*i*P **P** **14 06 43.7 -0.3**
SKR *i* S **S** **14 17 03.4 +1.1**
SKR *i* 14 17 51.3
SKR pmax pmax
comp=Z,1μm,9.6s
SKR MLR MLR
comp=Z,1μm,19.0s
UNV Unalaska Valle 83.24 6 *eP* **P** **14 06 45.0 +0.2**
comp=Z,107nm,1.2s
EFI East Falkland 83.24 147 PFAKE 14 07 00.0 +15
EFI LR LR
comp=Z,5μm,20.0s
SBC Santa Barbara 83.26 44 P **P** **14 06 46.8 +1.4**
baz=228
BLG Laguna Peak, P 83.44 45 P **P** **14 06 46.6 +0.2**
baz=228
PKM Mcpherson Peak 83.50 44 P **P** **14 06 48.3 +1.4**
baz=228
SMMC Simmler 83.67 44 P **P** **14 06 49.2 +1.6**
baz=227
109C Camp Elliot, M 83.87 47 P **P** **14 06 50.1 +1.5**
baz=229
OSI Osito Audit: C 83.98 45 P **P** **14 06 50.6 +1.4**
baz=228
DECC Green Verdugo 83.98 45 P **P** **14 06 50.7 +1.5**
baz=229
SSE Sheshan 84.06 310 ⇑P **P** **14 06 48.4 -1.2**
SSE sP **sP** **14 06 57.6 -0.5**
SSE S **S** **14 17 12.7 -0.5**
SSE sS **sS** **14 17 24.2 +0.6**
SSE pmax pmax
comp=Z,200nm,0.6s
SSE pmax pmax
comp=Z,880nm,9.3s
SSE LR LR
comp=Z,2μm,23.5s
SSE LR LR
comp=Z,2μm,23.5s
SSE LR LR
comp=Z,4μm,22.5s
KSRS Korea Array 84.08 319 P **P** **14 06 49.5 -0.1**
comp=Z,20nm,0.9s,baz=140,slow=5.5,SNR=18
KS15 Wonju Array Si 84.10 319 *eP* **P** **14 06 51.1 +1.5**
KSAR Wonju Array Be 84.10 319 P **P** **14 06 49.5 -0.1**
KSAR Wonju Array Be 84.10 319 P **P** **14 06 49.5 -0.1**
KS01 Wonju Array Si 84.11 319 *eP* **P** **14 06 49.2 -0.5**
YSS Yuzh-Sakhalins 84.13 334 *c iP* **P** **14 06 50.0 +0.5**
YSS *e**SP **sP** **14 06 58.2 +0.2**
YSS *e* 14 10 00.0
YSS *e*S **S** **14 17 11.3 -1.8**
YSS pmax pmax
comp=Z,200nm,1.1s
YSS pmax pmax
comp=Z,1μm,9.0s
YSS Yuzh-Sakhalins 84.13 334 *eP* **P** **14 06 50.0 +0.5**
comp=Z,235nm,1.0s
YSS LR LR
comp=Z,3μm,22.0s
MWC Mount Wilson 84.14 45 *eP* **P** **14 06 52.3 +2.2**
MWC pmax pmax
comp=Z,40nm,1.3s
MWC Mount Wilson 84.14 45 *eP* **P** **14 06 52.3 +2.2**
comp=Z,40nm,1.3s
MURC Murrieta 84.27 46 P **P** **14 06 51.8 +1.1**
baz=229
MONP2 Monument Peak 84.31 47 P **P** **14 06 51.6 +0.5**
baz=230
IKP In-Ko-Pah, Jac 84.35 48 P **P** **14 06 52.0 +0.9**
baz=230
BFSC Mount Baldy Ra 84.40 46 P **P** **14 06 52.3 +0.9**
baz=229
VES Vestal, Richgr 84.58 44 P **P** **14 06 52.9 +0.8**
baz=228
EDW2 Edwards Air Fo 84.61 45 P **P** **14 06 53.5 +1.1**
baz=229,SNR=6.8
PET Petropavlovsk 84.65 345 *c iP* **P** **14 06 51.3 -0.7**
PET *i* S **S** **14 17 13.7 -4.3**
PET pmax pmax
comp=Z,37nm,1.2s
PET pmax pmax
comp=Z,900nm,8.4s
PET pmax pmax
comp=Z,1μm,12.3s
PET Petropavlovsk 84.65 345 PFAKE 14 07 10.0 +18
PET LR LR
comp=Z,3μm,22.0s
SWSC Sam W. Stewart 84.74 48 P **P** **14 06 53.7 +0.7**
baz=230
PFO Pinyon Flats O 84.75 47 P **P** **14 06 54.5 +1.3**
comp=Z,8.9nm,1.1s,baz=306,slow=2.9,SNR=5.3
PFO Pinyon Flats O 84.75 47 P **P** **14 06 54.1 +1.0**
baz=230
PFO Pinyon Flats O 84.75 47 *eP* **P** **14 06 54.2 +1.0**
PFO pmax pmax
comp=Z,36nm,1.3s
PFO MLR MLR
comp=Z,4μm,22.0s
PFO Pinyon Flats O 84.75 47 *eP* **P** **14 06 54.2 +1.0**
comp=Z,36nm,1.3s
PFO LR LR
comp=Z,4μm,22.0s
TPFO Pinon Flats 84.75 47 P **P** **14 06 53.8 +0.6**
baz=230
RCTC Rector, Farmer 84.79 43 P **P** **14 06 54.1 +0.9**
baz=226
ISA Isabella, Lake 84.83 44 P **P** **14 06 54.2 +0.8**
baz=228
ISA Isabella, Lake 84.83 44 *eP* **P** **14 06 55.7 +2.2**
ISA pmax pmax
comp=Z,34nm,1.0s
ISA Isabella, Lake 84.83 44 *eP* **P** **14 06 55.7 +2.2**
comp=Z,34nm,1.0s
INCN Inchon 84.85 318 *eP* **P** **14 06 56.3 +2.8**
comp=Z,38nm,1.0s
INCN LR LR
comp=Z,1μm,19.0s
BBRC Big Bear Solar 84.87 46 P **P** **14 06 54.7 +0.7**
baz=229
GZH Guangzhou 84.87 300 P **P** **14 06 55.1 +1.2**
GZH PP **PP** **14 10 16.7 +5.9**
GZH S **S** **14 17 20.2 -1.4**
GZH pmax pmax
comp=Z,2μm,8.2s
GZH LR LR
comp=Z,4μm,22.9s
PEA0 Petropavlovsk- 84.94 345 *eP* **P** **14 06 53.0 -0.5**
PEA0B Petropavlovsk- 84.94 345 *eP* **P** **14 06 53.9 +0.4**
comp=Z,186nm,1.6s
PETK Petropavlovsk- 84.94 345 P **P** **14 06 53.0 -0.5**
comp=Z,24nm,0.7s,baz=110,slow=8.1,SNR=35
PETK Petropavlovsk- 84.94 345 P **P** **14 06 53.0 -0.5**
PETK pmax pmax
comp=Z,24nm,0.7s
LRMC Laurel Mtn Rad 85.19 45 P **P** **14 06 56.4 +1.0**
baz=229,SNR=12
RRX Edison Barstow 85.22 46 P **P** **14 06 57.0 +1.6**
baz=229
IPM Ipoh 85.24 278 *eP* **P** **14 06 54.4 -1.6**
comp=Z,44nm,0.8s
CMB Columbia Colle 85.29 41 *eP* **P** **14 06 56.4 +0.7**
CMB pmax pmax
comp=Z,27nm,1.0s
CMB Columbia Colle 85.29 41 *eP* **P** **14 06 56.4 +0.7**
comp=Z,27nm,1.0s
BELC Belle Mtn. Jos 85.29 47 P **P** **14 06 56.8 +0.9**
baz=230,SNR=18
QIZ Qiongzhong 85.35 295 P **P** **14 06 57.4 +1.0**
QIZ pP **pP** **14 07 02.6 -0.1**
QIZ PP **PP** **14 10 12.7 -2.0**
QIZ S **S** **14 17 28.3 +1.8**
QIZ SS **SS** **14 23 02.5 +0.5**
QIZ pmax pmax
comp=Z,25nm,0.9s
QIZ pmax pmax
comp=Z,1μm,11.1s
QIZ LR LR
comp=Z,850nm,20.2s
QIZ LR LR
comp=Z,1μm,21.3s
QIZ Qiongzhong 85.35 295 PFAKE 14 07 10.0 +14
QIZ LR LR
comp=Z,2μm,22.0s
BC3 Big Chuckawall 85.42 47 P **P** **14 06 58.1 +1.6**
baz=230,SNR=10
GLA Glamis 85.44 48 P **P** **14 06 57.6 +1.0**
baz=231
GLA Glamis 85.44 48 *eP* **P** **14 06 56.6 0.0**
GLA pmax pmax
comp=Z,60nm,1.3s
GLA Glamis 85.44 48 *eP* **P** **14 06 56.6 0.0**
comp=Z,60nm,1.3s
AFDM Forest Hills D 85.58 40 *eP* **P** **14 06 58.0 +0.9**
comp=Z,25nm,1.1s
CWC Cottonwood Cre 85.58 44 P **P** **14 06 58.6 +1.3**
baz=229
HSIG 85.59 53 *eP* **P** **14 06 58.0 +0.7**
comp=Z,30nm,1.2s
HEC Hector,Ludlow 85.61 46 P **P** **14 06 58.3 +0.9**
baz=230
GSC Goldstone, Bar 85.62 45 P **P** **14 06 58.8 +1.3**
baz=229,SNR=12
GSC Goldstone, Bar 85.62 45 *eP* **P** **14 06 58.9 +1.4**
GSC pmax pmax
comp=Z,46nm,1.1s
GSC Goldstone, Bar 85.62 45 *eP* **P** **14 06 58.9 +1.4**
comp=Z,46nm,1.1s
MPMC Manual Prospec 85.69 44 P **P** **14 06 59.1 +1.2**
baz=229,SNR=15
ORV Oroville 85.70 40 *eP* **P** **14 06 58.4 +0.7**
ORV pmax pmax
comp=Z,19nm,1.0s
ORV Oroville 85.70 40 *eP* **P** **14 06 58.4 +0.7**
comp=Z,19nm,1.0s
DAC Darwin (Calif) 85.77 44 *eP* **P** **14 07 00.0 +1.7**
DAC pmax pmax
comp=Z,14nm,1.1s
DAC Darwin (Calif) 85.77 44 *eP* **P** **14 07 00.0 +1.7**
comp=Z,14nm,1.1s
WDC Whiskeytown Da 85.84 38 *eP* **P** **14 06 59.2 +0.9**
WDC pmax pmax
comp=Z,38nm,1.1s
WDC Whiskeytown Da 85.84 38 *eP* **P** **14 06 59.2 +0.9**
comp=Z,38nm,1.1s
TIN Tinemaha, Big 85.90 43 P **P** **14 07 00.3 +1.5**
baz=228
MLAC Mammoth, Mammo 85.92 43 P **P** **14 07 00.5 +1.4**
baz=228
IRM Iron Mountain 85.93 47 P **P** **14 07 00.0 +1.0**
baz=230,SNR=13
113A Mohawk Valley, 85.96 49 *eP* **P** **14 07 00.8 +1.7**
KULM Kulim 85.97 278 *eP* **P** **14 06 59.3 -0.3**
comp=Z,81nm,1.2s
KULM LR LR
comp=Z,4μm,20.0s
VLA Vladivostok 85.98 325 *c iP* **P** **14 06 59.2 +0.3**
VLA pmax pmax
comp=Z,42nm,1.0s
GMRC Granite Mounta 86.01 46 P **P** **14 07 01.3 +1.8**
baz=230
N02D Trinity Center 86.03 38 P **P** **14 07 00.9 +1.6**
baz=225,SNR=8.3
O03D Paynes Creek 86.04 39 P **P** **14 07 00.1 +0.6**
baz=226,SNR=6.7
Y12C Blythe 86.08 48 P **P** **14 07 00.7 +1.1**
baz=231
214A Organ Pipe Nat 86.09 50 P **P** **14 07 01.1 +1.3**
baz=232
WAKR Walker 86.16 42 *eP* **P** **14 07 02.3 +2.1**
comp=Z,60nm,1.3s
NJ2 Nanjing 86.21 310 *eP* **P** **14 07 00.6 +0.3**
NJ2 S **S** **14 17 39.4 +5.0**
NJ2 pmax pmax
comp=Z,53nm,1.0s
NJ2 pmax pmax
comp=Z,2μm,10.3s
NJ2 LR LR
comp=Z,1μm,22.8s
NJ2 LR LR
comp=Z,1μm,20.1s
NJ2 LR LR
comp=Z,1μm,19.5s
M02C Callahan 86.24 38 P **P** **14 07 01.6 +1.2**
baz=225

PSI Prapat 86.25 275 P **P** **14 06 58.8 -2.4**
comp=Z,21nm,0.9s,baz=174,slow=3.7,SNR=15
PSI Prapat 86.25 275 *e*P **P** **14 06 59.5 -1.7**
PSI pmax pmax
comp=Z,107nm,1.2s
PSI Prapat 86.25 275 *e*P **P** **14 06 59.5 -1.7**
comp=Z,107nm,1.2s
TUQ Turquoise Moun 86.26 46 P **P** **14 07 01.6 +0.9**
baz=230
SHOC Shoshone, Teco 86.34 45 P **P** **14 07 01.4 +0.5**
baz=230,SNR=11
FURC Furnace Creek, 86.34 44 P **P** **14 07 01.8 +1.0**
baz=229
GRAC Grapevine Rang 86.38 44 P **P** **14 07 02.9 +1.8**
baz=229,SNR=9.9
L02D Cave Junction, 86.39 37 P **P** **14 07 02.9 +1.9**
baz=225
LDFC Landfair 86.54 46 *e*P **P** **14 07 03.8 +1.8**
comp=Z,144nm,1.2s
YBH Yreka Blue Hor 86.56 37 *e*P **P** **14 07 03.9 +1.9**
YBH pmax pmax
comp=Z,29nm,1.0s
YBH Yreka Blue Hor 86.56 37 *e*P **P** **14 07 03.9 +1.9**
comp=Z,29nm,1.0s
NEE2 Needles Airpor 86.66 47 P **P** **14 07 03.9 +1.4**
baz=231
CHGN Chignik 86.66 10 *e*P **P** **14 07 02.5 +0.6**
GSI Gunungsitoli 86.69 273 P **P** **14 07 02.9 -0.3**
comp=Z,188nm,1.1s
GSI Gunungsitoli 86.69 273 *e*P **P** **14 07 02.5 -0.7**
comp=Z,248nm,1.2s
USRK Ussuriysk Ar. 86.72 326 P **P** **14 07 02.7 +0.1**
comp=Z,65nm,0.9s,baz=143,slow=3.0,SNR=96
PAYG Puerto Ayora 86.74 89 PFAKE 14 07 20.0 +17
PAYG LR LR
comp=Z,4μm,21.0s
UBPT Khong Chiam 86.91 289 P **P** **14 07 05.1 +1.0**
comp=Z,44nm,0.9s,comp=Z,1μm
PAHR Pah Rah Range 87.00 41 *e*P **P** **14 07 04.2 0.0**
comp=Z,33nm,1.4s
TPNV Topopah Spring 87.03 44 P **P** **14 07 05.4 +0.9**
baz=230,SNR=16
TPNV Topopah Spring 87.03 44 *e*P **P** **14 07 05.0 +0.5**
TPNV pmax pmax
comp=Z,31nm,1.0s
TPNV Topopah Spring 87.03 44 *e*P **P** **14 07 05.0 +0.5**
comp=Z,30nm,1.0s
HUMO Hull Mountain 87.05 37 *e*P **P** **14 07 06.9 +2.7**
comp=Z,63nm,1.6s
M04C Macdoel 87.06 38 P **P** **14 07 05.5 +1.1**
baz=226
Y14A Wickenburg 87.18 48 *e*P **P** **14 07 06.3 +1.2**
W13A Hualapai Mount 87.33 47 *e*P **P** **14 07 07.4 +1.4**
TYV Tymovskoe 87.38 336 *e*P **P** **14 07 06.0 +0.4**
TYV *e*S **SKSac** **14 17 32.0 +0.1**
TYV pmax pmax
comp=Z,112nm,1.2s
TYV pmax pmax
comp=Z,1μm,10.0s
TYV smax smax
comp=N,1μm,12.0s
SHPR Sheep Range 87.42 45 *e*P **P** **14 07 08.2 +1.9**
comp=N,108nm,2.0s
I03D Drain, OR 87.61 36 P **P** **14 07 08.3 +1.4**
baz=225
TUC Tucson 87.67 51 P **P** **14 07 08.4 +0.9**
baz=233
TUC Tucson 87.67 51 *e*P **P** **14 07 08.6 +1.0**
TUC pmax pmax
comp=Z,52nm,1.3s
TUC MLR MLR
comp=Z,3μm,22.0s
TUC Tucson 87.67 51 *e*P **P** **14 07 08.6 +1.0**
comp=Z,52nm,1.3s
TUC LR LR
comp=Z,3μm,22.0s
K04D Chiloquin, OR 87.69 37 P **P** **14 07 08.9 +1.4**
baz=226
MOD Modoc Plateau 87.97 39 *e*P **P** **14 07 09.9 +1.0**
comp=Z,11nm,0.8s
TPTI 87.99 275 P **P** **14 07 08.2 -1.2**
TRTT Trang 88.05 280 P **P** **14 07 10.2 +0.5**
comp=Z,87nm,0.9s,comp=Z,1μm
319A Douglas 88.15 52 *e*P **P** **14 07 11.8 +1.9**
I04A Tendick Farm, 88.16 36 P **P** **14 07 10.5 +0.9**
baz=225
HPIG 88.19 58 *e*P **P** **14 07 11.3 +1.0**
comp=Z,24nm,1.3s
MDJ Mudanjiang 88.21 325 P **P** **14 07 10.3 +0.6**
MDJ pP PcP 14 07 13.1 +1.7
MDJ sP pP 14 07 15.2 -0.8
MDJ pmax pmax
comp=Z,76nm,0.9s
MDJ pmax pmax
comp=Z,940nm,5.5s
MDJ LR LR
comp=Z,2μm,22.3s
MDJ LR LR
comp=Z,410nm,28.7s
MDJ LR LR
comp=Z,2μm,15.9s
MDJ Mudanjiang 88.21 325 PFAKE 14 07 20.0 +10
MDJ LR LR
comp=Z,2μm,22.0s
K05A Summer Lake 88.22 38 *e*P **P** **14 07 11.6 +1.5**
comp=Z,38nm,1.1s
CHBT CHBT 88.25 286 P **P** **14 07 12.9 +2.3**
comp=Z,52nm,1.5s,comp=Z,3μm
R11A Troy Canyon, C 88.33 44 P **P** **14 07 11.3 +0.6**
baz=230,SNR=6.3
R11A Troy Canyon, C 88.33 44 *e*P **P** **14 07 12.2 +1.5**
comp=Z,11nm,1.2s
WHN Wuhan 88.40 306⇑ *i*P **P** **14 07 11.6 +0.6**
WHN pmax pmax
comp=Z,210nm,1.2s
WHN pmax pmax
comp=Z,2μm,3.4s
WHN LR LR
comp=Z,6μm,25.1s
WHN LR LR
comp=Z,3μm,13.4s
WHN LR LR
comp=Z,12μm,22.4s
J05D Fort Rock, OR 88.42 37 P **P** **14 07 11.2 +0.3**
baz=226,SNR=7.3
OHAK Old Harbor 88.42 13 *e*P **P** **14 07 10.7 +0.4**
comp=Z,124nm,1.5s
X16A Lo Mia Camp, P 88.50 49 *e*P **P** **14 07 13.2 +1.5**
HABR Khabarovsk 88.50 330*c i*P **P** **14 07 11.3 +0.3**
HABR *e**SP **sP** **14 07 19.0 -0.5**
HABR *e* 14 10 38.0
HABR *e*S **SKSac** **14 17 37.2 -1.5**
HABR *e**SS **SKKSac** **14 17 48.7 -0.9**
HABR *e*SS **SS** **14 23 47.2 +0.1**
HABR *e*SSS SSS 14 27 21.2
HABR pmax pmax
comp=Z,1μm,3.1s
HABR MLR MLR
comp=Z,1μm,19.0s
KRAB Krabi 88.67 280 P P 14 07 19.4 +6.8
comp=Z,18μm,0.6s,comp=Z,564μm
BMN Battle Mountai 88.72 41 *e*P **P** **14 07 14.0 +1.6**
BMN pmax pmax
comp=Z,62nm,1.7s
BMN Battle Mountai 88.72 41 *e*P **P** **14 07 14.0 +1.6**
comp=Z,62nm,1.7s
G03D McMinnville, O 88.73 35 P **P** **14 07 13.4 +1.3**
baz=225
DL2 Dalian 88.74 317⇑ *i*P **P** **14 07 12.8 +0.5**
DL2 SKS **SKSac** **14 17 40.2 -0.5**
DL2 S **ScS** **14 18 01.6 -2.2**
DL2 pmax pmax
comp=Z,85nm,1.2s
DL2 pmax pmax
comp=Z,850nm,5.4s
DL2 LR LR
comp=Z,2μm,21.0s
DL2 LR LR
comp=Z,1μm,20.8s
DL2 LR LR
comp=Z,2μm,23.5s
LCO Las Campanas 88.82 123 PFAKE 14 07 30.0 +16
LCO LR LR
comp=Z,3μm,20.0s
LCMT Little Creek M 88.93 46 *e*P **P** **14 07 14.4 +0.9**
comp=Z,44nm,1.3s
SKNT Sakolnakorn 89.01 290 P **P** **14 07 14.8 +0.7**
comp=Z,70nm,1.1s
KDAK Kodiak Island 89.08 13 *e*P **P** **14 07 15.3 +1.8**
KDAK pmax pmax
comp=Z,322nm,1.4s
KDAK MLR MLR
comp=Z,2μm,21.0s
KDAK Kodiak Island 89.08 13 *e*P **P** **14 07 15.3 +1.8**
comp=Z,322nm,1.4s
KDAK LR LR
comp=Z,2μm,21.0s
I05D Terrebonne, OR 89.10 36 P **P** **14 07 14.9 +0.9**
baz=226
CCUT Cedar City 89.19 45 *e*P **P** **14 07 15.8 +1.0**
comp=Z,48nm,1.4s
WUAZ Wupatki 89.21 48 P **P** **14 07 15.8 +1.0**
baz=233
WUAZ Wupatki 89.21 48 *e*P **P** **14 07 16.3 +1.4**
comp=Z,60nm,1.3s
WUAZ LR LR
comp=Z,4μm,22.0s
WVOR Wild Horse Val 89.24 39 *e*P **P** **14 07 16.4 +1.6**
WVOR pmax pmax
comp=Z,65nm,1.6s
WVOR MLR MLR
comp=Z,5μm,19.0s
WVOR Wild Horse Val 89.24 39 *e*P **P** **14 07 16.4 +1.6**
comp=Z,65nm,1.6s
WVOR LR LR
comp=Z,5μm,19.0s
SURT Suratani 89.37 281 P **P** **14 07 18.5 +2.6**
comp=Z,18nm,1.1s,comp=Z,453nm
F04D Rainier, OR 89.47 34 P **P** **14 07 17.0 +1.4**
baz=225
SNY Shenyang 89.51 320⇑ P **P** **14 07 15.6 -0.2**
SNY pmax pmax
comp=Z,62nm,1.4s
SNY pmax pmax
comp=Z,970nm,6.8s
SNY LR LR
comp=Z,1μm,20.3s
SNY LR LR
comp=Z,1μm,21.7s
SNY LR LR
comp=Z,2μm,21.0s
E03A Lebam 89.53 34 P **P** **14 07 17.6 +1.8**
PATY Pattaya 89.56 285 P **P** **14 07 19.6 +2.8**
comp=Z,16nm,0.9s
TRQA Tornquist 89.58 134 PFAKE 14 07 30.0 +13
TRQA LR LR
comp=Z,5μm,21.0s
KHON Khomkaen 89.64 289 P **P** **14 07 18.7 +1.6**
comp=Z,25nm,0.9s
G05D Wamic, OR 89.73 36 P **P** **14 07 17.5 +0.6**
baz=226
CN2 Changchun 89.80 322 *e*P **P** **14 07 16.4 -0.8**
CN2 *e*pP pP 14 07 22.8 -0.7
CN2 PP **PP** **14 10 53.2 +3.1**
CN2 pmax pmax
comp=Z,130nm,1.1s
CN2 pmax pmax
comp=Z,800nm,4.0s
CN2 LR LR
comp=Z,2μm,24.0s
CN2 LR LR
comp=Z,2μm,24.0s
CN2 LR LR
comp=Z,3μm,25.0s
121A Cookes Peak, D 89.85 52 P **P** **14 07 18.4 +0.4**
baz=235
TIA Tai'an 89.88 312⇑ P **P** **14 07 18.2 +0.4**
TIA SKS **SKSac** **14 17 48.3 +0.8**
TIA S **SKKSac** **14 18 01.5 +0.9**
TIA pmax pmax
comp=Z,70nm,1.2s
TIA pmax pmax
comp=Z,1μm,9.0s
TIA LR LR
comp=Z,2μm,26.0s
TIA LR LR
comp=Z,2μm,21.0s
TIA LR LR
comp=Z,4μm,25.0s
NKL Nikolayevsk 89.96 336 *i* P **P** **14 07 17.0 -0.7**
NKL *e*S **SKSac** **14 17 44.0 -3.1**
NKL pmax pmax
comp=N,50nm,1.0s
NKL pmax pmax
comp=Z,170nm,1.0s
NKL pmax pmax
comp=Z,900nm,11.0s
NKL MLR MLR
comp=N,2μm,18.0s
NKL MLR MLR
comp=E,1μm,18.0s
NKL MLR MLR
comp=Z,3μm,18.0s
NLWA Neilton Lookou 89.99 33 *e*P **P** **14 07 19.5 +1.4**
comp=Z,39nm,1.2s
NLWA LR LR
comp=Z,3μm,20.0s
W18A Petrified Fore 90.04 49 P **P** **14 07 19.6 +0.8**
baz=234
ELK Elko 90.07 42 *e*P **P** **14 07 20.3 +1.4**
ELK pmax pmax
comp=Z,23nm,1.6s
ELK Elko 90.07 42 *e*P **P** **14 07 20.3 +1.4**
comp=Z,23nm,1.6s
HOPE Hope Point 90.08 158 PFAKE 14 07 30.0 +11
HOPE LR LR
comp=Z,3μm,22.0s
G06A Carlson Farm, 90.08 36 *e*P **P** **14 07 19.2 +0.7**
comp=Z,54nm,1.3s
MTPU Mount Pierson 90.23 46 *e*P **P** **14 07 21.3 +1.4**
comp=Z,31nm,1.2s
KLR Kul'dur 90.52 329*c i*P **P** **14 07 20.7 +0.3**
MSU Marysvale 90.52 45 *e*P **P** **14 07 22.7 +1.7**
MSU Marysvale 90.52 45 *e*P **P** **14 07 22.7 +1.7**
LON Longmire 90.53 34 *e*P **P** **14 07 21.4 +0.7**
LON pmax pmax
comp=Z,15nm,1.0s
LON Longmire 90.53 34 *e*P **P** **14 07 21.4 +0.7**
comp=Z,15nm,1.0s
DIB Dawson Inlet, 90.75 25 *e*P **P** **14 07 23.4 +2.0**
D05A Enumclaw 90.75 34 *e*P **P** **14 07 23.6 +2.0**
comp=Z,120nm,1.3s
CNPM China Poot 90.97 13 *e*P **P** **14 07 23.3 +1.0**
comp=Z,100nm,1.2s
G08A Pilot Rock 90.98 37 *e*P **P** **14 07 19.8 -3.0**
comp=Z,45nm,0.8s
TXAR Lajitas Array 90.99 57 P **P** **14 07 24.5 +1.3**
comp=Z,3.4nm,0.8s,baz=293,slow=6.4,SNR=10
TXAR PKKPbc **PKKPbc** **14 24 49.4 +1.8**
comp=Z,0.6nm,0.9s,baz=46,slow=3.6,SNR=5.5
TXAR Lajitas Array 90.99 57 P **P** **14 07 24.5 +1.3**
TXAR pmax pmax
comp=Z,4.0nm,0.8s
TXAR pmax pmax
comp=Z,1.0nm,0.9s
HOM Homer 91.01 13 *e*P **P** **14 07 23.9 +1.5**
comp=Z,268nm,1.2s
MNTX Cornudas Mount 91.06 54 P **P** **14 07 23.9 +0.5**
baz=236
MNTX Cornudas Mount 91.06 54 *e*P **P** **14 07 24.1 +0.6**
comp=Z,35nm,1.5s
MNTX LR LR
comp=Z,1μm,21.0s
PGC Sidney 91.09 32 *e*P **P** **14 07 24.0 +1.0**
DUG Dugway, Tooele 91.16 44 P **P** **14 07 24.6 +0.8**
baz=232
DUG Dugway, Tooele 91.16 44 *e*P **P** **14 07 25.9 +2.0**
DUG pmax pmax
comp=Z,27nm,1.6s
DUG MLR MLR
comp=Z,3μm,19.0s
DUG Dugway, Tooele 91.16 44 *e*P **P** **14 07 25.9 +2.0**
comp=Z,27nm,1.6s
DUG LR LR
comp=Z,3μm,19.0s
BRLK Bradley Lake 91.26 13 *e*P **P** **14 07 24.4 +0.8**
PBKT Sadao Pong 91.29 288 P **P** **14 07 28.3 +3.5**
comp=Z,55nm,1.0s,comp=Z,1μm
Y22D IRIS PASSCAL I 91.33 51 P **P** **14 07 25.5 +0.7**
baz=235
LAZ Ladron 91.36 51 *e*P **P** **14 07 26.3 +1.3**
HAWA Hanford 91.43 36 *e*P **P** **14 07 25.3 +0.6**
comp=Z,31nm,1.1s
HAWA LR LR
comp=Z,3μm,20.0s
MFID Camas Ranch 91.44 40 *e*P **P** **14 07 25.6 +0.5**
comp=Z,34nm,1.1s
B05A Bryant 91.45 33 P **P** **14 07 25.3 +0.6**
baz=226,SNR=10
A04D Lummi Island 91.49 33 P **P** **14 07 25.9 +1.0**
baz=225
BGU Big Grassy Mou 91.49 43 *e*P **P** **14 07 29.4 +4.0**
comp=Z,45nm,1.8s
CMIG Matias Romero 91.51 71 P **P** **14 07 28.6 +2.8**
comp=Z,5.7nm,1.1s,baz=242,slow=4.6,SNR=4.9
RSO Redoubt South 91.56 12 *e*P **P** **14 07 25.5 +0.2**
BNM Barren Site 91.57 51 *e*P **P** **14 07 25.9 -0.1**
BMO Blue Mountains 91.57 38 *e*P **P** **14 07 25.9 +0.4**
comp=Z,45nm,1.6s
BMO LR LR
comp=Z,3μm,21.0s
TMUT Trail Mountain 91.60 45 *e*P **P** **14 07 27.9 +1.8**
comp=Z,28nm,0.9s
BBB Bella Bella 91.65 28 P **P** **14 07 26.9 +1.3**
comp=Z,23nm,1.1s,baz=233,slow=4.6,SNR=13
BBB S **SKSac** **14 18 00.9 +4.1**
comp=Z,4.1nm,0.8s,baz=4.4,slow=3.0,SNR=4.5
BBB Bella Bella 91.65 28 *e*P **P** **14 07 27.2 +1.6**
LPM Los Pinos Moun 91.66 51 *e*P **P** **14 07 25.3 -1.0**
SVW2 Sparrevohn 91.69 10 *e*P **P** **14 07 25.2 -0.4**
comp=Z,23nm,1.2s
ENH Enshi 91.73 304 PFAKE 14 07 40.0 +13
ENH LR LR
comp=Z,2μm,21.0s
SRDT SRDT 91.74 285 P P 14 07 34.1 +7.2
comp=Z,143nm,1.0s
GYA Guiyang 91.79 299 P **P** **14 07 28.0 +0.9**
GYA pP sP 14 07 34.2 -1.5
GYA PP **PP** **14 11 09.5 +3.1**
GYA SKS **SKSac** **14 17 58.5 -0.7**
GYA S **S** **14 18 25.0 -2.4**
GYA SS **SS** **14 24 37.7 +1.8**
GYA pmax pmax
comp=Z,40nm,1.0s
GYA pmax pmax
comp=Z,160nm,8.5s
GYA LR LR
comp=Z,740nm,21.5s
GYA LR LR
comp=Z,680nm,22.0s
GYA LR LR
comp=Z,690nm,21.8s
SEW Seward 91.85 13 *e*P **P** **14 07 27.3 +1.0**
comp=Z,49nm,1.1s
SRU San Rafael Swe 91.91 46 *e*P **P** **14 07 28.7 +1.3**
SRU pmax pmax
comp=Z,18nm,1.0s
SRU San Rafael Swe 91.91 46 *e*P **P** **14 07 28.6 +1.3**
comp=Z,18nm,1.0s
MVCO Mesa Verde 92.08 48 P **P** **14 07 29.0 +0.7**
baz=234
MVCO Mesa Verde 92.08 48 PFAKE 14 07 40.0 +12
MVCO LR LR
comp=Z,3μm,22.0s
ANMO Albuquerque 92.14 51 P **P** **14 07 29.3 +0.7**
baz=236
ANMO Albuquerque 92.14 51 *e*P **P** **14 07 29.3 +0.7**
ANMO pmax pmax
comp=Z,14nm,1.0s
ANMO MLR MLR
comp=Z,3μm,22.0s
ANMO Albuquerque 92.14 51 *e*P **P** **14 07 29.3 +0.7**
comp=Z,14nm,1.0s
ANMO LR LR
comp=Z,3μm,22.0s
HVU Hansel Valley 92.16 42 *e*P **P** **14 07 29.7 +1.2**
HVU pmax pmax
comp=Z,29nm,1.1s
HVU Hansel Valley 92.16 42 *e*P **P** **14 07 29.7 +1.2**
comp=Z,29nm,1.1s
D08A Wollman Farm, 92.19 35 *e*P **P** **14 07 29.0 +0.8**
comp=Z,28nm,1.0s
PV05 Paradox Valley 92.20 47 *e*P **P** **14 07 30.7 +1.8**
UTTA Uttaradit 92.22 289 P P 14 07 38.0 +9.0
E09A Wood Farm, Sta 92.22 36 *e*P **P** **14 07 29.4 +0.9**
comp=Z,38nm,1.2s
HLID Hailey 92.33 40 P **P** **14 07 30.2 +0.9**
baz=231
HLID Hailey 92.33 40 *e*P **P** **14 07 30.1 +0.8**
comp=Z,15nm,1.0s
HLID LR LR
comp=Z,3μm,19.0s
SPU Mount Spurr 92.36 12 *e*P **P** **14 07 28.8 +0.1**
PV10 Paradox Valley 92.41 47 *e*P **P** **14 07 31.4 +1.5**
PV09 Paradox Valley 92.42 47 *e*P **P** **14 07 31.5 +1.6**
MA2 Magadan 92.44 344 P **P** **14 07 28.1 -1.0**
comp=Z,13nm,0.9s
MA2 S **SKSac** **14 18 01.4 +0.4**
comp=Z,3.3nm,0.8s,baz=0.5,slow=18,SNR=1.9
MA2 Magadan 92.44 344 P **P** **14 07 28.1 -1.0**
MA2 LR LR
comp=Z,2μm,21.0s
PV01 Paradox Valley 92.57 47 *e*P **P** **14 07 31.7 +1.1**
TCUT Toone Canyon 92.57 43 *e*P **P** **14 07 33.5 +3.0**
comp=Z,170nm,1.8s
RC01 Rabbit Creek A 92.70 13 *e*P **P** **14 07 31.0 +0.7**
comp=Z,55nm,1.2s
BJT Baijiatuau 92.75 315 PFAKE 14 07 50.0 +19
BJT LR LR
comp=Z,2μm,19.0s
BJI Beijing 92.76 315 P **P** **14 07 30.9 -0.1**
BJI SS SS 14 24 51.0 +1.9
BJI pmax pmax
comp=Z,40nm,1.8s
BJI pmax pmax
comp=Z,830nm,4.9s
BJI LR LR
comp=Z,1μm,25.6s
BJI LR LR
comp=Z,2μm,23.9s
BJI LR LR
comp=Z,3μm,24.7s
HWUT Hardware Ranch 92.78 43 *e*P **P** **14 07 34.9 +3.5**
comp=Z,17nm,1.1s
HWUT LR LR
comp=Z,3μm,19.0s
NNA Nana 92.84 105 PFAKE 14 07 50.0 +18
NNA LR LR
comp=Z,1μm,21.0s
SUKH Sukhothai 92.86 288 P **P** **14 07 35.8 +3.8**
comp=Z,6.2nm,0.9s
SUA Susitna One 92.86 12 *e*P **P** **14 07 31.8 +0.7**
comp=Z,24nm,1.0s
B08A Colville Reser 92.86 34 *e*P **P** **14 07 32.1 +0.8**
comp=Z,5.8nm,0.9s
EYAK Cordova Ski Ar 93.05 15 *e*P **P** **14 07 33.0 +1.2**
832A Faith Ranch, C 93.17 59 P **P** **14 07 33.4 +0.2**
baz=238
PMR Palmer 93.28 13 *e*P **P** **14 07 32.8 -0.1**
PMR pmax pmax
comp=Z,42nm,1.4s
PMR Palmer 93.28 13 *e*P **P** **14 07 32.8 -0.1**
comp=Z,42nm,1.4s
WRAK Wrangell Islan 93.34 23 PFAKE 14 07 50.0 +17
WRAK LR LR
comp=Z,2μm,21.0s
933A Laredo 93.35 60 P **P** **14 07 34.6 +0.5**
baz=239
TT01 Tatalina 93.35 9 *e*P **P** **14 07 32.8 -0.4**
LAMP Lampang 93.36 289 P **P** **14 07 36.9 +2.5**
comp=Z,8.3nm,0.9s,comp=Z,66nm
TTA Tatalina 93.37 9 *e*P **P** **14 07 34.3 +0.9**
TTA pmax pmax
comp=Z,25nm,1.0s
TTA Tatalina 93.37 9 *e*P **P** **14 07 34.3 +0.9**
comp=Z,24nm,1.0s
S22A 4UR Ranch, Cre 93.47 48 P **P** **14 07 35.4 +0.6**
baz=235
S22A 4UR Ranch, Cre 93.47 48 *e*P **P** **14 07 36.1 +1.3**
034A Hebbronville 93.52 61 P **P** **14 07 35.4 +0.6**
baz=239
DIV Divide 93.56 15 *e*P **P** **14 07 34.8 +0.5**
comp=Z,24nm,1.1s
833A Chaparral WMA, 93.62 60 P **P** **14 07 36.0 +0.6**
baz=239
LVC Limon Verde 93.67 118 P **P** **14 07 37.5 +1.2**
comp=Z,6.2nm,0.6s,baz=299,slow=8.7,SNR=2.5
LVC Limon Verde 93.67 118 P **P** **14 07 37.5 +1.2**
LVC LR LR
comp=Z,3μm,21.0s
035Z Hargill 93.68 62 P **P** **14 07 35.8 +0.2**

baz=239
BMRM Bremner River 93.68 15 *e*P **P 14 07 35.1 +0.3**
AHID Auburn Hatcher 93.75 42 PFAKE 14 07 50.0 +14
AHID LR LR
comp=Z,4µm,19.0s
TIY Taiyuan 93.80 311 *e*P **P 14 07 36.2 +0.2**
TIY SKS **SKSac 14 18 10.3 +0.5**
TIY S **S 14 18 45.5 +0.8**
TIY pmax pmax
comp=Z,44nm,0.5s
TIY pmax pmax
comp=Z,530nm,8.1s
TIY LR LR
comp=Z,2µm,19.4s
TIY LR LR
comp=Z,3µm,24.5s
TIY LR LR
comp=Z,4µm,22.8s
CRQM Cirque 93.83 16 *e*P **P 14 07 37.3 +1.5**
KLU Klutina 93.85 14 *e*P **P 14 07 36.7 +1.0**
SCM Sheep Creek Mo 93.86 14 *e*P **P 14 07 36.9 +1.2**
SCM pmax pmax
comp=Z,35nm,1.1s
SCM Sheep Creek Mo 93.86 14 *e*P **P 14 07 36.9 +1.2**
comp=Z,35nm,1.1s
NEW Newport 93.90 35 P **P 14 07 36.9 +0.7**
baz=229
NEW Newport 93.90 35 PFAKE 14 07 50.0 +14
NEW LR LR
comp=Z,3µm,20.0s
CMAR Chiang Mai Arr 93.90 289 P **P 14 07 36.7 -0.1**
comp=Z,2.7nm,0.9s,baz=142,slow=3.7,SNR=7.5
CMAR PP **PP 14 11 27.9 +5.0**
comp=Z,9.0nm,1.2s,baz=140,slow=6.3,SNR=5.8
934A Benavides 93.92 61 P **P 14 07 37.2 +0.5**
baz=239
O20A White River Ci 93.94 46 P **P 14 07 37.2 +0.4**
baz=235
MCMT McKenzie Canyo 94.00 40 P **P 14 07 38.1 +1.1**
CMMT Chiang Mai 94.07 289 P **P 14 07 41.2 +3.6**
comp=Z,27nm,1.0s,comp=Z,455nm
CHTO Chiang Mai 94.08 289 P **P 14 07 41.9 +4.3**
comp=Z,60nm,1.0s,comp=Z,µm
CHTO Chiang Mai 94.08 289 *e*P **P 14 07 38.7 +1.1**
CHTO pmax pmax
comp=Z,31nm,1.5s
CHTO MLR MLR
comp=Z,2µm,21.0s
CHTO Chiang Mai 94.08 289 *e*P **P 14 07 38.7 +1.1**
comp=Z,31nm,1.5s
CHTO LR LR
comp=Z,2µm,21.0s
MSTX Muleshoe 94.14 53 P **P 14 07 38.1 +0.4**
baz=237
MSTX Muleshoe 94.14 53 *e*P **P 14 07 38.2 +0.4**
KMI Kunming 94.14 296 P **P 14 07 38.6 +0.5**
KMI pP sP 14 07 45.0 -1.6
KMI sP pP 14 07 47.4 +3.0
KMI PP **PP 14 11 26.9 +1.9**
KMI S **S 14 18 46.2 -2.3**
KMI sS sS 14 18 56.3 -2.8
KMI SS **SS 14 25 11.0 +1.2**
KMI pmax pmax
comp=Z,17nm,0.9s
KMI pmax pmax
comp=Z,490nm,6.7s
KMI LR LR
comp=Z,960nm,19.3s
KMI LR LR
comp=Z,1µm,20.8s
KMI LR LR
comp=Z,2µm,22.2s
XAN Xi'an 94.16 307 P **P 14 07 38.6 +0.9**
XAN SKS **SKSac 14 18 13.2 +1.3**
XAN S **ScS 14 18 54.9 +5.6**
XAN pmax pmax
comp=Z,20nm,1.2s
XAN pmax pmax
comp=Z,590nm,11.0s
XAN LR LR
comp=Z,1µm,22.4s
XAN LR LR
comp=Z,2µm,23.4s
XAN LR LR
comp=Z,3µm,23.4s
SMCO Snowmass 94.19 47 *e*P **P 14 07 39.6 +1.4**
REDW Red Top Meadow 94.25 42 *e*P **P 14 07 38.6 +0.5**
TPAW Teton Pass 94.27 42 *e*P **P 14 07 39.0 +0.7**
comp=Z,19nm,1.0s
SDCO Great Sand Dun 94.34 49 P **P 14 07 39.4 +0.6**
baz=236
SDCO Great Sand Dun 94.34 49 *e*P **P 14 07 40.0 +1.2**
comp=Z,10nm,1.4s
SDCO LR LR
comp=Z,2µm,22.0s
KVTX Kingsville 94.36 61 PFAKE 14 07 50.0 +11
KVTX LR LR
comp=Z,2µm,21.0s
SNOW Snow King Moun 94.37 42 *e*P **P 14 07 39.3 +0.6**
comp=Z,23nm,0.9s
633A Saathoff Ranch 94.37 59 P **P 14 07 39.0 +0.3**
baz=239
JCT Junction City 94.43 58 P **P 14 07 39.1 0.0**
baz=239
JCT Junction City 94.43 58 PFAKE 14 07 50.0 +11
JCT LR LR
comp=Z,3µm,22.0s
CAST Castle Rocks 94.44 11 *e*P **P 14 07 37.3 -0.9**
DLMT Dillon 94.47 40 *e*P **P 14 07 39.9 +0.9**
comp=Z,22nm,1.2s
IMW Indian Meadow 94.52 41 *e*P **P 14 07 40.2 +0.7**
comp=Z,10.0nm,0.9s
LOHW Long Hollow 94.55 42 *e*P **P 14 07 40.0 +0.5**
comp=Z,30nm,1.4s
MSO Missoula 94.64 38 P **P 14 07 40.6 +0.9**
baz=231
BW06 Boulder Array 94.66 43 P **P 14 07 41.0 +0.9**
baz=234
BW06 Boulder Array 94.66 43 *e*P **P 14 07 40.8 +0.7**
BW06 LR LR
comp=Z,3µm,19.0s
PD31 Pinedale Array 94.66 43 *e*P **P 14 07 41.9 +1.8**
PDAR Pinedale Array 94.66 43 P **P 14 07 39.9 -0.2**
comp=Z,3.8nm,1.1s,baz=215,slow=4.9,SNR=13
PDAR PKKPbc **PKKPbc 14 24 38.5 -0.2**
comp=Z,1.1nm,0.8s,baz=58,slow=3.7,SNR=6.5
PDAR LR LR 14 45 59.8
comp=Z,3µm,18.5s,baz=244,slow=33
T25A Trinidad 94.73 50 P **P 14 07 40.6 +0.1**
baz=237
T25A Trinidad 94.73 50 *e*P **P 14 07 41.3 +0.8**
KTH Kantishna Hill 94.76 11 *e*P **P 14 07 39.1 -0.6**
FLWY Flagg Ranch 94.77 41 *e*P **P 14 07 42.0 +1.5**
TRF Thorofare Moun 94.78 12 *e*P **P 14 07 39.4 -0.6**
QLMT Earthquake Lak 94.80 41 *e*P **P 14 07 42.5 +1.8**
LRM Limekiln Ridge 94.83 39 *e*P **P 14 07 42.0 +1.2**
SKAG Skagway 94.83 20 *e*P **P 14 07 42.5 +2.5**
comp=Z,22nm,1.3s
DHY Denali Highway 94.98 13 *e*P **P 14 07 42.2 +1.3**
RND Reindeer 95.00 12 *e*P **P 14 07 40.8 -0.1**
RND Reindeer 95.00 12 *e*P **P 14 07 40.8 -0.1**
H17A Grant Village 95.03 41 P **P 14 07 42.7 +1.0**
baz=234
H17A Grant Village 95.03 41 *e*P **P 14 07 44.5 +2.7**
SEY Seymchan 95.08 346 P **P 14 07 40.3 -0.8**
comp=Z,15nm,0.8s,baz=149,slow=4.6,SNR=4.9
433A Art 95.10 58 P **P 14 07 41.8 -0.3**
baz=239
YHH Holmes Hill 95.11 41 *e*P **P 14 07 45.5 +3.3**
BOZ Bozeman (W) 95.15 40 P **P 14 07 42.9 +0.8**
baz=233
BOZ Bozeman (W) 95.15 40 *e*P **P 14 07 42.8 +0.7**
BOZ pmax pmax
comp=Z,32nm,1.6s
BOZ MLR MLR
comp=Z,3µm,22.0s
BOZ Bozeman (W) 95.15 40 *e*P **P 14 07 42.8 +0.7**
comp=Z,32nm,1.6s
BOZ LR LR
comp=Z,3µm,22.0s
534A Blanco 95.19 59 P **P 14 07 42.6 +0.1**
baz=239
LKWY Lake 95.23 41 PFAKE 14 08 00.0 +17
LKWY LR LR
comp=Z,6µm,19.0s
Q24A Divide 95.25 48 P **P 14 07 43.4 +0.4**
baz=236
PAX Paxson 95.27 14 *e*P **P 14 07 42.4 +0.3**
PAX Paxson 95.27 14 *e*P **P 14 07 42.4 +0.3**
MCK McKinley 95.28 12 *e*P **P 14 07 41.7 -0.4**
MCK McKinley 95.28 12 *e*P **P 14 07 41.7 -0.4**
HYT Haines Junctio 95.34 18 *e*P **P 14 07 44.7 +2.2**
ISCO Idaho Springs 95.41 47 P **P 14 07 44.2 +0.6**
baz=236
ISCO Idaho Springs 95.41 47 PFAKE 14 08 00.0 +16
ISCO LR LR
comp=Z,3µm,22.0s
333A Richland Sprin 95.47 57 P **P 14 07 43.9 +0.2**
baz=239
MENT Mentasta 95.62 15 *e*P **P 14 07 44.1 +0.4**
736A Circle Diamond 95.70 60 P **P 14 07 45.5 +0.7**
baz=240
DLBC Dease Lake 95.70 23 P **P 14 07 45.5 +1.3**
comp=Z,1.7nm,0.9s,baz=223,slow=9.3,SNR=3.9
DLBC PKKPbc **PKKPbc 14 24 36.1 -0.3**
comp=Z,1.5nm,0.8s,baz=31,slow=2.7,SNR=4.3
DLBC Dease Lake 95.70 23 *e*P **P 14 07 46.5 +2.3**
DLBC PKKPbc **PKKPbc 14 24 36.1 -0.3**
WRH Wood River Hil 96.11 12 *e*P **P 14 07 45.3 -0.5**
HHC Hu-ho-hao-te 96.11 314 *e*P **P 14 07 46.6 0.0**
HHC PP **PP 14 11 40.3 +0.4**
HHC SKS **SKSac 14 18 24.1 +2.0**
HHC S **ScS 14 19 06.2 +0.9**
HHC pmax pmax
comp=Z,29nm,1.3s
HHC pmax pmax
comp=Z,460nm,9.9s
HHC LR LR
comp=Z,2µm,18.4s
HHC LR LR
comp=Z,3µm,17.8s
HHC LR LR
comp=Z,5µm,18.2s
DOT Dot Lake 96.17 14 *e*P **P 14 07 46.2 0.0**
RLMT Red Lodge 96.21 41 P **P 14 07 47.7 +0.6**
baz=234
RLMT Red Lodge 96.21 41 PFAKE 14 08 00.0 +13
RLMT LR LR
comp=Z,3µm,19.0s
HDA Harding Lake 96.27 13 *e*P **P 14 07 46.1 -0.5**
CD2 Chengdu 96.27 302 P **P 14 07 48.5 +1.1**
CD2 sP sP 14 07 57.5 +1.5
CD2 PP **PP 14 11 42.1 +0.8**
CD2 SKS **SKSac 14 18 22.5 -0.7**
CD2 S **ScS 14 19 07.6 +0.6**
CD2 sS sS 14 19 18.7 +1.7
CD2 SS **SS 14 25 42.0 +2.5**
CD2 pmax pmax
comp=Z,30nm,0.6s
CD2 pmax pmax
comp=Z,650nm,7.8s
CD2 LR LR
comp=Z,1µm,17.3s
CD2 LR LR
comp=Z,3µm,21.3s
CD2 LR LR
comp=Z,3µm,20.3s
CCB Clear Creek Bu 96.32 12 *e*P **P 14 07 46.1 -0.7**
HIA Hailar 96.33 324 PFAKE 14 08 00.0 +13
HIA LR LR
comp=Z,4µm,21.0s
K22A Casper 96.43 44 P **P 14 07 49.1 +1.0**
baz=236
K22A Casper 96.43 44 *e*P **P 14 07 49.1 +1.0**
COLA College 96.52 12 *e*P **P 14 07 47.3 -0.3**
COLA pmax pmax
comp=Z,28nm,1.0s
COLA MLR MLR
comp=Z,3µm,21.0s
COLA College 96.52 12 *e*P **P 14 07 47.3 -0.3**
comp=Z,28nm,1.0s
COLA LR LR
comp=Z,3µm,21.0s
IL1 Eielson Array 96.60 12 *e*P **P 14 07 46.8 -1.2**
ILAR Eielson Array 96.60 12 P **P 14 07 47.0 -1.1**
comp=Z,7.9nm,1.0s,baz=219,slow=5.2,SNR=39
ILAR PP **PP 14 11 39.6 -3.5**
comp=Z,2.4nm,0.9s,baz=221,slow=7.5,SNR=4.8
ILAR PKKPbc **PKKPbc 14 24 32.7 -1.3**
comp=Z,1.0nm,0.9s,baz=322,slow=1.9,SNR=4.8
ILB Eielson Array 96.60 12 *e*P **P 14 07 47.4 -0.7**
WMOK Wichita Mounta 97.35 54 PFAKE 14 08 10.0 +18
WMOK LR LR
comp=Z,1µm,19.0s
OTAV Otavalo 97.52 94 PFAKE 14 08 10.0 +16
OTAV LR LR
comp=Z,3µm,22.0s
DAWY Dawson 97.58 16 *e*P Pdif 14 07 53.7 +1.0
EGMT Eagleton 97.63 39 PFAKE 14 08 10.0 +17
EGMT LR LR
comp=Z,387µm,22.0s
LPAZ La Paz 97.76 113 P Pdif 14 07 60.0 +4.6
comp=Z,0.7nm,0.7s,baz=348,slow=3.7,SNR=2.1
LPAZ PKKPbc **PKKPbc 14 24 29.4 -0.1**
comp=Z,2.1nm,0.9s,baz=60,slow=6.9,SNR=6.5
LPAZ LR LR 14 44 01.2
comp=Z,2µm,21.4s,baz=252,slow=30
LPAZ La Paz 97.76 113 P Pdif 14 08 00.0 +4.6
LPAZ pmax pmax
comp=Z,1.0nm,0.7s
LPAZ pmax pmax
comp=Z,2.0nm,0.9s
EGAK Eagle 97.78 15 *e*P Pdif 14 07 54.4 +1.0
EGAK LR LR
comp=Z,2µm,20.0s
BILL Bilibino 97.80 354 *de*P Pdif 14 07 54.1 +0.7
BILL *e* 14 11 50.8
BILL pmax pmax
comp=Z,16nm,1.2s
BILL Bilibino 97.80 354 PFAKE 14 08 10.0 +17
BILL LR LR
comp=Z,3µm,20.0s
COLD Coldfoot 98.28 10 *e*P Pdif 14 07 56.8 +1.2
OGNE Ogallala 98.33 48 PFAKE 14 08 10.0 +13
OGNE LR LR
comp=Z,4µm,22.0s
TEIG Tepich 98.50 72 PFAKE 14 08 10.0 +12
TEIG LR LR
comp=Z,34nm,21.0s
CBKS Cedar Bluff 98.75 50 PFAKE 14 08 10.0 +12
CBKS LR LR
comp=Z,3µm,21.0s
RSSD Black Hills 98.75 44 Pdiff Pdif 14 07 59.3 +0.7
baz=238
LZH Lanzhou 98.78 306 *e*P Pdif 14 08 00.8 +2.0
LZH pP sP 14 08 07.5 +0.1
LZH sP pP 14 08 10.0 +4.8
LZH PP **PP 14 12 04.0 +3.3**
LZH SKS **SKSac 14 18 36.0 -0.2**
LZH S **S 14 19 27.2 -0.7**
LZH sS sS 14 19 37.0 -1.5
LZH SS **SS 14 26 17.2 +2.1**
LZH pmax pmax
comp=Z,44nm,1.2s
LZH pmax pmax
comp=Z,410nm,9.7s
LZH LR LR
comp=Z,760nm,16.6s
LZH LR LR
comp=Z,1µm,17.2s
LZH LR LR
comp=Z,3µm,19.5s
LAO LASA Array 98.85 41 Pdiff Pdif 14 08 00.0 +1.3
baz=237
LAO LASA Array 98.85 41 PFAKE 14 08 10.0 +11
LAO LR LR
comp=Z,2µm,19.0s
NATX Nacogdoches 98.89 59 PFAKE 14 08 10.0 +11
NATX LR LR
comp=Z,2µm,19.0s
CPUP Villa Florida 99.96 128 PKKPbc PKKPbc 14 24 23.1 +0.4
comp=Z,3.9nm,0.9s,baz=7.5,slow=2.1,SNR=7.3
CPUP PKKP 14 24 28.9
comp=Z,3.2nm,0.9s,baz=32,slow=3.2,SNR=5.2
T35A Sooner Cattle 100.03 53 Pdiff **Pdif 14 08 04.2 0.0**
baz=241
YAK Yakutsk 100.54 337 *e*P **Pdif 14 08 04.1 -1.6**
YAK *e* 14 12 08.7
YAK *eS* **SKSac 14 18 40.5 -2.7**
YAK *e* 14 19 45.5
YAK *eSS* **SS 14 26 33.1 -5.1**
YAK pmax pmax
comp=Z,15nm,1.4s
YAK pmax pmax
comp=N,3.0nm,1.5s
YAK pmax pmax
comp=E,5.0nm,1.5s
YAK pmax pmax
comp=Z,155nm,3.2s
YAK pmax pmax
comp=N,36nm,3.0s
YAK pmax pmax
comp=E,32nm,3.2s
YAK smax smax
comp=N,157nm,3.5s
YAK smax smax
comp=E,38nm,2.7s
YAK MLR MLR
comp=Z,1µm,21.0s
YAK MLR MLR
comp=N,956nm,21.0s
YAK MLR MLR
comp=E,636nm,23.0s
YAK Yakutsk 100.54 337 PFAKE 14 08 20.0 +14
YAK LR LR
comp=Z,3µm,22.0s
DGMT Dagmar 100.97 40 PFAKE 14 08 20.0 +12
DGMT LR LR
comp=Z,3µm,22.0s
MIAR Mount Ida 101.01 57 PFAKE 14 08 20.0 +11
MIAR LR LR
comp=Z,2µm,22.0s
KSU1 Kansas State U 101.01 51 PFAKE 14 08 20.0 +12
KSU1 LR LR
comp=Z,2µm,21.0s
SONM Songino Array 102.91 318 P **Pdif 14 08 16.5 -0.4**
comp=Z,2.4nm,0.9s,baz=141,slow=7.1,SNR=3.2
SONM PP **PP 14 12 31.6 0.0**
comp=Z,0.4nm,0.5s,baz=116,slow=6.8,SNR=2.9
SONM PKKPbc **PKKPbc 14 24 15.9 +0.4**
comp=Z,1.5nm,0.9s,baz=276,slow=2.8,SNR=4.6
SONM PKKP **PKKPdf 14 24 27.4 +3.5**
comp=Z,1.2nm,0.7s,baz=270,slow=4.4,SNR=4.5
ECSD EROS Data Cent 103.20 47 PFAKE 14 08 30.0 +12
ECSD LR LR
comp=Z,2µm,20.0s
YKA Yellowknife Ar 104.01 25 Pdiff **Pdif 14 08 22.5 +1.3**
comp=Z,0.9nm,0.9s,baz=231,slow=4.7,SNR=3.0
YKA PKKPbc **PKKPbc 14 24 11.1 -1.3**
comp=Z,3.7nm,0.9s,baz=41,slow=2.8,SNR=8.1
YKA PKKP **PKKPdf 14 24 21.2 -0.9**
comp=Z,1.1nm,0.7s,baz=42,slow=3.3,SNR=4.3
DGAR Diego Garcia 104.06 253 PFAKE 14 08 40.0 +17
DGAR LR LR
comp=Z,4µm,20.0s
BRAL Brewton 104.41 62 PFAKE 14 08 40.0 +16
BRAL LR LR
comp=Z,2µm,21.0s
SCIA State Center 104.60 50 PFAKE 14 08 40.0 +16
SCIA LR LR
comp=Z,2µm,21.0s
FFC Flin Flon 105.33 36 PFAKE 14 13 00.0
FFC LR LR
comp=Z,2µm,20.0s
LSA Lhasa 105.37 296 PFAKE 14 13 00.0
LSA LR LR
comp=Z,2µm,21.0s
AGMN Agassiz Nation 105.74 43 PFAKE 14 13 00.0
AGMN LR LR
comp=Z,3µm,19.0s
SAML Samuel 105.82 110 PFAKE 14 13 00.0
SAML LR LR
comp=Z,3µm,20.0s
TLY Talaya 106.29 320 PKKP **PKKPdf 14 24 18.9 +1.4**
comp=Z,0.9nm,0.5s,baz=280,slow=5.0,SNR=3.1
ULM Lac du Bonnet 106.59 41 PKKP **PKKPdf 14 24 18.6 +1.7**
comp=Z,5.2nm,0.8s,baz=54,slow=6.0,SNR=4.5
MTDJ Mount Denham 106.66 78 PFAKE 14 13 00.0
MTDJ LR LR
comp=Z,4µm,22.0s
HDIL Hopedale 106.70 53 PFAKE 14 13 00.0
HDIL LR LR
comp=Z,2µm,21.0s
JFWS Jewell Farm 107.02 50 PFAKE 14 13 00.0
JFWS LR LR
comp=Z,1µm,20.0s
TIXI Tiksi 107.41 344 PKKP **PKKPdf 14 24 18.5 +2.6**
comp=Z,0.8nm,0.4s,baz=49,slow=2.8,SNR=3.3
GOGA Godfrey 108.10 61 PFAKE 14 13 00.0
GOGA LR LR
comp=Z,2µm,21.0s
EYMN Ely 108.25 45 PFAKE 14 13 00.0
EYMN LR LR
comp=Z,3µm,21.0s
SPB Sao Paulo 108.45 132 PFAKE 14 13 00.0
SPB LR LR
comp=Z,2µm,20.0s
SDV Santo Domingo 108.48 90 PFAKE 14 13 00.0
SDV LR LR
comp=Z,2µm,20.0s
COWI Conover 109.01 47 PFAKE 14 13 00.0
COWI LR LR
comp=Z,2µm,20.0s
GTBY Guantanamo Bay 109.46 78 PFAKE 14 13 10.0
GTBY LR LR
comp=Z,1µm,21.0s
NHSC New Hope 110.52 63 PFAKE 14 13 10.0
NHSC LR LR
comp=Z,1µm,22.0s
ACSO Alum Creek Sta 111.03 55 PFAKE 14 13 10.0
ACSO LR LR
comp=Z,3µm,22.0s
AAM Ann Arbor 111.28 53 PFAKE 14 13 10.0
AAM LR LR
comp=Z,2µm,22.0s
BLA Blacksburg 111.83 59 PFAKE 14 13 10.0
BLA LR LR
comp=Z,2µm,22.0s
SDDR Presa de Saban 112.34 80 PFAKE 14 13 10.0
SDDR LR LR
comp=Z,2µm,22.0s
PTGA Pitinga 112.96 105 PFAKE 14 13 10.0
PTGA LR LR
comp=Z,37µm,19.0s
CNNC Cliffs of the 113.06 61 PFAKE 14 13 10.0
CNNC LR LR
comp=Z,1µm,20.0s
WMQ Urumqi 113.24 308 *e*PKP **PKiKP 14 12 53.1 -3.3**
WMQ SKKS 14 20 43.6
WMQ AMB AMB
comp=Z,170nm,6.2s
WMQ LR LR
comp=Z,1µm,19.0s
WMQ LR LR
comp=Z,2µm,20.0s
WMQ LR LR
comp=Z,3µm,22.5s
GRTK Grand Turk 113.50 78 PFAKE 14 13 10.0
GRTK LR LR
comp=Z,1µm,22.0s
CBN Corbin Frederi 114.44 59 PFAKE 14 13 10.0 +11
CBN LR LR
comp=Z,1µm,20.0s
ABPO Ambohimpanom 115.83 227 PFAKE 14 13 20.0 +18
ABPO LR LR
comp=Z,1µm,19.0s
OPO Ambohidratompo 116.18 227 PKP **PKPdf 14 13 04.1 +1.1**
comp=Z,5.0nm,0.8s,baz=72,slow=18,SNR=4.4
SJG San Juan 116.43 83 PFAKE 14 13 20.0 +17
SJG LR LR
comp=Z,1µm,21.0s
SUR Sutherland 116.43 197 PKP **PKPdf 14 13 04.2 +1.0**
comp=Z,0.4nm,0.9s,baz=150,slow=6.5,SNR=8.0
SUR Sutherland 116.43 197 PKP **PKPdf 14 13 04.2 +1.0**
SUR LR LR
comp=Z,4µm,20.0s
BINY Binghamton 116.66 55 PFAKE 14 13 20.0 +17
BINY LR LR
comp=Z,2µm,22.0s
MKAR Makanchi Array 117.74 310 PKP **PKPdf 14 13 03.7 -1.1**
comp=Z,13nm,1.0s,baz=81,slow=2.0,SNR=28
ZALV Zalesovo Beam 117.79 319 PKP **PKPdf 14 13 03.4 -1.3**
comp=Z,5.8nm,0.9s,baz=207,slow=1.7,SNR=16
GRGR Grenville 117.81 91 PFAKE 14 13 20.0 +14
GRGR LR LR
comp=Z,2µm,22.0s
LONY Lake Ozonia 118.28 52 PFAKE 14 13 20.0 +14

LONY LR LR
comp=Z,2µm,21.0s
BOSA Boshof 118.67 202 PKP **PKPdf** **14 13 08.4 +0.9**
comp=Z,19nm,1.0s,baz=164,slow=3.4,SNR=16
NVS Novosibirsk 118.87 319 *e*PKIKP **PKPdf** **14 13 05.7 -1.0**
NVS *e* 14 13 12.0
NVS *e* 14 20 02.3
NVS pmax pmax
comp=N,9.0nm,1.6s
NVS pmax pmax
comp=E,8.0nm,1.2s
NRIK Noril'sk 118.96 336 PKP **PKPdf** **14 13 06.5 0.0**
comp=E,7.6nm,0.9s,baz=64,slow=2.8,SNR=7.3
FDF Fort de France 119.38 89 PFAKE 14 13 20.0 +11
FDF LR LR
comp=Z,2µm,21.0s
ANWB Willy Bob 120.05 86 PFAKE 14 13 30.0 +20
ANWB LR LR
comp=Z,2µm,21.0s
BBGH Gun Hill 120.08 91 PFAKE 14 13 30.0 +20
BBGH LR LR
comp=Z,4µm,22.0s
KSH Kashi 120.45 301 *e*PKP **PKPdf** **14 13 09.9 -0.6**
KSH *e*PP **PP** **14 14 44.5 +6.8**
KSH SKS **SKSdf** **14 20 16.6 -5.0**
KSH SKKS **SKKSac** **14 21 32.5 -3.7**
KSH SS **SS** **14 31 12.1 +6.0**
KSH AMB AMB
comp=Z,72nm,4.3s
KSH LR LR
comp=Z,410nm,11.9s
KSH LR LR
comp=Z,610nm,16.7s
KSH LR LR
comp=Z,2µm,22.2s
KURK Kurchatov 120.92 314 PKKPbc PKKPbc 14 23 17.4 +2.4
KURK LR LR
comp=Z,3µm,20.0s
KURBB Kurchatov Arra 120.96 314 PKKPbc PKKPbc 14 23 17.4 +2.5
comp=Z,1.0nm,0.9s,baz=292,slow=4.8,SNR=4.5
TKM2 Tokmak 2 121.50 305 *e*PKIKP **PKPdf** **14 13 11.3 -1.2**
TKM2 MLR MLR
comp=Z,2µm,21.0s
TKM2 Tokmak 2 121.50 305 *e*PKPdf **PKPdf** **14 13 11.3 -1.2**
TKM2 LR LR
comp=Z,2µm,21.0s
LBTB Lobatse 121.87 204 PKP **PKPdf** **14 13 14.4 +0.7**
comp=Z,6.7nm,0.9s,baz=142,slow=2.9,SNR=5.8
PKME Peaks-Kenny Pk 122.09 53 PFAKE 14 13 30.0 +17
PKME LR LR
comp=Z,2µm,20.0s
FRU Bishkek 122.19 304⇑ *e*PKIKP **PKPdf** **14 13 14.0 +0.4**
FRU *e* 14 13 24.0
FRU pmax pmax
comp=Z,60nm,1.6s
AAK Ala-Archa 122.24 304 PKP **PKPdf** **14 13 13.7 -0.1**
comp=Z,4.2nm,0.5s
AAK Ala-Archa 122.24 304 PKP **PKPdf** **14 13 13.7 -0.1**
AAK LR LR
comp=Z,3µm,22.0s
BBSR BB Station 122.61 68 PFAKE 14 13 30.0 +15
BBSR LR LR
comp=Z,2µm,21.0s
EKS2 Erkin-Say 122.76 304 *e*PKIKP **PKPdf** **14 13 14.5 -0.3**
EKS2 MLR MLR
comp=Z,2µm,20.0s
EKS2 Erkin-Say 122.76 304 *e*PKPdf **PKPdf** **14 13 14.5 -0.3**
EKS2 LR LR
comp=Z,2µm,20.0s
FRB Frobisher Bay 123.92 31 PKP **PKPdf** **14 13 15.7 -0.4**
comp=Z,17nm,1.0s,baz=187,slow=0.4,SNR=6.2
SCHQ Schefferville 124.77 41 PKP **PKPdf** **14 13 18.1 0.0**
comp=Z,5.8nm,0.7s,baz=94,slow=1.2,SNR=4.9
MATP Matopo 124.86 209 PKP **PKPdf** **14 13 19.6 0.0**
comp=Z,27nm,1.0s,baz=171,slow=2.3,SNR=26
KKAR Karatay Array 125.20 304 *e*PKIKP **PKPdf** **14 13 18.7 -0.6**
KKAR Karatay Array 125.20 304 *e*PKPdf **PKPdf** **14 13 18.7 -0.6**
BVAR Borovoye Array 126.22 316 PKP **PKPdf** **14 13 19.8 -1.1**
comp=Z,16nm,0.7s,baz=106,slow=3.2,SNR=49
BRVK Borovoye 126.29 316 *e*PKIKP **PKPdf** **14 13 20.9 -0.1**
BRVK MLR MLR
comp=Z,940nm,21.0s
BRVK Borovoye 126.29 316 *e*PKPdf **PKPdf** **14 13 20.9 -0.1**
BRVK LR LR
comp=Z,940nm,21.0s
RCBR Riachuelo 128.83 127 PFAKE 14 13 40.0 +13
RCBR LR LR
comp=Z,4µm,21.0s
LSZ Lusaka 129.52 212 PKP **PKPdf** **14 13 29.7 +1.1**
comp=Z,18nm,1.1s,baz=157,slow=2.1,SNR=12
LSZ SKPbc SKPbc 14 16 51.9 +2.4
comp=Z,2.3nm,0.6s,baz=132,slow=1.3,SNR=3.4
LSZ Lusaka 129.52 212 PKP **PKPdf** **14 13 29.7 +1.1**
LSZ SKPbc SKPbc 14 16 51.9 +2.4
LSZ LR LR
comp=Z,2µm,20.0s
TSUM Tsumeb 129.84 198 PKP **PKPdf** **14 13 30.2 +1.1**
comp=Z,6.1nm,0.8s,baz=285,slow=1.4,SNR=9.9
TSUM Tsumeb 129.84 198 PKP **PKPdf** **14 13 30.2 +1.1**
TSUM LR LR
comp=Z,3µm,19.0s
KBS Kingsbay 130.08 358 *e*PKPdf **PKPdf** **14 13 27.2 -0.4**
KBS IAmb IAmb 14 13 35.5
comp=Z,69nm,1.7s
KBS *e*PP **PP** **14 15 40.5 +0.1**
KBS Kingsbay 130.08 358 *e*PKIKP **PKPdf** **14 13 28.6 +1.0**
KBS Kingsbay 130.08 358 PFAKE 14 13 40.0 +12
KBS LR LR
comp=Z,1µm,21.0s
SFJD Kangerlussuaq 130.57 25 PFAKE 14 13 40.0 +11
SFJD LR LR
comp=Z,2µm,22.0s
SUMG Summit 131.35 15 *i* P **PKPdf** **14 13 31.6 +0.9**
SUMG Summit 131.35 15 *i* PKIKP **PKPdf** **14 13 31.6 +0.9**
SUMG Summit 131.35 15 *e*PKPdf **PKPdf** **14 13 30.6 0.0**
HOPEN Hopen 131.52 353 *e*PP PP 14 15 48.5 -1.1
HOPEN *e*SS SS 14 33 25.5 +3.5
SVE Sverdlovsk 131.58 322 *i* PKIKP **PKPdf** **14 13 31.2 +0.2**
SVE pmax pmax
comp=Z,18nm,1.1s
SVE MLR MLR
comp=Z,4µm,22.0s
SVE MLR MLR
comp=E,3µm,22.0s
HSPB Hornsund (broa 131.81 356 *e*P **PKPdf** **14 13 34.1 +3.2**
HSPB IAmb IAmb 14 13 35.8
comp=Z,39nm,1.2s
HSPB IAMs_20 IAMs_20 15 04 34.9
comp=Z,2µm,22.8s
ARU Arti 132.78 321 PKhKP PKPpre 14 13 24.5
ARU PKP **PKPdf** **14 13 33.4 +0.1**
comp=Z,8.2nm,0.6s
ARU SKPbc **SKPab** **14 17 02.3 +1.1**
comp=Z,1.9nm,0.3s,baz=77,slow=23,SNR=15
ARU SKP 14 17 08.3
comp=Z,12nm,0.8s,baz=162,slow=21,SNR=6.9
ARU Arti 132.78 321 *i* PKIKP **PKPdf** **14 13 32.5 -0.8**
ARU 14 15 54.8
ARU MLR MLR
comp=Z,4µm,22.0s
ARU Arti 132.78 321 PKPpre PKPpre 14 13 24.5
ARU PKP **PKPdf** **14 13 33.4 +0.1**
ARU SKPbc **SKPab** **14 17 02.3 +1.1**
ARU SKP 14 17 08.3
ARU LR LR
comp=Z,3µm,20.0s
ABKAR Akbulak array 132.85 312 *e*PKPdf **PKPdf** **14 13 33.7 +0.1**
SOKR Solikamsk 132.96 326 *d i*PKIKP **PKPdf** **14 13 32.4 -1.0**
SOKR pmax pmax
comp=Z,32nm,1.1s
GEYT Alibeck 133.90 296 PKhKP PKPpre 14 13 21.4
comp=Z,1.6nm,0.7s,baz=89,slow=12,SNR=2.8
GEYT PKP **PKiKP** **14 13 36.9 -0.5**
comp=Z,9.7nm,0.9s,baz=298,slow=3.2,SNR=12
GEYT SKPbc **SKPab** **14 17 06.8 0.0**
comp=Z,38nm,1.0s,baz=294,slow=1.5,SNR=22
AKTO Aktyubinsk 134.00 313 PKhKP PKPpre 14 13 21.6
comp=Z,2.9nm,0.8s,baz=349,slow=0.7,SNR=6.9
AKTO PKP **PKPdf** **14 13 36.2 +0.4**
comp=Z,12nm,0.9s,baz=236,slow=0.3,SNR=17
AKTO SKPbc **SKPab** **14 17 06.5 -0.2**
comp=Z,9.3nm,1.0s,baz=206,slow=6.7,SNR=22
KMBO Kilima Mbogo 135.50 233 PKP **PKPdf** **14 13 41.4 +1.3**
comp=Z,11nm,1.1s,baz=330,slow=0.7,SNR=8.4
KMBO SKPbc **SKPab** **14 17 13.5 -1.3**
comp=Z,4.6nm,0.9s,baz=114,slow=6.0,SNR=4.0
KMBO Kilima Mbogo 135.50 233 PKP **PKPdf** **14 13 41.4 +1.3**
KMBO SKPbc **SKPab** **14 17 13.5 -1.3**
KMBO LR LR
comp=Z,2µm,20.0s
HAMF Hammerfest 136.97 350 *e*PKPdf **PKPdf** **14 13 34.9 -5.8**
HAMF *e*PP **PP** **14 16 19.8 -4.5**
HAMF *e*SS SS 14 34 19.3 -8.4
HAMF IAMs_20 IAMs_20 15 11 13.8
comp=Z,2µm,20.1s
LVZ Lovozero 137.03 343 PFAKE 14 14 00.0 +19
LVZ LR LR
comp=Z,2µm,22.0s
APA Apatity 137.59 343 *i* PKHKP PKPpre 14 13 19.4
APA *i* 14 13 42.5
APA *i* 14 16 25.0
APA pmax pmax
comp=Z,11nm,0.9s
APA MLR MLR
comp=Z,3µm,21.0s
ARCES ARCESS Array B 137.66 349 PKhKP PKPpre 14 13 31.6
comp=Z,11nm,0.9s,baz=357,slow=4.9,SNR=12
ARCES SKPbc **SKiKP** **14 17 17.7 -1.4**
comp=Z,7.9nm,1.0s,baz=4.6,slow=6.1,SNR=3.8
H10S3 ASCENSION HYDR 138.35 153 T T 16 49 48.7
baz=204,slow=74,SNR=239
H10S2 ASCENSION HYDR 138.35 153 T T 16 49 35.8
baz=204,slow=74,SNR=219
H10S1 ASCENSION HYDR 138.37 153 T T 16 49 22.6
baz=204,slow=74,SNR=179
TRO Tromso 138.56 352 *e*PKPdf **PKPdf** **14 13 42.7 -0.9**
TRO IAmb IAmb 14 13 46.2
comp=Z,15nm,0.9s
TRO *e*PP **PP** **14 16 32.1 -2.0**
TRO *e*SS SS 14 34 46.9 +0.4
ASCN Ascension 139.40 153 PFAKE 14 14 00.0 +13
ASCN LR LR
comp=Z,2µm,21.0s
H10N3 ASCENSION HYDR 139.43 153 T T 16 50 24.5
baz=204,slow=75,SNR=196
H10N1 ASCENSION HYDR 139.43 153 T T 16 50 29.9
baz=204,slow=75,SNR=217
H10N2 ASCENSION HYDR 139.44 153 T T 16 50 35.4
baz=204,slow=75,SNR=205
KLMR Klimovskoe 140.17 333 *e*PKHKP PKPpre 14 13 38.9
KLMR pmax pmax
comp=Z,53nm,1.3s
MBAR Mbarara 140.25 227 PFAKE 14 14 00.0 +11
MBAR LR LR
comp=Z,672nm,22.0s
LOF Lofoten 140.59 354 *e*PKPdf **PKPdf** **14 13 41.0 -6.3**
LOF *e*PP **PP** **14 16 45.9 -0.8**
BORG Borgarnes 141.31 16 PFAKE 14 14 00.0 +11
BORG LR LR
comp=Z,2µm,20.0s
VRH Novokhopyorsk 143.82 318 *e*PKIKP **PKPdf** **14 13 54.0 +0.4**
VRH pmax pmax
comp=Z,30nm,0.6s
MOS Moscow 143.90 327 *i* PKHKP PKPpre 14 13 49.5
MOS pmax pmax
comp=Z,103nm,1.0s
MOS MLR MLR
comp=Z,2µm,23.0s
TBLG Delisi 144.19 302 P **PKPab** **14 13 52.5 +0.1**
TBLG Delisi 144.19 302 *e*PKIKP **PKPab** **14 13 52.5 +0.1**
GUDG Gudauri 144.29 303 P **PKPab** **14 13 52.8 -0.2**
GNI Garni 144.34 299 PKP **PKPab** **14 13 52.8 -0.4**
comp=Z,65nm,0.9s,baz=334,slow=5.9,SNR=13
GNI Garni 144.34 299*c i*PKIKP PKPbc 14 13 54.2 +0.6
GNI pmax pmax
comp=Z,455nm,1.7s
GNI Garni 144.34 299 PKP **PKPab** **14 13 52.8 -0.4**
GNI *e*PKPdf PKPbc 14 13 53.1 -0.4
GNI LR LR
comp=Z,2µm,19.0s
FINES FINESS Array B 144.37 341 PKhKP PKPpre 14 13 51.4
comp=Z,107nm,0.9s,baz=64,slow=4.4,SNR=164
ZEI Tsey 144.66 304 *i* PKIKP **PKPab** **14 13 53.8 -0.6**
ZEI pmax pmax
comp=Z,312nm,1.0s
OBN Obninsk 144.74 327 PKP **PKPab** **14 13 53.2 -0.7**
comp=Z,149nm,1.0s,baz=62,slow=0.6,SNR=74
OBN Obninsk 144.74 327*c i*PKIKP **PKPab** **14 13 52.6 -1.3**
OBN *e* 14 17 08.2
OBN pmax pmax
comp=Z,172nm,1.0s
OBN Obninsk 144.74 327 PKP **PKPab** **14 13 53.2 -0.7**
OBN LR LR
comp=Z,2µm,19.0s
NCK Nalchik 144.76 305*d i*PKIKP **PKPdf** **14 13 55.3 -0.3**
GOF Gofitskoye 144.84 308⇓ *i*PKIKP **PKPdf** **14 13 55.8 +0.2**
GOF pmax pmax
comp=Z,195nm,0.9s
ONI Oni 145.02 303 P **PKPbc** **14 13 55.6 +0.1**
ONI Oni 145.02 303 *e*PKIKP **PKPbc** **14 13 55.6 +0.1**
VORR Voronezh 145.07 320 *e*PKIKP **PKPbc** **14 13 53.0 -2.2**
VORR pmax pmax
comp=Z,500nm,1.4s
BGD Bogdanovka 145.10 301 P **PKPdf** **14 13 57.6 +1.1**
EAK Akyaka 145.16 300⇑ *i*P **PKPbc** **14 13 56.3 +0.2**
AKH Akhalkalaki 145.16 301⇓ *i*P **PKPdf** **14 13 57.2 +0.6**
AKH Akhalkalaki 145.16 301 P **PKPab** **14 13 56.4 +0.2**
AKH Akhalkalaki 145.16 301 *e*PKIKP **PKPab** **14 13 56.4 +0.2**
DYDN Diyadin 145.20 298⇑ *i*P **PKPab** **14 13 56.7 +0.2**
KBZ Khabaz 145.22 306 PKP **PKPbc** **14 13 55.6 -0.3**
comp=Z,65nm,1.0s,baz=86,slow=3.4,SNR=123
VSR Storozhevoye 145.29 319 *e*PKIKP **PKPbc** **14 13 55.0 -1.0**
VSR pmax pmax
comp=Z,340nm,1.5s
KIV Kislovodsk 145.32 306*c i*PKIKP **PKPbc** **14 13 56.2 -0.3**
KIV *e* 14 17 16.3
KIV pmax pmax
comp=Z,216nm,1.0s
KIV Kislovodsk 145.32 306 *e*PKPdf **PKPbc** **14 13 56.5 0.0**
KIV LR LR
comp=Z,4µm,20.0s
DIGO Kars 145.36 300⇑ *i*P **PKPbc** **14 13 56.6 -0.3**
NEY Neytrino 145.44 305*ce*PKIKP **PKPab** **14 13 57.3 +0.1**
TVAN Van 145.49 296⇑ *i*P **PKPdf** **14 13 56.6 -0.7**
GEVA Gevas 145.77 296⇑ *i*P **PKPdf** **14 13 57.6 -0.1**
CHVG Ch'k'valeri 145.99 304 P **PKPab** **14 13 59.5 +0.5**
SIRN S¯¬rnak 146.32 295⇑ *i*P **PKPdf** **14 13 57.3 -1.3**
DAGI Agillar 146.38 301⇑ *i*P **PKPdf** **14 13 58.4 -0.2**
HOMI Horasan 146.52 299⇑ *i*P **PKPbc** **14 14 00.3 -0.2**
DBOC Borcka 146.53 302⇑ *i*P **PKPbc** **14 14 00.3 +0.2**
DDEM Demirkent 146.53 301⇑ *i*P **PKPdf** **14 13 58.5 -0.3**
VSU Vasula 146.54 338*c i*PKP2 **PKPdf** **14 13 58.8 +0.7**
VSU pmax pmax
comp=Z,1µm,1.7s
MOL Molde 146.54 356 *e*PKPdf **PKPdf** **14 13 57.8 -0.1**
MOL IAmb IAmb 14 14 10.3
comp=Z,78nm,1.1s
ERZM Erzurum 146.95 299 *i* P **PKPbc** **14 14 01.4 -0.4**
AKN Aaknes 146.97 357 *e*PKPdf **PKPdf** **14 13 59.9 +1.1**
AKN *e*SKSdf **SKSdf** **14 21 03.1 -3.2**
BTMN Batman 147.21 295⇑ *i*P **PKPbc** **14 14 02.4 +0.1**
BNGL BINGÖL 147.22 297⇑ *i*P **PKPbc** **14 14 03.4 +0.9**
SOC Sochi 147.51 306 *e*PKHKP PKPpre 14 13 58.2
SOC *i* 14 14 02.2
SOC *e* 14 17 27.0
SOC *e*PP PP 14 20 43.2
SOC *e*SS SS 14 36 26.2 -5.8
SOC pmax pmax
comp=Z,6.0nm,0.6s
SOC pmax pmax
comp=Z,178nm,1.0s
BGOL Bingol 147.58 297⇑ *i*P **PKPbc** **14 14 03.5 +0.2**
KOPT Kop Dagi 147.60 299⇑ *i*P **PKPbc** **14 14 04.4 +0.8**
FOO Floro 147.62 358 *e*PKPdf **PKPbc** **14 14 01.5 -1.0**
FOO IAmb IAmb 14 14 15.9
comp=Z,258nm,1.5s
FOO *e*SS SS 14 36 34.4 +3.5
MARD Mardin 147.63 294⇑ *i*P **PKPdf** **14 14 00.0 -0.8**
NB2 NORSAR Subarra 147.75 353 PKP **PKPbc** **14 14 02.0 -1.0**
comp=Z,147nm,1.1s,baz=17,slow=3.1
NB2 NORSAR Subarra 147.75 353 PKP **PKPbc** **14 14 02.0 -1.0**
baz=17,slow=3.1
NOA NORSAR Array B 147.75 353 PKP **PKPdf** **14 13 58.7 -1.4**
comp=Z,17nm,1.0s,baz=16,slow=4.4,SNR=82
NOA PKPbc **PKPbc** **14 14 03.1 +0.2**
comp=Z,76nm,1.0s,baz=15,slow=4.5,SNR=72
MZRK Al-Mazaregh 147.78 292 *e*P **PKPab** **14 14 05.3 -1.0**
NC602 NORSAR Array S 148.00 352 *e*PKPdf **PKPdf** **14 14 00.8 +0.4**
MACK Trabzon 148.01 301⇑ *i*P **PKPbc** **14 14 04.2 -0.1**
HYA Hoyanger 148.01 357 *e*PKPdf **PKPdf** **14 14 02.1 +1.7**
HYA IAmb IAmb 14 14 05.3
comp=Z,69nm,1.2s
HYA *e*SS SS 14 36 39.0 +3.7
DIYA Diyarbakir 148.11 296⇑ *i*P **PKPbc** **14 14 04.7 0.0**
SUE Sulen 148.17 358 *e*PKPdf **PKPbc** **14 14 04.0 0.0**
SUE IAmb IAmb 14 14 18.4
comp=Z,121nm,1.1s
SUE *e*SS SS 14 36 42.5 +5.4
SFNV Sufian 148.21 293 *e*P **PKPbc** **14 14 06.1 +1.1**
EUZM Uzumlu 148.25 299⇑ *i*P **PKPbc** **14 14 05.2 +0.1**
HFS Hagfors 148.29 350 PKP **PKPdf** **14 14 00.3 -0.7**
comp=Z,94nm,0.9s,baz=183,slow=3.0,SNR=38
HFS PKPbc **PKPbc** **14 14 04.2 -0.1**
comp=Z,94nm,0.9s,baz=17,slow=1.5,SNR=51
TNCL Tunceli-Merkez 148.44 298⇑ *i*P **PKPbc** **14 14 05.4 -0.2**
KELT Kelkit 148.52 300⇑ *i*P **PKPdf** **14 14 01.9 -0.4**
ASK Askoy 148.74 358 *e*PKPdf **PKPbc** **14 14 05.6 +0.2**
ASK *e*PKPdf **PKPbc** **14 14 05.7 +0.2**
ASK IAmb IAmb 14 14 22.3
comp=Z,88nm,1.1s
ANN Anapa 148.75 309 *e*PKHKP PKPpre 14 14 01.3
ANN *i* 14 14 06.0
ANN pmax pmax
comp=Z,362nm,1.0s
ANN MLR MLR
comp=N,2µm,23.0s
ANN MLR MLR
comp=Z,1µm,23.0s
ANN MLR MLR
comp=E,565nm,23.0s
BER Bergen 148.83 358 IAmb IAmb 14 14 06.7
comp=Z,115nm,1.3s
OSL Oslo 148.88 353 *e*PKPdf **PKPbc** **14 14 04.5 -1.4**
OSL IAmb IAmb 14 14 06.9
comp=Z,94nm,1.1s
IDID Didziasalis 148.91 334 *e*P **PKPbc** **14 14 06.0 -0.1**
IDID IAmb IAmb 14 14 08.3
comp=Z,85nm,1.1s
ELZG Elazig 148.95 297⇑ *i*P **PKPbc** **14 14 08.1 +1.1**
ISAL Salakas 148.96 334 *e*P **PKPbc** **14 14 05.8 -0.4**
ISAL IAmb IAmb 14 14 08.5
comp=Z,70nm,1.1s
LRW Lerwick 148.98 4 *e*PKPdf **PKPbc** **14 14 04.9 -1.2**
REFA Refahiye_ERZ¯ 149.00 299⇑ *i*P **PKPdf** **14 14 02.8 -0.3**
MICGM Minsk 149.04 332⇓ *e*PKP **PKPdf** **14 14 03.0 +0.7**
MICGM ⇓ *e*PKP **PKPbc** **14 14 04.0 -2.4**
MICGM PKPM 14 14 06.0
comp=Z,0.5nm,1.2s
MICGM *e*PP **PP** **14 17 34.0 -3.5**
MICGM *e*PPP PPP 14 21 00.0
MICGM *e*SKSP 14 27 42.0
MICGM *e*SS SS 14 35 32.0 -76
MICGM *e*SSS SSS 14 42 16.0
MICGM *e*LQ LQ 15 00 34.0
MICGM *e*LR LR 15 12 30.0
MICGM LRM MLR 15 22 20.0
comp=Z,5.1nm,20.0s
MNK Minsk 149.04 332⇓ *e*PKIKP **PKPdf** **14 14 03.0 +0.7**
MNK *e* 14 17 34.0
MNK *e*PPP PPP 14 21 00.0
MNK *e*SSS SSS 14 42 16.0
MNK pmax pmax
comp=Z,450nm,1.2s
MNK MLR MLR
comp=Z,5µm,20.0s
GRSN GIRESUNGRSN 149.13 302⇑ *i*P **PKPbc** **14 14 07.3 +0.1**
NACGM Naroch 149.20 333 *e*PKP1 **PKPdf** **14 14 00.0 -2.6**
NACGM *e*PKP2 **PKPbc** **14 14 06.0 -0.8**
NACGM *e*PP **PP** **14 17 33.0 -5.3**
NACGM *e*PPP PPP 14 21 14.0
NACGM *e*SS SS 14 36 26.0 -23
NACGM *e*LR LR 15 11 46.0
NACGM LRM MLR 15 15 30.0
comp=Z,4.2nm,24.0s
KEMA Kemaliye 149.23 298⇑ *i*P **PKPbc** **14 14 07.9 +0.3**
ODD1 Odda 149.25 356 *e*PKPdf **PKPbc** **14 14 07.0 +0.1**
ODD1 IAmb IAmb 14 14 24.7
comp=Z,98nm,1.0s
KONO Kongsberg 149.28 354 *e*PKPdf **PKPbc** **14 14 06.2 -0.7**
KONO IAmb IAmb 14 14 08.7
comp=Z,157nm,1.3s
KONO *e*PP **PP** **14 17 36.8 -1.6**
KONO *e*SS SS 14 36 52.3 +2.7
KONO Kongsberg 149.28 354 *e*PKP2 **PKPbc** **14 14 07.0 +0.1**
KONO MLR MLR
comp=Z,2µm,20.0s
KONO Kongsberg 149.28 354 *e*PKPbc **PKPbc** **14 14 07.0 +0.1**
KONO LR LR
comp=Z,2µm,20.0s
SUSE Susehri 149.31 300⇑ *i*P **PKPab** **14 14 17.3 +4.8**
ORDU Ordu-Boztepe 149.42 302⇑ *i*P **PKPbc** **14 14 07.6 -0.3**
ATAB Bozova 149.59 295⇑ *i*P **PKPbc** **14 14 09.0 +0.5**
BLS5 Blasjo 149.74 357 *e*PKPdf **PKPbc** **14 14 06.3 -1.8**
BLS5 *e*SS SS 14 36 57.7 +2.9
BLS5 IAMs_20 IAMs_20 15 20 10.3
comp=Z,1µm,20.2s
AKCD Akcadag 149.80 297⇑ *i*P **PKPbc** **14 14 09.1 0.0**
KMY Karmoy 150.01 358 *e*PKPdf **PKPbc** **14 14 08.1 -0.5**
KMY IAmb IAmb 14 14 26.8
comp=Z,42nm,1.1s
CUKAN kangal_SIVAS 150.01 299⇑ *i*P **PKPbc** **14 14 09.7 +0.1**
STAV Stavanger 150.27 357 *e*PKPdf **PKPbc** **14 14 09.4 +0.1**
STAV IAmb IAmb 14 14 24.5
comp=Z,636nm,2.4s
ERBA Erbaa 150.30 302⇑ *i*P **PKPdf** **14 14 03.3 -1.6**
ZALF Zalf 150.50 286 *e*P **PKPbc** **14 14 13.6 +2.8**
CUALT Altinyayla-SIV 150.56 299⇑ *i*P **PKPbc** **14 14 11.0 +0.1**
ROOS Il_alroos 150.56 288 *e*P **PKPbc** **14 14 13.6 +2.6**
SAMS Samsun-Alacam 150.57 303⇑ *i*P **PKPbc** **14 14 10.5 -0.1**
KUZU Kuzuini 150.62 294⇑ *i*P **PKPbc** **14 14 11.3 +0.3**
RABH Abou Rabah 150.63 289 *e*P **PKPab** **14 14 19.0 +1.0**
HCB Kahramanmara¯ 150.70 295⇑ *i*P **PKPbc** **14 14 10.9 -0.3**
HOMB Homborsund 150.74 354 *e*PKPdf **PKPdf** **14 14 06.2 +1.3**
HOMB IAmb IAmb 14 14 11.8
comp=Z,293nm,1.2s
HOMB *e*PP **PP** **14 17 47.1 +0.3**
SNART Snartemo 150.78 356 *e*PKPdf **PKPbc** **14 14 09.7 -0.8**
SNART IAmb IAmb 14 14 26.0
comp=Z,61nm,0.7s
ASF Jabal al Asfar 150.84 284 PKP **PKPdf** **14 14 05.5 -0.6**
comp=Z,0.7nm,0.4s,baz=60,slow=2.0,SNR=4.8
ASF PKPbc **PKiKP** **14 14 12.5 +0.2**
comp=Z,134nm,0.9s,baz=70,slow=2.0,SNR=124
KAMA Osmaniye 150.91 295⇑ *i*P **PKPbc** **14 14 11.6 -0.1**
SIM Simferopol' 150.92 311*d i*PKIKP **PKPdf** **14 14 05.1 -0.5**
SIM 14 17 49.9
SIM pmax pmax
comp=Z,102nm,1.0s
AKASG Malin Array Be 150.92 325 PKP **PKPdf** **14 14 04.8 -0.6**
comp=Z,0.7nm,0.3s,baz=56,slow=1.6,SNR=6.1
AKASG PKPbc **PKPbc** **14 14 10.5 -0.6**
comp=Z,115nm,0.9s,baz=48,slow=2.7,SNR=110
CUSAR Sarkisla-SIVAS 150.93 299⇑ *i*P **PKPbc** **14 14 11.8 +0.1**
KIEV Kiev 150.94 325 *e*PKIKP **PKPdf** **14 14 05.2 -0.3**
KIEV MLR MLR
comp=Z,1µm,20.0s
KIEV Kiev 150.94 325 *e*PKPdf **PKPdf** **14 14 05.2 -0.3**
KIEV LR LR
comp=Z,1µm,20.0s
DRWC Darouich 150.96 293 *e*P **PKPab** **14 14 26.7 +7.3**
HAVZ Havza 150.98 303⇑ *i*P **PKPbc** **14 14 11.2 -0.5**
SALA Sala 151.00 285 *e*P **PKPbc** **14 14 14.2 +2.0**
ANDN Andirin 151.12 295⇑ *i*P **PKPbc** **14 14 12.2 0.0**
BTCH Batrach 151.18 292 *e*P **PKPbc** **14 14 13.1 +0.7**
MARH Ras Al Marh 151.23 288 *e*P **PKPbc** **14 14 14.5 +1.6**
SUW Suwalki 151.25 335 *e*PKP **PKPbc** **14 14 11.3 -0.5**
SUW Suwalki 151.25 335 *e*PKIKP **PKPbc** **14 14 11.3 -0.5**
KPL Plockton 151.26 10 *e*PKPdf **PKPbc** **14 14 11.1 -0.6**
TOTH TOTAH 151.27 287 *e*P **PKPbc** **14 14 14.3 +1.6**
HAWK Haweek 151.29 289 *e*P **PKPbc** **14 14 14.3 +1.6**
BIDA Albida 151.34 290 *e*P **PKPbc** **14 14 13.6 +0.8**
QASN Qassioun 151.40 287 *e*P **PKPbc** **14 14 14.5 +1.6**
YAYL Yayladag 151.46 292⇑ *i*P **PKPbc** **14 14 10.8 -2.3**
BOYT Boyabat 151.49 304 *i* P **PKPbc** **14 14 13.3 +0.4**
SACV Santiago Islan 151.58 114 PFAKE 14 14 20.0 -2.3
SACV LR LR
comp=Z,845nm,20.0s
ARNB Al Arnab 151.58 292 *e*P **PKPbc** **14 14 15.3 +2.0**
TCHB Talchebab 151.64 285 *e*P **PKPbc** **14 14 15.1 +1.6**
HWQ Hawqa 151.67 289 *e*P **PKPbc** **14 14 13.6 0.0**
COAL Corum-Alaca 151.71 301⇑ *i*P **PKPbc** **14 14 13.0 -0.5**
YURE YUREGIR 151.77 294 *i* P **PKPbc** **14 14 14.5 +0.9**
YAHY KAYSERI_Yahyal 151.82 297⇑ *i*P **PKPbc** **14 14 13.4 -0.4**

AKO	Adana	151.85	295	⇑	*i*	P	PKPbc	14 14 13.9	+0.1	
BHL	Bhannes	151.92	288		*e*	P	PKPbc	14 14 14.1	-0.1	
MMAI	Mount Meron Ar	152.13	286		PKPbc	PKPbc		14 14 15.3	+0.7	
comp=Z,217nm,0.9s,baz=69,slow=4.6,SNR=158										
CDAG	Cicekdag	152.31	300	⇑	*i*	P	PKPbc	14 14 13.2	-1.7	
PCAN	Candelaria	152.34	62		*e*	PKPdf	PKPdf	14 14 07.6	-0.4	
DED	Mersin	152.42	295	⇑	*i*	P	PKPbc	14 14 06.9	-1.3	
ILGA	Ilgaz	152.45	304	⇑	*i*	P	PKPbc	14 14 14.9	-0.4	
MUD	Monsted U'grnd	152.47	353		*i*	P	PKPbc	14 14 15.6	+1.2	
MUD	Monsted U'grnd	152.47	353		*i*	PKIKP	PKPbc	14 14 15.6	+1.2	
ROSA	Rosais	152.49	62		*e*	PKPdf	PKPdf	14 14 07.8	-0.4	
PPNO	Prainha do Nor	152.51	62		*e*	PKPdf	PKPdf	14 14 07.7	-0.6	
PGRA	Graciosa	152.63	61		*e*	PKPdf	PKPdf	14 14 07.8	-0.6	
COP	Copenhagen	152.74	348		*i*	P	PKPbc	14 14 14.4	-0.7	
COP	Copenhagen	152.74	348		*e*	PKIKP	PKPbc	14 14 14.4	-0.7	
BSD	Bornholm Skovb	152.78	345		*i*	P	PKPbc	14 14 14.8	-0.4	
comp=Z,3μm,21.0s										
BSD	Bornholm Skovb	152.78	345		*i*	PKIKP	PKPbc	14 14 14.8	-0.4	
BSD						MLR	MLR			
comp=Z,3μm,21.0s										
ELDT	Eldivan	152.81	302	⇑	*i*	P	PKPbc	14 14 15.1	-0.9	
BRTR	Keskin Array B	152.84	301		PKP		PKPdf	14 14 08.2	-0.6	
comp=Z,4.2nm,0.9s,baz=116,slow=2.9,SNR=10.0										
BRTR					PKPbc		PKiKP	14 14 16.6	+0.3	
comp=Z,38nm,1.1s,baz=135,slow=2.6,SNR=38										
BRTR	Keskin Array B	152.84	301		PKIKP		PKPdf	14 14 08.3	-0.6	
BRTR								14 14 16.6		
BRTR					pmax	pmax				
comp=Z,20nm,1.1s										
BRTR					pmax	pmax				
comp=Z,38nm,1.1s										
KERG	Konya-Eregli	152.90	296	⇑	*i*	P	PKPbc	14 14 14.8	-1.4	
AKSY	AKSARAY - Alti	152.97	298	⇑	*i*	P	PKPbc	14 14 15.3	-1.1	
KIZK	Mersin	153.00	294	⇑	*i*	P	PKPbc	14 14 14.9	-1.4	
BBAL	Bala	153.27	301	⇑	*i*	P	PKPbc	14 14 15.3	-1.8	
KIS	Kishinev	153.27	319		*e*	PKP	PKPdf	14 14 04.0	-5.1	
KIS						M	M	14 14 14.5		
comp=Z,200nm,2.0s										
KIS	Kishinev	153.27	319		*e*	PP	PP	14 18 00.0	-2.1	
KIS						eSKKS		14 24 46.0		
KIS	Kishinev	153.27	319		*e*	PKIKP	PKPdf	14 14 04.0	-5.1	
KIS					*e*			14 14 14.0		
KIS					*i*			14 14 25.0		
KIS					*e*			14 18 00.0		
KIS						pmax	pmax			
comp=Z,210nm,2.0s										
ANTO	Ankara	153.44	301		*e*	PKIKP	PKPbc	14 14 16.9	-0.4	
ANTO						MLR	MLR			
comp=Z,1μm,21.0s										
ANTO	Ankara	153.44	301		*e*	PKPdf	PKPbc	14 14 16.9	-0.4	
ANTO						LR	LR			
comp=Z,1μm,21.0s										
KKUL	Konya-Kulu	153.51	300	⇑	*i*	P	PKPbc	14 14 16.2	-1.4	
EKA	Eskdalemuir Ar	153.55	8		PKPbc		PKPbc	14 14 17.1	+0.2	
comp=Z,3.0nm,0.7s,baz=27,slow=0.4,SNR=6.4										
EKA						PKPab		PKPab	14 14 29.8	+0.4
comp=Z,18nm,0.9s,baz=344,slow=2.7,SNR=14										
ESK	Eskdalemuir	153.56	8		PFAKE			14 14 20.0	+3.1	
ESK						LR	LR			
comp=Z,2μm,20.0s										
BCAM	Yenicaga	153.72	304	⇑	*i*	P	PKPdf	14 14 06.6	-3.5	
CSS	Mathiatis	153.80	290		PFAKE			14 14 20.0	+1.8	
CSS						LR	LR			
comp=Z,1μm,22.0s										
ERMK	Ermenek	153.96	294	⇑	*i*	P	PKPbc	14 14 16.9	-1.8	
LVV	L'vov	154.02	328		*e*	PKIKP	PKPdf	14 14 10.7	+0.6	
TLCR		154.20	315	⇓	*i*	P	PKPdf	14 14 13.7	+3.3	
TLCR		154.20	315	⇓	PKIKP		PKPdf	14 14 13.7	+3.3	
KDHN	Kadinhani	154.26	299	⇑	*i*	P	PKPdf	14 14 09.0	-1.9	
GAZI	Gazipasa	154.49	293	⇑	*i*	P	PKPdf	14 14 08.2	-3.0	
SAHE	Sakarya_HENDEK	154.58	305	⇑	*i*	P	PKPdf	14 14 09.0	-2.2	
PSET	Sete Cidades	154.60	63		*e*	PKPdf	PKPdf	14 14 10.6	-0.7	
CFR	Carcaliu	154.62	316	⇑	*i*	P	PKPdf	14 14 13.0	+2.0	
CFR	Carcaliu	154.62	316	⇑	PKIKP		PKPdf	14 14 13.0	+2.0	
KWP	Kalwaria Pacla	154.75	329		*e*	PKP	PKPdf	14 14 11.8	+0.7	
KWP	Kalwaria Pacla	154.75	329		*e*	PKIKP	PKPdf	14 14 11.8	+0.7	
CMLA	Cha da Macela	154.77	63		*e*	PKPdf	PKPdf	14 14 11.0	-0.5	
CMLA	Cha da Macela	154.77	63		PFAKE			14 14 30.0	-5.2	
CMLA						LR	LR			
comp=Z,2μm,20.0s										
TESR	Tescani	154.78	320	⇑	*i*	P	PKPdf	14 14 12.6	+1.3	
TIRR	Tirgusor	154.81	314	⇑	*i*	P	PKPbc	14 14 19.4	-0.5	
TIRR	Tirgusor	154.81	314	⇑	PKIKP		PKPbc	14 14 19.4	-0.5	
TIRR	Tirgusor	154.81	314		*e*	PKPab	PKPab	14 14 34.5	-0.6	
BURAR	Bucovina Array	154.90	323	⇓	*i*	P	PKPdf	14 14 14.4	+2.9	
BURAR	Bucovina Array	154.90	323	⇓	PKIKP		PKPdf	14 14 14.4	+2.9	
TLB	Topalu	154.98	315	⇓	*i*	P	PKPdf	14 14 14.5	+3.0	
TLB	Topalu	154.98	315	⇓	PKIKP		PKPdf	14 14 14.5	+3.0	
HARR	Harsova	154.99	315	⇓	*i*	P	PKPdf	14 14 15.9	+4.3	
HARR	Harsova	154.99	315	⇓	PKIKP		PKPdf	14 14 15.9	+4.3	
BOV	Bolvadin	155.10	300	⇑	*i*	P	PKPdf	14 14 09.7	-3.1	
PLOR	Plostina	155.16	318	⇓	*i*	P	PKPdf	14 14 19.9	+8.1	
PLOR	Plostina	155.16	318	⇓	PKIKP		PKPdf	14 14 19.9	+8.1	
PSMA	Santa Maria	155.22	64		*e*	PKPdf	PKPdf	14 14 11.5	-0.6	
PSMN	Pico do Norte,	155.26	64		*e*	PKPdf	PKPdf	14 14 10.9	-1.3	
KOLS	Kolonicke sedl	155.46	329		*e*	PKIKP	PKPdf	14 14 13.4	+1.3	
KOLS					*e*			14 14 37.3		
KOLS	Kolonicke sedl	155.46	329		*e*	PKP	PKPdf	14 14 13.4	+1.3	
KOLS					*e*			14 14 37.3		
KOLS					*e*	L	L	14 22 25.9		
OJC	Ojcow	155.53	333		*e*	PKP	PKPdf	14 14 12.6	+0.5	
OJC	Ojcow	155.53	333		*e*	PKIKP	PKPdf	14 14 12.6	+0.5	
STHS	Stebnicka Huta	155.56	331		*e*	PKIKP	PKPdf	14 14 15.4	+3.2	
STHS	Stebnicka Huta	155.56	331		*e*	PKP	PKPdf	14 14 15.4	+3.2	
STHS					*e*			14 14 39.5		
ISR	Istrita	155.62	317	⇓	*i*	P	PKPdf	14 14 19.2	+6.7	
ISR	Istrita	155.62	317	⇓	PKIKP		PKPdf	14 14 19.2	+6.7	
UZH	Uzhgorod	155.66	328	⇑	PKIKP		PKPdf	14 14 19.3	+7.0	
UZH					*e*			14 14 38.5		
BMR	Baia Mare	155.75	325	⇑	*i*	P	PKPdf	14 14 12.3	-0.2	
BMR	Baia Mare	155.75	325	⇑	PKIKP		PKPdf	14 14 12.3	-0.2	
MLR	Muntele Rosu	155.77	318	⇓	*i*	P	PKPdf	14 14 13.1	+0.3	
MLR	Muntele Rosu	155.77	318	⇓	PKIKP		PKPdf	14 14 13.1	+0.3	
DOPR	Dopca	155.81	320	⇓	*i*	P	PKPdf	14 14 13.9	+1.2	
CRVS	Cervenica-Dubn	155.84	329		*e*	PKIKP	PKPdf	14 14 13.2	+0.6	
CRVS	Cervenica-Dubn	155.84	329		*e*	PKP	PKPdf	14 14 13.2	+0.6	
CRVS					*e*			14 14 39.8		
LIC	Lamto	155.85	160		*e*	PKIKP	PKPdf	14 14 23.8	+10	
comp=Z,54nm,1.4s										
TRPA	Tarpa	155.90	327		*e*	PKPdf	PKPab	14 14 40.0	+0.4	
KORT	Korkueli	155.94	296	⇑	*i*	P	PKPdf	14 14 11.3	-2.0	
NIE	Niedzica	155.95	332		*e*	PKP	PKPdf	14 14 12.6	-0.2	
NIE	Niedzica	155.95	332		*e*	PKIKP	PKPdf	14 14 12.6	-0.2	
KIC	Kosan Boka	156.07	161		*e*	PKIKP	PKPdf	14 14 23.2	+9.2	
comp=Z,166nm,1.3s										
KSP	Ksiaz	156.25	339		*e*	PKP	PKPdf	14 14 13.2	+0.1	
KSP	Ksiaz	156.25	339		*e*	PKIKP	PKPdf	14 14 13.2	+0.1	
TIC	Toumodi	156.25	160		*e*	PKIKP	PKPdf	14 14 23.5	+9.2	
VOIR		156.31	319	⇑	*i*	P	PKPdf	14 14 14.4	+0.9	
VOIR		156.31	319	⇑	PKIKP		PKPdf	14 14 14.4	+0.9	
CJR	Cluj-Napoca	156.33	323	⇑	*i*	P	PKPdf	14 14 14.5	+1.1	
CJR	Cluj-Napoca	156.33	323	⇑	PKIKP		PKPdf	14 14 14.5	+1.1	
DBIC	Dimbokro	156.33	160		PKP		PKPdf	14 14 14.9	+0.6	
comp=Z,12nm,1.1s,baz=117,slow=6.9,SNR=3.7										
OKC	Ostrava-Krasne	156.46	335		*e*	PKPDF	PKPdf	14 14 13.6	+0.2	
OKC					*ex*		x	14 14 21.5		
OKC					*e*	PKPAB	PKPab	14 14 42.9	+0.9	
OKC					*e*	SKKS		14 25 18.4		
OKC					*e*	SS	SS	14 38 13.1	+4.1	
OKC						AMS	AMS	15 21 30.0		
comp=Z,2μm,24.2s										
OKC	Ostrava-Krasne	156.46	335		*e*	PKIKP	PKPdf	14 14 13.6	+0.2	
OKC					*e*			14 14 21.5		
OKC						MLR	MLR			
comp=Z,2μm,24.2s										
LANS	Liptovska Anna	156.50	332		*e*	PKIKP	PKPdf	14 14 15.6	+2.0	
LANS	Liptovska Anna	156.50	332		*e*	PKP	PKPdf	14 14 15.5	+2.0	
LANS					*e*			14 14 43.1		
KECS	Kecovo	156.59	330		*e*	PKP2	PKPab	14 14 43.2	+0.6	
KECS	Kecovo	156.59	330		*e*	PKP	PKPab	14 14 43.2	+0.6	
ARR	Arges	156.59	319	⇑	*i*	P	PKPdf	14 14 13.9	+0.1	
UPC	Upice	156.63	339		*e*	PKPDF	PKPdf	14 14 14.1	+0.5	
UPC						epPKP	pPKPdf	14 14 22.0	+1.9	
UPC					*e*	PKPAB	PKPab	14 14 43.4	+0.7	
UPC					*ex*		x	14 14 50.2		
UPC					*ex*		x	14 18 09.3		
UPC					*e*	SKKS		14 25 19.7		
UPC					*e*	SS	SS	14 38 19.1	+8.5	
UPC						AMS	AMS	15 22 30.0		
comp=Z,3μm,23.2s										
UPC	Upice	156.63	339		*e*	PKIKP	PKPdf	14 14 14.1	+0.5	
UPC					*e*			14 14 22.0		
UPC						MLR	MLR			
comp=Z,3μm,23.2s										
AKAS	Kas	156.66	294		*i*	P	PKPdf	14 14 10.2	-4.1	
DPC	Dobruska-Polom	156.66	338		*e*	PKPDF	PKPdf	14 14 14.5	+0.8	
DPC					*e*	PKPAB	PKPab	14 14 43.7	+0.8	
DPC					*ex*		x	14 18 05.0		
DPC					*ex*		x	14 25 20.2		
DPC					*e*	SKKS		14 28 43.2		
DPC						AMS	AMS	15 22 30.0		
comp=Z,2μm,22.2s										
DPC	Dobruska-Polom	156.66	338		*e*	PKIKP	PKPdf	14 14 14.5	+0.8	
DPC						MLR	MLR			
comp=Z,2μm,22.2s										
DEMI	Demirci	156.70	302	⇑	*i*	P	PKPdf	14 14 12.7	-1.4	
MORC	Moravsky Berou	156.73	336	⇑	*i*	P	PKPdf	14 14 09.3	-4.5	
MORC	Moravsky Berou	156.73	336	⇑	PKIKP		PKPdf	14 14 09.3	-4.5	
DRGR		156.74	324	⇑	*i*	P	PKPdf	14 14 14.2	+0.3	
DRGR		156.74	324	⇑	PKIKP		PKPdf	14 14 14.2	+0.3	
CLL	Collm	156.74	344	⇓	*i*	PKPdf	PKPdf	14 14 13.9	+0.2	
CLL					*i*	PKPdiff	PKPab	14 14 24.7	-18	
comp=Z,19nm,1.1s										
CLL					*i*			14 14 34.0		
CLL					*i*	PKPab	PKPab	14 14 43.3	+0.2	
comp=Z,29nm,1.0s										
CLL					*i*	pPKPab	pPKPab	14 14 50.2	+0.7	
CLL					*e*			14 14 55.0		
CLL					*e*	PP	PP	14 18 19.0	-1.8	
CLL					*e*	PPP	PPP	14 21 55.0		
CLL					*e*	SKSP		14 28 30.0		
CLL					*e*	PSKS		14 28 47.0		
CLL					*e*	SS	SS	14 38 12.0	+0.4	
CLL					*e*	SSS	SSS	14 44 12.0		
CLL					*e*	SSSS		14 48 24.0		
CLL						LmV		15 25 00.0		
comp=Z,3μm,21.8s										
CLL	Collm	156.74	344	⇓	*i*	PKIKP	PKPdf	14 14 13.9	+0.2	
CLL					*i*			14 14 24.7		
CLL						pmax	pmax			
comp=Z,19nm,1.1s										
CLL						pmax	pmax			
comp=Z,29nm,1.0s										
CLL						MLR	MLR			
comp=Z,3μm,21.8s										
KRLC	Kraliky	156.75	337		*e*	PKPDF	PKPdf	14 14 14.5	+0.7	
KRLC					*e*	PKPAB	PKPab	14 14 43.9	+0.6	
KRLC					*e*	SKKS		14 25 20.1		
KRLC	Kraliky	156.75	337		*e*	PKIKP	PKPdf	14 14 14.5	+0.7	
DNZL	Cakiroluk	156.81	298	⇑	*i*	P	PKPdf	14 14 13.5	-1.0	
BRG	Berggiesshubel	156.90	342		*e*	PKP	PKPdf	14 14 14.3	+0.4	
comp=Z,21nm,1.5s										
BRG					*i*			14 14 44.0		
comp=Z,73nm,1.3s										
BRG					*i*			14 14 50.0		
BRG						PP	PP	14 18 21.0	-0.7	
BRG					*i*			14 28 46.0		
BRG						SS	SS	14 38 19.0	+5.6	
comp=N,2μm,23.7s										
comp=E,1μm,21.7s										
comp=Z,3μm,23.1s										
BRG	Berggiesshubel	156.90	342		*e*	PKIKP	PKPdf	14 14 14.3	+0.4	
BRG								14 18 21.0		
BRG						pmax	pmax			
comp=Z,21nm,1.5s										
BRG						MLR	MLR			
comp=N,2μm,23.7s										
BRG						MLR	MLR			
comp=E,1μm,21.7s										
BRG						MLR	MLR			
comp=Z,3μm,23.1s										
PVCC	Panska Ves	157.04	341		*e*	PKPAB	PKPab	14 14 45.6	+1.2	
PVCC					*e*	pPKP	pPKP	14 14 52.4		
PVCC						AMS	AMS	15 22 00.0		
comp=Z,3μm,24.5s										
PVCC	Panska Ves	157.04	341		*e*	PKP2	PKPab	14 14 45.6	+1.2	
PVCC						MLR	MLR			
comp=Z,3μm,24.5s										
WTSB	Winterswijk	157.14	354		*e*	PKPdf	PKPdf	14 14 13.4	-0.8	
WTSB					*e*	PKPab	PKPab	14 14 44.3	-0.4	
PSZ	Piszkesteto	157.28	330	⇓	*i*	P	PKPdf	14 14 17.3	+2.7	
PSZ	Piszkesteto	157.28	330		*e*	PKIKP	PKPdf	14 14 14.9	+0.3	
PSZ						MLR	MLR			
comp=Z,2μm,21.0s										
PSZ	Piszkesteto	157.28	330		*e*	PKPdf	PKPdf	14 14 14.9	+0.3	
PSZ						LR	LR			
comp=Z,2μm,21.0s										
PSZ	Piszkesteto	157.28	330	⇑	*e*	PKPdf	PKPdf	14 14 13.6	-1.0	
PSZ					*e*	PKPdf	PKPab	14 14 45.2	-0.5	
VYHS	Vyhne	157.28	332		*e*	PKIKP	PKPdf	14 14 15.6	+1.1	
VYHS	Vyhne	157.28	332		*e*	PKP	PKPdf	14 14 15.6	+1.1	
VYHS					*e*			14 14 45.7		
VYHS					*e*	L	L	14 20 49.0		
VRAC	Vranov	157.46	336	⇓	*i*	P	PKPdf	14 14 15.5	+0.8	
VRAC	Vranov	157.46	336	⇓	PKIKP		PKPdf	14 14 15.5	+0.8	
GOPC	GO Pecny, Ondr	157.53	340		*e*	PKPAB	PKPab	14 14 46.4	-0.2	
GOPC					*ex*		x	14 18 16.6		
GOPC					*e*	SKKS		14 28 44.6		
GOPC					*e*	SS	SS	14 38 30.3	+10	
GOPC						AMS	AMS	15 23 10.0		
comp=Z,3μm,22.7s										
GOPC	GO Pecny, Ondr	157.53	340		*e*	PKP2	PKPab	14 14 46.4	-0.2	
GOPC						MLR	MLR			
comp=Z,3μm,22.7s										
PRU	Pruhonice	157.53	340		*e*	PKPDF	PKPdf	14 14 14.9	+0.2	
PRU					*e*	PKPAB	PKPab	14 14 46.5	-0.1	
PRU					*e*	PP	PP	14 18 22.4	-2.9	
PRU					*ex*		x	14 25 23.4		
PRU					*e*	SKKS		14 28 44.3		
PRU					*e*	SS	SS	14 38 17.5	-2.7	
PRU						AMS	AMS	15 21 10.0		
comp=Z,2μm,24.1s										
PRU	Pruhonice	157.53	340		*e*	PKIKP	PKPdf	14 14 14.9	+0.2	
PRU					*e*			14 18 22.4		
PRU					*e*	SS	SS	14 38 17.5	-2.7	
PRU						MLR	MLR			
comp=N,2μm,24.1s										
SIRR	Siria	157.63	324	⇑	*i*	P	PKPdf	14 14 14.8	-0.2	
TREC	Trest	157.85	338		*e*	PKPAB	PKPab	14 14 49.0	+1.0	
TREC					*ex*		x	14 18 19.3		
TREC						AMS	AMS	15 22 10.0		
comp=N,3μm,23.5s										
TREC	Trest	157.85	338		*e*	PKP2	PKPab	14 14 49.0	+1.0	
TREC						MLR	MLR			
comp=Z,3μm,23.5s										
NKC	Novy Kostel	157.87	344		*e*	PKPAB	PKPab	14 14 48.5	+0.5	
NKC					*e*	SKKS		14 25 24.6		
NKC						AMS	AMS	15 26 10.0		
comp=Z,4μm,25.3s										
NKC	Novy Kostel	157.87	344		*e*	PKP2	PKPab	14 14 48.5	+0.5	
NKC						MLR	MLR			
comp=Z,4μm,25.3s										
BUD	Budapest	157.99	330		*e*	pPKPdf	PKPab	14 14 49.2	+0.6	
BZS	Buzias	158.09	323	⇓	*i*	P	PKPdf	14 14 15.6	0.0	
BZS	Buzias	158.09	323	⇓	PKIKP		PKPdf	14 14 15.6	0.0	
HGN	Heimansgroeve	158.40	355		*e*	PKPdf	PKPdf	14 14 10.6	-5.1	
HGN					*e*	PKPab	PKPab	14 14 50.0	-0.2	
HGN					*e*	PP	PP	14 18 29.0	-0.8	
CSKK	Cs˘ˇtkako	158.41	331		*e*	pPKPdf	PKPab	14 14 50.2	-0.3	
RZN	Rozhen	158.51	311		*i*	P	PKPdf	14 14 13.9	-2.6	
MEM	Membach	158.55	355		PKP		PKPdf	14 14 16.5	+0.6	
MEM	Membach	158.55	355		PKPab		PKPab	14 14 51.4	+0.5	
KHC	Kasperske Hory	158.58	341		*e*	PKPDF	PKPdf	14 14 16.3	+0.2	
KHC					*ex*		x	14 14 23.5		
KHC					*e*	PKPAB	PKPab	14 14 51.3	+0.1	
KHC					*ex*		x	14 14 58.0		
KHC					*e*	PP	PP	14 18 29.4	-1.7	
KHC					*e*	SKKS		14 25 28.3		
KHC					*ex*		x	14 28 46.6		
KHC					*e*	SS	SS	14 38 30.4	-1.0	
KHC						AMS	AMS	15 22 00.0		
comp=Z,3μm,21.5s										
KHC	Kasperske Hory	158.58	341		*e*	PKIKP	PKPdf	14 14 16.3	+0.2	
KHC					*e*			14 14 23.5		
KHC					*e*			14 14 51.3		
KHC					*e*			14 18 29.4		
KHC					*e*	SS	SS	14 38 30.4	-1.0	
KHC						MLR	MLR			
comp=Z,3μm,21.5s										
KHC	Kasperske Hory	158.58	341		*e*	PKPdf	PKPdf	14 14 15.9	-0.2	
MDVR	Moldovita	158.58	321	⇓	*i*	P	PKPdf	14 14 16.3	0.0	
SNF	Seneffe	158.75	358		PKPab		PKPab	14 14 52.0	+0.3	
BCLA	Clavier	158.79	356		PKPab		PKPab	14 14 52.3	+0.4	
GERES	GERESS Array B	158.80	340		PKP		PKPdf	14 14 15.0	-1.4	
comp=Z,3.3nm,0.9s,baz=68,slow=0.7,SNR=15										
GERES						PKPab	PKPab	14 14 52.1	-0.1	
comp=Z,4.9nm,0.8s,baz=34,slow=3.4,SNR=12										
CONA	Conrad Observa	158.89	336		*i*	PKPdf	PKPdf	14 14 15.3	-1.3	
comp=Z,6.5nm,1.1s										
CONA					*i*	PKPab	PKPab	14 14 53.6	+1.0	
comp=Z,76nm,1.1s,SNR=10										
VTS	Vitosha	159.01	315	⇓	*i*	P	PKPdf	14 14 21.0	+4.0	
VTS	Vitosha	159.01	315	⇓	PKIKP		PKPdf	14 14 21.0	+4.0	
VTS	Vitosha	159.01	315		*i*	P	PKPdf	14 14 16.0	-1.0	
DOU	Dourbes	159.15	357		PKP		PKPdf	14 14 17.4	+0.7	
DOU					PKPab		PKPab	14 14 54.0	+0.5	
MMB	Musomiste	159.20	312		*i*	P	PKPdf	14 14 14.7	-2.4	
KKB	Krupnik	159.48	313		*i*	P	PKPdf	14 14 14.7	-2.7	
WLF	Walferdange	159.48	354		PKP		PKPdf	14 14 18.5	+1.4	
WLF					PKPab		PKPab	14 14 55.6	+0.7	
WLF	Walferdange	159.48	354		PFAKE			14 14 30.0	+13	
WLF						LR	LR			
comp=Z,2μm,20.0s										
MOA	Molln	159.51	338		*i*	PKPdf	PKPdf	14 14 16.3	-1.0	
comp=Z,5.0nm,1.0s										
MOA					*i*	PKPab	PKPab	14 14 56.1	+0.9	
comp=Z,58nm,1.1s,SNR=14										
ARSA	Arzberg	159.59	335		*i*	PKPdf	PKPdf	14 14 15.8	-1.6	
comp=Z,4.8nm,1.0s										
ARSA					*i*	PKPab	PKPab	14 14 56.3	+0.7	
comp=Z,32nm,1.2s,SNR=6.2										
BEHE	Becsehely	159.74	332		*e*	pPKPdf	PKPab	14 14 56.4	+0.2	
SANT	Santorini	159.91	296		PFAKE			14 14 30.0	+12	
SANT						LR	LR			
comp=Z,2μm,22.0s										
LANF	Langenberg	159.96	351		PKP		PKPdf	14 14 17.7	0.0	
SOKA	Soboth	160.25	335		*i*	PKPdf	PKPdf	14 14 16.9	-1.3	
comp=Z,8.5nm,1.3s										
SOKA					*i*	PKPab	PKPab	14 14 58.8	+0.2	
comp=Z,74nm,1.2s,SNR=11										
PERS	Pernice	160.25	335		*e*	PKPdf	PKPdf	14 14 16.8	-1.4	
PERS					*i*	PKPab	PKPab	14 14 58.7	+0.1	
PERS					*i*	PP	PP	14 18 38.9	-1.4	
KBA	Koelnbreinsper	160.48	339		*i*	PKPdf	PKPdf	14 14 17.2	-1.4	
comp=Z,9.4nm,1.1s										
KBA					*i*	PKPab	PKPab	14 14 59.0	+0.3	
comp=Z,34nm,0.8s										
BFO	Black Forest	160.52	349		PFAKE			14 14 30.0	+12	
BFO						LR	LR			
comp=Z,2μm,20.0s										
OBKA	Obir	160.57	336		*e*	PKPdf	PKPdf	14 14 17.5	-1.1	
comp=Z,3.6nm,1.1s										
OBKA					*i*	PKPab	PKPab	14 14 59.9	-0.1	
comp=Z,22nm,1.0s,SNR=6.0										
IDI	Anoyia	160.60	294		*e*	PKPdf	PKP

PMTG	**Montargil**	**166.47**	**41**	*e*SS	SS	14 39 58.4	+4.0
PMRV	**Marv??o**	**166.68**	**38**	*e*PKPdf	**PKPdf**	**14 14 24.5**	**+0.1**
PMRV	**Marv??o**	**166.68**	**38**	*e*PKPab	**PKPab**	**14 15 28.8**	**+1.8**
PMRV	**Marv??o**	**166.68**	**38**	*e*PP	PP	14 19 14.2	-0.3
PMRV	**Marv??o**	**166.68**	**38**	*e*SS	SS	14 40 00.3	+3.9
PMRV	**Marv??o**	**166.68**	**38**	*e*LR	LR	15 17 28.3	
	comp=E,1µm,16.0s						
PNCL	**Nicolau / Gran**	**166.92**	**44**	*e*PKPdf	**PKPdf**	**14 14 25.2**	**+0.7**
PNCL	**Nicolau / Gran**	**166.92**	**44**	*e*PP	PP	14 19 15.1	-0.9
PNCL	**Nicolau / Gran**	**166.92**	**44**	*e*SS	SS	14 40 05.9	+6.7
EVO	**Evora**	**166.96**	**42**	*e*PKPdf	**PKPdf**	**14 14 25.8**	**+1.2**
EVO	**Evora**	**166.96**	**42**	*e*PP	PP	14 19 13.2	-2.9
PESTR	**Estremoz**	**166.97**	**40**	*e*PKPdf	**PKPdf**	**14 14 24.8**	**+0.2**
PESTR	**Estremoz**	**166.97**	**40**	*e*PKPab	**PKPab**	**14 15 28.6**	**+0.3**
PESTR	**Estremoz**	**166.97**	**40**	*e*PP	PP	14 19 21.2	+5.1
PESTR	**Estremoz**	**166.97**	**40**	*e*SS	SS	14 40 03.3	+3.9
PTEO	**Sao Teotonio**	**167.14**	**47**	*e*PKPdf	**PKPdf**	**14 14 25.9**	**+1.2**
MESJ	**Messejana**	**167.28**	**45**	*e*P	**PKPdf**	**14 14 24.1**	**-0.7**
MESJ				*e*SS	SS	14 40 05.9	+3.1
MESJ				AMS	AMS	15 27 53.7	
	comp=Z,2µm,16.4s						
MESJ	**Messejana**	**167.28**	**45**	*e*PKPdf	**PKPdf**	**14 14 25.9**	**+1.1**
MORF	**Marmelete**	**167.33**	**48**	*e*P	**PKPdf**	**14 14 24.3**	**-0.7**
MORF				*e*SS	SS	14 40 06.3	+2.7
MORF				AMS	AMS	15 27 47.6	
	comp=Z,2µm,21.2s						
MORF	**Marmelete**	**167.33**	**48**	*e*PKPdf	**PKPdf**	**14 14 26.5**	**+1.5**
MORF	**Marmelete**	**167.33**	**48**	*e*PP	PP	14 19 23.5	+5.2
MORF	**Marmelete**	**167.33**	**48**	*e*SS	SS	14 40 03.1	-0.6
PBEJ	**Beja**	**167.38**	**43**	*e*PKPdf	**PKPdf**	**14 14 26.9**	**+2.0**
PCVE	**Castro Verde**	**167.52**	**45**	*e*PKPdf	**PKPdf**	**14 14 25.6**	**+0.6**
PCVE	**Castro Verde**	**167.52**	**45**	*e*PKPab	**PKPab**	**14 15 29.9**	**-0.9**
PCVE	**Castro Verde**	**167.52**	**45**	*e*PP	PP	14 19 18.3	-0.8
PCVE	**Castro Verde**	**167.52**	**45**	*e*SS	SS	14 40 12.7	+7.4
PBAR	**Barrancos**	**167.76**	**41**	*e*PKPdf	**PKPdf**	**14 14 26.0**	**+0.8**
PBAR	**Barrancos**	**167.76**	**41**	*e*PP	PP	14 19 25.2	+5.0
PBAR	**Barrancos**	**167.76**	**41**	*e*SS	SS	14 40 08.8	+1.4
PBDV	**Barranco-do-Ve**	**167.83**	**46**	*e*PKPdf	**PKPdf**	**14 14 27.1**	**+1.8**
PBDV	**Barranco-do-Ve**	**167.83**	**46**	*e*SS	SS	14 40 15.4	+6.8
PAB	**San Pablo**	**168.05**	**29**	PFAKE		14 14 40.0	+15
PAB				LR	LR		
	comp=Z,2µm,20.0s						
ESDC	**Sonseca Array**	**168.10**	**27**	PKP	**PKPdf**	**14 14 26.0**	**+0.5**
	comp=Z,8.4nm,1.1s,baz=350,slow=2.5,SNR=28						
ESDC				PKPab	**PKPab**	**14 15 33.3**	**+0.1**
	comp=Z,5.9nm,0.9s,baz=330,slow=3.0,SNR=6.1						
CLTB	**Caltabellotta**	**168.14**	**317**	PFAKE		14 14 40.0	+14
CLTB				LR	LR		
	comp=Z,974nm,19.0s						
WDD	**Wied Dalam**	**168.32**	**307**	PFAKE		14 14 40.0	+14
WDD				LR	LR		
	comp=Z,3µm,20.0s						
VSL	**Villasalto**	**168.53**	**335**	PFAKE		14 14 40.0	+14
VSL				LR	LR		
	comp=Z,2µm,19.0s						
RTC	**Rabat Centre**	**170.31**	**58**	PFAKE		14 14 40.0	+13
RTC				LR	LR		
	comp=Z,12µm,20.0s						
KEST	**Kesra**	**171.64**	**322**	PKP	**PKPdf**	**14 14 27.2**	**-0.5**
	comp=Z,7.2nm,1.0s,baz=325,slow=2.8,SNR=5.8						
KEST				PKPab	**PKPab**	**14 15 50.1**	**+1.0**
	comp=Z,26nm,1.0s,baz=275,slow=1.0,SNR=9.3						
MDT	**Midelt**	**172.51**	**60**	PKP	**PKPdf**	**14 14 30.3**	**+2.0**
	comp=Z,13nm,0.9s,baz=227,slow=10,SNR=9.8						
TAM	**Tamanrasset**	**173.20**	**200**	PFAKE		14 14 40.0	+11
TAM				LR	LR		
	comp=Z,3µm,19.0s						

MOS ***09*** *13:57:15.0± 1.0, 7.2 6S× 128.9 0E, h96 km, mb5.1/24, Error ellipse: s-maj=15.6km s-min=6.6km az=117.3*
ISCJB ***09*** *13:57:18.9± 0.2, 7.4 0S± 0.0 3× 128.8 6E± 0.0 3, h131 km, mb4.7/79, Error ellipse: s-maj=3.8km s-min=3.8km az=144.7*
BJI ***09*** *13:57:20.1, 7.4 0S× 128.8 0E, h147 km, mb4.9/37, mB4.8/27*
NEIC ***09*** *13:57:20.5± 0.6, 7.3 1S× 128.8 7E, h130 km± 6 km, mb4.9/29, Error ellipse: s-maj=7.7km s-min=5.6km az=220.0*
DJA ***09*** *13:57:21.6± 0.3, 8.6 S± 3.3 × 12.9 E± °, h135 km± 4 km, M5.4/23, mB5.6/9, mb5.0/23, MLv6.1/1, Mw(mB)5.1/9*
IDC ***09*** *13:57:22.4± 2.0, 7.2 2S× 128.8 7E, h138 km± 18 km, mb4.4/24, mb1 4.4/26, mb1mx4.3/51, mbtmp4.8/26, MS3.9/1, Ms1 3.9/1, ms1mx2.9/58, Error ellipse: s-maj=14.1km s-min=10.2km az=70.0*

ISC 09 13:57:20.2± 0.3, 7.4 4S± 0.0 4× 128.8 8E± 0.0 4, h131 km, n176, σ1§ 86/195, mb4.8/78, 10C-4D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
SAUI	**Saumlaki**	**2.46**	**103**	P	**Pn**	**13 58 01.1**	**+1.1**
SAUI	**Saumlaki**	**2.46**	**103**	*e*Pn	**Pn**	**13 58 01.9**	**+1.9**
SOEI	**Soe**	**5.11**	**243**	P	**Pn**	**13 58 35.8**	**+0.9**
SOEI	**Soe**	**5.11**	**243**	*e*Pn	**Pn**	**13 58 35.9**	**+1.0**
SOEI				*e*Sn	**Sn**	**13 59 31.9**	**-1.2**
FAKI	**Fak Fak**	**5.61**	**37**	P	**Pn**	**13 58 40.8**	**-0.7**
FAKI	**Fak Fak**	**5.61**	**37**	*e*Pn	**Pn**	**13 58 40.4**	**-1.1**
FAKI				*e*Sn	**Sn**	**13 59 40.2**	**-4.7**
MTN	**Manton Dam**	**5.81**	**158**	*e*Pn	**Pn**	**13 58 45.0**	**+0.7**
BATI	**Baumata**	**5.84**	**242**	P	**Pn**	**13 58 46.2**	**+1.5**
MMRI	**Maumere**	**6.68**	**259**	P	**Pn**	**13 58 57.2**	**+1.2**
MMRI	**Maumere**	**6.68**	**259**	*e*Pn	**Pn**	**13 58 55.8**	**-0.2**
MMRI				*e*Sn	**Sn**	**14 00 12.7**	**+1.9**
SIJI	**Sorong**	**6.95**	**20**	P	**Pn**	**13 58 59.6**	**0.0**
	7.8nm,0.3s,baz=177,slow=23,SNR=2.8						
SIJI				S	**Sn**	**14 00 17.1**	**-0.2**
	11nm,0.3s,baz=273,slow=23,SNR=3.1						
WSI	**Waingapu**	**8.77**	**255**	P	**Pn**	**13 59 22.9**	**-1.2**
KMSI	**Cibinong**	**9.34**	**328**	P	**Pn**	13 59 42.5	+11
KAPI	**Kappang**	**9.38**	**284**	P	**Pn**	**13 59 33.0**	**+0.7**
	1.4nm,0.3s,baz=123,slow=10.0,SNR=3.0						
TTSI	**Tana Toraja**	**10.02**	**295**	P	Pn	13 59 48.0	+7.1
MRSI	**Marisa**	**10.47**	**318**	P	**Pn**	**13 59 50.7**	**+3.7**
	32nm,1.0s,11µm						
FITZ	**Fitzroy Crossi**	**11.06**	**196**	P	**Pn**	**13 59 52.4**	**-2.3**
	15nm,0.3s,baz=26,slow=11,SNR=176						
FITZ				S	**Sn**	**14 01 49.7**	**-7.0**
	30nm,0.3s,baz=84,slow=6.2,SNR=16						
FITZ				LR	LR	14 05 22.0	
	comp=Z,601nm,18.0s,baz=12,slow=43						
FITZ	**Fitzroy Crossi**	**11.06**	**196**	*e*Pn	**Pn**	**13 59 51.9**	**-2.8**
FITZ				S	**Sn**	**14 01 49.7**	**-7.0**
PLAI	**Plampang**	**11.07**	**262**	P	**Pn**	**13 59 54.8**	**-0.2**
TWSI	**Taliwang, Sumb**	**11.95**	**263**	P	**Pn**	**14 00 06.8**	**+0.3**
GENI	**Genyem**	**12.23**	**67**	P	**Pn**	**14 00 11.7**	**+1.5**
JAY	**Jayapura**	**12.76**	**68**	P	**Pn**	**14 00 18.1**	**+1.1**
	0.2nm,0.3s,baz=268,slow=22,SNR=7.7						
JAY				S	**Sn**	**14 02 37.8**	**-0.1**
	0.1nm,0.3s,baz=275,slow=23,SNR=3.5						
WRAB	**Tennant Creek**	**13.51**	**157**	*c iP*	**Pn**	**14 00 24.7**	**-2.0**
WRAB	**Tennant Creek**	**13.51**	**157**	*e*Pn	**Pn**	**14 00 23.5**	**-3.2**
WRAB				*e*Sn	Sn	14 02 46.6	-9.3
WRA	**Warramunga Arr**	**13.51**	**157**	P	Pn	14 00 19.9	-6.9
	1.7nm,0.3s,baz=339,slow=13,SNR=27						
WRA				S	Sn	14 02 47.6	-8.4
	34nm,0.3s,baz=336,slow=22,SNR=15						
WB2	**Warramunga Arr**	**13.52**	**157**	*e*Pn	**Pn**	**14 00 24.6**	**-2.2**
BBKI	**Banjar Baru**	**14.52**	**285**	P	**P**	**14 00 44.9**	**+2.4**
MTKI	**Muara Teweh, K**	**15.36**	**294**	P	**P**	**14 00 56.5**	**+4.6**
	91nm,0.8s,11µm						
COEN	**Coen**	**15.47**	**116**	*e*Pn	**Pn**	**14 00 51.5**	**+0.1**
	33nm,0.6s						
COEN				*e*Sn	Sn	14 03 31.5	-12
MBWA	**Marble Bar**	**16.25**	**212**	*e*Pn	**Pn**	**14 00 58.6**	**-2.6**
	66nm,1.4s						
MBWA				*e*Sn	Sn	14 03 51.0	-11
MYLDM	**Lahad Datu**	**16.26**	**320**	*e*Pn	**P**	**14 01 01.9**	**+0.1**
	58nm,0.9s						
AS31	**Alice Springs**	**16.84**	**164**	*e*P	**Pn**	**14 01 10.2**	**+1.9**
	9.3nm,0.7s						
ASAR	**Alice Springs**	**16.84**	**164**	P	**P**	**14 01 08.7**	**+0.4**
	2.2nm,0.3s,baz=338,slow=10,SNR=99						
ASAR				S	**Sn**	**14 04 09.8**	**-6.4**
	8.6nm,0.3s,baz=321,slow=16,SNR=7.5						
AS01	**Alice Springs**	**16.86**	**164**	*e*P	**Pn**	**14 01 09.9**	**+1.5**
PCJI	**Pacitan**	**17.55**	**266**	P	**P**	**14 01 14.6**	**-1.5**
PBKI	**Pangkalan Bun**	**17.77**	**284**	P	**Pn**	**14 01 21.7**	**+2.2**
	336nm,1.0s,3µm						
PMG	**Port Moresby**	**18.19**	**97**	P	**Pn**	**14 01 27.8**	**+3.2**
	1.9nm,0.3s,baz=270,slow=7.8,SNR=12						
PMG	**Port Moresby**	**18.19**	**97**	*e*P	**P**	**14 01 21.5**	**-1.6**
PMG				pmax	pmax		
	comp=Z,38nm,0.8s						
PMG	**Port Moresby**	**18.19**	**97**	*e*P	**P**	**14 01 21.5**	**-1.6**
	comp=Z,38nm,0.8s						
KKM	**Kota Kinabalu**	**18.41**	**316**	*e*P	**P**	**14 01 25.0**	**-0.6**
	comp=Z,44nm,1.0s						
MTSU	**Mount Surprise**	**18.41**	**127**	P	**Pn**	**14 01 28.5**	**+1.3**
	baz=37,SNR=49						
STKI	**Sintang**	**18.88**	**292**	P	**Pn**	**14 01 33.7**	**+1.0**
MANU	**Manus Island**	**19.18**	**75**	*e*P	**Pn**	**14 01 37.4**	**+1.2**
	comp=Z,123nm,1.0s						
SBUM	**Sibu**	**19.30**	**300**	*e*P	**Pn**	**14 01 37.0**	**-0.6**
	comp=Z,25nm,0.7s						
KSM	**Kuching**	**20.53**	**295**	*e*P	**P**	**14 01 48.5**	**0.0**
	comp=Z,70nm,0.6s						
CISI	**Cisompet, Garu**	**20.88**	**268**	P	**P**	**14 01 50.1**	**-2.2**
CISI	**Cisompet, Garu**	**20.88**	**268**	*e*P	**P**	**14 01 49.8**	**-2.5**
	comp=Z,76nm,1.2s						
TGY	**Tagaytay City**	**22.80**	**340**	P	**P**	**14 02 13.2**	**+1.1**
	comp=Z,113nm,0.6s,baz=176,slow=3.8,SNR=4.0						
FORT	**Forrest**	**23.23**	**182**	*e*P	**P**	**14 02 17.1**	**+1.2**
	comp=Z,913nm,0.7s						
PPBI	**Pangkal Pinang**	**23.25**	**282**	P	**P**	**14 02 17.9**	**+1.6**
	comp=Z,56nm,0.8s						
LHSI	**Lahat**	**25.48**	**277**	P	**P**	**14 02 40.1**	**+3.6**
	comp=Z,59nm,0.8s						
MYKOM	**Kota Tinggi**	**26.60**	**289**	*e*P	**P**	**14 02 48.0**	**+1.4**
	comp=Z,58nm,1.5s						
STKA	**Stephens Creek**	**27.05**	**156**	P	**P**	**14 02 52.8**	**+2.3**
	comp=Z,9.2nm,0.6s,baz=337,slow=13,SNR=1.2						
IPM	**Ipoh**	**30.21**	**292**	*e*P	**P**	**14 03 18.0**	**-0.6**
	comp=Z,16nm,0.7s						
MNSI	**Mandailing Nat**	**30.34**	**284**	P	**P**	**14 03 20.3**	**+0.4**
	comp=Z,46nm,0.8s						
KULM	**Kulim**	**30.87**	**293**	*e*P	**P**	**14 03 23.4**	**-1.1**
	comp=Z,18nm,0.9s						
PSI	**Prapat**	**31.57**	**288**	P	**P**	**14 03 29.8**	**-1.0**
	comp=Z,29nm,0.8s,baz=94,slow=6.9,SNR=23						
PSI	**Prapat**	**31.57**	**288**	*e*P	**P**	**14 03 28.7**	**-2.1**
PSI				pmax	pmax		
	comp=Z,36nm,0.9s						
PSI	**Prapat**	**31.57**	**288**	*e*P	**P**	**14 03 28.7**	**-2.1**
	comp=Z,36nm,0.9s						
UBPT	**Khong Chiam**	**32.37**	**314**	P	**P**	**14 03 38.0**	**+0.5**
	comp=Z,26nm,1.6s						
GSI	**Gunungsitoli**	**32.41**	**284**	P	**P**	**14 03 39.8**	**+1.8**
	comp=Z,27nm,0.7s						
GSI	**Gunungsitoli**	**32.41**	**284**	*e*P	**P**	**14 03 36.6**	**-1.4**
	comp=Z,17nm,0.6s						
TPTI	**Tapaktuan**	**33.37**	**287**	P	**P**	**14 03 47.7**	**+1.4**
	comp=Z,15nm,0.7s						
KRAB	**Krabi**	**33.43**	**297**	P	**P**	**14 03 46.9**	**+0.1**
	comp=Z,24µm,1.0s,comp=Z,813µm						
MLSI	**Meulaboh, Aceh**	**34.43**	**289**	P	**P**	**14 03 56.3**	**+0.8**
	comp=Z,55nm,0.5s						
SKNT	**Sakolnakorn**	**34.56**	**315**	P	**P**	**14 03 56.9**	**+0.3**
	comp=Z,24nm,1.2s						
KHON	**Khomkaen**	**34.97**	**313**	P	**P**	**14 04 04.6**	**+4.5**
	comp=Z,6.5nm,0.7s,comp=Z,478nm						
UTTA	**Uttaradit**	**37.53**	**312**	P	**P**	**14 04 22.2**	**+0.3**
	comp=Z,9.9nm,0.8s						
SUKH	**Sukhothai**	**38.05**	**311**	P	**P**	**14 04 26.9**	**+0.7**
	comp=Z,12nm,0.8s,comp=Z,91nm						
LAMP	**Lampang**	**38.70**	**312**	P	**P**	**14 04 32.4**	**+0.7**
	comp=Z,5.9nm,0.9s,comp=Z,71nm						
CMAR	**Chiang Mai Arr**	**39.17**	**311**	P	**P**	**14 04 36.0**	**+0.4**
	comp=Z,11nm,0.9s,baz=142,slow=7.1,SNR=49						
CMAR				PcP	**PcP**	**14 06 44.0**	**+1.4**
	comp=Z,1.0nm,0.6s,baz=164,slow=2.7,SNR=4.5						
CMMT	**Chiang Mai**	**39.39**	**312**	P	**P**	**14 04 37.7**	**+0.3**
	comp=Z,25nm,1.0s						
CHTO	**Chiang Mai**	**39.39**	**312**	P	**P**	**14 04 37.7**	**+0.3**
	comp=Z,111nm,1.0s						
CHTO	**Chiang Mai**	**39.39**	**312**	*e*P	**P**	**14 04 36.2**	**-1.2**
CHTO				pmax	pmax		
	comp=Z,19nm,0.8s						
CHTO	**Chiang Mai**	**39.39**	**312**	*e*P	**P**	**14 04 36.2**	**-1.2**
	comp=Z,19nm,0.8s						
GYA	**Guiyang**	**40.00**	**328**	P	**P**	**14 04 44.2**	**+1.7**
GYA				pP	pP	14 05 17.0	+5.3
GYA				sP	sP	14 05 34.2	+7.6
GYA				PP	**PnPn**	**14 06 22.8**	**+0.9**
GYA				S	**S**	**14 10 39.6**	**+1.0**
GYA				sS	sS	14 11 35.9	+6.6
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA				pmax	pmax		
	comp=Z,110nm,5.3s						
WHN	**Wuhan**	**40.25**	**340**	P	**P**	**14 04 45.0**	**+0.7**
JNU	**Nakatsue**	**40.38**	**3**	P	**P**	**14 04 44.7**	**-0.7**
	comp=Z,5.8nm,0.7s,baz=226,slow=1.7,SNR=6.4						
KMI	**Kunming**	**41.17**	**323**	P	**P**	**14 04 53.9**	**+1.6**
KMI				pmax	pmax		
	comp=Z,17nm,0.6s						
KMI				pmax	pmax		
	comp=Z,81nm,4.2s						
KMI				LR	LR		
	comp=Z,570nm,12.6s						
KMI				LR	LR		
	comp=Z,730nm,12.9s						
KMI				LR	LR		
	comp=Z,300nm,13.7s						
ENH	**Enshi**	**41.86**	**335**	*e*P	**P**	**14 04 53.9**	**-3.7**
	comp=Z,5.8nm,0.4s						
MJAR	**Matsushiro Arr**	**44.62**	**11**	P	**P**	**14 05 17.8**	**-1.8**
	comp=Z,2.0nm,0.7s,baz=189,slow=9.5,SNR=10						
MAJO	**Matsushiro**	**44.62**	**11**	*e*P	**P**	**14 05 18.4**	**-1.2**
MAJO				pmax	pmax		
	comp=Z,19nm,0.9s						
KSAR	**Wonju Array Be**	**44.65**	**359**	P	**P**	**14 05 20.2**	**+0.4**
KSAR	**Wonju Array Be**	**44.65**	**359**	P	**P**	**14 05 20.2**	**+0.4**
KSRS	**Korea Array**	**44.67**	**359**	P	**P**	**14 05 20.2**	**+0.3**
	comp=Z,2.9nm,0.5s,baz=176,slow=9.2,SNR=18						
CD2	**Chengdu**	**45.09**	**329**	*e*P	**P**	**14 05 24.2**	**+0.7**
CD2				pP	pP	14 05 57.0	+3.7
CD2				sP	sP	14 06 13.7	+5.7
CD2				PcS	**PcS**	**14 10 56.0**	**-0.1**
CD2				S	**S**	**14 11 53.3**	**+0.4**
CD2				sS	sS	14 12 51.0	+6.5
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.4s						
LZH	**Lanzhou**	**49.28**	**333**	*e*P	**P**	**14 05 56.7**	**+0.7**
LZH				pP	pP	14 06 30.5	+4.2
LZH				sP	sP	14 06 47.0	+6.1
LZH				PP	**PP**	**14 07 52.5**	**+1.2**
LZH				*e*S	**S**	**14 12 51.1**	**-1.3**
LZH				sS	sS	14 13 49.8	+5.1
LZH				SS	**SS**	**14 16 21.0**	**-4.9**
LZH				pmax	pmax		
	comp=Z,86nm,1.5s						
LZH				pmax	pmax		
	comp=Z,170nm,5.3s						
LZH				LR	LR		
	comp=Z,250nm,14.0s						
LZH				LR	LR		
	comp=Z,510nm,13.0s						
LZH				LR	LR		
	comp=Z,1µm,17.8s						
PALK	**Pallekele**	**50.21**	**286**	P	**P**	**14 06 04.7**	**+1.4**
	comp=Z,3.4nm,0.6s,baz=116,slow=7.2,SNR=3.9						
HHC	**Hu-ho-hao-te**	**50.62**	**343**	*e*P	**P**	**14 06 10.0**	**+4.0**
HHC				pmax	pmax		
	comp=Z,19nm,1.5s						
HHC				pmax	pmax		
	comp=Z,84nm,8.1s						
USRK	**Ussuriysk Ar.**	**51.47**	**3**	P	**P**	**14 06 11.9**	**-0.2**
	comp=Z,3.0nm,0.5s,baz=179,slow=6.2,SNR=11						
RPZ	**Rata Peaks**	**51.58**	**142**	P	**P**	**14 06 16.4**	**+3.4**
	comp=Z,12nm,0.5s,baz=354,slow=2.4,SNR=5.2						
LSA	**Lhasa**	**51.75**	**317**	*e*P	**P**	**14 06 14.1**	**-1.0**
LSA				pmax	pmax		
	comp=Z,24nm,0.6s						
LSA	**Lhasa**	**51.75**	**317**	*e*P	**P**	**14 06 14.1**	**-1.0**
	comp=Z,24nm,0.6s						
KHZ	**Kahutara**	**52.50**	**139**	*e*P	**P**	**14 06 20.4**	**+0.5**
RAMN	**Ramite**	**53.34**	**312**	*e*P	**P**	**14 06 26.8**	**+0.2**
	comp=Z,111nm,0.5s						
GTA	**Gaotai**	**53.83**	**332**	⇑P	**P**	**14 06 29.4**	**-0.4**
GTA				pP	pP	14 07 00.9	+0.4
GTA				sP	sP	14 07 16.2	+1.2
GTA				S	**S**	**14 13 52.8**	**-1.9**
GTA				sS	sS	14 14 50.3	+2.6
GTA				SS	**SS**	**14 17 33.7**	**-4.0**
GTA				pmax	pmax		
	comp=Z,23nm,1.1s						
GTA				pmax	pmax		
	comp=Z,60nm,4.8s						
GTA				LR	LR		
	comp=Z,430nm,19.5s						
GTA				LR	LR		
	comp=Z,840nm,19.0s						
GTA				LR	LR		
	comp=Z,340nm,19.0s						
GUN	**Gumba**	**54.41**	**312**	*e*P	**P**	**14 06 34.3**	**-0.2**
	comp=Z,84nm,0.5s						
PKIN	**Phulchoki**	**54.58**	**311**	*e*P	**P**	**14 06 35.0**	**-0.6**
	comp=Z,30nm,0.5s						
KKN	**Kakani**	**54.78**	**312**	*e*P	**P**	**14 06 36.7**	**-0.3**
	comp=Z,38nm,0.6s						
DMN	**Daman**	**54.81**	**311**	*e*P	**P**	**14 06 37.0**	**-0.3**
	comp=Z,40nm,0.7s						
GKN	**Gorkha**	**55.38**	**311**	*e*P	**P**	**14 06 40.8**	**-0.4**
	comp=Z,67nm,0.4s						
KOLN	**Koldanda**	**56.03**	**311**	*e*P	**P**	**14 06 45.8**	**-0.1**
	comp=Z,63nm,0.7s						
KLR	**Kul'dur**	**56.48**	**2**	⇓*e*P	**P**	**14 06 48.2**	**-0.3**
PYUN	**Piuthan**	**56.66**	**311**	*e*P	**P**	**14 06 50.3**	**-0.1**
	comp=Z,73nm,0.7s						
SONM	**Songino Array**	**58.51**	**342**	P	**P**	**14 07 03.5**	**+0.6**
	comp=Z,5.1nm,0.8s,baz=160,slow=8.1,SNR=28						
SONA1	**Songino Array**	**58.52**	**342**	*e*P	**P**	**14 07 02.7**	**-0.2**
ZAK	**Zakamensk**	**61.72**	**342**	*e*P	**P**	**14 07 23.7**	**-1.0**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.1s						
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.9s						
WMQ	**Urumqi**	**63.16**	**328**	⇑*i*P	**P**	**14 07 34.6**	**+0.3**
WMQ				pP	PcP	14 08 11.0	+0.3
WMQ				pmax	pmax		
	comp=Z,28nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,140nm,4.0s						
BOD	**Bodaibo**	**66.15**	**351**	*e*P	**P**	**14 07 52.1**	**-1.2**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.3s						
PDGK	**Podgornoye**	**67.47**	**323**	*i* P	**P**	**14 08 02.1**	**+0.1**
PDGK				pmax	pmax		
	comp=Z,17nm,0.7s						
KSH	**Kashi**	**67.59**	**318**	P	**P**	**14 08 03.7**	**+0.6**
KSH				*e*pP	pP	14 08 37.8	+2.7
KSH				*e*sP	sP	14 08 53.2	+4.0
KSH				PcS		14 12 32.7	
KSH				S	**S**	**14 16 46.1**	**-3.6**
KSH				ScS	**SKiKP**	**14 17 44.2**	**-3.7**
KSH				pmax	pmax		
	comp=Z,20nm,0.6s						
KSH				LR	LR		
	comp=Z,380nm,13.1s						
KSH				LR	LR		
	comp=Z,150nm,6.7s						
KSH				LR	LR		
	comp=Z,210nm,8.3s						
MK01	**Makanchi Array**	**67.97**	**327**	*e*P	**P**	**14 08 05.2**	**+0.1**
MK31	**Makanchi Array**	**67.98**	**327**	*i* P	**P**	**14 08 05.5**	**+0.3**
MK31				pmax	pmax		
	comp=Z,16nm,0.5s						
MK31	**Makanchi Array**	**67.98**	**327**	*e*P	**P**	**14 08 05.5**	**+0.3**
MKAR	**Makanchi Array**	**67.98**	**327**	P	**P**	**14 08 05.5**	**+0.2**
	comp=Z,23nm,0.4s,baz=120,slow=8.2,SNR=331						
MKAR	**Makanchi Array**	**67.98**	**327**	P	**P**	**14 08 05.5**	**+0.2**
MKAR				pmax	pmax		
	comp=Z,25nm,0.5s						
MAKZ	**Makanchi**	**68.16**	**327**	*e*P	**P**	**14 08 06.4**	**0.0**
MAKZ				pmax	pmax		
	comp=Z,15nm,0.6s						
MAKZ	**Makanchi**	**68.16**	**327**	*e*P	**P**	**14 08 06.4**	**0.0**
	comp=Z,15nm,0.6s						
MA2	**Magadan**	**69.05**	**12**	*e*P	**P**	**14 08 12.9**	**+1.4**
YAK	**Yakutsk**	**69.26**	**0**	*i* P	**P**	**14 08 12.3**	**-0.4**
YAK				pmax	pmax		
	comp=Z,24nm,0.8s						
YAK	**Yakutsk**	**69.26**	**0**	P	**P**	**14 08 10.2**	**-2.5**
	comp=Z,32nm,0.8s						
TKM2	**Tokmak 2**	**69.62**	**321**	*i* P	**P**	**14 08 15.8**	**+0.1**
TKM2				pmax	pmax		
	comp=Z,16nm,0.8s						
TKM2	**Tokmak 2**	**69.62**	**321**	*e*P	**P**	**14 08 14.6**	**-1.1**
	comp=Z,15nm,0.8s						
AAK	**Ala-Archa**	**70.16**	**320**	P	**P**	**14 08 20.4**	**+1.4**
	comp=Z,11nm,0.7s,baz=120,slow=4.5,SNR=21						
AAK	**Ala-Archa**	**70.16**	**320**	*c iP*	**P**	**14 08 19.2**	**+0.3**
AAK				pmax	pmax		
	comp=Z,50nm,0.9s						
**A

SVE				pmax	pmax		
	comp=Z,24nm,1.0s						
ARU	**Arti**	**85.49**	**328**c	*i*P	**P**	**14 09 42.6**	**-0.6**
ARU						14 13 01.9	
ARU				S	**SKSac**	**14 19 52.8**	**-3.3**
ARU				SS	**SS**	**14 25 36.7**	**-5.5**
ARU				pmax	pmax		
	comp=Z,14nm,1.0s						
ARU	**Arti**	**85.49**	**328**	*e*P	**P**	**14 09 41.7**	**-1.5**
	comp=Z,11nm,0.7s						
KMBO	**Kilima Mbogo**	**91.47**	**269**	P	**P**	**14 10 15.7**	**+2.8**
	comp=Z,1.2nm,0.3s,baz=45,slow=10.0,SNR=2.8						
KBZ	**Khabaz**	**92.19**	**314**	P	**P**	**14 10 15.4**	**+0.2**
	comp=Z,1.3nm,0.7s,baz=86,slow=4.0,SNR=2.7						
NEY	**Neytrino**	**92.25**	**313**‖	*e*P	**P**	**14 10 13.9**	**-1.9**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.8s						
KIV	**Kislovodsk**	**92.37**	**314**	*e*P	**P**	**14 10 13.6**	**-2.6**
KIV				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ILAR	**Eielson Array**	**94.22**	**25**	P	**P**	**14 10 21.5**	**-2.6**
	comp=Z,0.6nm,0.7s,baz=233,slow=4.2,SNR=2.5						
OBN	**Obninsk**	**97.36**	**325**‖	*e*P	**P**	**14 10 37.2**	**-1.4**
OBN				*i* *PP	**pP**	**14 11 15.0**	**+2.7**
OBN				pmax	pmax		
	comp=Z,7.0nm,1.0s						
BRTR	**Keskin Array B**	**98.72**	**309**	P	Pdif	14 10 45.4	+0.1
	comp=Z,0.6nm,0.6s,baz=112,slow=6.5,SNR=3.4						
ARCES	**ARCESS Array B**	**101.60**	**340**	P	**Pdif**	**14 10 55.9**	**-1.3**
	comp=Z,0.8nm,0.5s,baz=90,slow=5.4,SNR=8.8						
FINES	**FINESS Array B**	**102.61**	**331**	P	**Pdif**	**14 11 01.3**	**-0.6**
	comp=Z,0.3nm,0.5s,baz=82,slow=4.0,SNR=4.9						
VSU	**Vasula**	**102.65**	**328**‖	*e*P	**Pdif**	**14 10 59.8**	**-2.3**
GERES	**GERESS Array B**	**112.04**	**320**	PKiKP	**PKiKP**	**14 15 40.7**	**+0.4**
	comp=Z,1.9nm,0.6s,baz=90,slow=2.0,SNR=4.7						
TXAR	**Lajitas Array**	**126.11**	**59**	PKP	**PKPdf**	**14 16 09.1**	**+1.2**
	comp=Z,0.2nm,0.4s,baz=174,slow=3.5,SNR=4.9						
DBIC	**Dimbokro**	**134.09**	**272**	PKP	**PKPdf**	**14 16 25.6**	**+2.3**
	comp=Z,3.9nm,0.6s,baz=136,slow=2.1,SNR=2.9						
CPUP	**Villa Florida**	**145.90**	**170**	PKPbc	**PKPab**	**14 16 46.6**	**+0.9**
	comp=Z,7.5nm,0.8s,baz=187,slow=3.1,SNR=17						
LPAZ	**La Paz**	**151.03**	**145**	PKPbc	**PKPbc**	**14 17 01.4**	**+1.9**
	comp=Z,2.4nm,0.5s,baz=87,slow=2.3,SNR=12						

*GEN **09** 13:57:37.1,43.84N×10.86E,h4km,ML2.1*
*CSEM **09** 13:57:38.1±0.1,43.87N×10.78E,h5km,ML2.4/6,Error ellipse: s-maj=3.4km s-min=1.8km az=27.0*
ROM 09 13:57:37.4±0.1,43.87N×10.79E,h6km±1km,Ml1.9/8, Error ellipse: s-maj=2.7km s-min=1.2km az=35.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRMI	**Carmignano**	**0.15**	**120**	Pg	Pg	13 57 40.8	+0.3
CRMI				Sg	Sg	13 57 43.5	+0.9
	373nm,0.3s						
CRMI	**Carmignano**	**0.15**	**120**	Pg	Pg	13 57 40.8	+0.3
CRMI				Sg	Sg	13 57 43.5	+0.9
	373nm,0.3s						
POPM	**Popiglio**	**0.18**	**352**	P	Pg	13 57 41.7	+0.6
POPM				S	Sg	13 57 44.5	+0.9
MAIM	**Mastiano**	**0.22**	**283**	Pg	Pg	13 57 42.7	+0.9
MAIM				Sg	Sg	13 57 46.4	+1.6
	114nm,0.5s						
MAIM	**Mastiano**	**0.22**	**283**	Pg	Pg	13 57 42.7	+0.9
MAIM				S	Sg	13 57 46.1	+1.3
MAIM				Sg	Sg	13 57 46.4	+1.6
	114nm,0.5s						
BDI	**Bagni Di Lucca**	**0.24**	**325**	Pg	Pg	13 57 42.7	+0.5
BDI				Sg	Sg	13 57 47.3	+1.8
	299nm,0.3s						
BDI	**Bagni Di Lucca**	**0.24**	**325**	Pg	Pg	13 57 42.7	+0.5
BDI				Sg	Sg	13 57 47.3	+1.8
	299nm,0.3s						
FNVD	**Fontana Vidola**	**0.39**	**38**	Pg	Pg	13 57 45.5	+0.6
	155nm,0.5s						
FNVD	**Fontana Vidola**	**0.39**	**38**	Pg	Pg	13 57 45.5	+0.6
	155nm,0.5s						
VLC	**Villacollemand**	**0.41**	**315**	Pg	Pg	13 57 45.9	+0.4
VLC				Sg	Sb	13 57 52.7	-1.0
	50nm,0.2s						
VLC	**Villacollemand**	**0.41**	**315**	Pg	Pg	13 57 45.9	+0.4
VLC				Sg	Sb	13 57 52.7	-1.0
	50nm,0.2s						
SARO	**Sassorosso**	**0.43**	**319**	P	Pg	13 57 46.0	+0.3
SARO				S	Sb	13 57 52.7	-1.4
SEI	**Scarperia**	**0.45**	**65**	Pg	Pg	13 57 46.4	+0.3
SEI				Sg	Sb	13 57 54.7	0.0
SEI	**Scarperia**	**0.45**	**65**	Pg	Pg	13 57 46.4	+0.3
SEI				Sg	Sb	13 57 54.7	0.0
ZCCA	**Zocca**	**0.50**	**15**	Pg	Pb	13 57 48.7	0.0
	58nm,0.5s						
ZCCA	**Zocca**	**0.50**	**15**	Pg	Pb	13 57 48.7	0.0
	58nm,0.5s						
CSNT	**Castellina Chi**	**0.54**	**137**	Pg	Pb	13 57 49.3	+0.1
CSNT				Sg	Sb	13 57 56.2	-0.9
	61nm,0.6s						
CSNT	**Castellina Chi**	**0.54**	**137**	Pg	Pb	13 57 49.3	+0.1
CSNT				Sg	Sb	13 57 56.2	-0.9
	61nm,0.6s						
VMG	**Vicchio**	**0.55**	**80**	Pg	Pg	13 57 48.2	+0.1
VMG				Sg	Sb	13 57 57.5	-0.1
VMG	**Vicchio**	**0.55**	**80**	Pg	Pg	13 57 48.2	+0.1
VMG				Sg	Sb	13 57 57.5	-0.1
ASQU	**Asqua**	**0.73**	**95**	Pg	Pb	13 57 52.2	-0.3
ASQU				Sg	Sb	13 58 02.3	-0.4
ASQU	**Asqua**	**0.73**	**95**	Pg	Pb	13 57 52.2	-0.3
ASQU				Sg	Sb	13 58 02.3	-0.4
TRIF	**Trifonti**	**0.75**	**174**	Pg	Pb	13 57 52.7	-0.2
TRIF	**Trifonti**	**0.75**	**174**	Pg	Pb	13 57 52.7	-0.2
SFI	**Santa Sofia**	**0.77**	**87**	Pg	Pb	13 57 53.1	0.0
SFI				Sg	Sb	13 58 03.8	+0.1
	54nm,0.6s						
SFI	**Santa Sofia**	**0.77**	**87**	Pg	Pb	13 57 53.1	0.0
SFI				Sg	Sb	13 58 03.8	+0.1
	54nm,0.6s						
GRAM	**Graiana**	**0.81**	**320**	P	Pg	13 57 53.5	+0.4
CODM	**Codolo**	**0.86**	**308**	P	Pb	13 57 54.5	-0.2

*GCMT **09** 14:00:15.6±0.5,29.54S×176.62W,h32km±1km,MW5.3/68, Moment Tensor Solution. s16,c16; s68,c91; Duration: 1s1 Moment tensor: Scale 10^17^Nm; Mrr1.02±.12; Mθθ-0.06±.07; Mφφ-0.95±.07; Mrθ0.37±.06; Mrφ-0.11±.04; Mθφ0.28±.05; Best double couple: M0:1.09200×10^17^ NP1:φ23.00000°,δ56.00000°,λ107.00000°. NP2: φ174.00000°,δ38.00000°,λ66.00000°. Principal axes: T 1.1620, Plg73.0000°, Azm338.0000°; N -0.1350, Plg14.0000°, Azm193.0000°; P -1.0230, Plg10.0000°, Azm101.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **09** 14:00:15.6±0.5,29.19S×176.81W,h10km,mb4.9/1 Error ellipse: s-maj=18.2km s-min=12.4km az=138.0*
*ISCJB **09** 14:00:16.9±0.7,29.59S±0.07×176.74W±0.09,h36km, mb4.7/14, Error ellipse: s-maj=11.8km s-min=9.4km az=17.1*
*IDC **09** 14:00:23.5±2.1,29.20S×177.04W,h61km±13km,mb4.5/13, mb1 4.5/13,mb1mx4.2/39,mbtmp4.8/13, Error ellipse: s-maj=28.1km s-min=23.6km az=112.0*
ISC 09 14:00:19.3±0.6,29.38S±0.09×176.80W±0.09,h36km,n67, σ1§26/59,mb4.8/14,2D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.99**	**277**	P	**Pn**	**14 00 37.4**	**+0.8**
	5μm,0.3s,baz=97,slow=14,SNR=9.1						
RAO				S	**Sn**	**14 00 51.6**	**+2.3**
	11μm,0.3s,baz=116,slow=22,SNR=9.2						
RAO	**Raoul Island**	**0.99**	**277**	*e*Pn	**Pn**	**14 00 36.3**	**-0.3**
RAO				*e*Sn	**Sn**	**14 00 48.3**	**-0.9**
OUZ	**Omahuta**	**10.00**	**232**	Pn	**Pn**	**14 02 41.2**	**+0.9**
	51nm,0.6s						
URZ	**Urewera**	**10.20**	**208**	P	Pn	14 02 38.0	-5.1
	baz=278,slow=6.2,SNR=1.5						
URZ				S	**Sn**	**14 04 33.0**	**-3.2**
	3.9nm,0.3s,baz=251,slow=9.9,SNR=6.0						
CTA	**Charters Tower**	**34.69**	**277**	P	**P**	**14 07 06.5**	**+0.7**
	6.7nm,0.4s,baz=114,slow=12,SNR=3.0						
STKA	**Stephens Creek**	**35.73**	**255**	P	**P**	**14 07 15.9**	**+1.3**
	9.2nm,0.8s,baz=101,slow=7.3,SNR=5.6						
BBOO	**Buckleboo**	**40.26**	**253**	P	P	14 07 47.1	-5.7
ASAR	**Alice Springs**	**44.22**	**265**	P	**P**	**14 08 24.3**	**-0.9**
	4.3nm,0.4s,baz=105,slow=6.9,SNR=5.0						
WRA	**Warramunga Arr**	**45.12**	**270**	P	**P**	**14 08 30.9**	**-1.4**
	6.3nm,0.5s,baz=110,slow=8.1,SNR=6.0						
FITZ	**Fitzroy Crossi**	**53.42**	**269**	P	**P**	**14 09 34.6**	**-1.2**
	12nm,1.0s,baz=103,slow=11,SNR=3.5						
CASY	**Casey**	**56.53**	**208**	*e*P	**P**	**14 09 57.1**	**-0.5**
MAW	**Mawson**	**73.63**	**200**	P	**P**	**14 11 50.7**	**+2.2**
	9.2nm,1.0s,baz=100,slow=8.3,SNR=4.1						
MJAR	**Matsushiro Arr**	**78.01**	**324**	P	**P**	**14 12 13.2**	**-0.8**
	6.7nm,1.1s,baz=160,slow=6.0,SNR=9.4						
MAJO	**Matsushiro**	**78.01**	**324**	*e*P	**P**	**14 12 12.3**	**-1.6**
	13nm,1.3s						
SYO	**Syowa Base**	**78.34**	**193**‖	*e*P	**P**	**14 12 15.6**	**+0.3**
SYO	**Syowa Base**	**78.34**	**193**‖	*es*P	P	14 12 21.8	+6.5
ASAJ	**Asahikawa**	**82.03**	**332**	P	**P**	**14 12 36.7**	**+1.3**
	18nm,1.2s,baz=166,slow=11						
ASAJ	**Asahikawa**	**82.03**	**332**	*e*P	**P**	**14 12 35.2**	**-0.2**
KSRS	**Korea Array**	**84.25**	**319**	P	**P**	**14 12 47.9**	**+0.8**
	5.2nm,1.1s,baz=151,slow=5.6,SNR=3.5						
KSAR	**Wonju Array Be**	**84.27**	**319**	P	**P**	**14 12 47.9**	**+0.7**
YSS	**Yuzh-Sakhalins**	**84.29**	**333**	*e*P	**P**	**14 12 43.6**	**-3.4**
PETK	**Petropavlovsk-**	**85.09**	**345**	P	**P**	**14 12 51.0**	**+0.1**
	1.8nm,0.6s,baz=130,slow=7.8,SNR=2.1						
PSI	**Prapat**	**86.37**	**275**	P	**P**	**14 12 56.9**	**-1.6**
	3.1nm,0.4s,baz=101,slow=4.5,SNR=4.0						
USRK	**Ussuriysk Ar.**	**86.89**	**326**	P	**P**	**14 13 00.1**	**+0.1**
	24nm,1.3s,baz=124,slow=3.4,SNR=13						
SEY	**Seymchan**	**95.23**	**346**	P	**P**	**14 13 38.9**	**+0.5**
	2.9nm,1.0s,baz=165,slow=9.7,SNR=3.4						
MKAR	**Makanchi Array**	**117.91**	**310**	PKP	**PKPdf**	**14 19 00.8**	**-1.0**
	0.4nm,0.4s,baz=74,slow=1.0,SNR=4.0						
ZALV	**Zalesovo Beam**	**117.96**	**319**	PKP	**PKPdf**	**14 19 01.6**	**0.0**
	0.8nm,0.8s,baz=219,slow=0.9,SNR=2.8						
KURK	**Kurchatov**	**121.09**	**314**	PKP	**PKPdf**	**14 19 07.1**	**-0.6**
KURBB	**Kurchatov Arra**	**121.13**	**314**	PKP	**PKPdf**	**14 19 07.1**	**-0.7**
	1.1nm,0.6s,baz=113,slow=2.1,SNR=4.3						
BVAR	**Borovoye Array**	**126.40**	**316**	PKP	**PKPdf**	**14 19 18.2**	**+0.4**
	3.7nm,1.0s,baz=90,slow=2.2,SNR=4.2						
LSZ	**Lusaka**	**129.47**	**212**	PKP	**PKPdf**	**14 19 27.3**	**+2.3**
	1.1nm,0.4s,baz=194,slow=4.8,SNR=3.2						
ARCES	**ARCESS Array B**	**137.81**	**349**	PKhKP	PKPpre	14 19 30.7	
	0.9nm,0.6s,baz=90,slow=2.7,SNR=3.7						
ARCES				PKP	**PKiKP**	**14 19 39.8**	**-1.0**
	2.6nm,0.9s,baz=72,slow=4.0,SNR=3.0						
H10S3	**ASCENSION HYDR**	**138.18**	**153**	T	T	16 55 12.9	
	baz=202						
H10S2	**ASCENSION HYDR**	**138.19**	**153**	T	T	16 55 13.7	
	baz=202						
H10S1	**ASCENSION HYDR**	**138.20**	**153**	T	T	16 55 05.5	
	baz=202						
H10N3	**ASCENSION HYDR**	**139.26**	**153**	T	T	16 56 36.6	
	baz=204,slow=75,SNR=2.7						
H10N1	**ASCENSION HYDR**	**139.26**	**153**	T	T	16 56 28.8	
	baz=204,slow=75,SNR=3.3						
H10N2	**ASCENSION HYDR**	**139.28**	**153**	T	T	16 56 34.2	
	baz=204,slow=75,SNR=4.0						
TBLG	**Delisi**	**144.36**	**302**	P	PKPbc	14 19 50.5	+0.5
FINES	**FINESS Array B**	**144.53**	**341**	PKhKP	PKPpre	14 19 49.2	
	4.9nm,0.5s,baz=44,slow=4.2,SNR=9.7						
OBN	**Obninsk**	**144.91**	**327**	PKP	PKPbc	14 19 51.4	+0.2
	19nm,0.4s,baz=334,slow=2.9,SNR=7.7						
ONI	**Oni**	**145.19**	**303**	P	**PKPdf**	**14 19 53.5**	**+0.5**
BGD	**Bogdanovka**	**145.26**	**301**	P	**PKPdf**	**14 19 55.1**	**+1.7**
AKH	**Akhalkalaki**	**145.32**	**301**	P	**PKPdf**	**14 19 54.3**	**+0.8**
KBZ	**Khabaz**	**145.39**	**305**	PKPbc	**PKPab**	**14 19 53.5**	**+0.1**
	17nm,1.2s,baz=188,slow=1.7,SNR=7.6						
KVAR	**Kislovodsk Arr**	**145.49**	**306**	PKPbc	**PKPab**	**14 19 54.3**	**+0.4**
	16nm,1.0s,baz=290,slow=2.9,SNR=9.0						
CHVG	**Ch'k'valeri**	**146.16**	**304**	P	**PKPab**	**14 19 57.0**	**+0.7**
NB2	**NORSAR Subarra**	**147.89**	**353**	PKP	**PKPbc**	**14 19 59.3**	**-0.6**
	comp=Z,13nm,1.0s,baz=12,slow=4.4						
NOA	**NORSAR Array B**	**147.89**	**353**	PKPbc	**PKPbc**	**14 19 59.5**	**-0.4**
	comp=Z,1.9nm,0.7s,baz=12,slow=4.5,SNR=2.9						
NACGM	**Naroch**	**149.36**	**333**	*e*	**PKPbc**	**14 20 02.0**	**-1.8**
ASF	**Jabal al Asfar**	**150.98**	**284**	PKPbc	**PKPbc**	**14 20 10.5**	**+1.9**
	comp=Z,6.1nm,0.8s,baz=115,slow=4.8,SNR=7.4						
AKASG	**Malin Array Be**	**151.09**	**325**	PKPbc	**PKPbc**	**14 20 08.0**	**-0.1**
	comp=Z,2.0nm,0.3s,baz=42,slow=2.6,SNR=9.1						
MMAI	**Mount Meron Ar**	**152.28**	**286**	PKPbc	**PKPbc**	**14 20 13.2**	**+1.7**
	comp=Z,3.9nm,0.5s,baz=83,slow=7.1,SNR=8.8						
EIL	**Elat**	**152.41**	**279**	PKPbc	**PKPbc**	**14 20 13.5**	**+1.7**
	comp=Z,11nm,0.8s,baz=4.0,slow=1.2,SNR=7.2						
BRTR	**Keskin Array B**	**153.00**	**301**	PKPbc	**PKPbc**	**14 20 11.6**	**-1.5**
	comp=Z,1.3nm,0.8s,baz=151,slow=3.3,SNR=2.5						
BRTR				PKPab	**PKPab**	**14 20 22.6**	**-2.0**
	comp=Z,2.7nm,0.7s,baz=142,slow=6.0,SNR=5.7						
MLR	**Muntele Rosu**	**155.94**	**318**	PKPab	**PKPab**	**14 20 36.8**	**0.0**
	comp=Z,0.6nm,0.6s,baz=9.4,slow=7.0,SNR=3.5						
OKC	**Ostrava-Krasne**	**156.63**	**335**	*e*PKPAB	**PKPab**	**14 20 39.3**	**0.0**
UPC	**Upice**	**156.79**	**339**	*e*PKPAB	**PKPab**	**14 20 40.2**	**+0.2**
DPC	**Dobruska-Polom**	**156.82**	**338**	*e*PKPAB	**PKPab**	**14 20 40.9**	**+0.7**
KRLC	**Kraliky**	**156.91**	**337**	*e*PKPAB	**PKPab**	**14 20 41.4**	**+0.8**
BRG	**Berggiesshubel**	**157.06**	**342**	*e*P	**PKPab**	**14 20 41.4**	**+0.2**
	comp=Z,27nm,1.7s						
BRG	**Berggiesshubel**	**157.06**	**342**	*e*PKP	**PKPab**	**14 20 41.4**	**+0.2**
	comp=Z,27nm,1.7s						
VRAC	**Vranov**	**157.63**	**337**	PKPab	**PKPab**	**14 20 44.2**	**+0.5**
	comp=Z,4.1nm,0.9s,baz=18,slow=4.6,SNR=5.7						
PRU	**Pruhonice**	**157.69**	**340**	*e*PKPAB	**PKPab**	**14 20 44.1**	**+0.2**
NKC	**Novy Kostel**	**158.03**	**344**	*e*PKPAB	**PKPab**	**14 20 45.3**	**-0.1**
KHC	**Kasperske Hory**	**158.74**	**341**	*e*PKPAB	**PKPab**	**14 20 48.6**	**+0.1**
TORD	**Torodi Ar. Bea**	**163.79**	**175**	PKPab	**PKPab**	**14 21 13.5**	**+2.2**
	comp=Z,1.7nm,0.8s,baz=140,slow=2.0,SNR=3.8						

*NEIC **09** 14:04:54.7±0.4,29.35S×176.87W,h10km,mb4.4/1,Error ellipse: s-maj=11.4km s-min=9.3km az=116.0*
*ISCJB **09** 14:04:56.2±0.5,29.37S±0.07×176.89W±0.08,h31km, mb4.7/22,Error ellipse: s-maj=10.3km s-min=9.2km az=149.5*
*IDC **09** 14:05:01.2±1.9,29.15S×177.14W,h45km±13km,mb4.3/18, mb1 4.4/18,mb1mx4.2/37, mbtmp4.6/18,Error ellipse: s-maj=21.8km s-min=17.6km az=101.0*
ISC 09 14:04:58.4±0.4,29.29S±0.07×176.98W±0.07,h31km, n100,σ1§54/97,mb4.7/22,14C-5D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.82**	**272**	P	**Pb**	**14 05 14.7**	**+0.5**
	4μm,0.3s,baz=84,slow=7.4,SNR=52						
RAO				S	**Sb**	**14 05 25.9**	**+1.0**
	8μm,0.3s,baz=92,slow=22,SNR=20						
OUZ	**Omahuta**	**9.93**	**231**	*e*Pn	Pn	14 07 27.1	+8.2
	30nm,0.6s						
URZ	**Urewera**	**10.21**	**207**	P	**Pn**	**14 07 19.7**	**-3.0**
	0.6nm,0.3s,baz=242,slow=5.0,SNR=4.9						
URZ				S	**Sn**	**14 09 13.6**	**-2.4**
	4.3nm,0.3s,baz=126,slow=4.6,SNR=6.5						
MSVF	**Nonsavu**	**12.37**	**337**	*e*Pn	**Pn**	**14 07 53.0**	**+0.5**
AFI	**Afiamalu**	**16.05**	**19**	P	**Pn**	**14 08 34.8**	**-7.1**
	1.6nm,0.3s,baz=65,slow=20,SNR=2.6						
DZM	**Mont Dzumac**	**16.57**	**292**	P	**P**	**14 08 53.5**	**+2.6**
	0.8nm,0.3s,baz=160,slow=9.8,SNR=5.5						
RPZ	**Rata Peaks**	**17.29**	**210**	P	**Pn**	**14 08 55.6**	**-1.8**
	3.4nm,0.3s,baz=109,slow=0.5,SNR=6.2						
RAR	**Rarotonga**	**17.51**	**67**	P	P	**14 09 06.7**	**+5.5**
	1.7nm,0.3s,baz=197,slow=9.4,SNR=4.0						
ARMA	**Armidale**	**27.20**	**260**	P	**P**	**14 10 42.4**	**+2.8**
	baz=27,SNR=4.0						
CTA	**Charters Tower**	**34.52**	**277**	P	**P**	**14 11 44.4**	**+0.3**
	14nm,0.7s,baz=104,slow=10,SNR=7.7						
CTAO	**Charters Tower**	**34.52**	**277**	*e*P	**P**	**14 11 43.4**	**-0.7**
	27nm,0.7s						
STKA	**Stephens Creek**	**35.60**	**255**	P	**P**	**14 11 53.2**	**-0.1**
	4.3nm,0.5s,baz=95,slow=12,SNR=4.4						
STKA	**Stephens Creek**	**35.60**	**255**	P	**P**	**14 11 54.7**	**+1.4**
	baz=36,SNR=4.8						
HTT	**Hallett**	**37.67**	**252**	P	**P**	**14 12 11.8**	**+0.9**
	baz=38,SNR=6.1						
BBOO	**Buckleboo**	**40.13**	**253**	P	**P**	**14 12 32.6**	**+1.1**
	baz=40,SNR=5.9						
ASAR	**Alice Springs**	**44.07**	**265**	P	**P**	**14 13 03.0**	**-0.8**
	7.2nm,0.5s,baz=105,slow=7.0,SNR=27						
WRAB	**Tennant Creek**	**44.95**	**271**	*e*P	**P**	**14 13 09.7**	**-1.1**
	3.1nm,0.6s						
WRA	**Warramunga Arr**	**44.96**	**270**	P	**P**	**14 13 10.1**	**-0.8**
	4.0nm,0.3s,baz=109,slow=8.0,SNR=48						
FORT	**Forrest**	**47.20**	**254**	P	**P**	**14 13 28.2**	**-0.1**
	baz=47,SNR=12						
JAY	**Jayapura**	**48.20**	**296**	P	**P**	**14 13 37.6**	**+1.2**
	0.8nm,0.9s,baz=92,slow=24,SNR=3.2						
WRKA	**Warakurna**	**48.51**	**261**	P	**P**	**14 13 37.3**	**-1.4**
	baz=48,SNR=4.8						
VNDA	**Vanda**	**49.29**	**186**	P	**P**	**14 13 46.6**	**+2.8**
	0.9nm,0.7s,baz=7.7,slow=7.5,SNR=3.7						
FITZ	**Fitzroy Crossi**	**53.26**	**269**	P	**P**	**14 14 13.2**	**-1.2**
	8.9nm,0.9s,baz=204,slow=4.1,SNR=5.6						
FITZ	**Fitzroy Crossi**	**53.26**	**269**	P	**P**	**14 14 14.1**	**-0.3**
	baz=53,SNR=3.8						
NWAO	**Narrogin (SRO)**	**55.62**	**248**	P	**P**	**14 14 30.6**	**-0.9**
	5.2nm,0.9s,baz=9.3,slow=16,SNR=2.9						
CASY	**Casey**	**56.53**	**208**	*e*P	**P**	**14 14 35.7**	**-1.7**
MORW	**Morawa**	**57.70**	**252**	P	**P**	**14 14 45.7**	**-0.7**
	baz=58,SNR=8.3						
QSPA	**South Pole Qui**	**60.82**	**180**	*e*P	**P**	**14 15 07.9**	**+0.5**
MAW	**Mawson**	**73.65**	**200**	P	**P**	**14 16 30.0**	**+1.5**
	6.2nm,0.8s,baz=133,slow=8.7,SNR=14						
MAW	**Mawson**	**73.65**	**200**	P	**P**	**14 16 30.6**	**+2.1**
	baz=74,SNR=9.6						
MJAR	**Matsushiro Arr**	**77.84**	**325**	P	**P**	**14 16 51.6**	**-1.2**
	2.8nm,0.8s,baz=156,slow=5.9,SNR=11						
SYO	**Syowa Base**	**78.39**	**193**‖	*e*P	**P**	**14 16 55.2**	**-0.2**
SYO	**Syowa Base**	**78.39**	**193**‖	*e*PcP	**PcP**	**14 17 01.5**	**-3.1**
ASAJ	**Asahikawa**	**81.87**	**332**	P	**P**	**14 17 15.7**	**+1.2**
	12nm,0.8s						
KSRS	**Korea Array**	**84.08**	**319**	P	**P**	**14 17 26.8**	**+0.8**
	2.2nm,0.8s,baz=144,slow=5.1,SNR=4.1						
KSAR	**Wonju Array Be**	**84.10**	**319**	P	**P**	**14 17 26.8**	**+0.7**
YSS	**Yuzh-Sakhalins**	**84.14**	**334**	*e*P	**P**	**14 17 24.6**	**-1.5**
	29nm,0.8s						
PETK	**Petropavlovsk-**	**84.97**	**345**	P	**P**	**14 17 30.0**	**-0.2**
	4.2nm,0.6s,baz=114,slow=7.7,SNR=12						
PSI	**Prapat**	**86.21**	**275**	P	**P**	**14 17 39.0**	**+1.5**
	2.6nm,0.6s						
USRK	**Ussuriysk Ar.**	**86.73**	**326**	P	**P**	**14 17 39.3**	**+0.2**
	7.1nm,0.8s,baz=133,slow=4.3,SNR=14						
BBB	**Bella Bella**	**91.70**	**28**	P	**P**	**14 18 03.6**	**+1.3**
	4.2nm,0.9s,baz=2.5,slow=2.5,SNR=4.5						
ENH	**Enshi**	**91.71**	**304**	*e*P	**P**	**14 18 02.5**	**-0.5**
	26nm,1.1s						
MA2	**Magadan**	**92.46**	**344**	P	**P**	**14 18 04.7**	**-0.9**
	3.2nm,0.8s,baz=96,slow=18,SNR=3.5						
TRF	**Thorofare Moun**	**94.83**	**12**	*e*P	**P**	**14 18 14.6**	**-2.1**
	4.7nm,0.8s						
ILAR	**Eielson Array**	**96.65**	**12**	P	**P**	**14 18 24.4**	**-0.4**
	1.1nm,0.7s,baz=221,slow=5.5,SNR=6.5						
MKAR	**Makanchi Array**	**117.73**	**310**	PKP	**PKPdf**	**14 23 40.9**	**-0.4**
	1.3nm,0.7s,baz=261,slow=1.2,SNR=4.1						
ZALV	**Zalesovo Beam**	**117.79**	**319**	PKP	**PKPdf**	**14 23 40.8**	**-0.3**
	0.4nm,0.3s,baz=336,slow=3.2,SNR=2.4						
BOSA	**Boshof**	**118.62**	**202**	PKP	**PKPdf**	**14 23 44.6**	**+0.7**
	4.3nm,1.0s,baz=196,slow=5.9,SNR=3.3						
KURK	**Kurchatov**	**120.92**	**314**	PKP	**PKPdf**	**14 23 46.6**	**-0.6**
KURBB	**Kurchatov Arra**	**120.96**	**314**	PKP	**PKPdf**	**14 23 46.6**	**-0.7**
	2.2nm,0.7s,baz=110,slow=1.8,SNR=9.7						
BVAR	**Borovoye Array**	**126.22**	**316**	PKP	**PKPdf**	**14 23 57.5**	**+0.1**
	2.2nm,0.6s,baz=124,slow=1.2,SNR=11						
ARU	**Arti**	**132.79**	**321**	PKP	**PKPdf**	**14 24 10.7**	**+1.0**
	1.5nm,0.3s,baz=291,slow=23,SNR=2.8						
ARCES	**ARCESS Array B**	**137.69**	**348**	PKhKP	PKPpre	14 24 11.2	
	2.9nm,0.8s,baz=64,slow=2.8,SNR=4.7						
ARCES				PKP	**PKPdf**	**

CLCH eS Sb 14 06 00.1 -0.3
CLCH IAML 14 06 05.6
comp=E,456nm,0.6s
FCH Farellones 1.92 139 eP Pb **14 05 37.4 -1.3**
FCH i S **Sb 14 06 02.8 0.0**
FCH IAML 14 06 07.5
comp=E,249nm,0.2s
AUSP Uspallata 2.07 100 eP **Pb 14 05 41.3 0.0**
AUSP eS **Sg 14 06 10.8 +0.6**
RTLS Leoncito 2.13 88⇓eP **Pb 14 05 41.8 -0.5**
RTLS ⇓eS **Sg 14 06 10.9 -1.0**
ARCO CERRO ARCO 2.60 112 eP **Pb 14 05 50.6 +0.3**
ARCO eS **Sg 14 06 27.7 +0.6**
ARCO IAML 14 06 36.6
comp=Z,103nm,0.4s
ASAL Salagasta 2.61 106 eP **Pb 14 05 49.3 -1.0**
RTCV Cerro Valdivia 2.77 90 eP **Pb 14 05 50.0 -3.1**
AAGR Agrelo 2.78 116⇓eP **Pb 14 05 52.4 -0.8**
AAGR eS **Sg 14 06 34.5 +1.8**
AMOG MOGNA 2.98 72 eP **Pb 14 05 53.5 -3.1**
AGUA GUANDACOL 3.72 51⇓eP **Pn 14 06 03.0 +1.9**
AVFE Valle Fertil 3.91 73⇓eP **Pn 14 06 05.6 +1.9**
AVFE IAML 14 07 04.3
comp=Z,54nm,0.3s
ACAN Cantantal 3.93 97⇓eP **Pn 14 06 03.9 0.0**
VCA Vinchina 4.42 46 eP **Pn 14 06 12.5 +1.8**
VCA IAML 14 07 23.8
comp=Z,58nm,0.6s
ACHE Chepes 4.44 82 eP **Pn 14 06 12.3 +1.3**

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*NEIC **09** 14:12:17.2±0.2,29.2°42S×177.1°01W,h10km,mb4.9/22, Error ellipse: s-maj=8.8km s-min=6.1km az=122.0*
*GCMT **09** 14:12:17.2±0.4,29.3°30S×176.8°49W,h27km±1km,MW5.2/72, Moment Tensor Solution. s9,c12; s72,c105; Duration: 1⇕0 Moment tensor: Scale 10^16Nm; Mrr=4.90±.55; Mθθ=0.43±.32; Mϕϕ=-5.33±.34; Mrθ=0.14±.51; Mrϕ=-1.76±.17; Mθϕ=5.93±.56; Best double couple: M=8.01400×10^16 NP1:ϕS=4.00000°,δ69.00000°,λ80.00000°. NP2: ϕS=210.00000°,δ23.00000°,λ114.00000°. Principal axes: T 7.6690, Plg64.0000°, Azm259.0000°; N 0.6860, Plg9.0000°, Azm8.0000°; P -8.3590, Plg24.0000°, Azm102.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISCJB **09** 14:12:18.7±0.3,29.5°54S±0.0°04×177.0°04W±0.0°05,h31km, mb5.0/58,MS5.0/13 Error ellipse: s-maj=7.1km s-min=5.3km az=39.3*
*MOS **09** 14:12:20.5±1.2,29.2°23S×177.1°09W,h33km,mb5.4/16, Error ellipse: s-maj=13.5km s-min=10.2km az=119.4*
*IDC **09** 14:12:23.7±1.4,29.2°23S×177.1°04W,h49km±10km,mb4.5/21, mb1 4.6/21,mb1mx4.4/40,mbtmp4.8/21,MS4.8/8, Ms1 4.8/8,ms1mx4.4/35,Error ellipse: s-maj=16.8km s-min=15.5km az=106.0*
*BJI **09** 14:12:24.0,29.3°30S×177.3°20W,h58km,mb5.3/27, mB5.5/23,Ms5.5/17,Ms7 5.2/17*
ISC 09 14:12:20.6±0.3,29°43S±0.0°05×177°00W±0.0°05,h31km, n276,σ1⇕65/279,mb5.1/58,MS5.0/13,28C-14D,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
RAO	**Raoul Island**	**0.82**	**282**	P	**Pb**		**14 12 37.5**	**+1.1**
	3μm,0.3s,baz=164,slow=4.4,SNR=36							
RAO				S	**Sb**		**14 12 50.9**	**+3.8**
	11μm,0.3s,baz=85,slow=17,SNR=23							
RAO				LR	LR		14 13 02.6	
	comp=Z,25μm,18.1s,baz=314,slow=50							
RAO	**Raoul Island**	**0.82**	**282**	*e*P	**Pb**		**14 12 37.5**	**+1.1**
RAO				*e*			14 12 46.2	
RAO	**Raoul Island**	**0.82**	**282**	*e*Pn	**Pb**		**14 12 37.5**	**+1.1**
RAO				eSn	**Sn**		**14 12 46.2**	**-0.9**
OUZ	**Omahuta**	**9.82**	**232**	Pn	Pn		14 14 44.6	+4.9
URZ	**Urewera**	**10.07**	**207**	P	**Pn**		**14 14 39.1**	**-4.0**
	0.7nm,0.3s,baz=250,slow=5.3,SNR=7.6							
URZ				S	**Sn**		**14 16 32.9**	**-2.1**
	4.2nm,0.3s,baz=100,slow=23,SNR=9.3							
URZ	**Urewera**	**10.07**	**207**	*e*Pn	**Pn**		**14 14 41.1**	**-2.0**
URZ				S	**Sn**		**14 16 32.9**	**-2.1**
BKZ	**Black Stump Fm**	**11.10**	**207**	*e*Pn	**Pn**		**14 15 01.2**	**+4.0**
MSVF	**Nonsavu**	**12.49**	**338**	⇑*i*P	**Pn**		**14 15 16.7**	**+0.3**
MSVF				pmax	pmax			
	comp=Z,19nm,1.1s							
MSVF	**Nonsavu**	**12.49**	**338**	*e*Pn	**Pn**		**14 15 15.5**	**-0.9**
BFZ	**Birch Farm**	**12.51**	**204**	*e*Pn	**Pn**		**14 15 16.0**	**-0.5**
SNZO	**South Karori**	**13.64**	**207**	*e*Pn	**Pn**		**14 15 28.9**	**-2.9**
THZ	**Tophouse**	**14.78**	**211**	*e*Pn	**Pn**		**14 15 44.4**	**-3.0**
KHZ	**Kahutara**	**15.04**	**208**	*e*Pn	**Pn**		**14 15 45.9**	**-4.9**
DZM	**Mont Dzumac**	**16.61**	**292**	P	**P**		**14 16 16.3**	**+2.8**
	comp=Z,0.8nm,0.3s,baz=104,slow=13,SNR=12							
DZM				LR	LR		14 21 06.6	
	comp=Z,5μm,18.3s,baz=154,slow=32							
DZM	**Mont Dzumac**	**16.61**	**292**	*e*Pn	**P**		**14 16 16.1**	**+2.6**
	comp=Z,116nm,1.4s							
RAR	**Rarotonga**	**17.58**	**66**	LR	LR		14 23 40.1	
	comp=Z,1μm,18.1s,baz=246,slow=39							
ODZ	**Otahua Downs**	**18.39**	**209**	*e*P	**P**		**14 16 31.9**	**-1.1**
PPT	**Papeete**	**27.71**	**71**	LR	LR		14 26 15.6	
	comp=Z,701nm,19.3s,baz=233,slow=30							
EIDS	**Eidsvold**	**28.57**	**270**	P	**P**		**14 18 15.5**	**+1.5**
	baz=28,SNR=4.9							
EIDS	**Eidsvold**	**28.57**	**270**	*e*P	**P**		**14 18 15.8**	**+1.8**
	comp=Z,13nm,0.9s							
HNR	**Honiara**	**29.36**	**308**	LR	LR		14 27 58.1	
	comp=Z,1μm,18.6s,baz=272,slow=32							
CMSA	**Cobar Meteorol**	**32.12**	**257**	P	**P**		**14 18 46.5**	**+1.2**
	baz=32,SNR=11							
QLP	**Quilpie**	**34.24**	**265**	P	**P**		**14 19 04.7**	**+0.9**
	baz=34,SNR=6.7							
CTA	**Charters Tower**	**34.52**	**277**	LR	LR		14 31 24.1	
	comp=Z,2μm,19.2s,slow=33							
CTAO	**Charters Tower**	**34.52**	**277**	P	**P**		**14 19 07.3**	**+1.0**
CTAO				pmax	pmax			
	comp=Z,25nm,0.9s							
CTAO	**Charters Tower**	**34.52**	**277**	P	**P**		**14 19 07.3**	**+1.0**
	comp=Z,25nm,0.9s							
STKA	**Stephens Creek**	**35.55**	**255**	P	**P**		**14 19 15.7**	**+0.7**
	comp=Z,15nm,0.8s,baz=89,slow=9.5,SNR=17							
STKA				LR	LR		14 31 07.7	
	comp=Z,1μm,18.7s,baz=51,slow=32							
STKA	**Stephens Creek**	**35.55**	**255**	P	**P**		**14 19 16.3**	**+1.2**
	baz=35,SNR=12							
STKA	**Stephens Creek**	**35.55**	**255**	*e*P	**P**		**14 19 14.9**	**-0.1**
	comp=Z,5.5nm,1.0s							
MTSU	**Mount Surprise**	**36.98**	**279**	P	**P**		**14 19 28.3**	**+0.9**
	baz=37,SNR=9.5							
HTT	**Hallett**	**37.61**	**252**	P	**P**		**14 19 33.4**	**+0.7**
	baz=37,SNR=12							
PMG	**Port Moresby**	**38.99**	**293**	LR	LR		14 33 07.8	
	comp=Z,2μm,18.3s,baz=120,slow=32							
BBOO	**Buckleboo**	**40.07**	**253**	P	**P**		**14 19 53.1**	**-0.1**
	baz=40,SNR=9.8							
BBOO	**Buckleboo**	**40.07**	**253**	*e*P	**P**		**14 19 53.2**	**-0.1**
	comp=Z,71nm,1.4s							
AS01	**Alice Springs**	**43.99**	**266**	*e*P	**P**		**14 20 24.6**	**-0.9**
AS31	**Alice Springs**	**44.03**	**265**	*e*P	**P**		**14 20 25.1**	**-0.7**
	comp=Z,7.3nm,1.1s							
ASAR	**Alice Springs**	**44.03**	**265**	P	**P**		**14 20 25.1**	**-0.7**
	comp=Z,14nm,0.8s,baz=100,slow=7.1,SNR=97							
ASAR				LR	LR		14 38 24.9	
	comp=Z,2μm,18.1s,baz=66,slow=36							
WB2	**Warramunga Arr**	**44.93**	**271**	*e*P	**P**		**14 20 32.3**	**-0.6**
	comp=Z,31nm,0.8s							
WRAB	**Tennant Creek**	**44.93**	**271**⇓	*e*P	**P**		**14 20 31.6**	**-1.3**
WRAB				pmax	pmax			
	comp=Z,83nm,1.0s							
WRA	**Warramunga Arr**	**44.94**	**271**	P	**P**		**14 20 32.2**	**-0.8**
	comp=Z,22nm,0.8s,baz=110,slow=8.1,SNR=131							
FORT	**Forrest**	**47.14**	**254**	P	**P**		**14 20 49.1**	**-1.1**
	baz=47,SNR=11							
FORT	**Forrest**	**47.14**	**254**	*e*P	**P**		**14 20 49.0**	**-1.1**
	comp=Z,243nm,0.8s							
WRKA	**Warakurna**	**48.47**	**261**	P	**P**		**14 20 59.6**	**-1.0**
	baz=48,SNR=9.4							
SBA	**Scott Base**	**49.07**	**184**	*e*P	**P**		**14 21 08.8**	**+4.4**
SBA				pmax	pmax			
	comp=Z,52nm,1.4s							
SBA	**Scott Base**	**49.07**	**184**	*e*P	**P**		**14 21 08.8**	**+4.4**
	comp=Z,52nm,1.4s							
VNDA	**Vanda**	**49.14**	**186**	P	**P**		**14 21 08.2**	**+3.1**
	comp=Z,2.4nm,0.7s,baz=13,slow=9.4,SNR=12							
VNDA				PcP	**PcP**		**14 22 29.9**	**+2.0**
	comp=Z,3.3nm,0.9s,baz=321,slow=5.9,SNR=3.2							
VNDA	**Vanda**	**49.14**	**186**	*e*P	**P**		**14 21 05.5**	**+0.5**
VNDA							14 22 29.9	
VNDA				pmax	pmax			
	comp=Z,10.0nm,1.3s							
VNDA	**Vanda**	**49.14**	**186**	*e*P	**P**		**14 21 05.5**	**+0.5**
	comp=Z,9.9nm,1.3s							
VNDA				PcP	**PcP**		**14 22 29.9**	**+2.0**
KMBL	**Kambalda**	**52.14**	**252**	P	**P**		**14 21 27.3**	**-1.0**
	baz=52,SNR=6.0							
FITZ	**Fitzroy Crossi**	**53.24**	**269**	P	**P**		**14 21 35.8**	**-0.7**
	comp=Z,21nm,1.1s,baz=74,slow=6.0,SNR=10							
FITZ	**Fitzroy Crossi**	**53.24**	**269**	P	**P**		**14 21 36.3**	**-0.2**
	baz=53,SNR=8.0							
FITZ	**Fitzroy Crossi**	**53.24**	**269**	*e*P	**P**		**14 21 32.3**	**-4.3**
	comp=Z,39nm,1.3s							
KLBR	**Kellerberrin**	**55.48**	**250**	P	**P**		**14 21 51.8**	**-1.0**
	baz=55,SNR=7.8							
CASY	**Casey**	**56.40**	**208**	*e*P	**P**		**14 21 57.9**	**-0.8**
	comp=Z,27nm,0.8s							
GUMO	**Guam**	**56.42**	**314**	P	**P**		**14 22 00.1**	**+0.6**
	comp=Z,25nm,0.7s,baz=52,slow=21,SNR=3.0							
MBWA	**Marble Bar**	**57.20**	**263**	*e*P	**P**		**14 22 04.0**	**-1.1**
	comp=Z,29nm,1.0s							
QSPA	**South Pole Qui**	**60.68**	**180**	*e*P	**P**		**14 22 29.4**	**+0.7**
	comp=Z,29nm,1.0s							
PLAI	**Plampang**	**64.16**	**274**	P	**P**		**14 22 51.7**	**-0.9**
TWSI	**Taliwang, Sumb**	**64.98**	**274**	P	**P**		**14 22 58.2**	**+0.2**
TTSI	**Tana Toraja**	**65.24**	**281**	P	**P**		**14 23 00.1**	**+0.5**
	comp=Z,19nm,1.0s,comp=Z,1μm							
PCI	**Palu**	**66.33**	**283**	P	**P**		**14 23 09.0**	**+2.3**
	comp=Z,38nm,1.4s							
MAW	**Mawson**	**73.51**	**200**	P	**P**		**14 23 51.9**	**+1.9**
	comp=Z,9.1nm,0.8s,baz=116,slow=7.7,SNR=14							
MAW	**Mawson**	**73.51**	**200**	P	**P**		**14 23 52.0**	**+2.0**
	baz=73,SNR=9.7							
MAW	**Mawson**	**73.51**	**200**	*e*P	**P**		**14 23 51.7**	**+1.8**
	comp=Z,4.7nm,1.1s							
STKI	**Sintang**	**73.98**	**279**	P	**P**		**14 23 54.5**	**+0.9**
	comp=Z,20nm,0.5s							
SBUM	**Sibu**	**74.56**	**282**	*e*P	**P**		**14 23 56.6**	**-0.4**
	comp=Z,7.1nm,0.9s							
INU	**Inuyama**	**77.64**	**323**	*e*P	**P**		**14 24 12.4**	**-1.6**
	comp=Z,12nm,1.0s							
MJAR	**Matsushiro Arr**	**77.95**	**325**	P	**P**		**14 24 14.4**	**-1.2**
	comp=Z,6.0nm,0.8s,baz=162,slow=5.8,SNR=19							
MAJO	**Matsushiro**	**77.95**	**325**	*c*P	**P**		**14 24 14.2**	**-1.5**
MAJO				pmax	pmax			
	comp=Z,69nm,1.0s							
MAJO	**Matsushiro**	**77.95**	**325**	*e*P	**P**		**14 24 12.4**	**-3.3**
	comp=Z,8.8nm,0.8s							
MAT	**Matsushiro**	**77.95**	**325**	P	**P**		**14 24 14.4**	**-1.3**
MJB9	**Matsu-Tunnel**	**77.95**	**325**	*e*P	**P**		**14 24 14.2**	**-1.5**
	comp=Z,2.3nm,0.9s							
SYO	**Syowa Base**	**78.25**	**193**⇑	*e*P	**P**		**14 24 16.9**	**0.0**
SYO	**Syowa Base**	**78.25**	**193**⇓	*e*PcP	**PcP**		**14 24 25.6**	**-0.7**
SNAA	**Sanae**	**79.09**	**178**	P	**P**		**14 24 19.6**	**-2.1**
SNAA	**Sanae**	**79.09**	**178**⇑	*e*P	**P**		**14 24 22.2**	**+0.5**
SNAA				pmax	pmax			
	comp=Z,199nm,1.2s							
SNAA	**Sanae**	**79.09**	**178**	*e*P	**P**		**14 24 21.9**	**+0.2**
	comp=Z,8.0nm,0.9s							
JNU	**Nakatsue**	**79.42**	**318**	P	**P**		**14 24 23.3**	**-0.6**
	comp=Z,6.9nm,1.0s,baz=16,slow=1.8,SNR=5.6							
VNA1	**Neumayer--Stat**	**79.88**	**176**	P	P		14 24 37.2	+11
ERM	**Erimo**	**80.03**	**331**	*d*P	**P**		**14 24 24.7**	**-2.2**
ERM				pmax	pmax			
	comp=Z,21nm,1.3s							
ASAJ	**Asahikawa**	**81.99**	**332**	*e*P	**P**		**14 24 35.8**	**-1.6**
PLCA	**Paso Flores**	**82.53**	**133**	P	**P**		**14 24 42.5**	**+1.9**
	comp=Z,3.6nm,0.9s,baz=285,slow=7.0,SNR=3.4							
KSRS	**Kona Array**	**84.18**	**319**	P	**P**		**14 24 49.1**	**+0.3**
	comp=Z,6.4nm,1.0s,baz=147,slow=5.4,SNR=6.3							
KSAR	**Wonju Array Be**	**84.19**	**319**	P	**P**		**14 24 49.1**	**+0.2**
KSAR	**Wonju Array Be**	**84.19**	**319**	P	**P**		**14 24 49.1**	**+0.2**
KS01	**Wonju Array Si**	**84.21**	**319**	*e*P	**P**		**14 24 47.0**	**-2.0**
YSS	**Yuzh-Sakhalins**	**84.26**	**334**	⇑*e*P	**P**		**14 24 49.3**	**+0.4**
YSS				pmax	pmax			
	comp=Z,40nm,0.9s							
YSS	**Yuzh-Sakhalins**	**84.26**	**334**	*e*P	**P**		**14 24 46.8**	**-2.1**
	comp=Z,50nm,1.0s							
PEA0	**Petropavlovsk**	**85.10**	**345**	*e*P	**P**		**14 24 53.1**	**0.0**
PETK	**Petropavlovsk-**	**85.10**	**345**	P	**P**		**14 24 52.6**	**-0.5**
	comp=Z,9.1nm,0.8s,baz=113,slow=7.0,SNR=9.1							
MSHR	**Mys Shultsa**	**86.07**	**324**⇑	*e*P	**P**		**14 24 58.2**	**+0.1**
PSI	**Prapat**	**86.20**	**275**	P	**P**		**14 24 58.3**	**-1.4**
	comp=Z,3.9nm,0.5s,baz=183,slow=6.3,SNR=4.5							
GSI	**Gunungsitoli**	**86.64**	**273**	P	**P**		**14 25 03.2**	**+1.5**
GSI	**Gunungsitoli**	**86.64**	**273**	*e*P	**P**		**14 24 58.2**	**-3.5**
LDFC	**Landfair**	**86.71**	**46**	*e*P	**P**		**14 25 02.8**	**+1.1**
	comp=Z,8.4nm,0.8s							
USRK	**Ussuriysk Ar.**	**86.84**	**326**	P	**P**		**14 25 02.8**	**+0.9**
	comp=Z,14nm,0.8s,baz=112,slow=3.9,SNR=27							
TPNV	**Topopah Spring**	**87.20**	**44**	*e*P	**P**		**14 25 03.4**	**-0.7**
TPNV				pmax	pmax			
	comp=Z,6.0nm,0.9s							
TPNV	**Topopah Spring**	**87.20**	**44**	*e*P	**P**		**14 25 03.4**	**-0.7**
	comp=Z,5.8nm,0.9s							
Y14A	**Wickenburg**	**87.35**	**48**	*e*P	**P**		**14 25 06.1**	**+1.4**
TYV	**Tymovskoe**	**87.52**	**336**	*e*P	**P**		**14 25 03.0**	**-2.0**
TYV				pmax	pmax			
	comp=Z,40nm,1.2s							
TUC	**Tucson**	**87.83**	**51**	*e*P	**P**		**14 25 06.5**	**-0.6**
TUC	**Tucson**	**87.83**	**51**	*e*P	**P**		**14 25 06.5**	**-0.6**
MDJ	**Mudanjiang**	**88.33**	**325**	P	**P**		**14 25 09.9**	**+0.9**
MDJ				pmax	pmax			
	comp=Z,19nm,0.9s							
MDJ				pmax	pmax			
	comp=Z,240nm,7.9s							
WHN	**Wuhan**	**88.46**	**307**	P	**P**		**14 25 12.3**	**+2.3**
SKNT	**Sakolnakorn**	**89.01**	**290**	P	P		14 25 20.7	+7.8
LCMT	**Little Creek M**	**89.10**	**46**	*e*P	**P**		**14 25 14.4**	**+1.3**
CCUT	**Cedar City**	**89.36**	**45**	*e*P	**P**		**14 25 14.2**	**-0.2**
CN2	**Changchun**	**89.90**	**322**	*e*P	**P**		**14 25 16.3**	**-0.1**
CN2				pmax	pmax			
	comp=Z,40nm,1.2s							
CN2				pmax	pmax			
	comp=Z,200nm,4.0s							
CN2				LR	LR			
	comp=Z,600nm,17.0s							
CN2				LR	LR			
	comp=Z,700nm,17.0s							
CN2				LR	LR			
	comp=Z,800nm,18.0s							
TIA	**Tai'an**	**89.95**	**312**	⇑P	**P**		**14 25 17.5**	**+0.6**
TIA				pmax	pmax			
	comp=Z,40nm,1.0s							
NKL	**Nikolayevsk**	**90.10**	**336**	*e*P	**P**		**14 25 17.0**	**-0.1**
NKL				pmax	pmax			
	comp=Z,40nm,1.0s							
MTPU	**Mount Pierson**	**90.40**	**46**	*e*P	**P**		**14 25 19.7**	**+0.3**
KLR	**Kul'dur**	**90.64**	**329**	*c*eP	**P**		**14 25 20.9**	**+1.1**
	comp=Z,8.3nm,1.0s,baz=129,slow=2.9,SNR=16							
KLR	**Kul'dur**	**90.64**	**329**	*c*eP	**P**		**14 25 19.9**	**+0.1**
TX31	**Lajitas Ar. Si**	**91.14**	**57**	*e*P	**P**		**14 25 21.6**	**-1.1**
TXAR	**Lajitas Array**	**91.14**	**57**	P	**P**		**14 25 23.0**	**+0.3**
	comp=Z,1.8nm,1.1s,baz=242,slow=2.7,SNR=6.5							
G08A	**Pilot Rock**	**91.17**	**37**	*e*P	**P**		**14 25 21.2**	**-1.3**
GYA	**Guiyang**	**91.83**	**299**	P	**P**		**14 25 25.9**	**-0.1**
GYA				pP	sP		14 25 43.2	+3.7
GYA				PP	**PP**		**14 29 08.0**	**+2.4**
GYA				SKS	**SKSac**		**14 35 52.3**	**-4.6**
GYA				S	**S**		**14 36 19.6**	**-5.7**
GYA				SS	**SS**		**14 42 32.0**	**-2.2**
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
GYA				pmax	pmax			
	comp=Z,120nm,8.0s							
GYA				LR	LR			
	comp=Z,480nm,21.4s							
GYA				LR	LR			
	comp=Z,460nm,22.0s							
GYA				LR	LR			
	comp=Z,440nm,21.3s							
BBB	**Bella Bella**	**91.84**	**28**	P	**P**		**14 25 25.3**	**+0.1**
	comp=Z,3.8nm,0.9s,baz=211,slow=6.3,SNR=3.2							
ANMO	**Albuquerque**	**92.30**	**51**⇑	*e*P	**P**		**14 25 27.5**	**-0.6**
ANMO				pmax	pmax			
	comp=Z,2.0nm,1.1s							
HLID	**Hailey**	**92.51**	**40**	*e*P	**P**		**14 25 27.1**	**-1.7**
MA2	**Magadan**	**92.59**	**344**	P	**P**		**14 25 27.4**	**-1.1**
	comp=Z,5.5nm,0.9s,baz=132,slow=5.7,SNR=6.2							
BJI	**Beijing**	**92.85**	**315**	P	**P**		**14 25 31.3**	**+1.1**
BJI				S	S		14 36 18.4	-15
BJI				pmax	pmax			
	comp=Z,17nm,1.0s							
BJI				LR	LR			
	comp=Z,1μm,17.8s							
BJI				LR	LR			
	comp=Z,380nm,18.4s							
BJI				LR	LR			
	comp=Z,1μm,20.1s							
CMAR	**Chiang Mai Arr**	**93.90**	**289**	P	P		14 25 42.6	+7.0
	comp=Z,1.6nm,0.9s,baz=116,slow=2.1,SNR=5.6							
KMI	**Kunming**	**94.16**	**296**	P	**P**		**14 25 37.0**	**+0.1**
KMI				pmax	pmax			
	comp=Z,16nm,0.6s							
KMI				pmax	pmax			
	comp=Z,400nm,9.1s							
KMI				LR	LR			
	comp=Z,1μm,19.7s							
KMI				LR	LR			
	comp=Z,550nm,19.1s							
KMI				LR	LR			
	comp=Z,1μm,20.1s							
XAN	**Xi'an**	**94.22**	**307**	P	**P**		**14 25 38.0**	**+1.2**
XAN				pmax	pmax			
	comp=Z,7.0nm,1.1s							
PDAR	**Pinedale Array**	**94.84**	**43**	P	**P**		**14 25 40.6**	**+0.9**
	comp=Z,0.7nm,0.9s,baz=236,slow=0.7,SNR=2.2							
TRF	**Thorofare Moun**	**94.97**	**12**	*e*P	**P**		**14 25 39.2**	**-0.4**
RND	**Reindeer**	**95.19**	**12**	*e*P	**P**		**14 25 40.6**	**+0.1**
RND	**Reindeer**	**95.19**	**12**	*e*P	**P**		**14 25 40.6**	**+0.1**
SEY	**Seymchan**	**95.24**	**346**	P	**P**		**14 25 39.8**	**-0.8**
	comp=Z,6.3nm,1.0s,baz=160,slow=3.6,SNR=9.0							
SEY	**Seymchan**	**95.24**	**346**⇓	*e*P	**P**		**14 25 40.6**	**0.0**
LCCM	**Lewis and Clar**	**95.34**	**40**	*e*P	**P**		**14 25 40.7**	**-1.0**
HHC	**Hu-ho-hao-te**	**96.19**	**314**	*e*P	**P**		**14 25 46.6**	**+0.9**
HHC				pmax	pmax			
	comp=Z,26nm,1.4s							
HHC				pmax	pmax			
	comp=Z,180nm,9.7s							
CD2	**Chengdu**	**96.31**	**302**	*e*P	**P**		**14 25 45.2**	**-1.2**
CD2				pP	sP		14 26 01.8	+1.9
CD2				sP	pP		14 26 08.5	+12
CD2				SKS	**SKSac**		**14 36 16.3**	**-4.6**
CD2				S	**S**		**14 37 00.1**	**-4.2**
CD2				sS	sS		14 37 29.0	+8.1
CD2				SS	**SS**		**14 43 35.0**	**-3.0**
CD2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
CD2				pmax	pmax			
	comp=Z,120nm,6.2s							
COLA	**College**	**96.71**	**12**	*e*P	**P**		**14 25 46.2**	**-1.0**
COLA				pmax	pmax			
	comp=Z,5.0nm,1.0s							
ILAR	**Eielson Array**	**96.79**	**13**	P	**P**		**14 25 46.8**	**-0.9**
	comp=Z,1.0nm,0.9s,baz=215,slow=5.3,SNR=5.7							
LZH	**Lanzhou**	**98.84**	**306**	*e*P	**P**		**14 25 55.6**	**-2.2**
LZH				pP	sP		14 26 12.5	+1.1
LZH				sP	pP		14 26 19.2	+11
LZH				PP	**PP**		**14 30 00.3**	**+0.3**
LZH				pmax	pmax			
	comp=Z,17nm,1.3s							
LZH				pmax	pmax			
	comp=Z,93nm,9.5s							
LZH				LR	LR			
	comp=Z,190nm,17.6s							
LZH				LR	LR			
	comp=Z,190nm,17.2s							
LZH				LR	LR			
	comp=Z,260nm,19.6s							
WMQ	**Urumqi**	**113.31**	**308**	*e*PKP	**PKiKP**		**14 30 54.6**	**-0.6**
WMQ				PP	**PP**		**14 31 52.1**	**+5.7**
WMQ				AMB	AMB			
	comp=Z,91nm,6.6s							
WMQ				LR	LR			
	comp=Z,620nm,19.4s							
WMQ				LR	LR			
	comp=Z,420nm,22.3s							
WMQ				LR	LR			
	comp=Z,440nm,19.5s							
MKAR	**Makanchi Array**	**117.81**	**310**	PKP	**PKPdf**		**14 31 02.9**	**-0.8**
	comp=Z,2.2nm,0.8s,baz=78,slow=3.0,SNR=14							
ZALV	**Zalesovo Beam**	**117.88**	**319**	PKP	**PKPdf**		**14 31 02.6**	**-0.9**
	comp=Z,0.9nm,0.5s,baz=92,slow=0.9,SNR=6.6							
ZALV				PKKPbc	**PKKPab**		**14 41 25.1**	**-0.4**
	comp=Z,0.8nm,0.2s,baz=294,slow=7.4,SNR=4.0							
KSH	**Kashi**	**120.49**	**301**	*e*PKP	**PKPdf**		**14 31 10.9**	**+1.7**
KSH				*e*PP	**PP**		**14 32 38.6**	**+1.8**
KSH				SKS	**SKSdf**		**14 38 17.9**	**-1.2**
KSH				SKKS	**SKKSac**		**14 39 27.8**	**-6.1**
KSH				SS	**SKKSdf**		**14 48 58.1**	**-1.1**
KSH				AMB	AMB			
	comp=Z,160nm,5.5s							
KSH				LR	LR			
	comp=Z,300nm,8.4s							
KSH				LR	LR			
	comp=Z,300nm,9.5s							
KSH				LR	LR			
	comp=Z,820nm,17.7s							
KURK	**Kurchatov**	**121.00**	**314**	PKIKP	**PKPdf**		**14 31 09.1**	**-0.6**
KURK	**Kurchatov**	**121.00**	**314**	PKP	**PKPdf**		**14 31 09.1**	**-0.6**
KURBB	**Kurchatov Arra**	**121.04**	**314**	PKP	**PKPdf**		**14 31 09.1**	**-0.7**
	comp=Z,4.4nm,0.8s,baz=103,slow=2.1,SNR=42							
AAK	**Ala-Archa**	**122.29**	**304**	PKP	**PKPdf**		**14 31 12.7**	**+0.1**
	comp=

VSR				pmax	pmax		
	comp=Z,60nm,1.4s						
CHVG	**Ch'k'valeri**	**146.04**	**304**	P	**PKPab**	**14 31 58.6**	**+0.6**
VSU	**Vasula**	**146.68**	**337**	*c i* PKP2	**PKPbc**	**14 31 58.4**	**-0.3**
VSU				pmax	pmax		
	comp=Z,168nm,0.8s						
MZRK	**Al-Mazaregh**	**147.79**	**291**	*e*P	**PKPab**	**14 32 03.9**	**-1.2**
NB2	**NORSAR Subarra**	**147.92**	**352**	PKP	**PKPbc**	**14 32 01.1**	**-1.0**
	comp=Z,266nm,1.2s,baz=14,slow=4.6						
NOA	**NORSAR Array B**	**147.92**	**352**	PKPbc	**PKPbc**	**14 32 00.8**	**-1.3**
	comp=Z,12nm,1.0s,baz=14,slow=4.3,SNR=14						
SFNV	**Sufian**	**148.22**	**292**	*e*P	**PKPbc**	**14 32 04.9**	**+1.2**
HFS	**Hagfors**	**148.46**	**350**	PKP	**PKPdf**	**14 31 59.6**	**-0.4**
	comp=Z,12nm,0.8s,baz=305,slow=5.2,SNR=14						
HFS				PKPbc	**PKPbc**	**14 32 02.6**	**-0.9**
	comp=Z,11nm,0.8s,baz=17,slow=1.5,SNR=15						
ANN	**Anapa**	**148.82**	**309**	*e* PKP2	**PKPbc**	**14 32 04.6**	**-0.3**
ANN				pmax	pmax		
	comp=Z,120nm,1.4s						
MICGM	**Minsk**	**149.17**	**331**	*e*	**PKPbc**	**14 32 05.0**	**-0.5**
MNK	**Minsk**	**149.17**	**331**	*e* PKP2	**PKPbc**	**14 32 05.0**	**-0.5**
NACGM	**Naroch**	**149.33**	**333**	*e*	**PKPbc**	**14 32 05.0**	**-0.9**
ZALF	**Zalf**	**150.49**	**286**	*e*P	**PKPab**	**14 32 12.7**	**-3.5**
ROOS	**tl_alroos**	**150.56**	**288**	*e*P	**PKPbc**	**14 32 11.6**	**+1.9**
RABH	**Abou Rabah**	**150.63**	**289**	*e*P	**PKPbc**	**14 32 12.1**	**+2.3**
ASF	**Jabal al Asfar**	**150.82**	**284**	PKPbc	**PKPbc**	**14 32 11.3**	**+1.0**
	comp=Z,11nm,0.9s,baz=92,slow=1.1,SNR=24						
DRWC	**Darouich**	**150.98**	**293**	*e*P	**PKPab**	**14 32 15.1**	**-3.1**
SALA	**Sala**	**150.99**	**285**	*e*P	**PKPdf**	**14 32 07.3**	**+2.2**
SIM	**Simferopol'**	**150.99**	**311**	*d i* PKIKP	**PKPbc**	**14 32 10.9**	**+0.7**
SIM				pmax	pmax		
	comp=Z,27nm,0.7s						
AKASG	**Malin Array Be**	**151.04**	**325**	PKPbc	**PKPbc**	**14 32 09.1**	**-1.0**
	comp=Z,16nm,0.7s,baz=46,slow=2.9,SNR=42						
BTCH	**Batrach**	**151.19**	**292**	*e*P	**PKPbc**	**14 32 10.0**	**-1.1**
MARH	**Ras Al Marh**	**151.23**	**288**	*e*P	**PKPbc**	**14 32 11.1**	**-0.5**
TOTH	**TOTAH**	**151.27**	**286**	*e*P	**PKPbc**	**14 32 11.9**	**+0.6**
HAWK	**Haweek**	**151.29**	**289**	*e*P	**PKPbc**	**14 32 11.6**	**+0.2**
BIDA	**Albida**	**151.35**	**290**	*e*P	**PKPbc**	**14 32 10.8**	**-0.7**
SUW	**Suwalki**	**151.39**	**335**	*e*PKP	**PKPbc**	**14 32 10.9**	**+0.1**
SUW	**Suwalki**	**151.39**	**335**	*e*PKIKP	**PKPbc**	**14 32 10.9**	**+0.1**
TCHB	**Talchebab**	**151.63**	**285**	*e*P	**PKPbc**	**14 32 12.4**	**+0.3**
MMAI	**Mount Meron Ar**	**152.12**	**286**	PKPbc	**PKPbc**	**14 32 14.4**	**+1.1**
	comp=Z,14nm,0.6s,baz=81,slow=5.2,SNR=31						
EIL	**Elat**	**152.24**	**278**	PKPbc	**PKPbc**	**14 32 14.9**	**+1.3**
	comp=Z,14nm,0.7s,baz=34,slow=2.2,SNR=16						
BRTR	**Keskin Array B**	**152.88**	**300**	PKPbc	**PKPbc**	**14 32 14.8**	**-0.1**
	comp=Z,5.2nm,0.9s,baz=116,slow=2.9,SNR=16						
SORM	**Soroca**	**153.00**	**321**	⇑ *i* P	**PKPbc**	**14 32 14.5**	**-0.1**
SORM	**Soroca**	**153.00**	**321**	⇑ PKIKP	**PKPbc**	**14 32 14.5**	**-0.1**
EKA	**Eskdalemuir Ar**	**153.74**	**8**	PKPab	**PKPab**	**14 32 28.5**	**-0.4**
	comp=Z,1.1nm,0.5s,baz=343,slow=2.9,SNR=5.2						
TLCR		**154.29**	**315**	⇑ *i* P	**PKPbc**	**14 32 19.0**	**+1.5**
TLCR		**154.29**	**315**	⇑ PKIKP	**PKPbc**	**14 32 19.0**	**+1.5**
CFR	**Carcaliu**	**154.71**	**315**	⇓ *i* P	**PKPbc**	**14 32 18.6**	**+0.2**
CFR	**Carcaliu**	**154.71**	**315**	⇓ PKIKP	**PKPbc**	**14 32 18.6**	**+0.2**
TESR	**Tescani**	**154.88**	**319**	⇑ *i* P	**PKPbc**	**14 32 21.2**	**+2.4**
TIRR	**Tirgusor**	**154.89**	**314**	⇑ *i* P	**PKPbc**	**14 32 20.9**	**+2.1**
TIRR	**Tirgusor**	**154.89**	**314**	⇑ PKIKP	**PKPbc**	**14 32 20.9**	**+2.1**
BURAR	**Bucovina Array**	**155.01**	**323**	⇓ *i* P	PKPbc	14 32 19.2	
BURAR	**Bucovina Array**	**155.01**	**323**	⇓ PKIKP	PKPbc	14 32 19.2	
TLB	**Topalu**	**155.06**	**314**	⇑ *i* P	**PKPdf**	**14 32 17.0**	**+6.7**
TLB	**Topalu**	**155.06**	**314**	⇑ PKIKP	**PKPdf**	**14 32 17.0**	**+6.7**
PLOR	**Plostina**	**155.25**	**318**	⇓ *i* P	**PKPab**	**14 32 36.2**	**+0.4**
PLOR	**Plostina**	**155.25**	**318**	⇓ PKP2	**PKPab**	**14 32 36.2**	**+0.4**
KOLS	**Kolonicke sedl**	**155.58**	**328**	*e* PKIKP	**PKPdf**	**14 32 10.3**	**-0.7**
KOLS				*e*		14 32 33.8	
KOLS	**Kolonicke sedl**	**155.58**	**328**	*e* PKP	**PKPdf**	**14 32 10.3**	**-0.7**
KOLS				*e*		14 32 33.8	
STHS	**Stebnicka Huta**	**155.68**	**330**	*e* PKP2	**PKPab**	**14 32 37.8**	**+0.4**
STHS	**Stebnicka Huta**	**155.68**	**330**	*e* PKP	**PKPab**	**14 32 37.8**	**+0.4**
MLR	**Muntele Rosu**	**155.86**	**318**	PKPab	**PKPab**	**14 32 39.3**	**+0.8**
	comp=Z,1.1nm,0.9s,baz=53,slow=7.5,SNR=6.6						
CRVS	**Cervenica-Dubn**	**155.97**	**329**	*e* PKP2	**PKPab**	**14 32 38.8**	**+0.1**
CRVS	**Cervenica-Dubn**	**155.97**	**329**	*e* PKP	**PKPab**	**14 32 38.8**	**+0.1**
KSP	**Ksiaz**	**156.39**	**339**	*e* PKP	**PKPab**	**14 32 41.0**	**+0.6**
KSP	**Ksiaz**	**156.39**	**339**	*e* PKP2	**PKPab**	**14 32 41.0**	**+0.6**
OKC	**Ostrava-Krasne**	**156.60**	**335**	*e* PKPAB	**PKPab**	**14 32 41.1**	**-0.2**
OKC	**Ostrava-Krasne**	**156.60**	**335**	*e* PKP2	**PKPab**	**14 32 41.1**	**-0.2**
LANS	**Liptovska Anna**	**156.64**	**332**	*e* PKP2	**PKPab**	**14 32 42.7**	**+1.1**
LANS	**Liptovska Anna**	**156.64**	**332**	*e* PKP	**PKPab**	**14 32 42.7**	**+1.1**
KECS	**Kecovo**	**156.71**	**330**	*e* PKP2	**PKPab**	**14 32 38.4**	**-3.5**
KECS	**Kecovo**	**156.71**	**330**	*e* PKP	**PKPab**	**14 32 38.4**	**-3.5**
UPC	**Upice**	**156.77**	**339**	*e* PKPAB	**PKPab**	**14 32 42.3**	**+0.3**
UPC	**Upice**	**156.77**	**339**	*e* PKP2	**PKPab**	**14 32 42.3**	**+0.3**
DPC	**Dobruska-Polom**	**156.81**	**338**	*e* PKPAB	**PKPab**	**14 32 42.8**	**+0.5**
DPC				*ex*	x	14 32 51.4	
DPC	**Dobruska-Polom**	**156.81**	**338**	*e* PKP2	**PKPab**	**14 32 42.8**	**+0.5**
KRLC	**Kraliky**	**156.89**	**337**	*e* PKPAB	**PKPab**	**14 32 42.9**	**+0.3**
KRLC	**Kraliky**	**156.89**	**337**	*e* PKP2	**PKPab**	**14 32 42.9**	**+0.3**
CLL	**Collm**	**156.90**	**344**	*e* PKPdiff	PKPdf	14 32 26.0	+13
CLL				⇓ *i* PKPab	**PKPab**	**14 32 41.8**	**-0.7**
	comp=Z,16nm,1.3s						
CLL				*ep* PKPab	pPKPab	14 32 54.0	+1.5
CLL	**Collm**	**156.90**	**344**	⇓ *e* P	PKPdf	14 32 26.0	+13
CLL				*i*		14 32 41.8	
CLL				*e*		14 32 54.0	
CLL				pmax	pmax		
	comp=Z,16nm,1.3s						
PVCC	**Panska Ves**	**157.19**	**341**	*e* PKPAB	**PKPab**	**14 32 44.2**	**+0.4**
PVCC	**Panska Ves**	**157.19**	**341**	*e* PKP2	**PKPab**	**14 32 44.2**	**+0.4**
PSZ	**Piszkesteto**	**157.40**	**329**	⇑ *i* P	**PKPab**	**14 32 45.5**	**+0.6**
PSZ	**Piszkesteto**	**157.40**	**329**	⇑ PKP2	**PKPab**	**14 32 45.5**	**+0.6**
VYHS	**Vyhne**	**157.41**	**332**	*e* PKP2	**PKPab**	**14 32 44.5**	**-0.4**
VYHS	**Vyhne**	**157.41**	**332**	*e* PKP	**PKPab**	**14 32 44.5**	**-0.4**
VRAC	**Vranov**	**157.60**	**336**	PKP	**PKPdf**	**14 32 13.7**	**+0.1**
	comp=Z,0.7nm,0.4s,baz=202,slow=2.0,SNR=3.7						
VRAC				PKPab	**PKPab**	**14 32 46.1**	**+0.4**
	comp=Z,7.7nm,0.7s,baz=28,slow=4.4,SNR=14						
GOPC	**GO Pecny, Ondr**	**157.67**	**340**	*e* PKPAB	**PKPab**	**14 32 46.2**	**+0.2**
GOPC	**GO Pecny, Ondr**	**157.67**	**340**	*e* PKP2	**PKPab**	**14 32 46.2**	**+0.2**
PRU	**Pruhonice**	**157.68**	**340**	*e* PKPAB	**PKPab**	**14 32 45.9**	**-0.1**
PRU	**Pruhonice**	**157.68**	**340**	*e* PKP2	**PKPab**	**14 32 45.9**	**-0.1**
NKC	**Novy Kostel**	**158.03**	**344**	*e* PKPAB	**PKPab**	**14 32 47.3**	**-0.2**
NKC	**Novy Kostel**	**158.03**	**344**	*e* PKP2	**PKPab**	**14 32 47.3**	**-0.2**
BZS	**Buzias**	**158.19**	**323**	⇑ *i* P	**PKPdf**	**14 32 15.1**	**+0.7**
BZS	**Buzias**	**158.19**	**323**	⇑ PKIKP	**PKPdf**	**14 32 15.1**	**+0.7**
KHC	**Kasperske Hory**	**158.73**	**341**	*e* PKPAB	**PKPab**	**14 32 50.8**	**+0.2**
KHC				*ex*	x	14 33 02.1	
KHC	**Kasperske Hory**	**158.73**	**341**	*e* PKP2	**PKPab**	**14 32 50.8**	**+0.2**
GERES	**GERESS Array B**	**158.95**	**340**	PKP	**PKPdf**	**14 32 14.2**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=328,slow=6.8,SNR=2.9						
GERES				PKPab	**PKPab**	**14 32 51.4**	**-0.2**
	comp=Z,1.4nm,0.8s,baz=35,slow=4.9,SNR=9.6						
CONA	**Conrad Observa**	**159.03**	**335**	*i* PKPab	**PKPab**	**14 32 52.5**	**+0.6**
	SNR=10						
MOA	**Molln**	**159.65**	**338**	*i* PKPab	**PKPab**	**14 32 55.5**	**+0.9**
	SNR=6.5						
SOKA	**Soboth**	**160.39**	**335**	*i* PKPab	**PKPab**	**14 32 57.8**	**-0.1**
	SNR=7.4						
CRES	**Cresnjev**	**160.93**	**333**	*i* PKPdf	**PKPdf**	**14 32 17.1**	**-0.4**
CRES				*i* PKPab	**PKPab**	**14 33 00.0**	**-0.2**
LJU	**Ljubljana**	**161.11**	**335**	*i* PKPab	**PKPab**	**14 33 00.4**	**-0.6**
CEY	**Cerknica**	**161.40**	**334**	*i* PKPab	**PKPab**	**14 33 01.7**	**-0.6**
DAVOX	**Davos/Dischmat**	**161.87**	**345**	PKP	**PKPdf**	**14 32 19.0**	**+0.2**
	comp=Z,0.9nm,0.4s,baz=90,slow=11,SNR=3.5						
DAVOX				PKPab	**PKPab**	**14 33 04.4**	**0.0**
	comp=Z,3.7nm,0.8s,baz=317,slow=0.1,SNR=5.6						
TORD	**Torodi Ar. Bea**	**163.75**	**175**	PKP	**PKPdf**	**14 32 21.7**	**+0.5**
	comp=Z,4.1nm,1.2s,baz=208,slow=1.0,SNR=10						
TORD				PKPab	**PKPab**	**14 33 14.2**	**+1.0**
	comp=Z,0.3nm,0.4s,baz=128,slow=36,SNR=4.8						
ESDC	**Sonseca Array**	**168.29**	**27**	PKP	**PKPdf**	**14 32 25.5**	**+1.2**
	comp=Z,0.2nm,0.5s,baz=21,slow=2.5,SNR=5.7						
ESDC				PKPab	**PKPab**	**14 33 32.6**	**-0.3**
	comp=Z,0.1nm,0.3s,baz=305,slow=3.8,SNR=3.7						
KEST	**Kesra**	**171.75**	**321**	PKP	**PKPdf**	**14 32 28.4**	**+2.0**
	comp=Z,2.6nm,0.8s,baz=135,slow=4.6,SNR=2.3						
KEST				PKPab	**PKPab**	**14 33 49.2**	**+0.9**
	comp=Z,6.7nm,1.0s,baz=89,slow=1.8,SNR=4.9						

IDC 09 14:16:43.1±6.8, **29°54S**×**176°75W**, **h36**km±43km, **mb3.5/2**, **mb1 3.9/3**, **mb1mx3.5/43**, **mbtmp3.9/3**, **Error ellipse: s-maj=55.4km s-min=34.5km az=62.0, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.06**	**285**	Pn	Pn	14 17 01.3	-0.2
	542nm,0.3s,baz=88,slow=22,SNR=7.5						
RAO				Sn	Sn	14 17 16.0	+1.1
	2μm,0.3s,baz=207,slow=23,SNR=9.7						

URZ	**Urewera**	**10.08**	**209**	Pn	Pn	14 19 05.8	+0.5
	baz=53,slow=12,SNR=1.1						
URZ				Sn	Sn	14 20 57.1	0.0
	0.8nm,0.3s,baz=230,slow=21,SNR=1.6						
ASAR	**Alice Springs**	**44.25**	**265**	P	P	14 24 49.4	+0.1
	0.3nm,0.4s,baz=107,slow=8.1,SNR=4.4						
WRA	**Warramunga Arr**	**45.16**	**271**	P	P	14 24 56.2	-0.4
	0.5nm,0.3s,baz=110,slow=8.1,SNR=9.4						
FINES	**FINESS Array B**	**144.70**	**341**	PKP	PKPdf	14 36 14.9	-0.4
	0.5nm,0.5s,baz=28,slow=3.6,SNR=5.0						

IDC 09 14:18:46.1±6.5, **29°48S**×**176°77W**, **h60**km±42km, **mb3.3/2**, **mb1 3.6/2**, **mb1mx3.3/37**, **mbtmp3.6/2**, **Error ellipse: s-maj=161.3km s-min=56.6km az=179.0, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.03**	**283**	P	Pn	14 19 04.4	-0.2
	250nm,0.3s,baz=194,slow=23,SNR=2.5						
RAO				S	Sn	14 19 18.6	+0.4
	637nm,0.3s,baz=110,slow=22,SNR=4.9						
ASAR	**Alice Springs**	**44.24**	**265**	P	P	14 26 49.9	+0.1
	0.4nm,0.5s,baz=102,slow=6.5,SNR=5.3						
WRA	**Warramunga Arr**	**45.14**	**271**	P	P	14 26 56.5	-0.5
	0.3nm,0.3s,baz=110,slow=8.0,SNR=5.6						
FINES	**FINESS Array B**	**144.64**	**341**	PKP	PKPdf	14 38 15.2	-0.1
	0.3nm,0.5s,baz=54,slow=7.2,SNR=1.5						

*ISCJB **09** 14:20:39.8*±0.6, *46°88N*±0°08×*153°10E*±0°1, *h56km, mb3.7/16, Error ellipse: s-maj=15.3km s-min=3.9km az=137.1*

*SKHL **09** 14:20:40.8*±0.6, *46°78N*×*153°18E, h67km*±*3km, mb4.4/3*

*MOS **09** 14:20:41.8*±1.0, *46°99N*×*152°96E, h68km, mb4.2/6, Error ellipse: s-maj=15.7km s-min=9.2km az=73.2*

*IDC **09** 14:20:44.5*±2.8, *47°01N*×*152°88E, h75km*±*24km, mb3.4/15, mb1 3.7/18, mb1mx3.5/78, mbtmp3.8/18, Error ellipse: s-maj=22.2km s-min=15.4km az=152.0*

ISC 09 14:20:41.2±0.7, **46°79N**±0°09×**153°10E**±0°09, **h56**km, **n62**, σ1°**83**/66, **mb3.6**/16, **1C-9D, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**3.97**	**249**	*i* PN	**Pn**	**14 21 40.0**	**+0.5**
KUR				*i* S	**Sn**	**14 22 24.9**	**+0.2**
KUR				pmax	pmax		
	comp=E,44nm,0.3s						
KUR				pmax	pmax		
	comp=Z,44nm,0.3s						
KUR				pmax	pmax		
	comp=N,27nm,0.2s						
KUR				smax	smax		
	comp=N,60nm,0.4s						
KUR				smax	smax		
	comp=E,87nm,0.5s						
KUR	**Kuril'sk**	**3.97**	**249**	*i* P	**Pn**	**14 21 40.0**	**+0.5**
KUR				AMB	AMB	14 21 43.8	
	comp=E,30nm,0.3s						
KUR				AMB	AMB	14 21 43.8	
	comp=E,40nm,0.3s						
KUR				*i* S	**Sn**	**14 22 24.9**	**+0.2**
KUR				A	A	14 22 36.8	
	comp=E,60nm,0.4s						
KUR				A	A	14 22 36.8	
	comp=E,90nm,0.4s						
SKR	**Severo-Kuril's**	**4.37**	**26**	*e* PN	**Pn**	**14 21 44.6**	**-0.4**
SKR				*e* S	**Sn**	**14 22 32.0**	**-2.6**
SKR				pmax	pmax		
	comp=Z,43nm,0.7s						
SKR				smax	smax		
	comp=N,69nm,0.8s						
SKR				smax	smax		
	comp=E,84nm,1.1s						
SKR				MLR	MLR		
	comp=Z,500nm,15.0s						
SKR	**Severo-Kuril's**	**4.37**	**26**	*e* P	**Pn**	**14 21 44.6**	**-0.4**
SKR				AMB	AMB	14 21 46.3	
	comp=Z,30nm,0.7s						
SKR				*e* S	**Sn**	**14 22 32.0**	**-2.6**
SKR				A	A	14 22 44.9	
	comp=Z,40nm,0.5s						
SKR				A	A	14 22 44.9	
	comp=Z,70nm,0.5s						
SKR				AMS	AMS	14 23 40.6	
	comp=Z,500nm,16.0s						
PAU	**Pauzhetka**	**5.27**	**26**	*e* S	**Sn**	**14 22 54.3**	**-2.4**
PAU				A	A	14 22 56.6	
	comp=Z,180nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**5.80**	**244**	*e* PN	Pn	14 22 10.0	+5.4
YUK				*e* S	**Sn**	**14 23 13.3**	**+3.7**
YUK				smax	smax		
	comp=E,20nm,0.4s						
YUK				smax	smax		
	comp=N,77nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**5.80**	**244**	*e* P	**Pn**	**14 22 05.5**	**+0.9**
YUK				*e* S	**Sn**	**14 23 08.9**	**-0.7**
YUK				A	A	14 23 26.1	
	comp=N,80nm,0.4s						
YUK				A	A	14 23 26.1	
	comp=N,20nm,0.4s						
NEM2	**Nemuro 2**	**6.24**	**239**	P	**Pn**	**14 22 09.0**	**-1.6**
NEM2				*e* S	**Sn**	**14 23 15.8**	**-4.7**
JRA	**Rausu**	**6.31**	**246**	P	**Pn**	**14 22 12.7**	**+1.2**
JNK	**Nakash**	**6.74**	**245**	P	**Pn**	**14 22 17.9**	**+0.4**
PETK	**Petropavlovsk-**	**6.98**	**23**	P	**Pn**	**14 22 21.4**	**+0.6**
	comp=N,0.4nm,0.3s,baz=180,slow=12,SNR=8.8						
JTKR	**Abashiri--Toko**	**7.06**	**250**	P	**Pn**	**14 22 23.2**	**+1.3**
JAK	**Akkeshi**	**7.07**	**241**	P	**Pn**	**14 22 20.6**	**-1.5**
JAK				*e* S	**Sn**	**14 23 36.6**	**-4.4**
YSS	**Yuzh-Sakhalins**	**7.10**	**275**	*e* P	**Pn**	**14 22 24.0**	**+1.6**
YSS				AMB	AMB	14 22 27.3	
	comp=N,10.0nm,0.4s						
PET	**Petropavlovsk**	**7.19**	**28**	*e* S	**Sn**	**14 23 40.6**	**-3.2**
PET				A	A	14 23 42.2	
	comp=N,27nm,0.6s						
JMP	**Maruseppu**	**7.40**	**251**	P	**Pn**	**14 22 28.8**	**+2.2**
JAR	**Ashorobuto**	**7.48**	**245**	P	**Pn**	**14 22 28.0**	**+0.4**
JAR				*e* S	**Sn**	**14 23 51.1**	**+0.2**
JOB	**Onbets**	**7.65**	**243**	P	**Pn**	**14 22 29.6**	**-0.3**
ASAJ	**Asahikawa**	**7.86**	**254**	P	**Pn**	**14 22 35.0**	**+2.2**
	comp=N,0.6nm,0.3s,baz=66,slow=19,SNR=7.9						
ASAJ	**Asahikawa**	**7.86**	**254**	PN	**Pn**	**14 22 35.0**	**+2.2**
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
JKK2	**Kamakawa 2**	**7.86**	**252**	P	**Pn**	**14 22 34.6**	**+1.8**
TYV	**Tymovskoe**	**8.01**	**304**	*e*rx	rx	14 22 35.5	
JCH	**Churui**	**8.10**	**242**	P	**Pn**	**14 22 35.4**	**-0.7**
JCH				*e* S	**Sn**	**14 24 01.6**	**-4.5**
MYR	**Moyori**	**8.33**	**241**	*e* P	**Pn**	**14 22 38.0**	**-1.3**
JEM	**Erimo**	**8.57**	**240**	P	**Pn**	**14 22 42.5**	**-0.1**
JNBK	**Urakawa-nobuka**	**8.66**	**242**	P	**Pn**	**14 22 42.3**	**-1.5**
JKB	**Kayabe**	**9.94**	**245**	P	**Pn**	**14 22 59.5**	**-1.7**
MA2	**Magadan**	**12.88**	**355**	P	**Pn**	**14 23 41.8**	**+0.5**
	comp=Z,0.6nm,0.3s,baz=170,slow=9.6,SNR=7.5						
H11N2	**WAKE ISLAND Hy**	**29.26**	**153**	T	T	14 57 51.3	
	baz=340,slow=76,SNR=278						
H11N1	**WAKE ISLAND Hy**	**29.28**	**153**	T	T	14 57 56.9	
	baz=340,slow=76,SNR=170						
H11N3	**WAKE ISLAND Hy**	**29.28**	**153**	T	T	14 58 15.5	
	baz=340,slow=76,SNR=176						
H11S1	**WAKE ISLAND Hy**	**30.35**	**154**	T	T	14 59 26.7	
	baz=340,slow=76,SNR=206						
H11S3	**WAKE ISLAND Hy**	**30.36**	**154**	T	T	14 59 22.5	
	baz=340,slow=76,SNR=163						
H11S2	**WAKE ISLAND Hy**	**30.37**	**154**	T	T	14 59 22.6	
	baz=340,slow=76,SNR=147						
ILAR	**Eielson Array**	**36.52**	**39**	P	**P**	**14 27 40.9**	**+0.1**
	comp=Z,0.2nm,0.5s,baz=259,slow=7.7,SNR=5.3						
ILAR				pP	**pP**	**14 27 55.4**	**+0.3**
	comp=Z,0.3nm,0.6s,baz=255,slow=8.7,SNR=2.8						
MKAR	**Makanchi Array**	**46.91**	**297**	P	**P**	**14 29 05.1**	**-0.9**
	comp=Z,0.2nm,0.3s,baz=61,slow=8.0,SNR=3.6						
KURK	**Kurchatov**	**47.33**	**304**	P	**P**	**14 29 08.1**	**-1.0**
KURK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KURK	**Kurchatov**	**47.33**	**304**	*e* P	**P**	**14 29 08.1**	**-1.0**
KURBB	**Kurchatov Arra**	**47.43**	**304**	P	**P**	**14 29 08.1**	**-1.7**
	comp=Z,0.5nm,0.6s,baz=68,slow=8.2,SNR=4.2						
BVAR	**Borovoye Array**	**50.83**	**309**	P	**P**	**14 29 36.5**	**+0.7**
	comp=Z,0.2nm,0.4s,baz=83,slow=4.9,SNR=2.3						
YKA	**Yellowknife Ar**	**50.89**	**37**	P	**P**	**14 29 37.6**	**+1.5**
	comp=Z,0.4nm,0.7s,baz=292,slow=8.4,SNR=2.6						
CMAR	**Chiang Mai Arr**	**52.37**	**256**	P	**P**	**14 29 49.2**	**+1.5**
	comp=Z,0.6nm,0.5s,baz=225,slow=30,SNR=4.3						
FINES	**FINESS Array B**	**64.00**	**335**	P	**P**	**14 31 07.5**	**-0.8**
	comp=Z,1.1nm,0.4s,baz=36,slow=6.9,SNR=11						
PDAR	**Pinedale Array**	**64.73**	**54**	P	**P**	**14 31 15.5**	**+1.8**
	comp=Z,0.4nm,0.6s,baz=288,slow=6.2,SNR=2.9						
NB2	**NORSAR Subarra**	**68.18**	**341**	P	**P**	**14 31 34.5**	**-0.7**
	comp=Z,2.1nm,0.6s,baz=30,slow=6.5						
NOA	**NORSAR Array B**	**68.18**	**341**	P	**P**	**14 31 34.7**	**-0.5**
	comp=Z,1.2nm,0.6s,baz=30,slow=6.7,SNR=8.4						
HFS	**Hagfors**	**68.41**	**339**	P	**P**	**14 31 35.8**	**-0.8**
	comp=Z,3.4nm,0.5s,baz=52,slow=5.8,SNR=27						
AKASG	**Malin Array Be**	**71.51**	**326**	P	**P**	**14 31 54.8**	**-0.9**
	comp=Z,1.3nm,0.3s,baz=35,slow=6.1,SNR=5.1						
ASAR	**Alice Springs**	**72.25**	**198**	P	**P**	**14 32 02.0**	**+1.6**
	comp=Z,0.3nm,0.6s,baz=25,slow=7.3,SNR=5.0						
ASAR				pP	**pP**	**14 32 16.8**	**+0.8**
	comp=Z,0.5nm,0.7s,baz=2.8,slow=5.7,SNR=3.5						
MORC	**Moravsky Berou**	**76.40**	**332**	⇓ *i* P	**P**	**14 32 23.8**	**-0.6**
MORC	**Moravsky Berou**	**76.40**	**332**	⇓ P	**P**	**14 32 23.8**	**-0.6**
MLR	**Muntele Rosu**	**77.03**	**325**	P	**P**	**14 32 27.5**	**-0.6**
	comp=Z,0.3nm,0.5s,baz=36,slow=8.7,SNR=3.6						
MLR	**Muntele Rosu**	**77.03**	**325**	⇓ *i* P	**P**	**14 32 27.2**	**-0.9**
VRAC	**Vranov**	**77.11**	**332**	⇓ *i* P	**P**	**14 32 28.6**	**+0.3**
VRAC	**Vranov**	**77.11**	**332**	⇓ P	**P**	**14 32 28.6**	**+0.3**
DRGR		**77.17**	**328**	⇓ *i* P	**P**	**14 32 24.4**	**-4.4**
DRGR		**77.17**	**328**	⇓ P	**P**	**14 32 24.4**	**-4.4**
VOIR		**77.42**	**325**	⇓ *i* P	**P**	**14 32 30.6**	**+0.3**
VOIR		**77.42**	**325**	⇓ P	**P**	**14 32 30.6**	**+0.3**
TXAR	**Lajitas Array**	**77.48**	**61**	P	**P**	**14 32 31.7**	**+0.8**
	comp=Z,0.4nm,0.6s,baz=303,slow=4.4,SNR=6.5						
ARR	**Arges**	**77.64**	**326**	⇑ *i* P	**P**	**14 32 33.4**	**+1.9**
GERES	**GERESS Array B**	**78.41**	**334**	P	**P**	**14 32 35.3**	**-0.4**
	comp=Z,0.5nm,0.7s,baz=37,slow=6.7,SNR=3.2						

*IDC **09** 14:23:43.2*±1.0, *3°53S*×*130°90E, h0km, mb3.7/5, mb1 4.0/7, mb1mx3.6/56, mbtmp3.8/7, ML3.5/2, Error ellipse: s-maj=59.3km s-min=20.4km az=84.0*

*ISCJB **09** 14:23:44.0*±0.8, *3°74S*×*0°06*×*131°1E*±*0°2, h30km, mb3.7/4, Error ellipse: s-maj=30.5km s-min=8.7km az=5.4*

ISC 09 14:23:46.3±0.8, **3°59S**±0°07×**131°0E**±0°3, **h30**km, **n8**, σ2°**74**/10, **mb3.7**/4, **Irian J

	6.1nm,0.9s,baz=100,slow=11,SNR=7.1						
ASAR	**Alice Springs**	**44.20**	**265**	P	**P**	**14 47 28.9**	**-1.8**
	3.0nm,0.8s,baz=103,slow=6.5,SNR=28						
WRA	**Warramunga Arr**	**45.09**	**270**	P	**P**	**14 47 36.2**	**-1.6**
	4.2nm,0.8s,baz=110,slow=8.0,SNR=33						
VNDA	**Vanda**	**49.32**	**186**	P	**P**	**14 48 11.1**	**+1.1**
	0.4nm,0.7s,baz=357,slow=6.1,SNR=2.8						
QSPA	**South Pole Qui**	**60.84**	**180**	*e*P	**P**	**14 49 33.8**	**+0.4**
	6.5nm,0.8s						
MAW	**Mawson**	**73.72**	**200**	P	**P**	**14 50 55.3**	**+0.5**
	1.5nm,0.8s,baz=118,slow=13,SNR=3.4						
MJAR	**Matsushiro Arr**	**77.91**	**324**	P	**P**	**14 51 18.7**	**-0.3**
	1.6nm,0.8s,baz=148,slow=7.2,SNR=2.2						
SYO	**Syowa Base**	**78.44**	**193⇑**	*e*P	**P**	**14 51 19.8**	**-1.8**
USRK	**Ussuriysk Ar.**	**86.79**	**326**	P	**P**	**14 52 06.1**	**+0.8**
	2.2nm,0.7s,baz=106,slow=4.2,SNR=5.7						
PDAR	**Pinedale Array**	**94.62**	**43**	P	**P**	**14 52 42.9**	**+0.6**
	0.2nm,0.4s,baz=20,slow=43,SNR=2.6						
MKAR	**Makanchi Array**	**117.82**	**310**	PKP	**PKPdf**	**14 58 06.5**	**-0.8**
	0.3nm,0.5s,baz=69,slow=4.0,SNR=3.9						
KURK	**Kurchatov**	**121.00**	**314**	PKP	**PKPdf**	**14 58 13.0**	**-0.3**
KURBB	**Kurchatov Arra**	**121.04**	**314**	PKP	**PKPdf**	**14 58 13.0**	**-0.4**
	0.4nm,0.2s,baz=108,slow=1.5,SNR=2.7						
BVAR	**Borovoye Array**	**126.30**	**316**	PKP	**PKPdf**	**14 58 23.4**	**0.0**
	1.2nm,0.7s,baz=197,slow=1.5,SNR=6.8						
H10S3	**ASCENSION HYDR**	**138.29**	**153**	T	T	17 35 14.2	
	baz=204,SNR=2.6						
H10S2	**ASCENSION HYDR**	**138.29**	**153**	T	T	17 35 14.4	
H10S1	**ASCENSION HYDR**	**138.31**	**153**	T	T	17 35 36.9	
	baz=204						
H10N3	**ASCENSION HYDR**	**139.37**	**152**	T	T	17 36 43.3	
	baz=206						
H10N1	**ASCENSION HYDR**	**139.37**	**153**	T	T	17 36 46.6	
	baz=206						
H10N2	**ASCENSION HYDR**	**139.38**	**153**	T	T	17 36 53.4	
	baz=206						
FINES	**FINESS Array B**	**144.42**	**341**	PKP	**PKPab**	**14 58 54.8**	**-0.1**
	3.7nm,0.6s,baz=82,slow=3.6,SNR=24						
OBN	**Obninsk**	**144.81**	**327**	PKP	**PKPab**	**14 58 56.6**	**+0.1**
	10nm,0.4s,baz=219,slow=23,SNR=3.9						
KBZ	**Khabaz**	**145.31**	**306**	PKPbc	**PKPdf**	**14 58 59.0**	**+0.2**
	2.2nm,0.7s,baz=111,slow=9.0,SNR=5.8						
KVAR	**Kislovodsk Arr**	**145.40**	**306**	PKPab	**PKPab**	**14 59 00.2**	**+0.9**
	3.0nm,0.4s,baz=88,slow=6.9,SNR=5.0						
NOA	**NORSAR Array B**	**147.78**	**353**	PKPbc	**PKPbc**	**14 59 05.1**	**-0.3**
	0.4nm,0.5s,baz=5.2,slow=3.5,SNR=4.0						
AKASG	**Malin Array Be**	**150.99**	**325**	PKPbc	**PKPbc**	**14 59 13.2**	**-0.4**
	7.5nm,0.8s,baz=46,slow=2.9,SNR=7.9						
MMAI	**Mount Meron Ar**	**152.22**	**286**	PKPbc	**PKPbc**	**14 59 18.4**	**+1.2**
	4.8nm,0.8s,baz=91,slow=3.6,SNR=7.2						
BRTR	**Keskin Array B**	**152.93**	**301**	PKPbc	**PKPbc**	**14 59 18.4**	**-0.2**
	0.8nm,0.6s,baz=151,slow=2.8,SNR=5.3						

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*ISCJB **09** 14:40:43.1±0.1,35.˙94S±0.˙03×178.˚16E±0.˙03,h10km, mb5.4/88,MS4.9/16,Error ellipse: s-maj=4.8km s-min=3.6km az=157.6*

*BJI **09** 14:40:43.7,35.˚59S×178.˚56E,h15km,mb5.2/20,mB5.8/14, Ms5.6/18,Ms7 5.3/17*

*NEIC **09** 14:40:45.5,35.˚90S×178.˚12E,h12km,mb5.5/42, ML5.2(WEL),After WEL.*

*MOS **09** 14:40:45.7±1.4,36.˚01S×178.˚08E,h33km,mb5.1/33,Error ellipse: s-maj=11.7km s-min=9.4km az=91.6*

*GCMT **09** 14:40:45.5±0.2,35.˚75S×178.˚31E,h14km,MW5.3/86, Moment Tensor Solution. s69,c92; s86,c140; Duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_T-1.20±.04; M_{90}0.67±.03; M_{90}0.53±.03; M_{RR}0.25±.07; M_{90}0.58±.02; M_{RT}0.04±.07; Best double couple: $M_0$1.21800×10^{17} NP1:ϕ_D234.00000°,δ50.00000°,λ-82.00000°. NP2: ϕ_S42.00000°,δ40.00000°,λ-99.00000°. Principal axes: T 1.2020, Plg5.0000°, Azm319.0000°; N 0.0300, Plg6.0000°, Azm49.0000°; P -1.2330, Plg82.0000°, Azm189.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*IDC **09** 14:40:58.3±2.4,35.˚93S×178.˚10E,h133km±20km, mb4.5/19,mb1 4.6/19,mb1mx4.5/27,mbtmp4.9/19, MS4.8/14,Ms1 4.8/14,ms1mx4.5/38 Error ellipse: s-maj=14.0km s-min=13.2km az=25.0*

ISC 09 14:40:43.7±0.3,35.˚97S±0.˚05×178.˚25E±0.˚06,h10km,n458, σ1ŝ80/438,mb5.5/86,MS5.0/16,11C-9D,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.59**	**178**	*e*Pn			**Pn**	**14 41 11.8**	**-0.1**
URZ	**Urewera**	**2.46**	**201**	P			**Pn**	**14 41 24.6**	**+0.8**
	28nm,0.3s,baz=274,slow=3.3,SNR=29								
URZ				S			**Sn**	**14 41 55.5**	**+1.6**
	72nm,0.3s,baz=16,slow=12,SNR=8.8								
URZ				LR			LR	14 42 36.3	
	comp=Z,21µm,19.0s,baz=347,slow=40								
URZ	**Urewera**	**2.46**	**201**	*e*Pn			**Pn**	**14 41 24.7**	**+0.8**
URZ				*e*Sn			**Sn**	**14 41 50.1**	**-3.8**
BKZ	**Black Stump Fm**	**3.48**	**203**	*e*Pn			**Pn**	**14 41 40.5**	**+2.5**
HIZ	**Hauiti**	**3.71**	**226**	*e*Pn			**Pn**	**14 41 43.1**	**+2.1**
OUZ	**Omahuta**	**3.86**	**280**	*e*Pn			**Pn**	**14 41 40.5**	**-2.6**
BFZ	**Birch Farm**	**4.96**	**198**	*e*Pn			**Pn**	**14 41 59.8**	**+1.6**
THZ	**Tophouse**	**7.12**	**214**	*e*Pn			**Pn**	**14 42 28.7**	**+0.6**
KHZ	**Kahutara**	**7.40**	**208**	*e*Pn			**Pn**	**14 42 30.9**	**-0.8**
RAO	**Raoul Island**	**7.44**	**27**	LR			LR	14 45 08.4	
	comp=Z,7µm,18.1s,baz=205,slow=34								
LTZ	**Lake Taylor**	**8.22**	**212**	*e*Pn			**Pn**	**14 42 42.9**	**-0.2**
RPZ	**Rata Peaks**	**9.50**	**213**	P			**Pn**	**14 43 00.6**	**0.0**
	1.9nm,0.3s,baz=31,slow=2.6,SNR=5.8								
RPZ				S			Sn	14 44 36.7	-11
	1.3nm,0.3s,baz=312,slow=2.9,SNR=3.6								
RPZ				LR			LR	14 47 13.8	
	comp=Z,5µm,18.5s,baz=43,slow=40								
DZM	**Mont Dzumac**	**17.25**	**320**	P			**Pn**	**14 44 44.4**	**-0.5**
	0.5nm,0.3s,baz=146,slow=11,SNR=6.3								
DZM				LR			LR	14 50 12.5	
	comp=Z,6µm,19.9s,baz=134,slow=32								
DZM	**Mont Dzumac**	**17.25**	**320**	*e*P			**Pn**	**14 44 43.4**	**-1.5**
	194nm,1.4s								
DZM				*e*LR			LR	14 48 38.0	
	14µm,24.9s								
DZM	**Mont Dzumac**	**17.25**	**320**	*e*Pn			**Pn**	**14 44 42.9**	**-2.0**
	131nm,1.3s								
MSVF	**Nonsavu**	**18.17**	**359⇑**	*e*P			**P**	**14 44 58.5**	**+2.0**
MSVF				pmax			pmax		
	comp=Z,116nm,1.2s								
MSVF	**Nonsavu**	**18.17**	**359**	*e*Pn			**Pn**	**14 44 59.7**	**+3.2**
	comp=Z,238nm,1.3s								
NIUE	**Niue**	**19.80**	**35**	P			**Pn**	**14 45 16.6**	**+0.8**
	baz=20								
ARMA	**Armidale**	**22.92**	**276**	P			**P**	**14 45 49.0**	**+1.1**
	baz=23,SNR=6.0								
ARMA	**Armidale**	**22.92**	**276**	*e*P			**P**	**14 45 51.0**	**+3.0**
	comp=Z,296nm,2.0s								
CNB	**Canberra Magne**	**23.45**	**263**	P			**P**	**14 45 55.5**	**+2.2**
	baz=23,SNR=6.4								
AFI	**Afiamalu**	**23.73**	**25**	P			**P**	**14 45 59.2**	**+3.1**
	comp=Z,96nm,0.9s,baz=38,slow=14,SNR=6.5								
AFI	**Afiamalu**	**23.73**	**25**	*e*P			**P**	**14 45 54.0**	**-2.1**
AFI				pmax			pmax		
	comp=Z,124nm,1.0s								
AFI	**Afiamalu**	**23.73**	**25**	*e*P			**P**	**14 45 54.0**	**-2.1**
	comp=Z,124nm,1.0s								
CAN	**Canberra**	**23.74**	**263**	P			**P**	**14 45 57.8**	**+1.6**
	baz=24								
CAN	**Canberra**	**23.74**	**263**	*e*P			**P**	**14 45 58.7**	**+2.5**
CAN				pmax			pmax		
	comp=Z,190nm,1.9s								
CAN	**Canberra**	**23.74**	**263**	*e*P			**P**	**14 45 58.7**	**+2.5**
	comp=Z,190nm,1.9s								
RAR	**Rarotonga**	**24.19**	**58**	P			**P**	**14 46 01.4**	**+1.1**
	comp=Z,32nm,1.1s,baz=242,slow=14,SNR=2.8								
RAR				LR			LR	14 52 39.8	
	comp=Z,416nm,21.4s,baz=232,slow=29								
YNG	**Young**	**24.43**	**265**	P			**P**	**14 46 04.1**	**+1.5**
	baz=24								
EIDS	**Eidsvold**	**25.57**	**287**	*e*P			**P**	**14 46 13.6**	**+0.7**
	comp=Z,46nm,1.4s								
RMQ	**Roma**	**26.84**	**282**	P			**P**	**14 46 26.9**	**+2.5**
	baz=27,SNR=21								
CMSA	**Cobar Meteorol**	**27.35**	**270**	P			**P**	**14 46 30.7**	**+1.7**
	baz=27,SNR=6.1								
QLP	**Quilpie**	**30.41**	**278**	P			**P**	**14 46 57.5**	**+1.3**
	baz=30,SNR=11								
STKA	**Stephens Creek**	**30.57**	**267**	P			**P**	**14 47 00.2**	**+2.6**
	comp=Z,5.1nm,1.0s,baz=94,slow=12,SNR=3.7								
STKA				LR			LR	14 58 25.2	
	comp=Z,1µm,19.2s,baz=72,slow=34								
STKA	**Stephens Creek**	**30.57**	**267**	P			**P**	**14 46 59.1**	**+1.5**
	baz=30								
STKA	**Stephens Creek**	**30.57**	**267**	*e*P			**P**	**14 46 58.9**	**+1.3**
STKA				pmax			pmax		
	comp=Z,20nm,2.0s								
STKA	**Stephens Creek**	**30.57**	**267**	*e*P			**P**	**14 46 58.9**	**+1.3**
	comp=Z,20nm,2.0s								
TBI	**Tubuai**	**30.61**	**75**	*e*LR			LR	14 55 04.5	
	comp=Z,1µm,27.0s								
TBI	**Tubuai**	**30.61**	**75**	*e*T			T	15 18 55.2	
	comp=Z,92nm,0.3s								
HNR	**Honiara**	**31.23**	**323**	P			**P**	**14 47 04.8**	**+1.4**
	comp=Z,56nm,1.0s,baz=107,slow=13,SNR=2.7								
HNR	**Honiara**	**31.23**	**323**	*e*P			**P**	**14 47 04.9**	**+1.4**
HNR				pmax			pmax		
	comp=Z,160nm,1.2s								
HNR	**Honiara**	**31.23**	**323**	*e*P			**P**	**14 47 04.9**	**+1.4**
	comp=Z,160nm,1.2s								
CTA	**Charters Tower**	**32.19**	**291**	P			**P**	**14 47 13.6**	**+1.6**
	comp=Z,8.7nm,1.1s,baz=128,slow=8.6,SNR=5.6								
CTA				LR			LR	14 59 45.4	
	comp=Z,756nm,18.9s,baz=166,slow=35								
CTA	**Charters Tower**	**32.19**	**291**	P			**P**	**14 47 14.1**	**+2.2**
	baz=32								
CTAO	**Charters Tower**	**32.19**	**291**	*e*P			**P**	**14 47 11.5**	**-0.5**
CTAO				pmax			pmax		
	comp=Z,41nm,1.2s								
CTAO	**Charters Tower**	**32.19**	**291**	*e*P			**P**	**14 47 11.5**	**-0.5**
	comp=Z,41nm,1.2s								
HTT	**Hallett**	**32.28**	**263**	P			**P**	**14 47 14.1**	**+1.4**
	baz=32								
PAE	**Paea**	**33.80**	**66**	*e*T			T	15 22 46.4	
	comp=Z,7.2nm,0.3s								
PPT2	**Papeete2**	**33.85**	**66**	*e*LR			LR	14 56 31.0	
	comp=Z,694nm,22.0s								
PPT2	**Papeete2**	**33.85**	**66**	*e*T			T	15 22 49.4	
	comp=Z,19nm,0.3s								
BBOO	**Buckleboo**	**34.76**	**263**	P			**P**	**14 47 36.1**	**+1.8**
	baz=35								
BBOO	**Buckleboo**	**34.76**	**263**	*e*P			**P**	**14 47 34.8**	**+0.5**
	comp=Z,82nm,1.4s								
MEH	**Mehetia**	**34.80**	**68**	*e*T			T	15 24 02.0	
	comp=Z,48nm,0.3s								
MTSU	**Mount Surprise**	**34.82**	**292**	P			**P**	**14 47 36.5**	**+1.6**
	baz=35,SNR=8.1								
VAH	**Vaihoa**	**36.78**	**65**	*e*T			T	15 26 29.0	
	comp=Z,27nm,0.2s								
QIS	**Mount Isa**	**37.07**	**284**	P			**P**	**14 47 55.7**	**+1.5**
	baz=37,SNR=17								
TARA	**Tarawa**	**37.47**	**351**	*e*P			**P**	**14 47 54.8**	**-2.7**
	comp=Z,711nm,1.4s								
COEN	**Coen**	**38.31**	**296**	P			**P**	**14 48 05.4**	**+0.8**
	baz=38,SNR=9.9								
COEN	**Coen**	**38.31**	**296**	*e*P			**P**	**14 48 04.8**	**+0.1**
	comp=Z,39nm,0.9s								
PMG	**Port Moresby**	**38.70**	**305**	LR			LR	15 02 22.2	
	comp=Z,3µm,18.8s,baz=110,slow=33								
RABL	**Rabaul**	**39.73**	**317**	*e*P			**P**	**14 48 17.6**	**+1.1**
	comp=Z,399nm,1.4s								
ASAR	**Alice Springs**	**40.06**	**275**	P			**P**	**14 48 19.9**	**+0.5**
	comp=Z,74nm,1.0s,baz=115,slow=7.5,SNR=65								
ASAR				LR			LR	15 04 53.9	
	comp=Z,2µm,18.6s,baz=146,slow=36								
ASAR	**Alice Springs**	**40.06**	**275**	P			**P**	**14 48 19.9**	**+0.5**
ASAR				pmax			pmax		
	comp=Z,74nm,1.0s								
ASAR				MLR			MLR		
	comp=Z,2µm,18.6s								
WB2	**Warramunga Arr**	**41.56**	**281**	*e*P			**P**	**14 48 31.7**	**0.0**
	comp=Z,53nm,1.0s								
WRAB	**Tennant Creek**	**41.57**	**281**	*e*P			**P**	**14 48 30.4**	**-1.4**
WRAB				pmax			pmax		
	comp=Z,54nm,1.0s								
WRAB	**Tennant Creek**	**41.57**	**281**	*e*P			**P**	**14 48 30.4**	**-1.4**
	comp=Z,54nm,1.0s								
WRA	**Warramunga Arr**	**41.58**	**281**	P			**P**	**14 48 31.4**	**-0.4**
	comp=Z,119nm,0.8s,baz=119,slow=7.8,SNR=40								
WRA				LR			LR	15 05 33.3	
	comp=Z,4µm,18.7s,baz=120,slow=36								
WRA	**Warramunga Arr**	**41.58**	**281**	P			**P**	**14 48 31.4**	**-0.4**
WRA				pmax			pmax		
	comp=Z,21nm,1.0s								
WRA				MLR			MLR		
	comp=Z,4µm,18.7s								
FORT	**Forrest**	**41.86**	**262**	P			**P**	**14 48 35.9**	**+1.9**
	baz=42,SNR=6.7								
FORT	**Forrest**	**41.86**	**262**	P			**P**	**14 48 30.9**	**-3.1**
	comp=Z,504nm,0.8s								
VNDA	**Vanda**	**42.26**	**185**	P			**P**	**14 48 38.6**	**+1.9**
	comp=Z,2.4nm,0.9s,baz=353,slow=6.6,SNR=6.0								
VNDA				LR			LR	15 02 55.0	
	comp=Z,1µm,21.5s,baz=345,slow=31								
VNDA	**Vanda**	**42.26**	**185**	*e*P			**P**	**14 48 37.9**	**+1.2**
VNDA				pmax			pmax		
	comp=Z,11nm,1.3s								
VNDA	**Vanda**	**42.26**	**185**	*e*P			**P**	**14 48 37.9**	**+1.2**
	comp=Z,11nm,1.3s								
SBA	**Scott Base**	**42.28**	**184**	*e*P			**P**	**14 48 35.1**	**-1.7**
SBA				pmax			pmax		
	comp=Z,117nm,2.0s								
SBA	**Scott Base**	**42.28**	**184**	*e*P			**P**	**14 48 35.1**	**-1.7**
	comp=Z,117nm,2.0s								
RKT	**Rikitea**	**42.29**	**86**	*e*LQ			LQ	14 58 35.8	
	comp=Z,1µm,30.5s								
RKT				*e*LR			LR	15 00 15.7	
	comp=Z,2µm,30.2s								
RKT	**Rikitea**	**42.29**	**86**	*e*T			T	15 33 30.6	
	comp=Z,2.2nm,0.3s								
WRKA	**Warakurna**	**43.98**	**270**	P			**P**	**14 48 50.8**	**-0.6**
	baz=44,SNR=7.4								
TAOE	**Nuku Hiva Isla**	**46.46**	**65**	*e*LR			LR	15 02 33.8	
	comp=Z,936nm,22.5s								
KMBL	**Kaabala**	**46.59**	**259**	P			**P**	**14 49 12.3**	**+0.4**
	baz=46,SNR=4.7								
JAY	**Jayapura**	**48.08**	**305**	P			**P**	**14 49 26.1**	**+2.4**
	comp=Z,48nm,1.3s,comp=Z,757nm								
MTN	**Manton Dam**	**48.12**	**286**	P			**P**	**14 49 24.2**	**+0.2**
	baz=48,SNR=3.7								
KNRA	**Kununurra**	**48.34**	**281**	P			**P**	**14 49 27.0**	**+1.3**
	baz=48								
GENI	**Genyem**	**48.38**	**304**	P			**P**	**14 49 28.4**	**+2.4**
	comp=Z,102nm,1.3s								
FITZ	**Fitzroy Crossi**	**49.52**	**277**	P			**P**	**14 49 35.6**	**+0.8**
	baz=49,SNR=9.1								
FITZ	**Fitzroy Crossi**	**49.52**	**277**	P			**P**	**14 49 31.0**	**-3.7**
	comp=Z,81nm,1.4s								
NWAO	**Narrogin (SRO)**	**49.69**	**255**	P			**P**	**14 49 34.8**	**-1.1**
	baz=50,SNR=6.4								
NWAO				P			**P**	**14 49 34.8**	**-1.1**
	baz=50,SNR=6.4								
NWAO	**Narrogin (SRO)**	**49.69**	**255**	*e*P			**P**	**14 49 34.9**	**-0.9**
NWAO				pmax			pmax		
	comp=Z,146nm,1.4s								
NWAO	**Narrogin (SRO)**	**49.69**	**255**	*e*P			**P**	**14 49 34.9**	**-0.9**
	comp=Z,146nm,1.4s								
KLBR	**Kellerberrin**	**49.77**	**257**	P			**P**	**14 49 36.7**	**+0.2**
	baz=50,SNR=6.9								
MUN	**Mundaring**	**50.84**	**255**	P			**P**	**14 49 45.0**	**+0.4**
	baz=51								
BLDU	**Ballidu**	**50.98**	**257**	P			**P**	**14 49 45.4**	**-0.3**
	baz=51,SNR=5.4								
MEEK	**Meekatharra**	**51.11**	**263**	P			**P**	**14 49 45.9**	**-0.9**
	baz=51,SNR=3.9								
MORW	**Morawa**	**52.14**	**259**	P			**P**	**14 49 54.5**	**+0.2**
	baz=52,SNR=8.3								
MBWA	**Marble Bar**	**52.75**	**270**	*e*P			**P**	**14 49 56.5**	**-2.5**
	comp=Z,104nm,1.3s								
SOEI	**Soe**	**55.34**	**284**	P			**P**	**14 50 22.2**	**+4.1**
	comp=Z,97nm,1.3s								
MSAI	**Masohi**	**55.82**	**294**	P			**P**	**14 50 25.3**	**+3.9**
NLAI	**Nana**	**57.26**	**292**	P			**P**	**14 50 33.5**	**+1.9**
	comp=Z,61nm,1.1s,comp=Z,2µm								
MMRI	**Maumere**	**57.61**	**284**	P			**P**	**14 50 34.9**	**+0.7**
	comp=Z,156nm,1.9s,comp=Z,3µm								
MMRI	**Maumere**	**57.61**	**284**	*e*P			**P**	**14 50 32.5**	**-1.7**
	comp=Z,270nm,1.4s								
GUMO	**Guam**	**58.52**	**321**	P			**P**	**14 50 41.1**	**+0.7**
	comp=Z,82nm,1.2s,baz=128,slow=2.4,SNR=4.5								
GUMO	**Guam**	**58.52**	**321**	P			**P**	**14 50 41.1**	**+0.7**
GUMO				pmax			pmax		
	comp=Z,53nm,1.0s								
LBMI	**Labuha**	**58.69**	**295**	P			**P**	**14 50 45.2**	**+3.5**
	comp=Z,134nm,1.6s,comp=Z,2µm								
SANI	**Sanana**	**58.87**	**293**	P			P	14 50 53.0	+10
KDI	**Kendari**	**60.20**	**288**	P			P	14 50 57.1	+5.0
ANA2	**Anatahan**	**60.46**	**324**	*e*P			**P**	**14 50 53.9**	**+0.2**
PLAI	**Plampang**	**61.03**	**281**	P			**P**	**14 51 01.7**	**+3.9**
	comp=Z,96nm,1.5s								
KAPI	**Kappang**	**61.77**	**285**	LR			LR	15 20 44.1	
	comp=Z,632nm,18.2s,baz=145,slow=39								
TWSI	**Taliwang, Sumb**	**61.80**	**280**	P			**P**	**14 51 03.8**	**+0.8**
	comp=Z,94nm,1.4s,comp=Z,1µm								
LUWI	**Luwuk**	**61.95**	**291**	P			**P**	**14 51 07.9**	**+3.9**
KMSI	**Cibinong**	**62.10**	**293**	P			**P**	**14 51 09.7**	**+4.7**
	comp=Z,164nm,1.6s								
TTSI	**Tana Toraja**	**62.94**	**287**	P			**P**	**14 51 11.5**	**+0.9**
	comp=Z,36nm,1.5s								
DNP	**Denpasar**	**63.17**	**279**	P			P	14 51 17.1	+4.9
SRBI	**Singaraja**	**63.52**	**280**	P			**P**	**14 51 15.5**	**+1.0**
	comp=Z,132nm,1.7s								
MRSI	**Marisa**	**63.57**	**292**	P			**P**	**14 51 16.1**	**+1.3**
	comp=Z,40nm,1.6s,comp=Z,2µm								
JAGI	**Jajag, Banyuwa**	**64.14**	**279**	P			**P**	**14 51 19.2**	**+0.6**
	comp=Z,143nm,1.6s,comp=Z,2µm								
JAGI	**Jajag, Banyuwa**	**64.14**	**279**	*e*P			**P**	**14 51 18.2**	**-0.4**
	comp=Z,212nm,1.3s								
PCI	**Palu**	**64.28**	**289**	P			**P**	**14 51 21.1**	**+1.6**
	comp=Z,134nm,1.6s,comp=Z,3µm								
ABJI	**Asem Bagus**	**64.47**	**279**	P			**P**	**14 51 24.4**	**+3.7**
	comp=Z,107nm,1.2s								
GMJI	**Gumukmas**	**64.82**	**278**	P			**P**	**14 51 23.5**	**+0.4**
	comp=Z,150nm,1.3s								
MAW	**Mawson**	**65.99**	**202**	P			**P**	**14 51 30.2**	**+0.5**
	comp=Z,42nm,1.3s,baz=111,slow=8.1,SNR=13								
MAW	**Mawson**	**65.99**	**202**	P			**P**	**14 51 30.3**	**+0.5**
	baz=66,SNR=6.5								
MAW	**Mawson**	**65.99**	**202**	*e*P			**P**	**14 51 29.7**	**-0.1**
MAW				pmax			pmax		
	comp=Z,22nm,1.4s								
MAW	**Mawson**	**65.99**	**202**	*e*P			**P**	**14 51 29.7**	**-0.1**
	comp=Z,22nm,1.4s								
PWJI	**Pagerwojo**	**66.29**	**277**	P			**P**	**14 51 33.1**	**+0.6**
	comp=Z,187nm,1.3s								
BBKI	**Banjar Baru**	**66.57**	**283**	P			**P**	**14 51 35.3**	**+0.9**
	comp=Z,215nm,1.3s,comp=Z,4µm								
PCJI	**Pacitan**	**66.89**	**277**	P			**P**	**14 51 36.4**	**+1.3**
NGJI	**Ngawi**	**66.94**	**278**	P			**P**	**14 51 38.0**	**+1.3**
WOJI	**Wonogiri, Jawa**	**67.10**	**277**	P			**P**	**14 51 39.0**	**+1.3**
	comp=Z,238nm,1.5s,comp=Z,6µm								
MTKI	**Muara Teweh, K**	**68.08**	**286**	P			**P**	**14 51 47.4**	**+3.5**
	comp=Z,53nm,0.8s,comp=Z,7µm								
CMJI	**Cimerak**	**69.13**	**276**	P			**P**	**14 51 52.2**	**+1.7**
	comp=Z,162nm,1.3s								
MYLDM	**Lahad Datu**	**69.23**	**293**	*e*P			**P**	**14 51 51.7**	**+0.7**
	comp=Z,126nm,1.3s								
PBKI	**Pangkalan Bun**	**69.54**	**282**	P			**P**	**14 51 56.9**	**+3.9**
	comp=Z,227nm,1.2s,comp=Z,2µm								
CISI	**Cisompet, Garu**	**69.77**	**275**	P			**P**	**14 51 54.9**	**+0.4**
	comp=Z,241nm,1.3s,comp=Z,2µm								
CISI	**Cisompet, Garu**	**69.77**	**275**	*e*P			**P**	**14 51 52.6**	**-1.9**
	comp=Z,315nm,1.2s								
JCJI	**Jatiwangi**	**70.02**	**277**	P			P	14 52 02.2	+6.2
CNJI	**Cibinong**	**70.47**	**275**	P			**P**	**14 52 02.5**	**+3.8**
SDKM	**Sandakan**	**70.51**	**293**	⇑P			**P**	**14 51 59.1**	**+0.1**
SYO	**Syowa Base**	**70.97**	**195**	⇓*i*X			**P**	**14 51 59.0**	**-1.9**
SYO	**Syowa Base**	**70.97**	**195**	⇓*i*pP			pP	14 52 08.5	+4.4
DBJI	**Dramaga**	**71.21**	**276**	P			**P**	**14 52 05.6**	**+2.3**
	comp=Z,171nm,1.3s,comp=Z,10µm								
STKI	**Sintang**	**71.38**	**284**	P			**P**	**14 52 05.6**	**+1.3**
	comp=Z,85nm,1.4s								
KKM	**Kota Kinabalu**	**71.51**	**292**	*e*P			**P**	**14 52 03.8**	**-1.3**
	comp=Z,133nm,1.2s								
KDM	**Kudat**	**71.61**	**293**	⇓P			P	14 52 12.0	+6.4
CGJI	**Cibinong**	**72.03**	**275**	P			P	14 52 14.3	+6.1
BTM	**Bintulu**	**72.08**	**288**	⇑P			**P**

SCZ2 Santa Cruz Isl 90.59 47 P P 14 53 46.8 +0.7
baz=226
TCA Tanti 90.81 130 eP P 14 53 48.3 +0.8
PKM Mcpherson Peak 91.11 47 P P 14 53 49.3 +0.6
baz=226
FMP Fort Macarthur 91.20 48 P P 14 53 49.5 +0.6
baz=226
109C Camp Elliot, M 91.36 50 P P 14 53 50.6 +0.9
baz=227
BAR Barrett 91.49 50 eP P 14 53 51.9 +1.5
MDJ Mudanjiang 91.53 328 P P 14 53 51.0 +0.8
MDJ pmax pmax
comp=Z,410nm,6.6s
TIA Tai'an 91.56 315 eP P 14 53 50.2 -0.3
TIA pmax pmax
comp=Z,20nm,1.4s
OSI Osito Audit: C 91.56 47 P P 14 53 51.5 +0.9
baz=226
MWC Mount Wilson 91.69 48 eP P 14 53 52.4 +1.0
MWC Mount Wilson 91.69 48 eP P 14 53 52.4 +1.0
MONP2 Monument Peak 91.79 50 P P 14 53 53.2 +1.2
baz=228,SNR=16
MURC Murrieta 91.79 49 P P 14 53 52.6 +0.8
baz=227,SNR=7.2
IKP In-Ko-Pah, Jac 91.82 50 P P 14 53 53.1 +1.1
baz=228,SNR=11
ARVC Arvin 91.85 47 P P 14 53 52.4 +0.5
baz=226
BFSC Mount Baldy Ra 91.94 48 P P 14 53 53.2 +0.6
baz=227,SNR=11
CYA Choya 92.04 128|| eP P 14 53 54.4 +1.1
EDW2 Edwards Air Fo 92.18 48 P P 14 53 53.8 +0.2
baz=227,SNR=17
VES Vestal, Richgr 92.19 46 P P 14 53 53.6 +0.1
baz=226
SWSC Sam W. Stewart 92.21 50 P P 14 53 55.0 +1.4
baz=228,SNR=9.6
ENH Enshi 92.24 306 eP P 14 53 51.8 -2.1
comp=Z,40nm,1.5s
TPFO Pinon Flats 92.25 49 P P 14 53 55.2 +1.2
baz=228,SNR=11
PFO Pinyon Flats O 92.25 49 P P 14 53 55.5 +1.5
comp=Z,11nm,1.0s,baz=252,slow=5.3,SNR=12
PFO Pinyon Flats O 92.25 49 P P 14 53 54.9 +1.0
baz=228,SNR=9.0
CMAR Chiang Mai Arr 92.36 291 P P 14 53 54.4 -0.3
comp=Z,3.2nm,0.9s,baz=150,slow=3.6,SNR=14
CMAR PP PP 14 57 37.5 +1.8
comp=Z,3.6nm,1.2s,baz=138,slow=5.9,SNR=8.0
CMAR PKKP PKKPbc 15 11 09.4 +1.3
comp=Z,1.0nm,0.9s,baz=279,slow=3.6,SNR=4.9
BBRC Big Bear Solar 92.41 49 P P 14 53 55.5 +0.7
baz=227
ISA Isabella, Lake 92.43 47 P P 14 53 55.4 +0.7
baz=226,SNR=6.8
ISA Isabella, Lake 92.43 47 eP P 14 53 55.9 +1.2
ISA Isabella, Lake 92.43 47 eP P 14 53 55.9 +1.2
CMMT Chiang Mai 92.57 291 P P 14 54 00.2 +4.6
CHTO Chiang Mai 92.57 291 P P 14 54 00.3 +4.7
comp=Z,32nm,1.5s
CHTO Chiang Mai 92.57 291 eP P 14 53 54.4 -1.2
CHTO Chiang Mai 92.57 291 eP P 14 53 54.4 -1.2
CN2 Changchun 92.77 325 eP P 14 53 55.2 -0.7
CN2 pmax pmax
comp=Z,10.0nm,1.1s
CN2 LR LR
comp=Z,500nm,18.0s
CN2 LR LR
comp=Z,300nm,18.0s
CN2 LR LR
comp=Z,600nm,20.0s
LRMC Laurel Mtn Rad 92.78 47 P P 14 53 56.8 +0.4
baz=227,SNR=12
RRX Edison Barstow 92.78 48 P P 14 53 56.9 +0.6
baz=227
BELC Belle Mtn. Jos 92.80 49 P P 14 53 57.9 +1.4
baz=228,SNR=20
GLA Glamis 92.89 51 P P 14 53 58.4 +1.5
baz=228,SNR=15
GLA Glamis 92.89 51 eP P 14 53 58.7 +1.8
GLA Glamis 92.89 51 eP P 14 53 58.7 +1.8
BC3 Big Chuckawall 92.90 50 P P 14 53 58.4 +1.5
baz=228,SNR=28
CMB Columbia Colle 92.97 44 eP P 14 53 57.4 +0.3
CMB Columbia Colle 92.97 44 eP P 14 53 57.4 +0.3
HEC Hector,Ludlow 93.15 49 P P 14 53 58.4 +0.4
baz=228,SNR=15
GSC Goldstone, Bar 93.18 48 P P 14 53 58.9 +0.7
baz=227,SNR=11
GSC Goldstone, Bar 93.18 48 eP P 14 53 58.6 +0.4
GSC Goldstone, Bar 93.18 48 eP P 14 53 58.6 +0.4
CWC Cottonwood Cre 93.20 46 P P 14 53 58.8 +0.5
baz=227
MPMC Manual Prospec 93.28 47 P P 14 53 59.1 +0.3
baz=227,SNR=5.9
AFDM Forest Hills D 93.29 43 eP P 14 53 58.7 +0.2
DAC Darwin (Calif) 93.37 47 eP P 14 54 00.6 +1.4
DAC Darwin (Calif) 93.37 47 eP P 14 54 00.6 +1.4
ORV Oroville 93.43 42 eP P 14 53 59.3 +0.2
ORV Oroville 93.43 42 eP P 14 53 59.3 +0.2
IRM Iron Mountain 93.43 50 P P 14 54 00.5 +1.2
baz=228,SNR=21
214A Organ Pipe Nat 93.45 53 P P 14 54 00.7 +1.2
baz=229
214A Organ Pipe Nat 93.45 53 eP P 14 53 59.7 +0.2
comp=Z,171nm,1.3s
GMRC Granite Mounta 93.53 49 P P 14 54 00.7 +0.8
baz=228,SNR=7.5
TIN Tinemaha, Big 93.53 46 P P 14 54 00.3 +0.6
baz=227
Y12C Blythe 93.54 50 P P 14 54 01.1 +1.3
baz=228,SNR=5.3
Y12C Blythe 93.54 50 eP P 14 53 58.9 -0.8
MLAC Mammoth, Mammo 93.58 45 P P 14 54 00.6 +0.4
baz=226
WDC Whiskeytown Da 93.59 41 eP P 14 54 00.1 +0.3
WDC Whiskeytown Da 93.59 41 eP P 14 54 00.1 +0.3
KMI Kunming 93.61 298 P P 14 54 02.7 +2.1
KMI pP sP 14 54 08.8 +3.7
KMI sP pP 14 54 10.8 +6.9
KMI PP PP 14 57 50.2 +4.5
KMI S S 15 05 05.7 -4.0
KMI sS sS 15 05 23.1 +7.9
KMI SS SS 15 11 30.8 +2.9
KMI pmax pmax
comp=Z,7.0nm,0.8s
KMI LR LR
comp=Z,700nm,21.1s
KMI LR LR
comp=Z,580nm,17.9s
KMI LR LR
comp=Z,880nm,24.9s
O03D Paynes Creek 93.79 42 P P 14 54 00.3 -0.5
baz=225,SNR=5.4
N02D Trinity Center 93.79 41 P P 14 54 01.3 +0.5
baz=224
TUQ Turquoise Moun 93.80 48 P P 14 54 01.7 +0.6
baz=228,SNR=6.0
WAKR Walker 93.84 44 eP P 14 54 01.0 -0.3
LVC Limon Verde 93.87 121 eP P 14 54 00.3 -1.9
SHOC Shoshone, Teco 93.90 48 P P 14 54 02.3 +0.9
baz=228,SNR=9.7
FURC Furnace Creek, 93.93 47 P P 14 54 02.2 +0.7
baz=227
GRAC Grapevine Rang 94.00 46 P P 14 54 02.3 +0.5
baz=227,SNR=14
M02C Callahan 94.01 40 P P 14 54 02.5 +0.6
baz=224
LDFC Landfair 94.06 49 eP P 14 54 04.0 +1.7
NEE2 Needles Airpor 94.16 50 P P 14 54 03.7 +1.1
baz=228
L02D Cave Junction, 94.17 39 P P 14 54 03.2 +0.7
baz=224
KLR Kul'dur 94.33 332 LR LR 15 32 16.5
comp=Z,281nm,19.4s,baz=204,slow=33
KLR Kul'dur 94.33 332|| eP P 14 54 03.4 +0.4
TPNV Topopah Spring 94.62 47 P P 14 54 05.3 +0.4
baz=228,SNR=15
TPNV Topopah Spring 94.62 47 eP P 14 54 05.7 +0.8
TPNV Topopah Spring 94.62 47 eP P 14 54 05.7 +0.8
PAHR Pah Rah Range 94.70 43 eP P 14 54 05.3 +0.2
M04C Macdoel 94.82 40 P P 14 54 05.8 +0.2
baz=225
HUMO Hull Mountain 94.83 39 eP P 14 54 06.8 +1.3
SHPR Sheep Range 94.98 48 eP P 14 54 07.7 +1.2
TUC Tucson 95.00 53 P P 14 54 07.8 +1.2
baz=230
TUC Tucson 95.00 53 eP P 14 54 04.2 -2.4
TUC Tucson 95.00 53 eP P 14 54 04.2 -2.4
I03D Drain, OR 95.41 38 P P 14 54 09.4 +1.3
baz=224
R11A Troy Canyon, C 95.95 46 P P 14 54 10.8 -0.1
baz=228
R11A Troy Canyon, C 95.95 46 eP P 14 54 11.2 +0.3
I04A Tendick Farm, 95.96 39 P P 14 54 10.6 -0.1
baz=225
K05A Summer Lake 95.99 40 eP P 14 54 11.4 +0.5
J05D Fort Rock, OR 96.20 40 P P 14 54 12.5 +0.6
baz=225
BMN Battle Mountai 96.40 44 eP P 14 54 13.1 +0.2
BMN Battle Mountai 96.40 44 eP P 14 54 13.1 +0.2
CD2 Chengdu 96.46 304 eP P 14 54 13.5 +0.2
CD2 sP sP 14 54 22.0 +4.2
CD2 PP PP 14 58 07.7 +0.1
CD2 SKS SKSac 15 04 49.1 -1.0
CD2 S S 15 05 33.4 -0.5
CD2 sS sS 15 05 44.0 +4.6
CD2 SS SS 15 12 08.9 +0.9
CD2 pmax pmax
comp=Z,20nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.6s
CD2 LR LR
comp=Z,910nm,16.3s
CD2 LR LR
comp=Z,780nm,16.3s
CD2 LR LR
comp=Z,2µm,14.5s
LCMT Little Creek M 96.47 49 eP P 14 54 14.4 +1.1
WUAZ Wupatki 96.66 51 P P 14 54 14.6 +0.4
baz=230
WUAZ Wupatki 96.66 51 eP P 14 54 15.6 +1.4
CCUT Cedar City 96.75 48 eP P 14 54 14.8 +0.2
WVOR Wild Horse Val 96.98 42 eP P 14 54 15.5 0.0
WVOR Wild Horse Val 96.98 42 eP P 14 54 15.5 0.0
121A Cookes Peak, D 97.11 55 P Pdif 14 54 17.2 +0.8
baz=232
ELK Elko 97.74 45 eP Pdif 14 54 19.9 +0.8
ELK Elko 97.74 45 eP Pdif 14 54 19.9 +0.8
MTPU Mount Pierson 97.78 48 eP Pdif 14 54 21.2 +1.7
HHC Hu-ho-hao-te 97.90 315 eP Pdif 14 54 21.9 +2.2
HHC pmax pmax
comp=Z,33nm,1.4s
TX31 Lajitas Ar. Si 97.98 60 eP Pdif 14 54 20.5 +0.2
TXAR Lajitas Array 97.98 60 P Pdif 14 54 20.9 +0.6
comp=Z,1.3nm,1.0s,baz=212,slow=6.9,SNR=9.2
MSU Marysvale 98.08 48 eP Pdif 14 54 21.6 +0.9
MSU Marysvale 98.08 48 eP Pdif 14 54 21.6 +1.0
MNTX Cornudas Mount 98.21 57 Pdiff Pdif 14 54 21.6 +0.4
baz=233
MNTX Cornudas Mount 98.21 57 eP Pdif 14 54 21.8 +0.6
LPAZ La Paz 98.58 117 P Pdif 14 54 24.3 +0.3
comp=Z,0.9nm,0.8s,baz=227,slow=3.8,SNR=3.6
LPAZ PP PP 14 58 26.6 +2.5
comp=Z,0.8nm,0.7s,baz=271,slow=4.1,SNR=4.5
DUG Dugway, Tooele 98.78 46 Pdiff Pdif 14 54 24.5 +0.8
baz=230
B05A Bryant 99.28 36 Pdiff Pdif 14 54 27.1 +1.7
baz=225
ANMO Albuquerque 99.46 54 Pdiff Pdif 14 54 27.7 +0.8
baz=233
ANMO Albuquerque 99.46 54|| eP Pdif 14 54 27.4 +0.5
ANMO pmax pmax
comp=Z,2.0nm,1.1s
LZH Lanzhou 99.57 308 eP Pdif 14 54 27.5 +0.2
LZH pP sP 14 54 33.4 +1.6
LZH sP pP 14 54 36.2 +5.6
LZH PP PP 14 58 33.6 +2.0
LZH pmax pmax
comp=Z,21nm,1.3s
LZH pmax pmax
comp=Z,97nm,9.2s
LZH LR LR
comp=Z,340nm,16.5s
LZH LR LR
comp=Z,350nm,17.2s
LZH LR LR
comp=Z,430nm,19.8s
HLID Hailey 100.05 43 Pdiff Pdif 14 54 30.1 +0.9
baz=230
933A Laredo 100.10 63 Pdiff Pdif 14 54 30.9 +1.3
baz=235
034A Hebbronville 100.22 64 Pdiff Pdif 14 54 31.5 +1.4
baz=235
SEY Seymchan 100.73 348 PP PP 14 58 38.5 -1.1
comp=Z,0.6nm,0.6s,baz=223,slow=11,SNR=3.6
S22A 4UR Ranch, Cre 100.91 51 Pdiff Pdif 14 54 34.4 +1.0
baz=233
NEW Newport 101.70 38 PP PP 14 58 52.0 +4.6
comp=Z,0.6nm,0.4s,baz=221,slow=9.0,SNR=3.2
SDCO Great Sand Dun 101.75 52 Pdiff Pdif 14 54 37.9 +0.8
baz=234
T25A Trinidad 102.09 53 Pdiff Pdif 14 54 39.4 +0.8
baz=234
PDAR Pinedale Array 102.30 46 P Pdif 14 54 39.6 +0.2
comp=Z,0.4nm,0.7s,baz=221,slow=8.1,SNR=3.5
PDAR PP PP 14 58 56.5 +4.3
comp=Z,0.4nm,0.6s,baz=247,slow=7.7,SNR=5.7
MSO Missoula 102.41 41 Pdiff Pdif 14 54 41.1 +1.5
baz=230
333A Richland Sprin 102.43 60 Pdiff Pdif 14 54 40.6 +0.7
baz=236
BOZ Bozeman (W) 102.87 43 Pdiff Pdif 14 54 43.6 +1.9
baz=232
ILAR Eielson Array 104.07 15 PP PP 14 59 00.9 -3.8
comp=Z,0.5nm,0.9s,baz=220,slow=5.3,SNR=5.6
KSCO Kaye Shedlock' 104.32 52 Pdiff Pdif 14 54 49.6 +1.3
baz=235
SONM Songino Array 105.18 318 PP PP 14 59 11.3 -2.1
comp=Z,0.4nm,0.3s,baz=66,slow=44,SNR=3.5
X39A Fontain Ranch 107.59 60 PKiKP PKiKP 14 59 12.3 +1.5
baz=238
344A Westbrook Farm 108.42 64 PKiKP PKiKP 14 59 12.9 +0.4
baz=239
X40A Basin Creek Fa 108.48 61 PKiKP PKiKP 14 59 12.9 +0.4
baz=239
INK Inuvik 110.00 17 PP PP 14 59 45.3 -2.7
comp=Z,2.1nm,0.4s,baz=192,slow=10.0,SNR=4.4
S40A Lebanon 110.30 58 PKiKP PKiKP 14 59 15.9 +0.1
baz=240
R40A Maddies Statio 110.80 57 PKiKP PKiKP 14 59 17.3 +0.5
baz=240
S41A Jillco Farms, 110.81 58 PKiKP PKiKP 14 59 17.3 +0.5
baz=240
F36A Milaca 113.63 50 PKiKP PKiKP 14 59 23.0 +1.1
baz=242
WMQ Urumqi 114.15 308 ePKP PKPdf 14 59 21.4 -1.6
WMQ LR LR
comp=Z,730nm,24.2s
WMQ LR LR
comp=Z,680nm,24.4s
WMQ LR LR
comp=Z,830nm,23.8s
MKAR Makanchi Array 118.86 309 PKP PKPdf 14 59 28.2 -3.8
comp=Z,0.5nm,0.5s,baz=104,slow=2.5,SNR=9.2
ZALV Zalesovo Beam 120.02 317 PKP PKPdf 14 59 30.4 -3.5
comp=Z,0.2nm,0.3s,baz=129,slow=3.9,SNR=2.9
KSH Kashi 120.27 299 ePKP PKPdf 14 59 34.5 -0.5
KSH ePP PP 15 01 05.6 +4.3
KSH SKS SKSdf 15 06 42.5 -4.7
KSH SKKS SKKSac 15 07 54.5 -6.3
KSH SS SS 15 17 31.6 +2.0
KSH AMB AMB
comp=Z,120nm,4.1s
KSH LR LR
comp=Z,350nm,12.1s
KSH LR LR
comp=Z,180nm,6.8s
KSH LR LR
comp=Z,440nm,13.4s
O56A Blue Knob Stat 121.21 61 PKiKP PKiKP 14 59 37.1 +0.3
baz=248
AAK Ala-Archa 122.48 302 PKP PKPdf 14 59 36.6 -2.6
comp=Z,1.0nm,0.3s,baz=181,slow=5.8,SNR=4.3
KURK Kurchatov 122.52 312 PKiKP PKPdf 14 59 35.2 -3.6
KURK pmax pmax
comp=Z,2.0nm,0.3s
KURK Kurchatov 122.52 312 PKP PKPdf 14 59 35.2 -3.6
KURBB Kurchatov Arra 122.55 312 PKP PKPdf 14 59 35.2 -3.6
comp=Z,2.1nm,0.2s,baz=119,slow=2.0,SNR=9.6
N59A State Game Lan 123.42 61 PKiKP PKiKP 14 59 41.8 +0.7
baz=249
RES Resolute Bay 123.50 19 PKP PKPdf 14 59 36.8 -3.2
comp=Z,3.2nm,0.8s,baz=163,slow=5.7,SNR=3.7
BVAR Borovoye Array 128.05 313 PKP PKPdf 14 59 46.3 -3.0
comp=Z,0.5nm,0.3s,baz=117,slow=2.3,SNR=6.7
BRVK Borovoye 128.12 313 ePKIKP PKPdf 14 59 46.9 -2.6
KMBO Kilima Mbogo 128.23 233 PKP PKPdf 14 59 50.8 -0.4
comp=Z,0.9nm,0.3s,baz=71,slow=22,SNR=2.4
GEYT Alibeck 132.84 291 PKP PKPdf 14 59 56.7 -2.3
comp=Z,1.5nm,0.8s,baz=260,slow=4.1,SNR=4.4
ARU Arti 135.19 317 PKP PKPdf 14 59 59.7 -3.0
comp=Z,1.1nm,0.3s,baz=86,slow=7.1,SNR=3.5
ARU PP PP 15 02 41.3 +2.3
comp=Z,0.9nm,0.3s,baz=106,slow=5.2,SNR=6.3
AKTO Aktyubinsk 135.30 308 PP PP 15 02 41.0 +1.1
comp=Z,1.3nm,0.7s,baz=106,slow=5.8,SNR=5.8
ARCES ARCESS Array B 143.23 344 PKHKP PKPpre 15 00 12.7
comp=Z,5.4nm,1.0s,baz=5.4,slow=3.9,SNR=5.3
TBLG Delisi 143.69 294 P PKPab 15 00 12.8 -2.6
KLMR Klimovskoe 143.94 327 ePKHKP PKPpre 15 00 12.4
KLMR pmax pmax
comp=Z,56nm,1.3s
ZEI Tsey 144.41 295 i PKIKP PKPab 15 00 17.5 -0.9
ZEI pmax pmax
comp=Z,108nm,1.4s
AKH Akhalkalaki 144.58 293 P PKPab 15 00 17.7 -1.4
AKH Akhalkalaki 144.58 293 ePKIKP PKPab 15 00 17.6 -1.4
ONI Oni 144.72 295 P PKPab 15 00 16.7 -2.7
ONI Oni 144.72 295 ePKIKP PKPab 15 00 16.6 -2.7
GOF Gofitskoye 145.14 299|| ePKHKP PKPpre 15 00 11.3
KBZ Khabaz 145.20 297 PKPbc PKPbc 15 00 18.6 -2.2
comp=Z,5.3nm,1.0s,baz=128,slow=0.8,SNR=7.8
KBZ SKPbc SKPbc 15 03 48.0 -13
comp=Z,0.7nm,0.3s,baz=63,slow=4.7,SNR=4.8
NEY Neytrino 145.30 296|| ePKIKP PKPdf 15 00 22.2 +0.5
KVAR Kislovodsk Arr 145.36 297 PKPbc PKPbc 15 00 18.6 -2.9
comp=Z,6.3nm,1.0s,baz=321,slow=5.5,SNR=3.5
KIV Kislovodsk 145.36 297 dePKP2 PKPbc 15 00 18.3 -3.2
KIV e 15 03 40.5
KIV pmax pmax
comp=Z,7.0nm,1.1s
VRH Novokhopyorsk 145.58 310 ePKIKP PKPdf 15 00 19.1 -2.5
VRH pmax pmax
comp=Z,30nm,0.6s
MOS Moscow 146.81 319 i PKIKP PKPdf 15 00 23.0 -0.6
MOS e 15 03 47.9
MOS pmax pmax
comp=Z,58nm,0.9s
VSR Storozhevoye 147.16 311 ePKIKP PKPdf 15 00 23.2 -1.1
VSR pmax pmax
comp=Z,60nm,2.0s
OBN Obninsk 147.59 318 PKPbc PKPdf 15 00 25.1 +0.3
comp=Z,11nm,0.4s,baz=47,slow=3.6,SNR=8.8
OBN Obninsk 147.59 318 di PKIKP PKPdf 15 00 24.7 -0.2
OBN e 15 03 55.1
OBN pmax pmax
comp=Z,25nm,1.2s
ZALF Zalf 147.77 276 eP PKPbc 15 00 29.2 +0.3
ASF Jabal al Asfar 147.90 275 PKPbc PKPdf 15 00 27.5 +1.2
comp=Z,2.1nm,0.6s,baz=67,slow=3.6,SNR=7.2
ROOS tl_alroos 148.14 278 eP PKPab 15 00 34.5 +1.7
TOTH TOTAH 148.62 277 eP PKPdf 15 00 26.9 -0.5
EIL Elat 148.65 269 PKPbc PKPdf 15 00 28.9 +1.4
comp=Z,10nm,1.0s,baz=65,slow=1.8,SNR=11
MARH Ras Al Marh 148.75 278 eP PKPdf 15 00 23.5 -4.4
HAWK Haweek 148.93 279 eP PKPdf 15 00 29.2 +1.3
FINES FINESS Array B 149.04 334 PKPbc PKPdf 15 00 28.4 +1.3
comp=Z,21nm,1.0s,baz=64,slow=4.4,SNR=16
ANN Anapa 149.13 299 ePKP2 PKPbc 15 00 31.4 -0.5
ANN pmax pmax
comp=Z,48nm,1.4s
DRWC Darouich 149.16 283 eP PKPab 15 00 45.6 +8.8
BTCH Batrach 149.22 282 eP PKPdf 15 00 28.3 0.0
MMAI Mount Meron Ar 149.35 275 PKPbc PKPbc 15 00 31.2 -1.8
comp=Z,26nm,1.1s,baz=120,slow=3.3,SNR=14
LIC Lamto 150.24 173 ePKP1 PKPbc 15 00 33.5 -2.1
comp=Z,81nm,1.7s
KIC Kosan Boka 150.40 174 ePKP1 PKPbc 15 00 33.9 -2.1
comp=Z,273nm,1.6s
TIC Toumodi 150.66 173 ePKP1 PKPbc 15 00 34.8 -1.8
DBIC Dimbokro 150.70 174 PKP PKPdf 15 00 29.0 -2.2
comp=Z,6.7nm,0.9s,baz=184,slow=0.7,SNR=3.1
DBIC PKPbc PKPbc 15 00 34.1 -2.5
comp=Z,12nm,1.1s,baz=174,slow=0.3,SNR=2.7
VSU Vasula 150.72 329|| ePKIKP PKPdf 15 00 31.3 +1.5
SIM Simferopol' 151.47 299 i PKIKP PKPbc 15 00 35.6 -1.9
SIM pmax pmax
comp=Z,13nm,1.1s
BRTR Keskin Array B 151.91 288 PKPbc PKPdf 15 00 35.0 +2.5
comp=Z,6.7nm,1.0s,baz=132,slow=3.5,SNR=18
BRTR Keskin Array B 151.91 288 PKIKP PKPdf 15 00 35.0 +2.5
BRTR pmax pmax
comp=Z,7.0nm,1.0s
AKASG Malin Array Be 153.33 313 PKPbc PKPdf 15 00 37.4 +3.5
comp=Z,4.9nm,0.8s,baz=51,slow=3.0,SNR=4.6
AKASG PP PP 15 04 26.9 -0.6
comp=Z,0.2nm,0.3s,baz=54,slow=4.6,SNR=4.6
KIEV Kiev 153.34 313|| ePKIKP PKPdf 15 00 33.5 -0.5
NB2 NORSAR Subarra 153.59 346 PKP PKPpre 15 00 19.2
comp=Z,0.7nm,0.5s,baz=10,slow=3.2
NOA NORSAR Array B 153.59 346 PKP PKPdf 15 00 30.3 -3.7
comp=Z,0.6nm,0.7s,baz=13,slow=4.5,SNR=3.7
NOA PKPbc PKPbc 15 00 37.6 -4.2
comp=Z,2.7nm,0.9s,baz=36,slow=2.1,SNR=3.7
MLR Muntele Rosu 157.05 303 PKP PKPdf 15 00 35.8 -3.6
comp=Z,0.2nm,0.3s,baz=224,slow=9.7,SNR=2.6
TORD Torodi Ar. Bea 157.06 189 PKP PKPdf 15 00 38.3 -1.8
comp=Z,2.5nm,1.0s,baz=170,slow=2.5,SNR=7.1
TORD PKPab PKPab 15 01 08.9 -1.4
comp=Z,6.9nm,1.0s,baz=171,slow=3.1,SNR=9.7
TORD PP PP 15 04 47.6 0.0
comp=Z,2.6nm,1.2s,baz=212,slow=8.1,SNR=3.7
KOLS Kolonicke sedl 158.16 314 ePKP2 PKPab 15 01 15.5 +1.1
KOLS Kolonicke sedl 158.16 314 ePKP PKPab 15 01 15.5 +1.1
UZH Uzhgorod 158.28 313 ePKP2 PKPab 15 01 13.1 -1.8
STHS Stebnicka Huta 158.52 316 ePKP2 PKPab 15 01 16.0 +0.1
STHS Stebnicka Huta 158.52 316 ePKP PKPab 15 01 16.0 +0.1
CRVS Cervenica-Dubn 158.64 314 ePKP2 PKPab 15 01 16.0 -0.5
CRVS Cervenica-Dubn 158.64 314 ePKP PKPab 15 01 16.0 -0.5
KECS Kecovo 159.41 314 ePKP2 PKPab 15 01 19.7 -0.1
KECS Kecovo 159.41 314 ePKP PKPab 15 01 19.7 -0.1
KECS e 15 22 36.9
LANS Liptovska Anna 159.65 317 ePKP2 PKPab 15 01 22.2 +1.3
LANS Liptovska Anna 159.65 317 ePKP PKPab 15 01 22.2 +1.3
OKC Ostrava-Krasne 159.97 320 ePKPAB PKPab 15 01 21.7 -0.5
OKC Ostrava-Krasne 159.97 320 ePKP2 PKPab 15 01 21.7 -0.5
VYHS Vyhne 160.35 316 ePKP2 PKPab 15 01 22.8 -1.1
VYHS e 15 05 08.0
VYHS Vyhne 160.35 316 ePKP PKPab 15 01 22.8 -1.1
VYHS ePP PP 15 05 08.0 +1.6
KRLC Kraliky 160.52 322 ePKPAB PKPab 15 01 23.1 -1.5
KRLC Kraliky 160.52 322 ePKP2 PKPab 15 01 23.1 -1.5
DPC Dobruska-Polom 160.57 323 ePKPDF PKPdf 15 00 48.2 +4.9
DPC ePKPAB PKPab 15 01 23.8 -1.0
DPC Dobruska-Polom 160.57 323 ePKIKP PKPdf 15 00 48.2 +4.9
DPC e 15 01 23.8
UPC Upice 160.62 324 ePKPAB PKPab 15 01 23.9 -1.1
UPC Upice 160.62 324 ePKP2 PKPab 15 01 23.9 -1.1
VRAC Vranov 161.10 321 PKP PKPdf 15 00 41.3 -2.6
comp=Z,0.8nm,0.3s,baz=214,slow=4.3,SNR=2.5
VRAC PKPab PKPab 15 01 26.0 -1.1
comp=Z,6.7nm,1.1s,baz=11,slow=7.0,SNR=4.7
PVCC Panska Ves 161.27 326 ePKPAB PKPab 15 01 26.6 -1.2
PVCC Panska Ves 161.27 326 ePKP2 PKPab 15 01 26.6 -1.2
BRG Berggiesshubel 161.30 328 ePKP PKPdf 15 00 47.1 +3.1
comp=Z,21nm,2.0s
BRG e 15 01 32.1
comp=Z,11nm,1.5s
BRG Berggiesshubel 161.30 328 ePKIKP PKPdf 15 00 47.1 +3.1
BRG pmax pmax
comp=Z,21nm,2.0s
CLL Collm 161.37 330 ePKPab PKPab 15 01 26.0 -2.2
CLL epPKPab PKPab 15 01 33.0 +4.8
comp=Z,12nm,1.3s
CLL Collm 161.37 330 ePKP2 PKPab 15 01 26.0 -2.2
GOPC GO Pecny, Ondr 161.60 324 ePKPAB PKPab 15 01 28.1 -1.2
GOPC GO Pecny, Ondr 161.60 324 ePKP2 PKPab 15 01 28.1 -1.2
PRU Pruhonice 161.66 325 ePKPAB PKPab 15 01 28.3 -1.2
PRU Pruhonice 161.66 325 ePKP2 PKPab 15 01 28.3 -1.2
NKC Novy Kostel 162.42 329 ePKPAB PKPab 15 01 31.6 -1.3
NKC Novy Kostel 162.42 329 ePKP2 PKPab 15 01 31.6 -1.3
KHC Kasperske Hory 162.71 324 ePKPDF PKPdf 15 00 48.9 +3.3
KHC ePKPAB PKPab 15 01 32.8 -1.4
KHC Kasperske Hory 162.71 324 ePKIKP PKPdf 15 00 48.9 +3.3
KHC e 15 01 32.8

GERES **GERESS Array B 162.85 323** PKP **PKPdf 15 00 43.5 -2.2**
comp=Z,0.1nm,0.3s,baz=354,slow=1.3,SNR=3.4
GERES PKPab **PKPab 15 01 32.7 -2.1**
comp=Z,1.5nm,1.0s,baz=45,slow=4.0,SNR=7.4
KEST Kesra 170.98 272 PKPab **PKPab 15 02 08.8 -2.6**
comp=Z,7.6nm,0.9s,baz=29,slow=2.6,SNR=5.3
PVIS Viseu 173.24 44 *e*PKPab **PKPab 15 02 20.1 -0.9**
MVO Moncorvo 173.37 37 *e*PKPab **PKPab 15 02 24.2 +2.6**
MTE Manteigas 173.65 44 *e*PKPab **PKPab 15 02 22.0 -0.9**
PMG Montargil 174.00 57 *e*PKPab **PKPab 15 02 22.9 -1.5**
PMRV Marv??o 174.35 51 *e*PKPab **PKPab 15 02 24.9 -1.1**
EVO Evora 174.39 61 *e*PKPab **PKPab 15 02 25.6 -0.6**
PESTR Estremoz 174.53 56 *e*PKPab **PKPab 15 02 25.4 -1.4**
PCVE Castro Verde 174.69 70 *e*PKPab **PKPab 15 02 28.5 +0.9**
PBAR Barrancos 175.24 61 *e*PKPab **PKPab 15 02 29.7 -0.3**
ESDC Sonseca Array 175.91 25 PKP **PKPdf 15 00 52.6 -1.4**
comp=Z,0.3nm,0.6s,baz=355,slow=3.8,SNR=5.7
ESDC PKPab **PKPab 15 02 33.4 +0.6**
comp=Z,0.4nm,0.8s,baz=339,slow=3.8,SNR=3.9

ISCJB ***09*** *14:47:53.8±1.0, 35.70N±0.06×141.46E±0.08, h25km, mb3.5/4, Error ellipse: s-maj=9.8km s-min=8.4km az=176.1*
JMA ***09*** *14:47:53.7±0.4, 35.73N×141.44E, h21km±3km, M3.2*
IDC ***09*** *14:47:54.3±1.3, 36.17N×141.46E, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.4/62, mbtmp3.4/5, ML3.0/1, Error ellipse: s-maj=33.4km s-min=26.4km az=75.0*
ISC 09 14:47:55.9±1.2, 35.71N±0.06×141.38E±0.08, h25km, n19, σ1§79/15, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.43**	**269**	P	**Pb**	**14 48 03.3**	**-1.6**
CHOJ				*e*S	**Sb**	**14 48 10.0**	**-1.0**
JCN	**Nagara**	**1.01**	**253**	P	**Pb**	**14 48 14.6**	**0.0**
JYT	**Yasato**	**1.09**	**299**	P	**Pn**	**14 48 13.4**	**-2.2**
BSO1	**Boso 1**	**1.10**	**198**	P	**Pn**	**14 48 13.4**	**-1.9**
JHO	**Hitachi**	**1.11**	**324**	P	**Pn**	**14 48 13.9**	**-2.0**
BSO4	**Boso 4**	**1.12**	**230**	P	**Pn**	**14 48 14.9**	**-0.9**
BSO3	**Boso 3**	**1.15**	**218**	P	**Pn**	**14 48 15.0**	**-1.2**
BSO3				S	**Sn**	**14 48 29.8**	**-1.2**
MJAR	**Matsushiro Arr**	**2.70**	**289**	Pn	**Pn**	**14 48 38.9**	**+1.2**
	2.8nm,0.3s,baz=89,slow=9.1,SNR=22						
MAT	**Matsushiro**	**2.70**	**289**	P	**Pn**	**14 48 38.9**	**+1.2**
MAT				*e*S	**Sn**	**14 49 10.8**	**+1.1**
H11N2	**WAKE ISLAND Hy**	**27.52**	**119**	T	T	15 22 36.4	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**27.52**	**119**	T	T	15 22 36.3	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**27.53**	**119**	T	T	15 22 35.2	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**28.18**	**121**	T	T	15 23 35.3	
	baz=313						
H11S3	**WAKE ISLAND Hy**	**28.18**	**121**	T	T	15 23 27.6	
	baz=313						
H11S2	**WAKE ISLAND Hy**	**28.20**	**121**	T	T	15 23 26.2	
	baz=313						
MKAR	**Makanchi Array**	**44.81**	**303**	P	**P**	**14 56 07.8**	**+0.2**
	0.2nm,0.2s,baz=92,slow=9.5,SNR=2.4						
ILAR	**Eielson Array**	**50.63**	**32**	P	**P**	**14 56 51.5**	**-0.9**
	0.2nm,0.5s,baz=270,slow=6.3,SNR=4.4						
WRA	**Warramunga Arr**	**55.75**	**188**	P	**P**	**14 57 34.4**	**+3.8**
	0.3nm,0.4s,baz=2.1,slow=7.4,SNR=9.5						
ASAR	**Alice Springs**	**59.48**	**188**	P	P	14 58 04.2	+7.4
	0.4nm,0.9s,baz=24,slow=12,SNR=5.8						

WBNET 09 14:50:45.3, 50.20N×12.45E, h10km, Ml0.9, 5C-7D, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NKC	**Novy Kostel**	**0.03**	**359**	↓P	Pg	14 50 47.1	-0.2
NKC				S	Sg	14 50 48.4	-0.3
KVC	**Kvetna**	**0.04**	**81**	↓P	Pg	14 50 47.0	-0.3
KVC				S	Sg	14 50 48.3	-0.5
VAC	**Vackov**	**0.06**	**308**	↓P	Pg	14 50 47.3	-0.2
VAC				S	Sg	14 50 48.8	-0.3
SKC	**Skalna**	**0.06**	**243**	↓P	Pg	14 50 47.3	-0.2
SKC				S	Sg	14 50 48.8	-0.3
KACW	**Kace¯ov**	**0.07**	**142**	↓P	Pg	14 50 47.4	-0.2
KACW				S	Sg	14 50 49.0	-0.3
LBCW	**Luby**	**0.07**	**341**	↓P	Pg	14 50 47.5	-0.1
LBCW				S	Sg	14 50 49.2	-0.2
STCW	**Studenec**	**0.07**	**37**	↑P	Pg	14 50 47.4	-0.2
STCW				S	Sg	14 50 48.9	-0.5
POCW	**Po¯¡tky**	**0.12**	**353**	↑P	Pg	14 50 48.2	-0.1
POCW				S	Sg	14 50 50.2	-0.2
KRCW	**Kraslice**	**0.14**	**21**	↑P	Pg	14 50 48.4	-0.2
KRCW				S	Sg	14 50 50.6	-0.3
KOCW	**Kopaniny**	**0.15**	**296**	↓P	Pg	14 50 48.6	-0.1
KOCW				S	Sg	14 50 51.0	-0.2
ZHC	**Zelena Hora**	**0.16**	**215**	↑P	Pg	14 50 48.6	-0.1
ZHC				S	Sg	14 50 51.0	-0.3
LACW	**Lazy**	**0.19**	**143**	↑P	Pg	14 50 49.1	-0.2
LACW				S	Sg	14 50 51.9	-0.2

IDC ***09*** *14:53:17.2±2.0, 29.07S×177.27W, h52km±15km, mb4.0/10, mb1 4.1/10, mb1mx3.9/27, mbtmp4.2/10, Error ellipse: s-maj=28.6km s-min=23.7km az=102.0*
ISC 09 14:53:15.5±0.7, 28.9S±0.1×177.0W±0.1, h35km, n32, σ1§81/26, mb4.3/11, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.86**	**245**	P	**Pn**	**14 53 30.5**	**-0.6**
	847nm,0.3s,baz=139,slow=15,SNR=8.9						
RAO				S	**Sn**	**14 53 46.2**	**+3.7**
	2μm,0.3s,baz=137,slow=21,SNR=11						
RAO				LR	LR	14 53 47.2	
	comp=Z,1μm,19.0s,baz=156,slow=50						
URZ	**Urewera**	**10.54**	**206**	S	Sn	14 57 26.3	-15
	2.6nm,0.3s,baz=347,slow=22,SNR=8.3						
DZM	**Mont Dzumac**	**16.39**	**291**	P	**P**	**14 57 05.2**	**-0.3**
	0.2nm,0.3s,baz=279,slow=15,SNR=2.5						
CTA	**Charters Tower**	**34.43**	**276**	P	**P**	**15 00 00.9**	**+1.0**
	9.1nm,1.2s,baz=96,slow=7.9,SNR=5.1						
STKA	**Stephens Creek**	**35.67**	**255**	P	**P**	**15 00 09.6**	**-0.8**
	4.3nm,0.9s,baz=96,slow=7.3,SNR=4.7						
ASAR	**Alice Springs**	**44.06**	**265**	P	**P**	**15 01 17.6**	**-2.8**
	2.9nm,0.8s,baz=110,slow=8.4,SNR=22						
WRA	**Warramunga Arr**	**44.91**	**270**	P	**P**	**15 01 25.4**	**-1.8**
	4.5nm,0.8s,baz=110,slow=8.1,SNR=29						
VNDA	**Vanda**	**49.68**	**186**	P	**P**	**15 02 02.5**	**-1.0**
	0.7nm,0.8s,baz=39,slow=4.6,SNR=3.7						
MAW	**Mawson**	**74.02**	**200**	P	**P**	**15 04 45.2**	**-2.0**
	5.0nm,1.0s,baz=81,slow=4.1,SNR=6.1						
MJAR	**Matsushiro Arr**	**77.49**	**324**	P	**P**	**15 05 07.0**	**-0.5**
	0.7nm,0.3s,baz=152,slow=5.4,SNR=5.4						
USRK	**Ussuriysk Ar.**	**86.38**	**326**	P	**P**	**15 05 55.4**	**+1.5**
	5.3nm,1.1s,baz=64,slow=8.7,SNR=6.6						
KLR	**Kul'dur**	**90.17**	**329**	P	**P**	**15 06 13.2**	**+1.4**
	0.5nm,0.3s,baz=135,slow=3.5,SNR=3.8						
TXAR	**Lajitas Array**	**90.86**	**57**	P	**P**	**15 06 17.1**	**+1.3**
	0.9nm,1.1s,baz=228,slow=1.5,SNR=4.1						
SEY	**Seymchan**	**94.70**	**346**	P	**P**	**15 06 32.0**	**-0.4**
	1.1nm,1.0s,baz=133,slow=8.4,SNR=4.3						
MKAR	**Makanchi Array**	**117.44**	**310**	PKP	**PKPdf**	**15 11 56.0**	**-1.3**
	0.2nm,0.3s,baz=101,slow=1.5,SNR=3.7						
KURBB	**Kurchatov Arra**	**120.65**	**314**	PKP	**PKPdf**	**15 12 02.0**	**-1.3**
	1.0nm,0.2s,baz=96,slow=1.7,SNR=3.5						
BVAR	**Borovoye Array**	**125.90**	**316**	PKP	**PKPdf**	**15 12 12.4**	**-0.9**
	1.0nm,0.8s,baz=126,slow=3.8,SNR=6.1						
H10S3	**ASCENSION HYDR**	**138.71**	**153**	T	T	17 48 06.7	
	baz=205						
H10S2	**ASCENSION HYDR**	**138.71**	**153**	T	T	17 48 08.7	
	baz=205						
H10S1	**ASCENSION HYDR**	**138.73**	**153**	T	T	17 48 10.7	
	baz=205						
H10N3	**ASCENSION HYDR**	**139.78**	**153**	T	T	17 49 22.3	
	baz=202						
H10N1	**ASCENSION HYDR**	**139.79**	**153**	T	T	17 49 28.1	
	baz=202						
H10N2	**ASCENSION HYDR**	**139.80**	**153**	T	T	17 49 31.7	
	baz=202						
FINES	**FINESS Array B**	**144.00**	**341**	PKP	**PKPab**	**15 12 43.8**	**-0.2**
	4.3nm,0.8s,baz=64,slow=4.0,SNR=16						
OBN	**Obninsk**	**144.39**	**327**	PKP	**PKPab**	**15 12 45.4**	**-0.3**
	7.7nm,0.4s,baz=101,slow=9.2,SNR=4.3						
KBZ	**Khabaz**	**144.94**	**306**	PKP	**PKPab**	**15 12 48.1**	**0.0**
	4.4nm,1.0s,baz=79,slow=0.5,SNR=7.6						
NB2	**NORSAR Subarra**	**147.38**	**353**	PKP	**PKPdf**	**15 12 54.3**	**+1.8**
	comp=Z,0.6nm,0.8s,baz=16,slow=2.9						
NOA	**NORSAR Array B**	**147.38**	**353**	PKPbc	**PKPdf**	**15 12 54.2**	**+1.7**
	comp=Z,0.9nm,0.7s,baz=2.3,slow=6.2,SNR=4.2						
HFS	**Hagfors**	**147.92**	**350**	PKPbc	**PKPdf**	**15 12 56.1**	**+2.7**
	comp=Z,1.8nm,0.7s,baz=69,slow=4.9,SNR=8.3						
AKASG	**Malin Array Be**	**150.58**	**325**	PKPbc	**PKPbc**	**15 13 02.8**	**-0.5**
	comp=Z,4.9nm,0.8s,baz=43,slow=2.9,SNR=10						
BRTR	**Keskin Array B**	**152.58**	**301**	PKPbc	**PKPbc**	**15 13 07.7**	**-0.9**
	comp=Z,0.5nm,0.6s,baz=104,slow=4.1,SNR=3.6						
TORD	**Torodi Ar. Bea**	**164.29**	**175**	PKPab	**PKPab**	**15 14 14.2**	**+4.3**
	comp=Z,0.3nm,0.9s,baz=313,slow=26,SNR=2.9						

WEL 09 14:54:36.5±0.4, 37.26S×176.29E, h178km±4km, ML3.6/8, 1C, Error ellipse: s-maj=5.8km s-min=5.2km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**1.19**	**147**	PN	Pn	14 55 05.7	+0.3
URZ				SN	Sn	14 55 27.8	-0.1
HAZ	**Te Kaha**	**1.29**	**113**	PN	Pn	14 55 06.5	+0.2
HAZ				SN	Sn	14 55 29.3	+0.1
HAZ				AML	AML	14 55 39.0	
RUGZ	**Raukumara Rang**	**1.31**	**123**	PN	Pn	14 55 06.1	-0.4
MWZ	**Matawai**	**1.45**	**138**	PN	Pn	14 55 08.1	+0.3
WMGZ	**Waiomatatini S**	**1.78**	**109**	PN	Pn	14 55 11.1	+0.1
WMGZ				SN	Sn	14 55 37.3	-0.5
WMGZ				AML	AML	14 55 39.5	
RIGZ	**Rimuhau**	**1.85**	**141**	PN	Pn	14 55 11.7	-0.1
RIGZ				AML	AML	14 55 40.2	
RIGZ				AML	AML	14 55 40.4	
BKZ	**Black Stump Fm**	**1.91**	**175**	PN	Pn	14 55 12.1	-0.3
KNZ	**Kokohu**	**2.07**	**149**	↑PN	Pn	14 55 13.2	-0.8
KNZ				AML	AML	15 00 27.8	
ARHZ	**Aropaoanui**	**2.07**	**165**	PN	Pn	14 55 13.9	-0.3
ARHZ				AML	AML	14 55 45.5	
MCHZ	**McNeill Hill**	**2.20**	**172**	PN	Pn	14 55 15.3	-0.3
KRHZ	**Kereru**	**2.38**	**178**	PN	Pn	14 55 16.5	-1.1
CKHZ	**Cape Kidnapper**	**2.47**	**166**	PN	Pn	14 55 17.5	-1.1
KAHZ	**Kahuranaki**	**2.57**	**170**	PN	Pn	14 55 18.6	-1.2
PNHZ	**Pukenui**	**2.65**	**181**	PN	Pn	14 55 19.2	-1.6
PXZ	**Pawanui**	**2.80**	**171**	PN	Pn	14 55 20.6	-1.9
PXZ				AML	AML	14 55 57.4	
TSZ	**Takapari Road**	**2.80**	**185**	PN	Pn	14 55 20.9	-1.7
ANWZ	**Angora Road**	**3.19**	**177**	PN	Pn	14 55 25.0	-2.3
ANWZ				AML	AML	14 56 05.0	
MRZ	**Mangatainoka R**	**3.44**	**189**	PN	Pn	14 55 27.6	-2.8
MRZ				AML	AML	14 56 21.7	
MRZ				AML	AML	14 56 33.4	

IDC ***09*** *15:02:25.6±0.3, 29.06S×177.07W, h0km, mb5.2/33, mb1 5.2/33, mb1mx5.2/38, mbtmp5.2/33, MS5.7/26, Ms1 5.7/26, ms1mx5.4/38, Error ellipse: s-maj=13.2km s-min=11.5km az=177.0*
ISCJB ***09*** *15:02:26.8±1.3, 29.43S±0.03×177.10W±0.03, h19km±9km, mb5.5/196, MS5.8/215, Error ellipse: s-maj=5.2km s-min=3.6km az=40.9*
BJI ***09*** *15:02:27.2, 28.65S×176.45W, h19km, mb5.6/57, mB6.1/53, Ms5.9/76, Ms7 5.8/72*
NEIC ***09*** *15:02:27.2±0.1, 29.34S×177.05W, h14km, mb5.5/152, ME6.0, MS5.8/149, MW6.0, MW5.8, Error ellipse: s-maj=5.6km s-min=3.6km az=135.0, Moment Tensor Solution. s27 Moment tensor: Scale 10¹⁷Nm; Mrr2.93; Mθθ-1.03; Mϕϕ-1.90; Mrθ3.21; Mrϕ-0.99; Mθϕ5.84; Best double couple: M0 7.20000×10¹⁷ NP1:ϕs215.00000°, δ11.00000°, λ96.00000°. NP2:ϕs29.00000°, δ79.00000°, λ89.00000°. Principal axes: T 7.4100, Plg56.0000°, Azm298.0000°; N -0.4000, Plg1.0000°, Azm29.0000°; P -7.0100, Plg34.0000°, Azm120.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from MT mechanism.*
GCMT ***09*** *15:02:27.2±0.1, 29.15S×176.73W, h23km, MW6.0/131, Moment Tensor Solution. s124,c276; s131,c417; Duration: 2s3 Moment tensor: Scale 10¹⁸Nm; Mrr0.84±.01; Mθθ-0.07±.01; Mϕϕ-0.77±.01; Mrθ0.19±.01; Mθϕ-0.21±.00; Mrϕ0.65±.01; Best double couple: M0 1.07300×10¹⁸ NP1:ϕs16.00000°, δ64.00000°, λ90.00000°. NP2:ϕs195.00000°, δ26.00000°, λ90.00000°. Principal axes: T 1.0780, Plg71.0000°, Azm286.0000°; N -0.0090, Plg0.0000°, Azm196.0000°; P -1.0690, Plg19.0000°, Azm106.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
NEIC ***09*** *15:02:29.0±0.0, 29.33S×177.06W, h23km Best double couple: NP1:ϕs358.00000°, δ69.00000°, λ75.00000°. NP2:ϕs215.00000°, δ25.00000°, λ123.00000°. Principal axes: T 1.1800, Plg63.0000°, Azm246.0000°; N 0.1200, Plg14.0000°, Azm4.0000°; P -1.3000, Plg23.0000°, Azm100.0000°;*
MOS ***09*** *15:02:30.3±1.0, 29.04S×177.18W, h33km, mb5.7/80, MS5.9/43 Error ellipse: s-maj=9.6km s-min=7.2km az=104.2*
ISC 09 15:02:29.1±0.5, 29.28S±0.04×176.96W±0.04, h24km±2km, h24km:pP-P, n986, σ1§74/933, mb5.6/193, MS5.8/219, 44C-43D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.84**	**272**	Pn	**Pn**	**15 02 45.7**	**+0.3**
	7μm,0.3s,baz=134,slow=7.0,SNR=103						
RAO	**Raoul Island**	**0.84**	**272**	*e*Pn	**Pn**	**15 02 46.2**	**+0.7**
WMGZ	**Waiomatatini S**	**9.35**	**203**	*e*PN	**Pn**	**15 04 42.0**	**-0.4**
WMGZ				SN	**Sn**	**15 06 25.0**	**-1.7**
HAZ	**Te Kaha**	**9.52**	**206**	*e*PN	**Pn**	**15 04 44.5**	**-0.2**
HAZ				SN	**Sn**	**15 06 29.2**	**-1.8**
KUZ	**Kuaotunu**	**9.65**	**218**	PN	**Pn**	**15 04 48.6**	**+2.1**
RUGZ	**Raukumara Rang**	**9.75**	**206**	*e*PN	**Pn**	**15 04 48.2**	**+0.3**
RUGZ				SN	**Sn**	**15 06 37.0**	**+0.3**
TWGZ	**Tauwhareparae**	**9.82**	**204**	PN	**Pn**	**15 04 47.0**	**-1.8**
TWGZ				SN	**Sn**	**15 06 34.9**	**-3.5**
WCZ	**Waipu Caves**	**9.89**	**226**	*e*PN	**Pn**	**15 04 54.4**	**+4.6**
OUZ	**Omahuta**	**9.95**	**231**	Pn	Pn	15 04 55.3	+4.7
MWZ	**Matawai**	**10.12**	**205**	*e*PN	**Pn**	**15 04 49.5**	**-3.5**
MWZ				SN	**Sn**	**15 06 42.2**	**-3.7**
URZ	**Urewera**	**10.22**	**207**	Pn	**Pn**	**15 04 50.1**	**-4.2**
	2.9nm,0.3s,baz=342,slow=16,SNR=29						
URZ				Sn	**Sn**	**15 06 44.9**	**-3.3**
	30nm,0.3s,baz=90,slow=22,SNR=8.8						
URZ	**Urewera**	**10.22**	**207**	*e*Pn	**Pn**	**15 04 52.1**	**-2.2**
URZ				*e*Sn	**Sn**	**15 06 45.2**	**-3.0**
URZ	**Urewera**	**10.22**	**207**	PN	**Pn**	**15 04 49.7**	**-4.6**
RIGZ	**Rimuhau**	**10.37**	**204**	*e*PN	**Pn**	**15 04 57.4**	**+1.0**
RIGZ				SN	**Sn**	**15 06 48.8**	**-3.0**
WHHZ	**Waihua**	**10.89**	**205**	PN	**Pn**	**15 05 04.4**	**+1.0**
WHHZ				SN	**Sn**	**15 06 57.0**	**-7.5**
NMHZ	**Naumai**	**11.06**	**206**	PN	**Pn**	**15 05 07.0**	**+1.0**
NMHZ				SN	**Sn**	**15 07 01.8**	**-7.2**
BKZ	**Black Stump Fm**	**11.25**	**207**	*e*Pn	**Pn**	**15 05 06.2**	**-2.2**
HIZ	**Hauiti**	**11.44**	**214**	*e*Pn	Pn	15 05 16.8	+5.8
NIUE	**Niue**	**12.01**	**34**	P	Pn	15 05 11.3	-7.6
	baz=12,SNR=12						
MSVF	**Nonsavu**	**12.37**	**337**	*e*P	**Pn**	**15 05 24.4**	**+0.5**
MSVF	**Nonsavu**	**12.37**	**337**	*e*Pn	**Pn**	**15 05 24.4**	**+0.5**
BFZ	**Birch Farm**	**12.66**	**204**	*e*Pn	**Pn**	**15 05 25.6**	**-2.0**
MRZ	**Mangatainoka R**	**12.89**	**206**	PN	Pn	15 05 25.5	-5.3
MRZ				SN	Sn	15 07 43.0	-10
MSWZ	**Moikau Station**	**13.67**	**206**	PN	**Pn**	**15 05 36.8**	**-4.6**
SNZO	**South Karori**	**13.79**	**207**	*e*Pn	**Pn**	**15 05 40.6**	**-2.5**
	491nm,0.8s						
PLWZ	**Palliser**	**13.80**	**205**	PN	**Pn**	**15 05 38.5**	**-4.7**
TCW	**Tory Channel**	**13.88**	**209**	PN	Pn	15 05 36.9	-7.4
TUWZ	**Tuamarina**	**14.20**	**209**	PN	Pn	15 05 42.9	-5.8
NNZ	**Nelson**	**14.28**	**211**	*e*PN	**Pn**	**15 05 45.3**	**-4.4**
THZ	**Tophouse**	**14.93**	**211**	*e*Pn	**Pn**	**15 05 56.6**	**-2.0**
THZ	**Tophouse**	**14.93**	**211**	PN	Pn	15 05 53.4	-5.2
KHZ	**Kahutara**	**15.19**	**208**	*e*Pn	Pn	15 05 54.6	-7.4
	198nm,0.7s						
LTZ	**Lake Taylor**	**16.02**	**210**	*e*Pn	**Pn**	**15 06 10.9**	**-2.0**
	116nm,0.7s						
LTZ	**Lake Taylor**	**16.02**	**210**	PN	**Pn**	**15 06 10.3**	**-2.7**
AFI	**Afiamalu**	**16.03**	**19**	Pn	Pn	15 06 05.3	-7.9
	3.7nm,0.3s,baz=239,slow=12,SNR=5.7						
AFI				Sn	Sn	15 08 50.6	-20
	6.9nm,0.3s,baz=209,slow=18,SNR=3.4						
AFI	**Afiamalu**	**16.03**	**19**	P	**Pn**	**15 06 11.7**	**-1.5**
AFI	**Afiamalu**	**16.03**	**19**	Pn	**Pn**	**15 06 11.7**	**-1.5**
INZ	**Inchbonnie**	**16.35**	**212**	PN	**Pn**	**15 06 10.8**	**-6.2**
CRLZ	**Canterbury Las**	**16.53**	**208**	*e*Pn	**Pn**	**15 06 18.2**	**-1.0**
	455nm,1.6s						
OXZ	**Oxford**	**16.56**	**209**	*e*Pn	**Pn**	**15 06 15.6**	**-4.1**
	332nm,0.5s						
OXZ	**Oxford**	**16.56**	**209**	PN	**Pn**	**15 06 13.9**	**-5.8**
DZM	**Mont Dzumac**	**16.58**	**292**	Pn	**P**	**15 06 24.3**	**+1.7**
	1.9nm,0.3s,baz=113,slow=10,SNR=41						
DZM				LR	LR	15 11 44.8	
	comp=Z,85μm,18.1s,baz=138,slow=34						
DZM	**Mont Dzumac**	**16.58**	**292**	*e*P	**P**	**15 06 23.8**	**+1.2**
	1μm,1.8s						
DZM				*e*LR	LR	15 10 12.3	
	107μm,23.7s						
DZM	**Mont Dzumac**	**16.58**	**292**	*e*Pn	**Pn**	**15 06 19.6**	**-0.6**
	766nm,1.6s						
MQZ	**McQueen's Vall**	**16.62**	**207**	*e*Pn	**Pn**	**15 06 15.7**	**-4.8**
	85nm,0.8s						
MQZ	**McQueen's Vall**	**16.62**	**207**	PN	**Pn**	**15 06 14.9**	**-5.6**
MQZ				SN	Sn	15 09 07.9	-16
WVZ	**Waitaha Valley**	**16.95**	**212**	*e*PN	**Pn**	**15 06 21.1**	**-3.5**
RPZ	**Rata Peaks**	**17.30**	**210**	P	**Pn**	**15 06 23.5**	**-5.6**
	2.5nm,0.3s,baz=329,slow=2.6,SNR=3.2						
RPZ				S	Sn	15 09 24.6	-16
	3.0nm,0.3s,baz=25,slow=16,SNR=5.3						
RPZ	**Rata Peaks**	**17.30**	**210**	*e*Pn	**Pn**	**15 06 24.1**	**-4.9**
	144nm,0.7s						
RPZ				S	Sn	15 09 24.6	-16
RPZ	**Rata Peaks**	**17.30**	**210**	PN	**Pn**	**15 06 24.1**	**-4.9**
RAR	**Rarotonga**	**17.49**	**67**	P	**Pn**	**15 06 27.2**	**-4.3**
	7.8nm,0.3s,baz=242,slow=5.8,SNR=9.2						
RAR				S	Sn	15 09 23.0	-22
	7.2nm,0.3s,baz=218,slow=16,SNR=4.9						
RAR				LR	LR	15 11 34.1	
	comp=Z,22μm,20.8s,baz=248,slow=31						
RAR	**Rarotonga**	**17.49**	**67**	Pn	**Pn**	**15 06 25.2**	**-6.2**
	653nm,1.1s						
RAR				S	Sn	15 09 23.0	-22
LBZ	**Lake Benmore**	**18.22**	**211**	*e*Pn	**Pn**	**15 06 38.4**	**-1.9**
	68nm,0.9s						
LBZ	**Lake Benmore**	**18.22**	**211**	PN	**Pn**	**15 06 37.1**	**-3.2**
ODZ	**Otahua Downs**	**18.54**	**209**	P	**P**	**15 06 40.5**	**-3.4**
	128nm,0.8s						
ODZ	**Otahua Downs**	**18.54**	**209**	PN	**P**	**15 06 41.9**	**-2.0**
JCZ	**Jackson Bay**	**18.63**	**214**	PN	**P**	**15 06 41.5**	**-3.5**
EAZ	**Earnscleugh**	**19.27**	**211**	PN	**P**	**15 06 49.1**	**-2.8**
MLZ	**Mavora Lakes**	**19.91**	**212**	*e*P	**P**	**15 06 57.0**	**-2.1**
	184nm,1.3s						
LHI	**Lord Howe Isla**	**20.80**	**258**	P	Pn	15 07 12.1	+0.9
	baz=21,SNR=12						
LHI	**Lord Howe Isla**	**20.80**	**258**	*e*P	Pn	15 07 10.6	-0.5
	887nm,1.2s						
FUNA	**Funafuti**	**20.96**	**349**	PFAKE		15 07 20.0	+6.9
FUNA				LR	LR		
	comp=Z,20μm,19.0s						
TBI	**Tubuai**	**25.31**	**83**	*e*S	**S**	**15 12 15.6**	**-3.3**
	comp=Z,6μm,26.2s						
TBI				*e*LR	LR	15 14 11.0	
	comp=Z,44μm,27.8s,baz=248						
TBI	**Tubuai**	**25.31**	**83**	*e*T	T	15 33 47.6	
	comp=Z,47nm,0.3s						
ARMA	**Armidale**	**27.23**	**260**	P	**P**	**15 08 14.0**	**+2.5**
	baz=28,SNR=32						
ARMA	**Armidale**	**27.23**	**260**	*e*P	**P**	**15 08 13.3**	**+1.9**
	comp=Z,205nm,1.5s						
MGCD	**Mangrove Creek**	**27.52**	**254**	P	**P**	**15 08 16.7**	**+2.7**
	baz=28,SNR=23						
PAE	**Paea**	**27.58**	**71**	*e*T	T	15 36 35.7	
	comp=Z,27nm,0.3s						
PPT2	**Papeete2**	**27.62**	**71**	*e*LQ	LQ	15 13 38.9	
	comp=Z,26μm,24.8s						
PPT2				*e*LR	LR	15 15 09.4	
	comp=Z,44μm,26.2s,baz=239						
PPT2	**Papeete2**	**27.62**	**71**	*e*T	T	15 36 39.3	
	comp=Z,20nm,0.3s						
PPT	**Papeete**	**27.63**	**71**	P	**P**	**15 08 12.0**	**-3.0**
	comp=Z,18nm,0.8s,baz=254,slow=20,SNR=2.4						
PPT				LR	LR	15 16 16.2	
	comp=Z,13μm,21.7s,baz=246,slow=30						
PPT	**Papeete**	**27.63**	**71**	P	**P**	**15 08 12.0**	**-3.0**
PPT				pmax	pmax		
	comp=Z,18nm,0.8s						
EIDS	**Eidsvold**	**28.61**	**270**	P	**P**	**15 08 24.8**	**+1.1**
	baz=29,SNR=16						
EIDS	**Eidsvold**	**28.61**	**270**	*e*P	**P**	**15 08 21.6**	**-2.1**
	comp=Z,89nm,1.1s						
CNB	**Canberra Magne**	**29.00**	**249**	P	**P**	**15 08 28.7**	**+1.5**
	baz=29,SNR=9.4						
HNR	**Honiara**	**29.29**	**308**	P	**P**	**15 08 28.4

comp=Z,43nm,1.1s,baz=32,slow=5.0,SNR=4.5
PMG PcP **PcP** **15 12 05.3 +1.3**
comp=Z,53nm,0.9s,baz=211,slow=2.6,SNR=4.5
PMG LR LR 15 23 56.8
comp=Z,18µm,19.5s,baz=130,slow=33
PMG **Port Moresby** **38.97 293** *e*P **P** **15 09 56.4 +2.8**
comp=Z,45nm,1.0s
PMG PcP **PcP** **15 12 05.3 +1.3**
COEN **Coen** **39.86 284** P **P** **15 10 01.4 +0.4**
baz=40,SNR=11
COEN **Coen** **39.86 284** *e*P **P** **15 10 01.6 +0.5**
comp=Z,178nm,1.6s
TAOE **Nuku Hiva Isla** **40.04 67** *e*S **S** **15 16 08.8 +1.4**
comp=Z,4µm,23.8s
TAOE *e*LR LR 15 20 53.1
comp=Z,23µm,26.3s,baz=242
QIS **Mount Isa** **40.15 272** P **P** **15 10 03.9 +0.4**
baz=41,SNR=10
BBOO **Buckleboo** **40.15 253** P **P** **15 10 03.5 +0.1**
baz=41,SNR=44
BBOO **Buckleboo** **40.15 253** *e*P **P** **15 10 03.8 +0.4**
comp=Z,93nm,0.7s
PTCN **Pitcairn Islan** **41.69 96** PFAKE 15 10 30.0 +14
PTCN LR LR
comp=Z,14µm,21.0s
PATS **Pohnpei** **43.08 323** P **P** **15 10 27.9 +0.5**
baz=44,SNR=4.8
MANU **Manus Island** **43.41 302** *e*P **P** **15 10 30.7 +0.5**
comp=Z,123nm,1.1s
ASAR **Alice Springs** **44.09 265** P **P** **15 10 34.0 -1.6**
comp=Z,29nm,0.7s,baz=99,slow=6.3,SNR=161
ASAR ScP **ScP** **15 16 14.7 +3.5**
comp=Z,2.8nm,1.0s,baz=116,slow=4.2,SNR=4.3
ASAR S **S** **15 17 04.2 -2.9**
comp=Z,6.5nm,1.1s,baz=108,slow=14,SNR=3.4
ASAR ScS **ScS** **15 20 36.5 +3.2**
comp=Z,0.6nm,0.7s,baz=111,slow=5.1,SNR=2.8
ASAR LR LR 15 28 24.9
comp=Z,38µm,18.6s,baz=110,slow=35
WB2 **Warramunga Arr** **44.97 270** *e*P **P** **15 10 41.3 -1.4**
comp=Z,78nm,0.8s
WRAB **Tennant Creek** **44.97 270** *c i*P **P** **15 10 41.9 -0.8**
WRAB pmax pmax
comp=Z,310nm,1.2s
WRAB MLR MLR
comp=Z,39µm,17.0s
WRAB **Tennant Creek** **44.97 270** *e*P **P** **15 10 41.6 -1.1**
comp=Z,89nm,0.9s
WRAB LR LR
comp=Z,14µm,19.0s
WRA **Warramunga Arr** **44.98 270** P **P** **15 10 41.2 -1.5**
comp=Z,84nm,0.9s,baz=109,slow=7.9,SNR=68
WRA ScP **ScP** **15 16 19.9 +5.1**
comp=Z,3.5nm,0.8s,baz=112,slow=4.3,SNR=5.3
WRA S **S** **15 17 15.7 -4.3**
comp=Z,1.8nm,0.8s,baz=110,slow=14,SNR=4.4
WRA LR LR 15 28 56.3
comp=Z,16µm,18.1s,baz=110,slow=35
JOHN **Johnston Islan** **46.30 10** PFAKE 15 11 00.0 +7.0
JOHN LR LR
comp=Z,425nm,20.0s
FORT **Forrest** **47.22 254** *e*P **P** **15 10 58.0 -2.2**
comp=Z,1µm,0.8s
JAY **Jayapura** **48.21 296** P **P** **15 11 06.9 -1.2**
comp=Z,2.7nm,1.1s,baz=90,slow=20,SNR=4.8
JAY LR LR 15 29 17.6
comp=Z,330nm,21.0s,baz=74,slow=34
JAY **Jayapura** **48.21 296** P **P** **15 11 09.5 +1.4**
comp=Z,19nm,0.8s,comp=Z,558nm
GENI **Genyem** **48.59 295** P **P** **15 11 10.9 -0.1**
SBA **Scott Base** **49.22 184** *e*P **P** **15 11 18.6 +3.6**
SBA pmax pmax
comp=Z,216nm,1.4s
SBA MLR MLR
comp=Z,5µm,22.0s
SBA **Scott Base** **49.22 184** *e*P **P** **15 11 18.6 +3.6**
comp=Z,216nm,1.4s
SBA LR LR
comp=Z,5µm,22.0s
VNDA **Vanda** **49.30 186** P **P** **15 11 17.9 +2.2**
comp=Z,7.6nm,0.7s,baz=7.6,slow=7.7,SNR=16
VNDA LR LR 15 30 18.5
comp=Z,4µm,19.3s,baz=25,slow=34
VNDA **Vanda** **49.30 186** *e*P **P** **15 11 18.5 +2.9**
VNDA pmax pmax
comp=Z,34nm,1.0s
VNDA **Vanda** **49.30 186** *e*P **P** **15 11 18.5 +2.9**
comp=Z,34nm,1.0s
KDU **Kakadu** **49.63 278** P **P** **15 11 18.6 -0.4**
baz=50,SNR=3.4
MTN **Manton Dam** **50.72 277** P **P** **15 11 25.8 -1.5**
baz=51,SNR=9.2
MTN **Manton Dam** **50.72 277** *e*P **P** **15 11 26.5 -0.7**
comp=Z,136nm,1.4s
WAKE **Wake Island** **50.80 340** PFAKE 15 11 40.0 +12
WAKE LR LR
comp=Z,8µm,20.0s
KMBL **Kambalda** **52.23 251** P **P** **15 11 36.6 -1.8**
baz=53,SNR=8.4
POHA **Pohakuloa** **52.95 26** PFAKE 15 12 00.0 +16
POHA LR LR
comp=Z,6µm,19.0s
FITZ **Fitzroy Crossi** **53.28 269** P **P** **15 11 44.5 -1.8**
comp=Z,64nm,1.0s,baz=116,slow=9.6,SNR=27
FITZ **Fitzroy Crossi** **53.28 269** P **P** **15 11 44.9 -1.4**
baz=54,SNR=30
FITZ **Fitzroy Crossi** **53.28 269** *e*P **P** **15 11 45.1 -1.2**
comp=Z,153nm,1.3s
KIP **Kipapa** **53.62 22** ‖ *e*P **P** **15 11 49.4 +0.9**
KIP **Kipapa** **53.62 22** *e*P **P** **15 11 46.8 -1.8**
comp=Z,863nm,1.0s
KIP LR LR
comp=Z,6µm,19.0s
RKGY **Rocky Gully** **55.43 246** P **P** **15 12 01.7 0.0**
baz=56,SNR=10
NWAO **Narrogin (SRO)** **55.64 248** P **P** **15 12 01.7 -1.6**
comp=Z,15nm,0.8s,baz=1.5,slow=11,SNR=14
NWAO **Narrogin (SRO)** **55.64 248** *e*P **P** **15 12 01.7 -1.6**
comp=Z,43nm,1.1s
NWAO LR LR
comp=Z,10µm,19.0s
GUMO **Guam** **56.34 314** P **P** **15 12 06.3 -2.1**
comp=Z,72nm,0.8s,baz=173,slow=15,SNR=8.3
GUMO LR LR 15 35 15.9
comp=Z,4µm,18.3s,baz=144,slow=35
GUMO **Guam** **56.34 314** *e*P **P** **15 12 08.3 -0.1**
GUMO pmax pmax
comp=Z,137nm,0.9s
GUMO **Guam** **56.34 314** *e*P **P** **15 12 08.3 -0.1**
comp=Z,137nm,0.9s
CASY **Casey** **56.55 208** *e*P **P** **15 12 09.5 +0.3**
comp=Z,173nm,0.9s
CASY LR LR
comp=Z,898nm,19.0s
MIDW **Midway** **57.17 360** PFAKE 15 12 30.0 +16
MIDW LR LR
comp=Z,7µm,20.0s
MBWA **Marble Bar** **57.26 263** PFAKE 15 12 30.0 +15
MBWA LR LR
comp=Z,24µm,20.0s
SOEI **Soe** **58.10 277** P **P** **15 12 21.2 0.0**
SOEI **Soe** **58.10 277** *e*P **P** **15 12 20.4 -0.7**
comp=Z,177nm,0.9s
RPN **Rapa Nui** **58.86 106** PFAKE 15 12 40.0 +14
RPN LR LR
comp=Z,2µm,21.0s
MMRI **Maumere** **60.40 277** P **P** **15 12 35.5 -1.4**
MMRI **Maumere** **60.40 277** *e*P **P** **15 12 35.6 -1.2**
comp=Z,235nm,1.2s
QSPA **South Pole Qui** **60.83 180** *e*P **P** **15 12 41.0 +1.7**
comp=Z,120nm,0.9s
QSPA LR LR
comp=Z,10µm,19.0s
GIRL **Giralia** **61.44 259** P **P** **15 12 44.6 +0.7**
baz=62,SNR=9.2
MIR **Mirnyy** **63.53 207** *i*P **P** **15 12 59.0 +1.9**
MIR pmax pmax
comp=Z,20nm,1.0s
PLAI **Plampang** **64.19 274** P **P** **15 12 59.3 -3.0**
KAPI **Kappang** **64.31 279** P **P** **15 13 02.1 -1.0**
comp=Z,9.3nm,0.4s,baz=154,slow=5.1,SNR=5.2
KAPI **Kappang** **64.31 279** *e*P **P** **15 13 02.7 -0.4**
comp=Z,282nm,1.8s
KAPI LR LR
comp=Z,5µm,21.0s
SPSI **Sidrap Palu** **64.82 280** P **P** **15 13 07.7 +1.3**
TWSI **Taliwang, Sumb** **65.01 274** P **P** **15 13 04.3 -3.3**

TTSI **Tana Toraja** **65.25 281** P **P** **15 13 07.6 -1.6**
MRSI **Marisa** **65.28 285** P **P** **15 13 09.3 -0.1**
comp=Z,45nm,1.2s,comp=Z,6µm
DAV **Davao City (W)** **65.99 294** PFAKE 15 13 30.0 +16
DAV LR LR
comp=Z,3µm,22.0s
PCI **Palu** **66.33 283** P **P** **15 13 16.8 +0.6**
comp=Z,163nm,1.4s,comp=Z,2µm
SRBI **Singaraja** **66.77 274** P **P** **15 13 18.3 -0.7**
JAGI **Jajag, Banyuwa** **67.51 273** P **P** **15 13 21.7 -2.0**
JAGI **Jajag, Banyuwa** **67.51 273** *e*P **P** **15 13 21.4 -2.4**
comp=Z,234nm,1.2s
ABJI **Asem Bagus** **67.76 274** P P 15 13 33.6 +8.4
GMJI **Gumukmas** **68.22 273** P **P** **15 13 27.7 -0.5**
BBKI **Banjar Baru** **69.33 278** P **P** **15 13 36.0 +0.9**
comp=Z,106nm,1.5s,comp=Z,4µm
PWJI **Pagerwojo** **69.77 272** P **P** **15 13 37.1 -0.7**
PCJI **Pacitan** **70.24 272** P **P** **15 13 39.4 -1.3**
TSM **Tawau** **70.75 287** ⇑P **P** **15 13 42.7 -1.1**
UGM **Wanagama** **70.94 272** P **P** **15 13 45.2 +0.2**
UGM **Wanagama** **70.94 272** *e*P **P** **15 13 46.5 +1.5**
comp=Z,168nm,1.1s
PMSA **Palmer Station** **72.91 156** P **P** **15 13 57.7 +1.8**
comp=Z,5.4nm,0.6s,baz=218,slow=6.2,SNR=3.4
PMSA **Palmer Station** **72.91 156** P **P** **15 13 57.7 +1.8**
PMSA LR LR
comp=Z,5µm,21.0s
KKM **Kota Kinabalu** **73.08 287** *e*P **P** **15 13 58.4 +0.5**
comp=Z,208nm,1.8s
KKM LR LR
comp=Z,3µm,22.0s
CISI **Cisompet, Garu** **73.47 271** P **P** **15 13 59.4 -0.8**
CISI **Cisompet, Garu** **73.47 271** *e*P **P** **15 13 57.9 -2.3**
comp=Z,175nm,1.1s
MAW **Mawson** **73.67 200** P **P** **15 14 01.4 +1.0**
comp=Z,30nm,0.7s,baz=116,slow=6.9,SNR=32
MAW LR LR 15 46 17.5
comp=Z,7µm,19.2s,baz=117,slow=36
MAW **Mawson** **73.67 200** *e*P **P** **15 14 01.9 +1.5**
comp=Z,38nm,1.4s
LEM **Lembang** **73.99 271** P **P** **15 14 07.0 +3.6**
STKI **Sintang** **73.99 279** P **P** **15 14 05.2 +2.0**
CNJI **Cibinong** **74.19 270** P **P** **15 14 04.6 +0.3**
JHJ2 **Mitsune** **74.35 323** *e*P **P** **15 14 04.3 -0.5**
comp=Z,54nm,0.8s
JHJ2 *e*PcP **PcP** **15 14 19.0 -0.4**
JHJ **Hachijo jima 2** **74.38 323** P **P** **15 14 05.1 +0.2**
comp=Z,52nm,0.7s,baz=155,slow=14,SNR=2.1
SBUM **Sibu** **74.57 282** *e*P **P** **15 14 06.1 -0.4**
comp=Z,107nm,1.4s
KSM **Kuching** **75.71 280** *e*P **P** **15 14 12.5 -0.6**
comp=Z,76nm,1.3s
KSM LR LR
comp=Z,5µm,19.0s
CGJI **Cibinong** **75.77 270** P **P** **15 14 12.2 -1.3**
USHA **Ushuaia** **76.33 146** P **P** **15 14 19.0 +3.0**
comp=Z,67nm,1.0s,baz=278,slow=7.9,SNR=3.9
USHA LR LR 15 40 11.2
comp=Z,21µm,21.2s,baz=226,slow=30
KASI **Kota Agung** **77.33 271** P **P** **15 14 21.3 -1.0**
INU **Inuyama** **77.55 323** *e*P **P** **15 14 21.9 -1.1**
comp=Z,62nm,1.1s
MJAR **Matsushiro Arr** **77.85 324** P **P** **15 14 23.0 -1.6**
comp=Z,32nm,1.0s,baz=161,slow=5.9,SNR=5.2
MJAR LR LR 15 43 01.6
comp=Z,2µm,21.9s,baz=140,slow=31
MAJO **Matsushiro** **77.85 324** *c i*P **P** **15 14 23.7 -0.9**
MAJO pmax pmax
comp=Z,188nm,1.0s
MAJO MLR MLR
comp=Z,12µm,18.0s
MAJO **Matsushiro** **77.85 324** PFAKE
MAJO LR LR 15 14 40.0 +15
comp=Z,2µm,22.0s
MAT **Matsushiro** **77.85 324** P **P** **15 14 22.5 -2.1**
MAT S **S** **15 24 18.2 +2.1**
SYO **Syowa Base** **78.40 193** ‖ *e*P **P** **15 14 25.0 -2.3**
SYO **Syowa Base** **78.40 193** ‖ *i*pP **P** **15 14 29.6 +2.3**
SYO **Syowa Base** **78.40 193** ‖ *i*PcP **PcP** **15 14 34.2 -2.3**
TWG **Pinlang** **78.98 304** *e*P **P** **15 14 29.3 -1.9**
comp=Z,50nm,0.5s
LHSI **Lahat** **79.00 272** P **P** **15 14 33.1 +1.6**
SNAA **Sanae** **79.24 178** P **P** **15 14 32.8 +0.8**
SNAA **Sanae** **79.24 178** ‖ *e*P **P** **15 14 33.5 +1.5**
SNAA pmax pmax
comp=Z,525nm,1.0s
SNAA **Sanae** **79.24 178** *e*P **P** **15 14 32.8 +0.8**
comp=Z,58nm,1.2s
JNU **Nakatsue** **79.33 318** P **P** **15 14 31.1 -1.9**
comp=Z,11nm,0.6s,baz=152,slow=10,SNR=4.0
JNU **Nakatsue** **79.33 318** *e*P **P** **15 14 35.2 +2.3**
TPUB **Ta-pu** **79.59 304** *e*P **P** **15 14 33.3 -1.2**
comp=Z,27nm,0.7s
SSLB **Suanglung** **79.66 305** *e*P **P** **15 14 34.0 -0.9**
comp=Z,20nm,0.7s
YHNB **Yeheng** **79.91 306** *e*P **P** **15 14 33.7 -2.6**
YHNB LR LR
comp=Z,3µm,21.0s
ERM **Erimo** **79.92 331** *d i*P **P** **15 14 37.2 +1.4**
ERM pmax pmax
comp=Z,159nm,1.7s
ERM **Erimo** **79.92 331** *e*P **P** **15 14 37.2 +1.4**
comp=Z,252nm,1.7s
ERM LR LR
comp=Z,9µm,20.0s
VNA1 **Neumayer--Stat** **80.03 176** P **P** **15 14 37.1 +1.0**
NVL **N'lazarevskaya** **80.04 183** *e*P **P** **15 14 40.3 +4.1**
NVL *e* 15 17 41.5
NVL *e*S **S** **15 24 41.5 +2.9**
KUR **Kuril'sk** **80.78 336** *c i*P **P** **15 14 40.8 +0.5**
KUR *e*S **S** **15 24 47.6 +0.9**
KUR pmax pmax
comp=Z,115nm,1.7s
COCO **West Island** **80.87 261** PFAKE 15 14 50.0 +8.3
COCO LR LR
comp=Z,10µm,21.0s
MYKOM **Kota Tinggi** **81.45 277** *e*P **P** **15 14 44.5 -0.2**
comp=Z,62nm,0.9s
ASAJ **Asahikawa** **81.88 332** P **P** **15 14 46.4 +0.1**
comp=Z,75nm,0.9s,baz=166,slow=5.3
ASAJ **Asahikawa** **81.88 332** *e*P **P** **15 14 46.7 +0.5**
comp=Z,114nm,1.0s
KGM **Kluang** **82.02 277** ⇑P **P** **15 14 46.4 -1.4**
SMY **Shemya** **82.03 355** *e*P **P** **15 14 46.3 -0.5**
SMY pmax pmax
comp=Z,126nm,1.1s
SMY **Shemya** **82.03 355** *e*P **P** **15 14 46.3 -0.5**
comp=Z,126nm,1.1s
QZH **Quanzhou** **82.07 304** ⇑*i*P P 15 14 39.3 -8.4
QZH **Quanzhou** **82.07 304** S **S** **15 24 52.6 -8.4**
QZH pmax pmax
comp=Z,150nm,1.0s
QZH pmax pmax
comp=Z,3µm,13.8s
QZH LR LR
comp=N,2µm,12.6s
QZH LR LR
comp=E,3µm,16.9s
QZH LR LR
comp=Z,6µm,22.8s
NIKH **Nikolski High** **82.21 5** *e*P **P** **15 14 47.9 +0.1**
comp=Z,146nm,0.8s
PLCA **Paso Flores** **82.60 133** P **P** **15 14 51.6 +1.1**
comp=Z,21nm,1.0s,baz=253,slow=5.6,SNR=13
PLCA LR LR 15 42 41.7
comp=Z,4µm,22.0s,baz=284,slow=29
PLCA **Paso Flores** **82.60 133** *e*P **P** **15 14 47.4 -3.1**
comp=Z,55nm,1.2s
SKR **Sero-Kuril's** **83.10 343** *e*P **P** **15 14 54.1 +1.7**
LPIG **La Paz** **83.18 58** LR LR 15 42 44.6
comp=Z,3µm,21.6s,baz=224,slow=29
EFI **East Falkland** **83.23 147** PFAKE 15 15 00.0 +6.6
EFI LR LR
comp=Z,6µm,19.0s
CIS **Catalina Islan** **83.41 46** P **P** **15 14 55.4 +0.8**
baz=228
PKM **Mcpherson Peak** **83.54 44** P **P** **15 14 56.0 +0.7**
baz=229
109C **Camp Elliot, M** **83.91 47** P **P** **15 14 58.0 +0.9**
SSE **Sheshan** **84.06 310** ⇑P **P** **15 14 57.1 -0.8**
SSE sP **pP** **15 15 06.7 +1.1**
SSE S **S** **15 25 19.1 -1.9**
SSE sS **sS** **15 25 33.8 0.0**
SSE pmax pmax
comp=Z,26nm,0.7s
SSE pmax pmax
comp=Z,1µm,9.6s
SSE LR LR
comp=Z,2µm,23.2s
SSE LR LR
comp=Z,2µm,23.3s
SSE LR LR
comp=Z,4µm,22.8s
KSRS **Korea Array** **84.09 319** P **P** **15 14 58.1 +0.3**
comp=Z,46nm,1.1s,baz=137,slow=6.2,SNR=17
KSRS LR LR 15 50 38.2
comp=Z,2µm,18.5s,baz=137,slow=34
KS15 **Wonju Array Si** **84.10 319** *e*P **P** **15 14 58.6 +0.7**
KSAR **Wonju Array Be** **84.10 319** P **P** **15 14 58.1 +0.2**
KSAR **Wonju Array Be** **84.10 319** P **P** **15 14 58.1 +0.2**
KS01 **Wonju Array Si** **84.12 319** *e*P **P** **15 14 58.0 0.0**
YSS **Yuzh-Sakhalins** **84.14 334** *c i*P **P** **15 14 57.8 -0.1**
YSS *e**SP **sP** **15 15 09.0 +0.6**
YSS *e*S **S** **15 25 19.1 -2.0**
YSS pmax pmax
comp=Z,110nm,1.2s
YSS pmax pmax
comp=Z,2µm,9.0s
YSS smax smax
comp=N,2µm,11.0s
YSS **Yuzh-Sakhalins** **84.14 334** *e*P **P** **15 14 58.3 +0.4**
comp=N,147nm,0.9s
YSS LR LR
comp=Z,3µm,22.0s
ARVC **Arvin** **84.30 44** P **P** **15 15 00.1 +1.2**
baz=228
MURC **Murrieta** **84.31 46** P **P** **15 15 00.4 +1.3**
baz=229
MONP2 **Monument Peak** **84.34 47** P **P** **15 15 00.2 +0.6**
baz=230
IKP **In-Ko-Pah, Jac** **84.39 48** P **P** **15 15 00.5 +0.9**
baz=230
BFSC **Mount Baldy Ra** **84.43 46** P **P** **15 15 00.8 +0.9**
baz=229
VES **Vestal, Richgr** **84.62 44** P **P** **15 15 01.5 +0.9**
baz=228
EDW2 **Edwards Air Fo** **84.65 45** P **P** **15 15 01.6 +0.8**
baz=229,SNR=7.1
PET **Petropavlovsk** **84.67 345** *e*P **P** **15 14 56.0 -4.4**
PET *e*S **S** **15 25 21.1 -5.0**
PET pmax pmax
comp=Z,36nm,0.6s
PET pmax pmax
comp=Z,1µm,12.1s
PET **Petropavlovsk** **84.67 345** *e*P **P** **15 14 59.5 -0.8**
comp=Z,15nm,0.6s
PET LR LR
comp=Z,4µm,21.0s
SWSC **Sam W. Stewart** **84.78 48** P **P** **15 15 02.5 +1.0**
baz=230
TPFO **Pinon Flats** **84.78 47** P **P** **15 15 02.2 +0.5**
baz=230,SNR=6.0
PFO **Pinyon Flats O** **84.78 47** P **P** **15 15 02.9 +1.3**
comp=Z,8.5nm,1.1s,baz=258,slow=2.7,SNR=7.3
PFO LR LR 15 48 09.6
comp=Z,3µm,18.1s,baz=252,slow=32
PFO **Pinyon Flats O** **84.78 47** P **P** **15 15 01.9 +0.3**
baz=230,SNR=5.8
PFO **Pinyon Flats O** **84.78 47** P **P** **15 15 02.9 +1.3**
PFO pmax pmax
comp=Z,4.0nm,0.7s
PFO **Pinyon Flats O** **84.78 47** P **P** **15 15 02.9 +1.3**
comp=Z,5.7nm,1.1s
INCN **Inchon** **84.86 318** PFAKE 15 15 10.0 +8.2
INCN LR LR
comp=Z,2µm,20.0s
ISA **Isabella, Lake** **84.87 44** P **P** **15 15 03.1 +1.2**
baz=228,SNR=16
GZH **Guangzhou** **84.87 300** P **P** **15 15 02.3 +0.2**
GZH S **S** **15 25 29.8 +0.4**
GZH pmax pmax
comp=Z,3µm,12.3s
GZH LR LR
comp=Z,4µm,19.4s
PEA0 **Petropavlovsk-** **84.96 345** *e*P **P** **15 15 01.4 -0.5**
PEA0B **Petropavlovsk-** **84.96 345** *e*P **P** **15 15 01.9 +0.1**
comp=Z,59nm,0.8s
PETK **Petropavlovsk-** **84.96 345** P **P** **15 15 01.2 -0.6**
comp=Z,23nm,0.6s,baz=112,slow=7.5,SNR=37
PETK LR LR 15 51 09.3
comp=Z,2µm,18.6s,baz=166,slow=34
IPM **Ipoh** **85.22 278** *e*P **P** **15 15 02.7 -1.6**
comp=Z,49nm,0.9s
LRMC **Laurel Mtn Rad** **85.23 45** P **P** **15 15 04.3 +0.4**
baz=229,SNR=9.9
CMB **Columbia Colle** **85.33 41** *e*P **P** **15 15 05.0 +0.8**
CMB pmax pmax
comp=Z,20nm,0.9s
CMB **Columbia Colle** **85.33 41** *e*P **P** **15 15 05.0 +0.8**
comp=Z,20nm,0.9s
BELC **Belle Mtn. Jos** **85.33 47** P **P** **15 15 05.4 +1.0**
baz=230,SNR=10.0
QIZ **Qiongzhong** **85.34 295** P **P** **15 15 05.9 +1.3**
QIZ PP **PP** **15 18 23.5 +0.5**
QIZ S **S** **15 25 37.2 +2.9**
QIZ SS **SS** **15 31 11.5 +1.8**
QIZ pmax pmax
comp=Z,1µm,12.6s
QIZ LR LR
comp=Z,980nm,19.1s
QIZ LR LR
comp=Z,2µm,21.7s
QIZ **Qiongzhong** **85.34 295** PFAKE 15 15 20.0 +15
QIZ LR LR
comp=Z,2µm,21.0s
BC3 **Big Chuckawall** **85.45 47** P **P** **15 15 06.5 +1.5**
baz=230,SNR=9.0
GLA **Glamis** **85.48 48** P **P** **15 15 06.2 +1.2**
baz=231
AFDM **Forest Hills D** **85.62 40** *e*P **P** **15 15 06.2 +0.6**
comp=Z,16nm,1.0s
CWC **Cottonwood Cre** **85.62 44** P **P** **15 15 06.1 +0.3**
baz=228
HEC **Hector,Ludlow** **85.65 46** P **P** **15 15 07.0 +1.1**
baz=230,SNR=12
GSC **Goldstone, Bar** **85.66 45** P **P** **15 15 07.0 +1.1**
baz=229,SNR=13
MPMC **Manual Prospec** **85.73 44** P **P** **15 15 07.8 +1.4**
baz=229,SNR=14
ORV **Oroville** **85.74 40** *e*P **P** **15 15 06.8 +0.7**
ORV pmax pmax
comp=Z,15nm,1.0s
ORV **Oroville** **85.74 40** *e*P **P** **15 15 06.8 +0.7**
comp=Z,15nm,1.0s
WDC **Whiskeytown Da** **85.88 38** *e*P **P** **15 15 07.9 +1.1**
WDC pmax pmax
comp=Z,33nm,1.1s
WDC **Whiskeytown Da** **85.88 38** *e*P **P** **15 15 07.9 +1.1**
comp=Z,33nm,1.1s
TIN **Tinemaha, Big** **85.94 43** P **P** **15 15 08.1 +0.8**
baz=228
KULM **Kulim** **85.95 278** *e*P **P** **15 15 07.8 0.0**
comp=Z,83nm,1.2s
KULM LR LR
comp=Z,5µm,20.0s
MSHR **Mys Shultsa** **85.97 324** *c i*P **P** **15 15 08.0 +0.9**
IRM **Iron Mountain** **85.97 47** P **P** **15 15 08.9 +1.5**
baz=230,SNR=16
113A **Mohawk Valley,** **86.00 49** *e*P **P** **15 15 08.8 +1.2**
VLA **Vladivostok** **86.00 325** ‖ *e*P **P** **15 15 08.4 +1.1**
VLA pmax pmax
comp=Z,41nm,1.1s
GMRC **Granite Mounta** **86.04 46** P **P** **15 15 09.0 +1.1**
baz=230,SNR=6.9
N02D **Trinity Center** **86.07 38** P **P** **15 15 09.3 +1.5**
baz=225,SNR=9.8
O03D **Paynes Creek** **86.08 39** P **P** **15 15 08.7 +0.8**
baz=226,SNR=8.9
Y12C **Blythe** **86.11 48** P **P** **15 15 09.2 +1.1**
baz=231
214A **Organ Pipe Nat** **86.13 50** P **P** **15 15 09.4 +1.1**
baz=232,SNR=5.5
214A **Organ Pipe Nat** **86.13 50** *e*P **P** **15 15 08.2 -0.1**
comp=Z,326nm,1.8s
WAKR **Walker** **86.19 42** *e*P **P** **15 15 10.0 +1.3**
comp=Z,37nm,1.2s
NJ2 **Nanjing** **86.21 310** *e*P **P** **15 15 10.4 +1.8**
NJ2 SS SS 15 31 22.9 +0.7
NJ2 pmax pmax
comp=Z,31nm,1.5s
NJ2 pmax pmax
comp=Z,2µm,10.8s

NJ2 LR LR
comp=Z,2µm,20.1s
NJ2 LR LR
comp=Z,2µm,22.8s
NJ2 LR LR
comp=Z,3µm,23.3s
PSI Prapat 86.23 275 *e*P **P 15 15 07.0 -2.3**
PSI pmax pmax
comp=Z,94nm,1.2s
PSI Prapat 86.23 275 *e*P **P 15 15 07.0 -2.3**
comp=Z,94nm,1.2s
M02C Callahan 86.28 38 P **P 15 15 10.3 +1.5**
baz=225,SNR=7.6
TUQ Turquoise Moun 86.30 46 P **P 15 15 10.4 +1.2**
baz=230,SNR=5.3
SHOC Shoshone, Teco 86.37 45 P **P 15 15 10.5 +1.2**
baz=230
FURC Furnace Creek, 86.38 44 P **P 15 15 10.5 +1.2**
baz=229,SNR=7.6
GRAC Grapevine Rang 86.42 44 P **P 15 15 10.8 +1.2**
baz=229,SNR=16
L02D Cave Junction, 86.43 37 P **P 15 15 10.6 +1.1**
baz=224
LDFC Landfair 86.58 46 *e*P **P 15 15 11.9 +1.4**
comp=Z,66nm,1.2s
GSI Gunungsitoli 86.67 273 P **P 15 15 11.7 +0.3**
GSI Gunungsitoli 86.67 273 *e*P **P 15 15 11.0 -0.4**
comp=Z,119nm,0.9s
USRK Ussuriysk Ar. 86.73 326 P **P 15 15 10.7 -0.2**
comp=Z,34nm,0.8s,baz=132,slow=3.1,SNR=68
USRK LR LR 15 49 55.8
comp=Z,3µm,20.5s,baz=129,slow=33
PAYG Puerto Ayora 86.77 89 PFAKE 15 15 20.0 +8.1
PAYG LR LR
comp=Z,4µm,21.0s
UBPT Khong Chiam 86.90 289 P **P 15 15 15.4 +3.0**
comp=Z,58nm,1.4s,comp=Z,1µm
SKLT Songkhla 86.90 280 P P 15 15 20.3 +7.8
PAHR Pah Rah Range 87.03 41 *e*P **P 15 15 12.8 +0.2**
comp=Z,32nm,1.3s
TPNV Topopah Spring 87.07 44 P **P 15 15 14.0 +1.1**
baz=230,SNR=17
TPNV Topopah Spring 87.07 44 *e*P **P 15 15 13.6 +0.7**
TPNV pmax pmax
comp=Z,26nm,0.9s
TPNV Topopah Spring 87.07 44 *e*P **P 15 15 13.6 +0.7**
comp=Z,26nm,0.9s
HUMO Hull Mountain 87.08 37 *e*P **P 15 15 14.6 +1.9**
comp=Z,65nm,1.8s
M04C Macdoel 87.10 38 P **P 15 15 14.0 +1.1**
baz=226
Y14A Wickenburg 87.22 48 *e*P **P 15 15 14.5 +0.9**
W13A Hualapai Mount 87.37 47 *e*P **P 15 15 16.5 +2.0**
TYV Tymovskoe 87.40 336 *e*P **P 15 15 13.8 -0.1**
TYV *e*S **S 15 25 51.0 -1.9**
TYV pmax pmax
comp=Z,131nm,1.4s
TYV pmax pmax
comp=Z,800nm,6.0s
TYV smax smax
comp=N,2µm,12.0s
SHPR Sheep Range 87.45 45 *e*P **P 15 15 16.2 +1.4**
comp=N,31nm,1.4s
I03D Drain, OR 87.65 36 P **P 15 15 16.6 +1.3**
baz=225
TUC Tucson 87.71 51 P **P 15 15 17.2 +1.2**
baz=233
TUC Tucson 87.71 51 *e*P **P 15 15 16.0 0.0**
TUC pmax pmax
comp=Z,30nm,1.0s
TUC MLR MLR
comp=Z,3µm,21.0s
TUC Tucson 87.71 51 *e*P **P 15 15 16.0 0.0**
comp=Z,30nm,1.0s
TUC LR LR
comp=Z,3µm,21.0s
K04D Chiloquin, OR 87.73 37 P **P 15 15 17.0 +1.1**
baz=226
TPTI 87.97 275 P **P 15 15 16.1 -1.5**
MOD Modoc Plateau 88.01 39 *e*P **P 15 15 17.8 +0.5**
comp=Z,16nm,1.0s
TRTT Trang 88.03 280 P **P 15 15 20.5 +2.6**
comp=Z,75nm,1.2s,comp=Z,1µm
319A Douglas 88.18 52 *e*P **P 15 15 19.8 +1.5**
I04A Tendick Farm, 88.20 36 P **P 15 15 19.0 +1.0**
baz=225
MDJ Mudanjiang 88.22 325 P **P 15 15 18.1 0.0**
MDJ pP pP 15 15 24.0 -1.9
MDJ sP sP 15 15 27.4 -1.3
MDJ pmax pmax
comp=Z,52nm,1.0s
MDJ pmax pmax
comp=Z,1µm,9.4s
MDJ LR LR
comp=Z,2µm,17.8s
MDJ LR LR
comp=Z,590nm,23.7s
MDJ LR LR
comp=Z,3µm,20.7s
MDJ Mudanjiang 88.22 325 *e*P **P 15 15 16.2 -1.9**
comp=Z,90nm,1.3s
MDJ LR LR
comp=Z,3µm,21.0s
CHBT CHBT 88.23 286 P P 15 15 27.4 +8.6
K05A Summer Lake 88.26 38 *e*P **P 15 15 19.6 +1.0**
comp=Z,40nm,1.2s
R11A Troy Canyon, C 88.37 44 P **P 15 15 20.0 +0.8**
baz=230,SNR=7.0
R11A Troy Canyon, C 88.37 44 *e*P **P 15 15 19.5 +0.3**
comp=Z,5.9nm,0.9s
WHN Wuhan 88.40 306 P **P 15 15 20.8 +1.6**
WHN pmax pmax
comp=Z,1µm,6.0s
WHN LR LR
comp=Z,4µm,15.8s
WHN LR LR
comp=Z,4µm,18.9s
WHN LR LR
comp=Z,12µm,22.4s
OHAK Old Harbor 88.46 13 *e*P **P 15 15 18.6 -0.2**
comp=Z,35nm,1.0s
J05D Fort Rock, OR 88.46 37 P **P 15 15 20.5 +1.1**
baz=226,SNR=6.4
HABR Khabarovsk 88.52 330 *c i*P **P 15 15 19.6 +0.3**
HABR *e**SP **pP 15 15 27.1 0.0**
HABR *e* 15 18 45.8
HABR *e*PPP PPP 15 20 41.4
HABR *e*S **SKSac 15 25 45.3 -1.3**
HABR *e* 15 26 08.4
HABR *e*SS **SS 15 31 53.9 -1.3**
HABR pmax pmax
comp=Z,489nm,1.6s
HABR MLR MLR
comp=Z,4µm,19.0s
X16A Lo Mia Camp, P 88.54 49 *e*P **P 15 15 21.4 +1.3**
SURA Surathani 88.74 281 P 15 15 28.5 +7.3
DL2 Dalian 88.75 317 ⇑*i*P **P 15 15 21.3 +0.6**
DL2 S **S 15 26 09.9 +3.6**
DL2 pmax pmax
comp=Z,77nm,1.2s
DL2 pmax pmax
comp=Z,2µm,10.4s
DL2 LR LR
comp=Z,1µm,17.7s
DL2 LR LR
comp=Z,2µm,19.4s
DL2 LR LR
comp=Z,3µm,19.2s
BMN Battle Mountai 88.75 41 *e*P **P 15 15 21.1 +0.2**
BMN pmax pmax
comp=Z,40nm,1.5s
BMN Battle Mountai 88.75 41 *e*P **P 15 15 21.1 +0.2**
comp=Z,40nm,1.5s
G03D McMinnville, O 88.77 35 P **P 15 15 22.1 +1.5**
baz=225
LCO Las Campanas 88.82 123 *e*P **P 15 15 21.9 0.0**
comp=Z,12nm,1.0s
LCO LR LR
comp=Z,3µm,22.0s
LCMT Little Creek M 88.97 46 *e*P **P 15 15 23.3 +1.4**
comp=Z,18nm,1.1s
SKNT Sakolnakorn 89.00 290 P **P 15 15 23.3 +0.9**
comp=Z,78nm,1.1s,comp=Z,8µm
KDAK Kodiak Island 89.12 13 PFAKE 15 15 30.0 +8.1
KDAK LR LR
comp=Z,2µm,21.0s
I05D Terrebonne, OR 89.14 36 P **P 15 15 23.9 +1.5**
baz=226
U15A North Rim 89.21 47 *e*P **P 15 15 24.4 +1.1**
CCUT Cedar City 89.23 45 *e*P **P 15 15 23.8 +0.5**
comp=Z,16nm,1.1s
WUAZ Wupatki 89.25 48 P **P 15 15 24.9 +1.5**
baz=233
WUAZ Wupatki 89.25 48 *e*P **P 15 15 24.5 +1.2**
comp=Z,32nm,1.1s
WUAZ LR LR
comp=Z,3µm,22.0s
WVOR Wild Horse Val 89.28 39 PFAKE 15 15 30.0 +6.7
WVOR LR LR
comp=Z,9µm,19.0s
SURT Suratani 89.35 281 P P 15 15 31.5 +7.4
F04D Rainier, OR 89.51 34 P **P 15 15 25.8 +1.7**
baz=225
SNY Shenyang 89.52 320 ⇑P **P 15 15 24.5 +0.3**
SNY S **S 15 26 17.8 +4.5**
SNY pmax pmax
comp=Z,58nm,1.2s
SNY pmax pmax
comp=Z,1µm,10.0s
SNY LR LR
comp=Z,2µm,19.2s
SNY LR LR
comp=Z,1µm,19.6s
SNY LR LR
comp=Z,4µm,20.3s
PATY Pattaya 89.55 285 P P 15 15 35.2 +10
E03A Lebam 89.57 34 *e*P **P 15 15 25.8 +1.4**
comp=Z,72nm,1.0s
TRQA Tornquist 89.57 134 *e*P **P 15 15 23.8 -1.1**
comp=Z,41nm,1.5s
TRQA LR LR
comp=Z,5µm,20.0s
X18A Snowflake 89.59 49 *e*P **P 15 15 26.6 +1.6**
KHON Khomkaen 89.63 289 P **P 15 15 29.5 +4.2**
comp=Z,21nm,1.1s
G05D Wamic, OR 89.77 36 P **P 15 15 26.5 +1.1**
baz=226
CN2 Changchun 89.81 322 *e*P **P 15 15 24.3 -1.2**
CN2 *e*pP pP 15 15 32.3 -1.0
CN2 PP **PP 15 18 59.5 +1.0**
CN2 *e*S **S 15 26 13.4 -2.6**
CN2 pmax pmax
comp=Z,120nm,1.3s
CN2 pmax pmax
comp=Z,800nm,4.0s
CN2 LR LR
comp=Z,2µm,20.0s
CN2 LR LR
comp=Z,2µm,20.0s
CN2 LR LR
comp=Z,3µm,20.0s
TIA Tai'an 89.88 312 ⇑P **P 15 15 27.1 +1.0**
TIA SKS **SKSac 15 25 56.0 +0.7**
TIA S **ScS 15 26 21.8 +0.6**
TIA pmax pmax
comp=Z,90nm,1.3s
TIA pmax pmax
comp=Z,2µm,9.5s
TIA LR LR
comp=Z,2µm,30.0s
TIA LR LR
comp=Z,2µm,27.4s
TIA LR LR
comp=Z,5µm,30.0s
121A Cookes Peak, D 89.89 52 P **P 15 15 26.9 +0.5**
baz=235
121A Cookes Peak, D 89.89 52 *e*P **P 15 15 24.6 -1.9**
comp=Z,21nm,1.1s
NKL Nikolayevsk 89.98 336 *i* P **P 15 15 26.0 0.0**
NKL *e*S **SKSac 15 25 55.0 +0.1**
NKL pmax pmax
comp=N,40nm,1.0s
NKL pmax pmax
comp=Z,130nm,1.0s
NKL pmax pmax
comp=Z,1µm,11.0s
NKL MLR MLR
comp=E,1µm,18.0s
NKL MLR MLR
comp=N,3µm,20.0s
NKL MLR MLR
comp=Z,3µm,20.0s
NLWA Neilton Lookou 90.03 33 *e*P **P 15 15 27.4 +0.8**
comp=Z,24nm,0.9s
NLWA LR LR
comp=Z,5µm,19.0s
HOPE Hope Point 90.06 158 PFAKE 15 15 40.0 +13
HOPE LR LR
comp=Z,3µm,21.0s
G06A Carlson Farm, 90.12 36 *e*P **P 15 15 27.3 +0.3**
comp=Z,32nm,1.0s
MTPU Mount Pierson 90.27 46 *e*P **P 15 15 30.2 +1.9**
comp=Z,18nm,1.0s
KLR Kul'dur 90.53 329 P **P 15 15 28.5 -0.3**
comp=Z,30nm,0.9s,baz=109,slow=4.4,SNR=49
LON Longmire 90.57 34 *e*P **P 15 15 28.4 -0.7**
LON pmax pmax
comp=Z,10.0nm,1.0s
LON Longmire 90.57 34 *e*P **P 15 15 28.4 -0.7**
comp=Z,9.6nm,1.0s
DIB Dawson Inlet, 90.79 25 *e*P **P 15 15 30.9 +1.1**
comp=Z,35nm,1.2s
D05A Enumclaw 90.79 34 *e*P **P 15 15 30.4 +0.3**
comp=Z,80nm,1.1s
CNPM China Poot 91.00 13 *e*P **P 15 15 30.8 +0.1**
comp=Z,59nm,1.0s
TX31 Lajitas Ar. Si 91.02 57 *e*P **P 15 15 32.0 +0.3**
G08A Pilot Rock 91.02 37 *e*P **P 15 15 31.8 +0.4**
comp=Z,32nm,1.0s
TXAR Lajitas Array 91.02 57 P **P 15 15 32.0 +0.3**
comp=Z,4.7nm,1.1s,baz=213,slow=6.0,SNR=28
TXAR PKKPbc **PKKPbc 15 32 58.0 +2.2**
comp=Z,1.9nm,1.2s,baz=104,slow=2.6,SNR=4.3
TXAR LR LR 15 50 54.0
comp=Z,2µm,18.2s,baz=0.0,slow=32
HOM Homer 91.05 13 *e*P **P 15 15 31.6 +0.7**
comp=Z,190nm,0.9s
MNTX Cornudas Mount 91.09 54 P **P 15 15 32.2 +0.4**
baz=236
MNTX Cornudas Mount 91.09 54 *e*P **P 15 15 32.0 +0.2**
comp=Z,17nm,1.1s
MNTX LR LR
comp=Z,2µm,19.0s
DUG Dugway, Tooele 91.20 44 P **P 15 15 32.9 +0.6**
baz=232
DUG Dugway, Tooele 91.20 44 PFAKE 15 15 40.0 +7.7
DUG LR LR
comp=Z,6µm,19.0s
PBKT Sadao Pong 91.28 288 P **P 15 15 35.5 +2.5**
comp=Z,87nm,1.0s,comp=Z,1µm
BRLK Bradley Lake 91.29 13 *e*P **P 15 15 32.3 +0.2**
comp=Z,80nm,1.2s
HAWA Hanford 91.47 36 *e*P **P 15 15 30.7 -2.5**
comp=Z,22nm,1.0s
HAWA LR LR
comp=Z,3µm,20.0s
MFID Camas Ranch 91.48 40 *e*P **P 15 15 33.7 +0.2**
comp=Z,16nm,1.1s
B05A Bryant 91.49 33 P **P 15 15 34.3 +1.0**
baz=226,SNR=6.7
LOEI Loei 91.50 289 P **P 15 15 35.9 +1.8**
comp=Z,142nm,0.8s,comp=Z,7µm
A04D Lummi Island 91.52 33 P **P 15 15 34.0 +0.6**
baz=225
CMIG Matias Romero 91.54 71 P **P 15 15 34.6 +0.4**
comp=Z,0.9nm,0.3s,baz=316,slow=6.5,SNR=4.4
BMO Blue Mountains 91.61 38 *e*P **P 15 15 34.3 +0.2**
comp=Z,8.7nm,0.9s
BMO LR LR
comp=Z,4µm,19.0s
BBB Bella Bella 91.69 28 P **P 15 15 34.5 +0.5**
comp=Z,17nm,1.0s,baz=278,slow=3.5,SNR=11
BBB LR LR 15 48 27.9
comp=Z,677nm,20.8s,baz=227,slow=30
BBB Bella Bella 91.69 28 *e*P **P 15 15 35.3 +1.3**
comp=Z,31nm,1.1s
SVW2 Sparrevohn 91.72 10 *e*P **P 15 15 34.2 +0.2**
comp=Z,15nm,1.2s
ENH Enshi 91.72 304 *e*P **P 15 15 33.8 -1.0**
comp=Z,125nm,1.1s
ENH LR LR
comp=Z,2µm,21.0s
GYA Guiyang 91.79 299 ⇑*i*P **P 15 15 37.7 +2.4**
GYA pP pP 15 15 44.0 +0.8
GYA PP **PP 15 19 18.2 +3.5**
GYA SKS **SKSac 15 26 06.3 -0.7**
GYA S **S 15 26 34.8 -0.4**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,170nm,8.2s
GYA LR LR
comp=Z,980nm,21.4s
GYA LR LR
comp=Z,860nm,22.0s
GYA LR LR
comp=Z,940nm,21.3s
SEW Seward 91.89 13 *e*P **P 15 15 35.4 +0.6**
comp=Z,28nm,1.1s
SRU San Rafael Swe 91.95 46 *e*P **P 15 15 36.7 +0.8**
SRU pmax pmax
comp=Z,12nm,1.0s
SRU San Rafael Swe 91.95 46 *e*P **P 15 15 36.6 +0.8**
comp=Z,12nm,1.0s
MVCO Mesa Verde 92.12 48 P **P 15 15 37.4 +0.7**
baz=234
MVCO Mesa Verde 92.12 48 PFAKE 15 15 50.0 +13
MVCO LR LR
comp=Z,3µm,22.0s
ANMO Albuquerque 92.17 51 P **P 15 15 37.4 +0.4**
baz=235
ANMO Albuquerque 92.17 51 *e*P **P 15 15 37.5 +0.4**
ANMO pmax pmax
comp=Z,11nm,1.0s
ANMO MLR MLR
comp=Z,3µm,19.0s
ANMO Albuquerque 92.17 51 *e*P **P 15 15 37.5 +0.4**
comp=Z,11nm,1.0s
ANMO LR LR
comp=Z,3µm,19.0s
UTTA Uttaradit 92.21 289 P P 15 15 46.1 +8.8
D08A Wollman Farm, 92.23 35 *e*P **P 15 15 37.1 +0.4**
E09A Wood Farm, Sta 92.26 36 *e*P **P 15 15 37.5 +0.6**
comp=Z,27nm,1.0s
HLID Hailey 92.37 40 P **P 15 15 38.6 +0.9**
baz=231
HLID Hailey 92.37 40 *e*P **P 15 15 38.2 +0.5**
comp=Z,10nm,0.8s
HLID LR LR
comp=Z,5µm,19.0s
SPU Mount Spurr 92.39 12 *e*P **P 15 15 36.4 -0.8**
MA2 Magadan 92.46 344 P **P 15 15 36.2 -1.2**
comp=Z,9.8nm,0.8s,baz=120,slow=5.6,SNR=12
MA2 Magadan 92.46 344 P **P 15 15 36.2 -1.2**
MA2 LR LR
comp=Z,1µm,22.0s
PV01 Paradox Valley 92.61 47 *e*P **P 15 15 39.4 +0.4**
TCUT Toone Canyon 92.61 44 *e*P **P 15 15 40.9 +1.9**
comp=Z,32nm,0.9s
CMBY CAMPBELL BAY 92.61 277 *e*P **P 15 15 37.9 -1.4**
RC01 Rabbit Creek A 92.74 13 *e*P **P 15 15 39.3 +0.6**
comp=Z,80nm,1.4s
BJT Baijiatuau 92.76 315 *e*P **P 15 15 39.5 +0.2**
BJT pmax pmax
comp=Z,68nm,1.1s
BJT MLR MLR
comp=Z,3µm,19.0s
BJT Baijiatuau 92.76 315 *e*P **P 15 15 39.5 +0.2**
comp=Z,68nm,1.1s
BJT LR LR
comp=Z,3µm,19.0s
BJI Beijing 92.77 315 P **P 15 15 40.1 +0.8**
BJI pmax pmax
comp=Z,40nm,1.2s
BJI LR LR
comp=Z,2µm,22.1s
BJI LR LR
comp=Z,2µm,23.5s
BJI LR LR
comp=Z,3µm,26.5s
HWUT Hardware Ranch 92.81 43 *e*P **P 15 15 38.8 -1.0**
comp=Z,17nm,1.3s
HWUT LR LR
comp=Z,6µm,19.0s
NNA Nana 92.85 105 PFAKE 15 15 50.0 +9.5
NNA LR LR
comp=Z,1µm,20.0s
UMPA Umpang Tak 92.86 287 P P 15 15 49.6 +9.2
SUA Susitna One 92.89 12 *e*P **P 15 15 39.9 +0.4**
comp=Z,24nm,0.8s
EYAK Cordova Ski Ar 93.08 15 *e*P **P 15 15 41.2 +0.9**
comp=Z,21nm,1.0s
PMR Palmer 93.32 13 *e*P **P 15 15 41.3 0.0**
PMR pmax pmax
comp=Z,44nm,1.5s
PMR Palmer 93.32 13 *e*P **P 15 15 41.3 0.0**
comp=Z,44nm,1.5s
LAMP Lampang 93.35 289 P **P 15 15 46.2 +3.6**
WRAK Wrangell Islan 93.38 23 PFAKE 15 15 50.0 +8.3
WRAK LR LR
comp=Z,2µm,20.0s
TT01 Tatalina 93.38 9 *e*P **P 15 15 41.2 -0.4**
933A Laredo 93.38 60 P **P 15 15 43.3 +0.7**
baz=239
S22A 4UR Ranch, Cre 93.51 48 P **P 15 15 43.9 +0.7**
baz=235
034A Hebbronville 93.55 61 P **P 15 15 43.9 +0.6**
baz=239
DIV Divide 93.60 15 *e*P **P 15 15 43.1 +0.3**
comp=Z,30nm,1.3s
LVC Limon Verde 93.68 118 *e*P **P 15 15 42.7 -1.9**
comp=Z,9.7nm,1.1s
LVC LR LR
comp=Z,3µm,21.0s
BMRM Bremner River 93.71 15 *e*P **P 15 15 43.2 0.0**
comp=Z,18nm,0.9s
AHID Auburn Hatcher 93.79 42 PFAKE 15 16 00.0 +16
AHID LR LR
comp=Z,6µm,19.0s
TIY Taiyuan 93.80 311 *e*P **P 15 15 48.1 +3.8**
TIY pmax pmax
comp=Z,110nm,1.6s
TIY pmax pmax
comp=Z,490nm,5.9s
TIY LR LR
comp=Z,1µm,17.2s
TIY LR LR
comp=Z,5µm,28.6s
TIY LR LR
comp=Z,4µm,23.4s
KLU Klutina 93.89 14 *e*P **P 15 15 44.5 +0.4**
comp=Z,21nm,1.4s
CMAR Chiang Mai Arr 93.89 289 P **P 15 15 45.7 +0.6**
comp=Z,4.1nm,1.1s,baz=145,slow=3.5,SNR=8.7
CMAR PKiKP **PKiKP 15 20 30.5 +0.5**
comp=Z,0.6nm,0.4s,baz=146,slow=2.4,SNR=3.5
CMAR LR LR 15 58 34.1
comp=Z,1µm,20.8s,baz=157,slow=36
NEW Newport 93.94 35 PFAKE 15 16 00.0 +15
NEW LR LR
comp=Z,4µm,19.0s
O20A White River Ci 93.97 46 P **P 15 15 46.0 +0.8**
baz=235
MCMT McKenzie Canyo 94.04 40 *e*P **P 15 15 46.1 +0.7**
CMMT Chiang Mai 94.06 289 P P 15 15 52.8 +6.9
CHTO Chiang Mai 94.06 289 P P 15 15 52.9 +7.0
CHTO Chiang Mai 94.06 289 *e*P **P 15 15 48.4 +2.5**
CHTO pmax pmax
comp=Z,13nm,1.0s
CHTO MLR MLR
comp=Z,2µm,20.0s
CHTO Chiang Mai 94.06 289 *e*P **P 15 15 48.4 +2.5**
comp=Z,13nm,1.0s
CHTO LR LR
comp=Z,2µm,20.0s
KMI Kunming 94.13 296 P **P 15 15 47.2 +0.9**
KMI pP pP 15 15 54.9 +0.8
KMI sP sP 15 15 58.0 +1.1
KMI PP **PP 15 19 36.7 +3.4**
KMI S **S 15 26 50.4 -5.8**
KMI sS sS 15 27 06.4 -2.9
KMI SS **SS 15 33 16.2 -1.4**
KMI pmax pmax
comp=Z,15nm,0.9s
KMI pmax pmax
comp=Z,630nm,9.6s
KMI LR LR
comp=Z,2µm,19.5s
KMI LR LR
comp=Z,2µm,19.8s

KMI LR LR
comp=Z,3µm,19.8s
XAN Xi'an 94.16 307 P P 15 15 46.8 +0.8
XAN pP pP 15 15 53.8 -0.1
XAN SKS **SKSac 15 26 20.2 +0.6**
XAN pmax pmax
comp=Z,19nm,1.1s
XAN pmax pmax
comp=Z,870nm,13.2s
XAN LR LR
comp=Z,1µm,22.4s
XAN LR LR
comp=Z,2µm,23.4s
XAN LR LR
comp=Z,3µm,22.4s
MSTX Muleshoe 94.17 53 P P 15 15 46.6 +0.5
baz=237
MSTX Muleshoe 94.17 53 P P 15 15 44.7 -1.5
comp=Z,20nm,0.9s
SMCO Snowmass 94.23 47 *e*P **P 15 15 44.2 -2.5**
comp=Z,7.0nm,0.9s
REDW Red Top Meadow 94.29 42 *e*P **P 15 15 46.8 +0.2**
comp=Z,24nm,1.1s
TPAW Teton Pass 94.31 42 *e*P **P 15 15 44.2 -2.5**
comp=Z,20nm,1.2s
SDCO Great Sand Dun 94.38 49 P P 15 15 47.8 +0.5
baz=236
SDCO Great Sand Dun 94.38 49 PFAKE 15 16 00.0 +13
SDCO LR LR
comp=Z,2µm,20.0s
KVTX Kingsville 94.40 61 PFAKE 15 16 00.0 +13
KVTX LR LR
comp=Z,2µm,20.0s
SNOW Snow King Moun 94.41 42 *e*P **P 15 15 46.8 -0.4**
comp=Z,22nm,0.8s
JCT Junction City 94.47 58 PFAKE 15 16 00.0 +12
JCT LR LR
comp=Z,2µm,19.0s
CAST Castle Rocks 94.47 11 *e*P **P 15 15 45.3 -1.4**
comp=Z,23nm,0.9s
DLMT Dillon 94.51 40 *e*P **P 15 15 45.8 -1.7**
comp=Z,7.8nm,0.9s
IMW Indian Meadow 94.56 42 *e*P **P 15 15 48.0 0.0**
comp=Z,9.1nm,0.8s
LOHW Long Hollow 94.59 42 *e*P **P 15 15 47.4 -0.6**
comp=Z,14nm,1.3s
MSO Missoula 94.68 38 P P 15 15 49.0 +0.9
baz=231
MSO Missoula 94.68 38 *e*P **P 15 15 49.6 +1.5**
comp=Z,3.8nm,0.8s
BW06 Boulder Array 94.70 43 P P 15 15 49.0 +0.4
baz=234
BW06 Boulder Array 94.70 43 *e*P **P 15 15 47.0 -1.6**
comp=Z,5.9nm,0.9s
BW06 LR LR
comp=Z,5µm,19.0s
PD31 Pinedale Array 94.70 43 *e*P **P 15 15 48.0 -0.5**
PDAR Pinedale Array 94.70 43 P P 15 15 48.0 -0.5
comp=Z,2.1nm,0.9s,baz=224,slow=4.1,SNR=13
PDAR PP **PP 15 19 37.1 -0.3**
comp=Z,0.3nm,0.5s,baz=201,slow=9.7,SNR=2.4
PDAR LR LR 15 55 01.9
comp=Z,5µm,18.1s,baz=250,slow=33
T25A Trinidad 94.77 50 P P 15 15 49.3 +0.3
baz=237
KTH Kantishna Hill 94.80 11 *e*P **P 15 15 47.6 -0.6**
comp=Z,16nm,0.8s
FLWY Flagg Ranch 94.81 41 *e*P **P 15 15 48.1 -0.8**
comp=Z,26nm,0.9s
TRF Thorofare Moun 94.81 12 *e*P **P 15 15 47.6 -0.8**
comp=Z,27nm,0.8s
QLMT Earthquake Lak 94.84 41 *e*P **P 15 15 50.6 +1.5**
SKAG Skagway 94.87 20 *e*P **P 15 15 50.1 +1.6**
comp=Z,19nm,1.3s
DHY Denali Highway 95.01 13 *e*P **P 15 15 49.7 +0.4**
comp=Z,21nm,1.5s
RND Reindeer 95.03 12 *e*P **P 15 15 48.7 -0.6**
RND pmax pmax
comp=Z,42nm,1.1s
RND Reindeer 95.03 12 *e*P **P 15 15 48.7 -0.6**
comp=Z,42nm,1.1s
SEY Seymchan 95.10 346 P P 15 15 48.2 -1.3
comp=Z,14nm,0.8s,baz=151,slow=5.1,SNR=26
433A Art 95.14 58 P P 15 15 50.8 +0.3
baz=239
BOZ Bozeman (W) 95.22 40 P P 15 15 51.6 +0.9
baz=233
BOZ Bozeman (W) 95.22 40 *e*P **P 15 15 51.0 +0.3**
BOZ pmax pmax
comp=Z,15nm,1.0s
BOZ MLR MLR
comp=Z,5µm,19.0s
BOZ Bozeman (W) 95.22 40 *e*P **P 15 15 51.0 +0.3**
comp=Z,15nm,1.0s
BOZ LR LR
comp=Z,5µm,19.0s
534A Blanco 95.22 59 P P 15 15 51.2 +0.2
baz=239
LKWY Lake 95.27 41 PFAKE 15 16 00.0 +8.9
LKWY LR LR
comp=Z,10µm,19.0s
Q24A Divide 95.29 48 P P 15 15 51.8 +0.4
baz=236
PAX Paxson 95.31 14 *e*P **P 15 15 50.2 -0.4**
PAX pmax pmax
comp=Z,6.0nm,0.8s
PAX Paxson 95.31 14 *e*P **P 15 15 50.1 -0.4**
comp=Z,5.5nm,0.8s
MCK McKinley 95.31 12 *e*P **P 15 15 50.3 -0.2**
MCK pmax pmax
comp=Z,22nm,1.0s
MCK McKinley 95.31 12 *e*P **P 15 15 50.3 -0.2**
comp=Z,22nm,1.0s
AMTX Amarillo 95.42 53 P P 15 15 52.3 +0.5
baz=238
ISCO Idaho Springs 95.45 47 P P 15 15 52.8 +0.7
baz=236
ISCO Idaho Springs 95.45 47 PFAKE 15 16 00.0 +7.9
ISCO LR LR
comp=Z,3µm,21.0s
333A Richland Sprin 95.51 57 P P 15 15 52.5 +0.3
baz=239
MENT Mentasta 95.65 15 *e*P **P 15 15 52.1 0.0**
comp=Z,12nm,0.8s
DLBC Dease Lake 95.74 23 P P 15 15 53.4 +0.7
comp=Z,1.4nm,0.8s,baz=243,slow=18,SNR=3.5
DLBC LR LR 15 51 14.2
comp=Z,863nm,21.7s,baz=216,slow=31
434A Burnet 95.78 58 P P 15 15 53.4 0.0
baz=239
HHC Hu-ho-hao-te 96.11 314 *e*P **P 15 15 55.5 +0.6**
HHC S **S 15 27 13.7 +1.2**
HHC pmax pmax
comp=Z,19nm,1.3s
HHC pmax pmax
comp=Z,900nm,8.1s
HHC LR LR
comp=Z,2µm,19.4s
HHC LR LR
comp=Z,3µm,17.1s
HHC LR LR
comp=Z,5µm,18.6s
737A Port Lavaca 96.12 61 P P 15 15 54.0 -1.0
baz=240
WRH Wood River Hil 96.14 12 *e*P **P 15 15 53.4 -0.8**
comp=Z,25nm,1.2s
DOT Dot Lake 96.20 14 *e*P **P 15 15 54.6 0.0**
comp=Z,26nm,0.8s
RLMT Red Lodge 96.25 41 P P 15 15 56.1 +0.6
baz=234
RLMT Red Lodge 96.25 41 PFAKE 15 16 10.0 +14
RLMT LR LR
comp=Z,6µm,19.0s
CD2 Chengdu 96.26 302 P P 15 15 56.8 +1.1
CD2 sP sP 15 16 07.4 +1.1
CD2 PP **PP 15 19 50.5 +0.9**
CD2 SKS **SKSac 15 26 31.7 +0.7**
CD2 S **ScS 15 27 15.5 +0.8**
CD2 sS sS 15 27 28.7 +1.5
CD2 SS **SS 15 33 50.1 +2.7**
CD2 pmax pmax
comp=Z,30nm,0.7s
CD2 pmax pmax
comp=Z,220nm,6.2s
CD2 LR LR
comp=Z,2µm,18.3s
CD2 LR LR
comp=Z,3µm,21.6s
CD2 LR LR
comp=Z,3µm,20.5s
HDA Harding Lake 96.30 13 *e*P **P 15 15 54.2 -0.8**
comp=Z,13nm,0.7s
HIA Hailar 96.34 324‖ *e*P **P 15 15 55.8 +0.2**
HIA pmax pmax
comp=Z,6.0nm,1.0s
HIA Hailar 96.34 324 PFAKE 15 16 10.0 +14
HIA LR LR
comp=Z,4µm,21.0s
CCB Clear Creek Bu 96.35 12 *e*P **P 15 15 54.1 -1.1**
comp=Z,8.8nm,0.8s
DGPR DIGLIPUR 96.42 281 *e*P **P 15 15 55.3 -1.4**
K22A Casper 96.47 44 P **P 15 15 56.8 +0.3**
baz=236
K22A Casper 96.47 44 *e*P **P 15 15 57.2 +0.7**
comp=Z,10nm,0.9s
234A Clairette 96.47 57 P P 15 15 57.4 +0.8
baz=240
COLA College 96.55 12 *e*P **P 15 15 56.1 +0.1**
COLA pmax pmax
comp=Z,21nm,0.8s
COLA MLR MLR
comp=Z,3µm,20.0s
COLA College 96.55 12 *e*P **P 15 15 56.1 +0.1**
comp=Z,21nm,0.8s
COLA LR LR
comp=Z,3µm,20.0s
ILAR Eielson Array 96.64 12 P P 15 15 54.9 -1.7
comp=Z,9.1nm,1.0s,baz=224,slow=4.7,SNR=30
ILAR PP **PP 15 19 49.5 -2.2**
comp=Z,2.5nm,1.0s,baz=229,slow=8.0,SNR=5.1
ILAR PKKP **PKKPdf 15 32 48.9 +4.5**
comp=Z,0.6nm,0.5s,baz=14,slow=2.6,SNR=7.3
ILAR LR LR 15 53 21.8
comp=Z,1µm,21.0s,baz=205,slow=32
ILB Eielson Array 96.64 12 *e*P **P 15 15 55.3 -1.2**
IL1 Eielson Array 96.64 12 *e*P **P 15 15 54.8 -1.7**
537A Green Hill Far 96.87 59 P P 15 15 58.9 +0.6
baz=240
Y33A Hilltop Ranch, 97.13 55 P Pdif 15 16 01.2 +1.6
baz=239
638A Rosharon 97.20 60 P Pdif 15 16 00.4 +0.4
baz=240
W32A Sentinel 97.26 54 P Pdif 15 16 01.4 +1.2
baz=239
WMOK Wichita Mounta 97.39 54 P Pdif 15 16 01.2 +0.5
baz=240
WMOK Wichita Mounta 97.39 54 PFAKE 15 16 10.0 +9.2
WMOK LR LR
comp=Z,1µm,20.0s
OTAV Otavalo 97.54 94 PFAKE 15 16 10.0 +7.5
OTAV LR LR
comp=Z,2µm,22.0s
EGMT Eagleton 97.67 39 PFAKE 15 16 10.0 +8.3
EGMT LR LR
comp=Z,397µm,22.0s
LPAZ La Paz 97.77 113 P Pdif 15 16 06.1 +2.4
comp=Z,1.2nm,0.7s,baz=242,slow=4.0,SNR=3.5
LPAZ PKKP **PKKPbc 15 32 38.3 +0.6**
comp=Z,1.9nm,0.9s,baz=41,slow=8.7,SNR=4.6
LPAZ LR LR 15 52 00.2
comp=Z,2µm,21.2s,baz=249,slow=30
EGAK Eagle 97.82 15 *e*P Pdif 15 16 02.6 +0.7
comp=Z,20nm,1.4s
EGAK LR LR
comp=Z,3µm,19.0s
BILL Bilibino 97.83 354‖ *e*P **P 15 16 01.4 -0.4**
BILL *e* 15 20 00.3
BILL *e*PPP PPP 15 22 04.2
BILL pmax pmax
comp=Z,6.0nm,1.1s
BILL MLR MLR
comp=Z,4µm,20.0s
BILL Bilibino 97.83 354 PFAKE 15 16 10.0 +8.2
BILL LR LR
comp=Z,4µm,20.0s
COLD Coldfoot 98.31 10 *e*P Pdif 15 16 04.9 +0.9
comp=Z,6.5nm,1.2s
OGNE Ogallala 98.37 48 PFAKE 15 16 20.0 +15
OGNE LR LR
comp=Z,4µm,22.0s
TEIG Tepich 98.53 72 PFAKE 15 16 20.0 +14
TEIG LR LR
comp=Z,38nm,22.0s
LZH Lanzhou 98.78 306 *e*P Pdif 15 16 08.9 +1.8
LZH pP sP 15 16 16.5 -1.2
LZH sP pP 15 16 20.0 +5.1
LZH PP **PP 15 20 13.1 +4.1**
LZH SKS **SKSac 15 26 45.0 +1.1**
LZH S **S 15 27 35.0 -0.7**
LZH sS sS 15 27 46.3 -2.5
LZH SS **SS 15 34 26.0 +3.0**
LZH pmax pmax
comp=Z,35nm,1.1s
LZH pmax pmax
comp=Z,410nm,7.8s
LZH LR LR
comp=Z,2µm,18.0s
LZH LR LR
comp=Z,3µm,19.0s
LZH LR LR
comp=Z,4µm,19.8s
CBKS Cedar Bluff 98.79 50 PFAKE 15 16 20.0 +13
CBKS LR LR
comp=Z,3µm,19.0s
LAO LASA Array 98.89 41 PFAKE 15 16 20.0 +13
LAO LR LR
comp=Z,4µm,19.0s
NATX Nacogdoches 98.92 59 PFAKE 15 16 20.0 +12
NATX LR LR
comp=Z,2µm,19.0s
541A Lake Charles 99.23 61 Pdiff **Pdif 15 16 11.7 +2.7**
baz=242
CPUP Villa Florida 99.96 128 PKKP **PKKPbc 15 32 35.9 +4.9**
comp=Z,1.6nm,0.7s,baz=350,slow=6.1,SNR=3.6
Y39A Lockesburg 100.38 57 Pdiff **Pdif 15 16 16.4 +2.3**
baz=242
YAK Yakutsk 100.56 337 P Pdif 15 16 13.1 -1.0
comp=Z,3.9nm,0.4s,baz=134,slow=2.5,SNR=5.3
YAK Yakutsk 100.56 337 *e*P **Pdif 15 16 11.9 -2.2**
YAK pmax pmax
comp=Z,13nm,1.1s
YAK pmax pmax
comp=N,3.0nm,1.5s
YAK pmax pmax
comp=E,4.0nm,1.4s
YAK Yakutsk 100.56 337 P Pdif 15 16 13.1 -1.0
YAK LR LR
comp=Z,3µm,22.0s
DGMT Dagmar 101.00 40 PFAKE 15 16 30.0 +13
DGMT LR LR
comp=Z,4µm,19.0s
MIAR Mount Ida 101.04 57 PFAKE 15 16 30.0 +13
MIAR LR LR
comp=Z,3µm,22.0s
KSU1 Kansas State U 101.05 51 PFAKE 15 16 30.0 +13
KSU1 LR LR
comp=Z,3µm,19.0s
V38A Canehill 101.06 55 Pdiff **Pdif 15 16 17.0 0.0**
baz=242
U40A Yellville 102.40 55 Pdiff **Pdif 15 16 23.9 +0.9**
baz=243
INK Inuvik 102.47 15 P Pdif 15 16 21.3 -1.1
comp=Z,1.6nm,0.6s,baz=263,slow=8.3,SNR=3.7
INK PP **PP 15 20 36.2 +0.3**
comp=Z,3.6nm,0.9s,baz=137,slow=6.9,SNR=3.5
SONM Songino Array 102.92 318 P **Pdif 15 16 24.7 -0.5**
comp=Z,1.6nm,0.9s,baz=131,slow=4.5,SNR=4.9
SONM PKKP **PKKPdf 15 32 30.1 -2.0**
comp=Z,1.1nm,0.7s,baz=274,slow=5.6,SNR=3.7
SONM Songino Array 102.92 318 P **Pdif 15 16 24.7 -0.5**
SONM pmax pmax
comp=Z,1.0nm,0.9s
SONM pmax pmax
comp=Z,1.0nm,0.7s
SONA1 Songino Array 102.92 318 *e*Pdif **Pdif 15 16 25.1 0.0**
SHL Shillong 102.99 292 *e*P **Pdif 15 16 25.5 -0.6**
ECSD EROS Data Cent 103.24 47 PFAKE 15 16 40.0 +13
ECSD LR LR
comp=Z,3µm,19.0s
DGAR Diego Garcia 104.02 253 PFAKE 15 16 40.0 +9.2
DGAR LR LR
comp=Z,7µm,20.0s
YKA Yellowknife Ar 104.05 25 Pdiff **Pdif 15 16 34.4 +4.7**
comp=Z,0.5nm,0.9s,baz=246,slow=4.5,SNR=3.5
YKA PP **PP 15 20 52.9 +5.0**
comp=Z,0.8nm,0.8s,baz=238,slow=6.6,SNR=3.6
YKA PKKPbc **PKKPbc 15 32 20.1 -0.5**
comp=Z,1.7nm,0.8s,baz=38,slow=3.3,SNR=7.6
BOD Bodaibo 104.11 329 *e*P **Pdif 15 16 22.3 -7.7**
BOD pmax pmax
comp=Z,4.0nm,1.7s
BRAL Brewton 104.44 62 PFAKE 15 16 40.0 +7.8
BRAL LR LR
comp=Z,2µm,20.0s
SCIA State Center 104.64 50 PFAKE 15 16 40.0 +7.2
SCIA LR LR
comp=Z,3µm,19.0s
LSA Lhasa 105.36 296 PFAKE 15 21 00.0
LSA LR LR
comp=Z,2µm,20.0s
FFC Flin Flon 105.37 36 PFAKE 15 21 00.0
FFC LR LR
comp=Z,3µm,19.0s
BWNR Bhubaneshwar 105.73 285 *e*P **Pdif 15 16 36.9 -1.2**
AGMN Agassiz Nation 105.78 43 PFAKE 15 21 00.0
AGMN LR LR
comp=Z,5µm,20.0s
SAML Samuel 105.83 110 PFAKE 15 21 00.0
SAML LR LR
comp=Z,4µm,21.0s
ZAK Zakamensk 105.92 319 *e*P **Pdif 15 16 28.9 -10**
ZAK pmax pmax
comp=Z,2.0nm,1.5s
ZAK pmax pmax
comp=Z,4.0nm,1.6s
B33A Robert and Kas 105.93 43 PKiKP **PKiKP 15 20 53.3 +2.6**
baz=244
L40A Anamosa 106.05 51 PKiKP **PKiKP 15 20 52.5 +1.4**
baz=245
TLY Talaya 106.30 320 Pdiff **Pdif 15 16 44.7 +4.7**
comp=Z,0.9nm,0.5s,baz=130,slow=7.3,SNR=3.7
TLY Talaya 106.30 320 Pdif **Pdif 15 16 44.6 +4.7**
TLY LR LR
comp=Z,3µm,19.0s
ULM Lac du Bonnet 106.63 41 PKKPab PKKPab 15 32 24.3 -0.3
comp=Z,2.0nm,0.5s,baz=112,slow=4.3,SNR=3.2
MTDJ Mount Denham 106.69 78 PFAKE 15 21 00.0
MTDJ LR LR
comp=Z,3µm,21.0s
VIS Vishakhapatnam 106.72 281 *e*P **Pdif 15 16 40.3 -2.3**
HDIL Hopedale 106.74 53 PFAKE 15 21 00.0
HDIL LR LR
comp=Z,2µm,19.0s
JFWS Jewell Farm 107.06 50 PFAKE 15 21 00.0
JFWS LR LR
comp=Z,3µm,19.0s
BOK Bokaro 107.15 288 *e*P **Pdif 15 16 43.7 -0.7**
D37A Cotton 107.39 45 PKiKP **PKiKP 15 20 56.4 +3.0**
baz=246
TIXI Tiksi 107.43 344 *e*PKPdf **PKiKP 15 20 51.8 -0.9**
TIXI LR LR
comp=Z,3µm,19.0s
GOGA Godfrey 108.13 61 PFAKE 15 21 10.0
GOGA LR LR
comp=Z,2µm,20.0s
EYMN Ely 108.29 45 PFAKE 15 21 10.0
EYMN LR LR
comp=Z,5µm,19.0s
SPB Sao Paulo 108.45 132 PFAKE 15 21 10.0
SPB LR LR
comp=Z,2µm,20.0s
SDV Santo Domingo 108.50 90 PFAKE 15 21 10.0
SDV LR LR
comp=Z,1µm,20.0s
COWI Conover 109.05 47 PFAKE 15 21 10.0
COWI LR LR
comp=Z,3µm,19.0s
GTBY Guantanamo Bay 109.49 78 PFAKE 15 21 10.0
GTBY LR LR
comp=Z,2µm,21.0s
KMSC Kings Mountain 110.43 60 PKiKP **PKiKP 15 21 01.6 +2.1**
baz=248
NHSC New Hope 110.56 63 PFAKE 15 21 10.0
NHSC LR LR
comp=Z,2µm,19.0s
ACSO Alum Creek Sta 111.06 55 PFAKE 15 21 10.0
ACSO LR LR
comp=Z,4µm,19.0s
AAM Ann Arbor 111.32 53 PFAKE 15 21 10.0
AAM LR LR
comp=Z,2µm,19.0s
BLA Blacksburg 111.87 59 PFAKE 15 21 10.0
BLA LR LR
comp=Z,2µm,19.0s
SDDR Presa de Saban 112.37 80 PFAKE 15 21 20.0
SDDR LR LR
comp=Z,1µm,20.0s
PTGA Pitinga 112.97 105 PKKPab PKKPab 15 32 00.3 +0.3
comp=Z,2.9nm,0.8s,baz=59,slow=2.0,SNR=6.8
PTGA Pitinga 112.97 105 PKKPab PKKPab 15 32 00.3 +0.3
PTGA LR LR
comp=Z,43µm,22.0s
CNNC Cliffs of the 113.09 61 PFAKE 15 21 20.0
CNNC LR LR
comp=Z,2µm,20.0s
WMQ Urumqi 113.24 308 *e*PKP **PKiKP 15 21 03.9 -0.7**
WMQ PP **PP 15 21 57.8 +2.4**
WMQ AMB AMB
comp=Z,370nm,9.2s
WMQ LR LR
comp=Z,2µm,20.8s
WMQ LR LR
comp=Z,1µm,19.0s
WMQ LR LR
comp=Z,3µm,23.4s
GRTK Grand Turk 113.53 78 PFAKE 15 21 20.0
GRTK LR LR
comp=Z,1µm,20.0s
GOA Goa 113.98 275 *e*P **PKiKP 15 21 05.9 -0.8**
BHPL Bhopal 114.03 284 *e*P **PKiKP 15 21 04.3 -2.4**
BHPL IAmb IAmb 15 21 06.7
comp=Z,5.5nm,0.8s
BHPL IAMs_20 IAMs_20 16 14 10.0
comp=Z,1µm,18.2s
O56A Blue Knob Stat 114.26 56 PKiKP **PKiKP 15 21 09.4 +2.7**
baz=251
CBN Corbin Frederi 114.47 59 PFAKE 15 21 20.0 +13
CBN LR LR
comp=Z,2µm,19.0s
ABPO Ambohimpanom 115.79 227 PFAKE 15 21 20.0 +10
ABPO LR LR
comp=Z,1µm,21.0s
SUR Sutherland 116.40 197 PFAKE 15 21 20.0 +8.6
SUR LR LR
comp=Z,5µm,22.0s
SJG San Juan 116.46 83 PFAKE 15 21 20.0 +8.6
SJG LR LR
comp=Z,1µm,21.0s
N59A State Game Lan 116.48 56 PKiKP **PKiKP 15 21 12.2 +1.3**
baz=253
BINY Binghamton 116.69 55 PFAKE 15 21 20.0 +8.7
BINY LR LR
comp=Z,3µm,19.0s
SMLA Simla 117.08 292 *e*P **PKPdf 15 21 12.1 -0.2**
MK31 Makanchi Array 117.74 310 PKIKP **PKPdf 15 21 12.2 -0.9**
MK31 pmax pmax
comp=Z,11nm,0.8s
MKAR Makanchi Array 117.74 310 Pdiff **Pdif 15 17 35.7 +4.7**
comp=Z,0.5nm,0.4s,baz=94,slow=6.2,SNR=5.6
MKAR PKP **PKPdf 15 21 11.5 -1.6**
comp=Z,6.6nm,0.9s,baz=66,slow=2.9,SNR=24
MKAR PKKP **PKKPdf 15 32 05.0 +1.2**
comp=Z,1.0nm,0.7s,baz=285,slow=4.8,SNR=4.3
ZALV Zalesovo Beam 117.80 319 PKP **PKPdf 15 21 11.4 -1.5**
comp=Z,5.6nm,0.8s,baz=186,slow=1.3,SNR=14
GRGR Grenville 117.83 91 PFAKE 15 21 30.0 +16
GRGR LR LR
comp=Z,2µm,22.0s
DHRM DHARAMSHALA 118.14 293 *e*P **PKPdf 15 21 09.0 -5.7**
LONY Lake Ozonia 118.32 52 PFAKE 15 21 30.0 +16
LONY LR LR
comp=Z,2µm,19.0s
BOSA Boshof 118.64 202 PKP **PKPdf 15 21 14.9 -0.8**
comp=Z,9.7nm,0.8s,baz=158,slow=3.2,SNR=10
BOSA Boshof 118.64 202 PKIKP **PKPdf 15 21 14.9 -0.8**
BOSA pmax pmax
comp=Z,8.0nm,0.8s
PDGK Podgornoye 118.82 306 PKIKP **PKPdf 15 21 14.0 -1.2**
PDGK pmax pmax

comp=Z,11nm,0.8s
NVS Novosibirsk 118.88 319 *e*PKIKP **PKPdf 15 21 13.8 -1.2**
NVS *e* 15 22 44.8
NVS *e* 15 28 13.4
NVS pmax pmax
comp=N,6.0nm,1.1s
NVS pmax pmax
comp=Z,14nm,1.8s
NVS pmax pmax
comp=E,11nm,1.3s
NRIK Noril'sk 118.98 336 PKP **PKPdf 15 21 13.6 -1.2**
comp=E,8.4nm,0.8s,baz=75,slow=3.1,SNR=11
NRIK PP **PP 15 22 32.7 -2.1**
comp=E,9.2nm,1.0s,baz=109,slow=7.0,SNR=4.5
FDF Fort de France 119.41 89 PFAKE 15 21 30.0 +13
FDF LR LR
comp=Z,2µm,21.0s
ANWB Willy Bob 120.07 86 PFAKE 15 21 30.0 +12
ANWB LR LR
comp=Z,2µm,21.0s
BBGH Gun Hill 120.11 91 PFAKE 15 21 30.0 +11
BBGH LR LR
comp=Z,5µm,22.0s
KSH Kashi 120.44 301 PKP **PKPdf 15 21 19.1 +0.4**
KSH *e*PP PP 15 22 55.1 +9.2
KSH PKS **PKSdf 15 24 55.1 -0.3**
KSH SKS **SKSdf 15 28 26.9 -2.5**
KSH SKKS **SKKSac 15 29 42.4 -1.5**
KSH AMB AMB
comp=Z,230nm,6.6s
KSH LR LR
comp=Z,2µm,21.0s
KSH LR LR
comp=Z,700nm,14.1s
KSH LR LR
comp=Z,2µm,20.1s
BHJ Bhuj 120.66 281 *e*P **PKPdf 15 21 18.3 -1.1**
KURK Kurchatov 120.92 314 PKIKP **PKPdf 15 21 17.3 -1.8**
KURK 15 22 51.4
KURK pmax pmax
comp=Z,11nm,0.8s
KURK pmax pmax
comp=Z,2.0nm,0.9s
KURK pmax pmax
comp=Z,1.0nm,1.0s
KURK pmax pmax
comp=Z,1.0nm,0.9s
KURK Kurchatov 120.92 314 PKP **PKPdf 15 21 17.3 -1.8**
KURK *e*PKPdf **PKiKP 15 21 17.6 -1.6**
KURK PP **PP 15 22 51.4 +2.8**
KURK PKKPbc **PKKPbc 15 31 25.6 +2.2**
KURK PKKP **PKKPdf 15 31 58.1 +0.4**
KURK LR LR
comp=Z,4µm,19.0s
KURBB Kurchatov Arra 120.97 314 PKP **PKPdf 15 21 17.3 -1.8**
comp=Z,11nm,0.8s,baz=104,slow=1.9,SNR=29
KURBB PP **PP 15 22 51.4 +2.5**
comp=Z,2.3nm,0.9s,baz=99,slow=6.4,SNR=6.3
KURBB PKKPbc **PKKPbc 15 31 25.6 +2.4**
comp=Z,0.5nm,1.0s,baz=270,slow=4.6,SNR=4.7
KURBB PKKP **PKKPdf 15 31 58.1 +0.5**
comp=Z,1.0nm,0.8s,baz=286,slow=5.1,SNR=4.1
TKM2 Tokmak 2 121.50 305 PKIKP **PKPdf 15 21 19.5 -1.2**
TKM2 pmax pmax
comp=Z,12nm,0.7s
TKM2 Tokmak 2 121.50 305 *e*PKPdf **PKPdf 15 21 19.8 -1.0**
TKM2 LR LR
comp=Z,2µm,20.0s
PKME Peaks-Kenny Pk 122.12 53 PFAKE 15 21 30.0 +8.5
PKME LR LR
comp=Z,2µm,19.0s
FRU Bishkek 122.19 304 *e*PKIKP **PKPdf 15 21 22.0 +0.2**
FRU *e* 15 21 36.0
FRU pmax pmax
comp=Z,60nm,1.6s
AAK Ala-Archa 122.24 304⇓*i*PKIKP **PKPdf 15 21 21.6 -0.5**
AAK pmax pmax
comp=Z,11nm,0.9s
AAK MLR MLR
comp=Z,6µm,22.0s
AAK Ala-Archa 122.24 304 P **PKPdf 15 21 22.0 -0.1**
SNR=8.0
AAK Ala-Archa 122.24 304 *e*PKPdf **PKPdf 15 21 21.2 -0.9**
AAK LR LR
comp=Z,3µm,21.0s
BBSR BB Station 122.64 68 PFAKE 15 21 30.0 +7.1
BBSR LR LR
comp=Z,2µm,22.0s
EKS2 Erkin-Say 122.76 304 *e*PKIKP **PKPdf 15 21 22.4 -0.7**
EKS2 MLR MLR
comp=Z,2µm,20.0s
EKS2 Erkin-Say 122.76 304 *e*PKPdf **PKPdf 15 21 22.4 -0.7**
EKS2 LR LR
comp=Z,2µm,20.0s
MNAS Manas 123.65 304 PKIKP **PKPdf 15 21 24.5 -0.3**
MNAS pmax pmax
comp=Z,19nm,0.7s
OTUK Ortayu 124.64 311 PKIKP **PKPdf 15 21 25.3 -1.0**
OTUK pmax pmax
comp=Z,34nm,1.0s
SCHQ Schefferville 124.81 41 PKP **PKPdf 15 21 25.6 -0.9**
comp=Z,5.3nm,0.6s,baz=193,slow=2.9,SNR=4.0
KK31 Karatay Array 125.20 304 PKIKP **PKPdf 15 21 27.7 +0.1**
KK31 pmax pmax
comp=Z,22nm,0.7s
KKAR Karatay Array 125.20 304 *e*PKIKP **PKPdf 15 21 26.9 -0.7**
KKAR Karatay Array 125.20 304 *e*PKPdf **PKPdf 15 21 26.9 -0.7**
VOSK Vostochnaya 125.86 316 PKIKP **PKPdf 15 21 27.6 -0.9**
VOSK pmax pmax
comp=Z,42nm,0.8s
CHKZ Chkalovo 126.11 317 PKIKP **PKPdf 15 21 28.3 -0.6**
CHKZ pmax pmax
comp=Z,32nm,1.0s
BVA0 Borovoye Array 126.23 316 *i* PKIKP **PKPdf 15 21 28.3 -0.9**
BVA0 pmax pmax
comp=Z,36nm,0.8s
BRVK Borovoye 126.29 316⇓*i*PKIKP **PKPdf 15 21 29.1 -0.2**
BRVK Borovoye 126.29 316 *e*PKPdf **PKPdf 15 21 28.6 -0.7**
BRVK LR LR
comp=Z,1µm,22.0s
ZRNK Zerenda 127.06 316 PKIKP **PKPdf 15 21 30.0 -0.8**
ZRNK pmax pmax
comp=Z,37nm,0.9s
RCBR Riachuelo 128.83 127 PFAKE 15 21 50.0 +15
RCBR LR LR
comp=Z,4µm,21.0s
LSZ Lusaka 129.48 212 *e*PKIKP **PKPdf 15 21 36.2 -0.6**
LSZ MLR MLR
comp=Z,2µm,20.0s
LSZ Lusaka 129.48 212 *e*PKPdf **PKPdf 15 21 36.2 -0.6**
LSZ PKP **PKiKP 15 21 38.0 +0.6**
LSZ LR LR
comp=Z,2µm,20.0s
TSUM Tsumeb 129.80 198 *e*PKPdf **PKPdf 15 21 38.0 +0.7**
TSUM LR LR
comp=Z,5µm,19.0s
KBS Kingsbay 130.11 358 PFAKE 15 21 50.0 +14
KBS LR LR
comp=Z,1µm,20.0s
SFJD Kangerlussuaq 130.61 25 PFAKE 15 21 50.0 +13
SFJD LR LR
comp=Z,2µm,20.0s
DAG Danmarks Havn 131.33 7 *i* P **PKPdf 15 21 38.1 -0.2**
DAG Danmarks Havn 131.33 7 *i* PKIKP **PKPdf 15 21 38.1 -0.2**
SUMG Summit 131.38 15 *i* P **PKPdf 15 21 39.5 +0.5**
SUMG Summit 131.38 15 *i* PKIKP **PKPdf 15 21 39.5 +0.5**
SUMG Summit 131.38 15 *e*PKPdf **PKPdf 15 21 38.5 -0.4**
SVE Sverdlovsk 131.59 322 *i* PKIKP **PKPdf 15 21 39.9 +0.6**
SVE pmax pmax
comp=Z,19nm,0.9s
SVE MLR MLR
comp=Z,4µm,22.0s
SVE MLR MLR
comp=N,790nm,20.0s
SVE MLR MLR
comp=E,3µm,20.0s
ARU Arti 132.79 321 *i* PKIKP **PKPdf 15 21 41.8 +0.3**
ARU 15 24 04.5
ARU MLR MLR
comp=Z,4µm,21.0s
ARU Arti 132.79 321 *e*PKPdf **PKPdf 15 21 41.6 +0.1**
ARU LR LR
comp=Z,4µm,20.0s
AB31 Akbulak array 132.86 312*c i*PKIKP **PKPdf 15 21 42.6 +0.7**
AB31 pmax pmax

comp=Z,15nm,0.8s
ABKAR Akbulak array 132.86 312 *e*PKPdf **PKPdf 15 21 41.1 -0.8**
SOKR Solikamsk 132.98 326 *i* PKIKP **PKPdf 15 21 41.1 -0.6**
SOKR pmax pmax
comp=Z,34nm,1.2s
GEYT Alibeck 133.90 296 PKhKP PKPpre 15 21 35.1
comp=Z,4.1nm,0.8s,baz=55,slow=6.0,SNR=6.6
GEYT SKPab **SKPab 15 25 16.6 +2.1**
comp=Z,16nm,1.0s,baz=48,slow=3.3,SNR=12
SHEL Horse Pasture 134.23 168 PFAKE 15 22 00.0 +14
SHEL LR LR
comp=Z,851nm,19.0s
KMBO Kilima Mbogo 135.47 233 PKP **PKPdf 15 21 49.4 +1.2**
comp=Z,5.2nm,0.9s,baz=61,slow=2.1,SNR=5.9
KMBO SKPab **SKiKP 15 25 26.7 +2.2**
comp=Z,1.7nm,0.5s,baz=164,slow=2.4,SNR=4.1
KMBO Kilima Mbogo 135.47 233 PKP **PKPdf 15 21 49.4 +1.2**
KMBO SKPab **SKiKP 15 25 26.7 +2.2**
KMBO LR LR
comp=Z,2µm,20.0s
LVZ Lovozero 137.05 343⇑*e*PKIKP **PKPdf 15 21 47.5 -1.7**
LVZ Lovozero 137.05 343 *e*PKPdf **PKPdf 15 21 48.0 -1.2**
LVZ LR LR
comp=Z,2µm,21.0s
APA Apatity 137.61 343 *i* PKIKP **PKPdf 15 21 48.4 -1.8**
APA *i* PPS PPS 15 35 02.0
APA pmax pmax
comp=Z,13nm,0.8s
APA MLR MLR
comp=Z,3µm,21.0s
ARCES ARCESS Array B 137.68 348 PKhKP PKPpre 15 21 42.5
comp=Z,8.7nm,0.8s,baz=11,slow=1.6,SNR=16
ARCES PKP **PKPdf 15 21 50.5 +0.2**
comp=Z,11nm,0.6s,baz=22,slow=1.0,SNR=18
H10S3 ASCENSION HYDR138.33 153 T T 17 58 02.8
baz=204,slow=74
H10S2 ASCENSION HYDR138.34 153 T T 17 57 53.7
baz=204
H10S1 ASCENSION HYDR138.35 153 T T 17 57 54.7
baz=204,slow=74
TRO Tromso 138.59 352 *e* PKPpre 15 21 44.3
ASCN Ascension 139.38 153 PFAKE 15 22 10.0 +15
ASCN LR LR
comp=Z,2µm,19.0s
H10N3 ASCENSION HYDR139.41 153 T T 17 58 47.1
baz=204,slow=75,SNR=171
H10N1 ASCENSION HYDR139.41 153 T T 17 58 47.4
baz=204,slow=75,SNR=451
H10N2 ASCENSION HYDR139.43 153 T T 17 58 48.4
baz=204,slow=75,SNR=151
KLMR Klimovskoe 140.19 333 *e*PKHKP PKPpre 15 21 47.6
KLMR pmax pmax
comp=Z,46nm,1.3s
MBAR Mbarara 140.21 227 PFAKE 15 22 10.0 +13
MBAR LR LR
comp=Z,832nm,20.0s
STEI Steigen 140.64 353 *e*PKPdf **PKPdf 15 21 53.6 -2.1**
BORG Borgarnes 141.34 16 PFAKE 15 22 10.0 +13
BORG LR LR
comp=Z,2µm,20.0s
MOS Moscow 143.91 327 *i* PKIKP PKPbc 15 21 59.4 -0.3
MOS pmax pmax
comp=Z,89nm,1.3s
MOS pmax pmax
comp=Z,300nm,2.2s
TBLG Delisi 144.19 302 P PKPbc 15 22 01.1 0.0
TBLG Delisi 144.19 302 *e*PKIKP PKPbc 15 22 01.0 -0.1
GUDG Gudauri 144.29 303 P PKPbc 15 22 01.6 0.0
GNI Garni 144.34 299 *e*PKIKP PKPbc 15 22 02.3 +0.5
GNI MLR MLR
comp=Z,2µm,20.0s
GNI Garni 144.34 299 *e*PKPdf PKPbc 15 22 02.3 +0.5
GNI LR LR
comp=Z,2µm,20.0s
FINES FINESS Array B 144.39 341 PKP **PKPab 15 21 59.8 -1.0**
comp=Z,82nm,0.8s,baz=58,slow=4.7,SNR=97
ZEI Tsey 144.66 304 *i* PKIKP **PKPab 15 22 00.7 -1.9**
ZEI pmax pmax
comp=Z,190nm,0.8s
OBN Obninsk 144.75 327⇓*e*PKIKP **PKPab 15 22 01.6 -0.6**
OBN pmax pmax
comp=Z,107nm,1.0s
OBN Obninsk 144.75 327 *e*PKPdf **PKPab 15 22 01.6 -0.6**
OBN LR LR
comp=Z,1µm,20.0s
NCK Nalchik 144.76 305⇓*e*PKIKP PKPbc 15 22 02.9 0.0
GOF Gofitskoye 144.84 308⇑*e*PKIKP PKPbc 15 22 03.0 0.0
GOF pmax pmax
comp=Z,145nm,0.9s
ONI Oni 145.02 303 P **PKPdf 15 22 04.1 -0.3**
ONI Oni 145.02 303 *e*PKIKP **PKPdf 15 22 04.1 -0.3**
VORR Voronezh 145.08 320 *e*PKIKP **PKPbc 15 22 02.0 -1.5**
VORR pmax pmax
comp=Z,300nm,1.2s
BGD Bogdanovka 145.09 301 P **PKPdf 15 22 04.9 +0.1**
EAK Akyaka 145.15 300 *i* P **PKPdf 15 22 05.0 +0.2**
AKH Akhalkalaki 145.15 301⇓*i*P **PKPdf 15 22 05.3 +0.5**
AKH Akhalkalaki 145.15 301 P **PKPdf 15 22 04.9 0.0**
AKH Akhalkalaki 145.15 301 *e*PKIKP **PKPdf 15 22 04.8 0.0**
DYDN Diyadin 145.19 298 *i* P **PKPdf 15 22 05.0 0.0**
KBZ Khabaz 145.22 305 PKPbc **PKPbc 15 22 03.8 -0.4**
comp=Z,63nm,0.8s,baz=97,slow=1.4,SNR=74
VSR Storozhevoye 145.30 319 *e*PKIKP **PKPbc 15 22 03.2 -1.1**
VSR pmax pmax
comp=Z,330nm,2.0s
KVAR Kislovodsk Arr 145.32 306 PKPbc **PKPbc 15 22 04.0 -0.8**
comp=Z,87nm,0.9s,baz=34,slow=2.4,SNR=18
KIV Kislovodsk 145.32 306⇓*e*PKIKP **PKPbc 15 22 04.6 -0.1**
KIV *e* 15 25 23.1
KIV *e*PPP PPP 15 28 34.7
KIV pmax pmax
comp=Z,130nm,1.1s
KIV Kislovodsk 145.32 306 P **PKPdf 15 22 04.9 0.0**
SNR=73
KIV Kislovodsk 145.32 306 *e*PKPdf **PKPbc 15 22 04.7 0.0**
KIV LR LR
comp=Z,2µm,20.0s
NEY Neytrino 145.43 305*de*PKIKP **PKPab 15 22 05.6 +0.1**
GEVA Gevas 145.76 296 *i* P **PKPbc 15 22 06.3 -0.1**
CHVG Ch'k'valeri 145.99 304 P **PKPab 15 22 07.5 +0.2**
VSU Vasula 146.56 337⇓*e*PKP2 **PKPdf 15 22 06.7 +0.3**
VSU MLR MLR
comp=Z,6µm,20.0s
MOL Molde 146.57 356 *e*PKPdf **PKPbc 15 22 07.6 -0.2**
AKN Aaknes 146.99 357 *e*PKPdf **PKPdf 15 22 07.8 +0.7**
SOC Sochi 147.50 306*c i*PKP2 **PKPbc 15 22 11.1 0.0**
SOC *e* 15 25 35.6
SOC *e*SSS SSS 15 50 09.5
SOC 16 19 44.4
SOC pmax pmax
comp=Z,140nm,1.0s
FOO Floro 147.65 358 *e*PKPdf **PKPdf 15 22 09.2 +1.1**
NB2 NORSAR Subarra147.77 353 PKP **PKPbc 15 22 10.1 -1.2**
comp=Z,130nm,1.1s,baz=11,slow=2.9
NB2 NORSAR Subarra147.77 353 PKP **PKPbc 15 22 10.1 -1.2**
baz=11,slow=2.9
NOA NORSAR Array B 147.77 353 PKP **PKPdf 15 22 07.7 -0.7**
comp=Z,28nm,1.1s,baz=6.3,slow=4.0,SNR=39
NOA PKPbc **PKPbc 15 22 10.4 -0.9**
comp=Z,50nm,0.8s,baz=16,slow=4.5,SNR=47
MZRK Al-Mazaregh 147.78 292 *e*P **PKPab 15 22 14.4 -0.1**
MACK Trabzon 148.00 301 *i* P **PKPbc 15 22 12.9 +0.3**
HYA Hoyanger 148.04 357 *e*PKPdf **PKPdf 15 22 10.1 +1.3**
HYA IAmb IAmb 15 22 25.8
comp=Z,51nm,0.9s
SFNV Sufian 148.20 293 *e*P **PKPbc 15 22 14.6 +1.3**
SUE Sulen 148.20 358 *e*PKPdf **PKPab 15 22 13.8 -1.5**
TNCL Tunceli-Merkez 148.44 298 *i* P **PKPbc 15 22 14.9 +1.0**
KELT Kelkit 148.51 300 *i* P **PKPbc 15 22 14.4 +0.3**
ANN Anapa 148.75 309 *i* PKP2 **PKPbc 15 22 14.7 +0.4**
ANN *e* 15 25 43.7
ANN pmax pmax
comp=Z,228nm,1.0s
ASK Askoy 148.76 358 *e*PKPdf **PKPbc 15 22 15.4 +1.6**
BER Bergen 148.86 358 *e*PKPdf **PKPbc 15 22 14.0 -0.1**
OSL Oslo 148.91 353 *e*PKPdf **PKPbc 15 22 14.4 +0.2**
OSL IAmb IAmb 15 22 18.0
comp=Z,138nm,1.5s
IDID Didziasalis 148.93 334 *e*P **PKPbc 15 22 13.6 -0.8**
IDID IAmb IAmb 15 22 18.8
comp=Z,48nm,0.9s
ISAL Salakas 148.97 334 *e*P **PKPbc 15 22 13.9 -0.6**
ISAL IAmb IAmb 15 22 19.0
comp=Z,62nm,0.9s
LRW Lerwick 149.01 4 *e*PKPdf **PKPbc 15 22 13.0 -1.4**

MICGM Minsk 149.05 332⇓*e*PKP **PKPbc 15 22 14.0 -0.7**
MICGM PKPM 15 22 15.0
comp=Z,0.3nm,1.4s
MICGM *e*PP **PP 15 25 43.0 -2.8**
MICGM *e*SS SS 15 45 20.0 +24
MICGM *e*SSS SSS 15 50 40.0
MICGM *e*LR LR 16 16 36.0
MICGM LRM MLR 16 24 44.0
comp=Z,3.5nm,22.0s
MNK Minsk 149.05 332⇓*e*PKP2 **PKPbc 15 22 14.0 -0.7**
MNK *e* 15 25 43.0
MNK pmax pmax
comp=Z,320nm,1.4s
KSRV Kasrt alli 149.11 292 *e*P **PKPbc 15 22 16.4 +0.8**
GRSN GIRESUNGRSN 149.12 302 *i* P **PKPdf 15 22 13.0 +1.7**
NACGM Naroch 149.21 333 *e*P **PKPbc 15 22 14.0 -1.1**
NACGM *e*LR LR 16 17 40.0
NACGM LRM MLR 16 23 52.0
comp=Z,4.2nm,24.0s
KEMA Kemaliye 149.22 298 *i* P **PKPbc 15 22 16.5 +0.7**
ODD1 Odda 149.27 356 *e*PKPdf **PKPbc 15 22 14.7 -0.5**
SUSE Susehri 149.30 300 *i* P PKPab 15 22 31.6 +11
KONO Kongsberg 149.31 353 *e*PKPdf **PKPbc 15 22 14.5 -0.7**
KONO IAmb IAmb 15 22 24.7
comp=Z,50nm,0.8s
KONO Kongsberg 149.31 353⇑*e*PKIKP **PKPbc 15 22 13.5 -1.7**
KONO MLR MLR
comp=Z,6µm,19.0s
KONO Kongsberg 149.31 353 *e*PKPbc **PKPbc 15 22 14.5 -0.7**
KONO *e*PKPab **PKPab 15 22 20.6 +0.8**
KONO LR LR
comp=Z,2µm,20.0s
ATAB Bozova 149.58 295 *i* P **PKPbc 15 22 17.0 +0.3**
BLS5 Blasjo 149.77 357 *e*PKPdf **PKPbc 15 22 17.9 +1.4**
KMY Karmoy 150.03 358 *e*PKPdf **PKPbc 15 22 17.0 0.0**
STAV Stavanger 150.29 357 *e*PKPdf **PKPbc 15 22 17.5 -0.1**
ZALF Zalf 150.49 286 *e*P **PKPbc 15 22 20.0 +1.0**
ROOS tl_alroos 150.55 288 *e*P **PKPbc 15 22 20.9 +1.7**
CUALT Altinyayla-SIV 150.56 299 *i* P **PKPbc 15 22 19.6 +0.5**
RABH Abou Rabah 150.62 289 *e*P PKPab 15 22 34.4 +8.1
HOMB Homborsund 150.77 354 *e*PKPdf **PKPbc 15 22 17.0 -1.8**
SNART Snartemo 150.81 355 *e*PKPdf **PKPbc 15 22 18.4 -0.5**
ASF Jabal al Asfar 150.82 284 PKPbc **PKPbc 15 22 19.8 -0.1**
comp=Z,43nm,1.1s,baz=105,slow=2.3,SNR=5.4
KAMA Osmaniye 150.90 295 *i* P **PKPbc 15 22 20.2 +0.2**
SIM Simferopol' 150.92 311*c i*PKIKP **PKPbc 15 22 19.8 +0.2**
SIM pmax pmax
comp=Z,145nm,0.8s
AKASG Malin Array Be 150.94 325 PKP **PKPdf 15 22 12.6 -1.1**
comp=Z,1.8nm,0.5s,baz=45,slow=3.0,SNR=7.2
AKASG PKPbc **PKPbc 15 22 18.2 -1.2**
comp=Z,46nm,0.6s,baz=45,slow=3.0,SNR=86
KIEV Kiev 150.95 325*ce*PKIKP **PKPdf 15 22 12.5 -1.2**
KIEV Kiev 150.95 325 *e*PKPbc **PKPbc 15 22 18.7 -0.7**
KIEV LR LR
comp=Z,2µm,20.0s
DRWC Darouich 150.96 293 *e*P **PKPab 15 22 26.5 -1.1**
SALA Sala 150.99 285 *e*P **PKPbc 15 22 19.7 -0.7**
ANDN Andirin 151.11 295 *i* P **PKPbc 15 22 19.5 -0.9**
BTCH Batrach 151.17 292 *e*P **PKPbc 15 22 20.9 +0.3**
MARH Ras Al Marh 151.22 288 *e*P **PKPbc 15 22 22.1 +1.0**
TOTH TOTAH 151.26 287 *e*P **PKPbc 15 22 21.1 +0.3**
SUW Suwalki 151.27 335 *e*PKP **PKPbc 15 22 19.9 -0.2**
SUW Suwalki 151.27 335 *e*PKIKP **PKPbc 15 22 19.9 -0.2**
HAWK Haweek 151.28 289 *e*P **PKPbc 15 22 21.5 +0.6**
KPL Plockton 151.30 10 *e*PKPdf **PKPbc 15 22 19.3 -0.7**
BIDA Albida 151.33 290 *e*P **PKPbc 15 22 20.8 -0.3**
QASN Qassioun 151.39 287 *e*P **PKPbc 15 22 20.8 -0.4**
SACV Santiago Islan 151.59 114 PFAKE 15 22 30.0 -0.6
SACV LR LR
comp=Z,816nm,20.0s
TCHB Talchebab 151.63 285 *e*P **PKPbc 15 22 22.4 +0.8**
HWQ Hawqa 151.66 289 *e*P **PKPbc 15 22 22.3 +0.5**
BHL Bhannes 151.91 288 *e*P **PKPbc 15 22 23.3 +0.9**
DQRL Deir Qamar 151.98 287 *e*P **PKPbc 15 22 23.3 +0.7**
GULE Gulek 152.39 295 *i* P **PKPbc 15 22 25.3 +1.9**
ILGA Ilgaz 152.45 303 *i* P **PKPbc 15 22 20.8 -2.8**
MUD Monsted U'grnd 152.49 353 *i* P **PKPbc 15 22 23.7 +0.9**
MUD Monsted U'grnd 152.49 353 *i* PKIKP **PKPbc 15 22 23.7 +0.9**
BSD Bornholm Skovb 152.80 345 *i* P **PKPbc 15 22 24.1 +0.6**
BSD Bornholm Skovb 152.80 345 *i* PKIKP **PKPbc 15 22 24.1 +0.6**
BRTR Keskin Array B 152.83 301 PKP **PKPdf 15 22 16.9 -0.3**
comp=Z,3.0nm,0.9s,baz=132,slow=1.8,SNR=11
BRTR PKPbc **PKiKP 15 22 24.4 -0.1**
comp=Z,10nm,0.8s,baz=134,slow=3.6,SNR=18
SORM Soroca 152.91 321⇓*i*P **PKPdf 15 22 17.4 +0.6**
SORM Soroca 152.91 321 ⇓PKIKP **PKPdf 15 22 17.4 +0.6**
KIS Kishinev 153.28 319 *e*PKP **PKPdf 15 22 13.0 -4.3**
KIS *e*SKKS 15 33 02.0
KIS *e*L L 16 17 20.0
KIS LRM MLR 16 34 52.0
comp=Z,3µm,20.0s
KIS Kishinev 153.28 319 *e*PKIKP **PKPdf 15 22 13.0 -4.3**
KIS *e* 15 22 20.0
KIS *i* 15 22 24.0
KIS *i* 15 22 32.0
KIS MLR MLR
comp=Z,2µm,19.0s
KIS MLR MLR
comp=N,3µm,20.0s
KIS MLR MLR
comp=Z,3µm,20.0s
ANTO Ankara 153.43 301 *e*PKIKP **PKPdf 15 22 17.7 -0.2**
ANTO *e* 15 22 25.5
ANTO MLR MLR
comp=Z,1µm,20.0s
ANTO Ankara 153.43 301 P **PKPdf 15 22 18.6 +0.6**
SNR=23
ANTO Ankara 153.43 301 *e*PKPdf **PKPdf 15 22 17.7 -0.2**
ANTO *e*PKPbc **PKPbc 15 22 25.5 -0.1**
ANTO LR LR
comp=Z,1µm,20.0s
ESK Eskdalemuir 153.59 8 PFAKE 15 22 30.0 +4.7
ESK LR LR
comp=Z,3µm,20.0s
CSS Mathiatis 153.79 290 *e*PKPbc **PKPbc 15 22 25.7 -0.7**
CSS LR LR
comp=Z,1µm,20.0s
LVV L'vov 154.03 328 *e*PKIKP **PKPdf 15 22 17.7 -0.6**
LVV MLR MLR
comp=Z,4µm,23.0s
LVV MLR MLR
comp=N,3µm,22.0s
LVV MLR MLR
comp=E,2µm,24.0s
TLCR 154.21 315⇑*i*P **PKPbc 15 22 27.0 +0.1**
TLCR 154.21 315 ⇑PKIKP **PKPbc 15 22 27.0 +0.1**
GAZI Gazipasa 154.49 293 *i* P **PKPbc 15 22 26.7 -1.1**
CFR Carcaliu 154.63 316⇑*i*P **PKPdf 15 22 21.9 +2.6**
CFR Carcaliu 154.63 316 ⇑PKIKP **PKPdf 15 22 21.9 +2.6**
TESR Tescani 154.79 320⇓*i*P **PKPdf 15 22 23.0 +3.5**
CMLA Cha da Macela 154.80 63 PFAKE 15 22 30.0 +1.5
CMLA LR LR
comp=Z,3µm,19.0s
TIRR Tirgusor 154.81 314⇑*i*P **PKPdf 15 22 18.6 -1.0**
TIRR Tirgusor 154.81 314 ⇑PKIKP **PKPdf 15 22 18.6 -1.0**
BURAR Bucovina Array 154.91 323⇑*i*P **PKPbc 15 22 24.6 -3.9**
BURAR Bucovina Array 154.91 323 ⇑PKIKP **PKPbc 15 22 24.6 -3.9**
TLB Topalu 154.98 314⇑*i*P **PKPbc 15 22 25.1 -3.5**
TLB Topalu 154.98 314 ⇑PKIKP **PKPbc 15 22 25.1 -3.5**
HARR Harsova 155.00 315⇑*i*P **PKPbc 15 22 30.4 +1.8**
HARR Harsova 155.00 315 ⇑PKIKP **PKPbc 15 22 30.4 +1.8**
PLOR Plostina 155.16 318⇓*i*P **PKPdf 15 22 18.1 -2.0**
PLOR Plostina 155.16 318 ⇓PKIKP **PKPdf 15 22 18.1 -2.0**
GRER 155.23 317⇓*i*P PKPdf 15 22 31.6 +11
PSN Preselentsi 155.32 312 *e*P **PKPab 15 22 46.1 +0.5**
KOLS Kolonicke sedl 155.47 328 *e*PKIKP **PKPdf 15 22 20.6 +0.2**
KOLS *e* 15 22 46.0
KOLS Kolonicke sedl 155.47 328 *e*PKP **PKPdf 15 22 20.6 +0.2**
KOLS *e* 15 22 46.0
KOLS *e*L L 15 29 20.3
OJC Ojcow 155.54 333 *e*PKP **PKPdf 15 22 20.1 -0.3**
OJC Ojcow 155.54 333 *e*PKIKP **PKPdf 15 22 20.1 -0.3**
STHS Stebnicka Huta 155.57 330 *e*PKIKP **PKPdf 15 22 21.5 +1.0**
STHS Stebnicka Huta 155.57 330 *e*PKP **PKPdf 15 22 21.5 +1.0**
STHS *e* 15 22 47.8
ISR Istrita 155.62 317⇓*i*P PKPdf 15 22 29.5 +8.7
ISR Istrita 155.62 317 ⇓PKIKP PKPdf 15 22 29.5 +8.7
UZH Uzhgorod 155.68 328 *e*PKIKP **PKPdf 15 22 20.1 -0.5**
UZH *i* 15 22 26.1
UZH *e* 15 22 46.3
UZH MLR MLR

comp=N,950nm,20.0s
UZH MLR MLR
comp=E,600nm,20.0s
UZH MLR MLR
comp=Z,500nm,20.0s
ARCR ARCALIA 155.70 323 ⇓ *i*P **PKPab 15 22 48.9 +1.8**
BMR Baia Mare 155.76 325 ⇑ *i*P PKPdf 15 22 28.9 +8.1
BMR Baia Mare 155.76 325 ⇑ PKIKP PKPdf 15 22 28.9 +8.1
MLR Muntele Rosu 155.77 318 PKP **PKPdf 15 22 20.9 -0.1**
comp=Z,1.0nm,1.1s,baz=358,slow=2.5,SNR=4.2
MLR PKPab **PKPab 15 22 47.3 -0.4**
comp=Z,4.5nm,1.0s,baz=317,slow=3.8,SNR=9.5
MLR Muntele Rosu 155.77 318 ⇑ *i*P **PKPdf 15 22 24.7 +3.6**
LIC Lamto 155.83 160 *e*P PKPpre 15 22 05.4
comp=Z,62nm,1.5s
CRVS Cervenica-Dubn 155.86 329 *e*PKIKP **PKPdf 15 22 21.0 +0.1**
CRVS *e* 15 22 47.9
CRVS *e* 15 26 24.6
CRVS Cervenica-Dubn 155.86 329 *e*PKP **PKPdf 15 22 21.0 +0.1**
CRVS *e* 15 22 47.9
CRVS *e*PP **PP 15 26 24.6 0.0**
TRPA Tarpa 155.92 327 *e*pPKiKP **PKPab 15 22 48.6 +0.6**
NIE Niedzica 155.97 332 *e*PKP **PKPdf 15 22 22.2 +1.1**
NIE Niedzica 155.97 332 *e*PKIKP **PKPdf 15 22 22.2 +1.1**
PRD Provadia 156.05 312 *e*P **PKPab 15 22 42.9 -5.8**
KiC Kosan Boka 156.05 161 *e*P PKPpre 15 22 08.6
comp=Z,90nm,1.0s
TIC Toumodi 156.24 160 *e*P PKPpre 15 22 08.0
KSP Ksiaz 156.27 339 *e*PKP **PKPdf 15 22 21.7 +0.4**
KSP Ksiaz 156.27 339 *e*PKIKP **PKPdf 15 22 21.7 +0.4**
DBIC Dimbokro 156.31 160 PKP **PKPdf 15 22 22.9 +0.4**
comp=Z,5.0nm,0.9s,baz=206,slow=5.5,SNR=1.9
DBIC Dimbokro 156.31 160 PKIKP **PKPdf 15 22 23.0 +0.4**
DBIC pmax pmax
comp=Z,5.0nm,0.9s
VOIR 156.32 319 ⇓ *i*P PKPdf 15 22 33.8 +12
VOIR 156.32 319 ⇓ PKIKP PKPdf 15 22 33.8 +12
OKC Ostrava-Krasne 156.48 335 *e*PKPDF **PKPdf 15 22 22.5 +0.8**
OKC *e*PKPAB **PKPab 15 22 49.4 -0.9**
OKC *ex* x 15 22 59.2
OKC AMS AMS 16 34 00.0
comp=Z,1μm,21.6s
OKC Ostrava-Krasne 156.48 335 *e*PKIKP **PKPdf 15 22 22.5 +0.8**
OKC *e* 15 22 49.4
OKC MLR MLR
comp=Z,1μm,21.6s
LANS Liptovska Anna 156.52 332 *e*PKIKP **PKPdf 15 22 22.7 +0.9**
LANS Liptovska Anna 156.52 332 *e*PKP **PKPdf 15 22 22.7 +0.9**
LANS *e* 15 22 51.9
ARR Arges 156.60 319 ⇓ *i*P **PKPdf 15 22 22.6 +0.5**
KECS Kecovo 156.60 330 *e*PKP **PKPab 15 22 50.3 -0.6**
UPC Upice 156.65 339 *e*PKPDF **PKPdf 15 22 21.9 0.0**
UPC *e*PKPAB **PKPab 15 22 51.8 +0.8**
UPC AMS AMS 16 34 40.0
comp=Z,3μm,21.4s
UPC Upice 156.65 339 *e*PKIKP **PKPdf 15 22 21.9 0.0**
UPC MLR MLR
comp=Z,3μm,21.4s
DPC Dobruska-Polom 156.68 338 *e*PKPDF **PKPdf 15 22 22.1 +0.1**
DPC *e*PKPAB **PKPab 15 22 51.6 +0.4**
DPC *ex* x 15 23 01.0
DPC AMS AMS 16 34 10.0
comp=Z,2μm,21.9s
DPC Dobruska-Polom 156.68 338 *e*PKIKP **PKPdf 15 22 22.1 +0.1**
DPC MLR MLR
comp=Z,2μm,21.9s
DRGR 156.75 324 ⇑ *i*P **PKPdf 15 22 23.6 +1.4**
DRGR 156.75 324 ⇑ PKIKP **PKPdf 15 22 23.6 +1.4**
MORC Moravsky Berou 156.75 336 ⇓ *i*P **PKPdf 15 22 23.1 +1.0**
MORC Moravsky Berou 156.75 336 ⇓ PKIKP **PKPdf 15 22 23.1 +1.0**
CLL Collm 156.76 344 *e*PKPdf **PKPdf 15 22 22.0 0.0**
comp=Z,47nm,2.4s
CLL *e*PKPdiff **pPKPdf 15 22 32.0 +2.0**
comp=Z,17nm,1.2s
CLL *i* 15 22 43.3
CLL *i* PKPab **PKPab 15 22 50.7 -0.8**
comp=Z,37nm,1.0s
CLL *i* pPKPab **pPKPab 15 22 57.6 -1.7**
CLL *e*PP **PP 15 26 30.0 +0.8**
CLL *e*SS SS 15 46 24.0 +4.4
CLL *e*SSS SSS 15 52 18.0
CLL *e*SSSS 15 57 00.0
CLL Collm 156.76 344 *e*PKIKP **PKPdf 15 22 22.0 0.0**
CLL *e* 15 22 32.0
CLL pmax pmax
comp=Z,47nm,2.4s
CLL pmax pmax
comp=Z,17nm,1.2s
CLL pmax pmax
comp=Z,37nm,1.0s
KRLC Kraliky 156.77 337 *e*PKPDF **PKPdf 15 22 22.6 +0.5**
KRLC *e*PKPAB **PKPab 15 22 51.1 -0.5**
KRLC *ex* x 15 23 01.3
KRLC Kraliky 156.77 337 *e*PKIKP **PKPdf 15 22 22.6 +0.5**
BRG Berggiesshubel 156.92 342 *e*PKP **PKPdf 15 22 22.1 -0.1**
comp=Z,20nm,1.6s
BRG *i* 15 22 50.9
comp=Z,37nm,1.2s
comp=N,2μm,22.2s
comp=E,2μm,21.1s
comp=Z,1μm,20.4s
BRG Berggiesshubel 156.92 342 *e*PKIKP **PKPdf 15 22 22.1 -0.1**
BRG pmax pmax
comp=Z,20nm,1.6s
BRG MLR MLR
comp=N,2μm,22.2s
BRG MLR MLR
comp=E,2μm,21.1s
BRG MLR MLR
comp=Z,1μm,20.4s
SZH Strazhica 156.96 313 *e*P **PKPab 15 22 53.1 +0.4**
LOT Lotru 157.04 320 ⇑ *i*P **PKPdf 15 22 21.6 -1.1**
PVCC Panska Ves 157.06 341 AMS AMS 16 35 00.0
comp=Z,3μm,21.0s
DEV Deva 157.24 322 ⇓ *i*P **PKPdf 15 22 22.9 +0.1**
DEV Deva 157.24 322 ⇓ PKIKP **PKPdf 15 22 22.9 +0.1**
PSZ Piszkesteto 157.29 330 ⇓ *i*P **PKPdf 15 22 23.9 +1.0**
PSZ Piszkesteto 157.29 330 ⇓ PKIKP **PKPdf 15 22 23.9 +1.0**
PSZ Piszkesteto 157.29 330 PFAKE 15 22 30.0 +7.1
PSZ LR LR
comp=Z,3μm,21.0s
VYHS Vyhne 157.29 332 *e*PKIKP **PKPdf 15 22 23.3 +0.5**
VYHS *e* 15 26 29.9
VYHS Vyhne 157.29 332 *e*PKP **PKPdf 15 22 23.3 +0.5**
VYHS *e* 15 22 53.9
VYHS *e* 15 23 02.9
VYHS *e*PP **PP 15 26 29.9 -2.6**
VYHS *e*L L 15 31 38.9
VRAC Vranov 157.48 336 ⇓ *i*P PKPdf 15 22 31.2 +8.2
VRAC Vranov 157.48 336 ⇓ PKIKP PKPdf 15 22 31.2 +8.2
GOPC GO Pecny, Ondr 157.54 340 *e*PKPAB **PKPab 15 22 54.7 -0.2**
GOPC AMS AMS 16 31 10.0
comp=Z,3μm,23.3s
GOPC GO Pecny, Ondr 157.54 340 *e*PKP2 **PKPab 15 22 54.7 -0.2**
GOPC MLR MLR
comp=Z,3μm,23.3s
PRU Pruhonice 157.55 340 *e*PKPAB **PKPab 15 22 54.7 -0.2**
PRU *ep*PKP **pPKPab 15 23 03.0 +0.2**
PRU AMS AMS 16 31 00.0
comp=Z,3μm,22.5s
PRU Pruhonice 157.55 340 *e*PKP2 **PKPab 15 22 54.7 -0.2**
PRU MLR MLR
comp=Z,3μm,22.5s
SIRR Siria 157.64 324 ⇑ *i*P **PKPdf 15 22 23.2 -0.1**
TREC Trest 157.87 338 *e*PKPAB **PKPab 15 22 57.0 +0.6**
TREC AMS AMS 16 30 10.0
comp=Z,3μm,22.6s
TREC Trest 157.87 338 *e*PKP2 **PKPab 15 22 57.0 +0.6**
TREC MLR MLR
comp=Z,3μm,22.6s
NKC Novy Kostel 157.89 344 *e*PKPAB **PKPab 15 22 56.1 -0.3**
NKC *ep*PKP **pPKPab 15 23 03.4 -0.9**
NKC AMS AMS 16 34 20.0
comp=Z,4μm,20.5s
NKC Novy Kostel 157.89 344 *e*PKP2 **PKPab 15 22 56.1 -0.3**
NKC MLR MLR
comp=Z,4μm,20.5s
BZS Buzias 158.10 323 ⇑ *i*P **PKPdf 15 22 22.3 -1.5**
BZS Buzias 158.10 323 ⇑ PKIKP **PKPdf 15 22 22.3 -1.5**
MPEP Malo Peshtene 158.27 316 *e*P **PKPab 15 22 58.6 +0.3**
CSKK Cs˙‡kako 158.42 331 *ep*PKPdf **PKPab 15 22 58.0 -0.8**
HGN Heimansgroeve 158.43 355 *e*L L 15 25 39.2
comp=Z,1μm,22.0s
PGB Panagyurishte 158.44 314 *e*P **PKPab 15 22 59.5 +0.3**
RZN Rozhen 158.51 311 *e*P **PKPab 15 22 59.1 -0.6**
MDVR Moldovita 158.59 321 ⇑ *i*P **PKPdf 15 22 24.4 -0.1**
KHC Kasperske Hory 158.60 341 *e*PKPDF **PKPdf 15 22 24.0 -0.4**
KHC *e*PKPAB **PKPab 15 22 59.6 +0.1**
KHC *ex* x 15 23 08.9
KHC AMS AMS 16 31 50.0
comp=Z,2μm,21.2s
KHC Kasperske Hory 158.60 341 *e*PKIKP **PKPdf 15 22 24.0 -0.4**
KHC *e* 15 22 59.6
KHC MLR MLR
comp=Z,2μm,21.2s
KHC Kasperske Hory 158.60 341 *e*PKPdf **PKPdf 15 22 22.7 -1.7**
SNF Seneffe 158.78 358 PKPab **PKPab 15 23 00.1 -0.1**
BCLA Clavier 158.82 356 PKPab **PKPab 15 22 59.7 -0.6**
GERES GERESS Array B 158.82 340 PKP **PKPdf 15 22 23.9 -0.8**
comp=Z,2.3nm,0.9s,baz=90,slow=2.7,SNR=14
GERES PKPab **PKPab 15 22 58.5 -2.1**
comp=Z,3.1nm,0.7s,baz=22,slow=1.4,SNR=4.5
GERES PP **PP 15 26 43.3 +2.6**
comp=Z,1.6nm,1.0s,baz=46,slow=5.6,SNR=2.0
CONA Conrad Observa 158.91 335 *i* PKPdf **PKPdf 15 22 24.5 -0.4**
comp=Z,8.6nm,1.2s
CONA *i* PKPab **PKPab 15 23 01.2 +0.2**
comp=Z,70nm,1.5s,SNR=10
VTS Vitosha 159.02 315 ⇓ *i*P **PKPdf 15 22 27.4 +2.1**
VTS Vitosha 159.02 315 ⇓ PKIKP **PKPdf 15 22 27.4 +2.1**
VTS Vitosha 159.02 315 *e*P **PKPab 15 23 02.1 +0.3**
DOU Dourbes 159.18 357 PKPab **PKPab 15 23 00.3 -1.6**
KKB Krupnik 159.48 313 *e*P **PKPab 15 23 04.2 +0.5**
WLF Walferdange 159.50 354 PKPab **PKPab 15 23 02.8 -0.6**
WLF Walferdange 159.50 354 PFAKE 15 22 40.0 +15
WLF LR LR
comp=Z,3μm,21.0s
MOA Molln 159.53 338 *i* PKPdf **PKPdf 15 22 24.8 -0.7**
comp=Z,3.5nm,1.0s
MOA *i* PKPab **PKPab 15 23 03.8 +0.2**
comp=Z,40nm,1.3s,SNR=11
ARSA Arzberg 159.60 335 *i* PKPdf **PKPdf 15 22 25.0 -0.7**
comp=Z,5.7nm,1.1s
ARSA *i* PKPab **PKPab 15 23 03.9 0.0**
comp=Z,34nm,1.4s,SNR=7.7
SANT Santorini 159.90 296 PFAKE 15 22 40.0 +14
SANT LR LR
comp=Z,2μm,20.0s
LANF Langenberg 159.99 351 PKP **PKPdf 15 22 26.2 +0.2**
SOKA Soboth 160.27 335 *i* PKPdf **PKPdf 15 22 25.7 -0.8**
comp=Z,4.8nm,1.1s
SOKA *i* PKPab **PKPab 15 23 06.7 -0.3**
comp=Z,60nm,1.3s,SNR=11
KBA Koelnbreinsper 160.50 339 *i* PKPdf **PKPdf 15 22 26.1 -0.8**
comp=Z,8.0nm,1.0s
KBA *i* PKPab **PKPab 15 23 08.8 +0.7**
comp=Z,51nm,1.6s
BFO Black Forest 160.54 349 PFAKE 15 22 40.0 +13
BFO LR LR
comp=Z,2μm,20.0s
OBKA Obir 160.59 336 *i* PKPab **PKPab 15 23 07.8 -0.6**
comp=Z,16nm,1.0s,SNR=5.0
WATA Walderalm 160.79 342 *i* PKPdf **PKPdf 15 22 25.9 -1.1**
comp=Z,3.7nm,1.0s
WATA *i* PKPab **PKPab 15 23 09.1 -0.1**
comp=Z,35nm,1.3s
MYKA Terra Mystica 160.80 337 *i* PKPdf **PKPdf 15 22 26.5 -0.5**
comp=Z,3.1nm,0.9s
MYKA *i* PKPab **PKPab 15 23 08.5 -0.7**
comp=Z,38nm,1.2s,SNR=8.8
WTTA Wattenberg 160.84 342 *i* PKPdf **PKPdf 15 22 27.1 -0.1**
comp=Z,7.2nm,1.2s
WTTA *i* PKPab **PKPab 15 23 09.8 +0.2**
comp=Z,37nm,1.6s
RETA Reutte 160.86 344 *i* PKPdf **PKPdf 15 22 26.6 -0.5**
comp=Z,4.4nm,1.2s
RETA *i* PKPab **PKPab 15 23 09.1 -0.4**
comp=Z,20nm,1.1s
VNDS Vrh nad Dolski 160.88 335 *i* PKPdf **PKPdf 15 22 26.9 -0.2**
VNDS *e*PKPab **PKPab 15 23 08.9 -0.6**
MOTA Moosalm 160.91 343 *i* PKPdf **PKPdf 15 22 26.3 -0.9**
comp=Z,3.2nm,0.8s
MOTA *i* PKPab **PKPab 15 23 09.3 -0.5**
comp=Z,14nm,0.9s
THEF They Montfort 160.94 354 PKP **PKPdf 15 22 26.9 -0.2**
LJU Ljubljana 160.99 335 *e*PKPdf **PKPdf 15 22 27.0 -0.1**
LJU *e*PKPab **PKPab 15 23 09.3 -0.7**
ABTA Abfaltersbach 161.06 340 *i* PKPdf **PKPdf 15 22 26.3 -1.0**
comp=Z,11nm,1.7s
ABTA *i* PKPab **PKPab 15 23 09.5 -0.9**
comp=Z,28nm,1.2s
BOJS Bojanci 161.16 333 *e*PKPdf **PKPdf 15 22 26.3 -1.0**
BOJS *e*PKPab **PKPab 15 23 10.1 -0.6**
MOF Molkenrain 161.19 351 PKP **PKPdf 15 22 27.3 -0.1**
DAVA Damuels 161.25 345 *i* PKPdf **PKPdf 15 22 27.7 +0.1**
comp=Z,8.6nm,1.2s
DAVA *i* PKPab **PKPab 15 23 10.9 -0.4**
comp=Z,16nm,0.8s
FETA Feichten 161.30 343 *i* PKPdf **PKPdf 15 22 27.4 -0.2**
comp=Z,14nm,1.3s
FETA *i* PKPab **PKPab 15 23 11.0 -0.5**
comp=Z,21nm,0.9s
PDG Podgorica 161.47 319 ⇓ *i*P **PKPdf 15 22 27.3 -0.4**
DAVOX Davos/Dischmat 161.73 345 PKP **PKPdf 15 22 27.5 -0.6**
comp=Z,6.3nm,1.1s,baz=12,slow=2.0,SNR=9.1
DAVOX PKPab **PKPab 15 23 12.9 -0.5**
comp=Z,12nm,0.7s,baz=304,slow=5.3,SNR=8.1
TIR Tirane 161.78 316 ⇓ *i*P **PKPdf 15 22 25.5 -2.6**
TIR Tirane 161.78 316 ⇓ PKIKP **PKPdf 15 22 25.5 -2.6**
TIR Tirane 161.78 316 PFAKE 15 22 40.0 +12
TIR LR LR
comp=Z,4μm,21.0s
TUE Stuetta 162.14 346 *e*PKPdf **PKPdf 15 22 27.6 -1.0**
TUE LR LR
comp=Z,3μm,19.0s
TORD Torodi Ar. Bea 163.90 175 PKP **PKPdf 15 22 30.3 -0.6**
comp=Z,8.4nm,1.0s,baz=133,slow=0.8,SNR=26
TORD PKPab **PKPab 15 23 24.5 +1.1**
comp=Z,9.3nm,1.0s,baz=170,slow=2.2,SNR=4.0
SSB Saint Sauveur 163.99 356 *e*PKIKP **PKPdf 15 22 30.3 +0.1**
SSB MLR MLR
comp=Z,3μm,19.0s
SSB Saint Sauveur 163.99 356 *e*PKPdf **PKPdf 15 22 30.3 +0.1**
SSB LR LR
comp=Z,3μm,19.0s
BNI Bardonecchia 164.00 351 PFAKE 15 22 40.0 +10
BNI LR LR
comp=Z,3μm,22.0s
VLC Villacollemand 164.04 340 PFAKE 15 22 40.0 +10
VLC LR LR
comp=Z,1μm,20.0s
AQU L'Aquila 164.50 330 PFAKE 15 22 40.0 +9.2
AQU LR LR
comp=Z,3μm,20.0s
TIP Timpagrande 164.98 315 *e*PKPdf **PKPdf 15 22 30.8 -0.6**
TIP LR LR
comp=Z,4μm,22.0s
CUC Castrocucco 165.03 319 PFAKE 15 22 40.0 +8.7
CUC LR LR
comp=Z,2μm,19.0s
POLO Lamas de Olo 165.06 33 *e*PKPdf PKPdf 15 22 45.9 +15
POLO Lamas de Olo 165.06 33 *e*PKPab **PKPab 15 23 27.0 -1.1**
PVRL Vila Real 165.17 33 *e*PKPdf **PKPdf 15 22 32.8 +1.4**
PBRG Braganca 165.20 30 *e*PKPdf **PKPdf 15 22 34.5 +3.1**
PBRG Braganca 165.20 30 *e*PKPab **PKPab 15 23 29.0 +0.4**
PVIS Viseu 165.51 35 *e*PKPdf **PKPdf 15 22 33.4 +1.7**
MVO Moncorvo 165.58 32 *e*PKPdf **PKPdf 15 22 30.8 -1.0**
MVO Moncorvo 165.58 32 *e*PKPab **PKPab 15 23 30.6 +0.2**
PCAS Casmilo, Conde 165.67 38 *e*PKPdf **PKPdf 15 22 32.7 +0.9**
PCAS Casmilo, Conde 165.67 38 *e*PKPab **PKPab 15 23 30.3 -0.5**
MTE Manteigas 165.92 35 *e*PKPdf **PKPdf 15 22 32.1 0.0**
MTE Manteigas 165.92 35 *e*PKPab PKPab 15 23 41.9 +10
MTE Manteigas 165.92 35 *e*PKPdf **PKPdf 15 22 32.6 +0.6**
MTE LR LR
comp=Z,3μm,20.0s
CEL Celeste 166.07 313 PFAKE 15 22 40.0 +7.8
CEL LR LR
comp=Z,3μm,20.0s
PCBR Castelo Branco 166.37 37 *e*PKPdf **PKPdf 15 22 33.3 +1.0**
PMTG Montargil 166.51 41 *e*PKPdf **PKPdf 15 22 34.1 +1.6**
PMRV Marv??o 166.72 38 *e*PKPdf **PKPdf 15 22 33.6 +0.9**
PMRV Marv??o 166.72 38 *e*PKPab **PKPab 15 23 35.1 -0.3**
PNCL Nicolau / Gran 166.96 45 *e*PKPdf **PKPdf 15 22 34.6 +1.8**
EVO Evora 166.99 42 *e*PKPdf **PKPdf 15 22 34.7 +1.8**
EVO Evora 166.99 42 *e*PKPab PKPab 15 23 47.0 +10
PESTR Estremoz 167.01 40 *e*PKPdf **PKPdf 15 22 34.1 +1.2**
MESJ Messejana 167.32 45 *e*P **PKPdf 15 22 33.7 +0.6**
MESJ Messejana 167.32 45 *e*PKPdf **PKPdf 15 22 35.2 +2.1**
MORF Marmelete 167.37 48 *e*PKPdf **PKPdf 15 22 35.6 +2.4**
PBEJ Beja 167.41 43 *e*PKPdf **PKPdf 15 22 34.6 +1.4**
PCVE Castro Verde 167.56 45 *e*PKPdf **PKPdf 15 22 34.7 +1.4**
PBAR Barrancos 167.80 41 *e*PKPdf **PKPdf 15 22 34.4 +1.0**
PBAR Barrancos 167.80 41 *e*PKPab **PKPab 15 23 45.9 +5.7**
PBDV Barranco-do-Ve 167.87 46 *e*PKPdf **PKPdf 15 22 35.9 +2.3**
PAB San Pablo 168.09 29 *e*PKIKP **PKPdf 15 22 32.6 -1.1**
PAB MLR MLR
comp=Z,3μm,19.0s
PAB San Pablo 168.09 29 *e*PKPdf **PKPdf 15 22 32.6 -1.1**
PAB LR LR
comp=Z,3μm,19.0s
ESDC Sonseca Array 168.13 27 PKP **PKPdf 15 22 33.6 -0.1**
comp=Z,3.9nm,1.0s,baz=352,slow=2.1,SNR=18
ESDC PKPab **PKPab 15 23 40.9 -0.7**
comp=Z,1.7nm,0.7s,baz=316,slow=3.5,SNR=4.9
CLTB Caltabellotta 168.14 317 PFAKE 15 22 40.0 +6.2
CLTB LR LR
comp=Z,923nm,19.0s
WDD Wied Dalam 168.32 307 PFAKE 15 22 40.0 +6.1
WDD LR LR
comp=Z,3μm,21.0s
VSL Villasalto 168.55 335 PFAKE 15 22 40.0 +6.1
VSL LR LR
comp=Z,2μm,19.0s
RTC Rabat Centre 170.35 58 PFAKE 15 22 50.0 +15
RTC LR LR
comp=Z,12μm,20.0s
KEST Kesra 171.65 322 PKP **PKPdf 15 22 36.1 +0.2**
comp=Z,4.6nm,0.9s,baz=139,slow=1.2,SNR=4.4
KEST PKPab **PKPab 15 23 57.4 0.0**
comp=Z,24nm,1.1s,baz=73,slow=2.6,SNR=7.6
MDT Midelt 172.55 60 PKP **PKPdf 15 22 37.4 +0.9**
comp=Z,5.9nm,1.1s,baz=351,slow=4.4,SNR=6.9
TAM Tamanrasset 173.16 200 *e*PKIKP **PKPdf 15 22 38.0 +1.0**
TAM MLR MLR
comp=Z,3μm,19.0s
TAM Tamanrasset 173.16 200 *e*PKPdf **PKPdf 15 22 38.0 +1.0**
TAM LR LR
comp=Z,3μm,19.0s

*IDC **09** 15:09:35.1±1.4,29˙16S×176˙82W,h0km,mb4.2/4, mb1 4.4/4,mb1mx3.9/39,mbtmp4.2/4,Error ellipse: s-maj=51.3km s-min=28.4km az=172.0*
*ISCJB **09** 15:09:37.2±1.4,29˙57S±0˙08×176˙8W±0˙1,h31km, mb4.2/4,Error ellipse: s-maj=16.9km s-min=11.4km az=167.5*
ISC 09 15:09:39.5±1.2,29˙5S±0˙1×176˙9W±0˙1,h31km,n9, σ1§35/11,mb4.2/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.94**	**283**	Pn	**Pb**	**15 09 57.3**	**+0.2**
	998nm,0.3s,baz=78,slow=19,SNR=4.4						
RAO				Sn	**Sn**	**15 10 09.0**	**+0.2**
	2μm,0.3s,baz=23,slow=20,SNR=7.2						
URZ	**Urewera**	**10.10**	**208**	Pn	**Pn**	**15 12 00.1**	**-2.2**
	0.6nm,0.3s,baz=108,slow=20,SNR=1.9						
URZ				Sn	**Sn**	**15 13 56.3**	**+1.9**
	1.6nm,0.3s,baz=90,slow=19,SNR=3.1						
CTA	**Charters Tower**	**34.63**	**277**	P	**P**	**15 16 26.0**	**-0.2**
	4.9nm,0.8s,baz=94,slow=13,SNR=2.6						
ASAR	**Alice Springs**	**44.15**	**265**	P	**P**	**15 17 45.5**	**+0.1**
	2.0nm,0.7s,baz=102,slow=6.8,SNR=4.5						
WRA	**Warramunga Arr**	**45.05**	**271**	P	**P**	**15 17 52.6**	**-0.2**
	1.9nm,0.4s,baz=109,slow=6.2,SNR=10						
PETK	**Petropavlovsk-**	**85.16**	**345**	P	**P**	**15 22 12.7**	**+0.5**
	0.8nm,0.6s,baz=111,slow=9.5,SNR=4.3						
FINES	**FINESS Array B**	**144.59**	**341**	PKP	**PKPab**	**15 29 09.8**	**-0.9**
	1.5nm,0.6s,baz=59,slow=3.9,SNR=4.3						
AKASG	**Malin Array Be**	**151.13**	**325**	PKPbc	**PKPbc**	**15 29 28.8**	**-0.3**
	1.5nm,0.5s,baz=47,slow=3.2,SNR=2.6						
TORD	**Torodi Ar. Bea**	**163.71**	**175**	PKPab	**PKPab**	**15 30 34.1**	**+2.2**
	1.0nm,1.0s,baz=144,slow=3.4,SNR=3.5						

*IDC **09** 15:10:56.3±0.8,36˙76N×141˙41E,h0km,mb3.8/7, mb1 3.9/11,mb1mx3.7/66,mbtmp3.7/11,ML3.5/3,Error ellipse: s-maj=21.7km s-min=19.2km az=89.0*
*ISCJB **09** 15:10:57.5±1.2,36˙80N±0˙04×141˙50E±0˙06,h21km±7km, mb3.8/7,Error ellipse: s-maj=8.7km s-min=5.8km az=17.8*
*JMA **09** 15:10:58.4±0.1,36˙78N×141˙42E,h33km±2km,M4.0*
JMA Felt I J1.
ISC 09 15:10:57.5±1.8,36˙83N±0˙04×141˙45E±0˙06,h6km±10km, n27,σ1§23/31,mb3.7/7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.59**	**298**	P	**Pb**	**15 11 10.2**	**-0.1**
ONAJ				*e*S	**Sb**	**15 11 18.4**	**-0.5**
JFK	**Kawauchi**	**0.71**	**320**	P	**Pb**	**15 11 12.0**	**-0.3**
JFK				S	**Sb**	**15 11 21.6**	**-0.7**
JHO	**Hitachi**	**0.74**	**254**	P	**Pg**	**15 11 11.8**	**+0.1**
JHO				S	**Sg**	**15 11 21.5**	**+0.2**
JFT	**Otama**	**1.13**	**308**	P	**Pg**	**15 11 19.1**	**0.0**
JFT				S	**Sg**	**15 11 33.7**	**-0.1**
JMM	**Marumori**	**1.17**	**333**	P	**Pg**	**15 11 19.0**	**-0.8**
JMM				S	**Sg**	**15 11 34.2**	**-0.7**
JFY	**Yanaizu**	**1.51**	**293**	P	**Pn**	**15 11 25.0**	**-0.1**
JFY				S	**Sn**	**15 11 44.1**	**-1.0**
MJAR	**Matsushiro Arr**	**2.62**	**265**	Pn	**Pn**	**15 11 40.2**	**-0.2**
	24nm,0.3s,baz=95,slow=10,SNR=153						
MJAR				Sn	**Sn**	**15 12 10.7**	**-1.8**
	15nm,0.3s,baz=88,slow=16,SNR=6.8						
MAT	**Matsushiro**	**2.62**	**265**	P	**Pn**	**15 11 40.5**	**+0.1**
MAT				S	**Sn**	**15 12 12.5**	**0.0**
JHJ	**Hachijo jima 2**	**3.94**	**201**	Pn	**Pn**	**15 11 58.1**	**-0.3**
	15nm,0.3s,baz=349,slow=20,SNR=23						
JHJ				Sn	**Sn**	**15 12 44.1**	**-0.9**
	16nm,0.3s,baz=66,slow=20,SNR=4.0						
ASAJ	**Asahikawa**	**7.34**	**6**	Pn	**Pn**	**15 12 44.1**	**-0.9**
	baz=214,slow=9.0						
ASAJ				Sn	**Sn**	**15 14 09.5**	**+0.9**
	baz=270,slow=20						
JNU	**Nakatsue**	**9.43**	**250**	Pn	**Pn**	**15 13 16.9**	**+3.0**
	0.3nm,0.3s,baz=61,slow=13,SNR=3.0						
USRK	**Ussuriysk Ar.**	**10.30**	**319**	Pn	**Pn**	**15 13 29.7**	**+4.0**
	0.2nm,0.3s,baz=119,slow=15,SNR=3.3						
KSRS	**Korea Array**	**10.82**	**277**	Pn	**Pn**	**15 13 33.9**	**+1.0**
	0.1nm,0.3s,baz=95,slow=14,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**28.02**	**120**	T	T	15 46 22.1	
	baz=313,slow=75,SNR=445						
H11N1	**WAKE ISLAND Hy**	**28.02**	**121**	T	T	15 46 20.4	
	baz=313,slow=75,SNR=479						
H11N3	**WAKE ISLAND Hy**	**28.03**	**120**	T	T	15 46 21.2	
	baz=313,slow=75,SNR=397						
H11S1	**WAKE ISLAND Hy**	**28.72**	**123**	T	T	15 46 57.5	
	baz=315,slow=76,SNR=160						
H11S3	**WAKE ISLAND Hy**	**28.72**	**123**	T	T	15 47 08.0	
	baz=315,slow=76,SNR=108						
H11S2	**WAKE ISLAND Hy**	**28.74**	**123**	T	T	15 46 56.9	
	baz=315,slow=76,SNR=95						
ZALV	**Zalesovo Beam**	**42.08**	**313**	P	**P**	**15 18 49.4**	**-0.5**
	0.8nm,0.4s,baz=102,slow=7.2,SNR=5.5						
MKAR	**Makanchi Array**	**44.26**	**302**	P	**P**	**15 19 07.2**	**-0.4**
	0.3nm,0.3s,baz=82,slow=9.2,SNR=2.9						
KURBB	**Kurchatov Arra**	**46.16**	**308**	P	**P**	**15 19 22.1**	**-0.5**
	1.1nm,0.5s,baz=82,slow=8.1,SNR=6.0						
WRA	**Warramunga Arr**	**56.86**	**188**	P	**P**	**15 20 41.9**	**-1.1**
	0.8nm,0.5s,baz=6.8,slow=7.4,SNR=8.7						
ASAR	**Alice Springs**	**60.59**	**188**	P	**P**	**15 21 07.4**	**-1.5**
	0.5nm,0.7s,baz=15,slow=8.7,SNR=3.6						
PDAR	**Pinedale Array**	**77.79**	**45**	P	**P**	**15 22 56.4**	**+0.5**
	0.2nm,0.3s,baz=339,slow=2.2,SNR=2.5						
TXAR	**Lajitas Array**	**90.22**	**52**	P	**P**	**15 23 59.9**	**+0.6**
	0.3nm,0.7s,baz=316,slow=2.5,SNR=3.4						
LPAZ	**La Paz**	**146.77**	**60**	PKPbc	**PKPbc**	**15 30 42.1**	**+0.5**
	1.3nm,0.5s,baz=357,slow=0.2,SNR=5.0						

*IDC **09** 15:15:58.6±1.4,29˙74S×176˙68W,h0km,mb4.1/5, mb1 4.2/5,mb1mx3.8/40,mbtmp4.1/5,Error ellipse: s-maj=52.6km s-min=28.0km az=170.0*
ISC 09 15:16:04.1±1.2,29˙6S±0˙3×176˙8W±0˙1,h31km,n11, σ0§78/11,mb4.1/5,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.01**	**290**	Pn	**Pn**	**15 16 22.1**	**0.0**
	268nm,0.3s,baz=61,slow=21,SNR=7.7						
RAO				Sn	**Sn**	**15 16 34.9**	**-0.3**
	829nm,0.3s,baz=32,slow=23,SNR=8.5						
STKA	**Stephens Creek**	**35.65**	**256**	P	**P**	**15 22 59.8**	**+0.4**

1.6nm,0.6s,baz=107,slow=12,SNR=2.6
ASAR Alice Springs 44.17 266 P **P** 15 24 10.3 +0.1
1.6nm,0.8s,baz=102,slow=6.5,SNR=11
WRA Warramunga Arr 45.09 271 P **P** 15 24 16.9 -0.6
2.2nm,0.9s,baz=110,slow=8.0,SNR=11
USRK Ussuriysk Ar. 87.06 326 P **P** 15 28 47.2 +0.8
1.3nm,0.8s,baz=44,slow=1.6,SNR=4.3
KLR Kul'dur 90.87 329 P **P** 15 29 05.1 +0.9
0.3nm,0.3s,baz=166,slow=5.6,SNR=3.2
KURBB Kurchatov Arra 121.27 314 PKP **PKPdf** 15 34 52.5 -1.1
0.5nm,0.8s,baz=118,slow=1.3,SNR=5.9
FINES FINESS Array B 144.74 341 PKP PKPbc 15 35 35.8 -0.2
2.2nm,0.7s,baz=79,slow=2.8,SNR=10
NOA NORSAR Array B 148.11 353 PKPbc **PKPbc** 15 35 45.0 -1.1
1.1nm,0.9s,baz=9.0,slow=3.1,SNR=2.6
AKASG Malin Array Be 151.26 324 PKPbc **PKPbc** 15 35 54.3 +0.3
1.1nm,0.4s,baz=45,slow=2.8,SNR=4.3
BRTR Keskin Array B 153.09 300 PKPbc **PKPbc** 15 35 59.0 +0.2
0.5nm,0.6s,baz=354,slow=2.9,SNR=2.8

*IDC **09** 15:16:35.2±1.4,29.°72S×176.°00W,h0km,mb4.3/8, mb1 4.4/9,mb1mx4.1/42,mbtmp4.3/9,ML3.1/1,Error ellipse: s-maj=60.4km s-min=22.0km az=151.0*
*ISCJB **09** 15:16:37.7±1.0,29.°84S±0.°10×176.°0W±0.°2,h28km, mb4.3/8,Error ellipse: s-maj=22.0km s-min=10.7km az=29.3*
ISC 09 15:16:39.4±1.0,**29.°8S**±0.°1×**176.°0W**±0.°2,**h28**km,**n14**, σ1§**06**/15,**mb4.3/8**,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**10.26 212**		Pn	**Pn**		**15 19 03.1**	**-1.6**
	0.1nm,0.3s,baz=345,slow=12,SNR=1.9							
URZ					Sn		**Sn** 15 21 00.6	**+1.9**
	4.1nm,0.3s,baz=86,slow=24,SNR=4.0							
DZM	**Mont Dzumac**	**17.57 292**		Pn	**P**		15 20 44.0	**+0.7**
	0.1nm,0.3s,baz=113,slow=17,SNR=3.6							
CTA	**Charters Tower**	**35.46 277**		P	**P**		15 23 33.8	**+0.1**
	3.1nm,0.8s,baz=104,slow=8.5,SNR=3.2							
STKA	**Stephens Creek**	**36.36 256**		P	**P**		15 23 42.0	**+0.8**
	4.3nm,0.8s,baz=111,slow=9.3,SNR=5.0							
ASAR	**Alice Springs**	**44.92 265**		P	**P**		15 24 50.8	**-1.3**
	1.3nm,0.6s,baz=95,slow=6.5,SNR=9.6							
WRA	**Warramunga Ar**	**45.86 270**		P	**P**		15 24 58.1	**-1.4**
	4.4nm,0.9s,baz=107,slow=7.8,SNR=9.5							
FITZ	**Fitzroy Crossi**	**54.14 268**		P	**P**		15 26 02.4	**+0.1**
	6.4nm,1.0s,baz=111,slow=8.6,SNR=3.6							
BBB	**Bella Bella**	**91.70 27**		P	**P**		15 29 44.8	**+1.1**
	3.1nm,0.8s,baz=298,slow=2.5,SNR=3.6							
PDAR	**Pinedale Array**	**94.45 47**		P	**P**		15 29 57.4	**+0.4**
	0.3nm,0.7s,baz=230,slow=5.6,SNR=3.6							
ILAR	**Eielson Array**	**96.91 12**		P	**P**		15 30 06.8	**-0.6**
	0.6nm,0.8s,baz=221,slow=5.3,SNR=6.1							
KURBB	**Kurchatov Arra**	**121.92 314**		PKP	**PKPdf**		15 35 30.6	**-0.1**
	0.5nm,0.7s,baz=112,slow=2.2,SNR=3.5							
FINES	**FINESS Array B**	**145.11 342**		PKPbc	**PKPbc**		15 36 12.2	**-0.8**
	1.4nm,0.7s,baz=63,slow=8.8,SNR=4.8							
NB2	**NORSAR Subarra**	**148.34 353**		PKP	**PKPbc**		15 36 22.8	**+0.3**
	comp=Z,1.2nm,0.9s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**148.34 353**		PKPbc	**PKPbc**		15 36 22.0	**-0.5**
	comp=Z,2.1nm,0.8s,baz=14,slow=2.8,SNR=3.8							

*IDC **09** 15:17:09.8±0.8,29.°38S×176.°88W,h0km,mb4.6/11, mb1 4.7/13,mb1mx4.4/41,mbtmp4.6/13,ML4.1/2,Error ellipse: s-maj=27.3km s-min=18.3km az=155.0*
*NEIC **09** 15:17:10.5±0.5,29.°55S×176.°76W,h10km,mb4.8/3,Error ellipse: s-maj=12.5km s-min=10.1km az=107.0*
*ISCJB **09** 15:17:12.6±0.6,29.°51S±0.°07×176.°86W±0.°08,h31km, mb4.7/16,Error ellipse: s-maj=10.2km s-min=10.0km az=43.0*
ISC 09 15:17:14.5±0.5,**29.°53S**±0.°07×**176.°95W**±0.°08,**h31**km,**n93**, σ1§**39**/92,**mb4.8**/16,**12C-5D**,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.89 288**		Pn	**Pn**		**15 17 31.0**	**+0.2**
	905nm,0.3s,baz=79,slow=21,SNR=4.0							
RAO					Sn		**Sn** 15 17 40.9	**-1.9**
	2µm,0.3s,baz=90,slow=20,SNR=8.4							
URZ	**Urewera**	**10.00 208**		Pn	**Pn**		15 19 35.1	**-0.9**
	1.2nm,0.3s,baz=50,slow=16,SNR=4.0							
URZ					Sn		**Sn** 15 21 25.7	**-1.4**
	6.7nm,0.3s,baz=54,slow=22,SNR=9.7							
MSVF	**Nonsavu**	**12.61 338**		*e*Pn	**Pn**		15 20 11.6	**-0.2**
	133nm,1.5s							
DZM	**Mont Dzumac**	**16.69 293**		Pn	**P**		15 21 09.6	**+1.3**
	0.3nm,0.3s,baz=101,slow=14,SNR=6.8							
RPZ	**Rata Peaks**	**17.09 211**		P	**P**		15 21 12.2	**-0.3**
	0.9nm,0.3s,baz=356,slow=13,SNR=3.0							
ARMA	**Armidale**	**27.19 260**		P	**P**		15 22 58.5	**+3.0**
	baz=27							
MGCD	**Mangrove Creek**	**27.46 254**		P	**P**		15 23 00.7	**+2.9**
	baz=27							
EIDS	**Eidsvold**	**28.62 271**		P	**P**		15 23 10.0	**+1.8**
	baz=28							
EIDS	**Eidsvold**	**28.62 271**		*e*P	**P**		15 23 07.3	**-1.0**
	33nm,1.5s							
CNB	**Canberra Magne**	**28.93 250**		P	**P**		15 23 12.2	**+1.3**
	baz=29							
CAN	**Canberra**	**29.22 250**		P	**P**		15 23 14.8	**+1.3**
	baz=29							
RMQ	**Roma**	**30.37 267**		P	**P**		15 23 27.1	**+3.4**
	baz=30,SNR=5.3							
MOO	**Moorlands**	**31.51 236**		P	**P**		15 23 34.7	**+1.1**
	baz=31							
CMSA	**Cobar Meteorol**	**32.14 257**		P	**P**		15 23 40.2	**+0.9**
	baz=32							
QLP	**Quilpie**	**34.28 265**		P	**P**		15 23 59.1	**+1.1**
	baz=34							
CTA	**Charters Tower**	**34.58 277**		P	**P**		15 24 01.8	**+1.1**
	10nm,0.8s,baz=99,slow=12,SNR=8.4							
CTA	**Charters Tower**	**34.58 277**		P	**P**		15 24 03.0	**+2.3**
	baz=34							
ARPS	**Mount Arapiles**	**35.04 247**		P	**P**		15 24 05.7	**+1.2**
	baz=35							
STKA	**Stephens Creek**	**35.57 256**		P	**P**		15 24 10.3	**+1.3**
	11nm,0.8s,baz=109,slow=11,SNR=7.9							
STKA	**Stephens Creek**	**35.57 256**		P	**P**		15 24 10.5	**+1.4**
	baz=35,SNR=5.7							
MTSU	**Mount Surprise**	**37.05 279**		P	**P**		15 24 23.3	**+1.4**
	baz=37,SNR=5.2							
HTT	**Hallett**	**37.63 253**		P	**P**		15 24 27.7	**+1.1**
	baz=37,SNR=6.3							
BBOO	**Buckleboo**	**40.09 253**		P	**P**		15 24 47.9	**+0.7**
	baz=40							
ASAR	**Alice Springs**	**44.08 266**		P	**P**		15 25 19.7	**-0.2**
	6.6nm,0.8s,baz=113,slow=8.0,SNR=18							
WR0	**Warramunga Arr**	**44.81 271**		P	**P**		15 25 25.9	**+0.2**
	baz=45							
WRA	**Warramunga Arr**	**44.99 271**		P	**P**		15 25 26.8	**-0.5**
	14nm,1.0s,baz=109,slow=7.9,SNR=15							
MTN	**Manton Dam**	**50.76 278**		P	**P**		15 26 13.3	**+1.3**
	baz=51							
KMBL	**Kambalda**	**52.16 252**		P	**P**		15 26 22.5	**+0.3**
	baz=52							
FITZ	**Fitzroy Crossi**	**53.28 269**		P	**P**		15 26 30.0	**-0.7**
	17nm,1.1s,baz=106,slow=6.4,SNR=4.8							
FITZ	**Fitzroy Crossi**	**53.28 269**		P	**P**		15 26 30.5	**-0.2**
	baz=53,SNR=3.2							
KLBR	**Kellerberrin**	**55.50 250**		P	**P**		15 26 45.9	**-0.8**
	baz=55,SNR=3.9							
CASY	**Casey**	**56.33 208**		*e*P	**P**		15 26 49.7	**-2.3**
	2.3nm,0.7s							
MUN	**Mundaring**	**56.65 249**		P	**P**		15 26 54.7	**-0.3**
	baz=56							
MBWA	**Marble Bar**	**57.23 263**		*e*P	**P**		15 26 58.1	**-1.0**
QSPA	**South Pole Qui**	**60.57 180**		*e*P	**P**		15 27 22.0	**+0.2**
	66nm,0.9s							
SYO	**Syowa Base**	**78.16 193**i		*ep*P	**P**		15 29 11.0	**+0.8**
SYO	**Syowa Base**	**78.16 193**i		*es*P	**P**		15 29 13.0	**+2.8**
JNU	**Nakatsue**	**79.53 318**		P	**P**		15 29 17.7	**-0.6**
	2.8nm,0.7s,baz=36,slow=7.1,SNR=4.2							
ASAJ	**Asahikawa**	**82.10 332**		*e*P	**P**		15 29 30.3	**-1.5**
	14nm,1.4s							
YSS	**Yuzh-Sakhalins**	**84.38 334**		P	**P**		15 29 42.8	**-0.5**
	45nm,1.3s							
PETK	**Petropavlovsk-**	**85.21 345**		P	**P**		15 29 46.7	**-0.8**
	4.8nm,0.8s,baz=100,slow=7.1,SNR=7.6							
USRK	**Ussuriysk Ar.**	**86.95 326**		P	**P**		15 29 56.7	**+0.5**
	7.0nm,0.8s,baz=135,slow=3.5,SNR=18							
KLR	**Kul'dur**	**90.76 329**		P	**P**		15 30 14.7	**+0.6**
	3.0nm,0.8s,baz=112,slow=4.7,SNR=12							
TXAR	**Lajitas Array**	**91.15 57**		P	**P**		15 30 17.4	**+0.8**
	0.4nm,0.8s,baz=208,slow=5.1,SNR=4.3							
ILAR	**Eielson Array**	**96.88 12**		P	**P**		15 30 40.1	**-1.8**
	1.1nm,1.1s,baz=216,slow=5.9,SNR=4.2							
MKAR	**Makanchi Array**	**117.92 310**		PKP	**PKPdf**		15 35 57.2	**-0.5**
	0.9nm,0.6s,baz=56,slow=2.2,SNR=5.6							
ZALV	**Zalesovo Beam**	**117.99 319**		PKP	**PKPdf**		15 35 56.7	**-0.9**
	1.3nm,0.7s,baz=107,slow=1.5,SNR=3.9							
KURK	**Kurchatov**	**121.11 314**		PKP	**PKPdf**		15 36 03.2	**-0.5**
KURBB	**Kurchatov Arra**	**121.15 314**		PKP	**PKPdf**		15 36 03.2	**-0.6**
	2.4nm,0.8s,baz=102,slow=2.0,SNR=13							
GEYT	**Alibeck**	**134.01 296**		SKPab	**SKiKP**		15 40 02.1	**-1.8**
	3.5nm,1.0s,baz=111,slow=3.2,SNR=5.7							
ARCES	**ARCESS Array B**	**137.93 348**		PKP	**PKPdf**		15 36 35.2	**+0.2**
	1.5nm,0.9s,baz=21,slow=4.4,SNR=4.0							
H10S3	**ASCENSION HYDR**	**138.10 153**		T	T		18 12 07.0	
	baz=204,slow=74,SNR=4.1							
H10S2	**ASCENSION HYDR**	**138.10 153**		T	T		18 12 05.9	
	baz=204,slow=74,SNR=3.4							
H10S1	**ASCENSION HYDR**	**138.12 153**		T	T		18 12 07.0	
	baz=204,slow=74,SNR=2.8							
H10N3	**ASCENSION HYDR**	**139.18 153**		T	T		18 13 28.0	
	baz=204,slow=75,SNR=3.2							
H10N1	**ASCENSION HYDR**	**139.18 153**		T	T		18 13 29.6	
	baz=204,slow=75,SNR=4.9							
H10N2	**ASCENSION HYDR**	**139.20 153**		T	T		18 13 29.8	
	baz=204,slow=75,SNR=3.5							
GUDG	**Gudauri**	**144.43 303**		P	**PKPdf**		15 36 47.5	**-0.4**
FINES	**FINESS Array B**	**144.64 341**		PKP	**PKPab**		15 36 45.5	**-0.4**
	14nm,0.8s,baz=60,slow=4.6,SNR=25							
ONI	**Oni**	**145.16 303**		P	**PKPdf**		15 36 49.7	**+0.8**
AKH	**Akhalkalaki**	**145.29 301**		‖*i*P	**PKPdf**		15 36 50.5	**+1.2**
AKH	**Akhalkalaki**	**145.29 301**		P	**PKPdf**		15 36 50.8	**+1.5**
KBZ	**Khabaz**	**145.38 305**		PKPbc	**PKPab**		15 36 49.6	**+0.4**
	7.0nm,0.8s,baz=48,slow=2.9,SNR=16							
NB2	**NORSAR Subarra**	**148.03 353**		PKP	**PKPbc**		15 36 55.4	**-0.8**
	comp=Z,8.2nm,1.1s,baz=16,slow=3.2							
NOA	**NORSAR Array B**	**148.03 353**		PKPbc	**PKPbc**		15 36 55.2	**-1.0**
	comp=Z,4.2nm,0.8s,baz=14,slow=4.3,SNR=7.7							
NACGM	**Naroch**	**149.44 333**		*e*	**PKPbc**		15 37 01.0	**+1.0**
AKASG	**Malin Array Be**	**151.15 324**		PKPbc	**PKPbc**		15 37 04.2	**+0.1**
	comp=Z,14nm,0.7s,baz=46,slow=2.8,SNR=18							
SUW	**Suwalki**	**151.50 335**		*e*PKP	**PKPbc**		15 37 04.9	**0.0**
BRTR	**Keskin Array B**	**152.97 300**		PKPbc	**PKPbc**		15 37 09.0	**+0.1**
	comp=Z,1.8nm,0.8s,baz=131,slow=3.4,SNR=6.9							
BRTR				PKPab	**PKPab**		15 37 18.7	**-1.6**
	comp=Z,1.8nm,0.6s,baz=139,slow=4.9,SNR=6.8							
CFR	**Carcaliu**	**154.82 315**i		‖*i*P	**PKPab**		15 37 28.5	**+0.8**
TESR	**Tescani**	**154.99 319**i		‖*i*P	**PKPab**		15 37 28.4	**0.0**
KWP	**Kalwaria Pacla**	**154.99 329**		*e*PKP	**PKPab**		15 37 28.0	**-0.3**
TIRR	**Tirgusor**	**154.99 313**		‖*i*P	**PKPab**		15 37 29.0	**+0.5**
BURAR	**Bucovina Array**	**155.12 323**i		‖*i*P	**PKPab**		15 37 29.5	**+0.4**
TLB	**Topalu**	**155.17 314**i		‖*i*P	**PKPab**		15 37 30.0	**+0.8**
MLR	**Muntele Rosu**	**155.97 318**		‖*i*P	**PKPab**		15 37 32.5	**-0.3**
VOIR		**156.52 319**		‖*i*P	**PKPab**		15 37 36.9	**+1.8**
OKC	**Ostrava-Krasne**	**156.72 335**		*e*PKPAB	**PKPab**		15 37 36.2	**+0.6**
ARR	**Arges**	**156.80 319**i		‖*i*P	**PKPab**		15 37 37.3	**+1.0**
DPC	**Dobruska-Polom**	**156.92 338**		*e*PKPAB	**PKPab**		15 37 37.4	**+0.8**
DPC				*ex*	x		15 37 48.9	
DRGR		**156.96 324**i		‖*i*P	**PKPab**		15 37 29.4	**-7.5**
MORC	**Moravsky Berou**	**156.99 335**i		‖*i*P	**PKPab**		15 37 36.4	**-0.5**
BRG	**Berggiesshubel**	**157.17 342**		*e*P	**PKPab**		15 37 37.2	**-0.3**
	comp=Z,11nm,1.3s							
PSZ	**Piszkesteto**	**157.51 329**i		‖*i*P	**PKPab**		15 37 39.8	**+0.5**
GOPC	**GO Pecny, Ondr**	**157.79 340**		*e*PKPAB	**PKPab**		15 37 40.0	**-0.3**
PRU	**Pruhonice**	**157.79 340**		*e*PKPAB	**PKPab**		15 37 40.4	**+0.1**
SIRR	**Siria**	**157.85 324**i		‖*i*P	**PKPab**		15 37 40.5	**-0.2**
NKC	**Novky Kostel**	**158.14 344**		*e*PKPAB	**PKPab**		15 37 41.8	**0.0**
MDVR	**Moldovita**	**158.80 321**i		‖*i*P	**PKPab**		15 37 44.7	**-0.2**
KHC	**Kasperske Hory**	**158.84 341**		*e*PKPDF	**PKPdf**		15 37 09.0	**+0.1**
KHC				*e*PKPAB	**PKPab**		15 37 45.2	**+0.3**
KHC				*ex*	x		15 37 56.8	
GERES	**GERESS Array B**	**159.06 340**		PKPab	**PKPab**		15 37 45.5	**-0.4**
	comp=Z,0.6nm,0.7s,baz=36,slow=5.0,SNR=6.0							
VTS	**Vitosha**	**159.20 314**i		‖*i*P	**PKPab**		15 37 48.0	**+1.1**
TORD	**Torodi Ar. Bea**	**163.64 175**		PKP	**PKPdf**		15 37 15.2	**+0.2**
	comp=Z,3.4nm,1.3s,baz=132,slow=2.1,SNR=5.2							
TORD				PKPab	**PKPab**		15 38 08.6	**+2.0**
	comp=Z,0.9nm,0.8s,baz=170,slow=3.1,SNR=2.3							

IDC 09 15:18:26.4±1.9,**28.°49S**×**177.°24W**,**h0km**,**mb4.3**/4, **mb1 4.4**/4,**mb1mx3.9**/39,**mbtmp4.3**/4,**Error ellipse: s-maj=62.7km s-min=23.7km az=126.0**,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.97 218**		Pn	**Pn**		15 18 47.2	-0.1
	baz=100,slow=17,SNR=1.1							
RAO					Sn		Sb 15 18 59.2	-0.1
	2µm,0.3s,baz=108,slow=20,SNR=2.4							
STKA	**Stephens Creek**	**35.60 254**		P	P		15 25 26.2	+0.3
	2.8nm,0.6s,baz=99,slow=13,SNR=2.7							
ASAR	**Alice Springs**	**43.91 265**		P	P		15 26 35.0	-0.3
	2.0nm,0.5s,baz=102,slow=6.1,SNR=8.1							
WRA	**Warramunga Arr**	**44.73 270**		P	P		15 26 41.3	-0.5
	3.6nm,0.8s,baz=110,slow=8.1,SNR=5.8							
PETK	**Petropavlovsk-**	**84.14 345**		P	P		15 30 58.9	0.0
	1.6nm,0.8s,baz=100,slow=8.1,SNR=2.9							
FINES	**FINESS Array B**	**143.57 341**		PKP	PKPbc		15 38 00.2	+0.4
	2.1nm,0.5s,baz=62,slow=2.6,SNR=3.6							
NOA	**NORSAR Array B**	**146.96 352**		PKPbc	PKPbc		15 38 09.8	-0.6
	2.0nm,0.9s,baz=15,slow=4.4,SNR=2.1							
AKASG	**Malin Array Be**	**150.15 325**		PKPbc	PKPbc		15 38 18.7	-0.2
	3.6nm,0.7s,baz=46,slow=3.0,SNR=2.6							

*ISK **09** 15:18:36.4,41.°28N×36.°35E,h5km,MD2.7*
*ISCJB **09** 15:18:37.4±0.6,41.°25N±0.°05×36.°38E±0.°05,h6km,Error ellipse: s-maj=7.1km s-min=4.6km az=30.6*
*DDA **09** 15:18:37.3,41.°22N×36.°37E,h7km,Md2.8*
*CSEM **09** 15:18:37.4±0.2,41.°26N×36.°36E,h10km,MD2.8,Error ellipse: s-maj=6.1km s-min=3.9km az=10.0*
ISC 09 15:18:37.0±0.9,**41.°23N**±0.°04×**36.°41E**±0.°03,**h6**km,**n20**, σ0§**64**/**26**,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.21 307**		*i* P		**Pg**	**15 18 41.9**	**+0.7**
SAMS				*i* S		**Sg**	15 18 45.0	+0.9
SAMS	**Samsun-Alacam**	**0.21 307**		P		**Pg**	**15 18 41.9**	**+0.7**
SAMS				S		**Sg**	15 18 45.0	+0.9
KVT	**Kavak**	**0.32 241**		*e*PG		**Pg**	**15 18 43.0**	**-0.2**
KVT				*e*SG		**Sg**	15 18 47.9	+0.5
KVT	**Kavak**	**0.32 241**		*e*Pg		**Pg**	**15 18 43.0**	**-0.2**
KVT				*e*Sg		**Sg**	15 18 47.9	+0.5
ERBA	**Erbaa**	**0.61 155**		*i* P		**Pb**	**15 18 49.4**	**-0.7**
ERBA				*i* S		**Sb**	15 18 59.4	+0.4
ERBA	**Erbaa**	**0.61 155**		P		**Pb**	**15 18 49.3**	**-0.7**
ERBA				S		**Sb**	15 18 59.3	+0.4
ORDU	**Ordu-Boztepe**	**1.12 102**		*i* P		**Pn**	**15 18 59.2**	**0.0**
ORDU	**Ordu-Boztepe**	**1.12 102**		P		**Pn**	**15 18 59.2**	**0.0**
BOYT	**Boyabat**	**1.15 280**		*i* P		**Pg**	**15 18 58.7**	**-0.4**
BOYT	**Boyabat**	**1.15 280**		P		**Pg**	**15 18 58.7**	**-0.4**
SNOP	**Sinop**	**1.20 311**		*e*PN		**Pg**	**15 18 58.7**	**-1.3**
SNOP	**Sinop**	**1.20 311**		*e*Pn		**Pg**	**15 18 58.7**	**-1.3**
GRSN	**GIRESUNGRSN**	**1.44 102**		*i* P		**Pg**	**15 19 04.7**	**+0.2**
GRSN	**GIRESUNGRSN**	**1.44 102**		P		**Pg**	**15 19 04.7**	**+0.2**
COAL	**Corum-Alaca**	**1.46 228**		*i* P		**Pb**	**15 19 04.2**	**-0.4**
COAL	**Corum-Alaca**	**1.46 228**		P		**Pb**	**15 19 04.2**	**-0.4**
CORM	**Corum**	**1.72 233**		*e*PN		**Pn**	**15 19 07.8**	**+0.3**
CORM	**Corum**	**1.72 233**		*e*Pn		**Pn**	**15 19 07.8**	**+0.3**
ESPY	**Espiye-Giresun**	**1.78 100**		*e*PN		**Pb**	**15 19 09.4**	**-0.6**
ESPY	**Espiye-Giresun**	**1.78 100**		*e*Pn		**Pb**	**15 19 09.4**	**-0.6**

*IDC **09** 15:21:48.1±1.4,29.°60S×176.°84W,h0km,mb4.2/5, mb1 4.3/6,mb1mx3.9/38,mbtmp4.3/6,Error ellipse: s-maj=39.2km s-min=27.7km az=168.0*
*ISCJB **09** 15:21:52.1±2.0,29.°77S±0.°08×177.°1W±0.°2,h31km, mb4.2/5,Error ellipse: s-maj=26.1km s-min=9.4km az=167.2*
ISC 09 15:21:53.3±1.2,**29.°62S**±0.°10×**177.°0W**±0.°1,**h31**km,**n11**, σ0§**95**/14,**mb4.2**/5,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.90 294**		Pn	**Pn**		**15 22 09.5**	**-0.2**
	783nm,0.3s,baz=65,slow=23,SNR=4.6							
RAO					Sn		**Sn** 15 22 20.9	**-0.8**
	1µm,0.3s,baz=101,slow=21,SNR=6.4							
URZ	**Urewera**	**9.91 208**		Pn	**Pn**		15 24 13.2	**-0.3**
	baz=72,slow=20,SNR=1.9							
URZ					Sn		**Sn** 15 26 03.2	**-0.4**
	2.0nm,0.3s,baz=126,slow=19,SNR=7.7							
CTA	**Charters Tower**	**34.56 277**		P	**P**		**15 28 40.6**	**+1.3**
	2.7nm,0.6s,baz=82,slow=7.1,SNR=3.0							
STKA	**Stephens Creek**	**35.52 256**		P	**P**		15 28 48.6	**+1.1**
	2.3nm,0.7s,baz=91,slow=16,SNR=2.8							
PMG	**Port Moresby**	**39.09 294**		P	**P**		15 29 18.2	**+0.4**
	5.8nm,0.6s,baz=74,slow=20,SNR=3.4							
ASAR	**Alice Springs**	**44.04 266**		P	**P**		15 29 58.2	**-0.2**
	1.1nm,0.5s,baz=103,slow=7.0,SNR=7.8							
WRA	**Warramunga Arr**	**44.96 271**		P	**P**		15 30 04.7	**-1.1**
	1.9nm,0.5s,baz=110,slow=8.0,SNR=9.9							
FINES	**FINESS Array B**	**144.71 341**		PKP	**PKPab**		15 41 23.7	**-1.3**
	3.2nm,0.8s,baz=349,slow=1.9,SNR=8.9							
NOA	**NORSAR Array B**	**148.11 352**		PKPbc	**PKPbc**		15 41 34.6	**-0.6**
	0.7nm,0.6s,baz=15,slow=3.0,SNR=3.5							
AKASG	**Malin Array Be**	**151.20 324**		PKPbc	**PKPbc**		15 41 42.4	**-0.7**
	0.4nm,0.3s,baz=42,slow=2.8,SNR=4.8							
AKASG				PKPab	**PKPab**		15 41 51.0	**0.0**
	0.4nm,0.3s,baz=41,slow=2.8,SNR=4.8							
BRTR	**Keskin Array B**	**152.99 300**		PKPbc	**PKPbc**		15 41 49.2	**+1.5**
	0.5nm,0.6s,baz=26,slow=5.1,SNR=3.7							

*NEIC **09** 15:25:30.0±0.4,29.°55S×176.°85W,h10km,mb5.1/27, Error ellipse: s-maj=10.0km s-min=7.3km az=104.0*
*IDC **09** 15:25:29.2±0.6,29.°31S×176.°89W,h0km,mb4.6/16, mb1 4.7/16,mb1mx4.5/33,mbtmp4.5/16,MS5.1/7, Ms1 5.1/7,ms1mx4.5/26,Error ellipse: s-maj=19.8km s-min=16.7km az=175.0*
*GCMT **09** 15:25:30.0±0.3,29.°37S×176.°70W,h22km±1km,MW5.3/83, Moment Tensor Solution. s33,c49; s83,c125; Duration: 1§1 Moment tensor: Scale 10^{17}Nm; Mrr0.92±.06; Mθθ0.01±.04; Mθθ-0.92±.04; Mrθ0.19±.06; Mθφ-0.33±.02; Mφr0.61±.05; Best double couple: M0 1.16800×10^{17} NP1:φs17.00000°,δ62.00000°,λ90.00000°. NP2: φs198.00000°,δ28.00000°,λ91.00000°. Principal axes: T 1.1130, Plg73.0000°, Azm287.0000°; N 0.1110, Plg0.0000°, Azm17.0000°; P -1.2240, Plg17.0000°, Azm108.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISCJB **09** 15:25:32.6±0.3,29.°62S±0.°04×177.°03W±0.°06,h31km, mb5.1/52,MS5.2/9 Error ellipse: s-maj=7.2km s-min=6.1km az=148.9*
*BJI **09** 15:25:34.3,29.°90S×177.°80W,h23km,mb5.3/25, mB5.7/13,Ms5.6/17,Ms7 5.4/17*
*MOS **09** 15:25:35.1±1.4,29.°37S×177.°22W,h41km,mb4.9/21, Error ellipse: s-maj=13.7km s-min=10.2km az=134.9*
ISC 09 15:25:34.2±0.3,**29.°59S**±0.°06×**176.°93W**±0.°06,**h31**km, **n261**,σ1§**86**/244,**mb5.1**/52,**MS5.2**/9,**20C-18D**,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.92 291**		Pn	**Pn**		**15 25 50.4**	**-0.7**
	2µm,0.3s,baz=109,slow=6.8,SNR=32							
RAO					Sn		**Sn** 15 26 00.7	**-2.6**
	4µm,0.3s,baz=86,slow=19,SNR=24							
RAO	**Raoul Island**	**0.92 291**		*e*P	**Pn**		**15 25 50.7**	**-0.3**
RAO				*e*			15 25 59.2	
RAO	**Raoul Island**	**0.92 291**		*e*

STKA **Stephens Creek** **35.57 256** *e*P **P** **15 32 29.1 +0.3**
comp=Z,4.6nm,0.9s
MTSU **Mount Surprise** **37.07 279** P **P** **15 32 42.5 +0.7**
baz=37,SNR=8.7
HTT **Hallett** **37.62 253** P **P** **15 32 46.6 +0.2**
baz=38,SNR=12
RKT **Rikitea** **37.99 90** *e*S **S** **15 38 35.9 -3.9**
comp=Z,634nm,26.5s
RKT *e*LR LR 15 42 58.7
comp=Z,2µm,28.0s
PMG **Port Moresby** **39.12 293** LR LR 15 45 26.3
comp=Z,3µm,21.2s,baz=154,slow=31
BBOO **Buckleboo** **40.09 253** P **P** **15 33 06.2 -0.7**
baz=40,SNR=13
BBOO **Buckleboo** **40.09 253** *e*P **P** **15 33 05.3 -1.7**
comp=Z,36nm,1.0s
TAOE **Nuku Hiva Isla** **40.13 67** *e*LR LR 15 43 54.1
comp=Z,2µm,24.2s
ASAR **Alice Springs** **44.09 266** P **P** **15 33 38.0 -1.7**
comp=Z,12nm,0.7s,baz=98,slow=7.6,SNR=50
ASAR S **S** **15 40 13.7 +3.1**
comp=Z,1.2nm,1.1s,baz=108,slow=12,SNR=3.2
ASAR LR LR 15 51 47.4
comp=Z,4µm,18.2s,baz=90,slow=36
WB2 **Warramunga Arr** **44.99 271** *e*P **P** **15 33 45.4 -1.6**
comp=Z,25nm,0.9s
WRAB **Tennant Creek** **45.00 271**⇓ *e*P **P** **15 33 45.3 -1.7**
WRAB pmax pmax
comp=Z,34nm,0.8s
WRAB **Tennant Creek** **45.00 271** *e*P **P** **15 33 45.1 -1.9**
comp=Z,21nm,0.9s
WRA **Warramunga Arr** **45.00 271** P **P** **15 33 44.9 -2.2**
comp=Z,15nm,0.8s,baz=110,slow=8.1,SNR=92
WRA **Warramunga Arr** **45.00 271** P **P** **15 33 44.9 -2.2**
WRA pmax pmax
comp=Z,14nm,0.7s
FORT **Forrest** **47.16 254** *e*P **P** **15 34 02.5 -1.4**
comp=Z,280nm,0.6s
VNDA **Vanda** **49.00 186** P **P** **15 34 19.6 +2.1**
comp=Z,1.0nm,0.6s,baz=0.9,slow=7.1,SNR=8.4
VNDA **Vanda** **49.00 186** *e*P **P** **15 34 20.1 +2.7**
VNDA pmax pmax
comp=Z,20nm,1.5s
VNDA **Vanda** **49.00 186** *e*P **P** **15 34 20.1 +2.7**
comp=Z,20nm,1.5s
MTN **Manton Dam** **50.78 278** P **P** **15 34 30.6 -1.3**
baz=51,SNR=4.7
KNRA **Kununurra** **51.58 273** P **P** **15 34 37.0 -0.8**
baz=52
KMBL **Kambalda** **52.15 252** P **P** **15 34 41.7 -0.3**
baz=52
FITZ **Fitzroy Crossi** **53.30 269** P **P** **15 34 50.0 -0.5**
baz=53,SNR=8.9
FITZ **Fitzroy Crossi** **53.30 269** *e*P **P** **15 34 49.8 -0.7**
comp=Z,26nm,0.9s
KLBR **Kellerberrin** **55.49 250** P **P** **15 35 04.5 -1.9**
baz=56,SNR=9.5
CASY **Casey** **56.29 208** *e*P **P** **15 35 10.8 -0.7**
comp=Z,32nm,1.0s
BLDU **Ballidu** **56.63 251** P **P** **15 35 13.5 -1.1**
baz=57
MUN **Mundaring** **56.65 249** P **P** **15 35 14.2 -0.4**
baz=57
MBWA **Marble Bar** **57.24 263** *e*P **P** **15 35 15.5 -3.4**
comp=Z,34nm,1.1s
QSPA **South Pole Qui** **60.52 180** P **P** **15 35 41.5 +0.2**
comp=Z,32nm,0.8s
MAW **Mawson** **73.39 200** P **P** **15 37 03.7 +0.9**
comp=Z,5.3nm,0.7s,baz=117,slow=6.8,SNR=10
MAW **Mawson** **73.39 200** *e*P **P** **15 37 05.3 +2.5**
MAW pmax pmax
comp=Z,16nm,1.8s
MAW **Mawson** **73.39 200** *e*P **P** **15 37 05.3 +2.5**
comp=Z,16nm,1.8s
SBUM **Sibu** **74.66 282** *e*P **P** **15 37 09.9 -1.2**
comp=Z,43nm,1.8s
MJAR **Matsushiro Arr** **78.11 325** P **P** **15 37 27.9 -2.2**
comp=Z,3.9nm,0.7s,baz=161,slow=5.7,SNR=16
SYO **Syowa Base** **78.11 193**⇑ *e*P **P** **15 37 29.0 -0.7**
SYO **Syowa Base** **78.11 193** *e*pP **P** **15 37 31.9 +2.2**
MAJO **Matsushiro** **78.11 325**⇓ *e*P **P** **15 37 28.6 -1.6**
MAJO pmax pmax
comp=Z,33nm,0.9s
MAJO **Matsushiro** **78.11 325** *e*P **P** **15 37 25.6 -4.6**
comp=Z,22nm,1.3s
MAT **Matsushiro** **78.11 325** P **P** **15 37 28.1 -2.0**
MJB9 **Matsu-Tunnel** **78.12 325** *e*P **P** **15 37 29.7 -0.5**
comp=Z,4.9nm,1.2s
SNAA **Sanae** **78.94 178**⇓ *e*P **P** **15 37 35.3 +0.9**
YULB **Yu-li** **79.36 305** *e*P **P** **15 37 40.6 +3.3**
comp=Z,41nm,0.5s
NVL **N'lazarevskaya** **79.74 183** *e*P P 15 37 51.6 +13
SSLB **Suanglung** **79.85 305** *e*P **P** **15 37 40.0 0.0**
comp=Z,100nm,0.4s
ERM **Erimo** **80.19 331**⇑ *e*P **P** **15 37 43.2 +1.9**
ERM pmax pmax
comp=Z,19nm,1.3s
ASAJ **Asahikawa** **82.16 332** *e*P **P** **15 37 52.1 +0.4**
comp=Z,24nm,1.0s
PLCA **Paso Flores** **82.38 133** P **P** **15 37 54.1 +0.7**
comp=Z,2.9nm,0.8s,baz=261,slow=5.6,SNR=4.3
KSRS **Korea Array** **84.34 319** P **P** **15 38 02.5 -0.7**
comp=Z,3.0nm,0.9s,baz=140,slow=6.1,SNR=5.0
KSAR **Wonju Array Be** **84.35 319** P **P** **15 38 02.5 -0.7**
KSAR **Wonju Array Be** **84.35 319** P P **15 38 02.5 -0.7**
KS01 **Wonju Array Si** **84.37 319** *e*P **P** **15 38 03.6 +0.3**
YSS **Yuzh-Sakhalins** **84.43 334**⇓ *e*P **P** **15 38 03.2 -0.1**
YSS *e* 15 38 14.1
YSS pmax pmax
comp=Z,40nm,0.9s
PETK **Petropavlovsk-** **85.26 345** P **P** **15 38 06.0 -1.4**
comp=Z,7.9nm,0.8s,baz=132,slow=7.6,SNR=13
IPM **Ipoh** **85.29 278** *e*P **P** **15 38 07.1 -1.5**
comp=Z,130nm,2.0s
MSHR **Mys Shultsa** **86.23 324**⇑ *e*P **P** **15 38 13.2 +0.7**
VLA **Vladivostok** **86.26 325** *ce*P **P** **15 38 11.8 -0.8**
VLA pmax pmax
comp=Z,28nm,1.8s
PSI **Prapat** **86.28 275** P **P** **15 38 14.3 +0.6**
comp=Z,5.3nm,0.7s,baz=170,slow=17,SNR=3.8
WAKR **Walker** **86.41 42** *e*P P 15 38 26.5 +13
GSI **Gunungsitoli** **86.71 273** *e*P **P** **15 38 14.7 -0.9**
comp=Z,31nm,1.0s
LDFC **Landfair** **86.77 46** *e*P P 15 38 27.7 +12
USRK **Ussuriysk Ar.** **87.00 326** P **P** **15 38 15.7 -0.6**
comp=Z,9.1nm,0.7s,baz=137,slow=3.5,SNR=38
SHPR **Sheep Range** **87.65 45** *e*P P 15 38 32.8 +13
TYV **Tymovskoe** **87.69 336** *e*P **P** **15 38 19.5 +0.1**
TYV pmax pmax
comp=Z,66nm,1.4s
TUC **Tucson** **87.88 51** P **P** **15 38 22.9 +2.0**
TUC pmax pmax
comp=Z,9.0nm,1.7s
MDJ **Mudanjiang** **88.49 325** P **P** **15 38 24.3 +1.0**
MDJ pmax pmax
comp=Z,13nm,0.7s
MDJ pmax pmax
comp=Z,120nm,6.9s
WUAZ **Wupatki** **89.43 48** *e*P P 15 38 36.3 +8.0
comp=Z,8.6nm,1.0s
CN2 **Changchun** **90.06 322** *e*P **P** **15 38 30.1 -0.6**
CN2 *ep*P pP 15 38 38.2 -2.5
CN2 PP **PP** **15 42 05.5 +0.8**
CN2 pmax pmax
comp=Z,30nm,1.3s
CN2 pmax pmax
comp=Z,200nm,3.0s
TIA **Tai'an** **90.10 312** *e*P **P** **15 38 30.9 -0.2**
TIA pmax pmax
comp=Z,30nm,1.5s
NKL **Nikolayevsk** **90.27 336** *e*P **P** **15 38 30.3 -1.1**
NKL pmax pmax
comp=Z,30nm,0.9s
MTPU **Mount Pierson** **90.46 46** *e*P P 15 38 41.6 +8.4
comp=Z,12nm,1.5s
KLR **Kul'dur** **90.81 329** *ce*P **P** **15 38 35.1 +1.0**
TX31 **Lajitas Ar. Si** **91.17 57** *e*P P 15 38 48.5 +12
TXAR **Lajitas Array** **91.17 57** P **P** **15 38 35.5 -0.9**
comp=Z,0.4nm,0.9s,baz=198,slow=5.7,SNR=3.3
BNM **Barren Site** **91.78 51** *e*P P 15 38 47.0 +7.7
TMUT **Trail Mountain** **91.83 45** *e*P P 15 38 48.2 +8.7
BMO **Blue Mountains** **91.83 38** *e*P P 15 38 50.6 +12
ANMO **Albuquerque** **92.35 51** *c i*P **P** **15 38 45.8 +3.9**
ANMO pmax pmax
comp=Z,1.0nm,0.9s
HLID **Hailey** **92.59 40** *e*P P 15 38 52.9 +10

BJI **Beijing** **93.00 315** P P 15 38 49.0 +4.6
BJI pmax pmax
comp=Z,9.0nm,1.2s
CMAR **Chiang Mai Arr** **94.01 289** P **P** **15 38 50.8 +1.1**
comp=Z,0.5nm,0.6s,baz=134,slow=2.6,SNR=3.0
KMI **Kunming** **94.29 296** P **P** **15 38 54.9 +3.8**
KMI pmax pmax
comp=Z,7.0nm,0.8s
KMI pmax pmax
comp=Z,340nm,10.0s
KMI LR LR
comp=Z,2µm,19.0s
KMI LR LR
comp=Z,690nm,18.2s
KMI LR LR
comp=Z,2µm,18.4s
XAN **Xi'an** **94.37 307** P P 15 38 59.7 +8.7
XAN pP sP 15 39 07.3 +2.8
XAN pmax pmax
comp=Z,10.0nm,1.6s
TRF **Thorofare Moun** **95.11 12** *e*P P 15 39 03.7 +10
SEY **Seymchan** **95.40 346** P **P** **15 38 53.7 -1.2**
comp=Z,2.3nm,0.9s,baz=128,slow=5.5
HHC **Hu-ho-hao-te** **96.34 314** *e*P P 15 39 05.2 +5.3
HHC pmax pmax
comp=Z,31nm,1.4s
CD2 **Chengdu** **96.44 302** *e*P **P** **15 39 04.0 +3.4**
CD2 pP pP 15 39 11.8 +1.3
CD2 PP **PP** **15 42 56.9 +1.8**
CD2 SKS **SKSac** **15 49 38.7 +3.5**
CD2 S **ScS** **15 50 21.7 +2.2**
CD2 sS sS 15 50 34.9 -0.7
CD2 pmax pmax
comp=Z,10.0nm,0.7s
CD2 pmax pmax
comp=Z,120nm,6.4s
ILAR **Eielson Array** **96.93 12** P **P** **15 38 59.4 -2.5**
comp=Z,0.6nm,1.0s,baz=232,slow=6.0,SNR=5.8
ILAR PP PP 15 42 48.8 -9.2
comp=Z,0.4nm,0.9s,baz=217,slow=7.4,SNR=3.2
LZH **Lanzhou** **98.98 306** *e*P Pdif 15 39 16.3 +4.3
LZH pP sP 15 39 23.5 -2.1
LZH sP pP 15 39 27.0 +5.0
LZH PP **PP** **15 43 20.2 +5.6**
LZH pmax pmax
comp=Z,23nm,1.1s
LZH pmax pmax
comp=Z,98nm,9.5s
LZH LR LR
comp=Z,370nm,17.5s
LZH LR LR
comp=Z,350nm,17.3s
LZH LR LR
comp=Z,450nm,19.7s
YAK **Yakutsk** **100.85 337** *e*P **Pdif** **15 39 21.1 +1.7**
YAK pmax pmax
comp=Z,3.0nm,0.8s
SONM **Songino Array** **103.16 318** Pdiff **Pdif** **15 39 29.4 -0.9**
comp=Z,0.3nm,0.3s,baz=123,slow=5.3,SNR=2.5
WMQ **Urumqi** **113.45 308** *e*PKP **PKiKP** **15 44 11.9 +2.9**
WMQ PP **PP** **15 45 08.1 +7.1**
WMQ AMB AMB
comp=Z,210nm,7.5s
WMQ LR LR
comp=Z,690nm,17.6s
WMQ LR LR
comp=Z,600nm,18.7s
WMQ LR LR
comp=Z,560nm,18.8s
MKAR **Makanchi Array** **117.96 310** PKP **PKPdf** **15 44 15.8 -1.7**
comp=Z,0.6nm,0.4s,baz=73,slow=0.8,SNR=7.2
ZALV **Zalesovo Beam** **118.04 318** PKP **PKPdf** **15 44 15.6 -1.8**
comp=Z,0.4nm,0.4s,baz=190,slow=4.5,SNR=3.7
ZALV **Zalesovo Beam** **118.04 318** PKiKP **PKPdf** **15 44 15.6 -1.8**
ZALV pmax pmax
comp=Z,1.0nm,0.5s
NRIK **Noril'sk** **119.27 336** PKP **PKPdf** **15 44 18.6 -0.7**
comp=Z,2.8nm,0.8s,baz=143,slow=4.6,SNR=3.6
KSH **Kashi** **120.62 301** *e*PKP **PKPdf** **15 44 27.5 +4.5**
KSH PKS **PKSdf** **15 48 03.0 +3.2**
KSH SKS **SKSdf** **15 51 35.3 +2.4**
KSH SKKS **SKKSac** **15 52 49.3 +0.9**
KSH AMB AMB
comp=Z,82nm,6.8s
KSH LR LR
comp=Z,180nm,8.2s
KSH LR LR
comp=Z,210nm,6.3s
KSH LR LR
comp=Z,540nm,15.9s
KURK **Kurchatov** **121.16 314** *e*PKiKP **PKPdf** **15 44 21.8 -1.7**
KURK **Kurchatov** **121.16 314** *e*PKPdf **PKPdf** **15 44 21.8 -1.7**
TKM2 **Tokmak 2** **121.70 305** *e*PKiKP **PKPdf** **15 44 23.5 -1.6**
TKM2 **Tokmak 2** **121.70 305** *e*PKPdf **PKPdf** **15 44 23.5 -1.6**
KKAR **Karatay Array** **125.39 304** *e*PKiKP **PKPdf** **15 44 31.0 -1.0**
KKAR **Karatay Array** **125.39 304** *e*PKPdf **PKPdf** **15 44 31.0 -1.0**
BRVK **Borovoye** **126.53 316**⇑ *i*PKiKP **PKPdf** **15 44 34.0 +0.2**
ARU **Arti** **133.05 321** *i*PKiKP **PKPdf** **15 44 48.3 +2.3**
ARU 15 47 13.6
ARU SS SS 16 04 50.7 -2.4
GEYT **Alibeck** **134.05 296** PKP **PKPdf** **15 44 50.3 +1.7**
comp=Z,1.6nm,0.7s,baz=133,slow=3.6,SNR=3.3
GEYT SKPab **SKiKP** **15 48 22.0 -1.7**
comp=Z,4.8nm,0.8s,baz=48,slow=2.1,SNR=9.0
ARCES **ARCESS Array B** **137.99 348** PKhKP PKPpre 15 44 46.3
comp=Z,0.4nm,0.5s,baz=96,slow=2.4,SNR=3.7
ARCES PKP **PKPdf** **15 44 54.0 -0.9**
comp=Z,2.6nm,0.8s,baz=29,slow=2.8,SNR=6.3
ARCES **ARCESS Array B** **137.99 348** PKiKP **PKPdf** **15 44 54.0 -0.9**
ARCES pmax pmax
comp=Z,3.0nm,0.8s
H10S3 **ASCENSION HYDR** **138.05 153** T T 18 20 18.5
baz=204,slow=74,SNR=4.7
H10S2 **ASCENSION HYDR** **138.05 153** T T 18 20 30.2
baz=204,slow=74,SNR=5.4
H10S1 **ASCENSION HYDR** **138.07 153** T T 18 20 28.8
baz=204,slow=74,SNR=4.9
H10N3 **ASCENSION HYDR** **139.13 153** T T 18 21 51.6
baz=203,slow=75,SNR=18
H10N1 **ASCENSION HYDR** **139.13 153** T T 18 21 41.9
baz=203,slow=75,SNR=24
H10N2 **ASCENSION HYDR** **139.15 153** T T 18 21 29.9
baz=203,slow=75,SNR=31
KLMR **Klimovskoe** **140.47 333** *e*PKiKP **PKPdf** **15 44 59.2 -0.4**
KLMR pmax pmax
comp=Z,16nm,1.4s
MOS **Moscow** **144.18 327** *e*PKiKP **PKPdf** **15 45 11.7 +5.3**
TBLG **Delisi** **144.37 301** P **PKPab** **15 45 04.4 -1.0**
TBLG **Delisi** **144.37 301** *e*PKiKP **PKPab** **15 45 04.4 -1.0**
GUDG **Gudauri** **144.47 303** P PKPbc 15 45 06.6 +0.4
GNI **Garni** **144.51 299**⇑ *e*PKiKP **PKPab** **15 45 05.7 -0.4**
FINES **FINESS Array B** **144.69 341** PKP **PKPab** **15 45 04.4 -1.5**
comp=Z,15nm,0.7s,baz=60,slow=3.5,SNR=70
ZEI **Tsey** **144.85 303** *i*PKiKP PKPbc 15 45 07.4 0.0
ZEI pmax pmax
comp=Z,68nm,0.6s
NCK **Nalchik** **144.96 305**⇓ *e*PKiKP PKPbc 15 45 07.2 -0.3
OBN **Obninsk** **145.02 326** *de*PKiKP PKPbc 15 45 06.6 -0.6
OBN *e* 15 48 26.6
OBN pmax pmax
comp=Z,20nm,1.0s
GOF **Gofitskoye** **145.05 307**⇑ *e*PKiKP **PKPbc** **15 45 07.3 -0.4**
ONI **Oni** **145.20 303** P **PKPdf** **15 45 08.4 -0.3**
ONI **Oni** **145.20 303** *e*PKiKP **PKPdf** **15 45 08.4 -0.3**
BGD **Bogdanovka** **145.27 301** P **PKPdf** **15 45 09.2 +0.1**
AKH **Akhalkalaki** **145.33 301**⇓ *i*P **PKPab** **15 45 09.3 +0.1**
AKH **Akhalkalaki** **145.33 301** P **PKPbc** **15 45 08.7 -0.3**
AKH **Akhalkalaki** **145.33 301** *e*PKiKP **PKPbc** **15 45 08.6 -0.3**
KBZ **Khabaz** **145.41 305** PKPbc **PKPbc** **15 45 08.4 -0.5**
comp=Z,9.7nm,0.7s,baz=138,slow=2.4,SNR=25
KIV **Kislovodsk** **145.52 306** *ce*PKiKP **PKPdf** **15 45 08.2 -1.0**
KIV *e* 15 48 28.5
KIV pmax pmax
comp=Z,19nm,1.0s
KIV **Kislovodsk** **145.52 306** *e*PKPdf **PKPdf** **15 45 08.9 -0.4**
VSR **Storozhevoye** **145.54 319** *e*PKiKP **PKPdf** **15 45 08.3 -0.6**
VSR pmax pmax
comp=Z,70nm,2.0s
NEY **Neytrino** **145.63 304** *de*PKiKP **PKPab** **15 45 10.1 -0.1**
VSU **Vasula** **146.85 337** *ce*PKP2 **PKPbc** **15 45 11.6 -1.1**
SOC **Sochi** **147.70 306** *c i*PKP2 **PKPbc** **15 45 14.4 -1.2**
SOC *e* 15 48 44.4
SOC *e*PPP PPP 15 52 07.3
SOC *e*SSS SSS 16 13 13.2
SOC pmax pmax
comp=Z,26nm,0.8s
SOC pmax pmax
comp=Z,46nm,1.1s
NB2 **NORSAR Subarra** **148.08 353** PKP **PKPbc** **15 45 14.2 -1.9**
comp=Z,9.6nm,0.9s,baz=10,slow=3.2
NOA **NORSAR Array B** **148.08 353** PKPbc **PKPbc** **15 45 14.8 -1.3**
comp=Z,5.4nm,0.8s,baz=16,slow=4.6,SNR=12
ANN **Anapa** **148.96 309** *i*PKP2 **PKPbc** **15 45 18.9 +0.1**
ANN pmax pmax
comp=Z,194nm,2.0s
MNK **Minsk** **149.33 331** *e*PKP2 **PKPbc** **15 45 20.0 +0.6**
NACGM **Naroch** **149.50 333** *e* **PKPbc** **15 45 18.0 -1.8**
SIM **Simferopol'** **151.14 311** *d i*PKiKP **PKPbc** **15 45 24.6 +0.5**
AKASG **Malin Array Be** **151.20 324** PKPbc **PKPbc** **15 45 22.9 -1.1**
comp=Z,15nm,0.8s,baz=45,slow=3.0,SNR=29
AKASG PKPab **PKPab** **15 45 30.9 -1.0**
comp=Z,19nm,0.7s,baz=44,slow=3.2,SNR=17
KIEV **Kiev** **151.21 324** *e*PKiKP **PKPbc** **15 45 22.8 -1.2**
KIEV *e* 15 45 30.9
KIEV **Kiev** **151.21 324** *e*PKPbc **PKPbc** **15 45 22.8 -1.2**
KIEV *e*PKPab **PKPab** **15 45 30.9 -1.1**
BRTR **Keskin Array B** **153.01 300** PKPbc **PKPbc** **15 45 27.9 -0.8**
comp=Z,3.6nm,0.7s,baz=127,slow=2.7,SNR=16
BSD **Bornholm Skovb** **153.10 345** *i*P **PKPab** **15 45 35.8 -4.0**
SORM **Soroca** **153.16 321**⇓ *i*P **PKPab** **15 45 36.6 -3.7**
KIS **Kishinev** **153.52 318** *e*P **PKPdf** **15 45 24.0 +2.3**
KIS **Kishinev** **153.52 318** *e*PKiKP **PKPdf** **15 45 24.0 +2.3**
KIS *e* 15 45 38.0
CSS **Mathiatis** **153.91 290** *e*PKPdf **PKPdf** **15 45 21.5 -1.2**
LVV **L'vov** **154.30 328** *e*PKiKP **PKPbc** **15 45 33.5 +2.5**
TESR **Tescani** **155.04 319**⇓ *i*P **PKPab** **15 45 47.3 -1.1**
TIRR **Tirgusor** **155.04 313**⇑ *i*P **PKPab** **15 45 48.8 +0.4**
BURAR **Bucovina Array** **155.17 323**⇓ *i*P **PKPab** **15 45 47.0 -2.0**
TLB **Topalu** **155.21 314**⇓ *i*P **PKPab** **15 45 48.4 -0.7**
PLOR **Plostina** **155.41 318**⇑ *i*P **PKPab** **15 45 49.0 -1.0**
KOLS **Kolonicke sedl** **155.74 328** *e*PKP2 **PKPab** **15 45 48.8 -2.5**
KOLS **Kolonicke sedl** **155.74 328** *e*PKP **PKPab** **15 45 48.8 -2.5**
STHS **Stebnicka Huta** **155.85 330** *e*PKP2 **PKPab** **15 45 54.8 +3.1**
STHS **Stebnicka Huta** **155.85 330** *e*PKP **PKPab** **15 45 54.8 +3.1**
UZH **Uzhgorod** **155.95 328** *e*PKP2 **PKPab** **15 45 50.1 -2.0**
MLR **Muntele Rosu** **156.02 318**⇑ *i*P **PKPab** **15 45 52.5 -0.2**
DOPR **Dopca** **156.07 319**⇓ *i*P **PKPab** **15 45 52.9 +0.1**
CRVS **Cervenica-Dubn** **156.13 329** *e*PKP2 **PKPab** **15 45 53.1 +0.1**
CRVS **Cervenica-Dubn** **156.13 329** *e*PKP **PKPab** **15 45 53.1 +0.1**
PRD **Provadia** **156.27 312** *e*P **PKPab** **15 45 53.1 -0.6**
VOIR **156.57 318**⇓ *i*P **PKPab** **15 45 53.3 -1.7**
OKC **Ostrava-Krasne** **156.77 335** *e*PKPAB **PKPab** **15 45 55.7 +0.1**
OKC **Ostrava-Krasne** **156.77 335** *e*PKP2 **PKPab** **15 45 55.7 +0.1**
LANS **Liptovska Anna** **156.80 332** *e*PKP2 **PKPab** **15 45 54.8 -1.0**
LANS **Liptovska Anna** **156.80 332** *e*PKP **PKPab** **15 45 54.8 -1.0**
ARR **Arges** **156.85 319**⇑ *i*P **PKPab** **15 45 55.8 -0.4**
KECS **Kecovo** **156.88 330** *e*PKP2 **PKPab** **15 45 56.0 -0.1**
KECS **Kecovo** **156.88 330** *e*PKP **PKPab** **15 45 56.0 -0.1**
UPC **Upice** **156.94 339** *e*PKPAB **PKPab** **15 45 56.7 +0.4**
UPC *ex* x 15 46 05.4
UPC **Upice** **156.94 339** *e*PKP2 **PKPab** **15 45 56.7 +0.4**
DPC **Dobruska-Polom** **156.97 338** *e*PKPAB **PKPab** **15 45 56.9 +0.4**
DPC *ex* x 15 46 05.0
DPC **Dobruska-Polom** **156.97 338** *e*PKP2 **PKPab** **15 45 56.9 +0.4**
DRGR **157.01 324**⇓ *i*P **PKPab** **15 45 56.3 -0.6**
CLL **Collm** **157.06 344** *i*PKPab **PKPab** **15 45 55.6 -1.2**
comp=Z,6.0nm,0.9s
CLL *i*pPKPab **pPKPab** **15 46 01.9 -4.9**
CLL *i* 15 46 06.2
comp=Z,17nm,1.3s
CLL *e*PP **PP** **15 49 38.0 +3.0**
CLL **Collm** **157.06 344** *i*PKP2 **PKPab** **15 45 55.6 -1.2**
CLL pmax pmax
comp=Z,6.0nm,0.9s
SZH **Strazhica** **157.18 313** *e*P **PKPab** **15 45 58.4 +0.7**
BRG **Berggiesshubel** **157.22 342** *e*PKP **PKPab** **15 45 57.0 -0.5**
comp=Z,8.7nm,1.0s
BRG **Berggiesshubel** **157.22 342** *e*PKP2 **PKPab** **15 45 57.0 -0.5**
BRG pmax pmax
comp=Z,9.0nm,1.0s
PSZ **Piszkesteto** **157.56 329**⇑ *i*P **PKPab** **15 45 58.4 -0.8**
VYHS **Vyhne** **157.58 332** *e*PKP2 **PKPab** **15 45 59.2 0.0**
VYHS **Vyhne** **157.58 332** *e*PKP **PKPab** **15 45 59.2 0.0**
VYHS *e*SKSDF 15 52 53.8
VRAC **Vranov** **157.77 336**⇓ *i*P **PKPab** **15 46 00.1 +0.1**
PRU **Pruhonice** **157.85 340** *e*PKPAB **PKPab** **15 45 59.1 -1.1**
PRU **Pruhonice** **157.85 340** *e*PKP2 **PKPab** **15 45 59.1 -1.1**
NKC **Novy Kostel** **158.19 344** *e*PKPAB **PKPab** **15 46 00.9 -0.9**
NKC **Novy Kostel** **158.19 344** *e*PKP2 **PKPab** **15 46 00.9 -0.9**
BZS **Buzias** **158.36 323**⇑ *i*P **PKPab** **15 46 01.7 -0.9**
MPEP **Malo Peshtene** **158.51 315** *e*P **PKPab** **15 46 03.2 -0.2**
PGB **Panagyurishte** **158.66 313** *e*P **PKPab** **15 46 03.2 -1.0**
MDVR **Moldovita** **158.84 321**⇓ *i*P **PKPab** **15 46 04.7 -0.2**
KHC **Kasperske Hory** **158.90 341** *e*PKPAB **PKPab** **15 46 03.5 -1.4**
KHC **Kasperske Hory** **158.90 341** *e*PKP2 **PKPab** **15 46 03.5 -1.4**
GERES **GERESS Array B** **159.12 340** PKP **PKPdf** **15 45 29.4 +0.3**
comp=Z,0.2nm,0.6s,baz=29,slow=2.2,SNR=2.2
CONA **Conrad Observa** **159.19 335** *i*PKPab **PKPab** **15 46 05.9 -0.3**
comp=Z,24nm,2.0s
VTS **Vitosha** **159.25 314**⇓ *i*P **PKPab** **15 46 06.7 -0.1**
VTS **Vitosha** **159.25 314** *e*P **PKPab** **15 46 06.6 -0.2**
MMB **Musomiste** **159.43 311** *e*P **PKPab** **15 46 06.8 -0.7**
KKB **Krupnik** **159.71 313** *e*P **PKPab** **15 46 08.3 -0.4**
MOA **Molln** **159.82 338** *i*PKPab **PKPab** **15 46 08.8 -0.1**
comp=Z,12nm,1.6s
SOKA **Soboth** **160.55 335** *i*PKPab **PKPab** **15 46 11.5 -0.7**
comp=Z,14nm,1.7s
MYKA **Terra Mystica** **161.09 337** *i*PKPab **PKPab** **15 46 13.2 -1.3**
comp=Z,6.8nm,0.9s
WTTA **Wattenberg** **161.14 342** *i*PKPab **PKPab** **15 46 14.6 -0.2**
comp=Z,5.4nm,0.6s
DAVA **Damuels** **161.55 345** *i*PKPab **PKPab** **15 46 15.2 -1.4**
comp=Z,3.3nm,0.8s
TORD **Torodi Ar. Bea** **163.59 175** PKP **PKPdf** **15 45 35.5 +0.8**
comp=Z,1.8nm,1.0s,baz=222,slow=0.1,SNR=4.7
TORD PKPab **PKPab** **15 46 27.2 +1.2**
comp=Z,1.7nm,0.9s,baz=159,slow=3.3,SNR=4.0
ESDC **Sonseca Array** **168.39 28** PKP **PKPdf** **15 45 39.4 +1.5**
comp=Z,0.1nm,0.3s,baz=333,slow=1.4,SNR=2.9
KEST **Kesra** **171.91 321** PKPab **PKPab** **15 47 02.3 -0.3**
comp=Z,3.1nm,0.9s,baz=76,slow=2.3,SNR=4.7

GUC **09** *15:27:46.3±0.5,31.73S×71.75W,h32km±3km, ML3.5*
ISC 09 15:27:42.0±2.0,31.72S±0.05×71.98W±0.09,h10km,n20,
σ1896/36,2C-12D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
						h m s	ISC
ROCH	**El Roble**	**1.49**	**147**	⇑ *i*P	**Pn**	**15 28 09.8**	**+0.7**
ROCH				*i* S	**Sb**	**15 28 28.2**	**-0.8**
ROCH				IAML		15 28 32.8	
	comp=N,1µm,0.5s						
ROC1	**El Roble**	**1.49**	**147**	*e*P	**Pn**	**15 28 09.7**	**+0.6**
ROC1				*e*S	**Sb**	**15 28 28.0**	**-1.1**
PEL	**Peldehue**	**1.79**	**143**	⇑ *i*P	**Pn**	**15 28 14.2**	**+1.2**
PEL				*i* S	**Sn**	**15 28 35.4**	**-0.5**
PEL				IAML		15 28 40.1	
	comp=N,860nm,0.9s						
CLCH	**Cerro Calan**	**2.07**	**144**	*e*P	**Pn**	**15 28 18.2**	**+1.4**
CLCH				*i* S	**Sn**	**15 28 42.5**	**-0.2**
CLCH				IAML		15 28 48.3	
	comp=E,1µm,0.6s						
FCH	**Farellones**	**2.15**	**139**	*e*P	**Pn**	**15 28 19.7**	**+1.6**
FCH				*i* S	**Sn**	**15 28 44.5**	**-0.5**
FCH				IAML		15 28 50.4	
	comp=E,489nm,0.6s						
ANTU	**Antumapu**	**2.16**	**149**	*e*P	**Pn**	**15 28 19.8**	**+1.6**
ANTU				*i* S	**Sn**	**15 28 44.8**	**-0.2**
ANTU				IAML		15 28 55.5	
	comp=N,537nm,1.4s						
AUSP	**Uspallata**	**2.26**	**103**	*e*P	**Pb**	**15 28 23.7**	**+0.6**
AUSP				*e*S	**Sg**	**15 28 53.1**	**-1.6**
RTLS	**Leoncito**	**2.29**	**93**⇓	*e*P	**Pb**	**15 28 24.6**	**+1.0**
RTLS				*i* S	**Sg**	**15 28 54.0**	**-1.6**
ASAL	**Salagasta**	**2.81**	**109**⇓	*e*P	**Pb**	**15 28 32.8**	**+0.5**
ASAL				⇓ *i* S	**Sg**	**15 29 12.4**	**+0.2**
ARCO	**CERRO ARCO**	**2.81**	**114**	*e*P	**Pb**	**15 28 33.2**	**+0.8**
ARCO				⇓ *i* S	**Sg**	**15 29 10.6**	**-1.8**
ARCO				IAML		15 29 19.2	
	comp=Z,190nm,0.4s						
RTCV	**Cerro Valdivia**	**2.93**	**94**	*e*P	**Pb**	**15 28 34.0**	**-0.4**
RTCV				⇓ *i* S	**Sg**	**15 29 17.0**	**+0.8**
AAGR	**Agrelo**	**2.99**	**118**	*e*P	**Pb**	**15 28 35.3**	**-0.1**
AAGR				⇓ *i* S	**Sg**	**15 29 16.0**	**-2.2**
RTLL	**Cerro Villicun**	**3.02**	**83**	*e*P	**Pb**	**15 28 36.4**	**+0.4**
RTLL				⇓ *e*S	**Sg**	**15 29 15.1**	**-4.0**
AMOG	**MOGNA**	**3.09**	**76**	*e*P	**Pb**	**15 28 35.4**	**-1.7**

AGUA	**GUANDACOL**	**3.75**	**54**	*eP*		**Pn**	15 28 45.4	**+5.5**
AGUA				⇓*iS*		**Sg**	**15 29 39.9**	**-2.4**
AVFE	**Valle Fertil**	**4.02**	**76**	⇓*eP*		**Pn**	**15 28 47.9**	**+4.2**
AVFE				⇓*eS*		**Sb**	**15 29 39.7**	**-2.0**
AVFE				IAML			15 29 52.0	
	comp=Z,56nm,0.3s							
ACAN	**Cantantal**	**4.11**	**99**	*eP*		**Pn**	**15 28 48.7**	**+3.8**
ACAN				*iS*		**Sb**	**15 29 44.4**	**+0.1**
VCA	**Vinchina**	**4.42**	**49**	*eP*		**Pb**	**15 28 57.2**	**-2.7**
VCA				IAML			15 30 03.1	
	comp=Z,126nm,0.5s							
ACHE	**Chepes**	**4.58**	**84**	*eP*		**Pn**	**15 28 55.6**	**+4.2**
ACHE				⇓*iS*		**Sb**	**15 29 56.6**	**-1.3**
CYA	**Choya**	**6.28**	**60**	⇓*eP*		**Pn**	**15 29 18.2**	**+3.5**
CYA				IAML			15 30 59.5	
	comp=Z,18nm,0.5s							

*IDC **09** 15:30:07.7±1.0,29.°54S×176.°92W,h0km,mb4.2/6, mb1 4.3/7,mb1mx4.0/32,mbtmp4.2/7,ML3.6/1,Error ellipse: s-maj=31.0km s-min=24.4km az=0.0*
*ISCJB **09** 15:30:10.0±1.3,29.°77S±0.°07×177.°0W±0.°1,h31km, mb4.2/6,Error ellipse: s-maj=18.2km s-min=9.5km az=170.5*

ISC 09 15:30:12.4±0.9,29.°64S±0.°09×177.°0W±0.°1,h31km,n15, σ1§14/17,mb4.2/6,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.88**	**296**	Pn		**Pb**		**15 30 29.7**	**+0.5**
	605nm,0.3s,baz=85,slow=15,SNR=5.4								
RAO				Sn		**Sn**		**15 30 39.9**	**-0.4**
	3µm,0.3s,baz=89,slow=20,SNR=6.7								
URZ	**Urewera**	**9.88**	**208**	Pn		**Pn**		**15 32 31.2**	**-1.0**
	0.5nm,0.3s,baz=40,slow=12,SNR=2.1								
URZ				Sn		**Sn**		**15 34 22.2**	**+0.1**
	1.4nm,0.3s,baz=314,slow=18,SNR=4.2								
CTA	**Charters Tower**	**34.53**	**277**	P		**P**		**15 36 59.7**	**+1.5**
	1.4nm,0.4s,baz=101,slow=10,SNR=3.0								
STKA	**Stephens Creek**	**35.49**	**256**	P		**P**		**15 37 06.4**	**+0.1**
	5.3nm,0.9s,baz=60,slow=2.8,SNR=3.7								
ASAR	**Alice Springs**	**44.01**	**266**	P		**P**		**15 38 16.9**	**-0.4**
	1.9nm,0.7s,baz=105,slow=7.1,SNR=5.5								
WRA	**Warramunga Arr**	**44.93**	**271**	P		**P**		**15 38 23.8**	**-0.9**
	2.9nm,0.8s,baz=110,slow=8.1,SNR=8.5								
MJAR	**Matsushiro Arr**	**78.12**	**325**	P		**P**		**15 42 07.4**	**-0.9**
	1.0nm,0.7s,baz=155,slow=6.4,SNR=4.4								
USRK	**Ussuriysk Ar.**	**87.01**	**326**	P		**P**		**15 42 54.4**	**-0.1**
	2.1nm,0.8s,baz=119,slow=2.8,SNR=8.0								
FINES	**FINESS Array B**	**144.72**	**341**	PKP		**PKPab**		**15 49 43.0**	**-1.1**
	3.4nm,0.7s,baz=86,slow=7.8,SNR=7.3								
KBZ	**Khabaz**	**145.39**	**305**	PKPbc		**PKPab**		**15 49 47.9**	**+0.7**
	2.1nm,0.7s,baz=66,slow=3.4,SNR=4.2								
NOA	**NORSAR Array B**	**148.12**	**352**	PKPbc		**PKPbc**		**15 49 55.5**	**+1.1**
	0.5nm,0.6s,baz=17,slow=4.4,SNR=3.3								
AKASG	**Malin Array Be**	**151.20**	**324**	PKPbc		**PKPbc**		**15 50 01.3**	**-0.9**
	1.4nm,0.6s,baz=48,slow=2.8,SNR=4.7								
BRTR	**Keskin Array B**	**152.98**	**300**	PKPbc		**PKPbc**		**15 50 06.8**	**0.0**
	0.9nm,0.8s,baz=120,slow=2.8,SNR=3.4								
GERES	**GERESS Array B**	**159.15**	**340**	PKP		**PKPdf**		**15 50 06.2**	**-1.1**
	0.2nm,0.7s,baz=63,slow=1.7,SNR=2.5								
TORD	**Torodi Ar. Bea**	**163.54**	**176**	PKPab		**PKPab**		**15 51 06.8**	**+2.8**
	0.5nm,0.8s,baz=189,slow=4.0,SNR=2.6								

*IDC **09** 15:33:33.4±1.3,29.°68S×176.°77W,h0km,mb4.1/6, mb1 4.2/7,mb1mx4.0/25,mbtmp4.1/7,Error ellipse: s-maj=37.9km s-min=26.5km az=164.0*
*ISCJB **09** 15:33:36.4±1.2,29.°75S±0.°07×176.°8W±0.°1,h31km, mb4.1/6,Error ellipse: s-maj=16.4km s-min=9.8km az=170.9*

ISC 09 15:33:38.5±1.0,29.°62S±0.°09×176.°9W±0.°1,h31km,n13, σ0§89/15,mb4.2/6,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.96**	**292**	Pn		**Pb**		**15 33 56.5**	**-0.2**
	1µm,0.3s,baz=100,slow=10,SNR=20								
RAO				Sn		**Sb**		**15 34 08.8**	**-0.3**
	1µm,0.3s,baz=63,slow=24,SNR=11								
URZ	**Urewera**	**9.95**	**208**	Pn		**Pn**		**15 35 58.8**	**-0.5**
	baz=90,slow=20,SNR=1.6								
URZ				Sn		**Sn**		**15 37 50.2**	**+0.3**
	1.9nm,0.3s,baz=68,slow=23,SNR=14								
CTA	**Charters Tower**	**34.63**	**277**	P		**P**		**15 40 26.8**	**+1.6**
	4.9nm,1.0s,baz=101,slow=10,SNR=4.0								
ASAR	**Alice Springs**	**44.12**	**266**	P		**P**		**15 41 44.0**	**-0.2**
	1.1nm,0.5s,baz=102,slow=6.5,SNR=16								
WRA	**Warramunga Arr**	**45.03**	**271**	P		**P**		**15 41 51.3**	**-0.4**
	1.5nm,0.6s,baz=110,slow=8.0,SNR=14								
FITZ	**Fitzroy Crossi**	**53.33**	**269**	P		**P**		**15 42 54.3**	**-0.8**
	1.8nm,0.8s,baz=132,slow=6.5,SNR=2.4								
PETK	**Petropavlovsk-**	**85.30**	**345**	P		**P**		**15 46 11.8**	**-0.1**
	1.0nm,0.6s,baz=119,slow=8.4,SNR=4.3								
USRK	**Ussuriysk Ar.**	**87.05**	**326**	P		**P**		**15 46 21.1**	**+0.3**
	1.1nm,0.7s,baz=104,slow=4.2,SNR=5.5								
FINES	**FINESS Array B**	**144.73**	**341**	PKP		**PKPab**		**15 53 09.7**	**-0.6**
	1.7nm,0.6s,baz=40,slow=3.0,SNR=8.1								
NB2	**NORSAR Subarra**	**148.12**	**353**	PKP		**PKPbc**		**15 53 19.3**	**-1.2**
	comp=Z,2.5nm,1.0s,baz=10,slow=3.2								
NOA	**NORSAR Array B**	**148.12**	**353**	PKPbc		**PKPbc**		**15 53 20.5**	**0.0**
	comp=Z,0.7nm,0.7s,baz=15,slow=4.5,SNR=3.0								
AKASG	**Malin Array Be**	**151.24**	**324**	PKPbc		**PKPbc**		**15 53 27.8**	**-0.6**
	comp=Z,1.5nm,0.6s,baz=43,slow=3.0,SNR=5.0								
BRTR	**Keskin Array B**	**153.05**	**300**	PKPbc		**PKPbc**		**15 53 34.9**	**+1.8**
	comp=Z,0.5nm,0.6s,baz=92,slow=4.9,SNR=2.6								

SJA 09 15:36:04.8±1.3,28.°02S×66.°58W,h176km±5km,ML3.4, MW3.6,19D,Catamarca Province

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CYA	**Choya**	**0.81**	**121**	⇓*eP*		Pn		15 36 32.1	+1.3
CYA				⇓*eS*		Sn		15 36 51.1	+0.2
CYA				IAML				15 36 54.9	
	comp=Z,101nm,0.7s								
VCA	**Vinchina**	**1.60**	**243**	⇓*eP*		Pn		15 36 38.5	+1.0
VCA				⇓*eS*		Sn		15 37 02.4	-0.5
VCA				IAML				15 37 05.5	
	comp=Z,835nm,0.6s								
FSA	**Cafayete**	**1.98**	**16**	⇓*eP*		Pn		15 36 42.4	+0.7
FSA				⇓*eS*		Sn		15 37 09.6	-0.5
FSA				IAML				15 37 10.6	
	comp=Z,39nm,0.5s								
AGUA	**GUANDACOL**	**2.22**	**228**	⇓*eP*		Pn		15 36 44.9	+0.7
AGUA				⇓*eS*		Sn		15 37 15.1	+0.3
AVFE	**Valle Fertil**	**2.74**	**196**	⇓*eP*		Pn		15 36 51.0	+0.8
AVFE				IAML				15 36 52.3	
	comp=Z,192nm,0.2s								
AVFE				⇓*eS*		Sn		15 37 24.1	-1.4
ACHE	**Chepes**	**3.13**	**181**	*eP*		Pn		15 36 56.4	+1.4
ACHE				⇓*eS*		Sn		15 37 32.8	-1.4
AMOG	**MOGNA**	**3.35**	**209**	⇓*eP*		Pn		15 36 58.0	+0.4
RTLL	**Cerro Villicun**	**3.68**	**206**	⇓*eP*		Pn		15 37 02.2	+0.4
TCA	**Tanti**	**3.73**	**153**	*eP*		Pn		15 37 03.9	+1.4
TCA				*eS*		Sn		15 37 46.2	-1.3
TCA				IAML				15 37 48.4	
	comp=Z,66nm,0.5s								
SJA	**San Juan**	**3.89**	**206**	*eP*		Pn		15 37 05.4	+0.9
AZAP	**Zapla**	**4.02**	**20**	*eP*		Pn		15 37 07.1	+0.7
RTCV	**Cerro Valdivia**	**4.19**	**203**	⇓*eP*		Pn		15 37 09.0	+0.8
RTLS	**Leoncito**	**4.44**	**211**	⇓*eP*		Pn		15 37 12.5	+0.8
RTLS				*eS*		Sn		15 38 04.7	+0.6
ASTB	**Santa Barbara**	**4.49**	**26**	⇓*eP*		Pn		15 37 13.3	+1.1
ASAL	**Salagasta**	**4.95**	**203**	⇓*eP*		Pn		15 37 19.1	+1.0
ARCO	**CERRO ARCO**	**5.21**	**202**	⇓*eP*		Pn		15 37 22.4	+0.8
ARCO				IAML				15 37 24.1	
	comp=Z,39nm,0.1s								
AAGR	**Agrelo**	**5.41**	**200**	⇓*eP*		Pn		15 37 24.9	+0.9

IDC 09 15:36:19.1±5.0,29.°36S×176.°73W,h0km,mb3.7/2, mb1 4.0/2,mb1mx3.6/24,mbtmp3.7/2,Error ellipse: s-maj=283.0km s-min=73.9km az=165.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.05**	**276**	Sn		Sn		15 36 56.4	0.0
	948nm,0.3s,baz=120,slow=20,SNR=6.6								
URZ	**Urewera**	**10.24**	**208**	Sn		Sn		15 40 33.6	-9.4
	0.5nm,0.3s,baz=108,slow=20,SNR=2.3								
ASAR	**Alice Springs**	**44.28**	**265**	P		P		15 44 31.1	+0.2
	0.9nm,0.8s,baz=104,slow=6.7,SNR=6.2								
WRA	**Warramunga Arr**	**45.18**	**270**	P		P		15 44 37.5	-0.5
	0.9nm,0.7s,baz=110,slow=8.1,SNR=6.9								
FINES	**FINESS Array B**	**144.54**	**341**	PKP		PKPdf		15 55 56.4	-0.5
	1.2nm,0.5s,baz=60,slow=2.7,SNR=8.2								

MEX 09 15:38:12.0±0.7,15.°06N×91.°08W,h91km±47km,MD4.2, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.58**	**320**	*eP*		Pn		15 38 37.5	-1.5
CCIG				*eS*		Sn		15 38 57.9	-1.6
TGIG		**2.60**	**311**	*eP*		Pn		15 38 52.2	-0.1

IDC 09 15:42:55.7±2.2,29.°33S×176.°56W,h0km,mb3.8/3, mb1 4.0/3,mb1mx3.7/22,mbtmp3.8/3,Error ellipse: s-maj=114.3km s-min=35.4km az=169.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.19**	**274**	Pn		Pn		15 43 20.6	+1.0
	202nm,0.3s,baz=120,slow=20,SNR=6.3								
RAO				Sn		Sb		15 43 35.2	+0.1
	838nm,0.3s,baz=48,slow=23,SNR=8.0								
URZ	**Urewera**	**10.34**	**209**	Sn		Sn		15 47 09.8	-12
	0.6nm,0.3s,baz=19,slow=16,SNR=3.8								
STKA	**Stephens Creek**	**35.95**	**255**	P		P		15 49 58.8	+0.7
	1.5nm,0.7s,baz=106,slow=15,SNR=4.2								
ASAR	**Alice Springs**	**44.43**	**265**	P		P		15 51 07.8	-0.9
	0.6nm,0.7s,baz=105,slow=7.2,SNR=7.1								
WRA	**Warramunga Arr**	**45.33**	**270**	P		P		15 51 14.5	-1.3
	1.3nm,0.8s,baz=110,slow=7.6,SNR=7.2								
FINES	**FINESS Array B**	**144.56**	**341**	PKP		PKPdf		16 02 33.4	-0.1
	1.4nm,0.5s,baz=27,slow=3.4,SNR=8								
AKASG	**Malin Array Be**	**151.18**	**325**	PKPbc		PKPbc		16 02 50.7	+0.1
	0.1nm,0.3s,baz=41,slow=2.5,SNR=2.9								

*IDC **09** 15:46:17.1±1.7,29.°18S×176.°93W,h0km,mb3.7/2, mb1 4.1/3,mb1mx3.7/31,mbtmp4.0/3,MS4.4/1,Ms1 4.4/1, ms1mx3.5/28,Error ellipse: s-maj=56.7km s-min=30.2km az=159.0*
*ISCJB **09** 15:46:22.6±2.6,29.°70S±0.°08×177.°2W±0.°2,h36km, mb3.7/2,MS4.4/1,Error ellipse: s-maj=31.1km s-min=9.6km az=166.1*

ISC 09 15:46:23.0±1.5,29.°5S±0.°1×177.°1W±0.°1,h36km,n8, σ1§33/9,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.78**	**289**	Pn		**Pn**		**15 46 36.8**	**-0.6**
	137nm,0.3s,baz=0.0,slow=20,SNR=5.1								
RAO				Sn		**Sn**		**15 46 48.5**	**+0.7**
	206nm,0.3s,baz=54,slow=19,SNR=5.8								
RAO				LR		LR		15 46 57.2	
	comp=Z,844nm,19.7s,baz=354,slow=46								
URZ	**Urewera**	**9.98**	**207**	Pn		**Pn**		**15 48 45.4**	**+1.7**
	baz=350,slow=18,SNR=1.6								
URZ				Sn		**Sn**		**15 50 32.4**	**-2.0**
	0.3nm,0.3s,baz=53,slow=20,SNR=3.5								
ASAR	**Alice Springs**	**43.97**	**266**	P		**P**		**15 54 27.4**	**+0.5**
	0.9nm,0.8s,baz=102,slow=6.6,SNR=7.7								
WRA	**Warramunga Arr**	**44.88**	**271**	P		**P**		**15 54 34.0**	**-0.2**
	1.3nm,0.9s,baz=109,slow=7.8,SNR=5.7								
VNDA	**Vanda**	**49.06**	**186**	LR		LR		16 16 29.4	
	comp=Z,342nm,18.2s,baz=330,slow=37								
FINES	**FINESS Array B**	**144.57**	**341**	PKP		**PKPab**		**16 05 53.0**	**-0.5**
	1.5nm,0.7s,baz=64,slow=3.2,SNR=8.8								
AKASG	**Malin Array Be**	**151.06**	**324**	PKPbc		**PKPbc**		**16 06 10.5**	**-1.3**
	0.3nm,0.3s,baz=42,slow=2.7,SNR=5.4								
BRTR	**Keskin Array B**	**152.86**	**300**	PKPbc		**PKPbc**		**16 06 17.3**	**+0.9**
	0.3nm,0.5s,baz=151,slow=3.3,SNR=2.8								

IDC 09 15:50:21.9±5.3,28.°48S×177.°09W,h0km,mb3.4/2, mb1 3.7/2,mb1mx3.5/17,mbtmp3.4/2,Error ellipse: s-maj=108.6km s-min=42.9km az=108.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.06**	**223**	Pn		Pn		15 50 44.0	0.0
	144nm,0.3s,baz=9.0,slow=19,SNR=2.5								
RAO				Sn		Sg		15 50 55.6	-0.4
	212nm,0.3s,baz=73,slow=19,SNR=5.5								
ASAR	**Alice Springs**	**44.04**	**265**	P		P		15 58 31.6	-0.1
	0.4nm,0.8s,baz=105,slow=6.6,SNR=4.3								
WRA	**Warramunga Arr**	**44.86**	**270**	P		P		15 58 38.0	-0.2
	0.6nm,0.8s,baz=108,slow=8.2,SNR=2.9								
FINES	**FINESS Array B**	**143.60**	**341**	PKP		PKPdf		16 09 57.5	-0.5
	1.0nm,0.8s,baz=10.0,slow=2.9,SNR=3.3								

IDC 09 15:58:36.1±4.2,29.°62S×176.°80W,h0km,mb3.6/2, mb1 3.9/2,mb1mx3.6/18,mbtmp3.6/2,Error ellipse: s-maj=251.4km s-min=50.1km az=162.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.20**	**266**	P		P		16 06 47.0	-0.2
	0.7nm,0.8s,baz=104,slow=7.6,SNR=8.7								
WRA	**Warramunga Arr**	**45.12**	**271**	P		P		16 06 54.0	-0.6
	0.4nm,0.4s,baz=111,slow=6.1,SNR=5.9								
FINES	**FINESS Array B**	**144.75**	**341**	PKP		PKPbc		16 18 13.3	+0.1
	1.3nm,0.6s,baz=28,slow=3.3,SNR=7.8								
AKASG	**Malin Array Be**	**151.29**	**324**	PKPbc		PKPbc		16 18 31.6	+0.3
	0.2nm,0.3s,baz=48,slow=2.3,SNR=2.1								

*IDC **09** 16:05:27.2±0.8,29.°48S×176.°77W,h0km,mb4.4/9, mb1 4.5/12,mb1mx4.3/25,mbtmp4.4/12,ML3.6/3,Error ellipse: s-maj=27.2km s-min=17.2km az=161.0*
*NEIC **09** 16:05:28.4±0.4,29.°46S×176.°81W,h10km,mb4.5/4,Error ellipse: s-maj=10.7km s-min=9.2km az=138.0*
*ISCJB **09** 16:05:29.7±0.6,29.°60S±0.°06×176.°79W±0.°07,h31km, mb4.4/12,Error ellipse: s-maj=9.3km s-min=8.3km az=42.5*

ISC 09 16:05:31.5±0.6,29.°48S±0.°07×176.°84W±0.°08,h31km,n37, σ1§39/33,mb4.5/12,1C-1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.97**	**283**	Pn		**Pb**		**16 05 50.2**	**+0.4**
	2µm,0.3s,baz=191,slow=1.0,SNR=52								
RAO				Sn		**Sn**		**16 06 01.3**	**-0.4**
	2µm,0.3s,baz=90,slow=20,SNR=17								
OUZ	**Omahuta**	**9.91**	**232**	*e*Pn		Pn		16 08 03.2	+11
URZ	**Urewera**	**10.09**	**208**	Pn		**Pn**		**16 07 52.6**	**-1.7**
	0.2nm,0.3s,baz=39,slow=14,SNR=4.5								
URZ				Sn		**Sn**		**16 09 46.9**	**+0.4**
	1.3nm,0.3s,baz=158,slow=19,SNR=3.5								
MSVF	**Nonsavu**	**12.59**	**337**	Pn		**Pn**		**16 08 26.6**	**-2.1**
DZM	**Mont Dzumac**	**16.76**	**292**	Pn		**P**		**16 09 28.2**	**+2.1**
	0.2nm,0.3s,baz=121,slow=17,SNR=3.6								
DZM	**Mont Dzumac**	**16.76**	**292**	*e*Pn		**Pn**		**16 09 23.0**	**-1.1**
	23nm,1.0s								
RPZ	**Rata Peaks**	**17.18**	**211**	P		**Pn**		**16 09 28.2**	**-1.0**
	0.5nm,0.3s,baz=0.0,slow=2.0,SNR=3.0								
RAR	**Rarotonga**	**17.47**	**66**	P		**Pn**		**16 09 32.0**	**-0.9**
	1.7nm,0.3s,baz=144,slow=4.2,SNR=5.4								
CTA	**Charters Tower**	**34.67**	**277**	P		**P**		**16 12 19.6**	**+1.1**
	6.3nm,0.6s,baz=104,slow=11,SNR=15								
STKA	**Stephens Creek**	**35.67**	**255**	P		**P**		**16 12 28.9**	**+1.8**
	3.9nm,0.6s,baz=90,slow=10,SNR=6.2								
ASAR	**Alice Springs**	**44.17**	**265**	P		**P**		**16 13 37.6**	**-0.2**
	4.4nm,0.7s,baz=98,slow=5.9,SNR=56								
WRAB	**Tennant Creek**	**45.08**	**271**	*e*P		**P**		**16 13 45.0**	**0.0**
	16nm,1.2s								
WRA	**Warramunga Arr**	**45.08**	**271**	P		**P**		**16 13 44.7**	**-0.3**
	3.0nm,0.4s,baz=110,slow=6.3,SNR=45								
CASY	**Casey**	**56.42**	**208**	*e*P		**P**		**16 15 05.8**	**-4.0**
	1.9nm,0.9s								
QSPA	**South Pole Qui**	**60.63**	**180**	P		**P**		**16 15 39.8**	**+0.5**
MJAR	**Matsushiro Arr**	**78.07**	**324**	P		**P**		**16 17 26.3**	**-1.0**
	1.8nm,0.8s,baz=159,slow=5.5,SNR=6.9								
SYO	**Syowa Base**	**78.23**	**193**	⇓*e*pP		**P**		**16 17 30.4**	**+2.7**
SYO	**Syowa Base**	**78.23**	**193**	⇓*e*PcP		**PcP**		**16 17 35.2**	**-1.9**
YSS	**Yuzh-Sakhalins**	**84.37**	**334**	*e*P		**P**		**16 17 58.4**	**-2.0**
	6.0nm,0.8s								
PETK	**Petropavlovsk-**	**85.18**	**345**	P		**P**		**16 18 05.3**	**+1.0**
	2.5nm,0.5s,baz=110,slow=8.9,SNR=15								
USRK	**Ussuriysk Ar.**	**86.96**	**326**	P		**P**		**16 18 14.2**	**+0.9**
	4.1nm,0.8s,baz=153,slow=3.9,SNR=10								
TXAR	**Lajitas Array**	**91.04**	**57**	P		**P**		**16 18 34.6**	**+1.4**
	0.1nm,0.6s,baz=216,slow=4.5,SNR=2.6								
ILAR	**Eielson Array**	**96.81**	**12**	P		**P**		**16 18 58.5**	**-0.2**
	0.5nm,0.7s,baz=220,slow=5.4,SNR=6.0								
MKAR	**Makanchi Array**	**117.95**	**310**	PKP		**PKPdf**		**16 24 15.0**	**+0.1**
	0.3nm,0.3s,baz=73,slow=2.3,SNR=4.4								
ZALV	**Zalesovo Beam**	**118.02**	**319**	PKP		**PKPdf**		**16 24 15.3**	**+0.6**
	0.2nm,0.3s,baz=106,slow=1.5,SNR=2.3								
ARCES	**ARCESS Array B**	**137.90**	**348**	PKhKP		PKPpre		16 24 44.8	
	3.4nm,1.1s,baz=339,slow=3.1,SNR=4.7								
H10N3	**ASCENSION HYDR**	**139.18**	**153**	T		T		19 01 42.3	
	baz=204,slow=75,SNR=5.3								
H10N1	**ASCENSION HYDR**	**139.19**	**153**	T		T		19 01 42.3	
	baz=204,slow=75,SNR=4.4								
H10N2	**ASCENSION HYDR**	**139.20**	**153**	T		T		19 01 42.3	
	baz=204,slow=75,SNR=9.3								
FINES	**FINESS Array B**	**144.62**	**341**	PKP		PKPbc		16 25 03.1	0.0
	4.5nm,0.6s,baz=62,slow=3.0,SNR=33								
KBZ	**Khabaz**	**145.42**	**305**	PKPbc		**PKPab**		**16 25 07.0**	**+0.6**
	3.7nm,0.8s,baz=145,slow=2.0,SNR=10								
NB2	**NORSAR Subarra**	**147.98**	**353**	PKP		**PKPbc**		**16 25 13.7**	**+0.5**
	comp=Z,3.9nm,0.7s,baz=17,slow=3.1								
NOA	**NORSAR Array B**	**147.98**	**353**	PKPbc		**PKPbc**		**16 25 13.8**	**+0.6**
	comp=Z,4.3nm,0.8s,baz=15,slow=4.4,SNR=12								
NACGM	**Naroch**	**149.44**	**333**	*e*		**PKPbc**		**16 25 17.0**	**0.0**
AKASG	**Malin Array Be**	**151.16**	**325**	PKPbc		**PKPbc**		**16 25 21.3**	**0.0**
	comp=Z,6.4nm,0.6s,baz=46,slow=3.1,SNR=20								
BRTR	**Keskin Array B**	**153.03**	**300**	PKPbc		**PKPbc**		**16 25 26.9**	**+0.8**
	comp=Z,1.7nm,0.9s,baz=123,slow=4.6,SNR=7.8								
TORD	**Torodi Ar. Bea**	**163.69**	**175**	PKPab		**PKPab**		**16 26 24.7**	**+0.9**
	comp=Z,0.6nm,0.7s,baz=174,slow=3.6,SNR=2.7								

IDC 09 16:06:18.7±3.3,29.°91S×176.°63W,h0km,mb4.1/4, mb1 4.3/4,mb1mx3.9/22,mbtmp4.1/4,Error ellipse: s-maj=118.6km s-min=39.8km az=152.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.32**	**266**	P		P		16 14 30.9	+0.2
	0.5nm,0.4s,baz=104,slow=6.8,SNR=2.6								
WRA	**Warramunga Arr**	**45.27**	**271**	P		P		16 14 37.7	-0.5
	2.6nm,0.6s,baz=109,slow=7.7,SNR=3.1								
MJAR	**Matsushiro Arr**	**78.52**	**324**	P		P		16 18 21.6	-0.2
	0.9nm,0.7s,baz=144,slow=4.1,SNR=2.9								
USRK	**Ussuriysk Ar.**	**87.41**	**326**	P		P		16 19 08.0	+0.4
	1.5nm,0.7s,baz=144,slow=3.2,SNR=4.1								
FINES	**FINESS Array B**	**145.08**	**341**	PKPbc		PKPbc		16 25 56.0	-0.8
	6.3nm,0.6s,baz=49,slow=3.8,SNR=10								
NOA	**NORSAR Array B**	**148.43**	**353**	PKPbc		PKPbc		16 26 05.6	-1.0
	2.8nm,0.7s,baz=15,slow=4.2,SNR=3.7								
AKASG	**Malin Array Be**	**151.61**	**324**	PKPbc		PKPbc		16 26 14.4	-0.1
	0.6nm,0.4s,baz=44,slow=2.7,SNR=4.1								

IDC 09 16:07:55.3±3.0,28.°64S×176.°99W,h0km,mb3.8/2, mb1 4.1/2,mb1mx3.6/21,mbtmp3.8/2,Error ellipse: s-maj=97.9km s-min=34.0km az=136.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.02**	**233**	Pn		Pn		16 08 16.6	-0.3
	607nm,0.3s,baz=140,slow=4.4,SNR=6.3								
RAO				Sn		Sg		16 08 27.0	-1.0
	856nm,0.3s,baz=94,slow=19,SNR=5.3								
ASAR	**Alice Springs**	**44.11**	**265**	P		P		16 16 05.8	0.0
	1.2nm,0.9s,baz=101,slow=6.5,SNR=4.3								
WRA	**Warramunga Arr**	**44.95**	**270**	P		P		16 16 12.3	-0.1
	1.3nm,0.9

URZ Urewera 10.12 208 Pn **Pn** **16 19 54.8 -3.9**
1.0nm,0.3s,baz=105,slow=19,SNR=4.7
URZ Sn **Sn** **16 21 48.5 -2.6**
13nm,0.3s,baz=238,slow=23,SNR=14
URZ Urewera 10.12 208 *e*Pn **Pn** **16 19 54.5 -4.2**
URZ Sn **Sn** **16 21 48.5 -2.6**
MSVF Nonsavu 12.47 337 *e*P **Pn** **16 20 33.0 +2.1**
MSVF *e* 16 22 50.1
MSVF Nonsavu 12.47 337 *e*Pn **Pn** **16 20 33.0 +2.1**
MSVF *e*Sn **Sn** **16 22 50.1 +1.2**
THZ Tophouse 14.83 211 *e*Pn **Pn** **16 21 01.5 -1.5**
KHZ Kahutara 15.09 208 *e*Pn **Pn** **16 21 01.5 -4.8**
170nm,1.3s
AFI Afiamalu 16.14 18 Pn Pn 16 21 09.9 -10
0.8nm,0.3s,baz=196,slow=19,SNR=2.3
AFI Sn Sn 16 23 56.3 -22
3.0nm,0.3s,baz=198,slow=20,SNR=3.2
OXZ Oxford 16.47 209 *e*Pn **Pn** **16 21 19.2 -4.9**
DZM Mont Dzumac 16.62 292 Pn **P** **16 21 31.1 +2.6**
1.2nm,0.3s,baz=116,slow=12,SNR=13
DZM LR LR 16 26 49.5
comp=Z,7µm,18.0s,baz=138,slow=34
DZM Mont Dzumac 16.62 292 *e*P **P** **16 21 29.5 +1.0**
177nm,1.6s
DZM *e*LR LR 16 25 16.0
8µm,23.4s
DZM Mont Dzumac 16.62 292 *e*Pn **Pn** **16 21 25.6 -0.7**
45nm,0.8s
RPZ Rata Peaks 17.21 211 P **Pn** **16 21 30.5 -3.0**
6.8nm,0.3s,baz=350,slow=3.4,SNR=20
RPZ S Sn 16 24 29.0 -15
2.1nm,0.3s,baz=25,slow=18,SNR=7.0
RPZ Rata Peaks 17.21 211 *e*Pn **Pn** **16 21 29.7 -3.7**
282nm,1.7s
RPZ S Sn 16 24 29.0 -15
RAR Rarotonga 17.53 66 P **Pn** **16 21 32.6 -5.0**
1.6nm,0.3s,baz=234,slow=9.6,SNR=12
RAR S Sn 16 24 28.2 -24
2.0nm,0.3s,baz=326,slow=18,SNR=4.0
RAR LR LR 16 26 36.1
comp=Z,2µm,19.3s,baz=248,slow=31
RAR Rarotonga 17.53 66 *e*Pn Pn 16 21 28.8 -8.8
158nm,1.0s
RAR S Sn 16 24 28.2 -24
TBI Tubuai 25.33 83 *e*LQ LQ 16 27 51.4
2µm,27.8s
TBI *e*LR LR 16 29 13.1
4µm,28.0s,baz=250
TBI Tubuai 25.33 83 *e*T T 16 48 50.0
11nm,0.3s
ARMA Armidale 27.20 260 P **P** **16 23 19.2 +2.5**
baz=28,SNR=18
ARMA Armidale 27.20 260 *e*P **P** **16 23 13.7 -3.0**
112nm,2.0s
RIV Riverview 27.45 253 P **P** **16 23 21.6 +3.0**
baz=28
MGCD Mangrove Creek 27.49 254 P **P** **16 23 22.9 +3.9**
baz=26,SNR=9.4
PAE Paea 27.61 71 *e*T T 16 51 36.7
6.3nm,0.3s
PPT2 Papeete2 27.65 71 *e*LQ LQ 16 28 42.5
2µm,25.0s
PPT2 *e*LR LR 16 30 12.6
4µm,26.2s,baz=241
PPT2 Papeete2 27.65 71 *e*T T 16 51 40.9
3.5nm,0.3s
PPT Papeete 27.66 71 LR LR 16 31 39.9
comp=Z,1µm,19.0s,baz=250,slow=31
EIDS Eidsvold 28.61 270 P **P** **16 23 30.9 +1.8**
baz=29,SNR=5.1
EIDS Eidsvold 28.61 270 *e*P **P** **16 23 25.9 -3.2**
31nm,1.4s
HNR Honiara 29.36 308 P **P** **16 23 35.8 0.0**
45nm,1.0s,baz=174,slow=9.2,SNR=2.1
YNG Young 29.74 252 P **P** **16 23 41.7 +2.5**
baz=30,SNR=14
RMQ Roma 30.36 267 P **P** **16 23 47.4 +2.8**
baz=31,SNR=29
VAH Vaihoa 30.47 69 *e*T T 16 55 07.3
11nm,0.2s
MCQ Macquarie Isla 30.53 208 P **P** **16 23 48.9 +3.1**
baz=31
CMSA Cobar Meteorol 32.16 257 P **P** **16 24 02.0 +1.5**
baz=32,SNR=5.2
QLP Quilpie 34.28 265 P **P** **16 24 20.0 +1.1**
baz=35,SNR=8.4
CTA Charters Tower 34.55 277 P **P** **16 24 22.1 +0.7**
12nm,0.6s,baz=99,slow=11,SNR=26
CTA LR LR 16 36 57.5
comp=Z,3µm,18.4s,baz=112,slow=34
CTAO Charters Tower 34.55 277 *e*P **P** **16 24 16.8 -4.6**
CTAO pmax pmax
comp=Z,75nm,1.6s
CTAO Charters Tower 34.55 277 *e*P **P** **16 24 16.8 -4.6**
comp=Z,75nm,1.6s
ARPS Mount Arapiles 35.09 247 P **P** **16 24 27.4 +1.6**
baz=35
STKA Stephens Creek 35.59 255 P **P** **16 24 30.8 +0.5**
comp=Z,4.4nm,0.4s,baz=100,slow=10,SNR=7.8
STKA LR LR 16 37 52.7
comp=Z,2µm,18.1s,baz=102,slow=34
STKA Stephens Creek 35.59 255 P **P** **16 24 31.4 +1.2**
baz=36,SNR=6.3
MTSU Mount Surprise 37.01 279 P **P** **16 24 44.0 +1.5**
baz=37,SNR=8.6
HTT Hallett 37.66 252 P **P** **16 24 49.3 +1.4**
baz=38,SNR=15
RKT Rikitea 38.02 91 *e*LR LR 16 35 06.0
comp=Z,2µm,28.8s,baz=259
PMG Port Moresby 39.01 293 LR LR 16 38 42.1
comp=Z,2µm,19.7s,baz=152,slow=33
TAOE Nuku Hiva Isla 40.08 67 *e*LR LR 16 35 53.8
comp=Z,2µm,27.3s,baz=246
BBOO Buckleboo 40.12 253 P **P** **16 25 08.0 -0.5**
baz=40,SNR=5.6
BBOO Buckleboo 40.12 253 P **P** **16 25 08.4 0.0**
comp=Z,75nm,1.4s
AS01 Alice Springs 44.03 265 *e*P **P** **16 25 39.1 -1.4**
AS31 Alice Springs 44.07 265 *e*P **P** **16 25 38.7 -2.2**
comp=Z,4.7nm,0.6s
ASAR Alice Springs 44.08 265 P **P** **16 25 39.9 -1.0**
comp=Z,10nm,0.6s,baz=99,slow=6.5,SNR=175
ASAR ScP **ScP** **16 31 20.3 +4.7**
comp=Z,0.8nm,0.8s,baz=116,slow=4.3,SNR=4.4
ASAR LR LR 16 43 29.6
comp=Z,3µm,18.6s,baz=116,slow=35
ASAR Alice Springs 44.08 265 P **P** **16 25 39.9 -1.0**
ASAR pmax pmax
comp=Z,12nm,0.6s
ASAR pmax pmax
comp=N,1.0nm,0.8s
ASAR MLR MLR
comp=Z,3µm,18.6s
WB2 Warramunga Arr 44.96 271 *e*P **P** **16 25 46.5 -1.5**
comp=Z,71nm,1.5s
WRAB Tennant Creek 44.97 271 ⇓*i*P **P** **16 25 47.2 -0.8**
WRAB pmax pmax
comp=Z,98nm,1.4s
WRAB Tennant Creek 44.97 271 *e*P **P** **16 25 45.0 -3.1**
comp=Z,65nm,1.5s
WRA Warramunga Arr 44.97 271 P **P** **16 25 47.2 -0.9**
comp=Z,5.8nm,0.4s,baz=110,slow=8.0,SNR=95
WRA ScP **ScP** **16 31 22.6 +3.3**
comp=Z,0.7nm,0.9s,baz=94,slow=3.8,SNR=3.2
WRA LR LR 16 43 51.6
comp=Z,1µm,18.1s,baz=125,slow=35
FORT Forrest 47.18 254 P **P** **16 26 04.4 -0.9**
baz=48,SNR=30
FORT Forrest 47.18 254 *e*P **P** **16 26 03.3 -2.0**
comp=Z,271nm,0.6s
JAY Jayapura 48.26 296 LR LR 16 44 22.6
comp=Z,24nm,21.0s,baz=172,slow=34
WRKA Warakurna 48.51 261 P **P** **16 26 14.8 -1.0**
baz=49,SNR=60
SBA Scott Base 49.11 185 *e*P **P** **16 26 20.3 +0.8**
SBA pmax pmax
comp=Z,38nm,1.2s
SBA Scott Base 49.11 185 *e*P **P** **16 26 20.3 +0.8**
comp=Z,38nm,1.2s
VNDA Vanda 49.19 186 P **P** **16 26 24.2 +4.0**
comp=Z,1.8nm,0.8s,baz=11,slow=6.5,SNR=11
VNDA LR LR 16 44 23.1
comp=Z,445nm,20.3s,baz=298,slow=32
VNDA Vanda 49.19 186 P **P** **16 26 24.2 +4.0**
VNDA pmax pmax
comp=Z,3.0nm,0.9s
VNDA MLR MLR
comp=Z,445nm,20.3s

KNRA Kununurra 51.54 273 P **P** **16 26 38.5 -0.3**
baz=52
KMBL Kambalda 52.19 252 P **P** **16 26 43.2 -0.3**
baz=52
FITZ Fitzroy Crossi 53.27 269 P **P** **16 26 51.1 -0.5**
comp=Z,34nm,1.3s,baz=114,slow=6.0,SNR=13
FITZ Fitzroy Crossi 53.27 269 P **P** **16 26 51.4 -0.2**
baz=54,SNR=10
FITZ Fitzroy Crossi 53.27 269 *e*P **P** **16 26 50.3 -1.3**
comp=Z,50nm,1.4s
KLBR Kellerberrin 55.53 250 P **P** **16 27 07.1 -0.8**
baz=56,SNR=8.3
MEEK Meekatharra 56.29 256 P **P** **16 27 12.2 -1.3**
baz=57,SNR=5.6
CASY Casey 56.45 208 *e*P **P** **16 27 14.2 +0.3**
comp=Z,86nm,1.4s
BLDU Ballidu 56.67 251 P **P** **16 27 16.6 +0.6**
baz=57
MBWA Marble Bar 57.24 263 *e*P **P** **16 27 18.0 -2.2**
comp=Z,57nm,1.4s
QSPA South Pole Qui 60.72 180 *e*P **P** **16 27 47.0 +3.2**
comp=Z,126nm,0.9s
MAW Mawson 73.56 200 P **P** **16 29 07.6 +2.5**
comp=Z,12nm,1.1s,baz=144,slow=8.2,SNR=12
MAW LR LR 17 01 01.5
comp=Z,642nm,19.1s,baz=99,slow=35
MAW Mawson 73.56 200 *e*P **P** **16 29 07.9 +2.9**
comp=Z,12nm,1.5s
SBUM Sibu 74.59 282 *e*P **P** **16 29 12.0 +0.1**
comp=Z,44nm,2.0s
MJAR Matsushiro Arr 77.94 325 P **P** **16 29 28.9 -1.6**
comp=Z,8.0nm,1.0s,baz=163,slow=5.9,SNR=19
MJAR LR LR 16 58 18.2
comp=Z,176nm,21.7s,baz=105,slow=32
MAJO Matsushiro 77.94 325 *c*e**P** **P** **16 29 29.5 -0.9**
MAJO pmax pmax
comp=Z,73nm,1.1s
MAJO Matsushiro 77.94 325 *e*P **P** **16 29 27.6 -2.9**
comp=Z,13nm,1.0s
MAT Matsushiro 77.94 325 P **P** **16 29 29.0 -1.4**
MJB9 Matsu-Tunnel 77.94 325 *e*P **P** **16 29 30.4 0.0**
comp=Z,3.2nm,1.0s
SYO Syowa Base 78.30 193⇓*e*pP **P** **16 29 32.0 0.0**
SYO Syowa Base 78.30 193⇓*i*PcP **PcP** **16 29 39.9 -1.4**
SNAA Sanae 79.13 178 P **P** **16 29 37.5 +0.7**
SNAA Sanae 79.13 178 *c*e**P** **P** **16 29 37.4 +0.7**
SNAA Sanae 79.13 178 P **P** **16 29 37.4 +0.7**
comp=Z,9.3nm,1.0s
VNA1 Neumayer--Stat 79.92 176 P P 16 29 28.7 -12
ASAJ Asahikawa 81.97 332 *e*P **P** **16 29 50.9 -1.2**
comp=Z,33nm,1.2s
PLCA Paso Flores 82.53 133 P **P** **16 29 59.1 +3.7**
comp=Z,4.0nm,1.1s,baz=239,slow=8.2,SNR=3.4
PLCA LR LR 16 57 44.9
comp=Z,297nm,21.5s,baz=248,slow=29
KSRS Korea Array 84.17 319 P **P** **16 30 04.5 +0.9**
comp=Z,7.5nm,1.1s,baz=135,slow=6.2,SNR=5.9
KSRS LR LR 17 05 59.1
comp=Z,103nm,18.4s,baz=340,slow=35
KSRS Korea Array 84.17 319 P **P** **16 30 04.5 +0.9**
KSRS pmax pmax
comp=Z,5.0nm,1.0s
KSRS MLR MLR
comp=Z,103nm,18.4s
KSAR Wonju Array Be 84.19 319 P **P** **16 30 04.5 +0.9**
KSAR Wonju Array Be 84.19 319 P **P** **16 30 04.5 +0.9**
KS01 Wonju Array Si 84.20 319 *e*P **P** **16 30 04.2 +0.4**
YSS Yuzh-Sakhalins 84.24 334⇓*e*P **P** **16 30 04.1 +0.4**
YSS *e* 16 30 16.4
YSS pmax pmax
comp=Z,40nm,1.4s
YSS Yuzh-Sakhalins 84.24 334 P **P** **16 30 01.6 -2.0**
comp=Z,64nm,1.3s
PEA0 Petropavlovsk- 85.07 345 *e*P **P** **16 30 07.0 -0.7**
PEA0B Petropavlovsk- 85.07 345 *e*P **P** **16 30 08.3 +0.5**
comp=Z,16nm,0.7s
PETK Petropavlovsk- 85.07 345 P **P** **16 30 07.1 -0.6**
comp=Z,6.8nm,0.6s,baz=107,slow=7.6,SNR=32
IPM Ipoh 85.24 278 *e*P **P** **16 30 08.3 -1.3**
comp=Z,78nm,2.0s
MSHR Mys Shultsa 86.06 324⇓*e*P **P** **16 30 14.1 +1.2**
GSI Gunungsitoli 86.67 273 *e*P **P** **16 30 15.2 -1.6**
comp=Z,28nm,1.0s
USRK Ussuriysk Ar. 86.83 326 P **P** **16 30 17.1 +0.4**
comp=Z,13nm,0.9s,baz=136,slow=3.6,SNR=30
TUC Tucson 87.78 51 P **P** **16 30 22.9 +1.2**
TUC pmax pmax
comp=Z,8.0nm,1.2s
MDJ Mudanjiang 88.31 325 P **P** **16 30 24.3 +0.5**
MDJ pmax pmax
comp=Z,17nm,1.0s
MDJ pmax pmax
comp=Z,250nm,8.2s
MDJ Mudanjiang 88.31 325 *e*P **P** **16 30 23.3 -0.4**
comp=Z,3.6nm,0.6s
SNY Shenyang 89.60 320 ⇓P **P** **16 30 30.4 +0.5**
SNY pmax pmax
comp=Z,20nm,1.1s
CN2 Changchun 89.89 322 *e*P **P** **16 30 31.1 -0.1**
CN2 e**P** pP 16 30 42.8 +1.6
CN2 pmax pmax
comp=Z,30nm,1.2s
CN2 pmax pmax
comp=Z,100nm,3.0s
TIA Tai'an 89.95 312 *e*P **P** **16 30 32.5 +0.8**
TIA pmax pmax
comp=Z,30nm,1.2s
NKL Nikolayevsk 90.08 336 *e*P **P** **16 30 31.0 -0.8**
NKL *e* 16 30 40.4
KLR Kul'dur 90.63 329*c i*P **P** **16 30 34.5 0.0**
TX31 Lajitas Ar. Si 91.08 57 *e*P **P** **16 30 37.6 +0.3**
TXAR Lajitas Array 91.09 57 P **P** **16 30 37.3 0.0**
comp=Z,1.5nm,1.1s,baz=223,slow=5.1,SNR=6.9
TXAR Lajitas Array 91.09 57 P **P** **16 30 37.3 0.0**
TXAR pmax pmax
comp=Z,1.0nm,1.0s
ENH Enshi 91.78 304 *e*P **P** **16 30 40.5 +0.1**
comp=Z,36nm,1.2s
GYA Guiyang 91.84 299 P **P** **16 30 41.4 +0.5**
GYA pP sP 16 30 57.0 +2.6
GYA PP **PP** **16 34 23.4 +2.9**
GYA SKS **SKSac** **16 41 08.9 -2.9**
GYA S **S** **16 41 35.5 -4.7**
GYA SS **SS** **16 47 48.2 -1.0**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,8.0s
GYA LR LR
comp=Z,540nm,21.0s
GYA LR LR
comp=Z,480nm,22.0s
GYA LR LR
comp=Z,540nm,21.2s
ANMO Albuquerque 92.25 51 *e*P P 16 30 47.5 +4.9
ANMO pmax pmax
comp=Z,3.0nm,1.0s
ANMO Albuquerque 92.25 51 *e*P P 16 30 47.5 +4.8
comp=Z,3.0nm,1.0s
HLID Hailey 92.46 40 *e*P **P** **16 30 38.7 -4.7**
comp=Z,7.3nm,1.2s
BJI Beijing 92.84 315 P **P** **16 30 45.4 +0.4**
BJI pmax pmax
comp=Z,13nm,0.9s
CMAR Chiang Mai Arr 93.92 289 P **P** **16 30 51.3 +0.8**
comp=Z,1.5nm,1.1s,baz=131,slow=3.5,SNR=4.4
CMAR Chiang Mai Arr 93.92 289 P **P** **16 30 51.3 +0.8**
CMAR pmax pmax
comp=Z,1.0nm,0.7s
MCMT McKenzie Canyo 94.12 40 *e*P **P** **16 30 49.6 -1.5**
KMI Kunming 94.18 296 P **P** **16 30 52.0 +0.2**
KMI pmax pmax
comp=Z,3.0nm,0.7s
KMI pmax pmax
comp=Z,270nm,8.4s
KMI LR LR
comp=Z,240nm,18.9s
KMI LR LR
comp=Z,310nm,20.1s
KMI LR LR
comp=Z,300nm,20.1s
XAN Xi'an 94.23 307 P P 16 30 59.2 +7.6
XAN pmax pmax
comp=Z,6.0nm,0.5s
CAST Castle Rocks 94.58 11 *e*P P 16 30 46.6 -5.8
comp=Z,24nm,1.9s

PDAR Pinedale Array 94.78 43 P **P** **16 30 54.2 0.0**
comp=Z,0.2nm,0.3s,baz=246,slow=1.5,SNR=4.6
TRF Thorofare Moun 94.92 12 *e*P **P** **16 30 52.7 -1.5**
comp=Z,4.8nm,0.9s
RND Reindeer 95.14 12 *e*P **P** **16 30 55.3 +0.2**
RND pmax pmax
comp=Z,14nm,1.3s
RND Reindeer 95.14 12 *e*P **P** **16 30 55.3 +0.2**
comp=Z,14nm,1.3s
SEY Seymchan 95.21 346⇓*e*P **P** **16 30 55.0 -0.3**
HHC Hu-ho-hao-te 96.19 314 *e*P **P** **16 31 02.8 +2.3**
HHC pmax pmax
comp=Z,29nm,1.4s
HHC pmax pmax
comp=Z,320nm,8.3s
WRH Wood River Hil 96.25 12 *e*P **P** **16 30 59.5 -0.5**
comp=Z,14nm,1.5s
DOT Dot Lake 96.31 14 *e*P **P** **16 31 00.8 +0.4**
comp=Z,33nm,1.7s
CD2 Chengdu 96.32 302 *e*P **P** **16 31 01.4 +0.1**
CD2 pP sP 16 31 16.6 +1.8
CD2 sP pP 16 31 22.6 +11
CD2 SKS **SKSac** **16 41 33.2 -2.6**
CD2 S **S** **16 42 17.2 -2.0**
CD2 sS sS 16 42 43.4 +7.6
CD2 SS **SS** **16 48 52.3 -0.6**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.2s
CCB Clear Creek Bu 96.46 12 *e*P **P** **16 31 00.2 -0.8**
comp=Z,15nm,1.8s
ILAR Eielson Array 96.75 12 P **P** **16 31 00.7 -1.6**
comp=Z,1.1nm,0.9s,baz=221,slow=5.5,SNR=9.5
ILAR LR LR 17 08 17.8
comp=Z,262nm,21.3s,baz=5.0,slow=32
IL1 Eielson Array 96.75 12 *e*P **P** **16 31 01.0 -1.3**
BILL Bilibino 97.94 354 *e*P **P** **16 31 07.5 -0.1**
BILL pmax pmax
comp=Z,3.0nm,1.0s
LZH Lanzhou 98.85 306 *e*P Pdif 16 31 14.9 +2.2
LZH pP sP 16 31 30.2 +4.0
LZH sP pP 16 31 36.0 +13
LZH PP **PP** **16 35 19.0 +4.1**
LZH pmax pmax
comp=Z,24nm,1.4s
LZH pmax pmax
comp=Z,100nm,9.3s
LZH LR LR
comp=Z,350nm,17.4s
LZH LR LR
comp=Z,360nm,17.5s
LZH LR LR
comp=Z,470nm,19.7s
YAK Yakutsk 100.66 337 *e*P **Pdif** **16 31 19.3 -0.5**
YAK pmax pmax
comp=Z,3.0nm,0.9s
WMQ Urumqi 113.31 308 *e*PKP **PKiKP** **16 36 11.2 +1.2**
WMQ LR LR
comp=Z,290nm,18.4s
WMQ LR LR
comp=Z,350nm,20.2s
WMQ LR LR
comp=Z,290nm,16.9s
MKAR Makanchi Array 117.81 310 PKP **PKPdf** **16 36 18.2 -0.3**
comp=Z,2.4nm,0.7s,baz=80,slow=2.1,SNR=9.0
ZALV Zalesovo Beam 117.88 319 PKP **PKPdf** **16 36 17.1 -1.3**
comp=Z,1.0nm,0.6s,baz=156,slow=1.7,SNR=6.7
BOSA Boshof 118.53 202 PKP **PKPdf** **16 36 21.6 +0.9**
comp=Z,6.6nm,1.2s,baz=127,slow=9.2,SNR=3.7
NVS Novosibirsk 118.96 319 *e*PKIKP **PKPdf** **16 36 20.2 -0.2**
NVS pmax pmax
comp=Z,7.0nm,1.2s
KSH Kashi 120.50 301 *e*PKP **PKPdf** **16 36 24.2 +0.1**
KSH *es*PKP 16 36 40.7
KSH PKS **PKSdf** **16 39 59.1 -1.7**
KSH SKKS 16 44 38.0
KSH AMB AMB
comp=Z,76nm,4.7s
KSH LR LR
comp=Z,85nm,5.8s
KSH LR LR
comp=Z,130nm,7.1s
KSH LR LR
comp=Z,240nm,10.1s
KURK Kurchatov 121.00 314 PKIKP **PKPdf** **16 36 23.8 -0.7**
KURK pmax pmax
comp=Z,3.0nm,0.7s
KURK Kurchatov 121.00 314 PKP **PKPdf** **16 36 23.8 -0.7**
KURBB Kurchatov Arra 121.04 314 PKP **PKPdf** **16 36 23.8 -0.7**
comp=Z,3.4nm,0.7s,baz=110,slow=1.9,SNR=39
TKM2 Tokmak 2 121.56 305 *e*PKIKP **PKPdf** **16 36 25.5 -0.6**
TKM2 Tokmak 2 121.56 305 *e*PKPdf **PKPdf** **16 36 25.5 -0.6**
KKAR Karatay Array 125.26 304 *e*PKIKP **PKPdf** **16 36 33.0 +0.1**
KKAR Karatay Array 125.26 304 *e*PKPdf **PKPdf** **16 36 33.0 +0.1**
BVAR Borovoye Array 126.31 316 PKP **PKPdf** **16 36 34.1 -0.5**
comp=Z,3.9nm,0.6s,baz=96,slow=3.0,SNR=20
BRVK Borovoye 126.37 316 *e*PKIKP **PKPdf** **16 36 34.6 -0.1**
BRVK Borovoye 126.37 316 *e*PKPdf **PKPdf** **16 36 34.6 -0.1**
ARU Arti 132.88 321 PKP **PKPdf** **16 36 47.0 0.0**
comp=Z,2.3nm,0.5s,baz=40,slow=4.9,SNR=4.6
ARU SKP 16 40 24.4
comp=Z,3.0nm,0.6s,baz=124,slow=0.9,SNR=6.0
ARU Arti 132.88 321 *i* PKIKP **PKPdf** **16 36 46.6 -0.4**
ARU Arti 132.88 321 PKP **PKPdf** **16 36 47.0 0.0**
ARU *e*PKPdf **PKiKP** **16 36 47.7 -0.4**
ARU SKP 16 40 24.4
GEYT Alibeck 133.94 296 PKP **PKPdf** **16 36 50.5 +0.8**
comp=Z,2.3nm,0.6s,baz=72,slow=4.8,SNR=4.0
GEYT SKPab **SKiKP** **16 40 22.8 -2.0**
comp=Z,3.0nm,0.9s,baz=79,slow=0.7,SNR=5.9
AKTO Aktyubinsk 134.08 313 PKP **PKPdf** **16 36 50.0 +0.6**
comp=Z,3.0nm,0.9s,baz=151,slow=3.0,SNR=11
ARCES ARCESS Array B 137.79 348 PKhKP PKPpre 16 36 46.5
comp=Z,1.2nm,0.7s,baz=80,slow=1.4,SNR=5.4
ARCES PKP **PKPdf** **16 36 54.3 -1.5**
comp=Z,4.9nm,1.0s,baz=5.7,slow=1.2,SNR=9.0
H10S3 ASCENSION HYDR 138.24 153 T T 19 12 34.2
baz=204,slow=74,SNR=27
H10S2 ASCENSION HYDR 138.24 153 T T 19 12 34.2
baz=204,slow=74,SNR=8.0
H10S1 ASCENSION HYDR 138.25 153 T T 19 12 34.2
baz=204,slow=74,SNR=9.4
H10N3 ASCENSION HYDR 139.31 153 T T 19 13 52.3
baz=204,slow=75,SNR=26
H10N1 ASCENSION HYDR 139.32 153 T T 19 13 43.4
baz=204,slow=75,SNR=27
H10N2 ASCENSION HYDR 139.33 153 T T 19 13 40.8
baz=204,slow=75,SNR=28
KLMR Klimovskoe 140.29 333 *e*PKIKP **PKPdf** **16 36 58.5 -2.0**
KLMR pmax pmax
comp=Z,17nm,1.2s
TBLG Delisi 144.24 302 P PKPbc 16 37 06.9 +0.3
TBLG Delisi 144.24 302 *e*PKIKP PKPbc 16 37 06.8 +0.2
GUDG Gudauri 144.34 303 P PKPbc 16 37 07.8 +0.7
FINES FINESS Array B 144.50 341 PKP **PKPab** **16 37 05.8 -0.7**
comp=Z,17nm,0.7s,baz=61,slow=3.2,SNR=100
ZEI Tsey 144.72 304 *i* PKIKP **PKPab** **16 37 07.8 -0.3**
ZEI pmax pmax
comp=Z,101nm,1.4s
NCK Nalchik 144.82 305⇓*e*PKIKP **PKPdf** **16 37 09.1 -0.1**
OBN Obninsk 144.84 327 PKP **PKPab** **16 37 07.6 -0.3**
comp=Z,23nm,0.6s,baz=70,slow=2.1,SNR=20
OBN Obninsk 144.84 327*c i*PKIKP **PKPab** **16 37 07.6 -0.3**
OBN pmax pmax
comp=Z,35nm,1.1s
GOF Gofitskoye 144.91 308⇑*e*PKIKP **PKPdf** **16 37 09.0 -0.3**
ONI Oni 145.07 303 P **PKPab** **16 37 09.4 +0.1**
ONI Oni 145.07 303 *e*PKIKP **PKPab** **16 37 09.4 +0.1**
AKH Akhalkalaki 145.21 301⇑*i*P **PKPdf** **16 37 11.0 +0.8**
AKH Akhalkalaki 145.21 301 P **PKPdf** **16 37 10.8 +0.6**
AKH Akhalkalaki 145.21 301 *e*PKIKP **PKPdf** **16 37 10.8 +0.6**
KBZ Khabaz 145.28 305 PKPbc **PKPbc** **16 37 09.0 -0.7**
comp=Z,14nm,1.1s,baz=73,slow=2.3,SNR=30
VSR Storozhevoye 145.38 319 *e*PKIKP **PKPbc** **16 37 09.6 -0.2**
VSR pmax pmax
comp=Z,70nm,1.4s
KVAR Kislovodsk Arr 145.38 306 PKPbc **PKPbc** **16 37 10.3 0.0**
comp=Z,28nm,1.1s,baz=35,slow=2.1,SNR=25
KIV Kislovodsk 145.39 306*c i*PKIKP **PKPbc** **16 37 10.1 -0.1**
KIV pmax pmax
comp=Z,27nm,1.1s
NEY Neytrino 145.50 305⇑*e*PKIKP **PKPab** **16 37 11.3 +0.3**
CHVG Ch'k'valeri 146.05 304 P **PKPab** **16 37 13.3 +0.5**
VSU Vasula 146.66 337⇑*e*PKP2 **PKPbc** **16 37 13.0 -0.4**

SOC	**Sochi**	**147.57**	**306**	*i* PKP2	**PKPbc**	**16 37 16.5**	**0.0**
SOC				pmax	pmax			
	comp=Z,54nm,1.1s							
NB2	**NORSAR Subarra**	**147.88**	**353**	PKP	**PKPbc**	**16 37 16.6**	**-0.3**
	comp=Z,15nm,0.9s,baz=13,slow=2.9							
NOA	**NORSAR Array B**	**147.88**	**353**	PKPbc	**PKPbc**	**16 37 16.2**	**-0.7**
	comp=Z,12nm,1.0s,baz=14,slow=4.4,SNR=16							
SFNV	**Sufian**	**148.24**	**293**	*e*P	**PKPbc**	**16 37 19.7**	**+1.1**
ANN	**Anapa**	**148.82**	**309**	*i* PKP2	**PKPbc**	**16 37 20.5**	**+0.8**
ANN				pmax	pmax			
	comp=Z,124nm,1.5s							
MICGM	**Minsk**	**149.15**	**331**	*e*	**PKPbc**	**16 37 21.0**	**+0.8**
MNK	**Minsk**	**149.15**	**331**	*e*PKP2	**PKPbc**	**16 37 21.0**	**+0.8**
KSRV	**Kasrt alli**	**149.15**	**292**	*e*P	**PKPbc**	**16 37 21.3**	**+0.4**
ZALF	**Zalf**	**150.52**	**286**	*e*P	**PKPab**	**16 37 28.2**	**-2.9**
ASF	**Jabal al Asfar**	**150.85**	**284**	PKPbc	**PKPbc**	**16 37 25.9**	**+0.7**
	comp=Z,9.1nm,0.6s,baz=97,slow=1.1,SNR=28							
SIM	**Simferopol'**	**150.99**	**311**	*c* PKIKP	**PKPbc**	**16 37 25.6**	**+0.6**
SIM				pmax	pmax			
	comp=Z,23nm,0.8s							
SALA	**Sala**	**151.01**	**285**	*e*P	**PKPbc**	**16 37 28.0**	**+2.3**
AKASG	**Malin Array Be**	**151.02**	**325**	PKPbc	**PKPbc**	**16 37 24.7**	**-0.2**
	comp=Z,18nm,0.7s,baz=46,slow=3.0,SNR=54							
AKASG				SKPbc		16 41 02.0		
	comp=Z,0.5nm,0.4s,baz=52,slow=2.8,SNR=5.4							
BTCH	**Batrach**	**151.21**	**292**	*e*P	**PKPbc**	**16 37 26.7**	**+0.8**
BIDA	**Albida**	**151.37**	**290**	*e*P	**PKPbc**	**16 37 27.1**	**+0.8**
SUW	**Suwalki**	**151.37**	**335**	*e*PKP	**PKPbc**	**16 37 25.2**	**-0.4**
SUW	**Suwalki**	**151.37**	**335**	*e*PKIKP	**PKPbc**	**16 37 25.2**	**-0.4**
TCHB	**Talchebab**	**151.66**	**285**	*e*P	**PKPbc**	**16 37 28.2**	**+1.2**
MMAI	**Mount Meron Ar**	**152.14**	**286**	PKPbc	**PKPbc**	**16 37 29.6**	**+1.5**
	comp=Z,14nm,0.6s,baz=79,slow=6.4,SNR=39							
EIL	**Elat**	**152.27**	**279**	PKPbc	**PKPbc**	**16 37 29.8**	**+1.3**
	comp=Z,19nm,0.6s,baz=29,slow=2.3,SNR=23							
EIL				PKPab	**PKPab**	**16 37 38.1**	**-0.4**
	comp=Z,12nm,0.6s,baz=153,slow=4.5,SNR=8.4							
BRTR	**Keskin Array B**	**152.89**	**301**	PKPbc	**PKPbc**	**16 37 29.6**	**-0.1**
	comp=Z,3.0nm,0.8s,baz=141,slow=5.1,SNR=15							
SORM	**Soroca**	**153.00**	**321**	⇓*i*P	**PKPbc**	**16 37 29.5**	**+0.1**
SORM	**Soroca**	**153.00**	**321**	⇓⇓PKIKP	**PKPbc**	**16 37 29.5**	**+0.1**
KIS	**Kishinev**	**153.36**	**318**	*e*P	**PKPdf**	**16 37 22.0**	**-0.7**
KIS	**Kishinev**	**153.36**	**318**	*e*PKIKP	**PKPdf**	**16 37 22.0**	**-0.7**
KIS				*e*		16 37 26.0		
KIS				*e*		16 37 39.0		
LVV	**L'vov**	**154.12**	**328**	*e*PKP2	**PKPab**	**16 37 44.7**	**-0.9**
CFR	**Carcaliu**	**154.71**	**315**	⇓*i*P	**PKPab**	**16 37 48.3**	**+0.1**
CFR	**Carcaliu**	**154.71**	**315**	⇓⇓PKP2	**PKPab**	**16 37 48.3**	**+0.1**
TESR	**Tescani**	**154.87**	**319**	⇓*i*P	**PKPab**	**16 37 49.0**	**+0.1**
BURAR	**Bucovina Array**	**155.00**	**323**	⇓*i*P	**PKPab**	**16 37 47.2**	**-2.3**
BURAR	**Bucovina Array**	**155.00**	**323**	⇓⇓PKP2	**PKPab**	**16 37 47.2**	**-2.3**
PLOR	**Plostina**	**155.24**	**318**	⇑*i*P	**PKPab**	**16 37 50.4**	**-0.2**
PLOR	**Plostina**	**155.24**	**318**	⇑⇑PKP2	**PKPab**	**16 37 50.4**	**-0.2**
KOLS	**Kolonicke sedl**	**155.56**	**328**	*e*PKIKP	**PKPdf**	**16 37 26.5**	**+0.7**
KOLS				*e*		16 37 35.6		
KOLS	**Kolonicke sedl**	**155.56**	**328**	*e*PKP	**PKPdf**	**16 37 26.5**	**+0.7**
KOLS				*e*		16 37 35.6		
STHS	**Stebnicka Huta**	**155.67**	**330**	*e*PKP2	**PKPab**	**16 37 51.9**	**-0.3**
STHS	**Stebnicka Huta**	**155.67**	**330**	*e*PKP	**PKPab**	**16 37 51.9**	**-0.3**
ISR	**Istrita**	**155.70**	**317**	⇑*i*P	**PKPab**	**16 37 53.3**	**+0.7**
ISR	**Istrita**	**155.70**	**317**	⇑⇑PKP2	**PKPab**	**16 37 53.3**	**+0.7**
UZH	**Uzhgorod**	**155.77**	**328**	*e*PKP2	**PKPab**	**16 37 51.5**	**-1.1**
MLR	**Muntele Rosu**	**155.85**	**318**	PKPab	**PKPab**	**16 37 52.4**	**-0.9**
	comp=Z,1.4nm,0.9s,baz=14,slow=4.0,SNR=7.6							
MLR	**Muntele Rosu**	**155.85**	**318**	⇑*i*P	**PKPab**	**16 37 52.9**	**-0.4**
DOPR	**Dopca**	**155.90**	**319**	⇓*i*P	**PKPab**	**16 37 53.9**	**+0.6**
CRVS	**Cervenica-Dubn**	**155.95**	**329**	*e*PKP2	**PKPab**	**16 37 53.3**	**-0.1**
CRVS	**Cervenica-Dubn**	**155.95**	**329**	*e*PKP	**PKPab**	**16 37 53.3**	**-0.1**
NIE	**Niedzica**	**156.07**	**331**	*e*PKP	**PKPdf**	**16 37 27.5**	**+1.1**
NIE	**Niedzica**	**156.07**	**331**	*e*PKIKP	**PKPdf**	**16 37 27.5**	**+1.1**
DBIC	**Dimbokro**	**156.20**	**160**	PKPab	**PKPab**	**16 37 56.1**	**+0.8**
	comp=Z,8.3nm,1.0s,baz=245,slow=4.1,SNR=3.1							
KSP	**Ksiaz**	**156.37**	**339**	*e*PKP	**PKPdf**	**16 37 27.5**	**+0.8**
KSP	**Ksiaz**	**156.37**	**339**	*e*PKIKP	**PKPdf**	**16 37 27.5**	**+0.8**
VOIR		**156.40**	**319**	⇑*i*P	**PKPab**	**16 37 56.5**	**+0.9**
VOIR		**156.40**	**319**	⇑⇑PKP2	**PKPab**	**16 37 56.5**	**+0.9**
OKC	**Ostrava-Krasne**	**156.58**	**335**	*e*PKPAB	**PKPab**	**16 37 55.7**	**-0.3**
OKC	**Ostrava-Krasne**	**156.58**	**335**	⇓⇓*e*PKP2	**PKPab**	**16 37 55.7**	**-0.3**
LANS	**Liptovska Anna**	**156.62**	**332**	*e*PKP2	**PKPab**	**16 37 56.4**	**+0.1**
LANS	**Liptovska Anna**	**156.62**	**332**	*e*PKP	**PKPab**	**16 37 56.4**	**+0.1**
ARR	**Arges**	**156.68**	**319**	⇑*i*P	**PKPab**	**16 37 57.4**	**+0.6**
KECS	**Kecovo**	**156.70**	**330**	*e*	PKPab	16 37 43.4	-13
KECS	**Kecovo**	**156.70**	**330**	*e*PKP	**PKPab**	**16 37 56.8**	**+0.2**
UPC	**Upice**	**156.75**	**339**	*e*PKPAB	**PKPab**	**16 37 57.5**	**+0.7**
UPC	**Upice**	**156.75**	**339**	*e*PKP2	**PKPab**	**16 37 57.5**	**+0.7**
DPC	**Dobruska-Polom**	**156.78**	**338**	*e*PKPAB	**PKPab**	**16 37 57.1**	**+0.1**
DPC				*ex*	x	16 38 04.8		
DPC	**Dobruska-Polom**	**156.78**	**338**	*e*PKP2	**PKPab**	**16 37 57.1**	**+0.1**
DRGR		**156.84**	**324**	⇓*i*P	**PKPab**	**16 37 57.4**	**0.0**
DRGR		**156.84**	**324**	⇓⇓PKP2	**PKPab**	**16 37 57.4**	**0.0**
MORC	**Moravsky Berou**	**156.85**	**336**	⇑*i*P	**PKPab**	**16 37 57.6**	**+0.3**
MORC	**Moravsky Berou**	**156.85**	**336**	⇑⇑PKP2	**PKPab**	**16 37 57.6**	**+0.3**
KRLC	**Kraliky**	**156.87**	**337**	*e*PKPAB	**PKPab**	**16 37 58.1**	**+0.8**
KRLC	**Kraliky**	**156.87**	**337**	*e*PKP2	**PKPab**	**16 37 58.1**	**+0.8**
CLL	**Collm**	**156.87**	**344**	*e*PKPdiff	PKPdf	16 37 38.0	+11
CLL				⇓⇓*i*PKP	**PKPab**	**16 37 56.4**	**-0.8**
	comp=Z,10.0nm,0.9s							
CLL				*ep*PKPab	pPKPab	16 38 02.0	-5.2
CLL				LmV		17 48 00.0		
	comp=Z,300nm,19.6s							
CLL	**Collm**	**156.87**	**344**	⇓⇓*e*PKIKP	PKPdf	16 37 38.0	+11
CLL				*i*		16 37 56.4		
CLL				pmax	pmax			
	comp=Z,10.0nm,0.9s							
CLL				MLR	MLR			
	comp=Z,300nm,19.6s							
BRG	**Berggiesshubel**	**157.03**	**342**	*e*PKP	PKPdf	16 37 38.9	+11
	comp=Z,5.6nm,1.2s							
BRG				*e*		16 37 55.2		
	comp=Z,9.2nm,1.2s							
BRG	**Berggiesshubel**	**157.03**	**342**	*e*PKIKP	PKPdf	16 37 38.9	+11
BRG				*e*		16 37 55.2		
BRG				pmax	pmax			
	comp=Z,6.0nm,1.2s							
LOT	**Lotru**	**157.12**	**320**	⇑*i*P	**PKPab**	**16 37 58.9**	**+0.2**
PVCC	**Panska Ves**	**157.17**	**341**	*e*PKPAB	**PKPab**	**16 37 58.5**	**0.0**
PVCC	**Panska Ves**	**157.17**	**341**	*e*PKP2	**PKPab**	**16 37 58.5**	**0.0**
PSZ	**Piszkesteto**	**157.38**	**330**	⇑*i*P	**PKPab**	**16 38 00.3**	**+0.6**
PSZ	**Piszkesteto**	**157.38**	**330**	⇑⇑PKP2	**PKPab**	**16 38 00.4**	**+0.7**
VYHS	**Vyhne**	**157.39**	**332**	*e*PKP2	**PKPab**	**16 37 59.4**	**-0.2**
VYHS	**Vyhne**	**157.39**	**332**	*e*PKP	**PKPab**	**16 37 59.4**	**-0.2**
VRAC	**Vranov**	**157.58**	**336**	PKPab	**PKPab**	**16 38 00.1**	**-0.3**
	comp=Z,5.0nm,0.6s,baz=60,slow=3.8,SNR=12							
VRAC	**Vranov**	**157.58**	**336**	⇓⇓*i*P	**PKPab**	**16 38 01.6**	**+1.2**
GOPC	**GO Pecny, Ondr**	**157.65**	**340**	*e*PKPAB	**PKPab**	**16 38 01.6**	**+0.9**
GOPC	**GO Pecny, Ondr**	**157.65**	**340**	*e*PKP2	**PKPab**	**16 38 01.6**	**+0.9**
PRU	**Pruhonice**	**157.66**	**340**	*e*PKPAB	**PKPab**	**16 38 00.7**	**0.0**
PRU	**Pruhonice**	**157.66**	**340**	*e*PKP2	**PKPab**	**16 38 00.7**	**0.0**
TREC	**Trest**	**157.97**	**338**	*e*PKPAB	**PKPab**	**16 38 02.0**	**-0.1**
TREC	**Trest**	**157.97**	**338**	*e*PKP2	**PKPab**	**16 38 02.0**	**-0.1**
NKC	**Novy Kostel**	**158.00**	**344**	*e*PKPAB	**PKPab**	**16 38 02.5**	**+0.3**
NKC	**Novy Kostel**	**158.00**	**344**	*e*PKP2	**PKPab**	**16 38 02.5**	**+0.3**
MDVR	**Moldovita**	**158.68**	**321**	⇑*i*P	**PKPab**	**16 38 05.6**	**+0.2**
KHC	**Kasperske Hory**	**158.70**	**341**	*e*PKPDF	**PKPdf**	**16 37 30.0**	**+0.2**
KHC				*e*PKPAB	**PKPab**	**16 38 05.3**	**0.0**
KHC				*ep*PKP	**pPKPab**	**16 38 11.8**	**-3.5**
KHC	**Kasperske Hory**	**158.70**	**341**	*e*PKIKP	**PKPdf**	**16 37 30.0**	**+0.2**
KHC				*e*		16 38 05.3		
GERES	**GERESS Array B**	**158.92**	**340**	PKP	**PKPdf**	**16 37 29.7**	**-0.4**
	comp=Z,0.3nm,0.5s,baz=328,slow=4.7,SNR=3.5							
GERES				PKPab	**PKPab**	**16 38 04.2**	**-2.1**
	comp=Z,1.0nm,0.8s,baz=40,slow=4.4,SNR=5.2							
CONA	**Conrad Observa**	**159.01**	**335**	*i* PKPab	**PKPab**	**16 38 06.1**	**-0.6**
	comp=Z,13nm,1.0s,SNR=7.6							
VTS	**Vitosha**	**159.09**	**314**	⇑*i*P	**PKPab**	**16 38 08.7**	**+1.3**
VTS	**Vitosha**	**159.09**	**314**	⇑⇑PKP2	**PKPab**	**16 38 08.7**	**+1.3**
MOA	**Molln**	**159.63**	**338**	*i* PKPab	**PKPab**	**16 38 09.7**	**+0.4**
	comp=Z,11nm,1.2s,SNR=6.1							
ARSA	**Arzberg**	**159.70**	**335**	*e*PKPab	**PKPab**	**16 38 09.6**	**0.0**
	comp=Z,5.7nm,1.1s							
SOKA	**Soboth**	**160.37**	**335**	*i* PKPab	**PKPab**	**16 38 12.4**	**-0.3**
	comp=Z,20nm,1.7s,SNR=8.9							
WATA	**Walderalm**	**160.90**	**342**	*e*PKPab	**PKPab**	**16 38 14.6**	**-0.4**
	comp=Z,6.0nm,1.0s							
MYKA	**Terra Mystica**	**160.90**	**337**	*i* PKPab	**PKPab**	**16 38 14.1**	**-0.9**
	comp=Z,7.4nm,0.8s							
WTTA	**Wattenberg**	**160.94**	**342**	*i* PKPab	**PKPab**	**16 38 15.1**	**-0.1**
	comp=Z,8.0nm,1.0s							
RETA	**Reutte**	**160.96**	**344**	*e*PKPab	**PKPab**	**16 38 14.7**	**-0.5**
	comp=Z,5.8nm,0.9s							
ABTA	**Abfaltersbach**	**161.16**	**339**	*e*PKPab	**PKPab**	**16 38 14.9**	**-1.2**
	comp=Z,11nm,1.3s,SNR=5.2							
PDG	**Podgorica**	**161.55**	**319**	⇑*i*P	**PKPab**	**16 38 18.4**	**+0.5**
DAVOX	**Davos/Dischmat**	**161.84**	**345**	PKP	**PKPdf**	**16 37 33.0**	**-0.5**
	comp=Z,1.1nm,0.5s,baz=8.0,slow=19,SNR=3.8							
DAVOX				PKPab	**PKPab**	**16 38 18.4**	**-0.8**
	comp=Z,2.9nm,0.6s,baz=310,slow=6.2,SNR=5.4							
TORD	**Torodi Ar. Bea**	**163.79**	**175**	PKP	**PKPdf**	**16 37 37.0**	**+0.9**
	comp=Z,2.7nm,1.1s,baz=168,slow=0.9,SNR=8.2							
TORD				PKPab	**PKPab**	**16 38 29.9**	**+1.7**
	comp=Z,2.7nm,0.9s,baz=183,slow=3.0,SNR=6.7							
ESDC	**Sonseca Array**	**168.24**	**27**	PKP	**PKPdf**	**16 37 39.6**	**+0.6**
	comp=Z,0.4nm,0.7s,baz=3.2,slow=2.2,SNR=6.4							
ESDC				PKPab	**PKPab**	**16 38 46.4**	**-1.0**
	comp=Z,0.2nm,0.4s,baz=300,slow=5.2,SNR=4.5							
KEST	**Kesra**	**171.74**	**322**	PKPab	**PKPab**	**16 39 03.5**	**+0.4**
	comp=Z,2.6nm,0.8s,baz=75,slow=3.0,SNR=3.8							

*DDA **09** 16:22:37.0, 37.76N×27.38E, h7km, Md2.9*
*ISCJB **09** 16:22:37.4±0.5, 37.79N±0.03×27.38E±0.03, h7km±5km, Error ellipse: s-maj=5.6km s-min=4.6km az=172.5*
*ISK **09** 16:22:37.5, 37.81N×27.38E, h15km, MD2.7*
*CSEM **09** 16:22:37.3±0.2, 37.82N×27.37E, h8km, MD2.9, Error ellipse: s-maj=4.3km s-min=3.8km az=106.0*

ISC 09 16:22:37.1±1.1, 37.82N±0.02×27.37E±0.02, h3km±11km, n30, σ0.85/41, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcami?**	**0.16**	**223**	*i*	P	**Pg**		**16 22 40.3**	**+0.1**
GCAM				*i*	S	**Sg**		**16 22 42.2**	**-0.1**
GCAM	**G?zelcami?**	**0.16**	**223**	P		**Pg**		**16 22 40.3**	**+0.1**
GCAM				S		**Sg**		**16 22 42.2**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.43**	**72**	*e*PG		**Pg**		**16 22 46.1**	**+0.7**
AYDB				*e*SG		**Sb**		**16 22 53.4**	**-1.1**
AYDB	**Zeytinkoy-Aydi**	**0.43**	**72**	*e*Pg		**Pg**		**16 22 46.1**	**+0.7**
AYDB				*e*Sg		**Sb**		**16 22 53.4**	**-1.1**
DGB	**˜zmir**	**0.45**	**302**	*i*	P	**Pg**		**16 22 46.9**	**+1.1**
IZM	**Izmir**	**0.59**	**352**	*e*PG		**Pb**		**16 22 49.7**	**-0.4**
IZM	**Izmir**	**0.59**	**352**	*e*Pg		**Pb**		**16 22 49.7**	**-0.4**
BDRM	**Kayabasi**	**0.75**	**175**	*i*	P	**Pb**		**16 22 52.4**	**-0.5**
BDRM				*i*	S	**Sg**		**16 23 01.7**	**+0.4**
BDRM	**Kayabasi**	**0.75**	**175**	P		**Pb**		**16 22 52.4**	**-0.5**
BDRM				S		**Sg**		**16 23 01.7**	**+0.4**
BODT	**Bodrum**	**0.76**	**184**	*e*PG		**Pb**		**16 22 52.6**	**-0.3**
BODT	**Bodrum**	**0.76**	**184**	*e*Pg		**Pb**		**16 22 52.6**	**-0.3**
ZEY	**˜zmir**	**0.80**	**302**	*i*	P	**Pb**		**16 22 53.3**	**-0.4**
ZEY				*i*	S	**Sb**		**16 23 05.3**	**+0.3**
URLA	**Izmir**	**0.82**	**312**	*i*	P	**Pg**		**16 22 53.5**	**+0.7**
URLA				*i*	S	**Sn**		**16 23 07.2**	**-1.0**
URLA	**Izmir**	**0.82**	**312**	P		**Pg**		**16 22 53.5**	**+0.7**
AKS	**Akhisar**	**1.12**	**18**	*e*PN		**Pn**		**16 22 59.2**	**-0.5**
AKS	**Akhisar**	**1.12**	**18**	*e*Pn		**Pn**		**16 22 59.2**	**-0.5**
MANT	**Manisa**	**1.15**	**54**	*i*	P	**Pg**		**16 22 58.5**	**-0.7**
MANT				*i*	S	**Sg**		**16 23 14.6**	**+0.4**
MANT	**Manisa**	**1.15**	**54**	P		**Pg**		**16 22 58.5**	**-0.7**
MANT				S		**Sg**		**16 23 14.6**	**+0.4**
CHOS	**Chios island**	**1.18**	**299**	*e*PN		**Pg**		**16 23 00.1**	**+0.3**
CHOS	**Chios island**	**1.18**	**299**	*e*Pn		**Pg**		**16 23 00.1**	**+0.3**
KULA	**Kula-Manisa**	**1.23**	**55**	*e*PN		**Pb**		**16 23 00.9**	**-0.2**
KULA	**Kula-Manisa**	**1.23**	**55**	*e*Pn		**Pb**		**16 23 00.9**	**-0.2**
DKL	**Dikili**	**1.30**	**344**	*e*PN		**Pn**		**16 23 01.9**	**-0.3**
DKL	**Dikili**	**1.30**	**344**	*e*Pn		**Pn**		**16 23 01.9**	**-0.3**
DNZL	**Cakiroluk**	**1.33**	**95**	*i*	P	**Pn**		**16 23 02.3**	**-0.6**
DNZL				*i*	S	**Sn**		**16 23 25.1**	**+3.9**
DNZL	**Cakiroluk**	**1.33**	**95**	P		**Pn**		**16 23 02.3**	**-0.6**
DALY	**Dalyan (Mu˘la**	**1.43**	**134**	*e*PN		**Pn**		**16 23 03.5**	**-0.4**
DALY	**Dalyan (Mu˘la**	**1.43**	**134**	*e*Pn		**Pn**		**16 23 03.5**	**-0.4**
APE	**Apeiranthos**	**1.64**	**244**	*e*PN		**Pn**		**16 23 06.5**	**-0.5**
APE	**Apeiranthos**	**1.64**	**244**	*e*Pn		**Pn**		**16 23 06.5**	**-0.5**

*IDC **09** 16:24:05.8±1.4, 29.47S×176.61W, h0km, mb3.9/2, mb1 4.2/3, mb1mx3.8/24, mbtmp4.1/3, ML3.1/1, Error ellipse: s-maj=43.4km s-min=29.5km az=12.0*
*ISCJB **09** 16:24:08.4±2.3, 29.61S±0.09×176.18W±0.2, h21km, mb3.8/2, Error ellipse: s-maj=24.8km s-min=11.2km az=160.1*

ISC 09 16:24:09.3±1.3, 29.5S±0.1×176.7W±0.1, h21km, n8, σ0.91/10, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.05**	**282**	Pn		**Pn**		**16 24 29.2**	**+0.4**
	74nm,0.3s,baz=72,slow=20,SNR=2.5								
RAO				Sn		**Sb**		**16 24 41.3**	**-0.7**
	316nm,0.3s,baz=89,slow=21,SNR=6.1								
URZ	**Urewera**	**10.14**	**209**	Pn		**Pn**		**16 26 32.6**	**-1.1**
	0.2nm,0.3s,baz=72,slow=20,SNR=3.0								
URZ				Sn		**Sn**		**16 28 27.6**	**+0.9**
	0.7nm,0.3s,baz=18,slow=20,SNR=4.3								
ASAR	**Alice Springs**	**44.26**	**265**	P		**P**		**16 32 18.5**	**+0.9**
	0.9nm,0.5s,baz=101,slow=6.3,SNR=11								
WRA	**Warramunga Arr**	**45.16**	**271**	P		**P**		**16 32 25.1**	**+0.3**
	1.6nm,0.7s,baz=109,slow=7.5,SNR=6.0								
FINES	**FINESS Array B**	**144.63**	**341**	PKP		**PKPab**		**16 43 41.1**	**-1.2**
	1.3nm,0.8s,baz=38,slow=2.5,SNR=4.0								
AKASG	**Malin Array Be**	**151.20**	**325**	PKPbc		**PKPbc**		**16 44 00.7**	**0.0**
	0.4nm,0.4s,baz=44,slow=2.8,SNR=4.1								
BRTR	**Keskin Array B**	**153.09**	**300**	PKPbc		**PKPbc**		**16 44 06.5**	**+0.9**
	0.3nm,0.5s,baz=81,slow=3.6,SNR=2.4								
TORD	**Torodi Ar. Bea**	**163.69**	**175**	PKPab		**PKPab**		**16 45 03.0**	**-0.1**
	0.3nm,0.8s,baz=197,slow=4.2,SNR=3.0								

*IDC **09** 16:26:56.6±1.9, 28.3S±0.2×177.2W±0.4, h10km, n8, σ0.74/9, Kermadec Islands region*

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.19**	**214**	Pn		**Pg**		**16 27 20.2**	**+0.7**
	273nm,0.3s,baz=146,slow=19,SNR=5.4								
RAO				Sn		**Sb**		**16 27 33.8**	**-0.9**
	576nm,0.3s,baz=107,slow=19,SNR=8.5								
ASAR	**Alice Springs**	**44.00**	**264**	P		**P**		**16 35 04.3**	**-0.3**
	0.5nm,0.8s,baz=104,slow=6.7,SNR=6.8								
WRA	**Warramunga Arr**	**44.80**	**270**	P		**P**		**16 35 11.2**	**+0.2**
	0.8nm,0.7s,baz=109,slow=7.8,SNR=6.4								
KURBB	**Kurchatov Arra**	**120.13**	**314**	PKP		**PKPdf**		**16 45 47.9**	**+0.5**
	0.3nm,0.8s,baz=89,slow=2.1,SNR=3.5								
FINES	**FINESS Array B**	**143.38**	**341**	PKP		**PKPdf**		**16 46 29.4**	**-1.2**
	3.1nm,0.9s,baz=60,slow=3.4,SNR=7.8								
HFS	**Hagfors**	**147.29**	**350**	PKPbc		**PKPab**		**16 46 41.7**	**+0.1**
	2.5nm,1.0s,baz=353,slow=3.5,SNR=2.3								
AKASG	**Malin Array Be**	**150.00**	**326**	PKPbc		**PKPbc**		**16 46 47.4**	**+0.3**
	0.6nm,0.5s,baz=40,slow=1.9,SNR=4.5								
MMAI	**Mount Meron Ar**	**151.65**	**288**	PKPab		**PKPab**		**16 47 00.3**	**-0.1**
	1.1nm,0.6s,baz=74,slow=5.1,SNR=4.2								

*NEIC **09** 16:27:13.0±0.5, 30.04S×176.68W, h10km, mb5.1/9, Error ellipse: s-maj=16.8km s-min=12.1km az=112.0*
*IDC **09** 16:27:12.5±0.6, 29.65S×176.68W, h0km, mb4.5/13, mb1 4.6/13, mb1mx4.5/22, mbtmp4.4/13, Error ellipse: s-maj=22.0km s-min=19.9km az=134.0*
*ISCJB **09** 16:27:14.2±0.6, 30.18S±0.07×176.18W±0.1, h24km, mb4.6/22, Error ellipse: s-maj=16.6km s-min=8.8km az=19.6*

ISC 09 16:27:15.4±0.6, 30.03S±0.08×176.7W±0.1, h24km, n51, σ1.69/52, mb4.6/20, 1C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**9.69**	**210**	Pn		**Pn**		**16 29 29.9**	**-3.3**
	0.9nm,0.3s,baz=5.6,slow=15,SNR=3.5								
URZ				Sn		**Sn**		**16 31 19.0**	**-2.3**
	2.2nm,0.3s,baz=131,slow=20,SNR=4.4								
RPZ	**Rata Peaks**	**16.80**	**212**	P		**Pn**		**16 31 07.2**	**-1.7**
	1.8nm,0.3s,baz=80,slow=3.0,SNR=6.7								
DZM	**Mont Dzumac**	**17.11**	**294**	Pn		**P**		**16 31 17.4**	**+2.8**
	0.4nm,0.3s,baz=81,slow=13,SNR=7.3								
CTA	**Charters Tower**	**34.88**	**278**	P		**P**		**16 34 05.4**	**+0.3**
	8.9nm,0.6s,baz=100,slow=10,SNR=15								
CTAO	**Charters Tower**	**34.88**	**278**	*e*P		**P**		**16 34 06.2**	**+1.1**
	57nm,0.8s								
STKA	**Stephens Creek**	**35.69**	**256**	P		**P**		**16 34 14.1**	**+2.1**
	7.4nm,0.6s,baz=93,slow=11,SNR=10								
ASAR	**Alice Springs**	**44.28**	**266**	P		**P**		**16 35 22.9**	**-0.5**
	1.7nm,0.5s,baz=106,slow=6.3,SNR=17								
ASAR				PcP		**PcP**		**16 37 08.6**	**+0.9**
	1.0nm,0.6s,baz=118,slow=3.3,SNR=4.9								
WRAB	**Tennant Creek**	**45.23**	**271**	*e*P		**P**		**16 35 29.2**	**-1.8**
	12nm,0.9s								
WRA	**Warramunga Arr**	**45.24**	**271**	P		**P**		**16 35 30.6**	**-0.5**
	7.7nm,0.6s,baz=110,slow=7.7,SNR=27								
WRA				PcP		**PcP**		**16 37 11.7**	**+0.8**
	0.9nm,1.0s,baz=116,slow=3.7,SNR=4.7								
SBA	**Scott Base**	**48.49**	**185**	*e*P		**P**		**16 35 54.1**	**-1.6**
	23nm,1.6s								
VNDA	**Vanda**	**48.58**	**186**	P		**P**		**16 36 00.9**	**+4.5**
	3.2nm,1.1s,baz=6.5,slow=7.9,SNR=6.1								
CASY	**Casey**	**56.00**	**208**	P		**P**		**16 36 51.0**	**-0.6**
	2.0nm,0.9s								
QSPA	**South Pole Qui**	**60.08**	**180**	*e*P		**P**		**16 37 21.5**	**+1.1**
	72nm,1.1s								
MAW	**Mawson**	**73.06**	**200**	P		**P**		**16 38 46.3**	**+3.3**
	5.2nm,0.9s,baz=145,slow=9.6,SNR=9.0								
SYO	**Syowa Base**	**77.73**	**193**	⇑*e*P		**P**		**16 39 10.3**	**+0.5**
MJAR	**Matsushiro Ar**	**78.61**	**324**	P		**P**		**16 39 14.6**	**-0.5**
	2.0nm,0.5s,baz=154,slow=5.5,SNR=21								
MAJO	**Matsushiro**	**78.61**	**324**	*e*P		**P**		**16 39 12.1**	**-3.0**
	7.1nm,1.0s								
ASAJ	**Asahikawa**	**82.65**	**332**	P		**P**		16 39 31.2	-5.3
	3.5nm,0.8s								
KSRS	**Korea Array**	**84.82**	**319**	P

MTSU	**Mount Surprise**	**37.14**	**279**	P	**P**	**16 40 57.8**	**+1.5**
	baz=42,SNR=4.0							
HTT	**Hallett**	**37.76**	**252**	P	**P**	**16 41 02.0**	**+0.5**
	baz=43,SNR=3.9							
RKT	**Rikitea**	**37.89**	**90**	*e*LR	LR	16 51 17.0		
	616nm,26.2s							
TAOE	**Nuku Hiva Isla**	**39.98**	**67**	*e*LR	LR	16 52 07.8		
	470nm,23.2s							
BBOO	**Buckleboo**	**40.23**	**253**	P	**P**	**16 41 22.7**	**+0.7**
	baz=45							
ASAR	**Alice Springs**	**44.20**	**265**	P	**P**	**16 41 53.7**	**-0.8**
	5.3nm,0.8s,baz=99,slow=6.9,SNR=42							
ASAR				LR	LR	16 59 33.9		
	comp=Z,1μm,18.6s,baz=119,slow=35							
WR4	**Warramunga Arr**	**45.04**	**271**	P	**P**	**16 42 00.5**	**-0.7**
	baz=50							
WB4	**Warramunga Arr**	**45.10**	**271**	P	**P**	**16 42 01.0**	**-0.7**
	baz=50							
WRA	**Warramunga Arr**	**45.10**	**271**	P	**P**	**16 42 00.7**	**-1.0**
	3.8nm,0.4s,baz=110,slow=6.1,SNR=40							
JAY	**Jayapura**	**48.39**	**296**	LR	LR	17 00 05.0		
	comp=Z,15nm,19.9s,slow=33							
WRKA	**Warakurna**	**48.63**	**261**	P	**P**	**16 42 27.6**	**-1.7**
	baz=54,SNR=9.5							
VNDA	**Vanda**	**49.16**	**186**	P	**P**	**16 42 36.7**	**+4.1**
	2.6nm,1.1s,baz=1.8,slow=8.2,SNR=4.3							
FITZ	**Fitzroy Crossi**	**53.40**	**269**	P	**P**	**16 43 02.9**	**-2.2**
	baz=58,SNR=4.4							
NWAO	**Narrogin (SRO)**	**55.70**	**248**	LR	LR	17 05 09.3		
	comp=Z,460nm,18.4s,baz=314,slow=34							
CASY	**Casey**	**56.47**	**208**	P	**P**	**16 43 25.5**	**-1.1**
	4.7nm,1.3s							
QSPA	**South Pole Qui**	**60.67**	**180**	*e*P	**P**	**16 43 57.7**	**+1.5**
MAW	**Mawson**	**73.57**	**200**	P	**P**	**16 45 19.8**	**+2.0**
	8.3nm,1.2s,baz=117,slow=9.2,SNR=5.7							
USHA	**Ushuaia**	**76.14**	**146**	LR	LR	17 16 14.4		
	comp=Z,1μm,18.4s,baz=37,slow=33							
MJAR	**Matsushiro Arr**	**78.04**	**324**	P	**P**	**16 45 42.1**	**-1.5**
	6.8nm,1.1s,baz=160,slow=5.8,SNR=13							
MAT	**Matsushiro**	**78.05**	**324**	P	**P**	**16 45 42.3**	**-1.4**
SYO	**Syowa Base**	**78.28**	**193**⇑	*e*P	**P**	**16 45 45.2**	**+0.6**
PETK	**Petropavlovsk-**	**85.14**	**345**	P	**P**	**16 46 20.0**	**-0.7**
	4.4nm,0.8s,baz=129,slow=9.7,SNR=7.5							
USRK	**Ussuriysk Ar.**	**86.93**	**326**	P	**P**	**16 46 29.1**	**-0.6**
	8.6nm,0.9s,baz=111,slow=4.2,SNR=17							
TXAR	**Lajitas Array**	**91.00**	**57**	P	**P**	**16 46 49.7**	**+0.1**
	0.6nm,0.9s,baz=206,slow=8.3,SNR=4.7							
ENH	**Enshi**	**91.91**	**304**	*e*P	**P**	**16 46 53.8**	**+0.1**
MKAR	**Makanchi Array**	**117.94**	**310**	PKP	**PKPdf**	**16 52 31.4**	**-0.1**
	0.3nm,0.3s,baz=42,slow=2.0,SNR=7.7							
ZALV	**Zalesovo Beam**	**117.99**	**319**	PKP	**PKPdf**	**16 52 30.6**	**-0.6**
	0.3nm,0.3s,baz=111,slow=2.0,SNR=3.4							
KURK	**Kurchatov**	**121.12**	**314**	PKP	**PKPdf**	**16 52 36.8**	**-0.5**
KURBB	**Kurchatov Arra**	**121.16**	**314**	PKP	**PKPdf**	**16 52 36.8**	**-0.6**
	1.7nm,0.8s,baz=103,slow=2.0,SNR=19							
BVAR	**Borovoye Array**	**126.42**	**316**	PKP	**PKPdf**	**16 52 48.0**	**+0.5**
	3.8nm,1.0s,baz=74,slow=2.1,SNR=9.4							
H10S3	**ASCENSION HYDR**	**138.14**	**153**	T	T	19 29 10.8		
	baz=204,slow=74,SNR=8.7							
H10S2	**ASCENSION HYDR**	**138.14**	**153**	T	T	19 29 10.3		
	baz=204,slow=74,SNR=8.3							
H10S1	**ASCENSION HYDR**	**138.16**	**153**	T	T	19 29 14.2		
	baz=204							
H10N3	**ASCENSION HYDR**	**139.22**	**153**	T	T	19 30 03.8		
	baz=204,slow=75,SNR=6.9							
H10N1	**ASCENSION HYDR**	**139.22**	**153**	T	T	19 30 07.1		
	baz=204,slow=75,SNR=7.4							
H10N2	**ASCENSION HYDR**	**139.24**	**153**	T	T	19 30 02.8		
	baz=204,slow=75,SNR=4.7							
FINES	**FINESS Array B**	**144.58**	**341**	PKP	**PKPab**	**16 53 19.1**	**-0.3**
	7.0nm,0.7s,baz=45,slow=3.2,SNR=28							
ONI	**Oni**	**145.20**	**303**	P	**PKPdf**	**16 53 23.7**	**+1.1**
BGD	**Bogdanovka**	**145.28**	**301**	P	**PKPdf**	**16 53 24.4**	**+1.4**
AKH	**Akhalkalaki**	**145.34**	**301**	P	**PKPab**	**16 53 24.1**	**+1.0**
KBZ	**Khabaz**	**145.41**	**305**	PKPbc	**PKPab**	**16 53 23.2**	**+0.3**
	13nm,1.2s,baz=73,slow=2.5,SNR=18							
KIV	**Kislovodsk**	**145.51**	**306**	*e*PKPdf	**PKPab**	**16 53 23.7**	**+0.1**
CHVG	**Ch'k'valeri**	**146.18**	**304**	P	**PKPab**	**16 53 26.7**	**+0.8**
NB2	**NORSAR Subarra**	**147.94**	**353**	PKP	**PKPbc**	**16 53 29.1**	**-0.6**
	comp=Z,15nm,1.4s,baz=16,slow=3.2							
NOA	**NORSAR Array B**	**147.94**	**353**	PKPbc	**PKPbc**	**16 53 28.9**	**-0.7**
	comp=Z,4.6nm,0.9s,baz=14,slow=4.5,SNR=8.7							
HFS	**Hagfors**	**148.49**	**350**	PKPbc	**PKPbc**	**16 53 30.9**	**-0.2**
	comp=Z,4.5nm,0.7s,baz=26,slow=3.8,SNR=12							
AKASG	**Malin Array Be**	**151.13**	**325**	PKPbc	**PKPbc**	**16 53 37.8**	**0.0**
	comp=Z,5.6nm,0.6s,baz=45,slow=2.9,SNR=28							
KIEV	**Kiev**	**151.14**	**325**	*e*PKPbc	**PKPbc**	**16 53 37.9**	**+0.1**
MMAI	**Mount Meron Ar**	**152.27**	**286**	PKPbc	**PKPbc**	**16 53 42.9**	**+1.8**
	comp=Z,6.0nm,0.7s,baz=82,slow=6.2,SNR=12							
EIL	**Elat**	**152.41**	**278**	PKPbc	**PKPbc**	**16 53 42.4**	**+1.0**
	comp=Z,10nm,0.9s,baz=135,slow=1.8,SNR=9.1							
BRTR	**Keskin Array B**	**153.02**	**300**	PKPbc	**PKPbc**	**16 53 42.5**	**-0.1**
	comp=Z,1.7nm,0.9s,baz=143,slow=2.6,SNR=8.4							
BRTR				PKPab	**PKPab**	**16 53 52.9**	**-1.3**
	comp=Z,2.2nm,0.8s,baz=130,slow=4.5,SNR=5.1							
CLL	**Collm**	**156.94**	**344**	*i* PKP	**PKPab**	**16 54 09.9**	**-0.3**
	comp=Z,14nm,1.5s							
BRG	**Berggiesshubel**	**157.11**	**342**	*e*P	**PKPab**	**16 54 10.7**	**-0.2**
	comp=Z,8.3nm,1.2s							
VRAC	**Vranov**	**157.67**	**336**	PKPab	**PKPab**	**16 54 13.2**	**-0.3**
	comp=Z,3.1nm,0.8s,baz=29,slow=6.2,SNR=7.0							
KHC	**Kasperske Hory**	**158.78**	**341**	*e*PKPAB	**PKPab**	**16 54 18.0**	**-0.3**
GERES	**GERESS Array B**	**159.01**	**340**	PKPab	**PKPab**	**16 54 18.6**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=72,slow=1.7,SNR=4.4							
DAVOX	**Davos/Dischmat**	**161.91**	**345**	PKPab	**PKPab**	**16 54 32.3**	**+0.2**
	comp=Z,1.6nm,0.6s,baz=346,slow=3.8,SNR=4.0							
TORD	**Torodi Ar. Bea**	**163.74**	**175**	PKP	**PKPdf**	**16 53 49.8**	**+1.1**
	comp=Z,1.5nm,1.1s,baz=196,slow=2.3,SNR=4.3							
TORD				PKPab	**PKPab**	**16 54 44.2**	**+3.6**
	comp=Z,0.5nm,0.6s,baz=175,slow=2.8,SNR=4.3							

DDA 09 16:34:45.7, 39.30N×28.79E, h7km, Md2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**193**	*i* P	Pb	16 34 51.9	-0.9
DEMI				*i* S	Sg	16 34 55.5	+1.1
GDZ	**Gediz**	**0.57**	**111**	*i* P	Pg	16 34 57.1	+0.3
GDZ				*i* S	Sg	16 35 02.6	-1.7
MANT	**Manisa**	**0.83**	**193**	*i* P	Pg	16 35 01.0	-0.6
MANT				*i* S	Sg	16 35 11.1	-1.3
IGD	**Bursa**	**1.01**	**18**	*i* P	Pg	16 35 05.2	-0.1
IGD				*i* S	Sb	16 35 19.7	+0.5

IDC ***09*** *16:34:43.1±0.9, 57.99S×25.32W, h0km, mb4.2/5, mb1 4.3/5, mb1mx4.0/23, mbtmp4.2/5, Error ellipse: s-maj=36.4km s-min=23.4km az=76.0*
ISCJB ***09*** *16:34:48.2±0.9, 58.05S±0.2×25.2W±0.5, h49km, mb4.2/5, Error ellipse: s-maj=36.3km s-min=21.5km az=165.3*
ISC 09 16:34:50.0±0.9, 58.05S±0.2×25.3W±0.3, h49km, n8, σ0.967/8, mb4.3/5, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MAW	**Mawson**	**37.95**	**141**	P	**P**	**16 42 01.3**	**-0.9**
	1.1nm,0.6s,baz=217,slow=12,SNR=4.6						
VNDA	**Vanda**	**44.64**	**182**	P	**P**	**16 42 57.8**	**+0.9**
	2.0nm,0.6s,baz=183,slow=5.3,SNR=5.4						
LPAZ	**La Paz**	**52.35**	**304**	P	**P**	**16 43 57.0**	**-0.5**
	1.1nm,0.4s,baz=109,slow=2.9,SNR=7.4						
DBIC	**Dimbokro**	**66.57**	**22**	P	**P**	**16 45 34.9**	**+0.2**
	2.3nm,0.5s,baz=193,slow=10,SNR=2.7						
TORD	**Torodi Ar. Bea**	**74.30**	**27**	P	**P**	**16 46 22.4**	**+0.6**
	1.9nm,0.5s,baz=198,slow=6.5,SNR=27						
YKA	**Yellowknife Ar**	**138.32**	**316**	PKP	**PKPdf**	**16 54 08.1**	**0.0**
	0.3nm,0.4s,baz=136,slow=2.1,SNR=6.5						
SONM	**Songino Array**	**149.78**	**88**	PKPbc	**PKPbc**	**16 54 33.3**	**-0.2**
	0.9nm,0.6s,baz=249,slow=4.0,SNR=3.8						
ILAR	**Eielson Array**	**152.18**	**309**	PKPbc	**PKPbc**	**16 54 38.2**	**-0.1**
	1.0nm,0.4s,baz=136,slow=3.0,SNR=14						

GUC ***09*** *16:37:18.9±0.5, 33.20S×72.65W, h32km±3km, ML2.7*
ISC 09 16:37:18.2±2.9, 32.18S±0.06×72.2W±0.1, h23km±16km, n17, σ2.831/27, 2C-1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**1.30**	**128**	*e*P	**Pb**	**16 37 43.4**	**+1.2**
ROC1				*e*S	**Sb**	**16 38 01.6**	**+3.0**
ROCH	**El Roble**	**1.30**	**127**⇑	*i*P	**Pb**	**16 37 43.4**	**+1.2**
ROCH				*i* S	**Sb**	**16 38 02.2**	**+3.6**
ROCH				IAML		16 38 09.1	
	comp=N,227nm,0.2s						
PEL	**Peldehue**	**1.63**	**126**	*e*P	**Pb**	**16 37 47.6**	**0.0**
PEL				*e*S	**Sb**	**16 38 08.6**	**+0.9**
PEL				IAML		16 38 14.0	
	comp=E,151nm,0.3s						
RCDM	**Rinconada Maip**	**1.78**	**137**⇑	*i*P	**Pn**	**16 37 45.4**	**-2.2**
RCDM				*e*S	**Sn**	**16 38 06.0**	**-3.5**
CLCH	**Cerro Calan**	**1.88**	**131**	*e*P	**Pn**	**16 37 49.2**	**+0.2**
CLCH				*i* S	**Sn**	**16 38 12.4**	**+0.4**
CLCH				IAML		16 38 21.9	
	comp=E,123nm,0.5s						
FCH	**Farellones**	**2.00**	**125**	*e*S	**Sb**	**16 38 18.7**	**-0.1**
RTLS	**Leoncito**	**2.53**	**82**	*e*P	**Pn**	**16 37 58.4**	**+0.2**
RTLS				*e*S	**Sn**	**16 38 26.6**	**-1.9**
ARCO	**CERRO ARCO**	**2.87**	**104**	*e*S	**Sb**	**16 38 44.2**	**+0.5**
ARCO				IAML		16 38 52.7	
	comp=Z,33nm,0.4s						
ASAL	**Salagasta**	**2.91**	**99**	*e*P	**Pb**	**16 38 06.7**	**-2.8**
ASAL				*e*S	**Sb**	**16 38 45.0**	**+0.3**
AAGR	**Agrelo**	**3.02**	**108**	*e*P	**Pb**	**16 38 08.8**	**-2.5**
RTCV	**Cerro Valdivia**	**3.16**	**85**	*e*P	Pn	16 38 00.6	-6.0
RTCV				*e*S	**Sn**	**16 38 48.5**	**+4.8**
AMOG	**MOGNA**	**3.43**	**70**	*e*P	**Pn**	**16 38 09.1**	**-1.3**
AGUA	**GUANDACOL**	**4.20**	**51**	*e*P	**Pn**	**16 38 20.0**	**-0.9**
AGUA				*e*S	**Sn**	**16 39 12.5**	**+3.2**
ACAN	**Cantantal**	**4.28**	**93**	*e*P	**Pn**	**16 38 23.3**	**+1.2**
ACAN				*e*S	**Sb**	**16 39 20.5**	**-3.7**
AVFE	**Valle Fertil**	**4.37**	**71**	*e*P	**Pn**	**16 38 22.0**	**-1.2**
AVFE				⇓*e*S	**Sn**	**16 39 16.2**	**+2.8**
AVFE				IAML		16 39 20.7	
	comp=Z,14nm,0.3s						
ACHE	**Chepes**	**4.87**	**79**	*e*P	**Pn**	**16 38 29.3**	**-0.9**
VCA	**Vinchina**	**4.89**	**46**	*e*P	**Pn**	**16 38 30.8**	**+0.3**
VCA				IAML		16 39 40.3	
	comp=Z,22nm,0.3s						

ISCJB ***09*** *16:41:03.6±0.6, 26.09S±0.07×179.9E±0.1, h475km, mb4.2/13, Error ellipse: s-maj=12.7km s-min=9.1km az=7.5*
IDC ***09*** *16:41:03.1±1.9, 26.04S×179.93E, h456km±17km, mb3.9/12, mb1 4.0/14, mb1mx3.8/21, mbtmp4.7/14, Error ellipse: s-maj=18.9km s-min=15.5km az=120.0*
NEIC ***09*** *16:41:04.1±1.1, 26.06S×179.95E, h474km±11km, mb4.2/1, Error ellipse: s-maj=12.8km s-min=11.0km az=141.0*
ISC 09 16:41:04.3±0.6, 26.11S±0.08×179.91E±0.10, h475km, n34, σ1.908/36, mb4.1/13, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**12.35**	**190**	P	**P**	**16 43 46.9**	**+0.4**
	1.1nm,0.3s,baz=288,slow=6.4,SNR=7.4						
URZ				S	**S**	**16 45 58.7**	**-1.6**
	0.5nm,0.3s,baz=48,slow=20,SNR=4.2						
DZM	**Mont Dzumac**	**12.94**	**285**	P	**P**	**16 43 54.9**	**+1.7**
	1.9nm,0.3s,baz=92,slow=12,SNR=12						
AFI	**Afiamalu**	**14.42**	**34**	P	**P**	**16 44 07.1**	**-1.9**
	1.8nm,0.3s,baz=203,slow=13,SNR=2.5						
AFI				S	S	16 46 31.4	-10
	2.0nm,0.3s,baz=253,slow=20,SNR=2.7						
HNR	**Honiara**	**25.16**	**308**	P	**P**	**16 45 50.2**	**-0.6**
	36nm,0.6s,baz=131,slow=4.4,SNR=4.8						
EIDS	**Eidsvold**	**25.96**	**265**	*e*P	**P**	**16 45 58.1**	**+0.3**
CTA	**Charters Tower**	**31.47**	**274**	P	**P**	**16 46 46.8**	**+0.7**
	34nm,0.4s,baz=96,slow=11,SNR=78						
CTAO	**Charters Tower**	**31.47**	**274**	*e*P	**P**	**16 46 46.5**	**+0.4**
STKA	**Stephens Creek**	**33.88**	**251**	P	**P**	**16 47 06.9**	**+0.5**
	5.9nm,0.5s,baz=100,slow=11,SNR=18						
ASAR	**Alice Springs**	**41.64**	**263**	P	**P**	**16 48 10.3**	**+0.1**
	23nm,0.7s,baz=94,slow=8.3,SNR=167						
ASAR				ScP	**ScP**	**16 53 02.7**	**+1.8**
	0.9nm,0.9s,baz=106,slow=3.3,SNR=4.4						
ASAR				S	**S**	**16 53 50.9**	**-0.9**
	0.6nm,0.8s,baz=105,slow=14,SNR=4.5						
WRAB	**Tennant Creek**	**42.22**	**269**	*e*P	**P**	**16 48 13.9**	**-0.9**
WRA	**Warramunga Arr**	**42.22**	**269**	P	**P**	**16 48 14.4**	**-0.4**
	11nm,0.4s,baz=101,slow=7.7,SNR=199						
WRA				S	**S**	**16 53 57.7**	**-2.5**
	2.6nm,1.0s,baz=98,slow=15,SNR=4.7						
MBWA	**Marble Bar**	**54.94**	**262**	*e*P	**P**	**16 49 47.9**	**-1.9**
QSPA	**South Pole Qui**	**63.99**	**180**	*e*P	**P**	**16 50 50.0**	**+0.1**
MJAR	**Matsushiro Arr**	**73.67**	**326**	P	**P**	**16 51 48.3**	**-0.4**
	4.2nm,0.7s,baz=161,slow=5.5,SNR=24						
MAT	**Matsushiro**	**73.67**	**326**	P	**P**	**16 51 48.4**	**-0.3**
MAW	**Mawson**	**75.67**	**201**	P	**P**	**16 52 00.6**	**+1.1**
	2.2nm,0.5s,baz=140,slow=7.9,SNR=8.6						
KSRS	**Korea Array**	**79.88**	**320**	P	**P**	**16 52 23.6**	**+0.9**
	3.1nm,0.6s,baz=133,slow=6.4,SNR=13						
KSAR	**Wonju Array Be**	**79.90**	**320**	P	**P**	**16 52 23.6**	**+0.8**
PETK	**Petropavlovsk-**	**81.22**	**347**	P	**P**	**16 52 29.7**	**+0.3**
	2.7nm,0.6s,baz=111,slow=7.8,SNR=13						
USRK	**Ussuriysk Ar.**	**82.57**	**327**	P	**P**	**16 52 37.4**	**+0.9**
	1.6nm,0.7s,baz=108,slow=9.4,SNR=4.3						
CMAR	**Chiang Mai Arr**	**90.21**	**290**	P	**P**	**16 53 14.8**	**+1.1**
	1.2nm,0.9s,baz=142,slow=2.3,SNR=6.2						
CHTO	**Chiang Mai**	**90.38**	**291**	*e*P	**P**	**16 53 14.8**	**+0.3**
	3.8nm,1.1s						
TXAR	**Lajitas Array**	**91.66**	**58**	P	**P**	**16 53 21.8**	**+1.4**
	0.7nm,0.7s,baz=214,slow=6.7,SNR=9.8						
MKAR	**Makanchi Array**	**113.57**	**312**	PKiKP	**PKiKP**	**16 58 46.8**	**-0.9**
	0.2nm,0.3s,baz=63,slow=1.8,SNR=2.5						
GEYT	**Alibeck**	**129.98**	**299**	SKPbc	SKPab	17 01 59.6	+2.0
	4.4nm,0.9s,baz=90,slow=2.9,SNR=7.9						
ARCES	**ARCESS Array B**	**134.02**	**348**	PKhKP	PKPpre	16 59 20.0	
	0.8nm,0.8s,baz=76,slow=3.8,SNR=3.9						
ARCES				PKP	**PKiKP**	**16 59 27.1**	**-0.4**
	1.1nm,0.8s,baz=80,slow=1.4,SNR=4.1						
ARCES				SKPbc	**SKPbc**	**17 02 12.1**	**+1.7**
	2.7nm,0.7s,baz=46,slow=3.5,SNR=8.2						
FINES	**FINESS Array B**	**140.50**	**341**	PKhKP	PKPpre	16 59 31.5	
	1.0nm,0.4s,baz=53,slow=3.9,SNR=13						
NB2	**NORSAR Subarra**	**144.24**	**351**	PKP	PKPbc	16 59 43.3	-1.1
	comp=Z,8.5nm,1.0s,baz=14,slow=3.1						
NOA	**NORSAR Array B**	**144.24**	**351**	PKP	PKPbc	16 59 43.8	-0.6
	comp=Z,4.2nm,0.7s,baz=22,slow=2.6,SNR=20						
HFS	**Hagfors**	**144.68**	**348**	PKP	**PKPdf**	**16 59 45.1**	**-0.6**
	comp=Z,2.9nm,0.4s,baz=66,slow=3.2,SNR=58						
AKASG	**Malin Array Be**	**146.75**	**325**	PKPbc	**PKPbc**	**16 59 51.2**	**-0.8**
	comp=Z,1.7nm,0.4s,baz=44,slow=4.4,SNR=10						
MMAI	**Mount Meron Ar**	**148.47**	**291**	PKPbc	**PKPbc**	**16 59 58.1**	**+1.0**
	comp=Z,2.5nm,0.4s,baz=76,slow=7.0,SNR=14						
BRTR	**Keskin Array B**	**148.79**	**304**	PKPbc	**PKPbc**	**16 59 57.8**	**-0.1**
	comp=Z,1.1nm,0.5s,baz=136,slow=3.8,SNR=7.7						
TORD	**Torodi Ar. Bea**	**167.00**	**188**	PKP	**PKPdf**	**17 00 15.1**	**-0.5**
	comp=Z,0.3nm,0.6s,baz=240,slow=1.6,SNR=2.5						
TORD				PKPab	**PKPab**	**17 01 22.1**	**-0.3**
	comp=Z,0.4nm,0.8s,baz=204,slow=4.4,SNR=2.8						

ISCJB ***09*** *16:44:46.4±0.9, 4.95S±0.1×144.1E±0.1, h98km, mb3.5/4, Error ellipse: s-maj=26.9km s-min=10.4km az=44.9*
IDC ***09*** *16:44:47.0±2.6, 4.79S×144.17E, h86km±24km, mb3.4/4, mb1 3.6/4, mb1mx3.3/22, mbtmp3.8/4, Error ellipse: s-maj=37.4km s-min=16.3km az=53.0*
ISC 09 16:44:47.7±1.1, 4.9S±0.2×144.2E±0.2, h98km, n6, σ1.912/7, mb3.5/4, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**4.15**	**304**	P	**Pn**	**16 45 49.5**	**+0.5**
	0.3nm,0.3s,baz=102,slow=22,SNR=16						
JAY				S	**Sn**	**16 46 35.0**	**-1.6**
	0.1nm,0.3s,baz=90,slow=20,SNR=2.3						
PMG	**Port Moresby**	**5.42**	**147**	P	**Pn**	**16 46 05.3**	**-0.9**
	baz=333,slow=9.0						
ASAR	**Alice Springs**	**21.16**	**207**	P	**P**	**16 49 26.1**	**+0.9**
	3.3nm,0.8s,baz=29,slow=11,SNR=11						
MKAR	**Makanchi Array**	**74.82**	**321**	P	**P**	**16 56 17.6**	**+0.1**
	0.3nm,0.4s,baz=111,slow=6.9,SNR=7.9						
ZALV	**Zalesovo Beam**	**76.55**	**328**	P	**P**	**16 56 27.9**	**+0.8**
	0.3nm,0.3s,baz=116,slow=6.6,SNR=2.5						
ILAR	**Eielson Array**	**85.56**	**24**	P	**P**	**16 57 14.8**	**0.0**
	0.4nm,0.7s,baz=260,slow=5.3,SNR=3.7						

MEX 09 16:55:11.0±0.3, 15.83N×96.42W, h36km±6km, MD3.6, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PANG	**Puerto Angel**	**0.17**	**199**	*e*P	Pn	16 55 16.2	-3.4
PANG				*i* S	Sn	16 55 20.2	-7.0
HUIG	**Huatulco**	**0.30**	**101**	*i* P	Pn	16 55 17.4	-1.7
HUIG				*e*S	Sn	16 55 22.7	-2.7
VHO	**Vista Hermosa**	**1.27**	**346**	*e*P	Pn	16 55 30.8	-1.7
VHO				*e*S	Sn	16 55 46.1	-2.3

ISCJB ***09*** *16:58:02.6±0.6, 44.92N±0.07×149.51E±0.07, h60km, mb3.7/6, Error ellipse: s-maj=10.4km s-min=5.2km az=149.1*
SKHL ***09*** *16:58:03.2±0.9, 44.96N×149.53E, h70km±7km, mb4.5/4*
MOS ***09*** *16:58:03.4±1.1, 45.02N×149.44E, h66km, mb4.0/4, Error ellipse: s-maj=16.3km s-min=14.1km az=88.0*
JMA ***09*** *16:58:03.2±0.7, 44.96N×149.47E, h30km, M4.0*
IDC ***09*** *16:58:04.8±3.3, 44.93N×149.55E, h63km±30km, mb3.4/6, mb1 3.6/9, mb1mx3.3/45, mbtmp3.7/9, ML2.7/2, Error ellipse: s-maj=29.0km s-min=18.8km az=128.0*
ISC 09 16:58:03.9±0.8, 44.85N±0.07×149.50E±0.08, h60km, n41, σ2.901/45, mb3.6/6, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**1.22**	**289**	*i* PN	**Pn**	**16 58 23.3**	**-1.4**
KUR				*e*S	**Sn**	**16 58 38.4**	**-1.9**
KUR				pmax	pmax		
	comp=N,170nm,0.3s						
KUR				pmax	pmax		
	comp=E,80nm,0.3s						
KUR				pmax	pmax		
	comp=Z,330nm,0.3s						
KUR				smax	smax		
	comp=N,340nm,0.2s						
KUR				smax	smax		
	comp=E,170nm,0.2s						
KUR	**Kuril'sk**	**1.22**	**289**	*i* P	**Pn**	**16 58 23.3**	**-1.4**
KUR				AMB	AMB	16 58 24.6	
	comp=E,180nm,0.3s						
KUR				*e*S	**Sn**	**16 58 38.4**	**-1.9**
KUR				A	A	16 58 42.6	
	comp=E,340nm,0.2s						
KUR				A	A	16 58 42.6	
	comp=E,170nm,0.2s						
YUK	**Yuzh-Kuril'sk**	**2.73**	**254**	*e*PN	**Pn**	**16 58 47.8**	**+2.6**
YUK				*i* S	**Sn**	**16 59 19.5**	**+2.5**
YUK				pmax	pmax		
	comp=Z,110nm,0.2s						
YUK				smax	smax		
	comp=N,150nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**2.73**	**254**	*e*P	**Pn**	**16 58 45.8**	**+0.6**
YUK				AMB	AMB	16 58 46.2	
	comp=N,110nm,0.3s						
YUK				*i* S	**Sn**	**16 59 17.1**	**+0.1**
YUK				A	A	16 59 23.7	
	comp=N,150nm,0.4s						
YUK				A	A	16 59 23.7	
	comp=N,250nm,0.4s						
NEM2	**Nemuro 2**	**3.09**	**243**	P	**Pn**	**16 58 48.9**	**-1.2**
NEM2				*e*S	**Sn**	**16 59 23.1**	**-2.7**
JRA	**Rausu**	**3.27**	**255**	P	**Pn**	**16 58 53.6**	**+1.0**
JRA				*e*S	**Sn**	**16 59 32.3**	**+2.1**
JNK	**Nakash**	**3.66**	**251**	P	**Pn**	**16 58 58.8**	**+0.8**
JNK				*e*S	**Sn**	**16 59 39.8**	**-0.1**
JAK	**Akkeshi**	**3.93**	**244**	P	**Pn**	**16 59 01.2**	**-0.5**
JTKR	**Abashiri--Toko**	**4.10**	**260**	P	**Pn**	**16 59 06.6**	**+2.6**
JAR	**Ashorobuto**	**4.41**	**251**	P	**Pn**	**16 59 09.7**	**+1.5**
JAR				*e*S	**Sn**	**16 59 59.6**	**+1.3**
JMP	**Maruseppu**	**4.48**	**261**	P	**Pn**	**16 59 11.1**	**+1.9**
JOB	**Onbets**	**4.54**	**247**	P	**Pn**	**16 59 10.5**	**+0.6**
JSE	**Soyaes**	**4.91**	**274**	P	**Pn**	**16 59 16.0**	**+0.9**
JKK2	**Kamakawa 2**	**4.94**	**261**	P	**Pn**	**16 59 17.9**	**+2.4**
JCH	**Churui**	**4.98**	**245**	P	**Pn**	**16 59 17.2**	**+1.2**
JKA	**Kamikawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.27**	**300**	Pn	Pn	17 14 54.7	+0.7
	467nm,0.3s,baz=90,slow=20,SNR=4.3						
RAO				Sn	Sn	17 15 12.0	+0.3
	1μm,0.3s,baz=118,slow=21,SNR=6.0						
ASAR	**Alice Springs**	**44.30**	**266**	P	P	17 22 40.5	-0.4
	0.5nm,0.7s,baz=102,slow=6.7,SNR=8.0						
WRA	**Warramunga Arr**	**45.25**	**271**	P	P	17 22 48.0	-0.4
	0.6nm,0.4s,baz=110,slow=8.1,SNR=8.5						
FINES	**FINESS Array B**	**145.05**	**341**	PKPbc	PKPdf	17 34 07.3	-0.2
	0.7nm,0.6s,baz=50,slow=4.3,SNR=4.8						
AKASG	**Malin Array Be**	**151.58**	**324**	PKPbc	PKPbc	17 34 23.9	-0.9
	0.2nm,0.3s,baz=30,slow=2.4,SNR=2.4						

IDC 09 17:15:51.2±2.7, 28°.53S×177°.08W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/31, mbtmp3.6/2, Error ellipse: s-maj=81.5km s-min=25.3km az=127.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.03**	**226**	Pn	Pn	17 16 13.2	+0.3
	219nm,0.3s,baz=60,slow=20,SNR=2.1						
RAO				Sn	Sn	17 16 27.5	-0.5
	390nm,0.3s,baz=268,slow=22,SNR=4.4						
ASAR	**Alice Springs**	**44.05**	**265**	P	P	17 24 01.3	+0.2
	0.4nm,0.5s,baz=101,slow=6.6,SNR=6.3						
WRA	**Warramunga Arr**	**44.87**	**270**	P	P	17 24 07.5	-0.2
	0.7nm,0.6s,baz=109,slow=8.0,SNR=4.3						
FINES	**FINESS Array B**	**143.66**	**341**	PKP	PKPdf	17 35 26.2	-1.2
	0.7nm,0.7s,baz=66,slow=3.5,SNR=3.2						
AKASG	**Malin Array Be**	**150.27**	**325**	PKPbc	PKPbc	17 35 43.5	-0.5
	0.6nm,0.5s,baz=45,slow=3.0,SNR=2.9						

*ISCJB **09** 17:20:00.5±0.6, 29°.61S×176°.00W±0°.09, h10km, mb4.9/11, Error ellipse: s-maj=11.0km s-min=10.5km az=171.9*
*IDC **09** 17:20:01.7±2.0, 28°.83S×176°.19W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.7/27, mbtmp3.9/3, Error ellipse: s-maj=71.8km s-min=32.2km az=174.0*
*NEIC **09** 17:20:02.3±6.3, 29°.59S×175°.99W, h11km±39km, mb4.9/6, Error ellipse: s-maj=16.5km s-min=12.9km az=52.0*

ISC 09 17:20:02.1±0.9, 29°.4S±0°.2×176°.17W±0°.07, h10km, n24, σ1°79/21, mb4.8/11, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.53**	**274**	Pn	Pb	17 20 30.6	+0.1
	83nm,0.3s,baz=73,slow=19,SNR=2.5						
RAO				Sn	Sg	17 20 51.5	+0.3
	82nm,0.3s,baz=108,slow=19,SNR=4.0						
RAO	**Raoul Island**	**1.53**	**274**	ePn	Pb	17 20 30.6	+0.1
RAO				eSn	Sn	17 20 45.2	-4.1
URZ	**Urewera**	**10.48**	**210**	Pn	Pn	17 22 32.3	0.0
	0.3nm,0.3s,baz=285,slow=4.5,SNR=2.2						
URZ				Sn	Sn	17 24 24.9	-4.9
	0.2nm,0.3s,baz=250,slow=22,SNR=3.8						
BKZ	**Black Stump Fm**	**11.50**	**210**	ePn	Pn	17 22 43.1	-3.3
THZ	**Tophouse**	**15.21**	**213**	ePn	Pn	17 23 35.9	-1.1
	289nm,1.8s						
KHZ	**Kahutara**	**15.45**	**210**	ePn	Pn	17 23 39.3	-0.7
	295nm,1.9s						
OXZ	**Oxford**	**16.84**	**211**	ePn	Pn	17 23 56.9	-0.9
STKA	**Stephens Creek**	**36.27**	**255**	P	P	17 27 06.8	+1.2
	1.6nm,0.6s,baz=73,slow=11,SNR=3.9						
STKA	**Stephens Creek**	**36.27**	**255**	eP	P	17 27 07.2	+1.5
	6.9nm,1.8s						
PTCN	**Pitcairn Islan**	**41.00**	**95**	eP	P	17 27 43.3	-2.1
	1μm,1.4s						
AS01	**Alice Springs**	**44.72**	**265**	eP	P	17 28 17.9	+2.1
AS31	**Alice Springs**	**44.76**	**265**	eP	P	17 28 18.1	+2.0
	1.4nm,1.2s						
ASAR	**Alice Springs**	**44.77**	**265**	P	P	17 28 18.2	+2.2
	0.4nm,0.4s,baz=102,slow=6.6,SNR=24						
WB2	**Warramunga Arr**	**45.65**	**270**	eP	P	17 28 24.8	+1.6
WR1	**Warramunga Arr**	**45.66**	**270**	eP	P	17 28 24.5	+1.2
	31nm,1.9s						
WRA	**Warramunga Arr**	**45.66**	**270**	P	P	17 28 24.5	+1.2
	1.1nm,0.6s,baz=110,slow=7.8,SNR=13						
JOHN	**Johnston Islan**	**46.27**	**9**	eP	P	17 28 31.7	+3.9
	164nm,1.0s						
WAKE	**Wake Island**	**51.12**	**339**	eP	P	17 29 07.9	+2.8
	581nm,2.0s						
QSPA	**South Pole Qui**	**60.74**	**180**	eP	P	17 30 11.3	-2.5
PMSA	**Palmer Station**	**72.55**	**155**	eP	P	17 31 28.1	-0.8
	34nm,0.6s						
KKM	**Kota Kinabalu**	**73.76**	**287**	eP	P	17 31 37.4	+0.3
	8.8nm,1.0s						
INU	**Inuyama**	**78.03**	**322**	eP	P	17 32 00.6	-0.2
	13nm,1.3s						
FINES	**FINESS Array B**	**144.69**	**342**	PKP	PKPdf	17 39 37.5	-0.8
	1.4nm,1.0s,baz=19,slow=10,SNR=3.0						
TORD	**Torodi Ar. Bea**	**163.74**	**173**	PKPab	PKPab	17 41 01.0	+3.1
	0.3nm,0.9s,baz=171,slow=2.8,SNR=2.3						

*JMA **09** 17:20:22.1±0.1, 38°.56N×142°.41E, h37km±1km, M3.9*
JMA Felt I J1.
*IDC **09** 17:20:22.9±2.5, 38°.43N×142°.65E, h60km±23km, mb3.3/7, mb1 3.4/11, mb1mx3.2/44, mbtmp3.6/11, ML3.1/4, MS3.8/1, Ms1 3.8/1, ms1mx2.9/32, Error ellipse: s-maj=32.5km s-min=15.1km az=96.0*

ISC 09 17:20:19.6±2.9, 38°.49N±0°.05×142°.57E±0°.08, h27km±20km, n28, σ1°68/31, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.92**	**310**	P	Pn	17 20 36.8	+0.1
OFUJ				S	Sb	17 20 47.1	-1.7
JIO	**Ouri**	**0.96**	**268**	P	Pn	17 20 37.5	+0.2
JIO				S	Sn	17 20 48.3	-1.8
JMK	**Ichinoseki**	**1.16**	**294**	P	Pn	17 20 40.2	+0.3
JOM	**Ohasama**	**1.40**	**315**	P	Pn	17 20 44.0	+0.7
JOM				S	Sn	17 20 59.8	-1.1
JOU	**Okura**	**1.51**	**266**	P	Pn	17 20 45.8	+1.0
JOU				S	Sn	17 21 03.1	-0.4
JMM	**Marumori**	**1.54**	**247**	P	Pn	17 20 46.0	+0.8
JMM				S	Sn	17 21 03.5	-0.7
JTH	**Tanohata**	**1.55**	**339**	P	Pn	17 20 45.8	+0.4
JTH				eS	Sn	17 21 04.1	-0.5
JFK	**Kawauchi**	**1.75**	**231**	P	Pn	17 20 49.5	+1.3
JFK				eS	Sn	17 21 09.2	-0.4
JRG	**Rokugo**	**1.76**	**301**	P	Pn	17 20 49.0	+0.7
JYK	**Kaneyama**	**1.79**	**285**	P	Pn	17 20 49.5	+0.9
JYK				eS	Sn	17 21 09.5	-0.9
MJAR	**Matsushiro Arr**	**3.98**	**242**	P	Pn	17 21 22.3	+3.5
	1.1nm,0.3s,baz=43,slow=11,SNR=14						
ASAJ	**Asahikawa**	**5.62**	**0**	P	Pn	17 21 42.9	+1.6
	0.9nm,0.3s,baz=216,slow=16,SNR=21						
ASAJ				S	Sn	17 22 42.7	-2.3
	0.4nm,0.3s,baz=96,slow=19,SNR=2.1						
JHJ	**Hachijo jima 2**	**5.82**	**204**	P	Pn	17 21 46.4	+2.3
	4.1nm,0.3s,baz=328,slow=22,SNR=6.5						
JHJ				S	Sn	17 22 46.8	-3.1
	8.1nm,0.3s,baz=72,slow=23,SNR=7.3						
USRK	**Ussuriysk Ar.**	**9.79**	**309**	P	Pn	17 22 42.9	+4.5
	0.2nm,0.3s,baz=123,slow=15,SNR=9.1						
MA2	**Magadan**	**21.74**	**11**	P	P	17 25 09.8	+1.2
	1.3nm,0.5s,baz=138,slow=6.1,SNR=3.0						
YAK	**Yakutsk**	**24.87**	**346**	LR	LR	17 37 05.0	
	comp=Z,213nm,18.7s,baz=316,slow=40						
SEY	**Seymchan**	**25.19**	**11**	P	P	17 25 43.5	+1.0
	1.1nm,0.7s,baz=135,slow=5.7,SNR=7.4						
H11N2	**WAKE ISLAND Hy**	**28.16**	**125**	T	T	17 55 50.6	
	baz=317,slow=75,SNR=81						
H11N1	**WAKE ISLAND Hy**	**28.17**	**125**	T	T	17 55 47.2	
	baz=317,slow=75,SNR=49						
H11N3	**WAKE ISLAND Hy**	**28.18**	**125**	T	T	17 55 50.6	
	baz=317,slow=75,SNR=51						
H11S1	**WAKE ISLAND Hy**	**28.93**	**127**	T	T	17 56 50.9	
	baz=319,slow=76,SNR=11						
H11S3	**WAKE ISLAND Hy**	**28.93**	**127**	T	T	17 56 48.1	
	baz=319,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.95**	**127**	T	T	17 56 51.5	
	baz=319,slow=76,SNR=9.1						
ZALV	**Zalesovo Beam**	**41.63**	**311**	P	P	17 28 04.8	-0.4
	0.6nm,0.5s,baz=92,slow=9.6,SNR=4.0						
MKAR	**Makanchi Array**	**44.14**	**301**	P	P	17 28 25.6	-0.1
	0.2nm,0.3s,baz=84,slow=11,SNR=3.8						
WRA	**Warramunga Arr**	**58.63**	**189**	P	P	17 30 12.4	-1.9
	0.8nm,0.9s,baz=340,slow=8.4,SNR=5.7						
ASAR	**Alice Springs**	**62.36**	**189**	P	P	17 30 39.4	-0.3
	0.3nm,0.8s,baz=345,slow=7.0,SNR=3.2						
FINES	**FINESS Array B**	**67.95**	**332**	P	P	17 31 16.3	+0.7
	0.6nm,0.7s,baz=43,slow=8.4,SNR=2.7						

MAN 09 17:22:34, 18°.89N×121°.15E, h12km, mb4.5, ML3.4, MS3.3, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**1.30**	**199**	eP	Pn	17 22 57.1	-0.9
ABRA				eS	Sg	17 23 16.1	+0.1
CVP	**Callao Caves**	**1.34**	**152**	↑P	Pn	17 22 58.3	-0.2
CVP				↑S	Sb	17 23 15.6	-0.6
BALP	**Baler**	**3.16**	**173**	eP	Pn	17 23 25.6	+2.0
BALP				eS	Sn	17 24 03.4	+2.2

IDC 09 17:43:06.6±4.4, 28°.66S×177°.20W, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.4/30, mbtmp3.4/2, Error ellipse: s-maj=100.1km s-min=28.4km az=119.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.87**	**226**	Pn	Pn	17 43 26.8	+0.7
	166nm,0.3s,baz=12,slow=20,SNR=9.2						
RAO				Sn	Sn	17 43 38.3	-1.1
	614nm,0.3s,baz=86,slow=18,SNR=7.9						
ASAR	**Alice Springs**	**43.93**	**265**	P	P	17 51 15.3	-0.2
	0.3nm,0.5s,baz=104,slow=7.2,SNR=16						
WRA	**Warramunga Arr**	**44.76**	**270**	P	P	17 51 22.4	+0.2
	0.5nm,0.7s,baz=109,slow=8.0,SNR=5.1						
FINES	**FINESS Array B**	**143.74**	**341**	PKP	PKPbc	18 02 40.5	0.0
	0.8nm,0.7s,baz=79,slow=7.2,SNR=3.9						

*IDC **09** 17:44:50.9±1.3, 36°.17N×69°.41E, h0km, mb3.6/4, mb1 3.6/10, mb1mx3.3/70, mbtmp3.5/10, ML3.2/6, Error ellipse: s-maj=25.8km s-min=21.5km az=77.0*
*ISCJB **09** 17:44:57.5±0.6, 36°.65N±0°.04×69°.12E±0°.05, h43km, mb3.5/3, Error ellipse: s-maj=6.7km s-min=5.5km az=44.0*
*NNC **09** 17:45:00.5±3.2, 36°.99N×69°.03E, h0km, mb4.0, mpv3.7, Error ellipse: s-maj=28.3km s-min=20.3km az=160.0*

ISC 09 17:44:57.3±0.8, 36°.48N±0°.07×69°.23E±0°.07, h43km, n23, σ1°66/29, mb3.5/3, 9C-6D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAS	**Manas**	**6.51**	**22**	↑Pn	Pn	17 46 33.1	+2.5
	2.3nm,0.4s						
MNAS				↓Sn	Sn	17 47 43.5	-0.2
MNAS				↑Lg	Lg	17 48 16.4	
	6.9nm,0.6s						
KK31	**Karatay Array**	**6.69**	**8**	Pn	Pn	17 46 35.7	+2.8
	2.1nm,0.5s,baz=210,slow=16,SNR=19						
KK31				↓Sn	Sn	17 47 48.2	+0.3
	1.9nm,0.2s,baz=206,slow=27,SNR=5.8						
KK31				↑Lg	Lg	17 48 19.8	
	7.1nm,0.6s,baz=174,slow=30,SNR=4.7						
AAK	**Ala-Archa**	**7.37**	**32**	Pn	Pn	17 46 44.5	+2.0
	0.9nm,0.3s,baz=208,slow=8.7,SNR=7.6						
AAK				Sn	Sn	17 47 56.7	-8.0
	0.8nm,0.3s,baz=220,slow=19,SNR=1.7						
AAK	**Ala-Archa**	**7.37**	**32**	↑Pn	Pn	17 46 44.4	+2.0
	5.0nm,0.6s						
AAK				↑Lg	Lg	17 48 43.9	
	11nm,1.1s						
TKM2	**Tokmak 2**	**8.09**	**35**	↓Pn	Pn	17 46 53.9	+1.6
	3.6nm,0.6s						
TKM2				↓Sn	Sn	17 48 23.4	+0.9
	2.9nm,0.7s						
TKM2				↑Lg	Lg	17 49 08.6	
	4.5nm,0.9s						
GEYT	**Alibeck**	**8.98**	**283**	Pn	Pn	17 47 04.6	+0.1
	0.5nm,0.3s,baz=128,slow=8.0,SNR=6.5						
GEYT				Sn	Sn	17 48 45.9	+1.6
	0.9nm,0.3s,baz=129,slow=30,SNR=5.3						
MKAR	**Makanchi Array**	**14.18**	**39**	Pn	Pn	17 48 14.6	-0.7
	0.1nm,0.3s,baz=224,slow=11,SNR=2.6						
PYUN	**Piuthan**	**14.32**	**122**	eP	P	17 48 22.0	-1.8
AB31	**Akbulak array**	**14.45**	**335**	Pn	Pn	17 48 17.9	-1.1
	1.2nm,0.5s,baz=153,slow=12,SNR=24						
AB31				↑Sn	Sn	17 50 54.9	-2.9
	0.3nm,0.5s						
GKN	**Gorkha**	**15.52**	**119**	eP	P	17 48 37.4	+0.3
	10nm,0.4s						
KURBB	**Kurchatov Arra**	**15.64**	**22**	Pn	Pn	17 48 32.1	-2.5
	0.0nm,0.3s,baz=210,slow=12,SNR=2.9						
KURBB	**Kurchatov Arra**	**15.64**	**22**	↑Pn	P	17 48 37.7	-0.4
	1.9nm,0.7s						
KKN	**Kakani**	**16.11**	**118**	eP	P	17 48 45.1	+1.5
AKTO	**Aktyubinsk**	**16.12**	**333**	Pn	Pn	17 48 41.3	+0.6
	0.2nm,0.3s,baz=143,slow=15,SNR=9.6						
AKTO	**Aktyubinsk**	**16.12**	**333**	↓Pn	Pn	17 48 40.8	+0.1
	2.5nm,0.8s						
AKTO				↓Sn	Sn	17 51 34.9	-3.5
	1.6nm,1.1s						
PKIN	**Phulchoki**	**16.32**	**118**	eP	P	17 48 46.9	+0.9
	5.9nm,0.4s						
BVA0	**Borovoye Array**	**16.56**	**2**	↑Pn	P	17 48 47.6	-0.7
	0.7nm,0.8s,baz=164,slow=12,SNR=6.9						
BVAR	**Borovoye Array**	**16.56**	**2**	Pn	Pn	17 48 45.6	-0.7
	0.1nm,0.3s,baz=167,slow=8.3,SNR=2.9						
RAMN	**Ramite**	**17.55**	**118**	eP	Pn	17 48 58.5	-0.4
	10nm,0.5s						
ZALV	**Zalesovo Beam**	**20.55**	**27**	P	P	17 49 32.7	+0.7
	1.2nm,0.4s,baz=211,slow=10,SNR=7.4						
HFS	**Hagfors**	**42.20**	**322**	P	P	17 52 47.1	+1.4
	1.1nm,0.7s,baz=92,slow=13,SNR=3.3						
WRA	**Warramunga Arr**	**83.20**	**121**	P	P	17 57 17.0	-2.2
	0.5nm,1.0s,baz=308,slow=5.6,SNR=3.0						
ASAR	**Alice Springs**	**85.42**	**124**	P	P	17 57 30.7	+0.2
	0.1nm,0.5s,baz=326,slow=5.3,SNR=3.8						

*IDC **09** 17:45:01.8±1.6, 50°.86N×172°.99W, h0km, mb3.8/15, mb1 3.9/17, mb1mx3.7/79, mbtmp3.8/17, ML3.6/2, Error ellipse: s-maj=42.7km s-min=15.9km az=4.0*
*ISCJB **09** 17:45:04.9±0.6, 50°.93N±0°.08×172°.98W±0°.04, h33km, mb3.9/17, Error ellipse: s-maj=11.1km s-min=3.5km az=175.5*
*NEIC **09** 17:45:06.2, 50°.81N×173°.03W, h56km, mb4.1/5, ML3.5(AEIC), After AEIC.*

ISC 09 17:45:07.0±0.9, 50°.9N±0°.1×173°.03W±0°.04, h35km, n57, σ1°06/62, mb3.9/17, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOFP	**Korovin Flat P**	**1.50**	**334**	P	Pn	17 45 31.6	+0.1
KOSE	**Korovin Southe**	**1.56**	**336**	P	Pn	17 45 32.7	+0.4
KOKL	**Mount Kliuchef**	**1.58**	**333**	ePn	Pn	17 45 32.7	+0.1
KONE	**Korovin Northe**	**1.62**	**336**	P	Pn	17 45 33.5	+0.5
GSTR	**Great Sitkin T**	**2.23**	**303**	ePn	Pn	17 45 40.7	-0.8
GSCK	**Great Sitkin C**	**2.24**	**300**	ePn	Pn	17 45 40.5	-1.1
GSCK				eSn	Sn	17 46 06.4	-1.7
GSTD	**Great Sitkin T**	**2.25**	**301**	ePn	Pn	17 45 40.9	-1.0
GSTD				eSn	Sn	17 46 07.3	-1.2
ETKA	**Kagalaska Isla**	**2.31**	**295**	ePn	Pn	17 45 41.6	-1.0
ADAG	**Mount Adagdak**	**2.47**	**297**	ePn	Pn	17 45 44.8	0.0
KIRH	**Kanaga Island**	**2.73**	**292**	ePn	Pn	17 45 47.8	-0.5
KIKV	**Kanaga Island**	**2.77**	**292**	ePn	Pn	17 45 48.0	-0.8
KICM	**Kanaga Island**	**2.79**	**292**	ePn	Pn	17 45 48.9	-0.3
TAFP	**Tanaga Falls P**	**3.25**	**289**	ePn	Pn	17 45 55.3	-0.2
TAFP				eSn	Sn	17 46 32.7	-0.3
NIKH	**Nikolski High**	**3.29**	**50**	ePn	Pn	17 45 55.4	-0.7
NIKH				eSn	Sn	17 46 32.3	-1.7
TANO	**Tanaga North**	**3.34**	**289**	ePn	Pn	17 45 56.6	-0.1
GALAA	**Gareloi Lava P**	**3.70**	**285**	ePn	Pn	17 46 01.1	-0.6
OKWR	**Okmok West Rim**	**3.88**	**48**	P	Pn	17 46 04.6	+0.3
OKTU	**Okmok Mt. Tuli**	**3.93**	**49**	P	Pn	17 46 04.8	0.0
MSOM	**Makushin Julie**	**4.71**	**50**	ePn	Pn	17 46 15.2	-0.3
MTBL	**Makushin Table**	**4.93**	**49**	ePn	Pn	17 46 18.3	-0.4
UNV	**Unalaska Valle**	**4.95**	**51**	ePn	Pn	17 46 18.5	-0.3
UNV				eSn	Sn	17 47 12.8	-1.9
AKUT	**Akutan**	**5.47**	**51**	ePn	Pn	17 46 26.1	+0.2
SPIA	**Saint Paul Isl**	**6.47**	**14**	ePn	Pn	17 46 39.6	-0.1
CHGN	**Chignik**	**10.21**	**53**	ePn	Pn	17 47 30.3	-0.5
OHAK	**Old Harbor**	**13.16**	**54**	ePn	Pn	17 48 08.2	-3.0
KDAK	**Kodiak Island**	**13.72**	**52**	ePn	Pn	17 48 15.7	-3.1
PEA1	**Petropavlovsk-**	**18.09**	**288**	ePn	P	17 49 15.0	-0.5
PETK	**Petropavlovsk-**	**18.09**	**288**	P	P	17 49 15.0	-0.5
	0.2nm,0.3s,baz=85,slow=15,SNR=5.3						
HDA	**Harding Lake**	**19.21**	**35**	eP	Pn	17 49 28.8	0.0
	13nm,1.3s						
ILAR	**Eielson Array**	**19.43**	**35**	P	P	17 49 29.7	-0.3
	0.2nm,0.3s,baz=236,slow=9.0,SNR=9.1						
ILB	**Eielson Array**	**19.43**	**35**	eP	P	17 49 28.1	-2.0
DOT	**Dot Lake**	**19.95**	**39**	eP	P	17 49 36.0	+0.3
	15nm,1.4s						
EGAK	**Eagle**	**21.58**	**38**	eP	P	17 49 53.7	+0.4
	5.1nm,0.8s						
HYT	**Haines Junctio**	**21.98**	**50**	eP	P	17 50 01.1	+3.4
SEY	**Seymchan**	**22.05**	**316**	P	P	17 49 58.5	+0.1
	0.6nm,0.3s,baz=70,slow=10.0,SNR=7.0						
MA2	**Magadan**	**22.12**	**307**	P	P	17 49 58.8	-0.3
	1.6nm,0.6s,baz=65,slow=12,SNR=4.7						
INK	**Inuvik**	**25.80**	**33**	P	P	17 50 35.0	+0.7
	3.2nm,0.7s,baz=268,slow=6.6,SNR=8.3						
INK	**Inuvik**	**25.80**	**33**	eP	P	17 50 35.3	+1.0
	3.4nm,0.6s						
YKA	**Yellowknife Ar**	**32.90**	**47**	P	P	17 51 38.1	+0.8
	0.3nm,0.4s,baz=271,slow=7.9,SNR=4.3						
YKB5	**Yellowknife Ar**	**32.90**	**47**	eP	P	17 51 38.5	+1.1
KLR	**Kul'dur**	**34.78**	**289**	P	P	17 51 54.9	+1.0
	1.1nm,0.4s,baz=65,slow=8.1,SNR=6.6						
PDAR	**Pinedale Array**	**42.94**	**75**	P	P	17 53 03.0	+0.5
	1.2nm,0.7s,baz=294,slow=4.4,SNR=9.1						
SONA0	**Songino Array**	**50.06**	**300**	eP	P	17 53 57.8	-0.3
	7.7nm,1.9s						
SONM	**Songino Array**	**50.06**	**300**	P	P	17 53 57.8	-0.3
	0.5nm,0.5s,baz=63,slow=6.8,SNR=4.3						
LTX	**Lajitas**	**55.10**	**85**	eP	P	17 54 34.5	-1.1
TXAR	**Lajitas Array**	**55.10**	**85**	P	P	17 54 34.5	-1.1
	0.7nm,0.8s,baz=290,slow=5.4,SNR=8.4						
ARA0	**ARCESS Array S**	**59.08**	**353**	eP	P	17 55 03.9	+0.8
ARCES	**ARCESS Array B**	**59.08**	**353**	P	P	17 55 03.9	+0.8
	0.8nm,0.8s,baz=36,slow=7.8,SNR=4.0						
KURK	**Kurchatov**	**61.90**	**317**	eP	P	17 55 23.9	+1.4
KURBB	**Kurchatov Arra**	**62.01**	**317**	P	P	17 55 23.9	+0.6
	1.0nm,0.7s,baz=47,slow=6.8,SNR=8.9						
BVAR	**Borovoye Array**	**63.51**	**323**	P	P	17 55 34.1	+0.8
	0.8nm,0.5s,baz=49,slow=7.6,SNR=7.2						
FIA0	**FINESS Array S**	**66.94**	**350**	eP	P	17 55 55.4	0.0
FINES	**FINESS Array B**	**66.94**	**350**	P	P	17 55 55.4	0.0
	0.5nm,0.5s,baz=337,slow=8.9,SNR=4.1						
NB200	**NORSAR Array S**	**68.33**	**358**	eP	P	17 56 03.7	-0.5
NOA	**NORSAR Array B**	**68.33**	**358**	P	P	17 56 03.7	-0.5
	0.4nm,0.6s,baz=3.9,slow=6.3,SNR=2.8						
HFS	**Hagfors**	**69.16**	**356**	P	P	17 56 09.4	+0.1
	1.4nm,0.8s,baz=35,slow=5.4,SNR=4.8						
AKTO	**Aktyubinsk**	**70.07**	**328**	P	P	17 56 16.4	+1.3
	1.0nm,0.7s,baz=49,slow=11,SNR=3.1						

*BJI **09** 17:52:22.0, 39°.29N×89°.89E, h6km, mb3.9/2, ML3.7/9*
*ISCJB **09** 17:52:23.4±2.1, 39°.72N±0°.10×89°.9E±0°.2, h10km, Error ellipse: s-maj=17.6km s-min=14.2km az=178.1*
*NNC **09** 17:52:25.4±2.5, 39°.69N×89°.76E, h0km, mb3.8, mpv3.5, Error ellipse: s-maj=21.3km s-min=18.8km az=48.0*

ISC 09 17:52:27.2±1.5, 39°.6N±0°.1×89°.72E±0°.08, h10km, n8, σ2°.03/13, 7C-6D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**4.53**	**341**	Pn	Pn	17 53 37.2	+1.3
WMQ				Sn	Sn	17 54 32.5	+3.9
WMQ				smax	smax		
	comp=N,170nm,0.7s						
WMQ				smax	smax		
	comp=E,160nm,0.7s						
GTA	**Gaotai**	**7.81**	**88**	ePg	Pb	17 54 42.7	0.0
PDGK	**Podgornoye**	**8.56**	**299**	↑Pn	Pn	17 54 30.9	-0.3
	0.8nm,0.4s						
PDGK				↓Sn	Sn	17 56 07.7	-0.1
	8.5nm,0.6s						
PDGK				↓Lg	Lg	17 56 57.3	
	17nm,0.8s						
MK31	**Makanchi Array**	**9.04**	**326**	↑Pn	Pn	17 54 37.4	-0.3
	0.6nm,0.3s,baz=92,slow=23,SNR=22						
MK31				Sn	Sn	17 56 20.2	+0.5
	3.5nm,0.7s,baz=137,slow=24,SNR=4.5						
MK31				↓Lg	Lg	17 57 11.8	
	12nm,1.1s,baz=134,slow=31,SNR=3.7						
MAKZ	**Makanchi**	**9.20**	**325**	↑Pn	Pn	17 54 38.5	-1.3
	0.3nm,0.2s						
MAKZ				↓Sn	Sn	17 56 21.6	-1.7
	2.3nm,0.4s						
MAKZ				↑Lg	Lg	17 57 15.0	
	4.0nm,0.7s						
KSH	**Kashi**	**10.62**	**274**	P	Pn	17 55 01.4	+1.9
TKM2	**Tokmak 2**	**11.15**	**292**	↑Pn	Pn	17 55 04.9	-1.9
	1.6nm,0.4s						
TKM2				↑Sn	Sn	17 57 13.4	+1.7
	1.9nm,0.7s						
TKM2				↑Lg

ASAJ				*e*Sn	**Sn**	**18 11 15.0**	**-4.4**
YSS	**Yuzh-Sakhalins**	**10.53**	**2**	*e*Pn	**Pn**	**18 10 31.1**	**+0.2**
USRK	**Ussuriysk Ar.**	**11.08**	**318**	Pn	Pn	18 10 42.8	+4.4
	0.2nm,0.3s,baz=112,slow=15,SNR=4.3						
KS01	**Wonju Array Si**	**11.62**	**280**	*e*Pn	**Pn**	**18 10 45.9**	**+0.1**
PET	**Petropavlovsk**	**20.17**	**29**	*e*P	Pn	18 12 34.1	-2.2
	28nm,1.2s						
YHNB	**Yeheng**	**21.48**	**243**	*e*P	**P**	**18 12 48.7**	**-0.2**
	34nm,1.2s						
NACB	**Ningamchiao**	**21.63**	**241**	*e*P	**P**	**18 12 50.2**	**-0.2**
	35nm,1.3s						
YULB	**Yu-li**	**22.33**	**240**	*e*P	**P**	**18 12 57.8**	**-0.3**
	23nm,1.3s						
TPUB	**Ta-pu**	**22.86**	**241**	*e*P	**P**	**18 13 04.0**	**+0.3**
	34nm,1.4s						
MA2	**Magadan**	**23.81**	**11**	P	**P**	**18 13 12.9**	**0.0**
	1.5nm,0.6s,baz=164,slow=17,SNR=4.1						
H11N2	**WAKE ISLAND Hy**	**27.19**	**121**	T	T	18 41 56.5	
	baz=313,slow=75,SNR=7.7						
H11N1	**WAKE ISLAND Hy**	**27.20**	**121**	T	T	18 41 54.8	
	baz=313,slow=75,SNR=7.0						
H11N3	**WAKE ISLAND Hy**	**27.21**	**121**	T	T	18 41 56.5	
	baz=313,slow=75,SNR=8.0						
SEY	**Seymchan**	**27.26**	**10**	P	**P**	**18 13 45.4**	**+1.2**
	1.0nm,0.8s,baz=186,slow=10.0,SNR=6.6						
H11S1	**WAKE ISLAND Hy**	**27.90**	**123**	T	T	18 42 49.4	
	baz=315,slow=75,SNR=8.1						
H11S3	**WAKE ISLAND Hy**	**27.90**	**123**	T	T	18 42 47.7	
	baz=315,slow=75,SNR=6.3						
H11S2	**WAKE ISLAND Hy**	**27.91**	**123**	T	T	18 42 50.0	
	baz=315,slow=75,SNR=5.0						
ENH	**Enshi**	**28.04**	**267**	*e*P	**P**	**18 13 54.0**	**+2.4**
	5.7nm,0.8s						
SONA1	**Songino Array**	**28.75**	**305**	*e*P	**P**	**18 13 59.2**	**+1.4**
SONA0	**Songino Array**	**28.75**	**305**	*e*P	**P**	**18 13 59.2**	**+1.4**
	3.2nm,1.0s						
SONM	**Songino Array**	**28.75**	**305**	P	**P**	**18 13 59.2**	**+1.4**
	0.9nm,0.5s,baz=105,slow=9.6,SNR=7.0						
MYLDM	**Lahad Datu**	**38.02**	**221**	*e*P	**P**	**18 15 19.7**	**+1.1**
	33nm,1.4s						
CMAR	**Chiang Mai Arr**	**42.08**	**257**	P	**P**	**18 15 54.3**	**+2.0**
	0.4nm,0.8s,baz=51,slow=7.1,SNR=3.2						
ZAA0	**Zalesovo Array**	**42.88**	**313**	*e*P	**P**	**18 16 00.7**	**+2.2**
ZAA1	**Zalesovo Array**	**42.88**	**313**	*e*P	**P**	**18 16 00.3**	**+1.9**
ZAA1				*e*PcP	**PcP**	**18 17 49.5**	**+0.2**
ZALV	**Zalesovo Beam**	**42.88**	**313**	P	**P**	**18 16 00.3**	**+1.9**
	0.8nm,0.5s,baz=106,slow=7.1,SNR=4.2						
ZALV				PcP	**PcP**	**18 17 49.5**	**+0.2**
	0.9nm,0.7s,baz=63,slow=4.2,SNR=3.6						
LSA	**Lhasa**	**43.02**	**276**	*e*P	**P**	**18 16 01.6**	**+1.1**
	6.8nm,1.4s						
MK01	**Makanchi Array**	**45.08**	**303**	*e*P	**P**	**18 16 18.5**	**+2.2**
MK31	**Makanchi Array**	**45.08**	**303**	*e*P	**P**	**18 16 18.2**	**+2.0**
MK32	**Makanchi Array**	**45.08**	**303**	*e*P	**P**	**18 16 18.1**	**+1.8**
MKAR	**Makanchi Array**	**45.08**	**303**	P	**P**	**18 16 18.1**	**+1.8**
	0.9nm,0.7s,baz=88,slow=11,SNR=8.1						
MKAR	**Makanchi Array**	**45.08**	**303**	*e*P	**P**	**18 16 18.0**	**+1.8**
MAKZ	**Makanchi**	**45.29**	**303**	*e*P	**P**	**18 16 19.6**	**+1.7**
	4.1nm,1.3s						
KSM	**Kuching**	**45.68**	**228**	*e*P	**P**	**18 16 21.1**	**-0.2**
	18nm,1.6s						
KURK	**Kurchatov**	**46.90**	**309**	*e*P	**P**	**18 16 32.1**	**+1.6**
HDA	**Harding Lake**	**49.59**	**33**	*e*P	**P**	**18 16 47.4**	**-3.8**
	37nm,1.5s						
IL1	**Eielson Array**	**49.62**	**32**	*e*P	**P**	**18 16 50.5**	**-0.8**
ILAR	**Eielson Array**	**49.62**	**32**	P	**P**	**18 16 51.0**	**-0.3**
	1.1nm,0.8s,baz=265,slow=6.4,SNR=13						
ILB	**Eielson Array**	**49.62**	**32**	*e*P	**P**	**18 16 49.5**	**-1.8**
EYAK	**Cordova Ski Ar**	**50.38**	**38**	*e*P	**P**	**18 16 55.9**	**-1.2**
	15nm,0.3s						
TKM2	**Tokmak 2**	**50.58**	**299**	*e*P	**P**	**18 17 00.8**	**+1.6**
	4.1nm,1.1s						
VOSK	**Vostochnaya**	**51.25**	**312**	*e*P	**P**	**18 17 05.1**	**+1.2**
	7.1nm,1.9s						
YKU2	**Yakutat**	**53.55**	**38**	*e*P	**P**	**18 17 18.2**	**-2.5**
	390nm,0.8s						
KKAR	**Karatay Array**	**54.08**	**301**	*e*P	**P**	**18 17 27.0**	**+2.0**
GSI	**Gunungsitoli**	**54.14**	**240**	*e*P	**P**	**18 17 26.2**	**+0.5**
	42nm,1.7s						
INK	**Inuvik**	**54.59**	**27**	P	**P**	**18 17 27.2**	**-1.0**
	1.4nm,0.5s,baz=312,slow=4.0,SNR=4.9						
INK	**Inuvik**	**54.59**	**27**	*e*P	**P**	**18 17 27.2**	**-1.0**
	5.7nm,1.4s						
WRAB	**Tennant Creek**	**56.55**	**189**	*e*P	**P**	**18 17 41.6**	**-1.2**
	45nm,1.8s						
WB2	**Warramunga Arr**	**56.56**	**189**	*e*P	**P**	**18 17 41.1**	**-1.8**
	9.5nm,1.2s						
WR1	**Warramunga Arr**	**56.56**	**189**	*e*P	**P**	**18 17 41.5**	**-1.5**
	20nm,1.5s						
WRA	**Warramunga Arr**	**56.56**	**189**	P	**P**	**18 17 41.5**	**-1.5**
	1.9nm,0.8s,baz=7.3,slow=7.3,SNR=16						
ARU	**Arti**	**57.32**	**319**	*e*P	**P**	**18 17 49.1**	**+1.2**
	3.5nm,1.1s						
KBL	**Kabul**	**58.34**	**292**	*e*P	**P**	**18 17 56.4**	**+0.6**
	3.4nm,0.5s						
ABKAR	**Akbulak array**	**58.91**	**311**	*e*P	**P**	**18 18 00.0**	**+0.8**
AS01	**Alice Springs**	**60.28**	**189**	*e*P	**P**	**18 18 07.5**	**-1.4**
AS31	**Alice Springs**	**60.29**	**189**	*e*P	**P**	**18 18 08.6**	**-0.3**
	3.0nm,1.5s						
ASAR	**Alice Springs**	**60.29**	**189**	P	**P**	**18 18 08.0**	**-0.9**
	0.8nm,0.9s,baz=3.2,slow=6.7,SNR=11						
YKA	**Yellowknife Ar**	**63.96**	**30**	P	**P**	**18 18 33.1**	**0.0**
	0.7nm,0.8s,baz=303,slow=6.5,SNR=4.2						
FIA1	**FINESS Array S**	**69.70**	**333**	*e*P	**P**	**18 19 09.7**	**-0.1**
FIA0	**FINESS Array S**	**69.71**	**333**	*e*P	**P**	**18 19 10.7**	**+1.0**
FINES	**FINESS Array B**	**69.71**	**333**	P	**P**	**18 19 10.7**	**+1.0**
	1.6nm,0.7s,baz=53,slow=7.4,SNR=7.7						
E09A	**Wood Farm, Sta**	**70.40**	**46**	*e*P	**P**	**18 19 13.1**	**-1.2**
	4.7nm,0.9s						
KBZ	**Khabaz**	**71.87**	**311**	P	**P**	**18 19 25.0**	**+1.8**
	1.3nm,0.7s,baz=45,slow=1.4,SNR=3.3						
NB200	**NORSAR Array S**	**75.04**	**338**	*e*P	**P**	**18 19 42.4**	**+0.7**
NOA	**NORSAR Array B**	**75.04**	**338**	P	**P**	**18 19 42.4**	**+0.7**
	0.7nm,0.7s,baz=38,slow=5.8,SNR=2.8						
AKASG	**Malin Array Be**	**75.24**	**323**	P	**P**	**18 19 43.9**	**+0.9**
	1.0nm,0.6s,baz=47,slow=6.1,SNR=4.9						
AKBB	**Malin Array Si**	**75.24**	**323**	*e*P	**P**	**18 19 43.9**	**+0.9**
PDAR	**Pinedale Array**	**77.56**	**46**	P	**P**	**18 19 57.0**	**+0.4**
	0.3nm,0.5s,baz=190,slow=2.6,SNR=3.9						
BR101	**Keskin Array S**	**79.82**	**312**	*e*P	**P**	**18 20 10.7**	**+1.7**
BRTR	**Keskin Array B**	**79.82**	**312**	P	**P**	**18 20 10.7**	**+1.7**
	0.7nm,0.8s,baz=116,slow=3.4,SNR=4.5						
GERES	**GERESS Array B**	**83.63**	**329**	P	**P**	**18 20 29.3**	**+0.5**
	0.3nm,0.5s,baz=40,slow=4.4,SNR=5.9						
LTX	**Lajitas**	**89.90**	**53**	*e*P	**P**	**18 20 59.9**	**0.0**
TXAR	**Lajitas Array**	**89.90**	**53**	P	**P**	**18 20 59.9**	**0.0**
	0.7nm,0.7s,baz=299,slow=2.9,SNR=13						
LPAZ	**La Paz**	**146.34**	**62**	PKPbc	**PKPab**	**18 27 41.4**	**-1.8**
	1.5nm,0.5s,baz=301,slow=3.1,SNR=6.4						

GUC 09 18:08:45.5±0.5, 23°25S×68°19W, h156km±10km, ML3.7, 4C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB06	**IPOC Station P**	**1.39**	**293**	↑*i*P	Pn	18 09 15.3	+0.8
PB06				*i* S	Sn	18 09 37.9	+1.1
PB06				IAML		18 09 40.1	
	comp=E,1μm,0.1s						
PB04	**IPOC Station P**	**2.03**	**296**	↑*i*P	Pn	18 09 22.5	+1.1
PB04				*i* S	Sn	18 09 50.8	+1.7
PB04				IAML		18 10 00.1	
	comp=N,495nm,0.4s						
PB07	**IPOC Station P**	**2.18**	**314**	↑*i*P	Pn	18 09 24.6	+1.3
PB07				*i* S	Sn	18 09 54.0	+1.7
PB07				IAML		18 09 56.5	
	comp=N,514nm,0.1s						
PB10	**IPOC Station P**	**2.19**	**263**	*e*P	Pn	18 09 24.5	+1.3
PB10				*i* S	Sn	18 09 53.1	+0.8
PB10				IAML		18 10 04.4	
	comp=N,773nm,0.5s						
PB01	**IPOC Station P**	**2.50**	**331**	↓*i*P	Pn	18 09 27.9	+0.8
PB01				*i* S	Sn	18 10 00.7	+1.6
PB01				IAML		18 10 04.5	
	comp=E,196nm,0.3s						
PB08	**IPOC Station P**	**3.22**	**344**	↑*i*P	Pn	18 09 37.9	+1.6
PB08				*i* S	Sn	18 10 18.0	+2.4
PB08				IAML		18 10 20.9	
	comp=N,61nm,0.9s						
MNMC	**Minye Minye**	**4.30**	**342**	*e*P	Pn	18 09 50.9	+0.7

*IDC **09** 18:18:13.2±1.4, 5°42S×102°64E, h0km, mb3.8/9, mb1 3.9/9, mb1mx3.6/54, mbtmp3.8/9, Error ellipse: s-maj=60.2km s-min=18.3km az=48.0*

*ISCJB **09** 18:18:14.9±0.9, 5°75S×0°05×102°46E±0°05, h39km±8km, mb4.1/16, Error ellipse: s-maj=10.6km s-min=5.4km az=140.7*

*DJA **09** 18:18:16.8±0.9, 6°S×3°×10°3E±°, h19km±9km, M4.5/11, mb4.8/2, mB5.4/1, MLv4.4/11, Mw(mB)4.9/1*

*NEIC **09** 18:18:17.4±1.7, 5°51S×102°58E, h32km±12km, mb4.3/7, Error ellipse: s-maj=9.1km s-min=5.3km az=223.0*

ISC 09 18:18:18.0±1.1, 5°63S±0°06×102°55E±0°07, h42km±11km, n68, σ1°38/61, mb4.1/16, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MNAI	**Manna**	**1.32**	**18**	P	**Pn**	**18 18 39.6**	**-0.4**
MNAI				S	**Sn**	**18 18 55.3**	**-1.1**
MNAI	**Manna**	**1.32**	**18**	*e*Pn	**Pn**	**18 18 39.3**	**-0.7**
LWLI	**Liwa**	**1.62**	**68**	P	**Pn**	**18 18 43.4**	**-0.7**
LWLI				S	**Sn**	**18 19 05.6**	**+1.8**
KASI	**Kota Agung**	**1.94**	**87**	P	**Pn**	**18 18 47.5**	**-0.9**
KASI				S	**Sn**	**18 19 13.4**	**+1.8**
KSI	**Kapahiang**	**1.96**	**1**	P	**Pn**	**18 18 49.2**	**+0.3**
KSI				S	**Sn**	**18 19 14.5**	**+2.2**
LHSI	**Lahat**	**2.03**	**28**	P	**Pn**	**18 18 50.2**	**+0.5**
LHSI				S	**Sn**	**18 19 16.0**	**+2.1**
BLSI	**Bandar Lampung**	**2.69**	**85**	P	**Pn**	**18 18 59.1**	**+0.3**
CGJI	**Cibinong**	**3.27**	**108**	P	**Pn**	**18 19 06.5**	**-0.3**
CGJI				S	**Sn**	**18 19 42.5**	**-2.0**
PPSI	**Pulau Pagai**	**3.81**	**318**	P	**Pn**	**18 19 14.7**	**+0.5**
SKJI	**Sukabumi**	**4.21**	**109**	P	Pn	18 19 13.1	-6.6
DBJI	**Dramaga**	**4.27**	**103**	P	**Pn**	**18 19 20.9**	**+0.3**
CBJI	**Citeko**	**4.34**	**101**	P	**Pn**	**18 19 25.4**	**+3.8**
CNJI	**Cibinong**	**4.84**	**110**	P	**Pn**	**18 19 27.2**	**-1.2**
PPBI	**Pangkal Pinang**	**4.96**	**46**	P	**Pn**	**18 19 30.5**	**+0.5**
LEM	**Lembang**	**5.17**	**104**	P	Pn	18 19 39.4	+6.3
CISI	**Cisopet, Garu**	**5.57**	**110**	P	**Pn**	**18 19 37.4**	**-1.0**
	71nm,0.5s,3μm0.5nm						
CISI	**Cisompet, Garu**	**5.57**	**110**	*e*Pn	**Pn**	**18 19 37.4**	**-1.0**
CISI				*e*Sn	Sn	18 20 33.0	-8.2
XMIS	**Christmas Isla**	**5.72**	**148**	*e*Pn	Pn	18 19 35.9	-4.6
XMIS				*e*Sn	Sn	18 20 36.0	-8.8
CMJI	**Cimerak**	**6.24**	**110**	P	**Pn**	**18 19 46.9**	**-0.6**
UGM	**Wanagama**	**8.23**	**106**	P	**Pn**	**18 20 14.8**	**-0.2**
UGM	**Wanagama**	**8.23**	**106**	*e*Pn	**Pn**	**18 20 14.9**	**-0.1**
GSI	**Gunungsitoli**	**8.49**	**324**	P	**Pn**	**18 20 17.9**	**-0.6**
GSI	**Gunungsitoli**	**8.49**	**324**	*e*Pn	**Pn**	**18 20 17.6**	**-0.9**
COCO	**West Island**	**8.63**	**220**	*e*Pn	**Pn**	**18 20 22.7**	**+2.4**
PWJI	**Pagerwojo**	**9.49**	**105**	P	**Pn**	**18 20 30.4**	**-1.8**
IPM	**Ipoh**	**10.15**	**351**	*e*Pn	Pn	18 20 34.1	-7.2
JAGI	**Jajag, Banyuwa**	**11.85**	**104**	*e*Pn	**Pn**	**18 21 03.2**	**-1.4**
LHMI	**Lhok Sumawe**	**12.15**	**332**	*e*Pn	**Pn**	**18 21 05.6**	**-3.0**
MYLDM	**Lahad Datu**	**19.20**	**56**	*e*P	**P**	**18 22 38.9**	**+0.4**
	35nm,1.4s						
CM01	**Chiang Mai Arr**	**24.16**	**352**	*e*P	**P**	**18 23 26.5**	**-3.8**
CM31	**Chiang Mai Arr**	**24.19**	**352**	*e*P	**P**	**18 23 27.0**	**-3.7**
CMAR	**Chiang Mai Arr**	**24.19**	**352**	P	**P**	**18 23 29.5**	**-1.2**
	1.0nm,0.7s,baz=181,slow=9.1,SNR=7.5						
H08S2	**Diego Garcia H**	**29.92**	**264**	T	T	18 55 16.2	
	baz=88,slow=75,SNR=46						
H08S3	**Diego Garcia H**	**29.93**	**265**	T	T	18 55 15.7	
	baz=88,slow=75,SNR=31						
H08S1	**Diego Garcia H**	**29.94**	**264**	T	T	18 55 17.4	
	baz=88,slow=75,SNR=31						
H01W3	**Cape Leeuwin H**	**31.02**	**161**	T	T	18 57 08.9	
	baz=338,slow=76,SNR=14						
H01W2	**Cape Leeuwin H**	**31.03**	**161**	T	T	18 57 10.6	
	baz=338,slow=76,SNR=13						
H01W1	**Cape Leeuwin H**	**31.04**	**161**	T	T	18 57 09.3	
	baz=338,slow=76,SNR=13						
H08N1	**Diego Garcia H**	**31.37**	**267**	T	T	18 57 46.4	
	baz=122,slow=71,SNR=5.1						
H08N2	**Diego Garcia H**	**31.39**	**267**	T	T	18 57 48.1	
	baz=122,slow=71,SNR=5.3						
H08N3	**Diego Garcia H**	**31.39**	**267**	T	T	18 57 45.9	
	baz=122,slow=71,SNR=6.0						
WRA	**Warramunga Arr**	**34.02**	**118**	P	**P**	**18 24 59.0**	**+0.8**
	0.5nm,0.6s,baz=298,slow=10,SNR=6.3						
WR1	**Warramunga Arr**	**34.02**	**118**	*e*P	**P**	**18 24 59.0**	**+0.8**
	30nm,1.7s						
ASAR	**Alice Springs**	**35.10**	**124**	P	**P**	**18 25 08.9**	**+1.4**
	0.5nm,0.7s,baz=304,slow=8.2,SNR=16						
AS01	**Alice Springs**	**35.14**	**124**	*e*P	**P**	**18 25 09.5**	**+1.6**
SONA0	**Songino Array**	**53.34**	**3**	*e*P	**P**	**18 27 32.8**	**-0.3**
	1.3nm,0.7s						
SONM	**Songino Array**	**53.34**	**3**	P	**P**	**18 27 32.8**	**-0.3**
	1.1nm,0.5s,baz=185,slow=7.5,SNR=7.9						
SONA1	**Songino Array**	**53.35**	**3**	*e*P	**P**	**18 27 33.9**	**+0.7**
TKM2	**Tokmak 2**	**54.16**	**336**	*e*P	**P**	**18 27 39.4**	**+0.1**
	1.4nm,0.6s						
EKS2	**Erkin-Say**	**54.71**	**334**	*e*P	**P**	**18 27 43.7**	**+0.5**
	1.9nm,0.8s						
MK01	**Makanchi Array**	**55.17**	**343**	*e*P	**P**	**18 27 46.4**	**0.0**
MK31	**Makanchi Array**	**55.20**	**343**	*e*P	**P**	**18 27 47.0**	**+0.4**
MK32	**Makanchi Array**	**55.20**	**343**	*e*P	**P**	**18 27 46.6**	**+0.1**
MKAR	**Makanchi Array**	**55.20**	**343**	P	**P**	**18 27 46.6**	**+0.1**
	0.5nm,0.5s,baz=152,slow=8.6,SNR=9.4						
GEYT	**Alibeck**	**59.84**	**320**	P	**P**	**18 28 20.9**	**+1.4**
	1.0nm,0.6s,baz=133,slow=6.1,SNR=3.2						
ZAA0	**Zalesovo Array**	**61.20**	**348**	*e*P	**P**	**18 28 27.6**	**-0.7**
ZALV	**Zalesovo Beam**	**61.20**	**348**	P	**P**	**18 28 28.4**	**+0.1**
	1.2nm,0.5s,baz=164,slow=5.0,SNR=8.0						
ZAA1	**Zalesovo Array**	**61.20**	**348**	*e*P	**P**	**18 28 28.4**	**0.0**
VOSK	**Vostochnaya**	**63.99**	**339**	*e*P	**P**	**18 28 46.8**	**-0.3**
	8.4nm,2.0s						
BVAR	**Borovoye Array**	**64.45**	**339**	P	**P**	**18 28 49.9**	**-0.1**
	0.7nm,0.5s,baz=126,slow=7.3,SNR=4.2						
ZRNK	**Zerenda**	**64.89**	**338**	*e*P	**P**	**18 28 52.9**	**0.0**
	6.4nm,1.8s						
ABKAR	**Akbulak array**	**66.02**	**331**	*e*P	**P**	**18 28 59.9**	**-0.4**
KWAJ	**Kwajalein Atol**	**66.42**	**78**	*e*P	**P**	**18 29 04.0**	**+0.5**
	87nm,1.0s						
BR101	**Keskin Array S**	**77.63**	**313**	*e*P	**P**	**18 30 10.8**	**+0.4**
BR131	**Keskin Array S**	**77.63**	**313**	*e*P	**P**	**18 30 09.7**	**-0.7**
BRTR	**Keskin Array B**	**77.63**	**313**	P	**P**	**18 30 10.8**	**+0.4**
	0.4nm,0.6s,baz=149,slow=5.0,SNR=4.7						
BR231	**Keskin MP Arra**	**78.30**	**312**	*e*P	**P**	**18 30 11.9**	**-2.1**
TXAR	**Lajitas Array**	**145.80**	**43**	PKPbc	**PKPab**	**18 37 54.5**	**+0.6**
	0.7nm,0.8s,baz=301,slow=1.0,SNR=8.9						

*BJI **09** 18:18:36.1, 29°50S×175°60W, h42km, mb5.3/33, mB5.6/23, Ms5.1/22, Ms7 4.8/24*

*NEIC **09** 18:18:38.9±0.9, 29°50S×176°93W, h11km±5km, mb5.1/84, Error ellipse: s-maj=7.6km s-min=4.5km az=129.0*

*IDC **09** 18:18:38.3±0.5, 29°07S×176°93W, h0km, mb4.7/19, mb1 4.8/20, mb1mx4.7/32, mbtmp4.7/20, ML4.7/1, MS4.6/22, Ms1 4.6/22, ms1mx4.4/34, Error ellipse: s-maj=18.7km s-min=13.4km az=153.0*

*GCMT **09** 18:18:38.9±0.2, 29°17S×176°71W, h23km, MW5.2/97, Moment Tensor Solution. s79,c126; s97,c149; Duration: 1s0 Moment tensor: Scale 10^17 Nm; Mrr0.73±.03; Mθθ-0.01±.02; Mφφ-0.71±.02; Mrθ0.16±.03; Mθφ-0.17±.01; Mrφ0.56±.03; Best double couple: M=0.93800×10^17 NP1:ϕs15.00000°, δ64.00000°, λ92.00000°. NP2:ϕs191.00000°, δ26.00000°, λ87.00000°. Principal axes: T 0.9270, Plg71.0000°, Azm288.0000°; N 0.0220, Plg1.0000°, Azm194.0000°; P -0.9490, Plg19.0000°, Azm103.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **09** 18:18:41.0±0.2, 29°60S±0°03×176°96W±0°04, h33km, mb5.1/106, MS4.7/43 Error ellipse: s-maj=6.1km s-min=3.7km az=44.0*

*MOS **09** 18:18:42.8±1.2, 29°08S×177°12W, h33km, mb5.3/39, MS4.8/12, Error ellipse: s-maj=10.5km s-min=9.0km az=99.0*

ISC 09 18:18:42.0±0.3, 29°40S±0°05×176°85W±0°05, h31km, n476, σ2°00/486, mb5.1/106, MS4.8/43, 21C-23D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.94**	**279**	Pn	**Pn**	**18 18 59.2**	**+0.2**
	6μm,0.3s,baz=100,slow=13,SNR=113						
RAO				Sn	**Sb**	**18 19 13.2**	**+1.3**
	13μm,0.3s,baz=80,slow=18,SNR=26						
RAO	**Raoul Island**	**0.94**	**279**	*e*Pn	**Pn**	**18 18 59.2**	**+0.2**
RAO				*e*Sn	**Sn**	**18 19 10.2**	**-1.3**
OUZ	**Omahuta**	**9.95**	**232**	*e*Pn	Pn	18 21 09.7	+6.9
URZ	**Urewera**	**10.16**	**208**	Pn	**Pn**	**18 21 01.9**	**-3.7**
	1.0nm,0.3s,baz=86,slow=16,SNR=6.5						
URZ				Sn	**Sn**	**18 22 55.1**	**-3.4**
	10nm,0.3s,baz=112,slow=16,SNR=11						

BKZ	**Black Stump Fm**	**11.18**	**208**	*e*Pn	**Pn**	**18 21 15.6**	**-4.2**
HIZ	**Hauiti**	**11.39**	**215**	*e*Pn	**Pn**	**18 21 21.0**	**-1.5**
MSVF	**Nonsavu**	**12.52**	**337**	*e*P	**Pn**	**18 21 35.7**	**-2.4**
MSVF	**Nonsavu**	**12.52**	**337**	*e*P	**Pn**	**18 21 35.6**	**-2.4**
BFZ	**Birch Farm**	**12.59**	**205**	*e*Pn	**Pn**	**18 21 36.0**	**-2.9**
BFZ				*e*Sn	**Sn**	**18 23 50.5**	**-7.5**
SNZO	**South Karori**	**13.72**	**208**	*e*Pn	**Pn**	**18 21 53.0**	**-1.4**
KHZ	**Kahutara**	**15.13**	**208**	*e*Pn	**Pn**	**18 22 08.8**	**-4.6**
	79nm,0.9s						
KHZ				*e*Sn	Sn	18 24 45.9	-14
LTZ	**Lake Taylor**	**15.97**	**210**	*e*Pn	**Pn**	**18 22 21.8**	**-2.5**
	366nm,1.9s						
AFI	**Afiamalu**	**16.12**	**18**	Pn	**Pn**	**18 22 23.1**	**-3.3**
	3.0nm,0.3s,baz=243,slow=6.8,SNR=3.3						
AFI				Sn	Sn	18 25 06.8	-18
	2.2nm,0.3s,baz=212,slow=18,SNR=2.6						
AFI				LR	LR	18 29 00.2	
	comp=Z,672nm,19.9s,baz=208,slow=39						
AFI	**Afiamalu**	**16.12**	**18**	*e*Pn	Pn	18 22 15.7	-11
AFI				*e*Sn	Sn	18 25 06.8	-18
CRLZ	**Canterbury Las**	**16.46**	**208**	*e*Pn	**Pn**	**18 22 30.3**	**-0.3**
	184nm,1.3s						
OXZ	**Oxford**	**16.50**	**210**	*e*Pn	**Pn**	**18 22 27.8**	**-3.3**
	127nm,0.5s						
OXZ				*e*Sn	Sn	18 25 18.1	-15
MQZ	**McQueen's Vall**	**16.56**	**208**	*e*Pn	**Pn**	**18 22 28.2**	**-3.6**
	446nm,2.0s						
MQZ				*e*Sn	Sn	18 25 18.9	-16
DZM	**Mont Dzumac**	**16.72**	**292**	Pn	**Pn**	**18 22 34.9**	**+0.9**
	0.4nm,0.3s,baz=119,slow=11,SNR=19						
DZM				LR	LR	18 27 56.4	
	comp=Z,7μm,18.1s,baz=136,slow=34						
DZM	**Mont Dzumac**	**16.72**	**292**	*e*P	**P**	**18 22 37.5**	**+1.4**
	287nm,1.6s						
DZM				*e*LR	LR	18 26 27.0	
	9μm,23.7s						
DZM	**Mont Dzumac**	**16.72**	**292**	*e*Pn	**P**	**18 22 39.0**	**+2.9**
	297nm,1.7s						
RPZ	**Rata Peaks**	**17.25**	**211**	Pn	**Pn**	**18 22 37.5**	**-3.0**
	5.4nm,0.3s,baz=350,slow=2.3,SNR=20						
RPZ				S	Sn	18 25 34.4	-17
	1.8nm,0.3s,baz=22,slow=5.4,SNR=3.6						
RAR	**Rarotonga**	**17.45**	**66**	P	**Pn**	**18 22 38.5**	**-4.5**
	1.8nm,0.3s,baz=346,slow=0.5,SNR=4.4						
RAR				S	Sn	18 25 38.7	-18
	1.0nm,0.3s,baz=151,slow=10.0,SNR=2.8						
RAR				LR	LR	18 27 45.0	
	comp=Z,2μm,19.5s,baz=246,slow=32						
RAR	**Rarotonga**	**17.45**	**66**	*e*P	**Pn**	**18 22 41.0**	**-2.1**
RAR				*e*P	pmax	pmax	
	comp=Z,182nm,1.6s						
RAR	**Rarotonga**	**17.45**	**66**	*e*Pn	**Pn**	**18 22 41.0**	**-2.1**
	comp=Z,182nm,1.6s						
RAR				S	Sn	18 25 38.7	-18
FOZ	**Fox Glacier**	**17.68**	**214**	*e*Pn	**Pn**	**18 22 42.7**	**-3.1**
	comp=Z,600nm,1.9s						
LBZ	**Lake Benmore**	**18.16**	**211**	*e*Pn	**Pn**	**18 22 49.9**	**-1.9**
	comp=Z,82nm,1.3s						
ODZ	**Otahua Downs**	**18.48**	**209**	*e*P	**P**	**18 22 51.8**	**-3.5**
	comp=Z,50nm,0.7s						
WKZ	**Wanaka**	**19.04**	**212**	*e*P	**P**	**18 22 58.3**	**-3.1**
	comp=Z,493nm,1.9s						
MLZ	**Mavora Lakes**	**19.86**	**213**	*e*P	**P**	**18 23 11.1**	**+0.6**
	comp=Z,168nm,1.4s						
LHI	**Lord Howe Isla**	**20.86**	**258**	*e*P	**P**	**18 23 22.4**	**+1

comp=Z,16nm,0.8s,baz=100,slow=6.8,SNR=105
ASAR PcP **PcP** **18 28 32.4 -0.4**
comp=Z,1.6nm,0.7s,baz=119,slow=4.9,SNR=2.5
ASAR ScP **ScP** **18 32 26.9 +4.5**
comp=Z,2.8nm,1.0s,baz=130,slow=4.1,SNR=6.7
ASAR LR LR 18 44 36.0
comp=Z,3µm,18.8s,baz=118,slow=35
WR8 Warramunga Arr 44.92 271 P **P** **18 26 53.9 -0.3**
baz=44
WB2 Warramunga Arr 45.06 271 *e*P **P** **18 26 54.6 -0.7**
comp=Z,40nm,1.0s
WRAB Tennant Creek 45.06 271 *d i*P **P** **18 26 55.2 -0.1**
WRAB pmax pmax
comp=Z,85nm,1.0s
WRAB Tennant Creek 45.06 271 *e*P **P** **18 26 55.0 -0.4**
comp=Z,43nm,1.1s
WR1 Warramunga Arr 45.07 271 *e*P **P** **18 26 54.5 -0.8**
comp=Z,45nm,1.0s
WR1 *e*ScP **ScP** **18 32 32.4 +6.2**
WRA Warramunga Arr 45.07 271 P **P** **18 26 54.5 -0.8**
comp=Z,27nm,0.9s,baz=110,slow=7.9,SNR=44
WRA ScP **ScP** **18 32 32.4 +6.2**
comp=Z,7.2nm,1.4s,baz=115,slow=3.9,SNR=4.7
WRA LR LR 18 44 58.4
comp=Z,1µm,18.2s,baz=115,slow=35
FORT Forrest 47.27 254 P **P** **18 27 11.8 -0.8**
baz=47,SNR=9.8
FORT Forrest 47.27 254 *e*P **P** **18 27 11.2 -1.3**
comp=Z,321nm,0.7s
JAY Jayapura 48.35 296 LR LR 18 45 29.5
comp=Z,25nm,21.5s,slow=34
WRKA Warakurna 48.60 261 P **P** **18 27 21.8 -1.2**
baz=48,SNR=40
SBA Scott Base 49.11 185 *e*P P 18 27 32.1 +6.1
SBA pmax pmax
comp=Z,71nm,1.4s
SBA Scott Base 49.11 185 *e*P P 18 27 32.1 +6.1
comp=Z,72nm,1.4s
VNDA Vanda 49.19 186 P **P** **18 27 30.9 +4.2**
comp=Z,1.6nm,0.7s,baz=13,slow=8.6,SNR=6.6
VNDA LR LR 18 46 27.8
comp=Z,348nm,19.4s,baz=26,slow=34
VNDA Vanda 49.19 186 *e*P **P** **18 27 30.8 +4.2**
VNDA pmax pmax
comp=Z,33nm,1.8s
VNDA Vanda 49.19 186 *e*P **P** **18 27 30.8 +4.2**
comp=Z,33nm,1.8s
KNRA Kununurra 51.64 273 P **P** **18 27 45.6 -0.4**
baz=51
KMBL Kambalda 52.28 251 P **P** **18 27 49.8 -0.9**
baz=52,SNR=5.3
FITZ Fitzroy Crossi 53.37 269 P **P** **18 27 58.4 -0.4**
comp=Z,25nm,1.1s,baz=132,slow=9.9,SNR=8.7
FITZ LR LR 18 50 14.7
comp=Z,1µm,18.2s,baz=106,slow=36
FITZ Fitzroy Crossi 53.37 269 P **P** **18 27 58.6 -0.3**
baz=53,SNR=9.6
FITZ Fitzroy Crossi 53.37 269 *e*P **P** **18 27 58.4 -0.4**
comp=Z,52nm,1.3s
KLBR Kellerberrin 55.62 250 P **P** **18 28 14.0 -1.0**
baz=55,SNR=13
NWAO Narrogin (SRO) 55.69 248 P **P** **18 28 14.1 -1.4**
comp=Z,7.1nm,0.7s,baz=117,slow=14,SNR=5.8
NWAO Narrogin (SRO) 55.69 248 P **P** **18 28 14.7 -0.8**
baz=55,SNR=3.9
NWAO P **P** **18 28 14.7 -0.8**
baz=55,SNR=3.9
NWAO Narrogin (SRO) 55.69 248 P **P** **18 28 14.1 -1.4**
NWAO pmax pmax
comp=Z,5.0nm,0.6s
NWAO Narrogin (SRO) 55.69 248 *e*P P 18 28 10.4 -5.1
comp=Z,66nm,1.6s
MEEK Meekatharra 56.38 256 P **P** **18 28 19.6 -1.0**
baz=56,SNR=4.6
CASY Casey 56.48 208 *e*P **P** **18 28 22.2 +1.6**
comp=Z,64nm,1.0s
GUMO Guam 56.49 314 LR LR 18 51 27.8
comp=Z,334nm,18.3s,baz=154,slow=35
BLDU Ballidu 56.76 251 P **P** **18 28 22.3 -0.9**
baz=56
MUN Mundaring 56.78 249 P **P** **18 28 22.3 -1.0**
baz=56
MBWA Marble Bar 57.33 263 *e*P **P** **18 28 26.1 -1.2**
comp=Z,51nm,1.1s
QSPA South Pole Qui 60.71 180 *e*P **P** **18 28 54.0 +3.7**
PCI Palu 66.45 283 P **P** **18 29 29.9 +1.1**
JAGI Jajag, Banyuwa 67.61 273 *e*P **P** **18 29 33.8 -2.4**
comp=Z,84nm,1.4s
CISI Cisompet, Garu 73.57 271 P **P** **18 30 11.0 -1.6**
comp=Z,42nm,1.2s
MAW Mawson 73.59 200 P **P** **18 30 14.7 +3.0**
comp=Z,12nm,0.9s,baz=119,slow=8.5,SNR=19
MAW LR LR 19 02 17.5
comp=Z,654nm,19.0s,baz=76,slow=36
MAW Mawson 73.59 200 *e*P **P** **18 30 14.7 +3.0**
MAW pmax pmax
comp=Z,7.0nm,1.1s
MAW Mawson 73.59 200 *e*P **P** **18 30 14.7 +3.0**
comp=Z,7.1nm,1.1s
SBUM Sibu 74.69 282 *e*P **P** **18 30 18.9 -0.1**
comp=Z,9.8nm,0.9s
KSM Kuching 75.82 280 *e*P **P** **18 30 25.7 +0.1**
comp=Z,11nm,0.8s
INU Inuyama 77.70 323 *e*P **P** **18 30 36.4 +0.8**
comp=Z,13nm,1.0s
MJAR Matsushiro Arr 78.00 324 P **P** **18 30 36.4 -0.9**
comp=Z,8.3nm,1.0s,baz=164,slow=5.8,SNR=26
MJAR LR LR 19 01 37.4
comp=Z,80nm,19.8s,baz=155,slow=33
MAJO Matsushiro 78.00 324 *c i*P **P** **18 30 36.2 -1.1**
MAJO pmax pmax
comp=Z,80nm,1.2s
MAJO Matsushiro 78.00 324 *e*P **P** **18 30 36.9 -0.4**
comp=Z,14nm,0.8s
MAT Matsushiro 78.00 324 P **P** **18 30 36.1 -1.2**
MAT S **S** **18 40 30.6 +1.7**
MJB9 Matsu-Tunnel 78.01 324 *e*P **P** **18 30 37.0 -0.3**
comp=Z,3.7nm,0.9s
SYO Syowa Base 78.31 193⇑ *i*P **P** **18 30 39.4 +0.8**
SYO Syowa Base 78.31 193⇓ *e*pP **P** **18 30 41.8 +3.2**
SNAA Sanae 79.12 178 P **P** **18 30 45.8 +2.7**
SNAA Sanae 79.12 178 *e*P **P** **18 30 45.3 +2.2**
SNAA pmax pmax
comp=Z,16nm,1.0s
SNAA Sanae 79.12 178 *e*P **P** **18 30 45.3 +2.2**
comp=Z,16nm,1.0s
JNU Nakatsue 79.48 318 P **P** **18 30 44.2 -1.4**
baz=178,slow=15
VNA1 Neumayer--Stat 79.90 176 P **P** **18 30 50.2 +2.9**
ERM Erimo 80.07 331 *e*P **P** **18 30 50.9 +2.5**
ERM pmax pmax
comp=Z,25nm,1.1s
ERM Erimo 80.07 331 *e*P **P** **18 30 50.9 +2.5**
comp=Z,25nm,1.1s
KUR Kuril'sk 80.92 336 P P 18 30 47.3 -5.6
KUR *e* 18 33 55.1
KUR *e*S **S** **18 41 01.5 +2.1**
KUR MLR MLR
comp=Z,316nm,18.0s
MYKOM **Kota Tinggi 81.56 277** *e*P **P** **18 30 57.0 -0.1**
comp=Z,68nm,1.7s
ASAJ Asahikawa 82.03 332 *e*P **P** **18 31 00.2 +1.3**
comp=Z,50nm,1.2s
PLCA Paso Flores 82.45 133 P **P** **18 31 04.0 +2.5**
comp=Z,4.0nm,1.0s,baz=196,slow=6.6,SNR=2.6
PLCA LR LR 18 58 51.3
comp=Z,341nm,21.9s,baz=314,slow=29
PLCA Paso Flores 82.45 133 *e*P **P** **18 31 03.3 +1.8**
PLCA pmax pmax
comp=Z,33nm,1.5s
PLCA Paso Flores 82.45 133 *e*P **P** **18 31 03.3 +1.8**
comp=Z,33nm,1.5s
KSRS Korea Array 84.24 319 P **P** **18 31 09.8 -0.6**
comp=Z,11nm,1.2s,baz=141,slow=4.9,SNR=6.6
KSAR Wonju Array Be 84.26 319 P **P** **18 31 09.9 -0.6**
KSAR Wonju Array Be 84.26 319 P **P** **18 31 09.8 -0.6**
KS01 Wonju Array Si 84.28 319 *e*P **P** **18 31 10.4 -0.2**
YSS Yuzh-Sakhalins 84.29 334 *ce*P **P** **18 31 11.3 +0.9**
YSS *e**SP **pP** **18 31 20.9 +0.6**
YSS *e* 18 34 21.2
YSS pmax pmax
comp=Z,50nm,1.2s
YSS MLR MLR
comp=Z,300nm,20.0s
YSS Yuzh-Sakhalins 84.29 334 *e*P **P** **18 31 10.6 +0.2**
comp=Z,68nm,1.1s
PEA0 Petropavlovsk- 85.10 345 *e*P **P** **18 31 14.2 -0.2**
PEA0B Petropavlovsk- 85.10 345 *e*P **P** **18 31 14.1 -0.3**
comp=Z,93nm,1.7s
PETK Petropavlovsk- 85.10 345 P **P** **18 31 13.9 -0.5**
comp=Z,5.0nm,0.8s,baz=105,slow=9.0,SNR=15
PETK LR LR 19 03 50.6
comp=Z,169nm,21.3s,baz=165,slow=32
PEA1 Petropavlovsk- 85.11 345 *e*P **P** **18 31 13.9 -0.5**
IPM Ipoh 85.33 278 *e*P **P** **18 31 15.8 -0.8**
comp=Z,16nm,0.8s
CMB Columbia Colle 85.36 41 *e*P **P** **18 31 16.8 +0.7**
CMB pmax pmax
comp=Z,8.0nm,1.0s
CMB Columbia Colle 85.36 41 *e*P **P** **18 31 16.8 +0.7**
comp=Z,8.4nm,1.0s
QIZ Qiongzhong 85.48 295 P **P** **18 31 13.4 -3.7**
QIZ S **S** **18 41 47.7 +1.0**
QIZ LR LR
comp=Z,120nm,16.9s
QIZ LR LR
comp=Z,170nm,20.0s
AFDM Forest Hills D 85.65 40 *e*P **P** **18 31 17.1 -0.5**
comp=Z,12nm,1.2s
GSC Goldstone, Bar 85.68 45 *e*P **P** **18 31 19.0 +1.2**
GSC pmax pmax
comp=Z,10.0nm,0.9s
GSC Goldstone, Bar 85.68 45 *e*P **P** **18 31 19.0 +1.2**
comp=Z,9.6nm,0.9s
ORV Oroville 85.77 40 *e*P **P** **18 31 20.9 +2.8**
ORV pmax pmax
comp=Z,19nm,1.5s
ORV Oroville 85.77 40 *e*P **P** **18 31 20.9 +2.8**
comp=Z,19nm,1.5s
VLA Vladivostok 86.15 325⇓ *e*P **P** **18 31 19.5 -0.3**
VLA pmax pmax
comp=Z,13nm,1.0s
WAKR Walker 86.22 41 *e*P **P** **18 31 22.2 +1.6**
comp=Z,37nm,1.8s
PSI Prapat 86.33 275 LR LR 19 12 27.6
comp=Z,402nm,18.2s,baz=134,slow=38
PSI Prapat 86.33 275 *e*P **P** **18 31 19.4 -2.2**
PSI pmax pmax
comp=Z,21nm,1.2s
PSI Prapat 86.33 275 *e*P **P** **18 31 19.4 -2.2**
comp=Z,21nm,1.2s
LDFC Landfair 86.59 46 *e*P **P** **18 31 24.2 +1.8**
comp=Z,43nm,1.2s
YERR Yerington 86.66 41 *e*P **P** **18 31 23.1 +0.4**
comp=Z,15nm,1.4s
GSI Gunungsitoli 86.77 273 P **P** **18 31 24.0 +0.3**
GSI Gunungsitoli 86.77 273 *e*P **P** **18 31 23.6 -0.1**
comp=Z,20nm,0.7s
USRK Ussuriysk Ar. 86.89 326 P **P** **18 31 24.4 +1.0**
comp=Z,16nm,1.0s,baz=143,slow=3.5,SNR=36
USRK LR LR 19 06 07.8
comp=Z,270nm,20.5s,baz=132,slow=33
UBPT Khong Chiam 87.03 289 P P 18 31 32.7 +7.9
comp=Z,23nm,0.8s
TPNV Topopah Spring 87.09 44 *e*P **P** **18 31 28.8 +3.9**
TPNV pmax pmax
comp=Z,7.0nm,0.8s
TPNV Topopah Spring 87.09 44 *e*P **P** **18 31 28.8 +3.9**
comp=Z,7.3nm,0.8s
Y14A Wickenburg 87.23 48 *e*P **P** **18 31 27.4 +1.9**
comp=Z,114nm,0.1s
W13A Hualapai Mount 87.38 47 *e*P **P** **18 31 26.5 +0.1**
comp=Z,4.6nm,0.9s
TYV Tymovskoe 87.55 336 *e*P **P** **18 31 27.0 +0.5**
TYV pmax pmax
comp=Z,40nm,1.2s
TYV MLR MLR
comp=Z,500nm,18.0s
TUC Tucson 87.71 51 *e*P **P** **18 31 28.1 +0.2**
TUC pmax pmax
comp=Z,8.0nm,1.1s
TUC Tucson 87.71 51 *e*P **P** **18 31 28.1 +0.2**
comp=Z,7.7nm,1.1s
MOD Modoc Plateau 88.05 39 *e*P **P** **18 31 28.6 -0.8**
comp=Z,5.0nm,0.8s
MDJ Mudanjiang 88.38 325 P **P** **18 31 31.5 +0.9**
MDJ pmax pmax
comp=Z,20nm,1.0s
MDJ pmax pmax
comp=Z,92nm,5.3s
MDJ Mudanjiang 88.38 325 *e*P **P** **18 31 31.4 +0.9**
comp=Z,23nm,1.0s
X16A Lo Mia Camp, P 88.55 49 *e*P **P** **18 31 32.5 +0.6**
comp=Z,9.0nm,0.8s
WHN Wuhan 88.55 306 P **P** **18 31 33.7 +2.0**
WHN pP **pP** **18 31 39.1 -2.6**
WHN S S 18 42 06.4 -9.5
WHN LR LR
comp=Z,1µm,24.4s
HABR Khabarovsk 88.67 330 *de*P **P** **18 31 30.4 -1.4**
HABR *e**SP **pP** **18 31 38.1 -3.7**
HABR *e* 18 34 58.6
HABR *e*PPP PPP 18 36 54.8
HABR *e*S **SKSac** **18 41 57.0 -1.5**
HABR *e**SS **SKKSac** **18 42 08.4 -1.3**
HABR *e*SS **SS** **18 48 10.6 +1.9**
HABR *e*SSS SSS 18 51 45.4
HABR MLR MLR
comp=Z,85nm,19.0s
LCMT Little Creek M 88.98 46 *e*P **P** **18 31 35.6 +1.8**
comp=Z,9.3nm,1.2s
SKNT Sakolnakorn 89.13 290 P P 18 31 42.3 +7.5
comp=Z,25nm,0.9s
U15A North Rim 89.22 47 *e*P **P** **18 31 37.0 +1.9**
comp=Z,16nm,1.4s
CCUT Cedar City 89.25 45 *e*P **P** **18 31 36.5 +1.3**
comp=Z,8.2nm,1.2s
KNB Kanab 89.25 46 *e*P **P** **18 31 37.3 +2.1**
KNB pmax pmax
comp=Z,17nm,1.3s
KNB Kanab 89.25 46 *e*P **P** **18 31 37.3 +2.1**
comp=Z,17nm,1.3s
WUAZ Wupatki 89.26 48 *e*P **P** **18 31 37.1 +1.9**
comp=Z,13nm,1.0s
WVOR Wild Horse Val 89.32 39 *e*P **P** **18 31 36.3 +1.0**
WVOR pmax pmax
comp=Z,30nm,1.7s
WVOR Wild Horse Val 89.32 39 *e*P **P** **18 31 36.3 +1.0**
comp=Z,30nm,1.7s
X18A Snowflake 89.60 49 *e*P **P** **18 31 38.1 +1.3**
comp=Z,8.6nm,1.0s
SNY Shenyang 89.67 320⇑ P **P** **18 31 37.2 +0.5**
SNY pmax pmax
comp=Z,19nm,1.3s
SNY LR LR
comp=Z,170nm,19.9s
SNY LR LR
comp=Z,150nm,16.0s
SNY LR LR
comp=Z,300nm,22.8s
KHON Khomkaen 89.76 289 P P 18 31 46.0 +8.3
comp=Z,9.5nm,0.8s
CN2 Changchun 89.96 322 *e*P **P** **18 31 38.2 +0.2**
CN2 *e*S **S** **18 42 25.4 -3.1**
CN2 pmax pmax
comp=Z,40nm,1.4s
CN2 pmax pmax
comp=Z,200nm,3.0s
TIA Tai'an 90.03 312⇑ P **P** **18 31 39.8 +1.2**
TIA pmax pmax
comp=Z,30nm,1.2s
NKL Nikolayevsk 90.13 336 *e*P **P** **18 31 39.0 +0.5**
NKL pmax pmax
comp=Z,50nm,1.1s
CHAI Chaiyaphum 90.23 288 P P 18 31 47.5 +7.6
comp=Z,7.3nm,0.8s
MTPU Mount Pierson 90.28 46 *e*P **P** **18 31 42.0 +1.9**
comp=Z,13nm,1.3s
NONG Nongkai 90.37 290 P **P** **18 31 43.7 +3.2**
MSU Marysvale 90.58 45 *e*P **P** **18 31 43.3 +1.9**
MSU Marysvale 90.58 45 *e*P **P** **18 31 43.3 +1.9**
KLR Kul'dur 90.69 329 P **P** **18 31 41.6 +0.3**
comp=Z,9.3nm,1.0s,baz=110,slow=4.8,SNR=20
LTX Lajitas 91.01 57 *e*P **P** **18 31 45.6 +2.1**
LTX Lajitas 91.01 57 *e*P **P** **18 31 45.5 +2.1**
TX31 Lajitas Ar. Si 91.01 57 *e*P **P** **18 31 45.1 +1.6**
TXAR Lajitas Array 91.01 57 P **P** **18 31 45.5 +2.1**
comp=Z,0.9nm,1.0s,baz=236,slow=8.9,SNR=4.0
TXAR LR LR 19 06 57.0
comp=Z,162nm,18.2s,baz=0.0,slow=32
G08A Pilot Rock 91.06 37 *e*P **P** **18 31 44.8 +1.5**
comp=Z,11nm,1.2s
CNPM China Poot 91.10 13 *e*P **P** **18 31 44.0 +1.0**
comp=Z,38nm,1.3s
MFID Camas Ranch 91.52 40 *e*P **P** **18 31 46.5 +1.1**
comp=Z,17nm,1.7s
BMO Blue Mountains 91.65 38 *e*P **P** **18 31 46.3 +0.3**
TMUT Trail Mountain 91.65 45 *e*P **P** **18 31 48.2 +1.7**
comp=Z,6.4nm,0.9s
ENH Enshi 91.87 304 *e*P **P** **18 31 48.0 +0.7**
comp=Z,58nm,1.3s
GYA Guiyang 91.93 299 P **P** **18 31 44.2 -3.6**
GYA pP pP 18 31 57.0 -0.7
GYA PP **PP** **18 35 30.3 +2.6**
GYA SKS **SKSac** **18 42 12.8 -6.0**
GYA S **S** **18 42 45.4 -2.1**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,8.0s
GYA LR LR
comp=Z,510nm,21.2s
GYA LR LR
comp=Z,470nm,22.3s
GYA LR LR
comp=Z,520nm,21.4s
HVU Hansel Valley 92.23 42 *e*P **P** **18 31 48.7 -0.2**
HVU pmax pmax
comp=Z,7.0nm,0.9s
HVU Hansel Valley 92.23 42 *e*P **P** **18 31 48.7 -0.2**
comp=Z,6.9nm,0.9s
HLID Hailey 92.40 40 *e*P **P** **18 31 50.5 +0.8**
F10A Beach Ranch, E 92.42 37 *e*P **P** **18 31 49.6 0.0**
comp=Z,6.1nm,0.8s
MA2 Magadan 92.60 344 P **P** **18 31 49.2 -0.7**
comp=Z,1.8nm,0.6s,baz=190,slow=5.5,SNR=4.3
RC01 Rabbit Creek A 92.83 13 *e*P **P** **18 31 52.4 +1.5**
comp=Z,10nm,0.8s
BJI Beijing 92.92 315 P **P** **18 31 47.8 -4.0**
BJI S **S** **18 42 53.0 -2.5**
BJI pmax pmax
comp=Z,3.0nm,0.7s
BJI LR LR
comp=Z,140nm,26.7s
BJI LR LR
comp=Z,180nm,23.1s
BJI LR LR
comp=Z,230nm,24.9s
BMRM Bremner River 93.81 15 *e*P **P** **18 31 55.9 +0.4**
comp=Z,7.7nm,0.8s
SCM Sheep Creek Mo 93.99 14 *e*P **P** **18 31 57.7 +1.3**
SCM pmax pmax
comp=Z,26nm,0.8s
SCM Sheep Creek Mo 93.99 14 *e*P **P** **18 31 57.6 +1.3**
comp=Z,26nm,0.8s
CM31 Chiang Mai Arr 94.02 289 *e*P **P** **18 31 58.0 +0.5**
CMAR Chiang Mai Arr 94.02 289 P **P** **18 31 58.8 +1.3**
comp=Z,0.3nm,0.4s,baz=141,slow=3.5,SNR=4.0
CMAR LR LR 19 14 34.4
comp=Z,106nm,21.2s,baz=153,slow=36
KMI Kunming 94.27 296 P **P** **18 31 55.4 -3.4**
KMI pmax pmax
comp=Z,5.0nm,0.8s
KMI pmax pmax
comp=Z,93nm,4.7s
KMI LR LR
comp=Z,170nm,18.7s
KMI LR LR
comp=Z,220nm,17.8s
KMI LR LR
comp=Z,300nm,19.6s
XAN Xi'an 94.31 307 P **P** **18 31 59.9 +1.4**
XAN pP sP 18 32 12.2 +0.2
XAN pmax pmax
comp=Z,5.0nm,1.4s
XAN LR LR
comp=Z,230nm,21.4s
XAN LR LR
comp=Z,270nm,21.4s
CAST Castle Rocks 94.58 11 *e*P **P** **18 31 57.7 -1.3**
comp=Z,6.8nm,1.2s
BW06 Boulder Array 94.73 43 *e*P **P** **18 32 00.6 +0.1**
PDAR Pinedale Array 94.73 43 P **P** **18 32 00.9 +0.5**
comp=Z,0.3nm,0.7s,baz=227,slow=3.3,SNR=2.7
PDAR PKKP PKKPdf 18 49 07.2 +8.2
comp=Z,0.3nm,0.5s,baz=82,slow=5.1,SNR=3.9
PDAR LR LR 19 11 40.6
comp=Z,456nm,18.1s,baz=248,slow=34
RND Reindeer 95.13 12 *e*P **P** **18 32 02.4 +0.8**
RND pmax pmax
comp=Z,13nm,1.2s
RND Reindeer 95.13 12 *e*P **P** **18 32 02.4 +0.8**
comp=Z,13nm,1.2s
SEY Seymchan 95.24 346 P **P** **18 32 02.2 +0.3**
comp=Z,4.3nm,1.0s,baz=156,slow=5.5,SNR=14
DLBC Dease Lake 95.82 23 LR LR 19 04 57.3
comp=Z,64nm,21.9s,baz=140,slow=29
HHC Hu-ho-hao-te 96.26 314 *e*P **P** **18 32 03.3 -4.0**
HHC SKS **SKSac** **18 42 40.0 -1.7**
HHC S **ScS** **18 43 25.8 +0.3**
HHC pmax pmax
comp=Z,29nm,1.3s
HHC pmax pmax
comp=Z,110nm,6.8s
HHC LR LR
comp=Z,250nm,18.8s
HHC LR LR
comp=Z,290nm,18.2s
HHC LR LR
comp=Z,420nm,19.3s
DOT Dot Lake 96.30 14 *e*P **P** **18 32 07.2 +0.4**
comp=Z,6.3nm,0.8s
CD2 Chengdu 96.41 302 *e*P **P** **18 32 03.8 -4.4**
CD2 pP pP 18 32 16.7 -1.4
CD2 sP sP 18 32 21.7 0.0
CD2 SKS **SKSac** **18 42 37.4 -5.3**
CD2 S **S** **18 43 25.3 -1.2**
CD2 sS sS 18 43 47.6 +4.5
CD2 SS **SS** **18 50 07.0 +6.3**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.2s
CCB Clear Creek Bu 96.45 12 *e*P **P** **18 32 07.1 -0.3**
comp=Z,4.7nm,1.1s
COLA College 96.65 12 *e*P P 18 32 02.3 -6.0
COLA pmax pmax
comp=Z,3.0nm,0.9s
ILAR Eielson Array 96.74 12 P **P** **18 32 08.7 -0.1**
comp=Z,1.1nm,0.8s,baz=225,slow=5.7,SNR=8.4
ILAR PP **PP** **18 36 07.6 +3.3**
comp=Z,0.7nm,0.9s,baz=226,slow=6.5,SNR=5.3
ILAR LR LR 19 10 27.2
comp=Z,96nm,20.3s,baz=204,slow=32
ILB Eielson Array 96.74 12 *e*P **P** **18 32 07.7 -1.0**
IL1 Eielson Array 96.74 12 *e*P **P** **18 32 08.7 -0.1**
LPAZ La Paz 97.63 113 LR LR 19 08 10.4
comp=Z,168nm,21.4s,baz=278,slow=30
BILL Bilibino 97.96 354 *e*P **P** **18 32 09.7 -4.5**
BILL pmax pmax
comp=Z,2.0nm,1.0s
BILL MLR MLR
comp=Z,377nm,19.0s
LAO LASA Array 98.92 41 *e*P Pdif 18 32 20.3 +1.2
LZH Lanzhou 98.93 306 *e*P **P** **18 32 15.6 -4.0**
LZH pP pP 18 32 28.2 -1.3
LZH sP sP 18 32 32.5 -0.6
LZH PP **PP** **18 36 23.7 +1.7**
LZH pmax pmax
comp=Z,22nm,1.3s
LZH pmax pmax
comp=Z,97nm,9.5s
LZH LR LR
comp=Z,330nm,18.0s
LZH LR LR
comp=Z,350nm,17.6s
LZH LR LR
comp=Z,430nm,19.5s
SONA0 Songino Array 103.07 318 *e*Pdif **Pdif** **18 32 38.4 +0.8**
SONM Songino Array 103.07 318 P **Pdif** **18 32 38.4 +0.8**
comp=Z,0.2nm,0.4s,baz=158,slow=1.6,SNR=2.3
WMQ Urumqi 113.39 308 *e*PKP PKiKP 18 37 07.8 -8.9
WMQ LR LR
comp=Z,130nm,20.8s
WMQ LR LR
comp=Z,190nm,24.8s
WMQ LR LR
comp=Z,240nm,21.8s
MK01 Makanchi Array 117.88 310 *e*PKPdif **PKPdf** **18 37 25.1 0.0**

MK31	**Makanchi Array**	**117.89**	**310**	*e*PKIKP	**PKPdf**	**18 37 24.5**	**-0.7**
MK31	**Makanchi Array**	**117.89**	**310**	*e*PKPdf	**PKPdf**	**18 37 24.5**	**-0.7**
MK32	**Makanchi Array**	**117.89**	**310**	*e*PKPdf	**PKPdf**	**18 37 24.9**	**-0.2**
MKAR	**Makanchi Array**	**117.89**	**310**	PKP	**PKPdf**	**18 37 24.9**	**-0.2**
	comp=Z,1.7nm,0.8s,baz=86,slow=3.8,SNR=12						
MKAR	**Makanchi Array**	**117.89**	**310**	PKIKP	**PKPdf**	**18 37 25.0**	**-0.2**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
MKAR	**Makanchi Array**	**117.89**	**310**	*e*PKPdf	**PKPdf**	**18 37 25.4**	**+0.2**
ZAA0	**Zalesovo Array**	**117.95**	**319**	*e*PKPdf	**PKPdf**	**18 37 23.0**	**-2.0**
ZAA0				*e*PKPdf	**PKiKP**	**18 37 23.7**	**-1.4**
ZALV	**Zalesovo Beam**	**117.95**	**319**	PKP	**PKPdf**	**18 37 24.9**	**-0.1**
	comp=Z,0.9nm,0.6s,baz=116,slow=3.4,SNR=6.8						
ZAA1	**Zalesovo Array**	**117.95**	**319**	*e*PKPdf	**PKPdf**	**18 37 24.9**	**-0.1**
MAKZ	**Makanchi**	**118.11**	**310**	*e*PKIKP	**PKPdf**	**18 37 24.8**	**-0.8**
MAKZ	**Makanchi**	**118.11**	**310**	*e*PKPdf	**PKPdf**	**18 37 24.8**	**-0.8**
NVS	**Novosibirsk**	**119.03**	**319**	*e*PKIKP	**PKPdf**	**18 37 25.6**	**-1.4**
KSH	**Kashi**	**120.59**	**301**	*e*PKP	**PKPdf**	**18 37 24.8**	**-6.0**
KSH				*es*PKP		18 37 40.7	
KSH				*e*PP	**PP**	**18 39 01.7**	**+2.9**
KSH				PKS	**PKSdf**	**18 40 59.8**	**-7.7**
KSH				SKS	**SKSdf**	**18 44 31.2**	**-9.4**
KSH				SKKS	**SKKSac**	**18 45 50.5**	**-5.4**
KSH				SS	**SS**	**18 55 33.7**	**+6.7**
KSH				AMB	AMB		
	comp=Z,130nm,5.0s						
KSH				LR	LR		
	comp=Z,78nm,5.8s						
KSH				LR	LR		
	comp=Z,79nm,5.2s						
KSH				LR	LR		
	comp=Z,170nm,6.3s						
KURK	**Kurchatov**	**121.08**	**314**	PKIKP	**PKPdf**	**18 37 31.3**	**+0.2**
KURK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KURBB	**Kurchatov Arra**	**121.12**	**314**	PKP	**PKPdf**	**18 37 31.2**	**0.0**
	comp=Z,2.9nm,0.9s,baz=110,slow=2.0,SNR=29						
TKM2	**Tokmak 2**	**121.65**	**305**	*e*PKIKP	**PKPdf**	**18 37 30.3**	**-2.5**
TKM2	**Tokmak 2**	**121.65**	**305**	*e*PKPdf	**PKPdf**	**18 37 30.3**	**-2.5**
AAK	**Ala-Archa**	**122.38**	**304**	⇓*i*PKIKP	**PKPdf**	**18 37 29.0**	**-5.2**
KKAR	**Karatay Array**	**125.35**	**304**	*e*PKIKP	**PKPdf**	**18 37 39.6**	**-0.1**
KKAR	**Karatay Array**	**125.35**	**304**	*e*PKPdf	**PKPdf**	**18 37 39.6**	**-0.1**
VOSK	**Vostochnaya**	**126.01**	**316**	*e*PKIKP	**PKPdf**	**18 37 40.2**	**-0.3**
VOSK	**Vostochnaya**	**126.01**	**316**	*e*PKPdf	**PKPdf**	**18 37 40.2**	**-0.3**
BVAR	**Borovoye Array**	**126.38**	**316**	PKP	**PKPdf**	**18 37 41.8**	**+0.6**
	comp=Z,2.1nm,0.5s,baz=106,slow=3.2,SNR=26						
BRVK	**Borovoye**	**126.45**	**316**	*e*PKIKP	**PKPdf**	**18 37 42.3**	**+0.9**
BRVK	**Borovoye**	**126.45**	**316**	*e*PKPdf	**PKPdf**	**18 37 42.3**	**+0.9**
ZRNK	**Zerenda**	**127.22**	**316**	*e*PKIKP	**PKPdf**	**18 37 42.8**	**-0.1**
ZRNK	**Zerenda**	**127.22**	**316**	*e*PKPdf	**PKPdf**	**18 37 42.8**	**-0.1**
LSZ	**Lusaka**	**129.43**	**212**	*e*PKIKP	**PKPdf**	**18 37 48.3**	**-0.1**
LSZ	**Lusaka**	**129.43**	**212**	*e*PKPdf	**PKPdf**	**18 37 48.3**	**-0.1**
ARU	**Arti**	**132.94**	**321**	PKP	**PKPdf**	**18 37 54.5**	**+0.9**
	comp=Z,1.6nm,0.4s,baz=201,slow=1.8,SNR=4.2						
ARU				SKPbc	**SKPab**	**18 41 22.7**	**+2.0**
	comp=Z,0.7nm,0.3s,baz=70,slow=23,SNR=8.0						
ARU	**Arti**	**132.94**	**321**	*i* PKIKP	**PKPdf**	**18 37 53.4**	**-0.2**
ARU						18 40 19.2	
ARU				SS	SS	18 57 57.4	-2.3
ARU	**Arti**	**132.94**	**321**	*e*PKPpre	PKPpre	18 37 48.6	
ARU				PKP	**PKPdf**	**18 37 54.5**	**+0.9**
ARU				*es*SKPbc	**SKPab**	**18 41 23.6**	**+2.9**
ABKAR	**Akbulak array**	**133.01**	**311**	*e*PKPdf	**PKPdf**	**18 37 51.1**	**-2.9**
GEYT	**Alibeck**	**134.03**	**296**	PKP	**PKPdf**	**18 37 57.6**	**+1.2**
	comp=Z,2.1nm,0.7s,baz=132,slow=2.2,SNR=6.6						
GEYT				SKPbc	**SKPab**	**18 41 28.5**	**+2.4**
	comp=Z,7.7nm,1.0s,baz=90,slow=4.4,SNR=14						
AKTO	**Aktyubinsk**	**134.16**	**313**	PKP	**PKPdf**	**18 37 56.5**	**+0.4**
	comp=Z,1.9nm,0.8s,baz=63,slow=2.8,SNR=7.4						
AKTO				SKPbc	**SKPab**	**18 41 26.4**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=84,slow=11,SNR=14						
ARA0	**ARCESS Array S**	**137.82**	**349**	*e*PKPdf	**PKPdf**	**18 38 01.1**	**-1.3**
ARCES	**ARCESS Array B**	**137.82**	**349**	PKP	**PKPdf**	**18 38 01.1**	**-1.3**
	comp=Z,1.6nm,0.7s,baz=48,slow=1.8,SNR=8.7						
H10S3	**ASCENSION HYDR**	**138.18**	**153**	T	T	21 13 35.6	
	baz=204,slow=74,SNR=57						
H10S2	**ASCENSION HYDR**	**138.19**	**153**	T	T	21 13 33.9	
	baz=204,slow=74,SNR=47						
H10S1	**ASCENSION HYDR**	**138.20**	**153**	T	T	21 13 35.6	
	baz=204,slow=74,SNR=33						
H10N3	**ASCENSION HYDR**	**139.26**	**153**	T	T	21 14 54.8	
	baz=203,slow=75,SNR=75						
H10N1	**ASCENSION HYDR**	**139.26**	**153**	T	T	21 14 55.1	
	baz=203,slow=75,SNR=76						
H10N2	**ASCENSION HYDR**	**139.28**	**153**	T	T	21 14 56.1	
	baz=203,slow=75,SNR=70						
KLMR	**Klimovskoe**	**140.34**	**333**	*e*PKIKP	**PKPdf**	**18 38 04.7**	**-2.5**
KLMR				pmax	pmax		
	comp=Z,15nm,1.3s						
MOS	**Moscow**	**144.06**	**327**	*e*PKIKP	**PKPab**	**18 38 11.3**	**-0.2**
MOS				pmax	pmax		
	comp=Z,41nm,0.9s						
TBLG	**Delisi**	**144.33**	**302**	P	**PKPdf**	**18 38 14.6**	**-0.4**
TBLG	**Delisi**	**144.33**	**302**	*e*PKIKP	**PKPdf**	**18 38 14.5**	**-0.4**
GUDG	**Gudauri**	**144.43**	**303**	P	**PKPdf**	**18 38 16.0**	**+0.6**
GNI	**Garni**	**144.48**	**299**	PKP	PKPbc	18 38 14.2	+0.1
	comp=Z,19nm,1.1s,baz=97,slow=3.8,SNR=4.3						
GNI	**Garni**	**144.48**	**299**	*e*PKPdf	**PKPab**	**18 38 10.8**	**-3.1**
GNI				*e*PKPdf	PKPbc	18 38 14.2	+0.1
FIA1	**FINESS Array S**	**144.54**	**341**	*e*PKPdf	**PKPab**	**18 38 12.5**	**-0.6**
FIA1				*e*PKPdf	PKPbc	18 38 13.0	-0.3
FIA0	**FINESS Array S**	**144.54**	**341**	*e*PKIKP	PKPbc	18 38 13.3	0.0
FIA0	**FINESS Array S**	**144.54**	**341**	*e*PKPdf	PKPbc	18 38 13.3	0.0
FINES	**FINESS Array B**	**144.54**	**341**	PKP	PKPbc	18 38 13.3	0.0
	comp=Z,34nm,1.1s,baz=62,slow=2.8,SNR=57						
ZEI	**Tsey**	**144.80**	**304**	*i* PKIKP	**PKPab**	**18 38 14.5**	**-0.5**
ZEI				pmax	pmax		
	comp=Z,141nm,1.3s						
OBN	**Obninsk**	**144.91**	**327**	*d i*PKIKP	**PKPab**	**18 38 14.6**	**0.0**
OBN				*e*		18 41 32.4	
OBN				pmax	pmax		
	comp=Z,143nm,1.7s						
GOF	**Gofitskoye**	**144.99**	**308**	⇑*e*PKIKP	**PKPdf**	**18 38 15.7**	**-0.2**
GOF				pmax	pmax		
	comp=Z,49nm,1.0s						
BGD	**Bogdanovka**	**145.24**	**301**	P	**PKPdf**	**18 38 17.8**	**+1.0**
AKH	**Akhalkalaki**	**145.30**	**301**	⇑*i*P	**PKPdf**	**18 38 18.5**	**+1.7**
AKH	**Akhalkalaki**	**145.30**	**301**	P	**PKPdf**	**18 38 18.1**	**+1.2**
AKH	**Akhalkalaki**	**145.30**	**301**	*e*PKIKP	**PKPdf**	**18 38 18.0**	**+1.2**
KBZ	**Khabaz**	**145.37**	**305**	PKPbc	**PKPab**	**18 38 17.2**	**+0.5**
	comp=Z,24nm,1.1s,baz=64,slow=1.5,SNR=40						
VSR	**Storozhevoye**	**145.45**	**319**	*e*PKIKP	**PKPab**	**18 38 17.0**	**+0.2**
VSR				pmax	pmax		
	comp=Z,100nm,1.6s						
KVAR	**Kislovodsk Arr**	**145.47**	**306**	PKPbc	**PKPdf**	**18 38 16.4**	**-0.5**
	comp=Z,35nm,1.0s,baz=54,slow=2.9,SNR=33						
KIV	**Kislovodsk**	**145.47**	**306**	*c i*PKIKP	**PKPab**	**18 38 17.5**	**+0.3**
KIV				*e*		18 41 34.0	
KIV				pmax	pmax		
	comp=Z,77nm,1.2s						
KIV	**Kislovodsk**	**145.47**	**306**	*e*PKPbc	**PKPab**	**18 38 17.2**	**0.0**
CHVG	**Ch'k'valeri**	**146.14**	**304**	P	**PKPab**	**18 38 21.4**	**+1.8**
VSU	**Vasula**	**146.71**	**337**	*c i*PKP2	**PKPbc**	**18 38 20.1**	**0.0**
VSU				pmax	pmax		
	comp=Z,303nm,1.7s						
SOC	**Sochi**	**147.65**	**306**	*c i*PKP2	**PKPbc**	**18 38 23.1**	**-0.1**
SOC				*e*		18 41 53.8	
SOC				*e*PPP	PPP	18 45 05.2	
SOC				*e*SS	SS	19 00 55.6	+3.0
SOC				pmax	pmax		
	comp=Z,49nm,1.0s						
NC303	**NORSAR Array S**	**147.71**	**353**	*e*PKPdf	**PKPdf**	**18 38 21.3**	**+1.3**
NC204	**NORSAR Array S**	**147.72**	**353**	*e*PKPdf	**PKPbc**	**18 38 22.4**	**-0.6**
KOPT	**Kop Dagi**	**147.73**	**299**	*i* P	**PKPab**	**18 38 26.4**	**+0.1**
NC405	**NORSAR Array S**	**147.78**	**352**	*e*PKPdf	**PKPbc**	**18 38 23.4**	**+0.4**
NB2	**NORSAR Subarra**	**147.91**	**353**	PKP	**PKPbc**	**18 38 24.1**	**+0.7**
	comp=Z,42nm,1.2s,baz=18,slow=3.0						
NB2	**NORSAR Subarra**	**147.91**	**353**	PKP	**PKPbc**	**18 38 24.1**	**+0.7**
	baz=18,slow=3.0						
NB200	**NORSAR Array S**	**147.91**	**353**	*e*PKPbc	**PKPbc**	**18 38 23.4**	**0.0**
NOA	**NORSAR Array B**	**147.91**	**353**	PKPbc	**PKPbc**	**18 38 23.4**	**0.0**
	comp=Z,8.1nm,0.9s,baz=15,slow=4.4,SNR=16						
NBO02	**NORSAR Array S**	**147.94**	**353**	*e*PKPdf	**PKPbc**	**18 38 23.0**	**-0.5**
NBO00	**NORSAR Array S**	**147.96**	**353**	*e*PKPdf	**PKPdf**	**18 38 21.9**	**+1.4**
NAO01	**NORSAR Array S**	**148.13**	**353**	*e*PKPbc	**PKPbc**	**18 38 24.8**	**+0.8**
NC602	**NORSAR Array S**	**148.16**	**352**	*e*PKPbc	**PKPbc**	**18 38 24.3**	**+0.3**
TNCL	**Tunceli-Merkez**	**148.58**	**298**	*i* P	**PKPab**	**18 38 28.4**	**-1.2**
KELT	**Kelkit**	**148.66**	**300**	*i* P	**PKPab**	**18 38 28.6**	**-1.3**
ANN	**Anapa**	**148.90**	**309**	*i* PKIKP	**PKPdf**	**18 38 22.5**	**+0.1**
ANN				pmax	pmax		
	comp=Z,104nm,1.4s						
IZAR	**Zarasai**	**148.95**	**335**	*e*P	**PKPbc**	**18 38 24.9**	**-1.3**
IZAR				IAmb	IAmb	18 38 38.0	
	comp=Z,17nm,0.8s						
ELZG	**Elazig**	**149.08**	**297**	*i* P	**PKPab**	**18 38 30.1**	**-1.6**
IDID	**Didziasalis**	**149.08**	**334**	*e*P	**PKPbc**	**18 38 24.8**	**-1.8**
IDID				IAmb	IAmb	18 38 39.3	
	comp=Z,11nm,0.9s						
ISAL	**Salakas**	**149.12**	**334**	*e*P	**PKPbc**	**18 38 26.2**	**-0.4**
ISAL				IAmb	IAmb	18 38 42.5	
	comp=Z,17nm,1.1s						
MICGM	**Minsk**	**149.20**	**332**	*e*		**18 38 28.0**	**+1.1**
MNK	**Minsk**	**149.20**	**332**	*e*PKP2	**PKPbc**	**18 38 28.0**	**+1.1**
NACGM	**Naroch**	**149.36**	**333**	*e*		**18 38 27.0**	**-0.3**
KEMA	**Kemaliye**	**149.37**	**298**	*i* P	**PKPbc**	**18 38 30.3**	**+2.4**
CUKAN	**kangal_SIVAS**	**150.15**	**299**	*i* P	**PKPbc**	**18 38 32.1**	**+2.2**
ZALF	**Zalf**	**150.61**	**286**	*e*P	**PKPbc**	**18 38 32.4**	**+1.3**
SIM	**Simferopol'**	**151.07**	**311**	*c i*PKIKP	**PKPbc**	**18 38 33.2**	**+1.5**
SIM				pmax	pmax		
	comp=Z,30nm,0.7s						
AKASG	**Malin Array Be**	**151.09**	**325**	PKPbc	**PKPbc**	**18 38 31.4**	**-0.1**
	comp=Z,7.1nm,0.5s,baz=45,slow=2.8,SNR=53						
AKBB	**Malin Array Si**	**151.09**	**325**	*e*PKIKP	**PKPbc**	**18 38 31.4**	**-0.1**
AKBB	**Malin Array Si**	**151.09**	**325**	*e*PKPbc	**PKPbc**	**18 38 31.4**	**-0.1**
KIEV	**Kiev**	**151.10**	**325**	*e*PKIKP	**PKPbc**	**18 38 31.6**	**0.0**
KIEV	**Kiev**	**151.10**	**325**	*e*PKPbc	**PKPbc**	**18 38 31.6**	**0.0**
AK11	**Malin Array Si**	**151.13**	**325**	*e*PKPbc	**PKPbc**	**18 38 31.7**	**0.0**
BTCH	**Batrach**	**151.30**	**292**	*e*P	**PKPbc**	**18 38 34.1**	**+1.5**
MARH	**Ras Al Marh**	**151.35**	**288**	*e*P	**PKPbc**	**18 38 35.1**	**+2.0**
HAWK	**Haweek**	**151.41**	**289**	⇑*e*P	**PKPbc**	**18 38 35.1**	**+2.1**
SUW	**Suwalki**	**151.42**	**335**	*e*PKP	**PKPbc**	**18 38 33.0**	**+0.8**
SUW	**Suwalki**	**151.42**	**335**	*e*PKIKP	**PKPbc**	**18 38 33.0**	**+0.8**
BIDA	**Albida**	**151.46**	**290**	*e*P	**PKPbc**	**18 38 34.1**	**+1.0**
MMAI	**Mount Meron Ar**	**152.24**	**286**	PKPbc	**PKPbc**	**18 38 37.2**	**+2.3**
	comp=Z,43nm,0.9s,baz=77,slow=3.7,SNR=49						
MUD	**Monsted U'grnd**	**152.62**	**353**	*i* P	**PKPab**	**18 38 46.4**	**+1.0**
BSD	**Bornholm Skovb**	**152.94**	**345**	*i* P	**PKPab**	**18 38 43.4**	**-3.5**
BR101	**Keskin Array S**	**152.98**	**301**	*e*PKPbc	**PKPbc**	**18 38 36.2**	**-0.2**
BR131	**Keskin Array S**	**152.98**	**301**	*ep*PKPdf	**PKPbc**	**18 38 33.7**	**-2.7**
BRTR	**Keskin Array B**	**152.98**	**301**	PKPbc	**PKPbc**	**18 38 36.2**	**-0.2**
	comp=Z,8.1nm,1.1s,baz=147,slow=0.5,SNR=12						
SORM	**Soroca**	**153.07**	**321**	⇑*i*P	**PKPdf**	**18 38 31.9**	**+3.2**
SORM	**Soroca**	**153.07**	**321**	⇑PKIKP	**PKPdf**	**18 38 31.9**	**+3.2**
KIS	**Kishinev**	**153.43**	**318**	*e*P	**PKPdf**	**18 38 24.0**	**-5.3**
KIS	**Kishinev**	**153.43**	**318**	*e*PKIKP	**PKPdf**	**18 38 24.0**	**-5.3**
KIS				*e*		18 38 34.0	
ANTO	**Ankara**	**153.58**	**301**	*e*PKIKP	**PKPbc**	**18 38 36.7**	**-0.9**
ANTO	**Ankara**	**153.58**	**301**	*e*PKPbc	**PKPbc**	**18 38 36.7**	**-0.9**
CSS	**Mathiatis**	**153.92**	**290**	*e*PKPbc	**PKPbc**	**18 38 39.7**	**+1.3**
CFR	**Carcaliu**	**154.78**	**315**	⇑*i*P	**PKPab**	**18 38 48.8**	**-6.2**
KWP	**Kalwaria Pacla**	**154.92**	**329**	*e*PKP	**PKPab**	**18 38 56.3**	**+0.8**
KWP	**Kalwaria Pacla**	**154.92**	**329**	*e*PKP2	**PKPab**	**18 38 56.3**	**+0.8**
TESR	**Tescani**	**154.94**	**319**	⇓*i*P	**PKPab**	**18 38 50.1**	**-5.6**
TIRR	**Tirgusor**	**154.96**	**314**	⇓*i*P	**PKPbc**	**18 38 45.5**	**+5.2**
TIRR	**Tirgusor**	**154.96**	**314**	*e*PKP2	**PKPab**	**18 38 56.0**	**+0.2**
TIRR	**Tirgusor**	**154.96**	**314**	*e*PKPab	**PKPab**	**18 38 56.0**	**+0.2**
BUR08	**Bucovina Ar. S**	**155.06**	**323**	*e*PKPbc	PKPdf	18 38 43.5	+12
BUR08				*e*PKPab	**PKPab**	**18 38 56.8**	**+0.5**
BURAR	**Bucovina Array**	**155.07**	**323**	⇑*i*P	PKPab	18 38 44.6	-12
BURAR	**Bucovina Array**	**155.07**	**323**	⇑PKIKP	PKPab	18 38 44.6	-12
TLB	**Topalu**	**155.13**	**314**	⇓*i*P	PKPdf	18 38 43.0	+11
TLB	**Topalu**	**155.13**	**314**	⇓PKIKP	PKPdf	18 38 43.0	+11
PLOR	**Plostina**	**155.31**	**318**	⇓*i*P	**PKPab**	**18 38 59.2**	**+1.8**
PLOR	**Plostina**	**155.31**	**318**	⇓PKP2	**PKPab**	**18 38 59.2**	**+1.8**
KOLS	**Kolonicke sedl**	**155.62**	**328**	*e*PKIKP	**PKPdf**	**18 38 32.9**	**+0.5**
KOLS				*e*		18 38 58.8	
KOLS	**Kolonicke sedl**	**155.62**	**328**	*e*PKP	**PKPdf**	**18 38 32.9**	**+0.5**
KOLS				*e*		18 38 58.8	
STHS	**Stebnicka Huta**	**155.72**	**330**	*e*PKIKP	**PKPdf**	**18 38 35.3**	**+2.8**
STHS				*e*		18 38 59.4	
STHS	**Stebnicka Huta**	**155.72**	**330**	*e*PKP	**PKPdf**	**18 38 35.3**	**+2.8**
STHS				*e*		18 38 59.4	
UZH	**Uzhgorod**	**155.83**	**328**	*e*PKIKP	PKPdf	18 38 45.7	+13
UZH				*e*		18 38 58.3	
MLR	**Muntele Rosu**	**155.93**	**318**	⇓*i*P	**PKPab**	**18 39 01.7**	**+1.6**
MLR	**Muntele Rosu**	**155.93**	**318**	*e*PKIKP	**PKPdf**	**18 38 34.0**	**+1.0**
MLR	**Muntele Rosu**	**155.93**	**318**	*e*PKPdf	**PKPdf**	**18 38 34.0**	**+1.0**
MLR				*e*PKPab	**PKPab**	**18 39 00.8**	**+0.7**
DOPR	**Dopca**	**155.97**	**320**	⇓*i*P	PKPdf	18 38 45.3	+12
CRVS	**Cervenica-Dubn**	**156.01**	**329**	*e*PKIKP	**PKPdf**	**18 38 34.2**	**+1.3**
CRVS	**Cervenica-Dubn**	**156.01**	**329**	*e*PKP	**PKPdf**	**18 38 34.2**	**+1.3**
CRVS				*e*		18 39 01.4	
TRPA	**Tarpa**	**156.07**	**327**	⇓*ep*PKPdf	**PKPab**	**18 39 01.1**	**+0.7**
PRD	**Provadia**	**156.20**	**312**	*e*P	**PKPab**	**18 39 02.4**	**+1.2**
KSP	**Ksiaz**	**156.41**	**339**	*e*PKP	**PKPdf**	**18 38 34.0**	**+0.7**
KSP	**Ksiaz**	**156.41**	**339**	*e*PKIKP	**PKPdf**	**18 38 34.0**	**+0.7**
CWF	**Charnwood Fore**	**156.45**	**7**	*e*PKPab	**PKPab**	**18 39 02.4**	**+0.6**
VOIR		**156.47**	**319**	⇑*i*P	PKPab	18 38 52.3	-10
OKC	**Ostrava-Krasne**	**156.63**	**335**	*e*PKPAB	**PKPab**	**18 39 03.8**	**+1.0**
OKC	**Ostrava-Krasne**	**156.63**	**335**	*e*PKP2	**PKPab**	**18 39 03.8**	**+1.0**
LANS	**Liptovska Anna**	**156.67**	**332**	*e*PKP2	**PKPab**	**18 39 03.9**	**+0.8**
LANS	**Liptovska Anna**	**156.67**	**332**	*e*PKP	**PKPab**	**18 39 03.9**	**+0.8**
ARR	**Arges**	**156.75**	**319**	⇓*i*P	**PKPdf**	**18 38 35.5**	**+1.5**
KECS	**Kecovo**	**156.75**	**330**	*e*PKP2	**PKPab**	**18 39 04.0**	**+0.6**
KECS	**Kecovo**	**156.75**	**330**	*e*PKP	**PKPab**	**18 39 04.0**	**+0.6**
UPC	**Upice**	**156.79**	**339**	*e*PKPDF	**PKPdf**	**18 38 35.0**	**+1.2**
UPC				*e*PKPAB	**PKPab**	**18 39 04.7**	**+1.2**
UPC				AMS	AMS	19 46 30.0	
	comp=Z,300nm,20.9s						
UPC	**Upice**	**156.79**	**339**	*e*PKIKP	**PKPdf**	**18 38 35.0**	**+1.2**
UPC				MLR	MLR		
	comp=Z,300nm,20.9s						
DPC	**Dobruska-Polom**	**156.83**	**338**	*e*PKPDF	**PKPdf**	**18 38 35.7**	**+1.8**
DPC				*ex*	x	18 38 46.0	
DPC				*e*PKPAB	**PKPab**	**18 39 04.9**	**+1.2**
DPC				*ex*	x	18 39 16.1	
DPC				AMS	AMS	19 46 50.0	
	comp=Z,200nm,21.4s						
DPC	**Dobruska-Polom**	**156.83**	**338**	*e*PKIKP	**PKPdf**	**18 38 35.7**	**+1.8**
DPC				*e*		18 38 46.0	
DPC				MLR	MLR		
	comp=Z,200nm,21.4s						
DRGR		**156.90**	**324**	⇓*i*P	PKPdf	18 38 46.1	+12
DRGR		**156.90**	**324**	⇓PKIKP	PKPdf	18 38 46.1	+12
MORC	**Moravsky Berou**	**156.90**	**336**	*e*PKIKP	**PKPdf**	**18 38 34.9**	**+0.9**
MORC	**Moravsky Berou**	**156.90**	**336**	*e*PKPdf	**PKPdf**	**18 38 34.9**	**+0.9**
MORC				*e*PKPab	**PKPab**	**18 39 03.6**	**-0.4**
CLL	**Collm**	**156.91**	**344**	*e*PKPab	**PKPab**	**18 38 57.0**	**-6.9**
CLL				*i*		18 39 04.1	
	comp=Z,25nm,1.6s						
CLL				*e*		18 39 17.0	
CLL	**Collm**	**156.91**	**344**	*e*PKIKP	**PKPdf**	**18 38 34.6**	**+0.7**
CLL	**Collm**	**156.91**	**344**	*e*PKPdf	**PKPdf**	**18 38 34.6**	**+0.7**
CLL				*e*PKPab	**PKPab**	**18 39 04.1**	**+0.2**
KRLC	**Kraliky**	**156.91**	**337**	*e*PKPAB	**PKPab**	**18 39 05.2**	**+1.1**
KRLC	**Kraliky**	**156.91**	**337**	*e*PKP2	**PKPab**	**18 39 05.2**	**+1.1**
BRG	**Berggiesshubel**	**157.07**	**342**	*e*PKP	**PKPdf**	**18 38 34.9**	**+0.8**
	comp=Z,13nm,1.8s						
BRG				*e*		18 38 46.1	
	comp=Z,18nm,1.8s						
BRG	**Berggiesshubel**	**157.07**	**342**	*e*PKIKP	**PKPdf**	**18 38 34.9**	**+0.8**
BRG				*e*		18 38 46.1	
BRG				pmax	pmax		
	comp=Z,13nm,1.8s						
SZH	**Strazhica**	**157.11**	**313**	*e*P	**PKPab**	**18 39 06.0**	**+0.9**
LOT	**Lotru**	**157.19**	**320**	⇓*i*P	**PKPab**	**18 39 05.8**	**+0.3**
PVCC	**Panska Ves**	**157.21**	**341**	*e*PKPAB	**PKPab**	**18 39 06.0**	**+0.8**
PVCC				AMS	AMS	19 51 10.0	
	comp=Z,200nm,22.4s						
PVCC	**Panska Ves**	**157.21**	**341**	*e*PKP2	**PKPab**	**18 39 06.0**	**+0.8**
PVCC				MLR	MLR		
	comp=Z,200nm,22.4s						
PSZ	**Piszkesteto**	**157.44**	**330**	⇑*i*P	**PKPab**	**18 39 06.2**	**-0.3**
PSZ	**Piszkesteto**	**157.44**	**330**	*e*PKIKP	**PKPdf**	**18 38 35.3**	**+0.5**
PSZ	**Piszkesteto**	**157.44**	**330**	*e*PKPdf	**PKPdf**	**18 38 35.3**	**+0.5**
PSZ				*e*PKPab	**PKPab**	**18 39 07.1**	**+0.7**
PSZ	**Piszkesteto**	**157.44**	**330**	⇓*e*PKKPdf	**PKPab**	**18 39 07.0**	**+0.5**
VYHS	**Vyhne**	**157.45**	**332**	*e*PKP2	**PKPab**	**18 39 06.3**	**-0.1**
VYHS	**Vyhne**	**157.45**	**332**	*e*PKP	**PKPab**	**18 39 06.3**	**-0.1**
VRAC	**Vranov**	**157.63**	**336**	⇓*i*P	**PKPab**	**18 39 08.0**	**+0.9**
VRAC	**Vranov**	**157.63**	**336**	⇓PKP2	**PKPab**	**18 39 08.0**	**+0.9**
GOPC	**GO Pecny, Ondr**	**157.69**	**340**	*e*PKPAB	**PKPab**	**18 39 08.2**	**+0.8**
GOPC				AMS	AMS	19 47 20.0	
	comp=Z,200nm,23.0s						
GOPC	**GO Pecny, Ondr**	**157.69**	**340**	*e*PKP2	**PKPab**	**18 39 08.2**	**+0.8**
GOPC				MLR	MLR		
	comp=Z,200nm,23.0s						
PRU	**Pruhonice**	**157.70**	**340**	*e*PKPAB	**PKPab**	**18 39 08.3**	**+0.9**
PRU				*ex*	x	18 39 15.7	
PRU				AMS	AMS	19 47 20.0	
	comp=Z,200nm,21.3s						
PRU	**Pruhonice**	**157.70**	**340**	*e*PKP2	**PKPab**	**18 39 08.3**	**+0.9**
PRU				MLR	MLR		
	comp=Z,200nm,21.3s						
DIM	**Dimitrovgrad**	**157.95**	**311**	*e*P	**PKPab**	**18 39 10.1**	**+1.3**
SMOL	**Smolenice**	**157.99**	**334**	*e*PKP2	**PKPab**	**18 39 09.8**	**+1.1**
SMOL	**Smolenice**	**157.99**	**334**	*e*PKP	**PKPab**	**18 39 09.8**	**+1.1**
TREC	**Trest**	**158.02**	**338**	AMS	AMS	19 46 40.0	
	comp=Z,200nm,21.4s						
NKC	**Novy Kostel**	**158.04**	**344**	*e*PKPAB	**PKPab**	**18 39 09.1**	**+0.3**
NKC				AMS	AMS	19 50 30.0	
	comp=Z,400nm,24.1s						
NKC	**Novy Kostel**	**158.04**	**344**	*e*PKP2	**PKPab**	**18 39 09.1**	**+0.3**
NKC				MLR	MLR		
	comp=Z,400nm,24.1s						
MPEP	**Malo Peshtene**	**158.43**	**316**	*e*P	**PKPab**	**18 39 11.8**	**+1.0**
RZN	**Rozhen**	**158.66**	**311**	*e*P	**PKPab**	**18 39 13.7**	**+1.6**
KHC	**Kasperske Hory**	**158.75**	**341**	*e*PKPDF	**PKPdf**	**18 38 37.6**	**+1.3**
KHC				*ex*	x	18 38 49.4	
KHC				*e*PKPAB	**PKPab**	**18 39 12.6**	**+0.6**
KHC			

COEN	Coen	11.96	225	*e*Pn	Pn	18 49 34.1	+4.1
PATS	Pohnpei	13.89	28	*e*Pn	Pn	18 49 57.9	+1.5
EIDS	Eidsvold	19.70	182	*e*P	Pn	18 51 09.7	+0.2
	9.1nm,0.9s						
GUMO	Guam	20.27	340	*e*pP	pP	18 51 27.8	+3.1
KWAJ	Kwajalein Atol	21.21	48	*e*P	P	18 51 26.2	+2.1
	78nm,0.9s						
DZM	Mont Dzumac	21.62	141	LR	LR	18 59 10.2	
	comp=Z,187nm,18.4s,baz=294,slow=35						
DZM	Mont Dzumac	21.62	141	*e*P	P	18 51 29.5	+0.8
	29nm,1.5s						
MTN	Manton Dam	21.71	249	*e*P	P	18 51 30.6	+1.2
	132nm,1.8s						
WRAB	Tennant Creek	22.24	228	*e*P	P	18 51 35.6	+0.4
	18nm,0.8s						
WB2	Warramunga Arr	22.25	228	*e*P	P	18 51 35.0	-0.3
	12nm,0.9s						
WR1	Warramunga Arr	22.25	228	*e*P	P	18 51 35.8	+0.5
	14nm,0.9s						
WR1				*e*PcP	PcP	18 55 29.3	-1.2
WRA	Warramunga Arr	22.25	228	P	P	18 51 35.8	+0.5
	3.3nm,0.8s,baz=53,slow=10,SNR=18						
WRA				PcP	PcP	18 55 29.3	-1.2
	0.5nm,0.9s,baz=46,slow=1.7,SNR=3.4						
AS01	Alice Springs	24.94	222	*e*P	P	18 52 04.2	+2.8
AS31	Alice Springs	24.97	222	*e*P	P	18 52 02.1	+0.5
	2.1nm,0.6s						
ASAR	Alice Springs	24.97	222	P	P	18 52 02.1	+0.5
	5.5nm,0.7s,baz=60,slow=8.6,SNR=80						
ASAR				PcP	PcP	18 55 36.6	+0.4
	0.5nm,0.9s,baz=28,slow=4.2,SNR=3.1						
STKA	Stephens Creek	27.89	199	P	P	18 52 27.9	+0.1
	2.0nm,0.8s,baz=3.0,slow=12,SNR=3.1						
STKA	Stephens Creek	27.89	199	*e*P	P	18 52 28.2	+0.4
	7.1nm,1.8s						
FITZ	Fitzroy Crossi	28.49	242	P	P	18 52 33.3	-0.1
	6.9nm,0.6s,baz=54,slow=8.8,SNR=9.8						
FITZ	Fitzroy Crossi	28.49	242	*e*P	P	18 52 33.2	-0.1
	11nm,1.1s						
WAKE	Wake Island	28.66	30	*e*P	P	18 52 34.1	-0.7
	385nm,1.8s						
SBUM	Sibu	40.41	280	*e*P	P	18 54 16.0	-0.3
	5.8nm,1.3s						
KHZ	Kahutara	41.43	156	*e*P	P	18 54 25.6	+1.4
	146nm,1.5s						
YULB	Yu-li	41.48	315	*e*P	P	18 54 24.7	-0.2
	42nm,1.7s						
TPUB	Ta-pu	41.89	314	*e*P	P	18 54 26.9	-1.4
	32nm,1.3s						
DCZ	Deep Cove	41.91	164	*e*P	P	18 54 26.6	-1.5
	371nm,1.8s						
CRLZ	Canterbury Las	42.04	157	*e*P	P	18 54 29.6	+0.5
	354nm,1.8s						
MQZ	McQueen's Vall	42.16	157	*e*P	P	18 54 29.6	-0.6
	257nm,1.7s						
ERM	Erimo	48.02	351	*e*P	P	18 55 12.3	-4.3
	46nm,1.6s						
MNAI	Manna	48.75	269	*e*P	P	18 55 21.7	-1.2
	424nm,1.3s						
XMAS	Kiritimati	51.17	83	*e*P	P	18 55 37.7	-3.5
	266nm,1.6s						
CMAR	Chiang Mai Arr	57.38	296	P	P	18 56 26.4	0.0
	0.4nm,0.7s,baz=119,slow=6.0,SNR=5.4						
SONA0	Songino Array	66.49	328	*e*P	P	18 57 26.7	-0.5
	1.2nm,0.8s						
SONM	Songino Array	66.49	328	P	P	18 57 26.7	-0.5
	1.3nm,0.7s,baz=137,slow=4.7,SNR=8.1						
SONA1	Songino Array	66.49	328	*e*P	P	18 57 27.2	0.0
VNDA	Vanda	72.10	178	P	P	18 58 02.3	+1.1
	0.2nm,0.4s,baz=341,slow=4.1,SNR=4.0						
MK01	Makanchi Array	80.29	319	*e*P	P	18 58 48.0	-0.3
MK31	Makanchi Array	80.30	319	*e*P	P	18 58 47.9	-0.5
MK32	Makanchi Array	80.30	319	*e*P	P	18 58 48.4	0.0
MKAR	Makanchi Array	80.30	319	P	P	18 58 48.4	0.0
	0.8nm,0.9s,baz=122,slow=6.3,SNR=5.1						
MKAR	Makanchi Array	80.30	319	*e*P	P	18 58 48.5	+0.1
	18nm,1.1s						
ZAA0	Zalesovo Array	81.28	327	*e*P	P	18 58 52.0	-1.4
ZALV	Zalesovo Beam	81.28	327	P	P	18 58 51.7	-1.7
	0.5nm,0.3s,baz=116,slow=4.2,SNR=4.3						
ZAA1	Zalesovo Array	81.28	327	*e*P	P	18 58 51.7	-1.7
ILAR	Eielson Array	83.21	22	P	P	18 59 02.1	-1.1
	0.8nm,0.7s,baz=257,slow=5.2,SNR=7.5						
ILB	Eielson Array	83.21	22	*e*P	P	18 59 00.9	-2.4
KURK	Kurchatov	83.81	322	*e*P	P	18 59 06.8	+0.2
TIMB	Timberline	91.39	45	*e*P	P	18 59 43.6	-0.1
JCW	Jim Creek	91.57	42	*e*P	P	18 59 45.1	+0.9
GERES	GERESS Array B	124.22	328	PKP	PKPdf	19 05 36.1	+0.1
	0.6nm,0.8s,baz=82,slow=3.2,SNR=6.6						
TORD	Torodi Ar. Bea	149.66	287	PKPbc	PKPbc	19 06 28.2	+0.3
	5.9nm,0.7s,baz=77,slow=2.8,SNR=33						
BDFB	Brasilia	151.15	137	PKPbc	PKPbc	19 06 32.0	+0.4
	baz=258,slow=8.6						

*MOS **09** 19:02:49.0±0.9, 7.°31S×128.°62E, h106km, mb5.1/49, Error ellipse: s-maj=9.6km s-min=5.1km az=111.7*

*BJI **09** 19:02:54.6, 7.°40S×128.°60E, h153km, mb5.0/55, mB4.8/39*

*ISCJB **09** 19:02:54.9±0.4, 7.°47S±0.°02×128.°67E±0.°03, h166km±3km, mb4.8/125, Error ellipse: s-maj=4.5km s-min=3.2km az=151.6*

*KLM **09** 19:02:55.2, 7.°75S×128.°70E, h144km, mb5.1, MS6.0*

*NEIC **09** 19:02:55.0±0.1, 7.°38S×128.°65E, mb5.0/68, Error ellipse: s-maj=4.4km s-min=3.4km az=51.0*

*IDC **09** 19:02:55.4±0.5, 7.°35S×128.62E, h150km±4km, mb4.5/29, mb1 4.5/34, mb1mx4.5/38, mbtmp4.9/34, MS3.9/3, Ms1 3.9/3, ms1mx3.3/44, Error ellipse: s-maj=10.2km s-min=7.4km az=83.0*

*GCMT **09** 19:02:55.0±0.3, 7.°37S×128.°50E, h149km±3km, MW5.0/69, Moment Tensor Solution. s17,c19; s69,c99; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr2.94±.13; Mθθ-3.01±.19; Mφφ0.06±.20; Mrθ-1.22±.14; Mθφ0.53±.18; Mφr0.64±.15; Best double couple: M₀3.31900×10¹⁶ NP1:φs287.00000°, δ57.00000°, λ99.00000°. NP2: φs92.00000°, δ34.00000°, λ77.00000°. Principal axes: T 3.2670, Plg76.0000°, Azm223.0000°; N 0.0970, Plg7.0000°, Azm102.0000°; P -3.3720, Plg12.0000°, Azm11.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*DJA **09** 19:02:56.4±0.2, 8.°S±2.°×12.°9E±.°, h147km±3km, M5.2/51, mb5.1/51, mB5.5/18, MLv5.7/9, Mw(mB)5.0/18*

ISC 09 19:02:55.0±0.3, **7.°38S**±0.°03×**128.°66E**±0.°04, **h151**km±2km, **h151**km:**pP-P, n455**, σ1s**54**/548, **mb5.0**/125, **14C-14D, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAUI	Saumlaki	2.69	103	P	Pn	19 03 39.7	+1.2
SAUI	Saumlaki	2.69	103	*e*Pn	Pn	19 03 40.1	+1.6
SAUI				*e*Sn	Sn	19 04 05.2	-6.8
MSAI	Masohi	4.02	4	P	Pn	19 03 59.2	+3.6
NLAI	Namlea	4.40	339	P	Pn	19 04 04.4	+3.8
SOEI	Soe	4.94	241	P	Pn	19 04 07.8	0.0
SOEI	Soe	4.94	241	*e*Pn	Pn	19 04 07.6	-0.2
SOEI				*e*Sn	Sn	19 05 01.5	-3.1
FAKI	Fak Fak	5.70	39	P	Pn	19 04 17.7	-0.1
	313nm,0.5s,5μm2.9nm						
FAKI	Fak Fak	5.70	39	*e*Pn	Pn	19 04 17.0	-0.7
FAKI				*e*Sn	Sn	19 05 15.9	-6.6
SANI	Sanana	5.93	333	P	Pn	19 04 24.4	+3.6
	342nm,0.8s,3μm1.1nm						
MTN	Manton Dam	5.95	156	P	Pn	19 04 19.4	-1.7
	baz=5.9,SNR=1000						
MTN	Manton Dam	5.95	156	*e*Pn	Pn	19 04 19.7	-1.4
MTN				*e*Sn	Sn	19 05 18.4	-10
KDU	Kakadu	6.47	145	P	Pn	19 04 26.6	-1.5
	baz=6.4,SNR=198						
MMRI	Maumere	6.48	258	P	Pn	19 04 28.5	+0.3
	327nm,0.9s,3μm1.6nm						
MMRI	Maumere	6.48	258	*e*Pn	Pn	19 04 27.9	-0.2
LBMI	Labuha	6.80	350	P	Pn	19 04 36.4	+3.9
	661nm,1.3s,8μm2.3nm						
SIJI	Sorong	6.97	22	P	Pn	19 04 36.5	+1.7
	14nm,0.3s,baz=271,slow=24,SNR=17						
SIJI				S	Sn	19 05 51.3	-1.7
	baz=276,slow=23,SNR=2.7						
KNRA	Kununurra	8.24	179	P	Pn	19 04 49.6	-2.1
	baz=8.1						
WSI	Waingapu	8.57	254	P	Pn	19 04 54.9	-1.2
	1μm,0.6s,15μm8.9nm						
LUWI	Luwuk	8.61	317	P	Pn	19 04 59.8	+3.2
	350nm,1.2s,3μm						
LUWI	Luwuk	8.61	317	*e*Pn	Pn	19 04 59.9	+3.3
KAPI	Kappang	9.16	284	P	Pn	19 05 05.6	+1.6
	0.8nm,0.3s,baz=136,slow=10,SNR=7.3						
KAPI	Kappang	9.16	284	*e*Pn	Pn	19 05 06.2	+2.2
KMSI	Cibinong	9.18	329	P	Pn	19 05 08.0	+3.8
	703nm,1.1s,5μm						
SPSI	Sidrap Palu	9.47	291	P	Pn	19 05 10.4	+2.3
	44nm,0.9s						
TTSI	Tana Toraja	9.80	296	P	Pn	19 05 18.8	+6.4
	30nm,1.1s						
MRSI	Marisa	10.29	319	P	Pn	19 05 22.8	+3.9
	151nm,1.2s,2μm						
PLAI	Plampang	10.87	262	P	Pn	19 05 25.2	-1.4
	103nm,0.9s						
PCI	Palu	10.90	306	P	P	19 05 35.4	0.0
FITZ	Fitzroy Crossi	11.05	195	P	Pn	19 05 24.7	-4.3
	39nm,0.3s,baz=27,slow=9.1,SNR=305						
FITZ				S	Sn	19 07 20.8	-10
	56nm,0.3s,baz=109,slow=13,SNR=12						
FITZ				LR	LR	19 10 43.4	
	comp=Z,727nm,19.3s,baz=340,slow=42						
FITZ	Fitzroy Crossi	11.05	195	P	Pn	19 05 25.0	-3.9
	baz=11,SNR=728						
FITZ	Fitzroy Crossi	11.05	195	*e*Pn	Pn	19 05 24.4	-4.5
FITZ				*e*Sn	Sn	19 07 17.0	-14
SGSI	Sangihe	11.43	344	P	Pn	19 05 36.4	+2.5
	1μm,1.0s,11μm						
TWSI	Taliwang, Sumb	11.74	263	P	P	19 05 44.2	-0.8
GENI	Genyem	12.41	68	P	Pn	19 05 47.9	+1.2
	109nm,0.7s						
JAY	Jayapura	12.94	69	P	Pn	19 05 54.2	+0.7
	0.3nm,0.3s,baz=259,slow=22,SNR=28						
JAY	Jayapura	12.94	69	P	P	19 05 57.4	-1.0
	36nm,0.7s,450nm						
WRAB	Tennant Creek	13.64	157	*ce*P	Pn	19 05 58.7	-3.8
WRAB				pmax	pmax		
	comp=Z,348nm,1.2s						
WRAB	Tennant Creek	13.64	157	*e*Pn	Pn	19 05 58.5	-4.0
WRA	Warramunga Arr	13.65	157	P	Pn	19 05 59.0	-3.5
	comp=Z,18nm,0.3s,baz=325,slow=11,SNR=263						
WRA				S	Sn	19 08 19.0	-15
	comp=Z,42nm,0.3s,baz=338,slow=22,SNR=12						
WRA				LR	LR	19 11 58.1	
	comp=Z,533nm,19.9s,baz=0.0,slow=40						
WR1	Warramunga Arr	13.65	157	*e*Pn	Pn	19 05 59.0	-3.5
WR1				*e*Sn	Sn	19 08 19.1	-15
WB2	Warramunga Arr	13.65	157	*e*Pn	Pn	19 05 58.6	-4.0
BBKI	Banjar Baru	14.29	285	P	P	19 06 16.6	+3.2
	comp=Z,204nm,1.0s,comp=Z,2μm						
JAGI	Jajag, Banyuwa	14.41	265	P	Pn	19 06 12.2	+0.1
	comp=Z,36nm,1.3s						
JAGI	Jajag, Banyuwa	14.41	265	*e*Pn	Pn	19 06 10.3	-1.9
DAV	Davao City (W)	14.68	348	P	Pn	19 06 13.6	-1.9
	comp=Z,46nm,0.3s,baz=297,slow=2.3,SNR=3.6						
COEN	Coen	15.69	116	P	Pn	19 06 27.2	-0.8
	baz=16,SNR=53						
COEN	Coen	15.69	116	*e*Pn	P	19 06 29.2	+0.4
	comp=Z,218nm,1.4s						
PALU	Palau	15.74	22	P	P	19 06 31.1	+1.7
	baz=16,SNR=12						
TSM	Tawau	15.82	317	⇓P	P	19 06 33.6	+3.3
MYLDM	Lahad Datu	16.08	321	⇓P	P	19 06 37.9	+4.8
MYLDM	Lahad Datu	16.08	321	*e*Pn	P	19 06 33.2	0.0
	comp=Z,149nm,1.4s						
MBWA	Marble Bar	16.19	211	*e*Pn	Pn	19 06 31.6	-2.4
	comp=Z,73nm,0.8s						
PWJI	Pagerwojo	16.71	267	P	Pn	19 06 41.0	+0.5
	comp=Z,36nm,0.7s						
QIS	Mount Isa	16.85	142	P	P	19 06 41.8	+0.1
	baz=1,SNR=49						
AS31	Alice Springs	16.96	163	*e*P	P	19 06 41.8	-1.1
	comp=Z,50nm,0.7s						
AS31				*e*S	S	19 09 40.9	-11
ASAR	Alice Springs	16.96	163	P	P	19 06 42.4	-0.5
	comp=Z,6.3nm,0.3s,baz=336,slow=9.8,SNR=365						
ASAR				pP	pP	19 07 08.2	-0.6
	comp=Z,8.0nm,0.3s,baz=334,slow=10,SNR=9.0						
ASAR				S	S	19 09 41.2	-11
	comp=Z,12nm,0.3s,baz=316,slow=16,SNR=7.5						
ASAR				LR	LR	19 14 15.3	
	comp=Z,432nm,20.2s,baz=336,slow=40						
AS01	Alice Springs	16.97	163	*e*P	P	19 06 42.4	-0.6
SDKM	Sandakan	17.27	318	⇑P	Pn	19 06 51.1	+3.9
PCJI	Pacitan	17.34	266	P	P	19 06 46.6	-0.5
	comp=Z,43nm,1.1s						
PBKI	Pangkalan Bun	17.54	284	P	Pn	19 06 52.2	+1.7
	comp=Z,429nm,1.2s,comp=Z,4μm						
WRKA	Warakurna	17.56	181	P	P	19 06 48.5	-1.0
	baz=18,SNR=803						
KKM	Kota Kinabalu	18.22	317	⇑P	Pn	19 07 01.9	+3.2
KKM	Kota Kinabalu	18.22	317	*e*P	Pn	19 06 58.8	+0.2
	comp=Z,49nm,0.9s						
PMG	Port Moresby	18.41	98	P	P	19 06 58.8	-0.1
	comp=Z,2.4nm,0.3s,baz=177,slow=4.1,SNR=12						
PMG	Port Moresby	18.41	98	*ce*P	P	19 06 59.0	+0.1
PMG				pmax	pmax		
	comp=Z,297nm,0.8s						
PMG	Port Moresby	18.41	98	*e*P	P	19 06 58.5	-0.4
	comp=Z,112nm,0.8s						
MTSU	Mount Surprise	18.62	127	P	Pn	19 07 02.8	-0.4
	baz=19,SNR=64						
STKI	Sintang	18.66	293	P	Pn	19 07 04.0	+0.3
BTM	Bintulu	18.76	304	⇓P	Pn	19 07 06.1	+1.2
SBUM	Sibu	19.09	300	*e*P	Pn	19 07 08.3	-0.4
	comp=Z,92nm,1.1s						
MANU	Manus Island	19.38	75	*e*P	Pn	19 07 12.9	+0.8
	comp=Z,60nm,0.8s						
KSM	Kuching	20.31	295	⇑P	P	19 07 21.0	+1.6
KSM	Kuching	20.31	295	*e*P	P	19 07 20.0	+0.6
	comp=Z,172nm,0.8s						
GIRL	Giria	20.57	221	P	P	19 07 23.2	+1.2
	baz=20,SNR=8.4						
CISI	Cisompet, Garu	20.67	268	*e*P	P	19 07 19.9	-3.3
	comp=Z,189nm,1.7s						
CTA	Charters Tower	21.22	128	P	P	19 07 29.6	+0.5
	comp=Z,12nm,0.6s,baz=305,slow=13,SNR=26						
CTAO	Charters Tower	21.22	128	*e*P	P	19 07 29.8	+0.7
CTAO				pmax	pmax		
	comp=Z,46nm,1.1s						
CTAO	Charters Tower	21.22	128	*e*P	P	19 07 29.8	+0.7
	comp=Z,45nm,1.1s						
MEEK	Meekatharra	21.40	205	P	P	19 07 30.5	-0.5
	baz=21,SNR=15						
CBJI	Citeko	21.67	271	P	P	19 07 39.4	+5.5
PPBI	Pangkal Pinang	23.03	282	P	P	19 07 49.5	+2.4
	comp=Z,42nm,1.4s,comp=Z,954nm						
FORT	Forrest	23.28	181	P	P	19 07 49.7	+0.5
	baz=23,SNR=44						
FORT	Forrest	23.28	181	*e*P	P	19 07 48.3	-0.9
	comp=Z,1μm,0.8s						
QLP	Quilpie	24.17	144	P	P	19 07 58.5	+1.1
	baz=24,SNR=107						
MORW	Morawa	24.63	207	P	P	19 08 01.6	0.0
	baz=25,SNR=17						
KMBL	Kambalda	24.69	194	P	P	19 08 02.2	+0.1
	baz=25,SNR=22						
BLDU	Ballidu	25.68	204	P	P	19 08 10.9	-0.2
	baz=26,SNR=19						
KLBR	Kellerberrin	26.15	201	P	P	19 08 15.3	+0.1
	baz=26,SNR=24						
BBOO	Buckleboo	26.22	166	P	P	19 08 16.2	+0.4
	baz=26,SNR=94						
BBOO	Buckleboo	26.22	166	*e*P	P	19 08 16.0	+0.1
	comp=Z,116nm,0.6s						
BBOO				*e*pP	pP	19 08 49.0	+1.5
GUMO	Guam	26.33	38	P	P	19 08 17.2	+0.2
	comp=Z,10nm,0.3s,baz=30,slow=1.9,SNR=5.7						
MYKOM	Kota Tinggi	26.38	289	⇓P	P	19 08 20.2	+2.7
MYKOM	Kota Tinggi	26.38	289	*e*P	P	19 08 16.3	-1.2
	comp=Z,34nm,1.1s						
KGM	Kluang	26.95	289	⇓P	P	19 08 24.0	+1.3
RMQ	Roma	26.95	137	P	P	19 08 23.4	+0.8
	baz=27,SNR=10						
STKA	Stephens Creek	27.19	155	P	P	19 08 25.1	+0.5
	comp=Z,75nm,0.8s,baz=328,slow=9.1,SNR=132						
STKA				pP	pP	19 08 58.2	+1.8
	comp=Z,35nm,0.7s,baz=315,slow=9.8,SNR=3.2						
STKA	Stephens Creek	27.19	155	P	P	19 08 25.1	+0.5
	baz=27,SNR=98						
STKA	Stephens Creek	27.19	155	*e*P	P	19 08 25.1	+0.5
STKA				*e*pP	pP	19 08 59.2	+2.9
STKA				pmax	pmax		
	comp=Z,17nm,0.8s						
STKA	Stephens Creek	27.19	155	*e*P	P	19 08 25.1	+0.5
	comp=Z,17nm,0.8s						
STKA				*e*pP	pP	19 08 59.2	+2.9
NWAO	Narrogin (SRO)	27.54	201	P	P	19 08 27.8	+0.1
	comp=Z,14nm,0.4s,baz=278,slow=7.9,SNR=29						
NWAO				pP	pP	19 09 00.9	+1.4
	comp=Z,30nm,0.6s,baz=271,slow=14,SNR=4.6						
NWAO	Narrogin (SRO)	27.54	201	P	P	19 08 27.9	+0.1
	baz=28,SNR=20						
NWAO				P	P	19 08 27.9	+0.1
	baz=28,SNR=20						
NWAO	Narrogin (SRO)	27.54	201	*e*P	P	19 08 27.8	+0.1
NWAO				*e**PP	pP	19 09 00.8	+1.4
NWAO				pmax	pmax		
	comp=Z,122nm,1.4s						
NWAO	Narrogin (SRO)	27.54	201	*e*P	P	19 08 27.8	+0.1
	comp=Z,122nm,1.4s						
NWAO				*e*pP	pP	19 09 00.8	+1.3
HTT	Hallett	27.61	161	P	P	19 08 29.2	+0.9
	baz=28,SNR=21						
EIDS	Eidsvold	27.89	132	P	P	19 08 31.7	+0.7
	baz=28,SNR=3.9						
EIDS	Eidsvold	27.89	132	*e*P	P	19 08 31.2	+0.3
	comp=Z,14nm,1.1s						
KTGM	Kuala Trenggan	28.43	296	⇓P	P	19 08 37.8	+2.0
CMSA	Cobar Meteorol	28.82	149	P	P	19 08 40.2	+1.2
	baz=29,SNR=126						
RKGY	Rocky Gully	29.16	200	P	P	19 08 43.5	+1.6
	baz=29,SNR=12						
IPM	Ipoh	29.99	292	*e*P	P	19 08 49.3	-0.3
	comp=Z,14nm,0.9s						
MNSI	Mandailing Nat	30.12	284	P	P	19 08 51.9	+1.1
	comp=Z,24nm,0.5s						
HNR	Honiara	31.01	96	P	P	19 08 59.4	+0.8
	comp=Z,27nm,0.6s,baz=184,slow=15,SNR=3.0						
PSI	Prapat	31.35	288	P	P	19 09 00.6	-1.2
	comp=Z,20nm,0.8s,baz=61,slow=4.2,SNR=13						
PSI	Prapat	31.35	288	*e*P	P	19 09 00.3	-1.4
PSI				*e**PP	pP	19 09 31.9	-1.9
PSI	Prapat	31.35	288	*e*P	P	19 09 00.3	-1.4
PSI				*e*pP	pP	19 09 31.9	-1.9
ARMA	Armidale	31.45	140	P	P	19 09 04.7	+2.3
	baz=31,SNR=13						
ARPS	Mount Arapiles	31.62	160	P	P	19 09 05.0	+1.3
	baz=32,SNR=80						
QIZ	Qiongzhong	32.14	325	P	P	19 09 10.5	+2.1
QIZ				pmax	pmax		
	comp=Z,14nm,1.6s						
UBPT	Khong Chiam	32.17	314	P	P	19 09 09.9	+1.2
	comp=Z,23nm,2.1s						
GSI	Gunungsitoli	32.19	284	P	P	19 09 08.3	-0.6
	comp=Z,19nm,1.0s						
GSI	Gunungsitoli	32.19	284	*e*P	P	19 09 07.7	-1.3
	comp=Z,18nm,1.0s						
YNG	Young	32.39	149	P	P	19 09 12.3	+1.8
	baz=32,SNR=12						
CHBT	CHBT	32.93	307	P	P	19 09 18.5	+3.1
	comp=Z,40nm,1.1s						
CAN	Canberra	33.49	149	P	P	19 09 22.0	+1.9
	baz=34						
CAN	Canberra	33.49	149	*e*P	P	19 09 20.9	+0.8
CAN				pmax	pmax		
	comp=Z,29nm,0.6s						
CAN	Canberra	33.49	149	*e*P	P	19 09 20.9	+0.8
	comp=Z,30nm,0.6s						
CNB	Canberra Magne	33.67	149	P	P	19 09 23.5	+1.8
	baz=34,SNR=8.6						
TOO	Toolangi	33.72	156	P	P	19 09 24.4	+2.4
	baz=34,SNR=23						
SKNT	Sakolnakorn	34.37	315	P	P	19 09 28.6	+0.8
	comp=Z,27nm,1.1s						
KHON	Khonkaen	34.77	313	P	P	19 09 32.5	+1.2
	comp=Z,12nm,0.9s,comp=Z,340nm						
CHAI	Chaiyaphum	35.11	311	P	P	19 09 35.0	+0.8
	comp=Z,12nm,0.8s,comp=Z,462nm						
NONG	Nongkai	35.69	315	P	P	19 09 39.8	+0.7
	comp=Z,111nm,1.4s						
UTTA	Uttaradit	37.33	312	P	P	19 09 54.1	+1.1
	comp=Z,12nm,0.9s,comp=Z,102nm						
LAMP	Lampang	38.50	312	P	P	19 10 04.3	+1.4
	comp=Z,10nm,0.9s,comp=Z,86nm						
CM01	Chiang Mai Arr	38.94	312	*e*P	P	19 10 07.4	+0.9
CM01				*e*pP	pP	19 10 42.1	+2.7
CM01				*e*ScP	ScP	19 15 48.1	-0.4
CM31	Chiang Mai Arr	38.97	312	*e*P	P	19 10 07.5	+0.8
CM31				*e*PcP	PcP	19 12 15.9	+1.6
CM31				*e*ScP	ScP	19 15 49.4	+0.8
CMAR	Chiang Mai Arr	38.97	312	P	P	19 10 07.7	+1.0
	comp=Z,12nm,0.9s,baz=145,slow=7.0,SNR=81						
CMAR				PcP	PcP	19 12 15.9	+1.6
	comp=Z,6.9nm,0.7s,baz=172,slow=2.6,SNR=24						
CMAR				ScP	ScP	19 15 49.4	+0.8
	comp=Z,3.7nm,0.9s,baz=162,slow=3.2,SNR=14						
CMMT	Chiang Mai	39.19	312	P	P	19 10 09.3	+0.7
	comp=Z,30nm,1.0s						
CHTO	Chiang Mai	39.19	312	P	P	19 10 09.3	+0.7
	comp=Z,136nm,1.1s						
CHTO	Chiang Mai	39.19	312	*e*P	P	19 10 09.4	+0.8
CHTO				*e*S	S	19 15 50.9	-6.8
CHTO				pmax	pmax		
	comp=Z,28nm,0.9s						
CHTO	Chiang Mai	39.19	312	*e*P	P	19 10 09.3	+0.8
	comp=Z,28nm,0.9s						
CHTO				*e*S	S	19 15 50.9	-6.8
DZM	Mont Dzumac	39.22	116	*e*P	P	19 10 08.8	-0.1
	comp=Z,28nm,0.9s						
GYA	Guiyang	39.84	328	P	P	19 10 17.0	+3.0
GYA				pP	pP	19 10 51.2	+4.1
GYA				sP	sP	19 11 08.4	+4.1
GYA			

CD2 pmax pmax
comp=Z,120nm,5.2s
XAN Xi'an 45.24 337 P **P** **19 10 57.1 -0.3**
XAN pmax pmax
comp=Z,70nm,0.8s
BJT Baijiatuau 48.55 347 *e*P **P** **19 11 23.3 +0.4**
BJT Baijiatuau 48.55 347 *e*P **P** **19 11 23.3 +0.4**
BJI Beijing 48.58 347 P **P** **19 11 23.3 +0.2**
BJI pmax pmax
comp=Z,27nm,0.6s
LZH Lanzhou 49.13 333 ⇑P **P** **19 11 28.8 +1.2**
LZH pP pP 19 12 03.2 +1.2
LZH sP sP 19 12 20.0 +1.2
LZH PP **PP** **19 13 25.0 +2.1**
LZH S **S** **19 18 20.0 -1.5**
LZH sS sS 19 19 22.0 +0.9
LZH SS **SS** **19 21 51.9 -3.0**
LZH pmax pmax
comp=Z,56nm,1.0s
LZH pmax pmax
comp=Z,170nm,5.2s
LZH LR LR
comp=Z,290nm,14.6s
LZH LR LR
comp=Z,280nm,14.8s
LZH LR LR
comp=Z,370nm,17.2s
MSVF Nonsavu 49.16 107⇑ *e*P **P** **19 11 28.9 +0.8**
MSVF pmax pmax
comp=Z,40nm,0.9s
MSVF Nonsavu 49.16 107 *e*P **P** **19 11 28.4 +0.2**
comp=Z,23nm,0.8s
PALK Pallekele 49.99 286 P **P** **19 11 34.3 -0.1**
comp=Z,6.4nm,0.8s,baz=116,slow=18,SNR=3.1
PALK PcP **PcP** **19 12 53.3 +1.0**
comp=Z,7.5nm,0.9s,baz=120,slow=3.4,SNR=4.6
VLA Vladivostok 50.35 3‖ *e*P **P** **19 11 37.2 +0.8**
VLA pmax pmax
comp=Z,19nm,1.1s
HHC Hu-ho-hao-te 50.51 343 *e*P P 19 11 43.1 +5.2
HHC pmax pmax
comp=Z,17nm,1.3s
HHC pmax pmax
comp=Z,120nm,6.2s
USRK Ussuriysk Ar. 51.43 3 P **P** **19 11 44.9 +0.4**
comp=Z,4.5nm,0.7s,baz=164,slow=6.7,SNR=14
USRK pP **pP** **19 12 19.0 -0.2**
comp=Z,4.6nm,0.8s,baz=192,slow=5.2,SNR=3.7
LSA Lhasa 51.56 317 P **P** **19 11 47.5 +1.1**
LSA pmax pmax
comp=Z,25nm,0.8s
LSA Lhasa 51.56 317 *e*P **P** **19 11 47.1 +0.7**
LSA pmax pmax
comp=Z,16nm,0.7s
LSA Lhasa 51.56 317 *e*P **P** **19 11 47.1 +0.7**
comp=Z,16nm,0.7s
RPZ Rata Peaks 51.76 142 *e*P **P** **19 11 47.9 +0.8**
comp=Z,96nm,0.8s
MDJ Mudanjiang 51.77 1 P **pP** **19 12 19.7 -2.0**
MDJ pmax pmax
comp=Z,4.0nm,1.0s
MDJ pmax pmax
comp=Z,82nm,6.8s
ASAJ Asahikawa 52.79 13 P **P** **19 11 54.6 0.0**
comp=Z,6.7nm,0.7s,baz=225,slow=8.9,SNR=16
ASAJ Asahikawa 52.79 13 *e*P **P** **19 11 54.1 -0.4**
comp=Z,8.9nm,1.0s
RAMN Ramite 53.15 312 *e*P **P** **19 11 58.2 +0.4**
comp=Z,120nm,0.7s
BKZ Black Stump Fm 53.28 134 *e*P **P** **19 11 59.2 +0.7**
comp=Z,127nm,1.6s
GTA Gaotai 53.68 332 ⇑P **P** **19 12 02.3 +0.9**
GTA pP pP 19 12 37.1 +0.8
GTA sP sP 19 12 54.0 +1.0
GTA ScP **ScP** **19 16 49.5 0.0**
GTA S **S** **19 19 23.8 +0.1**
GTA sS sS 19 20 22.0 -2.2
GTA SS **SS** **19 23 06.4 -0.4**
GTA pmax pmax
comp=Z,54nm,0.9s
GTA pmax pmax
comp=Z,77nm,5.7s
GTA LR LR
comp=Z,120nm,18.5s
GTA LR LR
comp=Z,160nm,17.6s
GTA LR LR
comp=Z,120nm,20.9s
GUN Gumba 54.21 312 *e*P **P** **19 12 05.8 +0.1**
comp=Z,81nm,0.7s
PKIN Phulchoki 54.38 312 *e*P **P** **19 12 06.5 -0.4**
KKN Kakani 54.59 312 *e*P **P** **19 12 08.2 -0.1**
comp=Z,41nm,0.8s
DMN Daman 54.62 311 *e*P **P** **19 12 08.6 +0.1**
comp=Z,63nm,0.9s
GKN Gorkha 55.18 312 *e*P **P** **19 12 12.5 0.0**
HYB Hyderabad 55.29 297 *i*P **P** **19 12 12.0 -1.3**
YSS Yuzh-Sakhalins 55.53 12 *e*P **P** **19 12 14.6 +0.3**
YSS pmax pmax
comp=Z,20nm,0.9s
YSS Yuzh-Sakhalins 55.53 12 *e*P **P** **19 12 14.2 -0.2**
comp=Z,16nm,0.8s
KOLN Koldanda 55.83 311 *e*P **P** **19 12 17.2 0.0**
comp=Z,74nm,0.8s
HABR Khabarovsk 55.90 5 *e*P **P** **19 12 15.2 -1.8**
HABR *e**PP **pP** **19 12 48.2 -3.9**
HABR *e* 19 13 12.4
HABR *e* 19 14 21.5
HABR *e*PPP PPP 19 15 37.3
HABR *e*S **S** **19 19 52.2 -0.5**
HABR *e* 19 21 50.2
HABR *e*SS **SS** **19 23 41.7 +0.6**
HABR pmax pmax
comp=E,5.0nm,0.9s
HABR pmax pmax
comp=N,7.0nm,0.9s
HABR pmax pmax
comp=Z,12nm,0.9s
HABR MLR MLR
comp=Z,60nm,16.0s
KLR Kul'dur 56.44 2*c i*P **P** **19 12 20.8 0.0**
PYUN Piuthan 56.46 311 *e*P **P** **19 12 21.7 +0.1**
comp=Z,141nm,0.8s
SONA0 Songino Array 58.39 343 *e*P **P** **19 12 35.4 +0.7**
comp=Z,12nm,0.8s
SONA0 *e*ScP **ScP** **19 17 09.8 -0.2**
SONM Songino Array 58.39 343 P **P** **19 12 35.4 +0.7**
comp=Z,11nm,0.8s,baz=167,slow=7.5,SNR=49
SONM ScP **ScP** **19 17 09.8 -0.2**
comp=Z,0.8nm,0.7s,baz=167,slow=5.3,SNR=3.8
SONM PKP2bc 19 42 28.4
comp=Z,1.7nm,1.1s,baz=350,slow=3.5,SNR=6.3
SONA1 Songino Array 58.40 343 *e*P **P** **19 12 35.5 +0.7**
SONA1 *e*pP **pP** **19 13 12.0 +1.8**
CASY Casey 60.13 188 *e*P **P** **19 12 46.8 +0.6**
comp=Z,22nm,1.0s
NKL Nikolayevsk 61.16 8 *e*P **P** **19 12 54.0 +0.7**
ZAK Zakamensk 61.60 342 *e*P **P** **19 12 56.6 +0.1**
ZAK pmax pmax
comp=Z,5.0nm,1.2s
TLY Talaya 62.63 343 *e*P **P** **19 13 04.6 +1.4**
TLY pmax pmax
comp=Z,6.0nm,0.6s
TLY Talaya 62.63 343 *e*P **P** **19 13 03.8 +0.5**
comp=Z,6.9nm,0.7s
WMQ Urumqi 63.00 328 P **P** **19 13 07.1 +1.2**
WMQ pP PcP 19 13 46.3 +3.9
WMQ pmax pmax
comp=Z,52nm,0.7s
WMQ pmax pmax
comp=Z,100nm,3.5s
MOY Mondy 63.44 341 *e*P **P** **19 13 10.1 +1.5**
MOY pmax pmax
comp=Z,23nm,1.5s
PEA0 Petropavlovsk- 65.11 19 *e*P **P** **19 13 20.1 +0.8**
PEA0B Petropavlovsk- 65.11 19 *e*P **P** **19 13 20.6 +1.2**
comp=Z,26nm,0.8s
PETK Petropavlovsk- 65.11 19 P **P** **19 13 20.4 +1.1**
comp=Z,22nm,0.7s,baz=180,slow=4.3,SNR=41
PETK PcP **PcP** **19 13 50.8 0.0**
comp=Z,3.3nm,0.5s,baz=207,slow=2.0,SNR=6.5
PEA1 Petropavlovsk- 65.11 19 *e*P **P** **19 13 20.4 +1.0**
PEA1 *e*PcP **PcP** **19 13 50.8 -0.1**
PET Petropavlovsk 65.34 19 *e*P **P** **19 13 21.5 +0.7**
PET pmax pmax
comp=Z,21nm,0.9s
BOD Bodaibo 66.07 351 *e*P **P** **19 13 25.1 -0.3**
BOD pmax pmax
comp=Z,8.0nm,0.9s
PDGK Podgornoye 67.30 323 *i*P **P** **19 13 34.4 +0.9**
PDGK pmax pmax
comp=Z,22nm,0.8s
KSH Kashi 67.41 318 *e*P **P** **19 13 35.4 +0.9**
KSH *e*PcP **PcP** **19 14 02.0 +1.1**
KSH *e*pP pP 19 14 13.2 +2.3
KSH *e*sP sP 19 14 31.1 +3.9
KSH PcS 19 18 04.3
KSH S **S** **19 22 14.1 -4.3**
KSH ScS **SKiKP** **19 23 14.2 -3.7**
KSH pmax pmax
comp=Z,17nm,0.8s
KSH LR LR
comp=Z,87nm,6.3s
KSH LR LR
comp=Z,120nm,11.9s
KSH LR LR
comp=Z,130nm,6.8s
MK01 Makanchi Array 67.80 328 *e*P **P** **19 13 37.2 +0.6**
MK31 Makanchi Array 67.82 328 *e*P **P** **19 13 37.6 +0.8**
MK31 Makanchi Array 67.82 328 *e*P **P** **19 13 37.6 +0.8**
MK32 Makanchi Array 67.82 328 *e*P **P** **19 13 37.6 +0.8**
MKAR Makanchi Array 67.82 328 P **P** **19 13 37.6 +0.9**
comp=Z,34nm,0.8s,baz=127,slow=7.9,SNR=229
MKAR Makanchi Array 67.82 328 *e*P **P** **19 13 37.7 +0.9**
MKAR pmax pmax
comp=Z,231nm,0.8s
MKAR Makanchi Array 67.82 328 *e*P **P** **19 13 37.6 +0.9**
comp=Z,231nm,0.8s
MAKZ Makanchi 68.00 327 *e*P **P** **19 13 37.9 0.0**
MAKZ pmax pmax
comp=Z,29nm,0.9s
MAKZ Makanchi 68.00 327 *e*P **P** **19 13 37.9 0.0**
comp=Z,29nm,0.9s
MA2 Magadan 69.04 12 *e*P **P** **19 13 45.0 +1.0**
YAK Yakutsk 69.21 1 *e*P **P** **19 13 44.2 -0.8**
YAK *e* 19 14 07.5
YAK *e**PP **pP** **19 14 20.1 -1.5**
YAK *e* 19 16 18.1
YAK *e*PPP PPP 19 17 56.4
YAK *e*S **S** **19 22 35.6 -2.9**
YAK *e* 19 23 27.3
YAK pmax pmax
comp=Z,49nm,0.9s
YAK pmax pmax
comp=N,16nm,1.2s
YAK pmax pmax
comp=E,6.0nm,1.1s
YAK pmax pmax
comp=N,1.0nm,0.6s
YAK pmax pmax
comp=E,4.0nm,1.0s
YAK smax smax
comp=N,40nm,2.5s
YAK smax smax
comp=E,42nm,2.4s
YAK Yakutsk 69.21 1 *e*P **P** **19 13 45.1 +0.1**
comp=E,49nm,0.7s
TKM2 Tokmak 2 69.44 321 *i*P **P** **19 13 47.9 +0.8**
TKM2 pmax pmax
comp=Z,24nm,0.8s
TKM2 Tokmak 2 69.44 321 *e*P **P** **19 13 47.5 +0.3**
comp=Z,24nm,0.8s
AAK Ala-Archa 69.98 320 *e*P **P** **19 13 51.7 +1.3**
AAK *e**PP **pP** **19 14 27.9 +0.8**
AAK pmax pmax
comp=Z,34nm,1.0s
AAK Ala-Archa 69.98 320 *e*P **P** **19 13 51.7 +1.3**
comp=Z,34nm,1.0s
AAK *e*pP **pP** **19 14 27.9 +0.8**
KBL Kabul 70.00 311 *e*P **P** **19 13 51.0 +0.3**
KBL pmax pmax
comp=Z,9.0nm,1.0s
KBL Kabul 70.00 311 *e*P **P** **19 13 51.0 +0.3**
comp=Z,9.1nm,1.0s
FRU Bishkek 70.00 321 *e*P **P** **19 13 50.0 -0.4**
FRU *e* 19 14 16.0
FRU pmax pmax
comp=Z,40nm,1.6s
EKS2 Erkin-Say 70.45 320 *e*P **P** **19 13 54.4 +1.2**
EKS2 *e**PP **pP** **19 14 33.1 +3.2**
EKS2 pmax pmax
comp=Z,36nm,0.9s
EKS2 Erkin-Say 70.45 320 *e*P **P** **19 13 54.4 +1.2**
comp=Z,36nm,0.9s
EKS2 *e*pP **pP** **19 14 33.1 +3.2**
MNAS Manas 71.17 320 *i*P **P** **19 13 58.1 +0.5**
MNAS pmax pmax
comp=Z,47nm,1.0s
ZAA0 Zalesovo Array 71.34 334 *e*pP pP 19 14 33.2 -1.7
ZALV Zalesovo Beam 71.34 334 P **P** **19 13 57.9 -0.2**
comp=Z,18nm,0.7s,baz=128,slow=5.1,SNR=101
ZALV pP **pP** **19 14 33.5 -1.5**
comp=Z,8.4nm,0.7s,baz=133,slow=5.5,SNR=3.9
ZAA1 Zalesovo Array 71.35 334 *e*P **P** **19 13 57.9 -0.2**
ZAA1 *e*pP **pP** **19 14 33.5 -1.5**
KURK Kurchatov 72.16 329 *e*P **P** **19 14 03.7 +0.6**
KURK Kurchatov 72.16 329 *e*P **P** **19 14 03.7 +0.6**
VNDA Vanda 72.23 173 P **P** **19 14 03.7 +0.5**
comp=Z,8.3nm,0.6s,baz=318,slow=6.4,SNR=71
VNDA Vanda 72.23 173 *e*P **P** **19 14 03.3 +0.1**
VNDA pmax pmax
comp=Z,10.0nm,0.8s
VNDA Vanda 72.23 173 *e*P **P** **19 14 03.3 +0.1**
comp=Z,9.7nm,0.8s
SEY Seymchan 72.43 11 P **P** **19 14 05.5 +1.1**
comp=Z,24nm,0.7s,baz=204,slow=4.8,SNR=188
NVS Novosibirsk 72.63 334 *e*P **P** **19 14 05.8 0.0**
NVS *e*S **S** **19 23 15.8 -2.5**
NVS pmax pmax
comp=Z,13nm,0.7s
NVS pmax pmax
comp=N,6.0nm,0.6s
NVS pmax pmax
comp=E,6.0nm,0.5s
NVS smax smax
comp=E,31nm,2.2s
NVS smax smax
comp=N,29nm,2.3s
KK31 Karatay Array 72.75 319*ce*P **P** **19 14 07.8 +0.9**
KK31 pmax pmax
comp=Z,16nm,0.8s
KKAR Karatay Array 72.75 319 *e*P **P** **19 14 07.4 +0.5**
KKAR pmax pmax
comp=Z,124nm,0.8s
KKAR Karatay Array 72.75 319 *e*P **P** **19 14 07.4 +0.5**
comp=Z,124nm,0.8s
SBA Scott Base 73.14 172 *e*P **P** **19 14 09.7 +1.2**
SBA pmax pmax
comp=Z,12nm,0.8s
SBA Scott Base 73.14 172 *e*P **P** **19 14 09.7 +1.2**
comp=Z,12nm,0.8s
MAW Mawson 74.11 201 P **P** **19 14 15.2 +1.0**
comp=Z,24nm,1.0s,baz=62,slow=7.7,SNR=30
MAW Mawson 74.11 201 P **P** **19 14 15.8 +1.5**
baz=74,SNR=25
MAW Mawson 74.11 201 *e*P **P** **19 14 15.1 +0.8**
comp=Z,6.5nm,1.0s
OTUK Ortayu 74.17 325 P **P** **19 14 16.2 +1.1**
OTUK pmax pmax
comp=Z,90nm,0.8s
WSAR Wadi Sarin 74.84 296 P **P** **19 14 19.8 +0.4**
comp=Z,7.5nm,0.8s,baz=164,slow=7.4,SNR=5.4
VOSK Vostochnaya 77.22 328 *e*P **P** **19 14 31.9 -0.3**
VOSK *e**PP **pP** **19 15 08.4 -1.1**
VOSK pmax pmax
comp=Z,14nm,0.6s
VOSK Vostochnaya 77.22 328 *e*P **P** **19 14 31.9 -0.3**
comp=Z,14nm,0.6s
VOSK *e*pP **pP** **19 15 08.4 -1.1**
BVA0 Borovoye Array 77.68 328 P **P** **19 14 34.8 0.0**
BVA0 pmax pmax
comp=Z,22nm,1.0s
BVAR Borovoye Array 77.68 328 P **P** **19 14 35.1 +0.3**
comp=Z,51nm,1.2s,baz=123,slow=5.5,SNR=74
BVAR pP **pP** **19 15 11.3 -0.8**
comp=Z,9.4nm,1.1s,baz=124,slow=4.5,SNR=3.5
BRVK Borovoye 77.75 328*c i*P **P** **19 14 34.9 -0.3**
BRVK *i**PP **pP** **19 15 11.2 -1.3**
BRVK pmax pmax
comp=Z,59nm,1.0s
BRVK Borovoye 77.75 328 *e*P **P** **19 14 35.6 +0.4**
comp=Z,21nm,1.0s
CHKZ Chkalovo 77.89 329 *i*P **P** **19 14 35.9 0.0**
ZRNK Zerenda 78.37 328 *e*P **P** **19 14 38.4 -0.2**
ZRNK *e**PP **pP** **19 15 14.8 -1.2**
ZRNK pmax pmax
comp=Z,50nm,1.3s
ZRNK Zerenda 78.37 328 *e*P **P** **19 14 38.4 -0.2**
comp=Z,50nm,1.3s
ZRNK *e*pP **pP** **19 15 14.8 -1.2**
TIXI Tiksi 78.87 0‖ *e*P **P** **19 14 40.3 -0.6**
TIXI pmax pmax
comp=Z,11nm,1.0s
TIXI Tiksi 78.87 0 *e*P **P** **19 14 40.2 -0.6**
comp=Z,10nm,1.0s
GEYT Alibeck 79.45 311 P **P** **19 14 44.9 +0.1**
comp=Z,4.8nm,1.0s,baz=156,slow=1.5,SNR=14
GEYT pP **pP** **19 15 21.5 -0.8**
comp=Z,2.8nm,0.8s,baz=215,slow=4.9,SNR=3.3
OPO Ambohidratompo 79.63 252 P **P** **19 14 46.9 +0.5**
comp=Z,5.4nm,0.8s,baz=111,slow=5.8,SNR=5.8
BILL Bilibino 79.79 13 *e*P **P** **19 14 46.9 +0.9**
BILL *e* 19 17 50.0
BILL pmax pmax
comp=Z,4.0nm,1.1s
NRIK Noril'sk 81.61 346 P **P** **19 14 55.6 0.0**
comp=Z,4.9nm,0.5s,baz=130,slow=5.0,SNR=5.8
AB31 Akbulak array 81.98 322*ce*P **P** **19 14 58.0 0.0**
AB31 pmax pmax
comp=Z,8.0nm,0.5s
ABKAR Akbulak array 81.98 322 *e*P **P** **19 14 57.8 -0.3**
comp=Z,127nm,0.6s
QSPA South Pole Qui 82.60 180 *e*P **P** **19 15 01.2 +0.1**
SYO Syowa Base 82.83 201‖ *e*P **P** **19 15 01.6 -0.4**
SVE Sverdlovsk 84.41 329⇑ *e*P **P** **19 15 10.8 +0.5**
SVE pmax pmax
comp=Z,38nm,1.3s
ARU Arti 85.33 328*c i*P **P** **19 15 14.7 -0.2**
ARU *PP **pP** **19 15 50.5 -2.4**
ARU **19 18 33.1**
ARU PPP PPP 19 20 28.2
ARU S **S** **19 25 25.8 -6.9**
ARU SS **SS** **19 31 11.0 0.0**
ARU pmax pmax
comp=Z,27nm,1.0s
ARU Arti 85.33 328 *e*P **P** **19 15 14.5 -0.4**
comp=Z,23nm,1.0s
ARU *e*pP **pP** **19 15 50.9 -2.0**
TT01 Tatalina 89.91 26 *e*P **P** **19 15 37.3 +0.6**
TTA Tatalina 89.92 26 *e*P **P** **19 15 37.3 +0.5**
TTA pmax pmax
comp=Z,26nm,1.7s
TTA Tatalina 89.92 26 *e*P **P** **19 15 37.3 +0.5**
comp=Z,26nm,1.7s
KMBO Kilima Mbogo 91.25 269 P **P** **19 15 43.3 -1.0**
comp=Z,2.6nm,0.7s,baz=50,slow=15,SNR=5.1
NCK Nalchik 91.46 314‖ *e*P **P** **19 15 44.6 +0.3**
NCK pmax pmax
comp=Z,8.0nm,0.6s
CAST Castle Rocks 91.77 26 *e*P **P** **19 15 45.1 -0.2**
comp=Z,6.9nm,1.2s
SUA Susitna One 91.96 28 *e*P **P** **19 15 46.4 0.0**
comp=Z,9.2nm,0.9s
KBZ Khabaz 91.99 314 P **P** **19 15 46.4 -0.3**
comp=Z,3.0nm,0.8s,baz=79,slow=5.2,SNR=7.7
NEY Neytrino 92.05 313‖ *e*P **P** **19 15 47.6 +0.3**
NEY pmax pmax
comp=Z,1.0nm,0.8s
KIV Kislovodsk 92.18 314 *e*P **P** **19 15 47.4 -0.3**
KIV *e* 19 19 34.3
KIV pmax pmax
comp=Z,2.0nm,1.0s
KTH Kantishna Hill 92.31 26 *e*P **P** **19 15 47.6 -0.3**
comp=Z,16nm,0.4s
SML Sawmill 93.15 28 *e*P **P** **19 15 51.5 -0.3**
SML pmax pmax
comp=Z,16nm,0.8s
SML Sawmill 93.15 28 *e*P **P** **19 15 51.5 -0.3**
comp=Z,16nm,0.8s
RND Reindeer 93.19 27 *e*P **P** **19 15 50.2 -1.8**
RND *e**PP **pP** **19 16 28.4 -1.9**
RND pmax pmax
comp=Z,18nm,0.8s
RND Reindeer 93.19 27 *e*P **P** **19 15 50.2 -1.8**
comp=Z,18nm,0.8s
RND *e*pP **pP** **19 16 28.4 -1.9**
MCK McKinley 93.21 26 *e*P **P** **19 15 51.1 -0.9**
MCK pmax pmax
comp=Z,11nm,1.0s
MCK McKinley 93.21 26 *e*P **P** **19 15 51.1 -0.9**
comp=Z,11nm,1.0s
COLD Coldfoot 93.33 23 *e*P **P** **19 15 52.5 0.0**
comp=Z,6.3nm,1.1s
SCM Sheep Creek Mo 93.63 28 *e*P **P** **19 15 53.9 -0.1**
SCM pmax pmax
comp=Z,14nm,1.1s
SCM Sheep Creek Mo 93.63 28 *e*P **P** **19 15 53.9 -0.1**
comp=Z,14nm,1.1s
WRH Wood River Hil 93.70 26 *e*P **P** **19 15 53.3 -0.8**
comp=Z,9.2nm,0.9s
DHY Denali Highway 93.80 27 *e*P **P** **19 15 54.2 -0.7**
comp=Z,9.8nm,0.8s
DHY *e*pP **pP** **19 16 32.0 -1.2**
CCB Clear Creek Bu 93.85 25 *e*P **P** **19 15 53.4 -1.5**
comp=Z,9.2nm,0.8s
IL1 Eielson Array 94.26 25 *e*P **P** **19 15 54.7 -2.1**
ILAR Eielson Array 94.26 25 P **P** **19 15 55.2 -1.6**
comp=Z,2.1nm,0.8s,baz=268,slow=4.4,SNR=16
ILAR PKKP **PKKPdf** **19 32 56.4 -2.1**
comp=Z,0.7nm,0.8s,baz=43,slow=1.6,SNR=7.5
ILB Eielson Array 94.26 25 *e*P **P** **19 15 55.1 -1.6**
DIV Divide 94.27 29 *e*P **P** **19 15 56.1 -0.9**
comp=Z,8.3nm,0.7s
SNAA Sanae 94.98 194 P **P** **19 16 00.9 +0.8**
SNAA Sanae 94.98 194*de*P **P** **19 16 00.0 -0.1**
SNAA Sanae 94.98 194 *e*P **P** **19 16 00.3 +0.2**
comp=Z,18nm,1.2s
DOT Dot Lake 95.35 27 *e*P **P** **19 16 01.0 -0.8**
comp=Z,14nm,0.8s
BALM Baldy 95.92 29 *e*P **P** **19 16 05.3 +0.8**
BALM pmax pmax
comp=Z,14nm,1.6s
BALM Baldy 95.92 29 *e*P **P** **19 16 05.3 +0.8**
comp=Z,14nm,1.6s
KLMR Klimovskoe 95.97 331 *e*P **P** **19 16 01.8 -2.8**
KLMR *e* 19 19 57.5
KLMR pmax pmax
comp=Z,4.0nm,0.8s
VNA1 Neumayer--Stat 96.96 193 P **P** **19 16 09.5 +0.6**
OBN Obninsk 97.19 325*de*P **P** **19 16 09.2 -1.0**
OBN *e* 19 20 08.3
OBN pmax pmax
comp=Z,8.0nm,0.6s
DAWY Dawson 97.44 26 *e*P **P** **19 16 11.2 -0.1**
comp=Z,9.9nm,1.3s
LSZ Lusaka 98.08 253 *e*P **P** **19 16 14.4 -0.9**
LSZ pmax pmax
comp=Z,4.0nm,0.8s
LSZ Lusaka 98.08 253 *e*P **P** **19 16 14.4 -0.9**
comp=Z,4.1nm,0.8s
BR101 Keskin Array S 98.52 309 *e*P **P** **19 16 15.8 -1.0**
BRTR Keskin Array B 98.52 309 P **P** **19 16 15.8 -1.0**
comp=Z,0.7nm,0.7s,baz=133,slow=6.9,SNR=5.0
INK Inuvik 99.71 22 P **Pdif** **19 16 20.6 -0.6**
comp=Z,1.1nm,0.6s,baz=293,slow=7.8,SNR=3.5
INK Inuvik 99.71 22 *e*P **Pdif** **19 16 20.1 -1.1**
INK pmax pmax
comp=Z,8.0nm,1.4s
INK Inuvik 99.71 22 *e*Pdif **Pdif** **19 16 20.1 -1.1**
comp=Z,7.8nm,1.4s
ARA0 ARCESS Array S 101.47 340 *e*Pdif **Pdif** **19 16 28.3 -0.8**
ARA0 *e*PKiKP **PKiKP** **19 20 52.3 0.0**
ARA0 *e*PKKPbc **PKKPbc** **19 32 36.6 -3.2**
ARCES ARCESS Array B 101.47 340 P **Pdif** **19 16 28.3 -0.8**
comp=Z,1.7nm,0.8s,baz=82,slow=6.5,SNR=4.0
ARCES PKiKP **PKiKP** **19 20 52.3 0.0**
comp=Z,2.9nm,1.0s,baz=87,slow=1.9,SNR=6.4
ARCES PKKPbc **PKKPbc** **19 32 36.6 -3.2**
comp=Z,1.2nm,0.6s,baz=294,slow=2.5,SNR=12
FIA0 FINESS Array S 102.46 331 *e*P **Pdif** **19 16 32.9 -0.7**
FIA0 *e* 19 20 55.2
FIA0 FINESS Array S 102.46 331 *e*Pdif **Pdif** **19 16 32.9 -0.7**
FIA0 *e*PP **PKiKP** **19 20 55.1 +0.9**
FINES FINESS Array B 102.46 331 P **Pdif** **19 16 32.9 -0.7**
comp=Z,0.9nm,0.7s,baz=52,slow=9.9,SNR=3.9
FINES PKiKP **PKiKP** **19 20 55.1 +0.9**
comp=Z,1.2nm,0.5s,baz=98,slow=2.8,SNR=13

VTS	Vitosha	106.33	312	ePKiKP	PKiKP	19 21 02.2	+0.1		
YKA	Yellowknife Ar	108.68	26	PKiKP	PKiKP	19 21 05.6	-0.1		
	comp=Z,1.2nm,0.6s,baz=296,slow=1.6,SNR=9.1								
YKA				PKKPbc	PKKPbc	19 32 15.0	-2.6		
	comp=Z,0.5nm,0.5s,baz=112,slow=3.5,SNR=3.9								
OKC	Ostrava-Krasne	108.80	320	ePKP	PKiKP	19 21 07.9	+1.6		
MORC	Moravsky Berou	109.20	320	ePKiKP	PKiKP	19 21 07.7	+0.6		
NB2	NORSAR Subarra	109.51	333	PKPdf	PKiKP	19 21 07.0	-0.4		
	comp=Z,1.1nm,0.8s,baz=68,slow=1.9								
NB200	NORSAR Array S	109.51	333	ePKiKP	PKiKP	19 21 07.2	-0.2		
NOA	NORSAR Array B	109.51	333	PKiKP	PKiKP	19 21 07.2	-0.2		
	comp=Z,1.0nm,0.6s,baz=262,slow=3.1,SNR=6.8								
KRLC	Kraliky	109.62	321	ePKP	PKiKP	19 21 09.0	+1.1		
DPC	Dobruska-Polom	109.84	321	ePKP	PKiKP	19 21 09.2	+0.9		
PRU	Pruhonice	111.04	321	ePKP	PKiKP	19 21 10.8	+0.3		
PRU	Pruhonice	111.04	321	ePKIKP	PKiKP	19 21 10.8	+0.3		
BRG	Berggiesshubel	111.19	322	ePKP	PKiKP	19 21 11.6	+0.8		
	comp=Z,3.0nm,1.0s								
BRG	Berggiesshubel	111.19	322	ePKIKP	PKiKP	19 21 11.6	+0.8		
BRG				pmax	pmax				
	comp=Z,3.0nm,1.0s								
SOKA	Soboth	111.48	317	i PKiKP	PKiKP	19 21 11.7	+0.1		
	comp=Z,1.8nm,0.8s								
GERES	GERESS Array B	111.86	320	PKiKP	PKiKP	19 21 12.3	0.0		
	comp=Z,2.9nm,0.6s,baz=62,slow=1.9,SNR=34								
GEA0	GERESS Array S	111.86	320	ePKiKP	PKiKP	19 21 12.0	-0.2		
KHC	Kasperske Hory	111.86	320	ePKP	PKiKP	19 21 12.1	-0.1		
KHC	Kasperske Hory	111.86	320	ePKIKP	PKiKP	19 21 12.1	-0.1		
ABTA	Abfaltersbach	113.16	318	i PKiKP	PKiKP	19 21 14.1	-0.6		
	comp=Z,3.5nm,0.7s								
MPMC	Manual Prospec	113.57	54	P	PKiKP	19 21 17.2	+1.2		
	baz=278								
WTTA	Wattenberg	113.60	319	i PKiKP	PKiKP	19 21 15.7	0.0		
	comp=Z,9.1nm,0.6s								
WATA	Walderalm	113.62	319	i PKiKP	PKiKP	19 21 15.5	-0.2		
	comp=Z,2.6nm,0.4s								
MOTA	Moosalm	113.93	319	i PKiKP	PKiKP	19 21 16.0	-0.4		
	comp=Z,6.6nm,0.8s								
RETA	Reutte	114.11	319	i PKiKP	PKPdf	19 21 16.2	-0.3		
	comp=Z,1.7nm,0.6s								
FETA	Feichten	114.26	318	i PKiKP	PKPdf	19 21 17.0	0.0		
	comp=Z,2.6nm,0.6s								
HLID	Hailey	114.47	45	P	PKPdf	19 21 18.8	+1.3		
	baz=284								
HLID	Hailey	114.47	45	ePKiKP	PKiKP	19 21 18.4	+0.9		
R11A	Troy Canyon, C	114.69	51	P	PKPdf	19 21 19.1	+1.0		
	baz=281								
DAVA	Damuels	114.74	319	i PKiKP	PKPdf	19 21 17.9	0.0		
	comp=Z,6.4nm,0.5s								
PFO	Pinyon Flats O	114.75	56	PKP	PKPdf	19 21 20.1	+1.8		
	comp=Z,4.2nm,1.0s,baz=270,slow=6.1,SNR=3.6								
BELC	Belle Mtn. Jos	115.07	56	P	PKPdf	19 21 20.4	+1.4		
	baz=278								
GMRC	Granite Mounta	115.23	55	P	PKPdf	19 21 20.6	+1.4		
	baz=279								
TUE	Stuetta	115.33	318	ePKPdf	PKPdf	19 21 18.5	-0.6		
BFO	Black Forest	115.42	320	i PKIKP	PKPdf	19 21 21.2	+2.2		
IRM	Iron Mountain	115.75	56	P	PKPdf	19 21 21.7	+1.6		
	baz=279								
SENIN	Lac Senin/Sane	116.71	319	ePKPdf	PKPdf	19 21 21.6	-0.2		
SNOW	Snow King Moun	117.06	45	ePKPdf	PKPdf	19 21 23.6	+0.9		
LOHW	Long Hollow	117.19	45	ePKPdf	PKPdf	19 21 23.8	+1.1		
KEST	Kesra	117.99	307	PKP	PKPdf	19 21 25.2	+0.8		
	comp=Z,8.7nm,1.1s,baz=294,slow=9.2,SNR=6.2								
KEST	Kesra	117.99	307	ePKPdf	PKPdf	19 21 25.0	+0.6		
BW06	Boulder Array	118.10	45	ePKPdf	PKPdf	19 21 24.2	-0.4		
PD31	Pinedale Array	118.10	45	ePKPdf	PKPdf	19 21 24.5	-0.1		
PDAR	Pinedale Array	118.10	45	PKP	PKPdf	19 21 25.2	+0.6		
	comp=Z,1.4nm,0.6s,baz=233,slow=1.6,SNR=7.6								
PDAR				PKKPbc	PKKPbc	19 31 44.5	-1.0		
	comp=Z,0.7nm,0.7s,baz=98,slow=5.5,SNR=6.1								
ESK	Eskdalemuir	118.89	331	i PKIKP	PKPdf	19 21 23.9	-1.5		
TUC	Tucson	119.66	57	P	PKPdf	19 21 28.2	+0.5		
	baz=281								
RSSD	Black Hills	121.43	42	P	PKPdf	19 21 31.0	0.0		
	baz=292								
121A	Cookes Peak, D	122.10	56	P	PKPdf	19 21 34.0	+1.5		
	baz=283								
FRB	Frobisher Bay	122.39	9	PKP	PKPdf	19 21 31.7	-0.2		
	comp=Z,7.2nm,0.5s,baz=45,slow=1.3,SNR=7.3								
SDCO	Great Sand Dun	122.56	50	P	PKPdf	19 21 34.7	+1.3		
	baz=288								
ANMO	Albuquerque	122.60	53	P	PKPdf	19 21 34.7	+1.3		
	baz=285								
ANMO	Albuquerque	122.60	53	⇓iPKIKP	PKPdf	19 21 34.5	+1.0		
ANMO				pmax	pmax				
	comp=Z,2.0nm,1.0s								
ULM	Lac du Bonnet	123.49	33	PKP	PKPdf	19 21 34.1	-0.3		
	comp=Z,4.9nm,0.6s,baz=342,slow=11,SNR=2.9								
T25A	Trinidad	123.57	50	P	PKPdf	19 21 36.8	+1.5		
	baz=288								
C31A	Landman Farms,	123.75	36	P	PKPdf	19 21 35.1	+0.1		
	baz=300								
B32A	Ashes, Strandq	124.12	35	P	PKPdf	19 21 35.9	+0.2		
	baz=302								
MNTX	Cornudas Mount	124.28	57	P	PKPdf	19 21 37.7	+1.2		
	baz=284								
MNTX	Cornudas Mount	124.28	57	ePKPdf	PKPdf	19 21 36.2	-0.3		
D33A	AnnSam, Waubun	125.18	36	P	PKPdf	19 21 37.7	0.0		
	baz=302								
LTX	Lajitas	126.27	59	ePKIKP	PKPdf	19 21 41.3	+0.8		
LTX	Lajitas	126.27	59	ePKPdf	PKPdf	19 21 41.3	+0.8		
TX31	Lajitas Ar. Si	126.27	59	ePKPdf	PKPdf	19 21 38.0	-2.5		
TX31				ePKPdf	PKiKP	19 21 38.2	-2.7		
TXAR	Lajitas Array	126.27	59	PKP	PKPdf	19 21 41.3	+0.8		
	comp=Z,1.4nm,0.7s,baz=146,slow=1.6,SNR=14								
ECSD	EROS Data Cent	126.43	40	P	PKPdf	19 21 40.6	+0.3		
	baz=299								
BGNE	Belgrade	126.50	43	P	PKPdf	19 21 41.4	+0.9		
	baz=296								
H34A	Spellman Lake,	126.50	38	P	PKPdf	19 21 41.2	+0.9		
	baz=300								
ES19	SONSECA Array	126.78	315	ePKPdf	PKPdf	19 21 41.4	+0.3		
ESDC	Sonseca Array	126.83	315	PKP	PKPdf	19 21 41.6	+0.4		
	comp=Z,0.5nm,0.4s,baz=25,slow=2.6,SNR=10								
ESDC				PP	PP	19 23 39.3	-1.0		
	comp=Z,1.0nm,0.9s,baz=82,slow=9.2,SNR=4.3								
E36A	McGregor	127.01	35	P	PKPdf	19 21 41.5	+0.2		
	baz=304								
H35A	Sunnyside Ranc	127.06	38	P	PKPdf	19 21 42.3	+0.9		
	baz=301								
PAB	San Pablo	127.16	315	ePKIKP	PKPdf	19 21 42.3	+0.4		
PAB	San Pablo	127.16	315	ePKPdf	PKPdf	19 21 42.3	+0.4		
F36A	Milaca	127.22	36	P	PKPdf	19 21 42.4	+0.7		
	baz=303								
TOA0	Torodi Ar. Sit	127.58	281	ePKPdf	PKPdf	19 21 43.4	+0.1		
TOA0				ePKPdf	PKiKP	19 21 43.5	-0.3		
TORD	Torodi Ar. Bea	127.58	281	PKP	PKPdf	19 21 43.3	+0.1		
	comp=Z,7.3nm,0.7s,baz=74,slow=2.0,SNR=33								
TOA1	Torodi Ar. Sit	127.58	281	ePKPdf	PKPdf	19 21 43.3	+0.1		
Q33A	Connelly Farm,	127.74	46	P	PKPdf	19 21 43.6	+0.7		
	baz=295								
PBRG	Braganca	127.79	318	ePKPdf	PKPdf	19 21 44.1	+1.1		
P34A	Walnut Farm, R	128.22	45	P	PKPdf	19 21 44.5	+0.6		
	baz=296								
MVO	Moncorvo	128.28	318	ePKPdf	PKPdf	19 21 45.4	+1.4		
I37A	Lemond, Waseca	128.29	38	P	PKPdf	19 21 44.6	+0.8		
	baz=302								
Q34A	Chapman	128.40	45	P	PKPdf	19 21 45.4	+1.2		
	baz=295								
PVRL	Vila Real	128.68	318	ePKPdf	PKPdf	19 21 46.5	+1.8		
POLO	Lamas de Olo	128.69	318	ePKPdf	PKPdf	19 21 46.4	+1.6		
PGAV	Gavieira, Arco	128.71	319	ePKPdf	PKPdf	19 21 46.1	+1.3		
PLCA	Paso Flores	128.96	161	PKP	PKPdf	19 21 45.6	+0.3		
	comp=Z,5.7nm,0.8s,baz=220,slow=2.1,SNR=5.6								
MTE	Manteigas	128.99	317	ePKPdf	PKPdf	19 21 47.0	+1.7		
PVIS	Viseu	129.07	318	i P	SKPbc	19 24 53.7	+0.8		
PCBR	Castelo Branco	129.20	316	ePKPdf	PKPdf	19 21 47.0	+1.4		
JCT	Junction City	129.22	57	P	PKPdf	19 21 47.0	+1.0		
	baz=287								
JCT	Junction City	129.22	57	ePKIKP	PKPdf	19 21 47.3	+1.3		
JCT	Junction City	129.22	57	ePKPdf	PKPdf	19 21 47.3	+1.3		
PMRV	Marv??o	129.33	316	ePKPdf	PKPdf	19 21 47.0	+1.1		
PMRV				i P	SKPbc	19 24 54.1	+0.3		
333A	Richland Sprin	129.64	55	P	PKPdf	19 21 47.6	+0.9		
	baz=288								
PBAR	Barrancos	129.64	314	ePKPdf	PKPdf	19 21 47.8	+1.3		
PBAR				i P	SKPbc	19 24 55.5	+0.7		
433A	Art	129.72	56	P	PKPdf	19 21 47.8	+0.8		
	baz=287								
PESTR	Estremoz	129.72	315	ePKPdf	PKPdf	19 21 48.5	+1.8		
PESTR				i P	SKPbc	19 24 55.9	+0.8		
PCAS	Casmilo, Conde	129.79	317	ePKPdf	PKPdf	19 21 48.3	+1.5		
PTOM	Tomar	129.94	317	i P	SKPbc	19 24 55.6	-0.2		
EVO	Evora	130.17	315	i P	SKPbc	19 24 56.4	-0.3		
PBEJ	Beja	130.29	315	i P	SKPbc	19 24 56.9	-0.3		
434A	Burnet	130.38	56	P	PKPdf	19 21 49.4	+1.2		
	baz=288								
S37A	Fort Scott	130.41	46	P	PKPdf	19 21 48.7	+0.7		
	baz=296								
P38A	Dawn	130.44	43	P	PKPdf	19 21 48.9	+0.9		
	baz=299								
TUL1	Leonard	130.49	48	eSKPbc	SKPab	19 24 58.5	+0.5		
PCVE	Castro Verde	130.59	314	ePKPdf	PKPdf	19 21 47.9	-0.5		
PCVE				i P	SKPbc	19 24 58.3	+0.1		
MESJ	Messejana	130.63	315	eP	PKPdf	19 21 47.6	-0.8		
MESJ	Messejana	130.63	315	ePKPdf	PKPdf	19 21 50.0	+1.6		
MESJ				i P	SKPbc	19 24 58.4	+0.1		
WHTX	Lake Whitney,	130.66	54	eSKPbc	SKPab	19 24 59.6	+0.8		
PBDV	Barranco-do-Ve	130.69	314	i P	SKPbc	19 24 59.4	+0.8		
PNCL	Nicolau / Gran	130.72	315	ePKPdf	PKPdf	19 21 50.7	+2.1		
PNCL				i P	SKPbc	19 24 59.8	+1.1		
JFWS	Jewell Farm	130.81	38	eSKPbc	SKPbc	19 24 57.9	-1.0		
SCHQ	Schefferville	131.08	12	PKP	PKPdf	19 21 49.2	+0.4		
	comp=Z,3.0nm,0.4s,baz=43,slow=3.8,SNR=4.0								
SCHQ				SKPbc	SKPbc	19 24 58.9	-0.6		
	comp=Z,9.7nm,0.7s,baz=6.7,slow=3.6,SNR=9.2								
Q39A	Willow Grove F	131.10	43	P	PKPdf	19 21 49.1	-0.1		
	baz=299								
S39A	Bolivar	131.50	45	P	PKPdf	19 21 50.8	+0.7		
	baz=298								
O41A	Passleys Farm,	131.95	41	P	PKPdf	19 21 51.7	+0.8		
	baz=302								
X39A	Fountain Ranch	132.32	49	P	PKPdf	19 21 53.2	+1.5		
	baz=294								
P42A	Winchester	132.58	41	P	PKPdf	19 21 52.7	+0.6		
	baz=302								
MIAR	Mount Ida	132.71	49	eSKPbc	SKPbc	19 25 06.1	+0.2		
DBIC	Dimbokro	133.87	272	PKP	PKPdf	19 21 56.0	+0.8		
	comp=Z,4.5nm,0.6s,baz=66,slow=8.6,SNR=7.5								
DBIC				SKPbc	SKPbc	19 25 08.9	-1.5		
	comp=Z,16nm,1.0s,baz=101,slow=4.3,SNR=6.9								
SADO	Sadowa	135.60	28	PKP	PKPdf	19 21 58.3	+0.8		
	comp=Z,4.0nm,0.7s,baz=289,slow=7.7,SNR=3.6								
TKL	Tuckaleechee C	139.10	42	PKP	PKPdf	19 22 04.9	+0.6		
	comp=Z,6.4nm,0.6s,baz=166,slow=5.8,SNR=9.3								
LCO	Las Campanas	139.29	154	ePKPpre	PKPpre	19 21 57.1			
PB10	IPOC Station P	144.01	149	ePKPdf	PKPdf	19 22 12.7	-0.7		
DWPF	Disney Wildern	144.87	50	ePKPbc	PKPab	19 22 14.4	+0.2		
LVC	Limon Verde	145.58	150	ePKPdf	PKPab	19 22 18.3	+0.8		
CPUP	Villa Florida	145.99	170	PKPbc	PKPab	19 22 18.4	0.0		
	comp=Z,22nm,0.9s,baz=189,slow=2.5,SNR=41								
CPUP	Villa Florida	145.99	170	ePKPdf	PKPbc	19 22 17.6	-0.1		
PB01	IPOC Station P	146.60	148	ePKPbc	PKPbc	19 22 19.7	-0.1		
NNA	Nana	148.17	127	i PKP2	PKPbc	19 22 25.8	+1.6		
NNA	Nana	148.17	127	ePKPbc	PKPbc	19 22 25.4	+1.2		
LPAZ	La Paz	151.20	145	PKP	PKPdf	19 22 27.6	+1.4		
	comp=Z,5.2nm,1.1s,baz=78,slow=1.4,SNR=12								
LPAZ				PKPbc	PKiKP	19 22 33.4	+0.7		
	comp=Z,17nm,0.8s,baz=133,slow=2.3,SNR=49								
LPAZ				PKPab	PKPab	19 22 42.9	+2.4		
	comp=Z,25nm,0.6s,baz=173,slow=2.9,SNR=28								
LPAZ	La Paz	151.20	145	ePKIKP	PKPdf	19 22 27.3	+1.0		
LPAZ	La Paz	151.20	145	ePKPdf	PKPdf	19 22 27.3	+1.0		
LPAZ				ePKPbc	PKiKP	19 22 33.5	+0.7		
LPAZ				ePKPab	PKPab	19 22 42.4	+1.9		
OTAV	Otavalo	152.05	104	ePKPdf	PKPdf	19 22 29.2	+1.8		
OTAV				ePKPbc	PKiKP	19 22 36.1	+1.7		
RUSC	La Rusia	158.35	93	ePKPdf	PKPdf	19 22 33.6	-2.4		
SAML	Samuel	159.94	144	ePKPdf	PKPdf	19 22 37.8	+0.6		
SAML				ePKPab	PKPab	19 23 17.4	+0.3		

*CSEM **09** 19:05:04.6, 38˚.05N×14˚.78E, h8km, ML2.6/34*

ROM 09 19:05:04.6±0.1, 38˚.05N×14˚.78E, h8km±1km, Ml2.6/34, 6C-2D, Error ellipse: s-maj=1.4km s-min=0.9km az=163.0, Sicily

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MUCR	Ucria	0.07	96	⇓iPg	Pg	Pg	19 05 07.2	+0.6
MUCR				Sg	Sg	Sg	19 05 09.0	+0.9
	12μm,0.2s							
MUCR	Ucria	0.07	96	⇓iPg	Pg	Pg	19 05 07.2	+0.6
MUCR				Sg	Sg	Sg	19 05 09.0	+0.9
	12μm,0.2s							
MNO	Monte Soro	0.14	210	⇑iPg	Pg	Pg	19 05 07.8	+0.2
MNO				Sg	Sg	Sg	19 05 10.2	+0.5
	1μm,0.1s							
MNO	Monte Soro	0.14	210	⇑iPg	Pg	Pg	19 05 07.8	+0.2
MNO				Sg	Sg	Sg	19 05 10.2	+0.5
	1μm,0.1s							
MSFR	San Fratello	0.15	263	⇑iPg	Pg	Pg	19 05 08.2	+0.4
MSFR				Sg	Sg	Sg	19 05 10.8	+0.8
	882nm,0.3s							
MSFR	San Fratello	0.15	263	⇑iPg	Pg	Pg	19 05 08.2	+0.4
MSFR				Sg	Sg	Sg	19 05 10.8	+0.8
	882nm,0.3s							
NOV	Novara	0.28	95	Pg	Pg	Pg	19 05 10.8	+0.6
NOV				Sg	Sg	Sb	19 05 16.9	0.0
	817nm,0.3s							
NOV	Novara	0.28	95	Pg	Pg	Pg	19 05 10.8	+0.6
NOV				Sg	Sg	Sb	19 05 16.9	0.0
	817nm,0.3s							
VPL	Vulcano Piano	0.36	26	Pg	Pg	Pb	19 05 12.9	-0.5
	3μm,0.4s							
VPL	Vulcano Piano	0.36	26	Pg	Pg	Pb	19 05 12.9	-0.5
	3μm,0.4s							
MCSR	Castroreale	0.37	88	Pg	Pg	Pg	19 05 12.0	+0.1
MCSR				Sg	Sg	Sb	19 05 18.7	-0.8
	974nm,0.3s							
MCSR	Castroreale	0.37	88	Pg	Pg	Pg	19 05 12.0	+0.1
MCSR				Sg	Sg	Sb	19 05 18.7	-0.8
	974nm,0.3s							
GALF	Gagliano Caste	0.38	207	Pg	Pg	Pg	19 05 12.7	+0.7
GALF				Sg	Sg	Sb	19 05 20.1	+0.4
	821nm,0.5s							
GALF	Gagliano Caste	0.38	207	Pg	Pg	Pg	19 05 12.7	+0.7
GALF				Sg	Sg	Sb	19 05 20.1	+0.4
	821nm,0.5s							
ESLN	Serra La Nave	0.39	157	Pg	Pg	Pb	19 05 13.4	-0.5
	962nm,0.6s							
ESLN	Serra La Nave	0.39	157	Pg	Pg	Pb	19 05 13.4	-0.5
	962nm,0.6s							
MMME	Mongiuffi-Meli	0.39	107	Pg	Pg	Pg	19 05 12.7	+0.5
MMME				Sg	Sg	Sb	19 05 19.1	-1.0
	322nm,0.5s							
MMME	Mongiuffi-Meli	0.39	107	Pg	Pg	Pg	19 05 12.7	+0.5
MMME				Sg	Sg	Sb	19 05 19.1	-1.0
	322nm,0.5s							
LLI	Lipari	0.41	18	Pg	Pg	Pb	19 05 14.1	-0.1
	2μm,0.4s							
LLI	Lipari	0.41	18	Pg	Pg	Pb	19 05 14.1	-0.1
	2μm,0.4s							
MILZ	Milazzo	0.42	58	Pg	Pg	Pb	19 05 13.5	-0.7
MILZ				Sg	Sg	Sb	19 05 19.7	-1.0
	849nm,0.7s							
MILZ	Milazzo	0.42	58	Pg	Pg	Pb	19 05 13.5	-0.7
MILZ				Sg	Sg	Sb	19 05 19.7	-1.0
	849nm,0.7s							
ECNV	Catenanuova	0.46	187	Pg	Pg	Pb	19 05 15.0	0.0
	659nm,0.7s							
ECNV	Catenanuova	0.46	187	Pg	Pg	Pb	19 05 15.0	0.0
	659nm,0.7s							
MPNC	Port Mandanici	0.46	78	Pg	Pg	Pg	19 05 14.1	+0.6
	641nm,0.3s							
MPNC	Port Mandanici	0.46	78	Pg	Pg	Pg	19 05 14.1	+0.6
	641nm,0.3s							
CAGR	Agira	0.48	208	Pg	Pg	Pb	19 05 15.5	+0.1
	522nm,0.5s							
CAGR	Agira	0.48	208	Pg	Pg	Pb	19 05 15.5	+0.1
	522nm,0.5s							
PLLN	Pollina	0.51	264	Pg	Pg	Pg	19 05 14.9	+0.5
PLLN				Sg	Sg	Sb	19 05 23.4	0.0
	316nm,0.3s							
PLLN	Pollina	0.51	264	Pg	Pg	Pg	19 05 14.9	+0.5
PLLN				Sg	Sg	Sb	19 05 23.4	0.0
	316nm,0.3s							
IFIL	Filicudi I Eol	0.54	342	Pg	Pg	Pb	19 05 15.8	-0.6
	55μm,24.0s							
IFIL	Filicudi I Eol	0.54	342	Pg	Pg	Pb	19 05 15.8	-0.6
	55μm,24.0s							
IACL	Alicudi	0.59	325	Pg	Pg	Pb	19 05 16.6	-0.6
	860nm,0.3s							
IACL	Alicudi	0.59	325	Pg	Pg	Pb	19 05 16.6	-0.6
	860nm,0.3s							
GIB	Gibilmanna	0.60	264	Pg	Pg	Pg	19 05 16.3	+0.1
GIB				Sg	Sg	Sb	19 05 25.3	-0.8
	376nm,0.4s							
GIB	Gibilmanna	0.60	264	Pg	Pg	Pg	19 05 16.3	+0.1
GIB				Sg	Sg	Sb	19 05 25.3	-0.8
	376nm,0.4s							
MSRU	Castanea	0.61	70	Pg	Pg	Pb	19 05 17.0	-0.6
	366nm,0.4s							
MSRU	Castanea	0.61	70	Pg	Pg	Pb	19 05 17.0	-0.6
	366nm,0.4s							
RESU	Resuttano	0.70	235	Pg	Pg	Pb	19 05 19.5	+0.3
	178nm,0.5s							
RESU	Resuttano	0.70	235	Pg	Pg	Pb	19 05 19.5	+0.3
	178nm,0.5s							
HLNI	Lentini	0.70	174	⇑iPg	Pg	Pg	19 05 18.5	+0.3
HLNI				Sg	Sg	Sb	19 05 30.1	+1.1
	219nm,0.4s							
HLNI	Lentini	0.70	174	⇑iPg	Pg	Pg	19 05 18.5	+0.3
HLNI				Sg	Sg	Sb	19 05 30.1	+1.1
	219nm,0.4s							
HCRL	Carlentini	0.79	165	Pg	Pg	Pg	19 05 19.8	0.0
	402nm,0.2s							
HCRL	Carlentini	0.79	165	Pg	Pg	Pg	19 05 19.8	0.0
	402nm,0.2s							
MSCL	Scilla	0.81	77	Pg	Pg	Pg	19 05 20.3	0.0
	362nm,0.8s							
MSCL	Scilla	0.81	77	Pg	Pg	Pg	19 05 20.3	0.0
	362nm,0.8s							
HAGA	Augusta	0.82	159	Pg	Pg	Pg	19 05 20.2	-0.2
	175nm,0.6s							
HAGA	Augusta	0.82	159	Pg	Pg	Pg	19 05 20.2	-0.2
	175nm,0.6s							
AGST	Augusta-Monte	0.87	156	Pg	Pg	Pg	19 05 21.0	-0.3
	149nm,0.6s							
AGST	Augusta-Monte	0.87	156	Pg	Pg	Pg	19 05 21.0	-0.3
	149nm,0.6s							
ALJA	Alia	0.87	250	Pg	Pg	Pb	19 05 21.7	-0.3
	138nm,0.6s							
ALJA	Alia	0.87	250	Pg	Pg	Pb	19 05 21.7	-0.3
	138nm,0.6s							
HVZN	Vizzini	0.87	184	Pg	Pg	Pg	19 05 21.5	+0.1
	348nm,0.6s							
HVZN	Vizzini	0.87	184	Pg	Pg	Pg	19 05 21.5	+0.1
	348nm,0.6s							
RAFF	Raffo Rosso	0.89	202	Pg	Pg	Pb	19 05 22.6	+0.2
	188nm,0.9s							
RAFF	Raffo Rosso	0.89	202	Pg	Pg	Pb	19 05 22.6	+0.2
	188nm,0.9s							
CEL	Celeste	0.90	76	Pg	Pg	Pg	19 05 21.9	0.0
	70nm,0.3s							
CEL	Celeste	0.90	76	Pg	Pg	Pg	19 05 21.9	0.0
	70nm,0.3s							
SSY	Sortino	0.93	165	Pg	Pg	Pg	19 05 22.0	-0.4
	243nm,0.5s							
SSY	Sortino	0.93	165	Pg	Pg	Pg	19 05 22.0	-0.4
	243nm,0.5s							
MPAZ	Palizzi	0.97	95	Pg	Pg	Pg	19 05 23.1	-0.2
	108nm,0.5s							
MPAZ	Palizzi	0.97	95	Pg	Pg	Pg	19 05 23.1	-0.2
	108nm,0.5s							
SOI	Samo	1.00	88	Pg	Pg	Pg	19 05 23.2	-0.7
	71nm,0.5s							
SOI	Samo	1.00	88	Pg	Pg	Pg	19 05 23.2	-0.7
	71nm,0.5s							
JOPP	Joppolo	1.03	57	Pg	Pg	Pg	19 05 24.0	-0.4
	48nm,0.4s							
JOPP	Joppolo	1.03	57	Pg	Pg	Pg	19 05 24.0	-0.4
	48nm,0.4s							
HMD

GIB	**Gibilmanna** 376nm,0.4s	**0.60**	**265**	Pg	Pg	19 06 01.4	+0.1
MSRU	**Castanea** 366nm,0.4s	**0.61**	**69**	Pg	Pg	19 06 01.9	+0.6
MSRU	**Castanea** 366nm,0.4s	**0.61**	**69**	Pg	Pg	19 06 01.9	+0.6
HLNI	**Lentini**	**0.70**	**175**	Pg	Pg	19 06 03.5	+0.5
HLNI	219nm,0.4s			Sg	Sb	19 06 14.7	+0.8
HLNI	**Lentini**	**0.70**	**175**	Pg	Pg	19 06 03.5	+0.5
HLNI	219nm,0.4s			Sg	Sb	19 06 14.7	+0.8
HCRL	**Carlentini** 402nm,0.2s	**0.79**	**166**	Pg	Pg	19 06 04.7	0.0
HCRL	**Carlentini** 402nm,0.2s	**0.79**	**166**	Pg	Pg	19 06 04.7	0.0
MSCL	**Scilla** 362nm,0.8s	**0.81**	**76**	Pg	Pg	19 06 05.3	+0.1
MSCL	**Scilla** 362nm,0.8s	**0.81**	**76**	Pg	Pg	19 06 05.3	+0.1
HAGA	**Augusta** 175nm,0.6s	**0.81**	**159**	Pg	Pg	19 06 05.2	0.0
HAGA	**Augusta** 175nm,0.6s	**0.81**	**159**	Pg	Pg	19 06 05.2	0.0
HVZN	**Vizzini** 348nm,0.6s	**0.87**	**184**	Pg	Pb	19 06 07.3	+0.3
HVZN	**Vizzini** 348nm,0.6s	**0.87**	**184**	Pg	Pb	19 06 07.3	+0.3
RAFF	**Raffo Rosso** 188nm,0.9s	**0.89**	**202**	Pg	Pb	19 06 07.7	+0.4
RAFF	**Raffo Rosso** 188nm,0.9s	**0.89**	**202**	Pg	Pb	19 06 07.7	+0.4
CEL	**Celeste** 70nm,0.3s	**0.90**	**76**	Pg	Pg	19 06 06.7	-0.2
CEL	**Celeste** 70nm,0.3s	**0.90**	**76**	Pg	Pg	19 06 06.7	-0.2
SSY	**Sortino** 243nm,0.5s	**0.92**	**166**	Pg	Pg	19 06 07.3	+0.1
SSY	**Sortino** 243nm,0.5s	**0.92**	**166**	Pg	Pg	19 06 07.3	+0.1
MPAZ	**Palizzi** 108nm,0.5s	**0.97**	**95**	Pg	Pg	19 06 08.1	-0.1
MPAZ	**Palizzi** 108nm,0.5s	**0.97**	**95**	Pg	Pg	19 06 08.1	-0.1
SOI	**Samo** 71nm,0.5s	**1.00**	**88**	Pg	Pg	19 06 08.2	-0.6
SOI	**Samo** 71nm,0.5s	**1.00**	**88**	Pg	Pg	19 06 08.2	-0.6
JOPP	**Joppolo** 48nm,0.4s	**1.03**	**57**	Pg	Pg	19 06 08.9	-0.5
JOPP	**Joppolo** 48nm,0.4s	**1.03**	**57**	Pg	Pg	19 06 08.9	-0.5
HMDC	**Modica** 175nm,0.4s	**1.08**	**180**	Pg	Pg	19 06 10.1	-0.3
HMDC	**Modica** 175nm,0.4s	**1.08**	**180**	Pg	Pg	19 06 10.1	-0.3
HAVL	**Avola** 190nm,0.6s	**1.12**	**166**	Pg	Pg	19 06 10.2	-0.8
HAVL	**Avola** 190nm,0.6s	**1.12**	**166**	Pg	Pg	19 06 10.2	-0.8

*CSEM **09** 19:07:52.1,38.03N×14.79E,h9km,ML2.0/9*
ROM 09 19:07:52.1±0.1,38.03N×14.79E,h9km,Ml2.0/9,2C,Error ellipse: s-maj=1.3km s-min=0.7km az=170.0,Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUCR	**Ucria**	**0.07**	**78**	↑*i*P*g*	Pg	19 07 54.6	+0.3
MUCR				Sg	Sg	19 07 56.4	+0.6
MUCR	**Ucria**	**0.07**	**78**	↑*i*P*g*	Pg	19 07 54.6	+0.3
MUCR				Sg	Sg	19 07 56.4	+0.6
MNO	**Monte Soro**	**0.12**	**217**	Pg	Pg	19 07 55.4	+0.4
MNO	179nm,0.1s			Sg	Sg	19 07 57.8	+0.8
MNO	**Monte Soro**	**0.12**	**217**	Pg	Pg	19 07 55.4	+0.4
MNO	179nm,0.1s			Sg	Sg	19 07 57.8	+0.8
MSFR	**San Fratello**	**0.15**	**272**	Pg	Pg	19 07 55.8	+0.4
MSFR	89nm,0.6s			Sg	Sg	19 07 58.5	+0.8
MSFR	**San Fratello**	**0.15**	**272**	Pg	Pg	19 07 55.8	+0.4
MSFR	89nm,0.6s			Sg	Sg	19 07 58.5	+0.8
NOV	**Novara**	**0.28**	**90**	Pg	Pg	19 07 58.3	+0.6
NOV	73nm,0.3s			Sg	Sb	19 08 03.0	-1.2
NOV	**Novara**	**0.28**	**90**	Pg	Pg	19 07 58.3	+0.6
NOV	73nm,0.3s			Sg	Sb	19 08 03.0	-1.2
GALF	**Gagliano Caste** 82nm,0.5s	**0.36**	**209**	Pg	Pb	19 08 00.3	-0.5
GALF	**Gagliano Caste** 82nm,0.5s	**0.36**	**209**	Pg	Pb	19 08 00.3	-0.5
MCSR	**Castroreale**	**0.37**	**84**	Pg	Pg	19 07 59.7	+0.3
MCSR	**Castroreale**	**0.37**	**84**	Pg	Pg	19 07 59.7	+0.3
MMME	**Mongiuffi-Meli** 34nm,0.5s	**0.38**	**104**	Pg	Pb	19 08 00.4	-0.7
MMME	**Mongiuffi-Meli** 34nm,0.5s	**0.38**	**104**	Pg	Pb	19 08 00.4	-0.7
VPL	**Vulcano Piano** 968nm,0.4s	**0.38**	**24**	Pg	Pb	19 08 00.5	-0.6
VPL				Sg	Sb	19 08 06.6	-0.6
VPL	**Vulcano Piano** 968nm,0.4s	**0.38**	**24**	Pg	Pb	19 08 00.5	-0.6
VPL				Sg	Sb	19 08 06.6	-0.6
MILZ	**Milazzo** 82nm,0.5s	**0.43**	**55**	Pg	Pg	19 08 00.8	+0.4
MILZ	**Milazzo** 82nm,0.5s	**0.43**	**55**	Pg	Pg	19 08 00.8	+0.4
MPNC	**Port Mandanici** 274nm,0.5s	**0.46**	**75**	Pg	Pb	19 08 01.8	-0.7
MPNC	**Port Mandanici** 274nm,0.5s	**0.46**	**75**	Pg	Pb	19 08 01.8	-0.7
IACL	**Alicudi** 143nm,0.3s	**0.61**	**326**	Pg	Pb	19 08 04.6	-0.3
IACL	**Alicudi** 143nm,0.3s	**0.61**	**326**	Pg	Pb	19 08 04.6	-0.3
MSRU	**Castanea** 83nm,0.5s	**0.62**	**67**	Pg	Pb	19 08 04.7	-0.4
MSRU	**Castanea** 83nm,0.5s	**0.62**	**67**	Pg	Pb	19 08 04.7	-0.4

IDC 09 19:08:26.4±5.9,28.45S×177.38W,h0km,mb4.0/2, mb1 4.3/2,mb1mx3.8/22,mbtmp4.0/2,Error ellipse: s-maj=317.4km s-min=43.1km az=158.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs** 1.8nm,0.8s,baz=100,slow=6.7,SNR=2.4	**43.79**	**265**	P	P	19 16 33.9	-0.3
WRA	**Warramunga Arr** 0.9nm,0.4s,baz=109,slow=8.0,SNR=4.7	**44.60**	**270**	P	P	19 16 40.9	+0.1
FINES	**FINESS Array B** 1.8nm,0.5s,baz=64,slow=3.2,SNR=22	**143.49**	**341**	PKP	PKPbc	19 27 59.8	+0.2
NOA	**NORSAR Array B** 0.4nm,0.7s,baz=13,slow=4.6,SNR=2.7	**146.90**	**352**	PKPbc	PKPbc	19 28 10.1	-0.1
AKASG	**Malin Array Be** 0.5nm,0.4s,baz=47,slow=2.5,SNR=4.7	**150.04**	**325**	PKPbc	PKPbc	19 28 18.1	-0.6

*CSEM **09** 19:08:51.6,38.03N×14.79E,h8km±1km,MD2.3/19*
ROM 09 19:08:51.6±0.1,38.03N×14.79E,h8km±1km,Md2.3/19, Ml2.2/13,Error ellipse: s-maj=1.6km s-min=1.0km az=170.0,Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUCR	**Ucria**	**0.07**	**79**	Pg	Pg	19 08 54.1	+0.4
MUCR				Sg	Sg	19 08 56.0	+0.8
MUCR	**Ucria**	**0.07**	**79**	Pg	Pg	19 08 54.1	+0.4
MUCR				Sg	Sg	19 08 56.0	+0.8
MNO	**Monte Soro**	**0.12**	**217**	Pg	Pg	19 08 54.7	+0.3
MNO	233nm,0.1s			Sg	Sg	19 08 57.2	+0.8
MNO	**Monte Soro**	**0.12**	**217**	Pg	Pg	19 08 54.7	+0.3
MNO	233nm,0.1s			Sg	Sg	19 08 57.2	+0.8
MSFR	**San Fratello**	**0.15**	**272**	Pg	Pg	19 08 55.2	+0.3
MSFR	158nm,0.6s			Sg	Sg	19 08 57.8	+0.7
MSFR	**San Fratello**	**0.15**	**272**	Pg	Pg	19 08 55.2	+0.3
MSFR	158nm,0.6s			Sg	Sg	19 08 57.8	+0.7
NOV	**Novara**	**0.28**	**90**	Pg	Pg	19 08 57.8	+0.7
NOV	129nm,0.3s			Sg	Sg	19 09 01.9	+1.0
NOV	**Novara**	**0.28**	**90**	Pg	Pg	19 08 57.8	+0.7
NOV	129nm,0.3s			Sg	Sg	19 09 01.9	+1.0
GALF	**Gagliano Caste** 145nm,0.5s	**0.36**	**209**	Pg	Pb	19 08 59.8	-0.5
GALF	**Gagliano Caste** 145nm,0.5s	**0.36**	**209**	Pg	Pb	19 08 59.8	-0.5
MCSR	**Castroreale**	**0.37**	**84**	Pg	Pg	19 08 59.1	+0.2
MCSR				Sg	Sb	19 09 05.6	-0.8
MCSR	**Castroreale**	**0.37**	**84**	Pg	Pg	19 08 59.1	+0.2
MCSR				Sg	Sb	19 09 05.6	-0.8
MMME	**Mongiuffi-Meli** 55nm,0.5s	**0.38**	**104**	Pg	Pg	19 08 59.8	+0.7
MMME	**Mongiuffi-Meli** 55nm,0.5s	**0.38**	**104**	Pg	Pg	19 08 59.8	+0.7
VPL	**Vulcano Piano** 2μm,0.4s	**0.38**	**24**	Pg	Pb	19 09 00.0	-0.7
VPL	**Vulcano Piano** 2μm,0.4s	**0.38**	**24**	Pg	Pb	19 09 00.0	-0.7
MILZ	**Milazzo** 168nm,0.5s	**0.43**	**55**	Pg	Pg	19 09 00.6	+0.7
MILZ				Sg	Sb	19 09 06.9	-1.1
MILZ	**Milazzo** 168nm,0.5s	**0.43**	**55**	Pg	Pg	19 09 00.6	+0.7
MILZ				Sg	Sb	19 09 06.9	-1.1
LLI	**Lipari** 275nm,0.4s	**0.43**	**17**	Pg	Pb	19 09 02.0	+0.5
LLI	**Lipari** 275nm,0.4s	**0.43**	**17**	Pg	Pb	19 09 02.0	+0.5
MPNC	**Port Mandanici** 695nm,0.5s	**0.46**	**75**	Pg	Pb	19 09 01.3	-0.7
MPNC				Sg	Sb	19 09 08.4	-0.6
MPNC	**Port Mandanici** 695nm,0.5s	**0.46**	**75**	Pg	Pb	19 09 01.3	-0.7
MPNC				Sg	Sb	19 09 08.4	-0.6
IFIL	**Filicudi I Eol** 263μm,35.0s	**0.56**	**342**	Pg	Pb	19 09 03.5	-0.2
IFIL	**Filicudi I Eol** 263μm,35.0s	**0.56**	**342**	Pg	Pb	19 09 03.5	-0.2
GIB	**Gibilmanna** 63nm,0.5s	**0.60**	**266**	Pg	Pg	19 09 03.3	+0.1
GIB	**Gibilmanna** 63nm,0.5s	**0.60**	**266**	Pg	Pg	19 09 03.3	+0.1
IACL	**Alicudi** 143nm,0.3s	**0.61**	**326**	Pg	Pg	19 09 03.7	+0.4
IACL	**Alicudi** 143nm,0.3s	**0.61**	**326**	Pg	Pg	19 09 03.7	+0.4
MSRU	**Castanea** 83nm,0.5s	**0.62**	**68**	Pg	Pg	19 09 03.8	+0.3
MSRU	**Castanea** 83nm,0.5s	**0.62**	**68**	Pg	Pg	19 09 03.8	+0.3
HLNI	**Lentini** 38nm,0.3s	**0.68**	**174**	Pg	Pb	19 09 05.5	-0.2
HLNI	**Lentini** 38nm,0.3s	**0.68**	**174**	Pg	Pb	19 09 05.5	-0.2
HCRL	**Carlentini**	**0.77**	**165**	Pg	Pb	19 09 06.9	-0.3
HCRL	**Carlentini**	**0.77**	**165**	Pg	Pb	19 09 06.9	-0.3
MSCL	**Scilla**	**0.82**	**75**	Pg	Pg	19 09 07.3	0.0
MSCL	**Scilla**	**0.82**	**75**	Pg	Pg	19 09 07.3	0.0
MPAZ	**Palizzi**	**0.97**	**94**	Pg	Pg	19 09 10.3	+0.1
MPAZ	**Palizzi**	**0.97**	**94**	Pg	Pg	19 09 10.3	+0.1

IDC 09 19:21:17.8±2.9,33.55S×178.75W,h0km,mb3.8/2, mb1 4.1/3,mb1mx3.7/28,mbtmp3.9/3,ML4.1/1,Error ellipse: s-maj=67.6km s-min=35.2km az=119.0,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera** 5.1nm,0.3s,baz=261,slow=4.3,SNR=30	**5.78**	**214**	Pn	Pn	19 22 44.6	-0.1
URZ	3.1nm,0.3s,baz=222,slow=19,SNR=7.6			Sn	Sn	19 23 50.9	-0.7
ASAR	**Alice Springs** 0.9nm,0.7s,baz=110,slow=7.1,SNR=14	**42.41**	**271**	P	P	19 29 14.3	0.0
WRA	**Warramunga Arr** 1.1nm,0.6s,baz=116,slow=7.9,SNR=14	**43.68**	**276**	P	P	19 29 24.6	-0.1
FINES	**FINESS Array B** 0.8nm,0.5s,baz=37,slow=4.6,SNR=10	**147.84**	**338**	PKPbc	PKPbc	19 41 03.1	-0.8

*IDC **09** 19:25:57.0±1.4,32.07S×57.34E,h0km,mb3.9/8, mb1 4.1/9,mb1mx3.7/55,mbtmp4.0/9,ML4.3/1,Error ellipse: s-maj=53.0km s-min=22.7km az=31.0*
*ISCJB **09** 19:25:57.1±0.4,31.93S±0.06×57.36E±0.10,h11km, mb4.3/17,Error ellipse: s-maj=12.2km s-min=8.9km az=163.5*
*NEIC **09** 19:25:58.8±0.3,31.95S×57.34E,h10km,mb4.8/11,Error ellipse: s-maj=10.7km s-min=7.8km az=74.0*
ISC 09 19:25:59.1±0.6,31.93S±0.09×57.3E±0.1,h11km,n42, σ0s82/32,mb4.2/17,Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RER	**Riviere de l'E**	**10.81**	**352**	*e*P*n*	**Pn**	**19 28 35.3**	**+1.3**
CRZF	**Crozet Islands** 182nm,1.4s	**15.08**	**195**	*e*P*n*	**Pn**	**19 29 30.8**	**-1.2**
ABPO	**Ambohimpanom** 36nm,1.6s	**15.73**	**322**	*e*P*n*	**Pn**	**19 29 41.6**	**+0.7**
OPO	**Ambohidratompo** 1.2nm,0.3s,baz=147,slow=9.6,SNR=8.3	**16.13**	**323**	Pn	**Pn**	**19 29 45.7**	**-0.3**
OPO	0.4nm,0.3s,baz=221,slow=19,SNR=3.0			Sn	Sn	19 32 33.9	-11
H08S1	**Diego Carcia H** baz=207,slow=76,SNR=15	**27.99**	**34**	T	T	20 01 01.9	
H08S2	**Diego Carcia H** baz=207,slow=76,SNR=7.8	**28.00**	**34**	T	T	20 01 02.9	
H08S3	**Diego Carcia H** baz=207,slow=76,SNR=18	**28.01**	**34**	T	T	20 01 03.5	
H08N3	**Diego Carcia H** baz=204,slow=75,SNR=12	**28.49**	**30**	T	T	20 01 48.1	
H08N1	**Diego Carcia H** baz=204,slow=75,SNR=9.4	**28.50**	**30**	T	T	20 01 49.4	
H08N2	**Diego Carcia H** baz=204,slow=75,SNR=13	**28.51**	**30**	T	T	20 01 50.0	
LBTB	**Lobatse** 26nm,1.6s	**28.64**	**276**	*e*P	**P**	**19 31 55.7**	**-0.2**
LSZ	**Lusaka** 14nm,1.8s	**31.26**	**295**	*e*P	**P**	**19 32 18.3**	**-1.0**
MAW	**Mawson** 5.8nm,1.9s	**35.86**	**176**	*e*P	**P**	**19 33 00.1**	**+1.5**
H01W2	**Cape Leeuwin H** baz=256,slow=75,SNR=15	**46.99**	**110**	T	T	20 24 43.7	
H01W3	**Cape Leeuwin H** baz=256,slow=75,SNR=15	**47.00**	**110**	T	T	20 24 44.1	
H01W1	**Cape Leeuwin H** baz=256,slow=75,SNR=13	**47.01**	**110**	T	T	20 24 45.1	
SNAA	**Sanae** 9.1nm,1.4s	**50.71**	**201**	*e*P	**P**	**19 34 59.2**	**+0.8**
UOSS	**Minazif** 26nm,1.3s	**56.56**	**359**	*e*P	**P**	**19 35 41.9**	**+0.1**
QSPA	**South Pole Qui**	**58.24**	**180**	*e*P	**P**	**19 35 53.9**	**+0.5**
CM01	**Chiang Mai Arr**	**64.04**	**45**	*e*P	**P**	**19 36 32.6**	**-0.4**
CM31	**Chiang Mai Arr**	**64.06**	**45**	*e*P	**P**	**19 36 31.8**	**-1.3**
CMAR	**Chiang Mai Arr** 1.6nm,0.7s,baz=230,slow=7.7,SNR=14	**64.06**	**45**	P	**P**	**19 36 33.2**	**0.0**
ASAR	**Alice Springs** 0.6nm,0.9s,baz=240,slow=6.0,SNR=10.0	**67.00**	**104**	P	**P**	**19 36 51.6**	**-0.8**
MMAI	**Mount Meron Ar** 0.8nm,0.5s,baz=144,slow=9.2,SNR=3.5	**67.82**	**340**	P	**P**	**19 36 58.4**	**+1.2**
WR1	**Warramunga Arr** 19nm,1.4s	**69.03**	**101**	*e*P	**P**	**19 37 04.5**	**-0.7**
WRA	**Warramunga Arr** 0.9nm,0.8s,baz=240,slow=5.4,SNR=6.4	**69.03**	**101**	P	**P**	**19 37 04.5**	**-0.7**
TOA0	**Torodi Ar. Sit**	**69.58**	**301**	*e*P	**P**	**19 37 08.0**	**-0.4**
TORD	**Torodi Ar. Bea** 1.1nm,0.8s,baz=133,slow=4.6,SNR=6.3	**69.58**	**301**	P	**P**	**19 37 09.0**	**+0.6**
TOA1	**Torodi Ar. Sit** 26nm,1.8s	**69.58**	**301**	*e*P	**P**	**19 37 09.1**	**+0.6**
BR101	**Keskin Array S**	**74.59**	**341**	*e*P	**P**	**19 37 38.4**	**+0.2**
BR131	**Keskin Array S**	**74.59**	**341**	*e*P	**P**	**19 37 36.9**	**-1.3**
BRTR	**Keskin Array B** 0.7nm,0.8s,baz=179,slow=7.4,SNR=5.2	**74.59**	**341**	P	**P**	**19 37 38.4**	**+0.2**
BR231	**Keskin MP Arra**	**74.94**	**341**	*e*P	**P**	**19 37 38.6**	**-1.5**
ANTO	**Ankara**	**74.96**	**341**	*e*P	**P**	**19 37 40.1**	**-0.1**
ABKAR	**Akbulak array** 53nm,0.4s	**80.86**	**2**	*e*P	**P**	**19 38 12.7**	**+0.1**
MAKZ	**Makanchi** 2.3nm,0.9s	**81.48**	**17**	*e*P	**P**	**19 38 15.2**	**-0.8**
MK01	**Makanchi Array**	**81.52**	**17**	*e*P	**P**	**19 38 16.0**	**-0.3**
KURBB	**Kurchatov Arra** 1.0nm,0.9s,baz=206,slow=6.2,SNR=7.8	**84.31**	**13**	P	**P**	**19 38 31.2**	**+0.6**
BVAR	**Borovoye Array**	**85.36**	**8**	P	**P**	**19 38 36.5**	**+0.6**
	0.9nm,0.6s,baz=167,slow=6.8,SNR=6.6						
ILAR	**Eielson Array** 0.5nm,0.9s,baz=316,slow=3.8,SNR=5.4	**143.90**	**17**	PKP	PKPab	19 45 30.6	-0.3
YKA	**Yellowknife Ar** 1.9nm,0.7s,baz=1.8,slow=2.7,SNR=15	**148.98**	**353**	PKPbc	**PKPbc**	**19 45 45.9**	**-0.4**
YKB5	**Yellowknife Ar**	**148.98**	**353**	*e*PKPbc	**PKPbc**	**19 45 45.8**	**-0.5**

*ISCJB **09** 19:27:41.7±0.3,28.80S±0.02×67.64W±0.04,h127km±3km, mb4.9/13,Error ellipse: s-maj=5.3km s-min=3.8km az=12.3*
*SJA **09** 19:27:41.9±1.2,28.83S×67.59W,h124km±6km,ML3.6, MW3.5*
*NEIC **09** 19:27:41.1±0.6,28.76S×67.44W,h99km±6km,mb5.0/8, Error ellipse: s-maj=9.3km s-min=5.9km az=89.0*
*IDC **09** 19:27:43.4±2.5,28.70S×67.44W,h117km±22km,mb4.0/7, mb1 3.9/9,mb1mx3.6/37,mbtmp4.3/9,Error ellipse: s-maj=25.4km s-min=17.1km az=83.0*
ISC 09 19:27:42.4±0.7,28.77S±0.04×67.61W±0.04,h117km±7km, n64,σ1s69/79,mb4.7/13,2C-18D,La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCA	**Vinchina**	**0.52**	**274**	*e*P	**Pn**	**19 28 01.9**	**+1.5**
VCA				↓*e*S	**Sn**	**19 28 15.4**	**+1.6**
CYA	**Choya**	**1.62**	**79**	↓*e*P	**Pn**	**19 28 12.1**	**+1.0**
CYA				*e*S	**Sn**	**19 28 33.0**	**0.0**
CYA	comp=Z,477nm,0.5s			IAML		19 28 34.5	
AVFE	**Valle Fertil**	**1.89**	**176**	↓*e*P	**Pn**	**19 28 14.7**	**+0.4**
AVFE				*e*S	**Sn**	**19 28 39.1**	**+0.4**
AVFE	comp=Z,474nm,0.2s			IAML		19 28 40.0	
AMOG	**MOGNA**	**2.29**	**199**	*e*P	**Pn**	**19 28 19.3**	**-0.2**
AMOG				*e*S	**Sn**	**19 28 48.5**	**+0.7**
ACHE	**Chepes**	**2.52**	**161**	↓*e*P	**Pn**	**19 28 22.8**	**+0.4**
ACHE				↓*e*S	**Sn**	**19 28 51.4**	**-1.8**
RTLL	**Cerro Villicun**	**2.66**	**196**	↓*e*P	**Pn**	**19 28 24.4**	**+0.3**
RTLL				*e*S	**Sn**	**19 28 55.5**	**-0.7**
LCO	**Las Campanas**	**2.72**	**264**	↓*e*P	**Pn**	**19 28 26.0**	**+0.8**
LCO	**Las Campanas**	**2.72**	**264**	↑*i*P	**Pn**	**19 28 25.9**	**+0.8**
LCO				*i* S	**Sn**	**19 28 58.2**	**+0.2**
LCO	**Las Campanas**	**2.72**	**264**	*e*Pn	**Pn**	**19 28 25.9**	**+0.8**
LCO				*e*Sn	**Sn**	**19 28 57.6**	**-0.3**
VACH	**Vallenar**	**2.77**	**273**	↑*i*P	**Pn**	**19 28 26.5**	**+0.9**
VACH				*i* S	**Sn**	**19 28 59.0**	**+0.1**
CPCH	**Copiapo**	**2.80**	**300**	*e*P	**Pn**	**19 28 25.6**	**-0.4**
CPCH				*i* S	**Sn**	**19 28 57.9**	**-1.7**
AHML	**Horco Molle**	**2.83**	**46**	↓*e*P	**Pn**	**19 28 26.9**	**+0.6**
SJA	**San Juan**	**2.87**	**196**	↓*e*P	**Pn**	**19 28 27.7**	**+0.8**
SJA				*e*S	**Sn**	**19 29 00.4**	**-0.7**
FSA	**Cafayete**	**3.02**	**29**	↓*e*P	**Pn**	**19 28 31.3**	**+2.2**
FSA				*e*S	**Sn**	**19 29 07.3**	**+2.3**
FSA	comp=Z,68nm,0.8s			IAML		19 29 09.4	
TLL	**Tololo Astrono**	**3.11**	**243**	*e*P	**Pn**	**19 28 30.2**	**0.0**
TLL				*i* S	**Sn**	**19 29 08.0**	**+0.8**
RTCV	**Cerro Valdivia**	**3.18**	**194**	↓*e*P	**Pn**	**19 28 31.2**	**+0.2**
RTLS	**Leoncito**	**3.35**	**205**	↓*e*P	**Pn**	**19 28 34.1**	**+0.6**
ACAN	**Cantantal**	**3.51**	**174**	↓*e*P	**Pn**	**19 28 35.6**	**+0.3**
ACAN				*e*S	**Sn**	**19 29 12.4**	**-3.8**
AUSP	**Uspallata**	**3.77**	**204**	*e*P	**Pn**	**19 28 39.1**	**+0.2**
ARCO	**CERRO ARCO**	**4.21**	**195**	*e*P	**Pn**	**19 28 44.5**	**-0.3**
ARCO				*e*S	**Sn**	**19 29 31.9**	**-1.4**
ARCO	comp=Z,150nm,0.4s			IAML		19 29 34.2	
AAGR	**Agrelo**	**4.42**	**193**	↓*e*P	**Pn**	**19 28 47.5**	**-0.2**
AZAP	**Zapla**	**5.07**	**27**	↓*e*P	**Pn**	**19 28 57.3**	**+0.8**
ROC1	**El Roble**	**5.11**	**214**	↓*e*P	**Pn**	**19 28 55.1**	**-1.8**
ROC1	**El Roble**	**5.11**	**214**	*e*Pn	**Pn**	**19 28 54.9**	**-2.1**
ROC1				*e*Sn	**Sn**	**19 29 50.5**	**-4.5**
ASTB	**Santa Barbara**	**5.58**	**31**	↓*e*P	**Pn**	**19 29 04.4**	**+1.2**
PB10	**IPOC Station P**	**5.87**	**333**	*e*Pn	**Pn**	**19 29 07.3**	**+0.2**
PB10				*e*Sn	Sn	19 30 02.6	-10
HJA	**Humahuaca**	**5.88**	**20**	↓*e*P	**Pn**	**19 29 10.2**	**+2.6**
HJA	comp=Z,17nm,0.6s			IAML		19 29 10.8	
LVC	**Limon Verde** comp=Z,77nm,0.3s,baz=175,slow=9.2,SNR=20	**6.25**	**349**	P	**Pn**	**19 29 13.4**	**+0.9**
LVC	comp=Z,60nm,0.3s,baz=176,slow=22,SNR=9.5			S	**Sn**	**19 30 23.3**	**+0.5**
LVC	**Limon Verde**	**6.25**	**349**	*e*Pn	**Pn**	**19 29 12.9**	**+0.4**
LVC				*e*Sn	Sn	19 30 12.1	-11
PB04	**IPOC Station P**	**6.81**	**340**	*e*Pn	**Pn**	**19 29 16.3**	**-3.6**
PB04				*e*Sn	**Sn**	**19 30 30.1**	**-6.0**
PB01	**IPOC Station P**	**7.88**	**347**	*e*Pn	**Pn**	**19 29 33.4**	**-1.0**
PB01				*e*Sn	Sn	19 30 49.6	-12
PB11	**IPOC Station P**	**9.16**	**348**	*e*Pn	Pn	19 29 46.2	-5.5
CPUP	**Villa Florida** comp=Z,0.4nm,0.3s,baz=255,slow=11,SNR=4.7	**9.45**	**77**	P	**Pn**	**19 29 53.6**	**-1.8**
CPUP	**Villa Florida**	**9.45**	**77**	*e*Pn	**Pn**	**19 29 51.3**	**-4.1**
TRQA	**Tornquist**	**10.38**	**155**	*e*Pn	**Pn**	**19 30 06.5**	**-1.5**
PLCA	**Paso Flores**	**12.17**	**191**	*e*Pn	Pn	19 30 26.7	-5.2
LPAZ	**La Paz** comp=Z,0.4nm,0.3s,baz=164,slow=5.3,SNR=8.7	**12.44**	**358**	P	**P**	**19 30 45.6**	**+2.5**
LPAZ	**La Paz**	**12.44**	**358**	*e*Pn	Pn	19 30 30.1	-5.8
SAML	**Samuel** comp=Z,2.9nm,0.6s	**20.16**	**13**	*e*P	**P**	**19 32 06.6**	**-1.0**
BDFB	**Brasilia** comp=Z,1.8nm,0.4s,baz=258,slow=5.8	**22.32**	**58**	P	**P**	**19 32 29.9**	**-0.7**
BDFB	**Brasilia** comp=Z,45nm,2.0s	**22.32**	**58**	*e*P	**P**	**19 32 29.4**	**-1.2**
EFI	**East Falkland** comp=Z,347nm,1.6s	**23.97**	**165**	*e*P	**P**	**19 32 47.3**	**+1.6**
USHA	**Ushuaia** comp=Z,9.3nm,0.4s,baz=319,slow=9.3,SNR=2.5	**26.05**	**181**	P	**P**	**19 33 06.0**	**+1.5**
PTGA	**Pitinga** comp=Z,2.2nm,0.3s,baz=203,slow=17,SNR=8.4	**28.83**	**16**	P	**P**	**19 33 30.3**	**+0.6**
PMSA	**Palmer Station** comp=Z,4.7nm,0.4s,baz=131,slow=9.0,SNR=4.0	**36.09**	**177**	P	**P**	**19 34 34.3**	**+1.9**
PMSA	**Palmer Station** comp=Z,45nm,1.2s	**36.09**	**177**	*e*P	**P**	**19 34 33.6**	**+1.2**
AGP	**Aguadilla** comp=Z,165nm,1.1s	**46.91**	**1**	*e*P	**P**	**19 36 01.6**	**+0.5**
SNAA	**Sanae** comp=Z,17nm,1.9s	**55.07**	**160**	*e*P	**P**	**19 37 01.6**	**-0.1**
QSPA	**South Pole Qui**	**61.45**	**180**	*e*P	**P**	**19 37 46.8**	**+0.5**
WVT	**Waverly** comp=Z,13nm,1.5s	**67.31**	**342**	*e*P	**P**	**19 38 24.3**	**-0.2**
DBIC	**Dimbokro** comp=Z,4.3nm,1.0s,baz=188,slow=5.6,SNR=4.7	**69.88**	**70**	P	**P**	**19 38 40.7**	**-0.3**
DBIC	**Dimbokro** comp=Z,66nm,1.8s	**69.88**	**70**	*e*P	**P**	**19 38 40.4**	**-0.6**
WUAZ	**Wupatki**	**76.10**	**324**	*e*PcP	**PcP**	**19 39 33.5**	**+4.4**
TOA0	**Torodi Ar. Sit**	**78.

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.83**	**279**	Pn	**Pb**	**19 34 56.8**	**+0.4**
	3µm,0.3s,baz=99,slow=8.6,SNR=98						
RAO				Sn	**Sb**	**19 35 08.3**	**+1.1**
	9µm,0.3s,baz=90,slow=20,SNR=20						
MXZ	**Matakaoa Point**	**9.05**	**205**	*e*Pn	**Pn**	**19 36 48.7**	**-0.2**
OUZ	**Omahuta**	**9.87**	**231**	*e*Pn	Pn	19 37 06.0	+5.9
URZ	**Urewera**	**10.12**	**207**	Pn	**Pn**	**19 37 00.1**	**-3.4**
	0.4nm,0.3s,baz=346,slow=19,SNR=7.9						
URZ				Sn	**Sn**	**19 38 56.0**	**0.0**
	9.2nm,0.3s,baz=244,slow=22,SNR=3.3						
URZ	**Urewera**	**10.12**	**207**	*e*Pn	**Pn**	**19 37 00.0**	**-3.5**
BKZ	**Black Stump Fm**	**11.14**	**207**	*e*Pn	Pn	19 37 12.4	-5.3
HIZ	**Hauiti**	**11.34**	**215**	*e*Pn	Pn	19 37 14.7	-5.7
MSVF	**Nonsavu**	**12.46**	**337**	*e*P	**Pn**	**19 37 35.5**	**-0.2**
MSVF	**Nonsavu**	**12.46**	**337**	*e*Pn	**Pn**	**19 37 35.5**	**-0.2**
BFZ	**Birch Farm**	**12.56**	**204**	*e*Pn	**Pn**	**19 37 34.1**	**-2.8**
SNZO	**South Karori**	**13.69**	**207**	*e*Pn	Pn	19 37 47.2	-5.0
KHZ	**Kahutara**	**15.09**	**208**	*e*Pn	**Pn**	**19 38 06.4**	**-4.8**
	191nm,1.7s						
LTZ	**Lake Taylor**	**15.92**	**210**	*e*Pn	**Pn**	**19 38 19.5**	**-2.7**
	293nm,2.0s						
AFI	**Afiamalu**	**16.14**	**18**	*e*P	**Pn**	**19 38 22.2**	**-2.9**
AFI				pmax	pmax		
	comp=Z,56nm,1.0s						
AFI	**Afiamalu**	**16.14**	**18**	*e*Pn	**Pn**	**19 38 22.2**	**-2.9**
	comp=Z,56nm,1.0s						
CRLZ	**Canterbury Las**	**16.42**	**208**	*e*Pn	**Pn**	**19 38 24.8**	**-3.7**
	comp=Z,264nm,1.8s						
OXZ	**Oxford**	**16.46**	**209**	*e*Pn	**Pn**	**19 38 25.6**	**-3.4**
	comp=Z,74nm,1.1s						
MQZ	**McQueen's Vall**	**16.52**	**207**	*e*Pn	**Pn**	**19 38 27.5**	**-2.2**
	comp=Z,368nm,2.0s						
DZM	**Mont Dzumac**	**16.61**	**292**	Pn	**P**	**19 38 36.6**	**+3.2**
	comp=Z,1.3nm,0.3s,baz=108,slow=11,SNR=13						
DZM	**Mont Dzumac**	**16.61**	**292**	*e*Pn	**Pn**	**19 38 28.4**	**-2.7**
	comp=Z,214nm,1.7s						
RPZ	**Rata Peaks**	**17.20**	**211**	P	**Pn**	**19 38 38.4**	**+0.1**
	comp=Z,2.4nm,0.3s,baz=50,slow=3.2,SNR=9.2						
RPZ				S	Sn	19 41 34.8	-14
	baz=302,slow=21,SNR=2.7						
RPZ	**Rata Peaks**	**17.20**	**211**	*e*Pn	**Pn**	**19 38 34.5**	**-3.9**
	comp=Z,168nm,1.7s						
RAR	**Rarotonga**	**17.54**	**66**	P	**Pn**	**19 38 38.8**	**-3.9**
	comp=Z,1.1nm,0.3s,baz=261,slow=6.7,SNR=6.5						
RAR	**Rarotonga**	**17.54**	**66**	*e*P	**Pn**	**19 38 38.1**	**-4.6**
RAR				pmax	pmax		
	comp=Z,125nm,1.3s						
RAR	**Rarotonga**	**17.54**	**66**	*e*Pn	**Pn**	**19 38 38.1**	**-4.6**
	comp=Z,125nm,1.3s						
FOZ	**Fox Glacier**	**17.63**	**213**	*e*Pn	**Pn**	**19 38 40.0**	**-3.6**
	comp=Z,264nm,1.3s						
LBZ	**Lake Benmore**	**18.12**	**211**	*e*Pn	Pn	19 38 39.8	-10
	comp=Z,200nm,1.6s						
ODZ	**Otahua Downs**	**18.44**	**209**	*e*P	**P**	**19 38 51.2**	**-2.1**
	comp=Z,66nm,1.3s						
WKZ	**Wanaka**	**18.99**	**212**	*e*P	**P**	**19 38 55.6**	**-3.7**
	comp=Z,148nm,1.5s						
MLZ	**Mavora Lakes**	**19.81**	**212**	*e*P	**P**	**19 39 04.0**	**-4.4**
	comp=Z,132nm,1.4s						
DCZ	**Deep Cove**	**20.34**	**214**	*e*P	**P**	**19 39 08.2**	**-5.9**
	comp=Z,47nm,1.1s						
LHI	**Lord Howe Isla**	**20.76**	**258**	*e*P	P	19 39 08.7	-10
	comp=Z,272nm,1.2s						
ARMA	**Armidale**	**27.19**	**260**	*e*P	**P**	**19 40 18.8**	**-2.7**
	comp=Z,23nm,0.9s						
MGCD	**Mangrove Creek**	**27.48**	**254**	P	**P**	**19 40 27.1**	**+3.2**
	baz=28						
PPT	**Papeete**	**27.68**	**71**	*e*P	**P**	**19 40 27.5**	**+1.7**
PPT	**Papeete**	**27.68**	**71**	*e*P	**P**	**19 40 27.5**	**+1.7**
EIDS	**Eidsvold**	**28.60**	**270**	P	**P**	**19 40 35.7**	**+1.8**
	baz=29,SNR=4.2						
EIDS	**Eidsvold**	**28.60**	**270**	*e*P	**P**	**19 40 34.4**	**+0.5**
	comp=Z,22nm,1.1s						
CNB	**Canberra Magne**	**28.95**	**249**	P	**P**	**19 40 40.4**	**+3.3**
	baz=29,SNR=5.1						
CAN	**Canberra**	**29.25**	**249**	P	**P**	**19 40 42.3**	**+2.5**
	baz=30						
CAN	**Canberra**	**29.25**	**249**	*e*P	**P**	**19 40 40.2**	**+0.5**
CAN				pmax	pmax		
	comp=Z,46nm,1.1s						
CAN	**Canberra**	**29.25**	**249**	*e*P	**P**	**19 40 40.2**	**+0.5**
	comp=Z,46nm,1.1s						
HNR	**Honiara**	**29.35**	**308**	*e*P	**P**	**19 40 39.0**	**-1.6**
HNR				pmax	pmax		
	comp=Z,124nm,1.4s						
HNR	**Honiara**	**29.35**	**308**	*e*P	**P**	**19 40 39.0**	**-1.6**
	comp=Z,124nm,1.4s						
YNG	**Young**	**29.73**	**252**	P	**P**	**19 40 46.8**	**+2.8**
	baz=30,SNR=11						
RMQ	**Roma**	**30.35**	**267**	P	**P**	**19 40 52.3**	**+2.8**
	baz=30,SNR=15						
TAU	**Tasmania Unive**	**31.58**	**235**	*e*P	**P**	**19 40 59.0**	**-1.1**
TAU				pmax	pmax		
	comp=Z,309nm,1.6s						
TAU	**Tasmania Unive**	**31.58**	**235**	*e*P	**P**	**19 40 59.0**	**-1.1**
	comp=Z,309nm,1.6s						
CMSA	**Cobar Meteorol**	**32.15**	**257**	P	**P**	**19 41 06.7**	**+1.4**
	baz=32,SNR=8.2						
QLP	**Quilpie**	**34.26**	**265**	P	**P**	**19 41 25.0**	**+1.2**
	baz=34,SNR=5.1						
CTA	**Charters Tower**	**34.53**	**277**	P	**P**	**19 41 27.7**	**+1.5**
	comp=Z,24nm,0.7s,baz=105,slow=11,SNR=40						
CTAO	**Charters Tower**	**34.53**	**277**	*e*P	**P**	**19 41 27.1**	**+0.9**
CTAO	**Charters Tower**	**34.53**	**277**	*e*P	**P**	**19 41 27.1**	**+0.9**
STKA	**Stephens Creek**	**35.58**	**255**	P	**P**	**19 41 35.6**	**+0.5**
	comp=Z,16nm,0.9s,baz=98,slow=10.0,SNR=13						
STKA	**Stephens Creek**	**35.58**	**255**	P	**P**	**19 41 36.0**	**+0.9**
	baz=36,SNR=13						
STKA	**Stephens Creek**	**35.58**	**255**	*e*P	**P**	**19 41 35.6**	**+0.5**
STKA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
STKA	**Stephens Creek**	**35.58**	**255**	*e*P	**P**	**19 41 35.6**	**+0.5**
	comp=Z,6.0nm,1.0s						
MTSU	**Mount Surprise**	**37.00**	**279**	P	**P**	**19 41 48.3**	**+0.9**
	baz=37,SNR=5.9						
HTT	**Hallett**	**37.65**	**252**	P	**P**	**19 41 53.4**	**+0.7**
	baz=38,SNR=10						
PMG	**Port Moresby**	**39.00**	**293**	*e*P	**P**	**19 42 02.9**	**-1.3**
PMG				pmax	pmax		
	comp=Z,29nm,1.0s						
PMG	**Port Moresby**	**39.00**	**293**	*e*P	**P**	**19 42 02.9**	**-1.3**
	comp=Z,29nm,1.0s						
COEN	**Coen**	**39.87**	**284**	*e*P	**P**	**19 42 09.6**	**-1.9**
	comp=Z,64nm,1.8s						
BBOO	**Buckleboo**	**40.11**	**253**	P	**P**	**19 42 14.3**	**+1.0**
	baz=40,SNR=5.8						
BBOO	**Buckleboo**	**40.11**	**253**	*e*P	**P**	**19 42 13.3**	**0.0**
	comp=Z,37nm,0.8s						
MANU	**Manus Island**	**43.45**	**302**	*e*P	**P**	**19 42 41.3**	**+0.4**
	comp=Z,93nm,1.5s						
AS01	**Alice Springs**	**44.02**	**265**	*e*P	**P**	**19 42 44.6**	**-0.8**
AS01				*e*S	**S**	**19 49 15.4**	**-0.4**
AS31	**Alice Springs**	**44.06**	**265**	*e*P	**P**	**19 42 45.7**	**-0.1**
	comp=Z,5.1nm,0.8s						
ASAR	**Alice Springs**	**44.06**	**265**	P	**P**	**19 42 44.9**	**-0.8**
	comp=Z,20nm,0.8s,baz=98,slow=6.4,SNR=136						
WB2	**Warramunga Arr**	**44.95**	**271**	*e*P	**P**	**19 42 52.4**	**-0.4**
	comp=Z,32nm,1.0s						
WRAB	**Tennant Creek**	**44.95**	**271**	*e*P	**P**	**19 42 51.8**	**-1.1**
WRAB				pmax	pmax		
	comp=Z,34nm,1.1s						
WRAB	**Tennant Creek**	**44.95**	**271**	*e*P	**P**	**19 42 51.8**	**-1.1**
	comp=Z,34nm,1.1s						
WR1	**Warramunga Arr**	**44.96**	**271**	*e*P	**P**	**19 42 52.3**	**-0.6**
	comp=Z,30nm,0.9s						
WRA	**Warramunga Arr**	**44.96**	**271**	P	**P**	**19 42 52.3**	**-0.7**
	comp=Z,23nm,0.9s,baz=110,slow=8.0,SNR=58						
FORT	**Forrest**	**47.17**	**254**	P	**P**	**19 43 09.1**	**-1.1**
	baz=47,SNR=26						
FORT	**Forrest**	**47.17**	**254**	*e*P	**P**	**19 43 08.9**	**-1.3**
	comp=Z,239nm,0.6s						
WRKA	**Warakurna**	**48.50**	**261**	P	**P**	**19 43 19.5**	**-1.1**
	baz=49,SNR=25						
SBA	**Scott Base**	**49.11**	**185**	*e*P	**P**	**19 43 27.1**	**+2.6**
SBA				pmax	pmax		
	comp=Z,33nm,1.4s						
SBA	**Scott Base**	**49.11**	**185**	*e*P	**P**	**19 43 27.1**	**+2.6**
	comp=Z,33nm,1.4s						
VNDA	**Vanda**	**49.19**	**186**	P	**P**	**19 43 27.9**	**+2.8**
	comp=Z,1.3nm,0.6s,baz=332,slow=6.8,SNR=12						
VNDA	**Vanda**	**49.19**	**186**	*e*P	**P**	**19 43 24.5**	**-0.6**
VNDA				pmax	pmax		
	comp=Z,37nm,1.9s						
VNDA	**Vanda**	**49.19**	**186**	*e*P	**P**	**19 43 24.5**	**-0.6**
	comp=Z,37nm,1.9s						
MTN	**Manton Dam**	**50.72**	**278**	*e*P	**P**	**19 43 36.8**	**-0.7**
	comp=Z,89nm,1.6s						
FITZ	**Fitzroy Crossi**	**53.26**	**269**	P	**P**	**19 43 55.3**	**-1.1**
	baz=53,SNR=7.5						
FITZ	**Fitzroy Crossi**	**53.26**	**269**	*e*P	**P**	**19 43 56.0**	**-0.5**
	comp=Z,23nm,1.0s						
FAKI	**Fak Fak**	**54.84**	**289**	*e*P	**P**	**19 44 07.0**	**-1.0**
	comp=Z,63nm,1.3s						
KLBR	**Kellerberrin**	**55.52**	**250**	P	**P**	**19 44 11.7**	**-1.1**
	baz=56,SNR=9.8						
NWAO	**Narrogin (SRO)**	**55.59**	**248**	*e*P	**P**	**19 44 10.7**	**-2.6**
NWAO				pmax	pmax		
	comp=Z,44nm,1.4s						
NWAO	**Narrogin (SRO)**	**55.59**	**248**	*e*P	**P**	**19 44 10.7**	**-2.6**
	comp=Z,44nm,1.4s						
MEEK	**Meekatharra**	**56.28**	**256**	P	**P**	**19 44 17.6**	**-0.7**
	baz=56,SNR=4.6						
GUMO	**Guam**	**56.41**	**314**	P	**P**	**19 44 17.0**	**-2.2**
	comp=Z,26nm,0.7s,baz=180,slow=4.5						
GUMO	**Guam**	**56.41**	**314**	*e*P	**P**	**19 44 16.7**	**-2.4**
GUMO				pmax	pmax		
	comp=Z,65nm,1.0s						
GUMO	**Guam**	**56.41**	**314**	*e*P	**P**	**19 44 16.7**	**-2.4**
	comp=Z,66nm,1.0s						
CASY	**Casey**	**56.45**	**208**	*e*P	**P**	**19 44 19.9**	**+1.2**
	comp=Z,41nm,0.8s						
MBWA	**Marble Bar**	**57.23**	**263**	*e*P	**P**	**19 44 22.5**	**-2.5**
	comp=Z,26nm,0.8s						
ANA2	**Anatahan**	**58.00**	**317**	*e*P	**P**	**19 44 28.2**	**-2.2**
SOEI	**Soe**	**58.10**	**277**	*e*P	**P**	**19 44 28.8**	**-2.6**
	comp=Z,92nm,1.4s						
MMRI	**Maumere**	**60.40**	**277**	*e*P	**P**	**19 44 43.1**	**-4.1**
	comp=Z,165nm,1.9s						
QSPA	**South Pole Qui**	**60.72**	**180**	*e*P	**P**	**19 44 51.9**	**+3.1**
LUWI	**Luwuk**	**63.78**	**285**	*e*P	**P**	**19 45 07.5**	**-2.4**
	comp=Z,104nm,1.5s						
KAPI	**Kappang**	**64.31**	**279**	*e*P	**P**	**19 45 12.8**	**-0.5**
	comp=Z,22nm,1.1s						
PCI	**Palu**	**66.34**	**283**	P	**P**	**19 45 27.5**	**+1.0**
JAGI	**Jajag, Banyuwa**	**67.50**	**273**	*e*P	**P**	**19 45 33.7**	**-0.2**
	comp=Z,104nm,1.7s						
UGM	**Wanagama**	**70.93**	**272**	*e*P	**P**	**19 45 55.0**	**-0.2**
	comp=Z,196nm,1.7s						
PMSA	**Palmer Station**	**72.82**	**156**	*e*P	**P**	**19 46 08.0**	**+2.4**
	comp=Z,107nm,1.9s						
KKM	**Kota Kinabalu**	**73.10**	**287**	*e*P	**P**	**19 46 07.6**	**-0.7**
	comp=Z,23nm,1.2s						
CISI	**Cisompet, Garu**	**73.46**	**271**	*e*P	**P**	**19 46 09.4**	**-1.0**
	comp=Z,35nm,1.1s						
MAW	**Mawson**	**73.56**	**200**	P	**P**	**19 46 12.6**	**+2.7**
	comp=Z,14nm,1.1s,baz=114,slow=6.9,SNR=18						
MAW	**Mawson**	**73.56**	**200**	P	**P**	**19 46 12.5**	**+2.5**
	baz=74,SNR=11						
MAW	**Mawson**	**73.56**	**200**	*e*P	**P**	**19 46 12.1**	**+2.1**
	comp=Z,8.1nm,1.4s						
STKI	**Sintang**	**74.00**	**279**	P	**P**	**19 46 14.1**	**+0.7**
JHJ2	**Mitsune**	**74.43**	**323**	*e*P	**P**	**19 46 14.7**	**-0.7**
	comp=Z,358nm,1.9s						
SBUM	**Sibu**	**74.58**	**282**	*e*P	**P**	**19 46 17.2**	**+0.4**
	comp=Z,26nm,1.6s						
KSM	**Kuching**	**75.71**	**280**	*e*P	**P**	**19 46 23.1**	**-0.2**
	comp=Z,9.5nm,0.8s						
INU	**Inuyama**	**77.62**	**323**	*e*P	**P**	**19 46 34.2**	**+0.6**
	comp=Z,6.8nm,0.7s						
MJAR	**Matsushiro Arr**	**77.93**	**325**	P	**P**	**19 46 34.5**	**-0.8**
	comp=Z,7.9nm,1.0s,baz=161,slow=5.7,SNR=17						
MAJO	**Matsushiro**	**77.93**	**325**	*e*P	**P**	**19 46 35.0**	**-0.3**
MAJO				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MAJO	**Matsushiro**	**77.93**	**325**	*e*P	**P**	**19 46 35.0**	**-0.3**
	comp=Z,7.4nm,0.9s						
MAT	**Matsushiro**	**77.93**	**325**	P	**P**	**19 46 33.9**	**-1.4**
MJB9	**Matsu-Tunnel**	**77.93**	**325**	*e*P	**P**	**19 46 35.5**	**+0.2**
	comp=Z,1.9nm,0.9s						
SYO	**Syowa Base**	**78.30**	**193**	*e*P	**P**	**19 46 36.8**	**-0.1**
SYO	**Syowa Base**	**78.30**	**193**	*e*PcP	**PcP**	**19 46 47.0**	**+0.8**
SNAA	**Sanae**	**79.14**	**178**	P	**P**	**19 46 43.8**	**+2.1**
SNAA	**Sanae**	**79.14**	**178**	*e*P	**P**	**19 46 43.1**	**+1.5**
SNAA				pmax	pmax		
	comp=Z,18nm,1.4s						
SNAA	**Sanae**	**79.14**	**178**	*e*P	**P**	**19 46 43.1**	**+1.5**
	comp=Z,18nm,1.4s						
JNU	**Nakatsue**	**79.40**	**318**	P	**P**	**19 46 43.2**	**-0.4**
	comp=Z,3.7nm,0.6s,baz=26,slow=4.5,SNR=7.5						
JNU	**Nakatsue**	**79.40**	**318**	*e*P	**P**	**19 46 43.5**	**0.0**
	comp=Z,30nm,1.2s						
VNA1	**Neumayer--Stat**	**79.92**	**176**	P	**P**	**19 46 48.0**	**+2.2**
ASAJ	**Asahikawa**	**81.96**	**332**	*e*P	**P**	**19 46 58.0**	**+1.1**
	comp=Z,29nm,0.9s						
PLCA	**Paso Flores**	**82.54**	**133**	P	**P**	**19 47 02.6**	**+2.1**
	comp=Z,3.3nm,0.8s,baz=220,slow=6.5,SNR=3.6						
PLCA	**Paso Flores**	**82.54**	**133**	*e*P	**P**	**19 47 02.0**	**+1.5**
PLCA				pmax	pmax		
	comp=Z,60nm,1.9s						
PLCA	**Paso Flores**	**82.54**	**133**	*e*P	**P**	**19 47 01.9**	**+1.5**
	comp=Z,60nm,1.9s						
KSRS	**Korea Array**	**84.16**	**319**	P	**P**	**19 47 09.8**	**+1.4**
	comp=Z,5.0nm,0.9s,baz=129,slow=6.3,SNR=6.9						
KS15	**Wonju Array Si**	**84.17**	**319**	*e*P	**P**	**19 47 08.5**	**0.0**
KSAR	**Wonju Array Be**	**84.17**	**319**	P	**P**	**19 47 09.9**	**+1.4**
KSAR	**Wonju Array Be**	**84.17**	**319**	P	**P**	**19 47 09.8**	**+1.4**
KS01	**Wonju Array Si**	**84.19**	**319**	*e*P	**P**	**19 47 09.4**	**+0.8**
YSS	**Yuzh-Sakhalins**	**84.23**	**334**	*e*P	**P**	**19 47 09.2**	**+0.7**
YSS				pmax	pmax		
	comp=Z,1.0nm,0.9s						
YSS	**Yuzh-Sakhalins**	**84.23**	**334**	*e*P	**P**	**19 47 09.0**	**+0.4**
	comp=Z,56nm,0.9s						
PFO	**Pinyon Flats O**	**84.87**	**47**	*e*P	**P**	**19 47 12.5**	**+0.2**
PFO				pmax	pmax		
	comp=Z,5.0nm,1.0s						
PFO	**Pinyon Flats O**	**84.87**	**47**	*e*P	**P**	**19 47 12.5**	**+0.2**
	comp=Z,4.7nm,1.0s						
ISA	**Isabella, Lake**	**84.96**	**44**	*e*P	**P**	**19 47 10.8**	**-1.9**
ISA				pmax	pmax		
	comp=Z,10.0nm,1.1s						
ISA	**Isabella, Lake**	**84.96**	**44**	*e*P	**P**	**19 47 10.8**	**-1.9**
	comp=Z,10nm,1.1s						
PEA0	**Petropavlovsk-**	**85.06**	**345**	*e*P	**P**	**19 47 12.1**	**-0.5**
PETK	**Petropavlovsk-**	**85.06**	**345**	P	**P**	**19 47 12.6**	**0.0**
	comp=Z,5.5nm,0.6s,baz=103,slow=6.8,SNR=21						
PEA1	**Petropavlovsk-**	**85.07**	**345**	*e*P	**P**	**19 47 12.6**	**0.0**
CMB	**Columbia Colle**	**85.42**	**41**	*e*P	**P**	**19 47 15.7**	**+0.8**
CMB				pmax	pmax		
	comp=Z,6.0nm,0.9s						
CMB	**Columbia Colle**	**85.42**	**41**	*e*P	**P**	**19 47 15.7**	**+0.8**
	comp=Z,5.7nm,0.9s						
GLA	**Glamis**	**85.56**	**48**	*e*P	**P**	**19 47 16.3**	**+0.6**
GLA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GLA	**Glamis**	**85.56**	**48**	*e*P	**P**	**19 47 16.3**	**+0.6**
	comp=Z,5.0nm,0.9s						
AFDM	**Forest Hills D**	**85.71**	**40**	*e*P	**P**	**19 47 19.3**	**+3.1**
	comp=Z,6.7nm,1.1s						
GSC	**Goldstone, Bar**	**85.74**	**45**	*e*P	**P**	**19 47 16.8**	**+0.2**
GSC				pmax	pmax		
	comp=Z,12nm,1.3s						
GSC	**Goldstone, Bar**	**85.74**	**45**	*e*P	**P**	**19 47 16.8**	**+0.2**
	comp=Z,12nm,1.3s						
ORV	**Oroville**	**85.83**	**40**	*e*P	**P**	**19 47 16.7**	**-0.1**
ORV				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ORV	**Oroville**	**85.83**	**40**	*e*P	**P**	**19 47 16.7**	**-0.1**
	comp=Z,4.7nm,1.0s						
WDC	**Whiskeytown Da**	**85.97**	**38**	*e*P	**P**	**19 47 19.0**	**+1.5**
WDC				pmax	pmax		
	comp=Z,34nm,1.9s						
WDC	**Whiskeytown Da**	**85.97**	**38**	*e*P	**P**	**19 47 19.0**	**+1.5**
	comp=Z,34nm,1.9s						
TVH3	**East Aurora ar**	**86.54**	**42**	*e*P	**P**	**19 47 18.1**	**-2.6**
	comp=Z,8.1nm,1.3s						
TVH1	**TV Hill, Hawth**	**86.64**	**42**	*e*P	**P**	**19 47 19.0**	**-2.4**
	comp=Z,5.7nm,1.1s						
GSI	**Gunungsitoli**	**86.66**	**273**	P	**P**	**19 47 22.8**	**+1.2**
GSI	**Gunungsitoli**	**86.66**	**273**	*e*P	**P**	**19 47 21.4**	**-0.2**
	comp=Z,26nm,1.0s						
YERR	**Yerington**	**86.72**	**41**	*e*P	**P**	**19 47 21.2**	**-0.3**
	comp=Z,4.7nm,1.0s						
USRK	**Ussuriysk Ar.**	**86.81**	**326**	P	**P**	**19 47 22.1**	**+0.6**
	comp=Z,14nm,0.8s,baz=151,slow=3.5,SNR=31						
PAHR	**Pah Rah Range**	**87.12**	**41**	*e*P	**P**	**19 47 23.1**	**-0.3**
	comp=Z,11nm,1.6s						
PAHR				*e*S	**S**	**19 58 02.6**	**+1.9**
Y14A	**Wickenburg**	**87.30**	**48**	*e*P	**P**	**19 47 24.7**	**+0.5**
	comp=Z,29nm,1.2s						
W13A	**Hualapai Mount**	**87.45**	**47**	*e*P	**P**	**19 47 25.0**	**-0.2**
	comp=Z,7.2nm,1.5s						
TYV	**Tymovskoe**	**87.49**	**336**	*e*P	**P**	**19 47 25.0**	**+0.4**
TUC	**Tucson**	**87.79**	**51**	*e*P	**P**	**19 47 27.4**	**+0.8**
TUC				pmax	pmax		
	comp=Z,5.0nm,0.9s						
TUC	**Tucson**	**87.79**	**51**	*e*P	**P**	**19 47 27.4**	**+0.8**
	comp=Z,4.5nm,0.9s						
MDJ	**Mudanjiang**	**88.30**	**325**	P	**P**	**19 47 29.4**	**+0.7**
MDJ				pmax	pmax		
	comp=Z,16nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,90nm,5.9s						
MDJ	**Mudanjiang**	**88.30**	**325**	*e*P	**P**	**19 47 28.4**	**-0.3**
	comp=Z,16nm,0.9s						
X16A	**Lo Mia Camp, P**	**88.62**	**49**	*e*P	**P**	**19 47 30.4**	**-0.3**
	comp=Z,3.8nm,0.9s						
BMN	**Battle Mountai**	**88.84**	**41**	*e*P	**P**	**19 47 29.9**	**-1.7**
BMN				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BMN	**Battle Mountai**	**88.84**	**41**	*e*P	**P**	**19 47 29.9**	**-1.7**
	comp=Z,3.0nm,0.8s						
KNB	**Kanab**	**89.32**	**46**	*e*P	**P**	**19 47 32.7**	**-1.2**
KNB				pmax	pmax		
	comp=Z,7.0nm,1.1s						
KNB	**Kanab**	**89.32**	**46**	*e*P	**P**	**19 47 32.6**	**-1.2**
	comp=Z,7.0nm,1.1s						
CN2	**Changchun**	**89.88**	**322**	*e*P	**P**	**19 47 36.2**	**+0.1**
CN2				pmax	pmax		
	comp=Z,30nm,1.2s						
TIA	**Tai'an**	**89.94**	**312**	*e*P	**P**	**19 47 37.6**	**+1.0**
TIA				pmax	pmax		
	comp=Z,20nm,1.1s						
NKL	**Nikolayevsk**	**90.07**	**336**	*e*P	**P**	**19 47 36.8**	**+0.1**
NKL				pmax	pmax		
	comp=Z,40nm,1.0s						
KLR	**Kul'dur**	**90.62**	**329**	P	**P**	**19 47 39.9**	**+0.5**
	comp=Z,6.7nm,0.7s,baz=121,slow=3.1,SNR=30						
LTX	**Lajitas**	**91.09**	**57**	*e*P	**P**	**19 47 43.4**	**+1.1**
LTX	**Lajitas**	**91.09**	**57**	*e*P	**P**	**19 47 43.4**	**+1.1**
TX31	**Lajitas Ar. Si**	**91.09**	**57**	*e*P	**P**	**19 47 38.3**	**-4.0**
TXAR	**Lajitas Array**	**91.09**	**57**	P	**P**	**19 47 43.4**	**+1.1**
	comp=Z,1.3nm,1.1s,baz=208,slow=5.1,SNR=5.8						
CNPM	**Nina Pool**	**91.11**	**13**	*e*P	**P**	**19 47 40.5**	**-0.9**
	comp=Z,20nm,1.0s						
MNTX	**Cornudas Mount**	**91.17**	**54**	*e*P	**P**	**19 47 41.7**	**-0.8**
	comp=Z,5.7nm,1.4s						
RSO	**Redoubt Soth**	**91.70**	**12**	*e*P	**P**	**19 47 43.6**	**-0.8**
TMUT	**Trail Mountain**	**91.72**	**45**	*e*P	**P**	**19 47 46.1**	**+0.9**
	comp=Z,3.9nm,0.9s						
ENH	**Enshi**	**91.77**	**304**	*e*P	**P**	**19 47 45.1**	**-0.2**
	comp=Z,33nm,1.0s						
GYA	**Guiyang**	**91.83**	**299**	P	**P**	**19 47 46.2**	**+0.5**
GYA				PP	**PP**	**19 51 28.4**	**+3.1**
GYA				SKS	**SKSac**	**19 58 18.0**	**+1.4**
GYA				S	**S**	**19 58 45.6**	**+0.6**
GYA				SS	**SS**	**20 04 58.8**	**+4.9**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,8.0s						
GYA				LR	LR		
	comp=Z,510nm,21.2s						
GYA				LR	LR		
	comp=Z,470nm,22.3s						
GYA				LR	LR		
	comp=Z,520nm,21.4s						
SPUT	**South Promonto**	**92.19**	**43**	*e*P	**P**	**19 47 47.5**	**+0.4**
	comp=Z,12nm,1.0s						
HVU	**Hansel Valley**	**92.29**	**42**	*e*P	**P**	**19 47 48.0**	**+0.4**
HVU				pmax	pmax		
	comp=Z,7.0nm,1.2s						
HVU	**Hansel Valley**	**92.29**	**42**	*e*P	**P**	**19 47 48.0**	**+0.4**
	comp=Z,7.4nm,1.2s						
HLID	**Hailey**	**92.46**	**40**	*e*P	**P**	**19 47 47.6**	**-0.7**
	comp=Z,12nm,1.7s						
F10A	**Beach Ranch, E**	**92.48**	**37**	*e*P	**P**	**19 47 48.2**	**0.0**
	comp=Z,6.0nm,0.8s						
MA2	**Magadan**	**92.56**	**344**	P	**P**	**19 47 47.4**	**-0.7**
	comp=Z,1.3nm,0.3s

ILAR	Eielson Array	96.75	12	P		P	19 48 06.7	-0.6
	comp=Z,1.1nm,0.8s,baz=221,slow=5.4,SNR=11							
ILB	Eielson Array	96.75	12	*e*P		P	19 48 05.4	-1.8
IL1	Eielson Array	96.75	12	*e*P		P	19 48 06.5	-0.7
LZH	Lanzhou	98.83	306	*e*P		Pdif	19 48 19.5	+1.9
LZH				pP		PcP	19 48 21.0	+3.4
LZH				sP		P	19 48 22.1	+4.5
LZH				PP		PP	19 52 24.0	+4.3
LZH				pmax		pmax		
	comp=Z,21nm,1.2s							
LZH				pmax		pmax		
	comp=Z,95nm,9.3s							
LZH				LR		LR		
	comp=Z,330nm,17.8s							
LZH				LR		LR		
	comp=Z,340nm,17.5s							
LZH				LR		LR		
	comp=Z,410nm,19.2s							
WMO	Urumqi	113.30	308	*e*PKP		PKiKP	19 53 14.6	-0.3
MK01	Makanchi Array	117.79	310	*e*PKPdf		PKPdf	19 53 22.4	-1.0
MK31	Makanchi Array	117.80	310	*e*PKiKP		PKPdf	19 53 22.6	-0.9
MK31	Makanchi Array	117.80	310	*e*PKPdf		PKPdf	19 53 22.6	-0.9
MK32	Makanchi Array	117.80	310	*e*PKPdf		PKPdf	19 53 22.9	-0.5
MKAR	Makanchi Array	117.80	310	PKP		PKPdf	19 53 22.9	-0.5
	comp=Z,1.5nm,0.7s,baz=124,slow=1.3,SNR=7.1							
MKAR	Makanchi Array	117.80	310	*e*PKPdf		PKPdf	19 53 22.8	-0.6
ZAA0	Zalesovo Array	117.87	319	*e*PKPdf		PKPdf	19 53 21.9	-1.4
ZALV	Zalesovo Beam	117.87	319	PKP		PKPdf	19 53 22.4	-0.9
	comp=Z,0.9nm,0.6s,baz=180,slow=1.2,SNR=6.1							
ZAA1	Zalesovo Array	117.87	319	*e*PKPdf		PKPdf	19 53 22.4	-0.9
MAKZ	Makanchi	118.01	310	*e*PKiKP		PKPdf	19 53 23.0	-0.9
MAKZ	Makanchi	118.01	310	*e*PKPdf		PKPdf	19 53 23.0	-0.9
BOSA	Boshof	118.53	202	PKP		PKPdf	19 53 26.1	+0.4
	comp=Z,4.3nm,1.0s,baz=178,slow=7.8,SNR=3.9							
KSH	Kashi	120.49	301	*e*PKP		PKPdf	19 53 27.5	-1.5
KSH				PKS		PKSdf	19 57 03.5	-2.2
KSH				SKS		SKSdf	20 00 38.8	-0.1
KSH				AMB		AMB		
	comp=Z,76nm,4.7s							
KSH				LR		LR		
	comp=Z,490nm,16.0s							
KSH				LR		LR		
	comp=Z,570nm,15.4s							
KSH				LR		LR		
	comp=Z,1μm,22.6s							
KURK	Kurchatov	120.99	314	*e*PKiKP		PKPdf	19 53 28.9	-0.5
KURK	Kurchatov	120.99	314	*e*PKPdf		PKPdf	19 53 28.9	-0.5
KURBB	Kurchatov Arra	121.03	314	PKP		PKPdf	19 53 28.9	-0.5
	comp=Z,3.4nm,0.8s,baz=107,slow=1.9,SNR=31							
KBL	Kabul	124.64	294	*e*PKiKP		PKPdf	19 53 38.2	+1.0
KBL	Kabul	124.64	294	*e*PKPdf		PKPdf	19 53 38.2	+1.0
KKAR	Karatay Array	125.25	304	*e*PKiKP		PKPdf	19 53 37.4	-0.5
KKAR	Karatay Array	125.25	304	*e*PKPdf		PKPdf	19 53 37.4	-0.5
ZRNK	Zerenda	127.13	316	*e*PKiKP		PKPdf	19 53 40.5	-0.6
ZRNK	Zerenda	127.13	316	*e*PKPdf		PKPdf	19 53 40.5	-0.6
LSZ	Lusaka	129.38	212	*e*PKiKP		PKPdf	19 53 45.2	-1.6
LSZ	Lusaka	129.38	212	*e*PKPdf		PKPdf	19 53 45.2	-1.6
ARU	Arti	132.87	321	*e*PKiKP		PKPdf	19 53 52.5	+0.6
ARU	Arti	132.87	321	*e*PKPdf		PKPdf	19 53 52.5	+0.6
GEYT	Alibeck	133.93	296	PKP		PKPdf	19 53 55.3	+0.8
	comp=Z,2.8nm,0.7s,baz=222,slow=2.0,SNR=8.1							
GEYT				SKPbc		SKPab	19 57 24.7	+0.6
	comp=Z,5.5nm,0.9s,baz=132,slow=2.1,SNR=5.0							
AKTO	Aktyubinsk	134.07	313	PKP		PKPdf	19 53 54.5	+0.1
	comp=Z,1.7nm,0.6s,baz=306,slow=5.7,SNR=5.7							
ARA0	ARCESS Array S	137.78	348	*e*PKPpre		PKPpre	19 53 53.8	
ARA0				*e*PKPdf		PKiKP	19 54 02.7	0.0
ARCES	ARCESS Array B	137.78	348	PKhKP		PKPpre	19 53 53.8	
	comp=Z,1.0nm,0.6s,baz=101,slow=1.2,SNR=5.6							
ARCES				PKP		PKiKP	19 54 02.7	0.0
	comp=Z,1.1nm,0.5s,baz=81,slow=1.2,SNR=7.7							
DUS	Dusheti	144.21	302	P		PKPdf	19 54 15.1	+1.9
TBLG	Delisi	144.23	302	P		PKPbc	19 54 11.8	+0.4
GUDG	Gudauri	144.33	303	P		PKPbc	19 54 12.1	+0.1
GNI	Garni	144.38	299	PKP		PKPbc	19 54 12.9	+0.8
	comp=Z,12nm,0.9s,baz=291,slow=2.3,SNR=5.5							
GNI	Garni	144.38	299	*e*PKPdf		PKPbc	19 54 12.8	+0.6
GNI				*e*PKPdf		PKPab	19 54 12.9	+1.1
FIA1	FINESS Array S	144.49	341	*e*PKPdf		PKPab	19 54 10.7	-0.6
FIA1				*e*PKPdf		PKPbc	19 54 11.1	-0.5
FIA0	FINESS Array S	144.49	341	*e*PKiKP		PKPab	19 54 11.5	+0.2
FIA0	FINESS Array S	144.49	341	*e*PKPdf		PKPab	19 54 11.5	+0.2
FINES	FINESS Array B	144.49	341	PKP		PKPab	19 54 11.5	+0.2
	comp=Z,27nm,0.8s,baz=64,slow=4.4,SNR=97							
ZEI	Tsey	144.71	304	*i* PKiKP		PKPab	19 54 11.6	-1.4
ZEI				pmax		pmax		
	comp=Z,109nm,1.1s							
OBN	Obninsk	144.83	327	PKP		PKPab	19 54 12.9	+0.1
	comp=Z,36nm,1.0s,baz=55,slow=4.0,SNR=22							
OBN	Obninsk	144.83	327	*e*PKiKP		PKPab	19 54 12.4	-0.3
OBN	Obninsk	144.83	327	*e*PKPdf		PKPab	19 54 12.4	-0.3
GOF	Gofitskoye	144.90	308⇑	*e*PKiKP		PKPdf	19 54 14.1	-0.1
GOF				pmax		pmax		
	comp=Z,38nm,0.9s							
BGD	Bogdanovka	145.13	301	P		PKPdf	19 54 16.5	+1.5
AKH	Akhalkalaki	145.19	301	⇓*i*P		PKPdf	19 54 16.4	+1.3
AKH	Akhalkalaki	145.19	301	P		PKPdf	19 54 15.7	+0.6
AKH	Akhalkalaki	145.19	301	*e*PKiKP		PKPdf	19 54 15.6	+0.6
KBZ	Khabaz	145.27	305	PKPbc		PKPdf	19 54 15.1	+0.3
	comp=Z,13nm,0.8s,baz=129,slow=1.3,SNR=29							
KVAR	Kislovodsk Arr	145.37	306	PKPbc		PKPdf	19 54 15.4	+0.2
	comp=Z,22nm,0.8s,baz=42,slow=2.9,SNR=21							
VSR	Storozhevoye	145.37	319	*e*PKiKP		PKPbc	19 54 14.3	-0.4
VSR				pmax		pmax		
	comp=Z,100nm,0.9s							
KIV	Kislovodsk	145.38	306	*e*PKiKP		PKPbc	19 54 15.1	0.0
KIV	Kislovodsk	145.38	306	*e*PKPbc		PKPbc	19 54 15.1	0.0
NC405	NORSAR Array S	147.75	352	*e*PKPdf		PKPbc	19 54 20.5	-0.9
NB2	NORSAR Subarra	147.88	353	PKP		PKPbc	19 54 21.0	-0.8
	comp=Z,9.2nm,0.7s,baz=13,slow=3.1							
NB200	NORSAR Array S	147.88	353	*e*PKPbc		PKPbc	19 54 21.3	-0.5
NOA	NORSAR Array B	147.88	353	PKPbc		PKPbc	19 54 21.3	-0.5
	comp=Z,12nm,0.9s,baz=16,slow=4.4,SNR=26							
NBO02	NORSAR Array S	147.91	353	*e*PKPbc		PKPbc	19 54 21.4	-0.5
NBO00	NORSAR Array S	147.93	353	*e*PKPbc		PKPbc	19 54 21.6	-0.3
NAO01	NORSAR Array S	148.10	353	*e*PKPbc		PKPbc	19 54 22.2	-0.1
ANN	Anapa	148.81	309	*i* PKP2		PKPbc	19 54 24.4	-0.2
ANN				pmax		pmax		
	comp=Z,65nm,1.0s							
IZAR	Zarasai	148.89	334	*e*P		PKPbc	19 54 24.4	-0.1
IDID	Didziasalis	149.02	333	*e*P		PKPbc	19 54 24.8	0.0
ISAL	Salakas	149.06	334	*e*P		PKPbc	19 54 24.9	0.0
NACGM	Naroch	149.30	333	*e*		PKPbc	19 54 24.0	-1.5
NACGM				*e*LR		LR	20 52 42.0	
ASF	Jabal al Asfar	150.83	284	PKPbc		PKPbc	19 54 31.6	+1.5
	comp=Z,38nm,1.0s,baz=74,slow=0.8,SNR=38							
ASF				PKPab		PKPab	19 54 38.6	+1.2
	comp=Z,5.0nm,0.5s,baz=73,slow=4.6,SNR=7.8							
AKASG	Malin Array Be	151.01	325	PKPbc		PKPbc	19 54 29.7	-0.1
	comp=Z,12nm,0.6s,baz=47,slow=2.8,SNR=41							
AKBB	Malin Array Si	151.01	325	*e*PKiKP		PKPbc	19 54 29.7	-0.1
AKBB	Malin Array Si	151.01	325	*e*PKPbc		PKPbc	19 54 29.7	-0.1
KIEV	Kiev	151.03	325	*e*PKiKP		PKPbc	19 54 29.6	-0.2
KIEV	Kiev	151.03	325	*e*PKPbc		PKPbc	19 54 29.6	-0.2
AK11	Malin Array Si	151.06	325	*e*PKPbc		PKPbc	19 54 29.7	-0.2
SUW	Suwalki	151.36	335	*e*PKP		PKPbc	19 54 31.1	+0.6
SUW				*e*			19 55 11.5	
SUW	Suwalki	151.36	335	*e*PKiKP		PKPbc	19 54 31.1	+0.6
HWQ	Hawqa	151.68	288	*e*P		PKPbc	19 54 32.8	+0.7
BHL	Bhannes	151.93	288	*e*P		PKPbc	19 54 33.4	+0.8
MMAI	Mount Meron Ar	152.13	286	PKPbc		PKPbc	19 54 34.5	+1.4
	comp=Z,36nm,0.7s,baz=76,slow=7.0,SNR=80							
MMAI				PKPab		PKPab	19 54 43.3	+0.5
	comp=Z,16nm,0.5s,baz=76,slow=6.1,SNR=19							
EIL	Elat	152.26	279	PKPbc		PKPbc	19 54 34.2	+0.9
	comp=Z,45nm,1.0s,baz=320,slow=0.6,SNR=35							
EIL				PKPab		PKPab	19 54 42.2	-1.1
	comp=Z,12nm,0.6s,baz=80,slow=7.6,SNR=13							
BR101	Keskin Array S	152.88	301	*e*PKPdf		PKPdf	19 54 29.4	+2.0
BR101				*e*PKPbc		PKiKP	19 54 35.0	+0.2
BR131	Keskin Array S	152.88	301	*e*PKPdf		PKPdf	19 54 29.4	+2.0
BR131				*e*PKPbc		PKiKP	19 54 35.3	+0.5
BRTR	Keskin Array B	152.88	301	PKP		PKPdf	19 54 29.4	+2.0
	comp=Z,1.5nm,0.9s,baz=90,slow=4.3,SNR=3.6							
BRTR				PKPbc		PKiKP	19 54 35.0	+0.2
	comp=Z,5.8nm,0.8s,baz=129,slow=3.1,SNR=19							
SORM	Soroca	152.99	321	⇑*i*P		PKPab	19 54 45.2	-0.5
ANTO	Ankara	153.48	301	*e*PKiKP		PKPdf	19 54 28.5	+0.3
ANTO				*e*			19 54 37.3	
ANTO	Ankara	153.48	301	*e*PKPdf		PKPdf	19 54 28.5	+0.3
ANTO				*e*PKPbc		PKiKP	19 54 37.2	+1.3
BR231	Keskin MP Arra	153.50	301	*e*PKPdf		PKPdf	19 54 28.9	+0.7
BR231				*e*PKPbc		PKPbc	19 54 36.1	+0.1
EKA	Eskdalemuir Ar	153.69	8	PKPab		PKPab	19 54 47.9	-0.5
	comp=Z,1.8nm,0.6s,baz=331,slow=2.6,SNR=7.3							
CSS	Mathiatis	153.81	290	*e*PKPdf		PKPdf	19 54 28.6	-0.2
CSS				*e*PKPbc		PKiKP	19 54 37.6	+0.9
BEL	Belsk	153.97	334	*e*PKP		PKPbc	19 54 37.6	+1.3
BEL				*e*			19 55 18.0	
LVV	L'vov	154.12	328	*e*PKP2		PKPab	19 54 48.9	-1.6
TESR	Tescani	154.86	319	⇓*i*P		PKPab	19 54 54.1	+0.3
TIRR	Tirgusor	154.87	314	*e*PKiKP		PKPdf	19 54 30.2	+0.4
TIRR				*e*			19 54 40.3	
TIRR				*e*			19 54 54.5	
TIRR	Tirgusor	154.87	314	*e*PKPdf		PKPdf	19 54 30.2	+0.4
TIRR				*e*PKPbc		PKiKP	19 54 40.3	+1.8
TIRR				*e*PKPab		PKPab	19 54 54.5	+0.6
BURAR	Bucovina Array	154.99	323	⇑*i*P		PKPab	19 54 54.5	+0.1
BURAR	Bucovina Array	154.99	323	⇑PKP2		PKPab	19 54 54.5	+0.1
TLB	Topalu	155.04	314	⇑*i*P		PKPab	19 54 55.6	+1.0
TLB	Topalu	155.04	314	⇑PKP2		PKPab	19 54 55.6	+1.0
HARR	Harsova	155.06	315	⇓*i*P		PKPab	19 54 54.8	+0.1
HARR	Harsova	155.06	315	⇓PKP2		PKPab	19 54 54.8	+0.1
PLOR	Plostina	155.23	318	⇑*i*P		PKPab	19 54 56.3	+0.9
PLOR	Plostina	155.23	318	⇑PKP2		PKPab	19 54 56.3	+0.9
PSN	Preselentsi	155.38	312	*e*P		PKPab	19 54 53.7	-2.4
KOLS	Kolonicke sedl	155.55	328	*e*		PKPdf	19 54 31.1	+0.4
OJC	Ojcow	155.63	333	*e*PKP		PKPdf	19 54 41.0	+10
OJC	Ojcow	155.63	333	*e*PKiKP		PKPdf	19 54 41.0	+10
STHS	Stebnicka Huta	155.66	330	*e*PKP2		PKPab	19 54 57.6	+0.5
STHS				pmax		pmax		
	comp=Z,5.0nm,1.0s							
STHS	Stebnicka Huta	155.66	330	*e*P		PKPab	19 54 57.6	+0.5
UZH	Uzhgorod	155.76	328	*e*PKiKP		PKPdf	19 54 39.9	+9.0
UZH				*i*			19 54 56.9	
BMR	Baia Mare	155.84	325	⇑*i*P		PKPab	19 54 57.5	-0.4
BMR	Baia Mare	155.84	325	⇑PKP2		PKPab	19 54 57.5	-0.4
MLR	Muntele Rosu	155.84	318	PKPab		PKPab	19 54 57.9	-0.3
	comp=Z,1.4nm,0.9s,baz=58,slow=6.2,SNR=7.4							
MLR	Muntele Rosu	155.84	318	⇓*i*P		PKPab	19 54 59.3	+1.1
DOPR	Dopca	155.89	319	⇓*i*P		PKPab	19 54 59.2	+1.0
CRVS	Cervenica-Dubn	155.94	329	*e*PKP2		PKPab	19 54 57.8	-0.5
CRVS	Cervenica-Dubn	155.94	329	*e*		PKPdf	19 54 37.3	+6.1
CRVS	Cervenica-Dubn	155.94	329	*e*P		PKPab	19 54 57.8	-0.5
SECR		156.02	317	⇓*i*P		PKPab	19 54 59.3	+0.5
SULR		156.10	316	⇓*i*P		PKPab	19 54 59.8	+0.7
PRD	Provadia	156.11	312	*e*P		PKPab	19 55 00.0	+0.8
KSP	Ksiaz	156.36	339	*e*PKP		PKPab	19 55 00.6	+0.6
KSP	Ksiaz	156.36	339	*e*PKP2		PKPab	19 55 00.6	+0.6
VOIR		156.39	319	⇓*i*P		PKPab	19 55 01.7	+1.2
VOIR		156.39	319	⇓PKP2		PKPab	19 55 01.7	+1.2
OKC	Ostrava-Krasne	156.57	335	*e*PKPAB		PKPab	19 55 00.8	-0.1
OKC	Ostrava-Krasne	156.57	335	*e*PKP2		PKPab	19 55 00.8	-0.1
OKC				MLR		MLR		
	comp=Z,1μm,20.7s							
LANS	Liptovska Anna	156.61	332	*e*PKP2		PKPab	19 55 01.5	+0.3
LANS	Liptovska Anna	156.61	332	*e*P		PKPab	19 55 01.5	+0.3
ARR	Arges	156.67	319	⇓*i*P		PKPab	19 55 02.7	+1.0
KECS	Kecovo	156.69	330	*e*PKP2		PKPab	19 55 01.7	+0.2
KECS				pmax		pmax		
	comp=Z,5.0nm,0.9s							
KECS	Kecovo	156.69	330	*e*		PKPdf	19 54 34.5	+2.3
KECS	Kecovo	156.69	330	*e*P		PKPab	19 55 01.7	+0.2
UPC	Upice	156.74	339	*e*PKPAB		PKPab	19 55 02.1	+0.4
UPC	Upice	156.74	339	*e*PKP2		PKPab	19 55 02.1	+0.4
UPC				MLR		MLR		
	comp=Z,3μm,21.7s							
DPC	Dobruska-Polom	156.78	338	*e*PKPAB		PKPab	19 55 02.2	+0.3
DPC	Dobruska-Polom	156.78	338	*e*PKP2		PKPab	19 55 02.2	+0.3
DPC				MLR		MLR		
	comp=Z,2μm,21.4s							
DRGR		156.82	324	⇓*i*P		PKPab	19 55 02.3	0.0
DRGR		156.82	324	⇓PKP2		PKPab	19 55 02.3	0.0
MORC	Moravsky Berou	156.84	336	⇑*i*P		PKPab	19 55 02.7	+0.5
MORC	Moravsky Berou	156.84	336	⇑PKP2		PKPab	19 55 02.7	+0.5
KRLC	Kraliky	156.86	337	*e*PKPAB		PKPab	19 55 02.5	+0.3
KRLC	Kraliky	156.86	337	*e*PKP2		PKPab	19 55 02.5	+0.3
CLL	Collm	156.86	344	*e*PKPdiff		PKPdf	19 54 43.0	+11
CLL				*i* PKPab		PKPab	19 55 01.7	-0.4
CLL	Collm	156.86	344	*e*PKiKP		PKPdf	19 54 43.0	+11
JMB	Yambol	156.97	311	*e*P		PKPab	19 55 01.8	-1.2
SZH	Strazhica	157.02	313	*e*P		PKPab	19 55 03.4	+0.2
BRG	Berggiesshubel	157.02	342	*e*PKP2		PKPab	19 55 02.2	-0.6
BRG				pmax		pmax		
	comp=Z,10.0nm,1.0s							
BRG				MLR		MLR		
	comp=N,1μm,18.8s							
BRG				MLR		MLR		
	comp=E,698nm,20.2s							
BRG				MLR		MLR		
	comp=Z,2μm,20.8s							
BRG	Berggiesshubel	157.02	342	*e*PKP		PKPab	19 55 02.2	-0.6
	comp=Z,9.5nm,1.0s							
PVCC	Panska Ves	157.16	341	*e*PKPAB		PKPab	19 55 03.8	+0.4
PVCC	Panska Ves	157.16	341	*e*PKP2		PKPab	19 55 03.8	+0.4
PVCC				MLR		MLR		
	comp=Z,2μm,21.8s							
DEV	Deva	157.32	322	⇓*i*P		PKPab	19 55 05.0	+0.7
DEV	Deva	157.32	322	⇓PKP2		PKPab	19 55 05.0	+0.7
PSZ	Piszkesteto	157.37	330	⇓*i*P		PKPab	19 55 04.7	+0.1
PSZ	Piszkesteto	157.37	330	⇓PKP2		PKPab	19 55 04.7	+0.1
VYHS	Vyhne	157.38	332	*e*PKP2		PKPab	19 55 04.2	-0.3
VYHS				pmax		pmax		
	comp=Z,6.0nm,0.9s							
VYHS	Vyhne	157.38	332	*e*		PKPdf	19 54 29.9	-3.2
VYHS	Vyhne	157.38	332	*e*P		PKPab	19 55 04.2	-0.3
VRAC	Vranov	157.57	336	PKPab		PKPab	19 55 05.6	+0.3
	comp=Z,11nm,1.0s,baz=26,slow=4.1,SNR=18							
VRAC	Vranov	157.57	336	⇑*i*P		PKPab	19 55 06.1	+0.8
GOPC	GO Pecny, Ondr	157.64	340	*e*PKPAB		PKPab	19 55 05.8	+0.2
GOPC	GO Pecny, Ondr	157.64	340	*e*PKP2		PKPab	19 55 05.8	+0.2
GOPC				MLR		MLR		
	comp=Z,2μm,23.8s							
PRU	Pruhonice	157.65	340	*e*PKPAB		PKPab	19 55 05.6	0.0
PRU	Pruhonice	157.65	340	*e*PKP2		PKPab	19 55 05.6	0.0
PRU				MLR		MLR		
	comp=Z,2μm,21.7s							
SMOL	Smolenice	157.93	334	*e*PKP2		PKPab	19 55 07.5	+0.7
SMOL	Smolenice	157.93	334	*e*P		PKPab	19 55 07.5	+0.7
NKC	Novy Kostel	157.99	344	*e*PKPAB		PKPab	19 55 07.0	-0.1
NKC	Novy Kostel	157.99	344	*e*PKP2		PKPab	19 55 07.0	-0.1
NKC				MLR		MLR		
	comp=Z,3μm,20.8s							
BZS	Buzias	158.17	323	⇑*i*P		PKPab	19 55 08.1	+0.1
BZS	Buzias	158.17	323	⇑PKP2		PKPab	19 55 08.1	+0.1
KHC	Kasperske Hory	158.70	341	*e*PKPAB		PKPab	19 55 10.5	+0.3
KHC	Kasperske Hory	158.70	341	*e*PKP2		PKPab	19 55 10.5	+0.3
KHC				MLR		MLR		
	comp=Z,2μm,21.1s							
GERES	GERESS Array B	158.92	340	PKP		PKPdf	19 54 34.9	-0.1
	comp=Z,0.7nm,0.9s,baz=64,slow=3.1,SNR=6.3							
GERES				PKPab		PKPab	19 55 09.5	-1.8
	comp=Z,1.2nm,0.7s,baz=44,slow=4.1,SNR=9.1							
GEA0	GERESS Array S	158.92	340	*e*PKPdf		PKPdf	19 54 33.6	-1.5
GEA0				*e*PKPab		PKPab	19 55 09.2	-2.0
CONA	Conrad Observa	159.00	335	*i* PKPab		PKPab	19 55 11.6	0.0
	comp=Z,17nm,1.2s,SNR=9.4							
MOA	Molln	159.62	338	*i* PKPab		PKPab	19 55 15.1	+0.9
	comp=Z,12nm,1.2s,SNR=7.3							
ARSA	Arzberg	159.69	335	*i* PKPab		PKPab	19 55 14.1	-0.5
	comp=Z,4.4nm,0.9s							
SOKA	Soboth	160.36	335	*i* PKPab		PKPab	19 55 17.8	+0.3
	comp=Z,15nm,1.1s,SNR=11							
OBKA	Obir	160.68	335	*i* PKPab		PKPab	19 55 18.7	-0.2
	comp=Z,6.0nm,0.9s							
MYKA	Terra Mystica	160.89	337	*i* PKPab		PKPab	19 55 19.0	-0.8
	comp=Z,3.9nm,1.0s,SNR=6.1							
WTTA	Wattenberg	160.94	342	*e*PKPab		PKPab	19 55 19.4	-0.8
	comp=Z,20nm,1.6s							
RETA	Reutte	160.96	344	*i* PKPab		PKPab	19 55 18.6	-1.5
	comp=Z,5.7nm,1.1s							
MOTA	Moosalm	161.00	343	*i* PKPab		PKPab	19 55 20.5	+0.1
	comp=Z,7.4nm,1.1s							
ABTA	Abfaltersbach	161.15	339	*i* PKPab		PKPab	19 55 20.7	-0.3
	comp=Z,14nm,1.1s,SNR=7.1							
DAVA	Damuels	161.35	345	*i* PKPab		PKPab	19 55 19.3	-2.6
	comp=Z,9.1nm,0.9s							
FETA	Feichten	161.40	343	*i* PKPab		PKPab	19 55 19.4	-2.8
	comp=Z,5.5nm,0.9s							
DAVOX	Davos/Dischmat	161.83	345	PKP		PKPdf	19 54 38.9	+0.4
	comp=Z,1.3nm,0.7s,baz=206,slow=3.2,SNR=3.1							
TOA0	Torodi Ar. Sit	163.79	175	*e*PKPdf		PKPdf	19 54 41.4	+0.3
TORD	Torodi Ar. Bea	163.79	175	PKP		PKPdf	19 54 41.5	+0.4
	comp=Z,4.6nm,1.1s,baz=274,slow=0.4,SNR=12							
TOA1	Torodi Ar. Sit	163.80	175	*e*PKPdf		PKPdf	19 54 41.5	+0.4
PAB	San Pablo	168.19	29	*e*PKIKP		PKPdf	19 54 43.4	-0.6
PAB	San Pablo	168.19	29	*e*PKPdf		PKPdf	19 54 43.4	-0.6
ESDC	Sonseca Array	168.24	27	PKP		PKPdf	19 54 45.3	+1.3
	comp=Z,0.3nm,0.5s,baz=323,slow=1.6,SNR=7.9							
ES19	SONSECA Array	168.24	27	*e*PKPdf		PKPdf	19 54 45.2	+1.2

*IDC **09** 19:35:04.0±4.3,35°.90N×70°.30E,h121km±30km,mb3.5/8, mb1 3.4/14,mb1mx3.2/59,mbtmp3.9/14, Error ellipse: s-maj=48.3km s-min=18.8km az=152.0*

*ISCJB **09** 19:35:10.7±0.6,36°.46N±0°.04×70°.54E±0°.07,h204km, mb3.5/6, Error ellipse: s-maj=8.2km s-min=5.2km az=158.4*

*NNC **09** 19:35:13.4±3.5,36°.76N×70°.12E,h190km±47km,mb3.2, mpv4.1, Error ellipse: s-maj=32.1km s-min=24.2km az=54.0*

ISC 09 19:35:10.8±0.7,**36°.37N**±0°.06×**70°.70E**±0°.08,**h204**km,**n31, σ3°.21/38,mb3.6/6,8C-6D,Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
THN	Thein Dam	5.71	132	*e*P		Pn		19 36 31.0	-3.3
THN				*e*S		S		19 37 35.0	-5.1
MNAS	Manas	6.27	12	⇑P		Pn		19 36 40.0	-1.6
	13nm,0.6s								
MNAS				⇑S		S		19 37 50.6	-2.8
	12nm,0.5s								
KK31	Karatay Array	6.73	359	⇓P		Pn		19 36 45.0	-2.4
	6.7nm,0.3s,baz=199,slow=14,SNR=213								
KK31				⇓S		S		19 37 58.6	-5.5
	9.6nm,0.4s,baz=194,slow=26,SNR=4.1								
AAK	Ala-Archa	6.91	24	P		Pn		19 36 50.3	+0.3
	4.3nm,0.3s,baz=201,slow=8.5,SNR=15								
AAK				S		S		19 38 08.6	0.0
	1.7nm,0.3s,baz=356,slow=21,SNR=8.3								
AAK	Ala-Archa	6.91	24	⇓P		Pn		19 36 49.9	-0.1
	9.3nm,0.6s								
AAK				⇑S		S		19 38 08.9	+0.3

SNZO	**South Karori**	**13.74**	**207**	*e*Pn		**Pn**	**19 38 31.3**	**-2.7**
KHZ	**Kahutara**	**15.14**	**208**	*e*Pn		**Pn**	**19 38 49.6**	**-3.3**
	126nm,0.8s							
LTZ	**Lake Taylor**	**15.98**	**210**	*e*Pn		**Pn**	**19 39 00.4**	**-3.5**
	490nm,1.8s							
AFI	**Afiamalu**	**16.08**	**18**	Pn		**Pn**	**19 39 02.6**	**-2.8**
	6.6nm,0.3s,baz=202,slow=12,SNR=4.5							
AFI				Sn		Sn	19 41 46.8	-16
	12nm,0.3s,baz=244,slow=21,SNR=4.1							
AFI	**Afiamalu**	**16.08**	**18**	*e*P		**Pn**	**19 39 04.5**	**-0.9**
AFI				pmax		pmax		
	comp=Z,187nm,0.9s							
AFI	**Afiamalu**	**16.08**	**18**	*e*Pn		**Pn**	**19 39 04.5**	**-0.9**
	comp=Z,187nm,0.9s							
AFI				Sn		Sn	19 41 46.9	-16
CRLZ	**Canterbury Las**	**16.48**	**208**	*e*Pn		**Pn**	**19 39 05.2**	**-5.0**
	comp=Z,355nm,1.5s							
OXZ	**Oxford**	**16.52**	**209**	*e*Pn		**Pn**	**19 39 09.7**	**-1.0**
	comp=Z,270nm,0.6s							
MQZ	**McQueen's Vall**	**16.58**	**207**	*e*Pn		**Pn**	**19 39 07.3**	**-4.1**
	comp=Z,357nm,1.9s							
DZM	**Mont Dzumac**	**16.64**	**292**	Pn		**P**	**19 39 16.5**	**+1.9**
	comp=Z,1.4nm,0.3s,baz=132,slow=12,SNR=12							
DZM				LR		LR	19 44 35.3	
	comp=Z,72µm,18.3s,baz=132,slow=34							
DZM	**Mont Dzumac**	**16.64**	**292**	*e*P		**P**	**19 39 16.2**	**+1.6**
	comp=Z,606nm,1.5s							
DZM				*e*LR		LR	19 43 12.0	
	comp=Z,95µm,23.6s							
DZM	**Mont Dzumac**	**16.64**	**292**	*e*Pn		**P**	**19 39 14.2**	**-0.5**
	comp=Z,787nm,1.7s							
RPZ	**Rata Peaks**	**17.26**	**211**	P		**Pn**	**19 39 18.4**	**-1.6**
	comp=Z,14nm,0.3s,baz=331,slow=1.6,SNR=12							
RPZ				S		Sn	19 42 14.4	-17
	comp=Z,3.3nm,0.3s,baz=121,slow=23,SNR=5.3							
RPZ	**Rata Peaks**	**17.26**	**211**	*e*Pn		**Pn**	**19 39 16.3**	**-3.8**
	comp=Z,112nm,0.5s							
RPZ				*e*Sn		Sn	19 42 14.4	-17
RAR	**Rarotonga**	**17.48**	**66**	P		**Pn**	**19 39 19.7**	**-3.2**
	comp=Z,4.1nm,0.3s,baz=225,slow=5.4,SNR=15							
RAR	**Rarotonga**	**17.48**	**66**	*e*Pn		**Pn**	**19 39 18.9**	**-4.0**
	comp=Z,310nm,1.0s							
FOZ	**Fox Glacier**	**17.69**	**213**	*e*Pn		**Pn**	**19 39 22.2**	**-3.2**
	comp=Z,437nm,1.4s							
LBZ	**Lake Benmore**	**18.18**	**211**	*e*Pn		**Pn**	**19 39 28.7**	**-2.6**
	comp=Z,366nm,2.0s							
ODZ	**Otahua Downs**	**18.50**	**209**	*e*P		**P**	**19 39 33.0**	**-1.9**
	comp=Z,110nm,0.8s							
WKZ	**Wanaka**	**19.05**	**212**	*e*P		**P**	**19 39 37.4**	**-3.6**
	comp=Z,526nm,1.8s							
MLZ	**Mavora Lakes**	**19.87**	**212**	*e*P		**P**	**19 39 48.1**	**-1.9**
	comp=Z,210nm,1.5s							
DCZ	**Deep Cove**	**20.41**	**214**	*e*P		**P**	**19 39 54.3**	**-1.4**
	comp=Z,129nm,1.3s							
DCZ				LR		LR		
	comp=Z,19µm,19.0s							
LHI	**Lord Howe Isla**	**20.81**	**258**	P		Pn	19 40 04.2	+1.4
	baz=21,SNR=10							
LHI	**Lord Howe Isla**	**20.81**	**258**	*e*P		**P**	**19 39 59.9**	**-0.4**
	comp=Z,624nm,0.9s							
LHI				LR		LR		
	comp=Z,29µm,20.0s							
FUNA	**Funafuti**	**21.03**	**349**	*e*P		**P**	**19 40 04.9**	**+2.2**
	comp=Z,174nm,1.1s							
FUNA				LR		LR		
	comp=Z,20µm,19.0s							
TBI	**Tubuai**	**25.29**	**83**	*e*P		**P**	**19 40 44.8**	**-0.4**
	comp=Z,430nm,1.3s							
TBI				*e*S		**S**	**19 45 06.5**	**-2.7**
	comp=Z,5µm,26.2s							
TBI				*e*LQ		LQ	19 45 39.4	
	comp=Z,16µm,28.0s							
TBI				*e*LR		LR	19 46 51.8	
	comp=Z,39µm,27.8s,baz=251							
TBI	**Tubuai**	**25.29**	**83**	*e*T		T	20 06 34.6	
	comp=Z,60nm,0.3s							
ARMA	**Armidale**	**27.25**	**260**	P		**P**	**19 41 05.6**	**+2.6**
	baz=28,SNR=5.6							
ARMA	**Armidale**	**27.25**	**260**	*e*P		**P**	**19 41 02.8**	**-0.2**
	comp=Z,230nm,1.8s							
ARMA				LR		LR		
	comp=Z,34µm,21.0s							
RIV	**Riverview**	**27.49**	**252**	P		**P**	**19 41 08.0**	**+3.1**
	baz=28							
MGCD	**Mangrove Creek**	**27.53**	**254**	P		**P**	**19 41 08.5**	**+3.2**
	baz=28,SNR=5.5							
PAE	**Paea**	**27.57**	**71**	*e*P		**P**	**19 41 06.3**	**+0.5**
	comp=Z,24nm,1.2s							
PAE	**Paea**	**27.57**	**71**	*e*T		T	20 09 28.9	
	comp=Z,19nm,0.3s							
PPT2	**Papeete2**	**27.61**	**71**	*e*P		**P**	**19 41 07.0**	**+0.8**
	comp=Z,112nm,1.4s							
PPT2				*e*S		**S**	**19 45 45.0**	**-1.1**
	comp=Z,3µm,24.0s							
PPT2				*e*LQ		LQ	19 46 31.0	
	comp=Z,22µm,24.8s							
PPT2				*e*LR		LR	19 48 02.8	
	comp=Z,40µm,26.2s,baz=239							
PPT2	**Papeete2**	**27.61**	**71**	*e*T		T	20 09 32.6	
	comp=Z,16nm,0.3s							
PPT	**Papeete**	**27.62**	**71**	P		**P**	**19 41 08.4**	**+2.2**
	comp=Z,13nm,0.5s,baz=76,slow=15,SNR=3.7							
PPT	**Papeete**	**27.62**	**71**	*e*P		**P**	**19 41 08.0**	**+1.8**
TVO	**Taravao**	**27.78**	**72**	*e*T		T	20 09 44.6	
	comp=Z,2.5nm,0.3s							
TIAR	**Tiarei**	**27.81**	**71**	*e*P		**P**	**19 41 08.5**	**+0.5**
	comp=Z,25nm,0.8s							
EIDS	**Eidsvold**	**28.64**	**270**	P		**P**	**19 41 16.7**	**+1.3**
	baz=29,SNR=9.2							
EIDS	**Eidsvold**	**28.64**	**270**	*e*P		**P**	**19 41 16.3**	**+1.0**
	comp=Z,67nm,0.9s							
EIDS				LR		LR		
	comp=Z,27µm,22.0s							
CNB	**Canberra Magne**	**29.01**	**249**	P		**P**	**19 41 19.8**	**+1.2**
	baz=29,SNR=13							
CAN	**Canberra**	**29.31**	**249**	*e*P		**P**	**19 41 23.2**	**+2.0**
CAN				pmax		pmax		
	comp=Z,70nm,1.0s							
CAN				MLR		MLR		
	comp=Z,17µm,18.0s							
CAN	**Canberra**	**29.31**	**249**	*e*P		**P**	**19 41 23.2**	**+2.0**
	comp=Z,70nm,1.0s							
CAN				LR		LR		
	comp=Z,17µm,18.0s							
HNR	**Honiara**	**29.36**	**308**	P		**P**	**19 41 21.0**	**-0.7**
	comp=Z,76nm,0.9s,baz=227,slow=6.3,SNR=3.9							
HNR	**Honiara**	**29.36**	**308**	P		**P**	**19 41 20.0**	**-1.7**
HNR	**Honiara**	**29.36**	**308**	*e*P		**P**	**19 41 20.9**	**-0.8**
HNR				pmax		pmax		
	comp=Z,390nm,1.4s							
HNR				MLR		MLR		
	comp=Z,10µm,19.0s							
HNR	**Honiara**	**29.36**	**308**	*e*P		**P**	**19 41 20.9**	**-0.8**
	comp=Z,390nm,1.4s							
HNR				LR		LR		
	comp=Z,10µm,19.0s							
YNG	**Young**	**29.79**	**251**	P		**P**	**19 41 26.9**	**+1.5**
	baz=30,SNR=18							
RMQ	**Roma**	**30.39**	**267**	P		**P**	**19 41 33.0**	**+2.1**
	baz=31,SNR=6.5							
VAH	**Vaihoa**	**30.42**	**69**	*e*T		T	20 13 02.9	
	comp=Z,48nm,0.2s							
TAU	**Tasmania Unive**	**31.64**	**235**	*e*P		**P**	**19 41 41.5**	**-0.2**
TAU				pmax		pmax		
	comp=Z,127nm,1.2s							
TAU				MLR		MLR		
	comp=Z,22µm,19.0s							
TAU	**Tasmania Unive**	**31.64**	**235**	*e*P		**P**	**19 41 41.5**	**-0.2**
	comp=Z,127nm,1.2s							
TAU				LR		LR		
	comp=Z,22µm,19.0s							
TARA	**Tarawa**	**32.03**	**341**	*e*P		**P**	**19 41 43.7**	**-1.6**
	comp=Z,150nm,1.0s							
TARA				LR		LR		
	comp=Z,11µm,18.0s							
CMSA	**Cobar Meteorol**	**32.21**	**257**	P		**P**	**19 41 48.2**	**+1.4**
	baz=33,SNR=9.4							
QLP	**Quilpie**	**34.31**	**265**	P		**P**	**19 42 06.2**	**+1.0**
	baz=35,SNR=6.6							
CTA	**Charters Tower**	**34.58**	**277**	P		**P**	**19 42 08.6**	**+1.0**
	comp=Z,39nm,0.6s,baz=100,slow=11,SNR=16							
CTA				ScP		**ScP**	**19 48 27.2**	**+2.4**
	comp=Z,5.6nm,0.8s,baz=18,slow=1.7,SNR=3.7							
CTA	**Charters Tower**	**34.58**	**277**	*e*P		**P**	**19 42 08.6**	**+1.0**
CTAO	**Charters Tower**	**34.58**	**277**	*e*P		**P**	**19 42 07.8**	**+0.2**
CTAO				MLR		MLR		
	comp=Z,36µm,18.0s							
CTAO	**Charters Tower**	**34.58**	**277**	*e*P		**P**	**19 42 07.8**	**+0.2**
	comp=Z,36µm,18.0s							
					LR	LR		
ARPS	**Mount Arapiles**	**35.14**	**247**	P		**P**	**19 42 13.8**	**+1.6**
	baz=36,SNR=6.9							
STKA	**Stephens Creek**	**35.64**	**255**	P		**P**	**19 42 17.6**	**+1.0**
	comp=Z,41nm,0.6s,baz=97,slow=11,SNR=14							
STKA	**Stephens Creek**	**35.64**	**255**	P		**P**	**19 42 17.9**	**+1.3**
	baz=36,SNR=16							
STKA	**Stephens Creek**	**35.64**	**255**	*e*P		**P**	**19 42 16.2**	**-0.4**
STKA				pmax		pmax		
	comp=Z,21nm,0.9s							
STKA				MLR		MLR		
	comp=Z,6µm,18.0s							
STKA	**Stephens Creek**	**35.64**	**255**	*e*P		**P**	**19 42 16.1**	**-0.4**
	comp=Z,21nm,0.9s							
STKA				LR		LR		
	comp=Z,6µm,18.0s							
XMAS	**Kiritimati**	**36.36**	**34**	PFAKE			19 42 40.0	+17
XMAS				LR		LR		
	comp=Z,8µm,19.0s							
MTSU	**Mount Surprise**	**37.04**	**279**	P		**P**	**19 42 30.0**	**+1.3**
	baz=37,SNR=10							
HTT	**Hallett**	**37.70**	**252**	P		**P**	**19 42 34.5**	**+0.2**
	baz=38,SNR=12							
RKT	**Rikitea**	**37.99**	**91**	*e*S		**S**	**19 48 26.6**	**-0.3**
	comp=Z,4µm,29.0s							
RKT				*e*LR		LR	19 52 42.2	
	comp=Z,22µm,27.8s,baz=258							
RKT	**Rikitea**	**37.99**	**91**	*e*T		T	20 22 23.8	
	comp=Z,4.0nm,0.3s							
RABL	**Rabaul**	**38.51**	**305**	*e*P		**P**	**19 42 41.8**	**+0.7**
	comp=Z,80nm,0.5s							
RABL				LR		LR		
	comp=Z,10µm,20.0s							
PMG	**Port Moresby**	**39.02**	**293**	P		**P**	**19 42 46.3**	**+0.9**
	comp=Z,21nm,0.9s,baz=216,slow=14,SNR=2.1							
PMG	**Port Moresby**	**39.02**	**293**	*e*P		**P**	**19 42 45.8**	**+0.4**
PMG				pmax		pmax		
	comp=Z,28nm,0.9s							
PMG				MLR		MLR		
	comp=Z,17µm,21.0s							
PMG	**Port Moresby**	**39.02**	**293**	*e*P		**P**	**19 42 45.8**	**+0.4**
	comp=Z,28nm,0.9s							
PMG				LR		LR		
	comp=Z,17µm,21.0s							
COEN	**Coen**	**39.90**	**284**	*e*P		**P**	**19 42 51.0**	**-1.8**
	comp=Z,51nm,1.0s							
COEN				LR		LR		
	comp=Z,37µm,19.0s							
TAOE	**Nuku Hiva Isla**	**40.03**	**67**	*e*S		**S**	**19 48 59.7**	**+1.6**
	comp=Z,3µm,25.3s							
TAOE				*e*LR		LR	19 53 45.3	
	comp=Z,21µm,26.1s							
TAOE	**Nuku Hiva Isla**	**40.03**	**67**	PFAKE			19 43 10.0	+16
TAOE				LR		LR		
	comp=Z,9µm,21.0s							
BBOO	**Buckleboo**	**40.16**	**253**	P		**P**	**19 42 55.1**	**+0.4**
	baz=40,SNR=10							
BBOO	**Buckleboo**	**40.16**	**253**	*e*P		**P**	**19 42 55.0**	**+0.2**
	comp=Z,72nm,0.7s							
BBOO				LR		LR		
	comp=Z,15µm,20.0s							
QIS	**Mount Isa**	**40.19**	**272**	P		**P**	**19 42 55.6**	**+0.5**
	baz=40,SNR=4.7							
KWAJ	**Kwajalein Atol**	**40.75**	**336**	*e*P		**P**	**19 43 01.1**	**+1.5**
KWAJ				pmax		pmax		
	comp=Z,153nm,1.3s							
KWAJ				MLR		MLR		
	comp=Z,8µm,20.0s							
KWAJ	**Kwajalein Atol**	**40.75**	**336**	*e*P		**P**	**19 43 01.1**	**+1.5**
	comp=Z,152nm,1.3s							
KWAJ				LR		LR		
	comp=Z,8µm,20.0s							
PTCN	**Pitcairn Islan**	**41.65**	**96**	PFAKE			19 43 20.0	+13
PTCN				LR		LR		
	comp=Z,12µm,22.0s							
PATS	**Pohnpei**	**43.15**	**323**	PFAKE			19 43 30.0	+11
PATS				LR		LR		
	comp=Z,8µm,18.0s							
MANU	**Manus Island**	**43.47**	**302**	*e*P		**P**	**19 43 21.9**	**0.0**
	comp=Z,57nm,0.9s							
MANU				LR		LR		
	comp=Z,13µm,20.0s							
AS01	**Alice Springs**	**44.07**	**265**	*e*P		**P**	**19 43 25.4**	**-1.4**
AS31	**Alice Springs**	**44.11**	**265**	*e*P		**P**	**19 43 26.0**	**-1.1**
	comp=Z,13nm,0.6s							
AS31				*e*ScP		**ScP**	**19 49 05.9**	**+4.3**
AS31				*e*S		**S**	**19 49 57.8**	**-0.3**
AS31				LR		LR		
	comp=Z,600nm,18.0s							
ASAR	**Alice Springs**	**44.11**	**265**	P		**P**	**19 43 26.4**	**-0.7**
	comp=Z,37nm,0.8s,baz=102,slow=6.4,SNR=24							
ASAR				ScP		**ScP**	**19 49 05.9**	**+4.3**
	comp=Z,5.9nm,0.9s,baz=115,slow=3.9,SNR=5.7							
ASAR				S		**S**	**19 49 57.8**	**-0.3**
	comp=Z,2.7nm,0.9s,baz=113,slow=14,SNR=5.2							
ASAR				PKiKP		PKiKP	19 52 21.2	+8.3
	comp=Z,0.4nm,0.5s,baz=106,slow=1.4,SNR=4.3							
ASAR	**Alice Springs**	**44.11**	**265**	P		**P**	**19 43 26.4**	**-0.7**
ASAR				ScP		**ScP**	**19 49 05.9**	**+4.3**
ASAR				S		**S**	**19 49 57.8**	**-0.3**
ASAR				PKiKP		PKiKP	19 52 21.2	+8.3
WR0	**Warramunga Arr**	**44.82**	**271**	PFAKE			19 43 40.0	+7.2
WR0				LR		LR		
	comp=Z,14µm,19.0s							
WR9	**Warramunga Arr**	**44.85**	**271**	PFAKE			19 43 40.0	+7.0
WR9				LR		LR		
	comp=Z,14µm,19.0s							
WR8	**Warramunga Arr**	**44.86**	**271**	PFAKE			19 43 40.0	+6.9
WR8				LR		LR		
	comp=Z,15µm,19.0s							
WR7	**Warramunga Arr**	**44.88**	**271**	PFAKE			19 43 40.0	+6.7
WR7				LR		LR		
	comp=Z,15µm,18.0s							
WR6	**Warramunga Arr**	**44.90**	**271**	PFAKE			19 43 40.0	+6.6
WR6				LR		LR		
	comp=Z,14µm,18.0s							
WR5	**Warramunga Arr**	**44.92**	**271**	PFAKE			19 43 40.0	+6.4
WR5				LR		LR		
	comp=Z,15µm,18.0s							
WR4	**Warramunga Arr**	**44.95**	**271**	PFAKE			19 43 40.0	+6.2
WR4				LR		LR		
	comp=Z,14µm,19.0s							
WR3	**Warramunga Arr**	**44.96**	**271**	PFAKE			19 43 40.0	+6.1
WR3				LR		LR		
	comp=Z,15µm,18.0s							
WC3	**Warramunga Arr**	**44.97**	**271**	PFAKE			19 43 40.0	+6.0
WC3				LR		LR		
	comp=Z,16µm,19.0s							
WR2	**Warramunga Arr**	**44.98**	**271**	PFAKE			19 43 40.0	+5.9
WR2				LR		LR		
	comp=Z,14µm,18.0s							
WC2	**Warramunga Arr**	**44.99**	**271**	PFAKE			19 43 40.0	+5.9
WC2				LR		LR		
	comp=Z,19µm,19.0s							
WB2	**Warramunga Arr**	**45.00**	**271**	*e*P		**P**	**19 43 32.9**	**-1.3**
	comp=Z,61nm,0.8s							
WB2				LR		LR		
	comp=Z,16µm,18.0s							
WB3	**Warramunga Arr**	**45.00**	**271**	PFAKE			19 43 40.0	+5.8
WB3				LR		LR		
	comp=Z,15µm,18.0s							
WC4	**Warramunga Arr**	**45.00**	**271**	PFAKE			19 43 40.0	+5.8
WC4				LR		LR		
	comp=Z,15µm,18.0s							
WRAB	**Tennant Creek**	**45.00**	**271**	*e*P		**P**	**19 43 32.8**	**-1.4**
WRAB				pmax		pmax		
	comp=Z,57nm,0.8s							
WRAB				MLR		MLR		
	comp=Z,16µm,18.0s							
WRAB	**Tennant Creek**	**45.00**	**271**	*e*P		**P**	**19 43 32.8**	**-1.4**
	comp=Z,57nm,0.8s							
WRAB				LR		LR		
	comp=Z,16µm,18.0s							
WB4	**Warramunga Arr**	**45.00**	**271**	PFAKE			19 43 40.0	+5.8
WB4				LR		LR		
	comp=Z,14µm,18.0s							
WR1	**Warramunga Arr**	**45.01**	**271**	*e*P		**P**	**19 43 33.7**	**-0.6**
	comp=Z,69nm,0.8s							
WR1				*e*ScP		**ScP**	**19 49 09.6**	**+4.3**
WR1				*e*S		**S**	**19 50 07.1**	**-4.0**
WR1				LR		LR		
	comp=Z,16µm,19.0s							
WB5	**Warramunga Arr**	**45.01**	**271**	PFAKE			19 43 50.0	+16
WB5				LR		LR		
	comp=Z,14µm,19.0s							
WRA	**Warramunga Arr**	**45.01**	**271**	P		**P**	**19 43 33.7**	**-0.6**
	comp=Z,91nm,1.0s,baz=110,slow=7.9,SNR=26							
WRA				ScP		**ScP**	**19 49 09.6**	**+4.3**
	comp=Z,3.4nm,0.9s,baz=118,slow=4.3,SNR=4.6							
WRA				S		**S**	**19 50 07.1**	**-4.0**
	comp=Z,3.2nm,0.9s,baz=111,slow=13,SNR=2.5							
WRA				PKiKP		**PKiKP**	**19 52 21.2**	**+7.3**
	comp=Z,1.4nm,1.0s,baz=98,slow=0.5,SNR=4.8							
WRA	**Warramunga Arr**	**45.01**	**271**	P		**P**	**19 43 33.7**	**-0.6**
WRA				ScP		**ScP**	**19 49 09.6**	**+4.3**
WRA				S		**S**	**19 50 07.1**	**-4.0**
WRA				PKiKP		**PKiKP**	**19 52 21.2**	**+7.3**
WC1	**Warramunga Arr**	**45.01**	**271**	PFAKE			19 43 50.0	+16
WC1				LR		LR		
	comp=Z,12µm,18.0s							
WB6	**Warramunga Arr**	**45.02**	**271**	PFAKE			19 43 50.0	+16
WB6				LR		LR		
	comp=Z,13µm,19.0s							
WB8	**Warramunga Arr**	**45.02**	**271**	PFAKE			19 43 50.0	+16
WB8				LR		LR		
	comp=Z,14µm,18.0s							
WB9	**Warramunga Arr**	**45.02**	**271**	PFAKE			19 43 50.0	+16
WB9				LR		LR		
	comp=Z,28µm,18.0s							
WB0	**Warramunga Arr**	**45.02**	**271**	PFAKE			19 43 50.0	+16
WB0				LR		LR		
	comp=Z,14µm,18.0s							
FORT	**Forrest**	**47.23**	**254**	P		**P**	**19 43 51.0**	**-0.6**
	baz=48,SNR=6.8							
FORT	**Forrest**	**47.23**	**254**	*e*P		**P**	**19 43 49.3**	**-2.3**
WRKA	**Warakurna**	**48.55**	**261**	P		**P**	**19 44 00.5**	**-1.5**
	baz=49,SNR=7.9							
GENI	**Genyem**	**48.64**	**295**	P		P	19 44 08.2	+5.5
SBA	**Scott Base**	**49.16**	**185**	*e*P		**P**	**19 44 08.6**	**+2.8**
SBA				pmax		pmax		
	comp=Z,177nm,1.4s							
SBA				MLR		MLR		
	comp=Z,4µm,18.0s							
SBA	**Scott Base**	**49.16**	**185**	*e*P		**P**	**19 44 08.6**	**+2.8**
	comp=Z,177nm,1.4s							
SBA				LR		LR		
	comp=Z,4µm,18.0s							
VNDA	**Vanda**	**49.24**	**186**	P		**P**	**19 44 09.6**	**+3.2**
	comp=Z,3.5nm,0.7s,baz=15,slow=5.8,SNR=6.3							
VNDA	**Vanda**	**49.24**	**186**	*e*P		**P**	**19 44 07.4**	**+0.9**
VNDA				pmax		pmax		
	comp=Z,81nm,1.5s							
VNDA	**Vanda**	**49.24**	**186**	*e*P		**P**	**19 44 07.4**	**+0.9**
	comp=Z,81nm,1.5s							
MTN	**Manton Dam**	**50.76**	**277**	P		**P**	**19 44 18.7**	**-0.1**
	baz=51,SNR=5.2							
MTN	**Manton Dam**	**50.76**	**277**	*e*P		**P**	**19 44 17.9**	**-0.9**
	comp=Z,61nm,1.1s							
MTN				LR		LR		
	comp=Z,36µm,18.0s							
WAKE	**Wake Island**	**50.88**	**340**	PFAKE			19 44 30.0	+11
WAKE				LR		LR		
	comp=Z,6µm,21.0s							
KNRA	**Kununurra**	**51.57**	**273**	P		**P**	**19 44 24.3**	**-0.6**
	baz=52							
KMBL	**Kambalda**	**52.24**	**251**	P		**P**	**19 44 27.9**	**-1.8**
	baz=53,SNR=9.9							
UWE	**Uwekahuna**	**52.78**	**26**	PFAKE			19 44 50.0	+16
UWE				LR		LR		
	comp=Z,5µm,19.0s							
SAUI	**Saumlaki**	**52.96**	**283**	PFAKE			19 44 50.0	+15
SAUI				LR		LR		
	comp=Z,17µm,18.0s							
POHA	**Pohakuloa**	**53.00**	**25**	PFAKE			19 44 50.0	+14
POHA				LR		LR		
	comp=Z,5µm,19.0s							
HPAH	**Hawaii Prepara**	**53.19**	**25**	PFAKE			19 44 50.0	+13
HPAH				LR		LR		
	comp=Z,4µm,18.0s							
FITZ	**Fitzroy Crossi**	**53.31**	**269**	P		**P**	**19 44 36.9**	**-0.9**
	baz=54,SNR=12							
FITZ	**Fitzroy Crossi**	**53.31**	**269**	*e*P		**P**	**19 44 36.4**	**-1.4**
	comp=Z,206nm,1.6s							
FITZ				LR		LR		
	comp=Z,11µm,18.0s							
KEKH	**Kekaha**	**53.66**	**20**	PFAKE			19 44 50.0	+10
KEKH				LR		LR		
	comp=Z,5µm,20.0s							
OPA	**Opana**	**53.91**	**22**	PFAKE			19 44 50.0	+8.0
OPA				LR		LR		
	comp=Z,4µm,20.0s							
FAKI	**Fak Fak**	**54.87**	**289**	P		**P**	**19 44 44.7**	**-4.5**
	comp=Z,79nm,1.6s,comp=Z,2µm							
FAKI	**Fak Fak**	**54.87**	**289**	*e*P		**P**	**19 44 48.7**	**-0.5**
	comp=Z,72nm,1.1s							
FAKI				LR		LR		
	comp=Z,5µm,19.0s							
RKGY	**Rocky Gully**	**55.43**	**246**	P		**P**	**19 44 53.0**	**0.0**
	baz=56,SNR=7.3							
KLBR	**Kellerberrin**	**55.58**	**250**	P		**P**	**19 44 52.6**	**-1.6**
	baz=56,SNR=12							
NWAO	**Narrogin (SRO)**	**55.65**	**248**	P		**P**	**19 44 52.8**	**-1.8**
	baz=56,SNR=5.0							
NWAO				P		**P**	**19 44 52.8**	**-1.8**
	baz=56,SNR=5.0							
NWAO	**Narrogin (SRO)**	**55.65**	**248**	*e*P		**P**	**19 44 53.0**	**-1.6**
NWAO				pmax		pmax		
	comp=Z,93nm,1.6s							
NWAO				MLR		MLR		
	comp=Z,8µm,19.0s							
NWAO	**Narrogin (SRO)**	**55.65**	**248**	*e*P		**P**	**19 44 53.0**	**-1.6**
	comp=Z,93nm,1.6s							
NWAO				LR		LR		
	comp=Z,8µm,19.0s							
MEEK	**Meekatharra**	**56.34**	**256**	P		**P**	**19 44 58.5**	**-1.2**
	baz=57,SNR=10.0							
GUMO	**Guam**	**56.41**	**314**	P		**P**	**19 44 59.2**	**-0.9**
	comp=Z,74nm,0.5s,baz=178,slow=12,SNR=3.4							
GUMO	**Guam**	**56.41**	**314**	*e*P		**P**	**19 44 58.8**	**-1.3**
GUMO				pmax		pmax		
	comp=Z,436nm,1.8s							
GUMO				MLR		MLR		
	comp=Z,4µm,19.0s							
GUMO	**Guam**	**56.41**	**314**	*e*P		**P**	**19 44 58.8**	**-1.3**
	comp=Z,436nm,1.8s							
GUMO				LR		LR		
	comp=Z,4µm,19.0s							
CASY	**Casey**	**56.50**	**208**	*e*P		**P**	**19 45 00.2**	**0.0**
	comp=Z,118nm,0.8s							
CASY				LR		LR		
	comp=Z,

comp=Z,98nm,0.8s,comp=Z,2µm
KAPI Kappang 64.35 279 *e*P **P 19 45 52.9 -1.7**
comp=Z,83nm,1.3s
KAPI LR LR
comp=Z,5µm,21.0s
TWSI Taliwang, Sumb 65.04 274 P **P 19 45 56.6 -2.5**
comp=Z,41nm,1.2s,comp=Z,2µm
TTSI Tana Toraja 65.29 281 P **P 19 46 00.1 -0.6**
comp=Z,94nm,1.1s,comp=Z,989nm
DAV Davao City (W) 66.05 294‖ *e*P **P 19 46 04.5 -1.0**
DAV Davao City (W) 66.05 294 PFAKE 19 46 20.0 +14
DAV LR LR
comp=Z,3µm,22.0s
JAGI Jajag, Banyuwa 67.55 273 P **P 19 46 12.5 -2.7**
comp=Z,95nm,1.1s
JAGI Jajag, Banyuwa 67.55 273 *e*P **P 19 46 13.5 -1.6**
comp=Z,87nm,1.0s
JAGI LR LR
comp=Z,7µm,20.0s
GMJI Gumukmas 68.26 273 P P 19 46 14.6 -5.0
comp=Z,89nm,1.1s,comp=Z,2µm
MYLDM Lahad Datu 70.76 288 *e*P **P 19 46 32.4 -2.6**
comp=Z,56nm,1.2s
UGM Wanagama 70.97 272 P **P 19 46 35.2 -1.3**
comp=Z,110nm,1.2s
UGM Wanagama 70.97 272 PFAKE 19 46 50.0 +14
UGM LR LR
comp=Z,6µm,21.0s
PMSA Palmer Station 72.84 156 *e*P **P 19 46 47.6 +0.9**
comp=Z,163nm,1.8s
KKM Kota Kinabalu 73.13 287 *e*P **P 19 46 47.9 -1.5**
comp=Z,72nm,1.2s
CISI Cisompet, Garu 73.50 271 *e*P **P 19 46 49.2 -2.4**
comp=Z,104nm,1.0s
CISI LR LR
comp=Z,5µm,20.0s
MAW Mawson 73.62 200 P **P 19 46 54.0 +2.7**
comp=Z,49nm,1.1s,baz=154,slow=7.1,SNR=9.1
MAW Mawson 73.62 200 *e*P **P 19 46 52.3 +1.0**
MAW pmax pmax
comp=Z,42nm,1.8s
MAW MLR MLR
comp=Z,1µm,19.0s
MAW Mawson 73.62 200 *e*P **P 19 46 52.3 +1.0**
comp=Z,42nm,1.8s
MAW LR LR
comp=Z,1µm,19.0s
XMIS Christmas Isla 74.03 267 PFAKE 19 47 10.0 +15
XMIS LR LR
comp=Z,9µm,19.0s
JHJ2 Mitsune 74.42 323 *e*P **P 19 46 55.4 -1.0**
comp=Z,290nm,1.4s
JHJ Hachijo jima 2 74.44 323 P **P 19 46 55.3 -1.2**
comp=Z,38nm,0.7s,baz=198,slow=20,SNR=3.1
SBUM Sibu 74.61 282 *e*P **P 19 46 57.0 -1.0**
comp=Z,48nm,1.1s
SBUM LR LR
comp=Z,4µm,20.0s
KSM Kuching 75.75 280 *e*P **P 19 47 02.9 -1.6**
comp=Z,68nm,1.1s
KSM LR LR
comp=Z,4µm,20.0s
JOW Kunigami 76.66 311 PFAKE 19 47 20.0 +11
JOW LR LR
comp=Z,6µm,22.0s
INU Inuyama 77.62 323 *e*P **P 19 47 13.7 -0.9**
comp=Z,59nm,1.2s
INU LR LR
comp=Z,4µm,21.0s
MJAR Matsushiro Arr 77.92 324 P **P 19 47 15.0 -1.3**
comp=Z,15nm,0.9s,baz=160,slow=5.5,SNR=11
MJAR Matsushiro Arr 77.92 324 P **P 19 47 15.0 -1.3**
MJAR Matsushiro Arr 77.92 324 P **P 19 47 15.0 -1.3**
MAJO Matsushiro 77.92 324*c i*P **P 19 47 15.2 -1.0**
MAJO pmax pmax
comp=Z,94nm,0.9s
MAJO Matsushiro 77.92 324 *e*P **P 19 47 15.3 -1.0**
comp=Z,40nm,1.0s
MAJO LR LR
comp=Z,2µm,22.0s
MAT Matsushiro 77.92 324 P **P 19 47 14.7 -1.6**
MAT S **S 19 57 06.8 -0.6**
MJB9 Matsu-Tunnel 77.92 324 *e*P **P 19 47 15.2 -1.1**
comp=Z,9.4nm,0.9s
MJB9 LR LR
comp=Z,500nm,21.0s
SYO Syowa Base 78.35 193‖ *i*pP **P 19 47 21.2 +3.0**
SYO Syowa Base 78.35 193⇑ *i*PcP **PcP 19 47 27.8 +0.4**
YOJ Yonaguni jima 78.68 306 PFAKE 19 47 30.0 +9.3
YOJ LR LR
comp=Z,4µm,21.0s
TWG Pinlang 79.04 304 *e*P **P 19 47 24.8 +2.1**
comp=Z,117nm,0.8s
TWG LR LR
comp=Z,10µm,22.0s
YULB Yu-li 79.23 305 PFAKE 19 47 30.0 +6.2
YULB LR LR
comp=Z,4µm,21.0s
JNU Nakatsue 79.40 318 P **P 19 47 24.8 +0.3**
comp=Z,33nm,1.0s,baz=45,slow=5.0,SNR=5.2
JNU Nakatsue 79.40 318 *e*P **P 19 47 25.5 +1.0**
comp=Z,109nm,1.2s
NACB Ninganchiao 79.50 305 PFAKE 19 47 40.0 +15
NACB LR LR
comp=Z,3µm,22.0s
TPUB Ta-pu 79.66 304 *e*P **P 19 47 25.4 -0.7**
comp=Z,64nm,1.2s
TPUB LR LR
comp=Z,3µm,22.0s
SSLB Suanglung 79.72 305 *e*P **P 19 47 25.1 -1.4**
comp=Z,28nm,0.6s
SSLB LR LR
comp=Z,4µm,21.0s
YHNB Yeheng 79.97 306 PFAKE 19 47 40.0 +12
YHNB LR LR
comp=Z,3µm,20.0s
NVL N'lazarevskaya 79.98 183 *e*P **P 19 47 30.3 +3.2**
NVL *e* 19 50 38.1
NVL *e*S **S 19 57 30.6 +2.1**
NVL *e*SS **SS 20 02 38.2 +0.9**
ERM Erimo 79.99 331*ce*P **P 19 47 29.3 +1.9**
ERM pmax pmax
comp=Z,84nm,1.7s
ERM Erimo 79.99 331 *e*P **P 19 47 29.2 +1.8**
comp=Z,32nm,0.9s
ERM LR LR
comp=Z,9µm,20.0s
TATO Taipei 80.08 306 PFAKE 19 47 40.0 +12
TATO LR LR
comp=Z,4µm,21.0s
YUK Yuzh-Kuril'sk 80.58 334 *e*P **P 19 47 32.1 +1.6**
KUR Kuril'sk 80.85 336*c i*P **P 19 47 30.8 -1.1**
KUR *e*S **S 19 57 40.4 +2.4**
KUR pmax pmax
comp=Z,65nm,1.8s
KUR pmax pmax
comp=Z,569nm,8.5s
COCO West Island 80.89 261 PFAKE 19 47 40.0 +7.0
COCO LR LR
comp=Z,8µm,20.0s
MYKOM Kota Tinggi 81.49 277 *e*P **P 19 47 36.0 -0.1**
comp=Z,61nm,1.0s
MYKOM LR LR
comp=Z,5µm,20.0s
ASAJ Asahikawa 81.95 332 PFAKE 19 47 50.0 +12
ASAJ LR LR
comp=Z,6µm,20.0s
SMY Shemya 82.10 355 PFAKE 19 47 50.0 +12
SMY LR LR
comp=Z,6µm,20.0s
QZH Quanzhou 82.13 304⇑ *i*P P 19 47 30.2 -9.0
QZH Quanzhou 82.13 304 S S 19 57 37.0 -15
QZH pmax pmax
comp=Z,100nm,0.8s
QZH pmax pmax
comp=Z,3µm,4.5s
QZH LR LR
comp=N,2µm,14.1s
QZH LR LR
comp=E,2µm,14.8s
QZH LR LR
comp=Z,5µm,21.3s
NIKH Nikolski High 82.27 5 PFAKE 19 47 50.0 +11
NIKH LR LR
comp=Z,2µm,21.0s
PLCA Paso Flores 82.54 133 P **P 19 47 43.2 +1.8**
comp=Z,23nm,1.0s,baz=240,slow=5.1,SNR=8.9
PLCA Paso Flores 82.54 133 *e*P **P 19 47 42.7 +1.3**
PLCA pmax pmax
comp=Z,35nm,1.0s
PLCA Paso Flores 82.54 133 *e*P **P 19 47 42.6 +1.3**
comp=Z,35nm,1.0s
SNCC San Nicolas Is 82.64 45 PFAKE 19 47 50.0 +8.3
SNCC LR LR
comp=Z,5µm,19.0s
SKR Severo-Kuril's 83.17 343 *e*P **P 19 47 43.1 -0.9**
SLBS Sierra La Lagu 83.21 58 PFAKE 19 48 00.0 +15
SLBS LR LR
comp=Z,4µm,18.0s
BKNI Bangkinang 83.21 274 PFAKE 19 48 00.0 +15
BKNI LR LR
comp=Z,8µm,18.0s
UNV Unalaska Valle 83.34 6 PFAKE 19 48 00.0 +15
UNV LR LR
comp=Z,2µm,20.0s
AKUT Akutan 83.69 7 PFAKE 19 48 00.0 +13
AKUT LR LR
comp=Z,2µm,21.0s
SRIG Santa Rosalia 83.71 54 PFAKE 19 48 00.0 +13
SRIG LR LR
comp=Z,4µm,18.0s
PAGB Antelope Grade 83.87 43 *e*P **P 19 47 47.9 -0.1**
comp=Z,147nm,1.9s
SAO San Andreas Ge 83.87 42 PFAKE 19 48 00.0 +12
SAO LR LR
comp=Z,10µm,18.0s
PMPB Monarch Peak 83.87 42 *e*P **P 19 47 48.7 +0.6**
comp=Z,38nm,1.2s
MCCM Marconi Confer 84.01 40 PFAKE 19 48 00.0 +11
MCCM LR LR
comp=Z,7µm,19.0s
OSI Osito Audit: C 84.05 45 PFAKE 19 48 00.0 +11
OSI LR LR
comp=Z,5µm,18.0s
BAR Barrett 84.07 47 PFAKE 19 48 00.0 +11
BAR LR LR
comp=Z,3µm,22.0s
PASC Pasadena Art C 84.08 45 PFAKE 19 48 00.0 +11
PASC LR LR
comp=Z,5µm,18.0s
SSE Sheshan 84.13 310⇑ P **P 19 47 49.6 +0.2**
SSE sP **pP 19 47 59.5 +0.2**
SSE S **S 19 58 13.4 +1.2**
SSE sS **sS 19 58 28.2 -0.3**
SSE pmax pmax
comp=Z,39nm,0.7s
SSE pmax pmax
comp=Z,990nm,8.5s
SSE LR LR
comp=Z,1µm,22.7s
SSE LR LR
comp=Z,2µm,22.6s
SSE LR LR
comp=Z,3µm,22.7s
KSRS Korea Array 84.16 319 P **P 19 47 50.0 +0.6**
comp=Z,14nm,1.1s,baz=145,slow=5.6,SNR=8.8
KSAR Wonju Array Be 84.17 319 P **P 19 47 50.1 +0.6**
KSAR Wonju Array Be 84.17 319 P **P 19 47 50.0 +0.6**
KS01 Wonju Array Si 84.19 319 *e*P **P 19 47 49.8 +0.2**
MWC Mount Wilson 84.20 45 PFAKE 19 48 00.0 +10
MWC LR LR
comp=Z,5µm,18.0s
YSS Yuzh-Sakhalins 84.22 334⇑ *e*P **P 19 47 49.9 +0.5**
YSS *e* 19 47 57.9
YSS *e*S **S 19 58 15.8 +3.5**
YSS pmax pmax
comp=Z,70nm,1.1s
YSS pmax pmax
comp=Z,1µm,6.7s
YSS smax smax
comp=E,2µm,8.7s
YSS MLR MLR
comp=Z,3µm,19.0s
YSS MLR MLR
comp=N,2µm,17.0s
YSS MLR MLR
comp=E,2µm,19.0s
YSS Yuzh-Sakhalins 84.22 334 *e*P **P 19 47 50.0 +0.6**
comp=E,90nm,0.8s
YSS LR LR
comp=Z,2µm,21.0s
BFSC Mount Baldy Ra 84.46 46 P **P 19 47 52.3 +1.1**
baz=229
HOPS Hopland Field 84.50 39 PFAKE 19 48 00.0 +8.8
HOPS LR LR
comp=Z,9µm,19.0s
EDW2 Edwards Air Fo 84.67 45 P **P 19 47 53.6 +1.4**
baz=228
PET Petropavlovsk 84.74 345*c i*P **P 19 47 51.4 -0.6**
PET *i*S **S 19 58 13.3 -4.0**
PET *e*SS **SS 20 03 48.5 -1.9**
PET *e*SSS SSS 20 07 13.6
PET pmax pmax
comp=Z,1µm,12.5s
PET pmax pmax
comp=Z,1µm,12.1s
PET Petropavlovsk 84.74 345 PFAKE 19 48 00.0 +8.0
PET LR LR
comp=Z,3µm,21.0s
PFO Pinyon Flats O 84.81 47 P **P 19 47 54.8 +1.8**
baz=230
PFO Pinyon Flats O 84.81 47 PFAKE 19 48 00.0 +7.0
PFO LR LR
comp=Z,4µm,18.0s
ISA Isabella, Lake 84.89 44 PFAKE 19 48 00.0 +6.7
ISA LR LR
comp=Z,4µm,18.0s
INCN Inchon 84.92 318 PFAKE 19 48 00.0 +6.7
INCN LR LR
comp=Z,2µm,19.0s
GZH Guangzhou 84.93 300 P **P 19 47 53.6 0.0**
GZH PP **PP 19 51 11.7 +0.8**
GZH S **S 19 58 20.4 -0.1**
GZH pmax pmax
comp=Z,2µm,9.6s
GZH LR LR
comp=Z,4µm,20.4s
KMRM Mail Ridge 85.03 38 *e*P **P 19 47 53.3 -0.6**
comp=Z,39nm,1.0s
KMRM LR LR
comp=Z,5µm,19.0s
PEA0 Petropavlovsk- 85.03 345 *e*P **P 19 47 52.9 -0.6**
PEA0B Petropavlovsk- 85.03 345 *e*P **P 19 47 54.0 +0.5**
comp=Z,190nm,1.8s
PEA0B LR LR
comp=Z,3µm,22.0s
PETK Petropavlovsk- 85.03 345 P **P 19 47 53.7 +0.3**
comp=Z,12nm,0.6s,baz=93,slow=5.3,SNR=14
PETK Petropavlovsk- 85.03 345 P **P 19 47 53.8 +0.3**
PEA1 Petropavlovsk- 85.04 345 *e*P **P 19 47 53.7 +0.2**
LRMC Laurel Mtn Rad 85.26 45 P **P 19 47 56.8 +1.6**
baz=229
IPM Ipoh 85.26 278 *e*P **P 19 47 54.1 -1.5**
comp=Z,82nm,1.2s
IPM LR LR
comp=Z,4µm,20.0s
JCC Jacoby Creek, 85.28 37 PFAKE 19 48 10.0 +15
JCC LR LR
comp=Z,4µm,18.0s
CMB Columbia Colle 85.36 41 PFAKE 19 48 10.0 +14
CMB LR LR
comp=Z,7µm,18.0s
QIZ Qiongzhong 85.40 295 P **P 19 47 56.6 +0.5**
QIZ S **S 19 58 24.4 -0.9**
QIZ SS **SS 20 04 01.2 0.0**
QIZ pmax pmax
comp=Z,19nm,1.1s
QIZ pmax pmax
comp=Z,1µm,10.8s
QIZ LR LR
comp=Z,870nm,19.7s
QIZ LR LR
comp=Z,1µm,21.2s
QIZ Qiongzhong 85.40 295 *e*P **P 19 47 56.3 +0.2**
comp=Z,20nm,0.8s
QIZ LR LR
comp=Z,1µm,21.0s
BC3 Big Chuckawall 85.48 47 P **P 19 47 58.8 +2.5**
baz=230
KHMM Horse Mountain 85.48 38 PFAKE 19 48 10.0 +14
KHMM LR LR
comp=Z,3µm,18.0s
GLA Glamis 85.50 48 PFAKE 19 48 10.0 +14
GLA LR LR
comp=Z,3µm,22.0s
SDPT Sand Point 85.52 9 PFAKE 19 48 10.0 +14
SDPT LR LR
comp=Z,2µm,20.0s
HSIG 85.64 53 *e*P **P 19 47 56.4 -0.8**
comp=Z,22nm,1.0s
HSIG LR LR
comp=Z,3µm,18.0s
HEC Hector,Ludlow 85.67 46 P **P 19 47 58.9 +1.6**
baz=230
GSC Goldstone, Bar 85.68 45 P **P 19 47 58.7 +1.4**
baz=229
GSC Goldstone, Bar 85.68 45 *e*P **P 19 47 57.5 +0.2**
GSC MLR MLR
comp=Z,6µm,18.0s
GSC Goldstone, Bar 85.68 45 *e*P **P 19 47 57.5 +0.2**
GSC LR LR
comp=Z,6µm,18.0s
MPMC Manual Prospec 85.75 44 P **P 19 47 59.2 +1.4**
baz=229
ORV Oroville 85.77 40 PFAKE 19 48 10.0 +13
ORV LR LR
comp=Z,5µm,19.0s
DAC Darwin (Calif) 85.83 44 PFAKE 19 48 10.0 +12
DAC LR LR
comp=Z,6µm,18.0s
WDC Whiskeytown Da 85.91 38 PFAKE 19 48 10.0 +12
WDC LR LR
comp=Z,5µm,19.0s
KULM Kulim 85.99 278 *e*P **P 19 47 58.0 -1.2**
comp=Z,60nm,1.0s
KULM LR LR
comp=Z,5µm,20.0s
113A Mohawk Valley, 86.02 49 *e*P **P 19 47 59.0 +0.2**
comp=Z,25nm,1.3s
113A LR LR
comp=Z,4µm,18.0s
MSHR Mys Shultsa 86.04 324*c i*P **P 19 47 59.1 +0.4**
Y12C Blythe 86.14 48 *e*P **P 19 47 58.0 -1.4**
comp=Z,44nm,1.5s
Y12C LR LR
comp=Z,2µm,22.0s
WAKR Walker 86.22 42 *e*P **P 19 47 59.9 -0.1**
comp=Z,72nm,1.5s
WAKR LR LR
comp=Z,7µm,18.0s
PSI Prapat 86.26 275 *e*P **P 19 47 57.8 -2.9**
PSI pmax pmax
comp=Z,105nm,1.2s
PSI MLR MLR
comp=Z,7µm,18.0s
PSI Prapat 86.26 275 *e*P **P 19 47 57.8 -2.9**
comp=Z,104nm,1.2s
PSI LR LR
comp=Z,7µm,18.0s
SPIA Saint Paul Isl 86.37 4 PFAKE 19 48 10.0 +10
SPIA LR LR
comp=Z,4µm,20.0s
ROC1 El Roble 86.39 126 *e*P **P 19 47 57.7 -3.6**
comp=Z,15nm,0.7s
LDFC Landfair 86.60 46 PFAKE 19 48 10.0 +8.1
LDFC LR LR
comp=Z,4µm,18.0s
YBH Yreka Blue Hor 86.63 37 *e*P P 19 47 54.8 -7.0
YBH pmax pmax
comp=Z,30nm,1.1s
YBH MLR MLR
comp=Z,4µm,18.0s
YBH Yreka Blue Hor 86.63 37 *e*P P 19 47 54.8 -7.0
comp=Z,30nm,1.1s
YBH LR LR
comp=Z,4µm,18.0s
GSI Gunungsitoli 86.71 273 *e*P **P 19 48 01.6 -1.2**
comp=Z,142nm,1.1s
GSI LR LR
comp=Z,9µm,20.0s
PAYG Puerto Ayora 86.74 89 PFAKE 19 48 10.0 +7.0
PAYG LR LR
comp=Z,4µm,22.0s
USRK Ussuriysk Ar. 86.81 326 P **P 19 48 02.9 +0.5**
comp=Z,24nm,0.8s,baz=135,slow=3.6,SNR=17
UBPT Khong Chiam 86.95 289 P **P 19 48 07.0 +3.2**
comp=Z,56nm,0.9s,comp=Z,1µm
PAHR Pah Rah Range 87.06 41 *e*P **P 19 48 03.1 -0.9**
PAHR LR LR
comp=Z,10µm,19.0s
TPNV Topopah Spring 87.09 44 PFAKE 19 48 20.0 +16
TPNV LR LR
comp=Z,5µm,18.0s
HUMO Hull Mountain 87.12 37 PFAKE 19 48 20.0 +16
HUMO LR LR
comp=Z,2µm,19.0s
Y14A Wickenburg 87.24 48 *e*P **P 19 48 06.2 +1.3**
comp=Z,72nm,1.0s
Y14A LR LR
comp=Z,14µm,22.0s
W13A Hualapai Mount 87.39 47 PFAKE 19 48 20.0 +14
W13A LR LR
comp=Z,2µm,19.0s
TYV Tymovskoe 87.47 336 *e*P **P 19 48 05.5 0.0**
TYV *e*S **S 19 58 36.0 -8.1**
TYV pmax pmax
comp=Z,26nm,1.0s
TYV pmax pmax
comp=Z,2µm,11.0s
TYV smax smax
comp=N,2µm,12.0s
TYV MLR MLR
comp=Z,3µm,18.0s
SHPR Sheep Range 87.48 45 *e*P **P 19 48 07.5 +1.4**
comp=Z,34nm,1.4s
SHPR LR LR
comp=Z,4µm,18.0s
TUC Tucson 87.72 51 P **P 19 48 08.9 +1.6**
baz=233
TUC Tucson 87.72 51 *e*P **P 19 48 08.7 +1.4**
TUC pmax pmax
comp=Z,32nm,1.1s
TUC MLR MLR
comp=Z,3µm,19.0s
TUC Tucson 87.72 51 *e*P **P 19 48 08.7 +1.4**
comp=Z,32nm,1.1s
TUC LR LR
comp=Z,3µm,19.0s
MOIG Morelia 87.74 66 PFAKE 19 48 20.0 +12
MOIG LR LR
comp=Z,4µm,21.0s
MOD Modoc Plateau 88.04 39 PFAKE 19 48 20.0 +11
MOD LR LR
comp=Z,5µm,19.0s
TRTT Trang 88.07 280 P **P 19 48 13.5 +4.2**
comp=Z,58nm,1.1s,comp=Z,1µm
319A Douglas 88.20 52 PFAKE 19 48 20.0 +10
319A LR LR
comp=Z,4µm,18.0s
HPIG 88.24 58 PFAKE 19 48 20.0 +10
HPIG LR LR
comp=Z,4µm,18.0s
K05A Summer Lake 88.29 38 PFAKE 19 48 20.0 +10
K05A LR LR
comp=Z,3µm,19.0s
MDJ Mudanjiang 88.30 325 P **P 19 48 10.1 +0.5**
MDJ pP pP 19 48 17.7 -1.8
MDJ sP sP 19 48 19.6 -3.5
MDJ pmax pmax
comp=Z,34nm,0.9s
MDJ pmax pmax
comp=Z,990nm,6.7s
MDJ LR LR
comp=Z,2µm,18.5s
MDJ LR LR
comp=Z,660nm,29.6s
MDJ LR LR
comp=Z,3µm,25.9s
MDJ Mudanjiang 88.30 325 *e*P **P 19 48 10.0 +0.5**
comp=Z,49nm,1.0s
MDJ LR LR
comp=Z,3µm,22.0s
ZAIG Zacatecas 88.30 63 PFAKE 19 48 20.0 +9.5
ZAIG LR LR
comp=Z,3µm,21.0s
COR Corvallis 88.34 35 PFAKE 19 48 20.0 +10
COR LR LR
comp=Z,5µm,18.0s
R11A Troy Canyon, C 88.40 44 PFAKE 19 48 20.0 +9.5
R11A LR LR

comp=Z,5µm,18.0s
WHN Wuhan 88.47 306 ⇑*i*P P 19 48 11.4 +0.7
WHN PP **PP** 19 51 46.3 +6.9
WHN S **S** 19 58 46.4 -8.1
WHN pmax pmax
comp=Z,2µm,12.0s
WHN pmax pmax
comp=Z,2µm,5.0s
WHN LR LR
comp=Z,7µm,21.3s
WHN LR LR
comp=Z,1µm,12.2s
WHN LR LR
comp=Z,6µm,20.7s
J05D Fort Rock, OR 88.49 37 P P 19 48 12.0 +1.2
baz=226
OHAK Old Harbor 88.51 13 PFAKE 19 48 20.0 +10
OHAK LR LR
comp=Z,4µm,21.0s
X16A Lo Mia Camp, P 88.56 49 *e*P **P 19 48 12.2 +0.8**
comp=Z,18nm,0.9s
X16A LR LR
comp=Z,4µm,22.0s
HABR Khabarovsk 88.59 330 *ce*P **P 19 48 10.2 -0.7**
HABR *e**SP **pP** 19 48 19.2 -1.6
HABR *e* 19 51 39.0
HABR *e*S **SKSac** 19 58 37.8 +0.4
HABR *e**SS **SKKSac** 19 58 49.2 +0.7
HABR *e*SS **SS** 20 04 48.8 +1.9
HABR *e*SSS SSS 20 08 23.6
HABR pmax pmax
comp=Z,9.0nm,1.4s
HABR pmax pmax
comp=Z,301nm,1.5s
HABR MLR MLR
comp=Z,2µm,20.0s
KRAB Krabi 88.69 280 P **P 19 48 11.1 -1.1**
comp=Z,2µm,0.7s,comp=Z,216µm
TLIG Tlapa 88.75 69 *e*P **P 19 48 13.3 +0.8**
comp=Z,37nm,1.5s
TLIG LR LR
comp=Z,4µm,22.0s
LCO Las Campanas 88.76 123 PFAKE 19 48 20.0 +7.2
LCO LR LR
comp=Z,3µm,19.0s
BMN Battle Mountai 88.78 41 PFAKE 19 48 20.0 +7.8
BMN LR LR
comp=Z,7µm,19.0s
SURA Surathani 88.78 281 P P 19 48 21.2 +8.6
DL2 Dalian 88.82 317 ⇑*i*P **P 19 48 12.7 +0.5**
DL2 SKS **SKSac** 19 58 40.0 +0.7
DL2 S **ScS** 19 59 00.6 -2.1
DL2 pmax pmax
comp=Z,60nm,1.2s
DL2 pmax pmax
comp=Z,1µm,7.1s
DL2 LR LR
comp=Z,1µm,17.9s
DL2 LR LR
comp=Z,2µm,18.2s
DL2 LR LR
comp=Z,3µm,19.0s
LCMT Little Creek M 88.99 46 *e*P **P 19 48 13.9 +0.7**
comp=Z,16nm,1.0s
LCMT LR LR
comp=Z,4µm,18.0s
SKNT Sakolnakorn 89.05 290 P **P 19 48 16.7 +2.9**
comp=Z,102nm,1.1s
SRAK Srakaew 89.15 286 P P 19 48 19.7 +5.4
comp=Z,59nm,1.1s,comp=Z,693nm
LHMI Lhok Sumawe 89.17 276 PFAKE 19 48 30.0 +16
LHMI LR LR
comp=Z,5µm,19.0s
UNM Universidad Na 89.17 67 PFAKE 19 48 30.0 +15
UNM LR LR
comp=Z,3µm,20.0s
F03A Seaside 89.17 34 PFAKE 19 48 30.0 +16
F03A LR LR
comp=Z,3µm,19.0s
KDAK Kodiak Island 89.17 13 PFAKE 19 48 20.0 +6.6
KDAK LR LR
comp=Z,6µm,19.0s
U15A North Rim 89.23 47 *e*P **P 19 48 15.9 +1.3**
comp=Z,27nm,1.0s
U15A LR LR
comp=Z,2µm,22.0s
CCUT Cedar City 89.25 45 *e*P **P 19 48 14.5 -0.2**
comp=Z,22nm,1.3s
CCUT LR LR
comp=Z,4µm,18.0s
KNB Kanab 89.26 46 *e*P **P 19 48 14.9 +0.3**
KNB pmax pmax
comp=Z,46nm,1.2s
KNB MLR MLR
comp=Z,3µm,18.0s
KNB Kanab 89.26 46 *e*P **P 19 48 14.9 +0.3**
comp=Z,46nm,1.2s
KNB LR LR
comp=Z,3µm,18.0s
WUAZ Wupatki 89.27 48 *e*P **P 19 48 13.8 -0.9**
comp=Z,21nm,0.9s
WUAZ LR LR
comp=Z,3µm,22.0s
WVOR Wild Horse Val 89.31 39 *e*P **P 19 48 14.8 +0.1**
WVOR pmax pmax
comp=Z,26nm,1.3s
WVOR MLR MLR
comp=Z,8µm,19.0s
WVOR Wild Horse Val 89.31 39 *e*P **P 19 48 14.8 +0.1**
comp=Z,26nm,1.3s
WVOR LR LR
comp=Z,8µm,19.0s
SZCU Shurtz Canyon 89.45 45 *e*P **P 19 48 15.6 0.0**
comp=Z,16nm,1.0s
TRQA Tornquist 89.50 134 PFAKE 19 48 30.0 +14
TRQA LR LR
comp=Z,4µm,21.0s
PSUT Pine Spring 89.56 44 PFAKE 19 48 30.0 +14
PSUT LR LR
comp=Z,5µm,18.0s
SNY Shenyang 89.58 320 ⇑P **P 19 48 15.8 +0.1**
SNY S **S** 19 59 09.9 +5.4
SNY pmax pmax
comp=Z,35nm,1.0s
SNY pmax pmax
comp=Z,1µm,11.0s
SNY LR LR
comp=Z,1µm,19.6s
SNY LR LR
comp=Z,1µm,20.6s
SNY LR LR
comp=Z,3µm,20.3s
X18A Snowflake 89.61 49 *e*P **P 19 48 14.4 -1.9**
comp=Z,16nm,0.8s
X18A LR LR
comp=Z,3µm,18.0s
E03A Lebam 89.61 34 *e*P **P 19 48 15.3 -0.4**
comp=Z,44nm,1.0s
E03A LR LR
comp=Z,4µm,19.0s
KHON Khomkaen 89.68 289 P **P 19 48 20.5 +3.7**
comp=Z,26nm,1.0s
F04A Amboy 89.74 35 PFAKE 19 48 30.0 +14
F04A LR LR
comp=Z,3µm,19.0s
CROR Criterion Ridg 89.80 36 P **P 19 48 17.8 +1.0**
PKCU Pink Cliffs 89.84 46 PFAKE 19 48 30.0 +12
PKCU LR LR
comp=Z,4µm,18.0s
CN2 Changchun 89.88 322 *e*P **P 19 48 16.7 -0.3**
CN2 *ep*P pP 19 48 23.1 -3.9
CN2 *e*PP **PP** 19 51 52.7 +2.3
CN2 pmax pmax
comp=Z,70nm,1.2s
CN2 pmax pmax
comp=Z,700nm,5.0s
CN2 LR LR
comp=Z,2µm,20.0s
CN2 LR LR
comp=Z,1µm,20.0s
CN2 LR LR
comp=Z,2µm,21.0s
TIA Tai'an 89.94 312 ⇑P **P 19 48 18.1 +0.5**
TIA SKS **SKSac** 19 58 48.2 +2.1
TIA S **SKKSac** 19 59 01.4 +2.0
TIA pmax pmax
comp=Z,50nm,1.4s
TIA pmax pmax
comp=Z,1µm,10.0s
TIA LR LR
comp=Z,2µm,26.0s
TIA LR LR
comp=Z,2µm,27.0s
TIA LR LR
comp=Z,4µm,26.0s
HOPE Hope Point 89.98 158 PFAKE 19 48 30.0 +12
HOPE LR LR
comp=Z,5µm,22.0s
NKL Nikolayevsk 90.05 336 *i*P **P 19 48 18.0 +0.4**
NKL *e*S **SKSac** 19 58 40.0 -5.8
NKL *e* 19 59 15.0
NKL pmax pmax
comp=Z,95nm,1.0s
NKL pmax pmax
comp=Z,900nm,11.0s
NKL MLR MLR
comp=N,3µm,18.0s
NKL MLR MLR
comp=E,500nm,18.0s
NKL MLR MLR
comp=Z,4µm,18.0s
NLWA Neilton Lookou 90.07 33 *e*P **P 19 48 17.4 -0.6**
comp=Z,36nm,1.3s
NLWA LR LR
comp=Z,4µm,19.0s
W18A Petrified Fore 90.10 49 *e*P **P 19 48 18.6 0.0**
comp=Z,24nm,0.8s
W18A LR LR
comp=Z,2µm,21.0s
TDL Tradedollar La 90.13 34 P **P 19 48 19.7 +1.3**
CHAI Chaiyaphum 90.15 288 P **P 19 48 20.4 +1.4**
comp=Z,15nm,0.9s
G06A Carlson Farm, 90.15 36 *e*P **P 19 48 18.9 +0.5**
comp=Z,35nm,1.2s
G06A LR LR
comp=Z,2µm,18.0s
NONG Nongkai 90.29 290 P **P 19 48 22.4 +2.8**
comp=Z,72nm,1.1s,comp=Z,3µm
MTPU Mount Pierson 90.29 46 *e*P **P 19 48 20.9 +1.3**
comp=Z,22nm,1.1s
MTPU LR LR
comp=Z,4µm,18.0s
KLR Kul'dur 90.60 329 P **P 19 48 20.6 +0.3**
comp=Z,21nm,1.0s,baz=110,slow=2.9,SNR=13
KLR Kul'dur 90.60 329 *e*P **P 19 48 20.6 +0.3**
LON Longmire 90.61 34 PFAKE 19 48 30.0 +10
LON LR LR
comp=Z,2µm,19.0s
D05A Enumclaw 90.83 34 P **P 19 48 22.4 +1.0**
DIB Dawson Inlet, 90.83 25 *e*P **P 19 48 22.8 +1.6**
comp=Z,30nm,1.1s
DIB LR LR
comp=Z,2µm,21.0s
LTX Lajitas 91.03 57 *e*P **P 19 48 24.7 +1.7**
LTX Lajitas 91.03 57 *e*P **P 19 48 24.6 +1.7**
TX31 Lajitas Ar. Si 91.03 57 *e*P **P 19 48 22.7 -0.3**
TXAR Lajitas Array 91.03 57 P **P 19 48 24.6 +1.7**
comp=Z,1.7nm,0.9s,baz=215,slow=4.1,SNR=6.1
TXAR Lajitas Array 91.03 57 P **P 19 48 24.6 +1.7**
G08A Pilot Rock 91.06 37 *e*P **P 19 48 22.6 -0.1**
comp=Z,31nm,1.1s
G08A LR LR
comp=Z,3µm,19.0s
CNPM China Poot 91.06 13 PFAKE 19 48 30.0 +7.8
CNPM LR LR
comp=Z,4µm,21.0s
HOM Homer 91.10 13 PFAKE 19 48 30.0 +7.6
HOM LR LR
comp=Z,3µm,19.0s
MNTX Cornudas Mount 91.11 54 PFAKE 19 48 30.0 +6.9
MNTX LR LR
comp=Z,1µm,20.0s
PGC Sidney 91.17 32 PFAKE 19 48 30.0 +7.1
PGC LR LR
comp=Z,2µm,20.0s
DUG Dugway, Tooele 91.23 44 PFAKE 19 48 40.0 +16
DUG LR LR
comp=Z,6µm,18.0s
PBKT Sadao Pong 91.33 288 P P 19 48 29.0 +4.6
BRLK Bradley Lake 91.35 13 *e*P **P 19 48 23.7 +0.1**
comp=Z,65nm,1.3s
BRLK LR LR
comp=Z,4µm,20.0s
Y22D IRIS PASSCAL I 91.38 51 PFAKE 19 48 40.0 +15
Y22D LR LR
comp=Z,3µm,18.0s
Q16A Castle Valley 91.45 45 *e*P **P 19 48 25.0 +0.2**
comp=Z,12nm,1.1s
Q16A LR LR
comp=Z,3µm,19.0s
E07A Sunnyside 91.45 35 PFAKE 19 48 40.0 +16
E07A LR LR
comp=Z,6µm,18.0s
HAWA Hanford 91.50 36 *e*P **P 19 48 24.6 0.0**
comp=Z,22nm,1.1s
HAWA LR LR
comp=Z,4µm,19.0s
MFID Camas Ranch 91.51 40 *e*P **P 19 48 25.0 +0.2**
comp=Z,14nm,1.1s
MFID LR LR
comp=Z,4µm,19.0s
LTY Liberty 91.53 35 PFAKE 19 48 40.0 +15
LTY LR LR
comp=Z,2µm,20.0s
NLU North Lily Min 91.53 44 PFAKE 19 48 40.0 +15
NLU LR LR
comp=Z,6µm,21.0s
B05A Bryant 91.53 33 P **P 19 48 26.2 +1.6**
baz=226
CMIG Matias Romero 91.53 71 P **P 19 48 28.0 +2.6**
comp=Z,0.8nm,0.3s,baz=252,slow=13,SNR=3.1
CMIG Matias Romero 91.53 71 *e*P **P 19 48 28.0 +2.6**
BGU Big Grassy Mou 91.55 43 PFAKE 19 48 40.0 +15
BGU LR LR
comp=Z,6µm,18.0s
BMO Blue Mountains 91.64 38 *e*P **P 19 48 25.3 -0.1**
comp=Z,9.1nm,1.0s
BMO LR LR
comp=Z,4µm,19.0s
TMUT Trail Mountain 91.66 45 *e*P **P 19 48 26.1 +0.2**
comp=Z,21nm,0.9s
TMUT LR LR
comp=Z,4µm,18.0s
BBB Bella Bella 91.73 28 *e*P **P 19 48 26.5 +1.1**
comp=Z,19nm,0.9s
BBB LR LR
comp=Z,4µm,19.0s
SRDT SRDT 91.77 285 P P 19 48 34.3 +7.8
SVW2 Sparrevohn 91.78 10 PFAKE 19 48 40.0 +14
SVW2 LR LR
comp=Z,2µm,19.0s
ENH Enshi 91.78 304 *e*P **P 19 48 26.7 +0.4**
comp=Z,160nm,1.3s
ENH LR LR
comp=Z,2µm,20.0s
MPU Maple Canyon 91.83 44 PFAKE 19 48 40.0 +13
MPU LR LR
comp=Z,6µm,19.0s
GYA Guiyang 91.84 299 ⇑*i*P **P 19 48 28.1 +1.3**
GYA pP pP 19 48 35.0 -1.8
GYA PP **PP** 19 52 10.8 +4.3
GYA SKS **SKSac** 19 58 57.6 -0.1
GYA S **S** 19 59 26.2 0.0
GYA SS **SS** 20 05 38.0 +2.8
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,170nm,8.2s
GYA LR LR
comp=Z,920nm,21.4s
GYA LR LR
comp=Z,860nm,22.0s
GYA LR LR
comp=Z,910nm,21.3s
PB10 IPOC Station P 91.86 118 PFAKE 19 48 40.0 +13
PB10 LR LR
comp=Z,3µm,20.0s
SEW Seward 91.94 13 PFAKE 19 48 40.0 +14
SEW LR LR
comp=Z,3µm,18.0s
SRU San Rafael Swe 91.97 46 PFAKE 19 48 40.0 +13
SRU LR LR
comp=Z,3µm,18.0s
MID Middleton Isla 92.00 15 PFAKE 19 48 40.0 +14
MID LR LR
comp=Z,2µm,19.0s
B06A Marblemount 92.00 33 PFAKE 19 48 40.0 +13
B06A LR LR
comp=Z,4µm,19.0s
P17A Butcher Ranch, 92.05 45 *e*P **P 19 48 28.1 +0.5**
comp=Z,11nm,1.0s
P17A LR LR
comp=Z,4µm,18.0s
SPUT South Promonto 92.13 43 PFAKE 19 48 40.0 +12
SPUT LR LR
comp=Z,6µm,18.0s
MVCO Mesa Verde 92.14 48 PFAKE 19 48 40.0 +12
MVCO LR LR
comp=Z,3µm,22.0s
ANMO Albuquerque 92.19 51 *e*P **P 19 48 29.3 +1.0**
ANMO pmax pmax
comp=Z,9.0nm,1.0s
ANMO MLR MLR
comp=Z,4µm,18.0s
ANMO Albuquerque 92.19 51 *e*P **P 19 48 29.3 +1.0**
comp=Z,8.9nm,1.0s
ANMO LR LR
comp=Z,4µm,18.0s
HVU Hansel Valley 92.23 42 PFAKE 19 48 40.0 +12
HVU LR LR
comp=Z,6µm,18.0s
UTTA Uttaradit 92.26 289 P P 19 48 38.1 +9.4
D08A Wollman Farm, 92.26 35 P **P 19 48 28.7 +0.6**
E09A Wood Farm, Sta 92.30 36 PFAKE 19 48 40.0 +12
E09A LR LR
comp=Z,3µm,18.0s
JLU Jordanelle 92.30 44 PFAKE 19 48 40.0 +11
JLU LR LR
comp=Z,6µm,18.0s
HLID Hailey 92.40 40 P **P 19 48 30.3 +1.3**
baz=231
HLID Hailey 92.40 40 *e*P **P 19 48 29.4 +0.3**
comp=Z,14nm,1.1s
HLID LR LR
comp=Z,4µm,19.0s
CRAG Craig 92.41 23 PFAKE 19 48 40.0 +12
CRAG LR LR
comp=Z,2µm,21.0s
F10A Beach Ranch, E 92.42 37 *e*P **P 19 48 28.4 -0.5**
comp=Z,21nm,0.9s
F10A LR LR
comp=Z,3µm,19.0s
P18A Preston Nutter 92.45 45 PFAKE 19 48 40.0 +10
P18A LR LR
comp=Z,3µm,19.0s
MA2 Magadan 92.53 344 P **P 19 48 28.2 -0.8**
comp=Z,7.0nm,0.8s,baz=126,slow=4.4,SNR=7.7
MA2 Magadan 92.53 344 *e*P **P 19 48 28.2 -0.8**
PV01 Paradox Valley 92.63 47 *e*P **P 19 48 30.7 +0.4**
TCUT Toone Canyon 92.64 43 *e*P **P 19 48 30.4 +0.1**
comp=Z,77nm,1.6s
TCUT LR LR
comp=Z,8µm,19.0s
RC01 Rabbit Creek A 92.79 13 *e*P **P 19 48 29.5 -0.7**
comp=Z,43nm,1.2s
RC01 LR LR
comp=Z,2µm,19.0s
NNA Nana 92.81 105 PFAKE 19 48 40.0 +8.5
NNA LR LR
comp=Z,2µm,20.0s
PB04 IPOC Station P 92.81 117 PFAKE 19 48 40.0 +8.4
PB04 LR LR
comp=Z,4µm,20.0s
BJT Baijiatuau 92.83 315 PFAKE 19 48 40.0 +9.2
BJT LR LR
comp=Z,3µm,18.0s
BJI Beijing 92.83 315 P **P 19 48 30.8 -0.1**
BJI S **S** 19 59 38.3 +4.2
BJI pmax pmax
comp=Z,25nm,1.4s
BJI pmax pmax
comp=Z,820nm,5.8s
BJI LR LR
comp=Z,2µm,18.4s
BJI LR LR
comp=Z,1µm,18.4s
BJI LR LR
comp=Z,2µm,18.9s
HWUT Hardware Ranch 92.84 43 PFAKE 19 48 40.0 +8.9
HWUT LR LR
comp=Z,6µm,18.0s
GAMB Gambell 92.90 2 PFAKE 19 48 40.0 +9.5
GAMB LR LR
comp=Z,2µm,20.0s
B08A Colville Reser 92.94 34 PFAKE 19 48 40.0 +8.8
B08A LR LR
comp=Z,2µm,21.0s
SUA Susitna One 92.95 12 PFAKE 19 48 40.0 +9.0
SUA LR LR
comp=Z,4µm,20.0s
C09A Chrisman Ranch 93.09 35 PFAKE 19 48 40.0 +8.1
C09A LR LR
comp=Z,4µm,18.0s
EYAK Cordova Ski Ar 93.14 15 *e*P **P 19 48 31.5 -0.2**
comp=Z,20nm,1.1s
EYAK LR LR
comp=Z,3µm,20.0s
LLLB Lillooet 93.27 32 PFAKE 19 48 40.0 +7.3
LLLB LR LR
comp=Z,4µm,19.0s
PMR Palmer 93.37 13 PFAKE 19 48 40.0 +7.2
PMR LR LR
comp=Z,2µm,19.0s
LAMP Lampang 93.40 289 P P 19 48 41.9 +7.9
CCIG Comitan 93.42 73 PFAKE 19 48 50.0 +16
CCIG LR LR
comp=Z,2µm,22.0s
WRAK Wrangell Islan 93.43 23 *e*P **P 19 48 32.7 -0.5**
comp=Z,18nm,1.0s
WRAK LR LR
comp=Z,2µm,19.0s
TT01 Tatalina 93.44 9 *e*P **P 19 48 33.4 +0.2**
TTA Tatalina 93.46 9 *e*P **P 19 48 32.5 -0.8**
TTA MLR MLR
comp=Z,2µm,21.0s
TTA Tatalina 93.46 9 *e*P **P 19 48 32.5 -0.8**
TTA LR LR
comp=Z,2µm,21.0s
S22A 4UR Ranch, Cre 93.53 48 *e*P **P 19 48 32.5 -2.1**
comp=Z,14nm,1.3s
S22A LR LR
comp=Z,3µm,22.0s
LVC Limon Verde 93.62 118 PFAKE 19 48 50.0 +14
LVC LR LR
comp=Z,3µm,21.0s
DIV Divide 93.65 15 PFAKE 19 48 50.0 +16
DIV LR LR
comp=Z,3µm,20.0s
SML Sawmill 93.73 13 PFAKE 19 48 50.0 +15
SML LR LR
comp=Z,2µm,19.0s
YKU2 Yakutat 93.73 18 PFAKE 19 48 50.0 +16
YKU2 LR LR
comp=Z,4µm,20.0s
BMRM Bremner River 93.77 15 *e*P **P 19 48 34.5 -0.2**
comp=Z,22nm,1.2s
BMRM LR LR
comp=Z,3µm,20.0s
DHAK Deception Hill 93.78 19 PFAKE 19 48 50.0 +15
DHAK LR LR
comp=Z,4µm,20.0s
AHID Auburn Hatcher 93.82 42 PFAKE 19 48 50.0 +14
AHID LR LR
comp=Z,6µm,19.0s
TIY Taiyuan 93.87 311 *e*P **P 19 48 36.5 +0.7**
TIY SKS **SKSac** 19 59 10.1 +1.8
TIY S **S** 19 59 42.3 -1.3
TIY pmax pmax
comp=Z,590nm,11.1s
TIY LR LR
comp=Z,2µm,21.9s
TIY LR LR
comp=Z,2µm,21.5s
TIY LR LR
comp=Z,3µm,22.9s
CM01 Chiang Mai Arr 93.91 289 *e*P **P 19 48 36.5 +0.1**
CRQM Cirque 93.92 16 PFAKE 19 48 50.0 +14
CRQM LR LR

comp=Z,4µm,20.0s
CM31 Chiang Mai Arr 93.94 289 *e*P **P 19 48 36.1 -0.4**
CMAR Chiang Mai Arr 93.94 289 P **P 19 48 37.5 +0.9**
comp=Z,1.3nm,0.8s,baz=146,slow=4.4,SNR=7.0
CMAR Chiang Mai Arr 93.94 289 P **P 19 48 37.5 +0.9**
KLU Klutina 93.94 14 *e*P **P 19 48 35.0 -0.6**
comp=Z,11nm,1.1s
KLU LR LR
comp=Z,2µm,21.0s
SCM Sheep Creek Mo 93.95 14 *e*P **P 19 48 35.3 -0.3**
SCM pmax pmax
comp=Z,16nm,0.8s
SCM MLR MLR
comp=Z,2µm,20.0s
SCM Sheep Creek Mo 93.95 14 *e*P **P 19 48 35.2 -0.3**
comp=Z,16nm,0.8s
SCM LR LR
comp=Z,2µm,20.0s
NEW Newport 93.97 35 PFAKE 19 48 50.0 +14
NEW LR LR
comp=Z,5µm,18.0s
O20A White River Ci 94.00 46 PFAKE 19 48 50.0 +13
O20A LR LR
comp=Z,2µm,19.0s
PPLA Purkeypile 94.03 11 PFAKE 19 48 50.0 +14
PPLA LR LR
comp=Z,3µm,20.0s
PB01 IPOC Station P 94.03 117 PFAKE 19 48 50.0 +13
PB01 LR LR
comp=Z,3µm,20.0s
MCMT McKenzie Canyo 94.07 40 *e*P **P 19 48 37.8 +1.0**
PCA Pinnacle 94.08 17 PFAKE 19 48 50.0 +14
PCA LR LR
comp=Z,5µm,20.0s
CMMT Chiang Mai 94.11 289 P P 19 48 44.2 +6.9
CHTO Chiang Mai 94.11 289 P P 19 48 44.3 +7.0
CHTO Chiang Mai 94.11 289 *e*P **P 19 48 37.0 -0.3**
CHTO pmax pmax
comp=Z,15nm,1.0s
CHTO MLR MLR
comp=Z,2µm,20.0s
CHTO Chiang Mai 94.11 289 *e*P **P 19 48 37.0 -0.3**
comp=Z,16nm,1.0s
CHTO LR LR
comp=Z,2µm,20.0s
KMI Kunming 94.19 296 P **P 19 48 38.6 +0.8**
KMI pP pP 19 48 45.1 -2.6
KMI sP sP 19 48 47.6 -3.7
KMI PP **PP 19 52 30.1 +5.1**
KMI S **S 19 59 44.8 -2.4**
KMI sS sS 19 59 57.7 -6.1
KMI pmax pmax
comp=Z,15nm,1.0s
KMI pmax pmax
comp=Z,600nm,11.4s
KMI LR LR
comp=Z,1µm,18.6s
KMI LR LR
comp=Z,2µm,19.6s
KMI LR LR
comp=Z,2µm,19.4s
MSTX Muleshoe 94.19 53 PFAKE 19 48 50.0 +13
MSTX LR LR
comp=Z,3µm,18.0s
XAN Xi'an 94.23 307 P **P 19 48 37.8 +0.3**
XAN pP pP 19 48 45.4 -2.1
XAN SKS **SKSac 19 59 11.8 +1.4**
XAN S **ScS 19 59 54.5 +6.4**
XAN pmax pmax
comp=Z,11nm,1.1s
XAN pmax pmax
comp=Z,720nm,10.9s
XAN LR LR
comp=Z,1µm,22.4s
XAN LR LR
comp=Z,2µm,22.4s
XAN LR LR
comp=Z,3µm,22.4s
SMCO Snowmass 94.25 47 PFAKE 19 48 50.0 +12
SMCO LR LR
comp=Z,2µm,19.0s
REDW Red Top Meadow 94.32 42 PFAKE 19 48 50.0 +12
REDW LR LR
comp=Z,6µm,19.0s
TPAW Teton Pass 94.34 42 PFAKE 19 48 50.0 +12
TPAW LR LR
comp=Z,6µm,18.0s
BALM Baldy 94.36 16 *e*P **P 19 48 37.5 0.0**
BALM pmax pmax
comp=Z,15nm,1.2s
BALM MLR MLR
comp=Z,4µm,20.0s
BALM Baldy 94.36 16 *e*P **P 19 48 37.5 0.0**
comp=Z,15nm,1.2s
BALM LR LR
comp=Z,4µm,20.0s
SDCO Great Sand Dun 94.40 49 *e*P **P 19 48 38.9 +0.4**
comp=Z,7.8nm,1.4s
SDCO LR LR
comp=Z,2µm,18.0s
KVTX Kingsville 94.40 61 PFAKE 19 48 50.0 +12
KVTX LR LR
comp=Z,4µm,18.0s
SNOW Snow King Moun 94.44 42 *e*P **P 19 48 39.0 +0.5**
comp=Z,22nm,0.9s
SNOW LR LR
comp=Z,6µm,18.0s
JCT Junction City 94.48 58 PFAKE 19 48 50.0 +11
JCT LR LR
comp=Z,4µm,18.0s
CAST Castle Rocks 94.53 11 PFAKE 19 48 50.0 +12
CAST LR LR
comp=Z,3µm,20.0s
DLMT Dillon 94.54 40 PFAKE 19 48 50.0 +11
DLMT LR LR
comp=Z,5µm,19.0s
IMW Indian Meadow 94.59 41 PFAKE 19 48 50.0 +11
IMW LR LR
comp=Z,6µm,18.0s
PB11 IPOC Station P 94.60 116 PFAKE 19 48 50.0 +10
PB11 LR LR
comp=Z,3µm,22.0s
LOHW Long Hollow 94.61 42 *e*P **P 19 48 40.0 +0.7**
comp=Z,8.9nm,1.0s
LOHW LR LR
comp=Z,5µm,19.0s
MOOW Moose Ponds 94.61 42 *e*P **P 19 48 39.2 -0.1**
comp=Z,6.9nm,0.9s
MOOW LR LR
comp=Z,6µm,19.0s
MSO Missoula 94.71 38 PFAKE 19 48 50.0 +10
MSO LR LR
comp=Z,5µm,18.0s
BW06 Boulder Array 94.73 43 PFAKE 19 48 50.0 +10
BW06 LR LR
comp=Z,5µm,18.0s
PD31 Pinedale Array 94.73 43 *e*P **P 19 48 38.5 -1.4**
PDAR Pinedale Array 94.73 43 P **P 19 48 40.5 +0.6**
comp=Z,0.9nm,0.8s,baz=214,slow=2.9,SNR=4.9
PDAR PKKP **PKKPbc 20 05 38.2 +0.1**
comp=Z,0.7nm,0.7s,baz=36,slow=4.9,SNR=3.7
PDAR Pinedale Array 94.73 43 P **P 19 48 40.5 +0.6**
PDAR PKKP **PKKPbc 20 05 38.2 +0.1**
T25A Trinidad 94.79 50 PFAKE 19 48 50.0 +10
T25A LR LR
comp=Z,2µm,22.0s
FLWY Flagg Ranch 94.84 41 PFAKE 19 48 50.0 +10
FLWY LR LR
comp=Z,7µm,18.0s
KTH Kantishna Hill 94.85 11 PFAKE 19 48 50.0 +10
KTH LR LR
comp=Z,4µm,21.0s
TRF Thorofare Moun 94.87 12 PFAKE 19 48 50.0 +10
TRF LR LR
comp=Z,5µm,18.0s
QLMT Earthquake Lak 94.87 41 *e*P **P 19 48 41.1 +0.7**
YPP Pitchstone Pla 94.89 41 PFAKE 19 48 50.0 +9.3
YPP LR LR
comp=Z,8µm,18.0s
SKAG Skagway 94.92 20 PFAKE 19 48 50.0 +10
SKAG LR LR
comp=Z,3µm,20.0s
YHB Horse Butte 94.96 41 PFAKE 19 48 50.0 +9.2
YHB LR LR
comp=Z,5µm,20.0s
YFT Old Faithful 94.98 41 PFAKE 19 48 50.0 +9.0
YFT LR LR
comp=Z,10µm,18.0s
YMR Madison River 95.04 41 PFAKE 19 48 50.0 +8.8
YMR LR LR
comp=Z,4µm,19.0s
DHY Denali Highway 95.07 13 PFAKE 19 48 50.0 +9.2
DHY LR LR
comp=Z,3µm,19.0s
RND Reindeer 95.09 12 PFAKE 19 48 50.0 +9.2
RND LR LR
comp=Z,4µm,20.0s
H17A Grant Village 95.10 41 PFAKE 19 48 50.0 +8.5
H17A LR LR
comp=Z,5µm,19.0s
433A Art 95.15 58 P **P 19 48 42.3 +0.5**
baz=239
SEY Seymchan 95.17 346 P **P 19 48 40.7 -0.3**
comp=Z,7.7nm,0.7s,baz=152,slow=4.7,SNR=14
SEY Seymchan 95.17 346‖ *e*P **P 19 48 41.1 +0.1**
SEY Seymchan 95.17 346 P **P 19 48 40.7 -0.3**
YHH Holmes Hill 95.17 41 PFAKE 19 48 50.0 +8.1
YHH LR LR
comp=Z,5µm,19.0s
YNR Norris Junctio 95.23 41 PFAKE 19 48 50.0 +7.9
YNR LR LR
comp=Z,4µm,19.0s
BOZ Bozeman (W) 95.25 40 P **P 19 48 42.6 +0.5**
baz=233
BOZ Bozeman (W) 95.25 40 PFAKE 19 48 50.0 +7.9
BOZ LR LR
comp=Z,4µm,19.0s
LKWY Lake 95.30 41 PFAKE 19 48 50.0 +7.5
LKWY LR LR
comp=Z,12µm,18.0s
Q24A Divide 95.31 48 PFAKE 19 48 50.0 +7.3
Q24A LR LR
comp=Z,3µm,22.0s
PAX Paxson 95.36 14 PFAKE 19 48 50.0 +7.9
PAX LR LR
comp=Z,2µm,20.0s
MCK McKinley 95.37 12 PFAKE 19 48 50.0 +8.0
MCK LR LR
comp=Z,4µm,21.0s
AMTX Amarillo 95.44 53 PFAKE 19 48 50.0 +6.9
AMTX LR LR
comp=Z,3µm,19.0s
ISCO Idaho Springs 95.47 47 PFAKE 19 48 50.0 +6.6
ISCO LR LR
comp=Z,2µm,22.0s
ABTX Abilene, Hawle 95.70 56 PFAKE 19 49 00.0 +16
ABTX LR LR
comp=Z,4µm,18.0s
MENT Mentasta 95.71 15 PFAKE 19 49 00.0 +16
MENT LR LR
comp=Z,3µm,20.0s
DLBC Dease Lake 95.79 23 PFAKE 19 49 00.0 +16
DLBC LR LR
comp=Z,2µm,18.0s
N23A Red Feather La 95.87 46 PFAKE 19 49 00.0 +15
N23A LR LR
comp=Z,3µm,19.0s
WALA Waterton Lakes 96.12 36 PFAKE 19 49 00.0 +14
WALA LR LR
comp=Z,3µm,19.0s
HHC Hu-ho-hao-te 96.18 314 *e*P **P 19 48 46.4 0.0**
HHC PP **PP 19 52 46.4 +6.3**
HHC SKS **SKSac 19 59 24.3 +3.7**
HHC S **ScS 20 00 05.8 +1.6**
HHC pmax pmax
comp=Z,12nm,1.3s
HHC pmax pmax
comp=Z,470nm,9.2s
HHC LR LR
comp=Z,2µm,17.6s
HHC LR LR
comp=Z,3µm,18.3s
HHC LR LR
comp=Z,4µm,18.2s
WRH Wood River Hil 96.20 12 PFAKE 19 49 00.0 +14
WRH LR LR
comp=Z,2µm,20.0s
DOT Dot Lake 96.26 14 PFAKE 19 49 00.0 +14
DOT LR LR
comp=Z,5µm,21.0s
RLMT Red Lodge 96.28 41 PFAKE 19 49 00.0 +13
RLMT LR LR
comp=Z,5µm,18.0s
CD2 Chengdu 96.32 302 P **P 19 48 47.4 +0.2**
CD2 pP pP 19 48 54.6 -2.6
CD2 PP **PP 19 52 41.2 -0.1**
CD2 SKS **SKSac 19 59 22.5 +0.8**
CD2 S **ScS 20 00 06.5 +0.8**
CD2 sS sS 20 00 18.9 -2.9
CD2 SS **SS 20 06 41.5 +2.6**
CD2 pmax pmax
comp=Z,30nm,0.5s
CD2 pmax pmax
comp=Z,650nm,6.6s
CD2 LR LR
comp=Z,2µm,18.9s
CD2 LR LR
comp=Z,3µm,21.4s
CD2 LR LR
comp=Z,3µm,23.8s
HDA Harding Lake 96.36 13 PFAKE 19 49 00.0 +14
HDA LR LR
comp=Z,3µm,19.0s
PHWY Pilot Hill 96.40 46 PFAKE 19 49 00.0 +12
PHWY LR LR
comp=Z,2µm,18.0s
CCB Clear Creek Bu 96.41 12 PFAKE 19 49 00.0 +13
CCB LR LR
comp=Z,3µm,20.0s
HIA Hailar 96.42 324 PFAKE 19 49 00.0 +13
HIA LR LR
comp=Z,4µm,20.0s
TGUH Tegucigalpa,Un 96.46 78 PFAKE 19 49 00.0 +12
TGUH LR LR
comp=Z,3µm,21.0s
K22A Casper 96.49 44 PFAKE 19 49 00.0 +12
K22A LR LR
comp=Z,6µm,18.0s
COLA College 96.61 12 *e*P **P 19 48 46.9 -0.6**
COLA pmax pmax
comp=Z,11nm,0.9s
COLA College 96.61 12 PFAKE 19 49 00.0 +12
COLA LR LR
comp=Z,3µm,21.0s
ILAR Eielson Array 96.70 12 P **P 19 48 47.2 -0.8**
comp=Z,3.0nm,0.9s,baz=220,slow=5.1,SNR=13
ILAR PKKP **PKKPdf 20 05 35.3 -0.1**
comp=Z,0.2nm,0.5s,baz=330,slow=3.4,SNR=3.2
ILAR Eielson Array 96.70 12 P **P 19 48 47.2 -0.8**
ILAR PKKP **PKKPdf 20 05 35.3 -0.1**
ILB Eielson Array 96.70 12 *e*P **P 19 48 47.1 -0.9**
WHTX Lake Whitney, 96.98 57 PFAKE 19 49 00.0 +10
WHTX LR LR
comp=Z,3µm,18.0s
KSCO Kaye Shedlock' 96.98 49 PFAKE 19 49 00.0 +10
KSCO LR LR
comp=Z,3µm,18.0s
HDC Heredia 97.26 83 PFAKE 19 49 00.0 +8.0
HDC LR LR
comp=Z,3µm,20.0s
WMOK Wichita Mounta 97.40 54 PFAKE 19 49 00.0 +8.0
WMOK LR LR
comp=Z,2µm,19.0s
OTAV Otavalo 97.51 94 PFAKE 19 49 00.0 +6.4
OTAV LR LR
comp=Z,2µm,22.0s
DAWY Dawson 97.67 16 *e*P Pdif 19 48 53.2 +0.7
comp=Z,11nm,1.5s
DAWY LR LR
comp=Z,2µm,19.0s
LPAZ La Paz 97.71 113 P Pdif 19 48 57.1 +2.5
comp=Z,1.0nm,0.8s,baz=121,slow=0.7,SNR=2.5
LPAZ PKKPbc **PKKPbc 20 05 28.6 -0.4**
comp=Z,1.2nm,0.8s,baz=354,slow=6.7,SNR=4.6
LPAZ La Paz 97.71 113 *e*P Pdif 19 48 57.1 +2.5
LPAZ *e*PKKPbc **PKKPbc 20 05 28.6 -0.4**
EGAK Eagle 97.87 15 PFAKE 19 49 00.0 +6.7
EGAK LR LR
comp=Z,2µm,19.0s
BILL Bilibino 97.90 354 *e*P Pdif 19 48 53.4 0.0
BILL *e* 19 52 53.8
BILL pmax pmax
comp=Z,4.0nm,1.0s
BILL Bilibino 97.90 354 PFAKE 19 49 00.0 +6.6
BILL LR LR
comp=Z,4µm,20.0s
W34A Bridge Creek, 98.37 54 PFAKE 19 49 10.0 +14
W34A LR LR
comp=Z,2µm,18.0s
COLD Coldfoot 98.37 10 PFAKE 19 49 10.0 +15
COLD LR LR
comp=Z,2µm,20.0s
OGNE Ogallala 98.39 48 PFAKE 19 49 10.0 +14
OGNE LR LR
comp=Z,4µm,22.0s
FYU Fort Yukon 98.61 12 PFAKE 19 49 10.0 +13
FYU LR LR
comp=Z,2µm,21.0s
CBKS Cedar Bluff 98.81 50 PFAKE 19 49 10.0 +12
CBKS LR LR
comp=Z,3µm,19.0s
RSSD Black Hills 98.81 44 P Pdif 19 48 58.8 +0.4
baz=238
RSSD Black Hills 98.81 44 *e*P **P 19 48 57.8 -0.5**
RSSD pmax pmax
comp=Z,12nm,1.0s
RSSD MLR MLR
comp=Z,7µm,18.0s
RSSD Black Hills 98.81 44 *e*P **P 19 48 57.8 -0.5**
comp=Z,12nm,1.0s
RSSD LR LR
comp=Z,7µm,18.0s
V34A Guthrie 98.85 54 PFAKE 19 49 10.0 +12
V34A LR LR
comp=Z,2µm,18.0s
LZH Lanzhou 98.85 306 *e*P Pdif 19 49 00.2 +1.6
LZH pP pP 19 49 07.3 -1.3
LZH sP sP 19 49 10.0 -2.1
LZH PP **PP 19 53 04.0 +3.2**
LZH SKS **SKSac 19 59 36.0 +1.3**
LZH S **ScS 20 00 26.3 -0.5**
LZH sS sS 20 00 37.5 -5.9
LZH pmax pmax
comp=Z,59nm,1.5s
LZH pmax pmax
comp=Z,440nm,9.0s
LZH LR LR
comp=Z,2µm,18.0s
LZH LR LR
comp=Z,2µm,18.5s
LZH LR LR
comp=Z,3µm,19.8s
LAO LASA Array 98.92 41 PFAKE 19 49 10.0 +11
LAO LR LR
comp=Z,4µm,18.0s
NATX Nacogdoches 98.93 59 PFAKE 19 49 10.0 +11
NATX LR LR
comp=Z,2µm,19.0s
EDM Edmonton 98.97 33 PFAKE 19 49 10.0 +11
EDM LR LR
comp=Z,2µm,19.0s
U34A Anderson Ranch 99.13 53 PFAKE 19 49 10.0 +10
U34A LR LR
comp=Z,3µm,18.0s
CPUP Villa Florida 99.90 128 PKKPbc PKKPbc 20 05 23.0 +0.6
comp=Z,1.3nm,0.8s,baz=238,slow=1.3,SNR=3.8
CPUP Villa Florida 99.90 128 PKKPbc PKKPbc 20 05 23.0 +0.6
TUL1 Leonard 100.11 55 PFAKE 19 49 20.0 +16
TUL1 LR LR
comp=Z,3µm,18.0s
YAK Yakutsk 100.63 337 *e*P **Pdif 19 49 04.1 -1.5**
YAK *e* 19 53 09.1
YAK *e*S **SKSac 19 59 38.5 -3.3**
YAK *e*SP **Sdif 20 00 44.3 +4.2**
YAK *e*SS **SS 20 07 38.8 +0.8**
YAK pmax pmax
comp=Z,8.0nm,1.4s
YAK pmax pmax
comp=N,2.0nm,1.4s
YAK pmax pmax
comp=E,2.0nm,1.3s
YAK pmax pmax
comp=Z,29nm,2.3s
YAK pmax pmax
comp=N,34nm,2.2s
YAK pmax pmax
comp=E,35nm,2.5s
YAK smax smax
comp=N,235nm,4.3s
YAK smax smax
comp=E,76nm,3.5s
YAK MLR MLR
comp=Z,1µm,21.0s
YAK Yakutsk 100.63 337 PFAKE 19 49 20.0 +14
YAK LR LR
comp=Z,3µm,22.0s
WLAR White Oak Lake 101.00 58 PFAKE 19 49 20.0 +12
WLAR LR LR
comp=Z,3µm,22.0s
DGMT Dagmar 101.03 40 PFAKE 19 49 20.0 +12
DGMT LR LR
comp=Z,3µm,19.0s
MIAR Mount Ida 101.05 57 PFAKE 19 49 20.0 +12
MIAR LR LR
comp=Z,3µm,22.0s
KSU1 Kansas State U 101.07 51 PFAKE 19 49 20.0 +12
KSU1 LR LR
comp=Z,2µm,18.0s
BGNE Belgrade 101.15 49 PFAKE 19 49 20.0 +11
BGNE LR LR
comp=Z,3µm,22.0s
HHAR Hobbs 101.60 55 PFAKE 19 49 20.0 +9.3
HHAR LR LR
comp=Z,2µm,18.0s
UALR University of 102.06 57 PFAKE 19 49 20.0 +7.3
UALR LR LR
comp=Z,2µm,18.0s
CCAR Cane Creek 102.09 58 PFAKE 19 49 20.0 +7.2
CCAR LR LR
comp=Z,2µm,18.0s
VBMS Vicksburg 102.26 60 PFAKE 19 49 30.0 +16
VBMS LR LR
comp=Z,2µm,21.0s
X201 Greenbrier Sit 102.28 56 PFAKE 19 49 30.0 +16
X201 LR LR
comp=Z,4µm,18.0s
PRAC Prado 102.30 93 PFAKE 19 49 30.0 +16
PRAC LR LR
comp=Z,800nm,18.0s
WHAR Wooly Hollow 102.34 56 PFAKE 19 49 30.0 +16
WHAR LR LR
comp=Z,4µm,18.0s
INK Inuvik 102.52 15 PKKPbc PKKPbc 20 05 19.5 +2.9
comp=Z,1.4nm,0.7s,baz=272,slow=5.8,SNR=3.1
INK Inuvik 102.52 15 *e*P **Pdif 19 49 11.8 -2.1**
INK MLR MLR
comp=Z,3µm,19.0s
INK Inuvik 102.52 15 *e*Pdif **Pdif 19 49 11.8 -2.1**
INK PKKPbc **PKKPbc 20 05 19.5 +2.9**
INK LR LR
comp=Z,3µm,19.0s
HELC Santa Helena 102.93 90 PFAKE 19 49 30.0 +12
HELC LR LR
comp=Z,5µm,21.0s
SONA0 Songino Array 102.99 318 *e*Pdif **Pdif 19 49 17.8 +1.1**
SONA0 *e*PP **PP 19 53 31.5 -0.3**
SONA0 *e*PKKPbc **PKKPbc 20 05 14.8 +0.1**
SONM Songino Array 102.99 318 P **Pdif 19 49 17.8 +1.1**
comp=Z,0.7nm,0.6s,baz=124,slow=0.5,SNR=4.0
SONM PP **PP 19 53 31.5 -0.3**
comp=Z,1.3nm,0.9s,baz=145,slow=5.3,SNR=3.8
SONM PKKPbc **PKKPbc 20 05 14.8 +0.1**
comp=Z,0.4nm,0.5s,baz=298,slow=3.1,SNR=4.6
SONM Songino Array 102.99 318 P **Pdif 19 49 17.8 +1.1**
SONM PP **PP 19 53 31.5 -0.3**
SONM PKKPbc **PKKPbc 20 05 14.8 +0.1**
SONA1 Songino Array 102.99 318 *e*Pdif **Pdif 19 49 15.2 -1.5**
ECSD EROS Data Cent 103.26 47 PFAKE 19 49 30.0 +12
ECSD LR LR
comp=Z,2µm,20.0s
ROSC El Rosal 103.34 92 PFAKE 19 49 30.0 +11
ROSC LR LR
comp=Z,2µm,22.0s
MDND Maddock 103.37 42 PFAKE 19 49 30.0 +12
MDND LR LR
comp=Z,3µm,19.0s

MET **Memphis--Engin** **103.99** **58** PFAKE 19 49 30.0 +8.8
MET LR LR
comp=Z,3µm,18.0s
DGAR **Diego Garcia** **104.03** **253** PFAKE 19 49 30.0 +8.0
DGAR LR LR
comp=Z,7µm,20.0s
YKA **Yellowknife Ar** **104.09** **25** PKiKP **PKiKP** **19 53 38.1 +0.1**
comp=Z,0.2nm,0.5s,baz=240,slow=1.6,SNR=4.2
YKA PKKPbc **PKKPbc** **20 05 10.2 -1.4**
comp=Z,1.2nm,0.7s,baz=40,slow=3.7,SNR=5.2
YKA **Yellowknife Ar** **104.09** **25** PKiKP **PKiKP** **19 53 38.1 +0.1**
YKA PKKPbc **PKKPbc** **20 05 10.2 -1.4**
BOD **Bodaibo** **104.18** **329** *e*P **Pdif** **19 49 16.5 -5.0**
PALK **Pallekele** **104.30** **270** PFAKE 19 49 30.0 +6.8
PALK LR LR
comp=Z,6µm,18.0s
PBMO **Poplar Bluff** **104.35** **56** PFAKE 19 49 30.0 +7.2
PBMO LR LR
comp=Z,4µm,18.0s
BRAL **Brewton** **104.45** **62** PFAKE 19 49 30.0 +6.6
BRAL LR LR
comp=Z,1µm,21.0s
SCIA **State Center** **104.66** **50** PFAKE 19 49 40.0 +16
SCIA LR LR
comp=Z,2µm,19.0s
PVMO **Portageville** **104.72** **56** PFAKE 19 49 40.0 +16
PVMO LR LR
comp=Z,4µm,18.0s
HALT **Halls** **104.77** **57** PFAKE 19 49 40.0 +15
HALT LR LR
comp=Z,2876µm,18.0s
RUSC **La Rusia** **104.92** **92** PFAKE 19 53 50.0
RUSC LR LR
comp=Z,700nm,21.0s
LRAL **Lakeview Retre** **105.28** **61** PFAKE 19 53 50.0
LRAL LR LR
comp=Z,2µm,22.0s
FFC **Flin Flon** **105.40** **36** PFAKE 19 53 50.0
FFC LR LR
comp=Z,2µm,19.0s
LSA **Lhasa** **105.42** **296** PFAKE 19 53 50.0
LSA LR LR
comp=Z,1µm,20.0s
SIUC **Southern Illin** **105.62** **55** PFAKE 19 53 50.0
SIUC LR LR
comp=Z,3µm,18.0s
SAML **Samuel** **105.78** **110** PFAKE 19 53 50.0
SAML LR LR
comp=Z,1µm,21.0s
AGMN **Agassiz Nation** **105.81** **43** PFAKE 19 53 50.0
AGMN LR LR
comp=Z,4µm,18.0s
WVT **Waverly** **105.97** **57** PFAKE 19 53 50.0
WVT LR LR
comp=Z,2µm,18.0s
SPMN **Marine on St.** **106.36** **47** PFAKE 19 53 50.0
SPMN LR LR
comp=Z,3µm,19.0s
TLY **Talaya** **106.37** **320** PFAKE 19 53 50.0
TLY LR LR
comp=Z,2µm,19.0s
ULM **Lac du Bonnet** **106.66** **41** PFAKE 19 53 50.0
ULM LR LR
comp=Z,5µm,18.0s
MTDJ **Mount Denham** **106.68** **78** PFAKE 19 54 00.0
MTDJ LR LR
comp=Z,3µm,21.0s
HDIL **Hopedale** **106.75** **53** PFAKE 19 54 00.0
HDIL LR LR
comp=Z,2µm,21.0s
USIN **University of** **106.84** **56** PFAKE 19 54 00.0
USIN LR LR
comp=Z,3µm,18.0s
OLIL **Olney** **106.85** **55** PFAKE 19 54 00.0
OLIL LR LR
comp=Z,2µm,19.0s
SWET **Sewanee** **107.00** **59** PFAKE 19 54 00.0
SWET LR LR
comp=Z,900nm,18.0s
JFWS **Jewell Farm** **107.07** **50** PFAKE 19 54 00.0
JFWS LR LR
comp=Z,2µm,18.0s
TIGA **Tifton** **107.25** **63** PFAKE 19 54 00.0
TIGA LR LR
comp=Z,1µm,22.0s
TIXI **Tiksi** **107.50** **344** PKiKP **PKiKP** **19 53 44.5 +0.5**
comp=Z,1.1nm,0.6s,baz=155,slow=5.5,SNR=2.5
TIXI PP **PP** **19 53 58.2 -6.2**
comp=Z,4.1nm,0.9s,baz=135,slow=2.2,SNR=4.3
TIXI **Tiksi** **107.50** **344** *e*PKiKP **PKiKP** **19 53 44.5 +0.5**
TIXI *e*PP **PP** **19 53 58.2 -6.2**
TIXI LR LR
comp=Z,2µm,20.0s
DWPF **Disney Wildern** **107.60** **67** PFAKE 19 54 00.0
DWPF LR LR
comp=Z,800nm,22.0s
WCI **Wyandotte Cave** **107.94** **56** PFAKE 19 54 00.0
WCI LR LR
comp=Z,4µm,18.0s
GOGA **Godfrey** **108.14** **61** PFAKE 19 54 00.0
GOGA LR LR
comp=Z,2µm,20.0s
CPCT **Cooper Cave** **108.14** **59** PFAKE 19 54 00.0
CPCT LR LR
comp=Z,2µm,18.0s
BLO **Bloomington** **108.15** **55** PFAKE 19 54 00.0
BLO LR LR
comp=Z,4µm,18.0s
SFIN **Lafayette** **108.22** **54** PFAKE 19 54 00.0
SFIN LR LR
comp=Z,3µm,18.0s
EYMN **Ely** **108.31** **45** PFAKE 19 54 00.0
EYMN LR LR
comp=Z,4µm,18.0s
SPB **Sao Paulo** **108.38** **132** PFAKE 19 54 00.0
SPB LR LR
comp=Z,3µm,22.0s
SDV **Santo Domingo** **108.47** **90** PFAKE 19 54 00.0
SDV LR LR
comp=Z,1µm,20.0s
TKL **Tuckaleechee C** **108.79** **59** PFAKE 19 54 00.0
TKL LR LR
comp=Z,3µm,18.0s
COWI **Conover** **109.07** **47** PFAKE 19 54 00.0
COWI LR LR
comp=Z,2µm,19.0s
TZTN **Tazewell** **109.30** **58** PFAKE 19 54 00.0
TZTN LR LR
comp=Z,3µm,18.0s
GTBY **Guantanamo Bay** **109.47** **78** PFAKE 19 54 00.0
GTBY LR LR
comp=Z,1µm,21.0s
KMSC **Kings Mountain** **110.43** **61** PFAKE 19 54 00.0
KMSC LR LR
comp=Z,1µm,20.0s
NHSC **New Hope** **110.56** **63** PFAKE 19 54 00.0
NHSC LR LR
comp=Z,2µm,20.0s
FCC **Fort Churchill** **111.06** **34** PFAKE 19 54 00.0
FCC LR LR
comp=Z,3µm,19.0s
ACSO **Alum Creek Sta** **111.08** **55** PFAKE 19 54 00.0
ACSO LR LR
comp=Z,3µm,19.0s
AAM **Ann Arbor** **111.34** **53** PFAKE 19 54 00.0
AAM LR LR
comp=Z,2µm,18.0s
BLA **Blacksburg** **111.87** **59** PFAKE 19 54 10.0
BLA LR LR
comp=Z,2µm,18.0s
SDDR **Presa de Saban** **112.35** **80** PFAKE 19 54 10.0
SDDR LR LR
comp=Z,1µm,21.0s
PTGA **Pitinga** **112.93** **105** PFAKE 19 54 10.0
PTGA LR LR
comp=Z,1µm,18.0s
CNNC **Cliffs of the** **113.10** **62** PFAKE 19 54 10.0
CNNC LR LR
comp=Z,1µm,20.0s
MCWV **Mont Chateau** **113.14** **56** PFAKE 19 54 10.0
MCWV LR LR
comp=Z,2µm,18.0s
WMQ **Urumqi** **113.31** **308** *e*PKP **PKiKP** **19 53 56.8 +0.9**
WMQ PP **PP** **19 54 50.1 +2.9**
WMQ SKKS 20 01 43.2
WMQ AMB AMB
comp=Z,360nm,9.8s
WMQ LR LR
comp=Z,950nm,20.2s
WMQ LR LR
comp=Z,2µm,21.5s
WMQ LR LR
comp=Z,2µm,23.4s
SDD **Santo Domingo** **113.32** **81** PFAKE 19 54 10.0
SDD LR LR
comp=Z,3µm,22.0s
BDFB **Brasilia** **113.43** **125** PFAKE 19 54 10.0
BDFB LR LR
comp=Z,5µm,22.0s
GRTK **Grand Turk** **113.52** **78** PFAKE 19 54 10.0
GRTK LR LR
comp=Z,1µm,20.0s
ALLY **Alegheny Colle** **113.58** **54** PFAKE 19 54 10.0
ALLY LR LR
comp=Z,4µm,19.0s
ERPA **Erie** **113.84** **54** PFAKE 19 54 10.0
ERPA LR LR
comp=Z,2µm,18.0s
CBN **Corbin Frederi** **114.48** **59** PFAKE 19 54 10.0 +12
CBN LR LR
comp=Z,3µm,18.0s
SSPA **Standing Stone** **114.88** **56** PFAKE 19 54 10.0 +11
SSPA LR LR
comp=Z,3µm,18.0s
SADO **Sadowa** **115.24** **51** PFAKE 19 54 10.0 +10
SADO LR LR
comp=Z,2µm,20.0s
MPR **Mayaguez** **115.62** **83** PFAKE 19 54 10.0 +9.0
MPR LR LR
comp=Z,1µm,21.0s
MVL **Millersville** **115.80** **57** PFAKE 19 54 10.0 +9.3
MVL LR LR
comp=Z,2µm,19.0s
RES **Resolute Bay** **115.97** **17** PFAKE 19 54 10.0 +10
RES LR LR
comp=Z,3µm,20.0s
SUR **Sutherland** **116.34** **197** PFAKE 19 54 10.0 +7.5
SUR LR LR
comp=Z,3µm,20.0s
SJG **San Juan** **116.44** **83** PFAKE 19 54 10.0 +7.4
SJG LR LR
comp=Z,900nm,21.0s
PSUB **Penn St. - Bra** **116.44** **57** PFAKE 19 54 10.0 +8.1
PSUB LR LR
comp=Z,2µm,19.0s
KSPA **Keystone Colle** **116.68** **55** PFAKE 19 54 10.0 +7.6
KSPA LR LR
comp=Z,4µm,18.0s
BINY **Binghamton** **116.70** **55** PFAKE 19 54 10.0 +7.5
BINY LR LR
comp=Z,3µm,18.0s
HUMP **Col San Antoni** **116.71** **83** PFAKE 19 54 10.0 +6.9
HUMP LR LR
comp=Z,1µm,22.0s
VLDQ **Val d'Or** **117.27** **48** PFAKE 19 54 10.0 +6.7
VLDQ LR LR
comp=Z,3µm,19.0s
BRNJ **Basking Ridge** **117.30** **57** PFAKE 19 54 20.0 +16
BRNJ LR LR
comp=Z,2µm,18.0s
ODNJ **Ogdensburg** **117.39** **56** PFAKE 19 54 20.0 +16
ODNJ LR LR
comp=Z,2µm,18.0s
GRGR **Grenville** **117.80** **91** PFAKE 19 54 20.0 +15
GRGR LR LR
comp=Z,1µm,22.0s
MK31 **Makanchi Array** **117.81** **310** *e*PKiKP **PKPdf** **19 54 03.5 -0.9**
MK31 **Makanchi Array** **117.81** **310** *e*PKPdf **PKPdf** **19 54 03.5 -0.9**
MK32 **Makanchi Array** **117.81** **310** *e*Pdif **Pdif** **19 50 31.6 +9.1**
MK32 *e*PKPdf **PKPdf** **19 54 03.9 -0.6**
MK32 *e*PKKPbc **PKKPbc** **20 04 26.5 +0.5**
MKAR **Makanchi Array** **117.81** **310** Pdiff **Pdif** **19 50 31.6 +9.1**
comp=Z,0.3nm,0.4s,baz=96,slow=4.3,SNR=3.5
MKAR PKP **PKPdf** **19 54 03.9 -0.6**
comp=Z,2.2nm,0.5s,baz=160,slow=0.3,SNR=9.9
MKAR PKKPbc **PKKPbc** **20 04 26.5 +0.5**
comp=Z,0.2nm,0.3s,baz=318,slow=1.9,SNR=3.1
MKAR **Makanchi Array** **117.81** **310** Pdif **Pdif** **19 50 31.6 +9.1**
MKAR *e*PKPdf **PKPdf** **19 54 03.4 -1.1**
MKAR PKKPbc **PKKPbc** **20 04 26.5 +0.5**
ZAA0 **Zalesovo Array** **117.86** **319** *e*PKPdf **PKPdf** **19 54 02.6 -1.6**
ZAA0 *e*PKPdf **PKiKP** **19 54 02.9 -1.4**
ZALV **Zalesovo Beam** **117.86** **319** PKP **PKPdf** **19 54 03.5 -0.8**
comp=Z,2.1nm,0.6s,baz=203,slow=0.6,SNR=7.1
ZALV **Zalesovo Beam** **117.86** **319** PKP **PKPdf** **19 54 03.5 -0.8**
ZAA1 **Zalesovo Array** **117.87** **319** *e*PKPdf **PKPdf** **19 54 03.5 -0.8**
PAL **Palisades** **117.87** **57** PFAKE 19 54 20.0 +15
PAL LR LR
comp=Z,3µm,19.0s
MAKZ **Makanchi** **118.02** **310** PFAKE 19 54 20.0 +15
MAKZ LR LR
comp=Z,2µm,21.0s
LONY **Lake Ozonia** **118.33** **52** PFAKE 19 54 20.0 +15
LONY LR LR
comp=Z,2µm,19.0s
TRY **Troy** **118.50** **55** PFAKE 19 54 20.0 +14
TRY LR LR
comp=Z,6µm,18.0s
BOSA **Boshof** **118.59** **202** PKP **PKPdf** **19 54 07.9 +1.1**
comp=Z,9.7nm,1.0s,baz=174,slow=2.7,SNR=7.4
BOSA **Boshof** **118.59** **202** PKIKP **PKPdf** **19 54 07.9 +1.1**
BOSA pmax pmax
comp=Z,7.0nm,0.9s
BOSA **Boshof** **118.59** **202** *e*PKPdf **PKPdf** **19 54 05.0 -1.8**
BOSA *e*PKPdf **PKPdf** **19 54 07.9 +1.1**
SVB **Belmont** **118.65** **90** PFAKE 19 54 20.0 +13
SVB LR LR
comp=Z,2µm,22.0s
YLE **Yale** **118.66** **56** PFAKE 19 54 20.0 +14
YLE LR LR
comp=Z,4µm,18.0s
ACCN **Adirondack Com** **118.67** **54** PFAKE 19 54 20.0 +14
ACCN LR LR
comp=Z,5µm,21.0s
SABA **Saba** **118.76** **85** PFAKE 19 54 20.0 +13
SABA LR LR
comp=Z,2µm,21.0s
SEUS **St. Eustatius** **118.93** **85** PFAKE 19 54 20.0 +13
SEUS LR LR
comp=Z,2µm,21.0s
NVS **Novosibirsk** **118.95** **319** *e*PKIKP **PKPdf** **19 54 05.7 -0.6**
NVS *e*PPP PPP 19 57 55.2
NVS pmax pmax
comp=N,7.0nm,1.0s
NVS pmax pmax
comp=E,9.0nm,1.3s
NRIK **Noril'sk** **119.06** **336** PKP **PKPdf** **19 54 05.3 -0.8**
comp=E,3.7nm,0.6s,baz=47,slow=1.6,SNR=5.0
FRNY **Flat Rock** **119.07** **52** PFAKE 19 54 20.0 +13
FRNY LR LR
comp=Z,2µm,18.0s
SMRT **St. Maarten** **119.08** **85** PFAKE 19 54 20.0 +12
SMRT LR LR
comp=Z,900nm,20.0s
QUA2 **Belchertown** **119.33** **55** PFAKE 19 54 20.0 +13
QUA2 LR LR
comp=Z,3µm,18.0s
FDF **Fort de France** **119.38** **89** PFAKE 19 54 20.0 +12
FDF LR LR
comp=Z,2µm,21.0s
HNH **Hanover** **119.72** **54** PFAKE 19 54 20.0 +12
HNH LR LR
comp=Z,5µm,18.0s
BRYW **Bryant College** **119.83** **56** PFAKE 19 54 20.0 +12
BRYW LR LR
comp=Z,4µm,18.0s
HRV **Adam Dziewonsk** **119.95** **55** PFAKE 19 54 20.0 +11
HRV LR LR
comp=Z,4µm,18.0s
ANWB **Willy Bob** **120.05** **86** PFAKE 19 54 20.0 +10
ANWB LR LR
comp=Z,2µm,20.0s
WES **Weston** **120.10** **56** PFAKE 19 54 20.0 +11
WES LR LR
comp=Z,7µm,18.0s
BCX **Boston College** **120.19** **56** PFAKE 19 54 20.0 +11
BCX LR LR
comp=Z,5µm,19.0s
KSH **Kashi** **120.50** **301** *e*PKP **PKPdf** **19 54 10.4 +0.4**
KSH SKS **SKSdf** **20 01 16.6 -3.3**
KSH SKKS **SKKSac** **20 02 35.3 +0.5**
KSH AMB AMB
comp=Z,100nm,7.3s
KSH LR LR
comp=Z,580nm,13.9s
KSH LR LR
comp=Z,1µm,18.1s
KSH LR LR
comp=Z,2µm,20.3s
KURK **Kurchatov** **120.99** **314** *e*PKIKP **PKPdf** **19 54 09.9 -0.5**
KURK MLR MLR
comp=Z,2µm,19.0s
KURK **Kurchatov** **120.99** **314** *e*PKPdf **PKPdf** **19 54 09.9 -0.5**
KURK LR LR
comp=Z,2µm,19.0s
KURBB **Kurchatov Arra** **121.03** **314** PKP **PKPdf** **19 54 09.9 -0.6**
comp=Z,6.1nm,0.8s,baz=111,slow=2.0,SNR=12
TKM2 **Tokmak 2** **121.56** **305** *e*PKIKP **PKPdf** **19 54 11.5 -0.6**
TKM2 MLR MLR
comp=Z,1µm,20.0s
TKM2 **Tokmak 2** **121.56** **305** *e*PKPdf **PKPdf** **19 54 11.5 -0.6**
TKM2 LR LR
comp=Z,1µm,20.0s
WVL **Waterville** **121.75** **53** PFAKE 19 54 20.0 +8.0
WVL LR LR
comp=Z,5µm,18.0s
PKME **Peaks-Kenny Pk** **122.14** **53** PFAKE 19 54 20.0 +7.3
PKME LR LR
comp=Z,2µm,20.0s
FRU **Bishkek** **122.25** **304** *e*PKIKP **PKPdf** **19 54 12.0 -1.1**
FRU *e* 19 54 20.0
FRU pmax pmax
comp=Z,60nm,1.6s
AAK **Ala-Archa** **122.30** **304** PKP **PKPdf** **19 54 13.6 +0.2**
comp=Z,1.7nm,0.3s,baz=98,slow=3.0,SNR=6.3
AAK **Ala-Archa** **122.30** **304** *e*PKPdf **PKPdf** **19 54 11.4 -2.0**
AAK *e*PKPdf **PKiKP** **19 54 12.0 -1.6**
AAK LR LR
comp=Z,2µm,21.0s
BBSR **BB Station** **122.64** **68** PFAKE 19 54 30.0 +16
BBSR LR LR
comp=Z,1µm,21.0s
EKS2 **Erkin-Say** **122.82** **304** PFAKE 19 54 30.0 +16
EKS2 LR LR
comp=Z,2µm,20.0s
GGN **Saint George** **123.82** **53** PFAKE 19 54 30.0 +14
GGN LR LR
comp=Z,1µm,20.0s
KBL **Kabul** **124.66** **294** *e*PKIKP **PKPdf** **19 54 18.5 +0.2**
KBL MLR MLR
comp=Z,3µm,21.0s
KBL **Kabul** **124.66** **294** *e*PKPdf **PKPdf** **19 54 18.5 +0.2**
KBL LR LR
comp=Z,3µm,21.0s
SCHQ **Schefferville** **124.83** **41** PFAKE 19 54 30.0 +12
SCHQ LR LR
comp=Z,4µm,19.0s
KKAR **Karatay Array** **125.26** **304** *e*PKIKP **PKPdf** **19 54 17.2 -1.7**
KKAR **Karatay Array** **125.26** **304** *e*PKPdf **PKPdf** **19 54 17.2 -1.7**
LMN **Caledonia Moun** **125.34** **53** PFAKE 19 54 30.0 +11
LMN LR LR
comp=Z,3µm,19.0s
VOSK **Vostochnaya** **125.93** **316** PFAKE 19 54 30.0 +10
VOSK LR LR
comp=Z,1µm,20.0s
BRVK **Borovoye** **126.36** **316** *c i* PKIKP **PKPdf** **19 54 20.0 -0.6**
BRVK pmax pmax
comp=Z,56nm,1.7s
BRVK **Borovoye** **126.36** **316** *e*PKPdf **PKPdf** **19 54 19.2 -1.4**
BRVK LR LR
comp=Z,2µm,22.0s
ZRNK **Zerenda** **127.13** **316** PFAKE 19 54 30.0 +7.9
ZRNK LR LR
comp=Z,2µm,22.0s
RCBR **Riachuelo** **128.76** **127** PFAKE 19 54 40.0 +13
RCBR LR LR
comp=Z,3µm,20.0s
LSZ **Lusaka** **129.44** **212** SKPbc SKPbc 19 57 51.7 +4.3
comp=Z,2.5nm,0.6s,baz=128,slow=6.2,SNR=3.5
LSZ **Lusaka** **129.44** **212** *e*PKIKP **PKPdf** **19 54 28.6 +0.7**
LSZ MLR MLR
comp=Z,2µm,20.0s
LSZ **Lusaka** **129.44** **212** *e*PKPdf **PKPdf** **19 54 28.6 +0.7**
LSZ SKPbc SKPbc 19 57 51.7 +4.3
LSZ LR LR
comp=Z,2µm,20.0s
TSUM **Tsumeb** **129.75** **198** *e*PKPdf **PKPdf** **19 54 28.3 -0.1**
TSUM LR LR
comp=Z,4µm,19.0s
KBS **Kingsbay** **130.18** **358** PFAKE 19 54 40.0 +13
KBS LR LR
comp=Z,2µm,21.0s
WSAR **Wadi Sarin** **130.21** **277** PKP **PKPdf** **19 54 31.5 +2.7**
comp=Z,3.9nm,0.6s,baz=238,slow=4.1,SNR=4.7
WSAR **Wadi Sarin** **130.21** **277** *e*PKPdf **PKPdf** **19 54 31.6 +2.7**
DRLN **Deer Lake** **130.49** **49** PFAKE 19 54 40.0 +11
DRLN LR LR
comp=Z,2µm,18.0s
SFJD **Kangerlussuaq** **130.66** **25** PFAKE 19 54 40.0 +12
SFJD LR LR
comp=Z,2µm,19.0s
SUMG **Summit** **131.44** **15** *i* P PKPdf 19 54 45.6 +15
SUMG **Summit** **131.44** **15** PFAKE 19 54 40.0 +10
SUMG LR LR
comp=Z,2µm,20.0s
UOSS **Minazif** **132.85** **278** PFAKE 19 54 50.0 +16
UOSS LR LR
comp=Z,2µm,20.0s
ARU **Arti** **132.86** **321** *i* PKIKP **PKPdf** **19 54 32.2 -0.6**
ARU 19 56 54.8
ARU PPP PPP 19 59 47.6
ARU SSS SSS 20 19 35.0
ARU MLR MLR
comp=Z,4µm,21.0s
ARU **Arti** **132.86** **321** *e*PKPdf **PKPdf** **19 54 31.6 -1.2**
ARU LR LR
comp=Z,4µm,20.0s
ABKAR **Akbulak array** **132.92** **311** *e*PKPdf **PKPdf** **19 54 33.4 +0.2**
SOKR **Solikamsk** **133.05** **326** *i* PKIKP **PKPdf** **19 54 32.0 -1.0**
SOKR pmax pmax
comp=Z,10.0nm,0.6s
GEYT **Alibeck** **133.95** **296** PKP **PKPdf** **19 54 35.0 -0.5**
comp=Z,4.4nm,0.8s,baz=327,slow=2.5,SNR=5.1
GEYT SKPbc **SKPab** **19 58 06.5 +1.3**
comp=Z,18nm,0.9s,baz=76,slow=0.6,SNR=13
AKTO **Aktyubinsk** **134.07** **313** PKP **PKPdf** **19 54 35.5 +0.2**
comp=Z,5.3nm,0.8s,baz=145,slow=3.0,SNR=6.9
AKTO SKPbc **SKPab** **19 58 04.8 -0.4**
comp=Z,3.6nm,0.8s,baz=228,slow=24,SNR=8.4
AKTO **Aktyubinsk** **134.07** **313** PKP **PKPdf** **19 54 35.5 +0.2**
AKTO SKPbc **SKPab** **19 58 04.8 -0.4**
KMBO **Kilima Mbogo** **135.45** **233** PKP **PKPdf** **19 54 40.2 +0.8**
comp=Z,1.5nm,0.5s,baz=91,slow=8.4,SNR=3.5
KMBO SKPbc **SKiKP** **19 58 15.1 +0.2**
comp=Z,2.4nm,0.8s,baz=129,slow=17,SNR=3.4
KMBO **Kilima Mbogo** **135.45** **233** *e*PKIKP **PKPdf** **19 54 40.2 +0.8**
KMBO MLR MLR
comp=Z,2µm,18.0s
KMBO **Kilima Mbogo** **135.45** **233** *e*PKPdf **PKPdf** **19 54 40.2 +0.8**
KMBO *e*SKPbc **SKiKP** **19 58 15.1 +0.2**
KMBO LR LR
comp=Z,2µm,18.0s
LVZ **Lovozero** **137.12** **343**⇑ *e*PKIKP **PKPdf** **19 54 36.3 -4.3**
APA **Apatity** **137.68** **343** *i* PKIKP **PKPdf** **19 54 42.4 +0.9**
APA *i* 19 54 51.8
APA pmax pmax
comp=Z,12nm,0.8s
APA MLR MLR
comp=Z,3µm,21.0s
ARA0 **ARCESS Array S** **137.75** **348** *e*PKPpre PKPpre 19 54 34.8
ARA0 *e*PKPdf **PKPdf** **19 54 42.2 +0.5**
ARCES **ARCESS Array B** **137.75** **348** PKP **PKPdf** **19 54 42.2 +0.5**
comp=Z,8.0nm,0.6s,baz=47,slow=1.6,SNR=17
ARCES **ARCESS Array B** **137.75** **348** PKP **PKPdf** **19 54 42.2 +0.5**
ARE0 **ARCESS Array S** **137.75** **348** *e*PKPpre PKPpre 19 54 34.0
ARE0 LR LR
comp=Z,3µm,22.0s
H10S3 **ASCENSION HYDR** **138.26** **153** T T 22 30 42.7
baz=204,slow=74,SNR=62
H10S2 **ASCENSION HYDR** **138.26** **153** T T 22 30 12.2
baz=204,slow=74,SNR=53
H10S1 **ASCENSION HYDR** **138.28** **153** T T 22 30 34.9
baz=204,slow=74,SNR=67
DAMY **Dhamar** **139.19** **258** PFAKE 19 55 00.0 +14
DAMY LR LR

	comp=Z,3µm,19.0s								
H10N3	**ASCENSION HYDR**	**39.34**	**153**		T	T		22 31 32.8	
	baz=207,SNR=27								
H10N1	**ASCENSION HYDR**	**39.34**	**153**		T	T		22 31 38.0	
	baz=207,slow=74,SNR=40								
H10N2	**ASCENSION HYDR**	**39.35**	**153**		T	T		22 31 37.8	
	baz=207,slow=74,SNR=139								
KLMR	**Klimovskoe**	**140.26**	**333**	*e*	PKIKP	**PKPdf**		**19 54 44.1**	**-2.3**
KLMR				*e*				19 57 49.9	
KLMR					pmax	pmax			
	comp=Z,79nm,1.5s								
BORG	**Borgarnes**	**141.40**	**17**		PFAKE			19 55 00.0	+12
BORG					LR	LR			
	comp=Z,2µm,20.0s								
GROC	**Groznyy**	**143.28**	**304**	*i*	PKHKP	PKPpre		19 54 47.4	
GROC					pmax	pmax			
	comp=Z,138nm,1.9s								
VRH	**Novokhopyorsk**	**143.90**	**318**	*e*	PKIKP	PKPbc		19 54 51.1	+0.1
VRH					pmax	pmax			
	comp=Z,40nm,0.8s								
VRH					MLR	MLR			
	comp=Z,50nm,18.0s								
MOS	**Moscow**	**143.98**	**327**	*i*	PKIKP	PKPab		19 54 50.2	-0.4
MOS					pmax	pmax			
	comp=Z,59nm,0.8s								
GNI	**Garni**	**144.40**	**299**		PKP	**PKPdf**		**19 54 54.3**	**-0.4**
	comp=Z,25nm,0.9s,baz=269,slow=3.7,SNR=6.7								
GNI	**Garni**	**144.40**	**299***c*	*i*	PKIKP	PKPbc		19 54 52.9	-0.3
GNI					pmax	pmax			
	comp=Z,245nm,1.2s								
GNI	**Garni**	**144.40**	**299**	*e*	PKPdf	**PKPdf**		**19 54 54.3**	**-0.4**
GNI					LR	LR			
	comp=Z,2µm,20.0s								
FIA0	**FINESS Array S**	**144.47**	**341**	*e*	PKIKP	**PKPab**		**19 54 52.0**	**-0.2**
FIA0	**FINESS Array S**	**144.47**	**341**	*e*	PKPdf	**PKPab**		**19 54 52.0**	**-0.2**
FINES	**FINESS Array B**	**144.47**	**341**		PKP	**PKPab**		**19 54 52.0**	**-0.2**
	comp=Z,33nm,0.6s,baz=49,slow=5.8,SNR=20								
FINES	**FINESS Array B**	**144.47**	**341**		PKP	**PKPab**		**19 54 52.0**	**-0.2**
OBN	**Obninsk**	**144.82**	**327**		PKP	PKPbc		19 54 54.1	+0.3
	comp=Z,56nm,0.8s,baz=80,slow=1.2,SNR=14								
OBN	**Obninsk**	**144.82**	**327***c*	*i*	PKIKP	**PKPab**		**19 54 52.8**	**-0.9**
OBN					pmax	pmax			
	comp=Z,72nm,1.0s								
OBN	**Obninsk**	**144.82**	**327**	*e*	PKPdf	**PKPab**		**19 54 53.4**	**-0.3**
OBN					LR	LR			
	comp=Z,1µm,20.0s								
NCK	**Nalchik**	**144.83**	**305***c*	*i*	PKIKP	**PKPab**		**19 54 53.9**	**-0.3**
GOF	**Gofitskoye**	**144.91**	**308**⇑	*i*	PKIKP	PKPbc		19 54 54.2	-0.2
GOF					pmax	pmax			
	comp=Z,106nm,0.9s								
VORR	**Voronezh**	**145.15**	**320**		PKIKP	**PKPbc**		**19 54 53.0**	**-1.9**
VORR					pmax	pmax			
	comp=Z,250nm,2.0s								
KBZ	**Khabaz**	**145.28**	**305**		PKPbc	**PKPdf**		**19 54 55.8**	**-0.1**
	comp=Z,36nm,0.8s,baz=180,slow=1.0,SNR=16								
KBZ	**Khabaz**	**145.28**	**305**	*e*	PKPbc	**PKPdf**		**19 54 55.8**	**-0.1**
KVAR	**Kislovodsk Arr**	**145.38**	**306**		PKPbc	**PKPdf**		**19 54 56.2**	**+0.1**
	comp=Z,50nm,0.8s,baz=337,slow=2.4,SNR=14								
KVAR	**Kislovodsk Arr**	**145.38**	**306**		PKPbc	**PKPdf**		**19 54 56.2**	**+0.1**
KIV	**Kislovodsk**	**145.39**	**306***c*	*i*	PKIKP	**PKPab**		**19 54 56.2**	**-0.1**
KIV					pmax	pmax			
	comp=Z,108nm,1.0s								
KIV	**Kislovodsk**	**145.39**	**306**	*e*	PKPbc	**PKPbc**		**19 54 55.8**	**-0.3**
KIV					LR	LR			
	comp=Z,2µm,19.0s								
NEY	**Neytrino**	**145.50**	**305***d*	*i*	PKIKP	**PKPab**		**19 54 57.7**	**+0.8**
VSU	**Vasula**	**146.63**	**337***c*	*i*	PKP2	**PKPbc**		**19 54 58.9**	**-0.4**
VSU					pmax	pmax			
	comp=Z,738nm,1.7s								
SOC	**Sochi**	**147.57**	**306***c*	*i*	PKIKP	**PKPdf**		**19 54 58.9**	**-0.8**
SOC				*i*				19 55 03.6	
SOC				*e*				19 58 29.6	
SOC					pmax	pmax			
	comp=Z,45nm,0.9s								
SOC					pmax	pmax			
	comp=Z,106nm,1.0s								
NC204	**NORSAR Array S**	**147.66**	**353**	*e*	PKPdf	**PKPbc**		**19 55 00.9**	**-1.3**
NB2	**NORSAR Subarra**	**147.84**	**353**		PKP	**PKPbc**		**19 55 02.1**	**-0.6**
	comp=Z,113nm,1.4s,baz=17,slow=2.6								
NB2	**NORSAR Subarra**	**147.84**	**353**		PKP	**PKPbc**		**19 55 02.1**	**-0.6**
	baz=17,slow=2.6								
NB200	**NORSAR Array S**	**147.84**	**353**	*e*	PKPbc	**PKPbc**		**19 55 02.2**	**-0.4**
NOA	**NORSAR Array B**	**147.84**	**353**		PKPbc	**PKPbc**		**19 55 02.2**	**-0.4**
	comp=Z,14nm,0.8s,baz=57,slow=1.9,SNR=14								
NOA	**NORSAR Array B**	**147.84**	**353**		PKPbc	**PKPbc**		**19 55 02.2**	**-0.4**
NBO02	**NORSAR Array S**	**147.87**	**353**	*e*	PKPdf	**PKPbc**		**19 55 02.2**	**-0.5**
NBO00	**NORSAR Array S**	**147.90**	**353**	*e*	PKPdf	**PKPbc**		**19 55 02.3**	**-0.5**
NAO01	**NORSAR Array S**	**148.07**	**353**	*e*	PKPdf	**PKPbc**		**19 55 02.3**	**-1.0**
NC602	**NORSAR Array S**	**148.10**	**352**	*e*	PKPdf	**PKPbc**		**19 55 02.0**	**-1.3**
ANN	**Anapa**	**148.82**	**309**	*e*	PKIKP	**PKPdf**		**19 55 00.9**	**-0.8**
ANN				*i*				19 55 05.2	
ANN				*e*				19 55 12.6	
ANN					pmax	pmax			
	comp=Z,126nm,1.0s								
MICGM	**Minsk**	**149.12**	**332**⇓	*e*	PKP	**PKPbc**		**19 55 04.0**	**-2.1**
MICGM			⇓	*e*	PKP	**PKPbc**		**19 55 04.0**	**-2.1**
MICGM					PKPM			19 55 06.0	
	comp=Z,0.5nm,2.0s								
MICGM				*e*	PP	**PP**		**19 58 32.0**	**-5.5**
MICGM				*e*	SKKS			20 05 20.0	
MICGM				*e*	SKSP			20 08 44.0	
MICGM				*e*	SS	SS		20 17 26.0	-21
MICGM				*e*	SSS	SSS		20 23 30.0	
MICGM				*e*	LR	LR		20 51 18.0	
MICGM					LRM	MLR		20 57 48.0	
	comp=Z,2.6nm,22.0s								
MICGM					LRM	MLR		20 57 52.0	
	comp=Z,4.6nm,22.0s								
MNK	**Minsk**	**149.12**	**332**	*de*	PKIKP	**PKPbc**		**19 55 04.0**	**-2.1**
MNK				*e*	SSS	SSS		20 23 30.0	
MNK					pmax	pmax			
	comp=Z,480nm,2.0s								
KONO	**Kongsberg**	**149.38**	**353***c*	*i*	PKP2	**PKPbc**		**19 55 06.1**	**-0.5**
KONO					pmax	pmax			
	comp=Z,260nm,0.8s								
KONO	**Kongsberg**	**149.38**	**353**	*e*	PKPbc	**PKPbc**		**19 55 06.5**	**-0.1**
KONO					LR	LR			
	comp=Z,1µm,20.0s								
ASF	**Jabal al Asfar**	**150.87**	**284**		PKPbc	**PKPbc**		**19 55 12.4**	**+1.2**
	comp=Z,95nm,1.0s,baz=78,slow=0.4,SNR=21								
ASF	**Jabal al Asfar**	**150.87**	**284**	*e*	PKPbc	**PKPbc**		**19 55 12.4**	**+1.2**
SIM	**Simferopol'**	**150.99**	**311**		PKIKP	**PKPdf**		**19 55 07.0**	**+1.8**
SIM								19 58 45.5	
SIM					pmax	pmax			
	comp=Z,71nm,1.0s								
SIM					pmax	pmax			
	comp=Z,390nm,12.2s								
AKASG	**Malin Array Be**	**151.01**	**325**		PKPbc	**PKPbc**		**19 55 10.7**	**-0.1**
	comp=Z,26nm,0.6s,baz=46,slow=3.4,SNR=17								
AKASG					PKPab	**PKPab**		**19 55 18.3**	**0.0**
	comp=Z,110nm,0.8s,baz=46,slow=3.2,SNR=13								
AKASG	**Malin Array Be**	**151.01**	**325**		PKPbc	**PKPbc**		**19 55 10.7**	**-0.1**
AKASG					PKPab	**PKPab**		**19 55 18.3**	**0.0**
AKBB	**Malin Array Si**	**151.01**	**325**	*e*	PKIKP	**PKPbc**		**19 55 10.7**	**-0.1**
AKBB				*e*				19 55 18.3	
AKBB	**Malin Array Si**	**151.01**	**325**	*e*	PKPbc	**PKPbc**		**19 55 10.7**	**-0.1**
AKBB					PKPab	**PKPab**		**19 55 18.3**	**0.0**
KIEV	**Kiev**	**151.02**	**325**	*e*	PKIKP	**PKPbc**		**19 55 10.9**	**+0.1**
KIEV					MLR	MLR			
	comp=Z,2µm,19.0s								
KIEV	**Kiev**	**151.02**	**325**	*e*	PKPbc	**PKPbc**		**19 55 10.9**	**+0.1**
KIEV					LR	LR			
	comp=Z,2µm,19.0s								
KLNR	**Kaliningrad**	**151.88**	**339***c*	*i*	PKIKP	**PKPdf**		**19 55 03.0**	**-3.2**
KLNR				*i*				19 55 12.5	
MMAI	**Mount Meron Ar**	**152.16**	**286**		PKPbc	**PKPbc**		**19 55 15.8**	**+1.7**
	comp=Z,93nm,0.7s,baz=78,slow=7.8,SNR=14								
MMAI					PKPab	**PKPab**		**19 55 23.8**	**-0.1**
	comp=Z,28nm,0.4s,baz=97,slow=6.8,SNR=14								
MMAI	**Mount Meron Ar**	**152.16**	**286**		PKPbc	**PKPbc**		**19 55 15.8**	**+1.7**
MMAI					PKPab	**PKPab**		**19 55 23.8**	**-0.1**
EIL	**Elat**	**152.30**	**279**		PKPbc	**PKPbc**		**19 55 16.1**	**+1.7**
	comp=Z,80nm,0.8s,baz=60,slow=1.0,SNR=13								
EIL					PKPab	**PKPab**		**19 55 23.8**	**-0.7**
	comp=Z,55nm,0.6s,baz=275,slow=5.2,SNR=10								
EIL	**Elat**	**152.30**	**279**		PKPbc	**PKPbc**		**19 55 16.1**	**+1.7**
EIL					ePKPab	**PKPab**		**19 55 23.8**	**-0.7**
ROSA	**Rosais**	**152.52**	**62**		PFAKE			19 55 20.0	-5.2
ROSA					LR	LR			
	comp=Z,1µm,21.0s								
BSD	**Bornholm Skovb**	**152.88**	**345**	*i*	P	**PKPbc**		**19 55 14.5**	**-0.4**
	comp=Z,3µm,23.0s								
BSD	**Bornholm Skovb**	**152.88**	**345**	*e*	PKIKP	**PKPbc**		**19 55 14.5**	**-0.4**
BSD					MLR	MLR			
	comp=Z,3µm,23.0s								

BR101	**Keskin Array S**	**152.89**	**301**	*e*	PKPbc	**PKPbc**		**19 55 16.9**	**+1.2**
BR101				*e*	PKPab	**PKPab**		**19 55 24.4**	**-2.4**
BRTR	**Keskin Array B**	**152.89**	**301**		PKPbc	**PKPbc**		**19 55 16.9**	**+1.2**
	comp=Z,10nm,0.7s,baz=126,slow=3.4,SNR=8.3								
BRTR					PKPab	**PKPab**		**19 55 24.4**	**-2.4**
	comp=Z,15nm,0.6s,baz=152,slow=5.5,SNR=18								
BRTR	**Keskin Array B**	**152.89**	**301**		PKPbc	**PKPbc**		**19 55 16.9**	**+1.2**
BRTR					PKPab	**PKPab**		**19 55 24.4**	**-2.4**
KIS	**Kishinev**	**153.35**	**318**	*e*	PKP	**PKPdf**		**19 55 04.0**	**-4.6**
KIS	**Kishinev**	**153.35**	**318**	*e*	PP	PP		19 59 00.0	-2.1
KIS	**Kishinev**	**153.35**	**318**	*e*	PPS	PPS		20 12 02.0	
KIS				*e*	L	L		20 44 36.0	
KIS					LRM	MLR		21 07 54.0	
	comp=Z,2µm,20.0s								
KIS	**Kishinev**	**153.35**	**318**	*e*	PKIKP	**PKPdf**		**19 55 04.0**	**-4.6**
KIS				*e*				19 55 14.0	
KIS				*e*				19 59 00.0	
KIS				*e*	PPP	PPP		20 02 36.0	
KIS				*e*	PPS	PPS		20 12 02.0	
KIS					MLR	MLR			
	comp=Z,2µm,20.0s								
KIS					MLR	MLR			
	comp=N,2µm,19.0s								
KIS					MLR	MLR			
	comp=E,500nm,20.0s								
KIS					MLR	MLR			
	comp=Z,2µm,20.0s								
ANTO	**Ankara**	**153.49**	**301**		PFAKE			19 55 20.0	+3.1
ANTO					LR	LR			
	comp=Z,1µm,20.0s								
EKA	**Eskdalemuir Ar**	**153.65**	**8**		PKPbc	**PKPbc**		**19 55 16.5**	**-0.1**
	comp=Z,0.6nm,0.5s,baz=315,slow=2.0,SNR=3.9								
EKA					PKPab	**PKPab**		**19 55 27.2**	**-2.0**
	comp=Z,4.4nm,0.6s,baz=284,slow=0.6,SNR=6.4								
EKA	**Eskdalemuir Ar**	**153.65**	**8**	*e*	PKPbc	**PKPbc**		**19 55 16.5**	**-0.1**
EKA				*e*	PKPab	**PKPab**		**19 55 27.2**	**-2.0**
ESK	**Eskdalemuir**	**153.66**	**8**		PFAKE			19 55 20.0	+3.4
ESK					LR	LR			
	comp=Z,3µm,20.0s								
RGN	**Rugen**	**153.75**	**346**		PFAKE			19 55 20.0	+3.2
RGN					LR	LR			
	comp=Z,2µm,20.0s								
CSS	**Mathiatis**	**153.84**	**290**		PFAKE			19 55 20.0	+2.3
CSS					LR	LR			
	comp=Z,1µm,20.0s								
CMLA	**Cha da Macela**	**154.80**	**63**		PFAKE			19 55 20.0	+0.4
CMLA					LR	LR			
	comp=Z,2µm,19.0s								
TIRR	**Tirgusor**	**154.88**	**314**		PFAKE			19 55 20.0	+0.5
TIRR					LR	LR			
	comp=Z,3µm,20.0s								
DSB	**Dublin**	**155.13**	**14**		PFAKE			19 55 20.0	+9.1
DSB					LR	LR			
	comp=Z,2µm,20.0s								
KOLS	**Kolonicke sedl**	**155.54**	**328**	*e*	PKP2	**PKPab**		**19 55 31.6**	**-6.0**
KOLS	**Kolonicke sedl**	**155.54**	**328**	*e*	PKP	**PKPab**		**19 55 31.6**	**-6.0**
KOLS				*e*	L	L		20 09 10.5	
STHS	**Stebnicka Huta**	**155.64**	**330**	*e*	PKP2	**PKPab**		**19 55 36.2**	**-1.8**
STHS	**Stebnicka Huta**	**155.64**	**330**	*e*	PKP	**PKPab**		**19 55 36.2**	**-1.8**
MLR	**Muntele Rosu**	**155.84**	**318**		PKP	**PKPdf**		**19 55 13.1**	**+0.8**
	comp=Z,1.0nm,0.9s,baz=40,slow=6.1,SNR=3.2								
MLR	**Muntele Rosu**	**155.84**	**318**	*e*	PKPdf	**PKPdf**		**19 55 14.6**	**+2.2**
MLR				*e*	PKPab	**PKPab**		**19 55 38.7**	**-0.5**
MLR					LR	LR			
	comp=Z,3µm,20.0s								
CRVS	**Cervenica-Dubn**	**155.93**	**329**	*e*	PKP2	**PKPab**		**19 55 38.8**	**-0.5**
CRVS	**Cervenica-Dubn**	**155.93**	**329**	*e*	PKP	**PKPab**		**19 55 38.8**	**-0.5**
CRVS				*e*	SKSDF			20 02 23.4	
DBIC	**Dimbokro**	**156.24**	**160**		PKPab	**PKPab**		**19 55 44.1**	**+2.8**
	comp=Z,10nm,1.0s,baz=185,slow=5.2,SNR=4.4								
DBIC	**Dimbokro**	**156.24**	**160**	*e*	PKPab	**PKPab**		**19 55 41.9**	**+0.6**
CWF	**Charnwood Fore**	**156.41**	**7**		PFAKE			19 55 20.0	+7.4
CWF					LR	LR			
	comp=Z,2µm,20.0s								
OKC	**Ostrava-Krasne**	**156.55**	**335**	*e*	PKPAB	**PKPab**		**19 55 41.9**	**+0.1**
OKC				*e*	PP	**PP**		**19 59 15.7**	**-3.8**
OKC				*e*	SS	SS		20 19 11.9	+3.6
OKC					AMS	AMS		21 07 00.0	
	comp=Z,1µm,20.7s								
LANS	**Liptovska Anna**	**156.59**	**332**	*e*	PKP2	**PKPab**		**19 55 42.8**	**+0.7**
LANS	**Liptovska Anna**	**156.59**	**332**	*e*	PKP	**PKPab**		**19 55 42.8**	**+0.7**
KECS	**Kecovo**	**156.68**	**330**	*e*	PKP2	**PKPab**		**19 55 42.0**	**-0.4**
KECS	**Kecovo**	**156.68**	**330**	*e*	PKP	**PKPab**		**19 55 42.0**	**-0.4**
UPC	**Upice**	**156.72**	**339**⇑	*e*	PKP	PKPdf		19 55 23.3	+10
UPC				*e*	PKPAB	**PKPab**		**19 55 42.9**	**+0.4**
UPC				*e*	PP	**PP**		**19 59 18.1**	**-2.3**
UPC				*ex*		x		20 12 31.3	
UPC				*e*	SS	SS		20 19 11.9	+2.0
UPC					AMS	AMS		21 07 40.0	
	comp=Z,3µm,21.7s								
DPC	**Dobruska-Polom**	**156.75**	**338**⇑	*e*	PKP	PKPdf		19 55 23.3	+10
DPC				*e*	PKPAB	**PKPab**		**19 55 43.2**	**+0.4**
DPC				*e*	pPKP	pPKP		19 55 48.8	
DPC				*e*	PP	**PP**		**19 59 16.7**	**-3.9**
DPC				*e*	SKKS			20 09 41.6	
DPC				*e*	SS	**SS**		**20 19 14.1**	**+3.7**
DPC					AMS	AMS		21 07 10.0	
	comp=Z,2µm,21.4s								
MORC	**Moravsky Berou**	**156.82**	**336**		PFAKE			19 55 20.0	+6.6
MORC					LR	LR			
	comp=Z,9µm,21.0s								
CLL	**Collm**	**156.84**	**344**	*i*	PKPdiff	PKPdf		19 55 23.0	+10
	comp=Z,13nm,1.1s								
CLL				*i*				19 55 37.5	
	comp=Z,60nm,1.9s								
CLL				*i*	PKPab	**PKPab**		**19 55 42.3**	**-0.7**
	comp=Z,90nm,1.8s								
CLL				*ep*	PKPab	pPKPab		19 55 50.0	-3.0
CLL				*i*				19 56 02.9	
CLL				*e*	PP	**PP**		**19 59 19.0**	**-1.9**
CLL				*e*	PPP	PPP		20 02 54.0	
CLL				*e*	SKSP			20 09 32.0	
CLL				*e*	PSKS			20 09 45.0	
CLL				*e*				20 10 23.0	
CLL				*e*				20 10 51.0	
CLL				*e*	PPS	PPS		20 12 41.0	
CLL				*e*				20 14 06.0	
CLL				*e*	SS	SS		20 19 11.0	+0.1
CLL				*e*	SSS	SSS		20 25 18.0	
CLL				*e*				20 28 12.0	
CLL				*e*	SSSS			20 29 24.0	
CLL					Lm	MLR		21 06 00.0	
	comp=N,2µm,21.5s								
CLL					Lm	MLR		21 06 00.0	
	comp=E,500nm,20.8s								
CLL					Lm	MLR		21 06 00.0	
	comp=Z,3µm,22.0s								
CLL	**Collm**	**156.84**	**344**	*i*	PKIKP	PKPdf		19 55 23.0	+10
CLL				*i*				19 55 37.5	
CLL					pmax	pmax			
	comp=Z,13nm,1.1s								
CLL					pmax	pmax			
	comp=Z,90nm,1.8s								
CLL					MLR	MLR			
	comp=Z,3µm,22.0s								
CLL	**Collm**	**156.84**	**344**		PFAKE			19 55 20.0	+6.8
CLL					LR	LR			
	comp=Z,3µm,21.0s								
KRLC	**Kraliky**	**156.84**	**337**	*e*	PKPAB	**PKPab**		**19 55 43.2**	**+0.1**
KRLC				*ep*	PKP	**pPKPab**		**19 55 49.4**	**-3.7**
BRG	**Berggiesshubel**	**157.00**	**342**	*e*		PKPab		19 55 28.4	-15
	comp=Z,46nm,1.9s								
BRG				*e*				19 55 38.5	
	comp=Z,28nm,1.3s								
BRG					PP	PP		19 59 13.0	-8.8
BRG					SS	SS		20 19 16.0	+3.3
	comp=N,1µm,18.8s								
	comp=E,698nm,20.2s								
	comp=Z,2µm,20.8s								
PVCC	**Panska Ves**	**157.13**	**341**	*e*	PKPAB	**PKPab**		**19 55 46.2**	**+1.9**
PVCC					AMS	AMS		21 07 50.0	
	comp=Z,2µm,21.8s								
PSZ	**Piszkesteto**	**157.36**	**330**	*e*	PKP2	**PKPab**		**19 55 40.1**	**-5.4**
PSZ					MLR	MLR			
	comp=Z,3µm,20.0s								
PSZ	**Piszkesteto**	**157.36**	**330**	*e*	PKPab	**PKPab**		**19 55 40.1**	**-5.4**
PSZ					LR	LR			
	comp=Z,3µm,20.0s								
VYHS	**Vyhne**	**157.37**	**332**	*e*	PKP2	**PKPab**		**19 55 45.5**	**+0.1**
VYHS	**Vyhne**	**157.37**	**332**	*e*	PKP	**PKPab**		**19 55 45.5**	**+0.1**
VYHS				*e*	L	L		20 05 35.8	
VRAC	**Vranov**	**157.55**	**336**		PKPab	**PKPab**		**19 55 46.3**	**+0.1**
	comp=Z,16nm,0.8s,baz=25,slow=4.0,SNR=12								
VRAC	**Vranov**	**157.55**	**336**		PKPab	**PKPab**		**19 55 46.3**	**+0.1**

YER	**Yerkesik**	**157.57**	**297**		PFAKE			19 55 30.0	+15
YER					LR	LR			
	comp=Z,7µm,19.0s								
GOPC	**GO Pecny, Ondr**	**157.62**	**340**	*e*	PKPAB	**PKPab**		**19 55 49.2**	**+2.7**
GOPC				*e*	PP	**PP**		**19 59 19.0**	**-6.3**
GOPC				*e*	SKKS			20 09 40.5	
GOPC				*ex*		x		20 12 39.2	
GOPC				*e*	SS	SS		20 19 30.6	+11
GOPC					AMS	AMS		21 04 10.0	
	comp=Z,2µm,23.8s								
PRU	**Pruhonice**	**157.62**	**340**	*e*	PKPAB	**PKPab**		**19 55 46.5**	**+0.1**
PRU				*e*	PP	**PP**		**19 59 17.5**	**-7.8**
PRU				*e*	SKKS			20 09 41.9	
PRU				*ex*		x		20 12 37.0	
PRU				*e*	SS	**SS**		**20 19 18.4**	**-1.1**
PRU					AMS	AMS		21 04 10.0	
	comp=Z,2µm,21.7s								
SMOL	**Smolenice**	**157.91**	**334**	*e*	PKP2	**PKPab**		**19 55 48.5**	**+0.7**
SMOL	**Smolenice**	**157.91**	**334**	*e*	PKP	**PKPab**		**19 55 48.5**	**+0.7**
TREC	**Trest**	**157.94**	**338**	*e*	PKPAB	**PKPab**		**19 55 48.3**	**+0.4**
TREC				*e*	PP	PP		19 59 18.3	-8.8
TREC					AMS	AMS		21 13 40.0	
	comp=Z,2µm,19.4s								
TREC	**Trest**	**157.94**	**338**	*e*	PKP2	**PKPab**		**19 55 48.3**	**+0.4**
TREC					MLR	MLR			
	comp=Z,2µm,19.4s								
NKC	**Novy Kostel**	**157.97**	**344**	*e*	PKPAB	**PKPab**		**19 55 48.0**	**+0.1**
NKC				*e*	PP	**PP**		**19 59 23.3**	**-3.8**
NKC				*e*	SS	SS		20 19 22.9	-0.2
NKC					AMS	AMS		21 07 20.0	
	comp=Z,3µm,20.8s								
MPEP	**Malo Peshtene**	**158.34**	**316**	*e*	P	PKPpre		19 55 09.4	
PGB	**Panagyurishte**	**158.50**	**313**	*e*	P	PKPpre		19 55 10.1	
MDVR	**Moldovita**	**158.66**	**321**⇓	*i*	P	PKPpre		19 55 10.3	
KHC	**Kasperske Hory**	**158.67**	**341**	*e*	PKPDF	**PKPdf**		**19 55 17.4**	**+1.7**
KHC				*e*	PKPAB	**PKPab**		**19 55 51.4**	**+0.3**
KHC				*e*	PP	**PP**		**19 59 26.0**	**-5.1**
KHC				*e*	SKKS			20 09 45.7	
KHC				*ex*		x		20 12 52.5	
KHC				*e*	SS	**SS**		**20 19 30.6**	**-0.2**
KHC					AMS	AMS		21 08 40.0	
	comp=Z,2µm,21.1s								
KHC	**Kasperske Hory**	**158.67**	**341**		PFAKE			19 55 30.0	+14
KHC					LR	LR			
	comp=Z,900nm,21.0s								
GRFO	**Grafenberg**	**158.76**	**345**		PFAKE			19 55 30.0	+14
GRFO					LR	LR			
	comp=Z,2µm,22.0s								
KARP	**Karpathos**	**158.78**	**293**	*e*	PKPdf	**PKPdf**		**19 55 13.0**	**-3.2**
KARP				*e*	PKPab	**PKPab**		**19 55 49.2**	**-2.9**
KARP				*e*	PKPab	PKPab		19 55 57.7	+5.6
KARP					LR	LR			
	comp=Z,900nm,20.0s								
GERES	**GERESS Array B**	**158.89**	**340**		PKPab	**PKPab**		**19 55 50.9**	**-1.2**
	comp=Z,4.3nm,0.9s,baz=34,slow=3.7,SNR=8.0								
GERES	**GERESS Array B**	**158.89**	**340**		PKPab	**PKPab**		**19 55 50.9**	**-1.2**
CONA	**Conrad Observa**	**158.98**	**335**	*i*	PKPab	**PKPab**		**19 55 52.3**	**-0.2**
VTS	**Vitosha**	**159.09**	**315**⇓	*i*	P	**PKPdf**		**19 55 13.3**	**-3.2**
VTS	**Vitosha**	**159.09**	**315**	*e*	P	**PKPdf**		**19 55 12.7**	**-3.8**
VTS	**Vitosha**	**159.09**	**315**		PFAKE			19 55 30.0	+13
VTS					LR	LR			
	comp=Z,2µm,20.0s								
MMB	**Musomiste**	**159.27**	**312**	*e*	P	**PKPdf**		**19 55 13.0**	**-3.6**
KKB	**Krupnik**	**159.55**	**313**	*e*	P	**PKPdf**		**19 55 13.8**	**-3.1**
WLF	**Walferdange**	**159.57**	**354**		PFAKE			19 55 30.0	+13
WLF					LR	LR			
	comp=Z,2µm,21.0s								
MOA	**Molln**	**159.60**	**338**	*i*	PKPab	**PKPab**		**19 55 54.9**	**-0.2**
ARSA	**Arzberg**	**159.67**	**335**	*i*	P

PNCL	**Nicolau / Gran**	**166.98**	**45**	*e*PP	PP	20 00 20.3	+4.5
PNCL	**Nicolau / Gran**	**166.98**	**45**	*e*SS	SS	20 21 10.1	+12
EVO	**Evora**	**167.02**	**42**	*e*PKPdf	**PKPdf**	**19 55 26.1**	**+2.0**
PESTR	**Estremoz**	**167.04**	**40**	*e*PKPdf	**PKPdf**	**19 55 26.9**	**+2.8**
PESTR	**Estremoz**	**167.04**	**40**	*e*PP	PP	20 00 20.3	+4.3
PESTR	**Estremoz**	**167.04**	**40**	*e*SS	SS	20 21 11.4	+13
PTEO	**Sao Teotonio**	**167.20**	**47**	*e*PKPdf	**PKPdf**	**19 55 29.6**	**+5.4**
MESJ	**Messejana**	**167.34**	**45**	*e*P	**PKPdf**	**19 55 25.1**	**+0.8**
MESJ				AMS	AMS	21 08 52.0	
	comp=Z,2µm,19.2s						
MESJ	**Messejana**	**167.34**	**45**	*e*PKPdf	**PKPdf**	**19 55 27.6**	**+3.3**
MORF	**Marmelete**	**167.39**	**48**	*e*P	**PKPdf**	**19 55 24.7**	**+0.3**
MORF				AMS	AMS	21 09 58.6	
	comp=Z,2µm,15.5s						
MORF	**Marmelete**	**167.39**	**48**	*e*PKPdf	**PKPdf**	**19 55 27.9**	**+3.5**
MORF	**Marmelete**	**167.39**	**48**	*e*PP	PP	20 00 21.0	+2.9
MORF	**Marmelete**	**167.39**	**48**	*e*SS	SS	20 21 38.1	+35
PBEJ	**Beja**	**167.44**	**44**	*e*PKPdf	**PKPdf**	**19 55 30.4**	**+6.0**
PCVE	**Castro Verde**	**167.58**	**45**	*e*PKPdf	**PKPdf**	**19 55 26.3**	**+1.8**
PCVE	**Castro Verde**	**167.58**	**45**	*e*PP	PP	20 00 23.0	+4.1
PCVE	**Castro Verde**	**167.58**	**45**	*e*SS	SS	20 21 19.2	+15
PBAR	**Barrancos**	**167.83**	**41**	*e*PKPdf	**PKPdf**	**19 55 26.5**	**+1.9**
PBAR	**Barrancos**	**167.83**	**41**	*e*PP	PP	20 00 21.1	+1.1
PBAR	**Barrancos**	**167.83**	**41**	*e*SS	SS	20 21 07.8	+1.3
PBDV	**Barranco-do-Ve**	**167.89**	**47**	*e*PKPdf	**PKPdf**	**19 55 28.3**	**+3.5**
PBDV	**Barranco-do-Ve**	**167.89**	**47**	*e*PP	PP	20 00 25.4	+4.8
PBDV	**Barranco-do-Ve**	**167.89**	**47**	*e*SS	SS	20 21 06.7	-0.8
PAB	**San Pablo**	**168.13**	**29**	*e*PKIKP	**PKPdf**	**19 55 23.0**	**-1.9**
PAB	**San Pablo**	**168.13**	**29**	*e*PKPdf	**PKPdf**	**19 55 23.0**	**-1.9**
ESDC	**Sonseca Array**	**168.18**	**27**	PKP	**PKPdf**	**19 55 25.9**	**+1.0**
	comp=Z,1.2nm,0.9s,baz=341,slow=2.9,SNR=6.1						
ESDC				PKPab	**PKPab**	**19 56 32.9**	**-0.2**
	comp=Z,1.5nm,0.7s,baz=324,slow=4.3,SNR=3.1						
ESDC	**Sonseca Array**	**168.18**	**27**	PKP	**PKPdf**	**19 55 25.9**	**+1.0**
ESDC				*e*PKPab	**PKPab**	**19 56 32.9**	**-0.2**
ES19	**SONSECA Array**	**168.18**	**27**	*e*PKPdf	**PKPdf**	**19 55 25.2**	**+0.2**
ES19				*e*PKPab	**PKPab**	**19 56 31.9**	**-1.2**
KEST	**Kesra**	**171.72**	**322**	PKPab	**PKPab**	**19 56 48.5**	**-0.4**
	comp=Z,13nm,1.1s,baz=84,slow=17,SNR=6.1						
KEST	**Kesra**	**171.72**	**322**	*e*PKPdf	**PKPdf**	**19 55 27.6**	**+0.4**
KEST				*e*PKPab	**PKPab**	**19 56 47.9**	**-1.1**
TAM	**Tamanrasset**	**173.11**	**199**	*e*PKIKP	**PKPdf**	**19 55 27.8**	**-0.4**
TAM				*e*		19 56 55.5	
TAM	**Tamanrasset**	**173.11**	**199**	*e*PKPdf	**PKPdf**	**19 55 27.8**	**-0.4**
TAM				*e*PKPab	**PKPab**	**19 56 55.5**	**+0.2**
TAM				*ep*PKPab	**pPKPab**	**19 57 05.5**	**+0.2**

MEX 09 19:40:53.1±0.5, 17.70N×101.20W, h61km±6km, MD4.0, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.27**	**250**	*e*P	Pn	19 41 01.6	-1.5
ZIIG				*e*S	Sn	19 41 08.8	-1.6
ARIG	**Puente Sto Nin**	**0.99**	**54**	*e*P	Pn	19 41 09.8	-1.3
ARIG				*i* P	Pn	19 41 09.8	-1.3
ARIG				*e*S	Sn	19 41 22.5	-2.0
CAIG	**El Cayaco**	**1.10**	**126**	*e*P	Pn	19 41 11.5	-1.0
CAIG				*i* S	Sn	19 41 24.9	-2.0
MEIG	**Mezcala**	**1.52**	**81**	*e*P	Pn	19 41 16.6	-1.6
MEIG				*i* S	Sn	19 41 34.7	-2.4
EZ5V		**2.89**	**308**	*i* P	Pn	19 41 36.5	-0.4
EZ5V				*i* S	Sn	19 42 08.2	-2.4
R15V		**3.02**	**299**	*e*P	Pn	19 41 38.0	-0.5
R15V				*e*S	Sn	19 42 11.1	-2.6

IDC 09 19:54:54.6±4.4, 28.91S×176.59W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.8/39, mbtmp4.0/3, Error ellipse: s-maj=179.1km s-min=49.7km az=153.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.21**	**253**	Pn	Pg	19 55 16.9	-1.1
	90nm,0.3s,baz=270,slow=20,SNR=3.2						
STKA	**Stephens Creek**	**36.03**	**255**	P	P	20 01 58.1	+0.3
	2.7nm,0.9s,baz=95,slow=11,SNR=2.2						
ASAR	**Alice Springs**	**44.44**	**265**	P	P	20 03 08.2	+0.6
	1.8nm,0.8s,baz=107,slow=7.4,SNR=12						
WRA	**Warramunga Arr**	**45.30**	**270**	P	P	20 03 15.3	+0.8
	1.9nm,0.8s,baz=109,slow=7.9,SNR=10						
FINES	**FINESS Array B**	**144.15**	**342**	PKP	PKPab	20 14 28.8	-0.6
	baz=56,slow=2.5,SNR=7.9						

*IDC **09** 19:54:58.9±1.2, 29.14S×176.61W, h0km, mb3.7/1, mb1 4.1/2, mb1mx3.7/40, mbtmp4.0/2, ML3.5/1, Error ellipse: s-maj=59.7km s-min=27.9km az=155.0*

ISC 09 19:55:04.4±1.0, 29.5S±0.1×176.8W±0.1, h36km, n14, σ1§97/16, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.04**	**283**	Pn	**Pn**	**19 55 20.9**	**-1.6**
	249nm,0.3s,baz=70,slow=9.2,SNR=7.8						
RAO				Sn	**Sn**	**19 55 36.3**	**+0.5**
	1µm,0.3s,baz=90,slow=20,SNR=13						
URZ	**Urewera**	**10.11**	**209**	Pn	**Pn**	**19 57 29.9**	**+2.9**
	0.4nm,0.3s,baz=357,slow=17,SNR=2.8						
URZ				Sn	**Sn**	**19 59 15.2**	**-4.0**
	1.0nm,0.3s,baz=147,slow=18,SNR=3.4						
ASAR	**Alice Springs**	**44.24**	**265**	P	**P**	**20 03 13.5**	**+2.9**
	0.9nm,0.8s,baz=101,slow=6.8,SNR=7.4						
KURBB	**Kurchatov Arra**	**121.24**	**314**	PKP	**PKPdf**	**20 13 52.4**	**-0.7**
	0.2nm,0.6s,baz=95,slow=2.1,SNR=4.1						
BVAR	**Borovoye Array**	**126.51**	**316**	PKP	**PKPdf**	**20 14 01.4**	**-1.8**
	0.5nm,0.7s,baz=64,slow=6.6,SNR=3.5						
ARU	**Arti**	**133.07**	**321**	PKP	**PKPdf**	**20 14 15.2**	**-0.3**
	0.7nm,0.4s,baz=98,slow=15,SNR=2.6						
FINES	**FINESS Array B**	**144.65**	**341**	PKP	**PKPab**	**20 14 34.5**	**-0.7**
	3.2nm,0.8s,baz=96,slow=3.8,SNR=11						
KBZ	**Khabaz**	**145.49**	**305**	PKPbc	**PKPbc**	**20 14 36.7**	**-1.9**
	0.5nm,0.3s,baz=145,slow=0.8,SNR=3.8						
NB2	**NORSAR Subarra**	**148.01**	**353**	PKP	**PKPdf**	**20 14 41.4**	**-0.9**
	comp=Z,1.8nm,1.0s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**148.01**	**353**	PKPbc	**PKPbc**	**20 14 45.4**	**-0.1**
	comp=Z,0.8nm,0.7s,baz=15,slow=2.9,SNR=4.4						
AKASG	**Malin Array Be**	**151.21**	**325**	PKPbc	**PKPbc**	**20 14 53.3**	**-0.3**
	comp=Z,1.9nm,0.7s,baz=49,slow=2.7,SNR=5.2						
MMAI	**Mount Meron Ar**	**152.34**	**286**	PKPbc	**PKPbc**	**20 14 59.0**	**+2.1**
	comp=Z,1.0nm,0.4s,baz=93,slow=5.8,SNR=3.8						
EIL	**Elat**	**152.47**	**278**	PKPbc	**PKPbc**	**20 14 58.1**	**+1.0**
	comp=Z,3.0nm,0.7s,baz=58,slow=8.2,SNR=4.0						
BRTR	**Keskin Array B**	**153.09**	**300**	PKPbc	**PKPbc**	**20 14 57.5**	**-0.9**
	comp=Z,0.3nm,0.4s,baz=54,slow=7.3,SNR=2.6						

IDC 09 19:58:15.4±4.7, 28.67S×177.00W, h0km, mb3.7/2, mb1 3.9/2, mb1mx3.5/38, mbtmp3.7/2, Error ellipse: s-maj=122.1km s-min=31.8km az=130.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.99**	**234**	Pn	Pn	19 58 36.8	+0.2
	362nm,0.3s,baz=348,slow=23,SNR=6.5						
RAO				Sn	Sn	19 58 51.5	+0.2
	1µm,0.3s,baz=145,slow=19,SNR=9.6						
ASAR	**Alice Springs**	**44.10**	**265**	P	P	20 06 25.6	-0.2
	0.7nm,0.8s,baz=104,slow=7.6,SNR=5.7						
WRA	**Warramunga Arr**	**44.93**	**270**	P	P	20 06 32.5	+0.1
	1.2nm,1.0s,baz=109,slow=8.0,SNR=6.2						
FINES	**FINESS Array B**	**143.80**	**341**	PKP	PKPbc	20 17 50.5	+1.0
	1.1nm,0.9s,baz=46,slow=4.0,SNR=3.4						

*ISCJB **09** 20:04:32.5±0.8, 38.25N±0.04×141.93E±0.08, h59km±6km, mb3.6/6, Error ellipse: s-maj=11.0km s-min=5.5km az=20.0*

*JMA **09** 20:04:33.3±0.1, 38.27N×141.91E, h51km±1km, M3.8*
JMA Felt I J1.

*IDC **09** 20:04:34.8±3.1, 38.16N×141.87E, h69km±34km, mb3.3/6, mb1 3.5/10, mb1mx3.3/58, mbtmp3.7/10, ML3.0/4, Error ellipse: s-maj=37.3km s-min=26.0km az=23.0*

ISC 09 20:04:31.8±1.1, 38.22N±0.04×142.10E±0.09, h39km±6km, n29, σ1§79/37, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.64**	**292**	P	**Pn**	**20 04 44.5**	**+0.1**
JIO				S	**Sn**	**20 04 52.3**	**-1.0**
OFUJ	**Ofunato**	**0.93**	**339**	P	**Pn**	**20 04 48.9**	**+0.6**
OFUJ				S	**Sn**	**20 05 00.0**	**-0.4**
JMK	**Ichinoseki**	**1.01**	**317**	P	**Pn**	**20 04 49.7**	**+0.3**
JMK				*e*S	**Sn**	**20 05 01.5**	**-0.9**
JMM	**Marumori**	**1.09**	**252**	P	**Pn**	**20 04 50.4**	**-0.1**
JMM				S	**Sn**	**20 05 02.9**	**-1.5**
JOU	**Okura**	**1.14**	**278**	P	**Pn**	**20 04 51.3**	**+0.1**
JOU				S	**Sn**	**20 05 04.4**	**-1.3**
JFK	**Kawauchi**	**1.29**	**229**	P	**Pn**	**20 04 53.8**	**+0.5**
JFK				S	**Sn**	**20 05 08.8**	**-0.5**
JOM	**Ohasama**	**1.41**	**334**	P	**Pn**	**20 04 55.6**	**+0.7**
JOM				S	**Sn**	**20 05 11.7**	**-0.5**
JYK	**Kaneyama**	**1.54**	**298**	P	**Pn**	**20 04 56.7**	**+0.1**
JYK				S	**Sn**	**20 05 14.0**	**-1.3**
JFT	**Otama**	**1.56**	**244**	P	**Pn**	**20 04 57.8**	**+0.8**
JFT				S	**Sn**	**20 05 15.6**	**-0.4**
JYS	**Shirataka**	**1.60**	**271**	P	**Pn**	**20 04 57.8**	**+0.2**
JYS				S	**Sn**	**20 05 15.8**	**-1.2**
JRG	**Rokugo**	**1.64**	**316**	P	**Pn**	**20 04 58.7**	**+0.6**
JYA	**Atsumi**	**1.91**	**282**	P	**Pn**	**20 05 02.1**	**+0.3**
JYA				S	**Sn**	**20 05 23.3**	**-1.4**
MJAR	**Matsushiro Arr**	**3.52**	**243**	P	**Pn**	**20 05 25.8**	**+1.8**
	3.1nm,0.3s,baz=61,slow=9.8,SNR=52						
MJAR				S	**Sn**	**20 06 11.9**	**+7.5**
	3.0nm,0.3s,baz=92,slow=30,SNR=4.7						
MAT	**Matsushiro**	**3.52**	**243**	P	**Pn**	**20 05 26.0**	**+2.0**
MAT				*e*S	**Sn**	**20 06 03.8**	**-0.6**
JHJ	**Hachijo jima 2**	**5.42**	**201**	P	**Pn**	**20 05 50.4**	**+0.3**
	5.8nm,0.3s,baz=140,slow=23,SNR=36						
JHJ				S	**Sn**	**20 06 46.7**	**-4.5**
	27nm,0.3s,baz=270,slow=21,SNR=8.4						
USRK	**Ussuriysk Ar.**	**9.68**	**311**	P	**Pn**	**20 06 49.5**	**+1.1**
	0.4nm,0.3s,baz=121,slow=14,SNR=5.9						
KSRS	**Korea Array**	**11.24**	**270**	P	**Pn**	**20 07 10.0**	**+0.2**
	0.1nm,0.3s,baz=80,slow=14,SNR=3.4						
H11N2	**WAKE ISLAND Hy**	**28.31**	**124**	T	T	20 40 40.0	
	baz=316,slow=75,SNR=292						
H11N1	**WAKE ISLAND Hy**	**28.32**	**124**	T	T	20 40 40.0	
	baz=316,slow=75,SNR=360						
H11N3	**WAKE ISLAND Hy**	**28.33**	**124**	T	T	20 40 41.5	
	baz=316,slow=75,SNR=323						
H11S1	**WAKE ISLAND Hy**	**29.07**	**126**	T	T	20 41 35.7	
	baz=318,slow=76,SNR=92						
H11S3	**WAKE ISLAND Hy**	**29.07**	**126**	T	T	20 41 39.4	
	baz=318,slow=76,SNR=164						
H11S2	**WAKE ISLAND Hy**	**29.09**	**126**	T	T	20 41 40.6	
	baz=318,slow=76,SNR=105						
ZALV	**Zalesovo Beam**	**41.53**	**311**	P	**P**	**20 12 14.2**	**-0.9**
	0.6nm,0.5s,baz=84,slow=8.3,SNR=4.4						
MKAR	**Makanchi Array**	**43.96**	**301**	P	**P**	**20 12 33.8**	**-1.1**
	0.3nm,0.3s,baz=87,slow=9.6,SNR=5.8						
KURBB	**Kurchatov Arra**	**45.71**	**307**	P	**P**	**20 12 47.6**	**-1.2**
	1.1nm,0.6s,baz=81,slow=8.4,SNR=12						
ILAR	**Eielson Array**	**48.21**	**33**	P	**P**	**20 13 08.9**	**+0.9**
	0.4nm,0.7s,baz=273,slow=7.3,SNR=5.7						
BVAR	**Borovoye Array**	**50.19**	**312**	P	**P**	**20 13 22.2**	**-1.1**
	0.2nm,0.4s,baz=57,slow=10,SNR=3.0						
TXAR	**Lajitas Array**	**88.97**	**53**	P	**P**	**20 17 23.2**	**+0.6**
	0.3nm,0.6s,baz=289,slow=3.1,SNR=5.5						

*ISCJB **09** 20:05:41.1±0.1, 24.14S±0.04×179.53W±0.04, h400km, mb4.6/113, Error ellipse: s-maj=5.5km s-min=3.6km az=139.1*

*IDC **09** 20:05:42.4±1.3, 24.03S×179.41W, h403km±12km, mb4.2/22, mb1 4.2/25, mb1mx4.1/36, mbtmp4.9/25, Error ellipse: s-maj=11.6km s-min=10.7km az=128.0*

*NEIC **09** 20:05:44.0±0.6, 24.21S×179.48W, h426km±6km, mb4.8/97, Error ellipse: s-maj=5.1km s-min=4.2km az=147.0*

*MOS **09** 20:05:45.6±3.4, 23.89S×179.65W, h415km, mb4.7/31, Error ellipse: s-maj=9.3km s-min=9.1km az=154.5*

ISC 09 20:05:41.8±0.3, 24.11S±0.05×179.37W±0.06, h400km, n421, σ1§11/447, mb4.6/113, 29C-15D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSVF	**Nonsavu**	**6.78**	**339**	*e*P	**P**	**20 07 26.4**	**+2.5**
MSVF	**Nonsavu**	**6.78**	**339**	*e*P	**P**	**20 07 26.4**	**+2.5**
AFI	**Afiamalu**	**12.42**	**37**	P	**P**	**20 08 24.6**	**-1.7**
	17nm,0.3s,baz=70,slow=3.7,SNR=7.1						
AFI				S	S	20 10 30.7	-12
	14nm,0.3s,baz=63,slow=18,SNR=4.3						
AFI	**Afiamalu**	**12.42**	**37**	*e*P	**P**	**20 08 24.0**	**-2.4**
AFI				S	S	20 10 30.7	-12
OUZ	**Omahuta**	**12.64**	**207**	*e*P	**Pn**	**20 08 33.1**	**+2.7**
DZM	**Mont Dzumac**	**13.21**	**276**	P	**Pn**	**20 08 38.2**	**+1.0**
	3.6nm,0.3s,baz=162,slow=22,SNR=22						
DZM	**Mont Dzumac**	**13.21**	**276**	*e*P	**Pn**	**20 08 37.3**	**+0.1**
URZ	**Urewera**	**14.43**	**191**	P	**P**	**20 08 48.1**	**+0.2**
	3.7nm,0.3s,baz=22,slow=4.5,SNR=12						
URZ				S	**S**	**20 11 22.3**	**+0.4**
	2.4nm,0.3s,baz=85,slow=19,SNR=14						
URZ	**Urewera**	**14.43**	**191**	*e*P	**P**	**20 08 47.6**	**-0.2**
URZ				*e*S	**S**	**20 11 22.3**	**+0.4**
BKZ	**Black Stump Fm**	**15.42**	**192**	*e*P	**P**	**20 08 59.4**	**+0.7**
	117nm,1.9s						
BFZ	**Birch Farm**	**16.93**	**192**	*e*P	**P**	**20 09 15.0**	**+0.1**
	115nm,1.3s						
SNZO	**South Karori**	**17.86**	**195**	*e*P	**P**	**20 09 25.4**	**+0.8**
	132nm,1.1s						
RAR	**Rarotonga**	**18.32**	**85**	P	**P**	**20 09 28.9**	**-0.8**
	2.4nm,0.3s,baz=251,slow=8.3,SNR=4.3						
RAR	**Rarotonga**	**18.32**	**85**	*e*P	**P**	**20 09 29.8**	**+0.1**
RAR				pmax	pmax		
	comp=Z,65nm,1.4s						
RAR	**Rarotonga**	**18.32**	**85**	*e*P	**P**	**20 09 29.8**	**+0.1**
	comp=Z,65nm,1.4s						
THZ	**Tophouse**	**18.75**	**198**	*e*P	**P**	**20 09 33.2**	**-0.9**
	comp=Z,438nm,2.0s						
KHZ	**Kahutara**	**19.18**	**196**	*e*P	**P**	**20 09 36.5**	**-1.9**
	comp=Z,101nm,1.4s						
LTZ	**Lake Taylor**	**19.87**	**198**	*e*P	**P**	**20 09 43.5**	**-1.4**
	comp=Z,39nm,0.7s						
OXZ	**Oxford**	**20.44**	**198**	*e*P	**P**	**20 09 48.5**	**-1.6**
	comp=Z,47nm,0.8s						
MQZ	**McQueen's Vall**	**20.62**	**197**	*e*P	**P**	**20 09 50.2**	**-1.5**
	comp=Z,320nm,1.9s						
FOZ	**Fox Glacier**	**21.32**	**202**	*e*P	**P**	**20 09 56.7**	**-1.4**
	comp=Z,456nm,1.5s						
LBZ	**Lake Benmore**	**21.96**	**200**	*e*P	**P**	**20 10 01.7**	**-2.2**
	comp=Z,156nm,1.5s						
ODZ	**Otahua Downs**	**22.41**	**199**	*e*P	**P**	**20 10 06.5**	**-1.5**
	comp=Z,228nm,1.9s						
WKZ	**Wanaka**	**22.73**	**202**	*e*P	**P**	**20 10 09.1**	**-1.9**
	comp=Z,293nm,1.6s						
MLZ	**Mavora Lakes**	**23.52**	**203**	*e*P	**P**	**20 10 16.7**	**-1.3**
	comp=Z,274nm,1.7s						
HNR	**Honiara**	**24.55**	**303**	P	**P**	**20 10 26.9**	**-0.7**
	comp=Z,34nm,0.4s,baz=172,slow=9.3,SNR=4.6						
ARMA	**Armidale**	**26.49**	**250**	*e*P	**P**	**20 10 46.3**	**+1.5**
	comp=Z,30nm,0.9s						
EIDS	**Eidsvold**	**26.84**	**261**	*e*P	**P**	**20 10 48.6**	**+0.7**
	comp=Z,34nm,0.9s						
CAN	**Canberra**	**29.54**	**240**	*e*P	**P**	**20 11 12.9**	**+1.3**
CAN				pmax	pmax		
	comp=Z,63nm,1.5s						
CAN	**Canberra**	**29.54**	**240**	*e*P	**P**	**20 11 12.9**	**+1.3**
	comp=Z,63nm,1.5s						
CTA	**Charters Tower**	**32.05**	**270**	P	**P**	**20 11 34.1**	**+0.6**
	comp=Z,44nm,0.4s,baz=94,slow=11,SNR=141						
CTAO	**Charters Tower**	**32.05**	**270**	*e*P	**P**	**20 11 33.9**	**+0.3**
CTAO				pmax	pmax		
	comp=Z,83nm,1.0s						
CTAO	**Charters Tower**	**32.05**	**270**	*e*P	**P**	**20 11 33.9**	**+0.3**
	comp=Z,83nm,1.0s						
TAU	**Tasmania Unive**	**33.22**	**227**	*e*P	**P**	**20 11 44.0**	**+0.8**
TAU				pmax	pmax		
	comp=Z,500nm,1.9s						
TAU	**Tasmania Unive**	**33.22**	**227**	*e*P	**P**	**20 11 44.0**	**+0.8**
	comp=Z,500nm,1.9s						
KWAJ	**Kwajalein Atol**	**35.09**	**337**	*e*P	**P**	**20 12 01.0**	**+1.6**
KWAJ				pmax	pmax		
	comp=Z,153nm,1.1s						
KWAJ	**Kwajalein Atol**	**35.09**	**337**	*e*P	**P**	**20 12 01.0**	**+1.6**
	comp=Z,153nm,1.1s						
PMG	**Port Moresby**	**35.10**	**289**	P	**P**	**20 11 59.6**	**+0.1**
	comp=Z,91nm,0.7s,baz=90,slow=5.6,SNR=29						
STKA	**Stephens Creek**	**35.18**	**248**	P	**P**	**20 12 00.4**	**+0.4**
	comp=Z,17nm,0.5s,baz=95,slow=11,SNR=69						
STKA				PcP	**PcP**	**20 14 21.5**	**+0.6**
	comp=Z,3.3nm,0.5s,baz=102,slow=5.3,SNR=3.7						
STKA	**Stephens Creek**	**35.18**	**248**	*e*P	**P**	**20 12 00.2**	**+0.1**
	comp=Z,3.7nm,0.6s						
STKA				PcP	**PcP**	**20 14 21.5**	**+0.6**

COEN	**Coen**	**36.72**	**279**	*e*P	**P**	**20 12 13.6**	**+0.5**
	comp=Z,25nm,0.6s						
MANU	**Manus Island**	**38.92**	**299**	*e*P	**P**	**20 12 29.7**	**-1.6**
	comp=Z,84nm,1.4s						
BBOO	**Buckleboo**	**39.89**	**247**	*e*P	**P**	**20 12 38.0**	**-1.0**
	comp=Z,32nm,1.0s						
AS01	**Alice Springs**	**42.53**	**261**	*e*P	**P**	**20 12 59.9**	**-0.5**
AS31	**Alice Springs**	**42.57**	**261**	*e*P	**P**	**20 13 00.1**	**-0.6**
	comp=Z,10nm,1.1s						
ASAR	**Alice Springs**	**42.57**	**261**	P	**P**	**20 13 00.2**	**-0.5**
	comp=Z,37nm,1.1s,baz=93,slow=7.0,SNR=361						
ASAR				PcP	**PcP**	**20 14 44.6**	**0.0**
	comp=Z,2.1nm,0.8s,baz=88,slow=5.7,SNR=4.2						
WB2	**Warramunga Arr**	**42.96**	**266**	*e*P	**P**	**20 13 02.7**	**-1.1**
	comp=Z,35nm,0.6s						
WRAB	**Tennant Creek**	**42.96**	**266**	*e*P	**P**	**20 13 02.8**	**-1.0**
WRAB				pmax	pmax		
	comp=Z,42nm,0.9s						
WRAB	**Tennant Creek**	**42.96**	**266**	*e*P	**P**	**20 13 02.8**	**-1.0**
	comp=Z,42nm,0.9s						
WR1	**Warramunga Arr**	**42.97**	**266**	*e*P	**P**	**20 13 02.8**	**-1.0**
	comp=Z,48nm,0.9s						
WRA	**Warramunga Arr**	**42.97**	**266**	P	**P**	**20 13 02.8**	**-1.0**
	comp=Z,13nm,0.3s,baz=90,slow=6.0,SNR=537						
JAY	**Jayapura**	**44.12**	**293**	P	**P**	**20 13 12.3**	**-0.7**
	comp=Z,0.9nm,0.5s,baz=76,slow=23,SNR=13						
FORT	**Forrest**	**46.78**	**250**	*e*P	**P**	**20 13 32.1**	**-1.2**
MTN	**Manton Dam**	**48.04**	**274**	*e*P	**P**	**20 13 41.8**	**-1.3**
	comp=Z,118nm,1.8s						
GUMO	**Guam**	**51.23**	**313**	P	**P**	**20 14 06.2**	**-0.4**
	comp=Z,27nm,0.6s,baz=186,slow=6.0,SNR=4.4						
GUMO	**Guam**	**51.23**	**313**	*e*P	**P**	**20 14 06.0**	**-0.7**
GUMO				pmax	pmax		
	comp=Z,74nm,1.2s						
GUMO	**Guam**	**51.23**	**313**	*e*P	**P**	**20 14 06.0**	**-0.7**
	comp=Z,74nm,1.2s						
FITZ	**Fitzroy Crossi**	**51.39**	**266**	*e*P	**P**	**20 14 07.5**	**-0.4**
	comp=Z,20nm,0.8s						
ANA2	**Anatahan**	**52.71**	**316**	*e*P	**P**	**20 14 17.1**	**-0.4**
SBA	**Scott Base**	**54.21**	**184**	*e*P	**P**	**20 14 30.1**	**+2.8**
SBA				pmax	pmax		
	comp=Z,15nm,0.9s						
SBA	**Scott Base**	**54.21**	**184**	*e*P	**P**	**20 14 30.1**	**+2.8**
	comp=Z,15nm,0.9s						
VNDA	**Vanda**	**54.22**	**185**	P	**P**	**20 14 29.1**	**+1.7**
	comp=Z,3.1nm,0.6s,baz=359,slow=7.7,SNR=22						
VNDA	**Vanda**	**54.22**	**185**	*e*P	**P**	**20 14 29.2**	**+1.7**
	comp=Z,3.6nm,0.7s						
NWAO	**Narrogin (SRO)**	**55.67**	**246**	*e*P	**P**	**20 14 37.3**	**-1.2**
NWAO	**Narrogin (SRO)**	**55.67**	**246**	*e*P	**P**	**20 14 37.3**	**-1.2**
MBWA	**Marble Bar**	**55.90**	**260**	*e*P	**P**	**20 14 39.0**	**-1.2**
	comp=Z,20nm,1.0s						
MMRI	**Maumere**	**57.71**	**275**	*e*P	**P**	**20 14 51.8**	**-1.1**
	comp=Z,108nm,1.4s						
CASY	**Casey**	**60.18**	**206**	*e*P	**P**	**20 15 08.3**	**-0.4**
	comp=Z,16nm,0.8s						
JAGI	**Jajag, Banyuwa**	**65.15**	**272**	*e*P	**P**	**20 15 40.2**	**-1.8**
	comp=Z,57nm,1.3s						
QSPA	**South Pole Qui**	**65.98**	**180**	*e*P	**P**	**20 15 47.4**	**+0.9**
UGM	**Wanagama**	**68.68**	**271**	*e*P	**P**	**20 16 03.0**	**-1.1**
	comp=Z,313nm,1.7s						
JHJ2	**Mitsune**	**68.92**	**324**	*e*P	**P**	**20 16 04.8**	**-0.3**
	comp=Z,287nm,1.6s						
KKM	**Kota Kinabalu**	**69.51**	**287**	*e*P	**P**	**20 16 08.7**	**-0.5**
	comp=Z,16nm,1.0s						
JOW	**Kunigami**	**71.56**	**312**	*e*P	**P**	**20 16 21.3**	**+0.3**
	comp=Z,74nm,1.4s						
XMIS	**Christmas Isla**	**72.16**	**266**	*e*P	**P**	**20 16 24.3**	**-0.5**
	comp=Z,87nm,1.3s						
**MJA

WAKR	**Walker**	83.83	43	*e*P		P	20 17 29.0 +1.1
	comp=Z,23nm,1.4s						
PNTR	**Pine Nut**	84.09	43	*e*P		P	20 17 30.4 +1.2
IRM	**Iron Mountain**	84.12	49	P		P	20 17 30.6 +1.4
	baz=236,SNR=12						
GMRC	**Granite Mounta**	84.12	48	P		P	20 17 30.2 +0.8
	baz=235,SNR=5.1						
YERR	**Yerington**	84.25	43	*e*P		P	20 17 30.9 +1.0
	comp=Z,7.1nm,0.6s						
GRAC	**Grapevine Rang**	84.26	45	P		P	20 17 31.6 +1.7
	baz=234						
FURC	**Furnace Creek,**	84.28	46	P		P	20 17 31.2 +1.3
	baz=234						
TUQ	**Turquoise Moun**	84.31	47	P		P	20 17 31.5 +1.2
	baz=235						
Y12C	**Blythe**	84.32	49	P		P	20 17 31.7 +1.5
	baz=236						
Y12C	**Blythe**	84.32	49	*e*P		P	20 17 31.7 +1.5
	comp=Z,9.8nm,0.8s						
SHOC	**Shoshone, Teco**	84.34	47	P		P	20 17 31.9 +1.6
	baz=235						
CN2	**Changchun**	84.39	323	*e*P		P	20 17 28.9 -1.4
CN2				pmax	pmax		
	comp=Z,10.0nm,1.2s						
M04C	**Macdoel**	84.42	39	P		P	20 17 31.9 +1.2
	baz=231						
214A	**Organ Pipe Nat**	84.54	52	P		P	20 17 32.9 +1.5
	baz=237						
PAHR	**Pah Rah Range**	84.60	42	*e*P		P	20 17 32.4 +0.8
I03D	**Drain, OR**	84.79	37	P		P	20 17 33.5 +1.2
	baz=230						
TPNV	**Topopah Spring**	84.96	46	P		P	20 17 34.2 +0.7
	baz=235,SNR=5.2						
TPNV	**Topopah Spring**	84.96	46	*e*P		P	20 17 34.5 +1.0
TPNV				pmax	pmax		
	comp=Z,14nm,1.4s						
TPNV	**Topopah Spring**	84.96	46	*e*P		P	20 17 34.5 +1.0
	comp=Z,14nm,1.4s						
KLR	**Kul'dur**	84.99	330	P		P	20 17 34.6 +1.5
	comp=Z,1.2nm,0.5s,baz=166,slow=3.3,SNR=5.4						
SKNT	**Sakolnakorn**	85.17	291	P		P	20 17 35.0 +0.2
	comp=Z,34nm,0.8s						
VNA1	**Neumayer--Stat**	85.30	177	P		P	20 17 34.9 +0.5
I04A	**Tendick Farm,**	85.37	38	P		P	20 17 35.8 +0.6
	baz=230						
SHPR	**Sheep Range**	85.42	47	*e*P		P	20 17 36.8 +1.0
K05A	**Summer Lake**	85.56	39	*e*P		P	20 17 37.4 +1.1
	comp=Z,11nm,1.0s						
J05D	**Fort Rock, OR**	85.71	38	P		P	20 17 38.1 +1.1
	baz=231,SNR=6.2						
TUC	**Tucson**	86.19	52	P		P	20 17 41.3 +1.9
	baz=238						
TUC	**Tucson**	86.19	52	*e*P		P	20 17 40.8 +1.3
TUC				pmax	pmax		
	comp=Z,16nm,0.8s						
TUC	**Tucson**	86.19	52	*e*P		P	20 17 40.8 +1.3
	comp=Z,16nm,0.8s						
R11A	**Troy Canyon, C**	86.19	45	P		P	20 17 39.8 +0.4
	baz=235						
BMN	**Battle Mountai**	86.36	43	*e*P		P	20 17 40.8 +0.6
BMN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
BMN	**Battle Mountai**	86.36	43	*e*P		P	20 17 40.8 +0.6
	comp=Z,5.0nm,0.9s						
NONG	**Nongkai**	86.38	291	P		P	20 17 42.3 +1.7
	comp=Z,42nm,0.9s						
WVOR	**Wild Horse Val**	86.69	40	*e*P		P	20 17 42.5 +0.8
WVOR				pmax	pmax		
	comp=Z,10.0nm,0.3s						
WVOR	**Wild Horse Val**	86.69	40	*e*P		P	20 17 42.5 +0.8
	comp=Z,9.7nm,0.3s						
319A	**Douglas**	86.80	54	*e*P		P	20 17 44.1 +1.6
	comp=Z,16nm,1.0s						
MA2	**Magadan**	86.92	345	P		P	20 17 41.8 -0.4
	comp=Z,9.1nm,0.8s,baz=148,slow=5.0,SNR=16						
LCMT	**Little Creek M**	86.98	47	*e*P		P	20 17 44.4 +1.1
	comp=Z,7.4nm,1.1s						
ENH	**Enshi**	87.03	305	*e*P		P	20 17 43.6 +0.1
	comp=Z,20nm,1.4s						
KNB	**Kanab**	87.27	47	*e*P		P	20 17 46.0 +1.3
KNB				pmax	pmax		
	comp=Z,8.0nm,1.0s						
KNB	**Kanab**	87.27	47	*e*P		P	20 17 46.0 +1.3
	comp=Z,7.7nm,1.0s						
U15A	**North Rim**	87.31	48	*e*P		P	20 17 46.2 +1.2
	comp=Z,12nm,0.9s						
GYA	**Guiyang**	87.35	300	*e*P		P	20 17 45.2 0.0
GYA				pP		pP	20 19 26.4 +9.4
GYA				sP		sP	20 20 11.0 +13
GYA				PP		PP	20 21 20.6 +4.0
GYA				SKS		SKSac	20 27 29.2 -5.0
GYA	**Guiyang**	87.35	300	S		S	20 27 47.8 -3.5
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
SZCU	**Shurtz Canyon**	87.41	47	*e*P		P	20 17 46.7 +1.4
	comp=Z,8.6nm,0.9s						
WUAZ	**Wupatki**	87.45	49	P		P	20 17 46.6 +1.1
	baz=238						
WUAZ	**Wupatki**	87.45	49	*e*P		P	20 17 46.8 +1.3
	comp=Z,4.8nm,0.9s						
D05A	**Enumclaw**	87.77	35	*e*P		P	20 17 48.0 +1.5
	comp=Z,37nm,1.3s						
G08A	**Pilot Rock**	88.23	38	*e*P		P	20 17 49.9 +1.0
	comp=Z,11nm,0.8s						
MTPU	**Mount Pierson**	88.25	47	*e*P		P	20 17 50.1 +0.6
	comp=Z,7.6nm,0.9s						
SUA	**Susitna One**	88.34	13	*e*P		P	20 17 48.3 -0.7
	comp=Z,6.6nm,0.6s						
A04D	**Lummi Island**	88.38	34	P		P	20 17 50.4 +1.1
	baz=230						
B05A	**Bryant**	88.40	34	P		P	20 17 50.9 +1.5
	baz=230						
121A	**Cookes Peak, D**	88.48	53	P		P	20 17 51.5 +1.0
	baz=240						
MSU	**Marysvale**	88.51	46	*e*P		P	20 17 51.6 +1.1
MSU	**Marysvale**	88.51	46	*e*P		P	20 17 51.6 +1.1
BMO	**Blue Mountains**	88.91	39	*e*P		P	20 17 51.9 -0.1
BMO				pmax	pmax		
	comp=Z,4.0nm,0.8s						
BMO	**Blue Mountains**	88.91	39	*e*P		P	20 17 51.9 -0.1
	comp=Z,3.6nm,0.8s						
MFID	**Camas Ranch**	88.94	41	*e*P		P	20 17 53.1 +0.9
	comp=Z,12nm,0.9s						
DUG	**Dugway, Tooele**	89.00	45	P		P	20 17 54.0 +1.4
	baz=237						
XAN	**Xi'an**	89.32	308	P		P	20 17 54.4 +0.3
XAN				pmax	pmax		
	comp=Z,6.0nm,1.1s						
D08A	**Wollman Farm,**	89.33	36	*e*P		P	20 17 53.7 -0.1
	comp=Z,8.8nm,0.9s						
BMRM	**Bremner River**	89.33	16	*e*P		P	20 17 53.0 -0.6
	comp=Z,20nm,1.8s						
Q16A	**Castle Valley**	89.39	46	*e*P		P	20 17 55.4 +0.8
	comp=Z,5.2nm,0.8s						
TMUT	**Trail Mountain**	89.57	46	*e*P		P	20 17 56.5 +1.0
	comp=Z,14nm,0.8s						
SEY	**Seymchan**	89.59	347	P		P	20 17 54.6 0.0
	comp=Z,4.9nm,0.6s,baz=153,slow=5.6,SNR=31						
F10A	**Beach Ranch, E**	89.61	38	*e*P		P	20 17 55.5 +0.2
	comp=Z,8.4nm,0.8s						
CAST	**Castle Rocks**	89.85	12	*e*P		P	20 17 55.0 -0.9
	comp=Z,28nm,1.8s						
MNTX	**Cornudas Mount**	89.86	55	P		P	20 17 57.7 +1.0
	baz=241						
MNTX	**Cornudas Mount**	89.86	55	*e*P		P	20 17 57.2 +0.6
	comp=Z,8.0nm,0.9s						
KMI	**Kunming**	89.87	298	P		P	20 17 58.2 +1.1
KMI				pmax	pmax		
	comp=Z,8.0nm,1.2s						
KMI				pmax	pmax		
	comp=Z,210nm,13.9s						
KMI				LR	LR		
	comp=N,760nm,16.2s						
KMI				LR	LR		
	comp=E,520nm,16.6s						
KMI				LR	LR		
	comp=Z,970nm,17.6s						
HLID	**Hailey**	89.87	41	P		P	20 17 58.0 +1.4
	baz=236						
HLID	**Hailey**	89.87	41	*e*P		P	20 17 57.5 +0.8
	comp=Z,6.7nm,0.8s						
LAZ	**Ladron**	89.88	52	*e*P		P	20 17 58.0 +1.1
HVU	**Hansel Valley**	89.89	43	*e*P		P	20 17 57.6 +0.8
HVU				pmax	pmax		
	comp=Z,6.0nm,0.8s						
HVU	**Hansel Valley**	89.89	43	*e*P		P	20 17 57.6 +0.8
	comp=Z,5.5nm,0.8s						
SRU	**San Rafael Swe**	89.92	47	*e*P		P	20 17 57.7 +0.7
SRU				pmax	pmax		
	comp=Z,11nm,0.9s						
SRU	**San Rafael Swe**	89.92	47	*e*P		P	20 17 57.7 +0.7
	comp=Z,10nm,0.9s						
P17A	**Butcher Ranch,**	89.97	46	*e*P		P	20 17 58.1 +0.9
	comp=Z,11nm,1.3s						
BALM	**Baldy**	89.98	17	*e*P		P	20 17 57.0 +0.4
BALM				pmax	pmax		
	comp=Z,6.0nm,1.1s						
BALM	**Baldy**	89.98	17	*e*P		P	20 17 57.0 +0.4
	comp=Z,6.0nm,1.1s						
TX31	**Lajitas Ar. Si**	90.05	58	*e*P		P	20 17 58.4 +0.7
LTX	**Lajitas**	90.05	58	*e*P		P	20 17 58.9 +1.2
LTX	**Lajitas**	90.05	58	*e*P		P	20 17 58.9 +1.2
TXAR	**Lajitas Array**	90.05	58	P		P	20 17 58.9 +1.2
	comp=Z,5.2nm,0.8s,baz=212,slow=6.5,SNR=61						
CM01	**Chiang Mai Arr**	90.11	290	*e*P		P	20 17 58.5 +0.4
BNM	**Barren Site**	90.12	52	*e*P		P	20 17 58.8 +0.7
CM31	**Chiang Mai Arr**	90.14	290	*e*P		P	20 17 58.5 +0.3
CM31				*e*PP		PP	20 21 38.4 -0.3
CMAR	**Chiang Mai Arr**	90.14	290	P		P	20 17 58.5 +0.3
	comp=Z,2.0nm,0.9s,baz=128,slow=2.8,SNR=11						
CMAR				PP		PP	20 21 38.4 -0.3
	comp=Z,0.6nm,0.6s,baz=117,slow=6.8,SNR=4.5						
TRF	**Thorofare Moun**	90.23	13	*e*P		P	20 17 56.5 -1.2
	comp=Z,26nm,1.9s						
CMMT	**Chiang Mai**	90.28	290	P		P	20 18 00.8 +1.9
	comp=Z,6.6nm,1.5s						
CHTO	**Chiang Mai**	90.29	290	P		P	20 18 00.9 +2.0
	comp=Z,29nm,1.5s						
CHTO	**Chiang Mai**	90.29	290	*e*P		P	20 17 59.7 +0.8
CHTO				pmax	pmax		
	comp=Z,15nm,1.5s						
CHTO	**Chiang Mai**	90.29	290	*e*P		P	20 17 59.7 +0.8
	comp=Z,14nm,1.5s						
TCUT	**Toone Canyon**	90.40	44	*e*P		P	20 18 00.3 +1.1
	comp=Z,18nm,0.9s						
ANMO	**Albuquerque**	90.63	52	P		P	20 18 01.4 +1.1
	baz=241						
ANMO	**Albuquerque**	90.63	52⇑	*e*P		P	20 18 01.5 +1.1
ANMO				pmax	pmax		
	comp=Z,5.0nm,0.9s						
ANMO	**Albuquerque**	90.63	52	*e*P		P	20 18 00.9 +0.5
	comp=Z,6.0nm,1.0s						
PV01	**Paradox Valley**	90.73	48	*e*P		P	20 18 00.7 -0.2
HHC	**Hu-ho-hao-te**	90.97	315	*e*P		P	20 18 05.8 +4.1
HHC				pmax	pmax		
	comp=Z,19nm,1.5s						
HHC				pmax	pmax		
	comp=Z,44nm,6.8s						
AHID	**Auburn Hatcher**	91.47	43	*e*P		P	20 18 03.9 -0.2
	comp=Z,7.1nm,0.6s						
MCMT	**McKenzie Canyo**	91.51	41	*e*P		P	20 18 04.9 +0.6
S22A	**4UR Ranch, Cre**	91.73	49	P		P	20 18 06.5 +1.0
	baz=241						
CCB	**Clear Creek Bu**	91.80	13	*e*P		P	20 18 03.7 -1.1
	comp=Z,22nm,2.0s						
REDW	**Red Top Meadow**	91.94	43	*e*P		P	20 18 04.7 -1.5
	comp=Z,7.2nm,1.0s						
ILAR	**Eielson Array**	92.10	13	P		P	20 18 05.0 -1.2
	comp=Z,0.8nm,0.7s,baz=217,slow=5.8,SNR=7.1						
ILAR	**Eielson Array**	92.10	13	P		P	20 18 05.0 -1.2
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ILB	**Eielson Array**	92.10	13	*e*P		P	20 18 04.3 -1.8
SMCO	**Snowmass**	92.33	48	*e*P		P	20 18 07.8 -0.6
	comp=Z,3.0nm,0.8s						
BW06	**Boulder Array**	92.44	44	P		P	20 18 09.2 +0.6
	baz=239						
BW06	**Boulder Array**	92.44	44	*e*P		P	20 18 08.4 -0.2
	comp=Z,3.2nm,0.8s						
PD31	**Pinedale Array**	92.44	44	*e*P		P	20 18 07.8 -0.8
PDAR	**Pinedale Array**	92.44	44	P		P	20 18 08.6 0.0
	comp=Z,3.6nm,0.9s,baz=220,slow=3.5,SNR=19						
BILL	**Bilibino**	92.48	355⇑	*e*P		P	20 18 07.1 -0.8
BILL				*e**PP		pP	20 19 47.4 +7.0
BILL				pmax	pmax		
	comp=Z,4.0nm,0.9s						
BILL	**Bilibino**	92.48	355	*e*P		P	20 18 07.1 -0.8
	comp=Z,10nm,0.4s						
SDCO	**Great Sand Dun**	92.66	50	P		P	20 18 10.6 +0.8
	baz=241						
SDCO	**Great Sand Dun**	92.66	50	*e*P		P	20 18 09.7 -0.1
	comp=Z,18nm,1.7s						
BOZ	**Bozeman (W)**	92.67	41	P		P	20 18 10.3 +0.8
	baz=238						
BOZ	**Bozeman (W)**	92.67	41	*e*P		P	20 18 09.7 +0.2
BOZ				pmax	pmax		
	comp=Z,2.0nm,0.7s						
BOZ	**Bozeman (W)**	92.67	41	*e*P		P	20 18 09.7 +0.2
	comp=Z,1.8nm,0.7s						
034A	**Hebbronville**	92.98	62	P		P	20 18 12.0 +0.9
	baz=244						
T25A	**Trinidad**	93.13	51	P		P	20 18 12.5 +0.6
	baz=242						
Q24A	**Divide**	93.48	49	P		P	20 18 13.5 -0.1
	baz=242						
ISCO	**Idaho Springs**	93.56	48	P		P	20 18 14.7 +0.8
	baz=241						
JCT	**Junction City**	93.56	58	P		P	20 18 14.1 +0.3
	baz=244						
N23A	**Red Feather La**	93.86	47	P		P	20 18 15.5 +0.3
	baz=241						
LZH	**Lanzhou**	93.95	308	⇓P		P	20 18 17.8 +2.2
LZH				pP		pP	20 20 00.1 +12
LZH				sP		sP	20 20 44.5 +15
LZH				PP		PP	20 22 13.7 +5.4
LZH				pmax	pmax		
	comp=Z,18nm,1.5s						
LZH				pmax	pmax		
	comp=Z,75nm,9.3s						
533A	**Kerrville**	93.99	59	P		P	20 18 16.2 +0.4
	baz=244						
433A	**Art**	94.23	58	P		P	20 18 17.0 +0.2
	baz=244						
534A	**Blanco**	94.41	59	P		P	20 18 18.2 +0.5
	baz=245						
333A	**Richland Sprin**	94.56	58	P		P	20 18 18.6 +0.3
	baz=244						
ABTX	**Abilene, Hawle**	94.61	56	P		P	20 18 19.4 +0.9
	baz=244						
434A	**Burnet**	94.90	59	P		P	20 18 19.9 0.0
	baz=245						
YAK	**Yakutsk**	94.98	338	P		P	20 18 19.1 -0.2
	comp=Z,6.1nm,0.5s,baz=34,slow=0.8,SNR=4.5						
YAK	**Yakutsk**	94.98	338	*i* P		P	20 18 19.4 0.0
YAK				pmax	pmax		
	comp=Z,6.0nm,0.8s						
YAK	**Yakutsk**	94.98	338	*e*P		P	20 18 18.8 -0.5
	comp=Z,14nm,0.5s						
334A	**Lometa**	95.14	58	P		P	20 18 21.5 +0.5
	baz=245						
133A	**Hamilton Ranch**	95.16	57	P		P	20 18 22.5 +1.5
	baz=245						
234A	**Clairette**	95.50	58	P		P	20 18 23.3 +0.7
	baz=245						
X32A	**Elmer**	95.65	55	P		P	20 18 23.6 +0.4
	baz=245						
A25A	**Svangstu Ranch**	99.33	40	Pdiff		Pdif	20 18 39.6 +0.3
	baz=244						
S37A	**Fort Scott**	100.30	53	Pdiff		Pdif	20 18 43.8 0.0
	baz=248						
J37A	**Redenius Farm,**	103.24	48	Pdiff		Pdif	20 18 57.0 +0.2
	baz=249						
O41A	**Passleys Farm,**	104.02	52	Pdiff		Pdif	20 19 00.9 +0.6
	baz=250						
K40A	**Colesburg**	104.69	50	Pdiff		Pdif	20 19 04.1 +0.8
	baz=251						
KURK	**Kurchatov**	115.75	316	*e*PKIKP		PKPdf	20 23 35.8 -1.3
KURK	**Kurchatov**	115.75	316	*e*PKPdf		PKPdf	20 23 35.8 -1.3
KKAR	**Karatay Array**	120.45	307	*e*PKIKP		PKPdf	20 23 45.4 -1.1
KKAR	**Karatay Array**	120.45	307	*e*PKPdf		PKPdf	20 23 45.4 -1.1
KBL	**Kabul**	120.45	297	*e*PKIKP		PKPdf	20 23 46.1 -0.9
KBL	**Kabul**	120.45	297	*e*PKPdf		PKPdf	20 23 46.1 -0.9
BVAR	**Borovoye Array**	120.97	319	PKP		PKPdf	20 23 46.1 -1.0
	comp=Z,5.2nm,0.5s,baz=126,slow=1.1,SNR=50						
BRVK	**Borovoye**	121.04	319	*e*PKIKP		PKPdf	20 23 46.4 -0.9
BRVK	**Borovoye**	121.04	319	*e*PKPdf		PKPdf	20 23 46.4 -0.9
ZRNK	**Zerenda**	121.81	319	*e*PKIKP		PKPdf	20 23 47.2 -1.5
ZRNK	**Zerenda**	121.81	319	*e*PKPdf		PKPdf	20 23 47.2 -1.5
BOSA	**Boshof**	122.47	206	PKP		PKPdf	20 23 51.0 -0.1
	comp=Z,1.9nm,0.8s,baz=288,slow=14,SNR=3.4						
SPITS	**Spitsbergen Ar**	125.36	356	PKP		PKPdf	20 23 54.1 -0.8
	comp=Z,4.6nm,0.7s,baz=52,slow=9.3,SNR=4.6						
ARU	**Arti**	127.39	324	PKP		PKPdf	20 23 59.2 -0.1
	comp=Z,7.8nm,0.5s,baz=120,slow=2.1,SNR=22						
ARU	**Arti**	127.39	324	*i* PKIKP		PKPdf	20 23 58.9 -0.4
ARU							20 26 04.3
ARU							20 30 28.1
ARU	**Arti**	127.39	324	*e*PKPdf		PKPdf	20 23 58.5 -0.8
AKTO	**Aktyubinsk**	128.84	316	PKP		PKPdf	20 24 02.0 -0.3
	comp=Z,3.4nm,0.6s,baz=114,slow=3.5,SNR=13						
GEYT	**Alibeck**	129.57	300	PKP		PKPdf	20 24 03.7 -0.4
	comp=Z,2.9nm,0.7s,baz=297,slow=0.7,SNR=8.5						
GEYT				SKPbc	SKPab		20 26 47.5 -0.3
	comp=Z,3.3nm,0.9s,baz=298,slow=3.2,SNR=9.9						
ARA0	**ARCESS Array S**	132.20	348	*e*PKPdf		PKPdf	20 24 07.4 -0.7
ARA0				*e*SKPbc		SKPbc	20 26 54.7 -1.7
ARCES	**ARCESS Array B**	132.20	348	PKP		PKPdf	20 24 07.4 -0.7
	comp=Z,3.1nm,0.5s,baz=52,slow=1.5,SNR=29						
ARCES				SKPbc		SKPbc	20 26 54.7 -1.7
	comp=Z,3.3nm,0.8s,baz=36,slow=2.3,SNR=8.7						
KLMR	**Klimovskoe**	134.62	334	*e*PKIKP		PKPdf	20 24 11.0 -1.8
KLMR				*e*			20 27 02.7
KLMR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
FIA0	**FINESS Array S**	138.82	342	*e*PKHKP		PKPpre	20 24 11.4
FIA0				*e*			20 24 21.2
FIA0				*e*			20 27 15.0
FIA0	**FINESS Array S**	138.82	342	*e*PKPpre		PKPpre	20 24 11.4
FIA0				*e*PKPdf		PKPdf	20 24 21.2 +0.6
FIA0				*e*SKPbc		SKPbc	20 27 15.0 -2.0
FINES	**FINESS Array B**	138.82	342	PKhKP		PKPpre	20 24 11.4
	comp=Z,1.6nm,0.6s,baz=60,slow=4.6,SNR=12						
FINES				PKP		PKPdf	20 24 21.2 +0.6
	comp=Z,2.2nm,0.4s,baz=113,slow=4.4,SNR=19						
FINES				SKP			20 27 15.0
	comp=Z,4.1nm,0.8s,baz=33,slow=4.5,SNR=11						
OBN	**Obninsk**	139.24	329	*e*PKIKP		PKPdf	20 24 21.9 +0.4
OBN				*e*			20 27 17.0
OBN				pmax	pmax		
	comp=Z,2.0nm,0.8s						
NC303	**NORSAR Array S**	142.17	352	*e*PKPpre		PKPpre	20 24 22.1
NC405	**NORSAR Array S**	142.23	351	*e*PKPpre		PKPpre	20 24 22.2
NB2	**NORSAR Subarra**	142.37	352	PKP		PKPpre	20 24 22.5
	comp=Z,6.3nm,0.8s,baz=19,slow=3.7						
NB200	**NORSAR Array S**	142.37	352	*e*PKPpre		PKPpre	20 24 22.7
NOA	**NORSAR Array B**	142.37	352	PKhKP		PKPpre	20 24 22.7
	comp=Z,4.6nm,0.8s,baz=16,slow=4.8,SNR=19						
NBO02	**NORSAR Array S**	142.41	352	*e*PKPpre		PKPpre	20 24 22.8
HFS	**Hagfors**	142.86	349	PKhKP		PKPpre	20 24 23.9
	comp=Z,12nm,0.4s,baz=64,slow=3.4,SNR=161						
ANN	**Anapa**	143.72	314	*i* PKHKP		PKPpre	20 24 27.6
ANN				pmax	pmax		
	comp=Z,65nm,1.2s						
KONO	**Kongsberg**	143.93	352	*e*PKPdf		PKPab	20 24 27.8 -0.7
AKASG	**Malin Array Be**	145.45	328	PKPbc		PKPdf	20 24 31.9 -0.7
	comp=Z,12nm,0.6s,baz=40,slow=4.2,SNR=8.3						
AKBB	**Malin Array Si**	145.45	328	*e*PKPdf		PKPdf	20 24 31.9 -0.7
KIEV	**Kiev**	145.47	328	*e*PKPdf		PKPdf	20 24 32.2 -0.5
AK11	**Malin Array Si**	145.50	328	*e*PKPdf		PKPdf	20 24 32.1 -0.6
SUW	**Suwalki**	145.69	336	*e*PKP		PKPbc	20 24 33.8 -0.4
SUW	**Suwalki**	145.69	336	*e*PKIKP		PKPbc	20 24 33.8 -0.4
SIM	**Simferopol'**	145.81	316	*e*PKIKP		PKPbc	20 24 34.8 0.0
SIM				pmax	pmax		
	comp=Z,17nm,1.0s						
SIM				MLR	MLR		
	comp=Z,600nm,17.0s						
ASF	**Jabal al Asfar**	147.14	292	PKPbc		PKPbc	20 24 39.5 +0.4
	comp=Z,9.5nm,0.8s,baz=94,slow=3.0,SNR=20						
SORM	**Soroca**	147.50	325⇑	*i* P		PKPbc	20 24 39.0 -0.4
SORM	**Soroca**	147.50	325⇑	PKIKP		PKPbc	20 24 39.0 -0.4
BR101	**Keskin Array S**	148.16	307	*e*PKPbc		PKPbc	20 24 41.0 -0.6
BR131	**Keskin Array S**	148.16	307	*e*PKPbc		PKPbc	20 24 40.7 -0.8
BRTR	**Keskin Array B**	148.16	307	PKPbc		PKPbc	20 24 41.0 -0.6
	comp=Z,5.6nm,0.7s,baz=142,slow=4.9,SNR=31						
BRTR	**Keskin Array B**	148.16	307	PKIKP		PKPbc	20 24 41.0 -0.6
BRTR				pmax	pmax		
	comp=Z,6.0nm,0.7s						
GKP	**Gorka Klasztor**	148.29	341	*e*PKP		PKPbc	20 24 41.1 -0.1
BEL	**Belsk**	148.30	336	*e*PKP		PKPbc	20 24 41.3 0.0
MMAI	**Mount Meron Ar**	148.31	294	PKPbc		PKPbc	20 24 42.6 +0.5
	comp=Z,20nm,0.5s,baz=76,slow=7.0,SNR=78						
LVV	**L'vov**	148.50	331	*e*PKHKP		PKPpre	20 24 40.9
LVV				MLR	MLR		
	comp=Z,3μm,22.0s						
LVV				MLR	MLR		
	comp=N,2μm,21.0s						
LVV				MLR	MLR		
	comp=E,1μm,24.0s						
EKA	**Eskdalemuir Ar**	148.68	4	PKPbc		PKPbc	20 24 41.5 -0.7
	comp=E,2.9nm,0.5s,baz=341,slow=2.6,SNR=32						
BR231	**Keskin MP Arra**	148.75	308	*e*PKPdf		PKPdf	20 24 36.7 -2.0
BR231				*e*PKPbc		PKPbc	20 24 41.5 -1.5
BR231				*e*PKPab		PKPab	20 24 47.4 -0.9
TLCR		148.95	320	⇓*i* P		PKPbc	20 24 43.2 0.0
EIL	**Elat**	148.97	288	PKPbc		PKPbc	20 24 43.9 +0.2
	comp=E,14nm,0.8s,baz=338,slow=3.4,SNR=15						
KWP	**Kalwaria Pacla**	149.22	331	*e*PKP		PKPbc	20 24 43.6 -0.1
CFR	**Carcaliu**	149.36	320⇑	*i* P		PKPbc	20 24 43.9 -0.2
TESR	**Tescani**	149.41	323⇑	*i* P		PKPbc	20 24 44.0 -0.3
BUR08	**Bucovina Ar. S**	149.45	326	*e*PKPbc		PKPbc	20

BRG				*i*		20 24 59.2		
BRG				pmax	pmax			
	comp=Z,18nm,0.5s							
PVCC	**Panska Ves**	**151.49 341**	⇑	*e*PKP	**PKPbc**	**20 24 49.1**	**+0.1**	
PVCC	**Panska Ves**	**151.49 341**		*e*PKIKP	**PKPbc**	**20 24 49.1**	**+0.1**	
HUMR	**Humele**	**151.56 322**	⇑	*i*P	**PKPbc**	**20 24 48.4**	**-0.9**	
LOT	**Lotru**	**151.64 324**	⇓	*i*P	**PKPbc**	**20 24 48.9**	**-0.7**	
VYHS	**Vyhne**	**151.72 334**		*e*PKIKP	**PKPbc**	**20 24 49.3**	**-0.3**	
VYHS				*e*		20 25 00.6		
VYHS	**Vyhne**	**151.72 334**		*e*PKP	**PKPbc**	**20 24 49.3**	**-0.3**	
VYHS				*e*		20 25 00.6		
VRAC	**Vranov**	**151.90 338**		PKPbc	**PKPbc**	**20 24 49.8**	**-0.1**	
	comp=Z,1.7nm,0.6s,baz=48,slow=4.8,SNR=3.9							
VRAC				PKPab	**PKPab**	**20 25 01.1**	**+0.2**	
	comp=Z,4.2nm,0.5s,baz=36,slow=6.4,SNR=10							
VRAC	**Vranov**	**151.90 338**	⇑	*i*P	**PKPbc**	**20 24 50.2**	**+0.2**	
GOPC	**GO Pecny, Ondr**	**151.97 340**	⇑	*e*PKP	**PKPbc**	**20 24 49.9**	**-0.2**	
GOPC	**GO Pecny, Ondr**	**151.97 340**		*e*PKIKP	**PKPbc**	**20 24 49.9**	**-0.2**	
PRU	**Pruhonice**	**151.97 341**	⇑	*e*PKP	**PKPbc**	**20 24 50.0**	**-0.1**	
PRU				*e*PKPAB	**PKPab**	**20 25 01.5**	**+0.4**	
PRU	**Pruhonice**	**151.97 341**		*e*PKIKP	**PKPbc**	**20 24 50.0**	**-0.1**	
PRU				*e*		20 25 01.5		
SIRR	**Siria**	**152.16 328**	⇑	*i*P	**PKPbc**	**20 24 50.6**	**0.0**	
SMOL	**Smolenice**	**152.26 336**		*e*PKP	**PKPab**	**20 25 03.3**	**+0.9**	
TREC	**Trest**	**152.28 339**	⇑	*e*PKP	**PKPbc**	**20 24 50.9**	**+0.1**	
TREC	**Trest**	**152.28 339**		*e*PKIKP	**PKPbc**	**20 24 50.9**	**+0.1**	
NKC	**Novy Kostel**	**152.34 344**	⇑	*e*PKP	**PKPbc**	**20 24 50.5**	**-0.4**	
NKC				*e*PKPAB	**PKPab**	**20 25 03.2**	**+0.5**	
NKC	**Novy Kostel**	**152.34 344**		*e*PKIKP	**PKPbc**	**20 24 50.5**	**-0.4**	
NKC				*e*		20 25 03.2		
BZS	**Buzias**	**152.64 327**	⇑	*i*P	**PKPbc**	**20 24 51.3**	**-0.4**	
BZS	**Buzias**	**152.64 327**	⇑	PKIKP	**PKPbc**	**20 24 51.3**	**-0.4**	
KHC	**Kasperske Hory**	**153.03 341**	⇑	*e*PKP	**PKPbc**	**20 24 52.0**	**-0.5**	
KHC				*e*PKPAB	**PKPab**	**20 25 06.3**	**+0.6**	
KHC	**Kasperske Hory**	**153.03 341**		*e*PKIKP	**PKPbc**	**20 24 51.6**	**-0.9**	
KHC				*e*		20 25 05.6		
KHC	**Kasperske Hory**	**153.03 341**		*e*PKPbc	**PKPbc**	**20 24 51.6**	**-0.9**	
KHC				*e*PKPab	**PKPab**	**20 25 05.6**	**-0.1**	
GERES	**GERESS Array B**	**153.24 341**		PKPbc	**PKPbc**	**20 24 52.9**	**-0.2**	
	comp=Z,1.6nm,0.6s,baz=349,slow=1.4,SNR=8.1							
GEA0	**GERESS Array S**	**153.25 341**		*e*PKPdf	**PKPdf**	**20 24 43.9**	**-1.2**	
GEA0				*e*PKPbc	**PKPbc**	**20 24 52.0**	**-1.0**	
GEA0				*e*PKPab	**PKPab**	**20 25 06.3**	**-0.4**	
CONA	**Conrad Observa**	**153.32 337**		*i*PKiKP	**PKPbc**	**20 24 53.1**	**-0.2**	
	comp=Z,2.9nm,0.8s							
CONA				*i*PKPab	**PKPab**	**20 25 07.6**	**+0.5**	
	comp=Z,6.6nm,0.7s							
VTS	**Vitosha**	**153.76 320**		*e*PKIKP	**PKPdf**	**20 24 43.8**	**-2.4**	
VTS				*e*		20 24 53.8		
VTS				*e*		20 25 10.2		
VTS	**Vitosha**	**153.76 320**		*e*PKPdf	**PKPdf**	**20 24 43.8**	**-2.4**	
VTS				*e*PKPbc	**PKPbc**	**20 24 53.8**	**-0.6**	
VTS				*e*PKPab	**PKPab**	**20 25 10.2**	**+1.0**	
ARSA	**Arzberg**	**154.02 336**		*i* PKPab	**PKPab**	**20 25 10.8**	**+0.8**	
	comp=Z,2.8nm,0.8s							
SOKA	**Soboth**	**154.68 336**		*i* PKPab	**PKPab**	**20 25 12.1**	**-0.8**	
	comp=Z,4.6nm,1.1s							
BFO	**Black Forest**	**155.07 348**		*e*PKP2	**PKPab**	**20 25 13.5**	**-0.9**	
BFO	**Black Forest**	**155.07 348**		*e*PKPab	**PKPab**	**20 25 13.5**	**-0.9**	
MYKA	**Terra Mystica**	**155.21 338**		*i* PKPab	**PKPab**	**20 25 14.6**	**-0.5**	
	comp=Z,3.7nm,0.8s							
RETA	**Reutte**	**155.31 343**		*i* PKPab	**PKPab**	**20 25 15.5**	**0.0**	
	comp=Z,3.8nm,0.6s							
MOTA	**Moosalm**	**155.35 343**		*i* PKPab	**PKPab**	**20 25 15.5**	**-0.3**	
	comp=Z,4.0nm,0.9s							
DAVA	**Damuels**	**155.72 345**		*i* PKPab	**PKPab**	**20 25 16.5**	**-0.9**	
	comp=Z,5.6nm,0.6s							
DAVOX	**Davos/Dischmat**	**156.19 344**		PKPbc	PKPbc	20 24 58.8		
	comp=Z,2.5nm,0.6s,baz=4.8,slow=18,SNR=4.0							
DAVOX				PKPab	**PKPab**	**20 25 20.0**	**+0.5**	
	comp=Z,7.3nm,0.7s,baz=338,slow=2.8,SNR=13							
FUORN	**Ofenpass-Fuorn**	**156.24 343**		*e*PKPdf	**PKPdf**	**20 24 49.0**	**-0.6**	
FUORN				*e*PKPab	**PKPab**	**20 25 20.1**	**+0.3**	
TUE	**Stuetta**	**156.61 345**		*e*PKPdf	**PKPdf**	**20 24 50.1**	**+0.1**	
TUE				*e*PKPab	**PKPab**	**20 25 21.0**	**-0.4**	
ES19	**SONSECA Array**	**163.99 13**		*e*PKPdf	**PKPdf**	**20 24 56.7**	**-1.3**	
ES19				*e*PKPab	**PKPab**	**20 25 52.5**	**-1.0**	
ESDC	**Sonseca Array**	**164.00 13**		PKPab	**PKPab**	**20 25 53.9**	**+0.3**	
	comp=Z,0.3nm,0.5s,baz=346,slow=4.5,SNR=5.5							
KEST	**Kesra**	**166.18 329**		PKPab	**PKPab**	**20 26 04.5**	**+1.1**	
	comp=Z,1.4nm,0.7s,baz=302,slow=4.4,SNR=3.7							
KEST	**Kesra**	**166.18 329**		*e*PKPab	**PKPab**	**20 26 03.2**	**-0.2**	
TOA0	**Torodi Ar. Sit**	**169.05 185**		*e*PKPdf	**PKPdf**	**20 25 00.7**	**-1.9**	
TOA0				*e*PKPab	**PKPab**	**20 26 15.4**	**-0.9**	
TORD	**Torodi Ar. Bea**	**169.05 185**		PKP	**PKPdf**	**20 25 00.9**	**-1.6**	
	comp=Z,1.1nm,0.9s,baz=288,slow=0.5,SNR=5.3							
TORD				PKPab	**PKPab**	**20 26 16.1**	**-0.2**	
	comp=Z,2.0nm,0.7s,baz=172,slow=4.4,SNR=10							
TOA1	**Torodi Ar. Sit**	**169.06 185**		*e*PKPdf	**PKPdf**	**20 25 00.9**	**-1.6**	
TOA1				*e*PKPab	**PKPab**	**20 26 16.1**	**-0.2**	

*IDC **09** 20:09:42.7±0.7,29°.23S×177°.00W,h0km,mb4.5/10, mb1 4.5/11,mb1mx4.3/29,mbtmp4.4/11,ML3.2/1,Error ellipse: s-maj=27.4km s-min=15.9km az=168.0*
*NEIC **09** 20:09:43.5±0.4,29°.51S×177°.03W,h10km,mb5.1/19, Error ellipse: s-maj=12.0km s-min=7.8km az=109.0*
*ISCJB **09** 20:09:44.6±0.6,29°.64S±0°.05×177°.00W±0°.08, h31km, mb4.8/26, Error ellipse: s-maj=10.2km s-min=6.6km az=0.7*

ISC 09 20:09:47.0±0.5,**29°.46S**±0°.07×**177°.05W**±0°.08,**h31**km,**n77,** σ1**§66**/81,**mb4.8**/26,**1C, Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.78**	**285**	Pn	**Pn**	**20 10 01.5**	**-0.3**
	869nm,0.3s,baz=85,slow=9.7,SNR=18						
RAO				Sn	**Sn**	**20 10 14.1**	**+1.6**
	3µm,0.3s,baz=92,slow=23,SNR=26						
RAO	**Raoul Island**	**0.78**	**285**	*e*Pn	**Pn**	**20 10 01.2**	**-0.6**
RAO				*e*Sg	**Sn**	**20 10 12.9**	**+0.4**
URZ	**Urewera**	**10.03**	**207**	Pn	**Pn**	**20 12 05.8**	**-3.0**
	baz=278,slow=6.5,SNR=2.2						
URZ				Sn	**Sn**	**20 13 58.3**	**-1.9**
	2.5nm,0.3s,baz=243,slow=22,SNR=6.0						
BFZ	**Birch Farm**	**12.46**	**204**	*e*Pn	**Pn**	**20 12 40.0**	**-2.2**
MSVF	**Nonsavu**	**12.50**	**338**	*e*Pn	Pn	20 12 34.5	-8.4
SNZO	**South Karori**	**13.59**	**207**	*e*Pn	**Pn**	**20 12 53.4**	**-4.2**
THZ	**Tophouse**	**14.73**	**211**	*e*Pn	**Pn**	**20 13 12.8**	**-0.4**
KHZ	**Kahutara**	**14.99**	**208**	*e*Pn	**Pn**	**20 13 13.0**	**-3.6**
	156nm,1.6s						
DZM	**Mont Dzumac**	**16.57**	**293**	Pn	**Pn**	**20 13 38.2**	**+1.0**
	0.1nm,0.3s,baz=108,slow=16,SNR=2.6						
ODZ	**Otahua Downs**	**18.35**	**209**	*e*P	**Pn**	**20 13 59.5**	**+0.5**
	249nm,2.0s						
WKZ	**Wanaka**	**18.89**	**212**	*e*P	**P**	**20 14 03.1**	**-1.8**
	428nm,1.7s						
CAN	**Canberra**	**29.16**	**250**	*e*P	**P**	**20 15 43.8**	**-1.8**
	150nm,2.0s						
CTA	**Charters Tower**	**34.48**	**277**	P	**P**	**20 16 33.5**	**+1.3**
	6.5nm,0.6s,baz=97,slow=9.9,SNR=11						
STKA	**Stephens Creek**	**35.50**	**255**	P	**P**	**20 16 42.0**	**+1.0**
	4.2nm,0.7s,baz=115,slow=11,SNR=5.0						
STKA	**Stephens Creek**	**35.50**	**255**	*e*P	**P**	**20 16 42.1**	**+1.2**
	2.5nm,1.1s						
BBOO	**Buckleboo**	**40.02**	**253**	*e*P	**P**	**20 17 17.9**	**-1.3**
	50nm,1.6s						
AS01	**Alice Springs**	**43.95**	**266**	*e*P	**P**	**20 17 49.9**	**-1.5**
AS31	**Alice Springs**	**43.99**	**266**	*e*P	**P**	**20 17 52.0**	**+0.2**
	3.6nm,1.1s						
ASAR	**Alice Springs**	**43.99**	**266**	P	**P**	**20 17 51.5**	**-0.3**
	3.2nm,0.6s,baz=99,slow=6.4,SNR=15						
WRAB	**Tennant Creek**	**44.89**	**271**	*e*P	**P**	**20 17 55.7**	**-3.2**
	12nm,0.9s						
WR1	**Warramunga Arr**	**44.90**	**271**	*e*P	**P**	**20 17 58.8**	**-0.1**
	20nm,0.9s						
WRA	**Warramunga Arr**	**44.90**	**271**	P	**P**	**20 17 58.8**	**-0.1**
	11nm,1.0s,baz=107,slow=5.8,SNR=23						
SBA	**Scott Base**	**49.04**	**184**	*e*P	**P**	**20 18 33.1**	**+2.6**
	18nm,1.7s						
VNDA	**Vanda**	**49.11**	**186**	*e*P	**P**	**20 18 34.2**	**+3.2**
	3.0nm,1.1s						
MTN	**Manton Dam**	**50.66**	**278**	*e*P	**P**	**20 18 44.9**	**+1.2**
	83nm,1.7s						
FITZ	**Fitzroy Crossi**	**53.19**	**269**	*e*P	**P**	**20 19 02.6**	**+0.1**
	28nm,1.5s						
NWAO	**Narrogin (SRO)**	**55.50**	**248**	*e*P	**P**	**20 19 18.9**	**-0.3**
	73nm,1.7s						
CASY	**Casey**	**56.35**	**208**	*e*P	**P**	**20 19 25.0**	**+0.3**
	13nm,0.6s						
ANA2	**Anatahan**	**58.01**	**317**	*e*P	**P**	**20 19 36.8**	**-0.2**
SOEI	**Soe**	**58.05**	**277**	*e*P	**P**	**20 19 38.9**	**+1.3**
	80nm,1.3s						
SARN	**Sarigan**	**58.24**	**317**	*e*P	**P**	**20 19 38.1**	**-0.6**
QSPA	**South Pole Qui**	**60.65**	**180**	*e*P	**P**	**20 19 57.0**	**+2.2**
KKM	**Kota Kinabalu**	**73.06**	**287**	*e*P	**P**	**20 20 21 14.6**	**0.0**
	14nm,1.0s						
MAW	**Mawson**	**73.47**	**200**	P	**P**	**20 21 17.8**	**+1.8**
	2.6nm,0.8s,baz=159,slow=3.9,SNR=6.5						
MAW	**Mawson**	**73.47**	**200**	*e*P	**P**	**20 21 18.2**	**+2.2**
	5.8nm,2.0s						
KSM	**Kuching**	**75.66**	**280**	*e*P	**P**	**20 21 28.5**	**-1.1**
	19nm,1.7s						
MJAR	**Matsushiro Arr**	**77.94**	**325**	P	**P**	**20 21 41.5**	**-0.5**
	1.6nm,0.8s,baz=164,slow=5.9,SNR=9.8						
SYO	**Syowa Base**	**78.21**	**193**	*e*P	**P**	**20 21 43.2**	**+0.2**
PETK	**Petropavlovsk-**	**85.11**	**345**	P	**P**	**20 22 19.4**	**-0.1**
	2.0nm,0.6s,baz=120,slow=6.5,SNR=5.6						
PEA1	**Petropavlovsk-**	**85.12**	**345**	*e*P	**P**	**20 22 19.4**	**-0.1**
USRK	**Ussuriysk Ar.**	**86.84**	**326**	P	**P**	**20 22 28.8**	**+0.6**
	3.4nm,0.8s,baz=69,slow=4.2,SNR=7.0						
TIMB	**Timberline**	**89.83**	**35**	*e*P	**P**	**20 22 41.5**	**-1.1**
KLR	**Kul'dur**	**90.64**	**329**	P	**P**	**20 22 46.2**	**+0.2**
	1.9nm,0.7s,baz=118,slow=2.7,SNR=9.0						
BMO	**Blue Mountains**	**91.80**	**38**	*e*P	**P**	**20 22 47.5**	**-4.2**
	21nm,0.5s						
SEY	**Seymchan**	**95.25**	**346**	P	**P**	**20 23 06.6**	**-0.4**
	0.9nm,0.7s,baz=118,slow=4.8,SNR=7.1						
PAX	**Paxson**	**95.50**	**14**	*e*P	**P**	**20 23 10.8**	**+2.5**
	16nm,1.0s						
MK32	**Makanchi Array**	**117.79**	**310**	*e*PKPdf	**PKPdf**	**20 28 29.2**	**-0.8**
MKAR	**Makanchi Array**	**117.79**	**310**	PKP	**PKPdf**	**20 28 29.2**	**-0.8**
	0.3nm,0.4s,baz=72,slow=4.0,SNR=3.9						
KURK	**Kurchatov**	**120.99**	**314**	*e*PKPdf	**PKPdf**	**20 28 35.7**	**-0.2**
KURBB	**Kurchatov Arra**	**121.03**	**314**	PKP	**PKPdf**	**20 28 35.7**	**-0.3**
	0.7nm,0.6s,baz=110,slow=1.9,SNR=6.7						
KKAR	**Karatay Array**	**125.23**	**304**	*e*PKPdf	**PKPdf**	**20 28 44.9**	**+0.5**
BVAR	**Borovoye Array**	**126.30**	**316**	PKP	**PKPdf**	**20 28 45.5**	**-0.6**
	1.5nm,0.8s,baz=48,slow=2.2,SNR=9.0						
ZRNK	**Zerenda**	**127.14**	**316**	*e*PKPdf	**PKPdf**	**20 28 47.7**	**+0.1**
ARU	**Arti**	**132.88**	**321**	PKP	**PKPdf**	**20 28 58.8**	**+0.3**
	1.3nm,0.5s,baz=92,slow=3.6,SNR=3.8						
FIA0	**FINESS Array S**	**144.53**	**341**	*e*PKPdf	**PKPab**	**20 29 17.7**	**-0.3**
FINES	**FINESS Array B**	**144.53**	**341**	PKP	**PKPab**	**20 29 17.7**	**-0.3**
	8.1nm,0.7s,baz=77,slow=4.1,SNR=30						
KBZ	**Khabaz**	**145.25**	**305**	PKPbc	**PKPdf**	**20 29 21.3**	**-0.1**
	3.2nm,0.7s,baz=162,slow=2.5,SNR=8.7						
NB2	**NORSAR Subarra**	**147.94**	**352**	PKP	**PKPbc**	**20 29 27.5**	**-1.0**
	comp=Z,2.4nm,0.9s,baz=17,slow=2.6						
NB200	**NORSAR Array S**	**147.94**	**352**	*e*PKPbc	**PKPbc**	**20 29 27.6**	**-0.9**
NOA	**NORSAR Array B**	**147.94**	**352**	PKPbc	**PKPbc**	**20 29 27.6**	**-0.9**
	comp=Z,3.6nm,0.8s,baz=16,slow=4.4,SNR=10						
NB002	**NORSAR Array S**	**147.97**	**353**	*e*PKPbc	**PKPbc**	**20 29 28.1**	**-0.4**
HFS	**Hagfors**	**148.48**	**360**	PKPbc	**PKPbc**	**20 29 29.3**	**-0.6**
	comp=Z,5.7nm,0.7s,baz=66,slow=3.6,SNR=11						
ASF	**Jabal al Asfar**	**150.78**	**284**	PKPbc	**PKPbc**	**20 29 37.3**	**+0.8**
	comp=Z,8.3nm,1.0s,baz=185,slow=0.5,SNR=11						
AKASG	**Malin Array Be**	**151.03**	**324**	PKPbc	**PKPbc**	**20 29 35.9**	**-0.5**
	comp=Z,5.8nm,0.7s,baz=46,slow=2.9,SNR=12						
AKBB	**Malin Array Si**	**151.03**	**324**	*e*PKPbc	**PKPbc**	**20 29 35.9**	**-0.5**
AK11	**Malin Array Si**	**151.07**	**324**	*e*PKPbc	**PKPbc**	**20 29 36.6**	**+0.1**
MMAI	**Mount Meron Ar**	**152.08**	**286**	PKPbc	**PKPbc**	**20 29 41.5**	**+1.9**
	comp=Z,6.3nm,0.5s,baz=74,slow=7.0,SNR=16						
EIL	**Elat**	**152.21**	**278**	PKPbc	**PKPbc**	**20 29 40.9**	**+1.1**
	comp=Z,6.4nm,0.8s,baz=340,slow=6.6,SNR=7.2						
BR101	**Keskin Array S**	**152.85**	**300**	*e*PKPbc	**PKPbc**	**20 29 41.4**	**+0.3**
BRTR	**Keskin Array B**	**152.85**	**300**	PKPbc	**PKPbc**	**20 29 41.4**	**+0.3**
	comp=Z,1.9nm,0.9s,baz=120,slow=3.6,SNR=10						
EKA	**Eskdalemuir Ar**	**153.77**	**8**	PKPbc	**PKPab**	**20 29 49.2**	**-6.1**
	comp=Z,0.8nm,0.8s,baz=335,slow=3.1,SNR=3.0						
UPC	**Upice**	**156.78**	**339**	*e*PKPAB	**PKPab**	**20 30 09.3**	**+0.9**
DPC	**Dobruska-Polom**	**156.82**	**338**	*e*PKPAB	**PKPab**	**20 30 09.2**	**+0.6**
PRU	**Pruhonice**	**157.69**	**340**	*e*PKPab	**PKPab**	**20 30 12.4**	**+0.1**
KHC	**Kasperske Hory**	**158.74**	**340**	*e*PKPAB	**PKPab**	**20 30 13.8**	**-3.1**
KHC				epPKP	pPKP	20 30 17.2		
TORD	**Torodi Ar. Bea**	**163.73**	**176**	PKP	**PKPdf**	**20 29 48.4**	**+0.8**
	comp=Z,1.2nm,1.1s,baz=332,slow=5.0,SNR=4.1						
TORD				PKPab	**PKPab**	**20 30 42.2**	**+2.8**
	comp=Z,0.4nm,0.6s,baz=166,slow=3.5,SNR=3.6						
TOA1	**Torodi Ar. Sit**	**163.73**	**176**	*e*PKPdf	**PKPdf**	**20 29 48.4**	**+0.8**
TOA1				*e*PKPab	**PKPab**	**20 30 42.2**	**+2.8**

*ISCJB **09** 20:14:01.7±0.5,39°.60N±0°.02×27°.44E±0°.03,h3km±4km, Error ellipse: s-maj=3.9km s-min=3.5km az=177.2*
*ISK **09** 20:14:01.6,39°.59N×27°.44E,h6km,MD3.0*
*CSEM **09** 20:14:02.0±0.1,39°.59N×27°.44E,h5km,MD2.6,Error ellipse: s-maj=2.5km s-min=2.4km az=139.0*
*DDA **09** 20:14:02.1,39°.64N×27°.46E,h12km,Md2.6*

ISC 09 20:14:02.1±1.0,**39°.59N**±0°.02×**27°.44E**±0°.02,**h10**km±9km, **n67,** σ0**§58**/82,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BALY	**Balya**	**0.20**	**42**	*i* P	**Pg**	**20 14 06.0**	**-0.4**
BALY	**Balya**	**0.20**	**42**	P	**Pg**	**20 14 06.0**	**-0.4**
BALB	**Balıkesir**	**0.34**	**81**	*e*PG	**Pg**	**20 14 09.0**	**+0.1**
BALB				*e*SG	**Sg**	**20 14 14.0**	**+0.5**
BALB	**Balikesir**	**0.34**	**81**	*e*Pg	**Pg**	**20 14 09.0**	**+0.1**
BALB				*e*Sg	**Sg**	**20 14 14.0**	**+0.5**
GONE	**Gonen-Balikesi**	**0.49**	**22**	*e*PG	**Pg**	**20 14 11.8**	**0.0**
GONE				*e*SG	**Sg**	**20 14 18.8**	**+0.5**
GONE	**Gonen-Balikesi**	**0.49**	**22**	*e*Pg	**Pg**	**20 14 11.8**	**0.0**
GONE				*e*Sg	**Sg**	**20 14 18.8**	**+0.5**
AYVA	**Ayvalik**	**0.65**	**245**	*i* P	**Pb**	**20 14 15.4**	**-0.1**
AYVA				*i* S	**Sg**	**20 14 23.2**	**+0.1**
AYVA	**Ayvalik**	**0.65**	**245**	P	**Pb**	**20 14 15.4**	**-0.1**
AYVA				S	**Sg**	**20 14 23.2**	**+0.1**
DKL	**Dikili**	**0.66**	**219**	*e*PG	**Pg**	**20 14 15.0**	**0.0**
DKL	**Dikili**	**0.66**	**219**	*e*Pg	**Pg**	**20 14 15.0**	**0.0**
KNL	**Bal¯ıkesir**	**0.68**	**5**	*i* P	**Pg**	**20 14 14.0**	**-1.4**
KNL				*i* S	**Sg**	**20 14 23.5**	**-0.8**
KRBG	**Karabiga-Canak**	**0.81**	**352**	*e*PG	**Pg**	**20 14 17.7**	**-0.1**
KRBG	**Karabiga-Canak**	**0.81**	**352**	*e*Pg	**Pg**	**20 14 17.7**	**-0.1**
EDC	**Edincik**	**0.82**	**23**	*e*PG	**Pg**	**20 14 17.4**	**-0.6**
EDC	**Edincik**	**0.82**	**23**	*e*Pg	**Pg**	**20 14 17.4**	**-0.6**
EZN	**Ezine**	**0.89**	**286**	*e*PG	**Pg**	**20 14 19.0**	**-0.3**
EZN	**Ezine**	**0.89**	**286**	*e*Pg	**Pg**	**20 14 19.0**	**-0.3**
KCTX	**Karacabey (Bur**	**0.97**	**46**	*e*PG	**Pg**	**20 14 20.3**	**-0.6**
KCTX	**Karacabey (Bur**	**0.97**	**46**	*e*Pg	**Pg**	**20 14 20.3**	**-0.6**
MRMT	**Marmara Adasi**	**1.02**	**7**	*e*PG	**Pg**	**20 14 21.2**	**-0.6**
MRMT	**Marmara Adasi**	**1.02**	**7**	*e*Pg	**Pg**	**20 14 21.2**	**-0.6**
GELI	**Tayfur-Gelibol**	**1.10**	**318**	*e*PN	**Pg**	**20 14 23.0**	**-0.2**
GELI	**Tayfur-Gelibol**	**1.10**	**318**	*e*Pn	**Pg**	**20 14 23.0**	**-0.2**
BOZC	**Bozcaada**	**1.10**	**284**	*i* P	**Pb**	**20 14 23.7**	**+0.4**
BOZC				*i* S	**Sg**	**20 14 37.4**	**-0.2**
RKY	**Sarkoy-Tekirda**	**1.12**	**350**	*e*PN	**Pg**	**20 14 23.0**	**-0.6**
RKY	**Sarkoy-Tekirda**	**1.12**	**350**	*e*Pn	**Pg**	**20 14 23.0**	**-0.6**
DEMI	**Demirci**	**1.13**	**118**	*i* P	**Pn**	**20 14 24.3**	**+0.2**
DEMI				*i* S	**Sb**	**20 14 39.4**	**+0.8**
DEMI	**Demirci**	**1.13**	**118**	P	**Pn**	**20 14 24.3**	**+0.2**
DEMI				S	**Sb**	**20 14 39.4**	**+0.8**
IZM	**Izmir**	**1.20**	**187**	*e*PN	**Pg**	**20 14 24.6**	**-0.5**
IZM	**Izmir**	**1.20**	**187**	*e*Pn	**Pg**	**20 14 24.6**	**-0.5**
SIGR	**SIGRI**	**1.29**	**253**	*e*PN	**Pn**	**20 14 26.4**	**+0.2**
SIGR	**SIGRI**	**1.29**	**253**	*e*Pn	**Pn**	**20 14 26.4**	**+0.2**
ERIK	**Erikli-Kesan**	**1.29**	**327**	*e*PN	**Pg**	**20 14 26.9**	**-0.1**
ERIK	**Erikli-Kesan**	**1.29**	**327**	*e*Pn	**Pg**	**20 14 26.9**	**-0.1**
GADA	**Gvkgeada**	**1.33**	**297**	*e*PN	**Pb**	**20 14 27.3**	**+0.1**
GADA	**Gvkgeada**	**1.33**	**297**	*e*Pn	**Pb**	**20 14 27.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.35**	**54**	*e*PN	**Pb**	**20 14 27.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.35**	**54**	*e*Pn	**Pb**	**20 14 27.6**	**0.0**
KESN	**Edirne-Kesan**	**1.37**	**335**	*i* P	**Pn**	**20 14 27.8**	**+0.1**
KESN				*i* S	**Sg**	**20 14 45.7**	**-0.5**
KESN	**Edirne-Kesan**	**1.37**	**335**	P	**Pn**	**20 14 27.8**	**+0.1**
KESN				S	**Sg**	**20 14 45.7**	**-0.5**
MANT	**Manisa**	**1.40**	**141**	*i* P	**Pn**	**20 14 27.3**	**-0.7**
MANT				*i* S	**Sb**	**20 14 46.2**	**-0.3**
MANT	**Manisa**	**1.40**	**141**	P	**Pn**	**20 14 27.3**	**-0.7**
MANT				S	**Sb**	**20 14 46.2**	**-0.3**
KULA	**Kula-Manisa**	**1.43**	**138**	*e*PN	**Pn**	**20 14 28.6**	**+0.3**
KULA	**Kula-Manisa**	**1.43**	**138**	*e*Pn	**Pn**	**20 14 28.6**	**+0.3**
ARMT	**Armutlu**	**1.46**	**48**	*e*PN	**Pn**	**20 14 29.1**	**+0.5**
ARMT	**Armutlu**	**1.46**	**48**	*e*Pn	**Pn**	**20 14 29.1**	**+0.5**
IGD	**Bursa**	**1.51**	**63**	*i* P	**Pn**	**20 14 29.0**	**-0.3**
IGD				*i* S	**Sn**	**20 14 48.2**	**-0.8**
ENEZ	**Enez**	**1.51**	**320**	*e*PN	**Pb**	**20 14 30.0**	**-0.3**
ENEZ	**Enez**	**1.51**	**320**	*e*Pn	**Pb**	**20 14 30.0**	**-0.3**
TVSB	**Tavsanli**	**1.57**	**94**	*e*PN	**Pn**	**20 14 30.5**	**+0.3**
TVSB	**Tavsanli**	**1.57**	**94**	*e*Pn	**Pn**	**20 14 30.5**	**+0.3**
CHOS	**Chios island**	**1.62**	**222**	*e*PN	**Pn**	**20 14 31.6**	**+0.9**
CHOS	**Chios island**	**1.62**	**222**	*e*Pn	**Pn**	**20 14 31.7**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**1.68**	**168**	*e*PN	**Pn**	**20 14 31.9**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.68**	**168**	*e*Pn	**Pn**	**20 14 31.9**	**+0.2**
ALN	**Alexandroupoli**	**1.69**	**321**	*e*PN	**Pb**	**20 14 32.8**	**-0.5**
ALN	**Alexandroupoli**	**1.69**	**321**	*e*Pn	**Pb**	**20 14 32.8**	**-0.5**
IZI	**Iznik**	**1.73**	**64**	*e*PN	**Pn**	**20 14 32.9**	**+0.5**
IZI	**Iznik**	**1.73**	**64**	*e*Pn	**Pn**	**20 14 32.9**	**+0.5**
CTKS	**Kestanelik-??a**	**1.83**	**26**	*e*PN	**Pn**	**20 14 34.5**	**+0.8**
CTKS	**Kestanelik-??a**	**1.83**	**26**	*e*Pn	**Pn**	**20 14 34.5**	**+0.8**
BGKT	**Bogazkoy**	**1.89**	**32**	*e*PN	**Pn**	**20 14 35.6**	**+1.1**
BGKT	**Bogazkoy**	**1.89**	**32**	*e*Pn	**Pn**	**20 14 35.6**	**+1.1**
EDRB	**Edirne**	**2.32**	**347**	*e*PN	**Pn**	**20 14 42.0**	**+1.6**
EDRB	**Edirne**	**2.32**	**347**	*e*Pn	**Pn**	**20 14 42.0**	**+1.6**
GULT	**Gulveren**	**2.51**	**69**	*e*PN	**Pn**	**20 14 43.9**	**+0.8**
GULT	**Gulveren**	**2.51**	**69**	*e*Pn	**Pn**	**20 14 43.9

	1.0nm,0.3s,baz=130,slow=24,SNR=8.1							
AAK	**Ala-Archa**	**6.13**	**22**	⇑Sn	**Sn**	**20 32 32.4**	**-0.7**
	5.6nm,0.4s							
KK31	**Karatay Array**	**6.15**	**354**	Pn	**Pn**	**20 31 26.3**	**+1.9**
	1.0nm,0.2s,baz=183,slow=14,SNR=7.3							
KK31				⇓Sn	**Sn**	**20 32 30.3**	**-3.0**
	1.1nm,0.3s,baz=174,slow=21,SNR=4.9							
GEYT	**Alibeck**	**10.60**	**279**	P	**Pn**	**20 32 25.4**	**+0.4**
	0.4nm,0.3s,baz=86,slow=10,SNR=6.0							
GEYT				S	**Sn**	**20 34 19.9**	**-1.8**
	1.2nm,0.3s,baz=53,slow=22,SNR=7.1							
MKAR	**Makanchi Array**	**12.71**	**36**	P	**Pn**	**20 32 54.5**	**+1.4**
	0.1nm,0.3s,baz=219,slow=8.9,SNR=2.1							
PYUN	**Piuthan**	**13.19**	**129**	*eP*	Pn	20 32 58.7	-1.0
	5.2nm,0.2s							
KOLN	**Koldanda**	**13.80**	**128**	*eP*	**Pn**	**20 33 06.9**	**-0.8**
	4.3nm,0.4s							
GKN	**Gorkha**	**14.31**	**125**	*eP*	Pn	20 33 12.1	-2.1
	4.8nm,0.3s							
KURBB	**Kurchatov Arra**	**14.56**	**18**	P	**P**	**20 33 19.5**	**-1.3**
	0.0nm,0.3s,baz=204,slow=11,SNR=4.6							
KKN	**Kakani**	**14.87**	**124**	*eP*	**Pn**	**20 33 20.3**	**-1.2**
PKIN	**Phulchoki**	**15.09**	**124**	*eP*	**Pn**	**20 33 23.2**	**-1.1**
BVAR	**Borovoye Array**	**16.05**	**358**	P	**P**	**20 33 37.4**	**0.0**
	0.1nm,0.3s,baz=132,slow=4.3,SNR=2.5							
RAMN	**Ramite**	**16.31**	**124**	*eP*	**Pn**	**20 33 39.0**	**-0.5**
ZALV	**Zalesovo Beam**	**19.34**	**24**	P	**P**	**20 34 14.1**	**+0.6**
	0.2nm,0.3s,baz=225,slow=10,SNR=5.0							
ARCES	**ARCESS Array B**	**40.82**	**337**	P	**P**	**20 37 29.6**	**+2.2**
	0.9nm,0.8s,baz=160,slow=3.9,SNR=4.7							

*ROM **09** 20:38:03.9±0.3,41°.96N×15°.70E,h4km±3km,Ml2.8/31, Error ellipse: s-maj=4.0km s-min=2.0km az=47.0*
*CSEM **09** 20:38:05.9±0.2,41°.84N×15°.59E,h2km,ML3.6/5, Error ellipse: s-maj=3.8km s-min=2.9km az=14.0*

ISC 09 20:38:05.4±1.0,**41°.89N**±0°.02×**15°.63E**±0°.02,**h8**km±7km, **n79,σ0°99**/108,**Southern Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGRT	**San Giovanni R**	**0.16**	**149**	Pg	**Pg**	**20 38 09.0**	**+0.2**
SGRT				Sg	**Sg**	**20 38 11.3**	**+0.1**
	5μm,0.3s						
SGRT	**San Giovanni R**	**0.16**	**149**	Pg	**Pg**	**20 38 09.0**	**+0.2**
SGRT				Sg	**Sg**	**20 38 11.3**	**+0.1**
	5μm,0.3s						
MSAG	**Monte S. Angel**	**0.28**	**131**	Pg	**Pg**	**20 38 11.2**	**+0.3**
MSAG				Sg	**Sb**	**20 38 15.7**	**-1.8**
	2μm,0.5s						
MSAG	**Monte S. Angel**	**0.28**	**131**	Pg	**Pg**	**20 38 11.2**	**+0.3**
MSAG				Sg	**Sb**	**20 38 15.7**	**-1.8**
	2μm,0.5s						
MS1	**Monte Sant'Ang**	**0.30**	**129**	*i* Pg	**Pg**	**20 38 11.6**	**+0.3**
MS1				Sg	**Sb**	**20 38 17.5**	**-0.7**
CIGN	**Sant'Elia a Pi**	**0.59**	**246**	Pg	**Pg**	**20 38 17.2**	**+0.3**
CIGN				Sg	**Sb**	**20 38 26.9**	**+0.3**
	131nm,0.4s						
CIGN	**Sant'Elia a Pi**	**0.59**	**246**	Pg	**Pg**	**20 38 17.2**	**+0.3**
MOCO	**Biccari - m.te**	**0.63**	**214**	Pg	**Pg**	**20 38 17.4**	**-0.2**
	133nm,0.6s						
GATE	**Gambatesa**	**0.66**	**235**	Pg	**Pb**	**20 38 19.8**	**+0.6**
	177nm,0.4s						
GATE	**Gambatesa**	**0.66**	**235**	Pg	**Pb**	**20 38 19.8**	**+0.6**
	177nm,0.4s						
FRES	**Fresagrandinar**	**0.72**	**277**	Pg	**Pb**	**20 38 19.8**	**-0.5**
	273nm,0.6s						
FRES	**Fresagrandinar**	**0.72**	**277**	Pg	**Pb**	**20 38 19.8**	**-0.5**
	273nm,0.6s						
SGTA	**Sant Agata di**	**0.78**	**195**	Pg	**Pg**	**20 38 20.6**	**+0.1**
	231nm,0.4s						
SGTA	**Sant Agata di**	**0.78**	**195**	Pg	**Pg**	**20 38 20.6**	**+0.1**
	231nm,0.4s						
TRIV	**Trivento**	**0.82**	**261**	Pg	**Pb**	**20 38 21.9**	**0.0**
	122nm,0.3s						
TRIV	**Trivento**	**0.82**	**261**	Pg	**Pb**	**20 38 21.9**	**0.0**
	122nm,0.3s						
BSSO	**Busso**	**0.85**	**246**	Pg	**Pg**	**20 38 21.6**	**-0.2**
BSSO				Sg	**Sn**	**20 38 36.2**	**-0.3**
	110nm,0.4s						
BSSO	**Busso**	**0.85**	**246**	Pg	**Pg**	**20 38 21.6**	**-0.2**
SACR	**S. Croce Del S**	**0.85**	**235**	Pg	**Pg**	**20 38 21.7**	**-0.1**
SACR				Sg	**Sb**	**20 38 35.0**	**+0.9**
	167nm,0.5s						
SACR	**S. Croce Del S**	**0.85**	**235**	Pg	**Pg**	**20 38 21.7**	**-0.1**
PSB1	**Pescosannita**	**0.91**	**223**	Pg	**Pb**	**20 38 23.1**	**-0.3**
PSB1				Sg	**Sn**	**20 38 38.2**	**+0.4**
	313nm,1.1s						
PSB1	**Pescosannita**	**0.91**	**223**	Pg	**Pb**	**20 38 23.1**	**-0.3**
CAFE	**Carife**	**0.91**	**199**	Pg	**Pg**	**20 38 23.0**	**0.0**
CAFE				Sg	**Sn**	**20 38 39.0**	**+1.0**
CAFE	**Carife**	**0.91**	**199**	Pg	**Pg**	**20 38 23.0**	**0.0**
MRVN	**Minervino Murg**	**0.93**	**153**	Pg	**Pg**	**20 38 22.8**	**-0.5**
MRVN				Sg	**Sb**	**20 38 35.9**	**-0.5**
	250nm,0.4s						
MRVN	**Minervino Murg**	**0.93**	**153**	Pg	**Pg**	**20 38 22.8**	**-0.5**
MRVN				Sg	**Sb**	**20 38 35.9**	**-0.5**
	250nm,0.4s						
VULT	**Monte Vulture**	**0.94**	**181**	Pg	**Pb**	**20 38 23.8**	**-0.2**
VULT				Sg	**Sb**	**20 38 37.9**	**+1.3**
	700nm,0.3s						
VULT	**Monte Vulture**	**0.94**	**181**	Pg	**Pb**	**20 38 23.8**	**-0.2**
CDT	**Castel del Mon**	**0.94**	**149**	*e*Pg	**Pb**	**20 38 23.7**	**-0.3**
CDT				Sg	**Sn**	**20 38 38.3**	**-0.4**
PALZ	**Palazzo San Ge**	**0.98**	**165**	Pg	**Pg**	**20 38 23.2**	**-1.0**
PALZ				Sg	**Sb**	**20 38 38.2**	**+0.5**
	403nm,0.6s						
PALZ	**Palazzo San Ge**	**0.98**	**165**	Pg	**Pg**	**20 38 23.2**	**-1.0**
PALZ				Sg	**Sb**	**20 38 38.2**	**+0.5**
	403nm,0.6s						
PTRJ	**Pietraroja**	**0.98**	**238**	Pg	**Pg**	**20 38 23.4**	**-0.9**
PTRJ				Sg	**Sn**	**20 38 40.3**	**+0.6**
	363nm,0.5s						
PTRJ	**Pietraroja**	**0.98**	**238**	Pg	**Pg**	**20 38 23.4**	**-0.9**
SNAL	**S. Angelo Dei**	**1.02**	**198**	Pg	**Pg**	**20 38 23.8**	**-1.2**
SNAL				Sg	**Sn**	**20 38 41.5**	**+0.9**
	628nm,1.2s						
SNAL	**S. Angelo Dei**	**1.02**	**198**	Pg	**Pg**	**20 38 23.8**	**-1.2**
MIDA	**Miranda**	**1.06**	**257**	Pg	**Pg**	**20 38 25.1**	**-0.7**
MIDA				Sg	**Sn**	**20 38 41.6**	**0.0**
	128nm,0.4s						
MIDA	**Miranda**	**1.06**	**257**	Pg	**Pg**	**20 38 25.1**	**-0.7**
MIDA				Sg	**Sn**	**20 38 41.6**	**0.0**
	128nm,0.4s						
RNI2	**Rionero Sannit**	**1.12**	**261**	Pg	**Pg**	**20 38 26.4**	**-0.5**
RNI2	**Rionero Sannit**	**1.12**	**261**	Pg	**Pg**	**20 38 26.4**	**-0.5**
ACER	**Acerenza**	**1.13**	**168**	Pg	**Pb**	**20 38 27.1**	**-0.1**
	399nm,0.6s						
ACER	**Acerenza**	**1.13**	**168**	Pg	**Pb**	**20 38 27.1**	**-0.1**
	399nm,0.6s						
MRLC	**Muro Lucano**	**1.14**	**185**	Pg	**Pg**	**20 38 26.7**	**-0.6**
MRLC				Sg	**Sn**	**20 38 44.3**	**+0.7**
	212nm,0.4s						
MRLC	**Muro Lucano**	**1.14**	**185**	Pg	**Pg**	**20 38 26.7**	**-0.6**
VAGA	**Valle Agricola**	**1.15**	**246**	Pg	**Pg**	**20 38 27.3**	**-0.2**
	173nm,0.4s						
VAGA	**Valle Agricola**	**1.15**	**246**	Pg	**Pg**	**20 38 27.3**	**-0.2**
	173nm,0.4s						
MCRV	**Calabrutti - M**	**1.16**	**198**	Pg	**Pg**	**20 38 27.1**	**-0.6**
	142nm,0.3s						
MCRV	**Calabrutti - M**	**1.16**	**198**	Pg	**Pg**	**20 38 27.1**	**-0.6**
	142nm,0.3s						
BAI	**Bari**	**1.22**	**130**	*e*Pg	**Pn**	**20 38 28.8**	**0.0**
BAI				Sg	**Sn**	**20 38 46.8**	**+1.3**
AMUR	**Altamura**	**1.23**	**143**	Pg	**Pg**	**20 38 28.5**	**-0.4**
	193nm,0.5s						
AMUR	**Altamura**	**1.23**	**143**	Pg	**Pg**	**20 38 28.5**	**-0.4**
	193nm,0.5s						
CERA	**Filignano**	**1.24**	**257**	Pg	**Pn**	**20 38 29.7**	**+0.6**
	173nm,0.5s						
CERA	**Filignano**	**1.24**	**257**	Pg	**Pn**	**20 38 29.7**	**+0.6**
	173nm,0.5s						
INTR	**Introdacqua**	**1.29**	**276**	Pg	**Pg**	**20 38 29.1**	**-1.1**
	246nm,0.7s						
INTR	**Introdacqua**	**1.29**	**276**	Pg	**Pg**	**20 38 29.1**	**-1.1**
	246nm,0.7s						
SG1	**Sgolgore (BA)**	**1.31**	**143**	*e*Pg	**Pg**	**20 38 30.1**	**-0.5**
SG1				Sg	**Sn**	**20 38 49.0**	**+1.2**
CDRU	**Civita di Ruta**	**1.42**	**190**	Pg	**Pn**	**20 38 31.1**	**-0.6**
	42nm,0.5s						
CDRU	**Civita di Ruta**	**1.42**	**190**	Pg	**Pn**	**20 38 31.1**	**-0.6**
	42nm,0.5s						
POFI	**Posta Fibreno**	**1.45**	**264**	Pg	**Pn**	**20 38 31.4**	**-0.5**
	48nm,0.5s						
POFI	**Posta Fibreno**	**1.45**	**264**	Pg	**Pn**	**20 38 31.4**	**-0.5**
	48nm,0.5s						

VVLD	**Villa Vallelon**	**1.50**	**270**	Pg	**Pn**	**20 38 32.5**	**-0.2**
	114nm,0.6s							
VVLD	**Villa Vallelon**	**1.50**	**270**	Pg	**Pn**	**20 38 32.5**	**-0.2**
	114nm,0.6s							
NOCI	**Noci**	**1.54**	**135**	Pg	**Pn**	**20 38 33.1**	**-0.1**
	209nm,0.3s							
NOCI	**Noci**	**1.54**	**135**	Pg	**Pn**	**20 38 33.1**	**-0.1**
	209nm,0.3s							
FAGN	**Fagnano**	**1.57**	**284**	Pg	**Pg**	**20 38 35.2**	**-0.3**
	195nm,0.4s							
FAGN	**Fagnano**	**1.57**	**284**	Pg	**Pg**	**20 38 35.2**	**-0.3**
	195nm,0.4s							
SIRI	**Monte Sirino -**	**1.72**	**174**	Pg	**Pn**	**20 38 35.3**	**-0.4**
	45nm,0.3s							
SCHR	**S. Chirico Rap**	**1.73**	**169**	Pg	**Pn**	**20 38 35.6**	**-0.2**
	43nm,0.8s							
UDBI	**Udbina**	**2.63**	**2**	*e*Pn	**Pb**	**20 38 51.6**	**-1.3**
UDBI				Sn	**Sb**	**20 39 24.9**	**-0.6**
UDBI	**Udbina**	**2.63**	**2**	*e*Pn	**Pb**	**20 38 51.6**	**-1.3**
UDBI				Sn	**Sb**	**20 39 24.8**	**-0.6**
NVLJ	**Novalja**	**2.73**	**348**	*e*Pn	**Pn**	**20 38 50.6**	**+1.2**
NVLJ				Sn	**Sb**	**20 39 25.7**	**-2.3**
NVLJ	**Novalja**	**2.73**	**348**	*e*Pn	**Pn**	**20 38 50.6**	**+1.2**
NVLJ				Sn	**Sb**	**20 39 25.6**	**-2.3**
BBLS	**Lazići**	**3.40**	**53**	*e*Pn	**Pb**	**20 39 03.3**	**-2.7**
OZLJ	**Ozalj**	**3.72**	**358**	*e*Pn	**Pn**	**20 39 05.6**	**+2.4**
OZLJ				Sn	**Sn**	**20 39 49.5**	**+2.3**
OZLJ	**Ozalj**	**3.72**	**358**	*e*Pn	**Pn**	**20 39 05.5**	**+2.4**
OZLJ				Sn	**Sn**	**20 39 49.4**	**+2.3**
IVAS	**Ivanjica**	**3.73**	**62**	*e*Pn	**Pn**	**20 39 06.2**	**+2.9**
TEKS	**Tekeris**	**3.89**	**46**	*e*Pn	**Pn**	**20 39 06.0**	**+0.5**
GRUS	**Gruza**	**4.23**	**60**	*e*Pn	**Pn**	**20 39 13.2**	**+3.0**
SELS	**Selova**	**4.26**	**70**	*e*Pn	**Pn**	**20 39 12.6**	**+2.0**
ZAPS	**Zavoj**	**5.35**	**73**	*e*Pn	**Pn**	**20 39 25.2**	**-0.4**

IDC 09 20:40:38.3±2.3,**29°.90S**×**176°.00W**,**h0**km,**mb3.5**/2, **mb1 3.8**/2,**mb1mx3.5**/32,**mbtmp3.5**/2,**Error ellipse: s-maj=79.4km s-min=37.1km az=12.0,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.79**	**291**	Pn	Pb	20 41 11.5	-0.5
	111nm,0.3s,baz=94,slow=12,SNR=6.4						
RAO				Sn	Sn	20 41 33.1	-0.8
	360nm,0.3s,baz=352,slow=22,SNR=9.1						
ASAR	**Alice Springs**	**44.87**	**266**	P	P	20 48 54.4	-0.4
	0.4nm,0.9s,baz=105,slow=6.8,SNR=5.4						
WRA	**Warramunga Arr**	**45.81**	**271**	P	P	20 49 02.2	-0.1
	0.5nm,0.4s,baz=110,slow=8.1,SNR=12						
FINES	**FINESS Array B**	**145.25**	**342**	PKPbc	PKPbc	21 00 15.9	-1.0
	0.4nm,0.7s,baz=99,slow=5.0,SNR=6.5						

*IDC **09** 20:42:27.2±1.7,33°.32S×178°.33W,h0km,mb4.2/2, mb1 4.4/3,mb1mx3.8/37,mbtmp4.1/3,ML3.8/1,Error ellipse: s-maj=62.3km s-min=35.2km az=146.0*
*NEIC **09** 20:42:29.1±0.6,33°.43S×178°.45W,h10km,mb4.5/6,Error ellipse: s-maj=16.4km s-min=8.9km az=115.0*
*ISCJB **09** 20:42:31.0±0.7,33°.63S±0°.07×178°.4W±0°.1,h41km, mb4.8/11,Error ellipse: s-maj=16.1km s-min=7.9km az=24.6*

ISC 09 20:42:33.6±0.7,**33°.52S**±0°.09×**178°.6W**±0°.1,**h41**km,**n30,** σ1**°79**/33,**mb4.5**/11,**South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**5.88**	**215**	Pn	**Pn**	**20 43 59.5**	**+1.3**
	2.3nm,0.3s,baz=272,slow=4.4,SNR=10						
URZ				Sn	**Sn**	**20 45 06.3**	**+2.0**
	4.6nm,0.3s,baz=217,slow=22,SNR=8.0						
URZ	**Urewera**	**5.88**	**215**	*e*Pn	**Pn**	**20 43 58.4**	**+0.2**
URZ				*e*Sn	**Sn**	**20 45 03.3**	**-1.1**
OUZ	**Omahuta**	**6.69**	**253**	*e*Pn	**Pn**	**20 44 09.8**	**+0.5**
BKZ	**Black Stump Fm**	**6.90**	**214**	*e*Pn	**Pn**	**20 44 11.9**	**-0.3**
BKZ				*e*Sn	**Sn**	**20 45 23.4**	**-6.1**
BFZ	**Birch Farm**	**8.26**	**209**	*e*Pn	**Pn**	**20 44 28.9**	**-1.9**
BFZ				*e*Sn	Sn	20 45 47.3	-15
THZ	**Tophouse**	**10.64**	**217**	*e*Pn	**Pn**	**20 45 06.0**	**+2.5**
THZ				*e*Sn	Sn	20 46 47.0	-14
KHZ	**Kahutara**	**10.84**	**213**	*e*Pn	**Pn**	**20 45 05.3**	**-0.8**
LTZ	**Lake Taylor**	**11.71**	**215**	*e*Pn	**Pn**	**20 45 16.6**	**-1.6**
RPZ	**Rata Peaks**	**13.00**	**215**	*e*Pn	**Pn**	**20 45 34.5**	**-1.3**
WKZ	**Wanaka**	**14.81**	**217**	*e*Pn	**Pn**	**20 46 01.9**	**+1.6**
STKA	**Stephens Creek**	**33.41**	**262**	*eP*	**P**	**20 49 07.2**	**-1.2**
	8.0nm,1.7s						
TARA	**Tarawa**	**35.60**	**345**	*eP*	**P**	**20 49 27.7**	**+0.3**
	371nm,1.6s						
AS01	**Alice Springs**	**42.51**	**271**	*eP*	**P**	**20 50 27.2**	**+2.0**
ASAR	**Alice Springs**	**42.55**	**271**	P	**P**	**20 50 26.1**	**+0.6**
	2.4nm,0.7s,baz=111,slow=7.3,SNR=26						
PTCN	**Pitcairn Islan**	**42.80**	**92**	*eP*	**P**	**20 50 25.9**	**-1.6**
	2μm,1.9s						
WB2	**Warramunga Arr**	**43.81**	**276**	*eP*	**P**	**20 50 36.2**	**+0.4**
WR1	**Warramunga Arr**	**43.81**	**276**	*eP*	**P**	**20 50 36.6**	**+0.8**
	19nm,1.5s						
WRA	**Warramunga Arr**	**43.82**	**276**	P	**P**	**20 50 36.6**	**+0.8**
	3.1nm,0.8s,baz=117,slow=7.8,SNR=18						
VNDA	**Vanda**	**44.95**	**186**	*eP*	**P**	**20 50 47.2**	**+3.1**
	4.9nm,1.5s						
JOHN	**Johnston Islan**	**50.71**	**11**	*eP*	**P**	**20 51 28.2**	**-1.1**
	208nm,1.0s						
MAW	**Mawson**	**69.23**	**201**	*eP*	**P**	**20 53 37.4**	**+1.7**
	2.2nm,1.5s						
KKM	**Kota Kinabalu**	**73.08**	**289**	*eP*	**P**	**20 53 59.9**	**-0.2**
	16nm,1.0s						
SBUM	**Sibu**	**74.15**	**284**	*eP*	**P**	**20 54 05.9**	**-0.3**
	11nm,1.8s						
KURK	**Kurchatov**	**122.81**	**312**	*e*PKPdf	**PKPdf**	**21 01 25.6**	**+1.0**
KURBB	**Kurchatov Arra**	**122.84**	**312**	PKP	**PKPdf**	**21 01 25.6**	**+0.9**
	0.1nm,0.3s,baz=116,slow=2.2,SNR=5.3						
FIA0	**FINESS Array S**	**147.87**	**338**	*e*PKPbc	**PKPbc**	**21 02 14.0**	**+0.6**
FINES	**FINESS Array B**	**147.87**	**338**	PKPbc	**PKPbc**	**21 02 14.0**	**+0.6**
	3.5nm,1.0s,baz=29,slow=4.1,SNR=11						
NOA	**NORSAR Array B**	**151.74**	**350**	PKPbc	**PKPbc**	**21 02 20.1**	**-2.9**
	0.5nm,0.7s,baz=15,slow=1.7,SNR=3.3						
BR101	**Keskin Array S**	**153.50**	**293**	*e*PKPbc	**PKPbc**	**21 02 27.2**	**-0.6**
BRTR	**Keskin Array B**	**153.50**	**293**	PKPbc	**PKPbc**	**21 02 27.2**	**-0.6**
	0.4nm,0.8s,baz=87,slow=3.0,SNR=3.2						

IDC 09 20:48:19.1±2.9,**32°.44S**×**178°.19W**,**h0**km,**mb3.8**/2, **mb1 4.1**/3,**mb1mx3.7**/34,**mbtmp3.9**/3,**ML3.6**/1,**Error ellipse: s-maj=71.0km s-min=44.5km az=125.0,South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.18**	**4**	Sn	Sb	20 49 54.7	-1.2
	105nm,0.3s,baz=106,slow=21,SNR=3.8						
URZ	**Urewera**	**6.96**	**212**	Pn	Pn	20 50 01.1	-1.2
	1.0nm,0.3s,baz=216,slow=3.6,SNR=7.8						
URZ				Sn	Sn	20 51 18.2	-3.9
	2.0nm,0.3s,baz=244,slow=18,SNR=6.9						
ASAR	**Alice Springs**	**42.88**	**269**	P	P	20 56 19.6	+0.1
	0.6nm,0.6s,baz=101,slow=7.2,SNR=6.5						
WRA	**Warramunga Arr**	**44.05**	**274**	P	P	20 56 28.8	-0.1
	1.0nm,0.4s,baz=114,slow=7.8,SNR=18						
FINES	**FINESS Array B**	**146.99**	**339**	PKPbc	PKPbc	21 08 02.1	-0.8
	1.0nm,0.6s,baz=60,slow=3.0,SNR=9.6						

*ISCJB **09** 20:57:02.9±0.3,5°.51S±0°.05×151°.85E±0°.06,h45km, mb4.8/48,MS4.0/1,Error ellipse: s-maj=9.7km s-min=5.6km az=31.6*
*NEIC **09** 20:57:07.2±0.8,5°.55S×151°.88E,h71km±7km,mb4.8/30, Error ellipse: s-maj=8.2km s-min=5.5km az=116.0*
*IDC **09** 20:57:08.2±3.5,5°.54S×151.74E,h75km±31km,mb4.1/19, mb1 4.3/21,mb1mx4.0/48,mbtmp4.5/21,MS3.9/2, Ms1 3.8/2,ms1mx3.2/42,Error ellipse: s-maj=27.0km s-min=15.9km az=110.0*

ISC 09 20:57:04.3±0.5,**5°.59S**±0°.06×**151°.87E**±0°.08,**h45**km,**n82,** σ1**°35**/83,**mb4.7**/48,**New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**1.42**	**12**	*e*Pn	**Pn**	**20 57 28.8**	**+1.1**
RABL				*e*Sn	**Sn**	**20 57 49.0**	**+3.8**
MANU	**Manus Island**	**5.71**	**308**	*e*Pn	Pn	20 58 32.1	+5.5
PMG	**Port Moresby**	**6.02**	**231**	P	**Pn**	**20 58 33.7**	**+2.9**
	12nm,0.3s,baz=47,slow=8.9,SNR=32						
PMG				S	**Sn**	**20 59 40.4**	**+1.9**
	19nm,0.3s,baz=291,slow=16,SNR=6.0						
PMG	**Port Moresby**	**6.02**	**231**	*e*Pn	**Pn**	**20 58 33.2**	**+2.4**
PMG				*e*Sn	**Sn**	**20 59 35.5**	**-3.0**
HNR	**Honiara**	**8.87**	**116**	LR	LR	21 02 09.6	
	comp=Z,648nm,18.7s,baz=242,slow=34						
CTA	**Charters Tower**	**15.41**	**200**	P	**P**	**21 00 42.9**	**+0.1**
	0.1nm,0.3s,baz=26,slow=14,SNR=6.3						
EIDS	**Eidsvold**	**19.68**	**182**	*eP*	**P**	**21 01 31.0**	**+1.2**
	14nm,0.8s						
GUMO	**Guam**	**20.28**	**340**	P	**P**	**21 01 37.5**	**+1.2**
	54nm,1.0s,baz=179,slow=9.5,SNR=5.0						
DZM	**Mont Dzumac**	**21.62**	**141**	*eP*	**P**	**21 01 51.8**	**+0.9**
	59nm,1.9s						
MTN	**Manton Dam**	**21.69**	**249**	*eP*	**P**	**21 01 53.5**	**+1.9**
	107nm,1.8s						
WRAB	**Tennant Creek**	**22.22**	**228**	*eP*	**P**	**21 01 58.9**	**+1.6**
	20nm,0.7s						
WB2	**Warramunga Arr**	**22.22**	**228**	*eP*	**P**	**21 01 58.7**	**+1.4**
	19nm,0.8s						
WR1	**Warramunga Arr**	**22.23**	**228**	*eP*	**P**	**21 01 58.0**	**+0.5**
	26nm,0.8s						
WRA	**Warramunga Arr**	**22.23**	**228**	P	**P**	**21 01 58.0**	**+0.5**
	7.4nm,0.8s,baz=53,slow=10,SNR=31						
ANA2	**Anatahan**	**22.62**	**344**	*eP*	**P**	**21 02 00.9**	**-0.7**
AS01	**Alice Springs**	**24.91**	**222**	*eP*	**P**	**21 02 24.6**	**+1.2**
AS31	**Alice Springs**	**24.95**	**222**	*eP*	**P**	**21 02 24.7**	**+1.0**
	4.8nm,0.8s						
ASAR	**Alice Springs**	**24.95**	**222**	P	**P**	**21 02 24.3**	**+0.6**
	11nm,0.6s,baz=60,slow=8.6,SNR=130						
STKA	**Stephens Creek**	**27.87**	**199**	P	**P**	**21 02 51.0**	**+1.1**
	2.5nm,0.7s,baz=24,slow=13,SNR=7.3						
FITZ	**Fitzroy Crossi**	**28.47**	**242**	P	**P**	**21 02 55.5**	**0.0**
	18nm,0.6s,baz=54,slow=9.6,SNR=29						
FITZ	**Fitzroy Crossi**	**28.47**	**242**	*eP*	**P**	**21 02 55.4**	**0.0**
	19nm,0.8s						
MBWA	**Marble Bar**	**34.78**	**241**	*eP*	**P**	**21 03 51.1**	**+0.2**
	44nm,1.5s						
JAGI	**Jajag, Banyuwa**	**37.53**	**263**	*eP*	**P**	**21 04 12.1**	**-2.4**
	39nm,1.2s						
YULB	**Yu-li**	**41.48**	**315**	*eP*	**P**	**21 04 48.2**	**+0.9**
	123nm,2.0s						
SSLB	**Suanglung**	**41.98**	**315**	*eP*	**P**	**21 04 52.5**	**+1.2**
	66nm,1.9s						
KSM	**Kuching**	**42.09**	**278**	*eP*	**P**	**21 04 51.7**	**-0.8**
	35nm,2.0s						
YHNB	**Yeheng**	**42.26**	**317**	*eP*	**P**	**21 04 54.2**	**+0.6**
	109nm,1.8s						
CISI	**Cisompet, Garu**	**43.79**	**265**	*eP*	**P**	**21 05 05.0**	**-1.2**
	25nm,0.7s						
ENH	**Enshi**	**54.02**	**314**	*eP*	**P**	**21 06 24.0**	**-0.3**
	10.0nm,1.1s						
GSI	**Gunungsitoli**	**54.65**	**276**	*eP*	**P**	**21 06 27.9**	**-1.3**
	62nm,1.9s						
KEKH	**Kekaha**	**54.75**	**58**	*eP*	**P**	**21 06 27.1**	**-2.6**
	425nm,1.5s						
OPA	**Opana**	**56.08**	**59**	*eP*	**P**	**21 06 38.8**	**-0.6**
	183nm,1.3s						
CM01	**Chiang Mai Arr**	**57.35**	**296**	*eP*	**P**	**21 06 48.6**	**+0.1**
CMAR	**Chiang Mai Arr**	**57.38**	**296**	P	**P**	**21 06 49.3**	**+0.7**
	1.6nm,0.7s,baz=119,slow=5.7,SNR=12						
HPAH	**Hawaii Prepara**	**57.48**	**62**	*eP*	**P**	**21 06 50.0**	**+0.6**
	299nm,1.6s						
CHTO	**Chiang Mai**	**57.49**	**296**	*eP*	**P**	**21 06 49.5**	**0.0**
	18nm,1.9s						
PETK	**Petropavlovsk-**	**58.68**	**4**	P	**P**	**21 06 57.7**	**+0.6**
	1.0nm,0.5s,baz=178,slow=7.3,SNR=5.6						
PEA1	**Petropavlovsk-**	**58.69**	**4**	*eP*	**P**	**21 06 57.7**	**+0.6**
MA2	**Magadan**	**64.96**	**359**	P	**P**	**21 07 40.4**	**+1.2**
	1.7nm,0.5s,baz=148,slow=2.9,SNR=4.6						
SONA0	**Songino Array**	**66.50**	**328**	*eP*	**P**	**21 07 49.9**	**+0.4**
	9.4nm,1.4s						
SONM	**Songino Array**	**66.50**	**328**	P	**P**	**21 07 49.9**	**+0.4**

OUZ	Omahuta	10.08 231	*e*Pn	Pn	20 59 37.1	+2.4
URZ	Urewera	10.31 208	Pn	Pn	20 59 33.2	-4.7
	0.4nm,0.3s,baz=75,slow=15,SNR=2.0					
URZ			Sn	Sn	21 01 28.5	-3.7
	2.8nm,0.3s,baz=42,slow=23,SNR=7.4					
BKZ	Black Stump Fm	11.34 208	*e*Pn	Pn	20 59 54.1	+2.1
HIZ	Hauiti	11.55 215	*e*Pn	Pn	20 59 54.5	-0.3
MSVF	Nonsavu	12.40 336	*e*Pn	Pn	21 00 06.5	-0.1
BFZ	Birch Farm	12.75 205	*e*Pn	Pn	21 00 09.4	-1.8
SNZO	South Karori	13.88 208	*e*Pn	Pn	21 00 25.8	-0.8
THZ	Tophouse	15.02 211	*e*Pn	Pn	21 00 43.8	+1.6
	201nm,1.7s					
KHZ	Kahutara	15.28 208	*e*Pn	Pn	21 00 42.4	-3.1
	172nm,1.6s					
LTZ	Lake Taylor	16.12 210	*e*Pn	P	21 00 58.0	-1.3
	197nm,1.9s					
CRLZ	Canterbury Las	16.62 208	*e*Pn	P	21 01 03.7	-1.0
	458nm,1.7s					
OXZ	Oxford	16.66 210	*e*Pn	Pn	21 00 59.6	-3.6
	118nm,1.5s					
DZM	Mont Dzumac	16.71 291	Pn	P	21 01 06.9	+0.8
	0.3nm,0.3s,baz=290,slow=23,SNR=4.3					
DZM			LR	LR	21 06 06.5	
	comp=Z,977nm,18.7s,baz=135,slow=33					
DZM	Mont Dzumac	16.71 291	*e*P	P	21 01 06.8	+0.8
	37nm,1.1s					
DZM			*e*LR	LR	21 04 59.5	
	1µm,26.6s					
DZM	Mont Dzumac	16.71 291	*e*Pn	P	21 01 06.0	0.0
	14nm,0.7s					
MQZ	McQueen's Vall	16.71 208	*e*Pn	Pn	21 00 59.7	-4.1
	476nm,1.8s					
RAR	Rarotonga	17.34 66	P	Pn	21 01 08.8	-3.0
	1.6nm,0.3s,baz=227,slow=6.6,SNR=5.7					
RAR	Rarotonga	17.34 66	*e*Pn	Pn	21 01 08.5	-3.3
	33nm,0.8s					
RPZ	Rata Peaks	17.40 211	P	Pn	21 01 10.0	-2.4
	1.8nm,0.3s,baz=21,slow=2.7,SNR=5.6					
LBZ	Lake Benmore	18.32 211	*e*P	P	21 01 22.7	-0.8
	458nm,2.0s					
ODZ	Otahua Downs	18.64 209	*e*P	P	21 01 26.4	-0.6
	181nm,1.7s					
WKZ	Wanaka	19.19 212	*e*P	P	21 01 30.7	-2.4
	585nm,2.0s					
MLZ	Mavora Lakes	20.02 212	*e*P	P	21 01 39.2	-2.9
	322nm,1.9s					
LHI	Lord Howe Isla	20.95 258	*e*P	P	21 01 51.3	-1.0
	140nm,1.1s					
TBI	Tubuai	25.16 83	*e*LR	LR	21 08 50.6	
	583nm,27.2s					
ARMA	Armidale	27.38 260	*e*P	P	21 02 54.3	-0.3
	67nm,1.9s					
PPT2	Papeete2	27.47 71	*e*LR	LR	21 09 47.5	
	544nm,25.5s					
PPT	Papeete	27.48 71	LR	LR	21 13 10.9	
	comp=Z,83nm,18.9s,baz=278,slow=35					
EIDS	Eidsvold	28.76 270	*e*P	P	21 03 08.3	+1.4
	7.4nm,1.0s					
CAN	Canberra	29.45 249	*e*P	P	21 03 13.8	+0.8
	35nm,1.3s					
MCQ	Macquarie Isla	30.73 208	*e*P	P	21 03 24.6	+0.7
	374nm,1.6s					
TAU	Tasmania Unive	31.80 235	*e*P	P	21 03 33.2	-0.3
	445nm,1.8s					
TARA	Tarawa	31.99 340	*e*P	P	21 03 35.4	0.0
	327nm,1.5s					
CTA	Charters Tower	34.68 277	P	P	21 03 59.9	+1.0
	8.4nm,0.7s,baz=109,slow=12,SNR=8.9					
STKA	Stephens Creek	35.77 255	P	P	21 04 08.6	+0.3
	6.0nm,0.8s,baz=86,slow=8.2,SNR=6.0					
STKA			LR	LR	21 17 19.1	
	comp=Z,324nm,18.1s,baz=160,slow=34					
STKA	Stephens Creek	35.77 255	*e*P	P	21 04 08.2	-0.1
	12nm,1.9s					
PMG	Port Moresby	39.10 293	LR	LR	21 18 55.8	
	comp=Z,177nm,19.9s,baz=226,slow=34					
BBOO	Buckleboo	40.30 253	*e*P	P	21 04 46.3	-0.2
	84nm,1.8s					
AS01	Alice Springs	44.20 265	*e*P	P	21 05 16.9	-1.4
AS31	Alice Springs	44.24 265	*e*P	P	21 05 18.2	-0.4
	1.8nm,0.8s					
ASAR	Alice Springs	44.24 265	P	P	21 05 17.5	-1.1
	4.5nm,0.6s,baz=98,slow=6.4,SNR=19					
ASAR			LR	LR	21 22 56.7	
	comp=Z,524nm,18.1s,baz=142,slow=35					
WB2	Warramunga Arr	45.11 270	*e*P	P	21 05 24.4	-1.3
WRAB	Tennant Creek	45.12 270	*e*P	P	21 05 23.6	-2.0
	19nm,0.8s					
WR1	Warramunga Arr	45.12 270	*e*P	P	21 05 24.3	-1.4
	9.9nm,0.7s					
WRA	Warramunga Arr	45.12 270	P	P	21 05 24.3	-1.4
	7.4nm,0.7s,baz=108,slow=7.9,SNR=12					
JOHN	Johnston Islan	46.25 10	*e*P	P	21 05 36.1	+1.7
	158nm,1.0s					
SBA	Scott Base	49.26 185	*e*P	P	21 06 02.3	+5.2
	8.9nm,1.0s					
VNDA	Vanda	49.34 186	*e*P	P	21 06 01.9	+4.1
	1.0nm,0.6s,baz=18,slow=6.8,SNR=7.8					
VNDA	Vanda	49.34 186	*e*P	P	21 06 01.3	+3.6
FITZ	Fitzroy Crossi	53.43 268	P	P	21 06 28.6	-0.5
	6.1nm,0.9s,baz=141,slow=8.7,SNR=2.7					
FITZ	Fitzroy Crossi	53.43 268	*e*P	P	21 06 28.2	-1.0
	63nm,1.9s					
FAKI	Fak Fak	54.95 289	*e*P	P	21 06 34.9	-5.4
	49nm,0.6s					
GUMO	Guam	56.43 314	LR	LR	21 29 44.1	
	comp=Z,94nm,20.1s,baz=176,slow=35					
CASY	Casey	56.64 208	*e*P	P	21 06 52.6	+1.0
	13nm,0.8s					
QSPA	South Pole Qui	60.85 180	*e*P	P	21 07 24.2	+3.1
CISI	Cisompet, Garu	73.62 270	*e*P	P	21 08 41.6	-1.2
	60nm,1.3s					
MAW	Mawson	73.75 200	P	P	21 08 45.1	+2.7
	3.8nm,1.0s,baz=98,slow=7.0,SNR=5.9					
MAW	Mawson	73.75 200	*e*P	P	21 08 44.6	+2.1
	4.1nm,1.5s					
KSM	Kuching	75.85 280	*e*P	P	21 08 54.8	-0.8
	6.1nm,0.9s					
INU	Inuyama	77.62 323	*e*P	P	21 09 04.8	-0.2
	18nm,1.6s					
MJAR	Matsushiro Arr	77.91 324	P	P	21 09 05.7	-0.9
	2.2nm,0.8s,baz=161,slow=6.3,SNR=9.6					
MAJO	Matsushiro	77.92 324	*e*P	P	21 09 04.5	-2.2
	5.2nm,1.0s					
MJB9	Matsu-Tunnel	77.92 324	*e*P	P	21 09 04.1	-2.6
	1.4nm,1.1s					
SYO	Syowa Base	78.46 193⇑	*e*P	P	21 09 09.9	+0.6
NACB	Ninganchiao	79.55 305	*e*P	P	21 09 12.8	-3.1
	171nm,2.0s					
ASAJ	Asahikawa	81.92 332	*e*P	P	21 09 28.4	+0.3
	6.5nm,0.9s					
KS15	Wonju Array Si	84.18 319	*e*P	P	21 09 39.8	-0.2
PEA0	Petropavlovsk-	84.98 345	*e*P	P	21 09 43.4	-0.3
PETK	Petropavlovsk-	84.98 345	P	P	21 09 43.2	-0.4
	3.1nm,0.6s,baz=106,slow=8.0,SNR=7.4					
PEA1	Petropavlovsk-	84.98 345	*e*P	P	21 09 43.2	-0.4
USRK	Ussuriysk Ar.	86.80 326	P	P	21 09 53.3	+0.4
	3.3nm,0.8s,baz=177,slow=3.4,SNR=9.0					
KLR	Kul'dur	90.59 329	P	P	21 10 11.7	+1.0
	1.5nm,0.8s,baz=166,slow=2.8,SNR=3.9					
LTX	Lajitas	90.88 57	*e*P	P	21 10 14.2	+1.6
TXAR	Lajitas Array	90.88 57	P	P	21 10 14.2	+1.6
	0.6nm,1.0s,baz=188,slow=8.6,SNR=5.0					
ENH	Enshi	91.83 304	*e*P	P	21 10 17.1	+0.1
	7.4nm,1.0s					
SEY	Seymchan	95.11 346	P	P	21 10 31.1	-0.1
	1.1nm,0.6s,baz=122,slow=8.8,SNR=6.0					
MK01	Makanchi Array	117.83 310	*e*PKPdf	PKPdf	21 15 54.3	-0.6
MK32	Makanchi Array	117.84 310	*e*PKPdf	PKPdf	21 15 54.8	-0.1
MKAR	Makanchi Array	117.84 310	PKP	PKPdf	21 15 54.8	-0.1
	0.4nm,0.3s,baz=188,slow=0.9,SNR=5.3					
KKAR	Karatay Array	125.31 304	*e*PKPdf	PKPdf	21 16 08.8	-0.6
VOSK	Vostochnaya	125.94 316	*e*PKPdf	PKPdf	21 16 09.5	-0.7
BRVK	Borovoye	126.38 316	*e*PKPdf	PKPdf	21 16 11.7	+0.7
ZRNK	Zerenda	127.15 316	*e*PKPdf	PKPdf	21 16 12.3	-0.2
ARA0	ARCESS Array S	137.69 349	*e*PKPpre	PKPpre	21 16 27.1	
ARCES	ARCESS Array B	137.69 349	PKhKP	PKPpre	21 16 27.1	
	1.5nm,0.9s,baz=305,slow=3.2,SNR=3.2					
FIA0	FINESS Array S	144.42 341	*e*PKPdf	PKPbc	21 16 42.6	-0.1
FINES	FINESS Array B	144.42 341	PKP	PKPbc	21 16 42.6	-0.1
	5.3nm,0.6s,baz=53,slow=3.1,SNR=37					
KBZ	Khabaz	145.32 306	PKPbc	PKPab	21 16 46.6	+0.3
	3.4nm,0.7s,baz=131,slow=2.3,SNR=9.7					
NC303	NORSAR Array S	147.57 353	*e*PKPbc	PKPbc	21 16 52.2	-0.1
NB2	NORSAR Subarra	147.76 353	PKP	PKPbc	21 16 52.7	-0.2
	comp=Z,20nm,1.4s,baz=9.4,slow=2.9					
NB200	NORSAR Array S	147.76 353	*e*PKPbc	PKPbc	21 16 53.0	+0.1
NOA	NORSAR Array B	147.76 353	PKPbc	PKPbc	21 16 53.0	+0.1
	comp=Z,3.7nm,0.6s,baz=14,slow=4.4,SNR=15					
NBO02	NORSAR Array S	147.79 353	*e*PKPbc	PKPbc	21 16 52.5	-0.4
NACGM	Naroch	149.26 333	*e*	PKPbc	21 16 57.0	+0.2
AKASG	Malin Array Be	151.00 325	PKPbc	PKPbc	21 17 01.6	+0.4
	comp=Z,8.2nm,0.6s,baz=48,slow=2.7,SNR=25					
AKBB	Malin Array Si	151.00 325	*e*PKPbc	PKPbc	21 17 01.6	+0.4
AK11	Malin Array Si	151.04 325	*e*PKPbc	PKPbc	21 17 01.0	-0.2
BR101	Keskin Array S	152.95 301	*e*PKPbc	PKPbc	21 17 06.5	+0.3
BR131	Keskin Array S	152.95 301	*e*PKPdf	PKPdf	21 16 56.8	-2.1
BR131			*e*PKPbc	PKPbc	21 17 05.8	-0.4
BRTR	Keskin Array B	152.95 301	PKPbc	PKPbc	21 17 06.5	+0.3
	comp=Z,0.8nm,0.6s,baz=103,slow=2.2,SNR=6.9					
BR231	Keskin MP Arra	153.57 301	*e*PKPbc	PKPbc	21 17 06.7	-0.8
VTS	Vitosha	159.10 315	*e*PKPdf	PKPdf	21 17 06.7	-0.2
VTS			*e*PKPab	PKPab	21 17 43.6	-0.2
TORD	Torodi Ar. Bea	163.91 175	PKPab	PKPab	21 18 07.2	+2.1
	comp=Z,0.6nm,0.6s,baz=186,slow=4.5,SNR=2.5					
TOA1	Torodi Ar. Sit	163.92 175	*e*PKPab	PKPab	21 18 07.2	+2.1

IDC ***09*** *20:57:55.9±1.4, 34.80N×137.95E, h0km, mb3.6/5, mb1 3.6/6, mb1mx3.4/60, mbtmp3.7/6, ML3.4/1, MS3.2/1, Ms1 3.2/1, ms1mx2.9/53, Error ellipse: s-maj=34.5km s-min=23.8km az=68.0*

ISCJB ***09*** *20:57:59.6±0.5, 34.88N±0.04×138.21E±0.06, h39km±5km, mb3.5/5, Error ellipse: s-maj=8.9km s-min=6.5km az=21.2*

JMA ***09*** *20:58:00.6±0.1, 34.91N×138.24E, h28km±1km, M3.8 Broadband fault plane solution: P waves. NP1: ϕs306.00000°, δs58.00000°, λ138.00000°. NP2: ϕs61.00000°, δs55.00000°, λ40.00000°. Principal axes: T Plg51.0000°, Azm272.0000°; N Plg39.0000°, Azm96.0000°; P Plg2.0000°, Azm4.0000°;*

JMA Felt II J1.

ISC 09 20:58:00.0±0.9, 34.90N±0.04×138.26E±0.05, h32km±6km, n17, σ0.65/23, mb3.6/5, 5D, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHZ3	Shizuoka 3	0.17	346	⇓P	Pb	20 58 06.1	-0.2
SHZ3				S	Sb	20 58 10.5	-0.1
JSG	Sagara	0.23	196	P	Pb	20 58 06.8	0.0
JSG				*e*S	Sn	20 58 11.6	-0.2
JKKG	Kakegawa	0.26	245	P	Pb	20 58 06.8	-0.3
JKKG				S	Sb	20 58 11.6	-0.2
JNY	Yasuok	0.56	325	⇓P	Pb	20 58 11.4	-0.2
JNY				S	Sb	20 58 19.2	-0.4
TK04	Tokai 4	0.60	212	⇓P	Pn	20 58 12.4	+0.2
TK04				X		20 58 22.3	
JYN	Shimob	0.64	21	⇓P	Pb	20 58 12.6	-0.3
JYN				S	Sn	20 58 22.3	+0.1
JOD2	Odawara 2	0.77	61	⇓P	Pn	20 58 14.3	-0.4
JOD2				S	Sb	20 58 25.2	0.0
MJAR	Matsushiro Arr	1.64	359	Pn	Pn	20 58 28.1	+1.4
	138nm,0.3s,baz=197,slow=16,SNR=691						
MJAR				Sn	Sb	20 58 50.7	+0.7
	106nm,0.3s,baz=196,slow=26,SNR=15						
MAT	Matsushiro	1.64	358	P	Pb	20 58 28.5	-1.2
MAT				S	Sb	20 58 51.0	+1.0
JHJ	Hachijo jima 2	2.18	144	Pn	Pn	20 58 35.0	+1.0
	21nm,0.3s,baz=331,slow=20,SNR=40						
JNU	Nakatsue	6.38	256	Pn	Pn	20 59 37.5	+5.6
	1.7nm,0.3s,baz=14,slow=4.7,SNR=15						
KSRS	Korea Array	8.74	290	LR	LR	21 03 24.2	
	comp=Z,167nm,19.4s,baz=245,slow=38						
MKAR	Makanchi Array	43.13	304	P	P	21 05 57.9	+0.5
	0.1nm,0.3s,baz=96,slow=11,SNR=4.4						
KURBB	Kurchatov Array	45.34	309	P	P	21 06 14.0	-0.9
	0.6nm,0.7s,baz=94,slow=7.8,SNR=8.5						
BVAR	Borovoye Array	50.14	313	P	P	21 06 51.7	-0.4
	0.2nm,0.3s,baz=99,slow=9.2,SNR=3.8						
FINES	FINESS Array B	69.49	332	P	P	21 09 05.3	+0.3
	0.9nm,0.7s,baz=57,slow=5.1,SNR=3.3						
BRTR	Keskin Array B	78.32	310	P	P	21 09 57.2	-0.1
	0.7nm,0.8s,baz=101,slow=2.9,SNR=5.8						

IDC 09 21:05:34.6±1.9, 3.78S×130.16E, h0km, mb3.8/4, mb1 3.9/5, mb1mx3.6/35, mbtmp3.7/5, ML3.2/1, Error ellipse: s-maj=101.7km s-min=25.1km az=68.0, Seram

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	Warramunga Arr	16.58	166	Pn	Pn	21 09 27.0	-1.6
	0.1nm,0.3s,baz=349,slow=13,SNR=4.8						
ASAR	Alice Springs	20.10	170	P	P	21 10 10.8	+0.7
	0.8nm,0.6s,baz=348,slow=11,SNR=9.0						
CMAR	Chiang Mai Arr	37.87	307	P	P	21 12 53.5	-0.1
	0.7nm,0.7s,baz=146,slow=8.8,SNR=4.7						
MKAR	Makanchi Array	65.65	326	P	P	21 16 21.2	+0.5
	1.1nm,0.4s,baz=115,slow=7.8,SNR=18						
ZALV	Zalesovo Beam	68.79	333	P	P	21 16 39.7	-0.8
	0.4nm,0.2s,baz=111,slow=7.9,SNR=3.9						

IDC ***09*** *21:14:18.3±1.4, 33.34S×178.62W, h0km, mb4.4/2, mb1 4.6/3, mb1mx3.9/30, mbtmp4.4/3, ML4.3/1, Error ellipse: s-maj=44.7km s-min=35.5km az=148.0*

ISCJB ***09*** *21:14:21.7±0.7, 33.49S±0.08×178.6W±0.1, h41km, mb4.5/10, Error ellipse: s-maj=18.7km s-min=8.4km az=31.2*

NEIC ***09*** *21:14:21.8±3.3, 33.43S×178.51W, h26km±23km, mb4.4/8, Error ellipse: s-maj=16.9km s-min=10.2km az=125.0*

ISC 09 21:14:23.4±0.7, 33.5S±0.1×178.5W±0.1, h41km, n21, σ1.06/23, mb4.4/10, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	4.23	7	Pn	Pn	21 15 23.6	-1.7
URZ	Urewera	5.96	215	Pn	Pn	21 15 48.2	-1.0
	8.0nm,0.3s,baz=253,slow=2.8,SNR=47						
URZ				Sn	Sn	21 16 55.3	-0.8
	5.3nm,0.3s,baz=94,slow=18,SNR=8.6						
URZ	Urewera	5.96	215	*e*Pn	Pn	21 15 49.2	+0.1
URZ				Sn	Sn	21 16 55.3	-0.8
AFI	Afiamalu	20.40	19	P	P	21 18 57.5	+0.4
	17nm,0.6s						
EIDS	Eidsvold	27.61	279	*e*P	P	21 20 07.2	+0.1
	4.6nm,1.0s						
CTAO	Charters Tower	33.99	284	*e*P	P	21 21 03.2	-0.2
	17nm,0.6s						
ASAR	Alice Springs	42.61	270	P	P	21 22 15.8	0.0
	3.6nm,0.7s,baz=111,slow=7.3,SNR=54						
WRAB	Tennant Creek	43.87	276	*e*P	P	21 22 25.6	-0.4
	3.7nm,0.6s						
WRA	Warramunga Arr	43.87	276	P	P	21 22 25.7	-0.4
	5.2nm,0.8s,baz=117,slow=7.9,SNR=40						
CASY	Casey	52.25	209	*e*P	P	21 23 31.2	+1.1
	0.9nm,0.9s						
LCO	Las Campanas	87.66	123	*e*P	P	21 27 05.6	-2.6
	2.8nm,0.5s						
CHTO	Chiang Mai	94.20	290	*e*P	P	21 27 39.1	+0.8
	1.0nm,0.7s						
PV01	Paradox Valley	96.39	48	*e*P	P	21 27 49.0	+0.7
	99nm,0.8s						
HWUT	Hardware Ranch	96.75	44	*e*P	P	21 27 50.7	+1.0
	0.7nm,0.6s						
ARU	Arti	135.13	319	*e*PKPdf	PKPdf	21 33 38.5	+0.9
FINES	FINESS Array B	147.84	338	PKPbc	PKPbc	21 34 03.1	0.0
	1.9nm,0.5s,baz=40,slow=4.3,SNR=22						
NB2	NORSAR Subarra	151.69	350	PKP	PKPbc	21 34 12.7	0.0
	comp=Z,1.0nm,0.8s,baz=17,slow=4.1						
NOA	NORSAR Array B	151.69	350	PKPbc	PKPbc	21 34 14.1	+1.4
	comp=Z,0.2nm,0.5s,baz=22,slow=4.7,SNR=3.0						
BRTR	Keskin Array B	153.53	293	PKPbc	PKPbc	21 34 17.4	-0.2
	comp=Z,0.7nm,0.8s,baz=96,slow=2.5,SNR=4.0						
TORD	Torodi Ar. Bea	159.78	181	PKPab	PKPab	21 34 58.8	+1.6
	comp=Z,0.3nm,0.6s,baz=143,slow=0.7,SNR=4.3						
SANT	Santorini	160.14	285	*e*PKPdf	PKPdf	21 34 19.4	+1.1

IDC ***09*** *21:18:43.5±1.0, 28.47S×177.55W, h0km, mb4.1/7, mb1 4.2/7, mb1mx4.0/31, mbtmp4.1/7, Error ellipse: s-maj=32.2km s-min=15.7km az=102.0*

NEIC ***09*** *21:18:44.0±0.4, 28.42S×177.43W, h10km, mb4.5/9, Error ellipse: s-maj=14.7km s-min=9.9km az=104.0*

ISCJB ***09*** *21:18:48.8±0.6, 28.53S±0.07×177.5W±0.1, h54km, mb4.3/15, Error ellipse: s-maj=17.7km s-min=9.3km az=17.2*

ISC 09 21:18:50.4±0.6, 28.52S±0.08×177.6W±0.1, h54km, n28, σ1.39/28, mb4.2/15, 1C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	0.80	203	Pn	Pn	21 19 01.7	-3.8
	1µm,0.3s,baz=86,slow=9.7,SNR=42						
RAO				Sn	Sn	21 19 16.6	0.0
	2µm,0.3s,baz=272,slow=23,SNR=22						
FUNA	Funafuti	20.12	351	P	P	21 23 17.4	-2.5
	82nm,0.6s						
CTAO	Charters Tower	33.93	276	*e*P	P	21 25 29.1	+0.5
	25nm,0.7s						
STKA	Stephens Creek	35.32	254	P	P	21 25 40.7	+0.3
	1.5nm,0.5s,baz=108,slow=11,SNR=5.3						
ASAR	Alice Springs	43.63	265	P	P	21 26 50.0	+0.2
	1.8nm,0.5s,baz=98,slow=6.4,SNR=25						
WRAB	Tennant Creek	44.44	270	*e*P	P	21 26 56.8	+0.5
	3.1nm,1.1s						
WRA	Warramunga Arr	44.45	270	P	P	21 26 57.1	+0.7
	1.4nm,0.5s,baz=110,slow=8.0,SNR=18						
SBA	Scott Base	49.93	184	*e*P	P	21 27 38.4	+0.2
	1.6nm,0.8s						
VNDA	Vanda	50.00	186	P	P	21 27 40.3	+1.6
	0.4nm,0.7s,baz=349,slow=4.8,SNR=3.2						
CASY	Casey	56.98	207	*e*P	P	21 28 30.0	+0.1
	0.7nm,0.6s						
QSPA	South Pole Qui	61.58	180	*e*P	P	21 29 01.9	-0.1
	8.9nm,0.6s						
MAJO	Matsushiro	76.93	325	*e*P	P	21 30 36.7	-0.3
	1.1nm,0.4s						
SYO	Syowa Base	79.03	193⇑	*e*pP	P	21 30 50.6	+2.4
PETK	Petropavlovsk-	84.10	345	P	P	21 31 15.1	+0.1
	3.0nm,0.9s,baz=100,slow=5.8,SNR=4.5						
CMB	Columbia Colle	85.11	42	*e*P	P	21 31 20.1	-0.4
	2.7nm,0.4s						
USRK	Ussuriysk Ar.	85.81	326	P	P	21 31 25.1	+1.3
	1.8nm,0.8s,baz=119,slow=3.7,SNR=9.2						
KLR	Kul'dur	89.61	330	P	P	21 31 44.5	+2.6
	1.3nm,0.8s,baz=73,slow=3.7,SNR=4.7						
ANMO	Albuquerque	92.10	51	*e*P	P	21 31 53.5	-0.6
	0.4nm,0.6s						
ARCES	ARCESS Array B	136.84	348	PKP	PKPdf	21 38 04.9	-1.1
	1.0nm,0.8s,baz=349,slow=1.2,SNR=4.7						
FINES	FINESS Array B	143.51	341	PKP	PKPbc	21 38 16.0	+0.3
	3.3nm,0.7s,baz=58,slow=3.4,SNR=16						
OBN	Obninsk	143.83	327	*e*PKPdf	PKPdf	21 38 18.0	-1.0
KBZ	Khabaz	144.35	306	PKP	PKPdf	21 38 19.3	-0.9
	0.6nm,0.4s,baz=177,slow=6.5,SNR=4.6						
KIV	Kislovodsk	144.45	307	*e*PKPdf	PKPdf	21 38 20.4	-0.2
NB2	NORSAR Subarra	146.95	352	PKP	PKPbc	21 38 26.1	-0.2
	comp=Z,2.3nm,1.1s,baz=17,slow=2.6						
NOA	NORSAR Array B	146.95	352	PKPbc	PKPbc	21 38 26.2	-0.2
	comp=Z,1.9nm,1.0s,baz=15,slow=4.3,SNR=5.6						
AKASG	Malin Array Be	150.01	325	PKPbc	PKPbc	21 38 34.2	-0.3
	comp=Z,1.4nm,0.5s,baz=44,slow=2.2,SNR=5.7						
BRTR	Keskin Array B	151.99	302	PKPbc	PKPbc	21 38 39.4	-0.3
	comp=Z,0.5nm,0.6s,baz=122,slow=4.5,SNR=3.8						
TORD	Torodi Ar. Bea	164.69	177	PKPab	PKPab	21 39 46.6	+2.4
	comp=Z,0.5nm,0.6s,baz=169,slow=3.0,SNR=3.1						

IDC ***09*** *21:20:42.4±2.0, 36.31N×142.75E, h0km, mb3.7/4, mb1 3.7/7, mb1mx3.4/51, mbtmp3.7/7, ML3.5/2, Error ellipse: s-maj=46.4km s-min=23.7km az=81.0*

JMA ***09*** *21:20:46.7±0.1, 36.37N×142.46E, h75km±4km, M3.3*

ISC 09 21:20:43.3±3.2, 36.30N±0.04×142.54E±0.08, h5km±21km, n20, σ1.39/31, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	Chosi	1.49	247	P	Pb	21 21 11.8	+0.3
CHOJ				S	Sb	21 21 30.7	-0.1
ONAJ	Iwakimizuishiy	1.61	300	P	Pb	21 21 12.7	-1.0
JHO	Hitachi	1.62	281	P	Pb	21 21 12.9	-0.9
JHO				S	Sn	21 21 32.6	-1.3
BSO1	Boso 1	2.08	218	P	Pb	21 21 19.9	-1.4
BSO1				*e*S	Sb	21 21 45.6	-1.7
JMM	Marumori	2.10	319	P	Pn	21 21 19.0	-0.1
JMM				*e*S	Sn	21 21 43.4	-2.2
JFT	Otama	2.15	305	P	Pn	21 21 19.8	0.0
JFT				*e*S	Sn	21 21 45.2	-1.7
BSO3	Boso 3	2.23	228	P	Pn	21 21 22.2	+1.4
BSO3				*e*S	Sn	21 21 48.9	+0.2
JIO	Ouri	2.35	336	P	Pn	21 21 23.4	+0.8
JAG	Ashikaga	2.50	274	P	Pn	21 21 25.4	+0.7
JAG				S	Sn	21 21 54.3	-1.2
JMK	Ichinoseki	2.84	339	P	Pn	21 21 29.7	+0.3
JRY	Ryogami san	2.96	266	P	Pn	21 21 31.8	+0.7
JRY				S	Sn	21 22 05.3	-1.7
JOD2	Odawara 2	3.00	251	P	Pn	21 21 32.5	+1.0
JOD2				*e*S	Sn	21 22 06.9	-1.0
MJAR	Matsushiro Arr	3.50	275	Pn	Pn	21 21 40.1	+1.5
	2.2nm,0.3s,baz=101,slow=8.7,SNR=30						
MAT	Matsushiro	3.51	275

CHTO	**Chiang Mai** 1.0nm,0.8s	**54.10**	**299**	*e*P	**P**		**21 39 28.6**	**+0.1**
BJT	**Baijiatuan** 4.3nm,0.5s	**54.60**	**331**	*e*P	**P**		**21 39 31.5**	**-0.2**
SONM	**Songino Array** 0.9nm,1.1s,baz=163,slow=11,SNR=3.9	**65.11**	**331**	P	**P**		**21 40 43.7**	**-0.2**
DGAR	**Diego Garcia** 77nm,1.0s	**74.45**	**264**	*e*P	**P**		**21 41 41.9**	**+0.1**
MKAR	**Makanchi Array** 0.2nm,0.6s,baz=130,slow=4.9,SNR=3.7	**78.23**	**320**	P	**P**		**21 42 03.1**	**+0.5**
PMR	**Palmer** 1.7nm,0.4s	**83.44**	**25**	*e*P	**P**		**21 42 31.3**	**+1.3**
MCK	**McKinley** 1.5nm,0.3s	**84.48**	**24**	*e*P	**P**		**21 42 36.5**	**+1.2**
TORD	**Torodi Ar. Bea** 1.4nm,0.5s,baz=66,slow=3.6,SNR=25	**145.74**	**284**	PKPbc	**PKPab**		**21 49 43.8**	**+0.7**
SAML	**Samuel**	**145.74**	**116**	*e*PKPdf	**PKPdf**		**21 49 40.7**	**-1.4**

*IDC **09** 21:31:04.8±2.7, 39°.96S×179°.49E, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.6/29, mbtmp3.6/3, ML3.7/1, Error ellipse: s-maj=85.5km s-min=52.0km az=24.0*
*WEL **09** 21:31:12.1±0.8, 37°.12S×179°.69E, h33km, ML3.8/7, Error ellipse: s-maj=8.9km s-min=7.3km az=0.0*

ISC 09 21:31:09.1±3.1, 38°.1S±0°.2×179°.9E±0°.1, h26km±17km**, n14, σ2§04/17, 2D, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**1.18**	**282**	PN	**Pb**	**21 31 32.3**	**+1.5**
WMGZ				SN	**Sn**	**21 31 47.1**	**+2.0**
WMGZ				AML	AML	21 31 52.9	
MXZ	**Matakaoa Point**	**1.34**	**292**	PN	**Pn**	**21 31 29.0**	**-3.2**
MXZ				AML	AML	21 31 48.3	
MXZ				AML	AML	21 31 48.7	
HAZ	**Te Kaha**	**1.68**	**280**	PN	**Pn**	**21 31 36.8**	**0.0**
HAZ				SN	**Sn**	**21 31 57.3**	**-0.2**
HAZ				AML	AML	21 31 60.0	
RUGZ	**Raukumara Rang**	**1.73**	**273**	PN	**Pb**	**21 31 40.7**	**+0.4**
RUGZ				SN	**Sb**	**21 32 03.3**	**+1.6**
MWZ	**Matawai**	**1.86**	**261**	||PN	Pb	21 31 44.7	+2.3
MWZ				AML	AML	21 32 19.8	
MWZ				AML	AML	21 32 20.9	
KNZ	**Kokohu**	**1.96**	**241**	*e*PN	Pb	21 31 49.2	+5.1
URZ	**Urewera** 16nm,0.3s,baz=271,slow=4.5,SNR=64	**2.18**	**264**	Pn	**Pb**	**21 31 47.5**	**-0.4**
URZ				Sn	**Sb**	**21 32 14.6**	**+0.2**
	16nm,0.3s,baz=227,slow=23,SNR=7.2						
URZ	**Urewera**	**2.18**	**264**	||PN	**Pb**	**21 31 47.9**	**+0.1**
URZ				SN	**Sb**	**21 32 14.4**	**0.0**
URZ				AML	AML	21 32 24.8	
BKZ	**Black Stump Fm**	**2.85**	**247**	*e*PN	**Pb**	**21 31 59.2**	**-0.2**
BKZ				AML	AML	21 32 40.4	
KUZ	**Kuaotunu**	**3.56**	**291**	*e*PN	**Pn**	**21 31 58.8**	**-3.8**
MKAZ	**Moumakai**	**3.86**	**283**	PN	**Pn**	**21 32 05.1**	**-1.7**
MKAZ				AML	AML	21 32 48.2	
ASAR	**Alice Springs** 0.5nm,0.6s,baz=120,slow=8.1,SNR=6.4	**41.57**	**277**	P	**P**	**21 38 55.1**	**+0.2**
WRA	**Warramunga Arr** 0.7nm,0.7s,baz=126,slow=6.7,SNR=5.6	**43.25**	**282**	P	**P**	**21 39 07.0**	**-1.5**
FINES	**FINESS Array B** 0.3nm,0.5s,baz=20,slow=6.1,SNR=6.1	**151.50**	**334**	PKPbc	**PKPbc**	**21 51 03.7**	**+3.8**

*NEIC **09** 21:37:20.8±0.8, 28°.83S×176°.89W, h10km, mb4.3/4, Error ellipse: s-maj=27.4km s-min=10.7km az=136.0*
*IDC **09** 21:37:20.6±2.2, 28°.68S×177°.10W, h0km, mb3.9/3, mb1 4.0/3, mb1mx3.7/21, mbtmp3.9/3, Error ellipse: s-maj=81.1km s-min=20.9km az=136.0*
*ISCJB **09** 21:37:22.6±1.2, 28°.8S±0°.2×176°.9W±0°.2, h36km, mb4.3/7, Error ellipse: s-maj=35.3km s-min=9.6km az=137.0*

ISC 09 21:37:25.0±1.1, 28°.8S±0°.2×177°.0W±0°.2, h36km**, n13, σ1§30/14, mb4.2/7, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 772nm,0.3s,baz=77,slow=5.7,SNR=31	**0.95**	**239**	Pn	**Pn**	**21 37 40.9**	**-0.8**
RAO				LR	LR	21 37 47.3	
	comp=Z,255nm,18.1s,baz=57,slow=29						
RAO				Sn	**Sn**	**21 37 54.1**	**+0.1**
	1µm,0.3s,baz=89,slow=23,SNR=20						
AFI	**Afiamalu** 7.2nm,0.4s	**15.56**	**19**	*e*Pn	**Pn**	**21 41 00.5**	**-1.3**
CTAO	**Charters Tower** 7.5nm,0.8s	**34.46**	**276**	P	**P**	**21 44 09.6**	**+0.1**
STKA	**Stephens Creek** 2.4nm,0.8s,baz=110,slow=8.8,SNR=4.3	**35.73**	**255**	P	**P**	**21 44 21.5**	**+1.1**
ASAR	**Alice Springs** 0.6nm,0.5s,baz=97,slow=7.1,SNR=13	**44.11**	**265**	P	**P**	**21 45 29.9**	**-0.2**
WRA	**Warramunga Arr** 0.5nm,0.4s,baz=110,slow=7.8,SNR=11	**44.95**	**270**	P	**P**	**21 45 36.9**	**+0.1**
MIDW	**Midway** 35nm,0.7s	**56.67**	**360**	*e*P	**P**	**21 47 04.2**	**-0.5**
CASY	**Casey** 1.4nm,1.1s	**56.99**	**207**	*e*P	**P**	**21 47 05.2**	**-1.3**
ISCO	**Idaho Springs** 0.8nm,0.6s	**95.12**	**47**	*e*P	**P**	**21 50 45.8**	**+1.0**
FINES	**FINESS Array B** 0.7nm,0.5s,baz=63,slow=4.3,SNR=7.5	**143.91**	**341**	PKP	**PKPdf**	**21 56 56.0**	**+0.2**
NOA	**NORSAR Array B** 0.5nm,0.8s,baz=14,slow=4.5,SNR=3.3	**147.27**	**353**	PKPbc	**PKPbc**	**21 57 04.6**	**+0.6**
AKASG	**Malin Array Be** 0.5nm,0.4s,baz=332,slow=26,SNR=5.4	**150.51**	**325**	PKPbc	**PKPbc**	**21 57 10.8**	**-1.6**
MMAI	**Mount Meron Ar** 0.8nm,0.5s,baz=79,slow=8.6,SNR=5.6	**151.95**	**287**	PKPbc	**PKPbc**	**21 57 19.5**	**+3.0**

IDC 09 21:44:07.8±3.6, 28°.44S×176°.29W, h0km, mb3.5/2, mb1 3.7/2, mb1mx3.5/19, mbtmp3.5/2, Error ellipse: s-maj=138.0km s-min=29.0km az=143.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 200nm,0.3s,baz=81,slow=12,SNR=11	**1.64**	**240**	Pn	Pn	21 44 37.8	-0.1
RAO				Sn	Sb	21 45 00.1	0.0
	256nm,0.3s,baz=180,slow=22,SNR=7.3						
ASAR	**Alice Springs** 0.2nm,0.5s,baz=102,slow=6.3,SNR=5.3	**44.74**	**264**	P	P	21 52 23.2	0.0
WRA	**Warramunga Arr** 0.4nm,0.4s,baz=109,slow=8.0,SNR=5.3	**45.56**	**269**	P	P	21 52 29.9	+0.1
FINES	**FINESS Array B** 1.2nm,0.8s,baz=49,slow=5.8,SNR=6.7	**143.78**	**342**	PKP	PKPbc	22 03 41.6	-0.2
NOA	**NORSAR Array B** 0.6nm,0.7s,baz=16,slow=4.3,SNR=4.0	**147.01**	**353**	PKPbc	PKPbc	22 03 51.6	-0.3

IDC 09 21:45:47.4±3.0, 32°.62S×179°.28W, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.6/22, mbtmp3.6/3, ML3.3/1, MS3.8/1, Ms1 3.8/1, ms1mx2.9/13, Error ellipse: s-maj=67.0km s-min=36.0km az=108.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera** 0.7nm,0.3s,baz=278,slow=4.8,SNR=8.8	**6.35**	**207**	Pn	Pn	21 47 22.9	+0.7
URZ				Sn	Sn	21 48 35.3	-0.1
	0.8nm,0.3s,baz=166,slow=22,SNR=5.8						
DZM	**Mont Dzumac** comp=Z,296nm,19.4s,baz=8.5,slow=34	**16.46**	**306**	LR	LR	21 55 07.5	
ASAR	**Alice Springs** 0.4nm,0.8s,baz=101,slow=7.5,SNR=2.9	**41.96**	**270**	P	P	21 53 40.0	-0.3
WRA	**Warramunga Arr** 0.2nm,0.3s,baz=116,slow=6.5,SNR=6.7	**43.15**	**275**	P	P	21 53 49.7	-0.3
FINES	**FINESS Array B** 0.9nm,0.8s,baz=48,slow=6.2,SNR=5.7	**146.82**	**338**	PKPbc	PKPbc	22 05 30.2	-0.6

IDC 09 21:55:05.9±3.0, 33°.32S×178°.53W, h0km, mb3.4/2, mb1 3.8/3, mb1mx3.5/28, mbtmp3.6/3, ML3.1/1, Error ellipse: s-maj=77.3km s-min=37.0km az=120.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 125nm,0.3s,baz=108,slow=22,SNR=3.6	**4.09**	**8**	Sn	Sn	21 56 48.4	-10
URZ	**Urewera** 0.4nm,0.3s,baz=159,slow=19,SNR=1.3	**6.07**	**214**	Pn	Pn	21 56 37.3	+0.5
URZ				Sn	Sn	21 57 46.4	-0.6
	1.1nm,0.3s,baz=152,slow=23,SNR=2.0						
ASAR	**Alice Springs** 0.5nm,0.7s,baz=98,slow=6.7,SNR=3.7	**42.59**	**270**	P	P	22 03 03.7	-0.2
WRA	**Warramunga Arr** 0.4nm,0.7s,baz=116,slow=7.8,SNR=1.7	**43.84**	**275**	P	P	22 03 14.0	0.0
FINES	**FINESS Array B** 0.4nm,0.8s,baz=18,slow=10,SNR=2.7	**147.70**	**338**	PKPbc	PKPbc	22 14 50.8	-0.8

IDC 09 21:57:17.5±5.1, 28°.25S×176°.27W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/24, mbtmp3.6/2, Error ellipse: s-maj=142.7km s-min=39.8km az=134.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 97nm,0.3s,baz=94,slow=21,SNR=1.7	**1.76**	**235**	Pn	Pn	21 57 49.4	+0.1
RAO				Sn	Sn	21 58 12.0	-0.4
	202nm,0.3s,baz=68,slow=21,SNR=3.7						
ASAR	**Alice Springs** 0.5nm,0.5s,baz=102,slow=7.7,SNR=4.7	**44.79**	**264**	P	P	22 05 33.6	+0.4
WRA	**Warramunga Arr** 0.2nm,0.3s,baz=109,slow=8.0,SNR=1.5	**45.59**	**269**	P	P	22 05 39.6	-0.1
FINES	**FINESS Array B** 0.4nm,0.5s,baz=42,slow=3.1,SNR=5.2	**143.61**	**342**	PKP	PKPbc	22 16 51.8	+0.8

*CSEM **09** 21:57:58.8±0.1, 40°.43N×30°.03E, h2km, MD2.9, Error ellipse: s-maj=2.5km s-min=2.2km az=179.0*
*ISK **09** 21:57:58.4, 40°.43N×30°.03E, h8km, MD2.9*
*DDA **09** 21:57:58.3, 40°.42N×30°.02E, h6km, Md2.7*

ISC 09 21:57:59.0±0.9, 40°.43N±0°.02×30°.03E±0°.02, h9km±8km**, n77, σ0§59/100, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADVT	**Abdulvahap**	**0.22**	**270**	PG	**Pg**	**21 58 03.6**	**+0.2**
ADVT				*e*SG	**Sg**	**21 58 07.1**	**+0.6**
ADVT	**Abdulvahap**	**0.22**	**270**	*i* Pg	**Pg**	**21 58 03.6**	**+0.2**
ADVT				*e*Sg	**Sg**	**21 58 07.1**	**+0.6**
GPA	**Golpazari**	**0.26**	**124**	PG	**Pg**	**21 58 03.7**	**-0.5**
GPA	**Golpazari**	**0.26**	**124**	*i* Pg	**Pg**	**21 58 03.7**	**-0.5**
CAVI	**Cavuskoy**	**0.27**	**211**	PG	**Pg**	**21 58 04.1**	**-0.3**
CAVI	**Cavuskoy**	**0.27**	**211**	*i* Pg	**Pg**	**21 58 04.1**	**-0.3**
SPNC	**Sapanca-Adapaz**	**0.33**	**40**	PG	**Pg**	**21 58 05.8**	**+0.3**
SPNC				*e*SG	**Sg**	**21 58 10.6**	**+0.6**
SPNC	**Sapanca-Adapaz**	**0.33**	**40**	*i* Pg	**Pg**	**21 58 05.8**	**+0.3**
SPNC				*e*Sg	**Sg**	**21 58 10.6**	**+0.6**
GULT	**Gulveren**	**0.37**	**90**	*e*PG	**Pg**	**21 58 05.8**	**-0.5**
GULT	**Gulveren**	**0.37**	**90**	*e*Pg	**Pg**	**21 58 05.8**	**-0.5**
IZI	**Iznik**	**0.43**	**257**	*e*PG	**Pg**	**21 58 07.4**	**-0.1**
IZI	**Iznik**	**0.43**	**257**	*e*Pg	**Pg**	**21 58 07.4**	**-0.1**
HRT	**Hereke**	**0.47**	**325**	*e*PG	**Pg**	**21 58 08.2**	**-0.1**
HRT	**Hereke**	**0.47**	**325**	*e*Pg	**Pg**	**21 58 08.2**	**-0.1**
GEMT	**Gemlik**	**0.64**	**270**	*e*PG	**Pg**	**21 58 11.3**	**0.0**
GEMT	**Gemlik**	**0.64**	**270**	*e*Pg	**Pg**	**21 58 11.3**	**0.0**
BORA	**Eskisehir**	**0.64**	**149**	*i* P	**Pg**	**21 58 10.7**	**-0.7**
BORA				*i* S	**Sg**	**21 58 19.6**	**-0.2**
BORA	**Eskisehir**	**0.64**	**149**	P	**Pg**	**21 58 10.7**	**-0.7**
BORA				S	**Sg**	**21 58 19.6**	**-0.2**
IGD	**Bursa**	**0.65**	**255**	*i* P	**Pg**	**21 58 09.9**	**-1.7**
IGD				*i* S	**Sg**	**21 58 19.7**	**-0.4**
KAND	**Kocaeli-Kandir**	**0.67**	**11**	*i* P	**Pb**	**21 58 12.2**	**-0.7**
KAND				*i* S	**Sb**	**21 58 21.4**	**-0.9**
KAND	**Kocaeli-Kandir**	**0.67**	**11**	P	**Pb**	**21 58 12.2**	**-0.7**
KAND				S	**Sb**	**21 58 21.4**	**-0.9**
BTAS	**Taskesti**	**0.76**	**79**	*i* P	**Pb**	**21 58 13.1**	**-0.5**
BTAS				*i* S	**Sb**	**21 58 25.2**	**+0.5**
BTAS	**Taskesti**	**0.76**	**79**	P	**Pb**	**21 58 13.1**	**-0.5**
BTAS				S	**Sb**	**21 58 25.2**	**+0.5**
SAHE	**Sakarya_HENDEK**	**0.76**	**56**	*i* P	**Pg**	**21 58 13.0**	**-0.6**
SAHE				*i* S	**Sb**	**21 58 23.8**	**-0.9**
SAHE	**Sakarya_HENDEK**	**0.76**	**56**	P	**Pg**	**21 58 13.0**	**-0.6**
SAHE				S	**Sb**	**21 58 23.8**	**-0.9**
SILT	**Sile**	**0.78**	**338**	*e*PG	**Pg**	**21 58 13.7**	**-0.2**
SILT	**Sile**	**0.78**	**338**	*e*Pg	**Pg**	**21 58 13.7**	**-0.2**
MDNY	**Mudanya-Bursa**	**0.87**	**266**	*e*PG	**Pb**	**21 58 15.7**	**-0.6**
MDNY	**Mudanya-Bursa**	**0.87**	**266**	*e*Pg	**Pb**	**21 58 15.7**	**-0.6**
MDUB	**Mudurnu**	**0.90**	**87**	*e*PG	**Pg**	**21 58 15.9**	**-0.3**
MDUB	**Mudurnu**	**0.90**	**87**	*e*Pg	**Pg**	**21 58 15.9**	**-0.3**
ARMT	**Armutlu**	**0.90**	**279**	*e*PG	**Pg**	**21 58 15.9**	**-0.4**
ARMT	**Armutlu**	**0.90**	**279**	*e*Pg	**Pg**	**21 58 15.9**	**-0.4**
ISK	**Istanbul-Kandi**	**0.97**	**311**	*e*PG	**Pb**	**21 58 17.5**	**-0.4**
ISK	**Istanbul-Kandi**	**0.97**	**311**	*e*Pg	**Pb**	**21 58 17.5**	**-0.4**
TVSB	**Tavsanli**	**1.07**	**204**	*e*PG	**Pb**	**21 58 19.4**	**-0.4**
TVSB	**Tavsanli**	**1.07**	**204**	*e*Pg	**Pb**	**21 58 19.4**	**-0.4**
KLYT	**Kilyos**	**1.11**	**318**	*e*PN	**Pg**	**21 58 19.9**	**-0.4**
KLYT	**Kilyos**	**1.11**	**318**	*e*Pn	**Pg**	**21 58 19.9**	**-0.4**
ESKT	**Eskisehir**	**1.11**	**145**	*e*PN	**Pb**	**21 58 20.1**	**-0.3**
ESKT	**Eskisehir**	**1.11**	**145**	*i* P	**Pb**	**21 58 20.1**	**-0.3**
ESKT				*i* S	**Sb**	**21 58 35.1**	**+0.1**
ESKT	**Eskisehir**	**1.11**	**145**	*e*Pn	**Pb**	**21 58 20.1**	**-0.3**
SEYT	**Eskypehyr**	**1.11**	**145**	P	**Pb**	**21 58 20.1**	**-0.3**
SEYT				S	**Sb**	**21 58 35.1**	**+0.1**
BGKT	**Bogazkoy**	**1.21**	**309**	*e*PN	**Pn**	**21 58 22.0**	**0.0**
BGKT	**Bogazkoy**	**1.21**	**309**	*e*Pn	**Pn**	**21 58 22.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**263**	*e*PN	**Pg**	**21 58 23.3**	**-0.4**
KCTX	**Karacabey (Bur**	**1.29**	**263**	*e*Pn	**Pg**	**21 58 23.3**	**-0.4**
CTKS	**Kestanelik-??a**	**1.41**	**305**	*e*PN	**Pb**	**21 58 25.1**	**-0.2**
CTKS	**Kestanelik-??a**	**1.41**	**305**	*e*Pn	**Pb**	**21 58 25.1**	**-0.2**
GDZ	**Gediz**	**1.41**	**198**	*i* P	**Pb**	**21 58 25.1**	**-0.4**
GDZ				*i* S	**Sn**	**21 58 44.8**	**+1.2**
GDZ	**Gediz**	**1.41**	**198**	P	**Pb**	**21 58 25.1**	**-0.4**
GDZ				S	**Sn**	**21 58 44.8**	**+1.2**
GEDZ	**Gediz**	**1.47**	**199**	*e*PN	**Pb**	**21 58 26.1**	**-0.3**
GEDZ	**Gediz**	**1.47**	**199**	*e*Pn	**Pb**	**21 58 26.2**	**-0.3**
BCAM	**Yenicaga**	**1.60**	**76**	*i* P	**Pb**	**21 58 28.1**	**-0.7**
BCAM	**Yenicaga**	**1.60**	**76**	P	**Pb**	**21 58 28.1**	**-0.7**
EDC	**Edincik**	**1.65**	**268**	*e*PN	**Pn**	**21 58 28.2**	**0.0**
EDC	**Edincik**	**1.65**	**268**	*e*Pn	**Pn**	**21 58 28.2**	**0.0**
DEMI	**Demirci**	**1.72**	**216**	*i* P	**Pn**	**21 58 29.0**	**-0.1**
DEMI				*i* S	**Sg**	**21 58 54.5**	**+0.3**
DEMI	**Demirci**	**1.72**	**216**	P	**Pn**	**21 58 29.0**	**-0.1**
DEMI				S	**Sg**	**21 58 54.5**	**+0.3**
BALB	**Balikesir**	**1.83**	**245**	*e*PN	**Pb**	**21 58 31.4**	**-1.1**
BALB	**Balikesir**	**1.83**	**245**	*e*Pn	**Pb**	**21 58 31.4**	**-1.1**
BOLV	**Bolvadin**	**1.86**	**157**	*i* P	**Pg**	**21 58 34.7**	**+0.1**
BOLV				*i* S	**Sg**	**21 58 58.8**	**+0.2**
BOLV	**Bolvadin**	**1.86**	**157**	P	**Pg**	**21 58 34.7**	**+0.1**
BOLV				S	**Sg**	**21 58 58.8**	**+0.2**
MRMT	**Marmara Adasi**	**1.86**	**276**	*e*PN	**Pb**	**21 58 32.0**	**-1.2**
MRMT	**Marmara Adasi**	**1.86**	**276**	*e*Pn	**Pb**	**21 58 32.0**	**-1.2**
BALY	**Balya**	**1.97**	**250**	*i* P	**Pg**	**21 58 35.8**	**-0.9**
BALY				*i* S	**Sg**	**21 59 02.6**	**+0.3**
BALY	**Balya**	**1.97**	**250**	P	**Pg**	**21 58 35.8**	**-0.9**
BALY				S	**Sg**	**21 59 02.6**	**+0.3**
KULA	**Kula-Manisa**	**2.19**	**209**	*e*PN	**Pn**	**21 58 36.3**	**+0.7**
KULA	**Kula-Manisa**	**2.19**	**209**	*e*Pn	**Pn**	**21 58 36.3**	**+0.7**
MANT	**Manisa**	**2.25**	**211**	*i* P	**Pb**	**21 58 39.5**	**-0.4**
MANT	**Manisa**	**2.25**	**211**	P	**Pb**	**21 58 39.5**	**-0.4**
GELI	**Tayfur-Gelibol**	**2.71**	**270**	*e*PN	**Pn**	**21 58 43.7**	**+1.0**
GELI	**Tayfur-Gelibol**	**2.71**	**270**	*e*Pn	**Pn**	**21 58 43.7**	**+1.0**
EDRB	**Edirne**	**2.85**	**301**	*e*PN	**Pn**	**21 58 45.7**	**+1.1**
EDRB	**Edirne**	**2.85**	**301**	*e*Pn	**Pn**	**21 58 45.7**	**+1.1**
ALN	**Alexandroupoli**	**3.06**	**280**	*e*PN	**Pn**	**21 58 48.1**	**+0.6**
ALN	**Alexandroupoli**	**3.06**	**280**	*e*Pn	**Pn**	**21 58 48.1**	**+0.6**

IDC 09 22:13:22.1±3.3, 29°.23S×176°.59W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.6/21, mbtmp3.6/2, Error ellipse: s-maj=109.5km s-min=49.4km az=171.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 235nm,0.3s,baz=89,slow=8.7,SNR=12	**1.16**	**269**	Pn	Pn	22 13 45.8	+0.2
RAO				Sn	Sg	22 13 57.4	-2.1
	735nm,0.3s,baz=306,slow=23,SNR=11						
ASAR	**Alice Springs** 0.3nm,0.4s,baz=107,slow=7.5,SNR=8.3	**44.41**	**265**	P	P	22 21 34.6	-0.3
WRA	**Warramunga Arr** 0.5nm,0.6s,baz=109,slow=6.2,SNR=5.5	**45.30**	**270**	P	P	22 21 41.4	-0.5
FINES	**FINESS Array B** 0.5nm,0.7s,baz=49,slow=4.2,SNR=5.3	**144.45**	**341**	PKP	PKPdf	22 33 00.2	+0.5

*IDC **09** 22:18:38.7±1.4, 35°.08S×179°.36W, h0km, mb4.4/2, mb1 4.7/4, mb1mx4.1/23, mbtmp4.5/4, ML4.0/2, Error ellipse: s-maj=41.2km s-min=27.1km az=126.0*
*ISCJB **09** 22:18:42.9±1.2, 35°.2S±0°.1×179°.5W±0°.2, h43km, mb4.4/8, Error ellipse: s-maj=28.1km s-min=9.3km az=29.8*

*NEIC **09** 22:18:42.7±2.5, 35°.18S×179°.42W, h26km±17km, mb4.5/6, Error ellipse: s-maj=16.2km s-min=9.0km az=117.0*

ISC 09 22:18:45.1±0.9, 35°.2S±0°.1×179°.5W±0°.2, h43km**, n20, σ1§64/23, mb4.3/8, East of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera** 9.8nm,0.3s,baz=255,slow=4.3,SNR=56	**4.12**	**220**	Pn	**Pn**	**22 19 45.1**	**-0.4**
URZ				Sn	**Sn**	**22 20 34.5**	**+2.1**
	16nm,0.3s,baz=172,slow=23,SNR=14						
URZ	**Urewera**	**4.12**	**220**	*e*Pn	**Pn**	**22 19 45.1**	**-0.4**
URZ				*e*Sn	**Sn**	**22 20 30.5**	**-1.9**
RAO	**Raoul Island** 150nm,0.5s	**6.04**	**13**	*e*Pn	**Pn**	**22 20 10.7**	**-1.2**
RPZ	**Rata Peaks** 1.1nm,0.3s,baz=32,slow=19,SNR=3.2	**11.23**	**218**	Pn	**Pn**	**22 21 20.7**	**-2.3**
RPZ				Sn	Sn	22 23 15.8	-11
	1.2nm,0.3s,baz=258,slow=20,SNR=4.3						
HNR	**Honiara** 30nm,0.4s	**31.75**	**319**	*e*P	**P**	**22 25 04.9**	**-0.3**
CTAO	**Charters Tower** 14nm,0.7s	**33.65**	**287**	*e*P	**P**	**22 25 22.3**	**+0.5**
ASAR	**Alice Springs** 6.0nm,0.5s,baz=116,slow=7.4,SNR=92	**41.83**	**273**	P	**P**	**22 26 32.0**	**+1.1**
WRAB	**Tennant Creek** 0.6nm,0.4s	**43.24**	**278**	*e*P	**P**	**22 26 42.5**	**+0.1**
WRA	**Warramunga Arr** 1.6nm,0.4s,baz=118,slow=7.7,SNR=28	**43.25**	**278**	P	**P**	**22 26 43.0**	**+0.5**
MDJ	**Mudanjiang** 1.5nm,0.3s	**91.84**	**326**	*e*P	**P**	**22 31 48.4**	**+0.2**
CHTO	**Chiang Mai** 0.4nm,0.5s	**93.99**	**290**	*e*P	**P**	**22 31 58.9**	**+0.1**
ANMO	**Albuquerque** 0.2nm,0.5s	**97.51**	**52**	*e*P	**P**	**22 32 14.5**	**-0.2**
LSA	**Lhasa**	**105.92**	**295**	*e*PKP	**PKiKP**	**22 37 04.9**	**-0.1**
RES	**Resolute Bay**	**122.15**	**18**	*e*PKPdf	**PKPdf**	**22 37 33.7**	**-0.2**
ARCES	**ARCESS Array B** 1.2nm,0.8s,baz=57,slow=4.5,SNR=4.1	**142.91**	**346**	PKP	**PKPdf**	**22 38 12.9**	**0.0**
FINES	**FINESS Array B** 2.2nm,0.6s,baz=65,slow=3.7,SNR=18	**149.07**	**336**	PKPbc	**PKPbc**	**22 38 28.2**	**+0.5**
NB2	**NORSAR Subarra** comp=Z,0.8nm,0.7s,baz=17,slow=2.6	**153.20**	**348**	PKP	**PKPbc**	**22 38 43.1**	**+5.7**
NOA	**NORSAR Array B** comp=Z,1.0nm,0.8s,baz=13,slow=4.1,SNR=5.1	**153.20**	**348**	PKPab	**PKPab**	**22 38 47.6**	**-1.7**
BRTR	**Keskin Array B** comp=Z,0.4nm,0.5s,baz=132,slow=1.8,SNR=4.1	**153.38**	**290**	PKPbc	**PKPbc**	**22 38 38.7**	**0.0**
BRTR				PKPab	**PKPab**	**22 38 49.8**	**-1.2**
	comp=Z,1.4nm,0.8s,baz=151,slow=2.8,SNR=7.5						
TORD	**Torodi Ar. Bea** comp=Z,0.3nm,0.4s,baz=154,slow=2.7,SNR=3.7	**158.06**	**183**	PKPab	**PKPab**	**22 39 12.0**	**+0.8**

*IDC **09** 22:21:00.9±0.5, 29°.06S×177°.02W, h0km, mb4.5/14, mb1 4.7/15, mb1mx4.6/21, mbtmp4.5/15, ML3.5/1, MS4.7/11, Ms1 4.7/11, ms1mx4.4/28, Error ellipse: s-maj=19.9km s-min=13.2km az=158.0*
*GCMT **09** 22:21:02.5±0.3, 29°.12S×176°.91W, h38km, MW5.1/74, Moment Tensor Solution. s59,c72; s74,c106; Duration: 0 Moment tensor: Scale 10^16^Nm; Mrr-5.10±.27; Mθθ-0.23±.20; Mϕϕ5.33±.17; Mrθ-1.45±.17; Mrϕ 1.77±.12; Mθϕ2.68±.15; Best double couple: M06.29700×10^16^ NP1:ϕs176.00000°, δ59.00000°, λ-113.00000°. NP2: ϕs36.00000°, δ38.00000°, λ-57.00000°. Principal axes: T 6.2830, Plg11.0000°, Azm283.0000°; N 0.0270, Plg20.0000°, Azm189.0000°; P -6.3110, Plg67.0000°, Azm41.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **09** 22:21:02.5±0.2, 29°.34S×177°.01W, h10km, mb4.9/46 Error ellipse: s-maj=9.3km s-min=5.3km az=124.0*
*ISCJB **09** 22:21:04.5±0.2, 29°.35S±0°.05×177°.14W±0°.06, h31km, mb4.9/67, MS4.7/17, Error ellipse: s-maj=8.4km s-min=5.2km az=36.0*
*MOS **09** 22:21:05.5±1.1, 29°.18S×177°.17W, h33km, mb5.0/18, MS4.8/6, Error ellipse: s-maj=13.4km s-min=11.6km az=118.5*
*BJI **09** 22:21:05.0, 29°.10S×177°.20W, h20km, mb5.2/22, mB5.5/21, Ms5.2/16, Ms7 4.9/16*

ISC 09 22:21:05.8±0.3, 29°.40S±0°.05×177°.04W±0°.05, h31km**, n258, σ1§64/259, mb4.9/67, MS4.8/18, 2C-2D, Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 8µm,0.3s,baz=114,slow=1.9,SNR=225	**0.78**	**281**	Pn	**Pn**	**22 21 20.5**	**-0.2**
RAO				Sn	**Sn**	**22 21 33.1**	**+1.8**
	14µm,0.3s,baz=75,slow=20,SNR=24						
HAZ	**Te Kaha**	**9.38**	**206**	*e*PN	**Pn**	**22 23 15.0**	**-3.8**
HAZ				SN	**Sn**	**22 25 03.0**	**-0.2**
OUZ	**Omahuta**	**9.81**	**231**	*e*Pn	**Pn**	**22 23 27.9**	**+3.1**
URZ	**Urewera** 0.6nm,0.3s,baz=241,slow=19,SNR=6.6	**10.08**	**207**	Pn	**Pn**	**22 23 24.3**	**-4.1**
URZ				Sn	**Sn**	**22 25 18.8**	**-1.6**
	8.6nm,0.3s,baz=164,slow=23,SNR=7.8						
URZ	**Urewera**	**10.08**	**207**	*e*PN	**Pn**	**22 23 25.3**	**

TAOE	Nuku Hiva Isla	40.15	67	eLR		LR		22 39 25.4	
	comp=Z,2µm,25.0s								
AS01	Alice Springs	43.96	265	eP		P		22 29 09.2	-1.1
AS31	Alice Springs	44.00	265	eP		P		22 29 10.6	-0.1
	comp=Z,3.3nm,0.6s								
ASAR	Alice Springs	44.00	265	P		P		22 29 09.8	-0.9
	comp=Z,6.6nm,0.7s,baz=100,slow=7.5,SNR=30								
ASAR				LR		LR		22 47 09.2	
	comp=Z,3µm,18.3s,baz=112,slow=36								
WB2	Warramunga Arr	44.89	271	eP		P		22 29 16.7	-1.1
	comp=Z,14nm,1.0s								
WRAB	Tennant Creek	44.90	271	eP		P		22 29 17.5	-0.3
WRAB				pmax		pmax			
	comp=Z,10.0nm,0.8s								
WRAB	Tennant Creek	44.90	271	eP		P		22 29 17.5	-0.3
	comp=Z,10nm,0.8s								
WRA	Warramunga Arr	44.91	271	P		P		22 29 16.8	-1.1
	comp=Z,4.5nm,0.5s,baz=110,slow=8.1,SNR=38								
WRA				LR		LR		22 47 21.9	
	comp=Z,981nm,18.4s,baz=100,slow=35								
FORT	Forrest	47.11	254	eP		P		22 29 35.9	+0.7
	comp=Z,255nm,0.6s								
JAY	Jayapura	48.20	296	LR		LR		22 47 53.6	
	comp=Z,22nm,20.3s,slow=34								
SBA	Scott Base	49.09	184	eP		P		22 29 53.6	+3.8
SBA				pmax		pmax			
	comp=Z,32nm,1.3s								
SBA	Scott Base	49.09	184	eP		P		22 29 53.6	+3.8
	comp=Z,32nm,1.3s								
VNDA	Vanda	49.17	186	P		P		22 29 53.8	+3.4
	comp=Z,1.8nm,0.8s,baz=15,slow=6.7,SNR=9.1								
VNDA				LR		LR		22 47 01.2	
	comp=Z,248nm,21.4s,baz=25,slow=32								
VNDA	Vanda	49.17	186	eP		P		22 29 53.9	+3.5
VNDA				pmax		pmax			
	comp=Z,7.0nm,1.0s								
VNDA	Vanda	49.17	186	eP		P		22 29 53.9	+3.5
	comp=Z,6.5nm,1.0s								
FITZ	Fitzroy Crossi	53.20	269	LR		LR		22 52 29.4	
	comp=Z,790nm,18.2s,baz=96,slow=36								
CASY	Casey	56.41	208	eP		P		22 30 44.8	+0.9
	comp=Z,30nm,0.9s								
MBWA	Marble Bar	57.17	263	eP		P		22 30 49.7	-0.4
	comp=Z,34nm,1.3s								
QSPA	South Pole Qui	60.70	180	eP		P		22 31 15.9	+1.9
	comp=Z,224nm,1.0s								
KAPI	Kappang	64.26	279	LR		LR		22 59 50.5	
	comp=Z,349nm,18.9s,baz=142,slow=36								
MAW	Mawson	73.53	200	P		P		22 32 36.7	+1.5
	comp=Z,6.0nm,0.6s,baz=138,slow=7.8,SNR=20								
MAW				LR		LR		23 04 14.8	
	comp=Z,442nm,19.2s,baz=75,slow=35								
MAW	Mawson	73.53	200	eP		P		22 32 37.1	+1.9
	comp=Z,7.8nm,1.4s								
SBUM	Sibu	74.52	282	eP		P		22 32 41.9	0.0
	comp=Z,4.4nm,0.8s								
MJAR	Matsushiro Arr	77.91	325	P		P		22 32 59.3	-1.3
	comp=Z,2.0nm,0.6s,baz=159,slow=6.3,SNR=8.8								
MAJO	Matsushiro	77.91	325	eP		P		22 33 00.5	-0.1
MAJO				pmax		pmax			
	comp=Z,9.0nm,1.0s								
MAJO	Matsushiro	77.91	325	eP		P		22 33 00.5	-0.1
	comp=Z,8.8nm,1.0s								
MJB9	Matsu-Tunnel	77.91	325	eP		P		22 32 59.6	-1.0
	comp=Z,2.2nm,1.0s								
SYO	Syowa Base	78.27	193	⇑eP		P		22 33 01.7	-0.5
SYO	Syowa Base	78.27	193	⇓epP		P		22 33 03.8	+1.6
SNAA	Sanae	79.12	178	P		P		22 33 08.1	+1.1
SNAA	Sanae	79.12	178	eP		P		22 33 07.7	+0.7
SNAA	Sanae	79.12	178	eP		P		22 33 07.7	+0.7
	comp=Z,579nm,1.0s								
VNA1	Neumayer--Stat	79.91	176	P		P		22 33 12.5	+1.3
ASAJ	Asahikawa	81.95	332	eP		P		22 33 22.5	+0.3
	comp=Z,3.1nm,0.8s								
PLCA	Paso Flores	82.57	133	P		P		22 33 27.5	+1.5
	comp=Z,8.7nm,0.9s,baz=234,slow=6.5,SNR=7.7								
KSRS	Korea Array	84.14	319	P		P		22 33 34.4	+0.7
	comp=Z,2.9nm,0.8s,baz=128,slow=6.0,SNR=5.0								
KSAR	Wonju Array Be	84.15	319	P		P		22 33 34.4	+0.6
KSAR	Wonju Array Be	84.15	319	P		P		22 33 34.4	+0.6
YSS	Yuzh-Sakhalins	84.22	334	eP		P		22 33 33.9	0.0
YSS				pmax		pmax			
	comp=Z,20nm,0.8s								
YSS	Yuzh-Sakhalins	84.22	334	eP		P		22 33 33.9	0.0
	comp=Z,20nm,0.8s								
PEA0	Petropavlovsk-	85.06	345	eP		P		22 33 37.1	-0.9
PETK	Petropavlovsk-	85.06	345	P		P		22 33 36.7	-1.4
	comp=Z,3.7nm,0.6s,baz=99,slow=6.1,SNR=8.0								
QIZ	Qiongzhong	85.33	295	P		P		22 33 42.9	+2.7
QIZ				S		S		22 44 09.2	+0.1
QIZ				LR		LR			
	comp=Z,140nm,16.1s								
QIZ				LR		LR			
	comp=Z,200nm,21.8s								
GSC	Goldstone, Bar	85.80	45	eP		P		22 33 42.8	+0.5
GSC	Goldstone, Bar	85.80	45	eP		P		22 33 42.8	+0.5
WAKR	Walker	86.33	42	eP		P		22 33 44.9	-0.1
	comp=Z,20nm,1.6s								
USRK	Ussuriysk Ar.	86.80	326	P		P		22 33 46.2	-0.6
	comp=Z,4.8nm,0.7s,baz=124,slow=4.3,SNR=15								
Y14A	Wickenburg	87.36	48	eP		P		22 33 50.5	+0.5
	comp=Z,29nm,1.3s								
SHPR	Sheep Range	87.59	45	eP		P		22 33 50.9	-0.3
	comp=Z,5.2nm,1.2s								
TUC	Tucson	87.84	51	eP		P		22 33 53.5	+1.2
TUC				pmax		pmax			
	comp=Z,7.0nm,1.1s								
TUC	Tucson	87.84	51	eP		P		22 33 53.5	+1.2
	comp=Z,6.6nm,1.1s								
X16A	Lo Mia Camp, P	88.67	49	eP		P		22 33 57.6	+1.3
	comp=Z,6.0nm,1.0s								
LCMT	Little Creek M	89.11	46	eP		P		22 33 57.7	-0.5
	comp=Z,3.7nm,0.9s								
U15A	North Rim	89.35	47	eP		P		22 34 00.4	+0.8
	comp=Z,6.5nm,0.9s								
CCUT	Cedar City	89.37	45	eP		P		22 33 59.7	+0.1
	comp=Z,6.9nm,1.4s								
CN2	Changchun	89.86	322	eP		P		22 34 11.7	+10
CN2				pmax		pmax			
	comp=Z,10.0nm,1.2s								
TIA	Tai'an	89.91	312	eP		P		22 33 58.9	-3.0
TIA				pmax		pmax			
	comp=Z,10.0nm,1.6s								
NLWA	Neilton Lookou	90.17	33	eP		P		22 34 03.2	+0.4
	comp=Z,5.8nm,0.8s								
MTPU	Mount Pierson	90.40	46	eP		P		22 34 05.1	+0.5
	comp=Z,4.9nm,1.0s								
TX31	Lajitas Ar. Si	91.15	57	eP		P		22 34 07.1	-0.9
TXAR	Lajitas Array	91.15	57	P		P		22 34 07.3	-0.6
	comp=Z,1.1nm,0.9s,baz=214,slow=6.0,SNR=11								
G08A	Pilot Rock	91.16	37	eP		P		22 34 08.0	+0.4
	comp=Z,7.8nm,0.9s								
MFID	Camas Ranch	91.62	40	eP		P		22 34 10.1	+0.3
	comp=Z,4.3nm,0.9s								
ENH	Enshi	91.73	304	eP		P		22 34 09.6	-1.0
	comp=Z,8.7nm,0.3s								
BMO	Blue Mountains	91.75	38	eP		P		22 34 10.2	-0.2
	comp=Z,2.2nm,0.8s								
GYA	Guiyang	91.78	299	P		P		22 34 12.0	+1.0
GYA				PP		PP		22 37 52.4	+2.0
GYA				SKS		SKSac		22 44 42.8	+1.0
GYA				S		S		22 45 09.6	-0.5
GYA				SS		SS		22 51 20.0	+1.3
GYA				pmax		pmax			
	comp=Z,20nm,1.0s								
GYA				pmax		pmax			
	comp=Z,120nm,8.0s								
GYA				LR		LR			
	comp=Z,510nm,21.2s								
GYA				LR		LR			
	comp=Z,470nm,22.3s								
GYA				LR		LR			
	comp=Z,520nm,21.4s								
SPUT	South Promonto	92.24	43	eP		P		22 34 13.2	+0.4
	comp=Z,6.5nm,1.2s								
HVU	Hansel Valley	92.34	42	eP		P		22 34 13.6	+0.4
HVU				pmax		pmax			
	comp=Z,11nm,1.2s								
HVU	Hansel Valley	92.34	42	eP		P		22 34 13.6	+0.4
	comp=Z,11nm,1.2s								
D08A	Wollman Farm,	92.37	36	eP		P		22 34 13.4	+0.4
	comp=Z,8.7nm,0.9s								
HLID	Hailey	92.51	40	eP		P		22 34 14.5	+0.5
	comp=Z,2.8nm,0.8s								
SUA	Susitna One	93.03	12	eP		P		22 34 15.2	-0.7
	comp=Z,7.1nm,0.7s								
TTA	Tatalina	93.54	9	eP		P		22 34 17.2	-0.9
TTA				pmax		pmax			
	comp=Z,9.0nm,1.2s								
TTA	Tatalina	93.54	9	eP		P		22 34 17.2	-0.9
	comp=Z,9.2nm,1.2s								
BMRM	Bremner River	93.85	15	eP		P		22 34 19.5	-0.1
	comp=Z,6.9nm,0.8s								
CMAR	Chiang Mai Arr	93.86	289	P		P		22 34 20.1	-0.4
	comp=Z,0.4nm,0.6s,baz=131,slow=4.2,SNR=2.9								
KMI	Kunming	94.12	296	P		P		22 34 23.1	+1.2
KMI				pmax		pmax			
	comp=Z,4.0nm,0.8s								
KMI				pmax		pmax			
	comp=Z,150nm,5.7s								
XAN	Xi'an	94.18	307	P		P		22 34 32.0	+10
XAN	Xi'an	94.18	307	SKS		SKSac		22 44 56.2	+1.6
XAN	Xi'an	94.18	307	S		S		22 45 34.9	+4.1
XAN	Xi'an	94.18	307	SS		SS		22 52 06.6	+14
XAN				pmax		pmax			
	comp=Z,4.0nm,1.0s								
XAN				LR		LR			
	comp=E,180nm,20.3s								
XAN				LR		LR			
	comp=Z,220nm,19.3s								
SDCO	Great Sand Dun	94.52	49	eP		P		22 34 24.3	+0.8
	comp=Z,7.1nm,1.3s								
SDCO				ePP		PP		22 38 20.1	+8.2
CAST	Castle Rocks	94.61	11	eP		P		22 34 21.1	-1.8
	comp=Z,4.7nm,0.8s								
BW06	Boulder Array	94.84	43	eP		P		22 34 24.1	-0.7
PDAR	Pinedale Array	94.84	43	P		P		22 34 23.4	-1.4
	comp=Z,1.2nm,1.0s,baz=208,slow=2.9,SNR=4.9								
PDAR				LR		LR		23 14 01.2	
	comp=Z,464nm,18.0s,baz=229,slow=34								
KTH	Kantishna Hill	94.93	11	eP		P		22 34 23.2	-1.2
	comp=Z,4.8nm,0.8s								
TRF	Thorofare Moun	94.95	12	eP		P		22 34 23.6	-1.1
	comp=Z,10nm,0.8s								
BOZ	Bozeman (W)	95.36	40	eP		P		22 34 27.2	+0.2
BOZ				pmax		pmax			
	comp=Z,4.0nm,1.1s								
BOZ	Bozeman (W)	95.36	40	eP		P		22 34 27.2	+0.2
	comp=Z,4.1nm,1.1s								
HHC	Hu-ho-hao-te	96.14	314	eP		P		22 34 32.4	+1.8
HHC				SKS		SKSac		22 45 07.7	+2.8
HHC				S		ScS		22 45 53.0	+4.7
HHC				pmax		pmax			
	comp=Z,22nm,1.3s								
HHC				pmax		pmax			
	comp=Z,79nm,7.3s								
HHC				LR		LR			
	comp=Z,240nm,17.8s								
HHC				LR		LR			
	comp=Z,270nm,18.7s								
HHC				LR		LR			
	comp=Z,300nm,18.6s								
CD2	Chengdu	96.27	302	eP		P		22 34 31.6	+0.2
CD2				sP		pP		22 34 40.9	-0.4
CD2				PP		PP		22 38 24.6	-0.7
CD2				SKS		SKSac		22 45 06.7	+0.8
CD2				S		S		22 45 49.9	+0.8
CD2				sS		sS		22 46 01.4	-4.3
CD2				SS		SS		22 52 23.4	+0.9
CD2				pmax		pmax			
	comp=Z,10.0nm,0.6s								
CD2				pmax		pmax			
	comp=Z,120nm,6.6s								
DOT	Dot Lake	96.34	14	eP		P		22 34 30.5	-0.3
	comp=Z,55nm,0.5s								
HDA	Harding Lake	96.44	13	eP		P		22 34 30.4	-0.8
	comp=Z,5.4nm,0.7s								
CCB	Clear Creek Bu	96.49	12	eP		P		22 34 30.4	-1.1
	comp=Z,3.4nm,0.7s								
IL1	Eielson Array	96.77	13	eP		P		22 34 31.3	-1.5
ILAR	Eielson Array	96.77	13	P		P		22 34 31.3	-1.5
	comp=Z,1.5nm,0.7s,baz=220,slow=5.5,SNR=19								
ILAR				LR		LR		23 10 47.3	
	comp=Z,128nm,21.9s,baz=204,slow=31								
ILB	Eielson Array	96.77	13	eP		P		22 34 31.6	-1.1
BILL	Bilibino	97.94	354	eP		P		22 34 36.4	-1.6
BILL				e				22 38 36.6	
BILL				pmax		pmax			
	comp=Z,3.0nm,1.0s								
BILL				MLR		MLR			
	comp=Z,346nm,18.0s								
LZH	Lanzhou	98.80	306	eP		Pdif		22 34 45.7	+2.9
LZH				pP		pP		22 34 52.2	-0.6
LZH				sP		sP		22 34 54.8	-1.5
LZH				PP		PP		22 38 49.8	+5.0
LZH				pmax		pmax			
	comp=Z,21nm,1.4s								
LZH				pmax		pmax			
	comp=Z,93nm,9.5s								
LZH				LR		LR			
	comp=Z,350nm,18.0s								
LZH				LR		LR			
	comp=Z,340nm,17.8s								
LZH				LR		LR			
	comp=Z,420nm,19.5s								
SONM	Songino Array	102.96	318	P		Pdif		22 35 02.1	+1.1
	comp=Z,0.2nm,0.4s,baz=164,slow=1.0,SNR=2.5								
MK01	Makanchi Array	117.75	310	ePKPdf		PKPdf		22 39 47.5	-1.3
MKAR	Makanchi Array	117.77	310	PKP		PKPdf		22 39 47.5	-1.3
	comp=Z,0.5nm,0.4s,baz=64,slow=2.8,SNR=6.4								
ZALV	Zalesovo Beam	117.84	319	PKP		PKPdf		22 39 47.2	-1.4
	comp=Z,0.6nm,0.6s,baz=149,slow=3.5,SNR=4.3								
BOSA	Boshof	118.50	202	PKP		PKPdf		22 39 52.6	+1.6
	comp=Z,2.6nm,0.8s,baz=319,slow=1.3,SNR=4.2								
KSH	Kashi	120.45	301	ePKP		PKPdf		22 39 55.0	+0.7
KSH				esPKP				22 40 08.4	
KSH				ePP		PP		22 41 30.8	+9.2
KSH				PKS		PKSdf		22 43 30.6	-0.5
KSH				SKS		SKSdf		22 47 01.8	-2.4
KSH				SKKS		SKKSac		22 48 18.7	-0.1
KSH				AMB		AMB			
	comp=Z,73nm,4.5s								
KSH				LR		LR			
	comp=Z,52nm,6.2s								
KSH				LR		LR			
	comp=Z,79nm,9.7s								
KSH				LR		LR			
	comp=Z,100nm,6.7s								
KURK	Kurchatov	120.96	314	ePKIKP		PKPdf		22 39 53.9	-0.8
KURK	Kurchatov	120.96	314	ePKPdf		PKPdf		22 39 53.9	-0.8
KBL	Kabul	124.59	294	ePKIKP		PKPdf		22 40 04.3	+1.8
KBL	Kabul	124.59	294	ePKPdf		PKPdf		22 40 04.3	+1.8
KKAR	Karatay Array	125.21	304	ePKIKP		PKPdf		22 40 02.8	-0.4
KKAR	Karatay Array	125.21	304	ePKPdf		PKPdf		22 40 02.8	-0.4
VOSK	Vostochnaya	125.90	316	ePKIKP		PKPdf		22 40 03.6	-0.6
VOSK	Vostochnaya	125.90	316	ePKPdf		PKPdf		22 40 03.6	-0.6
BVAR	Borovoye Array	126.27	316	PKP		PKPdf		22 40 04.4	-0.5
	comp=Z,1.7nm,0.5s,baz=104,slow=1.8,SNR=15								
BRVK	Borovoye	126.33	316	ePKIKP		PKPdf		22 40 04.7	-0.3
BRVK	Borovoye	126.33	316	ePKPdf		PKPdf		22 40 04.7	-0.3
ZRNK	Zerenda	127.10	316	ePKIKP		PKPdf		22 40 06.0	-0.5
ZRNK	Zerenda	127.10	316	ePKPdf		PKPdf		22 40 06.0	-0.5
SPA0	Spitsbergen Ar	130.77	356	epPKPdf		pPKPdf		22 40 21.4	-1.7
ABKAR	Akbulak array	132.88	311	epPKPdf		pPKPdf		22 40 25.5	-2.2
GEYT	Alibeck	133.88	296	PKP		PKPdf		22 40 21.3	+1.4
	comp=Z,1.2nm,0.5s,baz=151,slow=3.3,SNR=3.3								
ARCES	ARCESS Array B	137.79	348	PKhKP		PKPpre		22 40 18.4	
	comp=Z,2.3nm,0.9s,baz=321,slow=1.6,SNR=6.2								
ARCES				PKP		PKPdf		22 40 23.8	-2.3
	comp=Z,4.2nm,0.9s,baz=29,slow=2.8,SNR=7.2								
ARCES	ARCESS Array B	137.79	348	PKHKP		PKPpre		22 40 18.4	
ARCES								22 40 23.8	
ARCES				pmax		pmax			
	comp=Z,2.0nm,0.9s								
ARCES				pmax		pmax			
	comp=Z,3.0nm,0.8s								
H10S3	ASCENSION HYDR	138.26	153	T		T		01 16 08.5	
	baz=204,slow=74,SNR=35								
H10S2	ASCENSION HYDR	138.26	153	T		T		01 16 08.5	
	baz=204,slow=74,SNR=91								
H10S1	ASCENSION HYDR	138.27	153	T		T		01 16 08.5	
	baz=204,slow=74,SNR=85								
H10N3	ASCENSION HYDR	139.33	153	T		T		01 17 25.8	
	baz=204,slow=75,SNR=64								
H10N1	ASCENSION HYDR	139.34	153	T		T		01 17 21.3	
	baz=204,slow=75,SNR=54								
H10N2	ASCENSION HYDR	139.35	153	T		T		01 17 22.4	
	baz=204,slow=75,SNR=59								
TBLG	Delisi	144.19	302	P		PKPab		22 40 36.6	+0.2
TBLG	Delisi	144.19	302	ePKIKP		PKPab		22 40 36.5	+0.2
GUDG	Gudauri	144.29	303	P		PKPdf		22 40 38.7	-0.2
FIA1	FINESS Array S	144.49	341	ePKPdf		PKPab		22 40 35.0	-1.7
FIA1				ePKPdf		PKPbc		22 40 35.5	-1.4
FINES	FINESS Array B	144.49	341	PKP		PKPab		22 40 35.9	-0.9
	comp=Z,17nm,0.8s,baz=64,slow=4.4,SNR=45								
ZEI	Tsey	144.67	303	i PKIKP		PKPab		22 40 36.3	-2.0
ZEI				pmax		pmax			
	comp=Z,35nm,0.7s								
OBN	Obninsk	144.82	326	ePKIKP		PKPab		22 40 36.6	-1.5
OBN				pmax		pmax			
	comp=Z,13nm,0.8s								
OBN				MLR		MLR			
	comp=Z,288nm,19.0s								
OBN	Obninsk	144.82	326	ePKPdf		PKPab		22 40 37.8	-0.3
GOF	Gofitskoye	144.86	308	⇑ePKIKP		PKPbc		22 40 38.5	-0.2
ONI	Oni	145.02	303	P		PKPab		22 40 39.5	+0.1
ONI	Oni	145.02	303	ePKIKP		PKPab		22 40 39.5	+0.1
BGD	Bogdanovka	145.09	301	P		PKPdf		22 40 40.4	0.0
AKH	Akhalkalaki	145.16	301	P		PKPdf		22 40 40.4	-0.1
AKH	Akhalkalaki	145.16	301	ePKIKP		PKPdf		22 40 40.3	-0.1
KBZ	Khabaz	145.23	305	PKPbc		PKPbc		22 40 39.8	-0.1
	comp=Z,6.3nm,0.7s,baz=127,slow=2.7,SNR=15								
KIV	Kislovodsk	145.34	306	ePKP2		PKPdf		22 40 39.2	-1.3
KIV				e				22 44 02.2	
KIV				pmax		pmax			
	comp=Z,9.0nm,1.0s								
KIV	Kislovodsk	145.34	306	ePKPbc		PKPdf		22 40 39.6	-0.9
VSR	Storozhevoye	145.34	319	ePKIKP		PKPdf		22 40 39.5	-0.6
VSR				pmax		pmax			
	comp=Z,20nm,0.9s								
NC303	NORSAR Array S	147.69	352	ePKPdf		PKPdf		22 40 44.2	+0.4
NC204	NORSAR Array S	147.70	353	ePKPdf		PKPbc		22 40 46.6	-0.2
MZRK	Al-Mazaregh	147.75	291	eP		PKPdf		22 40 40.3	-4.4
NB2	NORSAR Subarra	147.88	352	PKP		PKPbc		22 40 45.6	-1.7
	comp=Z,15nm,0.9s,baz=11,slow=2.9								
NOA	NORSAR Array B	147.88	352	PKPbc				22 40 45.5	-1.7
	comp=Z,9.2nm,0.8s,baz=16,slow=4.4,SNR=37								
NBO02	NORSAR Array S	147.92	353	ePKPdf		PKPbc		22 40 46.3	-1.0
NBO00	NORSAR Array S	147.94	353	ePKPdf		PKPbc		22 40 46.8	-0.6
NC602	NORSAR Array S	148.14	352	ePKPdf		PKPbc		22 40 47.0	-0.9
SFNV	Sufian	148.18	292	eP		PKPdf		22 40 42.0	-3.5
ANN	Anapa	148.78	309	i PKP2		PKPab		22 40 56.2	+2.4
ANN				pmax		pmax			
	comp=Z,29nm,0.8s								
ANN				MLR		MLR			
	comp=Z,214nm,21.0s								
IDID	Didziasalis	149.01	333	eP		PKPbc		22 40 50.1	-0.1
IDID				IAmb		IAmb		22 41 02.9	
	comp=Z,9.2nm,1.1s								
ISAL	Salakas	149.05	334	eP		PKPbc		22 40 50.3	0.0
ISAL				IAmb		IAmb		22 40 58.8	
	comp=Z,13nm,1.0s								
NACGM	Naroch	149.29	333	e		PKPbc		22 40 50.0	-0.9
NACGM				eLR		LR		23 56 08.0	
KONO	Kongsberg	149.42	353	ePKPdf		PKPdf		22 40 48.0	+1.3
KONO				ePKPbc		PKPbc		22 40 50.8	-0.3
ZALF	Zalf	150.45	286	eP		PKPdf		22 40 49.6	+0.3
SALA	Sala	150.95	285	eP		PKPdf		22 40 49.2	-1.0
AKASG	Malin Array Be	150.99	325	PKPbc		PKPbc		22 40 54.5	-0.7
	comp=Z,4.4nm,0.4s,baz=46,slow=3.0,SNR=33								
KIEV	Kiev	151.01	325	ePKIKP		PKPbc		22 40 54.3	-0.9
KIEV	Kiev	151.01	325	ePKPbc		PKPbc		22 40 54.3	-0.9
HAWK	Haweek	151.25	289	eP		PKPdf		22 40 49.6	-0.9
BIDA	Albida	151.31	290	eP		PKPdf		22 40 49.6	-1.0
SUW	Suwalki	151.35	335	ePKP		PKPbc		22 40 55.5	-0.4
SUW	Suwalki	151.35	335	ePKIKP		PKPbc		22 40 55.5	-0.4
BR131	Keskin Array S	152.84	300	ePKPbc		PKPbc		22 41 00.0	0.0
BRTR	Keskin Array B	152.84	300	PKPbc		PKPbc		22 40 59.2	-0.7
	comp=Z,2.2nm,0.8s,baz=146,slow=4.8,SNR=8.6								
BRTR				PKPab		PKPab		22 41 07.6	-3.4
	comp=Z,8.2nm,1.0s,baz=133,slow=2.3,SNR=17								
BR231	Keskin MP Arra	153.46	301	epPKPdf		PKPbc		22 40 59.9	-1.4
CSS	Mathiatis	153.76	290	ePKPbc		PKPbc		22 41 02.8	+0.8
BUR08	Bucovina Ar. S	154.96	323	ePKPbc		PKPdf		22 41 05.0	+10
KOLS	Kolonicke sedl	155.54	328	ePKP2		PKPab		22 41 21.1	-0.9
KOLS	Kolonicke sedl	155.54	328	ePKP		PKPab		22 41 21.1	-0.9
STHS	Stebnicka Huta	155.64	330	ePKP2		PKPab		22 41 22.8	+0.4
STHS	Stebnicka Huta	155.64	330	ePKP		PKPab		22 41 22.8	+0.4
CRVS	Cervenica-Dubn	155.93	329	ePKP2		PKPab		22 41 23.3	-0.4
CRVS	Cervenica-Dubn	155.93	329	ePKP		PKPab		22 41 23.3	-0.4
OKC	Ostrava-Krasne	156.56	335	ePKPAB		PKPab		22 41 25.8	-0.5
OKC	Ostrava-Krasne	156.56	335	ePKP2		PKPab		22 41 25.8	-0.5
LANS	Liptovska Anna	156.60	332	ePKP2		PKPab		22 41 26.5	-0.1
LANS	Liptovska Anna	156.60	332	ePKP		PKPab		22 41 26.5

MRHZ				AML	AML	22 23 43.3		
MRHZ				AML	AML	22 23 43.4		
URZ	**Urewera**	**0.83**	**93**	PN	Pn	22 23 43.6	0.0	
URZ				SN	Sn	22 24 02.3	+0.3	
BKZ	**Black Stump Fm**	**1.00**	**160**	Pn	Pn	22 23 45.1	+0.2	
BKZ	**Black Stump Fm**	**1.00**	**160**	⇑PN	Pn	22 23 45.1	+0.1	
BKZ				SN	Sn	22 24 03.9	-0.6	
BKZ				AML	AML	22 24 05.4		
WNVZ	**Wahianoa**	**1.15**	**198**	Pn	Pn	22 23 46.5	+0.1	
WNVZ	**Wahianoa**	**1.15**	**198**	⇑PN	Pn	22 23 46.4	+0.1	
MOVZ	**Moawhango**	**1.20**	**191**	Pn	Pn	22 23 46.4	-0.3	
MOVZ	**Moawhango**	**1.20**	**191**	PN	Pn	22 23 46.2	-0.5	
KWHZ	**Kaweka Forest**	**1.23**	**166**	PN	Pn	22 23 47.1	+0.1	
KWHZ				AML	AML	22 23 47.8		
KWHZ				AML	AML	22 24 10.6		
BHHZ	**Black Hill Sta**	**1.26**	**180**	Pn	Pn	22 23 47.1	-0.1	
BHHZ	**Black Hill Sta**	**1.26**	**180**	PN	Pn	22 23 47.1	-0.1	
ARHZ	**Aropaoanui**	**1.27**	**145**	PN	Pn	22 23 47.8	+0.6	
ARHZ				AML	AML	22 24 09.6		
ARHZ				AML	AML	22 24 12.0		
KRHZ	**Kereru**	**1.44**	**170**	PN	Pn	22 23 48.8	-0.1	
HAZ	**Te Kaha**	**1.45**	**72**	SN	Sn	22 24 10.1	-1.5	
HAZ				AML	AML	22 24 11.1		
KNZ	**Kokohu**	**1.50**	**122**	PN	Pn	22 23 49.4	-0.1	
CKHZ	**Cape Kidnapper**	**1.64**	**151**	PN	Pn	22 23 51.1	+0.2	
CKHZ				AML	AML	22 24 11.2		
CKHZ				AML	AML	22 24 17.7		
PNHZ	**Pukenui**	**1.69**	**176**	Pn	Pn	22 23 50.8	-0.7	
PNHZ	**Pukenui**	**1.69**	**176**	PN	Pn	22 23 50.8	-0.7	
PNHZ				AML	AML	22 24 33.3		
KAHZ	**Kahuranaki**	**1.69**	**158**	Pn	Pn	22 23 51.7	+0.1	
KAHZ	**Kahuranaki**	**1.69**	**158**	PN	Pn	22 23 51.6	0.0	
TSZ	**Takapari Road**	**1.83**	**182**	Pn	Pn	22 23 52.2	-0.8	
TSZ	**Takapari Road**	**1.83**	**182**	PN	Pn	22 23 52.2	-0.9	
TSZ				SN	Sn	22 24 18.4	-0.7	
WPHZ	**Waipukurau**	**1.86**	**171**	Pn	Pn	22 23 52.7	-0.6	
WPHZ	**Waipukurau**	**1.86**	**171**	PN	Pn	22 23 52.6	-0.8	
PXZ	**Pawanui**	**1.91**	**161**	Pn	Pn	22 23 53.3	-0.6	
PXZ	**Pawanui**	**1.91**	**161**	⇑PN	Pn	22 23 53.3	-0.6	
PRHZ	**Porangahau**	**2.09**	**168**	Pn	Pn	22 23 55.1	-0.8	
PRHZ	**Porangahau**	**2.09**	**168**	PN	Pn	22 23 55.1	-0.8	
POWZ	**Post Office Ro**	**2.17**	**186**	PN	Pn	22 23 55.4	-1.5	
ANWZ	**Angora Road**	**2.25**	**172**	PN	Pn	22 23 56.7	-1.2	
ANWZ				AML	AML	22 24 27.3		
PRWZ	**Pori Road**	**2.33**	**182**	Pn	Pn	22 23 57.4	-1.3	
PRWZ	**Pori Road**	**2.33**	**182**	PN	Pn	22 23 57.1	-1.6	
PRWZ				AML	AML	22 24 03.8		
PRWZ				AML	AML	22 24 08.2		
BFZ	**Birch Farm**	**2.46**	**177**	PN	Pn	22 23 58.5	-1.9	
BFZ				AML	AML	22 26 19.6		
BFZ				AML	AML	22 26 39.0		
MRZ	**Mangatainoka R**	**2.46**	**188**	PN	Pn	22 23 58.2	-2.1	
MRZ				AML	AML	22 23 58.8		
MRZ				AML	AML	22 24 31.0		
OGWZ	**Otaki Gorge**	**2.67**	**194**	PN	Pn	22 24 00.7	-2.3	
OGWZ				AML	AML	22 24 48.6		
HOWZ	**Holdsworth Sta**	**2.70**	**189**	PN	Pn	22 24 00.7	-2.6	
KIW	**Kapiti Island**	**2.77**	**198**	PN	Pn	22 24 01.6	-2.7	
TRWZ	**Traveller**	**3.18**	**185**	PN	Pn	22 24 06.2	-3.1	
MSWZ	**Moikau Station**	**3.24**	**191**	PN	Pn	22 24 06.6	-3.5	
TCW	**Tory Channel**	**3.28**	**204**	PN	Pn	22 24 07.3	-3.2	
PLWZ	**Palliser**	**3.39**	**190**	PN	Pn	22 24 08.4	-3.6	
NNZ	**Nelson**	**3.63**	**214**	PN	Pn	22 24 11.1	-3.9	
BSWZ	**Blackbirch Sta**	**3.86**	**205**	PN	Pn	22 24 14.3	-3.7	
KHZ	**Kahutara**	**4.60**	**204**	PN	Pn	22 24 23.9	-3.7	

*IDC **09** 22:28:19.1±1.4,29.°75S×176.°38W,h0km,mb3.8/2,*
mb1 4.0/2,mb1mx3.7/18,mbtmp3.8/2,Error ellipse:
s-maj=57.1km s-min=31.4km az=18.0
*NEIC **09** 22:28:20.0±0.9,29.°66S×176.°26W,h10km,mb4.3/4,Error*
ellipse: s-maj=36.6km s-min=19.6km az=179.0
*ISCJB **09** 22:28:20.0±1.2,29.°6S±0.°3×176.°4W±0.°1,h21km,mb4.4/7,*
Error ellipse: s-maj=46.1km s-min=12.7km az=5.0

ISC 09 22:28:22.3±1.1,**29.°5S**±0.°3×**176.°38W**±0.°09,**h21**km,**n14,**
σ1♀47/16,**mb4.2/7,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.36**	**281**	Pn	**Pb**	**22 28 47.6**	**+0.5**
	109nm,0.3s,baz=323,slow=20,SNR=3.3						
RAO				Sn	**Sn**	**22 29 01.7**	**-1.8**
	315nm,0.3s,baz=20,slow=22,SNR=8.1						
RAO	**Raoul Island**	**1.36**	**281**	*e*Pn	**Pn**	**22 28 47.0**	**+0.8**
RAO				Sn	**Sn**	**22 29 01.8**	**-1.8**
PMG	**Port Moresby**	**39.53**	**293**	*e*P	**P**	**22 35 52.7**	**+0.8**
	1.2nm,0.4s						
ASAR	**Alice Springs**	**44.57**	**265**	P	**P**	**22 36 32.3**	**-0.8**
	0.4nm,0.6s,baz=94,slow=6.0,SNR=4.4						
WRA	**Warramunga Arr**	**45.48**	**270**	P	**P**	**22 36 39.1**	**-1.3**
	1.6nm,0.7s,baz=110,slow=7.2,SNR=8.0						
DAV	**Davao City (W)**	**66.55**	**293**	*e*P	**P**	**22 39 12.1**	**+1.0**
	113nm,0.4s						
MAJO	**Matsushiro**	**78.33**	**324**	*e*P	**P**	**22 40 22.7**	**+1.8**
	2.4nm,0.9s						
NEW	**Newport**	**93.84**	**35**	*e*P	**P**	**22 41 36.7**	**-1.1**
	1.1nm,0.6s						
MCK	**McKinley**	**95.44**	**12**	*e*P	**P**	**22 41 42.5**	**-2.2**
	0.9nm,0.6s						
INK	**Inuvik**	**102.56**	**15**	*e*Pdif	**Pdif**	**22 42 17.9**	**+1.4**
FINES	**FINESS Array B**	**144.78**	**341**	PKPbc	**PKPab**	**22 47 55.1**	**-0.6**
	0.8nm,0.5s,baz=54,slow=2.4,SNR=9.8						
AKASG	**Malin Array Be**	**151.41**	**325**	PKPbc	**PKPbc**	**22 48 14.3**	**+0.1**
	0.4nm,0.4s,baz=48,slow=3.5,SNR=4.0						
BRTR	**Keskin Array B**	**153.39**	**301**	PKPab	**PKPab**	**22 48 33.6**	**+2.3**
	0.2nm,0.3s,baz=18,slow=1.8,SNR=2.6						
TORD	**Torodi Ar. Bea**	**163.62**	**173**	PKPab	**PKPab**	**22 49 15.5**	**-0.2**
	0.7nm,0.9s,baz=181,slow=3.5,SNR=4.3						

*ISK **09** 22:37:22.7,38.°68N×26.°77E,h20km,MD2.7*
*ISCJB **09** 22:37:23.3±0.5,38.°67N±0.°03×26.°74E±0.°05,h20km±8km,*
Error ellipse: s-maj=7.0km s-min=5.0km az=179.9
*CSEM **09** 22:37:23.1±0.1,38.°68N×26.°75E,h16km±1km,MD2.7,*
Error ellipse: s-maj=3.3km s-min=2.9km az=76.0
*DDA **09** 22:37:23.3,38.°63N×26.°81E,h14km,Md2.7*

ISC 09 22:37:22.9±1.0,**38.°68N**±0.°03×**26.°77E**±0.°04,**h14**km±11km,
n26,σ0♀23/38,**Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URLA	**Izmir**	**0.35**	**204**	*i* P	**Pg**	**22 37 29.9**	**-0.1**
URLA				*i* S	**Sg**	**22 37 34.9**	**+0.1**
URLA	**Izmir**	**0.35**	**204**	P	**Pg**	**22 37 29.9**	**-0.1**
URLA				S	**Sg**	**22 37 34.9**	**+0.1**
DKL	**Dikili**	**0.41**	**15**	*e*PG	**Pb**	**22 37 31.7**	**-0.2**
DKL				*e*SG	**Sb**	**22 37 38.0**	**+0.1**
DKL	**Dikili**	**0.41**	**15**	*e*Pg	**Pb**	**22 37 31.7**	**-0.2**
DKL				*e*Sg	**Sb**	**22 37 38.0**	**+0.1**
IZM	**Izmir**	**0.48**	**126**	*e*PG	**Pb**	**22 37 32.9**	**-0.2**
IZM				*e*SG	**Sb**	**22 37 40.3**	**+0.3**
IZM	**Izmir**	**0.48**	**126**	*e*Pg	**Pb**	**22 37 32.9**	**-0.2**
IZM				*e*Sg	**Sb**	**22 37 40.3**	**+0.3**
ZEY	**˜zmir**	**0.49**	**206**	*i* P	**Pg**	**22 37 32.4**	**-0.2**
ZEY				*i* S	**Sg**	**22 37 39.6**	**+0.5**
DGB	**˜zmir**	**0.63**	**172**	*i* P	**Pg**	**22 37 34.8**	**-0.5**
DGB				*i* S	**Sg**	**22 37 43.6**	**0.0**
CHOS	**Chios island**	**0.63**	**243**	*e*PG	**Pb**	**22 37 35.7**	**-0.1**
CHOS	**Chios island**	**0.63**	**243**	*e*Pg	**Pb**	**22 37 35.7**	**-0.1**
AKS	**Akhisar**	**0.84**	**76**	*e*PG	**Pb**	**22 37 39.2**	**0.0**
AKS	**Akhisar**	**0.84**	**76**	*e*Pg	**Pb**	**22 37 39.2**	**0.0**
SIGR	**SIGRI**	**0.89**	**307**	*e*PG	**Pg**	**22 37 40.4**	**+0.2**
SIGR	**SIGRI**	**0.89**	**307**	*e*Pg	**Pg**	**22 37 40.4**	**+0.2**
GCAM	**G?zelcaml?**	**1.04**	**159**	*i* P	**Pn**	**22 37 43.1**	**+0.1**
GCAM				*i* S	**Sb**	**22 37 56.2**	**0.0**
GCAM	**G?zelcaml?**	**1.04**	**159**	P	**Pn**	**22 37 43.1**	**+0.1**
GCAM				S	**Sb**	**22 37 56.2**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.14**	**129**	*e*PN	**Pn**	**22 37 44.6**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.14**	**129**	*e*Pn	**Pn**	**22 37 44.7**	**+0.1**
BALB	**Balikesir**	**1.29**	**42**	*e*PN	**Pn**	**22 37 46.2**	**-0.3**
BALB	**Balikesir**	**1.29**	**42**	*e*Pn	**Pn**	**22 37 46.2**	**-0.3**
MANT	**Manisa**	**1.41**	**97**	*i* P	**Pb**	**22 37 49.3**	**+0.1**
MANT				*i* S	**Sb**	**22 38 07.5**	**+0.3**
MANT	**Manisa**	**1.41**	**97**	P	**Pb**	**22 37 49.3**	**+0.1**
MANT				S	**Sb**	**22 38 07.4**	**+0.3**
KULA	**Kula-Manisa**	**1.49**	**96**	*e*PN	**Pn**	**22 37 49.1**	**-0.2**
KULA	**Kula-Manisa**	**1.49**	**96**	*e*Pn	**Pn**	**22 37 49.1**	**-0.2**
GELI	**Tayfur-Gelibol**	**1.73**	**352**	*e*PN	**Pn**	**22 37 52.2**	**-0.4**
GELI	**Tayfur-Gelibol**	**1.73**	**352**	*e*Pn	**Pn**	**22 37 52.2**	**-0.4**

JMA 09 22:42:04.2±0.3,**22.°82N**×**123.°03E,h47**km,**Southeast of Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HATJ	**Hateruma jima**	**1.42**	**30**	S	Sn	22 42 46.0	+0.8
JYNG	**Yonagunijimaku**	**1.63**	**357**	S	Sn	22 42 50.0	-0.2
IRIF	**Iriomote-Funau**	**1.64**	**23**	P	Pn	22 42 31.7	+1.1
IRIF				*e*S	Sn	22 42 51.3	+0.8
JKRS	**Kuro-shima**	**1.67**	**32**	*e*S	Sn	22 42 52.0	+0.7
JIJ	**Ishigaki jima**	**1.84**	**33**	*e*S	Sn	22 42 55.4	-0.1
JISG	**Ishigakijimahi**	**2.12**	**33**	P	Pn	22 42 37.8	+0.7
JISG				S	Sn	22 43 02.5	+0.3
JTJ	**Tarama**	**2.37**	**40**	P	Pn	22 42 41.5	+0.9

TAP 09 22:42:53.0,24.°47N×121.°84E,h20km,ML2.5,1C-2D,C,
Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.10**	**247**	*i* P	Pb	22 42 57.1	+0.1
	baz=244						
ENA				*i* S	Sb	22 42 59.6	-0.1
	baz=244						
TWC	**Suao**	**0.14**	**4**	⇑*i* P	Pb	22 42 57.7	-0.1
	baz=8.0						
TWC				*i* S	Sb	22 43 00.5	-0.5
	baz=8.0						
EHP	**Heping Village**	**0.18**	**210**	*e*P	Pb	22 42 57.4	-0.7
	baz=200						
TWE	**Neicheng**	**0.30**	**329**	⇓*i* P	Pb	22 43 00.0	+0.3
	baz=330						
TWE				S	Sb	22 43 04.4	+0.2
	baz=330						
ENTT	**Nioudou**	**0.30**	**305**	⇓*i* P	Pb	22 43 00.0	+0.2
	baz=305						
ENTT				S	Sb	22 43 04.7	+0.3
	baz=305						
EGS		**0.39**	**13**	*e*P	Pb	22 43 01.0	-0.2
	baz=14						
EGS				*e*S	Sb	22 43 07.1	+0.4
	baz=14						
NNS	**Nan Shan**	**0.42**	**267**	P	Pb	22 43 02.0	+0.1
	baz=266						
NNS				*e*S	Sb	22 43 07.8	-0.1
	baz=266						
TWD	**Chiawan**	**0.44**	**210**	*e*P	Pb	22 43 01.7	-0.5
	baz=213						
TWD				*e*S	Sb	22 43 08.1	-0.2
	baz=213						
NSK	**Sanguang**	**0.48**	**296**	*i* P	Pb	22 43 03.1	+0.2
	baz=296						
NSK				*i* S	Sb	22 43 09.7	0.0
	baz=296						
TWB1	**Santiao Chiao**	**0.56**	**14**	*e*P	Pn	22 43 06.3	+0.4
	baz=15						
TWB1				*e*S	Sb	22 43 11.8	0.0
	baz=15						
TWA	**Mucha**	**0.56**	**336**	*e*P	Pn	22 43 06.2	+0.3
	baz=326						
NWF	**Wu-fen Shan**	**0.60**	**355**	*e*P	Pb	22 43 05.6	+0.6
	baz=347						
NWF				*e*S	Sb	22 43 14.2	+1.0
	baz=347						
WHF	**Hehuan Shan**	**0.61**	**239**	*e*P	Pb	22 43 05.0	-0.4
	baz=239						
WHF				*e*S	Sb	22 43 12.7	-1.1
	baz=239						
TWT	**Tachien**	**0.64**	**251**	*e*P	Pb	22 43 05.9	+0.3
	baz=247						
TWT				*e*S	Sb	22 43 14.4	+0.2
	baz=247						
TWS1	**Kuangyinshan**	**0.74**	**329**	*e*P	Pn	22 43 08.3	-0.1
	baz=329						
NSTT	**Nanjuang**	**0.78**	**282**	*e*P	Pb	22 43 07.5	-0.4
	baz=275						
NSTT				*e*S	Sb	22 43 19.0	+0.9
	baz=275						
TWY	**Chenhua**	**0.83**	**345**	*e*P	Pn	22 43 10.4	+0.8
	baz=345						

*ISCJB **09** 22:44:36.5±0.6,6.°00N±0.°03×126.°30E±0.°04,h67km±5km,*
mb4.6/71,Error ellipse: s-maj=6.7km s-min=4.2km az=2.4
*IDC **09** 22:44:38.6±0.9,5.°94N×126.°05E,h80km±8km,mb4.2/24,*
mb1 4.3/25,mb1mx4.3/38,mbtmp4.5/25,MS3.9/4,
Ms1 3.9/4,ms1mx3.1/62,Error ellipse: s-maj=18.2km
s-min=8.8km az=75.0
*NEIC **09** 22:44:39.0±0.9,5.°93N×126.°19E,h81km±8km,mb4.6/26,*
Error ellipse: s-maj=8.5km s-min=5.6km az=82.0
*DJA **09** 22:44:39.9±0.5,6.°N±3.°×12.°6E±.°,h71km±4km,MS.2/31,*
mb4.8/31,mB5.7/9,MLv5.3/5,Mw(mB)5.3/9
*KLM **09** 22:44:42.3,5.°94N×126.°24E,h137km,mb4.7,MS5.1*

ISC 09 22:44:40.2±0.6,**6.°03N**±0.°04×**126.°23E**±0.°06,**h88**km±5km,
n184,σ2♀20/206,**mb4.6**/71,**12C-3D,Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**1.22**	**328**	P	**Pn**	**22 44 58.2**	**-4.2**
	209nm,0.3s,baz=130,slow=1.7,SNR=54						
DAV				S	**Sn**	**22 45 17.0**	**-2.1**
	245nm,0.3s,baz=262,slow=21,SNR=9.2						
DAV				LR	LR	22 45 46.3	
	comp=Z,2µm,20.4s,baz=115,slow=56						
KCP	**Kidapawan**	**1.50**	**311**	⇓*i* P	Pn	22 45 00.7	-5.1
KCP				*i* S	**Sn**	**22 45 20.5**	**-4.7**
CTBH	**Cotabato--PC H**	**2.30**	**301**	*e*P	**Pn**	**22 45 11.9**	**-4.4**
CTBH				*i* S	**Sn**	**22 45 39.7**	**-4.3**
SGSI	**Sangihe**	**2.43**	**197**	P	**Pn**	**22 45 21.2**	**+3.2**
CGP	**Cagayan de Oro**	**2.85**	**328**	⇑*e*P	**Pn**	**22 45 22.4**	**-1.3**
CGP				*e*S	**Sn**	**22 45 57.5**	**+0.3**
DCPH	**Dipolog City**	**3.82**	**312**	⇑*e*P	**Pn**	**22 45 34.4**	**-2.4**
SNPH	**Sibulan**	**4.43**	**318**	*e*P	**Pn**	**22 45 40.8**	**-4.4**
LLP	**Lapu-Lapu**	**4.82**	**332**	*e*P	**Pn**	**22 45 47.7**	**-2.7**
LLP				*e*S	**Sn**	**22 46 48.2**	**+3.3**
PLP	**Palo**	**5.25**	**346**	⇓*e*P	**Pn**	**22 45 56.1**	**-0.2**
KMSI	**Cibinong**	**5.86**	**203**	P	**Pn**	**22 46 05.8**	**+1.2**
RCP	**Roxas**	**6.49**	**328**	⇑*e*P	**Pn**	**22 46 11.5**	**-1.6**
MRSI	**Marisa**	**6.98**	**218**	P	**Pn**	**22 46 15.4**	**-4.4**
MRSI				S	Sn	22 47 27.0	-11
MYLDM	**Lahad Datu**	**7.74**	**264**	*e*Pn	**Pn**	**22 46 28.1**	**-2.1**
LUWI	**Luwuk**	**7.82**	**206**	P	**Pn**	**22 46 31.3**	**0.0**
LUWI				S	**Sn**	**22 47 57.4**	**-0.9**
LUWI	**Luwuk**	**7.82**	**206**	*e*Pn	**Pn**	**22 46 30.3**	**-1.1**
TSM	**Tawau**	**8.50**	**259**	⇑P	**Pn**	**22 46 40.9**	**+0.3**
NLAI	**Namlea**	**9.24**	**175**	P	**Pn**	**22 46 52.4**	**+1.7**
NLAI				S	Sn	22 48 22.5	-11
KDM	**Kudat**	**9.38**	**276**	⇑P	**Pn**	**22 46 52.5**	**0.0**
PCI	**Palu**	**9.39**	**223**	P	**Pn**	**22 46 50.7**	**-2.0**
	42nm,0.8s						
TGY	**Tagaytay City**	**9.57**	**327**	P	**Pn**	**22 46 57.8**	**+2.6**
	45nm,0.3s,baz=228,slow=7.4,SNR=3.8						
KKM	**Kota Kinabalu**	**9.96**	**271**	⇑P	**Pn**	**22 47 00.4**	**-0.1**
TTSI	**Tana Toraja**	**11.05**	**216**	P	**Pn**	**22 47 18.0**	**+2.6**
KAPI	**Kappang**	**12.73**	**211**	P	**Pn**	**22 47 35.6**	**-2.4**
	0.8nm,0.3s,baz=353,slow=12,SNR=3.7						
KAPI	**Kappang**	**12.73**	**211**	*e*Pn	**Pn**	**22 47 36.3**	**-1.7**
BTM	**Bintulu**	**13.40**	**258**	⇑P	**Pn**	**22 47 47.5**	**+0.6**
SBUM	**Sibu**	**14.41**	**256**	⇑P	**Pn**	**22 48 00.6**	**+0.6**
SBUM	**Sibu**	**14.41**	**256**	*e*Pn	**Pn**	**22 48 00.0**	**0.0**
BBKI	**Banjar Baru**	**14.77**	**231**	P	**P**	**22 48 09.7**	**+1.4**
SOEI	**Soe**	**15.80**	**187**	P	**P**	**22 48 20.7**	**+0.8**
STKI	**Sintang**	**15.87**	**249**	P	**P**	**22 48 22.0**	**+1.4**
	20nm,1.3s						
KSM	**Kuching**	**16.51**	**255**	⇓P	**P**	**22 48 28.5**	**+0.8**
KSM	**Kuching**	**16.51**	**255**	*e*Pn	**P**	**22 48 26.5**	**-1.2**
	20nm,0.9s						
JAY	**Jayapura**	**16.76**	**120**	P	**P**	**22 48 34.0**	**+3.5**
	baz=287,slow=20,SNR=2.5						
PLAI	**Plampang**	**16.99**	**210**	P	**P**	**22 48 34.3**	**+1.3**
TWSI	**Taliwang, Sumb**	**17.38**	**213**	P	**P**	**22 48 42.8**	**+5.6**
JAGI	**Jajag, Banyuwa**	**18.77**	**220**	P	**Pn**	**22 48 56.1**	**+2.1**
GUMO	**Guam**	**19.83**	**66**	P	**Pn**	**22 49 08.2**	**+1.7**
	28nm,0.8s,baz=214,slow=18,SNR=3.5						
NGJI	**Ngawi**	**19.85**	**228**	P	**Pn**	**22 49 10.9**	**+4.2**
PWJI	**Pagerwojo**	**20.04**	**226**	P	**Pn**	**22 49 12.5**	**+3.6**
	31nm,1.5s						
QIZ	**Qiongzhong**	**20.54**	**310**	*e*P	**P**	**22 49 13.2**	**+1.5**
	24nm,1.0s						
PPBI	**Pangkal Pinang**	**21.65**	**249**	P	**P**	**22 49 26.0**	**+2.3**
	15nm,0.9s,4µm						
TPRI	**Tanjung Pinang**	**22.24**	**258**	P	**P**	**22 49 31.8**	**+1.8**
	39nm,0.9s,16µm						
UBPT	**Khong Chiam**	**22.36**	**296**	P	**P**	**22 49 32.6**	**+1.4**
	18nm,1.2s						
MYKOM	**Kota Tinggi**	**22.71**	**260**	*e*P	**P**	**22 49 34.6**	**-0.4**
	21nm,0.8s						
CBJI	**Citeko**	**22.95**	**238**	P	**P**	**22 49 41.0**	**+3.7**
	192nm,0.8s						
KTGM	**Kuala Trenggan**	**22.99**	**269**	⇑P	**P**	**22 49 38.2**	**+0.5**
KGM	**Kluang**	**23.19**	**261**	⇑P	**P**	**22 49 40.0**	**+0.3**
PMBI	**Palembang**	**23.20**	**248**	P	**P**	**22 49 44.6**	**+4.9**
	245nm,0.4s,8µm						
BLSI	**Bandar Lampung**	**23.81**	**242**	P	**P**	**22 49 47.8**	**+2.5**
	88nm,0.4s						
FITZ	**Fitzroy Crossi**	**23.98**	**181**	P	**P**	**22 49 45.2**	**-1.4**
	13nm,0.5s,baz=15,slow=8.9,SNR=30						
FITZ	**Fitzroy Crossi**	**23.98**	**181**	*e*P	**P**	**22 49 45.7**	**-1.0**
	16nm,0.6s						
CGJI	**Cibinong**	**24.03**	**239**	P	**P**	**22 49 47.1**	**-0.1**
SKNT	**Sakolnakorn**	**24.33**	**298**	P	**P**	**22 49 50.9**	**+1.0**
	24nm,1.1s						
KASI	**Kota Agung**	**24.54**	**243**	P	**P**	**22 49 54.5**	**+2.7**
	74nm,1.0s						
FRIM	**Kepong**	**24.68**	**265**	⇑P	**P**	**22 49 54.1**	**+0.9**
LHSI	**Lahat**	**24.70**	**247**	P	**P**	**22 49 55.5**	**+2.2**
	62nm,1.0s						
LWLI	**Liwa**	**24.70**	**244**	P	**P**	**22 49 54.8**	**+1.3**
	112nm,0.9s						
KHON	**Khomkaen**	**25.11**	**296**	P	**P**	**22 49 58.8**	**+1.7**
IPM	**Ipoh**	**25.14**	**268**	*e*P	**P**	**22 49 57.4**	**0.0**
	16nm,0.8s						
KSI	**Kapahiang**	**25.48**	**248**	P	**P**	**22 50 05.1**	**+4.6**
	114nm,1.0s,12µm						
SDSI	**Sungai Dareh**	**25.71**	**255**	P	**P**	**22 50 02.9**	**+0.4**
	62nm,1.0s						
PMG	**Port Moresby**	**25.89**	**126**	LR	LR	23 01 45.7	
	comp=Z,250nm,18.1s,baz=272,slow=40						
WRAB	**Tennant Creek**	**27.00**	**163**	*e*P	**P**	**22 50 10.7**	**-3.4**
	9.3nm,1.1s						
WRA	**Warramunga Arr**	**27.01**	**163**	P	**P**	**22 50 12.1**	**-2.0**
	3.7nm,0.8s,baz=343,slow=10,SNR=20						
WB2	**Warramunga Arr**	**27.01**	**163**	*e*P	**P**	**22 50 12.6**	**-1.5**
	12nm,0.8s						
WB2				*e*S	**S**	**22 54 35.3**	**-10**
MNSI	**Mandailing Nat**	**27.09**	**260**	P	**P**	**22 50 15.2**	**+0.2**
	17nm,0.9s						
JNU	**Nakatsue**	**27.31**	**9**	P	**P**	**22 50 16.3**	**-0.4**
	10nm,0.9s,baz=209,slow=7.0,SNR=3.9						
PSI	**Prapat**	**27.41**	**264**	P	**P**	**22 50 15.8**	**-2.1**
	12nm,0.7s,baz=113,slow=2.8,SNR=5.8						
PSI	**Prapat**	**27.41**	**264**	*e*P	**P**	**22 50 17.0**	**-0.9**
	15nm,0.9s						
GYA	**Guiyang**	**27.59**	**320**	*e*P	**P**	**22 50 21.0**	**+1.6**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MBWA	**Marble Bar**	**27.76**	**193**	*e*P	**P**	**22 50 19.8**	**-0.9**
	comp=Z,137nm,1.2s						
ENH	**Enshi**	**28.81**	**329**	*e*P	**P**	**22 50 31.9**	**+1.8**
	comp=Z,16nm,0.8s						
GSI	**Gunungsitoli**	**28.97**	**262**	P	**P**	**22 50 30.3**	**-1.4**
	comp=Z,78nm,0.9s						
GSI	**Gunungsitoli**	**28.97**	**262**	*e*P	**P**	**22 50 29.8**	**-1.9**
	comp=Z,56nm,0.8s						
CMAR	**Chiang Mai Arr**	**29.33**	**297**	P	**P**	**22 50 33.4**	**-1.5**
	comp=Z,1.9nm,0.3s,baz=116,slow=7.3,SNR=11						
KMI	**Kunming**	**29.44**	**313**	P	**P**	**22 50 38.8**	**+2.8**
KMI				pmax	pmax		
	comp=Z,6.0nm,0.9s						
KMI				pmax	pmax		
	comp=Z,180nm,5.2s						
CHTO	**Chiang Mai**	**29.46**	**298**	*e*P	**P**	**22 50 36.0**	**-0.1**
	comp=Z,7.1nm,1.4s						
AS31	**Alice Springs**	**30.45**	**166**	*e*P	**P**	**22 50 43.1**	**-1.5**
	comp=Z,2.3nm,0.8s						
ASAR	**Alice Springs**	**30.45**	**166**	P	**P**	**22 50 42.9**	**-1.8**
	comp=Z,4.4nm,0.7s,baz=345,slow=7.1,SNR=51						
ASAR				PcP	**PcP**	**22 53 42.1**	**-0.2**
	comp=Z,0.8nm,0.5s,baz=352,slow=2.1,SNR=4.1						
ASAR				ScP	**ScP**	**22 57 22.5**

H11S2	**WAKE ISLAND Hy**	**41.34**	**69**	T		T	23 36 13.7	
	baz=257,SNR=16							
H11N1	**WAKE ISLAND Hy**	**41.78**	**67**	T		T	23 36 51.1	
	baz=266							
H11N2	**WAKE ISLAND Hy**	**41.79**	**67**	T		T	23 36 52.0	
	baz=266							
H11N3	**WAKE ISLAND Hy**	**41.80**	**67**	T		T	23 36 51.6	
	baz=266							
RAMN	**Ramite**	**43.05**	**303**	*e*P		**P**	**22 52 32.0**	**+0.2**
	comp=Z,17nm,0.7s							
GUN	**Gumba**	**44.00**	**304**	*e*P		**P**	**22 52 41.1**	**+1.5**
PKIN	**Phulchoki**	**44.28**	**304**	*e*P		**P**	**22 52 42.2**	**+0.5**
KKN	**Kakani**	**44.45**	**304**	*e*P		**P**	**22 52 43.8**	**+0.8**
SONM	**Songino Array**	**44.98**	**341**	P		**P**	**22 52 46.7**	**-0.1**
	comp=Z,4.8nm,1.0s,baz=161,slow=7.6,SNR=18							
SONM				PcP		**PcP**	**22 54 27.0**	**+0.4**
	comp=Z,2.1nm,0.7s,baz=164,slow=2.6,SNR=6.7							
SONM				ScP		**ScP**	**22 58 14.0**	**+2.7**
	comp=Z,0.4nm,0.7s,baz=162,slow=6.1,SNR=2.1							
SONA1	**Songino Array**	**44.99**	**341**	*e*P		**P**	**22 52 46.6**	**-0.3**
GKN	**Gorkha**	**45.06**	**304**	*e*P		**P**	**22 52 48.4**	**+0.6**
KOLN	**Koldanda**	**45.84**	**303**	*e*P		**P**	**22 52 53.5**	**-0.5**
	comp=Z,11nm,0.4s							
PYUN	**Piuthan**	**46.45**	**303**	*e*P		**P**	**22 52 58.4**	**-0.4**
	comp=Z,18nm,0.7s							
DZM	**Mont Dzumac**	**48.28**	**127**	P		**P**	**22 53 12.4**	**-0.4**
	comp=Z,10nm,0.7s,baz=335,slow=21,SNR=6.7							
DZM				LR		LR	23 14 08.2	
	comp=Z,133nm,18.1s,baz=70,slow=37							
DZM	**Mont Dzumac**	**48.28**	**127**	*e*P		**P**	**22 53 10.7**	**-2.2**
	comp=Z,21nm,1.2s							
TLY	**Talaya**	**49.21**	**342**	LR		LR	23 16 09.7	
	comp=Z,128nm,21.2s,baz=121,slow=38							
TLY	**Talaya**	**49.21**	**342**	*e*P		**P**	**22 53 21.1**	**+1.7**
	comp=Z,8.3nm,0.8s							
WMQ	**Urumqi**	**50.58**	**324**	*e*P		**P**	**22 53 29.9**	**-0.1**
WMQ				pmax		pmax		
	comp=Z,6.0nm,0.6s							
PEA0	**Petropavlovsk-**	**53.52**	**23**	*e*P		**P**	**22 53 52.9**	**+1.3**
PETK	**Petropavlovsk-**	**53.52**	**23**	P		**P**	**22 53 52.5**	**+0.9**
	comp=Z,4.1nm,0.8s,baz=191,slow=4.8,SNR=6.1							
PETK				PcP		**PcP**	**22 54 57.9**	**+0.5**
	comp=Z,1.4nm,0.5s,baz=200,slow=3.8,SNR=2.3							
MK01	**Makanchi Array**	**55.38**	**325**	*e*P		**P**	**22 54 04.0**	**-1.3**
MK31	**Makanchi Array**	**55.40**	**325**	*e*P		**P**	**22 54 05.1**	**-0.4**
MKAR	**Makanchi Array**	**55.40**	**325**	P		**P**	**22 54 04.2**	**-1.3**
	comp=Z,5.8nm,0.7s,baz=122,slow=8.1,SNR=20							
MKAR				PcP		**PcP**	**22 55 04.3**	**-0.5**
	comp=Z,2.2nm,0.7s,baz=140,slow=4.3,SNR=4.5							
MKAR	**Makanchi Array**	**55.40**	**325**	*e*P		**P**	**22 54 05.1**	**-0.4**
MKAR				PcP		**PcP**	**22 55 04.3**	**-0.5**
MAKZ	**Makanchi**	**55.59**	**324**	*e*P		**P**	**22 54 06.4**	**-0.3**
	comp=Z,7.9nm,1.2s							
YAK	**Yakutsk**	**55.95**	**2**	*e*P		**P**	**22 54 09.6**	**+0.6**
	comp=Z,30nm,0.8s							
KSH	**Kashi**	**56.09**	**314**	*e*P		**P**	**22 54 13.1**	**+2.5**
KSH				*e*pP		sP	22 54 45.7	+3.4
KSH				*e*sP		PcP	22 55 01.3	-6.4
KSH				*e*ScP		**ScP**	**22 58 53.1**	**-6.1**
KSH				PcS		**PcS**	**22 59 07.2**	**-1.1**
KSH				S		**S**	**23 01 48.5**	**-4.4**
KSH	**Kashi**	**56.09**	**314**	SS		**SS**	**23 05 39.4**	**-1.1**
KSH				pmax		pmax		
	comp=Z,62nm,3.9s							
ZALV	**Zalesovo Beam**	**58.33**	**333**	P		**P**	**22 54 24.4**	**-1.5**
	comp=Z,4.3nm,0.6s,baz=124,slow=7.4,SNR=22							
KURK	**Kurchatov**	**59.55**	**327**	*e*P		**P**	**22 54 33.8**	**-0.6**
	comp=Z,92nm,0.9s							
KKAR	**Karatay Array**	**61.23**	**316**	*e*P		**P**	**22 54 45.3**	**-0.8**
VOSK	**Vostochnaya**	**64.69**	**326**	*e*P		**P**	**22 55 07.6**	**-1.2**
	comp=Z,3.9nm,0.8s							
BRVK	**Borovoye**	**65.21**	**327**	*e*P		**P**	**22 55 12.7**	**+0.6**
	comp=Z,6.8nm,0.8s							
TIXI	**Tiksi**	**65.57**	**1**	*e*P		**P**	**22 55 14.4**	**+0.3**
	comp=Z,13nm,0.9s							
ZRNK	**Zerenda**	**65.87**	**326**	*e*P		**P**	**22 55 15.0**	**-1.4**
	comp=Z,6.1nm,0.7s							
NRIK	**Noril'sk**	**68.10**	**346**	P		**P**	**22 55 30.4**	**+0.2**
	comp=Z,7.1nm,0.7s,baz=125,slow=5.9,SNR=9.9							
GEYT	**Alibeck**	**69.08**	**308**	P		**P**	**22 55 36.4**	**-0.7**
	comp=Z,3.7nm,1.0s,baz=96,slow=3.0,SNR=8.6							
ABKAR	**Akbulak array**	**70.07**	**320**	*e*P		**P**	**22 55 42.0**	**-0.8**
PPLA	**Purkeypile**	**80.83**	**27**	*e*P		**P**	**22 56 45.1**	**+0.8**
CAST	**Castle Rocks**	**80.92**	**27**	*e*P		**P**	**22 56 45.3**	**+0.7**
BRLK	**Bradley Lake**	**81.24**	**31**	*e*P		**P**	**22 56 48.2**	**+1.8**
SUA	**Susitna One**	**81.41**	**29**	*e*P		**P**	**22 56 47.4**	**+0.1**
KTH	**Kantishna Hill**	**81.45**	**27**	*e*P		**P**	**22 56 48.8**	**+1.3**
TRF	**Thorofare Moun**	**81.73**	**27**	*e*P		**P**	**22 56 49.5**	**+0.4**
RC01	**Rabbit Creek A**	**81.87**	**29**	*e*P		**P**	**22 56 50.3**	**+0.6**
COLD	**Coldfoot**	**81.99**	**23**	*e*P		**P**	**22 56 51.6**	**+1.5**
PMR	**Palmer**	**82.18**	**29**	*e*P		**P**	**22 56 51.4**	**+0.1**
MCK	**McKinley**	**82.34**	**27**	*e*P		**P**	**22 56 52.6**	**+0.4**
RND	**Reindeer**	**82.37**	**27**	*e*P		**P**	**22 56 52.9**	**+0.6**
SML	**Sawmill**	**82.57**	**29**	*e*P		**P**	**22 56 53.6**	**+0.2**
	comp=Z,2.7nm,0.9s							
WRH	**Wood River Hil**	**82.74**	**26**	*e*P		**P**	**22 56 54.3**	**+0.2**
CCB	**Clear Creek Bu**	**82.86**	**26**	*e*P		**P**	**22 56 54.7**	**0.0**
DHY	**Denali Highway**	**83.03**	**27**	*e*P		**P**	**22 56 58.1**	**+2.2**
IL1	**Eielson Array**	**83.26**	**26**	*e*P		**P**	**22 56 55.6**	**-1.2**
ILAR	**Eielson Array**	**83.26**	**26**	P		**P**	**22 56 55.8**	**-1.0**
	comp=Z,7.0nm,0.9s,baz=247,slow=5.4,SNR=45							
ILB	**Eielson Array**	**83.26**	**26**	*e*P		**P**	**22 56 56.5**	**-0.3**
KLU	**Klutina**	**83.72**	**29**	*e*P		**P**	**22 57 00.4**	**+1.1**
DIV	**Divide**	**83.80**	**29**	*e*P		**P**	**22 57 01.0**	**+1.3**
EYAK	**Cordova Ski Ar**	**83.82**	**30**	*e*P		**P**	**22 57 01.5**	**+1.8**
BMRM	**Bremner River**	**84.37**	**29**	*e*P		**P**	**22 57 04.1**	**+1.5**
DOT	**Dot Lake**	**84.52**	**27**	*e*P		**P**	**22 57 03.8**	**+0.6**
CRQM	**Cirque**	**85.10**	**30**	*e*P		**P**	**22 57 08.2**	**+1.8**
BALM	**Baldy**	**85.47**	**29**	*e*P		**P**	**22 57 09.8**	**+1.7**
EGAK	**Eagle**	**85.71**	**25**	*e*P		**P**	**22 57 10.2**	**+1.1**
MAW	**Mawson**	**85.72**	**200**	P		**P**	**22 57 06.3**	**-2.7**
	comp=Z,2.0nm,0.8s,baz=156,slow=5.4,SNR=3.7							
VNDA	**Vanda**	**85.75**	**173**	*e*P		**P**	**22 57 08.3**	**-0.7**
	comp=Z,2.2nm,0.8s,baz=318,slow=6.4,SNR=16							
VNDA	**Vanda**	**85.75**	**173**	*e*P		**P**	**22 57 08.7**	**-0.3**
DAWY	**Dawson**	**86.55**	**26**	*e*P		**P**	**22 57 14.9**	**+1.5**
	comp=Z,3.6nm,0.9s							
ARCES	**ARCESS Array B**	**88.14**	**340**	P		**P**	**22 57 20.0**	**-0.8**
	comp=Z,3.7nm,0.6s,baz=85,slow=6.2,SNR=33							
BR131	**Keskin Array S**	**88.18**	**310**	*e*P		**P**	**22 57 20.9**	**-0.9**
BRTR	**Keskin Array B**	**88.18**	**310**	P		**P**	**22 57 19.6**	**-2.2**
	comp=Z,1.3nm,0.8s,baz=124,slow=3.5,SNR=8.6							
FINES	**FINESS Array B**	**89.59**	**332**	P		**P**	**22 57 26.4**	**-1.3**
	comp=Z,1.9nm,0.5s,baz=65,slow=4.3,SNR=25							
AKASG	**Malin Array Be**	**89.81**	**321**	P		**P**	**22 57 26.8**	**-2.2**
	comp=Z,0.3nm,0.3s,baz=66,slow=4.0,SNR=3.4							
NB2	**NORSAR Subarra**	**96.52**	**334**	P		**P**	**22 57 57.9**	**-1.9**
	comp=Z,2.5nm,0.9s,baz=67,slow=4.8							
NOA	**NORSAR Array B**	**96.52**	**334**	P		**P**	**22 57 58.1**	**-1.7**
	comp=Z,1.2nm,0.8s,baz=66,slow=4.6,SNR=4.7							
YKA	**Yellowknife Ar**	**97.62**	**24**	P		**P**	**22 58 03.4**	**-1.3**
	comp=Z,0.7nm,0.8s,baz=316,slow=5.9,SNR=5.0							
SCHQ	**Schefferville**	**118.39**	**9**	PKP		**PKPdf**	**23 03 17.7**	**+0.2**
	comp=Z,1.9nm,0.5s,baz=346,slow=3.8,SNR=4.4							
TXAR	**Lajitas Array**	**120.57**	**51**	PKP		**PKPdf**	**23 03 23.2**	**+0.6**
	comp=Z,0.5nm,0.7s,baz=262,slow=0.2,SNR=8.5							
TORD	**Torodi Ar. Bea**	**121.71**	**289**	PKP		**PKPdf**	**23 03 24.2**	**-0.7**
	comp=Z,5.3nm,0.7s,baz=53,slow=1.9,SNR=35							
JCT	**Junction City**	**122.92**	**48**	*e*PKPdf		**PKPdf**	**23 03 27.6**	**+0.6**
DBIC	**Dimbokro**	**129.58**	**284**	PKP		**PKPdf**	**23 03 39.0**	**-1.0**
	comp=Z,4.4nm,0.7s,baz=142,slow=3.2,SNR=5.1							
SDV	**Santo Domingo**	**157.59**	**49**	*e*PKPdf		**PKPdf**	**23 04 27.3**	**-0.4**
CPUP	**Villa Florida**	**159.52**	**171**	PKPab		**PKPab**	**23 05 08.0**	**+0.5**
	comp=Z,1.5nm,0.9s,baz=158,slow=6.9,SNR=3.8							
LPAZ	**La Paz**	**162.62**	**127**	PKP		**PKPdf**	**23 04 34.8**	**+1.1**
	comp=Z,1.6nm,0.9s,baz=30,slow=5.7,SNR=5.1							
LPAZ				PKPab		**PKPab**	**23 05 23.8**	**+1.5**
	comp=Z,1.4nm,0.8s,baz=226,slow=2.1,SNR=4.7							
SIV	**San Ignacio**	**167.78**	**145**	PKP		**PKPdf**	**23 04 38.1**	**+0.8**
	comp=Z,1.6nm,0.8s,baz=178,slow=1.1,SNR=3.6							

*ISCJB **09** 22:56:52.0±0.5, 1°.99S±0°.05×133°.20E±0°.09, h50km, mb4.2/11, Error ellipse: s-maj=12.4km s-min=6.7km az=177.0*
*NEIC **09** 22:56:52.6±0.3, 1°.98S×133°.11E, h35km, mb4.4/8, Error ellipse: s-maj=10.1km s-min=6.4km az=72.0*
*IDC **09** 22:56:54.8±2.3, 2°.16S×133°.22E, h59km±23km, mb3.9/4, mb1 4.1/7, mb1mx3.5/47, mbtmp4.1/7, ML3.9/3, Error ellipse: s-maj=27.3km s-min=14.0km az=80.0*
ISC 09 22:56:53.7±0.6, 2°.12S±0°.07×133°.32E±0°.09, h50km, n18, σ2≤12/21, mb4.4/11, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**2.40**	**301**	P	**Pn**	**22 57 31.4**	**+0.8**
	12nm,0.3s,baz=270,slow=24,SNR=26						
SIJI				S	**Sn**	**22 58 05.6**	**+6.8**
	8.7nm,0.3s,baz=88,slow=23,SNR=6.4						
JAY	**Jayapura**	**7.39**	**93**	P	**Pn**	**22 58 41.1**	**+2.0**
	0.1nm,0.3s,baz=90,slow=20,SNR=3.0						
FITZ	**Fitzroy Crossi**	**17.58**	**205**	P	**Pn**	**23 00 54.9**	**-0.4**
	0.4nm,0.3s,baz=30,slow=12,SNR=8.3						
FITZ				S	**Sn**	**23 04 08.0**	**-2.3**
	0.3nm,0.3s,baz=90,slow=20,SNR=4.9						
WRAB	**Tennant Creek**	**17.73**	**177**	*e*Pn	**P**	**23 00 59.0**	**+1.5**
	2.9nm,0.9s						
WRA	**Warramunga Arr**	**17.74**	**177**	P	**P**	**23 00 59.2**	**+1.6**
	0.5nm,0.3s,baz=359,slow=12,SNR=15						
WRA				S	**Sn**	**23 04 14.0**	**-0.3**
	0.1nm,0.3s,baz=353,slow=24,SNR=3.1						
ASAR	**Alice Springs**	**21.43**	**179**	P	**P**	**23 01 39.2**	**+1.4**
	2.1nm,0.5s,baz=6.0,slow=11,SNR=18						
HNR	**Honiara**	**27.45**	**106**	*e*P	**P**	**23 02 37.8**	**+2.4**
	9.0nm,0.5s						
CHTO	**Chiang Mai**	**39.69**	**303**	*e*P	**P**	**23 04 20.1**	**-1.4**
	0.4nm,0.4s						
BJT	**Baijiatuan**	**44.78**	**341**	*e*P	**P**	**23 05 00.8**	**-1.7**
	7.5nm,0.6s						
LSA	**Lhasa**	**51.22**	**311**	P	**P**	**23 05 51.8**	**-1.3**
	2.2nm,0.5s						
HIA	**Hailar**	**52.52**	**349**	*e*P	**P**	**23 06 01.1**	**-0.8**
	4.5nm,0.4s						
TLY	**Talaya**	**59.21**	**339**	*e*P	**P**	**23 06 49.2**	**-0.6**
	0.5nm,0.7s						
YAK	**Yakutsk**	**64.04**	**358**	*e*P	**P**	**23 07 20.9**	**-1.1**
	3.6nm,0.4s						
MKAR	**Makanchi Array**	**66.10**	**324**	P	**P**	**23 07 35.9**	**+0.1**
	1.1nm,0.4s,baz=111,slow=8.4,SNR=17						
KURK	**Kurchatov**	**70.20**	**327**	P	**P**	**23 08 00.8**	**-0.5**
KURBB	**Kurchatov Arra**	**70.20**	**326**	P	**P**	**23 08 00.8**	**-0.5**
	0.7nm,0.6s,baz=120,slow=5.7,SNR=6.6						
KBZ	**Khabaz**	**91.76**	**314**	P	**P**	**23 09 54.5**	**-1.7**
	1.8nm,0.8s,baz=99,slow=1.6,SNR=3.7						
TORD	**Torodi Ar. Bea**	**130.91**	**286**	PKP	**PKPdf**	**23 16 01.3**	**+0.5**
	0.1nm,0.3s,baz=83,slow=2.7,SNR=6.6						

*IDC **09** 22:58:21.2±1.0, 8°.02S×13°.15W, h0km, mb3.9/14, mb1 4.0/14, mb1mx3.8/33, mbtmp3.9/14, MS4.3/9, Ms1 4.3/9, ms1mx3.8/49, Error ellipse: s-maj=27.3km s-min=22.6km az=137.0*
*NEIC **09** 22:58:23.2±0.6, 8°.02S×13°.30W, h10km, mb4.3/5, Error ellipse: s-maj=17.0km s-min=13.4km az=104.0*
*GCMT **09** 22:58:23.2±0.2, 7°.78S×13°.58W, h14km±1km, MW5.0/94, Moment Tensor Solution. s28,c34; s94,c141; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-3.74±.25; Mθθ-0.05±.14; Mφφ3.80±.17; Mrθ0.58±.26; Mrφ-0.61±.08; Mθφ0.98±.27; Best double couple: M₀3.98500×10¹⁶ NP1:φs341.00000°, δ39.00000°, λ-107.00000°. Principal axes: T 3.9960, Plg7.0000°, Azm262.0000°; N -0.0130, Plg10.0000°, Azm354.0000°; P -3.9750, Plg78.0000°, Azm141.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 09 22:58:23.5±0.6, 8°.02S±0°.10×13°.2W±0°.1, h10km, n50, σ2≤62/38, mb4.2/26, MS4.2/8, Ascension Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H10N1	**ASCENSION HYDR**	**1.25**	**278**	Pn	Pn	22 58 38.8	-8.0
	baz=105,slow=15,SNR=524						
H10N2	**ASCENSION HYDR**	**1.26**	**278**	Pn	Pn	22 58 39.0	-7.9
	baz=105,slow=15,SNR=901						
H10N3	**ASCENSION HYDR**	**1.27**	**278**	Pn	Pn	22 58 39.7	-7.4
	baz=105,slow=15,SNR=633						
H10S1	**ASCENSION HYDR**	**1.68**	**237**	T	T	23 00 33.2	
	baz=53,slow=74,SNR=260						
H10S2	**ASCENSION HYDR**	**1.69**	**236**	T	T	23 00 31.9	
	baz=53,slow=74,SNR=731						
H10S3	**ASCENSION HYDR**	**1.70**	**237**	T	T	23 00 34.5	
	baz=53,slow=74,SNR=934						
DBIC	**Dimbokro**	**16.81**	**30**	Pn	**P**	**23 02 22.8**	**+1.5**
	0.1nm,0.3s,baz=208,slow=14,SNR=3.8						
DBIC				LR	LR	23 07 22.3	
	comp=Z,749nm,20.2s,baz=195,slow=32						
RCBR	**Riachuelo**	**22.61**	**274**	LR	LR	23 10 59.1	
	comp=Z,804nm,19.2s,baz=44,slow=33						
TORD	**Torodi Ar. Bea**	**25.73**	**35**	P	**P**	**23 03 53.1**	**-1.2**
	2.5nm,0.7s,baz=214,slow=11,SNR=17						
TORD				S	**S**	**23 08 18.4**	**-4.9**
	1.1nm,1.1s,baz=227,slow=23,SNR=2.6						
TORD				LR	LR	23 12 42.0	
	comp=Z,822nm,19.6s,baz=205,slow=34						
TSUM	**Tsumeb**	**31.88**	**114**	P	**P**	**23 04 47.7**	**-1.7**
	1.0nm,0.6s,baz=90,slow=1.0,SNR=3.0						
BDFB	**Brasilia**	**34.84**	**254**	LR	LR	23 16 44.6	
	comp=Z,838nm,21.6s,baz=168,slow=32						
TAM	**Tamanrasset**	**35.70**	**31**	*e*P	**P**	**23 05 23.6**	**+1.0**
	6.8nm,1.4s						
LBTB	**Lobatse**	**40.69**	**119**	P	**P**	**23 06 06.9**	**+2.3**
	1.8nm,0.7s,baz=275,slow=12,SNR=2.6						
LSZ	**Lusaka**	**41.14**	**104**	P	**P**	**23 06 09.9**	**+1.4**
	4.3nm,1.0s,baz=288,slow=2.4,SNR=3.4						
MDT	**Midelt**	**41.43**	**11**	LR	LR	23 22 21.9	
	comp=Z,244nm,18.2s,baz=194,slow=35						
BOSA	**Boshof**	**41.62**	**125**	P	**P**	**23 06 11.8**	**-0.4**
	1.2nm,0.7s,baz=286,slow=18,SNR=2.0						
SIV	**San Ignacio**	**47.37**	**256**	P	**P**	**23 06 57.8**	**-0.6**
	0.7nm,0.5s,baz=102,slow=2.8,SNR=3.2						
ESDC	**Sonseca Array**	**48.22**	**10**	P	**P**	**23 07 05.5**	**+1.1**
	0.5nm,0.7s,baz=203,slow=7.6,SNR=3.9						
KEST	**Kesra**	**48.43**	**25**	P	**P**	**23 07 07.0**	**+0.8**
	3.6nm,0.7s,baz=145,slow=16,SNR=2.6						
VAE	**Valguarnera**	**52.12**	**28**	LR	LR	23 28 56.6	
	comp=Z,223nm,20.8s,baz=170,slow=35						
LPAZ	**La Paz**	**54.16**	**256**	P	**P**	**23 07 50.6**	**+0.4**
	1.3nm,1.0s,baz=88,slow=5.8,SNR=3.1						
IDI	**Anoyia**	**56.10**	**37**	LR	LR	23 32 27.6	
	comp=Z,218nm,21.6s,baz=224,slow=36						
DAVOX	**Davos/Dischmat**	**58.31**	**18**	LR	LR	23 33 48.5	
	comp=Z,262nm,18.7s,baz=208,slow=36						
DAVA	**Damuels**	**58.76**	**18**	*i* pP	**P**	**23 08 25.7**	**+3.9**
	15nm,0.9s						
DAVA	**Damuels**	**58.76**	**18**	*i* P	**P**	**23 08 25.7**	**+3.9**
	15nm,0.9s						
FETA	**Feichten**	**58.79**	**19**	*i* pP	**P**	**23 08 26.0**	**+3.9**
	8.1nm,1.0s						
FETA	**Feichten**	**58.79**	**19**	*i* P	**P**	**23 08 26.0**	**+3.9**
	8.1nm,1.0s						
BFO	**Black Forest**	**59.24**	**17**	*e*P	**P**	**23 08 24.3**	**-0.7**
	0.9nm,0.8s						
WTTA	**Wattenberg**	**59.30**	**19**	*i* pP	**P**	**23 08 29.9**	**+4.2**
	6.2nm,1.0s						
WTTA	**Wattenberg**	**59.30**	**19**	*i* P	**P**	**23 08 29.9**	**+4.2**
	6.2nm,1.0s						
MOA	**Molln**	**60.70**	**21**	*i* pP	**P**	**23 08 38.9**	**+3.8**
	4.2nm,1.1s						
MOA	**Molln**	**60.70**	**21**	*i* P	**P**	**23 08 38.9**	**+3.8**
	4.2nm,1.1s						
GERES	**GERESS Array B**	**61.36**	**20**	P	**P**	**23 08 38.2**	**-1.4**
	0.4nm,0.4s,baz=213,slow=7.0,SNR=3.2						
KHC	**Kasperske Hory**	**61.56**	**20**	*e*P	**P**	**23 08 44.5**	**+3.5**
KHC				*ex*	x	23 08 50.4	
PRU	**Pruhonice**	**62.62**	**20**	*e*P	**P**	**23 08 52.6**	**+4.6**
PRU				*ex*	x	23 08 57.7	
VYHS	**Vyhne**	**62.94**	**23**	*e*P	**P**	**23 08 51.2**	**+1.0**
DPC	**Dobruska-Polom**	**63.54**	**21**	*e*P	**P**	**23 08 58.9**	**+4.8**
KECS	**Kecoo**	**63.60**	**24**	*e*P	**P**	**23 08 55.7**	**+1.2**
USHA	**Ushuaia**	**63.90**	**212**	LR	LR	23 32 35.5	
	comp=Z,467nm,21.0s,baz=360,slow=32						
SNAA	**Sanae**	**63.92**	**176**	*e*P	**P**	**23 08 56.8**	**+0.4**
	167nm,1.0s						
BRTR	**Keskin Array B**	**64.28**	**39**	P	**P**	**23 08 59.2**	**-0.2**
	1.8nm,0.9s,baz=208,slow=4.9,SNR=4.6						
KIEV	**Kiev**	**69.03**	**27**	*e*P	**P**	**23 09 28.2**	**-1.0**
	1.3nm,0.4s						
AKASG	**Malin Array Be**	**69.04**	**27**	P	**P**	**23 09 27.7**	**-1.6**
	5.4nm,0.8s,baz=227,slow=6.8,SNR=10						
NB2	**NORSAR Subarra**	**71.47**	**12**	P	**P**	**23 09 43.1**	**-1.0**
	comp=Z,5.6nm,0.9s,baz=206,slow=6.2						
NOA	**NORSAR Array B**	**71.47**	**12**	P	**P**	**23 09 43.0**	**-1.0**
	comp=Z,1.1nm,0.8s,baz=206,slow=6.3,SNR=5.0						
FINES	**FINESS Array B**	**75.72**	**18**	P	**P**	**23 10 08.4**	**-0.5**
	comp=Z,0.7nm,0.7s,baz=207,slow=3.4,SNR=7.8						
GEYT	**Alibeck**	**80.46**	**49**	P	**P**	**23 10 34.1**	**-1.8**
	comp=Z,0.5nm,0.4s,baz=282,slow=2.8,SNR=2.8						
ARCES	**ARCESS Array B**	**81.83**	**13**	P	**P**	**23 10 40.5**	**-2.0**
	comp=Z,2.8nm,1.0s,baz=219,slow=5.6,SNR=5.2						
QSPA	**South Pole Qui**	**82.11**	**180**	*e*P	**P**	**23 10 43.8**	**-0.4**
	comp=Z,6.9nm,0.9s						
JCT	**Junction City**	**91.08**	**300**	*e*P	**P**	**23 11 28.2**	**-0.6**
	comp=Z,0.6nm,0.5s						

JMA 09 23:07:45.1±0.1, 38°.33N×144°.13E, h31km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.07**	**292**	P	Pn	23 08 18.8	+1.2
JIO	**Ouri**	**2.19**	**274**	P	Pn	23 08 20.8	+1.5
JIO				*e*S	Sn	23 08 46.8	+1.5
MIYJ	**Miyakonagasawa**	**2.19**	**305**	P	Pn	23 08 20.7	+1.3
MIYJ				*e*S	Sn	23 08 46.9	+1.5
JMK	**Ichinoseki**	**2.36**	**286**	*e*S	Sn	23 08 52.1	+2.5
JOM	**Ohasama**	**2.49**	**298**	P	Pn	23 08 25.2	+1.7
JOM				*e*S	Sn	23 08 55.0	+2.2
JANG	**Nango**	**2.88**	**316**	P	Pn	23 08 30.1	+1.3
JANG				*e*S	Sn	23 09 02.9	+0.6
JYK	**Kaneyama**	**3.01**	**282**	*e*S	Sn	23 09 09.2	+3.5
JFT	**Otama**	**3.11**	**256**	S	Sn	23 09 10.6	+2.5
JOT	**Ohata**	**3.86**	**323**	*e*S	Sn	23 09 26.0	-0.6
JKB	**Kayabe**	**4.27**	**327**	*e*S	Sn	23 09 36.2	-0.5
JCH	**Churui**	**4.32**	**352**	P	Pn	23 08 48.0	-0.6
JCH				*e*S	Sn	23 09 35.2	-2.7
JOSM	**Okushiri--Mats**	**5.17**	**318**	P	Pn	23 09 00.6	+0.3
NEM2	**Nemuro 2**	**5.18**	**13**	P	Pn	23 08 57.6	-2.8

IDC 09 23:09:20.4±14.0, 7°.45S×13°.54W, h0km, mb3.7/5, mb1 3.8/5, mb1mx3.4/50, mbtmp3.7/5, Error ellipse: s-maj=406.0km s-min=104.0km az=162.0, Ascension Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TORD	**Torodi Ar. Bea**	**25.45**	**37**	P	P	23 14 50.7	+0.4
	1.1nm,0.8s,baz=224,slow=11,SNR=5.0						
GERES	**GERESS Array B**	**60.93**	**20**	P	P	23 19 34.4	-1.0
	0.3nm,0.5s,baz=218,slow=7.5,SNR=2.3						
AKASG	**Malin Array Be**	**68.67**	**28**	P	P	23 20 25.5	-0.1
	0.1nm,0.3s,baz=219,slow=5.1,SNR=4.0						
HFS	**Hagfors**	**70.74**	**14**	P	P	23 20 37.7	-0.5
	2.0nm,0.8s,baz=214,slow=5.0,SNR=3.8						
NOA	**NORSAR Array B**	**70.98**	**12**	P	P	23 20 40.9	+1.1
	0.6nm,0.8s,baz=207,slow=6.1,SNR=2.7						

*ISCJB **09** 23:17:57.8±0.2, 7°.90S±0°.04×13°.63W±0°.04, h17km, mb4.5/77, MS4.7/34, Error ellipse: s-maj=7.6km s-min=3.5km az=44.3*
*MOS **09** 23:17:57.1±1.2, 7°.83S×13°.59W, h10km, mb4.9/36, MS4.7/5, Error ellipse: s-maj=13.6km s-min=6.0km az=64.0*
*IDC **09** 23:17:57.3±0.5, 7°.79S×13°.46W, h0km, mb4.2/31, mb1 4.3/31, mb1mx4.

BOSA **Boshof** 42.05 124 *e*P P 23 25 50.5 -0.3
comp=Z,11nm,1.0s
MATP **Matopo** 42.61 112 P P 23 25 54.4 -1.2
comp=Z,6.0nm,0.9s,baz=269,slow=9.3,SNR=11
MATP LR LR 23 41 39.2
comp=Z,2μm,19.1s,baz=282,slow=34
MBAR **Mbarara** 44.83 83 *e*P P 23 26 13.7 +0.1
MBAR pmax pmax
comp=Z,20nm,1.3s
MBAR **Mbarara** 44.83 83 *e*P P 23 26 13.7 +0.1
comp=Z,20nm,1.3s
CPUP **Villa Florida** 45.32 241 P P 23 26 19.1 +2.0
comp=Z,1.8nm,0.9s,baz=97,slow=11,SNR=4.0
CPUP LR LR 23 43 24.7
comp=Z,2μm,18.5s,baz=77,slow=34
PTGA **Pitinga** 46.68 276 LR LR 23 44 48.2
comp=Z,1μm,18.1s,baz=100,slow=34
SIV **San Ignacio** 46.99 256 LR LR 23 44 01.3
comp=Z,2μm,21.2s,baz=83,slow=33
ESDC **Sonseca Array** 48.16 10 P P 23 26 39.2 +0.2
comp=Z,0.9nm,0.9s,baz=198,slow=7.6,SNR=6.1
ESDC LR LR 23 47 29.0
comp=Z,343nm,18.2s,baz=310,slow=37
ES19 **SONSECA Array** 48.19 10 *e*P P 23 26 39.1 -0.2
KEST **Kesra** 48.49 25 P P 23 26 42.1 +0.4
comp=Z,3.8nm,1.1s,baz=193,slow=8.6,SNR=3.5
KEST LR LR 23 47 08.1
comp=Z,1μm,19.9s,baz=168,slow=36
KEST **Kesra** 48.49 25 *e*P P 23 26 42.9 +1.2
comp=Z,35nm,1.8s
SAML **Samuel** 48.97 265 *e*P P 23 26 46.6 +0.8
comp=Z,11nm,1.1s
KMBO **Kilima Mbogo** 51.16 85 LR LR 23 47 34.1
comp=Z,1μm,18.1s,baz=232,slow=35
H05S1 **Guadeloupe/Mar** 51.77 295 T T 00 22 59.3
SNR=17
H05N1 **Guadeloupe/Mar** 52.70 297 T T 00 24 01.7
SNR=4.4
LPAZ **La Paz** 53.78 256 P P 23 27 24.3 +1.8
comp=Z,1.9nm,0.9s,baz=36,slow=6.6,SNR=8.2
LPAZ LR LR 23 48 02.6
comp=Z,1μm,22.0s,baz=77,slow=33
LPAZ **La Paz** 53.78 256 *e*P P 23 27 21.4 -1.1
comp=Z,21nm,1.8s
FRF **La Foret Royal** 54.41 18 *e*P P 23 27 31.1 +5.2
FRF pmax pmax
comp=Z,7.0nm,1.1s
CAF **Calviac** 54.44 14 *e*P P 23 27 29.8 +3.7
CAF pmax pmax
comp=Z,38nm,2.0s
RJF **Les Rejaudoux** 54.67 13 *e*P P 23 27 28.1 +0.4
RJF pmax pmax
comp=Z,10.0nm,1.0s
SBF **Sospel** 54.93 19 *e*P P 23 27 31.0 +1.3
SBF pmax pmax
comp=Z,25nm,1.3s
LVC **Limon Verde** 54.98 248 LR LR 23 50 50.6
comp=Z,4μm,18.4s,baz=106,slow=36
ISO **Isola** 55.10 18 P P 23 27 33.4 +2.5
ISO pmax pmax
comp=Z,9.0nm,1.5s
SSB **Saint Sauveur** 55.39 16 *e*P P 23 27 35.0 +2.1
SSB pmax pmax
comp=Z,16nm,1.5s
SSB **Saint Sauveur** 55.39 16 *e*P P 23 27 35.0 +2.1
comp=Z,16nm,1.5s
ORIF **Oris-en-Rattie** 55.42 17 *e*P P 23 27 34.4 +1.1
ORIF pmax pmax
comp=Z,7.0nm,1.1s
MBDF **Montbardon** 55.51 18 *e*P P 23 27 35.2 +1.2
MBDF pmax pmax
comp=Z,15nm,1.1s
TCF **Toulx Ste Croi** 55.76 13 *e*P P 23 27 36.4 +0.8
TCF pmax pmax
comp=Z,13nm,1.2s
AVF **Avril sur Loir** 56.50 14 *e*P P 23 27 41.3 +0.5
AVF pmax pmax
comp=Z,6.0nm,1.2s
SSF **Saint Saulge** 56.79 14 *e*P P 23 27 43.5 +0.6
SSF pmax pmax
comp=Z,21nm,1.4s
EFI **East Falkland** 56.82 211 *e*P P 23 27 43.6 +0.5
EFI pmax pmax
comp=Z,106nm,1.2s
TUE **Stuetta** 57.87 19 *e*P P 23 27 51.6 +0.8
comp=Z,8.1nm,1.2s
DAVOX **Davos/Dischmat** 58.31 19 P P 23 27 54.1 +0.3
comp=Z,6.0nm,0.9s,baz=196,slow=16,SNR=6.8
DAVA **Damuels** 58.76 19 *e*P P 23 27 56.3 -0.7
comp=Z,4.2nm,1.0s
FETA **Feichten** 58.80 19 *e*P P 23 27 55.6 -1.6
comp=Z,9.6nm,0.9s
ABTA **Abfaltersbach** 59.17 21 *i* P P 23 27 59.0 -0.6
comp=Z,11nm,1.6s
MOTA **Moosalm** 59.21 19 *i* P P 23 27 59.0 -1.0
comp=Z,19nm,1.4s
RETA **Reutte** 59.22 19 *e*P P 23 27 55.9 -4.2
comp=Z,7.1nm,1.2s
BFO **Black Forest** 59.23 17 *e*P P 23 28 00.6 +0.6
BFO pmax pmax
comp=Z,17nm,1.4s
BFO **Black Forest** 59.23 17 *e*P P 23 28 00.6 +0.6
comp=Z,17nm,1.4s
PLCA **Paso Flores** 60.02 227 P P 23 28 06.2 +0.4
comp=Z,2.4nm,0.7s,baz=108,slow=8.1,SNR=3.0
PLCA LR LR 23 50 25.6
comp=Z,536nm,21.1s,baz=118,slow=32
SOKA **Soboth** 60.02 22 *e*P P 23 28 06.0 +0.4
comp=Z,5.8nm,1.4s
BCLA **Clavier** 60.35 14 P P 23 28 09.8 +2.2
comp=Z,6.6nm,1.6s
VTS **Vitosha** 60.43 31 *i*P P 23 28 06.8 -1.8
VTS **Vitosha** 60.43 31 *e*P P 23 28 07.2 -1.4
VTS pmax pmax
comp=Z,4.0nm,1.0s
VTS **Vitosha** 60.43 31 *e*P P 23 28 07.2 -1.4
comp=Z,3.7nm,1.0s
ARSA **Arzberg** 60.69 22 *e*P P 23 28 11.0 +1.0
comp=Z,5.9nm,1.2s
MOA **Molln** 60.73 21 *e*P P 23 28 10.2 -0.1
comp=Z,7.2nm,1.0s
GEA0 **GERESS Array S** 61.37 20 *e*P P 23 28 13.3 -1.4
GEC2 **GERESS Array S** 61.38 20 *e*P P 23 28 15.4 +0.6
GEC2 pmax pmax
comp=Z,19nm,1.7s
GEC2 **GERESS Array S** 61.38 20 *e*P P 23 28 15.4 +0.6
comp=Z,19nm,1.7s
GERES **GERESS Array B** 61.38 20 P P 23 28 13.8 -1.0
comp=Z,1.2nm,0.8s,baz=196,slow=6.3,SNR=5.5
GERES LR LR 23 55 29.2
comp=Z,530nm,19.6s,baz=189,slow=37
CONA **Conrad Observa** 61.38 22 *e*P P 23 28 14.0 -0.9
comp=Z,7.6nm,1.6s
KHC **Kasperske Hory** 61.58 20 *e*P P 23 28 16.4 +0.3
KHC *ep*P pP 23 28 21.0 -0.6
KHC AMS AMS 23 54 20.0
comp=Z,700nm,22.9s
KHC **Kasperske Hory** 61.58 20 *e*P P 23 28 16.4 +0.3
KHC *e* 23 28 21.0
KHC MLR MLR
comp=Z,700nm,22.9s
KHC **Kasperske Hory** 61.58 20 *e*P P 23 28 17.1 +1.0
comp=Z,5.0nm,1.7s
ROSC **El Rosal** 61.82 280 LR LR 23 53 09.0
comp=Z,2μm,20.2s,baz=92,slow=34
MMAI **Mount Meron Ar** 61.87 46 P P 23 28 17.4 -1.0
comp=Z,0.3nm,0.4s,baz=323,slow=2.2,SNR=2.6
NKC **Novy Kostel** 62.16 19 *e*P P 23 28 21.1 +1.1
NKC AMS AMS 23 55 50.0
comp=Z,500nm,15.3s
NKC **Novy Kostel** 62.16 19 *e*P P 23 28 21.1 +1.1
NKC MLR MLR
comp=Z,500nm,15.3s
TREC **Trest** 62.38 21 AMS AMS 23 53 40.0
comp=Z,700nm,21.9s
PRU **Pruhonice** 62.64 20 *e*P P 23 28 23.7 +0.6
PRU *ex* x 23 28 29.3
PRU AMS AMS 23 55 20.0
comp=Z,400nm,20.1s
PRU **Pruhonice** 62.64 20 *e*P P 23 28 23.7 +0.6
PRU *e* 23 28 29.3
PRU MLR MLR
comp=Z,400nm,20.1s
GOPC **GO Pecny, Ondr** 62.66 20 AMS AMS 23 55 30.0
comp=Z,600nm,17.8s
LOT **Lotru** 62.80 29 *i*P P 23 28 24.2 -0.2
VYHS **Vyhne** 62.99 24 *e*P P 23 28 24.5 -1.0
VYHS pmax pmax
comp=Z,6.0nm,1.3s
VYHS **Vyhne** 62.99 24 *e*P P 23 28 24.5 -1.0
PVCC **Panska Ves** 63.11 20 AMS AMS 23 58 50.0
comp=Z,400nm,20.0s
ARR **Arges** 63.16 29 *i*P P 23 28 26.1 -0.7
BRG **Berggiesshubel** 63.20 19 *e*P P 23 28 26.4 -0.4
comp=Z,4.2nm,1.1s
BRG **Berggiesshubel** 63.20 19 *e*P P 23 28 26.4 -0.4
BRG pmax pmax
comp=Z,4.0nm,1.1s
CLL **Collm** 63.27 18 *e*P P 23 28 27.0 -0.3
CLL **Collm** 63.27 18 *e*P P 23 28 27.0 -0.3
DRGR 63.31 27 *i*P P 23 28 28.6 +0.8
DRGR 63.31 27 P P 23 28 29.9 +2.1
VOIR 63.41 29 *i*P P 23 28 26.9 -1.6
KRLC **Kraliky** 63.50 21 *e*P P 23 28 25.6 -3.3
KRLC **Kraliky** 63.50 21 *e*P P 23 28 25.6 -3.3
MORC **Moravsky Berou** 63.53 22 *i*P P 23 28 25.6 -3.5
MORC **Moravsky Berou** 63.53 22 *e*P P 23 28 30.5 +1.4
MORC pmax pmax
comp=Z,26nm,1.1s
MORC **Moravsky Berou** 63.53 22 *e*P P 23 28 30.5 +1.4
comp=Z,26nm,1.1s
DPC **Dobruska-Polom** 63.56 21 *e*P P 23 28 29.6 +0.3
DPC *ex* x 23 28 36.0
DPC AMS AMS 23 55 30.0
comp=Z,500nm,16.2s
DPC **Dobruska-Polom** 63.56 21 *e*P P 23 28 29.6 +0.3
DPC *e* 23 28 36.0
DPC MLR MLR
comp=Z,500nm,16.2s
EKA **Eskdalemuir Ar** 63.59 7 P P 23 28 27.5 -1.8
comp=Z,1.8nm,0.8s,baz=190,slow=6.4,SNR=5.3
UPC **Upice** 63.59 21 AMS AMS 23 56 10.0
comp=Z,500nm,16.7s
KECS **Kecovo** 63.65 25 *e*P P 23 28 30.1 +0.2
KECS pmax pmax
comp=Z,4.0nm,1.1s
KECS **Kecovo** 63.65 25 *e*P P 23 28 30.1 +0.2
OKC **Ostrava-Krasne** 63.81 22 AMS AMS 23 55 50.0
comp=Z,500nm,18.3s
MLR **Muntele Rosu** 63.89 30 *i*P P 23 28 27.8 -3.9
MLR **Muntele Rosu** 63.89 30 *e*P P 23 28 32.1 +0.4
MLR pmax pmax
comp=Z,17nm,1.2s
MLR **Muntele Rosu** 63.89 30 *e*P P 23 28 32.1 +0.4
comp=Z,17nm,1.2s
BR231 **Keskin MP Arra** 63.97 38 *e*P P 23 28 33.5 +1.2
SNAA **Sanae** 64.09 176 P P 23 28 33.1 +0.6
SNAA **Sanae** 64.09 176 *e*P P 23 28 33.2 +0.6
SNAA **Sanae** 64.09 176 *e*P P 23 28 33.1 +0.6
CRVS **Cervenica-Dubn** 64.38 25 *e*P P 23 28 36.0 +1.3
CRVS **Cervenica-Dubn** 64.38 25 *e*P P 23 28 36.0 +1.3
BR131 **Keskin Array S** 64.44 39 *e*P P 23 28 36.3 +0.9
BRTR **Keskin Array B** 64.44 39 P P 23 28 35.5 0.0
comp=Z,2.3nm,0.9s,baz=200,slow=6.6,SNR=9.9
BRTR LR LR 23 59 36.7
comp=Z,144nm,18.0s,baz=232,slow=39
PLOR **Plostina** 64.49 30 *i*P P 23 28 33.7 -1.8
PLOR **Plostina** 64.49 30 *i*P P 23 28 33.7 -1.8
KOLS **Kolonicke sedl** 64.75 25 *e*P P 23 28 37.8 +0.7
KOLS pmax pmax
comp=Z,94nm,3.7s
KOLS **Kolonicke sedl** 64.75 25 *e*P P 23 28 37.8 +0.7
KOLS *e*S S 23 37 31.4 +15
BUR08 **Bucovina Ar. S** 65.08 28 *e*P P 23 28 40.3 +0.9
KIEV **Kiev** 69.10 28 *e*P P 23 29 04.4 -0.3
KIEV pmax pmax
comp=Z,11nm,1.0s
KIEV **Kiev** 69.10 28 *e*P P 23 29 04.4 -0.3
comp=Z,11nm,1.0s
AKASG **Malin Array Be** 69.11 28 P P 23 29 02.4 -2.4
comp=Z,3.8nm,0.7s,baz=226,slow=6.4,SNR=13
AKASG LR LR 00 00 47.1
comp=Z,288nm,20.3s,baz=25,slow=37
SYO **Syowa Base** 70.09 162 *e*P P 23 29 09.5 -1.0
HFS **Hagfors** 71.19 14 P P 23 29 15.8 -1.5
comp=Z,5.1nm,0.8s,baz=212,slow=8.2,SNR=10
NBO02 **NORSAR Array S** 71.36 12 *e*P P 23 29 19.5 +1.1
NB2 **NORSAR Subarra** 71.43 12 P P 23 29 18.0 -0.8
comp=Z,2.1nm,0.8s,baz=205,slow=6.5
NOA **NORSAR Array B** 71.43 12 P P 23 29 18.0 -0.8
comp=Z,2.9nm,0.9s,baz=205,slow=6.4,SNR=8.9
NOA LR LR 00 02 49.4
comp=Z,199nm,18.2s,baz=225,slow=38
NC204 **NORSAR Array S** 71.55 12 *e*P P 23 29 20.3 +0.7
NC303 **NORSAR Array S** 71.63 12 *e*P P 23 29 21.5 +1.5
GNI **Garni** 71.92 43 LR LR 00 02 15.0
comp=Z,241nm,21.6s,baz=258,slow=37
GNI **Garni** 71.92 43 *e*P P 23 29 23.6 +1.2
GNI pmax pmax
comp=Z,67nm,1.4s
NEY **Neytrino** 72.07 40 *e*P P 23 29 24.7 +1.4
NEY pmax pmax
comp=Z,1.0nm,1.0s
KIV **Kislovodsk** 72.40 39 *e*P P 23 29 25.3 +0.2
KIV pmax pmax
comp=Z,8.0nm,1.4s
KIV **Kislovodsk** 72.40 39 *e*P P 23 29 25.7 +0.5
comp=Z,22nm,1.5s
KVAR **Kislovodsk Arr** 72.41 39 P P 23 29 25.8 +0.7
comp=Z,4.0nm,0.9s,baz=256,slow=4.2,SNR=6.0
KVAR LR LR 00 03 53.7
comp=Z,154nm,19.0s,slow=38
KBZ **Khabaz** 72.42 39 P P 23 29 25.2 +0.1
comp=Z,1.9nm,0.7s,baz=191,slow=4.4,SNR=4.9
NCK **Nalchik** 72.75 40 *e*P P 23 29 28.5 +1.4
NCK pmax pmax
comp=Z,4.0nm,0.9s
OBN **Obninsk** 75.36 27 *e*P P 23 29 41.9 -0.1
OBN pmax pmax
comp=Z,2.0nm,0.7s
FINES **FINESS Array B** 75.72 18 P P 23 29 42.7 -1.3
comp=Z,2.4nm,0.9s,baz=234,slow=6.4,SNR=8.4
FIA1 **FINESS Array S** 75.72 18 *e*P P 23 29 43.0 -0.9
SSPA **Standing Stone** 76.14 315 *e*P P 23 29 46.8 -0.1
comp=Z,81nm,2.0s
TRQ **Mont Tremblant** 76.32 321 *e*P P 23 29 48.2 +0.4
SCHQ **Schefferville** 76.56 332 P P 23 29 49.9 +0.9
comp=Z,3.6nm,1.0s,baz=108,slow=11,SNR=3.0
MAW **Mawson** 77.63 158 P P 23 29 55.5 +0.7
comp=Z,0.8nm,0.6s,baz=268,slow=13,SNR=3.7
ACSO **Alum Creek Sta** 79.62 313 *e*P P 23 30 06.8 +0.6
comp=Z,26nm,1.2s
KLMR **Klimovskoe** 80.10 23 *e*P P 23 30 06.0 -2.4
KLMR pmax pmax
comp=Z,17nm,1.5s
GEYT **Alibeck** 80.70 50 P P 23 30 11.7 -0.5
comp=Z,1.1nm,0.6s,baz=294,slow=1.5,SNR=7.7
ARCES **ARCESS Array B** 81.80 13 P P 23 30 16.5 -0.8
comp=Z,2.3nm,0.8s,baz=225,slow=2.4,SNR=9.9
SUMG **Summit** 81.89 353 *e*P P 23 30 19.8 +1.6
SUMG **Summit** 81.89 353 *e*P P 23 30 19.8 +1.6
WVT **Waverly** 82.02 308 *e*P P 23 30 19.9 +0.7
WVT **Waverly** 82.02 308 *e*P P 23 30 19.9 +0.7
QSPA **South Pole Qui** 82.24 180 *e*P P 23 30 20.9 +0.9
comp=Z,80nm,1.1s
LVZ **Lovozero** 82.92 17 *e*P P 23 30 20.5 -2.7
LVZ pmax pmax
comp=Z,37nm,2.8s
AKTO **Aktyubinsk** 84.58 38 P P 23 30 31.6 -0.5
comp=Z,2.3nm,1.1s,baz=243,slow=5.5,SNR=5.9
CCAR **Cane Creek** 84.60 305 *e*P P 23 30 33.6 +1.1
ARU **Arti** 86.86 32 P P 23 30 43.7 +0.4
comp=Z,0.6nm,0.3s,baz=305,slow=4.3,SNR=4.1
ARU **Arti** 86.86 32 *d*/P P 23 30 43.6 +0.4
ARU 23 34 05.0
ARU S SKSac 23 41 09.9 +0.5
ARU SS SS 23 47 01.8 -1.1
ARU pmax pmax
comp=Z,8.0nm,1.7s
ECSD **EROS Data Cent** 90.33 314 *e*P P 23 31 00.5 +0.4
RPN **Rapa Nui** 91.46 243 *i* P P 23 31 04.1 -1.6
BRVK **Borovoye** 92.61 37 *e*P P 23 31 09.5 -0.8
BRVK pmax pmax
comp=Z,2.0nm,1.2s
VOSK **Vostochnaya** 92.97 37 *e*P P 23 31 12.4 +0.4
VOSK **Vostochnaya** 92.97 37 *e*P P 23 31 12.4 +0.4
TXAR **Lajitas Array** 93.81 299 P P 23 31 17.3 +0.7
comp=Z,0.5nm,0.8s,baz=123,slow=6.1,SNR=5.1
AAK **Ala-Archa** 93.92 48 *e*P P 23 31 17.0 +0.1
AAK pmax pmax
comp=Z,3.0nm,1.0s
KSH **Kashi** 94.67 51 *e*P P 23 31 21.6 +1.3
KSH *ep*P pP 23 31 25.8 -0.2
KSH *e*PP PP 23 35 12.6 +3.9
KSH **Kashi** 94.67 51 S S 23 42 30.2 -3.0
KSH **Kashi** 94.67 51 SS SS 23 49 00.0 +3.1
KSH pmax pmax
comp=Z,73nm,5.4s
KSH LR LR
comp=N,140nm,8.5s
KSH LR LR
comp=E,230nm,13.0s
KSH LR LR
comp=Z,630nm,20.1s
VNDA **Vanda** 94.70 179 P P 23 31 20.1 +0.5
comp=Z,1.1nm,1.1s,baz=277,slow=4.7,SNR=3.8
SMCO **Snowmass** 97.48 308 *e*P Pdif 23 31 34.6 +1.1
RKT **Rikitea** 114.89 240 *e*LR LR 00 11 16.5
comp=Z,439nm,24.8s
LZH **Lanzhou** 116.77 54 *e*PKP PKPdf 23 36 43.7 -0.2
LZH pPKP pPKPdf 23 36 47.0 -2.8
LZH sPKP 23 36 48.3
LZH LR LR
comp=N,170nm,18.0s
LZH LR LR
comp=E,160nm,18.0s
LZH LR LR
comp=Z,220nm,20.1s
CD2 **Chengdu** 117.50 59 PKP PKPdf 23 36 45.0 -0.3
BILL **Bilibino** 119.92 0 *e*PKIKP PKPdf 23 36 47.6 -1.2
BILL pmax pmax
comp=Z,3.0nm,1.1s
GYA **Guiyang** 120.58 64 *e*Pdif Pdif 23 33 15.8 -0.4
GYA PKP PKPdf 23 36 51.0 -0.4
GYA PP PP 23 38 21.6 +2.8
GYA AMB AMB
comp=Z,120nm,7.8s
TAOE **Nuku Hiva Isla** 124.15 254 *e*LR LR 00 15 31.9
comp=Z,562nm,36.5s
TBI **Tubuai** 126.81 233 *e*LR LR 00 16 47.7
comp=Z,488nm,28.5s
PPT2 **Papeete2** 129.63 240 *e*LR LR 00 17 59.0
comp=Z,317nm,23.0s

MEX 09 23:20:21.5±0.4, 15.10N×90.91W, h13km±103km, MD4.0, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	1.66	315	*i* P		Pn	Pn	23 20 46.8	-3.8
CCIG				*e*S		Sn	Sn	23 21 07.4	-4.5
PCIG		2.31	285	*e*P		Pn	Pn	23 20 55.4	-3.9
PCIG				*i* S		Sn	Sn	23 21 23.6	-3.9

IDC 09 23:20:55.6±1.6, 29.62S×176.97W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/35, mbtmp3.6/2, Error ellipse: s-maj=34.6km s-min=24.7km az=16.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	0.90	294	Pn		Pn	Pn	23 21 16.5	+1.0
	480nm,0.3s,baz=58,slow=9.9,SNR=38								
RAO				Sn		Sn	Sn	23 21 28.7	-0.6
	1μm,0.3s,baz=114,slow=21,SNR=15								
ASAR	**Alice Springs**	44.05	266	P		P	P	23 29 04.9	-0.5
	0.5nm,0.7s,baz=107,slow=7.4,SNR=6.5								
WRA	**Warramunga Arr**	44.97	271	P		P	P	23 29 12.2	-0.6
	1.0nm,0.8s,baz=110,slow=8.1,SNR=7.6								
FINES	**FINESS Array B**	144.71	341	PKP		PKPab		23 40 30.9	-1.5
	1.0nm,0.7s,baz=46,slow=4.0,SNR=5.8								
NOA	**NORSAR Array B**	148.11	352	PKPbc		PKPbc		23 40 41.2	-1.4
	0.9nm,0.8s,baz=16,slow=4.5,SNR=3.3								
MMAI	**Mount Meron Ar**	152.19	285	PKPbc		PKPbc		23 40 55.1	+1.6
	0.3nm,0.4s,baz=94,slow=6.1,SNR=5.2								

*IDC **09** 23:26:55.9±1.1, 29.25S×176.90W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.7/35, mbtmp3.9/3, MS3.3/2, Ms1 3.3/2, ms1mx2.9/22, Error ellipse: s-maj=55.1km s-min=20.4km az=174.0*

*NEIC **09** 23:26:57.1±0.7, 29.23S×176.91W, h10km, mb4.5/2, Error ellipse: s-maj=24.2km s-min=14.1km az=164.0*

ISC 09 23:27:01.0±1.1, 29.3S±0.2×176.9W±0.1, h36km, n17, σ0 s93/16, mb4.2/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	0.90	270	Pn		Pn	**Pn**	23 27 16.4	-0.7
	256nm,0.3s,baz=118,slow=6.4,SNR=16								
RAO				Sn		Sn	**Sn**	23 27 31.1	+2.2
	2μm,0.3s,baz=90,slow=20,SNR=20								
RAR	**Rarotonga**	17.42	67	LR		LR		23 36 33.6	
	comp=Z,109nm,19.4s,baz=274,slow=33								
PPT	**Papeete**	27.56	71	LR		LR		23 41 13.1	
	comp=Z,59nm,20.0s,baz=214,slow=31								
CTAO	**Charters Tower**	34.59	277	*e*P		P	**P**	23 33 46.4	-0.3
	3.2nm,0.3s								
STKA	**Stephens Creek**	35.69	255	P		P	**P**	23 33 55.8	-0.2
	2.3nm,0.7s,baz=69,slow=8.6,SNR=3.3								
PMG	**Port Moresby**	39.02	293	*e*P		P	**P**	23 34 23.9	-0.5
	2.7nm,0.4s								
ASAR	**Alice Springs**	44.15	265	P		P	**P**	23 35 05.4	-1.0
	0.9nm,0.7s,baz=95,slow=6.9,SNR=11								
WRA	**Warramunga Arr**	45.04	270	P		P	**P**	23 35 12.8	-0.7
	0.9nm,0.6s,baz=110,slow=7.8,SNR=7.3								
MIDW	**Midway**	57.16	359	*e*P		P	**P**	23 36 44.2	+0.1
COCO	**West Island**	80.94	261	*e*P		P	**P**	23 39 11.7	-0.5
FINES	**FINESS Array B**	144.40	341	PKP		PKPab	**PKPab**	23 46 31.1	+0.3
	1.5nm,0.7s,baz=81,slow=3.1,SNR=10								
KBZ	**Khabaz**	145.26	306	PKPbc		PKPdf	**PKPdf**	23 46 35.5	+0.8
	1.3nm,0.6s,baz=172,slow=3.6,SNR=3.4								
NB2	**NORSAR Subarra**	147.76	353	PKP		PKPbc	**PKPbc**	23 46 42.1	+0.8
	comp=Z,1.0nm,0.7s,baz=16,slow=3.2								
NOA	**NORSAR Array B**	147.76	353	PKPbc		PKPbc	**PKPbc**	23 46 42.0	+0.6
	comp=Z,0.8nm,0.8s,baz=13,slow=4.4,SNR=3.8								
AKASG	**Malin Array Be**	150.96	325	PKPab		PKPab	**PKPab**	23 46 56.5	-0.6
	comp=Z,3.4nm,0.6s,baz=45,slow=3.5,SNR=10								
BRTR	**Keskin Array B**	152.88	301	PKPbc		PKPbc	**PKPbc**	23 46 55.5	+1.0
	comp=Z,0.2nm,0.5s,baz=134,slow=4.2,SNR=2.6								
TORD	**Torodi Ar. Bea**	163.91	175	PKPab		PKPab	**PKPab**	23 47 54.4	+0.8
	comp=Z,0.4nm,0.7s,baz=170,slow=5.8,SNR=4.2								

*ISCJB **09** 23:36:29.7±0.5, 7.71S±0.09×13.3W±0.1, h10km, mb4.2/16, MS3.3/2, Error ellipse: s-maj=15.5km s-min=12.6km az=146.0*

*IDC **09** 23:36:30.3±1.2, 7.57S×13.31W, h0km, mb4.1/9, mb1 4.1/9, mb1mx3.7/38, mbtmp4.1/9, MS3.3/2, Ms1 3.3/2, ms1mx3.1/44, Error ellipse: s-maj=31.8km s-min=23.9km az=30.0*

*NEIC **09** 23:36:31.5±0.4, 7.69S×13.31W, h10km, mb4.5/5, Error ellipse: s-maj=12.0km s-min=9.5km az=56.0*

ISC 09 23:36:31.5±0.6, 7.7S±0.1×13.3W±0.1, h10km, n19, σ0 s71/17, mb4.1/16, Ascension Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SHEL	**Horse Pasture**	11.05	139	*e*Pn		Pn	**Pn**	23 39 10.0	+0.2
TORD	**Torodi Ar. Bea**	25.51	36	P		P	**P**	23 41 59.6	-0.7
	3.8nm,0.9s,baz=214,slow=11,SNR=20								
SUR	**Sutherland**	40.08	133	LR		LR		23 58 57.9	
	comp=Z,13nm,18.4s,baz=293,slow=34								
LBTB	**Lobatse**	40.91	120	LR		LR		23 58 41.2	
	comp=Z,120nm,18.3s,baz=342,slow=32								
LSZ	**Lusaka**	41.30	104	P		P	**P**	23 44 19.0	+1.3
	1.6nm,0.8s,baz=305,slow=8.4,SNR=3.2								
MATP	**Matopo**	42.35	112	P		P	**P**	23 44 26.4	0.0
	1.4nm,0.7s,baz=258,slow=9.3,SNR=2.8								
ESDC	**Sonseca Array**	47.92	10	P		P	**P**	23 45 10.1	0.0
	0.1nm,0.3s,baz=199,slow=6.7,SNR=3.4								
SAML	**Samuel**	49.34	265	*e*P		P	**P**	23 45 21.5	+0.1
	2.1nm,1.3s								
SDV	**Santo Domingo**	59.45	285	*e*P		P	**P**	23 46 35.5	+0.2
	1.3nm,0.6s								
ROSC	**El Rosal**	62.13	280	P		P	**P**	23 46 54.0	+0.2
	5.1nm,0.3s,baz=108,slow=20,SNR=1.7								
SNAA	**Sanae**	64.24	176	*e*P		P	**P**	23 47 05.7	-0.8
	111nm,1.0s								
AKASG	**Malin Array Be**	68.79	27	P		P	**P**	23 47 34.5	-1.3
	0.3nm,0.2s,baz=228,slow=7.5,SNR=5.3								
NOA	**NORSAR Array B**	71.18	12	P		P	**P**	23 47 49.9	-0.3
	1.4nm,1.1s,baz=190,slow=9.6,SNR=2.4								
FINES	**FINESS Array B**	75.44	18	P		P	**P**	23 48 14.7	-0.6
	1.0nm,0.7s,baz=198,slow=13,SNR=3.1								

SFJD	**Kangerlussuaq**	**79.19**	**346**	*eP*	**P**	**23 48 37.1**	**+0.8**
	2.7nm,0.6s							
GEYT	**Alibeck**	**80.32**	**50**	P	**P**	**23 48 43.3**	**+0.2**
	0.3nm,0.4s,baz=272,slow=3.6,SNR=2.6							
ARCES	**ARCESS Array B**	**81.54**	**13**	P	**P**	**23 48 49.7**	**+0.8**
	1.6nm,0.7s,baz=224,slow=3.3,SNR=5.9							
QSPA	**South Pole Qui**	**82.42**	**180**	*eP*	**P**	**23 48 53.5**	**-0.4**
	9.5nm,0.8s							
KBS	**Kingsbay**	**87.55**	**5**	*eP*	**P**	**23 49 19.9**	**+0.7**
	5.7nm,0.6s							

IDC 09 23:41:54.8±3.5,6°45S×149°26E,h0km,mb3.2/1, mb1 3.9/3,mb1mx3.5/35,mbtmp3.7/3,ML3.9/1,Error ellipse: s-maj=125.1km s-min=35.7km az=115.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.60**	**215**	Pn	Pn	23 42 53.6	+1.7
	12nm,0.3s,baz=60,slow=7.3,SNR=14						
PMG				Sn	Sn	23 43 35.7	+0.6
	8.5nm,0.3s,baz=234,slow=23,SNR=6.3						
WRA	**Warramunga Arr**	**19.74**	**226**	P	P	23 46 26.0	-0.4
	0.4nm,0.3s,baz=51,slow=11,SNR=14						
ASAR	**Alice Springs**	**22.60**	**219**	P	P	23 46 56.5	-0.9
	0.6nm,0.6s,baz=55,slow=9.0,SNR=13						
TORD	**Torodi Ar. Bea**	**147.37**	**284**	PKPbc	PKPbc	00 01 41.3	-0.4
	0.1nm,0.4s,baz=69,slow=4.1,SNR=7.2						

*ROM **09** 23:43:15.7±0.4, 43°44N×19°40E,h10km,Ml3.9/53,Error ellipse: s-maj=7.0km s-min=2.3km az=75.0*
*LDG **09** 23:43:17.0±0.1, 43°39N×19°15E,h10km,Md3.7/2, Ml3.6/11,Error ellipse: s-maj=4.6km s-min=3.6km az=40.0*
*CSEM **09** 23:43:17.5±0.1, 43°44N×19°08E,h2km,ML3.7/4,Error ellipse: s-maj=2.4km s-min=2.0km az=120.0*
*PDG **09** 23:43:17.2±0.5, 43°42N×19°08E,h7km±1km,MD3.7/10, ML3.7/9,Error ellipse: s-maj=0.4km s-min=0.8km az=0.0*
*BEO **09** 23:43:18.0±0.3, 43°43N×19°13E,h5km±2km,M3.5/1*
*PRU **09** 23:43:18.8, 43°48N×19°04E,h0km*
ISC 09 23:43:17.1±0.8, 43°43N±0°01×19°10E±0°02,h16km±6km, n355,σ2°51/445,46C-44D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLE	**Pljevlja**	**0.24**	**116**	⇑*iPg*	**Pg**	**23 43 22.5**	**0.0**
PLE				*eSg*	**Sg**	**23 43 26.0**	**-0.1**
PLE	**Pljevlja**	**0.24**	**116**	⇑*iPg*	**Pg**	**23 43 22.5**	**0.0**
PLE				*eSg*	**Sg**	**23 43 26.0**	**-0.1**
UPM	**Unac-Piva**	**0.27**	**211**	⇓*iPg*	**Pg**	**23 43 22.6**	**-0.4**
UPM				*eSg*	**Sg**	**23 43 26.2**	**-0.9**
UPM	**Unac-Piva**	**0.27**	**211**	⇓*iPg*	**Pg**	**23 43 22.6**	**-0.4**
UPM				*eSg*	**Sg**	**23 43 26.2**	**-0.9**
BBLS	**Lazići**	**0.49**	**27**	*iPg*	**Pg**	**23 43 26.8**	**-0.1**
BBLS	**Lazići**	**0.49**	**27**	*iPg*	**Pg**	**23 43 26.8**	**-0.1**
BBLS				*eSg*	**Sg**	**23 43 33.5**	**0.0**
NKY	**Niksic**	**0.62**	**187**	⇑*iPg*	**Pg**	**23 43 29.1**	**-0.3**
NKY				*eSg*	**Sg**	**23 43 38.1**	**+0.4**
NKY	**Niksic**	**0.62**	**187**	⇑*iPg*	**Pg**	**23 43 29.1**	**-0.3**
NKY				*eSg*	**Sg**	**23 43 38.1**	**+0.4**
BRY	**Bratogost**	**0.67**	**218**	⇓*iPg*	**Pg**	**23 43 29.2**	**-1.1**
BRY				*eSg*	**Sb**	**23 43 39.5**	**-0.1**
BRY	**Bratogost**	**0.67**	**218**	⇓*iPg*	**Pg**	**23 43 29.2**	**-1.1**
BRY				*eSg*	**Sg**	**23 43 38.9**	**-0.2**
NKME	**Niksic**	**0.67**	**189**	⇑*iPg*	**Pg**	**23 43 29.7**	**-0.6**
NKME				*eSg*	**Sb**	**23 43 39.7**	**+0.1**
NKME	**Niksic**	**0.67**	**189**	⇑*iPg*	**Pg**	**23 43 29.7**	**-0.6**
NKME				*eSg*	**Sb**	**23 43 39.7**	**+0.1**
IVAS	**Ivanjica**	**0.78**	**79**	*iPg*	**Pg**	**23 43 31.6**	**-0.7**
IVAS				*eSg*	**Sg**	**23 43 41.3**	**-1.4**
IVAS	**Ivanjica**	**0.78**	**79**	*iPg*	**Pg**	**23 43 31.6**	**-0.7**
IVAS				*eSg*	**Sg**	**23 43 41.3**	**-1.4**
BEY	**Berane**	**0.81**	**134**	⇑*iPg*	**Pg**	**23 43 32.8**	**-0.1**
BEY				*eSg*	**Sb**	**23 43 44.9**	**+1.4**
IVA	**Berane**	**0.81**	**134**	⇑*iPg*	**Pg**	**23 43 32.8**	**-0.1**
IVA				*eSg*	**Sb**	**23 43 44.9**	**+1.4**
CEME	**Cevo**	**0.90**	**188**	⇑*iPg*	**Pb**	**23 43 33.3**	**-1.0**
CEME				*eSg*	**Sg**	**23 43 47.2**	**+1.0**
CEME	**Cevo**	**0.90**	**188**	⇑*iPg*	**Pb**	**23 43 33.3**	**-1.0**
CEME				*eSg*	**Sg**	**23 43 47.2**	**+1.0**
TREB	**Trebinje**	**0.90**	**218**	⇑*iPg*	**Pb**	**23 43 33.5**	**-0.8**
TREB				*eSg*	**Sn**	**23 43 48.0**	**+0.2**
TREB	**Trebinje**	**0.90**	**218**	⇑*iPg*	**Pb**	**23 43 33.5**	**-0.8**
TREB				*eSg*	**Sg**	**23 43 47.0**	**+0.6**
DIVS	**Divibare**	**0.93**	**44**	P	**Pg**	**23 43 35.0**	**-0.2**
DIVS	**Divibare**	**0.93**	**44**	⇓*iPg*	**Pg**	**23 43 34.9**	**-0.2**
DIVS				*eSg*	**Sn**	**23 43 48.3**	**-0.4**
DIVS	**Divibare**	**0.93**	**44**	P	**Pg**	**23 43 35.0**	**-0.2**
DIVS				*eSg*	**Sn**	**23 43 47.9**	**-0.8**
PDG	**Podgorica**	**1.01**	**173**	P	**Pb**	**23 43 35.7**	**-0.5**
PDG	**Podgorica**	**1.01**	**173**	⇓*iP*	**Pb**	**23 43 35.5**	**-0.7**
PDG	**Podgorica**	**1.01**	**173**	⇑*iPg*	**Pb**	**23 43 35.5**	**-0.7**
PDG				*eSg*	**Sn**	**23 43 50.5**	**+0.1**
PDG	**Podgorica**	**1.01**	**173**	⇓*iP*	**Pb**	**23 43 35.5**	**-0.7**
PDG				*eSg*	**Sb**	**23 43 49.6**	**+0.4**
TTG	**Podgorica**	**1.01**	**173**	⇑*iPg*	**Pb**	**23 43 35.5**	**-0.7**
TTG				*eSg*	**Sn**	**23 43 51.5**	**+1.1**
PVY	**Plav**	**1.05**	**143**	⇑*iPg*	**Pb**	**23 43 37.0**	**0.0**
PVY				*eSg*	**Sn**	**23 43 53.2**	**+1.5**
PVY	**Plav**	**1.05**	**143**	⇑*iPg*	**Pb**	**23 43 37.0**	**0.0**
PVY				*eSg*	**Sn**	**23 43 53.2**	**+1.5**
HCY	**Herceg Novi**	**1.08**	**204**	⇓*iPg*	**Pb**	**23 43 36.5**	**-0.8**
HCY				*eSg*	**Sn**	**23 43 53.4**	**+1.2**
HCY	**Herceg Novi**	**1.08**	**204**	⇑*iPg*	**Pb**	**23 43 36.6**	**-0.8**
HCY				*eSg*	**Sb**	**23 43 51.1**	**-0.2**
BUM	**Brajici-Budva**	**1.14**	**188**	⇑*iPg*	**Pn**	**23 43 38.0**	**-0.5**
BUM				*eSg*	**Sg**	**23 43 55.3**	**+1.3**
BUM	**Brajici-Budva**	**1.14**	**188**	⇑*iPg*	**Pn**	**23 43 38.0**	**-0.5**
BUM				*eSg*	**Sg**	**23 43 55.3**	**+1.3**
TEKS	**Tekeris**	**1.16**	**15**	*iPg*	**Pg**	**23 43 39.6**	**+0.1**
TEKS				*eSg*	**Sg**	**23 43 56.3**	**+1.7**
TEKS	**Tekeris**	**1.16**	**15**	*iPg*	**Pg**	**23 43 39.6**	**+0.1**
TEKS				*eSg*	**Sg**	**23 43 55.6**	**+1.0**
TRUS	**Trudelj**	**1.23**	**50**	⇓*iPg*	**Pg**	**23 43 40.4**	**-0.5**
TRUS				*eSg*	**Sg**	**23 43 56.8**	**-0.2**
TRUS	**Trudelj**	**1.23**	**50**	⇓*iPg*	**Pg**	**23 43 40.4**	**-0.5**
TRUS				*eSg*	**Sg**	**23 43 56.8**	**-0.2**
DRME	**Dracevica, Mon**	**1.25**	**177**	⇑*iPg*	**Pb**	**23 43 40.4**	**+0.2**
DRME				*eSg*	**Sg**	**23 43 59.6**	**+2.2**
DRME	**Dracevica, Mon**	**1.25**	**177**	*ePg*	**Pb**	**23 43 40.7**	**+0.5**
DRME				*eSg*	**Sg**	**23 43 57.6**	**+0.2**
GRUS	**Gruza**	**1.26**	**68**	⇓*iPg*	**Pb**	**23 43 40.9**	**+0.4**
GRUS				*eSg*	**Sg**	**23 43 58.9**	**+1.1**
GRUS	**Gruza**	**1.26**	**68**	⇓*iPg*	**Pb**	**23 43 40.9**	**+0.4**
GRUS				*eSg*	**Sg**	**23 43 58.9**	**+1.1**
BLJ	**Bijeljina**	**1.36**	**5**	*ePg*	**Pb**	**23 43 42.0**	**-0.1**
BLJ				*eSg*	**Sg**	**23 43 59.7**	**-1.2**
ULC	**Ulcinj**	**1.47**	**176**	⇓*iPg*	**Pb**	**23 43 44.9**	**+0.8**
ULC				*eSg*	**Sg**	**23 44 06.9**	**+2.3**
ULC	**Ulcinj**	**1.47**	**176**	⇓*iPg*	**Pb**	**23 43 44.9**	**+0.8**
ULC				*eSg*	**Sg**	**23 44 06.9**	**+2.3**
DOB	**Doboj**	**1.48**	**331**	*ePg*	**Pb**	**23 43 44.0**	**-0.3**
DOB				*eSg*	**Sg**	**23 44 04.9**	**-0.1**
SELS	**Selova**	**1.49**	**98**	*ePg*	**Pb**	**23 43 44.8**	**+0.4**
SELS				*eSg*	**Sb**	**23 44 03.7**	**+0.6**
SELS	**Selova**	**1.49**	**98**	*ePg*	**Pb**	**23 43 44.8**	**+0.4**
SELS				*eSg*	**Sb**	**23 44 03.7**	**+0.6**
FGSL	**Fruska Gora**	**1.80**	**16**	*iPn*	**Pn**	**23 43 48.4**	**+0.9**
FGSL				*eSg*	**Sb**	**23 44 13.1**	**+1.1**
FRGS	**Fruska Gora**	**1.80**	**16**	*iPn*	**Pn**	**23 43 48.4**	**+0.9**
FRGS				*eSg*	**Sb**	**23 44 13.1**	**+1.1**
BLY	**Banja Luka**	**1.91**	**314**	Pn	**Pb**	**23 43 50.8**	**-0.7**
	594nm,0.7s						
BLY	**Banja Luka**	**1.91**	**314**	⇑*iPn*	**Pb**	**23 43 50.7**	**-0.7**
BLY				*eSn*	**Sb**	**23 44 15.5**	**+0.5**
BOVS	**Bovan**	**1.91**	**83**	*ePn*	**Pb**	**23 43 51.1**	**-0.4**
BOVS				*eSg*	**Sg**	**23 44 18.3**	**-0.2**
BOVS	**Bovan**	**1.91**	**83**	*ePn*	**Pb**	**23 43 51.1**	**-0.4**
BOVS				*eSg*	**Sg**	**23 44 18.3**	**-0.2**
BARS	**Barje**	**2.08**	**106**	⇑*iPn*	**Pb**	**23 43 53.2**	**-1.3**
BARS				*eSn*	**Sb**	**23 44 20.6**	**+0.4**
KUBS	**Kucevo**	**2.10**	**61**	*iPn*	**Pn**	**23 43 51.4**	**-0.3**
KUBS	**Kucevo**	**2.10**	**61**	*iPn*	**Pn**	**23 43 51.4**	**-0.3**
BOLS	**Boljevac**	**2.11**	**78**	*ePn*	**Pn**	**23 43 52.5**	**+0.7**
BOLS				*eSg*	**Sg**	**23 44 23.1**	**-1.9**
BOLS	**Boljevac**	**2.11**	**78**	*ePn*	**Pn**	**23 43 52.5**	**+0.7**
BOLS				*eSg*	**Sg**	**23 44 23.1**	**-1.9**
TIR	**Tirane**	**2.16**	**164**	⇑*iP*	**Pb**	**23 43 56.9**	**+1.1**
TIR	**Tirane**	**2.16**	**164**	⇑*iP*	**Pb**	**23 43 56.9**	**+1.1**
MRAK	**Mrakovica**	**2.23**	**316**	*ePn*	**Pb**	**23 43 55.2**	**-1.9**
MRAK				*eSn*	**Sb**	**23 44 23.1**	**-1.4**
MDVR	**Moldovita**	**2.32**	**54**	⇓*iP*	**Pn**	**23 43 56.0**	**+1.4**
MDVR	**Moldovita**	**2.32**	**54**	⇓*iP*	**Pn**	**23 43 56.0**	**+1.4**
BANR	**Banloc**	**2.44**	**36**	⇓*iP*	**Pb**	**23 43 59.5**	**-1.0**
BANR	**Banloc**	**2.44**	**36**	⇓*iP*	**Pb**	**23 43 59.5**	**-1.0**
ZAPS	**Zavoj**	**2.58**	**92**	*eSn*	**Sn**	**23 44 31.5**	**+2.1**
OHR	**Ohrid**	**2.64**	**151**	*iPn*	**Pb**	**23 44 04.9**	**+0.8**
OHR	**Ohrid**	**2.64**	**151**	*iPn*	**Pb**	**23 44 04.8**	**+0.8**
UDBI	**Udbina**	**2.64**	**296**	*ePn*	**Pb**	**23 44 01.7**	**-2.4**
UDBI					**Sb**	**23 44 38.0**	**+1.7**
UDBI	**Udbina**	**2.64**	**296**	*ePn*	**Pb**	**23 44 01.7**	**-2.4**
UDBI					**Sb**	**23 44 38.0**	**+1.7**
TIM	**Timisoara**	**2.76**	**33**	⇑*iP*	**Pn**	**23 44 02.6**	**+2.0**
TIM	**Timisoara**	**2.76**	**33**	⇑*iP*	**Pn**	**23 44 02.6**	**+2.0**
BZS	**Buzias**	**2.83**	**39**	⇓*iP*	**Pn**	**23 44 02.6**	**+0.9**
BZS	**Buzias**	**2.83**	**39**	⇓*iP*	**Pn**	**23 44 02.6**	**+0.9**
BAI	**Bari**	**2.85**	**216**	*ePn*	**Pn**	**23 44 03.5**	**+1.7**
BAI					**Sn**	**23 44 37.2**	**+1.4**
MS1	**Monte Sant'Ang**	**2.90**	**235**	*ePn*	**Pn**	**23 44 04.6**	**+1.9**
MSAG	**Monte S. Angel**	**2.92**	**235**	Pn	**Pn**	**23 44 04.7**	**+1.8**
	367nm,0.7s						
MSAG	**Monte S. Angel**	**2.92**	**235**	Pn	**Pn**	**23 44 04.7**	**+1.8**
	367nm,0.7s						
MESG	**Mesagne**	**2.99**	**199**	Pn	**Pn**	**23 44 05.6**	**+1.8**
	478nm,0.7s						
MESG	**Mesagne**	**2.99**	**199**	Pn	**Pn**	**23 44 05.6**	**+1.8**
	478nm,0.7s						
SGRT	**San Giovanni R**	**2.99**	**237**	Pn	**Pn**	**23 44 05.5**	**+1.6**
	166nm,0.7s						
SGRT	**San Giovanni R**	**2.99**	**237**	Pn	**Pn**	**23 44 05.5**	**+1.6**
	166nm,0.7s						
NOCI	**Noci**	**3.04**	**210**	Pn	**Pn**	**23 44 06.1**	**+1.5**
	583nm,0.5s						
NOCI	**Noci**	**3.04**	**210**	Pn	**Pn**	**23 44 06.1**	**+1.5**
	583nm,0.5s						
AMUR	**Altamura**	**3.13**	**217**	Pn	**Pn**	**23 44 07.1**	**+1.3**
	325nm,0.5s						
AMUR	**Altamura**	**3.13**	**217**	Pn	**Pn**	**23 44 07.1**	**+1.3**
	325nm,0.5s						
VTS	**Vitosha**	**3.13**	**104**	P	**Pn**	**23 44 08.0**	**+2.1**
VTS	**Vitosha**	**3.13**	**104**	⇓*iP*	**Pn**	**23 44 08.3**	**+2.3**
VTS	**Vitosha**	**3.13**	**104**	*eP*	**Pn**	**23 44 08.2**	**+2.3**
VTS	**Vitosha**	**3.13**	**104**	P	**Pn**	**23 44 08.0**	**+2.1**
FNA	**Florina**	**3.14**	**147**	P	**Pb**	**23 44 10.1**	**-2.5**
FNA	**Florina**	**3.14**	**147**	P	**Pb**	**23 44 10.1**	**-2.5**
CDT	**Castel del Mon**	**3.15**	**223**	*ePn*	**Pn**	**23 44 07.9**	**+1.9**
CDT					**Sn**	**23 44 45.7**	**+2.4**
SG1	**Sgolgore (BA)**	**3.15**	**216**	*ePn*	**Pn**	**23 44 07.3**	**+1.2**
SG1					**Sn**	**23 44 45.1**	**+1.7**
MRVN	**Minervino Murg**	**3.20**	**223**	Pn	**Pn**	**23 44 08.4**	**+1.6**
	191nm,0.9s						
MRVN	**Minervino Murg**	**3.20**	**223**	Pn	**Pn**	**23 44 08.4**	**+1.6**
	191nm,0.9s						
TAR1	**Taranto**	**3.20**	**206**	*ePn*	**Pn**	**23 44 08.6**	**+1.9**
SRE	**Strehaia**	**3.21**	**66**	⇓*iP*	**Pb**	**23 44 11.4**	**-2.3**
SRE	**Strehaia**	**3.21**	**66**	⇓*iP*	**Pb**	**23 44 11.4**	**-2.3**
NVLJ	**Novalja**	**3.25**	**292**	*ePn*	**Pn**	**23 44 10.4**	**+3.0**
NVLJ	**Novalja**	**3.25**	**292**	*ePn*	**Pn**	**23 44 10.4**	**+3.0**
ZAG	**Zagreb**	**3.26**	**318**	*ePn*	**Pn**	**23 44 09.8**	**+2.2**
MATE	**Matera**	**3.30**	**213**	Pn	**Pn**	**23 44 09.8**	**+1.7**
	403nm,0.6s						
MATE	**Matera**	**3.30**	**213**	Pn	**Pn**	**23 44 09.8**	**+1.7**
	403nm,0.6s						
VAY	**Valandovo**	**3.33**	**128**	*ePn*	**Pb**	**23 44 15.0**	**-0.8**
VAY	**Valandovo**	**3.33**	**128**	*ePn*	**Pb**	**23 44 14.9**	**-0.8**
KKB	**Krupnik**	**3.33**	**117**	*eP*	**Pn**	**23 44 11.2**	**+2.7**
NEST	**Nestorio**	**3.35**	**154**	P	**Pb**	**23 44 13.0**	**-3.1**
NEST	**Nestorio**	**3.35**	**154**	P	**Pb**	**23 44 13.0**	**-3.1**
SIRR	**Siria**	**3.37**	**32**	⇓*iP*	**Pn**	**23 44 10.2**	**+1.1**
SIRR	**Siria**	**3.37**	**32**	⇓*iP*	**Pn**	**23 44 10.2**	**+1.1**
MPEP	**Malo Peshtene**	**3.39**	**90**	*eP*	**Pg**	**23 44 20.1**	**-1.8**
PALZ	**Palazzo San Ge**	**3.41**	**224**	Pn	**Pn**	**23 44 11.4**	**+1.8**
	678nm,1.1s						
PALZ	**Palazzo San Ge**	**3.41**	**224**	Pn	**Pn**	**23 44 11.4**	**+1.8**
	678nm,1.1s						
BEHE	**Becsehely**	**3.46**	**332**	⇑*ePn*	**Pn**	**23 44 12.1**	**+1.9**
BEHE				*eSn*	**Sn**	**23 44 52.9**	**+2.1**
BEHE	**Becsehely**	**3.46**	**332**	⇑*ex*	**Pn**	**23 44 12.1**	**+1.9**
BEHE				*ex*	**Sg**	**23 45 14.6**	**+6.6**
GRG	**Griva**	**3.49**	**134**	P	**Pn**	**23 44 13.1**	**+2.4**
GRG	**Griva**	**3.49**	**134**	P	**Pn**	**23 44 13.1**	**+2.4**
CRES	**Cresnjev**	**3.53**	**314**	⇑*iPn*	**Pn**	**23 44 12.9**	**+1.6**
ACER	**Acerenza**	**3.54**	**223**	Pn	**Pn**	**23 44 13.3**	**+1.9**
	493nm,0.9s						
ACER	**Acerenza**	**3.54**	**223**	Pn	**Pn**	**23 44 13.3**	**+1.9**
	493nm,0.9s						
CIGN	**Sant'Elia a Pi**	**3.57**	**242**	Pn	**Pn**	**23 44 14.2**	**+2.4**
	219nm,1.3s						
CIGN	**Sant'Elia a Pi**	**3.57**	**242**	Pn	**Pn**	**23 44 14.2**	**+2.4**
	219nm,1.3s						
MOCO	**Biccari - m.te**	**3.57**	**236**	Pn	**Pn**	**23 44 14.6**	**+2.7**
	124nm,0.8s						
FRES	**Fresagrandinar**	**3.57**	**247**	Pn	**Pn**	**23 44 14.8**	**+2.9**
	294nm,0.7s						
FRES	**Fresagrandinar**	**3.57**	**247**	Pn	**Pn**	**23 44 14.8**	**+2.9**
	294nm,0.7s						
PENT	**Pentalofos**	**3.58**	**154**	P	**Pb**	**23 44 16.8**	**-3.2**
PENT	**Pentalofos**	**3.58**	**154**	P	**Pb**	**23 44 16.8**	**-3.2**
VULT	**Monte Vulture**	**3.58**	**227**	Pn	**Pn**	**23 44 14.7**	**+2.7**
	235nm,0.6s						
VULT	**Monte Vulture**	**3.58**	**227**	Pn	**Pn**	**23 44 14.7**	**+2.7**
	235nm,0.6s						
SGTA	**Sant Agata di**	**3.60**	**232**	Pn	**Pn**	**23 44 14.0**	**+1.8**
	151nm,0.5s						
SGTA	**Sant Agata di**	**3.60**	**232**	Pn	**Pn**	**23 44 14.0**	**+1.8**
	151nm,0.5s						
KNT	**Kendrikon**	**3.62**	**128**	P	**Pn**	**23 44 13.2**	**+0.7**
KNT	**Kendrikon**	**3.62**	**128**	P	**Pn**	**23 44 13.2**	**+0.7**
GATE	**Gambatesa**	**3.64**	**240**	Pn	**Pn**	**23 44 16.2**	**+3.4**
	101nm,0.5s						
GATE	**Gambatesa**	**3.64**	**240**	Pn	**Pn**	**23 44 16.2**	**+3.4**
	101nm,0.5s						
DEV	**Deva**	**3.66**	**47**	⇑*iP*	**Pn**	**23 44 16.6**	**+3.6**
DEV	**Deva**	**3.66**	**47**	⇑*iP*	**Pn**	**23 44 16.6**	**+3.6**
KZN	**Kozani**	**3.71**	**147**	P	**Pn**	**23 44 17.6**	**+3.8**
KZN	**Kozani**	**3.71**	**147**	P	**Pn**	**23 44 17.6**	**+3.8**
CAFE	**Carife**	**3.74**	**231**	Pn	**Pn**	**23 44 17.0**	**+2.8**
CAFE	**Carife**	**3.74**	**231**	Pn	**Pn**	**23 44 17.0**	**+2.8**
TRIV	**Trivento**	**3.75**	**245**	Pn	**Pn**	**23 44 17.0**	**+2.7**
	468nm,1.5s						
TRIV	**Trivento**	**3.75**	**245**	Pn	**Pn**	**23 44 17.0**	**+2.7**
	468nm,1.5s						
KEK	**Kerkira**	**3.75**	**172**	P	**Pn**	**23 44 16.8**	**+2.5**
KEK	**Kerkira**	**3.75**	**172**	P	**Pn**	**23 44 16.8**	**+2.5**
MRLC	**Muro Lucano**	**3.79**	**226**	Pn	**Pn**	**23 44 17.1**	**+2.2**
	170nm,1.0s						
MRLC	**Muro Lucano**	**3.79**	**226**	Pn	**Pn**	**23 44 17.1**	**+2.2**
	170nm,1.0s						
PGB	**Panagyurishte**	**3.82**	**102**	*eP*	**Pb**	**23 44 20.9**	**-3.3**
SNAL	**S. Angelo Dei**	**3.82**	**230**	Pn	**Pn**	**23 44 17.5**	**+2.1**
	250nm,1.1s						
SNAL	**S. Angelo Dei**	**3.82**	**230**	Pn	**Pn**	**23 44 17.5**	**+2.1**
	250nm,1.1s						
BSSO	**Busso**	**3.83**	**242**	Pn	**Pn**	**23 44 18.6**	**+3.2**
	44nm,0.6s						
BSSO	**Busso**	**3.83**	**242**	Pn	**Pn**	**23 44 18.6**	**+3.2**
	44nm,0.6s						
MRB1	**Monte Rocchett**	**3.83**	**234**	Pn	**Pn**	**23 44 18.7**	**+3.3**
	155nm,0.7s						
MRB1	**Monte Rocchett**	**3.83**	**234**	Pn	**Pn**	**23 44 18.7**	**+3.3**
	155nm,0.7s						
SACR	**S. Croce Del S**	**3.83**	**239**	Pn	**Pn**	**23 44 18.4**	**+2.9**
	82nm,0.7s						
SACR	**S. Croce Del S**	**3.83**	**239**	Pn	**Pn**	**23 44 18.4**	**+2.9**
	82nm,0.7s						
KPRO	**Kipourio**	**3.87**	**153**	P	**Pn**	**23 44 20.5**	**+4.5**
KPRO	**Kipourio**	**3.87**	**153**	P	**Pn**	**23 44 20.5**	**+4.5**
PSB1	**Pescosannita**	**3.87**	**237**	Pn	**Pn**	**23 44 18.9**	**+3.0**
	85nm,0.8s						
PSB1	**Pescosannita**	**3.87**	**237**	Pn	**Pn**	**23 44 18.9**	**+3.0**
	85nm,0.8s						
MMB	**Musomiste**	**3.89**	**117**	*eP*	**Pn**	**23 44 18.7**	**+2.5**
LOT	**Lotru**	**3.91**	**57**	⇑*iP*	**Pn**	**23 44 19.6**	**+3.1**
LOT	**Lotru**	**3.91**	**57**	⇑*iP*	**Pn**	**23 44 19.6**	**+3.1**
SGD	**Sagiada**	**3.91**	**167**	P	**Pn**	**23 44 19.0**	**+2.5**
SGD	**Sagiada**	**3.91**	**167**	P	**Pn**	**23 44 19.0**	**+2.5**
MCRV	**Calabrutti - M**	**3.94**	**229**	Pn	**Pn**	**23 44 18.9**	**+1.9**
	118nm,0.6s						
MCRV	**Calabrutti - M**	**3.94**	**229**	Pn	**Pn**	**23 44 18.9**	**+1.9**
	118nm,0.6s						
MCEL	**Monticello**	**3.96**	**219**	Pn	**Pn**	**23 44 18.8**	**+1.5**
	126nm,0.7s						
MCEL	**Monticello**	**3.96**	**219**	Pn	**Pn**	**23 44 18.8**	**+1.5**
	126nm,0.7s						
PTRJ	**Pietraroja**	**3.96**	**240**	Pn	**Pn**	**23 44 19.8**	**+2.5**
	193nm,0.4s						
PTRJ	**Pietraroja**	**3.96**	**240**	Pn	**Pn**	**23 44 19.8**	**+2.5**
	193nm,0.4s						
CSKK	**Cs˘‡kako**	**3.97**	**352**	⇓*ePn*	**Pn**	**23 44 18.9**	**+1.5**
CSKK				*eSn*	**Sn**	**23 45 05.7**	**+2.1**
CSKK	**Cs˘‡kako**	**3.97**	**352**	⇓*ex*	**Pn**	**23 44 18.9**	**+1.5**
CSKK				*ex*	**Sn**	**23 45 05.7**	**+2.1**
AOI	**Ancona**	**4.00**	**274**	Pn	**Pn**	**23 44 21.3**	**+3.6**
	205nm,0.9s						
AOI	**Ancona**	**4.00**	**274**	Pn	**Pn**	**23 44 21.3**	**+3.6**
	205nm,0.9s						
MIDA	**Miranda**	**4.00**	**245**	Pn	**Pn**	**23 44 20.1**	**+2.3**
	178nm,1.1s						
MIDA	**Miranda**	**4.00**	**245**	Pn	**Pn**	**23 44 20.1**	**+2.3**
	178nm,1.1s						
IGT	**Igoumenitsa**	**4.01**	**166**	P	**Pn**	**23 44 20.7**	**+2.9**
IGT	**Igoumenitsa**	**4.01**	**166**	P	**Pn**	**23 44 20.7**	**+2.9**
RNI2	**Rionero Sannit**	**4.04**	**246**	Pn	**Pn**	**23 44 21.3**	**+3.0**
	427nm,1.7s						
RNI2	**Rionero Sannit**	**4.04**	**246**	Pn	**Pn**	**23 44 21.3**	**+3.0**
	427nm,1.7s						
SIRI	**Monte Sirino -**	**4.05**	**218**	Pn	**Pn**	**23 44 20.1**	**+1.7**
	108nm,0.3s						
SIRI	**Monte Sirino -**	**4.05**	**218**	Pn	**Pn**	**23 44 20.1**	**+1.7**
	108nm,0.3s						
BUD	**Budapest**	**4.05**	**359**	*eSn*	**Sn**	**23 45 08.1**	**+2.6**
BUD	**Budapest**	**4.05**	**359**	*ex*	**Pn**	**23 44 14.7**	**-3.7**
BUD				*ex*	**Sn**	**23 45 08.1**	**+2.6**
CEY	**Cerknica**	**4.05**	**306**	⇑*iPn*	**Pn**	**23 44 20.0**	**+1.5**
SRS	**Serrai**	**4.06**	**123**	P	**Pn**	**23 44 20.4**	**+1.8**
SRS	**Serrai**	**4.06**	**123**	P	**Pn**	**23 44 20.4**	**+1.8**
CDRU	**Civita di Ruta**	**4.08**	**225**	Pn	**Pn**	**23 44 20.8**	**+1.9**
	147nm,0.9s						
CDRU	**Civita di Ruta**	**4.08**	**225**	Pn	**Pn**	**23 44 20.8**	**+1.9**
	147nm,0.9s						
INTR	**Introdacqua**	**4.08**	**251**	Pn	**Pn**	**23 44 21.4**	**+2.5**
	228nm,0.8s			

LKD2	Lefkada island	4.79	165	P	Pn	23 44 30.4	+1.8
LKD2	Lefkada island	4.79	165	P	Pn	23 44 30.4	+1.8
EVR	Evrytania	4.95	155	P	Pn	23 44 34.8	+3.9
EVR	Evrytania	4.95	155	P	Pn	23 44 34.8	+3.9
CONA	Conrad Observa	5.03	334	*e*Pn	Pn	23 44 33.7	+1.7
	10nm,0.6s,SNR=6.5						
CONA				*e*Sn	Sn	23 45 31.7	+1.8
	25nm,1.0s						
CONA	Conrad Observa	5.03	334	Pn	Pn	23 44 33.7	+1.7
	10nm,0.6s,SNR=6.5						
CONA				Sn	Sn	23 45 31.7	+1.8
	25nm,1.0s						
AGG	Agios Georgios	5.04	150	P	Pn	23 44 35.4	+3.4
AGG	Agios Georgios	5.04	150	P	Pn	23 44 35.4	+3.4
VYHS	Vyhne	5.07	358	*e*Pn	Pn	23 44 30.7	-1.7
VYHS				*e*Sn	Sn	23 45 30.2	-0.3
VYHS	Vyhne	5.07	358	*e*PN	Pn	23 44 30.7	-1.7
VYHS				*e*SN	Sn	23 45 30.2	-0.3
KECS	Kecovo	5.14	10	*e*Pn	Pn	23 44 35.2	+1.8
KECS				*e*Sn	Sn	23 45 31.6	-0.9
KECS	Kecovo	5.14	10	*e*PN	Pn	23 44 35.2	+1.8
KECS				*e*SN	Sn	23 45 31.5	-0.9
KECS				*e*LG	Lg	23 45 32.9	
DOPR	Dopca	5.15	58	⇑*i*P	Pn	23 44 36.3	+2.7
DOPR	Dopca	5.15	58	⇑*i*P	Pn	23 44 36.3	+2.7
ARCR	ARCALIA	5.21	44	⇑*i*P	Pn	23 44 39.3	+5.0
ARCR	ARCALIA	5.21	44	⇑*i*P	Pn	23 44 39.3	+5.0
SMOL	Smolenice	5.21	348	*e*Pn	Pn	23 44 38.4	+4.0
SMOL	Smolenice	5.21	348	*e*PN	Pn	23 44 38.4	+4.0
TRPA	Tarpa	5.28	26	*e*Pn	Pn	23 44 36.7	+1.5
TRPA				*e*Sn	Sn	23 45 34.5	-1.2
TRPA	Tarpa	5.28	26	*ex*	Pn	23 44 36.7	+1.5
TRPA				*ex*	Sn	23 45 34.5	-1.2
ANX	Ano Chora	5.29	155	P	Pn	23 44 38.9	+3.4
ANX	Ano Chora	5.29	155	P	Pn	23 44 38.9	+3.4
MLR	Muntele Rosu	5.32	65	⇓*i*P	Pn	23 44 41.0	+5.1
MLR	Muntele Rosu	5.32	65	⇓*i*P	Pn	23 44 41.0	+5.1
KBA	Koelnbreinsper	5.46	314	*i* Sn	Sn	23 45 40.7	+0.3
	23nm,1.1s						
KBA	Koelnbreinsper	5.46	314	Sn	Sn	23 45 40.7	+0.3
	23nm,1.1s						
MOA	Molln	5.56	324	*i* Pn	Pn	23 44 42.0	+2.8
	4.4nm,0.2s,SNR=19						
MOA				*e*Sn	Sn	23 45 43.3	+0.4
	17nm,0.6s						
MOA	Molln	5.56	324	Pn	Pn	23 44 42.0	+2.8
	4.4nm,0.2s,SNR=19						
MOA				Sn	Sn	23 45 43.3	+0.4
	17nm,0.6s						
CRVS	Cervenica-Dubn	5.71	16	*e*Pn	Pn	23 44 43.0	+1.8
CRVS	Cervenica-Dubn	5.71	16	*e*PN	Pn	23 44 43.0	+1.8
ABTA	Abfaltersbach	5.72	308	*i* Pn	Pn	23 44 44.0	+2.6
	4.1nm,0.4s,SNR=7.1						
ABTA	Abfaltersbach	5.72	308	Pn	Pn	23 44 44.0	+2.6
	4.1nm,0.4s,SNR=7.1						
PLOR	Plostina	5.91	63	⇓*i*P	Pn	23 44 47.5	+3.6
PLOR	Plostina	5.91	63	⇓*i*P	Pn	23 44 47.5	+3.6
KOLS	Kolonicke sedl	5.93	21	*e*Sg	Sg	23 46 25.9	-1.3
KOLS	Kolonicke sedl	5.93	21	*e*SG	Sg	23 46 25.9	-1.3
BURAR	Bucovina Array	6.00	44	⇓*i*P	Pn	23 44 49.5	+4.3
BURAR	Bucovina Array	6.00	44	⇓*i*P	Pn	23 44 49.5	+4.3
STHS	Stebnicka Huta	6.17	13	*e*Pn	Pn	23 44 51.7	+4.2
STHS	Stebnicka Huta	6.17	13	*e*PN	Pn	23 44 51.7	+4.2
STHS				*e*LG	Lg	23 45 48.3	
MORC	Moravsky Berou	6.44	351	⇑*i*P	Pn	23 44 54.4	+3.2
MORC	Moravsky Berou	6.44	351	⇑*i*P	Pn	23 44 54.4	+3.2
TLB	Topalu	6.55	77	⇓*i*P	Pn	23 44 52.3	-0.5
TLB	Topalu	6.55	77	⇓*i*P	Pn	23 44 52.3	-0.5
WATA	Walderalm	6.58	309	*i* Pn	Pn	23 44 57.8	+4.5
	5.6nm,0.3s,SNR=8.6						
CFR	Carcaliu	6.72	72	⇓*i*P	Pn	23 44 59.5	+4.5
TIRR	Tirgusor	6.80	78	⇑*i*P	Pn	23 44 59.1	+2.9
TIRR	Tirgusor	6.80	78	⇑*i*P	Pn	23 44 59.1	+2.9
MOTA	Moosalm	6.85	308	*i* Pn	Pn	23 45 00.9	+3.9
	11nm,0.6s,SNR=28						
MOTA	Moosalm	6.85	308	Pn	Pn	23 45 00.9	+3.9
	11nm,0.6s,SNR=28						
KHC	Kasperske Hory	6.86	328	*e*PN	Pn	23 44 59.6	+2.6
KHC				*e*SN	Sn	23 46 14.6	-0.2
FETA	Feichten	6.91	304	*e*Pn	Pn	23 45 02.2	+4.4
	0.6nm,0.2s						
FETA				*e*Sn	Sn	23 46 22.4	+6.3
	21nm,1.5s						
RETA	Reutte	7.12	308	*i* Pn	Pn	23 45 04.4	+3.7
	0.8nm,0.2s						
RETA	Reutte	7.12	308	Pn	Pn	23 45 04.4	+3.7
	0.8nm,0.2s						
DPC	Dobruska-Polom	7.18	346	*e*PN	Pn	23 45 02.7	+1.4
PGF	Pioggiola	7.46	267	*e*Pn	Pn	23 45 05.0	-0.3
PGF	Pioggiola	7.46	267	*e*Pn	Pn	23 45 05.0	-0.3
DAVA	Damuels	7.55	304	*e*Sn	Sn	23 46 36.2	+4.4
	5.5nm,0.6s						
DAVA	Damuels	7.55	304	Sn	Sn	23 46 36.2	+4.4
	5.5nm,0.6s						
BRG	Berggiesshubel	8.23	337	SG	Sn	23 46 56.1	+7.8
	5.4nm,1.2s						
SBF	Sospel	8.47	277	*e*Pn	Pn	23 45 20.5	+1.4
SBF				*e*Sn	Sn	23 46 49.2	-5.2
	2.7nm,0.4s						
SBF	Sospel	8.47	277	*e*Pn	Pn	23 45 20.5	+1.4
SBF				*e*Sn	Sn	23 46 49.2	-5.2
	1.4nm,0.4s						
MBDF	Montbardon	8.97	283	*e*Pn	Pn	23 45 26.5	+0.5
MBDF				*e*Sn	Sn	23 47 01.3	-5.4
	8.6nm,0.6s						
MBDF	Montbardon	8.97	283	*e*Pn	Pn	23 45 26.5	+0.5
MBDF				*e*Sn	Sn	23 47 01.3	-5.4
	4.3nm,0.6s						
FRF	La Foret Royal	9.05	275	*e*Pn	Pn	23 45 28.6	+1.5
FRF				*e*Sn	Sn	23 47 03.2	-5.4
	1.4nm,0.4s						
FRF	La Foret Royal	9.05	275	*e*Pn	Pn	23 45 28.6	+1.5
FRF				*e*Sn	Sn	23 47 03.2	-5.4
	0.7nm,0.4s						
LPG	La Plagne	9.07	287	*e*P	Pn	23 45 32.4	+4.9
LPG				*e*Sn	Sn	23 47 03.7	-5.7
	28nm,0.9s						
LPG	La Plagne	9.07	287	*e*P	Pn	23 45 32.4	+4.9
LPG				*e*Sn	Sn	23 47 03.7	-5.7
	14nm,0.9s						
LPL	La Plagne	9.08	288	*e*P	Pn	23 45 32.7	+5.0
LPL				*e*Sn	Sn	23 47 04.4	-5.3
	8.1nm,0.5s						
LPL	La Plagne	9.08	288	*e*P	Pn	23 45 32.7	+5.0
LPL				*e*Sn	Sn	23 47 04.4	-5.3
	4.1nm,0.5s						
LMR	La Mourre	9.17	274	*e*Sn	Sn	23 47 05.5	-6.0
	1.0nm,0.3s						
LMR	La Mourre	9.17	274	*e*Sn	Sn	23 47 05.5	-6.0
	0.5nm,0.3s						
ORIF	Oris-en-Rattie	9.61	283	*e*Pn	Pn	23 45 34.5	-0.3
ORIF				*e*Sn	Sn	23 47 16.1	-6.4
	13nm,0.9s						
ORIF	Oris-en-Rattie	9.61	283	*e*Pn	Pn	23 45 34.5	-0.3
ORIF				*e*Sn	Sn	23 47 16.1	-6.4
	6.4nm,0.9s						
CDF	Champ du Feu	9.62	305	*e*Pn	Pn	23 45 34.7	-0.2
CDF	Champ du Feu	9.62	305	*e*Pn	Pn	23 45 34.7	-0.2
HINF	Hinteralfeld	9.63	301	*e*Pn	Pn	23 45 34.2	-0.8
HINF				*e*Sn	Sn	23 47 17.6	-5.2
	4.4nm,0.5s						
HINF	Hinteralfeld	9.63	301	*e*Pn	Pn	23 45 34.2	-0.8
HINF				*e*Sn	Sn	23 47 17.6	-5.2
	2.2nm,0.5s						
CABF	La Chapelle	9.74	294	*e*Pn	Pn	23 45 35.4	-1.2
CABF	La Chapelle	9.74	294	*e*Pn	Pn	23 45 35.4	-1.2
HAU	Haudompre	10.02	302	*e*Pn	Pn	23 45 39.1	-1.2
HAU				*e*Sn	Sn	23 47 26.8	-5.5
	8.7nm,0.8s						
HAU	Haudompre	10.02	302	*e*Pn	Pn	23 45 39.1	-1.2
HAU				*e*Sn	Sn	23 47 26.8	-5.5
	4.3nm,0.8s						
VIVF	Saint-Julien-l	10.47	283	*e*Pn	Pn	23 45 46.0	-0.5
VIVF	Saint-Julien-l	10.47	283	*e*Pn	Pn	23 45 46.0	-0.5
SMF	Signal de Mont	11.26	292	*e*Pn	Pn	23 45 56.5	-0.8
SMF				*e*Sn	Sn	23 47 56.4	-6.4
	2.9nm,0.5s						
SMF	Signal de Mont	11.26	292	*e*Pn	Pn	23 45 56.5	-0.8
SMF				*e*Sn	Sn	23 47 56.4	-6.4
	1.5nm,0.5s						
LOR	Lormes	11.39	295	*e*Pn	Pn	23 45 58.8	-0.2
	baz=122						
LOR				*e*Sn	Sn	23 47 59.2	-6.6
	2.6nm,0.5s						
LOR	Lormes	11.39	295	*e*Pn	Pn	23 45 58.8	-0.2
LOR				*e*Sn	Sn	23 47 59.2	-6.6
	1.3nm,0.5s						

NIED ***09*** *23:43:00.38˚40N×144˚10E.h5km.Mw3.6 Best double couple: M◦3.06000×10¹⁴ NP1:φs55.00000°,δ27.00000°, λ-42.00000°. NP2:φs184.00000°,δ72.00000°, λ-111.00000°.*

JMA 09 23:43:43.8±0.1, 38˚39N×144˚13E, h27km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	Ofunato	2.04	290	P	Pn	23 44 17.6	+1.2
MIYJ	Miyakonagasawa	2.15	304	P	Pn	23 44 18.8	+0.9
MIYJ				*e*S	Sn	23 44 44.6	+0.8
JIO	Ouri	2.19	273	P	Pn	23 44 19.5	+1.2
JIO				S	Sn	23 44 45.6	+1.1
JMK	Ichinoseki	2.35	285	P	Pn	23 44 22.0	+1.5
JMK				*e*S	Sn	23 44 50.9	+2.4
JOM	Ohasama	2.46	297	P	Pn	23 44 23.8	+1.6
JOM				S	Sn	23 44 53.7	+2.3
JOU	Okura	2.72	271	P	Pn	23 44 27.4	+1.6
JOU				S	Sn	23 44 59.9	+2.1
JANG	Nango	2.83	315	P	Pn	23 44 28.4	+1.1
JANG				*e*S	Sn	23 45 00.4	-0.1
JRG	Rokugo	2.91	291	P	Pn	23 44 30.5	+2.2
JRG				*e*S	Sn	23 45 05.5	+3.2
JYK	Kaneyama	3.00	281	P	Pn	23 44 31.7	+2.2
JYK				*e*S	Sn	23 45 07.6	+3.0
JFT	Otama	3.12	255	P	Pn	23 44 33.1	+1.8
JFT				*e*S	Sn	23 45 09.2	+1.5
JTM	Tenmabayashi	3.37	316	P	Pn	23 44 35.9	+1.3
JTM				S	Sn	23 45 13.9	+0.3
JOT	Ohata	3.81	323	P	Pn	23 44 43.8	+3.1
JCH	Churui	4.26	352	P	Pn	23 44 46.5	-0.4
JCH				S	Sn	23 45 33.5	-2.2
BSO1	Boso 1	4.51	215	P	Pn	23 44 48.9	-0.9
JRY	Ryogami san	4.80	242	P	Pn	23 44 54.7	+0.4
NEM2	Nemuro 2	5.12	13	P	Pn	23 44 55.9	-2.7
NEM2				S	Sn	23 45 50.5	-6.3
JTKR	Abashiri--Toko	5.58	358	P	Pn	23 45 04.4	-0.5
JTKR				*e*S	Sn	23 46 04.3	-3.8

ISCJB ***09*** *23:47:08.8±0.4, 7˚.94S±0˚.07×13˚.54W±0˚.04, h17km, mb4.0/16, Error ellipse: s-maj=10.0km s-min=5.9km az=173.9*

IDC ***09*** *23:47:08.3±1.0, 7˚.85S×13˚.52W, h0km, mb3.9/12, mb1 4.0/12, mb1mx3.7/53, mbtmp3.8/12, Error ellipse: s-maj=26.0km s-min=22.8km az=41.0*

NEIC ***09*** *23:47:09.8±0.4, 7˚.88S×13˚.55W, h10km, mb4.3/4, Error ellipse: s-maj=10.3km s-min=7.6km az=188.0*

ISC 09 23:47:10.6±0.6, 7˚.95S±0˚.10×13˚.61W±0˚.06, h17km, n28, σ1§00/25, mb4.0/16, Ascension Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASCN	Ascension	0.74	271	*e*Pg	Pb	23 47 24.6	-0.5
ASCN				*e*Sg	Sb	23 47 35.5	+0.5
H10N1	ASCENSION HYDR	0.87	277	Pn	Pb	23 47 26.1	-1.0
	baz=109,slow=15,SNR=6143						
H10N2	ASCENSION HYDR	0.88	278	Pn	Pb	23 47 26.3	-0.9
	baz=109,slow=15,SNR=8155						
H10N3	ASCENSION HYDR	0.89	277	Pn	Pb	23 47 26.5	-0.9
	baz=109,slow=15,SNR=4727						
H10S1	ASCENSION HYDR	1.42	226	Pn	Pn	23 47 34.3	-1.2
H10S2	ASCENSION HYDR	1.43	225	Pn	Pn	23 47 34.5	-1.2
H10S3	ASCENSION HYDR	1.44	226	Pn	Pn	23 47 34.6	-1.2
SHEL	Horse Pasture	11.07	137	*e*Pn	Pn	23 49 48.7	+0.3
SACV	Santiago Islan	24.83	336	*e*P	P	23 52 32.8	+0.5
	7.4nm,0.8s						
TORD	Torodi Ar. Bea	25.89	36	P	P	23 52 40.9	-1.1
	1.7nm,0.8s,baz=210,slow=9.9,SNR=22						
LSZ	Lusaka	41.53	104	P	P	23 54 58.3	+0.6
	1.3nm,0.7s,baz=219,slow=13,SNR=3.3						
BOSA	Boshof	41.97	124	P	P	23 55 00.8	-0.4
	4.6nm,1.0s,baz=301,slow=4.3,SNR=4.3						
MATP	Matopo	42.54	112	P	P	23 55 04.9	-1.0
	2.4nm,0.9s,baz=284,slow=8.3,SNR=3.8						
SAML	Samuel	49.01	265	*e*P	P	23 55 58.3	+1.2
	3.3nm,1.1s						
LPAZ	La Paz	53.81	256	P	P	23 56 34.9	+1.2
	1.2nm,0.8s,baz=104,slow=4.2,SNR=4.2						
GERES	GERESS Array B	61.49	20	P	P	23 57 26.7	+0.5
	0.2nm,0.3s,baz=202,slow=5.1,SNR=3.0						
SNAA	Sanae	64.01	176	*e*P	P	23 57 43.8	+0.8
	191nm,1.0s						
BRTR	Keskin Array B	64.46	39	P	P	23 57 47.6	+1.1
	0.4nm,0.6s,baz=218,slow=6.9,SNR=3.1						
OTAV	Otavalo	65.13	274	*e*P	P	23 57 52.0	+0.2
	1.8nm,0.8s						
AKASG	Malin Array Be	69.15	28	P	P	23 58 15.0	-1.0
	0.3nm,0.3s,baz=229,slow=7.0,SNR=5.2						
NOA	NORSAR Array B	71.48	12	P	P	23 58 29.0	-1.1
	1.1nm,0.9s,baz=194,slow=8.6,SNR=3.0						
FINES	FINESS Array B	75.77	18	P	P	23 58 54.0	-1.3
	0.9nm,0.8s,baz=224,slow=7.8,SNR=4.2						
ARCES	ARCESS Array B	81.85	13	P	P	23 59 28.1	-0.5
	1.4nm,0.8s,baz=212,slow=3.2,SNR=5.0						
TXAR	Lajitas Array	93.89	299	P	P	00 00 29.5	+1.6
	0.2nm,0.6s,baz=83,slow=8.3,SNR=2.6						
RKT	Rikitea	114.89	240	*e*LR	LR	00 40 52.4	
	434nm,23.8s						
TAOE	Nuku Hiva Isla	124.18	254	*e*LR	LR	00 45 10.8	
	631nm,22.2s						
TBI	Tubuai	126.80	233	*e*LR	LR	00 46 22.7	
	572nm,29.2s						
PPT2	Papeete2	129.64	239	*e*LR	LR	00 47 38.9	
	612nm,29.8s						

MOS ***09*** *23:47:27.7±1.2, 7˚.77S×13˚.50W, h10km, mb5.0/23, MS4.8/8, Error ellipse: s-maj=14.1km s-min=5.9km az=59.9*

ISCJB ***09*** *23:47:29.3±0.3, 7˚.74S±0˚.05×13˚.48W±0˚.04, h17km, mb4.6/80, MS5.0/23, Error ellipse: s-maj=7.9km s-min=5.5km az=151.9*

BJI ***09*** *23:47:29.8, 8˚.00S×13˚.50W, h10km, mb5.4/2, mB5.5/2, Ms5.1/4, Ms7 4.9/4*

IDC ***09*** *23:47:29.2±0.5, 7˚.57S×13˚.47W, h0km, mb4.3/36, mb1 4.3/36, mb1mx4.3/50, mbtmp4.3/36, MS5.0/14, Ms1 5.0/14, ms1mx4.8/23, Error ellipse: s-maj=14.6km s-min=12.1km az=164.0*

NEIC ***09*** *23:47:30.1±0.3, 7˚.80S×13˚.48W, h10km, mb5.1/21, Error ellipse: s-maj=9.2km s-min=7.0km az=154.0*

GCMT ***09*** *23:47:30.1±0.1, 7˚.86S×13˚.48W, h12km, MW5.3/117, Moment Tensor Solution. s74,c101; s117,c206; Duration: 1§1 Moment tensor: Scale 10¹⁷Nm; Mrr-1.05±.02; Mθθ-0.06±.02; Mφφ1.11±.01; Mrθ-0.04±.05; Mθφ-0.12±.01; Mφr-0.22±.04; Best double couple: M◦1.10800×10¹⁷ NP1:φs358.00000°,δ51.00000°, λ-86.00000°. NP2:φs171.00000°,δ39.00000°, λ-95.00000°. Principal axes: T 1.1420, Plg6.0000°, Azm85.0000°; N -0.0690, Plg3.0000°, Azm175.0000°; P -1.0740, Plg84.0000°, Azm294.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 09 23:47:31.4±0.4, 7˚.75S±0˚.07×13˚.43W±0˚.06, h17km, n255, σ1§40/248, mb4.7/80, MS4.9/24, 20C-9D, Ascension Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I50GB	ASCENSION ISLA	0.95	259	Pn	Pn	23 47 52.8	+2.8
	baz=73,slow=20,SNR=1.1						
H10N1	ASCENSION HYDR	1.04	265	T	T	23 48 58.0	
	baz=83						
H10N2	ASCENSION HYDR	1.05	266	T	T	23 48 48.0	
	baz=83						
H10N3	ASCENSION HYDR	1.06	265	T	T	23 48 50.9	
	baz=83						
H10S1	ASCENSION HYDR	1.69	225	T	T	23 49 35.3	
	baz=35,slow=75						
H10S2	ASCENSION HYDR	1.70	225	T	T	23 49 35.7	
	baz=35,slow=75						
H10S3	ASCENSION HYDR	1.71	225	T	T	23 49 44.7	
	baz=35,slow=75						
LIC	Lamto	16.22	31	*e*P	P	23 51 22.3	+0.6
	79nm,1.5s						
KIC	Kosan Boka	16.48	32	*e*P	P	23 51 25.3	+0.7
	115nm,1.1s						
TIC	Toumodi	16.58	31	*e*P	P	23 51 26.5	+0.8
DBIC	Dimbokro	16.68	31	Pn	P	23 51 26.4	-0.5
	0.2nm,0.3s,baz=186,slow=15,SNR=3.1						
DBIC				LR	LR	23 56 19.6	
	comp=Z,4μm,21.9s,baz=193,slow=32						
DBIC	Dimbokro	16.68	31	*e*P	P	23 51 27.4	+0.6
DBIC				pmax	pmax		
	comp=Z,60nm,1.3s						
DBIC	Dimbokro	16.68	31	*e*Pn	P	23 51 27.4	+0.6
	comp=Z,60nm,1.3s						
RCBR	Riachuelo	22.39	273	P	P	23 52 30.6	+1.4
	comp=Z,24nm,1.2s,baz=87,slow=10,SNR=3.4						
RCBR				LR	LR	23 58 50.7	
	comp=Z,5μm,20.7s,baz=84,slow=30						
RCBR	Riachuelo	22.39	273	*e*P	P	23 52 28.4	-0.8
	comp=Z,56nm,1.3s						
TOA0	Torodi Ar. Sit	25.63	36	*e*P	P	23 53 01.2	+0.9
	comp=Z,47nm,1.1s						
TORD	Torodi Ar. Bea	25.63	36	P	P	23 52 59.4	-0.8
	comp=Z,10nm,1.0s,baz=215,slow=11,SNR=5.0						
TORD				LR	LR	00 01 49.6	
	comp=Z,4μm,19.9s,baz=225,slow=34						
TSUM	Tsumeb	32.18	114	P	P	23 53 57.8	-1.0
	comp=Z,1.9nm,0.7s,baz=246,slow=7.1,SNR=4.1						
TSUM				LR	LR	00 04 11.3	
	comp=Z,3μm,21.9s,baz=278,slow=31						
TSUM	Tsumeb	32.18	114	*e*P	P	23 53 58.2	-0.6
	comp=Z,17nm,1.5s						
BDFB	Brasilia	34.72	254	P	P	23 54 20.3	-0.7
	comp=Z,3.2nm,0.7s,baz=78,slow=6.2						
BDFB				LR	LR	00 05 51.1	
	comp=Z,3μm,20.9s,baz=349,slow=32						
BDFB	Brasilia	34.72	254	*e*P	P	23 54 20.2	-0.7
BDFB				pmax	pmax		
	comp=Z,19nm,1.1s						
BDFB	Brasilia	34.72	254	*e*P	P	23 54 20.2	-0.7
	comp=Z,19nm,1.1s						
TAM	Tamanrasset	35.58	31	*e*P	P	23 54 29.6	+1.3
TAM				pmax	pmax		
	comp=Z,7.0nm,1.0s						
TAM	Tamanrasset	35.58	31	*e*P	P	23 54 29.6	+1.3
	comp=Z,6.9nm,1.0s						
SUR	Sutherland	40.13	132	P	P	23 55 07.5	+0.7
	comp=Z,1.0nm,1.2s,baz=300,slow=4.4,SNR=3.7						
LBTB	Lobatse	40.99	119	P	P	23 55 13.6	-0.3
	comp=Z,13nm,1.2s,baz=301,slow=9.1,SNR=5.5						
LBTB	Lobatse	40.99	119	*e*P	P	23 55 13.3	-0.6
LBTB	Lobatse	40.99	119	*e*P	P	23 55 13.3	-0.6
LSZ	Lusaka	41.41	104	P	P	23 55 17.8	+0.4
	comp=Z,10nm,1.0s,baz=268,slow=7.7,SNR=8.4						
LSZ				LR	LR	00 09 33.9	
	comp=Z,2μm,21.6s,baz=282,slow=32						
LSZ	Lusaka	41.41	104	*e*P	P	23 55 17.3	-0.1
LSZ				pmax	pmax		
	comp=Z,11nm,0.9s						
LSZ	Lusaka	41.41	104	*e*P	P	23 55 17.3	-0.1
	comp=Z,12nm,0.9s						
BOSA	Boshof	41.94	125	P	P	23 55 23.4	+1.8
	comp=Z,12nm,0.9s,baz=287,slow=6.4,SNR=9.0						
BOSA				LR	LR	00 09 37.4	
	comp=Z,2μm,21.0s,baz=286,slow=32						
BOSA	Boshof	41.94	125	*e*P	P	23 55 20.5	-1.1
BOSA				pmax	pmax		
	comp=Z,22nm,1.1s						
BOSA	Boshof	41.94	125	*e*P	P	23 55 20.4	-1.1
	comp=Z,22nm,1.1s						
MATP	Matopo	42.45	112	P	P	23 55 27.6	+1.7
	comp=Z,12nm,1.1s,baz=306,slow=6.0,SNR=5.8						
MATP				LR	LR	00 10 28.5	
	comp=Z,2μm,21.4s,baz=278,slow=32						
MBAR	Mbarara	44.59	83	*e*P	P	23 55 43.2	-0.1
MBAR				pmax	pmax		
	comp=Z,47nm,1.4s						
MBAR	Mbarara	44.59	83	*e*P	P	23 55 43.2	-0.1
	comp=Z,47nm,1.4s						
CPUP	Villa Florida	45.58	241	P	P	23 55 52.0	+1.2
	comp=Z,2.7nm,1.1s,baz=129,slow=8.3,SNR=3.1						
CPUP				LR	LR	00 12 54.5	
	comp=Z,2μm,18.6s,baz=75,slow=33						
CPUP	Villa Florida	45.58	241	*e*P	P	23 55 50.8	0.0
CPUP	Villa Florida	45.58	241	*e*P	P	23 55 50.8	0.0
EVO	Evora	46.32	6	*e*P	P	23 55 57.1	+0.7
	comp=Z,40nm,1.7s						
PMAFR	Mafra	46.63	4	*e*P	P	23 56 06.5	+7.7
	comp=Z,129nm,1.4s						
PTGA	Pitinga	46.89	276	P	P	23 56 00.3	-1.1
	comp=Z,1.7nm,0.6s,baz=89,slow=13,SNR=4.7						
PTGA	Pitinga	46.89	276	*e*P	P	23 56 00.0	-1.3
	comp=Z,17nm,1.5s						
SIV	San Ignacio	47.24	255	P	P	23 56 04.6	+0.5
	comp=Z,1.6nm,0.8s,baz=106,slow=11,SNR=3.8						
PMRV	Marv??o	47.27	6	*e*P	P	23 56 10.8	+7.0
	comp=Z,40nm,1.4s						
PTOM	Tomar	47.36	5	*e*P	P	23 56 08.8	+4.3
	comp=Z,33nm,1.6s						
ESDC	Sonseca Array	47.99	10	P	P	23 56 09.0	-0.5
	comp=Z,0.3nm,0.6s,baz=193,slow=6.1,SNR=5.4						
ES19	SONSECA Array	48.03	10	*e*P	P	23 56 10.0	+0.2
MTE	Manteigas	48.22	6	*e*P	P	23 56 12.0	+0.8
	comp=Z,39nm,1.7s						
MTE	Manteigas	48.22	6	*e*P	P	23 56 14.0	+2.8
	comp=Z,25nm,1.2s						
KE

BFO	**Black Forest**	**59.04**	**17**	*e*P		**P**	**23 57 30.0**	**-0.4**
BFO					pmax	pmax			
	comp=Z,26nm,1.3s								
BFO	**Black Forest**	**59.04**	**17**	*e*P		**P**	**23 57 30.0**	**-0.4**
	comp=Z,26nm,1.3s								
LANF	**Langenberg**	**59.49**	**16**	*e*P		**P**	**23 57 33.5**	**0.0**
OBKA	**Obir**	**59.50**	**22**	*i* P		**P**	**23 57 34.1**	**+0.4**
	comp=Z,12nm,1.3s								
EIL	**Elat**	**59.55**	**49**	P		**P**	**23 57 34.9**	**+0.6**
	comp=Z,1.8nm,0.7s,baz=229,slow=3.3,SNR=6.4								
WLF	**Walferdange**	**59.68**	**15**	*e*P		**P**	**23 57 37.3**	**+2.5**
WLF	**Walferdange**	**59.68**	**15**	*e*P		**P**	**23 57 37.3**	**+2.5**
SOKA	**Soboth**	**59.82**	**22**	*i* P		**P**	**23 57 36.1**	**+0.2**
	comp=Z,15nm,1.3s,SNR=11								
VTS	**Vitosha**	**60.21**	**31⇑**	*i*P		P	23 57 45.0	+6.3
VTS	**Vitosha**	**60.21**	**31**	⇑P		P	23 57 45.0	+6.3
ARSA	**Arzberg**	**60.49**	**22**	*e*P		**P**	**23 57 40.4**	**0.0**
	comp=Z,10nm,1.4s								
MOA	**Molln**	**60.53**	**21**	*e*P		**P**	**23 57 39.5**	**-1.1**
	comp=Z,11nm,1.1s								
CONA	**Conrad Observa**	**61.18**	**22**	*e*P		**P**	**23 57 44.9**	**-0.3**
	comp=Z,20nm,1.3s,SNR=9.5								
GERES	**GERESS Array B**	**61.18**	**20**	P		**P**	**23 57 44.9**	**-0.2**
	comp=Z,1.0nm,0.8s,baz=73,slow=4.5,SNR=7.1								
KHC	**Kasperske Hory**	**61.39**	**20**	*e*P		**P**	**23 57 45.2**	**-1.3**
KHC				*e*pP		**pP**	**23 57 51.8**	**-0.2**
KHC					AMS	AMS	00 23 40.0		
	comp=Z,900nm,21.9s								
KHC	**Kasperske Hory**	**61.39**	**20**	*e*P		**P**	**23 57 45.2**	**-1.3**
KHC				*e*			23 57 51.8		
KHC					MLR	MLR			
	comp=Z,900nm,21.9s								
KHC	**Kasperske Hory**	**61.39**	**20**	*e*P		**P**	**23 57 45.5**	**-1.0**
BZS	**Buzias**	**61.71**	**27⇑**	*i*P		**P**	**23 57 50.4**	**+1.7**
BZS	**Buzias**	**61.71**	**27**	⇑P		**P**	**23 57 50.4**	**+1.7**
NKC	**Novy Kostel**	**61.97**	**19**	*e*P		**P**	**23 57 50.1**	**-0.3**
NKC				*e*pP		**pP**	**23 57 55.8**	**-0.1**
NKC					AMS	AMS	00 25 10.0		
	comp=Z,1μm,16.9s								
NKC	**Novy Kostel**	**61.97**	**19**	*e*P		**P**	**23 57 50.1**	**-0.3**
NKC				*e*			23 57 55.8		
NKC					MLR	MLR			
	comp=Z,1μm,16.9s								
ROSC	**El Rosal**	**62.02**	**280**	P		**P**	**23 57 52.1**	**+0.2**
	comp=Z,3.2nm,0.3s,baz=124,slow=11,SNR=9.2								
ROSC					LR	LR	00 22 49.3		
	comp=Z,2μm,19.6s,baz=121,slow=34								
ASF	**Jabal al Asfar**	**62.26**	**48**	P		**P**	**23 57 51.9**	**-0.9**
	comp=Z,0.8nm,0.4s,baz=165,slow=4.4,SNR=13								
PRU	**Pruhonice**	**62.45**	**20**	*e*P		**P**	**23 57 53.5**	**0.0**
PRU				*e*pP		**pP**	**23 57 58.9**	**-0.1**
PRU					AMS	AMS	00 25 00.0		
	comp=Z,700nm,20.0s								
PRU	**Pruhonice**	**62.45**	**20**	*e*P		**P**	**23 57 53.5**	**0.0**
PRU				*e*			23 57 58.9		
PRU					MLR	MLR			
	comp=Z,700nm,20.0s								
GOPC	**GO Pecny, Ondr**	**62.47**	**20**	*e*pP		**pP**	**23 57 58.6**	**-0.6**
GOPC					AMS	AMS	00 25 10.0		
	comp=Z,800nm,18.7s								
GOPC	**GO Pecny, Ondr**	**62.47**	**20**	*e*P		P	23 57 58.6	+4.9
GOPC					MLR	MLR			
	comp=Z,800nm,18.7s								
VRAC	**Vranov**	**62.60**	**22**	P		**P**	**23 57 53.4**	**-1.2**
	comp=Z,0.7nm,0.4s,baz=237,slow=7.1,SNR=7.6								
PSZ	**Piszkesteto**	**62.75**	**25**	*e*P		**P**	**23 57 55.7**	**0.0**
PSZ					pmax	pmax			
	comp=Z,30nm,1.4s								
PSZ	**Piszkesteto**	**62.75**	**25**	*e*P		**P**	**23 57 55.7**	**0.0**
	comp=Z,30nm,1.4s								
VYHS	**Vyhne**	**62.78**	**24**	*e*P		**P**	**23 57 54.9**	**-1.0**
VYHS					pmax	pmax			
	comp=Z,12nm,1.5s								
VYHS	**Vyhne**	**62.78**	**24**	*e*P		**P**	**23 57 54.9**	**-1.0**
VYHS				*e*			00 09 29.5		
VYHS				*e*			00 09 49.3		
PVCC	**Panska Ves**	**62.92**	**20**	AMS		AMS	00 24 40.0		
	comp=Z,500nm,20.4s								
VNA1	**Neumayer--Stat**	**62.92**	**178**	P		**P**	**23 57 55.3**	**-1.1**
CLL	**Collm**	**63.08**	**18**	*e*P		**P**	**23 57 56.0**	**-1.7**
	comp=Z,30nm,2.1s								
CLL				*i*			23 58 04.0		
CLL				*i*			23 58 07.4		
CLL				*e*PP		**PP**	**00 00 15.0**	**-1.7**
CLL				*e*S		**S**	**00 06 32.0**	**+4.2**
CLL				*e*SS		**SS**	**00 10 27.0**	**-7.0**
CLL				*e*SSS		SSS	00 13 24.0		
CLL				Lm		MLR	00 25 00.0		
	comp=N,500nm,21.5s								
CLL				Lm		MLR	00 25 00.0		
	comp=E,400nm,20.9s								
CLL				Lm		MLR	00 25 00.0		
	comp=Z,800nm,19.6s								
CLL	**Collm**	**63.08**	**18**	*e*P		**P**	**23 57 56.0**	**-1.7**
CLL				*i*			23 58 04.0		
CLL				*e*S		**S**	**00 06 32.0**	**+4.2**
CLL				pmax		pmax			
	comp=Z,30nm,2.1s								
CLL				MLR		MLR			
	comp=Z,800nm,19.6s								
DRGR		**63.09**	**27⇑**	*i*P		**P**	**23 58 00.3**	**+2.3**
DRGR		**63.09**	**27**	⇑P		**P**	**23 58 00.3**	**+2.3**
VOIR		**63.19**	**29⇑**	*i*P		**P**	**23 58 00.5**	**+1.8**
VOIR		**63.19**	**29**	⇑P		**P**	**23 58 00.5**	**+1.8**
KRLC	**Kraliky**	**63.30**	**21**	*e*P		**P**	**23 58 00.3**	**+1.0**
KRLC				*ex*		x	23 58 06.8		
KRLC	**Kraliky**	**63.30**	**21**	*e*P		**P**	**23 58 00.3**	**+1.0**
KRLC				*e*			23 58 06.8		
MORC	**Moravsky Berou**	**63.33**	**22⇓**	*i*P		**P**	**23 57 57.9**	**-1.6**
MORC	**Moravsky Berou**	**63.33**	**22**	*e*P		**P**	**23 57 59.5**	**0.0**
MORC	**Moravsky Berou**	**63.33**	**22**	*e*P		**P**	**23 57 59.5**	**0.0**
DPC	**Dobruska-Polom**	**63.37**	**21**	*e*P		**P**	**23 58 00.1**	**+0.4**
DPC				*e*pP		**pP**	**23 58 04.5**	**-0.7**
DPC					AMS	AMS	00 25 00.0		
	comp=Z,800nm,20.9s								
DPC	**Dobruska-Polom**	**63.37**	**21**	*e*P		**P**	**23 58 00.1**	**+0.4**
DPC				*e*			23 58 04.5		
DPC				MLR		MLR			
	comp=Z,800nm,20.9s								
UPC	**Upice**	**63.39**	**21**	*e*P		**P**	**23 57 59.2**	**-0.6**
UPC				*e*pP		**pP**	**23 58 04.7**	**-0.6**
UPC					AMS	AMS	00 26 00.0		
	comp=Z,600nm,18.0s								
UPC	**Upice**	**63.39**	**21**	*e*P		**P**	**23 57 59.2**	**-0.6**
UPC				*e*			23 58 04.7		
UPC				MLR		MLR			
	comp=Z,600nm,18.0s								
KECS	**Kecovo**	**63.44**	**25**	*e*P		**P**	**23 57 58.4**	**-1.8**
KECS				*e*			23 58 07.2		
KECS				pmax		pmax			
	comp=Z,5.0nm,1.0s								
KECS	**Kecovo**	**63.44**	**25**	*e*P		**P**	**23 57 58.4**	**-1.8**
KECS				*e*			23 58 07.2		
LANS	**Liptovska Anna**	**63.56**	**23**	*e*P		**P**	**23 58 03.6**	**+2.6**
LANS				*e*			23 58 08.0		
LANS	**Liptovska Anna**	**63.56**	**23**	*e*P		**P**	**23 58 03.6**	**+2.6**
LANS				*e*			23 58 08.0		
OKC	**Ostrava-Krasne**	**63.61**	**22**	*e*P		**P**	**23 58 01.1**	**-0.2**
OKC					AMS	AMS	00 27 20.0		
	comp=Z,700nm,16.6s								
OKC	**Ostrava-Krasne**	**63.61**	**22**	*e*P		**P**	**23 58 01.1**	**-0.2**
OKC					MLR	MLR			
	comp=Z,700nm,16.6s								
MLR	**Muntele Rosu**	**63.67**	**30⇓**	*i*P		**P**	**23 57 59.7**	**-2.2**
MLR	**Muntele Rosu**	**63.67**	**30**	⇓P		**P**	**23 57 59.7**	**-2.2**
DOPR	**Dopca**	**63.74**	**29⇓**	*i*P		P	23 58 07.6	+5.4
ANTO	**Ankara**	**63.76**	**38**	*e*P		**P**	**23 58 03.0**	**+0.4**
ANTO					pmax	pmax			
	comp=Z,142nm,1.5s								
ANTO	**Ankara**	**63.76**	**38**	*e*P		**P**	**23 58 03.0**	**+0.4**
	comp=Z,142nm,1.5s								
TLB	**Topalu**	**64.10**	**32⇑**	*i*P		P	23 58 09.6	+5.0
TLB	**Topalu**	**64.10**	**32**	⇑P		P	23 58 09.6	+5.0
NIE	**Niedzica**	**64.10**	**24**	*e*P		**P**	**23 58 04.5**	**-0.1**
NIE	**Niedzica**	**64.10**	**24**	*e*P		**P**	**23 58 04.5**	**-0.1**
CRVS	**Cervenica-Dubn**	**64.17**	**25**	*e*P		**P**	**23 58 05.6**	**+0.6**
CRVS	**Cervenica-Dubn**	**64.17**	**25**	*e*P		**P**	**23 58 05.6**	**+0.6**
CRVS				*e*			00 09 26.0		
SNAA	**Sanae**	**64.20**	**176**	*de*P		**P**	**23 58 02.4**	**-2.5**
BRTR	**Keskin Array B**	**64.20**	**39**	P		**P**	**23 58 06.0**	**+0.4**
	comp=Z,2.1nm,1.1s,baz=207,slow=5.1,SNR=11								
BRTR	**Keskin Array B**	**64.20**	**39**	P		**P**	**23 58 06.0**	**+0.4**
TIRR	**Tirgusor**	**64.21**	**32⇓**	*i*P		P	23 58 11.7	+6.4
TIRR	**Tirgusor**	**64.21**	**32**	⇓P		P	23 58 11.7	+6.4
PLOR	**Plostina**	**64.27**	**30⇑**	*i*P		**P**	**23 58 04.2**	**-1.6**
PLOR	**Plostina**	**64.27**	**30**	⇑P		**P**	**23 58 04.2**	**-1.6**
UZH	**Uzhgorod**	**64.31**	**25**	*e*P		**P**	**23 58 05.0**	**-0.9**
UZH				*e*			23 58 09.7		
STHS	**Stebnicka Huta**	**64.48**	**24**	*e*P		**P**	**23 58 07.7**	**+0.6**
STHS					pmax	pmax			
	comp=Z,12nm,2.2s								
STHS	**Stebnicka Huta**	**64.48**	**24**	*e*P		**P**	**23 58 07.7**	**+0.6**
KOLS	**Kolonicke sedl**	**64.54**	**25**	*e*P		**P**	**23 58 07.6**	**+0.2**
KOLS					pmax	pmax			
	comp=Z,19nm,1.7s								
KOLS	**Kolonicke sedl**	**64.54**	**25**	*e*P		**P**	**23 58 07.6**	**+0.2**
KOLS				*e*			00 09 04.9		
OJC	**Ojcow**	**64.54**	**23**	*e*P		**P**	**23 58 07.0**	**-0.4**
OJC	**Ojcow**	**64.54**	**23**	*e*P		**P**	**23 58 07.0**	**-0.4**
OTAV	**Otavalo**	**65.29**	**274**	*e*P		**P**	**23 58 13.3**	**-0.3**
	comp=Z,20nm,1.5s								
KIS	**Kishinev**	**66.15**	**30**	*e*P		P	23 58 13.0	-4.8
KIS	**Kishinev**	**66.15**	**30**	*e*P		P	23 58 13.0	-4.8
KIS				*e*			23 58 22.0		
SUW	**Suwalki**	**68.82**	**22**	*e*P		**P**	**23 58 33.7**	**-0.9**
SUW	**Suwalki**	**68.82**	**22**	*e*P		**P**	**23 58 33.7**	**-0.9**
KIEV	**Kiev**	**68.89**	**28**	*e*P		**P**	**23 58 33.9**	**-1.2**
KIEV					pmax	pmax			
	comp=Z,22nm,1.0s								
KIEV	**Kiev**	**68.89**	**28**	*e*P		**P**	**23 58 33.9**	**-1.2**
	comp=Z,22nm,1.0s								
AKASG	**Malin Array Be**	**68.90**	**28**	P		**P**	**23 58 33.4**	**-1.7**
	comp=Z,0.8nm,0.4s,baz=227,slow=6.7,SNR=19								
SYO	**Syowa Base**	**70.14**	**162⇑**	*e*pP		pP	23 58 45.4	-2.7
MICGM	**Minsk**	**71.02**	**24**	*e*		**P**	**23 58 46.0**	**-2.1**
MNK	**Minsk**	**71.02**	**24**	*e*P		**P**	**23 58 46.0**	**-2.1**
NB2	**NORSAR Subarra**	**71.26**	**12**	P		**P**	**23 58 50.0**	**+0.5**
	comp=Z,2.3nm,0.8s,baz=205,slow=6.5								
NOA	**NORSAR Array B**	**71.26**	**12**	P		**P**	**23 58 49.5**	**-0.1**
	comp=Z,1.9nm,0.9s,baz=158,slow=19,SNR=5.4								
AKH	**Akhalkalaki**	**71.43**	**42**	P		**P**	**23 58 51.5**	**+0.3**
AKH	**Akhalkalaki**	**71.43**	**42**	*e*P		**P**	**23 58 51.4**	**+0.3**
BGD	**Bogdanovka**	**71.43**	**42**	P		**P**	**23 58 51.7**	**+0.5**
GNI	**Garni**	**71.67**	**43**	P		**P**	**23 58 53.4**	**+0.8**
	comp=Z,13nm,1.2s,baz=188,slow=1.8,SNR=3.8								
NEY	**Neytrino**	**71.83**	**40**	*ce*P		**P**	**23 58 55.2**	**+1.7**
NEY					pmax	pmax			
	comp=Z,3.0nm,2.1s								
ONI	**Oni**	**71.97**	**41**	P		**P**	**23 58 53.9**	**-0.4**
ONI	**Oni**	**71.97**	**41**	*e*P		**P**	**23 58 53.8**	**-0.4**
KIV	**Kislovodsk**	**72.16**	**39⇓**	*e*P		**P**	**23 58 54.5**	**-0.9**
KIV					pmax	pmax			
	comp=Z,8.0nm,1.5s								
KIV	**Kislovodsk**	**72.16**	**39**	*e*P		**P**	**23 58 55.8**	**+0.4**
	comp=Z,26nm,1.4s								
KVAR	**Kislovodsk Arr**	**72.17**	**39**	P		**P**	**23 58 55.6**	**+0.1**
	comp=Z,5.7nm,1.1s,baz=225,slow=4.3,SNR=10.0								
KBZ	**Khabaz**	**72.18**	**39**	P		**P**	**23 58 55.9**	**+0.5**
	comp=Z,1.2nm,0.6s,baz=251,slow=8.0,SNR=5.6								
TBLG	**Delisi**	**72.40**	**42**	P		**P**	**23 58 57.1**	**+0.2**
TBLG	**Delisi**	**72.40**	**42**	*e*P		**P**	**23 58 57.0**	**+0.2**
NCK	**Nalchik**	**72.51**	**40⇓**	*e*P		**P**	**23 58 57.7**	**+0.3**
NCK					pmax	pmax			
	comp=Z,6.0nm,1.2s								
GUDG	**Gudauri**	**72.58**	**41**	P		**P**	**23 58 59.7**	**+1.6**
DGRG	**David-gareji**	**72.69**	**42**	P		**P**	**23 58 57.3**	**-1.4**
DGRG	**David-gareji**	**72.69**	**42**	*e*P		**P**	**23 58 57.2**	**-1.4**
GOF	**Gofitskoye**	**72.94**	**38⇑**	*e*P		**P**	**23 58 59.8**	**-0.1**
VSR	**Storozhevoye**	**74.07**	**31**	*e*P		**P**	**23 59 09.1**	**+2.7**
VSR					pmax	pmax			
	comp=Z,40nm,1.8s								
OBN	**Obninsk**	**75.15**	**27**	P		**P**	**23 59 10.9**	**-1.7**
	comp=Z,3.2nm,0.3s,baz=178,slow=2.0,SNR=5.0								
OBN	**Obninsk**	**75.15**	**27⇓**	*e*P		**P**	**23 59 11.1**	**-1.4**
OBN				*e*			23 59 26.3		
OBN				*e*SSS		SSS	00 17 01.5		
OBN					pmax	pmax			
	comp=Z,8.0nm,1.8s								
FINES	**FINESS Array B**	**75.53**	**18**	P		**P**	**23 59 14.2**	**-0.4**
	comp=Z,7.2nm,1.0s,baz=191,slow=2.9,SNR=7.0								
MOS	**Moscow**	**76.01**	**27**	*e*P		**P**	**23 59 15.7**	**-1.8**
SCHQ	**Schefferville**	**76.55**	**331**	P		**P**	**23 59 21.1**	**+0.5**
	comp=Z,3.0nm,0.9s,baz=130,slow=4.7,SNR=3.3								
WSAR	**Wadi Sarin**	**76.81**	**64**	P		**P**	**23 59 23.7**	**+0.9**
	comp=Z,11nm,0.9s,baz=246,slow=5.8,SNR=4.2								
WSAR					LR	LR	00 32 51.1		
	comp=Z,1μm,18.9s,slow=36								
MAW	**Mawson**	**77.66**	**158**	P		**P**	**23 59 29.7**	**+3.1**
	comp=Z,4.2nm,0.9s,baz=296,slow=10,SNR=6.5								
ACSO	**Alum Creek Sta**	**79.69**	**313**	*e*P		**P**	**23 59 39.1**	**+0.7**
	comp=Z,12nm,0.8s								
KLMR	**Klimovskoe**	**79.89**	**23**	*e*P		**P**	**23 59 37.2**	**-1.8**
KLMR					pmax	pmax			
	comp=Z,15nm,1.2s								
GEYT	**Ailbeck**	**80.44**	**50**	P		**P**	**23 59 42.5**	**-0.1**
	comp=Z,1.2nm,0.8s,baz=298,slow=6.2,SNR=9.0								
ARCES	**ARCESS Array B**	**81.62**	**13**	P		**P**	**23 59 47.0**	**-1.1**
	comp=Z,2.3nm,0.8s,baz=244,slow=5.3,SNR=5.2								
LVZ	**Lovozero**	**82.73**	**16⇑**	*e*P		**P**	**23 59 53.8**	**-0.2**
LVZ					pmax	pmax			
	comp=Z,15nm,1.6s								
AKTO	**Aktyubinsk**	**84.34**	**38**	P		**P**	**00 00 01.8**	**-0.8**
	comp=Z,1.9nm,0.9s,baz=259,slow=3.0,SNR=13								
T41A	**Mountain View**	**85.41**	**308**	P		**P**	**00 00 07.0**	**-1.3**
	baz=103								
S41A	**Jillco Farms,**	**85.52**	**309**	P		**P**	**00 00 08.1**	**-0.7**
	baz=103								
R40A	**Maddies Statio**	**86.08**	**309**	P		**P**	**00 00 10.4**	**-1.2**
	baz=103								
Q40A	**Laux Farm, Aux**	**86.09**	**310**	P		**P**	**00 00 10.5**	**-1.1**
	baz=103								
S40A	**Lebanon**	**86.11**	**309**	P		**P**	**00 00 10.1**	**-1.6**
	baz=103								
O40A	**La Belle**	**86.20**	**311**	P		**P**	**00 00 10.5**	**-1.6**
	baz=104								
MIAR	**Mount Ida**	**86.31**	**305**	P		**P**	**00 00 10.5**	**-2.2**
	baz=102								
W39A	**Magazine**	**86.61**	**306**	P		**P**	**00 00 13.7**	**-0.5**
	baz=102								
ARU	**Arti**	**86.63**	**32**	P		**P**	**00 00 13.6**	**-0.2**
	comp=Z,1.2nm,0.6s,baz=241,slow=3.1,SNR=5.0								
ARU	**Arti**	**86.63**	**32**	*d* P		**P**	**00 00 12.3**	**-1.5**
ARU							00 03 32.7		
ARU					S	**SKSac**	**00 10 38.3**	**-1.4**
ARU					SS	**SS**	**00 16 28.7**	**-2.6**
ARU					pmax	pmax			
	comp=Z,14nm,1.7s								
R39A	**Chumby, Stover**	**86.68**	**309**	P		**P**	**00 00 13.6**	**-0.9**
	baz=103								
X39A	**Fountain Ranch**	**86.73**	**305**	P		**P**	**00 00 13.7**	**-1.2**
	baz=102								
S39A	**Bolivar**	**86.76**	**309**	P		**P**	**00 00 14.1**	**-0.9**
	baz=102								
Q39A	**Willow Grove F**	**86.79**	**310**	P		**P**	**00 00 14.1**	**-0.9**
	baz=103								
J39A	**Decorah**	**86.83**	**314**	P		**P**	**00 00 13.8**	**-1.3**
	baz=104								
U38A	**Gravette**	**87.34**	**307**	P		**P**	**00 00 16.2**	**-1.6**
	baz=102								
T38A	**Diamond**	**87.39**	**308**	P		**P**	**00 00 16.9**	**-1.1**
	baz=102								
I38A	**Scanlan Farm,**	**87.43**	**315**	P		**P**	**00 00 16.8**	**-1.3**
	baz=103								
W36A	**Wetumka**	**88.56**	**306**	P		**P**	**00 00 23.1**	**-0.6**
	baz=100								
C36A	**Pine Crest Far**	**88.62**	**318**	P		**P**	**00 00 23.3**	**-0.3**
	baz=103								
T36A	**Boggs Farm, Ca**	**88.64**	**308**	P		**P**	**00 00 23.3**	**-0.7**
	baz=101								
F36A	**Milaca**	**88.66**	**316**	P		**P**	**00 00 23.2**	**-0.7**
	baz=103								
D36A	**Goodland**	**88.71**	**318**	P		**P**	**00 00 24.0**	**-0.1**
	baz=103								
W35A	**Tecumseh**	**89.08**	**305**	P		**P**	**00 00 25.5**	**-0.6**
	baz=100								
T35A	**Sooner Cattle**	**89.11**	**307**	P		**P**	**00 00 25.5**	**-0.7**
	baz=100								
I35A	**Creekview Farm**	**89.26**	**314**	P		**P**	**00 00 25.8**	**-0.9**
	baz=102								
B35A	**Bob, Littlefor**	**89.33**	**319**	P		**P**	**00 00 25.5**	**-1.4**
	baz=102								
333A	**Richland Sprin**	**90.20**	**301**	P		**P**	**00 00 30.8**	**-0.7**
	baz=99								
Q33A	**Connelly Farm,**	**90.49**	**309**	P		**P**	**00 00 31.5**	**-1.1**
	baz=100								
WMOK	**Wichita Mounta**	**90.56**	**305**	P		**P**	**00 00 32.1**	**-0.9**
	baz=99								
AAK	**Ala-Archa**	**93.67**	**48**	P		**P**	**00 00 47.8**	**+0.3**
	comp=Z,1.2nm,0.3s,baz=231,slow=6.5,SNR=4.7								
AAK	**Ala-Archa**	**93.67**	**48⇑**	*e*P		**P**	**00 00 46.6**	**-0.8**
AAK					pmax	pmax			
	comp=Z,6.0nm,1.7s								
FRU	**Bishkek**	**93.78**	**47**	*e*P		**P**	**00 00 46.0**	**-1.8**
TXAR	**Lajitas Array**	**93.95**	**299**	P		**P**	**00 00 49.0**	**+0.1**
	comp=Z,0.5nm,0.8s,baz=99,slow=8.0,SNR=5.0								
TXAR	**Lajitas Array**	**93.95**	**299**	P		**P**	**00 00 49.0**	**+0.1**
KSH	**Kashi**	**94.41**	**51**	*e*P		**P**	**00 00 50.6**	**-0.3**
KSH				*e*pP		pP	00 00 55.1	-1.5	
KSH				*e*PP		**PP**	**00 04 41.7**	**+3.2**
KSH				SKS		**SKSac**	**00 11 23.6**	**-2.2**
KSH				S		**S**	**00 11 59.3**	**-3.4**
KSH				SS		**SS**	**00 18 27.3**	**+2.3**
KSH				LR		LR			
	comp=Z,85nm,5.8s								
KSH				LR		LR			
	comp=Z,170nm,10.3s								
KSH				LR		LR			
	comp=Z,830nm,21.2s								
LZH	**Lanzhou**	**116.52**	**54**	*e*PKP		**PKPdf**	**00 06 16.5**	**+1.4**
LZH				sPKP			00 06 21.0		
LZH				LR		LR			
	comp=Z,170nm,18.0s								
LZH				LR		LR			
	comp=Z,160nm,18.1s								
LZH				LR		LR			
	comp=Z,220nm,20.2s								
KMI	**Kunming**	**116.92**	**66**	PKP		**PKPdf**	**00 06 14.8**	**-1.5**
CD2	**Chengdu**	**117.24**	**59**	PKP		**PKPdf**	**00 06 15.0**	**-1.5**
BILL	**Bilibino**	**119.79**	**0⇑**	*e*PKIKP		**PKPdf**	**00 06 22.1**	**+1.8**
BILL				*e*			00 07 46.7		
BILL				*e*PPP		PPP	00 10 14.6		
BILL				*e*			00 13 16.0		
BILL				pmax		pmax			
	comp=Z,3.0nm,1.1s								
XAN	**Xi'an**	**121.00**	**55**	P		**Pdif**	**00 02 47.7**	**-1.8**
XAN				pP			00 02 55.4		
XAN				pmax		pmax			
	comp=Z,8.0nm,1.2s								
XAN				pmax		pmax			
	comp=Z,70nm,7.7s								
HHC	**Hu-ho-hao-te**	**121.23**	**47**	*e*PKP		**PKPdf**	**00 06 24.0**	**0.0**

*IDC **09** 23:49:00.3±0.6, 33.49S×178.52W, h0km, mb4.4/11, mb1 4.6/12, mb1mx4.5/23, mbtmp4.4/12, ML4.5/1, Error ellipse: s-maj=22.9km s-min=18.7km az=134.0*
*NEIC **09** 23:49:03.4±0.2, 33.60S×178.84W, h10km, mb5.2/58, Error ellipse: s-maj=11.2km s-min=5.3km az=131.0*
*BJI **09** 23:49:04.8, 33.60S×178.70W, h8km, mb5.5/23, mB5.7/26, Ms5.2/17, Ms7 4.9/18*
*ISCJB **09** 23:49:05.9±0.2, 33.75S±0.04×178.82W±0.06, h37km, mb5.1/70, MS4.9/4, Error ellipse: s-maj=8.1km s-min=4.2km az=42.2*

ISC 09 23:49:07.3±0.4, 33.76S±0.06×178.59W±0.07, h37km, n195, σ2s47/216, mb5.2/63, MS5.0/5, 8C-9D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**5.69**	**217**	Pn	**Pn**	**23 50 30.2**	**+1.1**
	14nm,0.3s,baz=253,slow=2.8,SNR=23						
URZ				Sn	**Sn**	**23 51 37.1**	**+3.9**
	21nm,0.3s,baz=70,slow=16,SNR=11						
URZ	**Urewera**	**5.69**	**217**	*e*Pn	**Pn**	**23 50 30.6**	**+1.5**
URZ				Sn	**Sn**	**23 51 37.1**	**+3.9**
OUZ	**Omahuta**	**6.62**	**255**	Pn	**Pn**	**23 50 40.1**	**-1.8**
BKZ	**Black Stump Fm**	**6.70**	**215**	*e*Pn	**Pn**	**23 50 43.5**	**+0.4**
BFZ	**Birch Farm**	**8.05**	**209**	*e*Pn	**Pn**	**23 51 01.9**	**+0.3**
BFZ				*e*Sn	**Sn**	**23 52 32.2**	**+0.9**
SNZO	**South Karori**	**9.23**	**213**	*e*Sn	**Sn**	**23 52 58.9**	**-1.4**
THZ	**Tophouse**	**10.45**	**218**	*e*Sn	**Sn**	**23 53 28.0**	**-2.2**
RPZ	**Rata Peaks**	**12.80**	**216**	Pn	**Pn**	**23 52 04.2**	**-2.5**
	3.2nm,0.3s,baz=49,slow=5.6,SNR=6.6						
RPZ				Sn	**Sn**	**23 54 19.6**	**-8.2**
	baz=202,slow=19,SNR=3.4						
DZM	**Mont Dzumac**	**17.59**	**308**	Pn	**Pn**	**23 53 09.2**	**

GSC	Goldstone, Bar	89.77	46	P		P	00 01 59.9	-2.0
	baz=227							
GSC	Goldstone, Bar	89.77	46	eP		P	00 02 00.5	-1.4
	13nm,1.0s							
MPMC	Manual Prospec	89.88	45	P		P	00 02 01.8	-0.7
	baz=227							
113A	Mohawk Valley,	89.96	50	eP		P	00 02 04.4	+1.7
IRM	Iron Mountain	90.01	48	P		P	00 02 02.2	-0.8
	baz=228							
214A	Organ Pipe Nat	90.04	51	P		P	00 02 02.2	-1.0
	baz=230							
Y12C	Blythe	90.13	49	P		P	00 02 02.1	-1.4
	baz=229							
WDC	Whiskeytown Da	90.23	39	eP		P	00 02 03.5	-0.3
	29nm,1.4s							
O03D	Paynes Creek	90.42	40	P		P	00 02 05.0	+0.2
	baz=224							
WAKR	Walker	90.44	42	eP		P	00 02 06.3	+1.2
	18nm,1.3s							
GRAC	Grapevine Rang	90.59	45	P		P	00 02 07.2	+1.6
	baz=227							
M02C	Callahan	90.65	38	P		P	00 02 06.4	+0.6
	baz=224							
Y14A	Wickenburg	91.21	49	eP		P	00 02 07.3	-1.3
	29nm,1.0s							
TPNV	Topopah Spring	91.21	45	eP		P	00 02 10.7	+2.0
	7.1nm,0.9s							
PAHR	Pah Rah Range	91.31	42	eP		P	00 02 10.8	+1.8
	8.4nm,1.3s							
W13A	Hualapai Mount	91.42	48	eP		P	00 02 08.7	-1.1
SHPR	Sheep Range	91.57	46	eP		P	00 02 10.6	+0.3
	15nm,1.6s							
TUC	Tucson	91.59	52	P		P	00 02 09.5	-0.9
	baz=231							
TUC	Tucson	91.59	52	eP		P	00 02 09.7	-0.7
	8.4nm,1.2s							
MOD	Modoc Plateau	92.35	39	eP		P	00 02 14.4	+0.6
	19nm,0.3s							
K05A	Summer Lake	92.63	39	eP		P	00 02 15.9	+0.8
	12nm,1.0s							
GYA	Guiyang	92.78	300	P		P	00 02 18.2	+2.1
GYA				PP		PP	00 06 02.0	+3.0
GYA				S		S	00 13 19.4	+0.5
GYA				SS		SS	00 19 36.2	+3.0
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
GYA				pmax	pmax			
	comp=Z,120nm,8.0s							
GYA				LR	LR			
	comp=N,550nm,21.0s							
GYA				LR	LR			
	comp=E,510nm,22.0s							
GYA				LR	LR			
	comp=Z,540nm,21.2s							
WUAZ	Wupatki	93.25	49	eP		P	00 02 19.5	+1.4
	11nm,1.0s							
U15A	North Rim	93.26	48	eP		P	00 02 20.2	+1.9
KNB	Kanab	93.32	47	eP		P	00 02 19.2	+0.8
	14nm,1.3s							
CCUT	Cedar City	93.34	46	eP		P	00 02 19.3	+0.8
	9.4nm,1.3s							
E03A	Lebam	94.05	35	eP		P	00 02 21.8	+0.5
	21nm,1.0s							
MTPU	Mount Pierson	94.36	47	eP		P	00 02 25.6	+2.2
	6.5nm,1.1s							
NLWA	Neilton Lookou	94.52	34	eP		P	00 02 24.3	+0.7
	10nm,1.0s							
TX31	Lajitas Ar. Si	94.61	58	eP		P	00 02 25.9	+1.4
TXAR	Lajitas Array	94.61	58	P		P	00 02 22.5	-2.0
	0.6nm,0.9s,baz=198,slow=7.6,SNR=4.1							
KMI	Kunming	94.88	297	P		P	00 02 27.7	+1.7
KMI				pP		pP	00 02 33.4	-4.2
KMI				sP		sP	00 02 37.8	-4.0
KMI				PP		PP	00 06 17.7	+2.2
KMI				S		S	00 13 37.7	+0.1
KMI				sS		sS	00 13 48.3	-8.8
KMI				SS		SS	00 20 07.2	+3.8
KMI				pmax	pmax			
	comp=Z,10.0nm,0.5s							
KMI				pmax	pmax			
	comp=Z,81nm,4.5s							
KMI				LR	LR			
	comp=N,560nm,7.4s							
KMI				LR	LR			
	comp=E,650nm,13.7s							
KMI				LR	LR			
	comp=Z,780nm,23.3s							
D05A	Enumclaw	95.26	35	eP		P	00 02 28.1	+1.3
	21nm,0.9s							
DIB	Dawson Inlet,	95.41	26	eP		P	00 02 27.7	+0.4
	13nm,1.1s							
G08A	Pilot Rock	95.42	38	eP		P	00 02 28.6	+0.8
	13nm,1.0s							
CNPM	China Poot	95.66	14	eP		P	00 02 27.5	-0.9
	22nm,0.8s							
TMUT	Trail Mountain	95.75	46	eP		P	00 02 31.0	+1.2
	7.1nm,0.9s							
MFID	Camas Ranch	95.79	41	eP		P	00 02 31.0	+1.5
	6.9nm,1.0s							
BRLK	Bradley Lake	95.95	14	eP		P	00 02 29.2	-0.5
BRLK				epP		PcP	00 02 35.4	+5.5
BMO	Blue Mountains	95.97	39	eP		P	00 02 30.8	+0.5
	3.7nm,0.8s							
B05A	Bryant	95.98	34	P		P	00 02 30.4	+0.4
	baz=224							
ANMO	Albuquerque	96.05	52	P		P	00 02 33.5	+2.5
	baz=233							
ANMO	Albuquerque	96.05	52	eP		P	00 02 33.0	+2.0
	4.4nm,1.0s							
HVU	Hansel Valley	96.42	43	eP		P	00 02 32.8	+0.3
	11nm,1.0s							
D08A	Wollman Farm,	96.66	36	eP		P	00 02 34.0	+0.8
	11nm,0.8s							
HLID	Hailey	96.66	41	P		P	00 02 34.7	+1.1
	baz=229							
HLID	Hailey	96.66	41	eP		P	00 02 35.1	+1.5
	5.0nm,0.9s							
CD2	Chengdu	97.44	302	eP		Pdif	00 02 37.5	+0.2
CD2				pP		pP	00 02 44.3	-4.6
CD2				PP		PP	00 06 34.6	-0.5
CD2				SKS		SKSac	00 13 13.5	+1.7
CD2				S		ScS	00 14 00.8	+1.4
CD2				sS		sS	00 14 12.5	-6.1
CD2				SS		SS	00 20 41.3	+2.1
CD2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
CD2				pmax	pmax			
	comp=Z,120nm,6.6s							
SUA	Susitna One	97.55	13	eP		P	00 02 35.7	-1.3
	9.3nm,0.7s							
PMR	Palmer	97.98	14	eP		P	00 02 37.4	-1.4
	5.3nm,0.8s							
AHID	Auburn Hatcher	98.01	43	eP		Pdif	00 02 40.9	+1.2
	5.7nm,0.8s							
HHC	Hu-ho-hao-te	98.20	314	eP		Pdif	00 02 43.1	+2.6
HHC				SKS		SKSac	00 13 19.8	+4.5
HHC				S		ScS	00 14 10.4	+5.1
HHC				pmax	pmax			
	comp=Z,12nm,1.4s							
HHC				pmax	pmax			
	comp=Z,91nm,8.1s							
HHC				LR	LR			
	comp=N,190nm,18.7s							
HHC				LR	LR			
	comp=E,200nm,18.3s							
HHC				LR	LR			
	comp=Z,220nm,17.9s							
MCMT	McKenzie Canyo	98.34	41	eP		Pdif	00 02 42.6	+1.4
BMRM	Bremner River	98.39	16	eP		P	00 02 39.9	-0.8
	11nm,0.8s							
SNOW	Snow King Moun	98.64	43	eP		Pdif	00 02 44.5	+1.9
	9.5nm,0.9s							
BW06	Boulder Array	98.90	44	eP		Pdif	00 02 44.4	+0.7
PDAR	Pinedale Array	98.90	44	P		P	00 02 42.2	-1.5
	1.7nm,1.0s,baz=212,slow=4.7,SNR=6.1							
BALM	Baldy	98.98	17	eP		P	00 02 43.4	-0.1
	5.6nm,0.8s							
FLWY	Flagg Ranch	99.06	43	eP		Pdif	00 02 47.0	+2.6
	8.3nm,0.9s							
CAST	Castle Rocks	99.12	12	eP		Pdif	00 02 42.0	-1.9
	6.8nm,0.8s							
KTH	Kantishna Hill	99.45	12	eP		Pdif	00 02 43.9	-1.6
	6.1nm,0.8s							
TRF	Thorofare Moun	99.47	12	eP		Pdif	00 02 44.2	-1.4
	12nm,0.8s							
BOZ	Bozeman (W)	99.52	41	eP		Pdif	00 02 46.5	+0.2
	4.7nm,1.1s							

LZH	Lanzhou	100.31	306	eP		Pdif	00 02 51.1	+1.0
LZH				pP		pP	00 02 57.5	-4.3
LZH				sP		sP	00 03 00.3	-5.7
LZH				PP		PP	00 07 00.0	+3.0
LZH				SKS		SKSac	00 13 27.2	+1.0
LZH				eS		Sdif	00 14 17.1	-6.2
LZH				pmax	pmax			
	comp=Z,18nm,1.5s							
LZH				pmax	pmax			
	comp=Z,130nm,9.2s							
LZH				LR	LR			
	comp=N,230nm,16.1s							
LZH				LR	LR			
	comp=E,250nm,15.9s							
LZH				LR	LR			
	comp=Z,460nm,19.7s							
WRH	Wood River Hil	100.80	13	ePdif		Pdif	00 02 50.1	-1.2
CCB	Clear Creek Bu	101.01	13	ePdif		Pdif	00 02 50.8	-1.4
ILAR	Eielson Array	101.30	13	P		Pdif	00 02 51.8	-1.8
	2.3nm,0.7s,baz=219,slow=5.6,SNR=29							
RSSD	Black Hills	102.94	45	ePdif		Pdif	00 03 02.5	+0.8
WMQ	Urumqi	114.88	307	ePKP		PKPdf	00 07 43.0	-0.9
WMQ				PP		PP	00 08 47.8	+4.4
WMQ				AMB	AMB			
	comp=Z,120nm,5.1s							
WMQ				LR	LR			
	comp=N,130nm,22.8s							
WMQ				LR	LR			
	comp=E,330nm,23.0s							
WMQ				LR	LR			
	comp=Z,240nm,22.2s							
MKAR	Makanchi Array	119.51	309	PKP		PKPdf	00 07 50.4	-2.3
	0.3nm,0.3s,baz=95,slow=1.3,SNR=6.1							
ZALV	Zalesovo Beam	120.17	317	PKP		PKPdf	00 07 50.8	-2.8
	0.2nm,0.3s,baz=338,slow=1.1,SNR=2.2							
KSH	Kashi	121.47	299	ePKP		PKPdf	00 07 56.5	-0.3
KSH				ePP		PP	00 09 33.4	+4.1
KSH				PKS		PKSdf	00 11 32.1	-1.4
KSH				SKKS			00 16 21.1	
KSH				SS		SS	00 26 04.3	+2.1
KSH				AMB	AMB			
	comp=Z,36nm,3.7s							
KSH				LR	LR			
	comp=N,120nm,7.8s							
KSH				LR	LR			
	comp=E,88nm,5.2s							
KSH				LR	LR			
	comp=Z,190nm,6.9s							
LSZ	Lusaka	124.96	212	PKP		PKPdf	00 08 04.5	+0.2
	2.0nm,0.8s,baz=89,slow=7.1,SNR=3.6							
GEYT	Alibeck	134.44	292	PKP		PKPdf	00 08 19.9	-1.5
	1.3nm,0.8s,baz=180,slow=1.5,SNR=4.4							
ARU	Arti	135.31	318	PKP		PKPdf	00 08 18.2	-4.2
	0.6nm,0.3s,baz=107,slow=20,SNR=2.0							
AKTO	Aktyubinsk	135.92	310	PKP		PKPdf	00 08 21.1	-2.7
	0.8nm,0.7s,baz=0.0,slow=0.0,SNR=3.6							
ARCES	ARCESS Array B	141.74	347	PKP		PKPdf	00 08 29.6	-4.2
	2.5nm,1.0s,baz=30,slow=6.2,SNR=2.6							
DGRG	David-gareji	144.64	296	P		PKPab	00 08 37.4	-1.2
GNI	Garni	145.06	293	PKPbc		PKPbc	00 08 37.1	-3.1
	18nm,1.2s,baz=151,slow=18,SNR=3.5							
TBLG	Delisi	145.12	296	P		PKPbc	00 08 38.5	-1.8
BGD	Bogdanovka	145.97	295	P		PKPdf	00 08 41.9	-0.4
AKH	Akhalkalaki	146.05	295	⇓P		PKPdf	00 08 42.2	-0.2
AKH	Akhalkalaki	146.05	295	P		PKPdf	00 08 41.8	-0.6
ONI	Oni	146.08	298	P		PKPdf	00 08 41.5	-0.8
KBZ	Khabaz	146.45	300	PKPbc		PKPdf	00 08 41.9	-0.9
	8.6nm,0.9s,baz=64,slow=1.3,SNR=15							
KVAR	Kislovodsk Arr	146.58	300	PKPbc		PKPdf	00 08 42.6	-0.6
	12nm,1.2s,baz=306,slow=4.9,SNR=8.3							
KBSD	Kabsdagh	148.08	287	eP		PKPdf	00 08 47.0	+1.2
FINES	FINESS Array B	148.08	338	PKPbc		PKPdf	00 08 45.5	+0.5
	11nm,0.9s,baz=41,slow=3.0,SNR=29							
KSRV	Kasrt alli	149.14	285	eP		PKPdf	00 08 49.6	+2.0
ZALF	Zalf	150.07	279	eP		PKPbc	00 08 52.6	-1.5
ASF	Jabal al Asfar	150.27	277	PKPbc		PKPbc	00 08 54.0	-0.7
	4.6nm,0.9s,baz=138,slow=1.5,SNR=11							
ROOS	tl_alroos	150.33	281	eP		PKPbc	00 08 53.6	-1.2
EIL	Elat	151.25	271	PKPbc		PKPbc	00 08 56.3	-0.7
	12nm,0.9s,baz=63,slow=1.1,SNR=14							
MMAI	Mount Meron Ar	151.68	278	PKPbc		PKPbc	00 08 57.4	-0.6
	12nm,0.9s,baz=76,slow=3.5,SNR=18							
LIC	Lamto	151.96	166	eP		PKPab	00 09 05.2	-3.0
	81nm,1.8s							
NB2	NORSAR Subarra	151.97	350	PKP		PKPab	00 09 06.5	-0.6
	comp=Z,17nm,0.8s,baz=8.7,slow=2.9							
NOA	NORSAR Array B	151.97	350	PKPbc		PKPbc	00 08 55.6	-2.1
	comp=Z,0.8nm,0.6s,baz=13,slow=4.1,SNR=5.2							
IZAR	Zarasai	152.09	330	eP		PKPab	00 09 04.1	-3.5
IZAR				IAmb	IAmb	IAmb	00 09 18.9	
	comp=Z,23nm,1.0s							
KIC	Kosan Boka	152.15	167	eP		PKPab	00 09 08.2	-0.8
	comp=Z,166nm,1.7s							
IDID	Didziasalis	152.16	328	eP		PKPbc	00 09 01.5	+3.3
IDID				IAmb	IAmb	IAmb	00 09 28.7	
	comp=Z,12nm,0.9s							
ISAL	Salakas	152.26	329	eP		PKPbc	00 09 01.5	+3.1
ISAL				IAmb	IAmb	IAmb	00 09 23.8	
	comp=Z,16nm,0.9s							
TIC	Toumodi	152.37	166	eP		PKPab	00 09 06.8	-3.2
NACGM	Naroch	152.41	328	e		PKPbc	00 09 01.0	+2.2
AKASG	Malin Array Be	153.56	318	PKPbc		PKPbc	00 09 00.3	-1.1
	comp=Z,1.7nm,0.6s,baz=68,slow=2.3,SNR=7.0							
BRTR	Keskin Array B	153.58	292	PKPbc		PKPbc	00 09 00.7	-1.4
	comp=Z,3.1nm,1.0s,baz=140,slow=4.0,SNR=14							
SORM	Soroca	155.25	314	⇑P		PKPab	00 09 19.9	-1.4
LEOM	Leova	155.99	310	⇓P		PKPab	00 09 28.5	+3.9
TLCR		156.08	307	⇓P		PKPab	00 09 25.3	+0.3
TIRR	Tirgusor	156.58	305	⇓P		PKPab	00 09 31.8	+4.6
TLB	Topalu	156.79	306	⇓P		PKPab	00 09 30.3	+2.2
PLOR	Plostina	157.26	310	⇑P		PKPab	00 09 32.0	+1.9
BURAR	Bucovina Array	157.37	315	⇑P		PKPab	00 09 26.0	-4.6
MLR	Muntele Rosu	157.85	309	⇑P		PKPab	00 09 25.5	-7.3
DOPR	Dopca	158.01	311	⇓P		PKPab	00 09 26.2	-7.2
VOIR		158.45	310	⇓P		PKPab	00 09 39.4	+4.0
ARR	Arges	158.75	310	⇓P		PKPab	00 09 29.0	-7.6
DRGR		159.26	315	⇓P		PKPab	00 09 35.6	-3.2
LOT	Lotru	159.26	311	⇑P		PKPab	00 09 33.8	-5.1
TORD	Torodi Ar. Bea	159.48	181	PKPab		PKPab	00 09 39.4	-0.9
	comp=Z,4.9nm,0.9s,baz=170,slow=1.8,SNR=12							
OKC	Ostrava-Krasne	159.73	327	ePKPAB		PKPab	00 09 42.5	+1.9
DPC	Dobruska-Polom	160.12	331	ePKPAB		PKPab	00 09 43.2	+0.8
DPC				ex		x	00 09 54.3	
UPC	Upice	160.12	332	ePKPAB		PKPab	00 09 47.2	+4.9
KRLC	Kraliky	160.15	330	ePKPAB		PKPab	00 09 47.8	+5.3
BZS	Buzias	160.51	313	⇑P		PKPdf	00 09 12.9	+10
PVCC	Panska Ves	160.66	334	ePKPAB		PKPab	00 09 49.2	+4.6
VTS	Vitosha	160.76	304	⇑P		PKPab	00 09 54.1	+8.5
PRU	Pruhonice	161.11	333	ePKPAB		PKPab	00 09 50.2	+3.6
PRU				ex		x	00 09 57.1	
NKC	Novy Kostel	161.64	337	ePKPAB		PKPab	00 09 46.3	-2.6
CONA	Conrad Observa	162.15	327	PKPab		PKPab	00 09 48.1	-3.3
	comp=Z,8.3nm,1.3s							
KHC	Kasperske Hory	162.17	333	ePKPAB		PKPab	00 09 54.4	+3.1
KHC				ex		x	00 10 01.3	
GERES	GERESS Array B	162.36	332	PKPab		PKPab	00 09 49.7	-2.5
	comp=Z,0.4nm,0.5s,baz=46,slow=7.0,SNR=2.9							
ARSA	Arzberg	162.81	326	*i* sPKPab		PKPab	00 09 58.3	+4.2
	comp=Z,4.1nm,0.9s							
MOA	Molln	162.92	329	*i* sPKPab		PKPab	00 09 57.9	+3.3
	comp=Z,6.5nm,1.1s							
SOKA	Soboth	163.45	325	*i* sPKPab		PKPab	00 10 01.0	+3.9
	comp=Z,10.0nm,1.1s							
OBKA	Obir	163.80	326	*i* pPKPab		PKPab	00 09 60.0	+1.3
	comp=Z,4.1nm,0.9s							
MYKA	Terra Mystica	164.13	328	*i* sPKPab		PKPab	00 10 03.0	+3.0
	comp=Z,9.3nm,0.9s							
WATA	Walderalm	164.41	333	*i* sPKPab		PKPab	00 10 05.0	+3.6
	comp=Z,4.5nm,0.9s							
WTTA	Wattenberg	164.44	333	*i* sPKPab		PKPab	00 10 06.1	+4.6
	comp=Z,3.9nm,0.6s							
ABTA	Abfaltersbach	164.52	330	*i* sPKPab		PKPab	00 10 06.0	+4.2
	comp=Z,9.4nm,1.0s							
RETA	Reutte	164.57	336	*i* PKPab		PKPab	00 09 58.6	-3.3
	comp=Z,7.8nm,1.2s							
MOTA	Moosalm	164.57	335	*i* sPKPab		PKPab	00 10 05.8	+3.8
	comp=Z,3.2nm,0.8s							
FETA	Feichten	164.98	335	*i* sPKPab		PKPab	00 10 07.9	+4.0
	comp=Z,4.8nm,1.0s							
DAVA	Damuels	165.04	337	*i* pPKPab		PKPab	00 10 05.1	+1.0
	comp=Z,7.3nm,1.0s							
DAVOX	Davos/Dischmat	165.48	336	PKPab		PKPab	00 10 03.2	-3.0
	comp=Z,1.6nm,0.6s,baz=351,slow=2.0,SNR=3.4							
ESDC	Sonseca Array	172.69	35	PKPab		PKPab	00 10 36.6	-1.4
	comp=Z,1.1nm,0.8s,baz=311,slow=4.7,SNR=7.7							

NEIC ***09*** *23:49:21.8±4.0,29°.21S×176°.87W,h6km±24km,mb4.6/4, Error ellipse: s-maj=12.7km s-min=8.5km az=120.0*
IDC ***09*** *23:49:21.2±0.5,29°.08S×176°.94W,h0km,mb4.6/12, mb1 4.8/12,mb1mx4.6/21,mbtmp4.6/12,MS4.2/3, Ms1 4.2/3,ms1mx4.0/20,Error ellipse: s-maj=22.0km s-min=16.8km az=175.0*
ISCJB ***09*** *23:49:25.3±0.6,29°.26S±0°.06×177°.01W±0°.08,h36km, mb4.7/18,MS4.3/1,Error ellipse: s-maj=10.4km s-min=8.6km az=28.8*

ISC 09 23:49:27.1±0.5,29°.20S±0°.08×176°.95W±0°.08,h36km,n61, σ2°.32/53,mb4.6/18,2C-1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	0.85	266	Pn	Pn	23 49 41.2	-1.4
	7μm,0.3s,baz=94,slow=5.8,SNR=215						
RAO				Sn	Sn	23 49 52.2	-1.6
	10μm,0.3s,baz=90,slow=20,SNR=31						
URZ	Urewera	10.30	207	Sn	Sn	23 53 45.6	-0.8
	6.8nm,0.3s,baz=18,slow=20,SNR=6.5						
MSVF	Nonsavu	12.30	337	ePn	Pn	23 52 19.9	0.0
	133nm,1.2s						
AFI	Afiamalu	15.95	19	Sn	Sn	23 55 53.3	-12
	4.2nm,0.3s,baz=206,slow=22,SNR=4.1						
AFI				LR	LR	00 00 00.4	
	comp=Z,291nm,19.1s,baz=194,slow=40						
RPZ	Rata Peaks	17.38	210	P	Pn	23 53 23.8	-2.9
	5.8nm,0.3s,baz=292,slow=5.0,SNR=8.2						
RPZ				S	Sn	23 56 19.9	-19
	0.6nm,0.3s,baz=257,slow=15,SNR=2.1						
RAR	Rarotonga	17.44	67	P	Pn	23 53 22.3	-5.3
	1.7nm,0.3s,baz=218,slow=13,SNR=7.1						
RAR				S	Sn	23 56 22.6	-18
	1.5nm,0.3s,baz=95,slow=22,SNR=4.0						
RAR				LR	LR	23 58 27.1	
	comp=Z,1μm,21.1s,baz=238,slow=31						
RAR	Rarotonga	17.44	67	ePn	Pn	23 53 23.2	-4.5
TBI	Tubuai	25.29	83	eLQ	LQ	23 59 59.4	
	586nm,25.1s						
TBI				eLR	LR	00 01 06.8	
	2μm,26.0s,baz=254						
PPT2	Papeete2	27.58	71	eLR	LR	00 02 03.6	
	3μm,25.2s,baz=238						
PPT	Papeete	27.59	71	LR	LR	00 02 58.6	
	comp=Z,948nm,22.0s,baz=209,slow=30						
CTA	Charters Tower	34.54	277	P	P	23 56 12.0	-0.4
	16nm,0.6s,baz=104,slow=11,SNR=9.0						
STKA	Stephens Creek	35.66	255	P	P	23 56 21.9	+0.1
	22nm,1.0s,baz=99,slow=12,SNR=8.1						
RKT	Rikitea	38.01	91	eLR	LR	00 07 00.3	
	1μm,25.8s,baz=253						
TAOE	Nuku Hiva Isla	39.99	67	eLR	LR	00 07 46.2	
	1μm,25.5s,baz=236						
ASAR	Alice Springs	44.10	265	P	P	23 57 31.3	-0.8
	7.8nm,0.7s,baz=99,slow=7.1,SNR=7.1						
ASAR				ScP	ScP	00 03 07.1	+1.0
	0.6nm,0.8s,baz=109,slow=5.4,SNR=3.6						
WRA	Warramunga Arr	44.99	270	P	P	23 57 38.0	-1.2
	8.4nm,0.8s,baz=109,slow=7.9,SNR=12						
WRA				ScP	ScP	00 03 12.8	+3.0
	0.5nm,0.3s,baz=107,slow=4.3,SNR=5.2						
VNDA	Vanda	49.38	186	P	P	23 58 13.8	+1.2
	4.1nm,1.1s,baz=23,slow=2.8,SNR=2.9						
GUMO	Guam	56.30	314	eP	P	23 59 04.2	-0.2
	2.2nm,0.4s						
MAW	Mawson	73.75	200	P	P	00 00 57.6	+0.6
	6.6nm,0.9s,baz=123,slow=9.6,SNR=4.8						
MJAR	Matsushiro Arr	77.79	324	P	P	00 01 19.7	-0.9
	2.2nm,0.8s,baz=158,slow=6.1,SNR=16						
MAJO	Matsushiro	77.79	324	eP	P	00 01 18.6	-2.0
	1.6nm,0.5s						
SYO	Syowa Base	78.48	193	⇑epP	P	00 01 25.8	+1.8
PLCA	Paso Flores	82.65	133	P	P	00 01 47.6	+0.6
	12nm,1.0s,baz=241,slow=6.1,SNR=9.4						
KSRS	Korea Array	84.04	319	P	P	00 01 53.5	-0.3
	1.2nm,0.7s,baz=135,slow=5.3,SNR=2.9						
KSAR	Wonju Array Be	84.05	319	P	P	00 01 53.5	-0.4
QIZ	Qiongzhong	85.32	295	P	P	00 02 00.5	-0.3
	4.6nm,1.1s						
USRK	Ussuriysk Ar.	86.68	326	P	P	00 02 07.6	+0.8
	4.5nm,0.7s,baz=126,slow=4.6,SNR=11						
SNY	Shenyang	89.46	320	⇓P	P	00 02 27.0	+6.8
SNY				pmax	pmax		
	comp=Z,12nm,0.5s						
TIA	Tai'an	89.83	312	eP	P	00 02 21.8	-0.3
TIA				pmax	pmax		
	comp=Z,20nm,1.1s						
TXAR	Lajitas Array	90.97	57	P	P	00 02 28.9	+1.2
	comp=Z,1.3nm,0.8s,baz=201,slow=7.2,SNR=8.8						
ENH	Enshi	91.69	304	eP	P	00 02 30.0	-1.0
	comp=Z,2.3nm,0.3s						
CMAR	Chiang Mai Arr	93.88	289	P	P	00 02 41.5	+0.2
	comp=Z,0.4nm,0.3s,baz=145,slow=3.3,SNR=3.0						
MKAR	Makanchi Array	117.70	310	PKP	PKPdf	00 08 08.3	-0.9
	comp=Z,0.9nm,0.5s,baz=188,slow=1.1,SNR=5.0						
BOSA	Boshof	118.72	202	PKP	PKPdf	00 08 11.0	-1.0
	comp=Z,3.7nm,0.9s,baz=75,slow=1.7,SNR=3.9						
NRIK	Noril'sk	118.92	336	PKP	PKPdf	00 08 08.6	-2.2
	comp=Z,2.1nm,0.7s,baz=85,slow=4.7,SNR=4.3						
KSH	Kashi	120.42	301	ePKP	PKPdf	00 08 22.2	+7.4
KSH				ePP	PP	00 09 50.5	+8.4
KSH				esPKP	

2D, Error ellipse: s-maj=12.6km s-min=5.0km az=165.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CALA	**Caldeira**	**0.91**	**79**	*eS*	Sg	00 20 47.8	-4.4
CALA	**Caldeira**	**0.91**	**79**	*eS*	Sg	00 20 47.8	-4.4
PCED	**Cedros**	**0.92**	**76**	⇓*iP*	Pg	00 20 37.0	-3.5
PCED				*eS*	Sg	00 20 47.5	-5.0
PCED				A	A	00 20 48.4	
	24nm,0.2s						
PCED	**Cedros**	**0.92**	**76**	⇓*iP*	Pg	00 20 37.0	-3.5
PCED				*eS*	Sg	00 20 47.5	-5.0
PCAN	**Candelaria**	**1.07**	**87**	*eP*	Pg	00 20 39.0	-4.3
PCAN				*eS*	Sg	00 20 51.4	-5.8
PCAN				A	A	00 20 54.0	
	19nm,0.1s						
PCAN	**Candelaria**	**1.07**	**87**	*eP*	Pg	00 20 39.0	-4.3
PCAN				*eS*	Sg	00 20 51.4	-5.8
ROSA	**Rosais**	**1.29**	**76**	*eP*	Pn	00 20 42.4	-4.5
ROSA				*eS*	Sb	00 20 56.9	-6.9
ROSA				A	A	00 20 58.5	
	29nm,0.4s						
ROSA	**Rosais**	**1.29**	**76**	*eP*	Pn	00 20 42.4	-4.5
ROSA				*eS*	Sb	00 20 56.9	-6.9

IDC ***10*** *00:26:33.5±1.2, 33.°79N×78.°31E, h0km, mb3.6/11, mb1 3.7/14, mb1mx3.5/63, mbtmp3.6/14, ML3.2/3, MS2.9/1, Ms1 2.9/1, ms1mx2.6/76, Error ellipse: s-maj=25.3km s-min=20.1km az=13.0*
NDI ***10*** *00:26:36.3±1.3, 34.°28N×78.°66E, h10km, ML2.7*
ISCJB ***10*** *00:26:38.2±0.5, 34.°08N±0.°05×78.°5E±0.°1, h33km, mb3.6/9, MS2.9/1, Error ellipse: s-maj=15.4km s-min=6.1km az=11.1*

ISC 10 00:26:40.4±0.7, 34.°18N±0.°07×78.°38E±0.°10, h35km, n22, σ2ş37/22, mb3.7/9, Kashmir-Xizang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THN	**Thein Dam**	**2.83**	**233**	*ex*	**Pn**	**00 27 19.0**	**-4.0**
THN				*eS*	**Sn**	**00 28 01.0**	**+5.1**
JWA	**Jwalamukhi**	**2.88**	**217**	*ex*	**Sn**	**00 28 00.0**	**+3.0**
SDNR	**Sundarnagar**	**2.92**	**204**	*eP*	**Pn**	**00 27 26.6**	**+2.2**
SDNR				*eS*	**Sn**	**00 28 02.0**	**+3.7**
BHK	**Bhakra**	**3.21**	**212**	*eP*	**Pn**	**00 27 29.0**	**+0.6**
SONA	**Sohna**	**6.01**	**191**	*eS*	**Sn**	**00 29 13.8**	**-0.6**
SONA				IAML		00 29 25.6	
	comp=N,11nm,0.1s						
SONA				IAML		00 29 26.6	
	comp=E,14nm,0.4s						
KUDL	**Kundal**	**6.23**	**196**	*eS*	**Sn**	**00 29 18.0**	**-1.7**
KUDL				IAML		00 29 46.9	
	comp=N,4.4nm,0.5s						
KUDL				IAML		00 29 47.7	
	comp=E,4.7nm,0.3s						
MKAR	**Makanchi Array**	**12.95**	**12**	Pn	**Pn**	**00 29 43.1**	**+1.4**
	comp=E,0.2nm,0.3s,baz=188,slow=13,SNR=7.2						
KURBB	**Kurchatov Arra**	**16.44**	**0**	Pn	**Pn**	**00 30 29.1**	**+0.9**
	comp=E,0.0nm,0.3s,baz=188,slow=11,SNR=9.8						
GEYT	**Alibeck**	**16.81**	**289**	Pn	**Pn**	**00 30 30.2**	**-2.8**
	comp=E,0.1nm,0.3s,baz=120,slow=14,SNR=3.6						
BVAR	**Borovoye Array**	**19.69**	**346**	P	**Pn**	**00 31 08.5**	**+0.5**
	comp=E,2.4nm,0.7s,baz=155,slow=11,SNR=13						
ZALV	**Zalesovo Beam**	**20.28**	**11**	P	Pn	00 31 14.1	-0.8
	comp=E,1.8nm,0.6s,baz=206,slow=12,SNR=9.7						
AKTO	**Aktyubinsk**	**22.04**	**324**	P	**P**	**00 31 33.0**	**+1.3**
	comp=E,4.1nm,0.7s,baz=92,slow=8.8,SNR=7.2						
CMAR	**Chiang Mai Arr**	**24.11**	**125**	P	**P**	**00 31 49.3**	**-3.6**
	comp=E,1.2nm,0.7s,baz=313,slow=9.6,SNR=6.8						
SONM	**Songino Array**	**25.00**	**48**	P	**P**	**00 32 02.4**	**+1.5**
	comp=E,0.6nm,0.5s,baz=250,slow=9.6,SNR=3.4						
BRTR	**Keskin Array B**	**35.90**	**292**	P	**P**	**00 33 36.3**	**-1.0**
	comp=E,0.1nm,0.3s,baz=108,slow=9.3,SNR=2.2						
MLR	**Muntele Rosu**	**41.15**	**302**	LR	LR	00 58 15.0	
	comp=E,15nm,18.4s,baz=84,slow=46						
FINES	**FINESS Array B**	**42.78**	**326**	P	**P**	**00 34 34.8**	**+0.6**
	comp=E,1.9nm,1.0s,baz=67,slow=15,SNR=4.9						
NB2	**NORSAR Subarra**	**49.83**	**324**	P	**P**	**00 35 30.3**	**+0.7**
	comp=Z,0.5nm,0.5s,baz=91,slow=7.9						
NOA	**NORSAR Array B**	**49.83**	**324**	P	**P**	**00 35 29.8**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=93,slow=7.5,SNR=4.3						
SEY	**Seymchan**	**53.00**	**33**	P	**P**	**00 35 54.0**	**+0.7**
	comp=Z,1.0nm,0.6s,baz=59,slow=9.9,SNR=3.6						
TORD	**Torodi Ar. Bea**	**71.80**	**274**	P	**P**	**00 37 58.1**	**-1.6**
	comp=Z,0.5nm,0.8s,baz=40,slow=5.0,SNR=5.2						
YKA	**Yellowknife Ar**	**83.10**	**6**	P	**P**	**00 39 02.3**	**+0.2**
	comp=Z,0.4nm,0.6s,baz=347,slow=5.5,SNR=3.4						

TAP 10 00:28:52.4, 24.°14N×121.°68E, h8km, ML2.8, 1C, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.10**	**233**	⇑*iP*	Pg	00 28 55.0	+0.2
	baz=228						
TWD				*i* S	Sg	00 28 56.8	+0.4
	baz=228						
HWA	**Hwalien**	**0.18**	**204**	*eP*	Pg	00 28 56.9	+0.8
	baz=202						
ENA	**Nanau**	**0.29**	**10**	P	Pg	00 28 58.6	+0.4
	baz=12						
WHF	**Hehuan Shan**	**0.38**	**271**	*eP*	Pg	00 29 00.3	+0.3
	baz=271						
ESL	**Shilin**	**0.40**	**215**	P	Pg	00 29 00.2	0.0
	baz=213						
ESL				*eS*	Sg	00 29 05.1	-0.3
	baz=213						
NNS	**Nan Shan**	**0.41**	**317**	P	Pb	00 29 01.4	-0.6
	baz=317						
TWC	**Suao**	**0.49**	**18**	*eP*	Pb	00 29 03.3	0.0
	baz=19						
ENTT	**Nioudou**	**0.51**	**348**	*eP*	Pb	00 29 03.2	-0.4
	baz=348						
TWE	**Neicheng**	**0.58**	**359**	*eP*	Pb	00 29 04.3	-0.5
	baz=360						
NSK	**Sanguang**	**0.61**	**331**	*eP*	Pb	00 29 05.3	-0.1
	baz=332						
NSK				*eS*	Sg	00 29 11.7	-0.5
	baz=332						
WDT	**Danda**	**0.63**	**233**	*eP*	Pb	00 29 05.8	-0.1
	baz=242						

ISCJB ***10*** *00:28:58.8±0.5, 24.°13N±0.°02×121.°76E±0.°03, h1km±5km, Error ellipse: s-maj=5.2km s-min=2.8km az=36.0*
TAP ***10*** *00:28:58.7, 24.°15N×121.°69E, h3km, ML3.5, C*
JMA ***10*** *00:28:58.7±0.1, 24.°13N×121.°70E, h0km, M3.2*

ISC 10 00:28:59.1±0.9, 24.°14N±0.°02×121.°72E±0.°02, h9km±7km, n50, σ0ş70/61, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.13**	**242**	*i* P	**Pg**	**00 29 01.2**	**-0.7**
	baz=227						
TWD				*i* S	**Sg**	**00 29 03.1**	**-0.8**
	baz=227						
EHP	**Heping Village**	**0.17**	**7**	*eP*	**Pg**	**00 29 03.3**	**+0.6**
	baz=23						
HWA	**Hwalien**	**0.19**	**212**	*eP*	**Pg**	**00 29 03.4**	**+0.3**
	baz=201						
HWA				*eS*	**Sg**	**00 29 07.4**	**+1.7**
	baz=201						
ENA	**Nanau**	**0.29**	**4**	*eP*	**Pg**	**00 29 03.4**	**-1.4**
	baz=24						
ENA				S	**Sg**	**00 29 09.1**	**+0.4**
	baz=24						
WHF	**Hehuan Shan**	**0.41**	**271**	*eP*	**Pg**	**00 29 06.6**	**-0.7**
	baz=268						
ESL	**Shilin**	**0.42**	**219**	*eP*	**Pg**	**00 29 06.3**	**-1.0**
	baz=211						
NNS	**Nan Shan**	**0.43**	**314**	*eP*	**Pg**	**00 29 07.7**	**+0.1**
	baz=314						
NNS				*eS*	**Sg**	**00 29 13.8**	**+0.4**
	baz=314						
TWC	**Suao**	**0.48**	**14**	*eP*	**Pb**	**00 29 09.2**	**-0.7**
	baz=14						
TWT	**Tachien**	**0.51**	**283**	*eP*	**Pb**	**00 29 10.2**	**-0.2**
	baz=281						
ENTT	**Nioudou**	**0.52**	**345**	*eP*	**Pb**	**00 29 09.6**	**-0.8**
	baz=351						
TWE	**Neicheng**	**0.58**	**355**	*eP*	**Pg**	**00 29 10.6**	**+0.2**
	baz=359						
TWE				S	**Sb**	**00 29 18.8**	**-1.0**
	baz=359						
ILA	**Ilan**	**0.62**	**3**	*eP*	**Pb**	**00 29 11.7**	**-0.5**
	baz=5.0						
ILA				S	**Sb**	**00 29 21.1**	**-0.1**
	baz=5.0						
NSK	**Sanguang**	**0.63**	**329**	*eP*	**Pb**	**00 29 12.5**	**+0.1**
	baz=329						
NSK				S	**Sb**	**00 29 20.0**	**-1.2**
	baz=329						
WDT	**Danda**	**0.66**	**235**	*eP*	**Pb**	**00 29 13.4**	**+0.4**
	baz=244						
EGS		**0.73**	**16**	*eP*	**Pg**	**00 29 13.1**	**-0.1**
	baz=31						
EHY	**Hungye**	**0.73**	**210**	*eP*	**Pb**	**00 29 13.7**	**-0.3**
	baz=215						
SMLT	**Sun Moon Lake**	**0.79**	**251**	*eP*	**Pg**	**00 29 14.0**	**-0.3**
	baz=247						
NSTT	**Nanjuang**	**0.82**	**307**	*eP*	**Pg**	**00 29 14.1**	**-0.7**
	baz=308						
TYC	**Yuchr**	**0.82**	**254**	*eP*	**Pb**	**00 29 14.9**	**-0.7**
	baz=250						
TWA	**Mucha**	**0.84**	**352**	*eP*	**Pb**	**00 29 15.9**	**-0.2**
	baz=357						
TWF1	**Yuli**	**0.87**	**206**	*eP*	**Pg**	**00 29 15.7**	**-0.3**
	baz=210						
TWQ1	**Liyutan**	**0.89**	**284**	*eP*	**Pn**	**00 29 18.7**	**+0.9**
	baz=283						
TWB1	**Santiao Chiao**	**0.90**	**16**	*eP*	**Pg**	**00 29 16.5**	**+0.1**
	baz=13						
TAP1	**Taipei**	**0.91**	**349**	*eP*	**Pb**	**00 29 17.9**	**+0.7**
	baz=340						
NSY	**Sanyi**	**0.92**	**288**	*eP*	**Pn**	**00 29 18.6**	**+0.4**
	baz=287						
TAP	**Taipei**	**0.92**	**348**	*eP*	**Pb**	**00 29 17.8**	**+0.6**
	baz=340						
NWF	**Wu-fen Shan**	**0.93**	**4**	*eP*	**Pb**	**00 29 17.8**	**+0.3**
	baz=9.0						
TCU	**Taichung**	**0.95**	**271**	*eP*	**Pb**	**00 29 17.9**	**+0.1**
	baz=268						
YUS	**Yu-Shan**	**0.95**	**227**	*eP*	**Pn**	**00 29 19.0**	**-0.2**
	baz=236						
NCU	**National Centr**	**0.96**	**330**	*eP*	**Pn**	**00 29 19.7**	**+0.9**
	baz=333						
WNT	**Mingjian**	**0.98**	**255**	*eP*	**Pn**	**00 29 19.2**	**+0.1**
	baz=240						
TWS1	**Kuangyinshan**	**0.99**	**344**	*eP*	**Pb**	**00 29 18.3**	**-0.3**
	baz=349						
ALS	**Alishan**	**1.04**	**233**	*eP*	**Pb**	**00 29 19.1**	**-0.5**
	baz=229						
CHKT	**Chengkung**	**1.08**	**197**	*eP*	**Pg**	**00 29 19.5**	**-0.5**
	baz=193						
CHN5	**Tsauling**	**1.09**	**241**	*eP*	**Pn**	**00 29 21.1**	**+0.3**
	baz=237						
TWY	**Chenhua**	**1.14**	**355**	*eP*	**Pb**	**00 29 21.2**	**+0.3**
	baz=347						
JYNG	**Yonagunijimaku**	**1.16**	**74**	P	**Pg**	**00 29 21.2**	**-0.2**
JYNG				S	**Sg**	**00 29 36.6**	**0.0**
YOJ	**Yonaguni jima**	**1.22**	**75**	P	**Pg**	**00 29 21.9**	**-0.7**
YOJ	**Yonaguni jima**	**1.22**	**75**	*eP*	**Pg**	**00 29 21.8**	**-0.7**
	baz=57						
CHN4	**Tsaushan**	**1.30**	**233**	*eP*	**Pn**	**00 29 24.1**	**+0.7**
	baz=214						
STYT	**Tauyuan**	**1.31**	**222**	*eP*	**Pb**	**00 29 23.9**	**-0.1**
	baz=218						
WTP	**Ta-pu**	**1.35**	**229**	*eP*	**Pb**	**00 29 25.3**	**+0.7**
	baz=209						
CHN1	**Nanshi**	**1.45**	**229**	*eP*	**Pb**	**00 29 26.8**	**+0.5**
	baz=240						
SGST	**Jiashian**	**1.48**	**225**	*eP*	**Pg**	**00 29 26.8**	**-0.7**
	baz=221						
IRIF	**Iriomote-Funau**	**1.85**	**84**	P	**Pb**	**00 29 32.9**	**-0.2**
IRIF				*eS*	**Sn**	**00 29 55.8**	**+1.3**
HATJ	**Hateruma jima**	**1.91**	**92**	*eS*	**Sn**	**00 29 55.7**	**-0.4**
SCZT	**Fangliau**	**2.03**	**210**	*eP*	**Pn**	**00 29 34.8**	**+1.3**
	baz=195						
JKRS	**Kuro-shima**	**2.10**	**87**	P	**Pn**	**00 29 35.5**	**+1.1**
JKRS				*eS*	**Sn**	**00 30 02.1**	**+1.4**
JIJ	**Ishigaki jima**	**2.23**	**84**	P	**Pn**	**00 29 35.8**	**-0.4**
JIJ				*eS*	**Sn**	**00 30 03.1**	**-0.8**
JISG	**Ishigakijimahi**	**2.41**	**79**	S	**Sn**	**00 30 07.8**	**-0.6**

IDC 10 00:31:06.0±3.0, 29.°99S×177.°04W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.6/35, mbtmp3.6/2, Error ellipse: s-maj=83.2km s-min=29.7km az=54.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.06**	**314**	Pn	Pn	00 31 28.3	+0.1
	303nm,0.3s,baz=135,slow=4.3,SNR=25						
RAO				Sn	Sg	00 31 39.1	-1.1
	596nm,0.3s,baz=90,slow=20,SNR=16						
ASAR	**Alice Springs**	**43.96**	**266**	P	P	00 39 15.4	+0.2
	0.4nm,0.5s,baz=106,slow=7.0,SNR=6.5						
WRA	**Warramunga Arr**	**44.91**	**271**	P	P	00 39 22.2	-0.6
	1.0nm,0.9s,baz=110,slow=8.0,SNR=5.2						
TORD	**Torodi Ar. Bea**	**163.19**	**176**	PKPab	PKPab	00 52 00.8	-0.3
	0.7nm,1.1s,baz=199,slow=3.8,SNR=2.7						

IDC ***10*** *00:37:60.0±0.5, 2.°22S×136.°67E, h0km, mb4.6/24, mb1 4.6/29, mb1mx4.5/53, mbtmp4.6/29, ML4.3/5, MS4.5/4, Ms1 4.5/4, ms1mx3.9/53, Error ellipse: s-maj=20.7km s-min=11.0km az=84.0*
NEIC ***10*** *00:38:02.0, 2.°22S×136.°66E, h10km, mb4.9/15, After DJA.*
NEIC Felt [III] at Serui.
ISCJB ***10*** *00:38:04.1±0.3, 2.°29S±0.°04×136.°63E±0.°04, h42km, mb4.7/40, MS4.5/3, Error ellipse: s-maj=5.2km s-min=5.1km az=11.1*
DJA ***10*** *00:38:06.0±1.4, 2.°5S×13.°7E±, h29km±12km, M5.0/8, mB5.3/2, mb5.0/8, MLv5.0/5, Mw(mB)4.7/2*

ISC 10 00:38:06.0±0.4, 2.°42S±0.°05×136.°65E±0.°04, h42km, n82, σ2ş30/87, mb4.7/39, MS4.5/3, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GENI	**Genyem**	**3.52**	**93**	P	**Pn**	**00 38 58.0**	**-0.2**
GENI				S	**Sn**	**00 39 42.9**	**+4.3**
JAY	**Jayapura**	**4.05**	**91**	P	**Pn**	**00 39 04.3**	**-1.2**
	3.9nm,0.3s,baz=252,slow=21,SNR=167						
JAY				Sn	**Sn**	**00 39 48.8**	**-3.0**
	2.8nm,0.3s,baz=276,slow=24,SNR=4.0						
JAY	**Jayapura**	**4.05**	**91**	P	**Pn**	**00 39 04.4**	**-1.1**
JAY				S	**Sn**	**00 39 51.4**	**-0.4**
FAKI	**Fak Fak**	**4.43**	**263**	P	**Pn**	**00 39 10.1**	**-0.6**
FAKI				S	**Sn**	**00 40 00.2**	**-0.8**
FAKI	**Fak Fak**	**4.43**	**263**	*eP*	**Pn**	**00 39 10.4**	**-0.2**
SIJI	**Sorong**	**5.60**	**286**	Pn	**Pn**	**00 39 26.0**	**-0.8**
	18nm,0.3s,baz=344,slow=1.6,SNR=3.5						
SIJI				Sn	**Sn**	**00 40 26.4**	**-3.5**
	8.9nm,0.3s,baz=92,slow=23,SNR=3.1						
MSAI	**Masohi**	**7.77**	**263**	P	**Pn**	**00 39 57.4**	**+0.8**
NLAI	**Namlea**	**9.57**	**265**	P	**Pn**	**00 40 22.9**	**+1.5**
MTN	**Manton Dam**	**11.71**	**208**	*eP*	**Pn**	**00 40 52.3**	**+1.7**
PMG	**Port Moresby**	**12.54**	**124**	LR	LR	00 47 38.3	
	comp=Z,1μm,21.4s,baz=278,slow=46						
COEN	**Coen**	**13.16**	**151**	*ePn*	**Pn**	**00 41 10.7**	**+0.3**
	53nm,0.8s						
COEN				*eSn*	**Sn**	**00 43 34.3**	**-1.1**
SOEI	**Soe**	**14.30**	**239**	*ePn*	**Pn**	**00 41 26.5**	**+0.4**
TTSI	**Tana Toraja**	**16.82**	**267**	P	**P**	**00 42 05.0**	**+4.7**
PCI	**Palu**	**16.87**	**275**	P	**P**	**00 42 07.5**	**+6.6**
KAPI	**Kappang**	**17.06**	**261**	Pn	**Pn**	**00 42 01.2**	**-0.3**
	0.6nm,0.3s,baz=147,slow=7.4,SNR=3.6						
WRAB	**Tennant Creek**	**17.56**	**187**	*ePn*	**P**	**00 42 08.6**	**+0.3**
	58nm,0.8s						
WB2	**Warramunga Arr**	**17.57**	**187**	*ePn*	**P**	**00 42 08.9**	**+0.4**
	198nm,1.5s						
WRA	**Warramunga Arr**	**17.57**	**187**	P	**P**	**00 42 08.4**	**-0.1**
	3.4nm,0.3s,baz=7.6,slow=12,SNR=31						
WRA				S	**Sn**	**00 45 13.9**	**-8.8**
	0.9nm,0.3s,baz=8.9,slow=22,SNR=5.1						
WRA				LR	LR	00 49 41.1	
	comp=Z,3μm,18.6s,baz=5.0,slow=40						
FITZ	**Fitzroy Crossi**	**18.97**	**214**	P	**Pn**	**00 42 25.2**	**+0.3**
	0.3nm,0.3s,baz=49,slow=16,SNR=7.4						
FITZ				S	**Sn**	**00 45 48.6**	**-7.8**
	0.5nm,0.3s,baz=346,slow=19,SNR=4.2						
FITZ	**Fitzroy Crossi**	**18.97**	**214**	*eP*	**Pn**	**00 42 27.1**	**+2.3**
	42nm,1.3s						
FITZ				S	**Sn**	**00 45 48.6**	**-7.8**
CTA	**Charters Tower**	**19.91**	**153**	P	**Pn**	**00 42 35.7**	**-0.4**
	7.1nm,0.7s,baz=324,slow=12,SNR=4.1						
CTAO	**Charters Tower**	**19.91**	**153**	*eP*	**Pn**	**00 42 35.8**	**-0.4**
	50nm,1.1s						
AS01	**Alice Springs**	**21.29**	**187**	*eP*	**P**	**00 42 49.6**	**+0.5**
AS31	**Alice Springs**	**21.29**	**187**	*eP*	**P**	**00 42 49.8**	**+0.7**
	18nm,0.6s						
ASAR	**Alice Springs**	**21.29**	**187**	P	**P**	**00 42 49.8**	**+0.6**
	20nm,0.8s,baz=13,slow=12,SNR=100						
ASAR				S	**S**	**00 46 44.0**	**+0.3**
	5.6nm,0.8s,baz=8.3,slow=26,SNR=4.9						
ASAR				LR	LR	00 52 30.3	
	comp=Z,2μm,19.1s,baz=8.5,slow=40						
MBWA	**Marble Bar**	**24.88**	**220**	*eP*	**P**	**00 43 27.0**	**+2.1**
	57nm,0.7s						
EIDS	**Eidsvold**	**26.72**	**150**	*eP*	**P**	**00 43 43.6**	**+2.0**
EIDS				*ep*P	**pP**	**00 43 52.3**	**-0.6**
STKA	**Stephens Creek**	**29.67**	**171**	P	**P**	**00 44 09.2**	**+1.4**
	3.7nm,0.3s,baz=356,slow=8.5,SNR=14						
STKA				LR	LR	00 58 08.6	
	comp=Z,728nm,19.9s,baz=352,slow=40						
STKA	**Stephens Creek**	**29.67**	**171**	*eP*	**P**	**00 44 10.1**	**+2.2**
	2.9nm,0.9s						
ARMA	**Armidale**	**31.26**	**155**	*eP*	**P**	**00 44 24.7**	**+2.6**
	15nm,0.8s						
JNU	**Nakatsue**	**35.76**	**352**	P	**P**	**00 44 58.8**	**-2.3**
	13nm,0.8s,baz=159,slow=3.0,SNR=11						
MNSI	**Mandailing Nat**	**37.20**	**274**	P	**P**	**00 45 14.7**	**+1.1**
MJAR	**Matsushiro Arr**	**38.78**	**2**	P	**P**	**00 45 24.6**	**-2.0**
	2.5nm,0.8s,baz=182,slow=7.8,SNR=11						
MJAR				PcP	**PcP**	**00 47 36.3**	**-1.2**
	0.5nm,0.4s,baz=156,slow=1.9,SNR=4.3						
KSAR	**Wonju Array Be**	**40.48**	**349**	P	**P**	**00 45 38.5**	**-2.3**
KSRS	**Korea Array**	**40.49**	**349**	P	**P**	**00 45 38.5**	**-2.3**
	3.4nm,0.8s,baz=168,slow=9.2,SNR=5.6						
KMI	**Kunming**	**42.78**	**312**	P	P	00 46 11.2	+11
KMI				pmax	pmax		
	comp=Z,17nm,1.0s						
KMI				pmax	pmax		
	comp=Z,180nm,4.0s						
CD2	**Chengdu**	**45.60**	**319**	*eP*	P	00 46 31.5	+9.2
USRK	**Ussuriysk Ar.**	**46.59**	**355**	P	**P**	**00 46 27.5**	**-2.3**
	comp=Z,2.4nm,0.8s,baz=167,slow=2.9,SNR=6.5						
ASAJ	**Asahikawa**	**46.63**	**6**	P	**P**	**00 46 28.3**	**-1.8**
	comp=Z,8.1nm,0.7s,baz=220,slow=9.3,SNR=9.8						
CN2	**Changchun**	**47.10**	**349**	*eP*	P	00 46 47.0	+13
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
MDJ	**Mudanjiang**	**47.25**	**353**	P	P	00 46 45.9	+11
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.4s						
MDJ				pmax	pmax		
	comp=Z,32nm,2.9s						
HHC	**Hu-ho-hao-te**	**48.76**	**335**	*eP*	P	00 47 03.6	+17
HHC				pmax	pmax		
	comp=Z,21nm,1.2s						
HHC				pmax	pmax		
	comp=Z,53nm,4.4s						
LZH	**Lanzhou**	**49.03**	**324**	*eP*	**P**	**00 46 49.5**	**+0.4**
LZH				pP	pP	00 46 56.0	-5.0
LZH				sP	sP	00 46 58.6	-7.3
LZH				pmax	pmax		
	comp=Z,25nm,1.0s						
LZH				pmax	pmax		
	comp=Z,78nm,6.5s						
LZH				LR	LR		
	comp=N,210nm,13.5s						
LZH				LR	LR		
	comp=E,200nm,14.0s						
LZH				LR	LR		
	comp=Z,330nm,17.5s						
LZH	**Lanzhou**	**49.03**	**324**	*eP*	P	00 46 57.2	+8.1
LZH				pP	sP	00 47 10.7	+4.8
LZH				sP	pP	00 47 15.0	+14
LZH				PP	PP	00 48 52.3	+9.3
LZH				pmax	pmax		
	comp=Z,21nm,1.4s						
LZH				pmax	pmax		
	comp=Z,76nm,7.2s						
LZH				LR	LR		
	comp=N,360nm,14.8s						
LZH				LR	LR		
	comp=E,370nm,15.3s						
LZH				LR	LR		
	comp=Z,420nm,18.5s						
KLR	**Kul'dur**	**51.61**	**356**	P	**P**	**00 47 06.9**	**-1.3**
	comp=Z,3.9nm,0.7s,baz=182,slow=4.1,SNR=16						
GTA	**Gaotai**	**53.63**	**325**	*eP*	**P**	**00 47 23.4**	**-0.1**
GTA				pP	pP	00 47 35.1	-0.4
GTA				sP	sP	00 47 40.8	+0.4
GTA				pmax	pmax		
	comp=Z,8.0nm,1.1s						
SONM	**Songino Array**	**56.60**	**336**	P	**P**	**00 47 43.6**	**-1.1**
	comp=Z,1.3nm,0.7s,baz=157,slow=7.2,SNR=3.9						
PETK	**Petropavlovsk-**	**58.08**	**15**	P	**P**	**00 47 54.6**	**-0.3**
	comp=Z,9.0nm,0.8s,baz=176,slow=5.7,SNR=13						
WMQ	**Urumqi**	**63.51**	**322**	P	P	00 48 40.4	+8.2
WMQ				pmax	pmax		
	comp=Z,19nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,220nm,6.6s						
YAK	**Yakutsk**	**64.49**	**356**	P	**P**	**00 48 36.4**	**-1.6**
	comp=Z,13nm,0.5s,baz=140,slow=0.2,SNR=4.7						
YAK	**Yakutsk**	**64.49**	**356**	*eP*	**P**	**00 48 38.0**	**0.0**
	comp=Z,27nm,0.8s						
SEY	**Seymchan**	**66.25**	**8**	P	**P**	**00 48 49.1**	**-0.3**
	comp=Z,3.3nm,0.7s,baz=197,slow=6.2,SNR=10						
MKAR	**Makanchi Array**	**68.31**	**323**	P	**P**	**00 49 02.8**	**-0.1**
	comp=Z,5.0nm,0.7s,baz=116,slow=6.8,SNR=8.7						
KSH	**Kashi**	**69.39**	**314**	*eP*	P	00 49 17.1	+7.2
KSH				*ep*P	PcP	00 49 30.7	-2.5
KSH				*e*PP	PP	00 51 52.6	+8.8
KSH				*e*ScP		00 53 39.2	
KSH				PcS		00 53 44.4	
KSH				S	**S**	**00 58 17.2**	**+2.9**
KSH				ScS	**ScS**	**00 59 10.7**	**+2.5**
KSH				pmax	pmax		
	comp=Z,56nm,2.6s						
ZALV	**Zalesovo Beam**	**70.66**	**330**	P	**P**	**00 49 16.1**	**-1.1**
	comp=Z,4.3nm,0.7s,baz=110,slow=6.1,SNR=7.4						
KURK	**Kurchatov**	**72.30**	**326**	*eP*	**P**	**00 49 27.0**	**-0.2**
KURBB	**Kurchatov Ar

s-maj=163.9km s-min=52.5km az=116.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.24**	**202**	P	Pn	00 40 50.7	+0.3
	4.5nm,0.3s,baz=50,slow=10,SNR=6.0						
PMG				S	Sn	00 41 39.8	+0.6
	27nm,0.3s,baz=130,slow=18,SNR=14						
WRA	**Warramunga Arr**	**20.11**	**223**	P	P	00 44 11.2	-0.1
	2.5nm,0.3s,baz=50,slow=11,SNR=3.6						
ASAR	**Alice Springs**	**23.08**	**217**	P	P	00 44 42.3	+0.2
	4.3nm,0.8s,baz=49,slow=9.8,SNR=1.8						
TORD	**Torodi Ar. Bea**	**146.65**	**286**	PKPbc	PKPdf	00 59 14.3	+0.9
	0.2nm,0.5s,baz=89,slow=2.8,SNR=11						

BKK ***10*** *00:40:22.9±7.9,21°N±40°×9°4E±5°4,h10km,M4.7/8, mB5.0/8,mb4.8/8,MLv5.0/6,Mw(mB)4.3/8*
MOS ***10*** *00:40:22.8±0.9,21°.11N×93°.87E,h50km,mb5.1/73,Error ellipse: s-maj=8.5km s-min=3.6km az=123.9*
ISCJB ***10*** *00:40:22.3±0.4,21°.08N±0°.03×93°.77E±0°.02,h44km±4km, mb4.8/158,MS4.3/7,Error ellipse: s-maj=4.2km s-min=3.0km az=8.1*
BJI ***10*** *00:40:26.2,21°.08N×93°.88E,h86km,mb4.7/37,mB4.6/20, Ms4.0/28,Ms7 3.7/27*
NEIC ***10*** *00:40:26.7±0.6,21°.09N×93°.90E,h71km±5km,mb4.9/42, Error ellipse: s-maj=4.9km s-min=3.7km az=49.0*
IDC ***10*** *00:40:26.6±1.7,21°.09N×93°.91E,h70km±15km,mb4.4/38, mb1 4.5/41,mb1mx4.3/70,mbtmp4.7/41,MS5.6/1, Ms1 5.6/1,ms1mx3.8/66,Error ellipse: s-maj=12.9km s-min=8.8km az=47.0*
ISC **10 00:40:25.3±0.4,21°.07N±0°.04×93.79E±0°.03,h58km±3km, h58km:pP-P,n408,σ1§40/460,mb4.8/158,MS3.9/7, 26C-26D,Myanmar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**4.81**	**339**	*e*P	**Pn**	**00 41 36.1**	**+0.7**
SHL				IAmb	IAmb	00 41 37.2	
	comp=Z,95nm,0.7s						
MHMT	**Maesarieng**	**4.85**	**126**	P	**Pn**	**00 41 35.3**	**-0.4**
MHMT				S	**Sn**	**00 42 23.2**	**-7.4**
CHTO	**Chiang Mai**	**5.34**	**114**	P	**Pn**	**00 41 42.5**	**-0.1**
	comp=Z,961nm,0.7s,comp=Z,26μcomp=Z,8.4nm						
CHTO				S	**Sn**	**00 42 41.1**	**-1.7**
	comp=Z,961nm,0.7s,comp=Z,26μcomp=Z,8.4nm						
CHTO	**Chiang Mai**	**5.34**	**114**	P	**Pn**	**00 41 42.1**	**-0.4**
CHTO	**Chiang Mai**	**5.34**	**114**	*e*P	**Pn**	**00 41 42.4**	**-0.1**
CHTO	**Chiang Mai**	**5.34**	**114**	*e*Pn	**Pn**	**00 41 42.4**	**-0.1**
CMMT	**Chiang Mai**	**5.35**	**114**	P	**Pn**	**00 41 42.4**	**-0.2**
	comp=Z,219nm,0.7s,comp=Z,6μcomp=Z,1.8nm						
CMMT				S	**Sn**	**00 42 42.7**	**-0.2**
	comp=Z,219nm,0.7s,comp=Z,6μcomp=Z,1.8nm						
CMMT	**Chiang Mai**	**5.35**	**114**	P	**Pn**	**00 41 42.1**	**-0.5**
CMAR	**Chiang Mai Arr**	**5.50**	**117**	P	**Pn**	**00 41 44.6**	**-0.1**
	comp=Z,3.8nm,0.3s,baz=292,slow=14,SNR=156						
CMAR				S	**Sn**	**00 42 46.7**	**0.0**
	comp=Z,4.5nm,0.3s,baz=290,slow=17,SNR=5.8						
LAMP	**Lampang**	**6.06**	**114**	P	**Pn**	**00 41 52.4**	**+0.1**
	comp=Z,34nm,0.8s,comp=Z,411nmcomp=Z,0.4nm						
LAMP	**Lampang**	**6.06**	**114**	P	**Pn**	**00 41 52.2**	**-0.1**
UMPA	**Umpang Tak**	**6.82**	**134**	P	**Pn**	**00 42 04.9**	**+2.1**
	comp=Z,18nm,0.8s,comp=Z,843nmcomp=Z,0.2nm						
UTTA	**Uttaradit**	**7.19**	**116**	P	**Pn**	**00 42 08.0**	**+0.1**
	comp=Z,15nm,0.5s,comp=Z,259nmcomp=Z,0.2nm						
UTTA	**Uttaradit**	**7.19**	**116**	P	**Pn**	**00 42 07.9**	**+0.1**
BWNR	**Bhubaneshwar**	**7.51**	**266**	*e*P	**Pn**	**00 42 11.9**	**-0.3**
BWNR				IAmb	IAmb	00 42 20.7	
	comp=Z,207nm,1.4s						
BOK	**Bokaro**	**7.80**	**292**	*e*P	**Pn**	**00 42 17.4**	**+1.3**
BOK				IAmb	IAmb	00 43 38.1	
	comp=Z,65nm,0.7s						
DGPR	**DIGLIPUR**	**7.89**	**186**	*e*P	**Pn**	**00 42 16.1**	**-1.3**
DGPR				IAmb	IAmb	00 42 22.5	
	comp=Z,52nm,0.4s						
PBKT	**Sadao Pong**	**8.14**	**122**	P	**Pn**	**00 42 21.4**	**+0.6**
	comp=Z,83nm,0.7s,comp=Z,1μm						
PBKT	**Sadao Pong**	**8.14**	**122**	P	**Pn**	**00 42 21.1**	**+0.3**
SRDT	**SRDT**	**8.39**	**142**	P	**Pn**	**00 42 24.3**	**0.0**
RAMN	**Ramite**	**8.80**	**313**	*e*P	**Pn**	**00 42 28.6**	**-1.5**
	comp=Z,81nm,0.5s						
RAMN				*e*S	**Sn**	**00 44 00.6**	**-7.3**
LSA	**Lhasa**	**8.92**	**345**	*e*P	**Pn**	**00 42 32.6**	**+0.7**
LSA				*e*		00 44 12.1	
LSA				pmax	pmax		
	comp=Z,62nm,0.5s						
LSA	**Lhasa**	**8.92**	**345**	*e*Pn	**Pn**	**00 42 32.6**	**+0.7**
	comp=Z,62nm,0.5s						
LSA				*e*Sn	**Sn**	**00 44 12.1**	**+0.9**
KMI	**Kunming**	**9.18**	**62**	P	**Pn**	**00 42 37.3**	**+2.1**
KMI				pmax	pmax		
	comp=Z,12nm,0.7s						
KMI				pmax	pmax		
	comp=Z,160nm,4.1s						
NONG	**Nongkai**	**9.31**	**107**	P	**Pn**	**00 42 37.6**	**+0.7**
	comp=Z,52nm,0.9s,comp=Z,2μm						
NONG	**Nongkai**	**9.31**	**107**	P	**Pn**	**00 42 37.6**	**+0.7**
CHAI	**Chaiyaphum**	**9.32**	**122**	P	**Pn**	**00 42 38.5**	**+1.5**
CHAI	**Chaiyaphum**	**9.32**	**122**	P	**Pn**	**00 42 38.5**	**+1.5**
	comp=Z,12nm,0.6s,comp=Z,142nmcomp=Z,0.1nm						
PBA	**Port Blair**	**9.41**	**186**	*e*P	Pn	00 42 36.1	-2.2
PBA				IAmb	IAmb	00 42 54.1	
	comp=Z,245nm,1.6s						
CHLP	**Challavanipeta**	**9.51**	**256**	*e*Pn	**Pn**	**00 42 38.1**	**-1.4**
CHLP				IAmb	IAmb	00 42 49.6	
	comp=Z,35nm,0.7s						
CHLP				*e*		00 44 12.2	
KHON	**Khomkaen**	**9.77**	**117**	P	**Pn**	**00 42 46.3**	**+3.2**
	comp=Z,28nm,1.0s,comp=Z,1μmcomp=Z,0.1nm						
GUN	**Gumba**	**9.91**	**315**	*e*P	**Pn**	**00 42 44.0**	**-1.3**
	comp=Z,103nm,0.6s						
PKIN	**Phulchoki**	**10.03**	**312**	*e*P	**Pn**	**00 42 45.0**	**-1.8**
	comp=Z,98nm,0.5s						
PKIN				*e*S	**Sn**	**00 44 31.3**	**-6.6**
KKN	**Kakani**	**10.24**	**312**	*e*P	**Pn**	**00 42 48.0**	**-1.7**
	comp=Z,13nm,0.2s						
DMN	**Daman**	**10.25**	**311**	*e*P	**Pn**	**00 42 48.2**	**-1.7**
VIS	**Vishakhapatnam**	**10.41**	**253**	*e*P	**Pn**	**00 42 50.0**	**-2.0**
VIS				IAmb	IAmb	00 42 51.9	
	comp=Z,56nm,1.4s						
SKNT	**Sakolnakorn**	**10.46**	**111**	P	**Pn**	**00 42 54.2**	**+1.6**
	comp=Z,41nm,0.8s,comp=Z,12μmcomp=Z,0.5nm						
GKN	**Gorkha**	**10.82**	**311**	*e*P	**Pn**	**00 42 55.9**	**-1.6**
	comp=Z,65nm,0.4s						
KOLN	**Koldanda**	**11.43**	**308**	*e*P	**Pn**	**00 43 03.7**	**-2.2**
	comp=Z,34nm,0.2s						
CHBT	**CHBT**	**11.62**	**134**	P	**Pn**	**00 43 12.5**	**+4.1**
	comp=Z,37nm,1.3s,comp=Z,0.3nm						
PYUN	**Piuthan**	**12.06**	**308**	*e*P	**Pn**	**00 43 12.7**	**-1.9**
PYUN				*e*S	**Sn**	**00 45 20.4**	**-7.2**
PVM	**Polavaram**	**12.10**	**254**	*e*Pn	**Pn**	**00 43 12.6**	**-2.4**
PVM				IAmb	IAmb	00 43 15.4	
	comp=Z,37nm,0.7s						
PVM				*e*		00 45 16.4	
UBPT	**Khong Chiam**	**12.50**	**115**	P	**Pn**	**00 43 22.6**	**+2.1**
GYA	**Guiyang**	**12.95**	**63**	P	**Pn**	**00 43 26.9**	**+0.2**
GYA				pP	P	00 43 37.6	+2.2
GYA				S	**Sn**	**00 45 50.2**	**+0.9**
GYA				sS	S	00 46 05.6	-6.3
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,4.9s						
GYA				LR	LR		
	comp=Z,550nm,13.4s						
GYA				LR	LR		
	comp=Z,510nm,14.0s						
GYA				LR	LR		
	comp=Z,540nm,13.8s						
CD2	**Chengdu**	**13.28**	**40**	*e*P	**Pn**	**00 43 30.5**	**-0.5**
CD2				S	**Sn**	**00 45 56.3**	**-0.7**
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,140nm,5.0s						
CD2				LR	LR		
	comp=Z,540nm,16.4s						
CD2				LR	LR		
	comp=Z,390nm,13.4s						
CD2				LR	LR		
	comp=Z,630nm,9.3s						
NGP	**Nagpur**	**13.76**	**273**	*e*P	**Pn**	**00 43 37.2**	**-0.3**
NGP				IAmb	IAmb	00 44 00.8	
	comp=Z,56nm,1.2s						
RPR	**Rampur**	**13.80**	**263**	*e*Pn	Pn	00 43 32.8	-5.4
RPR				*e*		00 45 58.6	
CMBY	**CAMPBELL BAY**	**13.97**	**179**	*e*P	**Pn**	**00 43 40.0**	**-0.4**
ADKI	**Addanki**	**14.10**	**251**	*e*Pn	**Pn**	**00 43 39.9**	**-2.2**
ADKI				IAmb	IAmb	00 43 49.9	
	comp=Z,31nm,0.9s						
NJS	**Nagarjunasagar**	**14.43**	**254**	*e*Pn	**Pn**	**00 43 44.1**	**-2.4**
NJS				IAmb	IAmb	00 43 55.8	
	comp=Z,12nm,0.8s						
NJS				*e*		00 46 09.5	
SRSP	**Sriramsagar**	**14.67**	**264**	*e*Pn	**Pn**	**00 43 48.9**	**-0.8**
SRSP				*e*		00 46 20.2	
HYB	**Hyderabad**	**14.84**	**258**	*i* P	**P**	**00 43 57.0**	**+0.6**
HYB				*e*		00 46 19.0	
HYB				*e*S	**Sn**	**00 46 36.0**	**+0.9**
HYB	**Hyderabad**	**14.84**	**258**	*e*P	**Pn**	**00 43 50.1**	**-1.7**
HYB				IAmb	IAmb	00 43 58.9	
	comp=Z,29nm,1.0s						
HYBB	**Hyderabad (bro**	**14.84**	**258**	*e*Pn	**Pn**	**00 43 50.0**	**-1.9**
HYBB				IAmb	IAmb	00 43 58.5	
	comp=Z,23nm,0.8s						
HYBB				*e*		00 46 20.1	
SRLM	**Srisailam**	**14.96**	**253**	*e*Pn	**Pn**	**00 43 50.8**	**-2.6**
SRLM				IAmb	IAmb	00 44 00.7	
	comp=Z,41nm,1.2s						
SRLM				*e*		00 46 21.9	
RCLA	**Racherla**	**15.15**	**251**	*e*Pn	**Pn**	**00 43 53.5**	**-2.3**
RCLA				IAmb	IAmb	00 44 03.0	
	comp=Z,12nm,0.7s						
RCLA				*e*		00 46 29.0	
MDRS	**Chennai**	**15.19**	**241**	*e*P	**Pn**	**00 43 56.6**	**+0.4**
MDRS				IAmb	IAmb	00 46 32.4	
	comp=Z,164nm,1.0s						
QIZ	**Qiongzhong**	**15.22**	**95**	P	**Pn**	**00 43 55.7**	**-1.1**
QIZ				S	**Sn**	**00 46 41.1**	**-3.3**
QIZ				LR	LR		
	comp=Z,430nm,27.1s						
QIZ				LR	LR		
	comp=Z,250nm,20.5s						
QIZ				LR	LR		
	comp=Z,350nm,26.2s						
SKHT	**Srikalahasti**	**15.28**	**244**	*e*Pn	**Pn**	**00 43 56.3**	**-1.1**
SKHT				IAmb	IAmb	00 43 59.1	
	comp=Z,9.1nm,1.0s						
SKHT				*e*		00 46 28.2	
BHPL	**Bhopal**	**15.31**	**281**	*e*P	**Pn**	**00 43 57.3**	**-0.7**
BHPL				IAmb	IAmb	00 44 06.5	
	comp=Z,83nm,0.9s						
KLRI	**Killari**	**16.47**	**263**	*e*Pn	**Pn**	**00 44 11.8**	**-0.9**
KLRI				IAmb	IAmb	00 44 22.1	
	comp=Z,18nm,0.7s						
KLRI				*e*		00 47 00.0	
LZH	**Lanzhou**	**17.36**	**28**	*e*P	Pn	00 44 16.5	-7.2
LZH				pP	P	00 44 28.4	+4.1
LZH				PP	**PnPn**	**00 44 33.5**	**-1.8**
LZH				sP	pP	00 44 36.3	-0.6
LZH				*e*S	Sn	00 47 25.3	-11
LZH				sS	S	00 47 41.6	-0.3
LZH				*e*SS	**SnSn**	**00 47 48.7**	**-1.9**
LZH				pmax	pmax		
	comp=Z,35nm,1.3s						
LZH				pmax	pmax		
	comp=Z,170nm,6.4s						
LZH				LR	LR		
	comp=N,230nm,10.5s						
LZH				LR	LR		
	comp=E,230nm,10.0s						
LZH				LR	LR		
	comp=Z,460nm,13.2s						
SMLA	**Simla**	**17.96**	**307**	*e*P	**Pn**	**00 44 32.1**	**+1.2**
XAN	**Xi'an**	**18.60**	**43**	P	**Pn**	**00 44 39.4**	**+0.7**
XAN				pmax	pmax		
	comp=Z,12nm,0.8s						
PALK	**Pallekele**	**18.66**	**225**	P	**Pn**	**00 44 40.7**	**+1.2**
	comp=Z,0.5nm,0.3s,baz=18,slow=0.5,SNR=3.2						
PALK				S	Sn	00 47 49.8	-18
	comp=Z,1.9nm,0.3s,baz=115,slow=23,SNR=11						
PALK				LR	LR	00 52 18.7	
	comp=Z,519nm,18.2s,baz=117,slow=38						
PSI	**Prapat**	**18.83**	**164**	P	**Pn**	**00 44 43.9**	**+2.2**
	comp=Z,1.2nm,0.3s,baz=320,slow=7.2,SNR=4.7						
POO	**Poona**	**18.93**	**266**	*e*P	**Pn**	**00 44 43.0**	**+0.2**
GTA	**Gaotai**	**19.00**	**14**	*e*P	**P**	**00 44 41.7**	**-0.6**
GTA				pP	sP	00 44 59.2	-3.1
GTA				sP	pP	00 45 08.7	+14
GTA				S	**S**	**00 48 07.4**	**-7.7**
GTA				sS	sS	00 48 29.3	-6.2
GTA				SS	**SnSn**	**00 48 37.6**	**+6.8**
GTA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,95nm,6.9s						
GTA				LR	LR		
	comp=Z,240nm,22.3s						
GTA				LR	LR		
	comp=Z,350nm,21.4s						
GTA				LR	LR		
	comp=Z,310nm,20.0s						
THN	**Thein Dam**	**19.68**	**309**	*ex*	**P**	**00 44 47.0**	**-2.6**
GOA	**Goa**	**19.74**	**257**	*e*P	**Pn**	**00 44 51.8**	**-0.6**
GOA				IAmb	IAmb	00 44 56.4	
	comp=Z,16nm,0.6s						
WMQ	**Urumqi**	**23.25**	**349**	P	**P**	**00 45 28.2**	**+0.5**
WMQ				pP	pP	00 45 43.0	+2.0
WMQ				sP	sP	00 45 53.8	+5.7
WMQ				*e*S	**S**	**00 49 32.2**	**-3.2**
WMQ				pmax	pmax		
	comp=Z,45nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,200nm,6.0s						
WMQ				LR	LR		
	comp=Z,400nm,16.6s						
WMQ				LR	LR		
	comp=Z,710nm,18.2s						
WMQ				LR	LR		
	comp=Z,570nm,19.8s						
KSH	**Kashi**	**23.89**	**324**	P	**P**	**00 45 34.0**	**+0.2**
KSH				*e*pP	pP	00 45 50.5	+2.6
KSH				*e*sP	sP	00 45 59.7	+4.9
KSH				S	**S**	**00 49 40.7**	**-5.3**
KSH				sS	sS	00 50 09.7	-0.5
KSH				SS	**SnSn**	**00 50 36.8**	**+6.4**
KSH				pmax	pmax		
	comp=Z,52nm,0.9s						
KSH				LR	LR		
	comp=Z,130nm,6.8s						
KSH				LR	LR		
	comp=Z,90nm,5.9s						
KSH				LR	LR		
	comp=Z,290nm,16.7s						
HHC	**Hu-ho-hao-te**	**24.84**	**33**	*e*P	**P**	**00 45 49.3**	**+7.0**
HHC				sP	sP	00 46 18.7	+15
HHC				PP	PnPn	00 46 33.1	+16
HHC				S	**S**	**00 50 01.8**	**+0.7**
HHC				sS	sS	00 50 35.7	+10
HHC				pmax	pmax		
	comp=Z,17nm,1.0s						
HHC				pmax	pmax		
	comp=Z,78nm,4.4s						
HHC				LR	LR		
	comp=N,230nm,12.3s						
HHC				LR	LR		
	comp=E,130nm,11.3s						
HHC				LR	LR		
	comp=Z,190nm,12.3s						
PDGK	**Podgornoye**	**25.21**	**335**	*i* P	**P**	**00 45 47.0**	**+1.5**
PDGK				pmax	pmax		
	comp=Z,93nm,1.0s						
KBL	**Kabul**	**25.59**	**307**	*e*P	**P**	**00 45 51.1**	**+1.8**
KBL				pmax	pmax		
	comp=Z,43nm,1.0s						
KBL	**Kabul**	**25.59**	**307**	*e*P	**P**	**00 45 51.1**	**+1.8**
	comp=Z,43nm,1.0s						
TKM2	**Tokmak 2**	**26.59**	**329**	*i* P	**P**	**00 45 59.0**	**+0.8**
TKM2				pmax	pmax		
	comp=Z,17nm,1.0s						
TKM2	**Tokmak 2**	**26.59**	**329**	*e*P	**P**	**00 45 59.8**	**+1.5**
	comp=Z,16nm,1.0s						
BJI	**Beijing**	**26.88**	**40**	P	**P**	**00 46 01.9**	**+1.3**
BJI				S	**S**	**00 50 31.5**	**-1.7**
BJI				pmax	pmax		
	comp=Z,6.0nm,1.1s						
BJI				LR	LR		
	comp=Z,370nm,21.2s						
BJI				LR	LR		
	comp=Z,170nm,21.2s						
BJI				LR	LR		
	comp=Z,220nm,24.6s						
AAK	**Ala-Archa**	**26.92**	**327**	P	**P**	**00 46 03.4**	**+2.3**
	comp=Z,22nm,0.9s,baz=140,slow=6.4,SNR=37						
AAK	**Ala-Archa**	**26.92**	**327**	*d* P	**P**	**00 46 02.9**	**+1.7**
AAK				pmax	pmax		
	comp=Z,84nm,1.0s						
AAK	**Ala-Archa**	**26.92**	**327**	*e*P	**P**	**00 46 03.5**	**+2.3**
	comp=Z,33nm,1.0s						
FRU	**Bishkek**	**27.00**	**328**	*e*P	**P**	**00 46 03.0**	**+1.2**
FRU				*e*		00 46 24.0	
FRU				pmax	pmax		
	comp=Z,40nm,1.2s						
MK01	**Makanchi Array**	**27.29**	**343**	*e*P	**P**	**00 46 05.0**	**+0.7**
EKS2	**Erkin-Say**	**27.30**	**327**	*e*P	**P**	**00 46 05.8**	**+1.3**
EKS2				pmax	pmax		
	comp=Z,7.0nm,0.8s						
EKS2	**Erkin-Say**	**27.30**	**327**	*e*P	**P**	**00 46 05.8**	**+1.3**
	comp=Z,6.9nm,0.8s						
MK31	**Makanchi Array**	**27.32**	**343**	*ce*P	**P**	**00 46 05.2**	**+0.7**
MK31				pmax	pmax		
	comp=Z,6.0nm,0.5s						
MK31	**Makanchi Array**	**27.32**	**343**	*e*P	**P**	**00 46 05.5**	**+1.0**
MKAR	**Makanchi Array**	**27.32**	**343**	P	**P**	**00 46 05.5**	**+0.9**
	comp=Z,11nm,0.8s,baz=155,slow=9.0,SNR=93						
MAKZ	**Makanchi**	**27.42**	**342**	*e*P	**P**	**00 46 06.0**	**+0.6**
MAKZ				pmax	pmax		
	comp=Z,9.0nm,0.9s						
MAKZ	**Makanchi**	**27.42**	**342**	*e*P	**P**	**00 46 06.0**	**+0.6**
	comp=Z,9.4nm,0.9s						
MNAS	**Manas**	**27.85**	**325**	*i* P	**P**	**00 46 09.0**	**-0.5**
MNAS				pmax	pmax		
	comp=Z,10.0nm,1.0s						
SONM	**Songino Array**	**28.58**	**18**	P	**P**	**00 46 15.8**	**-0.1**
	comp=Z,2.9nm,0.9s,baz=214,slow=9.6,SNR=13						
SONM				PcP	**PcP**	**00 49 25.8**	**-0.1**
	comp=Z,2.1nm,0.9s,baz=204,slow=3.3,SNR=3.9						
SONM				ScP	**ScP**	**00 53 02.1**	**-0.2**
	comp=Z,1.2nm,0.9s,baz=163,slow=6.2,SNR=4.9						
SONA1	**Songino Array**	**28.59**	**18**	*e*P	**P**	**00 46 16.0**	**0.0**
KKAR	**Karatay Array**	**29.34**	**324**	*e*P	**P**	**00 46 23.4**	**+0.8**
KKAR	**Karatay Array**	**29.34**	**324**	*e*P	**P**	**00 46 23.4**	**+0.8**
ZAK	**Zakamensk**	**30.20**	**12**	*e*P	**P**	**00 46 30.4**	**+0.2**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.1s						
KURBB	**Kurchatov Arra**	**31.85**	**341**	P	**P**	**00 46 45.2**	**+0.6**
	comp=Z,18nm,0.8s,baz=154,slow=8.4,SNR=115						
KURK	**Kurchatov**	**31.91**	**342**	P	**P**	**00 46 45.2**	**+0.1**
KURK				pmax	pmax		
	comp=Z,18nm,0.8s						
KURK	**Kurchatov**	**31.91**	**342**	*e*P	**P**	**00 46 45.6**	**+0.6**
OTUK	**Ortayu**	**32.13**	**333**	P	**P**	**00 46 48.1**	**+1.0**
OTUK				pmax	pmax		
	comp=Z,25nm,0.8s						
ZAA0	**Zalesovo Array**	**33.53**	**350**	*e*P	**P**	**00 46 59.5**	**+0.3**
ZALV	**Zalesovo Beam**	**33.53**	**350**	P	**P**	**00 46 59.9**	**+0.7**
	comp=Z,11nm,0.7s,baz=172,slow=8.5,SNR=71						
NVS	**Novosibirsk**	**34.65**	**349**	*i* P	**P**	**00 47 09.5**	**+0.6**
NVS				*e**PP	**pP**	**00 47 24.6**	**+1.1**
NVS				*e*S	**S**	**00 52 35.2**	**+0.9**
NVS				*e*		00 52 58.3	
NVS				pmax	pmax		
	comp=Z,23nm,1.4s						
NVS				pmax	pmax		
	comp=N,17nm,1.6s						
NVS				pmax	pmax		
	comp=E,11nm,1.4s						
NVS				smax	smax		
	comp=E,13nm,1.6s						
CN2	**Changchun**	**34.71**	**42**	*e*P	**P**	**00 47 09.1**	**-0.5**
CN2				pmax	pmax		
	comp=E,20nm,0.7s						
HIA	**Hailar**	**34.91**	**30**	*e*P	**P**	**00 47 10.6**	**-0.6**
HIA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
GEYT	**Alibeck**	**35.04**	**307**	P	**P**	**00 47 14.4**	**+1.8**
	comp=Z,17nm,1.1s,baz=134,slow=6.4,SNR=36						
GEYT				PcP	**PcP**	**00 49 43.2**	**-0.4**
	comp=Z,2.5nm,0.7s,baz=178,slow=3.9,SNR=4.2						
VOSK	**Vostochnaya**	**36.17**	**336**	*e*P	**P**	**00 47 22.7**	**+0.7**
VOSK				pmax	pmax		
	comp=Z,51nm,0.6s						
VOSK	**Vostochnaya**	**36.17**	**336**	*e*P	**P**	**00 47 22.7**	**+0.7**
	comp=Z,51nm,0.6s						
BVAR	**Borovoye Array**	**36.62**	**336**	P	**P**	**00 47 26.5**	**+0.6**
	comp=Z,6.5nm,0.7s,baz=141,slow=9.6,SNR=40						
BVAR				PcP	**PcP**	**00 49 47.9**	**0.0**
	comp=Z,2.1nm,0.6s,baz=180,slow=3.0,SNR=5.4						
BRVK	**Borovoye**	**36.69**	**336**	*d* P	**P**	**00 47 26.7**	**+0.3**
BRVK				*i **PP	**pP**	**00 47 41.4**	**+0.3**
BRVK				pmax	pmax		
	comp=Z,26nm,0.6s						
BRVK	**Borovoye**	**36.69**	**336**	*e*P	**P**	**00 47 27.1**	**+0.6**
	comp=Z,14nm,0.8s						
ZRNK	**Zerenda**	**37.10**	**335**	*e*P	**P**	**00 47 30.6**	**+0.7**
ZRNK				pmax	pmax		
	comp=Z,19nm,0.6s						
ZRNK	**Zerenda**	**37.10**	**335**	*e*P	**P**	**00 47 30.6**	**+0.7**
	comp=Z,19nm,0.6s						
MDJ	**Mudanjiang**	**37.71**	**43**	P	**P**	**00 47 34.4**	**-0.8**
MDJ				S	**S**	**00 53 26.9**	**+5.5**
MDJ				pmax	pmax		
	comp=Z,5.0nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,62nm,7.2s						
MDJ				LR	LR		
	comp=Z,170nm,17.0s						
MDJ				LR	LR		
	comp=Z,100nm,16.5s						
MDJ				LR	LR		
	comp=Z,89nm,13.4s						
AB31	**Akbulak array**	**38.90**	**324**	*ce*P	**P**	**00 47 45.7**	**+0.6**
AB31				pmax	pmax		
	comp=Z,7.0nm,0.7s						
ABKAR	**Akbulak array**	**38.90**	**324**	*e*P	**P**	**00 47 46.3**	**+1.2**
BOD	**Bodaibo**	**39.56**	**17**	*e*P	**P**	**00 47 50.2**	**-0.3**
BOD				pmax	pmax		
	comp=Z,11nm,1.4s						
AKTO	**Aktyubinsk**	**40.59**	**325**	LR	LR	01 07 49.9	
	comp=Z,9μm,19.7s,baz=324,slow=40						
MAJO	**Matsushiro**	**41.49**	**58**	*e*P	**P**	**00 48 06.6**	**-0.2**
MAJO				pmax	pmax		
	comp=Z,18nm,0.9s						
MJAR	**Matsushiro Arr**	**41.49**	**58**	P	**P**	**00 48 06.3**	**-0.5**
MJAR				ScP	**ScP**	**00 53 47.5**	**-1.4**
	comp=Z,0.8nm,0.6s,baz=267,slow=2.3,SNR=3.8						
SVE	**Sverdlovsk**	**43.25**	**334**	*c* P	**P**	**00 48 21.9**	**+1.2**
SVE				pmax	pmax		
	comp=Z,112nm,0.9s						
ARU	**Arti**	**43.86**	**332**	P	**P**	**00 48 26.5**	**+0.8**
	comp=Z,20nm,0.4s,baz=142,slow=3.2,SNR=

YAK **Yakutsk** 47.79 22 P P 00 48 54.8 -1.7
comp=Z,27nm,0.6s,baz=202,slow=1.2,SNR=6.1
YAK **Yakutsk** 47.79 22 eP P 00 48 55.2 -1.3
YAK pmax pmax
comp=Z,21nm,0.7s
KVAR **Kislovodsk Arr** 47.87 311 P P 00 48 59.1 +1.5
comp=Z,36nm,1.2s,baz=302,slow=5.3,SNR=17
KIV **Kislovodsk** 47.88 311 eP P 00 48 58.8 +1.2
KIV pmax pmax
comp=Z,33nm,1.0s
KIV **Kislovodsk** 47.88 311 eP P 00 48 59.0 +1.3
comp=Z,54nm,1.3s
NRIK **Noril'sk** 48.42 357 P P 00 49 00.9 -0.3
comp=Z,5.5nm,0.5s,baz=156,slow=5.5,SNR=9.5
NRIK **Noril'sk** 48.42 357 P P 00 49 01.0 -0.3
NRIK pmax pmax
comp=Z,6.0nm,0.5s
SOC **Sochi** 49.93 310*c* iP P 00 49 14.4 +1.2
SOC e*SP sP 00 49 37.7 +2.6
SOC e 00 51 05.7
SOC ePPP PPP 00 52 06.1
SOC eS S 00 56 20.3 +0.9
SOC eSS SS 00 59 54.7 +2.0
SOC eSSS SSS 01 01 16.7
SOC pmax pmax
comp=Z,33nm,1.0s
VRH **Novokhopyorsk** 50.28 320 eP P 00 49 16.1 +0.3
VRH pmax pmax
comp=Z,20nm,0.6s
VSR **Storozhevoye** 51.84 319 eP P 00 49 27.5 +0.1
VSR pmax pmax
comp=Z,30nm,2.0s
MOS **Moscow** 53.92 324 eP P 00 49 42.8 +0.1
MOS e 00 50 05.1
MOS pmax pmax
comp=Z,57nm,1.4s
BR131 **Keskin Array S** 54.13 304 eP P 00 49 45.3 +0.6
BRTR **Keskin Array B** 54.13 304 P P 00 49 44.9 +0.2
comp=Z,3.6nm,0.8s,baz=118,slow=8.1,SNR=31
OBN **Obninsk** 54.34 324 P P 00 49 45.2 -0.5
comp=Z,8.7nm,0.4s,baz=134,slow=5.4,SNR=9.2
OBN **Obninsk** 54.34 324*d* iP P 00 49 45.6 -0.1
OBN e 00 50 53.2
OBN e 00 51 43.3
OBN ePPP PPP 00 53 00.6
OBN pmax pmax
comp=Z,38nm,1.2s
OBN **Obninsk** 54.34 324 eP P 00 49 45.8 +0.1
comp=Z,92nm,1.7s
TIXI **Tiksi** 54.48 13 P P 00 49 45.9 -0.6
comp=Z,6.6nm,0.3s,baz=184,slow=5.2,SNR=24
TIXI **Tiksi** 54.48 13⇑ eP P 00 49 45.6 -0.9
TIXI pmax pmax
comp=Z,22nm,1.2s
TIXI **Tiksi** 54.48 13 eP P 00 49 45.1 -1.3
comp=Z,22nm,1.2s
KLMR **Klimovskoe** 54.65 331 eP P 00 49 45.1 -2.8
KLMR pmax pmax
comp=Z,33nm,1.1s
BR231 **Keskin MP Arra** 54.79 304 eP P 00 49 45.8 -3.7
MA2 **Magadan** 55.48 31 eP P 00 49 53.0 -1.0
WRA **Warramunga Arr** 56.88 133 P P 00 50 03.5 -0.9
comp=Z,4.7nm,0.8s,baz=320,slow=7.6,SNR=9.9
TLCR 57.85 311 ⇓ iP P 00 50 11.8 +0.8
TLCR 57.85 311 ⇓ P P 00 50 11.8 +0.8
AKASG **Malin Array Be** 57.94 317 P P 00 50 10.9 -0.6
comp=Z,1.3nm,0.4s,baz=77,slow=6.7,SNR=21
KIEV **Kiev** 57.94 317 eP P 00 50 11.0 -0.5
KIEV pmax pmax
comp=Z,12nm,0.9s
KIEV **Kiev** 57.94 317 eP P 00 50 11.0 -0.5
comp=Z,12nm,0.9s
TIRR **Tirgusor** 58.12 310⇑ iP P 00 50 12.8 -0.1
TIRR **Tirgusor** 58.12 310 eP P 00 50 13.5 +0.6
TIRR pmax pmax
comp=Z,9.0nm,0.9s
TIRR **Tirgusor** 58.12 310 eP P 00 50 13.5 +0.6
comp=Z,9.4nm,0.9s
PSN **Preselentsi** 58.28 309 eP P 00 50 14.7 +0.7
SORM **Soroca** 58.30 314 ⇓ iP P 00 50 13.8 -0.3
SORM **Soroca** 58.30 314 ⇓ P P 00 50 13.8 -0.3
CFR **Carcaliu** 58.33 311⇑ iP P 00 50 12.8 -1.6
CFR **Carcaliu** 58.33 311 ⇑ P P 00 50 12.8 -1.6
TLB **Topalu** 58.39 310⇑ iP P 00 50 15.2 +0.4
TLB **Topalu** 58.39 310 ⇑ P P 00 50 15.2 +0.4
PRD **Provadia** 58.85 308 eP P 00 50 18.5 +0.5
JOF **Joensuu** 58.98 332 P P 00 50 18.7 +0.1
JOF pmax pmax
comp=Z,28nm,0.9s
ASAR **Alice Springs** 59.19 137 P P 00 50 20.5 -0.1
comp=Z,1.8nm,0.7s,baz=313,slow=5.8,SNR=4.1
LVZ **Lovozero** 59.20 338⇑ eP P 00 50 19.8 -0.3
LVZ pmax pmax
comp=Z,8.0nm,0.8s
LVZ **Lovozero** 59.20 338 eP P 00 50 19.4 -0.6
comp=Z,14nm,0.9s
PLOR **Plostina** 59.39 312 ⇓ iP P 00 50 23.3 +1.5
PLOR **Plostina** 59.39 312 ⇓ P P 00 50 23.3 +1.5
TESR **Tescani** 59.40 312 ⇓ iP P 00 50 21.7 -0.1
KARP **Karpathos** 59.40 300 eP P 00 50 22.6 +0.6
comp=Z,34nm,0.9s
JMB **Yambol** 59.46 308 eP P 00 50 23.5 +1.2
KMBO **Kilima Mbogo** 59.47 256 P P 00 50 23.3 +0.3
comp=Z,2.7nm,1.0s,baz=50,slow=11,SNR=4.5
APA **Apatity** 59.53 337⇑ iP P 00 50 21.0 -1.3
APA pmax pmax
comp=Z,4.0nm,0.8s
APA MLR MLR
comp=Z,1μm,14.0s
MLR **Muntele Rosu** 59.88 311 P P 00 50 26.4 +1.1
comp=Z,6.8nm,0.9s,baz=91,slow=1.3,SNR=73
MLR **Muntele Rosu** 59.88 311 ⇓ iP P 00 50 26.6 +1.3
MLR **Muntele Rosu** 59.88 311 eP P 00 50 26.0 +0.7
MLR pmax pmax
comp=Z,33nm,0.9s
MLR **Muntele Rosu** 59.88 311 eP P 00 50 26.0 +0.7
comp=Z,32nm,0.9s
DOPR **Dopca** 60.27 312⇑ iP P 00 50 28.2 +0.4
VSU **Vasula** 60.30 326*ce*P P 00 50 27.8 +0.1
VSU pmax pmax
comp=Z,34nm,0.8s
KDZ **Kurdzhali** 60.36 307 eP P 00 50 29.2 +0.7
BURAR **Bucovina Array** 60.40 314⇑ iP P 00 50 29.3 +0.6
BURAR **Bucovina Array** 60.40 314 ⇑ P P 00 50 29.3 +0.6
BUR08 **Bucovina Ar. S** 60.41 314 eP P 00 50 29.4 +0.6
VOIR 60.51 311 ⇓ iP P 00 50 28.5 -1.0
VOIR 60.51 311 ⇓ P P 00 50 28.5 -1.0
MSF **Maaselka** 60.70 335 P P 00 50 30.3 0.0
MSF pmax pmax
comp=Z,12nm,1.3s
ARR **Arges** 60.81 311 ⇓ iP P 00 50 32.0 +0.5
LAST **Lasithi** 60.81 299 eP P 00 50 32.5 +0.8
comp=Z,23nm,0.9s
RZN **Rozhen** 60.88 307 eP P 00 50 32.7 +0.5
FIA1 **FINESS Array S** 61.08 329 eP P 00 50 33.1 +0.2
FINES **FINESS Array B** 61.08 329 P P 00 50 32.9 -0.1
comp=Z,11nm,0.8s,baz=101,slow=9.9,SNR=44
SUF **Sumiainen** 61.26 331 P P 00 50 34.1 0.0
SUF pmax pmax
comp=Z,26nm,1.0s
IDI **Anoyia** 61.27 300 P P 00 50 34.5 -0.4
comp=Z,8.6nm,0.7s,baz=120,slow=7.7
LOT **Lotru** 61.41 311 ⇓ iP P 00 50 35.7 0.0
CJR **Cluj-Napoca** 61.50 313⇑ iP P 00 50 36.9 +0.7
CJR **Cluj-Napoca** 61.50 313 ⇑ P P 00 50 36.9 +0.7
MPEP **Malo Peshtene** 61.52 309 eP P 00 50 37.1 +0.8
OUL **Oulu** 61.80 334 P P 00 50 38.5 +0.8
OUL pmax pmax
comp=Z,14nm,1.7s
SUW **Suwalki** 61.87 321 eP P 00 50 38.2 -0.2
SUW **Suwalki** 61.87 321 eP P 00 50 38.2 -0.2
VTS **Vitosha** 61.95 308⇑ iP P 00 50 39.9 +0.6
VTS **Vitosha** 61.95 308 eP P 00 50 40.0 +0.6
VTS pmax pmax
comp=Z,10.0nm,0.9s
VTS **Vitosha** 61.95 308 eP P 00 50 39.5 +0.1
VTS **Vitosha** 61.95 308 eP P 00 50 40.0 +0.6
comp=Z,9.8nm,0.9s
KWP **Kalwaria Pacla** 62.07 316 eP P 00 50 40.4 +0.5
KWP **Kalwaria Pacla** 62.07 316 eP P 00 50 40.4 +0.5
KKB **Krupnik** 62.09 307 eP P 00 50 39.9 -0.3
DRGR 62.11 313 ⇓ iP P 00 50 41.2 +0.9
DRGR 62.11 313 P P 00 50 41.1 +0.8
DRGR pmax pmax
comp=Z,34nm,1.1s
UZH **Uzhgorod** 62.35 315 eP P 00 50 41.9 +0.2
UZH e 00 50 53.3
KOLS **Kolonicke sedl** 62.36 315 eP P 00 50 42.5 +0.7
KOLS pmax pmax
comp=Z,7.0nm,1.6s
KOLS **Kolonicke sedl** 62.36 315 eP P 00 50 42.5 +0.7
SIRR **Siria** 62.86 312 ⇓ iP P 00 50 46.1 +0.9
ARCES **ARCESS Array B** 62.87 332 P P 00 50 45.0 +0.1
comp=Z,4.9nm,0.7s,baz=97,slow=6.3,SNR=24
CRVS **Cervenica-Dubn** 62.90 315 eP P 00 50 46.6 +1.2
CRVS **Cervenica-Dubn** 62.90 315 eP P 00 50 46.6 +1.2
AGG **Agios Georgios** 62.91 304 eP P 00 50 44.9 -0.8
AGG pmax pmax
comp=Z,36nm,1.3s
AGG **Agios Georgios** 62.91 304 eP P 00 50 44.9 -0.8
comp=Z,36nm,1.3s
BZS **Buzias** 62.92 311⇑ iP P 00 50 46.1 +0.5
BZS **Buzias** 62.92 311 ⇑ P P 00 50 46.1 +0.5
STHS **Stebnicka Huta** 63.03 316 eP P 00 50 46.5 +0.2
STHS pmax pmax
comp=Z,2.0nm,0.9s
STHS **Stebnicka Huta** 63.03 316 eP P 00 50 46.5 +0.2
BEL **Belsk** 63.28 318 eP P 00 50 48.8 +0.9
BEL **Belsk** 63.28 318 eP P 00 50 48.8 +0.9
KECS **Kecovo** 63.56 315 eP P 00 50 50.4 +0.6
KECS pmax pmax
comp=Z,4.0nm,1.3s
KECS **Kecovo** 63.56 315 eP P 00 50 50.4 +0.6
NIE **Niedzica** 63.64 316 eP P 00 50 51.1 +0.7
NIE **Niedzica** 63.64 316 eP P 00 50 51.1 +0.7
OJC **Ojcow** 63.94 317 eP P 00 50 53.0 +0.7
OJC **Ojcow** 63.94 317 eP P 00 50 52.9 +0.7
OJC pmax pmax
comp=Z,7.0nm,0.8s
OJC **Ojcow** 63.94 317 eP P 00 50 52.9 +0.7
comp=Z,6.8nm,0.8s
PSZ **Piszkesteto** 63.98 314 eP P 00 50 53.4 +0.8
PSZ pmax pmax
comp=Z,8.0nm,1.0s
PSZ **Piszkesteto** 63.98 314 eP P 00 50 53.4 +0.8
comp=Z,8.4nm,1.0s
BILL **Bilibino** 64.10 24⇓ iP P 00 50 53.3 +0.3
BILL e 00 51 25.7
BILL e 00 53 17.8
BILL eS S 00 59 14.3 -11
BILL pmax pmax
comp=Z,22nm,2.5s
LANS **Liptovska Anna** 64.20 315 eP P 00 50 52.6 -1.4
LANS **Liptovska Anna** 64.20 315 eP P 00 50 52.6 -1.4
TIR **Tirane** 64.54 307 ⇓ iP P 00 50 55.7 -0.6
TIR **Tirane** 64.54 307 eP P 00 50 56.0 -0.3
TIR pmax pmax
comp=Z,14nm,0.7s
TIR **Tirane** 64.54 307 eP P 00 50 56.0 -0.3
comp=Z,14nm,0.7s
VYHS **Vyhne** 64.65 315 eP P 00 50 57.5 +0.5
VYHS pmax pmax
comp=Z,3.0nm,1.1s
VYHS **Vyhne** 64.65 315 eP P 00 50 57.5 +0.5
PDG **Podgorica** 64.87 308 ⇓ iP P 00 50 58.1 -0.4
OKC **Ostrava-Krasne** 65.02 316 eP P 00 50 59.7 +0.4
OKC epP pP 00 51 14.6 -0.5
OKC **Ostrava-Krasne** 65.02 316 eP P 00 50 59.7 +0.4
OKC e 00 51 14.6
MBAR **Mbarara** 65.19 259 eP P 00 51 01.3 +0.1
MBAR pmax pmax
comp=Z,8.0nm,0.9s
MBAR **Mbarara** 65.19 259 eP P 00 51 01.3 +0.1
comp=Z,7.5nm,0.9s
MORC **Moravsky Berou** 65.41 316⇑ iP P 00 50 59.8 -2.2
MORC **Moravsky Berou** 65.41 316 eP P 00 51 02.9 +0.9
MORC pmax pmax
comp=Z,34nm,1.0s
MORC **Moravsky Berou** 65.41 316 eP P 00 51 02.9 +0.9
comp=Z,34nm,1.0s
KRLC **Kraliky** 65.88 317 eP P 00 51 05.5 +0.5
KRLC epP pP 00 51 21.6 +0.8
KRLC **Kraliky** 65.88 317 eP P 00 51 05.5 +0.5
KRLC e 00 51 21.6
VRAC **Vranov** 66.07 316 P P 00 51 06.9 +0.8
comp=Z,9.3nm,1.0s,baz=97,slow=5.6,SNR=16
VRAC **Vranov** 66.07 316 ⇓ iP P 00 51 06.9 +0.8
KSP **Ksiaz** 66.14 317 eP P 00 51 07.3 +0.8
KSP **Ksiaz** 66.14 317 eP P 00 51 07.3 +0.8
DPC **Dobruska-Polom** 66.16 317 eP P 00 51 07.3 +0.6
DPC epP pP 00 51 23.2 +0.6
DPC **Dobruska-Polom** 66.16 317 eP P 00 51 07.3 +0.6
DPC e 00 51 23.2
UPC **Upice** 66.34 317 eP P 00 51 08.4 +0.6
UPC **Upice** 66.34 317 eP P 00 51 08.4 +0.6
KOGS **Kog** 66.58 313 iP P 00 51 09.8 +0.4
CONA **Conrad Observa** 66.68 314 iP P 00 51 10.6 +0.4
comp=Z,2.0nm,0.5s,SNR=12
ARSA **Arzberg** 66.98 314 iP P 00 51 12.4 +0.3
comp=Z,2.8nm,0.7s,SNR=5.6
HFS **Hagfors** 67.06 328 P P 00 51 12.1 -0.1
comp=Z,4.4nm,0.5s,baz=93,slow=5.3,SNR=80
TIP **Timpagrande** 67.18 305 eP P 00 51 13.5 0.0
comp=Z,6.7nm,0.7s
PRU **Pruhonice** 67.33 317 eP P 00 51 15.0 +0.9
PRU epP pP 00 51 30.1 +0.1
PRU **Pruhonice** 67.33 317 eP P 00 51 15.0 +0.9
PRU e 00 51 30.1
BOJS **Bojanci** 67.38 312 iP P 00 51 15.1 +0.6
SOKA **Soboth** 67.38 313 iP P 00 51 15.2 +0.5
comp=Z,6.4nm,0.8s,SNR=9.1
PDKS **Podkum** 67.48 312 eP P 00 51 16.0 +0.7
BRG **Berggiesshubel** 67.62 318 eP P 00 51 16.5 +0.6
comp=Z,11nm,1.1s
BRG e 00 51 32.2
comp=Z,5.3nm,0.9s
BRG **Berggiesshubel** 67.62 318 eP P 00 51 16.5 +0.6
BRG e 00 51 32.2
BRG pmax pmax
comp=Z,11nm,1.1s
OBKA **Obir** 67.74 313 iP P 00 51 16.6 -0.3
comp=Z,9.0nm,0.9s,SNR=7.1
MOA **Molln** 67.76 314 iP P 00 51 17.1 +0.2
comp=Z,5.4nm,0.6s,SNR=11
CUC **Castrocucco** 67.77 306 eP P 00 51 17.0 -0.2
comp=Z,5.0nm,0.8s
LJU **Ljubljana** 67.81 312 iP P 00 51 18.1 +0.8
NC405 **NORSAR Array S** 67.98 329 eP P 00 51 17.5 -0.5
CEL **Celeste** 68.00 304 eP P 00 51 19.3 +0.6
comp=Z,25nm,0.9s
GEC2 **GERESS Array S** 68.01 315 eP P 00 51 19.1 +0.6
GEC2 pmax pmax
comp=Z,12nm,0.8s
GEC2 **GERESS Array S** 68.01 315 eP P 00 51 19.1 +0.6
comp=Z,12nm,0.8s
GERES **GERESS Array B** 68.01 315 P P 00 51 19.1 +0.6
comp=Z,7.2nm,0.7s,baz=79,slow=6.9,SNR=39
GEA0 **GERESS Array S** 68.01 315 eP P 00 51 18.9 +0.4
KHC **Kasperske Hory** 68.05 316 eP P 00 51 19.1 +0.3
KHC epP pP 00 51 34.7 0.0
KHC **Kasperske Hory** 68.05 316 eP P 00 51 19.3 +0.5
KHC pmax pmax
comp=Z,3.0nm,1.1s
KHC **Kasperske Hory** 68.05 316 eP P 00 51 19.2 +0.5
comp=Z,2.6nm,1.1s
NC602 **NORSAR Array S** 68.09 328 eP P 00 51 18.4 -0.3
NC303 **NORSAR Array S** 68.14 329 eP P 00 51 19.0 0.0
CLL **Collm** 68.16 318 iP P 00 51 19.4 +0.1
comp=Z,9.0nm,1.2s
CLL *i* pP pP 00 51 35.4 +0.2
CLL *es*P PcP 00 51 44.0 -0.9
CLL **Collm** 68.16 318 iP P 00 51 19.4 +0.1
CLL *i* *PP pP 00 51 35.4 +0.2
CLL e*SP PcP 00 51 44.0 -0.9
CLL pmax pmax
comp=Z,9.0nm,1.2s
NB2 **NORSAR Subarra** 68.23 329 P P 00 51 18.6 -1.0
comp=Z,6.6nm,0.7s,baz=85,slow=6.5
NOA **NORSAR Array B** 68.23 329 P P 00 51 19.0 -0.6
comp=Z,7.2nm,0.8s,baz=86,slow=6.2,SNR=25
NOA **NORSAR Array B** 68.23 329 P P 00 51 19.0 -0.6
CADS **Cadrg** 68.33 313 iP P 00 51 20.4 -0.2
MYKA **Terra Mystica** 68.34 313 iP P 00 51 20.6 0.0
comp=Z,1.4nm,0.5s
TRI **Trieste** 68.39 312 eP P 00 51 20.8 0.0
TRI pmax pmax
comp=Z,18nm,0.9s
TRI **Trieste** 68.39 312 eP P 00 51 20.8 0.0
comp=Z,18nm,0.9s
NC204 **NORSAR Array S** 68.43 329 eP P 00 51 20.3 -0.6
KBA **Koelnbreinsper** 68.48 314 iP P 00 51 21.5 -0.2
comp=Z,4.0nm,0.6s
NKC **Novy Kostel** 68.64 317 eP P 00 51 23.5 +1.1
NKC **Novy Kostel** 68.64 317 eP P 00 51 23.5 +1.1
ABTA **Abfaltersbach** 69.09 313 iP P 00 51 24.5 -0.8
comp=Z,6.2nm,1.1s
AQU **L'Aquila** 69.18 309 eP P 00 51 26.6 +0.7
AQU pmax pmax
comp=Z,13nm,1.1s
AQU **L'Aquila** 69.18 309 eP P 00 51 26.6 +0.7
comp=Z,13nm,1.1s
GRFO **Grafenberg** 69.50 317 eP P 00 51 28.7 +1.0
GRFO pmax pmax
comp=Z,29nm,1.5s
GRFO **Grafenberg** 69.50 317 eP P 00 51 28.7 +1.0
comp=Z,29nm,1.5s
WTTA **Wattenberg** 69.60 314 iP P 00 51 27.7 -0.9
comp=Z,5.7nm,0.8s
WATA **Walderalm** 69.63 314 iP P 00 51 28.2 -0.5
comp=Z,5.2nm,0.7s
STKA **Stephens Creek** 69.77 138 P P 00 51 29.0 -0.5
comp=Z,7.5nm,0.8s,baz=276,slow=8.1,SNR=5.4
MOTA **Moosalm** 69.95 314 iP P 00 51 30.5 -0.2
comp=Z,7.4nm,0.8s,SNR=8.6
RETA **Reutte** 70.15 314 iP P 00 51 31.6 -0.2
comp=Z,9.9nm,0.8s,SNR=10
CLTB **Caltabellotta** 70.21 304 eP P 00 51 32.5 +0.1
comp=Z,7.4nm,0.7s
FETA **Feichten** 70.25 314 iP P 00 51 32.1 -0.4
comp=Z,5.3nm,0.8s,SNR=7.2
DAVA **Damuels** 70.78 314 iP P 00 51 35.7 0.0
comp=Z,9.9nm,0.9s,SNR=5.5
DAVOX **Davos/Dischmat** 70.87 314 P P 00 51 36.2 -0.1
comp=Z,5.2nm,0.8s,baz=91,slow=3.7,SNR=9.6
STU **Stuttgart** 70.96 316 eP P 00 51 37.6 +0.9
STU pmax pmax
comp=Z,9.0nm,0.8s
STU **Stuttgart** 70.96 316 eP P 00 51 37.6 +0.9
comp=Z,8.8nm,0.8s
TUE **Stuetta** 71.29 313 eP P 00 51 38.8 -0.2
comp=Z,32nm,1.9s
BFO **Black Forest** 71.61 315 iP P 00 51 41.3 +0.7
BFO **Black Forest** 71.61 315 eP P 00 51 40.9 +0.3
CDF **Champ du Feu** 72.28 316 eP P 00 51 44.0 -0.7
CDF pmax pmax
comp=Z,8.0nm,1.0s
PGF **Pioggiola** 72.33 309 eP P 00 51 44.7 -0.5
PGF pmax pmax
comp=Z,17nm,0.8s
MEM **Membach** 72.63 318 P P 00 51 47.2 +0.5
SENIN **Lac Senin/Sane** 72.70 314 eP P 00 51 48.1 +0.7
comp=Z,7.8nm,0.8s
VSL **Villasalto** 72.74 306 eP P 00 51 47.6 +0.1
comp=Z,37nm,1.4s
WLF **Walferdange** 72.74 317 P P 00 51 48.8 +1.5
comp=Z,20nm,1.8s
WLF AP PcP 00 52 04.5 +0.1
WLF **Walferdange** 72.74 317 eP P 00 51 48.4 +1.1
WLF pmax pmax
comp=Z,25nm,1.1s
WLF **Walferdange** 72.74 317 eP P 00 51 48.4 +1.1
comp=Z,25nm,1.1s
SBF **Sospel** 73.16 311 eP P 00 51 49.4 -0.6
SBF pmax pmax
comp=Z,12nm,1.0s
LPG **La Plagne** 73.26 313 eP P 00 51 50.5 -0.3
LPG pmax pmax
comp=Z,11nm,1.1s
LPL **La Plagne** 73.27 313 eP P 00 51 50.5 -0.3
LPL pmax pmax
comp=Z,14nm,1.2s
KEST **Kesra** 73.66 302 P P 00 51 53.5 +0.4
comp=Z,13nm,1.0s,baz=323,slow=4.3,SNR=14
KEST **Kesra** 73.66 302 eP P 00 51 54.2 +1.1
comp=Z,18nm,1.0s
SNF **Seneffe** 73.73 318 P P 00 51 53.3 +0.2
FRF **La Foret Royal** 73.78 311 eP P 00 51 53.1 -0.5
FRF pmax pmax
comp=Z,15nm,1.0s
LSZ **Lusaka** 73.81 246 eP P 00 51 54.7 +0.4
LSZ pmax pmax
comp=Z,10.0nm,0.6s
LSZ **Lusaka** 73.81 246 eP P 00 51 54.7 +0.4
comp=Z,9.7nm,0.6s
ORIF **Oris-en-Rattie** 74.00 312 eP P 00 51 55.4 +0.5
ORIF pmax pmax
comp=Z,4.0nm,1.0s
LOR **Lormes** 74.78 315 eP P 00 51 58.5 -0.8
LOR pmax pmax
comp=Z,11nm,1.2s
SSB **Saint Sauveur** 74.83 313 eP P 00 51 59.6 0.0
SSB pmax pmax
comp=Z,31nm,2.0s
SSB **Saint Sauveur** 74.83 313 eP P 00 51 59.6 0.0
comp=Z,31nm,2.0s
VIVF **Saint-Julien-l** 74.84 313 eP P 00 51 59.2 -0.5
VIVF pmax pmax
comp=Z,11nm,1.2s
SMF **Signal de Mont** 74.95 314 eP P 00 51 59.5 -0.8
SMF pmax pmax
comp=Z,9.0nm,0.9s
SSF **Saint Saulge** 75.07 315 eP P 00 52 00.4 -0.6
AVF **Avril sur Loir** 75.24 315 eP P 00 52 01.3 -0.6
AVF pmax pmax
comp=Z,6.0nm,0.8s
TCF **Toulx Ste Croi** 76.14 314 eP P 00 52 06.9 -0.2
TCF pmax pmax
comp=Z,13nm,1.0s
CAF **Calviac** 76.61 313 eP P 00 52 09.7 -0.1
EKA **Eskdalemuir Ar** 76.78 324 P P 00 52 10.8 +0.3
comp=Z,6.6nm,0.8s,baz=76,slow=5.7,SNR=26
ESK **Eskdalemuir** 76.81 324 iP P 00 52 12.6 +1.9
LFF **La Frestale** 77.51 313 eP P 00 52 16.1 +1.3
LFF pmax pmax
comp=Z,17nm,1.2s
MFF **Saint Martin d** 77.61 315 eP P 00 52 15.0 -0.3
MFF pmax pmax
comp=Z,15nm,1.4s
TAM **Tamanrasset** 80.58 291 eP P 00 52 33.1 +0.9
TAM **Tamanrasset** 80.58 291 eP P 00 52 33.1 +0.9
CAST **Castle Rocks** 81.53 25 eP P 00 52 36.9 +0.5
COLA **College** 82.32 22 eP P 00 52 39.3 -1.1
COLA pmax pmax
comp=Z,3.0nm,0.4s
ES19 **SONSECA Array** 82.47 310 eP P 00 52 42.3 +0.5
BOSA **Boshof** 82.51 236 P P 00 52 42.5 +0.3
comp=Z,20nm,0.9s,baz=67,slow=3.9,SNR=35
ESDC **Sonseca Array** 82.53 310 P P 00 52 42.5 +0.4
comp=Z,1.4nm,0.6s,baz=55,slow=5.2,SNR=16
IL1 **Eielson Array** 82.71 22 eP P 00 52 41.0 -1.5
ILAR **Eielson Array** 82.71 22 P P 00 52 41.5 -1.0
comp=Z,2.8nm,0.8s,baz=303,slow=5.5,SNR=14
ILB **Eielson Array** 82.71 22 eP P 00 52 42.3 -0.2
SUA **Susitna One** 83.07 26 eP P 00 52 44.7 +0.1
PMR **Palmer** 83.66 25 eP P 00 52 47.0 -0.3
PMR **Palmer** 83.66 25 eP P 00 52 47.0 -0.3
SML **Sawmill** 83.85 25 eP P 00 52 48.6 +0.1
SML **Sawmill** 83.85 25 eP P 00 52 48.6 +0.1
MVO **Moncorvo** 84.15 312 eP P 00 52 51.2 +0.8
comp=Z,12nm,0.9s
MVO epP pP 00 53 06.9 +0.1
DOT **Dot Lake** 84.38 22 eP P 00 52 51.1 0.0
PVRL **Vila Real** 84.58 312 eP P 00 52 53.2 +0.6
POLO **Lamas de Olo** 84.60 312 eP P 00 52 53.7 +1.0
comp=Z,12nm,2.0s
POLO epP pP 00 53 09.1 0.0
PCAB **Cabril** 84.62 313 eP P 00 52 50.9 -1.9
comp=Z,22nm,1.7s
PGAV **Gavieira, Arco** 84.69 313 eP P 00 52 54.2 +1.0
comp=Z,30nm,1.9s
MTE **Manteigas** 84.80 311 eP P 00 52 55.3 +1.5
comp=Z,20nm,1.8s
MTE epP pP 00 53 09.3 -0.9
PVIS **Viseu** 84.92 312 eP P 00 52 55.4 +1.1
comp=Z,20nm,1.7s
PVIS epP pP 00 53 11.0 +0.3
PCBR **Castelo Branco** 84.98 311 eP P 00 52 55.2 +0.7
comp=Z,14nm,1.0s
PCBR epP pP 00 53 11.4 +0.5
KLU **Klutina** 84.98 25 eP P 00 52 54.8 +0.6
PMRV **Marv??o** 85.08 310 eP P 00 52 56.0 +0.9
comp=Z,11nm,1.9s
PMRV epP pP 00 53 10.8 -0.7

PBAR	**Barrancos**	**85.31**	**309**	*e*P		**P**	**00 52 57.2**	**+0.9**
	comp=Z,48nm,1.8s							
PBAR				*e*pP		**pP**	**00 53 12.8**	**+0.1**
PCAS	**Casmilo, Conde**	**85.61**	**311**	*e*P		**P**	**00 52 58.4**	**+0.7**
	comp=Z,28nm,1.7s							
PCAS				*e*pP		**pP**	**00 53 14.2**	**+0.1**
PTOM	**Tomar**	**85.73**	**311**	*e*P		**P**	**00 52 59.7**	**+1.4**
	comp=Z,19nm,1.4s							
BMRM	**Bremner River**	**85.80**	**25**	*e*P		**P**	**00 52 58.9**	**+0.6**
EVO	**Evora**	**85.88**	**310**	*e*P		**P**	**00 53 00.2**	**+1.2**
	comp=Z,18nm,1.5s							
PMAFR	**Mafra**	**86.61**	**310**	*e*P		P	00 52 56.9	-5.8
	comp=Z,87nm,2.1s							
PMAFR				*e*pP		pP	00 53 19.3	+0.2
TORD	**Torodi Ar. Bea**	**87.28**	**283**	P		**P**	**00 53 06.8**	**+0.5**
	comp=Z,8.1nm,0.9s,baz=72,slow=4.4,SNR=39							
TORD				PP		**PP**	**00 56 30.3**	**-0.7**
	comp=Z,0.5nm,0.8s,baz=64,slow=6.8,SNR=3.5							
YKA	**Yellowknife Ar**	**93.73**	**13**	P		**P**	**00 53 34.9**	**-0.5**
	comp=Z,1.6nm,0.8s,baz=329,slow=4.5,SNR=8.2							
PDAR	**Pinedale Array**	**112.94**	**18**	PKiKP		**PKiKP**	**00 58 56.0**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=0.0,slow=0.0,SNR=4.7							
ANMO	**Albuquerque**	**121.07**	**19**	⇑*i*PKIKP		**PKPdf**	**00 59 13.2**	**+1.1**
ANMO				pmax		pmax		
	comp=Z,6.0nm,2.5s							
MNTX	**Cornudas Mount**	**124.41**	**20**	*e*PKPdf		**PKPdf**	**00 59 18.8**	**+0.4**
JCT	**Junction City**	**127.11**	**15**	*e*PKIKP		**PKPdf**	**00 59 23.7**	**+0.1**
JCT	**Junction City**	**127.11**	**15**	*e*PKPdf		**PKPdf**	**00 59 23.7**	**+0.1**
TXAR	**Lajitas Array**	**127.14**	**19**	PKP		**PKPdf**	**00 59 24.1**	**+0.4**
	comp=Z,2.0nm,0.7s,baz=209,slow=2.2,SNR=18							
SDV	**Santo Domingo**	**146.53**	**331**	PKPbc		**PKPdf**	**00 59 59.7**	**-0.1**
	comp=Z,25nm,0.8s,baz=349,slow=3.2,SNR=7.7							
SDV	**Santo Domingo**	**146.53**	**331**	*e*PKPdf		**PKPdf**	**00 59 59.4**	**-0.5**
SDV				PKPbc		**PKPdf**	**00 59 59.7**	**-0.1**
PTGA	**Pitinga**	**147.37**	**305**	PKPbc		**PKPbc**	**01 00 03.4**	**0.0**
	comp=Z,4.0nm,0.7s,baz=14,slow=2.4,SNR=9.2							
ROSC	**El Rosal**	**151.73**	**334**	PKPbc		**PKPbc**	**01 00 15.7**	**+0.9**
	comp=Z,17nm,0.7s,baz=127,slow=6.8,SNR=9.1							
CPUP	**Villa Florida**	**153.07**	**253**	PKPbc		**PKPbc**	**01 00 15.9**	**-1.0**
	comp=Z,2.5nm,0.8s,baz=94,slow=1.9,SNR=4.2							
CPUP				PKPab		**PKPab**	**01 00 28.6**	**+0.1**
	comp=Z,5.7nm,1.1s,baz=148,slow=3.9,SNR=4.0							
SIV	**San Ignacio**	**155.65**	**278**	PKPab		**PKPab**	**01 00 39.9**	**0.0**
	comp=Z,4.8nm,1.0s,baz=115,slow=6.0,SNR=5.7							
LPAZ	**La Paz**	**162.22**	**282**	PKPab		**PKPab**	**01 01 08.2**	**-0.8**
	comp=Z,1.4nm,0.8s,baz=98,slow=4.7,SNR=3.5							
LVC	**Limon Verde**	**163.86**	**261**	PKPab		**PKPab**	**01 01 16.0**	**+0.1**
	comp=Z,20nm,0.9s,baz=72,slow=8.8,SNR=4.5							

*IDC **10** 00:45:52.4±0.9, 8.°30S×156.°90E, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.7/44, mbtmp3.9/5, ML4.5/1, Error ellipse: s-maj=36.7km s-min=24.9km az=13.0*
*ISCJB **10** 00:45:53.7±0.6, 8.°3S±0.°1×156.°95E±0.°08, h19km, mb4.3/10, Error ellipse: s-maj=21.0km s-min=9.1km az=17.5*
*NEIC **10** 00:45:57.4±0.5, 8.°42S×157.°00E, h35km, mb4.4/5, Error ellipse: s-maj=16.8km s-min=9.9km az=191.0*

ISC 10 00:45:55.3±0.7, 8.°4S±0.°2×156.°98E±0.°08, h19km, n15, σ1s04/19, mb4.2/10, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HNR	**Honiara**	**3.11**	**110**	Pn		**Pn**	**00 46 43.0**	**-0.3**
	48nm,0.3s,baz=271,slow=1.3,SNR=10							
HNR				Sn		**Sb**	**00 47 25.7**	**-1.8**
	45nm,0.3s,baz=17,slow=19,SNR=7.6							
HNR	**Honiara**	**3.11**	**110**	*e*P		**Pn**	**00 46 42.0**	**-1.3**
HNR				*e*S		**Sn**	**00 47 22.0**	**+2.0**
HNR	**Honiara**	**3.11**	**110**	*e*Pn		**Pn**	**00 46 42.7**	**-0.6**
HNR				*e*Sn		**Sn**	**00 47 21.9**	**+1.9**
WRA	**Warramunga Arr**	**24.73**	**240**	P		**P**	**00 51 15.9**	**+0.1**
	4.0nm,1.0s,baz=67,slow=10,SNR=2.7							
WRA				PcP		**PcP**	**00 54 52.5**	**-0.1**
	1.0nm,0.8s,baz=65,slow=2.7,SNR=4.1							
KKM	**Kota Kinabalu**	**43.10**	**288**	*e*P		**P**	**00 53 54.1**	**-0.7**
	2.7nm,0.5s							
XMAS	**Kiritimati**	**46.61**	**79**	*e*P		**P**	**00 54 22.9**	**+0.2**
	0.7nm,0.9s							
KSM	**Kuching**	**47.54**	**280**	P		**P**	**00 54 30.1**	**+0.1**
	4.1nm,0.5s							
MAJO	**Matsushiro**	**48.05**	**340**	*e*P		**P**	**00 54 33.5**	**-0.1**
	1.7nm,0.7s							
YSS	**Yuzh-Sakhalins**	**56.54**	**348**	P		**P**	**00 55 36.8**	**+0.4**
	4.8nm,0.3s							
COCO	**West Island**	**59.20**	**261**	*e*P		**P**	**00 55 56.4**	**+0.7**
	250nm,0.8s							
ILAR	**Eielson Array**	**83.96**	**21**	P		**P**	**00 58 24.4**	**+0.6**
	0.3nm,0.7s,baz=248,slow=3.8,SNR=3.5							
MKAR	**Makanchi Array**	**85.75**	**318**	P		**P**	**00 58 33.2**	**-0.1**
	0.8nm,0.6s,baz=102,slow=4.8,SNR=8.7							
KURK	**Kurchatov**	**89.14**	**321**	P		**P**	**00 58 48.5**	**-1.0**
KURBB	**Kurchatov Arra**	**89.17**	**321**	P		**P**	**00 58 48.5**	**-1.1**
	0.2nm,0.6s,baz=107,slow=4.1,SNR=2.8							
BDFB	**Brasilia**	**145.60**	**134**	PKPbc		**PKPab**	**01 05 34.0**	**0.0**
	baz=258,slow=3.9							

*CSEM **10** 00:52:44.5, 37.°99N×24.°84E, h18km, ML1.8/4*
ATH 10 00:52:44.5, 37.°99N×24.°84E, h18km±3km, ML1.8/4, Error ellipse: s-maj=3.5km s-min=1.0km az=128.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PTL	**Penteli**	**0.77**	**275**	P		Pb	00 52 59.2	-0.2
PTL				S		Sn	00 53 11.4	-0.3
PTL	**Penteli**	**0.77**	**275**	P		Pb	00 52 59.2	-0.2
PTL				S		Sn	00 53 11.4	-0.3
PTL				AML		AML	00 53 12.1	
	comp=N,64μm,0.4s							
PTL				AML		AML	00 53 13.3	
	comp=E,52μm,0.3s							
EREA	**Eretria**	**0.84**	**301**	P		Pn	00 53 01.3	-0.1
EREA				S		Sb	00 53 11.0	-0.4
EREA	**Eretria**	**0.84**	**301**	P		Pn	00 53 01.3	-0.1
EREA				S		Sb	00 53 11.0	-0.4
EREA				AML		AML	00 53 13.3	
	comp=N,190μm,0.5s							
EREA				AML		AML	00 53 13.9	
	comp=E,150μm,0.4s							
VLY	**Voula,Athens**	**0.84**	**261**	P		Pb	00 53 00.3	-0.2
VLY				S		Sg	00 53 12.4	+0.4
VLY	**Voula,Athens**	**0.84**	**261**	P		Pb	00 53 00.3	-0.2
VLY				S		Sg	00 53 12.4	+0.4
VLY				AML		AML	00 53 14.0	
	comp=N,80μm,0.6s							
VLY				AML		AML	00 53 15.9	
	comp=E,111μm,0.5s							
SERI	**Serifos**	**0.87**	**199**	P		Pg	00 53 01.4	-0.1
SERI	**Serifos**	**0.87**	**199**	P		Pg	00 53 01.4	-0.1
CHOS	**Chios island**	**1.04**	**67**	P		Pn	00 53 04.3	+0.1
CHOS				S		Sb	00 53 17.5	+0.3
CHOS	**Chios island**	**1.04**	**67**	P		Pn	00 53 04.3	+0.1
CHOS				S		Sb	00 53 17.5	+0.3
APE	**Apeiranthos**	**1.07**	**149**	P		Pn	00 53 04.8	+0.2
APE				S		Sn	00 53 19.1	+0.1
APE	**Apeiranthos**	**1.07**	**149**	P		Pn	00 53 04.8	+0.2
APE				S		Sn	00 53 19.1	+0.1
APE				AML		AML	00 53 20.2	
	comp=N,195μm,0.3s							
APE				AML		AML	00 53 20.5	
	comp=E,184μm,0.4s							
VILL	**Villia**	**1.22**	**279**	P		Pb	00 53 07.3	+0.3
VIL2	**Platees**	**1.26**	**281**	P		Pn	00 53 07.3	+0.1
DID	**Didima**	**1.36**	**250**	P		Pb	00 53 09.7	+0.3
DID	**Didima**	**1.36**	**250**	P		Pb	00 53 09.7	+0.3
LTK	**Loutraki**	**1.48**	**272**	P		Pg	00 53 12.5	-0.5
LTK	**Loutraki**	**1.48**	**272**	P		Pg	00 53 12.5	-0.6

*IDC **10** 00:56:38.8±0.8, 6.°98S×103.°46E, h0km, mb4.1/8, mb1 4.3/8, mb1mx4.1/55, mbtmp4.1/8, Error ellipse: s-maj=40.3km s-min=17.2km az=46.0*
*ISCJB **10** 00:56:39.2±0.6, 7.°21S±0.°05×103.°33E±0.°06, h20km, mb4.1/11, Error ellipse: s-maj=9.3km s-min=5.8km az=142.0*
*NEIC **10** 00:56:43.7±0.9, 7.°14S×103.°46E, h35km, mb4.6/2, Error ellipse: s-maj=24.4km s-min=13.2km az=45.0*
*DJA **10** 00:56:43.6±0.5, 7.°S±3.°×10.°4E±.°, h10km, M4.8/12, mB5.5/2, mb5.2/7, MLv4.6/12, Mw(mB)5.0/2*

ISC 10 00:56:42.0±0.7, 7.°20S±0.°06×103.°47E±0.°07, h20km, n54, σ2s34/46, mb4.2/11, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KASI	**Kota Agung**	**1.95**	**32**	P		**Pn**	**00 57 11.7**	**-2.3**
KASI				S		**Sn**	**00 57 32.4**	**-5.6**
LWLI	**Liwa**	**2.25**	**15**	P		**Pn**	**00 57 16.6**	**-1.6**
LWLI				S		**Sn**	**00 57 45.6**	**+0.2**
CGJI	**Cibinong**	**2.29**	**75**	P		**Pn**	**00 57 17.9**	**-0.7**
CGJI				S		**Sn**	**00 57 43.5**	**-2.7**
BLSI	**Bandar Lampung**	**2.54**	**44**	P		**Pn**	**00 57 22.3**	**+0.2**
KLSI		**2.79**	**27**	P		Pn	00 57 19.5	-6.1
SBJI	**Serang**	**2.85**	**68**	P		**Sn**	**00 57 57.0**	**-3.2**
SKJI	**Sukabumi**	**3.07**	**87**	P		**Pb**	**00 57 38.7**	**+2.7**
DBJI	**Dramaga**	**3.32**	**79**	P		**Pn**	**00 57 35.0**	**+2.1**
LHSI	**Lahat**	**3.35**	**1**	P		**Pn**	**00 57 32.1**	**-1.2**
CBJI	**Citeko**	**3.45**	**77**	P		**Pn**	**00 57 37.0**	**+2.4**
KSI	**Kapahiang**	**3.63**	**346**	P		**Pn**	**00 57 33.7**	**-3.5**
CNJI	**Cibinong**	**3.63**	**92**	P		**Pn**	**00 57 37.4**	**+0.2**
XMIS	**Christmas Isla**	**3.91**	**147**	*e*Pn		**Pn**	**00 57 38.9**	**-2.1**
CISI	**Cisompet, Garu**	**4.33**	**95**	P		**Pn**	**00 57 47.6**	**+0.8**
CISI	**Cisompet, Garu**	**4.33**	**95**	*e*Pn		**Pn**	**00 57 47.0**	**+0.2**
CMJI	**Cimerak**	**4.97**	**97**	P		**Pn**	**00 57 56.0**	**+0.4**
PPBI	**Pangkal Pinang**	**5.67**	**28**	P		**Pb**	**00 58 21.1**	**+0.8**
UGM	**Wanagama**	**7.03**	**96**	P		**Pn**	**00 58 25.6**	**+1.7**
	215nm,0.8s							
WOJI	**Wonogiri, Jawa**	**7.42**	**95**	P		**Pn**	**00 58 31.0**	**+1.8**
	128nm,0.9s							
PCJI	**Pacitan**	**7.71**	**98**	P		**Pn**	**00 58 36.1**	**+3.0**
	132nm,1.0s,0.4nm							
NGJI	**Ngawi**	**7.93**	**92**	P		**Pb**	**00 58 55.1**	**-3.8**
PWJI	**Pagerwojo**	**8.30**	**96**	P		**Pn**	**00 58 42.9**	**+1.5**
	211nm,0.8s,2μm0.6nm							
MNSI	**Mandailing Nat**	**8.84**	**334**	P		**Pn**	**00 58 50.0**	**+1.3**
	17nm,0.7s,0.1nm							
JAGI	**Jajag, Banyuwa**	**10.66**	**98**	P		Pn	00 59 20.5	+6.8
JAGI	**Jajag, Banyuwa**	**10.66**	**98**	*e*Pn		**Pn**	**00 59 15.0**	**+1.3**
	48nm,0.8s							
ABJI	**Asem Bagus**	**10.69**	**94**	P		Pn	00 59 25.2	+11
SRBI	**Singaraja**	**11.68**	**95**	P		**Pn**	**00 59 29.8**	**+2.2**
TTSI	**Tana Toraja**	**16.80**	**77**	P		P	01 00 48.4	+10
SOEI	**Soe**	**20.73**	**98**	P		Pn	01 01 30.0	+5.9
SOEI	**Soe**	**20.73**	**98**	*e*P		**P**	**01 01 21.8**	**+0.2**
	125nm,1.0s							
CHAI	**Chaiyaphum**	**23.00**	**356**	P		**P**	**01 01 50.7**	**+5.0**
	4.8nm,0.8s							
KHON	**Khomkaen**	**23.39**	**358**	P		**P**	**01 01 54.0**	**+4.3**
	12nm,0.8s							
CMAR	**Chiang Mai Arr**	**25.88**	**350**	P		**P**	**01 02 11.1**	**-1.6**
	5.4nm,0.7s,baz=184,slow=8.8,SNR=24							
CMMT	**Chiang Mai**	**26.23**	**350**	P		**P**	**01 02 20.0**	**+4.2**
CHTO	**Chiang Mai**	**26.23**	**350**	P		**P**	**01 02 20.1**	**+4.2**
	39nm,0.9s							
CHTO	**Chiang Mai**	**26.23**	**350**	*e*P		**P**	**01 02 14.2**	**-1.6**
	3.2nm,0.8s							
H01W3	**Cape Leeuwin H**	**29.25**	**162**	T		T	01 33 32.0	
	baz=340,slow=76,SNR=27							
H01W2	**Cape Leeuwin H**	**29.26**	**162**	T		T	01 33 33.2	
	baz=340,slow=76,SNR=43							
H01W1	**Cape Leeuwin H**	**29.27**	**162**	T		T	01 33 33.1	
	baz=340,slow=76,SNR=26							
H08S2	**Diego Garcia H**	**30.71**	**267**	T		T	01 35 04.8	
	baz=90,slow=74,SNR=187							
H08S3	**Diego Garcia H**	**30.72**	**267**	T		T	01 34 59.8	
	baz=90,slow=74,SNR=158							
H08S1	**Diego Garcia H**	**30.73**	**267**	T		T	01 35 03.6	
	baz=90,slow=74,SNR=207							
H08N1	**Diego Garcia H**	**32.23**	**270**	T		T	01 37 32.9	
	baz=161,slow=79,SNR=6.6							
H08N2	**Diego Garcia H**	**32.25**	**270**	T		T	01 37 33.4	
	baz=161,slow=79,SNR=6.3							
H08N3	**Diego Garcia H**	**32.26**	**270**	T		T	01 37 32.8	
	baz=161,slow=79,SNR=6.0							
WRA	**Warramunga Arr**	**32.50**	**116**	P		**P**	**01 03 12.2**	**+0.6**
	4.2nm,1.0s,baz=288,slow=10,SNR=6.8							
WRA				PcP		**PcP**	**01 05 58.7**	**+0.1**
	0.4nm,0.7s,baz=318,slow=2.1,SNR=4.0							
ASAR	**Alice Springs**	**33.48**	**123**	P		**P**	**01 03 21.5**	**+1.2**
	1.6nm,0.9s,baz=294,slow=7.7,SNR=9.4							
ASAR				PcP		**PcP**	**01 06 00.6**	**-0.6**
	0.6nm,0.8s,baz=300,slow=1.8,SNR=3.0							
JAY	**Jayapura**	**37.38**	**85**	P		**P**	**01 03 52.2**	**-1.7**
	0.7nm,0.8s,baz=106,slow=24,SNR=4.2							
STKA	**Stephens Creek**	**43.16**	**130**	P		**P**	**01 04 42.5**	**+1.0**
	4.8nm,0.8s,baz=287,slow=4.1,SNR=5.0							
STKA				PcP		**PcP**	**01 06 32.3**	**+1.3**
	1.7nm,0.8s,baz=322,slow=3.3,SNR=3.1							
KSH	**Kashi**	**52.99**	**333**	*e*P		**P**	**01 05 55.2**	**-2.4**
GEYT	**Alibeck**	**61.63**	**320**	P		**P**	**01 06 56.7**	**-1.8**
	1.8nm,0.9s,baz=152,slow=6.7,SNR=6.1							
VNDA	**Vanda**	**76.43**	**169**	P		**P**	**01 08 31.1**	**+1.3**
	1.8nm,1.0s,baz=287,slow=5.2,SNR=5.7							
BRTR	**Keskin Array B**	**79.36**	**313**	P		**P**	**01 08 46.0**	**-0.9**
	1.6nm,0.8s,baz=137,slow=6.8,SNR=15							
TXAR	**Lajitas Array**	**146.28**	**46**	PKPbc		**PKPab**	**01 16 23.2**	**+0.4**
	12nm,1.2s,baz=270,slow=0.9,SNR=3.0							

IDC 10 00:56:44.4±6.1, 17.°67S×178.°45W, h610km±65km, mb3.2/4, mb1 3.5/4, mb1mx3.0/39, mbtmp4.2/4, Error ellipse: s-maj=113.5km s-min=34.0km az=155.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CTA	**Charters Tower**	**33.45**	**260**	P		P	01 02 34.0	-1.0
	1.1nm,0.3s,baz=94,slow=11,SNR=2.8							
WRA	**Warramunga Arr**	**44.64**	**259**	P		P	01 04 05.0	+0.3
	2.1nm,0.4s,baz=94,slow=7.4,SNR=25							
WRA				PcP		PcP	01 05 32.5	-1.4
	0.4nm,0.3s,baz=95,slow=3.4,SNR=4.7							
ASAR	**Alice Springs**	**44.82**	**254**	P		P	01 04 06.7	+0.6
	5.1nm,0.6s,baz=88,slow=8.2,SNR=37							
ASAR				PcP		PcP	01 05 33.9	-0.6
	0.8nm,0.4s,baz=104,slow=3.9,SNR=7.9							
TXAR	**Lajitas Array**	**85.90**	**58**	P		P	01 08 21.3	-0.2
	0.7nm,0.7s,baz=229,slow=6.7,SNR=7.8							
BRTR	**Keskin Array B**	**144.59**	**315**	PKP		PKPbc	01 15 13.3	-0.1
	2.7nm,0.8s,baz=79,slow=2.0,SNR=3.3							
GERES	**GERESS Array B**	**147.37**	**345**	PKPbc		PKPbc	01 15 20.5	-0.3
	3.0nm,0.8s,baz=35,slow=3.6,SNR=3.2							

JMA 10 00:56:59.8, 37.°09N×140.°85E, h10km±1km, M1.3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.04**	**286**	P		Pg	00 57 01.7	-0.1
ONAJ				S		Sg	00 57 02.9	-0.4
JFK	**Kawauchi**	**0.28**	**4**	P		Pg	00 57 05.5	+0.1
JFK				*e*S		Sg	00 57 09.3	+0.1
JHO	**Hitachi**	**0.53**	**205**	P		Pg	00 57 09.6	-0.5
JHO				*e*S		Sg	00 57 17.0	0.0
JFT	**Otama**	**0.59**	**316**	P		Pg	00 57 11.6	+0.3
JFT				S		Sg	00 57 19.7	+0.6

*NIED **10** 00:57:00, 38.°00N×143.°50E, h32km, Mw7.0 Best double couple: M03.75000×10^19 NP1:φs332.00000°, δ74.00000°, λ174.00000°. NP2:φs64.00000°, δ84.00000°, λ16.00000°.*
*IDC **10** 00:57:06.8±0.3, 37.°98N×143.°45E, h0km, mb6.0/52, mb1 6.0/59, mb1mx6.0/61, mbtmp6.0/59, ML5.0/6, MS7.0/51, Ms1 7.0/51, ms1mx6.8/65, Error ellipse: s-maj=9.1km s-min=7.2km az=89.0*
*BJI **10** 00:57:06.2, 38.°10N×143.°50E, h20km, mb6.7/78, mB7.2/69, Ms7.4/93, Ms7 7.3/88*
*JMA **10** 00:57:07.3±0.2, 38.°03N×143.°51E, h34km, M7.3*
JMA Felt IV J1.
*ISCJB **10** 00:57:08.0±0.5, 38.°02N±0.°01×143.°32E±0.°01, h15km±3km, mb6.5/474, MS7.1/289, Error ellipse: s-maj=2.3km s-min=1.6km az=164.2*
*MOS **10** 00:57:09.7±0.9, 38.°01N×143.°33E, h27km, mb6.8/136, MS7.2/94, Error ellipse: s-maj=5.5km s-min=3.6km az=108.2 Broadband fault plane solution: P waves. M03.40000×10^19 NP1:φs58.00000°, δ84.00000°, λ10.00000°. NP2:φs327.00000°, δ80.00000°, λ174.00000°. Principal axes: T Plg11.0000°, Azm283.0000°; N Plg78.0000°, Azm90.0000°; P Plg3.0000°, Azm193.0000°;*
MOS Fault plane solution: P-wave C115, D29 . Felt (III) at Malokuril'skoye.

*NEIC **10** 00:57:10.8±0.1, 38.°03N×143.°26E, h23km, mb6.6/219, ME7.5, MS7.0/157, MW7.0, MW7.0, MW7.0 Error ellipse: s-maj=3.1km s-min=2.2km az=143.0, Moment Tensor Solution. s92 Moment tensor: Scale 10^19Nm; Mrr0.37; Mθθ-3.41; Mφφ3.04; Mrθ0.25; Mθφ0.81; Mrφ0.79; Best double couple: M03.40000×10^19 NP1:φs53.00000°, δ81.00000°, λ12.00000°. NP2:φs321.00000°, δ78.00000°, λ171.00000°. Principal axes: T 3.3600, Plg15.0000°, Azm277.0000°; N 0.1500, Plg75.0000°, Azm89.0000°; P -3.5200, Plg2.0000°, Azm187.0000°; Broadband fault plane solution: P waves. NP1:φs330.00000°, δ82.00000°, λ166.00000°. NP2:φs62.00000°, δ76.00000°, λ8.00000°. Principal axes: T Plg15.0000°, Azm285.0000°; N Plg0.0000°, Azm0.0000°; P Plg4.0000°, Azm17.0000°; Complex earthquake, with at least one larger event occurring about 3 seconds after the onset observed on broadband displacement seismograms. Depth from synthetics of broadband displacement seismograms based on larger event. Energy computed from BB mechanism.*
NEIC Felt [V] at Sendai, [IV] at Kashiwa and [III] at Kawasaki, Misawa, Tachikawa, Tokyo, Yokohama and Yokosuka. Felt in much of eastern Honshu and on Hokkaido. Recorded [4 JMA] in Fukushima, Iwate and Miyagi.
*GCMT **10** 00:57:10.8±0.0, 37.°98N×143.°33E, h22km, MW7.0/148, Moment Tensor Solution. s143,c368; s148,c715; Duration: 7s7 Moment tensor: Scale 10^19Nm; Mrr0.49±.01; Mθθ-3.25±.01; Mφφ2.76±.01; Mrθ0.41±.03; Mθφ2.12±.01; Mrφ1.36±.04; Best double couple: M03.96500×10^19 NP1:φs330.00000°, δ75.00000°, λ164.00000°. NP2:φs65.00000°, δ74.00000°, λ16.00000°. Principal axes: T 4.0070, Plg22.0000°, Azm288.0000°; N -0.0830, Plg68.0000°, Azm108.0000°; P -3.9230, Plg0.0000°, Azm18.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **10** 00:57:12.0±0.0, 37.°64N×143.°41E, h23km, Moment Tensor Solution. s55 Moment tensor: Scale 10^19Nm; Mrr0.30; Mθθ-2.40; Mφφ2.10; Mrθ-0.05; Mθφ1.74; Mrφ1.95; Best double couple: M03.50000×10^19 NP1:φs332.00000°, δ80.00000°, λ149.00000°. NP2:φs68.00000°, δ60.00000°, λ12.00000°. Principal axes: T 3.7000, Plg28.0000°, Azm285.0000°; N -0.5500, Plg57.0000°, Azm134.0000°; P -3.1500, Plg13.0000°, Azm23.0000°;*
*NEIC **10** 00:57:24.2±0.0, 38.°00N×143.°45E, h10km, Moment Tensor Solution. s101 Moment tensor: Scale 10^19Nm; Mrr0.01; Mθθ-2.58; Mφφ2.57; Mrθ-0.82; Mθφ1.88; Mrφ1.85; Best double couple: M03.80000×10^19 NP1:φs333.00000°, δ89.00000°, λ148.00000°. NP2:φs64.00000°, δ58.00000°, λ1.00000°. Principal axes: T 3.8200, Plg23.0000°, Azm283.0000°; N -0.0900, Plg58.0000°, Azm152.0000°; P -3.7300, Plg22.0000°, Azm23.0000°;*

ISC 10 00:57:10.9±0.3, 38.°06N±0.°02×143.°30E±0.°02, h25km±1km, h24km:pP-P, n2345, σ1s56/2583, mb6.5/487, MS7.1/297, 313C-66D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**1.59**	**285**	⇑P		**Pn**	**00 57 36.5**	**-1.0**
OFUJ	**Ofunato**	**1.64**	**309**	⇑P		**Pn**	**00 57 36.8**	**-1.4**
OFUJ				S		**Sn**	**00 57 58.3**	**-0.2**
JMK	**Ichinoseki**	**1.86**	**299**	⇑P		**Pn**	**00 57 40.4**	**-0.8**
JMK				S		**Sn**	**00 58 05.1**	**+1.1**
JFK	**Kawauchi**	**2.04**	**251**	⇑P		**Pn**	**00 57 42.3**	**-1.5**
JOM	**Ohasama**	**2.11**	**313**	⇑P		**Pn**	**00 57 43.9**	**-0.8**
JOM				*e*S		**Sn**	**00 58 10.6**	**+0.4**
ONAJ	**Iwakimizuishiy**	**2.21**	**245**	⇑P		**Pn**	**00 57 44.4**	**-1.6**
JFT	**Otama**	**2.41**	**258**	⇑P		**Pn**	**00 57 48.6**	**-0.2**
JFT				S		**Sn**	**00 58 17.9**	**+0.4**
JYK	**Kaneyama**	**2.46**	**291**	⇑P		**Pn**	**00 57 49.3**	**-0.2**
JANG	**Nango**	**2.70**	**330**	⇑P		**Pn**	**00 57 51.8**	**-1.0**
JANG				*e*S		**Sn**	**00 58 24.0**	**-0.6**
JAW	**Awa shima**	**3.22**	**278**	⇑P		**Pn**	**00 58 00.1**	**+0.3**
JAG	**Ashikaga**	**3.48**	**243**	P		**Pn**	**00 58 02.6**	**-0.8**
JHK	**Hiroka**	**3.50**	**258**	⇑P		**Pn**	**00 58 03.4**	**-0.3**
I30JP	**ISUMI INFRASON**	**3.65**	**222**	Pn		**Pn**	**00 58 05.0**	**-0.7**
	baz=44,slow=16,SNR=6.3							
I30JP				*i*			01 16 20.0	
	baz=20,slow=312,SNR=1.4							
JOT	**Ohata**	**3.75**	**333**	P		**Pn**	**00 58 06.4**	**-0.8**
ERM	**Erimo**	**3.96**	**358**	*e*P		**Pn**	**00 58 08.6**	**-1.4**
ERM				*e*			00 58 54.0	
ERM	**Erimo**	**3.96**	**358**	*e*Pn		**Pn**	**00 58 08.6**	**-1.4**
ERM				*e*Sn		**Sn**	**00 58 54.0**	**-1.6**
JSD	**Sado**	**3.98**	**271**	P		**Pn**	**00 58 09.9**	**-0.4**
JRY	**Ryogami san**	**4.07**	**241**	⇓P		**Pn**	**00 58 10.8**	**-0.8**
JKB	**Kayabe**	**4.21**	**336**	P		**Pn**	**00 58 13.3**	**-0.1**
MJAR	**Matsushiro Arr**	**4.33**	**251**	Pn		**Pn**	**00 58 16.4**	**+1.2**
	524nm,0.3s,baz=82,slow=15,SNR=1252							
MJAR	

YSS MLR MLR
comp=E,701μm,17.0s
YSS Yuzh-Sakhalins 8.90 358 *e*Pn **Pn 00 59 18.2 +0.3**
VLA Vladivostok 10.05 304*c i*P **Pn 00 59 34.9 +1.3**
VLA pmax pmax
comp=Z,842nm,1.2s
MSHR Mys Shultsa 10.31 300*c i*P **Pn 00 59 37.8 +0.6**
USRK Ussuriysk Ar. 10.51 309 Pn **Pn 00 59 41.2 +1.3**
comp=Z,19nm,0.3s,baz=118,slow=12,SNR=192
USRK LR LR 01 03 45.3
comp=Z,932μm,19.1s,baz=114,slow=37
I45RU USSURIYSK INFR 10.51 309 Pn **Pn 00 59 41.9 +1.9**
baz=126,slow=17,SNR=1.8
I45RU *i* 01 41 00.0
baz=115,slow=318,SNR=1.9
CBIJ Chichi jima 10.97 185 *e*Pn **Pn 00 59 46.8 +0.5**
CBIJ *e*Sn Sn 01 01 35.9 -12
UGL Uglegorsk 11.05 356⇓*i*P **Pn 00 59 46.0 -1.3**
UGL pmax pmax
comp=N,269nm,1.0s
UGL pmax pmax
comp=E,629nm,1.0s
UGL pmax pmax
comp=Z,1μm,1.0s
UGL pmax pmax
comp=Z,37μm,7.0s
UGL pmax pmax
comp=N,20μm,6.0s
UGL pmax pmax
comp=E,10μm,6.0s
JNU Nakatsue 11.25 248 Pn **Pn 00 59 50.3 +0.2**
comp=E,8.9nm,0.3s,baz=59,slow=7.2,SNR=192
JNU LR LR 01 04 40.9
comp=E,1725μm,19.6s,baz=58,slow=40
HABR Khabarovsk 12.02 333*c i*P **Pn 00 59 58.6 -1.9**
HABR pmax pmax
comp=Z,540nm,1.1s
HABR pmax pmax
comp=N,254nm,1.1s
HABR pmax pmax
comp=E,237nm,1.1s
KSRS Korea Array 12.19 272 Pn **Pn 01 00 05.5 +2.5**
comp=E,17nm,0.3s,baz=88,slow=13,SNR=268
KSRS LR LR 01 04 53.8
comp=E,1033μm,18.8s,baz=73,slow=38
MDJ Mudanjiang 12.20 307 P **Pn 01 00 03.9 +0.8**
MDJ S **Sn 01 02 16.6 -1.7**
MDJ ScP **ScP 01 09 17.9 +1.3**
MDJ PcS **PcS 01 09 21.6 +2.2**
MDJ pmax pmax
comp=E,79μm,10.8s
MDJ LR LR
comp=E,1129μm,22.6s
MDJ LR LR
comp=E,873μm,17.8s
MDJ LR LR
comp=E,1142μm,17.2s
MDJ Mudanjiang 12.20 307 *e*Pn **Pn 01 00 04.1 +1.0**
comp=E,3μm,1.3s
KS01 Wonju Array Si 12.21 272 *e*Pn **Pn 01 00 05.7 +2.4**
KS15 Wonju Array Si 12.22 272 *e*Pn **Pn 01 00 06.5 +3.1**
KSAR Wonju Array Be 12.22 272 P **Pn 01 00 05.5 +2.1**
KSAR Wonju Array Be 12.22 272 Pn **Pn 01 00 05.5 +2.1**
TYV Tymovskoe 12.81 358 *e*P **Pn 01 00 08.8 -2.6**
TYV pmax pmax
comp=Z,2μm,1.0s
INCN Inchon 13.20 273 *e*Pn **Pn 01 00 17.4 +0.5**
KLR Kul'dur 13.94 327 Pn **Pn 01 00 25.7 -1.0**
comp=Z,11nm,0.3s,baz=133,slow=12,SNR=450
KLR LR LR 01 05 58.8
comp=Z,840μm,20.0s,baz=143,slow=38
KLR Kul'dur 13.94 327*c i*P **Pn 01 00 25.0 -1.7**
CN2 Changchun 14.66 299⇑P **Pn 01 00 36.2 -0.4**
CN2 *e*pP P 01 00 43.2 +0.6
CN2 *e*S **Sn 01 03 17.7 -0.5**
CN2 pmax pmax
comp=Z,52μm,6.0s
NKL Nikolayevsk 15.21 354 *i* P **Pn 01 00 40.0 -3.8**
NKL *e*S **Sn 01 03 26.0 -5.3**
NKL pmax pmax
comp=N,29μm,6.0s
NKL pmax pmax
comp=E,7μm,6.0s
NKL pmax pmax
comp=Z,38μm,6.0s
NKL pmax pmax
comp=N,4μm,1.8s
NKL pmax pmax
comp=Z,6μm,1.5s
NKL smax smax
comp=E,78μm,12.0s
OKH Okha 15.50 359 *e*P **Pn 01 00 44.0 -3.7**
OKH *e*S **Sn 01 03 44.0 +5.5**
OKH pmax pmax
comp=Z,45μm,12.0s
OKH smax smax
comp=E,87μm,11.0s
SKR Severo-Kuril's 15.57 32*d i*P **Pn 01 00 46.8 -1.8**
SKR pmax pmax
comp=Z,3μm,0.9s
SNY Shenyang 15.59 290⇑P **Pn 01 00 47.7 -1.2**
SNY S **Sn 01 03 39.4 -1.4**
SNY pmax pmax
comp=Z,680nm,1.6s
SNY pmax pmax
comp=Z,113μm,10.0s
SNY LR LR
comp=Z,1432μm,16.5s
SNY LR LR
comp=Z,2044μm,16.7s
JOW Kunigami 16.89 233 *e*Pn **Pn 01 01 06.2 +0.6**
comp=Z,5μm,1.3s
DL2 Dalian 16.99 280⇑*i*P **Pn 01 01 05.4 -1.4**
DL2 S **Sn 01 04 15.9 +1.0**
DL2 pmax pmax
comp=Z,8μm,1.3s
DL2 pmax pmax
comp=Z,134μm,9.1s
DL2 LR LR
comp=Z,538μm,15.3s
DL2 LR LR
comp=Z,495μm,16.4s
DL2 LR LR
comp=Z,871μm,18.3s
PEA0 Petropavlovsk- 18.06 29 *e*Pn **Pn 01 01 17.5 -2.5**
PEA0B Petropavlovsk- 18.06 29 *e*Pn **Pn 01 01 19.6 -0.4**
comp=Z,11μm,1.4s
PETK Petropavlovsk- 18.06 29 P **Pn 01 01 17.2 -2.8**
comp=Z,6.2nm,0.3s,baz=195,slow=8.4,SNR=67
PETK LR LR 01 08 01.2
comp=Z,171μm,21.5s,baz=214,slow=36
I44RU PETROPAVLOVSK 18.06 29 P **P 01 01 21.9 +1.5**
baz=216,slow=8.7,SNR=3.5
PET Petropavlovsk 18.37 30*d i*P **P 01 01 18.6 -5.0**
PET *e*S **Sn 01 04 39.4 -8.6**
PET pmax pmax
comp=Z,101μm,10.7s
PET pmax pmax
comp=Z,155μm,11.6s
PET pmax pmax
comp=Z,6μm,1.4s
PET smax smax
comp=N,134μm,11.5s
PET MLR MLR
comp=Z,337μm,18.0s
PET MLR MLR
comp=Z,365μm,17.0s
PET Petropavlovsk 18.37 30 *e*P **Pn 01 01 23.7 0.0**
comp=Z,21μm,1.7s
SSE Sheshan 19.46 256⇑P **P 01 01 34.4 -1.4**
SSE sP **sP 01 01 46.9 +1.2**
SSE S **S 01 05 10.2 -4.2**
SSE sS **sS 01 05 23.8 -1.6**
SSE pmax pmax
comp=Z,2μm,1.5s
SSE pmax pmax
comp=Z,43μm,10.9s
SSE LR LR
comp=Z,1691μm,20.3s
SSE LR LR
comp=Z,957μm,16.5s
HIA Hailar 20.31 311*c i*P **P 01 01 42.3 -2.7**
HIA pmax pmax
comp=Z,2μm,1.0s
HIA MLR MLR
comp=Z,458μm,15.0s

HIA Hailar 20.31 311 *e*P **P 01 01 43.1 -1.9**
comp=Z,2μm,1.0s
HIA LR LR
comp=Z,568μm,20.0s
NJ2 Nanjing 20.86 261 *e*P **P 01 01 49.5 -1.5**
NJ2 pP **pP 01 01 56.4 -1.4**
NJ2 S Sn 01 05 47.2 -1.3
NJ2 sS **sS 01 05 56.3 +3.0**
NJ2 pmax pmax
comp=Z,1μm,1.1s
NJ2 pmax pmax
comp=Z,66μm,6.3s
NJ2 LR LR
comp=Z,1339μm,17.3s
NJ2 LR LR
comp=Z,564μm,21.7s
TIA Tai'an 20.93 273⇑P **P 01 01 49.6 -2.2**
TIA S **S 01 05 40.6 -3.3**
TIA PcP **PcP 01 05 58.0 -0.9**
TIA pmax pmax
comp=Z,2μm,2.0s
TIA pmax pmax
comp=Z,86μm,10.0s
TIA LR LR
comp=Z,776μm,15.0s
TIA LR LR
comp=Z,936μm,18.0s
BJI Beijing 21.13 284 P **P 01 01 51.8 -2.1**
BJI S Sn 01 05 53.4 -1.5
BJI pmax pmax
comp=Z,3μm,1.8s
BJI pmax pmax
comp=Z,94μm,8.5s
BJI LR LR
comp=Z,657μm,14.5s
BJI LR LR
comp=Z,285μm,19.1s
BJI LR LR
comp=Z,428μm,25.4s
BJT Baijiatuau 21.14 284 *e*P **P 01 01 51.8 -2.2**
BJT pmax pmax
comp=Z,4μm,0.9s
BJT MLR MLR
comp=Z,461μm,20.0s
BJT Baijiatuau 21.14 284 *e*P **P 01 01 51.8 -2.2**
comp=Z,4μm,0.9s
BJT LR LR
comp=Z,461μm,20.0s
SARN Sarigan 21.39 173 *e*P **P 01 01 55.0 -1.7**
ANA2 Anatahan 21.73 174 *e*P **P 01 01 58.7 -1.8**
YOJ Yonaguni jima 21.95 238 *e*P **P 01 02 02.3 -0.4**
YOJ pmax pmax
comp=Z,4μm,1.8s
YOJ Yonaguni jima 21.95 238 *e*P **P 01 02 02.3 -0.4**
comp=Z,4μm,1.8s
MA2 Magadan 22.06 10 P **P 01 02 04.0 +0.3**
comp=Z,1μm,0.9s,baz=197,slow=9.9,SNR=208
MA2 LR LR 01 12 21.5
comp=Z,267μm,18.2s,baz=204,slow=41
CLNS Chul'man 22.41 333 *e*P **P 01 02 07.7 +0.2**
CLNS *e**PP **sP 01 02 16.3 -1.2**
CLNS *e*PPP PPP 01 02 42.2
CLNS *e* 01 06 02.6
CLNS *e*S **S 01 06 12.5 +0.4**
CLNS *e*SS **SnSn 01 06 45.5 +4.6**
CLNS *e* 01 13 23.3
CLNS pmax pmax
comp=Z,796nm,1.0s
CLNS pmax pmax
comp=N,1μm,1.2s
CLNS pmax pmax
comp=E,2μm,1.4s
CLNS MLR MLR
comp=Z,157μm,14.0s
CLNS MLR MLR
comp=N,236μm,17.0s
CLNS MLR MLR
comp=E,193μm,17.0s
TATO Taipei 22.64 241 *e*P **P 01 02 09.9 -0.3**
comp=E,4μm,1.4s
TATO LR LR
comp=Z,452μm,22.0s
YHNB Yeheng 22.92 241 *e*P **P 01 02 11.7 -1.5**
comp=Z,908nm,0.7s
YHNB LR LR
comp=Z,622μm,21.0s
NACB Ninganchiao 23.10 239 *e*P **P 01 02 13.9 -1.0**
comp=Z,246nm,0.5s
SSLB Suanglung 23.79 240 *e*P **P 01 02 19.6 -2.2**
comp=Z,860nm,0.9s
YULB Yu-li 23.82 238 *e*P **P 01 02 21.4 -0.6**
comp=Z,4μm,1.6s
TIY Taiyuan 24.31 279 *e*P **P 01 02 24.7 -1.9**
TIY PP **PnPn 01 03 03.6 +6.7**
TIY S **S 01 06 43.4 -0.9**
TIY pmax pmax
comp=Z,760nm,0.8s
TIY pmax pmax
comp=Z,45μm,4.2s
TIY LR LR
comp=Z,365μm,14.1s
TIY LR LR
comp=Z,507μm,14.9s
TIY LR LR
comp=Z,672μm,15.9s
TPUB Ta-pu 24.34 239 *e*P **P 01 02 25.1 -1.7**
comp=Z,3μm,1.1s
TWG Pinlang 24.36 238 *e*P **P 01 02 27.0 0.0**
comp=Z,24μm,1.7s
TWG *e*S **S 01 06 42.8 -2.4**
GUMO Guam 24.41 176 P **P 01 02 24.7 -2.8**
comp=Z,1μm,1.0s,baz=181,slow=2.8,SNR=39
GUMO Guam 24.41 176 *e*P **P 01 02 24.7 -2.8**
GUMO MLR MLR
comp=Z,274μm,20.0s
GUMO Guam 24.41 176 *e*P **P 01 02 24.7 -2.8**
comp=Z,19μm,1.8s
GUMO LR LR
comp=Z,274μm,20.0s
HHC Hu-ho-hao-te 24.60 287 *e*P **P 01 02 27.4 -1.8**
HHC pP sP 01 02 39.6 +0.1
HHC PP **PnPn 01 03 04.4 +3.6**
HHC S **S 01 06 43.3 -5.6**
HHC SS **SnSn 01 07 48.0 +13**
HHC pmax pmax
comp=Z,2μm,1.0s
HHC LR LR
comp=Z,815μm,14.5s
QZH Quanzhou 24.70 245⇑*i*P P 01 02 20.3 -10
QZH S S 01 06 38.1 -12
QZH pmax pmax
comp=Z,4μm,1.2s
QZH pmax pmax
comp=Z,47μm,4.2s
QZH LR LR
comp=N,1699μm,22.0s
QZH LR LR
comp=E,1601μm,21.0s
QZH LR LR
comp=Z,734μm,16.0s
WHN Wuhan 25.00 261⇑*i*P **P 01 02 32.0 -0.7**
WHN S **S 01 06 50.9 -4.3**
WHN LR LR
comp=Z,1830μm,15.8s
WHN LR LR
comp=Z,861μm,17.0s
WHN LR LR
comp=Z,1263μm,17.0s
CIT Chita 25.02 314 *e*P **P 01 02 31.5 -1.3**
CIT *e* 01 03 12.5
CIT *e*S **S 01 06 54.1 -1.3**
CIT pmax pmax
comp=Z,30μm,2.5s
YAK Yakutsk 25.44 345 P **P 01 02 36.6 +0.2**
comp=Z,1μm,0.6s,baz=191,slow=0.8,SNR=209
YAK S **S 01 07 03.7 +2.1**
comp=Z,414nm,1.0s,baz=205,slow=19,SNR=3.0
YAK LR LR 01 13 27.4
comp=Z,635μm,19.2s,baz=156,slow=38
YAK Yakutsk 25.44 345*c i*P **P 01 02 35.5 -0.9**
YAK *e**PP **pP 01 02 38.9 -4.8**
YAK *e*PPP PPP 01 03 17.7
YAK *e* 01 06 07.5
YAK *e*S **S 01 06 59.3 -2.3**
YAK *e*SSS SSS 01 08 03.5
YAK *e* 01 13 38.2

YAK pmax pmax
comp=Z,4μm,1.1s
YAK pmax pmax
comp=N,3μm,1.5s
YAK pmax pmax
comp=E,1μm,1.5s
YAK smax smax
comp=E,103μm,8.9s
YAK smax smax
comp=N,53μm,4.5s
YAK MLR MLR
comp=N,351μm,15.0s
YAK MLR MLR
comp=Z,532μm,16.0s
YAK MLR MLR
comp=N,378μm,16.0s
YAK Yakutsk 25.44 345 *e*P **P 01 02 36.6 +0.2**
comp=N,5μm,0.9s
YAK S **S 01 07 03.8 +2.1**
SEY Seymchan 25.52 10 P **P 01 02 38.4 +1.3**
comp=N,455nm,0.8s,baz=192,slow=6.3,SNR=480
SEY LR LR 01 14 30.6
comp=N,344μm,18.2s,baz=201,slow=41
BTO Baotou 25.78 286 *e*P **P 01 02 38.2 -1.7**
SMY Shemya 25.89 46 *e*P **P 01 02 41.1 +0.6**
SMY pmax pmax
comp=Z,4μm,1.3s
SMY Shemya 25.89 46 *e*P **P 01 02 41.1 +0.6**
comp=Z,4μm,1.3s
H11N2 WAKE ISLAND Hy 27.44 125 P **P 01 02 56.0 +1.3**
baz=294,slow=10,SNR=86
H11N2 S S 01 08 02.0 +28
baz=174,slow=76,SNR=11
H11N2 T T 01 31 36.9
baz=317,slow=75,SNR=542
H11N1 WAKE ISLAND Hy 27.45 125 P **P 01 02 55.2 +0.5**
baz=294,slow=10,SNR=141
H11N1 S S 01 08 02.1 +28
baz=174,slow=76,SNR=8.6
H11N1 T T 01 31 36.3
baz=317,slow=75,SNR=298
H11N3 WAKE ISLAND Hy 27.46 125 P **P 01 02 58.4 +3.6**
baz=294,slow=10,SNR=101
H11N3 S S 01 08 02.2 +28
baz=174,slow=76,SNR=11
H11N3 T T 01 31 38.6
baz=317,slow=75,SNR=367
BOD Bodaibo 27.50 325⇓*i*P **P 01 02 55.2 +0.1**
BOD pmax pmax
comp=Z,4μm,1.8s
CVP Callao Caves 27.65 229⇓*e*P **P 01 02 56.5 -0.3**
XAN Xi'an 27.99 272 P **P 01 02 59.6 -0.2**
XAN pP pP 01 03 06.9 -0.2
XAN S **S 01 07 38.9 -3.7**
XAN SS **SnSn 01 09 03.0 +5.3**
XAN pmax pmax
comp=Z,2μm,1.7s
XAN pmax pmax
comp=Z,38μm,5.1s
XAN LR LR
comp=Z,495μm,17.3s
XAN LR LR
comp=Z,204μm,23.8s
XAN LR LR
comp=Z,481μm,18.7s
H11S1 WAKE ISLAND Hy 28.21 127 P **P 01 03 03.5 +1.9**
H11S1 S S 01 08 23.3 +37
baz=138,slow=23,SNR=5.0
H11S1 T T 01 32 38.6
baz=323,slow=74,SNR=48
H11S3 WAKE ISLAND Hy 28.22 127 P **P 01 03 03.5 +1.9**
H11S3 S S 01 08 23.3 +37
baz=138,slow=23,SNR=5.3
H11S3 T T 01 32 49.0
baz=323,SNR=108
H11S2 WAKE ISLAND Hy 28.23 127 P **P 01 03 03.7 +1.9**
H11S2 S S 01 08 23.5 +37
baz=138,slow=23,SNR=5.7
H11S2 T T 01 32 38.6
baz=323,slow=74,SNR=27
SONA1 Songino Array 28.48 302 *e*P **P 01 03 05.3 +1.1**
SONM Songino Array 28.49 302 P **P 01 03 05.8 +1.6**
comp=Z,524nm,0.9s,baz=95,slow=7.9,SNR=250
SONM LR LR 01 15 04.9
comp=Z,389μm,18.8s,baz=101,slow=38
SONM P3KPbc 01 35 20.0
comp=Z,0.7nm,0.8s,baz=243,slow=6.5,SNR=4.3
ENH Enshi 28.92 265 *e*P **P 01 03 08.2 +0.1**
comp=Z,4μm,0.9s
ENH LR LR
comp=Z,544μm,21.0s
HKC Hong Kong Obse 29.51 246⇑P **P 01 03 15.0 +1.7**
GZH Guangzhou 29.64 248 P **P 01 03 10.7 -3.7**
GZH S **S 01 08 02.3 -6.2**
GZH SS **SnSn 01 09 40.2 +2.2**
GZH pmax pmax
comp=Z,58μm,9.1s
PCPH Palayan 29.76 227⇑*e*P **P 01 03 15.1 -0.4**
GQP Guinayangan 30.35 223⇑*e*P **P 01 03 20.4 -0.4**
IRK Irkutsk 30.55 310⇑*i*P **P 01 03 22.7 +0.4**
IRK *e*S **S 01 08 25.7 +3.3**
IRK pmax pmax
comp=Z,8μm,3.0s
LQP Lukban 30.68 225⇑*e*P P 01 03 31.2 +7.3
TLY Talaya 30.82 309 P **P 01 03 26.2 +1.5**
comp=Z,248nm,0.9s,baz=114,slow=5.3,SNR=99
TLY Talaya 30.82 309*c i*P **P 01 03 24.6 -0.1**
TLY *e* 01 04 24.5
TLY *e*PPP PPP 01 04 38.3
TLY *e*S **S 01 08 25.0 -1.7**
TLY pmax pmax
comp=Z,3μm,1.5s
TLY MLR MLR
comp=Z,378μm,14.0s
TLY Talaya 30.82 309 *e*P **P 01 03 25.6 +0.9**
comp=Z,4μm,1.5s
TLY LR LR
comp=Z,291μm,19.0s
TGY Tagaytay City 31.02 226 P **P 01 03 27.1 +0.3**
comp=Z,2μm,0.9s,baz=302,slow=1.1,SNR=14
LZH Lanzhou 31.39 279⇓P **P 01 03 30.7 +0.7**
LZH pP sP 01 03 40.6 +0.2
LZH sP pP 01 03 44.8 +7.5
LZH PP **PnPn 01 04 35.5 +2.7**
LZH S **S 01 08 36.0 -0.1**
LZH sS sS 01 08 52.1 +3.9
LZH SS **SnSn 01 10 23.5 +2.9**
LZH pmax pmax
comp=Z,6μm,1.2s
LZH pmax pmax
comp=Z,43μm,5.0s
LZH LR LR
comp=Z,487μm,13.5s
LZH LR LR
comp=Z,689μm,16.5s
LZH LR LR
comp=Z,933μm,17.6s
RCP Roxas 32.16 220⇑*e*P **P 01 03 36.6 -0.1**
MOY Mondy 32.45 309 *e*P **P 01 03 39.2 +0.1**
MOY pmax pmax
comp=Z,4μm,2.2s
LLP Lapu-Lapu 32.62 217⇓*e*P **P 01 03 39.7 -1.1**
BILL Bilibino 32.63 16*d i*P **P 01 03 40.0 -0.4**
BILL *e* 01 04 49.7
BILL *e*PPP PPP 01 05 01.1
BILL *i*S **S 01 08 58.2 +3.7**
BILL *e*SS **SS 01 11 17.5 +2.5**
BILL pmax pmax
comp=Z,1μm,1.4s
BILL MLR MLR
comp=Z,277μm,22.0s
BILL Bilibino 32.63 16 *e*P **P 01 03 40.0 -0.4**
comp=Z,1μm,1.3s
BILL LR LR
comp=Z,227μm,21.0s
GYA Guiyang 32.87 260⇑*i*P **P 01 03 42.7 -0.4**
GYA PP **PP 01 04 54.9 -2.6**
GYA PcP **PcP 01 06 31.2 +3.8**
GYA S **S 01 08 56.6 -2.7**
GYA SS **SnSn 01 11 01.4 +4.6**
GYA pmax pmax
comp=Z,2μm,0.9s
GYA LR LR
comp=Z,653μm,21.5s
GYA LR LR
comp=Z,237μm,24.6s

GYA LR LR
comp=Z,281µm,20.5s
CD2 Chengdu 33.18 270⇑ *i*P **P 01 03 45.5 -0.1**
CD2 pP sP 01 03 55.4 -0.6
CD2 sP pP 01 03 59.9 +6.9
CD2 PP **PP 01 05 00.8 +0.1**
CD2 S **S 01 09 03.1 -0.8**
CD2 sS sS 01 09 20.1 +4.1
CD2 pmax pmax
comp=Z,3µm,0.9s
CD2 pmax pmax
comp=Z,21µm,6.4s
CD2 LR LR
comp=Z,954µm,17.1s
CD2 LR LR
comp=Z,744µm,19.3s
CD2 LR LR
comp=Z,935µm,17.1s
GTA Gaotai 33.71 286⇑ P **P 01 03 50.9 +0.6**
GTA pP sP 01 04 01.3 +0.6
GTA sP pP 01 04 05.3 +7.7
GTA PP **PnPn 01 05 03.5 +1.0**
GTA PcP **PcP 01 06 30.8 +1.2**
GTA S **S 01 09 12.6 +0.5**
GTA sS sS 01 09 28.3 +4.0
GTA SS **SnSn 01 11 19.9 +3.0**
GTA ScS **ScS 01 14 13.5 -0.6**
GTA pmax pmax
comp=Z,48µm,7.6s
GTA LR LR
comp=Z,611µm,18.5s
GTA LR LR
comp=Z,701µm,17.6s
GTA LR LR
comp=Z,770µm,17.6s
SNPH Sibulan 33.82 217 *e*P **P 01 03 49.0 -2.3**
CGP Cagayan de Oro 33.92 214⇓ *e*P **P 01 03 51.5 -0.6**
PATS Pohnpei 33.93 153 *e*P **P 01 03 52.1 -0.1**
comp=Z,3µm,1.7s
MIDW Midway 34.15 95 *e*P **P 01 03 57.8 +3.8**
comp=Z,1µm,1.4s
MIDW LR LR
comp=Z,148µm,20.0s
DCPH Dipolog City 34.43 217⇑ *e*P **P 01 03 57.5 +1.0**
TIXI Tiksi 34.47 352 *d i*P **P 01 03 56.1 -0.2**
TIXI pmax pmax
comp=Z,137nm,0.7s
TIXI Tiksi 34.47 352 *e*P **P 01 03 56.1 -0.2**
comp=Z,471nm,1.1s
TIXI LR LR
comp=Z,162µm,20.0s
QIZ Qiongzhong 34.71 246 P **P 01 04 00.9 +1.9**
QIZ pP **pP 01 04 05.7 -0.7**
QIZ sP **sP 01 04 07.4 -2.0**
QIZ S **S 01 09 34.0 +6.3**
QIZ sS **sS 01 09 39.1 -0.8**
QIZ LR LR
comp=Z,641µm,23.5s
QIZ LR LR
comp=Z,562µm,23.1s
QIZ LR LR
comp=Z,422µm,14.9s
QIZ Qiongzhong 34.71 246 *e*P **P 01 04 00.6 +1.6**
comp=Z,544nm,1.3s
QIZ LR LR
comp=Z,298µm,19.0s
DAV Davao City (W) 34.78 212 P **P 01 03 59.7 +0.2**
comp=Z,240nm,0.4s,baz=48,slow=2.8,SNR=14
DAV LR LR 01 18 13.4
comp=Z,199µm,20.4s,baz=46,slow=36
DAV Davao City (W) 34.78 212⇓ *e*P **P 01 03 59.2 -0.3**
DAV Davao City (W) 34.78 212⇑ S **S 01 09 32.3 +3.6**
DAV Davao City (W) 34.78 212 *e*P **P 01 04 00.4 +0.8**
comp=Z,2µm,1.4s
KCP Kidapawan 35.04 213⇑ *e*P **P 01 04 02.1 +0.3**
CTBH Cotabato--PC H 35.22 214 *e*P **P 01 04 03.9 +0.6**
SPIA Saint Paul Isl 35.80 42 *e*P **P 01 04 09.0 +1.0**
comp=Z,3µm,1.4s
NIKH Nikolski High 35.97 50 *e*P **P 01 04 08.3 -1.2**
comp=Z,867nm,1.0s
KWAJ Kwajalein Atol 36.45 137 *e*P **P 01 04 13.2 -0.7**
KWAJ pmax pmax
comp=Z,1µm,1.3s
KWAJ Kwajalein Atol 36.45 137 *e*P **P 01 04 13.2 -0.7**
comp=Z,1µm,1.3s
KMI Kunming 36.60 261 P **P 01 04 15.3 -0.1**
KMI pP sP 01 04 26.2 +0.4
KMI sP pP 01 04 29.7 +6.9
KMI PP **PP 01 05 41.9 +3.1**
KMI S **S 01 09 53.9 -3.1**
KMI sS sS 01 10 12.6 +3.4
KMI SS **SnSn 01 12 22.9 -4.4**
KMI pmax pmax
comp=Z,1µm,1.2s
KMI pmax pmax
comp=Z,20µm,4.2s
KMI LR LR
comp=Z,421µm,21.1s
KMI LR LR
comp=Z,278µm,25.1s
KMI LR LR
comp=Z,329µm,26.0s
GAMB Gambell 37.06 31 *e*P **P 01 04 18.7 +0.1**
comp=Z,2µm,2.0s
UNV Unalaska Valle 37.45 48 *e*P **P 01 04 20.3 -1.7**
comp=Z,220nm,1.1s
KRAR Krasnoyarsk 37.78 315⇑ *e*P **P 01 04 25.2 +0.4**
KRAR MLR MLR
comp=Z,414µm,19.0s
SGSI Sangihe 37.87 210 P **P 01 04 29.7 +3.8**
AKUT Akutan 37.90 48 *e*P **P 01 04 24.2 -1.5**
comp=Z,537nm,1.3s
KDM Kudat 39.19 224 ⇓P **P 01 04 37.8 +0.7**
MYLDM Lahad Datu 39.76 221 ⇓P **P 01 04 44.0 +2.2**
MYLDM Lahad Datu 39.76 221 *e*P **P 01 04 43.9 +2.2**
comp=Z,2µm,1.2s
SDKM Sandakan 40.05 223 ⇑P **P 01 04 45.1 +0.7**
MANU Manus Island 40.08 174 *e*P **P 01 04 43.0 -1.4**
comp=Z,793nm,1.4s
KKM Kota Kinabalu 40.25 224 ⇑P **P 01 04 47.7 +1.6**
KKM Kota Kinabalu 40.25 224 *e*P **P 01 04 47.1 +1.1**
comp=Z,935nm,1.3s
KKM LR LR
comp=Z,127µm,21.0s
NONG Nongkai 40.26 252 P **P 01 04 47.0 +1.1**
comp=Z,865nm,2.3s,comp=Z,18µm
SKNT Sakolnakorn 40.31 250 P **P 01 04 48.0 +1.6**
comp=Z,882nm,2.9s,comp=Z,24µm
UBPT Khong Chiam 40.31 246 P **P 01 04 47.5 +1.1**
comp=Z,879nm,2.7s,comp=Z,23µm
JAY Jayapura 40.44 184 P **P 01 04 47.2 -0.2**
comp=Z,29nm,0.9s,baz=279,slow=20,SNR=59
JAY Jayapura 40.44 184 P **P 01 04 47.2 -0.2**
GENI Genyem 40.55 185 P **P 01 04 48.4 +0.1**
TSM Tawau 40.83 221 ⇓P **P 01 04 51.6 +0.9**
SDPT Sand Point 41.01 46 *e*P **P 01 04 50.2 -1.5**
comp=Z,2µm,1.4s
LBMI Labuha 41.17 204 P **P 01 04 54.0 +0.6**
KMSI Cibinong 41.32 210 P **P 01 04 54.8 +0.1**
KHON Khomkaen 41.57 250 P **P 01 04 58.6 +1.8**
comp=Z,196nm,1.2s,comp=Z,2µm
WMQ Urumqi 41.73 296⇑ *i*P **P 01 04 59.2 +1.3**
WMQ pP sP 01 05 09.1 +0.7
WMQ PP **PnPn 01 06 41.2 +1.8**
WMQ PcP **PcP 01 06 50.9 -3.1**
WMQ S **S 01 11 13.2 -0.3**
WMQ ScS **ScS 01 14 50.6 -8.8**
WMQ pmax pmax
comp=Z,2µm,1.2s
WMQ pmax pmax
comp=Z,29µm,5.2s
WMQ LR LR
comp=Z,346µm,18.2s
WMQ LR LR
comp=Z,173µm,19.0s
WMQ LR LR
comp=Z,175µm,25.4s
FAKI Fak Fak 42.03 197 P **P 01 04 59.8 -0.7**
comp=Z,685nm,2.3s,comp=Z,30µmcomp=Z,128µm
FAKI Fak Fak 42.03 197 *e*P **P 01 04 59.8 -0.7**
comp=Z,2µm,1.7s
CHGN Chignik 42.19 45 *e*P **P 01 05 00.2 -1.2**
MRSI Marisa 42.25 213 P **P 01 05 02.6 +0.3**
I46RU ZALESOVO INFRA 42.35 312 P **P 01 05 04.0 +1.3**
baz=108,slow=8.5,SNR=2.6

ZAA0 Zalesovo Array 42.35 312 *e*P **P 01 05 02.3 -0.4**
ZALV Zalesovo Beam 42.35 312 P **P 01 05 03.0 +0.3**
comp=Z,214nm,0.7s,baz=87,slow=7.0,SNR=474
ZALV PcP **PcP 01 06 56.9 +1.1**
comp=Z,89nm,0.5s,baz=94,slow=4.3,SNR=4.1
ZALV S **S 01 11 21.9 -0.4**
comp=Z,9.6nm,0.8s,baz=104,slow=11,SNR=2.1
ZALV ScS **ScS 01 15 12.0 +9.4**
comp=Z,3.5nm,0.5s,baz=95,slow=8.5,SNR=4.2
ZALV LR LR 01 23 36.8
comp=Z,320µm,19.7s,baz=88,slow=37
ZALV PKPPKP P'P'df
01 36 52.4 -19
comp=Z,2.4nm,0.9s,baz=289,slow=4.5,SNR=4.0
UTTA Uttaradit 42.40 254 P **P 01 05 04.9 +1.4**
comp=Z,209nm,1.3s,comp=Z,2µm
CHAI Chaiyaphum 42.47 250 P **P 01 05 05.1 +1.0**
comp=Z,246nm,1.5s,comp=Z,3µm
LAMP Lampang 42.64 255 P **P 01 05 06.6 +1.1**
comp=Z,348nm,0.8s,comp=Z,3µm
PBKT Sadao Pong 42.81 252 P **P 01 05 07.7 +0.9**
comp=Z,878nm,1.3s,comp=Z,20µm
RABL Rabaul 42.83 167 *e*P **P 01 05 06.8 -0.2**
comp=Z,1µm,1.2s
NRIK Noril'sk 42.98 335 P **P 01 05 07.7 0.0**
comp=Z,51nm,0.7s,baz=106,slow=9.2,SNR=82
NRIK S **S 01 11 23.3 -7.8**
comp=Z,38nm,0.9s,baz=175,slow=13,SNR=1.7
NRIK LR LR 01 24 01.0
comp=Z,707µm,19.6s,baz=106,slow=38
CMMT Chiang Mai 42.99 256 P **P 01 05 08.9 +0.5**
comp=Z,1µm,1.5s,comp=Z,23µm
CHTO Chiang Mai 42.99 256 P **P 01 05 08.8 +0.5**
comp=Z,5µm,1.5s,comp=Z,103µm
CHTO Chiang Mai 42.99 256 *e*P **P 01 05 08.9 +0.5**
CHTO pmax pmax
comp=Z,2µm,1.4s
CHTO MLR MLR
comp=Z,221µm,19.0s
CHTO Chiang Mai 42.99 256 P **P 01 05 09.5 +1.1**
SNR=353
CHTO P **P 01 05 09.5 +1.1**
SNR=353
CHTO Chiang Mai 42.99 256 *e*P **P 01 05 08.9 +0.5**
comp=Z,2µm,1.4s
CHTO LR LR
comp=Z,221µm,19.0s
SANI Sanana 43.00 206 P **P 01 05 07.3 -1.0**
comp=Z,1µm,1.1s,comp=Z,23µmcomp=Z,123µm
ZSN Zaisan 43.01 302⇑ *i*P **P 01 05 09.1 +0.9**
comp=Z,12µm,1.7s
ZSN *i* S **S 01 11 34.6 +2.5**
ZSN LR LR 01 23 34.3
comp=Z,92µm,11.5s
CM31 Chiang Mai Arr 43.20 256 *e*P **P 01 05 11.8 +1.7**
CMAR Chiang Mai Arr 43.20 256 P **P 01 05 10.8 +0.8**
comp=Z,167nm,1.0s,baz=43,slow=6.9,SNR=112
CMAR LR LR 01 24 18.7
comp=Z,167µm,18.3s,baz=43,slow=38
CMAR PKPPKP **P'P'df**
01 36 59.0 -5.6
comp=Z,1.1nm,0.4s,baz=268,slow=2.7,SNR=3.4
CM01 Chiang Mai Arr 43.21 256 *e*P **P 01 05 10.3 +0.1**
NVS Novosibirsk 43.23 313⇓ *i*P **P 01 05 11.2 +1.4**
NVS *e*S **S 01 11 36.8 +1.7**
NVS pmax pmax
comp=Z,3µm,1.9s
NVS pmax pmax
comp=N,392nm,1.3s
NVS pmax pmax
comp=E,1µm,1.4s
NVS smax smax
comp=E,2µm,2.5s
NVS smax smax
comp=N,146nm,1.6s
LUWI Luwuk 43.27 211 P **P 01 05 09.3 -1.3**
comp=N,1µm,1.0s,comp=N,29µmcomp=N,130µm
LUWI Luwuk 43.27 211 *e*P **P 01 05 08.8 -1.7**
comp=N,5µm,1.7s
MSAI Masohi 43.30 201 P **P 01 05 13.0 +2.3**
comp=N,472nm,1.5s,comp=N,11µmcomp=N,28µm
LSA Lhasa 43.61 275 P **P 01 05 15.5 +1.7**
LSA pP **pP 01 05 22.0 +0.7**
LSA S **S 01 11 36.9 -5.4**
LSA pmax pmax
comp=N,480nm,1.4s
LSA pmax pmax
comp=N,30µm,10.9s
LSA LR LR
comp=N,56µm,18.3s
LSA LR LR
comp=N,155µm,25.4s
LSA LR LR
comp=N,296µm,21.2s
LSA Lhasa 43.61 275 *e*P **P 01 05 15.8 +2.0**
LSA pmax pmax
comp=Z,1µm,0.9s
LSA MLR MLR
comp=Z,398µm,20.0s
LSA Lhasa 43.61 275 *e*P **P 01 05 15.8 +2.0**
comp=Z,1µm,0.9s
LSA LR LR
comp=Z,398µm,20.0s
SRAK Srakaew 43.64 248 P **P 01 05 11.6 -2.0**
comp=Z,2µm,1.2s,comp=Z,26µm
TT01 Tatalina 43.72 35 *e*P **P 01 05 13.6 -0.1**
TTA Tatalina 43.73 35 *e*P **P 01 05 14.6 +0.7**
TTA Tatalina 43.73 35 *e*P **P 01 05 14.6 +0.7**
NLAI Namlea 43.74 204 P **P 01 05 14.3 -0.1**
comp=Z,608nm,1.1s,comp=Z,22µmcomp=Z,133µm
SVW2 Sparrevohn 43.80 38 *e*P **P 01 05 15.0 +0.6**
comp=Z,2µm,1.2s
MHMT Maesarieng 44.15 256 P **P 01 05 19.0 +1.4**
BNDI Bandanaira 44.15 199 P **P 01 05 18.1 +0.5**
comp=Z,3µm,0.9s,comp=Z,77µmcomp=Z,139µm
CHBT CHBT 44.26 246 P **P 01 05 20.5 +1.9**
comp=Z,2µm,1.3s,comp=Z,33µm
PCI Palu 44.41 215 P **P 01 05 19.2 -0.5**
comp=Z,2µm,1.4s,comp=Z,34µm
UMPA Umpang Tak 44.62 253 P **P 01 05 24.2 +2.7**
comp=Z,361nm,1.3s,comp=Z,4µm
MK01 Makanchi Array 44.85 302 *e*P **P 01 05 23.4 +0.4**
MK31 Makanchi Array 44.86 302 *ce*P **P 01 05 23.8 +0.7**
MK31 pmax pmax
comp=Z,1µm,0.8s
MK31 Makanchi Array 44.86 302 *e*P **P 01 05 23.1 0.0**
MKAR Makanchi Array 44.86 302 P **P 01 05 23.2 +0.2**
comp=Z,271nm,0.8s,baz=86,slow=7.4,SNR=477
MKAR LR LR 01 25 01.6
comp=Z,190µm,19.2s,baz=78,slow=37
MKAR P3KPbc
01 34 19.5
comp=Z,0.9nm,0.8s,baz=240,slow=2.8,SNR=5.1
MKAR PKPPKP P'P'df
01 36 48.2 -20
comp=Z,1.7nm,0.9s,baz=258,slow=1.3,SNR=4.3
MKAR P4KPbc
01 43 14.0
comp=Z,2.6nm,1.0s,baz=68,slow=3.3,SNR=6.8
SHL Shillong 44.92 269 *e*P **P 01 05 25.0 +1.0**
SHL IAmb IAmb 01 05 32.2
comp=Z,831nm,0.5s
SHL *e*S **S 01 12 00.0 -0.8**
OHAK Old Harbor 44.98 43 *e*P **P 01 05 22.7 -1.2**
comp=Z,1µm,1.1s
MAKZ Makanchi 45.06 302 *e*P **P 01 05 24.7 0.0**
MAKZ pmax pmax
comp=Z,3µm,1.5s
MAKZ Makanchi 45.06 302 *e*P **P 01 05 24.7 0.0**
comp=Z,3µm,1.5s
RSO Redoubt South 45.17 39 *e*P **P 01 05 25.8 +0.2**
KDAK Kodiak Island 45.34 43 *e*P **P 01 05 25.6 -1.0**
KDAK pmax pmax
comp=Z,10µm,1.1s
KDAK MLR MLR
comp=Z,65µm,20.0s
KDAK Kodiak Island 45.34 43 *e*P **P 01 05 25.6 -1.0**
comp=Z,10µm,1.1s
KDAK LR LR
comp=Z,65µm,20.0s
SBUM Sibu 45.45 226 *e*P **P 01 05 28.7 +0.6**
comp=Z,1µm,1.4s
PPLA Purkeypile 45.47 35 *e*P **P 01 05 28.9 +1.1**
comp=Z,5µm,1.6s
SPU Mount Spurr 45.51 38 *e*P **P 01 05 28.6 +0.6**
SEM Semipalatinsk 45.52 307⇑ *i*P **P 01 05 28.5 0.0**
comp=Z,7µm,1.4s
SEM *i* PP **PP 01 07 14.8 -0.2**
SEM *e*S **S 01 12 07.7 -1.3**
SEM LR LR 01 24 19.9
comp=Z,198µm,15.9s
TARA Tarawa 45.53 136 PFAKE
01 05 40.0 +11

TARA LR LR
comp=Z,17µm,21.0s
CAST Castle Rocks 45.54 35 *e*P **P 01 05 29.1 +0.9**
comp=Z,4µm,1.8s
SRDT SRDT 45.58 251 P **P 01 05 30.4 +1.3**
comp=Z,3µm,1.5s,comp=Z,51µm
HOM Homer 45.74 40 *e*P **P 01 05 30.3 +0.5**
comp=Z,4µm,1.4s
CNPM China Poot 45.95 40 *e*P **P 01 05 31.3 -0.3**
comp=Z,2µm,1.6s
KDI Kendari 45.99 209 P **P 01 05 33.2 +0.9**
comp=Z,962nm,1.5s,comp=Z,21µm
KTH Kantishna Hill 46.06 35 *e*P **P 01 05 33.1 +0.7**
comp=Z,2µm,1.1s
BKB Balikpapan 46.09 218 P **P 01 05 33.4 +0.3**
BRLK Bradley Lake 46.12 40 *e*P **P 01 05 32.6 -0.3**
comp=Z,1µm,1.2s
SUA Susitna One 46.14 37 *e*P **P 01 05 32.7 -0.4**
comp=Z,969nm,1.1s
TTSI Tana Toraja 46.32 213 P **P 01 05 34.5 -0.3**
comp=Z,330nm,2.0s,comp=Z,13µmcomp=Z,101µm
TRF Thorofare Moun 46.34 35 *e*P **P 01 05 35.1 +0.3**
comp=Z,1µm,1.2s
JOHN Johnston Islan 46.38 104 *e*P **P 01 05 35.7 +0.4**
comp=Z,2µm,1.3s
JOHN LR LR
comp=Z,11µm,20.0s
KURK Kurchatov 46.49 308 *e*P **P 01 05 36.2 +0.3**
comp=Z,21µm,0.8s
KURK LR LR
comp=Z,288µm,20.0s
COLD Coldfoot 46.53 29 *e*P **P 01 05 36.4 +0.4**
comp=Z,1µm,1.8s
RC01 Rabbit Creek A 46.64 38 *e*P **P 01 05 36.6 -0.2**
comp=Z,3µm,1.4s
MTKI Muara Teweh, K 46.82 221 P **P 01 05 39.8 +1.0**
comp=Z,2µm,2.1s,comp=Z,32µm
SEW Seward 46.83 39 *e*P **P 01 05 38.2 -0.1**
comp=Z,3µm,1.4s
PMR Palmer 46.91 37 *e*P **P 01 05 37.5 -1.5**
PMR pmax pmax
comp=Z,1µm,1.1s
PMR Palmer 46.91 37 *e*P **P 01 05 37.5 -1.5**
comp=Z,1µm,1.1s
MCK McKinley 46.95 34 *e*P **P 01 05 39.6 +0.3**
MCK pmax pmax
comp=Z,1µm,1.2s
MCK McKinley 46.95 34 *e*P **P 01 05 39.6 +0.3**
comp=Z,1µm,1.2s
RND Reindeer 46.99 35 *e*P **P 01 05 39.7 0.0**
RND pmax pmax
comp=Z,3µm,1.4s
RND Reindeer 46.99 35 *e*P **P 01 05 39.7 0.0**
comp=Z,3µm,1.4s
SAUI Saumlaki 47.15 196 P **P 01 05 42.5 +1.2**
comp=Z,2µm,1.4s,comp=Z,52µmcomp=Z,167µm
SAUI Saumlaki 47.15 196 *e*P **P 01 05 44.7 +3.3**
comp=Z,11µm,2.0s
SML Sawmill 47.28 37 *e*P **P 01 05 42.0 0.0**
SML pmax pmax
comp=Z,2µm,1.0s
SML Sawmill 47.28 37 *e*P **P 01 05 42.0 0.0**
comp=Z,2µm,1.0s
WRH Wood River Hil 47.31 33 *e*P **P 01 05 42.1 0.0**
comp=Z,317nm,0.8s
KSM Kuching 47.35 228 ⇓P **P 01 05 44.8 +1.9**
KSM Kuching 47.35 228 *e*P **P 01 05 44.2 +1.3**
comp=Z,2µm,1.6s
KSM LR LR
comp=Z,73µm,21.0s
PMG Port Moresby 47.35 175 P **P 01 05 42.2 -0.6**
comp=Z,167nm,0.9s,baz=353,slow=8.7,SNR=30
PMG Port Moresby 47.35 175 *d i*P **P 01 05 41.7 -1.2**
PMG pmax pmax
comp=Z,1µm,1.1s
PMG Port Moresby 47.35 175 *e*P **P 01 05 42.4 -0.4**
comp=Z,856nm,1.3s
PMG LR LR
comp=Z,54µm,19.0s
COLA College 47.41 33 *e*P **P 01 05 43.6 +0.8**
COLA pmax pmax
comp=Z,641nm,0.9s
COLA MLR MLR
comp=Z,85µm,21.0s
COLA College 47.41 33 *e*P **P 01 05 43.6 +0.8**
comp=Z,641nm,0.9s
COLA LR LR
comp=Z,85µm,21.0s
CCB Clear Creek Bu 47.43 33 *e*P **P 01 05 42.9 -0.2**
comp=Z,599nm,1.3s
PDGK Podgornoye 47.63 298 *i* P **P 01 05 45.0 0.0**
PDGK pmax pmax
comp=Z,3µm,1.2s
DHY Denali Highway 47.67 35 *e*P **P 01 05 45.2 +0.1**
comp=Z,2µm,1.6s
SHLS Shalkode 47.70 297⇑ *i*P **P 01 05 43.6 -2.0**
comp=Z,4µm,1.2s
SHLS *i* PP **PP 01 07 34.1 -3.1**
SHLS *i* S **S 01 12 35.2 -5.0**
SHLS LR LR 01 26 16.9
comp=Z,138µm,15.7s
SCM Sheep Creek Mo 47.75 37 *e*P **P 01 05 45.9 +0.2**
SCM Sheep Creek Mo 47.75 37 *e*P **P 01 05 45.9 +0.2**
STKI Sintang 47.82 225 P **P 01 05 47.8 +1.2**
comp=Z,1µm,1.4s,comp=Z,25µmcomp=Z,91µm
IL1 Eielson Array 47.83 33 *e*P **P 01 05 44.4 -1.7**
ILAR Eielson Array 47.83 33 P **P 01 05 45.9 -0.2**
comp=Z,255nm,0.8s,baz=261,slow=5.5,SNR=1076
ILAR LR LR 01 26 32.4
comp=Z,74µm,21.0s,baz=280,slow=37
ILAR P3KPbc
01 34 02.0
comp=Z,0.7nm,0.7s,baz=99,slow=3.5,SNR=6.1
ILAR PKPPKP P'P'df
01 36 43.0 -22
comp=Z,1.5nm,0.9s,baz=158,slow=1.8,SNR=5.0
ILB Eielson Array 47.83 33 *e*P **P 01 05 45.6 -0.5**
KAPI Kappang 48.12 212 P **P 01 05 49.2 +0.3**
comp=Z,230nm,0.8s,baz=33,slow=4.9,SNR=43
KAPI S **S 01 12 48.2 +2.0**
comp=Z,14nm,1.0s,baz=300,slow=20,SNR=4.9
KAPI Kappang 48.12 212 *e*P **P 01 05 49.1 +0.3**
comp=Z,4µm,1.5s
KAPI S **S 01 12 48.2 +2.0**
KAPI LR LR
comp=Z,53µm,22.0s
ZHN Zhinishke 48.41 298⇑ *i*P **P 01 05 51.3 +0.2**
comp=Z,4µm,1.4s
ZHN *i* PP **PP 01 07 43.8 +0.1**
ZHN *e*S **S 01 12 49.1 -1.2**
ZHN LR LR 01 26 35.0
comp=Z,110µm,15.3s
RAMN Ramite 48.43 274 *e*P **P 01 05 51.6 +0.1**
RAMN Ramite 48.43 274 *e*P **P 01 05 52.4 +0.9**
comp=Z,2µm,0.8s
KLU Klutina 48.45 37 *e*P **P 01 05 51.2 +0.2**
comp=Z,2µm,1.3s
MID Middleton Isla 48.45 40 *e*P **P 01 05 51.6 +0.6**
MID pmax pmax
comp=Z,3µm,1.5s
MID Middleton Isla 48.45 40 *e*P **P 01 05 51.6 +0.6**
comp=Z,3µm,1.5s
SATY Saty 48.47 298 *i* P **P 01 05 51.7 +0.2**
comp=Z,8µm,1.6s
SATY *i* PP **PP 01 07 44.5 +0.4**
SATY *i* S **S 01 12 49.6 -1.4**
SATY LR LR 01 26 52.9
comp=Z,197µm,15.6s
PAX Paxson 48.54 35 *e*P **P 01 05 52.1 +0.4**
PAX pmax pmax
comp=Z,2µm,1.7s
PAX Paxson 48.54 35 *e*P **P 01 05 52.1 +0.4**
comp=Z,2µm,1.7s
GUN Gumba 48.55 276 *e*P **P 01 05 53.0 +0.4**
DIV Divide 48.55 38 *e*P **P 01 05 52.3 +0.5**
comp=Z,5µm,1.4s
EYAK Cordova Ski Ar 48.62 38 *e*P **P 01 05 53.0 +0.7**
SURA Surathani 48.63 245 P **P 01 05 54.9 +2.0**
BBKI Banjar Baru 49.01 219 P **P 01 05 55.6 -0.1**
comp=Z,2µm,1.2s,comp=Z,27µm
KKN Kakani 49.07 276 *e*P **P 01 05 56.6 +0.1**
KKN Kakani 49.07 276 *e*P **P 01 05 57.4 +0.9**
comp=Z,4µm,0.8s
PKIN Phulchoki 49.08 276 *e*P **P 01 05 57.1 +0.5**
PKIN *e*S **S 01 13 02.1 +1.8**
DOT Dot Lake 49.12 34 *e*P **P 01 05 55.3 -0.9**
comp=Z,4µm,1.8s
BMRM Bremner River 49.14 38 *e*P **P 01 05 56.5 +0.2**
comp=Z,2µm,1.2s

DMN Daman 49.29 276 *e*P **P** **01 05 59.1 +0.9**
SKLT Songkhla 49.31 243 P **P** **01 06 00.0 +1.9**
comp=Z,1μm,1.1s,comp=Z,21μm
SURT Suratani 49.37 246 P **P** **01 06 00.5 +1.9**
comp=Z,507nm,1.9s,comp=Z,11μm
MDOK Medeo 49.38 298⇓ *i*P **P** **01 05 59.0 +0.4**
comp=Z,6μm,1.3s
MDOK *i* PP **PP** **01 07 53.5 +1.0**
MDOK *i* S **S** **01 13 02.1 -1.9**
MDOK *i* SS **SS** **01 16 31.4 -4.1**
MDOK LR LR 01 25 54.6
comp=Z,93μm,13.2s
AAA Alma-Ata 49.46 298 *e*P **P** **01 06 00.6 +1.5**
AAA *i* S **S** **01 13 04.6 -0.3**
AAA pmax pmax
comp=Z,34μm,9.3s
AAA smax smax
comp=N,51μm,22.2s
AAA MLR MLR
comp=Z,169μm,16.0s
AAA Alma-Ata 49.46 298 *e*P **P** **01 05 59.3 +0.2**
comp=Z,7μm,1.5s
AAA *i* PP **PP** **01 07 53.9 +0.8**
AAA *e*S **S** **01 13 03.9 -1.1**
AAA *i* SS **SS** **01 16 32.0 -4.5**
AAA LR LR 01 27 07.0
comp=Z,73μm,14.0s
GKN Gorkha 49.48 277 *e*P **P** **01 05 59.8 +0.3**
GKN Gorkha 49.48 277 *e*P **P** **01 06 00.4 +0.9**
comp=Z,8μm,1.2s
GKN *e*S **S** **01 13 07.7 +2.0**
TRTT Trang 49.50 244 P **P** **01 06 01.3 +1.7**
comp=Z,912nm,2.4s,comp=Z,22μm
KRAB Krabi 49.59 245 P **P** **01 06 02.1 +1.9**
comp=Z,1μm,0.8s,comp=Z,12μm
KUU Kurty 49.65 299⇑ *i*P **P** **01 06 00.2 -0.3**
comp=Z,14μm,1.2s
KUU *i* PP **PP** **01 07 55.5 +0.7**
KUU *i* S **S** **01 13 05.5 -1.9**
KUU *i* SS **SS** **01 16 34.7 -4.8**
KUU LR LR 01 26 51.7
comp=Z,97μm,13.1s
HNR Honiara 49.74 158 P **P** **01 06 00.5 -0.7**
comp=Z,128nm,0.8s,baz=187,slow=5.2,SNR=11
HNR LR LR 01 25 01.2
comp=Z,141μm,21.3s,baz=338,slow=34
HNR Honiara 49.74 158 *e*P **P** **01 06 02.0 +0.8**
HNR Honiara 49.74 158 *e*P **P** **01 06 00.9 -0.3**
HNR pmax pmax
comp=Z,1μm,1.2s
HNR Honiara 49.74 158 *e*P **P** **01 06 00.9 -0.3**
comp=Z,1μm,1.2s
CRQM Cirque 49.88 38 *e*P **P** **01 06 02.9 +0.8**
comp=Z,5μm,1.3s
PBKI Pangkalan Bun 50.01 223 P **P** **01 06 04.6 +1.2**
comp=Z,1μm,1.2s,comp=Z,19μmcomp=Z,110μm
BALM Baldy 50.22 38 *e*P **P** **01 06 05.0 +0.4**
BALM pmax pmax
comp=Z,2μm,1.4s
BALM Baldy 50.22 38 *e*P **P** **01 06 05.0 +0.4**
comp=Z,2μm,1.4s
EGAK Eagle 50.27 33 *e*P P 01 06 16.5 +12
EGAK LR LR
comp=Z,108μm,20.0s
BRZS Berezniki 50.37 308⇑ *i*P **P** **01 06 05.9 +0.1**
comp=Z,1μm,1.6s
BRZS *i* PP **PP** **01 08 02.6 +1.5**
BRZS *i* S **S** **01 13 15.7 -1.6**
BRZS LR LR 01 27 44.8
KOLN Koldanda 50.40 277 *e*P **P** **01 06 06.7 +0.2**
comp=Z,3μm,0.9s
KOLN Koldanda 50.40 277 *e*P **P** **01 06 06.8 +0.2**
PKDT Phuket 50.43 245 P **P** **01 06 08.7 +2.1**
MMRI Maumere 50.44 207 P **P** **01 06 06.5 -0.1**
comp=Z,922nm,1.2s,comp=Z,33μmcomp=Z,123μm
MMRI Maumere 50.44 207 *e*P **P** **01 06 06.2 -0.4**
comp=Z,1μm,1.1s
TKM2 Tokmak 2 50.47 298 *e*P **P** **01 06 07.6 +0.7**
TKM2 pmax pmax
comp=Z,5μm,1.5s
TKM2 MLR MLR
comp=Z,204μm,19.0s
TKM2 Tokmak 2 50.47 298 *e*P **P** **01 06 07.6 +0.7**
comp=Z,5μm,1.5s
TKM2 LR LR
comp=Z,204μm,19.0s
BOK Bokaro 50.53 271 *e*P **P** **01 06 08.2 +0.9**
BOK IAmb IAmb 01 06 13.5
comp=Z,2μm,1.4s
KULM Kulim 50.62 241 *e*P **P** **01 06 09.5 +1.4**
comp=Z,2μm,1.5s
KULM LR LR
comp=Z,228μm,21.0s
CHKZ Chkalovo 50.72 313 *i*P **P** **01 06 08.1 -0.2**
CHKZ pmax pmax
comp=Z,793nm,1.3s
VOSK Vostochnaya 50.72 312 *e*P **P** **01 06 08.1 -0.3**
VOSK pmax pmax
comp=Z,2μm,1.3s
VOSK Vostochnaya 50.72 312 *e*P **P** **01 06 08.1 -0.3**
comp=Z,2μm,1.3s
PYUN Piuthan 50.73 278 *e*P **P** **01 06 09.3 +0.3**
PYUN Piuthan 50.73 278 *e*P **P** **01 06 10.3 +1.3**
comp=Z,4μm,1.0s
SOEI Soe 50.78 205 P **P** **01 06 08.9 -0.4**
comp=Z,2μm,1.2s,comp=Z,32μmcomp=Z,145μm
SOEI Soe 50.78 205 *e*P **P** **01 06 08.5 -0.8**
comp=Z,2μm,0.9s
BTLS Baital 50.87 301⇓ *i*P **P** **01 06 10.1 +0.5**
comp=Z,3μm,1.4s
BTLS *i* PP **PP** **01 08 07.3 +1.5**
BTLS *i* S **S** **01 13 23.0 -1.3**
BTLS *i* SS **SS** **01 16 56.2 -2.5**
BTLS LR LR 01 27 40.2
comp=Z,38μm,13.1s
IPM Ipoh 50.95 240 *e*P **P** **01 06 10.4 -0.2**
comp=Z,2μm,1.5s
DGPR DIGLIPUR 50.99 255 *e*P **P** **01 06 11.8 +1.0**
BVA0 Borovoye Array 51.00 312 P **P** **01 06 10.8 +0.3**
BVA0 pmax pmax
comp=Z,330nm,1.0s
OTUK Ortayu 51.05 306 P **P** **01 06 11.6 +0.6**
OTUK pmax pmax
comp=Z,2μm,1.1s
BRVK Borovoye 51.05 312*c i*P **P** **01 06 10.9 +0.1**
BRVK pmax pmax
comp=Z,3μm,2.5s
BRVK MLR MLR
comp=Z,654μm,18.0s
BRVK Borovoye 51.05 312 *e*P **P** **01 06 11.0 +0.1**
comp=Z,2μm,1.4s
BRVK LR LR
comp=Z,181μm,19.0s
MYKOM Kota Tinggi 51.07 235 *e*P **P** **01 06 12.6 +1.1**
comp=Z,2μm,1.8s
DAWY Dawson 51.13 33 *e*P **P** **01 06 11.8 +0.5**
comp=Z,1μm,1.6s
FRU Bishkek 51.18 298 *i*P **P** **01 06 12.0 0.0**
FRU *i*S **S** **01 13 30.0 +1.2**
FRU *i* 01 17 00.0
FRU pmax pmax
comp=E,12μm,7.0s
FRU smax smax
comp=E,29μm,8.0s
FRU MLR MLR
comp=E,143μm,16.0s
TPRI Tanjung Pinang 51.31 233 P **P** **01 06 14.8 +1.6**
comp=E,712nm,1.1s,comp=E,15μm
AAK Ala-Archa 51.33 298 P **P** **01 06 14.2 +0.9**
comp=E,200nm,0.9s,baz=85,slow=6.6,SNR=158
AAK Ala-Archa 51.33 298*c i*P **P** **01 06 13.9 +0.6**
AAK pmax pmax
comp=Z,4μm,2.2s
AAK MLR MLR
comp=Z,419μm,16.0s
AAK Ala-Archa 51.33 298 P **P** **01 06 14.2 +0.9**
SNR=629
AAK P **P** **01 06 14.2 +0.9**
SNR=629
AAK Ala-Archa 51.33 298 *e*P **P** **01 06 13.4 +0.1**
comp=Z,409nm,0.8s
AAK LR LR
comp=Z,98μm,20.0s
KSH Kashi 51.36 294 P **P** **01 06 18.3 +4.7**
KSH *e*pP sP 01 06 23.4 -0.8
KSH *e*sP pP 01 06 26.7 +5.5
KSH *e*PcP **PcP** **01 07 32.9 +4.8**
KSH *e*ScP **ScP** **01 11 26.0 +3.0**
KSH S **S** **01 13 35.2 +3.6**
KSH ScS **ScS** **01 16 04.7 +2.2**
KSH pmax pmax
comp=Z,510nm,1.2s
KSH LR LR
comp=Z,214μm,16.5s
KSH LR LR
comp=Z,279μm,14.9s
KSH LR LR
comp=Z,368μm,16.0s
PCA Pinnacle 51.39 39 *e*P **P** **01 06 14.1 +0.7**
comp=Z,2μm,1.6s
BATI Baumata 51.40 205 P **P** **01 06 14.8 +0.9**
comp=Z,460nm,0.9s,comp=Z,9μm
COEN Coen 51.74 180 *e*P **P** **01 06 15.9 -0.4**
comp=Z,1μm,1.4s
EKS2 Erkin-Say 51.82 298 *e*P **P** **01 06 16.9 0.0**
EKS2 pmax pmax
comp=Z,571nm,1.1s
EKS2 MLR MLR
comp=Z,209μm,20.0s
EKS2 Erkin-Say 51.82 298 *e*P **P** **01 06 16.9 0.0**
comp=Z,571nm,1.1s
EKS2 LR LR
comp=Z,209μm,20.0s
ZRNK Zerenda 51.83 312 *i*P **P** **01 06 17.0 +0.3**
ZRNK pmax pmax
comp=Z,1μm,1.3s
ZRNK Zerenda 51.83 312 *e*P **P** **01 06 16.7 0.0**
comp=Z,2μm,1.4s
MTN Manton Dam 51.90 195 *e*P **P** **01 06 16.2 -1.3**
comp=Z,1μm,1.0s
PBA Port Blair 52.08 254 *e*P P 01 06 19.8 +0.7
BWJI Bawean 52.16 220 P P 01 06 26.3 +6.8
PTH Pithoragarh 52.22 281 *e*P **P** **01 06 20.6 +0.4**
PTH *ex* x 01 13 51.9
PLAI Plampang 52.38 213 P **P** **01 06 19.5 -1.6**
comp=Z,477nm,1.0s,comp=Z,15μmcomp=Z,114μm
BWNR Bhubaneshwar 52.42 267 *e*P **P** **01 06 21.9 +0.4**
BWNR IAmb IAmb 01 06 30.3
HYT Haines Junctio 52.58 37 *e*P **P** **01 06 23.7 +1.4**
comp=Z,2μm,1.0s
DHAK Deception Hill 52.62 40 *e*P **P** **01 06 24.1 +1.6**
comp=Z,3μm,1.5s
OPA Opana 52.62 90 *e*P **P** **01 06 25.3 +2.3**
OPA pmax pmax
comp=Z,3μm,1.6s
OPA Opana 52.62 90 *e*P **P** **01 06 25.3 +2.3**
comp=Z,3μm,1.6s
TWSI Taliwang, Sumb 52.68 214 P **P** **01 06 22.1 -1.3**
comp=Z,632nm,1.1s,comp=Z,10μm
PPBI Pangkal Pinang 52.73 229 P **P** **01 06 24.7 +1.0**
comp=Z,470nm,1.4s,comp=Z,22μm
KIP Kipapa 52.76 91⇓ *e*P **P** **01 06 25.2 +1.2**
KIP pmax pmax
comp=Z,7μm,2.5s
KIP Kipapa 52.76 91 *e*P **P** **01 06 25.7 +1.7**
comp=Z,3μm,1.9s
KIP LR LR
comp=Z,71μm,19.0s
MNAS Manas 52.76 299 *i*P **P** **01 06 24.2 +0.2**
MNAS pmax pmax
comp=Z,2μm,1.1s
INK Inuvik 52.79 28 LR LR 01 32 10.0
comp=Z,88μm,20.0s,baz=277,slow=40
INK Inuvik 52.79 28 *e*P **P** **01 06 24.2 +0.6**
INK pmax pmax
comp=Z,1μm,1.5s
INK Inuvik 52.79 28 *e*P **P** **01 06 24.1 +0.6**
comp=Z,1μm,1.5s
SRBI Singaraja 52.85 216 P **P** **01 06 25.1 +0.5**
comp=Z,2μm,1.2s,comp=Z,31μm
ABJI Asem Bagus 53.06 217 P **P** **01 06 26.9 +0.7**
comp=Z,976nm,2.4s,comp=Z,29μm
GRJI Gresik 53.16 219 P **P** **01 06 27.9 +1.0**
LHMI Lhok Sumawe 53.26 244 P **P** **01 06 30.9 +3.2**
comp=Z,1μm,1.9s,comp=Z,41μmcomp=Z,109μm
LHMI Lhok Sumawe 53.26 244 *e*P **P** **01 06 30.7 +3.0**
comp=Z,4μm,1.5s
TSI Tuntungan 53.35 241 P **P** **01 06 29.5 +1.1**
comp=Z,589nm,1.0s,comp=Z,20μmcomp=Z,80μm
DNP Denpasar 53.38 215 P **P** **01 06 28.0 -0.5**
comp=Z,2μm,1.5s,comp=Z,64μmcomp=Z,124μm
UWJI Ujung Watu 53.52 221 P **P** **01 06 31.6 +2.0**
comp=Z,2μm,1.5s,comp=Z,25μmcomp=Z,82μm
DDI Dehra Dun 53.55 283 *e*P **P** **01 06 30.1 +0.3**
PSI Prapat 53.60 240 P **P** **01 06 30.9 +0.5**
comp=Z,191nm,1.0s,baz=18,slow=5.1,SNR=75
PSI Prapat 53.60 240 *e*P **P** **01 06 31.2 +0.8**
PSI pmax pmax
comp=Z,498nm,1.0s
PSI Prapat 53.60 240 *e*P **P** **01 06 31.2 +0.8**
comp=Z,498nm,1.0s
JAGI Jajag, Banyuwa 53.69 217 P **P** **01 06 28.9 -1.9**
comp=Z,465nm,0.9s,comp=Z,13μmcomp=Z,89μm
JAGI Jajag, Banyuwa 53.69 217 *e*P **P** **01 06 28.4 -2.4**
comp=Z,383nm,0.9s
JMBI JAMBI 53.84 232 P **P** **01 06 35.2 +3.3**
comp=Z,2μm,1.2s,comp=Z,40μm
GMJI Gumukmas 53.85 218 P **P** **01 06 30.9 -1.1**
comp=Z,321nm,1.1s,comp=Z,11μmcomp=Z,94μm
SMLA Simla 53.87 284 *e*P **P** **01 06 31.9 -0.1**
KK31 Karatay Array 53.91 300*ce*P **P** **01 06 32.6 +0.3**
KK31 pmax pmax
comp=Z,1μm,1.1s
KKAR Karatay Array 53.91 300 *e*P **P** **01 06 32.1 -0.2**
KKAR Karatay Array 53.91 300 *e*P **P** **01 06 32.1 -0.2**
SKAG Skagway 53.97 39 *e*P **P** **01 06 34.0 +1.7**
comp=Z,1μm,1.6s
BKNI Bangkinang 54.01 236 P **P** **01 06 34.7 +1.5**
comp=Z,2μm,1.9s,comp=Z,34μmcomp=Z,98μm
BKNI Bangkinang 54.01 236 *e*P **P** **01 06 34.4 +1.2**
comp=Z,5μm,1.5s
NGJI Ngawi 54.06 220 P **P** **01 06 34.8 +1.3**
comp=Z,1μm,1.3s,comp=Z,37μm
PMBI Palembang 54.15 230 P **P** **01 06 36.4 +2.2**
comp=Z,2μm,1.2s,comp=Z,29μmcomp=Z,100μm
JWA Jwalamukhi 54.18 285 *e*P **P** **01 06 33.0 -1.3**
JWA *ex* x 01 06 57.0
CMBY CAMPBELL BAY 54.22 248 *e*P **P** **01 06 34.2 -0.6**
MLSI Meulaboh, Aceh 54.32 244 P **P** **01 06 35.5 0.0**
comp=Z,1μm,1.4s,comp=Z,18μm
THN Thein Dam 54.40 286 *e*P **P** **01 06 32.6 -3.2**
THN *e*S **S** **01 14 08.8 -4.0**
BRLS Borolday 54.40 300 *i*P **P** **01 06 37.8 +1.9**
BRLS *i*S **S** **01 14 13.7 +1.0**
PONG Pong 54.43 285 *e*P **P** **01 06 37.0 +0.9**
PONG *ex* x 01 14 22.0
TPTI 54.48 242 P **P** **01 06 36.0 -0.7**
comp=Z,193nm,1.0s,comp=Z,6μm
HLK Haleakala 54.50 90 *e*P **P** **01 06 39.6 +2.5**
comp=Z,1μm,1.4s
IUG Iuzhnay 54.59 299 *i*P **P** **01 06 37.8 +0.4**
comp=Z,19μm,1.4s
IUG *i*S **S** **01 14 13.6 -1.9**
IUG LR LR 01 30 49.5
comp=Z,61μm,14.1s
MNSI Mandailing Nat 54.62 238 P **P** **01 06 37.7 0.0**
comp=Z,471nm,1.1s,comp=Z,12μm
SDSI Sungai Dareh 54.70 235 P **P** **01 06 39.2 +1.0**
comp=Z,1μm,1.4s
WOJI Wonogiri, Jawa 54.73 221 P **P** **01 06 38.1 -0.3**
comp=Z,779nm,2.0s,comp=Z,23μmcomp=Z,86μm
CHLP Challavanipeta 54.78 267 *e*P **P** **01 06 40.2 +1.5**
CHLP IAmb IAmb 01 06 48.2
comp=Z,3μm,1.6s
CHLP *e*S **S** **01 14 17.5 -0.7**
CHLP IVMs_BB IVMs_BB 01 32 02.2
comp=Z,61μm,19.5s
CHM Chimkent 54.82 299 *e*P **P** **01 06 39.5 +0.6**
comp=Z,3μm,1.1s
CHM *i* PP **PP** **01 08 44.0 +2.4**
CHM *e*S **S** **01 14 17.2 -1.2**
CHM *i* SS **SS** **01 18 00.6 -0.8**
CHM LR LR 01 30 10.3
comp=Z,70μm,15.4s
PCJI Pacitan 54.91 220 P **P** **01 06 39.2 -0.5**
comp=Z,513nm,1.2s,comp=Z,16μmcomp=Z,83μm
UGM Wanagama 55.00 221 P **P** **01 06 39.7 -0.7**
comp=Z,3μm,1.4s,comp=Z,38μmcomp=Z,92μm
UGM Wanagama 55.00 221 *e*P **P** **01 06 39.6 -0.8**
comp=Z,6μm,1.4s
HPAH Hawaii Prepara 55.33 91 *e*P **P** **01 06 44.7 +1.8**
comp=Z,240nm,0.8s
SVE Sverdlovsk 55.38 319*d i*P **P** **01 06 43.7 +1.1**
SVE *e* 01 08 53.4
SVE *e*PPP PPP 01 10 03.7
SVE *i* S **S** **01 14 26.9 +1.6**
SVE *e* 01 16 25.5
SVE pmax pmax
comp=Z,3μm,2.2s
SVE pmax pmax
comp=Z,17μm,18.6s
SVE MLR MLR
comp=E,385μm,16.0s
SVE MLR MLR
comp=Z,512μm,16.0s
POHA Pohakuloa 55.61 91 *e*P **P** **01 06 46.7 +1.6**
comp=Z,675nm,0.8s
POHA LR LR
comp=Z,45μm,19.0s
GSI Gunungsitoli 55.61 240 P **P** **01 06 45.3 +0.5**
comp=Z,3μm,2.0s,comp=Z,61μm
GSI Gunungsitoli 55.61 240 *e*P **P** **01 06 45.1 +0.3**
comp=Z,7μm,1.6s
LHSI Lahat 55.62 231 P **P** **01 06 45.6 +0.7**
comp=Z,3μm,1.2s,comp=Z,39μmcomp=Z,86μm
MLOA Mauna Loa Obse 55.69 91 *e*P **P** **01 06 47.6 +1.7**
VIS Vishakhapatnam 55.79 266 *e*P **P** **01 06 46.9 +0.8**
BLSI Bandar Lampung 55.81 228 P **P** **01 06 45.9 -0.4**
comp=Z,652nm,1.1s,comp=Z,14μmcomp=Z,72μm
SBJI Serang 55.91 227 P **P** **01 06 48.0 +1.1**
comp=Z,605nm,1.1s,comp=Z,21μm
DBJI Dramaga 55.91 226 P **P** **01 06 46.6 -0.3**
comp=Z,456nm,2.1s,comp=Z,20μmcomp=Z,84μm
CMJI Cimerak 55.99 223 P **P** **01 06 46.3 -1.2**
comp=Z,379nm,1.0s,comp=Z,9μm
KSI Kapahiang 56.06 232 P **P** **01 06 48.2 +0.1**
CISI Cisompet, Garu 56.15 224 P **P** **01 06 47.0 -1.7**
comp=Z,432nm,1.6s,comp=Z,16μmcomp=Z,75μm
CISI Cisompet, Garu 56.15 224 *e*P **P** **01 06 46.0 -2.7**
comp=Z,514nm,0.9s
LWLI Liwa 56.24 229 P **P** **01 06 48.6 -0.8**
comp=Z,932nm,0.8s,comp=Z,11μm
CRAG Craig 56.30 43 *e*P **P** **01 06 50.6 +1.4**
comp=Z,400nm,1.2s
CNJI Cibinong 56.32 225 P **P** **01 06 47.6 -2.2**
comp=Z,564nm,1.0s,comp=Z,7μm
KASI Kota Agung 56.38 229 P **P** **01 06 48.7 -1.6**
comp=Z,506nm,1.3s,comp=Z,10μmcomp=Z,69μm
SKJI Sukabumi 56.39 225 P **P** **01 06 48.8 -1.5**
comp=Z,439nm,1.0s,comp=Z,11μmcomp=Z,57μm
WRAK Wrangell Islan 56.39 42 *e*P **P** **01 06 51.4 +1.6**
comp=Z,498nm,1.2s
WRAK LR LR
comp=Z,75μm,19.0s
SOKR Solikamsk 56.43 322*c i*P **P** **01 06 48.9 -1.1**
SOKR 01 08 58.3
SOKR S **S** **01 14 38.7 -0.4**
SOKR SS SS **01 18 30.4 +4.6**
SOKR pmax pmax
comp=Z,842nm,1.6s
CGJI Cibinong 56.56 227 P **P** **01 06 49.1 -2.5**
ARU Arti 56.59 318 P **P** **01 06 51.5 +0.2**
comp=Z,209nm,0.8s,baz=77,slow=4.5,SNR=264
ARU LR LR 01 33 51.8
comp=Z,384μm,18.1s,baz=66,slow=39
ARU PKPPKP P'P'df 01 36 44.0 -8.0
comp=Z,1.2nm,0.4s,baz=235,slow=2.3,SNR=4.6
ARU PKP2bc 01 36 52.0
comp=Z,0.9nm,0.3s,baz=265,slow=5.3,SNR=4.4
ARU P4KPbc 01 44 03.4
comp=Z,0.8nm,0.3s,baz=96,slow=14,SNR=2.3
ARU Arti 56.59 318*c i*P **P** **01 06 51.1 -0.2**
ARU 01 07 46.8
ARU 01 08 59.8
ARU PPP PPP 01 10 18.0
ARU 01 16 34.4
ARU SS **SS** **01 18 26.1 -2.4**
ARU SSS SSS 01 20 45.6
ARU pmax pmax
comp=Z,1μm,1.2s
ARU pmax pmax
comp=Z,14μm,16.3s
ARU MLR MLR
comp=Z,437μm,17.0s
ARU Arti 56.59 318 *e*P **P** **01 06 51.2 0.0**
comp=Z,3μm,1.4s
ARU P'P' 01 36 44.0
ARU ⇑*e* 01 36 52.0
PPSI Pulau Pagai 57.01 235 P **P** **01 06 55.8 +1.1**
comp=Z,2μm,1.7s,comp=Z,30μm
FUNA Funafuti 57.17 136 *e*P **P** **01 06 59.3 +3.4**
comp=Z,1μm,1.5s
FUNA LR LR
comp=Z,98μm,20.0s
NGP Nagpur 57.30 272 *e*P **P** **01 06 55.7 -1.1**
NGP IAmb IAmb 01 07 02.2
comp=Z,64μm,4.3s
H02N1 VAN INLET T-PH 57.39 45 P **P** **01 06 56.8 -0.3**
SNR=172
PVM Polavaram 57.40 267 *e*P **P** **01 06 57.6 0.0**
PVM IAmb IAmb 01 07 06.5
comp=Z,4μm,1.9s
PVM *e*S **S** **01 14 51.6 -1.5**
PVM IVMs_BB IVMs_BB 01 31 44.4
comp=Z,46μm,19.7s
DIB Dawson Inlet, 57.44 45 *e*P **P** **01 06 57.8 +0.5**
H02S1 DAWSON INLET T 57.44 45 P **P** **01 06 57.6 +0.2**
SNR=289
BHPL Bhopal 57.48 275 *e*P **P** **01 06 58.0 -0.1**
BHPL IAmb IAmb 01 07 06.6
comp=Z,2μm,1.3s
CTA Charters Tower 57.90 177 P **P** **01 06 59.9 -1.0**
comp=Z,51nm,1.0s,baz=358,slow=8.3,SNR=22
CTAO Charters Tower 57.90 177 *e*P **P** **01 06 59.8 -1.0**
CTAO pmax pmax
comp=Z,694nm,1.5s
CTAO MLR MLR
comp=Z,61μm,20.0s
CTAO Charters Tower 57.90 177 *e*P **P** **01 06 59.8 -1.0**
comp=Z,694nm,1.5s
CTAO LR LR
comp=Z,61μm,20.0s
FITZ Fitzroy Crossi 58.27 200 P **P** **01 07 03.5 0.0**
comp=Z,211nm,0.9s,baz=24,slow=7.5,SNR=68
WRAB Tennant Creek 58.29 190*d i*P **P** **01 07 02.4 -1.2**
WRAB pmax pmax
comp=Z,3μm,1.1s
WRAB Tennant Creek 58.29 190 *e*P **P** **01 07 02.3 -1.3**
comp=Z,2μm,1.4s
WRAB LR LR
comp=Z,103μm,21.0s
WB2 Warramunga Arr 58.30 190 *e*P **P** **01 07 01.9 -1.8**
WRA Warramunga Ar 58.30 190 P **P** **01 07 02.5 -1.2**
comp=Z,845nm,1.0s,baz=8.6,slow=7.3,SNR=364
WRA S **S** **01 15 01.0 -3.6**
comp=Z,107nm,1.4s,baz=6.2,slow=12,SNR=11
WRA LR LR 01 35 34.8
comp=Z,19μm,19.1s,baz=15,slow=40
WRA PKP2bc 01 36 51.1
comp=Z,9.5nm,1.2s,baz=226,slow=1.6,SNR=6.3
RPR Rampur 58.34 270 *e*P **P** **01 07 05.0 +0.8**
RPR IAmb IAmb 01 07 12.8
comp=Z,6μm,1.9s
RPR *e*S **S** **01 15 04.2 -1.2**
RPR IVMs_BB IVMs_BB 01 35 15.9
comp=Z,53μm,16.9s
AB31 Akbulak array 58.43 310*ce*P **P** **01 07 04.3 -0.1**
AB31 pmax pmax
comp=Z,146nm,0.5s
ABKAR Akbulak array 58.43 310 *e*P **P** **01 07 03.9 -0.4**
KBL Kabul 58.45 291 *e*P **P** **01 07 04.9 -0.1**
KBL pmax pmax
comp=Z,1μm,1.0s
KBL Kabul 58.45 291 *e*P **P** **01 07 04.9 -0.1**
comp=Z,1μm,1.0s
SRSP Sriramsagar 59.05 271 *e*P **P** **01 07 08.2 -1.0**
SRSP IAmb IAmb 01 07 14.4
comp=Z,3μm,1.2s
SRSP *e*S **S** **01 15 12.4 -2.3**
SRSP IVMs_BB IVMs_BB 01 35 34.2
comp=Z,39μm,16.2s
AKTO Aktyubinsk 59.11 312 P **P** **01 07 09.1 0.0**
comp=Z,264nm,0.8s,baz=62,slow=9.8,SNR=113
AKTO LR LR 01 34 12.1
comp=Z,182μm,19.3s,baz=59,slow=38
AKTO P4KPbc 01 44 17.1
comp=Z,4.1nm,0.9s,baz=77,slow=5.9,SNR=5.5
AKTO Aktyubinsk 59.11 312 *i*P **P** **01 07 09.3 +0.2**

AKTO pmax pmax
comp=Z,702nm,1.1s
HOPEN Hopen 59.41 346 *e*P **P 01 07 11.9 +1.1**
HOPEN IVmB_BB 01 07 27.6
comp=Z,10μm,3.4s
HOPEN *e*S **S 01 15 16.9 -0.9**
HOPEN IVMs_BB IVMs_BB 01 34 22.6
comp=Z,78μm,18.8s
NJS Nagarjunasagar 59.62 268 *e*P **P 01 07 12.9 -0.1**
NJS IAmb IAmb 01 07 21.6
comp=Z,1μm,1.3s
NJS *e*S **S 01 15 20.3 -1.7**
NJS IVMs_BB IVMs_BB 01 33 34.2
comp=Z,44μm,19.9s
HYB Hyderabad 59.73 269 *i* P **P 01 07 14.0 +0.2**
comp=Z,600nm,1.0s
HYB *e*PcP **PcP 01 08 02.5 +1.9**
HYB *e*PP **PP 01 09 30.0 +4.3**
HYB *e*S **S 01 15 24.0 +0.5**
HYB LR LR
comp=Z,188nm,30.0s
HYB Hyderabad 59.73 269 *e*P **P 01 07 14.0 +0.2**
HYBB Hyderabad (bro 59.73 269 *e*P **P 01 07 13.7 -0.1**
HYBB IAmb IAmb 01 07 22.2
comp=Z,2μm,1.3s
HYBB *e*S **S 01 15 22.2 -1.3**
HYBB IVMs_BB IVMs_BB 01 36 56.0
comp=Z,35μm,18.3s
XMIS Christmas Isla 59.75 224 *e*P **P 01 07 12.4 -1.4**
comp=Z,1μm,1.5s
SPA0 Spitsbergen Ar 59.81 349 *e*P **P 01 07 13.4 -0.2**
SPA0 *e*S **S 01 15 19.2 -3.8**
SPA0 IVMs_BB IVMs_BB 01 32 26.8
comp=Z,55μm,20.1s
SPA0 Spitsbergen Ar 59.81 349 *e*P **P 01 07 14.4 +0.9**
SPITS Spitsbergen Ar 59.81 349 LR LR 01 33 53.1
comp=Z,159μm,20.4s,baz=40,slow=37
KBS Kingsbay 59.91 350 *e*P **P 01 07 14.8 +0.7**
KBS IVmB_BB 01 07 21.1
comp=Z,6μm,2.8s
KBS *e*S **S 01 15 24.4 +0.3**
KBS *e*SS **SS 01 19 22.5 +2.7**
KBS IVMs_BB IVMs_BB 01 32 09.7
comp=Z,48μm,19.8s
KBS Kingsbay 59.91 350 *e*P **P 01 07 15.4 +1.2**
KBS pmax pmax
comp=Z,287nm,0.9s
KBS MLR MLR
comp=Z,148μm,21.0s
KBS Kingsbay 59.91 350 *e*P **P 01 07 15.4 +1.2**
comp=Z,287nm,0.9s
KBS LR LR
comp=Z,148μm,21.0s
SRLM Srisailam 60.20 268 *e*P **P 01 07 16.6 -0.5**
SRLM IAmb IAmb 01 07 25.4
comp=Z,1μm,1.3s
SRLM *e*S **S 01 15 27.8 -1.8**
SRLM IVMs_BB IVMs_BB 01 33 51.4
comp=Z,47μm,20.5s
BBB Bella Bella 60.28 45 *e*P **P 01 07 17.3 +0.2**
RCLA Racherla 60.52 267 *e*P **P 01 07 18.9 -0.3**
RCLA IAmb IAmb 01 07 27.9
comp=Z,1μm,1.2s
RCLA *e*S **S 01 15 34.0 +0.4**
RCLA IVMs_BB IVMs_BB 01 34 11.2
comp=Z,51μm,20.3s
HSPB Hornsund (broa 60.76 348 *e*P **P 01 07 20.4 +0.4**
HSPB IVmB_BB 01 07 36.2
comp=Z,9μm,3.6s
HSPB *e*S **S 01 15 38.0 +3.0**
HSPB IVMs_BB IVMs_BB 01 35 43.4
comp=Z,49μm,18.4s
HSPB Hornsund (broa 60.76 348 *e*P **P 01 07 21.2 +1.2**
HSPB *e**SP **pP 01 07 29.1 +1.4**
HSPB *e*S **S 01 15 35.6 +0.5**
MDRS Chennai 60.89 264 *e*P **P 01 07 22.9 +1.1**
MDRS IAmb IAmb 01 07 27.8
comp=Z,687nm,1.0s
KLRI Killari 60.91 271 *e*P **P 01 07 21.0 -0.9**
KLRI IAmb IAmb 01 07 30.5
comp=Z,3μm,1.2s
KLRI *e*S **S 01 15 36.0 -2.7**
KLRI IVMs_BB IVMs_BB 01 36 40.8
comp=Z,50μm,14.8s
SKHT Srikalahasti 60.92 265 *e*P **P 01 07 22.7 +0.7**
SKHT IAmb IAmb 01 07 31.2
comp=Z,2μm,1.3s
SKHT *e*S **S 01 15 38.9 +0.2**
SKHT IVMs_BB IVMs_BB 01 37 50.8
comp=Z,32μm,23.1s
RES Resolute Bay 61.23 15 LR LR 01 35 23.1
comp=Z,80μm,21.2s,baz=318,slow=38
RES Resolute Bay 61.23 15 *e*P **P 01 07 23.9 +0.7**
RES Resolute Bay 61.23 15 *e*P **P 01 07 23.9 +0.7**
LVZ Lovozero 61.79 336 *c i*P **P 01 07 26.6 -0.6**
LVZ pmax pmax
comp=Z,396nm,1.7s
LVZ MLR MLR
comp=Z,177μm,17.0s
LVZ Lovozero 61.79 336 *e*P **P 01 07 26.4 -0.8**
LVZ LR LR
comp=Z,182μm,19.0s
BJO Bjornoya 61.82 345 *e*P **P 01 07 27.8 +0.6**
BJO IVmBBB 01 07 43.4
comp=Z,5μm,3.3s
BJO *e*S **S 01 15 48.6 0.0**
BJO IVMs_BB IVMs_BB 01 35 57.1
comp=Z,82μm,17.3s
AS01 Alice Springs 62.02 190 *e*P **P 01 07 27.2 -1.9**
AS31 Alice Springs 62.02 190 *e*P **P 01 07 28.1 -1.1**
ASAR Alice Springs 62.03 190 P **P 01 07 28.1 -1.1**
comp=Z,262nm,1.1s,baz=10,slow=5.2,SNR=492
ASAR S **S 01 15 44.9 -7.5**
comp=Z,4.2nm,1.1s,baz=11,slow=10,SNR=3.4
ASAR PKPPKP **P'P'df 01 36 33.3 +2.6**
comp=Z,3.3nm,1.1s,baz=176,slow=2.1,SNR=6.2
ASAR PKP2bc 01 36 46.0
comp=Z,6.4nm,1.1s,baz=191,slow=2.5,SNR=7.5
ASAR LR LR 01 37 49.6
comp=Z,22μm,19.3s,baz=11,slow=39
ASAR P4KPbc 01 44 33.5
comp=Z,1.4nm,1.0s,baz=349,slow=2.6,SNR=4.3
YKA Yellowknife Ar 62.17 31 P **P 01 07 29.4 -0.3**
comp=Z,28nm,0.7s,baz=303,slow=6.8,SNR=161
YKA LR LR 01 35 22.7
comp=Z,4μm,20.0s,baz=0.0,slow=37
YKA PKPPKP P'P'df 01 36 31.5 -12
comp=Z,1.4nm,0.9s,baz=122,slow=3.2,SNR=4.1
YKA PKP2bc 01 36 46.5
comp=Z,4.1nm,0.9s,baz=123,slow=2.5,SNR=8.3
APA Apatity 62.37 336 ⇑ *i*P **P 01 07 30.4 -0.6**
APA *i* 01 09 54.0
APA *i* PPP PPP 01 11 28.0
APA *i* S **S 01 15 52.0 -3.7**
APA *i* 01 17 16.0
APA *i* SS **SS 01 19 56.0 -2.6**
APA pmax pmax
comp=Z,268nm,1.0s
APA MLR MLR
comp=Z,210μm,18.0s
POO Poona 62.82 273 ⇑ *i*P **P 01 07 33.0 -1.8**
comp=Z,85nm,1.2s
POO *e*P **P 01 07 34.8 0.0**
MBWA Marble Bar 62.93 205 P **P 01 07 34.6 -0.6**
SNR=14
MBWA Marble Bar 62.93 205 PFAKE 01 07 50.0 +15
MBWA LR LR
comp=Z,35μm,19.0s
HAMF Hammerfest 63.34 341 ⇓ *i*P **P 01 07 36.6 -0.8**
HAMF IVmB_BB 01 07 45.4
comp=Z,5μm,1.3s
HAMF *e*S **S 01 16 08.8 +1.0**
HAMF *e*SS **SS 01 20 14.8 +1.1**
HAMF IVMs_BB IVMs_BB 01 36 19.3
comp=Z,45μm,19.4s
BOM Bombay 63.43 274 *e*P P 01 07 46.6 +7.8
BOM *e*S S 01 16 20.2 +10
EIDS Eidsvold 63.51 172 *e*P **P 01 07 38.9 0.0**
BHJ Bhuj 63.55 280 *e*P **P 01 07 40.9 +1.3**
BHJ IAMs_20 IAMs_20 01 47 16.7
comp=Z,34μm,14.5s
ARA0 ARCESS Array S 63.57 340 *e*P **P 01 07 39.4 +0.4**
ARCES ARCESS Array B 63.57 340 P **P 01 07 39.3 +0.4**
comp=Z,97nm,0.7s,baz=56,slow=8.4,SNR=189
ARCES PKPPKP P'P'df 01 36 29.6 -12
comp=Z,2.6nm,0.8s,baz=313,slow=2.5,SNR=4.0
ARCES PKP2bc 01 36 43.4
comp=Z,5.7nm,0.9s,baz=112,slow=1.3,SNR=8.4
ARE0 ARCESS Array S 63.57 340 *e*P **P 01 07 39.8 +0.9**
ARE0 IVmB_BB 01 07 49.6
comp=Z,6μm,2.8s
ARE0 *e*S **S 01 16 10.6 -0.1**
ARE0 *e*SS **SS 01 20 17.0 -0.3**
ARE0 IVMs_BB IVMs_BB 01 41 22.0
comp=Z,77μm,15.6s
ARE0 ARCESS Array S 63.57 340 *e*P **P 01 07 39.5 +0.5**
DZM Mont Dzumac 63.64 156 *e*P **P 01 07 39.7 -0.4**
comp=Z,2μm,1.3s
DZM *e*S **S 01 16 11.9 -0.8**
comp=Z,115μm,28.7s
DZM *e*SS **SS 01 20 18.9 -2.2**
comp=Z,60μm,27.2s
DZM *e*LQ LQ 01 23 36.9
comp=Z,679μm,32.9s
DZM *e*LR LR 01 26 33.6
comp=Z,152μm,23.9s
DZM Mont Dzumac 63.64 156 *e*P **P 01 07 39.6 -0.4**
KLMR Klimovskoe 63.69 328 *e*P **P 01 07 37.7 -2.1**
KLMR *e* 01 09 57.8
KLMR *e*S **S 01 16 13.6 +1.2**
KLMR pmax pmax
comp=Z,2μm,1.4s
PALK Pallekele 64.05 258 P **P 01 07 43.5 +0.5**
comp=Z,193nm,0.9s,baz=116,slow=2.7,SNR=32
PALK Pallekele 64.05 258 *i* P **P 01 07 43.7 +0.8**
SNR=44
PALK Pallekele 64.05 258 *i* P **P 01 07 44.1 +1.1**
C03A Quillayute Air 64.23 48 *e*P **P 01 07 45.6 +2.0**
MSVF Nonsavu 64.38 143 *d i*P **P 01 07 44.9 -0.1**
MSVF pmax pmax
comp=Z,750nm,2.2s
MSVF Nonsavu 64.38 143 *e*P **P 01 07 45.9 +1.0**
MSVF LR LR
comp=Z,100μm,21.0s
ASHT Ashkhabad 64.46 299 P **P 01 07 46.8 +1.5**
ASHT pmax pmax
comp=Z,761nm,1.1s
LLLB Lillooet 64.48 45 *e*P **P 01 07 45.8 +0.5**
PGC Sidney 64.55 47 *e*P **P 01 07 46.5 +0.8**
GOA Goa 64.55 270 *e*P **P 01 07 46.4 +0.3**
SGF Sodankyl 64.59 338 P **P 01 07 46.3 +0.7**
SGF pmax pmax
comp=Z,2μm,1.0s
GEYT Alibeck 64.65 299 P **P 01 07 47.2 +0.6**
comp=Z,836nm,1.2s,baz=29,slow=3.4,SNR=172
GEYT PKP2bc 01 36 39.0
comp=Z,8.9nm,1.2s,baz=270,slow=5.5,SNR=7.0
GEYT LR LR 01 38 02.6
comp=Z,188μm,18.2s,baz=20,slow=38
VGZ Gonzales 64.73 47 P **P 01 07 47.4 +0.6**
MSF Maaselka 64.75 336 P **P 01 07 47.2 +0.5**
MSF pmax pmax
comp=Z,1μm,1.1s
B04A Port Angeles 64.80 48 P **P 01 07 48.3 +0.9**
XMAS Kiritimati 64.84 108 *e*P **P 01 07 49.2 +1.2**
DAG Danmarks Havn 64.88 355 *i* P **P 01 07 47.7 +0.3**
comp=Z,341nm,1.1s
DAG *i* S **S 01 16 27.5 +0.8**
DAG *i* 01 36 34.1
comp=Z,63μm,21.0s
DAG Danmarks Havn 64.88 355 *i* P **P 01 07 47.7 +0.3**
DAG *i* S **S 01 16 27.5 +0.8**
DAG pmax pmax
comp=Z,430nm,1.1s
DAG MLR MLR
comp=Z,68μm,21.0s
MCW Mount Constitu 64.89 47 P **P 01 07 48.7 +0.7**
MCW Mount Constitu 64.89 47 P **P 01 07 48.7 +0.7**
NLWA Neilton Lookou 64.92 49 *e*P **P 01 07 49.6 +1.4**
NLWA LR LR
comp=Z,47μm,20.0s
A04D Lummi Island 64.94 47 P **P 01 07 49.2 +1.0**
baz=300,SNR=20
BLN Blyn Mountain 65.14 48 *e*P **P 01 07 50.8 +1.2**
TRO Tromso 65.23 341 *e*P **P 01 07 49.5 -0.2**
TRO IVmBBB 01 07 57.9
comp=Z,7μm,1.3s
TRO *e*S **S 01 16 31.7 +0.5**
TRO *e*SS **SS 01 20 45.0 +1.9**
TRO IVMs_BB IVMs_BB 01 40 28.8
comp=Z,79μm,19.1s
GNW Green Mountain 65.45 48 P **P 01 07 52.6 +1.0**
E03A Lebam 65.52 49 *e*P **P 01 07 53.5 +1.5**
B05A Bryant 65.52 47 P **P 01 07 52.8 +0.9**
baz=300,SNR=85
B05A Bryant 65.52 47 P **P 01 07 52.9 +0.9**
JOF Joensuu 65.76 332 P **P 01 07 53.0 -0.3**
JOF pmax pmax
comp=Z,642nm,1.5s
F03A Seaside 65.83 50 *e*P **P 01 07 55.9 +1.8**
F04D Rainier, OR 66.08 49 P **P 01 07 56.7 +1.1**
baz=301
D05A Enumclaw 66.13 48 *e*P **P 01 07 57.4 +1.4**
TRD Trivandrum 66.20 262 *e*P **P 01 07 56.8 0.0**
COCO West Island 66.24 231 *e*P **P 01 07 58.7 +1.7**
COCO MLR MLR
comp=Z,69μm,20.0s
COCO West Island 66.24 231 *e*P **P 01 07 58.7 +1.7**
COCO LR LR
comp=Z,69μm,20.0s
OUL Oulu 66.29 336 P **P 01 07 56.8 +0.2**
OUL pmax pmax
comp=Z,697nm,1.4s
G03D McMinnville, O 66.37 50 P **P 01 07 59.2 +1.7**
baz=301,SNR=23
C06D Leavenworth 66.39 47 P **P 01 07 58.4 +0.8**
baz=301,SNR=5.6
PNT Penticton 66.39 45 *e*P **P 01 07 58.0 +0.3**
PNT Penticton 66.39 45 *e*P **P 01 07 58.0 +0.3**
WRW Wenatchee Ridg 66.43 47 P **P 01 07 58.9 +0.9**
LON Longmire 66.46 48 *e*P **P 01 07 58.7 +0.5**
LON Longmire 66.46 48 *e*P **P 01 07 58.7 +0.5**
NLW Nelson Butte 66.63 47 P **P 01 08 00.2 +0.9**
AFI Afiamalu 66.66 132 P **P 01 07 59.8 +0.1**
comp=Z,30nm,0.7s,baz=242,slow=5.8,SNR=5.5
AFI Afiamalu 66.66 132 *e*P **P 01 07 59.6 -0.2**
AFI pmax pmax
comp=Z,226nm,1.3s
AFI MLR MLR
comp=Z,77μm,22.0s
AFI Afiamalu 66.66 132 *e*P **P 01 07 59.6 -0.2**
comp=Z,226nm,1.3s
AFI LR LR
comp=Z,77μm,22.0s
COR Corvallis 66.67 51 *e*P **P 01 08 01.2 +1.8**
COR Corvallis 66.67 51 *e*P **P 01 08 01.2 +1.8**
KULLO Kullorsuaq 66.82 6 *i* P **P 01 07 59.8 -0.1**
comp=Z,614nm,1.3s
comp=Z,145μm,22.0s
KULLO Kullorsuaq 66.82 6 *i* P **P 01 07 59.8 -0.1**
KULLO pmax pmax
comp=Z,610nm,1.3s
KULLO MLR MLR
comp=Z,140μm,22.0s
G04A Mulino 66.85 50 *e*P **P 01 08 01.8 +1.2**
ASR Mount Adams--S 66.89 49 *e*P **P 01 08 01.8 +0.7**
WTV Waterville 67.05 47 P **P 01 08 02.2 +0.3**
B08A Colville Reser 67.05 46 *e*P **P 01 08 02.1 +0.2**
I03D Drain, OR 67.10 52 P **P 01 08 03.8 +1.6**
baz=301,SNR=43
MOS Moscow 67.32 324 *α i*P **P 01 08 04.5 +1.1**
MOS *e* 01 08 29.4
MOS *e* 01 10 35.1
MOS *i* S **S 01 16 58.0 +1.1**
MOS *e*SS **SS 01 21 19.3 +3.3**
MOS pmax pmax
comp=Z,3μm,1.5s
MOS pmax pmax
comp=Z,9μm,2.1s
MOS smax smax
comp=N,39μm,5.0s
MOS smax smax
comp=E,25μm,4.7s
MOS MLR MLR
comp=N,182μm,15.0s
MOS MLR MLR
comp=Z,208μm,15.0s
STEI Steigen 67.39 341 *e*P **P 01 08 03.9 +0.3**
STEI IVmB_BB 01 08 17.5
comp=Z,5μm,2.2s
STEI *e*S **S 01 16 59.9 +2.5**
STEI IVMs_BB IVMs_BB 01 36 54.3
comp=Z,46μm,23.4s
VFP Flag Point 67.41 50 P **P 01 08 05.2 +0.8**
G05D Wamic, OR 67.53 50 P **P 01 08 06.1 +1.1**
baz=302,SNR=24
EDM Edmonton 67.61 39 *e*P **P 01 08 05.3 -0.1**
EDM Edmonton 67.61 39 *e*P **P 01 08 05.3 -0.1**
I04A Tendick Farm, 67.63 51 P **P 01 08 06.2 +0.6**
baz=302,SNR=110
LOF Lofoten 67.67 342 *e*P **P 01 08 05.8 +0.4**
LOF IVmB_BB 01 08 15.0
comp=Z,2μm,1.5s
LOF *e*S **S 01 17 02.7 +1.9**
LOF *e*SKSac **ScS 01 18 02.9 +1.1**
LOF *e* 01 24 24.4
LOF IVMs_BB IVMs_BB 01 42 28.7
comp=Z,79μm,17.1s
L02D Cave Junction, 67.74 53 P **P 01 08 07.4 +1.0**
baz=302,SNR=26
VRH Novokhopyorsk 67.82 318 *e*P **P 01 08 07.0 +0.4**
VRH *e* 01 10 39.1
VRH *e*S **S 01 17 02.3 -0.8**
VRH pmax pmax
comp=Z,910nm,1.3s
VRH pmax pmax
comp=Z,540nm,0.8s
VRH smax smax
comp=E,4μm,3.6s
VRH MLR MLR
comp=Z,13μm,18.0s
HUMO Hull Mountain 67.91 53 *e*P **P 01 08 08.7 +1.2**
G06A Carlson Farm, 67.95 49 *e*P **P 01 08 08.6 +0.9**
C09A Chrisman Ranch 67.95 46 P **P 01 08 07.9 +0.3**
D08A Wollman Farm, 67.98 47 *e*P **P 01 08 08.2 +0.4**
HAWA Hanford 67.98 48 *e*P **P 01 08 09.0 +1.2**
HAWA LR LR
comp=Z,39μm,21.0s
I05D Terrebonne, OR 68.00 50 P **P 01 08 08.9 +0.9**
baz=302,SNR=56
OBN Obninsk 68.17 324 LR LR 01 40 15.5
comp=Z,79μm,18.2s,baz=54,slow=38
OBN Obninsk 68.17 324 *c i*P **P 01 08 08.9 +0.2**
OBN *e* 01 08 37.2
OBN *e* 01 10 41.2
OBN *e*PPP PPP 01 12 23.0
OBN *i* S **S 01 17 04.7 -2.4**
OBN *e*SSS SSS 01 24 37.6
OBN pmax pmax
comp=Z,1μm,1.7s
OBN MLR MLR
comp=Z,135μm,15.0s
OBN Obninsk 68.17 324 *e*P **P 01 08 08.2 -0.6**
JCC Jacoby Creek, 68.17 55 *e*P **P 01 08 11.0 +2.0**
KHMM Horse Mountain 68.33 55 *e*P **P 01 08 12.3 +2.0**
NEW Newport 68.35 45 P **P 01 08 10.6 +0.5**
baz=303,SNR=96
NEW Newport 68.35 45 *e*P **P 01 08 10.4 +0.3**
NEW MLR MLR
comp=Z,63μm,21.0s
NEW Newport 68.35 45 *e*P **P 01 08 10.4 +0.3**
NEW LR LR
comp=Z,63μm,21.0s
ARMA Armidale 68.56 172 *e*P **P 01 08 11.5 0.0**
FIA1 FINESS Array S 68.60 333 *e*P **P 01 08 11.4 +0.1**
FINES FINESS Array B 68.60 333 P **P 01 08 11.6 +0.2**
comp=Z,212nm,0.7s,baz=50,slow=6.3,SNR=523
FINES PKP2bc 01 36 23.8
comp=Z,2.8nm,0.9s,baz=124,slow=3.4,SNR=4.6
FINES LR LR 01 39 52.4
comp=Z,238μm,21.4s,baz=52,slow=37
FINES P4KPbc 01 45 06.4
comp=Z,1.5nm,0.9s,baz=61,slow=4.8,SNR=4.4
M02C Callahan 68.62 54 P **P 01 08 13.3 +1.3**
baz=302,SNR=36
J05D Fort Rock, OR 68.62 51 P **P 01 08 13.2 +1.2**
baz=302,SNR=86
K04D Chiloquin, OR 68.66 52 P **P 01 08 13.1 +0.9**
baz=302,SNR=13
KMRM Mail Ridge 68.70 55 *e*P **P 01 08 14.8 +2.4**
E09A Wood Farm, Sta 68.72 47 *e*P **P 01 08 13.3 +0.9**
VORR Voronezh 68.86 320 ⇑ *i*P **P 01 08 11.0 -2.1**
VORR pmax pmax
comp=Z,500nm,1.0s
G08A Pilot Rock 68.91 49 P **P 01 08 14.1 +0.3**
N02D Trinity Center 68.94 54 P **P 01 08 15.3 +1.3**
baz=303,SNR=37
KONS Konsvik 69.02 341 ⇓ *i*P **P 01 08 14.1 +0.2**
KONS IVmB_BB 01 08 25.1
comp=Z,3μm,1.7s
KONS *e*S **S 01 17 16.8 0.0**
KONS *e*SS **SS 01 21 41.5 -0.2**
KONS IVMs_BB IVMs_BB 01 42 42.7
comp=Z,59μm,18.7s
M04C Macdoel 69.06 53 P **P 01 08 15.6 +0.9**
baz=303,SNR=76
K05A Summer Lake 69.14 52 *e*P **P 01 08 16.5 +1.2**
VSR Storozhevoye 69.15 319 *e*P **P 01 08 15.2 +0.3**
VSR *e* 01 10 47.0
VSR *e*S **S 01 17 13.9 -5.0**
VSR *e*SSS SSS 01 24 54.4
VSR pmax pmax
comp=Z,6μm,2.1s
VSR pmax pmax
comp=Z,3μm,2.0s
VSR smax smax
comp=N,8μm,5.3s
VSR MLR MLR
comp=Z,214μm,27.0s
STOK Stokkvaagen 69.17 341 *e*P **P 01 08 15.0 +0.2**
STOK *e*S **S 01 17 19.0 +0.3**
WDC Whiskeytown Da 69.26 54 *e*P **P 01 08 16.5 +0.7**
WDC Whiskeytown Da 69.26 54 *e*P **P 01 08 16.5 +0.7**
JMIC Jan Mayen 69.40 350 LR LR 01 42 02.2
comp=Z,51μm,18.1s,baz=42,slow=39
JMIC Jan Mayen 69.40 350 *e*P **P 01 08 17.0 +0.8**
JMIC IVmB_BB 01 08 23.4
comp=Z,5μm,2.6s
JMIC *e*S **S 01 17 23.8 +2.5**
JMIC IVMs_BB IVMs_BB 01 38 37.9
comp=Z,19μm,21.5s
F10A Beach Ranch, E 69.55 47 *e*P **P 01 08 18.2 +0.6**
STKA Stephens Creek 69.59 182 P **P 01 08 17.1 -0.6**
comp=Z,57nm,0.7s,baz=344,slow=7.6,SNR=41
STKA LR LR 01 39 20.3
comp=Z,33μm,20.1s,baz=4.7,slow=36
STKA Stephens Creek 69.59 182 *e*P **P 01 08 17.3 -0.5**
SUMG Summit 69.66 1 ⇓ *i*P **P 01 08 19.6 +1.4**
SUMG *i* S **S 01 17 26.3 +1.2**
SUMG *i* 01 36 24.4
comp=Z,155μm,25.0s
SUMG Summit 69.66 1 ⇓ *i*P **P 01 08 19.6 +1.4**
SUMG *i* S **S 01 17 26.3 +1.2**
SUMG MLR MLR
comp=Z,160μm,25.0s
SUMG Summit 69.66 1 *e*P **P 01 08 19.2 +0.9**
WALA Waterton Lakes 69.67 43 *e*P **P 01 08 18.8 +0.4**
HOPS Hopland Field 69.77 56 *e*P **P 01 08 19.3 +0.3**
comp=Z,322nm,1.3s
BSMT Bassoo Peak 69.88 45 *e*P **P 01 08 20.4 +0.6**
O03D Paynes Creek 69.89 54 P **P 01 08 19.9 +0.1**
baz=303,SNR=80
GROC Groznyy 69.92 309 ⇑ *i*P **P 01 08 19.9 +0.1**
GROC *e*S **S 01 17 26.9 -1.4**
GROC pmax pmax
comp=Z,1μm,1.7s
FORT Forrest 69.94 194 *e*P **P 01 08 19.3 -0.6**
MOD Modoc Plateau 69.95 52 *e*P **P 01 08 20.9 +0.6**
BLMT Blacktail Moun 70.02 44 *e*P **P 01 08 21.4 +0.7**
BMO Blue Mountains 70.13 48 *e*P **P 01 08 21.6 +0.3**
BMO LR LR
comp=Z,58μm,20.0s
SEKA Sheki 70.15 307 P **P 01 08 19.6 -1.8**
SEKA S **S 01 17 27.7 -3.5**
JTMT Jette 70.22 44 *e*P **P 01 08 22.4 +0.6**
YBMT Yellow Bay 70.30 44 *e*P **P 01 08 22.9 +0.6**
VSU Vasula 70.33 330 *c i*P **P 01 08 22.1 +0.1**
VSU pmax pmax
comp=Z,2μm,1.7s
VSU MLR MLR
comp=Z,735μm,19.0s
MNGR Mingechevir, A 70.46 307 P **P 01 08 21.5 -1.7**
MNGR S **S 01 17 31.4 -3.3**
ORV Oroville 70.48 55 *e*P **P 01 08 23.3 -0.1**

ORV	Oroville	70.48	55	eP		P	01 08 23.3	-0.1
LKRN	Lenkeran, Azer	70.51	304	P		P	01 08 21.8	-1.7
SWMT	Swartz Lake	70.51	45	eP		P	01 08 23.9	+0.3
GOF	Gofitskoye	70.53	312	⇑iP		P	01 08 24.5	+1.0
GOF				eS		S	01 17 31.4	-3.9
GOF				pmax	pmax			
	comp=Z,2µm,1.5s							
WVOR	Wild Horse Val	70.69	51	eP		P	01 08 25.4	+0.6
WVOR				MLR	MLR			
	comp=Z,67µm,21.0s							
WVOR	Wild Horse Val	70.69	51	eP		P	01 08 25.4	+0.6
WVOR				LR	LR			
	comp=Z,67µm,21.0s							
LHI	Lord Howe Isla	70.76	166	eP		P	01 08 25.8	+0.9
BBOO	Buckleboo	70.83	186	eP		P	01 08 24.9	-0.4
MSO	Missoula	70.94	45	P		P	01 08 26.3	+0.1
	baz=306,SNR=64							
MSO	Missoula	70.94	45	eP		P	01 08 26.3	+0.1
SLMT	Seeley Lake	70.95	45	eP		P	01 08 26.2	0.0
NCK	Nalchik	71.08	311	c iP		P	01 08 27.4	+0.4
NCK				pmax	pmax			
	comp=Z,2µm,1.5s							
NCK				MLR	MLR			
	comp=Z,141µm,17.0s							
GUDG	Gudauri	71.14	309	P		P	01 08 28.4	+0.8
AFDM	Forest Hills D	71.16	55	eP		P	01 08 27.8	+0.2
DUS	Dusheti	71.21	309	P		P	01 08 31.5	+3.6
DUS	Dusheti	71.21	309	eP		P	01 08 31.5	+3.6
SCO	Scoresbysund	71.24	355	i P		P	01 08 28.3	+0.9
	comp=Z,1µm,1.9s							
	comp=Z,61µm,17.0s							
SCO	Scoresbysund	71.24	355	i P		P	01 08 28.3	+0.9
SCO				pmax	pmax			
	comp=Z,1µm,1.9s							
SCO				MLR	MLR			
	comp=Z,61µm,17.0s							
CHMT	Chamberlain Mo	71.27	45	eP		P	01 08 28.2	-0.2
ZEI	Tsey	71.30	310	eP		P	01 08 25.5	-3.1
ZEI				eS		S	01 17 42.2	-2.7
ZEI				pmax	pmax			
	comp=Z,2µm,1.2s							
ZEI				pmax	pmax			
	comp=N,967nm,1.0s							
ZEI				pmax	pmax			
	comp=E,2µm,1.1s							
ZEI				MLR	MLR			
	comp=N,119µm,12.0s							
ZEI				MLR	MLR			
	comp=E,130µm,15.0s							
KVAR	Kislovodsk Arr	71.36	311	P		P	01 08 30.2	+1.5
	comp=E,2µm,1.2s,baz=358,slow=0.7,SNR=194							
KVAR				PKP2bc			01 36 16.9	
	comp=E,2.9nm,0.7s,baz=352,slow=3.9,SNR=5.3							
KIV	Kislovodsk	71.36	311	i P		P	01 08 29.6	+0.8
	SNR=558							
KIV	Kislovodsk	71.36	311	eP		P	01 08 29.6	+0.8
KIV				e			01 08 49.5	
KIV				e			01 11 04.8	
KIV				ePPP		PPP	01 12 54.1	
KIV				eS		S	01 17 45.8	+0.5
KIV				eSS		SS	01 22 21.4	+2.3
KIV				pmax	pmax			
	comp=Z,2µm,4.7s							
KIV				pmax	pmax			
	comp=Z,3µm,1.1s							
KIV	Kislovodsk	71.36	311	P		P	01 08 29.7	+0.9
	SNR=1011							
KIV				P		P	01 08 29.7	+0.9
	SNR=1011							
KIV	Kislovodsk	71.36	311	eP		P	01 08 29.2	+0.4
KIV				LR	LR			
	comp=Z,145µm,19.0s							
KBZ	Khabaz	71.37	311	P		P	01 08 29.2	+0.6
	comp=Z,311nm,1.0s,baz=151,slow=7.6,SNR=5.9							
KBZ				PKP2bc			01 36 15.8	
	comp=Z,1.0nm,0.7s,baz=221,slow=1.1,SNR=4.9							
KBZ				LR	LR		01 44 58.0	
	comp=Z,169µm,18.1s,baz=36,slow=40							
TBLG	Delisi	71.39	309	P		P	01 08 29.5	+0.6
TBLG	Delisi	71.39	309	eP		P	01 08 29.5	+0.6
ONI	Oni	71.69	310	P		P	01 08 31.8	+1.1
ONI	Oni	71.69	310	eP		P	01 08 31.8	+1.1
NEY	Neytrino	71.75	311	c iP		P	01 08 31.7	+0.5
NEY				pmax	pmax			
	comp=Z,339nm,1.4s							
PAHR	Pah Rah Range	71.75	54	eP		P	01 08 31.7	+0.4
MFID	Camas Ranch	71.83	49	eP		P	01 08 32.1	+0.5
FFC	Flin Flon	72.03	34	eP		P	01 08 32.0	-0.4
FFC				pmax	pmax			
	comp=Z,644nm,1.3s							
FFC				MLR	MLR			
	comp=Z,64µm,22.0s							
FFC	Flin Flon	72.03	34	eP		P	01 08 32.0	-0.4
	comp=Z,644nm,1.3s							
FFC				LR	LR			
	comp=Z,64µm,22.0s							
WSAR	Wadi Sarin	72.05	286	P		P	01 08 34.1	+1.0
	comp=Z,270nm,1.1s,baz=88,slow=5.5,SNR=48							
CMB	Columbia Colle	72.06	56	eP		P	01 08 33.3	+0.3
CMB	Columbia Colle	72.06	56	eP		P	01 08 33.3	+0.3
SAO	San Andreas Ge	72.07	57	eP		P	01 08 33.9	+0.9
SAO	San Andreas Ge	72.07	57	eP		P	01 08 33.9	+0.9
HRY	Holter Researc	72.18	44	eP		P	01 08 34.7	+1.0
BIDO	Bidbid	72.27	286	P		P	01 08 35.3	+0.9
	SNR=121							
BIDO				P		P	01 08 35.3	+0.9
	SNR=121							
GNI	Garni	72.29	307	P		P	01 08 35.7	+1.2
	comp=Z,1µm,1.4s,baz=132,slow=1.3,SNR=39							
GNI				LR	LR		01 42 55.2	
	comp=Z,76µm,21.2s,baz=64,slow=38							
GNI	Garni	72.29	307	i P		P	01 08 35.6	+1.1
	SNR=156							
GNI	Garni	72.29	307	P		P	01 08 35.6	+1.1
	SNR=190							
GNI				P		P	01 08 35.6	+1.1
	SNR=190							
GNI	Garni	72.29	307	eP		P	01 08 35.7	+1.2
	comp=Z,9µm,1.3s							
BANOM	Banah	72.30	289	i P		P	01 08 35.7	+1.1
	SNR=114							
BANOM	Banah	72.30	289	P		P	01 08 35.4	+0.8
	SNR=80							
BANOM				P		P	01 08 35.4	+0.8
	SNR=80							
AKH	Akhalkalaki	72.34	309	⇑iP		P	01 08 36.5	+1.7
AKH	Akhalkalaki	72.34	309	P		P	01 08 36.3	+1.5
AKH	Akhalkalaki	72.34	309	eP		P	01 08 36.3	+1.5
IZAR	Zarasai	72.34	328	eP		P	01 08 34.8	+0.5
IZAR				IAmb	IAmb		01 08 44.2	
	comp=Z,443nm,1.3s							
BGD	Bogdanovka	72.36	309	P		P	01 08 36.8	+1.8
LRM	Limekiln Ridge	72.36	45	eP		P	01 08 35.1	+0.2
WAKR	Walker	72.40	55	eP		P	01 08 36.2	+1.0
FCC	Fort Churchill	72.41	27	eP		P	01 08 34.4	-0.2
FCC				pmax	pmax			
	comp=Z,579nm,1.4s							
FCC	Fort Churchill	72.41	27	eP		P	01 08 34.4	-0.2
	comp=Z,579nm,1.4s							
IDID	Didziasalis	72.43	328	eP		P	01 08 35.4	+0.6
IDID				IAmb	IAmb		01 08 44.6	
	comp=Z,387nm,1.2s							
MICGM	Minsk	72.48	326	⇑iP		P	01 08 36.0	+0.9
MICGM				⇑i P		P	01 08 36.0	+0.9
MICGM				PM			01 08 38.0	
	comp=Z,1.5nm,1.6s							
MICGM				PM			01 08 38.0	
	comp=Z,17nm,14.0s							
MICGM				PM			01 08 39.0	
	comp=N,1.0nm,1.6s							
MICGM				PM			01 08 39.0	
	comp=E,1.0nm,1.4s							
MICGM				ePcP		PcP	01 08 56.0	+3.2
MICGM				ePP		PP	01 11 16.0	+0.2
MICGM				PPM			01 11 20.0	
	comp=Z,9.9nm,12.0s							
MICGM				ePPP		PPP	01 12 56.0	
MICGM				ePsP			01 14 20.0	
MICGM				eS		S	01 17 58.0	+0.5
MICGM				SM			01 17 59.0	
	comp=E,50nm,14.0s							
MICGM				SM			01 18 00.0	
	comp=N,20nm,12.0s							
MICGM				ePS		PnS	01 18 20.0	-9.5
MICGM				eSS		SS	01 22 28.0	-7.4
MICGM				eSSS		SSS	01 25 57.0	
MICGM				eLQ		LQ	01 34 08.0	
MICGM				LQM			01 37 14.0	
	comp=N,54nm,18.0s							
MICGM				LQM			01 37 34.0	
	comp=E,129nm,18.0s							
MICGM				eLR		LR	01 38 40.0	
MICGM				LRM		MLR	01 42 56.0	
	comp=E,131nm,15.0s							
MICGM				LRM		MLR	01 43 22.0	
	comp=Z,182nm,16.0s							
MICGM				LRM		MLR	01 43 28.0	
	comp=N,76nm,14.0s							
MNK	Minsk	72.48	326	c iP		P	01 08 36.0	+0.9
MNK				e			01 08 56.0	
MNK				e			01 11 16.0	
MNK				ePPP		PPP	01 12 56.0	
MNK				eS		S	01 17 58.0	+0.5
MNK				pmax	pmax			
	comp=Z,17µm,14.0s							
MNK				pmax	pmax			
	comp=Z,2µm,1.6s							
MNK				pmax	pmax			
	comp=E,1µm,1.4s							
MNK				pmax	pmax			
	comp=N,990nm,1.6s							
MNK				pmax	pmax			
	comp=Z,10µm,12.0s							
MNK				smax	smax			
	comp=E,50µm,14.0s							
MNK				smax	smax			
	comp=N,20µm,12.0s							
MNK				MLR	MLR			
	comp=E,131µm,15.0s							
MNK				MLR	MLR			
	comp=Z,182µm,16.0s							
MNK				MLR	MLR			
	comp=N,76µm,14.0s							
ISAL	Salakas	72.52	328	eP		P	01 08 35.9	+0.6
ISAL				IAmb	IAmb		01 08 45.2	
	comp=Z,532nm,1.1s							
ILULI	Ilulissat	72.52	5	i P		P	01 08 35.3	+0.2
	comp=Z,104µm,18.0s							
ILULI	Ilulissat	72.52	5	i P		P	01 08 35.3	+0.2
ILULI				MLR	MLR			
	comp=Z,100µm,18.0s							
DLMT	Dillon	72.56	46	eP		P	01 08 36.2	+0.2
HLID	Hailey	72.58	48	P		P	01 08 37.1	+0.9
	baz=306,SNR=63							
HLID	Hailey	72.58	48	eP		P	01 08 36.8	+0.6
HLID				LR	LR			
	comp=Z,33µm,20.0s							
SMDO	Samad	72.59	286	P		P	01 08 36.7	+0.3
	SNR=106							
LCCM	Lewis and Clar	72.68	45	eP		P	01 08 37.4	+0.7
NACGM	Naroch	72.69	327	eP		P	01 08 35.0	-1.4
NACGM				eP		P	01 08 35.0	-1.4
NACGM				ePP		PP	01 10 50.0	-28
NACGM				ePPP		PPP	01 13 07.0	
NACGM				eS		S	01 17 58.0	-1.9
NACGM				ePS		PnS	01 18 38.0	+5.8
NACGM				eSS		SS	01 22 16.0	-23
NACGM				eSSS		SSS	01 25 50.0	
NACGM				eLQ		LQ	01 32 50.0	
NACGM				eLR		LR	01 38 24.0	
NACGM				LRM		MLR	01 43 24.0	
	comp=Z,162nm,16.0s							
EAK	Akyaka	72.69	308	⇑iP		P	01 08 37.5	+0.6
BMN	Battle Mountai	72.70	52	eP		P	01 08 37.6	+0.7
BMN	Battle Mountai	72.70	52	eP		P	01 08 37.6	+0.7
MCMT	McKenzie Canyo	72.73	46	eP		P	01 08 37.1	-0.1
HOQ	Hoqain	72.85	287	P		P	01 08 38.0	+0.1
	SNR=119							
UOSS	Minazif	72.92	288	eP		P	01 08 38.7	+0.4
BOZ	Bozeman (W)	72.93	45	P		P	01 08 39.0	+0.8
	baz=307,SNR=130							
BOZ	Bozeman (W)	72.93	45	eP		P	01 08 38.5	+0.3
BOZ				MLR	MLR			
	comp=Z,52µm,21.0s							
BOZ	Bozeman (W)	72.93	45	eP		P	01 08 38.5	+0.3
BOZ				LR	LR			
	comp=Z,52µm,21.0s							
DIGO	Kars	72.99	308	⇑iP		P	01 08 39.5	+0.8
HATD	Hatta, Dubai	73.04	288	i P		P	01 08 40.0	+1.0
	SNR=204							
ASHO	Ashiyiah	73.17	288	i P		P	01 08 40.7	+0.9
	SNR=167							
ASHO	Ashiyiah	73.17	288	P		P	01 08 40.1	+0.3
	SNR=171							
ASHO				P		P	01 08 40.1	+0.3
	SNR=171							
CAN	Canberra	73.20	175	eP		P	01 08 39.5	0.0
CAN				MLR	MLR			
	comp=Z,46µm,19.0s							
CAN	Canberra	73.20	175	eP		P	01 08 39.5	0.0
CAN				LR	LR			
	comp=Z,46µm,19.0s							
MLAC	Mammoth, Mammo	73.29	55	P		P	01 08 41.3	+0.7
	baz=305,SNR=16							
NAZ	Nazwa, Dubai	73.30	289	i P		P	01 08 41.1	+0.6
	SNR=82							
SOC	Sochi	73.32	312	c iP		P	01 08 40.9	+0.6
SOC				e*SP		sP	01 08 52.8	+1.6
SOC				e			01 11 22.7	
SOC				ePPP		PPP	01 13 06.0	
SOC				i S		S	01 18 08.0	+0.5
SOC				eSS		SS	01 22 48.4	-0.4
SOC				pmax	pmax			
	comp=Z,3µm,1.3s							
SOC				MLR	MLR			
	comp=Z,115µm,16.0s							
FAQ	Al Faqa, Dubai	73.49	289	i P		P	01 08 42.1	+0.5
	SNR=86							
DBOC	Borcka	73.50	310	⇑iP		P	01 08 41.9	+0.4
DAGI	Agillar	73.50	309	⇑iP		P	01 08 42.0	+0.4
QLMT	Earthquake Lak	73.54	46	eP		P	01 08 42.6	+0.7
ARQ	Araqi	73.59	287	P		P	01 08 42.6	+0.4
	SNR=153							
MOL	Molde	73.61	340	eP		P	01 08 41.9	+0.2
MOL				IVmB_BB			01 08 52.5	
	comp=Z,4µm,1.7s							
MOL				e			01 13 25.5	
MOL				eS		SKiKP	01 18 09.7	-0.1
MOL				eSS		SS	01 22 53.9	+1.8
MOL				IVMs_BB	IVMs_BB		01 44 55.1	
	comp=Z,85µm,18.5s							
DDEM	Demirkent	73.71	309	⇑iP		P	01 08 43.7	+0.8
ELK	Elko	73.74	51	eP		P	01 08 43.9	+0.7
ELK	Elko	73.74	51	eP		P	01 08 43.9	+0.7
HFS	Hagfors	73.77	336	LR	LR		01 44 04.2	
	comp=Z,247µm,19.1s,baz=40,slow=38							
RCTC	Rector, Farmer	73.79	57	P		P	01 08 43.4	+0.2
	baz=306,SNR=16							
NB2	NORSAR Subarra	73.82	338	P		P	01 08 43.6	+0.6
	comp=Z,1µm,1.4s,baz=39,slow=6.2							
NB2	NORSAR Subarra	73.82	338	P		P	01 08 43.6	+0.6
	baz=39,slow=6.2							
NOA	NORSAR Array B	73.82	338	P		P	01 08 43.3	+0.3
	comp=Z,52nm,0.7s,baz=40,slow=5.9,SNR=203							
NOA				LR	LR		01 46 18.6	
	comp=Z,219µm,19.4s,baz=60,slow=40							
SMMC	Simmler	73.86	58	P		P	01 08 44.7	+1.0
	baz=305,SNR=6.1							
YHH	Holmes Hill	73.89	45	eP		P	01 08 45.2	+1.1
ANN	Anapa	73.89	315	c iP		P	01 08 43.8	+0.2
ANN				e			01 11 27.5	
ANN				ePPP		PPP	01 13 13.4	
ANN				eS		S	01 18 12.5	-1.4
ANN				eSS		SS	01 22 54.5	-2.9
ANN				pmax	pmax			
	comp=N,994nm,3.5s							
ANN				pmax	pmax			
	comp=Z,2µm,3.5s							
ANN				pmax	pmax			
	comp=E,400nm,3.5s							
ANN				pmax	pmax			
	comp=Z,2µm,1.4s							
ANN				pmax	pmax			
	comp=N,122nm,0.7s							
ANN				pmax	pmax			
	comp=E,242nm,1.5s							
ANN				smax	smax			
	comp=E,27µm,13.4s							
ANN				smax	smax			
	comp=N,10µm,13.4s							
ANN				smax	smax			
	comp=Z,3µm,13.4s							
ANN				MLR	MLR			
	comp=Z,138µm,19.0s							
ANN				MLR	MLR			
	comp=N,93µm,19.0s							
ANN				MLR	MLR			
	comp=E,123µm,19.0s							
TUTA	Tutak	73.93	308	⇑iP		P	01 08 45.2	+0.9
NC602	NORSAR Array S	73.96	338	eP		P	01 08 43.7	-0.1
BASK	Baskale_VAN	73.97	306	⇑iP		P	01 08 45.4	+0.9
TIN	Tinemaha, Big	74.02	55	P		P	01 08 45.5	+0.8
	baz=306,SNR=20							
TVAN	Van	74.07	307	⇑iP		P	01 08 45.6	+0.5
AKN	Aaknes	74.08	340	eP		P	01 08 45.6	+1.1
AKN				IVmB_BB			01 09 14.0	
	comp=Z,6µm,2.6s							
AKN				IVMs_BB	IVMs_BB		01 45 18.1	
	comp=Z,93µm,18.5s							
HOMI	Horasan	74.12	309	⇑iP		P	01 08 46.6	+1.2
VES	Vestal, Richgr	74.17	57	P		P	01 08 45.5	+0.1
	baz=306,SNR=89							
PKM	Mcpherson Peak	74.23	58	P		P	01 08 47.0	+0.9
	baz=306,SNR=39							
YPP	Pitchstone Pla	74.23	46	eP		P	01 08 47.9	+1.8
LKWY	Lake	74.28	45	eP		P	01 08 47.5	+1.2
LKWY				pmax	pmax			
	comp=Z,1µm,1.9s							
LKWY				MLR	MLR			
	comp=Z,120µm,19.0s							
LKWY	Lake	74.28	45	eP		P	01 08 47.5	+1.2
	comp=Z,1µm,1.9s							
LKWY				LR	LR			
	comp=Z,120µm,19.0s							
H17A	Grant Village	74.29	46	P		P	01 08 48.8	+2.5
	baz=308,SNR=31							
H17A	Grant Village	74.29	46	eP		P	01 08 49.0	+2.7
	comp=Z,333nm,1.0s							
IMW	Indian Meadow	74.39	46	eP		P	01 08 48.1	+1.1
AKASG	Malin Array Be	74.40	323	P		P	01 08 46.8	+0.3
	comp=Z,364nm,1.1s,baz=44,slow=6.1,SNR=264							
AKASG				ScS		ScS	01 18 56.2	+0.5
	comp=Z,9.3nm,1.1s,baz=41,slow=13,SNR=4.6							
AKASG				PKPPKP		P'P'df	01 36 15.5	-6.8
	comp=Z,0.3nm,0.4s,baz=231,slow=2.0,SNR=4.8							
AKASG				LR	LR		01 45 07.8	
	comp=Z,142µm,19.0s,baz=60,slow=39							
FLWY	Flagg Ranch	74.41	46	eP		P	01 08 48.5	+1.5
	comp=Z,1µm,1.7s							
KIEV	Kiev	74.41	323	c iP		P	01 08 46.6	+0.1
KIEV				pmax	pmax			
	comp=Z,1µm,1.3s							
KIEV				MLR	MLR			
	comp=Z,212µm,17.0s							
KIEV	Kiev	74.41	323	eP		P	01 08 46.4	-0.1
KIEV				LR	LR			
	comp=Z,233µm,19.0s							
GEVA	Gevas	74.42	307	⇑iP		P	01 08 47.3	+0.2
CWC	Cottonwood Cre	74.48	56	P		P	01 08 47.4	0.0
	baz=306							
ERZM	Erzurum	74.53	309	⇑iP		P	01 08 49.5	+1.7
SBC	Santa Barbara	74.56	58	P		P	01 08 48.4	+0.7
	baz=306,SNR=5.8							
RLMT	Red Lodge	74.57	44	P		P	01 08 48.6	+0.7
	baz=309,SNR=27							
RLMT	Red Lodge	74.57	44	PFAKE			01 09 00.0	+12
RLMT				LR	LR			
	comp=Z,65µm,22.0s							
MOOW	Moose Ponds	74.59	46	eP		P	01 08 49.0	+0.9
HVU	Hansel Valley	74.61	49	eP		P	01 08 49.0	+0.8
HVU	Hansel Valley	74.61	49	eP		P	01 08 49.0	+0.8
GRAC	Grapevine Rang	74.61	55	P		P	01 08 48.9	+0.8
	baz=306,SNR=66							
TPAW	Teton Pass	74.63	47	eP		P	01 08 49.3	+0.9
ISA	Isabella, Lake	74.67	57	P		P	01 08 48.2	-0.3
	baz=306,SNR=24							
ISA	Isabella, Lake	74.67	57	eP		P	01 08 48.6	+0.1
ISA	Isabella, Lake	74.67	57	eP		P	01 08 48.6	+0.1
NWAO	Narrogin (SRO)	74.67	203	P		P	01 08 47.8	-0.4
	comp=Z,267nm,1.1s,baz=259,slow=7.0,SNR=42							
NWAO	Narrogin (SRO)	74.67	203	P		P	01 08 47.8	-0.4
	SNR=26							
NWAO				P		P	01 08 47.8	-0.4
	SNR=26							
NWAO	Narrogin (SRO)	74.67	203	eP		P	01 08 47.7	-0.4
NWAO				LR	LR			
	comp=Z,32µm,20.0s							
SFJD	Kangerlussuaq	74.73	6	P		P	01 08 48.4	+0.3
	comp=Z,129nm,0.8s,baz=352,slow=4.7,SNR=34							
SFJD				LR	LR		01 43 44.8	
	comp=Z,93µm,20.8s,baz=342,slow=37							
SFJD	Kangerlussuaq	74.73	6	⇓iP		P	01 08 48.7	+0.5
	comp=Z,115nm,0.8s							
SFJD				i S		S	01 18 21.4	-1.1
	comp=Z,97µm,20.0s							
SFJD	Kangerlussuaq	74.73	6	⇓iP		P	01 08 48.7	+0.5
SFJD				i S		S	01 18 21.4	-1.1
SFJD				pmax	pmax			
	comp=Z,120nm,0.8s							
SFJD				MLR	MLR			
	comp=Z,97µm,20.0s							
SFJD	Kangerlussuaq	74.73	6	eP		P	01 08 48.6	+0.5
	comp=Z,991nm,1.5s							
ARVC	Arvin	74.75	57	P		P	01 08 49.0	+0.2
	baz=306,SNR=36							
LOHW	Long Hollow	74.75	46	eP		P	01 08 49.7	+0.7
	comp=Z,640nm,1.8s							
SNOW	Snow King Moun	74.76	47	eP		P	01 08 50.1	+1.0
REDW	Red Top Meadow	74.77	47	eP		P	01 08 50.0	+0.9
	comp=Z,372nm,1.3s							
TATV	Tatvan	74.81	307	⇑iP		P	01 08 50.4	+1.0
SUW	Suwalki	74.83	328	eP		P	01 08 49.3	+0.4
SUW				eS		S	01 18 23.3	-0.7
SUW				LMZ		LR	01 43 38.9	
	comp=Z,174µm,19.2s							
SUW	Suwalki	74.83	328	eP		P	01 08 49.3	+0.4
SUW				eS		S	01 18 23.3	-0.7
SUW				MLR	MLR			
	comp=Z,174µm,19.2s							
OSL	Oslo	74.84	337	eP		P	01 08 49.5	+0.6
OSL				IVmBBB			01 08 57.5	
	comp=Z,7µm,1.7s							
OSL				eS		S	01 18 24.9	+1.0
OSL				IVMs_BB	IVMs_BB		01 46 39.5	
	comp=Z,73µm,18.0s							
SCZ2	Santa Cruz Isl	74.87	59	P		P	01 08 50.3	+0.7
	baz=306							
MACK	Trabzon	74.88	310	⇑iP		P	01 08 49.1	-0.5
DAC	Darwin (Calif)	74.89	56	eP		P	01 08 50.1	+0.2
DAC				pmax	pmax			
	comp=Z,375nm,1.3s							
DAC	Darwin (Calif)	74.89	56	eP		P	01 08 50.1	+0.2
	comp=Z,375nm,1.3s							
R11A	Troy Canyon, C	74.95	53	P		P	01 08 50.5	+0.3
	baz=307,SNR=320							
R11A	Troy Canyon, C	74.95	53	eP		P	01 08 50.6	+0.4
BGU	Big Grassy Mou	74.98	50	eP		P	01 08 47.1	-3.2
AHID	Auburn Hatcher	74.99	47	eP		P	01 08 50.7	+0.3
AHID				LR	LR			
	comp=Z,51µm,21.0s							
FOO	Floro	75.08	341	eP		P	01 08 50.6	+0.5
FOO				IVmB_BB			01 08 58.8	
	comp=Z,4µm,1.6s							
FOO				eS		S	01 18 24.9	-1.6
FOO				IVMs_BB	IVMs_BB		01 46 08.7	
	comp=Z,64µm,18.1s							
MPMC	Manual Prospec	75.09	56	P		P	01 08 51.3	+0.3
	baz=306,SNR=195							
SPUT	South Promonto	75.09	49	eP		P	01 08 52.2	+1.3
DGMT	Dagmar	75.10	40	P		P	01 08 50.7	+0.1
	baz=311,SNR=37							
DGMT	Dagmar	75.10	40	eP		P	01 08 50.6	-0.1
DGMT				LR	LR			
	comp=Z,82µm,22.0s							
OSI	Osito Audit: C	75.12	58	P		P	01 08 51.7	+0.6
	baz=306							
OSI	Osito Audit: C	75.12	58	eP		P	01 08 52.0	+0.9
HYA	Hoyanger	75.14	340	eP		P	01 08 51.6	+1

baz=310,SNR=48
LAO LASA Array 75.22 42 *e*P P **01 08 52.0 +0.5**
LAO LR LR
comp=Z,60µm,20.0s
BNGL BINGOL 75.24 308⇑ *i*P P **01 08 53.0 +1.1**
FURC Furnace Creek, 75.25 55 P P **01 08 52.3 +0.6**
baz=307,SNR=201
LRMC Laurel Mtn Rad 75.30 56 P P **01 08 52.5 +0.3**
baz=306,SNR=37
SIRN S˜˜rnak 75.32 306⇑ *i*P P **01 08 52.3 +0.1**
A25A Svangstu Ranch 75.33 39 P P **01 08 52.4 +0.4**
baz=312,SNR=26
TPNV Topopah Spring 75.36 55 P P **01 08 52.9 +0.3**
baz=307,SNR=183
TPNV Topopah Spring 75.36 55 *e*P P **01 08 52.9 +0.3**
TPNV Topopah Spring 75.36 55 *e*P P **01 08 52.9 +0.3**
SNCC San Nicolas Is 75.38 59 P P **01 08 53.1 +0.6**
baz=306
KONO Kongsberg 75.41 338 *e*P P **01 08 52.4 +0.2**
KONO IVmB_BB 01 09 02.8
comp=Z,5µm,2.5s
KONO *e*PP **PP 01 11 41.1 +0.5**
KONO *e*S **S 01 18 31.6 +1.3**
KONO IVMs_BB IVMs_BB 01 47 03.7
comp=Z,88µm,18.4s
KONO Kongsberg 75.41 338*c i*P P **01 08 51.9 -0.3**
KONO pmax pmax
comp=Z,3µm,1.6s
KONO Kongsberg 75.41 338 *e*P P **01 08 53.1 +0.9**
KONO LR LR
comp=Z,254µm,19.0s
HWUT Hardware Ranch 75.43 48 *e*P P **01 08 53.6 +0.7**
HWUT LR LR
comp=Z,40µm,21.0s
EDW2 Edwards Air Fo 75.45 57 P P **01 08 53.3 +0.4**
baz=306,SNR=143
BGOL Bingol 75.52 308⇑ *i*P P **01 08 54.2 +0.9**
DUG Dugway, Tooele 75.55 50 P P **01 08 54.1 +0.6**
baz=308,SNR=198
DUG Dugway, Tooele 75.55 50 *e*P P **01 08 53.9 +0.3**
DUG MLR MLR
comp=Z,39µm,19.0s
DUG Dugway, Tooele 75.55 50 *e*P P **01 08 53.9 +0.3**
DUG LR LR
comp=Z,39µm,19.0s
DECC Green Verdugo 75.59 58 P P **01 08 54.0 +0.3**
baz=306,SNR=16
SUE Sulen 75.61 341 *e*P P **01 08 52.5 -0.7**
SUE IVmB_BB 01 09 04.1
comp=Z,4µm,3.0s
SUE *e*S **S 01 18 32.5 +0.1**
SUE IVMs_BB IVMs_BB 01 46 14.3
comp=Z,80µm,18.0s
KLNR Kaliningrad 75.61 330*c i*P P **01 08 53.3 -0.1**
KLNR pmax pmax
comp=Z,2µm,1.2s
KLNR MLR MLR
comp=Z,257µm,18.0s
SIM Simferopol' 75.64 316*c i*P P **01 08 54.4 +0.6**
SIM *e* 01 11 49.0
SIM *i* PPP PPP 01 13 37.0
SIM *i* S S **01 18 32.9 -0.5**
SIM *e*SSS SSS 01 26 46.0
SIM pmax pmax
comp=Z,3µm,12.3s
SIM MLR MLR
comp=Z,162µm,17.2s
KELT Kelkit 75.68 310⇑ *i*P P **01 08 55.1 +0.8**
EUZM Uzumlu 75.68 309⇑ *i*P P **01 08 54.5 +0.3**
PASC Pasadena Art C 75.74 58 *e*P P **01 08 55.1 +0.5**
comp=Z,93nm,1.0s
B25A Knox Farm, Ray 75.75 39 P P **01 08 54.7 +0.3**
baz=312,SNR=17
GRSN GIRESUNGRSN 75.79 311 *i*P P **01 08 54.2 -0.5**
BTMN Batman 75.80 307⇑ *i*P P **01 08 56.1 +1.1**
BW06 Boulder Array 75.88 47 P P **01 08 55.4 -0.1**
baz=309,SNR=16
BW06 Boulder Array 75.88 47 *e*P P **01 08 55.7 +0.2**
comp=Z,519nm,1.6s
BW06 LR LR
comp=Z,51µm,21.0s
PDAR Pinedale Array 75.88 47 P P **01 08 55.2 -0.3**
comp=Z,33nm,0.7s,baz=266,slow=2.6,SNR=193
PDAR PKPPKP **P'P'df 01 36 12.7 -6.9**
comp=Z,1.4nm,0.9s,baz=108,slow=1.9,SNR=5.2
A26A Wade Farm, Ken 75.89 38 P P **01 08 55.3 +0.2**
baz=312,SNR=20
PSUT Pine Spring 75.92 52 *e*P P **01 08 57.0 +1.2**
FMP Fort Macarthur 75.94 58 P P **01 08 55.7 0.0**
baz=306
SHOC Shoshone, Teco 75.97 55 P P **01 08 56.0 +0.1**
baz=307,SNR=31
ASK Askoy 75.98 340 *e*P P **01 08 56.0 +0.6**
ASK IVmB_BB 01 09 04.2
comp=Z,4µm,1.6s
GSC Goldstone, Bar 75.98 56 P P **01 08 56.1 +0.1**
baz=307,SNR=91
GSC Goldstone, Bar 75.98 56 *e*P P **01 08 56.5 +0.5**
GSC Goldstone, Bar 75.98 56 *e*P P **01 08 56.5 +0.5**
ORDU Ordu-Boztepe 76.00 311⇑ *i*P P **01 08 56.2 +0.3**
BER Bergen 76.02 340 *e*P P **01 08 56.2 +0.6**
BER IVmBBB 01 09 04.4
comp=Z,4µm,1.3s
BER IVMs_BB IVMs_BB 01 46 05.9
comp=Z,62µm,20.1s
CIS Catalina Islan 76.04 59 P P **01 08 56.5 +0.2**
baz=306,SNR=14
BFSC Mount Baldy Ra 76.05 57 P P **01 08 56.4 -0.1**
baz=307,SNR=66
ODD1 Odda 76.06 339 *e*P P **01 08 56.5 +0.6**
ODD1 IVmB_BB 01 09 07.0
comp=Z,5µm,3.2s
ODD1 IVMs_BB IVMs_BB 01 45 40.9
comp=Z,76µm,17.8s
C25A Freed Ranch, W 76.08 40 P P **01 08 56.3 0.0**
baz=312,SNR=14
RRX Edison Barstow 76.11 57 P P **01 08 57.4 +0.7**
baz=307
TNCL Tunceli-Merkez 76.14 309⇑ *i*P P **01 08 58.1 +1.2**
B26A Jensen Ranch, 76.14 39 P P **01 08 57.3 +0.7**
baz=312,SNR=24
RAO Raoul Island 76.15 146 PFAKE 01 09 10.0 +13
RAO LR LR
comp=Z,69µm,20.0s
SCI2 San Clemente I 76.20 59 P P **01 08 57.9 +0.7**
baz=307
A27A Ledoux Ranch, 76.24 38 P P **01 08 57.8 +0.7**
baz=313
SUSE Susehri 76.28 310⇑ *i*P P 01 09 12.7 +15
SHPR Sheep Range 76.33 54 *e*P P **01 08 58.6 +0.6**
MARD Mardin 76.46 307⇑ *i*P P **01 08 59.6 +0.8**
TUQ Turquoise Moun 76.48 56 P P **01 08 59.4 +0.5**
baz=307,SNR=18
DIYA Diyarbakir 76.51 308⇑ *i*P P **01 09 00.3 +1.3**
BLS5 Blasjo 76.52 339 *e*P P **01 09 00.4 +1.8**
BLS5 IVmB_BB 01 09 07.3
comp=Z,4µm,1.7s
BLS5 *e*S **S 01 18 42.5 -0.1**
BLS5 IVMs_BB IVMs_BB 01 46 02.9
comp=Z,81µm,19.0s
BBRC Big Bear Solar 76.53 57 P P **01 08 59.1 -0.2**
baz=307
SORM Soroca 76.54 321⇑ *i*P P **01 08 58.9 +0.1**
SORM Soroca 76.54 321⇑ ⇑P P **01 08 58.9 +0.1**
HEC Hector,Ludlow 76.57 56 P P **01 08 59.6 +0.2**
baz=307,SNR=111
KEMA Kemaliye 76.68 310⇑ *i*P P **01 09 00.9 +0.9**
A28A Rude Farm, Bot 76.73 37 P P **01 09 00.2 +0.2**
baz=314,SNR=48
MURC Murrieta 76.74 58 P P **01 09 00.5 +0.2**
baz=307,SNR=33
SAMS Samsun-Alacam 76.75 312⇑ *i*P P **01 09 00.6 +0.5**
KBSD Kabsdagh 76.80 307 *e*P P **01 09 01.9 +1.3**
BORG Borgarnes 76.82 353 LR LR 01 41 30.2
comp=Z,41µm,21.7s,baz=15,slow=35
BORG Borgarnes 76.82 353 *e*P P **01 09 02.0 +1.9**
BORG pmax pmax
comp=Z,452nm,1.3s
BORG Borgarnes 76.82 353 *e*P P **01 09 02.0 +1.9**
comp=Z,452nm,1.3s
CCUT Cedar City 76.83 53 *e*P P **01 09 00.7 -0.3**
ERBA Erbaa 76.84 312⇑ *i*P P **01 09 01.5 +0.7**
ELZG Elazig 76.86 309⇑ *i*P P **01 09 02.9 +1.8**
HOMB Homborsund 76.87 337 *e*P P **01 09 00.6 +0.1**
HOMB *e*S **S 01 18 47.4 +1.1**
HOMB IVMs_BB IVMs_BB 01 47 58.2
comp=Z,85µm,18.1s
D26A Manning 76.95 40 P P **01 09 01.4 +0.2**
baz=312,SNR=30
B28A Dugan Ranch, T 77.01 38 P P **01 09 01.7 +0.2**
baz=314,SNR=30
KMY Karmoy 77.03 339 *e*P P **01 09 02.4 +1.1**
KMY IVmB_BB 01 09 10.1
comp=Z,302nm,1.6s
KMY *e*S **S 01 18 49.8 +1.7**
KMY IVMs_BB IVMs_BB 01 44 15.4
comp=Z,3µm,18.7s
GMRC Granite Mounta 77.04 56 P P **01 09 02.2 +0.1**
baz=308,SNR=128
TMUT Trail Mountain 77.08 50 *e*P P **01 09 02.9 +0.4**
KIS Kishinev 77.08 320 *i*P P **01 09 00.0 -1.9**
comp=Z,1µm,1.8s
KIS Kishinev 77.08 320 *i* PcP **PcP 01 09 12.0 -0.7**
KIS Kishinev 77.08 320 *i* PP PP 01 11 59.5 +4.5
KIS Kishinev 77.08 320 *i* PPP PPP 01 13 45.0
KIS Kishinev 77.08 320 *i* PsP 01 14 55.0
KIS *i* S **S 01 18 44.0 -5.1**
comp=Z,30µm,13.0s
KIS *i* ScS **SKSac 01 19 07.0 -5.8**
KIS Kishinev 77.08 320 *i* PS 01 19 16.0
KIS *e*SS SS 01 23 30.0 -16
KIS *e*SSS SSS 01 27 14.0
KIS *e*LQ LQ 01 31 44.0
KIS LRM MLR 01 46 48.0
comp=Z,112µm,17.0s
KIS Kishinev 77.08 320⇑ *i*P P **01 09 03.0 +1.1**
KIS Kishinev 77.08 320*j i*P P **01 09 00.0 -1.9**
KIS *i* 01 09 12.0
KIS *i* 01 11 59.5
KIS *i* PPP PPP 01 13 45.0
KIS *i* 01 18 44.0
KIS *i* 01 19 07.0
KIS *i* PS **PnS 01 19 16.0 -13**
KIS pmax pmax
comp=Z,1µm,1.8s
KIS pmax pmax
comp=Z,11µm,13.0s
KIS pmax pmax
comp=Z,10µm,20.0s
KIS MLR MLR
comp=N,180µm,17.0s
KIS MLR MLR
comp=E,112µm,17.0s
KIS MLR MLR
comp=Z,228µm,17.0s
STAV Stavanger 77.14 339 *e*P P **01 09 02.2 +0.2**
STAV IVmB_BB 01 09 12.8
comp=Z,5µm,2.6s
STAV IVMs_BB IVMs_BB 01 46 22.6
comp=Z,58µm,18.2s
SNART Snartemo 77.20 338 *e*P P **01 09 02.7 +0.3**
SNART IVmBBB 01 09 16.9
comp=Z,3µm,1.3s
SNART *e*S **S 01 18 49.5 -0.5**
HAVZ Havza 77.20 312⇑ *i*P P **01 09 03.1 +0.3**
A29A Manning Farm, 77.22 37 P P **01 09 03.0 +0.3**
baz=314,SNR=190
LDFC Landfair 77.22 55 *e*P P **01 09 03.8 +0.7**
PFO Pinyon Flats O 77.22 57 P P **01 09 03.5 +0.3**
comp=Z,74nm,1.1s,baz=311,slow=5.2,SNR=35
PFO Pinyon Flats O 77.22 57 P P **01 09 03.2 0.0**
baz=307,SNR=46
PFO Pinyon Flats O 77.22 57 *e*P P **01 09 03.1 -0.1**
PFO LR LR
comp=Z,94µm,22.0s
109C Camp Elliot, M 77.23 58 P P **01 09 03.3 +0.3**
baz=307,SNR=28
TPFO Pinon Flats 77.23 57 P P **01 09 03.5 +0.3**
baz=307,SNR=58
TOKA Tokat 77.23 311⇑ *i*P P **01 09 03.8 +0.8**
BSD Bornholm Skovb 77.25 333⇑ *i*P P **01 09 02.8 +0.2**
comp=Z,2µm,1.3s
BSD *i* S **S 01 18 48.2 -2.4**
comp=Z,204µm,18.0s
BSD Bornholm Skovb 77.25 333⇑ *i*P P **01 09 02.8 +0.2**
BSD *i* S **S 01 18 48.2 -2.4**
BSD pmax pmax
comp=Z,2µm,1.3s
BSD MLR MLR
comp=Z,200µm,18.0s
MTPU Mount Pierson 77.26 52 *e*P P **01 09 04.3 +0.7**
CUKAN kanal_SIVAS 77.28 310⇑ *i*P P **01 09 04.5 +1.2**
BELC Belle Mtn. Jos 77.30 57 P P **01 09 03.3 -0.2**
baz=308,SNR=40
SHAO Shalim 77.34 283 P P **01 09 03.9 0.0**
SNR=9.2
SHAO P P **01 09 03.9 0.0**
SNR=9.2
BEL Belsk 77.40 328 *e*P P **01 09 04.9 +1.3**
BEL *e*S **S 01 18 53.3 +0.9**
BEL LMZ LR 01 45 00.5
comp=Z,180µm,21.1s
BEL Belsk 77.40 328 *e*P P **01 09 04.9 +1.3**
BEL *e*S **S 01 18 53.3 +0.9**
BEL MLR MLR
comp=Z,180µm,21.1s
LVV L'vov 77.43 325 *e*P P **01 09 06.5 +2.7**
LVV *e* 01 09 22.4
LVV *e* 01 12 06.0
LVV *e* 01 13 51.0
LVV *e*S **S 01 18 54.6 +1.8**
LVV *e* 01 19 44.7
LVV *e* 01 24 00.0
LVV MLR MLR
comp=N,115µm,16.0s
LVV MLR MLR
comp=Z,145µm,16.0s
LVV MLR MLR
comp=E,104µm,15.0s
SFNV Sufian 77.44 306 *e*P P **01 09 05.7 +1.5**
BOYT Boyabat 77.46 313 *i*P P **01 09 05.1 +0.9**
B29A Wagenman Farm, 77.48 37 P P **01 09 04.2 +0.1**
baz=314,SNR=70
YEL1 Yell 77.49 343⇑ *e*P P **01 09 04.1 +0.1**
KNB Kanab 77.50 53 *e*P P **01 09 05.6 +0.9**
KNB Kanab 77.50 53 *e*P P **01 09 05.6 +0.9**
PKCU Pink Cliffs 77.55 52 *e*P P **01 09 07.0 +1.8**
IAS Iasi 77.58 321⇑ *i*P P **01 09 05.6 +0.9**
IAS Iasi 77.58 321 ⇑P P **01 09 05.6 +0.9**
SRU San Rafael Swe 77.61 50 *e*P P **01 09 05.5 +0.2**
SRU San Rafael Swe 77.61 50 *e*P P **01 09 05.5 +0.2**
AKCD Akcadag 77.64 309⇑ *i*P P **01 09 06.7 +1.3**
A30A Hoffart Farm, 77.64 36 P P **01 09 05.1 +0.1**
baz=315,SNR=86
BAR Barrett 77.64 58 *e*P P **01 09 05.4 +0.1**
K22A Casper 77.67 45 P P **01 09 05.5 0.0**
baz=311,SNR=78
K22A Casper 77.67 45 *e*P P **01 09 05.5 0.0**
comp=E,529nm,1.4s
COP Copenhagen 77.68 334⇑ *i*P P **01 09 05.9 +0.9**
comp=E,620nm,1.3s
COP *i* S **S 01 18 56.5 +1.3**
comp=Z,141µm,19.0s
COP Copenhagen 77.68 334⇑ *i*P P **01 09 05.9 +0.9**
COP *i* S **S 01 18 56.5 +1.3**
COP pmax pmax
comp=Z,620nm,1.3s
COP MLR MLR
comp=Z,140µm,19.0s
MONP2 Monument Peak 77.68 58 P P **01 09 06.3 +0.4**
baz=308,SNR=43
LEOM Leova 77.72 320⇑ *i*P P **01 09 06.4 +1.0**
LEOM Leova 77.72 320 ⇑P P **01 09 06.5 +1.0**
CUALT Altinyayla-SIV 77.73 310⇑ *i*P P **01 09 06.9 +1.0**
NEE2 Needles Airpor 77.73 55 P P **01 09 06.0 +0.2**
baz=308
IRM Iron Mountain 77.76 56 P P **01 09 06.5 +0.5**
baz=308,SNR=102
GKP Gorka Klasztor 77.78 330 *e*P P **01 09 06.4 +0.7**
GKP *e*S **S 01 18 56.6 +0.2**
GKP LMZ LR 01 46 02.7
comp=Z,318µm,18.6s
GKP Gorka Klasztor 77.78 330 *e*P P **01 09 06.4 +0.7**
GKP *e*S **S 01 18 56.7 +0.2**
GKP MLR MLR
comp=Z,318µm,18.6s
MDND Maddock 77.79 38 P P **01 09 06.5 +0.6**
baz=314,SNR=55
MDND Maddock 77.79 38 *e*P P **01 09 06.5 +0.6**
comp=Z,1µm,1.4s
ULM Lac du Bonnet 77.82 34 P P **01 09 05.3 -0.7**
comp=Z,84nm,0.8s,baz=312,slow=6.0,SNR=67
ULM LR LR 01 48 38.4
comp=Z,17µm,19.0s,baz=334,slow=40
BC3 Big Chuckawall 77.86 57 P P **01 09 07.0 +0.3**
baz=308,SNR=64
ATAB Bozova 77.92 308⇑ *i*P P **01 09 08.0 +1.2**
CUSAR Sarkisla-SIVAS 77.94 311⇑ *i*P P **01 09 07.3 +0.2**
H25A Fruitdale 77.96 42 P P **01 09 07.0 0.0**
baz=312,SNR=36
KAST KASTAMONU 77.97 314⇑ *i*P P **01 09 08.1 +1.0**
B30A Myrvik Farm, E 77.98 37 P P **01 09 06.9 -0.1**
baz=315,SNR=122
CTAK Corum_Osmancik 78.02 312⇑ *i*P P **01 09 08.6 +1.1**
LLD Lille Linde 78.03 334 *i*P P **01 09 10.2 +3.2**
comp=Z,504nm,1.1s
comp=Z,99µm,16.0s
LLD Lille Linde 78.03 334 *i*P P **01 09 10.2 +3.2**
LLD pmax pmax
comp=Z,500nm,1.1s
LLD MLR MLR
comp=Z,99µm,16.0s
IKP In-Ko-Pah, Jac 78.04 58 P P **01 09 07.6 0.0**
baz=308,SNR=40
RSSD Black Hills 78.06 43 P P **01 09 07.7 -0.1**
baz=312
RSSD Black Hills 78.06 43 *e*P P **01 09 07.4 -0.4**
RSSD Black Hills 78.06 43 *e*P P **01 09 07.4 -0.4**
SWSC Sam W. Stewart 78.07 58 P P **01 09 07.6 0.0**
baz=308,SNR=27
OUZ Omahuta 78.13 155 *e*P P **01 09 09.4 +1.8**
MUD Monsted U'grnd 78.15 336⇑ *i*P P **01 09 08.3 +0.7**
comp=Z,2µm,1.8s
MUD *i* S **S 01 18 59.1 -1.1**
comp=Z,178µm,17.0s
MUD Monsted U'grnd 78.15 336⇑ *i*P P **01 09 08.3 +0.7**
MUD *i* S **S 01 18 59.1 -1.1**
MUD pmax pmax
comp=Z,2µm,1.8s
MUD MLR MLR
comp=Z,180µm,17.0s
COAL Corum-Alaca 78.16 312⇑ *i*P P **01 09 08.9 +0.7**
KWP Kalwaria Pacla 78.16 325 *e*P P **01 09 09.4 +1.5**
KWP *e*S **S 01 19 01.7 +0.9**
KWP LMZ LR 01 49 04.0
comp=Z,233µm,18.1s
KWP Kalwaria Pacla 78.16 325 *e*P P **01 09 09.4 +1.5**
KWP *e*S **S 01 19 01.7 +0.9**
A31A Linda, St. Vin 78.17 36 P P **01 09 07.5 -0.4**
baz=316
RGN Rugen 78.26 333 *e*P P **01 09 09.6 +1.3**
comp=Z,905nm,1.1s
TLCR 78.31 319⇓ *i*P P **01 09 09.2 +0.4**
TLCR 78.31 319 ⇓P P **01 09 09.2 +0.4**
O20A White River Ci 78.31 48 P P **01 09 09.3 +0.1**
baz=310,SNR=103
O20A White River Ci 78.31 48 *e*P P **01 09 09.3 +0.1**
comp=Z,216nm,0.9s
B31A Greenbush Farm 78.32 36 P P **01 09 08.7 0.0**
baz=315,SNR=14
ILGA Ilgaz 78.38 313⇑ *i*P P **01 09 10.6 +1.1**
BUR08 Bucovina Ar. S 78.42 322 *e*P P **01 09 10.1 +0.6**
Y12C Blythe 78.42 56 P P **01 09 10.1 +0.4**
baz=308,SNR=72
Y12C Blythe 78.42 56 *e*P P **01 09 10.0 +0.4**
BURAR Bucovina Array 78.43 322⇓ *i*P P **01 09 10.2 +0.6**
BURAR Bucovina Array 78.43 322 ⇓P P **01 09 10.2 +0.6**
C30A Mose, Pekin 78.43 37 P P **01 09 09.0 -0.4**
baz=315,SNR=44
A32A Rocking H Ranc 78.50 36 P P **01 09 09.2 -0.5**
baz=316,SNR=55
TESR Tescani 78.50 321⇓ *i*P P **01 09 10.5 +0.7**
GLA Glamis 78.65 57 P P **01 09 11.2 +0.3**
baz=308,SNR=78
CFR Carcaliu 78.67 319⇑ *i*P P **01 09 11.6 +0.9**
CFR Carcaliu 78.67 319⇑ *i*P **PKKPbc 01 28 02.4 -2.3**
CFR Carcaliu 78.67 319 ⇑P P **01 09 11.6 +0.9**
C31A Landman Farms, 78.72 37 P P **01 09 10.6 -0.4**
baz=315,SNR=75
RBK Rabkut 78.73 283 P P **01 09 12.0 +0.3**
SNR=25
ODBI Odobesti 78.81 320⇓ *i*P P **01 09 14.1 +2.5**
B32A Ashes, Strandq 78.86 36 P P **01 09 11.2 -0.5**
baz=316,SNR=39
HCB Kahramanmara˜ 78.86 309⇑ *i*P P **01 09 12.5 +0.5**
KOLS Kolonicke sedl 78.86 325 *e*P P **01 09 12.1 +0.3**
KOLS pmax pmax
comp=Z,259nm,1.2s
KOLS Kolonicke sedl 78.86 325 *e*P P **01 09 12.1 +0.3**
KOLS *e*PP **PP 01 12 12.3 +2.5**
KOLS *e*S **S 01 19 08.0 -0.3**
KOLS *e*L L 01 47 44.1
ELDT Eldivan 78.91 313⇑ *i*P P **01 09 13.3 +0.9**
CDAG Cicekdag 78.92 312⇑ *i*P P **01 09 12.2 -0.2**
PLOR Plostina 78.96 320⇑ *i*P P **01 09 13.7 +1.3**
PLOR Plostina 78.96 320⇑ *i*P **PKKPbc 01 28 06.1 +2.0**
PLOR Plostina 78.96 320 ⇑P P **01 09 13.7 +1.3**
STHS Stebnicka Huta 78.98 326 *e*P P **01 09 13.8 +1.4**
STHS pmax pmax
comp=Z,273nm,1.1s
STHS Stebnicka Huta 78.98 326 *e*P P **01 09 13.8 +1.4**
STHS *e*S **S 01 19 13.1 +3.6**
A33A Warroad 78.99 35 P P **01 09 12.1 -0.4**
baz=317,SNR=90
TIRR Tirgusor 79.02 319⇓ *i*P P **01 09 13.1 +0.4**
TIRR Tirgusor 79.02 319⇑ *i*P **PKKPbc 01 28 06.8 +2.9**
TIRR Tirgusor 79.02 319 ⇓P P **01 09 13.1 +0.4**
TIRR Tirgusor 79.02 319 *e*P P **01 09 13.2 +0.6**
OJC Ojcow 79.02 327 *e*P P **01 09 13.7 +1.1**
OJC *e*S **S 01 19 10.2 +0.3**
OJC LMZ LR 01 46 46.1
comp=Z,216µm,18.5s
OJC Ojcow 79.02 327 *e*P P **01 09 13.7 +1.1**
OJC *e*S **S 01 19 10.2 +0.3**
OJC MLR MLR
comp=Z,216µm,18.5s
PV04 Paradox Valley 79.04 50 *e*P P **01 09 14.1 +0.9**
ANDN Andirin 79.05 309⇑ *i*P P **01 09 14.2 +1.0**
UZH Uzhgorod 79.08 325*c i*P P **01 09 14.0 +1.1**
UZH *e* 01 09 20.9
UZH *e* 01 09 24.3
UZH *e* 01 12 17.5
UZH *e*PPP PPP 01 14 04.7
UZH *e*S **S 01 19 08.4 -2.1**
UZH *e* 01 19 26.9
UZH *e*PS **PnS 01 19 53.1 -1.4**
UZH *e*SS **SS 01 24 17.9 +2.5**
UZH *e*SSS SSS 01 27 43.5
UZH MLR MLR
comp=Z,247µm,18.0s
F29A Eureka 79.08 39 P P **01 09 12.9 -0.2**
baz=314,SNR=31
HARR Harsova 79.11 319⇑ *i*P P **01 09 13.9 +0.7**
HARR Harsova 79.11 319 ⇑P P **01 09 13.9 +0.7**
KAMA Osmaniye 79.11 309⇑ *i*P P **01 09 13.9 +0.4**
KUZU Kuzuini 79.12 308⇑ *i*P P **01 09 13.9 +0.4**
GRER 79.12 320⇑ *i*P P **01 09 16.5 +3.2**
TLB Topalu 79.12 319⇑ *i*P P **01 09 14.0 +0.8**
TLB Topalu 79.12 319 ⇑P P **01 09 14.0 +0.8**
N23A Red Feather La 79.15 46 P P **01 09 14.5 +0.6**
baz=311,SNR=131
PHWY Pilot Hill 79.16 46 *e*P P **01 09 14.1 +0.1**
comp=Z,320nm,1.6s
EFOR EFORIE 79.16 318⇑ *i*P P **01 09 14.5 +1.0**
BMR Baia Mare 79.21 323⇑ *i*P P **01 09 15.0 +1.3**
BMR Baia Mare 79.21 323 ⇑P P **01 09 15.0 +1.3**
ARCR ARCALIA 79.22 323⇑ *i*P P **01 09 15.7 +1.9**
AGMN Agassiz Nation 79.24 36 P P **01 09 13.2 -0.7**
baz=316,SNR=88
AGMN Agassiz Nation 79.24 36 *e*P P **01 09 13.0 -0.9**
AGMN LR LR
comp=Z,62µm,20.0s
CRVS Cervenica-Dubn 79.25 325 *e*P P **01 09 14.7 +0.7**
CRVS *e*S **S 01 19 12.9 +0.4**
CRVS Cervenica-Dubn 79.25 325 *e*P P **01 09 14.7 +0.7**
CRVS *e*S **S 01 19 12.9 +0.4**
D31A Mcclaflin, Tow 79.26 38 P P **01 09 13.7 -0.3**
baz=315,SNR=19
C32A Crookston 79.27 36 P P **01 09 13.5 -0.5**
baz=316,SNR=15
BRTR Keskin Array B 79.29 312 P P **01 09 15.1 +0.6**
comp=Z,211nm,1.2s,baz=90,slow=3.8,SNR=80
BRTR PP **PP 01 12 18.0 +4.2**
comp=Z,43nm,1.0s,baz=56,slow=5.9,SNR=4.1

BRTR PKKPbc **PKKPbc** **01 28 04.2 +0.8**
comp=Z,2.6nm,0.8s,baz=188,slow=2.6,SNR=11
BRTR P4KPbc 01 45 49.4
comp=Z,0.2nm,0.5s,baz=31,slow=2.9,SNR=4.3
BRTR LR LR 01 49 45.7
comp=Z,55μm,18.5s,baz=30,slow=40
CVDA Cernavoda 79.30 319⇑*iP* **P 01 09 16.8 +2.6**
YAHY KAYSERI_Yahyal 79.32 310⇑*iP* **P 01 09 15.7 +1.0**
TRPA Tarpa 79.32 324⇑*eP* **P 01 09 15.9 +1.6**
WUAZ Wupatki 79.35 53 P **P 01 09 15.6 +0.7**
baz=309,SNR=169
WUAZ Wupatki 79.35 53 *eP* **P 01 09 15.4 +0.5**
WUAZ LR LR
comp=Z,52μm,22.0s
MANR Mangalia 79.36 318⇑*iP* **P 01 09 15.5 +0.9**
B33A Robert and Kas 79.38 36 P **P 01 09 13.8 -0.8**
baz=317,SNR=8.0
NIE Niedzica 79.39 326 *eP* **P 01 09 16.1 +1.4**
NIE *eS* **S 01 19 15.0 +1.0**
NIE LMZ LR 01 47 43.4
comp=Z,164μm,16.6s
NIE Niedzica 79.39 326 *eP* **P 01 09 16.1 +1.4**
NIE *eS* **S 01 19 15.0 +1.0**
NIE MLR MLR
comp=Z,164μm,16.6s
PV01 Paradox Valley 79.41 50 *eP* **P 01 09 15.5 +0.2**
PGOR Pogoanele 79.44 320⇑*iP* **P 01 09 16.7 +1.7**
AMRR Amara 79.47 319⇑*iP* **P 01 09 17.1 +2.0**
AMRR Amara 79.47 319⇑⇑*iP* **P 01 09 17.1 +2.0**
BCAM Yenicaga 79.47 314⇑*iP* **P 01 09 16.1 +0.7**
G29A Hoven 79.48 40 P **P 01 09 14.9 -0.3**
baz=314,SNR=28
F30A Leola 79.48 39 P **P 01 09 14.7 -0.6**
baz=315
DOPR Dopca 79.51 321⇓*iP* **P 01 09 16.9 +1.5**
ISR Istrita 79.52 320⇑*iP* **P 01 09 17.3 +1.8**
ISR Istrita 79.52 320⇑⇑*iP* **P 01 09 17.3 +1.8**
E31A Nome 79.53 38 P **P 01 09 15.2 -0.3**
baz=315,SNR=28
D32A Dogwood Acres, 79.53 37 P **P 01 09 14.8 -0.7**
baz=316,SNR=50
RAR Rarotonga 79.56 127 P **P 01 09 16.1 +0.3**
comp=Z,22nm,0.5s,baz=245,slow=12,SNR=4.1
RAR Rarotonga 79.56 127 *eP* **P 01 09 16.3 +0.5**
RAR pmax pmax
comp=Z,82nm,1.0s
RAR MLR MLR
comp=Z,52μm,20.0s
RAR Rarotonga 79.56 127 *eP* **P 01 09 16.3 +0.5**
comp=Z,82nm,1.0s
RAR LR LR
comp=Z,52μm,20.0s
MLR Muntele Rosu 79.56 321 PKKPbc PKKPbc 01 28 02.1 -0.8
comp=Z,1.4nm,1.0s,baz=170,slow=6.6,SNR=6.4
MLR PKPPKP **P'P'df** **01 36 05.3 -7.7**
comp=Z,0.8nm,1.0s,baz=62,slow=2.6,SNR=3.5
MLR LR LR 01 49 20.9
comp=Z,29μm,18.5s,baz=44,slow=39
MLR Muntele Rosu 79.56 321⇑*iP* **P 01 09 15.9 0.0**
MLR Muntele Rosu 79.56 321⇑*iP* **PKKPbc 01 28 02.4 -0.5**
MLR Muntele Rosu 79.56 321 *eP* **P 01 09 15.7 -0.1**
MLR Muntele Rosu 79.56 321 *eP* **P 01 09 15.7 -0.1**
MLR PKKPbc **PKKPbc** **01 28 02.1 -0.8**
MLR P'P' 01 36 05.3
B34A Aery, Baudette 79.65 35 P **P 01 09 15.3 -0.8**
baz=317,SNR=58
PSN Preselentsi 79.67 318 *iP* **P 01 09 17.3 +1.0**
C33A Trail 79.67 36 P **P 01 09 15.5 -0.7**
baz=317,SNR=52
AKO Adana 79.68 310⇑*iP* **P 01 09 17.3 +0.8**
SMCO Snowmass 79.68 48 *eP* **P 01 09 17.4 +0.5**
ANTO Ankara 79.68 313 *eP* **P 01 09 17.6 +1.1**
ANTO MLR MLR
comp=Z,80μm,19.0s
ANTO Ankara 79.68 313 P **P 01 09 17.7 +1.1**
SNR=195
ANTO P **P 01 09 17.7 +1.1**
SNR=195
ANTO Ankara 79.68 313 *eP* **P 01 09 17.6 +1.1**
ANTO LR LR
comp=Z,80μm,19.0s
BBAL Bala 79.71 312⇑*iP* **P 01 09 16.9 +0.1**
DGAR Diego Garcia 79.74 252 *eP* **P 01 09 17.5 +0.5**
DGAR pmax pmax
comp=Z,756nm,1.1s
DGAR MLR MLR
comp=Z,60μm,21.0s
DGAR Diego Garcia 79.74 252 *eP* **P 01 09 17.5 +0.5**
comp=Z,756nm,1.1s
DGAR LR LR
comp=Z,60μm,21.0s
RAC Raciborz 79.80 328 *eP* **P 01 09 17.9 +1.0**
RAC *e* 01 12 19.8
RAC *eS* **S 01 19 20.3 +2.1**
RAC MLR MLR
comp=Z,250μm,18.0s
SECR 79.82 320⇑*iP* **P 01 09 19.1 +2.0**
F31A Hecla 79.84 39 P **P 01 09 16.8 -0.4**
baz=315,SNR=33
CJR Cluj-Napoca 79.85 323⇑*iP* **P 01 09 18.7 +1.4**
CJR Cluj-Napoca 79.85 323⇑⇑*iP* **P 01 09 18.7 +1.4**
E32A Braaten, Kindr 79.90 38 P **P 01 09 16.8 -0.7**
baz=316
AKSY AKSARAY - Alti 79.92 311⇑*iP* **P 01 09 17.7 -0.1**
LANS Liptovska Anna 79.96 326 *eP* **P 01 09 19.4 +1.6**
LANS *eS* **S 01 19 20.1 +0.1**
LANS Liptovska Anna 79.96 326 *eP* **P 01 09 19.3 +1.5**
YURE YÜREGİR 79.97 309 *iP* **P 01 09 19.5 +1.4**
SULR 79.98 320⇑*iP* **P 01 09 18.9 +1.0**
BIGH Upper Bighouse 79.99 343⇑*eP* **P 01 09 17.3 -0.3**
BIGH AMB AMB 01 09 26.5
comp=Z,809nm,1.5s
BIGH AMS AMS 01 46 46.7
comp=Z,119μm,19.6s
KECS Kecovo 80.00 325 *eP* **P 01 09 18.9 +0.9**
KECS pmax pmax
comp=Z,90nm,1.2s
KECS Kecovo 80.00 325 *eP* **P 01 09 18.9 +0.9**
KECS *e*PP **PP 01 12 21.5 +2.2**
KECS *eS* **S 01 19 19.8 -0.6**
OKC Ostrava-Krasne 80.01 327⇑*iP* **P 01 09 18.9 +0.9**
OKC *e*pP **pP 01 09 26.4 +0.4**
OKC *e*PP **PP 01 12 23.6 +4.3**
OKC *eS* **S 01 19 22.1 +1.7**
OKC *e*PKPPKP P'P'df 01 36 03.1 -9.1
OKC AMS AMS 01 47 00.0
comp=Z,159μm,18.2s
OKC Ostrava-Krasne 80.01 327⇑*iP* **P 01 09 18.9 +0.9**
OKC *e* 01 09 26.4
OKC *e* 01 12 23.6
OKC *eS* **S 01 19 22.1 +1.7**
OKC MLR MLR
comp=Z,159μm,18.2s
KSP Ksiaz 80.01 329 *eP* **P 01 09 19.0 +1.0**
KSP *eS* **S 01 19 21.3 +0.9**
KSP LMZ LR 01 47 22.0
comp=Z,222μm,19.3s
KSP Ksiaz 80.01 329 *eP* **P 01 09 19.0 +1.0**
KSP *eS* **S 01 19 21.3 +0.9**
KSP MLR MLR
comp=Z,222μm,19.3s
MLA1 Latheron 80.03 343⇑*eP* **P 01 09 18.6 +0.7**
VOIR 80.05 321⇑*iP* **P 01 09 19.4 +1.0**
VOIR 80.05 321⇑*iP* **PKKPbc 01 28 01.1 -0.7**
VOIR 80.05 321⇑⇑*iP* **P 01 09 19.4 +1.0**
MVCO Mesa Verde 80.05 50 P **P 01 09 19.1 +0.3**
baz=310,SNR=51
MVCO Mesa Verde 80.05 50 *eP* **P 01 09 19.8 +1.0**
MVCO LR LR
comp=Z,37μm,22.0s
ISCO Idaho Springs 80.06 47 P **P 01 09 19.5 +0.5**
baz=312,SNR=47
ISCO Idaho Springs 80.06 47 *eP* **P 01 09 19.4 +0.5**
ISCO MLR MLR
comp=Z,55μm,19.0s
ISCO Idaho Springs 80.06 47 *eP* **P 01 09 19.4 +0.5**
ISCO LR LR
comp=Z,55μm,19.0s
KKUL Konya-Kulu 80.07 312⇑*iP* **P 01 09 19.3 +0.6**
D33A AnnSam, Waubun 80.08 37 P **P 01 09 17.8 -0.7**
baz=317,SNR=34
SAHE Sakarya_HENDEK 80.14 315⇑*iP* **P 01 09 17.5 -1.4**
C34A RKJ Ranch, Bem 80.15 36 P **P 01 09 18.1 -0.7**
baz=317,SNR=14

B35A Bob, Littlefor 80.16 35 P **P 01 09 18.3 -0.6**
baz=318,SNR=88
MTUR Matau 80.19 321⇑*iP* **P 01 09 20.4 +1.2**
MTUR Matau 80.19 321⇑⇑*iP* **P 01 09 20.4 +1.2**
YAYL Yayladag 80.19 308⇑*iP* **P 01 09 17.9 -1.5**
DRGR 80.21 323⇓*iP* **P 01 09 19.7 +0.4**
DRGR 80.21 323⇑*iP* **PKKPbc 01 28 05.6 +4.1**
DRGR 80.21 323⇓⇓*iP* **P 01 09 19.7 +0.4**
BTAS Taskesti 80.24 314⇑*iP* **P 01 09 19.5 -0.1**
KFRA Kufra 80.28 307 *eP* **P 01 09 20.9 +1.1**
ARR Arges 80.30 321⇑*iP* **P 01 09 21.6 +1.8**
MORC Moravsky Berou 80.31 328⇓*iP* **P 01 09 20.6 +0.9**
MORC Moravsky Berou 80.31 328 *eP* **P 01 09 20.4 +0.7**
MORC Moravsky Berou 80.31 328 *eP* **P 01 09 20.4 +0.7**
G31A Conde 80.32 39 P **P 01 09 19.6 -0.2**
baz=315,SNR=18
KAND Kocaeli-Kandir 80.34 315⇑*iP* **P 01 09 19.2 -0.8**
DPC Dobruska-Polom 80.38 329 *eP* **P 01 09 21.0 +0.9**
DPC *e*pP **pP 01 09 29.1 +1.1**
DPC *e*PP **PP 01 12 22.6 +0.2**
DPC *eS* **S 01 19 25.6 +1.2**
DPC *e*PKPPKP **P'P'df** **01 36 08.7 -2.9**
DPC AMS AMS 01 47 40.0
comp=Z,211μm,17.1s
DPC Dobruska-Polom 80.38 329 *eP* **P 01 09 21.0 +0.9**
DPC *e* 01 09 29.1
DPC *e* 01 12 22.6
DPC *eS* **S 01 19 25.6 +1.2**
DPC MLR MLR
comp=Z,211μm,17.1s
UPC Upice 80.38 329⇑⇑*eP* **P 01 09 21.2 +1.2**
UPC *e*pP **pP 01 09 27.9 -0.1**
UPC *e*PP **PP 01 12 21.8 -0.6**
UPC *eS* **S 01 19 25.3 +1.0**
UPC AMS AMS 01 47 40.0
comp=Z,209μm,16.8s
UPC Upice 80.38 329 *eP* **P 01 09 21.2 +1.2**
UPC *e* 01 09 27.9
UPC *e* 01 12 21.8
UPC *eS* **S 01 19 25.3 +1.0**
UPC MLR MLR
comp=Z,209μm,16.8s
F32A Veblen 80.39 38 P **P 01 09 19.7 -0.4**
baz=316,SNR=44
DED Mersin 80.39 310⇑*iP* **P 01 09 20.3 -0.1**
KRLC Kraliky 80.40 328⇑*eP* **P 01 09 20.2 0.0**
KRLC *e*pP **pP 01 09 28.5 +0.3**
KRLC Kraliky 80.40 328 *eP* **P 01 09 20.2 0.0**
KRLC *e* 01 09 28.5
PRD Provadia 80.41 318 *iP* **P 01 09 21.3 +1.0**
D34A Park Rapids 80.43 36 P **P 01 09 19.9 -0.5**
baz=317,SNR=74
E33A Westby DABS, E 80.47 37 P **P 01 09 20.4 -0.2**
baz=317,SNR=53
SUSD Miller 80.50 40 P **P 01 09 20.3 -0.5**
baz=315,SNR=19
KERG Konya-Eregli 80.51 310⇑*iP* **P 01 09 20.8 -0.3**
RABH Abou Rabah 80.52 306 *eP* **P 01 09 22.5 +1.4**
C35A Jirik Farms, M 80.54 35 P **P 01 09 20.1 -0.8**
baz=318,SNR=73
I30A Oacoma 80.63 41 P **P 01 09 21.2 -0.3**
baz=315,SNR=13
W18A Petrified Fore 80.63 53 P **P 01 09 22.4 +0.5**
baz=310,SNR=7.0
W18A Petrified Fore 80.63 53 *eP* **P 01 09 22.7 +0.8**
comp=Z,185nm,1.2s
ROOS tl_alroos 80.64 306 *eP* **P 01 09 23.0 +1.2**
G32A Webster 80.65 39 P **P 01 09 21.3 -0.2**
baz=316,SNR=34
MCD Coleburn Disti 80.66 342⇑*eP* **P 01 09 21.7 +0.3**
214A Organ Pipe Nat 80.66 57 P **P 01 09 22.2 +0.3**
baz=309,SNR=52
214A Organ Pipe Nat 80.66 57 *eP* **P 01 09 22.3 +0.4**
comp=Z,2μm,1.6s
TAU Tasmania Unive 80.67 177 *eP* **P 01 09 22.0 +0.7**
TAU MLR MLR
comp=Z,57μm,22.0s
TAU Tasmania Unive 80.67 177 *eP* **P 01 09 22.0 +0.7**
TAU LR LR
comp=Z,57μm,22.0s
LOT Lotru 80.67 322⇑*iP* **P 01 09 22.5 +0.7**
PSZ Piszkesteto 80.69 325⇑*iP* **P 01 09 23.1 +1.3**
PSZ Piszkesteto 80.69 325 *eP* **P 01 09 22.7 +0.9**
PSZ pmax pmax
comp=Z,741nm,1.2s
PSZ MLR MLR
comp=Z,191μm,20.0s
PSZ Piszkesteto 80.69 325 *eP* **P 01 09 22.7 +0.9**
comp=Z,741nm,1.2s
PSZ LR LR
comp=Z,191μm,20.0s
PSZ Piszkesteto 80.69 325⇑⇑*eP* **P 01 09 22.7 +0.9**
S22A 4UR Ranch, Cre 80.70 49 P **P 01 09 23.2 +0.8**
baz=311,SNR=119
BIDA Alibida 80.71 307 *eP* **P 01 09 19.8 -2.4**
H31A Wolsey 80.71 40 P **P 01 09 21.5 -0.4**
baz=315,SNR=13
VYHS Vyhne 80.72 326 *eP* **P 01 09 22.8 +0.9**
VYHS pmax pmax
comp=Z,347nm,1.4s
VYHS Vyhne 80.72 326 *eP* **P 01 09 22.8 +0.9**
VYHS Vyhne 80.72 326 *eS* **S 01 19 29.5 +1.5**
VYHS *e*L L 01 42 42.5
DEV Deva 80.78 322⇓*iP* **P 01 09 23.7 +1.5**
DEV Deva 80.78 322⇓⇓*iP* **P 01 09 23.7 +1.5**
F33A 5 Mile Ranch, 80.81 38 P **P 01 09 22.1 -0.3**
baz=316,SNR=65
E34A Wadena 80.86 37 P **P 01 09 21.8 -0.8**
baz=317
NRS Narsarsuaq 80.88 4 *iP* **P 01 09 22.3 -0.1**
comp=Z,415nm,1.4s
comp=Z,163μm,26.0s
NRS Narsarsuaq 80.88 4 *iP* **P 01 09 22.3 -0.1**
NRS pmax pmax
comp=Z,420nm,1.4s
NRS MLR MLR
comp=Z,160μm,26.0s
Q24A Divide 80.89 47 P **P 01 09 23.5 +0.2**
baz=312,SNR=57
BRG Berggiesshubel 80.92 330 *iP* **P 01 09 23.4 +0.5**
comp=Z,3.1nm,1.4s
BRG *i* PCP **pP 01 09 30.8 -0.1**
comp=Z,631nm,1.3s
BRG *i* PP **PP 01 12 33.1 +6.2**
comp=Z,261nm,1.4s
BRG S **S 01 19 31.0 +1.1**
BRG *e*PKPPKP **P'P'df** **01 36 14.0 +3.5**
comp=Z,174nm,2.9s
comp=N,180μm,16.2s
comp=E,241μm,18.0s
comp=Z,242μm,18.0s
BRG Berggiesshubel 80.92 330 *iP* **P 01 09 23.4 +0.5**
BRG *i* 01 09 30.8
BRG *i* 01 12 33.1
BRG S **S 01 19 31.0 +1.1**
BRG pmax pmax
comp=Z,261nm,1.4s
BRG MLR MLR
comp=N,180μm,16.2s
BRG MLR MLR
comp=E,241μm,18.0s
BRG MLR MLR
comp=Z,242μm,18.0s
CLL Collm 80.95 331⇑*iP* **P 01 09 23.2 +0.2**
comp=Z,930nm,1.3s
CLL *e*Pmax 01 09 25.0
CLL *i* 01 09 26.5
CLL *i* 01 09 30.5
comp=Z,930nm,1.3s
CLL *i* 01 09 36.4
CLL *e*PP **PP** **01 12 23.0 -4.0**
comp=Z,122nm,1.1s
CLL *i* 01 12 35.3
CLL *eS* **S 01 19 31.0 +0.9**
comp=N,16μm,23.9s
CLL *eS* **S 01 19 31.0 +0.9**
comp=E,31μm,23.5s
CLL *e*PPS PPS 01 20 39.0
CLL *e*SS SS 01 24 24.0 -19
CLL *e* 01 26 48.0
CLL *e*SSS SSS 01 28 12.0
CLL *e*PKPPKPdf P'P'df 01 36 01.0 -9.5
CLL *e* 01 36 16.0
CLL LmH 01 43 00.0
comp=N,372μm,19.8s
CLL LmH 01 43 00.0
comp=E,440μm,18.5s
CLL LmV 01 48 00.0
comp=Z,143μm,18.3s
CLL Lmax 01 51 00.0
CLL Collm 80.95 331⇑*iP* **P 01 09 23.2 +0.2**
CLL *i* 01 09 30.5
CLL *eS* **S 01 19 31.0 +0.9**
CLL pmax pmax
comp=Z,930nm,1.3s
CLL Collm 80.95 331 *eP* **P 01 09 23.1 +0.1**
PVCC Panska Ves 80.95 330⇑*iP* **P 01 09 24.2 +1.2**
PVCC *e*pP **pP 01 09 31.5 +0.5**
PVCC *e*PP **PP 01 12 25.8 -1.2**
PVCC *eS* **S 01 19 31.8 +1.6**
PVCC AMS AMS 01 49 50.0
comp=Z,246μm,17.4s
PVCC Panska Ves 80.95 330⇑*iP* **P 01 09 24.2 +1.2**
PVCC *e* 01 09 31.5
PVCC *e* 01 12 25.8
PVCC *eS* **S 01 19 31.8 +1.6**
PVCC MLR MLR
comp=Z,246μm,17.4s
D35A Remer 80.96 36 P **P 01 09 22.1 -1.1**
baz=318,SNR=27
KDHN Kadinhani 80.97 312⇑*iP* **P 01 09 23.6 0.0**
HAWK Haweek 80.98 307 *eP* **P 01 09 24.8 +1.2**
ISK Istanbul-Kandi 80.99 316 P **P 01 09 23.4 0.0**
ISK Istanbul-Kandi 80.99 316 P **P 01 09 23.4 0.0**
ISK Istanbul-Kandi 80.99 316 P **P 01 09 23.4 0.0**
I31A Royce, Wessing 81.00 40 P **P 01 09 23.0 -0.5**
baz=315,SNR=15
J30A Dallas 81.01 41 P **P 01 09 23.2 -0.4**
baz=315,SNR=25
C36A Pine Crest Far 81.01 35 P **P 01 09 22.8 -0.6**
baz=318,SNR=44
BORA Eskisehir 81.02 314⇑*iP* **P 01 09 23.4 -0.3**
ESKT Eskisehir 81.03 314 *iP* **P 01 09 23.6 -0.3**
MDO Dochfour 81.04 343⇑*eP* **P 01 09 23.5 +0.1**
VRAC Vranov 81.07 328 LR LR 01 48 26.1
comp=Z,231μm,19.9s,baz=36,slow=38
VRAC Vranov 81.07 328⇑*iP* **P 01 09 24.4 +0.7**
VRAC Vranov 81.07 328⇑⇑*iP* **P 01 09 24.4 +0.7**
DRUM Mains of Drumt 81.07 342 AMS AMS 01 49 58.5
comp=Z,110μm,19.2s
SIRR Siria 81.09 323⇓*iP* **P 01 09 25.1 +1.2**
KIZK Mersin 81.11 310⇑*iP* **P 01 09 23.7 -0.4**
SZH Strazhica 81.13 319 *iP* **P 01 09 24.7 +0.5**
ZIMR 81.15 320⇓*iP* **P 01 09 25.3 +1.1**
ZIMR 81.15 320⇓⇓*iP* **P 01 09 25.3 +1.1**
FKH Fakeheh 81.15 307 *eP* **P 01 09 25.7 +1.1**
E35A Pequot Lakes 81.19 36 P **P 01 09 23.7 -0.7**
baz=318
KAC Achnashellach 81.20 343⇑*eP* **P 01 09 24.9 +0.7**
G33A Ortonville 81.21 38 P **P 01 09 24.2 -0.3**
baz=316,SNR=25
H32A Carlson Farm, 81.22 39 P **P 01 09 23.9 -0.7**
baz=316,SNR=19
MARH Ras Al Marh 81.25 306 *eP* **P 01 09 26.7 +1.4**
ELBA Catalca 81.28 316⇑*iP* **P 01 09 24.5 -0.5**
D36A Goodland 81.30 35 P **P 01 09 24.1 -0.8**
baz=318,SNR=36
OGNE Ogallala 81.31 44 P **P 01 09 25.1 -0.2**
baz=314,SNR=20
OGNE Ogallala 81.31 44 *eP* **P 01 09 25.6 +0.3**
comp=Z,386nm,1.1s
OGNE LR LR
comp=Z,52μm,19.0s
SMOL Smolenice 81.32 327 *eP* **P 01 09 26.5 +1.4**
SMOL *eS* **S 01 19 40.4 +6.2**
SMOL Smolenice 81.32 327 *eP* **P 01 09 26.5 +1.4**
C37A Embarrass 81.32 34 P **P 01 09 24.5 -0.6**
baz=319,SNR=49
KMER Konya-Meram 81.32 312⇑*iP* **P 01 09 24.7 -0.7**
GOPC GO Pecny, Ondr 81.34 329⇑*iP* **P 01 09 26.1 +0.9**
GOPC *e*pP **pP 01 09 33.7 +0.5**
GOPC *eS* **S 01 19 36.2 +1.8**
GOPC *e*PKPPKP **P'P'df** **01 36 07.2 -2.6**
GOPC AMS AMS 01 48 00.0
comp=Z,252μm,19.2s
GOPC GO Pecny, Ondr 81.34 329⇑*iP* **P 01 09 26.1 +0.9**
GOPC *e* 01 09 33.7
GOPC *eS* **S 01 19 36.2 +1.8**
GOPC MLR MLR
comp=Z,252μm,19.2s
F34A Alexandria 81.34 37 P **P 01 09 24.9 -0.3**
baz=317,SNR=28
PRU Pruhonice 81.38 329⇑*eP* **P 01 09 25.5 +0.1**
PRU *e*pP **pP 01 09 33.6 +0.3**
PRU *e*PP **PP 01 12 27.6 -3.0**
PRU *eS* **S 01 19 35.3 +0.6**
PRU *e*PKPPKP **P'P'df** **01 36 07.1 -2.6**
PRU AMS AMS 01 48 10.0
comp=Z,273μm,19.9s
PRU Pruhonice 81.38 329 *eP* **P 01 09 25.5 +0.1**
PRU *e* 01 09 33.6
PRU *e* 01 12 27.6
PRU *eS* **S 01 19 35.3 +0.6**
PRU MLR MLR
comp=Z,273μm,19.9s
BUD Budapest 81.40 325⇑*eP* **P 01 09 26.5 +1.0**
K30A Basset 81.40 42 P **P 01 09 25.4 -0.2**
baz=315
ZALF Zalf 81.41 305 *eP* **P 01 09 26.9 +1.0**
J31A Geddes 81.42 41 P **P 01 09 25.5 -0.2**
baz=315,SNR=25
HWQ Hawqa 81.42 307 *eP* **P 01 09 26.7 +0.7**
KPL Plockton 81.43 344⇑⇑*eP* **P 01 09 26.2 +0.8**
KPL AMS AMS 01 45 33.5
comp=Z,72μm,20.1s
H33A Prehn Over Nor 81.43 39 P **P 01 09 25.4 -0.4**
baz=316,SNR=65
IGD Bursa 81.46 315⇑*iP* **P 01 09 24.7 -1.2**
EYMN Ely 81.46 34 P **P 01 09 25.4 -0.5**
baz=319,SNR=45
EYMN Ely 81.46 34 *eP* **P 01 09 25.9 0.0**
comp=Z,89nm,0.7s
EYMN LR LR
comp=Z,59μm,20.0s
CRAR CRAIOVA 81.47 321⇓*iP* **P 01 09 27.5 +1.6**
CRAR CRAIOVA 81.47 321⇓⇓*iP* **P 01 09 27.5 +1.6**
PVL Pavlikeni 81.48 319 *iP* **P 01 09 27.1 +1.1**
SDCO Great Sand Dun 81.49 48 P **P 01 09 27.2 +0.6**
baz=312,SNR=109
SDCO Great Sand Dun 81.49 48 *eP* **P 01 09 27.3 +0.7**
comp=Z,141nm,1.3s
SDCO LR LR
comp=Z,55μm,20.0s
KSB Sheil Bridge 81.50 343⇑*eP* **P 01 09 26.4 +0.7**
BOLV Bolvadin 81.52 313⇑*iP* **P 01 09 26.2 -0.3**
SRE Strehaia 81.52 321⇓*iP* **P 01 09 29.2 +3.0**
SRE Strehaia 81.52 321⇓⇓*iP* **P 01 09 29.2 +3.0**
EDU Dundee 81.53 342⇑*eP* **P 01 09 26.6 +0.6**
I32A Karley and Nic 81.55 40 P **P 01 09 25.9 -0.5**
baz=316,SNR=8.7
G34A Benson 81.56 38 P **P 01 09 26.0 -0.4**
baz=317,SNR=66
BZS Buzias 81.59 323⇑*iP* **P 01 09 27.0 +0.5**
BZS Buzias 81.59 323⇑⇑*iP* **P 01 09 27.0 +0.5**
F35A Swanville 81.62 37 P **P 01 09 26.1 -0.6**
baz=318,SNR=30
D37A Cotton 81.64 35 P **P 01 09 25.8 -1.0**
baz=319,SNR=22
TIM Timisoara 81.69 323⇑*iP* **P 01 09 28.9 +1.9**
TIM Timisoara 81.69 323⇑⇑*iP* **P 01 09 28.9 +1.9**
EDRB Edirne 81.70 318 P **P 01 09 27.6 +0.4**
EDRB Edirne 81.70 318 P **P 01 09 27.6 +0.4**
C38A Sawbill Land. 81.73 34 P **P 01 09 26.7 -0.6**
baz=320,SNR=53
E36A McGregor 81.75 36 P **P 01 09 27.0 -0.3**
baz=318,SNR=62
ERMK Ermenek 81.75 310⇑*iP* **P 01 09 27.7 -0.1**
TUC Tucson 81.77 55 P **P 01 09 28.1 +0.3**
baz=310
TUC Tucson 81.77 55 *eP* **P 01 09 28.0 +0.2**
TUC MLR MLR
comp=Z,67μm,19.0s
TUC Tucson 81.77 55 *eP* **P 01 09 28.0 +0.2**
TUC LR LR
comp=Z,67μm,19.0s
J32A Parkston 81.82 40 P **P 01 09 27.4 -0.5**
baz=316,SNR=14
CSKK Cs‡kako 81.83 326⇑*eP* **P 01 09 28.8 +1.0**
BHL Bhannes 81.85 307 *eP* **P 01 09 28.9 +0.7**

I33A **Coleman** 81.86 39 P P 01 09 27.7 -0.4
baz=316,SNR=22
K31A **O'Neill** 81.89 41 P P 01 09 27.9 -0.4
baz=315,SNR=22
H34A **Spellman Lake,** 81.92 38 P P 01 09 28.2 -0.1
baz=317,SNR=25
SALA **Sala** 81.93 305 *e*P P 01 09 29.9 +1.0
BEYL **Beirut** 81.97 307 *e*P P 01 09 29.4 +0.6
BRBR **Barbar** 81.98 306 *e*P P 01 09 28.0 -1.0
BANR **Banloc** 81.99 323⇑*i*P P 01 09 29.8 +1.2
ESY **Stoneypath** 82.00 341⇑*e*P P 01 09 27.9 -0.5
RCY **Rachaya** 82.00 306 *e*P P 01 09 30.0 +0.9
MOX **Moxa** 82.00 331 P P 01 09 28.9 +0.3
MOX pmax pmax
comp=Z,441nm,1.5s
NKC **Novy Kostel** 82.02 331⇑*e*P P 01 09 29.4 +0.7
NKC *e*S S 01 19 41.7 +0.4
NKC AMS AMS 01 48 50.0
comp=Z,151µm,16.5s
NKC **Novy Kostel** 82.02 331 *e*P P 01 09 29.4 +0.7
NKC *e*S S 01 19 41.7 +0.4
NKC MLR MLR
comp=Z,151µm,16.5s
DQRL **Deir Qamar** 82.03 307 *e*P P 01 09 30.1 +0.9
URZ **Urewera** 82.08 154 P P 01 09 26.5 -2.3
comp=Z,63nm,1.1s,baz=340,slow=4.5,SNR=9.6
URZ LR LR 01 41 34.6
comp=Z,41µm,21.4s,baz=338,slow=32
URZ **Urewera** 82.08 154 *e*P P 01 09 27.1 -1.8
comp=Z,154nm,1.0s
E37A **Wrenshall** 82.10 35 P P 01 09 28.5 -0.7
baz=319
GDZ **Gediz** 82.11 314⇑*i*P P 01 09 29.0 -0.6
F36A **Milaca** 82.11 36 P P 01 09 28.5 -0.8
baz=318,SNR=29
EDI **Edinburgh** 82.13 342⇑*e*P P 01 09 29.2 +0.1
EDI AMB AMB 01 09 40.1
comp=Z,162nm,3.6s
EDI AMS AMS 01 50 41.7
comp=Z,94µm,18.3s
G35A **Watkins** 82.13 37 P P 01 09 29.5 0.0
baz=318,SNR=16
PHNC **Paralimni** 82.14 309 P P 01 09 30.3 +0.7
MDVR **Moldovita** 82.16 322⇑*i*P P 01 09 29.1 -0.5
L31A **Butterfield Fa** 82.16 42 P P 01 09 29.3 -0.4
baz=315,SNR=47
ASF **Jabal al Asfar** 82.17 305 LR LR 01 49 22.1
comp=Z,58µm,20.3s,baz=0.5,slow=38
EAB **Aberfoyle** 82.17 342⇑*e*P P 01 09 30.1 +0.7
ECSD **EROS Data Cent** 82.18 39 P P 01 09 29.3 -0.5
baz=316,SNR=130
ECSD **EROS Data Cent** 82.18 39 *e*P P 01 09 29.4 -0.3
comp=Z,196nm,1.1s
ECSD LR LR
comp=Z,55µm,20.0s
MPEP **Malo Peshtene** 82.19 320 *i*P P 01 09 30.7 +0.9
DIM **Dimitrovgrad** 82.20 318 *i*P P 01 09 31.2 +1.4
K32A **Verdigre** 82.27 41 P P 01 09 29.3 -0.8
baz=316,SNR=10.0
SART **Tekirdag** 82.28 316⇑*i*P P 01 09 30.9 +0.5
KSCO **Kaye Shedlock'** 82.30 46 P P 01 09 30.4 -0.2
baz=314
KSCO **Kaye Shedlock'** 82.30 46 *e*P P 01 09 30.9 +0.3
comp=Z,991nm,1.7s
J33A **Davis** 82.31 40 P P 01 09 29.8 -0.6
baz=316,SNR=13
I34A **Hadley** 82.33 39 P P 01 09 30.3 -0.2
baz=317,SNR=12
H35A **Sunnyside Ranc** 82.35 38 P P 01 09 30.7 +0.2
baz=318,SNR=158
GAZI **Gazipasa** 82.38 310⇑*i*P P 01 09 30.0 -0.8
KNL **Bal¯kesir** 82.38 316⇑*i*P P 01 09 29.6 -1.2
NGZ **Ngauruhoe** 82.39 155 PN P 01 09 30.2 -0.5
PKVZ **Pokaka** 82.41 155 PN P 01 09 30.5 -0.2
CONA **Conrad Observa** 82.44 327 *i*P P 01 09 32.1 +1.0
comp=Z,667nm,1.4s,SNR=311
CONA **Conrad Observa** 82.44 327 *i* PKKPbc PKKPbc 01 28 00.0 +3.5
comp=Z,0.3nm,0.3s
KHC **Kasperske Hory** 82.44 329⇑*e*P P 01 09 31.1 +0.1
KHC *e*pP pP 01 09 39.4 +0.4
KHC *e*S S 01 19 47.5 +1.7
KHC *e*PKPPKP P'P'df 01 36 03.0 -4.8
KHC AMS AMS 01 48 50.0
comp=Z,250µm,19.8s
KHC **Kasperske Hory** 82.44 329 *e*P P 01 09 31.1 +0.1
KHC *e* 01 09 39.4
KHC *e*S S 01 19 47.5 +1.7
KHC MLR MLR
comp=Z,250µm,19.8s
KHC **Kasperske Hory** 82.44 329 *e*P P 01 09 31.7 +0.7
comp=Z,124nm,1.0s
TCHB **Talchebab** 82.45 306 *e*P P 01 09 29.5 -1.8
KESN **Edirne-Kesan** 82.45 317⇑*i*P P 01 09 31.9 +0.3
G36A **St. Michael** 82.47 37 P P 01 09 30.7 -0.5
baz=318,SNR=16
MAMC **Mammari** 82.53 309 P P 01 09 32.4 +0.7
T25A **Trinidad** 82.54 48 P P 01 09 32.6 +0.6
baz=313,SNR=104
KDZ **Kurdzhali** 82.55 318 *i*P P 01 09 32.9 +1.2
PGBU **Glenifferbraes** 82.55 342⇑*e*P P 01 09 32.2 +0.9
PGBU AMB AMB 01 09 41.3
comp=Z,672nm,1.8s
PGBU AMS AMS 01 41 01.4
comp=Z,56µm,27.5s
PGB **Panagyurishte** 82.55 319 *i*P P 01 09 32.8 +1.1
DEMI **Demirci** 82.57 314⇑*i*P P 01 09 31.8 -0.2
MMAI **Mount Meron Ar** 82.59 306 PKKPbc PKKPbc 01 27 59.0 +3.1
comp=Z,0.5nm,0.5s,baz=123,slow=3.1,SNR=4.4
MMAI LR LR 01 48 28.3
comp=Z,98µm,19.7s,baz=45,slow=37
PLD **Plovdiv** 82.60 319 *i*P P 01 09 32.7 +0.8
CSS **Mathiatis** 82.60 309 P P 01 09 32.9 +0.8
CSS **Mathiatis** 82.60 309 P P 01 09 32.4 +0.3
CSS **Mathiatis** 82.60 309 *e*P P 01 09 32.0 -0.1
comp=Z,712nm,1.8s
CSS LR LR
comp=Z,21µm,22.0s
GERES **GERESS Array B** 82.62 329 P P 01 09 32.4 +0.4
comp=Z,18nm,0.8s,baz=36,slow=5.0,SNR=74
GERES PP PP 01 12 39.0 -2.0
comp=Z,26nm,0.9s,baz=41,slow=9.1,SNR=3.4
GERES PKKPbc PKKPbc 01 27 56.4 +0.3
comp=Z,3.9nm,1.0s,baz=51,slow=0.9,SNR=7.4
GERES PKPPKP P'P'df 01 36 02.2 -5.3
comp=Z,0.6nm,0.6s,baz=226,slow=3.5,SNR=3.8
GERES LR LR 01 49 30.2
comp=Z,231µm,19.1s,baz=22,slow=38
WTSB **Winterswijk** 82.65 335 *e*P P 01 09 31.6 -0.3
EKA **Eskdalemuir Ar** 82.66 341 PKKPbc PKKPbc 01 27 55.0 -1.1
comp=Z,2.7nm,0.9s,baz=194,slow=1.7,SNR=4.0
M31A **Lambtecht Ranc** 82.68 42 P P 01 09 31.6 -0.8
baz=315,SNR=14
ESK **Eskdalemuir** 82.68 341⇑*e*P P 01 09 32.5 +0.4
ESK AMB AMB 01 09 41.6
comp=Z,254nm,2.3s
ESK AMS AMS 01 50 57.6
comp=Z,120µm,18.0s
ESK **Eskdalemuir** 82.68 341 *e*P P 01 09 32.9 +0.8
ESK pmax pmax
comp=Z,442nm,1.4s
ESK MLR MLR
comp=Z,154µm,19.0s
ESK **Eskdalemuir** 82.68 341 *e*P P 01 09 32.9 +0.8
comp=Z,442nm,1.4s
ESK LR LR
comp=Z,154µm,19.0s
BALY **Balya** 82.70 316⇑*i*P P 01 09 32.3 -0.2
L32A **Elgin** 82.72 41 P P 01 09 32.1 -0.5
baz=316,SNR=15
ALN **Alexandroupoli** 82.75 317 P P 01 09 32.8 +0.1
ALN **Alexandroupoli** 82.75 317 P P 01 09 32.8 +0.1
ALN **Alexandroupoli** 82.75 317 P P 01 09 32.8 +0.1
ANMO **Albuquerque** 82.78 51 P P 01 09 33.7 +0.5
baz=312
ANMO **Albuquerque** 82.78 51 *d*P P 01 09 33.7 +0.5
ANMO pmax pmax
comp=Z,114nm,1.2s
ANMO **Albuquerque** 82.78 51 *e*P P 01 09 34.2 +0.9
comp=Z,295nm,1.2s
ANMO LR LR
comp=Z,41µm,20.0s
ECK **Cauldkaine Hil** 82.79 341⇑*e*P P 01 09 33.1 +0.5
ENEZ **Enez** 82.80 317 P P 01 09 33.2 +0.2
K33A **Hardington** 82.80 40 P P 01 09 32.4 -0.6
baz=316,SNR=17
J34A **George** 82.84 39 P P 01 09 32.5 -0.6
baz=317,SNR=7.4
H36A **Jessenland, He** 82.88 37 P P 01 09 33.5 +0.2
baz=318,SNR=58
RZN **Rozhen** 82.89 318 *i*P P 01 09 34.8 +1.1
BHH **Howats Hill** 82.89 341⇑*e*P P 01 09 33.8 +0.6
I35A **Creekview Farm** 82.90 38 P P 01 09 32.9 -0.6
baz=318,SNR=20
ALFC **Alefka** 82.92 309 P P 01 09 33.9 +0.1
GRFO **Grafenberg** 82.92 331 *e*P P 01 09 34.5 +1.0
GRFO pmax pmax
comp=Z,1µm,1.4s
GRFO **Grafenberg** 82.92 331 *e*P P 01 09 34.5 +1.0
comp=Z,1µm,1.4s
SPMN **Marine on St.** 82.92 36 P P 01 09 32.9 -0.6
baz=319,SNR=37
SPMN **Marine on St.** 82.92 36 *e*P P 01 09 33.3 -0.3
comp=Z,379nm,1.4s
KULA **Kula-Manisa** 82.97 314 P P 01 09 33.9 -0.1
KULA **Kula-Manisa** 82.97 314 P P 01 09 33.9 -0.1
L33A **Hoskins** 82.98 41 P P 01 09 33.2 -0.7
baz=316
VTS **Vitosha** 83.01 320 P P 01 09 34.2 -0.1
VTS **Vitosha** 83.01 320⇓*i*P P 01 09 35.1 +0.8
VTS **Vitosha** 83.01 320 P P 01 09 34.2 -0.1
VTS **Vitosha** 83.01 320 *i*P P 01 09 35.3 +1.1
VTS **Vitosha** 83.01 320 P P 01 09 34.2 -0.1
SZAC **Souni** 83.02 309 P P 01 09 35.0 +0.7
KORT **Korkueli** 83.03 312⇑*i*P P 01 09 33.5 -0.9
MANT **Manisa** 83.04 314⇑*i*P P 01 09 33.4 -1.2
N31A **Bailey Ranch,** 83.06 43 P P 01 09 33.6 -0.8
baz=315,SNR=5.7
BGNE **Belgrade** 83.07 42 P P 01 09 33.8 -0.6
baz=316,SNR=20
BGNE **Belgrade** 83.07 42 *e*P P 01 09 34.1 -0.3
comp=Z,604nm,1.0s
Y22D **IRIS PASSCAL I** 83.07 52 P P 01 09 35.5 +0.8
baz=312
ARSA **Arzberg** 83.11 327 *i*P P 01 09 35.4 +0.9
comp=Z,178nm,1.6s,SNR=119
ARSA **Arzberg** 83.11 327 *i* PKKPbc PKKPbc 01 27 56.9 +2.0
comp=Z,3.1nm,0.8s
J35A **Milford** 83.15 39 P P 01 09 34.3 -0.5
baz=317,SNR=9.1
BEHE **Becsehely** 83.17 326⇑*e*P P 01 09 35.4 +0.6
AKMC **Akamas** 83.17 309 P P 01 09 35.4 +0.4
MOA **Molln** 83.17 328 *i*P P 01 09 35.6 +0.8
comp=Z,323nm,1.5s,SNR=185
MOA **Molln** 83.17 328 *i* PKKPbc PKKPbc 01 27 56.6 +1.8
comp=Z,0.7nm,0.7s
K34A **Le Mars** 83.20 40 P P 01 09 34.3 -0.7
baz=317,SNR=19
BNM **Barren Site** 83.20 52 *e*P P 01 09 35.9 +0.4
GMK **Mull of Kintyr** 83.24 343⇑*e*P P 01 09 35.6 +0.7
I36A **Fitzsimmons Fa** 83.25 38 P P 01 09 34.9 -0.3
baz=318
PPCY **Paphos** 83.26 309 P P 01 09 36.1 +0.7
DNZL **Cakiroluk** 83.31 313⇑*i*P P 01 09 36.4 +0.5
KESW **Keswick, Cumbr** 83.31 341⇑*e*P P 01 09 35.8 +0.4
KESW AMB AMB 01 09 45.2
comp=Z,640nm,1.6s
KESW AMS AMS 01 50 58.0
comp=Z,123µm,19.1s
GADA **Gvkgeada** 83.32 317 P P 01 09 35.6 -0.1
GADA **Gvkgeada** 83.32 317 P P 01 09 35.6 -0.1
SMTH **Samothraki Isl** 83.32 317 P P 01 09 35.2 -0.5
SMTH **Samothraki Isl** 83.32 317 P P 01 09 35.2 -0.5
GOLH **Golhisar** 83.33 313⇑*i*P P 01 09 35.5 -0.4
O31A **Woolen Ranch,** 83.33 43 P P 01 09 35.1 -0.7
baz=315,SNR=16
EZN **Ezine** 83.35 316 P P 01 09 36.0 +0.2
EZN **Ezine** 83.35 316 P P 01 09 36.0 +0.2
EZN **Ezine** 83.35 316 P P 01 09 36.0 +0.2
H37A **Dierke Farm, C** 83.35 37 P P 01 09 35.7 -0.1
baz=319,SNR=15
KOGS **Kog** 83.42 326 *i*P P 01 09 35.5 -0.6
KOGS *e*S S 01 19 55.0 -0.7
comp=Z,65µm,17.7s
M33A **Taylor Creek F** 83.45 41 P P 01 09 35.6 -0.7
baz=316,SNR=8.0
N32A **Stulken Farm,** 83.45 42 P P 01 09 35.5 -0.9
baz=316
GAL1 **Galloway** 83.46 342⇑*e*P P 01 09 36.5 +0.4
GAL1 AMB AMB 01 09 44.7
comp=Z,193nm,1.5s
GAL1 AMS AMS 01 48 18.9
comp=Z,42µm,18.9s
MMB **Musomiste** 83.47 319 *i*P P 01 09 37.4 +0.9
BOZC **Bozcaada** 83.49 316⇑*i*P P 01 09 36.0 -0.6
KAVA **Kavala** 83.49 318 P P 01 09 36.8 +0.3
KAVA **Kavala** 83.49 318 P P 01 09 36.8 +0.3
DIVS **Divibare** 83.49 323 P P 01 09 35.7 -0.9
AYVA **Ayvalik** 83.51 316⇑*i*P P 01 09 36.1 -0.5
POWZ **Post Office Ro** 83.54 156 *e*PN P 01 09 35.1 -1.4
NNZ **Nelson** 83.55 158 PN P 01 09 35.5 -0.9
121A **Cookes Peak, D** 83.55 54 P P 01 09 37.9 +0.6
baz=311,SNR=190
121A **Cookes Peak, D** 83.55 54 *e*P P 01 09 38.2 +1.0
comp=Z,956nm,1.5s
I37A **Lemonti Waseca** 83.55 37 P P 01 09 36.9 +0.1
baz=318,SNR=90
LMK **Market Rasen** 83.58 339⇑*e*P P 01 09 36.7 0.0
LMK AMB AMB 01 09 46.2
comp=Z,502nm,2.6s
LMK AMS AMS 01 47 15.0
comp=Z,117µm,21.4s
NVR **Nevrokopi** 83.58 319 P P 01 09 36.9 -0.1
NVR **Nevrokopi** 83.58 319 P P 01 09 36.9 -0.1
VAH **Vaihoa** 83.58 115 *e*P P 01 09 37.5 +0.3
comp=Z,306nm,1.3s
L34A **Svendsen Farm,** 83.58 40 P P 01 09 36.6 -0.5
baz=317,SNR=29
J36A **Seneca 1, Swea** 83.60 38 P P 01 09 36.6 -0.5
baz=318,SNR=30
KKB **Krupnik** 83.60 319 *i*P P 01 09 38.1 +1.0
K35A **Storm Lake** 83.61 39 P P 01 09 36.4 -0.7
baz=318
PPT **Papeete** 83.77 118 P P 01 09 36.8 -1.3
comp=Z,30nm,0.7s,baz=252,slow=20,SNR=2.5
PPT LR LR 01 43 18.3
comp=Z,25µm,18.7s,baz=300,slow=33
PERS **Pernice** 83.77 327 *i*P P 01 09 38.2 +0.3
SOKA **Soboth** 83.77 327 *i*P P 01 09 37.8 -0.2
comp=Z,649nm,1.6s,SNR=531
SOKA **Soboth** 83.77 327 *i* PKKPbc PKKPbc 01 27 50.9 -2.5
comp=Z,1.6nm,0.7s
PPT2 **Papeete2** 83.78 118 *e*P P 01 09 38.9 +0.6
comp=Z,193nm,1.2s
PPT2 **Papeete2** 83.78 118 *e*S S 01 19 58.9 -1.2
comp=Z,173µm,35.0s
PPT2 **Papeete2** 83.78 118 *e*LQ LQ 01 31 47.9
comp=Z,125µm,29.8s
PPT2 *e*LR LR 01 35 29.0
comp=Z,152µm,24.8s,baz=321
PPT2 **Papeete2** 83.78 118 *e*T T 02 41 58.2
comp=Z,19nm,0.3s
PRK **Paraskevi** 83.79 316 P P 01 09 37.8 -0.3
PRK **Paraskevi** 83.79 316 P P 01 09 37.8 -0.3
PRK **Paraskevi** 83.79 316 P P 01 09 37.8 -0.3
M34A **Aspy Farms, Fr** 83.82 41 P P 01 09 37.5 -0.7
baz=317,SNR=11
O32A **Brockman Farm,** 83.82 43 P P 01 09 37.1 -1.2
baz=316
PAE **Paea** 83.83 118 *e*P P 01 09 38.7 +0.3
comp=Z,47nm,1.3s
PAE **Paea** 83.83 118 *e*T T 02 42 00.6
comp=Z,3.3nm,0.3s
ANWZ **Angora Road** 83.84 155 *e*PN P 01 09 36.8 -1.1
SRS **Serrai** 83.89 319 P P 01 09 37.9 -0.7
SRS **Serrai** 83.89 319 P P 01 09 37.9 -0.7
SRS **Serrai** 83.89 319 P P 01 09 37.9 -0.7
L35A **Biglow Farm, R** 83.90 40 P P 01 09 37.9 -0.7
baz=317
THZ **Tophouse** 83.91 158 PN P 01 09 36.8 -1.5
COWI **Conover** 83.91 34 *e*P P 01 09 37.7 -0.9
comp=Z,320nm,1.4s
COWI LR LR
comp=Z,55µm,20.0s
N33A **J Bar K, Exete** 83.92 42 P P 01 09 37.7 -1.1
baz=316
LIA **Limnos Island** 83.92 317 P P 01 09 39.0 +0.3
LIA **Limnos Island** 83.92 317 P P 01 09 39.0 +0.3
HOWZ **Holdsworth Sta** 83.92 156 PN P 01 09 36.8 -1.6
TIAR **Tiarei** 83.92 118 *e*P P 01 09 39.3 +0.4
comp=Z,98nm,1.1s
TIAR **Tiarei** 83.92 118 *e*T T 02 42 07.8
comp=Z,11nm,0.3s
SCHQ **Schefferville** 83.93 17 P P 01 09 38.6 +0.1
comp=Z,60nm,0.7s,baz=357,slow=5.3,SNR=88
SCHQ PKKPbc PKKPbc 01 27 52.0 -1.3
comp=Z,4.5nm,0.8s,baz=108,slow=5.5,SNR=4.1
SCHQ LR LR 01 48 19.3
comp=Z,57µm,21.6s,baz=345,slow=37
HGN **Heimansgroeve** 83.95 334 *e*P P 01 09 38.5 -0.2
HGN *e*PP PP 01 12 18.3 -33
HGN *e*PPP PPP 01 14 58.5
HGN *e*S S 01 19 57.3 -3.6
HGN *e*SS SS 01 25 06.0 -22
AKAS **Kas** 83.99 312⇑*i*P P 01 09 38.6 -0.7
J37A **Redenius Farm,** 84.00 38 P P 01 09 38.8 -0.4
baz=318,SNR=42
BEBN **Eben Emael** 84.01 335 P P 01 09 39.3 +0.3
comp=Z,128nm,1.9s
SNZO **South Karori** 84.04 157 *e*P P 01 09 39.9 +1.0
comp=Z,2µm,1.4s
SNZO LR LR
comp=Z,63µm,20.0s
I38A **Scanlan Farm,** 84.04 37 P P 01 09 38.8 -0.5
baz=319,SNR=34
SIGR **SIGRI** 84.04 316 P P 01 09 38.6 -0.8
SIGR **SIGRI** 84.04 316 P P 01 09 38.6 -0.8
CBKS **Cedar Bluff** 84.06 44 P P 01 09 38.5 -1.0
baz=315,SNR=19
CBKS **Cedar Bluff** 84.06 44 *e*P P 01 09 39.1 -0.4
CBKS pmax pmax
comp=Z,244nm,1.1s
CBKS MLR MLR
comp=Z,62µm,20.0s
CBKS **Cedar Bluff** 84.06 44 *e*P P 01 09 39.1 -0.4
comp=Z,244nm,1.1s
CBKS LR LR
comp=Z,62µm,20.0s
KSL **Kastellorizon** 84.06 312 P P 01 09 39.5 0.0
KSL **Kastellorizon** 84.06 312 P P 01 09 39.5 0.0
MEM **Membach** 84.06 334 P P 01 09 39.4 +0.2
K36A **Gilmore City** 84.06 39 P P 01 09 39.3 -0.1
baz=318
P32A **Huiting Farm,** 84.10 43 P P 01 09 38.8 -1.0
baz=316,SNR=34
WIM **Isle of Man** 84.11 342⇑*e*P P 01 09 39.8 +0.4
OBKA **Obir** 84.11 327 *i*P P 01 09 39.9 +0.2
comp=Z,72nm,0.8s,SNR=67
OBKA **Obir** 84.11 327 *i* PKKPbc PKKPbc 01 27 50.3 -2.4
comp=Z,5.0nm,1.0s
SISC **Sisak** 84.12 326 P P 01 09 39.9 +0.2
TURN **Turunc** 84.13 313⇑*i*P P 01 09 41.8 +2.0
YER **Yerkesik** 84.14 313 P P 01 09 40.7 +0.7
YER **Yerkesik** 84.14 313 P P 01 09 40.7 +0.7
YER **Yerkesik** 84.14 313 P P 01 09 40.7 +0.7
TVO **Taravao** 84.14 118 *e*P P 01 09 40.8 +0.7
comp=Z,70nm,1.0s
MTW **Mount Morrison** 84.15 156 *e*PN P 01 09 42.5 +3.0
KBA **Koelnbreinsper** 84.17 328 *i*PcP P 01 09 40.5 +0.4
comp=Z,431nm,1.3s,SNR=52
KNT **Kendrikon** 84.21 319 P P 01 09 40.1 -0.1
KNT **Kendrikon** 84.21 319 P P 01 09 40.1 -0.1
KNT **Kendrikon** 84.21 319 P P 01 09 40.1 -0.1
SOH **Sokhos** 84.22 319 P P 01 09 40.2 -0.2
SOH **Sokhos** 84.22 319 P P 01 09 40.2 -0.2
SOH **Sokhos** 84.22 319 P P 01 09 40.2 -0.2
URA **Izmir** 84.23 315⇑*i*P P 01 09 40.2 -0.2
OUR **Ouranopolis** 84.25 318 P P 01 09 40.0 -0.4
OUR **Ouranopolis** 84.25 318 P P 01 09 40.0 -0.4
OUR **Ouranopolis** 84.25 318 P P 01 09 40.0 -0.4
VAY **Valandovo** 84.27 319 P P 01 09 41.0 +0.5
VAY **Valandovo** 84.27 319⇑*e*P P 01 09 41.2 +0.8
VAY **Valandovo** 84.27 319 P P 01 09 41.0 +0.5
VAY **Valandovo** 84.27 319 P P 01 09 41.0 +0.5
DGB **¯zmir** 84.29 315⇑*i*P P 01 09 40.2 -0.5
M35A **Neola** 84.30 40 P P 01 09 40.6 -0.1
baz=317,SNR=19
O33A **Hebron** 84.32 42 P P 01 09 39.5 -1.4
baz=316,SNR=6.1
GMM **Mts of Mourne** 84.33 342⇑*e*P P 01 09 40.9 +0.3
GCAM **G?zelcami?** 84.34 314⇑*i*P P 01 09 41.0 +0.1
N34A **Lincoln** 84.34 41 P P 01 09 39.6 -1.3
baz=317,SNR=17
L36A **Harm Buss Farm** 84.35 39 P P 01 09 40.4 -0.5
baz=318,SNR=24
PLE **Pljevlja** 84.36 323⇑*i*P P 01 09 41.2 +0.1
K37A **Belmond** 84.36 38 P P 01 09 40.5 -0.5
baz=318,SNR=70
ZEY **¯zmir** 84.37 315⇑*i*P P 01 09 40.6 -0.5
MYKA **Terra Mystica** 84.40 328 *i*P P 01 09 41.0 -0.2
comp=Z,534nm,1.6s,SNR=91
MYKA **Terra Mystica** 84.40 328 *i* PKKPbc PKKPbc 01 27 51.4 -0.6
comp=Z,1.1nm,0.5s
OZLJ **Ozalj** 84.41 326 P P 01 09 41.3 +0.2
STNC **Stoke** 84.42 340⇑*e*P P 01 09 41.1 +0.1
STNC AMB AMB 01 09 50.9
comp=Z,549nm,1.8s
STNC AMS AMS 01 51 28.5
comp=Z,134µm,19.4s
STU **Stuttgart** 84.44 331 *e*P P 01 09 41.6 +0.3
STU pmax pmax
comp=Z,731nm,1.3s
STU **Stuttgart** 84.44 331 *e*P P 01 09 41.6 +0.3
comp=Z,731nm,1.3s
UCC **Uccle** 84.45 335 P P 01 09 41.4 +0.1
comp=Z,140nm,1.9s
IVA **Berane** 84.46 322⇑*i*P P 01 09 41.5 -0.1
BCLA **Clavier** 84.46 335 P P 01 09 41.5 +0.2
comp=Z,284nm,1.7s
LJU **Ljubljana** 84.48 327 *e*P P 01 09 41.1 -0.4
LJU *e*PP PP 01 13 02.1 +6.0
LJU *e*PPP PPP 01 14 58.6
LJU *e*S S 01 20 02.8 -3.7
CWF **Charnwood Fore** 84.49 339⇑*e*P P 01 09 41.1 -0.3
CWF AMB AMB 01 09 50.0
comp=Z,351nm,1.6s
CWF AMS AMS 01 50 03.3
comp=Z,132µm,19.7s
PLG **Polygyros** 84.50 318 P P 01 09 41.8 +0.1
PLG **Polygyros** 84.50 318 P P 01 09 41.8 +0.1
PLG **Polygyros** 84.50 318 P P 01 09 41.8 +0.1
WVZ **Waitaha Valley** 84.51 160 PN P 01 09 40.5 -0.8
J38A **Wedel Dairy, R** 84.51 37 P P 01 09 41.1 -0.6
baz=319,SNR=32
CHOS **Chios island** 84.52 315 P P 01 09 42.3 +0.4
CHOS **Chios island** 84.52 315 P P 01 09 42.3 +0.4
HORT **Hortiatis** 84.52 319 P P 01 09 41.9 0.0
HORT **Hortiatis** 84.52 319 P P 01 09 41.9 0.0
SMG **Samos** 84.56 315 P P 01 09 41.9 -0.1
SMG **Samos** 84.56 315 P P 01 09 41.9 -0.1
THE **Thessaloniki** 84.56 319 P P 01 09 41.5 -0.5
THE **Thessaloniki** 84.56 319 P P 01 09 41.5 -0.5
THE **Thessaloniki** 84.56 319 P P 01 09 41.5 -0.5
Q32A **Meitler Ranch,** 84.58 44 P P 01 09 41.4 -0.7
baz=316,SNR=32
BOJS **Bojanci** 84.59 326 *i*P P 01 09 41.6 -0.5
BOJS *e*S S 01 20 04.5 -3.0
GRG **Griva** 84.62 319 P P 01 09 42.2 -0.1
GRG **Griva** 84.62 319 P P 01 09 42.2 -0.1
GRG **Griva** 84.62 319 P P 01 09 42.2 -0.1
PVY **Plav** 84.63 322⇑*i*P P 01 09 42.3 -0.2
BDRM **Kayabasi** 84.66 314⇑*i*P P 01 09 42.7 +0.1
CADS **Cadrg** 84.68 327 *i*P P 01 09 41.6 -1.0
UPM **Unac-Piva** 84.68 323 *e*P P 01 09 41.8 -1.0
WATA **Walderalm** 84.69 329 *i*P P 01 09 42.8 +0.1
comp=Z,537nm,1.5s,SNR=89
WATA **Walderalm** 84.69 329 *i* PKKPbc PKKPbc 01 27 49.2 -2.3
comp=Z,0.9nm,0.4s
PAIG **Paliouri** 84.70 318 P P 01 09 42.4 -0.3
PAIG **Paliouri** 84.70 318 P P 01 09 42.4 -0.3
PAIG **Paliouri** 84.70 318 P P 01 09 42.4 -0.3
O34A **Beatrice** 84.72 42 P P 01 09 41.5 -1.3
baz=317,SNR=41
WTTA **Wattenberg** 84.72 329 *i*PcP P 01 09 43.5 +0.6
comp=Z,373nm,1.4s,SNR=62
WTTA **Wattenberg** 84.72 329 *i* PKKPbc PKKPbc 01 27 50.0 -1.4
comp=Z,1.5nm,0.4s
WPM1 **Penmaenmawr** 84.72 341⇑*e*P P 01 09 43.2 +0.7
P33A **Williams Farm,** 84.72 43 P P 01 09 41.7 -1.2
baz=316,SNR=12
SNF **Seneffe** 84.73 335 P P 01 09 43.0 +0.3
BODT **Bodrum** 84.74 314 P P 01 09 43.3 +0.3
BODT **Bodrum** 84.74 314 P P 01 09 43.3 +0.3
M36A **Felix, Anita** 84.76 40 P P 01 09 42.5 -0.5
baz=318,SNR=9.1

N35A	**Tabor**	**84.77**	**41**	P	**P**	**01 09 42.8**	**-0.2**
	baz=317,SNR=13						
ABTA	**Abfaltersbach**	**84.78**	**328**	*i* P	**P**	**01 09 42.7**	**-0.4**
	comp=Z,236nm,1.3s,SNR=104						
ABTA	**Abfaltersbach**	**84.78**	**328**	*i* PKKPdf	PKKPdf	01 27 47.7	+6.0
	comp=Z,0.1nm,0.2s						
LANF	**Langenberg**	**84.79**	**332**	⇑*e*P	**P**	**01 09 43.6**	**+0.6**
LANF	**Langenberg**	**84.79**	**332**	P	**P**	**01 09 43.8**	**+0.8**
L37A	**Phoenix Point,**	**84.79**	**39**	P	**P**	**01 09 42.6**	**-0.5**
	baz=318,SNR=30						
WLF	**Walferdange**	**84.81**	**334**	P	**P**	**01 09 44.3**	**+1.2**
	comp=Z,565nm,1.8s						
WLF	**Walferdange**	**84.81**	**334**	*e*P	**P**	**01 09 44.3**	**+1.2**
WLF				pmax	pmax		
	comp=Z,1µm,1.5s						
WLF				MLR	MLR		
	comp=Z,382µm,22.0s						
WLF	**Walferdange**	**84.81**	**334**	*e*P	**P**	**01 09 44.3**	**+1.2**
	comp=Z,1µm,1.5s						
WLF				LR	LR		
	comp=Z,382µm,22.0s						
WLF1	**Llynfaes**	**84.82**	**341**	⇑*e*P	**P**	**01 09 42.6**	**-0.4**
WLF1				AMB	AMB	01 09 49.7	
	comp=Z,584nm,1.7s						
WLF1				AMS	AMS	01 51 43.2	
	comp=Z,197µm,18.8s						
ARG	**Arkhangelos**	**84.86**	**313**	P	**P**	**01 09 44.3**	**+0.7**
ARG	**Arkhangelos**	**84.86**	**313**	P	**P**	**01 09 44.3**	**+0.7**
ARG	**Arkhangelos**	**84.86**	**313**	P	**P**	**01 09 44.3**	**+0.7**
MOTA	**Moosalm**	**84.87**	**330**	*i* P	**P**	**01 09 43.7**	**+0.1**
	comp=Z,611nm,1.2s,SNR=282						
MOTA	**Moosalm**	**84.87**	**330**	*i* PKKPbc	PKKPbc	01 27 48.5	-2.6
	comp=Z,0.9nm,0.4s						
FOEL	**Foel Wylfa**	**84.87**	**340**	⇑*e*P	**P**	**01 09 43.6**	**+0.3**
FOEL				AMB	AMB	01 09 52.2	
	comp=Z,934nm,1.4s						
FOEL				AMS	AMS	01 52 03.9	
	comp=Z,124µm,19.5s						
J39A	**Decorah**	**84.87**	**37**	P	**P**	**01 09 42.5**	**-1.0**
	baz=320,SNR=71						
K38A	**Parkersburg**	**84.88**	**38**	P	**P**	**01 09 43.0**	**-0.6**
	baz=319						
RETA	**Reutte**	**84.89**	**330**	*i* P	**P**	**01 09 43.7**	**0.0**
	comp=Z,644nm,1.3s,SNR=247						
RETA	**Reutte**	**84.89**	**330**	*i* PKKPbc	PKKPbc	01 27 51.0	+0.1
	comp=Z,2.1nm,0.7s						
R32A	**Long Quarter,**	**84.90**	**44**	P	**P**	**01 09 42.6**	**-1.2**
	baz=316,SNR=9.9						
YRC	**Rhoscolyn**	**84.90**	**341**	⇑*e*P	**P**	**01 09 43.7**	**+0.3**
NKY	**Niksic**	**84.94**	**322**	⇑*i*P	**P**	**01 09 43.4**	**-0.6**
Q33A	**Connelly Farm,**	**84.97**	**43**	P	**P**	**01 09 43.0**	**-1.1**
	baz=316,SNR=54						
DOU	**Dourbes**	**84.97**	**335**	P	**P**	**01 09 44.1**	**+0.2**
	comp=Z,175nm,1.9s						
TAOE	**Nuku Hiva Isla**	**84.98**	**105**	*e*S	**S**	**01 20 10.9**	**-1.4**
	comp=Z,108µm,33.3s						
TAOE	**Nuku Hiva Isla**	**84.98**	**105**	*e*LR	LR	01 36 10.0	
	comp=Z,202µm,32.9s,baz=312						
TAOE	**Nuku Hiva Isla**	**84.98**	**105**	*e*T	T	02 43 29.9	
	comp=Z,127nm,0.3s						
NKME	**Niksic**	**84.99**	**322**	⇑*i*P	**P**	**01 09 43.5**	**-0.7**
MEH	**Mehetia**	**85.03**	**117**	*e*P	**P**	**01 09 45.1**	**+0.5**
	comp=Z,93nm,1.2s						
MEH	**Mehetia**	**85.03**	**117**	*e*T	T	02 43 30.4	
	comp=Z,134nm,0.3s						
EIL	**Elat**	**85.06**	**304**	PKKPbc	PKKPbc	01 27 52.5	+2.5
	comp=Z,3.0nm,0.5s,baz=311,slow=7.7,SNR=5.7						
EIL				LR	LR	01 52 33.4	
	comp=Z,57µm,19.0s,baz=40,slow=39						
O35A	**Humboldt**	**85.07**	**41**	P	**P**	**01 09 43.3**	**-1.2**
	baz=317,SNR=9.2						
TRI	**Trieste**	**85.08**	**327**	*e*P	**P**	**01 09 43.8**	**-0.7**
TRI				pmax	pmax		
	comp=Z,473nm,1.4s						
TRI	**Trieste**	**85.08**	**327**	*e*P	**P**	**01 09 43.8**	**-0.7**
	comp=Z,473nm,1.4s						
BRY	**Bratogost**	**85.09**	**323**	⇑*i*P	**P**	**01 09 44.4**	**-0.4**
PDG	**Podgorica**	**85.10**	**322**	P	**P**	**01 09 44.4**	**-0.2**
PDG	**Podgorica**	**85.10**	**322**	⇑*i*P	**P**	**01 09 45.0**	**+0.4**
TTG	**Podgorica**	**85.10**	**322**	⇑*i*P	**P**	**01 09 43.7**	**-0.9**
TTG	**Podgorica**	**85.10**	**322**	P	**P**	**01 09 44.4**	**-0.2**
TTG	**Podgorica**	**85.10**	**322**	P	**P**	**01 09 44.4**	**-0.2**
P34A	**Walnut Farm, R**	**85.11**	**42**	P	**P**	**01 09 43.6**	**-1.2**
	baz=317,SNR=37						
HLM1	**Long Mynd**	**85.12**	**340**	⇑*e*P	**P**	**01 09 44.9**	**+0.3**
HLM1				AMB	AMB	01 09 53.3	
	comp=Z,343nm,1.4s						
HLM1				AMS	AMS	01 51 49.8	
	comp=Z,86µm,19.8s						
UDBI	**Udbina**	**85.12**	**325**	P	**P**	**01 09 43.9**	**-0.9**
STR	**Strasbourg**	**85.13**	**332**	*e*P	**P**	**01 09 45.8**	**+1.1**
BFO	**Black Forest**	**85.13**	**332**	*e*P	**P**	**01 09 45.1**	**+0.3**
BFO				pmax	pmax		
	comp=Z,1µm,1.4s						
BFO				MLR	MLR		
	comp=Z,121µm,19.0s						
BFO	**Black Forest**	**85.13**	**332**	*e*P	**P**	**01 09 45.1**	**+0.3**
	comp=Z,1µm,1.4s						
BFO				LR	LR		
	comp=Z,121µm,19.0s						
NIS1	**Nisyros Isl.**	**85.14**	**314**	P	**P**	**01 09 43.8**	**-1.2**
NIS1	**Nisyros Isl.**	**85.14**	**314**	P	**P**	**01 09 43.8**	**-1.2**
N36A	**Muff Farm, Cla**	**85.15**	**40**	P	**P**	**01 09 44.6**	**-0.4**
	baz=318,SNR=32						
L38A	**Oak Wood Farm,**	**85.17**	**38**	P	**P**	**01 09 44.7**	**-0.4**
	baz=319,SNR=27						
M37A	**Trindle Farm,**	**85.17**	**39**	P	**P**	**01 09 45.2**	**+0.1**
	baz=318,SNR=16						
CEME	**Cevo**	**85.17**	**322**	⇑*i*P	**P**	**01 09 44.9**	**-0.2**
ELSH	**Elham, Standar**	**85.18**	**337**	⇑*e*P	**P**	**01 09 45.1**	**+0.2**
ELSH				AMB	AMB	01 09 54.2	
	comp=Z,548nm,1.9s						
ELSH				AMS	AMS	01 50 20.4	
	comp=Z,139µm,18.3s						
RPZ	**Rata Peaks**	**85.19**	**160**	P	**P**	**01 09 44.1**	**-0.7**
	comp=Z,24nm,0.7s,baz=318,slow=5.4,SNR=4.8						
RPZ				LR	LR	01 46 39.4	
	comp=Z,54µm,19.1s,baz=329,slow=35						
RPZ	**Rata Peaks**	**85.19**	**160**	*e*P	**P**	**01 09 45.2**	**+0.4**
	comp=Z,219nm,1.3s						
LIT	**Litokhoron**	**85.20**	**319**	P	**P**	**01 09 44.5**	**-0.8**
LIT	**Litokhoron**	**85.20**	**319**	P	**P**	**01 09 44.5**	**-0.8**
LIT	**Litokhoron**	**85.20**	**319**	P	**P**	**01 09 44.5**	**-0.8**
SCIA	**State Center**	**85.22**	**39**	*e*P	**P**	**01 09 45.4**	**+0.2**
	comp=Z,1µm,1.6s						
SCIA				LR	LR		
	comp=Z,64µm,20.0s						
K39A	**Oelwein**	**85.26**	**37**	P	**P**	**01 09 44.1**	**-1.4**
	baz=320,SNR=62						
FNA	**Florina**	**85.27**	**320**	P	**P**	**01 09 45.2**	**-0.4**
FNA	**Florina**	**85.27**	**320**	P	**P**	**01 09 45.2**	**-0.4**
FNA	**Florina**	**85.27**	**320**	P	**P**	**01 09 45.2**	**-0.4**
J40A	**Soldiers Grove**	**85.28**	**36**	P	**P**	**01 09 44.6**	**-1.0**
	baz=320,SNR=18						
FETA	**Feichten**	**85.28**	**330**	*i* PcP	**P**	**01 09 46.3**	**+0.6**
	comp=Z,366nm,1.2s,SNR=152						
FETA	**Feichten**	**85.28**	**330**	*i* PKKPdf	PKKPdf	01 27 46.0	+5.0
	comp=Z,0.9nm,0.5s						
S32A	**Newby Ranch, P**	**85.29**	**45**	P	**P**	**01 09 45.3**	**-0.5**
	baz=316						
DRME	**Dracevica, Mon**	**85.32**	**322**	⇑*i*P	**P**	**01 09 45.2**	**-0.6**
OHR	**Ohrid**	**85.32**	**320**	⇑*i*P	**P**	**01 09 46.1**	**+0.2**
SSW	**Stow on the Wo**	**85.33**	**339**	⇑*e*P	**P**	**01 09 46.4**	**+0.7**
DSB	**Dublin**	**85.35**	**342**	*e*P	**P**	**01 09 46.7**	**+1.0**
	comp=Z,182nm,1.0s						
SKIA	**Skiathos**	**85.36**	**317**	P	**P**	**01 09 45.4**	**-0.7**
XOR	**Xorichti**	**85.37**	**318**	P	**P**	**01 09 45.4**	**-0.7**
XOR	**Xorichti**	**85.37**	**318**	P	**P**	**01 09 45.4**	**-0.7**
BUM	**Brajici-Budva**	**85.37**	**322**	⇑*i*P	**P**	**01 09 46.0**	**-0.1**
R33A	**Olander Ranch,**	**85.38**	**44**	P	**P**	**01 09 45.6**	**-0.6**
	baz=316,SNR=26						
NEO	**Neokhori**	**85.39**	**318**	P	**P**	**01 09 45.3**	**-0.9**
NEO	**Neokhori**	**85.39**	**318**	P	**P**	**01 09 45.3**	**-0.9**
DAVA	**Damuels**	**85.40**	**330**	*i* PcP	**P**	**01 09 46.9**	**+0.6**
	comp=Z,723nm,1.2s,SNR=254						
DAVA	**Damuels**	**85.40**	**330**	*i* PKKPbc	PKKPbc	01 27 49.5	-0.3
	comp=Z,5.1nm,0.8s						
KZN	**Kozani**	**85.42**	**319**	P	**P**	**01 09 45.9**	**-0.5**
KZN	**Kozani**	**85.42**	**319**	P	**P**	**01 09 45.9**	**-0.5**
KZN	**Kozani**	**85.42**	**319**	P	**P**	**01 09 45.9**	**-0.5**
WLS	**Welschbruch**	**85.42**	**332**	*e*P	**P**	**01 09 46.4**	**+0.1**
CDF	**Champ du Feu**	**85.45**	**332**	*e*P	**P**	**01 09 45.9**	**-0.6**
CDF				pmax	pmax		
	comp=Z,873nm,1.4s						
HCY	**Herceg Novi**	**85.45**	**322**	⇑*i*P	**P**	**01 09 46.2**	**-0.3**
ULC	**Ulcinj**	**85.46**	**322**	⇑*i*P	**P**	**01 09 46.5**	**0.0**
FYTO	**Fytoko, Volos**	**85.47**	**318**	P	**P**	**01 09 46.6**	**0.0**
FYTO	**Fytoko, Volos**	**85.47**	**318**	P	**P**	**01 09 46.6**	**0.0**
NVLJ	**Novalja**	**85.50**	**326**	P	**P**	**01 09 45.8**	**-0.8**
Q34A	**Chapman**	**85.50**	**43**	P	**P**	**01 09 46.0**	**-0.7**
	baz=317,SNR=33						
KSU1	**Kansas State U**	**85.55**	**42**	P	**P**	**01 09 46.1**	**-0.8**
	baz=317,SNR=25						
KSU1	**Kansas State U**	**85.55**	**42**	*e*P	**P**	**01 09 46.9**	**-0.1**
	comp=Z,232nm,0.9s						
KSU1				LR	LR		
	comp=Z,47µm,20.0s						
P35A	**Duane Minner,**	**85.55**	**42**	P	**P**	**01 09 46.4**	**-0.6**
	baz=317,SNR=16						
N37A	**Lee Faris, Mou**	**85.58**	**40**	P	**P**	**01 09 46.9**	**-0.2**
	baz=318,SNR=29						
STRD	**Stroud**	**85.59**	**339**	⇑*e*P	**P**	**01 09 47.4**	**+0.5**
STRD				AMB	AMB	01 09 56.4	
	comp=Z,2µm,1.7s						
STRD				AMS	AMS	01 50 37.6	
	comp=Z,129µm,19.5s						
LBZ	**Lake Benmore**	**85.59**	**161**	PN	**P**	**01 09 46.5**	**-0.2**
M38A	**Pleasantville**	**85.59**	**39**	P	**P**	**01 09 47.2**	**0.0**
	baz=319,SNR=39						
TIR	**Tirane**	**85.61**	**321**	⇑*i*P	**P**	**01 09 48.0**	**+0.7**
TIR	**Tirane**	**85.61**	**321**	*e*P	**P**	**01 09 47.6**	**+0.3**
TIR				pmax	pmax		
	comp=Z,736nm,1.4s						
TIR				MLR	MLR		
	comp=Z,205µm,19.0s						
TIR	**Tirane**	**85.61**	**321**	*e*P	**P**	**01 09 47.6**	**+0.3**
	comp=Z,736nm,1.4s						
TIR				LR	LR		
	comp=Z,205µm,19.0s						
MCH1	**Michaelchurch**	**85.62**	**340**	⇑*e*P	**P**	**01 09 46.9**	**-0.1**
MCH1				AMB	AMB	01 09 55.7	
	comp=Z,544nm,1.6s						
MCH1				AMS	AMS	01 51 53.8	
	comp=Z,97µm,20.1s						
MNTX	**Cornudas Mount**	**85.62**	**53**	P	**P**	**01 09 47.5**	**0.0**
	baz=313,SNR=108						
MNTX	**Cornudas Mount**	**85.62**	**53**	*e*P	**P**	**01 09 47.6**	**+0.1**
	comp=Z,489nm,1.7s						
MNTX				LR	LR		
	comp=Z,40µm,21.0s						
K40A	**Colesburg**	**85.62**	**37**	P	**P**	**01 09 46.7**	**-0.6**
	baz=320,SNR=51						
J41A	**Loganville**	**85.64**	**36**	P	**P**	**01 09 46.7**	**-0.6**
	baz=321,SNR=43						
L39A	**Vinton**	**85.65**	**38**	P	**P**	**01 09 47.1**	**-0.4**
	baz=320,SNR=91						
EREA	**Eretria**	**85.66**	**317**	P	**P**	**01 09 47.1**	**-0.5**
O36A	**Bolckow**	**85.66**	**41**	P	**P**	**01 09 47.3**	**-0.2**
	baz=318,SNR=21						
ECH	**Echery**	**85.66**	**332**	⇑*e*P	**P**	**01 09 47.9**	**+0.5**
HMNX	**Herstmonceux**	**85.67**	**337**	⇑*e*P	**P**	**01 09 47.3**	**0.0**
HMNX				AMB	AMB	01 09 56.5	
	comp=Z,1µm,1.4s						
HMNX				AMS	AMS	01 51 33.3	
	comp=Z,156µm,19.7s						
T32A	**Huddler Ranch,**	**85.67**	**45**	P	**P**	**01 09 47.5**	**-0.1**
	baz=316,SNR=47						
MSTX	**Muleshoe**	**85.68**	**50**	P	**P**	**01 09 47.8**	**-0.1**
	baz=314,SNR=44						
MSTX	**Muleshoe**	**85.68**	**50**	*e*P	**P**	**01 09 48.0**	**+0.1**
	comp=Z,236nm,1.3s						
AMTX	**Amarillo**	**85.70**	**48**	P	**P**	**01 09 48.1**	**+0.2**
	baz=314						
AMTX	**Amarillo**	**85.70**	**48**	*e*P	**P**	**01 09 48.7**	**+0.8**
	comp=Z,606nm,1.3s						
MONM	**Monmouth**	**85.71**	**340**	⇑*e*P	**P**	**01 09 46.7**	**-0.8**
MONM				AMB	AMB	01 09 56.2	
	comp=Z,661nm,1.5s						
MONM				AMS	AMS	01 50 50.9	
	comp=Z,129µm,20.9s						
SMIA	**Simia**	**85.71**	**317**	P	**P**	**01 09 47.5**	**-0.3**
NEST	**Nestorio**	**85.71**	**320**	P	**P**	**01 09 47.8**	**-0.1**
SWN1	**Swindon**	**85.72**	**339**	⇑*e*P	**P**	**01 09 47.9**	**+0.4**
SWN1				AMB	AMB	01 09 57.2	
	comp=Z,1µm,1.6s						
SWN1				AMS	AMS	01 50 31.7	
	comp=Z,141µm,20.2s						
WOL	**Wolverton**	**85.73**	**339**	⇑*e*P	**P**	**01 09 48.0**	**+0.4**
WOL				AMB	AMB	01 09 56.0	
	comp=Z,709nm,1.4s						
WOL				AMS	AMS	01 48 40.4	
	comp=Z,90µm,22.5s						
APE	**Apeiranthos**	**85.74**	**315**	P	**P**	**01 09 46.4**	**-1.6**
APE	**Apeiranthos**	**85.74**	**315**	⇑*i*P	**P**	**01 09 49.7**	**+1.6**
APE	**Apeiranthos**	**85.74**	**315**	*de*P	**P**	**01 09 47.7**	**-0.3**
APE				pmax	pmax		
	comp=Z,450nm,1.8s						
APE	**Apeiranthos**	**85.74**	**315**	P	**P**	**01 09 46.4**	**-1.6**
R34A	**Isabella, Hill**	**85.78**	**43**	P	**P**	**01 09 47.8**	**-0.4**
	baz=317,SNR=6.0						
LPW	**Lampeter**	**85.80**	**341**	⇑*e*P	**P**	**01 09 48.3**	**+0.3**
LPW				AMB	AMB	01 09 56.6	
	comp=Z,548nm,1.3s						
LPW				AMS	AMS	01 52 30.3	
	comp=Z,121µm,19.0s						
DAVOX	**Davos/Dischmat**	**85.81**	**330**	PKKPbc	PKKPbc	01 27 49.2	+0.3
	comp=Z,4.7nm,0.8s,baz=63,slow=2.8,SNR=5.5						
DAVOX				PKPPKP	**P’P’df**	**01 35 54.8**	**-6.9**
	comp=Z,1.2nm,0.7s,baz=304,slow=17,SNR=3.6						
PENT	**Pentalofos**	**85.83**	**319**	P	**P**	**01 09 48.0**	**-0.5**
THL	**Klokotos Trika**	**85.84**	**319**	P	**P**	**01 09 46.8**	**-1.6**
IGLA	**Glengowla, Co**	**85.87**	**344**	⇑*e*P	**P**	**01 09 49.6**	**+1.4**
JFWS	**Jewell Farm**	**85.88**	**36**	*e*P	**P**	**01 09 47.9**	**-0.6**
JFWS				pmax	pmax		
	comp=Z,124nm,1.0s						
JFWS				MLR	MLR		
	comp=Z,71µm,19.0s						
JFWS	**Jewell Farm**	**85.88**	**36**	*e*P	**P**	**01 09 47.9**	**-0.6**
	comp=Z,124nm,1.0s						
JFWS				LR	LR		
	comp=Z,71µm,19.0s						
S33A	**Kaszmaul Farm,**	**85.88**	**44**	P	**P**	**01 09 48.5**	**-0.2**
	baz=316,SNR=23						
KARP	**Karpathos**	**85.89**	**313**	P	**P**	**01 09 49.2**	**+0.4**
KARP	**Karpathos**	**85.89**	**313**	P	**P**	**01 09 49.2**	**+0.4**
KPRO	**Kipourio**	**85.89**	**319**	P	**P**	**01 09 48.4**	**-0.4**
P36A	**Good Intent, A**	**85.91**	**41**	P	**P**	**01 09 48.0**	**-0.7**
	baz=318,SNR=54						
BATH	**Bath**	**85.93**	**339**	⇑*e*P	**P**	**01 09 47.8**	**-0.8**
BATH				AMB	AMB	01 09 57.1	
	comp=Z,479nm,1.5s						
BATH				AMS	AMS	01 50 48.2	
	comp=Z,141µm,19.7s						
ATAL	**Atalanti**	**85.95**	**317**	P	**P**	**01 09 48.3**	**-0.7**
ATAL	**Atalanti**	**85.95**	**317**	P	**P**	**01 09 48.3**	**-0.7**
PTL	**Penteli**	**85.96**	**316**	P	**P**	**01 09 48.5**	**-0.6**
PTL	**Penteli**	**85.96**	**316**	P	**P**	**01 09 48.5**	**-0.6**
MOF	**Molkenrain**	**85.98**	**332**	*e*P	**P**	**01 09 49.3**	**+0.2**
MOF	**Molkenrain**	**85.98**	**332**	P	**P**	**01 09 49.5**	**+0.4**
LKR	**Lokris**	**85.99**	**317**	P	**P**	**01 09 48.2**	**-1.0**
LKR	**Lokris**	**85.99**	**317**	P	**P**	**01 09 48.2**	**-1.0**
Q35A	**Mercer Eighty,**	**86.03**	**42**	P	**P**	**01 09 48.8**	**-0.6**
	baz=317,SNR=59						
N38A	**Joes South For**	**86.04**	**39**	P	**P**	**01 09 48.9**	**-0.5**
	baz=319,SNR=19						
O37A	**Wolven Farm, M**	**86.05**	**40**	P	**P**	**01 09 49.3**	**-0.1**
	baz=318,SNR=15						
M39A	**Webster**	**86.05**	**38**	P	**P**	**01 09 49.0**	**-0.5**
	baz=319,SNR=29						
ATHU	**Athens Univers**	**86.06**	**316**	P	**P**	**01 09 48.2**	**-1.4**
ATHU	**Athens Univers**	**86.06**	**316**	P	**P**	**01 09 48.2**	**-1.4**
L40A	**Anamosa**	**86.07**	**37**	P	**P**	**01 09 48.8**	**-0.7**
	baz=320,SNR=42						
AGG	**Agios Georgios**	**86.07**	**318**	P	**P**	**01 09 48.4**	**-1.2**
AGG	**Agios Georgios**	**86.07**	**318**	P	**P**	**01 09 49.2**	**-0.4**
AGG				pmax	pmax		
	comp=Z,1µm,1.4s						
AGG	**Agios Georgios**	**86.07**	**318**	P	**P**	**01 09 48.4**	**-1.2**
THEF	**They Montfort**	**86.08**	**333**	*e*P	**P**	**01 09 49.9**	**+0.4**
K41A	**Shullsburg**	**86.09**	**37**	P	**P**	**01 09 48.8**	**-0.7**
	baz=321,SNR=22						
T33A	**Patterson Ranc**	**86.11**	**45**	P	**P**	**01 09 49.6**	**-0.2**
	baz=316,SNR=14						
VLY	**Voula,Athens**	**86.14**	**316**	P	**P**	**01 09 47.8**	**-2.1**
VLY	**Voula,Athens**	**86.14**	**316**	P	**P**	**01 09 47.8**	**-2.1**
VILL	**Villia**	**86.17**	**317**	P	**P**	**01 09 48.7**	**-1.5**
U32A	**Winter Ranch,**	**86.19**	**46**	P	**P**	**01 09 50.4**	**+0.1**
	baz=316						
Q36A	**Arnold C. Orve**	**86.26**	**42**	P	**P**	**01 09 49.9**	**-0.6**
	baz=318,SNR=13						
TUE	**Stuetta**	**86.28**	**330**	*e*P	**P**	**01 09 51.0**	**+0.3**
	comp=Z,242nm,1.0s						
TUE				LR	LR		
	comp=Z,187µm,21.0s						
SANT	**Santorini**	**86.28**	**314**	*e*P	**P**	**01 09 50.7**	**0.0**
	comp=Z,323nm,1.1s						
SANT				LR	LR		
	comp=Z,63µm,21.0s						
THR3	**Thira Island,**	**86.29**	**314**	P	**P**	**01 09 50.8**	**+0.1**
THR3	**Thira Island,**	**86.29**	**314**	P	**P**	**01 09 50.8**	**+0.1**
S34A	**Willow Spring**	**86.29**	**44**	P	**P**	**01 09 50.2**	**-0.5**
	baz=317,SNR=27						
ODZ	**Otahua Downs**	**86.32**	**161**	*e*P	**P**	**01 09 51.1**	**+0.8**
	comp=Z,613nm,1.6s						
ODZ	**Otahua Downs**	**86.32**	**161**	*e*PN	**P**	**01 09 51.2**	**+0.9**
THR6	**Thira Island,**	**86.33**	**314**	P	**P**	**01 09 51.9**	**+1.0**
THR6	**Thira Island,**	**86.33**	**314**	P	**P**	**01 09 51.9**	**+1.0**
R35A	**Emporia Munici**	**86.33**	**43**	P	**P**	**01 09 50.7**	**-0.2**
	baz=317,SNR=20						
N39A	**Derby Farms, D**	**86.34**	**39**	P	**P**	**01 09 50.7**	**-0.2**
	baz=319,SNR=26						
P37A	**Lathrop**	**86.38**	**41**	P	**P**	**01 09 50.6**	**-0.5**
	baz=318,SNR=34						
JAN	**Janina**	**86.38**	**319**	P	**P**	**01 09 51.3**	**+0.2**
JAN	**Janina**	**86.38**	**319**	P	**P**	**01 09 51.3**	**+0.2**
JAN	**Janina**	**86.38**	**319**	P	**P**	**01 09 51.3**	**+0.2**
L41A	**Preston**	**86.41**	**37**	P	**P**	**01 09 50.4**	**-0.7**
	baz=320,SNR=34						
DSF	**Desfina**	**86.42**	**317**	P	**P**	**01 09 49.5**	**-1.9**
DSF	**Desfina**	**86.42**	**317**	P	**P**	**01 09 49.5**	**-1.9**
EVR	**Evrytania**	**86.43**	**318**	P	**P**	**01 09 50.5**	**-1.0**
EVR	**Evrytania**	**86.43**	**318**	P	**P**	**01 09 50.5**	**-1.0**
O38A	**Galt**	**86.43**	**40**	P	**P**	**01 09 50.8**	**-0.5**
	baz=319,SNR=5.2						
LTK	**Loutraki**	**86.47**	**317**	P	**P**	**01 09 49.0**	**-2.6**
LTK	**Loutraki**	**86.47**	**317**	P	**P**	**01 09 49.0**	**-2.6**
LOMF	**Lomont**	**86.51**	**332**	*e*P	**P**	**01 09 51.7**	**0.0**
LOMF	**Lomont**	**86.51**	**332**	P	**P**	**01 09 52.0**	**+0.3**
ANX	**Ano Chora**	**86.61**	**318**	P	**P**	**01 09 51.6**	**-0.7**
THAL	**Thalero**	**86.62**	**317**	P	**P**	**01 09 51.0**	**-1.3**
DSL	**Palaion Diasel**	**86.64**	**319**	P	**P**	**01 09 51.6**	**-0.8**
DSL	**Palaion Diasel**	**86.64**	**319**	P	**P**	**01 09 51.6**	**-0.8**
KALE	**Kalithea**	**86.64**	**318**	P	**P**	**01 09 50.6**	**-1.9**
KALE	**Kalithea**	**86.64**	**318**	P	**P**	**01 09 50.6**	**-1.9**
V32A	**Arapaho**	**86.64**	**46**	P	**P**	**01 09 52.9**	**+0.4**
	baz=316,SNR=39						
MHLO	**Agia Marina, M**	**86.64**	**315**	P	**P**	**01 09 52.1**	**-0.3**
U33A	**Lingo Farm, Me**	**86.65**	**45**	P	**P**	**01 09 52.0**	**-0.5**
	baz=316,SNR=24						
SERG	**Sergoula**	**86.67**	**318**	P	**P**	**01 09 51.1**	**-1.5**
DID	**Didima**	**86.69**	**316**	P	**P**	**01 09 48.8**	**-3.9**
DID	**Didima**	**86.69**	**316**	P	**P**	**01 09 48.8**	**-3.9**
R36A	**Gordon, Harris**	**86.70**	**42**	P	**P**	**01 09 52.4**	**-0.4**
	baz=318,SNR=63						
SGD	**Sagiada**	**86.73**	**320**	P	**P**	**01 09 52.4**	**-0.4**
IGT	**Igoumenitsa**	**86.74**	**319**	P	**P**	**01 09 52.4**	**-0.4**
IGT	**Igoumenitsa**	**86.74**	**319**	P	**P**	**01 09 52.4**	**-0.4**
IGT	**Igoumenitsa**	**86.74**	**319**	P	**P**	**01 09 52.4**	**-0.4**
S35A	**Otter Creek Ra**	**86.74**	**43**	P	**P**	**01 09 52.7**	**-0.2**
	baz=317,SNR=72						
ZKR	**Zakros**	**86.74**	**313**	P	**P**	**01 09 53.0**	**+0.1**
ZKR	**Zakros**	**86.74**	**313**	P	**P**	**01 09 53.0**	**+0.1**
T34A	**McClaskey Farm**	**86.74**	**44**	P	**P**	**01 09 52.7**	**-0.2**
	baz=317,SNR=30						
P38A	**Dawn**	**86.77**	**40**	P	**P**	**01 09 52.6**	**-0.4**
	baz=319,SNR=34						
O39A	**Kirksville**	**86.80**	**39**	P	**P**	**01 09 52.9**	**-0.2**
	baz=319,SNR=6.7						
PVO	**Paravola**	**86.80**	**318**	P	**P**	**01 09 52.4**	**-0.7**
KRND	**KRANIDI**	**86.83**	**316**	P	**P**	**01 09 51.1**	**-2.2**
LAKA	**Lakka**	**86.83**	**318**	P	**P**	**01 09 52.5**	**-0.9**
LAKA	**Lakka**	**86.83**	**318**	P	**P**	**01 09 52.5**	**-0.9**
Q37A	**Longview Farm,**	**86.85**	**41**	P	**P**	**01 09 52.4**	**-1.0**
	baz=318						
KEK	**Kerkira**	**86.87**	**320**	P	**P**	**01 09 52.6**	**-0.9**
KEK	**Kerkira**	**86.87**	**320**	P	**P**	**01 09 52.6**	**-0.9**
KLV	**Kalavryta, Ach**	**86.89**	**317**	P	**P**	**01 09 52.3**	**-1.4**
KLV	**Kalavryta, Ach**	**86.89**	**317**	P	**P**	**01 09 52.3**	**-1.4**
HTL	**Hartland**	**86.92**	**340**	⇑*e*P	**P**	**01 09 53.5**	**0.0**
HTL				AMB	AMB	01 10 06.4	
	comp=Z,145nm,3.1s						
HTL				AMS	AMS	01 53 06.5	
	comp=Z,56µm,21.0s						
W32A	**Sentinel**	**86.95**	**47**	P	**P**	**01 09 54.0**	**0.0**
	baz=316,SNR=67						
U34A	**Anderson Ranch**	**86.97**	**45**	P	**P**	**01 09 54.1**	**0.0**
	baz=316,SNR=50						
U34A	**Anderson Ranch**	**86.97**	**45**	*e*P	**P**	**01 09 54.3**	**+0.3**
	comp=Z,298nm,1.1s						
NPS	**Neapolis**	**86.98**	**313**	P	**P**	**01 09 55.1**	**+1.0**
NPS	**Neapolis**	**86.98**	**313**	P	**P**	**01 09 55.1**	**+1.0**
NPS	**Neapolis**	**86.98**	**313**	P	**P**	**01 09 55.1**	**+1.0**
PDO	**Prodromos**	**86.99**	**318**	P	**P**	**01 09 53.6**	**-0.5**
V33A	**Lossen Ranch,**	**87.00**	**46**	P	**P**	**01 09 54.1**	**-0.1**
	baz=316,SNR=12						
R37A	**Teagarden Farm**	**87.07**	**42**	P	**P**	**01 09 53.5**	**-1.0**
	baz=318,SNR=25						
S36A	**Lake Cedric, C**	**87.10**	**43**	P	**P**	**01 09 54.2**	**-0.5**
	baz=318,SNR=24						
LKD2	**Lefkada island**	**87.12**	**319**	P	**P**	**01 09 53.7**	**-1.1**
LKD2	**Lefkada island**	**87.12**	**319**	P	**P**	**01 09 53.7**	**-1.1**
LAST	**Lasithi**	**87.13**	**313**	P	**P**	**01 09 54.5**	**-0.5**
LAST	**Lasithi**	**87.13**	**313**	P	**P**	**01 09 54.5**	**-0.5**
AXS	**Araxos**	**87.19**	**318**	P	**P**	**01 09 55.9**	**+0.9**
DRO	**Drossia**	**87.19**	**318**	P	**P**	**01 09 54.7**	**-0.4**
T35A	**Sooner Cattle**	**87.19**	**44**	P	**P**	**01 09 54.9**	**-0.2**
	baz=317,SNR=25						
Q38A	**Cooks Store, C**	**87.22**	**41**	P	**P**	**01 09 54.4**	**-0.8**
	baz=319,SNR=38						
O40A	**La Belle**	**87.23**	**39**	P	**P**	**01 09 55.0**	**-0.2**
	baz=320,SNR=63						
RLS	**Riolos of Patr**	**87.24**	**318**	P	**P**	**01 09 55.0**	**-0.3**
RLS	**Riolos of Patr**	**87.24**	**318**	P	**P**	**01 09 55.0**	**-0.3**
VLX	**Vlachokerasia**	**87.26**	**317**	P	**P**	**01 09 54.5**	**-1.1**
VLX	**Vlachokerasia**	**87.26**	**317**	P	**P**	**01 09 54.5**	**-1.1**
P39B	**Salisbury**	**87.27**	**40**	P	**P**	**01 09 54.8**	**-0.6**
	baz=319,SNR=32						
DYA	**Yadsworthy**	**87.28**	**340**	⇑*e*P	**P**	**01 09 55.1**	**-0.1**
DYA				AMS	AMS	01 53 06.5	
	comp=Z,115µm,19.2s						
W33A	**Caddo, Fort Co**	**87.37**	**46**	P	**P**	**01 09 56.4**	**+0.4**
	baz=316,SNR=30						
IDI	**Anoyia**	**87.38**	**314**	P	**P**	**01 09 56.3**	**+0.1**
	comp=Z,64nm,0.8s,baz=29,slow=5.9,SNR=24						
IDI				PKKPbc	**PKKPbc**	**01 27 46.1**	**+1.4**
	comp=Z,6.6nm,0.8s,baz=307,slow=15,SNR=3.5						
IDI	**Anoyia**	**87.38**	**314**	P	**P**	**01 09 54.6**	**-1.5**
IDI	**Anoyia**	**87.38**	**314**	*e*P	**P**	**01 09 55.8**	**-0.3**
	comp=Z,488nm,1.1s						
IDI				PKKPbc	**PKKPbc**	**01 27 46.1**	**+1.4**
LPIG	**La Paz**	**87.38**	**61**	P	**P**	**01 09 56.1**	**-0.1**
	comp=Z,80nm,0.7s,baz=39,slow=1.4,SNR=7.3						
CABF	**La Chapelle**	**87.41**	**332**	*e*P	**P**	**01 09 55.4**	**-0.7**
CABF				pmax	pmax		
	comp=Z,432nm,1.6s						
V34A	**Guthrie**	**87.42**	**45**	P	**P**	**01 09 56.1**	**-0.1**
	baz=316,SNR=45						
V34A	**Guthrie**	**87.42**	**45**	*e*P	**P**	**01 09 56.3**	**+0.1**
	comp=Z,262nm,1.0s						
X32A	**Elmer**	**87.42**	**47**	P	**P**	**01 09 56.1**	**-0.2**
	baz=316,SNR=71						
T36A	**Boggs Farm, Ca**	**87.43**	**43**	P	**P**	**01 09 56.2**	**-0.1**
	baz=317,SNR=32						
VLI	**Veliai**	**87.43**	**316**	P	**P**	**01 09 54.1**	**-2.2**
VLI	**Veliai**	**87.43**	**316**	P	**P**	**01 09 54.1**	**-2.2**
VAL	**Valentia**	**87.45**	**344**	*e*P	**P**	**01 10 00.2**	**+4.2**
VAL	**Valentia**	**87.45**	**344**	⇑*i*S	**S**	**01 20 34.0**	**-1.1**
VAL	**Valentia**	**87.45**	**344**	*e*P	**P**	**01 10 00.2**	**+4.2**
VAL	**Valentia**	**87.45**	**344**	⇑*i*S	**S**	**01 20 34.0**	**-1.1**
U35A	**Pawnee**	**87.47**	**44**	P	**P**	**01 09 56.4**	**-0.1**
	baz=317,SNR=29						
BDHA	**Al Bayda’**	**87.47**	**286**	*e*P	**P**	**01 09 57.0**	**-0.1**
S37A	**Fort Scott**	**87.48**	**42**	P	**P**	**01 09 55.8**	**-0.7**
	baz=318,SNR=50						
Q39A	**Willow Grove F**	**87.49**	**40**	P	**P**	**01 09 56.3**	**-0.2**
	baz=319,SNR=104						
WMOK	**Wichita Mounta**	**87.49**	**47**	P	**P**	**01 09 56.1**	**-0.5**
	baz=316,SNR=97						
WMOK	**Wichita Mounta**	**87.49**	**47**	*e*P	**P**	**01 09 56.3**	**-0.3**
WMOK				pmax	pmax		
	comp=Z,152nm,1.1s						
WMOK				MLR	MLR		
	comp=Z,54µm,21.0s						
WMOK	**Wichita Mounta**	**87.49**	**47**	*e*P	**P**	**01 09 56.3**	**-0.3**
	comp=Z,152nm,1.1s						
WMOK				LR	LR		
	comp=Z,54µm,21.0s						

AMT Artemida-Makis 87.50 317 P **P** **01 09 55.7 -0.9**
KFL Anninata 87.56 318 P **P** **01 09 56.2 -0.7**
P40A Paris 87.59 40 P **P** **01 09 56.7 -0.2**
baz=320,SNR=56
VLS Valsamata 87.61 318 P **P** **01 09 56.0 -1.1**
VLS Valsamata 87.61 318 P **P** **01 09 56.0 -1.1**
VLS Valsamata 87.61 318 P **P** **01 09 56.0 -1.1**
SIVA Sivas 87.62 314 P **P** **01 09 57.1 -0.1**
SIVA Sivas 87.62 314 P **P** **01 09 57.1 -0.1**
LOR Lormes 87.65 334 *eP* **P** **01 09 56.5 -0.6**
LOR pmax pmax
comp=Z,807nm,1.4s
R38A Fenwick Farm, 87.65 42 P **P** **01 09 55.9 -1.3**
baz=318,SNR=31
VAM Vamos 87.68 314 P **P** **01 09 57.1 -0.4**
VAM Vamos 87.68 314 P **P** **01 09 57.1 -0.4**
VAM Vamos 87.68 314 P **P** **01 09 57.1 -0.4**
KYTH Kithira 87.70 316 P **P** **01 09 57.2 -0.4**
KYTH Kithira 87.70 316 P **P** **01 09 57.2 -0.4**
W34A Bridge Creek, 87.71 46 P **P** **01 09 57.7 0.0**
baz=316,SNR=30
W34A Bridge Creek, 87.71 46 *eP* **P** **01 09 58.2 +0.6**
comp=Z,325nm,1.1s
O41A Passleys Farm, 87.72 38 P **P** **01 09 57.4 -0.2**
baz=320,SNR=44
VLC Villacollemand 87.75 328 *eP* **P** **01 09 59.2 +1.5**
comp=Z,66nm,1.0s
VLC LR LR
comp=Z,127µm,20.0s
IMMV Iera Moni Meta 87.77 315 P **P** **01 09 57.8 -0.1**
FLN La Foliniere 87.77 337 *eP* **P** **01 09 56.8 -0.9**
FLN pmax pmax
comp=Z,423nm,1.3s
TBI Tubuai 87.78 122 *eP* **P** **01 09 58.8 +0.9**
comp=Z,376nm,1.0s
TBI Tubuai 87.78 122 *eP*PP PP 01 13 21.2 -2.9
comp=Z,2µm,28.5s
TBI *eS* **S** **01 20 37.2 -1.7**
comp=Z,62µm,37.8s
TBI Tubuai 87.78 122 *e*LQ LQ 01 33 41.7
comp=Z,75µm,34.5s
TBI *e*LR LR 01 37 22.6
comp=Z,100µm,33.2s,baz=314
TBI Tubuai 87.78 122 *e*T T 02 46 55.6
comp=Z,156nm,0.3s
X33A Lawton 87.79 47 P **P** **01 09 57.5 -0.6**
baz=316,SNR=21
LDF La Druitiere 87.81 337 *eP* **P** **01 09 57.0 -0.9**
LDF pmax pmax
comp=Z,445nm,1.4s
V35A Meyer Ranch, C 87.85 45 P **P** **01 09 58.1 -0.2**
baz=317,SNR=17
ANKY Antikythira Is 87.85 315 P **P** **01 09 57.5 -0.8**
ANKY Antikythira Is 87.85 315 P **P** **01 09 57.5 -0.8**
ZKS Zakynthos 87.87 318 P **P** **01 09 57.4 -1.0**
AQU L'Aquila 87.90 325 *eP* **P** **01 09 59.2 +0.8**
AQU pmax pmax
comp=Z,704nm,1.4s
AQU MLR MLR
comp=Z,227µm,19.0s
AQU L'Aquila 87.90 325 *eP* **P** **01 09 59.2 +0.8**
comp=Z,704nm,1.4s
AQU LR LR
comp=Z,227µm,19.0s
T37A Cheneyville 18 87.90 43 P **P** **01 09 57.9 -0.6**
baz=318,SNR=23
JSA Saint Aubin 87.91 338↑ *eP* **P** **01 09 57.8 -0.5**
JSA AMS AMS 01 50 23.0
comp=Z,118µm,19.1s
SSF Saint Saulge 87.95 334 *eP* **P** **01 09 58.0 -0.5**
SSF pmax pmax
comp=Z,417nm,1.4s
PYL PYLOS 87.95 317 P **P** **01 09 57.5 -1.3**
PYL PYLOS 87.95 317 P **P** **01 09 57.5 -1.3**
P41A Barry, Barry 87.97 39 P **P** **01 09 58.6 -0.2**
baz=320,SNR=71
Q40A Laux Farm, Aux 87.98 40 P **P** **01 09 58.5 -0.4**
baz=320,SNR=56
DAMY Dhamar 87.99 287 *eP* **P** **01 09 59.7 +0.1**
comp=Z,497nm,1.2s
U36A Oologah 88.00 44 P **P** **01 09 58.7 -0.3**
baz=318
R39A Chumby, Stover 88.01 41 P **P** **01 09 58.3 -0.7**
baz=319,SNR=50
O42A Bath 88.05 38 P **P** **01 09 58.9 -0.2**
baz=321
S38A Stockton 88.06 42 P **P** **01 09 58.3 -1.0**
baz=318,SNR=31
LPL La Plagne 88.08 331 *eP* **P** **01 09 59.9 +0.4**
LPL pmax pmax
comp=Z,335nm,1.3s
LPG La Plagne 88.09 331 *eP* **P** **01 10 00.1 +0.5**
LPG pmax pmax
comp=Z,438nm,1.4s
Y33A Hilltop Ranch, 88.10 47 P **P** **01 09 59.1 -0.5**
baz=316,SNR=47
X34A Smith Ranch, M 88.13 46 P **P** **01 09 59.7 0.0**
baz=316,SNR=26
HDIL Hopedale 88.15 37 P **P** **01 09 59.3 -0.4**
baz=321,SNR=41
HDIL Hopedale 88.15 37 *eP* **P** **01 09 59.7 0.0**
comp=Z,547nm,1.3s
HDIL LR LR
comp=Z,67µm,21.0s
GVD Gavdhos 88.16 314 P **P** **01 09 58.2 -1.6**
GVD Gavdhos 88.16 314 P **P** **01 09 58.2 -1.6**
SMF Signal de Mont 88.19 333 *eP* **P** **01 10 00.1 +0.4**
SMF pmax pmax
comp=Z,560nm,1.6s
GRR Gorron 88.22 337 *eP* **P** **01 09 59.2 -0.6**
GRR pmax pmax
comp=Z,580nm,1.3s
AVF Avril sur Loir 88.23 334 *eP* **P** **01 09 59.3 -0.6**
AVF pmax pmax
comp=Z,732nm,1.3s
W35A Tecumseh 88.27 45 P **P** **01 10 00.1 -0.2**
baz=317,SNR=19
T38A Diamond 88.30 43 P **P** **01 09 59.9 -0.5**
baz=318,SNR=67
TXAR Lajitas Array 88.31 54 P **P** **01 10 00.8 +0.1**
comp=Z,39nm,0.9s,baz=302,slow=3.2,SNR=165
TXAR PKKPbc **PKKPbc** **01 27 49.2 +6.8**
comp=Z,1.3nm,0.7s,baz=141,slow=4.4,SNR=4.9
TXAR PKPPKP **P'P'df** **01 35 51.3 -4.8**
comp=Z,1.2nm,0.9s,baz=76,slow=0.5,SNR=5.8
TUL1 Leonard 88.32 44 P **P** **01 10 00.1 -0.5**
baz=318,SNR=29
TUL1 Leonard 88.32 44 *eP* **P** **01 10 00.6 +0.1**
comp=Z,222nm,1.2s
S39A Bolivar 88.33 42 P **P** **01 09 59.5 -1.0**
baz=319,SNR=48
U37A Salina 88.33 43 P **P** **01 10 00.3 -0.2**
baz=318,SNR=30
V36A Jenks 88.33 44 P **P** **01 10 00.4 -0.2**
baz=317,SNR=36
P42A Winchester 88.40 39 P **P** **01 10 00.3 -0.5**
baz=321,SNR=71
R40A Maddies Statio 88.42 40 P **P** **01 10 00.3 -0.6**
baz=320,SNR=58
ABTX Abilene, Hawle 88.49 49 P **P** **01 10 01.1 -0.4**
baz=315,SNR=28
ABTX Abilene, Hawle 88.49 49 *eP* **P** **01 10 01.7 +0.3**
comp=Z,542nm,1.6s
BNI Bardonecchia 88.49 331 PFAKE 01 10 10.0 +8.6
BNI LR LR
comp=Z,212µm,21.0s
Z33A Whitaker Ranch 88.53 48 P **P** **01 10 01.1 -0.5**
baz=316,SNR=36
GDM Grand'Maison 88.58 331 *eP* **P** **01 10 02.3 +0.5**
BGF Bois d'Agland 88.61 334 *eP* **P** **01 10 01.1 -0.6**
BGF pmax pmax
comp=Z,476nm,1.7s
CUC Castrocucco 88.63 322 *eP* **P** **01 10 00.6 -1.3**
comp=Z,81nm,1.0s
CUC LR LR
comp=Z,105µm,20.0s
Y34A Reagan Ranch, 88.64 47 P **P** **01 10 01.6 -0.5**
baz=316,SNR=23
W36A Wetumka 88.65 45 P **P** **01 10 01.6 -0.5**
baz=317
GRN Grenoble 88.69 332 *eP* **P** **01 10 03.1 +0.9**
U38A Gravette 88.70 43 P **P** **01 10 01.6 -0.8**
baz=318,SNR=42
V37A Hulbert 88.70 44 P **P** **01 10 01.8 -0.5**
baz=318,SNR=66
X35A Drake 88.77 46 P **P** **01 10 01.9 -0.7**
baz=317,SNR=58
T39A Clever 88.80 42 P **P** **01 10 02.1 -0.6**
baz=319,SNR=35
TIP Timpagrande 88.80 321 P **P** **01 10 02.3 -0.5**
TIP Timpagrande 88.80 321 *eP* **P** **01 10 03.0 +0.2**
comp=Z,686nm,1.5s
TIP LR LR
comp=Z,139µm,22.0s
Q42A Golden Eagle 88.82 39 P **P** **01 10 02.9 +0.1**
baz=320,SNR=28
S40A Lebanon 88.82 41 P **P** **01 10 02.1 -0.8**
baz=319,SNR=38
PLDF La Plantade 88.85 333 *eP* **P** **01 10 03.6 +0.7**
ORIF Oris-en-Rattie 88.91 331 *eP* **P** **01 10 03.7 +0.4**
ORIF pmax pmax
comp=Z,258nm,1.5s
133A Hamilton Ranch 88.93 48 P **P** **01 10 03.3 -0.2**
baz=316,SNR=31
AGO Saint Agoulin 88.95 334 *eP* **P** **01 10 04.5 +1.2**
Z34A Collier Ranch, 88.97 47 P **P** **01 10 03.2 -0.5**
baz=316,SNR=21
X36A Centrahoma 88.99 45 P **P** **01 10 03.5 -0.2**
baz=317,SNR=58
TCF Toulx Ste Croi 89.07 334 *eP* **P** **01 10 03.5 -0.4**
TCF pmax pmax
comp=Z,280nm,1.3s
ISO Isola 89.08 330 P **P** **01 10 05.3 +1.3**
ISO pmax pmax
comp=Z,124nm,2.2s
Y35A Marietta 89.09 46 P **P** **01 10 03.7 -0.5**
baz=317,SNR=12
W37B Quinton 89.09 44 P **P** **01 10 03.8 -0.4**
baz=318,SNR=28
SADO Sadowa 89.09 29 *eP* **P** **01 10 03.8 -0.1**
comp=Z,304nm,1.6s
SSB Saint Sauveur 89.11 332 *eP* **P** **01 10 04.2 +0.1**
SSB Saint Sauveur 89.11 332 *eP* **P** **01 10 04.4 +0.3**
SSB pmax pmax
comp=Z,56nm,0.8s
SSB MLR MLR
comp=Z,147µm,20.0s
SSB Saint Sauveur 89.11 332 *eP* **P** **01 10 04.4 +0.3**
comp=Z,56nm,0.8s
SSB LR LR
comp=Z,147µm,20.0s
V38A Canehill 89.11 43 P **P** **01 10 03.8 -0.5**
baz=318,SNR=76
T40A Mansfield 89.15 41 P **P** **01 10 03.6 -0.9**
baz=319,SNR=50
SBF Sospel 89.19 330 *eP* **P** **01 10 04.4 -0.2**
SBF pmax pmax
comp=Z,290nm,1.4s
Q43A New Douglas 89.21 39 P **P** **01 10 04.3 -0.4**
baz=321,SNR=16
S41A Jillco Farms, 89.22 41 P **P** **01 10 03.9 -0.9**
baz=320,SNR=40
U39A Green Forest 89.22 42 P **P** **01 10 04.0 -0.8**
baz=319,SNR=91
PYM Petit Puy Mans 89.25 333 *eP* **P** **01 10 05.6 +0.8**
AAM Ann Arbor 89.32 33 *eP* **P** **01 10 05.4 +0.3**
AAM pmax pmax
comp=Z,129nm,1.0s
AAM MLR MLR
comp=Z,69µm,21.0s
AAM Ann Arbor 89.32 33 *eP* **P** **01 10 05.4 +0.3**
comp=Z,129nm,1.0s
AAM LR LR
comp=Z,69µm,21.0s
SFIN Lafayette 89.33 36 P **P** **01 10 04.9 -0.3**
baz=323,SNR=40
SFIN Lafayette 89.33 36 *eP* **P** **01 10 05.1 -0.1**
comp=Z,167nm,1.1s
233A Rising Star 89.36 49 P **P** **01 10 05.4 -0.1**
baz=316,SNR=25
Z35A Perchaven, San 89.38 47 P **P** **01 10 05.0 -0.6**
baz=317,SNR=46
VIVF Saint-Julien-l 89.42 332 *eP* **P** **01 10 05.0 -0.6**
VIVF pmax pmax
comp=Z,263nm,1.4s
OG26 St.-Nazaire-De 89.42 331 *eP* **P** **01 10 06.0 +0.4**
VERF Verneugheol 89.44 334 *eP* **P** **01 10 06.0 +0.3**
134A White-Moore Ra 89.45 48 P **P** **01 10 05.6 -0.3**
baz=316,SNR=24
Y36A Durant 89.52 46 P **P** **01 10 05.5 -0.7**
baz=317,SNR=34
X37A Clayton 89.53 45 P **P** **01 10 05.9 -0.3**
baz=318,SNR=24
V39A Pettigrew 89.54 43 P **P** **01 10 05.5 -0.8**
baz=319,SNR=58
Q44A Meyer Farm, Va 89.58 38 P **P** **01 10 06.1 -0.3**
baz=322,SNR=29
U40A Yellville 89.58 42 P **P** **01 10 05.7 -0.8**
baz=319,SNR=95
MFF Saint Martin d 89.58 336 *eP* **P** **01 10 05.9 -0.3**
MFF pmax pmax
comp=Z,379nm,1.2s
LBL Lubilhac 89.62 333 *eP* **P** **01 10 05.6 -0.9**
T41A Mountain View 89.63 41 P **P** **01 10 05.8 -0.9**
baz=320,SNR=52
LMQ La Malbaie 89.64 22 *eP* **P** **01 10 07.0 +0.5**
W38A Poteau 89.64 44 P **P** **01 10 06.5 -0.2**
baz=318,SNR=27
PGF Pioggiola 89.65 328 *eP* **P** **01 10 05.4 -1.4**
PGF pmax pmax
comp=Z,364nm,1.6s
FRNF Fournols 89.72 334 *eP* **P** **01 10 07.2 +0.2**
FRF La Foret Royal 89.76 330 *eP* **P** **01 10 06.1 -1.0**
FRF pmax pmax
comp=Z,393nm,1.7s
X38A Whitesboro 89.77 44 P **P** **01 10 07.4 0.0**
baz=318,SNR=38
333A Richland Sprin 89.81 49 P **P** **01 10 07.3 -0.4**
baz=316,SNR=87
234A Clairette 89.82 48 P **P** **01 10 07.3 -0.3**
baz=316,SNR=62
Y37A Hugo 89.83 45 P **P** **01 10 07.2 -0.5**
baz=318,SNR=8.5
135A Vickery Place, 89.85 47 P **P** **01 10 07.8 0.0**
baz=317,SNR=20
Z36A Blue Ridge 89.89 46 P **P** **01 10 07.6 -0.3**
baz=317,SNR=34
JCT Junction City 89.91 50 P **P** **01 10 07.5 -0.6**
baz=315,SNR=26
JCT Junction City 89.91 50 *eP* **P** **01 10 08.1 -0.1**
JCT pmax pmax
comp=Z,2µm,1.6s
JCT MLR MLR
comp=Z,39µm,19.0s
JCT Junction City 89.91 50 *eP* **P** **01 10 08.1 -0.1**
comp=Z,2µm,1.6s
JCT LR LR
comp=Z,39µm,19.0s
CEL Celeste 89.94 321 *eP* **P** **01 10 07.8 -0.3**
comp=Z,220nm,1.0s
CEL LR LR
comp=Z,141µm,21.0s
W39A Magazine 89.95 43 P **P** **01 10 07.7 -0.5**
baz=319,SNR=26
LMR La Mourre 90.00 330 *eP* **P** **01 10 07.1 -1.2**
LMR pmax pmax
comp=Z,341nm,1.4s
V40A Witts Springs 90.01 42 P **P** **01 10 07.7 -0.8**
baz=319,SNR=24
R44A Waltonville 90.06 39 P **P** **01 10 08.2 -0.4**
baz=321,SNR=33
U41A Viola 90.08 42 P **P** **01 10 08.1 -0.6**
baz=320,SNR=39
S43A Fulton Ridge, 90.08 40 P **P** **01 10 08.1 -0.6**
baz=321,SNR=20
433A Art 90.15 50 P **P** **01 10 08.8 -0.5**
baz=316,SNR=38
LEPF PUYLOUBIER 90.16 331 *eP* **P** **01 10 09.0 0.0**
RJF Les Rejaudoux 90.16 334 *eP* **P** **01 10 08.7 -0.3**
RJF pmax pmax
comp=Z,399nm,1.4s
WHTX Lake Whitney, 90.23 48 P **P** **01 10 09.3 -0.2**
baz=317,SNR=46
WHTX Lake Whitney, 90.23 48 *eP* **P** **01 10 09.9 +0.3**
comp=Z,319nm,1.0s
334A Lometa 90.25 49 P **P** **01 10 09.3 -0.4**
baz=316,SNR=76
X39A Fountain Ranch 90.28 44 P **P** **01 10 09.6 -0.1**
baz=318,SNR=51
H06N1 SOCORRO T-PHAS 90.30 66 T T 02 51 42.7
CAF Calviac 90.30 334 *eP* **P** **01 10 09.7 0.0**
CAF pmax pmax
comp=Z,356nm,1.3s
W40A Ferguson Farm, 90.34 43 P **P** **01 10 09.6 -0.4**
baz=319,SNR=32
Y38A Idabel 90.37 45 P **P** **01 10 09.6 -0.6**
baz=318,SNR=13
V41A Mountainview 90.38 42 P **P** **01 10 09.4 -0.8**
baz=320,SNR=51
H06E1 SOCORRO T-PHAS 90.39 66 T T 02 51 38.3
S44A Carbondale 90.40 39 P **P** **01 10 10.0 -0.3**
baz=321,SNR=30
Z37A Pogue Cattle C 90.41 46 P **P** **01 10 10.1 -0.2**
baz=318,SNR=25
136A Ennis 90.42 47 P **P** **01 10 10.0 -0.4**
baz=317,SNR=21
U42A Revenden 90.43 41 P **P** **01 10 09.6 -0.7**
baz=320,SNR=18
MIAR Mount Ida 90.55 44 P **P** **01 10 10.6 -0.4**
baz=319,SNR=81
MIAR Mount Ida 90.55 44 *eP* **P** **01 10 11.2 +0.2**
MIAR pmax pmax
comp=Z,152nm,1.1s
MIAR MLR MLR
comp=Z,50µm,19.0s
MIAR Mount Ida 90.55 44 *eP* **P** **01 10 11.2 +0.2**
comp=Z,152nm,1.1s
MIAR LR LR
comp=Z,50µm,19.0s
434A Burnet 90.60 49 P **P** **01 10 10.7 -0.6**
baz=316,SNR=33
533A Kerrville 90.67 50 P **P** **01 10 11.3 -0.4**
baz=316,SNR=17
Y39A Lockesburg 90.72 44 P **P** **01 10 11.5 -0.2**
baz=318,SNR=53
Z38A Mt. Pleasant 90.73 45 P **P** **01 10 12.0 +0.1**
baz=318
S45A Carrier Mills 90.75 39 P **P** **01 10 11.6 -0.3**
baz=322,SNR=20
LFF La Frestale 90.75 334 *eP* **P** **01 10 11.7 0.0**
LFF pmax pmax
comp=Z,635nm,1.5s
335A Moody 90.76 48 P **P** **01 10 11.7 -0.3**
baz=317,SNR=12
V42A Cord 90.76 42 P **P** **01 10 11.2 -0.7**
baz=320,SNR=34
137A Heron Place, G 90.77 46 P **P** **01 10 11.8 -0.2**
baz=318
W41B Gary Mavity, V 90.79 43 P **P** **01 10 11.2 -0.9**
baz=320,SNR=44
LONY Lake Ozonia 90.87 26 *eP* **P** **01 10 12.1 -0.2**
comp=Z,162nm,1.4s
LONY LR LR
comp=Z,97µm,22.0s
X40A Basin Creek Fa 91.00 43 P **P** **01 10 12.7 -0.4**
baz=319,SNR=54
633A Saathoff Ranch 91.02 51 P **P** **01 10 12.8 -0.5**
baz=316,SNR=14
336A Riesel 91.03 48 P **P** **01 10 13.1 -0.2**
baz=317,SNR=23
435B Jarrell 91.03 49 P **P** **01 10 13.2 -0.1**
baz=316,SNR=13
534A Blanco 91.04 50 P **P** **01 10 13.0 -0.4**
baz=316,SNR=39
138A Matatall Enter 91.11 46 P **P** **01 10 13.6 0.0**
baz=318
Y40A Okolona 91.11 44 P **P** **01 10 13.2 -0.4**
baz=319,SNR=13
X41A Kaden, Bauxite 91.16 43 P **P** **01 10 13.6 -0.2**
baz=319,SNR=6.6
237A Washetta, Mont 91.18 47 P **P** **01 10 13.4 -0.6**
baz=318
Z39A Irene McRaven, 91.19 45 P **P** **01 10 14.2 +0.3**
baz=318,SNR=13
ACSO Alum Creek Sta 91.30 34 *eP* **P** **01 10 14.8 +0.4**
comp=Z,80nm,0.8s
ACSO LR LR
comp=Z,67µm,21.0s
832A Faith Ranch, C 91.36 52 P **P** **01 10 14.8 -0.1**
baz=315,SNR=22
WCI Wyandotte Cave 91.42 37 *eP* **P** **01 10 14.6 -0.4**
WCI pmax pmax
comp=Z,361nm,1.0s
WCI Wyandotte Cave 91.42 37 *eP* **P** **01 10 14.6 -0.4**
comp=Z,361nm,1.0s
733A Divot King Ran 91.47 51 P **P** **01 10 15.4 +0.1**
baz=316
139A Bunkhouse Ranc 91.49 45 P **P** **01 10 15.6 +0.3**
baz=318
436A Wall Ranch, Ga 91.50 48 P **P** **01 10 16.1 +0.7**
baz=317
V44A Blytheville 91.52 41 P **P** **01 10 15.6 +0.1**
baz=321
Y41A Eaglette Beard 91.57 44 P **P** **01 10 15.7 0.0**
baz=319,SNR=21
238A Jacksville 91.57 46 P **P** **01 10 16.1 +0.3**
baz=318,SNR=5.9
634A China Grove, S 91.58 50 P **P** **01 10 15.6 -0.2**
baz=316
535A Dale 91.58 49 P **P** **01 10 15.7 -0.2**
baz=316
Z40A Long Farm, Mag 91.61 44 P **P** **01 10 15.9 0.0**
baz=319,SNR=38
M54A Oil Creek Stat 91.64 31 P **P** **01 10 15.7 -0.2**
baz=328,SNR=13
337A Centerville 91.64 47 P **P** **01 10 16.4 +0.3**
baz=317,SNR=5.3
833A Chaparral WMA, 91.69 52 P **P** **01 10 16.3 -0.1**
baz=316,SNR=5.9
CLTB Caltabellotta 91.78 323 *eP* **P** **01 10 16.9 +0.1**
comp=Z,90nm,1.5s
CLTB LR LR
comp=Z,76µm,20.0s
734A La Parita Cree 91.83 51 P **P** **01 10 17.2 +0.2**
baz=316,SNR=7.2
437A Phantom Ranch, 91.85 48 P **P** **01 10 17.6 +0.5**
baz=317,SNR=6.4
536A Bastrop 91.85 49 P **P** **01 10 17.3 +0.2**
baz=317
LRDF Laroque-de-Fa 91.86 332↑ *eP* **P** **01 10 17.6 +0.7**
635A Leesville 91.92 50 P **P** **01 10 17.7 +0.3**
baz=316
239A Gary 91.93 46 P **P** **01 10 17.3 -0.1**
baz=318
Z41A Richland Creek 91.94 44 P **P** **01 10 17.4 0.0**
baz=319,SNR=5.8
338A Crockett 91.94 47 P **P** **01 10 18.0 +0.5**
baz=318
N54A Moraine State 91.97 31 P **P** **01 10 17.2 -0.2**
baz=327,SNR=14
140A Cam and Jess, 91.97 45 P **P** **01 10 17.5 -0.1**
baz=319
VSL Villasalto 92.00 326 *eP* **P** **01 10 17.5 -0.1**
comp=Z,203nm,1.4s
VSL LR LR
comp=Z,148µm,19.0s
PKME Peaks-Kenny Pk 92.01 22 *eP* **P** **01 10 18.4 +0.8**
comp=Z,108nm,0.9s
PKME LR LR
comp=Z,73µm,20.0s
NATX Nacogdoches 92.02 46 P **P** **01 10 18.0 +0.1**
baz=318
NATX Nacogdoches 92.02 46 *eP* **P** **01 10 18.3 +0.5**
comp=Z,276nm,1.4s
NATX LR LR
comp=Z,53µm,19.0s
X43A Marvell 92.02 42 P **P** **01 10 17.6 -0.1**
baz=320,SNR=9.9
Y42A Garnett, Star 92.05 43 P **P** **01 10 18.0 0.0**
baz=326,SNR=10
V45A Humboldt 92.07 40 P **P** **01 10 17.6 -0.4**
baz=322
W44A Shelby Farms P 92.10 41 P **P** **01 10 18.0 -0.1**
baz=321
SJAF Saint Jean de 92.12 332↑ *eP* **P** **01 10 18.3 +0.2**
FILF Fillols 92.17 332 *eP* **P** **01 10 18.7 +0.2**
933A Laredo 92.27 52 P **P** **01 10 19.8 +0.7**
baz=316,SNR=34
735A Kenedy 92.28 50 P **P** **01 10 19.8 +0.7**
baz=316
636A Smothers Creek 92.28 49 P **P** **01 10 19.8 +0.7**
baz=317,SNR=21
537A Green Hill Far 92.29 48 P **P** **01 10 19.2 0.0**
baz=317,SNR=7.3
438A Sam Houston St 92.29 47 P **P** **01 10 19.6 +0.5**
baz=318,SNR=22
240A Hunter Patters 92.32 46 P **P** **01 10 19.2 0.0**
baz=319,SNR=8.0
834A Tilden 92.35 51 P **P** **01 10 19.9 +0.4**
baz=316
141A Papa Simpson, 92.37 45 P **P** **01 10 19.6 +0.1**

baz=319,SNR=7.5
339A Huntington 92.39 46 P P 01 10 19.3 -0.2
baz=318
Z42A Norrel Spur, H 92.39 44 P P 01 10 19.3 -0.2
baz=320,SNR=18
W45A Hickory Valley 92.41 41 P P 01 10 19.3 -0.3
baz=321
X44A Crenshaw 92.42 42 P P 01 10 19.0 -0.6
baz=321
Y43A Makayla and Ka 92.46 42 P P 01 10 19.9 +0.1
baz=320
BINY Binghamton 92.47 28 eP P 01 10 20.2 +0.4
comp=Z,1µm,2.4s
BINY LR LR
comp=Z,63µm,20.0s
VALF Valcebollere 92.51 332 eP P 01 10 20.8 +0.7
WDD Wied Dalam 92.52 321 eP P 01 10 19.8 -0.3
comp=Z,587nm,1.5s
WDD LR LR
comp=Z,76µm,19.0s
MELF Melles 92.55 333 eP P 01 10 20.4 +0.2
EPF Esparros 92.56 334 eP P 01 10 20.5 +0.3
EPF pmax pmax
comp=Z,270nm,1.7s
LABF Labassere 92.64 334 eP P 01 10 20.9 +0.3
736A Circle Diamond 92.66 50 P P 01 10 20.8 -0.1
baz=317
439A Center Grove, 92.67 47 P P 01 10 21.0 +0.1
baz=318,SNR=7.9
538A Harpers Horsep 92.67 48 P P 01 10 21.5 +0.7
baz=318
835A Beeville 92.68 51 P P 01 10 21.6 +0.7
baz=316
340A Bronson 92.71 46 P P 01 10 20.5 -0.5
baz=318
637A Eagle Lake 92.75 49 P P 01 10 21.2 -0.1
baz=317,SNR=13
934A Benavides 92.75 52 P P 01 10 20.7 -0.6
baz=316,SNR=15
RESF Ens 92.76 334 eP P 01 10 22.5 +1.3
REYF Montagne du Re 92.78 334 eP P 01 10 23.0 +1.7
OXF Oxford 92.79 41 eP P 01 10 21.1 -0.3
OXF pmax pmax
comp=Z,294nm,1.1s
OXF Oxford 92.79 41 eP P 01 10 21.1 -0.3
comp=Z,294nm,1.1s
Y44A Strider, Charl 92.80 42 P P 01 10 20.0 -1.4
baz=321,SNR=20
VIEF Viey 92.80 334 eP P 01 10 22.5 +1.1
241A Mo Tay, Goldon 92.80 45 P P 01 10 21.2 -0.2
baz=319
Z43A Armstrong Fami 92.82 43 P P 01 10 21.4 -0.1
baz=320
ORDF Ordiarp 92.84 335 eP P 01 10 23.2 +1.8
X45A UM Field Stati 92.87 41 P P 01 10 21.4 -0.3
baz=321
ATE Arette 92.87 334 eP P 01 10 23.1 +1.5
142A Monroe 92.94 44 P P 01 10 21.3 -0.7
baz=320
LARF Larrau 93.01 335 eP P 01 10 23.5 +1.2
034A Hebbronville 93.03 52 P P 01 10 21.7 -0.9
baz=316,SNR=33
SSPA Standing Stone 93.09 30 eP P 01 10 22.9 +0.3
comp=Z,194nm,0.9s
143A Socs Landing, 93.12 44 P P 01 10 22.8 -0.1
baz=320
O56A Blue Knob Stat 93.13 31 P P 01 10 21.2 -1.7
baz=328,SNR=14
440A Kirbyville 93.17 46 P P 01 10 23.1 -0.1
baz=318
KVTX Kingsville 93.17 51 eP P 01 10 24.6 +1.4
comp=Z,245nm,1.2s
KVTX LR LR
comp=Z,41µm,20.0s
737A Port Lavaca 93.17 49 P P 01 10 22.5 -0.7
baz=317
341A Kurthwood 93.18 46 P P 01 10 23.1 -0.1
baz=319
242A Grayson 93.20 44 P P 01 10 23.1 -0.1
baz=320
539A Cross D Ranch, 93.20 47 P P 01 10 24.0 +0.7
baz=318
Z44A Pea Ridge, Bel 93.21 43 P P 01 10 22.9 -0.4
baz=320,SNR=9.9
Y45A Yeager Farm, C 93.22 42 P P 01 10 22.7 -0.7
baz=321,SNR=16
638A Rosharon 93.29 48 P P 01 10 23.4 -0.3
baz=318
035A Encino 93.48 52 P P 01 10 23.7 -0.9
baz=316,SNR=8.9
Z45A Winona 93.53 42 P P 01 10 24.6 -0.2
baz=321
540A Vidor 93.56 47 P P 01 10 24.3 -0.6
baz=318
Y46A Houston 93.57 41 P P 01 10 24.4 -0.5
baz=322,SNR=26
738A Farr-Stevens R 93.59 49 P P 01 10 26.3 +1.2
baz=318
441A DeRidder 93.61 46 P P 01 10 25.5 +0.4
baz=319
342A Flagon Creek P 93.62 45 P P 01 10 25.6 +0.4
baz=319
N59A State Game Lan 93.67 29 P P 01 10 25.8 +0.4
baz=330
243A Waterproof 93.71 44 P P 01 10 25.8 +0.2
baz=320
144A Alexander Plac 93.71 43 P P 01 10 25.8 +0.2
baz=320
HRV Adam Dziewonsk 93.77 25 eP P 01 10 26.4 +0.7
HRV pmax pmax
comp=Z,283nm,1.8s
HRV Adam Dziewonsk 93.77 25 eP P 01 10 26.4 +0.7
comp=Z,283nm,1.8s
035Z Hargill 93.84 52 P P 01 10 26.9 +0.6
baz=316
VBMS Vicksburg 93.97 43 P P 01 10 26.3 -0.5
baz=320
145A Houston Renfro 94.00 43 P P 01 10 27.1 +0.2
baz=321
244A Avery, Jackson 94.02 44 P P 01 10 26.1 -0.9
baz=320,SNR=8.4
Z46A Louisville 94.06 42 P P 01 10 26.1 -1.2
baz=321,SNR=6.2
442A Mamou 94.06 46 P P 01 10 27.3 0.0
baz=319
TZTN Tazewell 94.06 36 eP P 01 10 27.3 +0.1
comp=Z,61nm,1.1s
Y47A UCPARC, Winfie 94.07 40 P P 01 10 26.2 -1.1
baz=322,SNR=6.1
343A Vidalia 94.09 45 P P 01 10 26.6 -0.8
baz=320
541A Lake Charles 94.12 46 P P 01 10 26.2 -1.4
baz=319
443A Delano Plantat 94.39 45 P P 01 10 28.4 -0.4
baz=320
146A Union 94.43 42 P P 01 10 29.0 +0.1
baz=321
542A Morse 94.44 46 P P 01 10 29.0 0.0
baz=319
344A Westbrook Farm 94.44 44 P P 01 10 29.2 +0.2
baz=320
245A Little AP, Sta 94.45 43 P P 01 10 28.5 -0.6
baz=321,SNR=8.0
Z47A Carrollton 94.51 41 P P 01 10 28.6 -0.7
baz=322
Z48A Northport 94.64 41 P P 01 10 28.9 -0.9
baz=322
147A Livingston 94.82 42 P P 01 10 30.1 -0.6
baz=322
543A St. Martinvill 94.86 46 P P 01 10 29.8 -1.1
baz=320
246A Jackson Lee, B 94.88 43 P P 01 10 30.4 -0.6
baz=321
BLA Blacksburg 94.92 34 eP P 01 10 32.5 +1.3
BLA pmax pmax
comp=Z,84nm,1.1s
BLA MLR MLR
comp=Z,91µm,21.0s
BLA Blacksburg 94.92 34 eP P 01 10 32.5 +1.3
comp=Z,84nm,1.1s
BLA LR LR
comp=Z,91µm,21.0s
345A Thompson Farm, 94.94 44 P P 01 10 30.5 -0.8
baz=321
444A Pine Grove 95.00 44 P P 01 10 31.3 -0.3
baz=320
KEST Kesra 95.10 324 P P 01 10 32.0 0.0
comp=Z,95nm,1.2s,baz=39,slow=1.4,SNR=27

KEST PKKPbc **PKKPbc** 01 27 26.8 +1.4
comp=Z,1.9nm,0.8s,baz=103,slow=19,SNR=3.1
KEST LR LR 01 58 43.7
comp=Z,185µm,18.4s,baz=344,slow=39
247A Quitman 95.12 42 P P 01 10 32.2 0.0
baz=322
346A Big Creek Wild 95.18 43 P P 01 10 32.0 -0.4
baz=321
LRAL Lakeview Retre 95.19 40 eP P 01 10 33.5 +1.0
comp=Z,46nm,1.3s
445A Amite 95.21 44 P P 01 10 32.2 -0.3
baz=320
544A White Castle 95.23 45 P P 01 10 32.3 -0.3
baz=320
CMAH Djebel Manchou 95.24 326 P P 01 10 31.9 -0.8
CAEH ´Ain El Ouahch 95.36 326 P P 01 10 34.4 +1.3
CBN Corbin Frederi 95.37 31 eP P 01 10 34.0 +0.9
comp=Z,86nm,1.3s
CBN LR LR
comp=Z,67µm,20.0s
248A Dixon Mills 95.55 42 P P 01 10 33.3 -0.7
baz=322
545A Edgard 95.66 45 P P 01 10 34.3 -0.3
baz=320
347A Saraland 95.67 43 P P 01 10 33.9 -0.7
baz=322
446A Poplarville 95.70 43 P P 01 10 34.7 -0.1
baz=321
CKFL Kef-Lekhel 95.73 326 P P 01 10 35.2 +0.2
546A Slidell 95.94 44 P P 01 10 35.0 -0.8
baz=321
PBRG Braganca 95.95 338 eP P 01 10 37.9 +2.1
comp=Z,105nm,1.8s
PBRG Braganca 95.95 338 ePP PP 01 14 29.2 +2.1
PBRG eSKS **S** **01 21 50.3 -2.4**
PBRG eSS **SS** **01 28 25.8 +4.3**
CASM Ain Smara 95.95 326 P P 01 10 35.6 -0.3
DFRA Djebel Bou Aff 95.98 327 P P 01 10 38.3 +2.2
348A Jackson 96.00 42 P P 01 10 35.9 -0.2
baz=322
645A Chauvin 96.05 45 P P 01 10 35.9 -0.4
baz=320
447A Lucedale 96.08 43 P P 01 10 36.4 -0.1
baz=321
KMSC Kings Mountain 96.24 35 P P 01 10 36.1 -1.1
baz=326
KMSC Kings Mountain 96.24 35 eP P 01 10 36.9 -0.2
comp=Z,43nm,1.1s
PGAV Gavieira, Arco 96.25 339 eP P 01 10 39.6 +2.4
comp=Z,114nm,1.7s
PGAV Gavieira, Arco 96.25 339 ePP PP 01 14 38.7 +9.2
PGAV eSKS **SKSac** **01 21 12.1 -0.2**
PGAV eSS **SS** **01 28 30.4 +4.7**
PGAV Gavieira, Arco 96.25 339 eLQ LQ 01 38 34.8
PGAV eLR LR 01 46 52.8
comp=Z,89µm,18.0s
646A Port Sulphur 96.38 45 P P 01 10 37.8 -0.1
baz=321
448A Bay Minette 96.40 42 P P 01 10 38.1 +0.1
baz=322
PCAB Cabril 96.41 339 eP P 01 10 38.9 +1.0
comp=Z,136nm,1.6s
PCAB Cabril 96.41 339 ePP PP 01 14 29.2 -1.5
SET Setif 96.48 327 P P 01 10 40.0 +1.7
CKHR Kef el Ahmar 96.58 327 P P 01 10 40.7 +1.8
MVO Moncorvo 96.62 338 eP P 01 10 41.9 +3.0
comp=Z,100nm,1.8s
MVO Moncorvo 96.62 338 ePP PP 01 14 51.7 +19
MVO eSKS **SKSac** **01 21 19.2 +4.9**
MVO eSS **SS** **01 28 37.5 +6.4**
MVO eLQ LQ 01 37 35.9
MVO Moncorvo 96.62 338 eLR LR 01 48 42.0
comp=Z,121µm,20.0s
BRAL Brewton 96.64 42 PFAKE 01 10 50.0 +11
BRAL LR LR
comp=Z,42µm,20.0s
GOGA Godfrey 96.65 38 eP P 01 10 40.2 +1.2
GOGA pmax pmax
comp=Z,126nm,1.6s
GOGA MLR MLR
comp=Z,83µm,19.0s
GOGA Godfrey 96.65 38 eP P 01 10 40.2 +1.2
comp=Z,126nm,1.6s
GOGA LR LR
comp=Z,83µm,19.0s
POLO Lamas de Olo 96.66 339 eP P 01 10 41.5 +2.4
comp=Z,55nm,1.4s
POLO Lamas de Olo 96.66 339 ePP PP 01 14 43.5 +11
POLO eSKS SKSac 01 21 30.3 +16
POLO eSS **SS** **01 28 36.3 +4.7**
PVRL Vila Real 96.72 338 eP P 01 10 42.9 +3.6
comp=Z,109nm,1.7s
ESDC Sonseca Array 97.02 335 P P 01 10 40.5 -0.2
comp=Z,5.4nm,0.7s,baz=18,slow=4.2,SNR=37
ESDC PP PP 01 14 11.8 -24
comp=Z,18nm,1.0s,baz=20,slow=6.2,SNR=5.3
ESDC PKKP **PKKPdf** **01 27 23.4 +2.9**
comp=Z,2.0nm,0.9s,baz=248,slow=0.6,SNR=5.0
ESDC LR LR 02 02 09.0
comp=Z,123µm,18.0s,baz=40,slow=40
PAB San Pablo 97.26 335 eP Pdif 01 10 42.1 +0.2
PAB pmax pmax
comp=Z,46nm,1.2s
PAB MLR MLR
comp=Z,162µm,21.0s
PAB San Pablo 97.26 335 eP Pdif 01 10 42.1 +0.2
comp=Z,46nm,1.2s
PAB LR LR
comp=Z,162µm,21.0s
PVIS Viseu 97.29 338 eP Pdif 01 10 45.4 +3.4
comp=Z,102nm,2.0s
PVIS Viseu 97.29 338 ePP PP 01 14 45.0 +7.5
MTE Manteigas 97.48 338 eP Pdif 01 10 46.0 +3.2
comp=Z,69nm,1.7s
MTE Manteigas 97.48 338 ePP PP 01 14 54.5 +16
MTE eSKS **SKSac** **01 21 22.0 +3.3**
MTE eSS **SS** **01 28 49.3 +6.1**
MTE Manteigas 97.48 338 eLQ LQ 01 39 21.5
MTE eLR LR 01 48 21.5
comp=Z,118µm,18.0s
MTE Manteigas 97.48 338 eP Pdif 01 10 43.9 +1.0
comp=Z,24nm,0.8s
MTE LR LR
comp=Z,119µm,19.0s
EMHD Djebel Mahouad 97.51 329 P P 01 10 41.0 -2.0
CNNC Cliffs of the 97.68 33 PFAKE 01 11 00.0 +16
CNNC LR LR
comp=Z,66µm,22.0s
RKT Rikitea 97.76 113 ePP PP 01 14 40.2 -2.5
comp=Z,3µm,29.8s
RKT eSKSac **SKSac** **01 21 18.0 -2.1**
comp=Z,19µm,28.5s
RKT Rikitea 97.76 113 ePS PS 01 23 36.0 +1.4
comp=Z,27µm,31.5s
RKT eSS SS 01 28 48.8 -1.1
comp=Z,28µm,29.8s
RKT Rikitea 97.76 113 eLR LR 01 41 46.9
comp=Z,99µm,27.2s,baz=309
PCBR Castelo Branco 97.98 338 eP Pdif 01 10 49.1 +4.2
comp=Z,56nm,1.7s
PCBR Castelo Branco 97.98 338 ePP PP 01 14 53.7 +11
EBNR Beni Rached 98.01 330 P P **01 10 44.0 -1.2**
PCAS Casmilo, Conde 98.08 339 eP Pdif 01 10 47.8 +2.4
comp=Z,83nm,1.7s
PCAS Casmilo, Conde 98.08 339 ePP PP 01 14 51.6 +8.1
PCAS eSKS **SKSac** **01 21 24.8 +3.2**
PCAS eSS **SS** **01 28 57.6 +6.1**
TIGA Tifton 98.19 39 P P **01 10 45.3 -0.7**
baz=324
TIGA Tifton 98.19 39 eP Pdif 01 10 47.2 +1.2
comp=Z,245nm,1.7s
PMRV Marv??o 98.33 337 eP Pdif 01 10 50.7 +4.1
comp=Z,54nm,1.6s
PMRV Marv??o 98.33 337 ePP PP 01 14 56.3 +11
PMRV eSKS **SKSac** **01 21 25.5 +2.5**
PMRV eSS SS 01 29 18.1 +23
PMRV Marv??o 98.33 337 eLQ LQ 01 39 54.3
PMRV eLR LR 01 49 29.6
comp=Z,82µm,20.0s
PTOM Tomar 98.46 338 eP Pdif 01 11 03.5 +16
comp=Z,61nm,1.4s
PTOM Tomar 98.46 338 ePP PP 01 15 00.1 +14
NHSC New Hope 98.46 36 PFAKE 01 11 00.0 +13
NHSC LR LR
comp=Z,57nm,21.0s
PESTR Estremoz 98.91 337 eP Pdif 01 10 50.5 +1.4
comp=Z,49nm,1.8s
PESTR Estremoz 98.91 337 ePP PP 01 14 57.4 +7.6
PESTR eSKS **SKSac** **01 21 31.2 +5.3**
PESTR eSS **SS** **01 29 05.9 +2.8**
PMTG Montargil 98.91 338 eP Pdif 01 10 51.0 +1.9
comp=Z,65nm,1.5s
PMTG Montargil 98.91 338 ePP PP 01 14 55.4 +5.6
PMTG eSKS **SKSac** **01 21 31.4 +5.6**
PMTG eSS **SS** **01 29 07.9 +4.8**
PMAFR Mafra 99.32 339 eP **Pdif** **01 10 51.7 +0.7**
PMAFR Mafra 99.32 339 ePP PP 01 14 56.8 +3.8
PMAFR eSKS **SKSac** **01 21 29.9 +2.0**
PMAFR eSS **SS** **01 29 11.5 +2.6**
EVO Evora 99.34 338 eP **Pdif** **01 10 52.5 +1.5**
EVO Evora 99.34 338 ePP PP 01 14 58.2 +5.1
PBAR Barrancos 99.37 337 eP **Pdif** **01 10 53.3 +2.1**
PBAR Barrancos 99.37 337 ePP PP 01 15 06.3 +13
PBAR eSKS **SKSac** **01 21 26.7 -1.5**
PBAR eSS **SS** **01 29 12.9 +3.3**
PMST Lisbon--Monsan 99.50 339 eP **Pdif** **01 10 58.0 +6.3**
PMST Lisbon--Monsan 99.50 339 ePP PP 01 14 56.8 +2.5
LIS Lisbon 99.51 338 eP **Pdif** **01 10 54.6 +2.9**
LIS ePP **PP** **01 14 58.4 +4.0**
LIS eS **SKSac** **01 21 32.3 +3.5**
LIS AMS AMS 01 52 22.6
comp=E,192µm,23.3s
LIS Lisbon 99.51 338 eP **Pdif** **01 11 01.6 +10**
LIS Lisbon 99.51 338 ePP PP 01 15 06.3 +12
LIS Lisbon 99.51 338 eP **Pdif** **01 10 54.6 +2.9**
LIS e 01 14 58.4
LIS eS **SKSac** **01 21 32.3 +3.5**
PBEJ Beja 99.76 337 eP **Pdif** **01 10 54.3 +1.4**
PBEJ Beja 99.76 337 ePP PP 01 15 00.0 +3.6
PNCL Nicolau / Gran 99.88 338 eP **Pdif** **01 10 55.3 +1.8**
PNCL Nicolau / Gran 99.88 338 ePP PP 01 15 08.8 +12
PNCL eSKS **SKSac** **01 21 35.7 +5.0**
PNCL eSS **SS** **01 29 20.8 +4.1**
MESJ Messejana 100.04 337 eP **Pdif** **01 10 56.6 +2.4**
MESJ ePP **PP** **01 15 02.0 +3.5**
MESJ eS **SKSac** **01 21 34.9 +3.4**
MESJ AMS AMS 01 53 58.3
comp=E,164µm,25.2s
MESJ Messejana 100.04 337 eP **Pdif** **01 10 55.0 +0.8**
MESJ Messejana 100.04 337 eP **Pdif** **01 10 56.6 +2.4**
MESJ e 01 15 02.0
MESJ eS **SKSac** **01 21 34.9 +3.4**
PCVE Castro Verde 100.18 337 eP **Pdif** **01 10 57.9 +3.1**
PCVE Castro Verde 100.18 337 ePP PP 01 15 10.0 +10
PCVE eSKS **Sdif** **01 22 26.2 -2.5**
PCVE eSS **SS** **01 29 25.4 +4.5**
PTEO Sao Teotonio 100.47 338 eP **Pdif** **01 11 04.0 +7.9**
PTEO Sao Teotonio 100.47 338 ePP PP 01 15 09.2 +7.5
PBDV Barranco-do-Ve 100.50 337 eP **Pdif** **01 10 58.5 +2.2**
PBDV Barranco-do-Ve 100.50 337 ePP PP 01 15 14.6 +13
PBDV eSKS **Sdif** **01 22 28.4 -3.1**
PBDV eSS **SS** **01 29 30.0 +4.5**
MORF Marmelete 100.67 338 eP **Pdif** **01 10 59.9 +2.8**
MORF eS **SKSac** **01 21 37.9 +3.2**
MORF AMS AMS 01 54 25.4
comp=E,231µm,22.5s
MORF Marmelete 100.67 338 eP **Pdif** **01 11 02.1 +5.1**
MORF Marmelete 100.67 338 ePP PP 01 15 21.6 +18
MORF eSKS SKKSac 01 21 52.2 -17
MORF eSS **SS** **01 29 28.7 +1.0**
MORF Marmelete 100.67 338 eP **Pdif** **01 10 59.9 +2.8**
MORF eS **SKSac** **01 21 37.9 +3.2**
RER Riviere de l'E 100.89 252 PFAKE 01 11 10.0 +12
RER LR LR
comp=Z,62µm,21.0s
PTCN Pitcairn Islan 102.49 112 PFAKE 01 11 20.0 +15
PTCN LR LR
comp=Z,37µm,19.0s
H07S1 FLORES T-PHASE 102.78 356 eP **Pdif** **01 11 05.7 -0.7**
PGRA Graciosa 102.87 353 eP **Pdif** **01 11 07.1 +0.4**
comp=Z,141nm,1.5s
RTC Rabat Centre 103.14 335 PFAKE 01 11 20.0 +12
RTC LR LR
comp=Z,346µm,21.0s
ROSA Rosais 103.20 353 eP **Pdif** **01 11 08.6 +0.4**
comp=Z,111nm,1.3s
KMBO Kilima Mbogo 103.31 279 Pdiff **Pdif** **01 11 08.4 -1.0**
comp=Z,13nm,1.1s,baz=30,slow=5.2,SNR=13
KMBO PP **PP** **01 15 21.1 -3.7**
comp=Z,24nm,1.1s,baz=34,slow=6.7,SNR=4.4
KMBO Kilima Mbogo 103.31 279 eP **Pdif** **01 11 08.4 -1.0**
KMBO 01 15 21.2
KMBO pmax pmax
comp=Z,70nm,1.4s
KMBO MLR MLR
comp=Z,45µm,21.0s
KMBO Kilima Mbogo 103.31 279 P **Pdif** **01 11 09.3 0.0**
SNR=11
KMBO Kilima Mbogo 103.31 279 ePdif **Pdif** **01 11 08.4 -1.0**
comp=Z,70nm,1.4s
KMBO PP **PP** **01 15 21.1 -3.7**
KMBO LR LR
comp=Z,45µm,21.0s
MDT Midelt 103.42 333 PKKPbc PKKPbc 01 27 05.2 +3.0
comp=Z,2.8nm,0.9s,baz=180,slow=1.0,SNR=2.8
PSET Sete Cidades 103.82 351 eP **Pdif** **01 11 11.5 +0.5**
comp=Z,120nm,1.5s
CMLA Cha da Macela 103.85 351 eP **Pdif** **01 11 10.8 -0.4**
CMLA Cha da Macela 103.85 351 PFAKE 01 11 20.0 +8.8
CMLA LR LR
comp=Z,31µm,20.0s
PSMN Pico do Norte, 104.54 350 eP **Pdif** **01 11 14.6 +0.4**
comp=Z,172nm,1.8s
BBSR BB Station 105.23 24 PFAKE 01 15 40.0
BBSR LR LR
comp=Z,48µm,22.0s
OPO Ambohidratompo 105.91 259 Pdiff **Pdif** **01 11 20.4 -0.3**
comp=Z,11nm,1.1s,baz=100,slow=11,SNR=2.6
ABPO Ambohimpanom 106.13 258 PFAKE 01 15 40.0
ABPO LR LR
comp=Z,21µm,20.0s
PMPS Porto Santo 106.75 342 eP Pdif 01 11 45.6 +21
PMPS Porto Santo 106.75 342 ePP PP 01 16 01.2 +13
CASY Casey 107.03 193 PFAKE 01 15 50.0
CASY LR LR
comp=Z,6µm,22.0s
PMOZ Porto Moniz, M 107.18 343 eP Pdif 01 11 46.5 +20
PMOZ Porto Moniz, M 107.18 343 ePP PP 01 16 06.0 +14
PMOZ eSKS SKSdf 01 23 35.0 +49
PMOZ eSS SS 01 31 15.8 +19
PMOZ Porto Moniz, M 107.18 343 eLQ LQ 01 48 20.3
PMOZ eLR LR 01 54 30.6
comp=Z,49µm,20.0s
PMAR Madeira 107.21 343 ePP PP 01 16 13.7 +22
FUL Funchal 107.28 343 eP Pdif 01 11 53.3 +27
FUL Funchal 107.28 343 ePP PP 01 16 15.1 +23
TAM Tamanrasset 107.64 319 eP **Pdif** **01 11 31.0 +2.5**
TAM pmax pmax
comp=Z,16nm,1.4s
TAM MLR MLR
comp=Z,66µm,20.0s
TAM Tamanrasset 107.64 319 ePdif **Pdif** **01 11 31.0 +2.5**
comp=Z,16nm,1.4s
TAM LR LR
comp=Z,66µm,20.0s
MBAR Mbarara 108.02 284 PFAKE 01 15 50.0
MBAR LR LR
comp=Z,1µm,22.0s
PAF Port-aux-Franc 108.31 221 PFAKE 01 15 50.0
PAF LR LR
comp=Z,32µm,22.0s
GTBY Guantanamo Bay 111.96 39 PFAKE 01 16 00.0
GTBY LR LR
comp=Z,58µm,21.0s
MTDJ Mount Denham 112.14 42 PFAKE 01 16 00.0
MTDJ LR LR
comp=Z,50µm,19.0s
GRTK Grand Turk 112.49 35 PFAKE 01 16 00.0
GRTK LR LR
comp=Z,63µm,20.0s
SDDR Presa de Saban 114.61 36 PFAKE 01 16 00.0 +10
SDDR LR LR
comp=Z,58µm,21.0s
VNDA Vanda 115.87 176 PKP **PKPdf** **01 15 49.4 -0.6**
comp=Z,7.4nm,0.9s,baz=333,slow=4.8,SNR=7.9
VNDA PKKPbc **PKKPbc** **01 26 22.2 -1.0**
comp=Z,2.3nm,1.0s,baz=209,slow=2.9,SNR=1.8
SBA Scott Base 116.52 175 PFAKE 01 16 00.0 +8.7
SBA LR LR

comp=Z,22µm,20.0s
TORD Torodi Ar. Bea 117.64 317 PKP **PKPdf** 01 15 54.9 -0.5
comp=Z,5.7nm,0.5s,baz=29,slow=3.1,SNR=38
TORD PP **PP** 01 17 03.6 -3.6
comp=Z,38nm,1.1s,baz=42,slow=4.3,SNR=7.8
TORD PKKPbc **PKKPbc** 01 26 17.4 +1.6
comp=Z,9.4nm,0.8s,baz=214,slow=3.5,SNR=12
SJG San Juan 117.65 32 PFAKE 01 16 10.0 +15
SJG LR LR
comp=Z,31µm,20.0s
PAYG Puerto Ayora 118.41 66 PFAKE 01 16 10.0 +13
PAYG LR LR
comp=Z,25µm,20.0s
LSZ Lusaka 118.95 273 PKKPbc PKKPbc 01 26 11.9 +0.8
comp=Z,1.6nm,0.6s,baz=211,slow=19,SNR=4.4
LSZ Lusaka 118.95 273 *e*PKIKP **PKPdf** **01 15 57.9 0.0**
LSZ MLR MLR
comp=Z,66µm,20.0s
LSZ Lusaka 118.95 273 *e*PKPdf **PKPdf** **01 15 57.9 0.0**
LSZ PKKPbc **PKKPbc** **01 26 11.9 +0.8**
LSZ LR LR
comp=Z,66µm,20.0s
RPN Rapa Nui 119.23 103 PFAKE 01 16 10.0 +12
RPN LR LR
comp=Z,15µm,22.0s
KMZ Kasempa 119.75 276 *i* P **PP** **01 17 17.7 -5.1**
KMZ *i* P **PP** **01 17 19.0 -3.8**
KMZ *i* P **PP** **01 17 19.6 -3.2**
KMZ *i* 01 17 53.5
KMZ *i* 01 17 54.1
KMZ *i* 01 18 02.4
ANWB Willy Bob 119.77 28 PFAKE 01 16 10.0 +11
ANWB LR LR
comp=Z,52µm,22.0s
MOTC Monteria, Cord 120.91 46 *e*P **PKPdf** **01 15 59.6 -2.0**
ITZ Itezhi-Tezhi 120.93 274 *i* P PP 01 17 46.8 +16
MAW Mawson 121.11 206 PKP **PKPdf** **01 16 00.0 -0.3**
comp=Z,28nm,0.8s,baz=68,slow=2.5,SNR=21
MAW PKKPbc **PKKPbc** **01 26 02.8 -1.1**
comp=Z,6.6nm,0.9s,baz=302,slow=3.1,SNR=3.6
FDF Fort de France 122.69 28 *e*PKIKP **PKPdf** **01 16 05.5 +0.4**
FDF MLR MLR
comp=Z,50µm,22.0s
FDF Fort de France 122.69 28 *e*PKPdf **PKPdf** **01 16 05.5 +0.4**
FDF LR LR
comp=Z,50µm,22.0s
BRRC Barranca, Sant 123.38 46 *e*P **PKPdf** **01 16 12.1 +5.7**
SDV Santo Domingo 123.57 41 PKP **PKPdf** **01 16 07.2 +0.1**
comp=Z,51nm,0.9s,baz=317,slow=2.4,SNR=13
SDV Santo Domingo 123.57 41 *e*PKPdf **PKPdf** **01 16 07.1 +0.1**
SDV LR LR
comp=Z,36µm,22.0s
NORC Norcasia 123.96 48 *e*P **PKPdf** **01 16 06.4 -1.2**
RUSC La Rusia 124.72 46 *e*P **PKPdf** **01 16 09.8 +0.2**
BBGH Gun Hill 124.74 27 PFAKE 01 16 20.0 +11
BBGH LR LR
comp=Z,53µm,22.0s
ROSC El Rosal 124.86 48 PKP **PKPdf** **01 16 10.6 +0.8**
comp=Z,15nm,0.5s,baz=260,slow=14,SNR=8.0
ROSC El Rosal 124.86 48 *e*P **PKPdf** **01 16 09.2 -0.5**
GRGR Grenville 124.87 30 PFAKE 01 16 20.0 +11
GRGR LR LR
comp=Z,64µm,21.0s
PCRV Puerto La Cruz 125.37 34 PKP **PKPdf** **01 16 08.8 -1.5**
comp=Z,21nm,0.6s,baz=238,slow=2.6,SNR=8.0
CHIC Chingaza 125.38 47 *e*P **PKPdf** **01 16 14.3 +3.5**
PRAC Prado 125.43 49 *e*P **PKPdf** **01 16 08.7 -1.7**
CMBC Cumbal 125.77 54 *e*P **PKPdf** **01 16 12.6 +1.0**
VILC Villavicencio, 125.81 48 *e*P **PKPdf** **01 16 10.3 -0.9**
SACV Santiago Islan 125.84 344 *e*PKPdf **PKPdf** **01 16 13.8 +2.7**
SACV LR LR
comp=Z,18µm,20.0s
OTAV Otavalo 125.90 55 *e*P **PKPdf** **01 16 12.6 +0.8**
OTAV Otavalo 125.90 55 *e*PKPdf **PKPdf** **01 16 12.1 +0.2**
OTAV LR LR
comp=Z,23µm,22.0s
SJAC San Juan de Ar 126.34 49 *e*P **PKPdf** **01 16 09.2 -3.0**
DBIC Dimbokro 126.53 319 PKP **PKPdf** **01 16 12.1 -0.4**
comp=Z,21nm,0.6s,baz=14,slow=2.0,SNR=30
DBIC PP **PP** **01 18 05.8 -1.7**
comp=Z,87nm,1.0s,baz=3.2,slow=6.0,SNR=4.5
TIC Toumodi 126.64 319 *e*PKP1 **PKPdf** **01 16 13.2 +0.5**
KIC Kosan Boka 126.74 319 *e*PKP1 **PKPdf** **01 16 14.2 +1.3**
comp=Z,532nm,1.6s
LIC Lamto 127.00 319 *e*PKP1 **PKPdf** **01 16 14.6 +1.3**
comp=Z,194nm,1.5s
QSPA South Pole Qui 127.80 180 PFAKE 01 16 30.0 +17
QSPA LR LR
comp=Z,41µm,22.0s
BOSA Boshof 128.23 261 *i* S **PKPdf** **01 16 14.3 -1.1**
BOSA Boshof 128.23 261 PKhKP PKPpre 01 16 04.9
comp=Z,4.7nm,0.8s,baz=40,slow=2.1,SNR=4.9
BOSA PKP **PKPdf** **01 16 14.2 -1.1**
comp=Z,14nm,1.0s,baz=21,slow=1.8,SNR=8.1
GRM Grahamstown 129.31 255 *i* P PP 01 18 35.8 +9.0
TSUM Tsumeb 129.51 276 PP PP 01 18 27.7 -0.5
comp=Z,21nm,1.0s,baz=76,slow=4.2,SNR=3.6
TSUM Tsumeb 129.51 276 *e*PKPdf **PKPdf** **01 16 17.0 -1.1**
TSUM PP **PP** **01 18 27.7 -0.5**
TSUM LR LR
comp=Z,46µm,20.0s
SYO Syowa Base 129.79 207‖ *e*P **PKPdf** **01 16 11.8 -5.1**
SYO Syowa Base 129.79 207‖ *i*P **PKPdf** **01 16 15.2 -1.7**
ATAH Atahualpa 131.35 62 PKP **PKPdf** **01 16 20.1 -2.0**
comp=Z,12nm,0.9s,baz=120,slow=1.9,SNR=11
SUR Sutherland 133.31 259 PFAKE 01 16 40.0 +15
SUR LR LR
comp=Z,58nm,21.0s
NNA Nana 135.82 65 PKP **PKPdf** **01 16 29.9 -0.1**
comp=Z,23nm,0.8s,baz=328,slow=3.4,SNR=5.0
NNA Nana 135.82 65 *e*PKPdf **PKPdf** **01 16 30.7 +0.7**
NNA LR LR
comp=Z,15µm,21.0s
PTGA Pitinga 137.13 35 PKP **PKPdf** **01 16 32.4 -0.1**
comp=Z,17nm,0.9s,baz=14,slow=3.7,SNR=8.7
NVL N'lazarevskaya 138.80 202 *e*PKHKP PKPpre 01 16 23.8
NVL *e*SS SS 01 37 32.3 -6.9
NVL *e*SSS SSS 01 42 43.2
SNAA Sanae 142.16 197 PKP **PKPdf** **01 16 36.8 -3.1**
SAML Samuel 142.46 46 *e*PKPdf **PKPdf** **01 16 38.7 -3.4**
SAML LR LR
comp=Z,26µm,22.0s
ASCN Ascension 143.85 320 *e*PKPdf **PKPdf** **01 16 43.6 -0.9**
ASCN LR LR
comp=Z,56µm,22.0s
VNA1 Neumayer--Stat 144.11 196 PKP **PKPab** **01 16 40.9 +0.1**
LPAZ La Paz 144.88 61‖ *e*P **PKPab** **01 16 45.7 -0.4**
LPAZ La Paz 144.88 61 PKP **PKPab** **01 16 45.4 -0.7**
comp=Z,78nm,0.8s,baz=349,slow=4.5,SNR=110
SHEL Horse Pasture 144.98 300 *e*PKIKP **PKPdf** **01 16 47.0 +0.6**
SHEL MLR MLR
comp=Z,17µm,20.0s
SHEL Horse Pasture 144.98 300 *e*PKPbc **PKPdf** **01 16 47.0 +0.6**
SHEL LR LR
comp=Z,17µm,20.0s
RCBR Riachuelo 147.91 359 PKPbc **PKPbc** **01 16 54.6 +0.1**
comp=Z,135nm,0.9s,baz=315,slow=2.2,SNR=14
RCBR Riachuelo 147.91 359 *e*PKPdf **PKPbc** **01 16 53.5 -1.0**
RCBR LR LR
comp=Z,34µm,22.0s
LVC Limon Verde 148.41 70 PKPbc **PKPbc** **01 16 54.2 -1.7**
comp=Z,188nm,0.7s,baz=304,slow=3.8,SNR=25
LVC Limon Verde 148.41 70 *e*PKPdf **PKPbc** **01 16 54.3 -1.7**
LVC LR LR
comp=Z,21µm,20.0s
PMSA Palmer Station 148.77 158 *e*PKPbc **PKPbc** **01 16 55.2 +0.1**
PMSA LR LR
comp=Z,34µm,21.0s
SIV San Ignacio 149.28 51 PKP **PKPdf** **01 16 53.8 +0.1**
comp=Z,15nm,0.4s,baz=266,slow=5.8,SNR=18
SIV PKPbc **PKPbc** **01 16 57.7 -0.2**
comp=Z,15nm,0.4s,baz=270,slow=0.9,SNR=18
LCO Las Campanas 150.39 82 *e*PKPbc **PKPbc** **01 17 00.6 0.0**
LCO LR LR
comp=Z,33µm,20.0s
HJA Humahuaca 151.35 67 *e*P **PKPbc** **01 17 04.5 +1.3**
ROC1 El Roble 151.71 90 *e*P **PKPbc** **01 17 03.5 -0.1**
AZAP Zapla 152.21 68 *e*P **PKPbc** **01 17 04.7 -0.2**
VCA Vinchina 152.21 80 *e*P **PKPbc** **01 17 05.5 +0.8**
AGUA GUANDACOL 152.33 82 *e*P **PKPbc** **01 17 06.3 +1.4**
ASTB Santa Barbara 152.49 67 *e*P **PKPbc** **01 17 03.7 -1.7**
FSA Cafayete 152.60 73 *e*P **PKPbc** **01 17 03.5 -2.2**
RTLS Leoncito 152.65 87 *e*P **PKPbc** **01 17 06.8 +1.0**
AUSP Uspallata 152.73 88 *e*P **PKPbc** **01 17 02.5 -3.5**
CANA Caviahue 153.00 100 *e*P **PKPbc** **01 17 04.5 -1.7**

RTLL Cerro Villicun 153.11 85 *e*P **PKPbc** **01 17 04.3 -2.2**
SJA San Juan 153.12 86 *e*P **PKPbc** **01 17 10.9 +4.4**
RTCV Cerro Valdivia 153.27 86 *e*P **PKPbc** **01 17 03.9 -2.9**
ASAL Salagasta 153.30 88 *e*P **PKPdf** **01 16 59.7 +0.3**
AHML Horco Molle 153.44 73 *e*P **PKPdf** **01 17 01.9 +2.2**
AAGR Agrelo 153.48 89 *e*P **PKPdf** **01 17 03.1 +3.4**
PLCA Paso Flores 153.79 107 *e*P PKPpre 01 16 48.2
PLCA Paso Flores 153.79 107 PKP **PKPdf** **01 17 00.3 +0.5**
comp=Z,11nm,1.1s,baz=229,slow=4.9,SNR=6.4
PLCA PKPbc **PKPbc** **01 17 07.2 -0.6**
comp=Z,42nm,1.1s,baz=266,slow=3.9,SNR=12
CYA Choya 153.93 77 *e*P **PKPdf** **01 17 04.0 +3.7**
ACAN Cantantal 154.48 86 *e*P **PKPdf** **01 17 04.7 +3.7**
BDFB Brasilia 155.54 27 PKP **PKPdf** **01 17 03.1 +0.1**
comp=Z,4.5nm,0.9s,baz=258,slow=3.5
MRA San Martin 155.69 85 *e*P PKPpre 01 16 51.5
TCA Tanti 156.16 82 *e*P **PKPdf** **01 17 03.9 +0.5**
SUCO SUCO 156.68 87 *e*P **PKPdf** **01 17 07.2 +3.2**
CPUP Villa Florida 159.04 62 PKP **PKPdf** **01 17 06.7 -0.3**
comp=Z,17nm,1.0s,baz=341,slow=1.5,SNR=17
CPUP PKPab **PKPab** **01 17 43.0 -0.6**
comp=Z,17nm,0.8s,baz=349,slow=4.0,SNR=4.4
EFI East Falkland 159.74 139 PFAKE 01 17 20.0 +13
EFI LR LR
comp=Z,48µm,21.0s
TRQA Tornquist 160.10 98 *e*PKPdf **PKPdf** **01 17 07.8 -0.1**
TRQA LR LR
comp=Z,37µm,20.0s
TRIS Tristan da Cun 160.65 265 PFAKE 01 17 20.0 +12
TRIS LR LR
comp=Z,34µm,21.0s
LPA La Plata 162.64 86*de*PKIKP **PKPdf** **01 17 15.0 +4.4**
LPA PKIKS 01 20 45.0
LPA PP **PP** **01 21 45.0 +0.8**
LPA SKIKS 01 24 14.0
LPA PPP PPP 01 25 28.0
LPA PPP(2) 01 29 27.0
comp=Z,21µm,19.0s
SPB Sao Paulo 162.91 36 PFAKE 01 17 20.0 +8.8
SPB LR LR
comp=Z,42µm,20.0s
HOPE Hope Point 163.77 180 PFAKE 01 17 20.0 +9.0
HOPE LR LR
comp=Z,21µm,21.0s

*IDC **10** 01:03:45.0±0.9, 37.89N×143.47E, h0km, mb4.6/12, mb1 4.8/16, mb1mx4.6/46, mbtmp4.7/16, ML4.4/4, Error ellipse: s-maj=23.0km s-min=18.2km az=137.0*
*ISCJB **10** 01:03:48.3±0.5, 37.92N±0.04×143.34E±0.04, h33km, mb4.6/15, Error ellipse: s-maj=6.4km s-min=4.7km az=166.1*
*NEIC **10** 01:03:48.4±0.6, 37.55N×143.62E, h35km, mb4.8/3, Error ellipse: s-maj=12.2km s-min=8.7km az=122.0*
NEIC Recorded [1 JMA] in Miyagi.
*JMA **10** 01:03:49.0±0.3, 37.97N×143.27E, h39km, M5.0*
JMA Felt I J1.

ISC 10 01:03:49.5±4.0, 37.95N±0.06×143.30E±0.06, h28km±29km, n35, σ1§40/39, mb4.8/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
JIO	**Ouri**	**1.62**	**289**	P		Pn	01 04 15.7	-0.4
JIO				S		**Sn**	**01 04 35.6**	**-0.4**
OFUJ	**Ofunato**	**1.70**	**312**	P		Pn	01 04 16.8	-0.5
OFUJ				S		**Sn**	**01 04 37.5**	**-0.7**
JMK	**Ichinoseki**	**1.91**	**302**	S		**Sn**	**01 04 43.5**	**+0.1**
JMM	**Marumori**	**1.98**	**268**	P		**Pn**	**01 04 20.9**	**-0.3**
JMM				*e*S		**Sn**	**01 04 44.3**	**-0.8**
JFK	**Kawauchi**	**2.01**	**254**	P		Pn	01 04 20.7	-0.9
JFK				*e*S		**Sn**	**01 04 44.1**	**-1.7**
JOM	**Ohasama**	**2.18**	**315**	S		**Sn**	**01 04 49.8**	**-0.3**
JFT	**Otama**	**2.39**	**260**	P		**Pn**	**01 04 27.4**	**+0.7**
JFT				S		**Sn**	**01 04 55.5**	**+0.4**
JYK	**Kaneyama**	**2.50**	**294**	P		**Pn**	**01 04 29.2**	**+0.9**
JYK				*e*S		**Sn**	**01 04 58.8**	**+0.9**
JANG	**Nango**	**2.79**	**331**	*e*S		**Sn**	**01 05 03.3**	**-1.7**
MJAR	**Matsushiro Arr**	**4.30**	**252**	Pn		**Pn**	**01 04 54.5**	**+1.5**
	15nm,0.3s,baz=84,slow=15,SNR=11							
MJAR				Sn		**Sn**	**01 05 43.5**	**+1.3**
	11nm,0.3s,baz=90,slow=29,SNR=3.7							
MAJO	**Matsushiro**	**4.30**	**252**	*e*Pn		**Pn**	**01 04 53.9**	**+0.9**
MAJO				*e*Sn		**Sn**	**01 05 40.7**	**-1.5**
JHJ	**Hachijo jima 2**	**5.61**	**212**	Pn		**Pn**	**01 05 09.3**	**-1.7**
	156nm,0.3s,baz=342,slow=16,SNR=10							
ASAJ	**Asahikawa**	**6.18**	**355**	Pn		**Pn**	**01 05 19.3**	**+0.4**
	9.5nm,0.3s,baz=203,slow=19,SNR=7.9							
ASAJ				Sn		**Sn**	**01 06 25.9**	**-2.7**
	5.0nm,0.3s,baz=112,slow=19,SNR=2.6							
USRK	**Ussuriysk Ar.**	**10.57**	**310**	Pn		Pn	01 06 26.0	+7.0
	2.0nm,0.3s,baz=112,slow=12,SNR=3.8							
CBIJ	**Chichi jima**	**10.87**	**185**	Sn		Sn	01 08 12.4	-11
JCJ	**Chichijima**	**10.87**	**185**	Sn		Sn	01 08 12.4	-11
	baz=0.0,slow=20							
KSRS	**Korea Array**	**12.19**	**272**	Pn		**Pn**	**01 06 44.2**	**+3.0**
	0.6nm,0.3s,baz=90,slow=14,SNR=5.5							
KSAR	**Wonju Array Be**	**12.22**	**272**	Pn		**Pn**	**01 06 44.2**	**+2.5**
SONM	**Songino Array**	**28.54**	**302**	P		**P**	**01 09 45.0**	**+2.2**
	17nm,0.9s,baz=97,slow=7.7,SNR=2.8							
ZALV	**Zalesovo Beam**	**42.41**	**312**	P		**P**	**01 11 42.0**	**+0.6**
	12nm,0.7s,baz=99,slow=7.9,SNR=4.4							
ZALV				PcP		**PcP**	**01 13 34.6**	**+0.5**
	3.4nm,0.5s,baz=104,slow=3.0,SNR=3.8							
LSA	**Lhasa**	**43.62**	**275**	*e*P		**P**	**01 11 50.9**	**-1.1**
	31nm,0.7s							
MKAR	**Makanchi Array**	**44.91**	**302**	P		**P**	**01 12 02.8**	**+1.2**
	9.7nm,0.8s,baz=72,slow=9.3,SNR=2.4							
KURK	**Kurchatov**	**46.55**	**308**	*e*P		**P**	**01 12 17.9**	**+3.5**
RC01	**Rabbit Creek A**	**46.72**	**38**	*e*P		**P**	**01 12 15.3**	**-0.4**
MCK	**McKinley**	**47.04**	**34**	*e*P		**P**	**01 12 16.5**	**-1.6**
	6.4nm,0.7s							
ILAR	**Eielson Array**	**47.92**	**33**	P		**P**	**01 12 25.1**	**+0.1**
	7.2nm,1.0s,baz=262,slow=6.1,SNR=3.2							
WRA	**Warramunga Arr**	**58.20**	**190**	P		**P**	**01 13 40.4**	**-0.7**
	12nm,1.1s,baz=9.5,slow=7.0,SNR=4.6							
YKA	**Yellowknife Ar**	**62.26**	**31**	P		**P**	**01 14 08.8**	**+0.4**
	2.2nm,0.7s,baz=299,slow=6.0,SNR=2.8							
ARCES	**ARCESS Array B**	**63.66**	**340**	P		**P**	**01 14 16.9**	**-0.8**
	8.6nm,0.8s,baz=62,slow=6.3,SNR=4.4							
GEYT	**Alibeck**	**64.70**	**299**	P		**P**	**01 14 26.3**	**+1.2**
	18nm,1.2s,baz=32,slow=3.6,SNR=2.0							
FINES	**FINESS Array B**	**68.69**	**333**	P		**P**	**01 14 50.5**	**+0.4**
	6.4nm,0.6s,baz=56,slow=5.2,SNR=3.0							
SUMG	**Summit**	**69.76**	**1**	*e*P		**P**	**01 14 57.4**	**+0.4**
	4.3nm,0.6s							
AKASG	**Malin Array Be**	**74.48**	**323**	P		**P**	**01 15 24.0**	**-1.1**
	2.6nm,0.7s,baz=46,slow=6.3,SNR=2.4							
PDAR	**Pinedale Array**	**75.95**	**46**	P		**P**	**01 15 34.1**	**+0.1**
	1.8nm,0.6s,baz=305,slow=1.9,SNR=4.5							
BRTR	**Keskin Array B**	**79.36**	**312**	P		**P**	**01 15 52.7**	**-0.3**
	2.1nm,0.7s,baz=54,slow=6.6,SNR=2.0							

*IDC **10** 01:06:19.1±2.0, 37.86N×143.66E, h0km, mb4.6/4, mb1 4.5/8, mb1mx4.2/42, mbtmp4.5/8, ML4.5/3, Error ellipse: s-maj=45.4km s-min=25.0km az=73.0*
*ISCJB **10** 01:06:21.4±0.7, 38.04N±0.04×143.34E±0.05, h19km, mb4.7/7, Error ellipse: s-maj=6.9km s-min=5.6km az=137.8*
*NEIC **10** 01:06:23.7±0.9, 37.98N×143.57E, h35km, mb4.7/1, Error ellipse: s-maj=17.8km s-min=10.3km az=134.0*
*JMA **10** 01:06:23.9±0.2, 38.05N×143.25E, h38km, M4.6*

ISC 10 01:06:22.1±1.0, 38.00N±0.06×143.42E±0.07, h19km, n27, σ1§86/38, mb4.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
JIO	**Ouri**	**1.69**	**286**	P		**Pn**	**01 06 49.9**	**-0.7**
JIO				S		**Sn**	**01 07 09.0**	**-2.8**
OFUJ	**Ofunato**	**1.75**	**309**	P		**Pn**	**01 06 50.7**	**-0.7**
OFUJ				S		**Sn**	**01 07 10.3**	**-2.8**
JMK	**Ichinoseki**	**1.97**	**299**	P		**Pn**	**01 06 54.2**	**-0.3**
JMK				S		**Sn**	**01 07 16.6**	**-2.1**
JMM	**Marumori**	**2.08**	**267**	P		**Pn**	**01 06 55.4**	**-0.6**
JMM				S		**Sn**	**01 07 18.2**	**-3.2**
JFK	**Kawauchi**	**2.12**	**253**	P		**Pn**	**01 06 55.4**	**-1.1**
JFK				S		**Sn**	**01 07 18.7**	**-3.6**
JOU	**Okura**	**2.20**	**280**	P		**Pn**	**01 06 57.6**	**-0.1**
JOU				S		**Sn**	**01 07 22.9**	**-1.5**
JOM	**Ohasama**	**2.22**	**312**	P		**Pn**	**01 06 57.9**	**0.0**
JOM				S		**Sn**	**01 07 23.5**	**-1.3**
JFT	**Otama**	**2.49**	**260**	P		**Pn**	**01 07 02.0**	**+0.4**
JFT				S		**Sn**	**01 07 29.7**	**-1.8**
JYK	**Kaneyama**	**2.57**	**292**	P		**Pn**	**01 07 02.9**	**+0.2**
JRG	**Rokugo**	**2.59**	**303**	P		**Pn**	**01 07 03.5**	**+0.6**
JRG				*e*S		**Sn**	**01 07 33.1**	**-0.8**
JANG	**Nango**	**2.79**	**329**	S		**Sn**	**01 07 36.0**	**-3.0**
JAG	**Ashikaga**	**3.54**	**245**	P		**Pn**	**01 07 16.1**	**+0.1**
JAG				*e*S		**Sn**	**01 07 53.7**	**-3.6**
ERM	**Erimo**	**4.01**	**357**	*e*Pn		**Pn**	**01 07 21.8**	**-0.8**
MJAR	**Matsushiro Arr**	**4.41**	**252**	Pn		**Pn**	**01 07 28.5**	**+0.5**
	9.7nm,0.3s,baz=52,slow=9.7,SNR=5.0							
MJAR				Sn		**Sn**	**01 08 18.1**	**-0.6**
	16nm,0.3s,baz=69,slow=27,SNR=5.8							
MAJO	**Matsushiro**	**4.41**	**252**	*e*Pn		**Pn**	**01 07 29.1**	**+1.1**
ASAJ	**Asahikawa**	**6.14**	**354**	Pn		**Pn**	**01 07 52.0**	**+0.2**
	34nm,0.3s,baz=210,slow=11,SNR=25							
USRK	**Ussuriysk Ar.**	**10.62**	**309**	Pn		**Pn**	**01 08 53.7**	**+0.6**
	0.4nm,0.3s,baz=120,slow=12,SNR=3.1							
KSRS	**Korea Array**	**12.29**	**272**	Pn		**Pn**	**01 09 18.7**	**+2.7**
	0.4nm,0.3s,baz=85,slow=13,SNR=4.6							
KSAR	**Wonju Array Be**	**12.32**	**272**	Pn		**Pn**	**01 09 18.7**	**+2.3**
SONM	**Songino Array**	**28.60**	**302**	P		**P**	**01 12 17.6**	**+0.5**
	13nm,1.1s,baz=114,slow=9.0,SNR=3.6							
ZALV	**Zalesovo Beam**	**42.46**	**312**	P		**P**	**01 14 18.5**	**+3.0**
	6.8nm,0.6s,baz=82,slow=7.1,SNR=5.2							
MKAR	**Makanchi Array**	**44.97**	**302**	P		**P**	**01 14 39.1**	**+3.2**
	4.5nm,0.8s,baz=89,slow=8.8,SNR=3.8							
KURK	**Kurchatov**	**46.60**	**308**	*e*P		**P**	**01 14 49.1**	**+0.5**
SEW	**Seward**	**46.81**	**39**	*e*P		**P**	**01 14 49.3**	**-0.8**
	21nm,1.0s							
EKS2	**Erkin-Say**	**51.93**	**299**	*e*P		**P**	**01 15 32.3**	**+2.5**
	24nm,1.1s							
WRA	**Warramunga Arr**	**58.26**	**190**	P		**P**	**01 16 14.4**	**-1.0**
	4.1nm,0.9s,baz=6.8,slow=6.9,SNR=2.3							
FFC	**Flin Flon**	**72.02**	**34**	*e*P		**P**	**01 17 43.4**	**-1.0**
	6.6nm,0.7s							

MEX 10 01:11:20.1±0.5, 14.85N×92.68W, h78km±30km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
PCIG		**1.00**	**328**	*i* P		Pn	01 11 37.2	-1.8
PCIG				*i* S		Sn	01 11 51.8	-1.3

*NEIC **10** 01:13:39.0, 19.48N×65.33W, h6km, MD4.1(RSPR), After RSPR.*
NEIC Felt at Caguas.

RSPR 10 01:13:39.0, 19.48N×65.33W, h6km±2km, MD4.0/11, 12C-18D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
STVI	**Saint Thomas**	**1.18**	**162**‖	*e*P		Pg	01 13 58.6	-3.0
STVI	**Saint Thomas**	**1.18**	**162**‖	*e*P		Pg	01 13 58.6	-3.0
STVI				*e*S		Sg	01 14 14.4	-2.4
ABVI	**Anegada Island**	**1.20**	**128**‖	*e*P		Pg	01 13 59.0	-3.1
ABVI				*e*S		Sg	01 14 14.8	-2.9
ABV	**Anegada**	**1.20**	**128**‖	*e*P		Pg	01 13 59.0	-3.1
ABV	**Anegada**	**1.20**	**128**	*e*S		Sg	01 14 14.8	-3.0
CBYP	**Canovanas**	**1.30**	**203**‖	*e*P		Pn	01 14 00.2	-3.6
CBYP	**Canovanas**	**1.30**	**203**‖	*e*P		Pn	01 14 00.2	-3.6
CBYP				*e*S		Sb	01 14 16.8	-4.0
HUMP	**Col San Antoni**	**1.42**	**200**‖	*e*P		Pn	01 14 01.9	-3.4
HUMP	**Col San Antoni**	**1.42**	**200**‖	*e*P		Pn	01 14 01.9	-3.4
HUMP				*e*S		Sb	01 14 20.0	-4.2
SJG	**San Juan**	**1.56**	**210**‖	*e*P		Pn	01 14 03.9	-3.5
SJG	**San Juan**	**1.56**	**210**‖	*e*P		Pn	01 14 03.9	-3.5
SJG				*e*S		Sn	01 14 23.8	-4.1
AOPR	**Arecibo Observ**	**1.75**	**230**‖	*e*P		Pn	01 14 06.8	-3.2
AOPR	**Arecibo Observ**	**1.75**	**230**‖	*e*P		Pn	01 14 06.8	-3.2
AOPR				*e*S		Sn	01 14 28.6	-4.1
CDVI	**St. Croix**	**1.80**	**163**‖	*e*P		Pn	01 14 07.9	-2.7
CDVI	**St. Croix**	**1.80**	**163**‖	*e*P		Pn	01 14 07.9	-2.7
CDVI				*e*S		Sn	01 14 29.7	-3.9
CELP	**Cerrillos**	**1.83**	**220**‖	*e*P		Pn	01 14 08.2	-2.8
CELP				*e*S		Sn	01 14 30.5	-4.0
CELP	**Cerrillos**	**1.83**	**220**‖	*e*P		Pn	01 14 08.2	-2.8
OBIP	**Obispado Ponce**	**1.87**	**220**‖	*e*P		Pn	01 14 08.8	-2.7
OBIP				*e*S		Sn	01 14 31.9	-3.5
OBIP	**Obispado Ponce**	**1.87**	**220**‖	*e*P		Pn	01 14 08.8	-2.7
AGPR	**Aguadilla, PR**	**1.96**	**239**‖	*e*P		Pn	01 14 09.3	-3.5
AGPR	**Aguadilla, PR**	**1.96**	**239**‖	*e*P		Pn	01 14 09.3	-3.5
AGPR				*e*S		Sn	01 14 33.8	-3.9
GBPR	**Guanica, Bosqu**	**2.09**	**225**‖	*e*P		Pn	01 14 11.8	-2.8
GBPR	**Guanica, Bosqu**	**2.09**	**225**‖	*e*P		Pn	01 14 11.8	-2.8
LSP	**Las Mesas**	**2.10**	**232**‖	*e*P		Pn	01 14 12.3	-2.5
LSP	**Las Mesas**	**2.10**	**232**‖	*e*P		Pn	01 14 12.3	-2.5
CRPR	**Cabo Rojo, PR**	**2.23**	**229**‖	*e*P		Pn	01 14 14.0	-2.5
CRPR	**Cabo Rojo, PR**	**2.23**	**229**‖	*e*P		Pn	01 14 14.0	-2.5
CRPR				*e*S		Sn	01 14 40.9	-3.4
IDE	**Isla Desecheo**	**2.30**	**242**‖	*e*P		Pn	01 14 15.0	-2.5
IDE	**Isla Desecheo**	**2.30**	**242**‖	*e*P		Pn	01 14 15.0	-2.5
DR12	**Loma Pena Alta**	**3.89**	**261**‖	*e*P		Pn	01 14 36.5	-2.8
DR12	**Loma Pena Alta**	**3.89**	**261**‖	*e*P		Pn	01 14 36.5	-2.8
SDDR	**Presa de Saban**	**5.65**	**266**	*e*Pn		Pn	01 15 02.1	-1.5
	30nm,0.4s							
SDDR				*e*Pg		Pg	01 15 23.8	-3.5
SDDR				*e*Sn		Sn	01 16 05.9	-3.0
GRTK	**Grand Turk**	**5.80**	**291**	*e*Pn		Pn	01 15 03.8	-1.8
GTBY	**Guantanamo Bay**	**9.22**	**274**	*e*Pn		Pn	01 15 50.6	-2.0

IDC 10 01:16:17.3±2.4, 37.80N×143.63E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.4/59, mbtmp3.6/4, ML3.5/1, Error ellipse: s-maj=47.9km s-min=36.8km az=64.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.51**	**255**	Pn		Pn	01 17 26.7	-0.2
	2.4nm,0.3s,baz=78,slow=8.2,SNR=7.2							
MJAR				Sn		Sn	01 18 20.6	+0.6
	0.8nm,0.3s,baz=39,slow=31,SNR=2.8							
MKAR	**Makanchi Array

42nm,0.3s,baz=87,slow=22,SNR=20
JHJ Sn **Sn 01 19 55.6 -6.2**
24nm,0.3s,baz=99,slow=19,SNR=3.3
ASAJ Asahikawa 6.24 354 *e*Pn **Pn 01 19 06.5 +0.9**
ASAJ Sn **Sn 01 20 11.8 -4.5**
USRK Ussuriysk Ar. 10.72 310 Pn **Pn 01 20 08.2 +1.3**
0.7nm,0.3s,baz=113,slow=14,SNR=8.6
JCJ Chichijima 10.83 186 Sn Sn 01 21 56.3 -13
baz=0.0,slow=20,SNR=1.6
JNU Nakatsue 11.33 249 *e*Pn **Pn 01 20 16.1 +0.8**
KSRS Korea Array 12.35 273 Pn **Pn 01 20 29.9 +0.7**
0.2nm,0.3s,baz=88,slow=14,SNR=9.5
KSAR Wonju Array Be 12.38 273 Pn **Pn 01 20 29.9 +0.3**
KLR Kul'dur 14.14 327 Pn **Pn 01 20 52.0 -1.7**
0.2nm,0.3s,baz=145,slow=17,SNR=3.8
PETK Petropavlovsk- 18.12 28 P **Pn 01 21 43.2 -1.8**
0.1nm,0.3s,baz=210,slow=11,SNR=2.6
MA2 Magadan 22.19 10 P **P 01 22 28.7 -0.6**
1.9nm,0.5s,baz=174,slow=19,SNR=2.8
SEY Seymchan 25.64 9 P **P 01 23 03.8 +1.2**
0.7nm,0.4s,baz=222,slow=14,SNR=2.3
H11N2 WAKE ISLAND Hy 27.23 125 T T 01 51 54.0
baz=309
H11N1 WAKE ISLAND Hy 27.24 125 T T 01 51 54.6
baz=309
H11N3 WAKE ISLAND Hy 27.25 125 T T 01 51 55.1
baz=309
H11S1 WAKE ISLAND Hy 28.00 127 T T 01 52 55.4
baz=306
H11S3 WAKE ISLAND Hy 28.00 127 T T 01 52 55.4
baz=306
H11S2 WAKE ISLAND Hy 28.02 127 T T 01 52 54.2
baz=306
SONM Songino Array 28.70 302 P **P 01 23 31.6 +1.2**
2.6nm,0.5s,baz=102,slow=8.9,SNR=8.7
ZALV Zalesovo Beam 42.56 312 P **P 01 25 29.3 +0.5**
3.8nm,0.7s,baz=82,slow=7.5,SNR=9.4
ZALV PcP **PcP 01 27 21.4 +0.4**
0.6nm,0.5s,baz=84,slow=2.2,SNR=2.0
MKAR Makanchi Array 45.06 302 P **P 01 25 49.6 +0.5**
3.0nm,0.7s,baz=84,slow=9.4,SNR=15
KURK Kurchatov 46.70 308 *e*P **P 01 26 02.5 +0.6**
KURBB Kurchatov Arra 46.78 308 P **P 01 26 03.0 +0.5**
8.6nm,0.6s,baz=82,slow=8.3,SNR=22
ILAR Eielson Array 47.87 33 P **P 01 26 10.5 -0.3**
0.6nm,0.9s,baz=266,slow=6.7,SNR=3.4
RAMN Ramite 48.59 274 *e*P **P 01 26 18.1 +0.9**
12nm,0.6s
GUN Gumba 48.71 276 *e*P **P 01 26 19.5 +1.3**
13nm,0.3s
KKN Kakani 49.24 276 *e*P **P 01 26 23.3 +1.2**
14nm,0.5s
GKN Gorkha 49.65 277 *e*P **P 01 26 26.2 +1.0**
10nm,0.3s
KOLN Koldanda 50.57 277 *e*P **P 01 26 33.6 +1.4**
4.8nm,0.3s
TKM2 Tokmak 2 50.67 298 *e*P **P 01 26 33.7 +0.9**
3.9nm,0.5s
PYUN Piuthan 50.90 278 *e*P **P 01 26 35.9 +1.2**
24nm,0.6s
BRVK Borovoye 51.27 312 *e*P **P 01 26 37.0 +0.2**
6.3nm,0.5s
EKS2 Erkin-Say 52.02 299 *e*P **P 01 26 43.1 +0.2**
6.0nm,0.8s
ARU Arti 56.80 319 P **P 01 27 18.2 +1.0**
1.0nm,0.4s,baz=90,slow=14,SNR=3.1
ARU Arti 56.80 319 *e*P **P 01 27 17.4 +0.2**
5.4nm,0.6s
WRAB Tennant Creek 58.17 190 *e*P **P 01 27 27.4 +0.2**
7.1nm,0.9s
WRA Warramunga Arr 58.18 190 P **P 01 27 27.8 +0.5**
3.8nm,0.6s,baz=9.4,slow=7.2,SNR=22
ABKAR Akbulak array 58.64 310 *e*P **P 01 27 30.8 +0.5**
AKTO Aktyubinsk 59.32 312 P **P 01 27 35.5 +0.5**
1.1nm,0.6s,baz=135,slow=4.3,SNR=3.5
ASAR Alice Springs 61.90 190 P **P 01 27 53.4 +0.6**
1.0nm,0.7s,baz=15,slow=7.2,SNR=10
ARCES ARCESS Array B 63.76 340 P **P 01 28 05.9 +1.3**
2.0nm,0.8s,baz=46,slow=7.8,SNR=3.3
GEYT Alibeck 64.86 299 P **P 01 28 13.2 +0.8**
1.0nm,0.7s,baz=55,slow=12,SNR=3.2
FINES FINESS Array B 68.81 333 P **P 01 28 38.1 +1.0**
1.1nm,0.7s,baz=33,slow=11,SNR=4.0
FFC Flin Flon 72.07 34 *e*P **P 01 28 56.4 -0.8**
3.5nm,0.8s
HFS Hagfors 73.97 336 P **P 01 29 09.4 +1.2**
1.7nm,0.8s,baz=39,slow=9.3,SNR=3.8
NB2 NORSAR Subarra 74.01 338 P P 01 29 14.6 +6.0
comp=Z,0.6nm,0.7s,baz=41,slow=5.9
NOA NORSAR Array B 74.01 338 P **P 01 29 09.0 +0.4**
comp=Z,0.2nm,0.5s,baz=25,slow=3.1,SNR=2.5
AKASG Malin Array Be 74.61 323 P **P 01 29 11.9 -0.3**
comp=Z,0.3nm,0.4s,baz=45,slow=6.4,SNR=2.3
PDAR Pinedale Array 75.87 47 P **P 01 29 19.9 +0.1**
comp=Z,2.8nm,1.0s,baz=335,slow=6.6,SNR=5.2

PGC 10 01:24:58.7±0.6, 52.68N×133.19W, h20km, ML3.4/11, 111km Wsw of Sandspit, Bc Haida Gwaii Region, Queen Charlotte Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DIB	**Dawson Inlet,**	**0.68**	**39**	P	Pb	01 25 11.8	-0.1
DIB				S	Sb	01 25 20.4	-0.4
VIB	**Van Inlet**	**0.69**	**34**	P	Pb	01 25 12.1	-0.1
VIB				S	Sb	01 25 20.9	-0.5
MOBC	**Moresby Island**	**0.87**	**57**	P	Pb	01 25 14.8	-0.4
MOBC				S	Sb	01 25 26.0	-0.5
BNB	**Barry Inlet**	**0.88**	**96**	P	Pb	01 25 14.3	-1.1
NDB	**Naden**	**1.29**	**7**	P	Pn	01 25 20.9	-0.7
NDB				S	Sn	01 25 36.8	-1.5
BBB	**Bella Bella**	**3.15**	**97**	Pn	Pn	01 25 46.6	-0.5
BBB				Sn	Sn	01 26 21.6	-2.3
HOLB	**Holberg**	**3.75**	**121**	Pn	Pn	01 25 54.1	-1.3
HOLB				Sn	Sn	01 26 35.6	-3.4
PHC	**Port Hardy**	**4.09**	**117**	Pn	Pn	01 25 58.5	-1.5
PHC				Sn	Sn	01 26 43.1	-4.2
BPBC	**Brooks Peninsu**	**4.23**	**125**	Pn	Pn	01 26 00.9	-1.1
BPBC				Sn	Sn	01 26 49.2	-1.6
MAYB	**Maynard**	**4.39**	**119**	Pn	Pn	01 26 02.9	-1.5
WOSB	**Woss**	**4.85**	**119**	Pn	Pn	01 26 09.3	-1.3
NCRB	**Newcastle Ridg**	**5.00**	**114**	Pn	Pn	01 26 12.2	-0.5
UBRB	**Upper Baezaeko**	**5.53**	**84**	Sn	Sn	01 27 23.1	+0.1
DLBC	**Dease Lake**	**6.04**	**16**	Sn	Sn	01 27 36.7	+1.2
PLBC	**Pleasant Camp**	**7.02**	**347**	Pn	Pn	01 26 41.3	+1.0

JMA 10 01:25:00.9±0.2, 37.99N×143.21E, h31km, M3.3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.54**	**288**	P	Pn	01 25 27.0	+0.8
OFUJ	**Ofunato**	**1.63**	**312**	P	Pn	01 25 28.2	+0.8
OFUJ				*e*S	Sn	01 25 48.2	+0.9
JMK	**Ichinoseki**	**1.83**	**302**	P	Pn	01 25 31.3	+1.1
JMM	**Marumori**	**1.92**	**267**	P	Pn	01 25 32.3	+0.9
JMM				*e*S	Sn	01 25 55.6	+1.2
JFK	**Kawauchi**	**1.96**	**252**	P	Pn	01 25 32.4	+0.4
JFK				*e*S	Sn	01 25 56.7	+1.2
JOU	**Okura**	**2.04**	**281**	P	Pn	01 25 34.0	+0.9
JOM	**Ohasama**	**2.11**	**315**	P	Pn	01 25 35.2	+1.2
JOM				*e*S	Sn	01 26 01.6	+2.4
JFT	**Otama**	**2.33**	**259**	*e*S	Sn	01 26 06.7	+2.1
JYK	**Kaneyama**	**2.42**	**293**	P	Pn	01 25 40.1	+1.7

*IDC **10** 01:25:30.5±2.5, 37.83N×143.65E, h0km, mb3.6/3, mb1 3.9/6, mb1mx3.5/61, mbtmp3.9/6, ML3.3/3, Error ellipse: s-maj=53.4km s-min=27.7km az=86.0*
*ISCJB **10** 01:25:31.8±1.2, 37.97N±0.06×143.28E±0.09, h19km, mb3.5/3, Error ellipse: s-maj=10.5km s-min=8.4km az=151.4*
*JMA **10** 01:25:34.1±0.2, 38.06N×143.19E, h24km, M3.7*
ISC 10 01:25:34.2±1.2, 37.98N±0.08×143.27E±0.09, h19km, n12, σ1°87/13, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.59**	**288**	P	**Pn**	**01 26 00.1**	**-1.1**
JIO				*e*S	**Sn**	**01 26 19.0**	**-2.2**
OFUJ	**Ofunato**	**1.67**	**312**	*e*S	**Sn**	**01 26 20.9**	**-2.4**
JMK	**Ichinoseki**	**1.88**	**302**	*e*S	**Sn**	**01 26 27.1**	**-1.4**
JMM	**Marumori**	**1.96**	**268**	*e*S	**Sn**	**01 26 29.3**	**-1.2**
JOM	**Ohasama**	**2.15**	**315**	*e*S	**Sn**	**01 26 33.6**	**-1.5**
JFT	**Otama**	**2.37**	**260**	*e*S	**Sn**	**01 26 39.5**	**-1.1**
MJAR	**Matsushiro Arr**	**4.28**	**252**	Pn	**Pn**	**01 26 39.2**	**+0.9**
	2.0nm,0.3s,baz=73,slow=12,SNR=8.4						
JHJ	**Hachijo jima 2**	**5.62**	**211**	Pn	**Pn**	**01 26 55.2**	**-1.5**
	8.2nm,0.3s,baz=60,slow=20,SNR=2.4						
ASAJ	**Asahikawa**	**6.15**	**355**	Pn	**Pn**	**01 27 03.8**	**-0.2**
	0.4nm,0.3s,baz=239,slow=18,SNR=2.9						
SONM	**Songino Array**	**28.51**	**302**	P	**P**	**01 31 30.6**	**+2.3**
	0.6nm,0.7s,baz=96,slow=10,SNR=3.3						
MKAR	**Makanchi Array**	**44.88**	**302**	P	**P**	**01 33 49.9**	**+2.6**
	0.5nm,0.7s,baz=76,slow=6.1,SNR=3.0						
WRA	**Warramunga Arr**	**58.22**	**190**	P	**P**	**01 35 25.9**	**-1.3**
	0.6nm,0.7s,baz=9.5,slow=7.2,SNR=3.1						

*IDC **10** 01:26:30.5±1.0, 37.99N×143.56E, h0km, mb3.9/10, mb1 4.0/14, mb1mx3.8/62, mbtmp3.9/14, ML3.6/2, Error ellipse: s-maj=23.8km s-min=19.1km az=122.0*
*ISCJB **10** 01:26:32.3±0.6, 38.08N±0.05×143.36E±0.05, h19km, mb3.9/12, Error ellipse: s-maj=7.4km s-min=5.1km az=156.7*
*NEIC **10** 01:26:34.0±2.6, 38.07N×143.53E, h21km±17km, mb4.2/1, Error ellipse: s-maj=15.0km s-min=7.6km az=126.0*
*JMA **10** 01:26:36.8±0.1, 38.15N×143.18E, h31km, M4.0*
ISC 10 01:26:34.2±0.8, 38.07N±0.06×143.28E±0.08, h19km, n29, σ2°02/35, mb4.0/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.56**	**285**	P	**Pb**	**01 27 01.9**	**-0.6**
JIO				*e*S	**Sn**	**01 27 20.2**	**-0.5**
OFUJ	**Ofunato**	**1.61**	**309**	*e*S	**Sn**	**01 27 21.0**	**-0.9**
JMK	**Ichinoseki**	**1.84**	**299**	P	**Pb**	**01 27 05.8**	**-1.4**
JMK				*e*S	**Sn**	**01 27 27.8**	**+0.4**
JMM	**Marumori**	**1.97**	**265**	*e*S	**Sn**	**01 27 30.9**	**+0.1**
JFK	**Kawauchi**	**2.03**	**250**	*e*S	**Sn**	**01 27 32.2**	**-0.1**
JOU	**Okura**	**2.08**	**279**	*e*S	**Sn**	**01 27 33.4**	**0.0**
JOM	**Ohasama**	**2.09**	**313**	*e*S	**Sn**	**01 27 33.9**	**+0.2**
JFT	**Otama**	**2.39**	**258**	*e*S	**Sn**	**01 27 42.3**	**+1.1**
ERM	**Erimo**	**3.94**	**359**	*e*Pn	**Pn**	**01 27 33.1**	**-0.5**
ERM				*e*Sn	**Sn**	**01 28 16.1**	**-3.1**
MJAR	**Matsushiro Arr**	**4.32**	**251**	Pn	**Pn**	**01 27 41.9**	**+3.0**
	1.3nm,0.3s,baz=80,slow=14,SNR=3.6						
MAJO	**Matsushiro**	**4.32**	**251**	*e*Pn	**Pn**	**01 27 40.8**	**+1.9**
MAT	**Matsushiro**	**4.32**	**251**	P	**Pn**	**01 27 40.8**	**+1.9**
MAT				S	**Sn**	**01 28 29.9**	**+1.2**
JHJ	**Hachijo jima 2**	**5.70**	**211**	Pn	**Pn**	**01 27 56.0**	**-1.8**
	10nm,0.3s,baz=73,slow=20,SNR=2.7						
JHJ				Sn	**Sn**	**01 28 56.2**	**-6.6**
	10nm,0.3s,baz=72,slow=20,SNR=2.2						
ASAJ	**Asahikawa**	**6.06**	**355**	Pn	**Pn**	**01 28 02.4**	**-0.4**
	baz=175,slow=10						
ASAJ				Sn	**Sn**	**01 29 06.2**	**-5.3**
	1.9nm,0.3s,baz=90,slow=20,SNR=2.2						
USRK	**Ussuriysk Ar.**	**10.48**	**309**	Pn	**Pn**	**01 29 07.1**	**+3.7**
	0.1nm,0.3s,baz=102,slow=15,SNR=2.6						
SEY	**Seymchan**	**25.50**	**10**	P	**P**	**01 31 59.9**	**-1.2**
	2.8nm,0.7s,baz=169,slow=1.3,SNR=5.7						
SONM	**Songino Array**	**28.46**	**302**	P	**P**	**01 32 29.7**	**+1.7**
	0.5nm,0.5s,baz=98,slow=7.2,SNR=3.1						
ZALV	**Zalesovo Beam**	**42.32**	**312**	P	**P**	**01 34 26.9**	**+0.4**
	0.4nm,0.3s,baz=81,slow=8.9,SNR=2.5						
MKAR	**Makanchi Array**	**44.83**	**302**	P	**P**	**01 34 47.6**	**+0.7**
	0.4nm,0.7s,baz=86,slow=7.4,SNR=2.4						
KURK	**Kurchatov**	**46.47**	**308**	*e*P	**P**	**01 35 00.3**	**+0.5**
ILAR	**Eielson Array**	**47.82**	**33**	P	**P**	**01 35 09.5**	**-0.7**
	1.5nm,0.8s,baz=265,slow=6.4,SNR=13						
TKM2	**Tokmak 2**	**50.44**	**298**	*e*P	**P**	**01 35 31.8**	**+1.0**
	1.6nm,0.6s						
WRA	**Warramunga Arr**	**58.31**	**190**	P	**P**	**01 36 26.6**	**-1.3**
	2.3nm,0.8s,baz=11,slow=7.2,SNR=6.3						
ABKAR	**Akbulak array**	**58.40**	**310**	*e*P	**P**	**01 36 28.5**	**+0.2**
	23nm,1.3s						
FINES	**FINESS Array B**	**68.58**	**333**	P	**P**	**01 37 35.5**	**+0.2**
	1.7nm,0.6s,baz=45,slow=8.4,SNR=8.6						
HFS	**Hagfors**	**73.74**	**336**	P	**P**	**01 38 06.9**	**+0.3**
	0.7nm,0.5s,baz=57,slow=5.5,SNR=11						
NB2	**NORSAR Subarra**	**73.79**	**338**	P	**P**	**01 38 07.0**	**0.0**
	comp=Z,0.6nm,0.6s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**73.79**	**338**	P	**P**	**01 38 06.7**	**-0.3**
	comp=Z,1.0nm,0.7s,baz=38,slow=5.8,SNR=4.3						
PDAR	**Pinedale Array**	**75.88**	**47**	P	**P**	**01 38 19.2**	**-0.5**
	comp=Z,0.5nm,0.7s,baz=306,slow=7.7,SNR=2.3						

*CSEM **10** 01:26:37.8±0.3, 41.38N×20.98E, h2km, ML2.1, Error ellipse: s-maj=6.8km s-min=4.5km az=7.0*
ATH 10 01:26:37.9, 41.37N×20.97E, h20km, ML2.1/2, 2C, Error ellipse: s-maj=3.5km s-min=1.5km az=209.0, Albania

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OHR	**Ohrid**	**0.28**	**206**	*i*Pg	Pb	01 26 43.9	-0.4
OHR				*i* Sg	Sb	01 26 48.8	+0.1
OHR	**Ohrid**	**0.28**	**206**	*i*Pg	Pb	01 26 43.8	-0.5
OHR				*i* Sg	Sg	01 26 48.7	0.0
FNA	**Florina**	**0.66**	**152**	P	Pb	01 26 50.4	-0.3
FNA				S	Sg	01 27 00.8	+1.0
FNA	**Florina**	**0.66**	**152**	P	Pb	01 26 50.4	-0.3
FNA				S	Sg	01 27 00.8	+1.0
FNA				AML	AML	01 27 03.0	
	comp=E,457μm,0.2s						
FNA				AML	AML	01 27 03.2	
	comp=N,514μm,0.4s						
TIR	**Tirane**	**0.83**	**269**	P	Pg	01 26 54.1	0.0
TIR				S	Sb	01 27 04.7	+0.4
TIR	**Tirane**	**0.83**	**269**	P	Pg	01 26 54.1	0.0
TIR				S	Sg	01 27 04.7	-0.4
NEST	**Nestorio**	**0.95**	**176**	P	Pb	01 26 55.6	-0.2
NEST				S	Sn	01 27 10.4	+1.1
NEST	**Nestorio**	**0.95**	**176**	P	Pb	01 26 55.6	-0.2
NEST				S	Sn	01 27 10.4	+1.1
NEST				AML	AML	01 27 15.8	
	comp=N,125μm,0.3s						
NEST				AML	AML	01 27 16.1	
	comp=E,175μm,0.5s						
GRG	**Griva**	**1.16**	**110**	P	Pg	01 26 59.9	-0.4
GRG	**Griva**	**1.16**	**110**	P	Pg	01 26 59.9	-0.5
PENT	**Pentalofos**	**1.18**	**174**	P	Pg	01 27 00.8	+0.1
PENT	**Pentalofos**	**1.18**	**174**	P	Pg	01 27 00.8	+0.1
KZN	**Kozani**	**1.22**	**150**	P	Pb	01 27 00.8	+0.4
KPRO	**Kipourio**	**1.44**	**168**	P	Pb	01 27 04.7	+0.6
KPRO	**Kipourio**	**1.44**	**168**	P	Pb	01 27 04.7	+0.6
KNT	**Kendrikon**	**1.47**	**97**	P	Pg	01 27 05.8	-0.4
KNT	**Kendrikon**	**1.47**	**97**	P	Pg	01 27 05.8	-0.5

*IDC **10** 01:33:35.9±1.4, 37.72N×143.67E, h0km, mb3.4/3, mb1 3.6/6, mb1mx3.4/55, mbtmp3.5/6, ML3.0/3, Error ellipse: s-maj=33.9km s-min=25.3km az=115.0*
*ISCJB **10** 01:33:37.3±1.1, 38.03N±0.07×143.26E±0.10, h19km, mb3.5/3, Error ellipse: s-maj=12.7km s-min=8.5km az=135.5*
*JMA **10** 01:33:38.0±0.2, 38.13N×143.26E, h23km, M3.5*
ISC 10 01:33:39.2±1.2, 37.96N±0.07×143.2E±0.1, h19km, n12, σ2°49/15, mb3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.56**	**289**	P	**Pn**	**01 34 04.8**	**-1.1**
JIO				*e*S	**Sn**	**01 34 23.2**	**-2.5**
OFUJ	**Ofunato**	**1.66**	**313**	P	**Pn**	**01 34 05.0**	**-2.3**
OFUJ				*e*S	**Sn**	**01 34 25.2**	**-2.9**
JMK	**Ichinoseki**	**1.87**	**303**	*e*S	**Sn**	**01 34 31.4**	**-1.7**
JOM	**Ohasama**	**2.14**	**315**	*e*S	**Sn**	**01 34 37.8**	**-2.2**
JYK	**Kaneyama**	**2.45**	**294**	P	**Pn**	**01 34 17.8**	**-0.4**
JYS	**Shirataka**	**2.51**	**277**	*e*S	**Sn**	**01 34 49.8**	**+0.7**
MJAR	**Matsushiro Arr**	**4.25**	**252**	Pn	**Pn**	**01 34 44.8**	**+1.8**
	0.8nm,0.3s,baz=68,slow=9.8,SNR=5.9						
JHJ	**Hachijo jima 2**	**5.59**	**211**	Pn	**Pn**	**01 35 01.6**	**+0.3**
	5.2nm,0.3s,baz=53,slow=20,SNR=3.2						
JHJ				Sn	**Sn**	**01 36 01.9**	**-3.0**
	4.7nm,0.3s,baz=47,slow=19,SNR=2.4						
USRK	**Ussuriysk Ar.**	**10.53**	**310**	Pn	**Pn**	**01 36 13.4**	**+4.4**
	0.2nm,0.3s,baz=117,slow=15,SNR=3.8						
MKAR	**Makanchi Array**	**44.86**	**302**	P	**P**	**01 41 55.3**	**+3.1**
	0.3nm,0.7s,baz=72,slow=9.3,SNR=2.5						
ILAR	**Eielson Array**	**47.94**	**33**	P	**P**	**01 42 15.9**	**-0.1**
	0.3nm,0.8s,baz=251,slow=5.6,SNR=3.4						
WRA	**Warramunga Arr**	**58.20**	**190**	P	**P**	**01 43 30.2**	**-1.9**
	0.9nm,1.0s,baz=7.0,slow=8.0,SNR=3.1						

*IDC **10** 01:40:16.1±7.7, 32.07S×178.99W, h98km±62km, mb3.5/2, mb1 3.8/3, mb1mx3.5/33, mbtmp4.0/3, ML3.6/1, Error ellipse: s-maj=55.2km s-min=34.6km az=41.0*
ISC 10 01:40:16.1±1.6, 32.1S±0.1×179.0W±0.3, h96km, n7, σ0°76/8, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.96**	**206**	P	**Pn**	**01 41 56.1**	**+0.7**
	1.2nm,0.3s,baz=333,slow=14,SNR=9.4						
URZ				S	**Sn**	**01 43 12.1**	**-0.9**
	3.3nm,0.3s,baz=41,slow=11,SNR=5.2						
ASAR	**Alice Springs**	**42.18**	**269**	P	**P**	**01 47 59.9**	**+0.3**
	0.4nm,0.3s,baz=107,slow=7.4,SNR=9.3						
WRA	**Warramunga Arr**	**43.32**	**274**	P	**P**	**01 48 08.9**	**+0.1**
	1.5nm,0.6s,baz=112,slow=7.9,SNR=16						
FINES	**FINESS Array B**	**146.37**	**338**	PKPbc	**PKPdf**	**01 59 44.0**	**+0.3**
	1.1nm,0.5s,baz=50,slow=3.0,SNR=17						
AKASG	**Malin Array Be**	**152.04**	**320**	PKPbc	**PKPbc**	**01 59 59.4**	**-0.3**
	0.4nm,0.3s,baz=61,slow=1.6,SNR=3.6						
BRTR	**Keskin Array B**	**152.56**	**295**	PKPbc	**PKPbc**	**02 00 00.4**	**-1.1**
	0.3nm,0.5s,baz=149,slow=4.8,SNR=3.3						
TORD	**Torodi Ar. Bea**	**161.18**	**182**	PKPab	**PKPab**	**02 00 49.9**	**+0.3**
	0.3nm,0.8s,baz=182,slow=3.5,SNR=3.2						

*IDC **10** 01:45:41.8±5.9, 37.72N×143.67E, h0km, mb3.6/2, mb1 3.6/5, mb1mx3.4/46, mbtmp3.7/5, ML3.5/2, Error ellipse: s-maj=110.6km s-min=31.4km az=108.0*
*ISCJB **10** 01:45:45.4±1.1, 37.93N±0.05×143.15E±0.08, h19km, mb3.5/2, Error ellipse: s-maj=10.0km s-min=5.7km az=24.2*
*JMA **10** 01:45:45.2±0.2, 37.94N×143.29E, h43km, M3.5*
ISC 10 01:45:42.7±1.7, 37.91N±0.05×143.36E±0.09, h19km, n18, σ2°49/29, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.68**	**290**	P	**Pb**	**01 46 12.1**	**-0.8**
JIO				S	**Sb**	**01 46 31.7**	**-1.9**
OFUJ	**Ofunato**	**1.77**	**312**	P	**Pb**	**01 46 13.1**	**-1.4**
OFUJ				*e*S	**Sb**	**01 46 33.9**	**-2.4**
JMK	**Ichinoseki**	**1.98**	**302**	P	**Pb**	**01 46 16.4**	**-1.6**
JMM	**Marumori**	**2.03**	**270**	P	**Pb**	**01 46 17.1**	**-1.8**
JMM				S	**Sn**	**01 46 39.9**	**-0.8**
JFK	**Kawauchi**	**2.05**	**255**	P	**Pn**	**01 46 16.8**	**+0.7**
JFK				*e*S	**Sn**	**01 46 40.6**	**-0.5**
JOU	**Okura**	**2.17**	**283**	P	**Pb**	**01 46 19.8**	**-1.6**
JOM	**Ohasama**	**2.25**	**315**	P	**Pb**	**01 46 20.4**	**-2.3**
JOM				S	**Sb**	**01 46 46.8**	**-3.3**
JFT	**Otama**	**2.43**	**262**	P	**Pb**	**01 46 23.4**	**-2.3**
JFT				*e*S	**Sn**	**01 46 50.8**	**+0.3**
JRG	**Rokugo**	**2.60**	**306**	P	**Pb**	**01 46 25.9**	**-2.8**
JTM	**Tenmabayashi**	**3.38**	**329**	*e*S	**Sn**	**01 47 13.6**	**-0.3**
JAG	**Ashikaga**	**3.45**	**246**	P	**Pn**	**01 46 36.8**	**+1.4**
JAG				S	**Sn**	**01 47 15.7**	**-0.1**
JRY	**Ryogami san**	**4.04**	**243**	P	**Pn**	**01 46 45.2**	**+1.7**
JRY				S	**Sn**	**01 47 28.5**	**-1.8**
MJAR	**Matsushiro Arr**	**4.33**	**253**	Pn	**Pn**	**01 46 50.4**	**+2.9**
	0.6nm,0.3s,baz=68,slow=13,SNR=4.0						
MJAR				Sn	**Sn**	**01 47 41.0**	**+3.5**
	1.1nm,0.3s,baz=314,slow=8.8,SNR=5.9						
MAT	**Matsushiro**	**4.33**	**253**	P	**Pn**	**01 46 51.4**	**+3.9**
MAT				S	**Sn**	**01 47 37.2**	**-0.3**
JHJ	**Hachijo jima 2**	**5.60**	**212**	Pn	**Pn**	**01 47 05.2**	**+0.3**
	18nm,0.3s,baz=72,slow=20,SNR=13						
JHJ				Sn	**Sn**	**01 48 03.1**	**-5.6**
	8.8nm,0.3s,baz=36,slow=17,SNR=3.3						
ASAJ	**Asahikawa**	**6.23**	**355**	Pn	**Pn**	**01 47 16.7**	**+3.1**
	baz=177,slow=17						
ASAJ				Sn	**Sn**	**01 48 21.8**	**-2.4**
	baz=180,slow=20						
ZALV	**Zalesovo Beam**	**42.48**	**312**	P	**P**	**01 53 40.7**	**+4.4**
	0.4nm,0.3s,baz=91,slow=6.3,SNR=2.8						
MKAR	**Makanchi Array**	**44.97**	**302**	P	P	01 54 02.0	+5.4
	0.7nm,0.8s,baz=72,slow=9.1,SNR=3.8						

IDC 10 01:46:34.0±1.6, 37.57N×144.58E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/44, mbtmp3.6/4, Error ellipse: s-maj=42.3km s-min=35.1km az=91.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZALV	**Zalesovo Beam**	**43.42**	**312**	P	P	01 54 37.5	-0.7
	0.6nm,0.6s,baz=100,slow=7.5,SNR=3.9						
MKAR	**Makanchi Array**	**45.97**	**302**	P	P	01 54 59.2	+0.4
	0.9nm,0.8s,baz=94,slow=7.8,SNR=5.1						
ILAR	**Eielson Array**	**47.68**	**33**	P	P	01 55 11.8	-0.1
	0.4nm,0.8s,baz=258,slow=7.3,SNR=4.7						
WRA	**Warramunga Arr**	**58.01**	**191**	P	P	01 56 28.5	-0.1
	0.8nm,0.8s,baz=7.6,slow=7.0,SNR=3.0						

*IDC **10** 01:51:03.6±0.9, 37.98N×143.71E, h0km, mb3.7/11, mb1 3.8/15, mb1mx3.6/51, mbtmp3.7/15, ML3.6/3, Error ellipse: s-maj=25.6km s-min=16.6km az=95.0*
*ISCJB **10** 01:51:05.1±0.6, 38.04N±0.05×143.53E±0.06, h19km, mb3.6/11, Error ellipse: s-maj=7.8km s-min=7.0km az=153.8*
*JMA **10** 01:51:06.8±0.4, 38.16N×143.32E, h8km, M4.0*
ISC 10 01:51:07.4±0.9, 38.09N±0.07×143.47E±0.09, h19km, n31, σ1°26/28, mb3.6/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.71**	**283**	P	**Pn**	**01 51 35.1**	**-1.0**
JIO				*e*S	**Sn**	**01 51 56.2**	**-1.3**
**OFU

comp=Z,0.4nm,0.7s,baz=39,slow=5.7,SNR=2.2
AKASG Malin Array Be 74.45 323 P **P** **02 02 44.4 +0.3**
comp=Z,0.2nm,0.3s,baz=46,slow=6.3,SNR=2.3

*IDC **10** 01:55:31.6±1.5, 38.°04N×143.°80E, h0km, mb3.8/6, mb1 3.9/11, mb1mx3.6/48, mbtmpg3.8/11, ML3.6/4, Error ellipse: s-maj=31.5km s-min=22.6km az=93.0*
*ISCJB **10** 01:55:34.5±0.7, 38.°05N±0.°05×143.°35E±0.°06, h19km, mb3.9/9, Error ellipse: s-maj=7.5km s-min=5.5km az=137.5*
*NEIC **10** 01:55:35.2±4.4, 38.°04N×143.°64E, h24km±29km, mb4.2/3, Error ellipse: s-maj=25.9km s-min=12.2km az=120.0*
*JMA **10** 01:55:37.9±0.2, 38.°08N×143.°21E, h38km, M3.9*
ISC 10 01:55:34.3±0.9, 38.°02N±0.°06×143.°52E±0.°08, h19km, n31, σ2°27/38, mb4.0/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.76**	**285**	P	**Pn**		**01 56 03.4**	**-0.4**
JIO				S	**Sn**		**01 56 21.6**	**-4.1**
OFUJ	**Ofunato**	**1.80**	**307**	P	**Pn**		**01 56 04.2**	**0.0**
OFUJ				eS	**Sn**		**01 56 23.2**	**-3.3**
JMK	**Ichinoseki**	**2.03**	**298**	P	**Pn**		**01 56 07.7**	**+0.3**
JMM	**Marumori**	**2.16**	**267**	P	**Pn**		**01 56 09.0**	**-0.2**
JMM				S	**Sn**		**01 56 31.4**	**-4.1**
JFK	**Kawauchi**	**2.20**	**254**	P	**Pn**		**01 56 09.5**	**-0.3**
JFK				eS	**Sn**		**01 56 32.3**	**-4.1**
JOM	**Ohasama**	**2.27**	**311**	P	**Pn**		**01 56 11.1**	**+0.4**
JOM				S	**Sn**		**01 56 36.3**	**-1.8**
JOU	**Okura**	**2.28**	**280**	P	**Pn**		**01 56 11.2**	**+0.3**
JOU				eS	**Sn**		**01 56 35.3**	**-3.1**
JFT	**Otama**	**2.57**	**260**	S	**Sn**		**01 56 43.1**	**-2.6**
JYK	**Kaneyama**	**2.64**	**291**	P	**Pn**		**01 56 16.7**	**+0.9**
JAG	**Ashikaga**	**3.61**	**245**	P	**Pn**		**01 56 29.4**	**+0.2**
ERM	**Erimo**	**4.00**	**356**	eP	**Pn**		**01 56 34.8**	**+0.3**
MJAR	**Matsushiro Arr**	**4.48**	**252**	P	**Pn**		**01 56 42.7**	**+1.5**
	1.8nm,0.3s,baz=121,slow=9.1,SNR=7.3							
MJAR				S	**Sn**		**01 57 32.7**	**-0.2**
	2.7nm,0.3s,baz=38,slow=14,SNR=4.6							
MAJO	**Matsushiro**	**4.49**	**252**	eP	**Pn**		**01 56 42.7**	**+1.5**
MAT	**Matsushiro**	**4.49**	**252**	P	**Pn**		**01 56 43.4**	**+2.2**
MAT				S	**Sn**		**01 57 33.6**	**+0.7**
JHJ	**Hachijo jima 2**	**5.76**	**213**	Pn	**Pn**		**01 56 58.9**	**+0.2**
	16nm,0.3s,baz=327,slow=22,SNR=6.8							
JHJ				Sn	**Sn**		**01 57 57.8**	**-6.4**
	3.6nm,0.3s,baz=73,slow=19,SNR=2.9							
ASAJ	**Asahikawa**	**6.13**	**354**	Pn	**Pn**		**01 57 05.6**	**+1.8**
	1.5nm,0.3s,baz=214,slow=18,SNR=7.6							
ASAJ				Sn	**Sn**		**01 58 09.4**	**-4.0**
	2.1nm,0.3s,baz=189,slow=19,SNR=7.4							
USRK	**Ussuriysk Ar.**	**10.66**	**309**	Pn	**Pn**		**01 58 08.3**	**+2.4**
	0.3nm,0.3s,baz=115,slow=13,SNR=4.4							
KLR	**Kul'dur**	**14.06**	**327**	Pn	**Pn**		**01 58 51.9**	**-0.4**
	0.2nm,0.3s,baz=132,slow=14,SNR=3.7							
H11N2	**WAKE ISLAND Hy**	**27.28**	**125**	T	T		02 30 11.2	
	baz=320							
H11N1	**WAKE ISLAND Hy**	**27.29**	**125**	T	T		02 30 12.4	
	baz=320							
H11N3	**WAKE ISLAND Hy**	**27.30**	**125**	T	T		02 30 10.7	
	baz=320							
SONM	**Songino Array**	**28.65**	**302**	P	**P**		**02 01 32.3**	**+2.5**
	1.5nm,0.7s,baz=96,slow=9.7,SNR=6.8							
ZALV	**Zalesovo Beam**	**42.50**	**312**	P	**P**		**02 03 29.8**	**+1.7**
	1.5nm,0.5s,baz=89,slow=7.5,SNR=5.4							
MKAR	**Makanchi Array**	**45.02**	**302**	P	**P**		**02 03 50.0**	**+1.4**
	0.9nm,0.7s,baz=87,slow=10,SNR=7.7							
KURK	**Kurchatov**	**46.65**	**308**	eP	**P**		**02 04 02.0**	**+0.8**
KURBB	**Kurchatov Arra**	**46.72**	**308**	P	**P**		**02 04 03.4**	**+1.6**
	2.6nm,0.5s,baz=82,slow=8.5,SNR=11							
ILAR	**Eielson Array**	**47.76**	**33**	P	**P**		**02 04 08.4**	**-1.4**
	0.2nm,0.7s,baz=258,slow=4.5,SNR=3.0							
BRVK	**Borovoye**	**51.21**	**312**	eP	**P**		**02 04 34.2**	**-2.0**
	2.2nm,0.5s							
WRA	**Warramunga Arr**	**58.29**	**190**	P	**P**		**02 05 28.8**	**+1.0**
	0.5nm,0.6s,baz=6.4,slow=7.0,SNR=3.7							
SUMG	**Summit**	**69.69**	**1**	eP	**P**		**02 06 43.1**	**+0.4**
	0.9nm,0.6s							
PSZ	**Piszkesteto**	**80.81**	**325**	eP	**P**		**02 07 46.8**	**+0.1**
	2.1nm,0.8s							

IDC 10 01:57:38.2±3.3, 6.°53S×148.°05E, h0km, mb3.0/1, mb1 3.7/3, mb1mx3.3/34, mbtmpg3.5/3, ML3.3/1, Error ellipse: s-maj=101.8km s-min=33.0km az=103.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.99**	**197**	Pn	Pn		01 58 28.6	+1.7
	5.5nm,0.3s,baz=1.2,slow=9.4,SNR=14							
PMG				Sn	Sn		01 59 06.3	+2.8
	3.2nm,0.3s,baz=342,slow=16,SNR=2.8							
WRA	**Warramunga Arr**	**18.84**	**224**	P	P		02 02 00.1	+0.1
	0.1nm,0.3s,baz=51,slow=3.4							
ASAR	**Alice Springs**	**21.80**	**217**	P	P		02 02 30.4	-1.7
	0.9nm,0.6s,baz=51,slow=9.2,SNR=12							
TORD	**Torodi Ar. Bea**	**146.23**	**284**	PKPbc	PKPdf		02 17 21.2	+0.5
	0.2nm,0.5s,baz=63,slow=3.2,SNR=9.5							

JMA 10 01:58:25.7±0.2, 37.°97N×143.°17E, h20km±5km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.51**	**289**	P	Pn		01 58 52.1	+0.5
JIO				eS	Sb		01 59 11.7	-0.1
OFUJ	**Ofunato**	**1.62**	**314**	P	Pn		01 58 53.7	+0.6
OFUJ				eS	Sn		01 59 13.5	+0.2
JMM	**Marumori**	**1.88**	**268**	P	Pn		01 58 57.5	+0.8
JMM				eS	Sn		01 59 20.6	+0.7
JFK	**Kawauchi**	**1.92**	**252**	P	Pn		01 58 58.0	+0.7
JFK				eS	Sn		01 59 21.3	+0.5
JOU	**Okura**	**2.01**	**282**	P	Pn		01 59 00.1	+1.5
JOU				eS	Sb		01 59 25.7	-0.6
JOM	**Ohasama**	**2.10**	**316**	eS	Sn		01 59 26.0	+0.7
JFT	**Otama**	**2.29**	**260**	P	Pb		01 59 04.4	-1.9
JFT				eS	Sb		01 59 32.7	-1.5
JYK	**Kaneyama**	**2.40**	**294**	P	Pn		01 59 05.1	+1.2
JAG	**Ashikaga**	**3.34**	**244**	P	Pn		01 59 17.3	+0.5
JAG				eS	Sn		01 59 57.0	+1.0

*IDC **10** 02:00:09.4±1.2, 37.°95N×143.°58E, h0km, mb3.6/7, mb1 3.7/12, mb1mx3.5/45, mbtmpg3.6/12, ML3.7/3, Error ellipse: s-maj=24.9km s-min=18.9km az=102.0*
*ISCJB **10** 02:00:11.1±0.6, 37.°94N±0.°03×143.°35E±0.°05, h19km, mb3.6/7, Error ellipse: s-maj=6.1km s-min=4.8km az=7.5*
*JMA **10** 02:00:13.1±0.1, 38.°02N×143.°34E, h42km, M3.8*
ISC 10 02:00:12.7±0.9, 37.°98N±0.°05×143.°35E±0.°08, h19km, n28, σ1°66/42, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.65**	**287**	P	**Pn**		**02 00 40.2**	**-0.4**
JIO				S	**Sn**		**02 01 00.0**	**-1.3**
OFUJ	**Ofunato**	**1.72**	**310**	P	**Pn**		**02 00 40.9**	**-0.7**
OFUJ				eS	**Sn**		**02 01 01.1**	**-1.9**
JMK	**Ichinoseki**	**1.94**	**301**	P	**Pn**		**02 00 44.2**	**-0.4**
JMK				eS	**Sn**		**02 01 07.5**	**-0.9**
JMM	**Marumori**	**2.03**	**268**	P	**Pn**		**02 00 45.6**	**-0.2**
JMM				eS	**Sn**		**02 01 08.9**	**-1.7**
JFK	**Kawauchi**	**2.06**	**254**	P	**Pn**		**02 00 45.7**	**-0.6**
JOM	**Ohasama**	**2.20**	**313**	P	**Pn**		**02 00 48.0**	**-0.2**
JOM				S	**Sn**		**02 01 14.0**	**-0.8**
JFT	**Otama**	**2.44**	**260**	P	**Pn**		**02 00 52.2**	**+0.8**
JFT				S	**Sn**		**02 01 20.6**	**-0.1**
JYK	**Kaneyama**	**2.53**	**293**	P	**Pn**		**02 00 53.1**	**+0.4**
JYK				eS	**Sn**		**02 01 22.1**	**-1.0**
JANG	**Nango**	**2.79**	**330**	P	**Pn**		**02 00 56.9**	**+0.6**
JAW	**Awa shima**	**3.27**	**280**	P	**Pn**		**02 01 03.7**	**+0.8**
JAG	**Ashikaga**	**3.48**	**245**	P	**Pn**		**02 01 06.1**	**+0.3**
JAG				S	**Sn**		**02 01 45.5**	**-0.9**
BSO1	**Boso 1**	**3.83**	**211**	P	**Pn**		**02 01 09.6**	**-0.5**
BSO1				eS	**Sn**		**02 01 53.8**	**-0.6**
JOT	**Ohata**	**3.84**	**333**	P	**Pn**		**02 01 12.5**	**+1.8**
JRY	**Ryogami san**	**4.07**	**243**	P	**Pn**		**02 01 14.6**	**+0.7**
JRY				eS	**Sn**		**02 01 58.7**	**-2.3**
MJAR	**Matsushiro Arr**	**4.35**	**252**	Pn	**Pn**		**02 01 19.6**	**+1.9**
	2.0nm,0.3s,baz=68,slow=10,SNR=9.5							
MJAR				Sn	**Sn**		**02 02 11.4**	**+3.5**
	1.3nm,0.3s,baz=85,slow=14,SNR=4.1							
MAT	**Matsushiro**	**4.35**	**252**	P	**Pn**		**02 01 19.4**	**+1.7**
MAT				eS	**Sn**		**02 02 07.6**	**-0.3**
JHJ	**Hachijo jima 2**	**5.65**	**212**	Pn	**Pn**		**02 01 35.2**	**-0.5**
	21nm,0.3s,baz=71,slow=22,SNR=5.6							
JHJ				Sn	**Sn**		**02 02 34.2**	**-5.8**
	7.6nm,0.3s,baz=76,slow=23,SNR=3.9							
ASAJ	**Asahikawa**	**6.16**	**355**	Pn	**Pn**		**02 01 42.7**	**+0.1**
	1.2nm,0.3s,baz=213,slow=19,SNR=6.3							
ASAJ				Sn	**Sn**		**02 02 47.8**	**-4.7**
	0.3nm,0.3s,baz=114,slow=20,SNR=3.8							
USRK	**Ussuriysk Ar.**	**10.59**	**310**	Pn	**Pn**		**02 02 43.8**	**+0.5**
	0.2nm,0.3s,baz=128,slow=44,SNR=4.3							
JCJ	**Chichijima**	**10.90**	**186**	Pn	**Pn**		**02 02 46.6**	**-1.0**
KSRS	**Korea Array**	**12.23**	**272**	Pn	**Pn**		**02 03 06.8**	**+1.0**
	baz=274,slow=39,SNR=2.8							
SONM	**Songino Array**	**28.57**	**302**	P	**P**		**02 06 08.8**	**+1.4**
	0.7nm,0.8s,baz=104,slow=11,SNR=3.2							
ZALV	**Zalesovo Beam**	**42.43**	**312**	P	**P**		**02 08 06.9**	**+1.0**
	0.7nm,0.5s,baz=72,slow=9.3,SNR=3.0							
MKAR	**Makanchi Array**	**44.93**	**302**	P	**P**		**02 08 27.0**	**+0.8**
	0.4nm,0.5s,baz=89,slow=8.2,SNR=3.9							
KURBB	**Kurchatov Arra**	**46.64**	**308**	P	**P**		**02 08 40.4**	**+0.8**
	1.4nm,0.4s,baz=82,slow=8.4,SNR=13							
ILAR	**Eielson Array**	**47.87**	**33**	P	**P**		**02 08 47.6**	**-1.4**
	0.1nm,0.6s,baz=58,slow=3.5,SNR=2.2							
WRA	**Warramunga Arr**	**58.23**	**190**	P	**P**		**02 10 05.5**	**-0.2**
	0.5nm,0.8s,baz=8.4,slow=7.3,SNR=5.2							
FINES	**FINESS Array B**	**68.69**	**333**	P	**P**		**02 11 15.3**	**+0.8**
	0.6nm,0.7s,baz=40,slow=11,SNR=3.4							

*IDC **10** 02:09:33.3±2.2, 37.°99S×177.°50E, h69km±15km, mb3.2/2, mb1 3.4/2, mb1mx3.1/24, mbtmpg3.4/2, Error ellipse: s-maj=53.9km s-min=35.3km az=21.0*
*ISCJB **10** 02:09:35.6±0.5, 38.°01S±0.°03×177.°15E±0.°04, h79km±4km, mb3.4/2, Error ellipse: s-maj=5.8km s-min=4.9km az=17.1*
*NEIC **10** 02:09:36.4, 37.°99S×177.°15E, h72km, ML4.2(WEL), After WEL.*
*WEL **10** 02:09:36.4±0.1, 37.°98S×177.°14E, h71km±1km, ML4.2/47, Error ellipse: s-maj=0.9km s-min=0.8km az=0.0*
ISC 10 02:09:36.2±0.8, 38.°02S±0.°04×177.°14E±0.°03, h76km±5km, n148, σ1§21/147, 24C-7D, North Island

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
WHRZ	**Whale Island**	**0.21**	**323**	⇑P*	**Pn**		**02 09 47.1**	**-0.5**
URZ	**Urewera**	**0.24**	**185**	P	**Pn**		**02 09 47.0**	**-0.6**
	844nm,0.3s,baz=1.0,slow=1.2,SNR=5671							
URZ				S	**Sn**		**02 09 55.8**	**-0.2**
	489nm,0.3s,baz=30,slow=20,SNR=52							
URZ	**Urewera**	**0.24**	**185**	⇑P*	**Pn**		**02 09 47.2**	**-0.5**
URZ	**Urewera**	**0.24**	**185**	⇑P*	**Pn**		**02 09 47.2**	**-0.5**
URZ				S*	**Sn**		**02 09 55.6**	**-0.4**
URZ				AML	AML		02 09 59.8	
EDRZ	**Edgecumbe**	**0.32**	**255**	P*	**Pn**		**02 09 48.0**	**-0.2**
EDRZ	**Edgecumbe**	**0.32**	**255**	⇑P*	**Pn**		**02 09 48.0**	**-0.2**
MARZ	**Manawahe**	**0.36**	**276**	P*	**Pn**		**02 09 48.1**	**-0.3**
MARZ	**Manawahe**	**0.36**	**276**	⇑P*	**Pn**		**02 09 48.1**	**-0.3**
RUGZ	**Raukumara Rang**	**0.43**	**82**	⇑P*	**Pn**		**02 09 48.0**	**-1.1**
MWZ	**Matawai**	**0.44**	**135**	⇑P*	**Pn**		**02 09 48.9**	**-0.1**
MWZ	**Matawai**	**0.44**	**135**	⇑P*	**Pn**		**02 09 48.9**	**-0.1**
MWZ				S*	**Sn**		**02 09 58.8**	**+0.3**
MWZ				AML	AML		02 09 59.2	
MWZ				AML	AML		02 09 59.3	
MWZ				AML	AML		02 10 01.8	
OPRZ	**Ohinepanea**	**0.49**	**291**	⇑P*	**Pn**		**02 09 48.9**	**-0.5**
OPRZ				S*	**Sn**		**02 09 58.5**	**-0.7**
OPRZ	**Ohinepanea**	**0.49**	**291**	⇑P*	**Pn**		**02 09 48.9**	**-0.5**
OPRZ				S*	**Sn**		**02 09 58.5**	**-0.7**
WIZ	**White Island**	**0.50**	**5**	P*	**Pn**		**02 09 48.4**	**-1.1**
WIZ	**White Island**	**0.50**	**5**	⇑P*	**Pn**		**02 09 48.4**	**-1.1**
RAGZ	**Rawiri**	**0.52**	**155**	P*	**Pn**		**02 09 50.0**	**+0.2**
RAGZ				S*	**Sn**		**02 10 01.1**	**+1.2**
RAGZ	**Rawiri**	**0.52**	**155**	⇑P*	**Pn**		**02 09 50.0**	**+0.2**
RAGZ				S*	**Sn**		**02 10 01.1**	**+1.2**
RAGZ				AML	AML		02 10 05.5	
MUGZ	**Murupara**	**0.54**	**212**	⇑P*	**Pn**		**02 09 49.7**	**-0.1**
MUGZ				S*	**Sn**		**02 09 59.7**	**-0.2**
HAZ	**Te Kaha**	**0.58**	**63**	⇑P*	**Pn**		**02 09 49.4**	**-0.8**
HAZ				AML	AML		02 09 59.8	
HAZ				AML	AML		02 09 59.8	
HAZ				AML	AML		02 09 59.8	
HAZ				AML	AML		02 09 59.9	
RRRZ	**Republican Roa**	**0.58**	**237**	P*	**Pn**		**02 09 50.4**	**+0.1**
RRRZ	**Republican Roa**	**0.58**	**237**	⇑P*	**Pn**		**02 09 50.4**	**+0.1**
OMRZ	**Omania**	**0.61**	**262**	P*	**Pn**		**02 09 50.6**	**+0.1**
OMRZ	**Omania**	**0.61**	**262**	⇑P*	**Pn**		**02 09 50.6**	**+0.1**
HLRZ	**Highlands Stat**	**0.66**	**250**	P*	**Pn**		**02 09 51.3**	**+0.2**
TWGZ	**Tauwhareparae**	**0.69**	**103**	Pn	**Pn**		**02 09 51.8**	**+0.4**
TWGZ	**Tauwhareparae**	**0.69**	**103**	⇓PN	**Pn**		**02 09 51.8**	**+0.4**
TWGZ				AML	AML		02 10 08.8	
TWGZ				AML	AML		02 10 13.7	
TKGZ	**Te Karaka**	**0.70**	**127**	Pn	**Pn**		**02 09 51.8**	**+0.4**
TKGZ	**Te Karaka**	**0.70**	**127**	PN	**Pn**		**02 09 51.8**	**+0.4**
TKGZ				AML	AML		02 10 09.2	
TKGZ				AML	AML		02 10 09.3	
KARZ	**Kaharoa**	**0.70**	**270**	P*	**Pn**		**02 09 51.5**	**-0.1**
KARZ	**Kaharoa**	**0.70**	**270**	⇑P*	**Pn**		**02 09 51.5**	**-0.1**
PRRZ	**Plateau Road**	**0.75**	**231**	P*	**Pn**		**02 09 52.3**	**+0.2**
PRRZ	**Plateau Road**	**0.75**	**231**	P*	**Pn**		**02 09 52.3**	**+0.2**
TGRZ	**Tauranga**	**0.75**	**293**	P*	**Pn**		**02 09 51.7**	**-0.4**
TGRZ	**Tauranga**	**0.75**	**293**	⇑P*	**Pn**		**02 09 51.7**	**-0.4**
PKGZ	**Pakihiroa**	**0.76**	**80**	⇓PN	**Pn**		**02 09 51.9**	**-0.2**
SNGZ	**Shannon Statio**	**0.77**	**168**	Pn	**Pn**		**02 09 53.0**	**+0.6**
SNGZ	**Shannon Statio**	**0.77**	**168**	PN	**Pn**		**02 09 52.9**	**+0.6**
SNGZ				AML	AML		02 10 10.4	
SNGZ				AML	AML		02 10 14.6	
ALRZ	**Allen Road**	**0.82**	**229**	P*	**Pn**		**02 09 53.2**	**+0.3**
ALRZ	**Allen Road**	**0.82**	**229**	P*	**Pn**		**02 09 53.2**	**+0.3**
RIGZ	**Rimuhau**	**0.84**	**144**	⇑PN	**Pn**		**02 09 53.8**	**+0.7**
RIGZ				AML	AML		02 10 12.0	
RIGZ				AML	AML		02 10 13.6	
PUZ	**Puketiti**	**0.89**	**93**	Pn	**Pn**		**02 09 53.3**	**-0.4**
PUZ	**Puketiti**	**0.89**	**93**	⇓PN	**Pn**		**02 09 53.3**	**-0.4**
PUZ				AML	AML		02 10 12.3	
PUZ				AML	AML		02 10 12.6	
WPRZ	**Whakapapatarin**	**0.91**	**237**	P*	**Pn**		**02 09 54.3**	**+0.4**
WPRZ	**Whakapapatarin**	**0.91**	**237**	P*	**Pn**		**02 09 54.3**	**+0.4**
KMRZ	**Kaimai**	**0.96**	**280**	P*	**Pn**		**02 09 54.4**	**-0.2**
CNGZ	**Carnagh Statio**	**0.96**	**119**	Pn	**Pn**		**02 09 54.6**	**+0.2**
CNGZ	**Carnagh Statio**	**0.96**	**119**	PN	**Pn**		**02 09 54.6**	**+0.2**
CNGZ				AML	AML		02 10 28.5	
CNGZ				AML	AML		02 10 31.0	
MRHZ	**Matea Rd**	**0.98**	**215**	P*	**Pn**		**02 09 55.0**	**+0.1**
MRHZ				AML	AML		02 10 10.2	
MRHZ				AML	AML		02 10 10.5	
WMGZ	**Waiomatatini S**	**1.03**	**79**	Pn	**Pn**		**02 09 55.2**	**-0.1**
WMGZ	**Waiomatatini S**	**1.03**	**79**	PN	**Pn**		**02 09 55.2**	**-0.1**
WMGZ				AML	AML		02 10 16.4	
WMGZ				AML	AML		02 10 18.0	
MXZ	**Matakaoa Point**	**1.04**	**64**	P*	**Pn**		**02 09 55.7**	**+0.3**
MXZ	**Matakaoa Point**	**1.04**	**64**	P*	**Pn**		**02 09 55.7**	**+0.3**
MXZ				AML	AML		02 10 15.7	
MXZ				AML	AML		02 10 16.5	
WHHZ	**Waihua**	**1.05**	**176**	AML	AML		02 10 19.1	
WHHZ				AML	AML		02 10 19.1	
PRGZ	**Paritu Road**	**1.07**	**147**	Pn	**Pn**		**02 09 56.0**	**+0.1**
PRGZ	**Paritu Road**	**1.07**	**147**	PN	**Pn**		**02 09 56.0**	**+0.1**
PRGZ				AML	AML		02 10 20.8	
PRGZ				AML	AML		02 10 22.1	
KNZ	**Kokohu**	**1.08**	**157**	Pn	**Pn**		**02 09 55.8**	**-0.2**
KNZ	**Kokohu**	**1.08**	**157**	⇑PN	**Pn**		**02 09 55.8**	**-0.2**
KNZ				AML	AML		02 10 21.7	
KNZ				AML	AML		02 10 22.0	
KUTZ	**Kaahu Road**	**1.13**	**245**	P*	**Pn**		**02 09 57.1**	**+0.5**
KUTZ	**Kaahu Road**	**1.13**	**245**	⇓P*	**Pn**		**02 09 57.1**	**+0.5**
ARHZ	**Aropaoanui**	**1.24**	**185**	Pn	**Pn**		**02 09 58.4**	**+0.4**
ARHZ	**Aropaoanui**	**1.24**	**185**	PN	**Pn**		**02 09 58.4**	**+0.4**
ARHZ				AML	AML		02 10 24.0	
ARHZ				AML	AML		02 10 24.6	
BKZ	**Black Stump Fm**	**1.25**	**204**	P*	**Pn**		**02 09 58.3**	**+0.2**
BKZ	**Black Stump Fm**	**1.25**	**204**	P*	**Pn**		**02 09 58.3**	**+0.2**
BKZ				AML	AML		02 10 21.0	
BKZ				AML	AML		02 10 24.8	
MHGZ	**Mahia Peninsul**	**1.28**	**152**	Pn	**Pn**		**02 09 58.6**	**+0.1**
MHGZ	**Mahia Peninsul**	**1.28**	**152**	PN	**Pn**		**02 09 58.6**	**+0.1**
MHGZ				AML	AML		02 10 26.7	
MHGZ				AML	AML		02 10 37.8	
TLZ	**Tolley Road**	**1.29**	**256**	P*	**Pn**		**02 09 59.0**	**+0.3**
TLZ	**Tolley Road**	**1.29**	**256**	P*	**Pn**		**02 09 59.0**	**+0.3**
TOZ	**Tahuroa Road**	**1.32**	**282**	P*	**Pn**		**02 09 59.1**	**+0.1**
TOZ				S*	**Sn**		**02 10 16.7**	**+0.4**
TOZ	**Tahuroa Road**	**1.32**	**282**	P*	**Pn**		**02 09 59.1**	**+0.1**
TOZ				S*	**Sn**		**02 10 16.7**	**+0.4**
RITZ	**Rihia Road**	**1.38**	**226**	P*	**Pn**		**02 10 00.8**	**+1.0**
RITZ	**Rihia Road**	**1.38**	**226**	⇑P*	**Pn**		**02 10 00.8**	**+1.0**
MCHZ	**McNeill Hill**	**1.46**	**193**	Pn	**Pn**		**02 10 01.4**	**+0.6**
MCHZ	**McNeill Hill**	**1.46**	**193**	PN	**Pn**		**02 10 01.4**	**+0.6**
MCHZ				AML	AML		02 10 32.6	
MCHZ				AML	AML		02 10 35.2	
KWHZ	**Kaweka Forest**	**1.50**	**201**	P*	**Pn**		**02 10 01.8**	**+0.3**
KWHZ				AML	AML		02 10 27.9	
KWHZ				AML	AML		02 10 28.5	
KRVZ	**Karewarewa**	**1.58**	**227**	P*	**Pn**		**02 10 03.5**	**+0.9**
KRVZ	**Karewarewa**	**1.58**	**227**	⇑P*	**Pn**		**02 10 03.5**	**+0.9**
WTVZ	**West Tongariro**	**1.63**	**228**	P*	**Pn**		**02 10 03.8**	**+0.6**
WTVZ	**West Tongariro**	**1.63**	**228**	P*	**Pn**		**02 10 03.8**	**+0.6**
CKHZ	**Cape Kidnapper**	**1.63**	**182**	Pn	**Pn**		**02 10 02.5**	**-0.6**
CKHZ	**Cape Kidnapper**	**1.63**	**182**	PN	**Pn**		**02 10 02.5**	**-0.6**
CKHZ				AML	AML		02 10 38.3	
CKHZ				AML	AML		02 10 39.2	
NGZ	**Ngauruhoe**	**1.66**	**226**	P*	**Pn**		**02 10 04.5**	**+0.9**
BHHZ	**Black Hill Sta**	**1.69**	**209**	P*	**Pn**		**02 10 04.1**	**+0.2**
BHHZ	**Black Hill Sta**	**1.69**	**209**	P*	**Pn**		**02 10 04.1**	**+0.2**
BHHZ				AML	AML		02 10 33.8	
BHHZ				AML	AML		02 10 34.8	
TWVZ	**Taurewa**	**1.69**	**231**	P*	**Pn**		**02 10 04.1**	**+0.1**
TWVZ	**Taurewa**	**1.69**	**231**	P*	**Pn**		**02 10 04.1**	**+0.1**
KUZ	**Kuaotunu**	**1.70**	**318**	Pn	**Pn**		**02 10 03.3**	**-0.7**
KUZ	**Kuaotunu**	**1.70**	**318**	⇑PN	**Pn**		**02 10 03.3**	**-0.7**
KRHZ	**Kereru**	**1.72**	**200**	⇓PN	**Pn**		**02 10 03.8**	**-0.5**
KRHZ				AML	AML		02 10 34.1	
KRHZ				AML	AML		02 10 34.6	
FWVZ	**Far West T-bar**	**1.75**	**225**	P*	**Pn**		**02 10 05.5**	**+0.8**
FWVZ	**Far West T-bar**	**1.75**	**225**	P*	**Pn**		**02 10 05.5**	**+0.8**
WHVZ	**Whangaehu Hut**	**1.75**	**223**	P*	**Pn**		**02 10 05.4**	**+0.7**
WHVZ	**Whangaehu Hut**	**1.75**	**223**	P*	**Pn**		**02 10 05.4**	**+0.7**
MOVZ	**Moawhango**	**1.75**	**218**	P*	**Pn**		**02 10 05.6**	**+0.9**
MOVZ	**Moawhango**	**1.75**	**218**	P*	**Pn**		**02 10 05.6**	**+0.9**
WNVZ	**Wahianoa**	**1.77**	**222**	Pn	**Pn**		**02 10 05.7**	**+0.6**
WNVZ	**Wahianoa**	**1.77**	**222**	⇓PN	**Pn**		**02 10 05.7**	**+0.6**
KAHZ	**Kahuranaki**	**1.78**	**186**	Pn	**Pn**		**02 10 04.5**	**-0.5**
KAHZ	**Kahuranaki**	**1.78**	**186**	PN	**Pn**		**02 10 04.5**	**-0.5**
KAHZ				AML	AML		02 10 40.0	
KAHZ				AML	AML		02 10 51.7	
TRVZ	**Turoa**	**1.78**	**224**	Pn	**Pn**		**02 10 05.9**	**+0.7**
TRVZ	**Turoa**	**1.78**	**224**	PN	**Pn**		**02 10 05.9**	**+0.7**
MKAZ	**Moumakai**	**1.82**	**300**	Pn	**Pn**		**02 10 05.5**	**0.0**
MKAZ	**Moumakai**	**1.82**	**300**	PN	**Pn**		**02 10 05.5**	**0.0**
MTVZ	**Mangateitei**	**1.88**	**223**	Pn	**Pn**		**02 10 07.2**	**+0.

ASAR Alice Springs 58.14 184 P P 02 23 57.6 +0.4
0.9nm,1.1s,baz=2.1,slow=7.6,SNR=4.9

*ISCJB **10** 02:14:31.4±0.6,34.91N±0.04×25.32E±0.03, h19km±4km, mb3.5/10, Error ellipse: s-maj=6.0km s-min=4.1km az=170.3*
*ATH **10** 02:14:31.6,35.00N×25.28E, h23km±1km, ML3.4/4, Error ellipse: s-maj=2.6km s-min=1.0km az=355.0*
*CSEM **10** 02:14:32.0±0.2,34.97N×25.28E, h8km, ML3.4, Error ellipse: s-maj=4.8km s-min=2.4km az=172.0*
*THE **10** 02:14:32.5,35.00N×25.26E, h2km, ML3.6/11, Error ellipse: s-maj=1.2km s-min=0.4km az=171.0*
*IDC **10** 02:14:32.4±2.2,35.11N×25.36E, h14km±13km, mb3.6/10, mb1 3.6/15, mb1mx3.5/49, mbtmp3.5/15, ML3.5/3, Error ellipse: s-maj=22.5km s-min=15.4km az=172.0*
ISC 10 02:14:32.2±0.9,34.99N±0.04×25.28E±0.02,h15km±6km, n68,σ0.976/99,mb3.7/10,Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LAST	**Lasithi**	**0.24**	**44**	P	**Pg**	**02 14 37.2**	**-0.2**
LAST				S	**Sg**	**02 14 41.6**	**+0.6**
LAST	**Lasithi**	**0.24**	**44**	P	**Pg**	**02 14 37.2**	**-0.2**
LAST				S	**Sg**	**02 14 41.6**	**+0.6**
LAST	**Lasithi**	**0.24**	**44**	P	**Pg**	**02 14 37.0**	**-0.4**
IACM	**Heraklion**	**0.36**	**332**	P	**Pb**	**02 14 39.7**	**-0.6**
IACM				S	**Sb**	**02 14 45.1**	**-0.6**
IACM	**Heraklion**	**0.36**	**332**	P	**Pb**	**02 14 39.7**	**-0.6**
IACM				S	**Sb**	**02 14 45.1**	**-0.6**
IACM	**Heraklion**	**0.36**	**332**	P	**Pb**	**02 14 40.3**	**+0.1**
IACM				S	**Sg**	**02 14 44.5**	**0.0**
NPS	**Neapolis**	**0.39**	**45**	P	**Pb**	**02 14 40.0**	**-0.8**
NPS				S	**Sb**	**02 14 46.6**	**0.0**
NPS	**Neapolis**	**0.39**	**45**	P	**Pg**	**02 14 39.6**	**-0.4**
NPS				S	**Sb**	**02 14 46.6**	**0.0**
NPS	**Neapolis**	**0.39**	**45**	P	**Pg**	**02 14 39.6**	**-0.4**
NPS				S	**Sb**	**02 14 46.9**	**+0.3**
NPS				AML	AML	02 14 48.4	
	comp=E,14856μm,0.6s						
NPS				AML	AML	02 14 48.7	
	comp=N,8809μm,0.2s						
SIVA	**Sivas**	**0.39**	**274**	P	**Pg**	**02 14 39.8**	**-0.2**
SIVA				S	**Sb**	**02 14 46.1**	**-0.4**
SIVA	**Sivas**	**0.39**	**274**	P	**Pg**	**02 14 39.7**	**-0.2**
SIVA				S	**Sb**	**02 14 46.1**	**-0.4**
SIVA	**Sivas**	**0.39**	**274**	P	**Pg**	**02 14 39.7**	**-0.2**
SIVA				S	**Sb**	**02 14 46.2**	**-0.3**
SIVA				AML	AML	02 14 48.8	
	comp=N,22813μm,0.4s						
SIVA				AML	AML	02 14 51.7	
	comp=E,34402μm,0.4s						
IDI	**Anoyia**	**0.44**	**313**	Pg	**Pg**	**02 14 40.5**	**-0.3**
	comp=E,68nm,0.3s,baz=146,slow=17,SNR=1288						
IDI				Lg	Lg	02 14 47.8	
	comp=E,545nm,0.3s,baz=156,slow=20,SNR=118						
IDI	**Anoyia**	**0.44**	**313**	P	**Pg**	**02 14 40.6**	**-0.3**
IDI				S	**Sb**	**02 14 47.5**	**-0.6**
IDI	**Anoyia**	**0.44**	**313**	P	**Pg**	**02 14 40.4**	**-0.6**
IDI				S	**Sb**	**02 14 48.0**	**0.0**
IDI				AML	AML	02 14 48.1	
	comp=E,5428μm,0.3s						
IDI				AML	AML	02 14 48.7	
	comp=N,12419μm,0.3s						
ZKR	**Zakros**	**0.78**	**81**	P	**Pg**	**02 14 46.6**	**-0.7**
ZKR	**Zakros**	**0.78**	**81**	P	**Pg**	**02 14 46.2**	**-1.1**
ZKR	**Zakros**	**0.78**	**81**	P	**Pg**	**02 14 46.2**	**-1.1**
ZKR				S	**Sn**	**02 14 59.5**	**-0.7**
VAM	**Vamos**	**0.98**	**296**	P	**Pg**	**02 14 50.3**	**-0.8**
VAM				S	**Sb**	**02 15 04.5**	**+1.0**
VAM	**Vamos**	**0.98**	**296**	P	**Pg**	**02 14 50.3**	**-0.8**
VAM				S	**Sb**	**02 15 04.5**	**+1.0**
GVD	**Gavdhos**	**0.99**	**262**	P	**Pb**	**02 14 51.2**	**+0.2**
GVD				S	**Sn**	**02 15 05.3**	**0.0**
GVD	**Gavdhos**	**0.99**	**262**	P	**Pb**	**02 14 51.2**	**+0.2**
GVD				S	**Sn**	**02 15 05.3**	**0.0**
GVD	**Gavdhos**	**0.99**	**262**	P	**Pn**	**02 14 51.7**	**+0.1**
IMMV	**Iera Moni Meta**	**1.16**	**294**	P	**Pg**	**02 14 54.1**	**-0.5**
IMMV				S	**Sn**	**02 15 10.3**	**+0.7**
IMMV	**Iera Moni Meta**	**1.16**	**294**	P	**Pg**	**02 14 54.1**	**-0.5**
IMMV				S	**Sn**	**02 15 10.3**	**+0.7**
IMMV	**Iera Moni Meta**	**1.16**	**294**	P	**Pb**	**02 14 53.3**	**-0.7**
IMMV				S	**Sg**	**02 15 09.2**	**-0.5**
IMMV				AML	AML	02 15 10.2	
	comp=E,4271μm,0.4s						
IMMV				AML	AML	02 15 10.8	
	comp=N,3372μm,0.5s						
THR6	**Thira Island,**	**1.37**	**4**	P	**Pb**	**02 14 57.3**	**-0.2**
THR6	**Thira Island,**	**1.37**	**4**	P	**Pb**	**02 14 57.3**	**-0.2**
SANT	**Santorini**	**1.39**	**6**	P	**Pb**	**02 14 57.5**	**-0.3**
SANT				S	**Sg**	**02 15 17.0**	**+0.1**
SANT	**Santorini**	**1.39**	**6**	P	**Pb**	**02 14 57.8**	**-0.1**
SANT				S	**Sg**	**02 15 17.0**	**+0.1**
SANT	**Santorini**	**1.39**	**6**	P	**Pb**	**02 14 57.8**	**-0.1**
THT1	**Athinios (Pele**	**1.40**	**5**	P	**Pb**	**02 14 58.0**	**0.0**
THT1				S	**Sg**	**02 15 17.4**	**+0.1**
THT1	**Athinios (Pele**	**1.40**	**5**	P	**Pb**	**02 14 58.0**	**0.0**
THT1				S	**Sg**	**02 15 17.4**	**+0.1**
THR3	**Thira Island,**	**1.42**	**4**	P	**Pb**	**02 14 58.3**	**-0.1**
THR3	**Thira Island,**	**1.42**	**4**	P	**Pb**	**02 14 58.3**	**-0.1**
THR5	**Thira Island,**	**1.43**	**2**	P	**Pb**	**02 14 58.3**	**-0.2**
THR5	**Thira Island,**	**1.43**	**2**	P	**Pb**	**02 14 58.3**	**-0.2**
THR7	**Fira-Santorini**	**1.44**	**5**	P	**Pb**	**02 14 58.1**	**-0.5**
THR7	**Fira-Santorini**	**1.44**	**5**	P	**Pb**	**02 14 58.1**	**-0.5**
THR2	**Thira island,**	**1.46**	**5**	P	**Pb**	**02 14 58.7**	**-0.4**
THR2	**Thira island,**	**1.46**	**5**	P	**Pb**	**02 14 58.7**	**-0.4**
CMBO	**Columbo, Santo**	**1.48**	**4**	P	**Pb**	**02 14 58.8**	**-0.6**
CMBO	**Columbo, Santo**	**1.48**	**4**	P	**Pb**	**02 14 58.8**	**-0.6**
KARP	**Karpathos**	**1.64**	**70**	P	**Pg**	**02 15 02.9**	**-0.7**
KARP	**Karpathos**	**1.64**	**70**	P	**Pg**	**02 15 02.9**	**-0.7**
MHLO	**Agia Marina, M**	**1.84**	**337**	P	**Pn**	**02 15 04.1**	**+0.8**
MHLO				S	**Sb**	**02 15 27.9**	**-0.5**
MHLO	**Agia Marina, M**	**1.84**	**337**	P	**Pn**	**02 15 04.1**	**+0.8**
MHLO				S	**Sb**	**02 15 27.9**	**-0.5**
APE	**Apeiranthos**	**2.08**	**6**	P	**Pn**	**02 15 07.6**	**+0.9**
APE				S	**Sn**	**02 15 34.0**	**+1.6**
APE	**Apeiranthos**	**2.08**	**6**	P	**Pn**	**02 15 07.6**	**+0.9**
APE				S	**Sn**	**02 15 34.0**	**+1.6**
VLI	**Veliai**	**2.57**	**313**	P	**Pn**	**02 15 13.4**	**+0.1**
VLI	**Veliai**	**2.57**	**313**	P	**Pn**	**02 15 13.4**	**+0.1**
ARG	**Arkhangelos**	**2.62**	**61**	P	**Pn**	**02 15 15.4**	**+1.4**
ARG				S	**Sn**	**02 15 47.7**	**+2.1**
ARG	**Arkhangelos**	**2.62**	**61**	P	**Pn**	**02 15 15.4**	**+1.4**
ARG				S	**Sn**	**02 15 47.7**	**+2.1**
BRTR	**Keskin Array B**	**8.16**	**52**	Pn	**Pn**	**02 16 29.8**	**-0.4**
	comp=N,0.0nm,0.3s,baz=236,slow=9.6,SNR=2.4						
MMAI	**Mount Meron Ar**	**8.63**	**100**	Pn	**Pn**	**02 16 36.6**	**-0.1**
	comp=N,0.8nm,0.3s,baz=277,slow=12,SNR=3.8						
EIL	**Elat**	**9.75**	**120**	Pn	**Pn**	**02 16 52.6**	**+0.7**
	comp=N,0.3nm,0.3s,baz=335,slow=16,SNR=5.6						
AKASG	**Malin Array Be**	**15.96**	**9**	Pn	**Pn**	**02 18 15.2**	**-0.9**
	baz=200,slow=11,SNR=3.0						
GERES	**GERESS Array B**	**16.28**	**332**	Pn	**Pn**	**02 18 20.0**	**-0.3**
	comp=N,0.1nm,0.3s,baz=144,slow=13,SNR=2.2						
ESDC	**Sonseca Array**	**23.66**	**290**	P	**P**	**02 19 43.7**	**+0.6**
	comp=N,0.7nm,0.7s,baz=80,slow=9.3,SNR=8.3						
MDT	**Midelt**	**24.86**	**274**	P	**P**	**02 19 56.5**	**+2.1**
	comp=N,3.0nm,1.0s,baz=44,slow=2.9,SNR=2.7						
FINES	**FINESS Array B**	**26.48**	**1**	P	**P**	**02 20 07.6**	**-0.9**
	comp=N,3.2nm,1.2s,baz=159,slow=12,SNR=3.0						
EKA	**Eskdalemuir Ar**	**28.23**	**325**	P	**P**	**02 20 24.0**	**-0.4**
	comp=N,0.2nm,0.3s,baz=126,slow=10.0,SNR=2.7						
TORD	**Torodi Ar. Bea**	**30.45**	**230**	P	**P**	**02 20 45.5**	**+1.1**
	comp=N,0.8nm,0.5s,baz=34,slow=8.6,SNR=19						
KURBB	**Kurchatov Arra**	**41.15**	**51**	P	**P**	**02 22 16.5**	**+0.7**
	comp=N,0.4nm,0.4s,baz=277,slow=8.5,SNR=5.0						
MKAR	**Makanchi Array**	**43.79**	**56**	P	**P**	**02 22 36.6**	**-0.6**
	comp=N,0.6nm,0.6s,baz=272,slow=8.4,SNR=6.5						
ZALV	**Zalesovo Beam**	**45.05**	**46**	P	**P**	**02 22 45.5**	**-1.7**
	comp=N,0.5nm,0.4s,baz=255,slow=8.7,SNR=2.4						
INK	**Inuvik**	**75.80**	**352**	P	**P**	**02 26 15.3**	**-1.8**
	comp=N,0.8nm,0.5s,baz=45,slow=2.9,SNR=2.8						
YKA	**Yellowknife Ar**	**77.64**	**342**	P	**P**	**02 26 28.2**	**+0.7**
	comp=N,0.3nm,0.7s,baz=35,slow=4.8,SNR=2.7						

*ISCJB **10** 02:21:58.7±0.9,38.64N±0.04×141.92E±0.10, h55km±6km, mb3.6/9, Error ellipse: s-maj=13.1km s-min=5.8km az=15.8*
*JMA **10** 02:21:59.3,38.64N×141.91E, h48km±1km, M3.7*
JMA Felt I J1.
*IDC **10** 02:22:03.0±2.4,39.17N×141.58E, h48km±21km, mb3.3/9, mb1 3.4/13, mb1mx3.3/48, mbtmp3.5/13, ML2.8/4, Error ellipse: s-maj=28.5km s-min=16.0km az=98.0*
ISC 10 02:21:58.8±1.5,38.65N±0.05×142.0E±0.1,h45km±12km, n30,σ1.926/31,mb3.6/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.51**	**327**	P	**Pn**	**02 22 10.4**	**+0.6**
OFUJ				S	**Sn**	**02 22 18.0**	**+0.3**
JIO	**Ouri**	**0.56**	**250**	P	**Pn**	**02 22 10.2**	**-0.3**
JIO				S	**Sn**	**02 22 17.5**	**-1.3**
JMK	**Ichinoseki**	**0.69**	**296**	P	**Pn**	**02 22 12.2**	**0.0**
JMK				S	**Sn**	**02 22 21.3**	**-0.6**
JOM	**Ohasama**	**1.00**	**326**	P	**Pn**	**02 22 16.7**	**+0.4**
JOM				eS	**Sn**	**02 22 28.7**	**-0.6**
JOU	**Okura**	**1.10**	**255**	P	**Pn**	**02 22 17.3**	**-0.5**
JOU				S	**Sn**	**02 22 30.5**	**-1.3**
JMM	**Marumori**	**1.25**	**231**	P	**Pn**	**02 22 18.9**	**-0.8**
JMM				S	**Sn**	**02 22 33.6**	**-1.7**
JRG	**Rokugo**	**1.31**	**305**	P	**Pn**	**02 22 20.7**	**+0.1**
JRG				eS	**Sn**	**02 22 36.4**	**-0.5**
JYK	**Kaneyama**	**1.32**	**282**	P	**Pn**	**02 22 20.6**	**-0.2**
JFK	**Kawauchi**	**1.57**	**216**	P	**Pn**	**02 22 23.8**	**-0.4**
JFK				S	**Sn**	**02 22 41.6**	**-1.7**
JYS	**Shirataka**	**1.59**	**255**	P	**Pn**	**02 22 24.3**	**-0.2**
MAT	**Matsushiro**	**3.69**	**236**	P	**Pn**	**02 22 54.6**	**+1.3**
MAT				S	**Sn**	**02 23 35.9**	**+0.4**
MJAR	**Matsushiro Arr**	**3.69**	**236**	P	**Pn**	**02 22 56.3**	**+3.1**
	1.8nm,0.3s,baz=45,slow=11,SNR=22						
ASAJ	**Asahikawa**	**5.48**	**4**	P	**Pn**	**02 23 15.3**	**-2.4**
	0.4nm,0.3s,baz=193,slow=10,SNR=4.1						
USRK	**Ussuriysk Ar.**	**9.35**	**310**	P	**Pn**	**02 24 08.2**	**-2.6**
	0.1nm,0.3s,baz=116,slow=33,SNR=2.9						
KSRS	**Korea Array**	**11.18**	**268**	P	**Pn**	**02 24 37.1**	**+1.2**
	0.1nm,0.3s,baz=90,slow=12,SNR=3.3						
SEY	**Seymchan**	**25.11**	**11**	P	**P**	**02 27 19.9**	**+0.9**
	1.8nm,0.8s,baz=102,slow=5.4,SNR=4.5						
H11N2	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	02 58 20.8	
	baz=317,slow=75,SNR=111						
H11N1	**WAKE ISLAND Hy**	**28.62**	**124**	T	T	02 58 21.6	
	baz=317,slow=75,SNR=178						
H11N3	**WAKE ISLAND Hy**	**28.63**	**124**	T	T	02 58 20.7	
	baz=317,slow=75,SNR=125						
H11S1	**WAKE ISLAND Hy**	**29.38**	**126**	T	T	02 59 06.2	
	baz=318,slow=76,SNR=38						
H11S3	**WAKE ISLAND Hy**	**29.38**	**126**	T	T	02 59 18.2	
	baz=318,slow=76,SNR=54						
H11S2	**WAKE ISLAND Hy**	**29.39**	**126**	T	T	02 59 15.7	
	baz=318,slow=76,SNR=50						
ZALV	**Zalesovo Beam**	**41.20**	**311**	P	**P**	**02 29 37.9**	**-0.9**
	0.9nm,0.5s,baz=95,slow=7.4,SNR=3.6						
ILAR	**Eielson Array**	**47.88**	**33**	P	**P**	**02 30 33.6**	**+1.6**
	0.3nm,0.6s,baz=263,slow=6.3,SNR=4.1						
AKTO	**Aktyubinsk**	**57.96**	**311**	P	**P**	**02 31 46.2**	**-0.2**
	0.8nm,0.7s,baz=56,slow=7.3						
WRA	**Warramunga Arr**	**58.73**	**188**	P	P	02 31 58.4	+6.4
	0.3nm,0.6s,baz=6.0,slow=8.2,SNR=2.8						
ASAR	**Alice Springs**	**62.45**	**188**	P	P	02 32 25.6	+8.2
	0.4nm,1.0s,baz=11,slow=7.5,SNR=2.7						
FINES	**FINESS Array B**	**67.61**	**332**	P	**P**	**02 32 49.7**	**-0.7**
	0.6nm,0.6s,baz=30,slow=11,SNR=3.8						
NOA	**NORSAR Array B**	**72.88**	**337**	P	**P**	**02 33 22.7**	**-0.1**
	0.4nm,0.6s,baz=40,slow=6.0,SNR=3.0						
GERES	**GERESS Array B**	**81.59**	**328**	P	**P**	**02 34 12.0**	**+0.2**
	0.2nm,0.4s,baz=31,slow=4.6,SNR=2.8						

*ISCJB **10** 02:28:29.0±1.2,37.90N±0.04×143.29E±0.09, h44km±12km, mb3.5/4, Error ellipse: s-maj=12.1km s-min=7.1km az=6.4*
*JMA **10** 02:28:29.0±0.2,37.98N×143.28E, h38km, M3.6*
*IDC **10** 02:29:06.3±2.0,44.06N×140.40E, h0km, mb3.6/6, mb1 3.8/6, mb1mx3.4/46, mbtmp3.6/6, Error ellipse: s-maj=71.8km s-min=22.6km az=63.0*
ISC 10 02:28:29.7±2.4,37.94N±0.05×143.3E±0.1,h41km±21km, n18,σ1.912/27,mb3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.63**	**289**	P	**Pn**	**02 28 55.7**	**-0.2**
JIO				eS	**Sn**	**02 29 15.5**	**-0.2**
OFUJ	**Ofunato**	**1.72**	**312**	P	**Pn**	**02 28 57.6**	**-0.5**
OFUJ				S	**Sn**	**02 29 17.0**	**-1.0**
JMK	**Ichinoseki**	**1.93**	**302**	P	**Pn**	**02 28 59.9**	**-0.2**
JMK				eS	**Sn**	**02 29 23.1**	**0.0**
JMM	**Marumori**	**2.00**	**269**	P	**Pn**	**02 29 01.1**	**+0.2**
JMM				eS	**Sn**	**02 29 23.9**	**-0.8**
JFK	**Kawauchi**	**2.02**	**254**	P	**Pn**	**02 29 00.9**	**-0.4**
JFK				S	**Sn**	**02 29 24.0**	**-1.3**
JOU	**Okura**	**2.13**	**282**	P	**Pn**	**02 29 03.5**	**+0.6**
JOM	**Ohasama**	**2.20**	**315**	P	**Pn**	**02 29 03.8**	**0.0**
JOM				eS	**Sn**	**02 29 30.0**	**+0.2**
JFT	**Otama**	**2.40**	**261**	P	**Pn**	**02 29 07.3**	**+0.8**
JFT				S	**Sn**	**02 29 36.0**	**+1.3**
JYK	**Kaneyama**	**2.52**	**294**	P	**Pn**	**02 29 08.6**	**+0.5**
JRG	**Rokugo**	**2.55**	**306**	P	**Pn**	**02 29 09.5**	**+0.9**
JANG	**Nango**	**2.81**	**331**	P	**Pn**	**02 29 13.2**	**+1.1**
JAW	**Awa shima**	**3.25**	**280**	P	**Pn**	**02 29 19.4**	**+1.3**
JAG	**Ashikaga**	**3.43**	**245**	P	**Pn**	**02 29 21.2**	**+0.5**
JAG				S	**Sn**	**02 30 00.2**	**0.0**
BSO1	**Boso 1**	**3.78**	**211**	P	**Pn**	**02 29 24.7**	**-0.3**
BSO1				eS	**Sn**	**02 30 08.5**	**+0.5**
SONM	**Songino Array**	**28.56**	**302**	P	**P**	**02 34 22.1**	**+0.3**
	0.3nm,0.4s,baz=92,slow=8.8,SNR=2.4						
ZALV	**Zalesovo Beam**	**42.43**	**312**	P	**P**	**02 36 16.4**	**-3.8**
	0.3nm,0.3s,baz=91,slow=10,SNR=2.4						
MKAR	**Makanchi Array**	**44.93**	**302**	P	**P**	**02 36 41.9**	**+1.4**
	0.5nm,0.7s,baz=64,slow=9.8,SNR=3.3						
FINES	**FINESS Array B**	**68.71**	**333**	P	**P**	**02 39 29.7**	**+1.0**
	0.9nm,0.8s,baz=79,slow=7.2,SNR=3.3						

*ISCJB **10** 02:29:31.1±1.4,38.00N±0.05×143.1E±0.1, h18km, mb3.6/8, Error ellipse: s-maj=12.3km s-min=7.3km az=10.7*
*IDC **10** 02:29:32.1±1.1,37.11N×143.42E, h0km, mb3.7/8, mb1 3.8/13, mb1mx3.7/53, mbtmp3.8/13, ML3.1/4, Error ellipse: s-maj=24.2km s-min=18.7km az=99.0*
*JMA **10** 02:29:32.1±0.3,38.00N×143.14E, h46km, M3.7*
ISC 10 02:29:29.7±1.7,38.00N±0.07×143.3E±0.1,h18km,n24, σ1.950/21,mb3.7/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.60**	**287**	P	**Pn**	**02 29 56.7**	**-0.3**
JIO				S	**Sn**	**02 30 15.3**	**-1.9**
OFUJ	**Ofunato**	**1.67**	**311**	P	**Pn**	**02 29 58.1**	**+0.1**
JMK	**Ichinoseki**	**1.89**	**301**	P	**Pn**	**02 30 01.4**	**+0.4**
JMK				S	**Sn**	**02 30 22.8**	**-1.5**
JMM	**Marumori**	**1.98**	**267**	P	**Pn**	**02 30 01.9**	**-0.4**
JMM				eS	**Sn**	**02 30 24.5**	**-2.2**
JFK	**Kawauchi**	**2.02**	**252**	P	**Pn**	**02 30 02.1**	**-0.8**
JOM	**Ohasama**	**2.15**	**314**	P	**Pn**	**02 30 05.4**	**+0.8**
JFT	**Otama**	**2.40**	**259**	P	**Pn**	**02 30 08.6**	**+0.6**
JYK	**Kaneyama**	**2.48**	**293**	P	**Pn**	**02 30 10.6**	**+1.4**
JANG	**Nango**	**2.74**	**330**	eS	**Sn**	**02 30 45.4**	**-0.1**
JAG	**Ashikaga**	**3.45**	**244**	P	**Pn**	**02 30 22.1**	**-0.4**
JAG				S	**Sn**	**02 31 01.5**	**-1.4**
MJAR	**Matsushiro Arr**	**4.31**	**252**	Pn	**Pn**	**02 30 35.9**	**+1.5**
	4.6nm,0.3s,baz=88,slow=15,SNR=13						
MJAR				Sn	**Sn**	**02 31 27.9**	**+3.7**
	baz=72,slow=24,SNR=2.6						
MAT	**Matsushiro**	**4.31**	**252**	P	**Pn**	**02 30 35.8**	**+1.4**
MAT				eS	**Sn**	**02 31 24.8**	**+0.6**
JHJ	**Hachijo jima 2**	**5.65**	**211**	Pn	Pn	02 30 48.5	-4.3
	37nm,0.3s,baz=36,slow=19,SNR=15						
JHJ				Sn	Sn	02 31 49.1	-8.0
	baz=58,slow=19,SNR=2.1						
USRK	**Ussuriysk Ar.**	**10.54**	**310**	Pn	Pn	02 32 14.6	+15
	0.2nm,0.3s,baz=96,slow=13,SNR=4.6						
JNU	**Nakatsue**	**11.22**	**248**	Pn	**Pn**	**02 32 11.3**	**+2.1**
	0.1nm,0.3s,baz=141,slow=9.3,SNR=2.4						
KLR	**Kul'dur**	**13.98**	**327**	Pn	P	02 33 03.5	+8.8
	0.1nm,0.3s,baz=139,slow=16,SNR=4.4						
SEY	**Seymchan**	**25.57**	**10**	P	P	02 35 09.0	+12
	1.0nm,0.5s,baz=194,slow=12,SNR=3.4						
SONM	**Songino Array**	**28.52**	**302**	P	P	02 35 33.2	+9.1
	0.7nm,0.5s,baz=99,slow=9.3,SNR=3.7						
ZALV	**Zalesovo Beam**	**42.38**	**312**	P	P	02 37 32.7	+10
	1.1nm,0.6s,baz=79,slow=7.7,SNR=4.5						
MKAR	**Makanchi Array**	**44.88**	**302**	P	**P**	**02 37 54.0**	**+11**
	0.8nm,0.6s,baz=84,slow=9.7,SNR=5.7						
ILAR	**Eielson Array**	**47.87**	**33**	P	**P**	**02 38 17.8**	**+12**
	0.4nm,0.8s,baz=276,slow=6.1,SNR=3.0						
BVAR	**Borovoye Array**	**51.03**	**312**	P	P	02 38 41.0	+11
	0.8nm,0.8s,baz=34,slow=38,SNR=7.7						
WRA	**Warramunga Arr**	**58.25**	**190**	P	**P**	**02 39 22.1**	**-1.0**
	1.0nm,0.6s,baz=8.4,slow=7.5,SNR=6.7						
ASAR	**Alice Springs**	**61.97**	**190**	P	**P**	**02 39 48.1**	**-0.4**
	0.3nm,0.7s,baz=21,slow=8.0,SNR=2.9						

*DDA **10** 02:32:48.9,36.88N×27.57E, h7km, Md3.0*
*ISCJB **10** 02:32:49.6±0.5,36.89N±0.02×27.56E±0.03, h8km±4km, Error ellipse: s-maj=4.7km s-min=3.9km az=151.8*
*ATH **10** 02:32:49.0,36.85N×27.52E, h37km±2km, ML2.5/3, Error ellipse: s-maj=3.4km s-min=1.3km az=212.0*
*CSEM **10** 02:32:49.6±0.2,36.89N×27.56E, h10km, MD3.0, Error ellipse: s-maj=3.8km s-min=3.5km az=155.0*
*ISK **10** 02:32:49.3,36.91N×27.57E, h10km, MD2.8*
ISC 10 02:32:49.4±0.9,36.89N±0.02×27.58E±0.02,h15km±6km, n49,σ1.929/67,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BDRM	**Kayabasi**	**0.21**	**329**	*i* P	**Pg**	**02 32 54.0**	**-0.2**
BDRM				*i* S	**Sg**	**02 32 57.4**	**-0.1**
BDRM	**Kayabasi**	**0.21**	**329**	P	**Pg**	**02 32 54.0**	**-0.2**
BDRM				S	**Sg**	**02 32 57.4**	**-0.1**
BODT	**Bodrum**	**0.28**	**310**	*e*PG	**Pg**	**02 32 55.1**	**-0.2**
BODT				*e*SG	**Sg**	**02 32 59.2**	**-0.2**
BODT	**Bodrum**	**0.28**	**310**	*e*Pg	**Pg**	**02 32 55.1**	**-0.2**
BODT				*e*Sg	**Sg**	**02 32 59.2**	**-0.2**
NIS1	**Nisyros Isl.**	**0.43**	**229**	*e*PG	**Pb**	**02 32 58.5**	**-0.1**
NIS1	**Nisyros Isl.**	**0.43**	**229**	P	**Pg**	**02 32 57.7**	**-0.2**
NIS1	**Nisyros Isl.**	**0.43**	**229**	*e*Pg	**Pb**	**02 32 58.5**	**-0.1**
NIS1				S	**Sb**	**02 33 06.2**	**+1.4**
NIS1	**Nisyros Isl.**	**0.43**	**229**	P	**Pg**	**02 32 57.7**	**-0.2**
NIS1				S	**Sb**	**02 33 06.2**	**+1.4**
NIS1				AML	AML	02 33 07.5	
	comp=E,3016μm,0.2s						
NIS1				AML	AML	02 33 08.0	
	comp=N,2057μm,0.4s						
NISR	**Nisiros**	**0.45**	**233**	P	**Pg**	**02 32 57.9**	**-0.5**
NISR				S	**Sg**	**02 33 04.9**	**+0.4**
NISR	**Nisiros**	**0.45**	**233**	P	**Pg**	**02 32 57.9**	**-0.5**
NISR				S	**Sg**	**02 33 04.9**	**+0.4**
NISR				AML	AML	02 33 06.5	
	comp=E,1690μm,0.2s						
NISR				AML	AML	02 33 08.1	
	comp=N,826μm,0.2s						
YER	**Yerkesik**	**0.62**	**66**	*e*PG	**Pg**	**02 33 01.4**	**-0.1**
YER	**Yerkesik**	**0.62**	**66**	*e*Pg	**Pg**	**02 33 01.4**	**-0.1**
ARG	**Arkhangelos**	**0.80**	**146**	P	**Pg**	**02 33 04.0**	**-0.9**
ARG				S	**Sb**	**02 33 17.5**	**+1.9**
TURN	**Turunc**	**0.82**	**91**	*i* P	**Pg**	**02 33 05.8**	**-5.6**
TURN				*i* S	**Sg**	**02 33 09.0**	**-8.2**
GCAM	**G?zelcaml?**	**0.86**	**341**	*i* P	**Pg**	**02 33 05.7**	**-0.3**
GCAM				*i* S	**Sb**	**02 33 18.8**	**+1.6**
GCAM	**G?zelcaml?**	**0.86**	**341**	P	**Pg**	**02 33 05.7**	**-0.3**
GCAM				S	**Sb**	**02 33 18.8**	**+1.6**
DALY	**Dalyan (Mu¨la**	**0.87**	**94**	*e*PG	**Pb**	**02 33 06.6**	**+0.5**
DALY	**Dalyan (Mu¨la**	**0.87**	**94**	*e*Pg	**Pb**	**02 33 06.6**	**+0.5**
SMG	**Samos**	**1.01**	**325**	P	**Pg**	**02 33 08.7**	**-0.3**
SMG				S	**Sb**	**02 33 22.2**	**+0.5**
SMG	**Samos**	**1.01**	**325**	P	**Pg**	**02 33 08.7**	**-0.3**
SMG				S	**Sb**	**02 33 22.2**	**+0.5**
SMG				AML	AML	02 33 26.8	
	comp=E,776μm,0.4s						
SMG				AML	AML	02 33 26.9	
	comp=N,454μm,0.3s						
AYDB	**Zeytinkoy-Aydi**	**1.09**	**13**	*e*PG	**Pg**	**02 33 10.0**	**-0.4

IDC 10 02:49:44.1±2.0, 17°67'S×178°73'W, h509km±27km, mb3.2/7, mb1 3.4/9, mb1mx3.1/37, mbtmp4.1/9, Error ellipse: s-maj=32.8km s-min=15.3km az=148.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.67**	**62**	P	P	02 51 37.1	-0.4
	4.3nm,0.3s,baz=248,slow=19,SNR=3.0						
DZM	**Mont Dzumac**	**14.62**	**250**	P	P	02 52 52.1	+1.8
	0.3nm,0.3s,baz=72,slow=20,SNR=3.8						
URZ	**Urewera**	**20.83**	**189**	P	P	02 53 49.2	-0.4
	16nm,1.0s,baz=36,slow=6.6,SNR=5.8						
STKA	**Stephens Creek**	**38.48**	**241**	P	P	02 56 22.0	-0.1
	3.0nm,0.4s,baz=97,slow=9.7,SNR=4.1						
WRA	**Warramunga Arr**	**44.37**	**259**	P	P	02 57 08.5	-0.6
	0.4nm,0.4s,baz=96,slow=7.4,SNR=9.7						
ASAR	**Alice Springs**	**44.56**	**254**	P	P	02 57 10.7	+0.1
	5.6nm,0.4s,baz=89,slow=8.2,SNR=118						
ILAR	**Eielson Array**	**85.73**	**13**	P	P	03 01 27.2	-1.2
	0.2nm,0.4s,baz=219,slow=8.0,SNR=5.7						
TXAR	**Lajitas Array**	**86.13**	**58**	P	P	03 01 32.0	+0.7
	0.3nm,0.7s,baz=232,slow=5.6,SNR=4.4						
PDAR	**Pinedale Array**	**87.39**	**44**	P	P	03 01 37.7	+0.6
	0.2nm,0.5s,baz=262,slow=2.7,SNR=2.6						

*IDC **10** 02:54:56.6±0.7, 37°98N×143°40E, h0km, mb3.9/20, mb1 4.0/25, mb1mx3.9/58, mbtmp3.9/25, ML3.2/5, Error ellipse: s-maj=19.4km s-min=13.9km az=113.0*
*NEIC **10** 02:54:58.8±2.8, 38°05N×143°39E, h12km±17km, mb4.4/3, Error ellipse: s-maj=11.6km s-min=6.1km az=127.0*
*JMA **10** 02:55:00.2±0.2, 38°15N×143°20E, h14km, M4.0*
ISC 10 02:54:57.5±3.2, 38°07N±0°06×143°27E±0°06, h3km±19km, n53, σ1§16/56, mb3.9/24, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.56**	**285**	P	**Pn**	**02 55 26.7**	**+0.5**
JIO				S	**Sb**	**02 55 46.2**	**-1.0**
OFUJ	**Ofunato**	**1.61**	**309**	P	**Pn**	**02 55 27.4**	**+0.6**
JMK	**Ichinoseki**	**1.83**	**299**	P	**Pn**	**02 55 30.4**	**+0.5**
JMK				*e*S	**Sn**	**02 55 52.9**	**-0.7**
JOU	**Okura**	**2.08**	**279**	P	**Pn**	**02 55 34.9**	**+1.6**
JOU				*e*S	**Sn**	**02 55 59.9**	**+0.3**
JOM	**Ohasama**	**2.08**	**313**	P	**Pb**	**02 55 34.9**	**-1.1**
JOM				S	**Sb**	**02 55 59.7**	**-2.6**
JFT	**Otama**	**2.39**	**257**	P	**Pn**	**02 55 39.3**	**+1.7**
JFT				S	**Sn**	**02 56 07.8**	**+0.4**
JYK	**Kaneyama**	**2.44**	**291**	P	**Pn**	**02 55 39.8**	**+1.6**
JYK				*e*S	**Sn**	**02 56 09.1**	**+0.6**
JRG	**Rokugo**	**2.45**	**303**	P	**Pb**	**02 55 41.6**	**-0.6**
JAH	**Hinai**	**2.94**	**317**	*e*S	**Sn**	**02 56 21.1**	**+0.1**
ERM	**Erimo**	**3.94**	**359**	*e*Pn	**Pn**	**02 55 59.0**	**+0.1**
JRY	**Ryogami san**	**4.05**	**241**	P	**Pn**	**02 56 01.4**	**+0.9**
JRY				*e*S	**Sn**	**02 56 46.6**	**-1.9**
MJAR	**Matsushiro Arr**	**4.32**	**251**	Pn	**Pn**	**02 56 04.4**	**+0.3**
	0.7nm,0.3s,baz=59,slow=12,SNR=4.5						
MAJO	**Matsushiro**	**4.32**	**251**	*e*Pn	**Pn**	**02 56 07.2**	**+3.1**
JHJ	**Hachijo jima 2**	**5.70**	**211**	Pn	**Pn**	**02 56 22.0**	**-1.1**
	9.9nm,0.3s,baz=41,slow=19,SNR=5.2						
ASAJ	**Asahikawa**	**6.06**	**355**	Pn	**Pn**	**02 56 27.9**	**-0.1**
	baz=193,slow=8.1						
ASAJ	**Asahikawa**	**6.06**	**355**	*e*Pn	**Pn**	**02 56 28.8**	**+0.8**
USRK	**Ussuriysk Ar.**	**10.48**	**309**	Pn	**Pn**	**02 57 32.6**	**+4.0**
	0.2nm,0.3s,baz=112,slow=14,SNR=3.7						
JNU	**Nakatsue**	**11.23**	**248**	Pn	**Pn**	**02 57 40.7**	**+1.7**
	0.1nm,0.3s,baz=354,slow=18,SNR=2.0						
KSRS	**Korea Array**	**12.17**	**272**	Pn	Pn	02 57 57.4	+5.7
	baz=256,slow=13,SNR=2.6						
KSAR	**Wonju Array Be**	**12.20**	**272**	Pn	Pn	02 57 57.4	+5.3
KLR	**Kul'dur**	**13.91**	**327**	Pn	**Pn**	**02 58 15.0**	**-0.4**
	0.1nm,0.3s,baz=148,slow=15,SNR=3.0						
KLR	**Kul'dur**	**13.91**	**327**	Pn	**Pn**	**02 58 15.0**	**-0.4**
PETK	**Petropavlovsk-**	**18.05**	**29**	P	**Pn**	**02 59 08.6**	**-0.6**
	0.2nm,0.3s,baz=188,slow=10,SNR=3.9						
MA2	**Magadan**	**22.05**	**10**	P	**P**	**02 59 53.6**	**+0.4**
	1.7nm,0.4s,baz=189,slow=18,SNR=2.5						
SEY	**Seymchan**	**25.50**	**10**	P	**P**	**03 00 28.0**	**+1.2**
	3.2nm,0.8s,baz=179,slow=12,SNR=8.9						
H11N2	**WAKE ISLAND Hy**	**27.47**	**125**	T	T	03 29 31.6	
	baz=49,slow=75,SNR=49						
H11N1	**WAKE ISLAND Hy**	**27.48**	**125**	T	T	03 29 39.4	
	baz=49,slow=75,SNR=42						
H11N3	**WAKE ISLAND Hy**	**27.49**	**125**	T	T	03 29 37.9	
	baz=49,slow=75,SNR=40						
SONM	**Songino Array**	**28.46**	**302**	P	**P**	**03 00 55.0**	**+1.2**
	0.6nm,0.6s,baz=94,slow=7.8,SNR=2.8						
TIXI	**Tiksi**	**34.45**	**352**	P	**P**	**03 01 45.7**	**-0.3**
	1.3nm,0.5s,baz=146,slow=3.6,SNR=2.3						
ZALV	**Zalesovo Beam**	**42.32**	**312**	P	**P**	**03 02 53.1**	**+0.8**
	0.4nm,0.3s,baz=77,slow=6.4,SNR=4.2						
ZALV				PcP	**PcP**	**03 04 45.5**	**-0.4**
	1.7nm,0.7s,baz=107,slow=4.5,SNR=3.5						
MKAR	**Makanchi Array**	**44.83**	**302**	P	**P**	**03 03 13.0**	**+0.2**
	0.7nm,0.8s,baz=83,slow=9.9,SNR=4.9						
KURK	**Kurchatov**	**46.46**	**308**	*e*P	**P**	**03 03 25.2**	**-0.3**
	51nm,0.8s						
ILAR	**Eielson Array**	**47.82**	**33**	P	**P**	**03 03 35.8**	**-0.2**
	2.2nm,0.8s,baz=265,slow=6.7,SNR=27						
ARU	**Arti**	**56.56**	**318**	*e*P	**P**	**03 04 41.1**	**0.0**
	1.9nm,0.4s						
WRA	**Warramunga Arr**	**58.31**	**190**	P	**P**	**03 04 52.6**	**-1.2**
	3.8nm,0.9s,baz=8.5,slow=7.1,SNR=16						
ABKAR	**Akbulak array**	**58.40**	**310**	*e*P	**P**	**03 04 53.4**	**-0.8**
	0.4nm,0.4s						
ASAR	**Alice Springs**	**62.04**	**190**	P	**P**	**03 05 18.4**	**-0.9**
	1.0nm,0.3s,baz=11,slow=5.9,SNR=6.0						
YKA	**Yellowknife Ar**	**62.16**	**31**	P	**P**	**03 05 19.7**	**0.0**
	0.5nm,1.0s,baz=282,slow=12,SNR=3.3						
FINES	**FINESS Array B**	**68.58**	**333**	P	**P**	**03 06 01.3**	**+0.1**
	2.0nm,0.6s,baz=45,slow=9.4,SNR=15						
SUMG	**Summit**	**69.64**	**1**	*e*P	**P**	**03 06 08.1**	**-0.1**
	2.7nm,0.7s						
KBZ	**Khabaz**	**71.34**	**311**	P	**P**	**03 06 19.8**	**+1.2**
	1.4nm,0.7s,baz=51,slow=4.9,SNR=3.6						
HFS	**Hagfors**	**73.74**	**336**	P	**P**	**03 06 33.1**	**+0.5**
	baz=26,slow=3.7,SNR=7.3						
NB2	**NORSAR Subarra**	**73.79**	**338**	P	**P**	**03 06 32.7**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**73.79**	**338**	P	**P**	**03 06 33.0**	**+0.1**
	comp=Z,1.0nm,0.6s,baz=40,slow=5.7,SNR=4.5						
AKASG	**Malin Array Be**	**74.37**	**323**	P	**P**	**03 06 36.1**	**-0.3**
	comp=Z,0.5nm,0.5s,baz=46,slow=5.8,SNR=3.6						
PDAR	**Pinedale Array**	**75.88**	**47**	P	**P**	**03 06 45.6**	**0.0**
	comp=Z,0.2nm,0.3s,baz=308,slow=3.0,SNR=3.1						
BRTR	**Keskin Array B**	**79.26**	**312**	P	**P**	**03 07 04.6**	**+0.2**
	comp=Z,0.4nm,0.6s,baz=27,slow=3.5,SNR=2.7						
VRAC	**Vranov**	**81.04**	**328**	P	**P**	**03 07 14.6**	**+0.9**
	comp=Z,1.0nm,0.5s,baz=65,slow=4.6,SNR=3.8						
GERES	**GERESS Array B**	**82.59**	**329**	P	**P**	**03 07 22.4**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=35,slow=5.3,SNR=2.9						
EKA	**Eskdalemuir Ar**	**82.63**	**341**	P	**P**	**03 07 22.8**	**+0.9**
	comp=Z,0.6nm,0.6s,baz=16,slow=3.3,SNR=4.0						
TXAR	**Lajitas Array**	**88.32**	**53**	P	**P**	**03 07 49.8**	**-1.1**
	comp=Z,0.2nm,0.6s,baz=318,slow=3.6,SNR=3.4						
TORD	**Torodi Ar. Bea**	**117.61**	**317**	PKP	**PKPdf**	**03 13 44.3**	**-1.2**
	comp=Z,0.5nm,1.2s,baz=32,slow=0.8,SNR=3.3						

*MOS **10** 02:55:56.1±1.0, 38°06N×143°56E, h17km, mb4.7/12, Error ellipse: s-maj=10.6km s-min=6.5km az=90.1*
*ISCJB **10** 02:55:57.3±1.3, 38°08N±0°03×143°44E±0°03, h22km±9km, mb4.4/53, MS4.6/2, Error ellipse: s-maj=5.7km s-min=4.2km az=161.2*
*NEIC **10** 02:55:57.4±2.5, 38°01N×143°56E, h13km±15km, mb4.6/20, Error ellipse: s-maj=8.3km s-min=4.8km az=136.0*
*JMA **10** 02:55:58.6±0.2, 38°18N×143°30E, h15km, M4.7*
*IDC **10** 02:55:59.1±6.5, 38°05N×143°56E, h24km±43km, mb4.0/24, mb1 4.2/30, mb1mx4.0/58, mbtmp4.2/30, ML3.4/5, Error ellipse: s-maj=16.9km s-min=11.6km az=115.0*
ISC 10 02:55:59.9±2.6, 38°09N±0°05×143°54E±0°06, h29km±18km, n133, σ1§92/145, mb4.4/54, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.76**	**282**	P	**Pn**	**02 56 25.9**	**-2.5**
OFUJ	**Ofunato**	**1.76**	**305**	P	**Pn**	**02 56 26.1**	**-2.4**
OFUJ				S	**Sn**	**02 56 46.4**	**-3.6**
JMK	**Ichinoseki**	**2.01**	**296**	P	**Pn**	**02 56 30.1**	**-1.8**
JMK				*e*S	**Sn**	**02 56 52.9**	**-3.1**
JOM	**Ohasama**	**2.23**	**309**	P	**Pn**	**02 56 33.3**	**-1.6**
JOM				S	**Sn**	**02 56 58.4**	**-3.1**
JOU	**Okura**	**2.28**	**278**	P	**Pn**	**02 56 33.9**	**-1.7**
JOU				*e*S	**Sn**	**02 56 59.9**	**-2.8**
JFT	**Otama**	**2.60**	**258**	P	**Pn**	**02 56 38.7**	**-1.3**
JRG	**Rokugo**	**2.62**	**301**	P	**Pn**	**02 56 39.1**	**-1.1**
JRG				S	**Sn**	**02 57 09.3**	**-1.7**
JYK	**Kaneyama**	**2.62**	**289**	P	**Pn**	**02 56 39.0**	**-1.3**
JYK				*e*S	**Sn**	**02 57 08.8**	**-2.4**
JANG	**Nango**	**2.77**	**326**	*e*S	**Sn**	**02 57 10.6**	**-4.1**
JTM	**Tenmabayashi**	**3.30**	**325**	S	**Sn**	**02 57 24.4**	**-3.4**
JAW	**Awa shima**	**3.39**	**277**	P	**Pn**	**02 56 49.8**	**-1.1**
JAG	**Ashikaga**	**3.66**	**244**	P	**Pn**	**02 56 52.5**	**-2.1**
JAG				S	**Sn**	**02 57 33.1**	**-3.6**
ERM	**Erimo**	**3.93**	**356**	*e*P	**Pn**	**02 56 56.9**	**-1.4**
ERM	**Erimo**	**3.93**	**356**	*e*Pn	**Pn**	**02 56 56.9**	**-1.4**
JRY	**Ryogami san**	**4.25**	**242**	P	**Pn**	**02 57 01.1**	**-1.6**
JKB	**Kayabe**	**4.25**	**334**	S	**Sn**	**02 57 46.1**	**-5.1**
MJAR	**Matsushiro Arr**	**4.52**	**252**	Pn	**Pn**	**02 57 05.7**	**-0.8**
	12nm,0.3s,baz=73,slow=16,SNR=5.5						
MJAR				Sn	**Sn**	**02 57 57.2**	**-0.8**
	3.0nm,0.3s,baz=46,slow=28,SNR=4.2						
MAT	**Matsushiro**	**4.52**	**252**	P	**Pn**	**02 57 06.0**	**-0.4**
MAT				*e*S	**Sn**	**02 57 55.0**	**-3.0**
MJB9	**Matsu-Tunnel**	**4.52**	**252**	*e*Pn	**Pn**	**02 57 05.0**	**-1.5**
JHJ2	**Mitsune**	**5.82**	**212**	*e*Pn	**Pn**	**02 57 20.8**	**-3.5**
JHJ	**Hachijo jima 2**	**5.83**	**213**	Pn	**Pn**	**02 57 21.4**	**-3.0**
	52nm,0.3s,baz=60,slow=20,SNR=12						
JHJ				Sn	**Sn**	**02 58 21.5**	**-8.7**
	80nm,0.3s,baz=105,slow=22,SNR=7.5						
INU	**Inuyama**	**5.91**	**244**	*e*Pn	**Pn**	**02 57 25.1**	**-0.4**
KUR	**Kuril'sk**	**7.83**	**23**	*e*P	**Pn**	**02 57 49.3**	**-2.6**
KUR				*e*S	**Sn**	**02 59 12.9**	**-6.6**
KUR				pmax	pmax		
	comp=N,16nm,0.4s						
KUR				pmax	pmax		
	comp=Z,44nm,0.4s						
KUR				pmax	pmax		
	comp=E,22nm,0.5s						
KUR				smax	smax		
	comp=E,159nm,0.5s						
KUR				smax	smax		
	comp=N,43nm,0.4s						
YSS	**Yuzh-Sakhalins**	**8.87**	**357**	*e*P	**Pn**	**02 58 06.3**	**+0.2**
YSS				pmax	pmax		
	comp=Z,9.0nm,0.4s						
YSS	**Yuzh-Sakhalins**	**8.87**	**357**	*e*Pn	**Pn**	**02 58 06.3**	**+0.2**
	comp=Z,9.3nm,0.4s						
USRK	**Ussuriysk Ar.**	**10.63**	**309**	Pn	**Pn**	**02 58 31.7**	**+1.6**
	comp=Z,0.4nm,0.3s,baz=121,slow=14,SNR=4.5						
JNU	**Nakatsue**	**11.43**	**248**	Pn	**Pn**	**02 58 39.5**	**-1.8**
	comp=Z,0.3nm,0.3s,baz=72,slow=9.6,SNR=4.5						
MDJ	**Mudanjiang**	**12.33**	**306**	P	**Pn**	**02 58 54.0**	**+0.6**
MDJ				pmax	pmax		
	comp=Z,7.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,1μm,7.5s						
KSRS	**Korea Array**	**12.37**	**272**	Pn	**Pn**	**02 58 54.6**	**+0.6**
	comp=Z,0.3nm,0.3s,baz=87,slow=14,SNR=11						
KSAR	**Wonju Array Be**	**12.41**	**272**	P	**Pn**	**02 58 54.6**	**+0.1**
KSAR	**Wonju Array Be**	**12.41**	**272**	Pn	**Pn**	**02 58 54.6**	**+0.1**
TYV	**Tymovskoe**	**12.78**	**357**	*e*P	**Pn**	**02 59 02.5**	**+2.9**
CN2	**Changchun**	**14.80**	**298**	*e*P	**Pn**	**02 59 28.8**	**+1.7**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
PEA0	**Petropavlovsk-**	**17.94**	**29**	*e*Pn	**P**	**03 00 08.2**	**+0.7**
PETK	**Petropavlovsk-**	**17.94**	**29**	P	**Pn**	**03 00 06.0**	**-1.0**
	comp=Z,0.4nm,0.3s,baz=201,slow=9.4,SNR=15						
PETK	**Petropavlovsk-**	**17.94**	**29**	P	**Pn**	**03 00 06.0**	**-1.0**
BJI	**Beijing**	**21.30**	**284**	P	**P**	**03 00 47.3**	**+3.1**
BJI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
BJI				pmax	pmax		
	comp=Z,4μm,17.4s						
MA2	**Magadan**	**21.99**	**10**	P	**P**	**03 00 52.2**	**+0.8**
	comp=Z,4.9nm,0.5s,baz=187,slow=8.9,SNR=5.7						
HHC	**Hu-ho-hao-te**	**24.76**	**286**	*e*P	**P**	**03 01 21.2**	**+2.1**
HHC				S	**S**	**03 05 38.1**	**-1.6**
HHC				pmax	pmax		
	comp=Z,28nm,1.0s						
HHC				pmax	pmax		
	comp=Z,970nm,5.9s						
HHC				LR	LR		
	comp=N,2μm,11.3s						
HHC				LR	LR		
	comp=E,2μm,10.3s						
HHC				LR	LR		
	comp=Z,1μm,12.3s						
SEY	**Seymchan**	**25.45**	**9**	P	**P**	**03 01 26.0**	**+1.0**
	comp=Z,8.9nm,0.8s,baz=188,slow=5.3,SNR=15						
SEY	**Seymchan**	**25.45**	**9**	P	**P**	**03 01 26.0**	**+1.0**
YAK	**Yakutsk**	**25.45**	**345**	P	**P**	**03 01 24.8**	**-0.2**
	comp=Z,27nm,0.6s,baz=358,slow=1.1,SNR=7.7						
YAK	**Yakutsk**	**25.45**	**345**	*e*P	**P**	**03 01 24.3**	**-0.6**
YAK				pmax	pmax		
	comp=Z,24nm,0.8s						
YAK				pmax	pmax		
	comp=E,9.0nm,1.4s						
YAK				pmax	pmax		
	comp=N,14nm,1.1s						
YAK	**Yakutsk**	**25.45**	**345**	*e*P	**P**	**03 01 24.4**	**-0.5**
	comp=N,27nm,0.8s						
SONA1	**Songino Array**	**28.62**	**302**	*e*P	**P**	**03 01 54.9**	**+1.0**
SONM	**Songino Array**	**28.63**	**302**	P	**P**	**03 01 53.5**	**-0.3**
	comp=N,1.3nm,0.5s,baz=95,slow=8.7,SNR=4.8						
ENH	**Enshi**	**29.11**	**265**	*e*P	**P**	**03 01 58.3**	**+0.1**
	comp=N,24nm,0.7s						
TLY	**Talaya**	**30.94**	**309**	*e*P	**P**	**03 02 15.0**	**+0.8**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.7s						
TLY	**Talaya**	**30.94**	**309**	*e*P	**P**	**03 02 15.0**	**+0.8**
	comp=Z,2.6nm,0.7s						
ZAK	**Zakamensk**	**30.97**	**306**	*e*P	**P**	**03 02 14.6**	**+0.1**
ZAK				*e*		03 05 05.3	
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
LZH	**Lanzhou**	**31.56**	**279**	*e*P	**P**	**03 02 19.7**	**-0.3**
LZH				pP	pP	03 02 25.8	-2.6
LZH				sP	sP	03 02 28.6	-3.3
LZH				PP	**PnPn**	**03 03 24.3**	**+0.6**
LZH				pmax	pmax		
	comp=Z,23nm,1.0s						
LZH				pmax	pmax		
	comp=Z,75nm,5.2s						
LZH				LR	LR		
	comp=N,360nm,12.9s						
LZH				LR	LR		
	comp=E,370nm,13.2s						
LZH				LR	LR		
	comp=Z,450nm,16.5s						
GYA	**Guiyang**	**33.06**	**260**	*e*P	P	03 02 39.5	+6.3
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**33.36**	**270**	*e*P	**P**	**03 02 39.5**	**+3.8**
GTA	**Gaotai**	**33.88**	**286**	*e*P	**P**	**03 02 39.8**	**-0.4**
GTA				pP	pP	03 02 50.6	+2.0
GTA				sP	sP	03 02 54.6	+2.5
GTA				PcP	**PcP**	**03 05 20.2**	**+1.8**
GTA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
TIXI	**Tiksi**	**34.46**	**352**	P	**P**	**03 02 44.0**	**-0.7**
	comp=Z,1.7nm,0.6s,baz=156,slow=2.8,SNR=2.5						
TIXI	**Tiksi**	**34.46**	**352**	P	**P**	**03 02 44.0**	**-0.7**
KMI	**Kunming**	**36.79**	**262**	P	P	03 03 12.3	+6.9
KMI				pmax	pmax		
	comp=Z,15nm,0.6s						
KMI				pmax	pmax		
	comp=Z,2μm,14.2s						
JAY	**Jayapura**	**40.49**	**184**	P	**P**	**03 03 36.3**	**0.0**
	comp=Z,0.8nm,0.9s,baz=107,slow=24,SNR=3.1						
WMQ	**Urumqi**	**41.88**	**296**	*e*P	**P**	**03 03 50.7**	**+3.2**
WMQ				pP	pP	03 03 56.9	+0.8
WMQ				sP	sP	03 04 01.0	+1.4
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
ZAA0	**Zalesovo Array**	**42.46**	**312**	*e*P	**P**	**03 03 55.7**	**+3.6**
ZALV	**Zalesovo Beam**	**42.46**	**312**	P	**P**	**03 03 53.8**	**+1.8**
	comp=Z,4.2nm,0.5s,baz=92,slow=7.9,SNR=14						
CMAR	**Chiang Mai Arr**	**43.39**	**256**	P	**P**	**03 04 00.1**	**0.0**
	comp=Z,0.7nm,0.3s,baz=168,slow=9.1,SNR=2.7						
MK01	**Makanchi Array**	**44.99**	**302**	*e*P	**P**	**03 04 15.0**	**+2.4**
MK31	**Makanchi Array**	**44.99**	**302**	*e*P	**P**	**03 04 15.0**	**+2.4**
MK31	**Makanchi Array**	**44.99**	**302**	*e*P	**P**	**03 04 15.0**	**+2.4**
MKAR	**Makanchi Array**	**44.99**	**302**	P	**P**	**03 04 13.5**	**+0.9**
	comp=Z,2.1nm,0.7s,baz=87,slow=10,SNR=7.2						
MKAR	**Makanchi Array**	**44.99**	**302**	*e*P	**P**	**03 04 15.0**	**+2.4**
RSO	**Redoubt South**	**45.02**	**39**	*e*P	**P**	**03 04 13.8**	**+1.0**
KDAK	**Kodiak Island**	**45.18**	**43**	*e*P	**P**	**03 04 14.0**	**+0.2**
KDAK				pmax	pmax		
	comp=Z,67nm,0.8s						
KDAK	**Kodiak Island**	**45.18**	**43**	*e*P	**P**	**03 04 14.0**	**+0.2**
	comp=Z,67nm,0.8s						
MAKZ	**Makanchi**	**45.20**	**302**	*e*P	**P**	**03 04 18.1**	**+3.9**
MAKZ				pmax	pmax		
	comp=Z,7.0nm,1.1s						
MAKZ	**Makanchi**	**45.20**	**302**	*e*P	**P**	**03 04 18.1**	**+3.9**
	comp=Z,6.5nm,1.1s						
SPU	**Mount Spurr**	**45.37**	**38**	*e*P	**P**	**03 04 16.6**	**+1.3**
KTH	**Kantishna Hill**	**45.92**	**35**	*e*P	**P**	**03 04 21.2**	**+1.4**
	comp=Z,10nm,1.0s						
TRF	**Thorofare Moun**	**46.21**	**35**	*e*P	**P**	**03 04 23.1**	**+1.0**
	comp=Z,4.9nm,0.8s						
COLD	**Coldfoot**	**46.41**	**29**	*e*P	**P**	**03 04 22.7**	**-0.8**
	comp=Z,3.4nm,0.7s						
KURK	**Kurchatov**	**46.61**	**308**	*e*P	**P**	**03 04 25.5**	**+0.2**
KURK	**Kurchatov**	**46.61**	**308**	*e*P	**P**	**03 04 25.5**	**+0.2**
MCK	**McKinley**	**46.81**	**34**	*e*P	**P**	**03 04 27.7**	**+1.0**
MCK				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MCK	**McKinley**	**46.81**	**34**	*e*P	**P**	**03 04 27.7**	**+1.0**
	comp=Z,7.4nm,0.9s						
SML	**Sawmill**	**47.14**	**37**	*e*P	**P**	**03 04 28.8**	**-0.5**
SML				pmax	pmax		
	comp=Z,2.0nm,0.8s						
SML	**Sawmill**	**47.14**	**37**	*e*P	**P**	**03 04 28.8**	**-0.5**
	comp=Z,2.2nm,0.8s						
WRH	**Wood River Hil**	**47.18**	**33**	*e*P	**P**	**03 04 30.1**	**+0.6**
	comp=Z,5.5nm,0.8s						
IL1	**Eielson Array**	**47.69**	**33**	*e*P	**P**	**03 04 33.0**	**-0.5**
ILAR	**Eielson Array**	**47.69**	**33**	P	**P**	**03 04 33.6**	**+0.1**
	comp=Z,6.4nm,0.7s,baz=264,slow=6.6,SNR=36						
ILB	**Eielson Array**	**47.69**	**33**	*e*P	**P**	**03 04 33.7**	**+0.2**
PAX	**Paxson**	**48.40**	**35**	*e*P	**P**	**03 04 40.4**	**+1.3**
PAX				pmax	pmax		
	comp=Z,12nm,0.8s						
PAX	**Paxson**	**48.40**	**35**	*e*P	**P**	**03 04 40.4**	**+1.3**
	comp=Z,12nm,0.8s						
DIV	**Divide**	**48.41**	**38**	*e*P	**P**	**03 04 40.4**	**+1.2**
	comp=Z,27nm,1.3s						
RAMN	**Ramite**	**48.61**	**274**	*e*P	**P**	**03 04 40.9**	**-0.5**
	comp=Z,12nm,0.6s						
GUN	**Gumba**	**48.73**	**276**	*e*P	**P**	**03 04 42.5**	**+0.1**
DOT	**Dot Lake**	**48.98**	**34**	*e*P	**P**	**03 04 43.7**	**+0.2**
	comp=Z,9.1nm,0.7s						
KKN	**Kakani**	**49.25**	**276**	*e*P	**P**	**03 04 46.1**	**-0.2**
	comp=Z,23nm,0.6s						
GKN	**Gorkha**	**49.66**	**277**	*e*P	**P**	**03 04 49.1**	**-0.2**
	comp=Z,14nm,0.4s						
CRQM	**Cirque**	**49.73**	**38**	*e*P	**P**	**03 04 51.0**	**+1.6**
	comp=Z,37nm,1.2s						
EGAK	**Eagle**	**50.14**	**33**	*e*P	**P**	**03 04 52.0**	**-0.2**
	comp=Z,1.3nm,0.5s						
KOLN	**Koldanda**	**50.58**	**277**	*e*P	**P**	**03 04 56.0**	**-0.3**
	comp=Z,6.9nm,0.4s						
TKM2	**Tokmak 2**	**50.61**	**298**	*e*P	**P**	**03 04 56.5**	**+0.1**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.6s						
TKM2	**Tokmak 2**	**50.61**	**298**	*e*P	**P**	**03 04 56.5**	**+0.1**
	comp=Z,3.9nm,0.6s						
PYUN	**Piuthan**	**50.90**	**278**	*e*P	**P**	**03 04 58.7**	**-0.1**
KKAR	**Karatay Array**	**54.05**	**300**	*e*P	**P**	**03 05 25.5**	**+3.8**
KKAR	**Karatay Array**	**54.05**	**300**	*e*P	**P**	**03 05 25.4**	**+3.8**
ARU	**Arti**	**56.68**	**319**	*e*P	**P**	**03 05 40.6**	**+0.2**
ARU				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ARU	**Arti**	**56.68**	**319**	*e*P	**P**	**03 05 40.6**	**+0.2**
	comp=Z,2.8nm,0.6s						
DLBC	**Dease Lake**	**56.75**	**39**	P	**P**	**03 05 42.0**	**+1.1**
	comp=Z,8.8nm,0.9s,baz=284,slow=4.8,SNR=4.6						
DLBC	**Dease Lake**	**56.75**	**39**	*e*P	**P**	**03 05 42.1**	**+1.1**
	comp=Z,4.6nm,1.0s						
WRAB	**Tennant Creek**	**58.36**	**190**	*e*P	**P**	**03 05 50.9**	**-1.6**
WRAB

10nm,0.3s,baz=52,slow=42,SNR=6.8
MAT Matsushiro 4.22 251 P **Pn 02 59 55.9 +1.6**
MAT S **Sn 03 00 44.5 +1.4**
JHJ Hachijo jima 2 5.64 210 P **Pn 03 00 10.7 -3.0**
49nm,0.3s,baz=96,slow=18,SNR=8.5
JHJ S Sn 03 01 08.8 -9.2
34nm,0.3s,baz=275,slow=23,SNR=5.3
USRK Ussuriysk Ar. 10.41 310 P **Pn 03 01 21.5 +2.3**
0.5nm,0.3s,baz=128,slow=11,SNR=4.7
KSRS Korea Array 12.07 272 P **Pn 03 01 45.3 +3.4**
0.2nm,0.3s,baz=85,slow=14,SNR=5.8
KLR Kul'dur 13.87 327 P **Pn 03 02 06.2 -0.2**
0.4nm,0.3s,baz=135,slow=12,SNR=5.6
PETK Petropavlovsk- 18.12 29 P **P 03 03 02.4 +0.7**
0.1nm,0.3s,baz=188,slow=9.7,SNR=3.7
SEY Seymchan 25.54 10 P **P 03 04 18.7 +0.5**
1.6nm,0.6s,baz=193,slow=14,SNR=4.6
SONM Songino Array 28.39 302 P **P 03 04 44.6 +0.5**
1.2nm,0.5s,baz=103,slow=9.6,SNR=3.8
ZALV Zalesovo Beam 42.26 312 P **P 03 06 43.0 +0.2**
3.5nm,0.5s,baz=89,slow=7.9,SNR=3.5
CMAR Chiang Mai Arr 43.09 256 P **P 03 06 49.9 -0.1**
0.7nm,0.5s,baz=35,slow=6.6,SNR=3.3
MKAR Makanchi Array 44.75 302 P **P 03 07 03.1 0.0**
1.6nm,0.6s,baz=85,slow=9.6,SNR=7.8
ILAR Eielson Array 47.89 33 P **P 03 07 26.5 -1.1**
0.8nm,0.7s,baz=268,slow=6.9,SNR=4.7
WRA Warramunga Arr 58.28 190 P **P 03 08 46.3 +1.8**
0.4nm,0.6s,baz=8.5,slow=7.1,SNR=3.1
ASAR Alice Springs 62.01 190 P **P 03 09 12.4 +2.4**
0.1nm,0.5s,baz=2.3,slow=6.9,SNR=3.0
FINES FINESS Array B 68.55 333 P **P 03 09 51.6 -0.4**
1.5nm,0.9s,baz=35,slow=5.1,SNR=3.6
HFS Hagfors 73.72 336 P **P 03 10 21.8 -1.5**
3.3nm,1.1s,baz=40,slow=7.5,SNR=2.8

*IDC **10** 03:07:02.7±1.1,36°.61N×15°.56E,h0km,mb3.4/5,*
mb1 3.6/13,mb1mx3.5/64,mbtmp3.5/13,ML3.6/8,Error
ellipse: s-maj=21.7km s-min=16.3km az=178.0
*ISCJB **10** 03:07:03.6±0.6,36°.67N±0°.02×15°.69E±0°.03,h21km±5km,*
mb3.5/6,Error ellipse: s-maj=4.2km s-min=3.6km az=3.7
*ROM **10** 03:07:03.7±0.1,36°.67N×15°.65E,h16km±1km,Ml3.9/40,*
Error ellipse: s-maj=1.7km s-min=1.5km az=166.0
*CSEM **10** 03:07:04.9±0.2,36°.74N×15°.60E,h20km,Mw3.7*
ISC 10 03:07:04.7±1.2,36°.72N±0°.04×15°.62E±0°.03,h17km±9km,
n209,σ1§22/231,mb3.5/6,24C-39D,Sicily

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HAVL	**Avola**	**0.47**	**301**	⇓*i*Pg		**Pb**	**03 07 14.2**	**-0.3**
HAVL				Sg		**Sb**	**03 07 21.1**	**0.0**
	8µm,0.3s							
HAVL	**Avola**	**0.47**	**301**	⇓*i*Pg		**Pb**	**03 07 14.2**	**-0.3**
HAVL				Sg		**Sb**	**03 07 21.1**	**0.0**
	8µm,0.3s							
SSY	**Sortino**	**0.62**	**314**	⇓*i*Pg		**Pb**	**03 07 17.1**	**0.0**
SSY				Sg		**Sb**	**03 07 25.9**	**+0.4**
	15µm,0.4s							
SSY	**Sortino**	**0.62**	**314**	⇓*i*Pg		**Pb**	**03 07 17.1**	**0.0**
SSY				Sg		**Sb**	**03 07 25.9**	**+0.4**
	15µm,0.4s							
HAGA	**Augusta**	**0.68**	**326**	Pg		**Pb**	**03 07 18.0**	**0.0**
HAGA				Sg		**Sb**	**03 07 27.8**	**+0.7**
HAGA	**Augusta**	**0.68**	**326**	Pg		**Pb**	**03 07 18.0**	**0.0**
HAGA				Sg		**Sb**	**03 07 27.8**	**+0.7**
HMDC	**Modica**	**0.71**	**289**	⇓*i*Pg		**Pg**	**03 07 17.8**	**-0.9**
HMDC				Sg		**Sg**	**03 07 27.5**	**-0.7**
	7µm,0.6s							
HMDC	**Modica**	**0.71**	**289**	⇓*i*Pg		**Pg**	**03 07 17.8**	**-0.9**
HMDC				Sg		**Sg**	**03 07 27.5**	**-0.7**
	7µm,0.6s							
HCRL	**Carlentini**	**0.73**	**320**	⇓*i*Pg		**Pb**	**03 07 18.9**	**-0.1**
HCRL				Sg		**Sg**	**03 07 29.4**	**+0.6**
	18µm,0.5s							
HCRL	**Carlentini**	**0.73**	**320**	⇓*i*Pg		**Pb**	**03 07 18.9**	**-0.1**
HCRL				Sg		**Sg**	**03 07 29.4**	**+0.6**
	18µm,0.5s							
HVZN	**Vizzini**	**0.86**	**302**	⇓*i*Pg		**Pb**	**03 07 20.4**	**-0.8**
HVZN				Sg		**Sg**	**03 07 33.1**	**+0.3**
	7µm,0.5s							
HVZN	**Vizzini**	**0.86**	**302**	⇓*i*Pg		**Pb**	**03 07 20.4**	**-0.8**
HVZN				Sg		**Sg**	**03 07 33.1**	**+0.3**
	7µm,0.5s							
HLNI	**Lentini**	**0.87**	**316**	⇓*i*Pg		**Pb**	**03 07 20.8**	**-0.5**
	926nm,0.3s							
HLNI	**Lentini**	**0.87**	**316**	⇓*i*Pg		**Pb**	**03 07 20.8**	**-0.5**
	926nm,0.3s							
ESLN	**Serra La Nave**	**1.10**	**332**	Pg		**Pn**	**03 07 25.3**	**-0.2**
	4µm,0.5s							
ESLN	**Serra La Nave**	**1.10**	**332**	Pg		**Pn**	**03 07 25.3**	**-0.2**
	4µm,0.5s							
RAFF	**Raffo Rosso**	**1.13**	**297**	⇓*i*Pg		**Pn**	**03 07 25.2**	**-0.5**
RAFF				Sg		**Sn**	**03 07 41.0**	**+0.2**
	6µm,0.6s							
RAFF	**Raffo Rosso**	**1.13**	**297**	⇓*i*Pg		**Pn**	**03 07 25.2**	**-0.5**
RAFF				Sg		**Sn**	**03 07 41.0**	**+0.2**
	6µm,0.6s							
ECNV	**Catenanuova**	**1.14**	**320**	⇓*i*Pg		**Pb**	**03 07 26.0**	**+0.1**
	4µm,0.5s							
ECNV	**Catenanuova**	**1.14**	**320**	⇓*i*Pg		**Pb**	**03 07 26.0**	**+0.1**
	4µm,0.5s							
VAE	**Valguarnera**	**1.23**	**308**	Pn		**Pg**	**03 07 28.2**	**-0.2**
	188nm,0.3s,baz=24,slow=1.9,SNR=268							
VAE						Sn	**Sg**	**03 07 47.2**	**+2.8**
	154nm,0.3s,baz=302,slow=9.5,SNR=9.1							
MMME	**Mongiuffi-Meli**	**1.25**	**346**	Pg		**Pn**	**03 07 27.2**	**-0.2**
	3µm,0.4s							
MMME	**Mongiuffi-Meli**	**1.25**	**346**	Pg		**Pn**	**03 07 27.2**	**-0.2**
	3µm,0.4s							
WDD	**Wied Dalam**	**1.25**	**226**	⇑*i*Pg		**Pn**	**03 07 25.7**	**-1.7**
WDD				Sg		**Sn**	**03 07 42.7**	**-1.2**
	4µm,0.6s							
WDD	**Wied Dalam**	**1.25**	**226**	⇑*i*Pg		**Pn**	**03 07 25.7**	**-1.7**
WDD				Sg		**Sn**	**03 07 42.7**	**-1.2**
	4µm,0.6s							
MPAZ	**Palizzi**	**1.27**	**14**	⇑*i*Pg		**Pn**	**03 07 27.5**	**-0.2**
	681nm,0.6s							
MPAZ	**Palizzi**	**1.27**	**14**	⇑*i*Pg		**Pn**	**03 07 27.5**	**-0.2**
	681nm,0.6s							
CAGR	**Agira**	**1.27**	**315**	⇓*i*Pg		**Pb**	**03 07 28.3**	**+0.1**
	4µm,0.5s							
CAGR	**Agira**	**1.27**	**315**	⇓*i*Pg		**Pb**	**03 07 28.3**	**+0.1**
	4µm,0.5s							
GALF	**Gagliano Caste**	**1.30**	**320**	⇓*i*Pg		**Pb**	**03 07 28.5**	**-0.2**
	2µm,0.5s							
GALF	**Gagliano Caste**	**1.30**	**320**	⇓*i*Pg		**Pb**	**03 07 28.5**	**-0.2**
	2µm,0.5s							
NOV	**Novara**	**1.36**	**344**	Pg		**Pn**	**03 07 29.1**	**+0.1**
	2µm,0.4s							
NOV	**Novara**	**1.36**	**344**	Pg		**Pn**	**03 07 29.1**	**+0.1**
	2µm,0.4s							
MCSR	**Castroreale**	**1.37**	**348**	Pg		**Pn**	**03 07 29.5**	**+0.3**
	3µm,0.3s							
MCSR	**Castroreale**	**1.37**	**348**	Pg		**Pn**	**03 07 29.5**	**+0.3**
	3µm,0.3s							
SOI	**Samo**	**1.39**	**14**	⇑*i*Pg		**Pn**	**03 07 29.2**	**-0.1**
	442nm,0.5s							
SOI	**Samo**	**1.39**	**14**	⇑*i*Pg		**Pn**	**03 07 29.2**	**-0.1**
	442nm,0.5s							
MNO	**Monte Soro**	**1.42**	**329**	Pg		**Pn**	**03 07 30.3**	**+0.4**
	1µm,0.6s							
MNO	**Monte Soro**	**1.42**	**329**	Pg		**Pn**	**03 07 30.3**	**+0.4**
	1µm,0.6s							
MPNC	**Port Mandanici**	**1.44**	**351**	Pg		**Pb**	**03 07 30.6**	**-0.4**
	2µm,0.5s							
MPNC	**Port Mandanici**	**1.44**	**351**	Pg		**Pb**	**03 07 30.6**	**-0.4**
	2µm,0.5s							
MUCR	**Ucria**	**1.45**	**336**	Pg		**Pn**	**03 07 30.3**	**+0.1**
	2µm,0.7s							
MUCR	**Ucria**	**1.45**	**336**	Pg		**Pn**	**03 07 30.3**	**+0.1**
	2µm,0.7s							
MSCL	**Scilla**	**1.51**	**5**	Pg		**Pn**	**03 07 31.1**	**0.0**
	1µm,0.6s							
MSCL	**Scilla**	**1.51**	**5**	Pg		**Pn**	**03 07 31.1**	**0.0**
	1µm,0.6s							
MSRU	**Castanea**	**1.54**	**357**	Pg		**Pn**	**03 07 31.7**	**+0.3**
	895nm,0.4s							
MSRU	**Castanea**	**1.54**	**357**	Pg		**Pn**	**03 07 31.7**	**+0.3**
	895nm,0.4s							
MSFR	**San Fratello**	**1.55**	**328**	Pg		**Pn**	**03 07 31.8**	**+0.3**
	544nm,0.8s							
MSFR	**San Fratello**	**1.55**	**328**	Pg		**Pn**	**03 07 31.8**	**+0.3**
	544nm,0.8s							
CEL	**Celeste**	**1.55**	**8**	Pg		**Pn**	**03 07 31.6**	**0.0**
	491nm,0.8s							
CEL	**Celeste**	**1.55**	**8**	Pg		**Pn**	**03 07 31.6**	**0.0**
	491nm,0.8s							
RESU	**Resuttano**	**1.56**	**307**	Pg		**Pb**	**03 07 32.8**	**-0.3**
	1µm,0.6s							
RESU	**Resuttano**	**1.56**	**307**	Pg		**Pb**	**03 07 32.8**	**-0.3**
	1µm,0.6s							
MILZ	**Milazzo**	**1.58**	**349**	Pg		**Pn**	**03 07 32.4**	**+0.5**
	2µm,0.5s							
MILZ	**Milazzo**	**1.58**	**349**	Pg		**Pn**	**03 07 32.4**	**+0.5**
	2µm,0.5s							
FAVR	**Favara**	**1.66**	**290**	Pg		**Pn**	**03 07 33.3**	**+0.3**
	1µm,0.8s							
FAVR	**Favara**	**1.66**	**290**	Pg		**Pn**	**03 07 33.3**	**+0.3**
	1µm,0.8s							
VPL	**Vulcano Piano**	**1.73**	**343**	⇓*i*Pg		**Pn**	**03 07 35.0**	**+1.0**
	6µm,0.6s							
VPL	**Vulcano Piano**	**1.73**	**343**	⇓*i*Pg		**Pn**	**03 07 35.0**	**+1.0**
	6µm,0.6s							
PLLN	**Pollina**	**1.73**	**318**	⇓*i*Pg		**Pb**	**03 07 35.1**	**-1.0**
	1µm,0.5s							
PLLN	**Pollina**	**1.73**	**318**	⇓*i*Pg		**Pb**	**03 07 35.1**	**-1.0**
	1µm,0.5s							
GIB	**Gibilmanna**	**1.79**	**315**	⇓*i*Pg		**Pn**	**03 07 35.9**	**+0.9**
	2µm,0.7s							
GIB	**Gibilmanna**	**1.79**	**315**	⇓*i*Pg		**Pn**	**03 07 35.9**	**+0.9**
	2µm,0.7s							
LLI	**Lipari**	**1.80**	**343**	Pg		**Pb**	**03 07 36.2**	**-1.0**
	4µm,0.8s							
LLI	**Lipari**	**1.80**	**343**	Pg		**Pb**	**03 07 36.2**	**-1.0**
	4µm,0.8s							
ALJA	**Alia**	**1.81**	**305**	Pg		**Pb**	**03 07 36.2**	**-1.2**
	594nm,0.5s							
ALJA	**Alia**	**1.81**	**305**	Pg		**Pb**	**03 07 36.2**	**-1.2**
	594nm,0.5s							
PLAC	**Placanica**	**1.84**	**20**	Pg		**Pn**	**03 07 36.4**	**+0.8**
	186nm,0.4s							
PLAC	**Placanica**	**1.84**	**20**	Pg		**Pn**	**03 07 36.4**	**+0.8**
	186nm,0.4s							
JOPP	**Joppolo**	**1.89**	**6**	Pg		**Pn**	**03 07 36.7**	**+0.4**
	278nm,0.7s							
JOPP	**Joppolo**	**1.89**	**6**	Pg		**Pn**	**03 07 36.7**	**+0.4**
	278nm,0.7s							
IFIL	**Filicudi i Eol**	**2.02**	**336**	⇓*i*Pg		**Pn**	**03 07 38.0**	**0.0**
	879µm,37.0s							
IFIL	**Filicudi i Eol**	**2.02**	**336**	⇓*i*Pg		**Pn**	**03 07 38.0**	**0.0**
	879µm,37.0s							
IACL	**Alicudi**	**2.07**	**331**	⇓*i*Pg		**Pn**	**03 07 38.6**	**-0.1**
	671nm,0.6s							
IACL	**Alicudi**	**2.07**	**331**	⇓*i*Pg		**Pn**	**03 07 38.6**	**-0.1**
	671nm,0.6s							
SOLUN	**Solunto**	**2.15**	**310**	⇓*i*Pg		**Pn**	**03 07 40.5**	**+0.7**
	282nm,0.7s							
SOLUN	**Solunto**	**2.15**	**310**	⇓*i*Pg		**Pn**	**03 07 40.5**	**+0.7**
	282nm,0.7s							
MPG	**Monte Pellegri**	**2.31**	**309**	Pg		**Pn**	**03 07 42.6**	**+0.7**
	246nm,0.9s							
MPG	**Monte Pellegri**	**2.31**	**309**	Pg		**Pn**	**03 07 42.6**	**+0.7**
	246nm,0.9s							
SERS	**Sersale**	**2.46**	**20**	⇑*i*Pg		**Pn**	**03 07 45.2**	**+1.1**
	110nm,0.7s							
SERS	**Sersale**	**2.46**	**20**	⇑*i*Pg		**Pn**	**03 07 45.2**	**+1.1**
	110nm,0.7s							
CAR1	**CAROLEI**	**2.57**	**10**	Pg		**Pn**	**03 07 45.7**	**+0.1**
	376nm,0.7s							
CAR1	**CAROLEI**	**2.57**	**10**	Pg		**Pn**	**03 07 45.7**	**+0.1**
	376nm,0.7s							
TIP	**Timpagrande**	**2.61**	**20**	P		**Pn**	**03 07 46.9**	**+0.7**
TIP	**Timpagrande**	**2.61**	**20**	⇑*i*Pg		**Pn**	**03 07 47.1**	**+0.9**
TIP	**Timpagrande**	**2.61**	**20**	⇑*i*Pg		**Pn**	**03 07 47.1**	**+0.9**
PIPA	**Pietrapaola**	**2.91**	**18**	⇑*i*Pg		**Pn**	**03 07 51.3**	**+1.0**
PIPA	**Pietrapaola**	**2.91**	**18**	⇑*i*Pg		**Pn**	**03 07 51.3**	**+1.0**
PTMD	**Pantelleria Cu**	**2.92**	**272**	Pg		**Pn**	**03 07 49.5**	**-0.9**
	210nm,0.5s							
PTMD	**Pantelleria Cu**	**2.92**	**272**	Pg		**Pn**	**03 07 49.5**	**-0.9**
	210nm,0.5s							
SALB	**San Lorenzo Be**	**3.20**	**10**	Pg		**Pn**	**03 07 55.7**	**+1.4**
SALB	**San Lorenzo Be**	**3.20**	**10**	Pg		**Pn**	**03 07 55.7**	**+1.4**
BULG	**Bulgheria - Ca**	**3.36**	**357**	Pg		**Pn**	**03 07 56.8**	**+0.4**
	156nm,0.4s							
BULG	**Bulgheria - Ca**	**3.36**	**357**	Pg		**Pn**	**03 07 56.8**	**+0.4**
	156nm,0.4s							
SIRI	**Monte Sirino -**	**3.46**	**3**	Pg		**Pn**	**03 07 58.2**	**+0.3**
	85nm,0.4s							
SIRI	**Monte Sirino -**	**3.46**	**3**	Pg		**Pn**	**03 07 58.2**	**+0.3**
	85nm,0.4s							
TAR1	**Tarsanto**	**4.01**	**18**	*e*Pn		**Pn**	**03 08 04.4**	**-1.0**
SG1	**Sgolgore (BA)**	**4.19**	**11**	*e*Pn		**Pn**	**03 08 07.4**	**-0.5**
SG1						Sn	**Sn**	**03 08 54.8**	**-1.7**
VLS	**Valsamata**	**4.21**	**68**	P		**Pn**	**03 08 07.9**	**-0.2**
VLS	**Valsamata**	**4.21**	**68**	P		**Pn**	**03 08 07.9**	**-0.2**
ZKS	**Zakynthos**	**4.23**	**75**	P		**Pn**	**03 08 07.7**	**-0.7**
ZKS	**Zakynthos**	**4.23**	**75**	P		**Pn**	**03 08 07.7**	**-0.7**
KFL	**Anninata**	**4.34**	**70**	P		**Pn**	**03 08 09.8**	**-0.1**
KFL	**Anninata**	**4.34**	**70**	P		**Pn**	**03 08 09.8**	**-0.1**
CDT	**Castel del Mon**	**4.38**	**6**	*e*Pn		**Pn**	**03 08 10.1**	**-0.4**
KEK	**Kerkira**	**4.44**	**46**	P		**Pn**	**03 08 10.2**	**-1.1**
KEK	**Kerkira**	**4.44**	**46**	P		**Pn**	**03 08 10.2**	**-1.1**
BAI	**Bari**	**4.49**	**12**	*e*Pn		**Pn**	**03 08 10.9**	**-1.0**
BAI						Sn	**Sn**	**03 08 59.6**	**-4.0**
LKD2	**Lefkada island**	**4.49**	**61**	P		**Pn**	**03 08 12.3**	**+0.3**
LKD2	**Lefkada island**	**4.49**	**61**	P		**Pn**	**03 08 12.3**	**+0.3**
SGD	**Sagiada**	**4.64**	**50**	P		**Pn**	**03 08 14.0**	**0.0**
SGD	**Sagiada**	**4.64**	**50**	P		**Pn**	**03 08 14.0**	**0.0**
IGT	**Igoumenitsa**	**4.65**	**51**	P		**Pn**	**03 08 13.8**	**-0.4**
IGT	**Igoumenitsa**	**4.65**	**51**	P		**Pn**	**03 08 13.8**	**-0.4**
PDO	**Prodromos**	**4.79**	**65**	P		**Pn**	**03 08 16.8**	**+0.7**
PDO	**Prodromos**	**4.79**	**65**	P		**Pn**	**03 08 16.8**	**+0.7**
PYL	**PYLOS**	**4.91**	**86**	P		**Pn**	**03 08 17.5**	**-0.2**
PYL	**PYLOS**	**4.91**	**86**	P		**Pn**	**03 08 17.5**	**-0.2**
AMT	**Artemida-Makis**	**4.93**	**79**	P		**Pn**	**03 08 18.4**	**+0.4**
AMT	**Artemida-Makis**	**4.93**	**79**	P		**Pn**	**03 08 18.4**	**+0.4**
DSL	**Palaion Diasel**	**4.95**	**59**	P		**Pn**	**03 08 18.5**	**+0.2**
DSL	**Palaion Diasel**	**4.95**	**59**	P		**Pn**	**03 08 18.5**	**+0.2**
MS1	**Monte Sant'Ang**	**4.98**	**3**	*e*Pn		**Pn**	**03 08 19.4**	**+0.6**
MS1						Sn	**Sn**	**03 09 15.8**	**-0.2**
DRO	**Drossia**	**5.00**	**74**	P		**Pn**	**03 08 20.9**	**+1.9**
DRO	**Drossia**	**5.00**	**74**	P		**Pn**	**03 08 20.9**	**+1.9**
GHAR	**Gharyan**	**5.04**	**205**	*i* P		**Pn**	**03 08 18.6**	**-1.0**
	SNR=23							
PVO	**Paravola**	**5.05**	**66**	P		**Pn**	**03 08 20.5**	**+0.9**
PVO	**Paravola**	**5.05**	**66**	P		**Pn**	**03 08 20.5**	**+0.9**
ITM	**Ithomi**	**5.07**	**83**	P		**Pn**	**03 08 20.7**	**+0.8**
ITM	**Ithomi**	**5.07**	**83**	P		**Pn**	**03 08 20.7**	**+0.8**
KEST	**Kesra**	**5.17**	**261**	Pn		**Pn**	**03 08 21.3**	**-0.1**
	0.7nm,0.3s,baz=53,slow=11,SNR=21							
KEST						Sn	**Sn**	**03 09 16.9**	**-3.7**
	1.0nm,0.3s,baz=38,slow=19,SNR=3.4							
ANX	**Ano Chora**	**5.33**	**68**	P		**Pn**	**03 08 24.8**	**+1.2**
ANX	**Ano Chora**	**5.33**	**68**	P		**Pn**	**03 08 24.8**	**+1.2**
KLV	**Kalavryta, Ach**	**5.36**	**74**	P		**Pn**	**03 08 25.9**	**+1.9**
KLV	**Kalavryta, Ach**	**5.36**	**74**	P		**Pn**	**03 08 25.9**	**+1.9**
EVR	**Evrytania**	**5.36**	**64**	P		**Pn**	**03 08 25.7**	**+1.7**
EVR	**Evrytania**	**5.36**	**64**	P		**Pn**	**03 08 25.7**	**+1.7**
SERG	**Sergoula**	**5.38**	**70**	P		**Pn**	**03 08 24.4**	**+0.2**
SERG	**Sergoula**	**5.38**	**70**	P		**Pn**	**03 08 24.4**	**+0.2**
PENT	**Pentalofos**	**5.54**	**50**	P		**Pn**	**03 08 28.5**	**+2.0**
PENT	**Pentalofos**	**5.54**	**50**	P		**Pn**	**03 08 28.5**	**+2.0**
KPRO	**Kipourio**	**5.55**	**53**	P		**Pn**	**03 08 27.4**	**+0.9**
KPRO	**Kipourio**	**5.55**	**53**	P		**Pn**	**03 08 27.4**	**+0.9**
NEST	**Nestorio**	**5.63**	**47**	P		**Pn**	**03 08 28.5**	**+0.9**
NEST	**Nestorio**	**5.63**	**47**	P		**Pn**	**03 08 28.5**	**+0.9**
TIR	**Tirane**	**5.68**	**34**	⇓*i*P		**Sn**	**03 09 32.3**	**-0.7**
LSRT	**Sirt**	**5.69**	**171**	*i* P		**Pn**	**03 08 29.0**	**+0.5**
	SNR=23							
AGG	**Agios Georgios**	**5.78**	**65**	P		**Pn**	**03 08 30.6**	**+0.9**
AGG	**Agios Georgios**	**5.78**	**65**	P		**Pn**	**03 08 30.6**	**+0.9**
THL	**Klokotos Trika**	**5.78**	**59**	P		**Pn**	**03 08 30.7**	**+1.0**
THL	**Klokotos Trika**	**5.78**	**59**	P		**Pn**	**03 08 30.7**	**+1.0**
FNA	**Florina**	**6.05**	**46**	P		**Pn**	**03 08 33.5**	**0.0**
FNA	**Florina**	**6.05**	**46**	P		**Pn**	**03 08 33.5**	**0.0**
FNA	**Florina**	**6.05**	**46**	P		**Pn**	**03 08 33.5**	**0.0**
FNA	**Florina**	**6.05**	**46**	P		**Pn**	**03 08 33.5**	**0.0**
DRME	**Dracevica, Mon**	**6.11**	**26**	*e*Pn		**Pn**	**03 08 32.6**	**-1.6**
HCY	**Herceg Novi**	**6.13**	**20**	*e*Pn		**Pn**	**03 08 32.1**	**-2.4**
LKR	**Lokris**	**6.16**	**70**	P		**Pn**	**03 08 36.5**	**+1.7**
LKR	**Lokris**	**6.16**	**70**	P		**Pn**	**03 08 36.5**	**+1.7**
LKR	**Lokris**	**6.16**	**70**	P		**Pn**	**03 08 36.5**	**+1.7**
VILL	**Villia**	**6.28**	**74**	P		**Pn**	**03 08 37.4**	**+0.8**
VILL	**Villia**	**6.28**	**74**	P		**Pn**	**03 08 37.4**	**+0.8**
PDG	**Podgorica**	**6.35**	**25**	⇑*i*P		**Sn**	**03 09 45.0**	**-4.6**
PDG	**Podgorica**	**6.35**	**25**	*e*Pn		**Pn**	**03 08 35.3**	**-2.2**
BRY	**Bratogost**	**6.57**	**19**	*e*Pn		**Pn**	**03 08 38.4**	**-2.2**
UPM	**Unac-Piva**	**6.95**	**20**	*e*Pn		**Pn**	**03 08 44.8**	**-1.0**
LJFR	**Jufra**	**7.60**	**179**	*i* P		**Pn**	**03 08 54.0**	**-0.7**
	SNR=22							
IDI	**Anoyia**	**7.64**	**98**	Pn		**Pn**	**03 08 56.1**	**+0.8**
	2.8nm,0.3s,baz=322,slow=16,SNR=28							
IDI						Sn	**Sn**	**03 10 16.4**	**-5.2**
	4.3nm,0.3s,baz=0.0,slow=20,SNR=5.9							
IVAS	**Ivanjica**	**7.67**	**25**	*e*Pn		**Pn**	**03 08 54.6**	**-1.1**
BBLS	**Lazići**	**7.70**	**21**	*e*Pn		**Pn**	**03 08 54.7**	**-1.3**
BARS	**Barje**	**7.73**	**36**	*e*Pn		**Pn**	**03 08 55.5**	**-0.9**
DIVS	**Divibare**	**8.09**	**23**	*e*Pn		**Pn**	**03 08 59.5**	**-1.9**
BLY	**Banja Luka**	**8.11**	**8**	*e*Pn		**Pn**	**03 09 01.6**	**0.0**
GRUS	**Gruza**	**8.14**	**27**	*e*Pn		**Pn**	**03 09 00.9**	**-1.2**
BOVS	**Bovan**	**8.32**	**32**	*e*Pn		**Pn**	**03 09 02.7**	**-1.9**
TRUS	**Trudelj**	**8.33**	**24**	*e*Pn		**Pn**	**03 09 02.8**	**-1.9**
TEKS	**Tekeris**	**8.36**	**20**	*e*Pn		**Pn**	**03 09 02.8**	**-2.3**
LGHD	**Ghdames**	**8.45**	**219**	*i* P		**Pn**	**03 09 05.2**	**-1.2**
	SNR=22							
ZAPS	**Zavoj**	**8.47**	**37**	⇑*i*Pn		**Pn**	**03 09 06.3**	**-0.3**
FGSL	**Fruska Gora**	**9.00**	**19**	*e*Pn		**Pn**	**03 09 11.5**	**-2.4**
BZS	**Buzias**	**9.96**	**25**	⇑*i*P		**Pn**	**03 09 25.0**	**-2.0**
BZS	**Buzias**	**9.96**	**25**	⇑*i*P		**Pn**	**03 09 25.0**	**-2.0**
LOT	**Lotru**	**10.66**	**33**	⇑*i*P		**Pn**	**03 09 35.8**	**-0.9**
LOT	**Lotru**	**10.66**	**33**	⇑*i*P		**Pn**	**03 09 35.8**	**-0.9**
ARR	**Arges**	**10.99**	**35**	⇓*i*P		**Pn**	**03 09 41.6**	**+0.5**
ARR	**Arges**	**10.99**	**35**	⇓*i*P		**Pn**	**03 09 41.6**	**+0.5**
VOIR		**11.23**	**36**	⇑*i*P		**Pn**	**03 09 45.0**	**+0.5**
VOIR		**11.23**	**36**	⇑*i*P		**Pn**	**03 09 45.0**	**+0.5**
DRGR		**11.36**	**25**	⇓*i*P		**Pn**	**03 09 45.9**	**-0.3**
DRGR		**11.36**	**25**	⇓*i*P		**Pn**	**03 09 45.9**	**-0.3**
MLR	**Muntele Rosu**	**11.71**	**38**	Pn		**Pn**	**03 09 53.1**	**+2.1**
	0.1nm,0.3s,baz=141,slow=14,SNR=5.5							
MLR	**Muntele Rosu**	**11.71**	**38**	⇑*i*P		**Pn**	**03 09 52.7**	**+1.6**
MLR	**Muntele Rosu**	**11.71**	**38**	⇑*i*P		**Pn**	**03 09 52.7**	**+1.6**
GERES	**GERESS Array B**	**12.20**	**354**	Pn		**Pn**	**03 09 58.6**	**+1.0**
	0.1nm,0.3s,baz=167,slow=13,SNR=3.4							
PLOR	**Plostina**	**12.31**	**39**	⇑*i*P		**Pn**	**03 10 02.0**	**+2.8**
TESR	**Tescani**	**12.78**	**37**	⇓*i*P		**Pn**	**03 10 07.7**	**+2.1**
TESR	**Tescani**	**12.78**	**37**	⇓*i*P		**Pn**	**03 10 07.7**	**+2.1**
BURAR	**Bucovina Array**	**12.99**	**30**	⇑*i*P		**Pn**	**03 10 05.9**	**-2.6**
BRTR	**Keskin Array B**	**14.48**	**73**	Pn		**P**	**03 10 32.8**	**-2.8**
	0.1nm,0.3s,baz=277,slow=12,SNR=3.6							
ESDC	**Sonseca Array**	**15.68**	**287**	Pn		**Pn**	**03 10 45.2**	**+0.4**
	0.0nm,0.3s,

SEY	**Seymchan**	**25.63**	**10**	P		**P**		**03 15 59.9**	**+1.3**
	2.4nm,0.7s,baz=206,slow=8.4,SNR=4.5								
H11N2	**WAKE ISLAND Hy**	**27.35**	**125**	T		T		03 44 57.8	
	baz=317,slow=75,SNR=38								
H11N1	**WAKE ISLAND Hy**	**27.36**	**125**	T		T		03 44 52.6	
	baz=317,slow=75,SNR=27								
H11N3	**WAKE ISLAND Hy**	**27.36**	**125**	T		T		03 44 58.2	
	baz=317,slow=75,SNR=30								
SONM	**Songino Array**	**28.58**	**302**	P		**P**		**03 16 26.7**	**+1.3**
	2.2nm,0.5s,baz=95,slow=7.7,SNR=14								
TLY	**Talaya**	**30.93**	**309**	P		**P**		**03 16 47.5**	**+1.6**
	1.3nm,0.3s,baz=144,slow=8.7,SNR=3.9								
ZALV	**Zalesovo Beam**	**42.45**	**312**	P		**P**		**03 18 24.4**	**+0.4**
	3.8nm,0.6s,baz=87,slow=7.2,SNR=13								
ZALV					PcP	**PcP**		**03 20 17.0**	**+0.3**
	0.9nm,0.5s,baz=115,slow=4.4,SNR=3.4								
NRIK	**Noril'sk**	**43.10**	**335**	P		**P**		**03 18 28.6**	**-0.5**
	1.5nm,0.4s,baz=112,slow=5.4,SNR=2.0								
MKAR	**Makanchi Array**	**44.95**	**302**	P		**P**		**03 18 44.5**	**+0.2**
	3.6nm,0.7s,baz=87,slow=9.8,SNR=23								
KURK	**Kurchatov**	**46.59**	**308**	*e*P		**P**		**03 18 56.8**	**-0.2**
	117nm,0.7s								
KURBB	**Kurchatov Arra**	**46.66**	**308**	P		**P**		**03 18 57.6**	**0.0**
	11nm,0.6s,baz=81,slow=8.1,SNR=33								
ILAR	**Eielson Array**	**47.91**	**33**	P		**P**		**03 19 07.5**	**+0.2**
	1.3nm,0.8s,baz=264,slow=7.2,SNR=15								
DIV	**Divide**	**48.63**	**38**	*e*P		**P**		**03 19 12.6**	**-0.3**
	4.3nm,0.8s								
DOT	**Dot Lake**	**49.20**	**34**	*e*P		**P**		**03 19 17.5**	**+0.3**
	2.8nm,0.6s								
TKM2	**Tokmak 2**	**50.55**	**298**	*e*P		**P**		**03 19 28.7**	**+0.7**
	5.2nm,0.8s								
BVAR	**Borovoye Array**	**51.11**	**312**	P		**P**		**03 19 31.2**	**-0.6**
	1.1nm,0.5s,baz=74,slow=6.6,SNR=5.2								
BRVK	**Borovoye**	**51.16**	**312**	*e*P		**P**		**03 19 32.5**	**+0.3**
	14nm,0.6s								
AAK	**Ala-Archa**	**51.41**	**298**	*e*P		**P**		**03 19 34.0**	**-0.5**
	1.8nm,0.4s								
EKS2	**Erkin-Say**	**51.90**	**299**	*e*P		**P**		**03 19 38.0**	**0.0**
	1.8nm,0.6s								
KKAR	**Karatay Array**	**54.00**	**300**	*e*P		**P**		**03 19 53.4**	**0.0**
	5.8nm,0.8s								
ARU	**Arti**	**56.70**	**319**	P		**P**		**03 20 12.7**	**+0.1**
	1.1nm,0.3s,baz=104,slow=4.2,SNR=2.3								
ARU	**Arti**	**56.70**	**319**	*e*P		**P**		**03 20 12.7**	**+0.1**
	4.0nm,0.6s								
FITZ	**Fitzroy Crossi**	**58.17**	**200**	P		**P**		**03 20 23.9**	**+0.7**
	2.0nm,0.8s,baz=14,slow=8.3,SNR=2.5								
WRAB	**Tennant Creek**	**58.17**	**190**	*e*P		**P**		**03 20 23.0**	**-0.3**
	3.4nm,0.7s								
WRA	**Warramunga Arr**	**58.19**	**190**	P		**P**		**03 20 22.6**	**-0.8**
	1.8nm,0.5s,baz=8.5,slow=7.2,SNR=26								
ABKAR	**Akbulak array**	**58.53**	**310**	*e*P		**P**		**03 20 25.2**	**-0.4**
	1.6nm,0.4s								
AKTO	**Aktyubinsk**	**59.21**	**312**	P		**P**		**03 20 30.0**	**-0.3**
	1.2nm,0.7s,baz=56,slow=9.4,SNR=4.9								
ASAR	**Alice Springs**	**61.91**	**190**	P		**P**		**03 20 48.5**	**-0.4**
	0.9nm,0.8s,baz=5.1,slow=7.0,SNR=9.3								
YKA	**Yellowknife Ar**	**62.26**	**31**	P		**P**		**03 20 50.2**	**-0.6**
	0.4nm,0.7s,baz=295,slow=5.9,SNR=3.4								
ARCES	**ARCESS Array B**	**63.69**	**340**	P		**P**		**03 21 00.3**	**0.0**
	2.1nm,0.8s,baz=40,slow=7.1,SNR=6.1								
GEYT	**Allbeck**	**64.74**	**299**	P		**P**		**03 21 08.3**	**+0.6**
	0.8nm,0.4s,baz=27,slow=6.8,SNR=2.9								
FINES	**FINESS Array B**	**68.73**	**333**	P		**P**		**03 21 32.9**	**+0.2**
	2.1nm,0.9s,baz=32,slow=11,SNR=5.9								
SUMG	**Summit**	**69.78**	**1**	*e*P		**P**		**03 21 40.2**	**+0.6**
	5.2nm,0.6s								
KVAR	**Kislovodsk Arr**	**71.46**	**312**	P		**P**		**03 21 51.7**	**+1.8**
	5.8nm,0.9s,baz=126,slow=19,SNR=3.7								
KIV	**Kislovodsk**	**71.47**	**312**	*e*P		**P**		**03 21 49.7**	**-0.2**
	13nm,0.9s								
KBZ	**Khabaz**	**71.47**	**311**	P		**P**		**03 21 49.0**	**-0.9**
	1.6nm,0.9s,baz=67,slow=12,SNR=2.6								
FFC	**Flin Flon**	**72.12**	**34**	*e*P		**P**		**03 21 53.2**	**-0.4**
	2.1nm,0.8s								
HFS	**Hagfors**	**73.89**	**336**	P		**P**		**03 22 04.6**	**+0.7**
	0.9nm,0.6s,baz=60,slow=8.8,SNR=4.5								
NB2	**NORSAR Subarra**	**73.94**	**338**	P		P		03 22 14.3	+10
	comp=Z,1.4nm,0.6s,baz=39,slow=6.2								
AKASG	**Malin Array Be**	**74.52**	**323**	P		**P**		**03 22 07.7**	**0.0**
	comp=Z,0.1nm,0.3s,baz=46,slow=5.4,SNR=3.9								
R11A	**Troy Canyon, C**	**75.00**	**53**	*e*P		**P**		**03 22 11.3**	**+0.2**
	comp=Z,0.9nm,0.8s								
BRTR	**Keskin Array B**	**79.39**	**312**	P		**P**		**03 22 35.5**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=103,slow=4.6,SNR=2.5								
PSZ	**Piszkesteto**	**80.81**	**325**	*e*P		**P**		**03 22 43.1**	**+0.1**
	comp=Z,2.9nm,0.9s								
VYHS	**Vyhne**	**80.84**	**326**	*e*P		P		03 22 53.8	+11
KHC	**Kasperske Hory**	**82.57**	**329**	*e*P		P		03 23 02.5	+10
KHC	**Kasperske Hory**	**82.57**	**329**	*e*P		**P**		**03 22 52.2**	**0.0**
	comp=Z,0.8nm,0.9s								
GERES	**GERESS Array B**	**82.74**	**329**	P		**P**		**03 22 53.5**	**+0.3**
	comp=Z,0.1nm,0.3s,baz=27,slow=2.4,SNR=2.8								
TXAR	**Lajitas Array**	**88.36**	**54**	P		**P**		**03 23 22.5**	**+1.0**
	comp=Z,0.1nm,0.4s,baz=316,slow=2.5,SNR=3.5								
TORD	**Torodi Ar. Bea**	**117.75**	**317**	PKP		**PKPdf**		**03 29 17.6**	**+1.4**
	comp=Z,0.3nm,0.8s,baz=13,slow=3.5,SNR=3.5								
SAML	**Samuel**	**142.53**	**46**	*e*PKPdf		**PKPdf**		**03 30 02.5**	**-0.3**
LPAZ	**La Paz**	**144.92**	**61**	PKP		**PKPdf**		**03 30 07.5**	**-0.3**
	comp=Z,0.4nm,0.5s,baz=293,slow=12,SNR=3.7								

*ISCJB **10** 03:12:52.7±1.8,37.57N±0.04×142.04E±0.05, h13km±12km, mb3.7/8, Error ellipse: s-maj=6.9km s-min=6.2km az=38.3*
*IDC **10** 03:12:52.6±0.9,37.82N×142.03E, h0km, mb3.7/8, mb1 3.9/9, mb1mx3.5/65, mbtmp3.7/9, ML2.3/1, Error ellipse: s-maj=27.3km s-min=24.2km az=137.0*
*JMA **10** 03:12:53.5±0.1,37.58N×142.00E, h21km±2km, M4.1*

ISC 10 03:12:52.7±1.8,37.61N±0.04×141.93E±0.06, h6km±10km, n21, σ1§29/31, mb3.8/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.87**	**254**	P	**Pb**	**03 13 10.7**	**+0.4**
JFK				S	**Sg**	**03 13 22.1**	**+1.3**
JMM	**Marumori**	**0.94**	**286**	P	**Pn**	**03 13 11.7**	**-0.7**
JMM				*e*S	**Sb**	**03 13 24.6**	**+0.6**
JIO	**Ouri**	**0.96**	**332**	P	**Pn**	**03 13 11.8**	**-0.9**
JIO				S	**Sn**	**03 13 25.4**	**-1.3**
ONAJ	**Iwakimizuishiy**	**1.03**	**241**	P	**Pg**	**03 13 12.7**	**+0.2**
ONAJ				S	**Sg**	**03 13 26.2**	**+0.3**
JOU	**Okura**	**1.25**	**308**	P	**Pg**	**03 13 17.1**	**+0.3**
JFT	**Otama**	**1.27**	**266**	P	**Pg**	**03 13 17.6**	**+0.6**
JFT				S	**Sn**	**03 13 34.4**	**+0.1**
JMK	**Ichinoseki**	**1.45**	**338**	P	**Pg**	**03 13 20.9**	**+0.3**
JMK				*e*S	**Sg**	**03 13 38.8**	**-0.7**
JYS	**Shirataka**	**1.59**	**293**	P	**Pb**	**03 13 22.6**	**0.0**
JYS				S	**Sb**	**03 13 44.0**	**+1.0**
JFY	**Yanaizu**	**1.78**	**264**	P	**Pb**	**03 13 25.2**	**-0.5**
JFY				S	**Sb**	**03 13 48.3**	**0.0**
JYK	**Kaneyama**	**1.80**	**317**	P	**Pb**	**03 13 24.8**	**-1.3**
MJAR	**Matsushiro Arr**	**3.16**	**251**	Pn	**Pb**	**03 13 46.1**	**-3.1**
	0.3nm,0.3s,baz=253,slow=33,SNR=0.7						
MJAR				Sn	**Sb**	**03 14 25.4**	**-2.6**
	4.0nm,0.3s,baz=78,slow=15,SNR=1.3						
JHJ	**Hachijo jima 2**	**4.81**	**202**	Pn	**Pn**	**03 14 05.1**	**-0.5**
	9.7nm,0.3s,baz=233,slow=20,SNR=0.6						
JHJ				Sn	**Sn**	**03 14 59.4**	**-2.2**
	12nm,0.3s,baz=240,slow=20,SNR=1.6						
MKAR	**Makanchi Array**	**44.16**	**302**	P	**P**	**03 21 02.8**	**+0.7**
	0.3nm,0.4s,baz=91,slow=10,SNR=1.5						
KURBB	**Kurchatov Arra**	**45.98**	**308**	P	**P**	**03 21 16.5**	**+0.1**
	0.7nm,0.4s,baz=81,slow=7.6,SNR=2.9						
WRA	**Warramunga Arr**	**57.59**	**188**	P	**P**	**03 22 47.2**	**+3.2**
	0.4nm,0.4s,baz=7.0,slow=7.6,SNR=1.7						
ASAR	**Alice Springs**	**61.41**	**188**	P	**P**	**03 23 11.2**	**+1.5**
	0.3nm,0.6s,baz=7.6,slow=7.7,SNR=2.1						
HFS	**Hagfors**	**73.73**	**336**	P	**P**	**03 24 27.6**	**+0.4**
	1.5nm,1.0s,baz=15,slow=12,SNR=1.6						
AKASG	**Malin Array Be**	**74.09**	**322**	P	**P**	**03 24 29.2**	**-0.2**
	0.5nm,0.4s,baz=44,slow=6.1,SNR=2.4						
PDAR	**Pinedale Array**	**76.97**	**46**	P	**P**	**03 24 46.7**	**+0.2**
	0.4nm,0.6s,baz=300,slow=2.7,SNR=3.1						
TXAR	**Lajitas Array**	**89.45**	**53**	P	**P**	**03 25 50.6**	**-0.2**
	0.3nm,0.6s,baz=263,slow=1.5,SNR=4.2						
LPAZ	**La Paz**	**146.05**	**59**	PKPbc	**PKPab**	**03 32 34.4**	**-0.8**
	1.0nm,0.6s,baz=350,slow=2.9,SNR=4.6						

*HEL **10** 03:14:09.9±0.3,67.70N×33.87E, h0km, ML2.1, Explosion*
*KOLA **10** 03:14:10.4,67.68N×33.77E, h0km*
*NAO **10** 03:14:11.3±1.4,67.62N×33.68E, ML2.4*

*CSEM **10** 03:14:11.8±0.8,67.67N×33.43E, h2km, ML2.4, Error ellipse: s-maj=14.0km s-min=8.4km az=61.0, Mining explosion.*

ISC 10 03:14:09.3±1.9,67.63N±0.04×33.86E±0.09, h0km, n31, σ1§40/54, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
APA	**Apatity**	**0.18**	**252**	P	**Pg**	**03 14 13.7**	**+0.9**
APA				S	**Sg**	**03 14 16.0**	**+0.8**
APZ9	**Apatity**	**0.18**	**252**	Pg	**Pg**	**03 14 13.9**	**+1.1**
APZ9				Lg	Lg	03 14 15.8	
APZ9	**Apatity**	**0.18**	**252**	Pg	**Pg**	**03 14 13.9**	**+1.1**
APZ9				Lg	Lg	03 14 15.8	
APZ9	**Apatity**	**0.18**	**252**	Pg	**Pg**	**03 14 13.9**	**+1.1**
APZ9	SNR=91						
	SNR=30			Lg	Lg	03 14 15.8	
APA0	**Apatity Array**	**0.33**	**267**	Pg	**Pg**	**03 14 16.2**	**+0.5**
APA0	baz=86,slow=16						
	baz=82,slow=37			Lg	Lg	03 14 20.3	
APA0	**Apatity Array**	**0.33**	**267**	Pg	**Pg**	**03 14 16.2**	**+0.5**
APA0	baz=86,slow=16						
	baz=82,slow=37			Lg	Lg	03 14 20.3	
APA0	**Apatity Array**	**0.33**	**267**	P	**Pg**	**03 14 15.9**	**+0.2**
APA0				S	**Sg**	**03 14 19.9**	**-0.1**
APA0	**Apatity Array**	**0.33**	**267**	Pg	**Pg**	**03 14 16.2**	**+0.5**
APA0	SNR=90						
				Lg	Lg	03 14 20.3	
VRF	**Varrio**	**1.63**	**276**	PG	**Pn**	**03 14 38.9**	**-0.4**
VRF	baz=85			MSG		03 14 58.6	
	comp=Z,21nm,0.2s						
VRF				SG	**Sn**	**03 14 59.1**	**-1.8**
VRF	**Varrio**	**1.63**	**276**	Pg	**Pn**	**03 14 38.8**	**-0.4**
VRF				Sg	**Sn**	**03 14 59.1**	**-1.8**
KU6	**Riekki**	**2.25**	**226**	PB	**Pn**	**03 14 49.6**	**+1.8**
KU6	baz=45			MSG		03 15 18.1	
	comp=Z,8.4nm,0.2s						
KU6				SG	**Sb**	**03 15 20.2**	**+1.1**
KU6	**Riekki**	**2.25**	**226**	Pb	**Pn**	**03 14 49.5**	**+1.8**
KU6				Sg	**Sb**	**03 15 20.2**	**+1.1**
MSF	**Maaselka**	**2.57**	**230**	PN	**Pb**	**03 14 54.6**	**-1.7**
MSF	baz=49			SB	**Sb**	**03 15 29.3**	**+0.9**
MSF	**Maaselka**	**2.57**	**230**	Pn	**Pb**	**03 14 54.6**	**-1.7**
MSF				Sb	**Sb**	**03 15 29.3**	**+0.9**
SGF	**Sodankyl**	**2.82**	**270**	PB	**Pb**	**03 14 58.4**	**-2.2**
SGF				SG	**Sb**	**03 15 37.0**	**+1.4**
SGF	**Sodankyl**	**2.82**	**270**	Pb	**Pb**	**03 14 58.3**	**-2.2**
SGF				Sg	**Sb**	**03 15 37.0**	**+1.4**
RNF	**Rovaniemi**	**3.23**	**255**	PN	**Pn**	**03 15 02.1**	**+0.9**
RNF				SN	**Sn**	**03 15 40.7**	**+0.9**
RNF	**Rovaniemi**	**3.23**	**255**	Pn	**Pn**	**03 15 02.1**	**+0.9**
RNF				Sn	**Sn**	**03 15 40.7**	**+0.3**
ARA0	**ARCESS Array S**	**3.61**	**306**	Pn	**Pn**	**03 15 07.0**	**+0.5**
ARA0	baz=122,slow=16			Pg	**Pb**	**03 15 14.6**	**+0.6**
	baz=120,slow=16						
ARA0				Sn	**Sn**	**03 15 47.8**	**-2.0**
	baz=125,slow=28						
ARA0				Lg	Lg	03 15 58.8	
	baz=114,slow=37						
ARA0	**ARCESS Array S**	**3.61**	**306**	Pn	**Pn**	**03 15 07.0**	**+0.5**
ARA0	baz=122,slow=16			Pg	**Pb**	**03 15 14.6**	**+0.6**
	baz=120,slow=16						
ARA0				Sn	**Sn**	**03 15 47.8**	**-2.0**
	baz=125,slow=28						
ARA0				Lg	Lg	03 15 58.8	
	baz=114,slow=37						
ARA0	**ARCESS Array S**	**3.61**	**306**	Pn	**Pn**	**03 15 07.0**	**+0.5**
ARA0	SNR=50			Pg	**Pb**	**03 15 14.6**	**+0.6**
ARA0	**ARCESS Array S**	**3.61**	**306**	Pg	**Pb**	**03 15 14.6**	**+0.6**
ARA0	SNR=0.7			Sn	**Sn**	**03 15 47.8**	**-2.0**
	SNR=50						
ARA0				Lg	Lg	03 15 58.8	
	SNR=2.9						
HEF	**Hetta**	**3.92**	**286**	PN	**Pn**	**03 15 10.8**	**+0.2**
HEF	baz=99			SN	**Sn**	**03 15 56.2**	**-1.0**
HEF	**Hetta**	**3.92**	**286**	Pn	**Pn**	**03 15 10.8**	**+0.2**
HEF				Sn	**Sn**	**03 15 56.2**	**-1.0**
TOF	**Tornio**	**4.07**	**252**	PN	**Pn**	**03 15 12.7**	**-0.1**
TOF				SN	**Sn**	**03 16 00.0**	**-1.0**
TOF	**Tornio**	**4.07**	**252**	Pn	**Pn**	**03 15 12.7**	**-0.1**
TOF				Sn	**Sn**	**03 16 00.0**	**-1.0**
OUL	**Oulu**	**4.10**	**235**	PN	**Pn**	**03 15 15.4**	**+2.3**
	baz=48						
OUL	**Oulu**	**4.10**	**235**	Pn	**Pn**	**03 15 15.4**	**+2.3**
FIA0	**FINESS Array S**	**7.05**	**212**	Pn	**Pn**	**03 15 54.4**	**+0.8**
FIA0	baz=26,slow=14			Sn	**Sn**	**03 17 10.8**	**-3.6**
	baz=27,slow=22						
FIA0				Lg	Lg	03 17 43.9	
	baz=24,slow=28						
FIA0	**FINESS Array S**	**7.05**	**212**	Pn	**Pn**	**03 15 54.4**	**+0.8**
FIA0	baz=26,slow=14			Sn	**Sn**	**03 17 10.8**	**-3.6**
	baz=27,slow=22						
FIA0				Lg	Lg	03 17 43.9	
	baz=24,slow=28						
FIA0	**FINESS Array S**	**7.05**	**212**	Pn	**Pn**	**03 15 54.4**	**+0.8**
FIA0	SNR=50			Lg	Lg	03 17 43.9	
	SNR=25						

*BJI **10** 03:14:09.7,38.36N×143.91E, h13km, mb4.5/36, mB5.3/8, Ms4.9/12, Ms7 4.6/12*
*IDC **10** 03:14:11.1±0.6,38.03N×143.44E, h0km, mb4.4/37, mb1 4.5/43, mb1mx4.4/70, mbtmp4.4/43, ML3.5/5, Error ellipse: s-maj=15.5km s-min=12.7km az=119.0*
*ISCJB **10** 03:14:13.1±0.2,38.08N±0.03×143.34E±0.03, h19km, mb4.6/149, MS4.5/4, Error ellipse: s-maj=4.8km s-min=2.9km az=166.5*
*NEIC **10** 03:14:14.8±1.3,38.07N×143.33E, h20km±9km, mb4.8/58, Error ellipse: s-maj=5.6km s-min=3.6km az=146.0*
*JMA **10** 03:14:15.6±0.3,38.07N×143.16E, h24km, M4.4*
*MOS **10** 03:14:16.3±0.9, 38.32N×143.27E, h33km, mb4.9/58, Error ellipse: s-maj=7.3km s-min=4.4km az=103.1*

ISC 10 03:14:14.1±0.4,38.10N±0.05×143.44E±0.04, h19km, n308, σ1§51/316, mb4.7/150, MS4.3/4, 20C-12D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.69**	**283**	P	**Pn**	**03 14 41.4**	**-1.1**
OFUJ	**Ofunato**	**1.70**	**306**	P	**Pb**	**03 14 42.6**	**-2.1**
OFUJ				S	**Sn**	**03 15 01.5**	**-2.5**
JMK	**Ichinoseki**	**1.94**	**297**	*e*S	**Sn**	**03 15 07.9**	**-2.0**
JMM	**Marumori**	**2.10**	**265**	P	**Pn**	**03 14 47.0**	**-1.3**
JMM				S	**Sn**	**03 15 11.2**	**-2.7**
JFK	**Kawauchi**	**2.16**	**251**	P	**Pn**	**03 14 47.5**	**-1.6**
JFK				*e*S	**Sn**	**03 15 13.1**	**-2.3**
JOM	**Ohasama**	**2.17**	**310**	*e*S	**Sn**	**03 15 13.7**	**-1.9**
JOU	**Okura**	**2.20**	**278**	P	**Pn**	**03 14 48.8**	**-0.9**
JFT	**Otama**	**2.53**	**258**	P	**Pn**	**03 14 53.7**	**-0.4**
JYK	**Kaneyama**	**2.55**	**290**	P	**Pn**	**03 14 54.2**	**-0.3**
JYS	**Shirataka**	**2.66**	**274**	P	**Pn**	**03 14 55.7**	**-0.3**
ERM	**Erimo**	**3.92**	**357**	*e*P	**Pn**	**03 15 12.6**	**-0.6**
ERM				*e*		03 15 55.8	
ERM	**Erimo**	**3.92**	**357**	*e*Pn	**Pn**	**03 15 12.6**	**-0.6**
ERM				*e*Sn	**Sn**	**03 15 55.8**	**-2.9**
MJAR	**Matsushiro Arr**	**4.45**	**251**	Pn	**Pn**	**03 15 21.3**	**+0.8**
	3.7nm,0.3s,baz=71,slow=14,SNR=4.8						
MAJO	**Matsushiro**	**4.45**	**251**	*e*P	**Pn**	**03 15 20.8**	**+0.2**
MAJO	**Matsushiro**	**4.45**	**251**	*e*Pn	**Pn**	**03 15 20.8**	**+0.2**
MJB9	**Matsu-Tunnel**	**4.45**	**251**	*e*Pn	**Pn**	**03 15 20.1**	**-0.4**
JHJ	**Hachijo jima 2**	**5.79**	**212**	Pn	**Pn**	**03 15 38.1**	**-0.8**
	24nm,0.3s,baz=87,slow=19,SNR=3.3						
JHJ				Sn	**Sn**	**03 16 36.8**	**-8.1**
	20nm,0.3s,baz=73,slow=19,SNR=2.7						
ASAJ	**Asahikawa**	**6.05**	**354**	Pn	**Pn**	**03 15 42.7**	**+0.2**
ASAJ	baz=183,slow=8.6						
	baz=41,slow=20			Sn	**Sn**	**03 16 46.6**	**-4.5**
ASAJ	**Asahikawa**	**6.05**	**354**	*e*Pn	**Pn**	**03 15 43.0**	**+0.5**
ASAJ				Sn	**Sn**	**03 16 46.6**	**-4.5**

YUK	**Yuzh-Kuril'sk**	**6.21**	**16**	*e*P		**Pn**		**03 15 42.2**	**-2.4**
KUR	**Kuril'sk**	**7.86**	**23**	*e*P		**Pn**		**03 16 05.1**	**-2.2**
KUR				*e*S		**Sn**		**03 17 30.3**	**-5.4**
KUR				pmax		pmax			
	comp=E,10.0nm,0.5s								
KUR				pmax		pmax			
	comp=Z,25nm,0.5s								
KUR				smax		smax			
	comp=N,66nm,0.6s								
KUR				smax		smax			
	comp=E,56nm,0.6s								
YSS	**Yuzh-Sakhalins**	**8.87**	**357**	⇑*e*P		**Pn**		**03 16 21.3**	**+0.2**
YSS				pmax		pmax			
	comp=Z,20nm,0.8s								
YSS	**Yuzh-Sakhalins**	**8.87**	**357**	*e*Pn		**Pn**		**03 16 21.0**	**-0.1**
	comp=Z,16nm,0.7s								
VLA	**Vladivostok**	**10.12**	**303**	⇑*i*P		**Pn**		**03 16 40.8**	**+2.6**
VLA				*i* S		**Sn**		**03 18 35.5**	**+4.4**
VLA				pmax		pmax			
	comp=Z,34nm,1.2s								
USRK	**Ussuriysk Ar.**	**10.57**	**309**	Pn		**Pn**		**03 16 47.1**	**+2.7**
	comp=Z,0.4nm,0.3s,baz=109,slow=17,SNR=5.1								
CBIJ	**Chichi jima**	**11.02**	**186**	*e*Pn		**Pn**		**03 16 50.3**	**-0.3**
CBIJ				Sn		Sn		03 18 44.5	-8.9
JCJ	**Chichijima**	**11.02**	**186**	Sn		Sn		03 18 44.5	-8.9
	baz=157,slow=15								
JNU	**Nakatsue**	**11.36**	**248**	Pn		**Pn**		**03 16 54.7**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=75,slow=12,SNR=3.4								
JNU	**Nakatsue**	**11.36**	**248**	*e*Pn		**Pn**		**03 16 53.7**	**-1.7**
MDJ	**Mudanjiang**	**12.27**	**306**	P		**Pn**		**03 17 07.7**	**0.0**
MDJ				pmax		pmax			
	comp=Z,3.0nm,0.8s								
KSRS	**Korea Array**	**12.30**	**272**	Pn		**Pn**		**03 17 10.8**	**+2.6**
	baz=83,slow=14,SNR=3.5								
KSAR	**Wonju Array Be**	**12.33**	**272**	P		**Pn**		**03 17 10.8**	**+2.2**
KSAR	**Wonju Array Be**	**12.33**	**272**	Pn		**Pn**		**03 17 10.8**	**+2.2**
KLR	**Kul'dur**	**13.96**	**327**	Pn		**Pn**		**03 17 29.3**	**-1.5**
	comp=Z,0.2nm,0.3s,baz=144,slow=9.7,SNR=5.8								
KLR	**Kul'dur**	**13.96**	**327**	⇑*e*P		**Pn**		**03 17 29.1**	**-1.7**
CN2	**Changchun**	**14.73**	**298**	*e*P		**Pn**		**03 17 42.0**	**+0.6**
CN2				pmax		pmax			
	comp=Z,10.0nm,0.5s								
SKR	**Severo-Kuril's**	**15.48**	**32**	*e*P		**P**		**03 17 53.7**	**-1.8**
SKR				pmax		pmax			
	comp=Z,146nm,1.0s								
PEA0	**Petropavlovsk-**	**17.97**	**29**	*e*Pn		**P**		**03 18 24.5**	**+1.4**
PEA0B	**Petropavlovsk-**	**17.97**	**29**	*e*Pn		**P**		**03 18 25.2**	**+2.0**
	comp=Z,62nm,1.5s								
PETK	**Petropavlovsk-**	**17.97**	**29**	P		**P**		**03 18 23.5**	**+0.4**
	comp=Z,0.6nm,0.3s,baz=212,slow=5.1,SNR=15								
PET	**Petropavlovsk**	**18.28**	**30**	*e*P		**P**		**03 18 27.8**	**+1.3**
PET				pmax		pmax			
	comp=Z,21nm,0.9s								
HIA	**Hailar**	**20.37**	**311**	⇑*e*P		**P**		**03 18 47.7**	**-1.7**
HIA				pmax		pmax			
	comp=Z,5.0nm,0.7s								
BJI	**Beijing**	**21.23**	**284**	P		**P**		**03 18 58.7**	**-0.1**
BJI				S		**S**		**03 22 48.5**	**-5.4**
BJI				pmax		pmax			
	comp=Z,8.0nm,1.0s								
BJI				LR		LR			
	comp=Z,2μm,14.7s								
BJI				LR		LR			
	comp=Z,2μm,14.2s								
BJI				LR		LR			
	comp=Z,1μm,22.2s								
BJT	**Baijiatuan**	**21.24**	**284**	*e*P		**P**		**03 18 58.8**	**-0.1**
BJT				pmax		pmax			
	comp=Z,14nm,0.7s								
BJT	**Baijiatuan**	**21.24**	**284**	*e*Pn		**P**		**03 18 58.8**	**-0.1**
	comp=Z,14nm,0.7s								
MA2	**Magadan**	**22.00**	**10**	P		**P**		**03 19 05.9**	**-1.0**
	comp=Z,12nm,0.8s,baz=192,slow=10,SNR=12								
SSLB	**Suanglung**	**23.91**	**240**	*e*P		**P**		**03 19 26.8**	**+0.1**
	comp=Z,8.1nm,0.8s								
HHC	**Hu-ho-hao-te**	**24.69**	**286**	*e*P		**P**		**03 19 32.6**	**-1.4**
HHC				S		**S**		**03 23 49.4**	**-5.4**
HHC				pmax		pmax			
	comp=Z,18nm,1.2s								
HHC				pmax		pmax			
	comp=Z,420nm,5.9s								
HHC				LR		LR			
	comp=Z,520nm,15.4s								
HHC				LR		LR			
	comp=Z,620nm,11.3s								
HHC				LR		LR			
	comp=Z,230nm,12.3s								
WHN	**Wuhan**	**25.11**	**261**	P		**P**		**03 19 40.3**	**+2.6**
YAK	**Yakutsk**	**25.43**	**345**	P		**P

KMI pmax pmax
comp=Z,1µm,11.7s
WMQ Urumqi 41.81 296 *e*P **P 03 22 04.7 +2.2**
WMQ pP sP 03 22 13.4 +2.6
WMQ sP pP 03 22 15.2 +6.8
WMQ pmax pmax
comp=Z,21nm,0.7s
ZAA0 Zalesovo Array 42.40 312 *e*P **P 03 22 07.4 +0.3**
ZALV Zalesovo Beam 42.40 312 P **P 03 22 07.3 +0.2**
comp=Z,2.4nm,0.7s,baz=86,slow=8.2,SNR=7.1
ZALV PcP **PcP 03 24 00.3 +0.3**
comp=Z,3.7nm,0.6s,baz=95,slow=2.6,SNR=7.0
NRIK Noril'sk 42.99 334 P **P 03 22 11.9 +0.3**
comp=Z,2.2nm,0.7s,baz=169,slow=8.8,SNR=3.8
NRIK Noril'sk 42.99 334 P **P 03 22 12.0 +0.3**
NRIK pmax pmax
comp=Z,2.0nm,0.7s
MK01 Makanchi Array 44.93 302 *e*P **P 03 22 27.4 -0.2**
MK31 Makanchi Array 44.93 302 *e*P **P 03 22 28.4 +0.8**
MK31 Makanchi Array 44.93 302 *e*P **P 03 22 28.4 +0.8**
MKAR Makanchi Array 44.93 302 P **P 03 22 28.2 +0.6**
comp=Z,1.4nm,0.7s,baz=85,slow=8.9,SNR=5.6
MKAR Makanchi Array 44.93 302 *e*P **P 03 22 28.4 +0.8**
RSO Redoubt South 45.07 39 *e*P **P 03 22 30.4 +1.7**
MAKZ Makanchi 45.14 302 *e*P **P 03 22 29.7 +0.5**
MAKZ pmax pmax
comp=Z,7.0nm,0.7s
MAKZ Makanchi 45.14 302 *e*P **P 03 22 29.7 +0.5**
comp=Z,6.9nm,0.7s
KDAK Kodiak Island 45.23 43 *i*P **P 03 22 30.4 +0.7**
PPLA Purkeypile 45.37 35 *e*P **P 03 22 33.6 +2.5**
comp=Z,23nm,1.4s
SPU Mount Spurr 45.41 38 *e*P **P 03 22 33.3 +2.1**
KTH Kantishna Hill 45.96 35 *e*P **P 03 22 37.4 +1.8**
comp=Z,16nm,0.9s
TRF Thorofare Moun 46.25 35 *e*P **P 03 22 39.7 +1.8**
comp=Z,11nm,0.9s
COLD Coldfoot 46.44 29 *e*P **P 03 22 40.1 +0.9**
comp=Z,2.9nm,0.9s
KURK Kurchatov 46.55 308 P **P 03 22 41.0 +0.7**
KURK pmax pmax
comp=Z,7.0nm,0.7s
KURK Kurchatov 46.55 308 *e*P **P 03 22 40.0 -0.3**
KURBB Kurchatov Arra 46.63 307 P **P 03 22 41.0 +0.1**
comp=Z,7.0nm,0.7s,baz=81,slow=7.8,SNR=23
SEW Seward 46.73 39 *e*P **P 03 22 43.1 +1.6**
comp=Z,21nm,1.0s
PMR Palmer 46.81 37 *e*P **P 03 22 43.1 +1.0**
PMR pmax pmax
comp=Z,11nm,0.8s
PMR Palmer 46.81 37 *e*P **P 03 22 43.1 +1.0**
comp=Z,11nm,0.8s
MCK McKinley 46.85 34 *e*P **P 03 22 43.8 +1.3**
MCK pmax pmax
comp=Z,11nm,0.8s
MCK McKinley 46.85 34 *e*P **P 03 22 43.8 +1.3**
comp=Z,11nm,0.8s
RND Reindeer 46.89 35 *e*P **P 03 22 44.0 +1.1**
RND pmax pmax
comp=Z,13nm,0.8s
RND Reindeer 46.89 35 *e*P **P 03 22 44.0 +1.1**
comp=Z,13nm,0.8s
SML Sawmill 47.18 37 *e*P **P 03 22 46.6 +1.5**
SML pmax pmax
comp=Z,16nm,0.8s
SML Sawmill 47.18 37 *e*P **P 03 22 46.6 +1.5**
comp=Z,16nm,0.8s
WRH Wood River Hil 47.22 33 *e*P **P 03 22 46.6 +1.3**
comp=Z,6.9nm,0.8s
COLA College 47.32 33 *e*P **P 03 22 47.2 +1.2**
COLA pmax pmax
comp=Z,7.0nm,0.7s
COLA College 47.32 33 *e*P **P 03 22 47.2 +1.2**
comp=Z,6.8nm,0.7s
CCB Clear Creek Bu 47.34 33 *e*P **P 03 22 47.4 +1.2**
comp=Z,6.3nm,1.2s
SCM Sheep Creek Mo 47.66 37 *e*P **P 03 22 50.5 +1.6**
SCM pmax pmax
comp=Z,19nm,0.9s
SCM Sheep Creek Mo 47.66 37 *e*P **P 03 22 50.5 +1.6**
comp=Z,19nm,0.9s
IL1 Eielson Array 47.73 33 *e*P **P 03 22 48.5 -0.8**
ILAR Eielson Array 47.73 33 P **P 03 22 50.2 +0.8**
comp=Z,11nm,0.8s,baz=264,slow=6.5,SNR=74
ILB Eielson Array 47.73 33 *e*P **P 03 22 50.2 +0.8**
KLU Klutina 48.35 37 *e*P **P 03 22 56.1 +1.8**
comp=Z,27nm,1.2s
DIV Divide 48.45 38 *e*P **P 03 22 56.8 +1.8**
comp=Z,25nm,0.9s
DOT Dot Lake 49.02 34 *e*P **P 03 23 00.3 +0.9**
comp=Z,15nm,0.8s
BMRM Bremner River 49.04 38 *e*P **P 03 23 01.0 +1.5**
comp=Z,21nm,1.0s
MENT Mentasta 49.24 35 *e*P **P 03 23 02.7 +1.7**
comp=Z,12nm,0.9s
CRQM Cirque 49.77 38 *e*P **P 03 23 07.5 +2.2**
comp=Z,28nm,0.8s
BALM Baldy 50.12 38 *e*P **P 03 23 09.6 +1.8**
BALM pmax pmax
comp=Z,9.0nm,0.8s
BALM Baldy 50.12 38 *e*P **P 03 23 09.6 +1.8**
comp=Z,9.4nm,0.8s
EGAK Eagle 50.18 33 *e*P **P 03 23 08.6 +0.5**
comp=Z,4.8nm,1.0s
TKM2 Tokmak 2 50.55 298 *e*P **P 03 23 12.5 +1.1**
TKM2 pmax pmax
comp=Z,6.0nm,0.8s
TKM2 Tokmak 2 50.55 298 *e*P **P 03 23 12.5 +1.1**
comp=Z,6.5nm,0.8s
VOSK Vostochnaya 50.78 312 *e*P **P 03 23 15.9 +3.1**
VOSK pmax pmax
comp=Z,4.0nm,0.9s
VOSK Vostochnaya 50.78 312 *e*P **P 03 23 15.9 +3.1**
comp=Z,3.9nm,0.9s
BVAR Borovoye Array 51.06 312 P **P 03 23 15.2 +0.3**
comp=Z,1.5nm,0.6s,baz=70,slow=6.7,SNR=5.5
BVAR PcP **PcP 03 24 31.0 +0.5**
comp=Z,2.3nm,0.6s,baz=58,slow=3.9,SNR=5.0
BRVK Borovoye 51.11 312 *e*P **P 03 23 15.1 -0.1**
BRVK pmax pmax
comp=Z,8.0nm,0.8s
BRVK Borovoye 51.11 312 *e*P **P 03 23 15.1 -0.1**
comp=Z,7.6nm,0.8s
OTUK Ortayu 51.11 306 P **P 03 23 15.9 +0.5**
OTUK pmax pmax
comp=Z,7.0nm,1.0s
AAK Ala-Archa 51.41 298‖ *e*P **P 03 23 17.6 -0.2**
AAK pmax pmax
comp=Z,14nm,1.7s
AAK Ala-Archa 51.41 298 *e*P **P 03 23 17.9 0.0**
comp=Z,4.2nm,0.8s
KSH Kashi 51.45 294 *e*P P 03 23 23.8 +5.7
KSH esP sP 03 23 33.7 +7.2
KSH PcS **PcS 03 28 33.2 +2.8**
KSH S **S 03 30 42.3 +5.1**
KSH ScS **ScS 03 33 09.1 +1.4**
KSH pmax pmax
comp=Z,270nm,6.8s
ZRNK Zerenda 51.88 312 *e*P **P 03 23 21.3 +0.3**
ZRNK pmax pmax
comp=Z,5.0nm,0.9s
ZRNK Zerenda 51.88 312 *e*P **P 03 23 21.3 +0.3**
comp=Z,5.4nm,0.9s
EKS2 Erkin-Say 51.90 298 *e*P **P 03 23 21.7 +0.2**
EKS2 pmax pmax
comp=Z,4.0nm,0.7s
EKS2 Erkin-Say 51.90 298 *e*P **P 03 23 21.7 +0.2**
comp=Z,4.1nm,0.7s
HYT Haines Junctio 52.48 37 *e*P **P 03 23 28.4 +2.8**
comp=Z,29nm,0.9s
INK Inuvik 52.70 28 P **P 03 23 27.8 +0.9**
comp=Z,1.0nm,0.6s,baz=292,slow=5.0,SNR=3.2
KKAR Karatay Array 53.99 300 *e*P **P 03 23 37.1 +0.3**
KKAR pmax pmax
comp=Z,5.0nm,0.8s
KKAR Karatay Array 53.99 300 *e*P **P 03 23 37.1 +0.3**
comp=Z,5.3nm,0.8s
SVE Sverdlovsk 55.42 319 *e*P **P 03 23 47.9 +1.0**
WRAK Wrangell Islan 56.29 42 *e*P **P 03 23 55.9 +2.8**
comp=Z,9.4nm,0.7s
ARU Arti 56.63 319 P **P 03 23 56.1 +0.5**
comp=Z,2.0nm,0.4s,baz=71,slow=4.7,SNR=7.4
ARU Arti 56.63 319 *d*/P **P 03 23 55.6 0.0**
ARU 03 24 50.9
ARU 03 26 02.3
ARU S **S 03 31 47.2 +0.7**
ARU SS **SS 03 35 31.6 -2.0**
ARU pmax pmax
comp=Z,20nm,1.7s
ARU Arti 56.63 319‖ *e*P **P 03 23 55.9 +0.4**
comp=Z,28nm,1.6s
WRAB Tennant Creek 58.35 190‖ *e*P **P 03 24 07.6 -0.4**
WRAB pmax pmax
comp=Z,61nm,2.5s
WRAB Tennant Creek 58.35 190 *e*P **P 03 24 07.1 -0.9**
comp=Z,13nm,0.9s
WRA Warramunga Arr 58.36 190 P **P 03 24 07.3 -0.7**
comp=Z,12nm,0.9s,baz=9.0,slow=7.3,SNR=28
ABKAR Akbulak array 58.49 310 *e*P **P 03 24 08.8 +0.1**
comp=Z,5.0nm,0.7s
AKTO Aktyubinsk 59.16 312 P **P 03 24 13.5 0.0**
comp=Z,2.5nm,0.7s,baz=64,slow=7.6,SNR=8.1
AS01 Alice Springs 62.08 190 *e*P **P 03 24 33.0 -0.5**
YKA Yellowknife Ar 62.08 31 P **P 03 24 33.4 +0.4**
comp=Z,1.9nm,0.8s,baz=298,slow=6.7,SNR=12
AS31 Alice Springs 62.08 190 *e*P **P 03 24 34.0 +0.4**
comp=Z,1.7nm,1.0s
ASAR Alice Springs 62.08 190 P **P 03 24 33.0 -0.5**
comp=Z,3.4nm,0.9s,baz=11,slow=5.9,SNR=15
ARCES ARCESS Array B 63.57 340 P **P 03 24 43.2 +0.3**
comp=Z,4.2nm,0.9s,baz=39,slow=7.8,SNR=7.7
KLMR Klimovskoe 63.72 328 *e*P **P 03 24 42.2 -1.8**
KLMR *e* 03 25 18.2
KLMR *e* 03 27 03.7
KLMR pmax pmax
comp=Z,8.0nm,1.1s
SGF Sodankyl 64.59 338 P **P 03 24 52.2 +2.6**
SGF pmax pmax
comp=Z,19nm,1.2s
GEYT Alibeck 64.73 299 P **P 03 24 50.3 -0.8**
comp=Z,2.7nm,0.6s,baz=96,slow=2.9,SNR=5.7
MSF Maaselka 64.76 336 P **P 03 24 51.2 +0.4**
MSF pmax pmax
comp=Z,10.0nm,1.9s
NLWA Neilton Lookou 64.81 49 *e*P **P 03 24 54.0 +2.5**
comp=Z,11nm,1.0s
JOF Joensuu 65.78 332 P **P 03 24 56.0 -1.4**
JOF pmax pmax
comp=Z,9.0nm,1.0s
OUL Oulu 66.30 336 P **P 03 25 00.6 -0.1**
OUL pmax pmax
comp=Z,12nm,1.1s
SUF Sumiainen 67.75 334 P **P 03 25 09.1 -0.9**
SUF pmax pmax
comp=Z,17nm,0.8s
OBN Obninsk 68.20 324 P **P 03 25 13.2 +0.3**
comp=Z,5.8nm,0.4s,baz=10,slow=19,SNR=4.0
OBN Obninsk 68.20 324 *ce*P **P 03 25 13.2 +0.3**
OBN *e* 03 25 39.2
OBN *e* 03 27 46.7
OBN *e*PPP PPP 03 29 21.8
OBN pmax pmax
comp=Z,30nm,2.5s
FIA1 FINESS Array S 68.62 333 *e*P **P 03 25 15.5 +0.1**
FINES FINESS Array B 68.62 333 P **P 03 25 15.8 +0.3**
comp=Z,7.4nm,0.6s,baz=44,slow=8.5,SNR=28
K05A Summer Lake 69.03 52 *e*P **P 03 25 20.9 +2.4**
comp=Z,9.1nm,0.9s
VSR Storozhevoye 69.19 319 *e*P **P 03 25 19.2 0.0**
VSR pmax pmax
comp=Z,10.0nm,0.9s
SUMG Summit 69.62 1 *i*P **P 03 25 23.0 +1.0**
comp=Z,19nm,1.3s
SUMG Summit 69.62 1 *i*P **P 03 25 23.0 +1.0**
SUMG pmax pmax
comp=Z,19nm,1.3s
SUMG Summit 69.62 1 *e*P **P 03 25 22.7 +0.7**
comp=Z,7.6nm,0.6s
BMO Blue Mountains 70.02 48 *e*P **P 03 25 25.7 +1.1**
comp=Z,2.2nm,1.1s
VSU Vasula 70.35 330‖ *e*P **P 03 25 26.9 +0.8**
VSU pmax pmax
comp=Z,21nm,0.7s
NCK Nalchik 71.14 311‖ *e*P **P 03 25 31.9 +0.6**
NCK pmax pmax
comp=Z,10.0nm,1.2s
KVAR Kislovodsk Arr 71.41 312 P **P 03 25 33.8 +0.7**
comp=Z,1.1nm,1.0s,baz=233,slow=5.1,SNR=7.7
KIV Kislovodsk 71.42 312 *e*P **P 03 25 34.1 +1.0**
KIV pmax pmax
comp=Z,23nm,1.1s
KIV Kislovodsk 71.42 312 *e*P **P 03 25 35.0 +2.0**
comp=Z,24nm,1.1s
KBZ Khabaz 71.42 311 P **P 03 25 33.5 +0.5**
comp=Z,5.8nm,0.9s,baz=45,slow=5.7,SNR=7.1
HLID Hailey 72.47 48 *e*P **P 03 25 40.6 +1.1**
comp=Z,1.1nm,0.9s
BOZ Bozeman (W) 72.83 45 *e*P **P 03 25 43.1 +1.5**
BOZ pmax pmax
comp=Z,2.0nm,0.7s
BOZ Bozeman (W) 72.83 45 *e*P **P 03 25 43.1 +1.5**
comp=Z,1.6nm,0.7s
HFS Hagfors 73.78 336 P **P 03 25 46.9 +0.2**
comp=Z,6.1nm,0.6s,baz=50,slow=4.6,SNR=29
NB2 NORSAR Subarra 73.82 338 P **P 03 25 46.8 -0.2**
comp=Z,5.6nm,0.8s,baz=38,slow=6.2
NOA NNSAR Array B 73.82 339 P **P 03 25 47.2 +0.2**
comp=Z,5.8nm,0.8s,baz=39,slow=5.9,SNR=16
AKASG Malin Array Be 74.43 323 P **P 03 25 50.9 +0.2**
comp=Z,3.7nm,0.6s,baz=44,slow=6.1,SNR=12
KIEV Kiev 74.44 323‖ *e*P **P 03 25 50.1 -0.6**
KIEV pmax pmax
comp=Z,6.0nm,1.1s
KIEV Kiev 74.44 323 *e*P **P 03 25 50.6 -0.1**
comp=Z,5.0nm,0.8s
TPNV Topopah Spring 75.25 55 *e*P **P 03 25 57.3 +1.4**
TPNV pmax pmax
comp=Z,5.0nm,0.9s
TPNV Topopah Spring 75.25 55 *e*P **P 03 25 57.3 +1.4**
comp=Z,5.4nm,0.9s
BW06 Boulder Array 75.77 47 *e*P **P 03 25 58.9 +0.1**
PDAR Pinedale Array 75.77 47 P **P 03 25 59.5 +0.6**
comp=Z,1.1nm,0.6s,baz=258,slow=2.7,SNR=11
SHPR Sheep Range 76.21 54 *e*P **P 03 26 03.1 +1.6**
comp=Z,2.7nm,1.0s
CCUT Cedar City 76.72 53 *e*P **P 03 26 05.1 +0.7**
comp=Z,3.1nm,1.0s
BORG Borgarnes 76.79 353 P **P 03 26 05.2 +1.3**
comp=Z,7.9nm,0.8s,baz=356,slow=5.3,SNR=3.4
LCMT Little Creek M 77.12 53 *e*P **P 03 26 08.3 +1.8**
comp=Z,4.3nm,1.0s
MTPU Mount Pierson 77.15 52 *e*P **P 03 26 09.0 +2.1**
comp=Z,4.1nm,1.0s
KNB Kanab 77.39 53 *e*P **P 03 26 10.0 +2.0**
KNB pmax pmax
comp=Z,3.0nm,1.0s
KNB Kanab 77.39 53 *e*P **P 03 26 10.0 +2.0**
comp=Z,3.4nm,1.0s
SRU San Rafael Swe 77.50 50 *e*P **P 03 26 10.1 +1.4**
SRU pmax pmax
comp=Z,5.0nm,0.9s
SRU San Rafael Swe 77.50 50 *e*P **P 03 26 10.1 +1.4**
comp=Z,4.8nm,0.9s
ULM Lac du Bonnet 77.72 34 P **P 03 26 09.3 -0.2**
comp=Z,4.7nm,1.1s,baz=337,slow=4.6,SNR=3.7
U15A North Rim 78.09 53 *e*P **P 03 26 13.6 +1.5**
BUR08 Bucovina Ar. S 78.45 323 *e*P **P 03 26 14.5 +0.8**
BURAR Bucovina Array 78.47 323‖ *i*P **P 03 26 14.4 +0.6**
BURAR Bucovina Array 78.47 323‖ P **P 03 26 14.4 +0.6**
TESR Tescani 78.54 321‖ *i*P **P 03 26 14.3 +0.2**
CFR Carcaliu 78.71 319‖ *i*P **P 03 26 15.0 0.0**
CFR Carcaliu 78.71 319‖ P **P 03 26 15.0 0.0**
PV10 Paradox Valley 78.86 50 *e*P **P 03 26 18.0 +1.7**
KOLS Kolonicke sedl 78.90 325 *e*P **P 03 26 16.8 +0.8**
KOLS pmax pmax
comp=Z,3.0nm,1.1s
KOLS Kolonicke sedl 78.90 325 *e*P **P 03 26 16.8 +0.8**
STHS Stebnicka Huta 79.00 326 *e*P **P 03 26 18.3 +1.7**
STHS pmax pmax
comp=Z,3.0nm,0.9s
STHS Stebnicka Huta 79.00 326 *e*P **P 03 26 18.3 +1.7**
PV05 Paradox Valley 79.02 50 *e*P **P 03 26 18.8 +1.6**
OJC Ojcow 79.04 327 *e*P **P 03 26 17.8 +1.0**
OJC pmax pmax
comp=Z,14nm,1.1s
OJC Ojcow 79.04 327 *e*P **P 03 26 17.8 +1.0**
comp=Z,14nm,1.1s
UZH Uzhgorod 79.11 325 *e*P **P 03 26 16.9 -0.2**
UZH *e* 03 26 31.3
AGMN Agassiz Nation 79.14 36 *e*P **P 03 26 17.4 +0.1**
comp=Z,7.8nm,1.1s
WUAZ Wupatki 79.24 53 *e*P **P 03 26 20.1 +1.7**
comp=Z,3.7nm,0.9s
CRVS Cervenica-Dubn 79.28 325 *e*P **P 03 26 17.7 -0.4**
CRVS Cervenica-Dubn 79.28 325 *e*P **P 03 26 17.7 -0.4**
BRTR Keskin Array B 79.34 312 P **P 03 26 19.1 +0.3**
comp=Z,1.0nm,0.9s,baz=88,slow=4.0,SNR=7.6
DOPR Dopca 79.54 321‖ *i*P **P 03 26 20.2 +0.6**
BR231 Keskin MP Arra 79.77 313 *e*P **P 03 26 18.9 -2.1**
LANS Liptovska Anna 79.98 326 *e*P **P 03 26 24.0 +2.1**
LANS Liptovska Anna 79.98 326 *e*P **P 03 26 24.0 +2.1**
KSP Ksiaz 80.03 329 P **P 03 26 24.4 +2.3**
OKC Ostrava-Krasne 80.03 328 *e*P **P 03 26 23.2 +1.1**
OKC Ostrava-Krasne 80.03 328 *e*P **P 03 26 23.2 +1.1**
VOIR 80.09 321‖ *i*P **P 03 26 21.2 -1.4**
VOIR 80.09 321‖ P **P 03 26 21.2 -1.4**
DRGR 80.25 323‖ *i*P **P 03 26 24.0 +0.5**
DRGR 80.25 323‖ P **P 03 26 24.0 +0.5**
MORC Moravsky Berou 80.34 328‖ *i*P **P 03 26 24.5 +0.7**
MORC Moravsky Berou 80.34 328‖ P **P 03 26 24.5 +0.7**
ARR Arges 80.34 321‖ *i*P **P 03 26 25.6 +1.6**
UPC Upice 80.41 329 *e*P **P 03 26 24.9 +0.7**
UPC Upice 80.41 329 *e*P **P 03 26 24.9 +0.7**
VYHS Vyhne 80.75 326 *e*P **P 03 26 26.7 +0.6**
VYHS pmax pmax
comp=Z,2.0nm,1.2s
VYHS Vyhne 80.75 326 *e*P **P 03 26 26.7 +0.6**
BRG Berggiesshubel 80.94 330 *e*P **P 03 26 27.6 +0.5**
comp=Z,3.5nm,1.0s
BRG Berggiesshubel 80.94 330 *e*P **P 03 26 27.5 +0.5**
BRG pmax pmax
comp=Z,4.0nm,1.0s
CLL Collm 80.96 331 *i*P **P 03 26 27.2 +0.2**
comp=Z,10.0nm,1.3s
CLL Collm 80.96 331 *e*P **P 03 26 27.3 +0.2**
CLL pmax pmax
comp=Z,11nm,1.3s
CLL Collm 80.96 331 *e*P **P 03 26 27.2 +0.2**
comp=Z,11nm,1.3s
VRAC Vranov 81.09 328 P **P 03 26 28.8 +1.0**
comp=Z,5.0nm,0.9s,baz=56,slow=4.6,SNR=8.9
VRAC Vranov 81.09 328‖ *i*P **P 03 26 28.9 +1.0**
SDCO Great Sand Dun 81.39 48 *e*P **P 03 26 31.2 +1.3**
comp=Z,2.0nm,1.0s
PRU Pruhonice 81.40 329 *e*P **P 03 26 30.0 +0.5**
PRU Pruhonice 81.40 329 *e*P **P 03 26 30.0 +0.5**
BZS Buzias 81.62 323‖ *i*P **P 03 26 31.0 +0.3**
BZS Buzias 81.62 323‖ P **P 03 26 31.0 +0.3**
NKC Novy Kostel 82.03 331 *e*P **P 03 26 34.0 +1.2**
NKC Novy Kostel 82.03 331 *e*P **P 03 26 34.0 +1.2**
ECSD EROS Data Cent 82.08 39 *e*P **P 03 26 33.5 +0.3**
comp=Z,3.3nm,0.8s
MDVR Moldovita 82.19 322‖ *i*P **P 03 26 31.0 -2.8**
KHC Kasperske Hory 82.47 329 *e*P **P 03 26 35.7 +0.6**
KHC Kasperske Hory 82.47 329 *e*P **P 03 26 35.3 +0.1**
KHC pmax pmax
comp=Z,1.0nm,0.9s
KHC Kasperske Hory 82.47 329 *e*P **P 03 26 35.3 +0.1**
comp=Z,1.4nm,0.9s
CONA Conrad Observa 82.47 327 *i*P **P 03 26 36.2 +1.0**
comp=Z,5.2nm,1.1s
GERES GERESS Array B 82.64 329 P **P 03 26 36.2 0.0**
comp=Z,0.9nm,0.8s,baz=42,slow=6.2,SNR=6.5
GEA0 GERESS Array S 82.65 329 *e*P **P 03 26 36.2 0.0**
EKA Eskdalemuir Ar 82.65 342 P **P 03 26 36.6 +0.7**
comp=Z,1.1nm,0.5s,baz=21,slow=4.9,SNR=11
ANMO Albuquerque 82.67 51 *e*P **P 03 26 38.2 +1.5**
ANMO pmax pmax
comp=Z,4.0nm,1.1s
ANMO Albuquerque 82.67 51 *e*P **P 03 26 38.2 +1.5**
comp=Z,3.7nm,1.1s
GRFO Grafenberg 82.94 331 *e*P **P 03 26 38.2 +0.7**
GRFO pmax pmax
comp=Z,6.0nm,1.2s
GRFO Grafenberg 82.94 331 *e*P **P 03 26 38.2 +0.7**
comp=Z,6.3nm,1.2s
VTS Vitosha 83.06 320‖ *i*P **P 03 26 39.6 +1.1**
VTS Vitosha 83.06 320‖ P **P 03 26 39.6 +1.1**
ARSA Arzberg 83.14 327 *i*P P 03 26 33.5 -5.1
comp=Z,1.9nm,0.8s
MOA Molln 83.20 328 *i*P P 03 26 34.0 -4.9
comp=Z,3.7nm,1.4s
SOKA Soboth 83.80 327 *i*P **P 03 26 42.6 +0.5**
comp=Z,5.1nm,0.9s,SNR=6.6
SCHQ Schefferville 83.86 17 P **P 03 26 42.5 +0.3**
comp=Z,3.0nm,0.6s,baz=23,slow=5.0,SNR=5.5
OBKA Obir 84.14 327 *i*P **P 03 26 41.7 -2.2**
comp=Z,2.5nm,0.8s
KBA Koelnbreinsper 84.19 328 *i*P **P 03 26 44.3 +0.1**
comp=Z,2.5nm,0.5s
MYKA Terra Mystica 84.42 328 *i*P **P 03 26 44.2 -1.1**
comp=Z,2.2nm,0.6s
WATA Walderalm 84.71 329 *i*P **P 03 26 46.9 +0.1**
comp=Z,1.2nm,0.6s
WTTA Wattenberg 84.74 329 *i*pP pP 03 26 51.1 -2.2
comp=Z,1.2nm,0.5s
ABTA Abfaltersbach 84.80 329 *i*P **P 03 26 46.3 -0.9**
comp=Z,2.3nm,1.0s
MOTA Moosalm 84.89 330 *i*P **P 03 26 47.8 0.0**
comp=Z,7.3nm,1.1s,SNR=5.2
RETA Reute 84.91 330 *i*P **P 03 26 48.2 +0.5**
comp=Z,11nm,1.3s,SNR=8.2
BFO Black Forest 85.15 332 *e*P **P 03 26 49.5 +0.7**
BFO pmax pmax
comp=Z,8.0nm,1.0s
BFO Black Forest 85.15 332 *e*P **P 03 26 49.5 +0.7**
comp=Z,8.1nm,1.0s
FETA Feichten 85.30 330 *i*P **P 03 26 50.0 +0.2**
comp=Z,4.2nm,0.8s
DAVA Damuels 85.42 330 *i*PcP **P 03 26 50.7 +0.3**
comp=Z,10nm,1.0s
FUORN Ofenpass-Fuorn 85.81 330 *e*P **P 03 26 53.2 +0.7**
comp=Z,9.4nm,0.8s
DAVOX Davos/Dischmat 85.83 330 P **P 03 26 53.0 +0.5**
comp=Z,2.2nm,0.6s,baz=78,slow=2.8,SNR=4.5
DAVOX Davos/Dischmat 85.83 330 P **P 03 26 53.0 +0.5**
LOR Lormes 87.66 334 *e*P **P 03 27 01.1 -0.1**
LOR pmax pmax
comp=Z,7.0nm,1.1s
LDF La Druitiere 87.82 337 *e*P **P 03 27 01.6 -0.3**
LDF pmax pmax
comp=Z,25nm,1.7s
SSF Saint Saulge 87.96 334 *e*P **P 03 27 02.6 0.0**
SSF pmax pmax
comp=Z,9.0nm,1.2s
LPL La Plagne 88.10 331 *e*P **P 03 27 03.8 +0.2**
LPL pmax pmax
comp=Z,3.0nm,0.7s
LPG La Plagne 88.11 331 *e*P **P 03 27 04.0 +0.3**
LPG pmax pmax
comp=Z,5.0nm,0.8s
TXAR Lajitas Array 88.20 54 P **P 03 27 04.8 +0.6**
comp=Z,0.6nm,0.6s,baz=309,slow=3.3,SNR=7.5
SMF Signal de Mont 88.20 333 *e*P **P 03 27 04.2 +0.4**
SMF pmax pmax
comp=Z,5.0nm,1.1s
AVF Avril sur Loir 88.25 334 *e*P **P 03 27 04.0 0.0**
AVF pmax pmax
comp=Z,4.0nm,0.8s
MFF Saint Martin d 89.59 336 *e*P **P 03 27 10.6 +0.3**
MFF pmax pmax
comp=Z,5.0nm,0.7s
CAF Calviac 90.31 334 *e*P **P 03 27 14.4 +0.6**
CAF pmax pmax
comp=Z,2.0nm,0.7s
LFF La Frestale 90.76 335 *e*P **P 03 27 16.3 +0.5**
LFF pmax pmax
comp=Z,6.0nm,0.8s
ESDC Sonseca Array 97.03 335 P **P 03 27 45.0 +0.3**
comp=Z,0.3nm,0.5s,baz=14,slow=3.4,SNR=4.8
TORD Torodi Ar. Bea 117.69 317 PKP **PKPdf 03 32 58.7 -0.7**
comp=Z,0.2nm,0.6s,baz=12,slow=1.5,SNR=5.8
SNAA Sanae 142.23 197 *e*PKIKP **PKPdf 03 33 42.9 -1.1**
SNAA Sanae 142.23 197 *e*PKPdf **PKPdf 03 33 42.9 -1.1**
SAML Samuel 142.35 46 *e*PKPdf **PKPdf 03 33 44.9 -1.0**
LPAZ La Paz 144.77 61 PKP **PKPdf 03 33 50.1 -0.7**
comp=Z,2.6nm,0.8s,baz=215,slow=12,SNR=10

*IDC **10** 03:19:20.9±0.7,37°.99N×143°.52E,h0km,mb3.8/12, mb1 4.0/18,mb1mx3.8/53,mbtmp3.9/18,ML3.5/5,Error ellipse: s-maj=19.7km s-min=15.5km az=114.0*
*ISCJB **10** 03:19:22.0±0.5,38°.04N±0°.04×143°.36E±0°.04,h19km, mb4.0/19,Error ellipse: s-maj=6.4km s-min=4.6km az=165.4*
*NEIC **10** 03:19:22.6±3.2,38°.03N×143°.50E,h12km±19km,mb4.3/7,*

Error ellipse: s-maj=10.7km s-min=6.1km az=126.0
JMA ***10*** *03:19:23.7±0.2, 38°.06N×143°.26E, h25km, M4.3*
ISC 10 03:19:23.4±0.6, 38°.00N±0°.06×143°.43E±0°.06, h19km, n48, σ1§90/51, mb4.0/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.70**	**286**	P	**Pn**	**03 19 50.4**	**-1.7**
JIO				*e*S	**Sn**	**03 20 10.3**	**-3.0**
OFUJ	**Ofunato**	**1.76**	**309**	P	**Pn**	**03 19 50.9**	**-1.9**
OFUJ				S	**Sn**	**03 20 11.2**	**-3.5**
JMK	**Ichinoseki**	**1.98**	**299**	P	**Pn**	**03 19 54.3**	**-1.6**
JMK				*e*S	**Sn**	**03 20 17.5**	**-2.7**
JMM	**Marumori**	**2.09**	**267**	P	**Pn**	**03 19 56.2**	**-1.2**
JMM				*e*S	**Sn**	**03 20 19.8**	**-3.1**
JFK	**Kawauchi**	**2.12**	**254**	P	**Pn**	**03 19 56.4**	**-1.5**
JOU	**Okura**	**2.21**	**280**	P	**Pn**	**03 19 58.3**	**-0.8**
JOM	**Ohasama**	**2.23**	**312**	P	**Pn**	**03 19 57.9**	**-1.4**
JOM				S	**Sn**	**03 20 23.8**	**-2.6**
JFT	**Otama**	**2.50**	**260**	P	**Pn**	**03 20 02.8**	**-0.3**
JFT				*e*S	**Sn**	**03 20 31.5**	**-1.5**
JYK	**Kaneyama**	**2.58**	**292**	P	**Pn**	**03 20 03.3**	**-0.9**
ERM	**Erimo**	**4.02**	**357**	*e*Pn	**Pn**	**03 20 23.6**	**-0.3**
MJAR	**Matsushiro Arr**	**4.41**	**252**	Pn	**Pn**	**03 20 30.3**	**+0.9**
	6.1nm,0.3s,baz=90,slow=16,SNR=35						
MAJO	**Matsushiro**	**4.41**	**252**	*e*Pn	**Pn**	**03 20 30.1**	**+0.7**
MAT	**Matsushiro**	**4.41**	**252**	P	**Pn**	**03 20 30.4**	**+1.0**
MAT				S	**Sn**	**03 21 18.4**	**-1.8**
JHJ	**Hachijo jima 2**	**5.70**	**213**	Pn	**Pn**	**03 20 46.0**	**-1.1**
	17nm,0.3s,baz=95,slow=23,SNR=8.5						
JHJ				Sn	**Sn**	**03 21 46.1**	**-5.9**
	42nm,0.3s,baz=279,slow=22,SNR=7.3						
ASAJ	**Asahikawa**	**6.15**	**354**	Pn	**Pn**	**03 20 51.7**	**-1.4**
	baz=184,slow=11						
ASAJ				Sn	**Sn**	**03 21 57.9**	**-5.1**
	0.7nm,0.3s,baz=184,slow=16,SNR=2.9						
USRK	**Ussuriysk Ar.**	**10.62**	**309**	Pn	**Pn**	**03 21 59.3**	**+4.8**
	0.2nm,0.3s,baz=114,slow=16,SNR=3.4						
JCJ	**Chichijima**	**10.92**	**186**	Sn	Sn	03 23 49.5	-11
	10.0nm,0.3s,baz=86,slow=13,SNR=1.9						
JNU	**Nakatsue**	**11.32**	**248**	Pn	**Pn**	**03 22 05.0**	**+0.8**
	0.2nm,0.3s,baz=42,slow=9.1,SNR=4.2						
JNU				Sn	Sn	03 23 58.3	-12
	0.1nm,0.3s,baz=100,slow=11,SNR=2.4						
KSRS	**Korea Array**	**12.29**	**272**	Pn	**Pn**	**03 22 19.5**	**+2.1**
	0.1nm,0.3s,baz=71,slow=14,SNR=5.4						
KSAR	**Wonju Array Be**	**12.33**	**272**	Pn	**Pn**	**03 22 19.5**	**+1.6**
KLR	**Kul'dur**	**14.04**	**327**	Pn	**Pn**	**03 22 40.7**	**-0.5**
	0.1nm,0.3s,baz=130,slow=16,SNR=3.4						
SEY	**Seymchan**	**25.56**	**9**	P	**P**	**03 24 51.8**	**+1.1**
	1.0nm,0.3s,baz=177,slow=7.1,SNR=5.5						
H11N2	**WAKE ISLAND Hy**	**27.32**	**125**	T	T	03 54 01.8	
	baz=317,slow=75,SNR=7.2						
H11N1	**WAKE ISLAND Hy**	**27.33**	**125**	T	T	03 54 14.8	
	baz=317,slow=75,SNR=4.0						
H11N3	**WAKE ISLAND Hy**	**27.34**	**125**	T	T	03 53 59.1	
	baz=317,slow=75,SNR=5.8						
H11S1	**WAKE ISLAND Hy**	**28.10**	**127**	T	T	03 55 00.8	
	baz=317						
H11S3	**WAKE ISLAND Hy**	**28.10**	**127**	T	T	03 54 59.2	
	baz=317						
H11S2	**WAKE ISLAND Hy**	**28.11**	**127**	T	T	03 55 01.3	
	baz=317						
SONM	**Songino Array**	**28.61**	**302**	P	**P**	**03 25 19.3**	**+0.8**
	0.9nm,0.8s,baz=75,slow=7.6,SNR=3.7						
ZALV	**Zalesovo Beam**	**42.46**	**312**	P	**P**	**03 27 17.8**	**+0.8**
	0.9nm,0.4s,baz=83,slow=7.1,SNR=4.0						
ZALV				PcP	**PcP**	**03 29 10.4**	**+0.9**
	0.7nm,0.5s,baz=103,slow=5.0,SNR=1.8						
MKAR	**Makanchi Array**	**44.98**	**302**	P	**P**	**03 27 39.1**	**+1.9**
	0.4nm,0.4s,baz=81,slow=8.9,SNR=3.2						
KURK	**Kurchatov**	**46.61**	**308**	*e*P	**P**	**03 27 50.3**	**+0.3**
KURBB	**Kurchatov Arra**	**46.68**	**308**	P	**P**	**03 27 51.3**	**+0.6**
	3.2nm,0.6s,baz=82,slow=8.6,SNR=20						
ILAR	**Eielson Array**	**47.82**	**33**	P	**P**	**03 27 59.8**	**+0.5**
	1.6nm,0.8s,baz=266,slow=6.5,SNR=20						
DIV	**Divide**	**48.54**	**38**	*e*P	**P**	**03 28 04.9**	**-0.1**
	6.0nm,0.9s						
DOT	**Dot Lake**	**49.11**	**34**	*e*P	**P**	**03 28 09.0**	**-0.3**
	4.0nm,0.8s						
TKM2	**Tokmak 2**	**50.59**	**298**	*e*P	**P**	**03 28 20.6**	**-0.5**
	2.1nm,0.6s						
BRVK	**Borovoye**	**51.17**	**312**	*e*P	**P**	**03 28 24.3**	**-0.7**
	4.4nm,0.4s						
WRA	**Warramunga Arr**	**58.26**	**190**	P	**P**	**03 29 16.8**	**+0.1**
	0.8nm,0.6s,baz=9.3,slow=7.2,SNR=7.5						
ABKAR	**Akbulak array**	**58.55**	**310**	*e*P	**P**	**03 29 18.6**	**+0.2**
	0.7nm,0.4s						
ASAR	**Alice Springs**	**61.98**	**190**	P	**P**	**03 29 43.0**	**+0.8**
	0.5nm,0.8s,baz=16,slow=6.9,SNR=4.0						
YKA	**Yellowknife Ar**	**62.17**	**31**	P	**P**	**03 29 43.2**	**+0.2**
	0.4nm,0.8s,baz=311,slow=4.9,SNR=3.1						
FINES	**FINESS Array B**	**68.70**	**333**	P	**P**	**03 30 25.1**	**-0.2**
	0.7nm,0.6s,baz=35,slow=7.0,SNR=6.0						
BMO	**Blue Mountains**	**70.10**	**48**	*e*P	**P**	**03 30 34.0**	**-0.3**
	0.5nm,0.4s						
NOA	**NORSAR Array B**	**73.91**	**338**	P	**P**	**03 30 57.4**	**+0.6**
	1.4nm,1.0s,baz=40,slow=5.7,SNR=2.3						
R11A	**Troy Canyon, C**	**74.90**	**53**	*e*P	**P**	**03 31 03.0**	**-0.3**
	0.5nm,0.6s						
TXAR	**Lajitas Array**	**88.26**	**54**	P	**P**	**03 32 14.5**	**+0.6**
	0.2nm,0.5s,baz=265,slow=4.1,SNR=2.8						
LPAZ	**La Paz**	**144.82**	**61**	PKP	**PKPdf**	**03 38 59.6**	**-0.6**
	0.7nm,0.8s,baz=11,slow=9.3,SNR=2.6						

IDC ***10*** *03:25:44.0±1.0, 29°.71S×176°.29W, h0km, mb4.1/4, mb1 4.3/4, mb1mx3.9/33, mbtmp4.1/4, Error ellipse: s-maj=44.5km s-min=23.6km az=6.0*
ISCJB ***10*** *03:25:45.5±1.6, 30°.26S±0°.07×176°.4W±0°.2, h24km, mb4.2/6, Error ellipse: s-maj=22.0km s-min=9.2km az=171.6*
NEIC ***10*** *03:25:45.2±0.7, 29°.96S×176°.32W, h10km, mb4.1/1, Error ellipse: s-maj=18.0km s-min=16.6km az=138.0*
ISC 10 03:25:47.7±0.9, 30°.06S±0°.09×176°.5W±0°.1, h24km, n22, σ1§30/21, mb4.2/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.49**	**302**	Pn	**Pb**	**03 26 13.9**	**-0.8**
	117nm,0.3s,baz=11,slow=19,SNR=6.6						
RAO				Sn	**Sb**	**03 26 33.3**	**+0.1**
	296nm,0.3s,baz=68,slow=21,SNR=7.6						
URZ	**Urewera**	**9.75**	**211**	Pn	**Pn**	**03 28 06.3**	**-0.1**
	0.5nm,0.3s,baz=294,slow=6.4,SNR=4.5						
URZ				Sn	**Sn**	**03 29 52.8**	**-2.4**
	1.0nm,0.3s,baz=337,slow=24,SNR=8.2						
CTAO	**Charters Tower**	**35.06**	**278**	*e*P	**P**	**03 32 39.7**	**+0.8**
	15nm,0.6s						
STKA	**Stephens Creek**	**35.84**	**256**	P	**P**	**03 32 48.5**	**+3.0**
	2.4nm,0.7s,baz=104,slow=15,SNR=3.9						
ASAR	**Alice Springs**	**44.45**	**266**	P	**P**	**03 33 57.2**	**+0.2**
	0.7nm,0.7s,baz=106,slow=7.1,SNR=6.8						
WRAB	**Tennant Creek**	**45.41**	**271**	*e*P	**P**	**03 34 05.0**	**+0.3**
	1.4nm,0.6s						
WRA	**Warramunga Arr**	**45.41**	**271**	P	**P**	**03 34 04.3**	**-0.4**
	2.9nm,0.7s,baz=110,slow=7.6,SNR=12						
MJAR	**Matsushiro Arr**	**78.73**	**324**	P	**P**	**03 37 46.6**	**-1.4**
	1.2nm,0.7s,baz=160,slow=5.3,SNR=4.7						
MKAR	**Makanchi Array**	**118.57**	**310**	PKP	**PKPdf**	**03 44 33.4**	**+0.2**
	0.2nm,0.2s,baz=104,slow=3.0,SNR=2.4						
KURK	**Kurchatov**	**121.77**	**314**	PKP	**PKPdf**	**03 44 39.0**	**-0.2**
KURBB	**Kurchatov Arra**	**121.81**	**314**	PKP	**PKPdf**	**03 44 39.0**	**-0.3**
	0.4nm,0.8s,baz=78,slow=2.1,SNR=4.0						
H10S3	**ASCENSION HYDR**	**137.45**	**153**	T	T	06 19 47.0	
	baz=204,slow=75,SNR=4.8						
H10S2	**ASCENSION HYDR**	**137.45**	**153**	T	T	06 19 44.2	
	baz=204,slow=75,SNR=5.3						
H10S1	**ASCENSION HYDR**	**137.47**	**153**	T	T	06 19 46.1	
	baz=204,slow=75,SNR=9.7						
ARCES	**ARCESS Array B**	**138.53**	**349**	PKP	**PKPdf**	**03 45 11.0**	**+0.6**
	2.2nm,0.9s,baz=30,slow=7.3,SNR=6.1						
FINES	**FINESS Array B**	**145.26**	**341**	PKP	**PKPdf**	**03 45 21.0**	**-1.6**
	2.1nm,0.7s,baz=46,slow=4.0,SNR=10						
NB2	**NORSAR Subarra**	**148.60**	**353**	PKP	**PKPbc**	**03 45 30.8**	**-1.2**
	comp=Z,0.7nm,0.7s,baz=64,slow=2						
NOA	**NORSAR Array B**	**148.60**	**353**	PKPbc	**PKPbc**	**03 45 31.0**	**-1.0**
	comp=Z,0.9nm,0.7s,baz=12,slow=4.4,SNR=4.6						
AKASG	**Malin Array Be**	**151.81**	**324**	PKPbc	**PKPbc**	**03 45 39.2**	**-0.7**
	comp=Z,1.1nm,0.5s,baz=36,slow=2.3,SNR=4.9						
KIEV	**Kiev**	**151.83**	**324**	*e*PKPdf	**PKPdf**	**03 45 33.0**	**-0.6**
BRTR	**Keskin Array B**	**153.59**	**300**	PKPab	**PKPab**	**03 45 58.1**	**+1.0**
	comp=Z,0.6nm,1.0s,baz=54,slow=7.3,SNR=3.2						
TORD	**Torodi Ar. Bea**	**163.09**	**174**	PKPab	**PKPab**	**03 46 40.5**	**+2.2**
	comp=Z,0.8nm,1.0s,baz=197,slow=3.7,SNR=3.6						

JMA ***10*** *03:30:25.6±0.2, 37°.97N×143°.15E, h25km±4km, M3.9*
IDC ***10*** *03:30:35.0±3.8, 37°.34N×142°.81E, h72km±33km, mb3.3/5, mb1 3.5/7, mb1mx3.2/38, mbtmp3.6/7, ML3.8/2, Error ellipse: s-maj=36.4km s-min=20.5km az=80.0*
ISC 10 03:30:22.0±2.3, 37°.86N±0°.04×143°.01E±0°.08, h1km±13km, n26, σ1§72/28, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.43**	**295**	P	**Pg**	**03 30 51.2**	**+1.7**
JIO				S	**Sn**	**03 31 11.1**	**+2.5**
OFUJ	**Ofunato**	**1.61**	**320**	P	**Pg**	**03 30 53.1**	**+0.3**
OFUJ				S	**Sg**	**03 31 12.1**	**-1.6**
JMM	**Marumori**	**1.75**	**271**	P	**Pg**	**03 30 56.8**	**+1.2**
JMM				S	**Sg**	**03 31 19.9**	**+1.6**
JFK	**Kawauchi**	**1.76**	**254**	P	**Pg**	**03 30 56.9**	**+1.1**
JFK				*e*S	**Sg**	**03 31 20.9**	**+2.3**
JMK	**Ichinoseki**	**1.78**	**308**	P	**Pg**	**03 30 55.5**	**-0.6**
JMK				S	**Sg**	**03 31 18.5**	**-0.6**
JOU	**Okura**	**1.91**	**286**	P	**Pg**	**03 30 59.0**	**+0.3**
JOM	**Ohasama**	**2.10**	**321**	P	**Pb**	**03 31 00.3**	**-0.5**
JOM				*e*S	**Sb**	**03 31 26.1**	**-1.2**
JFT	**Otama**	**2.14**	**262**	P	**Pg**	**03 31 03.4**	**+0.3**
JFT				*e*S	**Sg**	**03 31 30.6**	**-0.3**
JYK	**Kaneyama**	**2.33**	**298**	P	**Pb**	**03 31 04.6**	**-0.2**
JYS	**Shirataka**	**2.35**	**280**	P	**Pb**	**03 31 05.0**	**-0.1**
JRG	**Rokugo**	**2.41**	**310**	P	**Pb**	**03 31 05.1**	**-1.0**
JRG				*e*S	**Sb**	**03 31 35.2**	**-1.1**
JAG	**Ashikaga**	**3.18**	**244**	P	**Pb**	**03 31 17.8**	**-1.5**
MJAR	**Matsushiro Arr**	**4.05**	**252**	P	**Pb**	**03 31 30.5**	**-3.6**
	2.2nm,0.3s,baz=43,slow=12,SNR=13						
MJAR				S	**Sb**	**03 32 23.0**	**-0.6**
	0.9nm,0.3s,baz=51,slow=13,SNR=3.4						
MAT	**Matsushiro**	**4.05**	**253**	P	**Pb**	**03 31 31.0**	**-3.1**
MAT				S	**Sb**	**03 32 19.8**	**-3.8**
JHJ	**Hachijo jima 2**	**5.41**	**210**	P	**Pn**	**03 31 45.7**	**+1.9**
	30nm,0.3s,baz=340,slow=20,SNR=22						
JHJ				S	**Sn**	**03 32 46.6**	**-0.1**
	12nm,0.3s,baz=107,slow=19,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**27.52**	**124**	T	T	04 04 51.9	
	baz=317,slow=74,SNR=19						
H11N1	**WAKE ISLAND Hy**	**27.53**	**124**	T	T	04 05 07.3	
	baz=317,slow=74,SNR=12						
H11N3	**WAKE ISLAND Hy**	**27.54**	**124**	T	T	04 05 05.8	
	baz=317,slow=74,SNR=16						
H11S1	**WAKE ISLAND Hy**	**28.29**	**126**	T	T	04 06 04.0	
	baz=322						
H11S3	**WAKE ISLAND Hy**	**28.29**	**126**	T	T	04 06 12.6	
	baz=322						
H11S2	**WAKE ISLAND Hy**	**28.30**	**126**	T	T	04 06 13.5	
	baz=322						
ZALV	**Zalesovo Beam**	**42.30**	**312**	P	P	03 38 23.7	+6.7
	0.3nm,0.3s,baz=72,slow=14,SNR=2.2						
MKAR	**Makanchi Array**	**44.76**	**302**	P	P	03 38 41.5	+4.6
	0.1nm,0.3s,baz=83,slow=12,SNR=2.2						
ILAR	**Eielson Array**	**48.12**	**33**	P	P	03 39 11.0	+8.0
	0.3nm,0.7s,baz=262,slow=6.1,SNR=5.3						
WRA	**Warramunga Arr**	**58.07**	**190**	P	**P**	**03 40 16.5**	**-0.4**
	1.2nm,0.8s,baz=8.3,slow=7.3,SNR=6.8						
ASAR	**Alice Springs**	**61.80**	**189**	P	**P**	**03 40 42.9**	**+0.5**
	0.3nm,0.8s,baz=9.1,slow=7.6,SNR=3.2						

NEIC ***10*** *03:40:56.2, 16°.99N×95°.35W, h172km, MD4.2(MEX), After MEX.*
MEX 10 03:40:57.1±1.4, 17°.21N×95°.20W, h128km±19km, MD4.1, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TUIG	**Tuzandepetl**	**1.10**	**42**	*i* P	Pn	03 41 19.3	-1.5
TUIG				*i* S	Sn	03 41 36.4	-2.5
TUIG	**Tuzandepetl**	**1.10**	**42**	*e*P	Pn	03 41 25.5	+4.7
TUIG				*e*S	Sn	03 41 35.4	-3.5
VHO	**Vista Hermosa**	**1.47**	**265**	*e*P	Pn	03 41 24.7	-0.3
VHO				*e*S	Sn	03 41 45.2	-0.9
VHO	**Vista Hermosa**	**1.47**	**265**	*e*P	Pn	03 41 24.7	-0.3
VHO				*e*S	Sn	03 41 46.1	0.0
HUIG	**Huatulco**	**1.68**	**211**	*e*P	Pn	03 41 25.2	-2.0
HUIG				*e*S	Sn	03 41 48.2	-1.8
HUIG	**Huatulco**	**1.68**	**211**	*e*P	Pn	03 41 25.2	-2.0
HUIG				*e*S	Sn	03 41 48.2	-1.8
TPIG		**2.03**	**102**	*i* P	Pn	03 41 30.1	-1.3
TGIG				*e*S	Sn	03 41 55.6	-2.1
TPIG	**Tehuac#an**	**2.39**	**301**	*i* P	Pn	03 41 35.8	-0.2
TPIG				*e*S	Sn	03 42 04.2	-1.5
PCIG		**2.42**	**128**	*e*P	Pn	03 41 35.7	-0.5
PCIG				*i* S	Sn	03 42 05.0	-1.2
PCIG		**2.42**	**128**	*e*P	Pn	03 41 35.4	-0.8
PCIG				*e*S	Sn	03 42 06.2	+0.1
PNIG	**Pinotepa**	**2.92**	**254**	*e*P	Pn	03 41 40.2	-2.5
PNIG				*i* S	Sn	03 42 14.4	-3.4
PNIG	**Pinotepa**	**2.92**	**254**	*e*P	Pn	03 41 40.2	-2.5

GUC ***10*** *03:42:23.6±0.5, 21°.08S×70°.22W, h41km±1km, ML3.9*
IDC ***10*** *03:42:29.1±2.2, 21°.01S×69°.98W, h73km±20km, mb3.6/5, mb1 3.9/9, mb1mx3.6/31, mbtmp4.0/9, Error ellipse: s-maj=26.4km s-min=13.6km az=92.0*
SCB ***10*** *03:42:39.7±0.8, 20°.30S×69°.17W, h82km, Ml3.8/1, Error ellipse: s-maj=26.0km s-min=6.7km az=60.0*
ISC 10 03:42:23.3±1.3, 21°.02S±0°.03×70°.22W±0°.06, h27km±10km, n36, σ1§72/32, mb4.0/5, 6C, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB01	**IPOC Station P**	**0.69**	**92**	*i* P	**Pn**	**03 42 37.0**	**-0.4**
PB01				*i* S	**Sn**	**03 42 46.9**	**-0.4**
PB01				IAML		03 42 48.0	
	comp=E,11μm,0.3s						
PB07	**IPOC Station P**	**0.77**	**156**	*i* P	**Pn**	**03 42 37.8**	**-0.8**
PB07				*i* S	**Sb**	**03 42 48.3**	**-0.2**
PB07				IAML		03 42 49.0	
	comp=E,8μm,0.3s						
HMBC	**Humberstone**	**0.80**	**23**	*i* P	**Pb**	**03 42 39.8**	**+1.1**
PB09	**IPOC Station P**	**1.20**	**130**	*i* P	**Pb**	**03 42 44.4**	**-1.1**
PB09				*i* S	**Sb**	**03 42 60.0**	**-0.7**
PB04	**IPOC Station P**	**1.31**	**177**	*i* P	**Pn**	**03 42 46.0**	**-0.1**
PB04				*i* S	**Sn**	**03 43 02.6**	**-0.2**
PSGC	**Pisagua**	**1.42**	**4**	*i* P	**Pb**	**03 42 49.2**	**0.0**
PB06	**IPOC Station P**	**1.79**	**160**	*i* P	**Pn**	**03 42 52.8**	**+0.2**
PB06				*i* S	**Sn**	**03 43 15.3**	**+0.8**
LVC	**Limon Verde**	**2.00**	**143**	P	**Pb**	**03 42 59.0**	**-0.3**
	comp=E,5μm,0.3s,baz=326,slow=9.3,SNR=1519						
LVC				S	**Sb**	**03 43 22.9**	**-1.0**
	comp=E,8μm,0.3s,baz=307,slow=15,SNR=25						
LVC	**Limon Verde**	**2.00**	**143**	*i* S	**Sb**	**03 43 21.2**	**-2.7**
PB12	**IPOC Station P**	**2.39**	**358**	*i* P	**Pn**	**03 43 02.8**	**+1.9**
PB13	**IPOC Station P**	**2.75**	**14**	*i* P	**Pn**	**03 43 09.0**	**+2.7**
PB13				*i* S	**Sb**	**03 43 43.5**	**-2.3**
MOCB	**Mochara**	**4.29**	**94**	*e*P	Pb	03 43 32.9	-5.4
BBOJ	**La Paz, Jacaqu**	**4.46**	**26**	⇑*i*Pn	Pb	03 43 35.9	-5.3
BBOD	**La Paz, Gloria**	**4.62**	**20**	⇑*i*Pn	Pb	03 43 38.9	-5.1
BBOE	**La Paz, Chanca**	**4.69**	**27**	⇑*i*Pn	Pb	03 43 39.3	-5.9
LPAZ	**La Paz**	**5.11**	**23**	P	Pn	03 43 44.4	+5.7
	comp=E,5.0nm,0.3s,baz=214,slow=2.2,SNR=62						
LPAZ	**La Paz**	**5.11**	**23**	⇑*i*Pn	Pn	03 43 44.3	+5.7
BBOB	**La Paz, Bander**	**5.24**	**23**	⇑*i*Pn	Pn	03 43 46.0	+5.6
BBOB				⇑*i*Sn	**Sn**	**03 44 35.1**	**-5.1**
	comp=E,93nm,0.7s						
SIV	**San Ignacio**	**10.02**	**62**	P	**Pn**	**03 44 46.5**	**+0.9**
	comp=E,8.7nm,0.3s,baz=264,slow=12,SNR=81						
SIV				S	**Sn**	**03 46 38.0**	**+0.8**
	comp=E,0.2nm,0.3s,baz=255,slow=10,SNR=2.0						
SIV	**San Ignacio**	**10.02**	**62**	*e*P	**Pn**	**03 44 46.3**	**+0.7**
NNA	**Nana**	**10.99**	**324**	S	**Sn**	**03 46 57.9**	**-3.2**
	comp=E,1.5nm,0.3s,baz=263,slow=16,SNR=2.8						
CPUP	**Villa Florida**	**12.94**	**117**	P	**Pn**	**03 45 28.8**	**+3.3**
	comp=E,0.1nm,0.3s,baz=296,slow=7.9,SNR=5.0						
PLCA	**Paso Flores**	**19.66**	**181**	P	**Pn**	**03 46 52.2**	**+0.5**
	comp=E,0.1nm,0.3s,baz=28,slow=15,SNR=2.4						
BDFB	**Brasília**	**21.74**	**79**	P	**P**	**03 47 12.4**	**-0.5**
	comp=E,1.4nm,0.5s,baz=259,slow=19						
PTGA	**Pitinga**	**22.51**	**28**	P	**P**	**03 47 20.1**	**-1.1**
	comp=E,2.4nm,0.3s,baz=205,slow=21,SNR=10						
TXAR	**Lajitas Array**	**59.54**	**326**	P	**P**	**03 52 25.8**	**+1.1**
	comp=E,0.1nm,0.5s,baz=159,slow=10,SNR=2.8						
TORD	**Torodi Ar. Bea**	**78.35**	**71**	P	**P**	**03 54 20.6**	**-1.2**
	comp=E,1.9nm,0.8s,baz=258,slow=5.5,SNR=18						
YKA	**Yellowknife Ar**	**90.33**	**341**	P	**P**	**03 55 21.6**	**+0.1**
	comp=E,0.9nm,0.9s,baz=138,slow=5.1,SNR=6.5						
H11S2	**WAKE ISLAND Hy**	**126.60**	**278**	T	T	06 20 37.5	
	baz=103,slow=75,SNR=260						
H11S1	**WAKE ISLAND Hy**	**126.61**	**278**	T	T	06 20 41.3	
	baz=103,slow=75,SNR=284						
H11S3	**WAKE ISLAND Hy**	**126.62**	**278**	T	T	06 20 39.3	
	baz=103,slow=75,SNR=242						
H11N3	**WAKE ISLAND Hy**	**126.67**	**279**	T	T	06 20 44.4	
	baz=102,slow=75,SNR=245						
H11N2	**WAKE ISLAND Hy**	**126.69**	**279**	T	T	06 20 44.0	
	baz=102,slow=75,SNR=143						
H11N1	**WAKE ISLAND Hy**	**126.69**	**279**	T	T	06 20 45.7	
	baz=102,slow=75,SNR=260						
MKAR	**Makanchi Array**	**145.95**	**34**	PKPbc	**PKPbc**	**04 02 00.2**	**-0.3**
	comp=E,0.7nm,0.4s,baz=310,slow=2.2,SNR=9.3						
SONM	**Songino Array**	**153.11**	**5**	PKPbc	**PKPbc**	**04 02 18.8**	**+0.1**
	comp=E,0.3nm,0.4s,baz=343,slow=1.5,SNR=4.1						

NIED ***10*** *03:43:00, 37°.90N×143°.30E, h20km, Mw4.7 Best double couple: M0 1.22000×10^16 NP1:φs166.00000°, δ55.00000°, λ-157.00000°. NP2:φs63.00000°, δ72.00000°, λ-37.00000°.*
BJI ***10*** *03:43:29.9, 38°.05N×143°.36E, h6km, mb4.7/53, mB5.3/17, Ms4.8/15, Ms7 4.8/15*
IDC ***10*** *03:43:30.2±0.5, 37°.88N×143°.45E, h0km, mb4.6/33, mb1 4.6/40, mb1mx4.6/57, mbtmp4.5/40, ML3.7/7, Error ellipse: s-maj=13.0km s-min=11.5km az=113.0*
ISCJB ***10*** *03:43:31.7±1.0, 37°.93N±0°.03×143°.30E±0°.02, h14km±6km, mb4.7/162, MS4.6/5, Error ellipse: s-maj=5.1km s-min=2.8km az=163.0*
NEIC ***10*** *03:43:33.4±1.6, 37°.91N×143°.29E, h16km±9km, mb4.8/65, Error ellipse: s-maj=4.7km s-min=2.9km az=146.0*
NEIC Recorded [1 JMA] in Miyagi.
JMA ***10*** *03:43:33.7±0.1, 37°.93N×143°.32E, h45km, M4.6*
JMA Felt I J1.
MOS ***10*** *03:43:34.3±0.8, 38°.19N×143°.23E, h25km, mb4.9/66, Error ellipse: s-maj=7.0km s-min=4.3km az=104.2*
ISC 10 03:43:33.9±0.7, 37°.94N±0°.04×143°.36E±0°.05, h23km±4km, n375, σ1§50/397, mb4.7/167, MS4.7/6, 23C-18D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.66**	**289**	P	**Pn**	**03 44 01.0**	**-0.6**
JIO				S	**Sn**	**03 44 21.1**	**-1.2**
OFUJ	**Ofunato**	**1.75**	**311**	P	**Pn**	**03 44 01.9**	**-0.9**
OFUJ				S	**Sn**	**03 44 22.8**	**-1.5**
JMK	**Ichinoseki**	**1.96**	**302**	P	**Pn**	**03 44 05.3**	**-0.4**
JMK				S	**Sn**	**03 44 28.9**	**-0.7**
JMM	**Marumori**	**2.03**	**269**	P	**Pn**	**03 44 06.1**	**-0.6**
JMM				S	**Sn**	**03 44 30.0**	**-1.3**
JFK	**Kawauchi**	**2.05**	**255**	P	**Pn**	**03 44 05.9**	**-1.1**
JFK				*e*S	**Sn**	**03 44 30.5**	**-1.4**
JOM	**Ohasama**	**2.22**	**314**	P	**Pn**	**03 44 09.2**	**-0.2**
JOM				S	**Sn**	**03 44 35.7**	**-0.5**
JFT	**Otama**	**2.43**	**261**	P	**Pn**	**03 44 12.2**	**0.0**
JFT				*e*S	**Sn**	**03 44 40.2**	**-1.1**
JYK	**Kaneyama**	**2.55**	**293**	P	**Pn**	**03 44 13.9**	**+0.1**
JANG	**Nango**	**2.82**	**330**	P	**Pn**	**03 44 17.8**	**+0.2**
JAW	**Awa shima**	**3.28**	**280**	P	**Pn**	**03 44 23.3**	**-0.5**
JAG	**Ashikaga**	**3.46**	**245**	P	**Pn**	**03 44 26.3**	**-0.1**
JAG				S	**Sn**	**03 45 05.7**	**-1

comp=Z,20nm,2.0s
BJI Beijing 21.20 284 P **P** **03 48 19.1 +1.3**
BJI S **S** **03 52 02.7 -10**
BJI pmax pmax
comp=Z,17nm,1.9s
BJI LR LR
comp=Z,2µm,14.6s
BJI LR LR
comp=Z,2µm,23.5s
BJI LR LR
comp=Z,5µm,23.1s
MA2 Magadan 22.17 10 P **P** **03 48 28.2 +0.2**
comp=Z,13nm,0.7s,baz=208,slow=9.9,SNR=11
CLNS Chul'man 22.53 333 *e*P P 03 48 24.4 -7.6
CLNS pmax pmax
comp=Z,24nm,0.8s
CLNS pmax pmax
comp=N,18nm,1.1s
CLNS pmax pmax
comp=E,12nm,0.8s
SSLB Suanglung 23.77 240 *e*P **P** **03 48 44.3 -0.5**
comp=E,8.0nm,0.8s
YULB Yu-li 23.80 239 *e*P **P** **03 48 44.4 -0.6**
comp=E,9.6nm,0.7s
TPUB Ta-pu 24.31 240 *e*P **P** **03 48 49.4 -0.5**
comp=E,16nm,0.7s
HHC Hu-ho-hao-te 24.67 287 *e*P **P** **03 48 50.8 -2.3**
HHC S **S** **03 53 04.8 -8.6**
HHC pmax pmax
comp=E,17nm,1.1s
HHC pmax pmax
comp=E,270nm,4.6s
HHC LR LR
comp=E,300nm,12.3s
HHC LR LR
comp=E,430nm,12.3s
HHC LR LR
comp=E,310nm,12.3s
WHN Wuhan 25.02 262⇑ *i*P **P** **03 48 56.5 +0.3**
WHN pmax pmax
comp=E,42nm,0.6s
YAK Yakutsk 25.56 345 P **P** **03 49 01.2 +0.5**
comp=E,68nm,0.5s,baz=210,slow=0.2,SNR=16
YAK Yakutsk 25.56 345 *e*P **P** **03 49 01.0 +0.3**
YAK *e**PP **sP** **03 49 10.6 +0.2**
YAK *e*PPP PPP 03 49 43.3
YAK *e*S **S** **03 53 25.3 -1.6**
YAK *e**SS **sS** **03 53 38.2 0.0**
YAK *e*SS **SnSn** **03 54 18.2 -2.8**
YAK *e*SSS SSS 03 54 34.6
YAK pmax pmax
comp=Z,46nm,0.8s
YAK pmax pmax
comp=E,12nm,1.4s
YAK pmax pmax
comp=N,18nm,1.3s
YAK smax smax
comp=N,264nm,2.2s
YAK smax smax
comp=E,130nm,2.3s
YAK MLR MLR
comp=E,1µm,18.0s
YAK MLR MLR
comp=Z,2µm,18.0s
YAK MLR MLR
comp=N,984nm,12.0s
YAK Yakutsk 25.56 345 *e*P **P** **03 49 01.2 +0.5**
comp=N,83nm,0.6s
SEY Seymchan 25.62 10 P **P** **03 49 02.1 +0.8**
comp=N,12nm,0.8s,baz=184,slow=5.9,SNR=38
H11N2 WAKE ISLAND Hy 27.34 125 T T 04 18 03.1
baz=317,slow=74,SNR=49
H11N1 WAKE ISLAND Hy 27.35 125 T T 04 18 05.8
baz=317,slow=74,SNR=60
H11N3 WAKE ISLAND Hy 27.36 125 T T 04 18 14.3
baz=317,slow=74,SNR=64
BOD Bodaibo 27.62 326 *e*P **P** **03 49 18.2 -1.2**
BOD pmax pmax
comp=Z,37nm,1.3s
XAN Xi'an 28.04 273 P **P** **03 49 23.1 -0.3**
XAN pmax pmax
comp=Z,8.0nm,0.9s
H11S1 WAKE ISLAND Hy 28.11 127 T T 04 19 12.0
baz=319,slow=76,SNR=29
H11S3 WAKE ISLAND Hy 28.11 127 T T 04 19 06.7
baz=319,slow=76,SNR=29
H11S2 WAKE ISLAND Hy 28.13 127 T T 04 19 07.6
baz=319,slow=76,SNR=24
SONA1 Songino Array 28.58 302 *e*P **P** **03 49 28.6 +0.3**
SONM Songino Array 28.59 302 P **P** **03 49 29.4 +1.1**
comp=Z,4.1nm,0.9s,baz=92,slow=8.9,SNR=16
SONM PcP **PcP** **03 52 39.6 +0.6**
comp=Z,1.3nm,0.5s,baz=129,slow=2.6,SNR=5.7
ENH Enshi 28.95 265 *e*P **P** **03 49 31.9 +0.4**
comp=Z,19nm,0.6s
TLY Talaya 30.93 309 *e*P **P** **03 49 52.5 +3.6**
TLY pmax pmax
comp=Z,10.0nm,0.9s
ZAK Zakamensk 30.94 307 *e*P **P** **03 49 48.9 -0.2**
ZAK pmax pmax
comp=Z,5.0nm,1.3s
LZH Lanzhou 31.45 279 *e*P **P** **03 49 55.2 +1.4**
LZH pP pP 03 50 01.5 +0.9
LZH sP sP 03 50 04.5 +1.0
LZH PP **PnPn** **03 50 58.7 +1.9**
LZH pmax pmax
comp=Z,25nm,1.4s
LZH pmax pmax
comp=Z,93nm,5.0s
LZH LR LR
comp=Z,400nm,13.1s
LZH LR LR
comp=Z,380nm,13.0s
LZH LR LR
comp=Z,470nm,16.7s
BILL Bilibino 32.73 16⇑ *e*P **P** **03 50 04.2 -0.3**
BILL *e* 03 51 11.2
BILL *e*PPP PPP 03 51 23.5
BILL pmax pmax
comp=Z,6.0nm,1.0s
BILL MLR MLR
comp=Z,3µm,21.0s
GYA Guiyang 32.90 260 *e*P **P** **03 50 07.5 +1.0**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 33.22 270 *e*P **P** **03 50 08.5 -0.7**
CD2 pP pP 03 50 14.9 -1.2
CD2 sP sP 03 50 17.7 -1.2
CD2 S **S** **03 55 27.2 -0.7**
CD2 sS sS 03 55 38.1 -1.2
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
GTA Gaotai 33.78 286 *e*P **P** **03 50 15.2 +1.1**
GTA pP sP 03 50 24.7 +0.8
GTA sP pP 03 50 28.3 +7.2
GTA PcP **PcP** **03 52 54.4 +1.3**
GTA pmax pmax
comp=Z,12nm,1.4s
TIXI Tiksi 34.59 352⇑ *e*P **P** **03 50 19.6 -1.0**
TIXI pmax pmax
comp=Z,6.0nm,0.7s
KMI Kunming 36.62 262 P **P** **03 50 40.6 +1.8**
KMI pmax pmax
comp=Z,12nm,0.5s
WMQ Urumqi 41.82 296 P **P** **03 51 23.4 +1.5**
WMQ pP sP 03 51 31.5 -0.2
WMQ sP pP 03 51 34.6 +5.7
WMQ pmax pmax
comp=Z,15nm,0.8s
ZAA0 Zalesovo Array 42.46 312 *e*P **P** **03 51 26.8 0.0**
ZALV Zalesovo Beam 42.46 312 P **P** **03 51 27.3 +0.5**
comp=Z,4.8nm,0.4s,baz=87,slow=7.6,SNR=24
ZALV PcP **PcP** **03 53 19.7 +0.3**
comp=Z,8.8nm,0.5s,baz=92,slow=2.8,SNR=16
CHTO Chiang Mai 43.01 256 *e*P **P** **03 51 31.9 +0.2**
CHTO Chiang Mai 43.01 256 *e*P **P** **03 51 31.9 +0.2**
NRIK Noril'sk 43.10 335 P **P** **03 51 31.9 +0.1**
comp=Z,3.7nm,0.4s,baz=89,slow=3.5,SNR=4.5
CMAR Chiang Mai Arr 43.22 256 P **P** **03 51 34.3 +0.8**
comp=Z,1.1nm,0.4s,baz=51,slow=7.1,SNR=5.3
SVW2 Sparrevohn 43.86 38 *e*P **P** **03 51 39.6 +1.5**
PcP
comp=Z,16nm,0.9s
MK01 Makanchi Array 44.95 302 *e*P **P** **03 51 47.4 +0.4**
MK31 Makanchi Array 44.95 302 *e*P **P** **03 51 47.7 +0.6**
MK31 Makanchi Array 44.95 302 *e*P **P** **03 51 47.7 +0.6**
MKAR Makanchi Array 44.95 302 P **P** **03 51 47.5 +0.5**
comp=Z,2.7nm,0.6s,baz=83,slow=9.9,SNR=18
MKAR PcP **PcP** **03 53 28.6 +0.5**
comp=Z,1.1nm,0.6s,baz=72,slow=4.7,SNR=2.6
MAKZ Makanchi 45.16 302 *e*P **P** **03 51 49.3 +0.6**
MAKZ pmax pmax
comp=Z,14nm,1.4s
MAKZ Makanchi 45.16 302 *e*P **P** **03 51 49.3 +0.6**
comp=Z,14nm,1.4s
RSO Redoubt South 45.23 39 *e*P **P** **03 51 50.6 +1.3**
KDAK Kodiak Island 45.39 43 *i*P **P** **03 51 50.8 +0.5**
PPLA Purkeypile 45.54 35 *e*P **P** **03 51 53.8 +2.1**
comp=Z,47nm,1.7s
SPU Mount Spurr 45.58 38 *e*P **P** **03 51 53.6 +1.7**
KTH Kantishna Hill 46.13 34 *e*P **P** **03 51 57.5 +1.3**
comp=Z,14nm,0.9s
SUA Susitna One 46.20 37 *e*P **P** **03 51 57.6 +0.7**
comp=Z,12nm,0.7s
TRF Thorofare Moun 46.41 35 *e*P **P** **03 51 59.4 +0.9**
comp=Z,9.0nm,0.8s
KURK Kurchatov 46.60 308 P **P** **03 52 00.8 +0.9**
KURK pmax pmax
comp=Z,25nm,0.5s
KURK Kurchatov 46.60 308 *e*P **P** **03 51 60.0 +0.1**
COLD Coldfoot 46.61 29 *e*P **P** **03 52 00.8 +0.9**
comp=Z,1.8nm,0.6s
KURBB Kurchatov Arra 46.67 308 P **P** **03 52 00.8 +0.3**
comp=Z,25nm,0.5s,baz=81,slow=7.9,SNR=302
PMR Palmer 46.97 37 *e*P **P** **03 52 03.1 +0.4**
PMR pmax pmax
comp=Z,10.0nm,0.7s
PMR Palmer 46.97 37 *e*P **P** **03 52 03.1 +0.4**
comp=Z,9.5nm,0.7s
MCK McKinley 47.02 34 *e*P **P** **03 52 03.4 +0.3**
MCK pmax pmax
comp=Z,5.0nm,0.8s
MCK McKinley 47.02 34 *e*P **P** **03 52 03.4 +0.3**
comp=Z,5.4nm,0.8s
RND Reindeer 47.06 35 *e*P **P** **03 52 04.2 +0.7**
RND pmax pmax
comp=Z,12nm,0.9s
RND Reindeer 47.06 35 *e*P **P** **03 52 04.2 +0.7**
comp=Z,12nm,0.9s
SML Sawmill 47.34 37 *e*P **P** **03 52 06.2 +0.5**
SML pmax pmax
comp=Z,15nm,0.8s
SML Sawmill 47.34 37 *e*P **P** **03 52 06.2 +0.5**
comp=Z,15nm,0.8s
WRH Wood River Hil 47.38 33 *e*P **P** **03 52 06.5 +0.6**
comp=Z,6.3nm,0.8s
COLA College 47.49 33 *e*P **P** **03 52 07.3 +0.7**
COLA pmax pmax
comp=Z,5.0nm,0.8s
CCB Clear Creek Bu 47.51 33 *e*P **P** **03 52 07.6 +0.8**
comp=Z,4.4nm,1.3s
PDGK Podgornoye 47.72 298 *i*P **P** **03 52 08.9 +0.1**
PDGK pmax pmax
comp=Z,13nm,1.0s
SCM Sheep Creek Mo 47.82 37 *e*P **P** **03 52 10.7 +1.3**
SCM pmax pmax
comp=Z,19nm,1.0s
SCM Sheep Creek Mo 47.82 37 *e*P **P** **03 52 10.7 +1.3**
comp=Z,19nm,1.0s
IL1 Eielson Array 47.90 33 *e*P **P** **03 52 09.5 -0.4**
ILAR Eielson Array 47.90 33 P **P** **03 52 10.1 +0.2**
comp=Z,7.2nm,0.7s,baz=265,slow=6.6,SNR=106
ILB Eielson Array 47.90 33 *e*P **P** **03 52 10.5 +0.6**
RAMN Ramite 48.48 274 *e*P **P** **03 52 15.8 +0.6**
comp=Z,16nm,0.5s
KLU Kiuna 48.52 37 *e*P **P** **03 52 16.3 +1.5**
comp=Z,25nm,1.3s
GUN Gumba 48.60 276 *e*P **P** **03 52 16.9 +0.7**
comp=Z,13nm,0.3s
DIV Divide 48.62 38 *e*P **P** **03 52 16.4 +0.8**
comp=Z,18nm,0.8s
KKN Kakani 49.13 276 *e*P **P** **03 52 20.9 +0.8**
comp=Z,34nm,0.9s
DOT Dot Lake 49.19 34 *e*P **P** **03 52 20.2 +0.3**
comp=Z,12nm,0.8s
BMRM Bremner River 49.20 38 *e*P **P** **03 52 20.6 +0.5**
comp=Z,9.7nm,0.8s
DMN Daman 49.35 276 *e*P **P** **03 52 22.5 +0.6**
GKN Gorkha 49.54 277 *e*P **P** **03 52 23.8 +0.6**
CRQM Cirque 49.94 38 *e*P **P** **03 52 27.6 +1.7**
comp=Z,25nm,0.6s
BALM Baldy 50.28 38 *e*P **P** **03 52 29.8 +1.4**
BALM pmax pmax
comp=Z,7.0nm,0.8s
BALM Baldy 50.28 38 *e*P **P** **03 52 29.8 +1.4**
comp=Z,6.8nm,0.8s
EGAK Eagle 50.35 33 *e*P **P** **03 52 28.8 +0.2**
KOLN Koldanda 50.46 277 *e*P **P** **03 52 30.9 +0.7**
comp=Z,5.3nm,0.3s
TKM2 Tokmak 2 50.56 298 *e*P **P** **03 52 32.0 +1.2**
TKM2 pmax pmax
comp=Z,13nm,0.9s
TKM2 Tokmak 2 50.56 298 *e*P **P** **03 52 32.0 +1.2**
comp=Z,13nm,0.9s
PYUN Piuthan 50.78 278 *e*P **P** **03 52 33.4 +0.7**
CHKZ Chkalovo 50.83 313 *i*P **P** **03 52 31.2 -1.2**
CHKZ pmax pmax
comp=Z,6.0nm,0.6s
VOSK Vostochnaya 50.83 312 P **P** **03 52 32.1 -0.4**
VOSK pmax pmax
comp=Z,9.0nm,0.9s
BVA0 Borovoye Array 51.11 312 *i*P **P** **03 52 33.6 -1.0**
BVA0 pmax pmax
comp=Z,5.0nm,0.7s
BVAR Borovoye Array 51.11 312 P **P** **03 52 35.0 +0.4**
comp=Z,4.6nm,0.5s,baz=66,slow=8.0,SNR=34
BVAR PcP **PcP** **03 53 50.5 +0.5**
comp=Z,3.7nm,0.6s,baz=90,slow=2.6,SNR=7.2
OTUK Ortayu 51.15 306 P **P** **03 52 34.5 -0.5**
OTUK pmax pmax
comp=Z,6.0nm,0.7s
BRVK Borovoye 51.16 312‖ *e*P **P** **03 52 35.3 +0.4**
BRVK pmax pmax
comp=Z,10.0nm,0.6s
BRVK Borovoye 51.16 312 *e*P **P** **03 52 35.0 0.0**
comp=Z,5.4nm,0.8s
FRU Bishkek 51.27 299 *e*P **P** **03 52 35.0 -1.0**
FRU *e* 03 52 46.0
AAK Ala-Archa 51.42 298 P **P** **03 52 37.9 +0.7**
comp=Z,1.9nm,0.3s,baz=148,slow=11,SNR=5.0
AAK PcP **PcP** **03 53 52.2 +0.6**
comp=Z,2.8nm,0.5s,baz=90,slow=9.1,SNR=2.7
KSH Kashi 51.45 294 P P 03 52 42.4 +5.0
KSH *e*pP sP 03 52 48.7 +1.3
KSH *e*ScP **ScP** **03 57 49.5 +2.7**
KSH S **S** **04 00 00.6 +4.4**
KSH ScS **ScS** **04 02 28.3 +1.8**
KSH pmax pmax
comp=Z,4.0nm,0.7s
KSH pmax pmax
comp=Z,330nm,11.0s
KSH LR LR
comp=Z,800nm,15.3s
KSH LR LR
comp=Z,1µm,14.7s
KSH LR LR
comp=Z,460nm,11.3s
EKS2 Erkin-Say 51.91 299 *e*P **P** **03 52 41.0 +0.2**
EKS2 pmax pmax
comp=Z,4.0nm,0.8s
EKS2 Erkin-Say 51.91 299 *e*P **P** **03 52 41.0 +0.2**
comp=Z,3.6nm,0.8s
ZRNK Zerenda 51.94 312 *e*P **P** **03 52 41.3 +0.6**
ZRNK pmax pmax
comp=Z,7.0nm,0.8s
ZRNK Zerenda 51.94 312 *e*P **P** **03 52 41.3 +0.6**
comp=Z,7.2nm,0.8s
HYT Haines Junctio 52.65 37 *e*P **P** **03 52 48.5 +2.4**
comp=Z,17nm,1.0s
MNAS Manas 52.85 299 *i*P **P** **03 52 48.0 +0.1**
MNAS pmax pmax
comp=Z,16nm,0.7s
INK Inuvik 52.87 28 P **P** **03 52 48.0 +0.6**
comp=Z,2.5nm,0.5s,baz=286,slow=5.8,SNR=10
INK Inuvik 52.87 28 P **P** **03 52 48.0 +0.6**
KK31 Karatay Array 54.01 300 *i*P **P** **03 52 55.9 -0.3**
KK31 pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 54.01 300 *e*P **P** **03 52 56.4 +0.2**
KKAR pmax pmax
comp=Z,4.0nm,0.7s
KKAR Karatay Array 54.01 300 *e*P **P** **03 52 56.4 +0.2**
comp=Z,4.1nm,0.7s
SVE Sverdlovsk 55.49 319 *e*P **P** **03 53 08.0 +1.3**
GSI Gunungsitoli 55.59 240 *e*P **P** **03 53 08.2 +0.2**
comp=Z,11nm,0.7s
ARU Arti 56.70 319 P **P** **03 53 16.0 +0.6**
comp=Z,4.3nm,0.4s,baz=74,slow=4.7,SNR=11
ARU Arti 56.70 319 *d i*P **P** **03 53 15.7 +0.4**
ARU 03 54 09.9
ARU 03 55 21.2
ARU S **S** **04 01 09.1 +2.7**
ARU SS **SS** **04 04 52.0 -1.7**
ARU pmax pmax
comp=Z,19nm,1.7s
ARU Arti 56.70 319 *e*P **P** **03 53 15.8 +0.4**
comp=Z,7.8nm,0.6s
DLBC Dease Lake 56.96 39 *e*P **P** **03 53 19.6 +2.4**
comp=Z,4.5nm,0.8s
WRAB Tennant Creek 58.18 190⇑ *e*P **P** **03 53 24.8 -1.3**
WRAB pmax pmax
comp=Z,11nm,0.6s
WRAB Tennant Creek 58.18 190 *e*P **P** **03 53 25.0 -1.2**
comp=Z,7.8nm,0.8s
WRA Warramunga Arr 58.20 190 P **P** **03 53 25.3 -0.9**
comp=Z,4.0nm,0.5s,baz=7.8,slow=7.2,SNR=44
AB31 Akbulak array 58.54 310 *i*P **P** **03 53 27.9 -0.5**
AB31 pmax pmax
comp=Z,4.0nm,0.5s
ABKAR Akbulak array 58.54 310 *e*P **P** **03 53 28.6 +0.2**
AKTO Aktyubinsk 59.22 312 P **P** **03 53 33.3 +0.2**
comp=Z,6.5nm,0.7s,baz=72,slow=11,SNR=21
AKTO Aktyubinsk 59.22 312 *i*P **P** **03 53 31.6 -1.5**
AKTO pmax pmax
comp=Z,9.0nm,0.8s
SPITS Spitsbergen Ar 59.93 349 P **P** **03 53 37.9 +0.3**
comp=Z,7.6nm,0.8s,baz=68,slow=9.5,SNR=3.4
AS01 Alice Springs 61.91 190 *e*P **P** **03 53 51.3 -0.3**
ASAR Alice Springs 61.92 190 P **P** **03 53 51.4 -0.4**
comp=Z,1.8nm,0.8s,baz=9.0,slow=7.1,SNR=14
YKA Yellowknife Ar 62.24 31 P **P** **03 53 53.5 0.0**
comp=Z,2.6nm,0.6s,baz=303,slow=6.5,SNR=30
DZM Mont Dzumac 63.52 156 P **P** **03 54 02.1 -0.4**
comp=Z,4.3nm,0.9s,baz=108,slow=20,SNR=2.2
ARA0 ARCESS Array S 63.69 340 *e*P **P** **03 54 03.4 +0.4**
ARCES ARCESS Array B 63.69 340 P **P** **03 54 03.0 0.0**
comp=Z,3.8nm,0.5s,baz=53,slow=7.4,SNR=39
ARCES ARCESS Array B 63.69 340 P **P** **03 54 03.0 0.0**
KLMR Klimovskoe 63.81 328 *e*P **P** **03 54 02.9 -1.0**
KLMR pmax pmax
comp=Z,19nm,1.5s
SGF Sodankyl 64.71 338 P **P** **03 54 12.8 +3.1**
SGF pmax pmax
comp=Z,24nm,0.8s
GEYT Alibeck 64.74 299 P **P** **03 54 10.9 +0.4**
comp=Z,4.8nm,0.5s,baz=27,slow=3.6,SNR=8.9
NLWA Neilton Lookou 64.96 49 *e*P **P** **03 54 14.0 +2.2**
comp=Z,12nm,1.2s
JOF Joensuu 65.89 332 P **P** **03 54 17.7 +0.3**
JOF pmax pmax
comp=Z,15nm,1.1s
VRH Novokhopyorsk 67.94 318 *e*P **P** **03 54 27.3 -3.3**
VRH pmax pmax
comp=Z,10.0nm,0.4s
OBN Obninsk 68.29 324 *de*P **P** **03 54 33.0 +0.3**
OBN *e* 03 54 54.9
OBN *e*PPP PPP 03 58 45.9
OBN pmax pmax
comp=Z,25nm,1.7s
FIA1 FINESS Array S 68.72 333 *e*P **P** **03 54 35.8 +0.4**
comp=Z,15nm,0.6s
FINES FINESS Array B 68.73 333 P **P** **03 54 35.6 +0.3**
comp=Z,13nm,0.6s,baz=44,slow=8.6,SNR=104
K05A Summer Lake 69.17 52 *e*P **P** **03 54 40.8 +2.0**
comp=Z,12nm,0.9s
VSR Storozhevoye 69.26 319 *e*P **P** **03 54 38.8 -0.1**
VSR *e**SP **sP** **03 54 50.2 +1.2**
VSR pmax pmax
comp=Z,10.0nm,0.5s
SUMG Summit 69.77 1 *i*P **P** **03 54 43.0 +0.8**
comp=Z,12nm,0.6s
SUMG Summit 69.77 1 *i*P **P** **03 54 43.0 +0.8**
SUMG pmax pmax
comp=Z,12nm,0.6s
SUMG Summit 69.77 1 *e*P **P** **03 54 42.8 +0.6**
comp=Z,12nm,0.7s
MOD Modoc Plateau 69.99 52 *e*P **P** **03 54 44.3 +0.5**
comp=Z,5.4nm,0.7s
BMO Blue Mountains 70.18 48 *e*P **P** **03 54 45.4 +0.6**
comp=Z,3.2nm,0.9s
VSU Vasula 70.45 330 *d i*P **P** **03 54 46.4 +0.4**
VSU pmax pmax
comp=Z,32nm,0.8s
GOF Gofitskoye 70.63 312‖ *e*P **P** **03 54 48.4 +0.9**
KIV Kislovodsk 71.47 312 *e*P **P** **03 54 53.0 +0.3**
KIV pmax pmax
comp=Z,34nm,1.1s
KIV Kislovodsk 71.47 312 *e*P **P** **03 54 54.1 +1.4**
comp=Z,23nm,0.7s
KBZ Khabaz 71.48 311 P **P** **03 54 53.7 +1.2**
comp=Z,7.3nm,0.7s,baz=72,slow=4.1,SNR=16
MFID Camas Ranch 71.87 49 *e*P **P** **03 54 55.9 +0.7**
comp=Z,3.4nm,0.7s
CMB Columbia Colle 72.08 56 *e*P **P** **03 54 57.6 +1.2**
CMB pmax pmax
comp=Z,4.0nm,0.7s
CMB Columbia Colle 72.08 56 *e*P **P** **03 54 57.6 +1.2**
comp=Z,4.4nm,0.7s
LRM Limekiln Ridge 72.42 45 *e*P **P** **03 54 59.5 +1.0**
HLID Hailey 72.62 48 *e*P **P** **03 55 00.9 +1.3**
comp=Z,2.5nm,0.8s
BOZ Bozeman (W) 72.98 45 *e*P **P** **03 55 02.0 +0.2**
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 72.98 45 *e*P **P** **03 55 02.0 +0.2**
comp=Z,3.0nm,0.8s
NC405 NORSAR Array S 73.73 338 *e*P **P** **03 55 06.4 +0.7**
NC204 NORSAR Array S 73.88 338 *e*P **P** **03 55 06.1 -0.5**
HFS Hagfors 73.89 336 P **P** **03 55 06.9 +0.3**
comp=Z,4.9nm,0.6s,baz=51,slow=5.9,SNR=56
NB2 NORSAR Subarra 73.94 338 P **P** **03 55 06.9 -0.1**
comp=Z,6.6nm,0.8s,baz=38,slow=5.9
NOA NORSAR Array B 73.94 338 P **P** **03 55 06.8 -0.1**
comp=Z,3.6nm,0.7s,baz=38,slow=5.8,SNR=21
ANN Anapa 74.01 315 *e*P **P** **03 55 06.8 -0.8**
ANN pmax pmax
comp=Z,26nm,1.2s
H17A Grant Village 74.34 46 *e*P **P** **03 55 12.9 +3.0**
comp=Z,7.5nm,0.9s
IMW Indian Meadow 74.44 46 *e*P **P** **03 55 12.0 +1.5**
comp=Z,2.6nm,0.6s
AKASG Malin Array Be 74.52 323 P **P** **03 55 10.4 0.0**
comp=Z,5.1nm,0.6s,baz=46,slow=6.1,SNR=18
KIEV Kiev 74.53 323 *e*P **P** **03 55 10.6 +0.1**
KIEV pmax pmax
comp=Z,12nm,1.2s
KIEV Kiev 74.53 323 *e*P **P** **03 55 10.6 +0.1**
comp=Z,12nm,1.2s
R11A Troy Canyon, C 74.99 53 *e*P **P** **03 55 14.4 +0.8**
comp=Z,3.4nm,0.8s
TPNV Topopah Spring 75.39 55 *e*P **P** **03 55 16.9 +0.9**
TPNV pmax pmax
comp=Z,6.0nm,0.8s
TPNV Topopah Spring 75.39 55 *e*P **P** **03 55 16.9 +0.9**
comp=Z,6.3nm,0.8s
DUG Dugway, Tooele 75.59 50 *e*P **P** **03 55 18.5 +1.4**
DUG pmax pmax
comp=Z,5.0nm,0.7s
DUG Dugway, Tooele 75.59 50 *e*P **P** **03 55 18.5 +1.4**
comp=Z,4.9nm,0.7s
BW06 Boulder Array 75.93 47 *e*P **P** **03 55 19.3 +0.3**
comp=Z,3.0nm,0.6s
PD31 Pinedale Array 75.93 47 *e*P **P** **03 55 19.6 +0.6**
PDAR Pinedale Array 75.93 47 P **P** **03 55 19.2 +0.2**
comp=Z,2.1nm,0.6s,baz=262,slow=2.1,SNR=22
SHPR Sheep Range 76.36 54 *e*P **P** **03 55 22.6 +1.0**
comp=Z,2.9nm,0.7s
SORM Soroca 76.66 321⇑ *i*P P 03 55 34.3 +12
SORM Soroca 76.66 321⇑ P **P** 03 55 34.3 +12
CCUT Cedar City 76.87 53 *e*P **P** **03 55 24.9 +0.4**
comp=Z,3.7nm,0.8s
MSU Marysvale 77.01 51 *e*P **P** **03 55 26.6 +1.4**
MSU Marysvale 77.01 51 *e*P **P** **03 55 26.6 +1.4**
LCMT Little Creek M 77.27 53 *e*P **P** **03 55 28.1 +1.5**
comp=Z,5.0nm,0.8s
P17A Butcher Ranch, 77.29 50 *e*P **P** **03 55 28.1 +1.4**
comp=Z,7.5nm,0.6s

MTPU	Mount Pierson	77.30	52	*e*P		P	03 55 28.8	+1.8
	comp=Z,5.0nm,0.7s							
Q16A	Castle Valley	77.38	50	*e*P		P	03 55 28.6	+1.4
	comp=Z,16nm,1.9s							
BEL	Belsk	77.52	328	*e*P		P	03 55 28.8	+1.3
BEL	Belsk	77.52	328	*e*P		P	03 55 28.8	+1.3
KNB	Kanab	77.53	53	*e*P		P	03 55 29.8	+1.7
KNB					pmax	pmax		
	comp=Z,5.0nm,0.8s							
KNB	Kanab	77.53	53	*e*P		P	03 55 29.8	+1.7
	comp=Z,4.6nm,0.8s							
SRU	San Rafael Swe	77.65	50	*e*P		P	03 55 29.6	+0.8
SRU					pmax	pmax		
	comp=Z,8.0nm,0.7s							
SRU	San Rafael Swe	77.65	50	*e*P		P	03 55 29.6	+0.8
	comp=Z,7.7nm,0.7s							
K22A	Casper	77.72	45	*e*P		P	03 55 29.1	0.0
	comp=Z,2.7nm,0.5s							
ULM	Lac du Bonnet	77.89	34	P		P	03 55 29.6	-0.1
	comp=Z,2.7nm,0.6s,baz=315,slow=10,SNR=5.1							
U15A	North Rim	78.23	53	*e*P		P	03 55 33.4	+1.2
BUR08	Bucovina Ar. S	78.53	323	*e*P		P	03 55 34.2	+0.8
BURAR	Bucovina Array	78.55	323	⇑*i*P		P	03 55 33.7	+0.2
BURAR	Bucovina Array	78.55	323	⇑P		P	03 55 33.7	+0.2
TESR	Tescani	78.62	321	⇓*i*P		P	03 55 34.5	+0.8
CFR	Carcaliu	78.78	319	⇑*i*P		P	03 55 35.1	+0.5
CFR	Carcaliu	78.78	319	⇑P		P	03 55 35.1	+0.5
PV09	Paradox Valley	78.88	50	*e*P		P	03 55 37.0	+1.3
KOLS	Kolonicke sedl	78.98	325	*e*P		P	03 55 36.6	+0.9
KOLS					pmax	pmax		
	comp=Z,5.0nm,1.3s							
KOLS	Kolonicke sedl	78.98	325	*e*P		P	03 55 36.6	+0.9
PV10	Paradox Valley	79.01	50	*e*P		P	03 55 37.9	+1.5
STHS	Stebnicka Huta	79.09	326	*e*P		P	03 55 37.4	+1.1
STHS					pmax	pmax		
	comp=Z,3.0nm,0.8s							
STHS	Stebnicka Huta	79.09	326	*e*P		P	03 55 37.4	+1.1
OJC	Ojcow	79.14	327	*e*P		P	03 55 37.5	+1.0
OJC	Ojcow	79.14	327	*e*P		P	03 55 37.5	+1.0
OJC					pmax	pmax		
	comp=Z,19nm,1.3s							
OJC	Ojcow	79.14	327	*e*P		P	03 55 37.5	+1.0
	comp=Z,18nm,1.3s							
N23A	Red Feather La	79.20	46	*e*P		P	03 55 38.8	+1.4
HARR	Harsova	79.22	319	⇓*i*P		P	03 55 52.8	+16
CRVS	Cervenica-Dubn	79.37	325	*e*P		P	03 55 38.5	+0.6
CRVS	Cervenica-Dubn	79.37	325	*e*P		P	03 55 38.5	+0.6
WUAZ	Wupatki	79.38	53	*e*P		P	03 55 39.7	+1.3
	comp=Z,4.9nm,0.8s							
BR131	Keskin Array S	79.39	312	*e*P		P	03 55 39.2	+0.9
BRTR	Keskin Array B	79.39	312	P		P	03 55 38.9	+0.6
	comp=Z,1.4nm,0.6s,baz=79,slow=3.1,SNR=11							
DOPR	Dopca	79.62	321	⇓*i*P		P	03 55 39.0	-0.3
MLR	Muntele Rosu	79.68	321	⇑*i*P		P	03 55 40.3	+0.6
MLR	Muntele Rosu	79.68	321	⇑P		P	03 55 40.3	+0.6
BR231	Keskin MP Arra	79.82	313	*e*P		P	03 55 39.0	-1.6
LANS	Liptovska Anna	80.08	326	*e*P		P	03 55 43.4	+1.7
LANS	Liptovska Anna	80.08	326	*e*P		P	03 55 43.4	+1.7
MVCO	Mesa Verde	80.09	50	*e*P		P	03 55 43.3	+1.0
	comp=Z,3.7nm,0.8s							
KECS	Kecovo	80.12	325	*e*P		P	03 55 42.9	+1.0
KECS					pmax	pmax		
	comp=Z,1.0nm,0.7s							
KECS	Kecovo	80.12	325	*e*P		P	03 55 42.9	+1.0
OKC	Ostrava-Krasne	80.13	328	*e*P		P	03 55 43.1	+1.2
OKC	Ostrava-Krasne	80.13	328	*e*P		P	03 55 43.1	+1.2
KSP	Ksiaz	80.13	329	*e*P		P	03 55 43.3	+1.4
KSP	Ksiaz	80.13	329	*e*P		P	03 55 43.3	+1.4
VOIR		80.17	321	⇓*i*P		P	03 55 43.0	+0.7
VOIR		80.17	321	⇓P		P	03 55 43.0	+0.7
DRGR		80.33	323	⇑*i*P		P	03 55 44.0	+0.9
DRGR		80.33	323	⇑P		P	03 55 44.1	+0.9
ARR	Arges	80.42	321	⇑*i*P		P	03 55 44.8	+1.1
MORC	Moravsky Berou	80.43	328	⇑*i*P		P	03 55 44.5	+0.9
MORC	Moravsky Berou	80.43	328	*e*P		P	03 55 44.9	+1.3
MORC					pmax	pmax		
	comp=Z,19nm,0.9s							
MORC	Moravsky Berou	80.43	328	*e*P		P	03 55 44.9	+1.3
	comp=Z,19nm,0.9s							
UPC	Upice	80.50	329	*e*P		P	03 55 45.2	+1.3
UPC	Upice	80.50	329	*e*P		P	03 55 45.2	+1.3
KRLC	Kraliky	80.52	328	*e*P		P	03 55 45.0	+0.9
KRLC				*ex*		x	03 55 56.6	
KRLC	Kraliky	80.52	328	*e*P		P	03 55 45.0	+0.9
KRLC				*e*			03 55 56.6	
PSZ	Piszkesteto	80.81	325	⇑*i*P		P	03 55 35.0	-11
PSZ	Piszkesteto	80.81	325	⇑P		P	03 55 35.0	-11
VYHS	Vyhne	80.84	326	*e*P		P	03 55 46.6	+0.8
VYHS					pmax	pmax		
	comp=Z,2.0nm,0.8s							
VYHS	Vyhne	80.84	326	*e*P		P	03 55 46.6	+0.8
BRG	Berggiesshubel	81.05	330	*e*P		P	03 55 47.3	+0.5
	comp=Z,6.2nm,1.2s							
BRG				*e*			03 57 36.5	
	comp=Z,7.5nm,1.8s							
BRG	Berggiesshubel	81.05	330	*e*P		P	03 55 47.3	+0.5
BRG					pmax	pmax		
	comp=Z,6.0nm,1.2s							
CLL	Collm	81.07	331	⇓*i*P		P	03 55 47.1	+0.2
	comp=Z,6.0nm,0.8s							
CLL				*i*			03 55 58.2	
CLL				*e*PP		PP	03 58 51.0	-0.2
CLL	Collm	81.07	331	*e*P		P	03 55 47.1	+0.2
CLL					pmax	pmax		
	comp=Z,6.0nm,0.8s							
CLL	Collm	81.07	331	*e*P		P	03 55 47.0	+0.2
	comp=Z,5.5nm,0.8s							
PVCC	Panska Ves	81.07	330	*e*P		P	03 55 48.3	+1.4
PVCC				*ex*		x	03 55 59.5	
PVCC	Panska Ves	81.07	330	*e*P		P	03 55 48.3	+1.4
PVCC				*e*			03 55 59.5	
VRAC	Vranov	81.19	328	⇓*i*P		P	03 55 59.8	+12
VRAC	Vranov	81.19	328	⇓P		P	03 55 59.8	+12
PRU	Pruhonice	81.50	329	*e*P		P	03 55 50.3	+1.0
PRU				*ex*		x	03 56 01.0	
PRU	Pruhonice	81.50	329	*e*P		P	03 55 50.3	+1.0
PRU				*e*			03 56 01.0	
BZS	Buzias	81.71	323	⇓*i*P		P	03 55 49.3	-1.1
BZS	Buzias	81.71	323	⇓P		P	03 55 49.3	-1.1
NKC	Novy Kostel	82.14	331	*e*P		P	03 55 53.3	+0.7
NKC				*ex*		x	03 56 05.0	
NKC	Novy Kostel	82.14	331	*e*P		P	03 55 53.3	+0.7
NKC				*e*			03 56 05.0	
MDVR	Moldovita	82.28	322	⇑*i*P		P	03 55 53.5	0.0
CONA	Conrad Observa	82.56	327	*i*P		P	03 55 56.1	+1.1
	comp=Z,5.3nm,1.1s							
KHC	Kasperske Hory	82.57	329	*e*P		P	03 55 55.7	+0.8
KHC				*ex*		x	03 56 06.7	
KHC	Kasperske Hory	82.57	329	*e*P		P	03 55 55.5	+0.6
KHC					pmax	pmax		
	comp=Z,2.0nm,0.9s							
KHC	Kasperske Hory	82.57	329	*e*P		P	03 55 55.5	+0.6
	comp=Z,2.0nm,0.9s							
T25A	Trinidad	82.59	48	*e*P		P	03 55 56.5	+1.0
	comp=Z,5.0nm,0.8s							
CSS	Mathiatis	82.71	309	*e*P		P	03 55 56.8	+0.9
	comp=Z,3.6nm,0.5s							
GERES	GERESS Array B	82.74	329	P		P	03 55 56.3	+0.4
	comp=Z,1.2nm,0.6s,baz=30,slow=6.2,SNR=10							
GEA0	GERESS Array S	82.75	329	*e*P		P	03 55 56.1	+0.1
ANMO	Albuquerque	82.82	51	*e*P		P	03 55 57.9	+1.2
ANMO					pmax	pmax		
	comp=Z,8.0nm,1.3s							
ANMO	Albuquerque	82.82	51	*e*P		P	03 55 57.9	+1.2
	comp=Z,7.8nm,1.3s							
GRFO	Grafenberg	83.05	331	*e*P		P	03 55 58.1	+0.7
GRFO					pmax	pmax		
	comp=Z,4.0nm,0.7s							
GRFO	Grafenberg	83.05	331	*e*P		P	03 55 58.1	+0.7
	comp=Z,3.8nm,0.7s							
VTS	Vitosha	83.13	320	⇓*i*P		P	03 55 58.3	+0.2
VTS	Vitosha	83.13	320	*e*P		P	03 55 58.4	+0.3
VTS					pmax	pmax		
	comp=Z,3.0nm,0.8s							
VTS	Vitosha	83.13	320	*e*P		P	03 55 58.4	+0.3
	comp=Z,3.3nm,0.8s							
ARSA	Arzberg	83.23	327	*i*P		P	03 55 59.1	+0.7
	comp=Z,2.7nm,0.7s							
MOA	Molln	83.30	328	*i*P		P	03 55 59.4	+0.7
	comp=Z,7.0nm,1.6s							
319A	Douglas	83.37	55	*e*P		P	03 56 00.6	+1.0
PERS	Pernice	83.89	327	*i*P		P	03 56 02.3	+0.5
SOKA	Soboth	83.89	327	*i*P		P	03 56 02.4	+0.6
	comp=Z,6.0nm,0.6s,SNR=9.5							
SCHQ	Schefferville	84.03	17	P		P	03 56 02.0	-0.3
	comp=Z,3.3nm,0.6s,baz=4.0,slow=6.4,SNR=5.8							
OBKA	Obir	84.23	327	*i*P		P	03 56 02.2	-1.4
	comp=Z,3.4nm,0.8s							
KBA	Koelnbreinsper	84.29	328	*i*P		P	03 56 03.7	-0.3
	comp=Z,4.8nm,0.7s							
MYKA	Terra Mystica	84.52	328	*i*P		P	03 56 05.1	+0.1
	comp=Z,4.8nm,0.6s,SNR=5.4							
WATA	Walderalm	84.81	329	*i*PcP		PcP	03 56 08.5	-1.5
	comp=Z,2.6nm,0.7s							
WTTA	Wattenberg	84.84	329	*i*PcP		P	03 56 07.6	+0.9
	comp=Z,5.2nm,1.1s							
ABTA	Abfaltersbach	84.90	329	*i*P		P	03 56 05.5	-1.4
	comp=Z,3.6nm,1.2s							
JAVS	Javornik	84.92	327	*i*P		P	03 56 06.5	-0.6
MOTA	Moosalm	84.99	330	*i*PcP		P	03 56 08.0	+0.5
	comp=Z,3.3nm,0.7s							
RETA	Reutte	85.01	330	*i*PcP		P	03 56 08.2	+0.7
	comp=Z,7.8nm,0.8s,SNR=5.5							
PDG	Podgorica	85.22	322	⇓*i*P		P	03 56 09.0	+0.5
BFO	Black Forest	85.25	332	*e*P		P	03 56 08.7	+0.1
BFO					pmax	pmax		
	comp=Z,8.0nm,0.9s							
BFO	Black Forest	85.25	332	*e*P		P	03 56 08.7	+0.1
	comp=Z,8.4nm,0.9s							
FETA	Feichten	85.40	330	*i*PcP		P	03 56 10.0	+0.4
	comp=Z,3.9nm,0.7s							
DAVA	Damuels	85.52	330	*i*PcP		P	03 56 10.6	+0.5
	comp=Z,8.5nm,0.8s,SNR=6.7							
MNTX	Cornudas Mount	85.66	53	*e*P		P	03 56 11.6	+0.7
AMTX	Amarillo	85.74	48	*e*P		P	03 56 12.4	+1.0
FUORN	Ofenpass-Fuorn	85.91	330	*e*P		P	03 56 12.9	+0.7
LDF	La Druitiere	87.94	337	*e*P		P	03 56 21.9	+0.2
LDF					pmax	pmax		
	comp=Z,4.0nm,0.7s							
SSF	Saint Saulge	88.07	334	*e*P		P	03 56 22.3	-0.1
SSF					pmax	pmax		
	comp=Z,7.0nm,1.1s							
LPL	La Plagne	88.20	331	*e*P		P	03 56 24.2	+0.8
LPL					pmax	pmax		
	comp=Z,4.0nm,0.9s							
TX31	Lajitas Ar. Si	88.34	54	*e*P		P	03 56 24.6	+0.5
TXAR	Lajitas Array	88.34	54	P		P	03 56 24.2	+0.1
	comp=Z,1.5nm,0.6s,baz=303,slow=3.3,SNR=25							
AVF	Avril sur Loir	88.36	334	*e*P		P	03 56 23.7	0.0
AVF					pmax	pmax		
	comp=Z,28nm,1.6s							
TCF	Toulx Ste Croi	89.19	334	*e*P		P	03 56 28.0	+0.3
TCF					pmax	pmax		
	comp=Z,14nm,1.6s							
MFF	Saint Martin d	89.70	336	*e*P		P	03 56 30.3	+0.2
MFF					pmax	pmax		
	comp=Z,6.0nm,0.7s							
CAF	Calviac	90.42	334	*e*P		P	03 56 34.1	+0.6
CAF					pmax	pmax		
	comp=Z,3.0nm,0.7s							
MIAR	Mount Ida	90.60	44	*e*P		P	03 56 35.0	+0.5
MIAR	Mount Ida	90.60	44	*e*P		P	03 56 35.0	+0.5
LFF	La Frestale	90.87	334	*e*P		P	03 56 36.4	+0.9
LFF					pmax	pmax		
	comp=Z,14nm,1.3s							
ESDC	Sonseca Array	97.14	335	P		P	03 57 03.9	-0.6
	comp=Z,0.6nm,0.6s,baz=21,slow=4.5,SNR=8.3							
TORD	Torodi Ar. Bea	117.76	317	PKP		PKPdf	04 02 18.0	-0.9
	comp=Z,0.5nm,0.6s,baz=11,slow=1.8,SNR=11							
LSZ	Lusaka	119.00	273	*e*PKIKP		PKPdf	04 02 20.5	-0.8
LSZ	Lusaka	119.00	273	*e*PKPdf		PKPdf	04 02 20.5	-0.8
DBIC	Dimbokro	126.65	319	PKP		PKPdf	04 02 35.8	-0.2
	comp=Z,5.0nm,1.0s,baz=211,slow=5.9,SNR=4.2							
LPAZ	La Paz	144.90	61	PKP		PKPab	04 03 09.1	-0.3
	comp=Z,3.5nm,0.7s,baz=326,slow=2.7,SNR=23							
LVC	Limon Verde	148.41	70	*e*PKPbc		PKPbc	04 03 20.3	+1.0
LCO	Las Campanas	150.36	83	*e*PKPbc		PKPbc	04 03 24.3	+0.5

IDC 10 03:49:00.3±1.5, 38°61N×142°61E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.3/45, mbtmp3.4/4, ML3.1/1, Error ellipse: s-maj=45.3km s-min=29.6km az=125.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	Matsushiro Arr	4.06	241	P	Pn	03 50 03.8	+0.1
	1.1nm,0.3s,baz=19,slow=13,SNR=5.5						
KURBB	Kurchatov Arra	45.80	307	P	P	03 57 23.2	-0.3
	0.4nm,0.3s,baz=84,slow=8.6,SNR=4.2						
WRA	Warramunga Arr	58.76	189	P	P	03 58 59.9	-0.2
	0.9nm,1.1s,baz=7.9,slow=7.3,SNR=2.1						
YKA	Yellowknife Ar	61.97	31	P	P	03 59 21.7	+0.1
	0.2nm,0.7s,baz=302,slow=7.1,SNR=2.7						

IDC 10 03:50:14.3±9.0, 37°71N×142°63E, h141km±67km, mb3.2/3, mb1 3.2/4, mb1mx2.9/44, mbtmp3.5/4, Error ellipse: s-maj=82.1km s-min=30.6km az=66.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	Matsushiro Arr	3.72	253	P	Pn	03 51 10.7	0.0
	0.5nm,0.3s,baz=97,slow=17,SNR=1.8						
MJAR				S	Sn	03 51 54.3	-0.1
	0.4nm,0.3s,baz=310,slow=42,SNR=2.7						
MKAR	Makanchi Array	44.59	302	P	P	03 58 12.3	0.0
	0.1nm,0.3s,baz=95,slow=10,SNR=1.9						
KURBB	Kurchatov Arra	46.36	308	P	P	03 58 25.8	-0.3
	0.9nm,0.4s,baz=83,slow=8.0,SNR=5.0						
WRA	Warramunga Arr	57.87	189	P	P	03 59 51.3	0.0
	0.5nm,0.8s,baz=9.0,slow=7.1,SNR=1.8						

JMA 10 03:51:39.8±0.3, 37°98N×143°25E, h42km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	1.57	288	P	Pn	03 52 06.1	+0.9
JIO				S	Sn	03 52 24.0	-0.3
JMM	Marumori	1.95	267	P	Pn	03 52 11.7	+1.4
JMM				*e*S	Sn	03 52 34.4	+0.9
JFK	Kawauchi	1.98	253	P	Pn	03 52 11.9	+1.0
JFT	Otama	2.35	260	P	Pn	03 52 18.4	+2.4
JFT				*e*S	Sn	03 52 46.2	+2.5
JAG	Ashikaga	3.41	244	P	Pn	03 52 32.0	+1.6
JAG				S	Sn	03 53 11.9	+2.4
BSO1	Boso 1	3.79	210	P	Pn	03 52 35.5	+0.3
BSO1				*e*S	Sn	03 53 19.2	+0.9
MAT	Matsushiro	4.27	252	P	Pn	03 52 45.9	+3.6
MAT				S	Sn	03 53 35.2	+4.3

IDC 10 03:53:35.1±4.8, 30°52S×178°26W, h0km, mb3.9/2, mb1 4.1/2, mb1mx3.7/26, mbtmp3.9/2, Error ellipse: s-maj=123.5km s-min=27.4km az=132.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.29	13	Pn	Pg	03 53 59.7	-0.2
	84nm,0.3s,baz=112,slow=11,SNR=6.0						
RAO				Sn	Sg	03 54 11.5	-5.1
	328nm,0.3s,baz=117,slow=18,SNR=6.3						
ASAR	Alice Springs	42.88	267	P	P	04 01 34.3	-1.2
	0.8nm,0.6s,baz=109,slow=7.4,SNR=10						
WRA	Warramunga Arr	43.88	272	P	P	04 01 44.2	+0.6
	1.3nm,0.6s,baz=116,slow=7.6,SNR=12						
FINES	FINESS Array B	145.18	340	PKPbc	PKPab	04 13 13.5	0.0
	1.0nm,0.9s,baz=11,slow=1.4,SNR=4.6						

*IDC **10** 03:57:20.6±1.3, 37°78N×143°65E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.5/47, mbtmp3.6/8, ML3.4/2, Error ellipse: s-maj=34.9km s-min=23.9km az=109.0*

*JMA **10** 03:57:24.5±0.3, 37°97N×143°22E, h24km, M3.5*

ISC 10 03:57:20.8±3.5, 37°86N±0°05×143°34E±0°08, h1km±22km, n22, σ1°96/30, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	1.68	291	P	Pn	03 57 51.1	-0.3
JIO				S	Sn	03 58 11.1	-2.4
OFUJ	Ofunato	1.79	313	P	Pn	03 57 52.4	-0.5
OFUJ				S	Sn	03 58 13.1	-3.2
JMK	Ichinoseki	1.99	304	P	Pn	03 57 55.6	-0.1
JMM	Marumori	2.02	271	P	Pn	03 57 56.4	+0.4
JMM				*e*S	Sn	03 58 20.4	-1.5
JFK	Kawauchi	2.02	257	P	Pn	03 57 56.1	0.0
JFK				*e*S	Sn	03 58 20.0	-2.1
JOU	Okura	2.17	284	P	Pb	03 57 59.6	-1.4
JOU				*e*S	Sn	03 58 24.8	-1.0
JOM	Ohasama	2.27	316	P	Pb	03 58 01.5	-1.2
JOM				S	Sn	03 58 26.3	-1.9
JFT	Otama	2.41	263	P	Pn	03 58 02.6	+1.1
JFT				S	Sn	03 58 31.5	-0.1
JYK	Kaneyama	2.57	295	P	Pn	03 58 04.5	+0.9
JYK				*e*S	Sn	03 58 34.4	-1.2
JYS	Shirataka	2.61	279	P	Pn	03 58 05.7	+1.5
JYS				*e*S	Sn	03 58 35.1	-1.5
JRG	Rokugo	2.62	307	P	Pn	03 58 05.6	+1.3
MJAR	Matsushiro Arr	4.31	254	Pn	Pn	03 58 29.9	+2.4
	0.6nm,0.3s,baz=120,slow=30,SNR=7.8						
MJAR				Sn	Sn	03 59 20.3	+1.9
	0.6nm,0.3s,baz=91,slow=28,SNR=4.8						
JHJ	Hachijo jima 2	5.55	213	Pn	Pn	03 58 45.4	+0.7
	10.0nm,0.3s,baz=49,slow=20,SNR=1.6						
JHJ				Sn	Sn	03 59 43.3	-5.8
	7.2nm,0.3s,baz=99,slow=19,SNR=1.3						
H11N2	WAKE ISLAND Hy	27.30	125	T	T	04 32 02.9	
	baz=322						
H11N1	WAKE ISLAND Hy	27.31	125	T	T	04 31 58.3	
	baz=322						
H11N3	WAKE ISLAND Hy	27.32	125	T	T	04 32 03.1	
	baz=322						
ZALV	Zalesovo Beam	42.50	312	P	P	04 05 19.0	+1.5
	0.4nm,0.4s,baz=90,slow=6.6,SNR=2.1						
MKAR	Makanchi Array	44.98	302	P	P	04 05 41.2	+3.5
	0.2nm,0.2s,baz=91,slow=8.2,SNR=1.4						
ILAR	Eielson Array	47.97	33	P	P	04 06 00.8	0.0
	0.4nm,0.8s,baz=267,slow=7.8,SNR=5.7						
WRA	Warramunga Arr	58.12	190	P	P	04 07 15.5	-0.6
	1.0nm,1.1s,baz=7.9,slow=7.3,SNR=4.8						
ARCES	ARCESS Array B	63.76	340	P	P	04 07 54.3	+0.4
	1.3nm,0.8s,baz=47,slow=7.9,SNR=1.2						
FINES	FINESS Array B	68.79	333	P	P	04 08 26.2	-0.1
	0.6nm,0.9s,baz=32,slow=7.5,SNR=4.7						

MEX 10 03:58:45.7±0.3, 16°27N×98°24W, h12km±2km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	Pinotepa	0.17	42	*i*P	Pg	03 58 49.0	-0.6
PNIG				*e*S	Sg	03 58 51.9	-0.4
TLIG	Tlapa	1.33	347	*e*P	Pn	03 59 06.6	-3.6
TLIG				*e*S	Sb	03 59 22.8	-4.8
VHO	Vista Hermosa	1.66	61	*e*P	Pn	03 59 11.4	-3.4
VHO				*e*S	Sn	03 59 31.0	-5.1
HUIG	Huatulco	2.11	103	*i*P	Pn	03 59 17.7	-3.2
HUIG				*e*S	Sn	03 59 43.0	-4.1
TPIG	Tehuac#an	2.30	21	*i*P	Pn	03 59 21.1	-2.5
TPIG				*i*S	Sn	03 59 47.3	-4.7
YAIG	Yautepec	2.70	343	*i*P	Pn	03 59 26.1	-3.0
YAIG				*i*S	Sn	03 59 57.7	-4.1

*ISCJB **10** 04:09:18.7±0.1, 36°58N±0°02×26°80E±0°02, h152km±2km, mb3.8/10, Error ellipse: s-maj=3.1km s-min=2.0km az=29.6*

*PDG **10** 04:09:18.3±0.5, 36°58N×26°77E, h168km±2km, ML4.2/9, Error ellipse: s-maj=1.0km s-min=0.8km az=90.0*

*IDC **10** 04:09:18.6±0.9, 36°64N×26°81E, h130km±12km, mb3.6/10, mb1 3.6/19, mb1mx3.4/56, mbtmp4.0/19, Error ellipse: s-maj=13.7km s-min=10.5km az=162.0*

*CSEM **10** 04:09:19.6±0.1, 36°58N×26°79E, h148km±1km, ML3.9, Error ellipse: s-maj=2.7km s-min=1.8km az=30.0*

*ATH **10** 04:09:19.1, 36°61N×26°75E, h152km±3km, ML3.9/6, Error ellipse: s-maj=3.7km s-min=1.3km az=115.0*

*ISK **10** 04:09:20.8, 36°69N×26°79E, h136km, MD3.7*

*NIC **10** 04:09:20.7±0.3, 37°03N×27°19E, h101km, mb4.3, ML3.8*

*THE **10** 04:09:21.8, 36°61N×26°77E, h168km±2km, ML4.1/12, Error ellipse: s-maj=2.2km s-min=0.6km az=119.0*

*NEIC **10** 04:09:21.8, 36°61N×26°77E, h168km, mb4.1/8, After THE.*

*GII **10** 04:09:23.5±0.0, 36°12N×27°10E, h15km±1km, mb4.0/1, MD3.8/1*

*HLW **10** 04:09:24.2, 36°16N×27°01E, h33km±23km, Md3.8*

ISC 10 04:09:19.5±0.6, 36°56N±0°03×26°79E±0°03, h149km±5km, n363, σ1°32/447, mb3.7/10, 19C-12D, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NISR	Nisiros	0.28	79	P	Pn	04 09 40.2	+0.4
NISR	Nisiros	0.28	79	P	Pn	04 09 40.1	+0.4
NIS1	Nisyros lsl.	0.32	82	*e*PG	Pn	04 09 40.5	+0.6
NIS1				*e*SG	Sn	04 09 54.1	-1.4
NIS1	Nisyros lsl.	0.32	82	P	Pn	04 09 40.2	+0.3
NIS1	Nisyros lsl.	0.32	82	P	Pn	04 09 40.2	+0.3
NIS1	Nisyros lsl.	0.32	82	*e*Pg	Pn	04 09 40.5	+0.6
NIS1				*e*Sg	Sn	04 09 54.1	-1.4
NIS1	Nisyros lsl.	0.32	82	P	Pn	04 09 40.2	+0.3
NIS1	Nisyros lsl.	0.32	82	P	Pn	04 09 41.1	+1.2
BODT	Bodrum	0.66	40	*e*PG	Pn	04 09 41.3	-0.3
BODT				*e*SG	Sn	04 09 56.2	-2.1

SMG	Samos	1.15	2	P	Pn	04 09 45.1	-0.4		
SMG				S	Sn	04 10 03.8	-1.6		
SMG	Samos	1.15	2	P	Pn	04 09 45.1	-0.4		
SMG	Samos	1.15	2	P	Pn	04 09 44.9	-0.6		
SMG				S	Sn	04 10 03.8	-1.6		
SMG				AML	AML	04 10 03.9			
	comp=N,1009µm,0.7s								
SMG				AML	AML	04 10 04.5			
	comp=E,1304µm,0.7s								
THR5	Thira Island,	1.17	264	ePN	Pn	04 09 46.8	+1.1		
THR5	Thira Island,	1.17	264	P	Pn	04 09 46.2	+0.6		
THR5	Thira Island,	1.17	264	P	Pn	04 09 46.2	+0.6		
THR5	Thira Island,	1.17	264	ePn	Pn	04 09 46.8	+1.1		
YER	Yerkesik	1.33	64	ePN	Pn	04 09 47.6	+0.3		
YER	Yerkesik	1.33	64	P	Pn	04 09 48.1	+0.8		
YER				S	Sn	04 10 07.8	-0.7		
YER	Yerkesik	1.33	64	ePn	Pn	04 09 47.6	+0.3		
YER	Yerkesik	1.33	64	P	Pn	04 09 48.1	+0.8		
YER				S	Sn	04 10 07.8	-0.7		
YER	Yerkesik	1.33	64	P	Pn	04 09 48.1	+0.8		
ZKR	Zakros	1.51	198	P	Pn	04 09 50.5	+1.4		
ZKR				S	Sn	04 10 13.3	+1.5		
ZKR	Zakros	1.51	198	P	Pn	04 09 50.5	+1.4		
ZKR				S	Sn	04 10 13.3	+1.5		
ZKR	Zakros	1.51	198	P	Pn	04 09 50.5	+1.4		
ZKR				S	Sn	04 10 13.3	+1.5		
ZKR	Zakros	1.51	198	P	Pn	04 09 50.5	+1.4		
ZKR				S	Sn	04 10 14.4	+2.6		
ZKR				AML	AML	04 10 14.6			
	comp=E,3800µm,0.3s								
ZKR				AML	AML	04 10 15.2			
	comp=N,2783µm,0.7s								
DALY	Dalyan (Mu˙la	1.52	80	ePN	Pn	04 09 50.0	+0.9		
DALY	Dalyan (Mu˙la	1.52	80	ePn	Pn	04 09 50.0	+0.9		
NPS	Neapolis	1.61	217	P	Pn	04 09 50.7	+0.5		
NPS				S	Sn	04 10 13.3	-0.3		
NPS	Neapolis	1.61	217	P	Pn	04 09 50.7	+0.5		
NPS				S	Sn	04 10 13.3	-0.3		
NPS	Neapolis	1.61	217	P	Pn	04 09 50.7	+0.5		
NPS				S	Sn	04 10 13.3	-0.3		
NPS	Neapolis	1.61	217	P	Pn	04 09 50.6	+0.5		
NPS				S	Sn	04 10 12.6	-0.9		
NPS				AML	AML	04 10 14.2			
	comp=E,4515µm,0.2s								
NPS				AML	AML	04 10 14.9			
	comp=N,4240µm,0.2s								
AYDB	Zeytinkoy-Aydi	1.64	32	ePN	Pn	04 09 50.3	-0.3		
AYDB	Zeytinkoy-Aydi	1.64	32	ePn	Pn	04 09 50.3	-0.3		
LAST	Lasithi	1.75	218	P	Pn	04 09 52.5	+0.7		
LAST				S	Sn	04 10 17.0	+0.4		
LAST	Lasithi	1.75	218	P	Pn	04 09 52.5	+0.7		
LAST				S	Sn	04 10 17.0	+0.4		
LAST	Lasithi	1.75	218	P	Pn	04 09 52.5	+0.7		
LAST				S	Sn	04 10 17.0	+0.4		
LAST	Lasithi	1.75	218	P	Pn	04 09 52.1	+0.2		
IACM	Heraklion	1.87	229	P	Pn	04 09 53.7	+0.7		
IACM				S	Sn	04 10 18.2	-0.6		
IACM	Heraklion	1.87	229	P	Pn	04 09 53.7	+0.7		
IACM				S	Sn	04 10 18.2	-0.6		
CHOS	Chios island	1.92	342	ePN	Pn	04 09 53.0	-0.6		
CHOS	Chios island	1.92	342	P	Pn	04 09 53.4	-0.2		
CHOS				S	Sn	04 10 18.5	-1.4		
CHOS	Chios island	1.92	342	ePn	Pn	04 09 53.0	-0.6		
CHOS	Chios island	1.92	342	P	Pn	04 09 53.4	-0.2		
CHOS				S	Sn	04 10 18.5	-1.4		
CHOS	Chios island	1.92	342	P	Pn	04 09 53.4	-0.2		
CHOS				S	Sn	04 10 18.5	-1.4		
CHOS	Chios island	1.92	342	P	Pn	04 09 53.2	-0.4		
IDI	Anoyia	2.00	231	P	Pn	04 09 54.9	+0.4		
	comp=N,67nm,0.3s,baz=44,slow=5.7,SNR=2066								
IDI				S	Sn	04 10 20.1	-1.3		
	comp=N,162nm,0.3s,baz=350,slow=23,SNR=12								
IDI	Anoyia	2.00	231	P	Pn	04 09 54.9	+0.4		
IDI				S	Sn	04 10 20.3	-1.1		
IDI	Anoyia	2.00	231	P	Pn	04 09 54.6	+0.1		
IDI				S	Sn	04 10 19.1	-2.4		
IDI				AML	AML	04 10 21.2			
	comp=E,2656µm,0.2s								
IDI				AML	AML	04 10 21.4			
	comp=N,2975µm,0.3s								
SIVA	Sivas	2.23	227	P	Pn	04 09 58.5	+1.3		
SIVA				S	Sn	04 10 26.8	+0.6		
SIVA	Sivas	2.23	227	P	Pn	04 09 58.5	+1.3		
SIVA				S	Sn	04 10 26.8	+0.6		
SIVA	Sivas	2.23	227	P	Pn	04 09 58.5	+1.3		
SIVA				S	Sn	04 10 26.8	+0.6		
SIVA	Sivas	2.23	227	P	Pn	04 09 58.9	+1.7		
GLHS	Glhisar (BURDU	2.25	74	ePN	Pn	04 09 58.7	+1.1		
GLHS	Glhisar (BURDU	2.25	74	ePn	Pn	04 09 58.7	+1.1		
KSL	Kastellorizon	2.29	99	P	Pn	04 09 59.0	+1.0		
KSL				S	Sn	04 10 27.6	0.0		
KSL	Kastellorizon	2.29	99	P	Pn	04 09 59.0	+1.0		
KSL				S	Sn	04 10 27.6	0.0		
KSL	Kastellorizon	2.29	99	P	Pn	04 09 59.0	+1.0		
KSL				S	Sn	04 10 27.6	0.0		
KSL	Kastellorizon	2.29	99	P	Pn	04 09 59.0	+1.0		
KSL				S	Sn	04 10 29.2	+1.6		
KSL				AML	AML	04 10 29.4			
	comp=E,1853µm,0.4s								
KSL				AML	AML	04 10 29.5			
	comp=N,718µm,0.4s								
VAM	Vamos	2.39	242	P	Pn	04 09 59.8	+0.6		
VAM				S	Sn	04 10 29.8	0.0		
VAM	Vamos	2.39	242	P	Pn	04 09 59.8	+0.6		
VAM				S	Sn	04 10 29.8	0.0		
VAM	Vamos	2.39	242	P	Pn	04 09 59.8	+0.6		
VAM				S	Sn	04 10 29.8	0.0		
KULA	Kula-Manisa	2.46	37	ePN	Pn	04 10 00.1	+0.1		
KULA	Kula-Manisa	2.46	37	P	Pn	04 10 00.4	+0.4		
KULA	Kula-Manisa	2.46	37	ePn	Pn	04 10 00.1	+0.1		
KULA	Kula-Manisa	2.46	37	P	Pn	04 10 00.4	+0.4		
KULA	Kula-Manisa	2.46	37	P	Pn	04 10 00.4	+0.4		
DKL	Dikili	2.51	2	ePN	Pn	04 10 00.6	0.0		
DKL	Dikili	2.51	2	ePn	Pn	04 10 00.6	0.0		
ELL	Elmali	2.52	85	ePN	Pn	04 10 01.8	+1.0		
ELL	Elmali	2.52	85	ePn	Pn	04 10 01.8	+1.0		
IMMV	Iera Moni Meta	2.53	245	P	Pn	04 10 01.6	+0.8		
IMMV	Iera Moni Meta	2.53	245	P	Pn	04 10 01.6	+0.8		
IMMV	Iera Moni Meta	2.53	245	P	Pn	04 10 01.4	+0.5		
PRK	Paraskevi	2.71	351	P	Pn	04 10 02.9	-0.2		
PRK	Paraskevi	2.71	351	P	Pn	04 10 02.9	-0.2		
PRK	Paraskevi	2.71	351	P	Pn	04 10 02.9	-0.2		
PRK	Paraskevi	2.71	351	P	Pn	04 10 02.4	-0.7		
VLY	Voula,Athens	2.72	299	P	Pn	04 10 03.7	+0.5		
VLY	Voula,Athens	2.72	299	P	Pn	04 10 03.7	+0.5		
VLY	Voula,Athens	2.72	299	P	Pn	04 10 03.7	+0.5		
VLY	Voula,Athens	2.72	299	P	Pn	04 10 04.3	+1.1		
SIGR	SIGRI	2.75	345	P	Pn	04 10 03.1	-0.5		
SIGR	SIGRI	2.75	345	P	Pn	04 10 03.1	-0.5		
SIGR	SIGRI	2.75	345	P	Pn	04 10 03.1	-0.5		
SIGR	SIGRI	2.75	345	P	Pn	04 10 02.5	-1.0		
PTL	Penteli	2.77	303	P	Pn	04 10 04.2	+0.4		
PTL	Penteli	2.77	303	P	Pn	04 10 04.2	+0.4		
PTL	Penteli	2.77	303	P	Pn	04 10 04.2	+0.4		
PTL	Penteli	2.77	303	P	Pn	04 10 04.8	+1.0		
GVD	Gavdhos	2.79	233	P	Pn	04 10 05.3	+1.1		
GVD				S	Sn	04 10 38.6	0.0		
GVD	Gavdhos	2.79	233	P	Pn	04 10 05.2	+1.1		
GVD				S	Sn	04 10 38.6	0.0		
GVD	Gavdhos	2.79	233	P	Pn	04 10 05.3	+1.1		
GVD				S	Sn	04 10 38.6	0.0		
GVD	Gavdhos	2.79	233	P	Pn	04 10 05.2	+1.0		
KHL	Karahalli	2.80	50	ePN	Pn	04 10 05.1	+0.8		
KHL	Karahalli	2.80	50	ePn	Pn	04 10 05.1	+0.8		
ANKY	Antikythira Is	2.90	257	P	Pn	04 10 06.0	+0.5		
ANKY	Antikythira Is	2.90	257	P	Pn	04 10 06.0	+0.5		
ANKY	Antikythira Is	2.90	257	P	Pn	04 10 06.0	+0.5		
ANKY	Antikythira Is	2.90	257	P	Pn	04 10 05.7	+0.1		
EREA	Eretria	2.94	310	P	Pn	04 10 06.2	+0.2		
EREA	Eretria	2.94	310	P	Pn	04 10 06.2	+0.2		
DID	Didima	3.00	289	P	Pn	04 10 07.1	+0.4		
DID	Didima	3.00	289	P	Pn	04 10 07.2	+0.5		
DID	Didima	3.00	289	P	Pn	04 10 07.1	+0.4		
DID	Didima	3.00	289	P	Pn	04 10 07.2	+0.5		
KRND	KRANIDI	3.03	287	P	Pn	04 10 07.6	+0.5		
KRND	KRANIDI	3.03	287	P	Pn	04 10 07.6	+0.5		
KRND	KRANIDI	3.03	287	P	Pn	04 10 08.3	+1.2		
KYTH	Kithira	3.03	266	P	Pn	04 10 07.6	+0.4		
KYTH	Kithira	3.03	266	P	Pn	04 10 07.6	+0.4		
KYTH	Kithira	3.03	266	P	Pn	04 10 07.6	+0.4		

VLI	Veliai	3.10	274	P	Pn	04 10 08.1	0.0		
VLI				S	Sn	04 10 42.8	-2.8		
VLI	Veliai	3.10	274	P	Pn	04 10 08.1	0.0		
VLI				S	Sn	04 10 42.8	-2.8		
VLI	Veliai	3.10	274	P	Pn	04 10 08.1	0.0		
VLI				S	Sn	04 10 42.8	-2.8		
VLI	Veliai	3.10	274	P	Pn	04 10 08.0	-0.1		
ANTB	Antalya	3.12	83	ePN	Pn	04 10 10.6	+2.3		
ANTB	Antalya	3.12	83	ePn	Pn	04 10 10.6	+2.3		
BALB	Balikesir	3.20	15	ePN	Pn	04 10 09.3	+0.1		
BALB	Balikesir	3.20	15	ePn	Pn	04 10 09.3	+0.1		
VILL	Villia	3.20	301	P	Pn	04 10 10.4	+1.0		
VIL2	Platees	3.25	302	P	Pn	04 10 10.4	+0.4		
LTK	Loutraki	3.38	297	P	Pn	04 10 12.7	+1.1		
LTK	Loutraki	3.38	297	P	Pn	04 10 12.7	+1.1		
SUTC	Sutluce-Ispart	3.49	74	ePN	Pn	04 10 14.4	+1.2		
SUTC	Sutluce-Ispart	3.49	74	ePn	Pn	04 10 14.4	+1.2		
LIA	Limnos Island	3.57	340	P	Pn	04 10 14.2	+0.2		
TVSB	Tavsanli	3.58	35	ePN	Pn	04 10 14.8	+0.6		
TVSB	Tavsanli	3.58	35	ePn	Pn	04 10 14.8	+0.6		
VLX	Vlachokerasia	3.62	284	P	Pn	04 10 15.7	+0.8		
VLX	Vlachokerasia	3.62	284	P	Pn	04 10 15.7	+0.8		
KCTX	Karacabey (Bur	3.90	18	ePN	Pn	04 10 17.9	-0.5		
KCTX	Karacabey (Bur	3.90	18	ePn	Pn	04 10 17.9	-0.5		
ITM	Ithomi	3.95	280	P	Pn	04 10 20.2	+1.2		
ITM	Ithomi	3.95	280	P	Pn	04 10 20.2	+1.2		
AMT	Artemida-Makis	4.18	285	P	Pn	04 10 23.9	+1.9		
AMT	Artemida-Makis	4.18	285	P	Pn	04 10 23.9	+1.9		
KIZT	Kizilcal	4.66	59	ePN	Pn	04 10 30.2	+1.8		
KIZT	Kizilcal	4.66	59	ePn	Pn	04 10 30.2	+1.8		
KONT	Konya--Tatoy	4.66	71	ePN	Pn	04 10 29.5	+1.2		
KONT	Konya--Tatoy	4.66	71	ePn	Pn	04 10 29.5	+1.2		
SVRH	Sivrihisar-ESK	4.72	51	ePN	Pn	04 10 30.3	+1.1		
SVRH	Sivrihisar-ESK	4.72	51	ePn	Pn	04 10 30.3	+1.1		
AKMC	Akamas	4.76	107	P	Pn	04 10 29.7	0.0		
	baz=297								
AKMC	Akamas	4.76	107	P	Pn	04 10 29.7	0.0		
PPCY	Paphos	4.82	109	P	Pn	04 10 30.4	0.0		
	baz=298								
PPCY	Paphos	4.82	109	P	Pn	04 10 30.4	0.0		
ALFC	Alefka	4.92	105	P	Pn	04 10 32.2	+0.3		
	baz=294								
ALFC				S	Sn	04 11 27.0	-1.3		
ALFC	Alefka	4.92	105	P	Pn	04 10 32.2	+0.3		
ALFC				S	Sn	04 11 27.0	-1.3		
SLUM	Salum	5.22	195	P	Pn	04 10 35.4	-0.4		
	baz=199								
SLUM				S	Sn	04 11 30.0	-5.4		
	baz=199								
SLUM	Salum	5.22	195	P	Pn	04 10 35.4	-0.4		
SZAC	Souni	5.28	108	P	Pn	04 10 36.8	+0.2		
	baz=297								
SZAC	Souni	5.28	108	P	Pn	04 10 36.8	+0.2		
MAMC	Mammari	5.40	103	P	Pn	04 10 38.0	-0.2		
	baz=292								
MAMC	Mammari	5.40	103	P	Pn	04 10 38.0	-0.2		
CSS	Mathiatis	5.55	105	P	Pn	04 10 39.8	-0.4		
	baz=294								
CSS				S	Sn	04 11 41.8	-1.4		
CSS	Mathiatis	5.55	105	ePn	Pn	04 10 39.2	-1.0		
	comp=N,7.3nm,0.5s								
CSS	Mathiatis	5.55	105	P	Pn	04 10 39.8	-0.4		
CSS				S	Sn	04 11 41.8	-1.4		
CSS	Mathiatis	5.55	105	ePn	Pn	04 10 39.1	-1.0		
	comp=N,7.4nm,0.5s								
BRTR	Keskin Array B	6.26	58	P	Pn	04 10 51.4	+1.7		
	comp=N,0.4nm,0.3s,baz=225,slow=15,SNR=17								
BRTR				S	Sn	04 12 03.5	+3.2		
	comp=N,0.3nm,0.3s,baz=221,slow=24,SNR=6.7								
SWA2		7.38	189	P	Pn	04 11 04.8	+0.2		
	baz=192								
SWA2		7.38	189	P	Pn	04 11 04.8	+0.2		
BHL	Bhannes	7.72	107	eP	Pn	04 11 07.1	-2.1		
BHL	Bhannes	7.72	107	eP	Pn	04 11 07.1	-2.1		
DQRL	Deir Qamar	7.74	109	eP	Pn	04 11 07.9	-1.5		
DQRL	Deir Qamar	7.74	109	eP	Pn	04 11 07.9	-1.5		
HWQ	Hawqa	7.81	104	eP	Pn	04 11 09.9	-0.6		
HWQ	Hawqa	7.81	104	eP	Pn	04 11 09.9	-0.6		
KOT	Kottamia	7.84	146	S	Sn	04 12 31.3	-7.0		
	baz=145								
MMA0B	Mount Meron ar	7.92	114	Pn	Pn	04 11 11.4	-0.4		
MMA0B	Mount Meron ar	7.92	114	Pn	Pn	04 11 11.4	-0.4		
MMAI	Mount Meron Ar	7.92	114	P	Pn	04 11 11.0	-0.8		
	comp=N,22nm,0.3s,baz=310,slow=12,SNR=49								
MMAI				S	Sn	04 12 35.4	-4.8		
	comp=N,10nm,0.3s,baz=300,slow=30,SNR=9.8								
HHAG	Hagoal	7.95	144	S	Sn	04 12 34.3	-6.5		
	baz=144								
ULC	Ulcinj	7.96	315	⇓iPn	Pn	04 11 12.3	0.0		
ULC				eSn	Sn	04 12 38.4	-2.5		
ULC	Ulcinj	7.96	315	⇓iPn	Pn	04 11 12.3	0.0		
PVY	Plav	8.01	321	ePn	Pn	04 11 14.7	+1.7		
PVY				eSn	Sn	04 12 39.4	-2.8		
PVY	Plav	8.01	321	ePn	Pn	04 11 14.7	+1.7		
RCY	Rachaya	8.02	110	eP	Pn	04 11 12.5	-0.8		
RCY	Rachaya	8.02	110	eP	Pn	04 11 12.5	-0.8		
KSDI	Kefar Szold	8.03	112	Pn	Pn	04 11 12.9	-0.3		
KSDI				Sn	Sn	04 12 40.2	-2.4		
KSDI	Kefar Szold	8.03	112	Pn	Pn	04 11 12.9	-0.3		
RSH		8.03	132	P	Pn	04 11 13.8	+0.5		
	baz=130								
RSH		8.03	132	P	Pn	04 11 13.8	+0.5		
SLTI	Sal'it	8.06	120	Sn	Sn	04 12 40.7	-2.8		
TLB	Topalu	8.08	6	⇓iP	Pn	04 11 13.6	-0.1		
TLB	Topalu	8.08	6	⇓iP	Pn	04 11 13.6	-0.1		
DRME	Dracevica, Mon	8.14	316	⇑iPn	Pn	04 11 14.8	+0.2		
DRME				eSn	Sn	04 12 42.4	-2.8		
DRME	Dracevica, Mon	8.14	316	⇑iPn	Pn	04 11 14.8	+0.2		
HARR	Harsova	8.17	6	⇑iP	Pn	04 11 14.6	-0.4		
HARR	Harsova	8.17	6	⇑iP	Pn	04 11 14.6	-0.4		
MMLI	Mount Malkishu	8.22	117	Sn	Sn	04 12 45.2	-2.3		
KSHT	Keshet	8.23	113	Pn	Pn	04 11 16.5	+0.4		
KSHT	Keshet	8.23	113	Pn	Pn	04 11 16.5	+0.4		
BEY	Berane	8.24	322	ePn	Pn	04 11 17.5	+1.4		
IVA	Berane	8.24	322	ePn	Pn	04 11 17.5	+1.4		
IVA				eSn	Sn	04 12 45.2	-2.6		
PDG	Podgorica	8.26	318	⇓iP	Pn	04 11 15.9	-0.4		
PDG	Podgorica	8.26	318	⇓iP	Pn	04 11 15.9	-0.4		
TTG	Podgorica	8.26	318	⇓iPn	Pn	04 11 15.9	-0.4		
TIP	Timpagrande	8.35	291	ePn	Pn	04 11 15.1	-2.5		
	comp=N,12nm,0.4s								
TIP				eSn	Sn	04 12 34.9	-16		
BUM	Brajici-Budva	8.38	316	⇑iPn	Pn	04 11 18.3	+0.4		
BUM				eSn	Sn	04 12 48.4	-2.6		
BUM	Brajici-Budva	8.38	316	⇑iPn	Pn	04 11 18.3	+0.4		
SUZ	Suez	8.39	141	P	Pn	04 11 18.5	+0.3		
	baz=140								
SUZ	Suez	8.39	141	P	Pn	04 11 18.5	+0.3		
HMDT	Nahal Hemdat	8.40	118	Pn	Pn	04 11 18.4	+0.2		
HMDT	Nahal Hemdat	8.40	118	Pn	Pn	04 11 18.4	+0.2		
AMAZ	Amatzia	8.40	124	Sn	Sn	04 12 48.9	-2.8		
AWBH		8.40	167	P	Pn	04 11 18.6	+0.3		
	baz=167								
AWBH		8.40	167	P	Pn	04 11 18.6	+0.3		
TAR1	Taranto	8.43	301	ePn	Pn	04 11 16.5	-2.1		
KZIT	Kziot	8.48	129	Pn	Pn	04 11 19.5	+0.2		
KZIT				Sn	Sn	04 12 48.9	-4.6		
KZIT	Kziot	8.48	129	Pn	Pn	04 11 19.5	+0.2		
CEME	Cevo	8.53	317	⇑iPn	Pn	04 11 20.1	+0.2		
CEME				eSn	Sn	04 12 52.2	-2.4		
CEME	Cevo	8.53	317	⇑iPn	Pn	04 11 20.1	+0.2		
YTIR	Yattir	8.64	124	Pn	Pn	04 11 22.0	+0.5		
YTIR	Yattir	8.64	124	Pn	Pn	04 11 22.0	+0.5		
NKME	Niksic	8.65	318	⇓iPn	Pn	04 11 22.5	+0.9		
NKME				eSn	Sn	04 12 55.0	-2.7		
NKME	Niksic	8.65	318	⇓iPn	Pn	04 11 22.5	+0.9		
NKY	Niksic	8.66	319	⇓iPn	Pn	04 11 23.1	+1.3		
NKY				eSn	Sn	04 12 55.5	-2.5		
NKY	Niksic	8.66	319	⇓iPn	Pn	04 11 23.1	+1.3		
DSI	Dead Sea	8.69	122	Pn	Pn	04 11 22.1	0.0		
DSI	Dead Sea	8.69	122	Pn	Pn	04 11 22.1	0.0		
HCY	Herceg Novi	8.70	315	⇑iPn	Pn	04 11 21.6	-0.5		
HCY				eSn	Sn	04 12 55.0	-3.6		
HCY	Herceg Novi	8.70	315	⇑iPn	Pn	04 11 21.6	-0.5		
ZAF	Zafarana	8.72	145	P	Pn	04 11 22.7	+0.2		
	baz=144								
ZAF	Zafarana	8.72	145	P	Pn	04 11 22.7	+0.2		
ZNM	Zenema	8.80	143	P	Pn	04 11 24.4	+0.9		
	baz=142								
ZNM	Zenema	8.80	143	P	Pn	04 11 24.4	+0.9		
MZBI	Masada	8.83	124	Pn	Pn	04 11 24.3	+0.4		
MZBI	Masada	8.83	124	Pn	Pn	04 11 24.3	+0.4		

CEL	Celeste	8.84	284	ePn	Pn	04 11 20.8	-3.2		
	comp=N,37nm,0.5s								
MZDA	Masada	8.84	124	Pn	Pn	04 11 24.2	+0.2		
MZDA				Sn	Sn	04 12 59.7	-2.4		
MZDA	Masada	8.84	124	Pn	Pn	04 11 24.2	+0.2		
HNKL	Nakhl	8.94	136	P	Pn	04 11 26.2	+0.8		
	baz=134								
HNKL	Nakhl	8.94	136	P	Pn	04 11 26.2	+0.8		
MLR	Muntele Rosu	8.95	356	P	Pn	04 11 25.3	-0.2		
	comp=N,10nm,0.3s,baz=192,slow=7.1,SNR=9.7								
MLR	Muntele Rosu	8.95	356	⇑iP	Pn	04 11 25.0	-0.5		
MLR	Muntele Rosu	8.95	356	⇑iP	Pn	04 11 25.0	-0.5		
VOIR		8.97	352	⇑iP	Pn	04 11 24.4	-1.3		
VOIR		8.97	352	⇑iP	Pn	04 11 24.4	-1.3		
BRY	Bratogost	8.97	317	⇑iPn	Pn	04 11 26.3	+0.5		
BRY				eSn	Sn	04 13 02.8	-2.6		
BRY	Bratogost	8.97	317	⇑iPn	Pn	04 11 26.3	+0.5		
UPM	Unac-Piva	8.98	320	⇑iPn	Pn	04 11 28.1	+2.0		
UPM				eSn	Sn	04 13 02.8	-3.0		
UPM	Unac-Piva	8.98	320	⇑iPn	Pn	04 11 28.1	+2.0		
PRNI	Paran	9.24	130	Pn	Pn	04 11 28.9	-0.5		
PRNI	Paran	9.24	130	Pn	Pn	04 11 28.9	-0.5		
CUC	Castrocucco	9.29	295	ePn	Pn	04 11 27.9	-2.1		
	comp=N,49nm,0.6s								
CUC	Castrocucco	9.29	295	ePn	Pn	04 11 27.9	-2.1		
	comp=N,49nm,0.6s								
PLOR	Plostina	9.29	359	⇓iP	Pn	04 11 28.9	-1.0		
PLOR	Plostina	9.29	359	⇓iP	Pn	04 11 28.9	-1.0		
ASF	Jabal al Asfar	9.43	115	P	Pn	04 11 32.4	+0.4		
	comp=N,1.7nm,0.3s,baz=246,slow=4.1,SNR=10.0								
ASF				S	Sn	04 13 14.3	-2.3		
	comp=N,0.5nm,0.3s,baz=266,slow=19,SNR=2.8								
HFRF	Wahat Farafira	9.47	172	P	Pn	04 11 33.1	+0.6		
	baz=172								
HFRF	Wahat Farafira	9.47	172	P	Pn	04 11 33.1	+0.6		
HRFI	Mount Harif	9.48	131	Pn	Pn	04 11 32.6	0.0		
HRFI				Sn	Sn	04 13 14.2	-3.5		
HRFI	Mount Harif	9.48	131	Pn	Pn	04 11 32.6	0.0		
MBRI	Mt Berech	9.58	132	Pn	Pn	04 11 34.1	+0.1		
MBRI				Sn	Sn	04 13 16.5	-3.7		
MBRI	Mt Berech	9.58	132	Pn	Pn	04 11 34.1	+0.1		
GRB	Gharib	9.69	147	P	Pn	04 11 36.8	+1.3		
	baz=146								
GRB	Gharib	9.69	147	P	Pn	04 11 36.8	+1.3		
EIL	Elat	9.69	133	P	Pn	04 11 34.9	-0.5		
	comp=N,2.3nm,0.3s,baz=316,slow=2.8,SNR=15								
EIL				S	Sn	04 13 15.0	-7.8		
	comp=N,2.8nm,0.3s,baz=348,slow=14,SNR=10								
EIL	Elat	9.69	133	Pn	Pn	04 11 35.1	-0.3		
EIL	Elat	9.69	133	Pn	Pn	04 11 35.1	-0.3		
VAE	Valguarnera	9.94	279	P	Pn	04 11 38.4	-0.3		
	comp=N,0.9nm,0.3

DBIC Dimbokro 41.47 232 P **P** 04 16 53.0 +1.1
comp=N,4.9nm,0.9s,baz=167,slow=14,SNR=3.1
MKAR Makanchi Array 41.91 58 P **P** 04 16 56.3 +1.2
comp=N,1.0nm,0.4s,baz=274,slow=7.7,SNR=9.2
ZALV Zalesovo Beam 43.09 47 P **P** 04 17 04.6 +0.1
comp=N,1.5nm,0.3s,baz=265,slow=9.6,SNR=7.7

IDC ***10*** *04:10:40.4±0.6, 37°.89N×143°.41E, h0km, mb4.1/24, mb1 4.2/29, mb1mx4.1/64, mbtmp4.1/29, ML3.3/5, MS4.4/1, Ms1 4.4/1, ms1mx3.5/59, Error ellipse: s-maj=16.4km s-min=13.0km az=118.0*

ISCJB ***10*** *04:10:41.7±0.3, 37°.94N±0°.05×143°.32E±0°.04, h19km, mb4.2/39, Error ellipse: s-maj=5.1km s-min=3.5km az=140.0*

NEIC ***10*** *04:10:42.7±2.6, 37°.95N×143°.37E, h14km±15km, mb4.4/14, Error ellipse: s-maj=8.4km s-min=5.3km az=128.0*

JMA ***10*** *04:10:43.4±0.2, 37°.96N×143°.27E, h40km, M4.4*

ISC 10 04:10:43.6±0.5, **37°.94N**±0°.05×**143°.29E**±0°.07, **h19**km, **n74,** σ1§**25**/82, **mb4.3**/39, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.62**	**289**	P	**Pn**	**04 11 10.0**	**-1.1**
JIO				*e*S	**Sn**	**04 11 29.3**	**-2.2**
JMK	**Ichinoseki**	**1.92**	**303**	P	**Pn**	**04 11 14.3**	**-1.0**
JMK				*e*S	**Sn**	**04 11 37.2**	**-1.7**
JMM	**Marumori**	**1.98**	**269**	P	**Pn**	**04 11 15.4**	**-0.7**
JMM				S	**Sn**	**04 11 38.8**	**-1.6**
JFK	**Kawauchi**	**2.00**	**254**	P	**Pn**	**04 11 15.5**	**-1.0**
JFK				S	**Sn**	**04 11 39.8**	**-1.2**
ONAJ	**Iwakimizuishiy**	**2.15**	**248**	P	**Pn**	**04 11 17.7**	**-0.8**
JOM	**Ohasama**	**2.19**	**315**	P	**Pn**	**04 11 18.2**	**-0.9**
JOM				S	**Sn**	**04 11 43.7**	**-2.0**
JFT	**Otama**	**2.38**	**261**	P	**Pn**	**04 11 21.9**	**+0.2**
JFT				S	**Sn**	**04 11 50.7**	**+0.3**
JYK	**Kaneyama**	**2.50**	**294**	P	**Pn**	**04 11 23.0**	**-0.4**
JANG	**Nango**	**2.80**	**331**	P	**Pn**	**04 11 27.3**	**-0.1**
JAW	**Awa shima**	**3.23**	**281**	P	**Pn**	**04 11 33.3**	**0.0**
JAG	**Ashikaga**	**3.42**	**245**	P	**Pn**	**04 11 35.7**	**-0.2**
JAG				S	**Sn**	**04 12 16.8**	**+0.9**
BSO1	**Boso 1**	**3.77**	**210**	P	**Pn**	**04 11 41.3**	**+1.0**
BSO1				S	**Sn**	**04 12 23.4**	**-0.5**
JOT	**Ohata**	**3.85**	**334**	P	**Pn**	**04 11 43.0**	**+1.1**
JRY	**Ryogami san**	**4.00**	**243**	P	**Pn**	**04 11 44.3**	**+0.3**
JRY				*e*S	**Sn**	**04 12 29.4**	**-1.0**
ERM	**Erimo**	**4.08**	**359**	*e*Pn	**Pn**	**04 11 43.9**	**-1.0**
MJAR	**Matsushiro Arr**	**4.29**	**253**	Pn	**Pn**	**04 11 49.1**	**+1.1**
	3.3nm,0.3s,baz=88,slow=16,SNR=35						
MJAR				Sn	**Sn**	**04 12 41.6**	**+4.1**
	1.7nm,0.3s,baz=82,slow=26,SNR=5.2						
MAJO	**Matsushiro**	**4.29**	**253**	*e*Pn	**Pn**	**04 11 48.7**	**+0.8**
MAT	**Matsushiro**	**4.29**	**253**	P	**Pn**	**04 11 49.7**	**+1.8**
MAT				*e*S	**Sn**	**04 12 39.7**	**+2.2**
JHJ	**Hachijo jima 2**	**5.59**	**212**	Pn	**Pn**	**04 12 04.3**	**-1.5**
	13nm,0.3s,baz=29,slow=22,SNR=8.8						
JHJ				Sn	**Sn**	**04 13 03.8**	**-5.8**
	28nm,0.3s,baz=275,slow=22,SNR=6.6						
ASAJ	**Asahikawa**	**6.20**	**355**	Pn	**Pn**	**04 12 13.5**	**-0.6**
	baz=210,slow=5.8						
ASAJ				Sn	**Sn**	**04 13 24.2**	**-0.2**
	baz=270,slow=20						
USRK	**Ussuriysk Ar.**	**10.58**	**310**	Pn	**Pn**	**04 13 16.6**	**+2.4**
	0.3nm,0.3s,baz=110,slow=11,SNR=3.5						
JCJ	**Chichijima**	**10.85**	**185**	Sn	Sn	04 15 08.8	-10
	26nm,0.3s,baz=141,slow=6.5,SNR=2.1						
JNU	**Nakatsue**	**11.20**	**248**	Pn	**Pn**	**04 13 22.3**	**-0.4**
	0.2nm,0.3s,baz=50,slow=7.9,SNR=2.9						
KSRS	**Korea Array**	**12.19**	**272**	Pn	**Pn**	**04 13 38.8**	**+2.6**
	0.2nm,0.3s,baz=87,slow=14,SNR=7.2						
KSRS				LR	LR	04 18 04.6	
	comp=Z,2μm,20.1s,baz=30,slow=36						
KSAR	**Wonju Array Be**	**12.22**	**272**	Pn	**Pn**	**04 13 38.8**	**+2.2**
KLR	**Kul'dur**	**14.03**	**327**	Pn	**Pn**	**04 13 59.3**	**-2.0**
	0.1nm,0.3s,baz=150,slow=14,SNR=4.1						
MA2	**Magadan**	**22.18**	**10**	P	**P**	**04 15 38.0**	**-0.4**
	2.6nm,0.6s,baz=180,slow=13,SNR=3.1						
YAK	**Yakutsk**	**25.55**	**345**	P	**P**	**04 16 11.3**	**+0.4**
	7.7nm,0.4s,baz=295,slow=0.6,SNR=2.9						
SEY	**Seymchan**	**25.64**	**10**	P	**P**	**04 16 12.7**	**+1.0**
	3.4nm,0.7s,baz=201,slow=8.8,SNR=11						
H11N2	**WAKE ISLAND Hy**	**27.38**	**125**	T	T	04 45 14.2	
	baz=314,slow=74						
H11N1	**WAKE ISLAND Hy**	**27.39**	**125**	T	T	04 45 17.9	
	baz=314,slow=74						
H11N3	**WAKE ISLAND Hy**	**27.40**	**125**	T	T	04 45 21.4	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**28.15**	**127**	T	T	04 46 10.7	
	baz=319,slow=76,SNR=9.2						
H11S3	**WAKE ISLAND Hy**	**28.15**	**127**	T	T	04 46 13.8	
	baz=319,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.16**	**127**	T	T	04 46 12.1	
	baz=319,slow=76,SNR=10						
SONM	**Songino Array**	**28.55**	**302**	P	**P**	**04 16 39.1**	**+0.9**
	1.3nm,0.7s,baz=89,slow=8.1,SNR=6.7						
ENH	**Enshi**	**28.90**	**265**	*e*P	**P**	**04 16 41.7**	**+0.3**
	14nm,0.8s						
ZALV	**Zalesovo Beam**	**42.42**	**312**	P	**P**	**04 18 36.8**	**0.0**
	2.0nm,0.7s,baz=94,slow=7.1,SNR=8.4						
ZALV				PcP	**PcP**	**04 20 29.5**	**-0.2**
	2.1nm,0.7s,baz=102,slow=3.7,SNR=5.8						
CMAR	**Chiang Mai Arr**	**43.17**	**256**	P	**P**	**04 18 44.4**	**+1.0**
	0.8nm,0.4s,baz=42,slow=7.3,SNR=5.1						
MKAR	**Makanchi Array**	**44.91**	**302**	P	**P**	**04 18 57.1**	**+0.1**
	1.0nm,0.6s,baz=85,slow=10,SNR=7.9						
MKAR				PcP	**PcP**	**04 20 38.5**	**+0.3**
	0.2nm,0.4s,baz=90,slow=4.3,SNR=2.1						
KURK	**Kurchatov**	**46.56**	**308**	*e*P	**P**	**04 19 09.3**	**-0.7**
	56nm,0.8s						
KURBB	**Kurchatov Arra**	**46.63**	**308**	P	**P**	**04 19 10.4**	**-0.1**
	6.3nm,0.7s,baz=82,slow=8.1,SNR=47						
ILAR	**Eielson Array**	**47.93**	**33**	P	**P**	**04 19 20.3**	**-0.1**
	1.6nm,0.8s,baz=264,slow=6.8,SNR=21						
DIV	**Divide**	**48.65**	**38**	*e*P	**P**	**04 19 25.2**	**-0.9**
	4.4nm,0.5s						
TKM2	**Tokmak 2**	**50.52**	**298**	*e*P	**P**	**04 19 40.7**	**-0.1**
	3.4nm,0.7s						
BVAR	**Borovoye Array**	**51.08**	**312**	P	**P**	**04 19 45.0**	**+0.5**
	1.2nm,0.6s,baz=85,slow=8.3,SNR=5.1						
BRVK	**Borovoye**	**51.13**	**312**	*e*P	**P**	**04 19 45.2**	**+0.2**
	10.0nm,0.7s						
EKS2	**Erkin-Say**	**51.87**	**299**	*e*P	**P**	**04 19 50.8**	**0.0**
	1.4nm,0.7s						
KKAR	**Karatay Array**	**53.97**	**300**	*e*P	**P**	**04 20 06.3**	**+0.1**
	2.0nm,0.8s						
ARU	**Arti**	**56.68**	**319**	*e*P	**P**	**04 20 25.3**	**-0.2**
	2.4nm,0.6s						
DLBC	**Dease Lake**	**56.99**	**39**	*e*P	**P**	**04 20 27.4**	**-0.4**
	2.9nm,1.0s						
WRAB	**Tennant Creek**	**58.17**	**190**	*e*P	**P**	**04 20 35.9**	**-0.4**
	5.8nm,0.8s						
WRA	**Warramunga Arr**	**58.18**	**190**	P	**P**	**04 20 36.0**	**-0.4**
	6.2nm,0.8s,baz=9.1,slow=7.2,SNR=28						
ABKAR	**Akbulak array**	**58.50**	**310**	*e*P	**P**	**04 20 38.1**	**-0.3**
	1.6nm,0.5s						
AKTO	**Aktyubinsk**	**59.18**	**312**	P	**P**	**04 20 42.6**	**-0.5**
	1.8nm,0.8s,baz=75,slow=12,SNR=5.3						
ASAR	**Alice Springs**	**61.91**	**190**	P	**P**	**04 21 01.6**	**-0.3**
	1.8nm,0.8s,baz=7.5,slow=6.7,SNR=17						
YKA	**Yellowknife Ar**	**62.27**	**31**	P	**P**	**04 21 03.9**	**0.0**
	0.5nm,0.7s,baz=303,slow=7.2,SNR=4.6						
ARCES	**ARCESS Array B**	**63.68**	**340**	P	**P**	**04 21 13.9**	**+0.7**
	4.7nm,1.1s,baz=44,slow=6.6,SNR=3.8						
GEYT	**Ailbeck**	**64.70**	**299**	P	**P**	**04 21 20.5**	**0.0**
	1.0nm,0.4s,baz=32,slow=8.5,SNR=4.0						
FINES	**FINESS Array B**	**68.71**	**333**	P	**P**	**04 21 45.7**	**+0.1**
	3.1nm,0.7s,baz=74,slow=6.9,SNR=14						
SUMG	**Summit**	**69.78**	**1**	*e*P	**P**	**04 21 52.7**	**+0.2**
	4.1nm,0.7s						
KVAR	**Kislovodsk Arr**	**71.43**	**312**	P	**P**	**04 22 03.0**	**+0.2**
	4.2nm,0.8s,baz=45,slow=4.3,SNR=2.5						
KBZ	**Khabaz**	**71.44**	**311**	P	**P**	**04 22 03.3**	**+0.7**
	2.3nm,0.8s,baz=28,slow=3.9,SNR=5.7						
FFC	**Flin Flon**	**72.13**	**34**	*e*P	**P**	**04 22 06.5**	**-0.1**
	2.5nm,0.8s						
NB2	**NORSAR Subarra**	**73.92**	**338**	P	**P**	**04 22 17.1**	**-0.1**
	comp=Z,1.0nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.92**	**338**	P	**P**	**04 22 17.4**	**+0.2**
	comp=Z,2.0nm,0.8s,baz=38,slow=5.9,SNR=7.1						
AKASG	**Malin Array Be**	**74.49**	**323**	P	**P**	**04 22 20.3**	**-0.3**
	comp=Z,0.3nm,0.3s,baz=48,slow=6.0,SNR=5.6						
R11A	**Troy Canyon, C**	**75.03**	**53**	*e*P	**P**	**04 22 24.6**	**+0.4**
	comp=Z,1.4nm,1.0s						
PDAR	**Pinedale Array**	**75.97**	**46**	P	**P**	**04 22 29.9**	**+0.4**
	comp=Z,0.6nm,0.6s,baz=270,slow=3.0,SNR=5.4						
SDCO	**Great Sand Dun**	**81.58**	**48**	*e*P	**P**	**04 23 00.3**	**-0.3**
	comp=Z,1.3nm,0.9s						
GERES	**GERESS Array B**	**82.72**	**329**	P	**P**	**04 23 06.3**	**+0.2**
	comp=Z,0.5nm,0.7s,baz=31,slow=4.7,SNR=5.2						
TXAR	**Lajitas Array**	**88.39**	**54**	P	**P**	**04 23 33.1**	**-1.5**
	comp=Z,0.3nm,0.7s,baz=333,slow=3.2,SNR=4.0						
TORD	**Torodi Ar. Bea**	**117.73**	**317**	PKP	**PKPdf**	**04 29 27.5**	**-1.6**
	comp=Z,0.2nm,0.6s,baz=16,slow=2.0,SNR=6.1						
LPAZ	**La Paz**	**144.95**	**61**	PKP	**PKPdf**	**04 30 21.1**	**+0.3**
	comp=Z,0.5nm,0.6s,baz=11,slow=10,SNR=4.6						

NIED ***10*** *04:18:00, 36°.30N×141°.20E, h17km, Mw4.5 Best double couple: M0 6.85000×10^15 NP1:ϕ=224.00000°, δ=47.00000°, λ=-60.00000°. NP2:ϕ=4.00000°, δ=51.00000°, λ=-118.00000°.*

IDC ***10*** *04:18:08.4±0.6, 36°.21N×141°.20E, h0km, mb4.1/25, mb1 4.3/28, mb1mx4.1/70, mbtmp4.1/28, ML3.5/2, MS4.1/2, Ms1 4.1/2, ms1mx3.6/57, Error ellipse: s-maj=15.3km s-min=13.9km az=96.0*

BJI ***10*** *04:18:09.1, 35°.98N×140°.94E, h10km, mb4.5/36, mB5.0/10, Ms4.7/13, Ms7 4.5/14*

ISCJB ***10*** *04:18:10.3±0.7, 36°.28N±0°.03×141°.28E±0°.04, h22km±4km, mb4.4/83, MS4.5/6, Error ellipse: s-maj=5.6km s-min=4.1km az=24.0*

NEIC ***10*** *04:18:11.1±2.0, 36°.22N×141°.30E, h18km±12km, mb4.7/33, Error ellipse: s-maj=6.4km s-min=4.8km az=134.0*

NEIC Recorded [2 JMA] in Ibaraki.

JMA ***10*** *04:18:11.8±0.1, 36°.24N×141°.15E, h44km±2km, M4.2*

JMA Felt II J1.

MOS ***10*** *04:18:11.6±1.1, 36°.28N×141°.29E, h31km, mb4.8/33, Error ellipse: s-maj=9.2km s-min=5.7km az=111.6*

ISC 10 04:18:12.2±0.6, **36°.27N**±0°.03×**141°.18E**±0°.04, **h23**km±4km, **n203,** σ1§**47**/203, **mb4.6**/92, **MS4.4**/5, **3C-5D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.60**	**305**	P	**Pb**	**04 18 23.8**	**-0.2**
CHOJ	**Chosi**	**0.62**	**205**	P	**Pb**	**04 18 23.8**	**-0.5**
CHOJ				S	**Sb**	**04 18 32.0**	**-0.6**
JYT	**Yasato**	**0.80**	**268**	P	**Pb**	**04 18 26.4**	**-0.9**
JYT				S	**Sb**	**04 18 36.6**	**-1.0**
ONAJ	**Iwakimizuishiy**	**0.89**	**340**	P	**Pb**	**04 18 27.7**	**-1.3**
JFK	**Kawauchi**	**1.13**	**348**	P	**Pn**	**04 18 31.0**	**-1.5**
JAG	**Ashikaga**	**1.40**	**277**	P	**Pn**	**04 18 35.3**	**-1.0**
JFT	**Otama**	**1.42**	**332**	P	**Pn**	**04 18 36.7**	**+0.1**
JFT				S	**Sn**	**04 18 54.1**	**-0.5**
MJAR	**Matsushiro Arr**	**2.41**	**277**	Pn	**Pn**	**04 18 51.0**	**+0.8**
	41nm,0.3s,baz=245,slow=2.2,SNR=421						
MJAR				Sn	**Sb**	**04 19 22.2**	**-1.9**
	39nm,0.3s,baz=58,slow=16,SNR=5.8						
MJAR				LR	LR	04 19 36.5	
	comp=Z,μm,21.1s,baz=20,slow=37						
MAJO	**Matsushiro**	**2.41**	**277**	*e*P	**Pn**	**04 18 50.7**	**+0.5**
MAJO	**Matsushiro**	**2.41**	**277**	*e*Pn	**Pn**	**04 18 50.7**	**+0.5**
MAT	**Matsushiro**	**2.41**	**277**	P	**Pn**	**04 18 50.6**	**+0.4**
MAT				S	**Sn**	**04 19 19.8**	**+0.8**
MJB9	**Matsu-Tunnel**	**2.42**	**278**	*e*Pn	**Pn**	**04 18 51.0**	**+0.7**
JHJ2	**Mitsune**	**3.34**	**200**	*e*Pn	**Pn**	**04 19 04.0**	**+1.1**
JHJ2				*e*Sn	**Sn**	**04 19 43.1**	**+1.2**
JHJ	**Hachijo jima 2**	**3.34**	**200**	Pn	**Pn**	**04 19 04.4**	**+1.4**
	44nm,0.3s,baz=304,slow=24,SNR=19						
JHJ				Sn	**Sn**	**04 19 42.1**	**+0.1**
	149nm,0.3s,baz=59,slow=22,SNR=16						
INU	**Inuyama**	**3.50**	**256**	*e*Pn	**Pn**	**04 19 07.3**	**+2.1**
ERM	**Erimo**	**5.94**	**14**	*e*P	**Pn**	**04 19 38.1**	**-0.6**
ERM				*e*		04 20 44.1	
ERM				pmax	pmax		
	comp=Z,27nm,0.7s						
ERM	**Erimo**	**5.94**	**14**	*e*Pn	**Pn**	**04 19 38.1**	**-0.6**
	comp=Z,27nm,0.7s						
ERM				*e*Sn	**Sn**	**04 20 44.1**	**-1.9**
ASAJ	**Asahikawa**	**7.92**	**7**	Pn	**Pn**	**04 20 04.7**	**-1.1**
	baz=0.0,slow=0.0						
ASAJ	**Asahikawa**	**7.92**	**7**	*e*Pn	**Pn**	**04 20 04.7**	**-1.1**
	comp=Z,8.4nm,0.6s						
JNU	**Nakatsue**	**9.04**	**253**	*e*Pn	**Pn**	**04 20 25.5**	**+4.2**
	comp=Z,0.4nm,0.3s,baz=55,slow=6.4,SNR=3.6						
JNU	**Nakatsue**	**9.04**	**253**	*e*Pn	**Pn**	**04 20 19.3**	**-2.0**
CBIJ	**Chichi jima**	**9.18**	**174**	Pn	**Pn**	**04 20 20.5**	**-2.7**
CBIJ				Sn	Sn	04 21 55.3	-11
JCJ	**Chichijima**	**9.18**	**174**	Pn	**Pn**	**04 20 20.5**	**-2.7**
	baz=90,slow=20						
JCJ				Sn	Sn	04 21 55.3	-11
	comp=Z,20nm,0.3s,baz=195,slow=20,SNR=2.0						
VLA	**Vladivostok**	**9.90**	**317**	*i*P	**Pn**	**04 20 33.6**	**+0.6**
VLA				*i* S	**Sn**	**04 22 20.8**	**-2.5**
VLA				pmax	pmax		
	comp=Z,13nm,0.8s						
MSHR	**Mys Shultsa**	**9.99**	**312**	*i* P	**Pn**	**04 20 32.3**	**-1.9**
USRK	**Ussuriysk Ar.**	**10.58**	**321**	Pn	**Pn**	**04 20 46.1**	**+3.8**
	comp=Z,0.4nm,0.3s,baz=129,slow=15,SNR=7.7						
KSRS	**Korea Array**	**10.69**	**280**	Pn	**Pn**	**04 20 47.8**	**+4.0**
	comp=Z,0.1nm,0.3s,baz=275,slow=37,SNR=6.3						
KSAR	**Wonju Array Be**	**10.72**	**280**	P	**Pn**	**04 20 47.8**	**+3.6**
KSAR	**Wonju Array Be**	**10.72**	**280**	Pn	**Pn**	**04 20 47.8**	**+3.6**
YSS	**Yuzh-Sakhalins**	**10.74**	**6**	*e*P	**Pn**	**04 20 46.2**	**+1.7**
YSS				pmax	pmax		
	comp=Z,20nm,0.6s						
YSS	**Yuzh-Sakhalins**	**10.74**	**6**	*e*Pn	**Pn**	**04 20 44.2**	**-0.2**
	comp=Z,15nm,0.8s						
MDJ	**Mudanjiang**	**12.13**	**317**	P	**Pn**	**04 21 04.4**	**+0.9**
MDJ				pmax	pmax		
	comp=Z,2.0nm,0.7s						
CN2	**Changchun**	**14.19**	**307**	*e*P	**Pn**	**04 21 31.0**	**-0.7**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
KLR	**Kul'dur**	**14.67**	**335**	Pn	**Pn**	**04 21 37.4**	**-0.8**
	comp=Z,0.1nm,0.3s,baz=146,slow=16,SNR=2.7						
KLR	**Kul'dur**	**14.67**	**335**	*i* P	**Pn**	**04 21 37.2**	**-1.0**
TIA	**Tai'an**	**19.40**	**277**	*e*P	**P**	**04 22 34.0**	**-2.5**
TIA				pmax	pmax		
	comp=Z,20nm,1.1s						
BJI	**Beijing**	**20.00**	**288**	P	**P**	**04 22 42.5**	**-0.5**
BJI				pmax	pmax		
	comp=Z,7.0nm,1.4s						
BJI				LR	LR		
	comp=Z,2μm,20.3s						
PETK	**Petropavlovsk-**	**20.45**	**29**	P	Pn	04 22 49.4	-0.6
	comp=Z,2.5nm,0.7s,baz=184,slow=4.3,SNR=2.6						
PETK				LR	LR	04 31 20.6	
	comp=Z,1μm,20.2s,baz=171,slow=39						
PET	**Petropavlovsk**	**20.77**	**31**	*e*P	Pn	04 23 00.7	+7.0
PET				pmax	pmax		
	comp=Z,41nm,1.3s						
WHN	**Wuhan**	**23.07**	**263**	P	P	04 23 07.5	-8.6
HHC	**Hu-ho-hao-te**	**23.55**	**290**	*e*P	**P**	**04 23 16.6**	**-4.3**
HHC				pmax	pmax		
	comp=Z,22nm,0.9s						
HHC				pmax	pmax		
	comp=Z,130nm,4.4s						
HHC				LR	LR		
	comp=Z,620nm,14.4s						
HHC				LR	LR		
	comp=Z,730nm,13.4s						
HHC				LR	LR		
	comp=Z,750nm,10.3s						
MA2	**Magadan**	**24.14**	**12**	P	**P**	**04 23 25.9**	**-0.3**
	comp=Z,3.0nm,0.4s,baz=197,slow=5.9,SNR=3.9						
YAK	**Yakutsk**	**26.78**	**348**	P	**P**	**04 23 51.0**	**+1.1**
	comp=Z,7.5nm,0.4s,baz=74,slow=1.3,SNR=3.1						
YAK	**Yakutsk**	**26.78**	**348**	*i* P	**P**	**04 23 52.2**	**+2.2**
ENH	**Enshi**	**27.09**	**266**	*e*P	**P**	**04 23 51.3**	**-1.8**
	comp=Z,10nm,0.5s						
SEY	**Seymchan**	**27.58**	**11**	P	**P**	**04 23 57.3**	**+0.1**
	comp=Z,2.6nm,0.8s,baz=192,slow=9.5,SNR=7.6						
H11N2	**WAKE ISLAND Hy**	**27.93**	**119**	T	T	04 53 09.7	
	baz=312,slow=75,SNR=57						
H11N1	**WAKE ISLAND Hy**	**27.94**	**119**	T	T	04 53 16.0	
	baz=312,slow=75,SNR=66						
H11N3	**WAKE ISLAND Hy**	**27.95**	**119**	T	T	04 53 23.0	
	baz=312,slow=75,SNR=62						
SONA1	**Songino Array**	**28.06**	**305**	*e*P	**P**	**04 24 03.0**	**+1.1**
SONM	**Songino Array**	**28.06**	**305**	P	**P**	**04 24 02.1**	**+0.2**
	comp=Z,1.0nm,0.5s,baz=110,slow=9.6,SNR=7.3						
BOD	**Bodaibo**	**28.08**	**329**	*e*P	**P**	**04 24 01.5**	**-0.2**
BOD				pmax	pmax		
	comp=Z,7.0nm,1.8s						
H11S1	**WAKE ISLAND Hy**	**28.61**	**121**	T	T	04 54 08.8	
	baz=314,slow=75,SNR=1374						
H11S3	**WAKE ISLAND Hy**	**28.61**	**121**	T	T	04 53 58.9	
	baz=314,slow=75,SNR=1051						
H11S2	**WAKE ISLAND Hy**	**28.63**	**121**	T	T	04 53 59.0	
	baz=314,slow=75,SNR=1146						
LZH	**Lanzhou**	**30.02**	**281**	*e*P	**P**	**04 24 18.6**	**-0.8**
LZH				pP	pP	04 24 24.5	-1.8
LZH				sP	sP	04 24 27.3	-1.9
LZH				PP	**PnPn**	**04 25 14.5**	**-1.8**
LZH				pmax	pmax		
	comp=Z,25nm,1.0s						
LZH				pmax	pmax		
	comp=Z,89nm,5.4s						
LZH				LR	LR		
	comp=Z,380nm,13.2s						
LZH				LR	LR		
	comp=Z,400nm,13.1s						
LZH				LR	LR		
	comp=Z,480nm,17.0s						
GYA	**Guiyang**	**30.91**	**261**	*e*P	**P**	**04 24 26.8**	**-0.5**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.49**	**271**	*e*P	**P**	**04 24 29.5**	**-2.8**
CD2				sP	pP	04 24 38.0	-1.2
CD2				PP	**PnPn**	**04 25 38.5**	**+2.9**
CD2				S	**S**	**04 29 31.0**	**-8.2**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.2s						
QIZ	**Qiongzhong**	**32.44**	**246**	P	**P**	**04 24 40.2**	**-0.5**
GTA	**Gaotai**	**32.62**	**288**	*e*P	**P**	**04 24 43.1**	**+0.9**
GTA				pP	sP	04 24 52.0	0.0
GTA				sP	pP	04 24 56.0	+6.9
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
KMI	**Kunming**	**34.66**	**262**	P	**P**	**04 25 00.1**	**-0.1**
KMI				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KMI				pmax	pmax		
	comp=Z,360nm,9.2s						
BILL	**Bilibino**	**34.82**	**16**	*e*P	P	04 25 08.7	+7.9
BILL				*e*PPP	PPP	04 26 39.7	
BILL				pmax	pmax		
	comp=Z,7.0nm,0.9s						
BILL				MLR	MLR		
	comp=Z,1μm,19.0s						
TIXI	**Tiksi**	**36.03**	**353**	*i* P	P	04 25 17.3	+6.1
CHTO	**Chiang Mai**	**40.92**	**256**	*e*P	**P**	**04 25 54.3**	**+1.4**
CHTO	**Chiang Mai**	**40.92**	**256**	*e*P	**P**	**04 25 54.3**	**+1.4**
WMQ	**Urumqi**	**41.02**	**298**	*e*P	**P**	**04 25 54.5**	**+0.9**
WMQ				pP	pP	04 26 00.5	-0.1
WMQ				sP	sP	04 26 02.8	-0.7
WMQ				pmax	pmax		
	comp=Z,13nm,1.1s						
LSA	**Lhasa**	**42.09**	**276**	*e*P	**P**	**04 26 04.4**	**+1.4**
LSA				pmax	pmax		
	comp=Z,9.0nm,0.5s						
LSA	**Lhasa**	**42.09**	**276**	*e*P	**P**	**04 26 04.4**	**+1.4**
	comp=Z,9.5nm,0.5s						
ZAA0	**Zalesovo Array**	**42.30**	**313**	*e*P	**P**	**04 26 04.6**	**+0.8**
ZALV	**Zalesovo Beam**	**42.30**	**313**	P	**P**	**04 26 04.2**	**+0.5**
	comp=Z,3.1nm,0.6s,baz=98,slow=6.7,SNR=13						
ZALV				PcP	**PcP**	**04 27 57.4**	**+0.3**
	comp=Z,1.2nm,0.5s,baz=95,slow=2.2,SNR=4.0						
NVS	**Novosibirsk**	**43.24**	**314**	*e*P	P	04 26 21.4	+10
NRIK	**Noril'sk**	**43.89**	**336**	P	**P**	**04 26 17.4**	**+1.1**
	comp=Z,1.8nm,0.4s,baz=150,slow=6.9,SNR=3.1						
MK01	**Makanchi Array**	**44.37**	**303**	*e*P	**P**	**04 26 21.3**	**+0.7**
MK31	**Makanchi Array**	**44.37**	**303**	*e*P	**P**	**04 26 21.8**	**+1.1**
MK31	**Makanchi Array**	**44.37**	**303**	*e*P	**P**	**04 26 21.8**	**+1.1**
MKAR	**Makanchi Array**	**44.37**	**303**	P	**P**	**04 26 21.4**	**+0.7**
	comp=Z,2.2nm,0.8s,baz=87,slow=9.8,SNR=16						
MKAR				PcP	**PP**	**04 28 03.4**	**-0.7**
	comp=Z,0.4nm,0.3s,baz=51,slow=4.6,SNR=2.7						
MKAR	**Makanchi Array**	**44.37**	**303**	*e*P	**P**	**04 26 21.8**	**+1.1**
MKAR				PcP	**PP**	**04 28 03.4**	**-0.7**
MAKZ	**Makanchi**	**44.58**	**303**	*e*P	**P**	**04 26 23.1**	**+0.8**
MAKZ				pmax	pmax		
	comp=Z,6.0nm,0.9s						
MAKZ	**Makanchi**	**44.58**	**303**	*e*P	**P**	**04 26 23.1**	**+

WRAB Tennant Creek 56.26 188 *e*P P 04 27 49.7 -1.1
WRAB pmax pmax
comp=Z,20nm,1.4s
WRAB Tennant Creek 56.26 188 *e*P P 04 27 49.7 -1.1
comp=Z,20nm,1.4s
WRA Warramunga Arr 56.27 188 P P 04 27 50.3 -0.6
comp=Z,2.3nm,0.4s,baz=5.6,slow=7.0,SNR=43
ARU Arti 56.81 319 *e*P P 04 27 54.0 -0.3
ARU pmax pmax
comp=Z,18nm,1.0s
ARU Arti 56.81 319 *e*P P 04 27 53.8 -0.5
comp=Z,16nm,0.9s
SOKR Solikamsk 56.82 323 *e*P P 04 28 02.7 +8.4
SOKR pmax pmax
comp=Z,10.0nm,0.8s
ABKAR Akbulak array 58.29 310 *e*P P 04 28 04.9 0.0
comp=Z,2.8nm,0.6s
ASAR Alice Springs 60.00 188 P P 04 28 16.8 -0.2
comp=Z,1.5nm,0.8s,baz=15,slow=6.8,SNR=22
YKA Yellowknife Ar 64.57 30 P P 04 28 45.5 -1.6
comp=Z,1.2nm,1.0s,baz=296,slow=6.3,SNR=5.5
ARCES ARCESS Array B 64.65 339 P P 04 28 48.2 +0.7
comp=Z,1.0nm,0.7s,baz=54,slow=7.9,SNR=3.9
VRH Novokhopyorsk 68.02 318 *e*P P 04 29 18.5 +9.1
VRH pmax pmax
comp=Z,20nm,1.3s
OBN Obninsk 68.60 323 *e*P P 04 29 14.4 +1.5
OBN pmax pmax
comp=Z,4.0nm,1.3s
VSR Storozhevoye 69.38 319 *e*P P 04 29 26.7 +8.8
VSR pmax pmax
comp=Z,10.0nm,0.9s
FINES FINESS Array B 69.40 332 P P 04 29 18.7 +0.9
comp=Z,1.7nm,0.8s,baz=44,slow=14,SNR=4.0
VSU Vasula 71.02 330 *i* P P 04 29 28.5 +0.8
KBZ Khabaz 71.26 311 P P 04 29 29.7 +0.2
comp=Z,1.9nm,0.9s,baz=104,slow=4.2,SNR=3.6
KIV Kislovodsk 71.27 311 *e*P P 04 29 30.3 +0.6
KIV pmax pmax
comp=Z,22nm,1.1s
KIV Kislovodsk 71.27 311 *e*P P 04 29 31.3 +1.6
comp=Z,32nm,1.1s
SUMG Summit 71.45 360 *e*P P 04 29 30.5 -0.2
SUMG pmax pmax
comp=Z,6.0nm,1.0s
SUMG Summit 71.45 360 *e*P P 04 29 30.5 -0.2
comp=Z,5.9nm,1.0s
NEY Neytrino 71.62 310⇓*e*P P 04 29 33.3 +1.3
NEY pmax pmax
comp=Z,1.0nm,1.2s
GNI Garni 72.01 307⇑*e*P P 04 29 35.3 +1.0
GNI pmax pmax
comp=Z,17nm,0.9s
MOD Modoc Plateau 72.39 51 *e*P P 04 29 35.4 -1.2
comp=Z,2.0nm,0.7s
MFID Camas Ranch 74.28 48 *e*P P 04 29 46.5 -1.2
comp=Z,3.0nm,0.9s
FFC Flin Flon 74.45 32 *e*P P 04 29 47.8 -0.5
FFC pmax pmax
comp=Z,11nm,1.1s
FFC Flin Flon 74.45 32 *e*P P 04 29 47.8 -0.5
comp=Z,11nm,1.1s
HFS Hagfors 74.71 336 P P 04 29 49.8 +0.2
comp=Z,2.5nm,0.9s,baz=68,slow=5.4,SNR=7.5
AKASG Malin Array Be 74.79 322 P P 04 29 48.9 -1.4
comp=Z,0.8nm,0.4s,baz=47,slow=6.9,SNR=8.7
KIEV Kiev 74.80 322⇑*e*P P 04 29 49.6 -0.7
KIEV pmax pmax
comp=Z,3.0nm,0.9s
KIEV Kiev 74.80 322 *e*P P 04 29 49.4 -0.9
comp=Z,1.8nm,0.7s
NB2 NORSAR Subarra 74.82 337 P P 04 29 50.4 +0.1
comp=Z,8.6nm,1.1s,baz=41,slow=6.2
NOA NORSAR Array B 74.82 337 P P 04 29 50.9 +0.6
comp=Z,1.8nm,0.8s,baz=43,slow=5.4,SNR=7.7
DLMT Dillon 75.02 44 *e*P P 04 29 52.8 +0.9
comp=Z,7.8nm,1.1s
H17A Grant Village 76.75 44 *e*P P 04 30 01.2 -0.8
comp=Z,8.5nm,1.1s
PDAR Pinedale Array 78.34 45 P P 04 30 11.2 +0.4
comp=Z,0.6nm,0.6s,baz=281,slow=1.4,SNR=7.6
BRTR Keskin Array B 79.22 312 P P 04 30 16.2 +0.6
comp=Z,2.3nm,1.0s,baz=114,slow=4.5,SNR=8.1
KOLS Kolonicke sedl 79.33 324 *e*P P 04 30 16.6 +0.7
KOLS *e* 04 30 25.5
KOLS pmax pmax
comp=Z,7.0nm,1.6s
KOLS Kolonicke sedl 79.33 324 *e*P P 04 30 16.6 +0.7
KOLS *e* 04 30 25.4
STHS Stebnicka Huta 79.48 325 *e*P P 04 30 18.7 +2.0
STHS *e* 04 30 29.0
STHS pmax pmax
comp=Z,4.0nm,1.0s
STHS Stebnicka Huta 79.48 325 *e*P P 04 30 18.7 +2.0
STHS *e* 04 30 29.0
CRVS Cervenica-Dubn 79.74 324 *e*P P 04 30 18.5 +0.4
CRVS *e* 04 30 28.0
CRVS Cervenica-Dubn 79.74 324 *e*P P 04 30 18.5 +0.4
CRVS *e* 04 30 28.0
K22A Casper 80.14 44 *e*P P 04 30 20.4 -0.1
comp=Z,8.6nm,1.2s
LANS Liptovska Anna 80.48 326 *e*P P 04 30 24.5 +2.4
LANS *e* 04 30 34.9
LANS Liptovska Anna 80.48 326 *e*P P 04 30 24.5 +2.4
LANS *e* 04 30 34.9
UPC Upice 81.02 328 *e*P P 04 30 25.9 +1.0
UPC *e*pP sP 04 30 35.1 -0.1
UPC Upice 81.02 328 *e*P P 04 30 25.9 +1.0
UPC *e* 04 30 35.1
PSZ Piszkesteto 81.17 324 *e*P P 04 30 26.6 +0.7
PSZ pmax pmax
comp=Z,11nm,1.1s
PSZ Piszkesteto 81.17 324 *e*P P 04 30 26.6 +0.7
comp=Z,11nm,1.1s
VYHS Vyhne 81.25 325 *e*P P 04 30 27.2 +1.0
VYHS *e* 04 30 35.3
VYHS pmax pmax
comp=Z,8.0nm,1.7s
VYHS Vyhne 81.25 325 *e*P P 04 30 27.2 +1.0
VYHS *e* 04 30 35.3
BRG Berggiesshubel 81.61 329 *e*P P 04 30 37.2 +9.1
comp=Z,3.2nm,0.9s
BRG Berggiesshubel 81.61 329 *e*P P 04 30 37.2 +9.1
BRG pmax pmax
comp=Z,3.0nm,0.9s
PVCC Panska Ves 81.62 329 *e*P P 04 30 29.1 +1.0
PVCC *e*pP sP 04 30 38.1 -0.3
PVCC Panska Ves 81.62 329 *e*P P 04 30 29.1 +1.0
PVCC *e* 04 30 38.1
CLL Collm 81.67 330⇓*i*P P 04 30 28.3 0.0
comp=Z,8.0nm,1.3s
CLL *i* 04 30 36.4
comp=Z,7.0nm,0.9s
CLL *i* 04 30 46.1
CLL Collm 81.67 330⇓*i*P P 04 30 28.3 0.0
CLL *i* 04 30 36.4
CLL pmax pmax
comp=Z,8.0nm,1.3s
PRU Pruhonice 82.04 328 *e*P P 04 30 30.9 +0.6
PRU *e*pP sP 04 30 39.8 -0.8
PRU Pruhonice 82.04 328 *e*P P 04 30 30.9 +0.6
PRU *e* 04 30 39.8
CONA Conrad Observa 83.01 326 *i* PcP P 04 30 37.3 +1.8
comp=Z,9.8nm,1.6s
KHC Kasperske Hory 83.10 328 *e*P P 04 30 36.1 +0.2
KHC *e*pP pP 04 30 44.6 +1.1
KHC Kasperske Hory 83.10 328 *e*P P 04 30 35.9 0.0
KHC pmax pmax
comp=Z,3.0nm,1.3s
KHC Kasperske Hory 83.10 328 *e*P P 04 30 35.9 0.0
comp=Z,2.6nm,1.3s
GERES GERESS Array B 83.26 328 P P 04 30 36.2 -0.6
comp=Z,0.8nm,0.7s,baz=39,slow=6.3,SNR=6.8
GRFO Grafenberg 83.64 330 *e*P P 04 30 38.9 +0.2
GRFO pmax pmax
comp=Z,12nm,1.1s
GRFO Grafenberg 83.64 330 *e*P P 04 30 38.9 +0.2
comp=Z,12nm,1.1s
ARSA Arzberg 83.67 326 *i* PcP P 04 30 40.3 +1.4
comp=Z,0.8nm,0.5s
MOA Molln 83.78 327 *i* PcP P 04 30 40.9 +1.5
comp=Z,6.4nm,1.4s
SOKA Soboth 84.33 326 *i* PcP P 04 30 42.8 +0.5
comp=Z,7.8nm,1.3s
OBKA Obir 84.67 326 *i* sP P 04 30 55.3 +11
comp=Z,4.2nm,1.4s
KBA Koelnbreinsper 84.77 327 *i* sP P 04 30 55.0 +10
comp=Z,1.8nm,0.5s
MYKA Terra Mystica 84.98 327 *i* P P 04 30 44.5 -1.1
comp=Z,1.3nm,0.4s
ABTA Abfaltersbach 85.39 327 *i* sP P 04 30 56.0 +8.3
comp=Z,4.0nm,1.4s
MOTA Moosalm 85.53 329 *i* P P 04 30 47.7 -0.7
comp=Z,1.5nm,0.9s
RETA Reutte 85.56 329 *i* PcP P 04 30 49.4 +1.0
comp=Z,7.4nm,1.9s
BFO Black Forest 85.88 331 *e*P P 04 30 49.7 -0.3
BFO pmax pmax
comp=Z,5.0nm,0.9s
BFO Black Forest 85.88 331 *e*P P 04 30 49.7 -0.3
comp=Z,5.3nm,0.9s
FETA Feichten 85.94 329 *i* sP P 04 31 00.1 +10
comp=Z,4.2nm,1.3s
DAVA Damuels 86.08 329 *i* P P 04 30 50.6 -0.6
comp=Z,6.6nm,1.1s
TIP Timpagrande 89.11 320 *e*P P 04 31 06.9 +1.1
comp=Z,4.6nm,1.2s
TXAR Lajitas Array 90.74 52 P P 04 31 13.8 +0.2
comp=Z,0.5nm,0.8s,baz=291,slow=3.5,SNR=6.2
MIAR Mount Ida 93.01 42 *e*P P 04 31 22.9 -1.0
MIAR pmax pmax
comp=Z,15nm,1.4s
MIAR Mount Ida 93.01 42 *e*P P 04 31 22.9 -1.0
comp=Z,15nm,1.4s
TORD Torodi Ar. Bea 117.73 314 PKP PKPdf 04 36 56.5 -0.5
comp=Z,0.4nm,0.7s,baz=30,slow=2.1,SNR=5.1
SDV Santo Domingo 126.03 40 *e*PKPdf PKPdf 04 37 11.4 -1.8
SAML Samuel 144.92 45 *e*PKPdf PKPdf 04 37 47.6 -0.3
LPAZ La Paz 147.24 60 PKPbc PKPbc 04 37 55.2 +0.4
comp=Z,1.5nm,0.7s,baz=16,slow=1.8,SNR=8.4
LVC Limon Verde 150.61 71 *e*PKPbc PKPbc 04 38 02.3 -0.7
LVC *e*PKPab PKPab 04 38 10.0 +0.2

AZER **10** *04:22:47.4±0.0,38.˚00N×42.˚90E,h24km±7km, Error ellipse: s-maj=44.3km s-min=6.3km az=238.0*
ISK **10** *04:22:59.2,38.˚57N×44.˚34E,h5km, ML4.4*
NEIC **10** *04:22:59.3,38.˚56N×44.˚34E,h5km,mb4.0/5, ML4.1(ISK), MN4.1(TEH), After ISK.*
IDC **10** *04:23:00.4±0.8,38.˚33N×44.˚06E,h0km,mb3.8/13, mb1 3.8/22,mb1mx3.7/44,mbtmp3.7/22,ML3.5/7, Error ellipse: s-maj=15.8km s-min=11.4km az=179.0*
TEH **10** *04:23:01.5,38.˚69N×44.˚27E,h5km, ML4.1*
CSEM **10** *04:23:02.2±0.2,38.˚46N×44.˚20E,h2km, ML4.3, Error ellipse: s-maj=5.2km s-min=3.5km az=170.0*
THR **10** *04:23:03.1±0.8,38.˚65N×44.˚42E,h14km±14km, ML3.5*
ISC 10 04:23:01.5±1.1,38.˚48N±0.˚02×44.˚26E±0.˚01,h3km±8km, n225,σ2ᵖ18/280,mb3.9/16,43C-35D,Turkey-Iran border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BASK	**Baskale_VAN**	**0.47**	**206**	⇓*i*P		**Pg**	**04 23 11.2**	**+0.5**
BASK				*i* S		**Sb**	**04 23 20.1**	**+0.1**
BASK	**Baskale_VAN**	**0.47**	**206**	P		**Pg**	**04 23 11.1**	**+0.5**
BASK				S		**Sb**	**04 23 20.1**	**+0.1**
TVAN	**Van**	**0.67**	**274**	⇑*i*P		**Pg**	**04 23 13.3**	**-1.1**
TVAN				*i* S		**Sb**	**04 23 24.1**	**-1.7**
TVAN	**Van**	**0.67**	**274**	P		**Pg**	**04 23 13.4**	**-1.1**
TVAN				S		**Sb**	**04 23 24.1**	**-1.7**
VANB	**Van**	**0.69**	**280**	*e*PG		**Pg**	**04 23 13.6**	**-1.2**
VANB	**Van**	**0.69**	**280**	*e*Pg		**Pg**	**04 23 13.6**	**-1.2**
VANB	**Van**	**0.69**	**280**	Pg		**Pg**	**04 23 13.6**	**-1.2**
CLDR	**Caldiran**	**0.72**	**338**	*e*PG		**Pg**	**04 23 12.8**	**-2.4**
CLDR				*e*SG		**Sg**	**04 23 23.3**	**-1.3**
CLDR	**Caldiran**	**0.72**	**338**	*e*Pg		**Pg**	**04 23 12.9**	**-2.4**
CLDR				*e*Sg		**Sg**	**04 23 23.3**	**-1.3**
CLDR	**Caldiran**	**0.72**	**338**	Pg		**Pg**	**04 23 12.8**	**-2.4**
MAKU	**Maku**	**0.93**	**20**	*e*Pg		**Pg**	**04 23 17.1**	**-2.4**
MAKU				*e*Sg		**Sg**	**04 23 27.9**	**-3.7**
MAKU				AML	AML	04 23 36.1		
	comp=E,2μm,0.4s							
MAKU				AML	AML	04 23 37.9		
	comp=N,2μm,0.4s							
MAKU	**Maku**	**0.93**	**20**	*e*Pg		**Pg**	**04 23 17.0**	**-2.4**
MAKU	**Maku**	**0.93**	**20**	Pg		Pg	04 23 16.0	-3.4
GEVA	**Gevas**	**0.96**	**260**	⇑*i*P		**Pg**	**04 23 17.8**	**-2.1**
GEVA				*i* S		**Sn**	**04 23 33.4**	**-2.8**
GEVA	**Gevas**	**0.96**	**260**	P		**Pg**	**04 23 17.8**	**-2.1**
GEVA				S		**Sn**	**04 23 33.4**	**-2.8**
HKR	**Hakkari**	**0.99**	**205**	*e*PN		**Pg**	**04 23 20.7**	**+0.2**
HKR	**Hakkari**	**0.99**	**205**	*e*Pn		**Pg**	**04 23 20.7**	**+0.2**
HKR	**Hakkari**	**0.99**	**205**	Pn		**Pg**	**04 23 20.7**	**+0.2**
ISHB	**Shabestar**	**1.08**	**100**	*e*Pg		**Pg**	**04 23 20.8**	**-1.5**
ISHB				*e*Sg		**Sg**	**04 23 36.9**	**+0.6**
ISHB				*e*AMB	AMB	04 23 40.2		
	comp=Z,63μm,0.2s							
ISHB	**Shabestar**	**1.08**	**100**	Pg		**Pg**	**04 23 20.8**	**-1.5**
ISHB				Sg		**Sg**	**04 23 36.9**	**+0.6**
ISHB	**Shabestar**	**1.08**	**100**	Pg		**Pg**	**04 23 20.8**	**-1.5**
ISHB				Sg		**Sg**	**04 23 36.9**	**+0.6**
DYDN	**Diyadin**	**1.15**	**337**	⇓*i*P		**Pb**	**04 23 20.3**	**-3.9**
DYDN				*i* S		**Sn**	**04 23 42.2**	**+1.1**
DYDN	**Diyadin**	**1.15**	**337**	P		**Pb**	**04 23 20.3**	**-3.9**
DYDN				S		**Sn**	**04 23 42.2**	**+1.1**
IMRD	**Marand**	**1.15**	**78**	*e*Pg		**Pb**	**04 23 21.7**	**-2.5**
IMRD				*e*AMB	AMB	04 23 47.4		
	comp=Z,42μm,0.4s							
IMRD	**Marand**	**1.15**	**78**	*e*Pg		**Pb**	**04 23 21.7**	**-2.5**
IMRD	**Marand**	**1.15**	**78**	Pg		**Pb**	**04 23 21.7**	**-2.5**
NAX	**Nakhchivan** SNR=15	**1.19**	**54**	⇑P		**Pn**	**04 23 22.6**	**-2.4**
NAX				⇑S		**Sn**	**04 23 43.7**	**+2.0**
NAX	**Nakhchivan** SNR=15	**1.19**	**54**	P		**Pn**	**04 23 22.6**	**-2.4**
NAX				S		**Sn**	**04 23 43.7**	**+2.0**
CUKT	**Cukurca**	**1.33**	**203**	*e*PN		**Pg**	**04 23 27.0**	**-0.1**
CUKT	**Cukurca**	**1.33**	**203**	*e*Pn		**Pg**	**04 23 27.0**	**-0.1**
TUTA	**Tutak**	**1.46**	**310**	*i* P		**Pn**	**04 23 27.5**	**-1.4**
TUTA				*i* S		**Sg**	**04 23 50.1**	**+1.7**
TUTA	**Tutak**	**1.46**	**310**	P		**Pn**	**04 23 27.5**	**-1.4**
TUTA				S		**Sg**	**04 23 50.1**	**+1.7**
AGRB	**Hanur-Agry**	**1.48**	**318**	*e*PN		**Pn**	**04 23 28.0**	**-1.1**
AGRB	**Hanur-Agry**	**1.48**	**318**	*e*Pn		**Pn**	**04 23 28.0**	**-1.1**
AGRB	**Hanur-Agry**	**1.48**	**318**	Pn		**Pn**	**04 23 28.0**	**-1.1**
ITBZ	**Tabriz**	**1.50**	**99**	*e*AMB	AMB	04 23 33.6		
	comp=Z,11μm,0.2s							
ITBZ				*e*Sg		**Sn**	**04 23 50.2**	**+0.6**
GNI	**Garni**	**1.71**	**12**	Pn		**Pn**	**04 23 32.0**	**-0.3**
	comp=Z,54nm,0.3s,baz=228,slow=2.9,SNR=83							
GNI				Lg		Lg	04 23 58.3	
	comp=Z,141nm,0.3s,baz=45,slow=20,SNR=23							
GNI	**Garni**	**1.71**	**12**	⇑*i*P		**Pn**	**04 23 31.4**	**-0.9**
GNI				⇑*i*S		**Sn**	**04 23 55.5**	**+0.8**
GNI	**Garni**	**1.71**	**12**	⇑P		**Pn**	**04 23 31.4**	**-0.9**
GNI	**Garni**	**1.71**	**12**	Pn		**Pn**	**04 23 32.0**	**-0.3**
GNI				S		**Sn**	**04 23 55.5**	**+0.8**
GNI				Lg		Lg	04 23 58.3	
SIRT	**Sirnak**	**1.74**	**236**	*e*PN		**Pb**	**04 23 33.6**	**-0.5**
SIRT	**Sirnak**	**1.74**	**236**	*e*Pn		**Pb**	**04 23 33.6**	**-0.5**
SIRN	**S¨–rnak**	**1.76**	**237**	*i* P		**Pb**	**04 23 33.2**	**-1.3**
SIRN				*i* S		**Sg**	**04 24 00.3**	**+2.3**
SIRN	**S¨–rnak**	**1.76**	**237**	P		**Pb**	**04 23 33.2**	**-1.3**
SIRN				S		**Sg**	**04 24 00.3**	**+2.3**
GRS	**Goris**	**1.91**	**57**	⇑*i*P		**Pn**	**04 23 33.0**	**-2.0**
GRS				⇑S		**Sn**	**04 24 00.0**	**+0.4**
GRS	**Goris**	**1.91**	**57**	⇑P		**Pn**	**04 23 33.0**	**-2.0**
GRS				S		**Sn**	**04 24 00.0**	**+0.4**
DIGO	**Kars**	**2.05**	**341**	⇑*i*P		**Pb**	**04 23 38.6**	**-0.9**
DIGO				*i* S		**Sg**	**04 24 09.4**	**+2.0**
DIGO	**Kars**	**2.05**	**341**	P		**Pb**	**04 23 38.6**	**-0.9**
DIGO				S		**Sg**	**04 24 09.4**	**+2.0**
IHRS	**Heris**	**2.19**	**93**	*e*Pn		**Pn**	**04 23 39.5**	**+0.5**
IHRS				*e*AMB	AMB	04 23 44.9		
	comp=Z,9μm,0.2s							
IHRS	**Heris**	**2.19**	**93**	*e*Pn		**Pn**	**04 23 39.5**	**+0.5**
IHRS	**Heris**	**2.19**	**93**	Pn		**Pn**	**04 23 39.4**	**+0.5**
EAK	**Akyaka**	**2.26**	**347**	⇑*i*P		**Pb**	**04 23 42.8**	**-0.3**
EAK				*i* S		**Sg**	**04 24 14.8**	**+0.6**
EAK	**Akyaka**	**2.26**	**347**	P		**Pb**	**04 23 42.8**	**-0.3**
EAK				S		**Sg**	**04 24 14.8**	**+0.6**
KARS	**Kars**	**2.33**	**337**	*e*PN		**Pn**	**04 23 39.2**	**-1.7**
KARS	**Kars**	**2.33**	**337**	*e*Pn		**Pn**	**04 23 39.2**	**-1.7**
KARS	**Kars**	**2.33**	**337**	Pn		**Pn**	**04 23 39.2**	**-1.7**
GMRZ	**Gyumri**	**2.35**	**352**	⇓*e*P		**Pn**	**04 23 41.0**	**-0.1**
GMRZ				⇓*e*S		**Sg**	**04 24 20.0**	**+2.9**
BTMN	**Batman**	**2.43**	**257**	⇑*i*P		**Pn**	**04 23 43.0**	**+0.9**
BTMN				*i* S		**Sg**	**04 24 19.2**	**-0.4**
BTMN	**Batman**	**2.43**	**257**	P		**Pn**	**04 23 43.0**	**+0.9**
BTMN				S		**Sg**	**04 24 19.2**	**-0.4**
SVAN	**Silvan-Diyarba**	**2.43**	**263**	*e*PN		**Pn**	**04 23 43.0**	**+0.9**
SVAN	**Silvan-Diyarba**	**2.43**	**263**	*e*Pn		**Pn**	**04 23 43.0**	**+0.9**
BNGL	**BINGOL**	**2.48**	**282**	*i* P		**Pb**	**04 23 45.3**	**-1.5**
BNGL				*i* S		Sg	04 24 35.2	+14
GDB	**GEDABAY** SNR=65	**2.52**	**27**	⇑P		**Pn**	**04 23 44.0**	**+0.5**
GDB				⇓S		**Sg**	**04 24 24.9**	**+2.4**
GDB	**GEDABAY** SNR=65	**2.52**	**27**	P		**Pn**	**04 23 44.0**	**+0.5**
STE	**Stepanavan**	**2.52**	**2**	⇓P		**Pn**	**04 23 43.5**	**+0.1**
STE				S		**Sn**	**04 24 16.5**	**+1.8**
SENK	**Senkaya-Erzuru**	**2.55**	**325**	*e*PN		**Pn**	**04 23 43.4**	**-0.5**
SENK	**Senkaya-Erzuru**	**2.55**	**325**	*e*Pn		**Pn**	**04 23 43.4**	**-0.5**
EZM	**Erzurum**	**2.67**	**303**	*e*PN		**Pn**	**04 23 45.7**	**+0.1**
EZM	**Erzurum**	**2.67**	**303**	Pn		**Pn**	**04 23 45.7**	**+0.1**
GANJ	**Ganja** SNR=52	**2.69**	**36**	⇓P		**Pn**	**04 23 46.6**	**+1.0**
GANJ				⇓S		**Sg**	**04 24 30.5**	**+2.6**
GANJ	**Ganja** SNR=52	**2.69**	**36**	P		**Pn**	**04 23 46.6**	**+1.0**
QZX	**Qazax, Azerbai** SNR=35	**2.71**	**18**	⇑P		**Pn**	**04 23 46.5**	**+0.5**
QZX				⇑S		**Sg**	**04 24 28.1**	**-0.6**
QZX	**Qazax, Azerbai** SNR=35	**2.71**	**18**	P		**Pn**	**04 23 46.5**	**+0.5**
ISRB	**Sarab**	**2.76**	**103**	*e*Pn		**Pn**	**04 23 47.5**	**+0.7**
ISRB				*e*AMB	AMB	04 24 03.0		
	comp=Z,5μm,0.3s							
ISRB	**Sarab**	**2.76**	**103**	*e*Pn		**Pn**	**04 23 47.5**	**+0.7**
ECAT	**Cat-ERZURUM**	**2.80**	**295**	*i* P		**Pn**	**04 23 48.0**	**+0.7**
ECAT				*i* S		**Sg**	**04 24 37.0**	**+5.6**
ECAT	**Cat-ERZURUM**	**2.80**	**295**	P		**Pn**	**04 23 48.0**	**+0.7**
ECAT				S		**Sg**	**04 24 37.0**	**+5.6**
BGD	**Bogdanovka**	**2.83**	**350**	P		**Pn**	**04 23 52.7**	**-0.1**
BGD				S		**Sg**	**04 24 34.7**	**+2.4**
BNGB	**Bing¨ll**	**2.85**	**281**	*e*PN		**Pn**	**04 23 48.6**	**+0.7**
BNGB	**Bing¨ll**	**2.85**	**281**	Pn		**Pn**	**04 23 48.6**	**+0.7**
BNGB	**Bing¨ll**	**2.85**	**281**	Pn		**Pn**	**04 23 48.6**	**+0.7**
GRMI	**Germi**	**2.86**	**82**	*e*Pn		**Pn**	**04 23 48.9**	**+0.8**
GRMI				*e*Sg		**Sb**	**04 24 28.2**	**-0.5**
GRMI				AML	AML	04 24 37.0		
	comp=N,140nm,0.6s							
GRMI				AML	AML	04 24 37.9		
	comp=E,225nm,0.6s							
GRMI	**Germi**	**2.86**	**82**	*e*Pn		**Pn**	**04 23 48.9**	**+0.8**
GRMI				*e*Sg		**Sb**	**04 24 28.2**	**-0.5**
GRMI	**Germi**	**2.86**	**82**	Pn		**Pn**	**04 23 48.0**	**-0.1**
GRMI				Sg		**Sb**	**04 24 28.0**	**-0.7**
BRDA	**Brd** SNR=37	**2.88**	**51**	⇓P		**Pn**	**04 23 51.0**	**+2.8**
BRDA				⇑S		**Sg**	**04 24 38.1**	**+4.2**
BRDA	**Brd** SNR=37	**2.88**	**51**	P		**Pn**	**04 23 51.0**	**+2.8**
BINT	**Bingol**	**2.98**	**279**	*e*Pn		**Pn**	**04 23 48.6**	**-1.1**
AKH	**Akhalkalaki**	**2.99**	**349**	P		**Pb**	**04 23 54.6**	**-0.8**
MARD	**Mardin**	**2.99**	**248**	⇑*i*P		**Pn**	**04 23 51.0**	**+1.1**
MARD				*i* S		**Sg**	**04 24 35.2**	**-2.4**
YEDI	**Yedisu-Bingol**	**3.05**	**289**	*e*PN		**Pn**	**04 23 51.5**	**+0.7**
YEDI	**Yedisu-Bingol**	**3.05**	**289**	*e*Pn		**Pn**	**04 23 51.5**	**+0.7**
DGRG	**David-gareji**	**3.09**	**16**	P		**Pb**	**04 23 56.9**	**-0.2**
DGRG				S		**Sg**	**04 24 48.8**	**+8.1**
DDEM	**Demirkent**	**3.09**	**322**	*i* P		**Pb**	**04 23 56.9**	**-0.3**
DDEM	**Demirkent**	**3.09**	**322**	P		**Pb**	**04 23 56.9**	**-0.3**
MNGR	**Mingechevir, A** SNR=18	**3.16**	**43**	⇑P		**Pn**	**04 23 54.4**	**+2.3**
MNGR				⇓S		**Sg**	**04 24 43.6**	**+0.5**
MNGR	**Mingechevir, A** SNR=18	**3.16**	**43**	P		**Pn**	**04 23 54.4**	**+2.3**
DAGI	**Agillar**	**3.16**	**326**	*i* P		**Pb**	**04 23 58.9**	**+0.5**
DAGI				*i* S		Sg	04 24 52.3	+9.2
MAZI	**Mazidag**	**3.18**	**253**	*e*PN		**Pn**	**04 23 53.0**	**+0.5**
MAZI	**Mazidag**	**3.18**	**253**	*e*Pn		**Pn**	**04 23 53.0**	**+0.5**
LRK	**Lerik** SNR=56	**3.20**	**86**	⇓P		**Pn**	**04 23 54.4**	**+1.6**
LRK				⇓S		**Sg**	**04 24 43.9**	**-0.4**
LRK	**Lerik** SNR=56	**3.20**	**86**	P		**Pn**	**04 23 54.4**	**+1.6**
ZRD	**Zardab** SNR=32	**3.20**	**55**	⇑P		**Pn**	**04 23 55.5**	**+2.8**
ZRD				⇑S		**Sg**	**04 24 46.1**	**+1.7**
ZRD	**Zardab** SNR=32	**3.20**	**55**	P		**Pn**	**04 23 55.5**	**+2.8**
DIY	**Diyarbakir**	**3.23**	**261**	*e*Pn		**Pn**	**04 23 55.4**	**+2.2**
TBLG	**Delisi**	**3.27**	**6**	P		**Pb**	**04 24 02.9**	**+2.8**
TBLG				S		**Sg**	**04 24 45.4**	**-1.1**
DYBB	**Diyarbakir**	**3.29**	**262**	*e*PN		**Pn**	**04 23 55.4**	**+1.5**
KOPT	**Kop Dagi**	**3.30**	**299**	*i* P		**Pb**	**04 24 02.1**	**+1.2**
KOPT				*i* S		**Sg**	**04 24 55.9**	**+8.3**
KOPT	**Kop Dagi**	**3.30**	**299**	P		**Pb**	**04 24 02.1**	**+1.2**
KOPT				S		**Sg**	**04 24 55.9**	**+8.3**
GLBA	**Clilabad** SNR=11	**3.31**	**75**	⇑P		**Pn**	**04 23 56.4**	**+2.2**
GLBA				⇑S		**Sg**	**04 24 48.3**	**+0.4**
GLBA	**Clilabad** SNR=11	**3.31**	**75**	P		**Pn**	**04 23 56.4**	**+2.2**
SAAT	**Saatly**	**3.52**	**66**	⇑P		**Pn**	**04 23 59.4**	**+2.5**
SAAT				⇑S		**Sg**	**04 24 53.8**	**-0.7**
SAAT	**Saatly**	**3.52**	**66**	P		**Pn**	**04 23 59.4**	**+2.5**
SEKA	**Sheki** SNR=4.5	**3.54**	**39**	⇓P		**Pn**	**04 23 58.8**	**+1.4**
SEKA				⇓S		**Sb**	**04 24 51.4**	**+3.2**
SEKA	**Sheki** SNR=4.5	**3.54**	**39**	P		**Pn**	**04 23 58.8**	**+1.4**
LKRN	**Lenkeran, Azer** SNR=25	**3.55**	**85**	⇓P		**Pn**	**04 23 59.2**	**+1.8**
LKRN				⇓S		**Sg**	**04 24 54.1**	**-1.3**
LKRN	**Lenkeran, Azer** SNR=25	**3.55**	**85**	P		**Pn**	**04 23 59.2**	**+1.8**
ASTR	**Astara** SNR=17	**3.55**	**87**	⇑P		**Pn**	**04 23 59.1**	**+1.6**
ASTR				⇓S		**Sb**	**04 24 53.9**	**+5.5**
ASTR	**Astara** SNR=17	**3.55**	**87**	P		**Pn**	**04 23 59.1**	**+1.6**
KDMR	**Kurdemir**	**3.58**	**57**	⇓P		**Pn**	**04 24 00.8**	**+3.0**
KDMR				⇑S		**Sg**	**04 24 56.1**	**-0.4**
KDMR	**Kurdemir**	**3.58**	**57**	P		**Pn**	**04 24 00.8**	**+3.0**
ZKTA	**Zakatala**	**3.64**	**29**	⇑S		**Sb**	**04 24 54.4**	**+3.5**
QBL	**Gabala** SNR=3.9	**3.70**	**47**	⇑P		**Pn**	**04 24 01.2**	**+1.7**
QBL				⇓S		**Sb**	**04 24 58.1**	**+5.4**
QBL	**Gabala** SNR=3.9	**3.70**	**47**	P		**Pn**

SNGE				AML	AML	04 25 28.5	
	comp=E,83nm,0.8s						
SNGE	**Sanandaj**	**4.19**	**143**	Pn	**Pn**	**04 24 09.0**	**+2.5**
SNGE	**Sanandaj**	**4.19**	**143**	Pn	**Pn**	**04 24 09.0**	**+2.5**
QSAR	**Qusar**	**4.32**	**44**	⇑P	**Pn**	**04 24 10.3**	**+2.2**
QSAR				⇑S	**Sb**	**04 25 11.0**	**+0.5**
ATGJ	**Altiaghaj**	**4.32**	**55**	⇓P	**Pn**	**04 24 10.7**	**+2.6**
ATGJ	**Altiaghaj**	**4.32**	**55**	P	**Pn**	**04 24 10.7**	**+2.6**
QUBA	**Quba, Azerbaij** SNR=18	**4.34**	**47**	⇑P	**Pn**	**04 24 10.2**	**+1.9**
QUBA				⇓S	**Sb**	**04 25 13.3**	**+2.2**
QUBA	**Quba, Azerbaij** SNR=18	**4.34**	**47**	P	**Pn**	**04 24 10.2**	**+1.9**
SIZA	**Siyzn** SNR=3.0	**4.41**	**53**	⇓P	**Pn**	**04 24 11.9**	**+2.5**
SIZA				⇑S	**Sb**	**04 25 15.3**	**+1.9**
SIZA	**Siyzn** SNR=3.0	**4.41**	**53**	P	**Pn**	**04 24 11.9**	**+2.5**
IVIS	**Veis**	**4.46**	**151**	*e*Pn	**Pn**	**04 24 11.8**	**+1.7**
IVIS				*e*AMB	AMB	04 25 47.2	
	comp=Z,1μm,0.6s						
IVIS	**Veis**	**4.46**	**151**	*e*Pn	**Pn**	**04 24 11.8**	**+1.7**
IGHG	**Ghaleghazi**	**4.54**	**155**	*e*Pn	**Pn**	**04 24 13.1**	**+1.8**
IGHG				*e*AMB	AMB	04 25 51.9	
	comp=E,5μm,0.4s						
IGHG	**Ghaleghazi**	**4.54**	**155**	*e*Pn	**Pn**	**04 24 13.1**	**+1.8**
IGHG	**Ghaleghazi**	**4.54**	**155**	Pn	**Pn**	**04 24 13.1**	**+1.8**
IKOM	**Komasi**	**5.03**	**148**	*e*AMB	AMB	04 26 12.2	
	comp=Z,2μm,0.5s						
DARE	**Darende-Malaty**	**5.32**	**273**	*e*PN	**Pn**	**04 24 24.0**	**+2.2**
DARE	**Darende-Malaty**	**5.32**	**273**	*e*Pn	**Pn**	**04 24 24.0**	**+2.2**
DARE	**Darende-Malaty**	**5.32**	**273**	Pn	**Pn**	**04 24 24.0**	**+2.2**
KBZ	**Khabaz** comp=Z,0.1nm,0.3s,baz=218,slow=6.8,SNR=4.8	**5.34**	**349**	Pn	**Pn**	**04 24 25.1**	**+3.0**
KVAR	**Kislovodsk Arr** baz=325,slow=8.8,SNR=3.9	**5.60**	**348**	Pn	Pn	04 24 30.6	+4.9
BRTR	**Keskin Array B** comp=Z,0.1nm,0.3s,baz=105,slow=13,SNR=2.2	**8.35**	**282**	Pn	**Pn**	**04 25 04.0**	**+0.4**
ASF	**Jabal al Asfar** comp=Z,0.1nm,0.3s,baz=333,slow=4.5,SNR=2.3	**8.70**	**226**	Pn	**Pn**	**04 25 04.2**	**-4.1**
ASF				Lg	Lg	04 27 30.5	
	comp=Z,0.4nm,0.3s,baz=180,slow=20,SNR=2.9						
MMAI	**Mount Meron Ar** comp=Z,1.8nm,0.3s,baz=57,slow=14,SNR=3.0	**9.03**	**236**	Pn	**Pn**	**04 25 13.5**	**+0.7**
MMAI				Lg	Lg	04 27 52.8	
	comp=Z,1.8nm,0.3s,baz=55,slow=12,SNR=3.8						
GEYT	**Alibeck** comp=Z,0.4nm,0.3s,baz=306,slow=12,SNR=4.7	**10.92**	**89**	Pn	**Pn**	**04 25 38.2**	**-0.4**
GEYT				Lg	Lg	04 28 54.3	
	baz=48,slow=2.2,SNR=4.6						
EIL	**Elat** comp=Z,0.3nm,0.3s,baz=86,slow=19,SNR=2.6	**11.69**	**224**	Lg	Lg	04 29 07.0	
SORM	**Soroca**	**15.05**	**315**	⇑*i*P	P	**04 26 38.2**	**-2.2**
TESR	**Tescani**	**15.25**	**307**	⇑*i*P	P	04 26 49.3	+6.6
MLR	**Muntele Rosu** comp=Z,0.0nm,0.3s,baz=108,slow=19,SNR=1.9	**15.30**	**303**	Pn	**P**	**04 26 40.4**	**-2.9**
MLR	**Muntele Rosu**	**15.30**	**303**	⇑*i*P	P	04 26 52.1	+8.7
AKTO	**Aktyubinsk** comp=Z,0.6nm,0.3s,baz=213,slow=9.6,SNR=12	**15.44**	**35**	Pn	**Pn**	**04 26 37.6**	**-2.5**
ABKAR	**Akbulak array** comp=Z,1.5nm,0.5s	**15.58**	**41**	*e*Pn	**P**	**04 26 40.6**	**-1.3**
IDI	**Anoyia** comp=Z,0.4nm,0.3s,baz=52,slow=13,SNR=3.6	**15.82**	**264**	Pn	**P**	**04 26 49.3**	**+0.2**
DOPR	**Dopca**	**15.84**	**304**	⇓*i*P	**P**	**04 26 51.8**	**+2.6**
DOPR	**Dopca**	**15.84**	**304**	⇓*i*P	**P**	**04 26 51.8**	**+2.6**
VOIR		**15.87**	**302**	⇓*i*P	**P**	**04 26 52.7**	**+3.0**
VOIR		**15.87**	**302**	⇓*i*P	**P**	**04 26 52.7**	**+3.0**
ARR	**Arges**	**16.13**	**302**	⇓*i*P	**P**	**04 26 58.4**	**+5.9**
AKASG	**Malin Array Be** baz=129,slow=11,SNR=2.4	**16.21**	**324**	Pn	**Pn**	**04 26 47.0**	**-3.1**
BURAR	**Bucovina Array**	**16.61**	**309**	⇑*i*P	P	04 27 05.8	+7.9
LOT	**Lotru**	**16.73**	**301**	⇓*i*P	**P**	**04 27 01.4**	**+2.2**
LOT	**Lotru**	**16.73**	**301**	⇓*i*P	**P**	**04 27 01.4**	**+2.2**
OBN	**Obninsk** comp=Z,2.0nm,0.3s,baz=171,slow=15,SNR=4.3	**17.43**	**345**	P	**Pn**	**04 27 04.4**	**-1.0**
DRGR		**17.86**	**305**	⇑*i*P	**P**	**04 27 16.3**	**+4.6**
SIRR	**Siria**	**18.38**	**302**	⇓*i*P	**P**	**04 27 23.0**	**+5.6**
KOLS	**Kolonicke sedl**	**18.96**	**311**	*e*P	**Pn**	**04 27 29.0**	**+4.7**
PDG	**Podgorica**	**19.41**	**290**	⇑*i*P	**Pn**	**04 27 29.3**	**-0.4**
PDG	**Podgorica**	**19.41**	**290**	⇑*i*P	**Pn**	**04 27 29.3**	**-0.4**
CRVS	**Cervenica-Dubn**	**19.43**	**310**	*e*P	**Pn**	**04 27 33.0**	**+3.0**
WSAR	**Wadi Sarin** comp=Z,0.2nm,0.3s,baz=18,slow=6.4,SNR=2.5	**19.53**	**137**	P	**P**	**04 27 29.4**	**-0.7**
ARU	**Arti** comp=Z,5.9nm,0.7s,baz=214,slow=5.8,SNR=12	**20.32**	**23**	P	**P**	**04 27 37.8**	**-0.7**
ARU	**Arti** comp=Z,22nm,1.0s	**20.32**	**23**	*e*P	**P**	**04 27 37.7**	**-0.7**
ARU	**Arti** comp=Z,22nm,1.0s	**20.32**	**23**	*e*P	**P**	**04 27 37.7**	**-0.7**
VYHS	**Vyhne**	**20.90**	**307**	*e*P	Pn	04 27 49.3	+2.0
TIP	**Timpagrande** comp=Z,5.5nm,1.0s	**21.41**	**281**	*e*P	**P**	**04 27 47.3**	**-3.2**
CUC	**Castrocucco** comp=Z,4.1nm,0.8s	**22.05**	**283**	*e*P	**P**	**04 27 54.9**	**-2.4**
EKS2	**Erkin-Say** comp=Z,6.9nm,0.9s	**22.75**	**70**	*e*P	**P**	**04 28 04.5**	**-0.4**
EKS2	**Erkin-Say** comp=Z,6.9nm,0.9s	**22.75**	**70**	*e*P	**P**	**04 28 04.5**	**-0.4**
BVAR	**Borovoye Array** comp=Z,2.8nm,0.7s,baz=234,slow=12,SNR=5.4	**23.15**	**43**	P	**P**	**04 28 11.2**	**+2.4**
AAK	**Ala-Archa** comp=Z,2.0nm,0.4s,baz=248,slow=5.4,SNR=4.6	**23.28**	**70**	P	**P**	**04 28 12.6**	**+2.2**
GERES	**GERESS Array B** comp=Z,0.7nm,0.7s,baz=98,slow=8.4,SNR=5.9	**24.26**	**305**	P	**P**	**04 28 20.2**	**+0.4**
KHC	**Kasperske Hory**	**24.41**	**306**	*e*P	**P**	**04 28 20.0**	**-1.1**
FINES	**FINESS Array B** comp=Z,2.1nm,0.7s,baz=154,slow=14,SNR=8.3	**25.61**	**340**	P	**P**	**04 28 31.4**	**-0.3**
DAVOX	**Davos/Dischmat** comp=Z,0.9nm,0.5s,baz=3.2,slow=12,SNR=3.9	**25.45**	**299**	P	**P**	**04 28 37.7**	**-2.0**
KURBB	**Kurchatov Arra** comp=Z,1.3nm,0.5s,baz=263,slow=10.0,SNR=10.0	**27.02**	**52**	P	**P**	**04 28 45.2**	**+0.6**
KURK	**Kurchatov**	**27.10**	**52**	*e*P	**P**	**04 28 46.1**	**+0.8**
KURK	**Kurchatov**	**27.10**	**52**	*e*P	**P**	**04 28 46.1**	**+0.8**
MKAR	**Makanchi Array** comp=Z,0.8nm,0.6s,baz=257,slow=5.4,SNR=4.5	**28.95**	**61**	P	**P**	**04 29 04.6**	**+2.7**
HFS	**Hagfors** comp=Z,2.9nm,1.0s,baz=134,slow=13,SNR=3.5	**28.99**	**328**	P	**P**	**04 29 01.2**	**-0.9**
ESDC	**Sonseca Array** comp=Z,0.3nm,0.5s,baz=71,slow=8.4,SNR=4.2	**37.10**	**287**	P	**P**	**04 30 12.0**	**-1.1**
SONM	**Songino Array** comp=Z,0.3nm,0.5s,baz=307,slow=12,SNR=2.1	**45.16**	**57**	P	**P**	**04 31 20.7**	**+1.3**
TORD	**Torodi Ar. Bea** comp=Z,1.4nm,1.1s,baz=62,slow=6.7,SNR=5.1	**45.32**	**248**	P	**P**	**04 31 18.4**	**-2.5**
KSAR	**Wonju Array Be**	**63.61**	**62**	P	**P**	**04 33 34.0**	**+0.4**
KSAR	**Wonju Array Be**	**63.61**	**62**	P	**P**	**04 33 34.0**	**+0.4**
KSRS	**Korea Array** comp=Z,1.1nm,0.8s,baz=287,slow=8.5,SNR=5.0	**63.63**	**62**	P	**P**	**04 33 34.0**	**+0.3**
YKA	**Yellowknife Ar** comp=Z,0.3nm,0.7s,baz=15,slow=5.3,SNR=3.7	**77.94**	**350**	P	**P**	**04 34 59.0**	**-1.4**
YKA	**Yellowknife Ar**	**77.94**	**350**	P	**P**	**04 34 59.0**	**-1.4**

MAN 10 04:28:05, 17°.14N×121°.96E, h30km, mb3.8, ML2.5, MS2.1, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CVP	**Callao Caves**	**0.57**	**347**	⇓*i*P	Pb	04 28 16.7	+0.1
CVP				*i* S	Sb	04 28 24.2	-0.4

PRU 10 04:29:28.7, 49°.83N×18°.43E, h0km, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OKC	**Ostrava-Krasne**	**0.18**	**272**	*e*PG	Pg	04 29 32.0	-0.2
OKC				*e*SG	Sg	04 29 35.1	+0.5
	4.6nm,0.5s						

MEX 10 04:33:43.2±0.6, 32°.22N×115°.18W, h11km±79km, MD3.9, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.18**	**355**	*e*P	Pg	04 33 46.9	-0.3
MBIG				*i* S	Sg	04 33 49.2	-0.7
CBX	**Cerro Bola**	**1.26**	**274**	*e*P	Pn	04 34 02.4	-4.5
CBX				*e*S	Sb	04 34 19.3	-4.1
TJIG	**Tijuana**	**1.28**	**280**	*e*P	Pn	04 34 03.2	-3.9
TJIG				*e*S	Sb	04 34 19.1	-4.8

IDC 10 04:38:50.5±1.7, 0°.41S×121°.90E, h0km, mb3.3/2, mb1 3.5/2, mb1mx3.2/33, mbtmp3.3/2, Error ellipse: s-maj=194.9km s-min=32.3km az=58.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.92**	**149**	P	P	04 43 56.8	+0.5
	0.4nm,0.6s,baz=327,slow=11,SNR=5.3						
MKAR	**Makanchi Array**	**58.39**	**329**	P	P	04 48 48.9	+1.0
	0.2nm,0.3s,baz=129,slow=5.7,SNR=2.6						
TORD	**Torodi Ar. Bea**	**119.45**	**285**	PKP	PKPdf	04 57 41.5	-1.7
	0.4nm,0.8s,baz=102,slow=2.0,SNR=4.5						

IDC 10 04:45:03.2±3.0, 33°.40S×178°.43W, h0km, mb3.8/2, mb1 4.0/3, mb1mx3.7/29, mbtmp3.8/3, ML3.5/1, Error ellipse: s-maj=74.4km s-min=45.4km az=128.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.05**	**215**	Pn	Pn	04 46 33.7	-0.3
	1.2nm,0.3s,baz=314,slow=0.5,SNR=5.2						
URZ				Sn	Sn	04 47 40.5	-3.4
	2.8nm,0.3s,baz=227,slow=22,SNR=8.2						
ASAR	**Alice Springs**	**42.67**	**270**	P	P	04 53 01.9	0.0
	0.9nm,0.7s,baz=109,slow=7.0,SNR=8.6						
WRA	**Warramunga Arr**	**43.93**	**275**	P	P	04 53 11.9	-0.2
	1.0nm,0.6s,baz=116,slow=7.8,SNR=8.8						
FINES	**FINESS Array B**	**147.81**	**338**	PKPbc	PKPbc	05 04 48.6	-0.7
	0.4nm,0.6s,baz=48,slow=2.1,SNR=3.2						

*IDC **10** 05:02:20.6±8.8, 30°.20N×131°.60E, h0km, mb3.9/5, mb1 3.9/5, mb1mx3.5/64, mbtmp3.9/5, Error ellipse: s-maj=185.9km s-min=108.1km az=174.0*
*JMA **10** 05:02:32.7±0.1, 31°.17N×131°.55E, h36km±1km, M3.3*
ISC 10 05:02:31.5±1.8, 31°.18N±0°.04×131°.58E±0°.09, h31km±11km, n18, σ0°.88/21, mb3.9/5, 5C, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNAR	**Kushima--Naru**	**0.44**	**323**	P	**Pn**	**05 02 42.4**	**+0.7**
JNAR				S	**Sn**	**05 02 49.0**	**+0.4**
JTSR	**Tashiro 2**	**0.56**	**269**	⇑P	**Pn**	**05 02 43.6**	**+0.1**
JTSR				S	**Sn**	**05 02 52.1**	**+0.3**
JTN	**Tanegashima 3**	**0.73**	**225**	⇑P	**Pn**	**05 02 46.7**	**+0.9**
JTN				*e*S	**Sn**	**05 02 57.6**	**+1.7**
JTZ	**Takazaki**	**0.83**	**330**	⇑P	**Pb**	**05 02 48.1**	**+0.5**
JTZ				*e*S	**Sn**	**05 02 59.8**	**+1.4**
JSU	**Suzuyama**	**1.02**	**289**	⇑P	**Pb**	**05 02 50.4**	**-0.2**
JSU				*e*S	**Sb**	**05 03 04.1**	**+0.4**
JTSN	**Tsuno**	**1.07**	**357**	P	**Pb**	**05 02 51.6**	**+0.2**
JZO	**Okuchi**	**1.27**	**319**	⇑P	**Pb**	**05 02 54.2**	**-0.7**
JYAK	**Yakushimahirau**	**1.31**	**225**	P	**Pb**	**05 02 55.2**	**-0.4**
JYAK				*e*S	**Sb**	**05 03 11.5**	**-0.6**
JKC	**Kuchinoerabu**	**1.39**	**239**	P	**Pn**	**05 02 55.4**	**+0.6**
JIU2	**Izumi 2**	**1.51**	**335**	P	**Pb**	**05 02 57.8**	**-1.1**
SONM	**Songino Array** 0.9nm,0.8s,baz=133,slow=8.3,SNR=6.3	**25.41**	**318**	P	**P**	**05 07 56.5**	**+0.2**
H11N2	**WAKE ISLAND Hy** baz=296,slow=75,SNR=6.6	**33.73**	**101**	T	T	05 44 54.5	
H11N1	**WAKE ISLAND Hy** baz=296,slow=75,SNR=5.3	**33.73**	**101**	T	T	05 44 56.0	
H11N3	**WAKE ISLAND Hy** baz=296,slow=75,SNR=6.0	**33.74**	**101**	T	T	05 44 55.2	
KURBB	**Kurchatov Arra** 0.6nm,0.6s,baz=99,slow=9.2,SNR=5.0	**43.51**	**312**	P	**P**	**05 10 30.6**	**-1.4**
NRIK	**Noril'sk** 4.9nm,0.7s,baz=146,slow=5.9,SNR=4.3	**45.55**	**340**	P	**P**	**05 10 48.8**	**+0.8**
BVAR	**Borovoye Array** 1.2nm,0.5s,baz=96,slow=7.9,SNR=7.4	**48.70**	**315**	P	**P**	**05 11 12.3**	**-0.6**
FINES	**FINESS Array B** 1.1nm,0.9s,baz=72,slow=4.5,SNR=5.2	**70.02**	**330**	P	**P**	**05 13 39.0**	**-0.9**

*DJA **10** 05:09:02.6±1.1, 4°.N±4°.9°.5E±1°.1, h155km±8km, M4.4/11, mb4.5/6, mB5.1/3, MLv4.4/11, Mw(mB)4.5/3*
*ISCJB **10** 05:09:04.0±0.7, 4°.48N±0°.05×94°.97E±0°.04, h35km±6km, mb4.5/84, MS4.4/6, Error ellipse: s-maj=8.9km s-min=5.2km az=40.2*
*MOS **10** 05:09:05.7±0.9, 4°.63N×95°.07E, h45km, mb4.8/45, Error ellipse: s-maj=12.6km s-min=5.4km az=117.7*
*NEIC **10** 05:09:06.4±0.4, 4°.60N×95°.02E, h35km, mb4.7/13, Error ellipse: s-maj=11.0km s-min=5.4km az=215.0*
*IDC **10** 05:09:08.3±0.7, 4°.69N×95°.13E, h49km±3km, mb4.0/24, mb1 4.1/25, mb1mx3.8/66, mbtmp4.3/25, MS3.4/2, Ms1 3.5/2, ms1mx3.2/38, Error ellipse: s-maj=25.9km s-min=9.4km az=40.0*
ISC 10 05:09:06.8±0.5, 4°.48N±0°.05×94°.98E±0°.05, h46km±3km, h45km: pP-P, n167, σ1°.88/197, mb4.5/89, MS4.3/6, 5C-4D, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MLSI	**Meulaboh, Aceh**	**1.44**	**98**	P	**Pn**	**05 09 31.6**	**+1.2**
MLSI				S	**Sn**	**05 09 53.9**	**+5.8**
LHMI	**Lhok Sumawe**	**2.10**	**69**	P	**Pn**	**05 09 40.9**	**+1.4**
LHMI				S	**Sn**	**05 10 11.1**	**+6.7**
LHMI	**Lhok Sumawe**	**2.10**	**69**	*e*Pn	**Pn**	**05 09 36.5**	**-2.9**
LHMI				*e*Sn	**Sn**	**05 09 56.5**	**-7.9**
TPTI		**2.51**	**119**	P	**Pn**	**05 09 40.8**	**-4.3**
TPTI				S	**Sn**	**05 10 11.0**	**-3.5**
CMBY	**CAMPBELL BAY**	**2.73**	**337**	*e*P	**Pn**	**05 09 46.5**	**-1.6**
CMBY				IAmb	IAmb	05 09 56.8	
	comp=Z,191nm,0.5s						
KCSI	**Kotacane, Aceh**	**2.94**	**109**	P	**Pn**	**05 09 47.1**	**-4.0**
TSI	**Tuntungan**	**3.71**	**105**	P	**Pn**	**05 09 56.9**	**-4.7**
GSI	**Gunungsitoli**	**4.08**	**141**	P	Pn	05 09 58.7	-8.1
GSI	**Gunungsitoli**	**4.08**	**141**	*e*Pn	**Pn**	**05 10 05.9**	**-0.9**
GSI				*e*Sn	**Sn**	**05 10 51.8**	**-1.6**
PSI	**Prapat** comp=Z,3.7nm,0.3s,baz=314,slow=15,SNR=12	**4.27**	**113**	P	**Pn**	**05 10 12.6**	**+3.1**
PSI				S	**Sn**	**05 11 01.0**	**+2.8**
	comp=Z,4.1nm,0.3s,baz=254,slow=9.6,SNR=5.5						
PSI				LR	LR	05 12 11.0	
	comp=Z,391nm,19.6s,baz=288,slow=43						
PSI	**Prapat**	**4.27**	**113**	*e*Pn	**Pn**	**05 10 12.8**	**+3.3**
PSI				*e*Sn	**Sn**	**05 10 58.9**	**+0.7**
PKDT	**Phuket**	**4.76**	**44**	P	**Pn**	**05 10 17.1**	**+1.1**
KULM	**Kulim**	**5.71**	**82**	*e*Pn	**Pn**	**05 10 28.9**	**-0.1**
KULM				*e*Sn	**Sn**	**05 11 29.7**	**-3.6**
TRTT	**Trang**	**5.75**	**54**	P	**Pn**	**05 10 32.7**	**+3.0**
SURT	**Suratani**	**5.84**	**40**	P	**Pn**	**05 10 33.5**	**+2.5**
MNSI	**Mandailing Nat** comp=Z,42nm,0.5s,comp=Z,2μmcomp=Z,0.3nm	**5.87**	**128**	P	Pn	05 10 22.7	-8.7
IPM	**Ipoh**	**6.03**	**90**	*e*Pn	**Pn**	**05 10 33.3**	**-0.2**
IPM				*e*Sn	**Sn**	**05 11 37.2**	**-4.0**
SURA	**Surathani**	**6.56**	**45**	P	Pn	05 10 46.1	+5.4
DGPR	**DIGLIPUR**	**8.88**	**347**	*e*P	**Pn**	**05 11 12.1**	**-0.5**
DGPR				IAmb	IAmb	05 11 15.8	
	comp=Z,81nm,1.4s						
SRAK	**Srakaew**	**11.76**	**36**	P	Pn	05 12 00.4	+8.4
PBKT	**Sadao Pong** comp=Z,13nm,0.7s,comp=Z,999nm	**13.38**	**26**	P	**P**	**05 12 19.8**	**-2.7**
UTTA	**Uttaradit** comp=Z,2.4nm,0.8s,comp=Z,71nm	**14.27**	**22**	P	**P**	**05 12 33.0**	**+0.6**
CMAR	**Chiang Mai Arr** comp=Z,1.2nm,0.3s,baz=208,slow=11,SNR=43	**14.42**	**15**	P	**P**	**05 12 33.8**	**-0.4**
CMAR				LR	LR	05 17 57.4	
	comp=Z,190nm,21.1s,baz=185,slow=37						
PALK	**Pallekele** comp=Z,1.7nm,0.3s,baz=117,slow=12,SNR=5.5	**14.47**	**282**	S	Sn	05 14 58.1	-10
PALK	**Pallekele**	**14.47**	**282**	*i* P	**Pn**	**05 12 29.2**	**+0.2**
LAMP	**Lampang** comp=Z,5.4nm,0.8s	**14.68**	**18**	P	**P**	**05 12 37.8**	**+0.8**
CHTO	**Chiang Mai**	**14.76**	**15**	*e*P	**P**	**05 12 36.8**	**-1.2**
CHTO	**Chiang Mai**	**14.76**	**15**	*e*P	**P**	**05 12 36.8**	**-1.2**
CMMT	**Chiang Mai** comp=Z,15nm,0.8s	**14.76**	**15**	P	**P**	**05 12 37.6**	**-0.4**
SKNT	**Sakolnakorn** comp=Z,26nm,1.4s	**15.23**	**35**	P	**P**	**05 12 42.8**	**-0.4**
KSM	**Kuching** comp=Z,6.8nm,0.7s	**15.59**	**101**	*e*Pn	**P**	**05 12 46.2**	**-1.1**
BWNR	**Bhubaneshwar**	**18.08**	**331**	*e*P	**P**	**05 13 13.5**	**-1.2**
BWNR				IAmb	IAmb	05 14 11.5	
	comp=Z,165nm,2.5s						
HYB	**Hyderabad**	**20.60**	**310**	*e*P	**P**	**05 13 42.0**	**-0.3**
HYB				IAmb	IAmb	05 13 48.0	
	comp=Z,22nm,1.6s						
BOK	**Bokaro**	**21.11**	**336**	*e*P	**P**	**05 13 48.5**	**+0.8**
BOK				IAmb	IAmb	05 13 52.4	
	comp=Z,33nm,1.1s						
SHL	**Shillong**	**21.18**	**352**	*e*P	**P**	**05 13 47.1**	**-1.5**
KMI	**Kunming**	**21.84**	**19**	P	**P**	**05 13 56.6**	**+0.8**
KMI				pmax	pmax		
	comp=Z,19nm,0.6s						
KMI				pmax	pmax		
	comp=Z,160nm,5.4s						
NGP	**Nagpur**	**22.67**	**318**	*e*P	**P**	**05 14 03.9**	**-0.6**
NGP				IAmb	IAmb	05 14 04.7	
	comp=Z,210nm,3.4s						
GYA	**Guiyang**	**24.55**	**26**	P	**P**	**05 14 21.2**	**-1.4**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.7s						
BHPL	**Bhopal**	**25.21**	**319**	*e*P	**P**	**05 14 27.4**	**-1.1**
BHPL				IAmb	IAmb	05 14 32.9	
	comp=Z,18nm,0.7s						
LSA	**Lhasa**	**25.35**	**352**	*e*P	**P**	**05 14 30.8**	**+0.6**
LSA				pmax	pmax		
	comp=Z,6.0nm,0.5s						
LSA	**Lhasa** comp=Z,5.9nm,0.5s	**25.35**	**352**	*e*P	**P**	**05 14 30.8**	**+0.6**
H08S2	**Diego Garcia H** baz=62,slow=75,SNR=526	**25.46**	**242**	T	T	05 40 42.0	
H08S3	**Diego Garcia H** baz=62,slow=75,SNR=324	**25.46**	**242**	T	T	05 40 41.9	
H08S1	**Diego Garcia H** baz=62,slow=75,SNR=388	**25.48**	**242**	T	T	05 40 43.2	
CD2	**Chengdu**	**27.56**	**16**	*e*P	**P**	**05 14 49.6**	**0.0**
CD2				pP	pP	05 14 59.5	-2.2
CD2				sP	sP	05 15 04.0	-3.2
CD2				PP	**PP**	**05 15 57.4**	**+4.8**
CD2				S	**S**	**05 19 29.1**	**+1.2**
CD2				sS	sS	05 19 46.2	-2.0
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.0s						
LUWI	**Luwuk** comp=Z,34nm,0.7s	**28.30**	**101**	*e*P	**P**	**05 14 56.0**	**-0.4**
LUWI				*e*S	**S**	**05 19 41.3**	**+1.4**
SMLA	**Simla**	**31.36**	**330**	*e*P	**P**	**05 15 23.4**	**+0.1**
SMLA				IAmb	IAmb	05 15 24.4	
	comp=Z,6.8nm,0.6s						
XAN	**Xi'an**	**32.14**	**22**	P	**P**	**05 15 28.5**	**-1.7**
XAN				pP	pP	05 15 36.8	-5.5
XAN				pmax	pmax		
	comp=Z,22nm,0.8s						
XAN				LR	LR		
	comp=N,650nm,16.2s						
XAN				LR	LR		
	comp=Z,510nm,13.2s						
LZH	**Lanzhou**	**32.50**	**13**	*e*P	**P**	**05 15 34.0**	**+0.6**
LZH				pP	pP	05 15 45.0	-0.6
LZH				sP	sP	05 15 49.1	-1.9
LZH				PP	**PnPn**	**05 16 42.3**	**+0.4**
LZH				pmax	pmax		
	comp=Z,22nm,1.0s						
LZH				pmax	pmax		
	comp=Z,74nm,5.1s						
LZH				LR	LR		
	comp=N,370nm,13.5s						
LZH				LR	LR		
	comp=E,390nm,13.2s						
LZH				LR	LR		
	comp=Z,450nm,17.3s						
DHRM	**DHARAMSHALA**	**32.70**	**330**	*e*P	**P**	**05 15 35.1**	**-0.3**
DHRM				IAmb	IAmb	05 15 45.2	
	comp=Z,6.0nm,0.6s						
GTA	**Gaotai**	**35.05**	**7**	*e*P	**P**	**05 15 54.1**	**-1.4**
GTA				pP	pP	05 16 05.6	-2.1
GTA				sP	sP	05 16 10.4	-2.7
GTA				pmax	pmax		
	comp=Z,6.0nm,1.1s						
KSH	**Kashi**	**38.89**	**336**	P	**P**	**05 16 27.6**	**-0.6**
KSH				*e*pP	pP	05 16 37.8	-2.7
KSH				*e*sP	sP	05 16 42.4	-3.5
KSH				*e*PP	**PnPn**	**05 18 00.4**	**-0.2**
KSH				S	**S**	**05 22 20.6**	**-2.8**
KSH				PcS	**PcS**	**05 22 28.2**	**+0.2**
KSH				pmax	pmax		
	comp=Z,14nm,0.6s						
KSH				pmax	pmax		
	comp=Z,130nm,4.2s						
KSH				LR	LR		
	comp=N,330nm,10.8s						
KSH				LR	LR		
	comp=E,220nm,12.9s						
KSH				LR	LR		
	comp=Z,340nm,15.8s						
HHC	**Hu-ho-hao-te**	**39.16**	**20**	*e*P	P	05 16 37.1	+6.8
HHC				PP	**PnPn**	**05 18 12.4**	**+8.7**
HHC				S	**S**	**05 22 32.6**	**+5.3**
HHC				pmax	pmax		
	comp=Z,8.0nm,0.9s						
HHC				pmax	pmax		
	comp=Z,39nm,4.2s						
HHC				LR	LR		
	comp=N,100nm,13.6s						
HHC				LR	LR		
	comp=E,460nm,11.5s						
HHC				LR	LR		
	comp=Z,270nm,13.6s						
WMQ	**Urumqi**	**39.70**	**352**	*e*P	**P**	**05 16 35.4**	**+0.6**
WMQ				pP	pP	05 16 40.6	-6.6
WMQ				sP	sP	05 16 44.8	-7.8
WMQ	

KKAR Karatay Array 44.16 334 *e*P **P** 05 17 11.8 +0.7
SONM Songino Array 44.30 11 P **P** 05 17 10.8 -1.4
comp=Z,0.7nm,0.7s,baz=188,slow=8.7,SNR=4.2
SONM PcP **PP** 05 18 56.3 +0.1
comp=Z,0.9nm,0.7s,baz=231,slow=3.0,SNR=3.7
KSAR Wonju Array Be 44.50 38 P **P** 05 17 13.5 -0.4
KSAR Wonju Array Be 44.50 38 P **P** 05 17 13.5 -0.4
KSRS Korea Array 44.53 38 P **P** 05 17 13.5 -0.6
comp=Z,1.8nm,0.7s,baz=208,slow=8.9,SNR=5.6
WRA Warramunga Arr 45.66 123 P **P** 05 17 24.1 +0.7
comp=Z,3.0nm,0.8s,baz=302,slow=9.2,SNR=17
WRAB Tennant Creek 45.67 123*ce*P **P** 05 17 22.6 -0.8
WRAB pmax pmax
comp=Z,29nm,1.2s
ASAR Alice Springs 47.14 128 P **P** 05 17 36.0 +1.0
comp=Z,0.6nm,0.4s,baz=299,slow=7.6,SNR=12
ASAR pP **pP** 05 17 48.7 +1.1
comp=Z,3.6nm,0.9s,baz=298,slow=7.9,SNR=11
GEYT Alibeck 47.29 320 P **P** 05 17 37.7 +1.7
comp=Z,6.6nm,0.7s,baz=152,slow=9.6,SNR=13
CN2 Changchun 47.49 30 *e*P **P** 05 17 39.0 +1.6
OTUK Ortayu 47.72 340 P **P** 05 17 39.3 +0.2
OTUK pmax pmax
comp=Z,6.0nm,0.6s
KURBB Kurchatov Arra 48.02 346 P **P** 05 17 41.8 +0.4
comp=Z,3.9nm,0.6s,baz=169,slow=7.0,SNR=68
KURBB pP **pP** 05 17 55.2 +1.2
comp=Z,1.8nm,0.6s,baz=165,slow=7.2,SNR=4.1
KURBB sP **sP** 05 17 60.0 +0.7
comp=Z,3.4nm,0.8s,baz=167,slow=6.9,SNR=8.0
KURBB PcP **PcP** 05 19 09.4 +0.6
comp=Z,1.1nm,0.7s,baz=155,slow=2.8,SNR=5.4
KURK Kurchatov 48.09 346 *e*P **P** 05 17 41.7 -0.1
KURK *PP **pP** 05 17 55.2 +0.7
KURK *SP **sP** 05 18 00.0 +0.2
KURK *e* 05 19 10.1
KURK pmax pmax
comp=Z,35nm,0.8s
KURK Kurchatov 48.09 346 *e*P **P** 05 17 41.7 -0.1
comp=Z,35nm,0.8s
KURK pP **pP** 05 17 55.2 +0.7
KURK sP **sP** 05 17 60.0 +0.2
KURK *e*PcP **PcP** 05 19 10.1 +1.1
HIA Hailar 49.33 21 *e*P **P** 05 17 50.9 -0.6
HIA pmax pmax
comp=Z,4.0nm,0.8s
ZAA0 Zalesovo Array 50.01 352 *e*P **P** 05 17 56.0 -0.5
ZALV Zalesovo Beam 50.01 352 P **P** 05 17 55.8 -0.7
comp=Z,4.4nm,0.7s,baz=186,slow=7.7,SNR=16
VLA Vladivostok 50.46 35⇓ *i*P **P** 05 17 56.7 -3.4
VLA *i* *PP **pP** 05 18 06.6 -6.2
VLA *i* 05 19 15.4
VLA pmax pmax
comp=Z,10.0nm,1.0s
BVA0 Borovoye Array 52.45 342 *i*P **P** 05 18 14.8 -0.1
BVA0 pmax pmax
comp=Z,9.0nm,0.8s
BVAR Borovoye Array 52.45 342 P **P** 05 18 14.7 -0.1
comp=Z,8.6nm,0.7s,baz=134,slow=8.5,SNR=60
BRVK Borovoye 52.51 341 *e*P **P** 05 18 15.2 -0.1
BRVK pmax pmax
comp=Z,10.0nm,0.8s
BRVK Borovoye 52.51 341 *e*P **P** 05 18 15.2 -0.1
comp=Z,9.9nm,0.8s
ZRNK Zerenda 52.84 341 *e*P **P** 05 18 17.7 0.0
ZRNK pmax pmax
comp=Z,7.0nm,0.8s
ZRNK Zerenda 52.84 341 *e*P **P** 05 18 17.7 0.0
comp=Z,7.1nm,0.8s
CHKZ Chkalovo 52.94 342 *i*P **P** 05 18 17.8 -0.6
CHKZ pmax pmax
comp=Z,7.0nm,0.6s
AB31 Akbulak array 53.60 332*ce*P **P** 05 18 23.4 +0.1
AB31 pmax pmax
comp=Z,4.0nm,0.7s
ABKAR Akbulak array 53.60 332 *e*P **P** 05 18 23.9 +0.5
comp=Z,4.1nm,0.6s
AKTO Aktyubinsk 55.31 332 P **P** 05 18 36.3 +0.5
comp=Z,1.5nm,0.6s,baz=155,slow=9.3,SNR=5.6
AKTO Aktyubinsk 55.31 332 *i*P **P** 05 18 35.3 -0.5
AKTO pmax pmax
comp=Z,2.0nm,0.8s
SVE Sverdlovsk 58.85 339⇓ *e*P **P** 05 19 00.9 +0.3
SVE pmax pmax
comp=Z,14nm,0.9s
ARU Arti 59.32 337 P **P** 05 19 03.7 -0.3
comp=Z,1.1nm,0.3s,baz=172,slow=5.0,SNR=4.7
ARU Arti 59.32 337*d i*P **P** 05 19 03.1 -0.9
ARU 05 21 12.7
ARU S **S** 05 27 10.1 +1.1
ARU SS **SS** 05 31 04.2 -0.2
ARU pmax pmax
comp=Z,8.0nm,1.7s
ARU Arti 59.32 337 *e*P **P** 05 19 03.6 -0.3
comp=Z,6.9nm,1.0s
KBZ Khabaz 60.16 319 P **P** 05 19 10.3 +0.4
comp=Z,2.0nm,0.8s,baz=158,slow=5.4,SNR=4.3
KIV Kislovodsk 60.39 319 *e*P **P** 05 19 12.3 +0.6
KIV pmax pmax
comp=Z,9.0nm,1.0s
NRIK Noril'sk 64.95 357 P **P** 05 19 40.6 -0.8
comp=Z,3.8nm,0.7s,baz=161,slow=4.1,SNR=3.8
BR131 Keskin Array S 65.28 312 *e*P **P** 05 19 44.1 -0.2
BRTR Keskin Array B 65.28 312 P **P** 05 19 44.5 +0.2
comp=Z,1.7nm,0.6s,baz=133,slow=7.5,SNR=13
BRTR pP **sP** 05 20 00.6 -2.1
comp=Z,1.9nm,0.7s,baz=125,slow=8.8,SNR=6.6
BR231 Keskin MP Arra 65.95 312 *e*P **P** 05 19 45.3 -3.4
OBN Obninsk 68.68 328⇑ *e*P **P** 05 20 05.1 -0.3
OBN *e* 05 22 38.1
OBN *e*SS SS 05 33 25.7 -4.5
OBN pmax pmax
comp=Z,4.0nm,0.8s
OBN MLR MLR
comp=Z,94nm,18.0s
MA2 Magadan 69.39 27 *e*P **P** 05 20 08.8 -1.0
KLMR Klimovskoe 69.86 335 *e*P **P** 05 20 11.0 -1.6
KLMR pmax pmax
comp=Z,4.0nm,0.7s
TIXI Tiksi 70.38 11 P **P** 05 20 13.9 -1.7
comp=Z,4.3nm,0.7s,baz=222,slow=3.9,SNR=6.6
TIXI Tiksi 70.38 11⇓ *i*P **P** 05 20 14.2 -1.4
TIXI pmax pmax
comp=Z,3.0nm,0.6s
TIXI Tiksi 70.38 11 *e*P **P** 05 20 13.5 -2.2
comp=Z,6.1nm,0.8s
CFR Carcaliu 70.60 316 P **P** 05 20 17.8 +0.3
CFR pmax pmax
comp=Z,4.0nm,1.8s
AKASG Malin Array Be 71.33 322 P **P** 05 20 21.1 -0.7
comp=Z,1.2nm,0.5s,baz=90,slow=5.3,SNR=9.5
KIEV Kiev 71.33 322 P **P** 05 20 20.8 -1.0
KIEV pmax pmax
comp=Z,4.0nm,0.7s
MLR Muntele Rosu 72.18 316 P **P** 05 20 27.2 0.0
MLR pmax pmax
comp=Z,4.0nm,1.2s
VOIR 72.78 316 P **P** 05 20 31.1 +0.4
VOIR pmax pmax
comp=Z,2.0nm,0.6s
BUR08 Bucovina Ar. S 73.13 318 *e*P **P** 05 20 32.4 -0.4
JOF Joensuu 74.25 335 P **P** 05 20 39.5 +0.6
JOF pmax pmax
comp=Z,7.0nm,1.1s
DRGR 74.63 317 P **P** 05 20 42.2 +0.6
DRGR pmax pmax
comp=Z,10.0nm,1.1s
LVZ Lovozero 75.02 340 P **P** 05 20 42.4 -0.9
LVZ pmax pmax
comp=Z,12nm,2.0s
KOLS Kolonicke sedl 75.30 319 *e*P **P** 05 20 47.3 +2.0
KOLS *e* 05 21 03.0
KOLS pmax pmax
comp=Z,4.0nm,1.2s
KOLS Kolonicke sedl 75.30 319 *e*P **P** 05 20 47.3 +2.0
KOLS *e* 05 21 02.9
CRVS Cervenica-Dubn 75.82 319 *e*P **P** 05 20 49.5 +1.2
CRVS *e* 05 21 07.6
CRVS Cervenica-Dubn 75.82 319 *e*P **P** 05 20 49.5 +1.2
CRVS *e* 05 21 07.6
STHS Stebnicka Huta 76.05 320 *e*P **P** 05 20 51.4 +1.8
STHS pmax pmax
comp=Z,3.0nm,0.8s
STHS Stebnicka Huta 76.05 320 *e*P **P** 05 20 51.4 +1.8
FIA1 FINESS Array S 76.08 332 *e*P **P** 05 20 49.4 0.0
FINES FINESS Array B 76.09 332 P **P** 05 20 49.5 0.0
comp=Z,1.5nm,0.3s,baz=111,slow=5.8,SNR=41
FINES pP **pP** 05 21 04.5 +1.7
comp=Z,2.0nm,0.6s,baz=98,slow=6.3,SNR=5.4
MSF Maaselka 76.26 337 P **P** 05 20 49.9 -0.5
MSF pmax pmax
comp=Z,10.0nm,0.7s
KECS Kecovo 76.39 319 *e*P **P** 05 20 53.1 +1.6
KECS *e* 05 21 04.2
KECS pmax pmax
comp=Z,2.0nm,0.7s
KECS Kecovo 76.39 319 *e*P **P** 05 20 53.1 +1.6
KECS *e* 05 21 04.2
SUF Sumiainen 76.42 334 P **P** 05 20 51.6 +0.3
SUF pmax pmax
comp=Z,7.0nm,1.4s
NIE Niedzica 76.66 320 P **P** 05 20 53.5 +0.5
NIE pmax pmax
comp=Z,2.0nm,1.1s
OJC Ojcow 77.10 320 P **P** 05 20 56.3 +0.8
OJC pmax pmax
comp=Z,7.0nm,1.4s
OUL Oulu 77.23 336 P **P** 05 20 55.4 -0.4
OUL pmax pmax
comp=Z,7.0nm,0.9s
VYHS Vyhne 77.48 319 *e*P **P** 05 20 57.1 -0.6
VYHS pmax pmax
comp=Z,1.0nm,1.1s
VYHS Vyhne 77.48 319 *e*P **P** 05 20 57.1 -0.6
SGF Sodankyl 77.71 338 P **P** 05 21 01.1 +2.6
SGF pmax pmax
comp=Z,10.0nm,2.2s
MORC Moravsky Berou 78.48 320 P **P** 05 21 03.9 +0.7
MORC pmax pmax
comp=Z,12nm,1.2s
ARCES ARCESS Array B 78.72 340 P **P** 05 21 04.4 +0.3
comp=Z,2.0nm,0.7s,baz=101,slow=6.4,SNR=9.0
CONA Conrad Observa 79.40 318 *i*P **P** 05 21 05.6 -2.7
comp=Z,2.4nm,1.0s
SOKA Soboth 79.86 316 *i*P **P** 05 21 12.4 +1.5
comp=Z,5.5nm,1.5s
OBKA Obir 80.18 316 *i*P **P** 05 21 11.2 -1.4
comp=Z,4.7nm,1.4s
MYKA Terra Mystica 80.81 316 *i*P **P** 05 21 17.1 +1.2
comp=Z,0.9nm,0.4s
GEA0 GERESS Array S 80.90 319 *e*P **P** 05 21 17.3 +0.8
GEC2 GERESS Array S 80.90 319 P **P** 05 21 17.2 +0.8
GEC2 pmax pmax
comp=Z,5.0nm,1.0s
GEC2 GERESS Array S 80.90 319 *e*P **P** 05 21 17.3 +0.8
comp=Z,4.5nm,1.0s
GERES GERESS Array B 80.90 319 P **P** 05 21 17.6 +1.1
comp=Z,1.2nm,0.7s,baz=99,slow=6.1,SNR=9.0
GERES sP **sP** 05 21 36.9 +1.8
comp=Z,3.0nm,0.9s,baz=98,slow=6.1,SNR=8.0
ABTA Abfaltersbach 81.59 316 *i*P **P** 05 21 21.6 +1.4
comp=Z,3.8nm,1.7s
HFS Hagfors 81.79 330 P **P** 05 21 21.3 +0.5
comp=Z,1.2nm,0.6s,baz=90,slow=3.5,SNR=7.8
HFS pP **pP** 05 21 36.3 +2.1
comp=Z,1.6nm,0.6s,baz=117,slow=1.6,SNR=2.4
MOTA Moosalm 82.58 317 *i*P **P** 05 21 26.3 +0.9
comp=Z,2.0nm,0.7s
RETA Reutte 82.81 317 *i*P **P** 05 21 27.1 +0.6
comp=Z,2.3nm,0.6s
FETA Feichten 82.83 317 *i*P **P** 05 21 27.4 +0.8
comp=Z,1.7nm,0.8s
NOA NORSAR Array B 83.08 331 P **P** 05 21 29.2 +1.6
comp=Z,0.5nm,0.7s,baz=97,slow=5.3,SNR=2.9
NOA sP **sP** 05 21 46.5 +0.4
comp=Z,1.2nm,0.9s,baz=98,slow=5.3,SNR=2.3
DAVOX Davos/Dischmat 83.40 316 P **P** 05 21 30.6 +0.9
comp=Z,3.0nm,0.5s,baz=139,slow=4.7,SNR=14
DAVA Damuels 83.41 317 *i* PcP **P** 05 21 32.0 +2.3
comp=Z,5.3nm,1.4s
KEST Kesra 83.87 305 P **P** 05 21 33.8 +1.6
comp=Z,1.9nm,0.7s,baz=51,slow=6.5,SNR=4.3
QSPA South Pole Qui 94.40 180 *e*P **P** 05 22 22.9 +1.2
comp=Z,22nm,1.9s
TXAR Laitas Array 141.91 27 pPKP **pPKPdf** 05 28 49.9 +1.2
comp=Z,0.3nm,0.6s,baz=270,slow=0.9,SNR=2.3
TXAR sPKP 05 28 53.9
comp=Z,0.2nm,0.5s,baz=322,slow=2.5,SNR=3.5

ISCJB ***10*** *05:09:36.5±0.7,3.˚1S±0.˚1×12.˚0W±0.˚1, h13km, mb4.1/12, MS3.5/1, Error ellipse: s-maj=25.7km s-min=14.1km az=137.2*
IDC ***10*** *05:09:36.3±0.9, 3.˚13S×11.˚99W, h0km, mb4.1/12, mb1 4.2/12, mb1mx3.8/55, mbtmp4.1/12, MS3.7/1, Ms1 3.7/1, ms1mx3.1/30, Error ellipse: s-maj=33.0km s-min=18.0km az=136.0*
ISC 10 05:09:38.3±0.8, 3.˚1S±0.˚2×12.˚0W±0.˚2, h13km, n20, σ1§03/12, mb4.1/12, North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H10N2	**ASCENSION HYDR**	**5.29**	**208**	T	T	05 16 15.2	
	baz=28,slow=74,SNR=548						
H10N1	**ASCENSION HYDR**	**5.30**	**208**	T	T	05 16 16.1	
	baz=28,slow=74,SNR=588						
H10N3	**ASCENSION HYDR**	**5.31**	**208**	T	T	05 16 16.6	
	baz=28,slow=74,SNR=550						
H10S1	**ASCENSION HYDR**	**6.35**	**205**	T	T	05 17 34.6	
	baz=24,slow=75,SNR=221						
H10S2	**ASCENSION HYDR**	**6.37**	**204**	T	T	05 17 35.8	
	baz=24,slow=75,SNR=210						
H10S3	**ASCENSION HYDR**	**6.37**	**205**	T	T	05 17 35.7	
	baz=24,slow=75,SNR=207						
TORD	**Torodi Ar. Bea**	**21.12**	**40**	P	**P**	**05 14 21.7**	**-1.3**
	5.2nm,0.8s,baz=223,slow=10.0,SNR=26						
RCBR	**Riachuelo**	**23.99**	**263**	LR	LR	05 22 20.1	
	comp=Z,168nm,20.6s,baz=342,slow=32						
BDFB	**Brasilia**	**37.58**	**248**	P	**P**	**05 16 54.0**	**+1.0**
	1.2nm,0.6s,baz=63,slow=14,SNR=3.7						
KEST	**Kesra**	**43.51**	**25**	P	**P**	**05 17 43.4**	**+1.6**
	4.9nm,0.8s,baz=223,slow=13,SNR=8.5						
BOSA	**Boshof**	**43.55**	**129**	P	**P**	**05 17 42.5**	**+0.2**
	1.7nm,0.7s,baz=293,slow=9.1,SNR=4.8						
CPUP	**Villa Florida**	**49.17**	**238**	P	**P**	**05 18 25.5**	**-0.9**
	1.3nm,0.7s,baz=64,slow=12,SNR=4.5						
H05S1	**Guadeloupe/Mar**	**51.45**	**291**	T	T	06 14 02.6	
	SNR=6.1						
DAVOX	**Davos/Dischmat**	**53.31**	**19**	P	**P**	**05 18 57.3**	**-0.1**
	1.6nm,0.7s,baz=166,slow=19,SNR=2.4						
GERES	**GERESS Array B**	**56.38**	**20**	P	**P**	**05 19 19.5**	**+0.1**
	1.2nm,0.8s,baz=202,slow=5.7,SNR=11						
ROSC	**El Rosal**	**62.78**	**277**	P	**P**	**05 20 04.5**	**-0.1**
	3.6nm,0.5s,baz=155,slow=10,SNR=4.2						
AKASG	**Malin Array Be**	**64.16**	**28**	P	**P**	**05 20 12.6**	**0.0**
	0.3nm,0.4s,baz=227,slow=6.2,SNR=5.2						
HFS	**Hagfors**	**66.21**	**14**	P	**P**	**05 20 24.9**	**-0.7**
	1.1nm,0.7s,baz=211,slow=8.2,SNR=4.4						
KBZ	**Khabaz**	**67.72**	**40**	P	**P**	**05 20 36.8**	**+1.2**
	2.0nm,0.7s,baz=252,slow=3.1,SNR=3.5						
ARU	**Arti**	**81.97**	**32**	P	**P**	**05 21 56.6**	**-1.2**
	1.5nm,0.5s,baz=256,slow=12,SNR=3.6						

NIED ***10*** *05:14:00, 38.˚10N×143.˚30E, h32km, Mw4.5 Best double couple: M07.21000×10^15 NP1:φ328.00000°, δ70.00000°, λ159.00000°. NP2:φ66.00000°, δ70.00000°, λ22.00000°.*
IDC ***10*** *05:14:29.5±0.6, 37.˚97N×143.˚39E, h0km, mb4.5/27, mb1 4.5/33, mb1mx4.4/52, mbtmp4.5/33, ML3.7/6, MS3.8/4, Ms1 3.8/4, ms1mx3.4/41, Error ellipse: s-maj=15.4km s-min=12.6km az=127.0*
ISCJB ***10*** *05:14:31.4±0.9, 38.˚05N±0.˚03×143.˚33E±0.˚03, h20km±6km, mb4.6/86, MS4.1/11, Error ellipse: s-maj=5.4km s-min=3.6km az=156.4*
JMA ***10*** *05:14:33.8±0.1, 38.˚07N×143.˚26E, h38km, M4.7*
JMA Felt I J1.
NEIC ***10*** *05:14:33.2±1.1, 38.˚04N×143.˚41E, h22km±7km, mb4.8/16, Error ellipse: s-maj=6.0km s-min=3.4km az=133.0*
NEIC Recorded [1 JMA] in Fukushima and Miyagi.
MOS ***10*** *05:14:34.8±1.0, 38.˚35N×143.˚07E, h29km, mb5.0/38, Error ellipse: s-maj=7.4km s-min=4.7km az=108.2*
ISC 10 05:14:34.2±0.7, 38.˚04N±0.˚05×143.˚37E±0.˚05, h28km±4km, n242, σ1§81/277, mb4.7/92, MS4.1/12, 26C-12D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.65**	**285**	P	**Pn**	**05 14 59.9**	**-1.3**

JIO S **Sn** **05 15 18.9 -2.5**
OFUJ Ofunato 1.69 308 P **Pn** **05 15 00.5 -1.4**
OFUJ S **Sn** **05 15 19.8 -2.8**
JMK Ichinoseki 1.92 299 P **Pn** **05 15 03.9 -1.1**
JMK S **Sn** **05 15 26.4 -1.8**
JMM Marumori 2.04 266 P **Pn** **05 15 05.5 -1.2**
JMM S **Sn** **05 15 28.4 -2.9**
JFK Kawauchi 2.09 252 P **Pn** **05 15 05.7 -1.7**
JFK S **Sn** **05 15 28.8 -3.7**
JOU Okura 2.16 280 P **Pn** **05 15 07.7 -0.6**
JOM Ohasama 2.17 312 P **Pn** **05 15 07.7 -0.7**
JOM S **Sn** **05 15 32.3 -2.0**
JFT Otama 2.46 259 P **Pn** **05 15 12.2 -0.2**
JFT S **Sn** **05 15 40.1 -1.5**
JYK Kaneyama 2.52 291 P **Pn** **05 15 12.8 -0.5**
JYK S **Sn** **05 15 42.2 -0.9**
JRG Rokugo 2.53 303 P **Pn** **05 15 13.1 -0.3**
JRG *e*S **Sn** **05 15 43.0 -0.4**
JYS Shirataka 2.61 275 P **Pn** **05 15 14.2 -0.3**
JYS S **Sn** **05 15 45.0 -0.3**
JANG Nango 2.74 329 P **Pn** **05 15 16.4 +0.1**
JANG S **Sn** **05 15 46.6 -1.9**
ERM Erimo 3.97 358 *e*P **Pn** **05 15 31.8 -1.4**
ERM *e* 05 16 13.7
ERM Erimo 3.97 358 *e*Pn **Pn** **05 15 31.8 -1.4**
ERM *e*Sn **Sn** **05 16 13.7 -5.2**
MJAR Matsushiro Arr 4.38 252 Pn **Pn** **05 15 38.6 -0.3**
12nm,0.3s,baz=57,slow=10,SNR=82
MJAR Sn **Sn** **05 16 27.9 -1.0**
25nm,0.3s,baz=100,slow=12,SNR=6.8
MJAR LR LR 05 17 39.1
comp=Z,816nm,19.9s,baz=60,slow=44
MAJO Matsushiro 4.38 252*c i*P **Pn** **05 15 39.7 +0.8**
MAJO Matsushiro 4.38 252 *e*Pn **Pn** **05 15 39.6 +0.7**
MAT Matsushiro 4.38 252 P **Pn** **05 15 39.8 +0.9**
MAT S **Sn** **05 16 29.1 +0.1**
MJB9 Matsu-Tunnel 4.38 252 *e*Pn **Pn** **05 15 39.6 +0.7**
JHJ2 Mitsune 5.71 212 *e*Pn **Pn** **05 15 56.5 -0.5**
JHJ2 *e*Sn **Sn** **05 16 56.7 -4.9**
JHJ Hachijo jima 2 5.71 212 Pn **Pn** **05 15 54.0 -3.2**
70nm,0.3s,baz=66,slow=16,SNR=20
JHJ Sn **Sn** **05 16 54.8 -7.0**
244nm,0.3s,baz=266,slow=23,SNR=9.7
INU Inuyama 5.77 244 *e*Pn **Pn** **05 15 58.3 +0.4**
ASAJ Asahikawa 6.10 355 Pn **Pn** **05 16 01.5 -0.9**
baz=204,slow=9.1
ASAJ Asahikawa 6.10 355 *e*Pn **Pn** **05 16 01.8 -0.6**
YUK Yuzh-Kuril'sk 6.28 17*c i*P **Pn** **05 16 02.7 -2.1**
YUK *i* S **Sn** **05 17 09.5 -6.1**
YUK pmax pmax
comp=Z,794nm,0.3s
KUR Kuril'sk 7.94 24*c i*P **Pn** **05 16 25.6 -2.0**
KUR *e*S **Sn** **05 17 50.6 -5.8**
KUR pmax pmax
comp=E,32nm,0.4s
KUR pmax pmax
comp=Z,67nm,0.4s
KUR smax smax
comp=N,124nm,0.3s
KUR smax smax
comp=E,96nm,0.3s
YSS Yuzh-Sakhalins 8.92 357⇑ *e*P **Pn** **05 16 40.6 -0.5**
YSS pmax pmax
comp=Z,30nm,0.7s
YSS MLR MLR
comp=Z,600nm,16.0s
YSS MLR MLR
comp=N,300nm,18.0s
YSS MLR MLR
comp=E,300nm,17.0s
YSS Yuzh-Sakhalins 8.92 357 *e*Pn **Pn** **05 16 40.7 -0.4**
VLA Vladivostok 10.10 304 *e*P **Pn** **05 16 54.3 -3.0**
USRK Ussuriysk Ar. 10.56 309 Pn **Pn** **05 17 03.9 +0.4**
comp=E,1.3nm,0.3s,baz=108,slow=15,SNR=21
USRK LR LR 05 21 11.2
comp=E,455nm,18.2s,baz=150,slow=38
JNU Nakatsue 11.29 248 Pn Pn 05 17 08.7 -5.0
comp=E,0.2nm,0.3s,baz=58,slow=12,SNR=3.3
JNU LR LR 05 21 59.2
comp=E,679nm,19.2s,baz=42,slow=40
KSRS Korea Array 12.25 272 Pn **Pn** **05 17 27.9 +1.2**
comp=E,0.5nm,0.3s,baz=88,slow=14,SNR=46
KSRS LR LR 05 21 51.6
comp=E,542nm,20.5s,baz=52,slow=36
MDJ Mudanjiang 12.26 307 P **Pn** **05 17 27.8 +1.0**
KS01 Wonju Array Si 12.27 272 *e*Pn **Pn** **05 17 26.9 0.0**
KS15 Wonju Array Si 12.28 272 *e*Pn **Pn** **05 17 28.1 +1.0**
KSAR Wonju Array Be 12.28 272 P **Pn** **05 17 27.9 +0.8**
KSAR Wonju Array Be 12.28 272 Pn **Pn** **05 17 27.9 +0.8**
TYV Tymovskoe 12.83 358 *e*P **Pn** **05 17 32.5 -2.1**
TYV pmax pmax
comp=Z,13nm,0.8s
KLR Kul'dur 13.98 327 Pn **Pn** **05 17 48.4 -1.9**
comp=Z,0.4nm,0.3s,baz=130,slow=13,SNR=22
KLR Kul'dur 13.98 327*c i*P **Pn** **05 17 47.2 -3.0**
CN2 Changchun 14.71 299 *e*P **Pn** **05 17 59.0 -1.3**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,10.0nm,0.5s
SKR Severo-Kuril's 15.55 32 *i*P **Pn** **05 18 12.9 +1.6**
DL2 Dalian 17.05 280 P **Pn** **05 18 29.0 -1.5**
DL2 S **Sn** **05 21 35.8 -3.3**
DL2 pmax pmax
comp=Z,68nm,1.0s
DL2 pmax pmax
comp=Z,160nm,3.8s
DL2 LR LR
comp=N,230nm,15.1s
DL2 LR LR
comp=E,410nm,17.0s
DL2 LR LR
comp=Z,460nm,19.4s
PEA0 Petropavlovsk- 18.05 29 *e*Pn **Pn** **05 18 42.1 -0.7**
PETK Petropavlovsk- 18.05 29 P **Pn** **05 18 40.6 -2.2**
comp=Z,0.3nm,0.3s,baz=218,slow=9.0,SNR=7.2
PET Petropavlovsk 18.36 30 *e*P **Pn** **05 18 48.9 +2.4**
PET pmax pmax
comp=Z,31nm,1.0s
HIA Hailar 20.36 311 *e*P **P** **05 19 05.4 -3.0**
HIA pmax pmax
comp=Z,19nm,1.1s
BJI Beijing 21.19 284 P **P** **05 19 14.0 -3.4**
BJI S **S** **05 23 14.2 +2.7**
BJI pmax pmax
comp=Z,22nm,1.2s
BJI pmax pmax
comp=Z,140nm,5.3s
BJI LR LR
comp=N,200nm,16.2s
BJI LR LR
comp=E,290nm,14.5s
BJI LR LR
comp=Z,300nm,24.0s
BJT Baijiatuau 21.20 284 *e*P **P** **05 19 14.0 -3.5**
BJT pmax pmax
comp=Z,49nm,0.9s
BJT Baijiatuau 21.20 284 *e*P **P** **05 19 14.0 -3.5**
comp=Z,49nm,0.9s
MA2 Magadan 22.07 10 P **P** **05 19 27.7 +1.1**
comp=Z,7.1nm,0.7s,baz=184,slow=8.7,SNR=7.5
CLNS Chul'man 22.45 333 *e*P **P** **05 19 28.7 -2.1**
CLNS pmax pmax
comp=Z,14nm,0.8s
CLNS pmax pmax
comp=N,8.0nm,0.9s
HHC Hu-ho-hao-te 24.65 287 *e*P **P** **05 19 50.2 -2.3**
HHC pP pP 05 19 54.4 -6.3
HHC pPKP sP 05 19 57.5 -6.7
HHC S **S** **05 24 03.8 -8.5**
HHC SS **SnSn** **05 25 10.6 +12**
HHC pmax pmax
comp=Z,28nm,0.7s
HHC pmax pmax
comp=Z,110nm,4.1s
HHC LR LR
comp=N,160nm,12.3s
HHC LR LR
comp=E,310nm,11.6s
HHC LR LR
comp=Z,390nm,12.4s
WHN Wuhan 25.05 261⇑ *i*P **P** **05 19 55.4 -0.6**
WHN pP **pP** **05 20 02.3 -1.9**
WHN pmax pmax
comp=Z,86nm,0.7s

YAK	Yakutsk	25.47	345	P	P	05 19 59.7	+0.3		
	comp=Z,21nm,0.5s,baz=138,slow=1.3,SNR=7.0								
YAK	Yakutsk	25.47	345	*e*P	P	05 19 59.2	-0.3		
YAK				*e**PP	pP	05 20 07.5	-0.2		
YAK				*e*		05 20 30.1			
YAK				*e*PPP	PPP	05 20 44.4			
YAK				*e*S	S	05 24 25.0	+0.4		
YAK				*e**SS	sS	05 24 40.3	+2.1		
YAK				*e*SS	SnSn	05 25 22.0	+3.7		
YAK				*e*SSS	SSS	05 25 35.8			
YAK				pmax	pmax				
	comp=E,6.0nm,1.4s								
YAK				pmax	pmax				
	comp=Z,20nm,0.8s								
YAK				pmax	pmax				
	comp=N,10.0nm,1.3s								
YAK				pmax	pmax				
	comp=Z,29nm,1.1s								
YAK				pmax	pmax				
	comp=E,20nm,2.1s								
YAK				pmax	pmax				
	comp=N,33nm,1.8s								
YAK				smax	smax				
	comp=E,137nm,2.2s								
YAK				smax	smax				
	comp=N,151nm,2.2s								
YAK				MLR	MLR				
	comp=Z,290nm,15.0s								
YAK	Yakutsk	25.47	345	*e*P	P	05 19 59.5	0.0		
	comp=Z,28nm,0.8s								
SEY	Seymchan	25.52	10	P	P	05 20 01.1	+1.1		
	comp=Z,6.2nm,1.0s,baz=181,slow=6.5,SNR=11								
H11N2	WAKE ISLAND Hy	27.39	125	T	T	05 49 04.6			
	baz=317,slow=75,SNR=20								
H11N1	WAKE ISLAND Hy	27.40	125	T	T	05 49 02.5			
	baz=317,slow=75,SNR=18								
H11N3	WAKE ISLAND Hy	27.41	125	T	T	05 49 04.6			
	baz=317,slow=75,SNR=18								
BOD	Bodaibo	27.55	325	*e*P	P	05 20 17.2	-1.1		
BOD				pmax	pmax				
	comp=Z,24nm,1.5s								
XAN	Xi'an	28.04	272	P	P	05 20 22.2	-0.9		
XAN				pP	pP	05 20 29.1	-2.2		
XAN				pmax	pmax				
	comp=Z,19nm,0.7s								
XAN				LR	LR				
	comp=Z,300nm,16.2s								
SONA1	Songino Array	28.54	302	*e*P	P	05 20 27.9	+0.4		
SONM	Songino Array	28.54	302	P	P	05 20 27.9	+0.3		
	comp=Z,8.4nm,0.6s,baz=91,slow=8.9,SNR=32								
ENH	Enshi	28.97	265	*e*P	P	05 20 31.1	-0.2		
	comp=Z,36nm,0.8s								
TLY	Talaya	30.88	309	P	P	05 20 48.6	+0.6		
	comp=Z,3.1nm,0.5s,baz=125,slow=9.3,SNR=6.7								
TLY	Talaya	30.88	309	*e*P	P	05 20 49.2	+1.2		
TLY				pmax	pmax				
	comp=Z,19nm,1.3s								
TLY				MLR	MLR				
	comp=Z,237nm,14.0s								
TLY	Talaya	30.88	309	*e*P	P	05 20 48.6	+0.6		
	comp=Z,27nm,1.4s								
ZAK	Zakamensk	30.89	307	*e*P	P	05 20 42.7	-5.6		
ZAK				pmax	pmax				
	comp=Z,13nm,1.1s								
LZH	Lanzhou	31.44	279	*e*P	P	05 20 53.3	0.0		
LZH				pP	pP	05 21 00.5	-1.1		
LZH				sP	sP	05 21 04.0	-1.0		
LZH				PP	PnPn	05 21 57.5	+1.0		
LZH				pmax	pmax				
	comp=Z,30nm,1.2s								
LZH				pmax	pmax				
	comp=Z,83nm,5.4s								
LZH				LR	LR				
	comp=N,370nm,12.7s								
LZH				LR	LR				
	comp=E,370nm,13.0s								
LZH				LR	LR				
	comp=Z,450nm,16.2s								
MOY	Mondy	32.50	309	*e*P	P	05 21 04.4	+2.0		
BILL	Bilibino	32.63	16⇓	*e*P	P	05 21 05.3	+2.1		
BILL				*e*		05 22 12.7			
BILL				pmax	pmax				
	comp=Z,5.0nm,1.4s								
BILL				MLR	MLR				
	comp=Z,220nm,16.0s								
GYA	Guiyang	32.92	260⇑	*i*P	P	05 21 04.8	-1.5		
GYA				pP	pP	05 21 13.6	-1.0		
GYA				PP	PnPn	05 22 18.0	+2.4		
GYA				S	S	05 26 22.8	+0.1		
GYA				ScP	ScP	05 27 32.2	-0.2		
GYA				SS	SnSn	05 28 23.0	+2.1		
GYA				pmax	pmax				
	comp=Z,20nm,0.8s								
GYA				pmax	pmax				
	comp=Z,120nm,5.0s								
GYA				LR	LR				
	comp=N,510nm,16.9s								
GYA				LR	LR				
	comp=E,500nm,17.2s								
GYA				LR	LR				
	comp=Z,480nm,17.4s								
CD2	Chengdu	33.23	270	*e*P	P	05 21 08.2	-0.7		
GTA	Gaotai	33.77	286	⇑P	P	05 21 13.9	+0.3		
GTA				pP	sP	05 21 25.2	-0.1		
GTA				sP	pP	05 21 31.3	+9.4		
GTA				PcP	PcP	05 23 53.2	+0.7		
GTA				S	S	05 26 35.1	-0.5		
GTA				pmax	pmax				
	comp=Z,23nm,1.1s								
GTA				LR	LR				
	comp=N,130nm,16.6s								
GTA				LR	LR				
	comp=E,280nm,16.6s								
GTA				LR	LR				
	comp=Z,390nm,20.4s								
KMI	Kunming	36.65	261	P	P	05 21 39.2	+0.5		
KMI				pmax	pmax				
	comp=Z,18nm,0.6s								
KMI				pmax	pmax				
	comp=Z,92nm,5.0s								
WMQ	Urumqi	41.78	296	P	P	05 22 22.9	+1.7		
WMQ				pP	pP	05 22 27.9	-1.7		
WMQ				sP	sP	05 22 31.2	-1.8		
WMQ				pmax	pmax				
	comp=Z,13nm,0.7s								
WMQ				pmax	pmax				
	comp=Z,210nm,4.3s								
ZAA0	Zalesovo Array	42.40	312	*e*P	P	05 22 25.9	0.0		
ZALV	Zalesovo Beam	42.40	312	P	P	05 22 26.0	0.0		
	comp=Z,9.7nm,0.5s,baz=89,slow=7.4,SNR=28								
ZALV				PcP	PcP	05 24 18.3	-0.4		
	comp=Z,4.7nm,0.7s,baz=96,slow=3.3,SNR=5.8								
CHTO	Chiang Mai	43.04	256	*e*P	P	05 22 31.4	-0.2		
CHTO				pmax	pmax				
	comp=Z,8.0nm,0.8s								
CHTO	Chiang Mai	43.04	256	*e*P	P	05 22 31.4	-0.2		
	comp=Z,8.4nm,0.8s								
CMAR	Chiang Mai Arr	43.25	256	P	P	05 22 33.4	+0.1		
	comp=Z,2.5nm,0.4s,baz=48,slow=6.9,SNR=13								
NVS	Novosibirsk	43.28	313	*e*P	P	05 22 32.9	-0.2		
LSA	Lhasa	43.67	275	*e*P	P	05 22 36.5	-0.6		
LSA				pmax	pmax				
	comp=Z,10.0nm,0.6s								
LSA	Lhasa	43.67	275	*e*P	P	05 22 36.5	-0.6		
	comp=Z,10.0nm,0.6s								
MK01	Makanchi Array	44.91	302	*e*P	P	05 22 45.9	-0.4		
MK31	Makanchi Array	44.91	302	*ce*P	P	05 22 46.0	-0.3		
MK31				pmax	pmax				
	comp=Z,11nm,0.7s								
MK31	Makanchi Array	44.91	302	*e*P	P	05 22 46.5	+0.1		
MKAR	Makanchi Array	44.91	302	P	P	05 22 46.0	-0.3		
	comp=Z,12nm,0.7s,baz=83,slow=9.9,SNR=40								
MKAR	Makanchi Array	44.91	302	P	P	05 22 46.0	-0.3		
MKAR				pmax	pmax				
	comp=Z,12nm,0.7s								
MKAR	Makanchi Array	44.91	302	*e*P	P	05 22 46.5	+0.1		
MAKZ	Makanchi	45.12	302	*e*P	P	05 22 47.9	-0.1		
MAKZ				pmax	pmax				
	comp=Z,12nm,0.9s								
MAKZ	Makanchi	45.12	302	*e*P	P	05 22 47.9	-0.1		
	comp=Z,12nm,0.9s								
KURK	Kurchatov	46.55	308	*e*P	P	05 22 58.7	-0.4		
KURK	Kurchatov	46.55	308	*e*P	P	05 22 58.7	-0.4		
	comp=Z,255nm,0.6s								
KURBB	Kurchatov Arra	46.62	308	P	P	05 22 59.2	-0.4		
	comp=Z,26nm,0.6s,baz=82,slow=8.0,SNR=222								
RND	Reindeer	46.97	35	*e*P	P	05 23 01.9	-0.5		
RND				pmax	pmax				
	comp=Z,6.0nm,0.8s								
RND	Reindeer	46.97	35	*e*P	P	05 23 01.9	-0.5		
	comp=Z,6.3nm,0.8s								
COLA	College	47.40	33	*e*P	P	05 23 07.3	+1.8		
COLA				pmax	pmax				
	comp=Z,2.0nm,0.9s								
PDGK	Podgornoye	47.69	298	*i*P	P	05 23 07.5	-0.6		
PDGK				pmax	pmax				
	comp=Z,12nm,0.7s								
IL1	Eielson Array	47.81	33	*e*P	P	05 23 08.9	+0.2		
ILAR	Eielson Array	47.81	33	P	P	05 23 09.2	+0.4		
	comp=Z,1.4nm,0.9s,baz=266,slow=6.6,SNR=14								
ILB	Eielson Array	47.81	33	*e*P	P	05 23 08.8	0.0		
RAMN	Ramite	48.48	274	*e*P	P	05 23 14.6	-0.2		
	comp=Z,33nm,0.6s								
GUN	Gumba	48.60	276	*e*P	P	05 23 15.9	+0.1		
	comp=Z,68nm,0.7s								
KKN	Kakani	49.13	276	*e*P	P	05 23 19.9	+0.2		
	comp=Z,46nm,0.5s								
PKIN	Phulchoki	49.14	276	*e*P	P	05 23 20.2	+0.4		
	comp=Z,14nm,0.6s								
DMN	Daman	49.35	276	*e*P	P	05 23 21.3	-0.1		
GKN	Gorkha	49.54	277	*e*P	P	05 23 22.6	-0.1		
	comp=Z,79nm,1.0s								
KOLN	Koldanda	50.46	277	*e*P	P	05 23 29.6	-0.2		
	comp=Z,12nm,0.3s								
TKM2	Tokmak 2	50.52	298	*i*P	P	05 23 29.6	-0.5		
TKM2				pmax	pmax				
	comp=Z,23nm,0.9s								
TKM2	Tokmak 2	50.52	298	*e*P	P	05 23 30.5	+0.4		
	comp=Z,22nm,0.9s								
CHKZ	Chkalovo	50.77	313	*i*P	P	05 23 30.5	-1.0		
CHKZ				pmax	pmax				
	comp=Z,7.0nm,0.7s								
PYUN	Piuthan	50.78	278	*e*P	P	05 23 31.6	-0.6		
	comp=Z,85nm,0.8s								
BVA0	Borovoye Array	51.05	312	*i*P	P	05 23 32.9	-0.8		
BVA0				pmax	pmax				
	comp=Z,5.0nm,0.7s								
BVAR	Borovoye Array	51.05	312	P	P	05 23 33.4	-0.3		
	comp=Z,5.9nm,0.7s,baz=69,slow=8.1,SNR=25								
OTUK	Ortayu	51.10	306	P	P	05 23 32.8	-1.4		
OTUK				pmax	pmax				
	comp=Z,11nm,0.9s								
BRVK	Borovoye	51.11	312	*e*P	P	05 23 33.9	-0.1		
BRVK				pmax	pmax				
	comp=Z,8.0nm,0.9s								
BRVK	Borovoye	51.11	312	*e*P	P	05 23 33.9	-0.1		
	comp=Z,8.2nm,0.9s								
FRU	Bishkek	51.23	298	*e*P	P	05 23 34.0	-1.2		
AAK	Ala-Archa	51.38	298	P	P	05 23 36.4	-0.1		
	comp=Z,3.0nm,0.5s,baz=92,slow=3.7,SNR=6.4								
AAK	Ala-Archa	51.38	298	*e*P	P	05 23 35.2	-1.3		
AAK				pmax	pmax				
	comp=Z,12nm,0.9s								
AAK	Ala-Archa	51.38	298	*e*P	P	05 23 36.6	+0.1		
	comp=Z,7.3nm,1.0s								
KSH	Kashi	51.42	294	*e*P	P	05 23 40.7	+3.9		
KSH				*es*P	sP	05 23 51.8	+3.0		
KSH				*e*PP	PP	05 25 39.4	+5.5		
KSH				*e*ScP	ScP	05 28 48.1	+2.5		
KSH				S	S	05 30 59.5	+4.7		
KSH				pmax	pmax				
	comp=Z,6.0nm,0.6s								
KSH				pmax	pmax				
	comp=Z,63nm,4.3s								
KSH				LR	LR				
	comp=N,210nm,10.4s								
KSH				LR	LR				
	comp=E,67nm,9.2s								
KSH				LR	LR				
	comp=Z,220nm,17.1s								
EKS2	Erkin-Say	51.87	298	*e*P	P	05 23 40.1	-0.1		
EKS2				pmax	pmax				
	comp=Z,7.0nm,0.8s								
EKS2	Erkin-Say	51.87	298	*e*P	P	05 23 40.0	-0.1		
	comp=Z,6.9nm,0.8s								
ZRNK	Zerenda	51.88	312	*e*P	P	05 23 39.9	0.0		
ZRNK				pmax	pmax				
	comp=Z,11nm,0.9s								
ZRNK	Zerenda	51.88	312	*e*P	P	05 23 39.9	0.0		
	comp=Z,10nm,0.9s								
HYT	Haines Junctio	52.56	37	*e*P	P	05 23 45.6	+0.7		
	comp=Z,17nm,0.8s								
MNAS	Manas	52.82	299	*i*P	P	05 23 47.1	-0.1		
MNAS				pmax	pmax				
	comp=Z,26nm,0.8s								
KK31	Karatay Array	53.97	300	*ce*P	P	05 23 54.4	-1.1		
KK31				pmax	pmax				
	comp=Z,11nm,1.0s								
KKAR	Karatay Array	53.97	300	*e*P	P	05 23 55.5	0.0		
KKAR	Karatay Array	53.97	300	*e*P	P	05 23 55.5	0.0		
SVE	Sverdlovsk	55.42	319	*e*P	P	05 24 06.0	+0.3		
SVE				pmax	pmax				
	comp=Z,16nm,1.1s								
ARU	Arti	56.64	319	P	P	05 24 14.2	-0.2		
	comp=Z,4.3nm,0.5s,baz=62,slow=3.6,SNR=10								
ARU	Arti	56.64	319	*c*P	P	05 24 14.3	-0.2		
ARU						05 26 22.6			
ARU				S	S	05 32 05.9	+1.3		
ARU				SS	SS	05 35 48.3	-3.5		
ARU				pmax	pmax				
	comp=Z,15nm,1.2s								
ARU				MLR	MLR				
	comp=Z,305nm,17.0s								
ARU	Arti	56.64	319	*e*P	P	05 24 14.1	-0.2		
	comp=Z,16nm,1.2s								
DLBC	Dease Lake	56.87	39	P	P	05 24 15.4	-0.7		
	comp=Z,0.8nm,0.6s,baz=233,slow=15,SNR=3.2								
WRAB	Tennant Creek	58.28	190	*e*P	P	05 24 30.8	+4.4		
WRAB				pmax	pmax				
	comp=Z,23nm,1.1s								
WRA	Warramunga Arr	58.30	190	P	P	05 24 25.4	-1.0		
	comp=Z,6.4nm,0.8s,baz=8,7,slow=7.1,SNR=31								
AB31	Akbulak array	58.48	310	*ce*P	P	05 24 26.7	-0.8		
AB31				pmax	pmax				
	comp=Z,6.0nm,0.7s								
ABKAR	Akbulak array	58.48	310	*e*P	P	05 24 27.0	-0.5		
KBL	Kabul	58.51	291	*e*P	P	05 24 27.7	-0.5		
KBL				pmax	pmax				
	comp=Z,15nm,0.9s								
KBL	Kabul	58.51	291	*e*P	P	05 24 27.6	-0.5		
	comp=Z,15nm,0.9s								
AKTO	Aktyubinsk	59.16	312	P	P	05 24 31.9	-0.3		
	comp=Z,7.3nm,0.8s,baz=74,slow=11,SNR=18								
AKTO	Aktyubinsk	59.16	312	*i*P	P	05 24 30.5	-1.7		
AKTO				pmax	pmax				
	comp=Z,9.0nm,0.8s								
HYB	Hyderabad	59.78	269	*i*P	P	05 24 37.0	0.0		
AS01	Alice Springs	62.01	190	*e*P	P	05 24 51.0	-0.9		
ASAR	Alice Springs	62.02	190	P	P	05 24 51.2	-0.7		
	comp=Z,1.3nm,0.8s,baz=12,slow=5.8,SNR=9.3								
YKA	Yellowknife Ar	62.15	31	P	P	05 24 52.8	+0.4		
	comp=Z,0.2nm,0.6s,baz=301,slow=6.1,SNR=3.4								
ARCES	ARCESS Array B	63.60	340	P	P	05 25 02.0	+0.1		
	comp=Z,3.0nm,0.8s,baz=54,slow=7.6,SNR=7.7								
KLMR	Klimovskoe	63.73	328	*e*P	P	05 24 59.8	-3.1		
KLMR				*e*		05 27 20.2			
KLMR				pmax	pmax				
	comp=Z,6.0nm,0.8s								
GEYT	Alibeck	64.70	299	P	P	05 25 09.8	0.0		
	comp=Z,6.1nm,0.6s,baz=26,slow=3.8,SNR=8.7								
VRH	Novokhopyorsk	67.87	318	*e*P	P	05 25 29.7	0.0		
VRH				pmax	pmax				
	comp=Z,10.0nm,0.7s								
OBN	Obninsk	68.22	324⇓	*e*P	P	05 25 32.0	+0.2		
OBN				*e*		05 25 57.0			
OBN				*e*		05 28 01.9			
OBN				*e*S	SKiKP	05 35 00.8	-24		
OBN				pmax	pmax				
	comp=Z,7.0nm,0.5s								
OBN				MLR	MLR				
	comp=Z,123nm,17.0s								
FIA1	FINESS Array S	68.64	333	*e*P	P	05 25 34.3	-0.1		
FINES	FINESS Array B	68.64	333	P	P	05 25 34.4	0.0		
	comp=Z,7.5nm,0.7s,baz=46,slow=8.2,SNR=34								
VSR	Storozhevoye	69.19	319	*e*P	P	05 25 37.8	-0.2		
VSR				pmax	pmax				
	comp=Z,10.0nm,0.9s								
VSU	Vasula	70.37	330	*i*P	P	05 25 44.8	-0.3		
VSU				pmax	pmax				
	comp=Z,45nm,1.7s								
GOF	Gofitskoye	70.58	312⇑	*e*P	P	05 25 47.3	+0.7		
NCK	Nalchik	71.14	311	*e*P	P	05 25 50.4	+0.3		
NCK				pmax	pmax				
	comp=Z,10.0nm,1.4s								
KIV	Kislovodsk	71.42	312	*e*P	P	05 25 52.8	+0.9		
KIV				pmax	pmax				
	comp=Z,40nm,1.1s								
KIV	Kislovodsk	71.42	312	*e*P	P	05 25 52.6	+0.7		
	comp=Z,27nm,0.8s								
KBZ	Khabaz	71.42	311	P	P	05 25 52.3	+0.6		
	comp=Z,8.8nm,0.9s,baz=46,slow=2.7,SNR=15								
NEY	Neytrino	71.80	311	*e*P	P	05 25 54.1	-0.2		
NEY				pmax	pmax				
	comp=Z,1.0nm,1.2s								
NC204	NORSAR Array S	73.80	338	*e*P	P	05 26 06.7	+1.0		
HFS	Hagfors	73.80	336	P	P	05 26 05.5	-0.1		
	comp=Z,3.3nm,0.7s,baz=42,slow=4.5,SNR=12								
NB2	NORSAR Subarra	73.85	338	P	P	05 26 05.5	-0.5		
	comp=Z,4.3nm,0.8s,baz=38,slow=5.9								
NOA	NORSAR Array B	73.85	338	P	P	05 26 06.0	+0.1		
	comp=Z,3.4nm,0.8s,baz=38,slow=5.8,SNR=11								
AKASG	Malin Array Be	74.44	323	P	P	05 26 09.2	-0.3		
	comp=Z,4.9nm,0.8s,baz=42,slow=5.6,SNR=14								
KIEV	Kiev	74.46	323	*e*P	P	05 26 09.1	-0.5		
KIEV				pmax	pmax				
	comp=Z,6.0nm,0.9s								
KIEV	Kiev	74.46	323	*e*P	P	05 26 09.1	-0.5		
	comp=Z,6.3nm,0.9s								
PDAR	Pinedale Array	75.85	47	P	P	05 26 19.2	+1.0		
	comp=Z,0.2nm,0.5s,baz=282,slow=4.2,SNR=3.7								
SORM	Soroca	76.59	321⇓	*i*P	P	05 26 20.1	-1.8		
SORM	Soroca	76.59	321	⇓P	P	05 26 20.1	-1.8		
BUR08	Bucovina Ar. S	78.46	323	*e*P	P	05 26 32.9	+0.4		
BURAR	Bucovina Array	78.47	322⇑	*i*P	P	05 26 32.6	0.0		
BURAR	Bucovina Array	78.47	322	⇑P	P	05 26 32.6	0.0		
TESR	Tescani	78.55	321⇑	*i*P	P	05 26 32.3	-0.6		
CFR	Carcaliu	78.71	319⇑	*i*P	P	05 26 31.9	-1.9		
CFR	Carcaliu	78.71	319	⇑P	P	05 26 31.9	-1.9		
KOLS	Kolonicke sedl	78.91	325	*e*P	P	05 26 35.3	+0.5		
KOLS				pmax	pmax				
	comp=Z,4.0nm,1.2s								
KOLS	Kolonicke sedl	78.91	325	*e*P	P	05 26 35.3	+0.5		
PLOR	Plostina	79.00	321⇑	*i*P	P	05 26 27.4	-8.1		
PLOR	Plostina	79.00	321	⇑P	P	05 26 27.4	-8.1		
STHS	Stebnicka Huta	79.02	326	*e*P	P	05 26 33.4	-2.0		
STHS				pmax	pmax				
	comp=Z,7.0nm,0.8s								
STHS	Stebnicka Huta	79.02	326	*e*P	P	05 26 33.4	-2.0		
OJC	Ojcow	79.06	327	*e*P	P	05 26 36.1	+0.5		
OJC	Ojcow	79.06	327	*e*P	P	05 26 36.1	+0.5		
HARR	Harsova	79.16	319⇑	*i*P	P	05 26 40.2	+4.0		
HARR	Harsova	79.16	319	⇑P	P	05 26 40.2	+4.0		
TLB	Topalu	79.17	319⇓	*i*P	P	05 26 36.4	+0.1		
TLB	Topalu	79.17	319	⇓P	P	05 26 36.4	+0.1		
BRTR	Keskin Array B	79.34	312	P	P	05 26 36.9	-0.6		
	comp=Z,0.9nm,0.8s,baz=90,slow=4.3,SNR=6.7								
NIE	Niedzica	79.44	326	*e*P	P	05 26 38.8	+1.1		
NIE	Niedzica	79.44	326	*e*P	P	05 26 38.8	+1.1		
BR231	Keskin MP Arra	79.76	313	*e*P	P	05 26 38.7	-1.1		
KSP	Ksiaz	80.05	329	*e*P	P	05 26 41.9	+0.9		
KSP	Ksiaz	80.05	329	*e*P	P	05 26 41.9	+0.9		
VOIR		80.09	321⇓	*i*P	P	05 26 42.4	+1.0		
VOIR		80.09	321	⇓P	P	05 26 42.4	+1.0		
DRGR		80.26	323⇑	*i*P	P	05 26 42.6	+0.3		
DRGR		80.26	323	⇑P	P	05 26 42.6	+0.3		
ARR	Arges	80.35	321⇓	*i*P	P	05 26 44.5	+1.7		
MORC	Moravsky Berou	80.35	328⇑	*i*P	P	05 26 41.2	-1.5		
MORC	Moravsky Berou	80.35	328	⇑P	P	05 26 41.2	-1.5		
MORC	Moravsky Berou	80.35	328	*e*P	P	05 26 43.0	+0.3		
UPC	Upice	80.43	329	*e*P	P	05 26 43.9	+0.9		
UPC	Upice	80.43	329	*e*P	P	05 26 43.9	+0.9		
VYHS	Vyhne	80.77	326	*e*P	P	05 26 45.4	+0.5		
VYHS				pmax	pmax				
	comp=Z,2.0nm,1.3s								
VYHS	Vyhne	80.77	326	*e*P	P	05 26 45.4	+0.5		
CLL	Collm	80.99	331	*i*P	P	05 26 45.8	-0.2		
	comp=Z,7.0nm,1.1s								
CLL	Collm	80.99	331	*i*P	P	05 26 45.8	-0.2		
CLL				pmax	pmax				
	comp=Z,7.0nm,1.1s								
VRAC	Vranov	81.11	328⇓	*i*P	P	05 26 46.8	+0.1		
VRAC	Vranov	81.11	328	⇓P	P	05 26 46.8	+0.1		
PRU	Pruhonice	81.42	329	*e*P	P	05 26 49.0	+0.7		
PRU	Pruhonice	81.42	329	*e*P	P	05 26 49.0	+0.7		
CONA	Conrad Observa	82.48	327	*i*P	P	05 26 55.0	+0.9		
	comp=Z,4.8nm,1.1s								
KHC	Kasperske Hory	82.49	329	*e*P	P	05 26 54.2	+0.2		
KHC				*es*P	sP	05 27 06.9	+0.6		
KHC	Kasperske Hory	82.49	329	*e*P	P	05 26 54.2	+0.2		
KHC				*e*		05 27 06.9			
KHC	Kasperske Hory	82.49	329	*e*P	P	05 26 54.6	+0.6		
GERES	GERESS Array B	82.66	329	P	P	05 26 54.7	-0.3		
	comp=Z,0.9nm,0.8s,baz=45,slow=5.8,SNR=6.9								
GEA0	GERESS Array S	82.67	329	*e*P	P	05 26 54.8	-0.3		
ANMO	Albuquerque	82.75	51	*i*P	P	05 26 59.4	+3.6		
ANMO				pmax	pmax				
	comp=Z,5.0nm,2.5s								
ARSA	Arzberg	83.16	327	*i*PcP	P	05 27 01.3	+3.8		
	comp=Z,3.1nm,1.4s								
MOA	Molln	83.22	328	*i*P	P	05 26 58.4	+0.6		
	comp=Z,3.7nm,1.3s								
SOKA	Soboth	83.81	327	*i*P	P	05 27 00.9	-0.1		
	comp=Z,3.3nm,0.7s								
OBKA	Obir	84.15	327	*i*P	P	05 27 02.1	-0.6		
	comp=Z,2.5nm,1.1s								
KBA	Koelnbreinsper	84.21	328	*i*PcP	P	05 27 04.2	+1.1		
	comp=Z,1.3nm,0.4s								
MYKA	Terra Mystica	84.44	328	*i*P	P	05 27 02.4	-1.8		
	comp=Z,0.6nm,0.4s								
WTTA	Wattenberg	84.76	329	*i*P	P	05 27 05.6	-0.3		

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.23**	**24**	*e*Pg	**Pg**	**05 21 28.9**	**+0.6**
YER				*e*Sg	**Sg**	**05 21 32.5**	**+1.2**
YER	**Yerkesik**	**0.23**	**24**	*e*Pg	**Pg**	**05 21 28.9**	**+0.6**
YER				*e*Sg	**Sg**	**05 21 32.5**	**+1.2**
TURN	**Turunc**	**0.35**	**99**	*i* P	**Pg**	**05 21 27.8**	**-3.0**
TURN				*i* S	**Sg**	**05 21 30.6**	**-4.8**
DALY	**Dalyan (Mu¨la**	**0.41**	**106**	*e*PG	**Pb**	**05 21 34.1**	**+0.3**
DALY	**Dalyan (Mu¨la**	**0.41**	**106**	*e*Pg	**Pb**	**05 21 34.1**	**+0.3**
BDRM	**Kayabasi**	**0.59**	**284**	*i* P	**Pg**	**05 21 35.3**	**0.0**
BDRM				*i* S	**Sb**	**05 21 44.6**	**-1.2**
BDRM	**Kayabasi**	**0.59**	**284**	P	**Pg**	**05 21 35.3**	**0.0**
BDRM				S	**Sb**	**05 21 44.6**	**-1.2**
BODT	**Bodrum**	**0.70**	**281**	*e*PG	**Pb**	**05 21 38.8**	**0.0**
BODT	**Bodrum**	**0.70**	**281**	*e*Pg	**Pb**	**05 21 38.8**	**0.0**
NIS1	**Nisyros Isl.**	**0.86**	**248**	*e*PG	**Pn**	**05 21 42.7**	**-0.3**
NIS1	**Nisyros Isl.**	**0.86**	**248**	*e*Pg	**Pn**	**05 21 42.7**	**-0.3**
DNZL	**Cakiroluk**	**1.03**	**42**	*i* P	**Pg**	**05 21 44.2**	**+0.4**
DNZL				*i* S	**Sn**	**05 21 59.7**	**-1.0**
DNZL	**Cakiroluk**	**1.03**	**42**	P	**Pg**	**05 21 44.2**	**+0.4**
DNZL				S	**Sn**	**05 21 59.7**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**1.04**	**348**	*e*PG	**Pn**	**05 21 44.3**	**-1.3**
AYDB	**Zeytinkoy-Aydi**	**1.04**	**348**	*e*Pg	**Pn**	**05 21 44.3**	**-1.3**
GOLH	**Golhisar**	**1.16**	**74**	*i* P	**Pb**	**05 21 46.1**	**-0.6**
GOLH				*i* S	**Sn**	**05 22 08.2**	**+4.6**
GOLH	**Golhisar**	**1.16**	**74**	P	**Pb**	**05 21 46.1**	**-0.6**
AKAS	**Kas**	**1.35**	**121**	*i* P	**Pn**	**05 21 49.8**	**0.0**
AKAS				*i* S	**Sg**	**05 22 13.9**	**+6.5**
AKAS	**Kas**	**1.35**	**121**	P	**Pn**	**05 21 49.8**	**0.0**

NIED ***10*** *05:24:00, 37˚.90N× 143˚.40E, h20km, Mw4.9 Best double couple: M₀2.33000×10¹⁶ NP1:φ=67.00000°, δ64.00000°, λ-8.00000°. NP2:φ=161.00000°, δ82.00000°, λ-154.00000°.*

IDC ***10*** *05:24:37.0± 0.6, 37˚.79N× 143˚.55E, h0km, mb4.5/30, mb1 4.7/36, mb1mx4.6/47, mbtmp4.6/36, ML3.6/5, MS4.1/16, Ms1 4.1/16, ms1mx3.8/42, Error ellipse: s-maj=15.3km s-min=11.4km az=139.0*

JMA ***10*** *05:24:40.3± 0.2, 37˚.90N× 143˚.37E, h46km, M4.9*

JMA Felt I J1.

ISCJB ***10*** *05:24:40.1± 0.1, 37˚.92N± 0˚.02× 143˚.33E± 0˚.02, h27km, mb4.7/200, MS4.4/25, Error ellipse: s-maj=3.3km s-min=1.9km az=169.1*

NEIC ***10*** *05:24:40.6± 1.5, 37˚.85N× 143˚.38E, h18km± 9km, mb4.8/117, Error ellipse: s-maj=4.5km s-min=2.7km az=145.0*

NEIC Recorded [1 JMA] in Iwate and Miyagi.

MOS ***10*** *05:24:40.6± 0.9, 38˚.10N× 143˚.35E, h23km, mb5.0/78, MS4.3/10, Error ellipse: s-maj=6.4km s-min=4.5km az=97.9*

BJI ***10*** *05:24:42.5, 37˚.96N× 142˚.79E, h21km, mb4.8/62, mB5.0/38, Ms4.6/53, Ms7 4.4/49*

ISC 10 05:24:41.7± 0.7, 37.89N± 0˚.04× 143˚.41E± 0˚.04, h29km± 4km, n600, σ1♀33/632, mb4.8/206, MS4.4/25, 22C-14D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.72**	**290**	P	**Pn**	**05 25 08.1**	**-1.5**
OFUJ	**Ofunato**	**1.81**	**312**	P	**Pn**	**05 25 09.3**	**-1.6**
OFUJ				*e*S	**Sn**	**05 25 30.5**	**-2.4**
JMK	**Ichinoseki**	**2.02**	**302**	P	**Pn**	**05 25 12.5**	**-1.3**
JMK				*e*S	**Sn**	**05 25 35.9**	**-2.1**
JOM	**Ohasama**	**2.29**	**314**	P	**Pn**	**05 25 16.5**	**-1.0**
JOM				S	**Sn**	**05 25 42.9**	**-1.8**
JFT	**Otama**	**2.46**	**262**	P	**Pn**	**05 25 19.2**	**-0.7**
JFT				S	**Sn**	**05 25 47.6**	**-1.4**
JYK	**Kaneyama**	**2.61**	**294**	P	**Pn**	**05 25 21.1**	**-0.7**
JANG	**Nango**	**2.88**	**330**	P	**Pn**	**05 25 24.4**	**-1.3**
JANG				S	**Sn**	**05 25 56.7**	**-2.7**
JNS	**Sasagawa**	**3.24**	**270**	P	**Pn**	**05 25 30.0**	**-0.5**
JNS				*e*S	**Sn**	**05 26 06.7**	**-1.4**
JAW	**Awa shima**	**3.33**	**281**	P	**Pn**	**05 25 31.4**	**-0.3**
JAG	**Ashikaga**	**3.48**	**246**	P	**Pn**	**05 25 32.4**	**-1.5**
JAG				S	**Sn**	**05 26 12.4**	**-1.7**
BSO1	**Boso 1**	**3.78**	**212**	P	**Pn**	**05 25 35.4**	**-2.1**
BSO1				S	**Sn**	**05 26 18.8**	**-1.8**
JOT	**Ohata**	**3.94**	**333**	*e*S	**Sn**	**05 26 23.0**	**-2.3**
JRY	**Ryogami san**	**4.06**	**244**	P	**Pn**	**05 25 40.6**	**-1.3**
JRY				S	**Sn**	**05 26 25.4**	**-3.1**
JSD	**Sado**	**4.07**	**274**	P	**Pn**	**05 25 40.8**	**-1.2**
ERM	**Erimo**	**4.13**	**357**	*e*P	**Pn**	**05 25 41.5**	**-1.2**
ERM				*e*		05 26 26.9	
ERM	**Erimo**	**4.13**	**357**	*e*Pn	**Pn**	**05 25 41.5**	**-1.2**
ERM				*e*Sn	**Sn**	**05 26 26.9**	**-3.1**
JOD2	**Odawara 2**	**4.35**	**234**	P	**Pn**	**05 25 44.2**	**-1.7**
JOD2				*e*S	**Sn**	**05 26 31.2**	**-4.4**
MJAR	**Matsushiro Arr** 12nm,0.3s,baz=78,slow=14,SNR=232	**4.36**	**254**	Pn	**Pn**	**05 25 45.5**	**-0.5**
MJAR				Sn	**Sn**	**05 26 35.3**	**-0.6**
	18nm,0.3s,baz=64,slow=13,SNR=4.9						
MJAR				LR	LR	05 27 22.7	
	comp=Z,784nm,20.1s,baz=80,slow=38						
MAJO	**Matsushiro**	**4.36**	**254***c*	*i*P	**Pn**	**05 25 46.5**	**+0.5**
MAJO	**Matsushiro**	**4.36**	**254**	*e*Pn	**Pn**	**05 25 46.3**	**+0.3**
MAT	**Matsushiro**	**4.36**	**254**	P	**Pn**	**05 25 46.5**	**+0.5**
MAT				S	**Sn**	**05 26 35.4**	**-0.5**
MJB9	**Matsu-Tunnel**	**4.36**	**254**	*e*Pn	**Pn**	**05 25 46.3**	**+0.3**
JKB	**Kayabe**	**4.39**	**336**	P	**Pn**	**05 25 46.5**	**+0.1**
JKB				S	**Sn**	**05 26 33.3**	**-3.2**
JHJ2	**Mitsune**	**5.59**	**213**	*e*Pn	**Pn**	**05 26 00.4**	**-2.5**
JHJ2				*e*Sn	**Sn**	**05 26 59.7**	**-6.5**
JHJ	**Hachijo jima 2** 155nm,0.3s,baz=48,slow=14,SNR=62	**5.60**	**213**	Pn	**Pn**	**05 25 59.6**	**-3.5**
JHJ				Sn	**Sn**	**05 26 59.2**	**-7.2**
	370nm,0.3s,baz=220,slow=22,SNR=11						
JHJ				LR	LR	05 28 25.1	
	comp=Z,870nm,19.3s,baz=3.0,slow=41						
INU	**Inuyama**	**5.73**	**246**	*e*Pn	**Pn**	**05 26 04.6**	**-0.2**
INU				*e*Sn	**Sn**	**05 27 08.6**	**-0.9**
ASAJ	**Asahikawa**	**6.25**	**355**	*e*Pn	**Pn**	**05 26 11.4**	**-0.5**
ASAJ				*e*Sn	**Sn**	**05 27 21.4**	**-0.9**
YUK	**Yuzh-Kuril'sk**	**6.42**	**16***c*	*i*P	**Pn**	**05 26 11.6**	**-2.5**
YUK				*i* S	Sn	05 27 17.9	-8.4
YUK				pmax	pmax		
	comp=Z,124nm,0.2s						
KUR	**Kuril'sk**	**8.06**	**23***c*	*e*P	**Pn**	**05 26 34.4**	**-2.4**
KUR				*e*S	**Sn**	**05 28 01.3**	**-5.6**
KUR				pmax	pmax		
	comp=Z,144nm,0.6s						
KUR				pmax	pmax		
	comp=N,52nm,0.5s						
KUR				pmax	pmax		
	comp=E,92nm,0.6s						
KUR				smax	smax		
	comp=N,152nm,0.7s						
KUR				smax	smax		
	comp=E,97nm,0.7s						
YSS	**Yuzh-Sakhalins**	**9.07**	**357**↑	*e*P	**Pn**	**05 26 50.6**	**0.0**
YSS				*e*S	**Sn**	**05 28 29.5**	**-2.2**
YSS				pmax	pmax		
	comp=Z,30nm,0.5s						
YSS				MLR	MLR		
	comp=N,900nm,17.0s						
YSS				MLR	MLR		
	comp=E,800nm,17.0s						
YSS				MLR	MLR		
	comp=Z,1μm,17.0s						
YSS	**Yuzh-Sakhalins**	**9.07**	**357**	*e*Pn	**Pn**	**05 26 50.4**	**-0.2**
YSS				*e*Sn	**Sn**	**05 28 32.1**	**+0.5**
VLA	**Vladivostok**	**10.21**	**304**	*e*P	**Pn**	**05 27 05.3**	**-0.9**
USRK	**Ussuriysk Ar.** comp=Z,0.9nm,0.3s,baz=115,slow=12,SNR=18	**10.68**	**310**	Pn	**Pn**	**05 27 13.0**	**+0.4**
USRK				LR	LR	05 31 15.7	
	comp=Z,811nm,18.6s,baz=101,slow=37						
JNU	**Nakatsue** comp=Z,0.4nm,0.3s,baz=51,slow=12,SNR=20	**11.26**	**249**	Pn	**Pn**	**05 27 20.2**	**-0.4**
JNU				LR	LR	05 32 06.7	
	comp=Z,2μm,18.7s,baz=68,slow=40						
JNU	**Nakatsue**	**11.26**	**249**	*e*Pn	**Pn**	**05 27 20.7**	**+0.1**
HABR	**Khabarovsk**	**12.20**	**333**	*e*P	**Pn**	**05 27 30.2**	**-3.2**
HABR				*e*S	**Sn**	**05 29 44.1**	**-4.2**
HABR				pmax	pmax		
	comp=Z,19nm,1.5s						
HABR				pmax	pmax		
	comp=N,4.0nm,0.8s						
HABR				pmax	pmax		
	comp=E,5.0nm,0.8s						
HABR				MLR	MLR		
	comp=Z,336nm,15.0s						
KSRS	**Korea Array** comp=Z,0.7nm,0.3s,baz=86,slow=13,SNR=48	**12.28**	**273**	Pn	**Pn**	**05 27 36.2**	**+1.7**
KSRS				LR	LR	05 32 21.5	
	comp=Z,756nm,19.7s,baz=74,slow=37						
KS01	**Wonju Array Si**	**12.30**	**273**	*e*Pn	**Pn**	**05 27 35.6**	**+0.8**
KS15	**Wonju Array Si**	**12.31**	**273**	*e*Pn	**Pn**	**05 27 36.3**	**+1.3**
KSAR	**Wonju Array Be**	**12.31**	**273**	P	**Pn**	**05 27 36.2**	**+1.2**
KSAR	**Wonju Array Be**	**12.31**	**273**	Pn	**Pn**	**05 27 36.2**	**+1.2**
MDJ	**Mudanjiang**	**12.37**	**307**	P	**Pn**	**05 27 34.1**	**-1.7**
MDJ				S	**Sn**	**05 29 49.7**	**-2.8**
MDJ				PcS	**PcS**	**05 36 49.9**	**+0.2**
MDJ				pmax	pmax		
	comp=Z,5.0nm,0.4s						
MDJ				pmax	pmax		
	comp=Z,32nm,4.1s						
MDJ				LR	LR		
	comp=Z,760nm,12.3s						
MDJ				LR	LR		
	comp=Z,670nm,14.8s						
MDJ				LR	LR		
	comp=Z,960nm,18.4s						
MDJ	**Mudanjiang** comp=Z,25nm,0.9s	**12.37**	**307**	*e*Pn	**Pn**	**05 27 36.9**	**+1.1**
TYV	**Tymovskoe**	**12.98**	**358**	*e*P	**Pn**	**05 27 42.5**	**-1.6**
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
INCN	**Inchon**	**13.30**	**273**	*e*Pn	**Pn**	**05 27 48.9**	**+0.5**
KLR	**Kul'dur** comp=Z,0.5nm,0.3s,baz=130,slow=12,SNR=36	**14.12**	**327**	Pn	**Pn**	**05 27 57.8**	**-1.8**
KLR				LR	LR	05 33 21.4	
	comp=Z,704nm,20.8s,baz=146,slow=37						
KLR	**Kul'dur**	**14.12**	**327**	*d i*P	**Pn**	**05 27 58.0**	**-1.6**
CN2	**Changchun**	**14.81**	**299**	*e*P	**Pn**	**05 28 07.0**	**-2.0**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
SKR	**Severo-Kuril's**	**15.67**	**31**	*e*P	**P**	**05 28 24.3**	**+0.3**
SKR				pmax	pmax		
	comp=Z,173nm,0.8s						
DL2	**Dalian**	**17.10**	**280**	P	**Pn**	**05 28 36.9**	**-1.6**
DL2				S	**Sn**	**05 31 46.7**	**-1.1**
DL2				pmax	pmax		
	comp=Z,69nm,0.8s						
DL2				pmax	pmax		
	comp=Z,310nm,4.5s						
DL2				LR	LR		
	comp=Z,400nm,15.4s						
DL2				LR	LR		
	comp=Z,720nm,16.3s						
DL2				LR	LR		
	comp=Z,830nm,19.1s						
PEA0	**Petropavlovsk-**	**18.17**	**29**	*e*Pn	**Pn**	**05 28 51.5**	**-0.1**
PEA0B	**Petropavlovsk-** comp=Z,162nm,1.8s	**18.17**	**29**	*e*Pn	**P**	**05 28 52.5**	**+0.8**
PETK	**Petropavlovsk-** comp=Z,0.6nm,0.3s,baz=184,slow=10,SNR=20	**18.17**	**29**	P	**Pn**	**05 28 49.0**	**-2.6**
PETK				LR	LR	05 35 39.4	
	comp=Z,304nm,21.8s,baz=212,slow=36						
PETK	**Petropavlovsk-**	**18.17**	**29**	P	**Pn**	**05 28 49.0**	**-2.6**
PET	**Petropavlovsk**	**18.47**	**30**	*e*P	**Pn**	**05 28 57.0**	**+1.7**
PET				pmax	pmax		
	comp=Z,32nm,0.9s						
PET				MLR	MLR		
	comp=Z,700nm,16.0s						
HIA	**Hailar**	**20.48**	**311**	*e*P	**P**	**05 29 17.5**	**+0.4**
HIA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TIA	**Tai'an**	**21.02**	**274**	*e*P	**P**	**05 29 20.4**	**-2.6**
TIA				S	**S**	**05 33 11.3**	**-4.3**
TIA				pmax	pmax		
	comp=Z,30nm,0.7s						
TIA				LR	LR		
	comp=Z,1μm,14.3s						
TIA				LR	LR		
	comp=Z,1μm,17.0s						
TIA				LR	LR		
	comp=Z,2μm,16.0s						
BJI	**Beijing**	**21.25**	**284**	P	**P**	**05 29 23.2**	**-2.2**
BJI				S	**S**	**05 33 20.3**	**+0.2**
BJI				pmax	pmax		
	comp=Z,30nm,0.8s						
BJI				LR	LR		
	comp=Z,810nm,15.3s						
BJI				LR	LR		
	comp=Z,400nm,16.1s						
BJI				LR	LR		
	comp=Z,410nm,16.1s						
BJT	**Baijiatuau**	**21.26**	**284**	*e*P	**P**	**05 29 23.8**	**-1.7**
BJT				pmax	pmax		
	comp=Z,63nm,0.8s						
BJT	**Baijiatuau** comp=Z,63nm,0.8s	**21.26**	**284**	*e*P	**P**	**05 29 23.8**	**-1.7**
MA2	**Magadan** comp=Z,17nm,0.7s,baz=194,slow=8.1,SNR=15	**22.21**	**10**	P	**P**	**05 29 34.5**	**-1.0**
MA2				LR	LR	05 39 41.0	
	comp=Z,398nm,18.7s,baz=202,slow=41						
NACB	**Ninganchiao**	**23.08**	**240**	*e*P	**P**	**05 29 41.2**	**-3.8**
SSLB	**Suanglung** comp=Z,16nm,0.9s	**23.78**	**240**	*e*P	**P**	**05 29 51.5**	**-0.4**
TPUB	**Ta-pu** comp=Z,34nm,0.8s	**24.32**	**240**	*e*P	**P**	**05 29 56.8**	**-0.1**
HHC	**Hu-ho-hao-te**	**24.72**	**287**	*e*P	**P**	**05 29 56.5**	**-4.0**
HHC				S	**S**	**05 34 12.4**	**-8.3**
HHC				sS	sS	05 34 28.9	-5.8
HHC				pmax	pmax		
	comp=Z,15nm,1.0s						
HHC				pmax	pmax		
	comp=Z,140nm,4.6s						
HHC				LR	LR		
	comp=Z,260nm,11.3s						
HHC				LR	LR		
	comp=Z,880nm,12.9s						
HHC				LR	LR		
	comp=Z,790nm,14.3s						
WHN	**Wuhan**	**25.05**	**262**↓	*i*P	**P**	**05 30 03.3**	**-0.1**
WHN				sP	**sP**	**05 30 17.2**	**+1.7**
WHN				pmax	pmax		
	comp=Z,80nm,0.9s						
WHN				LR	LR		
	comp=Z,2μm,15.9s						
WHN				LR	LR		
	comp=Z,3μm,16.0s						
WHN				LR	LR		
	comp=Z,2μm,15.9s						
CIT	**Chita**	**25.20**	**314**	*e*P	**P**	**05 30 05.3**	**+0.7**
CIT				*e*		05 30 15.7	
CIT				pmax	pmax		
	comp=Z,129nm,1.8s						
YAK	**Yakutsk** comp=Z,46nm,0.7s,baz=127,slow=3.3,SNR=14	**25.62**	**345**	P	**P**	**05 30 08.8**	**+0.6**
YAK				LR	LR	05 40 46.5	
	comp=Z,683nm,19.7s,baz=158,slow=38						
YAK	**Yakutsk**	**25.62**	**345**	*e*P	**P**	**05 30 08.3**	**+0.1**
YAK				*e**PP	**pP**	**05 30 16.9**	**+0.2**
YAK				*e*PPP	PPP	05 30 50.7	
YAK				*e*		05 33 38.9	
YAK				*e*S	**S**	**05 34 32.1**	**-2.2**
YAK				*e**SS	**sS**	**05 34 47.1**	**-1.3**
YAK				*e*		05 41 06.2	
YAK				pmax	pmax		
	comp=N,9.0nm,1.4s						
YAK				pmax	pmax		
	comp=Z,29nm,0.7s						
YAK				pmax	pmax		
	comp=E,4.0nm,0.8s						
YAK				smax	smax		
	comp=E,203nm,2.0s						
YAK				smax	smax		
	comp=N,496nm,4.8s						
YAK				MLR	MLR		
	comp=E,475nm,14.0s						
YAK				MLR	MLR		
	comp=N,478nm,18.0s						
YAK				MLR	MLR		
	comp=Z,694nm,19.0s						
YAK	**Yakutsk** comp=Z,44nm,0.7s	**25.62**	**345**	*e*P	**P**	**05 30 08.9**	**+0.6**
SEY	**Seymchan** comp=Z,17nm,0.8s,baz=193,slow=6.3,SNR=55	**25.67**	**9**	P	**P**	**05 30 09.4**	**+0.8**
H11N2	**WAKE ISLAND Hy** baz=317,slow=74,SNR=21	**27.28**	**125**	T	T	05 59 09.2	
H11N1	**WAKE ISLAND Hy** baz=317,slow=74,SNR=105	**27.29**	**125**	T	T	05 59 10.1	
H11N3	**WAKE ISLAND Hy** baz=317,slow=74,SNR=157	**27.30**	**125**	T	T	05 59 08.1	
BOD	**Bodaibo**	**27.69**	**326**	*e*P	**P**	**05 30 26.8**	**-0.2**
BOD				pmax	pmax		
	comp=Z,28nm,0.8s						
H11S1	**WAKE ISLAND Hy** baz=319,slow=76,SNR=20	**28.05**	**127**	T	T	06 00 07.5	
H11S3	**WAKE ISLAND Hy** baz=319,slow=76,SNR=11	**28.05**	**127**	T	T	06 00 02.3	
H11S2	**WAKE ISLAND Hy** baz=319,slow=76,SNR=13	**28.07**	**127**	T	T	06 00 03.7	
XAN	**Xi'an**	**28.08**	**273**	P	**P**	**05 30 30.0**	**-0.8**
XAN				pP	pP	05 30 39.1	-0.2
XAN				pmax	pmax		
	comp=Z,14nm,0.8s						
XAN				LR	LR		
	comp=Z,650nm,16.2s						
XAN				LR	LR		
	comp=Z,520nm,14.2s						
SONA1	**Songino Array**	**28.64**	**302**	*e*P	**P**	**05 30 36.8**	**+1.0**
SONM	**Songino Array** comp=Z,8.4nm,0.7s,baz=100,slow=8.9,SNR=35	**28.65**	**302**	P	**P**	**05 30 37.2**	**+1.4**
SONM				LR	LR	05 42 33.9	
	comp=Z,495nm,18.2s,baz=330,slow=37						
ENH	**Enshi** comp=Z,42nm,0.6s	**28.99**	**265**	*e*P	**P**	**05 30 39.6**	**+0.7**
TLY	**Talaya** comp=Z,5.2nm,0.7s,baz=119,slow=4.3,SNR=7.1	**30.99**	**309**	P	**P**	**05 30 58.6**	**+2.2**
TLY	**Talaya**	**30.99**	**309**	*e*P	**P**	**05 30 58.5**	**+2.2**
TLY				pmax	pmax		
	comp=Z,7.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,266nm,12.0s						
TLY	**Talaya** comp=Z,22nm,1.5s	**30.99**	**309**	*e*P	**P**	**05 30 58.4**	**+2.0**
ZAK	**Zakamensk**	**31.01**	**307**	*e*P	**P**	**05 30 57.6**	**+1.0**
ZAK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
LZH	**Lanzhou**	**31.49**	**279**⇑	P	**P**	**05 31 01.3**	**+0.2**
LZH				pP	pP	05 31 07.5	-2.2
LZH				sP	sP	05 31 10.6	-2.7
LZH				PP	**PnPn**	**05 32 06.0**	**+1.4**
LZH				*e*S	**S**	**05 36 07.0**	**-0.6**
LZH				sS	sS	05 36 17.0	-4.7
LZH				pmax	pmax		
	comp=Z,35nm,1.2s						
LZH				pmax	pmax		
	comp=Z,170nm,5.3s						
LZH				LR	LR		
	comp=Z,500nm,12.7s						
LZH				LR	LR		
	comp=Z,530nm,12.3s						
LZH				LR	LR		
	comp=Z,1μm,15.2s						
MOY	**Mondy**	**32.62**	**309**	*e*P	**P**	**05 31 13.5**	**+2.7**
BILL	**Bilibino**	**32.77**	**16**	*de*P	**P**	**05 31 10.7**	**-1.0**
BILL				pmax	pmax		
	comp=Z,31nm,2.5s						
BILL				MLR	MLR		
	comp=Z,331nm,20.0s						
GYA	**Guiyang**	**32.93**	**261**⇑	*i*P	**P**	**05 31 13.6**	**-0.1**
GYA				pP	pP	05 31 21.0	-1.3
GYA				PP	**PnPn**	**05 32 24.5**	**+1.4**
GYA				ScP	**ScP**	**05 37 41.2**	**+1.6**
GYA				pmax	pmax		
	comp=Z,30nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.0s						
GYA				LR	LR		
	comp=Z,510nm,16.9s						
GYA				LR	LR		
	comp=Z,500nm,17.2s						
GYA				LR	LR		
	comp=Z,480nm,17.4s						
CD2	**Chengdu**	**33.26**	**270**	*e*P	**P**	**05 31 16.2**	**-0.3**
CD2				sP	pP	05 31 25.5	+0.4
CD2				PP	**PP**	**05 32 31.4**	**-0.5**
CD2				S	**S**	**05 36 35.5**	**+0.6**
CD2				sS	sS	05 36 46.5	-2.6
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.0s						
GTA	**Gaotai**	**33.84**	**286**	*e*P	**P**	**05 31 22.4**	**+0.8**
GTA				pP	sP	05 31 33.3	-0.4
GTA				sP	pP	05 31 37.3	+7.1
GTA				pmax	pmax		
	comp=Z,11nm,1.1s						
TIXI	**Tiksi** comp=Z,1.6nm,0.3s,baz=153,slow=6.4,SNR=2.8	**34.65**	**352**	P	**P**	**05 31 27.6**	**-0.5**
TIXI	**Tiksi**	**34.65**	**352**	*e*P	**P**	**05 31 28.0**	**0.0**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.7s						
TIXI	**Tiksi** comp=Z,4.3nm,0.7s	**34.65**	**352**	*e*P	**P**	**05 31 28.7**	**+0.7**
QIZ	**Qiongzhong**	**34.72**	**247**	P	**P**	**05 31 29.3**	**0.0**
QIZ				S	**S**	**05 37 01.6**	**+4.0**
QIZ				LR	LR		
	comp=Z,570nm,24.0s						
QIZ				LR	LR		
	comp=Z,510nm,23.6s						
QIZ				LR	LR		
	comp=Z,530nm,14.1s						
KMI	**Kunming**	**36.66**	**262**	P	**P**	**05 31 47.4**	**+1.3**
KMI				pmax	pmax		
	comp=Z,35nm,0.6s						
KMI				pmax	pmax		
	comp=Z,190nm,9.7s						
WMQ	**Urumqi**	**41.88**	**296**	P	**P**	**05 32 31.0**	**+1.7**
WMQ				pP	pP	05 32 39.1	+1.1
WMQ				pmax	pmax		
	comp=Z,27nm,1.3s						
WMQ				pmax	pmax		
	comp=Z,220nm,4.5s						
ZAA0	**Zalesovo Array**	**42.52**	**312**	*e*P	**P**	**05 32 34.8**	**+0.5**
ZALV	**Zalesovo Beam** comp=Z,19nm,0.6s,baz=78,slow=7.2,SNR=32	**42.52**	**312**	P	**P**	**05 32 35.5**	**+1.2**
ZALV				PcP	**PcP**	**05 34 26.6**	**+0.1**
	comp=Z,3.3nm,0.5s,baz=89,slow=3.3,SNR=3.8						
NRIK	**Noril'sk** comp=Z,380nm,18.1s,baz=102,slow=37	**43.17**	**335**	LR	LR	05 51 01.8	
CMAR	**Chiang Mai Arr** comp=Z,2.4nm,0.6s,baz=46,slow=6.5,SNR=15	**43.24**	**256**	P	**P**	**05 32 41.0**	**+0.4**
CMAR				LR	LR	05 51 55.0	
	comp=Z,267nm,19.2s,baz=48,slow=38						
CMAR	**Chiang Mai Arr**	**43.24**	**256**	P	**P**	**05 32 41.0**	**+0.4**
CM01	**Chiang Mai Arr**	**43.25**	**256**	*e*P	**P**	**05 32 41.1**	**+0.5**
NVS	**Novosibirsk**	**43.41**	**313**	*e*P	**P**	**05 32 45.9**	**+4.5**
NVS				pmax	pmax		
	comp=Z,11nm,0.7s						
NVS				pmax	pmax		
	comp=N,3.0nm,0.6s						
NVS				pmax	pmax		
	comp=E,13nm,0.7s						
LSA	**Lhasa**	**43.71**	**275**	*e*P	**P**	**05 32 45.2**	**+0.4**
LSA				pmax	pmax		
	comp=Z,7.0nm,0.4s						
LSA	**Lhasa** comp=Z,7.3nm,0.4s	**43.71**	**275**	*e*P	**P**	**05 32 45.2**	**+0.4**
TT01	**Tatalina**	**43.81**	**35**	*e*P	**P**	**05 32 45.5**	**+0.9**
SVW2	**Sparrevohn** comp=Z,13nm,0.8s	**43.88**	**38**	*e*P	**P**	**05 32 45.9**	**+0.7**
MK01	**Makanchi Array**	**45.01**	**302**	*e*P	**P**	**05 32 54.9**	**+0.4**
MK31	**Makanchi Array**	**45.01**	**302**	*i* P	**P**	**05 32 55.1**	**+0.6**
MK31				pmax	pmax		
	comp=Z,23nm,0.8s						
MK31	**Makanchi Array**	**45.01**	**302**	*e*P	**P**	**05 32 55.4**	**+0.9**
MKAR	**Makanchi Array** comp=Z,17nm,0.8s,baz=85,slow=8.3,SNR=30	**45.01**	**302**	P	**P**	**05 32 55.2**	**+0.7**
MKAR				LR	LR	05 52 40.7	
	comp=Z,271nm,19.6s,baz=77,slow=37	

comp=Z,13nm,0.8s
SUA Susitna One 46.22 37 *e*P **P 05 33 04.6 +0.7**
comp=Z,17nm,0.7s
TRF Thorofare Moun 46.43 35 *e*P **P 05 33 06.8 +1.1**
comp=Z,10.0nm,0.9s
COLD Coldfoot 46.63 29 *e*P **P 05 33 08.2 +1.3**
comp=Z,2.6nm,0.7s
KURK Kurchatov 46.66 308 *e*P **P 05 33 07.8 +0.5**
KURK Kurchatov 46.66 308 *e*P **P 05 33 07.8 +0.5**
comp=Z,338nm,0.7s
RC01 Rabbit Creek A 46.72 38 *e*P **P 05 33 08.5 +0.9**
comp=Z,16nm,0.8s
PMR Palmer 46.99 37 *e*P **P 05 33 10.3 +0.5**
PMR pmax pmax
comp=Z,9.0nm,0.7s
PMR Palmer 46.99 37 *e*P **P 05 33 10.3 +0.5**
comp=Z,9.4nm,0.7s
MCK McKinley 47.04 34 *e*P **P 05 33 10.8 +0.6**
MCK pmax pmax
comp=Z,13nm,1.0s
MCK McKinley 47.04 34 *e*P **P 05 33 10.8 +0.6**
comp=Z,13nm,1.0s
RND Reindeer 47.08 35 *e*P **P 05 33 11.3 +0.7**
RND pmax pmax
comp=Z,20nm,1.2s
RND Reindeer 47.08 35 *e*P **P 05 33 11.3 +0.7**
comp=Z,20nm,1.2s
KSM Kuching 47.30 228 *e*P **P 05 33 13.5 +0.8**
comp=Z,8.5nm,0.8s
SML Sawmill 47.36 37 *e*P **P 05 33 14.0 +1.2**
SML pmax pmax
comp=Z,23nm,0.8s
SML Sawmill 47.36 37 *e*P **P 05 33 14.0 +1.2**
comp=Z,23nm,0.8s
WRH Wood River Hil 47.41 33 *e*P **P 05 33 14.0 +1.0**
comp=Z,9.4nm,0.8s
COLA College 47.51 33 *e*P **P 05 33 14.9 +1.1**
COLA pmax pmax
comp=Z,15nm,0.8s
COLA College 47.51 33 *e*P **P 05 33 14.9 +1.1**
comp=Z,15nm,0.8s
CCB Clear Creek Bu 47.53 33 *e*P **P 05 33 14.9 +1.0**
comp=Z,14nm,1.9s
PDGK Podgornoye 47.78 298 *i*P **P 05 33 15.5 -0.7**
PDGK pmax pmax
comp=Z,11nm,0.7s
SCM Sheep Creek Mo 47.84 37 *e*P **P 05 33 17.4 +0.9**
SCM pmax pmax
comp=Z,111nm,2.0s
SCM Sheep Creek Mo 47.84 37 *e*P **P 05 33 17.4 +0.9**
comp=Z,111nm,2.0s
IL1 Eielson Array 47.92 33 *e*P **P 05 33 16.9 -0.1**
ILAR Eielson Array 47.92 33 P **P 05 33 17.1 +0.1**
comp=Z,7.8nm,0.8s,baz=265,slow=6.5,SNR=108
ILB Eielson Array 47.92 33 *e*P **P 05 33 17.5 +0.5**
RAMN Ramite 48.52 274 *e*P **P 05 33 22.6 +0.2**
comp=Z,38nm,0.7s
KLU Klutina 48.53 37 *e*P **P 05 33 23.1 +1.2**
comp=Z,10nm,0.8s
DIV Divide 48.64 38 *e*P **P 05 33 24.3 +1.7**
comp=Z,29nm,1.1s
GUN Gumba 48.65 276 *e*P **P 05 33 23.8 +0.3**
EYAK Cordova Ski Ar 48.70 38 *e*P **P 05 33 24.6 +1.5**
comp=Z,17nm,0.8s
KKN Kakani 49.17 276 *e*P **P 05 33 27.8 +0.4**
comp=Z,56nm,0.7s
PKIN Phulchoki 49.18 276 *e*P **P 05 33 28.2 +0.7**
comp=Z,15nm,0.6s
DOT Dot Lake 49.21 34 *e*P **P 05 33 27.2 +0.3**
comp=Z,12nm,0.8s
BMRM Bremner River 49.22 38 *e*P **P 05 33 28.2 +1.2**
comp=Z,86nm,1.8s
MENT Mentasta 49.43 35 *e*P **P 05 33 30.3 +1.7**
comp=Z,8.3nm,0.8s
GKN Gorkha 49.58 277 *e*P **P 05 33 30.7 +0.2**
CRQM Cirque 49.95 38 *e*P **P 05 33 34.8 +1.9**
comp=Z,33nm,1.2s
BALM Baldy 50.30 38 *e*P **P 05 33 36.5 +1.1**
BALM pmax pmax
comp=Z,8.0nm,0.9s
BALM Baldy 50.30 38 *e*P **P 05 33 36.5 +1.1**
comp=Z,8.2nm,0.9s
EGAK Eagle 50.37 33 *e*P **P 05 33 36.4 +0.7**
comp=Z,21nm,1.6s
KOLN Koldanda 50.50 277 *e*P **P 05 33 38.1 +0.6**
comp=Z,23nm,0.7s
TKM2 Tokmak 2 50.62 298 *i*P **P 05 33 38.4 +0.2**
TKM2 pmax pmax
comp=Z,11nm,0.9s
TKM2 Tokmak 2 50.62 298 *e*P **P 05 33 39.5 +1.3**
comp=Z,9.8nm,0.8s
PYUN Piuthan 50.83 278 *e*P **P 05 33 40.3 +0.3**
BVA0 Borovoye Array 51.17 312 *i*P P 05 33 48.1 +6.2
BVA0 pmax pmax
comp=Z,5.0nm,0.7s
OTUK Ortayu 51.21 306 P **P 05 33 42.7 +0.4**
OTUK pmax pmax
comp=Z,8.0nm,0.9s
DAWY Dawson 51.22 33 *e*P **P 05 33 43.2 +1.0**
comp=Z,18nm,1.8s
BRVK Borovoye 51.23 312 *i*P **P 05 33 42.4 +0.1**
BRVK pmax pmax
comp=Z,29nm,2.5s
BRVK Borovoye 51.23 312 *e*P **P 05 33 43.4 +1.0**
comp=Z,5.5nm,0.8s
FRU Bishkek 51.33 299 *e*P P 05 33 48.0 +4.7
FRU *e* 05 33 56.0
FRU *e* 05 35 42.0
AAK Ala-Archa 51.48 298 *e*P **P 05 33 45.2 +0.6**
AAK pmax pmax
comp=Z,43nm,0.8s
AAK Ala-Archa 51.48 298 *e*P **P 05 33 45.2 +0.6**
comp=Z,43nm,0.8s
KSH Kashi 51.51 294 *e*P P 05 33 50.2 +5.4
KSH *e*pP sP 05 33 56.2 -1.0
KSH *e*PP **PP 05 35 47.8 +5.8**
KSH PcS **PcS 05 38 59.1 +2.4**
KSH S **S 05 41 08.9 +5.6**
KSH pmax pmax
comp=Z,8.0nm,0.8s
KSH pmax pmax
comp=Z,74nm,3.8s
KSH LR LR
comp=Z,240nm,11.0s
KSH LR LR
comp=Z,340nm,15.3s
KSH LR LR
comp=Z,450nm,14.6s
EKS2 Erkin-Say 51.97 299 *e*P **P 05 33 49.5 +1.3**
EKS2 pmax pmax
comp=Z,7.0nm,0.8s
EKS2 Erkin-Say 51.97 299 *e*P **P 05 33 49.5 +1.3**
comp=Z,7.4nm,0.8s
ZRNK Zerenda 52.00 312 *i*P **P 05 33 49.0 +0.9**
ZRNK pmax pmax
comp=Z,6.0nm,0.7s
ZRNK Zerenda 52.00 312 *e*P **P 05 33 48.7 +0.5**
comp=Z,6.4nm,0.7s
HYT Haines Junctio 52.66 37 *e*P **P 05 33 55.3 +2.2**
comp=Z,21nm,0.9s
INK Inuvik 52.90 28 P **P 05 33 55.3 +0.8**
comp=Z,4.4nm,0.6s,baz=302,slow=7.3,SNR=13
INK Inuvik 52.90 28 *e*P **P 05 33 55.4 +0.8**
INK pmax pmax
comp=Z,5.0nm,0.6s
INK Inuvik 52.90 28 *e*P **P 05 33 55.4 +0.8**
comp=Z,5.4nm,0.6s
MNAS Manas 52.91 299 *i*P **P 05 33 55.4 +0.2**
MNAS pmax pmax
comp=Z,22nm,0.8s
KK31 Karatay Array 54.07 300 *i*P **P 05 34 04.0 +0.5**
KK31 pmax pmax
comp=Z,6.0nm,0.7s
KKAR Karatay Array 54.07 300 *e*P **P 05 34 04.5 +0.9**
KKAR Karatay Array 54.07 300 *e*P **P 05 34 04.5 +0.9**
SVE Sverdlovsk 55.56 319 *e*P **P 05 34 15.0 +0.9**
SVE pmax pmax
comp=Z,16nm,0.8s
SVE MLR MLR
comp=Z,522nm,16.0s
ARU Arti 56.77 319 *d i*P **P 05 34 22.1 -0.6**
ARU 05 35 18.1
ARU 05 36 27.4
ARU S **S 05 42 12.9 -0.7**
ARU SS **SS 05 45 56.5 -4.6**
ARU pmax pmax
comp=Z,5.0nm,1.0s
ARU MLR MLR
comp=Z,425nm,15.0s
ARU Arti 56.77 319 *e*P **P 05 34 22.7 0.0**
comp=Z,6.8nm,0.8s
DLBC Dease Lake 56.97 39 P **P 05 34 25.8 +1.5**
comp=Z,4.2nm,0.8s,baz=295,slow=7.7,SNR=12
DLBC Dease Lake 56.97 39 *e*P **P 05 34 26.7 +2.5**
comp=Z,9.8nm,1.0s
WRAB Tennant Creek 58.14 190 *i*P **P 05 34 32.1 -0.6**
WRAB pmax pmax
comp=Z,66nm,2.5s
WRAB Tennant Creek 58.14 190 *e*P **P 05 34 31.8 -1.0**
comp=Z,18nm,1.2s
WB2 Warramunga Arr 58.15 190 *e*P **P 05 34 32.0 -0.8**
comp=Z,13nm,1.0s
WRA Warramunga Arr 58.15 190 P **P 05 34 31.8 -1.0**
comp=Z,8.2nm,0.8s,baz=9.5,slow=7.2,SNR=44
KBL Kabul 58.59 291 *e*P **P 05 34 36.2 +0.1**
KBL pmax pmax
comp=Z,11nm,0.8s
KBL Kabul 58.59 291 *e*P **P 05 34 36.2 +0.1**
comp=Z,11nm,0.8s
AB31 Akbulak array 58.60 310 *i*P **P 05 34 35.8 +0.1**
AB31 pmax pmax
comp=Z,6.0nm,0.6s
ABKAR Akbulak array 58.60 310 *e*P **P 05 34 35.8 +0.1**
AKTO Aktyubinsk 59.28 312 *i*P **P 05 34 41.5 +1.1**
AKTO pmax pmax
comp=Z,7.0nm,0.8s
RES Resolute Bay 61.37 15 P **P 05 34 53.5 -0.9**
comp=Z,13nm,0.7s,baz=300,slow=7.0,SNR=5.0
AS01 Alice Springs 61.87 190 *e*P **P 05 34 58.2 -0.1**
AS31 Alice Springs 61.87 190 *e*P **P 05 34 58.4 +0.1**
comp=Z,1.4nm,0.6s
ASAR Alice Springs 61.88 190 P **P 05 34 57.8 -0.6**
comp=Z,2.1nm,0.8s,baz=9.4,slow=6.9,SNR=14
YKA Yellowknife Ar 62.27 31 P **P 05 35 00.2 -0.3**
comp=Z,3.7nm,0.7s,baz=303,slow=6.6,SNR=44
ARCES ARCESS Array B 63.75 340 P **P 05 35 10.6 +0.3**
comp=Z,2.1nm,0.6s,baz=42,slow=7.3,SNR=5.0
GEYT Alibeck 64.80 299 P **P 05 35 18.9 +1.1**
comp=Z,5.5nm,1.1s,baz=30,slow=5.4,SNR=4.8
NLWA Neilton Lookou 64.97 49 *e*P **P 05 35 20.4 +1.8**
comp=Z,12nm,0.6s
B05A Bryant 65.57 47 P **P 05 35 22.6 +0.1**
baz=300
F03A Seaside 65.87 50 *e*P **P 05 35 25.5 +1.0**
KMOR Kings Mountain 66.06 50 P P 05 35 31.5 +5.7
F04D Rainier, OR 66.13 49 P **P 05 35 26.5 +0.4**
baz=300
MPOR Mary's Peak 66.60 51 P **P 05 35 27.0 -2.3**
COR Corvallis 66.71 51 *e*P **P 05 35 30.7 +0.9**
COR pmax pmax
comp=Z,49nm,0.8s
COR Corvallis 66.71 51 *e*P **P 05 35 30.7 +0.9**
comp=Z,49nm,0.8s
DBO Dodson Butte 67.50 52 P **P 05 35 31.8 -3.3**
EDM Edmonton 67.69 39 *e*P **P 05 35 36.7 +0.7**
EDM pmax pmax
comp=Z,19nm,1.3s
EDM Edmonton 67.69 39 *e*P **P 05 35 36.6 +0.7**
comp=Z,19nm,1.3s
HUMO Hull Mountain 67.95 53 *e*P **P 05 35 37.9 +0.1**
comp=Z,19nm,0.8s
VRH Novokhopyorsk 68.00 318 *e*P **P 05 35 37.6 -0.3**
VRH pmax pmax
comp=Z,20nm,0.7s
I05D Terrebonne, OR 68.04 50 P **P 05 35 38.7 +0.3**
baz=302
OBN Obninsk 68.35 324 *e*P **P 05 35 42.4 +2.4**
OBN *e* 05 38 14.1
OBN *e*PPP PPP 05 39 52.3
OBN *e*S **S 05 44 37.2 -1.8**
OBN *e*SS **SS 05 48 57.3 -4.5**
OBN pmax pmax
comp=Z,5.0nm,1.0s
OBN MLR MLR
comp=Z,202nm,15.0s
NEW Newport 68.41 45 P **P 05 35 39.1 -1.5**
comp=Z,3.3nm,0.8s,baz=242,slow=15,SNR=4.7
NEW Newport 68.41 45 P **P 05 35 40.9 +0.3**
baz=303
YBH Yreka Blue Hor 68.56 53 *e*P **P 05 35 43.1 +1.3**
YBH pmax pmax
comp=Z,16nm,0.8s
YBH Yreka Blue Hor 68.56 53 *e*P **P 05 35 43.1 +1.3**
comp=Z,16nm,0.8s
J05D Fort Rock, OR 68.66 51 P **P 05 35 43.3 +0.8**
baz=302
FIA1 FINESS Array S 68.79 333 *e*P **P 05 35 43.1 +0.4**
FINES FINESS Array B 68.79 333 P **P 05 35 42.8 +0.2**
comp=Z,7.2nm,0.6s,baz=47,slow=8.4,SNR=36
N02D Trinity Center 68.97 54 P **P 05 35 44.6 +0.3**
baz=302
M04C Macdoel 69.09 53 P **P 05 35 45.6 +0.5**
baz=302
K05A Summer Lake 69.17 52 *e*P **P 05 35 47.7 +2.0**
comp=Z,17nm,0.8s
VSR Storozhevoye 69.33 319 *e*P **P 05 35 45.3 -0.9**
VSR pmax pmax
comp=Z,6.0nm,0.6s
SUMG Summit 69.82 1 *i*P **P 05 35 50.0 +0.6**
comp=Z,12nm,0.7s
SUMG Summit 69.82 1 *e*P **P 05 35 50.2 +0.8**
SUMG pmax pmax
comp=Z,12nm,0.7s
SUMG Summit 69.82 1 *e*P **P 05 35 50.2 +0.8**
comp=Z,12nm,0.7s
O03D Paynes Creek 69.92 54 P **P 05 35 50.2 +0.1**
baz=303
MOD Modoc Plateau 69.99 52 *e*P **P 05 35 51.1 +0.4**
comp=Z,4.9nm,0.8s
BMO Blue Mountains 70.18 48 *e*P **P 05 35 52.6 +0.9**
comp=Z,3.0nm,0.6s
ORV Oroville 70.51 55 *e*P **P 05 35 54.3 +0.6**
ORV pmax pmax
comp=Z,8.0nm,0.8s
ORV Oroville 70.51 55 *e*P **P 05 35 54.3 +0.6**
comp=Z,7.7nm,0.8s
WVOR Wild Horse Val 70.73 51 *e*P **P 05 35 55.6 +0.5**
WVOR pmax pmax
comp=Z,4.0nm,0.8s
WVOR Wild Horse Val 70.73 51 *e*P **P 05 35 55.6 +0.5**
comp=Z,3.8nm,0.8s
MSO Missoula 71.00 45 P **P 05 35 56.5 -0.1**
baz=305
SLMT Seeley Lake 71.01 45 *e*P **P 05 35 57.1 +0.3**
KIV Kislovodsk 71.54 312 *e*P **P 05 35 59.2 -0.7**
KIV pmax pmax
comp=Z,13nm,1.1s
KBZ Khabaz 71.54 311 P **P 05 36 01.3 +1.5**
comp=Z,3.3nm,0.8s,baz=32,slow=7.1,SNR=7.0
PAHR Pah Rah Range 71.79 54 *e*P **P 05 36 02.1 +0.5**
comp=Z,6.6nm,0.8s
MFID Camas Ranch 71.87 49 *e*P **P 05 36 03.1 +1.0**
comp=Z,5.5nm,0.8s
CMB Columbia Colle 72.08 56 *e*P **P 05 36 03.5 +0.2**
CMB pmax pmax
comp=Z,26nm,0.7s
CMB Columbia Colle 72.08 56 *e*P **P 05 36 03.5 +0.2**
comp=Z,26nm,0.7s
FFC Flin Flon 72.12 34 *e*P **P 05 36 03.5 +0.3**
FFC pmax pmax
comp=Z,9.0nm,0.8s
FFC Flin Flon 72.12 34 *e*P **P 05 36 03.5 +0.3**
comp=Z,8.6nm,0.8s
LRM Limekiln Ridge 72.42 45 *e*P **P 05 36 06.1 +0.7**
WAKR Walker 72.43 55 *e*P **P 05 36 06.4 +0.9**
comp=Z,7.2nm,1.0s
DLMT Dillon 72.61 46 *e*P **P 05 36 07.0 +0.5**
comp=Z,4.1nm,0.8s
HLID Hailey 72.62 48 P **P 05 36 07.0 +0.4**
baz=306
HLID Hailey 72.62 48 *e*P **P 05 36 07.5 +0.9**
comp=Z,3.7nm,0.8s
ILULI Ilulissat 72.67 5 *i*P **P 05 36 07.1 +1.0**
comp=Z,13nm,0.8s
ILULI Ilulissat 72.67 5 *i*P **P 05 36 07.1 +1.0**
ILULI pmax pmax
comp=Z,13nm,0.8s
BMN Battle Mountai 72.74 52 *e*P **P 05 36 08.0 +0.7**
BMN pmax pmax
comp=Z,6.0nm,0.6s
BMN Battle Mountai 72.74 52 *e*P **P 05 36 08.0 +0.7**
comp=Z,6.3nm,0.6s
BOZ Bozeman (W) 72.99 45 P **P 05 36 09.1 +0.4**
baz=307
BOZ Bozeman (W) 72.99 45 *e*P **P 05 36 09.4 +0.7**
BOZ pmax pmax
comp=Z,5.0nm,0.8s
BOZ Bozeman (W) 72.99 45 *e*P **P 05 36 09.4 +0.7**
comp=Z,4.7nm,0.8s
NC204 NORSAR Array S 73.95 338 *e*P **P 05 36 14.7 +0.8**
GCMT Greycliff 73.99 44 *e*P **P 05 36 16.3 +1.7**
NB2 NORSAR Subarra 74.00 338 P **P 05 36 14.2 0.0**
comp=Z,3.6nm,0.8s,baz=38,slow=5.9
NOA NORSAR Array B 74.00 338 P **P 05 36 14.4 +0.2**
comp=Z,2.3nm,0.7s,baz=39,slow=5.8,SNR=14
NOA LR LR 06 13 29.2
comp=Z,175nm,20.2s,baz=40,slow=40
ANN Anapa 74.07 315 *e*P P 05 36 10.6 -4.2
ANN *e*S **SKiKP 05 45 40.5 -0.1**
ANN pmax pmax
comp=Z,32nm,1.0s
VES Vestal, Richgr 74.19 57 P **P 05 36 15.6 -0.1**
baz=306
YPP Pitchstone Pla 74.29 46 *e*P **P 05 36 18.3 +1.8**
comp=Z,12nm,1.6s
H17A Grant Village 74.34 46 P **P 05 36 17.7 +1.0**
baz=308
H17A Grant Village 74.34 46 *e*P **P 05 36 19.8 +3.0**
comp=Z,9.4nm,0.8s
IMW Indian Meadow 74.44 46 *e*P **P 05 36 19.3 +1.9**
comp=Z,8.0nm,0.7s
CWC Cottonwood Cre 74.50 56 P **P 05 36 17.8 +0.1**
baz=306
AKASG Malin Array Be 74.58 323 P **P 05 36 17.7 +0.1**
comp=Z,1.1nm,0.4s,baz=46,slow=6.1,SNR=7.0
KIEV Kiev 74.59 323 *e*P **P 05 36 17.8 0.0**
KIEV pmax pmax
comp=Z,12nm,1.2s
KIEV Kiev 74.59 323 *e*P **P 05 36 17.8 0.0**
comp=Z,12nm,1.2s
GRAC Grapevine Rang 74.64 55 P **P 05 36 19.2 +0.9**
baz=306,SNR=6.2
HVU Hansel Valley 74.66 49 *e*P **P 05 36 19.2 +0.7**
HVU pmax pmax
comp=Z,6.0nm,0.8s
HVU Hansel Valley 74.66 49 *e*P **P 05 36 19.2 +0.7**
comp=Z,6.2nm,0.8s
TPAW Teton Pass 74.68 47 *e*P **P 05 36 20.7 +1.9**
comp=Z,5.4nm,0.8s
ISA Isabella, Lake 74.69 57 P **P 05 36 19.1 +0.3**
baz=306
SNOW Snow King Moun 74.81 47 *e*P **P 05 36 19.6 +0.1**
comp=Z,4.9nm,0.8s
DAC Darwin (Calif) 74.92 56 *e*P **P 05 36 21.1 +0.9**
DAC pmax pmax
comp=Z,5.0nm,0.8s
DAC Darwin (Calif) 74.92 56 *e*P **P 05 36 21.1 +0.9**
comp=Z,4.7nm,0.8s
R11A Troy Canyon, C 74.98 53 P **P 05 36 21.1 +0.5**
baz=307,SNR=11
R11A Troy Canyon, C 74.98 53 *e*P **P 05 36 21.5 +0.9**
comp=Z,4.1nm,0.8s
AHID Auburn Hatcher 75.04 47 *e*P **P 05 36 22.0 +1.2**
comp=Z,4.4nm,0.8s
MPMC Manual Prospec 75.11 56 P **P 05 36 22.0 +0.7**
baz=306,SNR=9.3
FURC Furnace Creek, 75.28 55 P **P 05 36 22.8 +0.9**
baz=306,SNR=8.5
LAO LASA Array 75.29 42 P **P 05 36 22.2 +0.3**
baz=310
TPNV Topopah Spring 75.39 55 P **P 05 36 23.7 +0.8**
baz=307,SNR=13
TPNV Topopah Spring 75.39 55 *e*P **P 05 36 23.6 +0.8**
TPNV pmax pmax
comp=Z,8.0nm,0.8s
TPNV Topopah Spring 75.39 55 *e*P **P 05 36 23.6 +0.8**
comp=Z,8.1nm,0.8s
A25A Svangstu Ranch 75.41 39 P **P 05 36 23.2 +0.7**
baz=312
EDW2 Edwards Air Fo 75.47 57 P **P 05 36 24.0 +0.8**
baz=306
HWUT Hardware Ranch 75.48 48 *e*P **P 05 36 24.8 +1.5**
comp=Z,5.7nm,1.0s
DUG Dugway, Tooele 75.59 50 P **P 05 36 24.1 +0.2**
baz=308
DUG Dugway, Tooele 75.59 50 *e*P **P 05 36 25.5 +1.5**
DUG pmax pmax
comp=Z,10.0nm,0.7s
DUG Dugway, Tooele 75.59 50 *e*P **P 05 36 25.5 +1.5**
comp=Z,9.7nm,0.7s
TCUT Toone Canyon 75.87 49 *e*P **P 05 36 26.6 +1.0**
comp=Z,9.4nm,0.7s
BW06 Boulder Array 75.93 47 P **P 05 36 26.2 +0.3**
baz=309
BW06 Boulder Array 75.93 47 *e*P **P 05 36 26.6 +0.7**
PD31 Pinedale Array 75.93 47 *e*P **P 05 36 26.3 +0.4**
PDAR Pinedale Array 75.93 47 P **P 05 36 26.1 +0.2**
comp=Z,3.4nm,0.7s,baz=257,slow=2.0,SNR=34
A26A Wade Farm, Ken 75.97 38 P **P 05 36 25.8 +0.1**
baz=312
SHOC Shoshone, Teco 76.00 55 P **P 05 36 26.4 +0.2**
baz=307
GSC Goldstone, Bar 76.01 56 P **P 05 36 26.4 +0.1**
baz=307
GSC Goldstone, Bar 76.01 56 *e*P **P 05 36 27.3 +1.0**
GSC pmax pmax
comp=Z,14nm,1.3s
GSC Goldstone, Bar 76.01 56 *e*P **P 05 36 27.3 +1.0**
comp=Z,14nm,1.3s
JLU Jordanelle 76.17 49 *e*P **P 05 36 28.6 +1.3**
comp=Z,6.0nm,0.8s
SHPR Sheep Range 76.36 54 *e*P **P 05 36 29.9 +1.5**
comp=Z,3.6nm,0.8s
TUQ Turquoise Moun 76.50 56 P **P 05 36 29.8 +0.6**
baz=307
BBRC Big Bear Solar 76.55 57 P **P 05 36 29.7 +0.2**
baz=307
HEC Hector,Ludlow 76.60 56 P **P 05 36 29.8 +0.1**
baz=307
MURC Murrieta 76.76 58 P **P 05 36 30.8 +0.3**
baz=307
A28A Rude Farm, Bot 76.82 37 P **P 05 36 30.7 +0.2**
baz=313
CCUT Cedar City 76.87 53 *e*P **P 05 36 31.8 +0.5**
comp=Z,6.3nm,0.9s
MSU Marysvale 77.02 51 *e*P **P 05 36 33.9 +1.8**
MSU Marysvale 77.02 51 *e*P **P 05 36 33.9 +1.8**
GMRC Granite Mounta 77.07 56 P **P 05 36 32.4 0.0**
baz=307
B28A Dugan Ranch, T 77.09 38 P **P 05 36 32.3 +0.2**
baz=313
PFO Pinyon Flats O 77.25 57 P **P 05 36 33.4 0.0**
baz=307
TPFO Pinon Flats 77.25 57 P **P 05 36 33.3 -0.1**
baz=307
LCMT Little Creek M 77.27 53 *e*P **P 05 36 35.1 +1.6**
comp=Z,7.6nm,0.8s
P17A Butcher Ranch, 77.30 50 *e*P **P 05 36 34.9 +1.3**
comp=Z,9.4nm,0.7s
MTPU Mount Pierson 77.30 52 *e*P **P 05 36 35.8 +1.9**
comp=Z,7.4nm,0.7s
A29A Manning Farm, 77.30 37 P **P 05 36 32.9 -0.3**
baz=314
BELC Belle Mtn. Jos 77.32 57 P **P 05 36 34.2 +0.4**
baz=307
Q16A Castle Valley 77.38 50 *e*P **P 05 36 35.8 +1.6**
comp=Z,89nm,1.9s
KNB Kanab 77.53 53 *e*P **P 05 36 36.8 +1.8**
KNB pmax pmax
comp=Z,10.0nm,1.1s
KNB Kanab 77.53 53 *e*P **P 05 36 36.8 +1.8**
comp=Z,9.8nm,1.1s
B29A Wagenman Farm, 77.56 37 P **P 05 36 34.4 -0.3**
baz=314
SRU San Rafael Swe 77.65 50 *e*P **P 05 36 36.5 +0.8**
SRU pmax pmax
comp=Z,20nm,1.0s
SRU San Rafael Swe 77.65 50 *e*P **P 05 36 36.5 +0.8**
comp=Z,20nm,1.0s
MONP2 Monument Peak 77.70 58 P **P 05 36 36.0 -0.1**
baz=307
K22A Casper 77.73 45 P **P 05 36 35.9 -0.1**
baz=311
A30A Hoffart Farm, 77.73 36 P **P 05 36 36.0 +0.3**
baz=315
BC3 Big Chuckawall 77.89 57 P **P 05 36 37.3 +0.3**
baz=308
ULM Lac du Bonnet 77.91 34 P **P 05 36 36.9 +0.3**
comp=Z,3.6nm,0.7s,baz=312,slow=7.9,SNR=6.3
IKP In-Ko-Pah, Jac 78.06 58 P **P 05 36 38.4 +0.5**
baz=307

B30A **Myrvik Farm, E** 78.06 37 P P 05 36 37.5 -0.1
baz=315
SWSC **Sam W. Stewart** 78.09 58 P P 05 36 38.5 +0.6
baz=308
RSSD **Black Hills** 78.13 43 P P 05 36 38.1 -0.2
baz=312
U15A **North Rim** 78.23 53 *eP* P 05 36 40.2 +1.1
comp=Z,7.4nm,0.8s
O20A **White River Ci** 78.36 48 P P 05 36 39.1 -0.5
baz=310
O20A **White River Ci** 78.36 48 *eP* P 05 36 40.4 +0.8
comp=Z,12nm,0.9s
Y12C **Blythe** 78.44 56 P P 05 36 40.5 +0.6
baz=308
A32A **Rocking H Ranc** 78.59 36 P P 05 36 40.0 -0.4
baz=316
BUR08 **Bucovina Ar. S** 78.60 323 *eP* P 05 36 41.5 +0.9
BURAR **Bucovina Array** 78.61 323 ⇓ *iP* P 05 36 41.4 +0.7
BURAR **Bucovina Array** 78.61 323 ⇓ P 05 36 41.4 +0.7
GLA **Glamis** 78.67 57 P P 05 36 41.0 -0.2
baz=308
TESR **Tescani** 78.68 321 ⇑ *iP* P 05 36 41.3 +0.3
C31A **Landman Farms,** 78.81 37 P P 05 36 41.3 -0.3
baz=315
CFR **Carcaliu** 78.85 319 ⇑ *iP* P 05 36 44.8 +2.9
CFR **Carcaliu** 78.85 319 ⇑ P P 05 36 44.8 +2.9
PV09 **Paradox Valley** 78.88 50 *eP* P 05 36 43.9 +1.3
B32A **Ashes, Strandq** 78.94 36 P P 05 36 41.8 -0.5
baz=316
ODBI **Odobesti** 79.00 320 ⇑ *iP* P 05 36 54.8 +12
PV10 **Paradox Valley** 79.02 50 *eP* P 05 36 44.8 +1.5
PV04 **Paradox Valley** 79.09 50 *eP* P 05 36 44.6 +1.0
PLOR **Plostina** 79.14 321 ⇑ *iP* P 05 36 58.6 +15
STHS **Stebnicka Huta** 79.16 326 *eP* P 05 36 44.0 +0.4
STHS pmax pmax
comp=Z,8.0nm,0.7s
STHS **Stebnicka Huta** 79.16 326 *eP* P 05 36 44.0 +0.4
PV05 **Paradox Valley** 79.17 50 *eP* P 05 36 45.5 +1.4
TIRR **Tirgusor** 79.19 319 ⇑ *iP* P 05 36 48.3 +4.5
TIRR **Tirgusor** 79.19 319 ⇑ P P 05 36 48.3 +4.5
N23A **Red Feather La** 79.20 46 P P 05 36 44.4 +0.1
baz=311
N23A **Red Feather La** 79.20 46 *eP* P 05 36 45.7 +1.4
comp=Z,7.1nm,1.0s
HARR **Harsova** 79.29 319 ⇑ *iP* P 05 36 45.6 +1.3
HARR **Harsova** 79.29 319 ⇑ P P 05 36 45.6 +1.3
Y14A **Wickenburg** 79.32 55 *eP* P 05 36 45.6 +0.8
comp=Z,47nm,1.0s
AGMN **Agassiz Nation** 79.32 36 P P 05 36 44.1 -0.3
baz=316
WUAZ **Wupatki** 79.38 53 P P 05 36 45.2 0.0
baz=309
WUAZ **Wupatki** 79.38 53 *eP* P 05 36 46.1 +0.9
comp=Z,14nm,1.0s
CRVS **Cervenica-Dubn** 79.44 325 *eP* P 05 36 45.8 +0.7
CRVS **Cervenica-Dubn** 79.44 325 *eP* P 05 36 45.8 +0.7
PV01 **Paradox Valley** 79.45 50 *eP* P 05 36 46.8 +1.1
BRTR **Keskin Array B** 79.46 312 P P 05 36 46.1 +0.6
comp=Z,0.7nm,0.5s,baz=90,slow=3.7,SNR=5.0
E31A **Nome** 79.61 38 P P 05 36 45.8 -0.2
baz=315
DOPR **Dopca** 79.69 321 ⇑ *iP* P 05 36 48.8 +2.3
B34A **Aery, Baudette** 79.74 35 P P 05 36 45.7 -1.1
baz=317
BR231 **Keskin MP Arra** 79.89 313 *eP* P 05 36 46.6 -1.2
X16A **Lo Mia Camp, P** 80.03 54 *eP* P 05 36 49.6 +0.8
comp=Z,10.0nm,1.0s
MVCO **Mesa Verde** 80.09 50 P P 05 36 49.3 +0.2
baz=310
MVCO **Mesa Verde** 80.09 50 *eP* P 05 36 50.2 +1.1
comp=Z,8.6nm,0.8s
ISCO **Idaho Springs** 80.11 47 P P 05 36 49.7 +0.4
baz=312
ISCO **Idaho Springs** 80.11 47 *eP* P 05 36 50.6 +1.3
ISCO pmax pmax
comp=Z,10.0nm,1.4s
ISCO **Idaho Springs** 80.11 47 *eP* P 05 36 50.6 +1.3
comp=Z,9.5nm,1.4s
KSP **Ksiaz** 80.20 329 P P 05 36 50.9 +1.8
KSP pmax pmax
comp=Z,5.0nm,0.7s
VOIR 80.23 321 ⇓ *iP* P 05 36 49.5 -0.1
VOIR 80.23 321 P P 05 36 49.4 -0.1
B35A **Bob, Littlefor** 80.25 35 P P 05 36 48.8 -0.7
baz=318
DRGR 80.40 323 ⇑ *iP* P 05 36 50.8 +0.4
DRGR 80.40 323 ⇑ P P 05 36 50.9 +0.5
F32A **Veblen** 80.47 38 P P 05 36 50.5 -0.2
baz=316
ARR **Arges** 80.49 321 ⇓ *iP* P 05 36 52.7 +1.8
MORC **Moravsky Berou** 80.50 328 ⇓ *iP* P 05 36 51.1 +0.3
MORC **Moravsky Berou** 80.50 328 ⇓ P P 05 36 51.1 +0.3
D34A **Park Rapids** 80.51 36 P P 05 36 50.7 -0.2
baz=317
E33A **Westby DABS, E** 80.55 37 P P 05 36 51.1 -0.1
baz=316
C35A **Jirik Farms, M** 80.63 35 P P 05 36 50.9 -0.6
baz=318
214A **Organ Pipe Nat** 80.68 57 P P 05 36 52.0 -0.1
baz=309
I30A **Oacoma** 80.70 41 P P 05 36 52.2 +0.2
baz=315
G32A **Webster** 80.72 39 P P 05 36 51.8 -0.3
baz=316
S22A **4UR Ranch, Cre** 80.75 49 P P 05 36 52.8 +0.1
baz=311
S22A **4UR Ranch, Cre** 80.75 49 *eP* P 05 36 54.4 +1.6
comp=Z,29nm,2.0s
H31A **Wolsey** 80.79 40 P P 05 36 52.1 -0.3
baz=315
PSZ **Piszkesteto** 80.87 325 ⇑ *iP* P 05 37 07.0 +14
F33A **5 Mile Ranch,** 80.90 38 P P 05 36 52.8 -0.1
baz=316
VYHS **Vyhne** 80.91 326 *eP* P 05 36 54.1 +1.1
VYHS pmax pmax
comp=Z,1.0nm,1.0s
VYHS **Vyhne** 80.91 326 *eP* P 05 36 54.1 +1.1
VYHS *ePP* PP 05 39 57.2 +0.2
J30A **Dallas** 81.08 41 P P 05 36 53.7 -0.4
baz=315
C36A **Pine Crest Far** 81.10 35 P P 05 36 53.8 -0.2
baz=318
BRG **Berggiesshubel** 81.11 330 *eP* P 05 36 55.6 +1.6
comp=Z,3.4nm,1.1s
BRG *e* 05 37 03.4
comp=Z,3.8nm,1.0s
comp=N,239nm,16.4s
comp=E,178nm,14.3s
comp=Z,374nm,15.4s
BRG **Berggiesshubel** 81.11 330 *eP* P 05 36 55.6 +1.6
BRG *e* 05 37 03.4
BRG pmax pmax
comp=Z,3.0nm,1.1s
BRG MLR MLR
comp=N,239nm,16.4s
BRG MLR MLR
comp=E,178nm,14.3s
BRG MLR MLR
comp=Z,374nm,15.4s
CLL **Collm** 81.13 331 *i* P P 05 36 54.2 +0.1
comp=Z,4.0nm,0.8s
CLL *e* 05 37 15.0
CLL LmH 06 10 00.0
comp=N,300nm,18.4s
CLL LmH 06 10 00.0
comp=E,400nm,19.4s
CLL LmV 06 17 00.0
comp=Z,300nm,18.5s
CLL **Collm** 81.13 331 *i* P P 05 36 54.2 +0.1
CLL pmax pmax
comp=Z,4.0nm,0.8s
CLL MLR MLR
comp=Z,300nm,18.5s
CLL **Collm** 81.13 331 *eP* P 05 36 54.5 +0.4
comp=Z,4.4nm,0.9s
SIRR **Siria** 81.28 323 ⇓ *iP* P 05 36 56.0 +1.0
G33A **Ortonville** 81.29 38 P P 05 36 54.9 -0.2
baz=316
C37A **Embarrass** 81.41 34 P P 05 36 55.6 -0.1
baz=319
F34A **Alexandria** 81.43 37 P P 05 36 55.2 -0.6
baz=317
K30A **Basset** 81.47 42 P P 05 36 56.2 0.0
baz=315
H33A **Prehn Over Nor** 81.51 39 P P 05 36 55.8 -0.5
baz=316

SDCO **Great Sand Dun** 81.54 48 P P 05 36 56.9 0.0
baz=312
SDCO **Great Sand Dun** 81.54 48 *eP* P 05 36 58.1 +1.2
comp=Z,7.6nm,1.3s
EYMN **Ely** 81.56 34 P P 05 36 56.4 -0.1
baz=319
PRU **Pruhonice** 81.57 329 *eP* P 05 36 57.1 +0.6
PRU **Pruhonice** 81.57 329 *eP* P 05 36 57.1 +0.6
TUC **Tucson** 81.79 55 P P 05 36 58.9 +0.8
baz=310
C38A **Sawbill Land.** 81.83 34 P P 05 36 57.3 -0.6
baz=319
E36A **McGregor** 81.83 36 P P 05 36 56.9 -1.1
baz=318
L31A **Butterfield Fa** 82.23 42 P P 05 36 59.9 -0.2
baz=315
ECSD **EROS Data Cent** 82.26 39 P P 05 36 59.8 -0.4
baz=316
ECSD **EROS Data Cent** 82.26 39 *eP* P 05 37 00.0 -0.2
comp=Z,9.4nm,0.9s
K32A **Verdigre** 82.34 41 P P 05 37 00.8 +0.2
baz=316
MDVR **Moldovita** 82.34 322 ⇑ *iP* P 05 36 59.7 -1.0
H35A **Sunnyside Ranc** 82.43 38 P P 05 37 01.3 +0.2
baz=317
T25A **Trinidad** 82.59 48 P P 05 37 02.7 +0.4
baz=312
T25A **Trinidad** 82.59 48 *eP* P 05 37 03.2 +0.8
comp=Z,12nm,1.0s
CONA **Conrad Observa** 82.63 327 *i* P P 05 37 03.2 +1.1
comp=Z,3.0nm,1.2s
KHC **Kasperske Hory** 82.63 329 *eP* P 05 37 02.7 +0.6
KHC **Kasperske Hory** 82.63 329 *eP* P 05 37 02.8 +0.6
KHC pmax pmax
comp=Z,2.0nm,1.1s
KHC **Kasperske Hory** 82.63 329 *eP* P 05 37 02.8 +0.6
comp=Z,1.6nm,1.1s
GERES **GERESS Array B** 82.81 329 P P 05 37 03.3 +0.2
comp=Z,0.4nm,0.4s,baz=33,slow=5.1,SNR=7.4
GEA0 **GERESS Array S** 82.81 329 *eP* P 05 37 03.1 0.0
ANMO **Albuquerque** 82.82 51 P P 05 37 03.8 +0.2
baz=312
ANMO **Albuquerque** 82.82 51 *d iP* P 05 37 02.9 -0.7
ANMO pmax pmax
comp=Z,7.0nm,1.7s
ANMO **Albuquerque** 82.82 51 *eP* P 05 37 04.7 +1.1
comp=Z,3.9nm,1.0s
H36A **Jessenland, He** 82.96 37 P P 05 37 04.3 +0.4
baz=318
VTS **Vitosha** 83.19 320 ⇓ *iP* P 05 37 05.6 +0.3
VTS **Vitosha** 83.19 320 ⇓ P P 05 37 05.6 +0.3
BNM **Barren Site** 83.24 52 *eP* P 05 37 07.0 +1.2
K34A **Le Mars** 83.28 40 P P 05 37 05.7 +0.1
baz=317
ARSA **Arzberg** 83.30 327 *i* P P 05 37 04.1 -1.5
comp=Z,0.7nm,0.4s
MOA **Molln** 83.36 328 *i* P P 05 37 07.2 +1.3
comp=Z,3.4nm,1.4s
319A **Douglas** 83.37 55 *eP* P 05 37 07.5 +1.2
comp=Z,10.0nm,0.8s
H37A **Dierke Farm, C** 83.44 37 P P 05 37 06.1 -0.2
baz=319
121A **Cookes Peak, D** 83.58 54 P P 05 37 07.8 +0.3
baz=311
I37A **Lemond, Waseca** 83.63 37 P P 05 37 07.1 -0.2
baz=318
SOKA **Soboth** 83.95 327 *i* P P 05 37 09.5 +0.4
comp=Z,2.4nm,0.7s
SCHQ **Schefferville** 84.07 17 P P 05 37 09.6 +0.3
comp=Z,2.9nm,0.8s,baz=327,slow=6.0,SNR=3.6
SCHQ LR LR 06 15 23.9
comp=Z,119nm,21.8s,baz=17,slow=36
I38A **Scanlan Farm,** 84.12 37 P P 05 37 09.2 -0.6
baz=319
P32A **Huiting Farm,** 84.17 43 P P 05 37 10.1 -0.1
baz=316
OBKA **Obir** 84.29 327 *i* PcP P 05 37 12.0 +1.3
comp=Z,2.4nm,0.8s
KBA **Koelnbreinsper** 84.35 328 *i* PcP P 05 37 12.4 +1.2
comp=Z,2.5nm,0.8s
M35A **Neola** 84.37 40 P P 05 37 10.9 -0.2
baz=317
L36A **Harm Buss Farm** 84.43 39 P P 05 37 11.2 -0.2
baz=318
MYKA **Terra Mystica** 84.58 328 *i* P P 05 37 11.9 -0.3
comp=Z,1.8nm,0.5s
Q32A **Meiter Ranch,** 84.64 44 P P 05 37 12.4 -0.2
baz=316
M36A **Felix, Anita** 84.84 40 P P 05 37 13.5 0.0
baz=318
WATA **Walderalm** 84.87 329 *i* PcP P 05 37 15.2 +1.5
comp=Z,1.7nm,0.7s
WTTA **Wattenberg** 84.90 329 *i* P P 05 37 10.2 -3.8
comp=Z,2.1nm,0.7s
J39A **Decorah** 84.95 37 P P 05 37 13.3 -0.7
baz=319
ABTA **Abfaltersbach** 84.96 329 *i* PcP P 05 37 16.6 +2.4
comp=Z,0.9nm,0.6s
MOTA **Moosalm** 85.05 330 *i* PcP P 05 37 15.4 +0.7
comp=Z,1.9nm,0.8s
RETA **Reutte** 85.07 330 *i* P P 05 37 15.1 +0.4
comp=Z,4.1nm,1.1s
P34A **Walnut Farm, R** 85.17 42 P P 05 37 14.8 -0.5
baz=316
PDG **Podgorica** 85.28 322 ⇑ *iP* P 05 37 11.1 -4.6
BFO **Black Forest** 85.32 332 *eP* P 05 37 16.1 +0.3
BFO pmax pmax
comp=Z,10.0nm,1.4s
BFO **Black Forest** 85.32 332 *eP* P 05 37 16.1 +0.3
comp=Z,10.0nm,1.4s
K39A **Oelwein** 85.34 37 P P 05 37 15.5 -0.5
baz=319
J40A **Soldiers Grove** 85.36 36 P P 05 37 15.6 -0.5
baz=320
R33A **Lancaster Ranch,** 85.44 44 P P 05 37 16.3 -0.4
baz=316
FETA **Feichten** 85.47 330 *i* P P 05 37 15.3 -1.4
comp=Z,2.7nm,0.9s
DAVA **Damuels** 85.58 330 *i* P P 05 37 12.8 -4.6
comp=Z,3.5nm,0.7s
KSU1 **Kansas State U** 85.61 43 P P 05 37 17.1 -0.3
baz=317
CDF **Champ du Feu** 85.64 332 *eP* P 05 37 17.3 -0.2
CDF pmax pmax
comp=Z,2.0nm,0.6s
MNTX **Cornudas Mount** 85.66 53 P P 05 37 18.0 +0.2
baz=312
MNTX **Cornudas Mount** 85.66 53 *eP* P 05 37 18.5 +0.7
comp=Z,4.7nm,1.3s
J41A **Loganville** 85.72 36 P P 05 37 17.5 -0.4
baz=320
T32A **Huddler Ranch,** 85.72 45 P P 05 37 18.7 +0.6
baz=316
O36A **Bolckow** 85.73 41 P P 05 37 18.6 +0.7
baz=318
AMTX **Amarillo** 85.75 48 P P 05 37 18.9 +0.6
baz=314
AMTX **Amarillo** 85.75 48 *eP* P 05 37 19.5 +1.2
comp=Z,8.8nm,0.8s
FUORN **Ofenpass-Fuorn** 85.98 330 *eP* P 05 37 20.2 +0.8
comp=Z,5.1nm,0.8s
P36A **Good Intent, A** 85.98 41 P P 05 37 19.0 -0.2
baz=318
Q35A **Mercer Eighty,** 86.10 42 P P 05 37 19.0 -0.9
baz=317
L40A **Anamosa** 86.15 37 P P 05 37 19.4 -0.6
baz=320
K41A **Shullsburg** 86.17 37 P P 05 37 19.5 -0.6
baz=320
Q36A **Arnold C. Orve** 86.33 42 P P 05 37 20.4 -0.6
baz=317
N39A **Derby Farms, D** 86.42 39 P P 05 37 20.9 -0.5
baz=319
P37A **Lathrop** 86.45 41 P P 05 37 21.2 -0.3
baz=318
U33A **Lingo Farm, Me** 86.71 45 P P 05 37 22.6 -0.3
baz=316
R36A **Gordon, Harris** 86.77 42 P P 05 37 23.3 +0.1
baz=317
S35A **Otter Creek Ra** 86.80 43 P P 05 37 23.1 -0.2
baz=317
W32A **Sentinel** 87.00 47 P P 05 37 24.0 -0.3
baz=315
T35A **Sooner Cattle** 87.25 44 P P 05 37 24.7 -0.8
baz=317
Q38A **Cooks Store, C** 87.29 41 P P 05 37 24.5 -1.2
baz=318
O40A **La Belle** 87.31 39 P P 05 37 25.0 -0.7
baz=320
P39B **Salisbury** 87.34 40 P P 05 37 25.5 -0.3
baz=319
W33A **Caddo, Fort Co** 87.43 46 P P 05 37 26.2 -0.2
baz=316
V34A **Guthrie** 87.48 45 P P 05 37 26.8 +0.2
baz=316
T36A **Boggs Farm, Ca** 87.50 44 P P 05 37 26.4 -0.3
baz=317
WMOK **Wichita Mounta** 87.54 47 P P 05 37 26.5 -0.5
baz=316
WMOK **Wichita Mounta** 87.54 47 *eP* P 05 37 27.4 +0.4
WMOK pmax pmax
comp=Z,17nm,0.9s
WMOK **Wichita Mounta** 87.54 47 *eP* P 05 37 27.4 +0.4
comp=Z,17nm,0.9s
S37A **Fort Scott** 87.55 42 P P 05 37 25.5 -1.5
baz=318
Q39A **Willow Grove F** 87.56 40 P P 05 37 26.2 -0.7
baz=319
P40A **Paris** 87.67 40 P P 05 37 27.0 -0.5
baz=319
R38A **Fenwick Farm,** 87.72 42 P P 05 37 26.9 -0.8
baz=318
LOR **Lormes** 87.83 334 *eP* P 05 37 28.8 +0.7
LOR pmax pmax
comp=Z,4.0nm,0.9s
X33A **Lawton** 87.84 47 P P 05 37 28.7 +0.3
baz=316
FLN **La Foliniere** 87.96 337 *eP* P 05 37 28.3 -0.4
FLN pmax pmax
comp=Z,5.0nm,0.9s
LDF **La Druitiere** 88.00 337 *eP* P 05 37 28.4 -0.5
LDF pmax pmax
comp=Z,4.0nm,0.8s
P41A **Barry, Barry** 88.05 39 P P 05 37 29.2 -0.1
baz=320
Q40A **Laux Farm, Aux** 88.06 40 P P 05 37 29.4 0.0
baz=319
R39A **Chumby, Stover** 88.08 41 P P 05 37 29.0 -0.5
baz=319
S38A **Stockton** 88.13 42 P P 05 37 29.4 -0.4
baz=318
Y33A **Hilltop Ranch,** 88.15 47 P P 05 37 29.7 -0.2
baz=316
X34A **Smith Ranch, M** 88.19 46 P P 05 37 30.3 +0.3
baz=316
HDIL **Hopedale** 88.24 37 P P 05 37 30.3 +0.1
baz=321
LPL **La Plagne** 88.27 331 *eP* P 05 37 31.3 +0.8
LPL pmax pmax
comp=Z,2.0nm,0.8s
LPG **La Plagne** 88.28 331 *eP* P 05 37 31.5 +0.9
LPG pmax pmax
comp=Z,2.0nm,0.7s
W35A **Tecumseh** 88.33 45 P P 05 37 31.0 +0.3
baz=317
TX31 **Lajitas Ar. Si** 88.34 54 *eP* P 05 37 31.5 +0.5
TXAR **Lajitas Array** 88.34 54 P P 05 37 31.4 +0.4
comp=Z,2.1nm,0.7s,baz=301,slow=3.4,SNR=31
T38A **Diamond** 88.37 43 P P 05 37 29.8 -1.1
baz=318
V36A **Jenks** 88.39 44 P P 05 37 30.9 -0.1
baz=317
S39A **Bolivar** 88.40 42 P P 05 37 30.4 -0.6
baz=319
GRR **Gorron** 88.41 337 *eP* P 05 37 30.7 -0.1
GRR pmax pmax
comp=Z,5.0nm,0.7s
AVF **Avril sur Loir** 88.42 334 *eP* P 05 37 30.8 -0.1
AVF pmax pmax
comp=Z,3.0nm,0.8s
P42A **Winchester** 88.47 39 P P 05 37 30.9 -0.4
baz=320
R40A **Maddies Statio** 88.49 41 P P 05 37 31.3 -0.1
baz=319
Z33A **Whitaker Ranch** 88.59 48 P P 05 37 31.3 -0.7
baz=316
U38A **Gravette** 88.76 43 P P 05 37 32.5 -0.2
baz=318
X35A **Drake** 88.82 46 P P 05 37 33.5 +0.4
baz=317
T39A **Clever** 88.87 42 P P 05 37 33.3 +0.1
baz=319
Q42A **Golden Eagle** 88.90 39 P P 05 37 33.4 +0.1
baz=320
X36A **Centrahoma** 89.05 45 P P 05 37 33.5 -0.6
baz=317
V38A **Canehill** 89.18 43 P P 05 37 34.0 -0.7
baz=318
T40A **Mansfield** 89.22 41 P P 05 37 34.0 -0.9
baz=319
TCF **Toulx Ste Croi** 89.25 334 *eP* P 05 37 35.7 +0.8
TCF pmax pmax
comp=Z,11nm,1.7s
U39A **Green Forest** 89.29 43 P P 05 37 33.7 -1.5
baz=319
233A **Rising Star** 89.41 49 P P 05 37 35.7 -0.2
baz=316
SFIN **Lafayette** 89.42 36 P P 05 37 34.9 -0.7
baz=322
Z35A **Perchaven, San** 89.43 47 P P 05 37 35.9 -0.1
baz=316
X37A **Clayton** 89.59 45 P P 05 37 36.4 -0.2
baz=318
V39A **Pettigrew** 89.61 43 P P 05 37 36.6 -0.2
baz=318
U40A **Yellville** 89.64 42 P P 05 37 36.6 -0.3
baz=319
T41A **Mountain View** 89.70 41 P P 05 37 36.7 -0.4
baz=320
W38A **Poteau** 89.70 44 P P 05 37 36.7 -0.5
baz=318
MFF **Saint Martin d** 89.76 336 *eP* P 05 37 37.3 +0.1
MFF pmax pmax
comp=Z,12nm,1.4s
X38A **Whitesboro** 89.83 44 P P 05 37 37.4 -0.3
baz=318
333A **Richland Sprin** 89.85 49 P P 05 37 37.2 -0.7
baz=316
234A **Clairette** 89.87 48 P P 05 37 37.6 -0.5
baz=316
Z36A **Blue Ridge** 89.95 46 P P 05 37 38.4 +0.1
baz=317
JCT **Junction City** 89.95 50 P P 05 37 38.6 +0.1
baz=315
JCT **Junction City** 89.95 50 *eP* P 05 37 39.0 +0.5
JCT pmax pmax
comp=Z,4.0nm,0.8s
JCT **Junction City** 89.95 50 *eP* P 05 37 39.0 +0.5
comp=Z,4.2nm,0.8s
V40A **Witts Springs** 90.08 43 P P 05 37 38.4 -0.5
baz=319
R44A **Waltonville** 90.13 39 P P 05 37 38.7 -0.4
baz=321
U41A **Viola** 90.15 42 P P 05 37 38.7 -0.5
baz=320
433A **Art** 90.19 50 P P 05 37 38.6 -1.0
baz=316
WHTX **Lake Whitney,** 90.28 48 P P 05 37 40.1 +0.2
baz=316
WHTX **Lake Whitney,** 90.28 48 *eP* P 05 37 41.1 +1.2
comp=Z,7.4nm,0.8s
334A **Lometa** 90.29 49 P P 05 37 40.0 0.0
baz=316
X39A **Fountain Ranch** 90.34 44 P P 05 37 39.0 -0.1
baz=318
W40A **Ferguson Farm,** 90.40 43 P P 05 37 40.3 -0.1
baz=319
V41A **Mountainview** 90.45 42 P P 05 37 39.9 -0.8
baz=319
Z37A **Pogue Cattle C** 90.47 46 P P 05 37 40.3 -0.4
baz=317
136A **Ennis** 90.47 47 P P 05 37 40.5 -0.3
baz=317
CAF **Calviac** 90.49 334 *eP* P 05 37 41.1 +0.4
CAF pmax pmax
comp=Z,4.0nm,1.1s
MIAR **Mount Ida** 90.61 44 P P 05 37 41.8 +0.5
baz=319
MIAR **Mount Ida** 90.61 44 *eP* P 05 37 41.9 +0.5
MIAR pmax pmax
comp=Z,4.0nm,0.8s
MIAR **Mount Ida** 90.61 44 *eP* P 05 37 41.9 +0.5
comp=Z,4.4nm,0.8s
434A **Burnet** 90.64 49 P P 05 37 41.6 -0.1
baz=316
Y39A **Lockesburg** 90.78 45 P P 05 37 42.2 0.0

baz=318
W41B Gary Mavity, V 90.86 43 P P 05 37 42.3 -0.2
baz=319
LFF La Frestale 90.93 334 *e*P P 05 37 43.9 +1.2
LFF pmax pmax
comp=Z,10.0nm,1.2s
633A Saathoff Ranch 91.06 51 P P 05 37 43.3 -0.3
baz=316
534A Blanco 91.08 50 P P 05 37 42.9 -0.8
baz=316
ESDC Sonseca Array 97.20 335 P P 05 38 11.6 0.0
comp=Z,0.6nm,0.7s,baz=29,slow=4.7,SNR=4.9
ESDC LR LR 06 29 12.0
comp=Z,131nm,18.5s,baz=320,slow=40
LPAZ La Paz 144.89 61 PKP PKPab 05 44 16.0 -0.2
comp=Z,3.3nm,0.7s,baz=340,slow=3.7,SNR=18

JMA 10 05:27:58.5±0.1, 38.08N×143.20E, h34km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.50**	**285**	P	Pn	Pn	05 28 23.9	+0.9
JIO				S	Sn	Sn	05 28 42.7	+1.2
OFUJ	**Ofunato**	**1.56**	**310**	P	Pn	Pn	05 28 24.7	+0.9
OFUJ				*e*S	Sn	Sn	05 28 43.8	+0.9
JMK	**Ichinoseki**	**1.78**	**300**	P	Pn	Pn	05 28 28.1	+1.3
JMK				*e*S	Sn	Sn	05 28 49.8	+1.5
JMM	**Marumori**	**1.91**	**264**	P	Pn	Pn	05 28 29.6	+0.9
JMM				*e*S	Sn	Sn	05 28 52.5	+0.9
JFK	**Kawauchi**	**1.98**	**250**	P	Pn	Pn	05 28 30.0	+0.4
JFK				*e*S	Sn	Sn	05 28 53.2	0.0
JOU	**Okura**	**2.02**	**279**	P	Pn	Pn	05 28 31.8	+1.7
JOU				*e*S	Sn	Sn	05 28 56.5	+2.3
JOM	**Ohasama**	**2.04**	**314**	P	Pn	Pn	05 28 31.8	+1.4
JOM				*e*S	Sn	Sn	05 28 56.3	+1.6
JFT	**Otama**	**2.34**	**257**	P	Pn	Pn	05 28 36.3	+1.8
JFT				S	Sn	Sn	05 29 04.3	+2.3
JYK	**Kaneyama**	**2.38**	**291**	P	Pn	Pn	05 28 36.9	+1.8
JYK				*e*S	Sn	Sn	05 29 05.6	+2.5
JRG	**Rokugo**	**2.40**	**304**	P	Pn	Pn	05 28 37.4	+2.0
JRG				*e*S	Sn	Sn	05 29 05.8	+2.2
JYS	**Shirataka**	**2.48**	**274**	P	Pn	Pn	05 28 38.4	+2.0
JYS				*e*S	Sn	Sn	05 29 08.1	+2.6
JANG	**Nango**	**2.64**	**331**	S	Sn	Sn	05 29 10.1	+0.6

*IDC **10** 05:31:23.9±0.8, 37.81N×143.41E, h0km, mb3.7/5, mb1 3.7/7, mb1mx3.5/38, mbtmp3.6/7, ML3.0/3, Error ellipse: s-maj=14.7km s-min=7.2km az=144.0*
*ISCJB **10** 05:31:26.0±0.8, 37.93N±0.04×143.25E±0.06, h19km, mb3.6/5, Error ellipse: s-maj=7.0km s-min=5.2km az=23.6*
*JMA **10** 05:31:28.7±0.1, 37.96N×143.19E, h45km, M4.0*
ISC 10 05:31:26.6±1.1, 37.90N±0.05×143.31E±0.08, h19km, n21, σ1§48/34, mb3.7/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.64**	**290**	P	Pn	**Pn**	**05 31 54.4**	**0.0**
JIO				S	Sn	**Sn**	**05 32 13.2**	**-1.8**
OFUJ	**Ofunato**	**1.75**	**313**	P	Pn	**Pn**	**05 31 55.7**	**-0.2**
OFUJ				S	Sn	**Sn**	**05 32 15.7**	**-1.9**
JMK	**Ichinoseki**	**1.95**	**303**	P	Pn	**Pn**	**05 31 58.9**	**+0.3**
JMK				S	Sn	**Sn**	**05 32 21.3**	**-1.3**
JMM	**Marumori**	**1.99**	**270**	P	Pn	**Pn**	**05 31 59.4**	**+0.2**
JMM				S	Sn	**Sn**	**05 32 21.5**	**-2.1**
JFK	**Kawauchi**	**2.01**	**255**	P	Pn	**Pn**	**05 31 59.3**	**-0.2**
JFK				*e*S	Sn	**Sn**	**05 32 22.2**	**-1.8**
JOM	**Ohasama**	**2.23**	**315**	P	Pn	**Pn**	**05 32 03.0**	**+0.5**
JOM				S	Sn	**Sn**	**05 32 28.4**	**-1.1**
JFT	**Otama**	**2.39**	**262**	P	Pn	**Pn**	**05 32 05.8**	**+1.1**
JFT				S	Sn	**Sn**	**05 32 32.8**	**-0.7**
JYK	**Kaneyama**	**2.53**	**295**	P	Pn	**Pn**	**05 32 07.6**	**+0.9**
JYK				S	Sn	**Sn**	**05 32 36.4**	**-0.6**
JANG	**Nango**	**2.84**	**331**	*e*S	Sn	**Sn**	**05 32 42.3**	**-2.3**
JAG	**Ashikaga**	**3.42**	**246**	P	Pn	**Pn**	**05 32 19.8**	**+1.0**
JAG				S	Sn	**Sn**	**05 32 56.8**	**-1.9**
JOT	**Ohata**	**3.89**	**334**	P	Pn	**Pn**	**05 32 26.9**	**+1.6**
JOT				*e*S	Sn	**Sn**	**05 33 08.0**	**-2.5**
JRY	**Ryogami san**	**4.00**	**243**	P	Pn	**Pn**	**05 32 27.7**	**+0.8**
JRY				*e*S	Sn	**Sn**	**05 33 09.7**	**-3.5**
MJAR	**Matsushiro Arr**	**4.29**	**253**	Pn	Pn	**Pn**	**05 32 32.1**	**+1.2**
1.1nm,0.3s,baz=87,slow=15,SNR=5.8								
MJAR				Sn	Sn	**Sn**	**05 33 22.1**	**+1.7**
2.6nm,0.3s,baz=313,slow=36,SNR=5.8								
MAT	**Matsushiro**	**4.29**	**253**	P	Pn	**Pn**	**05 32 32.9**	**+2.0**
MAT				S	Sn	**Sn**	**05 33 20.5**	**+0.1**
JHJ	**Hachijo jima 2**	**5.57**	**212**	Pn	Pn	**Pn**	**05 32 48.0**	**-0.4**
1.9nm,0.3s,baz=61,slow=19,SNR=2.1								
PETK	**Petropavlovsk-**	**18.19**	**29**	P	Pn	**Pn**	**05 35 37.5**	**-0.4**
0.1nm,0.3s,baz=237,slow=13,SNR=3.4								
SONM	**Songino Array**	**28.58**	**302**	P	P	**P**	**05 37 22.2**	**+0.8**
0.4nm,0.7s,baz=121,slow=5.6,SNR=3.0								
ZALV	**Zalesovo Beam**	**42.46**	**312**	P	P	**P**	**05 39 22.1**	**+2.0**
0.4nm,0.3s,baz=79,slow=9.2,SNR=3.2								
MKAR	**Makanchi Array**	**44.95**	**302**	P	P	**P**	**05 39 40.1**	**-0.1**
0.3nm,0.3s,baz=95,slow=9.0,SNR=3.4								
WRA	**Warramunga Arr**	**58.15**	**190**	P	P	**P**	**05 41 18.1**	**-1.0**
0.8nm,0.9s,baz=6.6,slow=7.1,SNR=3.8								
FINES	**FINESS Array B**	**68.75**	**333**	P	P	**P**	**05 42 29.1**	**+0.3**
1.0nm,0.8s,baz=4.7,slow=10,SNR=3.5								

*IDC **10** 05:34:29.0±1.0, 43.78N×128.73W, h0km, mb3.9/12, mb1 4.1/16, mb1mx3.9/39, mbtmp3.9/16, ML3.9/4, MS3.8/3, Ms1 3.8/3, ms1mx3.2/57, Error ellipse: s-maj=24.6km s-min=15.4km az=28.0*
*ISCJB **10** 05:34:32.2±0.3, 44.13N±0.03×128.51W±0.04, h13km, mb4.1/27, MS4.5/1, Error ellipse: s-maj=5.4km s-min=3.6km az=38.1*
*NEIC **10** 05:34:33.2±0.4, 44.11N×128.58W, h10km, mb4.1/32, Error ellipse: s-maj=7.0km s-min=3.7km az=45.0*
NEIC Felt at Eugene and Tillamook.
ISC 10 05:34:32.3±0.6, 43.94N±0.07×128.65W±0.06, h13km, n108, σ1§65/104, mb4.2/29, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
I03D	**Drain, OR**	**3.84**	**92**	P	Pn	**Pn**	**05 35 28.3**	**-2.8**
baz=278,SNR=66								
I03D				S	Sn	**Sn**	**05 36 14.7**	**-1.4**
baz=278								
HSO	**Harness Mounta**	**4.05**	**94**	P	Pn	**Pn**	**05 35 32.8**	**-1.3**
G03D	**McMinnville, O**	**4.05**	**70**	P	Pn	**Pn**	**05 35 32.3**	**-1.7**
baz=256,SNR=22								
G03D				S	Sn	**Sn**	**05 36 21.0**	**-0.3**
baz=256								
L02D	**Cave Junction,**	**4.10**	**114**	S	Sn	**Sn**	**05 36 17.8**	**-4.8**
baz=300								
E03A	**Lebam**	**4.44**	**52**	P	Pn	**Pn**	**05 35 38.4**	**-0.9**
I04A	**Tendick Farm,**	**4.51**	**90**	P	Pn	**Pn**	**05 35 37.4**	**-3.0**
baz=276,SNR=42								
F04D	**Rainier, OR**	**4.54**	**60**	P	Pn	**Pn**	**05 35 39.8**	**-0.9**
baz=245								
F04D				S	Sn	**Sn**	**05 36 34.2**	**+1.0**
baz=245								
G04A	**Mulino**	**4.59**	**72**	P	Pn	**Pn**	**05 35 40.4**	**-0.9**
NLWA	**Neilton Lookou**	**4.81**	**42**	*e*Pn	Pn	**Pn**	**05 35 39.1**	**-5.4**
F04A	**Amboy**	**4.85**	**64**	*e*Pn	Pn	**Pn**	**05 35 44.3**	**-0.7**
BPO	**Bald Peter**	**5.04**	**79**	P	Pn	**Pn**	**05 35 47.2**	**-0.7**
G05D	**Wamic, OR**	**5.39**	**73**	P	Pn	**Pn**	**05 35 50.5**	**-2.0**
baz=260								
G05D				S	Sn	**Sn**	**05 36 54.8**	**+0.3**
baz=260								
LON	**Longmire**	**5.58**	**57**	*e*Pn	Pn	**Pn**	**05 35 54.5**	**-0.6**
D05A	**Enumclaw**	**5.69**	**53**	*e*Pn	Pn	**Pn**	**05 35 56.8**	**+0.2**
G06A	**Carlson Farm,**	**5.87**	**74**	*e*Pn	Pn	**Pn**	**05 35 58.5**	**-0.5**
PGC	**Sidney**	**5.93**	**36**	*e*Pn	Pn	**Pn**	**05 35 55.1**	**-4.7**
PGC				*e*Sn	Sn	**Sn**	**05 37 03.0**	**-4.5**
B05A	**Bryant**	**6.28**	**44**	P	Pn	**Pn**	**05 36 04.4**	**-0.2**
baz=230								
LTY	**Liberty**	**6.51**	**57**	*e*Pn	Pn	**Pn**	**05 36 08.3**	**+0.6**
HAWA	**Hanford**	**6.89**	**66**	*e*Pn	Pn	**Pn**	**05 36 13.0**	**0.0**
ORV	**Oroville**	**6.91**	**127**	*e*Pn	Pn	**Pn**	**05 36 15.4**	**+2.1**
G08A	**Pilot Rock**	**7.04**	**76**	*e*Pn	Pn	**Pn**	**05 36 14.3**	**-0.9**
D08A	**Wollman Farm,**	**7.51**	**62**	*e*Pn	Pn	**Pn**	**05 36 20.1**	**-1.4**
E09A	**Wood Farm, Sta**	**7.85**	**67**	*e*Pn	Pn	**Pn**	**05 36 25.3**	**-0.9**
PAHR	**Pah Rah Range**	**8.10**	**118**	*e*Pn	Pn	**Pn**	**05 36 33.0**	**+3.2**
C09A	**Chrisman Ranch**	**8.20**	**58**	*e*Pn	Pn	**Pn**	**05 36 29.5**	**-1.5**
BBB	**Bella Bella**	**8.26**	**2**	Pn	Pn	**Pn**	**05 36 32.3**	**+0.6**
0.6nm,0.3s,baz=228,slow=5.3,SNR=8.0								

F10A	**Beach Ranch, E**	**8.35**	**72**	*e*Pn		**Pn**	**05 36 32.7**	**-0.5**
F10A				*e*Lg		Lg	05 39 04.8	
CMB	**Columbia Colle**	**8.59**	**131**	*e*Pn		**Pn**	**05 36 38.6**	**+2.2**
NEW	**Newport**	**9.10**	**58**	Pn		**Pn**	**05 36 43.3**	**0.0**
0.2nm,0.3s,baz=241,slow=6.3,SNR=6.5								
NEW				LR		LR	05 40 07.4	
comp=Z,230nm,20.5s,baz=327,slow=37								
NEW	**Newport**	**9.10**	**58**	P		**Pn**	**05 36 42.6**	**-0.7**
baz=247								
NEW	**Newport**	**9.10**	**58**	*e*Pn		**Pn**	**05 36 43.1**	**-0.2**
BSMT	**Bassoo Peak**	**10.42**	**63**	*e*Pn		**Pn**	**05 37 00.9**	**-0.7**
MSO	**Missoula**	**10.74**	**69**	*e*Pn		**Pn**	**05 37 05.7**	**-0.2**
CHMT	**Chamberlain Mo**	**11.22**	**69**	*e*Pn		**Pn**	**05 37 13.5**	**+0.9**
GSC	**Goldstone, Bar**	**12.55**	**129**	*e*Pn		**Pn**	**05 37 33.3**	**+2.7**
MSU	**Marysvale**	**13.52**	**108**	*e*Pn		**Pn**	**05 37 46.7**	**+2.7**
LDFC	**Landfair**	**13.68**	**126**	*e*Pn		**Pn**	**05 37 48.3**	**+2.2**
EDM	**Edmonton**	**13.71**	**42**	*e*Pn		**Pn**	**05 37 47.0**	**+0.6**
KNB	**Kanab**	**13.88**	**114**	*e*Pn		Pn	05 37 54.0	+5.2
PDAR	**Pinedale Array**	**13.94**	**88**	Pn		**Pn**	**05 37 52.3**	**+2.6**
0.1nm,0.3s,baz=281,slow=11,SNR=2.0								
PFO	**Pinyon Flats O**	**14.01**	**133**	LR		LR	05 42 44.6	
comp=Z,367nm,18.0s,baz=328,slow=36								
W13A	**Hualapai Mount**	**14.39**	**123**	*e*Pn		**Pn**	**05 37 59.0**	**+3.0**
DLBC	**Desae Lake**	**14.54**	**357**	Pn		**Pn**	**05 38 00.1**	**+2.4**
0.4nm,0.3s,baz=190,slow=17,SNR=3.5								
U15A	**North Rim**	**14.56**	**115**	*e*Pn		**Pn**	**05 38 00.8**	**+2.4**
Y12C	**Blythe**	**14.96**	**128**	*e*Pn		**Pn**	**05 38 05.3**	**+1.8**
O20A	**White River Ci**	**15.62**	**97**	*e*P		**P**	**05 38 18.0**	**+1.5**
8.2nm,0.9s								
WUAZ	**Wupatki**	**15.71**	**117**	*e*Pn		**Pn**	**05 38 15.6**	**+2.2**
14nm,1.0s								
Y14A	**Wickenburg**	**15.72**	**124**	*e*Pn		**Pn**	**05 38 15.4**	**+1.9**
47nm,1.0s								
PV04	**Paradox Valley**	**15.85**	**104**	*e*Pn		**Pn**	**05 38 16.7**	**+1.3**
LAO	**LASA Array**	**16.00**	**72**	*e*Pn		**Pn**	**05 38 16.5**	**-0.6**
13nm,1.3s								
PV01	**Paradox Valley**	**16.20**	**104**	*e*Pn		**Pn**	**05 38 21.6**	**+1.6**
X16A	**Lo Mia Camp, P**	**16.35**	**120**	*e*Pn		**Pn**	**05 38 24.1**	**+2.3**
10.0nm,1.0s								
MVCO	**Mesa Verde**	**16.70**	**107**	*e*Pn		**Pn**	**05 38 27.5**	**+1.3**
8.6nm,0.8s								
W18A	**Petrified Fore**	**17.01**	**115**	*e*Pn		**Pn**	**05 38 32.4**	**+2.2**
92nm,1.9s								
DGMT	**Dagmar**	**17.49**	**66**	*e*Pn		**Pn**	**05 38 34.1**	**-1.8**
13nm,0.9s								
ISCO	**Idaho Springs**	**17.63**	**96**	*e*P		**P**	**05 38 41.4**	**+2.5**
6.0nm,1.3s								
HYT	**Haines Junctio**	**17.73**	**346**	*e*Pn		**P**	**05 38 39.3**	**-0.3**
4.3nm,1.0s								
TUC	**Tucson**	**18.18**	**124**	*e*Pn		**Pn**	**05 38 46.1**	**+1.6**
6.5nm,1.0s								
SDCO	**Great Sand Dun**	**18.54**	**102**	*e*P		**Pn**	**05 38 50.8**	**+1.7**
4.4nm,0.9s								
LAZ	**Ladron**	**19.16**	**113**	*e*P		**Pn**	**05 38 58.2**	**+1.8**
ANMO	**Albuquerque**	**19.30**	**110**	*e*P		**P**	**05 38 58.7**	**+1.5**
3.9nm,1.0s								
LPM	**Los Pinos Moun**	**19.55**	**112**	*e*P		**Pn**	**05 39 02.0**	**+0.9**
T25A	**Trinidad**	**19.59**	**102**	*e*P		**Pn**	**05 39 02.1**	**+0.4**
BNM	**Barren Site**	**19.65**	**112**	*e*P		**Pn**	**05 39 03.4**	**+1.0**
YKA	**Yellowknife Ar**	**20.31**	**19**	P		**P**	**05 39 07.3**	**-0.5**
4.1nm,0.8s,baz=209,slow=11,SNR=23								
FFC	**Flin Flon**	**20.33**	**49**	*e*P		**P**	**05 39 08.2**	**+0.2**
28nm,0.8s								
MENT	**Mentasta**	**20.94**	**341**	*e*P		**P**	**05 39 15.2**	**+0.5**
8.6nm,1.2s								
SCM	**Sheep Creek Mo**	**21.03**	**335**	*e*P		**P**	**05 39 16.5**	**+0.8**
11nm,1.0s								
DAWY	**Dawson**	**21.07**	**347**	*e*P		**P**	**05 39 16.2**	**+0.1**
6.8nm,1.1s								
DOT	**Dot Lake**	**21.63**	**341**	*e*P		**P**	**05 39 22.1**	**0.0**
15nm,1.0s								
MNTX	**Cornudas Mount**	**21.98**	**116**	*e*P		**P**	**05 39 27.5**	**+1.4**
DHY	**Denali Highway**	**22.01**	**337**	*e*P		**P**	**05 39 25.7**	**-0.5**
17nm,1.3s								
EGAK	**Eagle**	**22.04**	**346**	*e*P		**P**	**05 39 27.9**	**+1.6**
9.5nm,1.4s								
SPU	**Mount Spurr**	**22.17**	**329**	*e*P		**P**	**05 39 27.8**	**-0.1**
AMTX	**Amarillo**	**22.63**	**104**	*e*P		**P**	**05 39 33.9**	**+0.9**
8.8nm,0.8s								
MCK	**McKinley**	**22.97**	**337**	*e*P		**P**	**05 39 35.0**	**-1.3**
12nm,1.4s								
ECSD	**EROS Data Cent**	**23.04**	**79**	*e*P		**P**	**05 39 36.7**	**-0.4**
9.4nm,0.9s								
ULM	**Lac du Bonnet**	**23.06**	**63**	P		**P**	**05 39 36.0**	**-1.3**
2.5nm,0.6s,baz=277,slow=10,SNR=4.6								
ILAR	**Eielson Array**	**23.25**	**340**	P		**P**	**05 39 38.5**	**-0.6**
1.2nm,0.9s,baz=154,slow=9.1,SNR=9.4								
ILAR					PcP	**PcP**	**05 43 24.7**	**-1.6**
0.5nm,0.8s,baz=164,slow=1.9,SNR=5.1								
WRH	**Wood River Hil**	**23.31**	**339**	*e*P		**P**	**05 39 40.0**	**+0.3**
5.2nm,0.9s								
PPLA	**Purkeypile**	**23.36**	**333**	*e*P		**P**	**05 39 41.5**	**+1.1**
60nm,1.9s								
CCB	**Clear Creek Bu**	**23.38**	**339**	*e*P		**P**	**05 39 40.0**	**-0.3**
2.6nm,0.8s								
KSU1	**Kansas State U**	**24.38**	**90**	*e*P		**P**	**05 39 51.2**	**+1.0**
12nm,0.7s								
TX31	**Lajitas Ar. Si**	**24.66**	**118**	*e*P		**P**	**05 39 53.1**	**+0.3**
TXAR	**Lajitas Array**	**24.66**	**118**	P		**P**	**05 39 53.0**	**+0.2**
2.0nm,0.8s,baz=299,slow=7.0,SNR=13								
WMOK	**Wichita Mounta**	**24.75**	**102**	*e*P		**P**	**05 39 54.4**	**+0.9**
14nm,0.9s								
V34A	**Guthrie**	**25.11**	**98**	*e*P		**P**	**05 39 56.4**	**-0.3**
12nm,0.9s								
HPIG		**25.14**	**125**	*e*P		**P**	**05 39 57.4**	**+0.1**
5.8nm,1.1s								
W34A	**Bridge Creek,**	**25.21**	**100**	*e*P		**P**	**05 39 59.3**	**+1.6**
11nm,0.8s								
SPMN	**Marine on St.**	**25.44**	**74**	*e*P		**P**	**05 40 01.3**	**+1.7**
5.6nm,0.9s								
SEY	**Seymchan**	**47.31**	**322**	P		**P**	**05 43 02.5**	**-2.6**
2.2nm,0.9s,baz=98,slow=4.1,SNR=5.7								
PETK	**Petropavlovsk-**	**47.60**	**308**	P		**P**	**05 43 06.1**	**-1.6**
3.1nm,1.0s,baz=65,slow=14,SNR=4.5								
H11N3	**WAKE ISLAND Hy**	**58.30**	**267**	T		T	06 47 11.5	
baz=49,slow=75,SNR=1708								
H11N2	**WAKE ISLAND Hy**	**58.30**	**267**	T		T	06 47 11.3	
baz=49,slow=75,SNR=1551								
H11N1	**WAKE ISLAND Hy**	**58.31**	**267**	T		T	06 47 12.7	
baz=49,slow=75,SNR=1649								
H11S1	**WAKE ISLAND Hy**	**59.23**	**266**	T		T	06 48 27.0	
baz=49,slow=75,SNR=402								
H11S2	**WAKE ISLAND Hy**	**59.23**	**266**	T		T	06 48 27.3	
baz=49,slow=75,SNR=252								
H11S3	**WAKE ISLAND Hy**	**59.24**	**266**	T		T	06 48 28.3	
baz=49,slow=75,SNR=232								
NOA	**NORSAR Array B**	**70.41**	**19**	P		**P**	**05 45 47.3**	**+1.5**
0.8nm,0.8s,baz=332,slow=5.6,SNR=4.1								
CN2	**Changchun**	**70.51**	**312**	*e*P		**P**	**05 45 47.0**	**+0.4**
CN2					pmax	pmax		
comp=Z,10.0nm,0.7s								
FINES	**FINESS Array B**	**72.99**	**12**	P		**P**	**05 46 02.9**	**+1.7**
comp=Z,1.7nm,0.8s,baz=343,slow=10.0,SNR=4.8								
SONA1	**Songino Array**	**76.57**	**325**	*e*P		**P**	**05 46 21.1**	**-1.2**
SONM	**Songino Array**	**76.58**	**325**	P		**P**	**05 46 21.0**	**-1.5**
comp=Z,1.6nm,0.9s,baz=44,slow=4.7,SNR=7.3								
ZALV	**Zalesovo Beam**	**78.38**	**341**	P		**P**	**05 46 33.0**	**+0.9**
comp=Z,0.7nm,0.5s,baz=20,slow=4.6,SNR=2.8								
LPAZ	**La Paz**	**81.45**	**122**	P		**P**	**05 46 47.5**	**-2.4**
comp=Z,2.0nm,0.8s,baz=1.3,slow=5.8,SNR=6.0								
GERES	**GERESS Array B**	**81.88**	**24**	P		**P**	**05 46 51.1**	**-0.2**
comp=Z,0.4nm,0.8s,baz=356,slow=4.2,SNR=3.8								
WMQ	**Urumqi**	**86.80**	**335**	*e*P		**P**	**05 47 17.8**	**+1.5**
PMG	**Port Moresby**	**92.30**	**259**	LR		LR	06 24 30.6	
comp=Z,146nm,19.1s,baz=157,slow=32								

*NSSP **10** 05:43:04.4, 38.37N×44.33E, h5km, Ms3.2*
*ISK **10** 05:43:07.0, 38.56N×44.31E, h5km, ML3.5*
*CSEM **10** 05:43:08.4±0.3, 38.56N×44.28E, h2km, ML3.6, Error ellipse: s-maj=7.3km s-min=5.6km az=167.0*
*DDA **10** 05:43:09.0, 38.54N×44.23E, h6km, Ml3.6*
*TEH **10** 05:43:10.1, 38.49N×44.31E, h5km, ML3.1*
ISC 10 05:43:08.5±1.1, 38.54N±0.02×44.27E±0.02, h5km±13km, n46, σ1§09/59, 5C-1D, Turkey-Iran border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BASK	**Baskale_VAN**	**0.53**	**204**	*i* P		**Pg**	**05 43 18.9**	**+0.2**
BASK				*i* S		**Sb**	**05 43 27.6**	**-0.7**
BASK	**Baskale_VAN**	**0.53**	**204**	P		**Pg**	**05 43 18.9**	**+0.2**
BASK				S		**Sb**	**05 43 27.6**	**-0.7**
CLDR	**Caldiran**	**0.67**	**335**	*e*PG		**Pg**	**05 43 20.7**	**-0.7**
CLDR				*e*SG		**Sb**	**05 43 31.3**	**-1.1**
CLDR	**Caldiran**	**0.67**	**335**	*e*Pg		**Pg**	**05 43 20.7**	**-0.7**
CLDR				*e*Sg		**Sb**	**05 43 31.3**	**-1.1**

TVAN	**Van**	**0.68**	**270**	*i* P		**Pg**	**05 43 21.4**	**-0.2**
TVAN				*i* S		**Sb**	**05 43 32.6**	**-0.1**
TVAN	**Van**	**0.68**	**270**	P		**Pg**	**05 43 21.4**	**-0.2**
TVAN				S		**Sb**	**05 43 32.7**	**-0.1**
VANB	**Van**	**0.69**	**275**	*e*PG		**Pg**	**05 43 21.3**	**-0.6**
VANB	**Van**	**0.69**	**275**	*e*Pg		**Pg**	**05 43 21.3**	**-0.6**
GEVA	**Gevas**	**0.98**	**257**	*i* P		**Pg**	**05 43 25.8**	**-1.5**
GEVA				*i* S		**Sg**	**05 43 40.0**	**0.0**
GEVA	**Gevas**	**0.98**	**257**	P		**Pg**	**05 43 25.8**	**-1.5**
GEVA				S		**Sg**	**05 43 40.0**	**0.0**
HKR	**Hakkari**	**1.04**	**204**	*e*PN		**Pg**	**05 43 28.8**	**+0.2**
HKR	**Hakkari**	**1.04**	**204**	*e*Pn		**Pg**	**05 43 28.8**	**+0.2**
ISHB	**Shabestar**	**1.09**	**103**	*e*Pg		**Pg**	**05 43 28.7**	**-0.7**
ISHB				*e*AMB		AMB	05 43 48.2	
comp=Z,6μm,0.2s								
DYDN	**Diyadin**	**1.10**	**336**	*i* P		**Pg**	**05 43 27.7**	**-2.0**
DYDN	**Diyadin**	**1.10**	**336**	P		**Pg**	**05 43 27.7**	**-2.0**
IMRD	**Marand**	**1.13**	**81**	*e*Pg		**Pg**	**05 43 29.6**	**-0.7**
IMRD				*e*Sg		**Sg**	**05 43 45.1**	**+0.1**
IMRD				*e*AMB		AMB	05 43 54.2	
comp=Z,17μm,0.3s								
IMRD	**Marand**	**1.13**	**81**	*e*Pg		**Pg**	**05 43 29.6**	**-0.7**
IMRD				*e*Sg		**Sg**	**05 43 45.1**	**+0.1**
CUKT	**Cukurca**	**1.39**	**202**	*e*PN		**Pn**	**05 43 34.7**	**0.0**
CUKT	**Cukurca**	**1.39**	**202**	*e*Pn		**Pn**	**05 43 34.7**	**0.0**
TUTA	**Tutak**	**1.43**	**308**	*i* P		**Pb**	**05 43 35.5**	**-0.3**
TUTA	**Tutak**	**1.43**	**308**	P		**Pb**	**05 43 35.5**	**-0.3**
ITBZ	**Tabriz**	**1.50**	**101**	*e*Pg		**Pn**	**05 43 36.1**	**-0.2**
ITBZ				*e*AMB		AMB	05 43 40.6	
comp=Z,1μm,0.1s								
ITBZ	**Tabriz**	**1.50**	**101**	*e*Pg		**Pn**	**05 43 36.1**	**-0.2**
GNI	**Garni**	**1.65**	**13**	⇑*i*P		**Pb**	**05 43 39.7**	**+0.2**
GNI				⇑*i*S		**Sg**	**05 44 05.0**	**+3.4**
GNI	**Garni**	**1.65**	**13**	⇑P		**Pb**	**05 43 39.7**	**+0.2**
GNI				S		**Sg**	**05 44 05.0**	**+3.4**
SIRT	**Sirnak**	**1.78**	**235**	*e*PN		**Pb**	**05 43 41.6**	**0.0**
SIRT	**Sirnak**	**1.78**	**235**	*e*Pn		**Pb**	**05 43 41.6**	**0.0**
SIRN	**S¨–rnak**	**1.80**	**235**	*i* P		**Pg**	**05 43 43.1**	**+0.1**
SIRN	**S¨–rnak**	**1.80**	**235**	P		**Pg**	**05 43 43.1**	**+0.1**
GRS	**Goris**	**1.87**	**58**	⇑*i*P		**Pn**	**05 43 42.0**	**+0.7**
GRS				⇓*i*S		**Sg**	**05 44 08.0**	**-0.7**
GRS	**Goris**	**1.87**	**58**	⇑P		**Pn**	**05 43 42.0**	**+0.7**
GRS				S		**Sg**	**05 44 08.0**	**-0.7**
DIGO	**Kars**	**2.00**	**340**	*i* P		**Pg**	**05 43 46.8**	**-0.1**
IHRS	**Heris**	**2.19**	**95**	*e*AMB		AMB	05 43 51.7	
comp=Z,2μm,0.2s								
EAK	**Akyaka**	**2.21**	**347**	*i* P		**Pg**	**05 43 51.2**	**+0.4**
SVAN	**Silvan-Diyarba**	**2.45**	**262**	*e*PN		**Pn**	**05 43 50.6**	**+1.5**
SVAN	**Silvan-Diyarba**	**2.45**	**262**	*e*Pn		**Pn**	**05 43 50.6**	**+1.5**
BTMN	**Batman**	**2.45**	**256**	*i* P		**Pb**	**05 43 51.6**	**-1.5**
BTMN	**Batman**	**2.45**

ellipse: s-maj=3.3km s-min=2.9km az=105.0
*DDA **10** 06:15:32.2,39.˚88N×39.˚03E,h7km,Md2.6*

ISC 10 06:15:32.5±0.9, 39.˚90N±0.˚03×39.˚04E±0.˚03, h13km±8km, n22,σ0°75/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZC	**Erzincan**	**0.29**	**122**	*e*Pg	**Pn**	**06 15 44.3**	**+1.8**
KELT	**Kelkit**	**0.30**	**34**	*i* P	**Pg**	**06 15 38.8**	**0.0**
KELT				*i* S	**Sg**	**06 15 43.2**	**+0.1**
KELT	**Kelkit**	**0.30**	**34**	P	**Pg**	**06 15 38.8**	**0.0**
KELT				S	**Sg**	**06 15 43.2**	**+0.1**
EUZM	**Uzumlu**	**0.54**	**111**	*i* P	**Pg**	**06 15 43.2**	**-0.1**
EUZM				*i* S	**Sb**	**06 15 51.0**	**-0.7**
EUZM	**Uzumlu**	**0.54**	**111**	P	**Pg**	**06 15 43.2**	**-0.1**
EUZM				S	**Sb**	**06 15 51.0**	**-0.7**
REFA	**Refahiye_ERZ˜**	**0.55**	**203**	*i* P	Pg	06 15 37.0	-6.4
REFA				*i* S	Sg	06 15 40.1	-11
REFA	**Refahiye_ERZ˜**	**0.55**	**203**	P	Pg	06 15 37.0	-6.3
REFA				S	Sg	06 15 40.2	-10
ERZN	**Erzincan**	**0.61**	**121**	*e*PG	**Pg**	**06 15 44.3**	**-0.3**
SUSE	**Susehri**	**0.71**	**296**	*i* P	**Pb**	**06 15 46.4**	**-0.4**
SUSE				*i* S	**Sb**	**06 15 57.0**	**+0.4**
SUSE	**Susehri**	**0.71**	**296**	P	**Pb**	**06 15 46.4**	**-0.4**
SUSE				S	**Sb**	**06 15 57.0**	**+0.4**
KEMA	**Kemaliye**	**0.76**	**214**	*i* P	**Pg**	**06 15 46.5**	**-0.8**
KEMA				*i* S	**Sg**	**06 15 57.1**	**-0.2**
KEMA	**Kemaliye**	**0.76**	**214**	P	**Pg**	**06 15 46.5**	**-0.8**
KEMA				S	**Sg**	**06 15 57.1**	**-0.2**
ESPY	**Espiye-Giresun**	**1.04**	**347**	*e*PG	**Pg**	**06 15 51.8**	**-0.8**
ESPY				*e*SG	**Sb**	**06 16 06.2**	**+0.3**
ESPY	**Espiye-Giresun**	**1.04**	**347**	*e*Pg	**Pg**	**06 15 51.8**	**-0.8**
ESPY				*e*Sg	**Sb**	**06 16 06.2**	**+0.3**
PTK	**Pertek**	**1.05**	**165**	*e*PG	**Pn**	**06 15 52.9**	**-0.1**
PTK	**Pertek**	**1.05**	**165**	*e*Pg	**Pn**	**06 15 52.9**	**-0.1**
MACK	**Trabzon**	**1.18**	**28**	*i* P	**Pg**	**06 15 55.4**	**+0.2**
MACK				*i* S	**Sn**	**06 16 10.8**	**+0.2**
MACK	**Trabzon**	**1.18**	**28**	P	**Pg**	**06 15 55.4**	**+0.2**
MACK				S	**Sn**	**06 16 10.8**	**+0.2**
KTUT	**Trabzon**	**1.22**	**27**	*e*PN	**Pn**	**06 15 54.6**	**-0.6**
KTUT	**Trabzon**	**1.22**	**27**	*e*Pn	**Pn**	**06 15 54.6**	**-0.6**
CUKAN	**kangal_SIVAS**	**1.35**	**245**	*i* P	**Pn**	**06 15 57.3**	**+0.2**
CUKAN				*i* S	**Sg**	**06 16 18.0**	**+2.0**
CUKAN	**kangal_SIVAS**	**1.35**	**245**	P	**Pn**	**06 15 57.3**	**+0.2**
CUKAN				S	**Sg**	**06 16 18.0**	**+2.0**

*IDC **10** 06:19:58.5±0.9,28.˚25N×55.˚63E,h0km,mb3.7/14,*
mb1 3.8/16,mb1mx3.7/52,mbtmp3.7/16,ML4.1/2,Error ellipse: s-maj=20.3km s-min=18.1km az=119.0
*TEH **10** 06:20:00.1,28.˚36N×55.˚57E,h10km,ML3.6*
*ISCJB **10** 06:20:01.2±0.4,28.˚24N±0.˚04×55.˚51E±0.˚05,h22km,*
mb3.6/14,Error ellipse: s-maj=6.7km s-min=4.8km az=150.8
*CSEM **10** 06:20:01.9±0.2,28.˚35N×55.˚68E,h2km,ML3.5,Error ellipse: s-maj=7.6km s-min=4.7km az=57.0*
*THR **10** 06:20:01.6±0.6,28.˚37N×55.˚66E,h14km±13km,ML3.5*

ISC 10 06:20:02.4±0.6, 28.˚31N±0.˚03×55.˚67E±0.˚04, h22km, n61, σ1°60/65, mb3.6/14, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDS	**Bandar-Abbas**	**1.01**	**154**	*e*Pg	**Pn**	**06 20 21.7**	**+0.2**
BNDS				AML	AML	06 20 41.0	
	comp=E,1µm,0.5s						
BNDS	**Bandar-Abbas**	**1.01**	**154**	*e*Pg	**Pn**	**06 20 21.7**	**+0.2**
GENO	**Geno**	**1.01**	**154**	*e*Pg	**Pn**	**06 20 21.9**	**+0.4**
GENO	**Geno**	**1.01**	**154**	*e*Pg	**Pn**	**06 20 21.9**	**+0.4**
IBND	**Bandar-abas**	**1.16**	**138**	*e*Pg	**Pb**	**06 20 24.5**	**+0.8**
IBND	**Bandar-abas**	**1.16**	**138**	*e*Pg	**Pb**	**06 20 24.5**	**+0.8**
NIAN	**Nian**	**1.28**	**126**	*e*Pg	**Pb**	**06 20 26.9**	**+1.1**
NIAN	**Nian**	**1.28**	**126**	*e*Pg	**Pb**	**06 20 26.9**	**+1.1**
NGRK	**Negar Kerman**	**1.62**	**35**	*e*Pn	**Pn**	**06 20 29.5**	**-0.6**
NGRK	**Negar Kerman**	**1.62**	**35**	*e*Pn	**Pn**	**06 20 29.5**	**-0.6**
KRBR	**Kerman**	**1.92**	**30**	*e*Pg	**Pb**	**06 20 35.7**	**-1.2**
KRBR				AML	AML	06 21 07.9	
	comp=N,490nm,0.5s						
KRBR				AML	AML	06 21 09.5	
	comp=E,339nm,0.3s						
KRBR	**Kerman**	**1.92**	**30**	*e*Pn	**Pb**	**06 20 35.3**	**-1.7**
KRBR				*e*Sg	**Sb**	**06 21 01.5**	**+0.9**
TVBK	**TV Kerman**	**1.92**	**30**	*e*Pn	**Pb**	**06 20 35.9**	**-1.1**
TVBK	**TV Kerman**	**1.92**	**30**	*e*Pn	**Pb**	**06 20 35.9**	**-1.1**
KHGB	**Koh Gabri**	**2.17**	**19**	*e*Pn	**Pb**	**06 20 39.1**	**-2.2**
KHGB	**Koh Gabri**	**2.17**	**19**	*e*Pn	**Pb**	**06 20 39.1**	**-2.2**
CHMN	**Cheshme madani**	**2.25**	**46**	*e*Pn	**Pb**	**06 20 41.8**	**-0.9**
CHMN	**Cheshme madani**	**2.25**	**46**	*e*Pn	**Pb**	**06 20 41.8**	**-0.9**
GHIR	**Ghir-Karzin**	**2.36**	**270**	*e*Pn	**Pn**	**06 20 41.9**	**+1.8**
GHIR				AML	AML	06 21 34.4	
	comp=E,214nm,0.6s						
GHIR				AML	AML	06 21 37.6	
	comp=N,306nm,0.5s						
GHIR	**Ghir-Karzin**	**2.36**	**270**	*e*Pn	**Pn**	**06 20 41.8**	**+1.8**
ISRV	**Sarvestan**	**2.48**	**296**	*e*Pn	**Pb**	**06 20 45.0**	**-1.5**
ISRV				*e*AMB	AMB	06 21 30.2	
	comp=Z,6µm,0.4s						
ISRV	**Sarvestan**	**2.48**	**296**	*e*Pn	**Pb**	**06 20 45.0**	**-1.5**
IPAR	**Pars**	**2.75**	**304**	*e*Pn	**Pn**	**06 20 47.0**	**+1.5**
IPAR				*e*AMB	AMB	06 21 45.6	
	comp=Z,3µm,0.4s						
IPAR	**Pars**	**2.75**	**304**	*e*Pn	**Pn**	**06 20 47.0**	**+1.5**
IMEH	**Mehriz**	**3.20**	**344**	*e*Pn	**Pn**	**06 20 53.6**	**+1.9**
IMEH				*e*Sg	**Sb**	**06 21 43.2**	**+5.8**
IMEH				*e*AMB	AMB	06 21 46.9	
	comp=Z,2µm,0.3s						
IMEH	**Mehriz**	**3.20**	**344**	*e*Pn	**Pn**	**06 20 53.6**	**+1.9**
IMEH				*e*Sg	**Sb**	**06 21 43.2**	**+5.8**
IBAF	**Bafgh**	**3.27**	**359**	*e*Pn	**Pn**	**06 20 54.2**	**+1.7**
IBAF				*e*AMB	AMB	06 21 08.0	
	comp=Z,2µm,0.3s						
IBAF	**Bafgh**	**3.27**	**359**	*e*Pn	**Pn**	**06 20 54.2**	**+1.7**
ISAD	**Sadrabad**	**3.98**	**335**	*e*AMB	AMB	06 21 17.8	
ISAD	comp=Z,1µm,0.3s			*e*Pn	**Pn**	**06 21 04.2**	**+1.8**
ICHK	**Chekchek**	**4.07**	**345**	*e*Pn	**Pb**	**06 21 11.8**	**-1.7**
ICHK				*e*AMB	AMB	06 21 18.2	
	comp=Z,745nm,0.3s						
IRAM	**Ramesheh**	**4.50**	**322**	*e*Pn	**Pn**	**06 21 10.7**	**+1.2**
IRAM				*e*AMB	AMB	06 21 34.9	
	comp=Z,364nm,0.2s						
IRAM	**Ramesheh**	**4.50**	**322**	*e*Pn	**Pn**	**06 21 10.7**	**+1.2**
NASN	**Na'in**	**5.11**	**332**	*e*Pn	**Pn**	**06 21 19.5**	**+1.6**
NASN	**Na'in**	**5.11**	**332**	*e*Pn	**Pn**	**06 21 19.5**	**+1.6**
IGAR	**Gharneh**	**5.14**	**323**	*e*Pn	**Pn**	**06 21 18.3**	**0.0**
IGAR				*e*AMB	AMB	06 21 45.0	
	comp=Z,377nm,0.3s						
IZEF	**Zefreh**	**5.40**	**329**	*e*Pn	**Pn**	**06 21 22.0**	**+0.1**
IZEF				*e*AMB	AMB	06 21 41.9	
	comp=Z,156nm,0.3s						
IZEF	**Zefreh**	**5.40**	**329**	*e*Pn	**Pn**	**06 21 22.0**	**+0.1**
TABS	**Tabas**	**5.46**	**13**	*e*Pn	**Pn**	**06 21 24.4**	**+1.7**
TABS	**Tabas**	**5.46**	**13**	*e*Pn	**Pn**	**06 21 24.4**	**+1.7**
WSAR	**Wadi Sarin**	**5.71**	**151**	Pn	**Pn**	**06 21 25.5**	**-0.5**
	comp=Z,2.4nm,0.3s,baz=346,slow=5.7,SNR=12						
WSAR				Sn	**Sn**	**06 22 29.9**	**-1.1**
	comp=Z,2.2nm,0.3s,baz=17,slow=15,SNR=14						
IPIR	**Pirpir**	**6.00**	**318**	*e*Pn	**Pn**	**06 21 30.3**	**+0.2**
IPIR				*e*AMB	AMB	06 22 45.1	
	comp=Z,231nm,0.2s						
IPIR	**Pirpir**	**6.00**	**318**	*e*Pn	**Pn**	**06 21 30.3**	**+0.2**
IKLH	**Kolahrood**	**6.10**	**326**	*e*Pn	**Pn**	**06 21 32.0**	**+0.4**
IKLH				*e*AMB	AMB	06 22 00.3	
	comp=Z,129nm,0.3s						
IKLH	**Kolahrood**	**6.10**	**326**	*e*Pn	**Pn**	**06 21 32.0**	**+0.4**
GEYT	**Alibeck**	**9.81**	**11**	Pn	**Pn**	**06 22 25.1**	**+2.9**
	baz=213,slow=12,SNR=4.6						
MMAI	**Mount Meron Ar**	**18.05**	**290**	Pn	**P**	**06 24 12.4**	**+0.2**
	comp=Z,1.2nm,0.3s,baz=99,slow=8.9,SNR=2.2						
BRTR	**Keskin Array B**	**21.46**	**308**	P	**P**	**06 24 49.5**	**0.0**
	comp=Z,2.7nm,0.8s,baz=133,slow=13,SNR=9.4						
AKTO	**Aktyubinsk**	**22.17**	**4**	P	**P**	**06 24 57.4**	**+0.6**
	comp=Z,5.7nm,0.7s,baz=174,slow=11,SNR=15						
BVAR	**Borovoye Array**	**26.99**	**20**	P	**P**	**06 25 42.2**	**-0.3**
	comp=Z,0.7nm,0.6s,baz=180,slow=5.8,SNR=3.9						
MKAR	**Makanchi Array**	**27.83**	**41**	P	**P**	**06 25 50.3**	**+0.1**
	comp=Z,0.4nm,0.5s,baz=230,slow=12,SNR=4.2						
KURBB	**Kurchatov Arra**	**28.21**	**32**	P	**P**	**06 25 53.9**	**+0.4**
	comp=Z,0.3nm,0.9s,baz=231,slow=8.8,SNR=3.1						
AKASG	**Malin Array Be**	**29.98**	**325**	P	**P**	**06 26 08.2**	**-1.0**
	comp=Z,0.5nm,0.4s,baz=132,slow=8.6,SNR=5.1						
ZALV	**Zalesovo Beam**	**33.31**	**32**	P	**P**	**06 26 38.0**	**-0.4**
	comp=Z,1.2nm,0.5s,baz=240,slow=9.0,SNR=5.2						
GERES	**GERESS Array B**	**38.07**	**314**	P	**P**	**06 27 18.4**	**-1.0**
	comp=Z,0.2nm,0.5s,baz=122,slow=7.1,SNR=3.9						
KHC	**Kasperske Hory**	**38.23**	**315**	*e*P	**P**	**06 27 21.1**	**+0.4**
FINES	**FINESS Array B**	**38.54**	**338**	P	**P**	**06 27 22.4**	**-0.6**
	comp=Z,0.8nm,0.7s,baz=153,slow=10,SNR=5.2						
ESDC	**Sonseca Array**	**49.90**	**299**	P	**P**	**06 28 55.3**	**+0.8**
	comp=Z,0.2nm,0.4s,baz=63,slow=7.8,SNR=3.1						
TORD	**Torodi Ar. Bea**	**52.28**	**265**	P	**P**	**06 29 10.8**	**-1.7**
	comp=Z,3.3nm,0.5s,baz=62,slow=7.8,SNR=26						
BOSA	**Boshof**	**63.66**	**210**	P	**P**	**06 30 31.2**	**-0.9**
	comp=Z,0.9nm,0.5s,baz=0.0,slow=4.0,SNR=3.7						
ILAR	**Eielson Array**	**85.57**	**9**	P	**P**	**06 32 37.3**	**-1.4**
	comp=Z,0.2nm,0.6s,baz=329,slow=4.4,SNR=3.2						
YKA	**Yellowknife Ar**	**89.18**	**355**	P	**P**	**06 32 57.0**	**+0.9**
	comp=Z,0.3nm,0.8s,baz=0.1,slow=5.0,SNR=4.6						

MEX 10 06:20:41.8±0.3, 16.˚09N×95.˚92W, h11km±9km, MD3.5, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.37**	**209**	*e*P	Pg	06 20 48.7	-0.5
HUIG				*e*S	Sg	06 20 54.2	+0.1
VHO	**Vista Hermosa**	**1.25**	**321**	*e*P	Pn	06 21 01.7	-3.7
VHO				*e*S	Sb	06 21 16.8	-4.9
PCIG		**2.63**	**98**	*e*P	Pn	06 21 21.1	-3.1
PCIG				*e*S	Sn	06 21 52.2	-3.9

*IDC **10** 06:22:58.1±6.6,36.˚83N×71.˚02E,h52km±48km,mb3.3/4,*
mb1 3.6/9,mb1mx3.3/54,mbtmp3.8/9,ML3.7/5,Error ellipse: s-maj=62.0km s-min=28.8km az=172.0
*ISCJB **10** 06:23:00.5±0.8,37.˚03N±0.˚06×71.˚3E±0.˚1,h88km,mb3.4/4,*
Error ellipse: s-maj=13.0km s-min=8.5km az=172.1
*NNC **10** 06:23:09.3±3.6,37.˚55N×71.˚16E,h106km±403km,mb3.5,*
mpv4.1,Error ellipse: s-maj=41.5km s-min=27.4km az=149.0

ISC 10 06:23:01.3±0.8, 37.˚05N±0.˚07×71.˚11E±0.˚07, h88km, n16, σ2°15/22, mb3.4/4, 2C-6D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAS	**Manas**	**5.54**	**11**	⇓P	**Pn**	**06 24 22.8**	**+1.5**
	7.1nm,0.4s						
MNAS				⇓S	**Sn**	**06 25 19.8**	**-3.9**
	11nm,0.4s						
THN	**Thein Dam**	**5.96**	**139**	*e*P	**Pn**	**06 24 26.8**	**-0.2**
THN				*e*S	**Sn**	**06 25 31.0**	**-2.9**
KK31	**Karatay Array**	**6.07**	**356**	⇓P	**Pn**	**06 24 30.0**	**+1.6**
	10nm,0.3s,baz=179,slow=12,SNR=547						
KK31				⇓S	**Sn**	**06 25 33.4**	**-3.0**
	9.9nm,0.6s						
AAK	**Ala-Archa**	**6.16**	**24**	P	**Pn**	**06 24 31.3**	**+1.5**
	3.3nm,0.3s,baz=189,slow=9.5,SNR=3.5						
AAK				S	**Sn**	**06 25 38.5**	**-0.3**
	1.8nm,0.3s,baz=328,slow=20,SNR=8.7						
AAK	**Ala-Archa**	**6.16**	**24**	⇑P	**Pn**	**06 24 31.7**	**+1.8**
	7.4nm,0.4s						
AAK				⇓S	**Sn**	**06 25 37.8**	**-1.0**
	9.1nm,0.5s						
TKM2	**Tokmak 2**	**6.80**	**29**	⇓P	**Pn**	**06 24 40.1**	**+1.5**
	15nm,0.6s						
TKM2				⇑S	**Sn**	**06 25 51.3**	**-3.4**
	3.0nm,0.6s						
GEYT	**Alibeck**	**10.36**	**279**	S	**Sn**	**06 27 18.0**	**-3.2**
	1.1nm,0.3s,baz=88,slow=19,SNR=3.3						
MKAR	**Makanchi Array**	**12.80**	**37**	P	**Pn**	**06 25 59.1**	**-0.8**
	0.1nm,0.3s,baz=226,slow=14,SNR=6.5						
KURBB	**Kurchatov Arra**	**14.58**	**19**	P	**Pn**	**06 26 21.0**	**-1.9**
	0.0nm,0.3s,baz=216,slow=12,SNR=5.1						
BVAR	**Borovoye Array**	**15.99**	**358**	P	**Pn**	**06 26 40.4**	**-0.4**
	0.5nm,0.3s,baz=164,slow=16,SNR=6.4						
AKTO	**Aktyubinsk**	**16.35**	**329**	P	**P**	**06 26 47.1**	**+0.3**
	1.2nm,0.3s,baz=136,slow=13,SNR=12						
ZALV	**Zalesovo Beam**	**19.38**	**25**	P	**P**	**06 27 20.6**	**+0.7**
	0.4nm,0.3s,baz=214,slow=9.5,SNR=4.3						
SONM	**Songino Array**	**27.96**	**56**	P	**P**	**06 28 45.7**	**+2.1**
	0.3nm,0.3s,baz=263,slow=5.7,SNR=2.5						
FINES	**FINESS Array B**	**37.08**	**326**	P	**P**	**06 30 04.3**	**+1.7**
	0.6nm,0.7s,baz=120,slow=10.0,SNR=2.3						
TORD	**Torodi Ar. Bea**	**65.82**	**268**	P	**P**	**06 33 37.5**	**-0.1**
	0.3nm,0.5s,baz=44,slow=4.9,SNR=3.2						
YKA	**Yellowknife Ar**	**80.70**	**3**	P	**P**	**06 35 06.6**	**+2.4**
	0.2nm,0.4s,baz=351,slow=5.5,SNR=12						

*CSEM **10** 06:24:18.9±0.2,41.˚98N×7.˚63E,h20km,ML3.0/7,Error ellipse: s-maj=5.7km s-min=4.4km az=128.0*
*GEN **10** 06:24:19.2,42.˚03N×7.˚61E,h8km,ML2.7*
*ROM **10** 06:24:20.9±0.1,42.˚11N×8.˚06E,h39km,Ml2.4/6,Error ellipse: s-maj=1.4km s-min=0.0km az=180.0*
*LDG **10** 06:24:21.8±0.4,42.˚02N×7.˚63E,h25km,Md2.7/4,Ml3.0/16,*
Error ellipse: s-maj=8.0km s-min=5.1km az=143.0
*STR **10** 06:24:31.7±0.7,42.˚20N×6.˚13E,h10km,Ml3.1,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 10 06:24:18.5±1.9, 42.˚01N±0.˚03×7.˚61E±0.˚03, h28km±18km, n101, σ1°84/149, Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGF	**Pioggiola**	**1.16**	**62**	*e*Pn	**Pn**	**06 24 39.7**	**+0.6**
PGF				*e*Sn	**Sn**	**06 24 53.4**	**-0.7**
	96nm,0.2s						
PGF	**Pioggiola**	**1.16**	**62**	*e*Pn	**Pn**	**06 24 39.7**	**+0.6**
PGF				*e*Sn	**Sn**	**06 24 53.4**	**-0.7**
	48nm,0.2s						
LMR	**La Mourre**	**1.56**	**329**	*e*Pn	**Pn**	**06 24 45.1**	**+0.7**
LMR				*e*Sn	**Sn**	**06 25 02.5**	**-1.1**
	64nm,0.2s						
LMR	**La Mourre**	**1.56**	**329**	*e*Pn	**Pn**	**06 24 45.1**	**+0.7**
LMR				*e*Sn	**Sn**	**06 25 02.5**	**-1.1**
	32nm,0.2s						
FRF	**La Foret Royal**	**1.71**	**336**	*e*Pn	**Pn**	**06 24 47.3**	**+0.8**
FRF				*e*Sn	**Sn**	**06 25 06.2**	**-1.2**
	33nm,0.2s						
FRF	**La Foret Royal**	**1.71**	**336**	*e*Pn	**Pn**	**06 24 47.3**	**+0.8**
FRF				*e*Sn	**Sn**	**06 25 06.2**	**-1.2**
	17nm,0.2s						
NEGI	**Seborga**	**1.84**	**2**	Pn	**Pn**	**06 24 48.8**	**+0.5**
NEGI				Sn	**Sn**	**06 25 08.7**	**-2.0**
	23nm,0.2s						
NEGI	**Seborga**	**1.84**	**2**	P	**Pn**	**06 24 48.8**	**+0.5**
NEGI				Sn	**Sn**	**06 25 08.7**	**-2.0**
	23nm,0.2s						
SBF	**Sospel**	**1.86**	**356**	*e*Pn	**Pn**	**06 24 48.9**	**+0.3**
SBF				*e*Sn	**Sn**	**06 25 09.8**	**-1.4**
	31nm,0.2s						
SBF	**Sospel**	**1.86**	**356**	*e*Pn	**Pn**	**06 24 48.9**	**+0.3**
IMI	**Imperia**	**1.91**	**6**	Pn	**Pn**	**06 24 50.4**	**+1.0**
IMI				Sn	**Sn**	**06 25 10.5**	**-2.1**
IMI	**Imperia**	**1.91**	**6**	Pn	**Pn**	**06 24 50.4**	**+1.0**
LEPF	**PUYLOUBIER**	**2.07**	**318**	Pn	**Pb**	**06 24 54.6**	**-0.8**
LEPF				Sg	**Sn**	**06 25 16.9**	**+0.6**
LEPF	**PUYLOUBIER**	**2.07**	**318**	Pn	**Pb**	**06 24 54.6**	**-0.8**
RORO	**Rocca Rossa**	**2.13**	**9**	Pn	**Pn**	**06 24 53.0**	**+0.7**
RORO				Sn	**Sn**	**06 25 16.0**	**-1.8**
RORO	**Rocca Rossa**	**2.13**	**9**	P	**Pn**	**06 24 52.2**	**-0.1**
RORO	**Rocca Rossa**	**2.13**	**9**	Pn	**Pn**	**06 24 53.0**	**+0.7**
RORO				Sn	**Sn**	**06 25 16.0**	**-1.8**
ENR	**Entracque**	**2.22**	**356**	Pn	**Pn**	**06 24 55.1**	**+1.5**
ENR				Sn	**Sn**	**06 25 19.7**	**-0.5**
	19nm,0.2s						
ENR	**Entracque**	**2.22**	**356**	P	**Pn**	**06 24 54.8**	**+1.2**
ENR	**Entracque**	**2.22**	**356**	Pn	**Pn**	**06 24 55.1**	**+1.5**
FINB	**Finale Ligure**	**2.23**	**13**	Pn	**Pn**	**06 24 54.8**	**+1.2**
FINB				Sn	**Sn**	**06 25 18.1**	**-2.2**
FINB	**Finale Ligure**	**2.23**	**13**	Pn	**Pn**	**06 24 54.8**	**+1.2**
FINB				Sn	**Sn**	**06 25 18.1**	**-2.2**
STV	**Sant Anna di V**	**2.25**	**355**	Pn	**Pn**	**06 24 55.6**	**+1.6**
STV				Sn	**Sn**	**06 25 20.0**	**-0.8**
	10.0nm,0.2s						
STV	**Sant Anna di V**	**2.25**	**355**	P	**Pn**	**06 24 55.6**	**+1.6**
SMRF	**Simiane la Rot**	**2.47**	**323**	*e*Pn	**Pn**	**06 24 59.1**	**+2.1**
SMRF				*e*Sn	**Sn**	**06 25 29.0**	**+2.7**
	4.4nm,0.2s						
SMRF	**Simiane la Rot**	**2.47**	**323**	*e*Pn	**Pn**	**06 24 59.1**	**+2.1**
SMRF				*e*Sn	**Sn**	**06 25 29.0**	**+2.7**
	2.2nm,0.2s						
DOI	**San Damiano**	**2.51**	**354**	Pn	**Pn**	**06 24 59.4**	**+1.8**
DOI				Sn	**Sn**	**06 25 27.3**	**0.0**
	25nm,0.3s						
PCP	**Piancastagn**	**2.62**	**15**	Pn	**Pn**	**06 24 59.7**	**+0.6**
PCP	**Piancastagn**	**2.62**	**15**	P	**Pn**	**06 24 59.8**	**+0.6**
MBDF	**Montbardon**	**2.79**	**348**	*e*Pn	**Pn**	**06 25 04.2**	**+2.7**
MBDF				*e*Sn	**Sn**	**06 25 34.1**	**-0.1**
	6.7nm,0.3s						
MBDF	**Montbardon**	**2.79**	**348**	*e*Pn	**Pn**	**06 25 04.2**	**+2.7**
MBDF				*e*Sn	**Sn**	**06 25 34.1**	**-0.1**
	3.3nm,0.3s						
BHB	**Bricherasio**	**2.84**	**355**	P	**Pn**	**06 25 02.5**	**+0.4**
BHB				S	**Sn**	**06 25 33.5**	**-2.0**
VSL	**Villasalto**	**2.84**	**151**	Pn	**Pn**	**06 25 03.6**	**+1.5**
VSL				Sn	**Sn**	**06 25 34.7**	**-0.8**
	14nm,0.2s						
VSL	**Villasalto**	**2.84**	**151**	Pn	**Pn**	**06 25 03.6**	**+1.5**
VSL				Sn	**Sn**	**06 25 34.7**	**-0.8**
	14nm,0.2s						
CGL	**Cagliari Serpe**	**2.94**	**154**	Pn	**Pn**	**06 25 05.2**	**+1.7**
CGL				Sn	**Sn**	**06 25 37.1**	**-0.8**
CGL	**Cagliari Serpe**	**2.94**	**154**	Pn	**Pn**	**06 25 05.2**	**+1.7**
CGL				Sn	**Sn**	**06 25 37.1**	**-0.8**
RRL	**Rocca Remolon**	**2.97**	**349**	P	**Pn**	**06 25 07.4**	**+3.3**
RRL				S	**Sn**	**06 25 39.5**	**+0.6**
RSP	**Reno Superiore**	**3.15**	**356**	Pn	**Pn**	**06 25 07.7**	**+1.3**
	5.0nm,0.2s						
RSP	**Reno Superiore**	**3.15**	**356**	P	**Pn**	**06 25 07.9**	**+1.5**
RSP				S	**Sn**	**06 25 40.6**	**-2.5**
ORIF	**Oris-en-Rattie**	**3.17**	**337**	*e*Pn	**Pn**	**06 25 09.1**	**+2.4**
ORIF	**Oris-en-Rattie**	**3.17**	**337**	*e*Pn	**Pn**	**06 25 09.1**	**+2.4**
LASF	**Ste Croix**	**3.44**	**308**	*e*Pn	**Pn**	**06 25 11.5**	**+1.1**
LASF				*e*Sn	**Sn**	**06 25 48.3**	**-1.9**
	7.8nm,0.2s						
LASF	**Ste Croix**	**3.44**	**308**	*e*Pn	**Pn**	**06 25 11.5**	**+1.1**
LSD	**Lago del Serru**	**3.47**	**354**	P	**Pn**	**06 25 14.8**	**+3.9**
LSD				S	**Sn**	**06 25 51.9**	**+0.7**
EJON	**La Jonquera**	**3.54**	**279**	P	**Pn**	**06 25 11.8**	**+0.2**
	1.2nm,0.2s,SNR=12						
LPG	**La Plagne**	**3.54**	**350**	*e*Pn	**Pn**	**06 25 16.4**	**+4.4**
LPG				*e*Sn	**Sn**	**06 25 56.2**	**+3.1**
	1.9nm,0.3s						
SJAF	**Saint Jean de**	**3.54**	**279**	Pn	**Pn**	**06 25 10.8**	**-0.9**
SJAF				Sg	**Sn**	**06 25 50.4**	**-2.3**
SJAF	**Saint Jean de**	**3.54**	**279**	Pn	**Pn**	**06 25 10.8**	**-0.9**
SJAF	**Saint Jean de**	**3.54**	**279**	P	**Pn**	**06 25 11.8**	**+0.1**
	1.2nm,0.2s,SNR=18						
VIVF	**Saint-Julien-l**	**3.56**	**324**	*e*Pn	**Pn**	**06 25 13.0**	**+1.0**
VIVF				*e*Sn	**Sn**	**06 25 51.1**	**-2.1**
	2.0nm,0.2s						
VIVF	**Saint-Julien-l**	**3.56**	**324**	*e*Pn	**Pn**	**06 25 13.0**	**+1.0**
LPL	**La Plagne**	**3.56**	**350**	*e*Pn	**Pn**	**06 25 15.6**	**+3.4**
LPL	**La Plagne**	**3.56**	**350**	*e*Pn	**Pn**	**06 25 15.6**	**+3.4**
FILF	**Fillols**	**3.79**	**280**	Pn	**Pn**	**06 25 15.1**	**-0.1**
FILF	**Fillols**	**3.79**	**280**	Pn	**Pn**	**06 25 15.1**	**-0.1**
CFON	**Fontmartina**	**3.87**	**268**	P	**Pn**	**06 25 17.0**	**+0.7**
	3.5nm,0.1s,SNR=18						
MTLF	**Montolieu**	**4.20**	**290**	*e*Pn	**Pn**	**06 25 21.4**	**+0.7**
MTLF				*e*Sn	**Sn**	**06 26 06.5**	**-2.3**
	6.0nm,0.3s						
MTLF	**Montolieu**	**4.20**	**290**	*e*Pn	**Pn**	**06 25 21.4**	**+0.7**
CLLI	**Livia**	**4.21**	**278**	P	**Pn**	**06 25 22.1**	**+1.1**

Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**46.68**	**183**	P	P	06 45 16.1	+0.4
	2.1nm,0.6s,baz=180,slow=6.7,SNR=22						
H10S2	**ASCENSION HYDR**	**47.98**	**18**	T	T	07 38 33.9	
	baz=199,slow=74,SNR=3.4						
H10S3	**ASCENSION HYDR**	**47.98**	**18**	T	T	07 38 33.6	
	baz=199,slow=74,SNR=3.1						
H10S1	**ASCENSION HYDR**	**47.99**	**18**	T	T	07 38 33.6	
	baz=199						
H10N1	**ASCENSION HYDR**	**49.09**	**18**	T	T	07 39 51.8	
	baz=193						
H10N3	**ASCENSION HYDR**	**49.09**	**17**	T	T	07 39 53.6	
	baz=193						
H10N2	**ASCENSION HYDR**	**49.11**	**17**	T	T	07 39 54.9	
	baz=193						
LPAZ	**La Paz**	**50.05**	**306**	P	P	06 45 44.1	+0.9
	0.4nm,0.4s,baz=113,slow=4.1,SNR=6.3						
TORD	**Torodi Ar. Bea**	**73.11**	**30**	P	P	06 48 18.6	+0.5
	1.5nm,0.5s,baz=202,slow=6.6,SNR=21						
YKA	**Yellowknife Ar**	**135.87**	**318**	PKP	PKPdf	06 56 05.6	-1.6
	0.1nm,0.4s,baz=134,slow=2.1,SNR=5.3						
ILAR	**Eielson Array**	**149.80**	**312**	PKPbc	PKPbc	06 56 34.3	-2.2
	0.3nm,0.8s,baz=113,slow=2.5,SNR=3.8						

NIED ***10*** *06:39:00.38˚.00N×143˚.30E, h14km, Mw3.7 Best double couple: M○3.82000×10^14 NP1:φs61.00000°, δ45.00000°, λ-14.00000°. NP2:φs160.00000°, δ80.00000°, λ-134.00000°.*

ISCJB ***10*** *06:39:41.8±0.9, 37˚.89N±0˚.04×143˚.26E±0˚.07, h18km, mb3.4/4, Error ellipse: s-maj=7.9km s-min=5.7km az=173.3*

IDC ***10*** *06:39:41.3±1.4, 37˚.51N×143˚.73E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.4/33, mbtmp3.5/6, ML3.5/2, Error ellipse: s-maj=32.4km s-min=25.0km az=113.0*

JMA ***10*** *06:39:43.2±0.2, 37˚.96N×143˚.29E, h42km, M3.5*

ISC 10 06:39:43.7±1.2, 37˚.89N±0˚.05×143˚.26E±0˚.07, h18km, n23, σ1s90/26, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.61**	**291**	P	**Pn**	**06 40 10.0**	**-1.2**
JIO				S	**Sn**	**06 40 29.8**	**-1.6**
OFUJ	**Ofunato**	**1.72**	**314**	P	**Pn**	**06 40 11.0**	**-1.8**
OFUJ				*e*S	**Sn**	**06 40 31.4**	**-2.9**
JMK	**Ichinoseki**	**1.92**	**304**	P	**Pn**	**06 40 14.3**	**-1.2**
JMK				*e*S	**Sn**	**06 40 37.3**	**-1.9**
JMM	**Marumori**	**1.95**	**270**	P	**Pn**	**06 40 15.4**	**-0.5**
JMM				*e*S	**Sn**	**06 40 38.5**	**-1.4**
JFK	**Kawauchi**	**1.96**	**255**	P	**Pn**	**06 40 15.3**	**-0.8**
JFK				*e*S	**Sn**	**06 40 39.0**	**-1.3**
JOM	**Ohasama**	**2.21**	**316**	*e*S	**Sn**	**06 40 44.0**	**-2.2**
JFT	**Otama**	**2.35**	**262**	P	**Pn**	**06 40 21.9**	**+0.5**
JFT				S	**Sn**	**06 40 49.7**	**0.0**
JYK	**Kaneyama**	**2.50**	**295**	P	**Pn**	**06 40 23.2**	**-0.3**
JAG	**Ashikaga**	**3.37**	**245**	P	**Pn**	**06 40 35.7**	**+0.2**
JAG				S	**Sn**	**06 41 15.4**	**+0.3**
BSO1	**Boso 1**	**3.72**	**210**	P	**Pn**	**06 40 38.9**	**-0.8**
BSO1				*e*S	**Sn**	**06 41 22.8**	**0.0**
JRY	**Ryogami san**	**3.96**	**243**	P	**Pn**	**06 40 43.7**	**+0.1**
JRY				*e*S	**Sn**	**06 41 27.6**	**-1.9**
MJAR	**Matsushiro Arr**	**4.25**	**253**	Pn	**Pn**	**06 40 48.9**	**+1.4**
	0.9nm,0.3s,baz=83,slow=15,SNR=12						
JHJ	**Hachijo jima 2**	**5.54**	**212**	Pn	**Pn**	**06 41 03.9**	**-1.4**
	15nm,0.3s,baz=72,slow=22,SNR=12						
JHJ				Sn	**Sn**	**06 42 03.7**	**-4.8**
	14nm,0.3s,baz=269,slow=23,SNR=4.7						
H11N2	**WAKE ISLAND Hy**	**27.38**	**125**	T	T	07 12 00.1	
	baz=315,slow=75,SNR=9.4						
H11N1	**WAKE ISLAND Hy**	**27.39**	**125**	T	T	07 12 01.3	
	baz=315,slow=75,SNR=10						
H11N3	**WAKE ISLAND Hy**	**27.39**	**125**	T	T	07 12 00.8	
	baz=315,slow=75,SNR=8.7						
H11S1	**WAKE ISLAND Hy**	**28.14**	**127**	T	T	07 12 56.3	
	baz=316,slow=76,SNR=5.5						
H11S3	**WAKE ISLAND Hy**	**28.15**	**127**	T	T	07 12 55.1	
	baz=316,slow=76,SNR=5.6						
H11S2	**WAKE ISLAND Hy**	**28.16**	**127**	T	T	07 12 55.9	
	baz=316,slow=76,SNR=6.2						
SONM	**Songino Array**	**28.55**	**302**	P	P	06 45 44.5	+6.1
	0.3nm,0.3s,baz=104,slow=6.1,SNR=2.6						
ZALV	**Zalesovo Beam**	**42.43**	**312**	P	**P**	**06 47 41.3**	**+4.2**
	0.3nm,0.3s,baz=104,slow=6.1,SNR=2.6						
ILAR	**Eielson Array**	**47.98**	**33**	P	**P**	**06 48 22.0**	**+0.9**
	0.1nm,0.5s,baz=263,slow=6.6,SNR=2.8						
WRA	**Warramunga Arr**	**58.13**	**190**	P	**P**	**06 49 34.8**	**-1.5**
	0.5nm,0.5s,baz=7.8,slow=7.1,SNR=5.2						

IDC ***10*** *06:57:22.8±0.4, 32˚.34S×178˚.13W, h0km, mb5.0/21, mb1 5.0/24, mb1mx5.0/34, mbtmp5.0/24, ML4.7/3, MS5.0/23, Ms1 5.0/23, ms1mx4.8/38, Error ellipse: s-maj=14.7km s-min=14.0km az=85.0*

BJI ***10*** *06:57:22.6, 32˚.50S×178˚.40W, h6km, mb5.3/32, mB5.7/37, Ms5.3/35, Ms7 5.0/36*

NEIC ***10*** *06:57:24.6±0.2, 32˚.52S×178˚.35W, h10km, mb5.4/28, Error ellipse: s-maj=5.9km s-min=4.1km az=135.0*

GCMT ***10*** *06:57:24.6±0.4, 32˚.62S×177˚.75W, h28km±1km, MW5.4/76, Moment Tensor Solution. s30,c39; s76,c99; Duration: 1s3 Moment tensor: Scale 10^17Nm; Mrr1.47±.09; Mθθ-0.47±.06; Mφφ-0.99±.05; Mrθ0.63±.10; Mrφ-0.32±.03; Mθφ0.87±.07; Best double couple: M○1.69200×10^17 NP1:φs32.00000°, δ65.00000°, λ94.00000°. NP2: φs202.00000°, δ26.00000°, λ82.00000°. Principal axes: T 1.8600, Plg70.0000°, Azm310.0000°; N -0.3330, Plg4.0000°, Azm210.0000°; P -1.5240, Plg20.0000°, Azm119.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISCJB ***10*** *06:57:26.4±0.2, 32˚.71S±0˚.03×178˚.40W±0˚.04, h33km, mb5.2/57, MS5.0/45 Error ellipse: s-maj=6.0km s-min=2.8km az=31.5*

MOS ***10*** *06:57:27.6±1.1, 32˚.28S×178˚.46W, h33km, mb5.6/27, MS5.1/13, Error ellipse: s-maj=12.0km s-min=8.4km az=100.1*

ISC 10 06:57:27.5±0.2, 32˚.58S±0˚.03×178˚.16W±0˚.04, h35km, n511, σ2s23/506, mb5.4/55, MS5.0/44, 21C-21D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.32**	**4**	Pn	Pn	06 58 11.9	-5.1
	252nm,0.3s,baz=217,slow=10,SNR=13						
RAO				Sn	**Sn**	**06 58 50.9**	**-4.3**
	1μm,0.3s,baz=115,slow=23,SNR=9.2						
RAO	**Raoul Island**	**3.32**	**4**	*e*P	**Pn**	**06 58 12.5**	**-4.5**
RAO				*e*		06 58 50.6	
RAO	**Raoul Island**	**3.32**	**4**	*e*Pn	**Pn**	**06 58 12.5**	**-4.5**
RAO				*e*Sn	**Sn**	**06 58 50.6**	**-4.7**
MXZ	**Matakaoa Point**	**5.75**	**209**	*e*PN	**Pn**	**06 58 48.5**	**-1.9**
MXZ				*e*SN	**Sn**	**06 59 55.8**	**+0.6**
WMGZ	**Waiomatatini S**	**5.93**	**207**	*e*PN	**Pn**	**06 58 50.7**	**-2.1**
PKGZ	**Pakihiroa**	**6.13**	**209**	*e*PN	**Pn**	**06 58 52.9**	**-2.7**
PKGZ				SN	**Sn**	**07 00 04.7**	**+0.2**
HAZ	**Te Kaha**	**6.14**	**212**	*e*PN	**Pn**	**06 58 54.3**	**-1.4**
HAZ				SN	**Sn**	**07 00 07.7**	**+2.9**
PUZ	**Puketiti**	**6.21**	**207**	*e*PN	**Pn**	**06 58 53.6**	**-3.2**
PUZ				*e*SN	**Sn**	**07 00 05.7**	**-0.9**
RUGZ	**Raukumara Rang**	**6.36**	**211**	*e*PN	**Pn**	**06 58 57.3**	**-1.6**
TWGZ	**Tauwhareparae**	**6.41**	**208**	*e*PN	**Pn**	**06 58 56.7**	**-2.8**
CNGZ	**Carnagh Statio**	**6.59**	**206**	*e*PN	**Pn**	**06 58 59.2**	**-2.8**
TKGZ	**Te Karaka**	**6.69**	**208**	SN	**Sn**	**07 00 16.8**	**-1.5**
MWZ	**Matawai**	**6.74**	**210**	*e*PN	**Pn**	**06 59 01.0**	**-2.9**
MWZ				*e*SN	**Sn**	**07 00 18.1**	**-1.4**
URZ	**Urewera**	**6.86**	**213**	Pn	**Pn**	**06 59 03.6**	**-2.0**
	21nm,0.3s,baz=29,slow=2.9,SNR=77						
URZ				Sn	**Sn**	**07 00 22.7**	**+0.4**
	13nm,0.3s,baz=176,slow=21,SNR=4.6						
URZ	**Urewera**	**6.86**	**213**	*e*Pn	**Pn**	**06 59 02.8**	**-2.7**
URZ				*e*Sn	**Sn**	**07 00 19.3**	**-3.0**
URZ	**Urewera**	**6.86**	**213**	*e*PN	**Pn**	**06 59 02.3**	**-3.3**
RIGZ	**Rimuhau**	**6.96**	**207**	*e*PN	**Pn**	**06 59 03.4**	**-3.6**
MKAZ	**Moumakai**	**7.11**	**229**	*e*PN	**Pn**	**06 59 12.0**	**+3.0**
MUGZ	**Murupara**	**7.19**	**214**	*e*PN	**Pn**	**06 59 07.6**	**-2.6**
SNGZ	**Shannon Statio**	**7.19**	**209**	*e*PN	**Pn**	**06 59 07.0**	**-3.2**
KNZ	**Kokohu**	**7.27**	**207**	*e*PN	Pn	06 59 06.7	-4.5
MHGZ	**Mahia Peninsul**	**7.30**	**205**	*e*PN	Pn	06 59 07.7	-3.9
TOZ	**Tahuroa Road**	**7.30**	**223**	*e*PN	**Pn**	**06 59 12.9**	**+1.2**
OUZ	**Omahuta**	**7.34**	**247**	*e*Pn	**Pn**	**06 59 16.2**	**+4.0**
OUZ				*e*Sn	**Sn**	**07 00 33.5**	**-0.8**
NMHZ	**Naumai**	**7.68**	**211**	*e*PN	**Pn**	**06 59 14.3**	**-2.6**
ARHZ	**Aropaoanui**	**7.74**	**209**	*e*PN	**Pn**	**06 59 14.0**	**-3.7**
BKZ	**Black Stump Fm**	**7.88**	**212**	*e*Pn	**Pn**	**06 59 18.5**	**-1.1**
BKZ				*e*Sn	**Sn**	**07 00 47.5**	**-0.1**
BKZ	**Black Stump Fm**	**7.88**	**212**	*e*PN	Pn	06 59 15.4	-4.2
BKZ				*e*SN	**Sn**	**07 00 43.8**	**-3.7**
KAHZ	**Kahuranaki**	**8.24**	**208**	*e*PN	Pn	06 59 19.0	-5.6
BFZ	**Birch Farm**	**9.25**	**207**	*e*Pn	Pn	06 59 34.1	-4.3
BFZ				*e*Sn	**Sn**	**07 01 16.1**	**-5.1**
MRZ	**Mangatainoka R**	**9.51**	**210**	*e*PN	Pn	06 59 36.9	-5.0
MRZ				*e*SN	Sn	07 01 19.4	-8.0
SNZO	**South Karori**	**10.41**	**211**	*e*Pn	**Pn**	**06 59 52.9**	**-1.5**
SNZO				*e*Sn	**Sn**	**07 01 43.3**	**-6.4**
TCW	**Tory Channel**	**10.53**	**213**	*e*SN	Sn	07 01 44.7	-7.8
THZ	**Tophouse**	**11.61**	**215**	*e*Pn	**Pn**	**07 00 11.3**	**+0.6**
THZ				*e*Sn	Sn	07 02 11.5	-7.5
THZ	**Tophouse**	**11.61**	**215**	*e*PN	Pn	07 00 04.6	-6.1
THZ				*e*SN	Sn	07 02 09.8	-9.2
KHZ	**Kahutara**	**11.82**	**211**	*e*Pn	Pn	07 00 08.0	-5.6
KHZ				*e*Sn	Sn	07 02 14.4	-10
KHZ	**Kahutara**	**11.82**	**211**	*e*PN	Pn	07 00 08.0	-5.6
OXZ	**Oxford**	**13.21**	**213**	*e*Pn	**Pn**	**07 00 29.4**	**-3.2**
OXZ				*e*Sn	Sn	07 02 47.5	-11
MQZ	**McQueen's Vall**	**13.24**	**210**	*e*PN	Pn	07 00 25.5	-7.5
MQZ				SN	Sn	07 02 45.0	-14
RPZ	**Rata Peaks**	**13.97**	**214**	Pn	Pn	07 00 36.0	-7.0
	4.7nm,0.3s,baz=43,slow=3.7,SNR=17						
RPZ				Sn	Sn	07 03 03.3	-14
	4.9nm,0.3s,baz=126,slow=17,SNR=9.6						
RPZ	**Rata Peaks**	**13.97**	**214**	*e*Pn	Pn	07 00 35.6	-7.3
RPZ				*e*Sn	Sn	07 03 04.5	-12
RPZ	**Rata Peaks**	**13.97**	**214**	*e*PN	Pn	07 00 35.6	-7.4
RPZ				SN	Sn	07 03 02.3	-15
MSVF	**Nonsavu**	**15.17**	**346**	*e*P	**Pn**	**07 00 57.7**	**-1.6**
MSVF	**Nonsavu**	**15.17**	**346**	*e*Pn	**Pn**	**07 00 57.7**	**-1.6**
ODZ	**Otahua Downs**	**15.18**	**212**	*e*Pn	**Pn**	**07 00 57.8**	**-1.5**
	158nm,1.3s						
DZM	**Mont Dzumac**	**17.20**	**304**	P	**P**	**07 01 28.8**	**+2.2**
	1.0nm,0.3s,baz=124,slow=14,SNR=24						
DZM	**Mont Dzumac**	**17.20**	**304**	*e*P	**P**	**07 01 28.7**	**+2.2**
	692nm,1.2s						
DZM				*e*LR	LR	07 05 28.5	
	9μm,21.2s						
DZM	**Mont Dzumac**	**17.20**	**304**	*e*P	**Pn**	**07 01 24.9**	**-0.3**
	362nm,1.2s						
AFI	**Afiamalu**	**19.48**	**19**	P	**P**	**07 01 47.4**	**-4.2**
	4.1nm,0.3s,baz=243,slow=18,SNR=7.4						
AFI				S	S	07 05 08.9	-21
	1.6nm,0.3s,baz=198,slow=17,SNR=2.9						
AFI	**Afiamalu**	**19.48**	**19**	P	**P**	**07 01 47.6**	**-4.0**
AFI				pmax	pmax		
	comp=Z,425nm,1.5s						
AFI	**Afiamalu**	**19.48**	**19**	P	**P**	**07 01 47.6**	**-4.0**
	comp=Z,425nm,1.5s						
AFI				S	S	07 05 08.9	-21
RAR	**Rarotonga**	**19.89**	**60**	P	**P**	**07 01 54.1**	**-1.9**
	comp=Z,4.3nm,0.3s,baz=206,slow=7.6,SNR=7.3						
RAR				S	S	07 05 14.3	-24
	comp=Z,2.9nm,0.3s,baz=74,slow=20,SNR=2.1						
RAR				LR	LR	07 10 10.0	
	comp=Z,3μm,18.4s,baz=257,slow=39						
RAR	**Rarotonga**	**19.89**	**60**	*e*P	**P**	**07 01 54.2**	**-1.8**
RAR				pmax	pmax		
	comp=Z,102nm,1.0s						
RAR	**Rarotonga**	**19.89**	**60**	*e*P	**P**	**07 01 54.2**	**-1.8**
	comp=Z,102nm,1.0s						
RAR				S	S	07 05 14.3	-24
ARMA	**Armidale**	**25.81**	**267**	*e*P	**P**	**07 02 54.1**	**-1.5**
	comp=Z,133nm,1.3s						
TBI	**Tubuai**	**26.90**	**77**	*e*LQ	LQ	07 08 14.7	
	comp=Z,2μm,24.2s						
TBI				*e*LR	LR	07 09 40.0	
	comp=Z,2μm,22.5s,baz=242						
TBI	**Tubuai**	**26.90**	**77**	*e*T	T	07 30 15.9	
	comp=Z,111nm,0.3s						
EIDS	**Eidsvold**	**27.78**	**277**	*e*P	**P**	**07 03 12.2**	**-1.1**
	comp=Z,45nm,0.8s						
PAE	**Paea**	**29.71**	**67**	*e*T	T	07 33 41.9	
	comp=Z,2.7nm,0.3s						
PPT2	**Papeete2**	**29.76**	**67**	*e*S	S	07 08 16.4	-8.7
	comp=Z,357nm,25.2s						
PPT2				*e*LQ	LQ	07 09 20.0	
	comp=Z,2μm,23.2s						
PPT2				*e*LR	LR	07 11 00.3	
	comp=Z,2μm,22.0s,baz=228						
PPT2	**Papeete2**	**29.76**	**67**	*e*T	T	07 33 45.6	
	comp=Z,3.7nm,0.3s						
PPT	**Papeete**	**29.77**	**67**	P	**P**	**07 03 28.7**	**-2.3**
	comp=Z,23nm,0.7s,baz=284,slow=4.2,SNR=2.7						
PPT				LR	LR	07 14 55.6	
	comp=Z,3μm,18.5s,baz=244,slow=36						
HNR	**Honiara**	**30.66**	**314**	LR	LR	07 14 54.3	
	comp=Z,2μm,18.7s,baz=171,slow=34						
VAH	**Vaihoa**	**32.66**	**65**	*e*T	T	07 37 20.9	
	comp=Z,11nm,0.3s						
STKA	**Stephens Creek**	**33.91**	**260**	P	**P**	**07 04 08.9**	**+1.7**
	comp=Z,5.7nm,0.4s,baz=101,slow=8.4,SNR=8.4						
STKA				LR	LR	07 17 31.9	
	comp=Z,5μm,18.1s,baz=93,slow=36						
STKA	**Stephens Creek**	**33.91**	**260**	*e*P	**P**	**07 04 07.8**	**+0.5**
STKA				pmax	pmax		
	comp=Z,24nm,1.8s						
STKA	**Stephens Creek**	**33.91**	**260**	*e*P	**P**	**07 04 07.8**	**+0.5**
	comp=Z,24nm,1.8s						
CTA	**Charters Tower**	**34.07**	**283**	P	**P**	**07 04 10.1**	**+1.3**
	comp=Z,44nm,0.9s,baz=114,slow=12,SNR=7.3						
CTAO	**Charters Tower**	**34.07**	**283**	*e*P	**P**	**07 04 08.7**	**-0.1**
CTAO				pmax	pmax		
	comp=Z,341nm,1.6s						
CTAO	**Charters Tower**	**34.07**	**283**	*e*P	**P**	**07 04 08.7**	**-0.1**
	comp=Z,340nm,1.6s						
BBOO	**Buckleboo**	**38.29**	**257**	*e*P	**P**	**07 04 44.4**	**-0.3**
	comp=Z,41nm,1.0s						
RKT	**Rikitea**	**39.11**	**87**	*e*S	**S**	**07 10 45.0**	**-4.1**
	comp=Z,330nm,24.5s						
RKT				*e*LR	LR	07 15 25.5	
	comp=Z,2μm,26.2s,baz=250						
PMG	**Port Moresby**	**39.46**	**298**	*e*P	**P**	**07 04 52.8**	**-1.8**
PMG				pmax	pmax		
	comp=Z,89nm,0.9s						
COEN	**Coen**	**39.78**	**289**	*e*P	**P**	**07 04 58.3**	**+1.0**
	comp=Z,44nm,0.9s						
TAOE	**Nuku Hiva Isla**	**42.33**	**65**	*e*S	**S**	**07 11 29.6**	**-7.7**
	comp=Z,441nm,24.1s						
TAOE				*e*LR	LR	07 16 51.1	
	comp=Z,1μm,22.8s,baz=235						
AS01	**Alice Springs**	**42.86**	**269**	*e*P	**P**	**07 05 22.3**	**-0.3**
AS31	**Alice Springs**	**42.90**	**269**	*e*P	**P**	**07 05 22.4**	**-0.6**
	comp=Z,17nm,0.8s						
ASAR	**Alice Springs**	**42.90**	**269**	P	**P**	**07 05 22.8**	**-0.1**
	comp=Z,49nm,0.9s,baz=113,slow=7.9,SNR=217						
ASAR				LR	LR	07 22 22.1	
	comp=Z,1μm,18.6s,baz=111,slow=35						
WB2	**Warramunga Arr**	**44.08**	**274**	*e*P	**P**	**07 05 32.1**	**-0.3**
	comp=Z,268nm,1.5s						
WRAB	**Tennant Creek**	**44.08**	**274**	*e*P	**P**	**07 05 31.8**	**-0.7**
WRAB				pmax	pmax		
	comp=Z,139nm,1.1s						
WRAB	**Tennant Creek**	**44.08**	**274**	*e*P	**P**	**07 05 31.8**	**-0.7**
	comp=Z,139nm,1.1s						
WRA	**Warramunga Arr**	**44.09**	**274**	P	**P**	**07 05 32.0**	**-0.5**
	comp=Z,67nm,0.7s,baz=113,slow=8.1,SNR=319						
WRA				LR	LR	07 23 05.0	
	comp=Z,2μm,18.1s,baz=110,slow=35						
WRA	**Warramunga Arr**	**44.09**	**274**	P	**P**	**07 05 32.0**	**-0.5**
FORT	**Forrest**	**45.39**	**257**	*e*P	**P**	**07 05 42.4**	**-0.4**
	comp=Z,842nm,0.8s						
SBA	**Scott Base**	**45.86**	**184**	*e*P	**P**	**07 05 50.1**	**+4.3**
SBA				pmax	pmax		
	comp=Z,81nm,1.5s						
SBA	**Scott Base**	**45.86**	**184**	*e*P	**P**	**07 05 50.0**	**+4.3**
	comp=Z,81nm,1.5s						
VNDA	**Vanda**	**45.92**	**186**	P	**P**	**07 05 48.8**	**+2.5**
	comp=Z,1.0nm,0.7s,baz=18,slow=4.4,SNR=8.2						
VNDA				LR	LR	07 21 32.1	
	comp=Z,1μm,20.2s,baz=15,slow=31						
VNDA	**Vanda**	**45.92**	**186**	*e*P	P	07 05 51.7	+5.4
VNDA				pmax	pmax		
	comp=Z,18nm,1.3s						
VNDA	**Vanda**	**45.92**	**186**	*e*P	P	07 05 51.7	+5.4
	comp=Z,18nm,1.3s						
JAY	**Jayapura**	**48.80**	**299**	P	**P**	**07 06 08.6**	**-0.9**
	comp=Z,4.2nm,0.8s,baz=99,slow=22,SNR=4.5						
JAY	**Jayapura**	**48.80**	**299**	P	**P**	**07 06 10.2**	**+0.6**
GENI	**Genyem**	**49.15**	**299**	P	**P**	**07 06 13.3**	**+1.2**
MTN	**Manton Dam**	**50.22**	**281**	*e*P	**P**	**07 06 19.5**	**-0.8**
	comp=Z,59nm,0.9s						
FITZ	**Fitzroy Crossi**	**52.25**	**272**	LR	LR	07 28 59.1	
	comp=Z,4μm,18.2s,baz=132,slow=36						
FITZ	**Fitzroy Crossi**	**52.25**	**272**	*e*P	**P**	**07 06 35.5**	**-0.1**
	comp=Z,55nm,1.0s						
CASY	**Casey**	**53.16**	**209**	*e*P	**P**	**07 06 42.4**	**+0.8**
	comp=Z,291nm,1.9s						
NWAO	**Narrogin (SRO)**	**53.53**	**251**	LR	LR	07 28 32.9	
	comp=Z,960nm,18.4s,slow=35						
FAKI	**Fak Fak**	**54.99**	**292**	P	**P**	**07 06 55.1**	**-0.5**
FAKI	**Fak Fak**	**54.99**	**292**	*e*P	**P**	**07 06 55.2**	**-0.4**
	comp=Z,70nm,1.0s						
MBWA	**Marble Bar**	**55.88**	**265**	*e*P	**P**	**07 07 00.6**	**-1.4**
	comp=Z,97nm,1.4s						
QSPA	**South Pole Qui**	**57.54**	**180**	*e*P	**P**	**07 07 15.1**	**+1.8**
	comp=Z,54nm,0.9s						
SOEI	**Soe**	**57.55**	**280**	P	**P**	**07 07 15.9**	**+1.8**
	comp=Z,141nm,0.9s						
SOEI	**Soe**	**57.55**	**280**	*e*P	**P**	**07 07 14.3**	**+0.2**
	comp=Z,184nm,1.1s						
BATI	**Baumata**	**57.82**	**279**	P	**P**	**07 07 17.6**	**+1.8**
MIR	**Mirnyy**	**60.13**	**207**	*i* P	**P**	**07 07 34.0**	**+3.0**
MIR				pmax	pmax		
	comp=Z,10.0nm,2.0s						
PLAI	**Plampang**	**63.47**	**277**	P	**P**	**07 07 53.3**	**-1.0**
KAPI	**Kappang**	**63.88**	**281**	LR	LR	07 36 23.3	
	comp=Z,1μm,18.1s,baz=124,slow=37						
TTSI	**Tana Toraja**	**64.92**	**283**	P	**P**	**07 08 03.7**	**-0.2**
GMJI	**Gumukmas**	**67.40**	**275**	P	**P**	**07 08 19.7**	**-0.1**
BBKI	**Banjar Baru**	**68.81**	**280**	P	**P**	**07 08 29.2**	**+0.6**
PWJI	**Pagerwojo**	**68.91**	**274**	P	**P**	**07 08 30.0**	**+0.7**
PCJI	**Pacitan**	**69.35**	**273**	P	**P**	**07 08 33.3**	**+1.3**
	comp=Z,71nm,1.6s						
MAW	**Mawson**	**70.23**	**201**	P	**P**	**07 08 38.1**	**+1.6**
	comp=Z,8.1nm,1.1s,baz=116,slow=8.2,SNR=7.1						
MAW				LR	LR	07 37 48.0	
	comp=Z,2μm,20.3s,baz=110,slow=34						
MAW	**Mawson**	**70.23**	**201**	P	**P**	**07 08 38.1**	**+1.6**
MAW				pmax	pmax		
	comp=Z,9.0nm,1.1s						
MAW	**Mawson**	**70.23**	**201**	*e*P	**P**	**07 08 38.3**	**+1.8**
	comp=Z,8.2nm,1.2s						
PMSA	**Palmer Station**	**70.34**	**155**	P	**P**	**07 08 38.7**	**+1.5**
	comp=Z,15nm,0.8s,baz=211,slow=5.0						
STKI	**Sintang**	**73.55**	**281**	P	**P**	**07 08 58.2**	**+0.9**
SBUM	**Sibu**	**74.28**	**283**	*e*P	**P**	**07 09 01.3**	**-0.3**
	comp=Z,22nm,1.1s						
SYO	**Syowa Base**	**74.97**	**193**	*e*P	**P**	**07 09 03.7**	**-1.0**
SYO	**Syowa Base**	**74.97**	**193**	*i*/X	**P**	**07 09 05.0**	**+0.3**
KSM	**Kuching**	**75.30**	**281**	*e*P	**P**	**07 09 05.7**	**-1.9**
	comp=Z,17nm,0.8s						
SNAA	**Sanae**	**75.99**	**178**	P	**P**	**07 09 11.8**	**+1.2**
SNAA	**Sanae**	**75.99**	**178**	*e*P	**P**	**07 09 11.9**	**+1.2**
SNAA				pmax	pmax		
	comp=Z,55nm,1.1s						
SNAA	**Sanae**	**75.99**	**178**	*e*P	**P**	**07 09 11.8**	**+1.2**
	comp=Z,55nm,1.1s						
NVL	**N'lazarevskaya**	**76.70**	**183**	*e*P	**P**	**07 09 18.5**	**+4.0**
NVL				*e*		07 12 08.8	
NVL				*e*S	**S**	**07 19 02.7**	**+4.2**
VNA1	**Neumayer--Stat**	**76.81**	**177**	P	**P**	**07 09 17.0**	**+1.9**
INU	**Inuyama**	**79.58**	**324**	*e*P	**P**	**07 09 31.2**	**+0.4**
MJAR	**Matsushiro Arr**	**79.95**	**326**	P	**P**	**07 09 31.5**	**-1.4**
	comp=Z,8.2nm,1.0s,baz=167,slow=5.8,SNR=7.8						
MJAR				LR	LR	07 39 10.5	
	comp=Z,246nm,21.5s,baz=125,slow=32						
JNU	**Nakatsue**	**81.09**	**319**	P	**P**	**07 09 38.2**	**-0.9**
	comp=Z,25nm,0.9s,baz=112,slow=4.9,SNR=20						
JNU	**Nakatsue**	**81.09**	**319**	*e*P	**P**	**07 09 38.9**	**-0.3**
PLCA	**Paso Flores**	**81.13**	**133**	P	**P**	**07 09 41.0**	**+1.5**
	comp=Z,14nm,0.9s,baz=244,slow=6.4,SNR=8.6						
PLCA				LR	LR	07 40 16.2	
	comp=Z,1μm,18.1s,baz=258,slow=32						
PLCA	**Paso Flores**	**81.13**	**133**	*e*P	**P**	**07 09 41.4**	**+1.9**
QZH	**Quanzhou**	**83.09**	**305**	P	P	07 09 40.0	-10
QZH	**Quan

DAC Darwin (Calif) 88.88 45 eP P 07 10 19.4 +1.1
comp=Z,8.0nm,1.4s
USRK Ussuriysk Ar. 88.90 327 P P 07 10 18.6 +0.7
comp=Z,8.1nm,1.4s
USRK LR LR 07 45 22.3
comp=Z,8.6nm,0.9s,baz=181,slow=2.8,SNR=17
ORV Oroville 88.92 40 eP P 07 10 22.6 +4.4
ORV Oroville 88.92 40 eP P 07 10 22.6 +4.4
IRM Iron Mountain 88.96 48 P P 07 10 20.3 +1.7
comp=Z,492nm,20.7s,baz=128,slow=32
214A Organ Pipe Nat 89.02 51 P P 07 10 20.3 +1.4
baz=229
214A Organ Pipe Nat 89.02 51 eP P 07 10 20.3 +1.4
baz=230
GMRC Granite Mounta 89.05 47 P P 07 10 20.6 +1.5
comp=Z,184nm,1.9s
Y12C Blythe 89.08 48 eP P 07 10 21.6 +2.6
SKNT Sakolnakorn 89.17 291 P P 07 10 21.4 +1.5
baz=228
TUQ Turquoise Moun 89.32 46 P P 07 10 21.9 +1.6
comp=Z,21nm,1.0s
WAKR Walker 89.33 42 eP P 07 10 22.4 +2.0
SHOC Shoshone, Teco 89.42 46 P P 07 10 21.7 +1.1
baz=228
LDFC Landfair 89.58 47 eP P 07 10 23.7 +2.2
YBH Yreka Blue Hor 89.83 38 eP P 07 10 24.3 +1.8
YBH Yreka Blue Hor 89.83 38 eP P 07 10 24.3 +1.8
TYV Tymovskoe 89.99 336 eP P 07 10 24.2 +1.4
TYV eS SKSac 07 20 54.0 +3.4
TYV pmax pmax
comp=Z,66nm,1.0s
TYV pmax pmax
comp=Z,500nm,6.0s
TYV smax smax
comp=N,2µm,12.0s
TYV MLR MLR
comp=N,900nm,20.0s
TYV MLR MLR
comp=Z,1µm,20.0s
TPNV Topopah Spring 90.13 45 P P 07 10 25.5 +1.4
baz=228
TPNV Topopah Spring 90.13 45 eP P 07 10 25.7 +1.6
TPNV Topopah Spring 90.13 45 eP P 07 10 25.7 +1.6
PAHR Pah Rah Range 90.19 41 eP P 07 10 25.8 +1.4
HUMO Hull Mountain 90.33 37 eP P 07 10 26.3 +1.6
MDJ Mudanjiang 90.34 326 P P 07 10 25.0 +0.3
MDJ SS SS 07 27 15.8 -2.0
MDJ pmax pmax
comp=Z,15nm,1.3s
MDJ pmax pmax
comp=Z,160nm,4.2s
MDJ LR LR
comp=Z,280nm,17.0s
MDJ LR LR
comp=Z,370nm,17.7s
MDJ LR LR
comp=Z,640nm,19.6s
NONG Nongkai 90.44 291 P P 07 10 27.1 +1.3
DL2 Dalian 90.45 317 P P 07 10 24.0 -1.3
DL2 SKS SKSac 07 20 53.3 -0.6
DL2 S S 07 21 14.8 -2.9
DL2 pmax pmax
comp=Z,200nm,4.6s
DL2 LR LR
comp=Z,280nm,15.9s
DL2 LR LR
comp=Z,600nm,17.3s
DL2 LR LR
comp=Z,520nm,19.1s
SHPR Sheep Range 90.49 46 eP P 07 10 27.7 +1.8
TUC Tucson 90.57 51 P P 07 10 27.8 +1.6
baz=231
TUC Tucson 90.57 51 eP P 07 10 28.2 +2.0
TUC Tucson 90.57 51 eP P 07 10 28.2 +2.0
HABR Khabarovsk 90.88 331 deP P 07 10 26.6 -0.4
HABR e*SP pP 07 10 34.6 -3.6
HABR e 07 14 00.6
HABR ePPP PPP 07 15 58.1
HABR eS SKSac 07 20 55.7 -0.1
HABR e 07 21 23.8
HABR eSS SS 07 27 21.3 -4.0
HABR MLR MLR
comp=Z,434nm,22.0s
MOD Modoc Plateau 91.22 39 eP P 07 10 30.0 +1.0
TIA Tai'an 91.35 313 eP P 07 10 30.3 +0.7
TIA pmax pmax
comp=Z,30nm,1.2s
TIA pmax pmax
comp=Z,280nm,8.0s
TIA LR LR
comp=Z,460nm,17.0s
TIA LR LR
comp=Z,480nm,19.0s
TIA LR LR
comp=Z,390nm,21.0s
I04A Tendick Farm, 91.46 37 P P 07 10 30.7 +0.7
baz=224
K05A Summer Lake 91.48 38 eP P 07 10 32.0 +1.7
J05D Fort Rock, OR 91.70 38 P P 07 10 32.4 +1.2
baz=225
CN2 Changchun 91.79 323 ||P P 07 10 32.1 +0.7
CN2 esP pP 07 10 38.0 -4.6
CN2 eS S 07 21 30.4 +0.7
CN2 pmax pmax
comp=Z,20nm,1.1s
CN2 pmax pmax
comp=Z,300nm,4.0s
CN2 LR LR
comp=Z,400nm,19.0s
CN2 LR LR
comp=Z,300nm,19.0s
CN2 LR LR
comp=Z,300nm,18.0s
BMN Battle Mountai 91.90 42 eP P 07 10 33.7 +1.4
BMN Battle Mountai 91.90 42 eP P 07 10 33.6 +1.4
LCMT Little Creek M 91.99 47 eP P 07 10 34.8 +2.1
KNB Kanab 92.25 47 eP P 07 10 35.8 +1.8
KNB Kanab 92.25 47 eP P 07 10 35.8 +1.8
CCUT Cedar City 92.26 46 eP P 07 10 35.0 +0.9
I05D Terrebonne, OR 92.39 37 P P 07 10 35.1 +0.8
baz=225
WVOR Wild Horse Val 92.48 40 eP P 07 10 35.7 +0.8
WVOR Wild Horse Val 92.48 40 eP P 07 10 35.7 +0.8
GYA Guiyang 92.51 300 P P 07 10 38.0 +2.6
GYA PP PP 07 14 21.2 +3.9
GYA SKS SKSac 07 21 10.8 +4.3
GYA S ScS 07 21 39.4 +0.1
GYA SS SS 07 27 54.6 +4.7
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,8.0s
GYA LR LR
comp=Z,550nm,21.0s
GYA LR LR
comp=Z,510nm,22.0s
GYA LR LR
comp=Z,540nm,21.2s
NKL Nikolayevsk 92.57 337 eP P 07 10 34.0 -0.8
KLR Kul'dur 92.84 330 P P 07 10 36.3 +0.1
comp=Z,8.7nm,1.0s,baz=102,slow=3.8,SNR=16
KLR Kul'dur 92.84 330 c iP P 07 10 35.7 -0.5
MTPU Mount Pierson 93.29 46 eP P 07 10 41.1 +2.1
TX31 Lajitas Ar. Si 93.67 57 eP P 07 10 42.2 +1.6
TXAR Lajitas Array 93.67 57 P P 07 10 41.4 +0.7
comp=Z,1.1nm,1.0s,baz=232,slow=6.2,SNR=6.4
TXAR PKKPbc PKKPbc 07 27 46.0 +0.7
comp=Z,0.4nm,0.9s,baz=98,slow=3.8,SNR=4.3
TXAR LR LR 07 48 02.9
comp=Z,1µm,18.1s,baz=0.0,slow=32
MNTX Cornudas Mount 93.85 55 P P 07 10 41.9 +0.6
baz=234
LON Longmire 93.86 35 eP P 07 10 46.1 +5.1
LON Longmire 93.86 35 eP P 07 10 46.1 +5.1
CMAR Chiang Mai Arr 93.99 289 PP PP 07 14 22.9 -5.9
comp=Z,3.0nm,0.3s,baz=139,slow=5.8,SNR=4.7
BJI Beijing 94.37 315 P P 07 10 44.8 +1.4
BJI PP PP 07 14 34.7 +3.2
BJI SKS SKSac 07 21 18.7 +3.0
BJI S ScS 07 21 59.5 +5.6
BJI SS SS 07 28 14.6 -1.3
BJI pmax pmax
comp=Z,10.0nm,0.7s
BJI pmax pmax
comp=Z,200nm,4.9s
BJI LR LR
comp=Z,340nm,20.0s
BJI LR LR
comp=Z,370nm,20.4s
MFID Camas Ranch 94.66 40 eP P 07 10 45.8 +0.9
KMI Kunming 94.68 297 P P 07 10 48.1 +2.6
KMI pP PcP 07 10 50.1 +4.2
KMI PP PP 07 14 38.7 +4.3
KMI S S 07 21 58.6 +2.1
KMI SS SS 07 28 25.7 +4.6
KMI pmax pmax
comp=Z,10.0nm,0.6s
KMI pmax pmax
comp=Z,99nm,4.2s
KMI LR LR
comp=Z,200nm,12.4s
KMI LR LR
comp=Z,250nm,11.9s
KMI LR LR
comp=Z,310nm,18.9s
TMUT Trail Mountain 94.68 46 eP P 07 10 50.8 +5.5
ANMO Albuquerque 95.04 52 eP P 07 10 45.6 -1.3
ANMO pmax pmax
comp=Z,2.0nm,1.2s
ANMO Albuquerque 95.04 52 eP P 07 10 52.5 +5.6
MA2 Magadan 95.35 345 P P 07 10 46.7 -0.8
comp=Z,3.7nm,0.6s,baz=167,slow=6.5,SNR=4.5
HLID Hailey 95.54 41 P P 07 10 49.9 +0.9
baz=230
HLID Hailey 95.54 41 eP P 07 10 50.0 +1.1
F10A Beach Ranch, E 95.62 38 eP P 07 10 49.7 +0.5
S22A 4UR Ranch, Cre 96.45 49 P P 07 10 53.6 +0.2
baz=234
CD2 Chengdu 97.12 302 eP Pdif 07 10 57.3 +0.9
CD2 sP PcP 07 11 01.3 +4.9
CD2 PP PP 07 14 53.1 0.0
CD2 SKS SKSac 07 21 34.7 +3.8
CD2 S ScS 07 22 20.9 +3.5
CD2 sS S 07 22 25.6 +8.5
CD2 SS SS 07 28 59.3 +3.9
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,120nm,6.2s
NEW Newport 97.21 36 LR LR 07 48 08.0
comp=Z,1µm,19.9s,baz=220,slow=31
LPAZ La Paz 97.38 115 P Pdif 07 11 01.5 +2.8
comp=Z,0.7nm,0.8s,baz=231,slow=6.9,SNR=3.8
LPAZ LR LR 07 50 52.5
comp=Z,299nm,18.0s,baz=253,slow=33
HHC Hu-ho-hao-te 97.64 314 eP P 07 10 57.0 -1.5
HHC PP PP 07 14 58.2 +1.3
HHC SKS SKSac 07 21 30.4 -2.8
HHC S S 07 22 20.9 -0.3
HHC pmax pmax
comp=Z,12nm,1.0s
HHC pmax pmax
comp=Z,120nm,4.0s
HHC LR LR
comp=Z,270nm,16.0s
HHC LR LR
comp=Z,310nm,14.8s
HHC LR LR
comp=Z,410nm,14.7s
DLMT Dillon 97.69 40 eP Pdif 07 11 03.1 +4.4
PDAR Pinedale Array 97.80 44 P Pdif 07 11 00.4 +1.0
comp=Z,0.6nm,0.8s,baz=227,slow=3.7,SNR=4.0
PDAR PP PP 07 14 58.1 -0.1
comp=Z,0.2nm,0.4s,baz=224,slow=6.3,SNR=2.9
PDAR LR LR 07 48 02.6
comp=Z,587nm,19.6s,baz=250,slow=31
SEY Seymchan 98.06 347 P Pdif 07 10 59.6 -0.1
comp=Z,5.0nm,1.0s,baz=165,slow=2.9,SNR=9.7
RND Reindeer 98.46 13 eP Pdif 07 11 05.0 +3.4
RND Reindeer 98.46 13 eP Pdif 07 11 05.0 +3.5
CPUP Villa Florida 98.74 129 LR LR 07 49 22.9
comp=Z,363nm,18.9s,baz=232,slow=32
PAX Paxson 98.75 14 eP Pdif 07 11 03.2 +0.3
PAX Paxson 98.75 14 eP Pdif 07 11 03.2 +0.3
DLBC Dease Lake 99.17 23 LR LR 07 55 55.7
comp=Z,265nm,18.0s,baz=149,slow=36
RLMT Red Lodge 99.39 42 eP Pdif 07 11 01.9 -4.5
WRH Wood River Hil 99.57 13 eP Pdif 07 11 10.3 +4.0
CCB Clear Creek Bu 99.79 13 eP Pdif 07 11 09.7 +2.4
LZH Lanzhou 99.90 306 eP Pdif 07 11 07.6 -1.2
LZH PP PP 07 15 15.0 +0.6
LZH SKS SKSac 07 21 44.1 -0.8
LZH eS ScS 07 22 36.2 -4.4
LZH eSS SS 07 29 35.1 +0.6
LZH pmax pmax
comp=Z,16nm,1.1s
LZH pmax pmax
comp=Z,210nm,9.6s
LZH LR LR
comp=Z,270nm,17.2s
LZH LR LR
comp=Z,400nm,17.5s
LZH LR LR
comp=Z,590nm,18.4s
COLA College 99.98 13 eP Pdif 07 11 08.2 +0.1
COLA pmax pmax
comp=Z,4.0nm,1.2s
ILAR Eielson Array 100.07 13 P Pdif 07 11 08.6 0.0
comp=Z,0.9nm,0.9s,baz=233,slow=5.4,SNR=7.4
ILAR PP PP 07 15 12.0 -2.8
comp=Z,1.1nm,0.8s,baz=258,slow=6.1,SNR=7.4
ILAR LR LR 07 55 04.4
comp=Z,314nm,18.1s,baz=209,slow=35
SONM Songino Array 104.66 318 Pdiff Pdif 07 11 30.0 +0.4
comp=Z,0.2nm,0.3s,baz=134,slow=8.2,SNR=2.5
SONM PKKPbc PKKPbc 07 27 15.8 +0.9
comp=Z,0.5nm,0.7s,baz=351,slow=1.9,SNR=2.8
SONM PKKPab PKKPab 07 27 33.7 +3.7
comp=Z,1.7nm,1.0s,baz=295,slow=4.9,SNR=6.1
SONM Songino Array 104.66 318 P Pdif 07 11 30.0 +0.4
INK Inuvik 105.91 16 PKiKP PKiKP 07 15 48.0 +1.4
comp=Z,1.0nm,0.6s,baz=150,slow=2.4,SNR=3.3
YKA Yellowknife Ar 107.46 26 PKiKP PKiKP 07 15 50.0 +0.4
comp=Z,0.2nm,0.9s,baz=260,slow=2.1,SNR=3.1
YKA PKKPbc PKKPbc 07 27 05.9 -0.6
comp=Z,1.4nm,0.9s,baz=45,slow=3.2,SNR=15
WMQ Urumqi 114.45 308 ePKP PKPdf 07 16 03.9 +0.3
WMQ PP PP 07 17 02.7 +1.9
WMQ SKKS 07 23 58.0
WMQ AMB AMB
comp=Z,170nm,5.6s
WMQ LR LR
comp=Z,210nm,16.6s
WMQ LR LR
comp=Z,170nm,14.2s
WMQ LR LR
comp=Z,290nm,20.0s
MK31 Makanchi Array 119.05 309 i PKIKP PKPdf 07 16 11.4 -0.9
MK31 pmax pmax
comp=Z,4.0nm,0.8s
MKAR Makanchi Array 119.05 309 PKP PKPdf 07 16 12.1 -0.2
comp=Z,6.5nm,0.9s,baz=82,slow=2.6,SNR=35
MKAR SKP 07 19 50.4
comp=Z,0.6nm,0.9s,baz=96,slow=2.9,SNR=4.0
MKAR PKKPbc PKKPab 07 26 28.2 +1.3
comp=Z,0.9nm,0.9s,baz=300,slow=2.8,SNR=2.8
ZALV Zalesovo Beam 119.55 318 PKP PKPdf 07 16 12.4 -0.5
comp=Z,2.3nm,0.7s,baz=158,slow=1.6,SNR=12
PDGK Podgornoye 119.88 305 PKIKP PKPdf 07 16 13.1 -1.0
PDGK pmax pmax
comp=Z,18nm,1.0s
NVS Novosibirsk 120.68 318 ePKIKP PKPdf 07 16 15.6 +0.5
NVS pmax pmax
comp=N,6.0nm,1.4s
NVS pmax pmax
comp=Z,18nm,1.4s
NVS pmax pmax
comp=E,12nm,1.3s
KSH Kashi 121.21 300 PKP PKPdf 07 16 18.0 +1.2
KSH PKS PKSdf 07 19 53.6 +0.1
KSH SKS SKSdf 07 23 29.2 +3.0
KSH SKKS SKKSac 07 24 40.5 -3.9
KSH AMB AMB
comp=E,120nm,5.2s
KSH LR LR
comp=E,360nm,14.5s
KSH LR LR
comp=E,140nm,8.6s
KSH LR LR
comp=E,140nm,10.0s
MATP Matopo 121.45 210 PKP PKPdf 07 16 18.4 +0.5
comp=E,4.2nm,0.8s,baz=86,slow=2.6,SNR=6.3
NRIK Noril'sk 121.56 335 PKP PKPdf 07 16 16.7 +0.4
comp=E,4.3nm,0.7s,baz=115,slow=2.2,SNR=5.7
KURK Kurchatov 122.44 313 ePKIKP PKPdf 07 16 18.1 -0.5
KURK Kurchatov 122.44 313 ePKPdf PKPdf 07 16 18.1 -0.5
TKM2 Tokmak 2 122.48 303 PKIKP PKPdf 07 16 18.4 -0.9
TKM2 pmax pmax
comp=Z,17nm,1.0s
TKM2 Tokmak 2 122.48 303 ePKPdf PKPdf 07 16 18.9 -0.4
FRU Bishkek 123.15 303 ||ePKIKP PKPdf 07 16 19.0 -1.3
FRU pmax pmax
comp=Z,60nm,1.8s
AAK Ala-Archa 123.19 303 PKIKP PKPdf 07 16 18.8 -1.7
AAK pmax pmax
comp=Z,22nm,1.6s
AAK Ala-Archa 123.19 303 ePKPdf PKPdf 07 16 20.7 +0.2
EKS2 Erkin-Say 123.70 303 ePKIKP PKPdf 07 16 22.1 +0.6
EKS2 Erkin-Say 123.70 303 ePKPdf PKPdf 07 16 22.1 +0.6
MNAS Manas 124.57 302 PKIKP PKPdf 07 16 22.8 -0.4
MNAS pmax pmax
comp=Z,30nm,1.2s
PKME Peaks-Kenny Pk 124.91 55 ePKPdf PKPdf 07 16 24.2 +0.7
OTUK Ortayu 125.94 309 PKIKP PKPdf 07 16 23.3 -2.2
OTUK pmax pmax
comp=Z,41nm,1.4s
KK31 Karatay Array 126.14 302 i PKIKP PKPdf 07 16 25.9 -0.1
KK31 pmax pmax
comp=Z,15nm,1.0s
KKAR Karatay Array 126.14 302 ePKIKP PKPdf 07 16 26.5 +0.5
KKAR Karatay Array 126.14 302 ePKPdf PKPdf 07 16 26.5 +0.5
LSZ Lusaka 126.15 212 PKP PKPdf 07 16 28.4 +1.3
comp=Z,2.3nm,0.4s,baz=140,slow=1.8,SNR=5.7
LSZ Lusaka 126.15 212 ePKPdf PKPdf 07 16 28.6 +1.5
DZET Dzherino 126.32 297 PKIKP PKPdf 07 16 26.8 +0.2
DZET pmax pmax
comp=Z,31nm,1.2s
TSUM Tsumeb 126.35 199 PKP PKPdf 07 16 26.4 -1.0
comp=Z,3.0nm,0.9s,baz=131,slow=2.3,SNR=4.1
TSUM Tsumeb 126.35 199 ePKPdf PKPdf 07 16 28.2 +0.8
BVA0 Borovoye Array 127.85 315 i PKIKP PKPdf 07 16 28.5 -0.4
BVA0 pmax pmax
comp=Z,32nm,1.1s
BRVK Borovoye 127.91 315 c iPKIKP PKPdf 07 16 29.5 +0.5
BRVK pmax pmax
comp=Z,68nm,1.0s
BRVK Borovoye 127.91 315 ePKPdf PKPdf 07 16 29.4 +0.4
ZRNK Zerenda 128.67 314 PKIKP PKPdf 07 16 29.1 -1.4
ZRNK pmax pmax
comp=Z,26nm,1.0s
KMBO Kilima Mbogo 132.65 232 PKP PKPdf 07 16 41.9 +2.3
comp=Z,3.2nm,0.8s,baz=177,slow=1.7,SNR=4.5
SVE Sverdlovsk 133.48 320 ePKIKP PKPdf 07 16 39.6 +0.2
SVE pmax pmax
comp=Z,63nm,2.5s
AB31 Akbulak array 134.20 309 i PKIKP PKPdf 07 16 41.1 +0.1
AB31 pmax pmax
comp=Z,11nm,1.1s
ABKAR Akbulak array 134.20 309 ePKPdf PKPdf 07 16 41.5 +0.5
GEYT Alibeck 134.32 293 PKP PKPdf 07 16 42.3 +0.6
comp=Z,11nm,1.0s,baz=132,slow=2.7,SNR=12
SUMG Summit 134.83 16 ePKIKP PKPdf 07 16 42.3 +0.2
SUMG Summit 134.83 16 ePKPdf PKPdf 07 16 42.3 +0.2
SOKR Solikamsk 135.07 324 ePKIKP PKPdf 07 16 36.2 -6.1
SOKR pmax pmax
comp=Z,9.0nm,0.9s
AKTO Aktyubinsk 135.44 311 PKIKP PKPdf 07 16 42.9 -0.4
AKTO pmax pmax
comp=Z,17nm,1.2s
APA Apatity 140.44 342 ||ePKHKP PKPpre 07 16 43.5
APA pmax pmax
comp=Z,5.0nm,1.1s
APA MLR MLR
comp=Z,600nm,17.0s
ARCES ARCESS Array B 140.68 347 PKhKP PKPpre 07 16 47.1
comp=Z,6.8nm,0.9s,baz=354,slow=2.4,SNR=9.8
KLMR Klimovskoe 142.60 330 ePKHKP PKPpre 07 16 50.2
KLMR pmax pmax
comp=Z,47nm,1.4s
GNI Garni 144.91 295 c iPKIKP PKPab 07 16 59.3 -0.9
GNI Garni 144.91 295 ePKPdf PKPdf 07 17 00.5 -0.6
TBLG Delisi 144.91 298 P PKPab 07 16 59.5 -0.5
TBLG Delisi 144.91 298 ePKIKP PKPab 07 16 59.5 -0.5
GUDG Gudauri 145.09 299 P PKPbc 07 17 00.3 -0.6
ZEI Tsey 145.50 299 i PKP2 PKPdf 07 17 00.6 -1.4
ZEI pmax pmax
comp=Z,183nm,1.4s
VRH Novokhopyorsk 145.50 315 ePKIKP PKPab 07 17 03.0 +1.2
NCK Nalchik 145.68 301 i PKP2 PKPdf 07 17 00.8 -1.2
BGD Bogdanovka 145.78 297 P PKPab 07 17 03.1 -0.4
ONI Oni 145.84 299 P PKPbc 07 17 02.9 -0.2
ONI Oni 145.84 299 ePKIKP PKPbc 07 17 02.8 -0.2
AKH Akhalkalaki 145.85 297 P PKPbc 07 17 03.2 -0.1
AKH Akhalkalaki 145.85 297 ePKP2 PKPbc 07 17 03.2 -0.1
GOF Gofitskoye 145.92 304 ||ePKP2 PKPab 07 17 03.6 0.0
GOF pmax pmax
comp=Z,74nm,0.7s
MOS Moscow 146.03 324 i PKP2 PKPbc 07 17 02.7 -0.3
MOS pmax pmax
comp=Z,560nm,1.4s
KBZ Khabaz 146.16 301 PKPbc PKPab 07 17 04.3 -0.3
comp=Z,26nm,0.9s,baz=150,slow=2.1,SNR=38
KIV Kislovodsk 146.29 302 i PKIKP PKPdf 07 17 02.9 -0.3
KIV pmax pmax
comp=Z,38nm,1.1s
KIV Kislovodsk 146.29 302 ePKPbc PKPbc 07 17 04.5 +0.1
NEY Neytrino 146.33 300 i PKP2 PKPab 07 17 05.6 +0.1
VORR Voronezh 146.84 316 ePKHKP PKPpre 07 17 02.0
VORR pmax pmax
comp=Z,550nm,1.4s
CHVG Ch'k'valeri 146.84 299 P PKPab 07 17 06.9 -0.4
OBN Obninsk 146.85 323 c iPKP2 PKPbc 07 17 05.3 -0.2
OBN e 07 20 29.9
OBN pmax pmax
comp=Z,350nm,1.7s
OBN MLR MLR
comp=Z,311nm,20.0s
OBN Obninsk 146.85 323 ePKPbc PKPab 07 17 06.2 -0.7
OBN ePKPab PKiKP 07 17 07.6 -0.5
VSR Storozhevoye 147.02 316 ePKP2 PKPbc 07 17 06.4 +0.3
VSR pmax pmax
comp=Z,300nm,1.6s
FINES FINESS Array B 147.13 339 PKPbc PKPbc 07 17 05.6 -0.4
comp=Z,91nm,0.8s,baz=64,slow=4.4,SNR=206
SOC Sochi 148.47 301 d iPKIKP PKPdf 07 17 07.3 +0.6
SOC i 07 17 13.3
SOC e 07 20 46.8
SOC ePPP PPP 07 23 57.6
SOC pmax pmax
comp=Z,50nm,1.1s
SOC pmax pmax
comp=Z,33nm,0.9s
VSU Vasula 149.14 334 c iPKP2 PKPbc 07 17 11.7 +0.3
VSU pmax pmax
comp=Z,440nm,1.2s
KSRV Kasrt alli 149.21 287 eP PKPbc 07 17 12.8 +0.3
ANN Anapa 149.89 304 i PKP2 PKPbc 07 17 13.7 -0.1
ANN pmax pmax
comp=Z,244nm,1.4s
ZALF Zalf 150.23 280 eP PKPbc 07 17 15.6 +0.6
ROOS tl_alroos 150.44 283 eP PKPbc 07 17 16.1 +0.6
SALA Sala 150.69 280 eP PKPbc 07 17 16.4 +0.1
NB2 NORSAR Subarra 150.87 351 PKP PKPbc 07 17 15.4 -0.3
comp=Z,42nm,1.0s,baz=22,slow=2.9
NB2 NORSAR Subarra 150.87 351 PKP PKPbc 07 17 15.4 -0.3
baz=22,slow=2.9
NOA NORSAR Array B 150.87 351 PKPbc PKPbc 07 17 15.1 -0.6
comp=Z,13nm,0.8s,baz=15,slow=4.2,SNR=33
TOTH TOTAH 151.05 281 eP PKPbc 07 17 18.2 +1.2
DRWC Darouich 151.15 288 eP PKPbc 07 17 18.5 +1.4
HAWK Hawaek 151.21 283 eP PKPbc 07 17 18.4 +1.1
IZAR Zarasai 151.25 331 eP PKPbc 07 17 17.1 +0.4
IZAR pmax IAmb IAmb 07 17 18.9
comp=Z,43nm,1.1s
BIDA Albida 151.32 284 eP PKPbc 07 17 18.5 +0.9
TCHB Talchebab 151.32 280 eP PKPbc 07 17 18.3 +0.7
IDID Didziasalis 151.34 330 eP PKPbc 07 17 17.2 +0.3
IDID IAmb IAmb 07 17 19.1
comp=Z,41nm,1.1s
MICGM Minsk 151.37 328 ||eP PKPbc 07 17 17.0 +0.1
MICGM PM 07 17 18.0
comp=Z,0.3nm,1.0s
MICGM eLR LR 08 23 38.0
MNK Minsk 151.37 328 ↑ePKIKP PKPbc 07 17 17.0 +0.1

MNK				pmax	pmax			
	comp=Z,300nm,1.0s							
ISAL	**Salakas**	**151.42**	**331**	*e*P		**PKPbc**	**07 17 17.6**	**+0.6**
ISAL				IAmb	IAmb		07 17 19.3	
	comp=Z,28nm,1.0s							
BRBR	**Barbar**	**151.45**	**281**	*e*P		**PKPbc**	**07 17 19.7**	**+1.5**
NACGM	**Naroch**	**151.59**	**329**	*e*P		**PKPbc**	**07 17 18.0**	**+0.6**
NACGM				PM			07 17 19.0	
	comp=Z,0.3nm,0.7s							
SIM	**Simferopol'**	**152.15**	**306***c*	*i*PKIKP		**PKPbc**	**07 17 19.9**	**+0.8**
SIM				*i*			07 17 31.2	
SIM				*e*PPP	PPP		07 24 12.0	
SIM				pmax	pmax			
	comp=Z,52nm,0.9s							
KONO	**Kongsberg**	**152.43**	**351**	*e*PKIKP		**PKPbc**	**07 17 19.9**	**+0.7**
KONO				*e*			07 17 31.0	
KONO	**Kongsberg**	**152.43**	**351**	*e*PKPbc		**PKPbc**	**07 17 19.9**	**+0.7**
KONO				*e*PKPab		**PKPab**	**07 17 31.0**	**+1.5**
AKASG	**Malin Array Be**	**152.91**	**320**	PKP		**PKPdf**	**07 17 14.3**	**+1.0**
	comp=Z,0.4nm,0.4s,baz=56,slow=1.8,SNR=5.1							
AKASG				PKPbc		**PKiKP**	**07 17 20.9**	**+0.2**
	comp=Z,37nm,1.0s,baz=54,slow=2.7,SNR=57							
KIEV	**Kiev**	**152.92**	**320**	*e*PKIKP		**PKPdf**	**07 17 14.6**	**+1.3**
KIEV				*e*			07 17 21.1	
KIEV				*e*			07 17 31.3	
KIEV	**Kiev**	**152.92**	**320**	*e*PKPdf		**PKPdf**	**07 17 14.6**	**+1.3**
KIEV				*e*PKPbc		**PKiKP**	**07 17 21.1**	**+0.3**
KIEV				*e*PKPab		**PKPab**	**07 17 31.3**	**-0.6**
LIC	**Lamto**	**153.01**	**165**	*e*P		**PKPbc**	**07 17 22.7**	**+0.8**
	comp=Z,68nm,1.7s							
KIC	**Kosan Boka**	**153.21**	**165**	*e*P		**PKPbc**	**07 17 24.9**	**+2.5**
	comp=Z,266nm,1.8s							
TIC	**Toumodi**	**153.42**	**165**	*e*P		**PKPbc**	**07 17 23.6**	**+0.8**
BRTR	**Keskin Array B**	**153.45**	**295**	PKP		**PKPdf**	**07 17 14.6**	**0.0**
	comp=Z,0.9nm,0.8s,baz=132,slow=2.1,SNR=8.5							
BRTR				PKPbc		**PKiKP**	**07 17 22.4**	**0.0**
	comp=Z,20nm,0.9s,baz=133,slow=3.6,SNR=54							
DBIC	**Dimbokro**	**153.48**	**165**	PKPbc		**PKPbc**	**07 17 24.3**	**+1.4**
	comp=Z,3.1nm,0.6s,baz=180,slow=6.1,SNR=2.7							
SUW	**Suwalki**	**153.73**	**331**	*e*PKP		**PKPbc**	**07 17 22.9**	**+0.7**
SUW	**Suwalki**	**153.73**	**331**	*e*PKIKP		**PKPbc**	**07 17 22.9**	**+0.7**
CSS	**Mathiatis**	**153.77**	**284**	*e*PKPdf		**PKPdf**	**07 17 15.1**	**0.0**
CSS				*e*PKPbc		**PKiKP**	**07 17 23.9**	**+0.8**
ANTO	**Ankara**	**154.08**	**295**	*e*PKIKP		**PKPbc**	**07 17 24.4**	**+0.8**
ANTO	**Ankara**	**154.08**	**295**	*e*PKPbc		**PKPbc**	**07 17 24.4**	**+0.8**
SORM	**Soroca**	**154.68**	**316**⇑	*i*P		**PKPbc**	**07 17 25.0**	**+0.6**
SORM	**Soroca**	**154.68**	**316**	⇑PKIKP		**PKPbc**	**07 17 25.0**	**+0.6**
KIS	**Kishinev**	**154.91**	**313**	*e*PKP		**PKPbc**	**07 17 23.0**	**-2.0**
KIS				LRM		MLR	08 28 36.0	
	comp=Z,300nm,24.0s							
KIS	**Kishinev**	**154.91**	**313**	*e*PKIKP		**PKPbc**	**07 17 23.0**	**-2.0**
KIS				*e*			07 17 36.0	
LVV	**L'vov**	**156.15**	**323**	*e*PKP2		PKPab	07 17 37.9	-7.8
TLB	**Topalu**	**156.37**	**308**⇑	*i*P		PKPdf	07 17 29.0	+11
TLB	**Topalu**	**156.37**	**308**	⇑PKIKP		PKPdf	07 17 29.0	+11
TESR	**Tescani**	**156.47**	**313**⇓	*i*P		**PKPdf**	**07 17 24.0**	**+5.6**
PLOR	**Plostina**	**156.76**	**312**⇑	*i*P		PKPdf	07 17 27.6	+8.8
PLOR	**Plostina**	**156.76**	**312**	⇑PKIKP		PKPdf	07 17 27.6	+8.8
BURAR	**Bucovina Array**	**156.77**	**317**⇑	*i*P		PKPdf	07 17 30.5	+12
BURAR	**Bucovina Array**	**156.77**	**317**	⇑PKIKP		PKPdf	07 17 30.5	+12
KWP	**Kalwaria Pacla**	**156.94**	**324**	*e*PKP		**PKPdf**	**07 17 19.2**	**+0.3**
KWP				*e*			07 17 49.2	
KWP	**Kalwaria Pacla**	**156.94**	**324**	*e*PKIKP		**PKPdf**	**07 17 19.2**	**+0.3**
MLR	**Muntele Rosu**	**157.37**	**312**⇓	*i*P		PKPdf	07 17 31.0	+11
MLR	**Muntele Rosu**	**157.37**	**312**	⇓PKIKP		PKPdf	07 17 31.1	+11
DOPR	**Dopca**	**157.49**	**313**⇓	*i*P		**PKPdf**	**07 17 20.5**	**+0.8**
UZH	**Uzhgorod**	**157.78**	**322**	*e*PKIKP		**PKPdf**	**07 17 20.1**	**+0.2**
UZH				*e*			07 17 27.9	
UZH				*i*			07 17 48.9	
STHS	**Stebnicka Huta**	**157.80**	**325**	*e*PKP2		**PKPab**	**07 17 53.3**	**+0.5**
STHS	**Stebnicka Huta**	**157.80**	**325**	*e*PKP		**PKPab**	**07 17 53.3**	**+0.5**
OJC	**Ojcow**	**157.91**	**328**	*e*PKP		**PKPdf**	**07 17 21.1**	**+1.0**
OJC				*e*			07 17 52.8	
OJC	**Ojcow**	**157.91**	**328**	*e*PKIKP		**PKPdf**	**07 17 21.1**	**+1.0**
VOIR		**157.95**	**312**⇓	*i*P		**PKPdf**	**07 17 26.4**	**+6.0**
VOIR		**157.95**	**312**	⇓PKIKP		**PKPdf**	**07 17 26.4**	**+6.0**
CRVS	**Cervenica-Dubn**	**158.03**	**324**	*e*PKIKP		**PKPdf**	**07 17 22.6**	**+2.3**
CRVS	**Cervenica-Dubn**	**158.03**	**324**	*e*PKP		**PKPdf**	**07 17 22.6**	**+2.3**
CRVS				*e*			07 17 54.2	
ARR	**Arges**	**158.24**	**313**⇓	*i*P		**PKPdf**	**07 17 21.2**	**+0.5**
NIE	**Niedzica**	**158.25**	**326**	*e*PKP		**PKPdf**	**07 17 21.5**	**+0.9**
NIE	**Niedzica**	**158.25**	**326**	*e*PKIKP		**PKPdf**	**07 17 21.5**	**+0.9**
DRGR		**158.65**	**318**⇑	*i*P		**PKPdf**	**07 17 20.6**	**-0.6**
DRGR		**158.65**	**318**	⇑PKIKP		**PKPdf**	**07 17 20.6**	**-0.6**
KECS	**Kecovo**	**158.80**	**324**	*e*PKP2		**PKPab**	**07 17 57.8**	**+0.7**
KECS	**Kecovo**	**158.80**	**324**	*e*PKP		**PKPab**	**07 17 57.8**	**+0.7**
LANS	**Liptovska Anna**	**158.83**	**327**	*e*PKP2		**PKPab**	**07 17 58.1**	**+0.8**
LANS	**Liptovska Anna**	**158.83**	**327**	*e*PKP		**PKPab**	**07 17 58.1**	**+0.8**
OKC	**Ostrava-Krasne**	**158.91**	**330**	*e*PKPAB		**PKPab**	**07 17 57.2**	**-0.4**
OKC	**Ostrava-Krasne**	**158.91**	**330**	*e*PKP2		**PKPab**	**07 17 57.2**	**-0.4**
MORC	**Moravsky Berou**	**159.22**	**330**⇓	*i*P		**PKPab**	**07 17 51.2**	**-7.7**
MORC	**Moravsky Berou**	**159.22**	**330**	⇓PKP2		**PKPab**	**07 17 51.2**	**-7.7**
UPC	**Upice**	**159.24**	**334**	*e*PKPAB		**PKPab**	**07 17 59.6**	**+0.6**
UPC				AMS	AMS		08 30 50.0	
	comp=Z,500nm,20.2s							
UPC	**Upice**	**159.24**	**334**	*e*PKP2		**PKPab**	**07 17 59.6**	**+0.6**
UPC				MLR	MLR			
	comp=Z,500nm,20.2s							
KRLC	**Kraliky**	**159.29**	**332**	*e*PKPAB		**PKPab**	**07 17 58.9**	**-0.4**
KRLC				*ex*	x		07 18 14.3	
KRLC	**Kraliky**	**159.29**	**332**	*e*PKP2		**PKPab**	**07 17 58.9**	**-0.4**
CLL	**Collm**	**159.57**	**340**	*e*PKPdf		**PKPdf**	**07 17 25.0**	**+3.0**
CLL				*e*			07 17 51.0	
CLL				⇓*i*PKPab		**PKPab**	**07 18 00.1**	**-0.2**
	comp=Z,51nm,1.1s							
CLL				*e*pPKPab		**pPKPab**	**07 18 06.0**	**-5.5**
CLL				*e*PP	PP		07 21 33.0	-8.5
CLL				*e*SKKSac	SKKSac		07 28 34.0	+6.4
CLL				*e*			07 29 12.0	
CLL				*e*PSKS			07 32 01.0	
CLL				*e*PPS	PPS		07 34 54.0	
CLL				*e*SS		**SS**	**07 41 48.0**	**+2.7**
CLL				*e*PSPS			07 42 41.0	
CLL				*e*SSS	SSS		07 47 54.0	
CLL	**Collm**	**159.57**	**340**⇓	*e*PKIKP		**PKPdf**	**07 17 25.0**	**+3.0**
CLL				*i*			07 18 00.1	
CLL				pmax	pmax			
	comp=Z,51nm,1.1s							
VYHS	**Vyhne**	**159.59**	**326**	*e*PKIKP		**PKPdf**	**07 17 22.7**	**+0.5**
VYHS				*e*			07 18 00.2	
VYHS	**Vyhne**	**159.59**	**326**	*e*PKP		**PKPdf**	**07 17 22.6**	**+0.4**
VYHS				*e*			07 18 00.2	
BRG	**Berggiesshubel**	**159.66**	**338**	*e*PKP		**PKPdf**	**07 17 25.1**	**+3.0**
	comp=Z,3.8nm,0.9s							
BRG				*i*			07 18 01.0	
	comp=Z,38nm,1.1s							
BRG				PP		**PP**	**07 21 38.0**	**-4.0**
	comp=N,243nm,19.8s							
	comp=E,195nm,20.5s							
	comp=Z,360nm,18.2s							
BRG	**Berggiesshubel**	**159.66**	**338**	*e*PKIKP		**PKPdf**	**07 17 25.1**	**+3.0**
BRG				*i*			07 18 01.0	
BRG							07 21 38.0	
BRG				pmax	pmax			
	comp=Z,4.0nm,0.9s							
BRG				pmax	pmax			
	comp=Z,38nm,1.1s							
BRG				MLR	MLR			
	comp=N,243nm,19.8s							
BRG				MLR	MLR			
	comp=E,195nm,20.5s							
BRG				MLR	MLR			
	comp=Z,360nm,18.2s							
PVCC	**Panska Ves**	**159.74**	**336**	*e*PKPAB		**PKPab**	**07 18 01.9**	**+0.8**
PVCC				AMS	AMS		08 38 00.0	
	comp=Z,400nm,19.7s							
PVCC	**Panska Ves**	**159.74**	**336**	*e*PKP2		**PKPab**	**07 18 01.9**	**+0.8**
PVCC				MLR	MLR			
	comp=Z,400nm,19.7s							
VRAC	**Vranov**	**159.97**	**331**⇓	*i*P		**PKPab**	**07 18 02.7**	**+0.5**
VRAC	**Vranov**	**159.97**	**331**	⇓PKP2		**PKPab**	**07 18 02.7**	**+0.5**
GOPC	**GO Pecny, Ondr**	**160.18**	**335**	*e*PKPAB		**PKPab**	**07 18 03.2**	**+0.1**
GOPC				*e*PP		**PP**	**07 21 38.4**	**-6.5**
GOPC				*e*SKKS			07 28 40.3	
GOPC				AMS	AMS		08 35 10.0	
	comp=Z,500nm,21.1s							
GOPC	**GO Pecny, Ondr**	**160.18**	**335**	*e*PKP2		**PKPab**	**07 18 03.2**	**+0.1**
GOPC				MLR	MLR			
	comp=Z,500nm,21.1s							
PRU	**Pruhonice**	**160.21**	**335**	*e*PKPAB		**PKPab**	**07 18 03.6**	**+0.5**
PRU				*ex*	x		07 18 34.3	
PRU				*e*PP		**PP**	**07 21 37.3**	**-7.7**
PRU				*e*SKKS			07 28 44.0	
PRU				AMS	AMS		08 37 00.0	
	comp=Z,300nm,19.5s							
PRU	**Pruhonice**	**160.21**	**335**	*e*PKP2		**PKPab**	**07 18 03.6**	**+0.5**
PRU				MLR	MLR			
	comp=N,300nm,19.5s							
SMOL	**Smolenice**	**160.22**	**328**	*e*PKP2		**PKPab**	**07 18 04.0**	**+0.7**
SMOL	**Smolenice**	**160.22**	**328**	*e*PKP		**PKPab**	**07 18 04.0**	**+0.7**
TORD	**Torodi Ar. Bea**	**160.66**	**180**	PKP		**PKPdf**	**07 17 25.5**	**+1.2**
	comp=N,2.1nm,0.9s,baz=106,slow=0.5,SNR=6.7							
TORD				PKPab		**PKPab**	**07 18 06.9**	**+1.0**
	comp=N,9.7nm,0.9s,baz=178,slow=3.1,SNR=14							
NKC	**Novy Kostel**	**160.68**	**339**	*e*PKPAB		**PKPab**	**07 18 05.2**	**0.0**
NKC				*ex*	x		07 18 32.0	
NKC				*e*PP		**PP**	**07 21 44.9**	**-2.7**
NKC				AMS	AMS		08 42 10.0	
	comp=N,600nm,19.3s							
NKC	**Novy Kostel**	**160.68**	**339**	*e*PKP2		**PKPab**	**07 18 05.2**	**0.0**
NKC				*e*			07 21 44.9	
NKC				MLR	MLR			
	comp=Z,600nm,19.3s							
KHC	**Kasperske Hory**	**161.27**	**335**	*e*PKPDF		**PKPdf**	**07 17 27.4**	**+3.4**
KHC				*ex*	x		07 17 37.8	
KHC				*ex*	x		07 17 45.5	
KHC				*e*PKPAB		**PKPab**	**07 18 07.7**	**-0.2**
KHC				*ex*	x		07 18 34.5	
KHC				*e*PP		**PP**	**07 21 49.2**	**-1.6**
KHC				*e*SKKS			07 28 43.7	
KHC				AMS	AMS		08 38 20.0	
	comp=Z,600nm,17.3s							
KHC	**Kasperske Hory**	**161.27**	**335**	*e*PKIKP		**PKPdf**	**07 17 27.4**	**+3.4**
KHC				*e*			07 17 37.8	
KHC				*e*			07 18 07.7	
KHC				*e*			07 21 49.2	
KHC				MLR	MLR			
	comp=Z,600nm,17.3s							
KHC	**Kasperske Hory**	**161.27**	**335**	*e*PKPdf		**PKPdf**	**07 17 23.7**	**-0.4**
KHC				*e*PKPab		**PKPab**	**07 18 07.9**	**0.0**
CONA	**Conrad Observa**	**161.35**	**329**	*i*PKPab		**PKPab**	**07 18 08.3**	**0.0**
	comp=Z,18nm,1.1s,SNR=6.0							
GERES	**GERESS Array B**	**161.47**	**335**	PKP		**PKPdf**	**07 17 26.9**	**+2.6**
	comp=Z,0.2nm,0.4s,baz=355,slow=2.3,SNR=5.2							
GERES				PKPab		**PKPab**	**07 18 08.8**	**0.0**
	comp=Z,5.3nm,0.8s,baz=34,slow=5.0,SNR=25							
MEM	**Membach**	**161.72**	**352**	PKPab		**PKPab**	**07 18 09.6**	**-0.1**
BCLA	**Clavier**	**161.99**	**353**	PKPab		**PKPab**	**07 18 10.6**	**-0.3**
ARSA	**Arzberg**	**162.01**	**329**	*i*PKPab		**PKPab**	**07 18 10.6**	**-0.6**
	comp=Z,11nm,1.1s							
MOA	**Molln**	**162.07**	**332**	*i*PKPab		**PKPab**	**07 18 10.6**	**-0.8**
	comp=Z,15nm,1.5s							
WLF	**Walferdange**	**162.63**	**351**	PKPab		**PKPab**	**07 18 14.0**	**+0.3**
SOKA	**Soboth**	**162.67**	**328**	*i*PKPab		**PKPab**	**07 18 13.2**	**-1.0**
	comp=Z,14nm,1.1s							
LANF	**Langenberg**	**163.01**	**346**	PKP		**PKPab**	**07 18 14.9**	**-0.5**
OBKA	**Obir**	**163.01**	**329**	*i*PKPab		**PKPab**	**07 18 15.2**	**-0.5**
	comp=Z,2.8nm,0.7s							
KBA	**Koelnbreinsper**	**163.06**	**332**	*i*PKPab		**PKPab**	**07 18 14.1**	**-1.8**
	comp=Z,13nm,1.6s							
VNDS	**Vrh nad Dolski**	**163.26**	**327**	*e*PKPdf		**PKPdf**	**07 17 24.7**	**-1.4**
VNDS				*e*PKPab		**PKPab**	**07 18 15.8**	**-0.9**
MYKA	**Terra Mystica**	**163.30**	**331**	*i*PKPab		**PKPab**	**07 18 15.9**	**-1.0**
	comp=Z,13nm,1.1s							
LJU	**Ljubljana**	**163.38**	**328**	*e*PKPdf		**PKPdf**	**07 17 24.0**	**-2.1**
LJU				*e*PKPab		**PKPab**	**07 18 16.5**	**-0.7**
BOJS	**Bojanci**	**163.44**	**325**	*e*PKPdf		**PKPdf**	**07 17 24.4**	**-1.8**
WATA	**Walderalm**	**163.50**	**336**	*i*PKPab		**PKPab**	**07 18 18.0**	**+0.2**
	comp=Z,6.4nm,0.8s							
WTTA	**Wattenberg**	**163.54**	**336**	*i*PKPab		**PKPab**	**07 18 18.3**	**+0.3**
	comp=Z,11nm,1.1s							
RETA	**Reute**	**163.63**	**338**	*i*PKPab		**PKPab**	**07 18 18.6**	**+0.3**
	comp=Z,36nm,1.1s,SNR=12							
MOTA	**Moosalm**	**163.65**	**337**	*i*PKPab		**PKPab**	**07 18 19.0**	**+0.6**
	comp=Z,16nm,0.9s,SNR=7.2							
ABTA	**Abfaltersbach**	**163.66**	**333**	*i*PKPab		**PKPab**	**07 18 17.6**	**-0.8**
	comp=Z,17nm,1.1s							
ECH	**Echery**	**163.87**	**347**	PKP		**PKPab**	**07 18 18.7**	**-0.5**
PMOZ	**Porto Moniz, M**	**163.97**	**84**	*e*PKPab		**PKPab**	**07 18 16.0**	**-4.5**
FETA	**Feichten**	**164.06**	**337**	*i*PKPab		**PKPab**	**07 18 20.6**	**+0.3**
	comp=Z,24nm,1.1s,SNR=5.9							
THEF	**They Montfort**	**164.06**	**350**	PKP		**PKPab**	**07 18 19.5**	**-0.5**
DAVA	**Damuels**	**164.08**	**340**	*i*PKPab		**PKPab**	**07 18 20.7**	**+0.3**
	comp=Z,30nm,1.0s,SNR=8.9							
MOF	**Molkenrain**	**164.22**	**347**	PKP		**PKPab**	**07 18 20.2**	**-0.7**
LOMF	**Lomont**	**164.76**	**347**	PKP		**PKPab**	**07 18 22.1**	**-1.2**
BNI	**Bardonecchia**	**166.99**	**345**	*e*PKIKP		**PKPdf**	**07 17 27.0**	**-2.4**
BNI	**Bardonecchia**	**166.99**	**345**	*e*PKPdf		**PKPdf**	**07 17 27.0**	**-2.4**
PGAV	**Gavieira, Arco**	**167.66**	**38**	*e*PKPab		PKPab	07 18 13.6	-23
PGAV	**Gavieira, Arco**	**167.66**	**38**	*e*SS		SS	07 43 18.5	+8.7
PGAV	**Gavieira, Arco**	**167.66**	**38**	*e*LR		LR	08 23 36.2	
	comp=Z,715nm,18.0s							
POLO	**Lamas de Olo**	**168.33**	**38**	*e*PKPdf		**PKPdf**	**07 17 30.5**	**0.0**
POLO	**Lamas de Olo**	**168.33**	**38**	*e*PKPab		PKPab	07 18 19.3	-20
PCAS	**Casmilo, Conde**	**168.82**	**45**	*e*PKPdf		**PKPdf**	**07 17 31.9**	**+1.2**
PCAS	**Casmilo, Conde**	**168.82**	**45**	*e*PKPab		PKPab	07 18 13.5	-28
PCAS	**Casmilo, Conde**	**168.82**	**45**	*e*SS		SS	07 43 41.9	+20
MVO	**Moncorvo**	**168.88**	**37**	*e*PKPdf		**PKPdf**	**07 17 30.9**	**+0.1**
MVO	**Moncorvo**	**168.88**	**37**	*e*PKPab		PKPab	07 18 14.8	-27
MVO	**Moncorvo**	**168.88**	**37**	*e*SS		SS	07 43 31.8	+10
MVO	**Moncorvo**	**168.88**	**37**	*e*LQ		LQ	08 10 29.9	
MVO	**Moncorvo**	**168.88**	**37**	*e*LR		LR	08 24 24.8	
	comp=Z,551nm,18.0s							
PMAFR	**Mafra**	**168.95**	**52**	*e*PKPdf		**PKPdf**	**07 17 37.0**	**+6.2**
PMAFR	**Mafra**	**168.95**	**52**	*e*PKPab		PKPab	07 18 14.8	-27
PMST	**Lisbon--Monsan**	**169.13**	**52**	*e*PKPab		PKPab	07 18 23.6	-19
MTE	**Manteigas**	**169.14**	**41**	*e*PKPdf		**PKPdf**	**07 17 36.7**	**+5.7**
MTE	**Manteigas**	**169.14**	**41**	*e*PKPab		PKPab	07 18 17.5	-25
MTE	**Manteigas**	**169.14**	**41**	*e*PP		PP	07 22 54.0	+22
MTE	**Manteigas**	**169.14**	**41**	*e*SS		SS	07 43 29.9	+5.0
MTE	**Manteigas**	**169.14**	**41**	*e*LQ		LQ	08 15 39.4	
MTE				*e*LR		LR	08 22 10.0	
	comp=Z,823nm,20.0s							
LIS	**Lisbon**	**169.17**	**53**	*e*PKPdf		PKPdf	07 17 40.8	+10
LIS	**Lisbon**	**169.17**	**53**	*e*PKPab		**PKPab**	**07 18 48.4**	**+5.4**
PCBR	**Castelo Branco**	**169.56**	**43**	*e*PKPdf		PKPdf	07 17 40.3	+9.2
PMTG	**Montargil**	**169.58**	**49**	*e*PKPdf		**PKPdf**	**07 17 36.9**	**+5.7**
PMTG	**Montargil**	**169.58**	**49**	*e*PKPab		PKPab	07 18 14.2	-31
TAM	**Tamanrasset**	**169.72**	**199**	*e*PKIKP		**PKPdf**	**07 17 35.7**	**+3.7**
TAM				*e*			07 18 47.9	
TAM	**Tamanrasset**	**169.72**	**199**	*e*PKPdf		**PKPdf**	**07 17 35.7**	**+3.7**
TAM				*e*PKPab		**PKPab**	**07 18 47.9**	**+2.1**
PMRV	**Marv??o**	**169.87**	**45**	*e*PKPdf		**PKPdf**	**07 17 32.9**	**+1.5**
PMRV	**Marv??o**	**169.87**	**45**	*e*PKPab		PKPab	07 18 15.0	-31
PMRV	**Marv??o**	**169.87**	**45**	*e*SS		SS	07 43 50.1	+18
PMRV	**Marv??o**	**169.87**	**45**	*e*LR		LR	08 23 57.9	
	comp=Z,789nm,20.0s							
PNCL	**Nicolau / Gran**	**169.89**	**54**	*e*PKPdf		**PKPdf**	**07 17 37.4**	**+6.0**
PNCL	**Nicolau / Gran**	**169.89**	**54**	*e*PKPab		PKPab	07 18 15.6	-31
EVO	**Evora**	**170.02**	**51**	*e*PKPdf		**PKPdf**	**07 17 37.8**	**+6.3**
EVO	**Evora**	**170.02**	**51**	*e*PKPab		PKPab	07 18 14.8	-32
PESTR	**Estremoz**	**170.10**	**48**	*e*PKPdf		**PKPdf**	**07 17 37.9**	**+6.4**
PESTR	**Estremoz**	**170.10**	**48**	*e*PKPab		PKPab	07 18 11.3	-36
PESTR	**Estremoz**	**170.10**	**48**	*e*SS		SS	07 43 43.5	+8.8
MORF	**Marmelete**	**170.18**	**58**	*e*PKPdf		**PKPdf**	**07 17 32.3**	**+0.6**
MESJ	**Messejana**	**170.24**	**55**	*e*PKPdf		**PKPdf**	**07 17 37.6**	**+6.0**
MESJ	**Messejana**	**170.24**	**55**	*e*PKPab		PKPab	07 18 12.4	-35
PCVE	**Castro Verde**	**170.47**	**55**	*e*PKPdf		**PKPdf**	**07 17 38.4**	**+6.6**
PCVE	**Castro Verde**	**170.47**	**55**	*e*PKPab		PKPab	07 18 15.0	-34
PCVE	**Castro Verde**	**170.47**	**55**	*e*SS		SS	07 43 59.9	+21
PBAR	**Barrancos**	**170.85**	**50**	*e*PKPdf		**PKPdf**	**07 17 33.0**	**+1.1**
PBAR	**Barrancos**	**170.85**	**50**	*e*PKPab		PKPab	07 18 15.8	-35
PBAR	**Barrancos**	**170.85**	**50**	*e*SS		SS	07 43 56.8	+15
ESDC	**Sonseca Array**	**171.50**	**32**	PKP		**PKPdf**	**07 17 35.0**	**+2.7**
	comp=Z,0.2nm,0.5s,baz=314,slow=2.2,SNR=6.4							
ESDC				PKPab		**PKPab**	**07 18 52.6**	**-0.7**
	comp=Z,0.4nm,0.5s,baz=324,slow=3.9,SNR=3.5							

NIED ***10*** *07:00:00.3, 38.00N × 143.30E, h8km, Mw3.9 Best double couple: M0 7.23000 × 10^14 NP1: φ=220.00000°, δ=50.00000°, λ=-41.00000°. NP2: φ=339.00000°, δ=60.00000°, λ=-132.00000°.*

IDC ***10*** *07:00:22.1 ± 1.4, 37.88N × 143.48E, h0km, mb3.7/6, mb1 3.8/9, mb1mx3.6/47, mbtmp3.7/9, ML4.1/2, Error ellipse: s-maj=30.5km s-min=20.3km az=109.0*

ISCJB ***10*** *07:00:23.2 ± 0.6, 37.90N ± 0.03 × 143.37E ± 0.05, h19km, mb4.0/9, Error ellipse: s-maj=5.7km s-min=4.1km az=23.4*

NEIC ***10*** *07:00:23.3 ± 0.7, 37.87N × 143.50E, h10km, mb4.5/2, Error ellipse: s-maj=14.1km s-min=7.3km az=116.0*

JMA ***10*** *07:00:24.9 ± 0.2, 38.01N × 143.34E, h36km, M3.9*

ISC 10 07:00:25.0 ± 1.0, **37.94N** ± 0.04 × **143.30E** ± 0.09, **h19**km, **n39,** σ1§**78**/49, **mb4.0**/9, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.62**	**289**	P	**Pn**	**07 00 52.3**	**-0.2**
JIO				*e*S	**Sn**	**07 01 11.9**	**-0.9**
OFUJ	**Ofunato**	**1.71**	**312**	P	**Pn**	**07 00 53.0**	**-0.8**
JMK	**Ichinoseki**	**1.92**	**302**	P	**Pn**	**07 00 56.4**	**-0.2**
JMK				*e*S	**Sn**	**07 01 19.5**	**-0.7**
JMM	**Marumori**	**1.98**	**269**	P	**Pn**	**07 00 57.8**	**+0.3**
JMM				*e*S	**Sn**	**07 01 21.8**	**0.0**
JFK	**Kawauchi**	**2.01**	**254**	P	**Pn**	**07 00 57.8**	**-0.1**
JFK				*e*S	**Sn**	**07 01 22.0**	**-0.5**
JOU	**Okura**	**2.12**	**282**	P	**Pn**	**07 00 59.9**	**+0.5**
JOM	**Ohasama**	**2.19**	**315**	P	**Pn**	**07 01 00.0**	**-0.4**
JOM				*e*S	**Sn**	**07 01 26.2**	**-0.8**
JFT	**Otama**	**2.39**	**261**	P	**Pn**	**07 01 04.2**	**+1.2**
JFT				*e*S	**Sn**	**07 01 32.7**	**+0.9**
JYK	**Kaneyama**	**2.51**	**294**	P	**Pn**	**07 01 05.3**	**+0.6**
JYK				*e*S	**Sn**	**07 01 35.1**	**+0.4**
JRG	**Rokugo**	**2.54**	**306**	P	**Pn**	**07 01 05.7**	**+0.5**
JRG				*e*S	**Sn**	**07 01 36.1**	**+0.5**
JANG	**Nango**	**2.80**	**331**	P	**Pn**	**07 01 09.2**	**+0.5**
JAH	**Hinai**	**3.06**	**318**	P	**Pn**	**07 01 14.1**	**+1.9**
JAG	**Ashikaga**	**3.42**	**245**	P	**Pn**	**07 01 17.7**	**+0.4**
JAG				*e*S	**Sn**	**07 01 57.6**	**+0.3**
BSO1	**Boso 1**	**3.78**	**210**	P	**Pn**	**07 01 21.6**	**-0.1**
BSO1				*e*S	**Sn**	**07 02 05.8**	**+0.5**
ERM	**Erimo**	**4.07**	**359**	*e*Pn	**Pn**	**07 01 26.6**	**+0.4**
ERM				*e*Sn	**Sn**	**07 02 11.4**	**-1.9**
MJAR	**Matsushiro Arr**	**4.29**	**253**	Pn	**Pn**	**07 01 31.6**	**+2.3**
	3.4nm,0.3s,baz=66,slow=13,SNR=38						
MJAR				Sn	**Sn**	**07 02 21.3**	**+2.5**
	2.2nm,0.3s,baz

14nm,0.8s,baz=58,slow=3.5,SNR=28
NB2 NORSAR Subarra151.01 351 PKP **PKPbc 07 22 25.8 +0.7**
comp=Z,1.6nm,0.6s,baz=17,slow=2.6
NOA NORSAR Array B151.01 351 PKPbc **PKPbc 07 22 25.8 +0.7**
comp=Z,3.5nm,0.8s,baz=15,slow=4.2,SNR=8.8
NACGM **Naroch 151.79 329** *e* **PKPbc 07 22 27.0 0.0**
NACGM eLR LR 08 26 40.0
AKASG Malin Array Be 153.13 320 PKPbc **PKPbc 07 22 30.5 +0.4**
comp=Z,1.5nm,0.6s,baz=54,slow=2.8,SNR=6.7
KIEV Kiev 153.14 320 *e*PKPbc **PKPbc 07 22 30.7 +0.5**
BRTR Keskin Array B 153.69 294 PKPbc **PKPbc 07 22 32.6 +0.6**
comp=Z,2.7nm,0.8s,baz=134,slow=3.6,SNR=9.4
CLL Collm 159.74 340∥*iP* **PKPab 07 23 10.1 0.0**
comp=Z,7.0nm,0.9s
TORD Torodi Ar. Bea 160.56 179 PKPab **PKPab 07 23 15.8 +1.2**
comp=Z,2.3nm,1.0s,baz=185,slow=3.6,SNR=5.6
GERES GERESS Array B 161.65 335 PKPab **PKPab 07 23 18.5 -0.2**
comp=Z,0.8nm,0.7s,baz=63,slow=4.5,SNR=5.1

NIED ***10*** *07:06:00,38.˚10N×143.˚10E,h8km,Mw3.7 Best double couple: M₀4.27000×10¹⁴ NP1:φs184.00000°,δ48.00000°, λ-137.00000°. NP2:φs62.00000°,δ60.00000°, λ-51.00000°.*
IDC ***10*** *07:06:35.5±2.0,38.˚06N×143.˚62E,h0km,mb3.5/3, mb1 3.6/6,mb1mx3.5/47,mbtmp3.6/6,ML3.3/2,MS2.9/1, Ms1 2.9/1,ms1mx2.4/45,Error ellipse: s-maj=40.2km s-min=24.5km az=86.0*
ISCJB ***10*** *07:06:37.3±1.0,38.˚04N±0.˚06×143.˚39E±0.˚07,h19km, mb3.5/3,Error ellipse: s-maj=8.4km s-min=7.7km az=42.1*
JMA ***10*** *07:06:40.8±0.2,38.˚09N×143.˚14E,h17km±4km,M3.6*
ISC 10 07:06:38.8±1.5,38.˚04N±0.˚06×143.˚4E±0.˚1,h19km,n16, σ1⁹93/22,mb3.4/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.68**	**285**	P	**Pn**	**07 07 06.7**	**-0.3**
JIO				*e*S	**Sn**	**07 07 25.7**	**-2.3**
OFUJ	**Ofunato**	**1.72**	**308**	P	**Pn**	**07 07 07.3**	**-0.3**
JMK	**Ichinoseki**	**1.95**	**299**	P	**Pn**	**07 07 10.6**	**-0.2**
JMK				*e*S	**Sn**	**07 07 33.2**	**-1.5**
JMM	**Marumori**	**2.08**	**266**	P	**Pn**	**07 07 12.0**	**-0.5**
JMM				*e*S	**Sn**	**07 07 36.4**	**-1.5**
JFK	**Kawauchi**	**2.12**	**252**	*e*S	**Sn**	**07 07 37.1**	**-1.9**
JOU	**Okura**	**2.19**	**279**	P	**Pn**	**07 07 14.3**	**+0.2**
JOU				S	**Sn**	**07 07 39.9**	**-0.8**
JOM	**Ohasama**	**2.19**	**312**	*e*S	**Sn**	**07 07 39.0**	**-1.7**
JFT	**Otama**	**2.49**	**259**	*e*S	**Sn**	**07 07 47.2**	**-0.9**
JYK	**Kaneyama**	**2.55**	**291**	*e*S	**Sn**	**07 07 49.1**	**-0.5**
JRG	**Rokugo**	**2.56**	**303**	*e*S	**Sn**	**07 07 49.4**	**-0.5**
MJAR	**Matsushiro Arr**	**4.41**	**252**	Pn	**Pn**	**07 07 47.3**	**+2.7**
	0.5nm,0.3s,baz=81,slow=14,SNR=5.8						
MJAR				Sn	**Sn**	**07 08 39.4**	**+4.0**
	0.7nm,0.3s,baz=47,slow=26,SNR=4.8						
MJAR				LR	LR	07 10 06.2	
	comp=Z,129nm,18.7s,baz=230,slow=46						
JHJ	**Hachijo jima 2**	**5.73**	**212**	Pn	**Pn**	**07 08 02.2**	**-0.6**
	6.9nm,0.3s,baz=319,slow=20,SNR=4.4						
JHJ				Sn	**Sn**	**07 09 02.7**	**-5.2**
	5.9nm,0.3s,baz=143,slow=20,SNR=4.4						
ASAJ	**Asahikawa**	**6.11**	**354**	Pn	**Pn**	**07 08 07.0**	**-0.9**
	baz=179,slow=9.0						
SONM	**Songino Array**	**28.57**	**302**	P	**P**	**07 12 34.2**	**+0.7**
	0.3nm,0.4s,baz=98,slow=8.0,SNR=2.6						
MKAR	**Makanchi Array**	**44.94**	**302**	P	**P**	**07 14 52.9**	**+0.5**
	0.2nm,0.6s,baz=96,slow=7.8,SNR=2.7						
WRA	**Warramunga Arr**	**58.30**	**190**	P	**P**	**07 16 32.6**	**+0.3**
	1.0nm,0.8s,baz=7.4,slow=7.1,SNR=3.8						

JMA 10 07:13:56.3±0.2,37.˚91N×143.˚26E,h36km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.60**	**290**	P	Pn	07 14 23.4	+1.4
JIO				*e*S	Sn	07 14 43.4	+2.0
OFUJ	**Ofunato**	**1.71**	**314**	P	Pn	07 14 24.6	+1.1
OFUJ				*e*S	Sn	07 14 45.7	+1.6
JMK	**Ichinoseki**	**1.91**	**304**	P	Pn	07 14 28.2	+1.9
JMK				*e*S	Sn	07 14 51.6	+2.5
JMM	**Marumori**	**1.95**	**269**	P	Pn	07 14 27.9	+1.0
JMM				*e*S	Sn	07 14 51.9	+1.8
JFK	**Kawauchi**	**1.97**	**255**	P	Pn	07 14 27.6	+0.5
JOM	**Ohasama**	**2.19**	**316**	P	Pn	07 14 32.8	+2.6
JOM				*e*S	Sn	07 14 58.5	+2.5
JFT	**Otama**	**2.35**	**261**	P	Pn	07 14 34.4	+2.0
JFT				*e*S	Sn	07 15 02.5	+2.5
JYK	**Kaneyama**	**2.49**	**295**	P	Pn	07 14 36.3	+2.0
JYK				*e*S	Sn	07 15 06.5	+3.1
JRG	**Rokugo**	**2.54**	**307**	*e*S	Sn	07 15 07.5	+3.0
JTM	**Tenmabayashi**	**3.34**	**330**	*e*S	Sn	07 15 25.4	+1.1
BSO1	**Boso 1**	**3.74**	**210**	P	Pn	07 14 50.1	-0.8
BSO1				*e*S	Sn	07 15 33.3	-0.1
MAT	**Matsushiro**	**4.26**	**253**	P	Pn	07 15 01.8	+3.2
MAT				*e*S	Sn	07 15 49.9	+2.9

IDC 10 07:15:19.2±3.1,32.˚53S×178.˚23W,h0km,mb3.5/2, mb1 3.9/3,mb1mx3.6/29,mbtmp3.7/3,ML2.9/1,Error ellipse: s-maj=73.9km s-min=46.3km az=121.0,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.87**	**212**	Pn	Pn	07 17 00.1	-1.1
	0.2nm,0.3s,baz=339,slow=16,SNR=4.6						
URZ				Sn	Sn	07 18 17.3	-2.8
	2.0nm,0.3s,baz=243,slow=23,SNR=10						
ASAR	**Alice Springs**	**42.84**	**269**	P	P	07 23 19.3	0.0
	0.3nm,0.6s,baz=111,slow=8.2,SNR=6.9						
WRA	**Warramunga Arr**	**44.02**	**274**	P	P	07 23 28.8	0.0
	0.5nm,0.5s,baz=114,slow=8.1,SNR=8.4						
FINES	**FINESS Array B**	**147.06**	**339**	PKPbc	PKPbc	07 35 02.5	-0.7
	0.3nm,0.4s,baz=27,slow=4.7,SNR=5.2						

CSEM ***10*** *07:15:55.1,43.˚88N×19.˚72E,h2km,ML1.4*
BEO 10 07:15:55.1±0.3,43.˚88N×19.˚72E,h2km±2km,M1.4/8, 2C-2D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BBLS	**Lazići**	**0.23**	**267**↑	*i*Pg	Pg	07 15 59.4	-0.1
BBLS				*e*Sg	Sg	07 16 03.1	+0.6
BBLS	**Lazići**	**0.23**	**267**↑	*i*Pg	Pg	07 15 59.4	-0.1
BBLS				*e*Sg	Sg	07 16 03.1	+0.6
DIVS	**Divibare**	**0.29**	**42**	*i* Pg	Pg	07 16 00.4	-0.4
DIVS				*e*Sg	Sg	07 16 04.4	-0.2
DIVS	**Divibare**	**0.29**	**42**	*i* Pg	Pg	07 16 00.4	-0.4
DIVS				*e*Sg	Sg	07 16 04.4	-0.2
IVAS	**Ivanjica**	**0.44**	**134**	*i* Pg	Pg	07 16 02.3	-1.2
IVAS				*e*Sg	Sg	07 16 07.7	-1.4
IVAS	**Ivanjica**	**0.44**	**134**	*i* Pg	Pg	07 16 02.3	-1.2
IVAS				*e*Sg	Sg	07 16 07.7	-1.4
TRUS	**Trudelj**	**0.60**	**55**	*e*Pg	Pg	07 16 06.3	-0.3
TRUS				*e*Sg	Sg	07 16 14.8	+0.3
TRUS	**Trudelj**	**0.60**	**55**	*e*Pg	Pg	07 16 06.3	-0.3
TRUS				*e*Sg	Sg	07 16 14.8	+0.3
TEKS	**Tekeris**	**0.68**	**348**	*e*Pg	Pg	07 16 08.4	+0.2
TEKS	**Tekeris**	**0.68**	**348**	*e*Pg	Pg	07 16 08.4	+0.2
GRUS	**Gruza**	**0.72**	**89**∥	*i*Pg	Pg	07 16 09.3	+0.4
GRUS				*e*Sg	Sg	07 16 18.7	+0.5
GRUS	**Gruza**	**0.72**	**89**∥	*i*Pg	Pg	07 16 09.3	+0.4
GRUS				*e*Sg	Sg	07 16 18.7	+0.5
SELS	**Selova**	**1.21**	**123**	*e*Pg	Pg	07 16 16.7	-1.6
SELS				*e*Sg	Sg	07 16 33.4	-0.6
SELS	**Selova**	**1.21**	**123**	*e*Pg	Pg	07 16 16.7	-1.6
SELS				*e*Sg	Sg	07 16 33.4	-0.6
FGSL	**Fruska Gora**	**1.28**	**3**	*e*Sg	Sg	07 16 35.0	-1.2
FRGS	**Fruska Gora**	**1.28**	**3**	*e*Sg	Sg	07 16 35.0	-1.2
BARS	**Barje**	**1.86**	**124**	*e*Pn	Pn	07 16 26.5	-1.5
BARS				*e*Sg	Sg	07 16 56.1	+1.2
BARS	**Barje**	**1.86**	**124**	*e*Pn	Pn	07 16 26.5	-1.5
BARS				*e*Sg	Sg	07 16 56.1	+1.2
ZAPS	**Zavoj**	**2.20**	**105**	*e*Pn	Pn	07 16 31.9	-0.8

ATH ***10*** *07:16:21.4,38.˚96N×21.˚21E,h15km±3km,ML1.9/4,Error ellipse: s-maj=3.8km s-min=0.8km az=326.0*
CSEM ***10*** *07:16:21.4±0.1,38.˚95N×21.˚20E,h10km,ML1.9,Error ellipse: s-maj=3.4km s-min=2.7km az=57.0*

THE 10 07:16:21.7,38.˚95N×21.˚21E,h25km±9km,ML1.8/4,Error ellipse: s-maj=9.8km s-min=1.1km az=178.0,Greece

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DSL	**Palaion Diasel**	**0.20**	**335**	P	Pb	07 16 26.0	-1.5
DSL				S	Sb	07 16 28.7	-2.8
DSL	**Palaion Diasel**	**0.20**	**335**	P	Pb	07 16 26.0	-1.5
DSL				S	Sb	07 16 28.7	-2.8
DSL				AML	AML	07 16 30.0	
	comp=N,3315μm,0.3s						
DSL				AML	AML	07 16 30.2	
	comp=E,2784μm,0.3s						
PDO	**Prodromos**	**0.35**	**183**	P	Pb	07 16 28.8	-0.7
PDO				S	Sb	07 16 35.5	+0.7
PDO	**Prodromos**	**0.35**	**183**	P	Pb	07 16 28.8	-0.7
PDO				S	Sb	07 16 34.6	-0.2
PDO	**Prodromos**	**0.35**	**183**	P	Pb	07 16 28.8	-0.7
PDO				S	Sb	07 16 34.6	-0.2
PDO				AML	AML	07 16 36.5	
	comp=N,1220μm,0.2s						
PDO				AML	AML	07 16 36.5	
	comp=E,974μm,0.2s						
PVO	**Paravola**	**0.41**	**143**	P	Pb	07 16 29.8	-0.7
PVO				S	Sb	07 16 37.5	+1.0
PVO	**Paravola**	**0.41**	**143**	P	Pb	07 16 29.6	-0.9
PVO				S	Sb	07 16 35.9	-0.6
PVO	**Paravola**	**0.41**	**143**	P	Pb	07 16 29.6	-0.9
PVO				S	Sb	07 16 35.9	-0.6
LKD2	**Lefkada island**	**0.46**	**250**	P	Pb	07 16 30.4	-0.8
LKD2				S	Sb	07 16 38.5	+0.8
LKD2	**Lefkada island**	**0.46**	**250**	P	Pb	07 16 30.4	-0.8
LKD2				S	Sb	07 16 37.9	+0.2
LKD2	**Lefkada island**	**0.46**	**250**	P	Pb	07 16 30.3	-1.0
LKD2				S	Sb	07 16 37.9	+0.2
LKD2				AML	AML	07 16 39.1	
	comp=E,419μm,0.2s						
LKD2				AML	AML	07 16 39.1	
	comp=N,452μm,0.1s						
EVR	**Evrytania**	**0.47**	**94**	P	Pb	07 16 30.8	-0.7
EVR				S	Sb	07 16 38.7	+0.5
EVR	**Evrytania**	**0.47**	**94**	P	Pb	07 16 30.8	-0.7
EVR				S	Sb	07 16 37.4	-0.8
EVR	**Evrytania**	**0.47**	**94**	P	Pb	07 16 30.4	-1.1
EVR				S	Sb	07 16 37.4	-0.7
EVR				AML	AML	07 16 39.0	
	comp=N,92μm,0.2s						
JAN	**Janina**	**0.76**	**339**	P	Pb	07 16 35.8	-0.5
JAN				S	Sn	07 16 48.2	+0.7
JAN	**Janina**	**0.76**	**339**	P	Pb	07 16 35.8	-0.5
JAN				S	Sn	07 16 48.2	+0.7
AXS	**Araxos**	**0.76**	**170**	P	Pb	07 16 35.5	-0.8
AXS	**Araxos**	**0.76**	**170**	P	Pb	07 16 35.5	-0.8
THL	**Klokotos Trika**	**0.88**	**45**	P	Pb	07 16 38.2	-0.1
TRIZ	**Trizonia**	**0.89**	**130**	P	Pb	07 16 38.1	-0.4
IGT	**Igoumenitsa**	**0.90**	**311**	P	Pb	07 16 38.6	0.0
IGT	**Igoumenitsa**	**0.90**	**311**	P	Pb	07 16 38.6	0.0
VLS	**Valsamata**	**0.91**	**212**	P	Pb	07 16 37.9	-0.9
VLS				S	Sn	07 16 51.2	0.0
RLS	**Riolos of Patr**	**0.91**	**167**	P	Pn	07 16 39.0	+0.1
KALE	**Kalithea**	**0.92**	**127**	P	Pn	07 16 39.7	+0.7
KALE	**Kalithea**	**0.92**	**127**	P	Pn	07 16 39.7	+0.7
LAKA	**Lakka**	**0.93**	**139**	P	Pb	07 16 40.1	+0.9
LAKA	**Lakka**	**0.93**	**139**	P	Pb	07 16 40.1	+0.9
DRO	**Drossia**	**1.07**	**158**	P	Pb	07 16 41.5	-0.1
DRO	**Drossia**	**1.07**	**158**	P	Pb	07 16 41.5	-0.1

IDC ***10*** *07:17:58.8±1.2,32.˚65S×178.˚03W,h0km,mb4.2/2, mb1 4.4/4,mb1mx3.9/31,mbtmp4.3/4,ML3.9/2,MS4.2/1, Ms1 4.2/1,ms1mx3.4/23,Error ellipse: s-maj=40.8km s-min=27.8km az=127.0*
ISCJB ***10*** *07:18:00.4±1.8,32.˚81S±0.˚08×177.˚8W±0.˚3,h34km, mb4.0/3,MS4.2/1,Error ellipse: s-maj=40.2km s-min=5.3km az=15.6*
NEIC ***10*** *07:18:00.3±0.8,32.˚73S×178.˚04W,h10km,mb4.1/1,Error ellipse: s-maj=24.6km s-min=10.2km az=111.0*
ISC 10 07:18:03.2±1.3,32.˚8S±0.˚1×177.˚9W±0.˚2,h34km,n21, σ1⁹64/28,mb4.1/3,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**3.50**	**0**	*e*Pn	**Pn**	**07 18 55.4**	**+0.2**
RAO				*e*Sn	**Sn**	**07 19 35.4**	**+0.1**
PKGZ	**Pakihiroa**	**6.07**	**211**	*e*PN	**Pn**	**07 19 30.5**	**-0.1**
HAZ	**Te Kaha**	**6.09**	**214**	*e*PN	**Pn**	**07 19 32.2**	**+1.4**
HAZ				*e*SN	**Sn**	**07 20 42.5**	**+3.2**
PUZ	**Puketiti**	**6.15**	**209**	*e*PN	**Pn**	**07 19 31.4**	**-0.2**
PUZ				*e*SN	**Sn**	**07 20 41.4**	**+0.7**
MWZ	**Matawai**	**6.68**	**212**	*e*PN	**Pn**	**07 19 38.6**	**-0.3**
MWZ				*e*SN	**Sn**	**07 20 55.0**	**+1.1**
URZ	**Urewera**	**6.81**	**215**	Pn	**Pn**	**07 19 40.2**	**-0.5**
	2.2nm,0.3s,baz=261,slow=3.9,SNR=7.5						
URZ				Sn	**Sn**	**07 20 59.1**	**+2.0**
	2.1nm,0.3s,baz=266,slow=22,SNR=6.4						
URZ	**Urewera**	**6.81**	**215**	Pn	**Pn**	**07 19 40.2**	**-0.5**
URZ				*e*Sn	**Sn**	**07 20 58.2**	**+1.1**
URZ				Sn	**Sn**	**07 20 59.1**	**+2.0**
URZ	**Urewera**	**6.81**	**215**	*e*PN	**Pn**	**07 19 41.5**	**+0.8**
URZ				*e*SN	**Sn**	**07 20 57.8**	**+0.7**
MRZ	**Mangatainoka R**	**9.45**	**212**	*e*SN	**Sn**	**07 21 57.2**	**-4.7**
SNZO	**South Karori**	**10.36**	**212**	*e*Pn	Pn	07 20 19.4	-10
SNZO				*e*Sn	**Sn**	**07 22 20.5**	**-3.8**
RPZ	**Rata Peaks**	**13.93**	**215**	Pn	**Pn**	**07 21 17.5**	**-0.7**
	0.5nm,0.3s,baz=297,slow=4.5,SNR=2.7						
RPZ				Sn	Sn	07 23 41.7	-10
	0.3nm,0.3s,baz=84,slow=18,SNR=2.9						
PMG	**Port Moresby**	**39.71**	**298**	LR	LR	07 40 35.7	
	comp=Z,332nm,19.2s,baz=208,slow=34						
ASAR	**Alice Springs**	**43.09**	**269**	P	**P**	**07 26 00.3**	**0.0**
	1.1nm,0.5s,baz=104,slow=7.6,SNR=14						
WRAB	**Tennant Creek**	**44.29**	**275**	*e*P	**P**	**07 26 09.4**	**-0.5**
	1.3nm,0.4s						
WRA	**Warramunga Arr**	**44.29**	**275**	P	**P**	**07 26 09.8**	**-0.1**
	5.4nm,0.9s,baz=112,slow=8.0,SNR=22						
KURK	**Kurchatov**	**122.70**	**313**	PKP	**PKPdf**	**07 36 54.4**	**-0.5**
KURBB	**Kurchatov Arra**	**122.74**	**313**	PKP	**PKPdf**	**07 36 54.4**	**-0.6**
	0.4nm,0.6s,baz=87,slow=1.8,SNR=5.2						
FINES	**FINESS Array B**	**147.37**	**339**	PKPbc	**PKPab**	**07 37 43.5**	**-1.0**
	3.3nm,0.6s,baz=54,slow=5.7,SNR=24						
NOA	**NORSAR Array B**	**151.09**	**351**	PKPbc	**PKPbc**	**07 37 51.9**	**-0.1**
	0.5nm,0.5s,baz=14,slow=4.1,SNR=2.5						
BRTR	**Keskin Array B**	**153.70**	**294**	PKPbc	**PKPbc**	**07 37 58.9**	**+0.2**
	0.8nm,0.6s,baz=131,slow=3.4,SNR=4.8						
TORD	**Torodi Ar. Bea**	**160.47**	**179**	PKPab	**PKPab**	**07 38 43.0**	**+2.1**
	0.3nm,0.6s,baz=170,slow=3.9,SNR=3.2						

MEX 10 07:23:25.5±0.3,14.˚62N×92.˚65W,h54km±40km,MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.21**	**333**	*e*P	Pn	07 23 44.7	-1.4
PCIG				*e*S	Sn	07 23 59.5	-2.0

IDC 10 07:24:37.5±2.9,32.˚60S×178.˚58W,h0km,mb3.5/2, mb1 3.8/3,mb1mx3.5/34,mbtmp3.6/3,ML2.8/1,Error ellipse: s-maj=70.1km s-min=35.9km az=114.0,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.65**	**211**	Pn	Pn	07 26 15.5	-0.9
	0.2nm,0.3s,baz=222,slow=15,SNR=3.3						
URZ				Sn	Sn	07 27 34.1	+1.2
	0.9nm,0.3s,baz=239,slow=21,SNR=5.9						
ASAR	**Alice Springs**	**42.54**	**270**	P	P	07 32 35.2	+0.1
	0.5nm,0.8s,baz=112,slow=8.2,SNR=4.1						
WRA	**Warramunga Arr**	**43.73**	**275**	P	P	07 32 44.6	-0.2
	0.2nm,0.3s,baz=114,slow=8.0,SNR=7.8						
FINES	**FINESS Array B**	**147.02**	**338**	PKPbc	PKPbc	07 44 20.7	-0.7
	0.9nm,0.9s,baz=48,slow=4.1,SNR=2.6						

IDC 10 07:29:36.2±4.5,28.˚70S×177.˚01W,h0km,mb3.4/2, mb1 3.7/2,mb1mx3.5/27,mbtmp3.4/2,Error ellipse: s-maj=122.1km s-min=31.2km az=132.0,Kermadec Islands region

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

RAO	**Raoul Island**	**0.97**	**235**	Pn	Pn	07 29 57.3	+0.3
	219nm,0.3s,baz=87,slow=18,SNR=10						
RAO				Sn	Sn	07 30 11.5	0.0
	379nm,0.3s,baz=67,slow=20,SNR=6.8						
ASAR	**Alice Springs**	**44.09**	**265**	P	P	07 37 47.5	+1.1
	0.3nm,0.6s,baz=101,slow=6.5,SNR=5.5						
WRA	**Warramunga Arr**	**44.93**	**270**	P	P	07 37 52.0	-1.1
	0.7nm,0.9s,baz=109,slow=8.0,SNR=3.0						
FINES	**FINESS Array B**	**143.83**	**341**	PKP	PKPbc	07 49 11.4	+1.1
	1.9nm,1.1s,baz=44,slow=6.2,SNR=3.2						

IDC ***10*** *07:36:49.2±1.0,33.˚48S×178.˚47W,h0km,mb4.5/7, mb1 4.7/9,mb1mx4.3/31,mbtmp4.6/9,ML4.8/2,MS4.0/4, Ms1 4.0/4,ms1mx3.6/25,Error ellipse: s-maj=32.8km s-min=24.2km az=137.0*
NEIC ***10*** *07:36:50.3±0.5,33.˚60S×178.˚36W,h10km,mb4.6/3,Error ellipse: s-maj=12.6km s-min=10.4km az=151.0*
ISCJB ***10*** *07:36:53.2±0.9,33.˚71S±0.˚05×178.˚5W±0.˚1,h41km, mb4.7/11,MS3.9/3,Error ellipse: s-maj=17.7km s-min=6.2km az=13.1*
ISC 10 07:36:54.3±0.7,33.˚54S±0.˚06×178.˚5W±0.˚1,h41km,n46, σ2⁹08/48,mb4.6/11,MS4.1/3,1C,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**4.30**	**6**	Pn	**Pn**	**07 37 53.0**	**-4.1**
	45nm,0.3s,baz=233,slow=20,SNR=2.4						
RAO				Sn	**Sn**	**07 38 41.6**	**-4.4**
	75nm,0.3s,baz=75,slow=20,SNR=4.6						
WMGZ	**Waiomatatini S**	**4.97**	**210**	PN	**Pn**	**07 38 05.3**	**-1.1**
PKGZ	**Pakihiroa**	**5.18**	**212**	*e*PN	**Pn**	**07 38 07.2**	**-2.1**
PKGZ				SN	**Sn**	**07 39 07.7**	**-0.1**
HAZ	**Te Kaha**	**5.21**	**215**	*e*PN	**Pn**	**07 38 08.7**	**-0.9**
HAZ				*e*SN	**Sn**	**07 39 09.0**	**+0.7**
PUZ	**Puketiti**	**5.25**	**210**	PN	**Pn**	**07 38 07.6**	**-2.7**
RUGZ	**Raukumara Rang**	**5.42**	**214**	*e*PN	**Pn**	**07 38 12.2**	**-0.5**
TWGZ	**Tauwhareparae**	**5.46**	**211**	*e*PN	**Pn**	**07 38 11.8**	**-1.4**
CNGZ	**Carnagh Statio**	**5.63**	**208**	*e*PN	**Pn**	**07 38 13.1**	**-2.3**
MWZ	**Matawai**	**5.79**	**213**	PN	**Pn**	**07 38 14.7**	**-2.9**
URZ	**Urewera**	**5.93**	**216**	Pn	**Pn**	**07 38 18.2**	**-1.2**
	29nm,0.3s,baz=357,slow=1.5,SNR=67						
URZ				Sn	**Sn**	**07 39 23.7**	**-2.4**
	20nm,0.3s,baz=181,slow=23,SNR=7.0						
URZ	**Urewera**	**5.93**	**216**	Pn	**Pn**	**07 38 18.2**	**-1.2**
	50nm,0.6s						
URZ				Sn	**Sn**	**07 39 23.7**	**-2.4**
URZ				*e*Sn	Sn	07 39 24.5	-1.6
URZ	**Urewera**	**5.93**	**216**	*e*PN	**Pn**	**07 38 17.0**	**-2.5**
URZ				*e*SN	**Sn**	**07 39 23.9**	**-2.2**
SNGZ	**Shannon Statio**	**6.24**	**212**	*e*PN	**Pn**	**07 38 22.1**	**-1.7**
NMHZ	**Naumai**	**6.74**	**213**	*e*PN	**Pn**	**07 38 28.4**	**-2.3**
OUZ	**Omahuta**	**6.79**	**253**	*e*PN	**Pn**	**07 38 31.4**	**+0.1**
	81nm,1.0s						
MRZ	**Mangatainoka R**	**8.56**	**212**	*e*SN	**Sn**	**07 40 23.0**	**-7.8**
RPZ	**Rata Peaks**	**13.05**	**216**	Pn	Pn	07 39 50.7	-6.3
	2.1nm,0.3s,baz=61,slow=4.7,SNR=8.1						
RPZ				Sn	Sn	07 42 05.3	-15
	1.3nm,0.3s,baz=278,slow=23,SNR=8.4						
DZM	**Mont Dzumac**	**17.56**	**307**	P	**P**	**07 40 57.3**	**+0.6**
	0.1nm,0.3s,baz=127,slow=20,SNR=5.1						
DZM				LR	LR	07 46 03.2	
	comp=Z,1μm,20.1s,baz=27,slow=32						
EIDS	**Eidsvold**	**27.68**	**279**	*e*P	**P**	**07 42 39.0**	**+0.6**
	20nm,1.9s						
PPT	**Papeete**	**30.38**	**66**	LR	LR	07 52 17.5	
	comp=Z,95nm,20.9s,baz=240,slow=31						
STKA	**Stephens Creek**	**33.52**	**262**	LR	LR	07 56 09.3	
	comp=Z,354nm,18.3s,baz=33,slow=35						
CTA	**Charters Tower**	**34.05**	**284**	P	**P**	**07 43 35.9**	**+1.1**
	6.2nm,0.5s,baz=113,slow=10,SNR=15						
CTAO	**Charters Tower**	**34.05**	**284**	*e*P	**P**	**07 43 35.8**	**+1.0**
	37nm,0.6s						
COEN	**Coen**	**39.87**	**290**	*e*P	**P**	**07 44 25.7**	**+1.5**
	8.0nm,0.8s						
ASAR	**Alice Springs**	**42.66**	**271**	P	**P**	**07 44 47.0**	**0.0**
	6.3nm,0.6s,baz=112,slow=7.2,SNR=93						
ASAR				PcP	**PcP**	**07 46 39.1**	**+0.6**
	1.2nm,0.5s,baz=118,slow=3.8,SNR=5.2						
WRAB	**Tennant Creek**	**43.92**	**276**	*e*P	**P**	**07 44 57.3**	**0.0**
	25nm,1.3s						
WRA	**Warramunga Arr**	**43.93**	**276**	P	**P**	**07 44 57.5**	**+0.2**
	7.7nm,0.4s,baz=117,slow=8.1,SNR=83						
FITZ	**Fitzroy Crossi**	**52.04**	**273**	P	**P**	**07 46 00.1**	**0.0**
	5.6nm,0.9s,baz=128,slow=5.9,SNR=4.1						
QSPA	**South Pole Qui**	**56.58**	**180**	*e*P	**P**	**07 46 35.5**	**+2.9**
	22nm,0.6s						
SYO	**Syowa Base**	**73.98**	**193**↑	*e*P	**P**	**07 48 25.3**	**+0.3**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.29**	**156**	*eP*	Pb	07 42 31.3	-1.8
HUIG				*eS*	Sb	07 42 37.1	-1.0
VHO	**Vista Hermosa**	**1.14**	**335**	*i* P	Pn	07 42 43.4	-2.5
VHO				*i* S	Sn	07 42 58.0	-2.6
PNIG	**Pinotepa**	**1.86**	**281**	*i* P	Pn	07 42 53.6	-2.1
PNIG				*i* S	Sn	07 43 15.6	-2.6

IDC 10 07:50:38.4±4.7, 30.18S×179.06W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/20, mbtmp3.6/2, Error ellipse: s-maj=229.9km s-min=74.2km az=166.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.20**	**267**	P	P	07 58 32.4	-1.0
	0.4nm,0.6s,baz=103,slow=7.1,SNR=6.3						
WRA	**Warramunga Arr**	**43.17**	**272**	P	P	07 58 41.8	+0.6
	0.5nm,0.3s,baz=112,slow=8.0,SNR=14						
FINES	**FINESS Array B**	**144.62**	**339**	PKP	PKPbc	08 10 15.6	+0.6
	0.5nm,0.6s,baz=36,slow=2.6,SNR=4.9						

*IDC **10** 07:56:49.6±2.7, 29.84S×176.45W, h0km, mb3.8/3, mb1 4.0/4, mb1mx3.7/26, mbtmp3.9/4, ML3.3/1, Error ellipse: s-maj=50.8km s-min=26.1km az=48.0*

ISC 10 07:56:52.2±2.1, 29.8S±0.1×176.3W±0.2, h24km, n6, σ1§58/8, mb3.8/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.49**	**291**	Pn	**Pn**	**07 57 17.9**	**+0.5**
	194nm,0.3s,baz=258,slow=19,SNR=9.3						
RAO				Sn	**Sn**	**07 57 35.8**	**-0.3**
	229nm,0.3s,baz=31,slow=21,SNR=6.3						
URZ	**Urewera**	**10.04**	**211**	Pn	**Pn**	**07 59 12.7**	**-2.2**
	0.3nm,0.3s,baz=188,slow=14,SNR=5.3						
URZ				Sn	**Sn**	**08 01 08.6**	**+1.9**
	1.7nm,0.3s,baz=327,slow=3.8,SNR=7.9						
STKA	**Stephens Creek**	**36.02**	**256**	P	**P**	**08 03 52.6**	**+0.9**
	1.7nm,0.6s,baz=138,slow=13,SNR=3.0						
ASAR	**Alice Springs**	**44.59**	**266**	P	**P**	**08 05 02.1**	**-0.6**
	0.4nm,0.6s,baz=98,slow=7.5,SNR=6.5						
WRA	**Warramunga Arr**	**45.53**	**271**	P	**P**	**08 05 09.5**	**-0.7**
	0.6nm,0.5s,baz=110,slow=7.6,SNR=7.0						
TORD	**Torodi Ar. Bea**	**163.33**	**173**	PKPab	**PKPab**	**08 17 45.3**	**+1.3**
	0.8nm,0.9s,baz=190,slow=6.2,SNR=3.8						

*NEIC **10** 08:00:59.6, 58.46N×138.04W, h11km, ML3.2(OTT), ML3.1(AEIC), After AEIC.*

PGC 10 08:00:57.8±0.6, 58.34N×138.03W, h1km, ML3.2/5, 135km Ese of Yakutat, Ak Southeastern Alaska, Southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DHAK	**Deception Hill**	**0.76**	**353**	P	Pg	08 01 11.8	-0.6
DHAK				S	Sg	08 01 22.3	+0.1
PLBC	**Pleasant Camp**	**1.42**	**37**	P	Pn	08 01 22.9	-1.8
PLBC				S	Sg	08 01 41.7	-1.5
PLBC	**Pleasant Camp**	**1.42**	**37**	P	Pn	08 01 22.9	-1.8
PLBC				S	Sg	08 01 41.1	-2.2
YKU2	**Yakutat**	**1.45**	**325**	P	Pn	08 01 24.3	-0.9
YKU2				S	Sg	08 01 43.8	-0.6
BESE	**Bessie Mountai**	**1.69**	**80**	P	Pn	08 01 28.5	0.0
BESE				S	Sn	08 01 51.0	+0.3
SKAG	**Skagway**	**1.80**	**50**	P	Pn	08 01 29.6	-0.3
SKAG				S	Sn	08 01 53.1	-0.2
PCA	**Pinnacle**	**2.10**	**328**	Pn	Pn	08 01 33.1	-1.1
PCA				Sn	Sn	08 01 59.6	-1.4
PCA	**Pinnacle**	**2.10**	**328**	P	Pn	08 01 32.9	-1.3
PCA				S	Sn	08 01 60.0	-1.0
YUK7	**Dusty Glacier**	**2.20**	**359**	Pn	Pn	08 01 34.9	-0.7
YUK7				Sn	Sn	08 02 02.4	-1.2
SAMH	**Samovar Hills**	**2.29**	**323**	P	Pn	08 01 37.0	+0.3
HYT	**Haines Junctio**	**2.51**	**6**	Pn	Pn	08 01 39.1	-0.7
HYT				Sn	Sn	08 02 11.0	-0.1
HYT	**Haines Junctio**	**2.51**	**6**	P	Pn	08 01 39.3	-0.5
TABL	**Table Mountain**	**2.64**	**324**	P	Pn	08 01 41.5	-0.2
LOGN	**Logan Glacier**	**2.92**	**330**	P	Pn	08 01 45.6	+0.1
CTGM	**Chitina Glacie**	**3.12**	**329**	Pn	Pn	08 01 48.6	+0.3
CTGM				Sn	Sn	08 02 25.1	-1.1
CTGM	**Chitina Glacie**	**3.12**	**329**	P	Pn	08 01 48.9	+0.6
BALM	**Baldy**	**3.48**	**323**	Pn	Pn	08 01 53.0	-0.1
BALM				Sn	Sn	08 02 32.9	-2.1
YUK2	**White River**	**3.73**	**339**	Pn	Pn	08 01 56.0	-0.7
DLBC	**Dease Lake**	**4.21**	**85**	Pn	Pn	08 02 01.9	-1.3
DLBC				Sn	Sn	08 02 50.2	-2.9
DLBC				Sg	Sg	08 03 10.1	-3.0
BMRM	**Bremner River**	**4.25**	**311**	*e*Pn	Pn	08 02 02.0	-1.7
BMRM				*e*Sn	Sn	08 02 51.9	-2.0
NDB	**Naden**	**5.23**	**145**	Pn	Pn	08 02 16.0	-1.2
VIB	**Van Inlet**	**5.96**	**146**	Pn	Pn	08 02 26.4	-0.8
DIB	**Dawson Inlet,**	**6.03**	**146**	Pn	Pn	08 02 27.1	-0.9
DIB				Sn	Sn	08 03 34.3	-3.2
MOBC	**Moresby Island**	**6.23**	**144**	Pn	Pn	08 02 30.4	-0.4
MOBC				Sn	Sn	08 03 40.4	-2.2
EGAK	**Eagle**	**6.63**	**348**	*e*Pn	Pn	08 02 32.5	-3.8
	5.3nm,0.8s						
BNB	**Barry Inlet**	**6.79**	**146**	Pn	Pn	08 02 38.9	+0.4
TRF	**Thorofare Moun**	**7.87**	**316**	*e*Pn	Pn	08 02 53.7	+0.3
	4.2nm,0.5s						

*IDC **10** 08:07:24.6±1.4, 37.85N×143.60E, h0km, mb3.7/5, mb1 3.8/7, mb1mx3.5/51, mbtmp3.7/7, ML3.3/2, Error ellipse: s-maj=37.6km s-min=21.3km az=80.0*

*ISCJB **10** 08:07:26.4±0.9, 37.84N±0.05×143.36E±0.07, h19km, mb3.7/5, Error ellipse: s-maj=8.4km s-min=7.5km az=156.7*

*JMA **10** 08:07:29.9±0.3, 37.94N×143.15E, h26km, M3.4*

ISC 10 08:07:27.7±1.2, 37.87N±0.06×143.39E±0.10, h19km, n15, σ1§90/21, mb3.8/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.71**	**290**	P	**Pn**	**08 07 56.4**	**0.0**
OFUJ	**Ofunato**	**1.81**	**312**	P	**Pn**	**08 07 57.8**	**0.0**
JMM	**Marumori**	**2.05**	**271**	P	**Pn**	**08 08 00.9**	**-0.3**
JMM				*e*S	**Sn**	**08 08 24.0**	**-2.3**
JFK	**Kawauchi**	**2.06**	**257**	*e*S	**Sn**	**08 08 24.3**	**-2.2**
JOM	**Ohasama**	**2.29**	**315**	*e*S	**Sn**	**08 08 29.0**	**-3.1**
JFT	**Otama**	**2.45**	**263**	P	**Pn**	**08 08 07.2**	**+0.6**
JFT				*e*S	**Sn**	**08 08 35.3**	**-0.7**
JYK	**Kaneyama**	**2.60**	**295**	P	**Pn**	**08 08 08.7**	**0.0**
JYK				*e*S	**Sn**	**08 08 37.7**	**-2.0**
BSO1	**Boso 1**	**3.76**	**212**	P	**Pn**	**08 08 24.0**	**-0.1**
BSO1				*e*S	**Sn**	**08 09 07.6**	**+0.1**
MJAR	**Matsushiro Arr**	**4.34**	**254**	Pn	**Pn**	**08 08 34.6**	**+1.9**
	0.7nm,0.3s,baz=78,slow=15,SNR=5.5						
MJAR				Sn	**Sn**	**08 09 25.5**	**+2.7**
	0.6nm,0.3s,baz=90,slow=28,SNR=5.8						
JHJ	**Hachijo jima 2**	**5.58**	**213**	Pn	**Pn**	**08 08 49.3**	**-0.4**
	5.9nm,0.3s,baz=360,slow=19,SNR=7.4						
JHJ				Sn	**Sn**	**08 09 48.3**	**-4.9**
	11nm,0.3s,baz=253,slow=19,SNR=5.0						
ZALV	**Zalesovo Beam**	**42.52**	**312**	P	**P**	**08 15 23.9**	**+2.3**
	0.6nm,0.4s,baz=76,slow=6.1,SNR=2.1						
KURBB	**Kurchatov Arra**	**46.73**	**308**	P	**P**	**08 15 55.5**	**+0.2**
	0.7nm,0.7s,baz=80,slow=8.0,SNR=6.6						
WRA	**Warramunga Arr**	**58.13**	**190**	P	**P**	**08 17 20.2**	**+0.1**
	0.9nm,0.6s,baz=7.7,slow=7.1,SNR=8.2						
ASAR	**Alice Springs**	**61.86**	**190**	P	**P**	**08 17 45.9**	**+0.2**
	0.3nm,0.8s,baz=11,slow=6.7,SNR=3.9						
FINES	**FINESS Array B**	**68.80**	**333**	P	**P**	**08 18 30.2**	**+0.1**
	1.0nm,0.8s,baz=46,slow=8.0,SNR=2.7						

IDC 10 08:16:21.4±2.9, 32.48S×178.38W, h0km, mb4.0/2, mb1 4.2/3, mb1mx3.8/30, mbtmp4.0/3, ML3.6/1, Error ellipse: s-maj=68.0km s-min=35.7km az=115.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.84**	**211**	Pn	Pn	08 18 01.9	-1.0
	1.2nm,0.3s,baz=245,slow=4.5,SNR=9.6						
URZ				Sn	Sn	08 19 20.7	-0.8
	2.0nm,0.3s,baz=332,slow=16,SNR=9.9						
ASAR	**Alice Springs**	**42.72**	**269**	P	P	08 24 20.8	+0.4
	1.1nm,0.6s,baz=104,slow=7.2,SNR=9.5						
WRA	**Warramunga Arr**	**43.89**	**275**	P	P	08 24 29.8	-0.2
	1.7nm,0.6s,baz=112,slow=8.0,SNR=26						
FINES	**FINESS Array B**	**146.97**	**339**	PKPbc	PKPbc	08 36 04.3	-0.9
	2.0nm,0.9s,baz=46,slow=3.4,SNR=8.2						

IDC 10 08:19:04.9±45.0, 16.03S×173.58W, h0km, mb4.3/3, mb1 4.5/3, mb1mx3.7/35, mbtmp4.3/3, Error ellipse: s-maj=872.1km s-min=175.7km az=79.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**43.58**	**240**	P	P	08 27 11.2	+0.2
	4.3nm,0.9s,baz=100,slow=13,SNR=4.6						
WRA	**Warramunga Arr**	**49.53**	**257**	P	P	08 27 57.9	-0.1
	0.8nm,0.5s,baz=94,slow=7.0,SNR=19						
ASAR	**Alice Springs**	**49.76**	**252**	P	P	08 27 59.2	-0.4
	6.4nm,0.6s,baz=88,slow=8.4,SNR=102						

IDC 10 08:22:45.7±1.8, 29.52S×176.81W, h0km, mb3.8/2, mb1 4.1/2, mb1mx3.7/24, mbtmp3.8/2, Error ellipse: s-maj=90.0km s-min=27.2km az=9.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.01**	**285**	Pn	Pn	08 23 08.0	+0.9
	268nm,0.3s,baz=12,slow=20,SNR=14						
RAO				Sn	Sn	08 23 21.5	-0.5
	1µm,0.3s,baz=143,slow=20,SNR=21						
ASAR	**Alice Springs**	**44.20**	**265**	P	P	08 30 56.9	+0.1
	0.7nm,0.5s,baz=100,slow=6.6,SNR=11						
WRA	**Warramunga Arr**	**45.11**	**271**	P	P	08 31 03.4	-0.7
	0.4nm,0.3s,baz=110,slow=8.0,SNR=19						
FINES	**FINESS Array B**	**144.66**	**341**	PKP	PKPab	08 42 21.9	-0.4
	0.9nm,0.6s,baz=46,slow=4.0,SNR=8.1						
AKASG	**Malin Array Be**	**151.21**	**325**	PKPbc	PKPbc	08 42 40.9	+0.2
	0.8nm,0.5s,baz=39,slow=2.0,SNR=3.1						

*NIED **10** 08:27:00, 38.00N×143.30E, h8km, Mw4.0 Best double couple: M0 1.23000×10^15 NP1:φs 18.00000°, δ45.00000°, λ-112.00000°. NP2:φs 227.00000°, δ49.00000°, λ-70.00000°.*

*IDC **10** 08:27:51.1±0.7, 37.97N×143.32E, h0km, mb4.0/19, mb1 4.1/23, mb1mx4.0/41, mbtmp4.0/23, ML3.4/3, MS3.9/1, Ms1 3.9/1, ms1mx2.7/49, Error ellipse: s-maj=18.9km s-min=14.4km az=107.0*

*ISCJB **10** 08:27:52.2±0.4, 37.95N±0.03×143.38E±0.05, h19km, mb4.0/23, MS4.0/1, Error ellipse: s-maj=5.8km s-min=4.6km az=35.9*

*JMA **10** 08:27:54.4±0.4, 38.04N×143.33E, h40km, M4.1*

*NEIC **10** 08:27:56.4±0.4, 37.96N×143.20E, h35km, mb4.5/4, Error ellipse: s-maj=10.7km s-min=7.2km az=113.0*

ISC 10 08:27:53.8±0.6, 37.97N±0.05×143.32E±0.06, h19km, n56, σ1§61/58, mb4.1/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.63**	**288**	P	**Pb**	**08 28 21.8**	**-1.3**
OFUJ	**Ofunato**	**1.70**	**311**	P	**Pb**	**08 28 22.6**	**-1.9**
JMK	**Ichinoseki**	**1.92**	**301**	*e*S	**Sn**	**08 28 47.5**	**-1.5**
JMM	**Marumori**	**2.00**	**268**	P	**Pn**	**08 28 26.6**	**+0.1**
JMM				*e*S	**Sn**	**08 28 49.7**	**-1.4**
JFK	**Kawauchi**	**2.03**	**253**	P	**Pn**	**08 28 26.9**	**-0.1**
JOU	**Okura**	**2.13**	**281**	P	**Pn**	**08 28 29.3**	**+1.0**
JOM	**Ohasama**	**2.18**	**314**	P	**Pn**	**08 28 28.7**	**-0.3**
JFT	**Otama**	**2.41**	**260**	P	**Pn**	**08 28 33.5**	**+1.3**
JFT				*e*S	**Sn**	**08 29 01.8**	**+0.7**
JYK	**Kaneyama**	**2.51**	**293**	P	**Pn**	**08 28 33.9**	**+0.4**
JANG	**Nango**	**2.78**	**330**	P	**Pn**	**08 28 38.1**	**+0.9**
JANG				*e*S	**Sn**	**08 29 09.6**	**-0.7**
JAW	**Awa shima**	**3.24**	**280**	P	**Pn**	**08 28 45.2**	**+1.6**
BSO1	**Boso 1**	**3.81**	**210**	P	**Pn**	**08 28 51.1**	**+0.1**
BSO1				*e*S	**Sn**	**08 29 35.8**	**+0.8**
ERM	**Erimo**	**4.04**	**358**	*e*Pn	**Pn**	**08 28 54.9**	**+0.4**
ERM				*e*Sn	**Sn**	**08 29 38.5**	**-2.9**
MJAR	**Matsushiro Arr**	**4.32**	**252**	Pn	**Pn**	**08 28 56.6**	**-1.8**
	0.9nm,0.3s,baz=292,slow=9.7,SNR=33						
MJAR				Sn	**Sb**	**08 29 56.0**	**-4.9**
	2.2nm,0.3s,baz=336,slow=41,SNR=3.3						
MAJO	**Matsushiro**	**4.32**	**252**	*e*Pn	**Pn**	**08 28 56.4**	**-2.1**
MAT	**Matsushiro**	**4.32**	**252**	P	**Pn**	**08 29 00.4**	**+1.9**
MAT				S	**Sn**	**08 29 50.1**	**+1.8**
JHJ2	**Mitsune**	**5.63**	**212**	*e*Pn	**Pn**	**08 29 16.4**	**+0.1**
JHJ2				*e*Sn	**Sn**	**08 30 17.6**	**-2.9**
JHJ	**Hachijo jima 2**	**5.63**	**212**	Pn	**Pn**	**08 29 16.6**	**+0.1**
	19nm,0.3s,baz=332,slow=20,SNR=14						
JHJ				Sn	**Sn**	**08 30 16.0**	**-4.7**
	13nm,0.3s,baz=60,slow=20,SNR=4.0						
ASAJ	**Asahikawa**	**6.16**	**355**	Pn	**Pn**	**08 29 23.1**	**-0.6**
	baz=270,slow=4.9						
ASAJ				Sn	**Sn**	**08 30 29.0**	**-4.7**
	0.6nm,0.3s,baz=90,slow=20,SNR=3.2						
USRK	**Ussuriysk Ar.**	**10.57**	**310**	Pn	**Pn**	**08 30 27.3**	**+3.2**
	0.2nm,0.3s,baz=102,slow=13,SNR=3.8						
KSRS	**Korea Array**	**12.21**	**272**	Pn	Pn	08 30 51.4	+4.8
	0.1nm,0.3s,baz=96,slow=14,SNR=6.1						
KSAR	**Wonju Array Be**	**12.24**	**272**	Pn	Pn	08 30 51.4	+4.4
KLR	**Kul'dur**	**14.01**	**327**	Pn	**Pn**	**08 31 12.0**	**+0.8**
	0.1nm,0.3s,baz=145,slow=12,SNR=2.2						
YAK	**Yakutsk**	**25.52**	**345**	P	**P**	**08 33 20.7**	**0.0**
	16nm,0.6s,baz=207,slow=2.2,SNR=5.0						
YAK	**Yakutsk**	**25.52**	**345**	P	**P**	**08 33 20.7**	**0.0**
	1.9nm,0.7s						
SEY	**Seymchan**	**25.60**	**10**	P	**P**	**08 33 22.2**	**+0.8**
	2.5nm,0.8s,baz=193,slow=6.3,SNR=8.0						
H11N2	**WAKE ISLAND Hy**	**27.38**	**125**	T	T	09 02 26.8	
	baz=317,slow=76,SNR=28						
H11N1	**WAKE ISLAND Hy**	**27.39**	**125**	T	T	09 02 39.5	
	baz=317,slow=76,SNR=20						
H11N3	**WAKE ISLAND Hy**	**27.40**	**125**	T	T	09 02 32.1	
	baz=317,slow=76,SNR=30						
H11S1	**WAKE ISLAND Hy**	**28.15**	**127**	T	T	09 03 30.6	
	baz=319,slow=76,SNR=8.6						
H11S3	**WAKE ISLAND Hy**	**28.15**	**127**	T	T	09 03 24.0	
	baz=319,slow=76,SNR=8.0						
H11S2	**WAKE ISLAND Hy**	**28.17**	**127**	T	T	09 03 44.9	
	baz=319,slow=76,SNR=7.7						
SONM	**Songjianga Array**	**28.55**	**302**	P	**P**	**08 33 50.0**	**+1.7**
	0.7nm,0.5s,baz=102,slow=8.5,SNR=4.6						
ZALV	**Zalesovo Beam**	**42.41**	**312**	P	**P**	**08 35 46.9**	**0.0**
	1.0nm,0.5s,baz=86,slow=9.1,SNR=5.4						
ZALV				PcP	**PcP**	**08 37 39.6**	**-0.1**
	1.8nm,0.7s,baz=106,slow=3.5,SNR=4.9						
MKAR	**Makanchi Array**	**44.91**	**302**	P	**P**	**08 36 07.8**	**+0.7**
	0.6nm,0.5s,baz=84,slow=8.8,SNR=7.6						
KURK	**Kurchatov**	**46.55**	**308**	*e*P	**P**	**08 36 19.8**	**-0.2**
	91nm,0.8s						
ILAR	**Eielson Array**	**47.89**	**33**	P	**P**	**08 36 30.6**	**+0.4**
	1.6nm,0.8s,baz=268,slow=6.6,SNR=18						
TKM2	**Tokmak 2**	**50.52**	**298**	*e*P	**P**	**08 36 52.3**	**+1.3**
	2.4nm,1.0s						
BVAR	**Borovoye Array**	**51.07**	**312**	LR	LR	09 00 20.4	
	comp=Z,126nm,19.4s,baz=249,slow=38						
INK	**Inuvik**	**52.86**	**28**	P	**P**	**08 37 08.1**	**+0.4**
	0.6nm,0.5s,baz=176,slow=8.8,SNR=3.8						
WRAB	**Tennant Creek**	**58.21**	**190**	*e*P	**P**	**08 37 47.1**	**+0.4**
	7.0nm,1.0s						
WRA	**Warramunga Arr**	**58.22**	**190**	P	**P**	**08 37 47.1**	**+0.4**
	6.5nm,0.8s,baz=9.2,slow=7.2,SNR=38						
ABKAR	**Akbulak array**	**58.49**	**310**	*e*P	**P**	**08 37 48.9**	**+0.4**
	1.1nm,0.4s						
ASAR	**Alice Springs**	**61.95**	**190**	P	**P**	**08 38 12.6**	**+0.3**
	1.3nm,0.7s,baz=16,slow=8.1,SNR=12						
YKA	**Yellowknife Ar**	**62.23**	**31**	P	**P**	**08 38 13.9**	**+0.1**
	0.3nm,0.7s,baz=231,slow=6.9,SNR=4.6						
ARCES	**ARCESS Array B**	**63.65**	**340**	P	**P**	**08 38 23.1**	**-0.1**
	2.2nm,0.8s,baz=59,slow=8.7,SNR=3.6						
GEYT	**Alibeck**	**64.70**	**299**	P	**P**	**08 38 29.2**	**-1.4**
	1.5nm,0.5s,baz=320,slow=13,SNR=3.3						
FINES	**FINESS Array B**	**68.69**	**333**	P	**P**	**08 38 56.0**	**+0.4**
	2.6nm,0.7s,baz=56,slow=7.4,SNR=11						
NB2	**NORSAR Subarra**	**73.90**	**338**	P	**P**	**08 39 27.3**	**+0.2**
	comp=Z,1.1nm,0.8s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**73.90**	**339**	P	**P**	**08 39 27.7**	**+0.5**
	comp=Z,1.9nm,0.8s,baz=39,slow=5.9,SNR=6.2						
AKASG	**Malin Array Be**	**74.47**	**323**	P	**P**	**08 39 30.8**	**+0.2**
	comp=Z,0.2nm,0.2s,baz=46,slow=5.8,SNR=4.1						
PDAR	**Pinedale Array**	**75.92**	**47**	P	**P**	**08 39 39.7**	**+0.3**
	comp=Z,0.3nm,0.6s,baz=29,slow=3.4,SNR=3.5						
BRTR	**Keskin Array B**	**79.35**	**312**	P	**P**	**08 40 00.8**	**+2.3**
	comp=Z,0.3nm,0.4s,baz=69,slow=8.3,SNR=2.7						
GERES	**GERESS Array B**	**82.70**	**329**	P	**P**	**08 40 16.7**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=55,slow=7.0,SNR=3.5						
TXAR	**Lajitas Array**	**88.35**	**54**	P	**P**	**08 40 45.1**	**+0.5**
	comp=Z,0.2nm,0.6s,baz=316,slow=3.8,SNR=3.4						
LPAZ	**La Paz**	**144.91**	**61**	PKP	**PKPdf**	**08 47 30.9**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=344,slow=11,SNR=3.8						

IDC 10 08:34:26.4±5.7, 2.01S×12.67W, h0km, mb3.8/3, mb1 3.9/4, mb1mx3.6/28, mbtmp3.9/4, ML3.4/1, Error ellipse: s-maj=137.1km s-min=34.2km az=92.0, North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10N2	**ASCENSION HYDR**	**6.06**	**197**	T	T	08 42 28.8	
	baz=349,slow=73,SNR=84						
H10N1	**ASCENSION HYDR**	**6.07**	**197**	T	T	08 42 30.3	
	baz=349,slow=73,SNR=105						
H10N3	**ASCENSION HYDR**	**6.08**	**197**	T	T	08 42 29.7	
	baz=349,slow=73,SNR=95						
H10S1	**ASCENSION HYDR**	**7.16**	**196**	T	T	08 43 49.6	
	baz=352,slow=74,SNR=39						
H10S3	**ASCENSION HYDR**	**7.18**	**196**	T	T	08 43 46.3	
	baz=352,slow=74,SNR=46						
H10S2	**ASCENSION HYDR**	**7.18**	**196**	T	T	08 43 46.9	
	baz=352,slow=74,SNR=39						
DBIC	**Dimbokro**	**11.62**	**42**	Pn	Pn	08 37 15.5	+1.8
	0.2nm,0.3s,baz=229,slow=16,SNR=5.2						
TORD	**Torodi Ar. Bea**	**20.73**	**43**	P	P	08 39 07.5	-1.3
	2.8nm,0.7s,baz=229,slow=11,SNR=14						
BOSA	**Boshof**	**44.79**	**130**	P	P	08 42 42.2	-0.1
	2.3nm,0.9s,baz=302,slow=9.5,SNR=3.3						
BRTR	**Keskin Array B**	**59.32**	**40**	P	P	08 44 30.6	+0.2
	0.2nm,0.3s,baz=224,slow=8.1,SNR=2.5						

IDC 10 08:38:25.5±2.8, 28.65S×177.12W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/28, mbtmp3.7/2, Error ellipse: s-maj=83.4km s-min=23.8km az=130.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.92**	**229**	Pn	Pn	08 38 45.9	+0.2
	375nm,0.3s,baz=171,slow=22,SNR=23						
RAO				Sn	Sn	08 38 59.8	+0.1
	2µm,0.3s,baz=72,slow=20,SNR=21						
ASAR	**Alice Springs**	**44.00**	**265**	P	P	08 46 34.7	-0.3
	0.4nm,0.5s,baz=107,slow=7.1,SNR=9.4						
WRA	**Warramunga Arr**	**44.84**	**270**	P	P	08 46 41.9	+0.2
	0.5nm,0.3s,baz=109,slow=7.9,SNR=16						
FINES	**FINESS Array B**	**143.76**	**341**	PKP	PKPbc	08 58 00.3	+0.9
	0.6nm,0.4s,baz=58,slow=5.2,SNR=9.8						
AKASG	**Malin Array Be**	**150.34**	**325**	PKPbc	PKPbc	08 58 18.1	-0.3
	0.5nm,0.4s,baz=46,slow=3.0,SNR=2.8						

*ISCJB **10** 08:43:17.2±1.1, 32.71S±0.05×178.1W±0.2, h10km, mb4.9/7, MS3.9/6, Error ellipse: s-maj=22.8km s-min=5.6km az=14.1*

*IDC **10** 08:43:19.5±0.9, 32.37S×178.21W, h0km, mb4.6/4, mb1 4.7/6, mb1mx4.1/42, mbtmp4.5/6, ML4.1/2, MS3.9/8, Ms1 3.9/8, ms1mx3.5/35, Error ellipse: s-maj=31.1km s-min=24.3km az=148.0*

*NEIC **10** 08:43:20.3±0.5, 32.39S×178.09W, h10km, mb4.9/2, Error ellipse: s-maj=13.4km s-min=11.2km az=131.0*

ISC 10 08:43:21.0±0.8, 32.66S±0.06×178.0W±0.1, h20km, n53, σ1§85/48, mb4.9/7, MS3.9/6, 1C-1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.40**	**1**	Pn	**Pn**	**08 44 10.4**	**-2.5**
	99nm,0.3s,baz=90,slow=19,SNR=4.4						
RAO				Sn	**Sn**	**08 44 49.4**	**-3.3**
	347nm,0.3s,baz=160,slow=22,SNR=6.9						
WMGZ	**Waiomatatini S**	**5.92**	**209**	*e*PN	**Pn**	**08 44 47.0**	**-0.6**
WMGZ				*e*SN	**Sn**	**08 45 54.6**	**-0.2**
PKGZ	**Pakihiroa**	**6.12**	**211**	*e*PN	**Pn**	**08 44 48.9**	**-1.5**
PKGZ				*e*SN	**Sn**	**08 45 59.5**	**-0.4**
HAZ	**Te Kaha**	**6.14**	**213**	*e*PN	**Pn**	**08 44 50.6**	**-0.1**
HAZ				SN	**Sn**	**08 46 01.1**	**+0.8**
PUZ	**Puketiti**	**6.20**	**209**	*e*PN	**Pn**	**08 44 50.3**	**-1.1**
MWZ	**Matawai**	**6.73**	**212**	*e*PN	**Pn**	**08 44 57.3**	**-1.5**
MWZ				*e*SN	**Sn**	**08 46 14.2**	**-0.7**
URZ	**Urewera**	**6.86**	**214**	Pn	**Pn**	**08 44 58.7**	**-1.8**
	5.3nm,0.3s,baz=55,slow=4.6,SNR=19						
URZ				Sn	**Sn**	**08 46 17.3**	**-0.7**
	25nm,0.3s,baz=41,slow=23,SNR=16						
URZ	**Urewera**	**6.86**	**214**	*e*Pn	**Pn**	**08 45 00.2**	**-0.

3.7nm,0.9s,baz=140,slow=2.2,SNR=5.7
FINES FINESS Array B 147.26 339 PKPbc **PKPbc 09 03 02.4 +0.2**
12nm,0.8s,baz=51,slow=3.8,SNR=33
NB2 NORSAR Subarra150.98 351 PKP **PKPbc 09 03 11.5 -0.2**
comp=Z,6.5nm,1.1s,baz=15,slow=4.1
NOA NORSAR Array B 150.98 351 PKPbc **PKPbc 09 03 12.4 +0.7**
comp=Z,1.9nm,0.8s,baz=14,slow=4.1,SNR=4.3
NACGM Naroch 151.74 329 *e* **PKPbc 09 03 14.0 +0.5**
AKASG Malin Array Be 153.06 320 PKPbc **PKPbc 09 03 17.1 +0.5**
comp=Z,0.4nm,0.3s,baz=54,slow=3.3,SNR=10
BRTR Keskin Array B 153.61 294 PKPbc **PKPbc 09 03 19.1 +0.6**
comp=Z,2.4nm,0.9s,baz=129,slow=3.3,SNR=11
TORD Torodi Ar. Bea 160.57 179 PKPab **PKPab 09 04 04.6 +3.4**
comp=Z,0.9nm,0.8s,baz=182,slow=3.3,SNR=4.5
KHC Kasperske Hory 161.40 336 *eP* **PKPab 09 04 04.0 -0.2**
GERES GERESS Array B 161.60 335 PKPab **PKPab 09 04 05.1 0.0**
comp=Z,0.1nm,0.3s,baz=41,slow=4.3,SNR=4.5

ISCJB ***10*** *08:45:34.2±1.4,29.°58S×0.°09×175.°7W±0.°1,h28km, mb4.3/7,Error ellipse: s-maj=16.6km s-min=12.2km az=162.7*
IDC ***10*** *08:45:34.3±1.4,29.°51S×175.°90W,h0km,mb4.2/5, mb1 4.4/6,mb1mx4.0/44,mbtmp4.3/6,ML3.7/1,Error ellipse: s-maj=41.1km s-min=25.6km az=162.0*
NEIC ***10*** *08:45:35.5±0.9,29.°44S×175.°88W,h10km,mb4.1/1,Error ellipse: s-maj=24.1km s-min=17.5km az=146.0*
ISC 10 08:45:37.7±1.1, 29.°5S±0.°1×175.°8W±0.°1, h28km, n15, σ1ᵖ39/18, mb4.2/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.86**	**278**	Pn	**Pn**	**08 46 07.8**	**0.0**
	226nm,0.3s,baz=92,slow=8.4,SNR=7.4						
RAO				Sn	**Sn**	**08 46 30.1**	**-0.2**
	552nm,0.3s,baz=54,slow=19,SNR=6.6						
RAO	**Raoul Island**	**1.86**	**278**	*e*Pn	**Pn**	**08 46 07.2**	**-0.6**
RAO				Sn	**Sn**	**08 46 30.1**	**-0.2**
URZ	**Urewera**	**10.50**	**212**	Pn	**Pn**	**08 48 06.9**	**+0.5**
	0.6nm,0.3s,baz=128,slow=19,SNR=2.5						
URZ				Sn	**Sn**	**08 50 04.6**	**+1.6**
	2.7nm,0.3s,baz=271,slow=17,SNR=12						
CTA	**Charters Tower**	**35.56**	**277**	P	**P**	**08 52 33.5**	**+0.7**
	3.5nm,0.9s,baz=108,slow=12,SNR=3.0						
STKA	**Stephens Creek**	**36.53**	**255**	P	**P**	**08 52 42.5**	**+1.5**
	1.9nm,0.6s,baz=102,slow=9.5,SNR=3.7						
ASAR	**Alice Springs**	**45.07**	**265**	P	**P**	**08 53 50.8**	**-0.7**
	1.9nm,0.7s,baz=103,slow=7.0,SNR=5.4						
WRAB	**Tennant Creek**	**45.98**	**270**	*e*P	**P**	**08 53 57.2**	**-1.5**
	1.0nm,0.4s						
WRA	**Warramunga Arr**	**45.98**	**270**	P	**P**	**08 53 57.4**	**-1.4**
	2.3nm,0.7s,baz=108,slow=7.6,SNR=6.1						
FITZ	**Fitzroy Crossi**	**54.27**	**268**	P	**P**	**08 55 00.6**	**-1.0**
	5.8nm,1.1s,baz=126,slow=8.7						
CASY	**Casey**	**56.79**	**208**	*e*P	**P**	**08 55 15.3**	**-3.6**
	10nm,0.8s						
ARCES	**ARCESS Array B**	**138.13**	**349**	PKP	**PKPdf**	**09 04 59.9**	**+0.7**
	4.6nm,1.0s,baz=16,slow=3.9,SNR=3.4						
FINES	**FINESS Array B**	**144.96**	**342**	PKP	**PKPab**	**09 05 11.2**	**+0.4**
	2.0nm,0.7s,baz=53,slow=5.4,SNR=6.0						
NB2	**NORSAR Subarra148.15**	**354**		PKP	**PKPbc**	**09 05 21.1**	**+0.8**
	comp=Z,2.6nm,0.6s,baz=9.8,slow=2.9						
NOA	**NORSAR Array B**	**148.15**	**354**	PKPbc	**PKPbc**	**09 05 21.3**	**+1.0**
	comp=Z,2.1nm,0.6s,baz=14,slow=4.4,SNR=6.3						
AKASG	**Malin Array Be**	**151.72**	**325**	PKPbc	**PKPbc**	**09 05 30.5**	**+1.3**
	comp=Z,1.2nm,0.6s,baz=46,slow=3.2,SNR=4.6						

IDC 10 08:46:12.3±2.0, 15.°12S×173.°53W, h0km, mb3.9/4, mb1 4.2/5, mb1mx3.8/51, mbtmp3.9/5, ML3.8/1, Error ellipse: s-maj=115.1km s-min=22.3km az=151.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**2.08**	**55**	Pn	Pn	08 46 46.5	-2.2
	29nm,0.3s,baz=221,slow=9.3,SNR=37						
AFI				Sn	Sn	08 47 09.1	-6.2
	53nm,0.3s,baz=46,slow=21,SNR=12						
WRA	**Warramunga Arr**	**49.78**	**257**	P	P	08 55 06.9	-0.3
	1.3nm,0.8s,baz=88,slow=7.4,SNR=3.5						
ASAR	**Alice Springs**	**50.08**	**252**	P	P	08 55 08.6	-0.8
	4.7nm,0.9s,baz=86,slow=7.8,SNR=13						
TXAR	**Lajitas Array**	**80.56**	**56**	P	P	08 58 28.3	+1.2
	0.6nm,1.0s,baz=236,slow=6.4,SNR=4.3						
ILAR	**Eielson Array**	**82.20**	**11**	P	P	08 58 35.1	+0.2
	0.3nm,0.9s,baz=198,slow=5.7,SNR=4.1						
BRTR	**Keskin Array B**	**145.86**	**321**	PKPbc	PKPbc	09 05 53.9	-0.2
	1.2nm,0.8s,baz=63,slow=4.9,SNR=4.1						

IDC ***10*** *08:53:59.1±0.8,37.°84N×143.°55E,h0km,mb3.8/13, mb1 4.0/17,mb1mx3.8/53,mbtmp3.8/17,ML3.7/4,MS3.1/6, Ms1 3.2/6,ms1mx2.8/54,Error ellipse: s-maj=18.8km s-min=16.0km az=114.0*
ISCJB ***10*** *08:54:00.4±0.5,37.°89N±0.°03×143.°31E±0.°04,h19km, mb3.9/15,MS3.7/1,Error ellipse: s-maj=4.9km s-min=4.1km az=17.9*
NIED ***10*** *08:54:00,38.°00N×143.°30E,h11km,Mw4.2 Best double couple: M₀2.06000×10¹⁵ NP1:φ=240.00000°,δ76.00000°, λ=12.00000°. NP2:φ=333.00000°,δ78.00000°, λ=165.00000°.*
JMA ***10*** *08:54:02.4±0.2,38.°00N×143.°31E,h45km,M4.5*
NEIC ***10*** *08:54:04.2±0.5,37.°86N×143.°47E,h35km,mb4.5/2,Error ellipse: s-maj=11.8km s-min=7.9km az=111.0*
ISC 10 08:54:01.6±0.7, 38.°00N±0.°04×143.°26E±0.°05, h19km, n47, σ2ᵖ92/50, mb3.8/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.58**	**287**	P	**Pb**	**08 54 29.0**	**-1.1**
JIO				*e*S	**Sb**	**08 54 48.8**	**-0.8**
OFUJ	**Ofunato**	**1.65**	**311**	P	**Pb**	**08 54 29.9**	**-1.5**
OFUJ				*e*S	**Sb**	**08 54 50.5**	**-1.4**
JMK	**Ichinoseki**	**1.87**	**301**	P	**Pb**	**08 54 33.2**	**-1.9**
JMK				*e*S	**Sb**	**08 54 56.6**	**-1.4**
JMM	**Marumori**	**1.96**	**267**	P	**Pb**	**08 54 34.6**	**-2.0**
JMM				*e*S	**Sn**	**08 54 57.5**	**-0.3**
JFK	**Kawauchi**	**2.00**	**252**	P	**Pb**	**08 54 34.7**	**-2.6**
JFK				*e*S	**Sn**	**08 54 58.0**	**-0.9**
JOM	**Ohasama**	**2.13**	**314**	P	**Pb**	**08 54 37.1**	**-2.5**
JOM				*e*S	**Sb**	**08 55 03.1**	**-2.6**
JFT	**Otama**	**2.37**	**259**	P	**Pb**	**08 54 41.3**	**-2.4**
JFT				*e*S	**Sn**	**08 55 09.0**	**+1.0**
JYK	**Kaneyama**	**2.46**	**293**	P	**Pb**	**08 54 42.1**	**-3.1**
JYK				*e*S	**Sb**	**08 55 12.1**	**-3.0**
JAG	**Ashikaga**	**3.42**	**244**	P	**Pn**	**08 54 55.0**	**+1.1**
BSO1	**Boso 1**	**3.81**	**210**	P	**Pn**	**08 54 58.4**	**-0.4**
BSO1				*e*S	**Sn**	**08 55 41.4**	**-1.4**
ERM	**Erimo**	**4.01**	**359**	*e*Pn	Pb	08 55 05.0	-6.6
ERM				*e*Sn	**Sn**	**08 55 45.4**	**-3.1**
MJAR	**Matsushiro Arr**	**4.29**	**252**	Pn	**Pn**	**08 55 07.8**	**+2.0**
	4.2nm,0.3s,baz=75,slow=15,SNR=28						
MJAR				Sn	**Sn**	**08 56 00.4**	**+5.1**
	2.9nm,0.3s,baz=337,slow=31,SNR=5.1						
MJAR				LR	LR	08 56 59.8	
	comp=Z,176nm,18.1s,baz=115,slow=41						
MAJO	**Matsushiro**	**4.29**	**252**	*e*Pn	**Pn**	**08 55 07.9**	**+2.1**
MAT	**Matsushiro**	**4.29**	**252**	P	**Pn**	**08 55 08.7**	**+2.9**
MAT				*e*S	**Sn**	**08 55 56.1**	**+0.8**
JHJ2	**Mitsune**	**5.63**	**211**	*e*Pn	**Pn**	**08 55 24.1**	**-0.2**
JHJ2				*e*Sn	**Sn**	**08 56 25.8**	**-2.5**
JHJ	**Hachijo jima 2**	**5.63**	**211**	Pn	**Pn**	**08 55 23.7**	**-0.6**
	36nm,0.3s,baz=61,slow=5.3,SNR=14						
JHJ				Sn	**Sn**	**08 56 25.8**	**-2.7**
	22nm,0.3s,baz=66,slow=19,SNR=3.8						
JHJ				LR	LR	08 57 51.8	
	comp=Z,96nm,20.3s,baz=104,slow=41						
ASAJ	**Asahikawa**	**6.13**	**355**	Pn	**Pn**	**08 55 31.5**	**+0.3**
	baz=270,slow=20						
ASAJ	**Asahikawa**	**6.13**	**355**	Pn	**Pn**	**08 55 31.5**	**+0.3**
ASAJ				*e*Sn	**Sn**	**08 56 44.0**	**+3.3**
USRK	**Ussuriysk Ar.**	**10.52**	**310**	Pn	**Pn**	**08 56 32.5**	**+1.2**
	0.2nm,0.3s,baz=136,slow=40,SNR=3.5						
JNU	**Nakatsue**	**11.20**	**248**	LR	LR	09 01 25.6	
	comp=Z,153nm,18.6s,baz=180,slow=39						
KSRS	**Korea Array**	**12.16**	**272**	Pn	**Pn**	**08 56 55.2**	**+1.4**
	0.1nm,0.3s,baz=90,slow=15,SNR=4.5						
KSRS				LR	LR	09 01 03.9	
	comp=Z,89nm,20.6s,baz=40,slow=34						
KSAR	**Wonju Array Be**	**12.20**	**272**	Pn	**Pn**	**08 56 55.2**	**+0.9**
KLR	**Kul'dur**	**13.97**	**327**	Pn	**P**	**08 57 23.2**	**-3.1**
	0.2nm,0.3s,baz=151,slow=14,SNR=2.2						
PETK	**Petropavlovsk-**	**18.12**	**29**	LR	LR	09 06 13.9	
	comp=Z,43nm,19.5s,baz=197,slow=40						
SEY	**Seymchan**	**25.58**	**10**	P	**P**	**08 59 31.5**	**+2.4**
	0.7nm,0.5s,baz=186,slow=19,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**27.43**	**125**	T	T	09 28 56.8	
	baz=317						
H11N1	**WAKE ISLAND Hy**	**27.44**	**125**	T	T	09 28 49.1	
	baz=317						
H11N3	**WAKE ISLAND Hy**	**27.45**	**125**	T	T	09 28 48.7	
	baz=317						
H11S1	**WAKE ISLAND Hy**	**28.20**	**127**	T	T	09 29 46.4	
	baz=318,slow=74						
H11S3	**WAKE ISLAND Hy**	**28.21**	**127**	T	T	09 29 40.7	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**28.22**	**127**	T	T	09 29 25.3	
	baz=318,slow=74						
SONM	**Songino Array**	**28.50**	**302**	P	**P**	**08 59 57.7**	**+2.0**
	0.8nm,0.5s,baz=102,slow=9.2,SNR=6.4						
ZALV	**Zalesovo Beam**	**42.36**	**312**	P	**P**	**09 01 57.3**	**+3.0**
	1.4nm,0.5s,baz=89,slow=8.1,SNR=5.7						
MKAR	**Makanchi Array**	**44.86**	**302**	P	P	09 02 17.9	+3.3
	0.6nm,0.5s,baz=84,slow=8.0,SNR=5.8						
KURK	**Kurchatov**	**46.50**	**308**	P	**P**	**09 02 29.6**	**+2.2**
KURBB	**Kurchatov Arra**	**46.58**	**308**	P	**P**	**09 02 29.6**	**+1.6**
	3.8nm,0.7s,baz=82,slow=8.3,SNR=15						
ILAR	**Eielson Array**	**47.89**	**33**	P	**P**	**09 02 38.1**	**0.0**
	0.6nm,0.8s,baz=264,slow=6.7,SNR=7.3						
TKM2	**Tokmak 2**	**50.47**	**298**	*e*P	**P**	**09 02 59.5**	**+1.2**
	7.8nm,1.2s						
BVAR	**Borovoye Array**	**51.02**	**312**	P	**P**	**09 03 04.8**	**+2.7**
	0.5nm,0.4s,baz=56,slow=8.8,SNR=3.1						
WRAB	**Tennant Creek**	**58.23**	**190**	*e*P	**P**	**09 03 54.6**	**0.0**
	3.4nm,0.9s						
WRA	**Warramunga Arr**	**58.24**	**190**	P	**P**	**09 03 54.5**	**-0.3**
	3.2nm,0.8s,baz=9.4,slow=7.2,SNR=18						
AKTO	**Aktyubinsk**	**59.12**	**312**	P	P	09 04 04.3	+3.6
	0.7nm,0.5s,baz=79,slow=14,SNR=3.0						
ASAR	**Alice Springs**	**61.96**	**190**	P	**P**	**09 04 20.0**	**-0.2**
	0.7nm,0.8s,baz=5.2,slow=7.6,SNR=6.3						
YKA	**Yellowknife Ar**	**62.23**	**31**	P	**P**	**09 04 22.5**	**+0.9**
	0.3nm,0.6s,baz=301,slow=6.3,SNR=3.9						
NOA	**NORSAR Array B**	**73.86**	**338**	LR	LR	09 43 08.1	
	comp=Z,38nm,19.5s,baz=55,slow=40						
PDAR	**Pinedale Array**	**75.94**	**46**	P	**P**	**09 05 46.9**	**-0.5**
	0.2nm,0.5s,baz=15,slow=3.8,SNR=2.7						
TXAR	**Lajitas Array**	**88.37**	**53**	P	**P**	**09 06 52.8**	**+0.3**
	0.1nm,0.7s,baz=316,slow=6.3,SNR=2.5						

DDA ***10*** *08:54:42.0,39.°22N×29.°42E,h7km,Md2.6*
ISCJB ***10*** *08:54:42.4±0.5,39.°21N±0.°03×29.°41E±0.°04,h7km±5km, Error ellipse: s-maj=5.4km s-min=4.7km az=153.0*
CSEM ***10*** *08:54:42.1±0.1,39.°22N×29.°43E,h5km,MD2.6,Error ellipse: s-maj=3.4km s-min=2.5km az=129.0*
ISK ***10*** *08:54:42.0,39.°22N×29.°38E,h7km,MD2.8*
ISC 10 08:54:42.4±0.8, 39.°21N±0.°02×29.°44E±0.°03, h11km±6km, n31, σ0ᵖ47/46, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GDZ	**Gediz**	**0.13**	**164**	*i* P	**Pg**	**08 54 45.4**	**-0.2**
GDZ				*i* S	**Sg**	**08 54 47.8**	**-0.2**
GDZ	**Gediz**	**0.13**	**164**	P	**Pg**	**08 54 45.4**	**-0.2**
GDZ				S	**Sg**	**08 54 47.8**	**-0.2**
GEDZ	**Gediz**	**0.17**	**187**	*e*PG	**Pg**	**08 54 46.0**	**-0.2**
GEDZ				*e*SG	**Sg**	**08 54 49.1**	**+0.2**
GEDZ	**Gediz**	**0.17**	**187**	*e*Pg	**Pg**	**08 54 46.0**	**-0.2**
GEDZ				*e*Sg	**Sg**	**08 54 49.1**	**+0.2**
TVSB	**Tavsanli**	**0.24**	**4**	*e*PG	**Pg**	**08 54 47.5**	**+0.1**
TVSB				*e*SG	**Sg**	**08 54 50.7**	**-0.2**
TVSB	**Tavsanli**	**0.24**	**4**	*e*Pg	**Pg**	**08 54 47.5**	**+0.1**
TVSB				*e*Sg	**Sg**	**08 54 50.7**	**-0.2**
DEMI	**Demirci**	**0.59**	**254**	*i* P	**Pg**	**08 54 53.5**	**-0.3**
DEMI				*i* S	**Sg**	**08 55 00.7**	**-0.8**
DEMI	**Demirci**	**0.59**	**254**	P	**Pg**	**08 54 53.5**	**-0.3**
DEMI				S	**Sg**	**08 55 00.7**	**-0.8**
KHL	**Karahalli**	**0.89**	**176**	*e*PG	**Pg**	**08 54 59.4**	**-0.2**
KHL	**Karahalli**	**0.89**	**176**	*e*Pg	**Pg**	**08 54 59.4**	**-0.2**
BORA	**Eskisehir**	**1.03**	**49**	*i* P	**Pg**	**08 55 01.8**	**-0.5**
BORA				*i* S	**Sb**	**08 55 16.4**	**+0.6**
BORA	**Eskisehir**	**1.03**	**49**	P	**Pg**	**08 55 01.8**	**-0.5**
BORA				S	**Sb**	**08 55 16.4**	**+0.6**
IGD	**Bursa**	**1.07**	**350**	*i* P	**Pg**	**08 55 02.2**	**-0.8**
IGD				*i* S	**Sb**	**08 55 17.1**	**+0.3**
IZI	**Iznik**	**1.12**	**1**	*e*PN	**Pb**	**08 55 03.9**	**0.0**
IZI	**Iznik**	**1.12**	**1**	*e*Pn	**Pb**	**08 55 03.9**	**0.0**
ESKT	**Eskisehir**	**1.14**	**74**	*i* P	**Pg**	**08 55 03.1**	**-1.2**
ESKT				*i* S	**Sb**	**08 55 19.5**	**+0.5**
SEYT	**Eskypehyr**	**1.14**	**74**	P	**Pg**	**08 55 03.1**	**-1.2**
SEYT				S	**Sb**	**08 55 19.5**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.23**	**340**	*e*PN	**Pn**	**08 55 05.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.23**	**340**	*e*Pn	**Pn**	**08 55 05.5**	**0.0**
GPA	**Golpazari**	**1.27**	**32**	*e*PN	**Pg**	**08 55 06.8**	**0.0**
GPA	**Golpazari**	**1.27**	**32**	*e*Pn	**Pg**	**08 55 06.8**	**0.0**
BALB	**Balikesir**	**1.28**	**290**	*e*PN	**Pg**	**08 55 06.6**	**-0.5**
BALB				*e*SN	**Sn**	**08 55 24.0**	**+0.7**
BALB	**Balikesir**	**1.28**	**290**	*e*Pn	**Pg**	**08 55 06.6**	**-0.5**
BALB				*e*Sn	**Sn**	**08 55 24.0**	**+0.7**
AKS	**Akhisar**	**1.31**	**256**	*e*PN	**Pn**	**08 55 06.5**	**-0.1**
AKS	**Akhisar**	**1.31**	**256**	*e*Pn	**Pn**	**08 55 06.5**	**-0.1**
ARMT	**Armutlu**	**1.42**	**342**	*e*PN	**Pg**	**08 55 09.2**	**-0.5**
ARMT	**Armutlu**	**1.42**	**342**	*e*Pn	**Pg**	**08 55 09.2**	**-0.5**
GULT	**Gulveren**	**1.48**	**34**	*e*PN	**Pb**	**08 55 10.0**	**+0.1**
GULT	**Gulveren**	**1.48**	**34**	*e*Pn	**Pb**	**08 55 10.0**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.64**	**81**	*e*PN	**Pb**	**08 55 12.4**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.64**	**81**	*e*Pn	**Pb**	**08 55 12.4**	**-0.2**

IDC ***10*** *08:58:56.5±1.3,37.°98N×143.°62E,h0km,mb3.5/4, mb1 3.6/7,mb1mx3.4/51,mbtmp3.5/7,ML3.0/2,Error ellipse: s-maj=37.3km s-min=21.9km az=105.0*
ISCJB ***10*** *08:58:58.4±0.8,38.°07N±0.°05×143.°37E±0.°06,h19km, mb3.5/4,Error ellipse: s-maj=7.1km s-min=6.8km az=11.6*
JMA ***10*** *08:59:00.2±0.2,38.°12N×143.°35E,h39km,M3.5*
ISC 10 08:58:59.2±1.0, 38.°03N±0.°05×143.°42E±0.°08, h19km, n19, σ1ᵖ57/29, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.68**	**285**	P	**Pn**	**08 59 27.2**	**-0.4**
JIO				*e*S	**Sn**	**08 59 46.2**	**-2.4**
OFUJ	**Ofunato**	**1.72**	**308**	P	**Pn**	**08 59 27.4**	**-0.8**
JMK	**Ichinoseki**	**1.95**	**299**	P	**Pn**	**08 59 30.9**	**-0.4**
JMK				*e*S	**Sn**	**08 59 53.4**	**-1.9**
JMM	**Marumori**	**2.08**	**266**	P	**Pn**	**08 59 33.0**	**-0.1**
JMM				*e*S	**Sn**	**08 59 57.0**	**-1.4**
JFK	**Kawauchi**	**2.12**	**252**	P	**Pn**	**08 59 33.5**	**-0.2**
JOU	**Okura**	**2.19**	**280**	P	**Pn**	**08 59 34.6**	**0.0**
JOU				*e*S	**Sn**	**09 00 00.4**	**-0.9**
JOM	**Ohasama**	**2.19**	**312**	P	**Pn**	**08 59 34.5**	**-0.2**
JOM				*e*S	**Sn**	**08 59 59.6**	**-1.7**
JFT	**Otama**	**2.49**	**259**	P	**Pn**	**08 59 39.3**	**+0.5**
JFT				*e*S	**Sn**	**09 00 08.0**	**-0.7**
JYK	**Kaneyama**	**2.56**	**291**	P	**Pn**	**08 59 39.9**	**+0.3**
JYK				*e*S	**Sn**	**09 00 09.6**	**-0.6**
JRG	**Rokugo**	**2.56**	**303**	P	**Pn**	**08 59 39.7**	**-0.1**
JRG				*e*S	**Sn**	**09 00 09.6**	**-0.8**
JANG	**Nango**	**2.76**	**328**	P	**Pn**	**08 59 42.6**	**+0.1**
JTM	**Tenmabayashi**	**3.29**	**327**	*e*S	**Sn**	**09 00 26.0**	**-2.4**
MJAR	**Matsushiro Arr**	**4.41**	**252**	Pn	**Pn**	**09 00 07.2**	**+2.1**
	0.8nm,0.3s,baz=78,slow=14,SNR=7.0						
JHJ	**Hachijo jima 2**	**5.73**	**212**	Pn	**Pn**	**09 00 22.8**	**-0.4**
	1.2nm,0.3s,baz=85,slow=20,SNR=6.3						
JHJ				Sn	**Sn**	**09 01 23.9**	**-4.5**
	4.4nm,0.3s,baz=252,slow=20,SNR=4.4						
ASAJ	**Asahikawa**	**6.11**	**354**	Pn	**Pn**	**09 00 29.4**	**+1.0**
	baz=221,slow=20						
ASAJ				Sn	**Sn**	**09 01 34.9**	**-2.8**
	0.4nm,0.3s,baz=151,slow=19,SNR=3.0						
ZALV	**Zalesovo Beam**	**42.43**	**312**	P	**P**	**09 06 54.9**	**+2.4**
	0.4nm,0.4s,baz=99,slow=8.9,SNR=2.7						
ILAR	**Eielson Array**	**47.80**	**33**	P	**P**	**09 07 35.7**	**+0.8**
	0.5nm,0.8s,baz=265,slow=6.9,SNR=4.8						
WRA	**Warramunga Arr**	**58.30**	**190**	P	**P**	**09 08 52.9**	**+0.2**
	0.3nm,0.5s,baz=8.3,slow=7.2,SNR=6.5						
FINES	**FINESS Array B**	**68.66**	**333**	P	**P**	**09 10 00.4**	**-0.5**
	0.4nm,0.6s,baz=44,slow=6.2,SNR=3.2						

NIED ***10*** *09:04:00,38.°00N×143.°30E,h11km,Mw4.1 Best double couple: M₀1.33000×10¹⁵ NP1:φ=210.00000°,δ31.00000°, λ=72.00000°. NP2:φ=9.00000°,δ61.00000°,λ=101.00000°.*

IDC ***10*** *09:04:21.9±0.7,37.°89N×143.°40E,h0km,mb3.9/19, mb1 4.1/25,mb1mx4.0/52,mbtmp4.0/25,ML3.5/3,MS3.4/2, Ms1 3.4/2,ms1mx2.7/46,Error ellipse: s-maj=18.0km s-min=13.8km az=109.0*
ISCJB ***10*** *09:04:22.9±0.4,37.°90N±0.°03×143.°36E±0.°04,h19km, mb4.0/23,MS3.5/1,Error ellipse: s-maj=5.0km s-min=3.9km az=30.7*
NEIC ***10*** *09:04:23.9±2.9,37.°89N×143.°42E,h12km±18km,mb4.4/3, Error ellipse: s-maj=9.1km s-min=6.4km az=93.0*
JMA ***10*** *09:04:25.1±0.1,38.°01N×143.°32E,h39km,M4.1*
ISC 10 09:04:25.1±0.6, 37.°93N±0.°05×143.°31E±0.°07, h19km, n60, σ1ᵖ39/65, mb4.0/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.63**	**289**	P	**Pn**	**09 04 52.1**	**-0.7**
JIO				S	**Sn**	**09 05 11.8**	**-1.4**
OFUJ	**Ofunato**	**1.73**	**312**	P	**Pn**	**09 04 53.0**	**-1.1**
JMK	**Ichinoseki**	**1.93**	**303**	P	**Pn**	**09 04 56.3**	**-0.6**
JMK				*e*S	**Sn**	**09 05 19.5**	**-1.2**
JMM	**Marumori**	**1.99**	**269**	P	**Pn**	**09 04 57.3**	**-0.4**
JMM				*e*S	**Sn**	**09 05 21.6**	**-0.5**
JOU	**Okura**	**2.13**	**283**	P	**Pn**	**09 04 59.8**	**+0.1**
JOM	**Ohasama**	**2.21**	**315**	P	**Pn**	**09 05 00.3**	**-0.4**
JOM				*e*S	**Sn**	**09 05 25.8**	**-1.7**
JFT	**Otama**	**2.39**	**261**	P	**Pn**	**09 05 03.9**	**+0.6**
JFT				*e*S	**Sn**	**09 05 32.5**	**+0.4**
JYK	**Kaneyama**	**2.52**	**294**	P	**Pn**	**09 05 05.0**	**0.0**
JRG	**Rokugo**	**2.56**	**306**	P	**Pn**	**09 05 05.5**	**0.0**
JANG	**Nango**	**2.81**	**331**	P	**Pn**	**09 05 08.7**	**-0.3**
JAH	**Hinai**	**3.07**	**318**	P	**Pn**	**09 05 12.6**	**0.0**
JAG	**Ashikaga**	**3.42**	**245**	P	**Pn**	**09 05 17.7**	**+0.2**
JAG				*e*S	**Sn**	**09 05 57.7**	**+0.2**
BSO1	**Boso 1**	**3.77**	**211**	P	**Pn**	**09 05 21.3**	**-0.4**
BSO1				*e*S	**Sn**	**09 06 05.3**	**0.0**
JOT	**Ohata**	**3.87**	**334**	P	**Pn**	**09 05 23.4**	**-0.1**
JRY	**Ryogami san**	**4.01**	**243**	P	**Pn**	**09 05 25.9**	**+0.4**
JRY				*e*S	**Sn**	**09 06 10.2**	**-1.8**
ERM	**Erimo**	**4.08**	**358**	*e*Pn	**Pn**	**09 05 24.0**	**-2.4**
ERM				*e*Sn	**Sn**	**09 06 14.1**	**+0.4**
MJAR	**Matsushiro Arr**	**4.30**	**253**	Pn	**Pn**	**09 05 30.5**	**+1.0**
	4.7nm,0.3s,baz=66,slow=9.9,SNR=47						
MJAR				Sn	**Sn**	**09 06 19.2**	**+0.1**
	2.7nm,0.3s,baz=42,slow=14,SNR=5.5						
MAJO	**Matsushiro**	**4.30**	**253**	*e*Pn	**Pn**	**09 05 31.1**	**+1.7**
MAT	**Matsushiro**	**4.30**	**253**	P	**Pn**	**09 05 31.3**	**+1.8**
MAT				S	**Sn**	**09 06 20.4**	**+1.3**
JHJ2	**Mitsune**	**5.58**	**212**	*e*Pn	**Pn**	**09 05 47.1**	**0.0**
	26nm,0.3s						
JHJ	**Hachijo jima 2**	**5.59**	**212**	Pn	**Pn**	**09 05 46.3**	**-0.9**
	39nm,0.3s,baz=343,slow=12,SNR=40						
JHJ				Sn	**Sn**	**09 06 43.9**	**-7.1**
	7.7nm,0.3s,baz=73,slow=19,SNR=3.0						
ASAJ	**Asahikawa**	**6.21**	**355**	Pn	**Pn**	**09 05 55.4**	**-0.2**
	1.3nm,0.3s,baz=188,slow=11,SNR=17						
ASAJ				Sn	**Sn**	**09 07 01.9**	**-4.1**
	0.5nm,0.3s,baz=232,slow=18,SNR=2.8						
USRK	**Ussuriysk Ar.**	**10.59**	**310**	Pn	**Pn**	**09 06 57.2**	**+1.5**
	0.2nm,0.3s,baz=106,slow=14,SNR=3.7						
CBIJ	**Chichi jima**	**10.84**	**185**	Pn	**Pn**	**09 06 57.1**	**-2.1**
CBIJ				Sn	Sn	09 08 46.1	-14
JCJ	**Chichijima**	**10.84**	**185**	Pn	**P

PUZ eSN Sn 09 13 52.8 -4.4
RUGZ Raukumara Rang 6.55 212 ePN Pn 09 12 46.1 -1.0
TWGZ Tauwhareparae 6.59 210 ePN Pn 09 12 45.4 -2.3
TWGZ SN Sn 09 14 00.1 -2.1
MWZ Matawai 6.92 211 ePN Pn 09 12 48.6 -3.5
MWZ SN Sn 09 14 06.2 -4.1
URZ Urewera 7.05 214 Pn Pn 09 12 52.1 -1.8
4.4nm,0.3s,baz=313,slow=0.8,SNR=23
URZ Sn Sn 09 14 07.1 -6.3
7.3nm,0.3s,baz=270,slow=6.3,SNR=14
URZ Urewera 7.05 214 ePn Pn 09 12 52.5 -1.4
URZ eSn Sn 09 14 15.9 +2.5
URZ Urewera 7.05 214 ePN Pn 09 12 50.5 -3.4
URZ eSN Sn 09 14 09.2 -4.2
SNGZ Shannon Statio 7.37 210 ePN Pn 09 12 56.1 -2.3
KNZ Kokohu 7.44 208 ePN Pn 09 12 55.1 -4.1
OUZ Omahuta 7.58 247 ePn Pn 09 13 04.0 +2.9
82nm,1.0s
ARHZ Aropaoanui 7.92 210 ePN Pn 09 13 03.6 -2.2
ARHZ SN Sn 09 14 30.8 -4.1
BKZ Black Stump Fm 8.06 213 ePN Pn 09 13 05.5 -2.4
MRZ Mangatainoka R 9.69 211 eSN Sn 09 15 08.8 -10
KHZ Kahutara 12.01 212 ePn Pn 09 13 58.3 -3.5
KHZ eSn Sn 09 16 04.7 -10
MQZ McQueen's Vall 13.43 211 SN Sn 09 16 32.7 -17
RPZ Rata Peaks 14.16 215 Pn Pn 09 14 24.9 -6.4
0.9nm,0.3s,baz=119,slow=1.8,SNR=3.6
RPZ Sn Sn 09 16 46.3 -22
0.8nm,0.3s,baz=198,slow=9.6,SNR=2.5
RPZ Rata Peaks 14.16 215 ePn Pn 09 14 26.0 -5.3
ODZ Otahua Downs 15.37 212 eP Pn 09 14 48.6 +1.2
211nm,1.9s
DZM Mont Dzumac 17.34 303 P P 09 15 16.2 +2.1
0.5nm,0.3s,baz=122,slow=18,SNR=8.1
DZM LR LR 09 20 55.9
comp=Z,746nm,18.8s,baz=139,slow=34
DZM Mont Dzumac 17.34 303 eP P 09 15 15.2 +1.1
77nm,1.6s
DZM eLR LR 09 19 22.7
680nm,22.9s
DZM Mont Dzumac 17.34 303 eP Pn 09 15 12.7 -0.2
16nm,0.9s
AFI Afiamalu 19.33 18 P P 09 15 33.3 -2.7
1.2nm,0.3s,baz=153,slow=6.8,SNR=2.0
RAR Rarotonga 19.66 60 LR LR 09 23 49.8
comp=Z,241nm,18.8s,baz=242,slow=39
ARMA Armidale 26.03 266 eP P 09 16 46.9 +3.0
8.0nm,0.8s
TBI Tubuai 26.66 77 eLR LR 09 23 33.6
152nm,25.0s
EIDS Eidsvold 27.99 277 eP P 09 17 01.9 +0.5
7.1nm,0.8s
PPT2 Papeete2 29.52 67 eLR LR 09 24 45.1
152nm,29.0s
PPT Papeete 29.54 67 LR LR 09 29 43.9
comp=Z,119nm,18.2s,baz=211,slow=38
STKA Stephens Creek 34.14 260 P P 09 17 56.0 +0.5
2.9nm,0.7s,baz=109,slow=9.6,SNR=6.7
STKA LR LR 09 31 10.0
comp=Z,295nm,18.1s,baz=72,slow=35
CTA Charters Tower 34.27 282 P P 09 17 57.9 +1.1
6.4nm,0.5s,baz=120,slow=10,SNR=19
CTAO Charters Tower 34.27 282 eP P 09 17 57.9 +1.1
43nm,0.6s
COEN Coen 39.97 288 eP P 09 18 45.3 +0.1
7.4nm,0.8s
TAOE Nuku Hiva Isla 42.09 65 eLR LR 09 30 33.7
95nm,26.2s
ASAR Alice Springs 43.12 269 P P 09 19 10.4 -0.7
5.4nm,0.6s,baz=109,slow=7.3,SNR=63
WRAB Tennant Creek 44.29 274 eP P 09 19 19.1 -1.4
15nm,0.7s
WRA Warramunga Arr 44.30 274 P P 09 19 19.8 -0.8
20nm,0.8s,baz=113,slow=7.9,SNR=125
FITZ Fitzroy Crossi 52.47 271 P P 09 20 22.9 -0.7
5.1nm,0.7s,baz=159,slow=8.1,SNR=7.6
FITZ Fitzroy Crossi 52.47 271 eP P 09 20 22.5 -1.1
18nm,1.2s
CASY Casey 53.34 209 eP P 09 20 30.4 +1.1
1.7nm,0.9s
MBWA Marble Bar 56.10 265 eP P 09 20 48.8 -1.2
113nm,1.3s
QSPA South Pole Qui 57.62 180 eP P 09 21 04.6 +4.3
46nm,0.7s
MAW Mawson 70.39 201 LR LR 09 51 35.9
comp=Z,118nm,19.6s,baz=63,slow=34
SYO Syowa Base 75.10 193⇑eP P 09 22 52.2 +0.3
SNAA Sanae 76.07 178 P P 09 22 52.8 -4.8
SNAA Sanae 76.07 178 eP P 09 22 59.6 +2.1
935nm,1.5s
VNA1 Neumayer--Stat 76.88 176 P P 09 23 15.0 +13
JNU Nakatsue 81.17 319 P P 09 23 25.5 -0.6
4.9nm,0.9s,baz=167,slow=7.3,SNR=3.5
KSRS Korea Array 85.99 320 P P 09 23 51.7 +1.1
1.1nm,0.9s,baz=128,slow=5.1,SNR=4.7
KSAR Wonju Array Be 86.01 320 P P 09 23 51.7 +1.0
PETK Petropavlovsk- 87.86 346 P P 09 24 01.0 +1.7
5.6nm,0.9s,baz=134,slow=6.4,SNR=5.2
MKAR Makanchi Array 119.17 309 PKP PKPdf 09 29 59.6 +0.4
0.4nm,0.3s,baz=88,slow=2.5,SNR=4.1
KBZ Khabaz 146.31 301 PKPbc PKPbc 09 30 50.6 -0.2
3.6nm,0.9s,baz=130,slow=3.8,SNR=5.8
FINES FINESS Array B 147.13 339 PKPbc PKPbc 09 30 53.5 +0.9
11nm,0.6s,baz=55,slow=3.4,SNR=73
NB2 NORSAR Subarra150.83 351 PKP PKPbc 09 31 03.5 +1.3
comp=Z,3.6nm,0.9s,baz=18,slow=3.1
NOA NORSAR Array B150.83 351 PKPbc PKPbc 09 31 03.2 +1.1
comp=Z,2.9nm,0.8s,baz=15,slow=4.2,SNR=9.4
NACGM Naroch 151.63 329 e PKPbc 09 31 05.0 +0.9
AKASG Malin Array Be 152.99 320 PKPbc PKPbc 09 31 08.1 +0.8
comp=Z,1.2nm,0.6s,baz=55,slow=2.6,SNR=10
KIEV Kiev 153.00 320 ePKPbc PKPbc 09 31 07.5 +0.2
BRTR Keskin Array B 153.61 295 PKPbc PKPbc 09 31 10.1 +0.8
comp=Z,2.7nm,0.8s,baz=133,slow=3.4,SNR=13
CSS Mathiatis 153.96 284 ePKPbc PKPbc 09 31 10.6 +0.6
CLL Collm 159.56 340⇓iP PKPab 09 31 47.2 +0.4
comp=Z,5.0nm,0.9s
TORD Torodi Ar. Bea 160.74 179 PKPab PKPab 09 31 54.2 +1.4
comp=Z,0.8nm,0.7s,baz=188,slow=3.5,SNR=5.5
GERES GERESS Array B 161.48 335 PKPab PKPab 09 31 56.1 +0.7
comp=Z,0.9nm,0.8s,baz=28,slow=6.0,SNR=7.6

*IDC **10** 09:13:44.6±1.7,4°.31S×101°.82E,h0km,mb3.9/5, mb1 3.9/5,mb1mx3.6/51,mbtmp3.9/5,MS3.5/2,Ms1 3.5/2, ms1mx2.9/36,Error ellipse: s-maj=76.4km s-min=29.0km az=56.0*

*ISCJB **10** 09:13:48.1±0.9,4°.3S±0°.1×101°.82E±0°.07,h35km,mb3.9/5, MS3.5/2,Error ellipse: s-maj=18.6km s-min=7.0km az=26.1*

*DJA **10** 09:13:49.5±1.3,4°.5±8°×10°.2E±°,h25km±10km,M4.1/6, MLv4.1/6*

ISC 10 09:13:50.4±0.9,4°.2S±0°.1×101°.94E±0°.08,h35km,n19, σ0s78/14,mb4.0/5,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KSI	Kapahiang	0.85	50	P	P	Pn	09 14 05.6	-0.4
MNAI	Manna	1.02	99	P	Pn	Pn	09 14 08.6	+0.4
MNAI				S	S	Sn	09 14 23.6	+2.2
LHSI	Lahat	1.62	77	P	Pn	Pn	09 14 16.2	-0.3
LWLI	Liwa	2.26	111	P	P	Pn	09 14 25.2	-0.2
PPSI	Pulau Pagai	2.40	307	P	Pn	Pn	09 14 27.8	+0.6
KASI	Kota Agung	2.86	117	P	P	Pn	09 14 33.6	0.0
KASI				S	S	Sn	09 15 07.0	+0.2
H08S2	Diego Garcia H	29.48	262	T	T	T	09 50 01.2	
baz=85,slow=75,SNR=7.2								
H08S3	Diego Garcia H	29.49	262	T	T	T	09 50 00.6	
baz=85,slow=75,SNR=6.9								
H08S1	Diego Garcia H	29.50	262	T	T	T	09 50 03.4	
baz=85,slow=75,SNR=5.0								
H01W3	Cape Leeuwin H	32.55	161	T	T	T	09 54 16.7	
baz=339,slow=76,SNR=11								
H01W2	Cape Leeuwin H	32.56	161	T	T	T	09 54 16.1	
baz=339,slow=76,SNR=12								
H01W1	Cape Leeuwin H	32.56	161	T	T	T	09 54 16.1	
baz=339,slow=76,SNR=11								
WRA	Warramunga Arr	35.22	119	LR	LR	Pn	09 37 28.1	
comp=Z,119nm,18.7s,baz=155,slow=40								
STKA	Stephens Creek	46.24	131	P	P	P	09 22 11.7	-0.8
2.3nm,0.8s,baz=286,slow=9.4,SNR=3.8								
SONM	Songino Array	51.97	4	P	P	P	09 22 56.4	+0.3
0.3nm,0.5s,baz=198,slow=9.3,SNR=2.6								
MKAR	Makanchi Array	53.67	343	P	P	P	09 23 08.6	-0.1
0.8nm,0.5s,baz=150,slow=8.3,SNR=9.8								
ZALV	Zalesovo Beam	59.69	348	P	P	P	09 23 50.6	-0.6
0.9nm,0.4s,baz=176,slow=6.8,SNR=4.5								
ZALV				LR	LR		09 53 35.3	
comp=Z,26nm,18.1s,baz=70,slow=40								
BRTR	Keskin Array B	76.23	312	P	P	P	09 25 35.5	-0.2
0.9nm,0.7s,baz=113,slow=5.7,SNR=4.3								
TXAR	Lajitas Array	145.17	41	PKPbc	PKPbc		09 33 24.9	+0.1
2.1nm,0.5s,baz=274,slow=0.7,SNR=39								

*IDC **10** 09:20:59.8±0.9,37°.79N×143°.53E,h0km,mb3.9/7, mb1 4.1/14,mb1mx3.9/53,mbtmp4.1/14,ML3.6/3,MS3.4/1, Ms1 3.4/1,ms1mx2.4/50,Error ellipse: s-maj=23.9km s-min=15.5km az=91.0*

*NIED **10** 09:21:00,38°.00N×143°.30E,h29km,Mw3.9 Best double couple: M0 8.58000×10^14 NP1:φs=46.00000°,δ76.00000°, λ7.00000°. NP2:φs314.00000°,δ83.00000°,λ166.00000°.*

*NEIC **10** 09:21:04.2±0.7,37°.83N×143°.52E,h35km,mb4.6/3,Error ellipse: s-maj=14.2km s-min=8.1km az=101.0*

*JMA **10** 09:21:04.3±0.2,37°.96N×143°.31E,h47km,M4.3*

ISC 10 09:21:02.8±3.5,37°.89N±0°.04×143°.41E±0°.06,h23km±29km, n44,σ1s53/53,mb4.0/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.72	290	P	P	Pn	09 21 31.3	+0.1
JIO				eS	S	Sn	09 21 50.6	-1.9
OFUJ	Ofunato	1.81	312	P	P	Pn	09 21 32.4	-0.1
OFUJ				eS	S	Sn	09 21 52.6	-2.1
JMK	Ichinoseki	2.02	302	P	P	Pn	09 21 35.6	+0.2
JMK				eS	S	Sn	09 21 58.5	-1.4
JMM	Marumori	2.07	270	P	P	Pn	09 21 36.1	0.0
JFK	Kawauchi	2.08	256	P	P	Pn	09 21 36.0	-0.3
JFK				eS	S	Sn	09 21 59.8	-1.6
JOM	Ohasama	2.29	314	P	P	Pn	09 21 39.5	+0.4
JOM				eS	S	Sn	09 22 05.5	-1.1
JFT	Otama	2.47	262	P	P	Pn	09 21 42.5	+1.0
JFT				eS	S	Sn	09 22 11.4	+0.5
JYK	Kaneyama	2.61	294	P	P	Pn	09 21 44.2	+0.7
JYK				eS	S	Sn	09 22 13.9	-0.5
JANG	Nango	2.88	330	P	P	Pn	09 21 47.3	0.0
JANG				eS	S	Sn	09 22 20.0	-1.2
JNS	Sasagawa	3.24	270	P	P	Pn	09 21 53.5	+1.3
JAW	Awa shima	3.33	281	P	P	Pn	09 21 54.5	+1.1
JAG	Ashikaga	3.48	246	P	P	Pn	09 21 56.0	+0.5
JOT	Ohata	3.94	333	P	P	Pn	09 22 02.0	+0.3
JOT				eS	S	Sn	09 22 44.2	-2.9
JRY	Ryogami san	4.07	244	P	P	Pn	09 22 04.4	+0.8
JRY				eS	S	Sn	09 22 47.6	-2.9
JSD	Sado	4.07	274	P	P	Pn	09 22 04.1	+0.5
ERM	Erimo	4.12	357	ePn	P	Pn	09 22 03.8	-0.5
ERM				eSn	S	Sn	09 22 50.5	-1.3
MJAR	Matsushiro Arr	4.36	254	Pn	P	Pn	09 22 08.9	+1.3
9.6nm,0.3s,baz=86,slow=15,SNR=56								
MJAR				Sn	S	Sn	09 22 57.7	-0.1
3.9nm,0.3s,baz=79,slow=15,SNR=5.1								
MAJO	Matsushiro	4.37	254	ePn	P	Pn	09 22 09.5	+1.8
MAT	Matsushiro	4.37	254	P	P	Pn	09 22 09.4	+1.7
MAT				S	S	Sn	09 22 58.9	+1.1
JHJ2	Mitsune	5.60	213	ePn	P	Pn	09 22 23.5	-1.1
120nm,0.3s								
JHJ2				eSn	S	Sn	09 23 24.4	-3.7
JHJ	Hachijo jima 2	5.60	213	Pn	P	Pn	09 22 23.7	-1.0
124nm,0.3s,baz=330,slow=18,SNR=46								
JHJ				Sn	S	Sn	09 23 21.8	-6.5
108nm,0.3s,baz=275,slow=23,SNR=10.0								
ASAJ	Asahikawa	6.25	355	Pn	P	Pn	09 22 34.3	+0.8
baz=191,slow=9.4								
ASAJ	Asahikawa	6.25	355	ePn	P	Pn	09 22 34.1	+0.6
12nm,0.3s								
YSS	Yuzh-Sakhalins	9.07	357	ePn	P	Pn	09 23 13.2	+1.0
USRK	Ussuriysk Ar.	10.68	310	Pn	P	Pn	09 23 36.0	+1.8
0.2nm,0.3s,baz=113,slow=15,SNR=3.6								
CBIJ	Chichi jima	10.81	186	Pn	P	Pn	09 23 33.6	-2.5
CBIJ				Sn	S	Sn	09 25 26.3	-10
JCJ	Chichijima	10.81	186	Pn	P	Pn	09 23 33.6	-2.5
baz=0.0,slow=20								
JCJ				Sn	S	Sn	09 25 26.3	-10
13nm,0.3s,baz=0.0,slow=20,SNR=1.9								
KSRS	Korea Array	12.28	273	Pn	P	Pn	09 23 59.1	+2.9
0.2nm,0.3s,baz=83,slow=14,SNR=11								
KSAR	Wonju Array Be	12.31	273	Pn	P	Pn	09 23 59.1	+2.4
KLR	Kul'dur	14.12	327	Pn	P	Pn	09 24 21.1	-0.2
0.1nm,0.3s,baz=127,slow=14,SNR=3.6								
SEY	Seymchan	25.66	9	P	P	P	09 26 33.5	+3.0
3.0nm,0.8s,baz=208,slow=9.8,SNR=9.2								
H11N2	WAKE ISLAND Hy	27.28	125	T	T	T	09 55 34.0	
baz=317,slow=74,SNR=10								
H11N1	WAKE ISLAND Hy	27.29	125	T	T	T	09 55 55.8	
baz=317,slow=74,SNR=5.6								
H11N3	WAKE ISLAND Hy	27.30	125	T	T	T	09 55 46.7	
baz=317,slow=74,SNR=22								
SONM	Songino Array	28.65	302	P	P	P	09 26 59.6	+1.9
1.1nm,0.7s,baz=90,slow=8.7,SNR=7.2								
ZALV	Zalesovo Beam	42.52	312	P	P	P	09 28 57.0	+0.8
1.5nm,0.7s,baz=105,slow=7.8,SNR=2.9								
MKAR	Makanchi Array	45.02	302	P	P	P	09 29 17.4	+1.0
1.0nm,0.6s,baz=91,slow=5.8,SNR=6.7								
KURK	Kurchatov	46.66	308	eP	P	P	09 29 29.7	+0.4
5.9nm,0.6s								
ILAR	Eielson Array	47.92	33	P	P	P	09 29 38.9	0.0
0.2nm,0.9s,baz=260,slow=6.7,SNR=2.7								
TKM2	Tokmak 2	50.62	298	eP	P	P	09 30 01.2	+1.2
2.9nm,0.8s								
WRAB	Tennant Creek	58.14	190	eP	P	P	09 30 54.8	+0.2
9.5nm,1.3s								
WRA	Warramunga Arr	58.15	190	P	P	P	09 30 54.7	0.0
3.3nm,0.8s,baz=8.5,slow=7.1,SNR=25								
AKTO	Aktyubinsk	59.28	312	LR	LR		09 56 56.8	
comp=Z,28nm,19.4s,slow=36								
ASAR	Alice Springs	61.88	190	P	P	P	09 31 20.6	+0.4
0.8nm,0.7s,baz=12,slow=7.0,SNR=9.2								

*IDC **10** 09:29:24.9±2.8,2°.76S×12°.20W,h0km,mb4.1/9,mb1 4.2/9, mb1mx3.8/38,mbtmp4.1/9,MS3.6/17,Ms1 3.6/17, ms1mx3.4/36,Error ellipse: s-maj=78.8km s-min=32.4km az=76.0*

*ISCJB **10** 09:29:25.8±2.1,2°.7S±0°.2×12°.0W±0°.4,h13km,mb4.0/8, MS3.6/16,Error ellipse: s-maj=58.6km s-min=20.8km az=166.5*

ISC 10 09:29:26.9±2.7,2°.9S±0°.2×12°.1W±0°.5,h13km,n37, σ3s16/13,mb4.2/8,MS3.5/16,North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
H10N2	ASCENSION HYDR	5.47	205	T	T	T	09 36 02.9	
baz=28,slow=74,SNR=812								
H10N1	ASCENSION HYDR	5.49	205	T	T	T	09 36 03.9	
baz=28,slow=74,SNR=1029								
H10N3	ASCENSION HYDR	5.49	205	T	T	T	09 36 04.3	
baz=28,slow=74,SNR=1049								
H10S1	ASCENSION HYDR	6.55	202	T	T	T	09 37 20.6	
baz=24,slow=74,SNR=468								
H10S2	ASCENSION HYDR	6.56	202	T	T	T	09 37 23.3	
baz=24,slow=74,SNR=424								
H10S3	ASCENSION HYDR	6.56	203	T	T	T	09 37 21.8	
baz=24,slow=74,SNR=455								
DBIC	Dimbokro	11.92	37	LR	LR		09 36 07.6	
comp=Z,300nm,20.4s,baz=188,slow=34								
TORD	Torodi Ar. Bea	21.00	40	P	P	P	09 34 09.0	-1.3
13nm,0.8s,baz=222,slow=10,SNR=41								
TORD				LR	LR		09 41 32.0	
comp=Z,168nm,19.2s,baz=190,slow=35								
RCBR	Riachuelo	23.89	262	LR	LR		09 41 24.3	
comp=Z,152nm,20.1s,baz=68,slow=30								
MES4	Messejana	40.65	5	eS	S		09 43 27.1	+11
PNCL	Nicolau / Gran	40.90	4	eS	S		09 43 20.1	-0.1
PBAR	Barrancos	41.09	6	eS	S		09 43 47.8	+25
PESTR	Estremoz	41.73	5	eS	S		09 43 38.8	+6.2
PMTG	Montargil	41.87	5	eS	S		09 43 28.7	-5.9
PMRV	Marv??o	42.30	5	eS	S		09 43 45.6	+4.6
ESDC	Sonseca Array	42.98	9	LR	LR		09 56 42.0	
comp=Z,31nm,18.7s,baz=10.0,slow=38								
KEST	Kesra	43.33	26	P	P		09 37 29.1	+0.2
6.2nm,1.0s,baz=187,slow=1.0,SNR=6.2								
KEST				LR	LR		09 56 41.7	
comp=Z,100nm,18.6s,baz=272,slow=38								
BOSA	Boshof	43.83	130	P	P		09 37 34.1	+0.9
2.5nm,0.9s,baz=298,slow=14,SNR=4.7								
MVO	Moncorvo	44.06	6	eS	S		09 43 53.1	-14
POLO	Lamas de Olo	44.20	5	eS	S		09 43 43.0	-26
PCAB	Cabril	44.51	4	eS	S		09 43 38.8	-35
PGAV	Gavieira, Arco	44.75	4	eS	S		09 43 39.1	-38
CPUP	Villa Florida	49.20	237	LR	LR		09 56 01.8	
comp=Z,85nm,21.2s,baz=58,slow=32								
KMBO	Kilima Mbogo	49.37	89	LR	LR		09 57 30.2	
comp=Z,146nm,18.2s,baz=274,slow=34								
SIV	San Ignacio	49.88	252	LR	LR		09 57 50.9	
comp=Z,49nm,19.7s,baz=198,slow=34								
DAVOX	Davos/Dischmat	53.10	19	LR	LR		10 02 27.4	
comp=Z,62nm,18.0s,baz=263,slow=37								
GERES	GERESS Array B	56.17	20	P	P		09 39 06.4	-0.1
1.9nm,1.0s,baz=189,slow=8.0,SNR=12								
GERES				LR	LR		10 05 09.9	
comp=Z,45nm,18.7s,baz=322,slow=38								
VRAC	Vranov	57.60	22	LR	LR		10 05 26.7	
comp=Z,59nm,18.2s,baz=196,slow=38								
BRTR	Keskin Array B	59.61	40	P	P		09 39 31.4	+0.4
2.6nm,1.0s,baz=223,slow=6.7,SNR=14								
BRTR				LR	LR		10 08 16.8	
comp=Z,33nm,18.8s,baz=268,slow=39								
AKASG	Malin Array Be	63.98	28	P	P		09 39 58.9	-1.1
0.1nm,0.3s,baz=231,slow=8.1,SNR=5.7								
PLCA	Paso Flores	64.56	226	LR	LR		10 02 01.8	
comp=Z,52nm,21.5s,baz=138,slow=30								
NOA	NORSAR Array B	66.23	12	LR	LR		10 12 31.1	
comp=Z,20nm,18.7s,baz=60,slow=39								
GNI	Garni	67.25	44	LR	LR		10 11 29.0	
comp=Z,18nm,20.4s,baz=224,slow=38								
KBZ	Khabaz	67.61	40	P	P		09 40 23.8	+0.3
2.9nm,0.9s,baz=312,slow=1.9,SNR=3.9								
KBZ				LR	LR		10 13 23.0	
comp=Z,28nm,18.5s,baz=282,slow=39								
BORG	Borgarnes	67.78	356	LR	LR		10 06 22.5	
comp=Z,41nm,18.6s,baz=255,slow=33								
FINES	FINESS Array B	70.50	18	P	P		09 40 40.5	-0.6
1.3nm,0.8s,baz=218,slow=8.8,SNR=4.7								
ARCES	ARCESS Array B	76.59	13	P	P		09 41 16.3	-0.6
2.4nm,1.0s,baz=185,slow=8.0,SNR=3.5								

NNC 10 09:34:24.1±3.5,38°.73N×70°.82E,h0km,mb3.6,mpv3.3, 3C-5D,Error ellipse: s-maj=39.0km s-min=8.3km az=153.0,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DZET	Dzherino	1.56	273	⇓P	P	Pn	09 34 51.4	-1.8
6.9nm,0.2s								
DZET				⇓S	S	Sb	09 35 14.6	+0.3
159nm,0.3s								
MNAS	Manas	3.97	18	⇓Pn	P	Pn	09 35 28.1	+1.7
2.8nm,0.4s								
MNAS				⇓Sn	S	Sn	09 36 15.7	+2.0
11nm,0.5s								
KK31	Karatay Array	4.38	357	Pn	P	Pn	09 35 30.7	-1.2
1.7nm,0.3s,baz=178,slow=12,SNR=57								
KK31				⇑Pg	P	Pb	09 35 40.7	-1.2
0.8nm,0.3s,baz=174,slow=13,SNR=7.5								
KK31				⇑Lg	L	Lg	09 36 36.1	
5.7nm,0.5s,baz=177,slow=27,SNR=5.2								
AAK	Ala-Archa	4.80	34	⇑Pn	P	Pn	09 35 40.0	+2.2
3.6nm,0.5s								
AAK				⇓Sn	S	Sn	09 36 35.5	+1.3
11nm,0.7s								

*CSEM **10** 09:38:29.4,36°.82N×23°.76W,h10km,ML3.8*

PDA 10 09:38:29.4±1.0,36°.82N×23°.76W,h10km,MD4.0,ML3.8, 2C-2D,Error ellipse: s-maj=7.9km s-min=5.0km az=49.0, Azores Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PSMN	Pico do Norte,	1.06	281	⇓iP	P	Pg	09 38 45.3	-4.5
PSMN				eS	S	Sg	09 38 58.0	-5.6
PSMN				A	A		09 39 01.3	
322nm,0.2s								
PSMN	Pico do Norte,	1.06	281	⇓iP	P	Pg	09 38 45.3	-4.5
PSMN				eS	S	Sg	09 38 58.0	-5.6
PSMA	Santa Maria	1.11	280	eP	P	Pb	09 38 46.0	-4.7
PSMA				eS	S	Sg	09 38 58.8	-6.4
PSMA				A	A		09 39 00.5	
337nm,0.1s								
BART	Pico Bartolome	1.48	311	eP	P	Pn	09 38 51.0	-5.1
BART				eS	S	Sn	09 39 07.5	-8.0
BART				A	A		09 39 09.2	
475nm,0.1s								
BART	Pico Bartolome	1.48	311	eP	P	Pn	09 38 51.0	-5.1
BART				eS	S	Sn	09 39 07.5	-8.0
PCALD	Caldeiras da R	1.69	306	eP	P	Pn	09 38 54.3	-4.7
PCALD				eS	S	Sn	09 39 13.2	-7.5
PCALD				A	A		09 39 16.3	
200nm,0.2s								
CMLA	Cha da Macela	1.69	304	eP	P	Pn	09 38 54.3	-4.8
CMLA				eS	S	Sn	09 39 13.4	-7.4
CMLA	Cha da Macela	1.69	304	eP	P	Pn	09 38 54.3	-4.8
CMLA				eS	S	Sn	09 39 13.4	-7.4
GRON	Grota Negra	1.70	304	eP	P	Pn	09 38 53.2	-6.0
GRON				eS	S	Sn	09 39 11.3	-10
GRON				A	A		09 39 15.7	
149nm,0.2s								
PDA	Ponta Delgada	1.78	302	⇑iP	P	Pn	09 38 55.5	-4.7
PDA				eS	S	Sn	09 39 15.3	-7.5
PDA				A	A		09 39 18.2	
144nm,0.2s								
PDA	Ponta Delgada	1.78	302	⇑iP	P	Pn	09 38 55.5	-4.7
PDA				eS	S	Sn	09 39 15.3	-7.5
PSET	Sete Cidades	1.86	303	eP	P	Pn	09 38 56.9	-4.4
PSET				eS	S	Sn	09 39 17.3	-7.6
PSET				A	A		09 39 21.2	
288nm,0.3s								
PSET	Sete Cidades	1.86	303	eP	P	Pn	09 38 56.9	-4.4
PSET				eS	S	Sn	09 39 17.3	-7.6
ADH	Angra Heroismo	3.31	305	eP	P	Pn	09 39 17.4	-3.8
ADH				eS	S	Sn	09 39 52.3	-8.3
ADH				A	A		09 39 56.3	
66nm,0.6s								
ADH	Angra Heroismo	3.31	305	eP	P	Pn	09 39 17.4	-3.8
ADH				eS	S	Sn	09 39 52.3	-8.3
ROSA	Rosais	4.03	300	eP	P	Pn	09 39 27.4	-3.7
ROSA				eS	S	Sn	09 40 10.1	-8.2
ROSA				A	A		09 40 12.8	
31nm,0.3s								
ROSA	Rosais	4.03	300	eP	P	Pn	09 39 27.4	-3.7
ROSA				eS	S	Sn	09 40 10.1	-8.2
PICO	Pico	4.07	296	eP	P	Pn	09 39 27.9	-3.8
PICO				eS	S	Sn	09 40 11.1	-8.3
PICO				A	A		09 40 14.5	
37nm,0.3s								
PICO	Pico	4.07	296	eP	P	Pn	09 39 27.9	-3.8
PICO				eS	S	Sn	09 40 11.1	-8.3
PCAN	Candelaria	4.09	295	eP	P	Pn	09 39 28.0	-4.1
PCAN	Candelaria	4.09	295	eP	P	Pn	09 39 28.

2.0nm,0.5s,baz=62,slow=10,SNR=8.2
WRA Warramunga Arr 35.12 255 P P 10 09 00.6 -0.6
0.5nm,0.4s,baz=81,slow=6.5,SNR=18
WRA S S 10 13 46.4 -7.1
0.8nm,0.9s,baz=86,slow=14,SNR=4.2
ASAR Alice Springs 35.96 249 P P 10 09 08.0 -0.2
1.4nm,0.7s,baz=76,slow=9.4,SNR=22
ASAR PcP PcP 10 11 17.1 -1.3
0.9nm,0.9s,baz=73,slow=2.5,SNR=5.8
ASAR S S 10 13 59.8 -6.3
1.2nm,0.8s,baz=75,slow=17,SNR=7.8
MJAR Matsushiro Arr 58.56 330 P P 10 11 56.2 -0.6
0.5nm,0.4s,baz=348,slow=13,SNR=4.1
CMAR Chiang Mai Arr 77.45 293 P P 10 13 52.5 +0.8
1.3nm,0.3s,baz=122,slow=3.8,SNR=6.4
ILAR Eielson Array 84.64 17 P P 10 14 27.6 0.0
0.2nm,0.5s,baz=235,slow=5.0,SNR=4.7
MKAR Makanchi Array 98.67 316 P P 10 15 32.9 +0.3
0.1nm,0.3s,baz=112,slow=3.9,SNR=2.8

*IDC **10** 10:07:34.1±3.2,29.°53S×176.°69W,h0km, mb3.7/3, mb1 4.0/4,mb1mx3.7/18, mbtmp3.9/4, Error ellipse: s-maj=56.7km s-min=43.1km az=49.0*
*ISCJB **10** 10:07:36.7±2.3,29.°75S±0.°09×176.°9W±0.°2, h21km, mb3.7/3, Error ellipse: s-maj=27.2km s-min=10.4km az=163.7*
ISC 10 10:07:37.9±1.9,**29.°6S**±0.°1×**176.°8W**±0.°2,**h21**km,**n6,** σ1§**31**/8,**mb3.6**/3,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.02 291**		Pn	**Pn**	**10 07 56.7**	**-0.4**
	156nm,0.3s,baz=202,slow=22,SNR=12						
RAO				Sn	**Sb**	**10 08 09.5**	**-0.4**
	830nm,0.3s,baz=25,slow=23,SNR=14						
RAO				LR	LR	10 08 11.0	
	comp=Z,193nm,18.6s,baz=191,slow=33						
URZ	**Urewera**	**9.97 209**		Pn	**Pn**	**10 09 58.6**	**-1.3**
	baz=0.0,slow=20,SNR=2.7						
URZ				Sn	**Sn**	**10 11 51.7**	**+0.5**
	0.4nm,0.3s,baz=103,slow=18,SNR=3.4						
STKA	**Stephens Creek**	**35.65 256**		P	**P**	**10 14 37.0**	**+2.4**
	3.0nm,1.1s,baz=106,slow=13,SNR=2.8						
ASAR	**Alice Springs**	**44.18 266**		P	**P**	**10 15 45.4**	**-0.2**
	0.4nm,0.5s,baz=105,slow=6.6,SNR=11						
WRA	**Warramunga Arr**	**45.10 271**		P	**P**	**10 15 52.5**	**-0.4**
	0.3nm,0.4s,baz=110,slow=7.5,SNR=6.4						
FINES	**FINESS Array B**	**144.76 341**		PKP	**PKPdf**	**10 27 11.9**	**-0.5**
	1.2nm,0.8s,baz=90,slow=5.7,SNR=4.3						

IDC 10 10:08:59.6±3.1,**29.°39S**×**176.°58W,h0km,mb3.6**/2, **mb1 4.0**/3,**mb1mx3.6**/19,**mbtmp3.8**/3,**ML3.5**/1,**Error ellipse: s-maj=56.2km s-min=48.4km az=27.0, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.18 276**		Pn	Pn	10 09 23.8	+0.4
	388nm,0.3s,baz=81,slow=19,SNR=3.8						
RAO				Sn	Sg	10 09 37.1	-0.3
	2µm,0.3s,baz=67,slow=21,SNR=11						
URZ	**Urewera**	**10.29 209**		Pn	Pn	10 11 27.5	-1.0
	0.4nm,0.3s,baz=12,slow=20,SNR=2.5						
URZ				Sn	Sn	10 13 17.2	-7.2
	0.4nm,0.3s,baz=328,slow=19,SNR=2.1						
ASAR	**Alice Springs**	**44.41 265**		P	P	10 17 11.9	-0.4
	0.4nm,0.5s,baz=106,slow=6.4,SNR=8.8						
WRA	**Warramunga Arr**	**45.31 270**		P	P	10 17 19.2	-0.3
	0.5nm,0.6s,baz=108,slow=7.8,SNR=6.1						
FINES	**FINESS Array B**	**144.60 341**		PKP	PKPdf	10 28 37.8	+0.3
	0.6nm,0.5s,baz=94,slow=5.7,SNR=5.1						

*NEIC **10** 10:27:18.3,19.°44N×65.°28W,h76km, MD3.7(RSPR), After RSPR.*
RSPR 10 10:27:18.3,19.°44N×65.°28W,h76km±8km,**MD3.7**/7, **8C-12D,Puerto Rico region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STVI	**Saint Thomas**	**1.12 164**	⇓	*e*P	Pn	10 27 37.5	-1.1
STVI	**Saint Thomas**	**1.12 164**	⇓	*e*P	Pn	10 27 37.5	-1.1
STVI				*e*S	Sn	10 27 53.5	-0.3
ABV	**Anegada**	**1.14 128**	⇑	*e*P	Pn	10 27 38.2	-0.6
ABVI	**Anegada Island**	**1.14 128**	⇑	*e*P	Pn	10 27 38.2	-0.6
CBYP	**Canovanas**	**1.28 205**	⇑	*e*P	Pn	10 27 39.1	-1.6
CBYP	**Canovanas**	**1.28 205**	⇑	*e*P	Pn	10 27 39.1	-1.6
HUMP	**Col San Antoni**	**1.40 203**	⇓	*e*P	Pn	10 27 41.1	-1.0
HUMP	**Col San Antoni**	**1.40 203**	⇓	*e*P	Pn	10 27 41.1	-1.0
HUMP				*e*S	Sn	10 27 59.6	-0.5
SJG	**San Juan**	**1.56 212**	⇑	*e*P	Pn	10 27 43.3	-0.9
SJG	**San Juan**	**1.56 212**	⇑	*e*P	Pn	10 27 43.3	-0.9
SJG				*e*S	Sn	10 28 03.4	-0.4
AOPR	**Arecibo Observ**	**1.77 232**	⇓	*e*P	Pn	10 27 46.3	-0.7
AOPR	**Arecibo Observ**	**1.77 232**	⇓	*e*P	Pn	10 27 46.3	-0.7
AOPR				*e*S	Sn	10 28 08.3	-0.6
CELP	**Cerrillos**	**1.83 223**	⇑	*e*P	Pn	10 27 47.6	-0.2
CELP				*e*S	Sn	10 28 09.7	-0.6
CELP	**Cerrillos**	**1.83 223**	⇑	*e*P	Pn	10 27 47.6	-0.2
OBIP	**Obispado Ponce**	**1.88 222**	⇓	*e*P	Pn	10 27 48.0	-0.4
OBIP	**Obispado Ponce**	**1.88 222**	⇓	*e*P	Pn	10 27 48.0	-0.4
OBIP				*e*S	Sn	10 28 10.9	-0.4
LSP	**Las Mesas**	**2.12 234**	⇓	*e*P	Pn	10 27 51.4	-0.4
LSP	**Las Mesas**	**2.12 234**	⇓	*e*P	Pn	10 27 51.4	-0.4
CRPR	**Cabo Rojo, PR**	**2.25 231**	⇓	*e*P	Pn	10 27 53.0	-0.4
CRPR	**Cabo Rojo, PR**	**2.25 231**	⇓	*e*P	Pn	10 27 53.0	-0.4
CRPR				*e*S	Sn	10 28 19.8	-0.4
SDDR	**Presa de Saban**	**5.70 266**		*e*Pn	Pn	10 28 42.2	+1.8

*ISCJB **10** 10:28:19.1±0.5,37.°11N±0.°03×140.°70E±0.°04,h10km, mb3.5/4,Error ellipse: s-maj=5.2km s-min=4.5km az=145.9*
*JMA **10** 10:28:19.0,37.°10N×140.°66E,h7km±1km, M3.2*
JMA Felt II J1.
*IDC **10** 10:28:26.2±3.3,36.°91N×140.°49E,h52km±31km, mb3.2/4, mb1 3.4/6,mb1mx3.1/51,mbtmp3.5/6,ML2.8/2,Error ellipse: s-maj=33.0km s-min=21.5km az=68.0*
ISC 10 10:28:20.3±0.8,**37.°10N**±0.°04×**140.°68E**±0.°03,**h10**km,**n22,** σ1§**46**/22,**mb3.6**/4,**3C-1D,Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**87**	⇑P	**Pg**	**10 28 21.4**	**-1.5**
ONAJ				*e*S	**Sg**	**10 28 23.2**	**-1.6**
JFK	**Kawauchi**	**0.31**	**30**	⇑P	**Pg**	**10 28 25.3**	**-1.3**
JFK				*e*S	**Sg**	**10 28 29.6**	**-1.2**
JHO	**Hitachi**	**0.49**	**190**	⇓P	**Pg**	**10 28 28.3**	**-1.6**
JFT	**Otama**	**0.50**	**327**	⇑P	**Pg**	**10 28 28.9**	**-1.2**
JFT				*e*S	**Sg**	**10 28 35.6**	**-1.1**
JSB	**Shiboa**	**0.62**	**258**	P	**Pg**	**10 28 31.5**	**-0.8**
JMM	**Marumori**	**0.77**	**7**	P	**Pg**	**10 28 33.5**	**-1.8**
JFY	**Yanaizu**	**0.83**	**292**	P	**Pg**	**10 28 35.0**	**-1.4**
JFY				*e*S	**Sg**	**10 28 45.7**	**-1.6**
JYT	**Yasato**	**0.95**	**204**	P	**Pg**	**10 28 36.5**	**-2.1**
MJAR	**Matsushiro Arr**	**2.06**	**255**	P	**Pn**	**10 28 54.7**	**-0.3**
	9.8nm,0.3s,baz=70,slow=15,SNR=90						
MJAR				S	**Sb**	**10 29 22.6**	**-0.7**
	11nm,0.3s,baz=69,slow=24,SNR=8.5						
MAT	**Matsushiro**	**2.06**	**255**	P	**Pn**	**10 28 55.0**	**0.0**
MAT				S	**Sb**	**10 29 23.4**	**0.0**
JHJ	**Hachijo jima 2**	**4.04**	**191**	P	**Pn**	**10 29 23.7**	**+1.6**
	2.5nm,0.3s,baz=82,slow=19,SNR=3.9						
KSRS	**Korea Array**	**10.17**	**276**	P	**Pn**	**10 30 48.1**	**+1.8**
	0.1nm,0.3s,baz=83,slow=12,SNR=2.6						
H11N2	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	11 04 01.9	
	baz=312,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	11 04 08.5	
	baz=312,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	11 04 05.3	
	baz=312,slow=75,SNR=7.3						
H11S1	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	11 04 58.5	
	baz=314,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	11 04 58.1	
	baz=314,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**29.41**	**122**	T	T	11 05 00.2	
	baz=314,slow=76,SNR=6.3						
MKAR	**Makanchi Array**	**43.59**	**302**	P	**P**	**10 36 25.7**	**+1.2**
	0.1nm,0.3s,baz=91,slow=10,SNR=2.3						
KURBB	**Kurchatov Arra**	**45.50**	**308**	P	**P**	**10 36 39.8**	**+0.2**
	1.1nm,0.8s,baz=81,slow=8.2,SNR=3.3						
ILAR	**Eielson Array**	**49.76**	**32**	P	**P**	**10 37 14.5**	**+1.9**
	0.2nm,0.5s,baz=271,slow=6.0,SNR=3.7						
WRA	**Warramunga Arr**	**57.05**	**187**	P	**P**	**10 38 04.8**	**-1.7**
	0.4nm,0.4s,baz=3.3,slow=7.2,SNR=11						

MEX 10 10:30:02.7±0.4,**14.°78N**×**92.°34W,h106**km±16km,**MD3.7, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGIG		**2.12**	**339**	*i* P	Pn	10 30 35.1	-2.0
TGIG				*i* S	Sn	10 31 03.0	-0.4

*ISCJB **10** 10:32:54.6±0.6,7.°40N±0.°08×127.°03E±0.°05,h52km, mb3.8/9,Error ellipse: s-maj=11.0km s-min=7.3km az=178.4*
*MAN **10** 10:32:54,7.°29N×126.°91E,h18km,mb4.8,ML3.7,MS3.7*
*IDC **10** 10:32:58.9±2.2,7.°42N×126.°86E,h74km±20km,mb3.5/9, mb1 3.7/9,mb1mx3.4/54,mbtmp3.8/9, Error ellipse: s-maj=25.1km s-min=14.3km az=84.0*
ISC 10 10:32:56.4±0.7,**7.°39N**±0.°09×**126.°97E**±0.°08,**h52**km,**n14,** σ1§**11**/20,**mb3.9**/9,**2C,Mindanao**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DAV	**Davao City (W)**	**1.42**	**257**	P	**Pn**	**10 33 20.7**	**+1.0**
	142nm,0.3s,baz=54,slow=4.0,SNR=11						
DAV				S	**Sn**	**10 33 38.9**	**+1.6**
	145nm,0.3s,baz=256,slow=20,SNR=8.3						
KCP	**Kidapawan**	**1.90**	**259**	⇑ *i*P	**Pn**	**10 33 25.5**	**-1.0**
KCP				*i* S	**Sn**	**10 33 48.2**	**-1.1**
CGP	**Cagayan de Oro**	**2.49**	**295**	⇑ *e*P	**Pn**	**10 33 34.3**	**-0.1**
CGP				*e*S	**Sn**	**10 34 05.2**	**+1.5**
FITZ	**Fitzroy Crossi**	**25.36**	**183**	P	**P**	**10 38 18.1**	**-0.7**
	2.2nm,0.9s,baz=13,slow=7.7,SNR=7.1						
WRA	**Warramunga Arr**	**28.11**	**165**	P	**P**	**10 38 45.0**	**+1.5**
	0.3nm,0.5s,baz=348,slow=10,SNR=5.9						
WRA				PcP	**PcP**	**10 41 57.4**	**+0.4**
	0.3nm,0.5s,baz=341,slow=2.7,SNR=5.7						
ASAR	**Alice Springs**	**31.60**	**168**	P	**P**	**10 39 14.7**	**+0.2**
	0.2nm,0.3s,baz=336,slow=7.5,SNR=17						
ASAR				PcP	**PcP**	**10 42 05.5**	**-0.4**
	0.5nm,0.4s,baz=349,slow=2.7,SNR=11						
ASAR				ScP	**ScP**	**10 45 43.4**	**-1.7**
	0.3nm,0.8s,baz=349,slow=3.8,SNR=3.6						
USRK	**Ussuriysk Ar.**	**36.93**	**6**	P	**P**	**10 40 00.1**	**-0.1**
	2.4nm,0.7s,baz=165,slow=6.0,SNR=5.8						
PETK	**Petropavlovsk-**	**51.98**	**23**	P	**P**	**10 42 01.4**	**+1.2**
	1.4nm,0.6s,baz=201,slow=7.8,SNR=4.1						
MKAR	**Makanchi Array**	**54.73**	**324**	P	**P**	**10 42 19.6**	**-1.0**
	0.5nm,0.4s,baz=117,slow=7.1,SNR=9.7						
KURBB	**Kurchatov Arra**	**58.83**	**326**	P	**P**	**10 42 47.9**	**-1.6**
	0.5nm,0.4s,baz=126,slow=6.2,SNR=5.7						
ILAR	**Eielson Array**	**81.72**	**26**	P	**P**	**10 45 09.7**	**+0.5**
	0.5nm,0.7s,baz=245,slow=4.6,SNR=11						
YKA	**Yellowknife Ar**	**96.09**	**24**	P	**P**	**10 46 17.5**	**-0.7**
	0.3nm,0.7s,baz=307,slow=5.0,SNR=4.2						
TXAR	**Lajitas Array**	**119.14**	**51**	PKP	**PKPdf**	**10 51 41.4**	**+1.0**
	0.2nm,0.6s,baz=294,slow=0.9,SNR=2.9						
TORD	**Torodi Ar. Bea**	**121.94**	**290**	PKP	**PKPdf**	**10 51 45.2**	**-0.8**
	0.2nm,0.4s,baz=52,slow=2.6,SNR=3.4						

*CSEM **10** 10:37:37.7,38.°56N×29.°36W,h6km,ML2.0*
PDA 10 10:37:37.7±0.5,**38.°56N**×**29.°36W,h6**km±6km,**MD3.5, ML2.0,2D,Error ellipse: s-maj=5.8km s-min=5.6km az=12.0,Azores Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CALA	**Caldeira**	**0.52**	**87**	*e*S	Sg	10 37 53.3	-1.2
CALA	**Caldeira**	**0.52**	**87**	*e*S	Sg	10 37 53.3	-1.2
PCED	**Cedros**	**0.52**	**82**	⇓ *i*P	Pg	10 37 46.6	-1.2
PCED				*e*S	Sg	10 37 53.3	-1.3
PCED				A	A	10 37 54.1	
	35nm,0.1s						
PCED	**Cedros**	**0.52**	**82**	⇓ *i*P	Pg	10 37 46.6	-1.2
PCED				*e*S	Sg	10 37 53.3	-1.3
HOR	**Horta**	**0.58**	**93**	*e*P	Pg	10 37 47.5	-1.3
HOR				*e*S	Sg	10 37 54.6	-1.7
PCAN	**Candelaria**	**0.69**	**98**	*e*P	Pg	10 37 49.1	-2.0
PCAN				*e*S	Sg	10 37 57.6	-2.5
PCAN				A	A	10 37 59.0	
	25nm,0.1s						
PCAN	**Candelaria**	**0.69**	**98**	*e*P	Pg	10 37 49.1	-2.0
PCAN				*e*S	Sg	10 37 57.6	-2.5
PICO	**Pico**	**0.74**	**94**	*e*P	Pg	10 37 49.9	-2.0
PICO				*e*S	Sg	10 37 58.9	-2.6
PICO				A	A	10 38 01.1	
	62nm,0.2s						
PICO	**Pico**	**0.74**	**94**	*e*P	Pg	10 37 49.9	-2.0
PICO				*e*S	Sg	10 37 58.9	-2.6
ROSA	**Rosais**	**0.89**	**79**	*e*P	Pg	10 37 51.6	-3.2
ROSA				*e*S	Sg	10 38 02.5	-3.9
ROSA				A	A	10 38 04.6	
	40nm,0.2s						
ROSA	**Rosais**	**0.89**	**79**	*e*P	Pg	10 37 51.6	-3.2
ROSA				*e*S	Sg	10 38 02.5	-3.9
PMAN	**Manadas**	**1.00**	**85**	*e*S	Sg	10 38 05.2	-4.7
PMAN				A	A	10 38 06.1	
	12nm,0.1s						
PMAN	**Manadas**	**1.00**	**85**	*e*S	Sg	10 38 05.2	-4.7

*NIED **10** 10:37:00,37.°10N×141.°10E,h65km,Mw3.7 Best double couple: M0 4.52000×10^14 NP1:φ=210.00000°,δ=25.00000°, λ=115.00000°. NP2:φ=3.00000°,δ=67.00000°,λ=79.00000°.*
*ISCJB **10** 10:37:41.0±0.7,37.°09N±0.°04×141.°24E±0.°08,h61km±5km, mb3.6/5,Error ellipse: s-maj=10.6km s-min=5.6km az=11.9*
*IDC **10** 10:37:41.6±2.1,37.°11N×141.°32E,h51km±19km,mb3.3/5, mb1 3.5/8,mb1mx3.3/50,mbtmp3.7/8,ML3.6/3,Error ellipse: s-maj=17.4km s-min=11.6km az=94.0*
*JMA **10** 10:37:43.4±0.1,37.°12N×141.°07E,h55km±1km,M3.7*
JMA Felt II J1.
ISC 10 10:37:42.0±1.1,**37.°09N**±0.°04×**141.°24E**±0.°08,**h52**km±8km, **n24,**σ0§**78**/29,**mb3.5**/5,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.35**	**272**	P	**Pn**	**10 37 52.3**	**+0.4**
ONAJ				S	**Sn**	**10 37 58.8**	**-0.2**
JFK	**Kawauchi**	**0.40**	**314**	P	**Pn**	**10 37 52.7**	**+0.4**
JFK				*i* S	**Sn**	**10 37 59.4**	**-0.4**
JHO	**Hitachi**	**0.72**	**228**	P	**Pn**	**10 37 56.3**	**+0.2**
JHO				S	**Sn**	**10 38 05.6**	**-0.8**
JFT	**Otama**	**0.83**	**301**	P	**Pn**	**10 37 58.1**	**+0.5**
JFT				S	**Sn**	**10 38 08.4**	**-0.6**
JMM	**Marumori**	**0.85**	**336**	P	**Pn**	**10 37 58.3**	**+0.5**
JMM				S	**Sn**	**10 38 09.1**	**-0.2**
JFY	**Yanaizu**	**1.26**	**285**	P	**Pn**	**10 38 03.1**	**-0.2**
JOU	**Okura**	**1.35**	**341**	P	**Pn**	**10 38 05.4**	**+0.9**
JOU				S	**Sn**	**10 38 21.7**	**+0.3**
JIO	**Ouri**	**1.36**	**4**	P	**Pn**	**10 38 05.5**	**+0.8**
JYS	**Shirataka**	**1.46**	**321**	P	**Pn**	**10 38 06.5**	**+0.5**
JYS				S	**Sn**	**10 38 24.3**	**+0.3**
MJAR	**Matsushiro Arr**	**2.49**	**258**	P	**Pn**	**10 38 20.0**	**-0.1**
	8.7nm,0.3s,baz=84,slow=16,SNR=28						
MJAR				S	**Sn**	**10 38 51.0**	**+1.8**
	5.0nm,0.3s,baz=46,slow=10,SNR=5.3						
MAT	**Matsushiro**	**2.49**	**258**	P	**Pn**	**10 38 21.0**	**+0.9**
MAT				S	**Sn**	**10 38 48.7**	**-0.6**
JHJ	**Hachijo jima 2**	**4.14**	**197**	P	**Pn**	**10 38 44.3**	**+1.6**
	14nm,0.3s,baz=59,slow=22,SNR=6.3						
JHJ				S	**Sn**	**10 39 29.4**	**-0.4**
	23nm,0.3s,baz=110,slow=23,SNR=6.5						
ASAJ	**Asahikawa**	**7.09**	**8**	P	**Pn**	**10 39 23.4**	**+0.3**
	1.0nm,0.3s,baz=177,slow=11,SNR=5.6						
ASAJ				S	**Sn**	**10 40 41.2**	**-1.1**
	0.4nm,0.3s,baz=60,slow=20,SNR=3.2						
SONM	**Songino Array**	**27.64**	**304**	P	**P**	**10 43 23.2**	**-1.5**
	0.5nm,0.4s,baz=93,slow=8.3,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**28.30**	**121**	T	T	11 13 30.0	
	baz=313,slow=75,SNR=5.8						
H11N1	**WAKE ISLAND Hy**	**28.31**	**121**	T	T	11 13 30.4	
	baz=313,slow=75,SNR=13						
H11N3	**WAKE ISLAND Hy**	**28.32**	**121**	T	T	11 13 31.2	
	baz=313,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**29.01**	**123**	T	T	11 14 28.3	
	baz=315,slow=75,SNR=23						
H11S3	**WAKE ISLAND Hy**	**29.01**	**123**	T	T	11 14 27.8	
	baz=315,slow=75,SNR=18						
H11S2	**WAKE ISLAND Hy**	**29.03**	**123**	T	T	11 14 30.5	
	baz=315,slow=75,SNR=8.9						
MKAR	**Makanchi Array**	**43.97**	**302**	P	**P**	**10 45 43.8**	**-0.1**
	0.4nm,0.4s,baz=80,slow=11,SNR=2.8						
KURBB	**Kurchatov Arra**	**45.85**	**308**	P	**P**	**10 45 58.6**	**-0.1**
	0.6nm,0.4s,baz=80,slow=8.2,SNR=4.5						
WRA	**Warramunga Arr**	**57.10**	**188**	P	**P**	**10 47 23.1**	**+0.1**
	0.4nm,0.6s,baz=4.4,slow=7.4,SNR=6.2						
ASAR	**Alice Springs**	**60.83**	**188**	P	**P**	**10 47 49.7**	**+0.9**
	0.3nm,0.9s,baz=13,slow=12,SNR=4.3						

IDC 10 10:39:49.6±2.8,**54.°16N**×**87.°21E,h0**km,**mb1 3.1**/2, **mb1mx3.0**/44,**mbtmp3.1**/2,**ML2.8**/2,**3C,Error ellipse: s-maj=24.1km s-min=18.7km az=49.0,Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.43**	**262**	*i*		10 49 00.0	
	baz=80,slow=316,SNR=9.0						
ZALV	**Zalesovo Beam**	**1.43**	**262**	Pg	Pn	10 40 15.0	-1.7
	5.6nm,0.3s,baz=82,slow=16,SNR=41						
ZALV				Lg	Lg	10 40 35.2	
	4.3nm,0.3s,baz=80,slow=24,SNR=13						
KURBB	**Kurchatov Arra**	**6.39**	**240**	Pn	Pn	10 41 25.8	+0.9
	0.2nm,0.3s,baz=55,slow=14,SNR=17						
KURBB				Sn	Sn	10 42 36.5	-1.8
	0.1nm,0.3s,baz=61,slow=21,SNR=2.8						
KURBB				Lg	Lg	10 43 14.7	
	0.1nm,0.3s,baz=58,slow=30,SNR=6.1						
KURBB	**Kurchatov Arra**	**6.39**	**240**	⇑Pn	Pn	10 41 25.1	+0.3
	2.5nm,0.6s,baz=60,slow=14						
KURBB				⇑Sn	Sn	10 42 36.5	-1.9
	6.6nm,0.6s						
KURBB				⇑Lg	Lg	10 43 10.4	
	12nm,0.8s,baz=60,slow=28						
MKAR	**Makanchi Array**	**8.02**	**205**	Pn	Pn	10 41 48.4	+1.2
	0.2nm,0.3s,baz=17,slow=14,SNR=4.6						

*ISK **10** 10:43:23.4,39.°10N×29.°02E,h5km,MD2.9*
*DDA **10** 10:43:23.7,39.°10N×29.°01E,h7km,Md2.9*
*CSEM **10** 10:43:24.5±0.1,39.°10N×29.°01E,h2km,MD2.9,Error ellipse: s-maj=2.8km s-min=2.4km az=167.0*
ISC 10 10:43:24.3±1.0,**39.°10N**±0.°02×**29.°03E**±0.°02,**h9**km±9km, **n61,**σ0§**63**/74,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.25**	**257**	*i* P	**Pg**	**10 43 29.4**	**+0.2**
DEMI				*i* S	**Sg**	**10 43 33.0**	**+0.4**
DEMI	**Demirci**	**0.25**	**257**	P	**Pg**	**10 43 29.4**	**+0.2**
DEMI				S	**Sg**	**10 43 33.0**	**+0.4**
GEDZ	**Gediz**	**0.30**	**100**	*e*PG	**Pb**	**10 43 30.9**	**-1.0**
GEDZ				*e*SG	**Sb**	**10 43 36.5**	**-0.6**
GEDZ	**Gediz**	**0.30**	**100**	*e*Pg	**Pb**	**10 43 30.9**	**-1.0**
GEDZ				*e*Sg	**Sb**	**10 43 36.5**	**-0.6**
GDZ	**Gediz**	**0.35**	**91**	*i* P	**Pg**	**10 43 31.2**	**-0.1**
GDZ				*i* S	**Sg**	**10 43 36.6**	**+0.6**
GDZ	**Gediz**	**0.35**	**91**	P	**Pg**	**10 43 31.2**	**-0.1**
GDZ				S	**Sg**	**10 43 36.6**	**+0.6**
TVSB	**Tavsanli**	**0.49**	**44**	*e*PG	**Pg**	**10 43 33.5**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**44**	*e*Pg	**Pg**	**10 43 33.5**	**-0.3**
MANT	**Manisa**	**0.71**	**211**	*i* P	**Pg**	**10 43 37.0**	**-0.9**
MANT				*i* S	**Sg**	**10 43 46.3**	**-0.9**
MANT	**Manisa**	**0.71**	**211**	P	**Pg**	**10 43 37.0**	**-0.9**
MANT				S	**Sg**	**10 43 46.3**	**-0.9**
KHL	**Karahalli**	**0.87**	**153**	*e*PG	**Pb**	**10 43 41.7**	**+0.2**
KHL				*e*SG	**Sb**	**10 43 53.7**	**+0.4**
KHL	**Karahalli**	**0.87**	**153**	*e*Pg	**Pb**	**10 43 41.7**	**+0.2**
KHL				*e*Sg	**Sb**	**10 43 53.7**	**+0.4**
AKS	**Akhisar**	**0.97**	**257**	*e*PG	**Pb**	**10 43 43.3**	**0.0**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg	**Pb**	**10 43 43.3**	**0.0**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pb**	**10 43 44.4**	**-0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pb**	**10 43 44.4**	**-0.1**
IGD	**Bursa**	**1.17**	**7**	*i* P	**Pg**	**10 43 45.1**	**-1.7**
IGD				*i* S	**Sb**	**10 44 02.1**	**+0.1**
BALY	**Balya**	**1.26**	**301**	*i* P	**Pn**	**10 43 48.6**	**+0.4**
BALY	**Balya**	**1.26**	**301**	P	**Pn**	**10 43 48.6**	**+0.4**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pb**	**10 43 48.7**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pb**	**10 43 48.7**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**10 43 48.1**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**10 43 48.1**	**-0.6**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pn**	**10 43 48.9**	**+0.6**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pn**	**10 43 48.9**	**+0.6**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pb**	**10 43 49.4**

1.3nm,0.3s,baz=214,slow=4.7,SNR=22
ARCES ARCESS Array B 124.38 345 PKP **PKPdf 11 03 16.2 +2.1**
0.6nm,0.3s,baz=69,slow=1.7,SNR=8.5
CONA Conrad Observa 143.42 329 *i* PKiKP **PKiKP 11 03 55.0 +1.2**
1.4nm,0.9s
SOKA Soboth 144.69 328 *i* PKPbc **PKPab 11 03 48.9 -3.0**
0.9nm,0.6s
OBKA Obir 145.05 328 *i* PKiKP **PKPdf 11 03 55.6 +2.3**
1.6nm,0.6s
KBA Koelnbreinsper 145.23 330 *i* PKPab **PKPab 11 03 55.1 +1.0**
1.6nm,0.6s
MYKA Terra Mystica 145.41 329 *i* PKPab **PKPab 11 03 55.3 +0.7**
1.4nm,0.4s
WATA Walderalm 145.85 332 *i* PKPab **PKPab 11 03 56.9 +0.6**
1.6nm,0.5s
ABTA Abfaltersbach 145.86 331 *i* PKPab **PKPab 11 03 56.4 +0.1**
3.5nm,0.7s
WTTA Wattenberg 145.88 332 *i* PKPab **PKPab 11 03 57.1 +0.6**
2.4nm,0.5s
MOTA Moosalm 146.05 333 *i* PKPab **PKPab 11 03 57.7 +0.6**
3.9nm,0.8s
RETA Reutte 146.09 333 *i* PKPbc **PKPdf 11 03 55.1 +0.2**
0.9nm,0.5s
FETA Feichten 146.46 333 *i* PKPbc **PKPdf 11 03 56.5 +0.8**
2.1nm,0.4s
DAVA Damuels 146.62 334 *i* PKPdf **PKPdf 11 03 54.1 -1.8**
3.7nm,1.1s

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*FUNV **10** 10:44:52.5, 10˚.64N×72˚.49W, h23km, MW2.5*
*ISCJB **10** 10:44:53.5±0.8, 10˚.57N±0˚.04×72˚.25W±0˚.06, h14km±6km, Error ellipse: s-maj=11.2km s-min=5.3km az=28.3*
*RSNC **10** 10:44:54.9±0.5, 10˚.82N×72˚.69W, h77km±28km, ML2.6*

ISC 10 10:44:53.4±1.1, 10˚.62N±0˚.05×72˚.28W±0˚.07, h14km±8km, n10, σ1s05/17, 1D, Venezuela

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	**0.17**	**228**	⇓*i*	*i*	*e*P	**Pg**	**10 44 57.0**	**-0.5**
VIRV						*e*S	**Sg**	**10 45 01.1**	**+0.8**
URIC	**Uribia, Colomb**	**1.11**	**14**	*e*P		*e*P	**Pb**	**10 45 14.1**	**-0.3**
URIC						*i*		10 45 15.2	
	comp=Z,32nm,0.3s								
URIC						*e*S	**Sn**	**10 45 30.3**	**+0.6**
DABV	**Dabajuro**	**1.64**	**79**	*e*P		*e*P	**Pn**	**10 45 21.6**	**-0.2**
VIGV	**El Vigia**	**1.98**	**153**	*e*P		*e*P	**Pn**	**10 45 26.3**	**-0.2**
VIGV						*e*S	**Sn**	**10 45 50.1**	**-1.1**
CURV	**Curarigua**	**2.36**	**105**	*e*P		*e*P	**Pn**	**10 45 32.3**	**+0.6**
CURV						*e*S	**Sn**	**10 46 01.3**	**+0.8**
SIQV	**Siquisique**	**2.43**	**89**	*e*P		*e*P	**Pn**	**10 45 33.6**	**+0.9**
OCAC	**Ocana**	**2.58**	**204**	*e*P		*e*P	**Pn**	**10 45 35.0**	**+0.2**
OCAC						*e*S	**Sn**	**10 46 06.1**	**0.0**
OCAC						*i*		10 46 14.1	
	comp=Z,52nm,0.5s								
MONV	**Montecano**	**2.62**	**59**	*e*P		*e*P	**Pn**	**10 45 34.7**	**-0.6**
CBRI	**Barrientos, No**	**2.93**	**190**	*e*P		*e*P	**Pn**	**10 45 41.4**	**+1.7**
CBRI						*e*S	**Sn**	**10 46 16.4**	**+1.7**
GRMC	**Gramalote, San**	**2.93**	**190**	*e*P		*e*P	**Pn**	**10 45 39.0**	**-0.7**
GRMC						*e*S	**Sn**	**10 46 12.9**	**-1.8**
GRMC						*i*		10 46 19.0	
	comp=Z,21nm,0.2s								

TRN 10 10:48:21.2, 16˚.79N×61˚.21W, h27km, MD3.0, 2C, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SEG	**Port Louis**	**0.47**	**217**	*e*P		*e*P	Pn	10 48 33.3	+1.0
BPA	**Boggy Peak**	**0.67**	**293**	*e*P		*e*P	Pn	10 48 37.4	+2.4
BPA						*e*S	Sn	10 48 47.6	+2.9
LZG	**Guadaloupe-1**	**0.84**	**220**	⇑*i*	*i*	*e*P	Pn	10 48 38.4	+1.1
DOG	**Dongo Capester**	**0.85**	**208**	*e*P		*e*P	Pn	10 48 38.5	+1.1
FNG	**Fond-Bernard**	**0.85**	**213**	⇑*i*	*i*	*e*P	Pn	10 48 38.5	+0.9
MGG	**Marie-Galante**	**0.87**	**187**	*e*P		*e*P	Pb	10 48 39.2	+1.5
MGG						*e*S	Sn	10 48 52.9	+3.5
PHG	**Guadaloupe-2**	**0.87**	**209**	*e*P		*e*P	Pb	10 48 38.9	+1.0
TBG	**Guadaloupe-3**	**1.02**	**204**	*e*P		*e*P	Pb	10 48 40.9	+0.6
ANWB	**Willy Bob**	**1.04**	**328**	*e*P		*e*P	Pb	10 48 41.2	+0.6
DWS	**Wesley**	**1.21**	**185**	*e*P		*e*P	Pb	10 48 44.1	+0.6
DWS						*e*S	Sb	10 49 00.2	+1.4
BBL	**Barber's Block**	**1.28**	**191**	*e*P		*e*P	Pb	10 48 44.9	+0.3
BBL						*e*S	Sb	10 49 02.7	+2.0

MEX 10 10:56:41.1±0.3, 15˚.82N×96˚.48W, h18km±71km, MD4.0, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.36**	**98**	*i*	*i*	P	Pg	10 56 47.4	-1.4
HUIG						*e*S	Sg	10 56 52.8	-1.2
VHO	**Vista Hermosa**	**1.27**	**349**	*e*P		*e*P	Pn	10 57 00.6	-3.5
VHO						*e*S	Sb	10 57 15.9	-4.7
PNIG	**Pinotepa**	**1.68**	**290**	*e*P		*e*P	Pn	10 57 06.6	-3.0
PNIG						*e*S	Sn	10 57 26.3	-4.4
TPIG	**Tehuac#an**	**2.72**	**342**	*i*	*i*	P	Pn	10 57 21.6	-2.4
TPIG						*i* S	Sn	10 57 53.1	-3.4

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*NIED **10** 10:57:00, 38˚.00N×143˚.30E, h14km, Mw3.7 Best double couple: M◎3.88000×10^14 NP1:φ⊕=27.00000°, δ76.00000°, λ=-8.00000°. NP2:φ⊕=119.00000°, δ82.00000°, λ=-166.00000°.*
*JMA **10** 10:57:33.5±0.2, 38˚.04N×143˚.27E, h39km, M3.9*
*IDC **10** 10:57:34.1±1.4, 37˚.48N×143˚.09E, h0km, mb3.3/3, mb1 3.5/4, mb1mx3.3/31, mbtmp3.3/4, ML3.3/1, MS2.5/2, Ms1 2.5/2, ms1mx2.3/15, Error ellipse: s-maj=36.4km s-min=28.9km az=123.0*

ISC 10 10:57:35.7±2.4, 38˚.04N±0˚.10×143˚.2E±0˚.3, h39km±15km, n18, σ0s78/23, mb3.3/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.54**	**286**	P		P	**Pn**	**10 58 00.0**	**-0.6**
JIO						*e*S	**Sn**	**10 58 18.9**	**-0.4**
OFUJ	**Ofunato**	**1.61**	**311**	P		P	**Pn**	**10 58 00.7**	**-0.8**
OFUJ						*e*S	**Sn**	**10 58 20.4**	**-0.6**
JMK	**Ichinoseki**	**1.82**	**301**	P		P	**Pn**	**10 58 04.2**	**-0.3**
JMM	**Marumori**	**1.94**	**266**	P		P	**Pn**	**10 58 05.3**	**-0.7**
JMM						*e*S	**Sn**	**10 58 28.8**	**-0.3**
JFK	**Kawauchi**	**1.99**	**251**	P		P	**Pn**	**10 58 05.4**	**-1.4**
JOU	**Okura**	**2.05**	**280**	P		P	**Pn**	**10 58 07.6**	**0.0**
JOU						*e*S	**Sn**	**10 58 32.0**	**0.0**
JOM	**Ohasama**	**2.08**	**314**	P		P	**Pn**	**10 58 07.9**	**-0.2**
JOM						*e*S	**Sn**	**10 58 33.0**	**+0.2**
JFT	**Otama**	**2.35**	**258**	P		P	**Pn**	**10 58 11.6**	**-0.2**
JFT						*e*S	**Sn**	**10 58 39.8**	**+0.4**
JYK	**Kaneyama**	**2.42**	**292**	P		P	**Pn**	**10 58 13.1**	**+0.4**
JRG	**Rokugo**	**2.44**	**304**	P		P	**Pn**	**10 58 13.5**	**+0.5**
JANG	**Nango**	**2.69**	**331**	P		P	**Pn**	**10 58 17.0**	**+0.6**
JAG	**Ashikaga**	**3.42**	**243**	P		P	**Pn**	**10 58 25.8**	**-0.7**
JAG						*e*S	**Sn**	**10 59 06.0**	**+0.3**
MJAR	**Matsushiro Arr**	**4.28**	**251**	Pn		P	**Pn**	**10 58 38.6**	**+0.4**
	1.9nm,0.3s,baz=74,slow=13,SNR=32								
MJAR				LR		LR		11 00 33.5	
	comp=Z,50nm,18.5s,baz=110,slow=45								
MAT	**Matsushiro**	**4.28**	**251**	P		P	**Pn**	**10 58 39.5**	**+1.2**
MAT				S			**Sn**	**10 59 28.9**	**+2.0**
KSRS	**Korea Array**	**12.14**	**272**	LR		LR		11 05 31.2	
	comp=Z,18nm,18.1s,baz=64,slow=40								
MKAR	**Makanchi Array**	**44.82**	**302**	P		P		11 05 50.4	+4.6
	0.3nm,0.7s,baz=93,slow=7.2,SNR=2.8								
ILAR	**Eielson Array**	**47.87**	**33**	P		P		11 06 17.9	+8.5
	0.2nm,0.8s,baz=259,slow=7.2,SNR=3.2								
WRA	**Warramunga Arr**	**58.28**	**190**	P			**P**	**11 07 26.3**	**-0.2**
	0.4nm,0.8s,baz=7.7,slow=7.3,SNR=2.7								

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*NSSC **10** 10:59:46.9±1.6, 36˚.40N×37˚.64E, h11km±15km, ML2.0*
*ISCJB **10** 10:59:48.1±0.6, 36˚.35N±0˚.03×37˚.31E±0˚.05, h0km, Error ellipse: s-maj=5.7km s-min=4.2km az=168.3*
*DDA **10** 10:59:49.3, 36˚.31N×37˚.04E, h7km, Md2.7, Suspected Mining explosion.*

ISC 10 10:59:47.9±0.9, 36˚.36N±0˚.05×37˚.29E±0˚.05, h0km, n8, σ0s51/14, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAMA	**Osmaniye**	**0.96**	**329**	*i*	P		**Pb**	**11 00 07.3**	**-0.2**
KAMA					*i*	S	**Sb**	**11 00 21.3**	**+0.4**
YAYL	**Yayladag**	**1.01**	**251**	*i*	P		**Pg**	**11 00 06.3**	**-1.0**
YAYL					*i*	S	**Sb**	**11 00 22.6**	**+0.3**
HCB	**Kahramanmara¯**	**1.03**	**343**	*i*	P		**Pb**	**11 00 08.2**	**-0.4**
HCB					*i*	S	**Sb**	**11 00 22.9**	**+0.2**
ANDN	**Andirin**	**1.43**	**328**	*i*	P		**Pb**	**11 00 16.1**	**+0.6**
ANDN					*i*	S	**Sn**	**11 00 35.2**	**+0.4**
KSRV	**Kasrt alli**	**1.47**	**109**	*e*P			**Pn**	**11 00 15.7**	**0.0**
KSRV				*e*S			**Sg**	**11 00 35.1**	**0.0**
KSRV				AML		AML		11 00 37.8	
	comp=Z,16nm,0.4s								
BIDA	**Albida**	**1.56**	**211**	*e*P			**Pn**	**11 00 17.3**	**+0.3**
BIDA				*e*S			**Sn**	**11 00 38.0**	**0.0**
BIDA				AML		AML		11 00 39.7	
	comp=E,64nm,0.4s								
BIDA				AML		AML		11 00 42.2	
	comp=N,33nm,0.6s								
HAWK	**Haweek**	**1.98**	**202**	*e*P			**Pn**	**11 00 22.8**	**+0.2**
HAWK				*e*S			**Sn**	**11 00 49.0**	**+0.9**
SFNV	**Sufian**	**2.27**	**88**	*e*P			Pn	11 00 19.9	-6.9
SFNV				*e*S			Sn	11 00 45.5	-10
SFNV				AML		AML		11 01 04.2	
	comp=Z,15nm,0.4s								

TRN 10 11:19:29.8, 15˚.37N×60˚.60W, h32km, MD3.6, 2D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DLPL	**La Plaine**	**0.62**	**267**	*e*P		*e*P	Pn	11 19 43.9	+1.4
DLPL						*e*S	Sn	11 19 54.1	+2.8
DSTT	**Stowe**	**0.69**	**260**	*e*P		*e*P	Pb	11 19 45.6	+2.2
DWS	**Wesley**	**0.71**	**286**	*e*P		*e*P	Pb	11 19 45.0	+1.1
DWS	**Wesley**	**0.71**	**286**	*e*P		*e*P	Pb	11 19 45.0	+1.1
DWS						*e*S	Sn	11 19 55.6	+2.1
DPMT	**Pointe Michel**	**0.76**	**262**	*e*P		*e*P	Pb	11 19 46.5	+1.9
DPMT						*e*S	Sb	11 19 57.1	+2.4
SVN	**Savane Anatole**	**0.76**	**227**	*e*P		*e*P	Pb	11 19 45.9	+1.3
BAMF	**Morne Balai**	**0.76**	**224**	*e*P		*e*P	Pb	11 19 45.7	+0.9
DSHT	**Scott's Head**	**0.76**	**259**	*e*P		*e*P	Pb	11 19 46.5	+1.9
DSHT						*e*S	Sb	11 19 58.1	+3.3
MDN	**Morne-Daniel**	**0.77**	**267**	*e*P		*e*P	Pb	11 19 46.9	+2.1
MDN						*e*S	Sb	11 19 58.0	+3.1
CXM	**Morne La Croix**	**0.78**	**225**	*e*P		*e*P	Pb	11 19 46.1	+1.0
CXM						*e*S	Sb	11 19 58.0	+2.6
GBMF	**Grand Be**	**0.79**	**224**	*e*P		*e*P	Pb	11 19 45.9	+0.7
PCM	**Pelee Case Pet**	**0.81**	**227**	*e*P		*e*P	Pb	11 19 46.1	+0.7
PML	**Morne Lenard**	**0.81**	**224**	*e*P		*e*P	Pb	11 19 46.1	+0.6
FDF	**Fort de France**	**0.82**	**220**	*e*S		*e*S	Sb	11 19 58.3	+1.7
BBL	**Barber's Block**	**0.85**	**281**	*e*P		*e*P	Pb	11 19 46.8	+0.6
BBL						*e*S	Sb	11 19 59.0	+1.6
MVM	**Montagne Vaucl**	**0.86**	**200**	*e*P		*e*P	Pb	11 19 46.8	+0.5
LPMF	**Morne Lapointe**	**0.86**	**204**	*e*P		*e*P	Pb	11 19 46.5	+0.1
MGG	**Marie-Galante**	**0.88**	**309**	*e*P		*e*P	Pb	11 19 46.9	+0.2
MGG	**Marie-Galante**	**0.88**	**309**	*e*P		*e*P	Pb	11 19 47.3	+0.6
ZAM	**Aeronautique**	**0.89**	**208**	*e*P		*e*P	Pb	11 19 47.0	+0.1
TRMF	**Trois Ilets**	**0.93**	**208**	*e*P		*e*P	Pb	11 19 47.5	0.0
BIM	**Bigot**	**0.96**	**208**	*e*P		*e*P	Pb	11 19 48.1	+0.1
BIM						*e*S	Sb	11 20 01.3	+0.9
DEG	**La Desirade**	**1.04**	**335**	*e*P		*e*P	Pb	11 19 49.5	+0.1
SFG	**Saint Francois**	**1.05**	**327**	*e*P		*e*P	Pb	11 19 49.8	+0.2
TBG	**Guadaloupe-3**	**1.12**	**296**	*e*P		*e*P	Pb	11 19 50.4	-0.2
DOG	**Dongo Capester**	**1.18**	**304**	⇓*i*	*i*	*e*P	Pb	11 19 51.7	-0.1
PHG	**Guadaloupe-2**	**1.19**	**303**	⇓*i*	*e*	*e*P	Pb	11 19 51.9	-0.1
SEG	**Port Louis**	**1.35**	**320**	*e*P		*e*P	Pb	11 19 54.3	-0.2
MCLT	**Moule a Chique**	**1.68**	**191**	*e*P		*e*P	Pn	11 19 58.3	+1.3
BPA	**Boggy Peak**	**2.06**	**324**	*e*S		*e*S	Sn	11 20 29.0	+2.1
SVB	**Belmont**	**2.17**	**197**	*e*P		*e*P	Pn	11 20 05.0	+1.2
SVB						*e*S	Sn	11 20 32.4	+2.7
ANWB	**Willy Bob**	**2.56**	**334**	*e*P		*e*P	Pn	11 20 11.0	+1.9
ANWB				*e*S		*e*S	Sn	11 20 41.0	+2.0
GRGR	**Grenville**	**3.37**	**198**	*e*P		*e*P	Pn	11 20 23.0	+2.7
GRGR				*e*S		*e*S	Sn	11 21 01.4	+2.2

MEX 10 11:22:42.7±0.3, 14˚.87N×92˚.87W, h71km±31km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TGIG		**1.91**	**353**	*e*P		*e*P	Pn	11 23 05.0	-8.3

IDC 10 11:47:02.2±8.8, 29˚.92S×176˚.14W, h0km, mb3.9/3, mb1 4.1/4, mb1mx3.8/32, mbtmp3.9/4, ML3.4/1, Error ellipse: s-maj=151.9km s-min=44.9km az=71.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.69**	**293**	Pn		Pn	Pn	11 47 33.0	0.0
	85nm,0.3s,baz=98,slow=15,SNR=3.8								
RAO						Sn	Sn	11 47 54.9	-0.4
	617nm,0.3s,baz=92,slow=21,SNR=9.1								
URZ	**Urewera**	**10.03**	**212**	Pn		Pn	Pn	11 49 27.0	-0.5
	0.4nm,0.3s,baz=27,slow=16,SNR=2.1								
URZ						Sn	Sn	11 51 20.8	+0.1
	0.8nm,0.3s,baz=158,slow=19,SNR=3.7								
STKA	**Stephens Creek**	**36.16**	**256**	P		P		11 54 07.4	+1.0
	1.9nm,0.7s,baz=90,slow=10,SNR=5.2								
ASAR	**Alice Springs**	**44.75**	**266**	P		P		11 55 17.2	-0.5
	0.5nm,0.6s,baz=106,slow=7.9,SNR=14								
WRA	**Warramunga Arr**	**45.70**	**271**	P		P		11 55 24.8	-0.5
	2.0nm,0.7s,baz=110,slow=8.1,SNR=18								

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*SCB **10** 11:49:03.7±1.0, 15˚.39S×72˚.94W, h95km, Ml4.1/1, Error ellipse: s-maj=24.2km s-min=19.6km az=137.0*
*ISCJB **10** 11:49:05.2±0.3, 15˚.83S±0˚.05×73˚.09W±0˚.05, h82km, mb4.2/29, Error ellipse: s-maj=9.2km s-min=3.9km az=41.2*
*NEIC **10** 11:49:08.2±0.8, 15˚.79S×72˚.76W, h97km±7km, mb4.4/18, Error ellipse: s-maj=12.3km s-min=6.6km az=55.0*
NEIC Felt at Camana.
*IDC **10** 11:49:08.8±0.8, 15˚.69S×72˚.84W, h103km±6km, mb3.8/14, mb1 3.9/20, mb1mx3.8/36, mbtmp4.2/20, Error ellipse: s-maj=16.4km s-min=10.3km az=41.0*

ISC 10 11:49:06.3±0.4, 15˚.80S±0˚.06×72˚.99W±0˚.06, h82km, n75, σ1s93/84, mb4.3/29, 8C, Southern Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BBOD	**La Paz, Gloria**	**4.30**	**102**	⇑*i*	*i*	P*n*	**Pn**	**11 50 12.9**	**+3.1**
BBOB	**La Paz, Bander**	**4.68**	**95**	⇑*i*	*i*	P*n*	**Pn**	**11 50 16.8**	**+1.8**
LPAZ	**La Paz**	**4.70**	**97**	P		P	**Pn**	**11 50 17.5**	**+2.2**
	2.2nm,0.3s,baz=285,slow=7.6,SNR=76								
LPAZ						S	**Sn**	**11 51 09.7**	**+0.8**
	0.5nm,0.3s,baz=11,slow=24,SNR=6.5								
LPAZ	**La Paz**	**4.70**	**97**	*e*P	*n*	P*n*	**Pn**	**11 50 17.9**	**+2.6**
LPAZ						S	**Sn**	**11 51 09.7**	**+0.8**
LPAZ	**La Paz**	**4.70**	**97**	⇑*i*	*i*P*n*		**Pn**	**11 50 17.1**	**+1.8**
BBOJ	**La Paz, Jacaqu**	**4.75**	**105**	⇑*i*	*i*P*n*		**Pn**	**11 50 19.0**	**+3.1**
BBOJ					⇑*i*	*i*S*n*	**Sn**	**11 51 13.3**	**+3.3**
	260nm,1.4s								
BBOE	**La Paz, Chanca**	**4.91**	**103**	⇑*i*	*i*P*n*		**Pn**	**11 50 21.3**	**+3.2**
NNA	**Nana**	**5.33**	**315**	P		P	**Pn**	**11 50 25.0**	**+1.6**
	32nm,0.3s,baz=153,slow=8.8,SNR=44								
NNA						S	**Sn**	**11 51 21.5**	**-2.0**
	24nm,0.3s,baz=221,slow=18,SNR=7.1								
NNA	**Nana**	**5.33**	**315**	*e*P*n*		P*n*	Pn	11 50 29.2	+5.8
NNA						S	**Sn**	**11 51 21.5**	**-2.0**
NNA						*e*S*n*	Sn	11 51 32.7	+9.2
PB01	**IPOC Station P**	**6.18**	**148**	*e*P*n*		P*n*	**Pn**	**11 50 35.3**	**+0.2**
PB04	**IPOC Station P**	**7.03**	**158**	*e*P*n*		P*n*	**Pn**	**11 50 46.7**	**-0.1**
LVC	**Limon Verde**	**7.79**	**151**	P		P*n*	**Pn**	**11 50 58.5**	**+1.2**
	30nm,0.3s,baz=358,slow=8.2,SNR=23								
LVC						S	**Sn**	**11 52 21.2**	**-2.9**
	44nm,0.3s,baz=133,slow=19,SNR=5.9								
LVC	**Limon Verde**	**7.79**	**151**	*e*P*n*		P*n*	**Pn**	**11 50 58.7**	**+1.4**
LVC						*e*S*n*	**Sn**	**11 52 23.2**	**-1.0**
MOCB	**Mochara**	**8.83**	**129**	*e*P		P*n*	**Pn**	**11 51 13.6**	**+2.0**
ATAH	**Atahualpa**	**10.11**	**328**	P		P*n*	**Pn**	**11 51 31.1**	**+2.0**
	0.4nm,0.3s,baz=194,slow=17,SNR=2.6								
ATAH						S	**Sn**	**11 53 20.2**	**-0.7**
	0.8nm,0.3s,baz=90,slow=11,SNR=1.9								
SIV	**San Ignacio**	**11.47**	**93**	P		P*n*	**Pn**	**11 51 43.4**	**-3.7**
	0.4nm,0.3s,baz=275,slow=11,SNR=12								
SIV						S	Sn	11 53 43.3	-10
	0.2nm,0.3s,baz=113,slow=18,SNR=2.5								
SIV	**San Ignacio**	**11.47**	**93**	⇑*i*	*i*P		**Pn**	**11 51 44.0**	**-3.1**
SAML	**Samuel**	**11.75**	**56**	*e*P*n*			Pn	11 51 45.9	-5.0
CPUP	**Villa Florida**	**17.96**	**128**	P			**P**	**11 53 09.7**	**-0.5**
	0.1nm,0.3s,baz=317,slow=12,SNR=3.2								

PRAC Prado 19.48 354 *e*P **Pn 11 53 29.1 +0.3**
12nm,0.7s
PTGA Pitinga 19.73 42 P **P 11 53 27.1 -2.5**
1.4nm,0.3s,baz=211,slow=10,SNR=23
PTGA Pitinga 19.73 42 *e*P **P 11 53 27.0 -2.5**
11nm,0.7s
ROSC El Rosal 20.55 356 P **P 11 53 40.1 +1.3**
7.1nm,0.4s,baz=115,slow=17,SNR=4.3
BDFB Brasilia 24.04 93 P **P 11 54 14.6 +0.5**
1.9nm,0.5s,baz=258,slow=7.3
SDV Santo Domingo 24.64 6 P **P 11 54 19.3 -0.2**
2.6nm,0.6s,baz=156,slow=20,SNR=3.2
PLCA Paso Flores 24.93 176 P **P 11 54 23.5 +1.6**
3.6nm,0.8s,baz=24,slow=12,SNR=6.4
NATX Nacogdoches 51.66 336 *e*P P 11 58 10.5 +5.7
20nm,1.3s
TXAR Lajitas Array 53.77 326 P **P 11 58 20.9 +0.4**
0.5nm,0.5s,baz=150,slow=9.0,SNR=9.3
TXAR pP **pP 11 58 45.4 +4.4**
0.4nm,0.8s,baz=151,slow=8.5,SNR=3.5
TX31 Lajitas Ar. Si 53.77 326 *e*P **P 11 58 20.9 +0.3**
MNTX Cornudas Mount 56.54 327 *e*P **P 11 58 40.9 +0.5**
1.8nm,0.9s
LAZ Ladron 59.57 327 *e*P **P 11 59 03.2 +1.5**
ANMO Albuquerque 59.64 328 *e*P **P 11 59 03.1 +0.9**
1.9nm,0.8s
T25A Trinidad 60.41 331 *e*P **P 11 59 08.5 +1.1**
2.9nm,0.8s
SDCO Great Sand Dun 61.41 331 *e*P **P 11 59 15.4 +1.1**
4.2nm,0.9s
X16A Lo Mia Camp, P 61.90 324 *e*P **P 11 59 19.2 +1.7**
2.3nm,0.8s
WUAZ Wupatki 62.67 325 *e*P **P 11 59 24.4 +1.8**
4.1nm,1.0s
CCUT Cedar City 65.25 325 *e*P **P 11 59 40.9 +1.3**
3.0nm,1.0s
MSU Marysvale 65.32 327 *e*P **P 11 59 41.8 +1.8**
DUG Dugway, Tooele 66.90 328 *e*P **P 11 59 51.6 +1.6**
5.2nm,1.2s
AGMN Agassiz Nation 66.99 344 *e*P **P 11 59 49.8 -0.5**
3.4nm,0.8s
R11A Troy Canyon, C 67.05 325 *e*P **P 11 59 53.1 +2.1**
2.4nm,0.4s
PDAR Pinedale Array 67.28 332 P **P 11 59 51.5 -1.0**
0.2nm,0.4s,baz=105,slow=5.7,SNR=2.9
ULM Lac du Bonnet 68.78 344 P **P 12 00 00.6 -0.9**
0.9nm,0.3s,baz=164,slow=8.1,SNR=3.0
PAHR Pah Rah Range 70.12 324 *e*P **P 12 00 12.3 +2.2**
2.5nm,0.8s
EDM Edmonton 77.01 336 *e*P **P 12 00 50.1 +0.1**
12nm,1.0s
NLWA Neilton Lookou 77.64 327 *e*P **P 12 00 55.7 +2.0**
TOA0 Torodi Ar. Sit 79.25 73 *e*P **P 12 01 01.3 -1.9**
6.6nm,1.0s
TORD Torodi Ar. Bea 79.25 73 P **P 12 01 01.4 -1.8**
2.9nm,0.8s,baz=259,slow=5.3,SNR=12
TORD pP **pP 12 01 28.4 +3.4**
2.2nm,0.9s,baz=260,slow=5.1,SNR=4.9
VNDA Vanda 81.75 190 P **P 12 01 17.0 +1.5**
1.0nm,0.9s,baz=137,slow=5.1,SNR=5.9
SYO Syowa Base 83.15 160 ⇑*e*P **P 12 01 21.9 -1.0**
YKA Yellowknife Ar 84.58 342 P **P 12 01 29.7 -0.4**
2.4nm,0.8s,baz=135,slow=5.0,SNR=20
ESDC Sonseca Array 84.61 46 P **P 12 01 30.1 -0.8**
0.7nm,0.7s,baz=248,slow=5.0,SNR=5.9
ESDC pP **sP 12 01 58.2 -3.5**
0.8nm,0.6s,baz=259,slow=5.1,SNR=5.5
ES19 SONSECA Array 84.67 46 *e*P **P 12 01 30.8 -0.4**
TSUM Tsumeb 85.45 109 *e*P **P 12 01 36.3 +0.6**
5.5nm,0.8s
BOSA Boshof 89.57 120 P **P 12 01 54.3 -1.1**
2.6nm,0.9s,baz=180,slow=6.1,SNR=3.5
MAW Mawson 90.85 165 P **P 12 01 59.9 -0.3**
2.5nm,0.7s,baz=231,slow=7.5,SNR=4.8
SUMG Summit 91.09 10 *e*P **P 12 02 02.0 +0.3**
6.6nm,0.9s
INK Inuvik 94.31 341 P **P 12 02 15.0 -1.1**
0.8nm,0.7s,baz=71,slow=5.9,SNR=3.9
AS01 Alice Springs 132.76 214 *e*PKPdf **PKPdf 12 08 12.6 0.0**
ASAR Alice Springs 132.78 214 PKP **PKPdf 12 08 12.7 0.0**
0.7nm,0.7s,baz=125,slow=2.0,SNR=7.6
BRVK Borovoye 132.96 30 *e*PKPdf **PKPdf 12 08 14.1 +2.1**
PMG Port Moresby 133.01 240 *e*PKPdf **PKPdf 12 08 12.1 -1.2**
WC3 Warramunga Arr 135.44 218 *e*PKPdf **PKPdf 12 08 18.4 +0.7**
WRA Warramunga Arr 135.47 218 PKP **PKPdf 12 08 18.0 +0.2**
2.5nm,0.9s,baz=150,slow=1.7,SNR=9.1
ZALV Zalesovo Beam 138.17 20 PKP **PKPdf 12 08 20.1 -1.6**
1.9nm,0.7s,baz=289,slow=4.4,SNR=7.0
MKAR Makanchi Array 142.89 28 PKP **PKPdf 12 08 27.0 -3.5**
0.7nm,0.7s,baz=270,slow=1.1,SNR=5.3
USRK Ussuriysk Ar. 144.65 328 PKP **PKPab 12 08 32.3 -0.1**
3.0nm,1.0s,baz=17,slow=1.5,SNR=5.1
MJAR Matsushiro Arr 145.45 313 PKPbc **PKPdf 12 08 35.1 -0.1**
3.5nm,0.9s,baz=78,slow=1.5,SNR=14
CBIJ Chichijima 145.50 295 *e*PKPdf **PKPab 12 08 36

14nm,0.2s
SSFR Montelago di S 0.63 318 Pg Pb 11 56 56.6 0.0
14nm,0.2s

NIED ***10*** *12:01:00,37.90N×143.30E,h8km,Mw3.8 Best double couple: M0 5.05000×10^14 NP1:φs305.00000°,δ44.00000°, λ-92.00000°. NP2:φs127.00000°,δ46.00000°, λ-88.00000°.*

IDC ***10*** *12:01:15.4±1.1,37.88N×143.40E,h0km,mb3.7/5, mb1 3.8/9,mb1mx3.5/47,mbtmp3.6/9,ML3.1/4,MS2.8/5, Ms1 2.8/5,ms1mx2.5/52,Error ellipse: s-maj=27.5km s-min=19.4km az=105.0*

ISCJB ***10*** *12:01:16.7±0.7,37.89N±0.04×143.33E±0.06,h19km, mb3.6/5,MS3.8/1,Error ellipse: s-maj=6.6km s-min=5.1km az=8.5*

JMA ***10*** *12:01:18.0±0.2,37.90N×143.25E,h27km,M3.8*

ISC 10 12:01:18.3±0.9,37.88N±0.05×143.28E±0.08,h19km,n35, σ1 9 39/36,mb3.6/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.63**	**291**	P			**Pn**	**12 01 45.3**	**-0.6**
JIO				S			**Sn**	**12 02 05.0**	**-1.4**
OFUJ	**Ofunato**	**1.74**	**314**	P			**Pn**	**12 01 46.6**	**-0.9**
OFUJ				S			**Sn**	**12 02 08.1**	**-1.1**
JMK	**Ichinoseki**	**1.94**	**304**	P			**Pn**	**12 01 50.0**	**-0.2**
JMM	**Marumori**	**1.97**	**270**	P			**Pn**	**12 01 50.1**	**-0.6**
JMM				S			**Sn**	**12 02 13.9**	**-0.9**
JFK	**Kawauchi**	**1.98**	**256**	P			**Pn**	**12 01 50.3**	**-0.5**
JOU	**Okura**	**2.12**	**284**	P			**Pn**	**12 01 53.6**	**+0.8**
JOU				S			**Sn**	**12 02 18.7**	**+0.1**
JOM	**Ohasama**	**2.22**	**316**	P			**Pn**	**12 01 52.5**	**-1.6**
JFT	**Otama**	**2.37**	**262**	P			**Pn**	**12 01 57.0**	**+0.9**
JFT				S			**Sn**	**12 02 24.9**	**+0.3**
JYK	**Kaneyama**	**2.52**	**295**	P			**Pn**	**12 01 58.4**	**+0.2**
JRG	**Rokugo**	**2.57**	**307**	P			**Pn**	**12 01 58.7**	**-0.2**
JANG	**Nango**	**2.84**	**332**	P			**Pn**	**12 02 03.7**	**+1.1**
JTM	**Tenmabayashi**	**3.37**	**330**	P			**Pn**	**12 02 11.5**	**+1.6**
JAG	**Ashikaga**	**3.39**	**246**	P			**Pn**	**12 02 10.5**	**+0.3**
BSO1	**Boso 1**	**3.72**	**211**	P			**Pn**	**12 02 14.6**	**+0.3**
BSO1				S			**Sn**	**12 02 58.1**	**+0.8**
JOT	**Ohata**	**3.90**	**334**	P			**Pn**	**12 02 18.5**	**+1.4**
JOT				*e*S			**Sn**	**12 03 01.2**	**-1.1**
JRY	**Ryogami san**	**3.97**	**243**	P			**Pn**	**12 02 18.7**	**+0.5**
MJAR	**Matsushiro Arr**	**4.27**	**253**	Pn			**Pn**	**12 02 24.3**	**+2.1**
	1.2nm,0.3s,baz=84,slow=15,SNR=15								
MJAR				Sn			**Sn**	**12 03 14.2**	**+2.7**
	1.3nm,0.3s,baz=88,slow=29,SNR=5.6								
MJAR				LR			LR	12 04 15.9	
	comp=Z,48nm,20.9s,baz=110,slow=42								
MAT	**Matsushiro**	**4.27**	**253**	P			**Pn**	**12 02 24.7**	**+2.4**
MAT				*e*S			**Sn**	**12 03 09.0**	**-2.5**
JHJ	**Hachijo jima 2**	**5.54**	**212**	Pn			**Pn**	**12 02 40.0**	**+0.1**
	12nm,0.3s,baz=341,slow=18,SNR=16								
JHJ				Sn			**Sn**	**12 03 38.4**	**-4.7**
	32nm,0.3s,baz=268,slow=23,SNR=9.4								
JHJ				LR			LR	12 05 05.4	
	comp=Z,50nm,19.2s,baz=270,slow=41								
USRK	**Ussuriysk Ar.**	**10.61**	**310**	Pn			**Pn**	**12 03 48.9**	**-0.3**
	0.2nm,0.3s,baz=102,slow=12,SNR=3.3								
JNU	**Nakatsue**	**11.17**	**249**	LR			LR	12 08 32.9	
	comp=Z,34nm,19.2s,baz=123,slow=39								
KLR	**Kul'dur**	**14.07**	**327**	Pn			**Pn**	**12 04 36.4**	**-0.1**
	0.1nm,0.3s,baz=320,slow=19,SNR=2.2								
PETK	**Petropavlovsk-**	**18.22**	**29**	LR			LR	12 14 40.4	
	comp=Z,18nm,18.1s,baz=202,slow=44								
SEY	**Seymchan**	**25.69**	**10**	P			**P**	**12 06 47.0**	**+0.1**
	1.3nm,0.8s,baz=217,slow=1.7,SNR=4.3								
H11N2	**WAKE ISLAND Hy**	**27.36**	**125**	T			T	12 35 47.0	
	baz=317,slow=75,SNR=79								
H11N1	**WAKE ISLAND Hy**	**27.36**	**125**	T			T	12 35 48.5	
	baz=317,slow=75,SNR=36								
H11N3	**WAKE ISLAND Hy**	**27.37**	**125**	T			T	12 35 47.5	
	baz=317,slow=75,SNR=42								
H11S1	**WAKE ISLAND Hy**	**28.12**	**127**	T			T	12 36 44.4	
	baz=319,slow=76,SNR=13								
H11S3	**WAKE ISLAND Hy**	**28.12**	**127**	T			T	12 36 44.1	
	baz=319,slow=76,SNR=13								
H11S2	**WAKE ISLAND Hy**	**28.14**	**127**	T			T	12 36 44.3	
	baz=319,slow=76,SNR=11								
MKAR	**Makanchi Array**	**44.93**	**302**	P			**P**	**12 09 32.3**	**+0.5**
	0.6nm,0.7s,baz=90,slow=3.2,SNR=3.1								
ILAR	**Eielson Array**	**47.98**	**33**	P			**P**	**12 09 55.5**	**0.0**
	0.3nm,0.9s,baz=278,slow=5.7,SNR=4.1								
WRA	**Warramunga Arr**	**58.13**	**190**	P			**P**	**12 11 10.7**	**0.0**
	0.5nm,0.4s,baz=7.0,slow=7.1,SNR=5.9								
ASAR	**Alice Springs**	**61.85**	**190**	P			**P**	**12 11 36.3**	**+0.1**
	0.7nm,0.8s,baz=0.0,slow=5.0,SNR=4.7								
PALK	**Pallekele**	**64.00**	**258**	LR			LR	12 42 24.5	
	comp=Z,62nm,18.5s,baz=295,slow=38								

IDC 10 12:03:16.2±2.1,7.09S×129.94E,h0km,mb3.8/1, mb1 4.0/4,mb1mx3.6/39,mbtmp3.8/4,ML3.9/3,Error ellipse: s-maj=85.0km s-min=28.0km az=77.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.72**	**201**	Pn			Pn	12 06 04.9	+0.2
	1.0nm,0.3s,baz=27,slow=12,SNR=26								
FITZ				Sn			Sn	12 08 03.3	-13
	0.7nm,0.3s,baz=215,slow=12,SNR=4.9								
WRA	**Warramunga Arr**	**13.47**	**162**	Pn			Pn	12 06 28.4	-0.2
	0.6nm,0.3s,baz=344,slow=13,SNR=35								
WRA				Sn			Sn	12 08 45.6	-14
	0.7nm,0.3s,baz=329,slow=24,SNR=6.9								
ASAR	**Alice Springs**	**16.91**	**167**	Pn			Pn	12 07 14.4	0.0
	0.2nm,0.3s,baz=340,slow=8.4,SNR=21								
ASAR				Sn			Sn	12 10 11.4	-12
	0.1nm,0.3s,baz=331,slow=16,SNR=5.0								
MKAR	**Makanchi Array**	**68.27**	**327**	P			P	12 14 19.0	0.0
	0.5nm,0.4s,baz=122,slow=6.7,SNR=7.3								

GUC ***10*** *12:07:26.7±0.4,34.12S×72.17W,h35km±3km,ML2.9*

ISC 10 12:07:25.1±3.1,34.13S±0.05×72.12W±0.1,h4km±16km,n18, σ1 9 97/29,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.31**	**145**	*i* P			**Pb**	**12 07 33.7**	**+0.5**
CHPI				*i* S			**Sb**	**12 07 39.4**	**+0.8**
NICH	**Los Niches**	**1.19**	**137**	*i* P			**Pb**	**12 07 47.4**	**-0.8**
NICH				*i* S			**Sb**	**12 08 03.0**	**-0.9**
RCDM	**Rinconada Maip**	**1.34**	**62**	*i* P			**Pn**	**12 07 49.3**	**-1.2**
RCDM				*i* S			**Sb**	**12 08 06.1**	**-2.2**
TALC	**Talca**	**1.35**	**159**	*i* P			**Pn**	**12 07 50.1**	**-0.6**
TALC				*i* S			**Sb**	**12 08 07.9**	**-0.6**
ROCH	**El Roble**	**1.53**	**41**	*i* P			**Pn**	**12 07 53.1**	**-0.3**
ROCH				*i* S			**Sn**	**12 08 13.4**	**-0.4**
CLCH	**Cerro Calan**	**1.58**	**63**	*i* P			**Pn**	**12 07 53.2**	**-0.7**
CLCH				*i* S			**Sn**	**12 08 13.5**	**-1.3**
CLCH					IAML			12 08 27.3	
	comp=E,283nm,0.6s								
PEL	**Peldehue**	**1.61**	**53**	*i* P			**Pn**	**12 07 53.8**	**-0.5**
PEL				*i* S			**Sn**	**12 08 14.7**	**-0.9**
PEL					IAML			12 08 24.2	
	comp=E,309nm,0.8s								
AAGR	**Agrelo**	**3.02**	**71**	*e*P			**Pb**	**12 08 18.4**	**-0.9**
ARCO	**CERRO ARCO**	**3.03**	**66**	*e*P			**Pb**	**12 08 20.9**	**+1.2**
ARCO					IAML			12 08 25.5	
	comp=Z,37nm,0.3s								
AUSP	**Uspallata**	**3.04**	**52**	*e*P			**Pb**	**12 08 17.7**	**-2.2**
AUSP				*e*S			**Sg**	**12 09 02.0**	**-0.9**
ASAL	**Salagasta**	**3.22**	**62**	*e*P			**Pn**	**12 08 19.6**	**+3.1**
ASAL				*e*S			**Sg**	**12 09 10.9**	**+2.3**
RTLS	**Leoncito**	**3.38**	**47**	*e*P			**Pn**	**12 08 22.4**	**+3.5**
RTLS				*e*S			**Sg**	**12 09 11.6**	**-2.2**
RTCV	**Cerro Valdivia**	**3.83**	**55**	*e*P			**Pn**	**12 08 28.8**	**+3.9**
RTLL	**Cerro Villicun**	**4.21**	**49**	*e*P			**Pn**	**12 08 32.3**	**+2.2**
RTLL				*e*S			**Sb**	**12 09 32.1**	**+1.1**
AMOG	**MOGNA**	**4.48**	**46**	*e*P			**Pn**	**12 08 35.4**	**+1.7**
AVFE	**Valle Fertil**	**5.31**	**51**	*e*P			**Pn**	**12 08 48.4**	**+3.1**
AVFE					IAML			12 08 55.4	
	comp=Z,4.3nm,0.3s								
ACHE	**Chepes**	**5.54**	**59**	*e*P			**Pn**	**12 08 48.9**	**+0.4**
MRA	**San Martin**	**5.71**	**74**	*e*P			**Pn**	**12 08 53.8**	**+3.1**
MRA					IAML			12 10 37.9	
	comp=Z,5.1nm,0.5s								

BJI ***10*** *12:07:52.9,32.80S×177.10W,h9km,mb5.3/21,mB5.6/20, Ms5.0/13,Ms7 4.6/14*

ISCJB ***10*** *12:07:55.9±0.5,32.81S±0.03×177.66W±0.09,h20km, mb4.9/34,MS4.5/22,Error ellipse: s-maj=11.3km s-min=3.4km az=19.1*

NEIC ***10*** *12:07:57.9±0.4,32.70S×177.98W,h10km,mb5.0/20, Error ellipse: s-maj=11.7km s-min=6.1km az=110.0*

IDC ***10*** *12:07:57.4±0.5,32.43S×178.06W,h0km,mb4.5/13, mb1 4.6/16,mb1mx4.5/30,mbtmp4.6/16,ML4.8/2,MS4.4/13, Ms1 4.4/13,ms1mx4.2/33,Error ellipse: s-maj=18.4km s-min=16.9km az=89.0*

GCMT ***10*** *12:07:57.9±0.3,32.62S×177.56W,h22km±1km,MW5.0/72, Moment Tensor Solution. s23,c24; s72,c103; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.95±.29; Mθθ-0.54±.18; Mφφ-3.41±.18; Mrθ0.44±.29; Mrφ-0.92±.10; Mθφ2.67±.25; Best double couple: M0 4.67500×10^16 NP1:φs12.00000°,δ63.00000°,λ87.00000°. NP2: φs200.00000°,δ28.00000°,λ96.00000°. Principal axes: T 4.8200, Plg72.0000°, Azm275.0000°; N -0.2940, Plg3.0000°, Azm14.0000°; P -4.5300, Plg18.0000°, Azm105.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***10*** *12:08:01.9±2.3,32.30S×178.16W,h33km,mb5.0/6, MS4.6/5 Error ellipse: s-maj=14.2km s-min=10.5km az=100.4*

ISC 10 12:07:59.3±0.4,32.66S±0.05×177.78W±0.08,h20km, n215,σ1 9 96/227,mb4.9/34,MS4.5/24,2C-3D,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.40**	**358**	Pn			**Pn**	**12 08 48.5**	**-2.6**
	103nm,0.3s,baz=240,slow=20,SNR=3.8								
RAO				Sn			**Sn**	**12 09 25.8**	**-5.0**
	321nm,0.3s,baz=104,slow=19,SNR=5.8								
RAO	**Raoul Island**	**3.40**	**358**	*e*P			**Pn**	**12 08 48.5**	**-2.6**
RAO				*e*				12 09 27.2	
RAO	**Raoul Island**	**3.40**	**358**	*e*Pn			**Pn**	**12 08 48.5**	**-2.6**
RAO				*e*Sn			**Sn**	**12 09 27.2**	**-3.7**
MXZ	**Matakaoa Point**	**5.85**	**212**	*e*Pn			**Pn**	**12 09 23.5**	**-1.3**
WMGZ	**Waiomatatini S**	**6.02**	**210**	PN			**Pn**	**12 09 27.4**	**+0.3**
PKGZ	**Pakihiroa**	**6.22**	**212**	PN			**Pn**	**12 09 28.6**	**-1.4**
PKGZ				SN			**Sn**	**12 10 40.0**	**-0.5**
HAZ	**Te Kaha**	**6.25**	**214**	PN			**Pn**	**12 09 29.4**	**-0.9**
HAZ				*e*SN			**Sn**	**12 10 41.6**	**+0.5**
PUZ	**Puketiti**	**6.30**	**210**	PN			**Pn**	**12 09 29.3**	**-1.7**
PUZ				*e*SN			**Sn**	**12 10 41.4**	**-1.0**
TWGZ	**Tauwhareparae**	**6.50**	**211**	*e*PN			**Pn**	**12 09 32.5**	**-1.4**
TWGZ				*e*SN			**Sn**	**12 10 47.3**	**-0.2**
CNGZ	**Carnagh Statio**	**6.67**	**208**	PN			**Pn**	**12 09 34.4**	**-1.7**
MWZ	**Matawai**	**6.83**	**213**	PN			**Pn**	**12 09 36.0**	**-2.4**
URZ	**Urewera**	**6.97**	**215**	Pn			**Pn**	**12 09 38.2**	**-2.1**
	7.4nm,0.3s,baz=36,slow=9.6,SNR=27								
URZ				Sn			**Sn**	**12 10 56.6**	**-2.3**
	29nm,0.3s,baz=127,slow=20,SNR=14								
URZ	**Urewera**	**6.97**	**215**	*e*Pn			**Pn**	**12 09 39.2**	**-1.0**
URZ				*e*Sn			**Sn**	**12 10 57.0**	**-1.9**
SNGZ	**Shannon Statio**	**7.28**	**212**	*e*SN			**Sn**	**12 11 05.5**	**-1.2**
KNZ	**Kokohu**	**7.34**	**209**	*e*PN			**Pn**	**12 09 41.7**	**-3.7**
KNZ				*e*SN			**Sn**	**12 11 05.4**	**-2.7**
OUZ	**Omahuta**	**7.61**	**248**	*e*Pn			**Pn**	**12 09 51.4**	**+2.5**
BKZ	**Black Stump Fm**	**7.98**	**214**	*e*Pn			**Pn**	**12 09 52.5**	**-1.7**
BKZ				*e*Sn			**Sn**	**12 11 22.7**	**-1.2**
BKZ	**Black Stump Fm**	**7.98**	**214**	*e*PN			**Pn**	**12 09 52.2**	**-2.0**
BKZ				*e*SN			**Sn**	**12 11 20.1**	**-3.8**
BFZ	**Birch Farm**	**9.33**	**209**	*e*Pn			**Pn**	**12 10 09.7**	**-2.9**
BFZ				*e*Sn			**Sn**	**12 11 52.0**	**-4.9**
THZ	**Tophouse**	**11.73**	**217**	*e*Pn			**Pn**	**12 10 42.6**	**-2.8**
THZ				*e*Sn			**Sn**	**12 12 49.1**	**-6.7**
KHZ	**Kahutara**	**11.92**	**213**	*e*Pn			**Pn**	**12 10 43.9**	**-4.2**
KHZ				*e*Sn			Sn	12 12 49.5	-11
LTZ	**Lake Taylor**	**12.80**	**215**	*e*Pn			**Pn**	**12 10 57.8**	**-2.3**
OXZ	**Oxford**	**13.32**	**214**	*e*Pn			**Pn**	**12 11 04.7**	**-2.6**
OXZ				*e*Sn			Sn	12 13 21.7	-13
MQZ	**McQueen's Vall**	**13.34**	**211**	*e*Pn			**Pn**	**12 11 04.5**	**-2.9**
MQZ				*e*Sn			Sn	12 13 20.4	-15
RPZ	**Rata Peaks**	**14.09**	**215**	Pn			**Pn**	**12 11 13.5**	**-4.2**
	1.7nm,0.3s,baz=54,slow=19,SNR=2.6								
RPZ				Sn			Sn	12 13 37.2	-16
	1.1nm,0.3s,baz=13,slow=19,SNR=3.3								
LBZ	**Lake Benmore**	**15.01**	**215**	*e*Pn			**Pn**	**12 11 27.4**	**-2.8**
	84nm,1.4s								
ODZ	**Otahua Downs**	**15.28**	**213**	*e*Pn			**Pn**	**12 11 30.7**	**-3.1**
	220nm,1.8s								
MSVF	**Nonsavu**	**15.33**	**345**	*e*P			**Pn**	**12 11 32.7**	**-1.9**
MSVF					pmax	pmax			
	comp=Z,37nm,1.1s								
MSVF	**Nonsavu**	**15.33**	**345**	*e*Pn			**Pn**	**12 11 32.7**	**-1.9**
	comp=Z,37nm,1.1s								
MLZ	**Mavora Lakes**	**16.73**	**217**	*e*Pn			**Pn**	**12 11 50.9**	**-1.6**
	comp=Z,290nm,1.9s								
DZM	**Mont Dzumac**	**17.51**	**303**	P			**Pn**	**12 12 02.8**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=121,slow=17,SNR=4.1								
DZM	**Mont Dzumac**	**17.51**	**303**	*e*P			**P**	**12 12 04.7**	**+1.2**
	comp=Z,154nm,1.4s								
DZM					*e*LR		LR	12 16 15.0	
	comp=Z,3μm,24.9s								
DZM	**Mont Dzumac**	**17.51**	**303**	*e*P			**Pn**	**12 12 01.9**	**-0.5**
	comp=Z,151nm,1.6s								
AFI	**Afiamalu**	**19.45**	**18**	P			**P**	**12 12 25.0**	**+0.2**
	comp=Z,3.6nm,0.3s,baz=18,slow=3.2,SNR=5.2								
RAR	**Rarotonga**	**19.66**	**59**	P			**Pn**	**12 12 28.5**	**+0.1**
	comp=Z,0.9nm,0.3s,baz=158,slow=5.4,SNR=1.8								
ARMA	**Armidale**	**26.12**	**267**	*e*P			**P**	**12 13 33.2**	**+1.0**
	comp=Z,18nm,0.9s								
TBI	**Tubuai**	**26.61**	**77**	*e*LQ			LQ	12 18 47.0	
	comp=Z,874nm,25.5s								
TBI					*e*LR		LR	12 19 55.5	
	comp=Z,764nm,22.2s,baz=243								
EIDS	**Eidsvold**	**28.11**	**277**	P			**P**	**12 13 50.3**	**+0.4**
	baz=28,SNR=6.1								
EIDS	**Eidsvold**	**28.11**	**277**	*e*P			**P**	**12 13 49.9**	**0.0**
	comp=Z,18nm,0.8s								
PAE	**Paea**	**29.45**	**66**	*e*T			T	12 44 37.0	
	comp=Z,1.5nm,0.3s								
PPT2	**Papeete2**	**29.50**	**66**	*e*S			S	12 18 39.4	-17
	comp=Z,117nm,23.5s								
PPT2					*e*LQ		LQ	12 19 51.4	
	comp=Z,778nm,23.8s								
PPT2					*e*LR		LR	12 21 21.0	
	comp=Z,684nm,20.8s,baz=230								
PPT2	**Papeete2**	**29.50**	**66**	*e*T			T	12 44 41.5	
	comp=Z,1.4nm,0.3s								
PPT	**Papeete**	**29.51**	**66**	LR			LR	12 24 42.6	
	comp=Z,886nm,18.1s,baz=237,slow=34								
RMQ	**Roma**	**29.66**	**273**	P			**P**	**12 14 03.8**	**+0.1**
	baz=29,SNR=15								
CMSA	**Cobar Meteorol**	**30.87**	**262**	P			**P**	**12 14 15.1**	**+0.8**
	baz=30,SNR=15								
QLP	**Quilpie**	**33.44**	**270**	P			**P**	**12 14 36.9**	**0.0**
	baz=33,SNR=4.8								
STKA	**Stephens Creek**	**34.21**	**260**	P			**P**	**12 14 43.7**	**+0.1**
	comp=Z,3.0nm,0.9s,baz=96,slow=10,SNR=5.3								
STKA					LR		LR	12 28 17.3	
	comp=Z,1μm,18.1s,baz=86,slow=36								
STKA	**Stephens Creek**	**34.21**	**260**	*e*P			**P**	**12 14 42.9**	**-0.7**
STKA					pmax	pmax			
	comp=Z,10.0nm,1.8s								
STKA	**Stephens Creek**	**34.21**	**260**	*e*P			**P**	**12 14 42.9**	**-0.7**
	comp=Z,9.7nm,1.8s								
CTA	**Charters Tower**	**34.40**	**282**	P			**P**	**12 14 45.8**	**+0.5**
	comp=Z,13nm,0.5s,baz=118,slow=9.8,SNR=22								
CTAO	**Charters Tower**	**34.40**	**282**	*e*P			**P**	**12 14 45.9**	**+0.5**
CTAO					pmax	pmax			
	comp=Z,52nm,1.4s								
CTAO	**Charters Tower**	**34.40**	**282**	*e*P			**P**	**12 14 45.9**	**+0.5**
	comp=Z,52nm,1.4s								
MTSU	**Mount Surprise**	**36.95**	**284**	P			**P**	**12 15 07.9**	**+0.6**
	baz=37,SNR=5.6								
BBOO	**Buckleboo**	**38.59**	**257**	*e*P			**P**	**12 15 20.1**	**-0.8**
	comp=Z,95nm,1.7s								
RKT	**Rikitea**	**38.80**	**87**	*e*LR			LR	12 25 38.8	
	comp=Z,710nm,31.0s,baz=249								
QIS	**Mount Isa**	**39.71**	**277**	P			**P**	**12 15 29.9**	**-0.6**
	baz=39,SNR=6.6								
COEN	**Coen**	**40.11**	**288**	P			**P**	**12 15 34.0**	**+0.2**
	baz=40,SNR=6.0								
COEN	**Coen**	**40.11**	**288**	*e*P			**P**	**12 15 34.0**	**+0.2**
	comp=Z,17nm,0.9s								
TAOE	**Nuku Hiva Isla**	**42.07**	**64**	*e*S			S	12 21 55.0	-14
	comp=Z,161nm,24.1s								
TAOE					*e*LR		LR	12 27 13.3	
	comp=Z,393nm,21.5s								
AS01	**Alice Springs**	**43.18**	**269**	*e*P			**P**	**12 15 58.1**	**-0.9**
AS31	**Alice Springs**	**43.22**	**269**	*e*P			**P**	**12 15 58.1**	**-1.1**
	comp=Z,6.3nm,0.9s								
ASAR	**Alice Springs**	**43.22**	**269**	P			**P**	**12 15 58.0**	**-1.2**
	comp=Z,12nm,0.6s,baz=110,slow=7.6,SNR=128								
ASAR					LR		LR	12 34 33.5	
	comp=Z,484nm,18.1s,baz=117,slow=37								
WB2	**Warramunga Arr**	**44.40**	**274**	*e*P			**P**	**12 16 07.8**	**-1.0**
	comp=Z,45nm,1.1s								
WRAB	**Tennant Creek**	**44.40**	**274**	*e*P			**P**	**12 16 06.8**	**-2.0**
WRAB					pmax	pmax			
	comp=Z,62nm,1.0s								
WRAB	**Tennant Creek**	**44.40**	**274**	*e*P			**P**	**12 16 07.2**	**-1.6**
	comp=Z,44nm,1.1s								
WRA	**Warramunga Arr**	**44.41**	**274**	P			**P**	**12 16 07.4**	**-1.5**
	comp=Z,14nm,0.4s,baz=113,slow=8.0,SNR=313								
FORT	**Forrest**	**45.69**	**257**	P			**P**	**12 16 17.6**	**-1.3**
	baz=45,SNR=28								
FORT	**Forrest**	**45.69**	**257**	*e*P			**P**	**12 16 17.6**	**-1.3**
	comp=Z,370nm,0.7s								
VNDA	**Vanda**	**45.88**	**186**	P			**P**	**12 16 22.7**	**+2.9**
	comp=Z,0.7nm,0.7s,baz=30,slow=6.0,SNR=5.2								
VNDA					PcP		**PcP**	**12 18 00.8**	**+4.3**
	comp=Z,3.4nm,0.9s,baz=27,slow=2.9,SNR=5.2								
VNDA					LR		LR	12 32 26.4	
	comp=Z,371nm,19.7s,baz=8.0,slow=32								
WRKA	**Warakurna**	**47.42**	**265**	P			**P**	**12 16 30.6**	**-1.9**
	baz=47,SNR=84								
JAY	**Jayapura**	**49.12**	**299**	LR			LR	12 37 39.7	
	comp=Z,8.5nm,18.2s,baz=146,slow=36								
MTN	**Manton Dam**	**50.55**	**281**	*e*P			**P**	**12 16 55.7**	**-0.9**
	comp=Z,92nm,1.6s								
FITZ	**Fitzroy Crossi**	**52.57**	**272**	P			**P**	**12 17 10.5**	**-1.3**
	comp=Z,5.4nm,0.7s,baz=140,slow=5.0,SNR=10								
FITZ					LR		LR	12 39 44.3	
	comp=Z,1μm,18.0s,baz=121,slow=36								
FITZ	**Fitzroy Crossi**	**52.57**	**272**	P			**P**	**12 17 10.6**	**-1.1**
	baz=52,SNR=7.6								
FITZ	**Fitzroy Crossi**	**52.57**	**272**	*e*P			**P**	**12 17 10.6**	**-1.1**
	comp=Z,73nm,2.0s								
NWAO	**Narrogin (SRO)**	**53.80**	**251**	LR			LR	12 39 47.6	
	comp=Z,283nm,18.6s,slow=36								
KLBR	**Kellerberrin**	**53.82**	**253**	P			**P**	**12 17 19.6**	**-1.2**
	baz=53,SNR=7.3								
MEEK	**Meekatharra**	**54.89**	**259**	P			**P**	**12 17 28.6**	**-0.1**
	baz=54,SNR=5.5								
MBWA	**Marble Bar**	**56.19**	**265**	*e*P			**P**	**12 17 36.4**	**-1.6**
	comp=Z,117nm,1.8s								
SOEI	**Soe**	**57.88**	**279**	*e*P			**P**	**12 17 49.5**	**-0.8**
	comp=Z,62nm,1.0s								
PMSA	**Palmer Station**	**70.14**	**155**	P			**P**	**12 19 13.1**	**+3.2**
	comp=Z,4.5nm,0.8s,baz=264,slow=4.6,SNR=4.5								
MAW	**Mawson**	**70.27**	**201**	P			**P**	**12 19 12.4**	**+1.7**
	comp=Z,1.3nm,0.4s,baz=154,slow=8.2,SNR=3.8								
MAW					LR		LR	12 48 22.9	
	comp=Z,584nm,20.7s,baz=79,slow=34								
MAW	**Mawson**	**70.27**	**201**	*e*P			P	12 19 05.3	-5.3
	comp=Z,1.5nm,0.9s								
SYO	**Syowa Base**	**74.96**	**193**	*e*P			**P**	**12 19 39.0**	**+0.4**
KSM	**Kuching**	**75.63**	**281**	*e*P			**P**	**12 19 42.2**	**-1.1**
	comp=Z,6.3nm,0.8s								
SNAA	**Sanae**	**75.90**	**178**	*e*P			P	12 19 38.9	-5.1
VNA1	**Neumayer--Stat**	**76.71**	**176**	P			P	12 20 02.8	+14
MJAR	**Matsushiro Arr**	**80.20**	**325**	P			**P**	**12 20 07.2**	**-1.0**
	comp=Z,1.9nm,0.8s,baz=161,slow=4.9,SNR=8.8								
MJAR					LR		LR	12 49 26.7	
	comp=Z,73nm,21.8s,baz=100,slow=31								
MAJO	**Matsushiro**	**80.20**	**325**	*e*P			P	12 20 02.2	-6.0

KMI	**Kunming**	**95.00 297**	P	**P**	**12 21 19.7**	**-1.3**		
KMI			pmax	pmax				
	comp=Z,8.0nm,0.6s							
CD2	**Chengdu**	**97.44 302**	*e*P	**P**	**12 21 28.5**	**-3.2**		
CD2			sP	pP	12 21 36.0	-2.4		
CD2			PP	**PP**	**12 25 28.4**	**-0.9**		
CD2			SKS	**SKSac**	**12 32 05.1**	**-3.0**		
CD2			S	**ScS**	**12 32 55.4**	**-0.1**		
CD2			sS	sS	12 33 03.8	-2.6		
CD2			SS	**SS**	**12 39 41.1**	**+6.2**		
CD2			pmax	pmax				
	comp=Z,10.0nm,0.6s							
CD2			pmax	pmax				
	comp=Z,120nm,6.6s							
LZH	**Lanzhou**	**100.21 306**	*e*P	**Pdif**	**12 21 42.4**	**-1.7**		
LZH			pP	pP	12 21 48.7	-2.2		
LZH			sP	sP	12 21 51.5	-1.7		
LZH			PP	**PP**	**12 25 53.5**	**+3.0**		
LZH			pmax	pmax				
	comp=Z,16nm,1.5s							
LZH			pmax	pmax				
	comp=Z,93nm,9.2s							
LZH			LR	LR				
	comp=Z,150nm,17.5s							
LZH			LR	LR				
	comp=Z,160nm,18.0s							
LZH			LR	LR				
	comp=Z,200nm,19.6s							
WMQ	**Urumqi**	**114.75 307**	*e*PKP	PKPdf	12 26 31.8	-6.4		
WMQ			PP	**PP**	**12 27 41.7**	**+4.9**		
WMQ			AMB	AMB				
	comp=Z,95nm,5.5s							
WMQ			LR	LR				
	comp=Z,160nm,19.1s							
WMQ			LR	LR				
	comp=Z,280nm,26.6s							
WMQ			LR	LR				
	comp=Z,150nm,28.4s							
MK31	**Makanchi Array**	**119.35 309**	*e*PKIKP	**PKPdf**	**12 26 44.5**	**-2.4**		
MK31	**Makanchi Array**	**119.35 309**	*e*PKPdf	**PKPdf**	**12 26 44.5**	**-2.4**		
MKAR	**Makanchi Array**	**119.35 309**	PKP	**PKPdf**	**12 26 47.3**	**+0.4**		
	comp=Z,0.8nm,0.6s,baz=74,slow=4.3,SNR=7.5							
MKAR	**Makanchi Array**	**119.35 309**	*e*PKPdf	**PKPdf**	**12 26 44.2**	**-2.7**		
ZALV	**Zalesovo Beam**	**119.83 317**	PKP	**PKPdf**	**12 26 47.8**	**+0.3**		
	comp=Z,0.5nm,0.3s,baz=132,slow=2.1,SNR=2.7							
KSH	**Kashi**	**121.53 299**	*e*PKP	**PKPdf**	**12 26 44.7**	**-6.8**		
KSH			*e*PP	**PP**	**12 28 24.9**	**+0.9**		
KSH			PKS	PKSdf	12 30 20.2	-8.0		
KSH			AMB	AMB				
	comp=Z,74nm,6.0s							
KSH			LR	LR				
	comp=Z,79nm,7.6s							
KSH			LR	LR				
	comp=Z,87nm,9.0s							
KSH			LR	LR				
	comp=Z,81nm,7.0s							
KURK	**Kurchatov**	**122.72 313**	PKIKP	**PKPdf**	**12 26 53.7**	**+0.5**		
KURK	**Kurchatov**	**122.72 313**	PKP	**PKPdf**	**12 26 53.6**	**+0.5**		
KURBB	**Kurchatov Arra**	**122.76 313**	PKP	**PKPdf**	**12 26 53.6**	**+0.4**		
	comp=Z,0.6nm,0.3s,baz=107,slow=1.9,SNR=9.1							
BVAR	**Borovoye Array**	**128.13 315**	PKP	**PKPdf**	**12 27 03.7**	**+0.2**		
	comp=Z,0.7nm,0.4s,baz=87,slow=3.0,SNR=7.3							
BRVK	**Borovoye**	**128.20 315**	*i* PKIKP	**PKPdf**	**12 26 59.0**	**-4.6**		
GEYT	**Alibeck**	**134.64 293**	PKP	**PKPdf**	**12 27 16.9**	**+0.6**		
	comp=Z,0.8nm,0.4s,baz=125,slow=3.8,SNR=3.6							
AKTO	**Aktyubinsk**	**135.73 311**	PKP	**PKPdf**	**12 27 19.9**	**+1.9**		
	comp=Z,1.2nm,0.7s,baz=94,slow=5.6,SNR=4.7							
ARCES	**ARCESS Array B**	**140.83 347**	PKhKP	PKPpre	12 27 20.3			
	comp=Z,1.6nm,0.8s,baz=29,slow=2.1,SNR=3.9							
KLMR	**Klimovskoe**	**142.82 331**	*e*PKHKP	PKPpre	12 27 23.5			
KLMR			pmax	pmax				
	comp=Z,12nm,1.2s							
GNI	**Garni**	**145.23 295**	*i* PKHKP	PKPpre	12 27 29.3			
TBLG	**Delisi**	**145.23 297**	P	**PKPbc**	**12 27 34.9**	**-0.2**		
TBLG	**Delisi**	**145.23 297**	*e*PKIKP	**PKPbc**	**12 27 34.9**	**-0.2**		
VRH	**Novokhopyorsk**	**145.78 315**	*e*PKIKP	**PKPab**	**12 27 36.7**	**-0.2**		
VRH			pmax	pmax				
	comp=Z,60nm,1.0s							
ZEI	**Tsey**	**145.81 299**	*i* PKIKP	**PKPab**	**12 27 37.5**	**-0.1**		
ZEI			pmax	pmax				
	comp=Z,161nm,2.0s							
NCK	**Nalchik**	**145.99 301**	*i* PKP2	**PKPdf**	**12 27 36.9**	**+0.3**		
ONI	**Oni**	**146.16 299**	P	**PKPab**	**12 27 38.6**	**-0.2**		
ONI	**Oni**	**146.16 299**	*e*PKP2	**PKPab**	**12 27 38.5**	**-0.2**		
AKH	**Akhalkalaki**	**146.17 297**	P	**PKPbc**	**12 27 38.5**	**+0.2**		
AKH	**Akhalkalaki**	**146.17 297**	*e*PKP2	**PKPbc**	**12 27 38.4**	**+0.2**		
MOS	**Moscow**	**146.28 324**	*i* PKP2	**PKPbc**	**12 27 37.8**	**0.0**		
MOS			pmax	pmax				
	comp=Z,200nm,1.0s							
MOS			pmax	pmax				
	comp=Z,136nm,1.1s							
KBZ	**Khabaz**	**146.48 301**	PKPbc	**PKPdf**	**12 27 37.6**	**+0.3**		
	comp=Z,4.9nm,0.8s,baz=86,slow=2.6,SNR=11							
KIV	**Kislovodsk**	**146.61 302**	*i* PKP2	**PKPbc**	**12 27 39.0**	**-0.3**		
KIV			pmax	pmax				
	comp=Z,13nm,1.0s							
NEY	**Neytrino**	**146.65 300**	⇓*i* PKP2	**PKPbc**	**12 27 39.0**	**-0.6**		
OBN	**Obninsk**	**147.11 323**	PKPbc	**PKPbc**	**12 27 39.1**	**-1.1**		
	comp=Z,20nm,0.4s,baz=125,slow=4.1,SNR=12							
OBN	**Obninsk**	**147.11 323**	*e*PKP2	**PKPbc**	**12 27 40.2**	**0.0**		
OBN			*e*PPP	PPP	12 34 19.9			
OBN			pmax	pmax				
	comp=Z,103nm,2.0s							
VORR	**Voronezh**	**147.12 316**	PKP2	**PKPbc**	**12 27 40.0**	**-0.4**		
VORR			pmax	pmax				
	comp=Z,300nm,1.4s							
CHVG	**Ch'k'valeri**	**147.16 299**	P	**PKPab**	**12 27 41.7**	**-0.8**		
VSR	**Storozhevoye**	**147.30 316**	*e*PKP2	**PKPbc**	**12 27 41.1**	**+0.2**		
VSR			pmax	pmax				
	comp=Z,60nm,1.4s							
KBSD	**Kabsdagh**	**148.39 289**	*e*P	**PKPdf**	**12 27 38.0**	**-2.8**		
SOC	**Sochi**	**148.79 301**	*i* PKIKP	**PKPdf**	**12 27 42.4**	**+1.2**		
SOC			*e*		12 31 12.6			
SOC			*e*PPP	PPP	12 34 39.1			
SOC			*e*SS	SS	12 50 20.6	-4.8		
SOC			pmax	pmax				
	comp=Z,30nm,0.9s							
KSRV	**Kasrt alli**	**149.54 286**	*e*P	**PKPbc**	**12 27 48.1**	**+0.8**		
ZALF	**Zalf**	**150.56 280**	*e*P	**PKPbc**	**12 27 50.6**	**+0.7**		
ROOS	**tl_alroos**	**150.77 283**	*e*P	**PKPbc**	**12 27 49.9**	**-0.5**		
ASF	**Jabal al Asfar**	**150.79 279**	PKPbc	**PKPbc**	**12 27 51.0**	**+0.5**		
	comp=Z,10nm,0.9s,baz=89,slow=1.0,SNR=15							
ASF	**Jabal al Asfar**	**150.79 279**	PKIKP	**PKPbc**	**12 27 51.0**	**+0.5**		
NB2	**NORSAR Subarra**	**151.00 351**	PKP	**PKPbc**	**12 27 51.0**	**+1.0**		
	comp=Z,5.9nm,1.0s,baz=24,slow=3.3							
NOA	**NORSAR Array B**	**151.00 351**	PKPbc	**PKPbc**	**12 27 50.5**	**+0.5**		
	comp=Z,2.8nm,0.8s,baz=13,slow=4.1,SNR=9.8							
SALA	**Sala**	**151.02 280**	*e*P	**PKPdf**	**12 27 45.6**	**+0.2**		
TOTH	**TOTAH**	**151.37 281**	*e*P	**PKPdf**	**12 27 46.3**	**+0.6**		
HAWK	**Haweek**	**151.53 283**	*e*P	**PKPbc**	**12 27 51.1**	**-1.1**		
MICGM	**Minsk**	**151.60 328**	*e*	**PKPbc**	**12 27 50.0**	**-1.5**		
MNK	**Minsk**	**151.60 328**	*e*PKIKP	**PKPbc**	**12 27 50.0**	**-1.5**		
BIDA	**Albida**	**151.65 284**	*e*P	**PKPbc**	**12 27 52.4**	**0.0**		
TCHB	**Talchebab**	**151.65 279**	*e*P	**PKPdf**	**12 27 42.7**	**-3.4**		
NACGM	**Naroch**	**151.82 329**	*e*	**PKPbc**	**12 27 53.0**	**+1.0**		
EIL	**Elat**	**151.89 273**	PKPbc	**PKPbc**	**12 27 54.4**	**+1.3**		
	comp=Z,19nm,0.8s,baz=53,slow=1.5,SNR=18							
MMAI	**Mount Meron Ar**	**152.17 280**	PKPbc	**PKPbc**	**12 27 55.1**	**+1.5**		
	comp=Z,11nm,0.7s,baz=80,slow=4.6,SNR=15							
SIM	**Simferopol'**	**152.46 306**	*i* PKIKP	**PKPbc**	**12 27 55.3**	**+1.5**		
SIM			*e*		12 28 08.0			
SIM			pmax	pmax				
	comp=Z,10.0nm,1.2s							
AKASG	**Malin Array Be**	**153.18 320**	PKPbc	**PKPbc**	**12 27 56.0**	**+0.8**		
	comp=Z,2.7nm,0.7s,baz=51,slow=2.8,SNR=13							
AKASG	**Malin Array Be**	**153.18 320**	PKIKP	**PKPbc**	**12 27 56.0**	**+0.8**		
BRTR	**Keskin Array B**	**153.77 295**	PKPbc	**PKPbc**	**12 27 57.5**	**+0.4**		
	comp=Z,2.4nm,0.8s,baz=134,slow=3.6,SNR=13							
CRVS	**Cervenica-Dubn**	**158.29 324**	*e*PKP2	**PKPab**	**12 28 29.2**	**+0.3**		
CRVS	**Cervenica-Dubn**	**158.29 324**	*e*PKP	**PKPab**	**12 28 29.2**	**+0.3**		
KECS	**Kecovo**	**159.05 324**	*e*PKP2	**PKPab**	**12 28 32.8**	**+0.6**		
KECS	**Kecovo**	**159.05 324**	*e*PKP	**PKPab**	**12 28 32.8**	**+0.6**		
OKC	**Ostrava-Krasne**	**159.14 330**	*e*PKPAB	**PKPab**	**12 28 32.8**	**+0.3**		
OKC	**Ostrava-Krasne**	**159.14 330**	*e*PKP2	**PKPab**	**12 28 32.8**	**+0.3**		
UPC	**Upice**	**159.46 334**	*e*PKPAB	**PKPab**	**12 28 34.3**	**+0.4**		
UPC			AMS	AMS	13 56 20.0			
	comp=Z,200nm,20.2s							
UPC	**Upice**	**159.46 334**	*e*PKP2	**PKPab**	**12 28 34.3**	**+0.4**		
UPC			MLR	MLR				
	comp=Z,200nm,20.2s							
DPC	**Dobruska-Polom**	**159.47 334**	*e*PKPAB	**PKPab**	**12 28 34.3**	**+0.3**		
DPC			*ep*PKP	**pPKPab**	**12 28 39.1**	**-1.6**		
DPC			*ex*	x	12 28 47.3			
DPC	**Dobruska-Polom**	**159.47 334**	*e*PKP2	**PKPab**	**12 28 34.3**	**+0.3**		
KRLC	**Kraliky**	**159.51 332**	*e*PKPAB	**PKPab**	**12 28 34.1**	**-0.1**		
KRLC	**Kraliky**	**159.51 332**	*e*PKP2	**PKPab**	**12 28 34.1**	**-0.1**		
CLL	**Collm**	**159.75 340**	*e*	**PKPab**	**12 28 32.0**	**-3.1**		
CLL			⇓*i* PKPab	**PKPab**	**12 28 35.0**	**-0.1**		
	comp=Z,12nm,1.3s							
CLL			*i*		12 28 47.0			
	comp=Z,17nm,1.5s							
CLL			LmV		13 57 00.0			
	comp=Z,100nm,18.4s							
CLL	**Collm**	**159.75 340**	⇓*i* PKP2	**PKPab**	**12 28 35.0**	**-0.1**		
CLL			pmax	pmax				
	comp=Z,12nm,1.3s							
VYHS	**Vyhne**	**159.83 327**	*e*PKP2	**PKPab**	**12 28 35.8**	**+0.2**		
VYHS	**Vyhne**	**159.83 327**	*e*PKP	**PKPab**	**12 28 35.8**	**+0.2**		
BRG	**Berggiesshubel**	**159.85 338**	*e*PKP	**PKPab**	**12 28 35.7**	**+0.1**		
	comp=Z,12nm,1.2s							
BRG			*e*		12 28 48.5			
	comp=Z,15nm,1.6s							
BRG	**Berggiesshubel**	**159.85 338**	*e*PKP2	**PKPab**	**12 28 35.7**	**+0.1**		
BRG			pmax	pmax				
	comp=Z,12nm,1.2s							
PVCC	**Panska Ves**	**159.94 337**	*e*PKPAB	**PKPab**	**12 28 36.5**	**+0.5**		
PVCC			AMS	AMS	13 48 20.0			
	comp=Z,100nm,16.9s							
PVCC	**Panska Ves**	**159.94 337**	*e*PKP2	**PKPab**	**12 28 36.5**	**+0.5**		
PVCC			MLR	MLR				
	comp=Z,100nm,16.9s							
GOPC	**GO Pecny, Ondr**	**160.39 335**	*e*PKPAB	**PKPab**	**12 28 38.2**	**+0.2**		
GOPC	**GO Pecny, Ondr**	**160.39 335**	*e*PKP2	**PKPab**	**12 28 38.2**	**+0.2**		
PRU	**Pruhonice**	**160.41 336**	*e*PKPAB	**PKPab**	**12 28 38.3**	**+0.3**		
PRU			AMS	AMS	13 49 40.0			
	comp=Z,100nm,19.2s							
PRU	**Pruhonice**	**160.41 336**	*e*PKP2	**PKPab**	**12 28 38.3**	**+0.3**		
PRU			MLR	MLR				
	comp=Z,100nm,19.2s							
TORD	**Torodi Ar. Bea**	**160.57 178**	PKPab	**PKPab**	**12 28 41.4**	**+1.8**		
	comp=Z,2.6nm,0.8s,baz=173,slow=3.7,SNR=8.3							
NKC	**Novy Kostel**	**160.87 340**	*e*PKPAB	**PKPab**	**12 28 40.6**	**+0.6**		
NKC	**Novy Kostel**	**160.87 340**	*e*PKP2	**PKPab**	**12 28 40.6**	**+0.6**		
KHC	**Kasperske Hory**	**161.47 336**	*e*PKPAB	**PKPab**	**12 28 43.1**	**+0.4**		
KHC			*ex*	x	12 28 51.6			
KHC			AMS	AMS	13 53 50.0			
	comp=Z,100nm,18.1s							
KHC	**Kasperske Hory**	**161.47 336**	*e*PKP2	**PKPab**	**12 28 43.1**	**+0.4**		
KHC			MLR	MLR				
	comp=Z,100nm,18.1s							
CONA	**Conrad Observa**	**161.58 330**	*i* PKPab	**PKPab**	**12 28 43.7**	**+0.3**		
	comp=Z,5.1nm,0.9s							
GERES	**GERESS Array B**	**161.67 335**	PKPab	**PKPab**	**12 28 43.4**	**-0.3**		
	comp=Z,1.3nm,0.8s,baz=37,slow=5.2,SNR=10							
ARSA	**Arzberg**	**162.25 329**	*i* PKPab	**PKPab**	**12 28 44.3**	**-1.9**		
	comp=Z,1.3nm,0.4s							
MOA	**Molln**	**162.29 332**	*i* PKPab	**PKPab**	**12 28 46.7**	**+0.4**		
	comp=Z,9.3nm,1.7s							
SOKA	**Soboth**	**162.90 329**	*i* PKPab	**PKPab**	**12 28 48.4**	**-0.8**		
	comp=Z,6.3nm,1.4s							
OBKA	**Obir**	**163.25 329**	*i* PKPab	**PKPab**	**12 28 49.8**	**-0.8**		
	comp=Z,4.7nm,1.6s							
KBA	**Koelnbreinsper**	**163.28 333**	*i* PKPab	**PKPab**	**12 28 50.6**	**-0.3**		
	comp=Z,2.1nm,0.8s							
MYKA	**Terra Mystica**	**163.53 331**	*i* PKPab	**PKPab**	**12 28 51.0**	**-0.9**		
	comp=Z,4.3nm,1.1s							
WATA	**Walderalm**	**163.70 337**	*i* PKPab	**PKPab**	**12 28 52.9**	**+0.2**		
	comp=Z,3.6nm,0.8s							
WTTA	**Wattenberg**	**163.74 337**	*i* PKPab	**PKPab**	**12 28 53.8**	**+0.9**		
	comp=Z,5.1nm,1.0s							
RETA	**Reutte**	**163.82 339**	*i* PKPab	**PKPab**	**12 28 53.2**	**+0.1**		
	comp=Z,8.0nm,1.1s							
MOTA	**Moosalm**	**163.84 338**	*i* PKPab	**PKPab**	**12 28 54.3**	**+1.0**		
	comp=Z,14nm,1.3s							
ABTA	**Abfaltersbach**	**163.87 334**	*i* PKPab	**PKPab**	**12 28 52.7**	**-0.7**		
	comp=Z,4.7nm,0.9s							
FETA	**Feichten**	**164.25 338**	*i* PKPab	**PKPab**	**12 28 55.4**	**+0.3**		
	comp=Z,6.0nm,1.0s							
DAVA	**Damuels**	**164.26 340**	*i* PKPab	**PKPab**	**12 28 55.4**	**+0.2**		
	comp=Z,5.6nm,1.0s							

*TAP **10** 12:27:03.8,22.°79N×122.°95E,h105km±1km,ML3.3,D*
*JMA **10** 12:27:03.7±0.3,22.°83N×123.°04E,h55km,M2.3*
ISC 10 12:26:58.6±1.5,**22.°71N**±0.°09×**123.°11E**±0.°05,**h11**km±13km,
n28,σ0°72/48,**Southeast of Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
HATJ	**Hateruma jima**	**1.49**	**25**	S		**Sb**	**12 27 45.2**	**-0.1**
LAY	**Lan-yu**	**1.59**	**246**	*e*P		**Pg**	**12 27 29.8**	**+0.6**
	baz=245							
LAY				*e*S		**Sg**	**12 27 49.5**	**-0.3**
	baz=245							
CHKT	**Chengkung**	**1.66**	**284**	*e*P		**Pb**	**12 27 29.0**	**-0.1**
	baz=283							
CHKT				*e*S		**Sn**	**12 27 48.4**	**-0.5**
	baz=283							
IRIF	**Iriomote-Funau**	**1.72**	**19**	P		**Pb**	**12 27 30.6**	**+0.3**
IRIF				*e*S		**Sn**	**12 27 50.8**	**+0.3**
JKRS	**Kuro-shima**	**1.73**	**28**	P		**Pg**	**12 27 31.8**	**-0.2**
JKRS				*e*S		**Sn**	**12 27 51.1**	**+0.2**
TWF1	**Yuli**	**1.79**	**291**	P		**Pb**	**12 27 31.2**	**-0.3**
	baz=290							
TWF1				*e*S		**Sn**	**12 27 50.5**	**-1.8**
	baz=290							
EHY	**Hungye**	**1.83**	**296**	*e*P		**Pb**	**12 27 32.5**	**+0.3**
	baz=295							
EHY				*e*S		**Sn**	**12 27 53.5**	**+0.3**
	baz=295							
TWG	**Pinlang**	**1.88**	**274**	*e*P		**Pb**	**12 27 33.2**	**+0.1**
	baz=270							
TWG				S		**Sn**	**12 27 54.7**	**+0.1**
	baz=270							
ESL	**Shilin**	**1.90**	**306**	*e*P		**Pb**	**12 27 33.7**	**+0.4**
	baz=310							
JIJ	**Ishigaki jima**	**1.90**	**30**	P		**Pb**	**12 27 33.4**	**0.0**
JIJ				S		**Sn**	**12 27 54.7**	**-0.4**
ELDTW	**Lidau**	**1.99**	**284**	*e*P		**Pb**	**12 27 34.2**	**-0.7**
	baz=289							
ELDTW				*e*S		**Sn**	**12 27 56.3**	**-1.0**
	baz=289							
ECL	**Taimali**	**1.99**	**267**	*e*P		**Pb**	**12 27 34.4**	**-0.6**
	baz=264							
WDT	**Danda**	**2.10**	**300**	*e*P		**Pb**	**12 27 36.4**	**-0.5**
	baz=305							
WDT				*e*S		**Sn**	**12 27 59.5**	**-0.8**
	baz=305							
EAST	**Anshuo**	**2.12**	**262**	P		**Pb**	**12 27 36.7**	**-0.4**
	baz=250							
EAST				S		**Sn**	**12 28 01.0**	**+0.7**
	baz=250							
YUS	**Yu-Shan**	**2.13**	**292**	*e*P		**Pb**	**12 27 37.5**	**-0.2**
	baz=291							
YUS				*e*S		**Sn**	**12 28 01.8**	**+0.4**
	baz=291							
JISG	**Ishigakijimahi**	**2.17**	**30**	P		**Pb**	**12 27 37.0**	**-1.0**
JISG				*e*S		**Sn**	**12 28 02.2**	**+0.5**
STYT	**Tauyuan**	**2.22**	**282**	*e*P		**Pb**	**12 27 38.7**	**-0.1**
	baz=280							
STYT				*e*S		**Sn**	**12 28 03.2**	**+0.3**
	baz=280							
ALS	**Alishan**	**2.27**	**291**	*e*P		**Pb**	**12 27 39.9**	**0.0**
	baz=290							
ALS				*e*S		**Sn**	**12 28 06.0**	**+1.5**
	baz=290							
SSD	**Sandimen**	**2.29**	**271**	*e*P		**Pb**	**12 27 39.6**	**-0.3**
	baz=269							
SCZT	**Fangliau**	**2.33**	**262**	*e*P		**Pb**	**12 27 39.9**	**-0.7**
	baz=253							
SGST	**Jiashian**	**2.36**	**280**	*e*P		**Pb**	**12 27 40.3**	**-0.9**
	baz=278							
WTP	**Ta-pu**	**2.36**	**284**	*e*P		**Pb**	**12 27 41.9**	**+0.6**
	baz=282							
WTP				*e*S		**Sb**	**12 28 09.5**	**-1.0**
	baz=282							
ENTT	**Nioudou**	**2.39**	**324**	*e*P		**Pn**	**12 27 39.0**	**+1.2**
	baz=325							
TYC	**Yuchr**	**2.39**	**300**	*e*P		**Pb**	**12 27 41.2**	**-0.5**
	baz=302							
CHN4	**Tsaushan**	**2.41**	**286**	*e*P		**Pb**	**12 27 42.3**	**+0.3**
	baz=287							
CHN4				*e*S		**Sb**	**12 28 11.5**	**-0.2**
	baz=287							
CHN5	**Tsauling**	**2.41**	**292**	*e*P		**Pb**	**12 27 42.4**	**+0.4**
	baz=299							
CHN5				*e*S		**Sb**	**12 28 10.2**	**-1.7**
	baz=299							
JTJ	**Tarama**	**2.42**	**37**	P		**Pb**	**12 27 40.8**	**-1.4**
JTJ				S		**Sn**	**12 28 08.5**	**+0.8**
CHN1	**Nanshi**	**2.43**	**282**	*e*P		**Pb**	**12 27 42.7**	**+0.4**
	baz=285							
CHN1				*e*S		**Sb**	**12 28 11.4**	**-0.9**
	baz=285							

*ISCJB **10** 12:32:37.5±1.1,22.°3S±0.°1×174.°5W±0.°1,h22km,mb3.8/3,*
Error ellipse: s-maj=19.8km s-min=11.8km az=36.6
*IDC **10** 12:32:39.8±2.7,22.°28S×175.°08W,h0km,mb3.8/3,*
mb1 4.1/4,mb1mx3.7/27,mbtmp3.9/4,ML4.1/1,Error
ellipse: s-maj=96.0km s-min=31.4km az=137.0
ISC 10 12:32:40.5±1.1,**22.°4S**±0.°1×**174.°5W**±0.°1,**h22**km,**n8,**
σ1°90/9,**mb3.8/3,Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**8.83**	**17**	Pn		**Pn**	**12 34 47.7**	**+0.8**
	2.0nm,0.3s,baz=32,slow=17,SNR=2.8							
AFI				Sn		**Sn**	**12 36 24.0**	**-1.9**
	2.8nm,0.3s,baz=46,slow=18,SNR=4.7							
RAR	**Rarotonga**	**13.71**	**88**	Pn		**Pn**	**12 35 52.9**	**-0.8**
	0.9nm,0.3s,baz=61,slow=19,SNR=4.1							
ASAR	**Alice Springs**	**47.31**	**258**	P		**P**	**12 41 10.9**	**-1.9**
	0.7nm,0.9s,baz=92,slow=7.4,SNR=6.5							
WRA	**Warramunga Arr**	**47.61**	**263**	P		**P**	**12 41 13.2**	**-2.0**
	1.3nm,0.8s,baz=100,slow=8.1,SNR=7.0							
MJAR	**Matsushiro Arr**	**73.70**	**322**	P		**P**	**12 44 13.6**	**+0.9**
	0.6nm,0.7s,baz=168,slow=6.7,SNR=6.2							
AKASG	**Malin Array Be**	**146.24**	**333**	PKPbc		**PKPab**	**12 52 20.4**	**+0.7**
	0.9nm,0.5s,baz=44,slow=4.4,SNR=7.4							
BRTR	**Keskin Array B**	**150.54**	**312**	PKPbc		**PKPbc**	**12 52 31.6**	**+0.7**
	0.3nm,0.5s,baz=108,slow=4.7,SNR=3.6							
GERES	**GERESS Array B**	**152.83**	**348**	PKPbc		**PKPbc**	**12 52 38.6**	**+2.8**
	0.1nm,0.4s,baz=42,slow=1.6,SNR=3.3							

*ISCJB **10** 12:33:17.6±0.6,54.°97N±0.°02×161.°94E±0.°05,h18km±5km,*
mb3.2/5,Error ellipse: s-maj=4.6km s-min=2.7km az=18.6
*KRSC **10** 12:33:17.3±0.6,54.°95N×161.°95E,h46km±11km,ML4.2,*
FELT [III-IV] at GMS Kronoki.
*IDC **10** 12:33:17.6±1.0,55.°05N×162.°09E,h0km,mb3.4/5,*
mb1 3.6/6,mb1mx3.3/59,mbtmp3.4/6,ML2.4/1,Error
ellipse: s-maj=41.8km s-min=20.8km az=136.0
*MOS **10** 12:33:19.3±0.6,54.°99N×161.°89E,h34km,mb4.3/1,Error*
ellipse: s-maj=9.1km s-min=4.6km az=82.7
ISC 10 12:33:18.5±1.1,**55.°01N**±0.°02×**161.°88E**±0.°03,**h13**km±8km,
n84,σ1°28/144,**mb3.3/5,Near east coast of Kamchatka**
Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.46**	**191**	PN		**Pg**	**12 33 28.4**	**+0.9**
MKZ				S		**Sg**	**12 33 35.4**	**+1.7**
MKZ	**Mys Kozlova**	**0.46**	**191**	*i* P		**Pg**	**12 33 28.4**	**+0.9**
MKZ				*i* S		**Sg**	**12 33 35.4**	**+1.7**
TUMD	**Tumrok D**	**0.87**	**284**	*e*P		**Pg**	**12 33 34.5**	**-0.8**
TUMD				*e*S		**Sg**	**12 33 47.1**	**+0.4**
KZV	**Kizimen**	**0.92**	**277**	PN		**Pb**	**12 33 34.6**	**-1.8**
KZV				S		**Sg**	**12 33 47.0**	**-1.2**
KZV	**Kizimen**	**0.92**	**277**	*i* P		**Pb**	**12 33 34.6**	**-1.8**
KZV				*e*S		**Sg**	**12 33 47.0**	**-1.2**
TUMR	**Tumrok**	**1.03**	**286**	PN		Pb	12 33 34.5	-3.8
TUMR				S		**Sb**	**12 33 47.2**	**-4.6**
TUMR	**Tumrok**	**1.03**	**286**	*i* P		**Pb**	**12 33 36.9**	**-1.4**
TUMR				*e*S		**Sb**	**12 33 50.5**	**-1.3**
ZLN	**Zelenaya**	**1.18**	**329**	PN		**Pn**	**12 33 39.8**	**-1.0**
ZLN				S		**Sb**	**12 33 55.9**	**-0.2**
ZLN	**Zelenaya**	**1.18**	**329**	*e*P		**Pn**	**12 33 39.8**	**-1.0**
ZLN				*e*S		**Sb**	**12 33 55.9**	**-0.2**
KMNR	**Kamenistaya**	**1.20**	**309**	PN		**Pn**	**12 33 39.7**	**-1.4**
KMNR				S		**Sb**	**12 33 55.9**	**-0.7**
KMNR	**Kamenistaya**	**1.20**	**309**	*i* P		**Pn**	**12 33 39.7**	**-1.4**
KMNR				*e*S		**Sb**	**12 33 55.9**	**-0.7**

KOK	Koryaka	2.57	229	PN	Pn	12 33 59.9	0.0	
KOK	Koryaka	2.57	229	P	Pn	12 33 59.9	0.0	
GNL	Ganaly	2.65	242	PN	Pn	12 34 00.6	-0.4	
GNL	Ganaly	2.65	242	*e*P	Pn	12 34 00.6	-0.4	
DALK	Dalny	2.71	224	PN	Pn	12 34 01.0	-0.6	
DALK				*e*S	Sn	12 34 32.8	-1.4	
DALK	Dalny	2.71	224	*e*P	Pn	12 34 01.0	-0.6	
DALK				*e*S	Sn	12 34 32.8	-1.4	
PET	Petropavlovsk	2.75	225	*e*PN	Pn	12 34 01.3	-1.0	
PET				*e*S	Sn	12 34 33.5	-1.8	
PET				smax	smax			
	comp=E,137nm,0.6s							
PET				smax	smax			
	comp=N,235nm,0.6s							
PET	Petropavlovsk	2.75	225	*e*P	Pn	12 34 02.0	-0.3	
PET				*e*S	Sn	12 34 34.5	-0.8	
KRMR	Karymshinskiy	3.11	227	PN	Pn	12 34 07.4	+0.2	
KRMR				S	Sn	12 34 43.4	-0.8	
KRMR	Karymshinskiy	3.11	227	*e*P	Pn	12 34 07.4	+0.2	
KRMR				*e*S	Sn	12 34 43.4	-0.8	
PETK	Petropavlovsk-	3.11	234	Pn	Pn	12 34 07.5	+0.3	
	comp=N,1.9nm,0.3s,baz=60,slow=16,SNR=31							
PETK				Sn	Sn	12 34 45.9	+1.5	
	comp=N,2.3nm,0.3s,baz=60,slow=18,SNR=3.9							
RUS	Russkaya	3.26	219	PN	Pn	12 34 08.6	-0.7	
RUS				S	Sn	12 34 45.7	-2.3	
RUS	Russkaya	3.26	219	*e*P	Pn	12 34 08.6	-0.7	
RUS				S	Sn	12 34 45.7	-2.3	
ASAK	Asacha	3.54	224	PN	Pn	12 34 13.8	+0.6	
ASAK				S	Sn	12 34 54.9	+0.1	
ASAK	Asacha	3.54	224	*e*P	Pn	12 34 13.8	+0.6	
ASAK				*e*S	Sn	12 34 54.9	+0.1	
OSSR	Ossora	4.30	8	PN	Pn	12 34 24.1	+0.6	
OSSR	Ossora	4.30	8	*e*P	Pn	12 34 24.1	+0.6	
ILAR	Eielson Array	26.73	48	P	P	12 38 56.8	-0.5	
	comp=N,0.3nm,0.8s,baz=278,slow=7.9,SNR=5.8							
H11N2	WAKE ISLAND Hy	35.42	172	T	T	13 17 25.7		
	baz=355,slow=76,SNR=155							
H11N3	WAKE ISLAND Hy	35.44	172	T	T	13 17 28.2		
	baz=355,slow=76,SNR=174							
H11N1	WAKE ISLAND Hy	35.44	172	T	T	13 17 28.5		
	baz=355,slow=76,SNR=173							
YKA	Yellowknife Ar	41.05	45	P	P	12 41 01.0	-0.1	
	comp=N,0.1nm,0.5s,baz=301,slow=7.5,SNR=3.1							
YKA	Yellowknife Ar	41.05	45	P	P	12 41 01.0	-0.1	
KURK	Kurchatov	47.63	301	P	P	12 41 56.7	+2.9	
KURBB	Kurchatov Arra	47.73	301	P	P	12 41 56.7	+2.1	
	comp=N,0.2nm,0.7s,baz=58,slow=9.4,SNR=3.0							
WRA	Warramunga Arr	78.27	206	P	P	12 45 19.5	+1.7	
	comp=N,0.6nm,0.8s,baz=18,slow=5.9,SNR=3.4							
ASAR	Alice Springs	81.94	206	P	P	12 45 40.4	+2.7	
	comp=N,0.4nm,0.7s,baz=14,slow=6.0,SNR=4.1							

KRSC 10 12:39:13.8±2.6, 48°29N×156°59E, h22km±10km, ML4.0, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	Severo-Kuril's	2.42	353	P	Pn	12 39 51.6	-0.4
SKR				*e*S	Sn	12 40 21.2	+0.3
PAU	Pauzhetka	3.19	3	P	Pb	12 40 06.5	-3.2
PAU				S	Sb	12 40 45.0	-3.1
ASAK	Asacha	4.19	11	P	Pn	12 40 21.0	+4.6
RUS	Russkaya	4.33	16	*e*P	Pn	12 40 21.8	+3.5
DALK	Dalny	4.95	15	P	Pn	12 40 30.9	+4.2
DALK				S	Sn	12 41 30.1	+6.9
UGLR	Uglovaya	5.13	15	P	Pn	12 40 35.0	+5.7
AVH	Avacha	5.17	14	P	Pn	12 40 35.1	+5.3
SDLR	Sedlovina	5.21	15	P	Pn	12 40 34.8	+4.4
KRER	Koryakskii	5.21	14	P	Pn	12 40 35.9	+5.4
SPN	Mys Shipunski	5.29	23	P	Pn	12 40 36.4	+5.0
GNL	Ganaly	5.48	8	P	Pn	12 40 39.3	+5.1
MKZ	Mys Kozlova	7.05	25	P	Pn	12 40 59.0	+3.4
BKI	Bering	9.04	36	S	Sn	12 43 08.4	+4.5

*GUC **10** 12:49:32.7±0.5, 34°12S×72°33W, h28km±8km, ML3.5*
ISC 10 12:49:32.0±2.5, 34°14S±0°04×72°24W±0°1, h14km±10km, n20, σ1§68/35, 4C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	Pichilemu	0.41	128	⇑*i*P	Pg	12 49 40.4	+0.3
CHPI				*i* S	Sg	12 49 46.6	+1.0
NICH	Los Niches	1.29	132	*e*P	Pn	12 49 54.7	-0.9
NICH				*i* S	Sn	12 50 11.3	-1.3
TALC	Talca	1.40	154	⇑*i*P	Pn	12 49 56.9	-0.2
TALC				*i* S	Sn	12 50 15.2	-0.1
RCDM	Rinconada Maip	1.47	64	*e*P	Pn	12 49 57.2	-1.0
RCDM				*i* S	Sn	12 50 15.3	-1.8
ANTU	Antumapu	1.57	69	*e*P	Pn	12 49 58.8	-0.7
ANTU				*e*S	Sn	12 50 18.9	-0.7
ANTU				AML	AML	12 50 20.5	
	comp=N,1μm,0.5s						
ROC1	El Roble	1.63	45	*e*P	Pn	12 49 59.5	-1.1
ROC1				⇓*e*S	Sg	12 50 24.4	-0.3
ROCH	El Roble	1.64	45	*e*P	Pn	12 50 00.2	-0.4
ROCH				*e*S	Sn	12 50 21.3	-0.3
ROCH				AML	AML	12 50 31.3	
	comp=N,1μm,0.4s						
CLCH	Cerro Calan	1.71	65	⇑*i*P	Pn	12 50 01.3	-0.2
CLCH				*i* S	Sn	12 50 23.1	-0.2
CLCH				AML	AML	12 50 31.1	
	comp=N,813nm,0.4s						
PEL	Peldehue	1.73	55	⇑*i*P	Pn	12 50 01.9	+0.1
PEL				*e*S	Sn	12 50 23.5	-0.3
PEL				AML	AML	12 50 31.9	
	comp=E,940nm,0.4s						
AAGR	Agrelo	3.15	71	*e*P	Pn	12 50 24.2	+2.9
AUSP	Uspallata	3.16	54	*e*P	Pb	12 50 26.8	-1.4
AUSP				*e*S	Sb	12 51 06.3	-0.3
ARCO	CERRO ARCO	3.17	67	*e*P	Pb	12 50 27.1	-1.0
ARCO				IAML		12 50 32.5	
	comp=Z,86nm,0.3s						
ARCO				*e*S	Sb	12 51 09.3	+2.7
ASAL	Salagasta	3.35	64	*e*P	Pb	12 50 31.2	-0.1
ASAL				*e*S	Sg	12 51 17.2	-2.5
RTLS	Leoncito	3.50	49	*e*P	Pn	12 50 29.4	+3.2
RTLS				*e*S	Sb	12 51 17.8	+1.5
RTCV	Cerro Valdivia	3.95	56	*e*P	Pn	12 50 35.7	+3.4
RTCV				*e*S	Sg	12 51 36.8	-2.2
RTLL	Cerro Villicun	4.33	51	*e*P	Pn	12 50 39.2	+1.7
RTLL				*e*S	Sb	12 51 39.6	-0.5
AMOG	MOGNA	4.58	47	*e*P	Pn	12 50 42.1	+1.1
AVFE	Valle Fertil	5.43	52	*e*P	Pn	12 50 53.6	+1.0
AVFE				IAML		12 51 02.2	
	comp=Z,8.7nm,0.3s						
ACHE	Chepes	5.67	60	*e*P	Pn	12 50 57.1	+1.1
TCA	Tanti	7.14	69	*e*P	Pn	12 51 20.1	+4.0
TCA				IAML		12 51 22.9	
	comp=Z,6.6nm,0.4s						

*GCMT **10** 12:51:27.5±0.2, 28°.90S×176°.51W, h22km, MW5.2/88, Moment Tensor Solution. s69,c101; s88,c136; Duration: 1§0 Moment tensor: Scale 10^{16}Nm; M_{rr}6.35±.24; $M_{\theta\theta}$0.12±.18; $M_{\phi\phi}$-6.47±.17; $M_{r\theta}$0.30±.33; $M_{\theta\phi}$-1.69±.12; $M_{\phi r}$3.44±.26; Best double couple: M_o7.46300×10^{16} NP1:ϕ_s9.00000°, δ59.00000°, λ85.00000°. NP2:ϕ_s198.00000°, δ32.00000°, λ98.00000°. Principal axes: T 7.2170, Plg76.0000°, Azm266.0000°; N 0.4970, Plg4.0000°, Azm12.0000°; P -7.7100, Plg14.0000°, Azm103.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **10** 12:51:27.6±0.4, 28°.97S×176°.74W, h10km, mb5.0/15 Error ellipse: s-maj=12.1km s-min=9.0km az=131.0*

*ISCJB **10** 12:51:30.5±0.4, 29°.15S±0°.05×176°.97W±0°.07, h36km, mb4.7/26, MS4.5/20, Error ellipse: s-maj=9.7km s-min=7.3km az=28.6*

*IDC **10** 12:51:33.5±2.2, 28°.91S×176°.97W, h48km±17km, mb4.2/15, mb1 4.3/16, mb1mx4.1/32, mbtmp4.4/16, ML3.5/1, MS3.4/23, Ms1 4.4/23, ms1mx4.4/30, Error ellipse: s-maj=23.2km s-min=20.4km az=86.0*

ISC 10 12:51:31.8±0.4, 29°09S±0°06×176°79W±0°06, h36km, n94, σ2§18/79, mb4.6/26, MS4.4/20, 1C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.00	261	P	Pn	12 51 48.5	-0.7
	796nm,0.3s,baz=110,slow=6.8,SNR=30						
RAO				S	Sn	12 52 02.9	+0.7
	4μm,0.3s,baz=106,slow=20,SNR=18						
RAO				LR	LR	12 52 18.9	
	comp=Z,15μm,20.4s,baz=154,slow=50						
RAO	Raoul Island	1.00	261	*e*Pn	Pn	12 51 49.9	+0.7
RAO				*e*Sn	Sn	12 52 06.0	+3.8
OUZ	Omahuta	10.18	231	*e*Pn	Pn	12 54 03.5	+8.2
URZ	Urewera	10.46	207	P	Pn	12 53 53.0	-6.1
	0.6nm,0.3s,baz=210,slow=20,SNR=4.5						
URZ				S	Sn	12 55 48.3	-6.6
	2.0nm,0.3s,baz=131,slow=17,SNR=3.0						
URZ	Urewera	10.46	207	*e*Pn	Pn	12 54 00.9	+1.8
URZ				*e*Sn	Sn	12 55 55.1	+0.2
MSVF	Nonsavu	12.26	336	*e*Pn	Pn	12 54 25.1	+1.2
	83nm,1.3s						
KHZ	Kahutara	15.42	208	*e*Pn	Pn	12 55 02.6	-3.9
KHZ				*e*Sn	Sn	12 57 45.1	-11
AFI	Afiamalu	15.81	18	P	Pn	12 55 04.6	-7.1
	1.2nm,0.3s,baz=163,slow=19,SNR=2.7						
AFI				S	Sn	12 57 42.3	-24
	1.0nm,0.3s,baz=180,slow=20,SNR=2.4						
AFI				LR	LR	13 01 51.6	
	comp=Z,521nm,19.6s,baz=199,slow=39						
DZM	Mont Dzumac	16.66	291	P	Pn	12 55 22.1	-0.4
	0.2nm,0.3s,baz=122,slow=19,SNR=1.7						
DZM				LR	LR	13 00 38.5	
	comp=Z,4μm,19.0s,baz=125,slow=33						
DZM	Mont Dzumac	16.66	291	*e*P	P	12 55 28.5	+3.8
	129nm,1.6s						
DZM				*e*LR	LR	12 59 24.5	
	6μm,25.1s						
DZM	Mont Dzumac	16.66	291	*e*P	Pn	12 55 23.2	+0.6
	109nm,1.5s						
OXZ	Oxford	16.80	209	*e*P	Pn	12 55 19.2	-5.0
MQZ	McQueen's Vall	16.86	207	*e*P	Pn	12 55 20.2	-4.6
RAR	Rarotonga	17.27	67	P	Pn	12 55 25.7	-4.4
	1.8nm,0.3s,baz=221,slow=20,SNR=2.6						
RAR				S	Sn	12 58 14.3	-27
	baz=23,slow=8.9,SNR=1.7						
RAR				LR	LR	13 00 16.4	
	comp=Z,1μm,19.6s,baz=246,slow=30						
RPZ	Rata Peaks	17.54	210	P	Pn	12 55 28.4	-4.9
	0.8nm,0.3s,baz=107,slow=11,SNR=2.5						
RPZ				S	Sn	12 58 31.8	-16
	0.4nm,0.3s,baz=349,slow=16,SNR=2.9						
RPZ	Rata Peaks	17.54	210	*e*P	Pn	12 55 32.5	-0.8
	62nm,1.3s						
ODZ	Otahua Downs	18.78	209	*e*P	P	12 55 47.9	+0.2
	118nm,1.6s						
WKZ	Wanaka	19.33	212	*e*P	P	12 55 51.4	-2.4
TBI	Tubuai	25.14	83	*e*S	S	13 01 17.4	+1.2
	407nm,28.0s						
TBI				*e*LR	LR	13 03 03.9	
	2μm,29.8s,baz=246						
ARMA	Armidale	27.41	259	*e*P	P	12 57 15.2	+1.1
	17nm,1.3s						
PPT2	Papeete2	27.41	71	*e*LQ	LQ	13 02 35.2	
	2μm,25.5s						
PPT2				*e*LR	LR	13 04 03.0	
	2μm,27.5s,baz=238						
PPT	Papeete	27.42	71	LR	LR	13 05 09.7	
	comp=Z,634nm,20.7s,baz=246,slow=30						
CTA	Charters Tower	34.67	277	P	P	12 58 17.0	-1.1
	7.5nm,0.8s,baz=97,slow=13,SNR=7.0						
CTA				LR	LR	13 10 58.0	
	comp=Z,2μm,20.2s,baz=122,slow=34						
CTAO	Charters Tower	34.67	277	*e*P	P	12 58 17.8	-0.3
	78nm,1.0s						
STKA	Stephens Creek	35.82	255	P	P	12 58 27.5	-0.3
	3.0nm,0.6s,baz=102,slow=13,SNR=5.9						
STKA				LR	LR	13 11 54.8	
	comp=Z,1μm,18.1s,baz=90,slow=34						
RKT	Rikitea	37.87	91	*e*S	S	13 04 36.5	+2.1
	259nm,25.5s						
RKT				*e*LR	LR	13 08 57.8	
	1μm,29.0s,baz=257						
TAOE	Nuku Hiva Isla	39.83	67	*e*S	S	13 05 07.5	+3.3
	150nm,26.7s						
TAOE				*e*LR	LR	13 09 44.7	
	1μm,27.2s						
ASAR	Alice Springs	44.25	265	P	P	12 59 36.5	-1.4
	4.8nm,0.7s,baz=97,slow=7.5,SNR=32						
ASAR				LR	LR	13 17 30.6	
	comp=Z,2μm,18.4s,baz=106,slow=35						
WRAB	Tennant Creek	45.12	270	*e*P	P	12 59 43.6	-1.3
	21nm,1.1s						
WRA	Warramunga Arr	45.13	270	P	P	12 59 43.5	-1.4
	7.1nm,0.8s,baz=108,slow=8.0,SNR=30						
WRA				LR	LR	13 16 45.2	
	comp=Z,609nm,20.5s,baz=115,slow=34						
FORT	Forrest	47.41	254	*e*P	P	13 00 02.3	-0.5
	102nm,0.6s						
SBA	Scott Base	49.41	185	*e*P	P	13 00 21.1	+3.6
	33nm,1.3s						
VNDA	Vanda	49.50	186	P	P	13 00 20.8	+2.6
	1.6nm,1.0s,baz=18,slow=6.6,SNR=4.4						
VNDA				LR	LR	13 18 06.6	
	comp=Z,232nm,20.1s,baz=19,slow=32						
FITZ	Fitzroy Crossi	53.44	268	P	P	13 00 46.8	-1.6
	9.0nm,1.0s,baz=105,slow=3.9,SNR=8.0						
FITZ	Fitzroy Crossi	53.44	268	*e*P	P	13 00 47.0	-1.4
	22nm,1.3s						
GUMO	Guam	56.33	314	LR	LR	13 23 03.9	
	comp=Z,348nm,20.0s,baz=164,slow=34						
CASY	Casey	56.78	207	*e*P	P	13 01 12.3	+0.5
	2.7nm,0.8s						
QSPA	South Pole Qui	61.01	180	*e*P	P	13 01 43.6	+2.1
	31nm,0.6s						
MAW	Mawson	73.89	200	P	P	13 03 04.1	+1.6
	2.4nm,0.9s,baz=103,slow=9.2,SNR=5.4						
MAW				LR	LR	13 35 34.0	
	comp=Z,523nm,18.5s,baz=68,slow=36						
USHA	Ushuaia	76.40	146	LR	LR	13 29 15.3	
	comp=Z,2μm,18.7s,baz=166,slow=30						
MJAR	Matsushiro Arr	77.79	324	P	P	13 03 23.7	-1.5
	3.4nm,0.9s,baz=158,slow=4.7,SNR=13						
MJAR				LR	LR	13 32 08.0	
	comp=Z,92nm,21.8s,baz=155,slow=31						
MAJO	Matsushiro	77.79	324	*e*P	P	13 03 23.4	-1.8
	9.8nm,1.0s						
SYO	Syowa Base	78.62	193	⇑*e*P	P	13 03 28.7	-0.7
JNU	Nakatsue	79.30	317	P	P	13 03 32.3	-1.3
	6.1nm,0.9s,baz=14,slow=12,SNR=2.6						
PLCA	Paso Flores	82.62	133	LR	LR	13 31 52.3	
	comp=Z,148nm,21.6s,baz=320,slow=29						
LPIG	La Paz	82.95	58	LR	LR	13 31 03.7	
	comp=Z,182nm,20.8s,baz=212,slow=29						
YSS	Yuzh-Sakhalins	84.05	333	*e*P	P	13 03 58.7	+0.5
	16nm,0.8s						
KSRS	Korea Array	84.05	319	P	P	13 03 58.6	+0.1
	3.5nm,1.1s,baz=140,slow=5.6,SNR=7.5						
KSRS				LR	LR	13 39 09.1	
	comp=Z,83nm,18.1s,baz=122,slow=34						
KSAR	Wonju Array Be	84.06	319	P	P	13 03 58.6	0.0
PFO	Pinyon Flats O	84.55	47	LR	LR	13 37 21.8	
	comp=Z,252nm,18.3s,baz=248,slow=32						
PETK	Petropavlovsk-	84.82	345	P	P	13 04 02.7	+0.6
	7.3nm,0.8s,baz=104,slow=6.1,SNR=9.6						
PETK				LR	LR	13 37 48.4	
	comp=Z,115nm,18.9s,baz=162,slow=33						
USRK	Ussuriysk Ar.	86.67	326	P	P	13 04 11.7	+0.3
	3.1nm,0.9s,baz=107,slow=2.6,SNR=11						
USRK				LR	LR	13 40 26.2	
	comp=Z,106nm,19.1s,baz=140,slow=34						
TUC	Tucson	87.47	51	*e*P	P	13 04 19.2	+3.4
	17nm,1.5s						
KLR	Kul'dur	90.45	329	P	P	13 04 30.1	+0.8
	2.3nm,0.8s,baz=92,slow=4.6,SNR=8.6						
TXAR	Lajitas Array	90.79	57	P	P	13 04 31.6	+0.1
	0.2nm,0.5s,baz=193,slow=5.1,SNR=6.8						
TXAR				LR	LR	13 39 29.1	
	comp=Z,123nm,18.7s,baz=0.0,slow=32						
CMIG	Matias Romero	91.34	71	LR	LR	13 34 52.7	
	comp=Z,116nm,21.6s,baz=238,slow=28						
ENH	Enshi	91.75	304	*e*P	P	13 04 36.5	+0.6
	55nm,1.7s						
ANMO	Albuquerque	91.94	51	*e*P	P	13 04 38.5	+1.8
	8.4nm,1.7s						
PDAR	Pinedale Array	94.46	43	LR	LR	13 43 00.7	
	comp=Z,261nm,18.2s,baz=250,slow=33						
ILAR	Eielson Array	96.42	12	P	P	13 04 55.5	-0.9
	0.4nm,0.9s,baz=226,slow=6.1,SNR=3.5						
LPAZ	La Paz	97.70	113	LR	LR	13 41 18.6	
	comp=Z,65nm,19.9s,baz=253,slow=30						
MKAR	Makanchi Array	117.74	310	PKP	PKPdf	13 10 12.9	-1.0
	2.2nm,1.0s,baz=100,slow=1.4,SNR=9.9						
ZALV	Zalesovo Beam	117.76	319	PKP	PKPdf	13 10 12.6	-1.1
	0.4nm,0.3s,baz=222,slow=2.0,SNR=4.9						
KURK	Kurchatov	120.91	314	*e*PKPdf	PKPdf	13 10 18.8	-1.0
KKAR	Karatay Array	125.22	304	*e*PKPdf	PKPdf	13 10 27.6	-0.8
BRVK	Borovoye	126.27	316	*e*PKPdf	PKPdf	13 10 32.5	+2.5
ABKAR	Abkulak array	132.85	312	*e*PKPdf	PKPdf	13 10 42.8	+0.1
GEYT	Alibeck	133.95	296	PKP	PKPdf	13 10 46.3	+1.1
	1.5nm,0.7s,baz=180,slow=1.2,SNR=3.6						
H10S3	ASCENSION HYDR	38.43	153	T	T	15 46 30.9	
	baz=204,slow=74,SNR=14						
H10S2	ASCENSION HYDR	38.43	153	T	T	15 46 32.7	
	baz=204,slow=74,SNR=16						
H10S1	ASCENSION HYDR	38.45	153	T	T	15 46 33.5	
	baz=204,slow=74,SNR=14						
H10N3	ASCENSION HYDR	39.50	152	T	T	15 48 02.8	
	baz=203,slow=75,SNR=14						
H10N1	ASCENSION HYDR	39.51	152	T	T	15 48 03.0	
	baz=203,slow=75,SNR=10						
H10N2	ASCENSION HYDR	39.52	152	T	T	15 48 02.5	
	baz=203,slow=75,SNR=20						
TBLG	Delisi	144.22	302	P	PKPdf	13 11 05.0	+1.2
ONI	Oni	145.04	304	P	PKPdf	13 11 05.6	+0.4
AKH	Akhalkalaki	145.19	302	P	PKPdf	13 11 06.0	+0.3
KBZ	Khabaz	145.24	306	PKP	PKPbc	13 11 04.5	-0.7
	3.1nm,0.9s,baz=72,slow=4.7,SNR=8.4						
KIV	Kislovodsk	145.34	306	*e*PKPdf	PKPdf	13 11 05.9	+0.2
NB2	NORSAR Subarra	147.61	353	PKP	PKPab	13 11 13.3	-0.6
	comp=Z,16nm,1.2s,baz=24,slow=3.7						
NOA	NORSAR Array B	147.61	353	PKPbc	PKPdf	13 11 10.1	+1.1
	comp=Z,4.1nm,0.8s,baz=15,slow=4.5,SNR=7.0						
NACGM	Naroch	149.12	333	*e*	PKPbc	13 11 15.0	-0.7
NACGM				*e*LR	LR	14 11 32.0	
AKASG	Malin Array Be	150.87	325	PKPbc	PKPbc	13 11 19.2	-0.9
	comp=Z,12nm,0.7s,baz=46,slow=2.9,SNR=23						
KIEV	Kiev	150.88	325	*e*PKPbc	PKPbc	13 11 19.0	-1.1
BRTR	Keskin Array B	152.87	301	PKPbc	PKPbc	13 11 24.8	-0.4
	comp=Z,3.7nm,0.9s,baz=126,slow=2.1,SNR=11						
KOLS	Kolonicke sedl	155.39	329	*e*	PKPdf	13 11 32.5	+11
KOLS	Kolonicke sedl	155.39	329	*e*PKP	PKPab	13 11 44.2	-2.4
CRVS	Cervenica-Dubn	155.78	330	*e*PKP	PKPab	13 11 48.4	+0.2
CLL	Collm	156.63	344	*e*(PKPab)	PKPab	13 11 52.0	+0.3
	comp=Z,9.0nm,1.4s						
CLL				*e*		13 12 06.0	
BRG	Berggiesshubel	156.79	343	*e*PKP	PKPab	13 11 52.0	-0.5
	comp=Z,2.4nm,0.8s						
VYHS	Vyhne	157.20	332	*e*PKP	PKPab	13 11 57.3	+2.9
KHC	Kasperske Hory	158.47	341	*e*PKPAB	PKPab	13 12 02.0	+2.1
KHC				*ex*	x	13 12 15.0	
GERES	GERESS Array B	158.70	341	PKP	PKPdf	13 11 24.9	-0.5
	comp=Z,0.1nm,0.3s,baz=48,slow=1.5,SNR=2.1						
TORD	Torodi Ar. Bea	164.07	175	PKPab	PKPab	13 12 25.5	+0.5
	comp=Z,2.3nm,1.0s,baz=186,slow=6.0,SNR=4.4						

*CSEM **10** 13:08:55.7±0.4, 29°.96N×57°.50E, h2km, ML3.6, Error ellipse: s-maj=11.2km s-min=8.2km az=33.0*

TEH 10 13:08:54.2, 30°.04N×57°.64E, h2km, ML3.6, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHMN	Cheshme madani	0.20	206	*e*Pg	Pg	13 08 57.8	-0.4
CHMN	Cheshme madani	0.20	206	*e*Pg	Pg	13 08 57.8	-0.4
TVBK	TV Kerman	0.77	266	*e*Pg	Pg	13 09 08.5	-0.4
TVBK	TV Kerman	0.77	266	*e*Pg	Pg	13 09 08.5	-0.4
KRBR	Kerman	0.77	266	*e*Pg	Pg	13 09 08.5	-0.4
KRBR				*e*Sg	Sg	13 09 18.2	-0.7
NGRK	Negar Kerman	0.89	244	*e*Pg	Pg	13 09 09.9	-1.3
NGRK	Negar Kerman	0.89	244	*e*Pg	Pg	13 09 09.9	-1.3
KHGB	Koh Gabri	1.06	288	*e*Pg	Pg	13 09 13.8	-0.8
KHGB	Koh Gabri	1.06	288	*e*Pg	Pg	13 09 13.8	-0.8
IBAF	Bafgh	2.36	311	*e*Pn	Pn	13 09 35.6	+1.4
IBAF				*e*Sg	Sb	13 10 07.3	+0.1
IBAF				*e*AMB	AMB	13 10 19.6	
	comp=Z,3μm,0.2s						
IBAF	Bafgh	2.36	311	*e*Pn	Pn	13 09 35.6	+1.4
IKOO	Kooshah	2.64	26	*e*Pn	Pn	13 09 37.8	-0.4
IKOO				*e*AMB	AMB	13 10 31.5	
	comp=Z,4μm,0.1s						
ZHSF	Zahedan	2.76	98	*e*Pn	Pb	13 09 42.6	-1.8
ZHSF				*e*Sg	Sg	13 10 24.4	+1.6
IMEH	Mehriz	2.93	298	*e*Pn	Pn	13 09 41.8	-0.4
IMEH				*e*AMB	AMB	13 10 30.7	
	comp=Z,1μm,0.2s						
IMEH	Mehriz	2.93	298	*e*Pn	Pn	13 09 41.8	-0.4
BNDS	Bandar-Abbas	2.94	206	*e*Pn	Pn	13 09 42.6	+0.5
ICHK	Chekchek	3.54	309	*e*Pn	Pn	13 09 53.7	+3.3
ICHK				*e*AMB	AMB	13 11 00.7	
	comp=Z,906nm,0.3s						
ICHK	Chekchek	3.54	309	*e*Pn	Pn	13 09 53.7	+3.3
TABS	Tabas	3.62	353	*e*Pn	Pn	13 09 54.2	+2.7
ISAD	Sadrabad	3.88	300	*e*Pn	Pn	13 09 54.3	-0.8
ISAD	Sadrabad	3.88	300	*e*Pn	Pn	13 09 54.3	-0.8

**IDC 10 13:09:01.1±

10nm,0.3s,baz=60,slow=20,SNR=8.8
JHJ Sn **Sn** **13 20 58.1 -5.0**
3.7nm,0.3s,baz=72,slow=19,SNR=3.7
ASAJ Asahikawa 6.17 355 Pn **Pn** **13 20 06.2 0.0**
baz=270,slow=20
USRK Ussuriysk Ar. 10.57 310 Pn **Pn** **13 21 06.5 -0.2**
0.1nm,0.3s,baz=102,slow=14,SNR=2.7
KSRS Korea Array 12.21 272 Pn **Pn** **13 21 32.8 +3.7**
0.1nm,0.3s,baz=92,slow=14,SNR=2.6
KSAR Wonju Array Be 12.24 272 Pn **Pn** **13 21 32.8 +3.3**
KLR Kul'dur 14.02 327 Pn **Pn** **13 21 51.7 -2.0**
0.1nm,0.3s,baz=133,slow=13,SNR=5.1
SEY Seymchan 25.60 10 P **P** **13 24 05.0 +1.0**
0.6nm,0.4s,baz=189,slow=19,SNR=3.4
H11N2 WAKE ISLAND Hy 27.38 125 T T 13 53 11.1
baz=317,slow=75,SNR=80
H11N1 WAKE ISLAND Hy 27.39 125 T T 13 53 17.4
baz=317,slow=75,SNR=49
H11N3 WAKE ISLAND Hy 27.40 125 T T 13 53 12.5
baz=317,slow=75,SNR=51
H11S1 WAKE ISLAND Hy 28.15 127 T T 13 53 58.5
baz=319,slow=76,SNR=9.5
H11S3 WAKE ISLAND Hy 28.15 127 T T 13 54 09.4
baz=319,slow=76,SNR=8.8
H11S2 WAKE ISLAND Hy 28.17 127 T T 13 54 08.1
baz=319,slow=76,SNR=9.8
SONM Songino Array 28.55 302 P **P** **13 24 31.5 +0.7**
0.8nm,0.7s,baz=86,slow=9.4,SNR=6.2
ZALV Zalesovo Beam 42.42 312 P **P** **13 26 29.6 +0.2**
1.6nm,0.7s,baz=101,slow=7.7,SNR=4.9
MKAR Makanchi Array 44.91 302 P **P** **13 26 49.3 -0.3**
0.6nm,0.6s,baz=88,slow=10,SNR=6.5
KURK Kurchatov 46.56 308 *eP* **P** **13 27 02.4 -0.1**
19nm,0.6s
ILAR Eielson Array 47.89 33 P **P** **13 27 12.8 0.0**
0.3nm,0.7s,baz=263,slow=7.8,SNR=3.7
WRA Warramunga Ar 58.22 190 P **P** **13 28 29.0 -0.2**
2.7nm,0.8s,baz=9.7,slow=7.2,SNR=13
ABKAR Akbulak array 58.50 310 *eP* **P** **13 28 31.0 0.0**
0.6nm,0.6s
ASAR Alice Springs 61.94 190 P **P** **13 28 55.0 +0.2**
0.9nm,0.9s,baz=12,slow=6.9,SNR=7.0

*GUC **10** 13:19:39.9±0.5, 34.1°S×72.4°W, h36km±2km, ML3.0*
ISC 10 13:19:35.1±2.5, 34.05S±0.04×72.5W±0.1, h12km±14km, n16, σ1°§04/24, 2C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.56**	**128**	⇑*iP*		**Pn**	**13 19 48.9**	**+0.1**
CHPI				*i* S		**Sb**	**13 19 55.4**	**+0.7**
NICH	**Los Niches**	**1.44**	**132**	*eP*		**Pg**	**13 20 02.8**	**0.0**
NICH				*i* S		**Sb**	**13 20 20.4**	**+0.2**
TALC	**Talca**	**1.54**	**151**	*eP*		**Pg**	**13 20 05.1**	**+0.4**
TALC				*i* S		**Sg**	**13 20 24.1**	**-0.6**
ANTU	**Antumapu**	**1.66**	**74**	*eP*		**Pg**	**13 20 07.1**	**+0.3**
ANTU				*eS*		**Sb**	**13 20 27.6**	**+1.3**
ANTU				IAML			13 20 29.0	
	comp=N,378nm,0.2s							
ROC1	**El Roble**	**1.66**	**50**	*eP*		**Pn**	**13 20 03.0**	**-1.2**
ROCH	**El Roble**	**1.67**	**50**	*eP*		**Pg**	**13 20 08.4**	**+1.3**
ROCH				*i* S		**Sg**	**13 20 29.9**	**+1.2**
ROCH				IAML			13 20 38.9	
	comp=N,245nm,0.4s							
CLCH	**Cerro Calan**	**1.79**	**69**	*eP*		**Pg**	**13 20 09.3**	**-0.1**
CLCH				*i* S		**Sb**	**13 20 31.6**	**+1.4**
CLCH				IAML			13 20 39.3	
	comp=N,294nm,1.0s							
PEL	**Peldehue**	**1.79**	**60**	⇑*iP*		**Pg**	**13 20 10.6**	**+1.2**
PEL				*i* S		**Sg**	**13 20 32.9**	**+0.3**
PEL				IAML			13 20 39.9	
	comp=N,282nm,0.7s							
FCH	**Farellones**	**2.01**	**70**	*eP*		**Pb**	**13 20 12.9**	**+1.2**
FCH				*i* S		**Sb**	**13 20 37.6**	**+0.9**
AUSP	**Uspallata**	**3.21**	**56**	*eP*		**Pg**	**13 20 35.2**	**-1.4**
AUSP				*eS*		**Sg**	**13 21 16.4**	**-1.8**
AAGR	**Agrelo**	**3.24**	**74**	*eP*		**Pb**	**13 20 31.5**	**-1.1**
ARCO	**CERRO ARCO**	**3.25**	**69**	*eP*		**Pg**	**13 20 36.1**	**-1.2**
ARCO				IAML			13 20 41.0	
	comp=Z,32nm,0.3s							
ASAL	**Salagasta**	**3.42**	**66**	*eP*		**Pg**	**13 20 39.8**	**-0.9**
ASAL				*eS*		**Sg**	**13 21 24.7**	**-0.3**
RTLS	**Leoncito**	**3.53**	**51**	*eP*		**Pb**	**13 20 37.9**	**+0.3**
AMOG	**MOGNA**	**4.61**	**49**	*eP*		Pb	13 20 51.1	-4.9
ACHE	**Chepes**	**5.73**	**61**	*eP*		Pn	13 21 06.0	+5.9

*IDC **10** 13:23:27.9±1.2, 28.3°S×177.2°W, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.8/32, mbtmp3.9/4, MS3.5/2, Ms1 3.5/2, ms1mx3.0/27, Error ellipse: s-maj=39.3km s-min=24.7km az=107.0*
*NEIC **10** 13:23:29.4±0.9, 28.55S×177.23W, h10km, mb4.4/2, Error ellipse: s-maj=27.1km s-min=17.3km az=101.0*
*ISCJB **10** 13:23:34.9±1.6, 28.6S±0.2×177.5W±0.3, h54km, mb4.0/6, Error ellipse: s-maj=35.6km s-min=21.3km az=169.4*
ISC 10 13:23:35.5±1.1, 28.5S±0.1×177.3W±0.2, h54km, n15, σ1°§43/13, mb3.8/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.92**	**215**	Pn		**Pn**	**13 23 49.6**	**-2.7**
	399nm,0.3s,baz=83,slow=12,SNR=22							
RAO					Sn	**Sn**	**13 24 06.9**	**+2.3**
	808nm,0.3s,baz=69,slow=17,SNR=16							
URZ	**Urewera**	**10.79**	**204**	Pn		Pn	13 26 01.4	-5.8
	0.3nm,0.3s,baz=59,slow=18,SNR=3.2							
URZ					Sn	Sn	13 27 51.7	-15
	1.0nm,0.3s,baz=83,slow=22,SNR=7.0							
DZM	**Mont Dzumac**	**16.01**	**290**	LR		LR	13 31 27.1	
	comp=Z,204nm,18.4s,baz=155,slow=30							
RAR	**Rarotonga**	**17.49**	**69**	LR		LR	13 31 45.9	
	comp=Z,149nm,20.8s,baz=236,slow=29							
ASAR	**Alice Springs**	**43.84**	**265**	P		**P**	**13 31 35.4**	**-1.3**
	1.3nm,0.8s,baz=105,slow=7.1,SNR=21							
WRAB	**Tennant Creek**	**44.65**	**270**	*eP*		**P**	**13 31 43.9**	**+0.8**
	0.6nm,0.4s							
WRA	**Warramunga Arr**	**44.66**	**270**	P		**P**	**13 31 43.7**	**+0.5**
	1.6nm,0.8s,baz=109,slow=7.7,SNR=5.4							
QSPA	**South Pole Qui**	**61.61**	**180**	*eP*		**P**	**13 33 47.2**	**-0.1**
	9.5nm,0.9s							
MAW	**Mawson**	**74.29**	**200**	P		**P**	**13 35 08.6**	**+1.9**
	0.9nm,0.5s,baz=64,slow=1.6,SNR=3.6							
MJAR	**Matsushiro Arr**	**77.03**	**325**	P		**P**	**13 35 23.5**	**+0.8**
	0.3nm,0.3s,baz=142,slow=5.2,SNR=4.7							
KURK	**Kurchatov**	**120.15**	**315**	PKP		**PKPdf**	**13 42 19.3**	**-0.7**
KURBB	**Kurchatov Arra**	**120.20**	**314**	PKP		**PKPdf**	**13 42 19.3**	**-0.7**
	0.4nm,0.6s,baz=113,slow=2.1,SNR=4.5							
BVAR	**Borovoye Array**	**125.45**	**317**	PKP		**PKPdf**	**13 42 29.6**	**-0.5**
	0.4nm,0.7s,baz=95,slow=2.2,SNR=3.4							
AKASG	**Malin Array Be**	**150.12**	**325**	PKPbc		**PKPbc**	**13 43 19.6**	**-0.2**
	1.3nm,0.6s,baz=45,slow=2.8,SNR=7.6							
TORD	**Torodi Ar. Bea**	**164.70**	**176**	PKPab		**PKPab**	**13 44 29.4**	**-0.1**
	0.4nm,0.8s,baz=167,slow=3.9,SNR=2.3							

IDC 10 13:31:01.3±2.6, 28.74S×176.77W, h0km, mb3.5/2, mb1 3.9/3, mb1mx3.6/35, mbtmp3.8/3, ML3.2/1, Error ellipse: s-maj=70.3km s-min=34.1km az=133.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.13**	**243**	Pn		Pn	13 31 25.8	+1.5
	253nm,0.3s,baz=89,slow=7.7,SNR=21							
RAO					Sn	Sg	13 31 36.7	-0.8
	221nm,0.3s,baz=73,slow=19,SNR=5.4							
URZ	**Urewera**	**10.78**	**207**	Pn		Pn	13 33 35.0	-1.8
	0.2nm,0.3s,baz=315,slow=4.3,SNR=2.5							
URZ					Sn	Sn	13 35 26.8	-11
	0.4nm,0.3s,baz=240,slow=20,SNR=3.6							
ASAR	**Alice Springs**	**44.30**	**265**	P		P	13 39 12.7	-0.4
	0.4nm,0.5s,baz=106,slow=7.4,SNR=13							
WRA	**Warramunga Arr**	**45.14**	**270**	P		P	13 39 18.1	-1.8
	0.5nm,0.9s,baz=108,slow=8.0,SNR=4.8							
AKASG	**Malin Array Be**	**150.59**	**325**	PKPbc		PKPbc	13 50 55.3	+0.5
	0.6nm,0.5s,baz=41,slow=2.3,SNR=3.6							

*IDC **10** 13:48:14.8±1.1, 32.4°S×178.0°W, h0km, mb4.4/2, mb1 4.6/3, mb1mx3.9/22, mbtmp4.3/3, ML3.8/1, Error ellipse: s-maj=43.7km s-min=35.3km az=156.0*
*ISCJB **10** 13:48:15.6±1.0, 32.49S±0.07×178.1W±0.2, h20km, mb4.3/3, Error ellipse: s-maj=24.6km s-min=6.8km az=17.9*
*NEIC **10** 13:48:16.2±0.6, 32.38S×178.06W, h10km, mb4.6/1, Error ellipse: s-maj=19.7km s-min=10.7km az=99.0*
ISC 10 13:48:17.7±0.9, 32.41S±0.1×178.1W±0.2, h20km, n19, σ1°§29/25, mb4.6/3, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.15**	**3**	Pn		**Pn**	**13 49 04.5**	**-1.8**
WMGZ	**Waiomatatini S**	**6.09**	**207**	*e*PN		**Pn**	**13 49 47.0**	**+0.4**
WMGZ					SN	**Sn**	**13 50 57.0**	**+1.3**
PKGZ	**Pakihiroa**	**6.28**	**209**	*e*PN		**Pn**	**13 49 46.8**	**-2.6**
PKGZ					SN	**Sn**	**13 51 00.4**	**-0.1**
HAZ	**Te Kaha**	**6.30**	**211**	Pn		**Pn**	**13 49 48.9**	**-0.5**
HAZ				*e*SN		**Sn**	**13 51 01.8**	**+1.1**
PUZ	**Puketiti**	**6.37**	**207**	*e*PN		**Pn**	**13 49 47.6**	**-2.9**
PUZ				*e*SN		**Sn**	**13 51 01.1**	**-1.5**
URZ	**Urewera**	**7.01**	**212**	Pn		**Pn**	**13 49 58.9**	**-0.3**
	1.8nm,0.3s,baz=9.4,slow=11,SNR=9.5							
URZ					Sn	**Sn**	**13 51 16.6**	**-1.7**
	10nm,0.3s,baz=126,slow=19,SNR=17							
URZ	**Urewera**	**7.01**	**212**	*e*PN		**Pn**	**13 49 59.0**	**-0.2**
URZ				*e*SN		**Sn**	**13 51 17.3**	**-1.0**
ASAR	**Alice Springs**	**42.93**	**269**	P		**P**	**13 56 16.2**	**+0.8**
	2.3nm,0.7s,baz=108,slow=7.3,SNR=44							
WRAB	**Tennant Creek**	**44.09**	**274**	*e*P		**P**	**13 56 25.1**	**+0.4**
	5.5nm,0.6s							
WRA	**Warramunga Arr**	**44.10**	**274**	P		**P**	**13 56 25.6**	**+0.8**
	4.9nm,0.4s,baz=113,slow=8.0,SNR=118							
SBA	**Scott Base**	**46.03**	**184**	*e*P		**P**	**13 56 39.1**	**-0.3**
QSPA	**South Pole Qui**	**57.70**	**180**	*e*P		**P**	**13 58 08.1**	**+1.3**
MKAR	**Makanchi Array**	**118.97**	**309**	PKP		**PKPdf**	**14 07 05.9**	**+1.4**
	0.4nm,0.8s,baz=125,slow=4.2,SNR=3.6							
NOA	**NORSAR Array B**	**150.71**	**351**	PKPbc		**PKPbc**	**14 08 07.6**	**-0.2**
	0.6nm,0.6s,baz=16,slow=4.2,SNR=3.0							
EIL	**Elat**	**151.58**	**273**	PKPbc		**PKPbc**	**14 08 10.8**	**+0.1**
	3.7nm,0.7s,baz=117,slow=6.8,SNR=3.8							
MMAI	**Mount Meron Ar**	**151.84**	**280**	PKPbc		**PKPbc**	**14 08 13.1**	**+1.7**
	0.7nm,0.4s,baz=90,slow=2.9,SNR=3.1							
AKASG	**Malin Array Be**	**152.80**	**320**	PKPbc		**PKPbc**	**14 08 13.5**	**+0.7**
	0.6nm,0.5s,baz=57,slow=2.6,SNR=4.6							
BRTR	**Keskin Array B**	**153.40**	**295**	PKPbc		**PKPbc**	**14 08 15.1**	**+0.4**
	0.4nm,0.5s,baz=110,slow=4.1,SNR=3.0							
TORD	**Torodi Ar. Bea**	**160.82**	**179**	PKPab		**PKPab**	**14 08 58.5**	**-0.5**
	0.4nm,0.7s,baz=179,slow=2.6,SNR=3.1							

CASC 10 13:52:01.7±1.0, 10.02N×84.29W, h74km±5km, MD3.6, 1C-2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CGA2	**Cerro Gallo 2**	**0.18**	**267**	⇓*eP*		Pn	13 52 13.2	+0.4
CGA2					*e*S	Sn	13 52 21.7	+0.8
URSC	**Urasca**	**0.53**	**111**	⇑*iP*		Pn	13 52 15.7	+0.3
URSC					*e*S	Sn	13 52 25.9	+0.4
BUS	**Buena Vista**	**0.70**	**132**	*eP*		Pn	13 52 17.4	0.0
BUS					*e*S	Sn	13 52 30.9	+2.0
JCR	**Jicaral**	**0.83**	**258**	⇓*eP*		Pn	13 52 18.7	+0.3
JCR					*e*S	Sn	13 52 31.3	+0.5
BRU2	**Volcan**	**1.99**	**128**	*eP*		Pn	13 52 34.0	+0.5
BRU2					*e*S	Sn	13 52 59.2	+1.5
TBS2		**2.02**	**127**	*eP*		Pn	13 52 34.3	+0.4
TBS2					*e*S	Sn	13 52 59.0	+0.7

MEX 10 13:57:01.1±0.7, 14.76N×93.58W, h85km±198km, MD4.1, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
TGIG		**2.06**	**12**	*eP*		Pn	13 57 33.1	-0.9
TGIG					*e*S	Sn	13 57 57.0	-2.1

*ISCJB **10** 14:04:36.7±0.6, 39.08N±0.07×97.39E±0.06, h10km, mb3.5/6, Error ellipse: s-maj=11.1km s-min=5.4km az=20.8*
*BJI **10** 14:04:37.2, 39.05N×97.30E, h6km, mb3.8/4, ML3.9/5, Ms3.6/2, Ms7 3.4/2*
*IDC **10** 14:04:37.0±0.9, 38.93N×97.40E, h0km, mb3.5/7, mb1 3.8/11, mb1mx3.5/65, mbtmp3.6/11, ML3.1/4, MS3.3/1, Ms1 3.3/1, ms1mx2.5/37, Error ellipse: s-maj=28.7km s-min=18.1km az=46.0*
ISC 10 14:04:38.9±0.8, 39.1N±0.1×97.16E±0.07, h10km, n14, σ1°§92/15, mb3.6/6, Gansu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**2.09**	**81**	Pg	Pg	**Pn**	**14 05 13.4**	**-0.7**
GTA				Sg	Sg	**Sn**	**14 05 39.1**	**-1.1**
GTA				*s*max	*s*max			
	comp=N,530nm,1.0s							
GTA				*s*max	*s*max			
	comp=E,360nm,0.9s							
LZH	**Lanzhou**	**6.11**	**117**	*e*Pg	**Pg**	**Pg**	**14 06 36.5**	**+0.7**
LZH				Sg	**Sg**	**Sg**	**14 07 55.2**	**+0.3**
LZH				*s*max	*s*max			
	comp=N,64nm,1.2s							
LZH				*s*max	*s*max			
	comp=E,51nm,1.1s							
LZH				LR	LR			
	comp=N,380nm,6.4s							
LZH				LR	LR			
	comp=E,340nm,7.5s							
LZH				LR	LR			
	comp=Z,470nm,8.7s							
SONM	**Songino Array**	**11.00**	**35**	Pn		**Pn**	**14 07 16.4**	**0.0**
	comp=Z,0.9nm,0.3s,baz=219,slow=15,SNR=40							
SONM					Lg	Lg	14 10 23.4	
	baz=216,slow=34,SNR=5.8							
SONM					LR	LR	14 11 46.9	
	comp=Z,132nm,18.0s,baz=204,slow=39							
MKAR	**Makanchi Array**	**13.31**	**310**	Pn		**Pn**	**14 07 48.0**	**+0.1**
	comp=Z,0.0nm,0.3s,baz=116,slow=13,SNR=2.9							
MKAR					Sn	**Sn**	**14 10 11.6**	**-4.3**
	comp=Z,0.0nm,0.3s,baz=133,slow=28,SNR=2.5							
MKAR					Lg	Lg	14 11 45.4	
	baz=118,slow=27,SNR=2.6							
TLY	**Talaya**	**13.37**	**18**	Lg	Lg	Lg	14 11 40.8	
	comp=Z,0.0nm,0.3s,baz=180,slow=20,SNR=5.4							
ZALV	**Zalesovo Beam**	**17.06**	**335**	Pn		**Pn**	**14 08 40.2**	**+2.8**
	comp=Z,0.2nm,0.3s,baz=139,slow=11,SNR=8.4							
KURBB	**Kurchatov Arra**	**17.46**	**317**	Pn		**Pn**	**14 08 41.9**	**-0.5**
	comp=Z,0.0nm,0.3s,baz=123,slow=11,SNR=16							
KURBB					Lg	Lg	14 13 59.1	
	comp=Z,0.1nm,0.3s,baz=113,slow=28,SNR=4.0							
CMAR	**Chiang Mai Arr**	**20.63**	**175**	P		**P**	**14 09 16.4**	**-2.2**
	comp=Z,0.5nm,0.3s,baz=341,slow=11,SNR=3.4							
BVAR	**Borovoye Array**	**23.04**	**316**	P		**P**	**14 09 46.2**	**+2.2**
	comp=Z,0.5nm,0.6s,baz=78,slow=10,SNR=3.1							
KSRS	**Korea Array**	**24.16**	**84**	P		**P**	**14 09 54.0**	**-1.1**
	comp=Z,0.9nm,0.6s,baz=281,slow=8.9,SNR=4.2							
BRTR	**Keskin Array B**	**48.13**	**292**	P		**P**	**14 13 20.8**	**+1.6**
	comp=Z,1.0nm,0.8s,baz=98,slow=8.9,SNR=5.7							
WRA	**Warramunga Arr**	**68.27**	**142**	P		P	14 15 37.9	-2.1
	comp=Z,1.2nm,1.0s,baz=340,slow=7.1,SNR=3.9							
ESDC	**Sonseca Array**	**73.52**	**308**	P		**P**	**14 16 13.2**	**+1.3**
	comp=Z,0.1nm,0.4s,baz=43,slow=5.3,SNR=3.1							
YKA	**Yellowknife Ar**	**75.57**	**15**	P		**P**	**14 16 23.0**	**-0.3**
	comp=Z,0.5nm,0.8s,baz=333,slow=6.3,SNR=4.3							

*IDC **10** 14:07:47.6±1.6, 32.51S×177.94W, h0km, mb4.0/3, mb1 4.2/4, mb1mx3.8/25, mbtmp4.0/4, ML3.7/1, Error ellipse: s-maj=44.1km s-min=36.6km az=20.0*
*ISCJB **10** 14:07:49.7±1.7, 32.7S±0.1×178.1W±0.3, h20km, mb4.0/4, Error ellipse: s-maj=31.3km s-min=13.7km az=11.8*
*NEIC **10** 14:07:49.1±0.9, 32.58S×177.94W, h10km, mb4.1/1, Error ellipse: s-maj=20.7km s-min=16.4km az=70.0*
ISC 10 14:07:51.2±1.3, 32.7S±0.1×178.0W±0.2, h20km, n10, σ0°§65/12, mb4.1/4, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.85**	**214**	Pn		**Pn**	**14 09 31.0**	**+0.5**
	1.3nm,0.3s,baz=346,slow=17,SNR=7.8							
URZ					Sn	**Sn**	**14 10 47.3**	**-0.6**
	3.1nm,0.3s,baz=90,slow=21,SNR=9.0							
URZ	**Urewera**	**6.85**	**214**	*e*Pn		**Pn**	**14 09 31.3**	**+0.9**
URZ					Sn	**Sn**	**14 10 47.3**	**-0.6**
CTA	**Charters Tower**	**34.22**	**283**	P		**P**	**14 14 36.4**	**+0.8**
	1.5nm,0.5s,baz=90,slow=10,SNR=4.6							
ASAR	**Alice Springs**	**43.03**	**269**	P		**P**	**14 15 49.2**	**-0.4**
	0.8nm,0.5s,baz=111,slow=8.1,SNR=20							
WRAB	**Tennant Creek**	**44.22**	**274**	*e*P		**P**	**14 15 58.8**	**-0.4**
	2.1nm,0.6s							
WRA	**Warramunga Arr**	**44.22**	**274**	P		**P**	**14 15 58.5**	**-0.8**
	1.7nm,0.5s,baz=114,slow=8.0,SNR=27							
QSPA	**South Pole Qui**	**57.45**	**180**	P		**P**	**14 17 38.4**	**0.0**
MKAR	**Makanchi Array**	**119.21**	**309**	PKP		**PKPdf**	**14 26 38.6**	**+0.1**
	0.2nm,0.6s,baz=124,slow=1.6,SNR=2.4							
AKASG	**Malin Array Be**	**153.07**	**320**	PKPbc		**PKPbc**	**14 27 46.0**	**-0.8**
	0.2nm,0.3s,baz=47,slow=1.2,SNR=3.2							
TORD	**Torodi Ar. Bea**	**160.57**	**179**	PKPab		**PKPab**	**14 28 31.3**	**0.0**
	0.2nm,0.5s,baz=163,slow=3.7,SNR=3.1							

*ISCJB **10** 14:13:55.8±1.0, 36.38N±0.06×142.33E±0.08, h15km, mb3.4/4, Error ellipse: s-maj=9.0km s-min=8.3km az=172.9*
*IDC **10** 14:13:57.6±1.5, 36.86N×142.28E, h0km, mb3.3/4, mb1 3.4/6, mb1mx3.3/46, mbtmp3.3/6, ML2.8/2, Error ellipse: s-maj=32.2km s-min=27.6km az=110.0*
*JMA **10** 14:13:58.5±0.1, 36.36N×142.26E, h58km, M3.2*
ISC 10 14:13:56.4±1.3, 36.41N±0.07×142.38E±0.10, h15km, n20, σ1°§50/17, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.42**	**241**	P		**Pn**	**14 14 20.8**	**-0.9**
JFT	**Otama**	**1.98**	**305**	*e*S		**Sn**	**14 14 52.7**	**-1.2**
BSO1	**Boso 1**	**2.09**	**214**	P		Pn	14 14 30.8	+0.3
BSO1				*e*S		**Sn**	**14 14 54.4**	**-1.6**
BSO3	**Boso 3**	**2.21**	**224**	P		**Pn**	**14 14 32.5**	**+0.1**
JAG	**Ashikaga**	**2.36**	**271**	P		**Pn**	**14 14 34.8**	**+0.1**
JAG				*e*S		**Sn**	**14 15 01.2**	**-2.2**
JRY	**Ryogami san**	**2.84**	**263**	P		**Pn**	**14 14 40.4**	**-0.9**
JOD2	**Odawara 2**	**2.91**	**248**	S		**Sn**	**14 15 15.1**	**-1.9**
MJAR	**Matsushiro Arr**	**3.37**	**273**	Pn		**Pn**	**14 14 48.8**	**+0.3**
	1.4nm,0.3s,baz=83,slow=8.7,SNR=18							
MJAR					Sn	**Sn**	**14 15 27.9**	**-0.4**
	1.4nm,0.3s,baz=89,slow=17,SNR=6.3							
MAT	**Matsushiro**	**3.37**	**274**	P		**Pn**	**14 14 49.5**	**+1.0**
MAT				*e*S		**Sn**	**14 15 29.4**	**+1.1**
ASAJ	**Asahikawa**	**7.70**	**1**	Pn		**Pn**	**14 15 44.5**	**-3.5**
	0.1nm,0.3s,baz=162,slow=9.6,SNR=2.4							
H11N2	**WAKE ISLAND Hy**	**27.16**	**121**	T		T	14 48 13.6	
	baz=313							
H11N1	**WAKE ISLAND Hy**	**27.17**	**121**	T		T	14 48 07.7	
	baz=313							
H11N3	**WAKE ISLAND Hy**	**27.18**	**121**	T		T	14 48 09.3	
	baz=319							
H11S1	**WAKE ISLAND Hy**	**27.87**	**123**	T		T	14 49 01.9	
	baz=315							
H11S3	**WAKE ISLAND Hy**	**27.87**	**123**	T		T	14 49 05.9	
	baz=315							
H11S2	**WAKE ISLAND Hy**	**27.88**	**123**	T		T	14 49 05.2	
	baz=315							
SONM	**Songino Array**	**28.78**	**305**	P		**P**	**14 19 54.9**	**+1.3**
	0.3nm,0.4s,baz=96,slow=8.9,SNR=2.6							
MKAR	**Makanchi Array**	**45.11**	**303**	P		**P**	**14 22 13.1**	**+1.1**
	0.2nm,0.6s,baz=77,slow=6.2,SNR=2.3							
ILAR	**Eielson Array**	**49.61**	**32**	P		**P**	**14 22 47.0**	**+0.2**
	0.3nm,0.8s,baz=262,slow=6.9,SNR=4.0							
WRA	**Warramunga Arr**	**56.56**	**189**	P		P	14 23 45.1	+6.7
	0.5nm,1.0s,baz=2.6,slow=7.6,SNR=4.5							

*IDC **10** 14:24:16.3±1.0, 29.65S×176.30W, h0km, mb4.1/6, mb1 4.3/7, mb1mx4.0/29, mbtmp4.1/7, ML3.7/1, MS3.3/1, Ms1 3.3/1, ms1mx2.7/31, Error ellipse: s-maj=32.2km s-min=22.5km az=167.0*
*NEIC **10** 14:24:17.6±0.7, 29.76S×176.29W, h10km, mb4.4/1, Error ellipse: s-maj=17.5km s-min=13.9km az=115.0*
*ISCJB **10** 14:24:18.0±1.0, 29.87S±0.07×176.4W±0.1, h21km, mb4.1/7, Error ellipse: s-maj=14.9km s-min=9.9km az=4.9*
ISC 10 14:24:20.6±0.8, 29.73S±0.08×176.50W±0.08, h21km, n22, σ1°§72/22, mb4.3/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.33**	**290**	Pn		**Pb**	**14 24 45.9**	**+1.2**
	392nm,0.3s,baz=180,slow=4.0,SNR=18							
RAO					Sn	**Sb**	**14 25 01.3**	**0.0**
	761nm,0.3s,baz=38,slow=22,SNR=14							
RAO	**Raoul Island**	**1.33**	**290**	*e*Pn		**Pb**	**14 24 46.0**	**+1.2**
RAO					*e*S	**Sn**	**14 24 58.0**	**-2.9**
URZ	**Urewera**	**10.03**	**210**	Pn		**Pn**	**14 26 42.3**	**-1.1**
	0.6nm,0.3s,baz=342,slow=16,SNR=4.3							
URZ					Sn	**Sn**	**14 28 34.4**	**-0.8**
	1.9nm,0.3s,baz=158,slow=18,SNR=10							
URZ	**Urewera**	**10.03**	**210**	*e*Pn		**Pn**	**14 26 43.2**	**-0.2**
URZ					Sn	**Sn**	**14 28 34.4**	**-0.8**
KHZ	**Kahutara**	**14.99**	**210**	*e*Pn		**Pn**	**14 27 49.2**	**-2.0**
DZM	**Mont Dzumac**	**17.13**	**292**	*e*P		**P**	**14 28 24.0**	**+3.6**
	42nm,1.6s							
DZM					*e*LR	LR	14 32 29.2	
	231nm,24.7s							
RAR	**Rarotonga**	**17.30**	**65**	LR		LR	14 33 56.9	
	comp=Z,98nm,19.0s,baz=280,slow=34							
TBI	**Tubuai**	**24.97**	**82**	*e*LR		LR	14 35 40.8	
	103nm,26.0s							

H11N2	**WAKE ISLAND Hy**	**27.32**	**125**	T	T	15 03 00.7
	baz=317,slow=75,SNR=13					
H11N1	**WAKE ISLAND Hy**	**27.33**	**125**	T	T	15 02 59.6
	baz=317,slow=75,SNR=6.7					
H11N3	**WAKE ISLAND Hy**	**27.34**	**125**	T	T	15 02 56.8
	baz=317,slow=75,SNR=11					
WRA	**Warramunga Arr**	**58.19**	**190**	P	**P**	**14 38 19.0 +1.0**
	0.4nm,0.5s,baz=8.7,slow=7.3,SNR=6.3					
ASAR	**Alice Springs**	**61.92**	**190**	P	**P**	**14 38 44.6 +1.1**
	0.2nm,0.8s,baz=15,slow=7.7,SNR=3.1					

IPEC ***10*** *14:51:03.8±0.1,47.57N×15.48E,h5km±1km,ML2.2/7, Error ellipse: s-maj=0.8km s-min=0.6km az=70.0*
VIE ***10*** *14:51:03.6±0.2,47.55N×15.45E,h7km±4km,mb1.6/8, ML2.2/8,Error ellipse: s-maj=2.2km s-min=1.7km az=119.0*
CSEM ***10*** *14:51:03.6±0.2,47.58N×15.48E,h2km,ML2.7/12,Error ellipse: s-maj=4.6km s-min=2.9km az=124.0*
PRU ***10*** *14:51:04.4,47.60N×15.45E,h0km*
ISC 10 14:51:03.6±1.2,47.57N±0.02×15.47E±0.02,h0km±12km, n26,σ0s96/48,Austria

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ARSA	**Arzberg**	**0.32**	**174**	Pg	**Pg**		**14 51 10.2**	**+0.5**
	2.0nm,0.1s,SNR=34							
ARSA				Sg	**Sg**		**14 51 14.5**	**+0.7**
	107nm,0.1s							
CONA	**Conrad Observa**	**0.45**	**36**	Pg	**Pg**		**14 51 12.5**	**+0.3**
	17nm,0.2s,SNR=87							
CONA				Sg	**Sg**		**14 51 19.0**	**+1.0**
	65nm,0.3s							
MOA	**Molln**	**0.86**	**290**	Pg	**Pg**		**14 51 20.3**	**+0.1**
	1.5nm,0.1s,SNR=19							
MOA				Sg	**Sb**		**14 51 32.6**	**-1.0**
	5.9nm,0.2s							
SOKA	**Soboth**	**0.94**	**199**	Pg	**Pg**		**14 51 21.2**	**-0.4**
	3.4nm,0.2s,SNR=16							
SOKA				Sg	**Sg**		**14 51 32.9**	**-0.8**
	3.2nm,0.2s							
PERS	**Pernice**	**0.96**	**195**	*i* Pg	**Pg**		**14 51 21.7**	**-0.3**
PERS				*e*Sg	**Sg**		**14 51 33.6**	**-0.9**
	comp=Z,7.0nm,0.2s							
PERS	**Pernice**	**0.96**	**195**	*i* Pg	**Pg**		**14 51 21.7**	**-0.3**
PERS				*e*Sg	**Sg**		**14 51 33.6**	**-0.9**
	comp=Z,7.0nm,0.2s							
OBKA	**Obir**	**1.23**	**211**	Pg	**Pg**		**14 51 27.1**	**-0.1**
	comp=Z,7.6nm,0.3s,SNR=27							
OBKA				Sg	**Sb**		**14 51 44.3**	**+0.1**
	comp=Z,20nm,0.7s							
KOGS	**Kog**	**1.24**	**154**	*e*Pg	**Pn**		**14 51 28.8**	**+0.7**
KOGS				*i* Sg	**Sb**		**14 51 44.6**	**+0.3**
	comp=Z,14nm,0.2s							
KOGS	**Kog**	**1.24**	**154**	*e*Pg	**Pn**		**14 51 28.8**	**+0.7**
KOGS				*i* Sg	**Sb**		**14 51 44.6**	**+0.3**
	comp=Z,14nm,0.2s							
KBA	**Koelnbreinsper**	**1.53**	**252**	Pg	**Pb**		**14 51 32.9**	**0.0**
	comp=Z,2.5nm,0.2s							
KBA				Sg	**Sg**		**14 51 53.4**	**+0.7**
	comp=Z,9.8nm,0.4s							
MYKA	**Terra Mystica**	**1.56**	**234**	Pg	**Pg**		**14 51 33.9**	**+0.3**
	comp=Z,1.4nm,0.3s							
MYKA				Sg	**Sg**		**14 51 54.0**	**+0.2**
	comp=Z,3.3nm,0.3s							
KRUC	**Moravsky**	**1.62**	**22**	*e*Pg	**Pn**		**14 51 33.0**	**-0.4**
KRUC				*e*Sg	**Sn**		**14 51 54.2**	**-0.8**
	comp=Z,18nm,0.3s							
SMOL	**Smolenice**	**1.62**	**53**	*e*Pg	**Pb**		**14 51 34.1**	**-0.3**
SMOL				*e*Sg	**Sg**		**14 51 55.7**	**+0.1**
SMOL	**Smolenice**	**1.62**	**53**	*e*PG	**Pb**		**14 51 34.1**	**-0.3**
SMOL				*e*SG	**Sg**		**14 51 55.7**	**+0.1**
VRAC	**Vranov**	**1.90**	**23**	*e*Pn	**Pn**		**14 51 36.7**	**-0.5**
VRAC				*e*Sg	**Sb**		**14 52 02.9**	**-0.4**
	comp=Z,16nm,0.3s							
KHC	**Kasperske Hory**	**2.01**	**322**	*e*PG	**Pb**		**14 51 40.4**	**-0.7**
KHC				*e*SG	**Sb**		**14 52 06.3**	**-0.4**
	comp=Z,14nm,0.4s							
GOPC	**GO Pecny, Ondr**	**2.39**	**349**	*e*PG	**Pb**		**14 51 47.4**	**-0.2**
GOPC				*e*SG	**Sb**		**14 52 17.8**	**+0.2**
	comp=Z,7.0nm,0.4s							
VYHS	**Vyhne**	**2.44**	**66**	*e*Pg	**Pb**		**14 51 46.2**	**-2.1**
VYHS				*e*Sg	**Sg**		**14 52 23.5**	**+1.5**
VYHS	**Vyhne**	**2.44**	**66**	*e*PG	**Pb**		**14 51 46.2**	**-2.1**
VYHS				*e*SG	**Sg**		**14 52 23.5**	**+1.5**
VYHS				*e*LG	Lg		14 52 27.0	
PRU	**Pruhonice**	**2.50**	**346**	*e*PG	**Pb**		**14 51 49.1**	**-0.3**
PRU				*e*SG	**Sb**		**14 52 21.5**	**+0.8**
	comp=Z,10nm,0.4s							
MORC	**Moravsky Berou**	**2.60**	**31**	*e*Sn	**Sn**		**14 52 19.0**	**-0.3**
DPC	**Dobruska-Polom**	**2.84**	**11**	*e*PG	**Pb**		**14 51 55.4**	**+0.2**
DPC				*e*SG	**Sg**		**14 52 33.9**	**-1.0**
	comp=Z,5.9nm,0.5s							
UPC	**Upice**	**2.97**	**7**	*e*PG	**Pb**		**14 51 58.1**	**+0.8**
MOTA	**Moosalm**	**2.97**	**267**	Pn	**Pn**		**14 51 54.3**	**+2.1**
	comp=Z,0.2nm,0.1s							
MOTA				Sg	**Sg**		**14 52 38.5**	**-0.6**
	comp=Z,4.4nm,0.5s							
NKC	**Novy Kostel**	**3.33**	**324**	*e*SG	**Sg**		**14 52 48.5**	**-2.2**
	comp=Z,5.4nm,0.4s							
BRG	**Berggiesshubel**	**3.46**	**344**	SG	**Sb**		**14 52 50.5**	**+2.2**
	comp=Z,3.9nm,0.6s							

NIED ***10*** *15:04:00,38.00N×143.20E,h11km,Mw3.6 Best double couple: M0 3.07000×10^14 NP1:φs247.00000°,δ52.00000°, λ-26.00000°. NP2:φs354.00000°,δ70.00000°, λ-138.00000°.*
IDC ***10*** *15:04:13.4±1.1,37.78N×143.53E,h0km,mb3.4/5, mb1 3.6/8,mb1mx3.4/41,mbtmp3.5/8,ML3.5/3,Error ellipse: s-maj=29.8km s-min=20.1km az=96.0*
ISCJB ***10*** *15:04:14.7±0.8,37.88N±0.05×143.34E±0.06,h19km, mb3.4/5,Error ellipse: s-maj=7.8km s-min=6.9km az=136.8*
JMA ***10*** *15:04:16.4±0.3,37.96N×143.19E,h19km,M3.7*
ISC 10 15:04:15.9±1.0,37.87N±0.05×143.39E±0.08,h19km,n27, σ1s85/28,mb3.3/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.71**	**290**	P	**Pn**		**15 04 43.2**	**-1.5**
JIO				*e*S	**Sn**		**15 05 02.9**	**-3.1**
OFUJ	**Ofunato**	**1.81**	**312**	P	**Pn**		**15 04 44.2**	**-1.9**
JMK	**Ichinoseki**	**2.02**	**303**	P	**Pn**		**15 04 47.6**	**-1.3**
JMM	**Marumori**	**2.06**	**271**	P	**Pn**		**15 04 48.4**	**-1.1**
JMM				*e*S	**Sn**		**15 05 12.5**	**-2.1**
JFK	**Kawauchi**	**2.06**	**257**	P	**Pn**		**15 04 48.4**	**-1.2**
JOU	**Okura**	**2.21**	**284**	P	**Pn**		**15 04 51.0**	**-0.6**
JFT	**Otama**	**2.45**	**263**	P	**Pn**		**15 04 54.9**	**0.0**
JFT				S	**Sn**		**15 05 23.0**	**-1.3**
JYK	**Kaneyama**	**2.60**	**295**	P	**Pn**		**15 04 56.6**	**-0.4**
JRG	**Rokugo**	**2.64**	**306**	P	**Pn**		**15 04 57.3**	**-0.2**
JAH	**Hinai**	**3.15**	**318**	P	**Pn**		**15 05 05.4**	**+0.8**
JAH				S	**Sn**		**15 05 39.8**	**-1.9**
JAG	**Ashikaga**	**3.46**	**247**	P	**Pn**		**15 05 08.5**	**-0.3**
MJAR	**Matsushiro Arr**	**4.34**	**254**	Pn	**Pn**		**15 05 21.6**	**+0.7**
	2.0nm,0.3s,baz=66,slow=9.8,SNR=40							
MJAR					Sn		**15 06 14.0**	**+2.9**
	0.7nm,0.3s,baz=79,slow=24,SNR=4.9							
MAT	**Matsushiro**	**4.35**	**254**	P	**Pn**		**15 05 22.4**	**+1.4**
MAT				S	**Sn**		**15 06 09.8**	**-1.3**
JHJ	**Hachijo jima 2**	**5.58**	**213**	Pn	**Pn**		**15 05 37.5**	**-0.5**
	17nm,0.3s,baz=337,slow=19,SNR=33							
JHJ					Sn		**15 06 36.2**	**-5.4**
	16nm,0.3s,baz=72,slow=20,SNR=6.0							
ASAJ	**Asahikawa**	**6.26**	**355**	Pn	**Pn**		**15 05 47.9**	**+0.6**
	0.5nm,0.3s,baz=195,slow=15,SNR=9.8							
ASAJ					Sn		**15 06 55.9**	**-2.5**
	baz=270,slow=20							
USRK	**Ussuriysk Ar.**	**10.68**	**310**	Pn	Pn		15 06 54.1	+6.4
	0.1nm,0.3s,baz=104,slow=14,SNR=2.6							
H11N2	**WAKE ISLAND Hy**	**27.28**	**125**	T	T		15 39 02.7	
	baz=317,slow=75,SNR=15							
H11N1	**WAKE ISLAND Hy**	**27.29**	**125**	T	T		15 39 11.7	
	baz=317,slow=75,SNR=9.6							
H11N3	**WAKE ISLAND Hy**	**27.30**	**125**	T	T		15 39 04.1	
	baz=317,slow=75,SNR=12							
H11S1	**WAKE ISLAND Hy**	**28.05**	**127**	T	T		15 39 58.1	
	baz=316							
H11S3	**WAKE ISLAND Hy**	**28.05**	**127**	T	T		15 40 06.7	
	baz=316							
H11S2	**WAKE ISLAND Hy**	**28.07**	**127**	T	T		15 40 05.1	
	baz=316							
SONM	**Songino Array**	**28.64**	**302**	P	**P**		**15 10 13.4**	**+2.0**
	0.3nm,0.5s,baz=101,slow=7.5,SNR=2.8							
MKAR	**Makanchi Array**	**45.01**	**302**	P	**P**		**15 12 31.3**	**+1.2**
	0.1nm,0.5s,baz=93,slow=8.1,SNR=2.6							
ILAR	**Eielson Array**	**47.94**	**33**	P	**P**		**15 12 53.5**	**+0.7**
	0.2nm,0.8s,baz=275,slow=7.5,SNR=3.8							
WRA	**Warramunga Arr**	**58.13**	**190**	P	**P**		**15 14 08.2**	**-0.2**
	1.4nm,0.7s,baz=9.4,slow=7.1,SNR=10.0							
ASAR	**Alice Springs**	**61.86**	**190**	P	**P**		**15 14 34.0**	**0.0**
	0.3nm,0.6s,baz=15,slow=7.0,SNR=6.0							

NIED ***10*** *15:07:00,38.00N×143.10E,h8km,Mw3.5 Best double couple: M0 1.91000×10^14 NP1:φs332.00000°,δ47.00000°, λ-168.00000°. NP2:φs233.00000°,δ81.00000°, λ-43.00000°.*
IDC ***10*** *15:07:40.5±2.2,37.72N×143.65E,h0km,mb3.3/2, mb1 3.5/5,mb1mx3.3/41,mbtmp3.4/5,ML3.5/2,MS3.2/1, Ms1 3.2/1,ms1mx2.3/25,Error ellipse: s-maj=50.5km s-min=26.9km az=86.0*
JMA ***10*** *15:07:43.4±0.3,37.99N×143.14E,h15km,M3.5*
ISC 10 15:07:41.3±3.8,37.94N±0.05×143.35E±0.09,h13km±24km, n23,σ2s41/25,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.66**	**289**	P	**Pn**		**15 08 09.9**	**-0.2**
JIO				*e*S	**Sb**		**15 08 29.7**	**-2.8**
OFUJ	**Ofunato**	**1.74**	**311**	P	**Pn**		**15 08 10.8**	**-0.5**
OFUJ				*e*S	**Sn**		**15 08 31.2**	**-2.2**
JMM	**Marumori**	**2.02**	**269**	P	**Pn**		**15 08 15.1**	**0.0**
JMM				*e*S	**Sn**		**15 08 37.5**	**-2.8**
JOU	**Okura**	**2.16**	**282**	P	**Pn**		**15 08 17.6**	**+0.6**
JOM	**Ohasama**	**2.22**	**314**	P	**Pb**		**15 08 20.0**	**-1.3**
JOM				S	**Sn**		**15 08 43.9**	**-1.3**
JFT	**Otama**	**2.43**	**261**	P	**Pn**		**15 08 21.8**	**+1.1**
JFT				*e*S	**Sn**		**15 08 49.4**	**-0.9**
JYK	**Kaneyama**	**2.54**	**293**	P	**Pn**		**15 08 22.9**	**+0.6**
JRG	**Rokugo**	**2.58**	**305**	P	**Pn**		**15 08 23.9**	**+1.2**
JYS	**Shirataka**	**2.61**	**277**	P	**Pn**		**15 08 24.4**	**+1.2**
JAG	**Ashikaga**	**3.46**	**245**	P	**Pn**		**15 08 35.3**	**+0.4**
MJAR	**Matsushiro Arr**	**4.33**	**253**	Pn	**Pn**		**15 08 49.0**	**+2.1**
	0.7nm,0.3s,baz=83,slow=15,SNR=10							
MJAR					Sn		**15 09 40.0**	**+2.7**
	0.5nm,0.3s,baz=60,slow=24,SNR=3.0							
MAT	**Matsushiro**	**4.33**	**253**	P	**Pn**		**15 08 49.4**	**+2.5**
MAT				*e*S	**Sn**		**15 09 38.1**	**+0.8**
JHJ	**Hachijo jima 2**	**5.62**	**212**	Pn	**Pn**		**15 09 03.7**	**-0.9**
	14nm,0.3s,baz=329,slow=20,SNR=19							
JHJ					Sn		**15 10 02.6**	**-6.4**
	6.4nm,0.3s,baz=98,slow=19,SNR=3.0							
ASAJ	**Asahikawa**	**6.20**	**355**	Pn	**Pn**		**15 09 15.1**	**+2.6**
	baz=187,slow=17							
ASAJ					Sn		**15 10 20.6**	**-2.5**
	0.3nm,0.3s,baz=241,slow=19,SNR=2.6							
H11N2	**WAKE ISLAND Hy**	**27.34**	**125**	T	T		15 42 21.7	
	baz=317							
H11N1	**WAKE ISLAND Hy**	**27.35**	**125**	T	T		15 42 21.7	
	baz=317							
H11N3	**WAKE ISLAND Hy**	**27.36**	**125**	T	T		15 42 20.0	
	baz=317							
H11S1	**WAKE ISLAND Hy**	**28.11**	**127**	T	T		15 43 16.3	
	baz=318							
H11S3	**WAKE ISLAND Hy**	**28.12**	**127**	T	T		15 43 12.2	
	baz=318							
H11S2	**WAKE ISLAND Hy**	**28.13**	**127**	T	T		15 43 10.4	
	baz=318							
SONM	**Songino Array**	**28.58**	**302**	LR	LR		15 26 52.5	
	comp=Z,41nm,18.3s,baz=91,slow=40							
MKAR	**Makanchi Array**	**44.95**	**302**	P	**P**		**15 16 00.3**	**+4.3**
	0.2nm,0.5s,baz=81,slow=8.8,SNR=2.6							
WRA	**Warramunga Arr**	**58.19**	**190**	P	**P**		**15 17 35.3**	**+0.1**
	0.5nm,0.9s,baz=8.6,slow=7.2,SNR=3.7							

IDC ***10*** *15:11:06.4±2.9,29.33S×176.19W,h0km,mb3.7/2, mb1 4.1/3,mb1mx3.7/33,mbtmp3.9/3,ML3.2/1,MS3.6/2, Ms1 3.5/2,ms1mx2.8/33,Error ellipse: s-maj=68.7km s-min=34.3km az=28.0*
ISC 10 15:11:10.4±2.1,29.4S±0.1×176.3W±0.1,h28km,n7, σ1s20/7,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.46**	**275**	Pn	**Pb**		**15 11 36.9**	**0.0**
	286nm,0.3s,baz=66,slow=11,SNR=15							
RAO					Sn	**Sb**	**15 11 55.3**	**+0.3**
	73nm,0.3s,baz=73,slow=19,SNR=2.9							
RAO					LR	LR	15 12 21.9	
	comp=Z,133nm,21.2s,baz=40,slow=50							
URZ	**Urewera**	**10.41**	**210**	Pn	**Pn**		**15 13 36.4**	**-1.4**
	0.2nm,0.3s,baz=49,slow=11,SNR=3.6							
URZ					Sn	**Sn**	**15 15 34.8**	**+1.2**
	0.5nm,0.3s,baz=276,slow=22,SNR=7.6							
DZM	**Mont Dzumac**	**17.20**	**291**	LR	LR		15 20 30.3	
	comp=Z,209nm,19.1s,baz=160,slow=33							
ASAR	**Alice Springs**	**44.69**	**265**	P	**P**		**15 19 21.4**	**+0.2**
	0.6nm,0.5s,baz=104,slow=7.5,SNR=16							
WRA	**Warramunga Arr**	**45.59**	**270**	P	**P**		**15 19 27.9**	**-0.5**
	0.6nm,0.5s,baz=110,slow=8.0,SNR=11							
TXAR	**Lajitas Array**	**90.58**	**56**	LR	LR		15 59 13.8	
	comp=Z,20nm,18.7s,baz=0.0,slow=32							
TORD	**Torodi Ar. Bea**	**163.72**	**173**	PKPab	**PKPab**		**15 32 04.7**	**+1.4**
	0.8nm,0.8s,baz=194,slow=4.1,SNR=3.2							

ISCJB ***10*** *15:19:18.5±0.4,16.66N±0.03×95.06W±0.03,h112km±2km, mb4.3/37,Error ellipse: s-maj=5.7km s-min=4.1km az=168.1*
NEIC ***10*** *15:19:19.0±0.6,16.58N×95.00W,h113km±6km,mb4.3/42, MD4.7(MEX),Error ellipse: s-maj=9.9km s-min=6.2km az=179.0*
MEX ***10*** *15:19:20.9±1.1,16.69N×95.09W,h103km±13km,MD4.7*
IDC ***10*** *15:19:20.4±0.8,16.82N×94.81W,h89km±5km,mb3.5/8, mb1 3.7/9,mb1mx3.6/35,mbtmp3.8/9,Error ellipse: s-maj=35.2km s-min=16.7km az=70.0*
ISC 10 15:19:19.6±0.6,16.69N±0.04×95.07W±0.03,h99km±5km, n344,σ1s15/368,mb4.3/37,Oaxaca

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.44**	**24**	P	**Pn**		**15 19 34.9**	**-0.1**
	814nm,0.3s,baz=214,slow=5.2,SNR=7607							
CMIG					S	**Sn**	**15 19 45.1**	**-1.2**
	763nm,0.3s,baz=127,slow=20,SNR=56							
HUIG	**Huatulco**	**1.35**	**227**	*e*P	**Pn**		**15 19 43.5**	**-0.5**
HUIG				*e*S	**Sn**		**15 20 02.5**	**-0.1**
HUIG	**Huatulco**	**1.35**	**227**	*e*P	**Pn**		**15 19 43.5**	**-0.5**
HUIG				*e*S	**Sn**		**15 20 02.5**	**-0.1**
TUIG	**Tuzandepetl**	**1.47**	**25**	*e*P	**Pn**		**15 19 45.7**	**+0.1**
TUIG				*e*S	**Sn**		**15 20 04.6**	**-0.5**
TUIG	**Tuzandepetl**	**1.47**	**25**	*e*P	**Pn**		**15 19 45.7**	**+0.1**
TUIG				*e*S	**Sn**		**15 20 04.6**	**-0.5**
VHO	**Vista Hermosa**	**1.63**	**284**	*e*P	**Pn**		**15 19 48.8**	**+1.1**
VHO				*e*S	**Sn**		**15 20 09.2**	**+0.1**
VHO	**Vista Hermosa**	**1.63**	**284**	*e*P	**Pn**		**15 19 48.8**	**+1.1**
VHO				*e*S	**Sn**		**15 20 09.2**	**+0.1**
TGIG		**1.87**	**87**	*e*P	**Pn**		**15 19 51.6**	**+1.0**
TGIG				*i* S	**Sn**		**15 20 15.3**	**+1.1**
TGIG		**1.87**	**87**	*e*P	**Pn**		**15 19 51.6**	**+1.0**
TGIG				*i* S	**Sn**		**15 20 15.3**	**+1.1**
SCX	**San Cristobal**	**2.34**	**89**	*e*P	Pn		15 19 46.9	-10
SCX				*e*S	Sn		15 20 06.9	-18
TPIG	**Tehuac#an**	**2.78**	**309**	*e*P	**Pn**		**15 20 03.5**	**+0.9**
TPIG				*e*S	**Sn**		**15 20 34.7**	**-0.9**
TPIG	**Tehuac#an**	**2.78**	**309**	*e*P	**Pn**		**15 20 03.5**	**+0.9**
TPIG				*e*S	**Sn**		**15 20 34.7**	**-0.9**
PNIG	**Pinotepa**	**2.94**	**265**	*e*P	**Pn**		**15 20 03.8**	**-0.8**
PNIG				*i* S	**Sn**		**15 20 38.4**	**-1.0**
PNIG	**Pinotepa**	**2.94**	**265**	*e*P	**Pn**		**15 20 03.8**	**-0.8**
PNIG				*e*S	**Sn**		**15 20 37.9**	**-1.5**
TLIG	**Tlapa**	**3.45**	**285**	*i* P	**Pn**		**15 20 12.7**	**+1.2**
TLIG				*e*S	**Sn**		**15 20 50.8**	**-0.8**
TLIG	**Tlapa**	**3.45**	**285**	*e*Pn	**Pn**		**15 20 12.7**	**+1.2**
TLIG				*e*Sn	Sn		15 20 39.3	-12
PPM	**Popocatepetl**	**4.13**	**305**	*e*P	**Pn**		**15 20 22.9**	**+1.8**
PPM				*i* S	**Sn**		**15 21 07.2**	**-1.3**
PPM	**Popocatepetl**	**4.13**	**305**	*e*P	**Pn**		**15 20 23.6**	**+2.6**
PPM				*i* S	**Sn**		**15 21 10.7**	**+2.1**
SCIG	**Sabancuy**	**4.34**	**58**	*e*P	**Pn**		**15 20 22.4**	**-1.0**
SCIG				*i* S	**Sn**		**15 21 08.1**	**-4.9**
SCIG	**Sabancuy**	**4.34**	**58**	*e*P	**Pn**		**15 20 22.4**	**-1.0**
SCIG				*e*S	**Sn**		**15 21 07.3**	**-5.7**
ACX	**Acapulco**	**4.59**	**273**	*e*P	**Pn**		**15 20 23.8**	**-3.0**
ACX				*i* S	**Sn**		**15 21 14.9**	**-4.1**
ACX	**Acapulco**	**4.59**	**273**	*e*P	**Pn**		**15 20 23.8**	**-3.0**
ACX				*i* S	**Sn**		**15 21 13.1**	**-5.9**
VTVM	**Tizayuca**	**4.66**	**312**	*e*P	**Pn**		**15 20 28.1**	**+0.1**
MZVM		**4.67**	**303**	*i* P	**Pn**		**15 20 28.4**	**+0.5**
MAVM	**Malinalco, Edo**	**4.78**	**299**	*i* P	**Pn**		**15 20 28.7**	**-0.8**
CAIG	**El Cayaco**	**4.99**	**275**	*i* P	**Pn**		**15 20 32.2**	**0.0**
CAIG				*i* S	**Sn**		**15 21 27.4**	**-1.2**
CAIG	**El Cayaco**	**4.99**	**275**	*i* P	**Pn**		**15 20 32.2**	**0.0**
CAIG				*i* S	**Sn**		**15 21 26.2**	**-2.4**
TOVM	**TOLUCA**	**5.08**	**301**	*e*P	**Pn**		**15 20 36.6**	**+2.8**
ARIG	**Puente Sto Nin**	**5.28**	**288**	*e*P	**Pn**		**15 20 38.1**	**+2.0**
ARIG				*i* S	**Sn**		**15 21 34.9**	**-0.8**
ATVM	**ATLACOMULCO**	**5.46**	**305**	*i* P	**Pn**		**15 20 39.4**	**+0.5**
MOIG	**Morelia**	**6.53**	**298**	*e*Pn	**Pn**		**15 20 55.7**	**+2.4**
936A	**North Padre Is**	**10.88**	**349**	P	**Pn**		**15 21 53.7**	**+1.5**
	baz=168							
835A	**Beeville**	**11.82**	**348**	P	**Pn**		**15 22 06.7**	**+1.8**
	baz=167							
834A	**Tilden**	**11.82**	**345**	P	**Pn**		**15 22 06.4**	**+1.4**
	baz=163,SNR=14							
833A	**Chaparral WMA,**	**12.24**	**342**	P	**Pn**		**15 22 12.2**	**+1.6**
	baz=160,SNR=13							
735A	**Kenedy**	**12.37**	**349**	P	**Pn**		**15 22 12.4**	**+0.2**
	baz=168							
832A	**Faith Ranch, C**	**12.39**	**339**	P	**Pn**		**15 22 13.2**	**+0.6**
	baz=158							
734A	**La Parita Cree**	**12.52**	**346**	P	**Pn**		**15 22 16.5**	**+2.3**
	baz=164,SNR=5.5							
733A	**Divot King Ran**	**12.59**	**343**	P	**Pn**		**15 22 16.5**	**+1.3**
	baz=161,SNR=8.0							
635A	**Leesville**	**12.88**	**349**	P	**Pn**		**15 22 20.5**	**+1.6**
	baz=168							
634A	**China Grove, S**	**12.99**	**347**	P	**Pn**		**15 22 22.3**	**+2.0**
	baz=166							
633A	**Saathoff Ranch**	**13.26**	**344**	P	**Pn**		**15 22 25.6**	**+1.7**
	baz=162,SNR=16							
537A	**Green Hill Far**	**13.38**	**355**	P	**Pn**		**15 22 27.4**	**+1.9**
	baz=175,SNR=5.7							
534A	**Blanco**	**13.64**	**347**	P	**Pn**		**15 22 30.8**	**+1.9**
	baz=166,SNR=183							
533A	**Kerrville**	**13.81**	**345**	P	**Pn**		**15 22 31.9**	**+0.7**
	baz=164,SNR=16							
438A	**Sam Houston St**	**14.00**	**359**	P	**Pn**		**15 22 33.9**	**+0.3**
	baz=178							
439A	**Center Grove,**	**14.04**	**1**	P	**Pn**		**15 22 34.2**	**+0.1**
	baz=181							
441A	**DeRidder**	**14.10**	**7**	P	**Pn**		**15 22 35.4**	**+0.5**
	baz=187							
436A	**Wall Ranch, Ga**	**14.11**	**354**	P	**Pn**		**15 22 35.4**	**+0.5**
	baz=173							
442A	**Mamou**	**14.17**	**9**	P	**Pn**		**15 22 35.6**	**-0.1**
	baz=190							
435B	**Jarrell**	**14.21**	**351**	P	**Pn**		**15 22 36.9**	**+0.5**
	baz=170,SNR=28							
434A	**Burnet**	**14.36**	**349**	P	**Pn**		**15 22 39.5**	**+1.2**
	baz=167,SNR=22							
JCT	**Junction City**	**14.39**	**343**	P	**Pn**		**15 22 37.6**	**-1.1**
	baz=161,SNR=11							
JCT	**Junction City**	**14.39**	**343**	*e*Pn	**Pn**		**15 22 37.5**	**-1.1**
433A	**Art**	**14.47**	**346**	P	**P**		**15 22 42.1**	**-1.5**
	baz=164,SNR=39							
339A	**Huntington**	**14.59**	**2**	P	**Pn**		**15 22 41.2**	**+0.1**
	baz=182							
338A	**Crockett**	**14.60**	**359**	P	**Pn**		**15 22 42.1**	**+0.8**
	baz=179							
341A	**Kurthwood**	**14.68**	**6**	P	**Pn**		**15 22 42.4**	**+0.1**
	baz=187							
335A	**Moody**	**14.68**	**352**	P	**P**		**15 22 44.4**	**-1.5**
	baz=171,SNR=25							
336A	**Riesel**	**14.72**	**354**	P	**Pn**		**15 22 44.3**	**+1.4**
	baz=173							
TXAR	**Lajitas Array**	**14.86**	**329**	P	**P**		**15 22 46.9**	**-1.0**
	0.0nm,0.3s,baz=143,slow=14,SNR=4.0							
TX31	**Lajitas Ar. Si**	**14.86**	**329**	*e*Pn	**Pn**		**15 22 44.8**	**+0.1**
334A	**Lometa**	**14.86**	**349**	P	**Pn**		**15 22 46.0**	**+1.3**
	baz=168,SNR=33							
343A	**Vidalia**	**14.87**	**12**	P	**Pn**		**15 22 45.4**	**+0.7**
	baz=193,SNR=7.8							
446A	**Poplarville**	**14.97**	**19**	P	**Pn**		**15 22 45.8**	**-0.3**
	baz=201							
333A	**Richland Sprin**	**15.00**	**347**	P	**P**		**15 22 48

	baz=200								
Y33A	Hilltop Ranch, baz=168	17.54	350	P	Pn	15 23 18.9	+1.1		
Z47A	Carrollton baz=202	17.61	20	P	P	15 23 18.3	+0.1		
X35A	Drake baz=174,SNR=11	17.72	355	P	P	15 23 19.6	+0.2		
X39A	Fountain Ranch baz=183,SNR=8.3	17.77	3	P	P	15 23 20.0	0.0		
Y45A	Yeager Farm, C baz=197	17.81	15	P	P	15 23 19.8	-0.6		
X37A	Clayton baz=179,SNR=8.1	17.83	359	P	Pn	15 23 21.0	-0.3		
MIAR	Mount Ida baz=184,SNR=20	17.83	4	P	Pn	15 23 21.0	-0.3		
MIAR	Mount Ida 18nm,1.0s	17.83	4	eP	P	15 23 20.8	+0.1		
LRAL	Lakeview Retre 8.2nm,0.8s	17.84	23	eP	P	15 23 19.9	-0.8		
X40A	Basin Creek Fa baz=187	17.84	6	P	Pn	15 23 21.2	-0.2		
X36A	Centrahoma baz=176	17.84	357	P	P	15 23 20.4	-0.5		
X41A	Kaden, Bauxite baz=188,SNR=8.9	17.88	7	P	P	15 23 21.2	0.0		
X38A	Whitesboro baz=180,SNR=22	17.91	1	P	Pn	15 23 22.0	-0.2		
Z48A	Northport baz=204	17.95	21	P	P	15 23 21.8	-0.1		
X34A	Smith Ranch, M baz=171,SNR=32	18.01	353	P	P	15 23 22.5	-0.2		
Y46A	Houston baz=199,SNR=6.0	18.01	17	P	P	15 23 22.1	-0.6		
X33A	Lawton baz=169,SNR=6.4	18.04	351	P	P	15 23 22.7	-0.3		
X43A	Marvell baz=193	18.15	11	P	Pn	15 23 25.0	-0.1		
UALR	University of 19nm,0.6s	18.18	7	eP	P	15 23 23.3	-1.2		
WMOK	Wichita Mounta baz=168	18.28	350	P	Pn	15 23 26.6	-0.1		
WMOK	Wichita Mounta 10nm,0.8s	18.28	350	eP	P	15 23 25.6	0.0		
X44A	Crenshaw baz=195	18.28	13	P	P	15 23 25.7	+0.1		
W38A	Poteau baz=181,SNR=8.4	18.31	1	P	Pn	15 23 26.6	-0.5		
Y47A	UCPARC, Winfie baz=202,SNR=6.1	18.33	19	P	P	15 23 25.3	-0.9		
W37B	Quinton baz=179,SNR=12	18.38	359	P	P	15 23 27.2	+0.5		
W36A	Wetumka baz=176	18.40	357	P	Pn	15 23 27.7	-0.5		
W35A	Tecumseh baz=174	18.46	355	P	P	15 23 27.9	+0.3		
W39A	Magazine baz=184,SNR=16	18.47	3	P	P	15 23 28.0	+0.3		
W40A	Ferguson Farm, baz=186,SNR=6.5	18.51	5	P	P	15 23 28.1	0.0		
MSTX	Muleshoe baz=156	18.55	340	P	P	15 23 29.3	+0.6		
W41B	Gary Mavity, V baz=188,SNR=6.0	18.58	7	P	P	15 23 29.2	+0.3		
W34A	Bridge Creek, 43nm,0.8s	18.63	353	eP	P	15 23 30.1	+0.6		
X301	Greenbrier Sit 34nm,1.6s	18.63	7	eP	P	15 23 29.8	+0.4		
W33A	Caddo, Fort Co baz=170	18.64	351	P	P	15 23 29.9	+0.4		
X201	Greenbrier Sit 18nm,1.3s	18.68	7	eP	P	15 23 30.4	+0.4		
WHAR	Wooly Hollow 9.2nm,0.9s	18.69	7	eP	P	15 23 30.5	+0.4		
W44A	Shelby Farms P baz=195	18.97	13	P	P	15 23 32.3	-0.8		
V36A	Jenks baz=177,SNR=11	19.04	358	P	P	15 23 33.7	-0.2		
AMTX	Amarillo 12nm,0.8s	19.06	343	eP	Pn	15 23 35.6	-0.5		
V35A	Meyer Ranch, C baz=175,SNR=9.0	19.06	356	P	P	15 23 34.5	+0.3		
V38A	Canehill baz=182,SNR=26	19.11	2	P	P	15 23 34.6	0.0		
V39A	Pettigrew baz=184,SNR=28	19.11	4	P	P	15 23 34.9	+0.1		
V37A	Hulbert baz=180,SNR=11	19.12	360	P	P	15 23 34.5	-0.2		
W45A	Hickory Valley baz=197	19.13	15	P	P	15 23 34.9	0.0		
V40A	Witts Springs baz=186,SNR=23	19.14	6	P	P	15 23 34.9	-0.2		
TUL1	Leonard baz=178	19.15	358	P	P	15 23 34.9	-0.2		
TUL1	Leonard 14nm,0.8s	19.15	358	eP	P	15 23 34.1	-1.1		
V34A	Guthrie baz=173	19.19	354	P	P	15 23 35.5	0.0		
V34A	Guthrie 20nm,0.6s	19.19	354	eP	P	15 23 34.8	-0.7		
V41A	Mountainview baz=188,SNR=22	19.20	7	P	P	15 23 35.3	-0.3		
V33A	Lossen Ranch, baz=170,SNR=7.7	19.27	352	P	P	15 23 36.5	+0.1		
V32A	Arapaho baz=168	19.28	350	P	P	15 23 37.1	+0.5		
V42A	Cord baz=190,SNR=38	19.32	9	P	P	15 23 36.6	-0.3		
121A	Cookes Peak, D 3.7nm,0.7s	19.52	326	ePn	Pn	15 23 41.7	+0.1		
HHAR	Hobbs 8.8nm,0.8s	19.54	3	eP	P	15 23 38.6	-0.8		
U36A	Oologah baz=178	19.63	358	P	P	15 23 40.5	+0.1		
U37A	Salina baz=180	19.64	360	P	P	15 23 40.4	0.0		
U35A	Pawnee baz=175	19.66	356	P	P	15 23 40.3	-0.3		
GOGA	Godfrey 9.2nm,0.6s	19.66	30	eP	P	15 23 40.4	-0.4		
U39A	Green Forest baz=184,SNR=15	19.66	4	P	P	15 23 40.2	-0.5		
U38A	Gravette baz=182,SNR=6.4	19.68	2	P	P	15 23 40.3	-0.6		
U40A	Yellville baz=186,SNR=30	19.69	5	P	P	15 23 40.7	-0.2		
U41A	Viola baz=189,SNR=33	19.77	8	P	P	15 23 41.3	-0.6		
U33A	Lingo Farm, Me baz=171	19.85	353	P	P	15 23 41.9	-0.8		
U42A	Revenden baz=191,SNR=25	19.88	9	P	P	15 23 42.4	-0.6		
U32A	Winter Ranch, baz=169	19.92	351	P	P	15 23 42.9	-0.6		
SWET	Sewanee 3.4nm,0.5s	20.18	22	eP	P	15 23 44.6	-1.7		
T35A	Sooner Cattle baz=176,SNR=12	20.19	357	P	P	15 23 46.1	-0.3		
T38A	Diamond baz=182,SNR=21	20.28	2	P	P	15 23 46.9	-0.5		
T36A	Boggs Farm, Ca baz=178	20.30	358	P	P	15 23 47.0	-0.6		
T39A	Clever baz=184	20.31	4	P	P	15 23 47.0	-0.7		
T34A	McClaskey Farm baz=174,SNR=6.7	20.34	355	P	P	15 23 47.3	-0.7		
T37A	Cheneyville 18 baz=180,SNR=11	20.35	0	P	P	15 23 47.7	-0.5		
WVT	Waverly 4.7nm,0.8s	20.41	17	eP	P	15 23 46.8	-1.9		
PBMO	Poplar Bluff 16nm,1.0s	20.43	11	eP	P	15 23 47.8	-1.2		
T41A	Mountain View baz=189,SNR=27	20.48	8	P	P	15 23 49.1	-0.4		
T40A	Mansfield baz=187,SNR=10	20.51	6	P	P	15 23 49.0	-0.8		
S38A	Stockton baz=183,SNR=7.4	20.89	3	P	P	15 23 53.0	-0.9		
CPCT	Cooper Cave 9.6nm,1.5s	20.92	25	eP	P	15 23 52.1	-2.1		
S35A	Otter Creek Ra baz=176,SNR=19	20.94	357	P	P	15 23 53.9	-0.5		
S40A	Lebanon baz=187,SNR=12	20.95	6	P	P	15 23 53.9	-0.7		
S36A	Lake Cedric, C baz=178,SNR=6.0	20.96	359	P	P	15 23 54.1	-0.6		
S39A	Bolivar baz=184,SNR=9.3	20.98	4	P	P	15 23 54.0	-0.9		
S37A	Fort Scott baz=180	20.99	1	P	P	15 23 54.4	-0.6		
S34A	Willow Spring baz=174	21.01	355	P	P	15 23 53.8	-1.3		
S41A	Jillco Farms, baz=189,SNR=11	21.02	7	P	P	15 23 54.4	-0.9		
S43A	Fulton Ridge, baz=193	21.26	11	P	P	15 23 56.7	-1.2		
TKL	Tuckaleechee C 2.3nm,0.6s,baz=192,slow=14,SNR=7.0	21.41	26	P	P	15 23 58.0	-1.5		
TKL	Tuckaleechee C 27nm,1.6s	21.41	26	eP	P	15 23 57.8	-1.7		
R38A	Fenwick Farm, baz=183,SNR=5.7	21.44	3	P	P	15 23 59.0	-0.8		
R37A	Teagarden Farm baz=180	21.54	1	P	P	15 24 00.6	-0.3		
R36A	Gordon, Harris baz=179	21.56	359	P	P	15 24 00.2	-0.8		
SIUC	Southern Illin 10nm,0.5s	21.57	13	eP	P	15 24 00.6	-0.5		
R35A	Emporia Munici baz=177	21.57	358	P	P	15 24 00.6	-0.6		
R34A	Isabella, Hill baz=174	21.61	355	P	P	15 24 01.3	-0.4		
R39A	Chumby, Stover baz=185,SNR=13	21.62	4	P	P	15 24 00.5	-1.1		
R40A	Maddies Statio baz=187,SNR=10	21.66	6	P	P	15 24 00.9	-1.2		
HELC	Santa Helena 23nm,1.5s	21.79	116	eP	P	15 24 01.4	-2.7		
KMSC	Kings Mountain baz=217	22.10	31	P	P	15 24 05.5	-1.3		
KMSC	Kings Mountain 8.6nm,1.2s	22.10	31	eP	P	15 24 05.5	-1.3		
Q35A	Mercer Eighty, baz=177	22.10	358	P	P	15 24 06.5	-0.3		
Q37A	Longview Farm, baz=181	22.11	1	P	P	15 24 06.7	-0.2		
Q34A	Chapman baz=175	22.21	356	P	P	15 24 07.1	-0.9		
Q38A	Cooks Store, C baz=184	22.23	3	P	P	15 24 07.3	-0.7		
TZTN	Tazewell 9.0nm,0.8s	22.26	25	eP	P	15 24 06.7	-1.9		
Q39A	Willow Grove F baz=185,SNR=6.2	22.35	4	P	P	15 24 07.8	-1.5		
KSU1	Kansas State U baz=176	22.37	357	P	P	15 24 09.1	-0.5		
KSU1	Kansas State U 7.4nm,0.6s	22.37	357	eP	P	15 24 08.7	-0.9		
Q40A	Laux Farm, Aux baz=187,SNR=8.1	22.38	6	P	P	15 24 07.9	-1.8		
CBKS	Cedar Bluff baz=168	22.42	350	P	P	15 24 10.2	+0.1		
Q32A	Meitler Ranch, baz=171,SNR=5.8	22.43	353	P	P	15 24 10.7	+0.5		
Q42A	Golden Eagle baz=191	22.49	9	P	P	15 24 09.4	-1.5		
Q43A	New Douglas baz=193	22.66	11	P	P	15 24 10.9	-1.7		
Q44A	Meyer Farm, Va baz=195	22.76	12	P	P	15 24 11.9	-1.7		
P35A	Duane Minner, baz=178	22.77	358	P	P	15 24 12.4	-1.4		
P33A	Williams Farm, baz=173	22.78	355	P	P	15 24 12.5	-1.3		
OLIL	Olney 9.9nm,0.8s	22.80	14	eP	P	15 24 12.4	-1.5		
WCI	Wyandotte Cave 14nm,0.6s	22.80	18	eP	P	15 24 12.1	-2.0		
P39B	Salisbury baz=186,SNR=8.9	22.80	5	P	P	15 24 12.6	-1.4		
P37A	Lathrop baz=182	22.82	1	P	P	15 24 13.0	-1.2		
P34A	Walnut Farm, R baz=176	22.82	357	P	P	15 24 13.1	-1.1		
P36A	Good Intent, A baz=180	22.85	360	P	P	15 24 13.2	-1.3		
P38A	Dawn baz=184	22.89	3	P	P	15 24 13.5	-1.4		
P40A	Paris baz=187,SNR=9.1	22.91	6	P	P	15 24 13.4	-1.7		
P32A	Huiting Farm, baz=171	23.05	353	P	P	15 24 16.0	-0.5		
P41A	Barry, Barry baz=190,SNR=13	23.17	8	P	P	15 24 15.8	-1.7		
P42A	Winchester baz=191,SNR=7.2	23.18	9	P	P	15 24 15.8	-1.9		
KSCO	Kaye Shedlock' 16nm,0.4s	23.20	345	eP	P	15 24 19.8	+1.8		
O36A	Bolckow baz=180	23.36	0	P	P	15 24 18.8	-0.5		
O33A	Hebron baz=174	23.40	355	P	P	15 24 19.3	-0.4		
O34A	Beatrice baz=176	23.45	357	P	P	15 24 19.6	-0.6		
O35A	Humboldt baz=178	23.50	358	P	P	15 24 19.7	-1.0		
O40A	La Belle baz=188,SNR=11	23.51	6	P	P	15 24 19.1	-1.6		
O39A	Kirksville baz=186	23.58	5	P	P	15 24 20.0	-1.3		
BLO	Bloomington 14nm,0.6s	23.61	17	eP	P	15 24 20.3	-1.3		
O41A	Passleys Farm, baz=190,SNR=7.0	23.62	8	P	P	15 24 20.2	-1.5		
O32A	Brockman Farm, baz=172	23.65	354	P	P	15 24 21.3	-0.6		
O31A	Woolen Ranch, baz=170	23.67	352	P	P	15 24 21.3	-0.9		
O42A	Bath baz=192	23.82	10	P	P	15 24 22.5	-0.9		
N37A	Lee Faris, Mou baz=182	24.00	2	P	P	15 24 24.7	-0.3		
N36A	Muff Farm, Cla baz=180	24.04	0	P	P	15 24 25.3	-0.2		
N38A	Joes South For baz=184,SNR=9.1	24.07	3	P	P	15 24 24.6	-1.1		
N35A	Tabor baz=178	24.09	359	P	P	15 24 25.5	-0.4		
N34A	Lincoln baz=176	24.09	357	P	P	15 24 25.7	-0.2		
N39A	Derby Farms, D baz=186	24.20	5	P	P	15 24 26.8	-0.1		
HDIL	Hopedale baz=193	24.30	11	P	P	15 24 27.5	-0.3		
HDIL	Hopedale 11nm,0.6s	24.30	11	eP	P	15 24 26.5	-1.3		
SFIN	Lafayette baz=198	24.60	15	P	P	15 24 29.0	-1.5		
SFIN	Lafayette 7.6nm,0.8s	24.60	15	eP	P	15 24 29.2	-1.3		
M37A	Trindle Farm, baz=182	24.64	2	P	P	15 24 31.0	+0.1		
M36A	Felix, Anita baz=180	24.68	0	P	P	15 24 30.7	-0.5		
M35A	Neola baz=178	24.70	359	P	P	15 24 31.5	+0.1		
M34A	Aspy Farms, Fr baz=176	24.76	357	P	P	15 24 32.0	0.0		
OGNE	Ogallala 18nm,0.9s	24.91	347	eP	P	15 24 33.8	+0.4		
SCIA	State Center 34nm,0.7s	25.18	3	eP	P	15 24 34.9	-0.9		
L34A	Svendsen Farm, baz=177	25.22	358	P	P	15 24 35.5	-0.6		
L36A	Harm Buss Farm baz=181,SNR=5.5	25.33	1	P	P	15 24 35.8	-1.3		
L38A	Oak Wood Farm, baz=184,SNR=7.1	25.43	4	P	P	15 24 37.3	-0.8		
L33A	Hoskins baz=175	25.46	356	P	P	15 24 37.5	-0.9		
L39A	Vinton baz=187	25.48	5	P	P	15 24 37.8	-0.8		
L40A	Anamosa baz=188,SNR=5.7	25.50	7	P	P	15 24 37.7	-1.0		
L41A	Preston baz=190	25.60	8	P	P	15 24 38.5	-1.1		
K36A	Gilmore City baz=181	25.87	1	P	P	15 24 41.5	-0.5		
K35A	Storm Lake baz=180	25.95	360	P	P	15 24 41.7	-1.0		
K38A	Parkersburg baz=185	25.95	4	P	P	15 24 42.1	-0.6		
K32A	Verdigre baz=174	26.00	355	P	P	15 24 42.4	-0.8		
K37A	Belmond baz=183,SNR=7.7	26.02	2	P	P	15 24 42.3	-1.1		
K39A	Oelwein baz=187	26.07	5	P	P	15 24 42.6	-1.3		
K40A	Colesburg baz=188	26.14	7	P	P	15 24 43.7	-0.8		
K41A	Shullsburg baz=190	26.15	8	P	P	15 24 44.0	-0.6		
JFWS	Jewell Farm 16nm,0.8s	26.46	8	eP	P	15 24 46.5	-0.9		
J36A	Seneca 1, Swea baz=181,SNR=6.7	26.56	1	P	P	15 24 47.4	-0.8		
J37A	Redenius Farm, baz=183,SNR=5.2	26.57	2	P	P	15 24 47.2	-1.1		
J38A	Wedel Dairy, R baz=185	26.64	4	P	P	15 24 48.2	-0.7		
J40A	Soldiers Grove baz=189	26.87	7	P	P	15 24 50.6	-0.4		
J41A	Loganville baz=190	26.94	8	P	P	15 24 50.9	-0.7		
ECSD	EROS Data Cent baz=177	26.99	358	P	P	15 24 52.0	-0.1		
ECSD	EROS Data Cent 12nm,1.4s	26.99	358	eP	P	15 24 52.4	+0.3		
I35A	Creekview Farm baz=180	27.08	0	P	P	15 24 52.5	-0.4		
I34A	Hadley baz=178	27.27	359	P	P	15 24 53.8	-0.8		
H31A	Wolsey baz=173	27.85	355	P	P	15 24 59.6	-0.2		
H34A	Spellman Lake, baz=178	27.90	359	P	P	15 25 00.7	+0.5		
SPMN	Marine on St. baz=184	28.51	3	P	P	15 25 05.2	-0.5		
SPMN	Marine on St. 13nm,0.7s	28.51	3	eP	P	15 25 03.9	-1.7		
PDAR	Pinedale Array 0.4nm,0.6s,baz=153,slow=6.1,SNR=2.9	28.79	338	pP	pP	15 25 31.0	+0.4		
F34A	Alexandria baz=180	29.02	360	P	P	15 25 09.2	-0.9		
F36A	Milaca baz=183,SNR=5.3	29.11	2	P	P	15 25 10.2	-0.8		
F29A	Eureka baz=171	29.33	353	P	P	15 25 13.6	+0.7		
MLAC	Mammoth, Mammo baz=129	29.55	320	P	P	15 25 14.8	-0.4		
E33A	Westby DABS, E baz=178	29.74	359	P	P	15 25 16.0	-0.5		
E34A	Wadena baz=180	29.74	360	P	P	15 25 16.1	-0.4		
COWI	Conover 3.9nm,0.6s	29.74	8	eP	P	15 25 13.1	-3.5		
E36A	McGregor baz=183	29.78	3	P	P	15 25 16.4	-0.5		
E35A	Pequot Lakes baz=181	29.79	1	P	P	15 25 17.0	+0.1		
TPAW	Teton Pass 12nm,1.5s	29.93	336	eP	P	15 25 16.1	-2.4		
D34A	Park Rapids baz=180	30.31	360	P	P	15 25 20.7	-0.8		
D35A	Remer baz=182	30.32	1	P	P	15 25 21.0	-0.6		
D36A	Goodland baz=183	30.44	3	P	P	15 25 21.6	-1.1		
D37A	Cotton baz=185,SNR=8.8	30.46	4	P	P	15 25 21.8	-1.1		
D26A	Manning baz=166	30.86	350	P	P	15 25 26.1	-0.3		
C35A	Jirik Farms, M baz=182	30.94	1	P	P	15 25 26.3	-0.7		
C36A	Pine Crest Far baz=184	31.04	3	P	P	15 25 27.3	-0.6		
C37A	Embarrass baz=185	31.04	4	P	P	15 25 27.5	-0.5		
C31A	Landman Farms, baz=175	31.09	357	P	P	15 25 27.7	-0.7		
C38A	Sawbill Land. baz=187	31.10	5	P	P	15 25 27.4	-1.1		
EYMN	Ely baz=186	31.31	5	P	P	15 25 29.3	-1.0		
EYMN	Ely 4.0nm,0.6s	31.31	5	eP	P	15 25 29.0	-1.3		
AGMN	Agassiz Nation baz=178,SNR=6.6	31.53	359	P	P	15 25 31.7	-0.6		
AGMN	Agassiz Nation 7.9nm,0.8s	31.53	359	eP	P	15 25 31.4	-0.8		
B35A	Bob, Littlefor baz=182	31.60	2	P	P	15 25 32.1	-0.8		
B32A	Ashes, Strandq baz=177	31.64	358	P	P	15 25 32.8	-0.4		
B31A	Greenbush Farm baz=175	31.72	357	P	P	15 25 33.4	-0.5		
B30A	Myrvik Farm, E baz=174,SNR=5.4	31.79	356	P	P	15 25 34.3	-0.3		
B29A	Wagenman Farm, baz=172	31.88	355	P	P	15 25 35.5	+0.1		
B28A	Dugan Ranch, T baz=170	31.97	353	P	P	15 25 36.3	+0.1		
A33A	Warroad baz=179	32.16	360	P	P	15 25 37.2	-0.6		
A30A	Hoffart Farm, baz=174	32.27	356	P	P	15 25 38.6	-0.2		
A29A	Manning Farm, baz=172,SNR=5.4	32.33	355	P	P	15 25 38.8	-0.4		
LPAZ	La Paz 0.7nm,0.5s,baz=306,slow=8.7,SNR=3.0	42.19	140	P	P	15 27 05.2	+1.6		
YKA	Yellowknife Ar 0.7nm,0.5s,baz=154,slow=7.3,SNR=9.9	47.77	348	P	P	15 27 46.6	+0.2		
YKA	1.8nm,0.6s,baz=152,slow=7.5,SNR=12			pP	pP	15 28 09.3	-0.8		
INK	Inuvik 0.6nm,0.6s,baz=141,slow=7.8,SNR=4.1	57.04	344	P	P	15 28 56.3	+1.4		
INK	7.4nm,0.6s,baz=133,slow=6.2,SNR=20			pP	pP	15 29 19.1	-0.1		
ILAR	Eielson Array 0.2nm,0.7s,baz=145,slow=3.3,SNR=3.8	59.22	337	P	P	15 29 13.0	+2.9		
ILAR	1.4nm,1.0s,baz=133,slow=4.1,SNR=9.5			pP	pP	15 29 34.2	-0.3		
PLCA	Paso Flores 2.0nm,0.7s,baz=356,slow=7.0,SNR=7.8	61.51	159	P	P	15 29 27.5	+1.4		
PCAS	Casmilo, Conde 33nm,1.8s	76.89	52	eP	P	15 31 02.5	+1.3		
PVIS	Viseu 7.2nm,1.9s	77.21	51	eP	P	15 31 03.4	+0.3		
PMTG	Montargil 10nm,1.3s	77.28	53	eP	P	15 31 04.0	+0.6		
MTE	Manteigas 15nm,1.9s	77.54	51	eP	P	15 31 06.1	+1.2		
EVO	Evora 6.6nm,1.6s	77.55	53	eP	P	15 31 05.5	+0.6		
PCBR	Castelo Branco 7.4nm,1.7s	77.70	52	eP	P	15 31 07.3	+1.6		
MVO	Moncorvo 20nm,2.2s	77.77	51	eP	P	15 31 07.1	+0.9		
PMRV	Marv??o 17nm,1.7s	77.84	52	eP	P	15 31 07.0	+0.5		
PBRG	Braganca 18nm,1.5s	77.85	50	eP	P	15 31 07.4	+0.8		
ESDC	Sonseca Array 1.7nm,0.8s,baz=293,slow=4.7,SNR=12	80.38	52	P	P	15 31 20.9	+0.4		
TORD	Torodi Ar. Bea 0.3nm,0.5s,baz=297,slow=5.7,SNR=5.9	92.61	76	P	P	15 32 22.1	+1.2		
WRA	Warramunga Arr 0.7nm,0.8s,baz=60,slow=2.0,SNR=4.2	133.11	258	PKP	PKPdf	15 38 25.7	+1.2		
ASAR	Alice Springs 0.3nm,0.8s,baz=104,slow=1.9,SNR=3.3	133.69	253	PKP	PKPdf	15 38 26.2	+0.7		

IDC ***10*** *15:20:38.0± 1.2, 23°.90N× 121°.84E, h0km, mb3.6/5, mb1 3.6/6, mb1mx3.4/42, mbtmp3.5/6, ML3.2/1, MS2.8/2, Ms1 2.8/2, ms1mx2.4/42, Error ellipse: s-maj=72.7km s-min=19.5km az=68.0*

ISCJB ***10*** *15:20:40.4± 0.8, 23°.96N± 0°.02× 122°.32E± 0°.01, h11km± 5km, mb3.5/5, MS3.0/1, Error ellipse: s-maj=3.5km s-min=2.0km az=161.3*

JMA ***10*** *15:20:40.8± 0.2, 23°.96N× 122°.29E, h17km± 4km, M3.4*

TAP ***10*** *15:20:41.4, 24°.02N× 122°.30E, h23km, ML3.6, C*

ISC 10 15:20:40.6±1.1, **23°.95N**±0°.02× **122°.28E**±0°.02, **h17**km±8km, **n65**, σ**0**.**86**/105, **mb3.5**/5, **1C-4D, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	Hwalien baz=251	0.62	273	eP	Pb	15 20 53.9	+0.9
TWD	Chiawan baz=276	0.64	282	⇓iP	Pb	15 20 53.9	+0.5
TWD	baz=276			*i* S	Sb	15 21 02.9	+0.9
TWC	Suao baz=325	0.77	329	⇑iP	Pb	15 20 54.8	-0.7
TWC				*e* S	Sb	15 21 03.4	-2.4

	baz=325							
JYNG	**Yonagunijimaku**	**0.79**	**50**	P		**Pb**	**15 20 55.5**	**-0.3**
JYNG				S		**Sb**	**15 21 04.7**	**-1.5**
ESL	**Shilin**	**0.79**	**260**	⇓*i*P		**Pb**	**15 20 55.9**	**+0.1**
	baz=245							
ESL				*e*S		**Sb**	**15 21 05.2**	**-1.1**
	baz=245							
YOJ	**Yonaguni jima**	**0.84**	**52**	P		**Pb**	**15 20 56.4**	**-0.4**
YOJ				S		**Sb**	**15 21 06.4**	**-1.4**
EGS		**0.95**	**340**	P		**Pb**	**15 20 58.4**	**-0.2**
	baz=328							
EGS				*e*S		**Sg**	**15 21 11.4**	**-0.1**
	baz=328							
ILA	**Ilan**	**0.95**	**329**	*e*P		**Pb**	**15 20 57.8**	**-0.8**
	baz=326							
ENTT	**Nioudou**	**0.95**	**317**	P		**Pb**	**15 20 58.6**	**-0.1**
	baz=324							
ENTT				*e*S		**Sb**	**15 21 11.1**	**+0.1**
	baz=324							
TWE	**Neicheng**	**0.95**	**324**	P		**Pb**	**15 20 58.4**	**-0.3**
	baz=329							
TWE				*e*S		**Sg**	**15 21 11.7**	**0.0**
	baz=329							
NNS	**Nan Shan**	**0.96**	**301**	⇓*i*P		**Pb**	**15 20 59.1**	**+0.1**
	baz=296							
NNS				*e*S		**Sb**	**15 21 11.8**	**+0.3**
	baz=296							
EHY	**Hungye**	**0.98**	**244**	P		**Pg**	**15 20 59.7**	**0.0**
	baz=241							
EHY				*e*S		**Sg**	**15 21 12.5**	**-0.1**
	baz=241							
TWT	**Tachien**	**1.06**	**287**	P		**Pn**	**15 21 01.0**	**+0.2**
	baz=271							
TWF1	**Yuli**	**1.08**	**237**	P		**Pb**	**15 21 01.0**	**+0.2**
	baz=222							
TWF1				*e*S		**Sb**	**15 21 15.3**	**+0.6**
	baz=222							
TWB1	**Santiao Chiao**	**1.09**	**346**	*e*P		**Pb**	**15 21 00.9**	**-0.1**
	baz=344							
NSK	**Sanguang**	**1.11**	**311**	⇓*i*P		**Pb**	**15 21 01.2**	**-0.2**
	baz=307							
CHKT	**Chengkung**	**1.19**	**225**	*e*P		**Pn**	**15 21 01.8**	**-0.7**
	baz=212							
CHKT				*e*S		**Sb**	**15 21 16.3**	**-1.6**
	baz=212							
NWF	**Wu-fen Shan**	**1.21**	**338**	P		**Pn**	**15 21 02.5**	**-0.4**
	baz=334							
NWF				*e*S		**Sb**	**15 21 18.1**	**-0.4**
	baz=334							
TWA	**Mucha**	**1.21**	**328**	*e*P		**Pn**	**15 21 02.6**	**-0.2**
	baz=326							
YUS	**Yu-Shan**	**1.30**	**250**	*e*P		**Pn**	**15 21 04.8**	**+0.3**
	baz=247							
YUS				*e*S		**Sb**	**15 21 21.4**	**-0.2**
	baz=247							
TYC	**Yuchr**	**1.30**	**268**	*e*P		**Pn**	**15 21 04.0**	**-0.1**
	baz=265							
NSTT	**Nanjuang**	**1.35**	**300**	*e*P		**Pb**	**15 21 05.2**	**-0.3**
	baz=297							
NSTT				*e*S		**Sb**	**15 21 22.8**	**+0.2**
	baz=297							
IRIF	**Iriomote-Funau**	**1.38**	**73**	P		**Pb**	**15 21 05.9**	**0.0**
IRIF				*e*S		**Sn**	**15 21 23.0**	**+0.1**
ELDTW	**Lidau**	**1.38**	**237**	*e*P		**Pn**	**15 21 05.0**	**-0.2**
	baz=235							
TWS1	**Kuangyinshan**	**1.39**	**326**	*e*P		**Pn**	**15 21 05.2**	**-0.1**
	baz=323							
HATJ	**Hateruma jima**	**1.40**	**85**	P		**Pb**	**15 21 06.2**	**-0.1**
HATJ				*e*S		**Sb**	**15 21 24.3**	**+0.5**
ALS	**Alishan**	**1.42**	**252**	P		**Pb**	**15 21 06.8**	**0.0**
	baz=250							
ALS				*e*S		**Sb**	**15 21 25.1**	**+0.3**
	baz=250							
TWQ1	**Liyutan**	**1.44**	**286**	*e*P		**Pb**	**15 21 07.3**	**+0.4**
	baz=283							
TWQ1				*e*S		**Sb**	**15 21 24.9**	**0.0**
	baz=283							
TWY	**Chenhua**	**1.46**	**335**	*e*P		**Pn**	**15 21 06.6**	**+0.4**
	baz=348							
WNT	**Mingjian**	**1.46**	**268**	*e*P		**Pb**	**15 21 07.7**	**+0.3**
	baz=265							
WNT				*e*S		**Sg**	**15 21 27.3**	**-0.6**
	baz=265							
NSY	**Sanyi**	**1.47**	**289**	*e*P		**Pb**	**15 21 07.8**	**+0.3**
	baz=273							
NSY				*e*S		**Sg**	**15 21 27.3**	**-0.6**
	baz=273							
TCU	**Taichung**	**1.48**	**278**	*e*P		**Pb**	**15 21 08.1**	**+0.4**
	baz=275							
TCU				*e*S		**Sg**	**15 21 28.4**	**0.0**
	baz=275							
CHN5	**Tsauling**	**1.51**	**257**	*e*P		**Pb**	**15 21 08.2**	**-0.1**
	baz=243							
TWG	**Pinlang**	**1.58**	**225**	*e*P		**Pn**	**15 21 07.2**	**-0.7**
	baz=236							
TWG				*e*S		**Sn**	**15 21 26.7**	**-1.2**
	baz=236							
WGK	**Gukeng**	**1.60**	**261**	*e*P		**Pb**	**15 21 09.6**	**-0.1**
	baz=259							
WGK				*e*S		**Sg**	**15 21 31.3**	**-0.9**
	baz=259							
STYT	**Tauyuan**	**1.60**	**241**	P		**Pn**	**15 21 09.1**	**+0.9**
	baz=229							
STYT				S		**Sb**	**15 21 29.5**	**-0.3**
	baz=229							
JKRS	**Kuro-shima**	**1.60**	**79**	P		**Pb**	**15 21 10.4**	**+0.6**
JKRS				*e*S		**Sb**	**15 21 30.3**	**+0.5**
CHN4	**Tsaushan**	**1.66**	**249**	*e*P		**Pb**	**15 21 10.5**	**-0.2**
	baz=248							
CHN4				*e*S		**Sb**	**15 21 32.9**	**+1.5**
	baz=248							
WTP	**Ta-pu**	**1.68**	**246**	*e*P		**Pb**	**15 21 11.1**	**0.0**
	baz=244							
WTP				*e*S		**Sb**	**15 21 33.6**	**+1.5**
	baz=244							
JIJ	**Ishigaki jima**	**1.75**	**76**	P		**Pn**	**15 21 10.2**	**0.0**
JIJ				*e*S		**Sn**	**15 21 32.0**	**-0.1**
CHY	**Chiayi**	**1.76**	**256**	*e*P		**Pb**	**15 21 12.4**	**0.0**
	baz=253							
CHN1	**Nanshi**	**1.78**	**245**	*e*P		**Pb**	**15 21 12.5**	**-0.3**
	baz=244							
CHN1				*e*S		**Sb**	**15 21 36.2**	**+1.3**
	baz=244							
TWK	**Hsinying**	**1.78**	**248**	*e*P		**Pg**	**15 21 14.8**	**0.0**
	baz=246							
TWK				*e*S		**Sb**	**15 21 36.0**	**+1.2**
	baz=246							
SGST	**Jiashian**	**1.78**	**241**	*e*P		**Pb**	**15 21 12.0**	**-0.9**
	baz=229							
SGST				*e*S		**Sb**	**15 21 36.1**	**+1.1**
	baz=229							
ECL	**Taimali**	**1.82**	**223**	*e*P		**Pn**	**15 21 10.7**	**-0.4**
	baz=232							
WTCT	**Ta-ch'eng**	**1.83**	**268**	*e*P		**Pb**	**15 21 13.6**	**-0.1**
	baz=265							
WSF	**Szhu**	**1.91**	**261**	*e*P		**Pb**	**15 21 13.9**	**-1.1**
	baz=259							
WSF				*e*S		**Sb**	**15 21 39.5**	**+0.9**
	baz=259							
SSD	**Sandimen**	**1.93**	**232**	*e*P		**Pb**	**15 21 14.3**	**-1.1**
	baz=225							
SSD				*e*S		**Sb**	**15 21 39.6**	**+0.4**
	baz=225							
JISG	**Ishigakijimahi**	**1.96**	**71**	P		**Pn**	**15 21 12.9**	**-0.2**
JISG				*e*S		**Sn**	**15 21 36.8**	**-0.5**
CHN8	**Yiju**	**1.99**	**253**	*e*P		**Pn**	**15 21 14.0**	**+0.5**
	baz=251							
CHN8				*e*S		**Sb**	**15 21 40.9**	**0.0**
	baz=251							
LAY	**Lan-yu**	**2.02**	**200**	*e*P		**Pn**	**15 21 12.9**	**-0.9**
	baz=200							
EAST	**Anshuo**	**2.04**	**221**	*e*P		**Pn**	**15 21 14.6**	**+0.3**
	baz=220							
TWM1	**Shoushan**	**2.04**	**237**	*e*P		**Pb**	**15 21 16.5**	**-0.8**
	baz=235							
SCZT	**Fangliau**	**2.19**	**225**	*e*P		**Pb**	**15 21 19.1**	**-0.7**
	baz=217							
JTJ	**Tarama**	**2.31**	**72**	P		**Pn**	**15 21 19.3**	**+1.3**
JTJ				S		**Sn**	**15 21 46.8**	**+0.8**
HEN	**Hengchun**	**2.40**	**217**	*e*P		**Pb**	**15 21 22.5**	**-0.9**
	baz=216							
PNG	**Penghu**	**2.53**	**262**	*e*P		**Pn**	**15 21 22.2**	**+1.3**
	baz=260							
PNG				*e*S		**Sn**	**15 21 52.8**	**+1.5**
	baz=260							
JIRB	**Irabujima**	**2.78**	**71**	P		**Pn**	**15 21 25.8**	**+1.5**
JIRB				*e*S		**Sn**	**15 21 57.0**	**-0.5**

JIKM	**Ikemajima**	**2.87**	**70**	P		**Pn**	**15 21 27.1**	**+1.5**
JIKM				*e*S		**Sn**	**15 22 01.0**	**+1.2**
KSRS	**Korea Array**	**14.30**	**18**	Pn		**Pn**	**15 24 05.3**	**+3.0**
	0.1nm,0.3s,baz=198,slow=11,SNR=2.8							
KSRS				LR		LR	15 30 02.3	
	comp=Z,24nm,18.3s,baz=325,slow=39							
SONM	**Songino Array**	**26.98**	**336**	P		**P**	**15 26 20.0**	**-1.6**
	1.9nm,0.7s,baz=146,slow=9.2,SNR=12							
MKAR	**Makanchi Array**	**39.21**	**316**	P		**P**	**15 28 06.9**	**-1.0**
	0.3nm,0.5s,baz=104,slow=9.7,SNR=5.8							
MKAR				LR		LR	15 44 49.7	
	comp=Z,22nm,18.6s,baz=48,slow=37							
ZALV	**Zalesovo Beam**	**40.99**	**327**	P		**P**	**15 28 19.9**	**-2.7**
	0.5nm,0.3s,baz=115,slow=8.8,SNR=4.7							
WRA	**Warramunga Arr**	**45.18**	**164**	P		**P**	**15 28 56.6**	**-0.1**
	0.5nm,0.8s,baz=345,slow=9.0,SNR=3.4							
ASAR	**Alice Springs**	**48.66**	**166**	P		**P**	**15 29 25.0**	**+1.1**
	0.2nm,0.6s,baz=345,slow=6.9,SNR=5.0							

*IDC **10** 15:20:47.6±2.8, 36°.71N×142°.47E, h0km, mb3.2/2, mb1 3.5/4, mb1mx3.3/48, mbtmp3.4/4, ML3.3/2, Error ellipse: s-maj=60.5km s-min=32.1km az=64.0*
*JMA **10** 15:20:48.9±0.2, 36°.71N×142°.38E, h16km, M3.3*
ISC 10 15:20:48.0±3.5, 36°.69N±0°.04×142°.36E±0°.08, h5km±23km, n21, σ1°36/26, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.32**	**289**	P		**Pn**	**15 21 12.7**	**-0.5**
JFK	**Kawauchi**	**1.37**	**300**	P		**Pn**	**15 21 13.5**	**-0.4**
JHO	**Hitachi**	**1.44**	**267**	P		**Pn**	**15 21 14.7**	**-0.2**
CHOJ	**Chosi**	**1.56**	**231**	P		**Pb**	**15 21 17.3**	**-0.1**
CHOJ				*e*S		**Sn**	**15 21 35.6**	**-1.5**
JMM	**Marumori**	**1.72**	**314**	P		**Pn**	**15 21 18.8**	**+0.2**
JFT	**Otama**	**1.82**	**298**	P		**Pb**	**15 21 20.9**	**-0.9**
JFT				*e*S		**Sb**	**15 21 43.7**	**-1.2**
JIO	**Ouri**	**1.94**	**336**	P		**Pn**	**15 21 22.0**	**+0.3**
JIO				*e*S		**Sn**	**15 21 44.4**	**-2.0**
BSO1	**Boso 1**	**2.32**	**209**	P		**Pn**	**15 21 27.7**	**+1.3**
JAG	**Ashikaga**	**2.35**	**264**	P		**Pn**	**15 21 28.2**	**+0.8**
JMK	**Ichinoseki**	**2.43**	**339**	P		**Pn**	**15 21 29.5**	**+1.0**
JYK	**Kaneyama**	**2.73**	**325**	P		**Pn**	**15 21 33.7**	**+1.1**
JYK				*e*S		**Sn**	**15 22 06.4**	**+0.3**
JRY	**Ryogami san**	**2.87**	**258**	P		**Pn**	**15 21 35.1**	**+0.6**
JRY				*e*S		**Sn**	**15 22 10.0**	**+0.5**
JOD2	**Odawara 2**	**3.01**	**243**	P		**Pn**	**15 21 37.6**	**+1.2**
MJAR	**Matsushiro Arr**	**3.34**	**269**	Pn		**Pn**	**15 21 42.8**	**+1.8**
	3.3nm,0.3s,baz=94,slow=13,SNR=50							
MJAR				Sn		**Sn**	**15 22 22.0**	**+0.9**
	0.9nm,0.3s,baz=86,slow=16,SNR=4.1							
MAT	**Matsushiro**	**3.34**	**269**	P		**Pn**	**15 21 43.2**	**+2.2**
MAT				*e*S		**Sn**	**15 22 22.3**	**+1.1**
JHJ	**Hachijo jima 2**	**4.14**	**211**	Pn		**Pn**	**15 21 52.1**	**+0.1**
	5.0nm,0.3s,baz=330,slow=22,SNR=13							
JHJ				Sn		**Sn**	**15 22 37.0**	**-3.8**
	9.9nm,0.3s,baz=92,slow=22,SNR=9.3							
H11N2	**WAKE ISLAND Hy**	**27.32**	**122**	T		T	15 55 44.3	
	baz=312							
H11N1	**WAKE ISLAND Hy**	**27.33**	**122**	T		T	15 55 39.3	
	baz=312							
H11N3	**WAKE ISLAND Hy**	**27.34**	**122**	T		T	15 55 39.3	
	baz=312							
MKAR	**Makanchi Array**	**44.95**	**303**	P		**P**	**15 29 04.4**	**+0.4**
	0.1nm,0.5s,baz=78,slow=9.0,SNR=3.0							
WRA	**Warramunga Arr**	**56.83**	**189**	P		**P**	**15 30 34.3**	**+0.7**
	0.5nm,1.1s,baz=6.2,slow=8.5,SNR=2.7							

*ISCJB **10** 15:27:41.6±1.0, 29°.38S±0°.09×176°.2W±0°.1, h36km, mb4.0/4, Error ellipse: s-maj=14.2km s-min=11.3km az=135.2*
*IDC **10** 15:27:48.7±3.2, 28°.89S×176°.46W, h71km±25km, mb3.7/4, mb1 4.1/4, mb1mx3.6/32, mbtmp4.0/4, Error ellipse: s-maj=56.5km s-min=30.8km az=164.0*
ISC 10 15:27:43.8±0.9, 29°.2S±0°.1×176°.3W±0°.1, h36km, n10, σ0°85/11, mb4.0/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**1.42**	**268**	P		Pn	15 28 11.2	+4.1
	137nm,0.3s,baz=119,slow=10,SNR=7.4							
RAO				S		**Sn**	**15 28 25.0**	**+0.4**
	363nm,0.3s,baz=86,slow=23,SNR=7.9							
URZ	**Urewera**	**10.56**	**210**	P		**Pn**	**15 30 12.1**	**-0.4**
	0.4nm,0.3s,baz=100,slow=6.1,SNR=3.9							
URZ				S		**Sn**	**15 32 08.9**	**-0.5**
	2.0nm,0.3s,baz=101,slow=23,SNR=8.1							
ASAR	**Alice Springs**	**44.67**	**265**	P		**P**	**15 35 53.8**	**+0.4**
	1.9nm,0.5s,baz=105,slow=8.0,SNR=30							
WRA	**Warramunga Arr**	**45.56**	**270**	P		**P**	**15 36 00.1**	**-0.2**
	0.9nm,0.4s,baz=109,slow=7.8,SNR=14							
TXAR	**Lajitas Array**	**90.50**	**56**	P		**P**	**15 40 42.2**	**+0.1**
	0.6nm,1.0s,baz=212,slow=4.9,SNR=4.1							
ILAR	**Eielson Array**	**96.45**	**12**	P		**P**	**15 41 07.6**	**-1.0**
	0.3nm,0.7s,baz=216,slow=5.4,SNR=3.9							
NB2	**NORSAR Subarra**	**147.78**	**353**	PKP		**PKPbc**	**15 47 24.1**	**-0.1**
	comp=Z,1.4nm,0.5s,baz=7.7,slow=2.9							
NOA	**NORSAR Array B**	**147.78**	**353**	PKPbc		**PKPbc**	**15 47 24.1**	**-0.1**
	comp=Z,1.7nm,0.5s,baz=12,slow=4.5,SNR=5.7							
AKASG	**Malin Array Be**	**151.22**	**325**	PKPbc		**PKPbc**	**15 47 32.9**	**0.0**
	comp=Z,1.3nm,0.4s,baz=43,slow=3.2,SNR=5.1							
TORD	**Torodi Ar. Bea**	**163.90**	**173**	PKPab		**PKPab**	**15 48 38.3**	**+2.0**
	comp=Z,0.8nm,0.8s,baz=182,slow=3.9,SNR=3.5							

*NIED **10** 15:33:00, 38°.10N×143°.40E, h11km, Mw4.0 Best double couple: M0 1.17000×10^15 NP1:φs330.00000°, δ24.00000°, λ-120.00000°. NP2:φs182.00000°, δ69.00000°, λ-77.00000°.*
*IDC **10** 15:33:07.3±0.7, 37°.94N×143°.58E, h0km, mb4.0/11, mb1 4.1/17, mb1mx3.9/46, mbtmp4.0/17, ML3.9/5, MS3.1/4, Ms1 3.1/4, ms1mx2.7/53, Error ellipse: s-maj=19.2km s-min=14.3km az=116.0*
*ISCJB **10** 15:33:08.2±1.5, 38°.01N±0°.05×143°.46E±0°.05, h16km±11km, mb4.1/20, MS3.8/1, Error ellipse: s-maj=9.0km s-min=5.5km az=143.1*
*NEIC **10** 15:33:09.1±0.7, 38°.06N×143°.49E, h10km, mb4.3/7, Error ellipse: s-maj=14.4km s-min=8.2km az=129.0*
*JMA **10** 15:33:10.3±0.2, 38°.12N×143°.40E, h40km, M4.2*
ISC 10 15:33:09.5±4.7, 37°.99N±0°.06×143°.48E±0°.06, h12km±29km, n59, σ1°88/62, mb4.2/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**1.74**	**286**	P		**Pn**	**15 33 37.9**	**-1.6**
JIO				S		**Sn**	**15 33 57.9**	**-3.7**
OFUJ	**Ofunato**	**1.79**	**308**	P		**Pn**	**15 33 37.9**	**-2.3**
JMK	**Ichinoseki**	**2.02**	**299**	P		**Pn**	**15 33 41.6**	**-1.7**
JMM	**Marumori**	**2.13**	**267**	P		**Pn**	**15 33 43.7**	**-1.1**
JMM				*e*S		**Sn**	**15 34 08.4**	**-2.8**
JFK	**Kawauchi**	**2.16**	**254**	P		**Pn**	**15 33 43.9**	**-1.4**
JFK				*e*S		**Sn**	**15 34 10.0**	**-2.0**
JOU	**Okura**	**2.25**	**280**	P		**Pn**	**15 33 45.7**	**-0.9**
JOU				S		**Sn**	**15 34 11.9**	**-2.4**
JOM	**Ohasama**	**2.26**	**312**	P		**Pn**	**15 33 44.9**	**-1.8**
JFT	**Otama**	**2.53**	**260**	P		**Pn**	**15 33 50.2**	**-0.3**
JFT				S		**Sn**	**15 34 19.4**	**-1.9**
JYK	**Kaneyama**	**2.62**	**292**	P		**Pn**	**15 33 50.6**	**-1.0**
JRG	**Rokugo**	**2.63**	**303**	P		**Pn**	**15 33 50.4**	**-1.4**
JANG	**Nango**	**2.83**	**328**	P		**Pn**	**15 33 53.1**	**-1.4**
JAH	**Hinai**	**3.12**	**316**	P		**Pn**	**15 33 59.3**	**+0.9**
JNS	**Sasagawa**	**3.29**	**268**	P		**Pn**	**15 34 00.6**	**-0.3**
JAW	**Awa shima**	**3.36**	**279**	P		**Pn**	**15 34 01.5**	**-0.3**
JAG	**Ashikaga**	**3.57**	**245**	P		**Pn**	**15 34 04.1**	**-0.6**
JOT	**Ohata**	**3.87**	**332**	P		**Pn**	**15 34 09.6**	**+0.8**
ERM	**Erimo**	**4.03**	**357**	*e*Pn		**Pn**	**15 34 09.1**	**-1.9**
MJAR	**Matsushiro Arr**	**4.44**	**253**	Pn		**Pn**	**15 34 17.3**	**+0.5**
	9.1nm,0.3s,baz=77,slow=15,SNR=119							
MJAR				Sn		**Sn**	**15 35 09.7**	**+1.3**
	3.1nm,0.3s,baz=91,slow=25,SNR=4.1							
MJAR				LR		LR	15 36 20.1	
	comp=Z,185nm,19.9s,baz=65,slow=43							
MAJO	**Matsushiro**	**4.45**	**253**	*e*Pn		**Pn**	**15 34 17.1**	**+0.3**
MAT	**Matsushiro**	**4.45**	**253**	P		**Pn**	**15 34 17.2**	**+0.4**
MAT				S		**Sn**	**15 35 09.1**	**+0.6**
MJB9	**Matsu-Tunnel**	**4.45**	**253**	*e*Pn		**Pn**	**15 34 17.3**	**+0.6**
JHJ	**Hachijo jima 2**	**5.72**	**213**	Pn		**Pn**	**15 34 32.9**	**-1.3**
	60nm,0.3s,baz=336,slow=14,SNR=80							
JHJ				Sn		**Sn**	**15 35 33.0**	**-6.8**
	74nm,0.3s,baz=70,slow=24,SNR=9.5							
INU	**Inuyama**	**5.82**	**245**	*e*Pn		**Pn**	**15 34 35.8**	**+0.1**

ASAJ	**Asahikawa**	**6.16**	**354**	Pn		**Pn**	**15 34 38.4**	**-1.8**
	3.2nm,0.3s,baz=192,slow=11,SNR=18							
ASAJ				Sn		**Sn**	**15 35 45.0**	**-5.5**
	1.2nm,0.3s,baz=139,slow=20,SNR=3.1							
USRK	**Ussuriysk Ar.**	**10.65**	**309**	Pn		**Pn**	**15 35 42.6**	**+0.7**
	0.3nm,0.3s,baz=110,slow=14,SNR=7.3							
JNU	**Nakatsue**	**11.35**	**248**	Pn		**Pn**	**15 35 51.7**	**+0.2**
	0.3nm,0.3s,baz=102,slow=16,SNR=10.0							
JNU				LR		LR	15 40 50.2	
	comp=Z,102nm,18.1s,baz=122,slow=41							
KSRS	**Korea Array**	**12.33**	**272**	Pn		**Pn**	**15 36 06.4**	**+1.6**
	0.2nm,0.3s,baz=91,slow=13,SNR=6.1							
KSRS				LR		LR	15 40 51.8	
	comp=Z,118nm,18.0s,baz=56,slow=37							
KSAR	**Wonju Array Be**	**12.36**	**272**	Pn		**Pn**	**15 36 06.4**	**+1.1**
KLR	**Kul'dur**	**14.06**	**327**	Pn		**Pn**	**15 36 25.2**	**-3.3**
	0.2nm,0.3s,baz=136,slow=9.8,SNR=7.6							
KLR				LR		LR	15 41 52.9	
	comp=Z,83nm,20.7s,baz=146,slow=37							
YAK	**Yakutsk**	**25.53**	**345**	P		**P**	**15 38 37.6**	**-0.1**
	4.5nm,0.4s,baz=96,slow=2.0,SNR=4.6							
SEY	**Seymchan**	**25.56**	**9**	P		**P**	**15 38 37.9**	**0.0**
	2.1nm,0.8s,baz=143,slow=1.9,SNR=6.7							
H11N2	**WAKE ISLAND Hy**	**27.29**	**125**	T		T	16 07 43.8	
	baz=317,slow=75,SNR=53							
H11N1	**WAKE ISLAND Hy**	**27.30**	**125**	T		T	16 07 45.5	
	baz=317,slow=75,SNR=24							
H11N3	**WAKE ISLAND Hy**	**27.31**	**125**	T		T	16 07 40.8	
	baz=317,slow=75,SNR=30							
H11S1	**WAKE ISLAND Hy**	**28.07**	**127**	T		T	16 08 44.4	
	baz=319,slow=76,SNR=9.2							
H11S3	**WAKE ISLAND Hy**	**28.07**	**127**	T		T	16 08 47.0	
	baz=319,slow=76,SNR=10							
H11S2	**WAKE ISLAND Hy**	**28.08**	**127**	T		T	16 08 45.3	
	baz=319,slow=76,SNR=7.5							
SONA1	**Songino Array**	**28.64**	**302**	*e*P		**P**	**15 39 03.2**	**-2.8**
SONM	**Songino Array**	**28.64**	**302**	P		**P**	**15 39 05.7**	**-0.3**
	2.0nm,0.8s,baz=95,slow=8.6,SNR=9.1							
ENH	**Enshi**	**29.05**	**265**	*e*P		**P**	**15 39 07.9**	**-1.8**
	9.2nm,0.8s							
TLY	**Talaya**	**30.97**	**309**	*e*P		**P**	**15 39 24.9**	**-1.5**
	1.9nm,0.6s							
GTA	**Gaotai**	**33.86**	**286**	*e*P		**P**	**15 39 52.7**	**+0.7**
GTA				pP		sP	15 40 02.8	+5.7
GTA				sP		pP	15 40 06.8	+11
GTA				S		S	15 44 51.1	-25
GTA				sS		sS	15 45 05.8	-16
GTA				SS		ScP	15 46 29.9	+15
GTA				pmax		pmax		
	comp=Z,6.0nm,1.0s							
GTA				pmax		pmax		
	comp=Z,83nm,5.5s							
GTA				LR		LR		
	comp=N,51nm,14.7s							
GTA				LR		LR		
	comp=E,120nm,14.7s							
GTA				LR		LR		
	comp=Z,130nm,14.7s							
WMQ	**Urumqi**	**41.88**	**296**	P		**P**	**15 40 58.7**	**-0.9**
WMQ				pP		pP	15 41 03.0	-0.3
WMQ				pmax		pmax		
	comp=Z,18nm,0.7s							
WMQ				pmax		pmax		
	comp=Z,140nm,5.0s							
ZALV	**Zalesovo Beam**	**42.49**	**312**	P		**P**	**15 41 05.8**	**+1.5**
	comp=Z,2.1nm,0.4s,baz=94,slow=8.0,SNR=9.0							
ZALV				PcP		**PcP**	**15 42 56.6**	**-0.4**
	comp=Z,0.6nm,0.5s,baz=98,slow=3.1,SNR=3.5							
CMAR	**Chiang Mai Arr**	**43.32**	**256**	P		**P**	**15 41 11.1**	**-0.4**
	comp=Z,0.2nm,0.4s,baz=41,slow=8.7,SNR=3.4							
MK01	**Makanchi Array**	**45.01**	**302**	*e*P		**P**	**15 41 24.0**	**-0.8**
MK31	**Makanchi Array**	**45.01**	**302**	*e*P		**P**	**15 41 25.6**	**+0.8**
MKAR	**Makanchi Array**	**45.01**	**302**	P		**P**	**15 41 25.5**	**+0.8**
	comp=Z,1.2nm,0.6s,baz=85,slow=10.0,SNR=14							
MKAR	**Makanchi Array**	**45.01**	**302**	*e*P		**P**	**15 41 25.6**	**+0.9**
MAKZ	**Makanchi**	**45.22**	**302**	*e*P		**P**	**15 41 27.1**	**+0.7**
	comp=Z,4.3nm,1.1s							
ILAR	**Eielson Array**	**47.80**	**33**	P		**P**	**15 41 46.5**	**0.0**
	comp=Z,1.6nm,0.8s,baz=264,slow=6.4,SNR=20							
TKM2	**Tokmak 2**	**50.62**	**298**	*e*P		**P**	**15 42 09.4**	**+0.8**
	comp=Z,3.9nm,0.8s							
ZRNK	**Zerenda**	**51.98**	**312**	*e*P		**P**	**15 42 22.1**	**+3.8**
	comp=Z,1.8nm,0.8s							
KKAR	**Karatay Array**	**54.06**	**300**	*e*P		**P**	**15 42 36.6**	**+2.7**
	comp=Z,1.4nm,0.7s							
WRA	**Warramunga Arr**	**58.26**	**190**	P		**P**	**15 43 03.4**	**-0.6**
	comp=Z,7.5nm,0.8s,baz=8.0,slow=7.0,SNR=66							
ABKAR	**Akbulak array**	**58.58**	**310**	*e*P		P	15 43 10.6	+4.7
	comp=Z,1.6nm,0.4s							
**

SIV	**San Ignacio**	**38.71**	**136**	P		**P**	**15 47 55.9**	**+0.9**
	comp=Z,1.3nm,0.7s,baz=321,slow=9.3,SNR=5.2							
YKA	**Yellowknife Ar**	**53.52**	**345**	P		**P**	**15 49 49.4**	**-1.3**
	comp=Z,0.2nm,0.6s,baz=137,slow=7.9,SNR=4.6							
DLBC	**Dease Lake**	**55.75**	**335**	P		**P**	**15 50 07.0**	**0.0**
	comp=Z,0.5nm,0.4s,baz=176,slow=13,SNR=4.0							
ILAR	**Eielson Array**	**65.87**	**336**	P		**P**	**15 51 14.4**	**-1.2**
	comp=Z,0.3nm,0.9s,baz=108,slow=2.9,SNR=3.7							
WRA	**Warramunga Arr**	**138.93**	**254**	PKP		**PKPdf**	**15 59 58.1**	**+1.1**
	comp=Z,0.4nm,0.7s,baz=90,slow=2.6,SNR=4.8							
ASAR	**Alice Springs**	**138.94**	**248**	PKP		**PKPdf**	**15 59 58.6**	**+1.6**
	comp=Z,0.3nm,0.7s,baz=116,slow=2.2,SNR=4.2							
CMAR	**Chiang Mai Arr**	**148.57**	**348**	PKPbc		**PKPbc**	**16 00 16.8**	**-0.8**
	comp=Z,0.4nm,0.7s,baz=353,slow=3.9,SNR=3.7							

GUC ***10*** *15:42:47.1±0.7, 32°.34S×71°.72W, h27km±7km, ML2.8*
ISC 10 15:42:40.9±3.5, 32°.28S±0°.06×72°.2W±0°.2, h22km±18km, n14,σ1¶48/27, 1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**1.21**	**125**	*e*P	**Pb**	**15 43 03.7**	**+0.4**
ROC1				*e*S	**Sn**	**15 43 17.4**	**-1.2**
ROCH	**El Roble**	**1.21**	**125**	*e*P	**Pn**	**15 43 04.2**	**+1.5**
ROCH				*i* S	**Sn**	**15 43 17.4**	**-1.2**
ROCH				IAML		15 43 20.8	
	comp=E,411nm,0.5s						
PEL	**Peldehue**	**1.54**	**125**	⇓*i*P	**Pb**	**15 43 09.2**	**+0.5**
PEL				*i* S	**Sb**	**15 43 26.3**	**-1.5**
PEL				IAML		15 43 28.2	
	comp=N,476nm,0.3s						
RCDM	**Rinconada Maip**	**1.68**	**136**	*e*P	**Pb**	**15 43 12.3**	**+1.1**
RCDM				*i* S	**Sb**	**15 43 31.1**	**-0.8**
CLCH	**Cerro Calan**	**1.79**	**129**	*e*P	**Pb**	**15 43 13.5**	**+0.5**
CLCH				*i* S	**Sb**	**15 43 33.5**	**-1.5**
CLCH				IAML		15 43 42.9	
	comp=E,231nm,0.7s						
ANTU	**Antumapu**	**1.84**	**135**	*e*P	**Pb**	**15 43 14.0**	**+0.1**
ANTU				*i* S	**Sb**	**15 43 35.1**	**-1.4**
ANTU				IAML		15 43 42.9	
	comp=N,249nm,0.9s						
FCH	**Farellones**	**1.91**	**124**	*e*P	**Pb**	**15 43 15.4**	**+0.1**
FCH				*e*S	**Sb**	**15 43 37.2**	**-1.7**
FCH				IAML		15 43 39.9	
	comp=E,310nm,0.3s						
AUSP	**Uspallata**	**2.38**	**89**	*e*P	**Pb**	**15 43 23.7**	**+0.5**
AUSP				*e*S	**Sb**	**15 43 52.1**	**-0.1**
RTLS	**Leoncito**	**2.50**	**80**	*e*P	**Pb**	**15 43 26.2**	**+0.8**
RTLS				*e*S	**Sb**	**15 43 57.0**	**+1.1**
ASAL	**Salagasta**	**2.85**	**97**	*e*P	**Pb**	**15 43 32.4**	**+1.1**
ASAL				*e*S	**Sb**	**15 44 08.0**	**+2.2**
AAGR	**Agrelo**	**2.95**	**107**	*e*P	**Pb**	**15 43 32.9**	**+0.1**
RTCV	**Cerro Valdivia**	**3.13**	**83**	*e*P	**Pb**	**15 43 34.7**	**-1.1**
RTCV				*e*S	**Sb**	**15 44 12.4**	**-1.2**
RTLL	**Cerro Villicun**	**3.30**	**74**	*e*P	**Pb**	**15 43 36.3**	**-2.6**
RTLL				*e*S	**Sb**	**15 44 20.0**	**+1.4**
AMOG	**MOGNA**	**3.42**	**68**	*e*P	**Pb**	**15 43 38.1**	**-2.9**
AMOG				*e*S	**Sb**	**15 44 24.6**	**+2.4**

NIED ***10*** *15:44:00.37°.90N×143°.30E, h11km, Mw4.2 Best double couple: M0 2.57000×10^15 NP1:φs333.00000°, δ83.00000°, λ-176.00000°. NP2:φs243.00000°, δ86.00000°, λ-7.00000°.*
IDC ***10*** *15:44:42.2±0.7, 37°.84N×143°.47E, h0km, mb4.0/15, mb1 4.1/22, mb1mx3.9/49, mbtmp4.0/22, ML3.3/6, MS3.2/11, Ms1 3.2/11, ms1mx3.0/49, Error ellipse: s-maj=17.9km s-min=13.7km az=120.0*
NEIC ***10*** *15:44:43.6±2.7, 37°.87N×143°.50E, h10km±16km, mb4.5/7, Error ellipse: s-maj=10.1km s-min=5.4km az=125.0*
MOS ***10*** *15:44:44.9±1.1, 37°.99N×143°.42E, h29km, mb4.6/8, Error ellipse: s-maj=10.8km s-min=7.5km az=95.9*
JMA ***10*** *15:44:45.4±0.2, 37°.95N×143°.32E, h38km, M4.3*
ISC 10 15:44:43.2±2.0, 37°.91N±0°.05×143°.44E±0°.05, h7km±12km, n98,σ1¶92/115, mb4.2/30, MS3.3/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.73**	**289**	P	**Pn**	**15 45 12.8**	**-1.0**
JIO				S	**Sn**	**15 45 32.7**	**-3.4**
OFUJ	**Ofunato**	**1.81**	**311**	P	**Pn**	**15 45 13.7**	**-1.2**
OFUJ				*e*S	**Sn**	**15 45 34.7**	**-3.5**
JMK	**Ichinoseki**	**2.03**	**302**	P	**Pn**	**15 45 17.1**	**-0.7**
JMK				S	**Sn**	**15 45 40.5**	**-2.9**
JMM	**Marumori**	**2.09**	**270**	P	**Pn**	**15 45 17.9**	**-0.8**
JMM				S	**Sn**	**15 45 41.3**	**-3.7**
JFK	**Kawauchi**	**2.11**	**256**	P	**Pn**	**15 45 17.8**	**-1.2**
JOU	**Okura**	**2.23**	**283**	P	**Pn**	**15 45 20.4**	**-0.3**
JOM	**Ohasama**	**2.29**	**314**	P	**Pn**	**15 45 20.9**	**-0.6**
JOM				S	**Sn**	**15 45 47.3**	**-2.7**
JFT	**Otama**	**2.49**	**262**	P	**Pn**	**15 45 24.2**	**0.0**
JFT				S	**Sn**	**15 45 52.1**	**-2.8**
JYK	**Kaneyama**	**2.62**	**294**	P	**Pn**	**15 45 25.8**	**-0.2**
JRG	**Rokugo**	**2.65**	**305**	P	**Pn**	**15 45 25.9**	**-0.5**
JANG	**Nango**	**2.88**	**329**	P	**Pn**	**15 45 30.1**	**+0.6**
JANG				S	**Sn**	**15 46 01.4**	**-3.0**
JAH	**Hinai**	**3.15**	**317**	P	**Pn**	**15 45 34.5**	**+1.2**
JAW	**Awa shima**	**3.35**	**281**	P	**Pn**	**15 45 36.5**	**+0.6**
JTM	**Tenmabayashi**	**3.41**	**328**	P	**Pn**	**15 45 39.1**	**+2.3**
JTM				S	**Sn**	**15 46 15.1**	**-2.4**
JAG	**Ashikaga**	**3.51**	**246**	P	**Pn**	**15 45 37.9**	**-0.3**
JAG				S	**Sn**	**15 46 17.4**	**-2.6**
BSO1	**Boso 1**	**3.81**	**212**	P	**Pn**	**15 45 41.0**	**-0.8**
BSO1				*e*S	**Sn**	**15 46 24.3**	**-2.3**
JOT	**Ohata**	**3.93**	**333**	P	**Pn**	**15 45 45.1**	**+1.2**
JSD	**Sado**	**4.09**	**273**	P	**Pn**	**15 45 46.6**	**+0.4**
JRY	**Ryogami san**	**4.09**	**244**	P	**Pn**	**15 45 46.1**	**-0.2**
JRY				*e*S	**Sn**	**15 46 30.4**	**-4.1**
ERM	**Erimo**	**4.11**	**357**	*e*P	**Pn**	**15 45 46.5**	**+0.1**
ERM				*e*		15 46 30.1	
ERM	**Erimo**	**4.11**	**357**	*e*Pn	**Pn**	**15 45 46.5**	**+0.1**
ERM				*e*Sn	**Sn**	**15 46 30.1**	**-4.6**
MJAR	**Matsushiro Arr**	**4.39**	**253**	Pn	**Pn**	**15 45 51.6**	**+1.2**
	6.5nm,0.3s,baz=64,slow=13,SNR=94						
MJAR				Sn	**Sn**	**15 46 37.9**	**-3.9**
	5.8nm,0.3s,baz=98,slow=17,SNR=6.4						
MAJO	**Matsushiro**	**4.39**	**253**	*e*P	**Pn**	**15 45 51.7**	**+1.3**
MAJO	**Matsushiro**	**4.39**	**253**	*e*Pn	**Pn**	**15 45 51.7**	**+1.3**
MAT	**Matsushiro**	**4.39**	**253**	P	**Pn**	**15 45 51.6**	**+1.2**
MAT				S	**Sn**	**15 46 40.8**	**-1.0**
MJB9	**Matsu-Tunnel**	**4.39**	**254**	*e*Pn	**Pn**	**15 45 51.8**	**+1.4**
JHJ2	**Mitsune**	**5.62**	**213**	*e*Pn	**Pn**	**15 46 05.1**	**-2.2**
JHJ	**Hachijo jima 2**	**5.63**	**213**	Pn	**Pn**	**15 46 04.8**	**-2.7**
	86nm,0.3s,baz=336,slow=17,SNR=100						
JHJ				Sn	**Sn**	**15 47 05.2**	**-7.1**
	76nm,0.3s,baz=300,slow=22,SNR=11						
JHJ				LR	LR	15 48 59.1	
	comp=Z,136nm,18.3s,baz=118,slow=46						
INU	**Inuyama**	**5.76**	**246**	*e*Pn	**Pn**	**15 46 10.4**	**+1.2**
ASAJ	**Asahikawa**	**6.23**	**354**	Pn	**Pn**	**15 46 15.8**	**+0.2**
	3.5nm,0.3s,baz=204,slow=17,SNR=63						
ASAJ				Sn	**Sn**	**15 47 23.1**	**-4.0**
	2.1nm,0.3s,baz=248,slow=19,SNR=9.1						
ASAJ	**Asahikawa**	**6.23**	**354**	*e*Pn	**Pn**	**15 46 16.6**	**+0.9**
ASAJ				Sn	**Sn**	**15 47 23.1**	**-4.0**
KUR	**Kuril'sk**	**8.03**	**23**	*e*P	**Pn**	**15 46 39.0**	**-1.3**
KUR				*i* S	**Sn**	**15 48 04.8**	**-6.5**
KUR				pmax	pmax		
	comp=N,13nm,0.6s						
KUR				pmax	pmax		
	comp=Z,22nm,0.6s						
KUR				smax	smax		
	comp=N,59nm,0.2s						
KUR				smax	smax		
	comp=E,14nm,0.2s						
YSS	**Yuzh-Sakhalins**	**9.05**	**357**	*e*P	**Pn**	**15 46 56.2**	**+1.9**
YSS	**Yuzh-Sakhalins**	**9.05**	**357**	*e*Pn	**Pn**	**15 46 56.2**	**+1.9**
USRK	**Ussuriysk Ar.**	**10.68**	**310**	Pn	**Pn**	**15 47 17.9**	**+1.3**
	comp=E,0.3nm,0.3s,baz=125,slow=10.0,SNR=8.2						
USRK				LR	LR	15 51 12.2	
	comp=E,61nm,18.5s,baz=124,slow=36						
JNU	**Nakatsue**	**11.29**	**249**	Pn	**Pn**	**15 47 25.4**	**+0.3**
	comp=E,0.1nm,0.3s,baz=92,slow=12,SNR=2.3						
KSRS	**Korea Array**	**12.30**	**273**	Pn	**Pn**	**15 47 41.2**	**+2.4**
	comp=E,0.1nm,0.3s,baz=86,slow=14,SNR=6.1						
KSRS				LR	LR	15 52 10.5	
	comp=E,78nm,19.5s,baz=76,slow=36						
KSAR	**Wonju Array Be**	**12.34**	**273**	P	**Pn**	**15 47 41.2**	**+1.9**
KSAR	**Wonju Array Be**	**12.34**	**273**	Pn	**Pn**	**15 47 41.2**	**+1.9**
MDJ	**Mudanjiang**	**12.38**	**307**	P	**Pn**	**15 47 41.0**	**+1.2**
MDJ				S	**Sn**	**15 49 57.2**	**-0.8**
MDJ				ScP	**ScP**	**15 56 51.8**	**-2.4**
MDJ				PcS	**PcS**	**15 56 55.2**	**+0.3**
MDJ				pmax	pmax		
	comp=Z,3.0nm,1.4s						
MDJ				pmax	pmax		
	comp=Z,23nm,3.9s						
MDJ				LR	LR		
	comp=N,210nm,15.8s						
MDJ				LR	LR		
	comp=E,120nm,14.3s						
MDJ				LR	LR		
	comp=Z,71nm,7.4s						
KLR	**Kul'dur**	**14.12**	**327**	Pn	**Pn**	**15 48 01.9**	**-1.7**
	comp=Z,0.1nm,0.3s,baz=129,slow=13,SNR=7.3						
CN2	**Changchun**	**14.82**	**299**	*e*P	**P**	**15 48 17.9**	**-1.3**
CN2				pmax	pmax		
	comp=E,10.0nm,0.6s						
PETK	**Petropavlovsk-**	**18.14**	**28**	P	**Pn**	**15 48 54.5**	**-1.0**
	comp=Z,0.1nm,0.3s,baz=193,slow=12,SNR=2.8						
BJI	**Beijing**	**21.27**	**284**	P	**P**	**15 49 29.1**	**-1.0**
BJI				S	**S**	**15 53 27.4**	**+0.7**
BJI				pmax	pmax		
	comp=Z,8.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,51nm,3.6s						
BJI				LR	LR		
	comp=N,140nm,11.1s						
BJI				LR	LR		
	comp=E,70nm,9.1s						
BJI				LR	LR		
	comp=Z,21nm,16.2s						
MA2	**Magadan**	**22.19**	**10**	LR	LR	15 59 47.8	
	comp=Z,49nm,18.1s,baz=240,slow=41						
GUMO	**Guam**	**24.26**	**177**	LR	LR	15 58 17.0	
	comp=Z,30nm,21.1s,baz=352,slow=34						
HHC	**Hu-ho-hao-te**	**24.74**	**287**	*e*P	**P**	**15 50 05.5**	**+0.1**
HHC				pmax	pmax		
	comp=Z,21nm,0.9s						
HHC				pmax	pmax		
	comp=Z,52nm,4.1s						
YAK	**Yakutsk**	**25.61**	**345**	P	**P**	**15 50 13.2**	**+0.4**
	comp=Z,4.3nm,0.4s,baz=145,slow=0.6,SNR=6.2						
YAK				LR	LR	16 01 00.4	
	comp=Z,118nm,19.2s,baz=151,slow=38						
YAK	**Yakutsk**	**25.61**	**345**	*e*P	**P**	**15 50 13.6**	**+0.8**
YAK				pmax	pmax		
	comp=E,3.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,20nm,1.1s						
YAK				pmax	pmax		
	comp=N,5.0nm,1.0s						
YAK	**Yakutsk**	**25.61**	**345**	*e*P	**P**	**15 50 13.2**	**+0.4**
	comp=N,17nm,0.8s						
SEY	**Seymchan**	**25.64**	**9**	P	**P**	**15 50 14.2**	**+1.0**
	comp=N,1.2nm,0.6s,baz=222,slow=9.2,SNR=4.5						
H11N2	**WAKE ISLAND Hy**	**27.27**	**125**	T	T	16 19 21.1	
	baz=317,slow=75,SNR=112						
H11N1	**WAKE ISLAND Hy**	**27.28**	**125**	T	T	16 19 14.0	
	baz=317,slow=75,SNR=31						
H11N3	**WAKE ISLAND Hy**	**27.29**	**125**	T	T	16 19 13.5	
	baz=317,slow=75,SNR=33						
BOD	**Bodaibo**	**27.68**	**326**	*e*P	**P**	**15 50 31.0**	**-0.7**
BOD				pmax	pmax		
	comp=Z,9.0nm,1.0s						
H11S1	**WAKE ISLAND Hy**	**28.04**	**127**	T	T	16 20 18.4	
	baz=318,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**28.04**	**127**	T	T	16 20 12.6	
	baz=318,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**28.06**	**127**	T	T	16 20 16.5	
	baz=318,slow=76,SNR=15						
SONA1	**Songino Array**	**28.65**	**302**	*e*P	**P**	**15 50 41.0**	**+0.4**
SONM	**Songino Array**	**28.66**	**302**	P	**P**	**15 50 41.5**	**+0.8**
	comp=Z,1.5nm,0.6s,baz=100,slow=7.3,SNR=14						
SONM				LR	LR	16 02 10.3	
	comp=Z,53nm,18.2s,baz=104,slow=36						
ENH	**Enshi**	**29.01**	**265**	*e*P	**P**	**15 50 43.8**	**-0.1**
	comp=Z,13nm,0.8s						
TLY	**Talaya**	**31.00**	**309**	*e*P	**P**	**15 51 04.5**	**+3.3**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,50nm,15.0s						
ZAK	**Zakamensk**	**31.01**	**307**	*e*P	**P**	**15 51 00.8**	**-0.6**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.4s						
LZH	**Lanzhou**	**31.52**	**279**	*e*P	**P**	**15 51 06.2**	**+0.1**
LZH				pP	sP	15 51 12.8	+3.8
LZH				sP	pP	15 51 15.5	+7.3
LZH				PP	**PnPn**	**15 52 11.3**	**+2.3**
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,52nm,4.7s						
LZH				LR	LR		
	comp=N,280nm,12.7s						
LZH				LR	LR		
	comp=E,300nm,13.2s						
LZH				LR	LR		
	comp=Z,350nm,16.3s						
GYA	**Guiyang**	**32.95**	**261**	*e*P	**P**	**15 51 20.0**	**+1.3**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GTA	**Gaotai**	**33.85**	**286**	*e*P	**P**	**15 51 27.1**	**+0.6**
GTA				pP	sP	15 51 35.8	+6.3
GTA				sP	pP	15 51 39.8	+11
GTA				S	**S**	**15 56 51.4**	**+0.4**
GTA				sS	sS	15 57 05.0	+10
GTA				SS	**SnSn**	**15 58 57.3**	**+1.5**
GTA				pmax	pmax		
	comp=Z,4.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,77nm,6.7s						
GTA				LR	LR		
	comp=N,110nm,16.6s						
GTA				LR	LR		
	comp=E,68nm,17.1s						
GTA				LR	LR		
	comp=Z,110nm,20.0s						
DAV	**Davao City (W)**	**34.71**	**212**	LR	LR	16 06 12.7	
	comp=Z,44nm,19.0s,baz=354,slow=37						
WMQ	**Urumqi**	**41.89**	**296**	*e*P	**P**	**15 52 35.5**	**+1.3**
WMQ				pP	sP	15 52 43.0	+5.8
WMQ				pmax	pmax		
	comp=Z,14nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,140nm,3.9s						
ZAA0	**Zalesovo Array**	**42.52**	**312**	*e*P	**P**	**15 52 39.1**	**-0.1**
ZALV	**Zalesovo Beam**	**42.52**	**312**	P	**P**	**15 52 39.1**	**0.0**
	comp=Z,1.7nm,0.6s,baz=92,slow=5.0,SNR=5.9						
ZALV				PcP	**PcP**	**15 54 31.7**	**+0.1**
	comp=Z,0.9nm,0.4s,baz=108,slow=4.7,SNR=3.1						
CMAR	**Chiang Mai Arr**	**43.27**	**256**	P	**P**	**15 52 46.4**	**+0.7**
	comp=Z,0.4nm,0.6s,baz=55,slow=6.7,SNR=3.4						
MK31	**Makanchi Array**	**45.02**	**302**	*e*P	**P**	**15 52 59.5**	**+0.1**
MK31	**Makanchi Array**	**45.02**	**302**	*e*P	**P**	**15 52 59.5**	**+0.1**
MKAR	**Makanchi Array**	**45.02**	**302**	P	**P**	**15 52 59.5**	**+0.1**
	comp=Z,2.5nm,0.7s,baz=83,slow=9.2,SNR=19						
MKAR				LR	LR	16 12 31.9	
	comp=Z,19nm,21.0s,baz=88,slow=37						
MKAR	**Makanchi Array**	**45.02**	**302**	*e*P	**P**	**15 52 59.6**	**+0.2**
MAKZ	**Makanchi**	**45.23**	**302**	*e*P	**P**	**15 53 01.1**	**+0.1**
MAKZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
MAKZ	**Makanchi**	**45.23**	**302**	*e*P	**P**	**15 53 01.1**	**+0.1**
	comp=Z,3.0nm,0.8s						
ILAR	**Eielson Array**	**47.89**	**33**	P	**P**	**15 53 22.8**	**+1.2**
	comp=Z,1.6nm,0.8s,baz=261,slow=6.0,SNR=13						
IL1	**Eielson Array**	**47.89**	**33**	*e*P	**P**	**15 53 22.4**	**+0.8**
BRVK	**Borovoye**	**51.23**	**312**	P	**P**	**15 53 47.4**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,11nm,0.9s						
BRVK	**Borovoye**	**51.23**	**312**	P	**P**	**15 53 47.4**	**+0.1**
	comp=Z,11nm,0.9s						
KSH	**Kashi**	**51.52**	**294**	*e*P	P	15 53 55.6	+5.8
KSH				*e*pP	sP	15 54 02.9	+10
KSH				S	**S**	**16 01 16.1**	**+5.5**
KSH				ScS	**ScS**	**16 03 40.7**	**-0.1**
KSH				pmax	pmax		
	comp=Z,42nm,3.4s						
KSH				LR	LR		
	comp=N,100nm,5.3s						
KSH				LR	LR		
	comp=E,120nm,7.3s						
KSH				LR	LR		
	comp=Z,120nm,7.5s						
HYT	**Haines Junctio**	**52.63**	**37**	*e*P	**P**	**15 53 56.4**	**-1.4**
	comp=Z,4.2nm,0.9s						
ARU	**Arti**	**56.77**	**319**	P	**P**	**15 54 27.2**	**-0.4**
ARU				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ARU	**Arti**	**56.77**	**319**	*e*P	**P**	**15 54 27.3**	**-0.4**
	comp=Z,3.5nm,0.8s						
WRA	**Warramunga Arr**	**58.18**	**190**	P	**P**	**15 54 37.2**	**-0.7**
	comp=Z,4.2nm,0.6s,baz=9.0,slow=7.2,SNR=38						
ABKAR	**Abkulak array**	**58.60**	**310**	*e*P	**P**	**15 54 40.6**	**0.0**
	comp=Z,1.1nm,0.4s						
ASAR	**Alice Springs**	**61.90**	**190**	P	**P**	**15 55 03.1**	**-0.4**
	comp=Z,1.1nm,0.8s,baz=12,slow=7.8,SNR=16						
YKA	**Yellowknife Ar**	**62.24**	**31**	P	**P**	**15 55 05.4**	**+0.2**
	comp=Z,0.5nm,0.7s,baz=299,slow=6.7,SNR=4.9						
GEYT	**Alibeck**	**64.81**	**299**	P	**P**	**15 55 22.6**	**-0.2**
	comp=Z,0.5nm,0.3s,baz=46,slow=8.3,SNR=3.9						
NB2	**NORSAR Subarra**	**73.99**	**338**	P	**P**	**15 56 18.5**	**-0.7**
	comp=Z,2.1nm,0.8s,baz=41,slow=6.2						
NOA	**NORSAR Array B**	**73.99**	**338**	P	**P**	**15 56 19.7**	**+0.5**
	comp=Z,1.0nm,0.9s,baz=42,slow=5.8,SNR=3.5						
AKASG	**Malin Array Be**	**74.58**	**323**	P	**P**	**15 56 22.7**	**0.0**
	comp=Z,0.5nm,0.4s,baz=45,slow=6.0,SNR=3.7						
AKASG				LR	LR	16 31 09.1	
	comp=Z,36nm,20.1s,baz=20,slow=37						
PDAR	**Pinedale Array**	**75.90**	**47**	P	**P**	**15 56 31.6**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=299,slow=1.5,SNR=3.6						
SCHQ	**Schefferville**	**84.04**	**17**	LR	LR	16 38 37.7	
	comp=Z,28nm,18.3s,baz=297,slow=38						
TXAR	**Lajitas Array**	**88.31**	**54**	P	**P**	**15 57 36.5**	**+0.6**
	comp=Z,0.4nm,0.7s,baz=311,slow=3.8,SNR=5.5						
LPAZ	**La Paz**	**144.86**	**61**	PKP	**PKPdf**	**16 04 21.9**	**-0.3**
	comp=Z,1.3nm,0.7s,baz=9.6,slow=5.7,SNR=5.8						
LPAZ	**La Paz**	**144.86**	**61**	PKIKP	**PKPdf**	**16 04 22.0**	**-0.3**

GUC ***10*** *15:48:59.6±0.8, 21°.34S×70°.24W, h41km±2km, ML3.8*
IDC ***10*** *15:49:04.9±4.5, 21°.35S×70°.12W, h77km±27km, mb3.6/2, mb1 3.7/4, mb1mx3.3/29, mbtmp3.9/4, Error ellipse: s-maj=66.0km s-min=17.2km az=77.0*
ISC 10 15:48:56.8±1.5, 21°.35S±0°.03×70°.31W±0°.06, h7km±10km, n23,σ1¶03/28, 5C-6D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB07	**IPOC Station P**	**0.54**	**134**	⇓*i*P	**Pn**	**15 49 11.4**	**+0.3**
PB07				*i* S	**Sn**	**15 49 19.2**	**-1.2**
PB07				IAML		15 49 19.7	
	comp=E,10μm,0.4s						
PB01	**IPOC Station P**	**0.82**	**68**	⇓*i*P	**Pn**	**15 49 15.1**	**+0.2**
PB01				*i* S	**Sb**	**15 49 25.6**	**+0.8**
PB01				IAML		15 49 25.7	
	comp=N,4μm,0.6s						
PB04	**IPOC Station P**	**0.99**	**172**	⇑*i*P	**Pn**	**15 49 18.1**	**+0.9**
PB04				*i* S	**Sn**	**15 49 31.5**	**0.0**
PB04				IAML		15 49 32.5	
	comp=E,9μm,0.5s						
PB09	**IPOC Station P**	**1.08**	**114**	⇓*i*P	**Pn**	**15 49 19.8**	**+1.3**
PB09				*i* S	**Sn**	**15 49 34.6**	**+0.7**
PB09				IAML		15 49 44.6	
	comp=E,5μm,0.5s						
HMBC	**Humberstone**	**1.14**	**20**	⇑*i*P	**Pn**	**15 49 19.6**	**+0.4**
HMBC				*i* S	**Sn**	**15 49 34.7**	**-0.5**
HMBC				IAML		15 49 37.4	
	comp=N,3μm,0.6s						
PB06	**IPOC Station P**	**1.51**	**153**	⇓*i*P	**Pg**	**15 49 25.6**	**-0.2**
PB06				*i* S	**Sg**	**15 49 45.3**	**-0.1**
PB06				IAML		15 49 52.9	
	comp=N,1μm,0.6s						
PB08	**IPOC Station P**	**1.62**	**42**	⇓*i*P	**Pg**	**15 49 27.6**	**-0.3**
PB08				*i* S	**Sb**	**15 49 47.9**	**0.0**
PB08				IAML		15 49 53.2	
	comp=N,1μm,0.7s						
PB11	**IPOC Station P**	**1.70**	**21**	⇑*i*P	**Pb**	**15 49 28.0**	**-0.4**
PB11				*i* S	**Sb**	**15 49 49.4**	**-0.6**
PSGC	**Pisagua**	**1.75**	**6**	⇑*i*P	**Pb**	**15 49 28.6**	**-0.8**
PSGC				*i* S	**Sn**	**15 49 49.9**	**-0.5**
LVC	**Limon Verde**	**1.80**	**134**	P	**Pg**	**15 49 31.1**	**-0.3**
	comp=N,1μm,0.3s,baz=312,slow=11,SNR=240						
LVC				S	**Sg**	**15 49 54.2**	**-0.5**
	comp=N,3μm,0.3s,baz=240,slow=20,SNR=19						
PB10	**IPOC Station P**	**2.16**	**186**	⇑*i*P	**Pn**	**15 49 34.5**	**+1.3**
PB10				*i* S	**Sb**	**15 50 03.3**	**0.0**
PB10				IAML		15 50 18.0	
	comp=E,1μm,0.8s						
PB13	**IPOC Station P**	**3.10**	**14**	⇓*i*P	**Pn**	**15 49 48.6**	**+2.0**
PB13				*i* S	**Sn**	**15 50 26.2**	**+2.1**
LPAZ	**La Paz**	**5.44**	**23**	P	Pn	15 50 25.0	+6.1
	comp=E,2.0nm,0.3s,baz=209,slow=8.0,SNR=33						
SIV	**San Ignacio**	**10.24**	**60**	P	**Pn**	**15 51 26.1**	**+1.8**
	comp=E,0.7nm,0.3s,baz=256,slow=13,SNR=10.0						
PTGA	**Pitinga**	**22.84**	**28**	P	**P**	**15 54 00.4**	**-0.3**
	comp=E,0.9nm,0.3s,baz=199,slow=18,SNR=4.6						
TORD	**Torodi Ar. Bea**	**78.53**	**71**	P	**P**	**16 00 57.2**	**-2.2**
	comp=E,1.7nm,0.9s,baz=256,slow=5.4,SNR=5.8						
H11S2	**WAKE ISLAND Hy**	**26.57**	**278**	T	T	18 27 19.8	
	baz=103,slow=74,SNR=142						
H11S1	**WAKE ISLAND Hy**	**

H11S1 **WAKE ISLAND Hy 28.69 121** T T 16 30 26.9
baz=314,slow=76,SNR=52
H11S3 **WAKE ISLAND Hy 28.69 121** T T 16 30 28.8
baz=314,slow=76,SNR=44
H11S2 **WAKE ISLAND Hy 28.71 121** T T 16 30 26.9
baz=314,slow=76,SNR=48
ZALV Zalesovo Beam 42.24 313 P **P** **16 02 14.0 0.0**
0.8nm,0.5s,baz=87,slow=8.0,SNR=3.9
MKAR Makanchi Array 44.30 303 P **P** **16 02 31.5 +0.8**
0.1nm,0.3s,baz=87,slow=7.1,SNR=2.9
ILAR Eielson Array 50.36 32 P **P** **16 03 18.3 +0.6**
0.3nm,0.8s,baz=272,slow=6.6,SNR=3.6
WRA Warramunga Arr 56.20 188 P **P** **16 04 00.4 -0.6**
0.6nm,0.4s,baz=4.7,slow=7.3,SNR=20
ASAR Alice Springs 59.93 188 P **P** **16 04 26.9 -0.3**
0.3nm,0.6s,baz=3.8,slow=5.3,SNR=14
STKA Stephens Creek 67.73 179 LR LR 16 35 15.5
comp=Z,109nm,18.2s,baz=63,slow=36

*NEIC **10** 16:13:43.2±1.0,29°.48S×176°.84W,h10km,mb4.4/1,Error ellipse: s-maj=22.4km s-min=11.6km az=97.0*
*ISCJB **10** 16:13:45.1±1.1,29°.53S±0°.08×176°.9W±0°.1,h31km, mb4.4/5,Error ellipse: s-maj=16.6km s-min=10.2km az=153.2*
*IDC **10** 16:13:47.5±5.2,29°.53S×176°.99W,h37km±37km,mb4.0/3, mb1 4.2/5,mb1mx3.8/37,mbtmp4.3/5,ML4.0/2,Error ellipse: s-maj=46.3km s-min=30.7km az=65.0*
ISC 10 16:13:46.9±1.0,29°.5S±0°.1×177°.0W±0°.1,h31km,n21, σ1s01°17,mb4.4/5,1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.85**	**287**	Pn		**Pn**	**16 14 02.9**	**+0.2**
	1µm,0.3s,baz=97,slow=9.6,SNR=24							
RAO				Sn		**Sn**	**16 14 14.1**	**-0.1**
	4µm,0.3s,baz=108,slow=20,SNR=13							
URZ	**Urewera**	**10.02**	**208**	Pn		**Pn**	**16 16 08.4**	**-0.3**
	0.5nm,0.3s,baz=138,slow=18,SNR=1.2							
URZ	**Urewera**	**10.02**	**208**	*e*Pn		**Pn**	**16 16 09.3**	**+0.6**
MSVF	**Nonsavu**	**12.56**	**338**	*e*P		**Pn**	**16 16 44.2**	**+0.5**
KHZ	**Kahutara**	**14.99**	**208**	*e*Pn		**Pn**	**16 17 16.8**	**+0.3**
DZM	**Mont Dzumac**	**16.65**	**293**	eLR		LR	16 21 13.2	
	360nm,24.1s							
RPZ	**Rata Peaks**	**17.11**	**211**	Pn		**Pn**	**16 17 43.6**	**-0.1**
	1.2nm,0.3s,baz=180,slow=20,SNR=1.7							
TBI	**Tubuai**	**25.36**	**83**	eLR		LR	16 25 16.8	
	154nm,25.0s							
PPT2	**Papeete2**	**27.71**	**71**	eLR		LR	16 26 22.8	
	112nm,24.5s							
RKT	**Rikitea**	**38.04**	**90**	eLR		LR	16 31 15.2	
	254nm,36.0s							
ASAR	**Alice Springs**	**44.05**	**266**	P		**P**	**16 21 51.3**	**-0.9**
	1.7nm,0.5s,baz=106,slow=7.4,SNR=1.7							
WRAB	**Tennant Creek**	**44.95**	**271**	*e*P		**P**	**16 21 58.7**	**-0.7**
	3.9nm,0.7s							
WRA	**Warramunga Arr**	**44.96**	**271**	P		**P**	**16 21 58.7**	**-0.8**
	1.9nm,0.3s,baz=110,slow=6.1,SNR=4.8							
QSPA	**South Pole Qui**	**60.61**	**180**	*e*P		P	16 23 58.6	+4.0
	32nm,1.0s							
MJAR	**Matsushiro Arr**	**78.01**	**325**	P		**P**	**16 25 43.9**	**+1.6**
	1.1nm,0.6s,baz=161,slow=5.2,SNR=2.6							
SYO	**Syowa Base**	**78.19**	**193**	*e*P		**P**	**16 25 44.0**	**+1.1**
MKAR	**Makanchi Array**	**117.87**	**310**	PKP		**PKPdf**	**16 32 29.8**	**-0.3**
	0.2nm,0.4s,baz=114,slow=1.7,SNR=1.8							
BVAR	**Borovoye Array**	**126.37**	**316**	PKP		**PKPdf**	**16 32 45.6**	**-0.6**
	0.8nm,0.6s,baz=128,slow=2.4,SNR=3.5							
AKTO	**Aktyubinsk**	**134.14**	**313**	PKP		**PKPdf**	**16 33 00.7**	**-0.4**
	1.0nm,0.6s,baz=222,slow=1.3,SNR=3.1							
NB2	**NORSAR Subarra1**	**147.99**	**352**	PKP		**PKPbc**	**16 33 26.9**	**-1.7**
	comp=Z,1.2nm,0.6s,baz=16,slow=3.2							
NOA	**NORSAR Array B**	**147.99**	**352**	PKPbc		**PKPbc**	**16 33 26.6**	**-2.0**
	comp=Z,2.0nm,0.7s,baz=13,slow=4.4,SNR=6.5							

*NEIC **10** 16:14:33.7±1.3,14°.84S×167°.44E,h94km±11km,mb4.9/29, Error ellipse: s-maj=8.6km s-min=6.7km az=63.0*
*ISCJB **10** 16:14:34.5±1.6,14°.97S±0°.05×167°.45E±0°.06, h115km±15km,mb4.7/47,Error ellipse: s-maj=10.9km s-min=7.7km az=152.1*
*IDC **10** 16:14:36.5±1.8,14°.99S×167°.36E,h113km±15km, mb4.1/19,mb1 4.3/21,mb1mx4.1/38,mbtmp4.6/21,MS3.5/4, Ms1 3.6/4,ms1mx3.1/35,Error ellipse: s-maj=14.8km s-min=11.8km az=78.0*
*BJI **10** 16:14:36.8,14°.75S×167°.60E,h129km,mb4.6/35, mB4.7/24*
ISC 10 16:14:37.4±0.6,15°.01S±0°.05×167°.45E±0°.07,h127km±4km, n117,σ1s48/131,mb4.6/45,1C,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.09**	**188**	P		**Pn**	**16 16 19.3**	**+0.7**
	41nm,0.3s,baz=15,slow=19,SNR=102							
DZM				S		**Sn**	**16 17 36.7**	**-1.2**
	7.2nm,0.3s,baz=348,slow=23,SNR=3.5							
DZM	**Mont Dzumac**	**7.09**	**188**	*e*Pn		**Pn**	**16 16 18.3**	**-0.3**
	112nm,0.3s							
DZM				*e*Sn		**Sn**	**16 17 37.0**	**-0.9**
	106nm,0.3s							
DZM				eLR		LR	16 17 54.4	
	701nm,32.4s							
DZM	**Mont Dzumac**	**7.09**	**188**	*e*Pn		**Pn**	**16 16 17.6**	**-1.0**
DZM				S		**Sn**	**16 17 36.7**	**-1.2**
HNR	**Honiara**	**9.19**	**306**	P		**Pn**	**16 16 46.2**	**-0.8**
	13nm,0.3s,baz=239,slow=4.9,SNR=8.1							
HNR				LR		LR	16 20 17.2	
	comp=Z,205nm,19.6s,baz=154,slow=37							
HNR	**Honiara**	**9.19**	**306**	*e*P		**Pn**	**16 16 45.0**	**-1.9**
HNR				*e*S		Sn	16 18 14.0	-15
HNR	**Honiara**	**9.19**	**306**	*e*Pn		Pn	16 16 39.5	-7.4
EIDS	**Eidsvold**	**18.48**	**234**	*e*P		**Pn**	**16 18 45.2**	**-0.1**
	13nm,0.9s							
AFI	**Afiamalu**	**20.14**	**90**	*e*P		**P**	**16 19 00.3**	**-1.5**
	42nm,0.9s							
AFI				*e*S		**S**	**16 22 42.1**	**+0.7**
PMG	**Port Moresby**	**20.59**	**283**	P		**P**	**16 19 07.0**	**+0.5**
	19nm,0.8s,baz=115,slow=16,SNR=4.7							
PMG	**Port Moresby**	**20.59**	**283**	*e*P		**P**	**16 19 04.8**	**-1.7**
	45nm,1.1s							
CTA	**Charters Tower**	**20.83**	**253**	P		**P**	**16 19 09.5**	**+0.5**
	11nm,0.9s,baz=86,slow=12,SNR=10							
CTAO	**Charters Tower**	**20.83**	**253**	*e*P		**P**	**16 19 09.3**	**+0.2**
	41nm,1.5s							
OUZ	**Omahuta**	**20.87**	**166**	*e*P		Pn	16 19 11.9	-1.3
	88nm,1.2s							
ARMA	**Armidale**	**21.13**	**221**	*e*P		**P**	**16 19 13.8**	**+1.5**
	53nm,1.4s							
MXZ	**Matakaoa Point**	**24.44**	**159**	*e*P		**P**	**16 19 43.1**	**-1.2**
	148nm,1.2s							
URZ	**Urewera**	**24.68**	**162**	P		**P**	**16 19 47.3**	**+0.8**
	21nm,0.6s,baz=0.7,slow=13,SNR=4.0							
URZ	**Urewera**	**24.68**	**162**	*e*P		**P**	**16 19 47.5**	**+1.0**
	152nm,1.8s							
BKZ	**Black Stump Fm**	**25.34**	**163**	*e*P		**P**	**16 19 53.0**	**+0.5**
	24nm,0.8s							
BFZ	**Birch Farm**	**26.70**	**165**	*e*P		**P**	**16 20 04.1**	**-0.6**
	151nm,1.5s							
LTZ	**Lake Taylor**	**27.99**	**172**	*e*P		**P**	**16 20 16.3**	**+0.1**
	161nm,1.7s							
OXZ	**Oxford**	**28.49**	**173**	*e*P		**P**	**16 20 21.4**	**+0.8**
	184nm,1.8s							
MQZ	**McQueen's Vall**	**28.95**	**172**	*e*P		**P**	**16 20 26.1**	**+1.5**
	324nm,1.7s							
STKA	**Stephens Creek**	**28.95**	**230**	P		**P**	**16 20 25.9**	**+1.0**
	13nm,0.6s,baz=46,slow=8.5,SNR=38							
STKA				PcP		**PcP**	**16 23 30.2**	**-0.5**
	5.0nm,0.7s,baz=98,slow=0.8,SNR=4.9							
STKA				ScP		**ScP**	**16 27 03.1**	**+2.4**
	4.9nm,0.9s,baz=322,slow=6.0,SNR=5.2							
STKA	**Stephens Creek**	**28.95**	**230**	*e*P		**P**	**16 20 25.5**	**+0.6**
	14nm,1.6s							
STKA				PcP		**PcP**	**16 23 30.2**	**-0.5**
STKA				ScP		**ScP**	**16 27 03.1**	**+2.4**
LBZ	**Lake Benmore**	**29.37**	**176**	*e*P		**P**	**16 20 30.1**	**+1.6**
	210nm,1.7s							
WRA	**Warramunga Arr**	**31.93**	**256**	P		**P**	**16 20 49.3**	**-2.0**
	1.6nm,0.6s,baz=85,slow=9.2,SNR=14							
WRA				PcP		**PcP**	**16 23 39.1**	**+0.3**
	3.2nm,1.0s,baz=88,slow=3.2,SNR=6.8							
AS01	**Alice Springs**	**32.70**	**250**	*e*P		**P**	**16 20 56.7**	**-1.3**
AS01				*e*PcP		**PcP**	**16 23 40.8**	**-0.1**
AS31	**Alice Springs**	**32.74**	**250**	*e*P		**P**	**16 20 57.0**	**-1.3**
	1.6nm,0.8s							
ASAR	**Alice Springs**	**32.74**	**250**	P		**P**	**16 20 57.1**	**-1.3**
	2.6nm,0.5s,baz=76,slow=9.3,SNR=41							
ASAR				PcP		**PcP**	**16 23 40.8**	**-0.2**
	1.7nm,0.7s,baz=102,slow=2.3,SNR=7.4							
ASAR				ScP		**ScP**	**16 27 16.5**	**+3.0**
	1.2nm,0.8s,baz=95,slow=3.3,SNR=8.6							
BBOO	**Buckleboo**	**33.55**	**233**	*e*P		**P**	**16 21 05.9**	**+0.7**
	33nm,0.9s							
GUMO	**Guam**	**36.15**	**321**	LR		LR	16 36 35.7	
	comp=Z,67nm,20.9s,baz=154,slow=37							
FITZ	**Fitzroy Crossi**	**40.14**	**260**	P		**P**	**16 22 00.2**	**-1.0**
	2.8nm,0.6s,baz=61,slow=10,SNR=8.5							
FITZ				LR		LR	16 37 57.5	
	comp=Z,96nm,18.3s,baz=99,slow=35							
PPT2	**Papeete2**	**41.26**	**100**	eLR		LR	16 34 08.5	
	296nm,30.0s							
PPT	**Papeete**	**41.27**	**100**	P		**P**	**16 22 12.3**	**+1.8**
	36nm,0.8s,baz=248,slow=4.5,SNR=5.2							
TBI	**Tubuai**	**41.41**	**108**	eLR		LR	16 34 11.0	
	252nm,32.5s							
TAOE	**Nuku Hiva Isla**	**51.54**	**89**	eLR		LR	16 38 33.0	
	160nm,33.7s							
MJAR	**Matsushiro Arr**	**58.23**	**332**	P		**P**	**16 24 18.0**	**-0.5**
	2.3nm,1.1s,baz=163,slow=7.8,SNR=8.9							
VNDA	**Vanda**	**62.59**	**181**	P		**P**	**16 24 48.2**	**+0.7**
	3.4nm,0.7s,baz=358,slow=7.3,SNR=17							
VNDA				LR		LR	16 49 08.5	
	comp=Z,46nm,18.9s,baz=21,slow=33							
VNDA	**Vanda**	**62.59**	**181**	*e*P		**P**	**16 24 48.0**	**+0.4**
	43nm,1.9s							
SBA	**Scott Base**	**62.86**	**180**	*e*P		**P**	**16 24 50.4**	**+1.1**
	24nm,0.9s							
YSS	**Yuzh-Sakhalins**	**65.55**	**342**	*e*P		**P**	**16 25 05.9**	**-1.3**
YSS				*e*pP		**PcP**	**16 25 37.5**	**-0.4**
USRK	**Ussuriysk Ar.**	**67.21**	**333**	P		**P**	**16 25 18.9**	**+1.0**
	1.5nm,0.7s,baz=108,slow=6.2,SNR=8.9							
PEA0	**Petropavlovsk-**	**68.36**	**354**	*e*P		**P**	**16 25 23.7**	**-1.2**
PETK	**Petropavlovsk-**	**68.36**	**354**	P		**P**	**16 25 25.0**	**+0.1**
	8.0nm,1.0s,baz=120,slow=9.0,SNR=5.7							
MDJ	**Mudanjiang**	**68.61**	**332**	P		**P**	**16 25 26.8**	**+0.2**
MDJ				pP		pP	16 25 58.9	+1.2
MDJ				sP		sP	16 26 12.3	+0.9
MDJ				S		**S**	**16 34 19.3**	**+0.2**
MDJ				pmax		pmax		
	comp=Z,4.0nm,0.8s							
CN2	**Changchun**	**69.97**	**329**	*e*P		**P**	**16 25 38.3**	**+3.2**
CN2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
GYA	**Guiyang**	**72.02**	**305**	P		**P**	**16 25 48.6**	**+0.7**
GYA				pP		pP	16 26 22.4	+3.1
GYA				PP		**PP**	**16 28 33.0**	**+3.2**
GYA				S		**S**	**16 34 58.7**	**-1.0**
GYA				SKS		**SKSac**	**16 35 36.2**	**-4.5**
GYA				pmax		pmax		
	comp=Z,20nm,1.0s							
GYA				pmax		pmax		
	comp=Z,120nm,7.2s							
BJI	**Beijing**	**72.59**	**321**	P		**P**	**16 25 51.5**	**+0.6**
BJI				pP		**pP**	**16 26 22.2**	**-0.1**
BJI				sP		**sP**	**16 26 37.6**	**+1.7**
BJI				PP		**PP**	**16 28 30.6**	**-3.6**
BJI				S		**S**	**16 35 06.4**	**+1.0**
BJI				sS		**sS**	**16 36 02.9**	**+3.4**
BJI				pmax		pmax		
	comp=Z,5.0nm,0.6s							
BJI				pmax		pmax		
	comp=Z,110nm,4.6s							
KMI	**Kunming**	**74.60**	**302**	P		**P**	**16 26 04.3**	**+1.0**
KMI				pmax		pmax		
	comp=Z,9.0nm,0.8s							
KMI				pmax		pmax		
	comp=Z,86nm,4.4s							
CM01	**Chiang Mai Arr**	**75.19**	**294**	*e*P		**P**	**16 26 07.2**	**+0.6**
CMAR	**Chiang Mai Arr**	**75.22**	**294**	P		**P**	**16 26 08.0**	**+1.3**
	2.1nm,0.8s,baz=127,slow=4.1,SNR=11							
HHC	**Hu-ho-hao-te**	**75.91**	**320**	*e*P		**P**	**16 26 11.5**	**+1.2**
HHC				PP		**PP**	**16 29 01.7**	**-0.8**
HHC				S		**S**	**16 35 45.0**	**+2.2**
HHC				pmax		pmax		
	comp=Z,16nm,0.9s							
HHC				pmax		pmax		
	comp=Z,44nm,4.9s							
HHC				LR		LR		
	comp=N,290nm,14.8s							
HHC				LR		LR		
	comp=E,190nm,14.8s							
HHC				LR		LR		
	comp=Z,270nm,14.8s							
CD2	**Chengdu**	**76.32**	**308**	*e*P		**P**	**16 26 12.0**	**-0.7**
LZH	**Lanzhou**	**78.64**	**312**	*e*P		**P**	**16 26 26.8**	**+1.1**
LZH				pP		pP	16 27 00.2	+2.7
LZH				sP		sP	16 27 14.5	+3.5
LZH				PP		**PP**	**16 29 28.3**	**+2.7**
LZH				pmax		pmax		
	comp=Z,22nm,1.4s							
LZH				pmax		pmax		
	comp=Z,86nm,6.7s							
LZH				LR		LR		
	comp=N,230nm,15.2s							
LZH				LR		LR		
	comp=E,260nm,16.0s							
LZH				LR		LR		
	comp=Z,330nm,18.5s							
MAW	**Mawson**	**81.69**	**202**	P		**P**	**16 26 41.9**	**+0.6**
	1.9nm,0.5s,baz=114,slow=6.3,SNR=6.6							
MAW	**Mawson**	**81.69**	**202**	*e*P		**P**	**16 26 41.2**	**-0.1**
	4.1nm,0.6s							
YAK	**Yakutsk**	**82.35**	**343**	*e*P		**P**	**16 26 44.0**	**-0.6**
	68nm,1.6s							
SONM	**Songino Array**	**82.82**	**324**	P		**P**	**16 26 48.2**	**+0.5**
	2.5nm,0.8s,baz=147,slow=7.0,SNR=13							
SONA1	**Songino Array**	**82.83**	**324**	*e*P		**P**	**16 26 47.4**	**-0.3**
GTA	**Gaotai**	**82.99**	**314**	*e*P		**P**	**16 26 49.7**	**+1.0**
GTA				sP		sP	16 27 31.9	-2.4
GTA				S		**S**	**16 36 58.4**	**+0.8**
GTA				sS		sS	16 37 52.8	-0.2
GTA				pmax		pmax		
	comp=Z,4.0nm,1.4s							
GTA				pmax		pmax		
	comp=Z,43nm,5.9s							
GTA				LR		LR		
	comp=N,990nm,16.6s							
GTA				LR		LR		
	comp=E,910nm,16.6s							
GTA				LR		LR		
	comp=Z,2µm,16.2s							
CAST	**Castle Rocks**	**84.21**	**17**	*e*P		**P**	**16 26 53.9**	**-0.4**
	4.6nm,0.7s							
TRF	**Thorofare Moun**	**84.75**	**18**	*e*P		**P**	**16 26 56.6**	**-0.5**
	15nm,1.7s							
RND	**Reindeer**	**85.14**	**18**	*e*P		**P**	**16 26 58.8**	**-0.2**
	5.2nm,0.9s							
TLY	**Talaya**	**86.32**	**326**	*e*P		**P**	**16 27 04.7**	**-0.3**
	3.7nm,1.0s							
HDA	**Harding Lake**	**86.45**	**18**	*e*P		**P**	**16 27 04.9**	**-0.5**
	15nm,1.0s							
ILAR	**Eielson Array**	**86.74**	**18**	P		**P**	**16 27 06.2**	**-0.5**
	1.7nm,0.7s,baz=238,slow=5.6,SNR=21							
ILB	**Eielson Array**	**86.74**	**18**	*e*P		**P**	**16 27 05.4**	**-1.3**
IL1	**Eielson Array**	**86.74**	**18**	*e*P		**P**	**16 27 04.9**	**-1.8**
PFO	**Pinyon Flats O**	**87.02**	**54**	P		**P**	**16 27 06.5**	**-2.4**
	2.6nm,0.6s,baz=305,slow=14,SNR=4.5							
SYO	**Syowa Base**	**88.49**	**197**	*e*P		**P**	**16 27 14.0**	**-1.1**
TIXI	**Tiksi**	**90.28**	**349**	*e*P		**P**	**16 27 21.6**	**-1.7**
	8.8nm,1.5s							
WMQ	**Urumqi**	**93.05**	**314**	*e*P		**P**	**16 27 35.0**	**-1.9**
WMQ				pmax		pmax		
	comp=Z,11nm,0.7s							
WMQ				pmax		pmax		
	comp=Z,110nm,3.7s							
SNAA	**Sanae**	**93.28**	**183**	P		**P**	**16 27 36.8**	**-0.7**
SNAA	**Sanae**	**93.28**	**183**	*e*P		**P**	**16 27 36.8**	**-0.7**
	8.0nm,0.7s							
VNA1	**Neumayer--Stat**	**94.51**	**181**	P		**P**	**16 27 42.5**	**-0.5**
TXAR	**Lajitas Array**	**96.26**	**61**	P		**P**	**16 27 53.9**	**+2.0**
	0.1nm,0.6s,baz=231,slow=4.6,SNR=3.6							
MK01	**Makanchi Array**	**97.51**	**316**	*e*P		**P**	**16 27 56.9**	**-0.2**
MK31	**Makanchi Array**	**97.53**	**316**	*e*P		**P**	**16 27 57.2**	**0.0**
MKAR	**Makanchi Array**	**97.53**	**316**	P		Pdif	16 27 57.7	+0.5
	2.7nm,0.7s,baz=91,slow=6.5,SNR=28							
MKAR	**Makanchi Array**	**97.53**	**316**	*e*P		**P**	**16 27 57.1**	**-0.1**
ZAA0	**Zalesovo Array**	**97.72**	**324**	*e*P		**P**	**16 27 56.8**	**-1.0**
ZAA0				*e*pP		**pP**	**16 28 27.2**	**-3.2**
ZALV	**Zalesovo Beam**	**97.72**	**324**	P		**P**	**16 27 57.1**	**-0.7**
	2.3nm,0.7s,baz=114,slow=4.8,SNR=11							
MAKZ	**Makanchi**	**97.74**	**316**	*e*P		Pdif	16 27 58.3	+0.2
	2.2nm,1.0s							
ARCES	**ARCESS Array B**	**120.56**	**345**	PKP		**PKPdf**	**16 33 12.6**	**-1.0**
	1.6nm,0.5s,baz=82,slow=1.9,SNR=12							
BOSA	**Boshof**	**123.28**	**220**	PKP		**PKPdf**	**16 33 20.3**	**+0.1**
	4.0nm,0.8s,baz=120,slow=2.3,SNR=7.5							
KBZ	**Khabaz**	**125.07**	**313**	PKP		**PKPdf**	**16 33 26.4**	**+3.6**
	1.8nm,0.6s,baz=238,slow=3.3,SNR=4.2							
KMBO	**Kilima Mbogo**	**128.21**	**256**	PKP		**PKPdf**	**16 33 30.8**	**+0.7**
	1.4nm,0.7s,baz=66,slow=8.8,SNR=3.9							
NOA	**NORSAR Array B**	**130.94**	**345**	PKP		**PKPdf**	**16 33 33.0**	**-0.6**
	2.3nm,0.7s,baz=15,slow=4.5,SNR=7.0							
AKASG	**Malin Array Be**	**131.06**	**326**	PKP		**PKPdf**	**16 33 35.2**	**+1.1**
	2.8nm,0.7s,baz=46,slow=2.8,SNR=12							
KIEV	**Kiev**	**131.07**	**326**	*e*PKPdf		**PKPdf**	**16 33 34.0**	**0.0**
AK11	**Malin Array Si**	**131.10**	**326**	*e*PKPdf		**PKPdf**	**16 33 34.3**	**+0.2**
BRTR	**Keskin Array B**	**132.82**	**311**	PKP		**PKPdf**	**16 33 39.1**	**+1.2**
	0.7nm,0.7s,baz=106,slow=3.1,SNR=4.3							
CONA	**Conrad Observa**	**139.65**	**330**	*i* PKPdf		**PKPdf**	**16 33 47.6**	**-2.7**
	3.5nm,1.1s							
GERES	**GERESS Array B**	**139.97**	**333**	PKhKP		PKPpre	16 33 44.5	
	0.4nm,0.7s,baz=90,slow=2.0,SNR=4.4							
ARSA	**Arzberg**	**140.29**	**330**	*i* PKiKP		**PKiKP**	**16 33 56.2**	**+2.2**
	0.1nm,0.3s							
MOA	**Molln**	**140.45**	**331**	*i* PKiKP		**PKPdf**	**16 33 52.7**	**+1.0**
	1.6nm,0.8s							
OBKA	**Obir**	**141.28**	**330**	*i* PKiKP		**PKiKP**	**16 33 56.6**	**+0.5**
	2.0nm,1.1s							
MYKA	**Terra Mystica**	**141.63**	**331**	*i* PKiKP		**PKiKP**	**16 33 56.0**	**-0.8**
	0.8nm,0.4s							
ABTA	**Abfaltersbach**	**142.07**	**332**	*i* PKPdf		**PKPdf**	**16 33 54.7**	**0.0**
	2.5nm,0.8s							
WTTA	**Wattenberg**	**142.07**	**333**	*i* PKPdf		**PKPdf**	**16 33 50.0**	**-4.8**
	3.9nm,0.8s							
RETA	**Reutte**	**142.28**	**334**	*i* PKPdf		**PKPdf**	**16 33 52.8**	**-2.2**
	2.6nm,0.7s							
FETA	**Feichten**	**142.66**	**334**	*i* PKPdf		**PKPdf**	**16 33 53.1**	**-2.7**
	5.7nm,0.8s							
DAVA	**Damuels**	**142.81**	**335**	*i* PKPdf		**PKPdf**	**16 33 53.4**	**-2.7**
	6.9nm,0.8s							
FUORN	**Ofenpass-Fuorn**	**143.17**	**334**	*e*PKPdf		PKPbc	16 33 54.8	+0.7
TUE	**Stuetta**	**143.67**	**334**	*e*PKPdf		PKPbc	16 33 55.9	+0.4
LOMF	**Lomont**	**143.95**	**337**	PKP		PKPbc	16 33 57.1	+0.9
SENIN	**Lac Senin/Sane**	**144.59**	**336**	*e*PKPdf		PKPbc	16 33 58.8	+0.5
AQU	**L'Aquila**	**144.76**	**326**	*e*PKPdf		PKPbc	16 33 58.9	+0.1
TIP	**Timpagrande**	**144.77**	**319**	*e*PKPdf		**PKPab**	**16 33 58.8**	**0.0**
CUC	**Castrocucco**	**144.88**	**321**	*e*PKPbc		**PKPab**	**16 33 57.4**	**-1.8**
RSL	**Roselend**	**145.42**	**336**	PKP		**PKPab**	**16 34 01.5**	**+0.3**
PLDF	**La Plantade**	**146.28**	**340**	PKP		**PKPab**	**16 34 04.5**	**+0.2**
AGO	**Saint Agoulin**	**146.37**	**340**	PKP		**PKPab**	**16 34 04.4**	**-0.2**
LBL	**Lubilhac**	**147.05**	**339**	PKP		**PKPab**	**16 34 07.1**	**-0.2**
KEST	**Kesra**	**151.54**	**320**	PKPbc		**PKPbc**	**16 34 17.7**	**+0.6**
	5.4nm,0.6s,baz=142,slow=4.4,SNR=6.6							
ESDC	**Sonseca Array**	**154.30**	**345**	PKPab		**PKPab**	**16 34 38.8**	**+1.4**
	0.5nm,0.8s,baz=10,slow=3.4,SNR=4.3							
TORD	**Torodi Ar. Bea**	**166.06**	**264**	PKP		**PKPdf**	**16 34 28.2**	**-0.1**
	1.0nm,0.7s,baz=72,slow=1.5,SNR=5.8							
TORD				PKPab		**PKPab**	**16 35 29.1**	**-0.4**
	1.6nm,1.0s,baz=102,slow=2.3,SNR=3.7							

*IDC **10** 16:24:12.5±0.6,9°.50N×122°.29E,h0km,mb4.1/15, mb1 4.2/15,mb1mx3.9/46,mbtmp4.1/15,MS3.5/7, Ms1 3.5/7,ms1mx3.1/50,Error ellipse: s-maj=30.0km s-min=13.2km az=65.0*
*MAN **10** 16:24:14,9°.44N×122°.13E,h15km,mb5.3,ML4.3,MS4.5*
MAN INTENSITY III - SIPALAY CITY NEGROS OCCIDENTAL.
*ISCJB **10** 16:24:15.5±0.3,9°.44N±0°.03×122°.13E±0°.03,h29km, mb4.3/34,MS3.5/8,Error ellipse: s-maj=4.5km s-min=3.8km az=15.5*
*NEIC **10** 16:24:16.3±2.3,9°.49N×122°.28E,h28km±16km,mb4.5/13, Error ellipse: s-maj=9.3km s-min=5.5km az=80.0*
NEIC Felt [III PIVS] at Cawayan and Sipalay. Felt [II PIVS] at Iloilo, Panay.
ISC 10 16:24:16.4±0.4,9°.47N±0°.03×122°.30E±0°.05,h29km,n69, σ2s14°7,mb4.4/34,MS3.5/8,5C-4D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.93**	**98**	*i*P		**Pb**	**16 24 32.8**	**-1.3**
SNPH				*i* S		**Sb**	**16 24 50.2**	**+4.1**
JAP	**San Jose, Anti**	**1.31**	**345**	*e*P		**Pn**	**16 24 37.8**	**-1.0**
LLP	**Lapu-Lapu**	**1.84**	**63**	*e*P		**Pb**	**16 24 48.5**	**-1.0**
LLP				*e*S		**Sb**	**16 25 13.1**	**+0.9**
RCP	**Roxas**	**2.12**	**12**	*e*P		**Pb**	**16 24 50.9**	**-3.3**
KALP	**Kalibo**	**2.19**	**1**	*e*P		**Pb**	**16 24 52.5**

WRA				PcP	**PcP**	**16 33 29.0**	**+0.2**	
	comp=Z,1.4nm,0.6s,baz=336,slow=3.0,SNR=13							
CN2	**Changchun**	**34.31**	**4**	*e*P	P	16 31 04.1	+3.8	
CN2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
AS31	**Alice Springs**	**34.83**	**161**	*e*P	**P**	**16 31 05.5**	**+0.4**	
	comp=Z,1.6nm,0.6s							
ASAR	**Alice Springs**	**34.84**	**161**	P	**P**	**16 31 06.4**	**+1.3**	
	comp=Z,2.2nm,0.6s,baz=343,slow=7.2,SNR=53							
ASAR				PcP	**PcP**	**16 33 38.3**	**+0.3**	
	comp=Z,1.4nm,0.6s,baz=343,slow=2.6,SNR=14							
AS01	**Alice Springs**	**34.85**	**161**	*e*P	**P**	**16 31 05.7**	**+0.5**	
MDJ	**Mudanjiang**	**35.58**	**9**	P	**P**	**16 31 11.9**	**+0.7**	
MDJ				pP	sP	16 31 20.7	-2.6	
MDJ				sP	pP	16 31 24.4	+4.6	
MDJ				S	**S**	**16 36 46.9**	**+1.6**	
MDJ				pmax	pmax			
	comp=Z,5.0nm,0.9s							
MDJ				pmax	pmax			
	comp=Z,30nm,4.0s							
MDJ				LR	LR			
	comp=N,29nm,24.2s							
MDJ				LR	LR			
	comp=E,78nm,24.2s							
MDJ				LR	LR			
	comp=Z,27nm,24.2s							
USRK	**Ussuriysk Ar.**	**35.61**	**12**	P	**P**	**16 31 12.2**	**+0.7**	
	comp=Z,0.7nm,0.3s,baz=126,slow=22,SNR=7.8							
GTA	**Gaotai**	**35.95**	**330**	*e*P	**P**	**16 31 15.2**	**+0.6**	
GTA				pP	sP	16 31 25.0	-1.8	
GTA				sP	pP	16 31 28.8	+5.6	
GTA				pmax	pmax			
	comp=Z,5.0nm,0.8s							
SONM	**Songino Array**	**40.53**	**343**	P	**P**	**16 31 53.3**	**+0.2**	
	comp=Z,1.2nm,0.7s,baz=169,slow=9.5,SNR=9.5							
SONA1	**Songino Array**	**40.54**	**344**	*e*P	**P**	**16 31 53.0**	**-0.2**	
NWAO	**Narrogin (SRO)**	**42.44**	**186**	LR	LR	16 52 23.9		
	comp=Z,56nm,18.1s,slow=40							
TLY	**Talaya**	**44.77**	**344**	LR	LR	16 53 09.8		
	comp=Z,90nm,18.1s,baz=115,slow=39							
TLY	**Talaya**	**44.77**	**344**	*e*P	**P**	**16 32 27.0**	**-0.4**	
	comp=Z,3.6nm,1.1s							
STKA	**Stephens Creek**	**45.07**	**157**	P	**P**	**16 32 30.4**	**+0.5**	
	comp=Z,2.1nm,0.7s,baz=328,slow=5.9,SNR=5.3							
WMQ	**Urumqi**	**45.53**	**325**	*e*P	**P**	**16 32 33.5**	**-0.1**	
WMQ				pP	PKiKP	16 41 03.0	-6.5	
WMQ				pmax	pmax			
	comp=Z,6.0nm,0.5s							
WMQ				pmax	pmax			
	comp=Z,84nm,4.9s							
MK01	**Makanchi Array**	**50.34**	**325**	*e*P	**P**	**16 33 10.5**	**-0.3**	
MK31	**Makanchi Array**	**50.36**	**325**	*e*P	**P**	**16 33 10.8**	**0.0**	
MKAR	**Makanchi Array**	**50.36**	**325**	P	**P**	**16 33 11.3**	**+0.5**	
	comp=Z,1.5nm,0.7s,baz=131,slow=8.3,SNR=12							
MKAR	**Makanchi Array**	**50.36**	**325**	*e*P	**P**	**16 33 11.0**	**+0.1**	
MAKZ	**Makanchi**	**50.55**	**325**	*e*P	**P**	**16 33 12.5**	**+0.2**	
	comp=Z,5.4nm,1.1s							
KSH	**Kashi**	**50.91**	**314**	*e*P	**P**	**16 33 18.1**	**+2.8**	
KSH				*e*pP	sP	16 33 28.0	+0.4	
KSH				*e*ScP	**ScP**	**16 38 27.0**	**+1.0**	
KSH				S	**S**	**16 40 30.9**	**+0.7**	
KSH				pmax	pmax			
	comp=Z,34nm,3.3s							
TKM2	**Tokmak 2**	**52.56**	**318**	*e*P	**P**	**16 33 28.1**	**+0.5**	
	comp=Z,7.6nm,1.4s							
YAK	**Yakutsk**	**52.74**	**4**	LR	LR	16 57 21.5		
	comp=Z,51nm,19.4s,baz=196,slow=38							
ZALV	**Zalesovo Beam**	**53.51**	**333**	P	**P**	**16 33 34.0**	**-0.1**	
	comp=Z,1.0nm,0.5s,baz=128,slow=5.9,SNR=5.4							
EKS2	**Erkin-Say**	**53.67**	**317**	*e*P	**P**	**16 33 36.7**	**+0.9**	
	comp=Z,6.5nm,1.1s							
KKAR	**Karatay Array**	**56.06**	**316**	*e*P	**P**	**16 33 54.0**	**+1.0**	
BRVK	**Borovoye**	**60.21**	**327**	*e*P	**P**	**16 34 20.9**	**-0.8**	
	comp=Z,6.1nm,1.4s							
ZRNK	**Zerenda**	**60.86**	**326**	*e*P	**P**	**16 34 25.8**	**-0.4**	
	comp=Z,5.7nm,1.4s							
TIXI	**Tiksi**	**62.26**	**2**	*e*P	**P**	**16 34 34.0**	**-1.2**	
	comp=Z,3.2nm,0.9s							
NRIK	**Noril'sk**	**63.86**	**347**	P	**P**	**16 34 46.2**	**+0.3**	
	comp=Z,2.7nm,0.5s,baz=80,slow=6.9,SNR=4.1							
GEYT	**Alibeck**	**63.91**	**308**	P	**P**	**16 34 48.3**	**+1.4**	
	comp=Z,1.4nm,0.5s,baz=152,slow=6.5,SNR=3.5							
ABKAR	**Akbulak array**	**64.95**	**320**	*e*P	**P**	**16 34 52.3**	**-1.1**	
AKTO	**Aktyubinsk**	**66.46**	**321**	P	**P**	**16 35 03.1**	**0.0**	
	comp=Z,1.3nm,0.7s,baz=106,slow=7.2,SNR=5.2							
BRTR	**Keskin Array B**	**83.00**	**309**	P	**P**	**16 36 39.0**	**-0.5**	
	comp=Z,0.9nm,0.6s,baz=119,slow=5.7,SNR=5.3							
AKASG	**Malin Array Be**	**84.69**	**320**	P	**P**	**16 36 47.2**	**-0.4**	
	comp=Z,2.2nm,0.7s,baz=66,slow=4.2,SNR=9.7							
VNDA	**Vanda**	**89.66**	**172**	P	**P**	**16 37 11.5**	**+0.4**	
	comp=Z,0.8nm,0.8s,baz=323,slow=6.3,SNR=12							
TXAR	**Lajitas Array**	**121.27**	**47**	PKP	**PKPdf**	**16 43 08.4**	**+0.9**	
	comp=Z,0.1nm,0.6s,baz=35,slow=1.9,SNR=3.7							
PLCA	**Paso Flores**	**146.84**	**162**	PKPbc	**PKPab**	**16 43 57.5**	**-0.1**	
	comp=Z,4.8nm,0.7s,baz=272,slow=1.2,SNR=18							

GUC 10 16:26:47.5±0.6, 21°.89S×68°.67W, h124km±5km, ML3.5, 5C-4D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PB09	**IPOC Station P**	**0.54**	**280**	↑	*i*P	Pn	16 27 07.0	+0.7
PB09					*i*S	Sn	16 27 21.4	+0.9
PB09					IAML		16 27 24.0	
	comp=N,3μm,0.2s							
PB01	**IPOC Station P**	**1.14**	**318**	↑	*i*P	Pn	16 27 11.9	+0.6
PB01					*i*S	Sn	16 27 30.4	+1.0
PB01					IAML		16 27 32.8	
	comp=E,745nm,0.2s							
PB07	**IPOC Station P**	**1.14**	**278**	↑	*i*P	Pn	16 27 12.4	+0.9
PB07					*i*S	Sn	16 27 30.9	+1.2
PB07					IAML		16 27 31.4	
	comp=N,1μm,0.2s							
PB06	**IPOC Station P**	**1.17**	**226**	↑	*i*P	Pn	16 27 12.4	+0.7
PB06					*i*S	Sn	16 27 31.0	+0.9
PB06					IAML		16 27 32.6	
	comp=N,597nm,0.2s							
PB04	**IPOC Station P**	**1.44**	**252**	↑	*i*P	Pn	16 27 15.5	+0.8
PB04					*i*S	Sn	16 27 36.3	+0.9
PB08	**IPOC Station P**	**1.80**	**345**	↓	*i*P	Pn	16 27 20.2	+1.1
PB08					*i*S	Sn	16 27 44.5	+1.4
HMBC	**Humberstone**	**1.96**	**324**	↓	*i*P	Pn	16 27 20.8	-0.1
HMBC					*i*S	Sn	16 27 47.1	+0.7
HMBC					IAML		16 27 48.7	
	comp=E,329nm,0.9s							
PB11	**IPOC Station P**	**2.31**	**336**	↓	*i*S	Pn	16 27 25.3	+0.1
PB11					*i*S	Sn	16 27 54.9	+0.8
MNMC	**Minye Minye**	**2.88**	**342**	↓	*i*P	Pn	16 27 32.8	+0.2
MNMC					*i*S	Sn	16 28 08.0	+0.7

NIED ***10*** *16:34:00,38.00N×143.20E,h8km, Mw3.5 Best double couple: M₀2.33000×10¹⁴ NP1:φs44.00000°,δ63.00000°, λ-24.00000°. NP2:φs145.00000°,δ69.00000°, λ-151.00000°.*

JMA 10 16:34:10.9±0.2, 37°.98N×143°.23E, h23km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JIO	**Ouri**	**1.56**	**288**	P		Pn	16 34 37.8	+0.7
JIO				S		Sb	16 34 57.6	-0.6
JMM	**Marumori**	**1.93**	**267**	P		Pn	16 34 42.9	+0.6
JMM				S		Sn	16 35 06.8	+0.9
JOM	**Ohasama**	**2.13**	**315**	S		Sn	16 35 12.2	+1.5
JFT	**Otama**	**2.34**	**260**	P		Pn	16 34 49.2	+1.2
JFT				S		Sn	16 35 18.0	+2.0
JYK	**Kaneyama**	**2.44**	**293**	P		Pn	16 34 50.8	+1.5
MAT	**Matsushiro**	**4.26**	**252**	P		Pn	16 35 16.6	+2.3
MAT				*e*S		Sn	16 36 04.8	+1.5

ISCJB ***10*** *16:40:19.7±0.8,36.80N±0.04×27.57E±0.06,h13km±7km, Error ellipse: s-maj=8.0km s-min=7.3km az=155.7*
CSEM ***10*** *16:40:20.9±0.2,36.81N×27.53E,h2km, MD2.3, Error ellipse: s-maj=4.3km s-min=3.8km az=169.0*
ISK ***10*** *16:40:20.3,36.83N×27.50E,h10km, MD2.5*
DDA ***10*** *16:40:22.6,36.95N×27.59E,h5km, Md2.3*

ISC 10 16:40:20.2±1.1, 36°.81N±0.04×27°.57E±0.03, h11km±12km, n13, σ1°37/21, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BDRM	**Kayabasi**	**0.27**	**339**	*i* P		**Pg**	**16 40 25.7**	**-0.1**
BDRM				*i* S		**Sg**	**16 40 29.7**	**+0.2**
BDRM	**Kayabasi**	**0.27**	**339**	P		**Pg**	**16 40 25.7**	**-0.1**
BDRM				S		**Sg**	**16 40 29.7**	**+0.2**
BODT	**Bodrum**	**0.32**	**321**	PG		**Pg**	**16 40 26.4**	**-0.3**
BODT				*e*SG		**Sg**	**16 40 30.9**	**-0.2**
BODT	**Bodrum**	**0.32**	**321**	*i* Pg		**Pg**	**16 40 26.4**	**-0.3**
BODT				*e*Sg		**Sg**	**16 40 30.9**	**-0.2**
NIS1	**Nisyros Isl.**	**0.38**	**236**	*e*PG		**Pg**	**16 40 27.7**	**+0.1**
NIS1				*e*SG		**Sg**	**16 40 32.7**	**+0.1**
NIS1	**Nisyros Isl.**	**0.38**	**236**	*e*Pg		**Pg**	**16 40 27.7**	**+0.1**
NIS1				*e*Sg		**Sg**	**16 40 32.7**	**+0.1**
YER	**Yerkesik**	**0.66**	**60**	*e*PG		**Pg**	**16 40 34.4**	**+1.4**
YER	**Yerkesik**	**0.66**	**60**	*e*Pg		**Pg**	**16 40 34.4**	**+1.4**
TURN	**Turunc**	**0.83**	**85**	*i* P		Pg	16 40 32.5	-3.7
TURN				*i* S		**Sg**	**16 40 42.5**	**-4.6**
DALY	**Dalyan (Mu¨la**	**0.87**	**89**	*e*PG		**Pg**	**16 40 37.9**	**+0.9**
DALY	**Dalyan (Mu¨la**	**0.87**	**89**	*e*Pg		**Pg**	**16 40 37.9**	**+0.9**
GCAM	**G?zelcaml?**	**0.93**	**343**	*i* P		**Pb**	**16 40 39.1**	**+1.0**
GCAM				*i* S		**Sb**	**16 40 49.3**	**-1.2**
GCAM	**G?zelcaml?**	**0.93**	**343**	P		**Pb**	**16 40 39.2**	**+1.0**
GCAM				S		**Sb**	**16 40 49.3**	**-1.2**

NEIC ***10*** *16:42:57.5±0.1,9.53N×122.26E,h10km,mb5.1/69, Error ellipse: s-maj=4.0km s-min=3.1km az=86.0*
NEIC Felt [IV PIVS] at Sipalay and [III PIVS] at Cawayan. Felt [III] at Dumaguete. Also felt at Bacolod and San Carlos. Felt [III PIVS] at Iloilo, Panay.
GCMT ***10*** *16:42:57.5±0.2,9.48N×122.14E,h20km,MW5.0/72, Moment Tensor Solution. s39,c47; s72,c121; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr3.00±.22; Mθθ-2.16±.13; Mϕϕ-0.84±.16; Mrθ-0.32±.26; Mθϕ-2.64±.08; Mϕr-0.03±.34; Best double couple: M₀3.63000×10¹⁶ NP1:φs237.00000°,δ47.00000°,λ,97.00000°. NP2: φs46.00000°,δ43.00000°,λ82.00000°. Principal axes: T 3.0270, Plg84.0000°, Azm211.0000°; N 1.2020, Plg6.0000°, Azm52.0000°; P -4.2330, Plg2.0000°, Azm322.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***10*** *16:42:58.1,9.18N×122.39E,h48km, mb4.8/69, mB5.0/55, Ms4.8/67, Ms7 4.5/64*
MAN ***10*** *16:42:58,9.49N×122.14E,h31km, mb5.7, ML4.8, MS5.2*
MAN INTENSITY IV - SIPALAY CITY NEGROS OCCIDENTAL; INTENSITY III - CAUAYAN NEGROS OCCIDENTAL; ILOILO CITY.
MOS ***10*** *16:43:00.6±1.0,9.59N×122.28E,h42km, mb5.3/50, MS4.5/14, Error ellipse: s-maj=9.1km s-min=4.4km az=119.1*
IDC ***10*** *16:43:00.8±2.2,9.49N×122.30E,h30km±15km, mb4.5/46, mb1 4.6/46,mb1mx4.5/62,mbtmp4.7/46,MS4.1/25, Ms1 4.2/25,ms1mx4.0/40, Error ellipse: s-maj=14.6km s-min=8.1km az=71.0*
ISCJB ***10*** *16:43:01.4±0.4,9.56N±0.02×122.29E±0.02,h49km±3km, mb4.9/153, MS4.4/56, Error ellipse: s-maj=3.7km s-min=2.9km az=177.5*
KLM ***10*** *16:43:03.6,9.51N×122.10E,h42km, mb5.1, MS6.2*
DJA ***10*** *16:43:04.0±0.5,10.1N±3.1×12.2E±.1, h44km±4km, M4.9/65, mb5.0/65, mB5.4/32, MLv5.2/3, Mw(mB)4.8/32*

ISC 10 16:43:02.9±0.4, 9.49N±0.03×122.23E±0.04, h45km±3km, h45km: pP-P, n480, σ1s79/524, mb5.0/153, MS4.4/58, 36C-27D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SNPH	**Sibulan**	**1.00**	**98**	↑	*i*P	**Pn**	**16 43 15.8**	**-4.8**
SNPH					*i* S	**Sn**	**16 43 31.6**	**-2.1**
JAP	**San Jose, Anti**	**1.28**	**347**	↓	*e*P	**Pn**	**16 43 21.1**	**-3.2**
LLP	**Lapu-Lapu**	**1.90**	**64**	↓	*e*P	**Pn**	**16 43 31.6**	**-1.2**
LLP					*e*S	**Sn**	**16 43 56.6**	**+1.1**
RCP	**Roxas**	**2.12**	**14**	↑	*e*P	**Pn**	**16 43 34.1**	**-1.7**
KALP	**Kalibo**	**2.17**	**3**	↑	*e*P	**Pn**	**16 43 35.2**	**-1.5**
CGP	**Cagayan de Oro**	**2.64**	**113**	↓	*e*P	**Pn**	**16 43 43.1**	**+0.1**
CGP					*i* S	**Sn**	**16 44 18.8**	**+4.9**
CTBH	**Cotabato--PC H**	**3.01**	**138**		*e*P	**Pn**	**16 43 47.7**	**-0.4**
CTBH					*i* S	**Sn**	**16 44 28.9**	**+5.9**
MMPH	**Masbate**	**3.16**	**26**	↑	*e*P	**Pn**	**16 43 51.0**	**+0.9**
MMPH					*i* S	**Sn**	**16 44 28.4**	**+1.8**
PLP	**Palo**	**3.18**	**58**	↓	*e*P	**Pn**	**16 43 48.9**	**-1.5**
PLP					*i* S	**Sn**	**16 44 26.2**	**-0.9**
KCP	**Kidapawan**	**3.75**	**131**	↑	*e*P	Pn	16 44 02.1	+3.7
DAV	**Davao City (W)**	**4.10**	**126**		Pn	**Pn**	**16 44 06.3**	**+3.3**
	baz=16,slow=3.0,SNR=14							
DAV					LR	LR	16 45 20.4	
	comp=Z,3μm,20.1s,baz=320,slow=35							
DAV	**Davao City (W)**	**4.10**	**126**	*e*Pn		**Pn**	**16 44 02.5**	**-0.5**
BIPH	**Bislig**	**4.29**	**107**	↑	*i*P	**Pn**	**16 44 07.0**	**+1.4**
BIPH					*i* S	**Sn**	**16 44 57.8**	**+3.4**
GQP	**Guinayangan**	**4.39**	**3**	↓	*e*P	**Pn**	**16 44 05.7**	**-1.3**
GQP					*e*S	**Sn**	**16 45 03.6**	**+6.6**
LQP	**Lukban**	**4.64**	**352**		*e*P	Pn	16 44 16.0	+5.3
TGY	**Tagaytay City**	**4.75**	**345**		Pn	Pn	16 44 16.6	+4.5
	49nm,0.3s,baz=341,slow=13,SNR=4.9							
MYLDM	**Lahad Datu**	**5.66**	**221**	↑	P	**Pn**	**16 44 24.6**	**+0.1**
MYLDM	**Lahad Datu**	**5.66**	**221**	*e*Pn		**Pn**	**16 44 23.4**	**-1.1**
KDM	**Kudat**	**5.92**	**245**	↓	P	**Pn**	**16 44 27.3**	**-0.8**
SDKM	**Sandakan**	**6.29**	**233**	↓	P	**Pn**	**16 44 29.8**	**-3.4**
TSM	**Tawau**	**6.74**	**220**	↑	P	**Pn**	**16 44 37.7**	**-1.6**
KKM	**Kota Kinabalu**	**6.87**	**241**	↓	P	**Pn**	**16 44 40.1**	**-1.2**
KKM	**Kota Kinabalu**	**6.87**	**241**	*e*Pn		**Pn**	**16 44 38.4**	**-2.8**
MRSI	**Marisa**	**8.96**	**182**	P		**Pn**	**16 45 09.9**	**+0.1**
KMSI	**Cibinong**	**9.03**	**169**	P		Pn	16 45 14.5	+3.8
	187nm,1.0s,3μm							
LUWI	**Luwuk**	**10.48**	**177**	P		**Pn**	**16 45 32.9**	**+2.3**
	157nm,1.2s,2μm							
LUWI	**Luwuk**	**10.48**	**177**	*e*Pn		**Pn**	**16 45 32.8**	**+2.3**
PCI	**Palu**	**10.60**	**193**	P		**Pn**	**16 45 35.5**	**+3.2**
	34nm,0.8s							
BTM	**Bintulu**	**11.03**	**236**	↓	P	**Pn**	**16 45 37.3**	**-0.8**
LBMI	**Labuha**	**11.35**	**152**	P		Pn	16 45 47.9	+5.4
	102nm,1.3s,1μm							
SBUM	**Sibu**	**12.16**	**236**	↓	P	**Pn**	**16 45 52.8**	**-0.8**
SBUM	**Sibu**	**12.16**	**236**	*e*Pn		**Pn**	**16 45 51.3**	**-2.3**
TTSI	**Tana Toraja**	**12.68**	**191**	P		**Pn**	**16 46 03.4**	**+2.7**
	59nm,0.9s							
NLAI	**Namlea**	**13.55**	**159**	P		**Pn**	**16 46 13.3**	**+0.8**
SPSI	**Sidrap Palu**	**13.59**	**190**	P		**P**	**16 46 18.6**	**-2.4**
TPUB	**Ta-pu**	**13.82**	**354**	*e*Pn		**Pn**	**16 46 17.3**	**+1.1**
YULB	**Yu-li**	**13.85**	**356**	*e*Pn		**Pn**	**16 46 18.0**	**+1.3**
STKI	**Sintang**	**14.22**	**229**	P		**Pn**	**16 46 21.3**	**-0.4**
	42nm,1.3s							
SSLB	**Suanglung**	**14.27**	**355**	*e*Pn		**Pn**	**16 46 20.7**	**-1.6**
KSM	**Kuching**	**14.28**	**237**	*e*Pn		**Pn**	**16 46 21.2**	**-1.4**
MSAI	**Masohi**	**14.39**	**152**	P		**P**	**16 46 31.5**	**+1.5**
KAPI	**Kappang**	**14.62**	**190**	Pn		**P**	**16 46 31.4**	**-1.1**
	1.6nm,0.3s,baz=32,slow=6.8,SNR=5.0							
KAPI					LR	LR	16 51 44.9	
	comp=Z,771nm,19.8s,baz=14,slow=36							
KAPI	**Kappang**	**14.62**	**190**	*e*Pn		**P**	**16 46 30.5**	**-2.0**
BBKI	**Banjar Baru**	**14.83**	**210**	P		**P**	**16 46 34.2**	**-0.6**
YOJ	**Yonaguni jima**	**14.91**	**3**	*e*P		**Pn**	**16 46 29.3**	**-1.4**
YOJ	**Yonaguni jima**	**14.91**	**3**	*e*Pn		**Pn**	**16 46 29.3**	**-1.4**
YHNB	**Yeheng**	**15.12**	**357**	*e*Pn		**Pn**	**16 46 33.8**	**+0.2**
	56nm,1.0s							
QIZ	**Qiongzhong**	**15.29**	**310**	P		**Pn**	**16 46 34.9**	**-0.9**
QIZ				S		**Sn**	**16 49 24.3**	**+0.2**
QIZ				LR		LR		
	comp=N,2μm,14.7s							
QIZ				LR		LR		
	comp=E,2μm,14.3s							
QIZ				LR		LR		
	comp=Z,4μm,15.1s							
QIZ	**Qiongzhong**	**15.29**	**310**	*e*Pn		**Pn**	**16 46 34.1**	**-1.6**
	51nm,1.1s							
QZH	**Quanzhou**	**15.75**	**348**	P		**Pn**	**16 46 34.7**	**-7.0**
QZH				S		**Sn**	**16 49 30.1**	**-5.2**
QZH				pmax		pmax		
	comp=Z,130nm,0.9s							
QZH				LR		LR		
	comp=N,2μm,13.8s							
QZH				LR		LR		
	comp=E,3μm,16.3s							
QZH				LR		LR		
	comp=Z,3μm,13.8s							
FAKI	**Fak Fak**	**15.87**	**141**	P		**P**	**16 46 46.0**	**-0.3**
FAKI	**Fak Fak**	**15.87**	**141**	*e*Pn		**Pn**	**16 46 42.5**	**-0.7**
	comp=Z,136nm,1.2s							
GZH	**Guangzhou**	**15.97**	**329**	P		**P**	**16 46 52.5**	**+5.1**
GZH				S		**S**	**16 49 52.2**	**-0.6**
GZH				pmax		pmax		
	comp=Z,160nm,1.2s							
PBKI	**Pangkalan Bun**	**16.05**	**221**	P		**P**	**16 46 47.8**	**-0.5**
UBPT	**Khong Chiam**	**17.34**	**291**	P		**P**	**16 47 04.5**	**+1.8**
	comp=Z,153nm,1.1s,comp=Z,3μm							
PLAI	**Plampang**	**18.73**	**194**	P		**Pn**	**16 47 22.0**	**+3.3**
SRBI	**Singaraja**	**18.81**	**202**	P		**Pn**	**16 47 23.5**	**+3.8**
TWSI	**Taliwang, Sumb**	**18.88**	**197**	P		**Pn**	**16 47 23.0**	**+2.5**
WSI	**Waingapu**	**19.13**	**186**	P		**Pn**	**16 47 26.2**	**+2.7**
SOEI	**Soe**	**19.23**	**174**	P		**Pn**	**16 47 29.1**	**+4.3**
SOEI	**Soe**	**19.23**	**174**	*e*P		**P**	**16 47 22.0**	**-1.5**
	comp=Z,132nm,0.9s							
SKNT	**Sakolnakorn**	**19.25**	**295**	P		**Pn**	**16 47 24.6**	**-0.3**
	comp=Z,86nm,0.9s							
KTGM	**Kuala Trenggan**	**19.38**	**259**	⇓	P	**Pn**	**16 47 27.2**	**+0.6**
TPRI	**Tanjung Pinang**	**19.57**	**245**	P		**Pn**	**16 47 28.6**	**-0.1**
JAGI	**Jajag, Banyuwa**	**19.57**	**205**	P		**Pn**	**16 47 31.4**	**+2.6**
JAGI	**Jajag, Banyuwa**	**19.57**	**205**	*e*P		**P**	**16 47 25.9**	**-1.2**
	comp=Z,57nm,0.9s							
PPBI	**Pangkal Pinang**	**19.77**	**235**	P		**Pn**	**16 47 30.9**	**-0.3**
CHBT	**CHBT**	**19.79**	**281**	P		**Pn**	**16 47 31.0**	**-0.4**
	comp=Z,170nm,1.2s							
MYKOM	**Kota Tinggi**	**19.81**	**248**	⇑	P	**Pn**	**16 47 31.7**	**0.0**
MYKOM	**Kota Tinggi**	**19.81**	**248**	*e*P		**P**	**16 47 28.6**	**-1.3**
	comp=Z,91nm,1.3s							
NGJI	**Ngawi**	**19.89**	**213**	P		**Pn**	**16 47 34.6**	**+2.0**
KHON	**Khomkaen**	**20.09**	**292**	P		**P**	**16 47 33.6**	**+0.7**
	comp=Z,38nm,1.0s,comp=Z,366nm							
KGM	**Kluang**	**20.22**	**250**	⇑	P	Pn	16 47 35.7	-0.8
PWJI	**Pagerwojo**	**20.26**	**211**	P		Pn	16 47 36.5	-0.5
WOJI	**Wonogiri, Jawa**	**20.57**	**214**	P		Pn	16 47 40.0	-0.6
PCJI	**Pacitan**	**20.73**	**212**	P		Pn	16 47 42.4	-0.2
UGM	**Wanagama**	**20.85**	**214**	P		Pn	16 47 45.2	+1.1
UGM	**Wanagama**	**20.85**	**214**	*e*P		**P**	**16 47 41.5**	**+0.3**
	comp=Z,123nm,1.0s							
FRIM	**Kepong**	**21.39**	**254**	⇑	P	**P**	**16 47 48.0**	**+1.1**
SKLT	**Songkhla**	**21.50**	**265**	P		**P**	**16 47 49.7**	**+1.6**
	comp=Z,45nm,1.3s							
SSE	**Sheshan**	**21.52**	**358**	P		**P**	**16 47 48.8**	**+0.7**
SSE				pP		**sP**	**16 48 01.9**	**-2.8**
SSE				sP		pP	16 48 07.1	+8.1
SSE				S		**S**	**16 51 46.0**	**+1.7**
SSE				sS		**sS**	**16 52 04.0**	**+2.2**
SSE				pmax		pmax		
	comp=Z,52nm,0.9s							
SSE				pmax		pmax		
	comp=Z,290nm,9.2s							
SSE				LR		LR		
	comp=Z,270nm,19.0s							
SSE				LR		LR		
	comp=Z,780nm,19.0s							
SSE				LR		LR		
	comp=Z,540nm,18.5s							
GENI	**Genyem**	**21.53**	**123**	P		**P**	**16 47 52.9**	**+4.5**
IPM	**Ipoh**	**21.62**	**258**	⇑	P	**P**	**16 47 50.3**	**+0.9**
IPM	**Ipoh**	**21.62**	**258**	*e*P		**P**	**16 47 49.2**	**-0.2**
	comp=Z,348nm,2.0s							
KULM	**Kulim**	**21.80**	**260**	⇑	P	**P**	**16 47 52.2**	**+0.9**
KULM	**Kulim**	**21.80**	**260**	*e*P		**P**	**16 47 50.8**	**-0.5**
	comp=Z,80nm,1.2s							
PBKT	**Sadao Pong**	**21.86**	**291**	P		**P**	**16 47 52.0**	**+0.1**
	comp=Z,23nm,1.5s							
CMJI	**Cimerak**	**21.98**	**219**	P		**P**	**16 47 54.7**	**+1.6**
CBJI	**Citeko**	**22.02**	**225**	P		**P**	**16 47 58.4**	**+4.8**
DBJI	**Dramaga**	**22.18**	**225**	P		**P**	**16 47 58.7**	**+3.3**
WHN	**Wuhan**	**22.20**	**342**	⇑	P	**P**	**16 47 58.2**	**+2.8**
WHN					S	**S**	**16 52 00.7**	**+3.5**
WHN				pmax		pmax		
	comp=Z,66nm,1.1s							
WHN				LR		LR		
	comp=Z,2μm,14.8s							
WHN				LR		LR		
	comp=Z,2μm,11.5s							
WHN				LR		LR		
	comp=Z,2μm,15.9s							
CISI	**Cisompet, Garu**	**22.20**	**221**	P		**P**	**16 47 56.9**	**+1.2**
CISI	**Cisompet, Garu**	**22.20**	**221**	*e*P		**P**	**16 47 55.9**	**+0.3**
	comp=Z,245nm,1.6s							
TRTT	**Trang**	**22.34**	**268**	P		P

KMI LR LR
comp=Z,1μm,15.8s
KMI LR LR
comp=Z,2μm,17.1s
CM01 Chiang Mai Arr 24.24 294 *e*P **P 16 48 14.7 -1.1**
TSI Tuntungan 24.24 257 P **P 16 48 16.9 +1.1**
CM31 Chiang Mai Arr 24.27 294 *e*P **P 16 48 15.3 -0.7**
CMAR Chiang Mai Arr 24.27 294 P **P 16 48 15.8 -0.2**
comp=Z,12nm,1.0s,baz=113,slow=7.6,SNR=56
CMAR LR LR 16 57 39.6
comp=Z,762nm,18.4s,baz=122,slow=36
KDU Kakadu 24.27 155 P **P 16 48 16.1 +0.1**
baz=24,SNR=8.1
CMMT Chiang Mai 24.38 295 P **P 16 48 16.4 -0.6**
comp=Z,64nm,1.6s,comp=Z,765nm
CHTO Chiang Mai 24.38 295 P **P 16 48 16.5 -0.6**
comp=Z,122nm,1.6s,comp=Z,3μm
CHTO Chiang Mai 24.38 295 *e*P **P 16 48 15.9 -1.1**
CHTO pmax pmax
comp=Z,47nm,1.4s
CHTO Chiang Mai 24.38 295 *e*P **P 16 48 15.9 -1.1**
comp=Z,47nm,1.4s
KCSI Kotacane, Aceh 25.00 258 P **P 16 48 22.2 -0.6**
LHMI Lhok Sumawe 25.42 262 *e*P **P 16 48 25.7 -0.9**
comp=Z,197nm,1.2s
KNRA Kununurra 25.83 165 P **P 16 48 31.5 +1.3**
baz=26
GSI Gunungsitoli 25.84 253 P **P 16 48 29.9 -0.4**
GSI Gunungsitoli 25.84 253 *e*P **P 16 48 29.1 -1.2**
comp=Z,98nm,0.9s
TIA Tai'an 27.00 351 *e*P **P 16 48 38.3 -2.3**
TIA pmax pmax
comp=Z,10.0nm,1.8s
XAN Xi'an 27.32 335 P **P 16 48 44.4 +0.9**
XAN pP pP 16 48 54.3 -1.2
XAN pmax pmax
comp=Z,7.0nm,1.5s
XAN pmax pmax
comp=Z,150nm,9.1s
XAN LR LR
comp=Z,730nm,17.2s
XAN LR LR
comp=Z,920nm,15.2s
XAN LR LR
comp=Z,1μm,15.2s
CD2 Chengdu 27.39 324 P **P 16 48 43.9 -0.3**
CD2 pP pP 16 48 55.2 -0.9
CD2 sP sP 16 49 00.6 -1.0
CD2 S **S 16 53 24.3 +3.0**
CD2 sS sS 16 53 45.7 +4.2
CD2 pmax pmax
comp=Z,100nm,0.9s
CD2 pmax pmax
comp=Z,180nm,6.0s
CD2 LR LR
comp=Z,1μm,13.5s
CD2 LR LR
comp=Z,1μm,12.3s
CD2 LR LR
comp=Z,2μm,15.7s
FITZ Fitzroy Crossi 27.62 173 P **P 16 48 45.9 -0.3**
comp=Z,6.8nm,0.8s,baz=58,slow=7.6,SNR=6.8
FITZ Fitzroy Crossi 27.62 173 P **P 16 48 46.1 -0.2**
baz=28,SNR=5.7
FITZ Fitzroy Crossi 27.62 173 *e*P **P 16 48 46.0 -0.3**
comp=Z,16nm,0.8s
INCN Inchon 28.15 7 *e*P **P 16 48 49.2 -1.6**
comp=Z,68nm,1.8s
KSAR Wonju Array Be 28.29 10 P **P 16 48 51.5 -0.6**
KSAR Wonju Array Be 28.29 10 P **P 16 48 51.5 -0.6**
KSRS Korea Array 28.31 10 P **P 16 48 51.5 -0.7**
comp=Z,2.1nm,0.8s,baz=182,slow=9.6,SNR=8.1
KSRS LR LR 16 59 39.8
comp=Z,396nm,21.4s,baz=190,slow=35
KS01 Wonju Array Si 28.33 10 *e*P **P 16 48 50.8 -1.6**
INU Inuyama 29.06 25 *e*P **P 16 48 55.6 -3.4**
comp=Z,11nm,1.0s
MAJO Matsushiro 30.59 26 *e*P **P 16 49 09.4 -3.1**
MAJO pmax pmax
comp=Z,16nm,1.3s
MAJO Matsushiro 30.59 26 P **P 16 49 09.8 -2.6**
comp=Z,8.4nm,1.3s
MAT Matsushiro 30.59 26 P **P 16 49 09.2 -3.3**
MAT S **S 16 54 13.8 +2.4**
MJAR Matsushiro Arr 30.59 26 P **P 16 49 10.5 -2.0**
comp=Z,1.5nm,0.9s,baz=198,slow=8.6,SNR=7.2
MJAR PcP **PcP 16 52 10.0 -0.4**
comp=Z,1.6nm,1.0s,baz=199,slow=3.6,SNR=5.7
MJAR LR LR 17 00 05.7
comp=Z,328nm,20.8s,baz=195,slow=34
BJI Beijing 30.90 351 P **P 16 49 14.5 -0.6**
BJI pP **pP 16 49 26.1 -1.1**
BJI sP **sP 16 49 31.7 -0.9**
BJI S **S 16 54 19.6 +3.5**
BJI sS **sS 16 54 40.9 +4.6**
BJI pmax pmax
comp=Z,17nm,1.5s
BJI pmax pmax
comp=Z,160nm,3.6s
BJI LR LR
comp=Z,580nm,8.9s
BJI LR LR
comp=Z,630nm,17.7s
BJI LR LR
comp=Z,270nm,15.7s
PMG Port Moresby 31.12 126 *e*P **P 16 49 17.1 -0.3**
PMG pmax pmax
comp=Z,97nm,1.0s
LZH Lanzhou 31.31 331 ⇑P **P 16 49 19.3 +0.2**
LZH pP sP 16 49 32.2 -4.4
LZH sP pP 16 49 38.0 +6.8
LZH PP **PnPn 16 50 24.7 +2.0**
LZH *e*S **S 16 54 24.0 +0.9**
LZH sS sS 16 54 44.0 +0.6
LZH SS **SnSn 16 56 12.5 +3.0**
LZH pmax pmax
comp=Z,59nm,1.2s
LZH pmax pmax
comp=Z,190nm,4.5s
LZH LR LR
comp=Z,310nm,12.5s
LZH LR LR
comp=Z,360nm,10.0s
LZH LR LR
comp=Z,570nm,15.5s
WRAB Tennant Creek 31.58 158 *i*P **P 16 49 19.4 -2.0**
WRAB pmax pmax
comp=Z,61nm,1.0s
WRAB Tennant Creek 31.58 158 *e*P **P 16 49 20.2 -1.2**
comp=Z,40nm,1.2s
WRA Warramunga Arr 31.59 158 P **P 16 49 20.4 -1.1**
comp=Z,10nm,0.7s,baz=339,slow=9.4,SNR=74
WRA PcP **PcP 16 52 12.8 -0.5**
comp=Z,3.9nm,0.6s,baz=338,slow=3.0,SNR=14
WRA ScP **ScP 16 55 55.4 +2.4**
comp=Z,3.6nm,1.1s,baz=337,slow=3.9,SNR=5.8
WB2 Warramunga Arr 31.59 158 *e*P **P 16 49 20.1 -1.4**
comp=Z,38nm,1.2s
WR0 Warramunga Arr 31.68 158 P **P 16 49 21.3 -0.9**
baz=32
SNY Shenyang 32.23 2 ⇓P **P 16 49 26.4 -0.4**
SNY S **S 16 54 41.6 +4.7**
SNY pmax pmax
comp=Z,19nm,1.1s
SNY LR LR
comp=Z,380nm,13.7s
SNY LR LR
comp=Z,710nm,14.7s
SNY LR LR
comp=Z,710nm,16.1s
HHC Hu-ho-hao-te 32.63 345 *e*P **P 16 49 30.9 +0.4**
HHC pP sP 16 49 46.5 -1.5
HHC PP **PnPn 16 50 37.8 -1.7**
HHC S **S 16 54 44.2 +0.8**
HHC sS sS 16 55 06.4 +2.7
HHC SS **SnSn 16 56 42.6 +1.3**
HHC pmax pmax
comp=Z,24nm,1.0s
HHC pmax pmax
comp=Z,84nm,4.0s
HHC LR LR
comp=Z,670nm,13.5s
HHC LR LR
comp=Z,370nm,11.4s
HHC LR LR
comp=Z,690nm,14.3s

MSHR Mys Shultsa 33.88 12 *i*P **P 16 49 40.2 -1.0**
CN2 Changchun 34.30 4 *e*P **P 16 49 45.8 +1.0**
CN2 *es*P sP 16 50 04.0 +1.6
CN2 *e*S **S 16 55 10.3 +1.4**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
CN2 pmax pmax
comp=Z,100nm,4.0s
CN2 LR LR
comp=Z,300nm,15.0s
CN2 LR LR
comp=Z,300nm,15.0s
CN2 LR LR
comp=Z,500nm,14.0s
QIS Mount Isa 34.41 150 P **P 16 49 45.2 -0.9**
baz=34,SNR=3.4
VLA Vladivostok 34.55 13 *e*P **P 16 49 45.6 -1.4**
VLA pmax pmax
comp=Z,17nm,1.2s
WRKA Warakurna 34.83 170 P **P 16 49 49.6 -0.1**
baz=35,SNR=31
AS31 Alice Springs 34.88 161 *e*P **P 16 49 49.4 -0.8**
comp=Z,7.8nm,0.6s
ASAR Alice Springs 34.88 161 P **P 16 49 49.5 -0.6**
comp=Z,20nm,0.7s,baz=342,slow=7.4,SNR=316
ASAR PcP **PcP 16 52 21.6 -0.8**
comp=Z,3.9nm,0.6s,baz=342,slow=2.8,SNR=14
ASAR S **S 16 55 17.6 -0.8**
comp=Z,3.4nm,1.2s,baz=341,slow=18,SNR=7.5
ASAR ScP **ScP 16 56 06.8 +2.4**
comp=Z,3.7nm,1.2s,baz=327,slow=3.4,SNR=6.9
ASAR LR LR 17 06 31.6
comp=Z,190nm,19.2s,baz=323,slow=40
AS01 Alice Springs 34.89 161 *e*P **P 16 49 49.9 -0.4**
LSA Lhasa 35.33 309 P **P 16 49 55.2 +0.7**
LSA pmax pmax
comp=Z,4.0nm,1.0s
LSA Lhasa 35.33 309 *e*P **P 16 49 54.1 -0.4**
LSA pmax pmax
comp=Z,11nm,1.2s
LSA Lhasa 35.33 309 *e*P **P 16 49 54.1 -0.4**
comp=Z,11nm,1.2s
MDJ Mudanjiang 35.57 9 P **P 16 49 55.8 0.0**
MDJ pP pP 16 50 06.9 -1.1
MDJ sP sP 16 50 12.0 -1.4
MDJ S **S 16 55 30.0 +1.4**
MDJ sS sS 16 55 49.1 +0.2
MDJ pmax pmax
comp=Z,22nm,1.2s
MDJ LR LR
comp=Z,250nm,29.8s
MDJ LR LR
comp=Z,450nm,21.4s
MDJ LR LR
comp=Z,320nm,22.9s
MDJ Mudanjiang 35.57 9 *e*P **P 16 49 55.5 -0.3**
comp=Z,38nm,1.1s
USRK Ussuriysk Ar. 35.60 12 P **P 16 49 56.3 +0.2**
comp=Z,8.1nm,0.8s,baz=199,slow=7.6,SNR=25
USRK LR LR 17 06 05.8
comp=Z,223nm,18.3s,baz=186,slow=39
GTA Gaotai 35.90 330 *e*P **P 16 49 58.7 -0.2**
GTA pP pP 16 50 08.8 -2.3
GTA sP sP 16 50 13.3 -3.1
GTA S **S 16 55 33.2 -0.8**
GTA SS **SnSn 16 57 55.5 -5.0**
GTA pmax pmax
comp=Z,14nm,1.2s
GTA pmax pmax
comp=Z,180nm,5.9s
GTA LR LR
comp=Z,990nm,15.7s
GTA LR LR
comp=Z,900nm,16.2s
GTA LR LR
comp=Z,2μm,16.2s
MEEK Meekatharra 36.08 185 P **P 16 50 00.1 -0.3**
baz=36,SNR=8.1
CTA Charters Tower 37.73 141 P **P 16 50 14.3 -0.2**
comp=Z,4.4nm,0.9s,baz=327,slow=8.3,SNR=3.7
RAMN Ramite 37.85 302 *e*P **P 16 50 15.8 0.0**
comp=Z,28nm,0.8s
ASAJ Asahikawa 38.76 24 *e*P **P 16 50 22.2 -0.7**
comp=Z,84nm,1.8s
GUN Gumba 38.79 303 *e*P **P 16 50 23.7 -0.1**
MORW Morawa 38.80 189 P **P 16 50 23.7 +0.4**
baz=39,SNR=4.4
PKIN Phulchoki 39.08 302 *e*P **P 16 50 25.2 -0.9**
comp=Z,16nm,0.7s
KKN Kakani 39.25 303 *e*P **P 16 50 27.1 -0.4**
comp=Z,34nm,0.8s
DMN Daman 39.33 302 *e*P **P 16 50 28.0 -0.2**
GKN Gorkha 39.85 303 *e*P **P 16 50 31.9 -0.6**
KLR Kul'dur 40.40 10*c* *i*P **P 16 50 35.5 -1.0**
FORT Forrest 40.43 172 P **P 16 50 36.5 -0.4**
baz=41,SNR=32
FORT Forrest 40.43 172 *e*P **P 16 50 36.6 -0.3**
comp=Z,518nm,0.8s
SONM Songino Array 40.49 344 P **P 16 50 36.7 -0.7**
comp=Z,10nm,1.0s,baz=167,slow=8.1,SNR=48
SONM PcP **PcP 16 52 41.6 +2.2**
comp=Z,1.3nm,0.9s,baz=173,slow=3.4,SNR=2.7
SONM ScP **ScP 16 56 26.6 +1.3**
comp=Z,0.2nm,0.4s,baz=159,slow=3.2,SNR=3.3
SONM LR LR 17 09 27.7
comp=Z,521nm,19.0s,baz=156,slow=39
SONA1 Songino Array 40.50 344 *e*P **P 16 50 36.4 -1.2**
KMBL Kambalda 40.63 180 P **P 16 50 38.5 -0.1**
baz=41,SNR=7.1
KOLN Koldanda 40.64 302 *e*P **P 16 50 38.8 -0.3**
comp=Z,32nm,0.7s
KLBR Kellerberrin 41.07 186 P **P 16 50 42.0 -0.2**
baz=41,SNR=10
YSS Yuzh-Sakhalins 41.22 21 *e*P P 16 50 49.5 +6.3
YSS *e* 16 51 01.4
YSS *e**SP sP 16 51 10.1 +9.2
YSS *e* 16 52 27.3
YSS *e*S **S 16 57 00.9 +7.2**
YSS pmax pmax
comp=Z,10.0nm,1.0s
YSS MLR MLR
comp=Z,300nm,18.0s
YSS MLR MLR
comp=N,200nm,15.0s
YSS MLR MLR
comp=E,200nm,13.0s
PYUN Piuthan 41.26 302 *e*P **P 16 50 44.2 +0.1**
comp=E,118nm,1.1s
QLP Quilpie 41.74 150 P **P 16 50 47.0 -0.8**
baz=42,SNR=6.3
NWAO Narrogin (SRO) 42.45 186 P **P 16 50 53.6 +0.2**
comp=E,19nm,0.6s,baz=234,slow=7.4,SNR=15
NWAO Narrogin (SRO) 42.45 186 P **P 16 50 53.9 +0.5**
baz=43,SNR=10
NWAO P **P 16 50 53.9 +0.5**
baz=43,SNR=10
NWAO Narrogin (SRO) 42.45 186 *e*P **P 16 50 53.1 -0.4**
NWAO pmax pmax
comp=Z,32nm,1.1s
NWAO Narrogin (SRO) 42.45 186 *e*P **P 16 50 53.1 -0.4**
comp=Z,32nm,1.1s
HYB Hyderabad 43.12 285 *i*P **P 16 50 59.5 +0.3**
ZAK Zakamensk 43.68 342 *e*P **P 16 51 01.0 -2.4**
ZAK pmax pmax
comp=Z,5.0nm,1.3s
RMQ Roma 44.08 145 P **P 16 51 06.3 -0.5**
baz=44
BBOO Buckleboo 44.09 163 P **P 16 51 06.7 +0.1**
baz=44,SNR=8.0
BBOO Buckleboo 44.09 163 *e*P **P 16 51 06.5 -0.1**
comp=Z,48nm,1.0s
RKGY Roxy Gully 44.14 186 P **P 16 51 08.1 +1.0**
baz=44,SNR=7.3
TYV Tymovskoe 44.55 18 *e*P P 16 51 15.2 +5.0
TYV pmax pmax
comp=Z,32nm,1.2s
TYV MLR MLR
comp=N,2μm,18.0s
EIDS Eidsvold 44.61 142 P **P 16 51 10.2 -0.8**
baz=45,SNR=3.2
EIDS Eidsvold 44.61 142 *e*P **P 16 51 10.0 -1.1**
comp=N,34nm,1.3s
TLY Talaya 44.73 344 P **P 16 51 11.8 +0.1**
comp=N,2.2nm,0.5s,baz=178,slow=22,SNR=7.4
TLY Talaya 44.73 344 *e*P **P 16 51 11.5 -0.2**
TLY pmax pmax
comp=Z,20nm,1.5s

TLY MLR MLR
comp=Z,224nm,15.0s
TLY Talaya 44.73 344 *e*P **P 16 51 11.0 -0.7**
comp=Z,15nm,1.1s
IRK Irkutsk 45.07 344 *e*P **P 16 51 12.3 -2.0**
IRK pmax pmax
comp=Z,29nm,1.6s
STKA Stephens Creek 45.12 157 P **P 16 51 14.8 -0.1**
comp=Z,12nm,0.7s,baz=330,slow=7.3,SNR=31
STKA LR LR 17 10 57.1
comp=Z,207nm,21.3s,baz=13,slow=37
STKA Stephens Creek 45.12 157 P **P 16 51 15.1 +0.2**
baz=45,SNR=15
STKA Stephens Creek 45.12 157 *e*P **P 16 51 14.8 -0.1**
comp=Z,3.3nm,0.8s
WMQ Urumqi 45.47 325 P **P 16 51 18.6 +0.9**
WMQ pP pP 16 51 29.6 -0.6
WMQ sP sP 16 51 34.2 -1.3
WMQ S **S 16 57 59.6 +3.3**
WMQ sS sS 16 58 17.0 -0.1
WMQ ScS **ScS 17 01 04.2 -6.3**
WMQ pmax pmax
comp=Z,25nm,1.3s
WMQ pmax pmax
comp=Z,260nm,3.8s
WMQ LR LR
comp=Z,970nm,14.0s
WMQ LR LR
comp=Z,560nm,14.8s
WMQ LR LR
comp=Z,830nm,17.0s
HTT Hallett 45.55 160 P **P 16 51 19.0 +0.6**
baz=46,SNR=7.1
NKL Nikolayevsk 46.02 15 *e*P P 16 51 15.0 -6.7
CMSA Cobar Meteorol 46.58 152 P **P 16 51 27.0 +0.6**
baz=47,SNR=6.0
BOD Bodaibo 48.63 354 *e*P **P 16 51 41.1 -0.9**
BOD pmax pmax
comp=Z,12nm,1.4s
ARMA Armidale 48.71 146 P **P 16 51 43.3 +0.2**
baz=49,SNR=8.2
ARMA Armidale 48.71 146 *e*P **P 16 51 42.8 -0.3**
comp=Z,27nm,1.0s
PDGK Podgornoye 50.16 320 P **P 16 51 53.6 -0.3**
PDGK pmax pmax
comp=Z,80nm,1.2s
MK01 Makanchi Array 50.28 325 *e*P **P 16 51 54.5 -0.3**
MK31 Makanchi Array 50.30 325 *e*P **P 16 51 55.1 +0.1**
MK31 Makanchi Array 50.30 325 *e*P **P 16 51 55.1 +0.1**
MKAR Makanchi Array 50.30 325 P **P 16 51 55.6 +0.6**
comp=Z,15nm,1.0s,baz=123,slow=8.8,SNR=72
MKAR LR LR 17 14 24.4
comp=Z,615nm,18.1s,baz=128,slow=37
MKAR Makanchi Array 50.30 325 *e*P **P 16 51 55.0 0.0**
MAKZ Makanchi 50.49 325 *e*P **P 16 51 56.7 +0.3**
MAKZ pmax pmax
comp=Z,40nm,1.3s
MAKZ Makanchi 50.49 325 *e*P **P 16 51 56.7 +0.3**
comp=Z,40nm,1.3s
KSH Kashi 50.84 314 P **P 16 52 01.6 +2.3**
KSH *e*pP sP 16 52 14.4 -2.9
KSH PcS **PcS 16 57 12.7 -0.5**
KSH S **S 16 59 13.8 +1.3**
KSH ScS **ScS 17 01 45.1 -1.5**
KSH SS **SS 17 02 46.9 -0.7**
KSH pmax pmax
comp=Z,28nm,1.2s
KSH pmax pmax
comp=Z,220nm,3.5s
KSH LR LR
comp=Z,520nm,9.5s
KSH LR LR
comp=Z,800nm,13.7s
KSH LR LR
comp=Z,590nm,14.6s
PETK Petropavlovsk- 52.04 26 P **P 16 52 08.4 +0.5**
comp=Z,1.9nm,0.8s,baz=188,slow=3.2,SNR=6.2
PETK LR LR 17 14 39.3
comp=Z,96nm,20.8s,baz=218,slow=36
PET Petropavlovsk 52.41 27 *e*P P 16 52 24.1 +14
PET *e*S **S 16 59 36.9 +3.7**
TKM2 Tokmak 2 52.50 318 *e*P **P 16 52 11.7 -0.1**
TKM2 pmax pmax
comp=Z,52nm,1.5s
TKM2 Tokmak 2 52.50 318 *e*P **P 16 52 11.7 -0.1**
comp=Z,52nm,1.5s
YAK Yakutsk 52.73 4 P **P 16 52 11.8 -1.0**
comp=Z,5.3nm,0.5s,baz=230,slow=1.4,SNR=8.1
YAK Yakutsk 52.73 4 *i*P **P 16 52 11.4 -1.4**
YAK pmax pmax
comp=Z,28nm,1.7s
YAK Yakutsk 52.73 4 *e*P **P 16 52 11.3 -1.4**
comp=Z,16nm,0.9s
FRU Bishkek 53.12 317⇓ *e*P **P 16 52 16.0 -0.1**
FRU pmax pmax
comp=Z,90nm,2.4s
AAK Ala-Archa 53.12 317 P **P 16 52 17.4 +1.1**
comp=Z,6.5nm,0.8s,baz=106,slow=5.7,SNR=22
AAK Ala-Archa 53.12 317 P **P 16 52 16.4 +0.1**
AAK pmax pmax
comp=Z,29nm,1.2s
AAK Ala-Archa 53.12 317 *e*P **P 16 52 16.6 +0.4**
comp=Z,27nm,1.2s
ZAA0 Zalesovo Array 53.47 333 *e*P **P 16 52 17.2 -1.2**
ZALV Zalesovo Beam 53.47 333 P **P 16 52 17.5 -0.9**
comp=Z,2.8nm,0.5s,baz=133,slow=6.2,SNR=17
ZALV LR LR 17 15 35.0
comp=Z,208nm,18.3s,baz=70,slow=36
DZM Mont Dzumac 53.51 126 *e*LR LR 17 07 52.7
comp=Z,443nm,29.9s
EKS2 Erkin-Say 53.61 317 *e*P **P 16 52 19.9 0.0**
EKS2 pmax pmax
comp=Z,27nm,1.1s
EKS2 Erkin-Say 53.61 317 *e*P **P 16 52 19.9 0.0**
comp=Z,27nm,1.1s
MA2 Magadan 54.40 17 *i*P **P 16 52 24.3 -0.8**
MNAS Manas 54.41 316 P **P 16 52 26.0 +0.3**
MNAS pmax pmax
comp=Z,39nm,1.4s
KURBB Kurchatov Arra 54.51 327 P **P 16 52 26.1 +0.1**
comp=Z,7.7nm,0.7s,baz=135,slow=6.7,SNR=44
KURK Kurchatov 54.51 327 P **P 16 52 26.1 0.0**
KURK Kurchatov 54.51 327 P **P 16 52 26.1 0.0**
KBL Kabul 54.52 306 *e*P **P 16 52 26.1 -0.6**
KBL pmax pmax
comp=Z,16nm,0.8s
KBL Kabul 54.52 306 *e*P **P 16 52 26.1 -0.6**
comp=Z,16nm,0.8s
NVS Novosibirsk 54.75 334 *e*P **P 16 52 26.9 -0.8**
KK31 Karatay Array 56.00 316 P **P 16 52 36.5 -0.5**
KK31 pmax pmax
comp=Z,28nm,1.2s
KKAR Karatay Array 56.00 316 *e*P **P 16 52 36.8 -0.2**
KKAR Karatay Array 56.00 316 *e*P **P 16 52 36.8 -0.2**
OTUK Ortayu 56.86 322 P **P 16 52 42.3 -0.7**
OTUK pmax pmax
comp=Z,46nm,1.6s
SEY Seymchan 57.59 16 P **P 16 52 47.6 -0.3**
comp=Z,2.7nm,0.8s,baz=208,slow=7.7,SNR=7.8
SEY Seymchan 57.59 16 *i*P **P 16 52 48.0 +0.1**
VOSK Vostochnaya 59.63 327 P **P 16 53 01.3 -1.0**
VOSK pmax pmax
comp=Z,8.0nm,1.1s
BVA0 Borovoye Array 60.08 327 *i*P **P 16 53 04.4 -1.0**
BVA0 pmax pmax
comp=Z,22nm,1.4s
BVAR Borovoye Array 60.08 327 P **P 16 53 05.0 -0.4**
comp=Z,6.4nm,1.0s,baz=121,slow=7.1,SNR=26
BVAR Borovoye Array 60.08 327 P **P 16 53 05.0 -0.4**
BRVK Borovoye 60.16 327 P **P 16 53 04.6 -1.3**
BRVK pmax pmax
comp=Z,29nm,1.4s
BRVK Borovoye 60.16 327 *e*P **P 16 53 05.4 -0.5**
comp=Z,22nm,1.1s
ZRNK Zerenda 60.80 326 *e*P **P 16 53 09.6 -0.7**
ZRNK pmax pmax
comp=Z,36nm,1.5s
ZRNK Zerenda 60.80 326 *e*P **P 16 53 09.6 -0.7**
comp=Z,36nm,1.5s
TIXI Tiksi 62.24 2 P **P 16 53 18.3 -1.3**
comp=Z,8.7nm,0.9s,baz=160,slow=5.8,SNR=19
TIXI Tiksi 62.24 2*c* *i*P **P 16 53 17.9 -1.7**
TIXI pmax pmax
comp=Z,16nm,1.0s
TIXI Tiksi 62.24 2 *e*P **P 16 53 18.1 -1.5**
comp=Z,32nm,1.4s

NRIK	**Noril'sk**	**63.83 347**	P	**P**	**16 53 30.0**	**-0.2**
	comp=Z,10nm,0.9s,baz=135,slow=6.4,SNR=12					
NRIK			LR	LR	17 23 31.6	
	comp=Z,261nm,18.4s,baz=144,slow=38					
NRIK	**Noril'sk**	**63.83 347**	P	**P**	**16 53 30.0**	**-0.2**
NRIK			pmax	pmax		
	comp=Z,10.0nm,0.9s					
NRIK			MLR	MLR		
	comp=Z,261nm,18.4s					
GEYT	**Alibeck**	**63.84 308**	P	**P**	**16 53 32.0**	**+1.0**
	comp=Z,7.9nm,1.0s,baz=127,slow=0.7,SNR=22					
GEYT			LR	LR	17 25 47.8	
	comp=Z,177nm,19.3s,baz=5.0,slow=40					
HATD	**Hatta, Dubai**	**64.43 293**	P	**P**	**16 53 35.4**	**+0.4**
AB31	**Akbulak array**	**64.89 320**	P	**P**	**16 53 35.7**	**-1.8**
AB31			pmax	pmax		
	comp=Z,19nm,1.2s					
SVE	**Sverdlovsk**	**66.74 328**⇑	*i* P	**P**	**16 53 49.2**	**-0.1**
SVE			pmax	pmax		
	comp=Z,45nm,1.9s					
ARU	**Arti**	**67.71 327**	P	**P**	**16 53 54.6**	**-0.9**
	comp=Z,2.4nm,0.4s,baz=101,slow=4.4,SNR=11					
ARU	**Arti**	**67.71 327***c i*	P	**P**	**16 53 54.1**	**-1.3**
ARU					16 54 23.3	
ARU					16 56 23.3	
ARU			S	**S**	**17 02 50.9**	**+1.3**
ARU					17 03 47.0	
ARU			SS	**SS**	**17 07 04.2**	**-7.0**
ARU			pmax	pmax		
	comp=Z,28nm,1.7s					
ARU			MLR	MLR		
	comp=Z,293nm,18.0s					
ARU	**Arti**	**67.71 327**	*eP*	**P**	**16 53 53.5**	**-1.9**
	comp=Z,46nm,1.7s					
RPZ	**Rata Peaks**	**69.02 144**	LR	LR	17 26 49.5	
	comp=Z,247nm,18.2s,baz=314,slow=38					
AFI	**Afiamalu**	**69.48 109**	LR	LR	17 19 23.4	
	comp=Z,79nm,20.6s,baz=230,slow=31					
LKRN	**Lenkeran, Azer**	**71.22 308**	P	**P**	**16 54 16.4**	**-1.1**
LKRN			S	**S**	**17 03 30.8**	**-0.8**
SEKA	**Sheki**	**72.56 310**	P	**P**	**16 54 24.4**	**-1.2**
SEKA			S	**S**	**17 03 46.0**	**-1.0**
MNGR	**Mingechevir, A**	**72.62 310**	P	**P**	**16 54 24.8**	**-1.0**
MNGR			S	**S**	**17 03 46.8**	**-0.8**
GANJ	**Ganja**	**73.20 310**	P	**P**	**16 54 28.1**	**-1.2**
GANJ			S	**S**	**17 03 53.3**	**-1.0**
NAX	**Nakhchivan**	**73.80 308**	P	**P**	**16 54 31.7**	**-1.2**
NAX			S	**SKiKP**	**17 04 00.1**	**+1.4**
GNI	**Garni**	**74.39 309**	P	**P**	**16 54 38.3**	**+1.8**
	comp=Z,13nm,0.9s,baz=148,slow=3.7,SNR=12					
GNI	**Garni**	**74.39 309**	*i* P	**P**	**16 54 38.1**	**+1.6**
	SNR=11					
GNI	**Garni**	**74.39 309***c i*	P	**P**	**16 54 37.5**	**+0.9**
GNI			pmax	pmax		
	comp=Z,255nm,1.7s					
GNI	**Garni**	**74.39 309**	*eP*	**P**	**16 54 37.4**	**+0.9**
	comp=Z,119nm,1.4s					
TBLG	**Delisi**	**74.42 311**	P	**P**	**16 54 37.4**	**+0.9**
TBLG	**Delisi**	**74.42 311**	*eP*	**P**	**16 54 37.3**	**+0.9**
GUDG	**Gudauri**	**74.63 311**	P	**P**	**16 54 39.2**	**+1.3**
ZEI	**Tsey**	**75.06 312**	*eP*	**P**	**16 54 39.2**	**-1.2**
ZEI			pmax	pmax		
	comp=Z,123nm,1.3s					
NCK	**Nalchik**	**75.29 312**	*i* P	**P**	**16 54 41.7**	**+0.2**
NCK			pmax	pmax		
	comp=Z,15nm,1.0s					
AKH	**Akhalkalaki**	**75.35 310**	P	**P**	**16 54 42.8**	**+0.7**
AKH	**Akhalkalaki**	**75.35 310**	*eP*	**P**	**16 54 42.7**	**+0.7**
ONI	**Oni**	**75.39 312**	P	**P**	**16 54 41.6**	**-0.5**
ONI	**Oni**	**75.39 312**	*eP*	**P**	**16 54 41.6**	**-0.5**
KBZ	**Khabaz**	**75.80 313**	P	**P**	**16 54 44.4**	**+0.1**
	comp=Z,8.5nm,1.0s,baz=66,slow=4.4,SNR=14					
KBZ			LR	LR	17 32 19.6	
	comp=Z,162nm,18.0s,baz=76,slow=39					
NEY	**Neytrino**	**75.93 312**	*eP*	**P**	**16 54 46.3**	**+1.0**
NEY			pmax	pmax		
	comp=Z,6.0nm,1.4s					
KVAR	**Kislovodsk Arr**	**75.95 313**	P	**P**	**16 54 46.1**	**+0.7**
	comp=Z,24nm,1.0s,baz=265,slow=10.0,SNR=11					
KIV	**Kislovodsk**	**75.96 313**	*i* P	**P**	**16 54 45.5**	**+0.2**
	SNR=7.4					
KIV	**Kislovodsk**	**75.96 313**	*eP*	**P**	**16 54 45.9**	**+0.6**
KIV			*e*S	**S**	**17 04 27.2**	**+2.1**
KIV			pmax	pmax		
	comp=Z,28nm,1.0s					
KIV			MLR	MLR		
	comp=Z,211nm,18.0s					
KIV	**Kislovodsk**	**75.96 313**	*eP*	**P**	**16 54 46.0**	**+0.7**
	comp=Z,37nm,1.1s					
VRH	**Novokhopyorsk**	**76.72 320**	*eP*	**P**	**16 54 49.0**	**-0.3**
VRH			pmax	pmax		
	comp=Z,90nm,1.2s					
SOC	**Sochi**	**78.11 313***c i*	P	**P**	**16 54 56.1**	**-1.2**
SOC			*e*		16 57 52.4	
SOC			*e*PPP	PPP	16 59 41.2	
SOC			*e*S	**S**	**17 04 48.7**	**+0.3**
SOC			pmax	pmax		
	comp=Z,31nm,1.0s					
SOC			MLR	MLR		
	comp=Z,136nm,13.0s					
KLMR	**Klimovskoe**	**78.22 330**	*eP*	**P**	**16 54 55.8**	**-1.7**
KLMR			*e*		16 57 51.3	
KLMR			pmax	pmax		
	comp=Z,38nm,1.3s					
VSR	**Storozhevoye**	**78.33 320**	*eP*	**P**	**16 54 57.4**	**-0.9**
VSR			pmax	pmax		
	comp=Z,50nm,1.1s					
KSRV	**Kasrt alli**	**79.04 305**	*eP*	**P**	**16 54 59.9**	**-2.8**
MOS	**Moscow**	**79.19 325**	*eP*	**P**	**16 55 01.4**	**-1.6**
MOS			*e*		16 58 03.5	
MOS			pmax	pmax		
	comp=Z,58nm,1.0s					
MOS			pmax	pmax		
	comp=Z,100nm,1.3s					
OBN	**Obninsk**	**79.81 324**	P	**P**	**16 55 05.4**	**-0.9**
	comp=Z,13nm,0.3s,baz=349,slow=23,SNR=9.5					
OBN	**Obninsk**	**79.81 324**⇑	*i* P	**P**	**16 55 05.3**	**-1.0**
OBN			*e*		16 55 14.1	
OBN			*e*		16 58 11.2	
OBN			*e*PPP	PPP	16 59 58.3	
OBN			*e*S	**S**	**17 05 13.5**	**+7.6**
OBN			pmax	pmax		
	comp=Z,83nm,1.7s					
OBN			MLR	MLR		
	comp=Z,240nm,19.0s					
LVZ	**Lovozero**	**80.36 337**	*eP*	**P**	**16 55 05.7**	**-3.5**
LVZ			pmax	pmax		
	comp=Z,12nm,0.8s					
LVZ	**Lovozero**	**80.36 337**	*eP*	**P**	**16 55 05.7**	**-3.5**
	comp=Z,12nm,0.8s					
COLD	**Coldfoot**	**80.38 23**	*eP*	**P**	**16 55 08.7**	**-0.5**
	comp=Z,4.7nm,0.9s					
ROOS	**tl_alroos**	**80.58 303**	*eP*	**P**	**16 55 11.3**	**+0.2**
ZALF	**Zalf**	**80.65 302**	*eP*	**P**	**16 55 12.5**	**+1.0**
PMR	**Palmer**	**81.08 29**	*eP*	**P**	**16 55 11.8**	**-1.2**
PMR			pmax	pmax		
	comp=Z,5.0nm,0.9s					
PMR	**Palmer**	**81.08 29**	*eP*	**P**	**16 55 11.8**	**-1.2**
	comp=Z,5.4nm,0.9s					
ASF	**Jabal al Asfar**	**81.09 301**	P	**P**	**16 55 15.3**	**+1.4**
	comp=Z,8.1nm,0.9s,baz=59,slow=1.0,SNR=16					
SALA	**Sala**	**81.17 302**	*eP*	**P**	**16 55 14.2**	**-0.3**
TOTH	**TOTAH**	**81.37 302**	*eP*	**P**	**16 55 16.1**	**+0.9**
SML	**Sawmill**	**81.44 29**	*eP*	**P**	**16 55 13.6**	**-1.5**
SML			pmax	pmax		
	comp=Z,2.0nm,1.1s					
SML	**Sawmill**	**81.44 29**	*eP*	**P**	**16 55 13.6**	**-1.5**
	comp=Z,2.5nm,1.1s					
COLA	**College**	**81.45 26**	*eP*	**P**	**16 55 11.3**	**-3.6**
COLA			pmax	pmax		
	comp=Z,12nm,0.3s					
COLA	**College**	**81.45 26**	*eP*	**P**	**16 55 11.3**	**-3.6**
	comp=Z,12nm,0.3s					
TCHB	**Talchebab**	**81.82 302**	*eP*	**P**	**16 55 17.8**	**+0.2**
ILAR	**Eielson Array**	**81.86 26**	P	**P**	**16 55 17.8**	**+0.6**
	comp=Z,0.6nm,0.8s,baz=235,slow=3.2,SNR=3.9					
ILAR			LR	LR	17 35 57.2	
	comp=Z,50nm,18.3s,baz=282,slow=39					
JOF	**Joensuu**	**82.04 332**	P	**P**	**16 55 18.4**	**+0.3**
JOF			pmax	pmax		
	comp=Z,16nm,2.5s					
SIM	**Simferopol'**	**82.04 314***c i*	P	**P**	**16 55 18.3**	**-0.2**
SIM			*i*		16 55 27.0	
SIM			pmax	pmax		
	comp=Z,17nm,0.9s					
MMAI	**Mount Meron Ar**	**82.26 302**	P	**P**	**16 55 20.6**	**+0.7**
	comp=Z,3.8nm,0.8s,baz=89,slow=4.5,SNR=6.6					
BR131	**Keskin Array S**	**82.93 309**	*eP*	**P**	**16 55 22.6**	**-0.9**
BRTR	**Keskin Array B**	**82.93 309**	P	**P**	**16 55 23.1**	**-0.3**
	comp=Z,4.6nm,0.9s,baz=110,slow=5.5,SNR=24					
BRTR			LR	LR	17 38 03.4	
	comp=Z,62nm,19.6s,baz=84,slow=40					
EIL	**Elat**	**83.02 299**	P	**P**	**16 55 24.9**	**+1.0**
	comp=Z,13nm,1.1s,baz=71,slow=4.6,SNR=12					
BMRM	**Bremner River**	**83.31 29**	*eP*	**P**	**16 55 22.6**	**-2.2**
	comp=Z,17nm,1.6s					
SGF	**Sodankyl**	**83.49 337**	P	**P**	**16 55 28.4**	**+2.8**
SGF			pmax	pmax		
	comp=Z,66nm,1.5s					
ARA0	**ARCESS Array S**	**83.53 339**	*eP*	**P**	**16 55 23.3**	**-2.4**
ARCES	**ARCESS Array B**	**83.53 339**	P	**P**	**16 55 25.4**	**-0.3**
	comp=Z,12nm,1.0s,baz=65,slow=8.6,SNR=12					
ARCES			LR	LR	17 36 03.2	
	comp=Z,99nm,19.8s,baz=96,slow=38					
ARE0	**ARCESS Array S**	**83.53 339**	*eP*	**P**	**16 55 24.3**	**-1.4**
	comp=Z,19nm,1.0s					
ANTO	**Ankara**	**83.56 309**	*eP*	**P**	**16 55 26.3**	**-0.3**
ANTO			pmax	pmax		
	comp=Z,157nm,1.4s					
ANTO	**Ankara**	**83.56 309**	*eP*	**P**	**16 55 26.3**	**-0.3**
	comp=Z,157nm,1.4s					
BR231	**Keskin MP Arra**	**83.58 309**	*eP*	**P**	**16 55 23.4**	**-3.4**
CSS	**Mathiatis**	**83.74 304**	*eP*	**P**	**16 55 26.8**	**-0.8**
	comp=Z,11nm,1.3s					
SPITS	**Spitsbergen Ar**	**83.99 348**	P	**P**	**16 55 27.3**	**-0.7**
	comp=Z,16nm,0.8s,baz=104,slow=10,SNR=4.7					
OUL	**Oulu**	**84.13 335**	P	**P**	**16 55 28.8**	**0.0**
OUL			pmax	pmax		
	comp=Z,38nm,1.5s					
EGAK	**Eagle**	**84.30 25**	*eP*	**P**	**16 55 29.4**	**-0.3**
	comp=Z,3.9nm,0.9s					
AKASG	**Malin Array Be**	**84.63 320**	P	**P**	**16 55 30.9**	**-0.8**
	comp=Z,11nm,0.9s,baz=68,slow=4.9,SNR=50					
AKASG			LR	LR	17 36 18.9	
	comp=Z,172nm,18.9s,baz=70,slow=38					
KIEV	**Kiev**	**84.64 320**	*eP*	**P**	**16 55 30.3**	**-1.5**
KIEV			pmax	pmax		
	comp=Z,25nm,1.1s					
KIEV	**Kiev**	**84.64 320**	*eP*	**P**	**16 55 30.2**	**-1.5**
	comp=Z,25nm,1.1s					
AK11	**Malin Array Si**	**84.67 320**	*eP*	**P**	**16 55 30.9**	**-1.0**
VSU	**Vasula**	**84.85 328***c i*	P	**P**	**16 55 32.3**	**-0.3**
VSU			pmax	pmax		
	comp=Z,104nm,1.0s					
MICGM	**Minsk**	**84.87 324**	*e*	**P**	**16 55 32.0**	**-0.8**
MNK	**Minsk**	**84.87 324**	*eP*	**P**	**16 55 32.0**	**-0.8**
DAWY	**Dawson**	**85.19 26**	*eP*	**P**	**16 55 34.4**	**+0.1**
	comp=Z,5.8nm,1.0s					
KMBO	**Kilima Mbogo**	**85.23 268**	P	**P**	**16 55 36.3**	**+0.5**
	comp=Z,7.0nm,1.0s,baz=32,slow=6.7,SNR=9.6					
KMBO	**Kilima Mbogo**	**85.23 268**	*eP*	**P**	**16 55 35.6**	**-0.2**
KMBO			pmax	pmax		
	comp=Z,48nm,1.8s					
KMBO	**Kilima Mbogo**	**85.23 268**	*eP*	**P**	**16 55 35.6**	**-0.2**
	comp=Z,48nm,1.8s					
NACGM	**Naroch**	**85.43 325**	*e*	**P**	**16 55 35.0**	**-0.6**
NACGM			*e*LR	LR	17 33 26.0	
KIS	**Kishinev**	**85.45 317**	*eP*	**P**	**16 55 33.0**	**-2.9**
KIS			LRM	MLR	17 37 12.0	
	comp=Z,300nm,20.0s					
KIS	**Kishinev**	**85.45 317**	*eP*	**P**	**16 55 33.0**	**-2.9**
KIS			*e*		16 55 42.0	
KIS			MLR	MLR		
	comp=Z,300nm,19.0s					
KIS			MLR	MLR		
	comp=Z,300nm,20.0s					
MILM	**Milestii Mici**	**85.47 317**⇓	*iP*	**P**	**16 55 36.2**	**+0.2**
SORM	**Soroca**	**85.59 318**⇓	*iP*	**P**	**16 55 35.6**	**-0.9**
SORM	**Soroca**	**85.59 318**⇓	P	**P**	**16 55 35.6**	**-0.9**
TLCR		**85.74 315**⇑	*iP*	**P**	**16 55 33.8**	**-3.5**
TLCR		**85.74 315**⇑	P	**P**	**16 55 33.8**	**-3.5**
TIRR	**Tirgusor**	**86.14 314**⇑	*iP*	**P**	**16 55 39.0**	**-0.3**
TIRR	**Tirgusor**	**86.14 314**	*eP*	**P**	**16 55 38.5**	**-0.8**
TIRR			pmax	pmax		
	comp=Z,15nm,1.1s					
TIRR	**Tirgusor**	**86.14 314**	*eP*	**P**	**16 55 38.5**	**-0.8**
	comp=Z,15nm,1.1s					
CFR	**Carcaliu**	**86.22 315**⇓	*iP*	**P**	**16 55 39.7**	**0.0**
CFR	**Carcaliu**	**86.22 315**	⇓P	**P**	**16 55 39.7**	**0.0**
INK	**Inuvik**	**86.46 21**	P	**P**	**16 55 40.8**	**+0.4**
	comp=Z,3.5nm,1.0s,baz=283,slow=6.3,SNR=7.3					
INK	**Inuvik**	**86.46 21**	*eP*	**P**	**16 55 39.9**	**-0.5**
INK			pmax	pmax		
	comp=Z,9.0nm,1.0s					
INK	**Inuvik**	**86.46 21**	*eP*	**P**	**16 55 39.9**	**-0.5**
	comp=Z,8.8nm,1.0s					
TESR	**Tescani**	**87.01 317**⇓	*iP*	**P**	**16 55 43.1**	**-0.5**
PLOR	**Plostina**	**87.13 316**⇑	*iP*	**P**	**16 55 44.4**	**+0.2**
PLOR	**Plostina**	**87.13 316**	⇑P	**P**	**16 55 44.4**	**+0.2**
MAW	**Mawson**	**87.63 199**	*eP*	**P**	**16 55 46.1**	**+0.1**
MAW			pmax	pmax		
	comp=Z,4.0nm,1.6s					
MAW	**Mawson**	**87.63 199**	*eP*	**P**	**16 55 46.1**	**+0.1**
	comp=Z,4.1nm,1.6s					
SUW	**Suwalki**	**87.67 324**	*eP*	**P**	**16 55 46.1**	**-0.5**
SUW	**Suwalki**	**87.67 324**	*eP*	**P**	**16 55 46.1**	**-0.5**
MLR	**Muntele Rosu**	**87.68 316**	P	**P**	**16 55 46.6**	**-0.3**
	comp=Z,1.3nm,0.8s,baz=126,slow=1.1,SNR=10					
MLR	**Muntele Rosu**	**87.68 316**⇑	*iP*	**P**	**16 55 46.7**	**-0.3**
MLR	**Muntele Rosu**	**87.68 316**	*eP*	**P**	**16 55 46.3**	**-0.7**
MLR			pmax	pmax		
	comp=Z,27nm,1.3s					
MLR	**Muntele Rosu**	**87.68 316**	*eP*	**P**	**16 55 46.3**	**-0.7**
	comp=Z,27nm,1.3s					
BURAR	**Bucovina Array**	**87.76 318**⇑	*iP*	**P**	**16 55 47.6**	**+0.3**
BURAR	**Bucovina Array**	**87.76 318**	⇑P	**P**	**16 55 47.6**	**+0.3**
BUR08	**Bucovina Ar. S**	**87.76 318**	*eP*	**P**	**16 55 46.7**	**-0.6**
DOPR	**Dopca**	**87.97 316**⇑	*iP*	**P**	**16 55 45.6**	**-2.6**
LVV	**L'vov**	**88.07 320**	*eP*	P	16 55 56.2	+7.6
VOIR		**88.31 316**⇓	*iP*	**P**	**16 55 46.9**	**-3.0**
VOIR		**88.31 316**	⇓P	**P**	**16 55 46.9**	**-3.0**
ARR	**Arges**	**88.61 316**⇑	*iP*	**P**	**16 55 51.5**	**+0.2**
KWP	**Kalwaria Pacla**	**88.95 320**	*eP*	**P**	**16 55 51.8**	**-1.0**
KWP	**Kalwaria Pacla**	**88.95 320**	*eP*	**P**	**16 55 51.8**	**-1.0**
LOT	**Lotru**	**89.19 316**⇓	*iP*	P	16 55 44.4	-10
DRGR		**89.60 317**⇓	*iP*	**P**	**16 55 55.9**	**-0.1**
DRGR		**89.60 317**	⇓P	**P**	**16 55 55.9**	**-0.1**
VNDA	**Vanda**	**89.69 172**	P	**P**	**16 55 54.2**	**-1.4**
	comp=Z,3.4nm,0.7s,baz=322,slow=6.4,SNR=31					
VNDA			LR	LR	17 36 11.4	
	comp=Z,105nm,21.0s,baz=346,slow=36					
VNDA	**Vanda**	**89.69 172**	*eP*	**P**	**16 55 54.9**	**-0.6**
VNDA			pmax	pmax		
	comp=Z,36nm,1.9s					
VNDA	**Vanda**	**89.69 172**	*eP*	**P**	**16 55 54.9**	**-0.6**
	comp=Z,36nm,1.9s					
CRVS	**Cervenica-Dubn**	**89.92 320**	*eP*	**P**	**16 55 57.7**	**+0.4**
CRVS	**Cervenica-Dubn**	**89.92 320**	*eP*	**P**	**16 55 57.7**	**+0.4**
STHS	**Stebnicka Huta**	**89.92 320**	*eP*	**P**	**16 55 58.3**	**+0.9**
STHS			pmax	pmax		
	comp=Z,7.0nm,0.8s					
STHS	**Stebnicka Huta**	**89.92 320**	*eP*	**P**	**16 55 58.3**	**+0.9**
NIE	**Niedzica**	**90.52 320**	*eP*	**P**	**16 56 00.1**	**-0.1**
NIE	**Niedzica**	**90.52 320**	*eP*	**P**	**16 56 00.1**	**-0.1**
OJC	**Ojcow**	**90.62 321**	*eP*	**P**	**16 56 00.4**	**-0.2**
OJC	**Ojcow**	**90.62 321**	*eP*	**P**	**16 56 00.4**	**-0.2**
SBA	**Scott Base**	**90.64 171**	*eP*	**P**	**16 56 00.5**	**+0.5**
SBA			pmax	pmax		
	comp=Z,16nm,1.7s					
SBA	**Scott Base**	**90.64 171**	*eP*	**P**	**16 56 00.5**	**+0.5**
	comp=Z,16nm,1.7s					
KECS	**Kecovo**	**90.65 319**	*eP*	**P**	**16 56 00.2**	**-0.5**
KECS			pmax	pmax		
	comp=Z,4.0nm,1.3s					
KECS	**Kecovo**	**90.65 319**	*eP*	**P**	**16 56 00.2**	**-0.5**
KECS			*e*PP	**PP**	**16 59 31.2**	**-4.8**
HFS	**Hagfors**	**90.87 332**	P	**P**	**16 55 59.8**	**-1.7**
	comp=Z,4.2nm,0.9s,baz=102,slow=6.2,SNR=6.6					
PPT2	**Papeete2**	**91.12 108**	*e*LR	LR	17 25 21.9	
	comp=Z,210nm,23.2s					
NB2	**NORSAR Subarra**	**91.67 333**	P	**P**	**16 56 03.7**	**-1.5**
	comp=Z,19nm,1.7s,baz=67,slow=4.8					
NB2	**NORSAR Subarra**	**91.67 333**	P	**P**	**16 56 03.7**	**-1.5**
	baz=67,slow=4.8					
NOA	**NORSAR Array B**	**91.67 333**	LR	LR	17 40 15.1	
	comp=Z,130nm,19.2s,baz=60,slow=38					
VYHS	**Vyhne**	**91.70 320**	*eP*	**P**	**16 56 01.3**	**-4.3**
VYHS			pmax	pmax		
	comp=Z,5.0nm,1.8s					
VYHS	**Vyhne**	**91.70 320**	*eP*	**P**	**16 56 01.3**	**-4.3**
OKC	**Ostrava-Krasne**	**91.75 321**	AMS	AMS	17 40 20.0	
	comp=Z,200nm,18.8s					
MORC	**Moravsky Berou**	**92.14 321**	*eP*	**P**	**16 56 04.9**	**-2.8**
MORC			pmax	pmax		
	comp=Z,28nm,1.3s					
MORC	**Moravsky Berou**	**92.14 321**	*eP*	**P**	**16 56 04.9**	**-2.8**
	comp=Z,28nm,1.3s					
TBI	**Tubuai**	**92.17 113**	*e*LR	LR	17 25 49.5	
	comp=Z,183nm,24.5s					
KSP	**Ksiaz**	**92.58 322**	*eP*	**P**	**16 56 10.2**	**+0.6**
KSP	**Ksiaz**	**92.58 322**	*eP*	**P**	**16 56 10.2**	**+0.6**
DPC	**Dobruska-Polom**	**92.72 322**	*eP*	**P**	**16 56 10.6**	**+0.3**
DPC			*e*pP	**PcP**	**16 56 13.7**	**+2.7**
DPC			*ex*	x	16 56 37.4	
DPC			AMS	AMS	17 39 20.0	
	comp=Z,200nm,16.2s					
DPC	**Dobruska-Polom**	**92.72 322**	*eP*	**P**	**16 56 10.6**	**+0.3**
DPC			MLR	MLR		
	comp=Z,200nm,16.2s					
UPC	**Upice**	**92.86 322**	*eP*	**P**	**16 56 11.2**	**+0.3**
UPC			AMS	AMS	17 39 40.0	
	comp=Z,300nm,19.6s					
UPC	**Upice**	**92.86 322**	*eP*	**P**	**16 56 11.2**	**+0.3**
UPC			MLR	MLR		
	comp=Z,300nm,19.6s					
VRAC	**Vranov**	**92.88 321**	P	**P**	**16 56 10.8**	**-0.3**
	comp=Z,2.7nm,0.8s,baz=66,slow=4.5,SNR=6.6					
PDG	**Podgorica**	**93.09 314**⇓	*iP*	**P**	**16 56 11.1**	**-1.0**
JMIC	**Jan Mayen**	**93.22 346**	P	**P**	**16 56 12.1**	**0.0**
	comp=Z,70nm,0.9s,baz=173,slow=14,SNR=3.8					
PVCC	**Panska Ves**	**93.72 322**	AMS	AMS	17 40 00.0	
	comp=Z,200nm,15.1s					
GOPC	**GO Pecny, Ondr**	**93.79 322**	AMS	AMS	17 40 20.0	
	comp=Z,300nm,20.3s					
PRU	**Pruhonice**	**93.92 322**	*eP*	**P**	**16 56 15.8**	**0.0**
PRU			AMS	AMS	17 40 20.0	
	comp=Z,300nm,16.3s					
PRU	**Pruhonice**	**93.92 322**	*eP*	**P**	**16 56 15.8**	**0.0**
PRU			MLR	MLR		
	comp=Z,300nm,16.3s					
BRG	**Berggiesshubel**	**93.98 323**	*eP*	**P**	**16 56 16.2**	**+0.2**
	comp=Z,13nm,1.1s					
BRG			*e*		16 56 24.2	
	comp=Z,13nm,1.1s					
	comp=N,143nm,15.6s					
	comp=E,169nm,21.3s					
	comp=Z,132nm,18.6s					
BRG	**Berggiesshubel**	**93.98 323**	*eP*	**P**	**16 56 16.2**	**+0.2**
BRG			*e*		16 56 24.2	
BRG			pmax	pmax		
	comp=Z,13nm,1.1s					
BRG			pmax	pmax		
	comp=Z,13nm,1.1s					
BRG			MLR	MLR		
	comp=N,143nm,15.6s					
BRG			MLR	MLR		
	comp=E,169nm,21.3s					
BRG			MLR	MLR		
	comp=Z,132nm,18.6s					
CLL	**Collm**	**94.38 324**⇓	*iP*	**P**	**16 56 17.6**	**-0.3**
	comp=Z,14nm,1.4s					
CLL			⇑*i*		16 56 25.9	
	comp=Z,10.0nm,1.2s					
CLL			*e*PP	**PP**	**17 00 08.0**	**+2.8**
	comp=Z,20nm,1.9s					
CLL			*e*PPP	PPP	17 02 18.0	
CLL			*e*SKSac	**SKSac**	**17 06 48.0**	**-1.5**
CLL			*e*		17 08 12.0	
CLL			*e*PS	**PS**	**17 08 47.0**	**-0.2**
CLL			*e*SS	**SS**	**17 13 48.0**	**-0.3**
CLL			*e*SSS	SSS	17 17 30.0	
CLL			*e*		17 20 48.0	
CLL			Lm	MLR	17 43 00.0	
	comp=Z,200nm,19.9s					
CLL	**Collm**	**94.38 324**⇓	*iP*	**P**	**16 56 17.6**	**-0.3**
CLL			*i*		16 56 25.9	
CLL			pmax	pmax		
	comp=Z,14nm,1.4s					
CLL			MLR	MLR		
	comp=Z,200nm,19.9s					
KHC	**Kasperske Hory**	**94.80 321**	*eP*	**P**	**16 56 19.8**	**-0.1**
KHC			AMS	AMS	17 41 00.0	
	comp=Z,200nm,15.0s					
KHC	**Kasperske Hory**	**94.80 321**	*eP*	**P**	**16 56 19.8**	**-0.1**
KHC			MLR	MLR		
	comp=Z,200nm,15.0s					
GEC2	**GERESS Array S**	**94.82 321**	*eP*	**P**	**16 56 18.2**	**-1.9**
GEC2			pmax	pmax		
	comp=Z,8.0nm,1.3s					
GEC2	**GERESS Array S**	**94.82 321**	*eP*	**P**	**16 56 18.2**	**-1.9**
	comp=Z,8.0nm,1.3s					
GERES	**GERESS Array B**	**94.82 321**	P	**P**	**16 56 19.8**	**-0.3**
	comp=Z,0.8nm,0.7s,baz=67,slow=4.5,SNR=9.5					
GERES			LR	LR	17 40 23.8	
	comp=Z,107nm,21.3s,baz=90,slow=36					
GEA0	**GERESS Array S**	**94.83 321**	*eP*	**P**	**16 56 18.7**	**-1.4**
NKC	**Novy Kostel**	**95.10 323**	AMS	AMS	17 42 40.0	
	comp=Z,200nm,16.4s					
YKA	**Yellowknife Ar**	**96.05 23**	P	**P**	**16 56 26.0**	**+0.8**
	comp=Z,1.1nm,0.9s,baz=302,slow=4.6,SNR=9.0					
YKA			LR	LR	17 43 04.0	
	comp=Z,6.1nm,18.8s,baz=0.0,slow=38					
YKB5	**Yellowknife Ar**	**96.05 23**	*eP*	**P**	**16 56 23.9**	**-1.3**
FUORN	**Ofenpass-Fuorn**	**97.80 320**	*eP*	**P**	**16 56 33.0**	**-0.9**
	comp=Z,8.8nm,1.3s					
DAVOX	**Davos/Dischmat**	**97.98 320**	P	**P**	**16 56 34.5**	**-0.1**
	comp=Z,1.1nm,0.5s,baz=108,slow=9.6,SNR=3.7					
TAOE	**Nuku Hiva Isla**	**98.88 98**	*e*LR	LR	17 28 57.2	
	comp=Z,173nm,26.1s					
RKT	**Rikitea**	**105.38 111**	*e*LR	LR	17 31 57.7	
	comp=Z,193nm,29.5s					
TOA0	**Torodi Ar. Sit**	**116.82 290**	*e*

0.5nm,0.8s,baz=123,slow=3.3,SNR=4.2

MAN 10 16:54:04,9˚50N×122˚07E,h36km,mb4.5,ML3.4,MS3.3, 2D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.17**	**98**	⇓*iP*	Pn	16 54 20.8	-3.0
LLP	**Lapu-Lapu**	**2.04**	**66**	*eP*	Pn	16 54 36.8	+1.0
LLP				*eS*	Sn	16 55 01.6	+1.6
RCP	**Roxas**	**2.15**	**18**	⇓*eP*	Pn	16 54 40.1	+2.7

MAN 10 16:58:27,9˚50N×122˚11E,h11km,mb4.5,ML3.3,MS3.2, 1C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.12**	**98**	⇑*iP*	Pb	16 58 44.9	-3.6
SNPH				*i* S	Sb	16 59 00.3	-2.8
LLP	**Lapu-Lapu**	**2.00**	**66**	⇓*eP*	Pn	16 59 00.9	+0.2
LLP				*eS*	Sn	16 59 26.6	+0.7
RCP	**Roxas**	**2.14**	**17**	⇓*eP*	Pn	16 59 04.0	+1.3

IDC 10 17:05:11.8±2.5,23˚16S×66˚73W,h218km±26km,mb3.5/1, mb1 3.6/4,mb1mx3.2/32,mbtmp4.2/4,Error ellipse: s-maj=33.5km s-min=21.7km az=115.0,Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**6.96**	**349**	P	Pn	17 06 51.7	-0.6
	2.9nm,0.3s,baz=177,slow=7.9,SNR=70						
PLCA	**Paso Flores**	**17.82**	**190**	P	P	17 09 04.4	0.0
	0.3nm,0.3s,baz=35,slow=11,SNR=8.7						
BDFB	**Brasilia**	**19.16**	**70**	P	P	17 09 20.1	+1.0
	baz=270,slow=11						
TORD	**Torodi Ar. Bea**	**76.03**	**69**	P	P	17 16 34.2	-1.3
	0.6nm,0.4s,baz=254,slow=5.7,SNR=15						
MKAR	**Makanchi Array**	**145.72**	**39**	PKPbc	PKPab	17 24 25.5	-0.2
	0.7nm,0.5s,baz=305,slow=3.4,SNR=9.2						

*NEIC **10** 17:08:57.9,35˚99S×177˚76E,h184km,MG4.4(WEL), After WEL.*

WEL 10 17:08:58.2±0.4,36˚15S×177˚85E,h201km±3km,ML4.4/30, 11C-5D,Error ellipse: s-maj=5.0km s-min=4.4km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**1.46**	**166**	Pn	Pn	17 09 31.6	-0.1
MXZ				Sn	S	17 09 57.8	+0.3
MXZ	**Matakaoa Point**	**1.46**	**166**	PN	Pn	17 09 31.6	-0.1
MXZ				SN	S	17 09 57.8	+0.3
MXZ				AML	AML	17 10 03.2	
MXZ				AML	AML	17 10 03.2	
HAZ	**Te Kaha**	**1.61**	**182**	⇑PN	Pn	17 09 33.1	+0.2
HAZ				AML	AML	17 10 02.6	
HAZ				AML	AML	17 10 02.6	
HAZ				AML	AML	17 10 02.8	
HAZ				AML	AML	17 10 02.9	
WMGZ	**Waiomatatini S**	**1.73**	**165**	Pn	Pn	17 09 34.4	+0.2
WMGZ	**Waiomatatini S**	**1.73**	**165**	PN	Pn	17 09 34.3	+0.2
WMGZ				AML	AML	17 10 06.2	
WMGZ				AML	AML	17 10 06.5	
PKGZ	**Pakihiroa**	**1.75**	**174**	⇑PN	Pn	17 09 34.4	+0.1
RUGZ	**Raukumara Rang**	**1.82**	**184**	PN	Pn	17 09 34.8	-0.3
PUZ	**Puketitti**	**1.95**	**171**	Pn	Pn	17 09 36.1	-0.2
PUZ	**Puketitti**	**1.95**	**171**	⇑PN	Pn	17 09 36.1	-0.2
PUZ				*e*SN	S	17 10 05.6	0.0
PUZ				AML	AML	17 10 18.9	
OPRZ	**Ohinepanea**	**1.99**	**211**	Pn	Pn	17 09 38.8	+2.2
OPRZ	**Ohinepanea**	**1.99**	**211**	PN	Pn	17 09 38.8	+2.2
TWGZ	**Tauwhareparae**	**2.03**	**177**	Pn	Pn	17 09 37.9	+0.8
TWGZ	**Tauwhareparae**	**2.03**	**177**	⇑PN	Pn	17 09 37.9	+0.8
TWGZ				AML	AML	17 10 10.8	
TWGZ				AML	AML	17 10 13.2	
URZ	**Urewera**	**2.19**	**195**	Pn	Pn	17 09 39.0	+0.3
URZ	**Urewera**	**2.19**	**195**	⇓PN	Pn	17 09 39.0	+0.3
URZ				SN	S	17 10 10.4	+0.4
MWZ	**Matawai**	**2.20**	**187**	Pn	Pn	17 09 39.1	+0.2
MWZ	**Matawai**	**2.20**	**187**	⇑PN	Pn	17 09 39.1	+0.2
MWZ				*e*SN	S	17 10 10.6	+0.3
TKGZ	**Te Karaka**	**2.29**	**180**	Pn	Pn	17 09 40.0	+0.2
TKGZ	**Te Karaka**	**2.29**	**180**	⇑PN	Pn	17 09 40.0	+0.2
TKGZ				AML	AML	17 10 14.0	
TKGZ				AML	AML	17 10 14.6	
CNGZ	**Carnagh Statio**	**2.35**	**173**	Pn	Pn	17 09 40.8	+0.3
CNGZ	**Carnagh Statio**	**2.35**	**173**	PN	Pn	17 09 40.8	+0.3
CNGZ				AML	AML	17 10 18.8	
CNGZ				AML	AML	17 10 19.2	
RAGZ	**Rawiri**	**2.37**	**188**	Pn	Pn	17 09 41.5	+0.7
RAGZ	**Rawiri**	**2.37**	**188**	PN	Pn	17 09 41.5	+0.7
RRRZ	**Republican Roa**	**2.44**	**206**	Pn	Pn	17 09 42.9	+1.4
RRRZ	**Republican Roa**	**2.44**	**206**	⇓PN	Pn	17 09 42.8	+1.4
MUGZ	**Murupara**	**2.48**	**200**	⇑PN	Pn	17 09 42.2	+0.5
RIGZ	**Rimuhau**	**2.56**	**182**	⇑PN	Pn	17 09 42.8	0.0
RIGZ				AML	AML	17 10 23.8	
RIGZ				AML	AML	17 10 23.9	
PRRZ	**Plateau Road**	**2.62**	**206**	Pn	Pn	17 09 44.6	+1.1
PRRZ	**Plateau Road**	**2.62**	**206**	PN	Pn	17 09 44.6	+1.1
SNGZ	**Shannon Statio**	**2.66**	**189**	Pn	Pn	17 09 44.1	+0.1
SNGZ	**Shannon Statio**	**2.66**	**189**	PN	Pn	17 09 44.1	+0.1
SNGZ				AML	AML	17 10 25.4	
SNGZ				AML	AML	17 10 32.6	
ALRZ	**Allen Road**	**2.69**	**206**	Pn	Pn	17 09 45.4	+1.0
ALRZ	**Allen Road**	**2.69**	**206**	PN	Pn	17 09 45.4	+1.0
MRHZ	**Matea Rd**	**2.92**	**203**	Pn	Pn	17 09 46.8	-0.1
MRHZ				AML	AML	17 09 50.4	
MRHZ				AML	AML	17 09 51.4	
WHHZ	**Waihua**	**2.97**	**189**	⇑PN	Pn	17 09 47.5	+0.1
WHHZ				AML	AML	17 10 30.9	
WHHZ				AML	AML	17 10 31.1	
MHGZ	**Mahia Peninsul**	**3.00**	**179**	Pn	Pn	17 09 47.5	-0.4
MHGZ	**Mahia Peninsul**	**3.00**	**179**	PN	Pn	17 09 47.5	-0.4
MHGZ				AML	AML	17 10 34.5	
MHGZ				AML	AML	17 10 39.4	
NMHZ	**Naumai**	**3.06**	**195**	Pn	Pn	17 09 49.1	+0.5
NMHZ	**Naumai**	**3.06**	**195**	PN	Pn	17 09 49.1	+0.5
NMHZ				AML	AML	17 09 50.7	
NMHZ				AML	AML	17 10 31.5	
ARHZ	**Aropaoanui**	**3.18**	**192**	Pn	Pn	17 09 50.0	-0.1
ARHZ	**Aropaoanui**	**3.18**	**192**	⇑PN	Pn	17 09 50.0	-0.1
ARHZ				AML	AML	17 10 34.7	
ARHZ				AML	AML	17 10 37.2	
BKZ	**Black Stump Fm**	**3.20**	**199**	PN	Pn	17 09 49.5	-0.8
MCHZ	**McNeill Hill**	**3.42**	**195**	Pn	Pn	17 09 52.8	0.0
MCHZ	**McNeill Hill**	**3.42**	**195**	PN	Pn	17 09 52.8	0.0
MCHZ				AML	AML	17 10 39.8	
MCHZ				AML	AML	17 10 47.3	
KWHZ	**Kaweka Forest**	**3.46**	**199**	Pn	Pn	17 09 52.3	-1.2
KWHZ				AML	AML	17 10 41.5	
KWHZ				AML	AML	17 10 54.0	
CKHZ	**Cape Kidnapper**	**3.56**	**190**	Pn	Pn	17 09 53.9	-0.7
CKHZ	**Cape Kidnapper**	**3.56**	**190**	PN	Pn	17 09 53.9	-0.7
CKHZ				AML	AML	17 10 41.8	
CKHZ				AML	AML	17 10 42.5	
FWVZ	**Far West T-bar**	**3.60**	**210**	Pn	Pn	17 09 55.5	+0.2
FWVZ	**Far West T-bar**	**3.60**	**210**	PN	Pn	17 09 55.5	+0.2
BHHZ	**Black Hill Sta**	**3.62**	**202**	Pn	Pn	17 09 54.7	-0.7
BHHZ	**Black Hill Sta**	**3.62**	**202**	⇓PN	Pn	17 09 54.7	-0.7
BHHZ				AML	AML	17 10 42.1	
BHHZ				AML	AML	17 10 43.2	
WNVZ	**Wahianoa**	**3.64**	**209**	Pn	Pn	17 09 55.7	-0.1
WNVZ	**Wahianoa**	**3.64**	**209**	PN	Pn	17 09 55.7	-0.1
MOVZ	**Moawhango**	**3.66**	**206**	Pn	Pn	17 09 55.1	-0.8
MOVZ	**Moawhango**	**3.66**	**206**	PN	Pn	17 09 55.1	-0.8
KRHZ	**Kereru**	**3.68**	**198**	⇓PN	Pn	17 09 55.1	-1.0
KRHZ				AML	AML	17 10 43.3	
KRHZ				AML	AML	17 10 45.7	
KAHZ	**Kahuranaki**	**3.72**	**192**	Pn	Pn	17 09 56.0	-0.6
KAHZ	**Kahuranaki**	**3.72**	**192**	⇓PN	Pn	17 09 56.0	-0.6
KAHZ				AML	AML	17 10 47.9	
KAHZ				AML	AML	17 10 48.3	
MTVZ	**Mangateitei**	**3.74**	**210**	Pn	Pn	17 09 56.2	-0.7
PNHZ	**Pukenui**	**3.98**	**199**	Pn	Pn	17 09 58.4	-1.4
PNHZ	**Pukenui**	**3.98**	**199**	PN	Pn	17 09 58.4	-1.4
PNHZ				AML	AML	17 10 51.3	
PNHZ				AML	AML	17 10 52.0	
WPHZ	**Waipukurau**	**4.07**	**195**	Pn	Pn	17 09 59.5	-1.3
WPHZ	**Waipukurau**	**4.07**	**195**	PN	Pn	17 09 59.5	-1.3
WPHZ				AML	AML	17 10 52.1	
WPHZ				AML	AML	17 10 57.5	
TSZ	**Takapari Road**	**4.18**	**200**	PN	Pn	17 10 00.7	-1.6
PRHZ	**Porangahau**	**4.22**	**193**	Pn	Pn	17 10 01.3	-1.5
PRHZ	**Porangahau**	**4.22**	**193**	PN	Pn	17 10 01.3	-1.5
PRHZ				AML	AML	17 10 55.0	
PRHZ				AML	AML	17 10 55.7	
WAZ	**Wanganui**	**4.25**	**211**	*e*PN	Pn	17 10 02.7	-0.4
DVHZ	**Dannevirke**	**4.35**	**197**	Pn	Pn	17 10 02.7	-1.7
DVHZ	**Dannevirke**	**4.35**	**197**	PN	Pn	17 10 02.7	-1.7
ANWZ	**Angora Road**	**4.44**	**194**	PN	Pn	17 10 04.1	-1.4
ANWZ				AML	AML	17 11 00.8	
ANWZ				AML	AML	17 11 02.3	
POWZ	**Post Office Ro**	**4.54**	**201**	Pn	Pn	17 10 05.3	-1.5
PRWZ	**Pori Road**	**4.64**	**198**	Pn	Pn	17 10 06.5	-1.6
PRWZ	**Pori Road**	**4.64**	**198**	PN	Pn	17 10 06.5	-1.6
MRZ	**Mangatainoka R**	**4.85**	**201**	PN	Pn	17 10 08.1	-2.5
MRZ				AML	AML	17 11 06.2	
MRZ				AML	AML	17 11 06.6	
TIWZ	**Tintock**	**4.87**	**198**	Pn	Pn	17 10 09.0	-2.0
TIWZ	**Tintock**	**4.87**	**198**	PN	Pn	17 10 09.0	-2.0
TIWZ				AML	AML	17 10 09.9	
CPWZ	**Castlepoint**	**4.93**	**195**	Pn	Pn	17 10 10.3	-1.4
CPWZ	**Castlepoint**	**4.93**	**195**	PN	Pn	17 10 10.3	-1.4
OGWZ	**Otaki Gorge**	**5.12**	**203**	Pn	Pn	17 10 11.8	-2.3
OGWZ	**Otaki Gorge**	**5.12**	**203**	PN	Pn	17 10 11.8	-2.3
OGWZ				AML	AML	17 10 12.4	
OGWZ				AML	AML	17 10 12.7	
TMWZ	**Te Maipa**	**5.18**	**197**	Pn	Pn	17 10 12.4	-2.5
TMWZ	**Te Maipa**	**5.18**	**197**	PN	Pn	17 10 12.4	-2.5
TMWZ				AML	AML	17 10 13.1	
TMWZ				AML	AML	17 10 14.4	
KIW	**Kapiti Island**	**5.24**	**205**	Pn	Pn	17 10 13.2	-2.5
KIW	**Kapiti Island**	**5.24**	**205**	PN	Pn	17 10 13.2	-2.5
MTW	**Mount Morrison**	**5.33**	**199**	Pn	Pn	17 10 11.5	-5.3
TRWZ	**Traveller**	**5.51**	**197**	Pn	Pn	17 10 16.4	-2.7
TRWZ	**Traveller**	**5.51**	**197**	PN	Pn	17 10 16.4	-2.7
MSWZ	**Moikau Station**	**5.64**	**200**	Pn	Pn	17 10 17.7	-3.1
MSWZ	**Moikau Station**	**5.64**	**200**	PN	Pn	17 10 17.7	-3.1
WEL	**Wellington**	**5.67**	**204**	Pn	Pn	17 10 18.3	-2.8
WEL	**Wellington**	**5.67**	**204**	⇑PN	Pn	17 10 18.3	-2.8
WEL				AML	AML	17 10 22.3	
TCW	**Tory Channel**	**5.78**	**208**	Pn	Pn	17 10 19.2	-3.4
TCW	**Tory Channel**	**5.78**	**208**	PN	Pn	17 10 19.2	-3.4
TCW				AML	AML	17 11 27.0	
TCW				AML	AML	17 11 28.1	
PLWZ	**Palliser**	**5.78**	**200**	Pn	Pn	17 10 19.4	-3.2
PLWZ	**Palliser**	**5.78**	**200**	PN	Pn	17 10 19.4	-3.2
TUWZ	**Tuamarina**	**6.09**	**209**	Pn	Pn	17 10 23.3	-3.3
TUWZ	**Tuamarina**	**6.09**	**209**	PN	Pn	17 10 23.3	-3.3
BSWZ	**Blackbirch Sta**	**6.37**	**208**	Pn	Pn	17 10 26.4	-3.7
BSWZ	**Blackbirch Sta**	**6.37**	**208**	PN	Pn	17 10 26.4	-3.7
THZ	**Tophouse**	**6.80**	**213**	Pn	Pn	17 10 32.8	-3.1
KHZ	**Kahutara**	**7.10**	**207**	Pn	Pn	17 10 35.9	-3.7
KHZ	**Kahutara**	**7.10**	**207**	PN	Pn	17 10 35.9	-3.7
LTZ	**Lake Taylor**	**7.91**	**211**	Pn	Pn	17 10 46.1	-4.1
CRLZ	**Canterbury Las**	**8.44**	**207**	Pn	Pn	17 10 52.2	-4.8
CRLZ	**Canterbury Las**	**8.44**	**207**	PN	Pn	17 10 52.2	-4.8
OXZ	**Oxford**	**8.45**	**210**	Pn	Pn	17 10 52.3	-4.9
OXZ	**Oxford**	**8.45**	**210**	PN	Pn	17 10 52.3	-4.9
MQZ	**McQueen's Vall**	**8.54**	**206**	Pn	Pn	17 10 53.1	-5.2
MQZ	**McQueen's Vall**	**8.54**	**206**	PN	Pn	17 10 53.1	-5.2

*ISCJB **10** 17:20:54.4±0.7,29˚91S±0˚04×176˚19W±0˚09,h10km, mb4.4/11,Error ellipse: s-maj=11.1km s-min=5.6km az=12.6*

*NEIC **10** 17:20:55.8±0.6,29˚88S×176˚10W,h10km,mb4.7/1,Error ellipse: s-maj=16.1km s-min=11.6km az=113.0*

*IDC **10** 17:20:55.1±1.0,29˚57S×176˚15W,h0km,mb4.4/9, mb1 4.6/9,mb1mx4.4/27,mbtmp4.4/9,Error ellipse: s-maj=38.7km s-min=21.7km az=166.0*

ISC 10 17:20:56.5±0.7,29˚79S±0˚07×176˚24W±0˚08,h10km,n34, σ1s80/35,mb4.4/11,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.56**	**290**	Pn	**Pg**	**17 21 26.0**	**-0.4**
	232nm,0.3s,baz=115,slow=7.0,SNR=12						
RAO				Sn	**Sn**	**17 21 43.3**	**-1.2**
	720nm,0.3s,baz=106,slow=21,SNR=11						
PKGZ	**Pakihiroa**	**9.36**	**209**	*e*PN	**Pn**	**17 23 10.7**	**-0.8**
PKGZ				*e*SN	**Sn**	**17 24 57.1**	**+0.4**
HAZ	**Te Kaha**	**9.37**	**210**	*e*PN	**Pn**	**17 23 11.0**	**-0.5**
HAZ				*e*SN	**Sn**	**17 24 59.5**	**+2.6**
TWGZ	**Tauwhareparae**	**9.64**	**208**	*e*SN	**Sn**	**17 25 04.8**	**+1.1**
URZ	**Urewera**	**10.09**	**211**	Pn	**Pn**	**17 23 19.5**	**-1.9**
	0.7nm,0.3s,baz=284,slow=6.6,SNR=8.7						
URZ				Sn	**Sn**	**17 25 15.3**	**+0.8**
	7.4nm,0.3s,baz=221,slow=22,SNR=22						
URZ	**Urewera**	**10.09**	**211**	*e*PN	Pn	17 23 17.7	-3.7
URZ				*e*SN	**Sn**	**17 25 13.7**	**-0.8**
KAHZ	**Kahuranaki**	**11.47**	**208**	SN	**Sn**	**17 25 47.5**	**-1.0**
PXZ	**Pawanui**	**11.67**	**207**	SN	**Sn**	**17 25 48.9**	**-4.6**
PXZ				*e*SN		17 25 49.5	
TSZ	**Takapari Road**	**12.07**	**210**	*e*SN	**Sn**	**17 25 60.0**	**-3.3**
KHZ	**Kahutara**	**15.05**	**210**	*e*Pn	**Pn**	**17 24 28.4**	**-0.7**
MQZ	**McQueen's Vall**	**16.47**	**210**	*e*SN	Sn	17 27 37.0	-13
RPZ	**Rata Peaks**	**17.20**	**213**	P	**Pn**	**17 24 56.3**	**-0.5**
	0.9nm,0.3s,baz=13,slow=19,SNR=3.7						
RPZ				S	Sn	17 27 55.6	-13
	0.7nm,0.3s,baz=358,slow=14,SNR=3.3						
DZM	**Mont Dzumac**	**17.36**	**292**	*e*P	**P**	**17 25 03.6**	**+3.2**
	53nm,1.3s						
DZM				*e*LR	LR	17 29 14.0	
	758nm,26.4s						
TBI	**Tubuai**	**24.76**	**81**	*e*LR	LR	17 32 09.8	
	342nm,29.2s						
PPT2	**Papeete2**	**27.20**	**69**	*e*LR	LR	17 33 17.8	
	176nm,26.5s						
STKA	**Stephens Creek**	**36.10**	**256**	P	**P**	**17 28 00.9**	**+2.3**
	6.3nm,0.6s,baz=100,slow=10,SNR=20						
ASAR	**Alice Springs**	**44.67**	**266**	P	**P**	**17 29 09.4**	**-0.3**
	1.9nm,0.7s,baz=106,slow=8.0,SNR=40						
WRAB	**Tennant Creek**	**45.60**	**271**	*e*P	**P**	**17 29 17.0**	**-0.1**
	6.6nm,0.7s						
WRA	**Warramunga Arr**	**45.61**	**271**	P	**P**	**17 29 17.1**	**-0.1**
	5.8nm,0.6s,baz=109,slow=7.8,SNR=47						
VNDA	**Vanda**	**48.86**	**186**	P	**P**	**17 29 46.3**	**+4.6**
	1.2nm,1.0s,baz=343,slow=9.8,SNR=4.4						
MJAR	**Matsushiro Arr**	**78.63**	**324**	P	**P**	**17 32 57.5**	**-1.1**
	1.6nm,0.7s,baz=159,slow=5.4,SNR=9.7						
SNAA	**Sanae**	**78.71**	**178**	*e*P	**P**	**17 32 55.8**	**-2.9**
JNU	**Nakatsue**	**80.13**	**317**	P	**P**	**17 33 07.5**	**+0.6**
	5.3nm,0.8s,baz=249,slow=5.5,SNR=6.9						
PSI	**Prapat**	**86.90**	**275**	P	**P**	**17 33 42.2**	**0.0**
	3.4nm,0.5s,baz=153,slow=6.8,SNR=3.6						
USRK	**Usuriysk Ar.**	**87.51**	**326**	P	**P**	**17 33 44.3**	**0.0**
	1.5nm,0.7s,baz=78,slow=11,SNR=4.1						
TXAR	**Lajitas Array**	**90.78**	**56**	P	**P**	**17 34 00.2**	**+0.1**
	1.3nm,1.1s,baz=208,slow=5.1,SNR=6.2						
ILAR	**Eielson Array**	**97.00**	**12**	P	**P**	**17 34 26.6**	**-1.1**
	0.6nm,0.8s,baz=216,slow=6.1,SNR=7.4						
MKAR	**Makanchi Array**	**118.55**	**310**	PKP	**PKPdf**	**17 39 42.6**	**-1.7**
	0.2nm,0.2s,baz=88,slow=2.8,SNR=4.2						
KBZ	**Khabaz**	**146.03**	**305**	PKPbc	**PKPab**	**17 40 36.7**	**-0.3**
	1.6nm,0.7s,baz=314,slow=17,SNR=3.7						
NB2	**NORSAR Subarra**	**148.36**	**353**	PKP	**PKPbc**	**17 40 41.6**	**-0.9**
	comp=Z,22nm,1.7s,baz=7.9,slow=2.7						
NOA	**NORSAR Array B**	**148.36**	**353**	PKPbc	**PKPbc**	**17 40 41.9**	**-0.6**
	comp=Z,2.9nm,0.8s,baz=13,slow=4.3,SNR=6.1						
AKASG	**Malin Array Be**	**151.72**	**325**	PKPbc	**PKPbc**	**17 40 50.4**	**-0.5**
	comp=Z,3.5nm,0.7s,baz=46,slow=3.0,SNR=11						
BRTR	**Keskin Array B**	**153.63**	**300**	PKPbc	**PKPbc**	**17 40 55.7**	**0.0**
	comp=Z,0.6nm,0.8s,baz=110,slow=1.8,SNR=3.6						
TORD	**Torodi Ar. Bea**	**163.33**	**173**	PKPab	**PKPab**	**17 41 52.0**	**+1.6**
	comp=Z,1.5nm,0.9s,baz=185,slow=3.2,SNR=4.9						

*ISCJB **10** 17:21:36.0±0.4,23˚45N±0˚02×121˚84E±0˚02,h15km±4km, Error ellipse: s-maj=3.7km s-min=2.3km az=137.1*

*JMA **10** 17:21:36.2±0.1,23˚46N×121˚77E,h34km,M3.1*

*TAP **10** 17:21:37.7,23˚49N×121˚72E,h29km,ML3.9,B*

ISC 10 17:21:36.7±1.1,23˚45N±0˚02×121˚77E±0˚03,h25km±11km, n68,σ0s80/110,21C-3D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TEGC	**Jichi Village**	**0.34**	**320**	*e*P	**Pn**	**17 21 45.4**	**-0.6**
	baz=334						
EHY	**Hungye**	**0.42**	**278**	⇑*iP*	**Pb**	**17 21 45.9**	**+0.4**
	baz=272						
EHY				S	**Sb**	**17 21 52.0**	**+0.4**
	baz=272						
TWF1	**Yuli**	**0.45**	**257**	⇑*iP*	**Pb**	**17 21 46.5**	**+0.5**
	baz=243						
TWF1				*i* S	**Sn**	**17 21 53.7**	**-1.2**
	baz=243						
ESL	**Shilin**	**0.48**	**319**	⇓P	**Pb**	**17 21 46.2**	**-0.3**
	baz=326						
ESL				S	**Sb**	**17 21 52.2**	**-1.0**
	baz=326						
ESF	**Shoufeng Towns**	**0.48**	**330**	*e*P	**Pn**	**17 21 47.2**	**-0.8**
	baz=340						
CHKT	**Chengkung**	**0.51**	**227**	⇓P	**Pb**	**17 21 47.1**	**0.0**
	baz=208						
CHKT				*e*S	**Sb**	**17 21 53.8**	**-0.4**
	baz=208						
HWA	**Hwalien**	**0.55**	**344**	*e*P	**Pb**	**17 21 47.8**	**+0.1**
	baz=356						
TWD	**Chiawan**	**0.65**	**345**	P	**Pb**	**17 21 49.0**	**-0.3**
	baz=2.0						
TWD				*e*S	**Sb**	**17 21 57.5**	**-0.5**
	baz=2.0						
ELDTW	**Lidau**	**0.74**	**250**	⇑*iP*	**Pb**	**17 21 50.6**	**-0.4**
	baz=244						
ELDTW				*i* S	**Sb**	**17 21 59.7**	**-1.2**
	baz=244						
YUS	**Yu-Shan**	**0.76**	**273**	⇑*iP*	**Pb**	**17 21 51.6**	**+0.2**
	baz=270						
YUS				*i* S	**Sb**	**17 22 01.1**	**-0.5**
	baz=270						
WHF	**Hehuan Shan**	**0.83**	**326**	⇑P	**Pb**	**17 21 51.9**	**-0.9**
	baz=328						
ALS	**Alishan**	**0.89**	**274**	⇑*iP*	**Pb**	**17 21 54.0**	**+0.3**
	baz=271						
ALS				S	**Sb**	**17 22 04.8**	**-0.5**
	baz=271						
TWG	**Pinlang**	**0.90**	**226**	*e*P	**Pn**	**17 21 52.8**	**-1.0**
	baz=232						
TWG				*e*S	**Sb**	**17 22 04.0**	**-1.3**
	baz=232						
TTN	**Taitung**	**0.90**	**220**	*e*P	**Pn**	**17 21 53.6**	**-0.2**
	baz=203						
TYC	**Yuchr**	**0.95**	**298**	⇑*iP*	**Pn**	**17 21 54.2**	**-0.3**
	baz=298						
TYC				*e*S	**Sn**	**17 22 06.7**	**-0.6**
	baz=298						
TWT	**Tachien**	**0.97**	**326**	*e*P	**Pn**	**17 21 54.5**	**-0.4**
	baz=327						
TWT				*e*S	**Sb**	**17 22 06.3**	**-1.1**
	baz=327						
STYT	**Tauyuan**	**0.98**	**253**	⇑*iP*	**Pn**	**17 21 54.9**	**-0.1**
	baz=240						
STYT				S	**Sb**	**17 22 07.4**	**-0.1**
	baz=240						
CHN5	**Tsauling**	**1.02**	**278**	⇑*iP*	**Pb**	**17 21 56.2**	**+0.5**
	baz=276						
CHN5				*e*S	**Sb**	**17 22 10.1**	**+1.4**
	baz=276						
NNS	**Nan Shan**	**1.05**	**340**	*e*P	**Pn**	**17 21 55.6**	**-0.4**
	baz=343						
NNS				*e*S	**Sn**	**17 22 07.9**	**-2.1**
	baz=343						
WNT	**Mingjian**	**1.09**	**293**	⇑*iP*	**Pb**	**17 21 57.2**	**+0.4**
	baz=291						
WTP	**Ta-pu**	**1.09**	**259**	⇑*iP*	**Pb**	**17 21 57.0**	**+0.2**
	baz=256						
WTP				*e*S	**Sb**	**17 22 11.1**	**+0.4**
	baz=256						
CHN4	**Tsaushan**	**1.09**	**265**	⇑*iP*	**Pb**	**17 21 57.3**	**+0.4**
	baz=256						
CHN4				S	**Sb**	**17 22 12.2**	**+1.5**
	baz=256						
ECL	**Taimali**	**1.14**	**222**	*e*P	**Pn**	**17 21 55.9**	**-1.2**
	baz=226						
WGK	**Gukeng**	**1.14**	**282**	⇑*iP*	**Pb**	**17 21 58.0**	**+0.3**
	baz=281						
WGK				*e*S	**Sb**	**17 22 13.2**	**+1.2**
	baz=281						
SGST	**Jiashian**	**1.16**	**252**	*e*P	**Pb**	**17 21 58.0**	**+0.1**
	baz=240						
SGST				*e*S	**Sb**	**17 22 13.9**	**+1.3**
	baz=240						
TWC	**Suao**	**1.16**	**3**	*e*P	**Pn**	**17 21 57.1**	**-0.2**
	baz=8.0						
CHN1	**Nanshi**	**1.18**	**257**	⇑P	**Pb**	**17 21 58.7**	**+0.4**
	baz=254						
CHN1				*e*S	**Sb**	**17 22 14.5**	**+1.4**
	baz=254						
CHN2	**Minshiung**	**1.20**	**274**	*e*P	**Pb**	**17 21 59.3**	**+0.6**
	baz=272						
CHN2				*e*S	**Sb**	**17 22 15.3**	**+1.6**
	baz=272						
TWK	**Hsinying**	**1.20**	**261**	*e*P	**Pb**	**17 21 59.2**	**+0.5**
	baz=258						
TWK				S	**Sb**	**17 22 14.6**	**+0.8**
	baz=258						
ENTT	**Nioudou**	**1.20**	**351**	*e*P	**Pn**	**17 21 57.7**	**-0.2**
	baz=354						
ENTT				*e*S	**Sn**	**17 22 12.5**	**-0.9**
	baz=354						
TCU	**Taichung**

baz=322
HSN *e*S **Sb** **17 22 24.0 +0.6**
baz=322
NCU **National Centr** **1.60 341** *e*P **Pb** **17 22 05.4 -0.3**
baz=343
NWF **Wu-fen Shan** **1.61 0** *e*P **Pb** **17 22 04.7 -1.1**
baz=350
TWS1 **Kuangyinshan** **1.67 349** *e*P **Pn** **17 22 04.9 +0.4**
baz=2.0
TWS1 *e*S **Sn** **17 22 25.9 +0.8**
baz=2.0
HEN **Hengchun** **1.73 214** *e*P **Pb** **17 22 07.5 -0.2**
baz=199
TWY **Chenhua** **1.82 355** *e*P **Pb** **17 22 08.6 -0.8**
baz=359
WDGT **Dungji** **1.95 265**⇑ *e*P **Pn** **17 22 08.6 +0.3**
baz=261
HATJ **Hateruma jima** **1.96 72** P **Pn** **17 22 08.9 +0.6**
HATJ S **Sn** **17 22 32.7 +0.6**
IRIF **Iriomote-Funau** **2.00 63** P **Pn** **17 22 09.5 +0.7**
IRIF S **Sn** **17 22 34.5 +1.5**
PNG **Penghu** **2.04 274**⇑ *i*P **Pn** **17 22 09.9 +0.5**
baz=271
JKRS **Kuro-shima** **2.19 69** P **Pn** **17 22 12.5 +1.0**
JKRS *e*S **Sn** **17 22 37.6 -0.3**
JIJ **Ishigaki jima** **2.35 67** P **Pn** **17 22 14.1 +0.4**
JIJ *e*S **Sn** **17 22 40.9 -0.9**
JISG **Ishigakijimahi** **2.58 64** P **Pn** **17 22 17.0 +0.1**
JISG *e*S **Sn** **17 22 46.9 -0.6**
JTJ **Tarama** **2.93 66** P **Pn** **17 22 22.4 +0.7**
JTJ *e*S **Sn** **17 22 56.4 +0.4**
KNM **Kinmen** **3.20 288** *e*P **Pn** **17 22 26.9 +1.5**
baz=285

IDC ***10*** *17:24:24.6±1.0, 28°.66S×176°.70W, h0km, mb4.3/7, mb1 4.4/7, mb1mx4.1/32, mbtmp4.3/7, MS3.8/1, Ms1 3.8/1, ms1mx3.0/38, Error ellipse: s-maj=39.5km s-min=17.9km az=142.0*

NEIC ***10*** *17:24:26.2±0.7, 28°.56S×176°.75W, h10km, mb4.3/3, Error ellipse: s-maj=26.2km s-min=13.3km az=138.0*

ISC 10 17:24:28.6±0.9, **28°.8S**±0°.2×**176°.6W**±0°.1, **h29km, n21, σ1§20/22, mb4.3/10, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.23**	**248**	LR	LR	17 24 42.5	
	comp=Z,333nm,20.5s,baz=113,slow=15						
RAO				Pn	**Pb**	**17 24 50.7**	**-0.5**
	213nm,0.3s,baz=118,slow=6.2,SNR=15						
RAO				Sn	**Sb**	**17 25 07.2**	**+0.4**
	1μm,0.3s,baz=80,slow=22,SNR=11						
DZM	**Mont Dzumac**	**16.70**	**290**	*e*P	**P**	**17 28 26.1**	**+3.4**
	64nm,1.4s						
DZM				*e*LR	LR	17 32 06.0	
	521nm,22.6s						
TBI	**Tubuai**	**24.95**	**84**	*e*LR	LR	17 35 53.8	
	239nm,30.2s						
PPT2	**Papeete2**	**27.17**	**72**	*e*LR	LR	17 37 06.7	
	199nm,25.2s						
HNR	**Honiara**	**29.25**	**307**	LR	LR	17 39 23.9	
	comp=Z,175nm,19.3s,baz=168,slow=31						
STKA	**Stephens Creek**	**36.05**	**254**	P	**P**	**17 31 27.9**	**+0.3**
	2.8nm,0.7s,baz=89,slow=9.3,SNR=5.1						
ASAR	**Alice Springs**	**44.43**	**265**	P	**P**	**17 32 35.8**	**-1.4**
	2.6nm,0.7s,baz=95,slow=6.8,SNR=19						
WRAB	**Tennant Creek**	**45.27**	**270**	*e*P	**P**	**17 32 43.3**	**-0.6**
	2.0nm,0.8s						
WRA	**Warramunga Arr**	**45.28**	**270**	P	**P**	**17 32 42.9**	**-1.0**
	5.5nm,0.9s,baz=108,slow=7.8,SNR=11						
WRA				PcP	**PcP**	**17 34 23.6**	**+0.1**
	2.8nm,0.9s,baz=107,slow=3.4,SNR=5.4						
MAW	**Mawson**	**74.23**	**200**	P	**P**	**17 36 03.3**	**+0.9**
	3.2nm,0.9s,baz=100,slow=6.5,SNR=5.5						
MJAR	**Matsushiro Arr**	**77.63**	**324**	P	**P**	**17 36 22.1**	**0.0**
	0.9nm,0.7s,baz=162,slow=4.5,SNR=6.6						
MAJO	**Matsushiro**	**77.64**	**324**	P	**P**	**17 36 21.1**	**-1.1**
	4.5nm,0.5s						
ASAJ	**Asahikawa**	**81.59**	**332**	*e*P	**P**	**17 36 41.4**	**-2.1**
	2.0nm,0.7s						
PETK	**Petropavlovsk-**	**84.58**	**345**	P	**P**	**17 36 59.8**	**+1.1**
	4.9nm,1.0s,baz=120,slow=8.8,SNR=6.4						
TXAR	**Lajitas Array**	**90.50**	**57**	P	**P**	**17 37 29.4**	**+1.4**
	0.6nm,1.0s,baz=178,slow=3.6,SNR=4.7						
ENH	**Enshi**	**91.71**	**304**	*e*P	**P**	**17 37 32.7**	**-0.8**
MKAR	**Makanchi Array**	**117.66**	**310**	PKP	**PKPdf**	**17 43 10.8**	**-0.9**
	0.3nm,0.8s,baz=58,slow=3.6,SNR=2.8						
NB2	**NORSAR Subarra**	**147.33**	**353**	PKP	**PKPbc**	**17 44 08.5**	**-0.3**
	comp=Z,1.4nm,0.8s,baz=16,slow=3.2						
NOA	**NORSAR Array B**	**147.33**	**353**	PKPbc	**PKPbc**	**17 44 08.8**	**0.0**
	comp=Z,1.3nm,0.7s,baz=16,slow=4.4,SNR=4.2						
AKASG	**Malin Array Be**	**150.71**	**325**	PKPbc	**PKPbc**	**17 44 17.1**	**-0.5**
	comp=Z,1.2nm,0.5s,baz=42,slow=2.5,SNR=5.8						
AKASG				PKPab	**PKPab**	**17 44 24.1**	**-0.6**
	comp=Z,0.8nm,0.5s,baz=44,slow=3.1,SNR=5.4						
BRTR	**Keskin Array B**	**152.84**	**302**	PKPbc	**PKPbc**	**17 44 23.1**	**0.0**
	comp=Z,0.9nm,0.8s,baz=131,slow=3.4,SNR=4.9						
BRTR				PKPab	**PKPab**	**17 44 33.8**	**-0.4**
	comp=Z,2.7nm,0.9s,baz=122,slow=4.5,SNR=3.5						

NIED ***10*** *17:35:00, 37°.90N×144°.50E, h5km, Mw3.4 Best double couple: M0 1.52000×10^14 NP1:φs 198.00000°, δ 43.00000°, λ -50.00000°. NP2:φs 330.00000°, δ 59.00000°, λ -120.00000°.*

JMA 10 17:35:10.1±0.2, **37°.87N×144°.49E, h55km, M3.8, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.52**	**299**	P	Pn	17 35 49.8	+1.2
JIO	**Ouri**	**2.54**	**284**	P	Pn	17 35 50.1	+1.2
JIO				*e*S	Sn	17 36 20.0	+1.4
MIYJ	**Miyakonagasawa**	**2.70**	**310**	P	Pn	17 35 51.9	+0.9
MIYJ				*e*S	Sn	17 36 22.8	+0.4
JOM	**Ohasama**	**2.97**	**304**	*e*S	Sn	17 36 31.3	+2.1
JFT	**Otama**	**3.31**	**265**	*e*S	Sn	17 36 39.7	+2.1
JANG	**Nango**	**3.41**	**318**	P	Pn	17 36 01.8	+1.1
JANG				*e*S	Sn	17 36 40.0	+0.1
JYK	**Kaneyama**	**3.41**	**289**	P	Pn	17 36 02.9	+2.1
JYK				*e*S	Sn	17 36 42.6	+2.6
JOT	**Ohata**	**4.40**	**324**	P	Pn	17 36 15.9	+1.6
JOT				*e*S	Sn	17 37 03.3	-0.9
JKB	**Kayabe**	**4.81**	**328**	P	Pn	17 36 21.9	+1.9
JKB				*e*S	Sn	17 37 13.0	-1.4
JCH	**Churui**	**4.82**	**350**	P	Pn	17 36 19.2	-0.8
JCH				*e*S	Sn	17 37 11.1	-3.4
JRY	**Ryogami san**	**4.84**	**249**	P	Pn	17 36 21.2	+0.7
JRY				*e*S	Sn	17 37 14.0	-1.2
JOD2	**Odawara 2**	**5.07**	**241**	*e*S	Sn	17 37 18.5	-2.2
NEM2	**Nemuro 2**	**5.57**	**9**	P	Pn	17 36 27.0	-3.3
NEM2				*e*S	Sn	17 37 25.9	-7.1
JTKR	**Abashiri--Toko**	**6.11**	**356**	P	Pn	17 36 36.7	-1.0
JTKR				*e*S	Sn	17 37 42.0	-4.2

NEIC ***10*** *17:40:21.9±0.2, 9°.52N×122°.20E, h10km, mb4.8/17, Error ellipse: s-maj=6.5km s-min=5.3km az=85.0*

NEIC Felt [III PIVS] at Cawayan and Sipalay. Felt [II PIVS] at Iloilo, Panay.

MOS ***10*** *17:40:23.9±0.8, 9°.56N×122°.31E, h41km, mb4.9/31, Error ellipse: s-maj=12.2km s-min=5.3km az=121.2*

MAN ***10*** *17:40:24, 9°.54N×122°.08E, h29km, mb5.5, ML4.5, MS4.8*

MAN INTENSITY III - SIPALAY CITY AND CAUAYAN NEGROS OCCIDENTAL; INTENSITY II - ILOILO CITY.

ISCJB ***10*** *17:40:25.3±0.4, 9°.52N±0°.03×122°.24E±0°.03, h50km±4km, mb4.5/95, MS3.9/16, Error ellipse: s-maj=4.5km s-min=4.1km az=36.0*

DJA ***10*** *17:40:27.1±1.8, 10°N±5°×12°.2E±°, h28km±15km, M4.8/27, mb4.7/27, mB5.4/9, ML4.9/3, Mw(mB)4.8/9*

KLM ***10*** *17:40:27.4, 9°.01N×122°.31E, h30km, mb4.6, ML4.4*

IDC ***10*** *17:40:28.1±2.4, 9°.47N×122°.13E, h58km±23km, mb4.1/31, mb1 4.2/32, mb1mx4.1/50, mbtmp4.3/32, MS3.6/7, Ms1 3.6/7, ms1mx3.2/42, Error ellipse: s-maj=14.9km s-min=9.7km az=69.0*

ISC 10 17:40:26.8±0.5, **9°.48N**±0°.03×**122°.24E**±0°.04, **h48km**±3km, **h48km:pP-P, n210, σ1§58/243, mb4.6/95, MS3.8/17, 26C-21D, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.99**	**98**⇓	*i*P	**Pn**	**17 40 39.9**	**-4.5**
SNPH				*i* S	**Sn**	**17 40 55.5**	**-1.9**
JAP	**San Jose, Anti**	**1.29**	**347**⇓	*e*P	**Pn**	**17 40 45.4**	**-3.0**
LLP	**Lapu-Lapu**	**1.89**	**64**⇓	*e*P	**Pn**	**17 40 55.6**	**-1.1**
LLP				*e*S	**Sn**	**17 41 20.1**	**+0.7**
RCP	**Roxas**	**2.12**	**14**⇓	*e*P	**Pn**	**17 40 58.8**	**-1.1**
RCP				*e*S	**Sn**	**17 41 27.7**	**+2.6**
KALP	**Kalibo**	**2.19**	**3**⇑	*i*P	**Pn**	**17 40 59.5**	**-1.2**
CGP	**Cagayan de Oro**	**2.63**	**113**⇓	*e*P	**Pn**	**17 41 05.7**	**-1.1**
CGP				*e*S	**Sn**	**17 41 39.7**	**+2.2**
CTBH	**Cotabato--PC H**	**3.00**	**138**	*e*P	**Pn**	**17 41 11.5**	**-0.3**
CTBH				*i* S	**Sn**	**17 41 42.3**	**-4.2**
MMPH	**Masbate**	**3.17**	**25**⇑	*i*P	**Pn**	**17 41 14.9**	**+0.8**
MMPH				*i* S	**Sn**	**17 41 54.4**	**+3.8**
PLP	**Palo**	**3.17**	**58**⇑	*i*P	**Pn**	**17 41 12.8**	**-1.4**
PLP				*i* S	**Sn**	**17 41 51.0**	**+0.1**
KCP	**Kidapawan**	**3.74**	**131**⇑	*e*P	Pn	17 41 28.4	+6.3
DAV	**Davao City (W)**	**4.08**	**126**	P	**Pn**	**17 41 30.3**	**+3.6**
	baz=131,slow=15,SNR=5.6						
DAV				S	**Sn**	**17 42 17.0**	**+3.7**
	70nm,0.3s,baz=217,slow=14,SNR=4.5						
DAV	**Davao City (W)**	**4.08**	**126**	*e*Pn	**Pn**	**17 41 29.1**	**+2.3**
DAV				*e*Sn	**Sn**	**17 42 14.9**	**+1.6**
MYLDM	**Lahad Datu**	**5.66**	**221**⇑	P	**Pn**	**17 41 48.2**	**-0.1**
MYLDM	**Lahad Datu**	**5.66**	**221**	*e*Pn	**Pn**	**17 41 48.1**	**-0.2**
KDM	**Kudat**	**5.93**	**245**⇑	P	**Pn**	**17 41 52.8**	**+0.8**
SDKM	**Sandakan**	**6.29**	**233**⇓	P	**Pn**	**17 41 54.0**	**-3.0**
KKM	**Kota Kinabalu**	**6.88**	**241**	*e*Pn	**Pn**	**17 42 02.9**	**-2.3**
KKM				*e*Sn	**Sn**	**17 43 23.3**	**+1.1**
LUWI	**Luwuk**	**10.47**	**177**	P	**Pn**	**17 42 57.6**	**+3.3**
	100nm,0.9s,866nm						
LUWI	**Luwuk**	**10.47**	**177**	*e*Pn	**Pn**	**17 42 57.8**	**+3.5**
SBUM	**Sibu**	**12.16**	**236**	*e*Pn	**Pn**	**17 43 15.8**	**-1.7**
STKI	**Sintang**	**14.22**	**229**	P	**Pn**	**17 43 42.7**	**-2.9**
KAPI	**Kappang**	**14.61**	**190**	LR	LR	17 49 18.1	
	comp=Z,212nm,20.4s,baz=24,slow=36						
QIZ	**Qiongzhong**	**15.30**	**310**	P	**Pn**	**17 43 59.9**	**+0.2**
QIZ				S	**Sn**	**17 46 52.3**	**+4.1**
QIZ				LR	LR		
	comp=N,650nm,13.9s						
QIZ				LR	LR		
	comp=E,510nm,15.3s						
QIZ				LR	LR		
	comp=Z,870nm,15.4s						
FAKI	**Fak Fak**	**15.85**	**141**	P	**P**	**17 44 12.6**	**+2.7**
	comp=Z,40nm,1.1s						
UBPT	**Khong Chiam**	**17.36**	**291**	P	**P**	**17 44 29.5**	**+3.0**
	comp=Z,40nm,1.4s,comp=Z,1μm						
SKNT	**Sakolnakorn**	**19.26**	**295**	P	**Pn**	**17 44 49.0**	**+0.2**
	comp=Z,24nm,1.2s						
PPBI	**Pangkal Pinang**	**19.78**	**235**	P	**Pn**	**17 44 54.6**	**-0.4**
	comp=Z,39nm,1.1s						
CHBT	**CHBT**	**19.80**	**281**	P	**Pn**	**17 44 55.3**	**0.0**
	comp=Z,72nm,1.3s						
MYKOM	**Kota Tinggi**	**19.82**	**248**	*e*P	**Pn**	**17 44 55.0**	**-0.5**
	comp=Z,37nm,1.4s						
NGJI	**Ngawi**	**19.89**	**213**	P	**Pn**	**17 44 57.8**	**+1.6**
	comp=Z,83nm,0.9s						
KHON	**Khomkaen**	**20.10**	**292**	P	Pn	17 44 58.0	-0.8
	comp=Z,17nm,1.0s,comp=Z,254nm						
PWJI	**Pagerwojo**	**20.26**	**211**	P	Pn	17 45 00.3	-0.3
	comp=Z,33nm,1.2s						
WOJI	**Wonogiri, Jawa**	**20.57**	**214**	P	Pn	17 45 03.6	-0.7
	comp=Z,141nm,1.2s,comp=Z,3μm						
PCJI	**Pacitan**	**20.73**	**212**	P	**P**	**17 45 03.8**	**+0.3**
	comp=Z,59nm,1.3s						
IPM	**Ipoh**	**21.63**	**258**	⇓P	**P**	**17 45 14.2**	**+1.1**
IPM	**Ipoh**	**21.63**	**258**	*e*P	**P**	**17 45 11.7**	**-1.5**
	comp=Z,23nm,0.7s						
PBKT	**Sadao Pong**	**21.87**	**291**	P	**P**	**17 45 17.7**	**+2.0**
	comp=Z,10.0nm,1.2s						
CBJI	**Citeko**	**22.02**	**225**	P	**P**	**17 45 20.4**	**+3.1**
CISI	**Cisompet, Garu**	**22.20**	**221**	P	**P**	**17 45 21.1**	**+1.8**
	comp=Z,46nm,1.4s						
CISI	**Cisompet, Garu**	**22.20**	**221**	*e*P	**P**	**17 45 19.5**	**+0.1**
	comp=Z,61nm,1.0s						
GYA	**Guiyang**	**22.42**	**321**	*e*P	**P**	**17 45 22.0**	**+0.3**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GUMO	**Guam**	**22.54**	**77**	P	**P**	**17 45 25.3**	**+2.4**
	comp=Z,28nm,1.1s,baz=163,slow=13,SNR=3.5						
UTTA	**Uttaradit**	**22.60**	**294**	P	**P**	**17 45 24.7**	**+1.2**
	comp=Z,3.2nm,0.8s						
LHSI	**Lahat**	**22.86**	**235**	P	**P**	**17 45 28.1**	**+1.8**
	comp=Z,30nm,0.8s						
CGJI	**Cibinong**	**22.97**	**226**	P	**P**	**17 45 28.6**	**+1.2**
	comp=Z,52nm,1.2s						
UMPA	**Umpang Tak**	**23.74**	**289**	P	**P**	**17 45 36.6**	**+1.7**
	comp=Z,6.3nm,1.2s						
ANA2	**Anatahan**	**23.86**	**71**	*e*P	**P**	**17 45 35.1**	**-0.9**
MTN	**Manton Dam**	**23.88**	**158**	*e*P	**P**	**17 45 36.0**	**0.0**
	comp=Z,48nm,1.2s						
PSI	**Prapat**	**24.10**	**256**	P	**P**	**17 45 38.5**	**+0.2**
	comp=Z,19nm,0.8s,baz=69,slow=8.1,SNR=15						
PSI	**Prapat**	**24.10**	**256**	*e*P	**P**	**17 45 38.4**	**+0.1**
PSI				pmax	pmax		
	comp=Z,50nm,1.1s						
PSI	**Prapat**	**24.10**	**256**	*e*P	**P**	**17 45 38.4**	**+0.1**
	comp=Z,50nm,1.1s						
MNSI	**Mandailing Nat**	**24.14**	**250**	P	**P**	**17 45 38.8**	**+0.2**
	comp=Z,32nm,1.1s						
KMI	**Kunming**	**24.20**	**312**	P	**P**	**17 45 39.8**	**+0.5**
KMI				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KMI				pmax	pmax		
	comp=Z,130nm,4.5s						
KMI				LR	LR		
	comp=N,280nm,12.8s						
KMI				LR	LR		
	comp=E,270nm,14.3s						
KMI				LR	LR		
	comp=Z,380nm,16.4s						
TSI	**Tuntungan**	**24.25**	**257**	P	**P**	**17 45 40.0**	**+0.4**
CM01	**Chiang Mai Arr**	**24.25**	**294**	*e*P	**P**	**17 45 38.1**	**-1.4**
CMAR	**Chiang Mai Arr**	**24.28**	**294**	P	**P**	**17 45 39.6**	**-0.1**
	comp=Z,3.2nm,0.9s,baz=122,slow=8.0,SNR=20						
CMAR				LR	LR	17 55 14.2	
	comp=Z,119nm,19.5s,baz=115,slow=37						
CMMT	**Chiang Mai**	**24.39**	**295**	P	**P**	**17 45 40.7**	**-0.1**
	comp=Z,9.3nm,1.2s						
CHTO	**Chiang Mai**	**24.39**	**295**	P	**P**	**17 45 40.7**	**-0.1**
	comp=Z,42nm,1.2s						
CHTO	**Chiang Mai**	**24.39**	**295**	*e*P	**P**	**17 45 40.3**	**-0.6**
CHTO				pmax	pmax		
	comp=Z,8.0nm,1.0s						
CHTO	**Chiang Mai**	**24.39**	**295**	*e*P	**P**	**17 45 40.3**	**-0.6**
	comp=Z,8.3nm,1.0s						
GSI	**Gunungsitoli**	**25.84**	**253**	P	**P**	**17 45 53.3**	**-0.7**
GSI	**Gunungsitoli**	**25.84**	**253**	*e*P	**P**	**17 45 52.2**	**-1.8**
	comp=Z,43nm,0.7s						
CD2	**Chengdu**	**27.40**	**324**	*e*P	**P**	**17 46 08.0**	**+0.1**
CD2				pP	pP	17 46 21.3	+0.9
CD2				sP	sP	17 46 27.7	+1.6
CD2				PP	**PP**	**17 47 16.8**	**+6.2**
CD2				S	**S**	**17 50 45.8**	**+0.8**
CD2				sS	sS	17 51 08.9	+2.9
CD2				pmax	pmax		
	comp=Z,20nm,0.6s						
CD2				pmax	pmax		
	comp=Z,120nm,5.6s						
FITZ	**Fitzroy Crossi**	**27.61**	**173**	P	**P**	**17 46 10.0**	**+0.2**
	comp=Z,4.0nm,0.9s,baz=36,slow=11,SNR=3.6						
JHJ	**Hachijo jima 2**	**28.55**	**32**	LR	LR	17 57 25.7	
	comp=Z,148nm,19.2s,baz=290,slow=36						
MJAR	**Matsushiro Arr**	**30.59**	**26**	P	**P**	**17 46 36.7**	**+0.5**
	comp=Z,0.6nm,0.6s,baz=200,slow=8.1,SNR=4.1						
MJAR				PcP	**PcP**	**17 49 33.7**	**-0.3**
	comp=Z,0.8nm,0.8s,baz=213,slow=3.2,SNR=5.0						
BJI	**Beijing**	**30.91**	**351**	P	**P**	**17 46 38.9**	**0.0**
BJI				S	**S**	**17 51 42.7**	**+2.9**
BJI				sS	**sS**	**17 52 04.2**	**+3.4**
BJI				SS	**SS**	**17 53 57.9**	**+4.6**
BJI				pmax	pmax		
	comp=Z,10.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,82nm,5.3s						
BJI				LR	LR		
	comp=N,89nm,6.1s						
BJI				LR	LR		
	comp=E,140nm,10.4s						
BJI				LR	LR		
	comp=Z,97nm,23.9s						
LZH	**Lanzhou**	**31.32**	**331**	*e*P	**P**	**17 46 43.0**	**+0.1**
LZH				pP	pP	17 46 56.3	+0.9
LZH				sP	sP	17 47 02.5	+1.4
LZH				PP	**PnPn**	**17 47 48.0**	**+1.4**
LZH				pmax	pmax		
	comp=Z,24nm,1.1s						
LZH				pmax	pmax		
	comp=Z,73nm,5.2s						
LZH				LR	LR		
	comp=N,380nm,12.9s						
LZH				LR	LR		
	comp=E,400nm,13.2s						
LZH				LR	LR		
	comp=Z,440nm,16.3s						
WRAB	**Tennant Creek**	**31.57**	**158**	*ce*P	**P**	**17 46 44.6**	**-0.3**
WRAB				pmax	pmax		
	comp=Z,28nm,1.0s						
WRA	**Warramunga Arr**	**31.57**	**158**	P	**P**	**17 46 44.4**	**-0.6**
	comp=Z,2.0nm,0.6s,baz=339,slow=9.4,SNR=22						
WRA				PcP	**PcP**	**17 49 36.5**	**-0.3**
	comp=Z,1.7nm,0.6s,baz=333,slow=2.7,SNR=9.9						
WB2	**Warramunga Arr**	**31.58**	**158**	*e*P	**P**	**17 46 45.0**	**0.0**
	comp=Z,12nm,1.0s						
HHC	**Hu-ho-hao-te**	**32.64**	**345**	*e*P	**P**	**17 46 55.6**	**+1.3**
HHC				pP	sP	17 47 11.6	-0.9
HHC				PP	**PP**	**17 48 08.4**	**-0.4**
HHC				S	**S**	**17 52 04.5**	**-2.6**
HHC				pmax	pmax		
	comp=Z,22nm,1.1s						
HHC				pmax	pmax		
	comp=Z,83nm,4.6s						
HHC				LR	LR		
	comp=N,150nm,13.1s						
HHC				LR	LR		
	comp=E,160nm,14.6s						
HHC				LR	LR		
	comp=Z,190nm,14.3s						
MSHR	**Mys Shultsa**	**33.88**	**12**⇓	*e*P	**P**	**17 47 04.6**	**-0.3**
CN2	**Changchun**	**34.30**	**4**	*e*P	**P**	**17 47 09.3**	**+0.7**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
VLA	**Vladivostok**	**34.55**	**12**⇓	*i*P	**P**	**17 47 09.0**	**-1.7**
VLA				*i* *PP	**pP**	**17 47 19.7**	**-3.6**
VLA				*i* *SP	**sP**	**17 47 28.0**	**-1.0**
VLA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
AS31	**Alice Springs**	**34.86**	**161**	*e*P	**P**	**17 47 13.8**	**+0.2**
	comp=Z,3.7nm,0.8s						
ASAR	**Alice Springs**	**34.86**	**161**	P	**P**	**17 47 13.8**	**+0.1**
	comp=Z,5.7nm,0.6s,baz=342,slow=7.2,SNR=72						
ASAR				PcP	**PcP**	**17 49 45.8**	**-0.2**
	comp=Z,1.5nm,0.5s,baz=346,slow=2.6,SNR=9.4						
AS01	**Alice Springs**	**34.88**	**161**	*e*P	**P**	**17 47 13.7**	**-0.1**
LSA	**Lhasa**	**35.34**	**309**	P	**P**	**17 47 17.4**	**-0.9**
LSA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
MDJ	**Mudanjiang**	**35.58**	**9**	P	**P**	**17 47 19.7**	**+0.1**
MDJ				pP	pP	17 47 32.6	+0.4
MDJ				sP	sP	17 47 38.9	+1.0
MDJ				S	**S**	**17 52 52.9**	**+0.8**
MDJ				sS	sS	17 53 17.3	+3.9
MDJ				pmax	pmax		
	comp=Z,7.0nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,33nm,3.8s						
MDJ				LR	LR		
	comp=N,93nm,14.3s						
MDJ				LR	LR		
	comp=E,120nm,15.8s						
MDJ				LR	LR		
	comp=Z,95nm,12.7s						
USRK	**Ussuriysk Ar.**	**35.61**	**12**	P	**P**	**17 47 20.1**	**+0.3**
	comp=Z,5.0nm,0.9s,baz=206,slow=7.8,SNR=12						
GTA	**Gaotai**	**35.91**	**330**	*e*P	**P**	**17 47 22.8**	**+0.2**
GTA				pP	pP	17 47 34.1	-1.2
GTA				sP	sP	17 47 39.3	-1.7
GTA				S	**S**	**17 52 57.4**	**-0.2**
GTA				sS	sS	17 53 18.6	-0.3
GTA				SS	**SnSn**	**17 55 22.6**	**-2.0**
GTA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,87nm,8.6s						
GTA				LR	LR		
	comp=N,180nm,15.7s						
GTA				LR	LR		
	comp=E,200nm,16.6s						
GTA				LR	LR		
	comp=Z,320nm,15.7s						
HABR	**Khabarovsk**	**40.33**	**13**	*e*P	**P**	**17 47 56.5**	**-3.0**
HABR				*e**PP	**pP**	**17 48 09.7**	**-2.6**
HABR				*e**SP	**sP**	**17 48 16.0**	**-2.0**
HABR				*e*PPP	PPP	17 49 56.0	
HABR				*e*		17 49 59.4	
HABR				*e*S	**S**	**17 54 01.1**	**-2.8**
HABR				*e**SS	**sS**	**17 54 24.2**	**-1.2**
HABR				*e*SS	**SS**	**17 57 02.3**	**-1.8**
HABR				*e*SSS	SSS	17 57 27.2	
HABR				*e*		17 57 58.7	
HABR				pmax	pmax		
	comp=E,3.0nm,0.7s						
HABR				pmax	pmax		
	comp=Z,6.0nm,1.5s						
HABR				pmax	pmax		
	comp=N,7.0nm,0.7s						
HABR				MLR	MLR		
	comp=Z,86nm,20.0s						
KLR	**Kul'dur**	**40.41**	**10**	P	**P**	**17 47 60.0**	**-0.2**
	comp=Z,1.0nm,0.5s,baz=209,slow=6.0,SNR=5.9						
KLR	**Kul'dur**	**40.41**	**10**	*i* P	**P**	**17 47 58.2**	**-2.0**
FORT	**Forrest**	**40.42**	**172**	*e*P	**P**	**17 48 00.0**	**-0.4**
	comp=Z,199nm,0.8s						
SONM	**Songino Array**	**40.51**	**344**	P	**P**	**17 48 00.3**	**-0.9**
	comp=Z,3.5nm,0.8s,baz=164,slow=8.2,SNR=21						
SONM				LR	LR	18 07 16.8	
	comp=Z,121nm,18.1s,baz=162,slow=40						
SONA1	**Songino Array**	**40.51**	**344**	*e*P	**P**	**17 48 00.4**	**-0.8**
YSS	**Yuzh-Sakhalins**	**41.22**	**21**⇓	*e*P	P	17 48 13.9	+7.0
YSS				pmax	pmax		
	comp=Z,10.0nm,1.2s						
TLY	**Talaya**	**44.75**	**344**	P	**P**	**17 48 35.7**	**+0.3**
	comp=Z,2.7nm,0.6s,baz=155,slow=8.5,SNR=4.8						
TLY	**Talaya**	**44.75**	**344**	*e*P	**P**	**17 48 35.2**	**-0.2**
TLY				pmax	pmax		
	comp=Z,7.0nm,1.1s						
TLY				MLR	MLR		
	comp=Z,80nm,20.0s						
TLY

KSH S **S** **17 56 36.1 0.0**
KSH pmax pmax
comp=Z,88nm,4.1s
KSH LR LR
comp=N,450nm,10.3s
KSH LR LR
comp=E,260nm,7.6s
KSH LR LR
comp=Z,190nm,13.2s
PETK Petropavlovsk- 52.05 26 P **P** **17 49 33.9 +2.3**
comp=Z,2.6nm,1.0s,baz=237,slow=5.0,SNR=2.9
TKM2 Tokmak 2 52.51 318 *i* P **P** **17 49 35.2 -0.3**
TKM2 pmax pmax
comp=Z,8.0nm,0.8s
TKM2 Tokmak 2 52.51 318 *eP* **P** **17 49 36.0 +0.5**
comp=Z,7.1nm,0.7s
YAK Yakutsk 52.73 4 *eP* **P** **17 49 35.6 -0.9**
YAK pmax pmax
comp=Z,7.0nm,1.0s
FRU Bishkek 53.13 317 *eP* **P** **17 49 40.0 +0.2**
AAK Ala-Archa 53.13 317⇑ *eP* **P** **17 49 38.2 -1.8**
AAK pmax pmax
comp=Z,21nm,1.1s
AAK Ala-Archa 53.13 317 *eP* **P** **17 49 41.5 +1.4**
comp=Z,8.8nm,1.1s
ZAA0 Zalesovo Array 53.48 333 *eP* **P** **17 49 41.6 -0.5**
ZALV Zalesovo Beam 53.48 333 P **P** **17 49 41.4 -0.7**
comp=Z,2.0nm,0.6s,baz=125,slow=6.0,SNR=10
EKS2 Erkin-Say 53.63 317 *eP* **P** **17 49 44.8 +1.2**
EKS2 pmax pmax
comp=Z,9.0nm,0.8s
EKS2 Erkin-Say 53.63 317 *eP* **P** **17 49 44.8 +1.2**
comp=Z,8.9nm,0.8s
MNAS Manas 54.42 316 *i* P **P** **17 49 50.1 +0.7**
MNAS pmax pmax
comp=Z,14nm,0.8s
KURBB Kurchatov Arra 54.52 327 P **P** **17 49 49.9 +0.1**
comp=Z,2.9nm,0.7s,baz=129,slow=6.5,SNR=44
KURK Kurchatov 54.52 327 P **P** **17 49 49.9 +0.1**
KURK Kurchatov 54.52 327 P **P** **17 49 49.9 +0.1**
NVS Novosibirsk 54.76 334 *eP* **P** **17 49 48.1 -3.3**
KK31 Karatay Array 56.02 316 *i* P **P** **17 50 00.8 +0.1**
KK31 pmax pmax
comp=Z,5.0nm,0.6s
KKAR Karatay Array 56.02 316 *eP* **P** **17 50 01.1 +0.4**
KKAR Karatay Array 56.02 316 *eP* **P** **17 50 01.1 +0.4**
OTUK Ortayu 56.88 322 P **P** **17 50 06.8 0.0**
OTUK pmax pmax
comp=Z,16nm,1.4s
SEY Seymchan 57.60 16 P **P** **17 50 12.0 +0.4**
comp=Z,2.3nm,0.7s,baz=278,slow=5.4,SNR=7.5
SEY Seymchan 57.60 16 *ceP* **P** **17 50 11.5 -0.1**
VOSK Vostochnaya 59.64 327 P **P** **17 50 24.2 -1.8**
VOSK pmax pmax
comp=Z,3.0nm,0.9s
BVA0 Borovoye Array 60.10 327 P **P** **17 50 27.7 -1.4**
BVA0 pmax pmax
comp=Z,6.0nm,1.2s
BVAR Borovoye Array 60.10 327 P **P** **17 50 29.2 +0.1**
comp=Z,2.7nm,0.9s,baz=123,slow=7.4,SNR=12
BRVK Borovoye 60.17 327 *ceP* **P** **17 50 29.0 -0.6**
BRVK pmax pmax
comp=Z,20nm,1.2s
BRVK Borovoye 60.17 327 *eP* **P** **17 50 28.2 -1.4**
comp=Z,9.7nm,1.3s
ZRNK Zerenda 60.82 326 *eP* **P** **17 50 32.9 -1.1**
ZRNK pmax pmax
comp=Z,16nm,1.5s
ZRNK Zerenda 60.82 326 *eP* **P** **17 50 32.9 -1.1**
comp=Z,16nm,1.5s
WSAR Wadi Sarin 62.12 291 P **P** **17 50 42.8 -0.6**
comp=Z,7.2nm,0.9s,baz=150,slow=4.4,SNR=4.2
TIXI Tiksi 62.25 2⇑ *iP* **P** **17 50 42.0 -1.3**
TIXI pmax pmax
comp=Z,5.0nm,1.0s
NRIK Noril'sk 63.84 347 P **P** **17 50 53.5 -0.4**
comp=Z,5.7nm,0.7s,baz=141,slow=6.7,SNR=4.0
NRIK LR LR 18 22 12.1
comp=Z,59nm,18.9s,baz=148,slow=39
GEYT Alibeck 63.85 308 P **P** **17 50 55.0 +0.3**
comp=Z,2.4nm,0.8s,baz=116,slow=3.4,SNR=8.1
AB31 Akbulak array 64.90 320 *iP* **P** **17 51 00.9 -0.3**
AB31 pmax pmax
comp=Z,7.0nm,1.1s
ABKAR Akbulak array 64.90 320 *eP* **P** **17 51 01.3 +0.1**
AKTO Aktyubinsk 66.41 321⇓ *eP* **P** **17 51 10.4 -0.6**
AKTO pmax pmax
comp=Z,5.0nm,0.9s
ARU Arti 67.72 327 *ciP* **P** **17 51 18.5 -0.6**
ARU 17 51 43.2
ARU 17 53 47.0
ARU S **S** **18 00 12.3 -0.9**
ARU pmax pmax
comp=Z,8.0nm,1.7s
ARU Arti 67.72 327 *eP* **P** **17 51 18.6 -0.6**
comp=Z,19nm,1.7s
LKRN Lenkeran, Azer 71.24 308 P **P** **17 51 40.4 -0.8**
LKRN S **S** **18 00 54.1 -1.1**
SEKA Sheki 72.57 310 P **P** **17 51 48.3 -0.9**
SEKA S **S** **18 01 09.3 -1.3**
MNGR Mingechevir, A 72.64 310 P **P** **17 51 48.7 -0.8**
MNGR S **S** **18 01 10.0 -1.2**
GANJ Ganja 73.21 310 P **P** **17 51 52.1 -0.9**
GANJ S **S** **18 01 16.5 -1.3**
NAX Nakhchivan 73.81 308 P **P** **17 51 55.6 -1.0**
NAX S **SKiKP** **18 01 23.3 +1.2**
GNI Garni 74.41 309⇑ *eP* **P** **17 51 58.3 -1.9**
GNI pmax pmax
comp=Z,47nm,1.3s
ZEI Tsey 75.07 312 *eP* **P** **17 52 04.7 +0.6**
ZEI pmax pmax
comp=Z,32nm,0.9s
KBZ Khabaz 75.82 313 P **P** **17 52 08.3 +0.3**
comp=Z,4.5nm,1.0s,baz=214,slow=8.4,SNR=4.6
KBZ LR LR 18 30 42.7
comp=Z,33nm,18.2s,baz=78,slow=40
NEY Neytrino 75.94 312 *iP* **P** **17 52 08.7 -0.3**
NEY pmax pmax
comp=Z,2.0nm,1.1s
KVAR Kislovodsk Arr 75.97 313 LR LR 18 29 37.4
comp=Z,29nm,19.2s,baz=60,slow=39
KIV Kislovodsk 75.97 313 *eP* **P** **17 52 10.0 +1.0**
KIV pmax pmax
comp=Z,15nm,1.1s
KIV Kislovodsk 75.97 313 *eP* **P** **17 52 10.2 +1.1**
VRH Novokhopyorsk 76.73 320 *eP* **P** **17 52 13.2 +0.2**
VRH pmax pmax
comp=Z,30nm,0.7s
KLMR Klimovskoe 78.23 330 *eP* **P** **17 52 19.1 -2.1**
KLMR pmax pmax
comp=Z,8.0nm,0.9s
VSR Storozhevoye 78.34 320 *eP* **P** **17 52 21.3 -0.7**
VSR pmax pmax
comp=Z,20nm,1.0s
OBN Obninsk 79.82 324 *ceP* **P** **17 52 29.5 -0.5**
OBN *i* 17 52 38.1
OBN *e* 17 55 29.7
OBN pmax pmax
comp=Z,16nm,0.7s
OBN MLR MLR
comp=Z,65nm,19.0s
ILAR Eielson Array 81.87 26 P **P** **17 52 42.9 +2.1**
comp=Z,0.1nm,0.7s,baz=260,slow=5.1,SNR=3.1
SIM Simferopol' 82.06 314 *eP* **P** **17 52 42.7 +0.5**
SIM *e* 17 52 51.0
SIM pmax pmax
comp=Z,12nm,0.7s
BR131 Keskin Array S 82.95 309 *eP* **P** **17 52 47.4 +0.3**
BRTR Keskin Array B 82.95 309 P **P** **17 52 47.0 -0.1**
comp=Z,2.9nm,0.8s,baz=114,slow=5.1,SNR=17
ARCES ARCESS Array B 83.54 339 P **P** **17 52 48.8 -0.6**
comp=Z,6.2nm,1.0s,baz=97,slow=3.9,SNR=7.9
BR231 Keskin MP Arra 83.59 309 *eP* **P** **17 52 48.1 -2.3**
OUL Oulu 84.14 335 P **P** **17 52 51.9 -0.6**
OUL pmax pmax
comp=Z,14nm,1.4s
SUF Sumiainen 84.43 333 P **P** **17 52 53.3 -0.7**
SUF pmax pmax
comp=Z,11nm,2.4s
AKASG Malin Array Be 84.64 320 P **P** **17 52 54.7 -0.7**
comp=Z,6.2nm,0.7s,baz=69,slow=5.1,SNR=15
KIEV Kiev 84.66 320 *iP* **P** **17 52 53.6 -1.8**
KIEV pmax pmax
comp=Z,10.0nm,1.0s
VSU Vasula 84.86 328 *ceP* **P** **17 52 55.8 -0.5**
VSU pmax pmax
comp=Z,63nm,1.2s
MICGM Minsk 84.88 324 *e* **P** **17 52 56.0 -0.5**
MNK Minsk 84.88 324 *eP* **P** **17 52 56.0 -0.5**
KMBO Kilima Mbogo 85.24 268 P **P** **17 52 59.6 +0.2**
comp=Z,2.9nm,0.8s,baz=47,slow=5.8,SNR=6.3
SORM Soroca 85.60 318 *i*↓*P* **P** **17 52 59.2 -1.0**
SORM Soroca 85.60 318 ↓*P* **P** **17 52 59.2 -1.0**
TIRR Tirgusor 86.15 314 *i*↓*P* **P** **17 53 01.4 -1.6**
TIRR Tirgusor 86.15 314 ↓*P* **P** **17 53 01.4 -1.6**
CFR Carcaliu 86.23 315⇑ *iP* **P** **17 53 02.2 -1.2**
CFR Carcaliu 86.23 315⇑ *P* **P** **17 53 02.2 -1.2**
TLB Topalu 86.39 314⇑ *iP* **P** **17 53 00.6 -3.6**
TLB Topalu 86.39 314⇑ *P* **P** **17 53 00.6 -3.6**
INK Inuvik 86.46 21 P **P** **17 53 04.0 0.0**
comp=Z,3.1nm,1.0s,baz=274,slow=6.6,SNR=7.6
TESR Tescani 87.02 317⇑ *iP* **P** **17 53 05.7 -1.6**
PLOR Plostina 87.14 316⇑ *iP* **P** **17 53 06.9 -1.0**
PLOR Plostina 87.14 316⇑ *P* **P** **17 53 06.9 -1.0**
MLR Muntele Rosu 87.69 316⇑ *iP* **P** **17 53 10.0 -0.7**
MLR Muntele Rosu 87.69 316⇑ *P* **P** **17 53 10.0 -0.7**
MLR Muntele Rosu 87.69 316 *eP* **P** **17 53 10.9 +0.2**
BURAR Bucovina Array 87.77 318 *i*↓*P* **P** **17 53 10.6 -0.4**
BURAR Bucovina Array 87.77 318 ↓*P* **P** **17 53 10.6 -0.4**
BUR08 Bucovina Ar. S 87.78 318 *eP* **P** **17 53 11.3 +0.3**
VOIR 88.32 316 *i*↓*P* **P** **17 53 11.3 -2.3**
VOIR 88.32 316 ↓*P* **P** **17 53 11.3 -2.3**
ARR Arges 88.62 316⇑ *iP* **P** **17 53 14.3 -0.7**
DRGR 89.61 317 *i*↓*P* **P** **17 53 24.0 +4.4**
DRGR 89.61 317 ↓*P* **P** **17 53 24.0 +4.4**
VNDA Vanda 89.68 172 P **P** **17 53 18.6 -0.5**
comp=Z,1.7nm,0.9s,baz=325,slow=7.9,SNR=5.9
CRVS Cervenica-Dubn 89.93 320 *eP* **P** **17 53 21.1 +0.1**
CRVS Cervenica-Dubn 89.93 320 *eP* **P** **17 53 21.1 +0.1**
MDVR Moldovita 90.77 316⇑ *iP* P 17 53 19.9 -5.2
NOA NORSAR Array B 91.68 333 P **P** **17 53 28.0 -0.8**
comp=Z,1.4nm,0.9s,baz=77,slow=4.1,SNR=2.8
BRG Berggiesshubel 93.99 323 *e*PKP **P** **17 53 39.8 +0.1**
comp=Z,5.1nm,1.0s
BRG Berggiesshubel 93.99 323 *eP* **P** **17 53 39.8 +0.1**
BRG pmax pmax
comp=Z,5.0nm,1.0s
CLL Collm 94.39 324 *e*(P) **P** **17 53 41.0 -0.5**
CLL *i* 17 53 49.4
CLL Collm 94.39 324 *eP* **P** **17 53 41.0 -0.5**
CLL *i* 17 53 49.4
GERES GERESS Array B 94.84 321 P **P** **17 53 42.9 -0.9**
comp=Z,0.3nm,0.7s,baz=80,slow=8.5,SNR=3.5
MOX Moxa 95.45 323 P **P** **17 53 45.7 -0.7**
MOX pmax pmax
comp=Z,2.0nm,1.2s
YKA Yellowknife Ar 96.06 23 P **P** **17 53 48.3 -0.6**
comp=Z,0.4nm,0.7s,baz=298,slow=3.3,SNR=3.7
PLCA Paso Flores 146.87 162 PKPbc **PKPbc** **18 00 05.0 +0.7**
comp=Z,8.0nm,0.9s,baz=219,slow=2.5,SNR=12
PLCA Paso Flores 146.87 162 PKP2 **PKPbc** **18 00 05.0 +0.7**

*IDC **10** 17:41:55.1±0.7,9.°49N×122.°24E,h0km,mb4.1/12, mb1 4.2/12,mb1mx3.9/52,mbtmp4.1/12,MS3.5/4, Ms1 3.4/4,ms1mx3.0/43,Error ellipse: s-maj=35.3km s-min=15.2km az=68.0*
*ISCJB **10** 17:41:58.5±0.6,9.°46N±0.°08×122.°3E±0.°1,h37km, mb4.1/12,MS3.5/4,Error ellipse: s-maj=20.9km s-min=10.5km az=170.4*
ISC 10 17:42:00.4±0.8,9.°5N±0.°1×122.°3E±0.°2,h37km,n18, σ0s48/15,mb4.1/12,MS3.5/4,2C,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RCP	**Roxas**	**2.10**	**13⇑**	*eP*		**Pn**		**17 42 33.2**	**+0.2**
KALP	**Kalibo**	**2.16**	**2⇑**	*eP*		**Pn**		**17 42 33.7**	**-0.2**
PSI	**Prapat**	**24.12**	**255**	LR		LR		17 57 57.2	
comp=Z,66nm,18.2s,baz=91,slow=40									
CMAR	**Chiang Mai Arr**	**24.29**	**294**	P		**P**		**17 47 14.7**	**+0.1**
2.1nm,0.9s,baz=88,slow=8.0,SNR=5.3									
KSRS	**Korea Array**	**28.29**	**10**	P		**P**		**17 47 50.3**	**-0.1**
1.7nm,0.8s,baz=183,slow=9.1,SNR=3.7									
WRA	**Warramunga Arr**	**31.59**	**158**	P		**P**		**17 48 19.1**	**-0.7**
2.5nm,0.9s,baz=331,slow=11,SNR=3.6									
ASAR	**Alice Springs**	**34.88**	**161**	P		**P**		**17 48 48.9**	**+0.3**
4.7nm,0.7s,baz=344,slow=7.6,SNR=6.9									
ASAR				PcP		**PcP**		**17 51 20.9**	**-0.1**
1.2nm,0.9s,baz=349,slow=2.8,SNR=4.6									
USRK	**Ussuriysk Ar.**	**35.58**	**12**	P		**P**		**17 48 54.7**	**+0.4**
2.8nm,0.8s,baz=251,slow=4.4,SNR=4.8									
KLR	**Kul'dur**	**40.39**	**10**	LR		LR		18 08 02.1	
comp=Z,79nm,18.6s,baz=189,slow=39									
SONM	**Songino Array**	**40.49**	**344**	P		**P**		**17 49 35.8**	**0.0**
1.9nm,0.7s,baz=164,slow=9.3,SNR=5.4									
STKA	**Stephens Creek**	**45.12**	**157**	P		**P**		**17 50 13.6**	**+0.3**
3.1nm,0.8s,baz=316,slow=12,SNR=2.9									
MKAR	**Makanchi Array**	**50.31**	**325**	P		**P**		**17 50 53.9**	**+0.4**
2.4nm,0.6s,baz=126,slow=6.8,SNR=5.8									
AAK	**Ala-Archa**	**53.13**	**317**	LR		LR		18 16 24.3	
comp=Z,63nm,18.1s,baz=66,slow=39									
ZALV	**Zalesovo Beam**	**53.47**	**333**	P		**P**		**17 51 16.1**	**-0.7**
1.1nm,0.5s,baz=127,slow=7.2,SNR=3.7									
KURBB	**Kurchatov Arra**	**54.51**	**327**	P		**P**		**17 51 25.1**	**+0.6**
2.1nm,0.7s,baz=117,slow=9.3,SNR=8.3									
GEYT	**Alibeck**	**63.85**	**308**	P		**P**		**17 52 29.9**	**+0.4**
0.8nm,0.4s,baz=52,slow=2.4,SNR=2.4									
AKASG	**Malin Array Be**	**84.64**	**320**	P		**P**		**17 54 29.4**	**-0.8**
0.6nm,0.4s,baz=69,slow=4.8,SNR=5.4									
YKA	**Yellowknife Ar**	**96.03**	**23**	LR		LR		18 43 01.5	
comp=Z,11nm,19.4s,baz=180,slow=38									

*IDC **10** 17:43:47.0±0.9,29.°49S×176.°36W,h0km,mb4.4/12, mb1 4.5/12,mb1mx4.3/37,mbtmp4.3/12,Error ellipse: s-maj=35.1km s-min=22.1km az=165.0*
*ISCJB **10** 17:43:47.9±0.7,29.°93S±0.°07×176.°27W±0.°08,h21km, mb4.3/14,Error ellipse: s-maj=10.5km s-min=9.7km az=8.6*
*NEIC **10** 17:43:47.9±0.7,29.°77S×176.°34W,h10km,mb4.3/2,Error ellipse: s-maj=16.8km s-min=10.5km az=118.0*
ISC 10 17:43:49.8±0.6,29.°74S±0.°09×176.°33W±0.°08,h21km,n29, σ1s29/27,mb4.3/14,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.47**	**289**	Pn		**Pb**		**17 44 16.5**	**+0.2**
346nm,0.3s,baz=84,slow=23,SNR=7.9									
RAO				Sn		**Sb**		**17 44 35.0**	**+0.5**
749nm,0.3s,baz=102,slow=23,SNR=8.7									
URZ	**Urewera**	**10.09**	**211**	Sn		**Sn**		**17 48 03.8**	**-2.0**
1.7nm,0.3s,baz=156,slow=23,SNR=4.7									
KHZ	**Kahutara**	**15.05**	**210**	*e*Pn		**Pn**		**17 47 20.6**	**-0.6**
DZM	**Mont Dzumac**	**17.26**	**292**	*eP*		**P**		**17 47 53.7**	**+2.5**
52nm,1.4s									
DZM				*e*LR		LR		17 52 02.8	
689nm,27.4s									
TBI	**Tubuai**	**24.84**	**82**	*e*LR		LR		17 55 04.3	
393nm,28.5s									
PPT2	**Papeete2**	**27.25**	**70**	*e*LR		LR		17 56 06.2	
385nm,27.8s									
CTA	**Charters Tower**	**35.14**	**277**	P		**P**		**17 50 43.1**	**+1.0**
6.0nm,0.8s,baz=105,slow=12,SNR=7.4									
CTAO	**Charters Tower**	**35.14**	**277**	*eP*		**P**		**17 50 39.9**	**-2.2**
STKA	**Stephens Creek**	**36.04**	**256**	P		**P**		**17 50 50.9**	**+1.2**
4.6nm,0.6s,baz=100,slow=12,SNR=6.4									
RKT	**Rikitea**	**37.47**	**90**	*e*LR		LR		18 00 57.3	
201nm,26.0s									
TAOE	**Nuku Hiva Isla**	**39.72**	**66**	*e*LR		LR		18 01 48.6	
132nm,26.8s									
ASAR	**Alice Springs**	**44.59**	**266**	P		**P**		**17 52 00.5**	**-0.3**
1.9nm,0.7s,baz=104,slow=6.7,SNR=11									
WRAB	**Tennant Creek**	**45.52**	**271**	*eP*		**P**		**17 52 06.8**	**-1.3**
0.9nm,0.3s									
WRA	**Warramunga Arr**	**45.53**	**271**	P		**P**		**17 52 07.2**	**-1.0**
4.5nm,0.7s,baz=110,slow=7.7,SNR=24									
GUMO	**Guam**	**57.06**	**313**	P		**P**		**17 53 32.3**	**-2.2**
13nm,0.8s,baz=143,slow=18,SNR=3.7									
QSPA	**South Pole Qui**	**60.37**	**180**	*eP*		**P**		**17 53 59.1**	**+1.9**
3.6nm,0.8s									
MJAR	**Matsushiro Arr**	**78.54**	**324**	P		**P**		**17 55 48.9**	**-0.7**
2.0nm,0.9s,baz=160,slow=5.2,SNR=11									
JNU	**Nakatsue**	**80.04**	**317**	P		**P**		**17 55 57.8**	**-0.1**
19nm,1.2s,baz=126,slow=3.5,SNR=6.0									
USRK	**Ussuriysk Ar.**	**87.42**	**326**	P		**P**		**17 56 35.4**	**0.0**
1.8nm,0.7s,baz=35,slow=5.3,SNR=4.8									
TXAR	**Lajitas Array**	**90.82**	**56**	P		**P**		**17 56 52.0**	**+0.1**
1.0nm,1.0s,baz=213,slow=6.5,SNR=5.5									
CMAR	**Chiang Mai Arr**	**94.56**	**289**	P		**P**		**17 57 11.2**	**+2.0**
0.5nm,0.8s,baz=98,slow=3.0,SNR=4.7									
PDAR	**Pinedale Array**	**94.67**	**43**	P		**P**		**17 57 09.2**	**-0.3**
0.5nm,0.8s,baz=221,slow=7.9,SNR=4.3									
ILAR	**Eielson Array**	**96.97**	**12**	P		**P**		**17 57 18.4**	**-0.8**
0.3nm,0.9s,baz=224,slow=4.4,SNR=4.6									
MKAR	**Makanchi Array**	**118.46**	**310**	PKP		**PKPdf**		**18 02 34.3**	**-1.3**
0.3nm,0.7s,baz=76,slow=5.1,SNR=3.7									
NB2	**NORSAR Subarra**	**148.30**	**353**	PKP		**PKPbc**		**18 03 33.3**	**-0.5**
comp=Z,0.8nm,0.7s,baz=9.7,slow=2.9									
NOA	**NORSAR Array B**	**148.30**	**353**	PKPbc		**PKPbc**		**18 03 33.0**	**-0.8**
comp=Z,1.1nm,0.7s,baz=18,slow=4.2,SNR=4.2									
AKASG	**Malin Array Be**	**151.63**	**325**	PKPbc		**PKPbc**		**18 03 42.0**	**-0.2**
comp=Z,0.8nm,0.4s,baz=46,slow=2.7,SNR=9.7									
BRTR	**Keskin Array B**	**153.54**	**300**	PKPab		**PKPab**		**18 03 59.6**	**+0.1**
comp=Z,0.5nm,0.5s,baz=151,slow=2.8,SNR=4.1									
TORD	**Torodi Ar. Bea**	**163.38**	**173**	PKP		**PKPdf**		**18 03 52.5**	**+0.8**
comp=Z,0.4nm,0.7s,baz=146,slow=2.8,SNR=2.7									
TORD				PKPab		**PKPab**		**18 04 43.5**	**+1.2**
comp=Z,3.4nm,0.9s,baz=191,slow=4.0,SNR=9.8									

*IDC **10** 17:47:14.2±10.0,18.°34S×177.°89W,h527km±124km, mb3.3/10,mb1 3.5/10,mb1mx3.2/37,mbtmp4.2/10,Error ellipse: s-maj=45.6km s-min=36.9km az=150.0*
*ISCJB **10** 17:47:15.8±1.4,18.°3S±0.°3×178.°0W±0.°3,h557km, mb3.8/10,Error ellipse: s-maj=49.2km s-min=17.9km az=143.8*
ISC 10 17:47:16.6±1.6,18.°4S±0.°3×177.°9W±0.°2,h557km,n10, σ0s76/10,mb3.8/10,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.81**	**261**	P		**P**		**17 53 13.6**	**+0.3**
2.0nm,0.4s,baz=102,slow=11,SNR=6.8									
STKA	**Stephens Creek**	**38.80**	**242**	P		**P**		**17 53 53.7**	**-0.5**
1.4nm,0.5s,baz=89,slow=10,SNR=6.8									
WRA	**Warramunga Arr**	**44.98**	**260**	P		**P**		**17 54 42.7**	**-0.4**
2.4nm,0.4s,baz=98,slow=6.7,SNR=39									
ASAR	**Alice Springs**	**45.09**	**255**	P		**P**		**17 54 43.8**	**-0.1**
3.3nm,0.5s,baz=91,slow=8.4,SNR=43									
FITZ	**Fitzroy Crossi**	**53.39**	**261**	P		**P**		**17 55 44.8**	**-0.2**
3.6nm,1.1s,baz=122,slow=5.4,SNR=11									
MJAR	**Matsushiro Arr**	**68.55**	**323**	P		**P**		**17 57 24.2**	**+0.1**
1.4nm,0.6s,baz=153,slow=5.5,SNR=6.0									
PETK	**Petropavlovsk-**	**74.24**	**345**	P		**P**		**17 57 56.9**	**-0.1**
2.6nm,0.6s,baz=99,slow=9.3,SNR=5.8									
TXAR	**Lajitas Array**	**85.87**	**57**	P		**P**		**17 58 59.0**	**+0.7**
0.9nm,0.7s,baz=217,slow=6.1,SNR=8.2									
ILAR	**Eielson Array**	**86.24**	**13**	P		**P**		**17 58 57.8**	**-1.3**
0.4nm,0.4s,baz=216,slow=4.7,SNR=12									
CMAR	**Chiang Mai Arr**	**89.46**	**290**	P		**P**		**17 59 16.4**	**+1.2**
0.7nm,0.8s,baz=108,slow=1.8,SNR=5.4									

*IDC **10** 17:48:33.5±0.8,28.°97S×176.°73W,h0km,mb4.6/13, mb1 4.7/16,mb1mx4.5/37,mbtmp4.6/16,ML4.1/3,MS4.3/13, Ms1 4.3/13,ms1mx4.0/32,Error ellipse: s-maj=25.5km s-min=18.7km az=126.0*
*NEIC **10** 17:48:34.4±0.4,29.°00S×176.°61W,h10km,mb4.8/17, Error ellipse: s-maj=13.2km s-min=9.6km az=137.0*
*GCMT **10** 17:48:34.4±0.4,28.°87S×176.°12W,h24km±1km,MW5.0/66, Moment Tensor Solution. s27,c32; s66,c83; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}3.13±.24; $M_{\theta\theta}$-0.56±.16; $M_{\phi\phi}$-2.58±.14; $M_{r\theta}$0.68±.22; $M_{r\phi}$-0.60±.08; $M_{\theta\phi}$1.85±.17; Best double couple: $M_0$3.53700×10^{16} NP1:ϕs18.00000°,δ62.00000°,λ92.00000°. NP2: ϕs193.00000°,δ28.00000°,λ86.00000°. Principal axes: T 3.7330, Plg73.0000°, Azm293.0000°; N -0.4000, Plg2.0000°, Azm197.0000°; P -3.3420, Plg17.0000°, Azm106.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISCJB **10** 17:48:36.6±0.4,29.°18S±0.°06×176.°64W±0.°07,h36km, mb4.9/32,MS4.3/12 Error ellipse: s-maj=10.0km s-min=7.8km az=44.2*
ISC 10 17:48:38.2±0.5,29.°22S±0.°07×176.°43W±0.°07,h36km,n84, σ2s18/77,mb4.8/32,MS4.3/12,2C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.30**	**268**	Pn		**Pn**		**17 49 00.9**	**+1.1**
442nm,0.3s,baz=95,slow=6.2,SNR=11									
RAO				Sn		**Sn**		**17 49 23.5**	**+7.6**
3µm,0.3s,baz=92,slow=23,SNR=9.1									
RAO	**Raoul Island**	**1.30**	**268**	*e*Pn		**Pn**		**17 48 59.9**	**+0.1**
RAO				*e*Sn		**Sn**		**17 49 12.5**	**-3.5**
URZ	**Urewera**	**10.49**	**209**	Pn		**Pn**		**17 51 05.9**	**-0.1**
1.7nm,0.3s,baz=242,slow=6.3,SNR=6.4									
URZ	**Urewera**	**10.49**	**209**	*e*Pn		**Pn**		**17 51 07.8**	**+1.9**
MSVF	**Nonsavu**	**12.50**	**335**	*e*Pn		**Pn**		**17 51 34.0**	**+0.3**
KHZ	**Kahutara**	**15.46**	**209**	*e*Pn		**Pn**		**17 52 09.6**	**-3.9**
147nm,1.3s									
OXZ	**Oxford**	**16.85**	**210**	*e*Pn		**P**		**17 52 33.7**	**+0.8**
284nm,1.8s									
DZM	**Mont Dzumac**	**17.00**	**291**	LR		LR		17 57 48.9	
comp=Z,1µm,19.0s,baz=110,slow=33									
DZM	**Mont Dzumac**	**17.00**	**291**	*eP*		**P**		**17 52 36.4**	**+1.6**
77nm,1.1s									
DZM				*e*LR		LR		17 56 35.6	
2µm,25.1s									
DZM	**Mont Dzumac**	**17.00**	**291**	Pn		**Pn**		**17 52 32.3**	**-0.9**
39nm,1.1s									
RAR	**Rarotonga**	**17.04**	**66**	P		**Pn**		**17 52 34.1**	**+0.4**
2.6nm,0.3s,baz=27,slow=22,SNR=4.0									
RAR				LR		LR		17 59 27.6	
comp=Z,774nm,18.1s,baz=246,slow=38									
RPZ	**Rata Peaks**	**17.59**	**211**	P		**Pn**		**17 52 40.7**	**+0.3**
1.7nm,0.3s,baz=244,slow=2.1,SNR=6.9									
RPZ				LR		LR		18 00 10.7	
comp=Z,1µm,18.2s,baz=30,slow=39									
TBI	**Tubuai**	**24.85**	**83**	*e*LQ		LQ		17 58 52.0	
319nm,27.8s									
TBI				*e*LR		LR		17 59 54.6	
610nm,31.2s									
PPT2	**Papeete2**	**27.16**	**71**	*e*LQ		LQ		17 59 30.0	
654nm,23.8s									
PPT2				*e*LR		LR		18 00 56.0	
397nm,21.8s									
PPT	**Papeete**	**27.17**	**71**	LR		LR		18 03 18.6	
comp=Z,371nm,19.0s,baz=246,slow=32									
CTA	**Charters Tower**	**34.99**	**276**	P		**P**		**17 55 25.6**	**-1.6**
5.7nm,0.6s,baz=103,slow=11,SNR=11									
CTA				LR		LR		18 08 53.2	
comp=Z,1µm,19.0s,baz=74,slow=35									
CTAO	**Charters Tower**	**34.99**	**276**	*eP*		**P**		**17 55 26.4**	**-0.8**
12nm,0.8s									
STKA	**Stephens Creek**	**36.09**	**255**	P		**P**		**17 55 35.3**	**-1.3**
10nm,0.7s,baz=99,slow=8.6,SNR=14									
STKA	**Stephens Creek**	**36.09**	**255**	*eP*		**P**		**17 55 37.1**	**+0.5**
2.7nm,0.9s									
RKT	**Rikitea**	**37.55**	**91**	*e*LR		LR		18 05 48.0	
450nm,30.8s									
PMG	**Port Moresby**	**39.38**	**293**	LR		LR		18 10 44.3	
comp=Z,406nm,18.7s,baz=

comp=Z,106nm,18.6s,baz=142,slow=34
CASY Casey 56.81 208 *e*P **P 17 58 17.6 -0.9**
15nm,0.7s
QSPA South Pole Qui 60.89 180 *e*P **P 17 58 47.4 +0.4**
71nm,0.9s
MAW Mawson 73.88 200 P **P 18 00 11.0 +2.1**
5.3nm,0.7s,baz=130,slow=8.8,SNR=15
MAW Mawson 73.88 200 *e*P **P 18 00 09.2 +0.3**
3.9nm,1.4s
MJAR Matsushiro Arr 78.07 324 P **P 18 00 30.1 -3.1**
2.2nm,0.7s,baz=160,slow=5.3,SNR=15
MAJO Matsushiro 78.07 324 *e*P **P 18 00 29.8 -3.4**
9.8nm,0.9s
MJB9 Matsu-Tunnel 78.08 324 *e*P **P 18 00 31.8 -1.4**
2.4nm,0.9s
SYO Syowa Base 78.56 192⇑*e*P **P 18 00 35.8 +0.3**
SYO Syowa Base 78.56 192⇑*e*PcP **PcP 18 00 44.5 +0.1**
JNU Nakatsue 79.60 317 P **P 18 00 41.0 -0.8**
5.4nm,0.8s,baz=52,slow=6.4,SNR=6.1
PLCA Paso Flores 82.30 132 LR LR 18 31 57.0
comp=Z,176nm,18.7s,baz=334,slow=32
YSS Yuzh-Sakhalins 84.30 333 *e*P **P 18 01 03.0 -3.0**
15nm,1.0s
KSRS Korea Array 84.35 319 P **P 18 01 07.0 +0.5**
2.0nm,0.7s,baz=136,slow=5.9,SNR=6.6
KSRS LR LR 18 32 18.7
comp=Z,31nm,20.4s,baz=145,slow=31
KSAR Wonju Array Be 84.36 319 P **P 18 01 07.0 +0.4**
CMB Columbia Colle 84.98 41 *e*P **P 18 01 11.6 +1.9**
4.3nm,1.0s
PEA0 Petropavlovsk- 85.03 345 *e*P **P 18 01 08.0 -1.5**
PETK Petropavlovsk- 85.03 345 P **P 18 01 08.4 -1.1**
6.9nm,0.8s,baz=113,slow=6.3,SNR=7.5
Y12C Blythe 85.73 47 *e*P **P 18 01 15.9 +2.4**
142nm,0.8s
Y14A Wickenburg 86.83 48 *e*P P 18 01 25.6 +6.5
339nm,0.4s
USRK Ussurisyk Ar. 86.95 326 P **P 18 01 19.6 +0.4**
3.3nm,0.8s,baz=152,slow=4.2,SNR=8.2
TUC Tucson 87.31 51 *e*P **P 18 01 22.5 +1.1**
12nm,0.6s
WUAZ Wupatki 88.86 48 *e*P **P 18 01 28.8 0.0**
6.1nm,1.2s
ENH Enshi 92.08 304 *e*P **P 18 01 42.3 -1.4**
18nm,0.8s
BJI Beijing 93.05 315 P **P 18 01 49.2 +1.3**
BJI PP **PP 18 05 31.7 0.0**
BJI Beijing 93.05 315 S **S 18 12 56.7 +5.0**
BJI Beijing 93.05 315 SS SS 18 19 03.6 -3.9
BJI pmax pmax
comp=Z,9.0nm,0.6s
BJI LR LR
comp=N,78nm,9.0s
BJI LR LR
comp=E,93nm,9.6s
BJI LR LR
comp=Z,66nm,34.0s
CMAR Chiang Mai Arr 94.31 289 P **P 18 01 55.0 +0.7**
comp=Z,1.1nm,0.9s,baz=138,slow=3.6,SNR=7.4
HHC Hu-ho-hao-te 96.41 313 *e*P **P 18 02 08.0 +4.5**
HHC pmax pmax
comp=Z,13nm,1.0s
HHC pmax pmax
comp=Z,99nm,7.0s
ILAR Eielson Array 96.48 12 P **P 18 02 02.5 -0.5**
comp=Z,0.6nm,0.7s,baz=224,slow=4.9,SNR=10
LZH Lanzhou 99.12 306 *e*P **Pdif 18 02 17.5 +1.6**
LZH pP sP 18 02 40.8 +9.4
LZH sP pP 18 02 50.1 +23
LZH PP **PP 18 06 21.6 +2.6**
LZH pmax pmax
comp=Z,16nm,1.1s
LZH pmax pmax
comp=Z,63nm,9.2s
LZH LR LR
comp=N,170nm,16.9s
LZH LR LR
comp=E,150nm,17.0s
LZH LR LR
comp=Z,180nm,19.5s
CPUP Villa Florida 99.63 127 LR LR 18 42 38.3
comp=Z,96nm,18.8s,baz=263,slow=32
MKAR Makanchi Array 118.06 310 PKP **PKPdf 18 07 20.6 -0.4**
comp=Z,0.5nm,0.7s,baz=101,slow=1.2,SNR=6.4
KURK Kurchatov 121.22 314 *e*PKPdf **PKPdf 18 07 27.0 +0.1**
KBZ Khabaz 145.56 306 PKPbc **PKPab 18 08 12.9 0.0**
comp=Z,2.1nm,0.7s,baz=137,slow=2.4,SNR=5.9
NB2 NORSAR Subarra147.77 353 PKP **PKPbc 18 08 17.5 -1.0**
comp=Z,3.5nm,0.8s,baz=10,slow=3.2
NOA NORSAR Array B 147.77 353 PKPbc **PKPbc 18 08 18.3 -0.2**
comp=Z,3.4nm,0.8s,baz=16,slow=4.7,SNR=11
KSRV Kasrt alli 149.52 292 *e*P **PKPbc 18 08 24.9 +1.1**
ZALF Zalf 150.92 286 *e*P **PKPbc 18 08 28.3 +1.0**
ROOS tl_alroos 150.97 288 *e*P **PKPab 18 08 31.6 -3.4**
AKASG Malin Array Be 151.15 325 PKPbc **PKPbc 18 08 26.7 -0.5**
comp=Z,3.8nm,0.7s,baz=45,slow=3.0,SNR=14
AK11 Malin Array Si 151.19 325 *e*PKPbc **PKPbc 18 08 27.2 0.0**
DRWC Darouich 151.36 294 *e*P **PKPab 18 08 35.5 -1.0**
SALA Sala 151.42 285 *e*P **PKPbc 18 08 30.2 +1.5**
BRBR Barbar 152.09 287 *e*P **PKPab 18 08 35.8 -4.0**
BRTR Keskin Array B 153.20 301 PKPbc **PKPbc 18 08 33.7 +1.3**
comp=Z,1.7nm,0.7s,baz=164,slow=3.5,SNR=9.8
DPC Dobruska-Polom 156.80 339 *e*PKPAB **PKPab 18 08 59.5 +0.5**
BRG Berggiesshubel 157.01 343 *e*PKP **PKPab 18 09 06.0 +6.1**
comp=Z,3.1nm,0.9s
VYHS Vyhne 157.46 333 *e*PKP **PKPab 18 09 01.2 -0.7**
KHC Kasperske Hory 158.69 342 *e*PKPAB **PKPab 18 09 07.2 0.0**
GERES GERESS Array B 158.92 341 PKPab **PKPab 18 09 04.5 -3.8**
comp=Z,0.3nm,0.5s,baz=9.9,slow=2.3,SNR=3.0
TORD Torodi Ar. Bea 163.91 173 PKPab **PKPab 18 09 31.5 +0.8**
comp=Z,1.4nm,0.7s,baz=183,slow=3.4,SNR=5.0

WEL 10 17:55:46.8±0.1,**43.56S**×**172.39E**,**h7**km±1km,**ML3.5**/15,
3C-2D,**Error ellipse: s-maj=1.0km s-min=0.7km az=90.0,**
South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.17**	**94**	⇑PG	Pg	17 55 50.2	0.0
CRLZ				SG	Sg	17 55 53.0	+0.4
CRLZ				AML	AML	17 55 53.3	
MQZ	**McQueen's Vall**	**0.24**	**127**	PG	Pg	17 55 51.5	0.0
MQZ				SG	Sg	17 55 55.2	+0.5
MQZ				AML	AML	17 55 55.6	
OXZ	**Oxford**	**0.35**	**313**	⇓PG	Pg	17 55 53.4	-0.2
OXZ				SG	Sg	17 55 58.1	-0.1
OXZ				AML	AML	17 55 58.6	
OXZ				AML	AML	17 55 58.6	
OXZ				AML	AML	17 55 58.6	
LTZ	**Lake Taylor**	**0.79**	**353**	P*	Pg	17 56 02.0	+0.1
LTZ				AML	AML	17 56 02.5	
RPZ	**Rata Peaks**	**0.98**	**261**	⇑P*	Pg	17 56 05.3	-0.4
RPZ				AML	AML	17 56 19.3	
RPZ				AML	AML	17 56 21.8	
INZ	**Inchbonnie**	**1.09**	**320**	P*	Pg	17 56 07.2	-0.5
WVZ	**Waitaha Valley**	**1.30**	**291**	*e*P*	Pn	17 56 10.5	-0.8
WVZ				AML	AML	17 56 12.2	
KHZ	**Kahutara**	**1.42**	**37**	⇑PN	Pn	17 56 11.2	-1.8
KHZ				AML	AML	17 56 34.5	
KHZ				AML	AML	17 56 38.2	
LBZ	**Lake Benmore**	**1.79**	**242**	PN	Pn	17 56 16.8	-1.3
LBZ				AML	AML	17 56 53.0	
LBZ				AML	AML	17 58 48.0	
THZ	**Tophouse**	**1.84**	**12**	PN	Pn	17 56 17.0	-1.8
THZ				AML	AML	17 56 46.9	
THZ				AML	AML	17 56 48.1	
DSZ	**Denniston Nort**	**1.87**	**346**	*e*PN	Pn	17 56 17.5	-1.6
DSZ				AML	AML	17 56 27.4	
DSZ				AML	AML	17 56 55.9	
DSZ				AML	AML	17 56 55.9	
FOZ	**Fox Glacier**	**1.87**	**270**	*e*PN	Pn	17 56 19.3	+0.2
FOZ				AML	AML	17 56 50.0	
FOZ				AML	AML	17 57 21.3	
ODZ	**Otahua Downs**	**1.94**	**220**	PN	Pn	17 56 18.3	-1.8
ODZ				AML	AML	17 56 52.2	
ODZ				AML	AML	17 56 52.2	
ODZ				AML	AML	17 56 54.2	
ODZ				AML	AML	17 56 54.2	
BSWZ	**Blackbirch Sta**	**2.15**	**31**	*e*PN	Pn	17 56 22.0	-0.9
WKZ	**Wanaka**	**2.74**	**241**	AML	AML	17 57 17.0	
WKZ				AML	AML	17 57 23.3	
EAZ	**Earnscleugh**	**2.77**	**232**	⇓PN	Pn	17 56 29.8	-1.7
EAZ				AML	AML	17 57 15.0	
EAZ				AML	AML	17 57 20.7	
TUZ	**Tuapeka**	**3.10**	**218**	PN	Pn	17 56 34.1	-1.8
TUZ				AML	AML	17 57 33.8	
TUZ				AML	AML	17 57 34.5	

ISCJB ***10*** *18:00:44.4±0.5,32.21N±0.03×115.18W±0.03,h26km±4km,*
Error ellipse: s-maj=5.6km s-min=3.7km az=173.5
NEIC ***10*** *18:00:46.1,32.18N×115.26W,h5km,MD4.0(MEX),*
ML3.6(ECX),ML3.5(PAS),After ECX.
ECX ***10*** *18:00:46.1±0.5,32.18N×115.26W,h5km,MD3.4,ML3.6*
MEX ***10*** *18:00:47.1±0.5,32.24N×115.16W,h13km±81km,MD4.0*
ISC 10 18:00:44.4±0.9,**32.18N**±0.03×**115.23W**±0.02,**h20**km±3km,
n37,σ0.70/54,**4C-5D**,**California-Baja California border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.23**	**7**	*e*P	Pb	**18 00 50.8**	**+0.6**
MBIG				*i* S	Sb	**18 00 53.2**	**-0.8**
CPBX	**Cerro Prieto**	**0.24**	**346**	*e*P	Pb	**18 00 51.0**	**+0.6**
CPBX				*e*S	Sb	**18 00 54.1**	**-0.3**
CPBX				IAML		18 01 00.4	
	comp=N,24μm,0.3s						
CPBX				⇓*e*		18 01 00.4	
CPBX	**Cerro Prieto**	**0.24**	**346**	*e*P	Pb	**18 00 51.0**	**+0.6**
CPBX				*i* S	Sb	**18 00 52.9**	**-1.5**
SGL	**Mount Signal**	**0.62**	**318**	⇓*i*P	Pb	**18 00 57.1**	**+0.4**
DREC	**Desert Rsrch C**	**0.65**	**344**	*e*P	Pn	**18 00 58.0**	**-0.5**
COA	**Coachella**	**0.69**	**8**	⇑*i*P	Pb	**18 00 58.1**	**+0.4**
YMD	**Yuma Desert**	**0.69**	**57**	⇑*i*P	Pb	**18 00 58.0**	**+0.3**
YUH	**Yuha Desert**	**0.75**	**309**	⇓*i*P	Pb	**18 00 59.0**	**+0.3**
RMX	**La Rumorosa**	**0.83**	**301**	⇓*e*P	Pb	**18 01 00.4**	**+0.2**
RMX				*i* S	Sb	**18 01 11.0**	**0.0**
RMX				⇓*e*		18 01 13.0	
RMX				IAML		18 01 13.0	
	comp=N,2μm,0.2s						
IKP	**In-Ko-Pah, Jac**	**0.88**	**302**	P	Pn	**18 01 01.3**	**-0.4**
	baz=123,SNR=128						
IKP				S	Sn	**18 01 13.1**	**-0.8**
	baz=123						
SWSC	**Sam W. Stewart**	**0.90**	**328**	P	Pb	**18 01 00.8**	**-0.5**
	baz=149,SNR=71						
SWSC				S	Sb	**18 01 13.0**	**+0.1**
	baz=149						
GLA	**Glamis**	**0.93**	**21**	P	Pb	**18 01 01.4**	**-0.5**
	baz=203,SNR=166						
GLA				S	Sb	**18 01 13.0**	**-0.9**
	baz=203						
ZAX	**El Zacaton**	**1.11**	**233**⇑	*e*P	Pb	**18 01 05.1**	**+0.1**
SPX	**San Pedro Mart**	**1.15**	**190**	*i* P	Pb	**18 01 06.1**	**+0.3**
SPX	**San Pedro Mart**	**1.15**	**190**	*e*P	Pb	**18 01 05.9**	**0.0**
SPX				*e*S	Sn	**18 01 20.9**	**-0.1**
CBX	**Cerro Bola**	**1.22**	**277**	*e*P	Pb	**18 01 06.9**	**0.0**
CBX				*e*S	Sn	**18 01 22.5**	**+0.1**
CBX	**Cerro Bola**	**1.22**	**277**	*e*P	Pb	**18 01 07.0**	**0.0**
CBX				IAML		18 01 25.9	
	comp=E,2μm,0.5s						
CBX	**Cerro Bola**	**1.22**	**277**	*e*P	Pb	**18 01 06.9**	**0.0**
CBX				*e*S	Sn	**18 01 22.5**	**+0.1**
MONP2	**Monument Peak**	**1.23**	**305**	P	Pn	**18 01 06.5**	**-0.2**
	baz=126,SNR=80						
MONP2				S	Sn	**18 01 23.2**	**+0.3**
	baz=126						
TJIG	**Tijuana**	**1.25**	**282**	*e*P	Pb	**18 01 07.1**	**-0.1**
TJIG				*e*S	Sn	**18 01 23.3**	**+0.4**
TJIG	**Tijuana**	**1.25**	**282**	*e*P	Pb	**18 01 06.9**	**-0.3**
ECNX	**Esteban Cantu**	**1.27**	**246**	*e*P	Pb	**18 01 07.7**	**-0.1**
BAR	**Barrett**	**1.31**	**293**	*e*P	Pb	**18 01 08.2**	**-0.2**
PBX	**Punta Banda**	**1.34**	**251**⇑	*e*P	Pb	**18 01 08.7**	**-0.2**
BC3	**Big Chuckawall**	**1.48**	**353**	P	Pn	**18 01 09.6**	**-0.4**
	baz=174,SNR=30						
BC3				S	Sn	**18 01 27.8**	**-1.0**
	baz=174						
109C	**Camp Elliot, M**	**1.73**	**295**	Sb	Sb	**18 01 38.4**	**+1.6**
	baz=114						
TPFO	**Pinon Flats**	**1.75**	**324**	P	Pn	**18 01 13.3**	**-0.5**
	baz=145,SNR=24						
PFO	**Pinyon Flats O**	**1.76**	**324**	P	Pn	**18 01 13.5**	**-0.4**
	baz=145,SNR=18						
PFO	**Pinyon Flats O**	**1.76**	**324**	*e*P	Pn	**18 01 13.5**	**-0.4**
	comp=E,64nm,0.5s						
BELC	**Belle Mtn. Jos**	**1.92**	**341**	P	Pn	**18 01 15.7**	**-0.4**
	baz=161						
214A	**Organ Pipe Nat**	**2.07**	**96**	P	Pn	**18 01 17.5**	**-0.5**
	baz=277,SNR=19						
214A				S	Sn	**18 01 42.9**	**-0.3**
	baz=277						
214A	**Organ Pipe Nat**	**2.07**	**96**	*e*P	Pn	**18 01 17.4**	**-0.7**
	comp=E,618nm,0.5s						
MURC	**Murrieta**	**2.17**	**311**	P	Pn	**18 01 19.8**	**+0.3**
	baz=131,SNR=15						
WUAZ	**Wupatki**	**4.62**	**43**	*e*Pn	Pn	**18 01 55.0**	**+1.7**
WUAZ				*e*Sn	Sn	**18 02 46.7**	**+0.2**
W18A	**Petrified Fore**	**5.44**	**56**	Pn	Pn	**18 02 03.5**	**-1.1**
W18A				Sn	Sn	**18 03 09.1**	**+2.5**
121A	**Cookes Peak, D**	**6.31**	**85**	P	Pn	**18 02 17.1**	**+0.5**
	baz=269,SNR=5.4						
121A	**Cookes Peak, D**	**6.31**	**85**	*e*Pn	Pn	**18 02 16.5**	**0.0**
	comp=E,7.6nm,0.5s						
121A				*e*Sn	Sn	**18 03 27.1**	**-1.1**

IDC ***10*** *18:04:14.0±2.6,37.84N×141.12E,h0km,mb3.5/4,*
mb1 3.6/5,mb1mx3.3/59,mbtmp3.5/5,ML3.0/1,Error
ellipse: s-maj=60.2km s-min=30.8km az=76.0
JMA ***10*** *18:04:16.7±0.1,37.34N×141.35E,h49km±1km,M3.6*
JMA Felt II J1.
ISC 10 18:04:15.0±1.6,**37.33N**±0.04×**141.41E**±0.07,**h28**km±12km,
n16,σ1.18/26,**mb3.5**/4,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.43**	**275**	P	Pn	**18 04 26.5**	**+1.2**
JFK				S	Sn	**18 04 33.1**	**+0.8**
ONAJ	**Iwakimizuishiy**	**0.54**	**246**	P	Pn	**18 04 27.9**	**+1.0**
ONAJ				S	Sn	**18 04 35.7**	**+0.7**
JMM	**Marumori**	**0.73**	**318**	P	Pn	**18 04 30.2**	**+0.8**
JMM				S	Sn	**18 04 39.8**	**+0.2**
JFT	**Otama**	**0.88**	**283**	P	Pb	**18 04 32.8**	**+1.1**
JFT				S	Sn	**18 04 43.9**	**+0.6**
JHO	**Hitachi**	**0.98**	**224**	P	Pb	**18 04 33.5**	**0.0**
JHO				S	Sn	**18 04 45.3**	**-0.6**
JIO	**Ouri**	**1.13**	**357**	P	Pb	**18 04 35.7**	**-0.1**
JIO				S	Sn	**18 04 49.1**	**-0.3**
JOU	**Okura**	**1.19**	**330**	P	Pb	**18 04 36.8**	**-0.2**
JOU				S	Sb	**18 04 52.6**	**+0.5**
JFY	**Yanaizu**	**1.36**	**274**	P	Pb	**18 04 39.2**	**-0.7**
JFY				S	Sb	**18 04 56.3**	**-0.6**
JYS	**Shirataka**	**1.39**	**310**	P	Pb	**18 04 39.7**	**-0.7**
JYS				*e*S	Sb	**18 04 57.3**	**-0.4**
MJAR	**Matsushiro Arr**	**2.69**	**254**	Pn	Pn	**18 04 58.1**	**+1.7**
	3.0nm,0.3s,baz=64,slow=13,SNR=26						
MAT	**Matsushiro**	**2.69**	**254**	P	Pn	**18 04 58.4**	**+2.1**
MAT				S	Sb	**18 05 32.0**	**-2.9**
JHJ	**Hachijo jima 2**	**4.41**	**198**	Pn	Pn	**18 05 21.9**	**+1.9**
	7.7nm,0.3s,baz=162,slow=23,SNR=1.4						
JHJ				Sn	Sn	**18 06 09.4**	**-0.9**
	6.9nm,0.3s,baz=80,slow=22,SNR=1.4						
ZALV	**Zalesovo Beam**	**41.72**	**312**	P	P	**18 12 00.3**	**-0.8**
	0.4nm,0.2s,baz=92,slow=9.3,SNR=2.8						
MKAR	**Makanchi Array**	**43.96**	**302**	P	P	**18 12 19.0**	**-0.5**
	0.4nm,0.6s,baz=95,slow=9.0,SNR=4.8						
KURBB	**Kurchatov Arra**	**45.82**	**308**	P	P	**18 12 33.0**	**-1.2**
	0.6nm,0.5s,baz=82,slow=8.1,SNR=7.0						
WRA	**Warramunga Arr**	**57.35**	**188**	P	P	18 14 07.3	+6.7
	0.3nm,0.9s,baz=4.1,slow=7.2,SNR=1.2						

ISCJB ***10*** *18:13:38.3±0.8,6.78N±0.05×73.06W±0.06,h162km±7km,*
Error ellipse: s-maj=11.0km s-min=4.9km az=38.2
FUNV ***10*** *18:13:39.3,6.97N×73.12W,h187km,MW2.3*
RSNC ***10*** *18:13:41.0±0.8,6.76N×73.13W,h147km±5km,ML2.7*
ISC 10 18:13:37.1±1.5,**6.82N**±0.05×**73.07W**±0.06,**h174**km±10km,
n16,σ1.83/29,**Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.25**	**207**	*e*P	Pn	**18 14 00.7**	**0.0**
BARC				*e*S	Sn	**18 14 15.6**	**-3.1**
BARC				*i*		18 14 17.5	
	comp=Z,153nm,0.2s						
BRRC	**Barranca, Sant**	**0.70**	**294**	*e*P	Pn	**18 14 02.6**	**+0.5**
BRRC				*e*S	Sn	**18 14 20.1**	**-1.3**
BRRC				*i*		18 14 23.0	
	comp=Z,164nm,0.1s						
RUSC	**La Rusia**	**0.92**	**181**	*e*P	Pn	**18 14 04.5**	**+0.3**
RUSC				*e*S	Sn	**18 14 23.2**	**-1.8**
RUSC				*i*		18 14 25.2	
	comp=Z,75nm,0.3s						
GRMC	**Gramalote, San**	**0.93**	**16**	*e*P	Pn	**18 14 06.5**	**+2.7**
GRMC				*e*S	Sn	**18 14 26.3**	**+1.7**
GRMC				*i*		18 14 27.6	
	comp=Z,38nm,0.6s						
CBRI	**Barrientos, No**	**0.93**	**17**	*i* Pg	Pn	**18 14 05.3**	**+1.4**
CAPV	**Capacho**	**1.28**	**36**	*e*P	Pn	**18 14 08.6**	**+1.9**
CAPV				*e*S	Sn	**18 14 30.0**	**+0.3**
OCAC	**Ocana**	**1.44**	**350**	*e*P	Pn	**18 14 09.6**	**+1.5**
OCAC				*e*S	Sn	**18 14 32.6**	**+0.5**
OCAC				*i*		18 14 36.0	
	comp=Z,41nm,0.4s						
NORC	**Norcasia**	**2.18**	**235**	*e*P	Pn	**18 14 16.4**	**+0.6**
NORC				*e*S	Sn	**18 14 44.1**	**-1.8**
CHIC	**Chingaza**	**2.27**	**197**	*e*P	Pn	**18 14 18.8**	**+1.6**
CHIC				*e*S	Sn	**18 14 46.8**	**-1.5**
CHIC				*i*		18 14 53.5	
	comp=Z,33nm,0.3s						
HELC	**Santa Helena**	**2.52**	**256**	*e*P	Pn	**18 14 21.9**	**+1.8**
HELC				*e*S	Sn	**18 14 52.1**	**-1.3**
VIGV	**El Vigia**	**2.62**	**40**	*e*P	Pn	**18 14 22.4**	**+1.4**
VIGV				*e*S	Sn	**18 14 53.7**	**-1.4**
SOCV	**Socops**	**2.63**	**56**	*e*P	Pn	**18 14 22.9**	**+1.8**
SOCV				*e*S	Sn	**18 14 54.9**	**-0.4**
TOLC	**Tolima**	**3.15**	**225**	*e*P	Pn	**18 14 29.4**	**+1.7**
PRAC	**Prado**	**3.58**	**211**	*e*P	Pn	**18 14 34.2**	**+1.5**
PRAC				*e*S	Sn	**18 15 16.3**	**+0.2**
VIRV	**Villa del Rosa**	**3.72**	**10**	*e*P	Pn	**18 14 34.5**	**+0.1**
VIRV				*e*S	Sn	**18 15 14.4**	**-5.0**
BAUV	**El Baul**	**5.41**	**67**	*e*P	Pn	**18 14 56.0**	**-0.3**

ISCJB ***10*** *18:13:39.4±0.2,42.15N±0.01×12.43E±0.02,h6km±2km,*
mb3.7/3,Error ellipse: s-maj=2.8km s-min=2.2km
az=136.4
ROM ***10*** *18:13:39.9±0.1,42.12N×12.47E,h7km±1km,Ml3.4/46,*
Error ellipse: s-maj=1.2km s-min=0.9km az=64.0
NEIC ***10*** *18:13:39.0,42.14N×12.48E,h3km,ML3.2(ROM),After*
ROM.
NEIC Felt [III] at Rome. Also felt at Acquafondata, Bracciano,
Formello, Monterotondo and Rieti.
LDG ***10*** *18:13:40.1±0.1,42.17N×12.47E,h2km,Md2.9/3,Ml3.0/5,*
Error ellipse: s-maj=3.6km s-min=2.2km az=36.0
CSEM ***10*** *18:13:40.4±0.1,42.14N×12.45E,h2km,ML3.5/17,Error*
ellipse: s-maj=3.2km s-min=2.3km az=39.0
IDC ***10*** *18:13:40.6±1.3,42.18N×12.61E,h0km,mb3.7/3,*
mb1 3.7/6,mb1mx3.4/55,mbtmp3.6/6,ML3.4/3,MS2.7/1,
Ms1 2.7/1,ms1mx2.1/50,Error ellipse: s-maj=33.8km
s-min=14.2km az=96.0
PRU ***10*** *18:13:42.8,41.99N×12.75E,h27km*
ISC 10 18:13:41.0±0.9,**42.12N**±0.02×**12.44E**±0.02,**h12**km±6km,
n216,σ1.79/285,**mb3.8**/3,**8C-12D**,**Central Italy**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MTCE	**Montecelio**	**0.24**	**114**	⇓*i*Pg	Pg	**18 13 45.4**	**-0.7**
MTCE				Sg	Sg	**18 13 49.1**	**-0.5**
	4μm,0.4s						
MTCE	**Montecelio**	**0.24**	**114**	⇓*i*Pg	Pg	18 13 45.4	-0.7
MTCE				Sg	Sg	18 13 49.1	-0.5
	4μm,0.4s						
ROM9	**Roma**	**0.30**	**170**	Pg	Pg	**18 13 47.1**	**+0.1**
ROM9				Sg	Sb	**18 13 52.6**	**-0.4**
	9μm,0.4s						
ROM9	**Roma**	**0.30**	**170**	Pg	Pg	18 13 47.1	+0.1
ROM9				Sg	Sb	18 13 52.6	-0.4
	9μm,0.4s						
TOLF	**Tolfa**	**0.34**	**260**⇑	*i*Pg	Pg	**18 13 47.5**	**-0.2**
TOLF				Sg	Sg	**18 13 53.6**	**+1.3**
	6μm,0.5s						
TOLF	**Tolfa**	**0.34**	**260**⇑	*i*Pg	Pg	18 13 47.5	-0.2
TOLF				Sg	Sg	18 13 53.6	+1.3
	6μm,0.5s						
SAMA	**S.Maria delle**	**0.36**	**162**	Pg	Pg	**18 13 47.8**	**-0.3**
SAMA				Sg	Sg	**18 13 53.7**	**+0.7**
SAMA	**S.Maria delle**	**0.36**	**162**	Pg	Pg	18 13 47.8	-0.3
SAMA				Sg	Sg	18 13 53.7	+0.7
MA9	**Marino**	**0.39**	**155**	Pg	Pg	**18 13 48.1**	**-0.6**
MA9				Sg	Sb	**18 13 55.0**	**-0.6**
	7μm,0.5s						
MA9	**Marino**	**0.39**	**155**	Pg	Pg	18 13 48.1	-0.6
MA9				Sg	Sb	18 13 55.0	-0.6
	7μm,0.5s						
RDP	**Rocca di Papa**	**0.42**	**151**	Pg	Pg	**18 13 48.7**	**-0.5**
RDP				Sg	Sb	**18 13 56.5**	**0.0**
	10μm,0.4s						
RDP	**Rocca di Papa**	**0.42**	**151**	Pg	Pg	18 13 48.7	-0.5
RDP				Sg	Sb	18 13 56.5	0.0
	10μm,0.4s						
CERT	**Cerreto**	**0.44**	**113**	⇓*e*Pg	Pg	**18 13 48.8**	**-0.8**
CERT				Sg	Sb	**18 13 55.9**	**-1.2**
	4μm,0.4s						
CERT	**Cerreto**	**0.44**	**113**	⇓*e*Pg	Pg	18 13 48.8	-0.8
CERT				Sg	Sb	18 13 55.9	-1.2
	4μm,0.4s						
LAV9	**Lanuvio**	**0.48**	**157**	Pg	Pg	**18 13 50.2**	**-0.2**
	13μm,0.3s						
LAV9	**Lanuvio**	**0.48**	**157**	Pg	Pg	18 13 50.2	-0.2
	13μm,0.3s						
FIAM	**Fiamignano**	**0.52**	**73**	Pg	Pg	**18 13 50.3**	**-0.9**
	3μm,0.8s						
FIAM	**Fiamignano**	**0.52**	**73**	Pg	Pg	18 13 50.3	-0.9
	3μm,0.8s						
LNSS	**Leonessa**	**0.65**	**42**	Pg	Pg	**18 13 52.6**	**-1.1**
LNSS				Sg	Sb	**18 14 03.0**	**-0.5**
	2μm,0.5s						
LNSS	**Leonessa**	**0.65**	**42**	Pg	Pg	18 13 52.6	-1.1
LNSS				Sg	Sb	18 14 03.0	-0.5
	2μm,0.5s						
LATE	**Laterza**	**0.68**	**316**	Pg	Pg	**18 13 53.9**	**-0.3**
	3μm,0.4s						
LATE	**Laterza**	**0.68**	**316**	Pg	Pg	18 13 53.9	-0.3
	3μm,0.4s						
RM29	**Verrico (Monte**	**0.71**	**52**	Pg	Pg	**18 13 53.8**	**-1.0**
	2μm,0.8s						
RM29	**Verrico (Monte**	**0.71**	**52**	Pg	Pg	18 13 53.8	-1.0
	2μm,0.8s						
PTQR	**Pietraquaria**	**0.72**	**98**	⇓*e*Pg	Pg	**18 13 53.5**	**-1.4**
PTQR				Sg	Sb	**18 14 04.6**	**-0.7**
PTQR	**Pietraquaria**	**0.72**	**98**	⇓*e*Pg	Pg	18 13 53.5	-1.4
PTQR				Sg	Sb	18 14 04.6	-0.7
GUAR	**Guarcino**	**0.73**	**116**	Pg	Pg	**18 13 53.4**	**-1.6**
	2μm,0.6s						
GUAR	**Guarcino**	**0.73**	**116**	Pg	Pg	18 13 53.4	-1.6
	2μm,0.6s						
AQU	**L'Aquila**	**0.75**	**72**	Pg	Pg	**18 13 54.1**	**-1.4**
	2μm,1.3s						
AQU	**L'

CESI	CESI - Serrava	0.95	21	Pg	Pg	18 13 58.0	-1.2
CESI	CESI - Serrava	0.95	21	Pg	Pg	18 13 58.0	-1.2
TERO	Teramo	1.00	59	Pg	Pg	18 13 58.5	-1.7
	653nm,0.6s						
TERO	Teramo	1.00	59	Pg	Pg	18 13 58.5	-1.7
	653nm,0.6s						
MAON	Monte Argentar	1.02	288⇑	*i*Pg	Pg	18 14 00.0	-0.6
	695nm,0.7s						
MAON	Monte Argentar	1.02	288⇑	*i*Pg	Pg	18 14 00.0	-0.6
	695nm,0.7s						
ARCI	Arcidosso	1.02	316	Pg	Pb	18 14 00.5	-0.1
	374nm,0.9s						
ARCI	Arcidosso	1.02	316	Pg	Pb	18 14 00.5	-0.1
	374nm,0.9s						
POFI	Posta Fibreno	1.03	113	Pg	Pg	18 13 58.3	-2.5
	756nm,0.5s						
POFI	Posta Fibreno	1.03	113	Pg	Pg	18 13 58.3	-2.5
	756nm,0.5s						
FDMO	Fiordimonte	1.03	27⇓	*e*Pg	Pg	18 13 59.5	-1.3
	836nm,0.4s						
FDMO	Fiordimonte	1.03	27⇓	*e*Pg	Pg	18 13 59.5	-1.3
	836nm,0.4s						
ATCC	AVT- Casa Cast	1.07	8	Pg	Pg	18 14 00.2	-1.4
	958nm,0.6s						
ATCC	AVT- Casa Cast	1.07	8	Pg	Pg	18 14 00.2	-1.4
	958nm,0.6s						
ATTE	AVT- Monte Tez	1.08	357	Pg	Pg	18 14 00.5	-1.2
	659nm,0.7s						
ATTE	AVT- Monte Tez	1.08	357	Pg	Pg	18 14 00.5	-1.2
	659nm,0.7s						
INTR	Introdacqua	1.09	95	Pg	Pg	18 14 00.2	-1.8
	2µm,0.9s						
INTR	Introdacqua	1.09	95	Pg	Pg	18 14 00.2	-1.8
	2µm,0.9s						
MURB	Monte Urbino	1.14	3	Pg	Pg	18 14 01.8	-1.2
	1µm,0.3s						
MURB	Monte Urbino	1.14	3	Pg	Pg	18 14 01.8	-1.2
	1µm,0.3s						
SNTG	Esanatoglia	1.19	18	Pg	Pg	18 14 02.0	-1.9
	490nm,0.7s						
SNTG	Esanatoglia	1.19	18	Pg	Pg	18 14 02.0	-1.9
	490nm,0.7s						
CAFI	Castiglion Fio	1.26	344⇓	*e*Pg	Pg	18 14 03.9	-1.2
	603nm,1.3s						
CAFI	Castiglion Fio	1.26	344⇓	*e*Pg	Pg	18 14 03.9	-1.2
	603nm,1.3s						
ATVO	AVT- Monte Val	1.26	359	Pg	Pg	18 14 03.6	-1.6
	704nm,1.0s						
ATVO	AVT- Monte Val	1.26	359	Pg	Pg	18 14 03.6	-1.6
	704nm,1.0s						
CERA	Filignano	1.29	113	Pg	Pg	18 14 03.0	-2.7
	913nm,0.8s						
ATMC	Monte Cedrone	1.34	352	Pg	Pg	18 14 05.3	-1.4
	1µm,1.2s						
ATMC	Monte Cedrone	1.34	352	Pg	Pg	18 14 05.3	-1.4
	1µm,1.2s						
SSFR	Montelago di S	1.34	11	Pg	Pg	18 14 04.8	-1.9
	439nm,0.5s						
SSFR	Montelago di S	1.34	11	Pg	Pg	18 14 04.8	-1.9
	439nm,0.5s						
CASP	Castiglione de	1.35	300	Pg	Pn	18 14 04.7	-0.8
	162nm,0.5s						
CASP	Castiglione de	1.35	300	Pg	Pn	18 14 04.7	-0.8
	162nm,0.5s						
CING	Cingoli	1.37	24	Pg	Pg	18 14 05.3	-2.0
	700nm,0.8s						
CING	Cingoli	1.37	24	Pg	Pg	18 14 05.3	-2.0
	700nm,0.8s						
BADI	Badiali	1.40	354	Pg	Pn	18 14 06.2	0.0
	339nm,0.7s						
BADI	Badiali	1.40	354	Pg	Pn	18 14 06.2	0.0
	339nm,0.7s						
MODR	Mondragone	1.45	132	Pg	Pn	18 14 05.3	-1.7
	326nm,0.8s						
TRIF	Trifonti	1.51	312	Pg	Pn	18 14 07.3	-0.5
	253nm,0.9s						
TRIF	Trifonti	1.51	312	Pg	Pn	18 14 07.3	-0.5
	253nm,0.9s						
VAGA	Valle Agricola	1.51	117	Pg	Pn	18 14 08.0	+0.1
	320nm,0.9s						
VAGA	Valle Agricola	1.51	117	Pg	Pn	18 14 08.0	+0.1
	320nm,0.9s						
VENT	Ventotene	1.52	151	Pg	Pn	18 14 06.8	-1.0
	288nm,0.5s						
MPAG	Monte Paganucc	1.52	9	Pg	Pn	18 14 08.3	+0.2
	282nm,0.7s						
MPAG	Monte Paganucc	1.52	9	Pg	Pn	18 14 08.3	+0.2
	282nm,0.7s						
PARC	Parchiule	1.53	354	Pg	Pn	18 14 08.0	-0.2
PARC	Parchiule	1.53	354	Pg	Pn	18 14 08.0	-0.2
FSSB	Fossombrone	1.59	9	Pg	Pn	18 14 09.4	+0.5
	495nm,0.4s						
FSSB	Fossombrone	1.59	9	Pg	Pn	18 14 09.4	+0.5
	495nm,0.4s						
CSNT	Castellina Chi	1.59	328	Pg	Pn	18 14 08.7	-0.3
	399nm,2.4s						
CSNT	Castellina Chi	1.59	328	Pg	Pn	18 14 08.7	-0.3
	399nm,2.4s						
BSSO	Busso	1.71	109	Pg	Pb	18 14 11.8	-0.5
	769nm,1.5s						
BSSO	Busso	1.71	109	Pg	Pb	18 14 11.8	-0.5
	769nm,1.5s						
PTRJ	Pietraroja	1.73	115	Pg	Pn	18 14 11.0	0.0
	1µm,1.1s						
PTF	Prato	2.10	332	*e*P	Pn	18 14 16.4	+0.5
PTF	Prato	2.10	332	*e*P	Pn	18 14 16.4	+0.5
VLC	Villacollemand	2.53	324	*e*Pn	Pn	18 14 18.4	-3.5
VLC				*e*Sn	Sn	18 14 49.4	-3.3
VLC	Villacollemand	2.53	324	*e*Pn	Pn	18 14 18.4	-3.5
VLC				*e*Sn	Sn	18 14 49.4	-3.3
SARO	Sassorosso	2.55	325	P	Pn	18 14 23.0	+0.9
PGF	Pioggiola	2.59	281	*e*Pn	Pn	18 14 22.2	-0.5
PGF				*e*Sn	Sn	18 14 51.9	-2.2
	16nm,0.4s						
PGF	Pioggiola	2.59	281	*e*Pn	Pn	18 14 22.2	-0.5
PGF				*e*Sn	Sn	18 14 51.9	-2.2
	8.2nm,0.4s						
MS1	Monte Sant'Ang	2.64	98	*e*Pn	Pn	18 14 25.7	+2.3
NVLJ	Novalja	3.02	35	*e*Pn	Pn	18 14 28.7	+0.3
NVLJ				Sn	Sn	18 15 04.9	+0.5
NVLJ	Novalja	3.02	35	*e*Pn	Pn	18 14 28.7	+0.3
NVLJ				Sn	Sn	18 15 04.9	+0.5
CDT	Castel del Mon	3.06	109	*e*Pn	Pn	18 14 30.3	+1.3
CUC	Castrocucco	3.32	129	*e*Pn	Pn	18 14 30.5	-2.2
CUC				*e*Sn	Sn	18 15 12.1	0.0
CUC	Castrocucco	3.32	129	*e*Pn	Pn	18 14 30.5	-2.2
CUC				*e*Sn	Sn	18 15 12.1	0.0
UDBI	Udbina	3.41	44	*e*Pn	Pn	18 14 35.5	+1.5
UDBI				Sn	Sn	18 15 17.2	+2.8
UDBI	Udbina	3.41	44	*e*Pn	Pn	18 14 35.5	+1.5
UDBI				Sn	Sn	18 15 17.2	+2.8
SG1	Sgolgore (BA)	3.43	111	*e*Pn	Pn	18 14 34.8	+0.6
BAI	Bari	3.48	105	*e*Pn	Pn	18 14 36.0	+1.2
VSL	Villasalto	3.50	223	*e*Pn	Pn	18 14 35.0	-0.2
VSL				*e*Sn	Sn	18 15 14.1	-2.5
VSL	Villasalto	3.50	223	*e*Pn	Pn	18 14 35.0	-0.2
VSL				*e*Sn	Sn	18 15 14.1	-2.5
RIY	Rijeka	3.53	24	*e*Pn	Pn	18 14 36.0	+0.5
IMI	Imperia	3.79	300	P	Pn	18 14 38.8	-0.3
CEY	Cerknica	3.89	21	*e*Pn	Pn	18 14 39.4	-1.1
SBF	Sospel	4.07	297	*e*Pn	Pn	18 14 42.4	-0.6
SBF	Sospel	4.07	297	*e*Pn	Pn	18 14 42.4	-0.6
OZLJ	Ozalj	4.12	31	*e*Pn	Pn	18 14 44.5	+0.8
OZLJ				Sn	Sn	18 15 30.8	-0.9
OZLJ	Ozalj	4.12	31	*e*Pn	Pn	18 14 44.4	+0.8
OZLJ				Sn	Sn	18 15 30.8	-0.9
LJU	Ljubljana	4.20	20	*e*Pn	Pn	18 14 45.4	+0.7
CRES	Cresnjev	4.29	29	*e*Pn	Pn	18 14 46.9	+0.8
BLY	Banja Luka	4.34	51	*e*Pn	Pn	18 14 45.9	-0.7
TREB	Trebinje	4.41	80	*e*Pn	Pn	18 14 48.7	+1.0
FRF	La Foret Royal	4.50	291	*e*Pn	Pn	18 14 47.9	-1.0
FRF				*e*Sn	Sn	18 15 37.9	-3.2
	4.5nm,0.5s						
FRF	La Foret Royal	4.50	291	*e*Pn	Pn	18 14 47.9	-1.0
FRF				*e*Sn	Sn	18 15 37.9	-3.2
	2.2nm,0.5s						
HCY	Herceg Novi	4.50	84	*e*Pn	Pn	18 14 50.0	+1.1
LMR	La Mourre	4.54	287	*e*Pn	Pn	18 14 48.4	-1.0
LMR				*e*Sn	Sn	18 15 38.3	-3.7
	5.5nm,0.3s						
LMR	La Mourre	4.54	287	*e*Pn	Pn	18 14 48.4	-1.0
LMR				*e*Sn	Sn	18 15 38.3	-3.7
	2.8nm,0.3s						
BRY	Bratogost	4.57	78	*e*Pn	Pn	18 14 51.8	+1.8
CLTB	Caltabellotta	4.58	172	*e*Pn	Pn	18 14 48.0	-2.0
CLTB	Caltabellotta	4.58	172	*e*Pn	Pn	18 14 48.0	-2.0
MYKA	Terra Mystica	4.59	10	*i* Pn	Pn	18 14 51.2	+1.0
	5.0nm,0.4s,SNR=6.6						
MYKA				*i* Sn	Sn	18 15 45.9	+2.5
	5.1nm,0.4s						
MYKA	Terra Mystica	4.59	10	Pn	Pn	18 14 51.2	+1.0
	5.0nm,0.4s,SNR=6.6						
MYKA				Sn	Sn	18 15 45.9	+2.5
	5.1nm,0.4s						
ABTA	Abfaltersbach	4.63	1	*i* Pn	Pn	18 14 51.9	+1.2
	14nm,0.6s,SNR=16						
ABTA				*i* Sn	Sn	18 15 45.1	+0.8
	18nm,0.6s						
ABTA	Abfaltersbach	4.63	1	Pn	Pn	18 14 51.9	+1.2
	14nm,0.6s,SNR=16						
ABTA				Sn	Sn	18 15 45.1	+0.8
	18nm,0.6s						
OBKA	Obir	4.64	18	*i* Pn	Pn	18 14 52.1	+1.2
	4.8nm,0.4s						
OBKA				*i* Sn	Sn	18 15 49.1	+4.4
	22nm,0.6s						
OBKA	Obir	4.64	18	Pn	Pn	18 14 52.1	+1.2
	4.8nm,0.4s						
OBKA				Sn	Sn	18 15 49.1	+4.4
	22nm,0.6s						
MBDF	Montbardon	4.88	304	*e*Pn	Pn	18 14 55.0	+0.7
MBDF				*e*Sn	Sn	18 15 46.7	-4.1
	4.4nm,0.5s						
MBDF	Montbardon	4.88	304	*e*Pn	Pn	18 14 55.0	+0.7
MBDF				*e*Sn	Sn	18 15 46.7	-4.1
	2.2nm,0.5s						
TUE	Stuetta	4.88	334	*e*Pn	Pn	18 14 53.2	-1.2
TUE	Stuetta	4.88	334	*e*Pn	Pn	18 14 53.1	-1.2
UPM	Unac-Piva	4.89	75	*e*Pn	Pn	18 14 56.3	+1.9
SOKA	Soboth	4.92	21	*i* Pn	Pn	18 14 56.8	+2.1
	3.2nm,0.5s						
SOKA				*i* Sn	Sn	18 15 53.5	+2.0
	5.0nm,0.8s						
SOKA	Soboth	4.92	21	Pn	Pn	18 14 56.8	+2.1
	3.2nm,0.5s						
SOKA				Sn	Sn	18 15 53.5	+2.0
	5.0nm,0.8s						
KBA	Koelnbreinsper	5.00	7	*i* Pn	Pn	18 14 57.1	+1.2
	14nm,0.7s,SNR=9.3						
KBA				*i* Sn	Sn	18 15 54.2	+0.6
	8.3nm,0.6s						
KBA	Koelnbreinsper	5.00	7	Pn	Pn	18 14 57.1	+1.2
	14nm,0.7s,SNR=9.3						
KBA				Sn	Sn	18 15 54.2	+0.6
	8.3nm,0.6s						
DAVOX	Davos/Dischmat	5.01	339	Pn	Pn	18 14 58.4	+2.4
	0.7nm,0.3s,baz=150,slow=12,SNR=12						
DAVOX				Sn	Sn	18 15 57.0	+3.2
	0.4nm,0.3s,baz=343,slow=22,SNR=3.0						
DRME	Dracevica, Mon	5.01	87	*e*Pn	Pn	18 14 57.1	+1.2
FETA	Feichten	5.05	347	*i* Pn	Pn	18 14 59.3	+2.7
	6.2nm,0.7s,SNR=5.6						
FETA				*i* Sn	Sn	18 15 58.5	+3.6
	4.4nm,0.7s						
FETA	Feichten	5.05	347	Pn	Pn	18 14 59.3	+2.7
	6.2nm,0.7s,SNR=5.6						
FETA				Sn	Sn	18 15 58.5	+3.6
	4.4nm,0.7s						
PDG	Podgorica	5.06	84	*e*Pn	Pn	18 14 57.8	+1.2
WTTA	Wattenberg	5.17	354	*i* Pn	Pn	18 15 00.6	+2.3
	3.5nm,0.4s						
WTTA				*i* Sn	Sn	18 16 01.8	+3.8
	7.3nm,0.5s						
WTTA	Wattenberg	5.17	354	Pn	Pn	18 15 00.6	+2.3
	3.5nm,0.4s						
WTTA				Sn	Sn	18 16 01.8	+3.8
	7.3nm,0.5s						
WATA	Walderalm	5.25	354	*i* Pn	Pn	18 15 02.4	+3.1
	SNR=9.1						
WATA				*i* Sn	Sn	18 16 02.3	+2.5
	3.6nm,0.6s						
WATA	Walderalm	5.25	354	Pn	Pn	18 15 02.4	+3.1
	SNR=9.1						
WATA				Sn	Sn	18 16 02.3	+2.5
	3.6nm,0.6s						
MOTA	Moosalm	5.31	350	*i* Pn	Pn	18 15 03.2	+3.1
	0.1nm,0.1s						
MOTA				*i* Sn	Sn	18 16 03.1	+1.8
	2.8nm,0.4s						
MOTA	Moosalm	5.31	350	Pn	Pn	18 15 03.2	+3.1
	0.1nm,0.1s						
MOTA				Sn	Sn	18 16 03.1	+1.8
	2.8nm,0.4s						
LPG	La Plagne	5.32	311	*e*P	Pn	18 15 03.1	+2.6
LPG	La Plagne	5.32	311	*e*P	Pn	18 15 03.1	+2.6
LPL	La Plagne	5.35	311	*e*P	Pn	18 15 03.6	+2.9
LPL	La Plagne	5.35	311	*e*P	Pn	18 15 03.6	+2.9
SMRF	Simiane la Rot	5.36	293	*e*Pn	Pn	18 15 01.3	+0.5
SMRF	Simiane la Rot	5.36	293	*e*Pn	Pn	18 15 01.3	+0.5
BBLS	Lazići	5.39	69	*e*Pn	Pn	18 15 01.5	+0.3
DAVA	Damuels	5.48	341	*i* Pn	Pn	18 15 03.8	+1.3
	6.4nm,0.4s						
DAVA				*i* Sn	Sn	18 16 07.5	+2.1
	5.2nm,0.6s						
DAVA	Damuels	5.48	341	Pn	Pn	18 15 03.8	+1.3
	6.4nm,0.4s						
DAVA				Sn	Sn	18 16 07.5	+2.1
	5.2nm,0.6s						
RETA	Reutte	5.50	348	*i* Pn	Pn	18 15 05.2	+2.6
	1.8nm,0.4s						
RETA				*i* Sn	Sn	18 16 10.0	+4.2
	4.7nm,0.5s						
RETA	Reutte	5.50	348	Pn	Pn	18 15 05.2	+2.6
	1.8nm,0.4s						
ORIF	Oris-en-Rattie	5.53	303	*e*P	Pn	18 15 05.6	+2.5
ORIF	Oris-en-Rattie	5.53	303	*e*P	Pn	18 15 05.6	+2.5
ARSA	Arzberg	5.58	22	*e*Pn	Pn	18 15 04.0	+0.3
	2.4nm,0.4s						
ARSA				*i* Sn	Sn	18 16 08.8	+1.1
	5.4nm,0.7s						
ARSA	Arzberg	5.58	22	Pn	Pn	18 15 04.0	+0.3
	2.4nm,0.4s						
ARSA				Sn	Sn	18 16 08.8	+1.1
	5.4nm,0.7s						
TEKS	Tekeris	5.71	62	*e*Pn	Pn	18 15 08.0	+2.5
IVAS	Ivanjica	5.85	73	*e*Pn	Pn	18 15 08.9	+1.4
DIVS	Divibare	5.87	68	*e*Pn	Pn	18 15 09.1	+1.4
MOA	Molln	5.87	12	*i* Pn	Pn	18 15 08.6	+0.9
	2.5nm,0.3s						
MOA				*i* Sn	Sn	18 16 18.3	+3.4
	7.3nm,0.8s						
MOA	Molln	5.87	12	Pn	Pn	18 15 08.6	+0.9
	2.5nm,0.3s						
FGSL	Fruska Gora	6.15	58	*e*Pn	Pn	18 15 12.1	+0.6
TRUS	Trudelj	6.19	67	*e*Pn	Pn	18 15 12.5	+0.4
VIVF	Saint-Julien-l	6.28	298	*e*Pn	Pn	18 15 13.4	+0.1
VIVF				*e*Sn	Sn	18 16 19.2	-5.8
	2.5nm,0.4s						
VIVF	Saint-Julien-l	6.28	298	*e*Pn	Pn	18 15 13.4	+0.1
CONA	Conrad Observa	6.29	21	*i* Pn	Pn	18 15 14.2	+0.7
	1.5nm,0.2s						
CONA				*i* Sn	Sn	18 16 26.7	+1.4
	2.2nm,0.5s						
CONA	Conrad Observa	6.29	21	Pn	Pn	18 15 14.2	+0.7
	1.5nm,0.2s						
CONA				Sn	Sn	18 16 26.7	+1.4
	2.2nm,0.5s						
GRUS	Gruza	6.32	71	*e*Pn	Pn	18 15 14.4	+0.6
CABF	La Chapelle	6.39	317	*e*Pn	Pn	18 15 12.9	-2.1
SELS	Selova	6.49	77	*e*Pn	Pn	18 15 17.0	+0.8
LASF	Ste Croix	6.58	290	*e*Pn	Pn	18 15 17.2	-0.3
LASF	Ste Croix	6.58	290	*e*Pn	Pn	18 15 17.2	-0.3
GERES	GERESS Array B	6.78	7	Pn	Pn	18 15 20.6	+0.3
	0.4nm,0.3s,baz=173,slow=12,SNR=9.3						
GERES				Sn	Sn	18 16 36.7	-0.8
	1.0nm,0.3s,baz=181,slow=23,SNR=10						
KEST	Kesra	6.82	202	Pn	Pn	18 15 24.5	+3.7
	1.7nm,0.3s,baz=311,slow=5.1,SNR=22						
BFO	Black Forest	6.85	336	*e*Pn	Pn	18 15 16.9	-4.3
	3.6nm,0.6s						
BARS	Barje	6.97	81⇑	*i*Pn	Pn	18 15 23.3	+0.6
KHC	Kasperske Hory	7.05	6	*e*PN	Pn	18 15 23.7	-0.3
KHC				*ex*	x	18 15 45.0	
KHC				*e*SN	Sn	18 16 42.7	-1.4
KHC	Kasperske Hory	7.05	6	*e*Pn	Pn	18 15 21.8	-2.2
	1.2nm,0.8s						
KHC				*e*Sn	Sn	18 16 43.7	-0.4
KHC	Kasperske Hory	7.05	6	*e*Pn	Pn	18 15 21.8	-2.2
	1.2nm,0.8s						
KHC				*e*Sn	Sn	18 16 43.7	-0.4
CDF	Champ du Feu	7.27	332	*e*Pn	Pn	18 15 26.0	-1.0
CDF	Champ du Feu	7.27	332	*e*Pn	Pn	18 15 26.0	-1.0
VRAC	Vranov	7.75	21	LR	LR	18 19 06.5	
	comp=Z,47nm,18.8s,baz=277,slow=43						
VYHS	Vyhne	7.80	33	*e*PN	Pn	18 15 38.3	+4.1
LOR	Lormes	7.99	313	*e*Pn	Pn	18 15 33.8	-3.0
	baz=114						
CAF	Calviac	8.05	294	*e*Pn	Pn	18 15 37.9	+0.3
CAF	Calviac	8.05	294	*e*Pn	Pn	18 15 37.9	+0.3
RJF	Les Rejaudoux	8.53	296	*e*Pn	Pn	18 15 44.8	+0.6
RJF	Les Rejaudoux	8.53	296	*e*Pn	Pn	18 15 44.8	+0.6
DRGR		8.70	54⇓	*i*P	Pn	18 15 49.3	+2.7
DRGR		8.70	54⇓	*i*P	Pn	18 15 49.3	+2.7
ARR	Arges	9.40	66⇑	*i*P	Pn	18 16 03.0	+6.8
STHS	Stebnicka Huta	9.54	37	*e*PN	Pn	18 16 02.5	+4.5
VOIR		9.70	66⇑	*i*P	Pn	18 16 02.9	+2.6
VOIR		9.70	66⇑	*i*P	Pn	18 16 02.9	+2.6
TORD	Torodi Ar. Bea	30.34	201	P	P	18 19 53.4	+0.9
	0.6nm,0.7s,baz=16,slow=9.4,SNR=3.5						
ZALV	Zalesovo Beam	47.77	50	P	P	18 22 18.4	+0.8
	0.3nm,0.3s,baz=270,slow=8.2,SNR=2.5						
MKAR	Makanchi Array	48.58	59	P	P	18 22 25.1	+1.1
	0.8nm,0.7s,baz=282,slow=6.1,SNR=10						

NIED ***10*** *18:20:00,36˚.70N×142˚.20E,h41km,Mw3.9 Best double couple: M₀7.53000×10¹⁴ NP1:φ₈76.00000°,δ33.00000°, λ-43.00000°. NP2:φ₈204.00000°,δ68.00000°, λ-116.00000°.*

IDC ***10*** *18:20:21.4±2.1,36˚.64N×142˚.32E,h0km,mb3.4/4, mb1 3.5/7,mb1mx3.4/44,mbtmp3.5/7,ML3.6/3,MS2.9/2, Ms1 2.9/2,ms1mx2.5/32,Error ellipse: s-maj=41.0km s-min=25.4km az=136.0*

JMA ***10*** *18:20:23.0±0.2,36˚.69N×142˚.24E,h23km,M3.7*

ISC 10 18:20:22.1±2.4,36˚.69N±0˚.04×142˚.17E±0˚.08,h3km±14km, n27,σ1ᵖ03/27,mb3.4/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.18	291		P	Pg	18 20 44.6	0.0
JFK	Kawauchi	1.24	303		P	Pg	18 20 45.7	-0.1
JHO	Hitachi	1.29	267		P	Pn	18 20 46.8	-0.2
CHOJ	Chosi	1.45	227		P	Pn	18 20 49.2	0.0
CHOJ					S	Sn	18 21 08.0	-0.7
JMM	Marumori	1.61	317		P	Pn	18 20 51.0	-0.3
JFT	Otama	1.68	300		P	Pn	18 20 53.0	+0.6
JFT					S	Sn	18 21 14.7	+0.2
JIO	Ouri	1.88	340		P	Pn	18 20 55.0	0.0
JIO					eS	Sn	18 21 17.7	-1.5
JOU	Okura	2.06	325		P	Pn	18 20 58.3	+0.8
JOU					S	Sn	18 21 24.4	+0.7
JFY	Yanaizu	2.10	291		P	Pn	18 20 59.5	+1.4
JFY					eS	Sb	18 21 26.7	-0.5
JAG	Ashikaga	2.21	264		P	Pn	18 21 00.2	+0.6
BSO1	Boso 1	2.26	206		P	Pn	18 20 59.9	+0.1
BSO1					eS	Sn	18 21 27.5	-0.3
JMK	Ichinoseki	2.38	342		eS	Sn	18 21 30.3	-1.3
MJAR	Matsushiro Arr	3.19	268		Pn	Pn	18 21 14.8	+1.6
	6.2nm,0.3s,baz=87,slow=15,SNR=50							
MJAR					LR	LR	18 22 45.6	
	comp=Z,107nm,20.4s,baz=90,slow=44							
MAT	Matsushiro	3.19	268		P	Pn	18 21 15.1	+1.9
MAT					S	Sb	18 21 56.1	-2.7
JHJ	Hachijo jima 2	4.07	210		Pn	Pn	18 21 24.7	-0.5
	9.5nm,0.3s,baz=339,slow=19,SNR=21							
ASAJ	Asahikawa	7.42	2		Pn	Pn	18 22 11.2	-0.1
	0.9nm,0.3s,baz=221,slow=16,SNR=16							
MA2	Magadan	23.57	11		LR	LR	18 35 19.0	
	comp=Z,53nm,19.2s,baz=152,slow=38							
H11N2	WAKE ISLAND Hy 27.45	121			T	T	18 55 26.5	
	baz=314,slow=75,SNR=22							
H11N1	WAKE ISLAND Hy 27.46	121			T	T	18 55 49.6	
	baz=314,slow=75,SNR=11							
H11N3	WAKE ISLAND Hy 27.47	121			T	T	18 55 47.0	
	baz=314,slow=75,SNR=14							
H11S1	WAKE ISLAND Hy 28.16	123			T	T	18 56 31.3	
	baz=316,slow=75,SNR=8.9							
H11S3	WAKE ISLAND Hy 28.16	123			T	T	18 56 12.7	
	baz=316,slow=75,SNR=8.2							
H11S2	WAKE ISLAND Hy 28.18	123			T	T	18 56 22.7	
	baz=316,slow=75,SNR=7.2							
SONM	Songino Array	28.48	304		P	P	18 26 19.1	+0.7
	0.5nm,0.6s,baz=104,slow=6.9,SNR=3.8							
ZALV	Zalesovo Beam	42.59	313		P	P	18 28 20.4	+1.3
	0.3nm,0.3s,baz=94,slow=9.2,SNR=2.5							
MKAR	Makanchi Array	44.81	303		P	P	18 28 37.1	-0.1
	0.2nm,0.6s,baz=88,slow=7.6,SNR=3.5							
ILAR	Eielson Array	49.46	32		P	P	18 29 12.8	-0.3
	0.3nm,0.7s,baz=262,slow=6.7,SNR=4.1							

NIED ***10*** *18:22:00,38˚.00N×143˚.30E,h17km,Mw3.7 Best double couple: M₀3.56000×10¹⁴ NP1:φ₈336.00000°,δ70.00000°, λ175.00000°. NP2:φ₈68.00000°,δ85.00000°,λ21.00000°.*

JMA 10 18:22:42.0±0.4,38˚.02N×143˚.31E,h37km,M3.5,Off east coast of Honshu

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

RAR pmax pmax
comp=Z,118nm,1.7s
DZM Mont Dzumac 17.96 246 P **Pn 18 51 26.6 +0.8**
comp=Z,0.4nm,0.3s,baz=79,slow=13,SNR=11
DZM LR LR 18 57 14.0
comp=Z,19µm,19.0s,baz=76,slow=34
DZM Mont Dzumac 17.96 246 *e*P **Pn 18 51 26.0 +0.2**
comp=Z,284nm,1.4s
DZM *e*LR LR 18 55 35.8
comp=Z,29µm,25.3s
DZM Mont Dzumac 17.96 246 *e*Pn **Pn 18 51 23.7 -2.1**
comp=Z,653nm,2.0s
URZ Urewera 23.57 194 P **P 18 52 26.4 0.0**
comp=Z,16nm,0.7s,baz=49,slow=5.9,SNR=6.2
URZ LR LR 19 00 20.7
comp=Z,19µm,20.5s,baz=35,slow=34
HNR Honiara 24.30 281 LR LR 19 00 21.9
comp=Z,6µm,20.9s,baz=115,slow=32
XMAS Kiritimati 25.20 48 *e*P **P 18 52 42.8 +1.1**
comp=Z,108nm,1.2s
PAE Paea 25.34 99 *e*T T 19 18 36.8
comp=Z,3.2nm,0.3s
PPT Papeete 25.34 99 LR LR 18 59 58.6
comp=Z,3µm,21.3s,baz=268,slow=30
PPT2 Papeete2 25.34 99 *e*LQ LQ 18 57 46.0
comp=Z,25µm,25.8s
PPT2 *e*LR LR 18 58 53.9
comp=Z,12µm,26.0s,baz=260
PPT2 Papeete2 25.34 99 *e*T T 19 18 39.4
comp=Z,5.1nm,0.2s
TIAR Tiarei 25.56 98 *e*T T 19 18 55.1
comp=Z,4.0nm,0.3s
TVO Taravao 25.66 99 *e*T T 19 19 02.2
comp=Z,2.0nm,0.3s
TBI Tubuai 26.14 112 *e*LQ LQ 18 58 09.5
comp=Z,26µm,27.5s
TBI *e*LR LR 18 59 21.7
comp=Z,5µm,30.2s
TBI Tubuai 26.14 112 *e*T T 19 19 41.6
comp=Z,17nm,0.2s
SNZO South Karori 27.05 196 *e*P **P 18 52 53.6 -4.5**
comp=Z,302nm,1.5s
JOHN Johnston Islan 32.57 11 PFAKE 18 54 00.0 +13
JOHN LR LR
comp=Z,263nm,19.0s
TAOE Nuku Hiva Isla 35.54 84 *e*S **S 18 59 46.4 -2.2**
comp=Z,526nm,24.8s
TAOE *e*LQ LQ 19 02 16.9
comp=Z,3µm,28.1s
TAOE *e*LR LR 19 03 31.7
comp=Z,17µm,27.2s,baz=257
TAOE Nuku Hiva Isla 35.54 84 *e*T T 19 31 20.5
comp=Z,73nm,0.2s
CTA Charters Tower 36.27 257 P **P 18 54 18.9 -0.6**
CTA pmax pmax
comp=Z,25nm,1.5s
CTAO Charters Tower 36.27 257 *e*P **P 18 54 18.5 -1.0**
CTAO pmax pmax
comp=Z,35nm,1.3s
CTAO MLR MLR
comp=Z,6µm,20.0s
CTAO Charters Tower 36.27 257 *e*P **P 18 54 18.5 -1.0**
comp=Z,35nm,1.3s
CTAO LR LR
comp=Z,6µm,20.0s
PMG Port Moresby 36.52 275 LR LR 19 08 29.8
comp=Z,3µm,18.1s,baz=91,slow=35
PMG Port Moresby 36.52 275 *e*P **P 18 54 19.6 -2.0**
PMG pmax pmax
comp=Z,191nm,1.3s
CAN Canberra 37.11 231 PFAKE 18 54 40.0 +14
CAN LR LR
comp=Z,4µm,20.0s
H11S2 WAKE ISLAND Hy 37.80 332 T T 19 34 47.2
baz=150,slow=76,SNR=31
H11S3 WAKE ISLAND Hy 37.81 332 T T 19 34 42.6
baz=150,slow=76,SNR=29
H11S1 WAKE ISLAND Hy 37.81 332 T T 19 34 45.5
baz=150,slow=76,SNR=28
H11N3 WAKE ISLAND Hy 38.79 334 T T 19 35 45.1
baz=152,slow=76,SNR=83
H11N1 WAKE ISLAND Hy 38.79 334 T T 19 35 44.6
baz=152,slow=76,SNR=207
H11N2 WAKE ISLAND Hy 38.81 334 T T 19 35 49.4
baz=152,slow=76,SNR=92
RKT Rikitea 39.30 108 *e*S **S 19 00 44.4 -1.1**
comp=Z,2µm,31.5s
RKT *e*LQ LQ 19 03 36.8
comp=Z,3µm,26.5s
RKT *e*LR LR 19 05 24.8
comp=Z,6µm,27.8s,baz=282
RKT Rikitea 39.30 108 *e*T T 19 36 06.2
comp=Z,6.5nm,0.3s
COEN Coen 39.56 267 *e*P **P 18 54 46.9 -0.3**
comp=Z,24nm,1.0s
TOO Toolangi 40.59 230 P **P 18 54 56.7 +1.1**
TOO pmax pmax
comp=Z,48nm,1.3s
STKA Stephens Creek 41.93 239 P **P 18 55 05.1 -1.6**
comp=Z,24nm,1.1s,baz=74,slow=7.8,SNR=10
STKA Stephens Creek 41.93 239 *e*P **P 18 55 04.9 -1.8**
STKA pmax pmax
comp=Z,20nm,1.5s
STKA Stephens Creek 41.93 239 *e*P **P 18 55 04.9 -1.8**
comp=Z,20nm,1.5s
WB2 Warramunga Arr 47.46 257 *e*P **P 18 55 51.5 +0.4**
comp=Z,36nm,1.3s
WRAB Tennant Creek 47.46 257 *e*P **P 18 55 47.2 -3.8**
WRAB pmax pmax
comp=Z,14nm,1.1s
WRA Warramunga Arr 47.47 257 P **P 18 55 48.7 -2.4**
comp=Z,7.4nm,1.1s,baz=90,slow=7.4,SNR=18
WRA LR LR 19 15 23.1
comp=Z,2µm,18.1s,baz=90,slow=36
AS01 Alice Springs 47.75 252 *e*P **P 18 55 50.1 -3.1**
AS31 Alice Springs 47.79 252 *e*P **P 18 55 51.5 -2.1**
comp=Z,11nm,1.3s
ASAR Alice Springs 47.80 252 P **P 18 55 50.6 -3.0**
comp=Z,6.6nm,0.6s,baz=85,slow=8.2,SNR=71
ASAR LR LR 19 14 03.7
comp=Z,7µm,21.2s,baz=98,slow=34
GUMO Guam 48.33 305 LR LR 19 13 17.0
comp=Z,1µm,20.5s,baz=112,slow=32
GUMO Guam 48.33 305 P **P 18 56 00.3 +2.6**
GUMO pmax pmax
comp=Z,88nm,1.6s
MTN Manton Dam 51.31 266 *e*P **P 18 56 19.2 -1.2**
comp=Z,59nm,1.4s
FITZ Fitzroy Crossi 55.83 258 LR LR 19 18 45.0
comp=Z,4µm,19.4s,slow=34
FITZ Fitzroy Crossi 55.83 258 *e*P **P 18 56 50.5 -3.1**
comp=Z,103nm,1.8s
LBMI Labuha 57.72 279 P **P 18 57 10.5 +3.4**
SOEI Soe 58.50 268 P **P 18 57 16.1 +3.4**
DAV Davao City (W) 62.11 287 PFAKE 18 57 50.0 +13
DAV LR LR
comp=Z,943nm,20.0s
LUWI Luwuk 62.12 277 P **P 18 57 40.9 +3.6**
LUWI Luwuk 62.12 277 *e*P **P 18 57 35.4 -1.9**
comp=Z,59nm,1.0s
NWAO Narrogin (SRO) 62.49 241 LR LR 19 24 10.9
comp=Z,4µm,18.2s,baz=322,slow=36
SBA Scott Base 63.05 184 *e*P **P 18 57 42.6 +0.1**
SBA pmax pmax
comp=Z,72nm,1.4s
SBA Scott Base 63.05 184 *e*P **P 18 57 42.6 +0.1**
comp=Z,72nm,1.4s
VNDA Vanda 63.12 185 P **P 18 57 41.9 -1.1**
comp=Z,6.9nm,0.9s,baz=340,slow=8.8,SNR=20
VNDA LR LR 19 19 03.6
comp=Z,788nm,21.4s,baz=28,slow=30
VNDA Vanda 63.12 185 *e*P **P 18 57 42.9 -0.1**
VNDA pmax pmax
comp=Z,77nm,1.6s
VNDA Vanda 63.12 185 *e*P **P 18 57 42.9 -0.1**
comp=Z,77nm,1.6s
KAPI Kappang 63.95 272 LR LR 19 23 37.8
comp=Z,636nm,20.7s,baz=121,slow=34
KAPI Kappang 63.95 272 PFAKE 18 58 00.0 +10
KAPI LR LR
comp=Z,790nm,20.0s
JHJ Hachijo jima 2 64.18 319 LR LR 19 23 08.2
comp=Z,211nm,20.4s,baz=140,slow=34
PCI Palu 64.97 276 P **P 18 57 59.2 +3.0**
TWSI Taliwang, Sumb 65.84 267 P **P 18 58 05.0 +3.2**
MJAR Matsushiro Arr 67.41 321 P **P 18 58 10.4 -1.0**
comp=Z,2.1nm,0.8s,baz=162,slow=6.2,SNR=6.4
MJAR LR LR 19 22 40.3
comp=Z,1µm,22.0s,baz=130,slow=32
MAJO Matsushiro 67.41 321 *e*P **P 18 58 09.9 -1.5**
MAJO pmax pmax
comp=Z,43nm,1.9s
MAJO Matsushiro 67.41 321 *e*P **P 18 58 09.9 -1.5**
comp=Z,43nm,1.9s
MAT Matsushiro 67.41 321 P **P 18 58 10.0 -1.4**
MAT S **S 19 07 08.4 +1.6**
MJB9 Matsu-Tunnel 67.42 321 *e*P **P 18 58 09.5 -1.9**
comp=Z,11nm,1.9s
MYLDM Lahad Datu 68.08 282 *e*P **P 18 58 12.0 -4.0**
comp=Z,71nm,1.7s
ERM Erimo 68.48 328 PFAKE 18 58 30.0 +12
ERM LR LR
comp=Z,4µm,21.0s
KUR Kuril'sk 68.73 333 *e*P **P 18 58 17.8 -1.6**
KUR *e*S **S 19 07 19.4 -2.6**
KUR pmax pmax
comp=Z,34nm,1.6s
KUR pmax pmax
comp=Z,278nm,7.3s
BBKI Banjar Baru 69.08 272 P **P 18 58 25.1 +2.7**
JNU Nakatsue 70.06 314 P **P 18 58 27.7 -0.3**
comp=Z,9.2nm,0.9s,baz=31,slow=5.9,SNR=4.8
JNU LR LR 19 26 07.0
comp=Z,1µm,19.2s,baz=122,slow=33
JNU Nakatsue 70.06 314 *e*P **P 18 58 26.5 -1.5**
comp=Z,42nm,1.3s
KKM Kota Kinabalu 70.50 282 PFAKE 18 58 40.0 +8.7
KKM LR LR
comp=Z,1µm,21.0s
PCJI Pacitan 71.45 266 P **P 18 58 39.2 +2.3**
PET Petropavlovsk 71.61 344 *e*P **P 18 58 35.2 -1.7**
PET *e*S **S 19 07 52.1 -3.3**
PET pmax pmax
comp=Z,200nm,12.8s
PET pmax pmax
comp=Z,24nm,1.6s
PEA0 Petropavlovsk- 71.94 344 *e*P **P 18 58 38.1 -0.9**
PEA0B Petropavlovsk- 71.94 344 *e*P **P 18 58 40.5 +1.5**
comp=Z,60nm,1.4s
PETK Petropavlovsk- 71.94 344 P **P 18 58 38.7 -0.3**
comp=Z,12nm,0.9s,baz=121,slow=8.1,SNR=12
PETK LR LR 19 23 56.3
comp=Z,3µm,21.8s,baz=148,slow=31
YSS Yuzh-Sakhalins 72.33 332 *e*P **P 18 58 38.0 -3.4**
YSS *e* 18 58 50.1
YSS *e* 19 01 22.0
YSS *e*PPP PPP 19 02 58.5
YSS *e*S **S 19 08 00.2 -3.7**
YSS *e*PPS PPS 19 08 30.0
YSS pmax pmax
comp=Z,10.0nm,1.6s
YSS pmax pmax
comp=Z,100nm,4.4s
YSS MLR MLR
comp=Z,800nm,17.0s
YSS MLR MLR
comp=N,500nm,19.0s
YSS MLR MLR
comp=E,500nm,17.0s
YSS Yuzh-Sakhalins 72.33 332 *e*P **P 18 58 38.9 -2.5**
comp=E,33nm,1.2s
SBUM Sibu 73.22 277 *e*P **P 18 58 48.9 +1.4**
comp=E,12nm,1.2s
STKI Sintang 73.26 275 P **P 18 58 50.3 +2.6**
MONP2 Monument Peak 74.39 49 P P 18 58 57.3 +3.1
baz=240
CMB Columbia Colle 74.40 43 *e*P **P 18 58 52.5 -1.4**
CMB pmax pmax
comp=Z,14nm,1.1s
CMB Columbia Colle 74.40 43 *e*P **P 18 58 52.5 -1.4**
comp=Z,14nm,1.1s
KSRS Korea Array 74.49 317 P **P 18 58 55.1 +0.8**
comp=Z,6.3nm,1.1s,baz=131,slow=6.3,SNR=10
KSRS LR LR 19 28 37.4
comp=Z,983nm,19.0s,baz=122,slow=33
IKP In-Ko-Pah, Jac 74.50 49 P P 18 58 58.4 +3.8
baz=240
KSAR Wonju Array Be 74.51 317 P **P 18 58 55.2 +0.7**
KSAR Wonju Array Be 74.51 317 P **P 18 58 55.1 +0.7**
WDC Whiskeytown Da 74.52 39 *e*P **P 18 58 52.8 -1.7**
WDC pmax pmax
comp=Z,73nm,1.6s
WDC Whiskeytown Da 74.52 39 *e*P **P 18 58 52.8 -1.7**
comp=Z,73nm,1.6s
KS01 Wonju Array Si 74.52 317 *e*P **P 18 58 54.5 0.0**
AFDM Forest Hills D 74.54 41 *e*P **P 18 58 52.5 -2.2**
comp=Z,18nm,1.2s
ORV Oroville 74.56 41 *e*P **P 18 58 52.0 -2.7**
ORV pmax pmax
comp=Z,35nm,1.5s
ORV Oroville 74.56 41 *e*P **P 18 58 52.0 -2.7**
comp=Z,35nm,1.5s
PFO Pinyon Flats O 74.73 48 LR LR 19 23 30.3
comp=Z,2µm,21.6s,baz=244,slow=29
PFO Pinyon Flats O 74.73 48 P P 18 59 00.3 +4.2
baz=239
PFO Pinyon Flats O 74.73 48 PFAKE 18 59 10.0 +14
PFO LR LR
comp=Z,2µm,20.0s
KSM Kuching 74.77 276 *e*P **P 18 58 55.5 -1.1**
comp=Z,27nm,1.2s
KSM LR LR
comp=Z,562nm,20.0s
O03D Paynes Creek 74.80 40 P P 18 58 59.6 +3.3
baz=234
M02C Callahan 74.81 39 P **P 18 58 58.3 +2.0**
baz=233
SWSC Sam W. Stewart 74.87 49 P **P 18 58 59.2 +2.5**
baz=240
BELC Belle Mtn. Jos 75.26 48 P **P 18 59 01.0 +1.9**
baz=240
MPMC Manual Prospec 75.27 46 P **P 18 59 00.9 +1.7**
baz=238
WAKR Walker 75.28 43 *e*P **P 18 58 57.6 -1.6**
comp=Z,26nm,1.2s
TYV Tymovskoe 75.29 334 *e*P **P 18 59 00.5 +1.8**
TYV *e*S **SKiKP 19 08 24.0 +2.8**
TYV pmax pmax
comp=Z,32nm,1.2s
TYV pmax pmax
comp=Z,500nm,6.0s
TYV smax smax
comp=N,500nm,12.0s
TYV MLR MLR
comp=N,2µm,18.0s
GSC Goldstone, Bar 75.35 47 P P 18 59 02.4 +2.9
baz=239
VLA Vladivostok 75.35 323 I/P P 18 58 53.6 -5.6
VLA *e*PP pP 18 59 04.0 -0.7
VLA *e* 18 59 07.1
VLA pmax pmax
comp=Z,6.0nm,0.6s
INCN Inchon 75.36 316 PFAKE 18 59 10.0 +11
INCN LR LR
comp=Z,1µm,22.0s
QZH Quanzhou 75.38 301 P **P 18 58 58.1 -1.7**
QZH S **S 19 08 38.2 -1.1**
QZH LR LR
comp=Z,3µm,20.9s
QZH LR LR
comp=Z,2µm,14.6s
QZH LR LR
comp=Z,2µm,19.1s
HEC Hector,Ludlow 75.44 47 P **P 18 59 02.1 +2.1**
baz=239
MSHR Mys Shultsa 75.45 322 *e*P **P 18 58 57.2 -2.6**
KDAK Kodiak Island 75.45 13 P **P 18 58 59.6 +0.2**
KDAK pmax pmax
comp=Z,48nm,1.2s
KDAK Kodiak Island 75.45 13 PFAKE 18 59 10.0 +11
KDAK LR LR
comp=Z,616nm,21.0s
HUMO Hull Mountain 75.48 37 *e*P **P 18 58 59.8 -0.3**
comp=Z,42nm,1.4s
GLA Glamis 75.63 49 P P 18 59 03.1 +2.0
baz=241
GLA Glamis 75.63 49 *e*P **P 18 59 01.2 0.0**
GLA pmax pmax
comp=Z,86nm,1.5s
GLA Glamis 75.63 49 *e*P **P 18 59 01.2 0.0**
comp=Z,86nm,1.5s
GMRC Granite Mounta 75.89 47 P **P 18 59 04.7 +2.0**
baz=240
IRM Iron Mountain 75.95 48 P **P 18 59 05.6 +2.7**
baz=240
USRK Ussuriysk Ar. 75.96 324 P **P 18 59 03.2 +0.5**
comp=Z,2.2nm,0.9s,baz=54,slow=9.7,SNR=6.0
USRK LR LR 19 26 25.6
comp=Z,4µm,21.6s,baz=113,slow=31
PAHR Pah Rah Range 75.99 42 *e*P **P 18 59 02.5 -0.7**
comp=Z,27nm,1.2s
SSE Sheshan 76.05 308 *e*P **P 18 59 03.5 0.0**
SSE S **S 19 08 48.0 +1.6**
SSE pmax pmax
comp=Z,13nm,0.7s
SSE pmax pmax
comp=Z,69nm,6.0s
SSE LR LR
comp=Z,750nm,22.2s
SSE LR LR
comp=Z,1µm,22.2s
SSE LR LR
comp=Z,690nm,22.1s
Y12C Blythe 76.20 49 *e*P **P 18 59 03.7 -0.6**
comp=Z,75nm,1.6s
113A Mohawk Valley, 76.28 50 *e*P P 18 59 07.8 +3.0
TPNV Topopah Spring 76.58 45 *e*P **P 18 59 05.6 -1.1**
TPNV pmax pmax
comp=Z,38nm,1.8s
TPNV Topopah Spring 76.58 45 *e*P **P 18 59 05.5 -1.1**
comp=Z,38nm,1.8s
214A Organ Pipe Nat 76.61 51 P **P 18 59 09.2 +2.5**
baz=242
MOD Modoc Plateau 76.66 39 *e*P **P 18 59 06.7 -0.2**
comp=Z,35nm,1.2s
HSIG 76.71 55 *e*P **P 18 59 06.0 -1.3**
comp=Z,16nm,1.0s
K05A Summer Lake 76.78 38 *e*P **P 18 59 08.3 +0.6**
comp=Z,61nm,1.3s
J05D Fort Rock, OR 76.90 38 P **P 18 59 09.6 +1.3**
baz=234
KMOR Kings Mountain 77.04 35 P **P 18 59 10.1 +1.2**
HABR Khabarovsk 77.08 329 *e*P **P 18 59 04.5 -4.4**
HABR *e**PP **sP 18 59 14.8 -1.6**
HABR *e* 18 59 15.3
HABR *e**SP **PcP 18 59 19.0 -0.7**
HABR *e* 19 01 57.6
HABR *e*S **S 19 08 50.8 -6.2**
HABR *e**SS **sS 19 09 08.4 +2.3**
HABR *e* 19 09 18.7
HABR *e*SS **SS 19 13 48.5 -6.4**
HABR *e*SSS SSS 19 17 12.8
HABR MLR MLR
comp=Z,365nm,18.0s
SHPR Sheep Range 77.11 46 *e*P **P 18 59 09.9 +0.3**
comp=Z,25nm,1.7s
F03A Seaside 77.18 35 *e*P **P 18 59 10.3 +0.7**
comp=Z,61nm,1.4s
CNPM China Poot 77.33 13 *e*P **P 18 59 09.1 -1.0**
comp=Z,31nm,1.1s
Y14A Wickenburg 77.39 49 *e*P **P 18 59 13.0 +1.9**
I05D Terrebonne, OR 77.46 37 P **P 18 59 12.7 +1.4**
baz=234
E03A Lebam 77.56 34 *e*P **P 18 59 11.6 -0.1**
comp=Z,44nm,1.3s
MDJ Mudanjiang 77.58 323 P **P 18 59 11.5 -0.3**
MDJ S **S 19 09 04.7 +2.1**
MDJ ScS **ScS 19 09 26.1 -3.5**
MDJ SS **SS 19 14 03.6 +1.0**
MDJ pmax pmax
comp=Z,3.0nm,1.0s
MDJ LR LR
comp=Z,1µm,20.1s
MDJ LR LR
comp=Z,2µm,25.2s
MDJ LR LR
comp=Z,3µm,26.7s
BRLK Bradley Lake 77.62 13 *e*P **P 18 59 11.0 -0.8**
comp=Z,31nm,1.1s
R11A Troy Canyon, C 77.76 44 P **P 18 59 14.4 +1.2**
baz=239
R11A Troy Canyon, C 77.76 44 *e*P **P 18 59 12.6 -0.6**
comp=Z,25nm,1.4s
BMN Battle Mountai 77.77 42 *e*P **P 18 59 13.4 +0.1**
BMN pmax pmax
comp=Z,42nm,1.3s
BMN Battle Mountai 77.77 42 *e*P **P 18 59 13.3 +0.1**
comp=Z,42nm,1.3s
TDH Tom, Dick, Har 77.78 36 P **P 18 59 15.9 +2.8**
F04A Amboy 77.81 35 P **P 18 59 15.4 +2.4**
NKL Nikolayevsk 77.81 335 *e*P P 18 59 19.0 +6.1
NKL *e* 19 09 12.0
NLWA Neilton Lookou 77.93 33 *e*P **P 18 59 12.7 -1.1**
comp=Z,36nm,1.4s
SVW2 Sparrevohn 77.97 10 *e*P **P 18 59 12.5 -1.2**
comp=Z,14nm,1.1s
VFP Flag Point 77.97 36 P **P 18 59 14.4 +0.2**
WVOR Wild Horse Val 77.98 40 *e*P **P 18 59 11.5 -2.8**
WVOR pmax pmax
comp=Z,45nm,1.4s
WVOR Wild Horse Val 77.98 40 *e*P **P 18 59 11.5 -2.8**
comp=Z,45nm,1.4s
TUC Tucson 78.30 52 P **P 18 59 17.0 +0.8**
baz=243
TUC Tucson 78.30 52 *e*P **P 18 59 12.2 -4.0**
TUC pmax pmax
comp=Z,80nm,1.5s
TUC Tucson 78.30 52 *e*P **P 18 59 12.2 -4.0**
comp=Z,80nm,1.5s
LON Longmire 78.64 35 *e*P **P 18 59 18.3 +0.5**
LON pmax pmax
comp=Z,13nm,1.2s
LON Longmire 78.64 35 *e*P **P 18 59 18.3 +0.5**
comp=Z,13nm,1.2s
SPU Mount Spurr 78.69 12 *e*P **P 18 59 17.1 -0.6**
X16A Lo Mia Camp, P 78.76 50 *e*P **P 18 59 18.1 -0.8**
comp=Z,34nm,1.1s
D05A Emunclaw 78.81 34 P P 18 59 21.6 +3.0
CCUT Cedar City 78.88 46 *e*P **P 18 59 17.6 -1.9**
comp=Z,16nm,1.2s
PGC Sidney 78.94 32 *e*P **P 18 59 20.2 +1.0**
comp=Z,61nm,1.5s
KNB Kanab 79.00 47 *e*P **P 18 59 16.0 -4.1**
KNB pmax pmax
comp=Z,34nm,1.6s
KNB Kanab 79.00 47 *e*P **P 18 59 15.9 -4.1**
comp=Z,34nm,1.6s
319A Douglas 79.03 53 *e*P **P 18 59 17.1 -3.2**
comp=Z,35nm,1.2s
RC01 Rabbit Creek A 79.07 13 *e*P **P 18 59 19.0 -0.7**
comp=Z,47nm,1.2s
U15A North Rim 79.09 47 *e*P **P 18 59 19.8 -1.0**
comp=Z,31nm,1.2s
SUA Susitna One 79.20 12 *e*P **P 18 59 19.4 -1.2**
comp=Z,20nm,1.0s
ELK Elko 79.22 42 *e*P **P 18 59 19.5 -1.9**
ELK pmax pmax
comp=Z,21nm,1.4s
ELK Elko 79.22 42 *e*P **P 18 59 19.4 -1.9**
comp=Z,21nm,1.4s
KLR Kul'dur 79.23 328 P **P 18 59 23.2 +2.3**
comp=Z,0.5nm,0.3s,baz=106,slow=5.1,SNR=5.1
KLR Kul'dur 79.23 328 *e*P **P 18 59 16.6 -4.3**
WUAZ Wupatki 79.32 49 P **P 18 59 23.9 +2.1**
baz=242
WUAZ Wupatki 79.32 49 *e*P **P 18 59 21.0 -0.9**
comp=Z,36nm,1.3s
G08A Pilot Rock 79.40 37 *e*P **P 18 59 20.4 -1.6**
comp=Z,45nm,1.4s
JCW Jim Creek 79.45 33 P **P 18 59 24.1 +2.0**
DL2 Dalian 79.47 315 P P 18 59 29.7 +7.3
DL2 Dalian 79.47 315 S S 19 09 35.6 +12
DL2 Dalian 79.47 315 SS SS 19 14 41.4 +10
DL2 pmax pmax
comp=Z,170nm,5.4s
DL2 LR LR
comp=N,900nm,17.0s
DL2 LR LR
comp=E,1µm,18.2s
DL2 LR LR
comp=Z,1µm,20.0s
CN2 Changchun 79.56 321 *e*P **P 18 59 25.3 +2.5**
CN2 *e*S **S 19 09 28.0 +4.1**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
CN2 pmax pmax
comp=Z,100nm,4.0s
CN2 LR LR
comp=Z,200nm,17.0s

CN2 LR LR
comp=Z,200nm,17.0s
CN2 LR LR
comp=Z,300nm,18.0s
TT01 Tatalina 79.61 9 *eP* **P 18 59 22.5 -0.1**
TTA Tatalina 79.64 9 *eP* **P 18 59 25.6 +2.8**
TTA pmax pmax
comp=Z,40nm,1.2s
TTA Tatalina 79.64 9 *eP* **P 18 59 25.6 +2.8**
comp=Z,40nm,1.2s
PMR Palmer 79.65 13 *eP* **P 18 59 24.7 +1.9**
PMR pmax pmax
comp=Z,44nm,1.3s
PMR Palmer 79.65 13 *eP* **P 18 59 24.7 +1.9**
comp=Z,44nm,1.3s
HAWA Hanford 79.70 36 *eP* **P 18 59 23.2 -0.3**
comp=Z,36nm,1.3s
HAWA LR LR
comp=Z,1µm,19.0s
MTPU Mount Pierson 79.93 46 *eP* **P 18 59 23.8 -1.6**
comp=Z,57nm,1.8s
DIV Divide 80.00 14 *eP* **P 18 59 24.6 -0.3**
comp=Z,37nm,1.1s
SML Sawmill 80.02 13 *eP* **P 18 59 26.2 +1.3**
SML pmax pmax
comp=Z,15nm,1.2s
SML Sawmill 80.02 13 *eP* **P 18 59 26.2 +1.3**
comp=Z,15nm,1.2s
HPIG 80.11 59 *eP* **P 18 59 22.8 -3.6**
comp=Z,52nm,1.5s
BMO Blue Mountains 80.12 38 *eP* **P 18 59 26.5 +0.5**
comp=Z,28nm,1.4s
BMO LR LR
comp=Z,2µm,19.0s
BMRM Bremner River 80.14 15 *eP* **P 18 59 25.8 +0.1**
comp=Z,61nm,1.2s
SCM Sheep Creek Mo 80.26 13 *eP* **P 18 59 26.1 -0.1**
SCM pmax pmax
comp=Z,30nm,1.0s
SCM Sheep Creek Mo 80.26 13 *eP* **P 18 59 26.1 -0.1**
comp=Z,30nm,1.0s
KLU Klutina 80.28 14 *eP* **P 18 59 27.9 +1.5**
comp=Z,22nm,1.2s
WRAK Wrangell Islan 80.29 23 *eP* P 18 59 29.9 +3.5
comp=Z,24nm,1.4s
CRQM Cirque 80.33 16 *eP* **P 18 59 28.4 +1.6**
comp=Z,32nm,1.0s
D08A Wollman Farm, 80.43 36 *eP* P 18 59 30.4 +3.0
comp=Z,46nm,1.3s
DUG Dugway, Tooele 80.54 44 P **P 18 59 28.7 +0.3**
baz=241
DUG Dugway, Tooele 80.54 44 PFAKE 18 59 40.0 +12
DUG LR LR
comp=Z,764nm,20.0s
QIZ Qiongzhong 80.67 293 P **P 18 59 28.8 -0.5**
QIZ S **S 19 09 40.6 +4.1**
QIZ LR LR
comp=Z,440nm,19.6s
QIZ LR LR
comp=Z,910nm,21.6s
QIZ LR LR
comp=Z,1µm,20.1s
121A Cookes Peak, D 80.68 53 *eP* **P 18 59 29.9 +0.6**
comp=Z,66nm,1.4s
CAST Castle Rocks 80.74 11 *eP* **P 18 59 28.2 -0.5**
comp=Z,14nm,1.2s
BALM Baldy 80.78 16 *eP* **P 18 59 28.9 -0.2**
BALM pmax pmax
comp=Z,27nm,1.0s
BALM Baldy 80.78 16 *eP* **P 18 59 28.9 -0.2**
comp=Z,27nm,1.0s
F10A Beach Ranch, E 80.78 37 *eP* **P 18 59 31.1 +1.6**
comp=Z,37nm,1.3s
KTH Kantishna Hill 81.08 11 P **P 18 59 29.5 -1.1**
comp=Z,68nm,1.7s
TRF Thorofare Moun 81.10 11 *eP* **P 18 59 31.0 +0.1**
comp=Z,74nm,1.9s
WHN Wuhan 81.11 305 P P 18 59 37.2 +5.8
WHN S **S 19 09 48.2 +7.5**
WHN LR LR
comp=Z,2µm,14.4s
WHN LR LR
comp=Z,890nm,10.4s
WHN LR LR
comp=Z,3µm,16.6s
TMUT Trail Mountain 81.20 45 *eP* **P 18 59 32.9 +0.8**
comp=Z,26nm,1.2s
HLID Hailey 81.20 40 P **P 18 59 32.2 +0.4**
baz=239
HLID Hailey 81.20 40 *eP* **P 18 59 32.2 +0.4**
comp=Z,34nm,1.3s
HLID LR LR
comp=Z,783nm,19.0s
RND Reindeer 81.34 12 *eP* **P 18 59 30.1 -1.9**
RND pmax pmax
comp=Z,63nm,1.4s
RND Reindeer 81.34 12 *eP* **P 18 59 30.1 -1.9**
comp=Z,63nm,1.4s
HVU Hansel Valley 81.35 42 *eP* P 18 59 35.7 +3.0
HVU pmax pmax
comp=Z,41nm,1.4s
HVU Hansel Valley 81.35 42 *eP* P 18 59 35.7 +3.1
comp=Z,41nm,1.4s
DHY Denali Highway 81.35 13 *eP* **P 18 59 33.9 +1.7**
comp=Z,22nm,1.4s
SKAG Skagway 81.56 20 *eP* **P 18 59 35.3 +2.2**
comp=Z,36nm,1.2s
SRU San Rafael Swe 81.58 46 *eP* **P 18 59 35.9 +1.9**
SRU pmax pmax
comp=Z,20nm,1.3s
SRU San Rafael Swe 81.58 46 *eP* **P 18 59 35.9 +1.9**
comp=Z,20nm,1.3s
MCK McKinley 81.62 12 *eP* **P 18 59 32.4 -1.0**
MCK pmax pmax
comp=Z,39nm,1.1s
MCK McKinley 81.62 12 *eP* **P 18 59 32.4 -1.0**
comp=Z,39nm,1.1s
TCUT Toone Canyon 81.92 44 *eP* **P 18 59 37.4 +1.5**
comp=Z,123nm,1.4s
SEY Seymchan 81.93 346 P **P 18 59 36.1 +1.1**
comp=Z,8.1nm,1.1s,baz=130,slow=3.0,SNR=7.9
SEY LR LR 19 32 00.6
comp=Z,3µm,21.6s,baz=148,slow=33
LAZ Ladron 81.95 51 *eP* P 18 59 39.4 +3.4
HYT Haines Junctio 81.96 18 *eP* **P 18 59 38.1 +2.7**
comp=Z,41nm,1.4s
MENT Mentasta 82.05 14 *eP* **P 18 59 37.6 +1.9**
comp=Z,27nm,1.3s
HWUT Hardware Ranch 82.05 43 *eP* **P 18 59 39.1 +2.7**
comp=Z,26nm,1.4s
HWUT LR LR
comp=Z,742nm,21.0s
MNTX Cornudas Mount 82.20 54 P **P 18 59 38.4 +1.2**
baz=247
MNTX Cornudas Mount 82.20 54 *eP* **P 18 59 37.8 +0.6**
comp=Z,93nm,1.6s
MNTX LR LR
comp=Z,2µm,20.0s
BNM Barren Site 82.23 52 *eP* **P 18 59 38.7 +1.1**
LPM Los Pinos Moun 82.29 51 *eP* P 18 59 41.2 +3.3
WRH Wood River Hil 82.45 12 *eP* **P 18 59 37.0 -0.7**
comp=Z,66nm,1.4s
PV01 Paradox Valley 82.51 47 *eP* **P 18 59 40.0 +1.0**
DOT Dot Lake 82.58 14 *eP* **P 18 59 37.3 -1.2**
comp=Z,64nm,1.1s
DLBC Dease Lake 82.63 22 LR LR 19 28 13.8
comp=Z,1µm,21.8s,baz=234,slow=30
DLBC Dease Lake 82.63 22 *eP* **P 18 59 41.7 +2.8**
comp=Z,46nm,1.5s
TX31 Lajitas Ar. Si 82.65 57 *eP* **P 18 59 40.0 +0.3**
TXAR Lajitas Array 82.65 57 P **P 18 59 38.9 -0.8**
comp=Z,2.2nm,1.0s,baz=230,slow=5.7,SNR=13
TXAR LR LR 19 29 28.2
comp=Z,2µm,19.1s,baz=0.0,slow=31
CCB Clear Creek Bu 82.66 12 *eP* **P 18 59 37.9 -0.9**
comp=Z,30nm,1.1s
ANMO Albuquerque 82.69 51 P **P 18 59 41.0 +1.0**
baz=246
ANMO Albuquerque 82.69 51 *eP* **P 18 59 40.4 +0.5**
ANMO pmax pmax
comp=Z,82nm,1.6s
ANMO MLR MLR
comp=Z,2µm,22.0s
ANMO Albuquerque 82.69 51 *eP* **P 18 59 40.4 +0.5**
comp=Z,82nm,1.6s
ANMO LR LR
comp=Z,2µm,22.0s
MCMT McKenzie Canyo 82.81 40 *eP* **P 18 59 41.5 +1.1**
COLA College 82.86 12 *eP* **P 18 59 42.3 +2.5**
COLA pmax pmax
comp=Z,34nm,1.0s
COLA MLR MLR
comp=Z,2µm,20.0s
COLA College 82.86 12 *eP* **P 18 59 42.3 +2.5**
comp=Z,34nm,1.0s
COLA LR LR
comp=Z,2µm,20.0s
AHID Auburn Hatcher 82.91 42 PFAKE 18 59 50.0 +9.1
AHID LR LR
comp=Z,729nm,19.0s
ILAR Eielson Array 82.95 12 P **P 18 59 40.0 -0.4**
comp=Z,3.6nm,1.0s,baz=223,slow=5.0,SNR=20
ILAR LR LR 19 30 24.4
comp=Z,871nm,21.9s,baz=218,slow=31
ILAR Eielson Array 82.95 12 P **P 18 59 40.0 -0.4**
ILB Eielson Array 82.95 12 *eP* **P 18 59 40.2 -0.2**
IL1 Eielson Array 82.96 12 *eP* **P 18 59 37.8 -2.5**
MSO Missoula 83.17 38 *eP* **P 18 59 44.2 +2.2**
comp=Z,46nm,1.5s
BSMT Bassoo Peak 83.21 36 P **P 18 59 42.6 +0.3**
DLMT Dillon 83.23 39 *eP* **P 18 59 43.5 +1.1**
comp=Z,42nm,1.3s
TPAW Teton Pass 83.35 42 *eP* **P 18 59 44.7 +1.5**
comp=Z,32nm,1.2s
REDW Red Top Meadow 83.35 42 *eP* **P 18 59 45.1 +1.9**
comp=Z,52nm,1.3s
LRM Limekiln Ridge 83.55 39 *eP* P 18 59 47.1 +2.9
IMW Indian Meadow 83.55 41 *eP* **P 18 59 45.4 +1.1**
comp=Z,45nm,1.4s
S22A 4UR Ranch, Cre 83.58 48 P **P 18 59 45.1 +0.4**
baz=245
S22A 4UR Ranch, Cre 83.58 48 *eP* **P 18 59 46.8 +2.2**
comp=Z,60nm,1.4s
CHMT Chamberlain Mo 83.62 38 *eP* **P 18 59 46.7 +2.2**
O20A White River Ci 83.62 46 *eP* **P 18 59 46.8 +2.2**
comp=Z,59nm,1.5s
LOHW Long Hollow 83.63 42 *eP* P 18 59 47.5 +2.9
comp=Z,28nm,1.4s
BJT Baijiatuan 83.73 314 PFAKE 19 00 00.0 +15
BJT LR LR
comp=Z,1µm,22.0s
BJI Beijing 83.73 314 P **P 18 59 44.7 -0.2**
BJI PP **PP 19 02 57.9 -0.3**
BJI S **S 19 10 08.7 +1.5**
BJI SS **SS 19 15 35.8 +1.0**
BJI pmax pmax
comp=Z,10.0nm,1.1s
BJI pmax pmax
comp=Z,180nm,3.9s
BJI LR LR
comp=Z,660nm,23.5s
BJI LR LR
comp=Z,870nm,24.4s
BJI LR LR
comp=Z,2µm,27.1s
FLWY Flagg Ranch 83.79 41 *eP* P 18 59 48.8 +3.4
comp=Z,70nm,1.4s
BW06 Bolder Array 83.92 43 P **P 18 59 46.3 +0.1**
baz=243
BW06 Boulder Array 83.92 43 *eP* **P 18 59 46.5 +0.3**
comp=Z,19nm,1.1s
BW06 LR LR
comp=Z,655nm,19.0s
PD31 Pinedale Array 83.92 43 *eP* **P 18 59 46.8 +0.6**
PDAR Pinedale Array 83.92 43 P **P 18 59 44.9 -1.3**
comp=Z,2.0nm,0.8s,baz=208,slow=5.0,SNR=13
PDAR LR LR 19 30 24.9
comp=Z,427nm,20.3s,baz=250,slow=31
BOZ Bozeman (W) 83.96 39 P **P 18 59 47.0 +0.8**
baz=241
BOZ Bozeman (W) 83.96 39 *eP* **P 18 59 47.0 +0.8**
BOZ pmax pmax
comp=Z,47nm,1.4s
BOZ MLR MLR
comp=Z,2µm,19.0s
BOZ Bozeman (W) 83.96 39 *eP* **P 18 59 47.0 +0.8**
comp=Z,47nm,1.4s
BOZ LR LR
comp=Z,2µm,19.0s
DAWY Dawson 84.06 15 *eP* **P 18 59 46.1 0.0**
comp=Z,32nm,1.1s
SMCO Snowmass 84.08 47 *eP* **P 18 59 48.6 +1.3**
comp=Z,36nm,1.3s
LKWY Lake 84.21 41 PFAKE 19 00 00.0 +12
LKWY LR LR
comp=Z,1µm,19.0s
COCO West Island 84.22 259 PFAKE 19 00 00.0 +12
COCO LR LR
comp=Z,2µm,20.0s
EGAK Eagle 84.22 14 *eP* **P 18 59 46.7 -0.2**
comp=Z,36nm,1.2s
EGAK LR LR
comp=Z,1µm,21.0s
BILL Bilibino 84.23 353 PFAKE 19 00 00.0 +13
BILL LR LR
comp=Z,3µm,21.0s
IPM Ipoh 84.51 276 *eP* **P 18 59 51.5 +2.0**
comp=Z,21nm,1.1s
SDCO Great Sand Dun 84.54 49 P **P 18 59 49.5 0.0**
baz=246
SDCO Great Sand Dun 84.54 49 *eP* **P 18 59 51.0 +1.6**
comp=Z,18nm,1.4s
COLD Coldfoot 84.56 10 *eP* **P 18 59 49.0 +0.4**
comp=Z,29nm,1.2s
ENH Enshi 84.89 303 PFAKE 19 00 00.0 +8.9
ENH LR LR
comp=Z,1µm,21.0s
KULM Kulim 85.09 277 PFAKE 19 00 00.0 +7.6
KULM LR LR
comp=Z,786nm,21.0s
RLMT Red Lodge 85.18 41 *eP* **P 18 59 54.5 +2.1**
comp=Z,30nm,1.3s
RLMT LR LR
comp=Z,796nm,22.0s
ISCO Idaho Springs 85.30 47 PFAKE 19 00 10.0 +17
ISCO LR LR
comp=Z,1µm,19.0s
N23A Red Feather La 85.52 46 P **P 18 59 56.0 +1.7**
baz=245
933A Laredo 85.65 60 P **P 18 59 56.8 +1.9**
baz=250
HIA Hailar 85.76 324 PFAKE 19 00 10.0 +15
HIA LR LR
comp=Z,4µm,22.0s
GYA Guiyang 85.92 299 P **P 18 59 56.0 -0.4**
GYA PP **PP 19 03 18.4 +1.9**
GYA SKS **SKSac 19 10 20.0 -2.0**
GYA S **SKKSac 19 10 28.2 -1.1**
GYA SS **SS 19 16 10.6 +2.8**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,140nm,6.4s
GYA LR LR
comp=Z,550nm,21.0s
GYA LR LR
comp=Z,510nm,22.0s
GYA LR LR
comp=Z,540nm,21.2s
034A Hebbronville 85.96 61 P P 18 59 59.9 +3.5
baz=250
CMIG Matias Romero 86.18 71 LR LR 19 32 07.1
comp=Z,1µm,18.1s,baz=259,slow=31
633A Saathoff Ranch 86.35 58 P **P 19 00 00.1 +1.8**
baz=250
035A Encino 86.41 61 P **P 19 00 00.4 +1.7**
baz=251
533A Kerrville 86.68 58 P **P 19 00 01.0 +1.0**
baz=250
XAN Xi'an 86.68 306 P **P 19 00 02.6 +2.7**
XAN SS SS 19 16 21.0 +2.4
XAN pmax pmax
comp=Z,7.0nm,1.3s
XAN LR LR
comp=Z,930nm,19.3s
XAN LR LR
comp=Z,950nm,19.3s
KVTX Kingsville 86.78 60 PFAKE 19 00 10.0 +10
KVTX LR LR
comp=Z,1µm,19.0s
EDM Edmonton 86.79 32 *eP* **P 19 00 01.3 +1.3**
EDM pmax pmax
comp=Z,64nm,1.4s
EDM Edmonton 86.79 32 *eP* **P 19 00 01.3 +1.3**
comp=Z,64nm,1.4s
433A Art 86.86 57 P **P 19 00 02.4 +1.6**
baz=250
MAW Mawson 86.99 199 P **P 18 59 59.3 -1.4**
comp=Z,8.7nm,1.0s,baz=107,slow=4.4,SNR=12
MAW LR LR 19 36 34.5
comp=Z,1µm,20.8s,baz=112,slow=34
MAW Mawson 86.99 199 *eP* **P 18 59 59.6 -1.1**
MAW pmax pmax
comp=Z,9.0nm,1.5s
MAW Mawson 86.99 199 *eP* **P 18 59 59.6 -1.1**
comp=Z,9.4nm,1.5s
ABTX Abilene, Hawle 87.06 55 P P 19 00 05.0 +3.2
baz=250
534A Blanco 87.12 58 P **P 19 00 01.9 -0.2**
baz=250
333A Richland Sprin 87.14 57 P **P 19 00 04.7 +2.5**
baz=250
HHC Hu-ho-hao-te 87.27 314 *eP* **P 19 00 03.4 +0.7**
HHC S **S 19 10 36.5 -5.8**
HHC SS **SS 19 16 29.2 +2.1**
HHC pmax pmax
comp=Z,21nm,1.4s
HHC pmax pmax
comp=Z,100nm,3.7s
HHC LR LR
comp=Z,780nm,16.1s
HHC LR LR
comp=Z,470nm,20.5s
HHC LR LR
comp=Z,1µm,23.8s
434A Burnet 87.55 57 P P 19 00 07.2 +3.1
baz=251
334A Lometa 87.75 57 P **P 19 00 07.4 +2.3**
baz=251
YAK Yakutsk 88.19 337 LR LR 19 34 45.5
comp=Z,390nm,21.2s,baz=100,slow=32
YAK Yakutsk 88.19 337 *eP* **P 19 00 02.7 -3.7**
YAK pmax pmax
comp=Z,5.0nm,0.9s
W32A Sentinel 88.23 53 P **P 19 00 10.0 +2.6**
baz=250
BTO Baotou 88.26 313 *eP* **P 19 00 08.4 +0.9**
KMI Kunming 88.85 296 P **P 19 00 11.1 +0.4**
KMI PP **PP 19 03 40.2 -0.1**
KMI S **S 19 10 59.2 +0.9**
KMI SS **SS 19 16 51.9 +0.9**
KMI pmax pmax
comp=Z,8.0nm,1.3s
KMI pmax pmax
comp=Z,210nm,4.6s
KMI LR LR
comp=Z,700nm,19.2s
KMI LR LR
comp=Z,1µm,20.3s
KMI LR LR
comp=Z,1µm,22.9s
INK Inuvik 88.88 15 P **P 19 00 08.7 -0.8**
comp=Z,1.0nm,0.8s,baz=203,slow=7.6,SNR=3.9
INK Inuvik 88.88 15 *eP* **P 19 00 11.9 +2.3**
INK pmax pmax
comp=Z,9.0nm,1.4s
INK Inuvik 88.88 15 *eP* **P 19 00 11.8 +2.3**
comp=Z,8.6nm,1.4s
CBKS Cedar Bluff 89.14 49 PFAKE 19 00 20.0 +8.4
CBKS LR LR
comp=Z,1µm,19.0s
CD2 Chengdu 89.76 302 *eP* **P 19 00 13.5 -1.1**
CD2 PP **PP 19 03 45.4 -1.8**
CD2 SKS **SKSac 19 10 44.7 -0.2**
CD2 S **S 19 11 06.8 +0.6**
CD2 SS **SS 19 17 04.7 +1.1**
CD2 pmax pmax
comp=Z,20nm,0.6s
CD2 pmax pmax
comp=Z,160nm,6.2s
DGMT Dagmar 89.77 39 PFAKE 19 00 30.0 +16
DGMT LR LR
comp=Z,1µm,19.0s
CM01 Chiang Mai Arr 90.30 289 *eP* **P 19 00 19.6 +2.3**
CMAR Chiang Mai Arr 90.32 289 P **P 19 00 18.6 +1.1**
comp=Z,2.1nm,1.1s,baz=104,slow=2.7,SNR=9.4
CMAR LR LR 19 36 39.5
comp=Z,746nm,21.6s,baz=107,slow=33
CMMT Chiang Mai 90.41 289 P P 19 00 24.7 +6.8
comp=Z,7.3nm,1.9s,comp=Z,391nm
CHTO Chiang Mai 90.42 289 P P 19 00 24.8 +6.9
comp=Z,27nm,2.1s
CHTO Chiang Mai 90.42 289 P **P 19 00 18.9 +1.0**
CHTO pmax pmax
comp=Z,8.0nm,1.6s
CIT Chita 90.52 324 *eP* **P 19 00 16.3 -1.4**
CIT *e* 19 00 29.1
YKA Yellowknife Ar 91.09 24 P **P 19 00 20.4 +0.4**
comp=Z,1.0nm,0.8s,baz=242,slow=4.4,SNR=8.3
YKA LR LR 19 33 41.7
comp=Z,84nm,21.3s,baz=180,slow=30
PLCA Paso Flores 91.29 133 LR LR 19 33 27.9
comp=Z,974nm,21.7s,baz=278,slow=30
LZH Lanzhou 91.29 307 *eP* P 19 00 25.9 +4.1
LZH pP sP 19 00 30.4 +1.0
LZH sP pP 19 00 33.0 +5.6
LZH SKS **SKSac 19 10 52.0 -1.8**
LZH *eS* **ScS 19 11 23.1 -0.2**
LZH sS sS 19 11 31.2 +1.7
LZH SS **SS 19 17 29.0 +3.2**
LZH pmax pmax
comp=Z,35nm,1.4s
LZH pmax pmax
comp=Z,190nm,6.5s
LZH LR LR
comp=Z,640nm,16.4s
LZH LR LR
comp=Z,1µm,17.5s
LZH LR LR
comp=Z,1µm,18.8s
KSU1 Kansas State U 91.53 50 PFAKE 19 00 30.0 +7.3
KSU1 LR LR
comp=Z,1µm,20.0s
SYO Syowa Base 92.08 192 *eP* **P 19 00 23.6 -1.1**
SNAA Sanae 92.99 178 P P 19 00 22.8 -6.1
SNAA Sanae 92.99 178 *eP* **P 19 00 30.8 +1.8**
SNAA pmax pmax
comp=Z,23nm,1.5s
SNAA Sanae 92.99 178 *eP* **P 19 00 30.8 +1.8**
comp=Z,23nm,1.5s
ECSD EROS Data Cent 93.00 46 P **P 19 00 30.9 +1.5**
baz=252
ECSD EROS Data Cent 93.00 46 PFAKE 19 00 40.0 +11
ECSD LR LR
comp=Z,1µm,21.0s
SONA1 Songino Array 93.25 319 *eP* **P 19 00 32.1 +1.6**
SONM Songino Array 93.25 319 P **P 19 00 31.8 +1.2**
comp=Z,0.4nm,0.6s,baz=141,slow=3.6,SNR=5.2
SONM LR LR 19 37 55.4
comp=Z,720nm,21.9s,baz=114,slow=33
R38A Fenwick Farm, 93.27 51 P **P 19 00 32.0 +1.3**
baz=253
FFC Flin Flon 93.47 34 PFAKE 19 00 40.0 +8.8
FFC LR LR
comp=Z,793nm,20.0s
W41B Gary Mavity, V 93.69 55 P **P 19 00 34.6 +1.9**
baz=254
VNA1 Neumayer--Stat 93.72 176 P **P 19 00 35.4 +3.2**
R39A Chumbay, Stover 93.96 51 P **P 19 00 35.3 +1.4**
baz=254
TIXI Tiksi 94.38 345 LR LR 19 36 45.5
comp=Z,330nm,21.9s,baz=155,slow=31
TIXI Tiksi 94.38 345 *eP* **P 19 00 33.0 -2.0**
TIXI pmax pmax
comp=Z,1.0nm,1.1s
R40A Maddies Statio 94.54 52 P **P 19 00 37.6 +1.0**
baz=254
AGMN Agassiz Nation 94.91 41 PFAKE 19 00 50.0 +12
AGMN LR LR
comp=Z,688nm,20.0s
GTA Gaotai 95.31 309 *eP* **P 19 00 42.6 +2.4**
GTA pP sP 19 00 46.7 -1.1
GTA sP pP 19 00 49.7 +3.9
GTA SKS **SKSac 19 11 17.2 +1.5**
GTA S **ScS 19 11 55.0 -1.5**
GTA sS sS 19 12 03.0 -1.9
GTA SS **SS 19 18 25.9 +2.8**
GTA pmax pmax
comp=Z,3.0nm,1.4s
GTA pmax pmax

comp=Z,53nm,5.7s
GTA LR LR
comp=Z,540nm,21.9s
GTA LR LR
comp=Z,1µm,22.3s
GTA LR LR
comp=Z,2µm,24.2s
ATAH Atahualpa 95.32 99 LR LR 19 34 08.8
comp=Z,2µm,19.9s,baz=255,slow=30
LCO Las Campanas 95.41 122 PFAKE 19 00 50.0 +8.8
LCO LR LR
comp=Z,942nm,19.0s
NNA Nana 95.41 104 PFAKE 19 00 50.0 +8.8
NNA LR LR
comp=Z,351nm,21.0s
ULM Lac du Bonnet 95.48 39 LR LR 19 38 23.6
comp=Z,1µm,19.7s,baz=262,slow=32
BRAL Brewton 96.88 60 PFAKE 19 01 00.0 +13
BRAL LR LR
comp=Z,726nm,19.0s
JFWS Jewell Farm 97.23 48 PFAKE 19 01 00.0 +11
JFWS LR LR
comp=Z,1µm,20.0s
HDIL Hopedale 97.35 50 PFAKE 19 01 00.0 +11
HDIL LR LR
comp=Z,804nm,20.0s
EYMN Ely 97.62 42 PFAKE 19 01 00.0 +10
EYMN LR LR
comp=Z,903nm,21.0s
COWI Conover 98.75 45 PFAKE 19 01 10.0 +15
COWI LR LR
comp=Z,1µm,20.0s
LSA Lhasa 99.97 298 PFAKE 19 01 10.0 +8.1
LSA LR LR
comp=Z,523nm,22.0s
GOGA Godfrey 100.33 58 PFAKE 19 01 10.0 +7.2
GOGA LR LR
comp=Z,2µm,22.0s
AAM Ann Arbor 101.86 49 PFAKE 19 01 20.0 +11
AAM LR LR
comp=Z,1µm,19.0s
ACSO Alum Creek Sta 102.00 51 PFAKE 19 01 20.0 +10
ACSO LR LR
comp=Z,2µm,20.0s
HOPE Hope Point 102.44 157 PFAKE 19 01 20.0 +8.2
HOPE LR LR
comp=Z,1µm,20.0s
NHSC New Hope 102.98 59 PFAKE 19 01 30.0 +15
NHSC LR LR
comp=Z,1µm,21.0s
BLA Blacksburg 103.47 55 PFAKE 19 01 30.0 +13
BLA LR LR
comp=Z,2µm,20.0s
GTBY Guantanamo Bay 105.05 73 PFAKE 19 05 50.0
GTBY LR LR
comp=Z,959nm,20.0s
CNNC Cliffs of the 105.19 57 PFAKE 19 05 50.0
CNNC LR LR
comp=Z,1µm,20.0s
CBN Corbin Frederi 106.00 54 PFAKE 19 05 50.0
CBN LR LR
comp=Z,2µm,19.0s
BINY Binghamton 107.48 50 PFAKE 19 05 50.0
BINY LR LR
comp=Z,2µm,20.0s
DGAR Diego Garcia 108.58 257 PFAKE 19 06 00.0
DGAR LR LR
comp=Z,2µm,19.0s
LONY Lake Ozonia 108.69 48 PFAKE 19 06 00.0
LONY LR LR
comp=Z,976nm,20.0s
GRTK Grand Turk 109.00 72 PFAKE 19 06 00.0
GRTK LR LR
comp=Z,650nm,20.0s
KURK Kurchatov 111.56 319 PFAKE 19 06 00.0
KURK LR LR
comp=Z,2µm,19.0s
KSH Kashi 113.54 307 *e*PKP **PKiKP 19 05 54.5 0.0**
KSH *e*PP **PP 19 06 52.6 +6.2**
KSH SKS **SKSdf 19 13 05.7 -0.5**
KSH SKKS **SKKSac 19 13 45.9 -1.9**
KSH SS **SS 19 22 38.2 +5.0**
KSH AMB AMB
comp=Z,62nm,4.6s
KSH LR LR
comp=Z,180nm,7.6s
KSH LR LR
comp=Z,220nm,9.6s
KSH LR LR
comp=Z,850nm,19.8s
AAK Ala-Archa 114.64 310 PFAKE 19 06 10.0 +13
AAK LR LR
comp=Z,678nm,19.0s
EKS2 Erkin-Say 115.17 310 PFAKE 19 06 10.0 +12
EKS2 LR LR
comp=Z,584nm,21.0s
BBSR BB Station 115.86 61 PFAKE 19 06 10.0 +11
BBSR LR LR
comp=Z,884nm,20.0s
GRGR Grenville 116.28 84 PFAKE 19 06 10.0 +10
GRGR LR LR
comp=Z,388nm,21.0s
KBS Kingsbay 116.36 358 PFAKE 19 06 10.0 +11
KBS LR LR
comp=Z,921nm,19.0s
BRVK Borovoye 116.46 322 PFAKE 19 06 10.0 +11
BRVK LR LR
comp=Z,911nm,22.0s
ANWB Willy Bob 117.11 78 PFAKE 19 06 10.0 +8.3
ANWB LR LR
comp=Z,758nm,21.0s
FDF Fort de France 117.24 81 PFAKE 19 06 10.0 +7.9
FDF LR LR
comp=Z,727nm,21.0s
BBGH Gun Hill 118.48 83 PFAKE 19 06 20.0 +16
BBGH LR LR
comp=Z,2µm,21.0s
ARU Arti 122.08 328 *i* PKIKP **PKPdf 19 06 11.0 +0.8**
ARU 19 13 18.3
ARU PS PS 19 18 57.4 +78
ARU SS SS 19 24 40.3 +18
ARU MLR MLR
comp=Z,3µm,22.0s
ARU Arti 122.08 328 PFAKE 19 06 20.0 +10
ARU LR LR
comp=Z,3µm,20.0s
LVZ Lovozero 123.98 347 PFAKE 19 06 30.0 +16
LVZ LR LR
comp=Z,1µm,21.0s
ARCES ARCESS Array B 124.27 351 PKP **PKPdf 19 06 15.2 +1.1**
comp=Z,2.7nm,0.8s,baz=253,slow=1.3,SNR=5.6
ABPO Ambohimpanom 125.46 233 PFAKE 19 06 30.0 +12
ABPO LR LR
comp=Z,646nm,21.0s
BORG Borgarnes 127.76 13 PFAKE 19 06 30.0 +9.2
BORG LR LR
comp=Z,748nm,19.0s
KLMR Klimovskoe 127.96 339 *e*PKIKP **PKPdf 19 06 20.9 -0.4**
KLMR pmax pmax
comp=Z,14nm,1.3s
OBN Obninsk 133.13 335 PFAKE 19 06 40.0 +8.8
OBN LR LR
comp=Z,1µm,21.0s
KONO Kongsberg 135.66 356 PFAKE 19 06 50.0 +14
KONO LR LR
comp=Z,820nm,21.0s
KIV Kislovodsk 136.65 319 PFAKE 19 06 50.0 +12
KIV LR LR
comp=Z,776nm,20.0s
GNI Garni 136.93 313 PFAKE 19 06 50.0 +11
GNI LR LR
comp=Z,1µm,22.0s
AKASG Malin Array Be 139.39 335 PKP **PKPdf 19 06 44.5 +1.5**
comp=Z,0.3nm,0.4s,baz=34,slow=1.8,SNR=4.5
KIEV Kiev 139.40 335 PFAKE 19 06 50.0 +7.0
KIEV LR LR
comp=Z,637nm,22.0s
ESK Eskdalemuir 139.79 6 PFAKE 19 07 00.0 +16
ESK LR LR
comp=Z,874nm,19.0s
LSZ Lusaka 141.30 219 PFAKE 19 07 00.0 +12
LSZ LR LR
comp=Z,1µm,20.0s
KIS Kishinev 142.39 332 *e*PKP PKPdf 19 06 20.0 -29
KIS Kishinev 142.39 332 *e*PKKP 19 15 40.0
KIS *e*SKSP 19 20 10.0
KIS LRM MLR 20 08 20.0
comp=Z,2µm,22.0s
STHS Stebnicka Huta 143.32 341 *e*PKIKP **PKPdf 19 06 48.7 -1.5**
STHS Stebnicka Huta 143.32 341 *e*PKP **PKPdf 19 06 48.7 -1.5**
KMBO Kilima Mbogo 143.32 246 PFAKE 19 07 00.0 +8.4
KMBO LR LR
comp=Z,488nm,20.0s
CLL Collm 143.49 351 *e*PKPdf PKPdf 19 06 57.0 +6.6
comp=Z,17nm,1.7s
CLL *i* 19 07 00.5
comp=Z,16nm,1.6s
CLL *e* 19 07 10.0
CLL *e*PP PP 19 11 00.0 +59
CLL *e*SS SS 19 28 48.0 +6.9
CLL *e* 19 31 18.0
CLL *e*SSS SSS 19 34 06.0
CLL *e*SSSS 19 37 42.0
CLL LmV 20 10 00.0
comp=Z,1µm,20.8s
CLL Collm 143.49 351 *e*PKIKP PKPdf 19 06 57.0 +6.6
CLL pmax pmax
comp=Z,17nm,1.7s
CLL MLR MLR
comp=Z,1µm,20.8s
UZH Uzhgorod 143.66 340 *e*PKIKP PKPbc 19 06 48.1 -0.1
UZH *i* 19 06 55.7
UZH *e* 19 07 03.5
UZH *e* 19 10 01.1
UZH *e*PPP PPP 19 13 12.5
UZH *e* 19 13 53.9
UZH MLR MLR
comp=N,2µm,20.0s
UZH MLR MLR
comp=E,800nm,20.0s
UZH MLR MLR
comp=Z,1µm,20.0s
UPC Upice 143.70 347 *e*PKP **PKPdf 19 06 49.3 -1.5**
UPC *e*SS SS 19 28 47.7 +4.1
UPC AMS AMS 20 09 00.0
comp=Z,2µm,22.9s
UPC Upice 143.70 347 *e*PKIKP **PKPdf 19 06 49.3 -1.5**
UPC *e*SS SS 19 28 47.7 +4.1
UPC MLR MLR
comp=Z,2µm,22.9s
CRVS Cervenica-Dubn 143.70 341 *e*PKIKP **PKPdf 19 06 50.6 -0.3**
CRVS *e* 19 06 59.1
CRVS Cervenica-Dubn 143.70 341 *e*PKP **PKPdf 19 06 50.6 -0.3**
CRVS *e* 19 06 59.1
BRG Berggiesshubel 143.75 349 *e*PKP PKPdf 19 07 02.2 +11
comp=Z,9.7nm,1.4s
DPC Dobruska-Polom 143.78 347 *e*PKP **PKPdf 19 06 49.5 -1.5**
DPC *ep*PKP **pPKPdf 19 06 55.3 -1.4**
DPC AMS AMS 20 09 20.0
comp=Z,2µm,22.5s
DPC Dobruska-Polom 143.78 347 *e*PKIKP **PKPdf 19 06 49.5 -1.5**
DPC *e* 19 06 55.3
DPC MLR MLR
comp=Z,2µm,22.5s
OKC Ostrava-Krasne 143.82 345 *e*PKP **PKPdf 19 06 55.8 +4.8**
OKC *e*SS SS 19 28 53.6 +8.5
OKC AMS AMS 20 07 20.0
comp=Z,1µm,20.9s
OKC Ostrava-Krasne 143.82 345 *e*PKIKP **PKPdf 19 06 55.8 +4.8**
OKC MLR MLR
comp=Z,1µm,20.9s
PVCC Panska Ves 143.97 349 *e*PKP **PKPdf 19 06 52.0 +0.7**
PVCC AMS AMS 20 06 40.0
comp=Z,2µm,24.7s
PVCC Panska Ves 143.97 349 *e*PKIKP **PKPdf 19 06 52.0 +0.7**
PVCC MLR MLR
comp=Z,2µm,24.7s
TRPA Tarpa 144.00 339 ||*e*PKPdf **PKPdf 19 06 50.4 -1.0**
CFR Carcaliu 144.07 331 ||*i*P PKPbc 19 06 48.3 -1.2
CFR Carcaliu 144.07 331 ||PKIKP PKPbc 19 06 48.3 -1.2
LANS Liptovska Anna 144.08 343 *e*PKIKP **PKPdf 19 06 53.6 +2.0**
LANS Liptovska Anna 144.08 343 *e*PKP **PKPdf 19 06 53.6 +2.0**
KECS Kecovo 144.38 341 *e*PKIKP **PKPdf 19 06 53.6 +1.6**
KECS Kecovo 144.38 341 *e*PKP **PKPdf 19 06 53.6 +1.6**
TIRR Tirgusor 144.47 329 ↑*i*P **PKPdf 19 06 50.9 -1.4**
TIRR Tirgusor 144.47 329 *e*PKIKP **PKPdf 19 06 50.9 -1.4**
TIRR Tirgusor 144.47 329 *e*PKPdf **PKPdf 19 06 50.9 -1.4**
PRU Pruhonice 144.49 348 *e*PKP **PKPdf 19 06 51.6 -0.6**
PRU AMS AMS 20 07 10.0
comp=Z,2µm,24.2s
PRU Pruhonice 144.49 348 *e*PKIKP **PKPdf 19 06 51.6 -0.6**
PRU MLR MLR
comp=Z,2µm,24.2s
GOPC GO Pecny, Ondr 144.51 348 *e*SS SS 19 28 57.0 +4.0
GOPC AMS AMS 20 07 30.0
comp=Z,1µm,23.8s
TLB Topalu 144.55 330 ↑*i*P **PKPdf 19 06 50.8 -1.6**
TLB Topalu 144.55 330 ↑PKIKP **PKPdf 19 06 50.8 -1.6**
BRTR Keskin Array B 144.61 319 PKP PKPbc 19 06 50.5 -1.2
comp=Z,9.6nm,0.8s,baz=98,slow=2.6,SNR=31
BRTR PP **PP 19 10 09.9 +0.8**
comp=Z,0.9nm,0.8s,baz=119,slow=10.0,SNR=3.6
NKC Novy Kostel 144.62 351 AMS AMS 20 05 30.0
comp=Z,1µm,23.1s
VRAC Vranov 144.69 346 PKP **PKPdf 19 06 51.6 -1.0**
comp=Z,6.1nm,1.1s,baz=6.7,slow=2.9,SNR=8.7
VRAC Vranov 144.69 346 ↑*i*P **PKPdf 19 06 51.1 -1.5**
DOPR Dopca 144.69 334 ||*i*P **PKPab 19 06 49.9 -1.5**
MLR Muntele Rosu 144.83 333 ↑*i*P **PKPdf 19 06 51.8 -1.3**
MLR Muntele Rosu 144.83 333 ↑PKIKP **PKPdf 19 06 51.8 -1.3**
ISR Istrita 144.85 332 ↑*i*P **PKPdf 19 06 54.5 +1.5**
ISR Istrita 144.85 332 ↑PKIKP **PKPdf 19 06 54.6 +1.5**
VYHS Vyhne 144.86 343 *e*PKIKP **PKPdf 19 06 52.6 -0.3**
VYHS Vyhne 144.86 343 *e*PKP **PKPdf 19 06 52.6 -0.3**
VYHS *e*L L 20 06 48.1
MEM Membach 144.87 358 PKP **PKPdf 19 06 51.3 -1.5**
SNF Seneffe 145.00 360 PKP **PKPdf 19 06 51.7 -1.3**
ANTO Ankara 145.06 320 *e*PKIKP **PKPdf 19 06 52.8 -0.8**
ANTO MLR MLR
comp=Z,444nm,20.0s
ANTO Ankara 145.06 320 *e*PKPdf **PKPdf 19 06 52.8 -0.8**
ANTO LR LR
comp=Z,444nm,20.0s
PSZ Piszkesteto 145.06 341 ||*i*P **PKPdf 19 06 54.6 +1.3**
PSZ Piszkesteto 145.06 341 ||PKIKP **PKPdf 19 06 54.6 +1.3**
PSZ Piszkesteto 145.06 341 PFAKE 19 07 00.0 +6.7
PSZ LR LR
comp=Z,2µm,22.0s
PSZ Piszkesteto 145.06 341 ||*e*PKPbc **PKPdf 19 06 54.8 +1.5**
DRGR 145.08 337 ||*i*P **PKPab 19 06 49.8 -3.1**
DRGR 145.08 337 ||PKIKP **PKPab 19 06 49.8 -3.1**
VOIR 145.26 334 ||*i*P **PKPdf 19 06 53.0 -0.8**
VOIR 145.26 334 ||PKIKP **PKPdf 19 06 53.0 -0.8**
SULR 145.32 332 ↑*i*P **PKPdf 19 06 55.0 +1.2**
GRFO Grafenberg 145.33 352 *e*PKP2 **PKPbc 19 06 51.7 -1.7**
GRFO Grafenberg 145.33 352 *e*PKPdf **PKPbc 19 06 51.7 -1.7**
DOU Dourbes 145.41 359 PKP **PKPdf 19 06 54.7 +0.9**
ARR Arges 145.49 334 ↑*i*P **PKPab 19 06 53.9 -0.5**
KHC Kasperske Hory 145.50 349 *e*PKP **PKPdf 19 06 53.4 -0.6**
KHC *ep*PKP **pPKPdf 19 06 59.8 +0.1**
KHC AMS AMS 20 07 30.0
comp=Z,1µm,23.2s
KHC Kasperske Hory 145.50 349 *e*PKIKP **PKPdf 19 06 53.4 -0.6**
KHC *e* 19 06 59.8
KHC MLR MLR
comp=Z,1µm,23.2s
CMLA Cha da Macela 145.66 44 PFAKE 19 07 10.0 +15
CMLA LR LR
comp=Z,1µm,21.0s
GERES GERESS Array B 145.75 349 PKPbc **PKPab 19 06 53.9 -1.4**
comp=Z,1.9nm,0.3s,baz=1.9,slow=2.9,SNR=5.4
LOT Lotru 145.78 335 ||*i*P **PKPab 19 06 54.0 -1.5**
WLF Walferdange 145.81 358 PKP **PKPab 19 06 55.3 0.0**
WLF Walferdange 145.81 358 *e*PKP2 **PKPab 19 06 54.7 -0.6**
WLF Walferdange 145.81 358 *e*PKPdf **PKPab 19 06 54.7 -0.6**
ASF Jabal al Asfar 145.84 305 PKPbc **PKPab 19 06 56.8 +0.7**
comp=Z,1.2nm,0.4s,baz=210,slow=2.3,SNR=5.2
PRD Provadia 145.88 329 P **PKPab 19 06 54.7 -1.1**
SIRR Siria 145.91 338 ||*i*P **PKPab 19 06 57.1 +1.2**
CONA Conrad Observa 146.15 346 *i* PKPbc **PKPab 19 06 55.1 -1.7**
comp=Z,35nm,1.5s,SNR=10
GZR Gura Zlata 146.23 336 ↑*i*P **PKPdf 19 06 52.7 -2.7**
BZS Buzias 146.48 337 ||*i*P **PKPab 19 06 56.8 -1.2**
BZS Buzias 146.48 337 ||PKP2 **PKPab 19 06 56.9 -1.1**
SZH Strazhica 146.55 330 P **PKPab 19 06 57.0 -1.4**
MOA Molln 146.59 348 *i* PKPbc **PKPbc 19 06 56.1 -1.3**
comp=Z,13nm,1.1s
MMAI Mount Meron Ar 146.67 307 PKPbc **PKPab 19 06 59.1 -0.2**
comp=Z,6.8nm,0.9s,baz=52,slow=5.5,SNR=6.4
ARSA Arzberg 146.87 346 *i* PKPbc **PKPab 19 06 57.5 -2.1**
comp=Z,14nm,1.1s,SNR=12
WLS Welschbruch 146.99 356 PKP **PKPab 19 06 58.8 -1.2**
BFO Black Forest 147.00 355 *e*PKP2 **PKPab 19 06 57.9 -2.1**
BFO MLR MLR
comp=Z,737nm,19.0s
BFO Black Forest 147.00 355 *e*PKPbc **PKPab 19 06 57.9 -2.1**
BFO LR LR
comp=Z,737nm,19.0s
MDVR Moldovita 147.15 337 ↑*i*P **PKPbc 19 06 58.5 -0.6**
ECH Echery 147.20 356 PKP **PKPab 19 07 00.6 -0.2**
THEF They Montfort 147.25 358 PKP **PKPab 19 07 00.8 -0.1**
CSS Mathiatis 147.34 312 PFAKE 19 07 10.0 +8.2
CSS LR LR
comp=Z,201nm,21.0s
KOGS Kog 147.44 344 *e*PKPdf **PKPab 19 07 00.6 -1.1**
MPEP Malo Peshtene 147.49 333 P **PKPab 19 07 00.2 -1.8**
KBA Koelnbreinsper 147.51 348 *i* PKPbc **PKPbc 19 06 58.9 -1.3**
comp=Z,6.1nm,0.8s
SOKA Soboth 147.52 346 *i* PKPbc **PKPbc 19 06 59.1 -1.1**
comp=Z,14nm,1.2s,SNR=7.6
RETA Reutte 147.55 352 *i* PKPab **PKPab 19 07 00.8 -1.4**
comp=Z,17nm,1.5s,SNR=9.6
MOF Molkenrain 147.56 356 PKP **PKPab 19 07 01.5 -0.8**
WATA Walderalm 147.58 350 *i* sPKPdf **PKPab 19 07 01.5 -0.9**
comp=Z,13nm,1.2s
WTTA Wattenberg 147.64 350 *i* sPKPdf **PKPab 19 07 01.5 -1.3**
comp=Z,17nm,1.4s
MOTA Moosalm 147.64 351 *i* pPKPdf **PKPbc 19 07 00.0 -0.5**
comp=Z,21nm,1.2s
OBKA Obir 147.79 346 *i* pPKPdf **PKPbc 19 07 00.3 -0.6**
comp=Z,11nm,1.3s
DAVA Damuels 147.87 353 *i* PKPbc **PKPbc 19 06 59.4 -1.7**
comp=Z,18nm,1.2s
MYKA Terra Mystica 147.88 348 *i* PKPbc **PKPbc 19 06 59.6 -1.5**
comp=Z,20nm,1.6s,SNR=7.8
PGB Panagyurishte 147.93 331 P **PKPab 19 07 03.4 -0.5**
ABTA Abfaltersbach 147.99 349 *i* PKPbc **PKPbc 19 07 00.1 -1.3**
comp=Z,19nm,1.1s
FETA Feichten 148.01 351 *i* PKPbc **PKPbc 19 07 00.1 -1.5**
comp=Z,22nm,1.3s
KDZ Kurdzhali 148.02 329 P **PKPab 19 07 02.5 -1.7**
LOMF Lomont 148.08 356 PKP **PKPab 19 07 02.7 -1.7**
LJU Ljubljana 148.24 346 *e*PKPdf **PKPbc 19 06 59.8 -2.2**
LJU *e* 19 07 08.6
EIL Elat 148.28 302 PKPbc **PKPbc 19 07 00.8 -1.8**
comp=Z,2.6nm,0.7s,baz=49,slow=5.4,SNR=6.6
VTS Vitosha 148.33 333 ||*i*P **PKPbc 19 07 00.1 -2.4**
VTS Vitosha 148.33 333 ||PKIKP **PKPbc 19 07 00.1 -2.4**
VTS Vitosha 148.33 333 P **PKPbc 19 07 02.5 0.0**
RZN Rozhen 148.33 330 P **PKPab 19 07 04.7 -1.0**
DAVOX Davos/Dischmat 148.36 352 PKPbc **PKPbc 19 07 01.0 -1.5**
comp=Z,5.2nm,0.8s,baz=111,slow=3.2,SNR=11
DAVOX Davos/Dischmat 148.36 352 PKP2 **PKPbc 19 07 01.0 -1.5**
BOJS Bojanci 148.57 345 *e*PKPdf **PKPbc 19 07 00.9 -1.9**
BOJS *e* 19 07 04.0
TUE Stuetta 148.73 353 *e*PKPbc **PKPbc 19 07 03.3 -0.2**
MMB Musomiste 148.88 331 P **PKPbc 19 07 03.6 -0.2**
KKB Krupnik 148.96 332 P **PKPab 19 07 05.9 -2.1**
OG01 Vacheresse 149.11 356 PKP **PKPab 19 07 07.8 -0.7**
MBAR Mbarara 149.22 241 PFAKE 19 07 10.0 -0.1
MBAR LR LR
comp=Z,1µm,22.0s
AGO Saint Agoulin 149.45 1 PKP **PKPab 19 07 06.9 -2.9**
PLDF La Plantade 149.54 1 PKP **PKPab 19 07 07.6 -2.7**
PDG Podgorica 150.09 337 ↑*i*P **PKPbc 19 07 05.5 -1.2**
SSB Saint Sauveur 150.23 359 PKP **PKPbc 19 07 07.0 -0.1**
SSB Saint Sauveur 150.23 359 *e*PKIKP **PKPbc 19 07 06.2 -0.9**
SSB Saint Sauveur 150.23 359 *e*PKPbc **PKPbc 19 07 06.2 -0.9**
LBL Lubilhac 150.28 1 PKP **PKPbc 19 07 08.5 +1.3**
BNI Bardonecchia 150.38 356 PFAKE 19 07 10.0 +2.4
BNI LR LR
comp=Z,931nm,21.0s
ASCN Ascension 150.46 141 PFAKE 19 07 10.0 +1.5
ASCN LR LR
comp=Z,4µm,22.0s
OHR Ohrid 150.58 334 *e*P **PKPbc 19 07 07.4 -0.6**
TIR Tirane 150.77 335 ↑*i*P **PKPbc 19 07 10.1 +1.7**
TIR Tirane 150.77 335 ↑PKIKP **PKPbc 19 07 10.1 +1.7**
PGAV Gavieira, Arco 151.48 20 *e*PKPdf **PKPab 19 07 18.0 -0.4**
PGAV Gavieira, Arco 151.48 20 *e*PKP PKPab 19 07 54.6 +36
PGAV Gavieira, Arco 151.48 20 *e*LR LR 19 58 33.1
comp=Z,966nm,20.0s
AQU L'Aquila 151.99 345 PFAKE 19 07 20.0 -0.5
AQU LR LR
comp=Z,1µm,22.0s
PVRL Vila Real 152.28 19 *e*PKPdf **PKPbc 19 07 07.9 -4.1**
MVO Moncorvo 152.60 18 *e*PKP **PKPab 19 07 28.4 +5.3**
MVO Moncorvo 152.60 18 *e*LR LR 19 59 27.6
comp=Z,921nm,18.0s
PVIS Viseu 152.73 20 *e*PKPdf **PKPab 19 07 17.0 -6.6**
PCAS Casnilo, Conde 153.11 22 *e*PKP PKPab 19 07 37.0 +12
MTE Manteigas 153.13 20 *e*PKP PKPab 19 07 41.8 +16
MTE Manteigas 153.13 20 *e*LR LR 20 00 46.9
comp=Z,519nm,18.0s
MTE Manteigas 153.13 20 PFAKE 19 07 20.0 -5.3
MTE LR LR
comp=Z,763nm,21.0s
SACV Santiago Islan 153.28 87 PFAKE 19 07 20.0 +5.2
SACV LR LR
comp=Z,272nm,20.0s
CUC Castrocucco 153.46 340 PFAKE 19 07 20.0 +5.4
CUC LR LR
comp=Z,854nm,22.0s
PMAFR Mafra 153.78 24 *e*PKPdf **PKPab 19 07 20.5 -7.6**
PMAFR Mafra 153.78 24 *e*PKP PKPab 19 07 38.9 +11
PMRV Marv??o 154.06 21 *e*PKP PKPab 19 07 37.4 +8.2
PMRV Marv??o 154.06 21 *e*LR LR 20 00 36.5
comp=Z,744nm,20.0s
PMOZ Porto Moniz, M 154.06 44 *e*LR LR 19 59 41.1
comp=Z,367nm,24.0s
PMTG Montargil 154.08 22 *e*PKP **PKPab 19 07 32.6 +3.3**
PESTR Estremoz 154.49 22 *e*PKPdf **PKPbc 19 07 13.9 -2.9**
PESTR Estremoz 154.49 22 *e*PKP PKPab 19 07 46.3 +15
PNCL Nicolau / Gran 154.80 24 *e*PKP PKPab 19 07 38.8 +6.4
ESDC Sonseca Array 154.83 15 PKPab **PKPab 19 07 36.6 +4.1**
comp=Z,0.2nm,0.5s,baz=340,slow=3.8,SNR=8.5
CEL Celeste 154.98 338 PFAKE 19 07 20.0 +2.1
CEL LR LR
comp=Z,1µm,21.0s
MESJ Messejana 155.16 24 *e*PKP **PKPab 19 07 38.5 +4.6**
PCVE Castro Verde 155.41 24 *e*PKP **PKPab 19 07 34.6 -0.4**
MORF Marmelete 155.45 25 *e*PKP **PKPab 19 07 39.4 +4.1**
PBDV Barranco-do-Ve 155.79 24 *e*PKPdf **PKPdf 19 07 16.2 +5.9**
PBDV Barranco-do-Ve 155.79 24 *e*PKP **PKPab 19 07 36.5 -0.2**
CLTB Caltabellotta 156.49 342 PFAKE 19 07 20.0 +8.7
CLTB LR LR
comp=Z,973nm,22.0s
RTC Rabat Centre 159.04 26 PFAKE 19 07 30.0 +16
RTC LR LR
comp=Z,4µm,22.0s
TORD Torodi Ar. Bea 176.76 134 PKP **PKPdf 19 07 31.6 +4.5**
comp=Z,2.4nm,1.2s,baz=14,slow=1.8,SNR=6.1
TORD PKPab **PKPab 19 09 12.6 +3.1**
comp=Z,8.8nm,1.3s,baz=248,slow=3.2,SNR=12

IDC 10 18:59:21.5±2.7, 15°13'S×176°47'W, h0km, mb3.7/4, mb1 4.1/4, mb1mx3.7/33, mbtmp3.7/4, MS4.1/2, Ms1 4.1/2, ms1mx3.3/38, Error ellipse: s-maj=274.9km s-min=26.4km az=155.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**16.98**	**113**	LR	LR	19 08 54.5	
	comp=Z,232nm,19.1s,baz=280,slow=34						
CTA	**Charters Tower**	**35.82**	**257**	LR	LR	19 18 51.9	
	comp=Z,963nm,21.1s,slow=33						
H11N3	**WAKE ISLAND Hy**	**38.29**	**334**	T	T	19 47 53.4	
	baz=152,slow=76,SNR=8.9						
H11N1	**WAKE ISLAND Hy**	**38.30**	**334**	T	T	19 47 52.6	
	baz=152,slow=76,SNR=16						
H11N2	**WAKE ISLAND Hy**	**38.31**	**334**	T	T	19 47 54.3	
	baz=152,slow=76,SNR=10						
WRA	**Warramunga Arr**	**47.02**	**257**	P	P	19 07 56.8	+1.8
	0.4nm,0.8s,baz=91,slow=8.3,SNR=3.0						
ASAR	**Alice Springs**	**47.38**	**252**	P	P	19 07 56.1	-1.7
	0.6nm,0.6s,baz=84,slow=8.5,SNR=9.6						
TXAR	**Lajitas Array**	**82.94**	**57**	P	P	19 11 49.6	+0.8
	1.0nm,1.0s,baz=234,slow=6.0,SNR=6.2						
PDAR	**Pinedale Array**	**84.06**	**43**	P	P	19 11 53.9	-0.6
	0.9nm,0.9s,baz=39,slow=0.9,SNR=5.2						
BRTR	**Keskin Array B**	**144.04**	**319**	PKP	PKPbc	19 18 57.5	0.0
	1.4nm,0.9s,baz=101,slow=3.9,SNR=7.0						

*ISCJB **10** 19:04:44.6±0.4,27.˝98N±0.˝04×60.˝00E±0.˝05, h10km, mb3.6/18, MS3.8/1, Error ellipse: s-maj=7.4km s-min=4.6km az=30.3*
*IDC **10** 19:04:44.1±0.9,28.˝14N×59.˝65E, h0km, mb3.6/17, mb1 3.7/18, mb1mx3.5/75, mbtmp3.7/18, ML3.9/1, MS3.6/2, Ms1 3.6/2, ms1mx2.9/48, Error ellipse: s-maj=21.7km s-min=16.4km az=163.0*
*THR **10** 19:04:47.8±1.6,27.˝85N×59.˝65E, h15km, ML4.0*
*CSEM **10** 19:04:49.8±0.4,27.˝76N×59.˝89E, h10km, ML4.0, Error ellipse: s-maj=13.4km s-min=7.4km az=103.0*
*OMAN **10** 19:04:49.2±99.0,27.˝83N×59.˝80E, h15km, Error ellipse: s-maj=23.9km s-min=12.4km az=257.0*
*DSN **10** 19:04:49.5±2.3,27.˝56N×60.˝08E, h15km, ML4.2, Error ellipse: s-maj=55.8km s-min=11.0km az=168.0*
*TEH **10** 19:04:54.8,28.˝02N×59.˝40E, h7km, ML4.0*

ISC 10 19:04:45.4±0.5,27.97N±0.03×59.99E±0.04,h10km,n68,σ2s13/73,mb3.7/18,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZHSF	**Zahedan**	**1.78**	**23**	*e*Pn	**Pg**	**19 05 23.0**	**+3.5**
ZHSF	**Zahedan**	**1.78**	**23**	*e*Pn	**Pg**	**19 05 23.0**	**+3.5**
CHBR	**Chabahar**	**2.40**	**169**	*e*Pn	**Pb**	**19 05 27.6**	**-1.1**
CHBR	**Chabahar**	**2.40**	**169**	*e*Pn	**Pb**	**19 05 27.6**	**-1.1**
NIAN	**Nian**	**2.83**	**263**	*e*Pn	**Pb**	**19 05 33.8**	**-2.1**
NIAN	**Nian**	**2.83**	**263**	*e*Pn	**Pb**	**19 05 33.8**	**-2.1**
CHMN	**Cheshme madani**	**2.86**	**312**	*e*Pn	**Pn**	**19 05 30.4**	**-1.0**
CHMN	**Cheshme madani**	**2.86**	**312**	*e*Pn	**Pn**	**19 05 30.4**	**-1.0**
KHSK	**Kohestak**	**2.88**	**246**	*e*Pn	**Pn**	**19 05 34.1**	**+2.8**
KHSK	**Kohestak**	**2.88**	**246**	*e*Pn	**Pn**	**19 05 34.1**	**+2.8**
IBND	**Bandar-abas**	**3.10**	**261**	*e*Pn	**Pn**	**19 05 37.0**	**+2.6**
IBND				*e*AMB	AMB	19 06 40.1	
	comp=Z,11µm,0.4s						
IBND	**Bandar-abas**	**3.10**	**261**	*e*Pn	**Pn**	**19 05 37.0**	**+2.6**
NGRK	**Negar Kerman**	**3.31**	**301**	*e*Pn	**Pb**	**19 05 41.8**	**-2.7**
NGRK	**Negar Kerman**	**3.31**	**301**	*e*Pn	**Pb**	**19 05 41.8**	**-2.7**
BNDS	**Bandar-Abbas**	**3.44**	**261**	*e*Pn	**Pn**	**19 05 40.3**	**+1.1**
BNDS				*e*Sg	**Sn**	**19 06 24.4**	**+4.4**
KRBR	**Kerman**	**3.47**	**306**	*e*Pn	**Pn**	**19 05 41.3**	**+1.6**
KRBR				*e*Sg	**Sb**	**19 06 30.8**	**+1.3**
KRBR				AML	AML	19 06 33.4	
	comp=E,396nm,0.7s						
KRBR				AML	AML	19 06 40.1	
	comp=N,354nm,0.5s						
KRBR	**Kerman**	**3.47**	**306**	*e*Pn	**Pn**	**19 05 40.8**	**+1.0**
KRBR				*e*Sg	**Sb**	**19 06 30.8**	**+1.3**
TVBK	**TV Kerman**	**3.47**	**306**	*e*Pn	**Pb**	**19 05 45.6**	**-1.6**
TVBK	**TV Kerman**	**3.47**	**306**	*e*Pn	**Pb**	**19 05 45.6**	**-1.6**
BANOM	**Banah**	**3.87**	**239**	*i* P	**Pn**	**19 05 46.3**	**+1.3**
	SNR=16						
BANOM				S	**Sn**	**19 06 31.8**	**+1.2**
BANOM	**Banah**	**3.87**	**239**	P	**Pn**	**19 05 47.2**	**+2.2**
	SNR=16						
BANOM	**Banah**	**3.87**	**239**	P	**Pn**	**19 05 47.2**	**+2.2**
	SNR=16						
BANOM				S	**Sn**	**19 06 31.8**	**+1.2**
KHGB	**Koh Gabri**	**3.90**	**309**	*e*Pn	**Pb**	**19 05 54.7**	**+0.3**
KHGB	**Koh Gabri**	**3.90**	**309**	*e*Pn	**Pb**	**19 05 54.7**	**+0.3**
IKOO	**Kooshah**	**4.53**	**349**	*e*Pn	**Pn**	**19 05 54.4**	**+0.2**
IKOO	**Kooshah**	**4.53**	**349**	*e*Pn	**Pn**	**19 05 54.4**	**+0.2**
UOSS	**Minazif**	**4.54**	**229**	P	**Pn**	**19 05 54.4**	**+0.3**
HATD	**Hatta, Dubai**	**4.67**	**229**	P	**Pn**	**19 05 56.0**	**+0.1**
HATD	**Hatta, Dubai**	**4.67**	**229**	P	**Pn**	**19 05 56.0**	**+0.1**
BIDO	**Bidbid**	**4.74**	**201**	P	**Pn**	**19 05 57.7**	**+0.9**
BIDO				S	**Sn**	**19 06 51.4**	**-0.5**
	SNR=6.9						
BIDO	**Bidbid**	**4.74**	**201**	P	**Pn**	**19 05 57.7**	**+0.9**
BIDO				S	**Sn**	**19 06 51.4**	**-0.5**
	SNR=6.9						
IDAH	**Dahanechah**	**4.76**	**359**	*e*AMB	AMB	19 06 20.0	
	comp=Z,789nm,0.2s						
IDAH				*e*Pn	**Pb**	**19 06 05.4**	**-3.6**
ASHO	**Ashiyiah**	**4.81**	**228**	*i* P	**Pn**	**19 05 59.3**	**+1.4**
	SNR=21						
ASHO	**Ashiyiah**	**4.81**	**228**	P	**Pn**	**19 05 59.3**	**+1.4**
	SNR=21						
WSAR	**Wadi Sarin**	**4.87**	**195**	Pn	**Pn**	**19 06 00.2**	**+1.6**
	comp=Z,4.3nm,0.3s,baz=70,slow=4.6,SNR=176						
WSAR				Sn	**Sn**	**19 06 55.3**	**+0.2**
	comp=Z,20nm,0.3s,baz=322,slow=19,SNR=14						
ITEG	**Tejag**	**5.03**	**348**	*e*AMB	AMB	19 06 19.7	
	comp=Z,2µm,0.2s						
ITEG				*e*Pn	Pb	19 06 08.5	-5.1
FAQ	**Al Faqa, Dubai**	**5.09**	**232**	P	**Pn**	**19 06 04.3**	**+2.6**
FAQ	**Al Faqa, Dubai**	**5.09**	**232**	P	**Pn**	**19 06 04.3**	**+2.6**
IBAF	**Bafgh**	**5.28**	**314**	*e*Pn	**Pn**	**19 06 08.0**	**+3.6**
IBAF				*e*Sg	**Sb**	**19 07 26.3**	**+5.0**
IBAF	**Bafgh**	**5.28**	**314**	*e*Pn	**Pn**	**19 06 08.0**	**+3.6**
IBAF				*e*Sg	**Sb**	**19 07 26.3**	**+5.0**
IMEH	**Mehriz**	**5.79**	**307**	*e*Pn	Pn	19 06 18.9	+7.3
IMEH				*e*AMB	AMB	19 07 53.0	
	comp=Z,718nm,0.4s						
IMEH	**Mehriz**	**5.79**	**307**	*e*Pn	Pn	19 06 18.9	+7.3
GHIR	**Ghir-Karzin**	**6.20**	**275**	*e*Pn	**Pn**	**19 06 17.3**	**+0.3**
GHIR	**Ghir-Karzin**	**6.20**	**275**	*e*Pn	**Pn**	**19 06 16.8**	**-0.2**
ISRV	**Sarvestan**	**6.21**	**285**	*e*Pn	**Pn**	**19 06 17.3**	**-0.1**
ISRV				*e*AMB	AMB	19 07 59.9	
	comp=Z,360nm,0.4s						
ISRV	**Sarvestan**	**6.21**	**285**	*e*Pn	**Pn**	**19 06 17.3**	**-0.1**
ICHK	**Chekchek**	**6.45**	**313**	*e*Pn	**Pb**	**19 06 36.1**	**-1.7**
ICHK				*e*AMB	AMB	19 08 10.3	
	comp=Z,732nm,0.4s						
ICHK	**Chekchek**	**6.45**	**313**	*e*Pn	**Pb**	**19 06 36.1**	**-1.7**
GEYT	**Alibeck**	**10.06**	**351**	LR	LR	19 11 31.2	
	comp=Z,232nm,19.0s,baz=205,slow=41						
MMAI	**Mount Meron Ar**	**21.76**	**289**	P	**P**	**19 09 33.6**	**-3.6**
	comp=Z,0.4nm,0.3s,baz=100,slow=14,SNR=1.9						
AKTO	**Aktyubinsk**	**22.49**	**357**	P	**P**	**19 09 44.5**	**-0.3**
	comp=Z,2.0nm,0.8s,baz=172,slow=9.9,SNR=4.9						
BRTR	**Keskin Array B**	**24.74**	**305**	P	**P**	**19 10 03.7**	**-3.4**
	comp=Z,0.3nm,0.5s,baz=72,slow=9.3,SNR=2.4						
MKAR	**Makanchi Array**	**25.68**	**37**	P	**P**	**19 10 15.7**	**+0.2**
	comp=Z,0.8nm,0.7s,baz=224,slow=9.2,SNR=9.7						
BVAR	**Borovoye Array**	**26.20**	**14**	P	**P**	**19 10 20.2**	**+0.1**
	comp=Z,1.2nm,0.7s,baz=180,slow=8.9,SNR=6.5						
KURBB	**Kurchatov Array**	**26.65**	**27**	P	**P**	**19 10 25.7**	**+1.6**
	comp=Z,0.8nm,0.7s,baz=223,slow=8.9,SNR=4.7						
ZALV	**Zalesovo Beam**	**31.70**	**28**	P	**P**	**19 11 08.1**	**-0.9**
	comp=Z,0.5nm,0.4s,baz=237,slow=7.7,SNR=3.5						
AKASG	**Malin Array Be**	**32.51**	**323**	P	**P**	**19 11 14.3**	**-1.8**
	comp=Z,0.7nm,0.4s,baz=129,slow=8.5,SNR=4.4						
SONM	**Songino Array**	**40.92**	**48**	P	**P**	**19 12 29.7**	**+1.7**
	comp=Z,0.3nm,0.6s,baz=244,slow=8.6,SNR=3.5						
GERES	**GERESS Array B**	**41.06**	**313**	LR	LR	19 31 57.1	
	comp=Z,125nm,19.4s,baz=227,slow=40						
HHC	**Hu-ho-hao-te**	**43.86**	**59**	*e*P	**P**	**19 12 54.6**	**+2.6**
HHC				pmax	pmax		
	comp=Z,12nm,1.1s						
HHC				pmax	pmax		
	comp=Z,140nm,6.0s						
HFS	**Hagfors**	**44.79**	**329**	P	**P**	**19 12 56.5**	**-2.5**
	comp=Z,2.5nm,1.0s,baz=146,slow=10,SNR=3.7						
ARCES	**ARCESS Array B**	**46.12**	**344**	P	**P**	**19 13 07.9**	**-1.6**
	comp=Z,0.9nm,0.8s,baz=127,slow=10,SNR=2.9						
EKA	**Eskdalemuir Ar**	**52.33**	**320**	P	**P**	**19 13 54.3**	**-2.8**
	comp=Z,0.1nm,0.3s,baz=99,slow=8.3,SNR=3.2						
TORD	**Torodi Ar. Bea**	**56.07**	**267**	P	**P**	**19 14 23.9**	**-1.0**
	comp=Z,0.5nm,0.4s,baz=62,slow=6.8,SNR=14						
KSRS	**Korea Array**	**56.84**	**62**	P	**P**	**19 14 32.9**	**+2.7**
	comp=Z,0.8nm,0.8s,baz=255,slow=5.9,SNR=3.6						
TIXI	**Tiksi**	**57.08**	**21**	P	**P**	**19 14 29.5**	**-1.8**
	comp=Z,0.3nm,0.5s,baz=132,slow=9.3,SNR=3.6						
SEY	**Seymchan**	**66.55**	**30**	P	**P**	**19 15 35.2**	**0.0**
	comp=Z,1.2nm,0.7s,baz=313,slow=17,SNR=4.6						
ASAR	**Alice Springs**	**87.79**	**118**	P	**P**	**19 17 36.5**	**+1.4**
	comp=Z,0.4nm,0.9s,baz=304,slow=5.3,SNR=6.4						

*MOS **10** 19:11:05.2±1.4,49.˝91N×156.˝94E, h21km, mb4.1/1, Error ellipse: s-maj=30.7km s-min=7.9km az=80.5*

KRSC 10 19:11:01.7±2.4,49.76N×157.16E,h20km±8km,ML3.9,1D,East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.14**	**325**	PN	Pn	19 11 22.3	-0.3
SKR				S	Sb	19 11 35.5	-1.7
SKR	**Severo-Kuril's**	**1.14**	**325**	*e*P	Pn	19 11 22.3	-0.3
SKR				*e*S	Sb	19 11 35.5	-1.7
PAU	**Pauzhetka**	**1.73**	**353**	*i* PN	Pb	19 11 31.9	-0.8
PAU				*i* S	Sn	19 11 52.9	+0.8
PAU				pmax	pmax		
	comp=Z,200nm,0.8s						
PAU				smax	smax		
	comp=Z,310nm,0.2s						
PAU	**Pauzhetka**	**1.73**	**353**	*e*P	Pb	19 11 32.8	+0.1
PAU				*e*S	Sb	19 11 53.7	-0.3
ASAK	**Asacha**	**2.67**	**10**	PN	Pn	19 11 45.3	+1.6
ASAK	**Asacha**	**2.67**	**10**	P	Pn	19 11 45.3	+1.6
RUS	**Russkaya**	**2.81**	**17**	PN	Pb	19 11 49.5	-1.7
RUS				S	Sb	19 12 23.2	-2.0
RUS	**Russkaya**	**2.81**	**17**	*e*P	Pb	19 11 49.5	-1.7
RUS				S	Sb	19 12 23.2	-2.0
DALK	**Dalny**	**3.43**	**16**	PN	Pb	19 11 57.9	-3.8
DALK				S	Sn	19 12 37.9	+3.9
DALK	**Dalny**	**3.43**	**16**	*e*P	Pb	19 11 57.9	-3.8
DALK				*e*S	Sn	19 12 37.9	+3.9
UGLR	**Uglovaya**	**3.61**	**16**	PN	Pb	19 12 01.8	-3.1
UGLR	**Uglovaya**	**3.61**	**16**	P	Pb	19 12 01.8	-3.1
AVH	**Avacha**	**3.65**	**15**	PN	Pb	19 12 02.5	-3.0
AVH	**Avacha**	**3.65**	**15**	P	Pb	19 12 02.5	-3.0
SDLR	**Sedlovina**	**3.69**	**16**	PN	Pn	19 11 59.4	+1.7
SDLR	**Sedlovina**	**3.69**	**16**	P	Pn	19 11 59.4	+1.7
SPN	**Mys Shipunski**	**3.80**	**27**	PN	Pn	19 12 03.2	+4.2
SPN				S	Sn	19 12 48.1	+5.0
SPN	**Mys Shipunski**	**3.80**	**27**	*e*P	Pn	19 12 03.2	+4.2
SPN				S	Sn	19 12 48.1	+5.0
GNL	**Ganaly**	**3.97**	**7**	PN	Pn	19 12 05.8	+4.2
GNL	**Ganaly**	**3.97**	**7**	P	Pn	19 12 05.8	+4.2
MKZ	**Mys Kozlova**	**5.57**	**29**	PN	Pn	19 12 26.1	+2.7
MKZ	**Mys Kozlova**	**5.57**	**29**	*e*P	Pn	19 12 26.1	+2.7
VLA	**Vladivostok**	**18.59**	**259**	↓*i* P	Pn	19 15 21.8	+4.1
VLA				pmax	pmax		
	comp=Z,4.0nm,0.9s						

*IDC **10** 19:13:31.1±0.6,28.˝52S×176.˝69W, h0km, mb4.5/17, mb1 4.6/18, mb1mx4.5/43, mbtmp4.5/18, ML4.1/1, MS4.2/7, Ms1 4.2/7, ms1mx3.8/32, Error ellipse: s-maj=20.4km s-min=16.4km az=123.0*
*NEIC **10** 19:13:32.6±0.4,28.˝59S×176.˝63W, h10km, mb4.2/1, Error ellipse: s-maj=11.1km s-min=9.5km az=110.0*
*ISCJB **10** 19:13:35.1±0.5,28.˝59S±0.˝08×176.˝8W±0.˝1, h33km, mb4.5/17, MS4.2/5, Error ellipse: s-maj=14.6km s-min=11.3km az=15.7*

ISC 10 19:13:35.3±0.5,28.75S±0.08×176.58W±0.07,h29km,n49,σ1s97/48,mb4.5/17,MS4.3/6,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.27**	**246**	Pn	**Pb**	**19 13 58.3**	**-0.3**
	579nm,0.3s,baz=205,slow=3.2,SNR=26						
RAO				Sn	**Sb**	**19 14 16.6**	**+2.0**
	3µm,0.3s,baz=270,slow=20,SNR=14						
URZ	**Urewera**	**10.85**	**207**	Pn	**Pn**	**19 16 09.4**	**+0.9**
	1.4nm,0.3s,baz=272,slow=3.5,SNR=3.7						
URZ				Sn	**Sn**	**19 18 02.4**	**-6.5**
	2.1nm,0.3s,baz=85,slow=17,SNR=3.3						
MSVF	**Nonsavu**	**12.02**	**335**	*e*Pn	**Pn**	**19 16 23.1**	**-1.6**
AFI	**Afiamalu**	**15.42**	**18**	Sn	Sn	19 19 45.5	-15
	1.4nm,0.3s,baz=288,slow=20,SNR=2.3						
DZM	**Mont Dzumac**	**16.70**	**290**	Pn	**P**	**19 17 29.8**	**+0.4**
	0.3nm,0.3s,baz=125,slow=9.9,SNR=10						
DZM				LR	LR	19 22 34.6	
	comp=Z,1µm,22.0s,baz=136,slow=33						
DZM	**Mont Dzumac**	**16.70**	**290**	*e*P	**P**	**19 17 30.6**	**+1.1**
	154nm,1.4s						
DZM				*e*LR	LR	19 21 33.0	
	2µm,23.1s						
DZM	**Mont Dzumac**	**16.70**	**290**	*e*Pn	**Pn**	**19 17 26.4**	**-1.0**
	21nm,1.0s						
RAR	**Rarotonga**	**16.97**	**68**	Pn	**Pn**	**19 17 24.8**	**-5.8**
	1.2nm,0.3s,baz=198,slow=19,SNR=2.6						
RAR				LR	LR	19 23 30.2	
	comp=Z,344nm,18.5s,baz=252,slow=35						
RPZ	**Rata Peaks**	**17.93**	**210**	P	**Pn**	**19 17 39.8**	**-2.6**
	1.8nm,0.3s,baz=39,slow=6.5,SNR=7.5						
TBI	**Tubuai**	**24.93**	**84**	*e*LR	LR	19 24 56.6	
	720nm,29.0s						
PPT2	**Papeete2**	**27.13**	**72**	*e*LR	LR	19 25 55.8	
	854nm,27.0s						
PPT	**Papeete**	**27.14**	**72**	LR	LR	19 29 02.6	
	comp=Z,312nm,18.6s,baz=243,slow=34						
CTA	**Charters Tower**	**34.81**	**276**	P	**P**	**19 20 23.2**	**-0.5**
	3.6nm,0.5s,baz=105,slow=12,SNR=5.2						
CTAO	**Charters Tower**	**34.81**	**276**	*e*P	**P**	**19 20 23.1**	**-0.6**
STKA	**Stephens Creek**	**36.08**	**254**	LR	LR	19 35 15.5	
	comp=Z,540nm,18.3s,baz=62,slow=36						
RKT	**Rikitea**	**37.70**	**91**	*e*LR	LR	19 30 42.6	
	345nm,23.0s						
TAOE	**Nuku Hiva Isla**	**39.52**	**67**	*e*LR	LR	19 31 48.2	
	311nm,24.2s						
ASAR	**Alice Springs**	**44.46**	**265**	P	**P**	**19 21 42.9**	**-1.2**
	7.0nm,1.0s,baz=120,slow=8.1,SNR=23						
ASAR				PcP	**PcP**	**19 23 26.5**	**-0.9**
	2.4nm,0.8s,baz=116,slow=4.2,SNR=3.5						
ASAR				LR	LR	19 39 47.1	
	comp=Z,877nm,18.9s,baz=91,slow=36						
WRA	**Warramunga Arr**	**45.30**	**270**	P	**P**	**19 21 49.7**	**-1.1**
	12nm,1.0s,baz=108,slow=8.2,SNR=8.7						
WRA				PcP	**PcP**	**19 23 31.0**	**+0.7**
	9.2nm,1.1s,baz=109,slow=4.0,SNR=7.2						
VNDA	**Vanda**	**49.86**	**186**	P	**P**	**19 22 28.1**	**+2.7**
	1.0nm,0.8s,baz=349,slow=6.1,SNR=4.4						
GUMO	**Guam**	**56.22**	**313**	LR	LR	19 44 35.2	
	comp=Z,127nm,19.3s,baz=106,slow=33						
MAW	**Mawson**	**74.28**	**200**	P	**P**	**19 25 10.6**	**+1.2**
	9.7nm,0.9s,baz=110,slow=5.1,SNR=17						
MJAR	**Matsushiro Arr**	**77.61**	**324**	P	**P**	**19 25 27.2**	**-1.5**
	6.2nm,0.9s,baz=160,slow=5.5,SNR=22						
MAT	**Matsushiro**	**77.61**	**324**	P	**P**	**19 25 27.7**	**-1.0**
JNU	**Nakatsue**	**79.16**	**317**	P	**P**	**19 25 36.1**	**-1.3**
	23nm,1.2s,baz=148,slow=3.8,SNR=6.6						
PLCA	**Paso Flores**	**82.72**	**133**	P	**P**	**19 25 58.0**	**+1.4**
	2.9nm,0.9s,baz=260,slow=8.9,SNR=5.0						
PLCA				LR	LR	19 58 01.5	
	comp=Z,99nm,19.3s,baz=211,slow=32						
KSRS	**Korea Array**	**85.91**	**319**	P	**P**	**19 26 03.0**	**+0.7**
	2.1nm,0.9s,baz=137,slow=5.6,SNR=6.3						
KSAR	**Wonju Array Be**	**83.92**	**319**	P	**P**	**19 26 03.0**	**+0.7**
PETK	**Petropavlovsk-**	**84.53**	**345**	P	**P**	**19 26 05.0**	**-0.1**
	4.8nm,0.8s,baz=104,slow=6.3,SNR=6.1						
USRK	**Ussuriysk Ar.**	**86.48**	**326**	P	**P**	**19 26 13.9**	**-1.2**
	4.0nm,0.9s,baz=208,slow=3.7,SNR=7.6						
KLR	**Kul'dur**	**90.25**	**329**	P	**P**	**19 26 32.8**	**-0.1**
	2.6nm,0.8s,baz=109,slow=2.7,SNR=8.2						
TXAR	**Lajitas Array**	**90.45**	**57**	P	**P**	**19 26 35.9**	**+1.5**
	1.9nm,1.1s,baz=208,slow=5.1,SNR=12						
BBB	**Bella Bella**	**91.06**	**27**	P	**P**	**19 26 37.8**	**+1.2**
	3.0nm,0.7s,baz=245,slow=7.2,SNR=3.7						
CMAR	**Chiang Mai Arr**	**94.03**	**289**	P	**P**	**19 26 52.2**	**+1.1**
	0.5nm,0.3s,baz=151,slow=2.1,SNR=3.8						
PDAR	**Pinedale Array**	**94.09**	**43**	P	**P**	**19 26 51.3**	**+0.2**
	0.7nm,0.8s,baz=207,slow=3.0,SNR=6.1						
ILAR	**Eielson Array**	**96.05**	**12**	P	**P**	**19 26 58.2**	**-1.0**
	0.9nm,0.9s,baz=216,slow=3.1,SNR=5.3						
MKAR	**Makanchi Array**	**117.65**	**310**	PKP	**PKPdf**	**19 32 17.3**	**-1.1**
	0.2nm,0.3s,baz=258,slow=1.1,SNR=4.8						
KSH	**Kashi**	**120.45**	**301**	*e*PKP	**PKPdf**	**19 32 29.2**	**+5.1**
KSH				*es*PKP		19 32 46.9	
KSH				*e*PP	PP	19 34 01.0	+10
KSH				PKS	**PKSdf**	**19 36 04.7**	**+3.9**
KSH				SKS	**SKSdf**	**19 39 35.4**	**+1.2**
KSH				SKKS	**SKKSac**	**19 40 49.2**	**+0.4**
KSH				AMB	AMB		
	comp=Z,68nm,5.0s						
KSH				LR	LR		
	comp=N,210nm,11.3s						
KSH				LR	LR		
	comp=E,160nm,8.6s						
KSH				LR	LR		
	comp=Z,160nm,7.6s						
GEYT	**Alibeck**	**133.96**	**296**	PKP	**PKPdf**	**19 32 50.9**	**+1.1**
	comp=Z,0.4nm,0.5s,baz=308,slow=7.0,SNR=3.0						
KBZ	**Khabaz**	**145.18**	**306**	PKP	**PKPbc**	**19 33 08.8**	**-0.6**
	comp=Z,2.7nm,0.9s,baz=235,slow=3.5,SNR=4.2						
NB2	**NORSAR Subarra1**	**47.29**	**353**	PKP	**PKPbc**	**19 33 14.3**	**-1.1**
	comp=Z,3.6nm,0.9s,baz=16,slow=3.2						
NOA	**NORSAR Array B**	**147.29**	**353**	PKPbc	**PKPbc**	**19 33 14.2**	**-1.1**
	comp=Z,4.0nm,0.9s,baz=14,slow=4.4,SNR=9.7						
AKASG	**Malin Array Be**	**150.69**	**326**	PKPbc	**PKPbc**	**19 33 23.0**	**-1.2**
	comp=Z,4.9nm,0.8s,baz=46,slow=3.0,SNR=13						
BRTR	**Keskin Array B**	**152.84**	**302**	PKPbc	**PKPbc**	**19 33 29.4**	**-0.3**
	comp=Z,2.1nm,1.0s,baz=170,slow=2.3,SNR=9.2						
STHS	**Stebnicka Huta**	**155.27**	**331**	*e*PDIFF	**PKPab**	**19 33 51.3**	**+0.7**
CRVS	**Cervenica-Dubn**	**155.56**	**330**	*e*PDIFF	**PKPab**	**19 33 52.2**	**+0.3**
BRG	**Berggiesshubel**	**156.51**	**343**	*e*PKP	**PKPab**	**19 33 57.7**	**+1.9**
	comp=Z,4.4nm,1.1s						
VYHS	**Vyhne**	**156.97**	**333**	*e*PDIFF	**PKPab**	**19 33 58.2**	**+0.3**
TORD	**Torodi Ar. Bea**	**164.40**	**174**	PKPab	**PKPab**	**19 34 30.8**	**-0.1**
	comp=Z,2.2nm,1.0s,baz=169,slow=8.6,SNR=5.6						

*NEIC **10** 19:14:55.1±1.2,6.˝28S×130.˝21E, h104km±14km, mb4.0/2, Error ellipse: s-maj=13.0km s-min=8.1km az=74.0*
*IDC **10** 19:14:56.3±2.7,6.˝26S×130.˝29E, h115km±29km, mb3.7/5, mb1 4.0/10, mb1mx3.5/53, mbtmp4.3/10, MS4.0/1, Ms1 4.0/1, ms1mx3.2/35, Error ellipse: s-maj=32.4km s-min=14.3km az=68.0*
*DJA **10** 19:15:12.0±0.4, 4˚S±3˚×13˚0E±˚, h88km±5km, M3.9/7, mB5.6/1, mb4.1/3, MLv3.8/7, Mw(mB)5.1/1*

ISC 10 19:14:54.2±0.6,6.34S±0.05×130.22E±0.06,h100km,n25,σ2s80/27,mb3.8/5,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BNDI	**Bandanaira**	**1.83**	**350**	P	**Pn**	**19 15 27.2**	**+2.5**
BNDI				S	Sn	19 15 36.9	-11
MSAI	**Masohi**	**3.24**	**337**	P	Pn	19 15 35.8	-7.5
MSAI				S	Sn	19 15 53.4	-28
FAKI	**Fak Fak**	**3.96**	**31**	P	**Pn**	**19 15 53.5**	**+0.6**
FAKI				S	Sn	19 16 25.5	-13
FAKI	**Fak Fak**	**3.96**	**31**	*e*Pn	**Pn**	**19 15 53.1**	**+0.2**
FAKI				*e*Sn	**Sn**	**19 16 35.1**	**-3.3**
NLAI	**Namlea**	**4.38**	**315**	P	**Pn**	**19 15 56.6**	**-1.9**
NLAI				S	Sn	19 16 32.0	-16
SIJI	**Sorong**	**5.54**	**11**	P	**Pn**	**19 16 15.2**	**+0.9**
	26nm,0.3s,baz=270,slow=23,SNR=9.7						
SIJI				S	**Sn**	**19 17 10.6**	**-6.1**
	18nm,0.3s,baz=90,slow=24,SNR=29						
SANI	**Sanana**	**6.00**	**315**	S	Sn	19 17 08.4	-19
LBMI	**Labuha**	**6.28**	**334**	P	Pn	19 16 14.9	-10
LBMI				S	Sn	19 17 04.6	-30
KDI	**Kendari**	**7.93**	**287**	P	Pn	19 16 55.3	+8.5
	21nm,1.6s,0.1nm						
KDI				S	**Sn**	**19 18 16.5**	**+1.6**
	21nm,1.6s,0.1nm						
KMSI	**Cibinong**	**9.27**	**318**	S	Sn	19 18 24.5	-23
FITZ	**Fitzroy Crossi**	**12.51**	**201**	P	**Pn**	**19 17 51.8**	**+3.0**
	2.2nm,0.3s,baz=17,slow=9.1,SNR=97						
FITZ				S	**Sn**	**19 20 02.1**	**-4.3**
	2.4nm,0.3s,baz=104,slow=21,SNR=3.7						
FITZ	**Fitzroy Crossi**	**12.51**	**201**	*e*Pn	**Pn**	**19 17 49.9**	**+1.2**
	3.0nm,0.2s						
FITZ				S	**Sn**	**19 20 02.1**	**-4.3**
WRAB	**Tennant Creek**	**14.09**	**164**	*e*Pn	**Pn**	**19 18 11.3**	**+1.8**
WRAB				*e*Sn	**Sn**	**19 20 40.2**	**-4.5**
WRA	**Warramunga Arr**	**14.10**	**164**	P	**Pn**	**19 18 10.1**	**+0.5**
	1.1nm,0.3s,baz=346,slow=12,SNR=27						
WRA				S	**Sn**	**19 20 39.2**	**-5.7**
	3.1nm,0.3s,baz=337,slow=20,SNR=9.5						
COEN	**Coen**	**14.82**	**122**	*e*Pn	**Pn**	**19 18 21.1**	**+2.2**
PMG	**Port Moresby**	**17.06**	**101**	P	**P**	**19 18 48.0**	**+1.1**
	2.0nm,0.3s,baz=285,slow=7.8,SNR=10						
ASAR	**Alice Springs**	**17.59**	**169**	P	**Pn**	**19 18 55.6**	**+2.5**
	1.2nm,0.3s,baz=347,slow=10,SNR=137						
ASAR				S	**Sn**	**19 22

KUR				*e*S	**Sn**	**19 20 30.2**	**-6.9**
KUR				pmax	pmax			
	comp=Z,11nm,0.7s							
KUR				smax	smax			
	comp=E,38nm,0.7s							
KUR				smax	smax			
	comp=N,18nm,0.3s							
CBIJ	**Chichi jima**	**9.59**	**180**	Sn	Sn	19 20 30.1	-9.3	
JCJ	**Chichijima**	**9.59**	**180**	Sn	Sn	19 20 30.1	-9.3	
	baz=147,slow=0.0							
JNU	**Nakatsue**	**10.01**	**252**	Pn	**Pn**	**19 19 00.2**	**+2.8**	
	comp=N,0.4nm,0.3s,baz=187,slow=6.6,SNR=6.3							
JNU	**Nakatsue**	**10.01**	**252**	*e*Pn	**Pn**	**19 18 59.2**	**+1.8**	
VLA	**Vladivostok**	**10.21**	**312**	⇑*i*P	**Pn**	**19 19 04.0**	**+3.9**	
VLA				pmax	pmax			
	comp=Z,16nm,1.2s							
YSS	**Yuzh-Sakhalins**	**10.24**	**2**	⇑*e*P	**Pn**	**19 19 00.6**	**+0.2**	
YSS				*e*S	Sn	19 20 46.3	-8.8	
YSS				pmax	pmax			
	comp=Z,10.0nm,0.7s							
YSS				MLR	MLR			
	comp=Z,1µm,19.0s							
YSS				MLR	MLR			
	comp=N,900nm,20.0s							
YSS				MLR	MLR			
	comp=E,800nm,20.0s							
YSS	**Yuzh-Sakhalins**	**10.24**	**2**	*e*Pn	**Pn**	**19 18 57.1**	**-3.3**	
MSHR	**Mys Shultsa**	**10.37**	**308**	*ce*P	**Pn**	**19 19 04.0**	**+1.8**	
USRK	**Ussuriysk Ar.**	**10.82**	**317**	Pn	**Pn**	**19 19 12.0**	**+3.7**	
	comp=E,0.5nm,0.3s,baz=135,slow=15,SNR=5.9							
KSRS	**Korea Array**	**11.48**	**278**	Pn	**Pn**	**19 19 21.2**	**+3.8**	
	comp=E,0.2nm,0.3s,baz=94,slow=14,SNR=8.4							
KSAR	**Wonju Array Be**	**11.51**	**278**	P	**Pn**	**19 19 21.2**	**+3.3**	
KSAR	**Wonju Array Be**	**11.51**	**278**	Pn	**Pn**	**19 19 21.2**	**+3.3**	
MDJ	**Mudanjiang**	**12.43**	**313**	P	**Pn**	**19 19 30.0**	**-0.4**	
MDJ				pmax	pmax			
	comp=Z,6.0nm,0.5s							
MDJ				pmax	pmax			
	comp=Z,33nm,3.5s							
CN2	**Changchun**	**14.64**	**304**	*e*P	**Pn**	**19 20 01.0**	**+0.3**	
CN2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
KLR	**Kul'dur**	**14.66**	**332**	Pn	**P**	**19 20 05.7**	**-1.6**	
	comp=Z,0.5nm,0.3s,baz=127,slow=11,SNR=9.3							
PETK	**Petropavlovsk-**	**19.63**	**29**	P	**P**	**19 21 02.8**	**+0.8**	
	comp=Z,0.1nm,0.3s,baz=189,slow=7.5,SNR=5.7							
NJ2	**Nanjing**	**19.86**	**263**	*e*P	**Pn**	**19 21 06.9**	**+0.7**	
NJ2				S	**S**	**19 24 47.4**	**-0.6**	
NJ2				pmax	pmax			
	comp=Z,13nm,0.6s							
NJ2				LR	LR			
	comp=Z,1µm,19.0s							
BJI	**Beijing**	**20.69**	**287**	P	**P**	**19 21 13.8**	**+0.1**	
BJI				S	**S**	**19 25 01.1**	**-3.5**	
BJI				pmax	pmax			
	comp=Z,7.0nm,0.9s							
BJI				pmax	pmax			
	comp=Z,81nm,4.2s							
BJI				LR	LR			
	comp=N,610nm,20.9s							
BJI				LR	LR			
	comp=E,1µm,19.1s							
BJI				LR	LR			
	comp=Z,2µm,25.5s							
MA2	**Magadan**	**23.53**	**11**	P	**P**	**19 21 44.3**	**+0.7**	
	comp=Z,7.3nm,0.8s,baz=211,slow=8.7,SNR=6.7							
WHN	**Wuhan**	**23.99**	**263**	*e*P	**P**	**19 21 48.4**	**+0.1**	
HHC	**Hu-ho-hao-te**	**24.22**	**289**	*e*P	**P**	**19 21 48.9**	**-1.5**	
HHC				S	S	19 25 56.3	-12	
HHC				pmax	pmax			
	comp=Z,17nm,1.1s							
HHC				pmax	pmax			
	comp=Z,140nm,6.8s							
HHC				LR	LR			
	comp=N,810nm,15.4s							
HHC				LR	LR			
	comp=E,580nm,16.5s							
HHC				LR	LR			
	comp=Z,530nm,13.4s							
CIT	**Chita**	**25.38**	**316**	*e*P	**P**	**19 21 59.8**	**-0.9**	
CIT				*e*		19 22 12.0		
CIT				pmax	pmax			
	comp=Z,32nm,1.3s							
YAK	**Yakutsk**	**26.53**	**347**	P	**P**	**19 22 11.0**	**0.0**	
	comp=Z,18nm,0.6s,baz=163,slow=1.3,SNR=18							
YAK	**Yakutsk**	**26.53**	**347**	*e*P	**P**	**19 22 11.5**	**+0.5**	
YAK				pmax	pmax			
	comp=E,4.0nm,1.1s							
YAK				pmax	pmax			
	comp=Z,28nm,1.0s							
YAK				pmax	pmax			
	comp=N,8.0nm,1.0s							
YAK	**Yakutsk**	**26.53**	**347**	*e*P	**P**	**19 22 09.5**	**-1.5**	
	comp=N,25nm,0.7s							
SEY	**Seymchan**	**26.98**	**10**	P	**P**	**19 22 15.7**	**+0.7**	
	comp=N,3.4nm,0.6s,baz=6.5,slow=20,SNR=13							
SEY	**Seymchan**	**26.98**	**10**	⇓*e*P	**P**	**19 22 17.7**	**+2.7**	
XAN	**Xi'an**	**27.24**	**274**	P	**P**	**19 22 18.5**	**+0.7**	
XAN				pP	pP	19 22 27.3	+6.1	
XAN				pmax	pmax			
	comp=Z,8.0nm,0.7s							
H11N2	**WAKE ISLAND Hy**	**27.40**	**121**	T	T	19 52 00.4		
	baz=314,slow=75,SNR=26							
H11N1	**WAKE ISLAND Hy**	**27.41**	**121**	T	T	19 51 54.4		
	baz=314,slow=75,SNR=20							
H11N3	**WAKE ISLAND Hy**	**27.42**	**121**	T	T	19 51 44.3		
	baz=314,slow=75,SNR=17							
ENH	**Enshi**	**27.99**	**266**	*e*P	**P**	**19 22 23.5**	**-1.0**	
	comp=Z,20nm,0.8s							
H11S1	**WAKE ISLAND Hy**	**28.12**	**124**	T	T	19 52 46.6		
	baz=315,slow=75,SNR=15							
H11S3	**WAKE ISLAND Hy**	**28.12**	**124**	T	T	19 52 54.7		
	baz=315,slow=75,SNR=17							
H11S2	**WAKE ISLAND Hy**	**28.13**	**124**	T	T	19 52 51.7		
	baz=315,slow=75,SNR=12							
BOD	**Bodaibo**	**28.16**	**328**	*e*P	**P**	**19 22 25.1**	**-0.6**	
BOD				pmax	pmax			
	comp=Z,6.0nm,1.4s							
SONA1	**Songino Array**	**28.52**	**304**	*e*P	**P**	**19 22 29.7**	**+0.5**	
SONM	**Songino Array**	**28.53**	**304**	P	**P**	**19 22 30.3**	**+1.1**	
	comp=Z,7.1nm,0.7s,baz=105,slow=8.9,SNR=64							
LZH	**Lanzhou**	**30.79**	**281**	*e*P	**P**	**19 22 48.5**	**-1.0**	
LZH				pP	pP	19 22 59.3	+6.3	
LZH				sP	sP	19 23 04.5	+10	
LZH				PP	**PnPn**	**19 23 48.3**	**-1.1**	
LZH				pmax	pmax			
	comp=Z,24nm,1.2s							
LZH				pmax	pmax			
	comp=Z,73nm,5.0s							
LZH				LR	LR			
	comp=N,370nm,12.9s							
LZH				LR	LR			
	comp=E,380nm,13.0s							
LZH				LR	LR			
	comp=Z,420nm,16.5s							
ZAK	**Zakamensk**	**31.00**	**309**	*e*P	**P**	**19 22 51.5**	**+0.4**	
ZAK				pmax	pmax			
	comp=Z,4.0nm,1.2s							
CD2	**Chengdu**	**32.36**	**271**	*e*P	**P**	**19 23 03.2**	**+0.1**	
GTA	**Gaotai**	**33.31**	**288**	*e*P	**P**	**19 23 12.4**	**+0.9**	
GTA				pP	pP	19 23 21.9	+6.9	
GTA				sP	sP	19 23 25.8	+9.4	
GTA				S	**S**	**19 28 25.6**	**-6.3**	
GTA				pmax	pmax			
	comp=Z,4.0nm,0.9s							
GTA				pmax	pmax			
	comp=Z,180nm,7.6s							
GTA				LR	LR			
	comp=N,280nm,19.0s							
GTA				LR	LR			
	comp=E,1µm,22.3s							
GTA				LR	LR			
	comp=Z,2µm,23.8s							
KMI	**Kunming**	**35.59**	**262**	P	**P**	**19 23 34.7**	**+3.2**	
KMI				pmax	pmax			
	comp=Z,7.0nm,0.7s							
KMI				pmax	pmax			
	comp=Z,88nm,4.2s							
TIXI	**Tiksi**	**35.69**	**353**	P	**P**	**19 23 32.1**	**+0.6**	
	comp=Z,1.1nm,0.7s,baz=144,slow=7.0,SNR=5.9							
WMQ	**Urumqi**	**41.59**	**297**	*e*P	**P**	**19 24 23.7**	**+2.2**	
WMQ				pP	pP	19 24 35.0	+10	
WMQ				pmax	pmax			
	comp=Z,7.0nm,0.5s							
WMQ				pmax	pmax			
	comp=Z,89nm,5.8s							

RABL	**Rabaul**	**41.73**	**165**	*e*P	P	19 24 32.5	+10	
	comp=Z,359nm,0.4s							
CMAR	**Chiang Mai Arr**	**42.08**	**256**	P	**P**	**19 24 26.6**	**+1.0**	
	comp=Z,0.6nm,0.5s,baz=46,slow=6.2,SNR=5.0							
ZAA0	**Zalesovo Array**	**42.63**	**313**	*e*P	**P**	**19 24 30.1**	**+0.4**	
ZALV	**Zalesovo Beam**	**42.63**	**313**	P	**P**	**19 24 30.6**	**+0.8**	
	comp=Z,3.0nm,0.8s,baz=96,slow=9.1,SNR=14							
ZALV				PcP	**PcP**	**19 26 21.7**	**+0.1**	
	comp=Z,1.2nm,0.7s,baz=48,slow=2.1,SNR=3.2							
LSA	**Lhasa**	**42.92**	**276**	*e*P	**P**	**19 24 34.6**	**+1.6**	
LSA	**Lhasa**	**42.92**	**276**	*e*P	**P**	**19 24 34.6**	**+1.6**	
NVS	**Novosibirsk**	**43.55**	**314**	*e*P	**P**	**19 24 35.4**	**-1.8**	
NRIK	**Noril'sk**	**43.84**	**335**	LR	LR	19 44 57.6		
	comp=Z,663nm,21.8s,baz=88,slow=39							
MK01	**Makanchi Array**	**44.86**	**302**	*e*P	**P**	**19 24 47.8**	**-0.1**	
MK31	**Makanchi Array**	**44.86**	**303**	*e*P	**P**	**19 24 47.6**	**-0.3**	
MK31	**Makanchi Array**	**44.86**	**303**	*e*P	**P**	**19 24 47.6**	**-0.3**	
MKAR	**Makanchi Array**	**44.86**	**303**	P	**P**	**19 24 48.5**	**+0.6**	
	comp=Z,2.5nm,0.7s,baz=88,slow=9.5,SNR=34							
MKAR	**Makanchi Array**	**44.86**	**303**	*e*P	**P**	**19 24 47.5**	**-0.4**	
MAKZ	**Makanchi**	**45.07**	**303**	*e*P	**P**	**19 24 49.7**	**+0.1**	
MAKZ				pmax	pmax			
	comp=Z,17nm,1.8s							
MAKZ	**Makanchi**	**45.07**	**303**	*e*P	**P**	**19 24 49.7**	**+0.1**	
	comp=Z,17nm,1.8s							
KURK	**Kurchatov**	**46.66**	**308**	*e*P	**P**	**19 25 01.2**	**-0.8**	
KURK				pmax	pmax			
	comp=Z,52nm,0.8s							
KURK	**Kurchatov**	**46.66**	**308**	*e*P	**P**	**19 25 01.2**	**-0.8**	
	comp=Z,52nm,0.8s							
KURBB	**Kurchatov Arra**	**46.73**	**308**	P	**P**	**19 25 02.9**	**+0.4**	
	comp=Z,4.1nm,0.6s,baz=82,slow=7.8,SNR=21							
ILAR	**Eielson Array**	**49.40**	**32**	P	**P**	**19 25 23.6**	**+0.6**	
	comp=Z,1.6nm,0.8s,baz=266,slow=6.4,SNR=22							
IL1	**Eielson Array**	**49.40**	**32**	*e*P	**P**	**19 25 23.8**	**+0.9**	
TKM2	**Tokmak 2**	**50.38**	**299**	*e*P	**P**	**19 25 30.7**	**-0.3**	
TKM2				pmax	pmax			
	comp=Z,4.0nm,0.6s							
TKM2	**Tokmak 2**	**50.38**	**299**	*e*P	**P**	**19 25 30.7**	**-0.3**	
	comp=Z,4.1nm,0.6s							
KSH	**Kashi**	**51.16**	**295**	*e*P	P	19 25 42.2	+5.4	
KSH				*e*pP	pP	19 25 54.1	+14	
KSH				*e*ScP	**ScP**	**19 30 47.9**	**-0.6**	
KSH				S	**S**	**19 32 55.6**	**+0.8**	
KSH				ScS	**ScS**	**19 35 25.4**	**-2.1**	
KSH				pmax	pmax			
	comp=Z,100nm,4.1s							
KSH				LR	LR			
	comp=N,160nm,7.3s							
KSH				LR	LR			
	comp=E,150nm,6.4s							
KSH				LR	LR			
	comp=Z,140nm,5.9s							
BVAR	**Borovoye Array**	**51.29**	**313**	P	**P**	**19 25 37.6**	**+0.2**	
	comp=Z,0.9nm,0.5s,baz=81,slow=9.6,SNR=4.2							
BVAR				PcP	**PcP**	**19 26 53.0**	**+0.7**	
	comp=Z,0.9nm,0.5s,baz=83,slow=3.4,SNR=4.0							
ZRNK	**Zerenda**	**52.12**	**313**	*e*P	**P**	**19 25 43.9**	**+0.3**	
ZRNK				pmax	pmax			
	comp=Z,3.0nm,0.8s							
ZRNK	**Zerenda**	**52.12**	**313**	*e*P	**P**	**19 25 43.9**	**+0.3**	
	comp=Z,2.6nm,0.8s							
HYT	**Haines Junctio**	**54.15**	**37**	*e*P	**P**	**19 26 00.4**	**+1.8**	
	comp=Z,5.5nm,1.1s							
INK	**Inuvik**	**54.36**	**27**	P	**P**	**19 26 00.7**	**+0.8**	
	comp=Z,1.2nm,0.6s,baz=301,slow=8.7,SNR=3.2							
WRAB	**Tennant Creek**	**56.84**	**189**	*e*P	P	19 26 23.4	+5.2	
WRAB	**Tennant Creek**	**56.84**	**189**	*e*P	P	19 26 23.4	+5.2	
WRA	**Warramunga Arr**	**56.85**	**189**	P	**P**	**19 26 17.8**	**-0.5**	
	comp=Z,1.6nm,1.1s,baz=4.2,slow=7.3,SNR=4.9							
ARU	**Arti**	**57.05**	**319**	*c i*P	**P**	**19 26 20.4**	**+1.0**	
ARU				*PP	pP	19 26 28.9	+5.9	
ARU						19 28 23.5		
ARU				S	**S**	**19 34 13.2**	**-0.4**	
ARU				SS	**SS**	**19 37 59.2**	**-2.5**	
ARU				pmax	pmax			
	comp=Z,10.0nm,1.7s							
ARU	**Arti**	**57.05**	**319**	*e*P	**P**	**19 26 18.8**	**-0.5**	
	comp=Z,6.0nm,0.8s							
ABKAR	**Akbulak array**	**58.66**	**311**	*e*P	**P**	**19 26 30.4**	**-0.4**	
AKTO	**Aktyubinsk**	**59.39**	**312**	P	**P**	**19 26 35.7**	**-0.2**	
	comp=Z,2.3nm,0.8s,baz=78,slow=10,SNR=6.0							
ASAR	**Alice Springs**	**60.57**	**189**	P	**P**	**19 26 44.1**	**-0.1**	
	comp=Z,0.7nm,0.7s,baz=8.7,slow=6.7,SNR=4.5							
DZM	**Mont Dzumac**	**62.77**	**155**	LR	LR	19 48 19.3		
	comp=Z,332nm,21.2s,baz=276,slow=30							
YKA	**Yellowknife Ar**	**63.74**	**30**	P	**P**	**19 27 05.4**	**+0.4**	
	comp=Z,0.4nm,0.6s,baz=298,slow=5.6,SNR=3.9							
ARCES	**ARCESS Array B**	**64.53**	**340**	P	**P**	**19 27 10.3**	**+0.2**	
	comp=Z,1.1nm,0.8s,baz=82,slow=1.9,SNR=2.6							
GEYT	**Alibeck**	**64.58**	**299**	P	**P**	**19 27 10.0**	**-1.0**	
	comp=Z,1.6nm,0.7s,baz=64,slow=3.4,SNR=4.7							
KBZ	**Khabaz**	**71.62**	**311**	P	**P**	**19 27 56.5**	**+1.5**	
	comp=Z,2.6nm,0.8s,baz=172,slow=1.4,SNR=5.0							
KBZ				LR	LR	20 04 09.7		
	comp=Z,444nm,20.1s,baz=42,slow=40							
KIV	**Kislovodsk**	**71.63**	**311**	*e*P	**P**	**19 27 56.4**	**+1.2**	
KIV				pmax	pmax			
	comp=Z,10.0nm,1.1s							
KIV				MLR	MLR			
	comp=Z,447nm,17.0s							
ANN	**Anapa**	**74.24**	**314**	*e*P	**P**	**19 28 11.0**	**+0.5**	
ANN				*e*S	**SKiKP**	**19 37 37.4**	**-0.3**	
ANN				pmax	pmax			
	comp=Z,17nm,1.1s							
NB2	**NORSAR Subarra**	**74.74**	**338**	P	**P**	**19 28 13.9**	**+0.7**	
	comp=Z,0.5nm,0.6s,baz=38,slow=5.9							
NOA	**NORSAR Array B**	**74.74**	**338**	P	**P**	**19 28 13.9**	**+0.7**	
	comp=Z,1.5nm,0.9s,baz=39,slow=5.8,SNR=4.7							
NOA	**NORSAR Array B**	**74.74**	**338**	P	**P**	**19 28 14.0**	**+0.7**	
AKASG	**Malin Array Be**	**74.96**	**323**	P	**P**	**19 28 15.1**	**+0.4**	
	comp=Z,1.9nm,0.5s,baz=47,slow=6.2,SNR=12							
AKASG				LR	LR	20 04 24.1		
	comp=Z,525nm,21.5s,baz=35,slow=38							
KIEV	**Kiev**	**74.97**	**323**	*i* P	**P**	**19 28 15.1**	**+0.4**	
KIEV				pmax	pmax			
	comp=Z,3.0nm,0.7s							
PDAR	**Pinedale Array**	**77.40**	**46**	P	**P**	**19 28 30.3**	**+1.3**	
	comp=Z,0.3nm,0.5s,baz=259,slow=1.5,SNR=3.8							
KIS	**Kishinev**	**77.58**	**320**	*e*P	P	19 28 25.0	-4.6	
KIS	**Kishinev**	**77.58**	**320**	*e*P	P	19 28 25.0	-4.6	
PFO	**Pinyon Flats O**	**78.65**	**57**	*i* P	**P**	**19 28 38.6**	**+2.6**	
BUR08	**Bucovina Ar. S**	**78.97**	**322**	*e*P	**P**	**19 28 38.0**	**+0.6**	
BRTR	**Keskin Array B**	**79.57**	**312**	P	**P**	**19 28 41.6**	**+0.7**	
	comp=Z,0.6nm,0.5s,baz=94,slow=3.7,SNR=6.0							
BRTR				LR	LR	20 09 58.5		
	comp=Z,182nm,20.2s,baz=34,slow=40							
BR231	**Keskin MP Arra**	**80.01**	**313**	*e*P	**P**	**19 28 42.4**	**-0.9**	
DPC	**Dobruska-Polom**	**81.09**	**328**	*e*P	**P**	**19 28 50.1**	**+1.4**	
DPC	**Dobruska-Polom**	**81.09**	**328**	*e*P	**P**	**19 28 50.1**	**+1.4**	
CLL	**Collm**	**81.71**	**331**	⇑*i*P	**P**	**19 28 52.5**	**+0.6**	
	comp=Z,4.0nm,0.8s							
CLL				*e*		19 29 05.0		
CLL	**Collm**	**81.71**	**331**	⇑*i*P	**P**	**19 28 52.5**	**+0.6**	
CLL				*e*		19 29 05.0		
CLL				pmax	pmax			
	comp=Z,4.0nm,0.8s							
PRU	**Pruhonice**	**82.11**	**329**	*e*P	**P**	**19 28 55.3**	**+1.2**	
PRU	**Pruhonice**	**82.11**	**329**	*e*P	**P**	**19 28 55.3**	**+1.2**	
CONA	**Conrad Observa**	**83.12**	**327**	*i* PKiKP	**PKiKP**	**19 34 15.5**	**-2.4**	
	comp=Z,7.6nm,1.3s							
KHC	**Kasperske Hory**	**83.17**	**329**	*e*P	**P**	**19 29 00.8**	**+1.1**	
KHC	**Kasperske Hory**	**83.17**	**329**	*e*P	**P**	**19 29 00.8**	**+1.1**	
GERES	**GERESS Array B**	**83.34**	**329**	P	**P**	**19 29 01.1**	**+0.5**	
	comp=Z,0.7nm,0.5s,baz=351,slow=6.8,SNR=5.6							
GERES				LR	LR	20 09 48.2		
	comp=Z,1µm,21.2s,baz=25,slow=38							
MOA	**Molln**	**83.87**	**328**	*i* PKiKP	**PKiKP**	**19 34 20.1**	**+1.0**	
	comp=Z,5.0nm,1.2s							
SOKA	**Soboth**	**84.44**	**327**	*i* PKiKP	**PKiKP**	**19 34 17.8**	**-2.3**	
	comp=Z,6.0nm,1.4s							
OBKA	**Obir**	**84.78**	**327**	*i* PKiKP	**PKiKP**	**19 34 17.1**	**-3.5**	
	comp=Z,1.3nm,0.5s							
KBA	**Koelnbreinsper**	**84.86**	**328**	*i* PKiKP	**PKiKP**	**19 34 19.8**	**-1.1**	
	comp=Z,3.8nm,1.2s							
MYKA	**Terra Mystica**	**85.08**	**327**	*i* PKiKP	**PKiKP**	**19 34 18.6**	**-2.6**	
	comp=Z,3.7nm,1.0s							
WATA	**Walderalm**	**85.41**	**329**	*i* PKiKP	**PKiKP**	**19 34 21.9**	**+0.2**	
	comp=Z,2.7nm,1.0s							
WTTA	**Wattenberg**	**85.44**	**329**	*i* PKiKP	**PKiKP**	**19 34 21.7**	**-0.2**	
	comp=Z,4.3nm,1.0s							
ABTA	**Abfaltersbach**	**85.48**	**328**	*i* PKiKP	**PKiKP**	**19 34 21.7**	**-0.1**	
	comp=Z,3.5nm,0.9s							
MOTA	**Moosalm**	**85.59**	**329**	*i* PKiKP	**PKiKP**	**19 34 22.7**	**+0.7**	
	comp=Z,3.7nm,1.0s							
BFO	**Black Forest**	**85.91**	**331**	*i* P	**P**	**19 29 14.8**	**+1.2**	

FETA	**Feichten**	**86.01**	**329**	*i* PKiKP	**PKiKP**	**19 34 25.0**	**+2.2**	
	comp=Z,4.9nm,1.2s							
TXAR	**Lajitas Array**	**89.78**	**53**	P	**P**	**19 29 32.8**	**+0.3**	
	comp=Z,0.3nm,0.7s,baz=279,slow=1.7,SNR=3.5							
KEST	**Kesra**	**95.69**	**323**	LR	LR	20 17 38.2		
	comp=Z,379nm,20.5s,baz=348,slow=38							
VNDA	**Vanda**	**114.60**	**175**	PKP	PKPdf	19 35 11.7	-0.9	
	comp=Z,0.4nm,0.4s,baz=78,slow=19,SNR=7.0							
LPAZ	**La Paz**	**146.26**	**61**	PKPbc	**PKPdf**	**19 36 16.1**	**+1.8**	
	comp=Z,1.1nm,0.7s,baz=15,slow=5.2,SNR=6.2							

ISC 10 19:17:09.8±2.2, 51.5N±0.1×16.13E±0.07, h0km, n9, σ0 51/16, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.65**	**171**	*e*Pg	**Pg**	**19 17 22.6**	**+0.4**
KSP				*e*Sg	**Sg**	**19 17 31.7**	**+1.1**
UPC	**Upice**	**0.98**	**184**	*e*PG	**Pg**	**19 17 28.8**	**+0.3**
UPC				*e*SG	**Sb**	**19 17 42.3**	**-0.8**
	comp=Z,6.1nm,0.4s						
DPC	**Dobruska-Polom**	**1.14**	**174**	*e*PG	**Pg**	**19 17 31.3**	**-0.3**
DPC				*e*SG	**Sg**	**19 17 46.9**	**+0.5**
	comp=Z,2.2nm,0.5s						
PVCC	**Panska Ves**	**1.37**	**226**	*e*PG	**Pg**	**19 17 35.9**	**-0.2**
PVCC				*e*SG	**Sg**	**19 17 53.9**	**+0.1**
	comp=Z,7.7nm,0.4s						
KRLC	**Kraliky**	**1.47**	**163**	*e*PG	**Pn**	**19 17 37.3**	**-0.3**
KRLC				*e*SG	**Sg**	**19 17 57.2**	**+0.3**
BRG	**Berggiesshubel**	**1.50**	**247**	PG	**Pn**	**19 17 38.2**	**+0.1**
BRG				SG	**Sn**	**19 17 58.5**	**+0.2**
	9.4nm,0.4s						
PRU	**Pruhonice**	**1.80**	**215**	*e*SG	**Sg**	**19 18 07.5**	**-0.2**
	comp=Z,2.2nm,0.4s						
CLL	**Collm**	**1.96**	**266**	*e*Pg	**Pb**	**19 17 46.0**	**-0.4**
CLL				*e*Sg	**Sb**	**19 18 12.0**	**+0.5**
NKC	**Novy Kostel**	**2.65**	**243**	*e*SG	**Sg**	**19 18 35.3**	**+0.5**

WEL 10 19:18:56.8±0.1, 43.59S×172.51E, h8km±1km, ML3.7/16, 4C-3D, Error ellipse: s-maj=1.1km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.09**	**79**	⇑PG	Pg	19 18 58.8	-0.1
CRLZ				SG	Sg	19 19 00.3	-0.1
CRLZ				AML	AML	19 19 00.6	
CRLZ				AML	AML	19 19 00.6	
CRLZ				AML	AML	19 19 00.6	
MQZ	**McQueen's Vall**	**0.16**	**138**	⇓PG	Pg	19 19 00.1	0.0
MQZ				SG	Sg	19 19 02.7	+0.5
MQZ				AML	AML	19 19 02.8	
MQZ				AML	AML	19 19 02.9	
OXZ	**Oxford**	**0.43**	**308**	PG	Pg	19 19 05.0	-0.2
OXZ				AML	AML	19 19 15.2	
OXZ				AML	AML	19 19 15.2	
OXZ				AML	AML	19 19 15.2	
OXZ				AML	AML	19 19 15.2	
LTZ	**Lake Taylor**	**0.83**	**348**	⇓P*	Pg	19 19 13.0	+0.3
LTZ				S*	Sb	19 19 24.5	-0.3
LTZ				AML	AML	19 19 26.9	
RPZ	**Rata Peaks**	**1.06**	**263**	⇑P*	Pg	19 19 16.6	-0.6
RPZ				AML	AML	19 19 37.6	
RPZ				AML	AML	19 19 40.3	
INZ	**Inchbonnie**	**1.17**	**318**	P*	Pg	19 19 18.0	-0.6
WVZ	**Waitaha Valley**	**1.39**	**291**	PN	Pn	19 19 21.6	-1.0
KHZ	**Kahutara**	**1.40**	**33**	PN	Pn	19 19 20.7	-2.0
KHZ				AML	AML	19 19 48.7	
THZ	**Tophouse**	**1.85**	**9**	AML	AML	19 19 57.5	
THZ				AML	AML	19 20 06.2	
LBZ	**Lake Benmore**	**1.86**	**244**	PN	Pn	19 19 27.9	-1.1
LBZ				AML	AML	19 19 58.6	
LBZ				AML	AML	19 20 00.9	
DSZ	**Denniston Nort**	**1.92**	**344**	AML	AML	19 20 00.7	
DSZ				AML	AML	19 20 00.8	
DSZ				AML	AML	19 20 04.5	
DSZ				AML	AML	19 20 04.5	
FOZ	**Fox Glacier**	**1.96**	**271**	PN	Pn	19 19 30.8	+0.5
FOZ				AML	AML	19 19 55.4	
FOZ				AML	AML	19 20 05.2	
ODZ	**Otahua Downs**	**1.98**	**222**	⇑PN	Pn	19 19 29.1	-1.5
ODZ				AML	AML	19 20 08.0	
ODZ				AML	AML	19 20 08.0	
ODZ				AML	AML	19 20 09.2	
NNZ	**Nelson**	**2.46**	**16**	AML	AML	19 20 06.5	
NNZ				AML	AML	19 20 25.0	
WKZ	**Wanaka**	**2.80**	**243**	PN	Pn	19 19 41.1	-0.9
WKZ				AML	AML	19 20 37.4	
EAZ	**Earnscleugh**	**2.82**	**233**	⇑PN	Pn	19 19 40.8

BRRC				*i*			19 29 00.5		
	comp=Z,570nm,0.1s								
OCAC	**Ocana**	**0.78**	**349**	*e*P		**Pn**	**19 28 46.2**	**+1.1**	
OCAC				*e*S		**Sn**	**19 29 02.8**	**+0.2**	
OCAC				*i*			19 29 05.0		
	comp=Z,370nm,0.2s								
BARC	**Barichara**	**0.87**	**181**	*e*P		**Pn**	**19 28 46.1**	**+0.1**	
BARC				*e*S		**Sn**	**19 29 02.1**	**-1.9**	
BARC				*i*			19 29 03.8		
	comp=Z,265nm,0.2s								
CAPV	**Capacho**	**0.93**	**65**	*e*P		**Pn**	**19 28 47.8**	**+1.4**	
CAPV				*e*S		**Sn**	**19 29 06.1**	**+1.3**	
RUSC	**La Rusia**	**1.57**	**177**	*e*P		**Pn**	**19 28 52.7**	**-0.2**	
RUSC				*e*S		**Sn**	**19 29 15.2**	**-1.1**	
VIGV	**El Vigia**	**2.24**	**53**	*e*P		**Pn**	**19 29 01.9**	**+1.7**	
VIGV				*e*S		**Sn**	**19 29 28.4**	**-0.9**	
SOCV	**Socops**	**2.43**	**70**	*e*P		**Pn**	**19 29 03.9**	**+1.5**	
SOCV				*e*S		**Sn**	**19 29 33.8**	**+0.6**	
NORC	**Norcasia**	**2.54**	**222**	*e*P		**Pn**	**19 29 04.6**	**+0.8**	
NORC				*e*S		**Sn**	**19 29 35.0**	**-0.8**	
HELC	**Santa Helena**	**2.67**	**242**	*e*P		**Pn**	**19 29 06.6**	**+0.9**	
SDV	**Santo Domingo**	**2.88**	**61**	*e*P		**Pn**	**19 29 09.9**	**+1.7**	
SDV				*i*			19 29 10.2		
	comp=Z,46nm,0.2s								
SDV	**Santo Domingo**	**2.88**	**61**	*e*P		**Pn**	**19 29 09.6**	**+1.5**	
SDV				*e*S		**Sn**	**19 29 42.6**	**-0.9**	
CHIC	**Chingaza**	**2.88**	**191**	*e*P		**Pn**	**19 29 09.8**	**+1.3**	
CHIC				*e*S		**Sn**	**19 29 44.2**	**+0.2**	
CHIC				*i*			19 29 55.4		
	comp=Z,24nm,0.7s								
DBBC	**Dabeiba**	**3.05**	**262**	*e*P		**Pn**	**19 29 11.6**	**+1.3**	
VIRV	**Villa del Rosa**	**3.10**	**14**	*e*P		**Pn**	**19 29 11.6**	**+0.7**	
VIRV				*e*S		**Sn**	**19 29 44.2**	**-4.3**	
TOLC	**Tolima**	**3.58**	**217**	*e*P		**Pn**	**19 29 19.0**	**+1.7**	
PRAC	**Prado**	**4.11**	**205**	*e*P		**Pn**	**19 29 24.6**	**+0.6**	
PRAC				*e*S		**Sn**	**19 30 11.5**	**-0.4**	
SJAC	**San Juan de Ar**	**4.24**	**191**	*e*P		**Pn**	**19 29 26.2**	**+0.4**	
BAUV	**El Baul**	**5.28**	**74**	*e*P		**Pn**	**19 29 39.2**	**-0.2**	
BAUV				*e*S		**Sn**	**19 30 36.8**	**-2.8**	

ISCJB ***10*** *19:39:00.4±0.8, 15°.2S±0°.3×176°.2W±0°.2, h10km, mb4.2/8, MS3.8/3, Error ellipse: s-maj=49.9km s-min=12.9km az=158.1*

IDC ***10*** *19:39:00.4±1.2, 15°.19S×176°.14W, h0km, mb4.2/8, mb1 4.5/9, mb1mx4.1/38, mbtmp4.2/9, ML3.6/1, MS3.9/5, Ms1 3.9/5, ms1mx3.5/34, Error ellipse: s-maj=73.6km s-min=19.3km az=152.0*

ISC 10 19:39:02.0±0.9, 15°.0S±0°.3×176°.2W±0°.2, h10km, n32, σ1§92/24, mb4.3/8, MS3.9/3, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
AFI	**Afiamalu**	**4.40**	**76**	Pn		**Pn**	**19 40 08.8**		**-0.2**
	3.3nm,0.3s,baz=272,slow=21,SNR=3.8								
AFI				Sn		Sn	19 40 46.7		-14
	2.8nm,0.3s,baz=84,slow=18,SNR=2.8								
AFI				LR		LR	19 41 34.8		
	comp=Z,1μm,18.6s,baz=236,slow=35								
RAO	**Raoul Island**	**14.24**	**186**	LR		LR	19 45 56.9		
	comp=Z,499nm,19.5s,baz=289,slow=30								
HNR	**Honiara**	**23.98**	**281**	LR		LR	19 52 15.7		
	comp=Z,436nm,19.7s,baz=104,slow=33								
H11S2	**WAKE ISLAND Hy**	**37.34**	**333**	T		T	20 26 20.4		
	baz=147,slow=76,SNR=11								
H11S3	**WAKE ISLAND Hy**	**37.35**	**333**	T		T	20 26 26.6		
	baz=147,slow=76,SNR=11								
H11S1	**WAKE ISLAND Hy**	**37.36**	**333**	T		T	20 26 27.0		
	baz=147,slow=76,SNR=17								
H11N3	**WAKE ISLAND Hy**	**38.34**	**334**	T		T	20 27 30.5		
	baz=152,slow=76,SNR=31								
H11N1	**WAKE ISLAND Hy**	**38.34**	**334**	T		T	20 27 30.8		
	baz=152,slow=76,SNR=59								
H11N2	**WAKE ISLAND Hy**	**38.35**	**334**	T		T	20 27 31.9		
	baz=152,slow=76,SNR=46								
STKA	**Stephens Creek**	**41.91**	**239**	P		**P**	**19 46 53.8**		**+0.8**
	7.5nm,1.1s,baz=75,slow=12,SNR=3.1								
STKA				LR		LR	20 05 20.4		
	comp=Z,142nm,18.2s,baz=36,slow=38								
WRA	**Warramunga Arr**	**47.32**	**257**	P		**P**	**19 47 34.9**		**-1.4**
	2.2nm,1.0s,baz=94,slow=7.8,SNR=6.6								
ASAR	**Alice Springs**	**47.68**	**252**	P		**P**	**19 47 38.0**		**-1.0**
	4.7nm,0.9s,baz=88,slow=7.8,SNR=14								
ASAR				LR		LR	20 06 03.5		
	comp=Z,64nm,18.1s,baz=114,slow=34								
ILAR	**Eielson Array**	**82.63**	**12**	P		**P**	**19 51 25.3**		**+0.2**
	0.8nm,0.9s,baz=228,slow=7.0,SNR=7.2								
TXAR	**Lajitas Array**	**82.65**	**57**	P		**P**	**19 51 26.7**		**+0.6**
	2.0nm,1.0s,baz=224,slow=4.9,SNR=6.7								
PDAR	**Pinedale Array**	**83.80**	**43**	P		**P**	**19 51 32.1**		**+0.2**
	2.0nm,0.8s,baz=193,slow=6.1,SNR=9.4								
CMAR	**Chiang Mai Arr**	**89.96**	**289**	P		**P**	**19 52 04.3**		**+2.1**
	0.9nm,1.0s,baz=114,slow=3.7,SNR=4.1								
YKA	**Yellowknife Ar**	**90.84**	**24**	P		**P**	**19 52 05.5**		**+0.2**
	5.1nm,1.3s,baz=243,slow=4.7,SNR=4.9								
BRTR	**Keskin Array B**	**144.16**	**319**	PKP		**PKPdf**	**19 58 37.5**		**-1.1**
	5.2nm,0.9s,baz=132,slow=3.5,SNR=22								
GERES	**GERESS Array B**	**145.32**	**349**	PKPbc		**PKPab**	**19 58 41.6**		**+1.4**
	0.7nm,0.7s,baz=169,slow=5.7,SNR=3.0								
CONA	**Conrad Observa**	**145.72**	**346**	*i* PKPbc		**PKPab**	**19 58 42.2**		**+0.6**
	5.1nm,1.8s								
MOA	**Molln**	**146.16**	**347**	*i* PKiKP		**PKiKP**	**19 58 45.6**		**-0.2**
	4.3nm,1.2s								
ARSA	**Arzberg**	**146.44**	**346**	*i* PKiKP		**PKiKP**	**19 58 46.8**		**+0.3**
	3.5nm,1.2s								
KBA	**Koelnbreinsper**	**147.08**	**348**	*i* PKPbc		**PKPbc**	**19 58 45.1**		**-0.4**
	3.1nm,1.3s								
SOKA	**Soboth**	**147.09**	**346**	*i* PKiKP		**PKiKP**	**19 58 47.4**		**-0.5**
	3.9nm,1.1s								
RETA	**Reutte**	**147.13**	**351**	*i* PKPbc		**PKPab**	**19 58 46.3**		**-0.8**
	3.6nm,1.3s								
WTTA	**Wattenberg**	**147.22**	**350**	*i* PKPbc		**PKPab**	**19 58 46.3**		**-1.3**
	2.1nm,0.6s								
MOTA	**Moosalm**	**147.22**	**351**	*i* PKPbc		**PKPab**	**19 58 46.1**		**-1.4**
	1.2nm,0.6s								
OBKA	**Obir**	**147.36**	**346**	*i* PKiKP		**PKiKP**	**19 58 48.9**		**+0.5**
	3.3nm,1.1s								
MYKA	**Terra Mystica**	**147.45**	**347**	*i* PKPbc		**PKPab**	**19 58 46.4**		**-1.9**
	3.8nm,1.7s								
DAVA	**Damuels**	**147.45**	**352**	*i* PKiKP		**PKiKP**	**19 58 49.1**		**+0.4**
	4.1nm,1.3s								
ABTA	**Abfaltersbach**	**147.56**	**349**	*i* PKPdf		**PKPdf**	**19 58 43.7**		**-0.4**
	3.7nm,1.2s								
FETA	**Feichten**	**147.59**	**351**	*i* PKPbc		**PKPbc**	**19 58 46.0**		**-0.9**
	4.5nm,1.0s								

NIED ***10*** *20:07:00, 39°.00N×142°.40E, h29km, Mw3.7 Best double couple: M0≈4.03000×10¹⁴ NP1:φs=13.00000°, δ35.00000°, λ=-116.00000°. NP2:φs=224.00000°, δ59.00000°, λ=-73.00000°.*

IDC ***10*** *20:07:48.2±1.9, 39°.18N×143°.11E, h0km, mb3.6/5, mb1 3.7/9, mb1mx3.5/55, mbtmp3.6/9, ML3.1/4, Error ellipse: s-maj=47.6km s-min=20.0km az=66.0*

ISCJB ***10*** *20:07:53.4±1.2, 38°.94N±0°.04×142°.54E±0°.07, h23km±6km, mb3.5/5, Error ellipse: s-maj=9.4km s-min=6.8km az=0.5*

JMA ***10*** *20:07:55.9±0.1, 38°.98N×142°.40E, h33km±2km, M4.0*

JMA Felt I J1.

ISC 10 20:07:53.9±2.1, 38°.92N±0°.04×142°.48E±0°.09, h23km±14km, n27, σ1§48/31, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
OFUJ	**Ofunato**	**0.65**	**285**	P		**Pb**	**20 08 07.6**		**+1.0**
OFUJ				S		**Sb**	**20 08 15.6**		**+0.4**
MIYJ	**Miyakonagasawa**	**0.83**	**323**	P		**Pn**	**20 08 09.8**		**-0.5**
MIYJ				S		**Sb**	**20 08 19.4**		**-1.1**
JMK	**Ichinoseki**	**0.98**	**272**	P		**Pn**	**20 08 12.7**		**+0.4**
JMK				S		**Sn**	**20 08 24.6**		**-0.8**
JIO	**Ouri**	**0.99**	**243**	P		**Pb**	**20 08 12.8**		**+0.3**
JIO				S		**Sn**	**20 08 24.4**		**-1.4**
JOM	**Ohasama**	**1.07**	**302**	P		**Pn**	**20 08 13.9**		**+0.3**
JOM				S		**Sn**	**20 08 26.9**		**-0.9**
JTH	**Tanohata**	**1.12**	**335**	P		**Pn**	**20 08 14.3**		**0.0**
JKZ	**Kuzumaki**	**1.39**	**321**	P		**Pn**	**20 08 18.7**		**+0.8**
JKZ				S		**Sn**	**20 08 35.4**		**-0.2**
JRG	**Rokugo**	**1.51**	**289**	P		**Pb**	**20 08 21.2**		**0.0**
JRG				S		**Sb**	**20 08 39.6**		**-0.4**
JOU	**Okura**	**1.52**	**249**	P		**Pb**	**20 08 21.1**		**-0.4**
JOU				S		**Sb**	**20 08 40.0**		**-0.3**
JANG	**Nango**	**1.63**	**333**	P		**Pn**	**20 08 21.9**		**+0.6**
JYK	**Kaneyama**	**1.65**	**271**	P		**Pn**	**20 08 22.8**		**+1.3**
JYK				*e*S		**Sb**	**20 08 43.7**		**-0.3**
MJAR	**Matsushiro Arr**	**4.13**	**236**	Pn		**Pn**	**20 08 58.6**		**+3.0**
	2.0nm,0.3s,baz=40,slow=11,SNR=30								
MAT	**Matsushiro**	**4.13**	**236**	P		**Pn**	**20 08 59.1**		**+3.5**
MAT				S		**Sb**	**20 09 51.7**		**-3.7**
JHJ	**Hachijo jima 2**	**6.18**	**201**	Pn		**Pn**	**20 09 25.7**		**+1.9**
	3.1nm,0.3s,baz=72,slow=20,SNR=3.8								
JHJ				Sn		**Sn**	**20 10 32.8**		**-0.9**
	3.4nm,0.3s,baz=90,slow=20,SNR=3.1								
USRK	**Ussuriysk Ar.**	**9.46**	**307**	Pn		**Pn**	**20 10 09.8**		**+1.0**
	0.2nm,0.3s,baz=134,slow=16,SNR=2.9								
KSRS	**Korea Array**	**11.55**	**267**	Pn		Pn	20 10 43.3		+6.0
	0.2nm,0.3s,baz=270,slow=39,SNR=3.3								
SONM	**Songino Array**	**27.49**	**301**	P		**P**	**20 13 39.1**		**+0.6**
	0.2nm,0.3s,baz=105,slow=13,SNR=2.5								
H11N2	**WAKE ISLAND Hy**	**28.47**	**125**	T		T	20 44 14.9		
	baz=317,slow=75,SNR=188								
H11N1	**WAKE ISLAND Hy**	**28.48**	**125**	T		T	20 44 15.1		
	baz=317,slow=75,SNR=146								
H11N3	**WAKE ISLAND Hy**	**28.49**	**125**	T		T	20 44 15.8		
	baz=317,slow=75,SNR=196								
H11S1	**WAKE ISLAND Hy**	**29.25**	**127**	T		T	20 45 12.5		
	baz=318,slow=76,SNR=29								
H11S3	**WAKE ISLAND Hy**	**29.25**	**127**	T		T	20 45 13.6		
	baz=318,slow=76,SNR=31								
H11S2	**WAKE ISLAND Hy**	**29.27**	**127**	T		T	20 45 11.5		
	baz=318,slow=76,SNR=30								
ZALV	**Zalesovo Beam**	**41.29**	**311**	P		**P**	**20 15 34.9**		**-2.5**
	0.3nm,0.3s,baz=84,slow=8.8,SNR=2.7								
MKAR	**Makanchi Array**	**43.86**	**301**	P		**P**	**20 15 59.5**		**+1.2**
	0.3nm,0.4s,baz=85,slow=11,SNR=7.7								
WRA	**Warramunga Arr**	**59.04**	**189**	P		**P**	**20 17 52.0**		**-0.1**
	0.7nm,0.4s,baz=6.8,slow=7.0,SNR=18								
ASAR	**Alice Springs**	**62.77**	**189**	P		**P**	**20 18 18.4**		**+1.0**
	0.2nm,0.5s,baz=342,slow=3.3,SNR=6.7								

NIED ***10*** *20:19:00, 38°.10N×143°.90E, h5km, Mw4.6 Best double couple: M0≈1.05000×10¹⁶ NP1:φs=341.00000°, δ50.00000°, λ=-176.00000°. NP2:φs=249.00000°, δ87.00000°, λ=-40.00000°.*

BJI ***10*** *20:19:01.8, 38°.00N×144°.00E, h10km, mb4.7/64, mB4.9/41, Ms4.5/61, Ms7 4.2/58*

IDC ***10*** *20:19:02.7±0.6, 37°.98N×144°.05E, h0km, mb4.3/25, mb1 4.4/31, mb1mx4.4/50, mbtmp4.4/31, ML3.9/6, MS3.9/13, Ms1 4.0/13, ms1mx3.7/40, Error ellipse: s-maj=14.7km s-min=11.4km az=120.0*

ISCJB ***10*** *20:19:03.5±0.8, 38°.15N±0°.03×143°.92E±0°.03, h11km±5km, mb4.6/83, MS4.3/26, Error ellipse: s-maj=4.4km s-min=3.2km az=162.7*

NEIC ***10*** *20:19:04.7±0.3, 38°.08N×143°.93E, h10km, mb4.8/32, Error ellipse: s-maj=7.0km s-min=4.1km az=150.0*

JMA ***10*** *20:19:05.3±0.2, 38°.13N×143°.93E, h33km, M4.7*

MOS ***10*** *20:19:06.1±1.1, 38°.14N×143°.96E, h31km, mb4.9/32, MS4.0/6, Error ellipse: s-maj=7.5km s-min=5.2km az=107.6*

ISC 10 20:19:05.6±1.1, 38°.10N±0°.04×144°.00E±0°.05, h17km±6km, n217, σ1§96/252, mb4.7/83, MS4.3/26, 5C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
OFUJ	**Ofunato**	**2.07**	**299**	P		**Pn**	**20 19 38.4**		**-1.1**
OFUJ				S		**Sn**	**20 20 02.8**		**-2.1**
JIO	**Ouri**	**2.11**	**281**	P		**Pn**	**20 19 39.0**		**-1.1**
JIO				S		**Sn**	**20 20 02.8**		**-3.1**
MIYJ	**Miyakonagasawa**	**2.25**	**312**	P		**Pn**	**20 19 40.6**		**-1.4**
MIYJ				S		**Sn**	**20 20 07.0**		**-2.4**
JMK	**Ichinoseki**	**2.34**	**292**	P		**Pn**	**20 19 42.4**		**-0.8**
JMK				S		**Sn**	**20 20 10.0**		**-1.5**
JOM	**Ohasama**	**2.52**	**304**	P		**Pn**	**20 19 45.0**		**-0.7**
JOM				S		**Sn**	**20 20 14.2**		**-1.8**
JOU	**Okura**	**2.64**	**277**	P		**Pn**	**20 19 47.0**		**-0.4**
JOU				S		**Sn**	**20 20 16.7**		**-2.2**
JRG	**Rokugo**	**2.93**	**297**	P		**Pn**	**20 19 51.1**		**-0.3**
JRG				S		**Sn**	**20 20 25.4**		**-0.8**
JFT	**Otama**	**2.95**	**260**	P		Pb	20 19 51.6		-6.2
JFT				S		**Sn**	**20 20 24.4**		**-2.4**
JYK	**Kaneyama**	**2.97**	**287**	P		**Pn**	**20 19 51.6**		**-0.3**
JYK				S		**Sn**	**20 20 27.6**		**+0.5**
JANG	**Nango**	**2.98**	**321**	P		**Pn**	**20 19 50.5**		**-1.6**
JANG				S		**Sn**	**20 20 25.8**		**-1.6**
JAH	**Hinai**	**3.34**	**310**	P		**Pn**	**20 19 56.7**		**-0.3**
JTM	**Tenmabayashi**	**3.51**	**321**	P		**Pn**	**20 19 58.4**		**-1.0**
JTM				*e*S		**Sn**	**20 20 37.6**		**-2.9**
ERM	**Erimo**	**3.97**	**351**	*e*P		**Pn**	**20 20 04.4**		**-1.2**
ERM				*e*			20 20 48.0		
ERM	**Erimo**	**3.97**	**351**	*e*Pn		**Pn**	**20 20 04.4**		**-1.2**
ERM				*e*Sn		**Sn**	**20 20 48.0**		**-3.6**
JOT	**Ohata**	**3.99**	**326**	P		**Pn**	**20 20 05.4**		**-0.5**
JOT				S		**Sn**	**20 20 48.1**		**-4.2**
BSO1	**Boso 1**	**4.21**	**216**	P		**Pn**	**20 20 06.5**		**-2.0**
BSO1				S		**Sn**	**20 20 53.4**		**-3.6**
JKB	**Kayabe**	**4.42**	**330**	P		**Pn**	**20 20 12.2**		**+0.4**
JKB				*e*S		**Sn**	**20 20 58.8**		**-4.0**
JCH	**Churui**	**4.54**	**354**	P		**Pn**	**20 20 11.9**		**-1.6**
JCH				*e*S		**Sn**	**20 21 01.5**		**-4.3**
JRY	**Ryogami san**	**4.57**	**245**	P		**Pn**	**20 20 13.0**		**-1.0**
JRY				*e*S		**Sn**	**20 21 02.1**		**-4.6**
JOD2	**Odawara 2**	**4.85**	**236**	P		**Pn**	**20 20 16.1**		**-1.7**
JOD2				*e*S		**Sn**	**20 21 08.7**		**-4.9**
MJAR	**Matsushiro Arr**	**4.87**	**253**	Pn		**Pn**	**20 20 18.3**		**+0.3**
	19nm,0.3s,baz=78,slow=15,SNR=270								
MJAR				Sn		**Sn**	**20 21 12.3**		**-1.7**
	12nm,0.3s,baz=267,slow=21,SNR=5.1								
MJAR				LR		LR	20 21 50.4		
	comp=Z,246nm,20.6s,baz=15,slow=35								
MAJO	**Matsushiro**	**4.87**	**253**	*e*P		**Pn**	**20 20 18.7**		**+0.7**
MAJO				*e*			20 21 13.4		
MAJO	**Matsushiro**	**4.87**	**253**	*e*Pn		**Pn**	**20 20 18.7**		**+0.7**
MAJO				*e*Sn		**Sn**	**20 21 13.4**		**-0.5**
MAT	**Matsushiro**	**4.87**	**253**	P		**Pn**	**20 20 18.6**		**+0.6**
MAT				S		**Sn**	**20 21 13.1**		**-0.9**
MJB9	**Matsu-Tunnel**	**4.87**	**253**	*e*Pn		**Pn**	**20 20 19.0**		**+0.9**
JOSM	**Okushiri--Mats**	**5.28**	**320**	P		**Pn**	**20 20 23.7**		**+0.1**
JOSM				*e*S		**Sn**	**20 21 21.2**		**-2.8**
NEM2	**Nemuro 2**	**5.43**	**14**	P		**Pn**	**20 20 22.7**		**-3.0**
NEM2				S		**Sn**	**20 21 21.7**		**-6.0**
JTKR	**Abashiri--Toko**	**5.87**	**359**	P		**Pn**	**20 20 30.3**		**-1.4**
JTKR				S		**Sn**	**20 21 35.3**		**-3.2**
JHR	**Hokuryu**	**5.90**	**344**	P		**Pn**	**20 20 32.7**		**+0.6**
JHR				S		**Sn**	**20 21 36.2**		**-3.0**
JHJ2	**Mitsune**	**6.03**	**216**	P		**Pn**	**20 20 31.5**		**-2.4**
JHJ2	**Mitsune**	**6.03**	**216**	*e*Pn		Pn	20 20 28.9		-5.0
JHJ2				*e*Sn		**Sn**	**20 21 37.8**		**-4.7**
JHJ	**Hachijo jima 2**	**6.04**	**216**	Pn		**Pn**	**20 20 30.5**		**-3.5**
	67nm,0.3s,baz=32,slow=23,SNR=96								
JHJ				Sn		**Sn**	**20 21 34.2**		**-8.5**
	137nm,0.3s,baz=87,slow=23,SNR=6.9								
YUK	**Yuzh-Kuril'sk**	**6.10**	**13***c*	*i* P		**Pn**	**20 20 32.1**		**-2.8**
YUK				*i* S		**Sn**	**20 21 37.0**		**-7.2**
YUK				pmax	pmax				
	comp=Z,552nm,0.5s								
ASAJ	**Asahikawa**	**6.11**	**350**	Pn		**Pn**	**20 20 35.0**		**0.0**
	baz=213,slow=4.3								
ASAJ	**Asahikawa**	**6.11**	**350**	*e*Pn		**Pn**	**20 20 33.4**		**-1.6**
ASAJ				*e*Sn		**Sn**	**20 21 42.3**		**-2.1**
INU	**Inuyama**	**6.24**	**246**	*e*Pn		**Pn**	**20 20 36.9**		**+0.1**
KUR	**Kuril'sk**	**7.70**	**21***c*	*i* P		**Pn**	**20 20 54.3**		**-2.5**
KUR				*e*S		**Sn**	**20 22 15.9**		**-7.6**
KUR				pmax	pmax				
	comp=N,25nm,0.4s								
KUR				pmax	pmax				
	comp=E,27nm,0.4s								
KUR				pmax	pmax				
	comp=Z,83nm,0.4s								
KUR				smax	smax				
	comp=N,159nm,0.5s								
KUR				smax	smax				
	comp=E,38nm,0.4s								
YSS	**Yuzh-Sakhalins**	**8.90**	**355**§	*e*P		**Pn**	**20 21 13.1**		**-0.2**
YSS				*e*S		**Sn**	**20 22 45.9**		**-7.2**
YSS				pmax	pmax				
	comp=Z,10.0nm,0.5s								
YSS				MLR	MLR				
	comp=Z,680nm,17.0s								
YSS				MLR	MLR				
	comp=N,730nm,15.0s								
YSS	**Yuzh-Sakhalins**	**8.90**	**355**	*e*Pn		**Pn**	**20 21 11.8**		**-1.5**
VLA	**Vladivostok**	**10.48**	**302**	*e*P		**Pn**	**20 21 36.0**		**+1.0**
VLA				pmax	pmax				
	comp=Z,53nm,1.2s								
MSHR	**Mys Shultsa**	**10.77**	**299**⇑	*i* P		**Pn**	**20 21 39.4**		**+0.5**
USRK	**Ussuriysk Ar.**	**10.91**	**308**	Pn		**Pn**	**20 21 42.5**		**+1.7**
	comp=Z,2.8nm,0.3s,baz=113,slow=14,SNR=44								
USRK				LR		LR	20 25 50.4		
	comp=Z,910nm,18.2s,baz=118,slow=37								
JNU	**Nakatsue**	**11.77**	**249**	Pn		**Pn**	**20 21 52.0**		**-0.7**
	comp=Z,0.6nm,0.3s,baz=72,slow=7.8,SNR=11								
JNU				LR		LR	20 26 54.5		
	comp=Z,586nm,18.9s,baz=318,slow=40								
JNU	**Nakatsue**	**11.77**	**249**	*e*Pn		**Pn**	**20 21 50.1**		**-2.6**
HABR	**Khabarovsk**	**12.24**	**331**	*e*P		**Pn**	**20 21 56.6**		**-2.4**
HABR				*e*S		**Sn**	**20 24 11.9**		**-3.0**
HABR				pmax	pmax				
	comp=Z,32nm,1.4s								
HABR				pmax	pmax				
	comp=N,8.0nm,1.3s								
HABR				pmax	pmax				
	comp=E,17nm,1.4s								
HABR				MLR	MLR				
	comp=Z,524nm,13.0s								
MDJ	**Mudanjiang**	**12.62**	**306**	P		**Pn**	**20 22 05.3**		**+1.0**
MDJ				S		**Sn**	**20 24 28.0**		**+3.7**
MDJ				pmax	pmax				
	comp=Z,56nm,1.0s								
MDJ				LR	LR				
	comp=Z,690nm,16.3s								
MDJ				LR	LR				
	comp=Z,460nm,22.6s								
MDJ				LR	LR				
	comp=Z,860nm,18.1s								
MDJ	**Mudanjiang**	**12.62**	**306**	*e*Pn		**Pn**	**20 22 03.6**		**-0.6**
	comp=Z,50nm,0.9s								
KSRS	**Korea Array**	**12.74**	**272**	Pn		**Pn**	**20 22 07.3**		**+1.5**
	comp=Z,0.6nm,0.3s,baz=87,slow=13,SNR=35								
KSRS				LR		LR	20 26 46.4		
	comp=Z,331nm,19.3s,baz=66,slow=36								
KS01	**Wonju Array Si**	**12.76**	**272**	*e*Pn		**Pn**	**20 22 04.7**		**-1.4**
KS15	**Wonju Array Si**	**12.77**	**272**	*e*Pn		**Pn**	**20 22 04.4**		**-1.9**
KSAR	**Wonju Array Be**	**12.77**	**272**	P		**Pn**	**20 22 07.4**		**+1.1**
KSAR	**Wonju Array Be**	**12.77**	**272**	Pn		**Pn**	**20 22 07.3**		**+1.1**
TYV	**Tymovskoe**	**12.80**	**356**	*e*P		**Pn**	**20 22 04.2**		**-2.4**
TYV				pmax	pmax				
	comp=Z,8.0nm,0.6s								
KLR	**Kul'dur**	**14.20**	**325**	Pn		**Pn**	**20 22 24.3**		**-1.5**
	comp=Z,0.5nm,0.3s,baz=131,slow=11,SNR=22								
KLR				LR		LR	20 28 01.8		
	comp=Z,590nm,19.1s,baz=139,slow=38								
CN2	**Changchun**	**15.12**	**298**	*e*P		**Pn**	**20 22 36.8**		**-1.5**
CN2				*e*sP		P	20 22 42.5		-0.9
CN2				*e*S		**Sn**	**20 25 24.8**		**-0.4**
CN2				pmax	pmax				
	comp=Z,10.0nm,0.7s								
CN2				LR	LR				
	comp=Z,500nm,13.0s								
CN2				LR	LR				
	comp=Z,300nm,13.0s								
CN2				LR	LR				
	comp=Z,300nm,14.0s								
SKR	**Severo-Kuril's**	**15.25**	**31**	*i* P		**Pn**	**20 22 38.0**		**-1.9**
SNY	**Shenyang**	**16.09**	**290**	⇑P		**Pn**	**20 22 48.2**		**-2.6**
SNY				pmax	pmax				
	comp=Z,110nm,1.3s								
SNY				LR	LR				
	comp=Z,500nm,13.5s								
SNY				LR	LR				
	comp=Z,730nm,14.7s								
SNY				LR	LR				
	comp=Z,990nm,14.7s								
DL2	**Dalian**	**17.52**	**280**	P		**P**	**20 23 08.4**		**-1.7**
DL2				*e*S		**Sn**	**20 26 23.5**		**-0.2**
DL2				pmax	pmax				
	comp=Z,53nm,1.2s								
DL2				LR	LR				
	comp=Z,620nm,12.7s								
DL2				LR	LR				
	comp=Z,550nm,13.8s

comp=N,88nm,1.6s
YAK MLR MLR
comp=Z,279nm,15.0s
YAK MLR MLR
comp=N,161nm,12.0s
YAK MLR MLR
comp=E,217nm,12.0s
WHN Wuhan 25.54 262 P **P** **20 24 35.4 +2.0**
WHN S **S** **20 28 58.6 -1.6**
WHN LR LR
comp=E,2μm,13.9s
WHN LR LR
comp=E,910nm,11.2s
WHN LR LR
comp=E,1μm,18.4s
H11N2 WAKE ISLAND Hy 27.02 126 T T 20 53 18.2
baz=318,slow=75,SNR=15
H11N1 WAKE ISLAND Hy 27.03 126 T T 20 53 08.9
baz=318
H11N3 WAKE ISLAND Hy 27.04 126 T T 20 53 23.0
baz=318,slow=75,SNR=23
BOD Bodaibo 27.78 325 *eP* **P** **20 24 53.1 -0.2**
BOD pmax pmax
comp=Z,39nm,1.7s
H11S1 WAKE ISLAND Hy 27.81 128 T T 20 54 10.8
baz=321
H11S3 WAKE ISLAND Hy 27.81 128 T T 20 54 21.0
baz=321
H11S2 WAKE ISLAND Hy 27.82 128 T T 20 54 18.8
baz=321
XAN Xi'an 28.53 273 P P 20 25 02.8 +2.5
XAN pP sP 20 25 06.9 -0.9
XAN pmax pmax
comp=Z,11nm,0.8s
XAN LR LR
comp=Z,570nm,15.2s
XAN LR LR
comp=Z,210nm,16.2s
XAN LR LR
comp=Z,370nm,17.2s
SONA1 Songino Array 28.93 302 *eP* **P** **20 25 04.8 +1.0**
SONM Songino Array 28.93 302 P **P** **20 25 05.0 +1.1**
comp=Z,6.5nm,0.8s,baz=96,slow=8.5,SNR=36
SONM LR LR 20 37 00.7
comp=Z,234nm,18.2s,baz=76,slow=37
SONM Songino Array 28.93 302 P **P** **20 25 05.0 +1.1**
ENH Enshi 29.47 265 P **P** **20 25 08.2 -0.5**
comp=Z,29nm,0.8s
IRK Irkutsk 30.94 310 *eP* P 20 25 25.6 +4.1
IRK pmax pmax
comp=Z,21nm,2.5s
TLY Talaya 31.22 309 *eP* P 20 25 27.7 +3.8
TLY pmax pmax
comp=Z,7.0nm,0.6s
TLY MLR MLR
comp=Z,287nm,14.0s
TLY Talaya 31.22 309 *eP* **P** **20 25 20.3 -3.7**
comp=Z,14nm,1.1s
ZAK Zakamensk 31.26 306 *eP* **P** **20 25 23.6 -0.7**
ZAK pmax pmax
comp=Z,13nm,1.2s
LZH Lanzhou 31.92 279 *eP* **P** **20 25 29.7 -0.7**
LZH pP sP 20 25 32.6 -5.2
LZH sP pP 20 25 35.5 -0.2
LZH PP **PnPn** **20 26 35.4 +0.1**
LZH *e*S **S** **20 30 39.1 -1.7**
LZH sS sS 20 30 46.0 -3.6
LZH *e*SS **SnSn** **20 32 28.5 -0.9**
LZH pmax pmax
comp=Z,40nm,1.5s
LZH pmax pmax
comp=Z,130nm,5.0s
LZH LR LR
comp=Z,470nm,13.0s
LZH LR LR
comp=Z,400nm,13.2s
LZH LR LR
comp=Z,690nm,15.5s
MOY Mondy 32.85 308 *eP* P 20 25 42.1 +3.7
GYA Guiyang 33.42 261 *eP* **P** **20 25 44.8 +1.2**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 33.72 270 *eP* **P** **20 25 44.8 -1.3**
CD2 PP **PP** **20 27 01.0 -1.4**
CD2 S **S** **20 31 08.5 -0.3**
CD2 sS sS 20 31 13.7 -3.8
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
GTA Gaotai 34.22 286 *eP* **P** **20 25 51.4 +0.9**
GTA pP sP 20 26 00.8 +2.9
GTA PcP **PcP** **20 28 27.2 +0.3**
GTA S **S** **20 31 16.0 -0.5**
GTA sS sS 20 31 31.4 +6.2
GTA SS **SnSn** **20 33 27.6 +2.4**
GTA pmax pmax
comp=Z,5.0nm,0.9s
GTA pmax pmax
comp=Z,73nm,5.0s
GTA LR LR
comp=Z,270nm,21.9s
GTA LR LR
comp=Z,420nm,17.6s
GTA LR LR
comp=Z,520nm,15.2s
TIXI Tiksi 34.51 352 P **P** **20 25 52.3 -0.1**
comp=Z,1.4nm,0.3s,baz=196,slow=0.5,SNR=4.3
TIXI Tiksi 34.51 352 *eP* **P** **20 25 53.1 +0.7**
QIZ Qiongzhong 35.23 247 P **P** **20 25 59.1 -0.1**
QIZ S **S** **20 31 34.2 +2.1**
QIZ LR LR
comp=Z,340nm,23.6s
QIZ LR LR
comp=Z,350nm,21.2s
QIZ LR LR
comp=Z,250nm,18.0s
KMI Kunming 37.15 262 P **P** **20 26 16.5 +0.7**
KMI pP sP 20 26 19.8 -3.5
KMI sP pP 20 26 21.7 +0.6
KMI PP **PnPn** **20 27 43.1 +2.2**
KMI S **S** **20 32 02.4 +0.7**
KMI sS sS 20 32 07.3 -3.2
KMI SS **SnSn** **20 34 30.5 -5.9**
KMI pmax pmax
comp=Z,4.0nm,0.9s
KMI pmax pmax
comp=Z,94nm,4.3s
KMI LR LR
comp=Z,350nm,13.7s
KMI LR LR
comp=Z,390nm,15.0s
KMI LR LR
comp=Z,350nm,18.7s
WMQ Urumqi 42.20 296 *eP* **P** **20 26 59.4 +1.9**
WMQ pmax pmax
comp=Z,15nm,0.8s
WMQ pmax pmax
comp=Z,160nm,4.8s
WMQ LR LR
comp=Z,330nm,14.3s
WMQ LR LR
comp=Z,190nm,14.8s
WMQ LR LR
comp=Z,260nm,24.4s
ZAA0 Zalesovo Array 42.73 312 *eP* **P** **20 27 01.6 0.0**
ZALV Zalesovo Beam 42.73 312 P **P** **20 27 02.2 +0.6**
comp=Z,2.2nm,0.5s,baz=92,slow=8.4,SNR=12
ZALV PcP **PcP** **20 28 53.0 +0.1**
comp=Z,1.6nm,0.5s,baz=129,slow=3.5,SNR=3.6
NRIK Noril'sk 43.18 334 P **P** **20 27 05.5 +0.5**
comp=Z,2.0nm,0.4s,baz=76,slow=4.2,SNR=2.4
NRIK LR LR 20 46 03.6
comp=Z,539nm,19.7s,baz=124,slow=37
CHTO Chiang Mai 43.54 257 *eP* **P** **20 27 08.4 -0.1**
CHTO pmax pmax
comp=Z,6.0nm,0.8s
CHTO Chiang Mai 43.54 257 *eP* **P** **20 27 08.4 -0.1**
comp=Z,6.2nm,0.8s
NVS Novosibirsk 43.60 313 *eP* **P** **20 27 09.5 +0.9**
CMAR Chiang Mai Arr 43.74 256 P **P** **20 27 10.8 +0.7**
comp=Z,0.9nm,0.7s,baz=49,slow=8.0,SNR=9.5
CMAR LR LR 20 49 05.6
comp=Z,64nm,18.0s,baz=315,slow=41
LSA Lhasa 44.15 275 P P 20 27 17.0 +3.1
LSA pmax pmax
comp=Z,9.0nm,0.7s
LSA Lhasa 44.15 275 P **P** **20 27 13.1 -0.8**
LSA pmax pmax
comp=Z,8.0nm,0.7s
LSA Lhasa 44.15 275 P **P** **20 27 13.1 -0.8**
comp=Z,8.1nm,0.7s
RSO Redoubt South 44.79 39 *eP* **P** **20 27 20.4 +2.1**
KDAK Kodiak Island 44.93 43 *i P* **P** **20 27 19.6 +0.4**
CAST Castle Rocks 45.19 35 *eP* **P** **20 27 23.5 +2.3**
comp=Z,14nm,1.7s
MK01 Makanchi Array 45.30 302 *eP* **P** **20 27 22.1 -0.3**
MK31 Makanchi Array 45.30 302 *eP* **P** **20 27 22.9 +0.6**
MK31 Makanchi Array 45.30 302 *eP* **P** **20 27 22.9 +0.6**
MKAR Makanchi Array 45.30 302 P **P** **20 27 22.9 +0.6**
comp=Z,5.2nm,0.7s,baz=85,slow=9.7,SNR=59
MKAR LR LR 20 48 51.5
comp=Z,143nm,18.0s,baz=312,slow=39
MAKZ Makanchi 45.51 302 *eP* **P** **20 27 24.4 +0.4**
MAKZ pmax pmax
comp=Z,18nm,0.8s
MAKZ Makanchi 45.51 302 *eP* **P** **20 27 24.4 +0.4**
comp=Z,18nm,0.8s
KTH Kantishna Hill 45.72 35 *eP* **P** **20 27 25.7 +0.3**
comp=Z,14nm,1.5s
SUA Susitna One 45.77 37 *eP* **P** **20 27 27.5 +1.6**
comp=Z,4.9nm,0.8s
RC01 Rabbit Creek A 46.27 38 *eP* **P** **20 27 30.5 +0.8**
comp=Z,8.6nm,1.1s
PMR Palmer 46.54 37 *eP* **P** **20 27 32.1 +0.2**
PMR pmax pmax
comp=Z,5.0nm,0.9s
PMR Palmer 46.54 37 *eP* **P** **20 27 32.1 +0.2**
comp=Z,5.4nm,0.9s
RND Reindeer 46.64 35 *eP* **P** **20 27 32.4 -0.3**
RND pmax pmax
comp=Z,18nm,1.7s
RND Reindeer 46.64 35 *eP* **P** **20 27 32.4 -0.3**
comp=Z,18nm,1.7s
KURK Kurchatov 46.90 308 *eP* **P** **20 27 34.7 -0.1**
KURK Kurchatov 46.90 308 *eP* **P** **20 27 34.7 -0.1**
comp=Z,210nm,0.8s
SML Sawmill 46.92 37 *eP* **P** **20 27 32.6 -2.3**
SML pmax pmax
comp=Z,2.0nm,0.9s
SML Sawmill 46.92 37 *eP* **P** **20 27 32.6 -2.3**
comp=Z,2.2nm,0.9s
COLA College 47.08 33 *eP* **P** **20 27 35.8 -0.2**
COLA pmax pmax
comp=Z,2.0nm,0.7s
SCM Sheep Creek Mo 47.39 37 *eP* **P** **20 27 38.8 +0.2**
SCM pmax pmax
comp=Z,12nm,1.0s
SCM Sheep Creek Mo 47.39 37 *eP* **P** **20 27 38.8 +0.2**
comp=Z,12nm,1.0s
IL1 Eielson Array 47.49 33 *eP* **P** **20 27 38.8 -0.5**
ILAR Eielson Array 47.49 33 P **P** **20 27 39.8 +0.5**
comp=Z,3.8nm,0.7s,baz=263,slow=6.4,SNR=48
ILB Eielson Array 47.49 33 *eP* **P** **20 27 39.2 -0.1**
PDGK Podgornoye 48.10 298 P **P** **20 27 45.0 +0.8**
PDGK pmax pmax
comp=Z,14nm,1.0s
EYAK Cordova Ski Ar 48.25 39 *eP* **P** **20 27 47.1 +2.0**
comp=Z,11nm,0.9s
BMRM Bremner River 48.77 38 *eP* **P** **20 27 50.9 +1.7**
comp=Z,19nm,1.4s
DOT Dot Lake 48.78 34 *eP* **P** **20 27 49.6 +0.3**
comp=Z,7.1nm,0.8s
RAMN Ramite 48.97 275 *eP* **P** **20 27 52.3 +0.8**
comp=Z,42nm,0.8s
GUN Gumba 49.09 276 *eP* **P** **20 27 53.6 +1.1**
CRQM Cirque 49.51 38 *eP* **P** **20 27 56.6 +1.6**
comp=Z,17nm,0.7s
KKN Kakani 49.61 276 *eP* **P** **20 27 57.4 +1.0**
comp=Z,33nm,0.6s
PKIN Phulchoki 49.62 276 *eP* **P** **20 27 57.5 +1.0**
BALM Baldy 49.85 38 *eP* **P** **20 27 58.5 +0.9**
BALM pmax pmax
comp=Z,9.0nm,0.8s
BALM Baldy 49.85 38 *eP* **P** **20 27 58.5 +0.9**
comp=Z,8.8nm,0.8s
GKN Gorkha 50.02 277 *eP* **P** **20 28 00.3 +0.9**
comp=Z,32nm,0.7s
DANN Dangsing 50.55 278 *eP* **P** **20 28 04.9 +1.4**
TKM2 Tokmak 2 50.93 298 *eP* **P** **20 28 07.0 +0.8**
TKM2 pmax pmax
comp=Z,13nm,0.7s
TKM2 Tokmak 2 50.93 298 *eP* **P** **20 28 07.0 +0.8**
comp=Z,13nm,0.7s
KOLN Koldanda 50.94 277 *eP* **P** **20 28 07.3 +0.9**
comp=Z,14nm,0.7s
PYUN Piuthan 51.26 278 *eP* **P** **20 28 10.0 +1.2**
comp=Z,72nm,0.9s
BRVK Borovoye 51.43 312 *eP* **P** **20 28 09.2 -0.3**
BRVK pmax pmax
comp=Z,5.0nm,0.8s
BRVK Borovoye 51.43 312 *eP* **P** **20 28 09.9 +0.4**
comp=Z,5.4nm,0.8s
FRU Bishkek 51.64 299 *eP* P 20 28 19.0 +7.8
AAK Ala-Archa 51.79 298 *eP* **P** **20 28 12.2 -0.3**
AAK pmax pmax
comp=Z,6.0nm,1.0s
KSH Kashi 51.84 294 *eP* P 20 28 18.0 +5.1
KSH *ep*P sP 20 28 21.0 +0.5
KSH S **S** **20 35 40.1 +5.4**
KSH ScS **ScS** **20 38 04.2 +1.7**
KSH pmax pmax
comp=Z,67nm,4.4s
KSH LR LR
comp=Z,130nm,6.8s
KSH LR LR
comp=Z,130nm,7.5s
KSH LR LR
comp=Z,220nm,13.7s
ZRNK Zerenda 52.21 312 *eP* **P** **20 28 15.9 +0.6**
ZRNK pmax pmax
comp=Z,7.0nm,0.7s
ZRNK Zerenda 52.21 312 *eP* **P** **20 28 15.9 +0.6**
comp=Z,7.4nm,0.7s
HYT Haines Junctio 52.22 37 *eP* **P** **20 28 17.3 +1.9**
comp=Z,14nm,0.8s
EKS2 Erkin-Say 52.28 299 *eP* **P** **20 28 16.6 +0.5**
EKS2 pmax pmax
comp=Z,7.0nm,0.8s
EKS2 Erkin-Say 52.28 299 *eP* **P** **20 28 16.6 +0.5**
comp=Z,7.2nm,0.8s
INK Inuvik 52.50 28 P **P** **20 28 17.6 +0.5**
comp=Z,1.7nm,0.5s,baz=300,slow=6.1,SNR=13
INK Inuvik 52.50 28 *eP* **P** **20 28 18.1 +0.9**
INK pmax pmax
comp=Z,3.0nm,0.7s
INK Inuvik 52.50 28 *eP* **P** **20 28 18.1 +0.9**
comp=Z,3.4nm,0.7s
MNAS Manas 53.22 299 P **P** **20 28 24.3 +1.2**
MNAS pmax pmax
comp=Z,19nm,0.8s
SVE Sverdlovsk 55.71 319 *eP* **P** **20 28 42.1 +1.3**
SVE pmax pmax
comp=Z,21nm,1.0s
DLBC Dease Lake 56.52 39 P **P** **20 28 48.1 +1.4**
comp=Z,2.2nm,0.7s,baz=282,slow=4.6,SNR=6.6
DLBC Dease Lake 56.52 39 *eP* **P** **20 28 48.4 +1.7**
comp=Z,10nm,1.5s
ARU Arti 56.92 319 P **P** **20 28 50.0 +0.6**
baz=86,slow=9.9
ARU Arti 56.92 319 *i P* **P** **20 28 49.1 -0.3**
ARU pmax pmax
comp=Z,9.0nm,0.7s
ARU Arti 56.92 319 *eP* **P** **20 28 48.7 -0.7**
comp=Z,12nm,0.8s
WRAB Tennant Creek 58.43 191 P **P** **20 28 55.8 -4.6**
WRAB pmax pmax
comp=Z,23nm,0.7s
WRAB Tennant Creek 58.43 191 P **P** **20 28 55.8 -4.6**
comp=Z,23nm,0.7s
WB2 Warramunga Arr 58.44 191 *eP* **P** **20 28 59.7 -0.8**
comp=Z,27nm,0.7s
WRA Warramunga Arr 58.44 191 P **P** **20 28 59.5 -0.9**
comp=Z,24nm,0.6s,baz=8.8,slow=7.0,SNR=103
ABKAR Akbulak array 58.82 310 *eP* **P** **20 29 02.7 -0.1**
KBL Kabul 58.94 291 *eP* **P** **20 29 04.1 -0.1**
KBL pmax pmax
comp=Z,9.0nm,1.0s
KBL Kabul 58.94 291 *eP* **P** **20 29 04.1 -0.1**
comp=Z,8.8nm,1.0s
AKTO Aktyubinsk 59.49 312 P **P** **20 29 06.9 -0.6**
comp=Z,6.0nm,0.7s,baz=66,slow=7.9,SNR=16
YKA Yellowknife Ar 61.85 31 P **P** **20 29 24.0 +0.7**
comp=Z,1.6nm,0.6s,baz=303,slow=6.9,SNR=14
AS01 Alice Springs 62.16 190 *eP* **P** **20 29 25.1 -0.8**
ASAR Alice Springs 62.16 190 P **P** **20 29 25.4 -0.5**
comp=Z,3.7nm,0.7s,baz=4.7,slow=6.9,SNR=52
ARCES ARCESS Array B 63.72 340 P **P** **20 29 36.7 +1.0**
comp=Z,2.4nm,1.0s,baz=46,slow=6.9,SNR=6.3
KLMR Klimovskoe 63.95 328 *eP* **P** **20 29 38.4 +1.1**
KLMR *e* 20 30 11.6
KLMR pmax pmax
comp=Z,6.0nm,1.3s
GEYT Alibeck 65.11 300 P **P** **20 29 46.1 +0.7**
comp=Z,4.1nm,0.7s,baz=35,slow=3.6,SNR=9.7
STKA Stephens Creek 69.65 182 P **P** **20 30 12.9 -1.0**
comp=Z,2.8nm,0.9s,baz=310,slow=17,SNR=2.6
NCK Nalchik 71.47 311 *eP* **P** **20 30 25.0 -0.2**
NCK pmax pmax
comp=Z,4.0nm,0.6s
FFC Flin Flon 71.69 34 P **P** **20 30 27.3 +1.1**
FFC pmax pmax
comp=Z,11nm,0.9s
KIV Kislovodsk 71.75 312 *eP* **P** **20 30 26.8 -0.1**
KIV pmax pmax
comp=Z,14nm,1.1s
KBZ Khabaz 71.75 311 P **P** **20 30 28.1 +1.4**
comp=Z,3.8nm,0.9s,baz=26,slow=6.3,SNR=4.5
LRM Limekiln Ridge 71.95 46 *eP* **P** **20 30 27.6 -0.7**
NEY Neytrino 72.13 311 *eP* **P** **20 30 29.0 -0.3**
NEY pmax pmax
comp=Z,2.0nm,1.0s
NB2 NORSAR Subarra 73.98 338 P **P** **20 30 40.2 +0.4**
comp=Z,0.5nm,0.6s,baz=41,slow=6.2
NOA NORSAR Array B 73.98 338 P **P** **20 30 40.4 +0.6**
comp=Z,0.4nm,0.5s,baz=44,slow=4.6,SNR=4.9
NOA LR LR 21 08 39.5
comp=Z,146nm,18.6s,baz=50,slow=40
AKASG Malin Array Be 74.69 323 P **P** **20 30 44.4 +0.4**
comp=Z,1.2nm,0.5s,baz=43,slow=5.1,SNR=6.4
AKASG LR LR 21 07 22.0
comp=Z,145nm,18.1s,baz=75,slow=39
KIEV Kiev 74.71 323 *eP* **P** **20 30 43.7 -0.4**
KIEV pmax pmax
comp=Z,2.0nm,0.8s
FRB Frobisher Bay 75.25 14 P **P** **20 30 46.9 -0.1**
comp=Z,4.4nm,0.5s,baz=345,slow=4.4,SNR=4.7
BW06 Boulder Array 75.45 47 *eP* **P** **20 30 49.4 +0.6**
PDAR Pinedale Array 75.45 47 P **P** **20 30 48.3 -0.6**
comp=Z,1.6nm,0.5s,baz=280,slow=1.2,SNR=20
KWP Kalwaria Pacla 78.44 325 P **P** **20 31 06.8 +1.5**
KWP pmax pmax
comp=Z,88nm,1.2s
BRTR Keskin Array B 79.66 313 P **P** **20 31 12.3 0.0**
comp=Z,0.5nm,0.8s,baz=138,slow=7.6,SNR=6.0
BR231 Keskin MP Arra 80.08 313 *eP* **P** **20 31 14.5 -0.1**
DPC Dobruska-Polom 80.63 329 *eP* **P** **20 31 18.5 +1.3**
DPC *ex* x 20 31 35.6
DPC AMS AMS 21 09 10.0
comp=Z,200nm,18.9s
DPC Dobruska-Polom 80.63 329 *eP* **P** **20 31 18.5 +1.3**
DPC *e* 20 31 35.6
DPC MLR MLR
comp=Z,200nm,18.9s
UPC Upice 80.63 329 AMS AMS 21 11 10.0
comp=Z,200nm,12.0s
VYHS Vyhne 80.99 327 *eP* **P** **20 31 20.7 +1.5**
VYHS *e* 20 31 36.1
VYHS Vyhne 80.99 327 *eP* **P** **20 31 20.7 +1.5**
VYHS *e* 20 31 36.1
VYHS *e* 20 49 28.0
GOPC GO Pecny, Ondr 81.58 330 AMS AMS 21 10 10.0
comp=Z,200nm,19.6s
PRU Pruhonice 81.62 330 AMS AMS 21 10 20.0
comp=Z,300nm,18.4s
KHC Kasperske Hory 82.69 330 *ep*P **pP** **20 31 36.5 +2.7**
KHC *ex* x 20 31 46.3
KHC AMS AMS 21 12 30.0
comp=Z,300nm,14.3s
KHC Kasperske Hory 82.69 330 *eP* P 20 31 36.5 +8.4
KHC *e* 20 31 46.3
KHC MLR MLR
comp=Z,300nm,14.3s
GERES GERESS Array B 82.86 329 LR LR 21 11 41.6
comp=Z,153nm,19.3s,baz=50,slow=38
FUORN Ofenpass-Fuorn 86.03 330 *eP* **P** **20 31 46.3 +0.9**
comp=Z,5.8nm,0.9s
TXAR Lajitas Array 87.84 54 P **P** **20 31 54.8 +0.4**
comp=Z,0.3nm,0.5s,baz=301,slow=2.9,SNR=8.7

*IDC **10** 20:29:41.2±0.7,15°.40S×176°.05W,h0km,mb4.0/15, mb1 4.2/15,mb1mx4.1/32,mbtmp4.0/15,MS4.2/24, Ms1 4.2/24,ms1mx4.2/33,Error ellipse: s-maj=28.4km s-min=18.6km az=129.0*
*NEIC **10** 20:29:42.4±0.6, 15°.43S×175°.84W,h10km,mb4.8/15, Error ellipse: s-maj=22.3km s-min=11.9km az=148.0*
*GCMT **10** 20:29:42.0±0.2, 15°.33S×175°.87W,h18km±1km, MW5.2/109,Moment Tensor Solution. s38,c41; s109,c163; Duration: 1s0 Moment tensor: Scale 10^17 Nm; Mrr=0.14±.02; Mθθ=0.73±.02; Mφφ=-0.59±.02; Mrθ=0.06±.04; Mθφ=0.21±.01; Mφr=-0.33±.05; Best double couple: M=0.78200×10^17 NP1:φs=303.00000°,δ71.00000°, λ=-20.00000°. NP2:φs=39.00000°,δ71.00000°, λ=-160.00000°. Principal axes: T 0.7660, Plg1.0000°, Azm351.0000°; N 0.0320, Plg63.0000°, Azm82.0000°; P -0.7980, Plg27.0000°, Azm261.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISCJB **10** 20:29:44.6±0.5, 15°.4S±0°.1×176°.2W±0°.1, h26km,mb4.3/30, MS4.3/20 Error ellipse: s-maj=18.6km s-min=10.1km az=140.9*

ISC 10 20:29:46.3±0.6, 15°.6S±0°.1×176°.1W±0°.1, h26km, n78, σ2s24/49, mb4.3/30, MS4.3/20, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.46**	**69**	Pn	Pn	Pn	20 30 42.1	-10
	12nm,0.3s,baz=76,slow=3.1,SNR=14							
AFI				Sn	Sn	Sn	20 31 30.7	-13
	11nm,0.3s,baz=296,slow=21,SNR=3.9							
AFI				LR	LR	LR	20 31 58.8	
	comp=Z,2μm,19.5s,baz=238,slow=31							
AFI	**Afiamalu**	**4.46**	**69**	*e*Pn	Pn	Pn	20 30 43.1	-9.3
AFI				*e*Sn	Sn	Sn	20 31 31.3	-12
MSVF	**Nonsavu**	**6.04**	**248**	*e*Pn	**Pn**	**Pn**	**20 31 15.7**	**+1.6**
	42nm,1.1s							
RAO	**Raoul Island**	**13.71**	**187**	LR	LR	LR	20 37 30.2	
	comp=Z,4μm,21.6s,baz=19,slow=34							
RAR	**Rarotonga**	**16.43**	**112**	LR	LR	LR	20 37 47.3	
	comp=Z,672nm,21.2s,baz=288,slow=30							
DZM	**Mont Dzumac**	**17.77**	**246**	P	**P**	**P**	**20 33 56.8**	**+4.1**
	0.1nm,0.3s,baz=61,slow=19,SNR=2.6							
DZM				LR	LR	LR	20 39 43.1	
	comp=Z,1μm,20.1s,baz=76,slow=34							
DZM	**Mont Dzumac**	**17.77**	**246**	*e*P	P	P	20 34 00.2	+7.5
	82nm,1.6s							
DZM				*e*LR	LR	LR	20 38 24.3	
	2μm,25.4s							
URZ	**Urewera**	**23.38**	**194**	LR	LR	LR	20 42 49.3	
	comp=Z,3μm,20.9s,baz=43,slow=34							
PAE	**Paea**	**25.45**	**98**	*e*T	T	T	21 00 59.0	
	2.1nm,0.4s							
PPT	**Papeete**	**25.45**	**98**	LR	LR	LR	20 42 29.3	
	comp=Z,435nm,20.7s,baz=258,slow=30							
PPT2	**Papeete2**	**25.45**	**98**	*e*LQ	LQ	LQ	20 40 14.7	
	1μm,25.5s							
PPT2				*e*LR	LR	LR	20 41 23.8	
	2μm,26.8s,baz=265							
PPT2	**Papeete2**	**25.45**	**98**	*e*T	T	T	21 01 00.0	
	4.3nm,0.3s							
TVO	**Taravao**	**25.77**	**99**	*e*T	T	T	21 01 22.7	
	1.6nm,0.3s							
TBI	**Tubuai**	**26.21**	**111**	*e*LQ	LQ	LQ	20 40 38.8	
	2μm,27.5s							
TBI				*e*LR	LR	LR	20 41 51.4	
	1μm,29.5s,baz=287							
TBI	**Tubuai**	**26.21**	**111**	*e*T	T	T	21 02 04.4	
	12nm,0.3s							
SNZO	**South Karori**	**26.86**	**196**	*e*P	**P**	**P**	**20 35 19.9**	**-4.9**
	151nm,1.0s							
TAOE	**Nuku Hiva Isla**	**35.69**	**83**	*e*S	S	S	20 42 07.3	-11
	189nm,28.1s							
TAOE				*e*LR	LR	LR	20 45 58.8	
	2μm,28.3s							

CTA	**Charters Tower**	**36.10**	**257**	LR	LR	20 51 12.4	
	comp=Z,330nm,18.5s,baz=103,slow=36						
PMG	**Port Moresby**	**36.39**	**275**	LR	LR	20 51 07.2	
	comp=Z,304nm,18.2s,baz=88,slow=35						
H11S2	**WAKE ISLAND Hy**	**37.88**	**333**	T	T	21 17 20.8	
	baz=148,slow=76,SNR=7.6						
H11S3	**WAKE ISLAND Hy**	**37.89**	**333**	T	T	21 17 20.8	
	baz=148,slow=76,SNR=11						
H11S1	**WAKE ISLAND Hy**	**37.89**	**333**	T	T	21 17 06.1	
	baz=148,slow=76,SNR=7.9						
H11N3	**WAKE ISLAND Hy**	**38.87**	**334**	T	T	21 18 18.3	
	baz=152,slow=76,SNR=30						
H11N1	**WAKE ISLAND Hy**	**38.88**	**334**	T	T	21 18 21.8	
	baz=152,slow=76,SNR=56						
H11N2	**WAKE ISLAND Hy**	**38.89**	**334**	T	T	21 18 17.0	
	baz=152,slow=76,SNR=45						
RKT	**Rikitea**	**39.38**	**108**	*e*LR	LR	20 47 56.0	
	1μm,28.2s,baz=281						
RKT	**Rikitea**	**39.38**	**108**	*e*T	T	21 18 28.8	
	4.2nm,0.3s						
COEN	**Coen**	**39.41**	**267**	*e*P	**P**	**20 37 14.9**	**+0.5**
	2.2nm,0.7s						
STKA	**Stephens Creek**	**41.73**	**239**	P	**P**	**20 37 34.0**	**+0.5**
	5.9nm,0.9s,baz=20,slow=9.3,SNR=5.3						
WRAB	**Tennant Creek**	**47.30**	**257**	*e*P	**P**	**20 38 17.9**	**-0.2**
	2.2nm,0.8s						
WRA	**Warramunga Arr**	**47.30**	**257**	P	**P**	**20 38 16.5**	**-1.6**
	1.9nm,1.1s,baz=89,slow=7.7,SNR=7.4						
WRA				LR	LR	20 56 36.1	
	comp=Z,312nm,21.5s,baz=75,slow=34						
ASAR	**Alice Springs**	**47.62**	**252**	P	**P**	**20 38 19.9**	**-0.6**
	2.5nm,0.8s,baz=84,slow=8.5,SNR=20						
ASAR				LR	LR	20 56 32.2	
	comp=Z,605nm,22.0s,baz=100,slow=34						
VNDA	**Vanda**	**62.95**	**185**	P	**P**	**20 40 10.2**	**0.0**
	3.0nm,1.0s,baz=0.3,slow=6.5,SNR=12						
VNDA				LR	LR	21 06 15.2	
	comp=Z,52nm,18.4s,baz=40,slow=35						
MJAR	**Matsushiro Arr**	**67.45**	**321**	P	**P**	**20 40 37.4**	**-2.5**
	0.5nm,0.7s,baz=147,slow=6.9,SNR=3.7						
MJAR				LR	LR	21 05 22.0	
	comp=Z,87nm,21.8s,baz=345,slow=32						
PETK	**Petropavlovsk-**	**72.05**	**344**	P	**P**	**20 41 06.5**	**-1.4**
	2.1nm,0.7s,baz=146,slow=8.2,SNR=3.9						
PETK				LR	LR	21 06 03.8	
	comp=Z,274nm,21.7s,baz=159,slow=30						
QSPA	**South Pole Qui**	**74.46**	**180**	P	**P**	**20 41 23.7**	**+1.4**
KSRS	**Korea Array**	**74.51**	**317**	P	**P**	**20 41 21.0**	**-1.7**
	0.4nm,0.7s,baz=133,slow=5.2,SNR=2.5						
KSRS				LR	LR	21 10 28.8	
	comp=Z,78nm,19.3s,baz=314,slow=33						
KSAR	**Wonju Array Be**	**74.53**	**317**	P	**P**	**20 41 21.0**	**-1.9**
USRK	**Ussuriysk Ar.**	**76.01**	**324**	LR	LR	21 09 27.2	
	comp=Z,304nm,20.5s,baz=129,slow=31						
MOD	**Modoc Plateau**	**76.87**	**39**	P	**P**	**20 41 40.1**	**+3.7**
	6.3nm,1.1s						
TUC	**Tucson**	**78.50**	**52**	P	**P**	**20 41 49.7**	**+4.0**
	11nm,1.2s						
TRF	**Thorofare Moun**	**81.29**	**11**	P	**P**	**20 42 03.1**	**+3.0**
	5.0nm,0.9s						
HLID	**Hailey**	**81.41**	**40**	P	**P**	**20 42 04.6**	**+3.4**
	5.3nm,1.0s						
MNTX	**Cornudas Mount**	**82.40**	**54**	P	**P**	**20 42 07.1**	**+0.6**
	7.9nm,1.4s						
DOT	**Dot Lake**	**82.77**	**14**	P	**P**	**20 42 06.8**	**-0.9**
	11nm,1.0s						
TXAR	**Lajitas Array**	**82.85**	**57**	P	**P**	**20 42 07.4**	**-1.6**
	3.0nm,1.1s,baz=200,slow=6.5,SNR=9.9						
TXAR				LR	LR	21 11 40.7	
	comp=Z,192nm,20.9s,baz=0.0,slow=30						
COLA	**College**	**83.04**	**12**	P	**P**	**20 42 12.4**	**+3.4**
	6.8nm,0.8s						
ILAR	**Eielson Array**	**83.14**	**12**	P	**P**	**20 42 07.7**	**-1.9**
	0.5nm,0.7s,baz=238,slow=7.1,SNR=5.4						
ILAR				LR	LR	21 13 05.3	
	comp=Z,196nm,21.3s,baz=212,slow=31						
REDW	**Red Top Meadow**	**83.56**	**42**	P	**P**	**20 42 12.8**	**+0.2**
	9.1nm,1.0s						
BW06	**Boulder Array**	**84.12**	**43**	*e*P	**P**	**20 42 18.5**	**+3.0**
	4.5nm,1.1s						
PDAR	**Pinedale Array**	**84.12**	**43**	P	**P**	**20 42 14.2**	**-1.3**
	2.2nm,0.9s,baz=228,slow=3.8,SNR=8.8						
DAWY	**Dawson**	**84.25**	**15**	P	**P**	**20 42 16.4**	**+1.0**
	17nm,1.5s						
EGAK	**Eagle**	**84.41**	**14**	P	**P**	**20 42 17.0**	**+1.0**
	16nm,1.6s						
COLD	**Coldfoot**	**84.74**	**10**	P	**P**	**20 42 17.8**	**+0.1**
	6.4nm,1.0s						
MAW	**Mawson**	**86.79**	**199**	P	**P**	**20 42 27.9**	**-0.1**
	1.1nm,0.6s,baz=5.3,slow=2.9,SNR=4.1						
MAW				LR	LR	21 18 51.8	
	comp=Z,251nm,20.4s,baz=66,slow=34						
INK	**Inuvik**	**89.07**	**15**	P	**P**	**20 42 38.0**	**-0.6**
	0.4nm,0.5s,baz=297,slow=4.5,SNR=2.1						
CMAR	**Chiang Mai Arr**	**90.24**	**289**	P	**P**	**20 42 43.3**	**-2.0**
	0.2nm,0.7s,baz=109,slow=3.1,SNR=2.8						
CMAR				LR	LR	21 19 07.2	
	comp=Z,34nm,22.0s,baz=110,slow=33						
YKA	**Yellowknife A**	**91.30**	**24**	P	**P**	**20 42 46.3**	**-2.9**
	0.1nm,0.5s,baz=239,slow=4.0,SNR=2.7						
YKA				LR	LR	21 17 00.9	
	comp=Z,32nm,20.7s,baz=180,slow=31						
SONM	**Songino Array**	**93.28**	**319**	P	**P**	**20 42 58.2**	**-0.8**
	0.1nm,0.3s,baz=90,slow=1.4,SNR=3.6						
TIXI	**Tiksi**	**94.50**	**345**	LR	LR	21 21 48.4	
	comp=Z,317nm,20.2s,baz=181,slow=33						
ATAH	**Atahualpa**	**95.43**	**99**	LR	LR	21 18 22.9	
	comp=Z,383nm,18.5s,baz=132,slow=31						
NNA	**Nana**	**95.51**	**104**	LR	LR	21 18 10.2	
	comp=Z,44nm,21.8s,baz=108,slow=30						
ULM	**Lac du Bonnet**	**95.69**	**39**	LR	LR	21 18 27.7	
	comp=Z,207nm,21.0s,baz=324,slow=31						
BRTR	**Keskin Array B**	**144.64**	**319**	PKP	**PKPab**	**20 49 18.2**	**-1.6**
	3.9nm,0.9s,baz=92,slow=3.7,SNR=10						
KHC	**Kasperske Hory**	**145.62**	**349**	P	**PKPdf**	**20 49 22.4**	**-0.1**
GERES	**GERESS Array B**	**145.88**	**348**	PKPbc	**PKPdf**	**20 49 21.1**	**-1.8**
	0.9nm,0.6s,baz=107,slow=3.3,SNR=3.2						
CONA	**Conrad Observa**	**146.28**	**346**	*i* pPKPbc	**PKPbc**	**20 49 24.7**	**0.0**
	8.6nm,1.7s						
MOA	**Molln**	**146.71**	**347**	*i* sPKiKP	**PKPab**	**20 49 32.8**	**+5.7**
	6.3nm,1.4s						
ARSA	**Arzberg**	**146.99**	**345**	*i* pPKPdf	**PKPdf**	**20 49 25.5**	**+0.7**
	1.8nm,0.9s						
KBA	**Koelnbreinsper**	**147.64**	**348**	*i* PKiKP	**PKPbc**	**20 49 28.1**	**-0.7**
	2.1nm,0.7s						
SOKA	**Soboth**	**147.65**	**346**	*i* sPKPbc	**PKPab**	**20 49 30.4**	**-0.5**
	4.9nm,1.8s						
RETA	**Reutte**	**147.69**	**351**	*i* sPKiKP	**PKPab**	**20 49 36.4**	**+5.4**
	4.5nm,1.3s						
MOTA	**Moosalm**	**147.78**	**351**	*i* pPKPbc	**PKPbc**	**20 49 29.8**	**+0.6**
	2.2nm,0.9s						
OBKA	**Obir**	**147.92**	**346**	*i* pPKPbc	**PKPbc**	**20 49 29.5**	**+0.1**
	3.0nm,1.1s						
MYKA	**Terra Mystica**	**148.00**	**347**	*i* sPKPdf	**PKPbc**	**20 49 28.4**	**-1.2**
	2.7nm,1.0s						
DAVA	**Damuels**	**148.00**	**352**	*i* pPKPbc	**PKPbc**	**20 49 29.7**	**0.0**
	4.8nm,1.1s						
ABTA	**Abfaltersbach**	**148.12**	**349**	*i* PKiKP	**PKPbc**	**20 49 29.2**	**-0.8**
	5.0nm,1.3s						
FETA	**Feichten**	**148.15**	**351**	*i* sPKiKP	**PKPab**	**20 49 34.0**	**+1.0**
	5.7nm,1.1s						

*IDC **10** 20:45:02.1±0.8,28˚.92S×176˚.57W,h0km,mb4.0/10, mb1 4.2/11,mb1mx4.1/27,mbtmp4.0/11,ML3.7/1,MS4.3/2, Ms1 4.3/2,ms1mx3.4/31,Error ellipse: s-maj=26.7km s-min=19.4km az=141.0*

*NEIC **10** 20:45:03.3±0.6,29˚.00S×176˚.50W,h10km,mb4.4/2,Error ellipse: s-maj=18.7km s-min=14.2km az=131.0*

ISC 10 20:45:07.0±0.6,29.09S±0.10×176.40W±0.08,h36km,n23, σ2s06/26,mb4.0/12,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.34**	**263**		Pn	**Pn**	**20 45 28.5**	**-0.5**
	248nm,0.3s,baz=141,slow=7.0,SNR=7.9							
RAO					Sn	**Sn**	**20 45 49.5**	**+3.9**
	652nm,0.3s,baz=141,slow=18,SNR=8.2							
RAO					LR	LR	20 45 55.2	
	comp=Z,933nm,19.7s,baz=126,slow=43							
RAO	**Raoul Island**	**1.34**	**263**	*e*Pn		**Pn**	**20 45 30.3**	**+1.3**
RAO					Sn	**Sn**	**20 45 49.5**	**+3.9**
URZ	**Urewera**	**10.62**	**209**	Pn		**Pn**	**20 47 35.7**	**-0.8**
	0.6nm,0.3s,baz=243,slow=18,SNR=2.4							
URZ					Sn	**Sn**	**20 49 32.5**	**-1.6**
	1.3nm,0.3s,baz=139,slow=20,SNR=3.3							
DZM	**Mont Dzumac**	**16.97**	**290**	LR		LR	20 52 48.2	
	comp=Z,241nm,21.5s,baz=187,slow=28							
CTAO	**Charters Tower**	**35.00**	**276**	*e*P		**P**	**20 51 51.4**	**-4.8**
STKA	**Stephens Creek**	**36.15**	**255**	P		**P**	**20 52 04.7**	**-1.1**
	0.8nm,0.4s,baz=73,slow=11,SNR=2.6							
ASAR	**Alice Springs**	**44.59**	**265**	P		**P**	**20 53 14.5**	**-1.4**
	1.2nm,0.8s,baz=99,slow=6.7,SNR=8.1							
ASAR				PcP		**PP**	**20 55 00.3**	**0.0**
	0.8nm,1.0s,baz=121,slow=4.4,SNR=3.4							
WRAB	**Tennant Creek**	**45.46**	**270**	P		**P**	**20 53 25.9**	**+3.2**
	1.6nm,0.8s							
WRA	**Warramunga Arr**	**45.46**	**270**	P		**P**	**20 53 21.1**	**-1.7**
	3.4nm,1.1s,baz=110,slow=7.9,SNR=6.7							
WRA				PcP		**PcP**	**20 55 00.1**	**-1.4**
	2.9nm,1.1s,baz=105,slow=3.5,SNR=4.7							
VNDA	**Vanda**	**49.54**	**186**	P		**P**	**20 53 54.2**	**+0.5**
	0.3nm,0.6s,baz=206,slow=21,SNR=5.7							
FITZ	**Fitzroy Crossi**	**53.77**	**268**	*e*P		**P**	**20 54 23.6**	**-2.5**
QSPA	**South Pole Qui**	**61.02**	**180**	*e*P		**P**	**20 55 16.7**	**0.0**
	6.0nm,0.8s							
MAW	**Mawson**	**74.02**	**200**	P		**P**	**20 56 41.1**	**+2.6**
	2.5nm,0.8s,baz=108,slow=6.4,SNR=5.7							
TGY	**Tagaytay City**	**74.17**	**296**	LR		LR	21 29 16.2	
	comp=Z,798nm,18.1s,baz=137,slow=36							
MJAR	**Matsushiro Arr**	**77.98**	**324**	P		**P**	**20 57 00.3**	**-1.1**
	0.3nm,0.4s,baz=154,slow=5.7,SNR=4.5							
PETK	**Petropavlovsk-**	**84.91**	**345**	P		**P**	**20 57 38.2**	**+0.5**
	1.1nm,0.6s,baz=144,slow=20,SNR=3.0							
TXAR	**Lajitas Array**	**90.51**	**56**	P		**P**	**20 58 07.2**	**+1.8**
	1.3nm,1.0s,baz=212,slow=6.9,SNR=8.7							
PDAR	**Pinedale Array**	**94.23**	**43**	P		**P**	**20 58 23.8**	**+1.4**
	0.3nm,0.6s,baz=195,slow=6.5,SNR=2.9							
ILAR	**Eielson Array**	**96.35**	**12**	P		**P**	**20 58 30.6**	**-0.6**
	0.5nm,0.9s,baz=216,slow=4.5,SNR=3.9							
MKAR	**Makanchi Array**	**117.99**	**310**	PKP		**PKPdf**	**21 03 49.9**	**+0.3**
	0.1nm,0.2s,baz=29,slow=3.3,SNR=2.1							
AKASG	**Malin Array Be**	**151.06**	**325**	PKPbc		**PKPbc**	**21 04 56.0**	**+0.2**
	0.5nm,0.4s,baz=45,slow=2.7,SNR=6.6							
BRTR	**Keskin Array B**	**153.16**	**301**	PKPbc		**PKPbc**	**21 05 01.2**	**+0.1**
	3.0nm,0.6s,baz=143,slow=3.6,SNR=2.7							
TORD	**Torodi Ar. Bea**	**164.04**	**173**	PKPab		**PKPab**	**21 06 00.5**	**+0.4**
	0.7nm,1.0s,baz=190,slow=3.4,SNR=3.2							

*FUNV **10** 20:49:28.9,6˚.71N×71˚.92W,h15km,MW3.8*

*RSNC **10** 20:49:29.5±1.1,6˚.78N×71˚.79W,h4km±9km,ML3.2*

*ISCJB **10** 20:49:30.6±0.5,6˚.78N±0˚.04×71˚.79W±0˚.04,h56km±9km, mb3.4/4,Error ellipse: s-maj=7.6km s-min=4.5km az=39.6*

*IDC **10** 20:49:30.9±2.6,6˚.82N×71˚.86W,h35km±25km,mb3.2/4, mb1 3.7/8,mb1mx3.4/30,mbtmp3.6/8,ML2.9/4,Error ellipse: s-maj=24.5km s-min=14.2km az=142.0*

ISC 10 20:49:31.4±1.1,6˚.79N±0˚.05×71˚.83W±0˚.04,h44km±14km, n27,σ1s37/39,mb3.4/4,1C,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PAMC	**Pamplona, Colo**	**1.02**	**302**	*e*P		**Pn**	**20 49 47.2**	**-2.5**
PAMC				*e*S		**Sn**	**20 50 02.9**	**-0.2**
CAPV	**Capacho**	**1.17**	**336**	*e*P		**Pn**	**20 49 50.9**	**-0.6**
CAPV				*e*S		**Sn**	**20 50 07.3**	**+0.9**
CBRI	**Barrientos, No**	**1.32**	**314**	*e*P		**Pn**	**20 49 53.0**	**-0.6**
BARC	**Barichara**	**1.35**	**262**	*i* P		**Pn**	**20 49 53.4**	**-0.7**
BARC				*i*			20 49 55.0	
	comp=Z,719nm,0.4s							
GIRC	**Giron, Santand**	**1.38**	**282**	*e*P		**Pn**	**20 49 53.8**	**-0.6**
GIRC				*e*S		**Sn**	**20 50 14.0**	**+2.4**
BTLC	**Betulia, Santa**	**1.43**	**275**	*i* P		**Pn**	**20 49 55.7**	**+0.5**
RUSC	**La Rusia**	**1.53**	**234**	*i* P		**Pn**	**20 49 57.1**	**+0.3**
RUSC				*e*S		**Sn**	**20 50 17.4**	**+1.7**
RUSC				*i*			20 50 20.3	
	comp=Z,163nm,0.4s							
SOCV	**Socops**	**1.77**	**33**	*e*P		**Pn**	**20 49 59.9**	**+0.3**
SOCV				*e*S		**Sn**	**20 50 23.2**	**+2.2**
BRRC	**Barranca, Sant**	**1.89**	**280**	*e*P		**Pn**	**20 50 02.4**	**+1.2**
BRRC				*i*			20 50 08.8	
	comp=Z,189nm,0.4s							
OCAC	**Ocana**	**2.06**	**314**	*e*P		**Pn**	**20 50 04.6**	**+0.9**
OCAC				*e*S		**Sn**	**20 50 31.4**	**+3.2**
VIGV	**El Vigia**	**2.09**	**13**	*e*P		**Pn**	**20 50 04.3**	**+0.3**
VIGV				*e*S		**Sn**	**20 50 31.1**	**+2.3**
SDV	**Santo Domingo**	**2.40**	**30**	Pn		**Pn**	**20 50 08.4**	**-0.1**
	comp=Z,19nm,0.3s,baz=158,slow=5.5,SNR=60							
SDV				Sn		**Sn**	**20 50 37.6**	**+1.0**
	comp=Z,44nm,0.3s,baz=24,slow=18,SNR=9.3							
SDV	**Santo Domingo**	**2.40**	**30**	*e*P		**Pn**	**20 50 08.3**	**-0.1**
SDV				*e*S		**Sn**	**20 50 37.5**	**+0.9**
SDV				*i*			20 50 50.6	
	comp=Z,166nm,0.5s							
CHIC	**Chingaza**	**2.86**	**221**	*e*P		**Pn**	**20 50 15.4**	**+0.4**
CHIC				*i*			20 51 07.4	
	comp=Z,57nm,0.4s							
ROSC	**El Rosal**	**3.14**	**232**	Pn		**Pn**	**20 50 20.0**	**+1.1**
	comp=Z,3.5nm,0.3s,baz=306,slow=19,SNR=9.2							
ROSC				Lg		Lg	20 51 11.8	
	comp=Z,5.7nm,0.3s,baz=99,slow=19,SNR=2.6							
VILC	**Villavicencio,**	**3.24**	**215**	*e*P		**Pn**	**20 50 20.4**	**+0.4**
NORC	**Norcasia**	**3.26**	**248**	*e*P		**Pn**	**20 50 19.7**	**-0.4**
HELC	**Santa Helena**	**3.72**	**261**	*e*P		**Pn**	**20 50 26.8**	**0.0**
VIRV	**Villa del Rosa**	**3.73**	**351**	*e*P		**Pn**	**20 50 25.9**	**-0.7**
VIRV				*e*S		**Sn**	**20 51 08.5**	**-0.7**
PRAC	**Prado**	**4.31**	**225**	*e*P		**Pn**	**20 50 35.2**	**+0.7**
MONV	**Montecano**	**5.45**	**20**	*e*P		**Pn**	**20 50 49.3**	**-0.8**
MONV				*e*S		**Sn**	**20 51 48.0**	**-3.6**
PCRV	**Puerto La Cruz**	**7.87**	**64**	Pn		**Pn**	**20 51 22.8**	**-0.7**
	comp=Z,1.2nm,0.3s,baz=275,slow=0.6,SNR=7.4							
PCRV				Sn		**Sn**	**20 52 52.5**	**+1.1**
	comp=Z,0.7nm,0.3s,baz=180,slow=20,SNR=3.7							
PCRV				Lg		Lg	20 53 41.5	
	comp=Z,0.9nm,0.3s,baz=14,slow=21,SNR=1.9							
PTGA	**Pitinga**	**14.00**	**122**	Pn		**Pn**	**20 52 46.4**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=115,slow=24,SNR=2.5							
PTGA				Lg		Lg	20 56 48.3	
	comp=Z,0.9nm,0.3s,baz=224,slow=9.5,SNR=6.5							
LPAZ	**La Paz**	**23.22**	**171**	P		**P**	**20 54 35.3**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=342,slow=6.4,SNR=3.4							
TXAR	**Lajitas Array**	**37.44**	**311**	P		**P**	**20 56 39.6**	**-1.2**
	comp=Z,0.5nm,1.0s,baz=132,slow=5.4,SNR=3.2							
YKA	**Yellowknife Ar**	**63.73**	**339**	P		**P**	**20 59 58.4**	**0.0**
	comp=Z,0.5nm,0.7s,baz=125,slow=6.6,SNR=3.9							
TORD	**Torodi Ar. Bea**	**72.49**	**78**	P		**P**	**21 00 55.7**	**+1.5**
	comp=Z,0.3nm,0.6s,baz=263,slow=5.8,SNR=2.4							

*KRSC **10** 21:14:48.4±1.1,53˚.67N×160˚.99E,h55km±21km,ML4.3*

*ISCJB **10** 21:14:49.8±0.5,53˚.65N±0˚.03×160˚.99E±0˚.06,h59km±6km, mb3.6/8,Error ellipse: s-maj=7.1km s-min=2.6km az=30.2*

*MOS **10** 21:14:49.4±0.5,53˚.64N×161˚.00E,h60km,mb4.0/4,Error ellipse: s-maj=9.3km s-min=4.8km az=80.2*

*IDC **10** 21:14:52.6±2.1,53˚.95N×160˚.62E,h73km±26km,mb3.3/8, mb1 3.6/8,mb1mx3.3/52,mbtmp3.6/8,Error ellipse: s-maj=45.1km s-min=17.6km az=160.0*

ISC 10 21:14:49.9±1.0,53˚.66N±0˚.03×160˚.98E±0˚.04,h49km±11km, n78,σ1s36/145,mb3.5/8,1D,Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.80**	**226**	PN		**Pn**	**21 15 05.2**	**+0.3**
SPN				S		**Sn**	**21 15 16.2**	**+0.4**
SPN	**Mys Shipunski**	**0.80**	**226**	*i* P		**Pn**	**21 15 05.2**	**+0.3**
SPN				*e*S		**Sn**	**21 15 16.2**	**+0.4**
KII	**Karymskiy**	**0.98**	**293**	PN		**Pn**	**21 15 06.9**	**-0.5**
KII				S		**Sn**	**21 15 19.2**	**-1.1**
KII	**Karymskiy**	**0.98**	**293**	*i* P		**Pn**	**21 15 06.9**	**-0.5**
KII				*i* S		**Sn**	**21 15 19.2**	**-1.1**
MKZ	**Mys Kozlova**	**1.00**	**26**	PN		**Pn**	**21 15 07.6**	**0.0**
MKZ				S		**Sn**	**21 15 20.5**	**-0.2**
MKZ	**Mys Kozlova**	**1.00**	**26**	*i* P		**Pn**	**21 15 07.6**	**0.0**
MKZ				*i* S		**Sn**	**21 15 20.5**	**-0.2**
SDLR	**Sedlovina**	**1.31**	**254**	PN		**Pn**	**21 15 12.3**	**+0.4**
SDLR				S		**Sn**	**21 15 29.4**	**+1.1**
SDLR	**Sedlovina**	**1.31**	**254**	*i* P		**Pn**	**21 15 12.3**	**+0.4**
SDLR				*e*S		**Sn**	**21 15 29.4**	**+1.1**
SMAR	**Somma**	**1.36**	**254**	PN		**Pn**	**21 15 12.9**	**+0.2**
SMAR				S		**Sn**	**21 15 30.2**	**+0.5**
SMAR	**Somma**	**1.36**	**254**	*i* P		**Pn**	**21 15 12.9**	**+0.2**
SMAR				*e*S		**Sn**	**21 15 30.2**	**+0.5**
UGLR	**Uglovaya**	**1.36**	**252**	PN		**Pn**	**21 15 13.3**	**+0.7**
UGLR				S		**Sn**	**21 15 30.6**	**+1.0**
UGLR	**Uglovaya**	**1.36**	**252**	*i* P		**Pn**	**21 15 13.3**	**+0.7**
UGLR				*e*S		**Sn**	**21 15 30.6**	**+1.0**
KRER	**Koryakskii**	**1.38**	**256**	PN		**Pn**	**21 15 13.6**	**+0.7**
KRER				S		**Sn**	**21 15 31.1**	**+1.0**
KRER	**Koryakskii**	**1.38**	**256**	*i* P		**Pn**	**21 15 13.6**	**+0.7**
KRER				*i* S		**Sn**	**21 15 31.1**	**+1.0**
AVH	**Avacha**	**1.40**	**255**	PN		**Pn**	**21 15 13.8**	**+0.8**
AVH				S		**Sn**	**21 15 31.0**	**+0.7**
AVH	**Avacha**	**1.40**	**255**	*i* P		**Pn**	**21 15 13.8**	**+0.8**
AVH				*e*S		**Sn**	**21 15 31.0**	**+0.7**
KRX	**Arik**	**1.42**	**259**	PN		**Pn**	**21 15 13.9**	**+0.4**
KRX				S		**Sn**	**21 15 31.4**	**+0.3**
KRX	**Arik**	**1.42**	**259**	*i* P		**Pn**	**21 15 13.9**	**+0.4**
KRX				*i* S		**Sn**	**21 15 31.4**	**+0.3**
KOK	**Koryaka**	**1.45**	**256**	PN		**Pn**	**21 15 14.4**	**+0.7**
KOK				S		**Sn**	**21 15 32.7**	**+1.1**
KOK	**Koryaka**	**1.45**	**256**	*i* P		**Pn**	**21 15 14.4**	**+0.7**
KOK				*e*S		**Sn**	**21 15 32.7**	**+1.1**
DALK	**Dalny**	**1.47**	**246**	PN		**Pn**	**21 15 14.4**	**+0.4**
DALK				S		**Sn**	**21 15 32.8**	**+0.7**
DALK	**Dalny**	**1.47**	**246**	*i* P		**Pn**	**21 15 14.4**	**+0.4**
DALK				*i* S		**Sn**	**21 15 32.8**	**+0.7**
KZV	**Kizimen**	**1.51**	**345**	PN		**Pn**	**21 15 14.5**	**-0.2**
KZV				S		**Sn**	**21 15 32.6**	**-0.7**
KZV	**Kizimen**	**1.51**	**345**	*e*P		**Pn**	**21 15 14.5**	**-0.2**
KZV				*e*S		**Sn**	**21 15 32.6**	**-0.7**
PET	**Petropavlovsk**	**1.53**	**246**	*i* P		**Pn**	**21 15 13.5**	**+0.5**
PET				*e*S		**Sn**	**21 15 33.8**	**+0.3**
PET				pmax		pmax		
	comp=Z,287nm,0.5s							
PET				smax		smax		
	comp=N,1μm,0.5s							
PET				smax		smax		
	comp=E,946nm,0.4s							
PET	**Petropavlovsk**	**1.53**	**246**	*i* P		**Pn**	**21 15 15.3**	**+0.5**
PET				*e*S		**Sn**	**21 15 33.9**	**+0.4**
TUMR	**Tumrok**	**1.70**	**344**	PN		**Pn**	**21 15 17.5**	**+0.3**
TUMR				S		**Sn**	**21 15 37.8**	**0.0**
TUMR	**Tumrok**	**1.70**	**344**	*i* P		**Pn**	**21 15 17.5**	**+0.3**
TUMR				*i* S		**Sn**	**21 15 37.8**	**0.0**
GNL	**Ganaly**	**1.81**	**272**	PN		**Pn**	**21 15 19.1**	**+0.4**
GNL				S		**Sn**	**21 15 41.4**	**+1.0**
GNL	**Ganaly**	**1.81**	**272**	*e*P		**Pn**	**21 15 19.1**	**+0.4**
GNL				*e*S		**Sn**	**21 15 41.4**	**+1.0**
KRMR	**Karymshinskiy**	**1.90**	**245**	PN		**Pn**	**21 15 20.9**	**+1.1**
KRMR				S		**Sn**	**21 15 44.1**	**+1.5**
KRMR	**Karymshinskiy**	**1.90**	**245**	*i* P		**Pn**	**21 15 20.9**	**+1.1**
KRMR				*i* S		**Sn**	**21 15 44.1**	**+1.5**
RUS	**Russkaya**	**1.93**	**231**	PN		**Pn**	**21 15 20.6**	**+0.4**
RUS				S		**Sn**	**21 15 43.3**	**+0.1**
RUS	**Russkaya**	**1.93**	**231**	*e*P		**Pn**	**21 15 20.6**	**+0.4**
RUS				*e*S		**Sn**	**21 15 43.3**	**+0.1**
PETK	**Petropavlovsk-**	**2.04**	**256**	P		**Pn**	**21 15 22.6**	**+0.8**
	comp=E,620nm,0.3s,baz=87,slow=21,SNR=216							
PETK				S		**Sn**	**21 15 47.4**	**+1.4**
	comp=E,58nm,0.3s,baz=90,slow=21,SNR=26							
KMNR	**Kamenistaya**	**2.15**	**349**	PN		**Pn**	**21 15 24.4**	**+1.1**
KMNR				S		**Sn**	**21 15 50.6**	**+1.8**
KMNR	**Kamenistaya**	**2.15**	**349**	*e*P		**Pn**	**21 15 24.4**	**+1.1**
KMNR				*e*S		**Sn**	**21 15 50.6**	**+1.8**
ASAK	**Asacha**	**2.25**	**237**	PN		**Pn**	**21 15 26.2**	**+1.4**
ASAK				S		**Sn**	**21 15 54.1**

NEIC ***10*** *21:17:47.0, 36°.29S×72°.44W, h52km, mb4.6/9, After GUC. NEIC Felt [IV] at Cauquenes, Cobquecura and Coelemu; [III] at Chiguayante, Chillan, Concepcion, La Laja, Ninhue, Penco, Quirihue, San Fabian, San Nicolas, San Pedro de la Paz, San Rosendo, Talcahuano and Tome; [II] at Parral and Pelluhue.*

ISC 10 21:17:47.1±1.0, 36°.23S±0°.04×72°.55W±0°.06, h46km±9km, n58, σ1°66/72, mb4.5/15, 5C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CCHI	**Chillan**	**0.53**	**134**	⇑*i*	*i*	P	**Pn**	**21 17 57.7**	**-0.8**
CCHI				*i*	*i*	S	**Sn**	**21 18 05.3**	**-1.4**
CCHI				AML		AML	AML	21 18 07.5	
	comp=N,75μm,0.7s								
CCSP	**San Pedro de C**	**0.76**	**216**	⇓*i*	*i*	P	**Pn**	**21 18 02.0**	**+0.6**
CCSP				*i*	*i*	S	**Sn**	**21 18 13.2**	**+1.4**
TALC	**Talca**	**1.12**	**42**	⇓*i*	*i*	P	**Pn**	**21 18 07.1**	**+0.8**
TALC				*i*	*i*	S	**Sn**	**21 18 21.6**	**+1.1**
NICH	**Los Niches**	**1.63**	**42**	⇑*i*	*i*	P	**Pn**	**21 18 14.2**	**+0.8**
NICH				*i*	*i*	S	**Sn**	**21 18 34.5**	**+1.3**
CHPI	**Pichilemu**	**1.89**	**14**	⇑*i*	*i*	P	**Pn**	**21 18 18.7**	**+1.8**
CHPI				*i*	*i*	S	**Sn**	**21 18 41.7**	**+2.2**
ANTU	**Antumapu**	**3.09**	**31**	*eP*	*e*	P	**Pn**	**21 18 34.5**	**+1.1**
ANTU				*eS*	*e*	S	**Sn**	**21 19 10.4**	**+1.3**
ANTU				IAML				21 19 29.7	
	comp=N,1μm,0.5s								
RCDM	**Rinconada Maip**	**3.09**	**28**	⇑*i*	*i*	P	**Pn**	**21 18 34.5**	**+1.1**
RCDM				*i*	*i*	S	**Sn**	**21 19 10.5**	**+1.4**
CLCH	**Cerro Calan**	**3.28**	**31**	*eP*	*e*	P	**Pn**	**21 18 37.1**	**+1.1**
CLCH				IAML				21 19 35.7	
	comp=N,1μm,0.6s								
PEL	**Peldehue**	**3.44**	**27**	⇑*i*	*i*	P	**Pn**	**21 18 39.6**	**+1.3**
PEL				*i*	*i*	S	**Sn**	**21 19 19.4**	**+1.6**
PEL				IAML				21 19 43.8	
	comp=N,744nm,0.7s								
ROC1	**El Roble**	**3.49**	**22**	*eP*	*e*	P	**Pn**	**21 18 40.7**	**+1.6**
ROC1				*eS*	*e*	S	Sn	21 19 31.0	+12
ROC1	**El Roble**	**3.49**	**22**	*ePn*	*e*	P	**Pn**	**21 18 40.7**	**+1.6**
ROC1				*eSn*	*e*	S	**Sn**	**21 19 22.6**	**+3.4**
AAGR	**Agrelo**	**4.39**	**45**	*eP*	*e*	P	**Pn**	**21 18 54.2**	**+2.9**
ARCO	**CERRO ARCO**	**4.51**	**43**	*eP*	*e*	P	**Pn**	**21 18 55.6**	**+2.5**
ARCO				IAML				21 19 25.2	
	comp=Z,61nm,0.4s								
ASAL	**Salagasta**	**4.76**	**41**	*eP*	*e*	P	**Pn**	**21 18 58.4**	**+2.0**
PLCA	**Paso Flores**	**4.76**	**161**	Pn		P	**Pn**	**21 18 55.8**	**-0.6**
	comp=Z,3.9nm,0.3s,baz=347,slow=11,SNR=42								
PLCA				Lg		Lg	Lg	21 20 10.5	
	comp=Z,4.5nm,0.3s,baz=279,slow=15,SNR=3.2								
PLCA	**Paso Flores**	**4.76**	**161**	*ePn*	*e*	P	**Pn**	**21 18 57.2**	**+0.8**
PLCA				*eSn*	*e*	S	**Sn**	**21 19 55.8**	**+5.5**
PLCA				Lg		Lg	Lg	21 20 10.5	
AUSP	**Uspallata**	**4.78**	**34**	*eP*	*e*	P	**Pn**	**21 18 59.2**	**+2.3**
RTLS	**Leoncito**	**5.18**	**32**	*eP*	*e*	P	**Pn**	**21 19 04.7**	**+2.3**
RTCV	**Cerro Valdivia**	**5.48**	**39**	*eP*	*e*	P	**Pn**	**21 19 06.4**	**+0.1**
AMOG	**MOGNA**	**6.27**	**34**	*eP*	*e*	P	**Pn**	**21 19 17.7**	**+0.6**
AGUA	**GUANDACOL**	**7.54**	**28**	*eP*	*e*	P	**Pn**	**21 19 35.6**	**+1.0**
TCA	**Tanti**	**8.23**	**56**	*eP*	*e*	P	**Pn**	**21 19 43.6**	**-0.3**
TCA				IAML				21 19 49.5	
	comp=Z,10nm,0.5s								
TRQA	**Tornquist**	**8.64**	**105**	*ePn*	*e*	P	**Pn**	**21 19 50.2**	**+0.7**
TRQA				*eSn*	*e*	S	**Sn**	**21 21 31.7**	**+6.2**
CYA	**Choya**	**9.64**	**38**	*eP*	*e*	P	**Pn**	**21 20 01.5**	**-1.7**
CYA				IAML				21 20 21.8	
	comp=Z,7.5nm,0.8s								
PB04	**IPOC Station P**	**14.01**	**9**	*ePn*	*e*	P	**Pn**	**21 20 59.7**	**-3.4**
PB01	**IPOC Station P**	**15.37**	**11**	*ePn*	*e*	P	**P**	**21 21 27.6**	**+2.6**
	comp=Z,21nm,0.6s								
CPUP	**Villa Florida**	**16.31**	**57**	Pn		P	**P**	**21 21 34.2**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=208,slow=8.7,SNR=4.0								
USHA	**Ushuaia**	**18.82**	**173**	P		P	**Pn**	**21 22 03.4**	**-0.2**
	comp=Z,12nm,0.3s,baz=321,slow=6.5,SNR=3.1								
LPAZ	**La Paz**	**20.25**	**12**	P		P	Pn	21 22 21.0	-0.5
	comp=Z,2.2nm,0.7s,baz=180,slow=7.0,SNR=12								
LPAZ	**La Paz**	**20.25**	**12**	*eP*	*e*	P	**P**	**21 22 19.3**	**+0.1**
	comp=Z,4.9nm,0.8s								
SIV	**San Ignacio**	**22.60**	**30**	P		P	**P**	**21 22 42.7**	**-1.2**
	comp=Z,7.1nm,0.7s,baz=220,slow=8.6,SNR=18								
PTGA	**Pitinga**	**37.20**	**21**	*eP*	*e*	P	**P**	**21 24 54.1**	**+0.1**
	comp=Z,6.2nm,0.8s								
TRIS	**Tristan da Cun**	**47.61**	**110**	*eP*	*e*	P	**P**	**21 26 18.1**	**-0.3**
	comp=Z,273nm,0.9s								
SNAA	**Sanae**	**49.69**	**157**	*eP*	*e*	P	**P**	**21 26 33.7**	**-0.3**
	comp=Z,4.4nm,0.9s								
QSPA	**South Pole Qui**	**54.01**	**180**	*eP*	*e*	P	**P**	**21 27 05.8**	**-0.6**
	comp=Z,7.1nm,1.2s								
MAW	**Mawson**	**71.17**	**163**	P		P	**P**	**21 29 00.2**	**-0.2**
	comp=Z,1.8nm,0.9s,baz=231,slow=13,SNR=4.4								
MAW	**Mawson**	**71.17**	**163**	*eP*	*e*	P	**P**	**21 29 00.2**	**-0.2**
	comp=Z,3.8nm,1.8s								
LTX	**Lajitas**	**71.48**	**332**	*eP*	*e*	P	**P**	**21 29 03.4**	**+0.4**
TXAR	**Lajitas Array**	**71.48**	**332**	P		P	**P**	**21 29 03.4**	**+0.5**
	comp=Z,0.4nm,0.6s,baz=142,slow=9.0,SNR=3.0								
LIC	**Lamto**	**75.88**	**71**	*eP*	*e*	P	**P**	**21 29 28.4**	**-0.6**
	comp=Z,56nm,2.0s								
TIC	**Toumodi**	**76.16**	**71**	*eP*	*e*	P	**P**	**21 29 29.6**	**-1.0**
KIC	**Kosan Boka**	**76.19**	**71**	*eP*	*e*	P	**P**	**21 29 29.9**	**-0.9**
	comp=Z,16nm,0.7s								
DBIC	**Dimbokro**	**76.30**	**71**	P		P	**P**	**21 29 30.6**	**-0.8**
	comp=Z,3.4nm,0.6s,baz=202,slow=6.0,SNR=8.1								
DBIC	**Dimbokro**	**76.30**	**71**	*eP*	*e*	P	**P**	**21 29 30.6**	**-0.8**
	comp=Z,32nm,1.5s								
BOSA	**Boshof**	**79.41**	**118**	P		P	**P**	**21 29 47.1**	**-1.6**
	comp=Z,5.6nm,0.9s,baz=207,slow=4.8,SNR=7.6								
PFO	**Pinyon Flats O**	**80.68**	**324**	P		P	**P**	**21 29 56.5**	**+1.2**
	comp=Z,3.0nm,1.1s,baz=76,slow=4.2,SNR=3.6								
PFO	**Pinyon Flats O**	**80.68**	**324**	*eP*	*e*	P	**P**	**21 29 56.5**	**+1.2**
	comp=Z,18nm,1.8s								
TORD	**Torodi Ar. Bea**	**85.36**	**70**	P		P	**P**	**21 30 18.9**	**-0.9**
	comp=Z,1.3nm,0.9s,baz=265,slow=3.0,SNR=5.6								
TOA1	**Torodi Ar. Sit**	**85.36**	**70**	*eP*	*e*	P	**P**	**21 30 18.9**	**-0.9**
	comp=Z,18nm,1.5s								
PD31	**Pinedale Array**	**85.56**	**334**	*eP*	*e*	P	**P**	**21 30 19.4**	**-0.9**
PDAR	**Pinedale Array**	**85.56**	**334**	P		P	**P**	**21 30 19.5**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=115,slow=8.1,SNR=3.0								
GCMT	**Greycliff**	**88.24**	**335**	*eP*	*e*	P	**P**	**21 30 33.5**	**+0.4**
KURBB	**Kurchatov Arra**	**154.75**	**46**	PKPbc		PKPbc	**PKPbc**	**21 37 42.6**	**+0.1**
	comp=Z,0.2nm,0.5s,baz=293,slow=2.9,SNR=4.7								
KURBB				PKPab		PKPab	**PKPab**	**21 37 57.4**	**-0.4**
	comp=Z,0.8nm,0.7s,baz=292,slow=4.7,SNR=8.4								
KURK	**Kurchatov**	**154.76**	**46**	*ePKPbc*		PKPbc	**PKPbc**	**21 37 42.6**	**+0.1**
KURK				*ePKPab*		PKPab	**PKPab**	**21 37 57.4**	**-0.4**
MK32	**Makanchi Array**	**158.50**	**53**	*ePKPdf*		PKPdf	**PKPdf**	**21 37 39.5**	**+0.5**
MK32				*ePKPab*		PKPab	**PKPab**	**21 38 13.4**	**-0.7**
MKAR	**Makanchi Array**	**158.50**	**53**	PKP		PKPdf	**PKPdf**	**21 37 39.5**	**+0.5**
	comp=Z,0.2nm,0.2s,baz=33,slow=1.1,SNR=3.3								
MKAR				PKPab		PKPab	**PKPab**	**21 38 13.4**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=298,slow=2.6,SNR=4.4								
SONA0	**Songino Array**	**168.38**	**4**	*ePKPab*		PKPab	**PKPab**	**21 38 58.2**	**+0.8**
SONM	**Songino Array**	**168.38**	**4**	PKPab		PKPab	**PKPab**	**21 38 58.2**	**+0.8**
	comp=Z,0.2nm,0.4s,baz=336,slow=3.2,SNR=2.4								

NEIC ***10*** *21:27:08.8±0.5, 29°.91S×176°.05W, h10km, mb4.8/10, Error ellipse: s-maj=13.9km s-min=9.9km az=129.0*
IDC ***10*** *21:27:08.7±0.8, 29°.61S×176°.06W, h0km, mb4.1/6, mb1 4.3/6, mb1mx4.0/36, mbtmp4.1/6, MS3.4/1, Ms1 3.4/1, ms1mx2.7/28, Error ellipse: s-maj=35.2km s-min=19.5km az=178.0*
ISCJB ***10*** *21:27:11.2±0.7, 30°.20S±0°.04×176°.18W±0°.08, h33km, mb4.6/14, MS3.2/1, Error ellipse: s-maj=10.5km s-min=6.1km az=8.5*

ISC 10 21:27:13.3±0.7, 30°.16S±0°.06×176°.30W±0°.09, h35km, n48, σ2°81/50, mb4.4/14, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.67**	**302**	Pn		P	**Pn**	**21 27 40.8**	**+0.7**
	323nm,0.3s,baz=46,slow=23,SNR=14								
RAO				Sn		S	**Sn**	**21 28 01.4**	**+1.1**
	2μm,0.3s,baz=117,slow=21,SNR=18								
RAO	**Raoul Island**	**1.67**	**302**	*ePn*	*e*	P	**Pn**	**21 27 41.0**	**+0.9**
RAO				*eSn*	*e*	S	**Sn**	**21 27 59.6**	**-0.7**
PUZ	**Puketiti**	**9.09**	**208**	*ePn*	*e*	P	**Pn**	**21 29 22.1**	**+0.2**
PUZ				*eSn*	*e*	S	**Sn**	**21 31 06.6**	**+3.6**
URZ	**Urewera**	**9.74**	**212**	Pn		P	**Pn**	**21 29 32.9**	**+2.0**
	1.0nm,0.3s,baz=272,slow=4.0,SNR=8.4								
URZ				Sn		S	**Sn**	**21 31 24.1**	**+5.0**
	4.8nm,0.3s,baz=127,slow=12,SNR=10								
PXZ	**Pawanui**	**11.32**	**208**	*eSN*	*e*	S	**Sn**	**21 31 59.4**	**+1.6**
MRZ	**Mangatainoka R**	**12.39**	**210**	*eSN*	*e*	S	**Sn**	**21 32 23.4**	**-0.4**
TCW	**Tory Channel**	**13.41**	**212**	*eSN*	*e*	S	**Sn**	**21 32 48.0**	**-0.9**
NNZ	**Nelson**	**13.85**	**214**	*eSN*	*e*	S	**Sn**	**21 32 56.0**	**-3.5**
THZ	**Tophouse**	**14.49**	**214**	*ePn*	*e*	P	**P**	**21 30 39.7**	**-2.4**
KHZ	**Kahutara**	**14.71**	**211**	*ePn*	*e*	P	**Pn**	**21 30 38.3**	**-0.4**
KHZ				*eSn*	*e*	S	**Sn**	**21 33 15.3**	**-5.0**
OXZ	**Oxford**	**16.10**	**212**	SN		S	**Sn**	**21 33 47.1**	**-7.2**
MQZ	**McQueen's Vall**	**16.13**	**210**	*eSN*	*e*	S	**Sn**	**21 33 48.5**	**-6.4**
RPZ	**Rata Peaks**	**16.86**	**213**	P		P	**P**	**21 31 08.4**	**0.0**
	0.7nm,0.3s,baz=27,slow=9.0,SNR=2.9								
RPZ				S			**Sn**	**21 34 06.4**	**-6.4**
	0.8nm,0.3s,baz=197,slow=19,SNR=4.7								
RPZ	**Rata Peaks**	**16.86**	**213**	*ePn*	*e*	P	**P**	**21 31 08.4**	**0.0**
	190nm,1.7s								
RPZ				*eSn*	*e*	S	**Sn**	**21 34 06.4**	**-6.4**
PPT	**Papeete**	**27.39**	**69**	LR		LR	LR	21 40 06.5	
	comp=Z,80nm,21.9s,baz=141,slow=29								
STKA	**Stephens Creek**	**35.96**	**256**	P		P	**P**	**21 34 14.7**	**+3.9**
	2.3nm,0.7s,baz=99,slow=11,SNR=6.9								
STKA	**Stephens Creek**	**35.96**	**256**	*eP*	*e*	P	**P**	**21 34 11.9**	**+1.1**
	9.1nm,1.9s								
AS31	**Alice Springs**	**44.59**	**266**	*eP*	*e*	P	**P**	**21 35 23.9**	**+1.6**
	4.7nm,1.9s								
ASAR	**Alice Springs**	**44.59**	**266**	P		P	**P**	**21 35 23.9**	**+1.6**
	0.8nm,0.6s,baz=109,slow=8.2,SNR=7.9								
WB2	**Warramunga Arr**	**45.55**	**271**	*eP*	*e*	P	**P**	**21 35 31.4**	**+1.4**
WRAB	**Tennant Creek**	**45.55**	**271**	*eP*	*e*	P	**P**	**21 35 31.0**	**+1.0**
	3.4nm,0.6s								
WR1	**Warramunga Arr**	**45.56**	**271**	*eP*	*e*	P	**P**	**21 35 31.0**	**+1.0**
	18nm,1.4s								
WRA	**Warramunga Arr**	**45.56**	**271**	P		P	**P**	**21 35 31.0**	**+0.9**
	3.6nm,0.6s,baz=109,slow=7.8,SNR=22								
KIP	**Kipapa**	**54.22**	**21**	*eP*	*e*	P	P	21 36 31.0	-4.5
	361nm,1.9s								
GUMO	**Guam**	**57.36**	**314**	*eP*	*e*	P	**P**	**21 36 55.0**	**-3.3**
	166nm,1.8s								
SOEI	**Soe**	**58.78**	**277**	*eP*	*e*	P	**P**	**21 37 06.7**	**-1.8**
	46nm,1.2s								
ANA2	**Anatahan**	**58.96**	**316**	*eP*	*e*	P	**P**	**21 37 06.5**	**-3.0**
SARN	**Sarigan**	**59.20**	**317**	*eP*	*e*	P	P	21 37 06.6	-4.5
QSPA	**South Pole Qui**	**59.95**	**180**	*eP*	*e*	P	P	21 37 22.3	+6.4
	26nm,1.0s								
MAW	**Mawson**	**73.04**	**200**	P		P	**P**	**21 38 43.1**	**+3.8**
	1.5nm,0.7s,baz=131,slow=9.9,SNR=4.4								
MAW	**Mawson**	**73.04**	**200**	*eP*	*e*	P	**P**	**21 38 39.9**	**+0.7**
	2.0nm,1.4s								
SNAA	**Sanae**	**78.35**	**178**	*eP*	*e*	P	**P**	**21 39 08.9**	**-0.8**
	8.5nm,1.2s								
LTX	**Lajitas**	**91.03**	**56**	*eP*	*e*	P	**P**	**21 40 12.8**	**-1.4**
TXAR	**Lajitas Array**	**91.03**	**56**	P		P	**P**	**21 40 12.8**	**-1.4**
	1.0nm,1.0s,baz=207,slow=7.1,SNR=3.9								
PD31	**Pinedale Array**	**94.95**	**43**	*eP*	*e*	P	P	21 40 27.1	-5.1
PDAR	**Pinedale Array**	**94.95**	**43**	P		P	**P**	**21 40 30.2**	**-2.0**
	0.6nm,0.9s,baz=238,slow=5.1,SNR=2.9								
MK32	**Makanchi Array**	**118.74**	**310**	*ePKPdf*		PKPdf	**PKPdf**	**21 45 57.9**	**+0.3**
MKAR	**Makanchi Array**	**118.74**	**310**	PKP		PKPdf	**PKPdf**	**21 45 57.9**	**+0.3**
	0.2nm,0.3s,baz=62,slow=6.7,SNR=3.2								
GEYT	**Alibeck**	**134.79**	**295**	PKP		PKPdf	**PKPdf**	**21 46 30.4**	**+1.9**
	1.0nm,0.8s,baz=158,slow=1.6,SNR=3.4								
NB2	**NORSAR Subarra**	**148.71**	**353**	PKP		PKPbc	**PKPbc**	**21 46 56.0**	**-0.2**
	comp=Z,1.1nm,0.6s,baz=8.2,slow=2.8								
NB200	**NORSAR Array S**	**148.71**	**353**	*ePKPbc*		PKPbc	**PKPbc**	**21 46 55.3**	**-0.9**
NOA	**NORSAR Array B**	**148.71**	**353**	PKPbc		PKPbc	**PKPbc**	**21 46 55.3**	**-0.9**
	comp=Z,1.7nm,0.7s,baz=14,slow=4.3,SNR=5.2								
AKASG	**Malin Array Be**	**151.98**	**324**	PKPbc		PKPbc	**PKPbc**	**21 47 04.8**	**+0.5**
	comp=Z,3.3nm,0.8s,baz=48,slow=3.0,SNR=7.9								
AKBB	**Malin Array Si**	**151.98**	**324**	*ePKPbc*		PKPbc	**PKPbc**	**21 47 04.8**	**+0.5**
BR101	**Keskin Array S**	**153.77**	**299**	*ePKPbc*		PKPbc	**PKPbc**	**21 47 09.4**	**+0.5**
BRTR	**Keskin Array B**	**153.77**	**299**	PKPbc		PKPbc	**PKPbc**	**21 47 09.4**	**+0.5**
	comp=Z,0.7nm,0.7s,baz=143,slow=2.5,SNR=5.0								
TORD	**Torodi Ar. Bea**	**162.97**	**173**	PKPab		PKPab	**PKPab**	**21 48 05.5**	**+3.6**
	comp=Z,4.7nm,0.8s,baz=190,slow=4.1,SNR=30								
TOA1	**Torodi Ar. Sit**	**162.97**	**173**	*ePKPab*		PKPab	**PKPab**	**21 48 05.5**	**+3.6**

ISCJB ***10*** *21:34:26.6±0.9, 11°.92N±0°.06×72°.51W±0°.03, h63km±11km, Error ellipse: s-maj=9.5km s-min=5.2km az=164.5*
RSNC ***10*** *21:34:26.9±0.5, 12°.07N×72°.50W, h44km±29km, ML3.2*
FUNV ***10*** *21:34:26.7, 12°.10N×72°.65W, h35km, MW3.1*

ISC 10 21:34:27.4±1.8, 11°.95N±0°.09×72°.52W±0°.05, h46km±23km, n19, σ1°11/36, 5D, Near north coast of Colombia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
URIC	**Uribia, Colomb**	**0.58**	**116**	⇓*i*	*i*	P	**Pn**	**21 34 38.8**	**-0.6**
URIC				*eS*	*e*	S	**Sn**	**21 34 48.1**	**+0.1**
URIC				*i*				21 34 49.3	
	comp=Z,616nm,0.2s								
VIRV	**Villa del Rosa**	**1.45**	**175**	*eP*	*e*	P	**Pn**	**21 34 51.1**	**0.0**
VIRV				*eS*	*e*	S	**Sn**	**21 35 10.3**	**+1.4**
DABV	**Dabajuro**	**2.12**	**119**	⇓*eP*	*e*	P	**Pn**	**21 35 01.3**	**+1.0**
DABV				*eS*	*e*	S	**Sn**	**21 35 26.8**	**+1.5**
MONV	**Montecano**	**2.50**	**90**	*eP*	*e*	P	**Pn**	**21 35 05.7**	**+0.2**
MONV				*eS*	*e*	S	**Sn**	**21 35 33.7**	**-1.1**
SIQV	**Siquisique**	**2.96**	**116**	⇓*eP*	*e*	P	**Pn**	**21 35 12.7**	**+0.8**
SIQV				*eS*	*e*	S	**Sn**	**21 35 46.5**	**+0.2**
CURV	**Curarigua**	**3.17**	**127**	*eP*	*e*	P	**Pn**	**21 35 15.5**	**+0.7**
CURV				*eS*	*e*	S	**Sn**	**21 35 51.8**	**+0.3**
VIGV	**El Vigia**	**3.30**	**160**	*eP*	*e*	P	**Pn**	**21 35 16.7**	**+0.2**
VIGV				*eS*	*e*	S	**Sn**	**21 35 55.0**	**+0.5**
SJCC	**San Jacinto, C**	**3.31**	**232**	*eP*	*e*	P	**Pn**	**21 35 16.8**	**0.0**
SJCC				*eS*	*e*	S	**Sn**	**21 35 56.5**	**+1.5**
SJCC				*i*				21 36 04.8	
	comp=Z,22nm,0.3s								
SDV	**Santo Domingo**	**3.57**	**148**	*eP*	*e*	P	**Pn**	**21 35 20.9**	**+0.4**
SDV				*eS*	*e*	S	**Sn**	**21 36 01.9**	**+0.4**
OCAC	**Ocana**	**3.77**	**192**	*eP*	*e*	P	**Pn**	**21 35 23.3**	**+0.1**
OCAC				*eS*	*e*	S	**Sn**	**21 36 07.6**	**+1.2**
OCAC				*i*				21 36 22.6	
	comp=Z,71nm,0.5s								
SANV	**Sanarito**	**3.81**	**129**	*eP*	*e*	P	**Pn**	**21 35 25.2**	**+1.5**
SANV				*eS*	*e*	S	**Sn**	**21 36 07.0**	**-0.4**
TEPV	**Terepaima**	**3.82**	**121**	*eP*	*e*	P	**Pn**	**21 35 24.2**	**+0.5**
TEPV				⇓*eS*	*e*	S	**Sn**	**21 36 06.7**	**-0.8**
SOCV	**Socops**	**4.00**	**156**	*eP*	*e*	P	**Pn**	**21 35 26.2**	**0.0**
SOCV				*eS*	*e*	S	**Sn**	**21 36 11.1**	**-0.8**
CAPV	**Capacho**	**4.07**	**177**	*eP*	*e*	P	**Pn**	**21 35 27.2**	**-0.1**
CAPV				*eS*	*e*	S	**Sn**	**21 35 28.6**	**-1.2**
GRMC	**Gramalote, San**	**4.22**	**184**	*eP*	*e*	P	**Pn**	**21 35 28.1**	**-1.2**
GRMC				*eS*	*e*	S	**Sn**	**21 36 14.9**	**-2.5**
GRMC				*i*				21 36 31.8	
	comp=Z,52nm,0.3s								
CBRI	**Barrientos, No**	**4.22**	**184**	*eP*	*e*	P	**Pn**	**21 35 30.7**	**+1.4**
MOTC	**Monteria, Cord**	**4.42**	**225**	*eP*	*e*	P	**Pn**	**21 35 31.0**	**-0.9**
MAPV	**Macapo**	**4.52**	**117**	*eP*	*e*	P	**Pn**	**21 35 34.2**	**+0.9**
MAPV				*eS*	*e*	S	**Sn**	**21 36 23.5**	**-1.1**
BAUV	**El Baul**	**5.33**	**124**	*eP*	*e*	P	**Pn**	**21 35 45.1**	**+0.8**
BAUV				⇓*eS*	*e*	S	**Sn**	**21 36 41.5**	**-3.1**

IDC 10 21:37:34.1±2.9, 3°.89S×130°.10E, h148km±42km, mb2.9/1, mb1 3.2/5, mb1mx3.0/37, mbtmp3.6/5, Error ellipse: s-maj=77.5km s-min=16.7km az=86.0, Seram

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**3.22**	**21**	P		P	Pn	**21 38 23.3**	**-1.0**
	11nm,0.3s,baz=180,slow=2.0,SNR=4.8								
SIJI				S		S	Sn	21 39 03.5	+0.4
	14nm,0.3s,baz=0.0,slow=1.0,SNR=2.3								
FITZ	**Fitzroy Crossi**	**14.78**	**197**	P		P	Pn	21 40 54.1	-1.9
	0.1nm,0.3s,baz=10,slow=11,SNR=2.3								
WRA	**Warramunga Arr**	**16.48**	**166**	P		P	Pn	21 41 16.0	-1.0
	0.1nm,0.3s,baz=341,slow=11,SNR=3.3								
ASAR	**Alice Springs**	**20.00**	**170**	P		P	P	21 41 55.0	-0.4
	0.2nm,0.3s,baz=342,slow=9.0,SNR=10								
MKAR	**Makanchi Array**	**65.71**	**326**	P		P	P	21 48 03.5	+0.6
	0.2nm,0.6s,baz=130,slow=6.6,SNR=3.2								

IDC ***10*** *21:40:30.2±1.1, 9°.69N×122°.65E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.5/37, mbtmp3.7/4, MS3.2/1, Ms1 3.2/1, ms1mx2.4/34, Error ellipse: s-maj=152.7km s-min=20.5km az=68.0*

ISC 10 21:40:34.0±1.0, 9°.52N±0°.07×122°.31E±0°.08, h29km, n8, σ1°99/14, mb3.7/4, 2C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.94**	**101**	⇓*i*	*i*	P	**Pn**	**21 40 50.6**	**-0.7**
SNPH				*i*	*i*	S	**Sn**	**21 41 06.9**	**+3.1**
LLP	**Lapu-Lapu**	**1.82**	**64**	⇑*eP*	*e*	P	**Pb**	**21 41 06.8**	**+0.1**
LLP				*eS*	*e*	S	**Sb**	**21 41 30.0**	**+0.9**
RCP	**Roxas**	**2.07**	**12**	⇓*eP*	*e*	P	**Pb**	**21 41 08.9**	**-2.1**
RCP				*eS*	*e*	S	**Sb**	**21 41 36.9**	**+0.5**
CGP	**Cagayan de Oro**	**2.59**	**114**	⇑*eP*	*e*	P	**Pb**	**21 41 18.7**	**-1.1**
CGP				*eS*	*e*	S	**Sn**	**21 41 39.7**	**-4.8**
WRA	**Warramunga Arr**	**31.58**	**158**	P		P	**P**	**21 46 54.5**	**+0.1**
	1.1nm,0.9s,baz=338,slow=9.5,SNR=8.0								
WRA				PcP		PcP	**PcP**	**21 49 47.3**	**+0.7**
	0.6nm,0.9s,baz=333,slow=2.7,SNR=3.8								
ASAR	**Alice Springs**	**34.88**	**161**	P		P	**P**	**21 47 24.5**	**+1.4**
	1.6nm,0.6s,baz=342,slow=7.2,SNR=22								
ASAR				PcP		PcP	**PcP**	**21 49 56.5**	**+0.7**
	0.4nm,0.5s,baz=339,slow=2.4,SNR=4.5								
SONM	**Songino Array**	**40.49**	**343**	P		P	**P**	**21 48 10.3**	**-0.1**
	0.3nm,0.6s,baz=168,slow=9.1,SNR=2.7								
MKAR	**Makanchi Array**	**50.32**	**325**	P		P	**P**	**21 49 29.1**	**+0.8**
	0.4nm,0.6s,baz=124,slow=8.7,SNR=5.5								
MKAR				LR		LR	LR	22 11 10.7	
	comp=Z,23nm,18.9s,baz=354,slow=36								

IDC 10 21:48:21.2±2.9, 7°.76N×126°.04E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.4/37, mbtmp3.6/3, Error ellipse: s-maj=234.9km s-min=28.9km az=65.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**28.71**	**164**	P		P	P	21 54 20.8	+0.3
	0.6nm,0.3s,baz=344,slow=8.9,SNR=17								
ASAR	**Alice Springs**	**32.16**	**166**	P		P	P	21 54 50.4	-0.6
	0.3nm,0.6s,baz=345,slow=6.9,SNR=4.6								
MKAR	**Makanchi Array**	**53.89**	**324**	P		P	P	21 57 46.4	0.0
	0.2nm,0.4s,baz=141,slow=7.1,SNR=3.3

MK31 ⇑Lg Lg 21 59 44.5
5.1nm,0.6s,baz=0.0,slow=0.1,SNR=6.2

JMA 10 21:58:30.1±0.2, 38.06N×143.27E, h35km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.56**	**285**	P	Pn	21 58 56.5	+1.1
JIO				*eS*	Sn	21 59 15.5	+1.1
OFUJ	**Ofunato**	**1.62**	**310**	P	Pn	21 58 57.2	+1.1
OFUJ				*eS*	Sn	21 59 17.0	+1.3
JMK	**Ichinoseki**	**1.84**	**300**	P	Pn	21 59 00.7	+1.6
JMK				*eS*	Sn	21 59 23.0	+1.8
JMM	**Marumori**	**1.97**	**265**	P	Pn	21 59 01.9	+1.0
JMM				*eS*	Sn	21 59 25.1	+0.7
JFK	**Kawauchi**	**2.02**	**251**	P	Pn	21 59 02.1	+0.4
JOM	**Ohasama**	**2.09**	**313**	P	Pn	21 59 04.3	+1.6
JOM				S	Sn	21 59 29.6	+2.1
JFT	**Otama**	**2.39**	**258**	P	Pn	21 59 08.3	+1.6
JFT				*eS*	Sn	21 59 36.9	+2.2
JYK	**Kaneyama**	**2.44**	**291**	P	Pn	21 59 09.7	+2.3
JYK				*eS*	Sn	21 59 39.6	+3.6
JANG	**Nango**	**2.68**	**330**	P	Pn	21 59 13.5	+2.7
JANG				*eS*	Sn	21 59 45.6	+3.6
JAG	**Ashikaga**	**3.46**	**243**	P	Pn	21 59 22.3	+0.9
JOT	**Ohata**	**3.73**	**333**	P	Pn	21 59 28.2	+3.0
JRY	**Ryogami san**	**4.05**	**241**	P	Pn	21 59 30.4	+0.8
JRY				*eS*	Sn	22 00 14.5	-1.2

NIED ***10*** *22:35:00, 36.90N×141.50E, h5km, Mw3.7 Best double couple: M0≈4.62000×10¹⁴ NP1:φs39.00000°, δ37.00000°, λ-64.00000°. NP2:φs188.00000°, δ57.00000°, λ-108.00000°.*

ISCJB ***10*** *22:35:39.2±1.4, 36.89N±0.03×141.51E±0.05, h10km±8km, mb3.5/6, Error ellipse: s-maj=7.1km s-min=5.6km az=9.4*

IDC ***10*** *22:35:39.8±1.2, 36.88N×141.31E, h0km, mb3.5/6, mb1 3.6/8, mb1mx3.5/40, mbtmp3.5/8, ML3.0/2, MS2.7/2, Ms1 2.7/2, ms1mx2.3/39, Error ellipse: s-maj=29.4km s-min=21.0km az=92.0*

JMA ***10*** *22:35:40.6±0.1, 36.90N×141.46E, h30km±1km, M3.5*

ISC 10 22:35:40.2±1.9, 36.92N±0.04×141.48E±0.07, h6km±10km, n27, σ1§24/29, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.58**	**288**	P	**Pg**	**22 35 51.6**	**+0.3**
ONAJ				S	**Sg**	**22 35 59.1**	**+0.2**
JFK	**Kawauchi**	**0.66**	**313**	P	**Pg**	**22 36 03.2**	**+0.3**
JFK				S	**Sg**	**22 36 02.2**	**+0.7**
JHO	**Hitachi**	**0.80**	**247**	P	**Pg**	**22 35 54.9**	**-0.6**
JHO				S	**Sg**	**22 36 06.2**	**+0.4**
JMM	**Marumori**	**1.09**	**330**	P	**Pg**	**22 36 00.4**	**-0.8**
JMM				S	**Sg**	**22 36 14.6**	**-0.7**
JFT	**Otama**	**1.09**	**303**	P	**Pg**	**22 36 00.7**	**-0.5**
JFT				S	**Sg**	**22 36 14.5**	**-0.8**
JFY	**Yanaizu**	**1.50**	**289**	P	**Pn**	**22 36 07.1**	**-0.6**
JFY				S	**Sn**	**22 36 26.0**	**-1.6**
JIO	**Ouri**	**1.54**	**356**	P	**Pn**	**22 36 07.3**	**-0.8**
JIO				S	**Sn**	**22 36 26.6**	**-1.8**
JOU	**Okura**	**1.58**	**336**	P	**Pn**	**22 36 09.0**	**+0.2**
JAG	**Ashikaga**	**1.71**	**254**	P	**Pn**	**22 36 09.0**	**-1.5**
MJAR	**Matsushiro Arr**	**2.66**	**263**	Pn	**Pn**	**22 36 22.7**	**-0.9**
MJAR	1.7nm,0.3s,baz=84,slow=16,SNR=15			Sn	**Sn**	**22 36 57.0**	**+0.9**
MAT	**Matsushiro**	**2.66**	**263**	P	**Pn**	**22 36 23.8**	**+0.2**
MAT	2.1nm,0.3s,baz=91,slow=9.3,SNR=7.3			S	**Sn**	**22 36 55.9**	**-0.3**
JHJ	**Hachijo jima 2**	**4.04**	**201**	Pn	**Pn**	**22 36 42.2**	**-0.3**
JHJ	5.0nm,0.3s,baz=108,slow=20,SNR=3.8			Sn	**Sn**	**22 37 29.1**	**-1.1**
JNU	**Nakatsue**	**9.49**	**250**	LR	LR	22 41 33.6	
USRK	**Ussuriysk Ar.**	**10.24**	**318**	Pn	**Pn**	**22 38 11.6**	**+3.9**
KSRS	**Korea Array**	**10.83**	**277**	LR	LR	22 42 23.2	
SONM	**Songino Array**	**27.89**	**304**	P	**P**	**22 41 29.5**	**-1.5**
H11N2	**WAKE ISLAND Hy 28.04**	**121**		T	T	23 10 51.3	
H11N1	**WAKE ISLAND Hy 28.05**	**121**		T	T	23 10 56.4	
H11N3	**WAKE ISLAND Hy 28.06**	**121**		T	T	23 10 57.2	
H11S1	**WAKE ISLAND Hy 28.75**	**123**		T	T	23 11 45.5	
H11S3	**WAKE ISLAND Hy 28.75**	**123**		T	T	23 11 47.8	
H11S2	**WAKE ISLAND Hy 28.77**	**123**		T	T	23 11 47.9	
ZALV	**Zalesovo Beam**	**42.03**	**312**	P	**P**	**22 43 31.1**	**-1.1**
MKAR	**Makanchi Array**	**44.23**	**302**	P	**P**	**22 43 49.9**	**-0.2**
ILAR	**Eielson Array**	**49.56**	**32**	P	**P**	**22 44 33.0**	**+1.4**
WRA	**Warramunga Arr**	**56.96**	**188**	P	**P**	**22 45 26.0**	**-0.5**
BRTR	**Keskin Array B**	**78.97**	**312**	P	**P**	**22 47 46.5**	**+1.4**

IDC 10 22:37:41.6±1.4, 32.64S×178.27W, h0km, mb4.2/3, mb1 4.4/5, mb1mx4.0/30, mbtmp4.3/5, ML4.3/2, Error ellipse: s-maj=36.6km s-min=26.2km az=119.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**3.39**	**5**	Pn	Pn	22 38 36.9	+1.1
URZ	**Urewera**	**6.76**	**213**	Pn	Pn	22 39 21.7	-0.4
URZ	3.2nm,0.3s,baz=251,slow=3.9,SNR=9.6			Sn	Sn	22 40 41.6	+1.8
CTA	**Charters Tower**	**34.00**	**283**	P	P	22 44 28.1	+0.8
ASAR	**Alice Springs**	**42.81**	**269**	P	P	22 45 41.0	-0.4
WRA	**Warramunga Arr**	**44.00**	**275**	P	P	22 45 50.6	-0.4
MKAR	**Makanchi Array**	**119.02**	**309**	PKP	PKPdf	22 56 33.4	+1.4
HFS	**Hagfors**	**151.38**	**347**	PKPbc	PKPbc	22 57 35.0	-1.6
BRTR	**Keskin Array B**	**153.39**	**294**	PKPbc	PKPbc	22 57 41.0	-1.0
TORD	**Torodi Ar. Bea**	**160.60**	**180**	PKPab	PKPab	22 58 25.3	0.0

MAN 10 22:45:32, 9.52N×122.04E, h17km, mb4.5, ML3.6, MS3.5, 2C, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.20**	**98**	⇑*iP*	Pn	22 45 49.5	-4.5
SNPH				*i* S	Sb	22 46 05.1	-4.4
RCP	**Roxas**	**2.15**	**19**	⇑*eP*	Pb	22 46 09.3	-1.2

NIED ***10*** *22:51:00, 38.10N×143.90E, h5km, Mw3.8 Best double couple: M0≈5.43000×10¹⁴ NP1:φs28.00000°, δ16.00000°, λ-81.00000°. NP2:φs199.00000°, δ74.00000°, λ-93.00000°.*

IDC ***10*** *22:51:52.6±0.9, 37.95N×144.06E, h0km, mb3.7/8, mb1 3.8/12, mb1mx3.6/43, mbtmp3.8/12, ML3.3/4, MS2.6/2, Ms1 2.6/2, ms1mx2.2/52, Error ellipse: s-maj=24.4km s-min=17.3km az=93.0*

ISCJB ***10*** *22:51:55.9±0.7, 38.09N±0.05×143.93E±0.07, h33km, mb3.8/9, Error ellipse: s-maj=8.7km s-min=5.5km az=41.8*

JMA ***10*** *22:51:55.4±0.2, 38.14N×143.94E, h34km, M3.7*

ISC 10 22:51:57.5±0.9, 38.06N±0.06×144.01E±0.08, h35km, n29, σ1§92/36, mb3.7/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.10**	**300**	P	**Pn**	**22 52 28.6**	**-1.5**
JIO	**Ouri**	**2.13**	**281**	P	**Pn**	**22 52 29.0**	**-1.5**
JIO				S	**Sn**	**22 52 53.4**	**-2.3**
MIYJ	**Miyakonagasawa**	**2.28**	**312**	P	**Pn**	**22 52 30.6**	**-2.0**
JMK	**Ichinoseki**	**2.36**	**293**	P	**Pn**	**22 52 32.4**	**-1.3**
JOM	**Ohasama**	**2.55**	**304**	P	**Pn**	**22 52 35.6**	**-0.7**
JFT	**Otama**	**2.96**	**261**	P	**Pn**	**22 52 41.5**	**-0.5**
JFT				S	**Sn**	**22 53 14.6**	**-1.6**
JYK	**Kaneyama**	**2.99**	**288**	P	**Pn**	**22 52 41.7**	**-0.6**
JANG	**Nango**	**3.01**	**321**	P	**Pn**	**22 52 40.8**	**-1.9**
JAW	**Awa shima**	**3.77**	**277**	P	**Pn**	**22 52 52.8**	**-0.2**
JOT	**Ohata**	**4.03**	**326**	P	**Pn**	**22 52 56.1**	**-0.5**
JNBK	**Urakawa-nobuka**	**4.32**	**348**	P	**Pn**	**22 52 59.9**	**-0.8**
JNBK				S	**Sn**	**22 53 47.3**	**-2.5**
JKB	**Kayabe**	**4.45**	**330**	P	**Pn**	**22 53 02.2**	**-0.2**
JRY	**Ryogami san**	**4.57**	**245**	P	**Pn**	**22 53 03.1**	**-1.0**
JRY				*eS*	**Sn**	**22 53 53.1**	**-2.8**
JCH	**Churui**	**4.57**	**354**	P	**Pn**	**22 53 02.2**	**-1.9**
JCH				*eS*	**Sn**	**22 53 51.9**	**-4.1**
MJAR	**Matsushiro Arr**	**4.87**	**254**	Pn	**Pn**	**22 53 08.0**	**-0.2**
MJAR	2.3nm,0.3s,baz=74,slow=11,SNR=16			LR	LR	22 55 32.9	
MAT	**Matsushiro**	**4.87**	**254**	P	**Pn**	**22 53 08.6**	**+0.4**
MAT	comp=Z,31nm,18.6s,baz=60,slow=45			*eS*	**Sn**	**22 54 03.3**	**0.0**
JHJ	**Hachijo jima 2**	**6.01**	**216**	Pn	**Pn**	**22 53 21.2**	**-2.7**
JHJ	9.1nm,0.3s,baz=75,slow=20,SNR=4.1			Sn	**Sn**	**22 54 25.2**	**-6.3**
ASAJ	**Asahikawa**	**6.14**	**350**	Sn	**Sn**	**22 54 33.1**	**-1.6**
USRK	**Ussuriysk Ar.**	**10.94**	**308**	Pn	**Pn**	**22 54 32.5**	**+1.0**
USRK	1.4nm,0.3s,baz=53,slow=20,SNR=3.4			LR	LR	22 58 30.6	
KSRS	**Korea Array**	**12.75**	**272**	Pn	**Pn**	**22 54 57.3**	**+1.1**
SEY	**Seymchan**	**25.42**	**9**	P	**P**	**22 57 22.6**	**+1.1**
SONM	**Songino Array**	**28.96**	**302**	P	**P**	**22 57 54.9**	**+1.4**
ZALV	**Zalesovo Beam**	**42.76**	**312**	P	**P**	**22 59 52.0**	**+0.8**
MKAR	**Makanchi Array**	**45.33**	**302**	P	**P**	**23 00 12.5**	**+0.6**
ILAR	**Eielson Array**	**47.52**	**33**	P	**P**	**23 00 30.3**	**+1.4**
WRA	**Warramunga Arr**	**58.41**	**191**	P	**P**	**23 01 49.2**	**-0.3**
ASAR	**Alice Springs**	**62.13**	**190**	P	**P**	**23 02 14.8**	**-0.2**
HFS	**Hagfors**	**73.98**	**337**	P	**P**	**23 03 30.3**	**+1.3**
AKASG	**Malin Array Be**	**74.73**	**323**	P	**P**	**23 03 34.3**	**+0.9**

IDC ***10*** *22:54:19.3±0.9, 38.33N×1.09W, h0km, mb3.4/7, mb1 3.5/13, mb1mx3.4/45, mbtmp3.4/13, ML3.5/6, MS2.8/6, Ms1 2.8/6, ms1mx2.6/32, Error ellipse: s-maj=18.8km s-min=14.4km az=19.0*

ISCJB ***10*** *22:54:19.1±0.3, 38.45N±0.01×1.24W±0.01, h6km±2km, mb3.4/7, MS2.7/3, Error ellipse: s-maj=2.6km s-min=1.6km az=155.4*

INMG ***10*** *22:54:20.5±2.6, 38.38N×0.88W, h24km±4km, MD4.2, ML4.0, Error ellipse: s-maj=5.8km s-min=3.9km az=98.0*

CSEM ***10*** *22:54:20.7±0.1, 38.36N×1.13W, h10km, ML4.4/32, Error ellipse: s-maj=2.3km s-min=1.4km az=144.0*

IGIL ***10*** *22:54:21.4, 38.35N×1.03W, h11km, ML3.0*

MDD ***10*** *22:54:21.7±0.2, 38.34N×1.03W, h11km, mbLg3.8/80, Error ellipse: s-maj=2.8km s-min=1.8km az=132.0, PRXIMO*

MDD EMS: IV INTENSIDAD MAXIMA.

STR ***10*** *22:54:22.6±0.2, 38.35N×0.97W, h5km, Ml3.8, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

LDG ***10*** *22:54:22.8±0.1, 38.34N×1.10W, h11km, Md3.6/3, Ml3.9/27, Error ellipse: s-maj=2.1km s-min=1.2km az=141.0*

ISC 10 22:54:19.9±1.0, 38.36N±0.02×1.10W±0.02, h10km±7km, n346, σ1§63/514, mb3.5/7, MS2.6/3, 18C-16D, Spain

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ETOB	**Tobarra**	**0.46**	**309**	⇑Pg	**Pb**	**22 54 31.0**	**+1.0**
ETOB	573nm,0.2s,SNR=18 3µm,0.3s,SNR=26			Lg	Lg	22 54 37.7	
ETOB	**Tobarra**	**0.46**	**309**	Pg	**Pb**	**22 54 31.0**	**+1.0**
ETOB	573nm,0.2s,SNR=18 3µm,0.3s,SNR=26			Lg	Lg	22 54 37.7	
EMUR	**La Murta**	**0.53**	**192**	⇓Pg	**Pb**	**22 54 30.7**	**-0.5**
EMUR	699nm,0.3s,SNR=18 8µm,0.4s			Lg	Lg	22 54 39.3	
EMUR	**La Murta**	**0.53**	**192**	Pg	**Pb**	**22 54 30.7**	**-0.5**
EMUR	699nm,0.3s,SNR=18 8µm,0.4s			Lg	Lg	22 54 39.3	
AFON	**Font Roja**	**0.54**	**55**	⇑Pg	**Pg**	**22 54 30.6**	**+0.3**
AFON	394nm,0.7s,SNR=18 3µm,0.6s			Lg	Lg	22 54 37.3	
AFON	**Font Roja**	**0.54**	**55**	Pg	**Pg**	**22 54 30.6**	**+0.3**
AFON	394nm,0.7s,SNR=18 3µm,0.6s			Lg	Lg	22 54 37.3	
CART	**Cartagena**	**0.77**	**174**	⇓Pg	**Pb**	**22 54 35.1**	**-0.2**
CART				Lg	Lg	22 54 47.5	
CART	**Cartagena**	**0.77**	**174**	Pg	**Pb**	**22 54 35.1**	**-0.2**
CART				*eS*	**Sn**	**22 54 47.5**	**-0.9**
EVIA	**Vianos**	**1.14**	**285**	⇓Pg	**Pn**	**22 54 42.8**	**+0.9**
EVIA	62nm,0.2s,SNR=18 206nm,0.2s,SNR=7.9			Lg	Lg	22 54 59.4	
EVIA	**Vianos**	**1.14**	**285**	Pg	**Pn**	**22 54 42.8**	**+0.9**
EVIA	62nm,0.2s,SNR=18 206nm,0.2s,SNR=7.9			Lg	Lg	22 54 59.4	
SESP	**Santiago Espad**	**1.16**	**259**	⇑Pg	**Pn**	**22 54 43.6**	**+1.3**
SESP	164nm,0.2s,SNR=18 5µm,0.5s,SNR=7.9			Lg	Lg	22 55 00.3	
SESP	**Santiago Espad**	**1.16**	**259**	Pg	**Pn**	**22 54 43.6**	**+1.3**
SESP	164nm,0.2s,SNR=18 5µm,0.5s,SNR=7.9			Lg	Lg	22 55 00.3	
ENIJ	**Nijar**	**1.64**	**213**	⇓Pn	**Pn**	**22 54 48.7**	**0.0**
ENIJ	52nm,0.3s,SNR=18 41nm,0.3s,SNR=7.9			Pg	**Pg**	**22 54 51.8**	**+0.5**
ENIJ	858nm,0.5s,SNR=7.9			Lg	Lg	22 55 14.2	
ENIJ	**Nijar**	**1.64**	**213**	Pn	**Pn**	**22 54 48.7**	**0.0**
EQES	**Quesada**	**1.65**	**251**	⇓Pn	**Pg**	**22 54 50.9**	**-0.7**
EQES	52nm,0.3s,SNR=18 20nm,0.1s,SNR=18			Pg	**Pb**	**22 54 53.0**	**+2.6**
EQES	447nm,0.4s,SNR=7.9 5µm,0.6s,SNR=22			Lg	Lg	22 55 15.2	
EQES	**Quesada**	**1.65**	**251**	Pn	**Pg**	**22 54 50.9**	**-0.7**
GORA	**Gorafe**	**1.77**	**241**	Pn	**Pg**	**22 54 53.2**	**-0.6**
GORA	30nm,0.2s,SNR=7.9 1µm,0.6s,SNR=7.9			Pg	**Pb**	**22 54 55.3**	**+2.9**
GORA	4µm,0.5s,SNR=7.9			Lg	Lg	22 55 19.5	
GORA	**Gorafe**	**1.77**	**241**	Pn	**Pg**	**22 54 53.2**	**-0.6**
EIBI	**Ibiza**	**2.02**	**70**	Pn	**Pn**	**22 54 53.0**	**-1.0**
EIBI	24nm,0.3s,SNR=60 16nm,0.1s,SNR=7.9			Pg	**Pb**	**22 54 56.1**	**-0.6**
EIBI	41nm,0.2s,SNR=4.0			Sn	**Sn**	**22 55 17.4**	**-2.0**
EIBI	**Ibiza**	**2.02**	**70**	Pn	**Pn**	**22 54 53.0**	**-1.0**
EBER	**Berja**	**2.03**	**225**	Pn	**Pn**	**22 54 55.1**	**+0.8**
EBER	24nm,0.3s,SNR=92 90nm,0.4s,SNR=7.9			Pg	**Pg**	**22 54 59.1**	**+0.2**
EBER	311nm,0.4s,SNR=4.0			Sn	**Sn**	**22 55 19.8**	**0.0**
EBER	1µm,0.6s,SNR=7.9			Lg	Lg	22 55 27.6	
EBER	**Berja**	**2.03**	**225**	Pn	**Pn**	**22 54 55.1**	**+0.8**
EMOS	**Mosqueruela**	**2.06**	**13**	⇑Pn	**Pn**	**22 54 55.1**	**+0.4**
EMOS	20nm,0.3s,SNR=92 2.0nm,0.1s,SNR=18			Pg	**Pg**	**22 54 59.9**	**+0.4**
EMOS	**Mosqueruela**	**2.06**	**13**	Pn	**Pn**	**22 54 55.1**	**+0.4**
EBAN	**Banos Encina**	**2.12**	**266**	Pn	**Pn**	**22 54 56.3**	**+0.9**
EBAN	350nm,0.2s,SNR=7.9 644nm,0.4s,SNR=7.9			Sn	**Sn**	**22 55 22.6**	**+0.8**
EBAN	202nm,0.2s,SNR=7.9			Lg	Lg	22 55 30.6	
EBAN	**Banos Encina**	**2.12**	**266**	Pn	**Pn**	**22 54 56.3**	**+0.9**
EBAN	350nm,0.2s,SNR=7.9 644nm,0.4s,SNR=7.9			Sn	**Sn**	**22 55 22.6**	**+0.8**
EBAN	202nm,0.2s,SNR=7.9			Lg	Lg	22 55 30.6	
EQUE	**Quentar**	**2.18**	**239**	Pn	**Pb**	**22 54 58.2**	**-1.3**
EQUE	85nm,0.4s,SNR=78 27nm,0.2s,SNR=7.9			Pg	**Pg**	**22 55 02.5**	**+0.8**
EQUE	783nm,0.7s,SNR=5.0			Lg	Lg	22 55 31.2	
EQUE	**Quentar**	**2.18**	**239**	Pn	**Pb**	**22 54 58.2**	**-1.3**
SELV	**Sierra Elvira**	**2.36**	**243**	Pn	**Pb**	**22 55 00.4**	**-2.1**
SELV	4.1nm,0.3s,SNR=7.9 29nm,0.4s,SNR=7.9			Pg	**Pg**	**22 55 05.0**	**-0.2**
SELV	873nm,0.9s,SNR=7.9			Lg	Lg	22 55 37.5	
SELV	**Sierra Elvira**	**2.36**	**243**	Pn	**Pb**	**22 55 00.4**	**-2.1**
SELV	**Sierra Elvira**	**2.36**	**243**	Pg	**Pg**	**22 55 05.0**	**-0.2**
SELV	4.1nm,0.3s,SNR=7.9 29nm,0.4s,SNR=7.9 873nm,0.9s,SNR=7.9			Lg	Lg	22 55 37.5	
ESDC	**Sonseca Array**	**2.59**	**301**	Pn	**Pn**	**22 55 02.0**	**+0.1**
ESDC	9.3nm,0.3s,baz=116,slow=14,SNR=93 79nm,0.3s,baz=117,slow=16,SNR=126			Pg	**Pg**	**22 55 09.9**	**+0.4**
ESDC	161nm,0.3s,baz=118,slow=29,SNR=14			Lg	Lg	22 55 43.0	
ESDC	comp=Z,87nm,21.6s,baz=180,slow=35			LR	LR	22 55 50.8	
ESDC	**Sonseca Array**	**2.59**	**301**	⇓Pn	**Pn**	**22 55 02.4**	**+0.5**
ESDC	6.5nm,0.2s,baz=114,slow=14,SNR=18 35nm,0.3s,baz=118,slow=17,SNR=7.2			Pg	**Pg**	**22 55 10.2**	**+0.6**
ESDC	351nm,0.5s,baz=124,slow=30,SNR=22			Lg	Lg	22 55 44.6	
ESDC	**Sonseca Array**	**2.59**	**301**	Pn	**Pn**	**22 55 02.4**	**+0.5**
ESDC	**Sonseca Array**	**2.59**	**301**	Pg	**Pg**	**22 55 10.2**	**+0.6**
ESDC	6.5nm,0.2s,SNR=18 35nm,0.3s,SNR=7.2 351nm,0.5s,SNR=22			Lg	Lg	22 55 44.6	
EGOR	**Sierra Gorda,**	**2.69**	**243**	⇓Pn	**Pb**	**22 55 05.5**	**-2.7**
EGOR	28nm,0.3s,SNR=18 103nm,0.3s,SNR=7.9			Sn	**Sb**	**22 55 39.8**	**-1.5**
EGOR	869nm,0.8s,SNR=7.9			Lg	Lg	22 55 49.0	
EGOR	**Sierra Gorda,**	**2.69**	**243**	Pn	**Pb**	**22 55 05.5**	**-2.7**
EGOR	28nm,0.3s,SNR=18 869nm,0.8s,SNR=7.9			Lg	Lg	22 55 49.0	
OKGL	**Djebel Kef Gue**	**2.70**	**148**	Pn	**Pn**	**22 55 03.0**	**-0.3**
OKGL	10nm,0.2s,SNR=7.9 289nm,0.5s,SNR=7.9			Pg	**Pb**	**22 55 08.9**	**+0.7**
OKGL	203nm,0.4s,SNR=7.9			Sn	**Sn**	**22 55 35.2**	**-0.8**
OKGL	950nm,0.8s,SNR=7.9			Lg	Lg	22 55 45.8	
OKGL	**Djebel Kef Gue**	**2.70**	**148**	Pn	**Pn**	**22 55 03.0**	**-0.3**
OKGL	10nm,0.2s,SNR=7.9 203nm,0.4s,SNR=7.9			Sn	**Sn**	**22 55 35.2**	**-0.8**
OKGL	950nm,0.8s,SNR=7.9			Lg	Lg	22 55 45.8	
EADA	**Adamuz**	**2.74**	**267**	⇓Pn	**Pn**	**22 55 04.3**	**+0.4**
EADA	11nm,0.1s,SNR=18 70nm,0.3s,SNR=7.9			Pg	**Pg**	**22 55 13.2**	**+0.7**
EADA	61nm,0.4s,SNR=5.3			Sn	**Sn**	**22 55 37.1**	**0.0**
EADA	249nm,0.4s,SNR=16			Lg	Lg	22 55 49.0	
EADA	**Adamuz**	**2.74**	**267**	Pn	**Pn**	**22 55 04.3**	**+0.4**
EADA	**Adamuz**	**2.74**	**267**	Pg	**Pg**	**22 55 13.2**	**+0.7**
EADA	11nm,0.1s,SNR=18 70nm,0.3s,SNR=7.9			Sn	**Sn**	**22 55 37.1**	**0.0**
EADA	61nm,0.4s,SNR=5.3			Lg	Lg	22 55 49.0	
EBR	**Ebro Roquetas**	**2.75**	**26**	Pn	**Pn**	**22 55 04.7**	**+0.7**
EBR	**Ebro Roquetas**	**2.75**	**26**	Pn	**Pn**	**22 55 04.7**	**+0.7**
ERTA	**Horta de San J**	**2.82**	**23**	⇑Pn	**Pn**	**22 55 05.9**	**+0.9**
ERTA	12nm,0.2s,SNR=7.9 12nm,0.2s,SNR=7.9 32nm,0.3s,SNR=18			Sn	**Sn**	**22 55 37.9**	**-1.2**
ERTA	33nm,0.4s,SNR=6.0			Lg	Lg	22 55 49.4	
ERTA	**Horta de San J**	**2.82**	**23**	Pn	**Pn**	**22 55 05.9**	**+0.9**
ERTA	242nm,0.7s,SNR=7.9 32nm,0.3s,SNR=18			Sn	**Sn**	**22 55 37.9**	**-1.2**
ERTA	33nm,0.4s,SNR=6.0			Lg	Lg	22 55 49.4	
EALB	**Alboran**	**2.86**	**213**	Pn	**Pn**	**22 55 07.1**	**+1.5**
EALB	**Alboran**	**2.86**	**213**	Pn	**Pn**	**22 55 07.1**	**+1.5**
EMAL	**Malaga-Limoner**	**3.09**	**240**	⇓Pn	**Pn**	**22 55 11.2**	**+2.6**
EMAL	0.8nm,0.2s,SNR=7.9			Lg	Lg	22 56 03.3	
EMAL	**Malaga-Limoner**	**3.09**	**240**	*i* P	**Pn**	**22 55 11.2**	**+2.6**
EMAL				Lg	Lg	22 56 03.3	
GUD	**Guadarrama**	**3.29**	**315**	Pn	**Pn**	**22 55 12.5**	**+1.0**
GUD	1.3nm,0.2s,SNR=7.9 11nm,0.4s,SNR=7.9			Pg	**Pg**	**22 55 21.4**	**-1.5**
GUD	318nm,0.6s,SNR=6.3			Lg	Lg	22 56 05.7	
GUD	**Guadarrama**	**3.29**	**315**	Pn	**Pn**	**22 55 12.5**	**+1.0**
ETOS	**Mallorca**	**3.36**	**64**	⇑Pn	**Pn**	**22 55 12.9**	**+0.6**
ETOS	1.3nm,0.2s,SNR=7.9 84nm,0.4s,SNR=18 45nm,0.6s,SNR=4.0			Sn	**Sn**	**22 55 49.6**	**-2.7**
ETOS	54nm,0.6s,SNR=7.9			Lg	Lg	22 56 06.0	
ETOS	**Mallorca**	**3.36**	**64**	Pn	**Pn**	**22 55 12.9**	**+0.6**
ETOS	84nm,0.4s,SNR=18 54nm,0.6s,SNR=7.9			Lg	Lg	22 56 06.0	
ESAC	**San Caprasio**	**3.40**	**8**	⇓Pn	**Pn**	**22 55 14.6**	**+1.7**
ESAC	39nm,0.3s,SNR=18 122nm,0.4s,SNR=7.9			Pg	**Pg**	**22 55 23.0**	**-2.0**
ESAC	793nm,0.4s,SNR=7.9			Lg	Lg	22 56 08.8	
ESAC	**San Caprasio**	**3.40**	**8**	Pn	**Pn**	**22 55 14.6**	**+1.7**
ESAC	39nm,0.3s,SNR=18 793nm,0.4s,SNR=7.9			Lg	Lg	22 56 08.8	
ECAB	**El Cabril**	**3.41**	**267**	⇓Pn	**Pn**	**22 55 13.4**	**+0.3**
ECAB	26nm,0.3s,SNR=18 59nm,0.3s,SNR=6.8			Sn	**Sn**	**22 55 53.1**	**-0.6**
ECAB	377nm,0.6s,SNR=11			Lg	Lg	22 56 10.4	
ECAB	**El Cabril**	**3.41**	**267**	Pn	**Pn**	**22 55 13.4**	**+0.3**
ECAB	26nm,0.3s,SNR=18 59nm,0.3s,SNR=6.8			Sn	**Sn**	**22 55 53.1**	**-0.6**
ECAB	377nm,0.6s,SNR=11			Lg	Lg	22 56 10.4	
EMIJ	**Mijas**	**3.43**	**240**	⇑Pn	**Pn**	**22 55 15.2**	**+1.9**
EMIJ	43nm,0.5s,SNR=18						

EMIJ Pg **Pg** **22 55 24.0 -1.5**
62nm,0.6s,SNR=7.9
EMIJ Lg Lg 22 56 11.5
256nm,0.7s,SNR=5.0
EMIJ Mijas 3.43 240 Pn **Pn** **22 55 15.2 +1.9**
43nm,0.5s,SNR=18
EPOB Poblet 3.43 29 ⇑Pn **Pn** **22 55 13.9 +0.5**
25nm,0.2s,SNR=18
EPOB Sn **Sn** **22 55 52.5 -1.7**
5.5nm,0.2s,SNR=7.9
EPOB Lg Lg 22 56 08.3
85nm,0.8s,SNR=7.9
EPOB Poblet 3.43 29 Pn **Pn** **22 55 13.9 +0.5**
25nm,0.2s,SNR=18
EPOB Lg Lg 22 56 08.3
85nm,0.8s,SNR=7.9
EJIF Jimena Fronter 3.96 243 Pn **Pn** **22 55 22.6 +1.9**
3.7nm,0.2s,SNR=7.9
EJIF Pg **Pg** **22 55 34.1 -1.7**
73nm,0.6s,SNR=7.9
EJIF Lg Lg 22 56 26.2
143nm,0.6s,SNR=7.9
EJIF Jimena Fronter 3.96 243 Pn **Pn** **22 55 22.6 +1.9**
3.7nm,0.2s,SNR=7.9
ESPR Espera 4.06 250 ⇑Pn **Pn** **22 55 23.4 +1.4**
3.2nm,0.1s,SNR=18
ESPR Sn **Sn** **22 56 09.0 -0.5**
49nm,0.4s,SNR=7.9
ESPR Lg Lg 22 56 31.4
222nm,0.7s,SNR=7.9
ESPR Espera 4.06 250 Pn **Pn** **22 55 23.4 +1.4**
3.2nm,0.1s,SNR=18
ESPR Sn **Sn** **22 56 09.0 -0.5**
49nm,0.4s,SNR=7.9
ESPR Lg Lg 22 56 31.4
222nm,0.7s,SNR=7.9
YSOS Sos del Rey Ca 4.09 360 Pn **Pn** **22 55 24.3 +1.8**
2.2nm,0.3s,SNR=7.9
YSOS Pg **Pb** **22 55 34.7 +2.6**
0.8nm,0.4s,SNR=7.9
YSOS Lg Lg 22 56 30.2
11nm,0.2s,SNR=7.9
YSOS Sos del Rey Ca 4.09 360 Pn **Pn** **22 55 24.3 +1.8**
2.2nm,0.3s,SNR=7.9
YSOS Lg Lg 22 56 30.2
11nm,0.2s,SNR=7.9
ECEU Ceuta 4.21 236 Pn **Pn** **22 55 25.4 +1.3**
3.4nm,0.3s,SNR=12
ECEU Ceuta 4.21 236 Pn **Pn** **22 55 25.4 +1.3**
3.4nm,0.3s,SNR=12
YUND Undues 4.22 360 Pn **Pn** **22 55 26.0 +1.8**
2.4nm,0.2s,SNR=7.9
YUND Pg **Pb** **22 55 33.6 -0.6**
9.2nm,0.2s,SNR=7.9
YUND Lg Lg 22 56 34.0
5.5nm,0.2s,SNR=7.9
YUND Undues 4.22 360 Pn **Pn** **22 55 26.0 +1.8**
2.4nm,0.2s,SNR=7.9
YUND Lg Lg 22 56 34.0
5.5nm,0.2s,SNR=7.9
YBER Berdun 4.22 2 Pn **Pn** **22 55 25.4 +1.1**
0.6nm,0.3s,SNR=7.9
YBER Pg **Pg** **22 55 43.2 +2.4**
5.3nm,0.2s,SNR=7.9
YBER Lg Lg 22 56 34.0
4.9nm,0.2s,SNR=7.9
YBER Berdun 4.22 2 Pn **Pn** **22 55 25.4 +1.1**
0.6nm,0.3s,SNR=7.9
YBER Berdun 4.22 2 Pg **Pg** **22 55 43.2 +2.4**
5.3nm,0.2s,SNR=7.9
YBER Lg Lg 22 56 34.0
4.9nm,0.2s,SNR=7.9
YMUS Pe˜a Musera 4.22 1 Pn **Pn** **22 55 26.0 +1.7**
0.6nm,0.1s,SNR=7.9
YMUS Pg **Pg** **22 55 41.7 +0.9**
3.4nm,0.2s,SNR=7.9
YMUS Lg Lg 22 56 34.0
3.7nm,0.2s,SNR=7.9
YMUS Pe˜a Musera 4.22 1 Pn **Pn** **22 55 26.0 +1.7**
0.6nm,0.1s,SNR=7.9
EPLA Plasencia 4.23 295 ⇑Pn **Pn** **22 55 24.9 +0.6**
2.2nm,0.2s,SNR=18
EPLA Pg **Pg** **22 55 38.9 -2.0**
6.1nm,0.2s,SNR=7.9
EPLA Lg Lg 22 56 35.3
432nm,0.8s,SNR=7.9
EPLA Plasencia 4.23 295 Pn **Pn** **22 55 24.9 +0.6**
2.2nm,0.2s,SNR=18
YSIG Sigues 4.28 1 Pn **Pn** **22 55 26.8 +1.7**
1.1nm,0.2s,SNR=7.9
YSIG Pg **Pg** **22 55 38.8 -3.0**
1.3nm,0.2s,SNR=7.9
YSIG Lg Lg 22 56 36.6
2.5nm,0.3s,SNR=7.9
YSIG Sigues 4.28 1 Pn **Pn** **22 55 26.8 +1.7**
1.1nm,0.2s,SNR=7.9
YSIG Lg Lg 22 56 36.6
2.5nm,0.3s,SNR=7.9
YNAR Nardues-Alduna 4.28 357 Pn **Pn** **22 55 26.9 +1.8**
6.2nm,0.2s,SNR=7.9
YNAR Nardues-Alduna 4.28 357 Pn **Pn** **22 55 26.9 +1.8**
6.2nm,0.2s,SNR=7.9
YARA Arangoiti 4.29 359 Pn **Pn** **22 55 26.4 +1.2**
1.2nm,0.1s,SNR=7.9
YARA Arangoiti 4.29 359 Pn **Pn** **22 55 26.4 +1.2**
1.2nm,0.1s,SNR=7.9
CFON Fontmartina 4.35 37 ⇓Pn **Pn** **22 55 26.4 +0.3**
15nm,0.2s,SNR=18
CFON Fontmartina 4.35 37 Pn **Pn** **22 55 26.4 +0.3**
15nm,0.2s,SNR=18
CSOR Sort 4.36 22 ⇑Pn **Pn** **22 55 27.3 +1.0**
20nm,0.5s,SNR=18
CSOR Lg Lg 22 56 36.8
48nm,0.5s,SNR=7.9
CSOR Sort 4.36 22 Pn **Pn** **22 55 27.3 +1.0**
20nm,0.5s,SNR=18
CSOR Lg Lg 22 56 36.8
48nm,0.5s,SNR=7.9
YASP Aspurt 4.37 359 Pn **Pn** **22 55 27.8 +1.5**
1.6nm,0.1s,SNR=7.9
YASP Aspurt 4.37 359 Pn **Pn** **22 55 27.8 +1.5**
1.6nm,0.1s,SNR=7.9
IUNC Unciti 4.41 356 Pn **Pn** **22 55 28.9 +2.1**
5.9nm,0.2s,SNR=7.9
IUNC Unciti 4.41 356 Pn **Pn** **22 55 28.9 +2.1**
5.9nm,0.2s,SNR=7.9
ECHI Chisagues Biel 4.42 12 Pn **Pn** **22 55 27.4 +0.4**
0.9nm,0.1s,SNR=7.9
ECHI Chisagues Biel 4.42 12 Pn **Pn** **22 55 27.4 +0.4**
0.9nm,0.1s,SNR=7.9
IEPA Eparoz 4.42 358 Pn **Pn** **22 55 28.5 +1.5**
3.3nm,0.1s,SNR=7.9
IEPA Eparoz 4.42 358 Pn **Pn** **22 55 28.5 +1.5**
3.3nm,0.1s,SNR=7.9
EARA Aranguren 4.43 355 Pn **Pn** **22 55 27.4 +0.4**
1.5nm,0.1s,SNR=5.0
EARA Aranguren 4.43 355 Pn **Pn** **22 55 27.4 +0.4**
1.5nm,0.1s,SNR=5.0
EMIN Mina Concepcio 4.44 264 ⇑Pn **Pn** **22 55 27.3 +0.1**
5.1nm,0.3s,SNR=18
EMIN Sn **Sn** **22 56 17.4 -1.5**
16nm,0.3s,SNR=7.9
EMIN Lg Lg 22 56 41.9
165nm,0.7s,SNR=5.0
EMIN Mina Concepcio 4.44 264 Pn **Pn** **22 55 27.3 +0.1**
5.1nm,0.3s,SNR=18
EMIN Sn **Sn** **22 56 17.4 -1.5**
16nm,0.3s,SNR=7.9
EMIN Lg Lg 22 56 41.9
165nm,0.7s,SNR=5.0
MAHO Mahon 4.45 68 Pn **Pn** **22 55 28.4 +1.1**
MAHO Sn **Sn** **22 56 16.0 -3.0**
MAHO Mahon 4.45 68 *e*P **Pn** **22 55 28.4 +1.1**
MAHO *e*S **Sn** **22 56 16.0 -3.0**
IELO Elcoad 4.48 359 Pn **Pn** **22 55 28.8 +0.9**
1.5nm,0.1s,SNR=7.9
IELO Lg Lg 22 56 43.4
157nm,0.9s,SNR=7.9
IELO Elcoad 4.48 359 Pn **Pn** **22 55 28.8 +0.9**
1.5nm,0.1s,SNR=7.9
IELO Lg Lg 22 56 43.4
157nm,0.9s,SNR=7.9
IZUN Zunzarren 4.51 357 Pn **Pn** **22 55 30.3 +2.1**
3.4nm,0.2s,SNR=7.9
IZUN Zunzarren 4.51 357 Pn **Pn** **22 55 30.3 +2.1**
3.4nm,0.2s,SNR=7.9
EORO Oroz-Betelu 4.54 358 Pn **Pn** **22 55 29.5 +0.9**
3.0nm,0.1s,SNR=7.9

EORO Lg Lg 22 56 44.6
218nm,0.7s,SNR=7.9
EORO Oroz-Betelu 4.54 358 Pn **Pn** **22 55 29.5 +0.9**
3.0nm,0.1s,SNR=7.9
EORO Lg Lg 22 56 44.6
218nm,0.7s,SNR=7.9
ETSF Etsaut 4.56 5 *e*Pn **Pn** **22 55 30.6 +1.7**
ETSF *e*Sg **Sg** **22 56 46.0 -0.2**
258nm,1.1s
ETSF Etsaut 4.56 5 Pn **Pn** **22 55 30.6 +1.7**
ETSF Lg Lg 22 56 46.0
129nm,1.1s
ETSF Etsaut 4.56 5 Pn **Pn** **22 55 30.6 +1.7**
ETSF *e*Sg **Sg** **22 56 46.0 -0.2**
129nm,1.1s
RESF Ens 4.58 13 Pn **Pn** **22 55 30.7 +1.4**
RESF Ens 4.58 13 Pn **Pn** **22 55 30.7 +1.4**
IUSE Utxeti 4.60 356 Pn **Pn** **22 55 31.6 +2.1**
2.2nm,0.2s,SNR=7.9
IUSE Utxeti 4.60 356 Pn **Pn** **22 55 31.6 +2.1**
2.2nm,0.2s,SNR=7.9
VIEF Viey 4.60 10 Pn **Pn** **22 55 30.8 +1.3**
VIEF Viey 4.60 10 Pn **Pn** **22 55 30.8 +1.3**
EBAD Badajoz 4.65 277 Pn **Pn** **22 55 30.5 +0.3**
4.7nm,0.2s,SNR=21
EBAD Pg **Pg** **22 55 45.3 -3.7**
8.9nm,0.3s,SNR=9.3
EBAD Sn **Sn** **22 56 24.1 -0.1**
28nm,0.3s,SNR=11
EBAD Lg Lg 22 56 49.2
404nm,0.5s,SNR=5.7
EBAD Badajoz 4.65 277 Pn **Pn** **22 55 30.5 +0.3**
4.7nm,0.2s,SNR=21
EBAD Sn **Sn** **22 56 24.1 -0.1**
28nm,0.3s,SNR=11
EBAD Lg Lg 22 56 49.2
404nm,0.5s,SNR=5.7
LARF Larrau 4.68 1 Pn **Pn** **22 55 32.2 +1.7**
LARF Larrau 4.68 1 Pn **Pn** **22 55 32.2 +1.7**
PBAR Barrancos 4.68 270 ⇓*e*Pn **Pn** **22 55 30.6 +0.1**
PBAR Sn **Sn** **22 56 24.1 -0.7**
PBAR *e*Sg **Sg** **22 56 49.4 -0.7**
PBAR A A 22 56 57.6
531nm,0.6s
PBAR Barrancos 4.68 270 Pn **Pn** **22 55 30.6 +0.1**
PBAR Sn **Sn** **22 56 24.1 -0.7**
PBAR Lg Lg 22 56 49.4
531nm,0.6s
PBAR Barrancos 4.68 270 Pn **Pn** **22 55 30.6 +0.1**
PBAR Sn **Sn** **22 56 24.1 -0.7**
PBAR *e*Sg **Sg** **22 56 49.4 -0.7**
531nm,0.6s
VALF Valcebollere 4.69 30 Pn **Pn** **22 55 31.8 +1.0**
VALF Valcebollere 4.69 30 Pn **Pn** **22 55 31.8 +1.0**
MELF Melles 4.73 17 Pn **Pn** **22 55 32.2 +0.9**
MELF Melles 4.73 17 Pn **Pn** **22 55 32.2 +0.9**
ATE Arette 4.74 4 Pn **Pn** **22 55 32.7 +1.4**
ATE Arette 4.74 4 Pn **Pn** **22 55 32.7 +1.4**
CLLI Llivia 4.74 29 ⇑Pn **Pn** **22 55 32.5 +1.0**
13nm,0.3s,SNR=18
CLLI Sn **Sn** **22 56 23.4 -3.1**
1.6nm,0.2s,SNR=7.9
CLLI Lg Lg 22 56 50.9
223nm,2.1s,SNR=7.9
CLLI Llivia 4.74 29 Pn **Pn** **22 55 32.5 +1.0**
13nm,0.3s,SNR=18
CLLI Lg Lg 22 56 50.9
223nm,2.1s,SNR=7.9
REYF Montagne du Re 4.74 6 Pn **Pn** **22 55 32.7 +1.3**
REYF Montagne du Re 4.74 6 Pn **Pn** **22 55 32.7 +1.3**
SJPF Ste Jean 4.75 359 *e*Pn **Pn** **22 55 33.6 +2.1**
SJPF *e*Sg **Sg** **22 56 52.7 +0.2**
260nm,1.2s
SJPF Ste Jean 4.75 359 Pn **Pn** **22 55 33.6 +2.1**
SJPF Lg Lg 22 56 52.7
130nm,1.2s
SJPF Ste Jean 4.75 359 Pn **Pn** **22 55 33.6 +2.1**
SJPF *e*Sg **Sg** **22 56 52.7 +0.2**
130nm,1.2s
EPF Esparros 4.80 13 *e*Pn **Pn** **22 55 33.8 +1.6**
EPF *e*Sg **Sg** **22 56 53.3 -0.6**
146nm,0.9s
EPF Esparros 4.80 13 Pn **Pn** **22 55 33.8 +1.6**
EPF Lg Lg 22 56 53.3
73nm,0.9s
EPF Esparros 4.80 13 Pn **Pn** **22 55 33.8 +1.6**
EPF Lg Lg 22 56 53.3
73nm,0.9s
ORDF Ordiarp 4.86 1 Pn **Pn** **22 55 34.3 +1.4**
ORDF Ordiarp 4.86 1 Pn **Pn** **22 55 34.3 +1.4**
EALK Alkurruntz 4.87 356 Pn **Pn** **22 55 35.3 +2.1**
2.5nm,0.2s,SNR=21
EALK Lg Lg 22 56 55.1
426nm,1.1s,SNR=7.9
EALK Alkurruntz 4.87 356 Pn **Pn** **22 55 35.3 +2.1**
2.5nm,0.2s,SNR=21
EALK Lg Lg 22 56 55.1
426nm,1.1s,SNR=7.9
OSSF Osses 4.90 359 Pn **Pn** **22 55 35.4 +1.9**
OSSF Osses 4.90 359 Pn **Pn** **22 55 35.4 +1.9**
PMRV Marv??o 5.03 284 *e*Pn **Pn** **22 55 36.6 +1.3**
PMRV *e*Sg **Sg** **22 57 02.6 +1.4**
PMRV A A 22 57 07.4
201nm,0.6s
PMRV Marv??o 5.03 284 Pn **Pn** **22 55 36.6 +1.3**
PMRV Lg Lg 22 57 02.6
201nm,0.6s
PMRV Marv??o 5.03 284 Pn **Pn** **22 55 36.6 +1.3**
PMRV *e*Sg **Sg** **22 57 02.6 +1.4**
201nm,0.6s
FILF Fillols 5.04 32 Pn **Pn** **22 55 35.5 -0.1**
FILF Sn **Sn** **22 56 36.8 +2.9**
FILF Fillols 5.04 32 Pn **Pn** **22 55 35.5 -0.1**
FILF Sn **Sn** **22 56 36.8 +2.9**
EJON La Jonquera 5.10 35 ⇓Pn **Pn** **22 55 37.1 +0.8**
4.6nm,0.2s,SNR=18
EJON Sn **Sn** **22 56 31.1 -4.1**
1.4nm,0.2s,SNR=7.9
EJON Lg Lg 22 56 59.8
70nm,1.3s,SNR=7.9
EJON La Jonquera 5.10 35 Pn **Pn** **22 55 37.1 +0.8**
4.6nm,0.2s,SNR=18
EJON Lg Lg 22 56 59.8
70nm,1.3s,SNR=7.9
PESTR Estremoz 5.11 278 *e*Pn **Pn** **22 55 36.7 +0.3**
PESTR *e*Sn **Sn** **22 56 34.9 -0.6**
PESTR *e*Sg **Sg** **22 57 02.1 -1.8**
PESTR A A 22 57 14.3
200nm,0.6s
PESTR Estremoz 5.11 278 *e*Pn **Pn** **22 55 36.7 +0.3**
PESTR *e*Sn **Sn** **22 56 34.9 -0.6**
PESTR *e*Sg **Sg** **22 57 02.1 -1.8**
200nm,0.6s
EGRO El Granado 5.11 263 Pn **Pn** **22 55 36.7 +0.3**
13nm,0.4s,SNR=14
EGRO Sn **Sn** **22 56 34.3 -1.2**
21nm,0.4s,SNR=5.9
EGRO Lg Lg 22 57 03.0
366nm,1.2s,SNR=6.4
EGRO El Granado 5.11 263 Pn **Pn** **22 55 36.7 +0.3**
13nm,0.4s,SNR=14
EGRO Sn **Sn** **22 56 34.3 -1.2**
21nm,0.4s,SNR=5.9
EGRO Lg Lg 22 57 03.0
366nm,1.2s,SNR=6.4
SJAF Saint Jean de 5.12 35 Pn **Pn** **22 55 37.2 +0.6**
SJAF Saint Jean de 5.12 35 ⇑Pn **Pn** **22 55 37.0 +0.4**
12nm,0.3s,SNR=18
SJAF Saint Jean de 5.12 35 Pn **Pn** **22 55 37.2 +0.6**
PCBR Castelo Branco 5.18 289 *e*Pn **Pn** **22 55 38.3 +0.9**
PCBR *e*Sn **Sn** **22 56 36.1 -1.0**
PCBR *e*Sg **Sg** **22 57 09.6 +3.5**
PCBR A A 22 57 14.7
96nm,0.6s
PCBR Castelo Branco 5.18 289 Pn **Pn** **22 55 38.3 +0.9**
PCBR Sn **Sn** **22 56 36.1 -1.0**
PCBR Lg Lg 22 57 09.6
48nm,0.6s
PCBR Castelo Branco 5.18 289 Pn **Pn** **22 55 38.3 +0.9**
PCBR Sn **Sn** **22 56 36.1 -1.0**
PCBR *e*Sg **Sg** **22 57 09.6 +3.5**
96nm,0.6s
ELAN Lanestosa 5.18 341 Pn **Pn** **22 55 38.6 +1.1**
2.0nm,0.2s,SNR=38
ELAN Sn **Sn** **22 56 34.2 -3.1**
14nm,0.5s,SNR=7.9
ELAN Lg Lg 22 57 05.3
148nm,1.1s
ELAN Lanestosa 5.18 341 Pn **Pn** **22 55 38.6 +1.1**
2.0nm,0.2s,SNR=38
ELAN Lg Lg 22 57 05.3
148nm,1.1s
PBEJ Beja 5.34 269 *e*Pn **Pn** **22 55 39.8 +0.2**
PBEJ *e*Sn **Sn** **22 56 40.2 -1.0**
PBEJ *e*Sg **Sg** **22 57 09.8 -1.6**
PBEJ A A 22 57 21.1
74nm,0.6s
PBEJ Beja 5.34 269 Pn **Pn** **22 55 39.8 +0.2**
PBEJ Sn **Sn** **22 56 40.2 -1.0**
PBEJ Lg Lg 22 57 09.8
37nm,0.6s
PBEJ Beja 5.34 269 Pn **Pn** **22 55 39.8 +0.2**
PBEJ Sn **Sn** **22 56 40.2 -1.0**
PBEJ *e*Sg **Sg** **22 57 09.8 -1.6**
74nm,0.6s
LRDF Laroque-de-Fa 5.35 30 Pn **Pn** **22 55 40.5 +0.8**
LRDF Laroque-de-Fa 5.35 30 Pn **Pn** **22 55 40.5 +0.8**
MVO Moncorvo 5.36 303 ⇑*e*Pn **Pn** **22 55 40.5 +0.6**
MVO *e*Sn **Sn** **22 56 40.2 -1.5**
MVO *e*Sg **Sg** **22 57 13.1 +1.1**
MVO A A 22 57 28.3
142nm,0.8s
MVO Moncorvo 5.36 303 ⇑Pn **Pn** **22 55 40.5 +0.6**
4.2nm,0.2s,SNR=18
MVO Sn **Sn** **22 56 39.6 -2.1**
4.0nm,0.2s,SNR=7.9
MVO Lg Lg 22 57 11.0
518nm,0.8s,SNR=9.8
MVO Moncorvo 5.36 303 Pn **Pn** **22 55 40.5 +0.6**
4.2nm,0.2s,SNR=18
MVO *e*Sn **Sn** **22 56 40.2 -1.5**
MVO Lg Lg 22 57 11.0
518nm,0.8s,SNR=9.8
MVO *e*Sg **Sg** **22 57 13.1 +1.1**
142nm,0.8s
MTE Manteigas 5.39 294 *e*Pn **Pn** **22 55 41.4 +1.0**
MTE *e*Sn **Sn** **22 56 42.3 -0.3**
MTE *e*Sg **Sg** **22 57 13.6 +0.5**
MTE A A 22 57 24.8
185nm,0.5s
MTE Manteigas 5.39 294 Pn **Pn** **22 55 41.4 +1.0**
MTE Sn **Sn** **22 56 42.3 -0.3**
MTE Lg Lg 22 57 13.6
93nm,0.5s
MTE Manteigas 5.39 294 Pn **Pn** **22 55 41.4 +1.0**
MTE Sn **Sn** **22 56 42.3 -0.3**
MTE *e*Sg **Sg** **22 57 13.6 +0.5**
185nm,0.5s
EVO Evora 5.43 274 *e*Pn **Pn** **22 55 41.6 +0.8**
EVO *e*Sn **Sn** **22 56 42.2 -1.2**
EVO *e*Sg **Sg** **22 57 11.7 -2.5**
EVO A A 22 57 19.4
107nm,0.6s
EVO Evora 5.43 274 Pn **Pn** **22 55 41.6 +0.8**
EVO Sn **Sn** **22 56 42.2 -1.2**
EVO Lg Lg 22 57 11.7
107nm,0.6s
EVO Evora 5.43 274 Pn **Pn** **22 55 41.6 +0.8**
EVO Sn **Sn** **22 56 42.2 -1.2**
EVO Lg Lg 22 57 11.7
107nm,0.6s
PBDV Barranco-do-Ve 5.52 261 *e*Pn **Pn** **22 55 42.3 +0.2**
PBDV *e*Sn **Sn** **22 56 44.8 -0.9**
PBDV *e*Sg **Sg** **22 57 17.5 +0.3**
PBDV A A 22 57 22.6
105nm,0.5s
PBDV Barranco-do-Ve 5.52 261 Pn **Pn** **22 55 42.3 +0.2**
PBDV Sn **Sn** **22 56 44.8 -0.9**
PBDV Lg Lg 22 57 17.5
105nm,0.5s
PBDV Barranco-do-Ve 5.52 261 Pn **Pn** **22 55 42.3 +0.2**
PBDV Sn **Sn** **22 56 44.8 -0.9**
PBDV *e*Sg **Sg** **22 57 17.5 +0.3**
105nm,0.5s
PCVE Castro Verde 5.53 265 *e*Pn **Pn** **22 55 42.7 +0.5**
PCVE *e*Sn **Sn** **22 56 44.2 -1.6**
PCVE *e*Sg **Sg** **22 57 17.2 -0.2**
PCVE A A 22 57 34.1
93nm,0.6s
PCVE Castro Verde 5.53 265 Pn **Pn** **22 55 42.7 +0.5**
PCVE Sn **Sn** **22 56 44.2 -1.6**
PCVE Lg Lg 22 57 17.2
93nm,0.6s
PCVE Castro Verde 5.53 265 Pn **Pn** **22 55 42.7 +0.5**
PCVE Sn **Sn** **22 56 44.2 -1.6**
PCVE *e*Sg **Sg** **22 57 17.2 -0.2**
93nm,0.6s
PBRG Braganca 5.53 310 *e*Pn **Pn** **22 55 42.8 +0.6**
PBRG *e*Sn **Sn** **22 56 44.0 -1.9**
PBRG *e*Sg **Sg** **22 57 16.4 -1.0**
PBRG A A 22 57 24.2
113nm,0.5s
PBRG Braganca 5.53 310 Pn **Pn** **22 55 42.8 +0.6**
PBRG Sn **Sn** **22 56 44.0 -1.9**
PBRG Lg Lg 22 57 16.4
57nm,0.5s
PBRG Braganca 5.53 310 Pn **Pn** **22 55 42.8 +0.6**
PBRG Sn **Sn** **22 56 44.0 -1.9**
PBRG *e*Sg **Sg** **22 57 16.4 -1.0**
113nm,0.5s
MTLF Montolieu 5.58 26 *e*Pn **Pn** **22 55 43.9 +1.0**
MTLF *e*Sn **Sn** **22 56 44.2 -2.8**
14nm,0.5s
MTLF *e*Sg **Sg** **22 57 18.3 -0.6**
66nm,0.9s
MTLF Montolieu 5.58 26 Pn **Pn** **22 55 43.9 +1.0**
MTLF Sn **Sn** **22 56 44.2 -2.8**
6.9nm,0.5s
MTLF Lg Lg 22 57 18.3
33nm,0.9s
MTLF Montolieu 5.58 26 Pn **Pn** **22 55 43.9 +1.0**
MTLF *e*Sg **Sg** **22 57 18.3 -0.6**
33nm,0.9s
ECAL Calabor 5.61 311 Pn **Pn** **22 55 43.7 +0.3**
8.8nm,0.3s,SNR=42
ECAL Lg Lg 22 57 18.9
349nm,0.8s,SNR=5.0
ECAL Calabor 5.61 311 Pn **Pn** **22 55 43.7 +0.3**
8.8nm,0.3s,SNR=42
ECAL Lg Lg 22 57 18.9
349nm,0.8s,SNR=5.0
PMTG Montargil 5.62 279 *e*Pn **Pn** **22 55 43.5 +0.1**
PMTG *e*Sg **Sg** **22 57 17.4 -2.8**
PMTG A A 22 57 30.9
190nm,0.8s
PMTG Montargil 5.62 279 *e*Pn **Pn** **22 55 43.5 +0.1**
MESJ Messejana 5.64 267 *e*P **Pn** **22 55 43.6 -0.1**
MESJ *e*S **Sn** **22 56 43.8 -4.8**
MESJ AML AML 22 56 48.1
comp=E,17nm,0.9s
MESJ Messejana 5.64 267 *e*Pn **Pn** **22 55 44.4 +0.7**
MESJ *e*Sn **Sn** **22 56 47.5 -1.0**
MESJ *e*Sg **Sg** **22 57 21.5 +0.6**
MESJ A A 22 57 33.8
comp=E,107nm,0.6s
MESJ Messejana 5.64 267 Pn **Pn** **22 55 44.4 +0.7**
MESJ Sn **Sn** **22 56 47.5 -1.0**
MESJ Lg Lg 22 57 21.5
comp=E,107nm,0.6s
MESJ Messejana 5.64 267 Pn **Pn** **22 55 44.4 +0.7**
MESJ Sn **Sn** **22 56 47.5 -1.0**
MESJ *e*Sg **Sg** **22 57 21.5 +0.6**
comp=E,107nm,0.6s
PVIS Viseu 5.76 296 *e*Pn **Pn** **22 55 45.8 +0.4**
PVIS *e*Sn **Sn** **22 56 49.7 -1.8**
PVIS *e*Sg **Sg** **22 57 22.7 -2.0**
PVIS A A 22 57 29.1
comp=E,88nm,0.6s
PVIS Viseu 5.76 296 Pn **Pn** **22 55 45.8 +0.4**
PVIS Sn **Sn** **22 56 49.7 -1.8**
PVIS Lg Lg 22 57 22.7
comp=E,44nm,0.6s
PVIS Viseu 5.76 296 Pn **Pn** **22 55 45.8 +0.4**
PVIS Sn **Sn** **22 56 49.7 -1.8**
PVIS *e*Sg **Sg** **22 57 22.7 -2.0**
comp=E,88nm,0.6s
PTOM Tomar 5.83 285 *e*Pn **Pn** **22 55 47.4 +1.0**
PTOM *e*Sn **Sn** **22 56 55.2 +1.9**
PTOM *e*Sg **Sg** **22 57 24.2 -2.9**

PTOM					A	A	22 57 33.8		
	comp=E,156nm,0.5s								
PTOM	**Tomar**	**5.83**	**285**		Pn	**Pn**	**22 55 47.4**	**+1.0**	
PTOM					Sn	**Sn**	**22 56 55.2**	**+1.9**	
PTOM					Lg	Lg	22 57 24.2		
	comp=E,78nm,0.5s								
PTOM	**Tomar**	**5.83**	**285**		Pn	**Pn**	**22 55 47.4**	**+1.0**	
PTOM					Sn	**Sn**	**22 56 55.2**	**+1.9**	
PTOM					Lg	Lg	22 57 24.2		
	comp=E,78nm,0.5s								
EARI	**Arriondas**	**5.84**	**329**		Pn	**Pn**	**22 55 47.5**	**+1.0**	
	comp=E,1.6nm,0.2s,SNR=25								
EARI					Sn	**Sn**	**22 56 50.5**	**-3.0**	
	comp=E,1.8nm,0.3s,SNR=7.9								
EARI					Lg	Lg	22 57 25.1		
	comp=E,112nm,1.0s,SNR=5.0								
EARI	**Arriondas**	**5.84**	**329**		Pn	**Pn**	**22 55 47.5**	**+1.0**	
	comp=E,1.6nm,0.2s,SNR=25								
EARI					Lg	Lg	22 57 25.1		
	comp=E,112nm,1.0s,SNR=5.0								
PNCL	**Nicolau / Gran**	**5.86**	**270**	⇓	*e*Pn	**Pn**	**22 55 47.4**	**+0.8**	
PNCL					*e*Sn	**Sn**	**22 56 52.2**	**-1.6**	
PNCL					*e*Sg	**Sg**	**22 57 25.2**	**-2.6**	
PNCL					A	A	22 57 35.7		
	comp=E,95nm,0.6s								
PNCL	**Nicolau / Gran**	**5.86**	**270**	⇓	*e*Pn	**Pn**	**22 55 47.4**	**+0.8**	
PNCL					*e*Sn	**Sn**	**22 56 52.2**	**-1.6**	
PVRL	**Vila Real**	**5.87**	**302**		*e*Pn	**Pn**	**22 55 47.3**	**+0.4**	
PVRL					*e*Sg	**Sg**	**22 57 30.5**	**+2.2**	
PVRL					A	A	22 57 43.7		
	comp=E,78nm,0.6s								
PVRL	**Vila Real**	**5.87**	**302**		Pn	**Pn**	**22 55 47.3**	**+0.4**	
PVRL					Lg	Lg	22 57 30.5		
	comp=E,39nm,0.6s								
PVRL	**Vila Real**	**5.87**	**302**		Pn	**Pn**	**22 55 47.3**	**+0.4**	
PVRL					*e*Sg	**Sg**	**22 57 30.5**	**+2.2**	
	comp=E,78nm,0.6s								
COI	**Coimbra**	**5.97**	**290**		Pn	**Pn**	**22 55 49.4**	**+1.2**	
COI					Lg	Lg	22 57 31.2		
COI	**Coimbra**	**5.97**	**290**		Pn	**Pn**	**22 55 49.4**	**+1.2**	
COI					*e*Sg	**Sg**	**22 57 31.2**	**-0.2**	
POLO	**Lamas de Olo**	**5.97**	**302**	⇑	*e*Pn	**Pn**	**22 55 48.7**	**+0.4**	
POLO					*e*Sn	**Sn**	**22 56 53.0**	**-3.7**	
POLO					*e*Sg	**Sg**	**22 57 32.7**	**+1.3**	
POLO					A	A	22 57 46.7		
	comp=E,46nm,0.6s								
POLO	**Lamas de Olo**	**5.97**	**302**	⇑	*e*Pn	**Pn**	**22 55 48.7**	**+0.4**	
POLO					*e*Sg	**Sg**	**22 57 32.7**	**+1.3**	
	comp=E,46nm,0.6s								
PCAS	**Casmilo, Conde**	**5.99**	**289**		*e*Pn	**Pn**	**22 55 49.7**	**+1.2**	
PCAS					*e*Sn	**Sn**	**22 56 56.3**	**-0.9**	
PCAS					*e*Sg	**Sg**	**22 57 31.9**	**-0.3**	
PCAS					A	A	22 57 38.9		
	comp=E,225nm,0.7s								
PCAS	**Casmilo, Conde**	**5.99**	**289**		*e*Pn	**Pn**	**22 55 49.7**	**+1.2**	
PCAS					*e*Sn	**Sn**	**22 56 56.3**	**-0.9**	
PCAS					*e*Sg	**Sg**	**22 57 31.9**	**-0.3**	
	comp=E,225nm,0.7s								
MORF	**Marmelete**	**6.07**	**262**		*e*P	**Pn**	**22 55 49.7**	**0.0**	
MORF	**Marmelete**	**6.07**	**262**		*e*Pn	**Pn**	**22 55 50.6**	**+0.9**	
MORF					*e*Sn	**Sn**	**22 56 56.5**	**-2.7**	
MORF					*e*Sg	**Sg**	**22 57 33.3**	**-1.4**	
MORF					A	A	22 57 44.9		
	comp=E,45nm,0.6s								
MORF	**Marmelete**	**6.07**	**262**		Pn	**Pn**	**22 55 50.6**	**+0.9**	
MORF					Sn	**Sn**	**22 56 56.5**	**-2.7**	
MORF					Lg	Lg	22 57 33.3		
	comp=E,45nm,0.6s								
MORF	**Marmelete**	**6.07**	**262**		Pn	**Pn**	**22 55 50.6**	**+0.9**	
MORF					*e*Sg	**Sg**	**22 57 33.3**	**-1.4**	
	comp=E,45nm,0.6s								
PTEO	**Sao Teotonio**	**6.08**	**265**		*e*Pn	**Pn**	**22 55 50.4**	**+0.7**	
PTEO					*e*Sn	**Sn**	**22 56 59.1**	**-0.2**	
PTEO					*e*Sg	**Sg**	**22 57 37.4**	**+2.4**	
PTEO					A	A	22 57 41.9		
	comp=E,136nm,0.7s								
PTEO	**Sao Teotonio**	**6.08**	**265**		Pn	**Pn**	**22 55 50.4**	**+0.7**	
PTEO					Sn	**Sn**	**22 56 59.1**	**-0.2**	
PTEO					Lg	Lg	22 57 37.4		
	comp=E,68nm,0.7s								
PTEO	**Sao Teotonio**	**6.08**	**265**		Pn	**Pn**	**22 55 50.4**	**+0.7**	
PTEO					Sn	**Sn**	**22 56 59.1**	**-0.2**	
PTEO					*e*Sg	**Sg**	**22 57 37.4**	**+2.4**	
	comp=E,136nm,0.7s								
MDT	**Midelt**	**6.22**	**208**		Pn	**Pn**	**22 55 53.1**	**+1.3**	
	comp=E,0.5nm,0.3s,baz=30,slow=12,SNR=14								
MDT					Sn	**Sn**	**22 57 03.8**	**+0.7**	
	baz=15,slow=16,SNR=1.8								
PCAB	**Cabril**	**6.28**	**304**		*e*Pn	**Pn**	**22 55 50.0**	**-2.6**	
PCAB					*e*Sg	**Sg**	**22 57 37.1**	**-4.4**	
PCAB					A	A	22 57 58.3		
	comp=E,71nm,0.7s								
PCAB	**Cabril**	**6.28**	**304**		Pn	**Pn**	**22 55 50.0**	**-2.6**	
PCAB					Lg	Lg	22 57 37.1		
	comp=E,36nm,0.7s								
LIS	**Lisbon**	**6.32**	**276**		*e*Sn	**Sn**	**22 57 04.8**	**-0.5**	
LIS					*e*Sg	**Sg**	**22 57 48.6**	**+5.8**	
LIS					A	A	22 58 00.3		
	comp=E,169nm,0.7s								
LIS	**Lisbon**	**6.32**	**276**		Sn	**Sn**	**22 57 04.8**	**-0.5**	
LIS					Lg	Lg	22 57 48.6		
	comp=E,169nm,0.7s								
LIS	**Lisbon**	**6.32**	**276**		*e*Sn	**Sn**	**22 57 04.8**	**-0.5**	
PMST	**Lisbon--Monsan**	**6.35**	**276**		*e*Sn	**Sn**	**22 57 05.0**	**-0.9**	
PMST					*e*Sg	**Sg**	**22 57 44.8**	**+1.2**	
PMST					A	A	22 57 55.2		
	comp=E,83nm,0.5s								
PMST	**Lisbon--Monsan**	**6.35**	**276**		*e*Sn	**Sn**	**22 57 05.0**	**-0.9**	
PMST					*e*Sg	**Sg**	**22 57 44.8**	**+1.2**	
	comp=E,83nm,0.5s								
ELOB	**Lobios**	**6.38**	**306**		Pn	**Pn**	**22 55 54.4**	**+0.4**	
	comp=E,1.4nm,0.2s,SNR=12								
ELOB					Sn	**Sn**	**22 57 03.6**	**-3.4**	
	comp=E,10.0nm,0.4s,SNR=7.9								
ELOB					Lg	Lg	22 57 42.9		
	comp=E,337nm,1.1s,SNR=7.0								
ELOB	**Lobios**	**6.38**	**306**		Pn	**Pn**	**22 55 54.4**	**+0.4**	
	comp=E,1.4nm,0.2s,SNR=12								
ELOB					Lg	Lg	22 57 42.9		
	comp=E,337nm,1.1s,SNR=7.0								
PTO	**Porto**	**6.42**	**298**		*e*Sg	**Sg**	**22 57 47.2**	**+1.5**	
PTO	**Porto**	**6.42**	**298**		Lg	Lg	22 57 47.2		
PTO	**Porto**	**6.42**	**298**		*e*Sg	**Sg**	**22 57 47.2**	**+1.5**	
PMAFR	**Mafra**	**6.43**	**278**		*e*Pn	**Pn**	**22 55 55.9**	**+1.3**	
PMAFR					*e*Sn	**Sn**	**22 57 06.4**	**-1.7**	
PMAFR					*e*Sg	**Sg**	**22 57 48.3**	**+1.9**	
PMAFR					A	A	22 57 57.8		
	comp=E,153nm,0.6s								
PMAFR	**Mafra**	**6.43**	**278**		Pn	**Pn**	**22 55 53.4**	**-1.2**	
	comp=E,1.7nm,0.2s,SNR=7.9								
PMAFR					Sn	**Sn**	**22 57 04.9**	**-3.2**	
	comp=E,32nm,0.3s,SNR=7.9								
PMAFR					Lg	Lg	22 57 46.4		
	comp=E,903nm,1.0s,SNR=11								
PMAFR	**Mafra**	**6.43**	**278**		*e*Pn	**Pn**	**22 55 55.9**	**+1.3**	
PMAFR					*e*Sn	**Sn**	**22 57 06.4**	**-1.7**	
PMAFR					Lg	Lg	22 57 46.4		
	comp=E,903nm,1.0s,SNR=11								
PMAFR					*e*Sg	**Sg**	**22 57 48.3**	**+1.9**	
	comp=E,153nm,0.6s								
PGAV	**Gavieira, Arco**	**6.57**	**306**		*e*Pn	**Pn**	**22 55 57.1**	**+0.5**	
PGAV					*e*Sn	**Sn**	**22 57 10.5**	**-1.0**	
PGAV					*e*Sg	**Sg**	**22 57 49.9**	**-0.8**	
PGAV					A	A	22 58 03.4		
	comp=E,103nm,0.6s								
PGAV	**Gavieira, Arco**	**6.57**	**306**		*e*Pn	**Pn**	**22 55 57.1**	**+0.5**	
PGAV					*e*Sn	**Sn**	**22 57 10.5**	**-1.0**	
PGAV					*e*Sg	**Sg**	**22 57 49.9**	**-0.8**	
	comp=E,103nm,0.6s								
LFF	**La Frestale**	**6.72**	**11**		*e*Pn	**Pn**	**22 56 00.0**	**+1.5**	
LFF					*e*Sg	**Sg**	**22 57 53.9**	**-1.6**	
	comp=E,55nm,0.8s								
LFF	**La Frestale**	**6.72**	**11**		Pn	**Pn**	**22 56 00.0**	**+1.5**	
LFF					Lg	Lg	22 57 53.9		
	comp=E,27nm,0.8s								
LFF	**La Frestale**	**6.72**	**11**		Pn	**Pn**	**22 56 00.0**	**+1.5**	
LFF					Lg	Lg	22 57 53.9		
	comp=E,27nm,0.8s								
EPON	**Pontenova**	**6.76**	**319**		Pn	**Pn**	**22 55 59.6**	**+0.5**	
	comp=E,0.6nm,0.2s,SNR=8.3								
EPON					Sn	**Sn**	**22 57 11.4**	**-4.6**	
	comp=E,4.3nm,0.4s,SNR=7.9								
EPON					Lg	Lg	22 57 54.2		
	comp=E,167nm,1.1s,SNR=7.9								
EPON	**Pontenova**	**6.76**	**319**		Pn	**Pn**	**22 55 59.6**	**+0.5**	
	comp=E,0.6nm,0.2s,SNR=8.3								
EPON					Lg	Lg	22 57 54.2		
	comp=E,167nm,1.1s,SNR=7.9								
LASF	**Ste Croix**	**6.83**	**32**		*e*Pn	**Pn**	**22 56 00.7**	**+0.7**	
LASF					*e*Sg	**Sg**	**22 57 56.1**	**-2.8**	
	comp=E,86nm,1.6s								
LASF	**Ste Croix**	**6.83**	**32**		Pn	**Pn**	**22 56 00.7**	**+0.7**	
LASF					Lg	Lg	22 57 56.1		
	comp=E,43nm,1.6s								
LASF	**Ste Croix**	**6.83**	**32**		Pn	**Pn**	**22 56 00.7**	**+0.7**	
LASF					Lg	Lg	22 57 56.1		
	comp=E,43nm,1.6s								
EAGO	**Agolada(Pontev**	**6.93**	**312**		Pn	**Pn**	**22 56 01.7**	**+0.3**	
	comp=E,1.1nm,0.1s,SNR=7.9								
EAGO					Lg	Lg	22 58 00.3		
	comp=E,180nm,1.0s,SNR=7.9								
EAGO	**Agolada(Pontev**	**6.93**	**312**		Pn	**Pn**	**22 56 01.7**	**+0.3**	
	comp=E,1.1nm,0.1s,SNR=7.9								
EAGO					Lg	Lg	22 58 00.3		
	comp=E,180nm,1.0s,SNR=7.9								
CAF	**Calviac**	**6.98**	**19**		*e*Pn	**Pn**	**22 56 02.9**	**+0.8**	
CAF					*e*Sg	**Sg**	**22 58 01.6**	**-2.2**	
	comp=E,65nm,1.2s								
CAF	**Calviac**	**6.98**	**19**		Pn	**Pn**	**22 56 02.9**	**+0.8**	
CAF					Lg	Lg	22 58 01.6		
	comp=E,32nm,1.2s								
CAF	**Calviac**	**6.98**	**19**		Pn	**Pn**	**22 56 02.9**	**+0.8**	
CAF					Lg	Lg	22 58 01.6		
	comp=E,32nm,1.2s								
RJF	**Les Rejaudoux**	**7.21**	**15**		*e*Pn	**Pn**	**22 56 06.1**	**+0.8**	
RJF					*e*Sn	**Sn**	**22 57 22.8**	**-4.4**	
	comp=E,28nm,1.0s								
RJF	**Les Rejaudoux**	**7.21**	**15**		Pn	**Pn**	**22 56 06.1**	**+0.8**	
RJF					Sn	**Sn**	**22 57 22.8**	**-4.4**	
	comp=E,14nm,1.0s								
RJF	**Les Rejaudoux**	**7.21**	**15**		Pn	**Pn**	**22 56 06.1**	**+0.8**	
SMRF	**Simiane la Rot**	**7.54**	**40**		*e*Pn	**Pn**	**22 56 12.9**	**+3.1**	
SMRF					*e*Sg	**Sg**	**22 58 20.2**	**-1.6**	
	comp=E,48nm,1.4s								
SMRF	**Simiane la Rot**	**7.54**	**40**		Pn	**Pn**	**22 56 12.9**	**+3.1**	
SMRF					Lg	Lg	22 58 20.2		
	comp=E,48nm,1.4s								
SMRF	**Simiane la Rot**	**7.54**	**40**		Pn	**Pn**	**22 56 12.9**	**+3.1**	
SMRF					Lg	Lg	22 58 20.2		
	comp=E,48nm,1.4s								
EMAZ	**Mazaricos**	**7.54**	**310**		Pn	**Pn**	**22 56 10.4**	**+0.5**	
	comp=E,1.2nm,0.1s,SNR=7.9								
EMAZ					Lg	Lg	22 58 19.6		
	comp=E,281nm,1.5s,SNR=7.9								
EMAZ	**Mazaricos**	**7.54**	**310**		Pn	**Pn**	**22 56 10.4**	**+0.5**	
	comp=E,1.2nm,0.1s,SNR=7.9								
EMAZ					Lg	Lg	22 58 19.6		
	comp=E,281nm,1.5s,SNR=7.9								
LBL	**Lubilhac**	**7.60**	**24**		Pn	**Pn**	**22 56 11.3**	**+0.7**	
LBL	**Lubilhac**	**7.60**	**24**		Pn	**Pn**	**22 56 11.3**	**+0.7**	
LMR	**La Mourre**	**7.61**	**47**		*e*Pn	**Pn**	**22 56 11.6**	**+0.8**	
LMR					*e*Sn	**Sn**	**22 57 33.0**	**-4.0**	
	comp=E,3.8nm,0.5s								
LMR	**La Mourre**	**7.61**	**47**		Pn	**Pn**	**22 56 11.6**	**+0.8**	
LMR					Sn	**Sn**	**22 57 33.0**	**-4.0**	
	comp=E,1.9nm,0.5s								
LMR	**La Mourre**	**7.61**	**47**		Pn	**Pn**	**22 56 11.6**	**+0.8**	
VIVF	**Saint-Julien-l**	**7.80**	**32**		*e*Pn	**Pn**	**22 56 14.1**	**+0.7**	
VIVF					*e*Sg	**Sg**	**22 58 27.3**	**-2.8**	
	comp=E,20nm,0.9s								
VIVF	**Saint-Julien-l**	**7.80**	**32**		Pn	**Pn**	**22 56 14.1**	**+0.7**	
VIVF					Lg	Lg	22 58 27.3		
	comp=E,9.9nm,0.9s								
VIVF	**Saint-Julien-l**	**7.80**	**32**		Pn	**Pn**	**22 56 14.1**	**+0.7**	
VIVF					Lg	Lg	22 58 27.3		
	comp=E,9.9nm,0.9s								
FRF	**La Foret Royal**	**7.83**	**46**		*e*Pn	**Pn**	**22 56 13.9**	**+0.1**	
FRF					*e*Sn	**Sn**	**22 57 37.5**	**-5.0**	
	comp=E,10nm,0.8s								
FRF	**La Foret Royal**	**7.83**	**46**		Pn	**Pn**	**22 56 13.9**	**+0.1**	
FRF					Sn	**Sn**	**22 57 37.5**	**-5.0**	
	comp=E,5.2nm,0.8s								
FRF	**La Foret Royal**	**7.83**	**46**		Pn	**Pn**	**22 56 13.9**	**+0.1**	
PYM	**Petit Puy Mans**	**8.00**	**21**		Pn	**Pn**	**22 56 17.2**	**+1.1**	
PYM	**Petit Puy Mans**	**8.00**	**21**		Pn	**Pn**	**22 56 17.2**	**+1.1**	
MFF	**Saint Martin d**	**8.27**	**5**		*e*Pn	**Pn**	**22 56 20.5**	**+0.7**	
MFF	**Saint Martin d**	**8.27**	**5**		Pn	**Pn**	**22 56 20.5**	**+0.7**	
MFF	**Saint Martin d**	**8.27**	**5**		Pn	**Pn**	**22 56 20.5**	**+0.7**	
TCF	**Toulx Ste Croi**	**8.30**	**16**		*e*Pn	**Pn**	**22 56 19.2**	**-1.0**	
TCF					*e*Sg	**Sg**	**22 58 41.4**	**-4.6**	
	comp=E,44nm,1.2s								
TCF	**Toulx Ste Croi**	**8.30**	**16**		Pn	**Pn**	**22 56 19.2**	**-1.0**	
TCF					Lg	Lg	22 58 41.4		
	comp=E,22nm,1.2s								
TCF	**Toulx Ste Croi**	**8.30**	**16**		Pn	**Pn**	**22 56 19.2**	**-1.0**	
TCF					Lg	Lg	22 58 41.4		
	comp=E,22nm,1.2s								
AGO	**Saint Agoulin**	**8.31**	**21**		Pn	**Pn**	**22 56 20.8**	**+0.5**	
AGO	**Saint Agoulin**	**8.31**	**21**		Pn	**Pn**	**22 56 20.8**	**+0.5**	
BGF	**Bois d'Agland**	**8.70**	**18**		*e*Pn	**Pn**	**22 56 26.0**	**+0.3**	
BGF	**Bois d'Agland**	**8.70**	**18**		Pn	**Pn**	**22 56 26.0**	**+0.3**	
BGF	**Bois d'Agland**	**8.70**	**18**		Pn	**Pn**	**22 56 26.0**	**+0.3**	
KEST	**Kesra**	**8.75**	**104**		Pn	**Pn**	**22 56 28.4**	**+1.8**	
	comp=E,0.1nm,0.3s,baz=307,slow=10,SNR=3.9								
KEST					Sn	**Sn**	**22 58 06.8**	**+1.5**	
	comp=E,0.4nm,0.3s,baz=343,slow=19,SNR=2.6								
PGF	**Pioggiola**	**8.76**	**58**		*e*Pn	**Pn**	**22 56 28.3**	**+1.7**	
PGF	**Pioggiola**	**8.76**	**58**		Pn	**Pn**	**22 56 28.3**	**+1.7**	
PGF	**Pioggiola**	**8.76**	**58**		Pn	**Pn**	**22 56 28.3**	**+1.7**	
AVF	**Avril sur Loir**	**9.04**	**20**		*e*Pn	**Pn**	**22 56 31.0**	**+0.6**	
AVF					*e*Sg	Sg	22 59 06.4		
	comp=E,33nm,1.3s								
AVF	**Avril sur Loir**	**9.04**	**20**		Pn	**Pn**	**22 56 31.0**	**+0.6**	
AVF					Lg	Lg	22 59 06.4		
	comp=E,16nm,1.3s								
AVF	**Avril sur Loir**	**9.04**	**20**		Pn	**Pn**	**22 56 31.0**	**+0.6**	
AVF					Lg	Lg	22 59 06.4		
	comp=E,16nm,1.3s								
SMF	**Signal de Mont**	**9.05**	**22**		*e*Pn	**Pn**	**22 56 31.8**	**+1.3**	
SMF					*e*Sg	Sg	22 59 06.0		
	comp=E,9.6nm,0.9s								
SMF	**Signal de Mont**	**9.05**	**22**		Pn	**Pn**	**22 56 31.8**	**+1.3**	
SMF					Lg	Lg	22 59 06.0		
	comp=E,4.8nm,0.9s								
SMF	**Signal de Mont**	**9.05**	**22**		Pn	**Pn**	**22 56 31.8**	**+1.3**	
SMF					Lg	Lg	22 59 06.0		
	comp=E,4.8nm,0.9s								
LPL	**La Plagne**	**9.23**	**37**		*e*Pn	**Pn**	**22 56 35.9**	**+2.8**	
LPL	**La Plagne**	**9.23**	**37**		Pn	**Pn**	**22 56 35.9**	**+2.8**	
LPL	**La Plagne**	**9.23**	**37**		Pn	**Pn**	**22 56 35.9**	**+2.8**	
HYF	**Humbligny**	**9.32**	**16**		*e*Pn	**Pn**	**22 56 35.2**	**+1.0**	
HYF	**Humbligny**	**9.32**	**16**		Pn	**Pn**	**22 56 35.2**	**+1.0**	
HYF	**Humbligny**	**9.32**	**16**		Pn	**Pn**	**22 56 35.2**	**+1.0**	
SSF	**Saint Saulge**	**9.34**	**20**		*e*Sg	Sg	22 59 15.9		
	comp=E,70nm,1.6s								
SSF	**Saint Saulge**	**9.34**	**20**		Lg	Lg	22 59 15.9		
	comp=E,35nm,1.6s								
SSF	**Saint Saulge**	**9.34**	**20**		Lg	Lg	22 59 15.9		
	comp=E,35nm,1.6s								
LOR	**Lormes**	**9.62**	**21**		*e*Sg	Sg	22 59 22.8		
	comp=E,15nm,0.9s								
LOR	**Lormes**	**9.62**	**21**		Lg	Lg	22 59 22.8		
	comp=E,7.6nm,0.9s								
LOR	**Lormes**	**9.62**	**21**		Lg	Lg	22 59 22.8		
	comp=E,7.6nm,0.9s								
QUIF	**Quistinic**	**9.68**	**352**		*e*Pn	**Pn**	**22 56 40.7**	**+1.7**	
QUIF					*e*Sn	**Sn**	**22 58 21.4**	**-6.2**	
	comp=E,8.8nm,0.6s								
QUIF	**Quistinic**	**9.68**	**352**		Pn	**Pn**	**22 56 40.7**	**+1.7**	
QUIF					Sn	**Sn**	**22 58 21.4**	**-6.2**	
	comp=E,4.4nm,0.6s								
QUIF	**Quistinic**	**9.68**	**352**		Pn	**Pn**	**22 56 40.7**	**+1.7**	
CABF	**La Chapelle**	**9.80**	**30**		*e*Pn	**Pn**	**22 56 42.0**	**+1.1**	
CABF					*e*Sg	Sg	22 59 28.5		
	comp=E,33nm,1.1s								
CABF	**La Chapelle**	**9.80**	**30**		Pn	**Pn**	**22 56 42.0**	**+1.1**	
CABF					Lg	Lg	22 59 28.5		
	comp=E,16nm,1.1s								
CABF	**La Chapelle**	**9.80**	**30**		Pn	**Pn**	**22 56 42.0**	**+1.1**	
CABF					Lg	Lg	22 59 28.5		
	comp=E,16nm,1.1s								
SGMF	**Saint Gilles**	**9.95**	**354**		*e*Sn	**Sn**	**22 58 30.1**	**-4.3**	
	comp=E,2.0nm,0.5s								
SGMF	**Saint Gilles**	**9.95**	**354**		Sn	**Sn**	**22 58 30.1**	**-4.3**	
	comp=E,1.0nm,0.5s								
ROSF	**Rostrenen**	**10.10**	**352**		*e*Pn	**Pn**	**22 56 46.5**	**+1.6**	
ROSF					*e*Sn	**Sn**	**22 58 33.1**	**-5.0**	
	comp=E,3.5nm,0.5s								
ROSF	**Rostrenen**	**10.10**	**352**		Pn	**Pn**	**22 56 46.5**	**+1.6**	
ROSF					Sn	**Sn**	**22 58 33.1**	**-5.0**	
	comp=E,1.8nm,0.5s								
ROSF	**Rostrenen**	**10.10**	**352**		Pn	**Pn**	**22 56 46.5**	**+1.6**	
SFTF	**Sexfontaines**	**10.81**	**22**		*e*Sg	Sg	23 00 01.4		
	comp=E,45nm,1.4s								
SFTF	**Sexfontaines**	**10.81**	**22**		Lg	Lg	23 00 01.4		
	comp=E,45nm,1.4s								
SFTF	**Sexfontaines**	**10.81**	**22**		Lg	Lg	23 00 01.4		
	comp=E,45nm,1.4s								
MEZF	**Maizieres J'vi**	**11.08**	**22**		*e*Sg	Sg	23 00 10.0		
	comp=E,204nm,2.1s								
MEZF	**Maizieres J'vi**	**11.08**	**22**		Lg	Lg	23 00 10.0		
	comp=E,204nm,2.1s								
MEZF	**Maizieres J'vi**	**11.08**	**22**		Lg	Lg	23 00 10.0		
	comp=E,204nm,2.1s								
PAGF	**Fort de Pagny**	**11.33**	**24**		*e*Sg	Sg	23 00 16.5		
	comp=E,18nm,1.4s								
DAVOX	**Davos/Dischmat**	**11.67**	**40**		Pn	Pn	22 57 15.2	+8.7	
	comp=E,0.1nm,0.3s,baz=354,slow=14,SNR=4.2								
DAVOX					LR	LR	23 01 39.7		
	comp=E,55nm,20.7s,baz=270,slow=38								
CDF	**Champ du Feu**	**11.74**	**28**		*e*Sg	Sg	23 00 30.6		
	comp=E,46nm,1.8s								
GERES	**GERESS Array B**	**14.97**	**41**		Pn	**Pn**	**22 57 51.7**	**+0.2**	
	comp=E,0.1nm,0.3s,baz=224,slow=12,SNR=2.7								
CLL	**Collm**	**16.32**	**33**		*e*P	**P**	**22 58 14.0**	**+2.1**	
VRAC	**Vranov**	**16.77**	**44**		Pn	**P**	**22 58 17.5**	**+0.5**	
	comp=E,0.1nm,0.3s,baz=264,slow=4.1,SNR=3.3								
VRAC					LR	LR	23 05 11.6		
	comp=E,39nm,20.7s,baz=260,slow=39								
EKA	**Eskdalemuir Ar**	**17.04**	**356**		P	**Pn**	**22 58 19.1**	**+1.1**	
	baz=174,slow=16,SNR=2.8								
VYHS	**Vyhne**	**17.62**	**49**		*e*P	**Pn**	**22 58 22.9**	**-2.5**	
KOLS	**Kolonicke sedl**	**19.87**	**50**		*e*P	**Pn**	**22 58 53.8**	**+1.2**	
MLR	**Muntele Rosu**	**21.28**	**62**		P	**P**	**22 59 07.7**	**+1.2**	
	comp=E,0.3nm,0.7s,baz=162,slow=13								
MLR					LR	LR	23 07 38.8		
	comp=E,23nm,20.1s,baz=256,slow=38								
HFS	**Hagfors**	**23.73**	**19**		LR	LR	23 08 08.0		
	comp=E,32nm,21.0s,baz=264,slow=35								
NOA	**NORSAR Array B**	**23.98**	**15**		LR	LR	23 10 30.0		
	comp=E,21nm,18.6s,baz=230,slow=40								
TORD	**Torodi Ar. Bea**	**25.23**	**174**		P	**P**	**22 59 46.4**	**+0.5**	
	comp=E,1.2nm,1.0s,baz=350,slow=8.4,SNR=5.8								
BRTR	**Keskin Array B**	**26.92**	**76**		P	**P**	**23 00 01.6**	**+0.4**	
	comp=E,0.5nm,0.7s,baz=270,slow=7.4,SNR=3.8								
BRTR					PcP	**PcP**	**23 03 24.8**	**+1.6**	
	comp=E,0.4nm,0.9s,baz=196,slow=2.6,SNR=3.4								
GEYT	**Alibeck**	**45.86**	**71**		P	**P**	**23 02 43.1**	**+0.8**	
	comp=E,0.5nm,0.5s,baz=289,slow=10,SNR=2.4								
ZALV	**Zalesovo Beam**	**57.89**	**44**		P	**P**	**23 04 12.8**	**+1.1**	
	comp=E,0.3nm,0.3s,baz=298,slow=6.4,SNR=2.5								
MKAR	**Makanchi Array**	**59.26**	**53**		P	**P**	**23 04 22.1**	**+0.8**	
	comp=E,0.6nm,0.8s,baz=306,slow=4.1,SNR=5.1								
YKA	**Yellowknife Ar**	**66.

KSH				*e*PP		**PnPn**		**23 21 42.7**	**+8.3**
KSH				*es*P		pP		23 21 44.3	+28
KSH				S		S		23 25 05.1	-13
KSH				sS		Sn		23 25 45.0	+2.1
KSH				pmax		pmax			
	comp=Z,13nm,0.7s								
KSH				pmax		pmax			
	comp=Z,41nm,1.4s								
KSH				LR		LR			
	comp=N,72nm,4.5s								
KSH				LR		LR			
	comp=E,130nm,5.2s								
KSH				LR		LR			
	comp=Z,99nm,6.5s								
KBL	**Kabul**	**25.53**	**307**	*e*P		**P**		**23 21 22.9**	**+2.7**
	comp=Z,12nm,1.1s								
AAK	**Ala-Archa**	**26.88**	**328**	P		**P**		**23 21 34.2**	**+1.9**
	comp=Z,2.2nm,0.6s,baz=134,slow=5.4,SNR=8.6								
AAK				LR		LR		23 33 26.4	
	comp=Z,27nm,18.9s,baz=86,slow=39								
AAK	**Ala-Archa**	**26.88**	**328**	*e*P		**P**		**23 21 34.2**	**+1.9**
	comp=Z,6.6nm,0.9s								
EKS2	**Erkin-Say**	**27.26**	**327**	*e*P		**P**		**23 21 37.5**	**+1.8**
	comp=Z,3.0nm,0.9s								
MK01	**Makanchi Array**	**27.28**	**343**	*e*P		**P**		**23 21 36.4**	**+0.8**
MK31	**Makanchi Array**	**27.30**	**343**	*e*P		**P**		**23 21 36.7**	**+0.8**
MKAR	**Makanchi Array**	**27.30**	**343**	P		**P**		**23 21 36.2**	**+0.4**
	comp=Z,2.4nm,0.6s,baz=165,slow=8.5,SNR=29								
MKAR	**Makanchi Array**	**27.30**	**343**	*e*P		**P**		**23 21 36.7**	**+0.8**
SONM	**Songino Array**	**28.61**	**18**	P		**P**		**23 21 47.7**	**+0.1**
	comp=Z,0.4nm,0.6s,baz=198,slow=7.3,SNR=3.6								
KURBB	**Kurchatov Arra**	**31.83**	**342**	P		**P**		**23 22 16.2**	**+0.3**
	comp=Z,3.5nm,0.7s,baz=152,slow=8.1,SNR=30								
KURBB				PcP		**PcP**		**23 25 05.4**	**-0.6**
	comp=Z,0.3nm,0.4s,baz=159,slow=2.1,SNR=2.9								
KURK	**Kurchatov**	**31.89**	**342**	*e*P		**P**		**23 22 16.5**	**+0.1**
KURK				PcP		**PcP**		**23 25 05.4**	**-0.7**
WSAR	**Wadi Sarin**	**32.51**	**280**	LR		LR		23 37 38.1	
	comp=Z,18nm,19.3s,baz=156,slow=40								
ZAA0	**Zalesovo Array**	**33.53**	**350**	*e*P		**P**		**23 22 30.9**	**+0.1**
ZALV	**Zalesovo Beam**	**33.53**	**350**	P		**P**		**23 22 30.8**	**+0.1**
	comp=Z,1.3nm,0.4s,baz=169,slow=9.3,SNR=13								
GEYT	**Alibeck**	**34.98**	**307**	P		**P**		**23 22 45.4**	**+1.8**
	comp=Z,1.3nm,0.4s,baz=160,slow=4.7,SNR=7.5								
BVAR	**Borovoye Array**	**36.60**	**336**	P		**P**		**23 22 57.6**	**+0.4**
	comp=Z,1.1nm,0.4s,baz=139,slow=9.7,SNR=10								
BRVK	**Borovoye**	**36.66**	**336**	*e*P		**P**		**23 22 58.7**	**+0.9**
	comp=Z,3.0nm,0.6s								
ZRNK	**Zerenda**	**37.07**	**335**	*e*P		**P**		**23 23 02.0**	**+0.8**
	comp=Z,5.2nm,0.6s								
ABKAR	**Akbulak array**	**38.86**	**325**	*e*P		**P**		**23 23 17.8**	**+1.4**
AKTO	**Aktyubinsk**	**40.55**	**325**	LR		LR		23 42 23.5	
	comp=Z,25nm,21.6s,baz=134,slow=39								
ARU	**Arti**	**43.83**	**333**	P		**P**		**23 23 57.7**	**+0.7**
	comp=Z,7.1nm,0.3s,baz=107,slow=5.0,SNR=18								
ARU	**Arti**	**43.83**	**333**	*e*P		**P**		**23 23 57.8**	**+0.7**
	comp=Z,8.0nm,0.7s								
BRTR	**Keskin Array B**	**54.06**	**304**	P		**P**		**23 25 15.9**	**0.0**
	comp=Z,0.8nm,0.9s,baz=122,slow=9.4,SNR=5.8								
WRA	**Warramunga Arr**	**56.93**	**133**	P		**P**		**23 25 34.7**	**-1.8**
	comp=Z,0.9nm,0.5s,baz=319,slow=7.5,SNR=15								
AKASG	**Malin Array Be**	**57.88**	**317**	P		**P**		**23 25 41.2**	**-1.6**
	comp=Z,1.0nm,0.5s,baz=81,slow=7.0,SNR=6.4								
ASAR	**Alice Springs**	**59.24**	**136**	P		**P**		**23 25 50.1**	**-2.5**
	comp=Z,0.7nm,0.5s,baz=317,slow=6.9,SNR=10								
MLR	**Muntele Rosu**	**59.83**	**311**	P		**P**		**23 25 57.4**	**+0.9**
	comp=Z,1.1nm,0.8s,baz=20,slow=1.5,SNR=16								
MLR	**Muntele Rosu**	**59.83**	**311**	*e*P		**P**		**23 25 57.5**	**+0.9**
	comp=Z,7.1nm,1.1s								
ARCES	**ARCESS Array B**	**62.84**	**338**	P		**P**		**23 26 16.2**	**-0.2**
	comp=Z,0.6nm,0.4s,baz=77,slow=5.2,SNR=3.9								
HFS	**Hagfors**	**67.02**	**328**	P		**P**		**23 26 42.9**	**-0.7**
	comp=Z,3.0nm,0.5s,baz=100,slow=6.2,SNR=29								
BRG	**Berggiesshubel**	**67.57**	**318**	*e*P		**P**		**23 26 47.8**	**+0.5**
	comp=Z,1.6nm,0.8s								
GEA0	**GERESS Array S**	**67.95**	**315**	*e*P		**P**		**23 26 50.2**	**+0.3**
GERES	**GERESS Array B**	**67.95**	**315**	P		**P**		**23 26 49.7**	**-0.2**
	comp=Z,1.4nm,0.7s,baz=77,slow=7.0,SNR=5.7								
NB2	**NORSAR Subarra**	**68.19**	**329**	P		**P**		**23 26 50.1**	**-1.0**
	comp=Z,0.8nm,0.6s,baz=84,slow=6.5								
NOA	**NORSAR Array B**	**68.19**	**329**	P		**P**		**23 26 50.4**	**-0.7**
	comp=Z,1.2nm,0.6s,baz=86,slow=6.5,SNR=5.5								
EKA	**Eskdalemuir Ar**	**76.74**	**324**	P		**P**		**23 27 41.8**	**-0.3**
	comp=Z,0.9nm,0.5s,baz=72,slow=5.7,SNR=10.0								
CAST	**Castle Rocks**	**81.57**	**25**	*e*P		**P**		**23 28 05.7**	**-2.6**
	comp=Z,3.5nm,1.0s								
BOSA	**Boshof**	**82.44**	**236**	P		**P**		**23 28 13.4**	**-0.1**
	comp=Z,2.3nm,0.9s,baz=15,slow=4.8,SNR=4.7								
ILAR	**Eielson Array**	**82.75**	**22**	P		**P**		**23 28 12.4**	**-2.1**
	comp=Z,0.5nm,0.7s,baz=300,slow=5.6,SNR=6.3								
TORD	**Torodi Ar. Bea**	**87.20**	**283**	P		**P**		**23 28 37.9**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=68,slow=4.5,SNR=11								

NIED ***10*** *23:24:00,38.00N×143.20E,h14km,Mw3.7 Best double couple: M₀3.44000×10¹⁴ NP1:φ₈340.00000°,δ61.00000°, λ162.00000°. NP2:φ₈79.00000°,δ74.00000°,λ30.00000°.*
IDC ***10*** *23:24:38.9±1.1,37.71N×143.75E,h0km,mb3.9/7, mb1 3.9/10,mb1mx3.6/50,mbtmp3.9/10,ML3.1/3,MS2.7/1, Ms1 2.7/1,ms1mx2.1/29,Error ellipse: s-maj=27.5km s-min=23.5km az=65.0*
NEIC ***10*** *23:24:43.1±2.9,37.67N×143.69E,h28km±19km,mb4.4/5, Error ellipse: s-maj=13.6km s-min=8.8km az=125.0*
JMA ***10*** *23:24:45.9±0.2,37.99N×143.22E,h47km,M3.7*
ISC 10 23:24:42.9±3.3,38.0N±0.1×143.16E±0.1,h2km±16km, n37,σ1§78/34,mb4.0/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.49**	**287**	P	**Pg**	**23 25 11.9**	**+0.5**
JIO				*e*S	**Sg**	**23 25 30.2**	**-0.5**
OFUJ	**Ofunato**	**1.57**	**313**	P	**Pb**	**23 25 12.9**	**+0.2**
OFUJ				*e*S	**Sg**	**23 25 33.2**	**-0.2**
JMM	**Marumori**	**1.88**	**266**	P	**Pn**	**23 25 16.9**	**+0.9**
JMM				S	**Sb**	**23 25 39.8**	**-1.9**
JFK	**Kawauchi**	**1.93**	**251**	P	**Pn**	**23 25 16.9**	**+0.2**
JFK				*e*S	**Sn**	**23 25 40.5**	**-1.0**
JOU	**Okura**	**1.99**	**281**	P	**Pb**	**23 25 19.3**	**-0.6**
JOM	**Ohasama**	**2.05**	**315**	P	**Pb**	**23 25 20.1**	**-0.8**
JOM				*e*S	**Sg**	**23 25 45.9**	**-3.0**
JFT	**Otama**	**2.29**	**258**	P	**Pn**	**23 25 23.6**	**+1.9**
JANG	**Nango**	**2.67**	**332**	P	**Pb**	**23 25 29.1**	**-2.3**
JAG	**Ashikaga**	**3.36**	**243**	P	**Pn**	**23 25 37.2**	**+0.8**
JRY	**Ryogami san**	**3.95**	**241**	P	**Pn**	**23 25 45.4**	**+0.9**
JRY				*e*S	**Sn**	**23 26 28.9**	**-2.6**
ERM	**Erimo**	**3.98**	**0**	*e*Pn	**Pn**	**23 25 47.3**	**+2.3**
MJAR	**Matsushiro Arr**	**4.21**	**251**	Pn	**Pn**	**23 25 49.0**	**+0.8**
	1.3nm,0.3s,baz=68,slow=9.4,SNR=5.8						
MAJO	**Matsushiro**	**4.21**	**251**	*e*Pn	**Pn**	**23 25 50.1**	**+1.9**
MAT	**Matsushiro**	**4.21**	**251**	P	**Pn**	**23 25 52.8**	**+4.6**
MAT				*e*S	**Sn**	**23 26 38.2**	**+0.2**
JHJ	**Hachijo jima 2**	**5.61**	**210**	Pn	Pn	23 26 02.5	-4.8
	8.5nm,0.3s,baz=253,slow=19,SNR=6.4						
JHJ				Sn	Sn	23 27 04.0	-8.4
	36nm,0.3s,baz=288,slow=24,SNR=7.4						
USRK	**Ussuriysk Ar.**	**10.44**	**310**	Pn	**Pn**	**23 27 17.7**	**+4.2**
	0.1nm,0.3s,baz=105,slow=14,SNR=3.0						
JNU	**Nakatsue**	**11.13**	**248**	LR	LR	23 32 07.9	
	comp=Z,37nm,18.7s,baz=303,slow=39						
MDJ	**Mudanjiang**	**12.13**	**307**	Pn	Pn	23 27 42.0	+5.3
YAK	**Yakutsk**	**25.44**	**345**	*e*P	**P**	**23 30 12.4**	**+0.8**
	11nm,0.4s						
H11N2	**WAKE ISLAND Hy**	**27.52**	**125**	T	T	23 59 12.5	
	baz=317,slow=74,SNR=31						
H11N1	**WAKE ISLAND Hy**	**27.53**	**125**	T	T	23 59 29.3	
	baz=317,slow=74,SNR=18						
H11N3	**WAKE ISLAND Hy**	**27.54**	**125**	T	T	23 59 10.3	
	baz=317,slow=74,SNR=24						
H11S1	**WAKE ISLAND Hy**	**28.29**	**127**	T	T	00 00 14.0	
	baz=318,slow=76,SNR=11						
H11S3	**WAKE ISLAND Hy**	**28.29**	**127**	T	T	00 00 14.7	
	baz=318,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**28.30**	**127**	T	T	00 00 11.6	
	baz=318,slow=76,SNR=12						
SONM	**Songino Array**	**28.41**	**302**	P	**P**	**23 30 40.1**	**+1.3**
	0.6nm,0.5s,baz=99,slow=7.9,SNR=6.0						
ZALV	**Zalesovo Beam**	**42.28**	**312**	P	**P**	**23 32 38.4**	**+0.8**
	0.8nm,0.5s,baz=109,slow=7.4,SNR=4.0						
ZALV				PcP	**PcP**	**23 34 30.5**	**-0.8**
	0.5nm,0.5s,baz=94,slow=2.0,SNR=3.0						
MKAR	**Makanchi Array**	**44.77**	**302**	P	**P**	**23 32 57.9**	**+0.1**
	1.0nm,0.7s,baz=83,slow=10,SNR=9.7						
KURK	**Kurchatov**	**46.42**	**308**	*e*P	**P**	**23 33 11.2**	**+0.5**
	21nm,0.6s						
KURBB	**Kurchatov Arra**	**46.49**	**307**	P	**P**	**23 33 12.0**	**+0.7**
	2.9nm,0.6s,baz=81,slow=8.1,SNR=6.8						
COLA	**College**	**47.50**	**33**	*e*P	**P**	**23 33 16.1**	**-2.9**
	1.5nm,0.5s						
BVAR	**Borovoye Array**	**50.94**	**312**	P	**P**	**23 33 45.4**	**-0.1**
	baz=54,slow=7.3						
AAK	**Ala-Archa**	**51.24**	**298**	*e*P	**P**	**23 33 48.9**	**+0.8**
	1.2nm,0.5s						
EKS2	**Erkin-Say**	**51.73**	**298**	*e*P	**P**	**23 33 52.0**	**+0.2**
	0.6nm,0.5s						
WRA	**Warramunga Arr**	**58.25**	**190**	P	P	23 34 33.6	-5.2
	0.4nm,0.5s,baz=7.6,slow=7.0,SNR=5.3						
HFS	**Hagfors**	**73.75**	**336**	P	**P**	**23 36 17.6**	**-0.5**
	0.5nm,0.6s,baz=68,slow=9.4,SNR=3.5						
PFO	**Pinyon Flats O**	**77.34**	**57**	P	P	23 36 33.9	-5.5
	1.7nm,0.4s,baz=297,slow=15,SNR=4.6						

IDC ***10*** *23:26:46.1±3.6,28.86S×176.59W,h0km,mb3.8/2, mb1 4.0/2,mb1mx3.6/21,mbtmp3.8/2,Error ellipse: s-maj=212.5km s-min=24.6km az=155.0*
NEIC ***10*** *23:26:47.6±0.8,29.29S×176.59W,h10km,mb4.5/7,Error ellipse: s-maj=27.0km s-min=14.3km az=166.0*
ISC 10 23:26:51.6±1.2,29.2S±0.3×176.6W±0.1,h36km,n16, σ1§15/18,mb4.4/9,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.19**	**269**	Pn	**Pn**	**23 27 10.9**	**-0.8**
	274nm,0.3s,baz=84,slow=16,SNR=16						
RAO				Sn	**Sn**	**23 27 28.4**	**+1.8**
	517nm,0.3s,baz=265,slow=24,SNR=8.8						
RAO	**Raoul Island**	**1.19**	**269**	*e*Pn	**Pn**	**23 27 11.3**	**-0.4**
RAO				Sn	**Sn**	**23 27 28.4**	**+1.8**
FUNA	**Funafuti**	**20.98**	**348**	P	**P**	**23 31 31.9**	**+0.1**
	14nm,0.3s						
HNR	**Honiara**	**29.54**	**307**	*e*P	**P**	**23 32 51.6**	**-1.3**
	35nm,0.4s						
ASAR	**Alice Springs**	**44.44**	**265**	P	**P**	**23 34 58.9**	**-0.4**
	0.5nm,0.4s,baz=103,slow=7.4,SNR=6.4						
WRA	**Warramunga Arr**	**45.33**	**270**	P	**P**	**23 35 05.8**	**-0.5**
	1.3nm,0.9s,baz=109,slow=7.5,SNR=4.5						
KKM	**Kota Kinabalu**	**73.40**	**287**	P	**P**	**23 38 19.9**	**-0.6**
	2.1nm,0.5s						
MAJO	**Matsushiro**	**78.02**	**324**	*e*P	**P**	**23 38 46.3**	**0.0**
	1.2nm,0.4s						
YSS	**Yuzh-Sakhalins**	**84.26**	**333**	*e*P	**P**	**23 39 19.2**	**0.0**
	5.8nm,0.6s						
ANMO	**Albuquerque**	**91.87**	**51**	P	**P**	**23 39 57.4**	**+1.1**
	0.2nm,0.5s						
NEW	**Newport**	**93.70**	**35**	*e*P	**P**	**23 40 05.6**	**+1.4**
	0.9nm,0.6s						
JCT	**Junction City**	**94.15**	**57**	*e*P	**P**	**23 40 07.0**	**+0.3**
	0.8nm,0.3s						
KURK	**Kurchatov**	**121.14**	**314**	PKP	**PKPdf**	**23 45 40.5**	**+0.4**
KURBB	**Kurchatov Arra**	**121.19**	**314**	PKP	**PKPdf**	**23 45 40.5**	**+0.3**
	0.1nm,0.3s,baz=97,slow=2.1,SNR=4.2						
AKASG	**Malin Array Be**	**151.10**	**325**	PKPbc	**PKPbc**	**23 46 41.2**	**+0.8**
	1.1nm,0.5s,baz=44,slow=2.9,SNR=7.1						
BRTR	**Keskin Array B**	**153.11**	**301**	PKPbc	**PKPbc**	**23 46 43.2**	**-2.4**
	0.1nm,0.3s,baz=7.6,slow=3.1,SNR=2.2						

CSEM ***10*** *23:34:27.5,38.39N×1.00W,h3km,ML1.4*
MDD 10 23:34:27.4±1.3,38.39N×1.00W,h3km±9km,mbLg1.4/6, Error ellipse: s-maj=11.3km s-min=4.9km az=70.0, PRXIMO,Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETOB	**Tobarra**	**0.50**	**300**	Pg	Pg	23 34 36.3	-0.8
	4.4nm,0.2s,SNR=79						
ETOB				Lg	Lg	23 34 43.9	
	1.8nm,0.1s,SNR=11						
ETOB	**Tobarra**	**0.50**	**300**	Pg	Pg	23 34 36.3	-0.7
	4.4nm,0.2s,SNR=79						
ETOB				Lg	Lg	23 34 43.9	
	1.8nm,0.1s,SNR=11						
EMUR	**La Murta**	**0.58**	**199**	Pg	Pg	23 34 38.1	-0.5
	1.0nm,0.1s,SNR=13						
EMUR				Lg	Lg	23 34 46.1	
	3.8nm,0.2s,SNR=10						
EMUR	**La Murta**	**0.58**	**199**	Pg	Pg	23 34 38.1	-0.5
	1.0nm,0.1s,SNR=13						
EMUR				Lg	Lg	23 34 46.1	
	3.8nm,0.2s,SNR=10						
EVIA	**Vianos**	**1.21**	**282**	Pg	Pg	23 34 49.8	-0.8
	2.3nm,0.2s,SNR=7.9						
EVIA				Lg	Lg	23 35 05.5	
	2.3nm,0.2s,SNR=7.9						
EVIA	**Vianos**	**1.21**	**282**	Pg	Pg	23 34 49.8	-0.8
	2.3nm,0.2s,SNR=7.9						
EVIA				Lg	Lg	23 35 05.5	
	2.3nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**1.25**	**258**	Pg	Pg	23 34 50.3	-1.1
	0.2nm,0.1s,SNR=7.9						
SESP				Lg	Lg	23 35 07.1	
	1.4nm,0.1s,SNR=7.9						
SESP	**Santiago Espad**	**1.25**	**258**	Pg	Pg	23 34 50.3	-1.1
	0.2nm,0.1s,SNR=7.9						
SESP				Lg	Lg	23 35 07.1	
	1.4nm,0.1s,SNR=7.9						
EQES	**Quesada**	**1.74**	**251**	Pn	Pn	23 34 57.6	-1.1
	0.1nm,0.1s,SNR=7.9						
EQES				Pg	Pb	23 34 60.0	-0.1
	0.4nm,0.2s,SNR=14						
EQES				Sn	Sn	23 35 19.8	-1.7
	0.1nm,0.1s,SNR=7.9						
EQES				Lg	Lg	23 35 22.9	
	1.1nm,0.1s,SNR=12						
EQES	**Quesada**	**1.74**	**251**	Pn	Pn	23 34 57.6	-1.1
	0.1nm,0.1s,SNR=7.9						
EQES	**Quesada**	**1.74**	**251**	Pg	Pb	23 35 00.0	-0.1
	0.4nm,0.2s,SNR=14						
EQES				Sn	Sn	23 35 19.8	-1.7
	0.1nm,0.1s,SNR=7.9						
EQES				Lg	Lg	23 35 22.9	
	1.1nm,0.1s,SNR=12						
GORA	**Gorafe**	**1.86**	**241**	Pn	Pn	23 34 58.5	-1.8
	0.9nm,0.0s,SNR=7.9						
GORA				Lg	Lg	23 35 26.4	
	5.1nm,0.2s,SNR=7.9						
GORA	**Gorafe**	**1.86**	**241**	Pn	Pn	23 34 58.5	-1.8
	0.9nm,0.0s,SNR=7.9						
GORA				Lg	Lg	23 35 26.4	
	5.1nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**2.64**	**300**	Pg	Pb	23 35 16.5	+1.0
	0.1nm,0.1s,baz=114,slow=17,SNR=7.5						
ESDC	**Sonseca Array**	**2.64**	**300**	Pg	Pb	23 35 16.5	+1.1
	0.1nm,0.1s,SNR=7.5						

INMG ***10*** *23:35:05.4±1.8,38.25N×0.84W,h23km±5km,ML2.7,Error ellipse: s-maj=8.3km s-min=3.4km az=122.0*
CSEM ***10*** *23:35:06.8±0.1,38.38N×1.14W,h10km,ML3.1/29,Error ellipse: s-maj=3.3km s-min=2.0km az=145.0*
LDG ***10*** *23:35:08.2±0.1,38.33N×1.08W,h10km,Ml2.6/3,Error ellipse: s-maj=3.6km s-min=1.8km az=144.0*
MDD 10 23:35:07.6±0.3,38.33N×1.05W,h10km±1km,mbLg2.6/39, 2C-1D,Error ellipse: s-maj=3.9km s-min=2.3km az=131.0,PRXIMO,Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETOB	**Tobarra**	**0.50**	**309**	⇑Pg	Pg	23 35 16.7	-0.6
	103nm,0.2s,SNR=18						
ETOB				Lg	Lg	23 35 23.9	
	176nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**0.50**	**309**	Pg	Pg	23 35 16.7	-0.7
	103nm,0.2s,SNR=18						
ETOB				Lg	Lg	23 35 23.9	
	176nm,0.2s,SNR=7.9						
EMUR	**La Murta**	**0.51**	**197**	⇓Pg	Pg	23 35 16.4	-1.1
	6.7nm,0.3s,SNR=18						
EMUR				Lg	Lg	23 35 23.8	
	169nm,0.4s,SNR=25						
EMUR	**La Murta**	**0.51**	**197**	Pg	Pg	23 35 16.4	-1.1
	6.7nm,0.3s,SNR=18						
EMUR				Lg	Lg	23 35 23.8	
	169nm,0.4s,SNR=25						
AFON	**Font Roja**	**0.52**	**50**	Pg	Pg	23 35 17.4	-0.4
	1.9nm,0.3s,SNR=19						
AFON				Lg	Lg	23 35 24.8	
	140nm,0.6s,SNR=7.9						
AFON	**Font Roja**	**0.52**	**50**	Pg	Pg	23 35 17.4	-0.3
	1.9nm,0.3s,SNR=19						
AFON				Lg	Lg	23 35 24.8	
	140nm,0.6s,SNR=7.9						
EVIA	**Vianos**	**1.18**	**285**	Pg	Pb	23 35 28.9	-1.3
	46nm,0.2s,SNR=7.9						
EVIA				Lg	Lg	23 35 45.6	
	96nm,0.3s,SNR=7.9						
EVIA	**Vianos**	**1.18**	**285**	Pg	Pb	23 35 28.9	-1.3
	46nm,0.2s,SNR=7.9						
EVIA				Lg	Lg	23 35 45.6	
	96nm,0.3s,SNR=7.9						
SESP	**Santiago Espad**	**1.20**	**260**	Pg	Pb	23 35 29.6	-0.8
	6.9nm,0.1s,SNR=7.9						
SESP				Lg	Lg	23 35 46.7	
	229nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**1.20**	**260**	Pg	Pb	23 35 29.6	-0.9
	6.9nm,0.1s,SNR=7.9						
SESP				Lg	Lg	23 35 46.7	
	229nm,0.2s,SNR=7.9						
ENIJ	**Nijar**	**1.64**	**214**	Pn	Pn	23 35 34.5	-2.0
	4.0nm,0.3s,SNR=7.9						
ENIJ	**Nijar**	**1.64**	**214**	Pn	Pn	23 35 34.5	-2.0
	4.0nm,0.3s,SNR=7.9						
EQES	**Quesada**	**1.68**	**252**	Pn	Pn	23 35 36.8	-0.4
	4.0nm,0.3s,SNR=32						
EQES				Pg	Pg	23 35 39.3	-0.5
	10nm,0.2s,SNR=7.9						
EQES				Sn	Sn	23 35 56.7	-2.1
	3.1nm,0.1s,SNR=7.9						
EQES				Lg	Lg	23 36 01.1	
	154nm,0.4s,SNR=7.9						
EQES	**Quesada**	**1.68**	**252**	Pn	Pn	23 35 36.8	-0.4
	4.0nm,0.3s,SNR=32						
GORA	**Gorafe**	**1.79**	**242**	Pg	Pg	23 35 41.3	-0.6
	5.8nm,0.2s,SNR=7.9						
GORA				Lg	Lg	23 36 05.9	
	316nm,0.5s,SNR=7.9						
GORA	**Gorafe**	**1.79**	**242**	Pg	Pg	23 35 41.3	-0.6
	5.8nm,0.2s,SNR=7.9						
GORA				Lg	Lg	23 36 05.9	
	316nm,0.5s,SNR=7.9						
EIBI	**Ibiza**	**2.00**	**69**	Pn	Pn	23 35 39.9	-1.5
	2.6nm,0.3s,SNR=11						
EIBI				Sn	Sn	23 36 03.9	-2.5
	4.9nm,0.2s,SNR=7.9						
EIBI	**Ibiza**	**2.00**	**69**	Pn	Pn	23 35 39.9	-1.5
	2.6nm,0.3s,SNR=11						
EBER	**Berja**	**2.05**	**226**	Pn	Pn	23 35 41.0	-1.3
	1.1nm,0.2s,SNR=13						
EBER				Sn	Sn	23 36 06.5	-1.4
	1.9nm,0.2s,SNR=7.9						
EBER				Lg	Lg	23 36 13.7	
	21nm,0.4s,SNR=7.9						
EBER	**Berja**	**2.05**	**226**	Pn	Pn	23 35 41.0	-1.2
	1.1nm,0.2s,SNR=13						
EBER				Sn	Sn	23 36 06.5	-1.4
	1.9nm,0.2s,SNR=7.9						
EBER				Lg	Lg	23 36 13.7	
	21nm,0.4s,SNR=7.9						
EMOS	**Mosqueruela**	**2.08**	**12**	Pn	Pn	23 35 41.9	-0.8
	1.1nm,0.1s,SNR=14						
EMOS				Sn	Sn	23 36 05.8	-2.9
	4.0nm,0.3s,SNR=7.9						
EMOS				Lg	Lg	23 36 13.0	
	9.5nm,0.4s,SNR=7.9						
EMOS	**Mosqueruela**	**2.08**	**12**	Pn	Pn	23 35 41.9	-0.8
	1.1nm,0.1s,SNR=14						
EMOS				Sn	Sn	23 36 05.8	-2.9
	4.0nm,0.3s,SNR=7.9						
EMOS				Lg	Lg	23 36 13.0	
	9.5nm,0.4s,SNR=7.9						
EQUE	**Quentar**	**2.20**	**240**	Pn	Pn	23 35 43.8	-0.5
	0.6nm,0.1s,SNR=7.9						
EQUE				Pg	Pb	23 35 47.1	-0.4
	6.8nm,0.2s,SNR=7.9						
EQUE				Lg	Lg	23 36 18.2	
	45nm,0.4s,SNR=11						
EQUE	**Quentar**	**2.20**	**240**	Pn	Pn	23 35 43.8	-0.5
	0.6nm,0.1s,SNR=7.9						
SELV	**Sierra Elvira**	**2.39**	**244**	Pn	Pn	23 35 46.4	-0.4
	0.6nm,0.2s,SNR=7.9						
SELV				Pg	Pb	23 35 51.2	+0.6
	1.3nm,0.2s,SNR=7.9						
SELV				Lg	Lg	23 36 23.3	
	20nm,0.5s,SNR=7.9						
SELV	**Sierra Elvira**	**2.39**	**244**	Pn	Pn	23 35 46.4	-0.4
	0.6nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**2.64**	**301**	Pn	Pn	23 35 48.2	-2.1
	0.7nm,0.2s,baz=119,slow=13,SNR=14						
ESDC				Pg	Pb	23 35 55.9	+0.9
	4.2nm,0.3s,baz=120,slow=18,SNR=44						

ECAB	**El Cabril**	**3.45**	**267**	Pn	Pn	23 35 59.3	-2.1
	1.1nm,0.2s,SNR=14							
ECAB				Sn	Sn	23 36 38.3	-4.1
	2.7nm,0.2s,SNR=5.5							
ECAB				Lg	Lg	23 36 56.9	
	8.2nm,0.3s,SNR=7.9							
ESPR	**Espera**	**4.09**	**251**	Sn	Sn	23 36 59.0	+1.0
	3.2nm,0.2s,SNR=7.9							
ESPR				Lg	Lg	23 37 21.7	
	6.3nm,0.4s,SNR=7.9							
EPLA	**Plasencia**	**4.28**	**295**	Pn	Pn	23 36 10.5	-2.2
	0.3nm,0.2s,SNR=7.9							
EPLA				Pg	Pb	23 36 25.5	+2.6
	0.3nm,0.1s,SNR=7.9							
EPLA				Lg	Lg	23 37 21.6	
	8.7nm,0.3s,SNR=7.9							
EPLA	**Plasencia**	**4.28**	**295**	Pn	Pn	23 36 10.5	-2.2
	0.3nm,0.2s,SNR=7.9							
CFON	**Fontmartina**	**4.35**	**37**	Pn	Pn	23 36 12.3	-1.5
	0.5nm,0.1s,SNR=7.9							
CFON				Sn	Sn	23 36 59.5	-5.0
	2.0nm,0.2s,SNR=7.9							
CFON	**Fontmartina**	**4.35**	**37**	Pn	Pn	23 36 12.3	-1.5
	0.5nm,0.1s,SNR=7.9							
CSOR	**Sort**	**4.37**	**22**	Pn	Pn	23 36 13.0	-1.1
	0.3nm,0.1s,SNR=7.9							
CSOR	**Sort**	**4.37**	**22**	Pn	Pn	23 36 13.0	-1.1
	0.3nm,0.1s,SNR=7.9							
IEPA	**Eparoz**	**4.45**	**358**	Pn	Pn	23 36 14.9	-0.2
	0.3nm,0.2s,SNR=7.9							
IEPA				Pg	Pg	23 36 29.4	-3.3
	0.5nm,0.1s,SNR=7.9							
IEPA				Lg	Lg	23 37 28.6	
	0.8nm,0.2s,SNR=7.9							
IEPA	**Eparoz**	**4.45**	**358**	Pn	Pn	23 36 14.9	-0.2
	0.3nm,0.2s,SNR=7.9							
EMIN	**Mina Concepcio**	**4.47**	**265**	Pn	Pn	23 36 13.9	-1.5
	0.2nm,0.1s,SNR=7.9							
EMIN				Sn	Sn	23 37 03.8	-3.8
	2.3nm,0.4s,SNR=7.9							
EMIN				Lg	Lg	23 37 28.9	
	3.2nm,0.4s,SNR=7.9							
EMIN	**Mina Concepcio**	**4.47**	**265**	Pn	Pn	23 36 13.9	-1.6
	0.2nm,0.1s,SNR=7.9							
EMIN				Sn	Sn	23 37 03.8	-3.8
	2.3nm,0.4s,SNR=7.9							
EMIN				Lg	Lg	23 37 28.9	
	3.2nm,0.4s,SNR=7.9							
IELO	**Elcoad**	**4.51**	**358**	Pn	Pn	23 36 15.7	-0.2
	0.2nm,0.2s,SNR=7.9							
IELO	**Elcoad**	**4.51**	**358**	Pn	Pn	23 36 15.7	-0.3
	0.2nm,0.2s,SNR=7.9							
ETSF	**Etsaut**	**4.58**	**5**	*e*Pn	Pn	23 36 16.0	-0.9
ETSF				*e*Sg	Sg	23 37 32.2	-2.3
	1.3nm,0.3s							
ETSF	**Etsaut**	**4.58**	**5**	Pn	Pn	23 36 16.0	-0.9
ETSF				Lg	Lg	23 37 32.2	
	0.6nm,0.3s							
ETSF	**Etsaut**	**4.58**	**5**	Pn	Pn	23 36 16.0	-0.9
ETSF				*e*Sg	Sg	23 37 32.2	-2.3
	0.6nm,0.3s							
EBAD	**Badajoz**	**4.70**	**277**	Pn	Pn	23 36 17.1	-1.4
	0.2nm,0.1s,SNR=7.9							
EBAD				Pg	Pg	23 36 34.4	-3.1
	1.1nm,0.4s,SNR=6.3							
EBAD				Sn	Sn	23 37 08.1	-4.9
	3.3nm,0.2s,SNR=7.9							
EBAD				Lg	Lg	23 37 37.4	
	3.6nm,0.4s,SNR=11							
EBAD	**Badajoz**	**4.70**	**277**	Pn	Pn	23 36 17.1	-1.4
	0.2nm,0.1s,SNR=7.9							
PBAR	**Barrancos**	**4.72**	**270**	*e*Pn	Pn	23 36 16.7	-2.1
PBAR	**Barrancos**	**4.72**	**270**	*e*Pg	Pb	23 36 25.8	-4.6
PBAR				*e*Sn	Sn	23 37 10.3	-3.3
PBAR				*e*Sg	Sg	23 37 36.8	-2.3
PBAR				A	A	23 37 43.1	
	24nm,0.7s							
PBAR	**Barrancos**	**4.72**	**270**	Pn	Pn	23 36 16.7	-2.1
PBAR				Pg	Pb	23 36 25.8	-4.6
PBAR				Sn	Sn	23 37 10.3	-3.3
PBAR				Lg	Lg	23 37 36.8	
	24nm,0.7s							
PBAR	**Barrancos**	**4.72**	**270**	Pn	Pn	23 36 16.7	-2.1
PBAR				Sn	Sn	23 37 10.3	-3.3
PBAR				*e*Sg	Sg	23 37 36.8	-2.3
	24nm,0.7s							
CLLI	**Llivia**	**4.74**	**28**	Pn	Pn	23 36 18.5	-0.7
	0.3nm,0.2s,SNR=7.9							
CLLI	**Llivia**	**4.74**	**28**	Pn	Pn	23 36 18.5	-0.7
	0.3nm,0.2s,SNR=7.9							
SJPF	**Ste Jean**	**4.78**	**358**	*e*Pn	Pn	23 36 19.3	-0.3
SJPF				*e*Sg	Sg	23 37 37.1	-3.9
	2.4nm,0.5s							
SJPF	**Ste Jean**	**4.78**	**358**	Pn	Pn	23 36 19.3	-0.3
SJPF				Lg	Lg	23 37 37.1	
	1.2nm,0.5s							
SJPF	**Ste Jean**	**4.78**	**358**	Pn	Pn	23 36 19.3	-0.3
SJPF				*e*Sg	Sg	23 37 37.1	-3.9
	1.2nm,0.5s							
EPF	**Esparros**	**4.81**	**12**	*e*Pn	Pn	23 36 20.2	+0.1
EPF				*e*Sg	Sg	23 37 39.1	-2.9
	3.9nm,0.4s							
EPF	**Esparros**	**4.81**	**12**	Pn	Pn	23 36 20.2	+0.1
EPF				Lg	Lg	23 37 39.1	
	1.9nm,0.4s							
EPF	**Esparros**	**4.81**	**12**	Pn	Pn	23 36 20.2	+0.1
EPF				*e*Sg	Sg	23 37 39.1	-2.9
	2.0nm,0.4s							
EALK	**Alkurruntz**	**4.89**	**356**	Pn	Pn	23 36 21.6	+0.3
	0.4nm,0.2s,SNR=7.9							
EALK	**Alkurruntz**	**4.89**	**356**	Pn	Pn	23 36 21.6	+0.3
	0.4nm,0.2s,SNR=7.9							
PMRV	**Marv??o**	**5.07**	**284**	*e*Sg	Sg	23 37 45.5	-4.8
PMRV				A	A	23 37 52.8	
	11nm,0.6s							
PMRV	**Marv??o**	**5.07**	**284**	Lg	Lg	23 37 45.5	
	11nm,0.6s							
PMRV	**Marv??o**	**5.07**	**284**	*e*Sg	Sg	23 37 45.5	-4.8
	11nm,0.6s							
PESTR	**Estremoz**	**5.15**	**278**	*e*Pn	Pn	23 36 22.9	-1.9
PESTR	**Estremoz**	**5.15**	**278**	*e*Pg	Pg	23 36 43.9	-2.4
PESTR				*e*Sn	Sn	23 37 21.0	-3.3
PESTR				*e*Sg	Sg	23 37 48.0	-5.0
PESTR				A	A	23 37 59.9	
	9.8nm,0.6s							
PESTR	**Estremoz**	**5.15**	**278**	*e*Pn	Pn	23 36 22.9	-1.9
PESTR	**Estremoz**	**5.15**	**278**	*e*Pg	Pg	23 36 43.9	-2.4
PESTR				*e*Sn	Sn	23 37 21.0	-3.3
PESTR				*e*Sg	Sg	23 37 48.0	-5.0
	9.8nm,0.6s							
ELAN	**Lanestosa**	**5.22**	**340**	Pn	Pn	23 36 25.2	-0.5
	0.5nm,0.2s,SNR=7.9							
ELAN	**Lanestosa**	**5.22**	**340**	Pn	Pn	23 36 25.2	-0.5
	0.5nm,0.2s,SNR=7.9							
PCBR	**Castelo Branco**	**5.22**	**289**	*e*Sn	Sn	23 37 23.1	-2.9
PCBR				*e*Sg	Sg	23 37 50.4	-4.9
PCBR				A	A	23 37 57.3	
	5.7nm,0.7s							
PCBR	**Castelo Branco**	**5.22**	**289**	Sn	Sn	23 37 23.1	-2.9
PCBR				Lg	Lg	23 37 50.4	
	2.8nm,0.7s							
PCBR	**Castelo Branco**	**5.22**	**289**	Sn	Sn	23 37 23.1	-2.9
PCBR				*e*Sg	Sg	23 37 50.4	-4.9
	5.7nm,0.7s							
PBEJ	**Beja**	**5.38**	**269**	*e*Sg	Sg	23 37 58.6	-1.7
PBEJ				A	A	23 38 03.8	
	4.3nm,0.5s							
PBEJ	**Beja**	**5.38**	**269**	Lg	Lg	23 37 58.6	
	2.2nm,0.5s							
PBEJ	**Beja**	**5.38**	**269**	*e*Sg	Sg	23 37 58.6	-1.7
	4.3nm,0.5s							
MVO	**Moncorvo**	**5.41**	**303**	*e*Pn	Pn	23 36 26.3	-2.0
MVO				*e*Sn	Sn	23 37 24.9	-5.8
MVO				*e*Sg	Sg	23 37 56.3	-4.9
MVO				A	A	23 38 10.9	
	7.8nm,0.7s							
MVO	**Moncorvo**	**5.41**	**303**	Pn	Pn	23 36 26.5	-1.8
	1.0nm,0.3s,SNR=6.2							
MVO				Sn	Sn	23 37 25.0	-5.6
	2.6nm,0.5s,SNR=7.9							
MVO				Lg	Lg	23 38 00.6	
	11nm,0.4s,SNR=7.9							
MVO	**Moncorvo**	**5.41**	**303**	Pn	Pn	23 36 26.5	-1.8
	1.0nm,0.3s,SNR=6.2							
MVO				Sn	Sn	23 37 25.0	-5.7
	2.6nm,0.5s,SNR=7.9							
MVO				*e*Sg	Sg	23 37 56.3	-4.9
	7.8nm,0.7s							
MVO				Lg	Lg	23 38 00.6	
	11nm,0.4s,SNR=7.9							
MTE	**Manteigas**	**5.44**	**294**	*e*Pn	Pn	23 36 27.3	-1.5
MTE				*e*Sn	Sn	23 37 28.5	-3.0
MTE				*e*Sg	Sg	23 37 57.7	-4.5
MTE				A	A	23 38 10.3	
	7.7nm,0.5s							
MTE	**Manteigas**	**5.44**	**294**	Pn	Pn	23 36 27.3	-1.5
MTE				Sn	Sn	23 37 28.5	-3.0
MTE				Lg	Lg	23 37 57.7	
	3.8nm,0.5s							
MTE	**Manteigas**	**5.44**	**294**	Pn	Pn	23 36 27.3	-1.5
MTE				Sn	Sn	23 37 28.5	-3.0
MTE				*e*Sg	Sg	23 37 57.7	-4.5
	7.7nm,0.5s							
EVO	**Evora**	**5.47**	**274**	*e*Sg	Sg	23 37 57.7	-5.5
EVO	**Evora**	**5.47**	**274**	Lg	Lg	23 37 57.7	
EVO	**Evora**	**5.47**	**274**	*e*Sg	Sg	23 37 57.7	-5.5
PBDV	**Barranco-do-Ve**	**5.56**	**261**	*e*Pn	Pn	23 36 28.6	-1.8
PBDV				*e*Sn	Sn	23 37 30.9	-3.4
PBDV				*e*Sg	Sg	23 38 04.5	-1.5
PBDV				A	A	23 38 09.5	
	7.0nm,0.5s							
PBDV	**Barranco-do-Ve**	**5.56**	**261**	Pn	Pn	23 36 28.6	-1.8
PBDV				Sn	Sn	23 37 30.9	-3.4
PBDV				Lg	Lg	23 38 04.5	
	7.0nm,0.5s							
PBDV	**Barranco-do-Ve**	**5.56**	**261**	Pn	Pn	23 36 28.6	-1.8
PBDV				Sn	Sn	23 37 30.9	-3.4
PBDV				*e*Sg	Sg	23 38 04.5	-1.5
	7.0nm,0.5s							
PCVE	**Castro Verde**	**5.57**	**265**	*e*Sg	Sg	23 38 00.5	-5.8
PCVE				A	A	23 38 11.9	
	4.5nm,0.4s							
PCVE	**Castro Verde**	**5.57**	**265**	Lg	Lg	23 38 00.5	
	4.5nm,0.4s							
PCVE	**Castro Verde**	**5.57**	**265**	Lg	Lg	23 38 00.5	
	4.5nm,0.4s							
PBRG	**Braganca**	**5.58**	**310**	*e*Pn	Pn	23 36 28.7	-1.9
PBRG				*e*Sg	Sg	23 38 03.0	-3.6
PBRG				A	A	23 38 09.6	
	6.9nm,0.5s							
PBRG	**Braganca**	**5.58**	**310**	Pn	Pn	23 36 28.7	-1.9
PBRG				Lg	Lg	23 38 03.0	
	3.5nm,0.5s							
PBRG	**Braganca**	**5.58**	**310**	Pn	Pn	23 36 28.7	-1.9
PBRG				*e*Sg	Sg	23 38 03.0	-3.6
	6.9nm,0.5s							
ECAL	**Calabor**	**5.66**	**311**	Pn	Pn	23 36 29.6	-2.1
	1.6nm,0.3s,SNR=6.9							
ECAL				Lg	Lg	23 38 07.3	
	19nm,1.1s,SNR=7.9							
ECAL	**Calabor**	**5.66**	**311**	Pn	Pn	23 36 29.6	-2.2
	1.6nm,0.3s,SNR=6.9							
ECAL				Lg	Lg	23 38 07.3	
	19nm,1.1s,SNR=7.9							
PMTG	**Montargil**	**5.66**	**280**	*e*Pn	Pn	23 36 29.7	-2.1
PMTG				*e*Sn	Sn	23 37 33.6	-3.2
PMTG				*e*Sg	Sg	23 38 06.1	-3.2
PMTG				A	A	23 38 16.5	
	7.8nm,0.7s							
PMTG	**Montargil**	**5.66**	**280**	*e*Pn	Pn	23 36 29.7	-2.1
PMTG				*e*Sn	Sn	23 37 33.6	-3.2
PMTG				*e*Sg	Sg	23 38 06.1	-3.2
	7.8nm,0.7s							
MESJ	**Messejana**	**5.68**	**267**	*e*Sg	Sg	23 38 08.3	-1.6
MESJ				A	A	23 38 10.6	
	5.7nm,0.6s							
MESJ	**Messejana**	**5.68**	**267**	Lg	Lg	23 38 08.3	
	5.7nm,0.6s							
MESJ	**Messejana**	**5.68**	**267**	*e*Sg	Sg	23 38 08.3	-1.6
	5.7nm,0.6s							
PVIS	**Viseu**	**5.80**	**296**	*e*Pn	Pn	23 36 31.7	-2.1
PVIS				*e*Sg	Sg	23 38 09.9	-4.0
PVIS				A	A	23 38 17.7	
	5.3nm,0.6s							
PVIS	**Viseu**	**5.80**	**296**	Pn	Pn	23 36 31.7	-2.1
PVIS				Lg	Lg	23 38 09.9	
	2.7nm,0.6s							
PVIS	**Viseu**	**5.80**	**296**	Pn	Pn	23 36 31.7	-2.1
PVIS				*e*Sg	Sg	23 38 09.9	-4.0
	5.3nm,0.6s							
EARI	**Arriondas**	**5.88**	**329**	Pn	Pn	23 36 34.3	-0.6
	0.3nm,0.2s,SNR=7.9							
EARI	**Arriondas**	**5.88**	**329**	Pn	Pn	23 36 34.3	-0.5
	0.3nm,0.2s,SNR=7.9							
PNCL	**Nicolau / Gran**	**5.89**	**270**	*e*Sg	Sg	23 38 13.3	-3.5
PNCL				A	A	23 38 30.6	
	4.3nm,0.7s							
PNCL	**Nicolau / Gran**	**5.89**	**270**	*e*Sg	Sg	23 38 13.3	-3.5
	4.3nm,0.7s							
PVRL	**Vila Real**	**5.92**	**302**	*e*Sg	Sg	23 38 16.6	-0.9
PVRL				A	A	23 38 21.8	
	3.6nm,0.4s							
PVRL	**Vila Real**	**5.92**	**302**	Lg	Lg	23 38 16.6	
	1.8nm,0.4s							
PVRL	**Vila Real**	**5.92**	**302**	Lg	Lg	23 38 16.6	
	1.8nm,0.4s							
POLO	**Lamas de Olo**	**6.01**	**302**	*e*Pn	Pn	23 36 34.6	-2.1
POLO				*e*Sg	Sg	23 38 19.3	-1.3
POLO				A	A	23 38 34.3	
	2.2nm,0.7s							
POLO	**Lamas de Olo**	**6.01**	**302**	*e*Pn	Pn	23 36 34.6	-2.1
POLO				*e*Sg	Sg	23 38 19.3	-1.3
	2.2nm,0.7s							
PCAS	**Casmilo, Conde**	**6.04**	**289**	*e*Pn	Pn	23 36 35.5	-1.4
PCAS				*e*Sn	Sn	23 37 44.6	-1.5
PCAS				*e*Sg	Sg	23 38 18.0	-3.3
PCAS				A	A	23 38 25.1	
	10.0nm,0.6s							
PCAB	**Cabril**	**6.33**	**304**	*e*Sg	Sg	23 38 25.5	-5.2
PCAB				A	A	23 38 30.4	
	6.0nm,0.6s							
PCAB	**Cabril**	**6.33**	**304**	Lg	Lg	23 38 25.5	
	3.0nm,0.6s							
PCAB	**Cabril**	**6.33**	**304**	*e*Sg	Sg	23 38 25.5	-5.2
	6.0nm,0.6s							
ELOB	**Lobios**	**6.43**	**306**	Pn	Pn	23 36 40.1	-2.3
	0.4nm,0.2s,SNR=7.9							
ELOB				Lg	Lg	23 38 33.3	
	10nm,0.6s,SNR=7.9							
ELOB	**Lobios**	**6.43**	**306**	Pn	Pn	23 36 40.1	-2.3
	0.4nm,0.2s,SNR=7.9							
ELOB				Lg	Lg	23 38 33.3	
	10nm,0.6s,SNR=7.9							
PGAV	**Gavieira, Arco**	**6.62**	**306**	*e*Pn	Pn	23 36 43.0	-1.9
PGAV	**Gavieira, Arco**	**6.62**	**306**	*e*Pn	Pn	23 36 43.0	-1.9
CAF	**Calvac**	**6.99**	**18**	*e*Pn	Pn	23 36 48.5	-1.5
CAF	**Calviac**	**6.99**	**18**	Pn	Pn	23 36 48.5	-1.5
CAF	**Calviac**	**6.99**	**18**	Pn	Pn	23 36 48.5	-1.5

*ISCJB **10** 23:36:59.4±0.6,39°.13N±0'.04×29°.01E±0'.04,h2km,8km, Error ellipse: s-maj=6.3km s-min=4.3km az=154.1*
*DDA **10** 23:36:59.4,39°.10N×29°.03E,h7km,Md2.9*
*ISK **10** 23:36:59.4,39°.14N×29°.03E,h7km,MD2.7*
*CSEM **10** 23:36:59.6±0.1,39°.13N×29°.01E,h5km,MD2.9,Error ellipse: s-maj=3.7km s-min=3.2km az=115.0*

ISC 10 23:36:59.6±0.9,39°12N±0'.02×29°02E±0'.02,h10km±10km, n30,σ0°59/42,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.25**	**252**	*i* P	**Pg**	**23 37 05.0**	**+0.3**
DEMI				*i* S	**Sg**	**23 37 08.4**	**+0.3**
DEMI	**Demirci**	**0.25**	**252**	P	**Pg**	**23 37 05.0**	**+0.3**
DEMI				S	**Sg**	**23 37 08.4**	**+0.3**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pg**	**23 37 07.0**	**+0.1**
GDZ				*i* S	**Sg**	**23 37 11.9**	**+0.1**
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**23 37 07.0**	**+0.1**
GDZ				S	**Sg**	**23 37 11.9**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pg**	**23 37 09.0**	**0.0**
TVSB				*e*SG	**Sg**	**23 37 15.1**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pg**	**23 37 09.0**	**0.0**
TVSB				*e*Sg	**Sg**	**23 37 15.1**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**23 37 12.6**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**23 37 12.6**	**+0.1**
MANT	**Manisa**	**0.72**	**210**	*i* P	**Pg**	**23 37 12.6**	**-1.1**
MANT				*i* S	**Sg**	**23 37 21.6**	**-1.5**
MANT	**Manisa**	**0.72**	**210**	P	**Pg**	**23 37 12.6**	**-1.1**
MANT				S	**Sg**	**23 37 21.6**	**-1.5**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pb**	**23 37 17.2**	**+0.1**
KHL				*e*SG	**Sb**	**23 37 30.2**	**+1.2**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pb**	**23 37 17.2**	**+0.1**
KHL				*e*Sg	**Sb**	**23 37 30.2**	**+1.2**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pb**	**23 37 19.5**	**+0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pb**	**23 37 19.5**	**+0.1**
BALY	**Balya**	**1.25**	**300**	*i* P	**Pg**	**23 37 24.0**	**+0.4**
BALY				*i* S	**Sg**	**23 37 39.0**	**-0.8**
BALY	**Balya**	**1.25**	**300**	P	**Pg**	**23 37 24.0**	**+0.4**
BALY				S	**Sg**	**23 37 39.0**	**-0.8**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**23 37 24.0**	**+0.3**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**23 37 24.0**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pg**	**23 37 23.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pg**	**23 37 23.5**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pb**	**23 37 23.2**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pb**	**23 37 23.2**	**-0.2**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pg**	**23 37 23.7**	**-0.3**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pg**	**23 37 23.7**	**-0.3**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**23 37 25.9**	**0.0**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**23 37 25.9**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*PN	**Pg**	**23 37 28.1**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*Pn	**Pg**	**23 37 28.1**	**+0.3**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pb**	**23 37 31.1**	**-0.7**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pb**	**23 37 31.1**	**-0.7**

*IDC **10** 23:39:45.7±0.8,15°.34S×176°.16W,h0km,mb4.3/11, mb1 4.5/11,mb1mx4.3/24,mbtmp4.3/11,MS4.0/20, Ms1 4.0/20,ms1mx4.0/32,Error ellipse: s-maj=34.7km s-min=19.5km az=137.0*
*ISCJB **10** 23:39:47.8±0.4,15°.3S±0°.1×176°.1W±0°.1,h26km,mb4.5/31, MS4.1/17,Error ellipse: s-maj=21.5km s-min=9.1km az=142.3*
*NEIC **10** 23:39:47.0±0.3,15°.32S×176°.01W,h10km,mb4.9/19, Error ellipse: s-maj=16.8km s-min=6.8km az=143.0*
*GCMT **10** 23:39:47.0±0.3,15°.13S×175°.87W,h34km±1km,MW5.1/67, Moment Tensor Solution. s13,c14; s67,c89; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.44±.39; $M_{\theta\theta}$3.64±.34; $M_{\phi\phi}$-1.20±.24; $M_{r\theta}$1.49±.33; $M_{\theta\phi}$4.94±.17; $M_{\phi r}$0.26±.22; Best double couple: $M_0$5.69400×10^{16} NP1:ϕ_s281.00000°,δ84.00000°,λ-18.00000°. NP2: ϕ_s13.00000°,δ72.00000°,λ-174.00000°. Principal axes: T 6.9310, Plg9.0000°, Azm328.0000°; N -2.4730, Plg71.0000°, Azm84.0000°; P -4.4580, Plg17.0000°, Azm236.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 10 23:39:49.8±0.6,15°.3S±0°.2×176°.0W±0°.1,h26km,n59, σ1s07/43,mb4.6/31,MS4.0/17,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**4.31**	**71**	Pn	Pn	23 40 46.9	-6.8
	4.3nm,0.3s,baz=262,slow=14,SNR=4.1						
AFI				Sn	Sn	23 41 33.1	-10
	11nm,0.3s,baz=102,slow=20,SNR=6.5						
AFI				LR	LR	23 42 22.5	
	comp=Z,3μm,21.1s,baz=261,slow=35						
MSVF	**Nonsavu**	**6.20**	**247**	*e*Pn	**Pn**	**23 41 20.4**	**+0.6**
RAO	**Raoul Island**	**13.96**	**187**	LR	LR	23 47 30.6	
	comp=Z,1μm,18.2s,baz=280,slow=33						
RAR	**Rarotonga**	**16.45**	**113**	LR	LR	23 48 25.2	
	comp=Z,447nm,20.3s,baz=292,slow=31						
DZM	**Mont Dzumac**	**17.94**	**245**	*e*P	**P**	**23 44 02.3**	**+4.3**
	89nm,1.6s						
DZM				*e*LR	LR	23 48 22.0	
	2μm,24.9s						
DZM	**Mont Dzumac**	**17.94**	**245**	*e*Pn	**Pn**	**23 43 57.0**	**-0.6**
	87nm,1.6s						
PAE	**Paea**	**25.41**	**99**	*e*T	T	00 11 17.3	
	2.4nm,0.3s						
PPT	**Papeete**	**25.41**	**99**	LR	LR	23 53 44.5	
	comp=Z,95nm,18.4s,baz=294,slow=33						
PPT2	**Papeete2**	**25.41**	**99**	*e*LQ	LQ	23 50 18.4	
	2μm,25.2s						
TBI	**Tubuai**	**26.22**	**112**	*e*LQ	LQ	23 50 42.3	
	1μm,27.8s						
TBI				*e*LR	LR	23 51 53.2	
	594nm,27.5s,baz=288						
TBI	**Tubuai**	**26.22**	**112**	*e*T	T	00 12 20.0	
	8.5nm,0.3s						
TAOE	**Nuku Hiva Isla**	**35.59**	**84**	*e*LR	LR	23 56 03.3	
	663nm,26.0s						
RKT	**Rikitea**	**39.38**	**108**	*e*T	T	00 28 46.0	
	3.4nm,0.3s						
STKA	**Stephens Creek**	**41.92**	**239**	P	**P**	**23 47 36.4**	**-2.0**
	4.6nm,0.9s,baz=106,slow=8.7,SNR=4.9						
STKA				LR	LR	00 03 31.1	
	comp=Z,364nm,18.6s,baz=39,slow=34						
WRA	**Warramunga Arr**	**47.44**	**257**	P	**P**	**23 48 20.6**	**-2.0**
	3.6nm,0.9s,baz=91,slow=6.8,SNR=7.2						
WRA				LR	LR	00 05 40.5	
	comp=Z,228nm,19.6s,baz=120,slow=33						
ASAR	**Alice Springs**	**47.77**	**252**	P	**P**	**23 48 23.4**	**-1.8**
	3.0nm,0.8s,baz=85,slow=8.2,SNR=14						
ASAR				LR	LR	00 06 36.9	
	comp=Z,355nm,20.9s,baz=98,slow=34						
VNDA	**Vanda**	**63.19**	**185**	P	**P**	**23 50 15.6**	**+0.4**
	4.4nm,1.0s,baz=2.1,slow=9.4,SNR=7.4						
VNDA				LR	LR	00 12 05.

comp=Z,95nm,18.2s,baz=64,slow=34
CMAR Chiang Mai Arr 90.24 289 P **P** **23 52 48.4 -0.4**
0.6nm,0.3s,baz=114,slow=2.2,SNR=3.7
YKA Yellowknife Ar 91.05 24 P **P** **23 52 52.4 +0.9**
1.1nm,0.9s,baz=239,slow=4.3,SNR=7.3
YKA LR LR 00 25 56.7
comp=Z,17nm,21.3s,baz=180,slow=30
PLCA Paso Flores 91.38 133 LR LR 00 26 09.2
comp=Z,97nm,19.7s,baz=332,slow=30
SONM Songino Array 93.16 319 P **P** **23 53 02.8 +1.0**
0.2nm,0.5s,baz=141,slow=4.8,SNR=2.7
ULM Lac du Bonnet 95.46 39 LR LR 00 29 45.3
comp=Z,213nm,19.0s,baz=259,slow=31
AKASG Malin Array Be 139.29 335 PKP **PKPdf** **23 59 14.6 +0.1**
0.1nm,0.3s,baz=40,slow=2.2,SNR=2.7
TIRR Tirgusor 144.37 329 *e*PKPdf **PKPdf** **23 59 23.9 +0.2**
BRTR Keskin Array B 144.51 319 PKP **PKPab** **23 59 22.2 -0.5**
9.5nm,1.0s,baz=113,slow=1.9,SNR=17
ANTO Ankara 144.96 320 *e*PKPdf **PKPdf** **23 59 25.9 +0.8**
KHC Kasperske Hory 145.41 349 *e*PKP **PKPab** **23 59 27.0 +1.4**
KHC Kasperske Hory 145.41 349 *e*PKPbc **PKPab** **23 59 25.8 +0.2**
GERES GERESS Array B 145.66 349 PKPbc **PKPab** **23 59 26.3 -0.3**
0.7nm,0.6s,baz=48,slow=2.0,SNR=5.1
TUE Stuetta 148.65 353 *e*PKPdf **PKPdf** **23 59 31.6 +0.4**
TUE *e*PKPab **PKPab** **23 59 38.5 +0.1**

NIED ***11*** *00:09:00,37.˙10N×140.˙90E,h5km,Mw4.0 Best double couple: M₀1.27000×10¹⁵ NP1:ϕ₈82.00000°,δ40.00000°, λ-55.00000°. NP2:ϕ₈220.00000°,δ58.00000°, λ-115.00000°.*

JMA ***11*** *00:09:11.9,37.˙09N×140.˙84E,h8km±1km,M4.4 Broadband fault plane solution: P waves. NP1: ϕ₈218.00000°,δ49.00000°,λ-112.00000°. NP2: ϕ₈71.00000°,δ45.00000°,λ-66.00000°. Principal axes: T Plg2.0000°, Azm324.0000°; N Plg17.0000°, Azm233.0000°; P Plg73.0000°, Azm61.0000°;*

JMA Felt IV J1.

ISCJB ***11*** *00:09:11.3±0.6,37.˙11N±0.˙03×140.˙95E±0.˙04,h17km±3km, mb4.4/67,MS4.0/3 Error ellipse: s-maj=5.6km s-min=3.8km az=27.7*

MOS ***11*** *00:09:14.0±1.2,37.˙12N×140.˙94E,h40km,mb4.5/39,Error ellipse: s-maj=9.6km s-min=5.8km az=112.7*

NEIC ***11*** *00:09:16.5±0.7,37.˙15N×140.˙84E,h41km±6km,mb4.6/20, Error ellipse: s-maj=9.1km s-min=5.2km az=134.0*

NEIC Recorded [4 JMA] in Fukushima.

IDC ***11*** *00:09:17.2±2.1,37.˙07N×140.˙74E,h51km±20km,mb3.9/20, mb1 4.0/23,mb1mx4.0/34,mbtmp4.1/23,ML3.7/3, Error ellipse: s-maj=16.6km s-min=12.1km az=85.0*

ISC 11 00:09:12.1±0.8,37.˙11N±0.˙03×140.˙86E±0.˙04,h14km±4km, n185,σ1$37/190,mb4.5/69,MS3.9/3,16C-17D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.05**	**266**	⇓P	**Pg**	**00 09 13.4**	**-1.3**
JFK	**Kawauchi**	**0.26**	**3**	⇑P	**Pg**	**00 09 17.4**	**-0.3**
JFK				S	**Sg**	**00 09 21.7**	**+0.2**
JHO	**Hitachi**	**0.54**	**205**	⇑P	**Pg**	**00 09 21.9**	**-0.9**
JHO				S	**Sg**	**00 09 29.3**	**-0.7**
JFT	**Otama**	**0.58**	**315**	⇑P	**Pg**	**00 09 23.5**	**-0.1**
JFT				S	**Sg**	**00 09 31.6**	**+0.3**
JSB	**Shiboa**	**0.76**	**260**	⇑P	**Pg**	**00 09 26.9**	**0.0**
JSB				S	**Sg**	**00 09 37.1**	**+0.2**
JMM	**Marumori**	**0.76**	**356**	⇑P	**Pg**	**00 09 26.4**	**-0.5**
JMM				S	**Sg**	**00 09 37.1**	**+0.2**
JFY	**Yanaizu**	**0.97**	**289**	⇑P	**Pb**	**00 09 30.2**	**-0.5**
JFY				S	**Sg**	**00 09 42.7**	**-0.7**
JYT	**Yasato**	**1.02**	**211**	⇑P	**Pb**	**00 09 30.4**	**-1.2**
MJAR	**Matsushiro Arr**	**2.20**	**256**	P	**Pn**	**00 09 49.9**	**+1.6**
	42nm,0.3s,baz=106,slow=15,SNR=146						
MJAR				S	**Sb**	**00 10 18.7**	**-0.1**
	42nm,0.3s,baz=89,slow=25,SNR=15						
MAJO	**Matsushiro**	**2.20**	**256**	*c iP*	**Pn**	**00 09 49.6**	**+1.3**
MAJO	**Matsushiro**	**2.20**	**256**	*e*Pn	**Pb**	**00 09 50.1**	**-1.5**
MAT	**Matsushiro**	**2.20**	**256**	P	**Pb**	**00 09 50.2**	**-1.5**
MAT				S	**Sb**	**00 10 17.9**	**-0.9**
MJB9	**Matsu-Tunnel**	**2.20**	**256**	*e*Pn	**Pb**	**00 09 50.5**	**-1.2**
INU	**Inuyama**	**3.56**	**242**	*e*Pn	**Pn**	**00 10 10.4**	**+3.4**
JHJ	**Hachijo jima 2**	**4.07**	**193**	P	**Pn**	**00 10 16.2**	**+2.1**
	22nm,0.3s,baz=60,slow=20,SNR=6.1						
JHJ				S	**Sn**	**00 11 03.2**	**+1.7**
	11nm,0.3s,baz=48,slow=20,SNR=5.7						
ERM	**Erimo**	**5.22**	**19**	*e*P	**Pn**	**00 10 29.4**	**-0.3**
ERM	**Erimo**	**5.22**	**19**	*e*Pn	**Pn**	**00 10 31.0**	**+1.3**
ASAJ	**Asahikawa**	**7.13**	**10**	P	**Pn**	**00 10 56.1**	**+0.2**
	2.6nm,0.3s,baz=208,slow=13,SNR=7.5						
ASAJ	**Asahikawa**	**7.13**	**10**	*e*Pn	**Pn**	**00 10 56.7**	**+0.7**
JNU	**Nakatsue**	**9.09**	**247**	P	**Pn**	**00 11 25.4**	**+2.5**
	0.5nm,0.3s,baz=55,slow=10,SNR=6.8						
MSHR	**Mys Shultsa**	**9.25**	**309**	*e*P	**Pn**	**00 11 26.5**	**+1.5**
USRK	**Ussuriysk Ar.**	**9.77**	**319**	P	Pn	00 11 38.4	+6.2
	0.2nm,0.3s,baz=128,slow=12,SNR=20						
KSRS	**Korea Array**	**10.31**	**276**	P	Pn	00 11 45.7	+6.1
	0.4nm,0.3s,baz=93,slow=14,SNR=19						
KSAR	**Wonju Array Be**	**10.35**	**276**	P	Pn	00 11 45.7	+5.6
KSAR	**Wonju Array Be**	**10.35**	**276**	P	Pn	00 11 45.7	+5.6
MDJ	**Mudanjiang**	**11.35**	**315**	P	Pn	00 12 00.5	+6.6
MDJ				pmax	pmax		
	comp=Z,9.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,42nm,4.5s						
MDJ				LR	LR		
	comp=N,85nm,31.3s						
MDJ				LR	LR		
	comp=E,90nm,30.3s						
MDJ				LR	LR		
	comp=Z,170nm,31.0s						
CN2	**Changchun**	**13.50**	**304**	*e*P	**Pn**	**00 12 26.7**	**+3.6**
KLR	**Kul'dur**	**13.81**	**334**	*e*P	**Pn**	**00 12 28.3**	**+0.9**
BJI	**Beijing**	**19.50**	**286**	P	Pn	**00 13 39.9**	**-0.2**
BJI				S	**Sn**	**00 17 13.0**	**-5.7**
BJI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
BJI				LR	LR		
	comp=N,110nm,13.5s						
BJI				LR	LR		
	comp=E,92nm,16.1s						
HIA	**Hailar**	**19.54**	**315**	*e*P	**Pn**	**00 13 40.1**	**-0.4**
HIA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
YHNB	**Yeheng**	**20.76**	**239**	*e*P	Pn	00 13 56.1	+1.0
	comp=Z,106nm,1.6s						
YHNB				*e*S	Sn	00 17 48.7	-0.7
NACB	**Ninganchiao**	**20.94**	**237**	*e*P	Pn	00 13 56.4	-0.8
	comp=Z,41nm,1.4s						
NACB				*e*S	Sn	00 17 54.4	+0.8
YULB	**Yu-li**	**21.67**	**236**	*e*P	**P**	**00 14 06.0**	**+3.5**
	comp=Z,59nm,1.9s						
YULB				*e*S	**S**	**00 18 02.5**	**+0.3**
HHC	**Hu-ho-hao-te**	**23.03**	**288**	*e*P	**P**	**00 14 17.8**	**+0.9**
HHC				pmax	pmax		
	comp=Z,9.0nm,0.9s						
HHC				pmax	pmax		
	comp=Z,52nm,5.2s						
MA2	**Magadan**	**23.38**	**13**	P	**P**	**00 14 21.1**	**+1.0**
	comp=Z,3.5nm,0.3s,baz=203,slow=10,SNR=5.1						
YAK	**Yakutsk**	**25.91**	**348**	*e*P	**P**	**00 14 43.8**	**+0.4**
YAK				pmax	pmax		
	comp=N,6.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,22nm,0.9s						
SEY	**Seymchan**	**26.81**	**12**	P	**P**	**00 14 52.7**	**+1.1**
	comp=Z,1.7nm,0.2s,baz=190,slow=11,SNR=4.3						
BOD	**Bodaibo**	**27.23**	**328**	*e*P	**P**	**00 14 52.9**	**-2.6**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.4s						
SONA1	**Songino Array**	**27.37**	**304**	*e*P	**P**	**00 14 57.1**	**0.0**
SONM	**Songino Array**	**27.38**	**304**	P	**P**	**00 14 55.9**	**-1.2**
	comp=Z,1.7nm,0.7s,baz=105,slow=8.3,SNR=11						
SONM				PcP	**PcP**	**00 18 16.4**	**+0.6**
	comp=Z,0.6nm,0.5s,baz=118,slow=2.0,SNR=5.1						
H11N2	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	00 44 52.4	
	baz=312,slow=75,SNR=358						
H11N1	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	00 44 52.9	
	baz=312,slow=75,SNR=320						
H11N3	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	00 44 53.7	
	baz=312,slow=75,SNR=277						
H11S1	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	00 45 44.5	
	baz=314,slow=75,SNR=167						
H11S3	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	00 45 44.6	
	baz=314,slow=75,SNR=127						
H11S2	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	00 45 48.4	
	baz=314,slow=75,SNR=90						
TLY	**Talaya**	**29.95**	**311**	*e*P	**P**	**00 15 16.0**	**-3.8**
TLY				pmax	pmax		
	comp=Z,1.0nm,0.9s						
GYA	**Guiyang**	**30.79**	**260**	*e*P	**P**	**00 15 29.4**	**+1.8**
GYA				pP	sP	00 15 41.0	+7.6
GYA				PP	**PnPn**	**00 16 32.2**	**+4.5**
GYA				S	**S**	**00 20 29.6**	**-1.2**
GYA				sS	sS	00 20 49.4	+12
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.23**	**270**	*e*P	**P**	**00 15 31.8**	**+0.5**
GTA	**Gaotai**	**32.12**	**287**	*e*P	**P**	**00 15 38.4**	**-0.8**
GTA				pP	pP	00 15 43.4	+0.1
GTA				sP	sP	00 15 46.5	+1.5
GTA				S	**S**	**00 20 46.3**	**-4.9**
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,40nm,4.4s						
GTA				LR	LR		
	comp=N,91nm,15.2s						
GTA				LR	LR		
	comp=E,170nm,21.4s						
GTA				LR	LR		
	comp=Z,170nm,20.0s						
BILL	**Bilibino**	**34.09**	**17**	*e*P	**P**	**00 15 55.5**	**-0.3**
BILL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
KMI	**Kunming**	**34.53**	**261**	P	P	00 16 05.4	+4.9
KMI				pmax	pmax		
	comp=Z,11nm,0.5s						
TIXI	**Tiksi**	**35.17**	**353**	*i* P	**P**	**00 16 03.6**	**-1.5**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TIXI	**Tiksi**	**35.17**	**353**	*e*P	**P**	**00 16 04.7**	**-0.5**
	comp=Z,2.1nm,0.8s						
KWAJ	**Kwajalein Atol**	**37.17**	**133**	*i* P	**P**	**00 16 20.8**	**-2.0**
WMQ	**Urumqi**	**40.41**	**297**	*e*P	**P**	**00 16 53.1**	**+3.2**
WMQ				S	S	00 23 32.5	+35
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,61nm,5.0s						
WMQ				LR	LR		
	comp=N,170nm,21.2s						
WMQ				LR	LR		
	comp=E,140nm,23.4s						
WMQ				LR	LR		
	comp=Z,130nm,22.4s						
ZAA0	**Zalesovo Array**	**41.54**	**312**	*e*P	**P**	**00 16 59.3**	**+0.4**
ZALV	**Zalesovo Beam**	**41.54**	**312**	P	**P**	**00 16 58.8**	**-0.1**
	comp=Z,2.8nm,0.5s,baz=97,slow=6.6,SNR=15						
ZALV				PcP	**PcP**	**00 18 56.0**	**-0.1**
	comp=Z,1.6nm,0.4s,baz=104,slow=3.2,SNR=7.1						
NRIK	**Noril'sk**	**43.02**	**335**	P	**P**	**00 17 10.5**	**-0.3**
	comp=Z,1.3nm,0.3s,baz=115,slow=6.2,SNR=4.1						
MK01	**Makanchi Array**	**43.70**	**302**	*e*P	**P**	**00 17 16.9**	**+0.3**
MK31	**Makanchi Array**	**43.70**	**302**	*e*P	**P**	**00 17 17.4**	**+0.7**
MK31	**Makanchi Array**	**43.70**	**302**	*e*P	**P**	**00 17 17.4**	**+0.7**
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**00 17 16.8**	**+0.1**
	comp=Z,1.8nm,0.6s,baz=84,slow=9.5,SNR=20						
MKAR				PcP	**PcP**	**00 19 03.6**	**0.0**
	comp=Z,0.9nm,0.9s,baz=72,slow=6.3,SNR=3.5						
MKAR	**Makanchi Array**	**43.70**	**302**	*e*P	**P**	**00 17 17.4**	**+0.7**
MKAR				PcP	**PcP**	**00 19 03.6**	**0.0**
KURK	**Kurchatov**	**45.54**	**308**	*e*P	**P**	**00 17 31.0**	**-0.2**
KURK	**Kurchatov**	**45.54**	**308**	*e*P	**P**	**00 17 31.0**	**-0.2**
	comp=Z,54nm,0.8s						
TTA	**Tatalina**	**45.62**	**35**	*e*P	P	00 17 37.1	+5.3
TTA				pmax	pmax		
	comp=Z,7.0nm,0.6s						
TTA	**Tatalina**	**45.62**	**35**	*e*P	P	00 17 37.1	+5.3
	comp=Z,6.8nm,0.6s						
SVW2	**Sprevohn**	**45.74**	**37**	*e*P	**P**	**00 17 35.1**	**+2.5**
	comp=Z,8.6nm,1.2s						
CAST	**Castle Rocks**	**47.42**	**34**	*e*P	**P**	**00 17 48.1**	**+2.2**
	comp=Z,2.3nm,0.9s						
TKM2	**Tokmak 2**	**49.20**	**298**	*e*P	**P**	**00 18 00.5**	**+0.3**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TKM2	**Tokmak 2**	**49.20**	**298**	*e*P	**P**	**00 18 00.5**	**+0.3**
	comp=Z,3.5nm,0.8s						
COLA	**College**	**49.26**	**32**	*e*P	**P**	**00 17 59.3**	**-0.6**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ILAR	**Eielson Array**	**49.67**	**32**	P	**P**	**00 18 04.0**	**+0.8**
	comp=Z,1.7nm,0.8s,baz=270,slow=6.5,SNR=21						
ILB	**Eielson Array**	**49.67**	**32**	*e*P	**P**	**00 18 04.4**	**+1.3**
IL1	**Eielson Array**	**49.67**	**32**	*e*P	**P**	**00 18 02.8**	**-0.3**
KSH	**Kashi**	**49.97**	**294**	*e*P	**P**	**00 18 09.3**	**+3.4**
KSH				*ep*P	sP	00 18 21.1	+9.2
KSH				*es*P	pP	00 18 26.5	+16
KSH				PcS	**PcS**	**00 23 25.3**	**+2.3**
KSH				S	**S**	**00 25 14.8**	**-1.4**
KSH	**Kashi**	**49.97**	**294**	SS	**SS**	**00 28 45.1**	**-3.7**
KSH				pmax	pmax		
	comp=Z,20nm,2.9s						
KSH				LR	LR		
	comp=Z,120nm,6.0s						
AAK	**Ala-Archa**	**50.06**	**298**	*e*P	**P**	**00 18 05.9**	**-0.7**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BRVK	**Borovoye**	**50.25**	**312**	*i* P	**P**	**00 18 07.3**	**-0.4**
BRVK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
ZRNK	**Zerenda**	**51.03**	**312**	*e*P	**P**	**00 18 13.6**	**0.0**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ZRNK	**Zerenda**	**51.03**	**312**	*e*P	**P**	**00 18 13.6**	**0.0**
	comp=Z,3.2nm,0.8s						
INK	**Inuvik**	**54.53**	**27**	P	**P**	**00 18 40.4**	**+1.3**
	comp=Z,1.8nm,1.0s,baz=332,slow=6.6,SNR=4.8						
INK	**Inuvik**	**54.53**	**27**	*e*P	**P**	**00 18 39.9**	**+0.8**
	comp=Z,0.7nm,0.8s						
ARU	**Arti**	**56.01**	**318**	*c iP*	**P**	**00 18 50.3**	**+0.2**
ARU				S	**S**	**00 26 39.6**	**+1.8**
ARU				SS	**SS**	**00 30 26.8**	**+3.5**
ARU				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ARU	**Arti**	**56.01**	**318**	*e*P	**P**	**00 18 50.5**	**+0.5**
	comp=Z,10nm,1.4s						
WRA	**Warramunga Arr**	**57.07**	**187**	P	**P**	**00 18 57.2**	**-0.8**
	comp=Z,2.2nm,0.5s,baz=4.2,slow=7.3,SNR=13						
ABKAR	**Akbulak array**	**57.55**	**310**	*e*P	**P**	**00 19 01.4**	**+0.2**
ASAR	**Alice Springs**	**60.80**	**187**	P	**P**	**00 19 22.6**	**-1.2**
	comp=Z,0.8nm,0.6s,baz=8.5,slow=6.0,SNR=8.7						
GEYT	**Ailbeck**	**63.41**	**299**	P	**P**	**00 19 41.2**	**-0.2**
	comp=Z,2.3nm,0.8s,baz=294,slow=1.5,SNR=7.4						
KLMR	**Klimovskoe**	**63.46**	**328**	*e*P	**P**	**00 19 39.4**	**-1.8**
KLMR				pmax	pmax		
	comp=Z,7.0nm,1.4s						
ARCES	**ARCESS Array B**	**63.77**	**339**	P	**P**	**00 19 43.1**	**-0.1**
	comp=Z,2.7nm,0.8s,baz=60,slow=6.9,SNR=8.2						
YKA	**Yellowknife Ar**	**63.97**	**30**	P	**P**	**00 19 45.0**	**+0.5**
	comp=Z,0.5nm,0.7s,baz=300,slow=6.8,SNR=3.9						
OBN	**Obninsk**	**67.77**	**323**	*i* P	**P**	**00 20 08.0**	**-1.2**
OBN				*i*		00 20 31.7	
OBN				*i*		00 22 38.8	
OBN				pmax	pmax		
	comp=Z,6.0nm,1.1s						
VSU	**Vasula**	**70.17**	**329**	*e*P	**P**	**00 20 24.3**	**+0.3**
VSU				pmax	pmax		
	comp=Z,20nm,1.0s						
KBZ	**Khabaz**	**70.52**	**310**	P	**P**	**00 20 27.4**	**+1.0**
	comp=Z,2.2nm,0.8s,baz=27,slow=4.5,SNR=2.5						
KIV	**Kislovodsk**	**70.52**	**311**	*e*P	**P**	**00 20 25.7**	**-0.9**
KIV				pmax	pmax		
	comp=Z,9.0nm,1.1s						
KIV	**Kislovodsk**	**70.52**	**311**	*e*P	**P**	**00 20 28.5**	**+1.9**
	comp=Z,9.8nm,1.1s						
SUMG	**Summit**	**70.61**	**360**	*e*P	**P**	**00 20 28.4**	**+1.4**
SUMG				pmax	pmax		
	comp=Z,5.0nm,0.9s						
SUMG	**Summit**	**70.61**	**360**	*e*P	**P**	**00 20 28.4**	**+1.4**
	comp=Z,4.9nm,0.9s						
NC405	**NORSAR Array S**	**73.73**	**337**	*e*P	**P**	**00 20 45.9**	**+0.5**
NB2	**NORSAR Subarra**	**73.95**	**337**	P	**P**	**00 20 46.5**	**-0.2**
	comp=Z,1.5nm,0.6s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**73.95**	**337**	P	**P**	**00 20 47.0**	**+0.3**
	comp=Z,2.6nm,0.7s,baz=43,slow=5.5,SNR=13						
NOA	**NORSAR Array B**	**73.95**	**337**	P	**P**	**00 20 47.0**	**+0.3**
NOA				pmax	pmax		
	comp=Z,3.0nm,0.7s						
AKASG	**Malin Array Be**	**73.97**	**322**	P	**P**	**00 20 46.7**	**-0.2**
	comp=Z,2.7nm,0.5s,baz=46,slow=5.9,SNR=13						
AKASG	**Malin Array Be**	**73.97**	**322**	P	**P**	**00 20 46.7**	**-0.2**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KIEV	**Kiev**	**73.98**	**322**	*e*P	**P**	**00 20 46.6**	**-0.4**
KIEV				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KIEV	**Kiev**	**73.98**	**322**	*e*P	**P**	**00 20 46.4**	**-0.6**
	comp=Z,6.8nm,1.0s						
SORM	**Soroca**	**76.05**	**320**	⇓*i*P	**P**	**00 20 57.8**	**-1.2**
SORM	**Soroca**	**76.05**	**320**	⇓P	**P**	**00 20 57.8**	**-1.2**
AHID	**Auburn Hatcher**	**77.05**	**46**	*e*P	**P**	**00 21 03.7**	**-1.4**
	comp=Z,13nm,0.8s						
PDAR	**Pinedale Array**	**77.93**	**45**	P	**P**	**00 21 10.5**	**+0.4**
	comp=Z,0.4nm,0.7s,baz=280,slow=5.4,SNR=2.9						
BUR08	**Bucovina Ar. S**	**77.97**	**321**	*e*P	**P**	**00 21 10.7**	**+0.7**
BURAR	**Bucovina Array**	**77.98**	**321**	⇑*i*P	**P**	**00 21 10.3**	**+0.3**
BURAR	**Bucovina Array**	**77.98**	**321**	⇑P	**P**	**00 21 10.3**	**+0.3**
TESR	**Tescani**	**77.99**	**320**	⇓*i*P	**P**	**00 21 09.3**	**-0.7**
CFR	**Carcaliu**	**78.10**	**318**	⇓*i*P	**P**	**00 21 10.8**	**+0.3**
CFR	**Carcaliu**	**78.10**	**318**	⇓P	**P**	**00 21 10.8**	**+0.3**
PLOR	**Plostina**	**78.43**	**319**	⇓*i*P	**P**	**00 21 12.8**	**+0.3**
PLOR	**Plostina**	**78.43**	**319**	⇓P	**P**	**00 21 12.8**	**+0.3**
BRTR	**Keskin Array B**	**78.47**	**311**	P	**P**	**00 21 12.5**	**-0.4**
	comp=Z,0.8nm,0.6s,baz=44,slow=3.8,SNR=6.0						
TLB	**Topalu**	**78.54**	**318**	⇓*i*P	**P**	**00 21 13.1**	**+0.1**
TLB	**Topalu**	**78.54**	**318**	⇓P	**P**	**00 21 13.1**	**+0.1**
STHS	**Stebnicka Huta**	**78.64**	**325**	*e*P	**P**	**00 21 10.6**	**-3.0**
STHS				pmax	pmax		
	comp=Z,2.0nm,0.8s						
STHS	**Stebnicka Huta**	**78.64**	**325**	*e*P	**P**	**00 21 10.6**	**-3.0**
OJC	**Ojcow**	**78.73**	**326**	*e*P	**P**	**00 21 14.5**	**+0.4**
OJC	**Ojcow**	**78.73**	**326**	*e*P	**P**	**00 21 14.4**	**+0.4**
OJC				pmax	pmax		
	comp=Z,8.0nm,1.1s						
OJC	**Ojcow**	**78.73**	**326**	*e*P	**P**	**00 21 14.4**	**+0.4**
	comp=Z,8.2nm,1.1s						
CRVS	**Cervenica-Dubn**	**78.91**	**324**	*e*P	**P**	**00 21 15.6**	**+0.6**
CRVS	**Cervenica-Dubn**	**78.91**	**324**	*e*P	**P**	**00 21 15.6**	**+0.6**
DOPR	**Dopca**	**79.01**	**320**	⇑*i*P	**P**	**00 21 17.1**	**+1.5**
DRGR		**79.78**	**322**	⇓*i*P	**P**	**00 21 19.8**	**-0.1**
DRGR		**79.78**	**322**	⇓P	**P**	**00 21 19.8**	**-0.1**
ARR	**Arges**	**79.80**	**320**	⇑*i*P	**P**	**00 21 21.4**	**+1.4**
KSP	**Ksiaz**	**79.81**	**328**	*e*P	**P**	**00 21 20.7**	**+0.8**
KSP	**Ksiaz**	**79.81**	**328**	*e*P	**P**	**00 21 20.7**	**+0.8**
MORC	**Moravsky Berou**	**80.06**	**327**	⇑*i*P	**P**	**00 21 22.2**	**+0.9**
MORC	**Moravsky Berou**	**80.06**	**327**	⇑P	**P**	**00 21 22.2**	**+0.9**
MORC	**Moravsky Berou**	**80.06**	**327**	*e*P	**P**	**00 21 22.2**	**+0.9**
	comp=Z,12nm,0.9s						
DPC	**Dobruska-Polom**	**80.16**	**328**	*e*P	**P**	**00 21 23.1**	**+1.3**
DPC	**Dobruska-Polom**	**80.16**	**328**	*e*P	**P**	**00 21 23.1**	**+1.3**
VYHS	**Vyhne**	**80.41**	**325**	*e*P	**P**	**00 21 23.1**	**-0.1**
VYHS				pmax	pmax		
	comp=Z,4.0nm,1.6s						
VYHS	**Vyhne**	**80.41**	**325**	*e*P	**P**	**00 21 23.1**	**-0.1**
BRG	**Berggiesshubel**	**80.76**	**329**	*e*P	**P**	**00 21 25.6**	**+0.6**
	comp=Z,3.6nm,0.5s						
BRG	**Berggiesshubel**	**80.76**	**329**	*e*P	**P**	**00 21 25.6**	**+0.6**
BRG				pmax	pmax		
	comp=Z,4.0nm,0.5s						
PVCC	**Panska Ves**	**80.77**	**329**	*e*P	**P**	**00 21 26.2**	**+1.2**
PVCC	**Panska Ves**	**80.77**	**329**	*e*P	**P**	**00 21 26.2**	**+1.2**
CLL	**Collm**	**80.81**	**330**	⇓*i*P	**P**	**00 21 25.1**	**-0.1**
	comp=Z,5.0nm,0.8s						
CLL				*i*		00 21 27.4	
	comp=Z,5.0nm,0.9s						
CLL	**Collm**	**80.81**	**330**	⇓*i*P	**P**	**00 21 25.1**	**-0.1**
CLL				pmax	pmax		
	comp=Z,5.0nm,0.8s						
CLL	**Collm**	**80.81**	**330**	*e*P	**P**	**00 21 25.6**	**+0.4**
VRAC	**Vranov**	**80.82**	**327**	⇓*i*P	**P**	**00 21 26.2**	**+0.8**
VRAC	**Vranov**	**80.82**	**327**	⇓P	**P**	**00 21 26.2**	**+0.8**
GOPC	**GO Pecny, Ondr**	**81.14**	**328**	*e*P	**P**	**00 21 28.1**	**+1.0**
GOPC	**GO Pecny, Ondr**	**81.14**	**328**	*e*P	**P**	**00 21 28.1**	**+1.0**
NKC	**Novy Kostel**	**81.87**	**329**	*e*P	**P**	**00 21 31.6**	**+0.7**
NKC	**Novy Kostel**	**81.87**	**329**	*e*P	**P**	**00 21 31.6**	**+0.7**
NKC				MLR	MLR		
	comp=Z,200nm,17.3s						
URZ	**Urewera**	**82.12**	**152**	*e*P	**P**	**00 21 32.5**	**+0.4**
	comp=Z,105nm,1.3s						
CONA	**Conrad Observa**	**82.17**	**326**	*i* P	**P**	**00 21 33.6**	**+0.9**
	comp=Z,2.2nm,0.7s						
KHC	**Kasperske Hory**	**82.25**	**328**	*e*P	**P**	**00 21 33.8**	**+0.8**
KHC	**Kasperske Hory**	**82.25**	**328**	*e*P	**P**	**00 21 32.8**	**-0.2**
KHC				pmax	pmax		
	comp=Z,1.0nm,0.7s						
KHC	**Kasperske Hory**	**82.25**	**328**	*e*P	**P**	**00 21 32.8**	**-0.2**
	comp=Z,1.3nm,0.7s						
GERES	**GERESS Array B**	**82.42**	**328**	P	**P**	**00 21 33.9**	**0.0**

MQZ	**McQueen's Vall**	**0.15**	**171**	⇑PG	Pg	00 13 11.7	+0.2		
MQZ				SG	Sg	00 13 14.2	+0.5		
OXZ	**Oxford**	**0.48**	**299**	P*	Pg	00 13 17.9	+0.1		
OXZ	**Oxford**	**0.48**	**299**	P*	Pg	00 13 17.8	+0.1		
OXZ				AML	AML	00 13 25.4			
OXZ				AML	AML	00 13 25.4			
OXZ				AML	AML	00 13 25.9			
OXZ				AML	AML	00 13 27.1			
LTZ	**Lake Taylor**	**0.82**	**342**	P*	Pg	00 13 24.3	+0.2		
LTZ	**Lake Taylor**	**0.82**	**342**	P*	Pg	00 13 24.3	+0.2		
LTZ				S*	Sb	00 13 35.5	-0.6		
RPZ	**Rata Peaks**	**1.15**	**262**	*e*Pn	Pg	00 13 29.7	-0.8		
RPZ				*e*Sb	Sb	00 13 45.9	+0.2		
RPZ	**Rata Peaks**	**1.15**	**262**	⇓P*	Pg	00 13 29.4	-1.1		
RPZ				AML	AML	00 13 46.5			
RPZ				AML	AML	00 13 53.3			
KHZ	**Kahutara**	**1.33**	**31**	*e*Pn	Pn	00 13 31.6	-1.6		
KHZ	**Kahutara**	**1.33**	**31**	⇑Pn	Pn	00 13 31.4	-1.9		
KHZ				AML	AML	00 13 53.1			
KHZ				AML	AML	00 13 59.5			
KHZ				AML	AML	00 13 59.5			
KHZ				AML	AML	00 14 08.9			
WVZ	**Waitaha Valley**	**1.46**	**289**	PN	Pn	00 13 34.1	-0.9		
WVZ				AML	AML	00 14 03.8			
THZ	**Tophouse**	**1.81**	**7**	Pn	Pn	00 13 38.2	-1.7		
THZ	**Tophouse**	**1.81**	**7**	PN	Pn	00 13 38.2	-1.7		
THZ				AML	AML	00 14 10.5			
THZ				AML	AML	00 14 17.4			
DSZ	**Denniston Nort**	**1.91**	**341**	Pn	Pn	00 13 40.3	-1.0		
DSZ	**Denniston Nort**	**1.91**	**341**	PN	Pn	00 13 40.3	-1.0		
DSZ				AML	AML	00 14 08.3			
DSZ				AML	AML	00 14 08.4			
DSZ				AML	AML	00 14 08.6			
DSZ				AML	AML	00 14 08.6			
LBZ	**Lake Benmore**	**1.94**	**244**	Pn	Pn	00 13 41.1	-0.7		
LBZ	**Lake Benmore**	**1.94**	**244**	PN	Pn	00 13 41.1	-0.7		
LBZ				AML	AML	00 14 17.8			
LBZ				AML	AML	00 14 17.8			
LBZ				AML	AML	00 14 19.3			
LBZ				AML	AML	00 14 19.3			
ODZ	**Otahua Downs**	**2.05**	**223**	*e*Pn	Pn	00 13 42.1	-1.2		
ODZ				*e*Pg	Pg	00 13 48.0	+0.2		
ODZ				*e*Sg	Sg	00 14 14.4	0.0		
ODZ	**Otahua Downs**	**2.05**	**223**	⇓PN	Pn	00 13 42.0	-1.3		
ODZ				AML	AML	00 14 20.3			
ODZ				AML	AML	00 14 20.3			
ODZ				AML	AML	00 14 21.2			
ODZ				AML	AML	00 14 21.2			
BSWZ	**Blackbirch Sta**	**2.06**	**27**	Pn	Pn	00 13 41.8	-1.6		
BSWZ	**Blackbirch Sta**	**2.06**	**27**	PN	Pn	00 13 41.8	-1.6		
BSWZ				AML	AML	00 14 20.8			
BSWZ				AML	AML	00 14 32.4			
TUWZ	**Tuamarina**	**2.34**	**25**	Pn	Pn	00 13 45.3	-1.9		
TUWZ	**Tuamarina**	**2.34**	**25**	PN	Pn	00 13 45.3	-1.9		
TUWZ				AML	AML	00 14 25.5			
TUWZ				AML	AML	00 14 37.8			
NNZ	**Nelson**	**2.41**	**14**	Pn	Pn	00 13 46.9	-1.2		
NNZ	**Nelson**	**2.41**	**14**	PN	Pn	00 13 46.9	-1.2		
NNZ				AML	AML	00 14 18.3			
NNZ				AML	AML	00 14 25.4			
NNZ				AML	AML	00 14 25.5			
NNZ				AML	AML	00 14 41.5			
TCW	**Tory Channel**	**2.65**	**28**	Pn	Pn	00 13 49.2	-2.2		
TCW	**Tory Channel**	**2.65**	**28**	PN	Pn	00 13 49.2	-2.2		
TCW				AML	AML	00 14 34.2			
TCW				AML	AML	00 14 34.3			
BHW	**Baring Head**	**2.72**	**39**	Pn	Pn	00 13 50.4	-2.0		
HHSZ	**Highcliff Hill**	**2.74**	**211**	AML	AML	00 14 45.8			
HHSZ				AML	AML	00 14 54.9			
WEL	**Wellington**	**2.77**	**36**	AML	AML	00 14 25.0			
WEL				AML	AML	00 14 25.2			
WEL				AML	AML	00 14 25.7			
WEL				AML	AML	00 14 27.6			
PLWZ	**Palliser**	**2.78**	**45**	Pn	Pn	00 13 50.8	-2.5		
PLWZ	**Palliser**	**2.78**	**45**	PN	Pn	00 13 50.8	-2.5		
PLWZ				AML	AML	00 14 28.5			
PLWZ				AML	AML	00 14 41.2			
JCZ	**Jackson Bay**	**2.82**	**258**	PN	Pn	00 13 53.7	-0.2		
JCZ				AML	AML	00 14 45.3			
JCZ				AML	AML	00 14 46.1			
WKZ	**Wanaka**	**2.89**	**243**	AML	AML	00 14 45.5			
WKZ				AML	AML	00 14 45.5			
WKZ				AML	AML	00 14 50.1			
WKZ				AML	AML	00 14 50.2			
MSWZ	**Moikau Station**	**2.89**	**43**	AML	AML	00 14 27.2			
MSWZ				AML	AML	00 14 27.2			
EAZ	**Earnscleugh**	**2.90**	**234**	Pn	Pn	00 13 53.7	-1.3		
EAZ	**Earnscleugh**	**2.90**	**234**	⇓PN	Pn	00 13 53.7	-1.3		
EAZ				AML	AML	00 14 47.7			
EAZ				AML	AML	00 14 49.7			
EAZ				AML	AML	00 14 50.8			
EAZ				AML	AML	00 14 50.8			
DUWZ	**D'Urville Isla**	**2.92**	**20**	AML	AML	00 14 39.1			
DUWZ				AML	AML	00 18 55.0			
CAW	**Cannon Point**	**3.05**	**37**	Pn	Pn	00 13 54.4	-2.6		
CAW	**Cannon Point**	**3.05**	**37**	PN	Pn	00 13 54.4	-2.6		
CAW				AML	AML	00 14 37.8			
CAW				AML	AML	00 14 38.9			
KIW	**Kapiti Island**	**3.19**	**33**	Pn	Pn	00 13 56.9	-1.9		
KIW	**Kapiti Island**	**3.19**	**33**	PN	Pn	00 13 56.9	-1.9		
KIW				AML	AML	00 14 37.1			
KIW				AML	AML	00 14 55.6			
TUZ	**Tuapeka**	**3.21**	**221**	AML	AML	00 15 03.7			
TUZ				AML	AML	00 15 03.7			
TUZ				AML	AML	00 15 04.4			
TUZ				AML	AML	00 15 04.5			
MTW	**Mount Morrison**	**3.21**	**43**	AML	AML	00 14 35.6			
MTW				AML	AML	00 14 38.5			
OGWZ	**Otaki Gorge**	**3.33**	**36**	AML	AML	00 14 37.3			
OGWZ				AML	AML	00 14 45.8			
TMWZ	**Te Maipa**	**3.45**	**46**	AML	AML	00 14 46.8			
TMWZ				AML	AML	00 14 52.8			
MRZ	**Mangatainoka R**	**3.64**	**38**	Pn	Pn	00 14 02.3	-2.7		
MRZ	**Mangatainoka R**	**3.64**	**38**	PN	Pn	00 14 02.3	-2.8		
MRZ				AML	AML	00 14 47.7			
MRZ				AML	AML	00 14 50.4			
MLZ	**Mavora Lakes**	**3.70**	**239**	Pn	Pn	00 14 05.0	-0.9		
MLZ	**Mavora Lakes**	**3.70**	**239**	PN	Pn	00 14 05.0	-0.9		
MLZ				AML	AML	00 15 14.4			
MLZ				AML	AML	00 15 22.2			
SYZ	**Scrubby Hill**	**3.87**	**218**	Pn	Pn	00 14 07.2	-0.9		
SYZ	**Scrubby Hill**	**3.87**	**218**	⇑PN	Pn	00 14 07.2	-0.9		
SYZ				AML	AML	00 15 17.4			
SYZ				AML	AML	00 15 24.8			
POWZ	**Post Office Ro**	**3.94**	**38**	AML	AML	00 14 59.6			
POWZ				AML	AML	00 15 05.1			
WHZ	**Wether Hill Ro**	**4.07**	**233**	AML	AML	00 15 29.9			
WHZ				AML	AML	00 15 30.3			
WAZ	**Wanganui**	**4.19**	**26**	AML	AML	00 15 29.1			
WAZ				AML	AML	00 15 31.7			
ANWZ	**Angora Road**	**4.22**	**44**	PN	Pn	00 14 10.3	-2.8		
ANWZ				AML	AML	00 15 01.6			
ANWZ				AML	AML	00 15 18.4			
TSZ	**Takapari Road**	**4.30**	**37**	AML	AML	00 15 47.4			
KHEZ	**Kahui Hut**	**4.39**	**14**	Pn	Pn	00 14 16.3	+0.8		
KHEZ	**Kahui Hut**	**4.39**	**14**	PN	Pn	00 14 16.3	+0.8		
PNHZ	**Pukenui**	**4.52**	**38**	AML	AML	00 15 08.1			
PNHZ				AML	AML	00 15 08.7			
APZ	**The Paps**	**4.63**	**223**	AML	AML	00 15 49.2			
APZ				AML	AML	00 16 50.3			
VRZ	**Vera Road**	**4.71**	**21**	AML	AML	00 15 18.2			
VRZ				AML	AML	00 15 21.9			
WNVZ	**Wahianoa**	**4.78**	**29**	Pn	Pn	00 14 20.3	-0.6		
WNVZ	**Wahianoa**	**4.78**	**29**	PN	Pn	00 14 20.3	-0.6		
KRHZ	**Kereru**	**4.82**	**37**	AML	AML	00 15 15.4			
KRHZ				AML	AML	00 15 22.6			
URZ	**Urewera**	**6.29**	**34**	*e*Pn	Pn	00 14 38.7	-2.8		

IDC **11** *00:15:34.4±1.3, 37°.61N×142°.88E, h0km, mb3.3/3, mb1 3.4/4, mb1mx3.2/31, mbtmp3.3/4, ML3.0/1, Error ellipse: s-maj=32.1km s-min=29.0km az=117.0*

JMA **11** *00:15:42.0±0.2, 37°.36N×141°.88E, h28km±3km, M3.5*

ISC 11 00:15:40.0±2.3**, 37°.33N**±0°.06×**141°.90E**±0°.08**, h13**km±12km**, n20**, σ0§**86**/20**, mb3.2**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.82**	**273**	P	**Pn**	**00 15 57.1**	**-0.1**
JFK				S	**Sb**	**00 16 07.1**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.91**	**256**	P	**Pn**	**00 15 58.3**	**-0.1**
ONAJ				S	**Sg**	**00 16 09.3**	**-0.1**
JMM	**Marumori**	**1.03**	**302**	P	**Pn**	**00 16 00.1**	**0.0**
JMM				S	**Sb**	**00 16 12.7**	**-0.4**
JIO	**Ouri**	**1.21**	**339**	P	**Pb**	**00 16 02.6**	**-0.1**
JIO				S	**Sb**	**00 16 16.6**	**-1.5**
JFT	**Otama**	**1.26**	**279**	P	**Pg**	**00 16 04.3**	**+0.1**
JFT				S	**Sb**	**00 16 19.8**	**+0.2**
JOU	**Okura**	**1.43**	**317**	P	**Pb**	**00 16 06.4**	**0.0**
JOU				S	**Sn**	**00 16 24.1**	**-0.1**
JMK	**Ichinoseki**	**1.71**	**342**	P	**Pn**	**00 16 10.0**	**+0.6**
OFUJ	**Ofunato**	**1.76**	**354**	P	**Pn**	**00 16 10.4**	**+0.3**
OFUJ				S	**Sn**	**00 16 30.4**	**-2.0**
JYK	**Kaneyama**	**2.00**	**323**	P	**Pn**	**00 16 14.3**	**+0.9**
MJAR	**Matsushiro Arr**	**3.06**	**256**	Pn	**Pb**	**00 16 33.5**	**-0.8**
	1.2nm,0.3s,baz=72,slow=11,SNR=3.7						
SONM	**Songino Array**	**27.95**	**303**	P	**P**	**00 21 31.8**	**+1.7**
	0.1nm,0.4s,baz=101,slow=6.0,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**27.97**	**122**	T	T	00 51 05.4	
	baz=315,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy**	**27.98**	**122**	T	T	00 50 59.3	
	baz=315,slow=75,SNR=5.9						
H11N3	**WAKE ISLAND Hy**	**27.99**	**122**	T	T	00 51 08.1	
	baz=315,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**28.70**	**124**	T	T	00 52 00.3	
	baz=316,slow=76,SNR=8.3						
H11S3	**WAKE ISLAND Hy**	**28.70**	**124**	T	T	00 52 00.3	
	baz=316,slow=76,SNR=9.8						
H11S2	**WAKE ISLAND Hy**	**28.71**	**124**	T	T	00 52 02.3	
	baz=316,slow=76,SNR=8.6						
MKAR	**Makanchi Array**	**44.29**	**302**	P	**P**	**00 23 49.8**	**+0.5**
	0.2nm,0.5s,baz=80,slow=7.9,SNR=2.6						
WRA	**Warramunga Arr**	**57.41**	**188**	P	**P**	**00 25 27.8**	**-0.4**
	304nm,1.2s,baz=4.0,slow=6.9,SNR=24						
YKA	**Yellowknife Ar**	**63.36**	**30**	P	P	00 26 00.4	-8.0
	0.3nm,0.7s,baz=298,slow=6.9,SNR=2.9						

ISCJB **11** *00:26:25.4±1.0, 37°.75N±0°.04×141°.80E±0°.10, h49km±12km, mb4.6/2, Error ellipse: s-maj=13.2km s-min=5.6km az=12.0*

JMA **11** *00:26:26.2, 37°.77N×141°.73E, h49km±1km, M4.1*

JMA Felt I J1.

IDC **11** *00:26:27.5±5.5, 37°.46N×142°.03E, h50km±55km, mb3.3/1, mb1 3.8/3, mb1mx3.1/49, mbtmp3.7/3, ML3.7/2, Error ellipse: s-maj=79.2km s-min=29.0km az=92.0*

ISC 11 00:26:26.3±1.1**, 37.75N**±0°.04×**141.81E**±0°.07**, h46**km±12km**, n23**, σ1§**42**/30**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.80**	**333**	P	**Pn**	**00 26 40.6**	**-0.5**
JIO				S	**Sn**	**00 26 50.6**	**-1.4**
JMM	**Marumori**	**0.82**	**279**	P	**Pn**	**00 26 40.5**	**-0.9**
JMM				S	**Sn**	**00 26 50.8**	**-1.6**
JFK	**Kawauchi**	**0.84**	**243**	P	**Pn**	**00 26 41.0**	**-0.7**
JFK				S	**Sn**	**00 26 51.5**	**-1.5**
ONAJ	**Iwakimizuishiy**	**1.03**	**232**	P	**Pn**	**00 26 43.8**	**-0.6**
ONAJ				S	**Sn**	**00 26 56.6**	**-1.1**
JOU	**Okura**	**1.10**	**305**	P	**Pn**	**00 26 44.5**	**-0.7**
JOU				*e*S	**Sn**	**00 26 58.2**	**-1.1**
JFT	**Otama**	**1.19**	**259**	P	**Pn**	**00 26 46.6**	**+0.1**
JFT				S	**Sn**	**00 27 01.2**	**-0.4**
JMK	**Ichinoseki**	**1.29**	**339**	P	**Pn**	**00 26 47.7**	**-0.2**
JMK				S	**Sn**	**00 27 03.0**	**-1.0**
JYS	**Shirataka**	**1.46**	**289**	P	**Pn**	**00 26 49.8**	**-0.4**
JYK	**Kaneyama**	**1.64**	**316**	P	**Pn**	**00 26 52.2**	**-0.4**
JYK				S	**Sn**	**00 27 11.7**	**-0.7**
JFY	**Yanaizu**	**1.71**	**259**	P	**Pn**	**00 26 53.4**	**-0.2**
JOM	**Ohasama**	**1.77**	**347**	P	**Pn**	**00 26 54.6**	**+0.2**
JOM				S	**Sn**	**00 27 15.7**	**-0.1**
JYA	**Atsumi**	**1.86**	**298**	P	**Pn**	**00 26 55.1**	**-0.5**
JYA				*e*S	**Sn**	**00 27 18.1**	**+0.2**
MJAR	**Matsushiro Arr**	**3.12**	**248**	P	**Pn**	**00 27 13.8**	**+0.8**
	4.1nm,0.3s,baz=90,slow=16,SNR=11						
MAT	**Matsushiro**	**3.12**	**248**	P	**Pn**	**00 27 13.9**	**+0.9**
MAT				S	**Sn**	**00 27 53.3**	**+4.3**
JHJ	**Hachijo jima 2**	**4.90**	**200**	P	**Pn**	**00 27 37.8**	**+0.4**
	22nm,0.3s,baz=147,slow=23,SNR=17						
JHJ				S	**Sn**	**00 28 29.4**	**-3.5**
	24nm,0.3s,baz=234,slow=23,SNR=8.6						
H11N2	**WAKE ISLAND Hy**	**28.25**	**122**	T	T	01 01 52.8	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**28.26**	**122**	T	T	01 01 53.5	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**28.27**	**122**	T	T	01 01 54.7	
	baz=313						
H11S1	**WAKE ISLAND Hy**	**28.99**	**125**	T	T	01 02 48.5	
	baz=318						
H11S3	**WAKE ISLAND Hy**	**28.99**	**125**	T	T	01 02 50.3	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**29.00**	**125**	T	T	01 02 55.2	
	baz=318						
WRA	**Warramunga Arr**	**57.81**	**188**	P	**P**	**00 36 12.3**	**-0.6**
	50nm,0.9s,baz=6.6,slow=7.2,SNR=3.9						
TXAR	**Lajitas Array**	**89.44**	**53**	P	**P**	**00 39 18.8**	**+0.3**
	0.1nm,0.3s,baz=295,slow=2.6,SNR=3.9						
TXAR				pP	**pP**	**00 39 34.6**	**+2.3**
	0.2nm,0.6s,baz=324,slow=3.6,SNR=3.1						

IDC **11** *00:27:22.7±0.6, 3°.31S×146°.47E, h0km, mb4.6/25, mb1 4.8/28, mb1mx4.7/42, mbtmp4.7/28, ML4.9/2, MS4.6/29, Ms1 4.6/29, ms1mx4.4/44, Error ellipse: s-maj=19.8km s-min=10.4km az=97.0*

ISCJB **11** *00:27:24.6±0.2, 3°.29S±0°.03×146°.48E±0°.03, h20km, mb5.0/127, MS4.7/55, Error ellipse: s-maj=4.3km s-min=3.6km az=11.6*

BJI **11** *00:27:24.3, 3°.37S×146°.86E, h34km, mb5.1/70, mB5.2/51, Ms5.0/72, Ms7 4.8/69*

NEIC **11** *00:27:26.0±0.6, 3°.31S×146°.47E, h18km±3km, mb5.1/66, Error ellipse: s-maj=5.7km s-min=4.3km az=107.0*

GCMT **11** *00:27:26.0±0.1, 3°.32S×146°.50E, h12km, MW5.3/121, Moment Tensor Solution. s87,c130; s121,c208; Duration: 1§0 Moment tensor: Scale 10^16Nm; Mrr-1.02±.13; Mθθ 1.41±.13; Mϕϕ-0.38±.14; Mrθ 1.48±.32; Mθϕ 9.24±.10; Mϕr-0.82±.34; Best double couple: Mo 9.45600×10^16 NP1:ϕ1≈272.00000°, δ84.00000°, λ-10.00000°. NP2:ϕ2≈3.00000°, δ80.00000°, λ-174.00000°. Principal axes: T 9.8230, Plg3.0000°, Azm318.0000°; N -0.7300, Plg78.0000°, Azm62.0000°; P -9.0900, Plg11.0000°, Azm227.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS **11** *00:27:26.0±1.0, 3°.31S×146°.44E, h33km, mb5.2/52, MS4.4/11 Error ellipse: s-maj=9.5km s-min=5.6km az=103.4*

DJA **11** *00:27:26.6±1.5, 4°.3S×14°.6E±°, h18km±10km, M5.1/42, mb5.1/42, mB5.6/17, MLv5.0/3, Mw(mB)5.1/17*

ISC 11 00:27:26.3±0.3**, 3°.30S**±0°.04×**146°.59E**±0°.04**, h20**km**, n301,** σ1§**93**/326**, mb5.0**/127**, MS4.8**/55**, 5C-2D, Bismarck Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MANU	**Manus Island**	**1.47**	**32**	*e*Pn	**Pn**	**00 27 49.0**	**-2.7**
RABL	**Rabaul**	**5.63**	**99**	*e*Pn	**Pn**	**00 28 51.7**	**+2.8**
JAY	**Jayapura**	**5.93**	**277**	Pn	**Pn**	**00 28 53.5**	**+0.3**
	0.1nm,0.3s,baz=79,slow=21,SNR=8.7						
JAY				Sn	**Sn**	**00 30 07.0**	**+6.4**
	0.0nm,0.3s,baz=89,slow=23,SNR=1.6						
JAY				LR	LR	00 30 56.5	
	comp=Z,178nm,19.5s,baz=113,slow=37						
JAY	**Jayapura**	**5.93**	**277**	P	**Pn**	**00 28 53.6**	**+0.5**
	95nm,1.1s,957nm0.3nm						
PMG	**Port Moresby**	**6.09**	**175**	Pn	**Pn**	**00 28 54.0**	**-1.2**
	29nm,0.3s,baz=4.0,slow=6.1,SNR=54						
PMG	**Port Moresby**	**6.09**	**175**	*e*Pn	**Pn**	**00 28 54.4**	**-0.9**
GENI	**Genyem**	**6.46**	**276**	P	**Pn**	**00 29 00.5**	**+0.2**
	403nm,1.1s,4μm1.3nm						
COEN	**Coen**	**11.11**	**197**	P	**Pn**	**00 30 03.9**	**-0.3**
	baz=11,SNR=25						
COEN	**Coen**	**11.11**	**197**	*e*Pn	**Pn**	**00 30 03.9**	**-0.3**
HNR	**Honiara**	**14.60**	**115**	Pn	**Pn**	**00 30 52.0**	**+0.2**
	7.2nm,0.3s,baz=302,slow=15,SNR=2.4						
HNR				LR	LR	00 35 56.8	
	comp=Z,2μm,18.5s,baz=281,slow=35						
HNR	**Honiara**	**14.60**	**115**	P	**Pn**	**00 30 52.0**	**+0.2**
HNR				pmax	pmax		
	comp=Z,7.0nm,0.3s						
HNR				MLR	MLR		
	comp=Z,2μm,18.5s						
HNR	**Honiara**	**14.60**	**115**	Pn	**Pn**	**00 30 52.0**	**+0.2**
MTSU	**Mount Surprise**	**14.91**	**188**	P	**Pn**	**00 30 56.6**	**+0.5**
	baz=15,SNR=6.9						
PATS	**Pohnpei**	**15.44**	**49**	P	**P**	**00 31 05.9**	**-1.6**
	baz=16,SNR=5.3						
PATS	**Pohnpei**	**15.44**	**49**	*e*Pn	**P**	**00 31 05.9**	**-1.6**
	comp=Z,556nm,1.4s						
CTA	**Charters Tower**	**16.69**	**181**	Pn	**P**	**00 31 20.4**	**-0.9**
	comp=Z,2.7nm,0.3s,baz=1.5,slow=14,SNR=33						
CTA				LR	LR	00 38 07.5	
	comp=Z,3μm,20.7s,baz=6.5,slow=39						
CTAO	**Charters Tower**	**16.69**	**181**	*e*P	**Pn**	**00 31 19.5**	**+0.4**
CTAO				pmax	pmax		
	comp=Z,76nm,1.3s						
CTAO	**Charters Tower**	**16.69**	**181**	*e*Pn	**Pn**	**00 31 19.5**	**+0.4**
	comp=Z,76nm,1.3s						
KDU	**Kakadu**	**16.80**	**235**	P	**Pn**	**00 31 19.0**	**-1.5**
	baz=17,SNR=8.9						
GUMO	**Guam**	**16.87**	**354**	Pn	**Pn**	**00 31 20.3**	**-1.0**
	comp=Z,3.1nm,0.3s,baz=194,slow=19,SNR=2.8						
GUMO				LR	LR	00 37 05.6	
	comp=Z,2μm,18.2s,baz=176,slow=35						
GUMO	**Guam**	**16.87**	**354**	*e*Pn	**Pn**	**00 31 20.4**	**-1.0**
	comp=Z,160nm,1.2s						
MSAI	**Masohi**	**17.64**	**269**	P	**Pn**	**00 31 29.8**	**-1.2**
MTN	**Manton Dam**	**17.99**	**237**	*e*Pn	**Pn**	**00 31 33.7**	**-1.7**
	comp=Z,361nm,1.7s						
QIS	**Mount Isa**	**18.45**	**201**	P	**P**	**00 31 40.2**	**-0.7**
	baz=18,SNR=5.3						
NLAI	**Namlea**	**19.46**	**270**	P	**P**	**00 31 51.9**	**-0.1**
	comp=Z,113nm,0.9s,comp=Z,3μm						
WRAB	**Tennant Creek**	**20.40**	**215**	*d* iP	**P**	**00 31 59.9**	**-2.2**
WRAB				pmax	pmax		
	comp=Z,223nm,1.1s						
WRAB	**Tennant Creek**	**20.40**	**215**	*e*P	**P**	**00 32 00.7**	**-1.4**
	comp=Z,117nm,1.0s						
WB2	**Warramunga Arr**	**20.40**	**215**	*e*P	**P**	**00 32 00.5**	**-1.7**
	comp=Z,146nm,1.1s						
WRA	**Warramunga Arr**	**20.41**	**215**	P	**P**	**00 32 00.4**	**-1.9**
	comp=Z,60nm,1.0s,baz=38,slow=11,SNR=80						
WRA				LR	LR	00 40 46.8	
	comp=Z,3μm,18.4s,baz=40,slow=40						
WRA	**Warramunga Arr**	**20.41**	**215**	P	**P**	**00 32 00.4**	**-1.9**
WRA				pmax	pmax		
	comp=Z,43nm,0.8s						
WRA				MLR	MLR		
	comp=Z,3μm,18.5s						
EIDS	**Eidsvold**	**22.36**	**169**	P	**P**	**00 32 24.0**	**+0.7**
	baz=22,SNR=7.3						
EIDS	**Eidsvold**	**22.36**	**169**	*e*P	**P**	**00 32 23.0**	**-0.2**
	comp=Z,54nm,1.0s						
KMSI	**Cibinong**	**22.93**	**279**	P	**P**	**00 32 30.0**	**+0.6**
	comp=Z,503nm,1.0s						
SOEI	**Soe**	**23.08**	**253**	P	**P**	**00 32 29.1**	**-1.9**
	comp=Z,260nm,1.2s,comp=Z,3μm						
SOEI	**Soe**	**23.08**	**253**	*e*P	**P**	**00 32 30.3**	**-0.7**
	comp=Z,253nm,1.0s						
RMQ	**Roma**	**23.15**	**175**	P	**P**	**00 32 32.5**	**+1.0**
	baz=23,SNR=15						
QLP	**Quilpie**	**23.26**	**185**	P	**P**	**00 32 32.3**	**-0.2**
	baz=23,SNR=14						
DAV	**Davao City (W)**	**23.37**	**296**	LR	LR	00 41 35.0	
	comp=Z,1μm,18.8s,baz=102,slow=37						
AS01	**Alice Springs**	**23.65**	**210**	*e*P	**P**	**00 32 33.8**	**-2.7**
AS31	**Alice Springs**	**23.67**	**210**	*e*P	**P**	**00 32 35.3**	**-1.4**
	comp=Z,10nm,0.6s						
ASAR	**Alice Springs**	**23.67**	**210**	P	**P**	**00 32 35.0**	**-1.8**
	comp=Z,12nm,0.5s,baz=45,slow=8.0,SNR=67						
ASAR				S	**S**	**00 36 52.7**	**+1.9**
	comp=Z,2.8nm,1.0s,baz=31,slow=18,SNR=4.5						
ASAR				LR	LR	00 42 46.8	
	comp=Z,2μm,18.0s,baz=42,slow=39						
BATI	**Baumata**	**23.77**	**252**	P	**P**	**00 32 36.2**	**-1.6**
	comp=Z,83nm,1.6s						
LUWI	**Luwuk**	**23.91**	**275**	P	**P**	**00 32 39.3**	**+0.2**
	comp=Z,197nm,1.1s,comp=Z,3μm						
LUWI	**Luwuk**	**23.91**	**275**	*e*P	**P**	**00 32 38.6**	**-0.5**
	comp=Z,485nm,1.4s						
KWAJ	**Kwajalein Atol**	**24.16**	**60**	*e*P	**P**	**00 32 42.3**	**+0.9**
KWAJ				pmax	pmax		
	comp=Z,122nm,1.0s						
KWAJ	**Kwajalein Atol**	**24.16**	**60**	*e*P	**P**	**00 32 42.3**	**+0.9**
	comp=Z,122nm,1.0s						
MRSI	**Marisa**	**24.93**	**278**	P	**P**	**00 32 48.3**	**-0.1**
	comp=Z,107nm,1.2s,comp=Z,2μm						
FITZ	**Fitzroy Crossi**	**25.25**	**233**	P	**P**	**00 32 49.1**	**-2.2**
	comp=Z,33nm,0.8s,baz=38,slow=8.9,SNR=37						
FITZ				LR	LR	00 43 10.9	
	comp=Z,2μm,21.2s,baz=55,slow=38						
FITZ	**Fitzroy Crossi**	**25.25**	**233**	P	**P**	**00 32 50.0**	**-1.3**
	baz=25,SNR=34						
FITZ	**Fitzroy Crossi**	**25.25**	**233**	*e*P	**P**	**00 32 49.2**	**-2.1**
	comp=Z,54nm,1.

MAJO pmax pmax
comp=Z,132nm,1.6s
MAJO Matsushiro 40.41 350 *e*P **P 00 35 02.1 -1.1**
comp=Z,62nm,1.4s
MAT Matsushiro 40.41 350 P **P 00 35 01.1 -2.0**
MAT S **S 00 41 07.8 -2.7**
MJB9 Matsu-Tunnel 40.41 350 *e*P **P 00 35 02.6 -0.6**
comp=Z,16nm,1.4s
KLSI 41.78 267 P **P 00 35 14.0 -0.8**
SSE Sheshan 41.91 327 P **P 00 35 14.9 -0.7**
SSE S **S 00 41 35.0 +2.0**
SSE pmax pmax
comp=Z,38nm,0.7s
SSE pmax pmax
comp=Z,150nm,3.5s
SSE LR LR
comp=Z,1μm,18.9s
SSE LR LR
comp=Z,790nm,18.9s
SSE LR LR
comp=Z,1μm,20.9s
QIZ Qiongzhong 42.42 303 P **P 00 35 19.8 -0.2**
QIZ pP **sP 00 35 28.5 -0.2**
QIZ sP **pP 00 35 32.3 +6.1**
QIZ S **S 00 41 39.1 -1.8**
QIZ sS **sS 00 41 56.3 +5.1**
QIZ ScS **ScS 00 45 17.1 -4.3**
QIZ pmax pmax
comp=Z,33nm,1.2s
QIZ pmax pmax
comp=Z,120nm,7.0s
QIZ LR LR
comp=Z,520nm,22.3s
QIZ LR LR
comp=Z,380nm,20.8s
QIZ LR LR
comp=Z,970nm,24.1s
QIZ Qiongzhong 42.42 303 *e*P **P 00 35 19.6 -0.3**
comp=Z,68nm,1.1s
NJ2 Nanjing 43.94 325 *e*P **P 00 35 32.0 0.0**
NJ2 pmax pmax
comp=Z,24nm,1.0s
NJ2 LR LR
comp=Z,1μm,23.9s
NJ2 LR LR
comp=Z,540nm,22.2s
NJ2 LR LR
comp=Z,1μm,22.2s
KSRS Korea Array 44.11 339 P **P 00 35 32.9 -0.3**
comp=Z,23nm,1.1s,baz=155,slow=9.7,SNR=35
KSRS LR LR 00 52 33.1
comp=Z,754nm,18.6s,baz=166,slow=34
KS15 Wonju Array Si 44.11 338 *e*P **P 00 35 33.5 +0.2**
KSAR Wonju Array Be 44.11 338 P **P 00 35 32.9 -0.4**
KSAR Wonju Array Be 44.11 338 P **P 00 35 32.9 -0.4**
KS01 Wonju Array Si 44.14 339 *e*P **P 00 35 32.1 -1.4**
URZ Urewera 44.57 145 LR LR 00 51 31.9
comp=Z,1μm,21.2s,baz=6.0,slow=32
UBPT Khong Chiam 44.70 296 P P 00 35 46.5 +8.1
SDSI Sungai Dareh 45.19 272 P **P 00 35 43.2 +0.8**
WHN Wuhan 45.61 320 P **P 00 35 45.4 0.0**
WHN S **S 00 42 31.6 +4.6**
WHN LR LR
comp=Z,560nm,13.5s
WHN LR LR
comp=Z,960nm,13.6s
WHN LR LR
comp=Z,2μm,18.5s
RPZ Rata Peaks 45.71 155 LR LR 00 52 41.0
comp=Z,1μm,21.8s,baz=16,slow=33
SKNT Sakolnakorn 46.64 297 P **P 00 35 54.0 +0.2**
comp=Z,52nm,1.0s
CHBT CHBT 46.76 291 P **P 00 35 57.5 +2.8**
comp=Z,54nm,1.4s,comp=Z,4μm
ASAJ Asahikawa 47.34 356 *e*P **P 00 35 57.8 -1.0**
comp=Z,54nm,1.1s
KHON Khomkaen 47.45 296 P P 00 36 07.2 +7.1
comp=Z,8.6nm,1.1s,comp=Z,909nm
MSHR Mys Shultsa 47.76 345 *e*P **P 00 36 00.4 -1.6**
DL2 Dalian 47.90 334 P **P 00 36 03.1 -0.1**
DL2 S **S 00 43 02.6 +3.0**
DL2 pmax pmax
comp=Z,59nm,0.8s
DL2 pmax pmax
comp=Z,210nm,5.3s
DL2 LR LR
comp=Z,650nm,17.9s
DL2 LR LR
comp=Z,680nm,17.3s
DL2 LR LR
comp=Z,1μm,18.0s
TIA Tai'an 47.99 328 ⇑P **P 00 36 03.0 -0.9**
TIA pmax pmax
comp=Z,40nm,1.1s
TIA LR LR
comp=Z,940nm,21.0s
TIA LR LR
comp=Z,710nm,23.0s
TIA LR LR
comp=Z,2μm,21.4s
PSI Prapat 48.03 277 *e*P **P 00 36 03.0 -1.8**
PSI pmax pmax
comp=Z,99nm,1.7s
PSI Prapat 48.03 277 *e*P **P 00 36 03.0 -1.8**
comp=Z,99nm,1.7s
VLA Vladivostok 48.08 346 *e*P **P 00 36 03.9 -0.6**
VLA pmax pmax
comp=Z,32nm,1.1s
KUR Kuril'sk 48.33 1 *e*P **P 00 36 02.9 -3.5**
KUR *e*S **S 00 43 04.7 -0.8**
KUR pmax pmax
comp=Z,168nm,3.8s
KUR MLR MLR
comp=Z,303nm,20.0s
GYA Guiyang 48.63 310 *e*P **P 00 36 10.2 +1.0**
GYA pmax pmax
comp=Z,10.0nm,1.0s
USRK Ussuriysk Ar. 49.07 346 P **P 00 36 11.9 -0.2**
comp=Z,7.7nm,0.7s,baz=175,slow=7.3,SNR=19
USRK LR LR 00 54 57.6
comp=Z,295nm,19.3s,baz=145,slow=34
UTTA Uttaradit 49.97 296 P **P 00 36 19.7 +0.3**
comp=Z,16nm,1.0s,comp=Z,127nm
MDJ Mudanjiang 50.07 344 P **P 00 36 19.6 -0.1**
MDJ pP sP 00 36 28.7 +0.2
MDJ sP pP 00 36 33.2 +7.1
MDJ PcP **PcP 00 37 38.4 -0.9**
MDJ PP **PP 00 38 16.4 +1.4**
MDJ ScP **ScP 00 41 31.0 -3.2**
MDJ PcS **PcS 00 41 34.5 -1.6**
MDJ S **S 00 43 31.3 +1.3**
MDJ pmax pmax
comp=Z,13nm,0.7s
MDJ pmax pmax
comp=Z,52nm,4.9s
MDJ LR LR
comp=Z,380nm,29.7s
MDJ LR LR
comp=Z,470nm,26.5s
MDJ LR LR
comp=Z,430nm,23.9s
MDJ Mudanjiang 50.07 344 P **P 00 36 19.7 -0.1**
comp=Z,6.5nm,0.3s
YSS Yuzh-Sakhalins 50.16 357 *e*P **P 00 36 19.6 -0.7**
YSS *e* 00 43 33.0
YSS MLR MLR
comp=Z,200nm,15.0s
YSS MLR MLR
comp=N,300nm,19.0s
SRDT SRDT 50.21 292 P **P 00 36 24.7 +3.4**
comp=N,101nm,2.0s
CN2 Changchun 50.60 340 *e*P **P 00 36 24.2 +0.5**
CN2 *ep*P sP 00 36 35.3 +2.8
CN2 *e*S **S 00 43 35.5 -1.8**
CN2 pmax pmax
comp=N,10.0nm,0.8s
CN2 LR LR
comp=N,1μm,20.0s
CN2 LR LR
comp=N,500nm,20.0s
CN2 LR LR
comp=N,800nm,20.0s
UMPA Umpang Tak 51.00 294 P **P 00 36 30.6 +3.3**
comp=N,11nm,1.1s
KMI Kunming 51.06 306 P **P 00 36 28.6 +0.7**
KMI pP pP 00 36 34.0 -0.2
KMI S **S 00 43 48.7 +3.8**
KMI sS sS 00 43 57.3 +2.0
KMI SS **SS 00 47 21.1 +0.8**
KMI pmax pmax
comp=N,27nm,0.9s
KMI pmax pmax
comp=N,37nm,3.1s
KMI LR LR
comp=N,420nm,19.8s
KMI LR LR
comp=N,310nm,17.3s
KMI LR LR
comp=N,690nm,24.3s
LAMP Lampang 51.06 297 P **P 00 36 28.7 +1.0**
comp=N,16nm,1.0s,comp=N,132nm
XAN Xi'an 51.37 319 P **P 00 36 28.8 -1.0**
XAN pP sP 00 36 38.7 +0.1
XAN PcP **PcP 00 37 44.9 +0.5**
XAN S **S 00 43 42.4 -6.0**
XAN ScS **ScS 00 46 14.4 -5.2**
XAN pmax pmax
comp=N,21nm,1.4s
XAN pmax pmax
comp=N,82nm,6.5s
XAN LR LR
comp=N,360nm,17.9s
XAN LR LR
comp=N,270nm,18.8s
XAN LR LR
comp=N,520nm,17.5s
BJI Beijing 51.37 330 P **P 00 36 28.9 -0.7**
BJI S **S 00 43 49.6 +1.5**
BJI sS **sS 00 44 03.8 +5.3**
BJI pmax pmax
comp=N,19nm,1.2s
BJI pmax pmax
comp=N,170nm,3.4s
BJI LR LR
comp=N,820nm,21.3s
BJI LR LR
comp=N,780nm,19.2s
CM01 Chiang Mai Arr 51.63 297 *e*P **P 00 36 31.8 -0.2**
CMAR Chiang Mai Arr 51.66 297 P **P 00 36 32.2 0.0**
comp=N,10nm,1.0s,baz=113,slow=5.5,SNR=37
CMAR LR LR 00 58 34.8
comp=N,171nm,18.0s,baz=112,slow=36
CHTO Chiang Mai 51.78 297 P **P 00 36 33.5 +0.4**
comp=N,134nm,1.2s,comp=N,2μm
CHTO Chiang Mai 51.78 297 *e*P **P 00 36 33.4 +0.4**
CHTO pmax pmax
comp=Z,42nm,1.2s
CHTO Chiang Mai 51.78 297 *e*P **P 00 36 33.4 +0.4**
comp=Z,42nm,1.2s
CD2 Chengdu 53.13 313 *e*P **P 00 36 42.6 -0.4**
CD2 pP sP 00 36 52.9 +1.1
CD2 PP **PP 00 38 42.8 -0.3**
CD2 PcS **PcS 00 41 49.2 -0.9**
CD2 S **S 00 44 11.4 -1.3**
CD2 sS sS 00 44 29.0 +5.8
CD2 SS **SS 00 47 52.7 +0.2**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
KLR Kul'dur 53.88 348 P **P 00 36 47.9 -0.1**
comp=Z,2.4nm,0.7s,baz=141,slow=12,SNR=9.8
HHC Hu-ho-hao-te 54.35 328 *e*P **P 00 36 52.0 +0.3**
HHC pP sP 00 37 01.5 +0.9
HHC S **S 00 44 27.5 -1.5**
HHC sS sS 00 44 43.4 +3.9
HHC pmax pmax
comp=Z,21nm,0.9s
HHC pmax pmax
comp=Z,160nm,4.1s
HHC LR LR
comp=Z,500nm,21.0s
HHC LR LR
comp=Z,670nm,19.4s
HHC LR LR
comp=Z,890nm,20.8s
RAR Rarotonga 55.05 114 LR LR 01 00 59.2
comp=Z,204nm,18.1s,baz=282,slow=37
LZH Lanzhou 55.92 318 *e*P **P 00 37 04.2 +0.9**
LZH pP sP 00 37 12.5 +0.3
LZH sP pP 00 37 17.0 +7.3
LZH S **S 00 44 57.0 +6.6**
LZH SS **SS 00 48 37.0 +0.3**
LZH pmax pmax
comp=Z,29nm,1.0s
LZH pmax pmax
comp=Z,98nm,4.2s
LZH LR LR
comp=Z,390nm,13.8s
LZH LR LR
comp=Z,610nm,17.3s
LZH LR LR
comp=Z,760nm,18.0s
NKL Nikolayevsk 56.47 356 *e*P **P 00 37 08.0 +1.4**
NKL pmax pmax
comp=Z,60nm,1.2s
PEA0 Petropavlovsk- 56.98 8 *e*P **P 00 37 10.7 +0.5**
PETK Petropavlovsk- 56.98 8 P **P 00 37 10.7 +0.4**
comp=Z,9.9nm,1.0s,baz=168,slow=7.6,SNR=7.7
PETK LR LR 00 57 12.8
comp=Z,119nm,21.4s,baz=184,slow=31
PET Petropavlovsk 57.03 9 *e*P P 00 37 15.9 +5.3
PET *e*S **S 00 45 08.2 +4.1**
PET *e*SS **SS 00 48 58.6 +5.5**
HIA Hailar 57.30 339 *c i*P **P 00 37 12.7 0.0**
HIA pmax pmax
comp=Z,16nm,1.0s
HIA Hailar 57.30 339 *e*P **P 00 37 12.9 +0.3**
comp=Z,73nm,1.1s
GTA Gaotai 60.43 320 ⇑P **P 00 37 35.0 +0.2**
GTA pP sP 00 37 45.2 +1.6
GTA sP pP 00 37 49.1 +7.9
GTA S **S 00 45 46.6 -2.5**
GTA sS sS 00 46 02.7 +3.0
GTA SS **SS 00 49 45.0 -2.4**
GTA pmax pmax
comp=Z,23nm,1.1s
GTA pmax pmax
comp=Z,170nm,4.6s
GTA LR LR
comp=Z,360nm,20.4s
GTA LR LR
comp=Z,390nm,21.4s
GTA LR LR
comp=Z,500nm,21.4s
CIT Chita 61.83 338 *e*P **P 00 37 43.5 -0.4**
SONM Songino Array 61.87 330 P **P 00 37 44.4 +0.1**
comp=Z,2.9nm,0.8s,baz=143,slow=6.0,SNR=19
SONM LR LR 01 03 52.6
comp=Z,1μm,20.1s,baz=116,slow=35
SONA1 Songino Array 61.87 330 *e*P **P 00 37 43.9 -0.5**
LSA Lhasa 62.32 306 *e*P **P 00 37 48.0 -0.2**
LSA pmax pmax
comp=Z,8.0nm,0.8s
LSA Lhasa 62.32 306 *e*P **P 00 37 48.0 -0.2**
comp=Z,8.3nm,0.8s
MA2 Magadan 62.77 2 P **P 00 37 50.3 +0.4**
comp=Z,8.9nm,0.8s,baz=160,slow=12,SNR=3.4
PPT2 Papeete2 64.08 108 *e*S **S 00 46 35.5 -0.2**
comp=Z,188nm,30.8s
TBI Tubuai 64.81 114 *e*S **S 00 46 45.8 +1.3**
comp=Z,577nm,28.8s
TBI *e*LQ LQ 00 54 59.5
comp=Z,1μm,33.2s
TBI *e*LR LR 00 57 46.0
comp=Z,1μm,34.8s
ZAK Zakamensk 65.09 331 *e*P **P 00 38 05.0 -0.6**
ZAK pmax pmax
comp=Z,24nm,1.2s
RAMN Ramite 65.17 302 *e*P **P 00 38 06.4 -0.4**
TLY Talaya 65.78 332 P **P 00 38 10.6 +0.7**
comp=Z,5.5nm,0.7s,baz=152,slow=2.8,SNR=4.2
TLY Talaya 65.78 332 *e*P **P 00 38 09.9 0.0**
TLY *e*S **S 00 46 57.8 +2.4**
TLY *e* 00 47 54.4
TLY pmax pmax
comp=Z,20nm,1.3s
TLY MLR MLR
comp=Z,455nm,19.0s
SEY Seymchan 66.20 3 P **P 00 38 12.6 +0.2**
comp=Z,1.6nm,0.3s,baz=166,slow=3.2,SNR=8.3
BOD Bodaibo 66.31 342 *e*P **P 00 38 11.0 -2.1**
BOD pmax pmax
comp=Z,21nm,1.5s
YAK Yakutsk 66.43 351 *e*P **P 00 38 13.7 -0.1**
YAK pmax pmax
comp=Z,17nm,1.0s
KKN Kakani 66.55 302 *e*P **P 00 38 15.0 -0.6**
DMN Daman 66.64 302 *e*P **P 00 38 15.9 -0.3**
MOY Mondy 67.03 331 *e*P **P 00 38 18.5 +0.5**
MOY pmax pmax
comp=Z,53nm,1.9s
GKN Gorkha 67.15 302 *e*P **P 00 38 18.8 -0.5**
comp=Z,53nm,0.9s
KOLN Koldanda 67.96 302 *e*P **P 00 38 23.8 -0.8**
comp=Z,24nm,0.7s
PYUN Piuthan 68.57 302 *e*P **P 00 38 27.7 -0.7**
HYB Hyderabad 70.16 290 *i*P **P 00 38 42.0 +3.9**
WMQ Urumqi 70.50 319 P **P 00 38 39.9 +0.1**
WMQ pP pP 00 38 45.1 -1.2
WMQ sP sP 00 38 50.7 +2.0
WMQ S **S 00 47 49.1 -3.1**
WMQ pmax pmax
comp=Z,36nm,1.2s
WMQ pmax pmax
comp=Z,180nm,4.6s
WMQ LR LR
comp=Z,590nm,20.4s
WMQ LR LR
comp=Z,530nm,15.7s
WMQ LR LR
comp=Z,730nm,19.4s
BILL Bilibino 72.51 8 *i*P **P 00 38 50.5 -0.8**
BILL pmax pmax
comp=Z,12nm,1.3s
TAOE Nuku Hiva Isla 72.97 98 *e*S **S 00 48 20.8 -0.9**
comp=Z,81nm,27.2s
TAOE Nuku Hiva Isla 72.97 98 *e*LR LR 01 01 34.3
comp=Z,446nm,24.1s
VNDA Vanda 74.61 177 P **P 00 39 04.9 +1.3**
comp=Z,3.2nm,0.8s,baz=332,slow=6.9,SNR=10.0
VNDA LR LR 01 09 12.6
comp=Z,446nm,19.4s,baz=360,slow=34
VNDA Vanda 74.61 177 *e*P **P 00 39 05.4 +1.9**
comp=Z,5.0nm,0.9s
MK01 Makanchi Array 75.16 320 *e*P **P 00 39 06.8 -0.6**
MK31 Makanchi Array 75.18 320 P **P 00 39 06.4 -1.0**
MK31 pmax pmax
comp=Z,34nm,1.1s
MK31 Makanchi Array 75.18 320 *e*P **P 00 39 07.6 +0.1**
MKAR Makanchi Array 75.18 320 P **P 00 39 07.0 -0.4**
comp=Z,12nm,1.0s,baz=106,slow=7.7,SNR=61
MKAR LR LR 01 10 34.5
comp=Z,283nm,21.1s,baz=84,slow=34
MKAR Makanchi Array 75.18 320 P **P 00 39 07.0 -0.4**
MKAR pmax pmax
comp=Z,12nm,1.0s
MKAR Makanchi Array 75.18 320 *e*P **P 00 39 07.6 +0.1**
MAKZ Makanchi 75.38 320 P **P 00 39 07.4 -1.2**
MAKZ pmax pmax
comp=Z,69nm,1.6s
MAKZ Makanchi 75.38 320 *e*P **P 00 39 08.3 -0.3**
comp=Z,36nm,1.0s
TIXI Tiksi 75.70 354 *i*P **P 00 39 08.4 -1.5**
TIXI pmax pmax
comp=Z,6.0nm,1.2s
PDGK Podgornoye 75.86 316 P **P 00 39 09.7 -1.6**
PDGK pmax pmax
comp=Z,24nm,1.4s
ZAA0 Zalesovo Array 76.53 328 *e*P **P 00 39 13.5 -1.4**
ZALV Zalesovo Beam 76.53 328 P **P 00 39 13.3 -1.6**
comp=Z,5.3nm,0.8s,baz=110,slow=5.1,SNR=26
ZALV LR LR 01 11 40.0
comp=Z,673nm,21.7s,baz=70,slow=35
KSH Kashi 77.29 312 *e*P **P 00 39 21.1 +1.4**
KSH *ep*P PcP 00 39 31.3 +1.0
KSH *es*P sP 00 39 35.5 +6.8
KSH *e*PP **PP 00 42 17.1 +3.0**
KSH S **S 00 49 07.4 -1.6**
KSH SKS **SKSac 00 49 25.9 -6.1**
KSH ScS **SKKSac 00 49 33.1 +0.5**
KSH pmax pmax
comp=Z,77nm,3.9s
KSH LR LR
comp=Z,120nm,6.4s
KSH LR LR
comp=Z,130nm,6.4s
KSH LR LR
comp=Z,310nm,17.9s
NVS Novosibirsk 77.74 328 *e*P **P 00 39 18.0 -3.7**
SVW2 Sparrevohn 77.98 25 *e*P **P 00 39 24.4 +1.4**
comp=Z,14nm,1.1s
RKT Rikitea 78.07 113 *e*LQ LQ 01 00 31.8
comp=Z,644nm,40.5s
RKT *e*LR LR 01 03 55.8
comp=Z,922nm,31.2s
TKM2 Tokmak 2 78.47 315 P **P 00 39 24.9 -1.4**
TKM2 pmax pmax
comp=Z,13nm,1.1s
TKM2 Tokmak 2 78.47 315 *e*P **P 00 39 27.2 +0.9**
comp=Z,35nm,1.6s
TT01 Tatalina 78.72 23 *e*P **P 00 39 27.9 +0.9**
TTA Tatalina 78.74 23 *e*P **P 00 39 28.8 +1.6**
TTA pmax pmax
comp=Z,11nm,1.1s
TTA Tatalina 78.74 23 *e*P **P 00 39 28.8 +1.6**
comp=Z,11nm,1.1s
KURK Kurchatov 78.82 323 *e*P **P 00 39 27.6 -0.2**
KURK *e* 00 39 32.8
KURK Kurchatov 78.82 323 *e*P **P 00 39 27.6 -0.2**
comp=Z,391nm,1.3s
KURK *e* 00 39 32.8
RSO Redoubt South 78.89 26 *e*P **P 00 39 28.8 +0.6**
FRU Bishkek 79.14 315 *e*P **P 00 39 29.0 -0.8**
FRU *e* 00 39 41.0
FRU pmax pmax
comp=Z,55nm,2.0s
AAK Ala-Archa 79.17 314 *e*P **P 00 39 28.6 -1.6**
AAK pmax pmax
comp=Z,8.0nm,1.2s
EKS2 Erkin-Say 79.69 314 *e*P **P 00 39 33.3 +0.3**
EKS2 pmax pmax
comp=Z,23nm,1.4s
EKS2 Erkin-Say 79.69 314 *e*P **P 00 39 33.3 +0.3**
comp=Z,23nm,1.4s
SUA Susitna One 80.21 26 *e*P **P 00 39 35.1 -0.3**
comp=Z,9.1nm,1.0s
RC01 Rabbit Creek A 80.49 26 *e*P **P 00 39 36.9 +0.2**
comp=Z,14nm,1.0s
RC01 *e*PP PP 00 42 52.9 +13
CAST Castle Rocks 80.54 24 *e*P **P 00 39 37.2 +0.3**
comp=Z,14nm,1.2s
MNAS Manas 80.56 314 P **P 00 39 37.6 -0.1**
MNAS pmax pmax
comp=Z,29nm,1.4s
PMR Palmer 80.97 26 *e*P **P 00 39 38.6 -0.6**
PMR pmax pmax
comp=Z,12nm,1.0s
PMR Palmer 80.97 26 *e*P **P 00 39 38.5 -0.6**
comp=Z,12nm,1.0s
KTH Kantishna Hill 81.06 24 *e*P **P 00 39 39.6 -0.2**
comp=Z,13nm,1.1s
TRF Thorofare Moun 81.27 24 *e*P **P 00 39 40.7 -0.4**
comp=Z,6.9nm,1.0s
SML Sawmill 81.40 26 *e*P **P 00 39 42.0 +0.4**
SML pmax pmax
comp=Z,19nm,0.9s
SML Sawmill 81.40 26 *e*P **P 00 39 42.0 +0.4**
comp=Z,19nm,0.9s
RND Reindeer 81.84 24 *e*P **P 00 39 43.6 -0.3**
RND pmax pmax
comp=Z,13nm,0.9s
RND Reindeer 81.84 24 *e*P **P 00 39 43.6 -0.3**
comp=Z,13nm,0.9s
SCM Sheep Creek Mo 81.85 26 *e*P **P 00 39 44.7 +0.7**
SCM pmax pmax
comp=Z,22nm,1.0s
SCM Sheep Creek Mo 81.85 26 *e*P **P 00 39 44.7 +0.7**
comp=Z,22nm,1.0s
MCK McKinley 81.94 24 *e*P **P 00 39 44.3 -0.1**
MCK pmax pmax
comp=Z,17nm,1.1s
MCK McKinley 81.94 24 *e*P **P 00 39 44.3 -0.1**
comp=Z,17nm,1.1s
OTUK Ortayu 82.04 319 P **P 00 39 43.4 -1.8**
OTUK pmax pmax
comp=Z,25nm,1.3s
KK31 Karatay Array 82.13 314 *i*P **P 00 39 45.5 -0.3**

KK31 pmax pmax
comp=Z,4.0nm,0.9s
KKAR Karatay Array 82.13 314 *e*P **P 00 39 45.6 -0.2**
KKAR pmax pmax
comp=Z,11nm,1.1s
KKAR Karatay Array 82.13 314 *e*P **P 00 39 45.6 -0.2**
comp=Z,11nm,1.1s
DIV Divide 82.28 27 *e*P **P 00 39 47.6 +1.3**
comp=Z,17nm,1.1s
DHY Denali Highway 82.32 25 *e*P **P 00 39 46.9 +0.4**
comp=Z,13nm,1.1s
KLU Klutina 82.34 27 *e*P **P 00 39 47.4 +0.8**
comp=Z,15nm,1.1s
WRH Wood River Hil 82.58 23 *e*P **P 00 39 47.3 -0.3**
comp=Z,13nm,1.1s
NRIK Noril'sk 82.60 342 P **P 00 39 47.3 -0.3**
comp=Z,2.7nm,0.6s,baz=119,slow=3.8,SNR=4.5
NRIK LR LR 01 14 40.7
comp=Z,264nm,21.7s,baz=120,slow=34
BMRM Bremner River 82.75 27 *e*P **P 00 39 50.1 +1.4**
comp=Z,13nm,1.0s
CCB Clear Creek Bu 82.77 23 *e*P **P 00 39 47.9 -0.7**
comp=Z,7.2nm,0.9s
COLD Coldfoot 82.96 20 *e*P **P 00 39 51.0 +1.4**
comp=Z,10nm,1.2s
PAX Paxson 83.08 25 *e*P **P 00 39 51.3 +0.9**
PAX pmax pmax
comp=Z,12nm,1.0s
PAX Paxson 83.08 25 *e*P **P 00 39 51.3 +0.9**
comp=Z,12nm,1.0s
IL1 Eielson Array 83.18 23 *e*P **P 00 39 49.2 -1.6**
ILAR Eielson Array 83.18 23 P **P 00 39 49.5 -1.3**
comp=Z,2.4nm,0.7s,baz=259,slow=5.0,SNR=18
ILAR LR LR 01 13 01.2
comp=Z,247nm,20.5s,baz=256,slow=33
ILB Eielson Array 83.18 23 *e*P **P 00 39 49.8 -1.0**
CRQM Cirque 83.36 28 *e*P **P 00 39 53.3 +1.3**
comp=Z,19nm,0.9s
BALM Baldy 83.81 28 *e*P **P 00 39 55.7 +1.4**
BALM pmax pmax
comp=Z,10.0nm,1.1s
BALM Baldy 83.81 28 *e*P **P 00 39 55.7 +1.4**
comp=Z,10nm,1.1s
DOT Dot Lake 83.92 25 *e*P **P 00 39 55.1 +0.5**
comp=Z,36nm,1.2s
VOSK Vostochnaya 83.95 324 P **P 00 39 53.1 -1.9**
VOSK pmax pmax
comp=Z,20nm,0.9s
BVA0 Borovoye Array 84.36 324 *i* P **P 00 39 53.9 -3.2**
BVA0 pmax pmax
comp=Z,27nm,0.9s
BVAR Borovoye Array 84.36 324 P **P 00 39 55.7 -1.4**
comp=Z,8.8nm,0.8s,baz=103,slow=6.7,SNR=50
CHKZ Chkalovo 84.38 325 P P 00 39 51.6 -5.5
CHKZ pmax pmax
comp=Z,48nm,1.6s
BRVK Borovoye 84.43 324 P **P 00 39 55.0 -2.4**
BRVK pmax pmax
comp=Z,21nm,1.0s
BRVK Borovoye 84.43 324 *e*P **P 00 39 56.9 -0.5**
comp=Z,93nm,1.8s
MAW Mawson 84.57 202 P **P 00 40 00.0 +2.2**
comp=Z,2.7nm,0.8s,baz=90,slow=3.7,SNR=6.7
MAW LR LR 01 16 12.8
comp=Z,172nm,19.8s,baz=70,slow=35
ZRNK Zerenda 85.17 324 P **P 00 39 59.1 -2.0**
ZRNK pmax pmax
comp=Z,12nm,0.6s
ZRNK Zerenda 85.17 324 *e*P **P 00 39 59.9 -1.2**
comp=Z,17nm,0.6s
EGAK Eagle 85.48 24 *e*P **P 00 40 03.8 +1.3**
comp=Z,9.3nm,1.1s
DAWY Dawson 86.01 25 *e*P **P 00 40 05.3 +0.1**
comp=Z,30nm,1.5s
HYT Haines Junctio 86.03 28 *e*P **P 00 40 07.4 +2.0**
comp=Z,13nm,1.1s
QSPA South Pole Qui 86.65 180 *e*P **P 00 40 09.0 +0.6**
comp=Z,19nm,0.9s
INK Inuvik 89.31 21 P **P 00 40 21.0 +0.3**
comp=Z,2.4nm,1.0s,baz=252,slow=8.1,SNR=5.5
INK Inuvik 89.31 21 *e*P **P 00 40 21.4 +0.6**
comp=Z,11nm,1.4s
DLBC Dease Lake 89.32 32 LR LR 01 12 09.7
comp=Z,273nm,21.5s,baz=281,slow=30
DLBC Dease Lake 89.32 32 *e*P **P 00 40 23.3 +2.1**
comp=Z,18nm,1.4s
BBB Bella Bella 89.69 38 LR LR 01 12 47.0
comp=Z,349nm,20.3s,baz=275,slow=30
AB31 Akbulak array 90.29 319 P **P 00 40 24.0 -1.8**
AB31 pmax pmax
comp=Z,5.0nm,0.8s
ABKAR Akbulak array 90.29 319 *e*P **P 00 40 23.8 -2.0**
GEYT Alibeck 90.80 308 P **P 00 40 26.2 -2.4**
comp=Z,0.5nm,0.4s,baz=230,slow=3.7,SNR=4.6
GEYT PP **PP 00 44 04.5 +0.1**
comp=Z,0.6nm,0.6s,baz=288,slow=42,SNR=3.3
GEYT LR LR 01 23 08.6
comp=Z,575nm,20.8s,baz=75,slow=37
AKTO Aktyubinsk 91.61 320 P **P 00 40 30.1 -1.8**
comp=Z,2.3nm,0.8s,baz=92,slow=7.1,SNR=4.1
AKTO LR LR 01 20 46.6
comp=Z,516nm,21.9s,baz=76,slow=35
AKTO Aktyubinsk 91.61 320 P **P 00 40 27.7 -4.3**
AKTO pmax pmax
comp=Z,6.0nm,1.1s
ARU Arti 91.64 326 *d i*P **P 00 40 29.4 -2.5**
ARU 00 44 08.0
ARU S **SKSac 00 50 59.2 -4.2**
ARU SS **SS 00 57 31.9 -6.1**
ARU pmax pmax
comp=Z,5.0nm,1.2s
ARU MLR MLR
comp=Z,518nm,23.0s
ARU Arti 91.64 326 *e*P **P 00 40 29.2 -2.7**
comp=Z,8.6nm,1.2s
NLWA Neilton Lookou 92.09 43 *e*P **P 00 40 35.6 +1.3**
comp=Z,13nm,1.3s
SYO Syowa Base 92.97 200⇑ *e*P **P 00 40 38.8 +1.0**
BMO Blue Mountains 96.64 45 *e*P **P 00 40 56.0 +0.7**
BMO pmax pmax
comp=Z,5.0nm,0.9s
BMO Blue Mountains 96.64 45 *e*P **P 00 40 56.0 +0.7**
comp=Z,5.3nm,0.9s
YKA Yellowknife Ar 96.98 28 P **P 00 40 56.0 -0.3**
comp=Z,1.3nm,1.0s,baz=276,slow=4.7,SNR=8.1
YKA LR LR 01 22 54.8
comp=Z,12nm,19.4s,baz=0.0,slow=34
YKA Yellowknife Ar 96.98 28 P **P 00 40 56.0 -0.3**
YKA pmax pmax
comp=Z,1.0nm,1.0s
YKA MLR MLR
comp=Z,12nm,19.4s
KLMR Klimovskoe 101.15 332 *e*P **Pdif 00 41 11.3 -3.7**
KLMR *e* 00 45 18.5
KLMR pmax pmax
comp=Z,9.0nm,1.2s
KVAR Kislovodsk Arr 102.28 314 PP PP 00 45 32.0 -0.9
comp=Z,7.7nm,1.1s,baz=10,slow=2.5,SNR=5.7
PDAR Pinedale Array 102.40 47 P **Pdif 00 41 25.8 +4.5**
comp=Z,0.9nm,0.9s,baz=222,slow=2.0,SNR=4.5
TXAR Lajitas Array 108.80 60 PKiKP **PKiKP 00 45 59.0 +4.0**
comp=Z,0.3nm,0.9s,baz=96,slow=2.5,SNR=3.4
OKC Ostrava-Krasne 116.46 325 AMS AMS 01 35 00.0
comp=Z,300nm,18.4s
UPC Upice 117.31 327 AMS AMS 01 35 40.0
comp=Z,400nm,20.6s
PVCC Panska Ves 118.07 327 AMS AMS 01 38 50.0
comp=Z,300nm,18.2s
BRG Berggiesshubel 118.22 328 *e*P **PKPdf 00 46 17.2 +5.0**
comp=Z,2.9nm,1.0s
BRG Berggiesshubel 118.22 328 *e*PKiKP **PKPdf 00 46 17.2 +5.0**
BRG pmax pmax
comp=Z,3.0nm,1.0s
GOPC GO Pecny, Ondr 118.29 327 AMS AMS 01 36 20.0
comp=Z,400nm,18.3s
CLL Collm 118.47 329 *e*PKiKP **PKiKP 00 46 14.0 +1.4**
CLL *e*PP **PP 00 47 25.0 -3.9**
CLL *e*SS SS 01 03 54.0 +9.4
CLL *e*SSS SSS 01 08 06.0
CLL Lm MLR 01 38 00.0
comp=N,300nm,20.8s
CLL Lm MLR 01 38 00.0
comp=E,400nm,21.6s
CLL Lm MLR 01 38 00.0
comp=Z,500nm,21.0s
CLL Collm 118.47 329 *e*PKiKP **PKiKP 00 46 14.0 +1.4**
CLL MLR MLR
comp=Z,500nm,21.0s
CONA Conrad Observa 118.72 324 *i* PKiKP **PKiKP 00 46 13.7 +0.4**
comp=Z,1.9nm,1.0s
NKC Novy Kostel 119.37 328 AMS AMS 01 41 10.0
comp=Z,500nm,17.8s
KHC Kasperske Hory 119.37 327 *e*PKP **PKPdf 00 46 19.3 +4.8**
KHC *ex* x 00 46 34.0
KHC AMS AMS 01 38 30.0
comp=Z,500nm,19.9s
KHC Kasperske Hory 119.37 327 *e*PKiKP **PKPdf 00 46 19.3 +4.8**
KHC *e* 00 46 34.0
KHC MLR MLR
comp=Z,500nm,19.9s
GERES GERESS Array B 119.46 326 PKP **PKPdf 00 46 17.3 +2.6**
comp=Z,0.5nm,0.6s,baz=87,slow=4.2,SNR=3.7
GEA0 GERESS Array S 119.47 326 *e*PKPdf **PKPdf 00 46 18.5 +3.7**
MOA Molln 119.68 325 *i* PKiKP **PKPdf 00 46 14.6 -0.5**
comp=Z,2.3nm,1.2s
SOKA Soboth 119.84 324 *i* PKPdf **PKPdf 00 46 13.8 -1.7**
comp=Z,2.2nm,1.4s
OBKA Obir 120.21 324 *i* PKiKP **PKiKP 00 46 16.9 +0.5**
comp=Z,1.3nm,0.5s
MYKA Terra Mystica 120.68 324 *i* PKPdf **PKPdf 00 46 15.1 -2.0**
comp=Z,2.6nm,0.9s
ABTA Abfaltersbach 121.28 325 *i* PKiKP **PKiKP 00 46 18.7 +0.3**
comp=Z,3.8nm,0.9s
WTTA Wattenberg 121.49 326 *i* PKiKP **PKPdf 00 46 18.2 -0.6**
comp=Z,4.3nm,0.9s
MOTA Moosalm 121.74 326 *i* PKPdf **PKPdf 00 46 16.2 -3.0**
comp=Z,3.1nm,1.0s
RETA Reutte 121.85 326 *i* PKPdf **PKPdf 00 46 15.6 -3.7**
comp=Z,2.4nm,1.1s
FETA Feichten 122.14 326 *i* PKiKP **PKiKP 00 46 20.4 +0.2**
comp=Z,4.8nm,1.0s
TIP Timpagrande 122.21 315 *e*pPKPdf pPKPdf 00 46 26.8 -0.4
DAVA Damuels 122.46 326 *i* PKPdf **PKPdf 00 46 18.3 -2.4**
comp=Z,3.7nm,1.0s
FUORN Ofenpass-Fuorn 122.63 326 *e*pPKPdf pPKPdf 00 46 27.4 -0.5
EKA Eskdalemuir Ar 122.67 340 PKP **PKPdf 00 46 22.9 +2.4**
comp=Z,0.6nm,0.6s,baz=23,slow=2.4,SNR=5.1
TUE Stuetta 123.23 326 *e*PKPdf **PKPdf 00 46 26.6 +4.4**
ESDC Sonseca Array 135.02 328 PP PP 00 49 22.5 +3.7
comp=Z,0.2nm,0.7s,baz=71,slow=6.4,SNR=4.4
TORD Torodi Ar. Bea 143.96 288 PKhKP PKPpre 00 46 57.9
comp=Z,4.4nm,1.0s,baz=75,slow=1.5,SNR=10.0
TORD PP **PP 00 50 17.5 +2.2**
comp=Z,0.8nm,1.0s,baz=139,slow=2.7,SNR=4.0
SAML Samuel 147.92 113 *e*PKPbc **PKPbc 00 47 10.9 -0.4**
KIC Kosan Boka 151.28 277 *e*PKiKP **PKPbc 00 47 17.7 -1.9**
comp=Z,108nm,1.5s
TIC Toumodi 151.53 278 *e*PKiKP **PKPbc 00 47 18.4 -1.8**
LIC Lamto 151.57 277 *e*PKiKP **PKPbc 00 47 18.1 -2.2**
comp=Z,76nm,2.0s

IDC 11 00:27:39.3±2.5, 37.01N×141.52E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.5/48, mbtmp3.6/5, Error ellipse: s-maj=91.9km s-min=28.0km az=68.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SONM	**Songino Array**	**27.87**	**304**	P	P	00 33 31.1	+0.3
	0.5nm,0.5s,baz=95,slow=9.1,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**28.06**	**121**	T	T	01 02 33.3	
	baz=315,slow=75,SNR=77						
H11N1	**WAKE ISLAND Hy**	**28.07**	**121**	T	T	01 02 34.8	
	baz=315,slow=75,SNR=104						
H11N3	**WAKE ISLAND Hy**	**28.08**	**121**	T	T	01 02 35.6	
	baz=315,slow=75,SNR=96						
H11S1	**WAKE ISLAND Hy**	**28.77**	**123**	T	T	01 03 28.7	
	baz=317,slow=74,SNR=54						
H11S3	**WAKE ISLAND Hy**	**28.77**	**123**	T	T	01 03 28.7	
	baz=317,SNR=69						
H11S2	**WAKE ISLAND Hy**	**28.79**	**123**	T	T	01 03 38.4	
	baz=317,slow=74,SNR=54						
ZALV	**Zalesovo Beam**	**42.00**	**312**	P	P	00 35 32.2	+0.1
	0.4nm,0.6s,baz=94,slow=6.4,SNR=3.4						
MKAR	**Makanchi Array**	**44.21**	**302**	P	P	00 35 49.4	-0.6
	0.4nm,0.6s,baz=89,slow=8.6,SNR=4.1						
BVAR	**Borovoye Array**	**50.66**	**312**	P	P	00 36 43.2	+3.0
	0.7nm,0.6s,baz=91,slow=8.6,SNR=4.2						
WRA	**Warramunga Arr**	**57.05**	**188**	P	P	00 37 27.1	-0.1
	0.4nm,0.5s,baz=10,slow=7.2,SNR=2.4						
NOA	**NORSAR Array B**	**74.24**	**337**	P	P	00 39 17.8	-0.1
	0.6nm,0.7s,baz=42,slow=5.9,SNR=3.3						

IDC 11 00:35:20.1±0.9, 3.27S×146.54E, h0km, mb4.1/11, mb1 4.4/12, mb1mx4.1/34, mbtmp4.2/12, ML2.6/1, MS3.9/3, Ms1 3.9/3, ms1mx3.2/45, Error ellipse: s-maj=33.0km s-min=16.5km az=99.0
ISCJB 11 00:35:21.8±0.4, 3.36S±0.05×146.60E±0.08, h20km, mb4.3/32, MS4.1/3, Error ellipse: s-maj=11.8km s-min=7.0km az=9.0
NEIC 11 00:35:25.4±0.5, 3.35S×146.60E, h35km, mb4.5/21, Error ellipse: s-maj=13.7km s-min=8.3km az=98.0
ISC 11 00:35:24.1±0.5, 3.38S±0.07×146.6E±0.1, h20km, n55, σ1998/53, mb4.4/32, MS4.0/3, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**6.01**	**175**	Pn	**Pn**	**00 36 52.1**	**+0.1**
	9.0nm,0.3s,baz=20,slow=3.7,SNR=11						
PMG				LR	LR	00 39 31.6	
	comp=Z,770nm,20.8s,baz=295,slow=41						
PMG	**Port Moresby**	**6.01**	**175**	*e*Pn	**Pn**	**00 36 51.8**	**-0.2**
CTA	**Charters Tower**	**16.61**	**181**	Pn	**P**	**00 39 19.4**	**+1.1**
	0.6nm,0.3s,baz=357,slow=16,SNR=4.8						
CTAO	**Charters Tower**	**16.61**	**181**	*e*Pn	**Pn**	**00 39 14.9**	**-1.0**
	98nm,1.3s						
MTN	**Manton Dam**	**17.96**	**238**	*e*Pn	**P**	**00 39 34.6**	**+1.3**
	100nm,1.6s						
WRAB	**Tennant Creek**	**20.34**	**215**	*e*P	**P**	**00 39 58.2**	**-1.1**
	18nm,0.7s						
WB2	**Warramunga Arr**	**20.35**	**215**	*e*P	**P**	**00 39 58.5**	**-0.9**
	24nm,0.8s						
WRA	**Warramunga Arr**	**20.35**	**215**	P	**P**	**00 39 58.5**	**-1.0**
	16nm,0.9s,baz=37,slow=12,SNR=28						
SOEI	**Soe**	**23.07**	**253**	*e*P	**P**	**00 40 29.2**	**+0.4**
	66nm,1.0s						
AS01	**Alice Springs**	**23.59**	**210**	*e*P	**P**	**00 40 32.5**	**-1.3**
AS31	**Alice Springs**	**23.61**	**210**	*e*P	**P**	**00 40 33.4**	**-0.7**
	9.9nm,1.4s						
ASAR	**Alice Springs**	**23.61**	**210**	P	**P**	**00 40 32.7**	**-1.3**
	9.7nm,0.9s,baz=41,slow=8.7,SNR=27						
FITZ	**Fitzroy Crossi**	**25.22**	**233**	P	**P**	**00 40 47.1**	**-1.7**
	12nm,0.8s,baz=52,slow=10,SNR=10.0						
FITZ	**Fitzroy Crossi**	**25.22**	**233**	*e*P	**P**	**00 40 47.7**	**-1.2**
KSM	**Kuching**	**36.60**	**277**	*e*P	**P**	**00 42 28.0**	**-1.4**
	4.7nm,0.5s						
NACB	**Ninganchiao**	**36.64**	**320**	*e*P	**P**	**00 42 27.5**	**-2.0**
	10.0nm,0.8s						
JHJ	**Hachijo jima 2**	**36.87**	**350**	LR	LR	00 56 37.7	
	comp=Z,174nm,18.0s,baz=18,slow=35						
YHNB	**Yeheng**	**37.13**	**320**	*e*P	**P**	**00 42 30.5**	**-3.3**
	4.8nm,0.5s						
JNU	**Naatsuse**	**39.24**	**339**	LR	LR	00 55 46.9	
	comp=Z,222nm,20.5s,baz=121,slow=31						
MJAR	**Matsushiro Arr**	**40.48**	**350**	P	**P**	**00 42 59.8**	**-1.8**
	0.5nm,0.4s,baz=171,slow=8.6,SNR=2.6						
MAJO	**Matsushiro**	**40.48**	**350**	*e*P	**P**	**00 42 59.0**	**-2.6**
	18nm,2.1s						
RAO	**Raoul Island**	**42.36**	**131**	*e*P	**P**	**00 43 18.2**	**+1.0**
	97nm,0.5s						
QIZ	**Qiongzhong**	**42.48**	**303**	*e*P	**P**	**00 43 17.3**	**-1.0**
	8.1nm,1.0s						
KULM	**Kulim**	**46.71**	**280**	*e*P	**P**	**00 43 50.5**	**-1.7**
	2.4nm,0.4s						
MDJ	**Mudanjiang**	**50.15**	**344**	*e*P	**P**	**00 44 16.0**	**-2.2**
	2.9nm,0.5s						
CN2	**Changchun**	**50.68**	**340**	*e*P	**P**	**00 44 25.0**	**+2.8**
BJT	**Baijiatuau**	**51.43**	**330**	*e*P	**P**	**00 44 25.7**	**-2.2**
	4.0nm,0.6s						
BJI	**Beijing**	**51.45**	**330**	P	**P**	**00 44 31.9**	**+3.9**
BJI				pmax	pmax		
	comp=Z,6.0nm,1.1s						
BJI				LR	LR		
	comp=N,380nm,16.5s						
BJI				LR	LR		
	comp=E,300nm,16.5s						
BJI				LR	LR		
	comp=Z,340nm,19.5s						
CM01	**Chiang Mai Arr**	**51.68**	**297**	*e*P	**P**	**00 44 32.0**	**+1.8**
CMAR	**Chiang Mai Arr**	**51.70**	**297**	P	**P**	**00 44 30.5**	**+0.1**
	comp=Z,0.7nm,0.3s,baz=116,slow=6.1,SNR=6.5						
CHTO	**Chiang Mai**	**51.83**	**297**	P	**P**	**00 44 29.4**	**-1.9**
	comp=Z,0.7nm,0.5s						
HHC	**Hu-ho-hao-te**	**54.42**	**328**	*e*P	P	00 44 55.3	+5.1
HHC				pmax	pmax		
	comp=Z,18nm,1.0s						
HHC				pmax	pmax		
	comp=Z,66nm,8.1s						
GTA	**Gaotai**	**60.50**	**320**	*e*P	**P**	**00 45 37.1**	**+4.0**
GTA				pP	sP	00 45 41.2	-0.8
GTA				sP	pP	00 45 44.2	+4.6
GTA				pmax	pmax		
	comp=Z,3.0nm,1.2s						
SONA1	**Songino Array**	**61.95**	**330**	*e*P	**P**	**00 45 44.6**	**+1.8**
WMQ	**Urumqi**	**70.57**	**319**	*e*P	**P**	**00 46 40.7**	**+2.6**
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,70nm,3.5s						
VNDA	**Vanda**	**74.53**	**177**	P	**P**	**00 47 02.4**	**+1.5**
	comp=Z,1.2nm,0.9s,baz=314,slow=6.2,SNR=6.7						
MK01	**Makanchi Array**	**75.23**	**320**	*e*P	**P**	**00 47 02.7**	**+1.6**
MK31	**Makanchi Array**	**75.25**	**320**	*e*P	**P**	**00 47 02.7**	**+1.5**
MKAR	**Makanchi Array**	**75.25**	**320**	P	**P**	**00 47 02.5**	**-3.2**
	comp=Z,0.5nm,0.7s,baz=72,slow=4.7,SNR=3.1						
MAKZ	**Makanchi**	**75.45**	**320**	*e*P	**P**	**00 47 08.9**	**+2.1**
	comp=Z,3.7nm,0.8s						
ZAA0	**Zalesovo Array**	**76.60**	**328**	*e*P	**P**	**00 47 15.5**	**+2.3**
ZALV	**Zalesovo Beam**	**76.60**	**328**	P	**P**	**00 47 12.1**	**-1.2**
	comp=Z,1.3nm,0.7s,baz=116,slow=9.8,SNR=4.7						
KSH	**Kashi**	**77.36**	**312**	*e*P	P	00 47 22.8	+4.8
KSH				*e*pP	PcP	00 47 33.5	+5.0
KSH				*e*PP	PP	00 50 21.1	+8.6
KSH				S	**S**	**00 57 13.4**	**+5.8**
KSH	**Kashi**	**77.36**	**312**	SKS	**SKSac**	**00 57 28.7**	**-1.6**
KSH				pmax	pmax		
	comp=Z,51nm,4.0s						
PMR	**Palmer**	**81.03**	**26**	*e*P	**P**	**00 47 35.7**	**-1.7**
	comp=Z,0.6nm,0.4s						
MCK	**McKinley**	**82.01**	**24**	*e*P	**P**	**00 47 41.9**	**-0.6**
	comp=Z,1.1nm,0.4s						
CCB	**Clear Creek Bu**	**82.83**	**23**	*e*P	**P**	**00 47 45.8**	**-1.0**
	comp=Z,4.1nm,1.2s						
COLA	**College**	**82.91**	**23**	*e*P	**P**	**00 47 45.7**	**-1.5**
	comp=Z,1.1nm,0.6s						
IL1	**Eielson Array**	**83.25**	**23**	*e*P	**P**	**00 47 47.3**	**-1.7**
ILAR	**Eielson Array**	**83.25**	**23**	P	**P**	**00 47 46.8**	**-2.2**
	comp=Z,0.5nm,0.5s,baz=259,slow=4.3,SNR=5.4						
BVAR	**Borovoye Array**	**84.44**	**324**	P	**P**	**00 47 54.7**	**-0.6**
	comp=Z,3.6nm,0.7s,baz=90,slow=7.2,SNR=5.3						
ZRNK	**Zerenda**	**85.24**	**324**	*e*P	**P**	**00 48 00.6**	**+1.3**
	comp=Z,3.0nm,0.7s						
YKA	**Yellowknife Ar**	**97.05**	**28**	P	**P**	**00 48 53.4**	**-1.0**
	comp=Z,0.3nm,0.8s,baz=266,slow=5.5,SNR=3.1						
TORD	**Torodi Ar. Bea**	**144.00**	**288**	PKP	**PKPdf**	**00 54 58.7**	**-0.7**
	comp=Z,1.4nm,0.9s,baz=83,slow=3.2,SNR=5.6						
SAML	**Samuel**	**147.88**	**113**	*e*PKPdf	**PKPdf**	**00 55 06.4**	**+0.4**
SAML				*e*PKPab	**PKPab**	**00 55 12.5**	**+1.0**

CSEM 11 00:37:22.5, 38.47N×29.88W, h10km, ML2.1
PDA 11 00:37:22.5±0.9, 38.47N×29.88W, h10km, MD3.5, ML2.1, Error ellipse: s-maj=21.9km s-min=9.0km az=177.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCED	**Cedros**	**0.94**	**80**	*e*P	Pg	00 37 36.9	-3.6
PCED				*e*S	Sg	00 37 47.4	-5.3
PCED				A	A	00 37 48.3	
	19nm,0.1s						
PCED	**Cedros**	**0.94**	**80**	*e*P	Pg	00 37 36.9	-3.6
PCED				*e*S	Sg	00 37 47.4	-5.3
HOR	**Horta**	**0.98**	**86**	*e*S	Sg	00 37 49.1	-5.0
HOR				A	A	00 37 51.4	
	43nm,0.2s						
HOR	**Horta**	**0.98**	**86**	*e*S	Sg	00 37 49.1	-5.0
PCAN	**Candelaria**	**1.09**	**90**	*e*S	Sg	00 37 51.5	-6.2
PCAN				A	A	00 37 54.9	
	16nm,0.2s						
PCAN	**Candelaria**	**1.09**	**90**	*e*S	Sg	00 37 51.5	-6.2
PICO	**Pico**	**1.14**	**88**	*e*P	Pb	00 37 39.8	-4.5
PICO				*e*S	Sb	00 37 53.1	-6.1
PICO				A	A	00 37 54.8	
	20nm,0.2s						
PICO	**Pico**	**1.14**	**88**	*e*P	Pb	00 37 39.8	-4.5
PICO				*e*S	Sb	00 37 53.1	-6.1
ROSA	**Rosais**	**1.31**	**78**	*e*P	Pn	00 37 42.3	-4.5
ROSA				*e*S	Sb	00 37 57.0	-7.0
ROSA				A	A	00 37 58.1	
	14nm,0.2s						
ROSA	**Rosais**	**1.31**	**78**	*e*P	Pn	00 37 42.3	-4.5
ROSA				*e*S	Sb	00 37 57.0	-7.0

IDC 11 00:41:48.3±1.4, 32.51S×178.21W, h0km, mb4.4/2, mb1 4.6/3, mb1mx3.9/32, mbtmp4.4/3, ML4.1/1, Error ellipse: s-maj=59.0km s-min=33.4km az=148.0
ISCJB 11 00:41:51.2±0.7, 32.62S±0.07×178.13W±0.1, h33km, mb4.5/10, Error ellipse: s-maj=16.6km s-min=6.9km az=27.0
NEIC 11 00:41:51.6±3.0, 32.58S×178.32W, h21km±21km, mb4.4/9, Error ellipse: s-maj=12.4km s-min=7.1km az=120.0
ISC 11 00:41:53.3±0.7, 32.58S±0.09×178.4W±0.1, h33km, n22, σ078/24, mb4.4/10, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**3.34**	**7**	Sn	**Sn**	**00 43 20.9**	**-0.7**
	61nm,0.3s,baz=23,slow=23,SNR=3.4						
URZ	**Urewera**	**6.77**	**212**	Pn	**Pn**	**00 43 29.0**	**-1.2**
	3.8nm,0.3s,baz=255,slow=2.3,SNR=23						
URZ				Sn	**Sn**	**00 44 46.1**	**-0.1**
	16nm,0.3s,baz=234,slow=22,SNR=12						
AFI	**Afiamalu**	**19.53**	**19**	*e*P	**P**	**00 46 18.2**	**+0.1**
	16nm,0.7s						
RAR	**Rarotonga**	**20.04**	**60**	*e*P	**P**	**00 46 23.5**	**0.0**
	11nm,0.6s						
HNR	**Honiara**	**30.55**	**314**	*e*P	**P**	**00 48 03.8**	**0.0**
	58nm,0.4s						
PMG	**Port Moresby**	**39.31**	**298**	P	**P**	**00 49 19.2**	**-0.2**
	6.8nm,0.8s						
ASAR	**Alice Springs**	**42.74**	**269**	P	**P**	**00 49 48.6**	**+0.9**
	3.3nm,0.7s,baz=107,slow=7.6,SNR=25						
WRAB	**Tennant Creek**	**43.92**	**275**	*e*P	**P**	**00 49 57.4**	**+0.2**
	1.3nm,0.4s						
WRA	**Warramunga Arr**	**43.92**	**275**	P	**P**	**00 49 57.9**	**+0.7**
	2.5nm,0.4s,baz=113,slow=7.9,SNR=33						
KKM	**Kota Kinabalu**	**72.96**	**289**	*e*P	**P**	**00 53 19.9**	**-0.1**
	3.6nm,0.7s						
SYO	**Syowa Base**	**74.93**	**193**⇑	*e*PcP	**PcP**	**00 53 45.6**	**+1.4**
BJT	**Baijiatuau**	**94.25**	**316**	P	**P**	**00 55 08.8**	**-0.1**
	2.5nm,0.7s						
ANMO	**Albuquerque**	**95.17**	**52**	P	**P**	**00 55 13.8**	**+0.3**
	0.2nm,0.5s						
HWUT	**Hardware Ranch**	**96.03**	**44**	*e*P	**P**	**00 55 16.8**	**-0.5**
	0.4nm,0.4s						
PMR	**Palmer**	**96.79**	**14**	*e*P	**P**	**00 55 20.0**	**0.0**
	0.7nm,0.3s						
MKAR	**Makanchi Array**	**118.93**	**309**	PKP	**PKPdf**	**01 00 38.1**	**0.0**
	0.2nm,0.6s,baz=7.6,slow=2.2,SNR=3.0						
KURK	**Kurchatov**	**122.32**	**313**	PKP	**PKPdf**	**01 00 44.5**	**+0.1**
KURBB	**Kurchatov Arra**	**122.36**	**313**	PKP	**PKPdf**	**01 00 44.5**	**0.0**
	0.3nm,0.5s,baz=106,slow=2.0,SNR=5.1						
OBN	**Obninsk**	**146.76**	**323**	*e*PKPdf	**PKPdf**	**01 01 27.7**	**-1.8**
OBN				*e*PKPbc	**PKPbc**	**01 01 31.7**	**+0.5**
NOA	**NORSAR Array B**	**150.85**	**350**	PKPbc	**PKPbc**	**01 01 41.3**	**-0.3**
	0.5nm,0.7s,baz=17,slow=4.2,SNR=3.0						
HFS	**Hagfors**	**151.31**	**347**	PKPbc	**PKPbc**	**01 01 42.7**	**0.0**
	3.5nm,1.0s,baz=90,slow=1.4,SNR=4.8						
MMAI	**Mount Meron Ar**	**151.69**	**280**	PKPbc	**PKPbc**	**01 01 46.4**	**+1.8**
	5.4nm,1.0s,baz=46,slow=7.1,SNR=5.7						

IDC 11 00:45:08.1±48.0, 16.16S×175.29W, h0km, mb4.3/3, mb1 4.5/3, mb1mx3.7/35, mbtmp4.3/3, Error ellipse: s-maj=913.4km s-min=174.7km az=78.0
**NEIC 11

HNR	**Honiara**	**24.86**	**282**	*e*P		P		00 50 01.8	+0.5
	45nm,0.6s								
EIDS	**Eidsvold**	**32.59**	**248**	*e*P		P		00 51 11.6	+1.4
	11nm,1.4s								
PMG	**Port Moresby**	**37.02**	**276**	*e*P		P		00 51 50.7	+2.1
	4.6nm,0.8s								
POHA	**Pohakuloa**	**40.57**	**30**	P		P		00 52 21.1	+2.5
	174nm,1.1s								
STKA	**Stephens Creek**	**42.03**	**240**	P		P		00 53 02.4	+32
	1.1nm,0.5s,baz=94,slow=11,SNR=4.0								
WRA	**Warramunga Arr**	**47.79**	**257**	P		P		00 53 48.1	+32
	0.8nm,0.4s,baz=94,slow=7.2,SNR=11								
ASAR	**Alice Springs**	**48.05**	**252**	P		P		00 53 50.2	+32
	8.5nm,0.6s,baz=88,slow=8.4,SNR=82								
JHJ2	**Mitsune**	**64.88**	**319**	*e*P		P		00 55 18.3	+0.3
	2.7nm,0.3s								
KKM	**Kota Kinabalu**	**71.07**	**282**	*e*P		P		00 55 56.1	-1.3
	2.1nm,0.5s								
CMB	**Columbia Colle**	**74.52**	**42**	*e*P		P		00 56 17.3	-0.1
	3.7nm,0.6s								
KSM	**Kuching**	**75.28**	**276**	P		P		00 56 22.1	-0.1
	2.1nm,0.3s								
HWUT	**Hardware Ranch**	**82.17**	**43**	*e*P		P		00 56 58.9	-0.9
	0.5nm,0.3s								
BJT	**Baijiatuan**	**84.45**	**314**	*e*P		P		00 57 09.6	-1.8
	4.5nm,0.7s								
COCO	**West Island**	**84.55**	**259**	*e*P		P		00 57 11.6	-0.9
	385nm,1.1s								
KULM	**Kulim**	**85.60**	**277**	*e*P		P		00 57 16.2	-1.5
	2.2nm,0.4s								
CHTO	**Chiang Mai**	**91.03**	**289**	*e*P		P		00 57 42.8	-0.8
	1.1nm,0.6s								

IDC ***11*** *00:53:28.0±2.8, 35°.62N×26°.38E, h23km±24km, mb3.8/5, mb1 3.6/8, mb1mx3.3/57, mbtmp3.7/8, ML3.3/3, MS3.9/1, Ms1 3.9/1, ms1mx2.5/57, Error ellipse: s-maj=27.7km s-min=18.2km az=165.0*

DDA ***11*** *00:53:28.4, 35°.66N×26°.61E, h7km, Ml3.2*

ATH ***11*** *00:53:29.7, 35°.63N×26°.40E, h46km±16km, ML3.2/16, Error ellipse: s-maj=16.1km s-min=0.9km az=154.0*

ISCJB ***11*** *00:53:29.5±0.2, 35°.58N±0°.02×26°.41E±0°.02, h60km±4km, mb3.8/5, MS4.0/1, Error ellipse: s-maj=3.6km s-min=2.6km az=155.8*

CSEM ***11*** *00:53:30.8±0.1, 35°.58N×26°.40E, h40km, ML3.2, Error ellipse: s-maj=3.5km s-min=2.5km az=162.0*

ISK ***11*** *00:53:31.0, 35°.69N×26°.44E, h39km, ML3.2*

THE ***11*** *00:53:31.4, 35°.62N×26°.42E, h31km±5km, ML3.3/9, Error ellipse: s-maj=5.6km s-min=0.5km az=159.0*

HLW ***11*** *00:53:33.5, 35°.20N×26°.84E, h19km±7km, Md4.0, Ml3.8*

ISC 11 00:53:30.3±0.8, 35°.58N±0°.03×26°.43E±0°.02, h52km±8km, n161, σ1§46/224, mb4.0/5, Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZKR	**Zakros**	**0.50**	**201**	P	**Pn**	**00 53 42.0**	**+0.3**
ZKR	**Zakros**	**0.50**	**201**	P	**Pn**	**00 53 42.0**	**+0.3**
ZKR				S	**Sn**	**00 53 50.0**	**+0.1**
ZKR	**Zakros**	**0.50**	**201**	P	**Pn**	**00 53 42.5**	**+0.7**
ZKR				S	**Sn**	**00 53 50.0**	**+0.1**
ZKR				AML	AML	00 53 50.6	
	comp=N,5541μm,0.4s						
ZKR				AML	AML	00 53 50.8	
	comp=E,10030μm,0.3s						
KARP	**Karpathos**	**0.60**	**93**	*e*PG	**Pn**	**00 53 43.4**	**+0.5**
KARP				*e*SG	**Sn**	**00 53 52.9**	**+0.9**
KARP	**Karpathos**	**0.60**	**93**	P	**Pn**	**00 53 42.8**	**-0.1**
KARP				S	**Sn**	**00 53 51.3**	**-0.7**
KARP	**Karpathos**	**0.60**	**93**	P	**Pn**	**00 53 42.8**	**-0.1**
KARP	**Karpathos**	**0.60**	**93**	*e*Pg	**Pn**	**00 53 43.4**	**+0.5**
KARP				S	**Sn**	**00 53 51.3**	**-0.7**
KARP				*e*Sg	**Sn**	**00 53 52.9**	**+0.9**
KARP	**Karpathos**	**0.60**	**93**	P	**Pn**	**00 53 42.5**	**-0.4**
KARP				S	**Sn**	**00 53 50.8**	**-1.2**
KARP				AML	AML	00 53 53.0	
	comp=E,6611μm,0.2s						
KARP				AML	AML	00 53 54.0	
	comp=N,5101μm,0.3s						
NPS	**Neapolis**	**0.74**	**245**	P	**Pn**	**00 53 45.0**	**+0.3**
NPS				S	**Sn**	**00 53 54.9**	**-0.3**
NPS	**Neapolis**	**0.74**	**245**	P	**Pn**	**00 53 45.0**	**+0.3**
NPS				S	**Sn**	**00 53 54.9**	**-0.3**
NPS	**Neapolis**	**0.74**	**245**	P	**Pn**	**00 53 45.0**	**+0.3**
NPS				S	**Sn**	**00 53 54.1**	**-1.0**
NPS				AML	AML	00 53 55.3	
	comp=E,11030μm,0.5s						
NPS				AML	AML	00 53 55.5	
	comp=N,10494μm,0.3s						
LAST	**Lasithi**	**0.89**	**242**	P	**Pn**	**00 53 46.8**	**+0.2**
LAST				S	**Sn**	**00 53 58.5**	**-0.1**
LAST	**Lasithi**	**0.89**	**242**	P	**Pn**	**00 53 46.8**	**+0.2**
LAST				S	**Sn**	**00 53 58.5**	**-0.1**
LAST	**Lasithi**	**0.89**	**242**	P	**Pn**	**00 53 47.2**	**+0.5**
SANT	**Santorini**	**1.11**	**315**	P	**Pn**	**00 53 49.7**	**0.0**
SANT				S	**Sn**	**00 54 03.2**	**-0.8**
SANT	**Santorini**	**1.11**	**315**	P	**Pn**	**00 53 50.0**	**+0.3**
SANT				S	**Sn**	**00 54 03.3**	**-0.8**
SANT	**Santorini**	**1.11**	**315**	P	**Pn**	**00 53 50.0**	**+0.3**
SANT				S	**Sn**	**00 54 03.3**	**-0.8**
SANT				AML	AML	00 54 05.2	
	comp=E,2835μm,0.3s						
SANT				AML	AML	00 54 06.8	
	comp=N,1824μm,0.4s						
THR6	**Thira Island,**	**1.14**	**313**	P	**Pn**	**00 53 50.0**	**0.0**
THR6	**Thira Island,**	**1.14**	**313**	P	**Pn**	**00 53 50.0**	**0.0**
THT1	**Athinios (Pele**	**1.14**	**315**	P	**Pn**	**00 53 49.8**	**-0.2**
THT1				S	**Sn**	**00 54 03.9**	**-0.7**
THT1	**Athinios (Pele**	**1.14**	**315**	P	**Pn**	**00 53 49.8**	**-0.2**
THT1				S	**Sn**	**00 54 03.9**	**-0.7**
IACM	**Heraklion**	**1.15**	**256**	P	**Pn**	**00 53 49.5**	**-0.5**
IACM				S	**Sn**	**00 54 03.8**	**-0.8**
IACM	**Heraklion**	**1.15**	**256**	P	**Pn**	**00 53 49.5**	**-0.5**
IACM				S	**Sn**	**00 54 03.9**	**-0.8**
IACM				AML	AML	00 54 07.7	
	comp=E,8623μm,0.5s						
IACM				AML	AML	00 54 08.4	
	comp=N,6852μm,0.4s						
THR7	**Fira-Santorini**	**1.17**	**316**	P	**Pn**	**00 53 50.5**	**+0.1**
THR7	**Fira-Santorini**	**1.17**	**316**	P	**Pn**	**00 53 50.5**	**+0.1**
NISR	**Nisiros**	**1.17**	**29**	P	**Pn**	**00 53 50.0**	**-0.4**
NISR				S	**Sn**	**00 54 04.7**	**-0.6**
NISR	**Nisiros**	**1.17**	**29**	P	**Pn**	**00 53 50.1**	**-0.4**
NISR				S	**Sn**	**00 54 04.7**	**-0.6**
NISR	**Nisiros**	**1.17**	**29**	P	**Pn**	**00 53 50.1**	**-0.3**
NISR				S	**Sn**	**00 54 04.2**	**-1.1**
NISR				AML	AML	00 54 06.3	
	comp=E,3987μm,0.2s						
NISR				AML	AML	00 54 07.8	
	comp=N,1691μm,0.2s						
THR3	**Thira Island,**	**1.18**	**315**	P	**Pn**	**00 53 50.6**	**+0.2**
THR3	**Thira Island,**	**1.18**	**315**	P	**Pn**	**00 53 50.6**	**+0.2**
THR2	**Thira island,**	**1.18**	**317**	P	**Pn**	**00 53 50.6**	**0.0**
THR2	**Thira island,**	**1.18**	**317**	P	**Pn**	**00 53 50.6**	**0.0**
NIS1	**Nisyros Isl.**	**1.19**	**30**	*e*PN	**Pn**	**00 53 50.7**	**+0.1**
NIS1				*e*SN	**Sn**	**00 54 04.8**	**-0.9**
NIS1	**Nisyros Isl.**	**1.19**	**30**	P	**Pn**	**00 53 50.7**	**+0.1**
NIS1	**Nisyros Isl.**	**1.19**	**30**	P	**Pn**	**00 53 50.7**	**+0.1**
NIS1				*e*Sn	**Sn**	**00 54 04.8**	**-0.9**
NIS1	**Nisyros Isl.**	**1.19**	**30**	P	**Pn**	**00 53 50.7**	**+0.1**
NIS1				AML	AML	00 54 15.5	
	comp=N,1994μm,0.4s						
NIS1				AML	AML	00 54 22.7	
	comp=E,1751μm,0.7s						
THR5	**Thira Island,**	**1.21**	**314**	*e*PN	**Pn**	**00 53 51.5**	**+0.6**
THR5	**Thira Island,**	**1.21**	**314**	P	**Pn**	**00 53 50.8**	**-0.1**
THR5	**Thira Island,**	**1.21**	**314**	P	**Pn**	**00 53 50.8**	**-0.1**
THR5	**Thira Island,**	**1.21**	**314**	*e*Pn	**Pn**	**00 53 51.5**	**+0.6**
CMBO	**Columbo, Santo**	**1.22**	**317**	P	**Pn**	**00 53 51.1**	**+0.1**
CMBO				S	**Sn**	**00 54 06.1**	**-0.3**
CMBO	**Columbo, Santo**	**1.22**	**317**	P	**Pn**	**00 53 51.1**	**+0.1**
CMBO				S	**Sn**	**00 54 06.1**	**-0.3**
CMBO	**Columbo, Santo**	**1.22**	**317**	P	**Pn**	**00 53 50.3**	**-0.7**
CMBO				S	**Sn**	**00 54 04.6**	**-1.8**
CMBO				AML	AML	00 54 09.6	
	comp=N,2867μm,0.5s						
CMBO				AML	AML	00 54 09.7	
	comp=E,2619μm,0.3s						
IDI	**Anoyia**	**1.29**	**257**	Pg	**Pn**	**00 53 51.9**	**-0.1**
	comp=E,32nm,0.3s,baz=77,slow=18,SNR=709						
IDI				Lg	Lg	00 54 07.5	
	comp=E,74nm,0.3s,baz=129,slow=23,SNR=24						
IDI				LR	LR	00 54 19.1	
	comp=E,22nm,18.1s,baz=98,slow=41						
IDI	**Anoyia**	**1.29**	**257**	P	**Pn**	**00 53 51.9**	**-0.1**
IDI				S	**Sn**	**00 54 08.2**	**-0.2**
IDI	**Anoyia**	**1.29**	**257**	P	**Pn**	**00 53 52.0**	**-0.1**
IDI				S	**Sn**	**00 54 08.2**	**-0.2**
IDI	**Anoyia**	**1.29**	**257**	P	**Pn**	**00 53 52.0**	**-0.1**
IDI				S	**Sn**	**00 54 07.2**	**-1.1**
IDI				AML	AML	00 54 10.0	
	comp=N,1218μm,0.2s						
IDI				AML	AML	00 54 11.6	
	comp=E,1388μm,0.3s						
SIVA	**Sivas**	**1.44**	**247**	P	**Pn**	**00 53 54.9**	**+0.9**
SIVA	**Sivas**	**1.44**	**247**	P	**Pn**	**00 53 55.0**	**+0.9**
SIVA				S	**Sn**	**00 54 13.4**	**+1.5**
SIVA	**Sivas**	**1.44**	**247**	P	**Pn**	**00 53 55.0**	**+1.0**
SIVA				S	**Sn**	**00 54 13.4**	**+1.5**
SIVA				AML	AML	00 54 15.6	
	comp=E,1488μm,0.3s						
SIVA				AML	AML	00 54 17.4	
	comp=N,1151μm,0.4s						
ARG	**Arkhangelos**	**1.52**	**65**	P	**Pn**	**00 53 55.7**	**+0.7**
ARG				S	**Sn**	**00 54 13.7**	**0.0**
ARG	**Arkhangelos**	**1.52**	**65**	P	**Pn**	**00 53 55.7**	**+0.7**
ARG				S	**Sn**	**00 54 13.7**	**0.0**
BODT	**Bodrum**	**1.64**	**25**	*e*PN	**Pn**	**00 53 56.7**	**-0.1**
BODT	**Bodrum**	**1.64**	**25**	P	**Pn**	**00 53 56.9**	**+0.1**
BODT				S	**Sn**	**00 54 16.1**	**-0.6**
APE	**Apeiranthos**	**1.65**	**334**	*e*PN	**Pn**	**00 53 57.4**	**+0.4**
APE	**Apeiranthos**	**1.65**	**334**	P	**Pn**	**00 53 56.7**	**-0.3**
APE				S	**Sn**	**00 54 16.5**	**-0.6**
APE	**Apeiranthos**	**1.65**	**334**	P	**Pn**	**00 53 57.0**	**0.0**
APE	**Apeiranthos**	**1.65**	**334**	*e*Pn	**Pn**	**00 53 57.4**	**+0.4**
APE				S	**Sn**	**00 54 16.5**	**-0.6**
APE	**Apeiranthos**	**1.65**	**334**	P	**Pn**	**00 53 57.0**	**0.0**
APE				S	**Sn**	**00 54 15.7**	**-1.5**
APE				AML	AML	00 54 17.9	
	comp=N,691μm,0.2s						
APE				AML	AML	00 54 18.2	
	comp=E,932μm,0.3s						
BDRM	**Kayabasi**	**1.69**	**29**	*i* P	**Pn**	**00 53 57.5**	**0.0**
BDRM				*i* S	**Sn**	**00 54 15.8**	**-2.2**
BDRM	**Kayabasi**	**1.69**	**29**	P	**Pn**	**00 53 57.5**	**0.0**
BDRM				S	**Sn**	**00 54 15.8**	**-2.2**
VAM	**Vamos**	**1.83**	**265**	P	**Pn**	**00 53 58.8**	**-0.5**
VAM				S	**Sn**	**00 54 20.0**	**-1.4**
MHLO	**Agia Marina, M**	**1.98**	**305**	P	**Pn**	**00 54 01.7**	**+0.3**
MHLO				S	**Sn**	**00 54 24.7**	**-0.4**
MHLO	**Agia Marina, M**	**1.98**	**305**	P	**Pn**	**00 54 01.7**	**+0.3**
MHLO				S	**Sn**	**00 54 24.7**	**-0.4**
MHLO	**Agia Marina, M**	**1.98**	**305**	P	**Pn**	**00 54 02.5**	**+1.1**
IMMV	**Iera Moni Meta**	**2.00**	**267**	P	**Pn**	**00 54 01.8**	**+0.1**
IMMV	**Iera Moni Meta**	**2.00**	**267**	P	**Pn**	**00 54 01.8**	**+0.1**
IMMV				S	**Sn**	**00 54 24.4**	**-1.2**
IMMV	**Iera Moni Meta**	**2.00**	**267**	P	**Pn**	**00 54 01.4**	**-0.3**
IMMV				S	**Sn**	**00 54 24.4**	**-1.2**
IMMV				AML	AML	00 54 26.4	
	comp=N,724μm,0.2s						
IMMV				AML	AML	00 54 29.0	
	comp=E,875μm,0.3s						
GVD	**Gavdhos**	**2.06**	**250**	P	**Pn**	**00 54 04.1**	**+1.6**
GVD	**Gavdhos**	**2.06**	**250**	P	**Pn**	**00 54 04.1**	**+1.6**
SMG	**Samos**	**2.15**	**9**	P	**Pn**	**00 54 03.4**	**-0.3**
SMG				S	**Sn**	**00 54 27.5**	**-1.7**
SMG	**Samos**	**2.15**	**9**	P	**Pn**	**00 54 03.4**	**-0.3**
SMG				S	**Sn**	**00 54 27.5**	**-1.7**
SMG				AML	AML	00 54 32.5	
	comp=E,567μm,0.3s						
SMG				AML	AML	00 54 32.5	
	comp=N,604μm,0.3s						
YER	**Yerkesik**	**2.15**	**43**	*e*PN	**Pn**	**00 54 04.5**	**+0.7**
YER	**Yerkesik**	**2.15**	**43**	P	**Pn**	**00 54 04.1**	**+0.3**
YER	**Yerkesik**	**2.15**	**43**	P	**Pn**	**00 54 04.1**	**+0.3**
TURN	**Turunc**	**2.18**	**53**	*i* P	**Pn**	**00 54 00.5**	**-3.6**
TURN				*i* S	**Sn**	**00 54 22.0**	**-7.9**
DALY	**Dalyan (Mu¨la**	**2.18**	**55**	*e*PN	**Pn**	**00 54 05.1**	**+1.0**
DALY	**Dalyan (Mu¨la**	**2.18**	**55**	*e*Pn	**Pn**	**00 54 05.1**	**+1.0**
GCAM	**G?zelcaml?**	**2.21**	**17**	*i* P	**Pn**	**00 54 04.4**	**-0.1**
GCAM	**G?zelcaml?**	**2.21**	**17**	P	**Pn**	**00 54 04.4**	**-0.1**
DGB	**¨zmir**	**2.49**	**8**	*i* P	**Pn**	**00 54 08.8**	**+0.4**
DGB				*i* S	**Sn**	**00 54 37.0**	**-0.6**
ANKY	**Antikythira Is**	**2.56**	**277**	P	**Pn**	**00 54 09.6**	**+0.2**
ANKY	**Antikythira Is**	**2.56**	**277**	P	**Pn**	**00 54 09.6**	**+0.2**
ANKY	**Antikythira Is**	**2.56**	**277**	P	**Pn**	**00 54 09.2**	**-0.1**
ANKY				AML	AML	00 54 41.5	
	comp=N,200μm,0.3s						
ANKY				AML	AML	00 54 49.6	
	comp=E,203μm,0.7s						
AYDB	**Zeytinkoy-Aydi**	**2.63**	**26**	*e*PN	**Pn**	**00 54 10.9**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**2.63**	**26**	*e*Pn	**Pn**	**00 54 10.9**	**+0.4**
ZEY	**¨zmir**	**2.65**	**1**	*i* P	**Pn**	**00 54 09.4**	**-1.2**
ZEY				*i* S	**Sn**	**00 54 39.6**	**-2.0**
AKAS	**Kas**	**2.66**	**75**	*i* P	**Pn**	**00 54 12.1**	**+1.3**
AKAS				*i* S	**Sn**	**00 54 41.0**	**-0.9**
AKAS	**Kas**	**2.66**	**75**	P	**Pn**	**00 54 12.1**	**+1.3**
AKAS				S	**Sn**	**00 54 41.0**	**-0.9**
URLA	**Izmir**	**2.78**	**3**	*i* P	**Pn**	**00 54 11.8**	**-0.6**
URLA	**Izmir**	**2.78**	**3**	P	**Pn**	**00 54 11.8**	**-0.6**
CHOS	**Chios island**	**2.82**	**354**	*e*PN	**Pn**	**00 54 13.2**	**+0.3**
CHOS	**Chios island**	**2.82**	**354**	P	**Pn**	**00 54 12.2**	**-0.7**
CHOS	**Chios island**	**2.82**	**354**	*e*Pn	**Pn**	**00 54 13.2**	**+0.3**
CHOS	**Chios island**	**2.82**	**354**	P	**Pn**	**00 54 12.2**	**-0.7**
KYTH	**Kithira**	**2.83**	**285**	P	**Pn**	**00 54 12.5**	**-0.6**
KYTH				S	**Sn**	**00 54 44.4**	**-1.6**
KYTH	**Kithira**	**2.83**	**285**	P	**Pn**	**00 54 12.5**	**-0.6**
IZM	**Izmir**	**2.89**	**13**	*e*PN	**Pn**	**00 54 14.2**	**+0.3**
IZM	**Izmir**	**2.89**	**13**	*e*Pn	**Pn**	**00 54 14.2**	**+0.3**
GLHS	**Glhisar (BURDU**	**2.93**	**57**	*e*PN	**Pn**	**00 54 16.4**	**+1.9**
DNZL	**Cakiroluk**	**2.98**	**44**	*i* P	**Pn**	**00 54 17.2**	**+2.0**
DNZL				*i* S	**Sn**	**00 54 50.7**	**+0.9**
DNZL	**Cakiroluk**	**2.98**	**44**	P	**Pn**	**00 54 17.2**	**+2.0**
DNZL				S	**Sn**	**00 54 50.7**	**+0.9**
GOLH	**Golhisar**	**3.02**	**56**	*i* P	**Pn**	**00 54 18.0**	**+2.3**
GOLH				*i* S	**Sn**	**00 54 54.1**	**+3.5**
ELL	**Elmali**	**3.04**	**67**	*e*PN	**Pn**	**00 54 18.1**	**+2.0**
ELL	**Elmali**	**3.04**	**67**	*e*Pn	**Pn**	**00 54 18.1**	**+2.0**
VLI	**Veliai**	**3.05**	**293**	P	**Pn**	**00 54 16.6**	**+0.6**
VLI	**Veliai**	**3.05**	**293**	P	**Pn**	**00 54 16.6**	**+0.6**
VLI				S	**Sn**	**00 54 49.6**	**-1.7**
VLI	**Veliai**	**3.05**	**293**	P	**Pn**	**00 54 16.7**	**+0.6**
VLI				S	**Sn**	**00 54 49.6**	**-1.7**
VLI				AML	AML	00 54 54.8	
	comp=N,304μm,0.5s						
VLI				AML	AML	00 54 55.5	
	comp=E,263μm,0.6s						
VLY	**Voula,Athens**	**3.10**	**318**	P	**Pn**	**00 54 17.9**	**+1.1**
VLY	**Voula,Athens**	**3.10**	**318**	P	**Pn**	**00 54 17.9**	**+1.1**
KRND	**KRANIDI**	**3.20**	**305**	P	**Pn**	**00 54 18.0**	**-0.1**
KRND	**KRANIDI**	**3.20**	**305**	P	**Pn**	**00 54 18.0**	**-0.1**
DID	**Didima**	**3.21**	**308**	P	**Pn**	**00 54 19.3**	**+1.0**
DID	**Didima**	**3.21**	**308**	P	**Pn**	**00 54 19.3**	**+1.0**
DID				AML	AML	00 55 00.5	
	comp=E,114μm,0.5s						
DID				AML	AML	00 55 09.7	
	comp=N,74μm,0.3s						
KULA	**Kula-Manisa**	**3.43**	**31**	*e*PN	**Pn**	**00 54 23.0**	**+1.7**
KULA	**Kula-Manisa**	**3.43**	**31**	*e*Pn	**Pn**	**00 54 23.0**	**+1.7**
KORT	**Korkueli**	**3.47**	**65**	*i* P	**Pn**	**00 54 23.8**	**+1.9**
KORT				*i* S	**Sn**	**00 54 58.2**	**-3.6**
KORT	**Korkueli**	**3.47**	**65**	P	**Pn**	**00 54 23.8**	**+1.9**
KORT				S	**Sn**	**00 54 58.2**	**-3.6**
SIGR	**SIGRI**	**3.65**	**353**	*e*PN	**Pn**	**00 54 24.6**	**+0.3**
SIGR	**SIGRI**	**3.65**	**353**	*e*Pn	**Pn**	**00 54 24.6**	**+0.3**
ANTB	**Antalya**	**3.66**	**68**	*e*PN	**Pn**	**00 54 26.7**	**+2.4**
BCK	**Bucak**	**3.84**	**60**	*e*PN	**Pn**	**00 54 28.8**	**+1.9**
BCK	**Bucak**	**3.84**	**60**	*e*Pn	**Pn**	**00 54 28.8**	**+1.9**
DEMI	**Demirci**	**3.91**	**27**	*i* P	**Pn**	**00 54 29.8**	**+1.9**
DEMI	**Demirci**	**3.91**	**27**	P	**Pn**	**00 54 29.8**	**+1.9**
SUTC	**Sutluce-Ispart**	**4.14**	**61**	*e*PN	**Pn**	**00 54 33.2**	**+2.1**
SUTC	**Sutluce-Ispart**	**4.14**	**61**	*e*Pn	**Pn**	**00 54 33.2**	**+2.1**
SLUM	**Salum**	**4.20**	**194**	P	**Pn**	**00 54 32.7**	**+0.8**
	baz=201						
SLUM				AMP		00 55 00.0	
	comp=E,240μm,0.7s,logA/T=5.5,baz=201						
SLUM				S	**Sn**	**00 55 16.5**	**-3.2**
	baz=201						
SLUM	**Salum**	**4.20**	**194**	S	**Sn**	**00 55 16.5**	**-3.2**
BALY	**Balya**	**4.26**	**12**	*i* P	**Pn**	**00 54 31.1**	**-1.6**
BALY	**Balya**	**4.26**	**12**	P	**Pn**	**00 54 31.1**	**-1.6**
GDZ	**Gediz**	**4.26**	**34**	*i* P	**Pn**	**00 54 34.7**	**+1.9**
GDZ	**Gediz**	**4.26**	**34**	P	**Pn**	**00 54 34.7**	**+1.9**
TVSB	**Tavsanli**	**4.55**	**31**	*e*PN	**Pn**	**00 54 38.7**	**+2.0**
TVSB	**Tavsanli**	**4.55**	**31**	*e*Pn	**Pn**	**00 54 38.7**	**+2.0**
GELI	**Tayfur-Gelibol**	**4.81**	**0**	*e*PN	**Pn**	**00 54 41.5**	**+1.3**
GELI	**Tayfur-Gelibol**	**4.81**	**0**	*e*Pn	**Pn**	**00 54 41.5**	**+1.3**
BORA	**Eskisehir**	**5.34**	**35**	*i* P	**Pn**	**00 54 49.6**	**+2.0**
BORA	**Eskisehir**	**5.34**	**35**	P	**Pn**	**00 54 49.6**	**+2.0**
KDHN	**Kadinhani**	**5.41**	**55**	*i* P	**Pn**	**00 54 49.6**	**+1.1**
KDHN	**Kadinhani**	**5.41**	**55**	P	**Pn**	**00 54 49.6**	**+1.1**
SWA2		**6.37**	**188**	P	**Pn**	**00 55 02.2**	**+0.6**
	baz=192						
SWA2				AMP		00 56 00.0	
	comp=N,280μm,0.4s,logA/T=5.9,baz=192						
SWA2				S	**Sn**	**00 56 06.7**	**-6.4**
	baz=192						
SWA2		**6.37**	**188**	P	**Pn**	**00 55 02.2**	**+0.6**
BRTR	**Keskin Array B**	**7.05**	**52**	Pn	**Pn**	**00 55 12.6**	**+1.5**
	comp=N,0.4nm,0.3s,baz=218,slow=14,SNR=18						
GLL	**Jalalah**	**7.46**	**142**	P	**Pn**	**00 55 14.8**	**-1.8**
	baz=142						
AWBH		**7.54**	**163**	P	**Pn**	**00 55 16.8**	**-0.8**
	baz=165						
AWBH		**7.54**	**163**	P	**Pn**	**00 55 16.8**	**-0.8**
MMAI	**Mount Meron Ar**	**7.85**	**106**	Pn	**Pn**	**00 55 20.4**	**-1.6**
	comp=N,0.6nm,0.3s,baz=302,slow=13,SNR=6.1						
MMAI				Sn	**Sn**	**00 56 46.6**	**-2.9**
	comp=N,2.6nm,0.3s,baz=283,slow=25,SNR=6.2						
SUZ	**Suez**	**7.86**	**135**	P	**Pn**	**00 55 20.5**	**-1.6**
	baz=134						
SUZ	**Suez**	**7.86**	**135**	P	**Pn**	**00 55 20.5**	**-1.6**
HNKL	**Nakhl**	**8.49**	**129**	P	**Pn**	**00 55 29.3**	**-1.5**
	baz=129						
HNKL				S	Sn	00 56 53.6	-12
	baz=129						
HNKL				AMP		00 57 00.0	
	comp=E,60μm,0.6s,logA/T=5.0,baz=129						
HFRF	**Wahat Farafira**	**8.56**	**169**	P	**Pn**	**00 55 31.0**	**-0.6**
	baz=170						
EIL	**Elat**	**9.29**	**127**	Pn	**Pn**	**00 55 40.9**	**-0.7**
	comp=E,0.2nm,0.3s,baz=334,slow=5.2,SNR=8.7						
EIL				Sn	**Sn**	**00 57 16.6**	**-8.1**
	comp=E,1.6nm,0.3s,baz=167,slow=1.9,SNR=12						
HBST	**Basata**	**9.46**	**130**	P	**Pn**	**00 55 42.9**	**-1.0**
	baz=129						
HBST	**Basata**	**9.46**	**130**	P	**Pn**	**00 55 42.9**	**-1.0**
HFS	**Hagfors**	**25.92**	**345**	P	**P**	**00 58 57.4**	**+0.2**
	comp=E,2.6nm,1.1s,baz=126,slow=7.3,SNR=2.6						
TORD	**Torodi Ar. Bea**	**31.56**	**231**	P	**P**	**00 59 49.0**	**+1.1**
	comp=E,0.2nm,0.4s,baz=32,slow=8.7,SNR=6.0						
KURBB	**Kurchatov Arra**	**40.05**	**51**	P	**P**	**01 01 01.3**	**+1.1**
	comp=E,1.0nm,0.5s,baz=277,slow=8.9,SNR=4.7						
MKAR	**Makanchi Array**	**42.67**	**57**	P	**P**	**01 01 23.1**	**+1.3**
	comp=E,1.3nm,0.5s,baz=270,slow=7.9,SNR=20						
ZALV	**Zalesovo Beam**	**43.96**	**46**	P	**P**	**01 01 32.5**	**+0.4**
	comp=E,1.3nm,0.5s,baz=270,slow=8.8,SNR=7.0						
ROSC	**El Rosal**	**95.91**	**280**	LR	LR	01 49 25.3	
	comp=E,52nm,18.1s,baz=259,slow=35						

NIED ***11*** *00:53:00, 38°.00N×143°.30E, h8km, Mw4.0 Best double couple: M0 1.10000×10^15 NP1:φs 167.00000°, δ31.00000°, λ-110.00000°. NP2:φs 10.00000°, δ61.00000°, λ-78.00000°.*

IDC ***11*** *00:53:55.4±0.8, 37°.84N×143°.45E, h0km, mb3.9/10, mb1 3.9/14, mb1mx3.7/60, mbtmp3.9/14, ML3.3/4, Error ellipse: s-maj=21.9km s-min=16.9km az=88.0*

ISCJB ***11*** *00:53:57.2±0.5, 37°.92N±0°.04×143°.35E±0°.05, h19km, mb4.0/14, Error ellipse: s-maj=6.1km s-min=5.1km az=147.6*

NEIC ***11*** *00:53:58.6±4.5, 37°.90N×143°.49E, h20km±27km, mb4.2/3, Error ellipse: s-maj=15.2km s-min=9.1km az=118.0*

JMA ***11*** *00:53:59.1±0.2, 37°.97N×143°.29E, h37km, M4.0*

**ISC 11 00:53

mb1 4.5/10,mb1mx4.2/41,mbtmp4.3/10,MS4.3/22, Ms1 4.3/22,ms1mx4.2/36,Error ellipse: s-maj=34.3km s-min=18.8km az=132.0

NEIC ***11*** *00:54:26.9±0.5, 15°.51S×175°.89W, h10km, mb4.5/13, Error ellipse: s-maj=26.1km s-min=13.0km az=144.0*

GCMT ***11*** *00:54:26.9±0.2, 15°.29S×175°.87W, h18km±1km, MW5.2/106,Moment Tensor Solution. s42,c50; s106,c169; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.65±.16; $M_{\theta\theta}$4.23±.16; $M_{\phi\phi}$-3.58±.14; $M_{r\theta}$1.06±.37; $M_{\theta\phi}$5.29±.15; $M_{r\phi}$-1.33±.35; Best double couple: M_o6.81300×10^{16} NP1:ϕ_s287.00000°,δ81.00000°, λ-13.00000°. NP2:ϕ_s19.00000°,δ77.00000°, λ-171.00000°. Principal axes: T 6.9170, Plg3.0000°, Azm334.0000°; N -0.2110, Plg74.0000°, Azm73.0000°; P -6.7090, Plg15.0000°, Azm243.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISCJB ***11*** *00:54:28.4±0.5, 15°.4S±0°.1×176°.0W±0°.1, h26km, mb4.5/25, MS4.3/21 Error ellipse: s-maj=24.8km s-min=10.8km az=138.5*

ISC 11 00:54:30.0±0.6, 15°.4S±0°.2×176°.0W±0°.2, h26km, n87, σ1§52/55, mb4.3/25, MS4.4/21, 6C-4D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
AFI	**Afiamalu**	**4.40**	**70**		Pn		Pn	00 55 27.1	-8.1
	9.2nm,0.3s,baz=296,slow=2.1,SNR=8.4								
AFI					Sn		Sn	00 56 14.1	-12
	9.9nm,0.3s,baz=348,slow=17,SNR=3.6								
AFI	**Afiamalu**	**4.40**	**70**	*e*Pn			Pn	00 55 27.9	-7.3
AFI					Sn		Sn	00 56 14.1	-12
RAO	**Raoul Island**	**13.86**	**187**	LR			LR	01 02 13.7	
	comp=Z,3μm,19.6s,baz=15,slow=34								
DZM	**Mont Dzumac**	**17.84**	**246**	LR			LR	01 04 23.6	
	comp=Z,3μm,18.4s,baz=66,slow=34								
DZM	**Mont Dzumac**	**17.84**	**246**	*e*P			**P**	**00 58 38.9**	**+1.7**
	60nm,1.5s								
DZM				*e*LR			LR	01 03 07.2	
	4μm,25.5s								
URZ	**Urewera**	**23.53**	**194**	LR			LR	01 07 31.2	
	comp=Z,2μm,19.8s,baz=32,slow=33								
HNR	**Honiara**	**24.18**	**281**	LR			LR	01 07 52.5	
	comp=Z,601nm,18.1s,baz=115,slow=33								
PAE	**Paea**	**25.46**	**99**	*e*T			T	01 25 50.6	
	2.1nm,0.3s								
PPT2	**Papeete2**	**25.46**	**99**	*e*LQ			LQ	01 04 57.3	
	4μm,25.8s								
PPT2				*e*LR			LR	01 06 05.3	
	1μm,26.2s								
TIAR	**Tiarei**	**25.68**	**98**	*e*T			T	01 26 07.4	
	2.8nm,0.3s								
TVO	**Taravao**	**25.77**	**99**	*e*T			T	01 26 14.5	
	1.1nm,0.3s								
TBI	**Tubuai**	**26.25**	**112**	*e*LQ			LQ	01 05 22.2	
	3μm,28.0s								
TBI				*e*LR			LR	01 06 33.8	
	391nm,31.8s								
TBI	**Tubuai**	**26.25**	**112**	*e*T			T	01 26 51.4	
	12nm,0.3s								
TAOE	**Nuku Hiva Isla**	**35.66**	**84**	*e*LR			LR	01 10 31.5	
	2μm,24.4s								
H11S2	**WAKE ISLAND Hy**	**37.75**	**333**	T			T	01 42 00.3	
	baz=144,slow=76,SNR=10								
H11S3	**WAKE ISLAND Hy**	**37.76**	**333**	T			T	01 41 54.4	
	baz=144,slow=76,SNR=9.5								
H11S1	**WAKE ISLAND Hy**	**37.77**	**333**	T			T	01 42 02.0	
	baz=144,slow=76,SNR=12								
H11N3	**WAKE ISLAND Hy**	**38.74**	**334**	T			T	01 42 57.2	
	baz=152,slow=76,SNR=15								
H11N1	**WAKE ISLAND Hy**	**38.75**	**334**	T			T	01 42 55.1	
	baz=152,slow=76,SNR=43								
H11N2	**WAKE ISLAND Hy**	**38.76**	**334**	T			T	01 42 58.4	
	baz=152,slow=76,SNR=18								
RKT	**Rikitea**	**39.41**	**108**	*e*LQ			LQ	01 10 48.0	
	490nm,27.5s								
RKT				*e*LR			LR	01 12 37.2	
	588nm,27.8s								
RKT	**Rikitea**	**39.41**	**108**	*e*T			T	01 43 21.3	
	3.5nm,0.3s								
STKA	**Stephens Creek**	**41.82**	**239**	P			**P**	**01 02 18.3**	**+0.4**
	6.3nm,1.0s,baz=73,slow=12,SNR=4.7								
STKA				LR			LR	01 18 43.8	
	comp=Z,592nm,18.2s,baz=72,slow=35								
WRA	**Warramunga Arr**	**47.35**	**257**	P			**P**	**01 03 00.6**	**-1.6**
	2.9nm,1.0s,baz=91,slow=8.1,SNR=6.9								
WRA				LR			LR	01 20 29.0	
	comp=Z,435nm,21.1s,baz=95,slow=33								
ASAR	**Alice Springs**	**47.68**	**252**	P			**P**	**01 03 02.3**	**-2.4**
	5.9nm,1.0s,baz=84,slow=7.9,SNR=17								
DAV	**Davao City (W)**	**62.00**	**287**	LR			LR	01 28 56.0	
	comp=Z,178nm,20.6s,baz=150,slow=33								
NWAO	**Narrogin (SRO)**	**62.38**	**241**	LR			LR	01 30 17.8	
	comp=Z,510nm,21.2s,slow=34								
VNDA	**Vanda**	**63.10**	**185**	P			**P**	**01 04 54.6**	**-0.2**
	2.0nm,1.0s,baz=15,slow=4.1,SNR=7.7								
VNDA				LR			LR	01 26 15.6	
	comp=Z,104nm,21.9s,baz=20,slow=30								
KAPI	**Kappang**	**63.83**	**272**	LR			LR	01 30 35.5	
	comp=Z,69nm,22.0s,baz=113,slow=34								
MJAR	**Matsushiro Arr**	**67.34**	**321**	LR			LR	01 28 55.4	
	comp=Z,135nm,21.8s,baz=75,slow=31								
JNU	**Nakatsue**	**69.98**	**314**	LR			LR	01 32 57.6	
	comp=Z,166nm,19.0s,baz=117,slow=33								
PETK	**Petropavlovsk-**	**71.91**	**344**	P			**P**	**01 05 50.8**	**+0.1**
	2.1nm,0.7s,baz=108,slow=9.3,SNR=3.3								
PETK				LR			LR	01 31 06.7	
	comp=Z,306nm,21.7s,baz=162,slow=31								
HUMO	**Hull Mountain**	**75.56**	**38**	*e*P			**P**	**01 06 12.9**	**+0.4**
	112nm,1.7s								
USRK	**Ussuriysk Ar.**	**75.90**	**324**	LR			LR	01 33 35.8	
	comp=Z,493nm,21.6s,baz=126,slow=31								
TUC	**Tucson**	**78.40**	**52**	*e*P			**P**	**01 06 28.3**	**-0.4**
	39nm,1.6s								
KLR	**Kul'dur**	**79.18**	**328**	LR			LR	01 35 53.2	
	comp=Z,239nm,21.6s,baz=135,slow=31								
PMR	**Palmer**	**79.69**	**13**	*e*P			**P**	**01 06 34.6**	**-0.4**
	1.0nm,0.3s								
BMRM	**Bremner River**	**80.18**	**15**	*e*P			**P**	**01 06 38.1**	**+0.3**
	2.2nm,0.7s								
BMO	**Blue Mountains**	**80.20**	**38**	*e*P			**P**	**01 06 38.2**	**-0.1**
	1.6nm,0.8s								
121A	**Cookes Peak, D**	**80.78**	**53**	*e*P			**P**	**01 06 41.1**	**-0.7**
	2.5nm,0.9s								
KTH	**Kantishna Hill**	**81.11**	**11**	P			**P**	**01 06 42.6**	**-0.1**
	5.8nm,1.5s								
TRF	**Thorofare Moun**	**81.14**	**11**	*e*P			**P**	**01 06 41.9**	**-1.1**
MNTX	**Cornudas Mount**	**82.30**	**54**	*e*P			**P**	**01 06 50.4**	**+0.7**
	32nm,1.8s								
PV01	**Paradox Valley**	**82.60**	**47**	*e*P			**P**	**01 06 50.5**	**-0.9**
	678nm,1.3s								
DOT	**Dot Lake**	**82.62**	**14**	*e*P			**P**	**01 06 50.0**	**-0.6**
	4.9nm,1.0s								
TXAR	**Lajitas Array**	**82.76**	**57**	P			**P**	**01 06 51.7**	**-0.6**
	2.6nm,1.1s,baz=235,slow=4.4,SNR=15								
TXAR				LR			LR	01 36 19.9	
	comp=Z,322nm,19.6s,baz=0.0,slow=30								
ILAR	**Eielson Array**	**82.99**	**12**	P			**P**	**01 06 52.8**	**+0.4**
	8.7nm,1.4s,baz=234,slow=4.7,SNR=12								
ILAR				LR			LR	01 37 34.4	
	comp=Z,94nm,21.8s,baz=228,slow=31								
IMW	**Indian Meadow**	**83.64**	**41**	*e*P			**P**	**01 06 57.3**	**+0.6**
	1.9nm,0.9s								
BW06	**Boulder Array**	**84.00**	**43**	*e*P			**P**	**01 06 56.3**	**-2.2**
	11nm,1.4s								
PDAR	**Pinedale Array**	**84.00**	**43**	P			**P**	**01 06 56.5**	**-2.0**
	1.1nm,0.8s,baz=218,slow=4.2,SNR=7.4								
PDAR				LR			LR	01 36 19.9	
	comp=Z,103nm,21.0s,baz=268,slow=30								
DAWY	**Dawson**	**84.10**	**15**	*e*P			**P**	**01 06 58.0**	**-0.3**
	1.1nm,0.9s								
SMCO	**Snowmass**	**84.18**	**47**	*e*P			**P**	**01 07 00.7**	**+1.0**
	5.0nm,1.0s								
COLD	**Coldfoot**	**84.59**	**10**	*e*P			**P**	**01 07 00.1**	**-0.5**
	24nm,1.8s								
MAW	**Mawson**	**86.94**	**199**	P			**P**	**01 07 12.8**	**+0.4**
	2.0nm,0.8s,baz=123,slow=5.2,SNR=4.4								
MAW				LR			LR	01 44 06.5	
	comp=Z,162nm,19.5s,baz=72,slow=34								
CMAR	**Chiang Mai Arr**	**90.21**	**289**	LR			LR	01 43 48.8	
	comp=Z,81nm,20.9s,baz=25,slow=33								
YKA	**Yellowknife Ar**	**91.15**	**24**	P			**P**	**01 07 32.2**	**-0.1**
	0.4nm,0.7s,baz=241,slow=4.4,SNR=6.7								
YKA				LR			LR	01 40 43.9	
	comp=Z,12nm,20.1s,baz=180,slow=30								
PLCA	**Paso Flores**	**91.37**	**133**	LR			LR	01 40 29.6	
	comp=Z,148nm,21.5s,baz=300,slow=30								
ULM	**Lac du Bonnet**	**95.57**	**39**	LR			LR	01 45 45.2	
	comp=Z,275nm,19.4s,baz=290,slow=32								
ARCES	**ARCESS Array B**	**124.26**	**351**	PKP			**PKPdf**	**01 13 26.5**	**+0.6**
	1.1nm,0.6s,baz=26,slow=3.1,SNR=4.9								
DPC	**Dobruska-Polom**	**143.76**	**347**	*e*PKP			**PKPdf**	**01 14 06.3**	**+3.5**
TIRR	**Tirgusor**	**144.41**	**329**	⇑*i*P			PKPbc	01 14 02.6	+0.1
TLB	**Topalu**	**144.50**	**330**	⇓*i*P			**PKPab**	**01 14 02.3**	**-0.3**
VRAC	**Vranov**	**144.67**	**346**	⇓*i*P			**PKPab**	**01 14 01.8**	**-1.3**
MLR	**Muntele Rosu**	**144.78**	**333**	⇑*i*P			**PKPdf**	**01 14 04.5**	**-0.4**
DRGR		**145.04**	**337**	⇓*i*P			**PKPbc**	**01 14 03.6**	**-1.0**
VOIR		**145.22**	**334**	⇑*i*P			**PKPbc**	**01 14 03.8**	**-1.4**
ARR	**Arges**	**145.45**	**334**	⇑*i*P			**PKPbc**	**01 14 05.2**	**-0.7**
KHC	**Kasperske Hory**	**145.48**	**349**	*e*PKP			**PKPab**	**01 14 06.6**	**+0.5**
KHC				*ex*			x	01 14 19.5	
KHC	**Kasperske Hory**	**145.48**	**349**	*e*PKPbc			**PKPbc**	**01 14 05.9**	**0.0**
GERES	**GERESS Array B**	**145.73**	**349**	PKPbc			**PKPdf**	**01 14 04.7**	**-1.7**
	0.4nm,0.6s,baz=352,slow=1.4,SNR=2.8								
CONA	**Conrad Observa**	**146.13**	**346**	*i* sPKPab			**PKPab**	**01 14 11.9**	**+3.3**
	9.0nm,1.5s								
BZS	**Buzias**	**146.44**	**337**	⇓*i*P			**PKPab**	**01 14 10.3**	**+0.5**
MOA	**Molln**	**146.57**	**347**	*i* sPKPab			**PKPab**	**01 14 14.2**	**+4.0**
	2.6nm,1.1s								
ARSA	**Arzberg**	**146.85**	**346**	*i* pPKiKP			**PKPab**	**01 14 15.2**	**+3.9**
	4.3nm,1.5s								
KBA	**Koelnbreinsper**	**147.49**	**348**	*i* sPKPbc			**PKPab**	**01 14 14.8**	**+0.7**
	2.6nm,0.4s								
SOKA	**Soboth**	**147.50**	**346**	*i* PKiKP			**PKPab**	**01 14 13.3**	**-0.7**
	6.9nm,1.6s								
RETA	**Reutte**	**147.54**	**351**	*i* sPKPdf			**PKPbc**	**01 14 12.1**	**0.0**
	2.7nm,1.0s								
WATA	**Walderalm**	**147.56**	**350**	*i* pPKPbc			**PKPab**	**01 14 13.9**	**-0.4**
	1.4nm,0.7s								
WTTA	**Wattenberg**	**147.62**	**350**	*i* pPKPbc			**PKPab**	**01 14 14.2**	**-0.3**
	2.7nm,0.8s								
MOTA	**Moosalm**	**147.63**	**351**	*i* sPKiKP			**PKPab**	**01 14 19.5**	**+5.0**
	2.1nm,0.4s								
OBKA	**Obir**	**147.78**	**346**	*i* sPKPbc			**PKPab**	**01 14 15.8**	**+0.7**
	2.3nm,1.0s								
DAVA	**Damuels**	**147.86**	**352**	*i* pPKPab			**PKPab**	**01 14 17.4**	**+1.9**
	7.1nm,1.2s								
MYKA	**Terra Mystica**	**147.86**	**347**	*i* pPKPbc			**PKPab**	**01 14 14.6**	**-0.7**
	1.8nm,0.4s								
ABTA	**Abfaltersbach**	**147.97**	**349**	*i* sPKPbc			**PKPab**	**01 14 16.1**	**+0.2**
	3.2nm,0.9s								
FETA	**Feichten**	**148.00**	**351**	*i* sPKPbc			**PKPab**	**01 14 16.2**	**+0.1**
	2.8nm,0.8s								
VTS	**Vitosha**	**148.28**	**332**	⇑*i*P			**PKPbc**	**01 14 15.0**	**+0.7**
PDG	**Podgorica**	**150.05**	**337**	⇑*i*P			**PKPbc**	**01 14 18.9**	**+0.4**

ISCJB ***11*** *01:14:07.8±0.5, 39°.09N±0°.04×29°.04E±0°.04, h6km±6km, Error ellipse: s-maj=7.9km s-min=4.1km az=149.1*

CSEM ***11*** *01:14:07.9±0.1, 39°.08N×29°.05E, h8km, MD2.7, Error ellipse: s-maj=2.6km s-min=1.6km az=134.0*

ISK ***11*** *01:14:07.8, 39°.10N×29°.09E, h9km, MD2.7*

DDA ***11*** *01:14:07.4, 39°.12N×29°.05E, h7km, Md2.6*

ISC 11 01:14:08.0±0.9, 39°.10N±0°.03×29°.05E±0°.02, h10km±9km, n33, σ0§48/44, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
DEMI	**Demirci**	**0.26**	**257**	*i* P			**Pg**	**01 14 13.8**	**+0.3**
DEMI				*i* S			**Sg**	**01 14 17.2**	**+0.1**
DEMI	**Demirci**	**0.26**	**257**	P			**Pg**	**01 14 13.8**	**+0.3**
DEMI				S			**Sg**	**01 14 17.2**	**+0.1**
GEDZ	**Gediz**	**0.29**	**101**	*e*PG			**Pg**	**01 14 13.6**	**-0.3**
GEDZ	**Gediz**	**0.29**	**101**	*e*Pg			**Pg**	**01 14 13.6**	**-0.3**
GDZ	**Gediz**	**0.34**	**92**	*i* P			**Pg**	**01 14 14.9**	**0.0**
GDZ				*i* S			**Sg**	**01 14 20.0**	**+0.6**
GDZ	**Gediz**	**0.34**	**92**	P			**Pg**	**01 14 14.9**	**0.0**
GDZ				S			**Sg**	**01 14 20.0**	**+0.6**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG			**Pg**	**01 14 17.4**	**+0.1**
TVSB				*e*SG			**Sg**	**01 14 23.4**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg			**Pg**	**01 14 17.4**	**+0.1**
TVSB				*e*Sg			**Sg**	**01 14 23.4**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG			**Pg**	**01 14 21.1**	**+0.3**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg			**Pg**	**01 14 21.1**	**+0.3**
MANT	**Manisa**	**0.72**	**212**	*i* P			**Pg**	**01 14 21.2**	**-0.8**
MANT				*i* S			**Sg**	**01 14 30.4**	**-1.0**
MANT	**Manisa**	**0.72**	**212**	P			**Pg**	**01 14 21.2**	**-0.8**
MANT				S			**Sg**	**01 14 30.4**	**-1.0**
BALB	**Balikesir**	**1.05**	**301**	*e*PN			**Pn**	**01 14 29.3**	**+0.5**
BALB	**Balikesir**	**1.05**	**301**	*e*Pn			**Pn**	**01 14 29.3**	**+0.5**
IGD	**Bursa**	**1.17**	**6**	*i* P			**Pg**	**01 14 29.0**	**-1.5**
IGD				*i* S			**Sg**	**01 14 45.2**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN			**Pg**	**01 14 32.3**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn			**Pg**	**01 14 32.3**	**-0.2**
IZI	**Iznik**	**1.28**	**15**	*e*PN			**Pg**	**01 14 32.6**	**0.0**
IZI	**Iznik**	**1.28**	**15**	*e*Pn			**Pg**	**01 14 32.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN			**Pg**	**01 14 32.5**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn			**Pg**	**01 14 32.5**	**-0.1**
GEMT	**Gemlik**	**1.34**	**5**	*e*PN			**Pb**	**01 14 33.1**	**-0.1**
GEMT	**Gemlik**	**1.34**	**5**	*e*Pn			**Pb**	**01 14 33.1**	**-0.1**
BORA	**Eskisehir**	**1.34**	**54**	*i* P			**Pb**	**01 14 33.0**	**-0.3**
BORA				*i* S			**Sn**	**01 14 51.3**	**+0.6**
BORA	**Eskisehir**	**1.34**	**54**	P			**Pb**	**01 14 33.0**	**-0.3**
BORA				S			**Sn**	**01 14 51.3**	**+0.6**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN			**Pn**	**01 14 34.1**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn			**Pn**	**01 14 34.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*PN			**Pn**	**01 14 35.0**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*Pn			**Pn**	**01 14 35.0**	**+0.4**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN			**Pb**	**01 14 35.2**	**-0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn			**Pb**	**01 14 35.2**	**-0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*PN			**Pn**	**01 14 38.4**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn			**Pn**	**01 14 38.4**	**0.0**

DDA 11 01:15:56.1, 39°.15N×29°.05E, h7km, Md2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
DEMI	**Demirci**	**0.28**	**247**	*i* P			Pb	01 16 02.7	-0.8
DEMI				*i* S			Sg	01 16 06.5	+1.0
GDZ	**Gediz**	**0.34**	**101**	*i* P			Pg	01 16 03.3	+0.5
GDZ				*i* S			Sg	01 16 08.1	+0.8

JMA 11 01:23:19.6±0.1, 38°.02N×143°.41E, h29km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
JIO	**Ouri**	**1.68**	**286**	*e*S			Sn	01 24 08.9	+1.3
OFUJ	**Ofunato**	**1.73**	**308**	P			Pn	01 23 48.6	+0.9
JMK	**Ichinoseki**	**1.95**	**299**	P			Pn	01 23 52.1	+1.3
JMK				S			Sn	01 24 15.6	+1.3
JOU	**Okura**	**2.19**	**280**	P			Pn	01 23 55.7	+1.6
JOU				S			Sn	01 24 21.7	+1.5
JOM	**Ohasama**	**2.20**	**312**	P			Pn	01 23 55.7	+1.5
JFT	**Otama**	**2.49**	**259**	P			Pn	01 24 00.3	+2.2
JFT				S			Sn	01 24 28.5	+1.0
JYK	**Kaneyama**	**2.56**	**291**	P			Pn	01 24 01.1	+2.0
JRG	**Rokugo**	**2.57**	**303**	P			Pn	01 24 01.4	+2.1
JAG	**Ashikaga**	**3.54**	**244**	S			Sn	01 24 53.8	+0.4
BSO1	**Boso 1**	**3.89**	**211**	P			Pn	01 24 18.5	+1.6
BSO1				*e*S			Sn	01 25 02.3	+0.9
JSD	**Sado**	**4.07**	**272**	P			Pn	01 24 21.5	+1.7
JRY	**Ryogami san**	**4.12**	**242**	P			Pn	01 24 22.4	+1.2
JRY				S			Sn	01 25 06.8	-1.2
JNBK	**Urakawa-nobuka**	**4.29**	**353**	S			Sn	01 25 11.9	+0.1
MAT	**Matsushiro**	**4.40**	**252**	P			Pn	01 24 27.9	+3.4
MAT				*e*S			Sn	01 25 11.6	-3.2

ISCJB ***11*** *01:30:30.7±0.6, 6°.83N±0°.04×73°.10W±0°.05, h158km±5km, Error ellipse: s-maj=10.0km s-min=4.5km az=34.0*

FUNV ***11*** *01:30:32.4, 6°.79N×73°.15W, h145km, MW2.9*

RSNC ***11*** *01:30:33.3±0.6, 6°.78N×73°.14W, h145km±3km, ML2.8*

ISC 11 01:30:30.6±1.4, 6°.82N±0°.05×73°.09W±0°.06, h161km±8km, n21, σ1§21/36, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
BTLC	**Betulia, Santa**	**0.21**	**300**	*e*P			**Pn**	**01 30 52.8**	**+0.3**
BTLC				*e*S			**Sn**	**01 31 07.8**	**-1.4**
BARC	**Barichara**	**0.24**	**203**	*e*P			**Pn**	**01 30 52.5**	**-0.1**
BARC				*e*S			**Sn**	**01 31 07.6**	**-1.9**
BARC				*i*				01 31 10.5	
	comp=Z,182nm,0.4s								
PAMC	**Pamplona, Colo**	**0.65**	**36**	*e*P			**Pn**	**01 30 55.5**	**+1.0**
PAMC				*e*S			**Sn**	**01 31 12.9**	**0.0**
BRRC	**Barranca, Sant**	**0.69**	**295**	*e*P			**Pn**	**01 30 54.4**	**+0.2**
BRRC				*e*S			**Sn**	**01 31 11.1**	**-1.1**
BRRC				*i*				01 31 15.9	
	comp=Z,75nm,0.2s								
RUSC	**La Rusia**	**0.92**	**180**	*e*P			**Pn**	**01 30 56.7**	**+0.3**
RUSC				*e*S			**Sn**	**01 31 15.3**	**-0.8**
RUSC				*i*				01 31 16.9	
	comp=Z,79nm,0.3s								
CBRI	**Barrientos, No**	**0.94**	**18**	*e*P			**Pn**	**01 30 57.1**	**+1.0**
CBRI				*e*S			**Sn**	**01 31 15.6**	**-0.2**
CBRI				*i*				01 31 17.9	
	comp=Z,50nm,0.8s								
GRMC	**Gramalote, San**	**0.94**	**17**	*e*P			**Pn**	**01 30 58.4**	**+2.3**
GRMC				*e*S			**Sn**	**01 31 18.4**	**+2.6**
GRMC				*i*				01 31 19.7	
	comp=Z,72nm,0.4s								
CAPV	**Capacho**	**1.29**	**36**	*e*P			**Pn**	**01 31 00.5**	**+1.3**
CAPV				*e*S			**Sn**	**01 31 18.8**	**-2.5**
OCAC	**Ocana**	**1.43**	**351**	*e*P			**Pn**	**01 31 01.5**	**+1.0**
OCAC				*e*S			**Sn**	**01 31 23.9**	**+0.3**
OCAC				*i*				01 31 28.7	
	comp=Z,71nm,0.3s								
NORC	**Norcasia**	**2.17**	**235**	*e*P			**Pn**	**01 31 08.7**	**+0.3**
NORC				*e*S			**Sn**	**01 31 36.9**	**-0.6**
CHIC	**Chingaza**	**2.26**	**197**	*e*P			**Pn**	**01 31 11.0**	**+1.1**
CHIC				*e*S			**Sn**	**01 31 40.2**	**0.0**
CHIC				*i*				01 31 44.3	
	comp=Z,36nm,0.4s								
HELC	**Santa Helena**	**2.50**	**256**	*e*P			**Pn**	**01 31 14.1**	**+1.4**
HELC				*e*S			**Sn**	**01 31 44.4**	**-0.8**
HELC				*i*				01 31 52.4	
	comp=Z,77nm,0.4s								
VIGV	**El Vigia**	**2.64**	**40**	*e*P			**Pn**	**01 31 15.3**	**+1.3**
VIGV				*e*S			**Sn**	**01 31 46.5**	**-1.1**
PRAC	**Prado**	**3.56**	**210**	*e*P			**Pn**	**01 31 26.7**	**+1.1**
PRAC				*e*S			**Sn**	**01 32 07.8**	**-0.7**
ELOV	**Elorza**	**3.58**	**87**	*e*P			**Pn**	**01 31 27.1**	**+1.3**
SJAC	**San Juan de Ar**	**3.62**	**194**	*e*P			**Pn**	**01 31 26.7**	**+0.3**
SJAC				*i*				01 32 19.9	
	comp=Z,43nm,0.6s								
VIRV	**Villa del Rosa**	**3.73**	**10**	*e*P			**Pn**	**01 31 27.3**	**-0.3**
VIRV				*e*S			**Sn**	**01 32 09.9**	**-2.1**
CURV	**Curarigua**	**4.43**	**44**	*e*P			**Pn**	**01 31 37.7**	**+0.8**
BAUV	**El Baul**	**5.43**	**67**	*e*P			**Pn**	**01 31 49.6**	**-0.3**
MAPV	**Macapo**	**5.47**	**56**	*e*P			**Pn**	**01 31 50.8**	**+0.4**
MONV	**Montecano**	**5.96**	**31**	*e*P			**Pn**	**01 31 56.8**	**-0.1**

ISCJB ***11*** *01:32:34.4±1.2, 31°.50S±0°.07×67°.95W±0°.07, h111km±9km, Error ellipse: s-maj=12.1km s-min=9.4km az=156.7*

GUC ***11*** *01:32:34.8±0.6, 31°.16S×68°.42W, h110km±128km, ML3.5*

SJA ***11*** *01:32:34.0±0.8, 31°.51S×67°.94W, h108km±5km, ML3.4, MW3.5*

ISC 11 01:32:34.9±2.7, 31°.5S±0°.1×67°.95W±0°.08, h107km±15km, n15, σ0§65/24, 5C, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
RTLL	**Cerro Villicun**	**0.47**	**288**	*e*P			**Pn**	**01 32 51.1**	**-0.3**
SJA	**San Juan**	**0.53**	**264**	*e*P			**Pn**	**01 32 51.7**	**0.0**
SJA				IAML				01 32 51.9	
	comp=Z,1μm,0.3s								
SJA				*e*S			**Sn**	**01 33 04.9**	**+0.6**
RTCV	**Cerro Valdivia**	**0.64**	**233**	*e*P			**Pn**	**01 32 52.2**	**-0.3**
RTCV				*

MJAR Matsushiro Arr 3.69 241 Pn **Pn 01 37 00.4 +0.7**
comp=Z,9.0nm,0.3s,baz=65,slow=9.6,SNR=51
MJAR LR LR 01 38 10.3
comp=Z,101nm,18.5s,baz=65,slow=35
MAJO Matsushiro 3.69 241 *c iP* **Pn 01 37 00.5 +0.9**
MAJO Matsushiro 3.69 241 *e*Pn **Pn 01 37 00.6 +0.9**
MAT Matsushiro 3.69 241 P **Pn 01 37 00.3 +0.6**
MAT S **Sn 01 37 46.6 +4.5**
MJB9 Matsu-Tunnel 3.69 241 *e*Pn **Pn 01 36 59.9 +0.2**
INU Inuyama 5.17 235 *e*Pn **Pn 01 37 20.0 +0.1**
JHJ2 Mitsune 5.63 201 *e*Pn **Pn 01 37 25.3 -1.0**
JHJ2 *e*S **Sn 01 38 28.3 -1.6**
JHJ Hachijo jima 2 5.64 201 Pn **Pn 01 37 25.5 -0.9**
comp=Z,64nm,0.3s,baz=251,slow=4.2,SNR=28
JHJ Sn **Sn 01 38 27.5 -2.5**
comp=Z,64nm,0.3s,baz=252,slow=21,SNR=7.0
JHJ LR LR 01 38 55.0
comp=Z,162nm,21.1s,baz=1.0,slow=30
ASAJ Asahikawa 5.71 3 *e*Pn **Pn 01 37 27.0 -0.3**
ASAJ *e*S **Sn 01 38 39.4 +7.7**
YUK Yuzh-Kuril'sk 6.25 25 *e*P **Pn 01 37 32.8 -2.0**
KUR Kuril'sk 8.02 30 *c iP* **Pn 01 37 59.6 +0.7**
KUR *e*S **Sn 01 39 23.4 -5.0**
KUR pmax pmax
comp=N,13nm,0.4s
KUR pmax pmax
comp=E,9.0nm,0.4s
KUR pmax pmax
comp=Z,36nm,0.4s
KUR smax smax
comp=E,37nm,0.6s
YSS Yuzh-Sakhalins 8.55 2⇑ *e*P **Pn 01 38 06.9 +0.7**
YSS *e*S **Sn 01 39 39.7 -1.8**
YSS pmax pmax
comp=Z,40nm,0.6s
YSS MLR MLR
comp=Z,300nm,12.0s
YSS Yuzh-Sakhalins 8.55 2 *e*Pn **Pn 01 38 06.2 -0.1**
VLA Vladivostok 9.14 304 *e*P **Pn 01 38 15.7 +1.4**
VLA pmax pmax
comp=Z,108nm,1.1s
MSHR Mys Shultsa 9.40 300 *i* P **Pn 01 38 18.9 +1.0**
USRK Ussuriysk Ar. 9.62 310 Pn **Pn 01 38 21.3 +0.4**
comp=Z,1.5nm,0.3s,baz=122,slow=13,SNR=73
USRK LR LR 01 41 55.8
comp=Z,782nm,19.0s,baz=120,slow=37
JNU Nakatsue 10.61 244 Pn **Pn 01 38 37.4 +2.8**
comp=Z,0.5nm,0.3s,baz=91,slow=10,SNR=7.2
JNU LR LR 01 43 02.7
comp=Z,354nm,19.6s,baz=313,slow=40
JNU Nakatsue 10.61 244 *e*Pn **Pn 01 38 36.4 +1.8**
MDJ Mudanjiang 11.31 307 P **Pn 01 38 45.8 +1.7**
MDJ S **Sn 01 40 51.4 +2.2**
MDJ pmax pmax
comp=Z,15nm,0.9s
MDJ pmax pmax
comp=Z,66nm,4.3s
MDJ LR LR
comp=N,280nm,14.3s
MDJ LR LR
comp=E,360nm,17.1s
MDJ LR LR
comp=Z,560nm,18.1s
KSRS Korea Array 11.33 270 Pn **Pn 01 38 47.9 +3.6**
comp=Z,0.6nm,0.3s,baz=84,slow=13,SNR=21
KS15 Wonju Array Si 11.36 270 *e*Pn **Pn 01 38 45.9 +1.1**
KSAR Wonju Array Be 11.36 270 P **Pn 01 38 47.9 +3.1**
KSAR Wonju Array Be 11.36 270 Pn **Pn 01 38 47.9 +3.1**
KLR Kul'dur 13.18 329 Pn **Pn 01 39 09.5 -0.1**
comp=Z,0.5nm,0.3s,baz=134,slow=12,SNR=15
KLR LR LR 01 44 20.0
comp=Z,735nm,18.0s,baz=136,slow=38
CN2 Changchun 13.74 298 *e*P **Pn 01 39 19.3 +2.1**
DL2 Dalian 16.09 278 P **P 01 39 50.8 -0.8**
DL2 pmax pmax
comp=Z,100nm,0.8s
PETK Petropavlovsk- 18.18 31 P **Pn 01 40 11.4 -3.1**
comp=Z,0.2nm,0.3s,baz=189,slow=8.2,SNR=2.2
PETK LR LR 01 46 38.2
comp=Z,76nm,19.6s,baz=215,slow=35
TIA Tai'an 20.06 271 *e*P **P 01 40 33.3 -2.1**
TIA pmax pmax
comp=Z,30nm,0.9s
BJI Beijing 20.22 283 P **P 01 40 35.9 -1.1**
BJI S **S 01 44 15.7 -6.4**
BJI pmax pmax
comp=Z,19nm,0.8s
BJI LR LR
comp=N,95nm,14.0s
BJI LR LR
comp=E,380nm,13.4s
BJI LR LR
comp=Z,190nm,18.8s
MA2 Magadan 21.88 12 P **P 01 40 55.0 +0.3**
comp=Z,18nm,0.7s,baz=200,slow=8.9,SNR=12
MA2 LR LR 01 49 30.1
comp=Z,185nm,18.1s,baz=242,slow=37
MA2 Magadan 21.88 12 P **P 01 40 55.0 +0.3**
MA2 pmax pmax
comp=Z,18nm,0.7s
MA2 MLR MLR
comp=Z,185nm,18.1s
MA2 Magadan 21.88 12 P **P 01 40 55.0 +0.3**
HHC Hu-ho-hao-te 23.68 286 *e*P **P 01 41 13.8 +0.2**
HHC sP sP 01 41 32.7 +6.1
HHC S **S 01 45 24.8 -1.6**
HHC sS sS 01 45 37.2 -4.4
HHC pmax pmax
comp=Z,17nm,0.9s
HHC pmax pmax
comp=Z,63nm,5.1s
HHC LR LR
comp=N,140nm,14.7s
HHC LR LR
comp=E,470nm,13.9s
HHC LR LR
comp=Z,560nm,15.4s
WHN Wuhan 24.21 260 ⇓P **P 01 41 17.7 -0.8**
WHN sP **sP 01 41 32.8 +1.2**
GUMO Guam 24.83 174 LR LR 01 51 46.3
comp=Z,58nm,20.6s,baz=12,slow=38
YAK Yakutsk 24.88 346 P **P 01 41 23.5 -0.7**
comp=Z,40nm,0.4s,baz=51,slow=1.4,SNR=7.0
YAK LR LR 01 51 29.9
comp=Z,227nm,18.8s,baz=102,slow=37
YAK Yakutsk 24.88 346 *e*P **P 01 41 22.4 -1.9**
YAK *e**PP **pP 01 41 31.8 -1.7**
YAK *e*PPP PPP 01 42 05.1
YAK *e* 01 44 56.9
YAK *e*S **S 01 45 43.2 -1.8**
YAK *e**SS **sS 01 46 02.3 +2.1**
YAK *e*SS **SnSn 01 46 33.3 -0.7**
YAK *e* 01 52 21.7
YAK pmax pmax
comp=Z,23nm,0.9s
YAK pmax pmax
comp=N,13nm,1.1s
YAK smax smax
comp=N,89nm,3.2s
YAK smax smax
comp=E,25nm,1.4s
SEY Seymchan 25.32 11 P **P 01 41 29.9 +1.6**
comp=E,17nm,0.7s,baz=195,slow=5.5,SNR=54
BOD Bodaibo 26.73 326 *d iP* **P 01 41 40.0 -1.1**
BOD pmax pmax
comp=Z,19nm,1.1s
XAN Xi'an 27.12 271 P **P 01 41 44.0 -0.9**
XAN pP pP 01 41 52.2 -2.0
XAN pmax pmax
comp=Z,21nm,0.7s
XAN pmax pmax
comp=Z,91nm,6.2s
SONA1 Songino Array 27.57 302 *e*P **P 01 41 48.5 -0.4**
SONM Songino Array 27.58 302 P **P 01 41 48.5 -0.4**
comp=Z,4.2nm,0.7s,baz=98,slow=8.5,SNR=24
H11N2 WAKE ISLAND Hy 28.35 124 T T 02 11 41.3
baz=315,slow=76
H11N1 WAKE ISLAND Hy 28.36 124 T T 02 11 38.9
baz=315
H11N3 WAKE ISLAND Hy 28.36 124 T T 02 11 41.5
baz=315,slow=76
H11S1 WAKE ISLAND Hy 29.11 126 T T 02 13 08.1
baz=318,slow=76,SNR=254
H11S3 WAKE ISLAND Hy 29.11 126 T T 02 13 10.9
baz=318,slow=76,SNR=447
H11S2 WAKE ISLAND Hy 29.13 126 T T 02 13 11.6
baz=318,slow=76,SNR=303
TLY Talaya 29.94 309 P **P 01 42 10.2 +0.5**
comp=Z,12nm,0.7s,baz=115,slow=8.4,SNR=4.1
TLY LR LR 01 54 42.1
comp=Z,230nm,19.0s,baz=108,slow=37
TLY Talaya 29.94 309 *e*P **P 01 42 10.1 +0.3**
TLY pmax pmax
comp=Z,18nm,0.8s
TLY MLR MLR
comp=Z,235nm,15.0s
ZAK Zakamensk 29.94 306 *e*P **P 01 42 09.0 -0.9**
ZAK pmax pmax
comp=Z,15nm,1.0s
LZH Lanzhou 30.49 278 *e*P **P 01 42 14.2 -0.8**
LZH pP pP 01 42 23.0 -1.3
LZH sP sP 01 42 27.6 -0.6
LZH pmax pmax
comp=Z,21nm,1.0s
MOY Mondy 31.56 308 *e*P **P 01 42 24.2 0.0**
MOY pmax pmax
comp=Z,23nm,2.2s
GYA Guiyang 32.09 259⇑ *i*P **P 01 42 28.3 -0.9**
GYA pP pP 01 43 20.0 +42
GYA PP **PnPn 01 43 37.2 +2.0**
GYA S **S 01 47 39.8 +0.3**
GYA sS sS 01 47 55.5 +0.6
GYA SS **SnSn 01 49 33.0 +2.2**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,110nm,4.9s
GYA LR LR
comp=N,420nm,17.3s
GYA LR LR
comp=Z,400nm,18.0s
GYA LR LR
comp=Z,460nm,17.6s
CD2 Chengdu 32.33 268 *e*P **P 01 42 31.0 -0.1**
BILL Bilibino 32.53 17 *e*P **P 01 42 31.5 -0.9**
BILL *i* 01 42 41.4
BILL *i* 01 43 41.5
BILL *i* 01 45 14.1
BILL pmax pmax
comp=Z,7.0nm,1.3s
BILL MLR MLR
comp=Z,203nm,19.0s
GTA Gaotai 32.79 285 *e*P **P 01 42 34.6 -0.6**
GTA pP pP 01 42 44.6 +0.1
GTA sP sP 01 42 48.8 +0.4
GTA S **S 01 47 49.4 -0.7**
GTA sS sS 01 48 05.4 -0.1
GTA SS **SnSn 01 49 50.5 +3.1**
GTA pmax pmax
comp=Z,10.0nm,1.3s
GTA pmax pmax
comp=Z,160nm,5.2s
GTA LR LR
comp=N,110nm,17.6s
GTA LR LR
comp=E,340nm,18.1s
GTA LR LR
comp=Z,410nm,18.1s
TIXI Tiksi 34.01 352 P **P 01 42 44.7 -0.5**
comp=Z,3.9nm,0.7s,baz=149,slow=6.6,SNR=7.4
TIXI Tiksi 34.01 352⇑ *i*P **P 01 42 44.5 -0.6**
TIXI pmax pmax
comp=Z,5.0nm,1.0s
TIXI Tiksi 34.01 352 *e*P **P 01 42 44.6 -0.6**
comp=Z,5.0nm,0.8s
QIZ Qiongzhong 34.08 245 P **P 01 42 46.7 +0.3**
QIZ S **S 01 48 11.2 +1.0**
QIZ LR LR
comp=Z,180nm,17.4s
KMI Kunming 35.81 260 P **P 01 43 01.5 -0.1**
KMI pP pP 01 43 11.6 +0.7
KMI sP sP 01 43 15.2 +0.4
KMI pmax pmax
comp=Z,29nm,0.9s
KMI LR LR
comp=Z,130nm,17.7s
WMQ Urumqi 40.80 296 P **P 01 43 44.2 +1.0**
WMQ pP pP 01 43 53.6 +0.9
WMQ sP sP 01 43 58.2 +1.7
WMQ pmax pmax
comp=Z,35nm,0.9s
WMQ pmax pmax
comp=Z,170nm,4.6s
ZAA0 Zalesovo Array 41.47 311 *e*P **P 01 43 48.3 -0.1**
ZALV Zalesovo Beam 41.47 311 P **P 01 43 48.5 0.0**
comp=Z,14nm,0.5s,baz=89,slow=7.8,SNR=63
ZALV PcP **PcP 01 45 46.6 +1.0**
comp=Z,0.7nm,0.3s,baz=51,slow=5.7,SNR=2.5
ZALV pPcP 01 45 54.9
comp=Z,2.6nm,0.6s,baz=93,slow=3.0,SNR=4.5
CHTO Chiang Mai 42.26 255 *e*P **P 01 43 54.8 -0.4**
CHTO pmax pmax
comp=Z,7.0nm,0.8s
CHTO Chiang Mai 42.26 255 *e*P **P 01 43 54.8 -0.4**
comp=Z,6.5nm,0.8s
NRIK Noril'sk 42.29 335 P **P 01 43 54.1 -0.8**
comp=Z,2.2nm,0.4s,baz=116,slow=7.5,SNR=5.2
NRIK LR LR 02 02 26.0
comp=Z,379nm,18.8s,baz=126,slow=37
NVS Novosibirsk 42.36 313 *e*P **P 01 43 53.4 -2.3**
NVS *e* 01 44 05.9
CMAR Chiang Mai Arr 42.47 255 P **P 01 43 57.0 0.0**
comp=Z,1.5nm,0.6s,baz=35,slow=6.5,SNR=9.5
CMAR pPcP 01 46 00.9
comp=Z,0.8nm,0.5s,baz=6.7,slow=2.8,SNR=4.1
CMAR Chiang Mai Arr 42.47 255 P **P 01 43 57.0 0.0**
CMAR pmax pmax
comp=Z,2.0nm,0.6s
CM01 Chiang Mai Arr 42.48 254 *e*P **P 01 43 57.2 +0.1**
MK01 Makanchi Array 43.94 301 *e*P **P 01 44 08.2 -0.4**
MK31 Makanchi Array 43.94 301 *i* P **P 01 44 07.8 -0.8**
MK31 pmax pmax
comp=Z,12nm,0.7s
MK31 Makanchi Array 43.94 301 *e*P **P 01 44 08.6 -0.1**
MKAR Makanchi Array 43.94 301 P **P 01 44 08.4 -0.2**
comp=Z,8.3nm,0.7s,baz=86,slow=9.7,SNR=38
MKAR pP **pP 01 44 17.9 -0.2**
comp=Z,16nm,0.8s,baz=84,slow=9.2,SNR=18
MKAR pPcP 01 46 04.4
comp=Z,2.2nm,1.0s,baz=64,slow=5.5,SNR=2.6
MKAR LR LR 02 03 01.2
comp=Z,140nm,19.0s,baz=55,slow=37
SVW2 Sparrevohn 44.05 38 *e*P **P 01 44 08.0 -1.3**
comp=Z,5.0nm,0.9s
MAKZ Makanchi 44.15 301 P **P 01 44 09.9 -0.4**
MAKZ pmax pmax
comp=Z,17nm,1.0s
MAKZ Makanchi 44.15 301 *e*P **P 01 44 10.4 +0.2**
comp=Z,15nm,0.9s
KURK Kurchatov 45.60 307 P **P 01 44 21.9 +0.2**
KURK *PP **pP 01 44 31.4 +0.2**
KURK 01 46 10.1
KURK pmax pmax
comp=Z,31nm,0.6s
KURK pmax pmax
comp=Z,2.0nm,0.7s
KURK Kurchatov 45.60 307 *e*P **P 01 44 21.1 -0.5**
comp=Z,276nm,0.7s
KURK pP **pP 01 44 31.4 +0.2**
KURK pPcP 01 46 10.1
KURBB Kurchatov Arra 45.67 307 P **P 01 44 21.9 -0.3**
comp=Z,31nm,0.6s,baz=81,slow=8.1,SNR=246
KURBB pP **pP 01 44 31.4 -0.4**
comp=Z,36nm,0.6s,baz=80,slow=8.2,SNR=21
KURBB pPcP 01 46 10.1
comp=Z,2.3nm,0.7s,baz=78,slow=4.3,SNR=4.4
CAST Castle Rocks 45.73 35 *e*P **P 01 44 24.4 +1.8**
comp=Z,12nm,1.7s
KTH Kantishna Hill 46.26 35 *e*P **P 01 44 27.9 +1.1**
comp=Z,3.1nm,0.8s
TRF Thorofare Moun 46.54 35 *e*P **P 01 44 30.6 +1.5**
comp=Z,1.7nm,0.8s
COLD Coldfoot 46.64 30 *e*P **P 01 44 30.7 +1.0**
PDGK Podgornoye 46.71 297 P **P 01 44 29.3 -1.2**
PDGK pmax pmax
comp=Z,8.0nm,0.6s
WRH Wood River Hil 47.49 33 *e*P **P 01 44 35.6 -0.7**
RAMN Ramite 47.55 273 *e*P **P 01 44 37.6 0.0**
comp=Z,51nm,0.7s
GUN Gumba 47.66 275 *e*P **P 01 44 38.7 +0.1**
comp=Z,56nm,0.6s
IL1 Eielson Array 47.99 33 *e*P **P 01 44 40.7 +0.5**
ILAR Eielson Array 47.99 33 P **P 01 44 40.8 +0.5**
comp=Z,1.1nm,0.7s,baz=271,slow=6.5,SNR=15
ILAR pP **pP 01 44 50.0 +0.1**
comp=Z,1.8nm,0.5s,baz=261,slow=5.8,SNR=11
ILB Eielson Array 47.99 33 *e*P **P 01 44 41.1 +0.9**
KKN Kakani 48.19 275 *e*P **P 01 44 42.5 0.0**
comp=Z,41nm,0.6s
PKIN Phulchoki 48.20 275 *e*P **P 01 44 42.3 -0.4**
comp=Z,40nm,0.7s
GKN Gorkha 48.59 276 *e*P **P 01 44 45.4 -0.2**
comp=Z,30nm,0.5s
DANN Dangsing 49.12 277 *e*P **P 01 44 50.0 +0.3**
KOLN Koldanda 49.51 276 *e*P **P 01 44 52.6 -0.1**
comp=Z,18nm,0.4s
TKM2 Tokmak 2 49.55 298 P **P 01 44 52.3 -0.5**
TKM2 pmax pmax
comp=Z,9.0nm,0.6s
TKM2 Tokmak 2 49.55 298 *e*P **P 01 44 53.2 +0.4**
comp=Z,15nm,1.0s
PYUN Piuthan 49.83 277 *e*P **P 01 44 55.1 0.0**
comp=Z,110nm,0.9s
VOSK Vostochnaya 49.85 311 P **P 01 44 53.7 -0.9**
VOSK pmax pmax
comp=Z,11nm,1.3s
BVA0 Borovoye Array 50.13 312 *i* P **P 01 44 56.0 -0.8**
BVA0 pmax pmax
comp=Z,5.0nm,0.6s
BVAR Borovoye Array 50.13 312 P **P 01 44 56.5 -0.2**
comp=Z,3.6nm,0.4s,baz=70,slow=7.7,SNR=27
BVAR pP **pP 01 45 06.2 -0.2**
comp=Z,5.3nm,0.5s,baz=73,slow=8.0,SNR=17
BVAR PcP **PcP 01 46 16.0 +0.1**
comp=Z,1.6nm,0.5s,baz=80,slow=4.0,SNR=2.8
BVAR pPcP 01 46 25.5
comp=Z,4.0nm,0.7s,baz=104,slow=3.1,SNR=5.7
OTUK Ortayu 50.15 305 P **P 01 44 55.6 -1.4**
OTUK pmax pmax
comp=Z,7.0nm,0.7s
BRVK Borovoye 50.18 312 P **P 01 44 56.6 -0.5**
BRVK pmax pmax
comp=Z,12nm,1.2s
BRVK Borovoye 50.18 312 *e*P **P 01 44 56.8 -0.3**
comp=Z,7.1nm,0.6s
AAK Ala-Archa 50.41 298 *e*P **P 01 44 58.2 -1.0**
AAK pmax pmax
comp=Z,6.0nm,0.8s
AAK Ala-Archa 50.41 298 *e*P **P 01 44 59.4 +0.1**
comp=Z,4.1nm,0.8s
KSH Kashi 50.44 293 *e*P **P 01 45 03.7 +4.3**
KSH *e*pP sP 01 45 13.3 +0.4
KSH *e*PcP **PcP 01 46 19.8 +2.4**
KSH PcS **PcS 01 50 16.0 +1.2**
KSH S **S 01 52 15.7 +4.8**
KSH ScS **ScS 01 54 48.4 +0.3**
KSH pmax pmax
comp=Z,26nm,2.6s
KSH LR LR
comp=N,93nm,6.2s
KSH LR LR
comp=E,79nm,6.9s
KSH LR LR
comp=Z,160nm,9.1s
EKS2 Erkin-Say 50.90 298 *e*P **P 01 45 02.5 -0.4**
EKS2 pmax pmax
comp=Z,5.0nm,1.0s
EKS2 Erkin-Say 50.90 298 *e*P **P 01 45 02.5 -0.4**
comp=Z,5.2nm,1.0s
ZRNK Zerenda 50.96 312 P **P 01 45 02.1 -0.9**
ZRNK pmax pmax
comp=Z,8.0nm,0.9s
ZRNK Zerenda 50.96 312 *e*P **P 01 45 02.8 -0.2**
comp=Z,11nm,1.0s
MNAS Manas 51.84 298 P **P 01 45 09.6 -0.4**
MNAS pmax pmax
comp=Z,9.0nm,0.7s
HYT Haines Junctio 52.82 37 *e*P **P 01 45 17.8 +0.8**
comp=Z,8.4nm,1.0s
INK Inuvik 52.88 28 *e*P **P 01 45 18.1 +1.1**
INK Inuvik 52.88 28 *e*P **P 01 45 18.1 +1.1**
KK31 Karatay Array 52.99 299 *i* P **P 01 45 17.8 -0.6**
KK31 pmax pmax
comp=Z,7.0nm,0.9s
KKAR Karatay Array 52.99 299 *e*P **P 01 45 18.1 -0.3**
KKAR pmax pmax
comp=Z,6.0nm,0.8s
KKAR Karatay Array 52.99 299 *e*P **P 01 45 18.1 -0.3**
comp=Z,6.1nm,0.8s
SVE Sverdlovsk 54.54 318⇑ *e*P **P 01 45 29.9 +0.5**
SVE pmax pmax
comp=Z,20nm,0.9s
ARU Arti 55.76 318 P **P 01 45 38.1 -0.1**
comp=Z,4.8nm,0.5s,baz=77,slow=4.3,SNR=15
ARU Arti 55.76 318 *c iP* **P 01 45 37.8 -0.3**
ARU 01 47 38.9
ARU S **S 01 53 25.1 +2.5**
ARU SS **SS 01 57 08.8 +1.1**
ARU pmax pmax
comp=Z,23nm,1.7s
ARU Arti 55.76 318 *e*P **P 01 45 37.9 -0.3**
comp=Z,26nm,1.3s
KBL Kabul 57.52 291 *e*P **P 01 45 51.5 +0.1**
KBL pmax pmax
comp=Z,8.0nm,0.9s
KBL Kabul 57.52 291 *e*P **P 01 45 51.5 +0.1**
comp=Z,8.3nm,0.9s
AB31 Akbulak array 57.55 310 P **P 01 45 49.4 -1.6**
AB31 pmax pmax
comp=Z,6.0nm,0.6s
ABKAR Akbulak array 57.55 310 *e*P **P 01 45 50.6 -0.4**
AKTO Aktyubinsk 58.23 312 P **P 01 45 55.2 -0.7**
comp=Z,8.8nm,0.8s,baz=66,slow=11,SNR=27
AKTO Aktyubinsk 58.23 312 P **P 01 45 54.1 -1.7**
AKTO pmax pmax
comp=Z,9.0nm,0.7s
CTAO Charters Tower 58.31 176 *e*P **P 01 45 56.0 -0.6**
CTAO Charters Tower 58.31 176 *e*P **P 01 45 56.0 -0.6**
WRAB Tennant Creek 58.50 189 *d iP* **P 01 45 57.2 -0.7**
WRAB pmax pmax
comp=Z,48nm,0.7s
WRAB Tennant Creek 58.50 189 *e*P **P 01 45 57.0 -0.9**
comp=Z,25nm,0.8s
WB2 Warramunga Arr 58.51 189 *e*P **P 01 45 57.4 -0.6**
comp=Z,28nm,0.8s
WRA Warramunga Arr 58.51 189 P **P 01 45 57.2 -0.7**
comp=Z,28nm,0.8s,baz=6.7,slow=7.2,SNR=107
AS01 Alice Springs 62.23 189 *e*P **P 01 46 22.9 -0.5**
AS31 Alice Springs 62.24 189 *e*P **P 01 46 23.4 -0.1**
ASAR Alice Springs 62.24 189 P **P 01 46 23.1 -0.3**
comp=Z,13nm,0.7s,baz=9.1,slow=5.0,SNR=103
YKA Yellowknife Ar 62.30 31 P **P 01 46 23.8 +0.4**
comp=Z,0.8nm,0.6s,baz=301,slow=6.5,SNR=8.1
MBWA Marble Bar 62.90 204 *e*P **P 01 46 27.4 -0.5**
comp=Z,37nm,0.5s
ARCES ARCESS Array B 62.94 339 P **P 01 46 27.1 -0.5**
comp=Z,1.5nm,0.6s,baz=52,slow=8.3,SNR=11
KLMR Klimovskoe 62.94 328 *e*P **P 01 46 25.0 -2.7**
KLMR *e* 01 48 43.2
KLMR pmax pmax
comp=Z,22nm,1.4s
GEYT Alibeck 63.73 299 P **P 01 46 32.8 -0.6**
comp=Z,4.2nm,0.7s,baz=46,slow=4.3,SNR=11
DZM Mont Dzumac 64.32 155 LR LR 02 13 15.0
comp=Z,187nm,18.6s,baz=4.5,slow=35
NLWA Neilton Lookou 65.32 48 *e*P **P 01 46 44.9 +1.3**
comp=Z,6.9nm,0.8s
VRH Novokhopyorsk 66.99 318 *e*P **P 01 46 53.6 -0.6**
VRH pmax pmax
comp=Z,40nm,0.7s
OBN Obninsk 67.38 323 *i* P **P 01 46 54.8 -1.7**
OBN *i* 01 49 25.5
OBN pmax pmax
comp=Z,6.0nm,0.8s
OBN MLR MLR
comp=Z,132nm,15.0s
VSR Storozhevoye 68.32 319 *e*P **P 01 47 02.0 -0.6**
VSR pmax pmax
comp=Z,20nm,0.8s
SUMG Summit 69.31 0 *i* P **P 01 47 09.7 +0.8**
comp=Z,3.9nm,0.7s
SUMG *i* 01 47 19.6
SUMG Summit 69.31 0 *e*P **P 01 47 09.7 +0.8**
SUMG *i* 01 47 19.6
SUMG pmax pmax
comp=Z,4.0nm,0.7s
K05A Summer Lake 69.58 51 *e*P **P 01 47 10.4 -0.4**
comp=Z,6.1nm,0.8s

VSU	**Vasula**	**69.59**	**330**	*i* P		**P**	**01 47 09.9**	**-0.4**	
VSU				pmax	pmax				
	comp=Z,46nm,1.7s								
GOF	**Gofitskoye**	**69.65**	**312**⇑	*e*P		P	01 47 21.5	+11	
GOF				pmax	pmax				
	comp=Z,26nm,1.1s								
STKA	**Stephens Creek**	**69.93**	**181**	P		**P**	**01 47 12.8**	**+0.2**	
	comp=Z,6.0nm,0.8s,baz=356,slow=6.0,SNR=8.3								
FORT	**Forrest**	**70.09**	**193**	*e*P		**P**	**01 47 13.8**	**+0.2**	
	comp=Z,243nm,0.8s								
KVAR	**Kislovodsk Arr**	**70.48**	**311**	P		**P**	**01 47 16.5**	**+0.3**	
	comp=Z,9.3nm,0.6s,baz=273,slow=0.7,SNR=9.2								
KIV	**Kislovodsk**	**70.49**	**311**	*e*P		**P**	**01 47 16.4**	**+0.1**	
KIV				pmax	pmax				
	comp=Z,24nm,0.9s								
KIV				MLR	MLR				
	comp=Z,108nm,18.0s								
KIV	**Kislovodsk**	**70.49**	**311**	*e*P		**P**	**01 47 16.6**	**+0.3**	
	comp=Z,20nm,0.7s								
KBZ	**Khabaz**	**70.49**	**311**	P		**P**	**01 47 16.9**	**+0.8**	
	comp=Z,7.1nm,0.8s,baz=53,slow=3.7,SNR=12								
BMO	**Blue Mountains**	**70.53**	**48**	*e*P		**P**	**01 47 17.7**	**+1.2**	
	comp=Z,3.0nm,1.2s								
NEY	**Neytrino**	**70.87**	**310**	*e*P		**P**	**01 47 17.2**	**-1.5**	
NEY				pmax	pmax				
	comp=Z,1.0nm,0.8s								
SLMT	**Seeley Lake**	**71.29**	**44**	*e*P		**P**	**01 47 21.4**	**+0.2**	
PAHR	**Pah Rah Range**	**72.23**	**53**	*e*P		**P**	**01 47 28.0**	**+1.1**	
	comp=Z,6.0nm,1.0s								
LRM	**Limekiln Ridge**	**72.72**	**45**	*e*P		**P**	**01 47 31.0**	**+1.1**	
NC405	**NORSAR Array S**	**72.95**	**337**	*e*P		**P**	**01 47 31.1**	**+0.4**	
HLID	**Hailey**	**72.97**	**48**	*e*P		**P**	**01 47 32.7**	**+1.4**	
	comp=Z,9.3nm,1.9s								
HFS	**Hagfors**	**73.10**	**336**	P		**P**	**01 47 31.5**	**0.0**	
	comp=Z,5.5nm,0.7s,baz=47,slow=6.5,SNR=21								
NC204	**NORSAR Array S**	**73.11**	**338**	*e*P		**P**	**01 47 32.8**	**+1.1**	
NB2	**NORSAR Subarra**	**73.16**	**337**	P		**P**	**01 47 31.5**	**-0.5**	
	comp=Z,4.8nm,0.7s,baz=39,slow=6.2								
NOA	**NORSAR Array B**	**73.16**	**337**	P		**P**	**01 47 32.1**	**+0.1**	
	comp=Z,3.8nm,0.6s,baz=39,slow=6.0,SNR=23								
NOA				pP		**pP**	**01 47 40.5**	**-1.4**	
	comp=Z,7.0nm,0.9s,baz=39,slow=5.9,SNR=11								
NOA				LR		LR	02 22 07.0		
	comp=Z,89nm,21.9s,baz=25,slow=38								
BOZ	**Bozeman (W)**	**73.28**	**45**	*e*P		**P**	**01 47 34.0**	**+0.9**	
BOZ				pmax	pmax				
	comp=Z,3.0nm,0.8s								
BOZ	**Bozeman (W)**	**73.28**	**45**	*e*P		**P**	**01 47 34.0**	**+0.9**	
	comp=Z,2.6nm,0.8s								
AKASG	**Malin Array Be**	**73.60**	**322**	P		**P**	**01 47 34.2**	**-0.4**	
	comp=Z,7.3nm,0.6s,baz=46,slow=6.1,SNR=34								
AKASG				pP		**pP**	**01 47 43.9**	**-0.8**	
	comp=Z,3.1nm,0.6s,baz=43,slow=6.1,SNR=6.0								
KIEV	**Kiev**	**73.61**	**322***c*	*i*P		**P**	**01 47 34.2**	**-0.5**	
KIEV				pmax	pmax				
	comp=Z,10.0nm,0.9s								
KIEV	**Kiev**	**73.61**	**322**	*e*P		**P**	**01 47 34.2**	**-0.5**	
	comp=Z,12nm,0.8s								
IMW	**Indian Meadow**	**74.76**	**46**	*e*P		**P**	**01 47 42.8**	**+0.9**	
	comp=Z,1.7nm,0.6s								
R11A	**Troy Canyon, C**	**75.42**	**53**	*e*P		**P**	**01 47 47.0**	**+1.3**	
	comp=Z,4.4nm,1.3s								
SORM	**Soroca**	**75.73**	**321**⇓	*i*P		P	01 47 42.1	-4.9	
SORM	**Soroca**	**75.73**	**321**	⇓P		P	01 47 42.1	-4.9	
BMUT	**Black Mountain**	**75.81**	**48**	*e*P		**P**	**01 47 50.3**	**+2.4**	
DUG	**Dugway, Tooele**	**75.98**	**50**	*e*P		**P**	**01 47 49.7**	**+0.9**	
DUG				pmax	pmax				
	comp=Z,3.0nm,0.8s								
DUG	**Dugway, Tooele**	**75.98**	**50**	*e*P		**P**	**01 47 49.7**	**+0.9**	
	comp=Z,3.4nm,0.8s								
BW06	**Boulder Array**	**76.25**	**46**	*e*P		**P**	**01 47 51.1**	**+0.7**	
PD31	**Pinedale Array**	**76.25**	**46**	*e*P		**P**	**01 47 51.1**	**+0.7**	
PDAR	**Pinedale Array**	**76.25**	**46**	P		**P**	**01 47 50.9**	**+0.5**	
	comp=Z,2.4nm,0.6s,baz=258,slow=3.0,SNR=24								
BSD	**Bornholm Skovb**	**76.53**	**332**	*i*P		**P**	**01 47 51.0**	**-0.4**	
	comp=Z,17nm,1.1s								
BSD	**Bornholm Skovb**	**76.53**	**332**	*e*P		**P**	**01 47 51.0**	**-0.4**	
BSD				pmax	pmax				
	comp=Z,17nm,1.1s								
COP	**Copenhagen**	**76.98**	**333**	*i*P		**P**	**01 47 54.2**	**+0.3**	
	comp=Z,8.8nm,0.8s								
COP	**Copenhagen**	**76.98**	**333**	*e*P		**P**	**01 47 54.2**	**+0.3**	
COP				pmax	pmax				
	comp=Z,9.0nm,0.8s								
CCUT	**Cedar City**	**77.29**	**52**	*e*P		**P**	**01 47 57.0**	**+0.6**	
	comp=Z,5.5nm,1.3s								
KWP	**Kalwaria Pacla**	**77.38**	**325**	*e*P		**P**	**01 47 57.1**	**+0.7**	
KWP				*e*			01 48 07.5		
KWP	**Kalwaria Pacla**	**77.38**	**325**	*e*P		**P**	**01 47 57.1**	**+0.7**	
KWP				*e*			01 48 07.5		
BUR08	**Bucovina Ar. S**	**77.61**	**322**	*e*P		**P**	**01 47 58.4**	**+0.5**	
BURAR	**Bucovina Array**	**77.62**	**322**⇑	*i*P		**P**	**01 47 58.1**	**+0.2**	
BURAR	**Bucovina Array**	**77.62**	**322**	⇑P		**P**	**01 47 58.1**	**+0.2**	
P17A	**Butcher Ranch,**	**77.67**	**49**	*e*P		**P**	**01 47 58.8**	**+0.4**	
	comp=Z,5.5nm,0.8s								
TESR	**Tescani**	**77.68**	**320**⇑	*i*P		**P**	**01 47 57.4**	**-0.7**	
LCMT	**Little Creek M**	**77.70**	**52**	*e*P		**P**	**01 47 59.7**	**+1.1**	
	comp=Z,5.5nm,1.3s								
MTPU	**Mount Pierson**	**77.71**	**51**	*e*P		**P**	**01 48 00.4**	**+1.5**	
	comp=Z,3.6nm,0.9s								
Q16A	**Castle Valley**	**77.77**	**50**	*e*P		**P**	**01 48 00.5**	**+1.6**	
	comp=Z,8.6nm,1.4s								
CFR	**Carcaliu**	**77.84**	**319**⇑	*i*P		**P**	**01 47 57.4**	**-1.5**	
CFR	**Carcaliu**	**77.84**	**319**	⇑P		**P**	**01 47 57.4**	**-1.5**	
KNB	**Kanab**	**77.96**	**52**	*e*P		**P**	**01 48 02.0**	**+1.9**	
KNB				pmax	pmax				
	comp=Z,15nm,1.6s								
KNB	**Kanab**	**77.96**	**52**	*e*P		**P**	**01 48 02.0**	**+1.9**	
	comp=Z,15nm,1.6s								
ULM	**Lac du Bonnet**	**78.01**	**34**	P		**P**	**01 47 59.9**	**+0.1**	
	comp=Z,2.3nm,0.7s,baz=355,slow=7.6,SNR=3.3								
SRU	**San Rafael Swe**	**78.03**	**49**	*e*P		**P**	**01 48 01.6**	**+1.1**	
SRU				pmax	pmax				
	comp=Z,5.0nm,0.8s								
SRU	**San Rafael Swe**	**78.03**	**49**	*e*P		**P**	**01 48 01.6**	**+1.1**	
	comp=Z,5.2nm,0.8s								
KOLS	**Kolonicke sedl**	**78.08**	**324**	*e*P		**P**	**01 48 01.3**	**+1.0**	
KOLS				*e*			01 48 10.3		
KOLS				pmax	pmax				
	comp=Z,5.0nm,1.1s								
KOLS	**Kolonicke sedl**	**78.08**	**324**	*e*P		**P**	**01 48 01.3**	**+1.0**	
KOLS				*e*			01 48 10.3		
PLOR	**Plostina**	**78.14**	**320**⇓	*i*P		**P**	**01 48 01.6**	**+0.9**	
PLOR	**Plostina**	**78.14**	**320**	⇓P		**P**	**01 48 01.7**	**+1.0**	
TIRR	**Tirgusor**	**78.18**	**318**⇑	*i*P		**P**	**01 48 01.0**	**+0.2**	
TIRR	**Tirgusor**	**78.18**	**318**	*e*P		**P**	**01 48 01.1**	**+0.2**	
TIRR	**Tirgusor**	**78.18**	**318**	*e*P		**P**	**01 48 01.1**	**+0.2**	
STHS	**Stebnicka Huta**	**78.20**	**325**	*e*P		**P**	**01 48 01.9**	**+1.0**	
STHS				*e*			01 48 12.7		
STHS				pmax	pmax				
	comp=Z,5.0nm,0.9s								
STHS	**Stebnicka Huta**	**78.20**	**325**	*e*P		**P**	**01 48 01.9**	**+1.0**	
STHS				*e*			01 48 12.7		
OJC	**Ojcow**	**78.25**	**326**	*e*P		**P**	**01 48 02.1**	**+0.9**	
OJC				*e*			01 48 12.2		
OJC	**Ojcow**	**78.25**	**326**	*e*P		**P**	**01 48 02.1**	**+0.9**	
OJC				*e*			01 48 12.1		
TLB	**Topalu**	**78.29**	**318**⇓	*i*P		**P**	**01 48 00.7**	**-0.8**	
TLB	**Topalu**	**78.29**	**318**	⇓P		**P**	**01 48 00.7**	**-0.8**	
BR131	**Keskin Array S**	**78.41**	**312**	*e*P		**P**	**01 48 03.1**	**+0.6**	
BRTR	**Keskin Array B**	**78.41**	**312**	P		**P**	**01 48 02.6**	**+0.1**	
	comp=Z,21nm,0.4s,baz=48,slow=4.6,SNR=8.1								
BRTR	**Keskin Array B**	**78.41**	**312**	P		**P**	**01 48 02.6**	**+0.1**	
BRTR				pmax	pmax				
	comp=Z,1.0nm,0.5s								
CRVS	**Cervenica-Dubn**	**78.47**	**325**	*e*P		**P**	**01 48 03.4**	**+0.9**	
CRVS	**Cervenica-Dubn**	**78.47**	**325**	*e*P		**P**	**01 48 03.4**	**+0.9**	
NIE	**Niedzica**	**78.62**	**326**	*e*P		**P**	**01 48 04.5**	**+1.1**	
NIE				*e*			01 48 14.7		
NIE	**Niedzica**	**78.62**	**326**	*e*P		**P**	**01 48 04.4**	**+1.1**	
NIE				*e*			01 48 14.7		
U15A	**North Rim**	**78.66**	**52**	*e*P		**P**	**01 48 05.3**	**+1.2**	
DOPR	**Dopca**	**78.69**	**321**⇑	*i*P		**P**	**01 48 04.9**	**+1.2**	
ISR	**Istrita**	**78.70**	**319**⇑	*i*P		**P**	**01 48 04.9**	**+1.1**	
ISR	**Istrita**	**78.70**	**319**	⇑P		**P**	**01 48 04.9**	**+1.1**	
MLR	**Muntele Rosu**	**78.75**	**320**⇓	*i*P		**P**	**01 48 04.6**	**+0.4**	
MLR	**Muntele Rosu**	**78.75**	**320**	*e*P		**P**	**01 48 05.9**	**+1.7**	
MLR	**Muntele Rosu**	**78.75**	**320**	*e*P		**P**	**01 48 05.9**	**+1.7**	
VOIR		**79.23**	**320**⇑	*i*P		**P**	**01 48 07.6**	**+0.8**	
VOIR		**79.23**	**320**	⇑P		**P**	**01 48 07.6**	**+0.8**	
KSP	**Ksiaz**	**79.27**	**328**	*e*P		**P**	**01 48 07.7**	**+0.9**	
KSP				*e*			01 48 17.8		
KSP	**Ksiaz**	**79.27**	**328**	*e*P		**P**	**01 48 07.7**	**+0.9**	
KSP				*e*			01 48 17.8		
PV10	**Paradox Valley**	**79.39**	**49**	*e*P		**P**	**01 48 09.9**	**+1.9**	
ARR	**Arges**	**79.49**	**321**⇓	*i*P		**P**	**01 48 09.5**	**+1.3**	
PV05	**Paradox Valley**	**79.55**	**49**	*e*P		**P**	**01 48 10.2**	**+1.4**	
MORC	**Moravsky Berou**	**79.55**	**327**⇑	*i*P		**P**	**01 48 08.8**	**+0.4**	
MORC	**Moravsky Berou**	**79.55**	**327**	*e*P		**P**	**01 48 09.2**	**+0.8**	
MORC	**Moravsky Berou**	**79.55**	**327**	*e*P		**P**	**01 48 09.2**	**+0.8**	
DPC	**Dobruska-Polom**	**79.63**	**328**	*e*P		**P**	**01 48 09.7**	**+0.9**	
DPC				*ep*P		**PcP**	**01 48 17.6**	**+1.0**	
DPC				*es*P		**sP**	**01 48 24.7**	**+2.0**	
DPC	**Dobruska-Polom**	**79.63**	**328**	*e*P		**P**	**01 48 09.7**	**+0.9**	
DPC				*e*			01 48 17.6		
DPC				*e*			01 48 24.7		
WUAZ	**Wupatki**	**79.82**	**53**	*e*P		**P**	**01 48 11.8**	**+1.5**	
	comp=Z,5.3nm,1.0s								
PV01	**Paradox Valley**	**79.83**	**49**	*e*P		**P**	**01 48 09.8**	**-0.6**	
	comp=Z,323nm,1.1s								
VYHS	**Vyhne**	**79.95**	**326**	*e*P		**P**	**01 48 11.1**	**+0.5**	
VYHS				*e*			01 48 21.4		
VYHS				pmax	pmax				
	comp=Z,4.0nm,1.1s								
VYHS	**Vyhne**	**79.95**	**326**	*e*P		**P**	**01 48 11.1**	**+0.5**	
VYHS				*e*			01 48 21.4		
BRG	**Berggiesshubel**	**80.19**	**330**	*e*P		**P**	**01 48 11.8**	**+0.1**	
	comp=Z,4.1nm,1.0s								
BRG				*e*			01 48 21.1		
	comp=Z,6.9nm,0.8s								
BRG	**Berggiesshubel**	**80.19**	**330**	*e*P		**P**	**01 48 11.8**	**+0.1**	
BRG				*e*			01 48 21.1		
BRG				pmax	pmax				
	comp=Z,4.0nm,1.0s								
CLL	**Collm**	**80.22**	**330**	*i*P		**P**	**01 48 11.4**	**-0.5**	
	comp=Z,5.0nm,0.8s								
CLL				*i*			01 48 20.8		
	comp=Z,14nm,0.8s								
CLL				LmV			02 26 00.0		
	comp=Z,200nm,18.9s								
CLL	**Collm**	**80.22**	**330**	*i*P		**P**	**01 48 11.4**	**-0.5**	
CLL				*i*			01 48 20.8		
CLL				pmax	pmax				
	comp=Z,5.0nm,0.8s								
CLL				MLR	MLR				
	comp=Z,200nm,18.9s								
CLL	**Collm**	**80.22**	**330**	*e*P		**P**	**01 48 11.8**	**0.0**	
VRAC	**Vranov**	**80.31**	**327**	P		**P**	**01 48 13.5**	**+1.0**	
	comp=Z,3.2nm,0.8s,baz=52,slow=2.9,SNR=5.6								
VRAC	**Vranov**	**80.31**	**327**	*i*P		**P**	**01 48 13.4**	**+1.0**	
RAR	**Rarotonga**	**80.46**	**127**	LR		LR	02 26 17.7		
	comp=Z,23nm,18.1s,baz=298,slow=37								
X16A	**Lo Mia Camp, P**	**80.48**	**54**	*e*P		**P**	**01 48 15.5**	**+1.6**	
GOPC	**GO Pecny, Ondr**	**80.60**	**329**	AMS		AMS	02 25 50.0		
	comp=Z,200nm,14.7s								
NKC	**Novy Kostel**	**81.28**	**330**	*ep*P		**pP**	**01 48 27.2**	**-0.6**	
NKC				AMS		AMS	02 27 20.0		
	comp=Z,200nm,17.3s								
CONA	**Conrad Observa**	**81.68**	**327**	*i*P		**P**	**01 48 20.8**	**+0.9**	
	comp=Z,6.6nm,0.9s								
KHC	**Kasperske Hory**	**81.70**	**329**	*e*P		**P**	**01 48 20.2**	**+0.3**	
KHC				*ep*P		**pP**	**01 48 29.2**	**-0.9**	
KHC				*es*P		**sP**	**01 48 35.4**	**+1.6**	
KHC				AMS		AMS	02 26 20.0		
	comp=Z,300nm,17.7s								
KHC	**Kasperske Hory**	**81.70**	**329**	*e*P		**P**	**01 48 20.2**	**+0.3**	
KHC				*e*			01 48 29.2		
KHC				*e*			01 48 35.4		
KHC				MLR	MLR				
	comp=Z,300nm,17.7s								
KHC	**Kasperske Hory**	**81.70**	**329**	*e*P		**P**	**01 48 20.1**	**+0.2**	
GERES	**GERESS Array B**	**81.88**	**329**	P		**P**	**01 48 20.8**	**-0.2**	
	comp=Z,1.2nm,0.8s,baz=29,slow=3.0,SNR=5.9								
GERES				pP		**pP**	**01 48 30.2**	**-0.9**	
	comp=Z,1.9nm,0.6s,baz=40,slow=5.2,SNR=11								
GEA0	**GERESS Array S**	**81.88**	**329**	*e*P		**P**	**01 48 20.7**	**-0.2**	
EKA	**Eskdalemuir Ar**	**82.05**	**341**	P		**P**	**01 48 21.9**	**+0.4**	
	comp=Z,0.3nm,0.4s,baz=23,slow=5.6,SNR=6.6								
EKA	**Eskdalemuir Ar**	**82.05**	**341**	P		**P**	**01 48 22.0**	**+0.4**	
VTS	**Vitosha**	**82.19**	**319**	*e*P		**P**	**01 48 22.7**	**-0.1**	
VTS	**Vitosha**	**82.19**	**319**	*e*P		**P**	**01 48 22.7**	**-0.1**	
GRFO	**Grafenberg**	**82.20**	**330**	*e*P		**P**	**01 48 23.5**	**+1.1**	
GRFO				pmax	pmax				
	comp=Z,3.0nm,0.7s								
GRFO	**Grafenberg**	**82.20**	**330**	*e*P		**P**	**01 48 23.5**	**+1.1**	
	comp=Z,3.4nm,0.7s								
ARSA	**Arzberg**	**82.35**	**327**	*i*P		**P**	**01 48 21.7**	**-1.6**	
	comp=Z,5.8nm,1.3s								
MOA	**Molln**	**82.42**	**328**	*i*P		**P**	**01 48 25.0**	**+1.3**	
	comp=Z,5.2nm,1.0s								
SOKA	**Soboth**	**83.00**	**326**	*i*P		**P**	**01 48 27.4**	**+0.6**	
	comp=Z,14nm,1.0s								
ANMO	**Albuquerque**	**83.22**	**50**	*e*P		**P**	**01 48 25.9**	**-2.4**	
ANMO				pmax	pmax				
	comp=Z,2.0nm,1.0s								
ANMO	**Albuquerque**	**83.22**	**50**	*e*P		**P**	**01 48 29.7**	**+1.4**	
OBKA	**Obir**	**83.35**	**327**	*i*P		**P**	**01 48 29.0**	**+0.4**	
	comp=Z,5.5nm,0.9s								
KBA	**Koelnbreinsper**	**83.41**	**328**	*i* PcP		**P**	**01 48 31.1**	**+2.1**	
	comp=Z,6.1nm,0.6s								
MYKA	**Terra Mystica**	**83.64**	**327**	*i*P		**P**	**01 48 29.9**	**-0.2**	
	comp=Z,6.0nm,0.8s								
CWF	**Charnwood Fore**	**83.85**	**339**	*e*P		**P**	**01 48 30.0**	**-0.9**	
WATA	**Walderalm**	**83.94**	**329**	*i*P		**P**	**01 48 30.4**	**-1.3**	
	comp=Z,2.5nm,0.5s								
WTTA	**Wattenberg**	**83.97**	**329**	*i*P		**P**	**01 48 32.2**	**+0.3**	
	comp=Z,4.7nm,0.9s								
ABTA	**Abfaltersbach**	**84.02**	**328**	*i*P		**P**	**01 48 28.7**	**-3.4**	
	comp=Z,3.6nm,0.8s								
MOTA	**Moosalm**	**84.13**	**329**	*i*P		**P**	**01 48 33.1**	**+0.4**	
	comp=Z,13nm,1.2s								
RETA	**Reutte**	**84.15**	**329**	*i* PcP		**P**	**01 48 33.4**	**+0.8**	
	comp=Z,17nm,1.3s								
PDG	**Podgorica**	**84.29**	**321**⇑	*i*P		**P**	**01 48 33.1**	**-0.3**	
BFO	**Black Forest**	**84.41**	**331**	*e*P		**P**	**01 48 36.1**	**+2.2**	
BFO				pmax	pmax				
	comp=Z,2.0nm,0.9s								
BFO	**Black Forest**	**84.41**	**331**	*e*P		**P**	**01 48 36.1**	**+2.2**	
	comp=Z,1.9nm,0.9s								
FETA	**Feichten**	**84.54**	**329**	*i*P		**P**	**01 48 35.1**	**+0.3**	
	comp=Z,8.8nm,1.0s								
DAVA	**Damuels**	**84.66**	**330**	*i* PcP		**P**	**01 48 35.7**	**+0.3**	
	comp=Z,16nm,1.0s								
PPT	**Papete**	**84.69**	**117**	LR		LR	02 19 15.4		
	comp=Z,59nm,20.2s,baz=12,slow=31								
PPT2	**Papeete2**	**84.70**	**117**	*e*LR		LR	02 14 57.0		
	comp=Z,158nm,24.8s								
PPT2	**Papeete2**	**84.70**	**117**	*e*T		T	03 21 49.9		
	comp=Z,2.4nm,0.2s								
DSB	**Dublin**	**84.75**	**342**	*e*P		**P**	**01 48 36.1**	**+0.7**	
FUORN	**Ofenpass-Fuorn**	**85.05**	**329**	*e*P		**P**	**01 48 38.1**	**+0.6**	
TUE	**Stuetta**	**85.54**	**329**	*e*P		**P**	**01 48 41.6**	**+1.7**	
	comp=Z,1.2nm,0.6s								
TAOE	**Nuku Hiva Isla**	**85.89**	**105**	*e*LR		LR	02 15 32.7		
	comp=Z,128nm,29.4s								
MEH	**Mehetia**	**85.95**	**116**	*e*T		T	03 23 24.0		
	comp=Z,23nm,0.2s								
TIP	**Timpagrande**	**87.99**	**321**	*e*P		**P**	**01 48 51.6**	**-0.2**	
	comp=Z,0.6nm,0.6s								
TBI	**Tubuai**	**88.69**	**121**	*e*LR		LR	02 16 43.5		
	comp=Z,91nm,23.0s								
TBI	**Tubuai**	**88.69**	**121**	*e*T		T	03 26 44.2		
	comp=Z,28nm,0.3s								
TX31	**Lajitas Ar. Si**	**88.78**	**53**	*e*P		**P**	**01 48 56.3**	**+0.5**	
TXAR	**Lajitas Array**	**88.78**	**53**	P		**P**	**01 48 55.8**	**+0.1**	
	comp=Z,1.5nm,0.6s,baz=300,slow=3.4,SNR=28								
LPAZ	**La Paz**	**145.44**	**59**	PKPbc		**PKPbc**	**01 55 40.4**	**-0.3**	
	comp=Z,3.6nm,0.5s,baz=1.5,slow=3.6,SNR=26								

***IDC* 11 01:39:15.5±20.0, 16°06S×176°30W, h298km±213km, mb3.1/4, mb1 3.5/4, mb1mx3.1/34, mbtmp3.8/4, MS3.7/6, Ms1 3.7/6, ms1mx3.6/8, Error ellipse: s-maj=138.6km s-min=41.1km az=160.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**13.21**	**186**	LR	LR	01 46 29.7	
	comp=Z,523nm,20.7s,baz=352,slow=33						
RAR	**Rarotonga**	**16.48**	**111**	LR	LR	01 49 09.5	
	comp=Z,86nm,18.5s,baz=298,slow=36						
DZM	**Mont Dzumac**	**17.36**	**247**	LR	LR	01 48 31.7	
	comp=Z,507nm,20.0s,baz=30,slow=32						
DZM	**Mont Dzumac**	**17.36**	**247**	*e*LR	LR	01 47 47.9	
	520nm,26.4s						
HNR	**Honiara**	**24.07**	**283**	LR	LR	01 51 46.8	
	comp=Z,286nm,21.1s,baz=117,slow=31						
PPT	**Papeete**	**25.62**	**97**	LR	LR	01 51 48.2	
	comp=Z,54nm,19.5s,baz=200,slow=29						
PPT2	**Papeete2**	**25.62**	**97**	*e*LQ	LQ	01 49 15.4	
	389nm,25.0s						
PPT2				*e*LR	LR	01 50 23.0	
	296nm,25.8s						
TBI	**Tubuai**	**26.26**	**110**	*e*LQ	LQ	01 49 39.0	
	500nm,28.8s						
TBI				*e*LR	LR	01 50 46.8	
	152nm,29.8s						
TAOE	**Nuku Hiva Isla**	**35.98**	**83**	*e*LR	LR	01 54 57.5	
	362nm,27.7s						
STKA	**Stephens Creek**	**41.29**	**240**	LR	LR	02 01 59.6	
	comp=Z,130nm,19.4s,baz=39,slow=33						
ASAR	**Alice Springs**	**47.25**	**252**	P	P	01 47 19.7	-0.1
	0.6nm,0.5s,baz=83,slow=7.6,SNR=2.8						
TXAR	**Lajitas Array**	**83.31**	**57**	P	P	01 51 10.4	+0.6
	1.0nm,1.1s,baz=237,slow=3.1,SNR=4.8						
ILAR	**Eielson Array**	**83.65**	**12**	P	P	01 51 10.9	+0.3
	0.5nm,1.0s,baz=197,slow=4.3,SNR=4.1						
PDAR	**Pinedale Array**	**84.63**	**43**	P	P	01 51 15.4	-0.9
	0.7nm,0.7s,baz=199,slow=4.1,SNR=4.8						
GERES	**GERESS Array B**	**146.29**	**348**	PKPbc	PKPbc	01 58 20.7	-0.8
	0.2nm,0.5s,baz=3.8,slow=2.9,SNR=2.5						

NIED **11** *01:43:00,37.40N×141.90E,h26km,Mw3.8 Best double couple: M0 6.34000×10^14 NP1:φs355.00000°,δ58.00000°, λ-155.00000°. NP2:φs252.00000°,δ69.00000°, λ-35.00000°.*
JMA **11** *01:43:44.8±0.2,37.37N×141.89E,h35km±4km,M3.9*
IDC **11** *01:43:46.5±7.5,37.27N×142.13E,h50km±48km,mb3.6/5, mb1 3.7/8,mb1mx3.3/54,mbtmp3.8/8,ML3.0/3,Error ellipse: s-maj=108.0km s-min=19.2km az=69.0*
ISC 11 01:43:41.9±2.0, 37.34N±0.04×141.99E±0.07, h11km±11km, n24, σ1s46/29, mb3.7/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.89**	**272**	P	**Pb**	**01 43 59.9**	**+0.5**
JFK				S	**Sg**	**01 44 10.1**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.98**	**256**	P	**Pb**	**01 44 01.2**	**+0.3**
ONAJ				S	**Sg**	**01 44 12.4**	**-1.1**
JMM	**Marumori**	**1.09**	**299**	P	**Pg**	**01 44 02.8**	**0.0**
JMM				S	**Sb**	**01 44 15.3**	**-1.6**
JIO	**Ouri**	**1.22**	**336**	P	**Pb**	**01 44 04.9**	**-0.2**
JIO				S	**Sb**	**01 44 18.6**	**-2.3**
JFT	**Otama**	**1.33**	**278**	P	**Pb**	**01 44 07.1**	**+0.3**
JFT				S	**Sb**	**01 44 22.6**	**-1.3**
JOU	**Okura**	**1.47**	**315**	P	**Pb**	**01 44 08.9**	**-0.3**
JOU				S	**Sn**	**01 44 26.6**	**-1.0**
JMK	**Ichinoseki**	**1.72**	**340**	P	**Pb**	**01 44 13.0**	**-0.5**
JMK				S	**Sn**	**01 44 33.2**	**-0.6**
JFY	**Yanaizu**	**1.82**	**273**	P	**Pn**	**01 44 13.9**	**+0.7**
JFY				S	**Sn**	**01 44 35.5**	**-0.8**
JYK	**Kaneyama**	**2.03**	**321**	P	**Pn**	**01 44 17.0**	**+0.9**
MJAR	**Matsushiro Arr**	**3.13**	**256**	P	**Pn**	**01 44 34.4**	**+3.2**
	2.5nm,0.3s,baz=87,slow=14,SNR=8.5						
MJAR				S	**Sb**	**01 45 14.6**	**-1.2**
	8.8nm,0.

Borrego Springs, El Cajon, El Centro, Imperial Beach, Pine Valley, San Diego and Santee. Felt in much of San Diego County and in parts of Imperial and Riverside Counties. Felt [II] at Rosarito and Tijuana, Baja California. Also felt at Tecate.

ISC 11 01:58:52.9±0.8, 32°82N±0″02×116°11W±0″02, h16km±5km, n118, σ1§53/162, 11C-9D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRR	Carrizo Plain	0.13	61	*i*P	Pb	01 58 57.4	+0.4
IKP	In-Ko-Pah, Jac	0.17	180	P	Pg	01 58 57.2	0.0
	baz=343,SNR=1000						
IKP				S	Sg	01 58 59.8	-0.5
	baz=343						
IKP	In-Ko-Pah, Jac	0.17	180	⇓*i*P	Pg	01 58 57.3	0.0
IKP				*e*S	Sg	01 58 59.8	-0.5
RMX	La Rumorosa	0.22	173	⇓*i*P	Pg	01 58 57.6	-0.5
RMX				*e*S	Sg	01 59 00.7	-0.9
YUH	Yuha Desert	0.23	138	⇓*i*P	Pg	01 58 58.5	+0.4
MONP2	Monument Peak	0.27	285	P	Pg	01 58 58.8	-0.2
	baz=113,SNR=1000						
MONP2				S	Sg	01 59 02.7	-0.4
	baz=113						
SWSC	Sam W. Stewart	0.29	65	P	Pb	01 59 00.1	+0.4
	baz=245,SNR=1000						
SWSC				S	Sb	01 59 04.5	+0.3
	baz=245						
SWSC	Sam W. Stewart	0.29	65	⇑*i*P	Pb	01 59 00.1	+0.4
COK	Cook Ranch	0.32	85	⇑*i*P	Pb	01 59 01.0	+0.8
WESC	Westside Schoo	0.32	101	⇑*i*P	Pb	01 59 01.0	+0.8
WESC				*e*S	Sb	01 59 06.1	+0.9
SGL	Mount Signal	0.37	118	⇑*i*P	Pb	01 59 01.3	+0.3
ERPC	Ernies Place	0.38	102	⇑*i*P	Pb	01 59 02.3	+1.1
BAR	Barrett	0.49	253	⇑*e*P	Pg	01 59 02.7	-0.1
BAR				*e*S	Sg	01 59 08.9	-0.6
BAR	Barrett	0.49	253	*e*Pg	Pg	01 59 02.5	-0.2
BAR				*e*Sg	Sg	01 59 08.8	-0.6
DREC	Desert Rsrch C	0.56	92	⇑*e*P	Pb	01 59 05.6	+1.4
TJIG	Tijuana	0.61	231	*e*P	Pg	01 59 04.7	-0.3
TJIG				*e*S	Sg	01 59 12.3	-0.9
TJIG	Tijuana	0.61	231	⇑*e*P	Pg	01 59 04.2	-0.8
TJIG				*e*S	Sg	01 59 12.3	-0.9
CBX	Cerro Bola	0.69	223	*e*P	Pb	01 59 06.4	-0.1
CBX				*e*S	Sg	01 59 15.3	-0.3
CBX	Cerro Bola	0.69	223	⇓*e*P	Pg	01 59 06.2	-0.2
CBX				*e*S	Sg	01 59 15.1	-0.5
CBX				IAML		01 59 18.5	
	comp=N,14μm,0.4s						
CBX				IAML		01 59 18.6	
	comp=E,14μm,0.5s						
CBX	Cerro Bola	0.69	223	*e*P	Pb	01 59 06.4	-0.1
CBX				*e*S	Sg	01 59 15.3	-0.3
SDRC	San Diego Road	0.71	263	⇑*e*P	Pg	01 59 06.2	-0.5
CPBX	Cerro Prieto	0.79	121	⇑*e*P	Pb	01 59 08.7	+0.5
CPBX	Cerro Prieto	0.79	121	*e*P	Pn	01 59 09.3	0.0
CPBX				*e*S	Sn	01 59 21.2	+0.5
TPFO	Pinon Flats	0.83	340	P	Pb	01 59 09.4	+0.4
	baz=163,SNR=862						
TPFO				S	Sg	01 59 20.1	0.0
	baz=163						
PFO	Pinyon Flats O	0.84	340	P	Pb	01 59 09.6	+0.4
	baz=163,SNR=977						
PFO				S	Sg	01 59 20.4	0.0
	baz=163						
PFO	Pinyon Flats O	0.84	340	*e*Pg	Pb	01 59 09.4	+0.3
PFO				*e*Sg	Sg	01 59 20.2	-0.2
109C	Camp Elliot, M	0.84	275	P	Pg	01 59 08.6	-0.6
	baz=96,SNR=551						
109C				S	Sg	01 59 19.2	-1.2
	baz=96						
MBIG	Mexicali	0.87	118	*e*P	Pg	01 59 10.4	+0.6
MBIG				*e*S	Sg	01 59 21.7	+0.4
MBIG	Mexicali	0.87	118	*e*P	Pb	01 59 09.9	+0.3
BC3	Big Chuckawall	0.99	33	P	Pb	01 59 11.8	0.0
	baz=215,SNR=352						
BC3				S	Sg	01 59 26.1	+0.8
	baz=215						
GLA	Glamis	1.10	78	P	Pb	01 59 13.3	-0.3
	baz=258,SNR=548						
GLA	Glamis	1.10	78	*e*Pg	Pb	01 59 13.3	-0.3
GLA				*e*Sg	Sb	01 59 26.7	-0.9
BELC	Belle Mtn. Jos	1.18	4	P	Pn	01 59 14.5	-0.3
	baz=187,SNR=375						
MURC	Murrieta	1.20	311	P	Pn	01 59 15.1	+0.2
	baz=133,SNR=291						
MURC				S	Sn	01 59 31.0	+0.1
	baz=133						
PBX	Punta Banda	1.20	206	⇓*e*P	Pn	01 59 14.3	-0.6
ECNX	Esteban Cantu	1.23	200	⇓*e*P	Pb	01 59 15.2	-0.7
ECNX				⇓*e*P	Pn	01 59 12.5	-3.0
ZAX	El Zacaton	1.31	186	⇓*e*P	Pn	01 59 16.3	-0.3
IRM	Iron Mountain	1.56	31	P	Pn	01 59 20.1	+0.2
	baz=212,SNR=58						
BBRC	Big Bear Solar	1.59	335	P	Pn	01 59 21.2	+0.7
	baz=156,SNR=42						
BBRC				Sb	Sg	01 59 43.6	-0.6
	baz=156						
Y12C	Blythe	1.62	55	P	Pn	01 59 20.7	0.0
	baz=236,SNR=23						
Y12C	Blythe	1.62	55	*e*Pn	Pn	01 59 21.1	+0.4
SPX	San Pedro Mart	1.85	163	⇓*e*P	Pn	01 59 25.0	+0.7
SPX	San Pedro Mart	1.85	163	*e*P	Pb	01 59 27.1	+0.6
SPX				*e*S	Sb	01 59 51.1	+1.4
SSK	Sunset Peak	1.92	317	*e*Pn	Pb	01 59 28.0	+0.5
BFSC	Mount Baldy Ra	1.92	318	Pb	Pb	01 59 27.8	+0.4
	baz=139,SNR=242						
BFSC				Sb	Sb	01 59 52.4	+1.2
	baz=139						
113A	Mohawk Valley,	1.97	91	*e*Pn	Pn	01 59 25.7	+0.1
GMRC	Granite Mounta	1.99	11	P	Pn	01 59 26.2	+0.3
	baz=192,SNR=118						
HEC	Hector,Ludlow	2.01	355	P	Pn	01 59 26.6	+0.4
	baz=176,SNR=73						
CIS	Catalina Islan	2.02	287	P	Pn	01 59 26.8	+0.5
	baz=107,SNR=35						
FMP	Fort Macarthur	2.03	296	P	Pn	01 59 27.3	+0.9
	baz=117,SNR=12						
SCI2	San Clemente I	2.06	275	P	Pn	01 59 27.4	+0.6
	baz=94,SNR=30						
SCI2				S	Sn	01 59 52.1	+0.1
	baz=94						
MWC	Mount Wilson	2.15	311	*e*Pn	Pb	01 59 30.4	-1.0
MWC				*e*Sn	Sb	01 59 56.8	-1.0
RRX	Edison Barstow	2.18	340	Pg	Pg	01 59 34.1	-0.6
	baz=161,SNR=19						
RRX				Sb	Sg	02 00 01.7	-1.2
	baz=161						
PASC	Pasadena Art C	2.19	308	*e*Pn	Pb	01 59 32.0	-0.1
PASC				*e*S	Sb	01 59 59.8	+0.7
FLSC	Flash Two Peak	2.28	340	*e*Pn	Pg	01 59 36.0	-0.5
NEE2	Needles Airpor	2.30	32	P	Pn	01 59 30.7	+0.6
	baz=214,SNR=14						
DECC	Green Verdugo	2.34	308	Pb	Pb	01 59 34.8	+0.1
	baz=128						
DECC				Sb	Sb	02 00 05.4	+2.0
	baz=128						
LDFC	Landfair	2.40	20	*e*Pn	Pn	01 59 32.9	+1.3
GSC	Goldstone, Bar	2.54	347	P	Pn	01 59 34.1	+0.6
	baz=168,SNR=12						
GSC	Goldstone, Bar	2.54	347	*e*Pn	Pn	01 59 34.2	+0.8
EDW2	Edwards Air Fo	2.58	323	P	Pn	01 59 34.7	+0.7
	baz=143						
EDW2				Sb	Sb	02 00 12.8	+2.5
	baz=143						
TUQ	Turquoise Moun	2.61	3	P	Pn	01 59 35.1	+0.6
	baz=184,SNR=9.1						
BLG	Laguna Peak, P	2.78	298	P	Pn	01 59 37.8	+1.0
	baz=118						
OSI	Osito Audit: C	2.82	310	*e*Pn	Pn	01 59 39.2	+1.9
Y14A	Wickenburg	2.83	66	*e*Pn	Pn	01 59 38.3	+1.0
Y14A				*e*Sn	Sn	02 00 12.5	+1.4
SNCC	San Nicolas Is	2.90	279	P	Pn	01 59 38.9	+0.5
	baz=98						
SNCC	San Nicolas Is	2.90	279	*e*Pn	Pn	01 59 38.3	0.0
214A	Organ Pipe Nat	2.92	106	P	Pn	01 59 39.6	+0.9
	baz=288						
214A				S	Sn	02 00 13.9	+0.5
	baz=288						
214A	Organ Pipe Nat	2.92	106	*e*Pn	Pn	01 59 39.6	+0.9
214A				*e*S	Sb	02 00 17.6	-2.4
W13A	Hualapai Mount	2.93	39	*e*Pn	Pn	01 59 40.0	+1.1
SCZ2	Santa Cruz Isl	3.17	293	P	Pn	01 59 42.8	+0.7
	baz=112						
ARVC	Arvin	3.22	316	Sb	Sb	02 00 32.1	+3.4
	baz=136						
MPMC	Manual Prospec	3.42	341	P	Pn	01 59 46.2	+0.5
	baz=161						
ISA	Isabella, Lake	3.44	326	*e*Pn	Pn	01 59 47.5	+1.6
DAC	Darwin (Calif)	3.66	341	*e*Pn	Pn	01 59 50.0	+1.1
DAC				*e*Pg	Pg	02 00 00.5	-2.5
DAC				*e*S	Sg	02 00 48.2	-2.2
SHPR	Sheep Range	3.76	12	*e*Pn	Pn	01 59 51.7	+1.5
TPNV	Topopah Spring	4.12	358	P	Pn	01 59 56.9	+1.7
	baz=179,SNR=25						
TPNV	Topopah Spring	4.12	358	*e*Pn	Pn	01 59 57.0	+1.7
X16A	Lo Mia Camp, P	4.21	67	*e*Pn	Pn	01 59 58.4	+1.9
GRAC	Grapevine Rang	4.29	346	P	Pn	01 59 58.7	+1.2
	baz=166						
TUC	Tucson	4.52	95	P	Pn	02 00 01.8	+1.1
	baz=278						
TUC	Tucson	4.52	95	*e*Pn	Pn	02 00 02.2	+1.4
TUC				*e*S	Sg	02 01 16.9	-1.2
WUAZ	Wupatki	4.76	54	P	Pn	02 00 05.6	+1.6
	baz=237,SNR=6.5						
WUAZ	Wupatki	4.76	54	*e*Pn	Pn	02 00 06.5	+2.4
WUAZ				*e*S	Sn	02 01 01.8	+2.9
U15A	North Rim	4.78	40	*e*Pn	Pn	02 00 06.8	+2.4
LCMT	Little Creek M	4.80	29	*e*Pn	Pn	02 00 06.8	+2.3
KNB	Kanab	4.98	32	*e*Pn	Pn	02 00 09.6	+2.5
EKU	East Kanab	5.18	34	*e*Pn	Pn	02 00 12.4	+2.6
CCUT	Cedar City	5.22	25	*e*Pn	Pn	02 00 12.1	+1.6
X18A	Snowflake	5.41	70	*e*Pn	Pn	02 00 14.8	+1.8
X18A				*e*Sn	Sn	02 01 14.8	-0.2
BHU	Blowhard Mount	5.45	28	*e*Pn	Pn	02 00 16.9	+3.1
R11A	Troy Canyon, C	5.53	4	*e*Pn	Pn	02 00 17.1	+2.5
R11A				*e*Pg	Pg	02 00 36.6	-2.2
R11A				*e*S	Sg	02 01 47.1	-3.3
PKCU	Pink Cliffs	5.56	33	*e*Pn	Pn	02 00 17.9	+2.7
W18A	Petrified Fore	5.77	65	*e*Pn	Pn	02 00 20.4	+2.5
W18A				*e*S	Sg	02 01 54.9	-3.1
PSUT	Pine Spring	5.99	17	*e*Pn	Pn	02 00 20.9	-0.1
MTPU	Mount Pierson	6.11	30	*e*Pn	Pn	02 00 25.7	+2.9
CMB	Columbia Colle	6.26	327	*e*Pn	Pn	02 00 25.7	+1.1
CMB				*e*S	Sb	02 01 55.6	-0.5
WAKR	Walker	6.28	335	*e*Pn	Pn	02 00 28.0	+3.0
WAKR				*e*Sn	Sn	02 01 42.3	+5.8
MMU	Miners Mountai	6.65	35	*e*Pn	Pn	02 00 33.1	+3.0
121A	Cookes Peak, D	7.02	90	P	Pn	02 00 36.4	+1.2
	baz=274,SNR=24						
121A	Cookes Peak, D	7.02	90	*e*Pn	Pn	02 00 35.9	+0.7
	comp=E,12nm,0.4s						
AFDM	Forest Hills D	7.27	329	*e*Pn	Pn	02 00 40.3	+1.8
Q16A	Castle Valley	7.28	32	*e*Pn	Pn	02 00 39.1	+0.4
MVCO	Mesa Verde	7.62	53	*e*Pn	Pn	02 00 45.0	+1.6
MVCO				*e*Pg	Pb	02 00 58.0	-6.8
BMN	Battle Mountai	7.65	354	*e*Pn	Pn	02 00 43.3	-0.4
LAZ	Ladron	7.65	76	*e*Pn	Pn	02 00 42.8	-1.0
SRU	San Rafael Swe	7.74	34	*e*Pn	Pn	02 00 48.1	+3.1
DUG	Dugway, Tooele	7.82	19	*e*Pn	Pn	02 00 51.3	+5.2
ELK	Elko	7.94	5	*e*Pn	Pn	02 00 50.6	+2.9
PV10	Paradox Valley	7.99	44	*e*Pn	Pn	02 00 50.2	+1.7
WMUT	West Mountain	8.02	24	*e*Pn	Pn	02 00 51.8	+3.0
PV09	Paradox Valley	8.02	43	*e*Pn	Pn	02 00 52.2	+3.4
BNM	Barren Site	8.03	78	*e*Pn	Pn	02 00 49.5	+0.5
PV01	Paradox Valley	8.12	47	*e*Pn	Pn	02 00 53.0	+2.8
P18A	Preston Nutter	8.28	33	*e*Pn	Pn	02 00 56.5	+4.0
MNTX	Cornudas Mount	9.15	94	*e*Pn	Pn	02 01 04.9	+0.7
BEI	Bear River Ran	9.89	19	*e*Pn	Pn	02 01 11.5	-3.0
G04A	Mulino	13.31	340	*e*Pn	P	02 02 07.9	-2.8

IDC 11 02:08:12.1±2.9, 30°45S×176°76W, h0km, mb3.6/2, mb1 3.8/2, mb1mx3.5/34, mbtmp3.6/2, Error ellipse: s-maj=78.5km s-min=26.8km az=56.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.56	320	Pn	Pb	02 08 41.5	-0.3
	71nm,0.3s,baz=125,slow=16,SNR=1.9						
RAO				Sn	Sg	02 09 03.2	+1.0
	148nm,0.3s,baz=171,slow=24,SNR=8.4						
ASAR	Alice Springs	44.17	266	P	P	02 16 23.1	+0.1
	0.3nm,0.4s,baz=104,slow=7.9,SNR=5.7						
WRA	Warramunga Arr	45.16	272	P	P	02 16 29.8	-1.1
	0.2nm,0.3s,baz=111,slow=6.3,SNR=5.2						
TORD	Torodi Ar. Bea	162.72	175	PKPab	PKPab	02 29 05.1	0.0
	0.4nm,1.0s,baz=188,slow=4.2,SNR=2.4						

*ISCJB **11** 02:10:23.6±0.4, 9°.40N±0°.04×122°.19E±0°.04, h10km, mb4.1/21, MS3.4/10, Error ellipse: s-maj=6.5km s-min=5.0km az=168.2*
*IDC **11** 02:10:23.8±0.6, 9°.42N×122°.15E, h0km, mb4.1/17, mb1 4.2/17, mb1mx4.0/54, mbtmp4.1/17, MS3.5/12, Ms1 3.5/12, ms1mx3.2/48, Error ellipse: s-maj=26.5km s-min=12.5km az=72.0*
*NEIC **11** 02:10:25.3±0.4, 9°.44N×122°.19E, h10km, mb4.3/3, Error ellipse: s-maj=13.3km s-min=8.0km az=71.0*
NEIC Felt [II PIVS] at Jinoba-an and Sipalay.
*MAN **11** 02:10:25, 9°.48N×122°.21E, h6km, mb4.5, ML3.6, MS3.5*
MAN INTENSITY II - SIPALAY AND HINOBA-AN NEGROS OCCIDENTAL.

ISC 11 02:10:25.0±0.5, 9°50N±0°.05×122°24E±0°.04, h10km, n39, σ1§47/37, mb4.2/21, MS3.3/10, 2C-3D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	Sibulan	1.00	99	⇓*i*P	Pg	02 10 40.0	-4.2
SNPH				*i* S	Sg	02 10 56.0	-1.2
RCP	Roxas	2.10	14	⇓*e*P	Pn	02 11 01.8	+1.4
RCP				*e*S	Sb	02 11 29.5	0.0
CGP	Cagayan de Oro	2.64	113	⇑*e*P	Pn	02 11 09.6	+1.9
CGP				*e*S	Sb	02 11 46.1	+1.1
PLP	Palo	3.16	58	⇓*e*P	Pn	02 11 16.0	+1.1
PPR	Puerto Princes	3.47	275	*e*P	Pn	02 11 20.2	+1.0
PPR				*e*S	Sn	02 11 59.5	-0.8
DAV	Davao City (W)	4.10	126	LR	LR	02 12 47.7	
	comp=Z,380nm,19.6s,baz=346,slow=35						
DAV	Davao City (W)	4.10	126	⇑*e*P	Pn	02 11 32.3	+4.5
KKM	Kota Kinabalu	6.89	240	*e*Pn	Pn	02 12 06.2	-0.1
	18nm,0.4s						
KKM				*e*S	Sn	02 13 23.0	-1.8
KAPI	Kappang	14.63	190	LR	LR	02 19 32.4	
	comp=Z,184nm,20.8s,baz=7.3,slow=38						
GUMO	Guam	22.54	77	LR	LR	02 22 36.2	
	comp=Z,64nm,21.6s,baz=319,slow=32						
PSI	Prapat	24.11	255	P	P	02 15 40.5	-0.8
	4.5nm,0.5s,baz=85,slow=17,SNR=4.7						
CMAR	Chiang Mai Arr	24.27	294	P	P	02 15 43.1	+0.4
	0.8nm,0.3s,baz=96,slow=7.8,SNR=6.1						
CMAR				LR	LR	02 25 00.7	
	comp=Z,83nm,20.2s,baz=105,slow=36						
JNU	Nakatsue	24.82	17	LR	LR	02 24 19.8	
	comp=Z,111nm,22.0s,baz=299,slow=34						
KSRS	Korea Array	28.30	10	LR	LR	02 27 24.9	
	comp=Z,68nm,19.8s,baz=195,slow=36						
MJAR	Matsushiro Arr	30.57	26	LR	LR	02 27 42.8	
	comp=Z,54nm,19.2s,baz=195,slow=34						
WRAB	Tennant Creek	31.59	158	P	P	02 16 47.5	-0.6
	1.6nm,0.6s						
WRA	Warramunga Arr	31.59	158	P	P	02 16 48.0	-0.2
	1.7nm,0.6s,baz=338,slow=9.5,SNR=10						
WRA				PcP	PcP	02 19 40.0	-0.7
	0.6nm,0.6s,baz=334,slow=3.1,SNR=5.2						
ASAR	Alice Springs	34.88	161	P	P	02 17 16.7	-0.2
	2.5nm,0.6s,baz=340,slow=7.2,SNR=41						
ASAR				PcP	PcP	02 19 49.2	-0.7
	0.6nm,0.5s,baz=346,slow=2.7,SNR=7.2						
ASAR				LR	LR	02 34 04.9	
	comp=Z,61nm,18.5s,baz=91,slow=41						
USRK	Ussuriysk Ar.	35.59	12	P	P	02 17 23.3	+0.7
	1.7nm,0.8s,baz=205,slow=8.8,SNR=5.9						
KLR	Kul'dur	40.39	10	P	P	02 18 06.0	+2.9
	0.6nm,0.4s,baz=189,slow=15,SNR=3.8						
SONM	Songino Array	40.48	344	P	P	02 18 04.6	+0.5
	0.5nm,0.6s,baz=161,slow=7.3,SNR=5.1						
SONM				LR	LR	02 37 03.1	
	comp=Z,92nm,18.1s,baz=165,slow=40						
NWAO	Narrogin (SRO)	42.46	186	P	P	02 18 20.7	+0.4
	8.6nm,0.7s,baz=214,slow=5.6,SNR=5.2						
STKA	Stephens Creek	45.12	157	P	P	02 18 42.6	+0.8
	1.7nm,0.6s,baz=326,slow=11,SNR=3.8						
MKAR	Makanchi Array	50.30	325	P	P	02 19 22.6	+0.7
	0.6nm,0.6s,baz=126,slow=8.8,SNR=7.4						
PETK	Petropavlovsk-	52.03	26	LR	LR	02 40 34.8	
	comp=Z,31nm,21.8s,baz=164,slow=35						
AAK	Ala-Archa	53.12	317	P	P	02 19 45.2	+2.0
	1.4nm,0.4s,baz=151,slow=5.5,SNR=2.9						
ZALV	Zalesovo Beam	53.46	333	P	P	02 19 44.7	-0.6
	1.6nm,0.3s,baz=134,slow=8.3,SNR=5.1						
KURBB	Kurchatov Arra	54.50	327	P	P	02 19 53.4	+0.4
	1.0nm,0.5s,baz=119,slow=9.2,SNR=13						
KURK	Kurchatov	54.51	327	*e*P	P	02 19 52.5	-0.5
	16nm,0.5s						
KKAR	Karatay Array	56.00	316	*e*P	P	02 20 04.7	+0.8
	3.2nm,0.8s						
NRIK	Noril'sk	63.82	347	LR	LR	02 50 38.3	
	comp=Z,47nm,19.2s,baz=270,slow=38						
ABKAR	Akbulak array	64.89	320	*e*P	P	02 21 04.5	-0.1
	2.0nm,0.9s						
AKTO	Aktyubinsk	66.39	321	LR	LR	02 51 55.4	
	comp=Z,76nm,19.1s,baz=142,slow=38						
ARCES	ARCESS Array B	83.52	339	P	P	02 22 53.0	+0.1
	1.8nm,1.1s,baz=61,slow=4.2,SNR=2.7						
ARCES	ARCESS Array B	83.52	339	P	P	02 22 53.0	+0.1
AKASG	Malin Array Be	84.63	320	P	P	02 22 57.7	-1.2
	1.1nm,0.6s,baz=65,slow=5.0,SNR=4.4						
INK	Inuvik	86.44	21	P	P	02 23 08.3	+0.7
	0.9nm,0.9s,baz=297,slow=6.8,SNR=2.7						
VNDA	Vanda	89.70	172	P	P	02 23 22.2	-0.7
	0.5nm,0.6s,baz=302,slow=6.9,SNR=6.5						
PLCA	Paso Flores	146.89	162	PKPbc	PKPbc	02 30 08.0	-0.2
	2.2nm,0.7s,baz=279,slow=1.9,SNR=12						

IDC 11 02:24:04.6±2.4, 29°28S×176°20W, h0km, mb3.7/1, mb1 4.0/2, mb1mx3.7/20, mbtmp4.0/2, ML3.8/1, Error ellipse: s-maj=48.4km s-min=29.4km az=19.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.50	270	Pn	Pg	02 24 34.5	+1.1
	184nm,0.3s,baz=83,slow=22,SNR=10						
RAO				Sn	Sn	02 24 55.4	+2.3
	505nm,0.3s,baz=60,slow=16,SNR=9.8						
URZ	Urewera	10.55	210	Pn	Pn	02 26 35.3	-1.7
	0.7nm,0.3s,baz=261,slow=3.5,SNR=3.5						
URZ				Sn	Sn	02 28 36.8	+1.0
	1.6nm,0.3s,baz=122,slow=20,SNR=6.4						
ASAR	Alice Springs	44.75	265	P	P	02 32 19.2	-0.8
	0.5nm,0.4s,baz=103,slow=7.6,SNR=8.9						
WRA	Warramunga Arr	45.64	270	P	P	02 32 25.6	-1.6
	baz=109,slow=7.3,SNR=4.2						
TORD	Torodi Ar. Bea	163.83	173	PKPab	PKPab	02 45 03.5	+1.0
	0.6nm,0.8s,baz=188,slow=2.9,SNR=5.7						

*ISCJB **11** 02:29:34.6±0.9, 38°.60N±0°.06×44°.27E±0°.04, h2km±8km, Error ellipse: s-maj=9.8km s-min=4.4km az=168.6*
*CSEM **11** 02:29:35.7±0.6, 38°.57N×44°.14E, h20km, MD2.9, Error ellipse: s-maj=18.7km s-min=10.0km az=164.0*
*TEH **11** 02:29:36.1, 38°.31N×44°.29E, h31km, ML2.5*
*DDA **11** 02:30:16.5, 38°.79N×44°.58E, h16km, Md2.9*

ISC 11 02:29:34.7±1.5, 38°57N±0°.05×44°25E±0°.03, h11km±12km, n15, σ0§83/28, Turkey-Iran border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BASK	Baskale_VAN	0.55	201	*i* P	Pg	02 29 45.9	+0.5
BASK				*i* S	Sb	02 29 54.8	+0.3
BASK	Baskale_VAN	0.55	201	P	Pg	02 29 45.9	+0.5
BASK				S	Sb	02 29 54.8	+0.3
TVAN	Van	0.66	267	*i* P	Pg	02 29 48.0	+0.4
TVAN				*i* S	Sb	02 29 58.6	+0.9
TVAN	Van	0.66	267	P	Pg	02 29 48.0	+0.4
TVAN				S	Sb	02 29 58.6	+0.9
GEVA	Gevas	0.97	255	*i* P	Pb	02 29 52.5	-1.1
GEVA				*i* S	Sn	02 30 07.8	-0.5
GEVA	Gevas	0.97	255	P	Pb	02 29 52.5	-1.1
GEVA				S	Sn	02 30 07.8	-0.5
HAKT	HAKKARI	1.09	203	*i* P	Pb	02 29 55.0	-0.8
HAKT				*i* S	Sn	02 30 12.3	+0.8
HAKT	HAKKARI	1.09	203	P	Pb	02 29 55.0	-0.8
HAKT				S	Sn	02 30 12.3	+0.8
ISHB	Shabestar	1.11	104	*e*Pg	Pb	02 29 55.5	-0.6
ISHB				*e*AMB	AMB	02 29 59.6	
	comp=Z,1μm,0.1s						
ISHB				*e*Sg	Sb	02 30 10.3	-0.4
IMRD	Marand	1.15	82	*e*Pn	Pb	02 29 56.5	-0.2
IMRD				*e*Sg	Sn	02 30 13.8	+1.0
IMRD				*e*AMB	AMB	02 30 21.2	
	comp=Z,3μm,0.1s						
IMRD	Marand	1.15	82	*e*Pn	Pb	02 29 56.5	-0.2
IMRD				*e*Sg	Sn	02 30 13.8	+1.0
IHRS	Heris	2.21	96	*e*Pn	Pb	02 30 13.3	-1.5
IHRS				*e*AMB	AMB	02 30 19.6	
	comp=Z,503nm,0.1s						
IHRS	Heris	2.21	96	*e*Pn	Pb	02 30 13.3	-1.5
IBST	Bostanabad	2.26	112	*e*Pn	Pb	02 30 15.1	-0.5
IBST				*e*AMB	AMB	02 30 17.4	
	comp=Z,109nm,0.1s						
IBST				*e*Sg	Sb	02 30 43.2	-0.5
IBST	Bostanabad	2.26	112	*e*Pn	Pb	02 30 15.1	-0.5
IBST				*e*Sg	Sb	02 30 43.2	-0.5

*NEIC **11** 02:40:24.3, 32°.14N

σ1§89/27, **mb3.7**/4, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.56**	**290**	P	**Pn**	**02 41 56.7**	**-0.9**
JIO				*e*S	**Sn**	**02 42 14.9**	**-2.5**
OFUJ	**Ofunato**	**1.67**	**314**	P	**Pn**	**02 41 57.8**	**-1.4**
OFUJ				*e*S	**Sn**	**02 42 17.3**	**-2.8**
JMK	**Ichinoseki**	**1.87**	**304**	P	**Pn**	**02 42 01.0**	**-0.9**
JMK				*e*S	**Sn**	**02 42 23.0**	**-2.0**
JOM	**Ohasama**	**2.15**	**316**	P	**Pn**	**02 42 04.1**	**-1.7**
JOM				S	**Sn**	**02 42 30.2**	**-1.9**
JFT	**Otama**	**2.32**	**261**	P	**Pn**	**02 42 08.4**	**+0.3**
JYK	**Kaneyama**	**2.45**	**295**	P	**Pn**	**02 42 09.6**	**-0.3**
JAW	**Awa shima**	**3.17**	**281**	P	**Pn**	**02 42 20.2**	**+0.4**
JAG	**Ashikaga**	**3.36**	**245**	P	**Pn**	**02 42 22.2**	**-0.2**
JAG				S	**Sn**	**02 43 00.9**	**-0.9**
BSO1	**Boso 1**	**3.73**	**210**	P	**Pn**	**02 42 26.4**	**-0.7**
BSO1				*e*S	**Sn**	**02 43 09.1**	**-1.2**
JRY	**Ryogami san**	**3.95**	**242**	P	**Pn**	**02 42 30.7**	**+0.2**
JRY				S	**Sn**	**02 43 13.1**	**-3.2**
MJAR	**Matsushiro Arr**	**4.23**	**252**	P	**Pn**	**02 42 35.3**	**+1.0**
	2.1nm,0.3s,baz=71,slow=13,SNR=9.0						
MAT	**Matsushiro**	**4.23**	**252**	P	**Pn**	**02 42 36.0**	**+1.6**
MAT				*e*S	**Sn**	**02 43 21.6**	**-1.7**
JHJ	**Hachijo jima 2**	**5.55**	**211**	P	**Pn**	**02 42 51.6**	**-1.0**
	9.1nm,0.3s,baz=326,slow=21,SNR=10						
JHJ				S	**Sn**	**02 43 51.6**	**-4.4**
	27nm,0.3s,baz=87,slow=21,SNR=8.4						
USRK	**Ussuriysk Ar.**	**10.53**	**310**	P	Pn	02 44 07.6	+6.8
	0.2nm,0.3s,baz=93,slow=14,SNR=5.6						
KSRS	**Korea Array**	**12.13**	**272**	P	**Pn**	**02 44 25.7**	**+3.0**
	baz=79,slow=12,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**27.43**	**125**	T	T	03 16 10.2	
	baz=317,slow=75,SNR=35						
H11N1	**WAKE ISLAND Hy**	**27.43**	**125**	T	T	03 16 25.6	
	baz=317,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**27.44**	**125**	T	T	03 16 05.3	
	baz=317,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**28.19**	**127**	T	T	03 17 26.5	
	baz=318,slow=76,SNR=12						
H11S3	**WAKE ISLAND Hy**	**28.20**	**127**	T	T	03 17 15.0	
	baz=318,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**28.21**	**127**	T	T	03 17 22.8	
	baz=318,slow=76,SNR=9.3						
SONM	**Songino Array**	**28.50**	**302**	P	**P**	**02 47 26.1**	**+1.0**
	0.8nm,0.8s,baz=105,slow=10,SNR=2.0						
ZALV	**Zalesovo Beam**	**42.38**	**312**	P	**P**	**02 49 24.4**	**+0.6**
	0.6nm,0.5s,baz=80,slow=10,SNR=2.7						
MKAR	**Makanchi Array**	**44.86**	**302**	P	**P**	**02 49 46.5**	**+2.5**
	1.0nm,0.7s,baz=86,slow=10,SNR=8.4						
WRA	**Warramunga Ar**	**58.16**	**190**	P	**P**	**02 51 23.2**	**-0.4**
	0.5nm,0.5s,baz=8.3,slow=7.3,SNR=3.9						

*ISCJB **11** 02:42:21.4±1.0,36.74N±0.06×14.53W±0.09, h10km, Error ellipse: s-maj=12.6km s-min=4.3km az=41.7*
*CSEM **11** 02:42:32.7±0.7,36.23N×13.99W, h20km, mb3.5, Error ellipse: s-maj=30.3km s-min=11.1km az=142.0*
*MDD **11** 02:42:33.8±2.0,36.59N×14.45W, h40km, mb3.5/3, Error ellipse: s-maj=34.0km s-min=10.8km az=136.0, PRXIMO*
*INMG **11** 02:42:37.1±0.7,36.63N×14.49W, h10km, ML2.3, Error ellipse: s-maj=9.4km s-min=2.3km az=127.0*

ISC 11 02:42:28.3±1.6, **36.65N**±0.08×**14.41W**±0.09, **h10km, n50,** σ3§23/67, **Azores-Cape St. Vincent Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMPS	**Porto Santo**	**3.92**	**204**	*e*Sn	**Sn**	**02 44 11.1**	**-3.4**
PMPS				A	A	02 44 14.9	
	14nm,0.6s						
PMPS	**Porto Santo**	**3.92**	**204**	S	**Sn**	**02 44 11.1**	**-3.4**
	7.2nm,0.6s						
PMPS	**Porto Santo**	**3.92**	**204**	S	**Sn**	**02 44 11.1**	**-3.4**
	7.2nm,0.6s						
PMAR	**Madeira**	**4.43**	**208**	*e*Sn	**Sn**	**02 44 22.9**	**-4.4**
PMAR				A	A	02 44 25.2	
	9.3nm,0.7s						
PMAR	**Madeira**	**4.43**	**208**	S	**Sn**	**02 44 22.9**	**-4.4**
	4.7nm,0.7s						
PMAR	**Madeira**	**4.43**	**208**	S	**Sn**	**02 44 22.9**	**-4.4**
	4.7nm,0.7s						
PTEO	**Sao Teotonio**	**4.63**	**77**	*e*Sn	**Sn**	**02 44 29.9**	**-2.3**
PTEO	**Sao Teotonio**	**4.63**	**77**	S	**Sn**	**02 44 29.9**	**-2.3**
PTEO	**Sao Teotonio**	**4.63**	**77**	S	**Sn**	**02 44 29.9**	**-2.3**
PMAFR	**Mafra**	**4.67**	**59**	*e*Pn	**Pn**	**02 43 42.4**	**+3.6**
PMAFR				*e*Sn	**Sn**	**02 44 31.1**	**-2.0**
PMAFR				A	A	02 44 46.1	
	6.4nm,0.6s						
PMAFR	**Mafra**	**4.67**	**59**	P	**Pn**	**02 43 42.0**	**+3.2**
	0.6nm,0.1s,SNR=7.9						
PMAFR				S	**Sn**	**02 44 32.2**	**-0.8**
	1.3nm,0.1s,SNR=7.9						
PMAFR	**Mafra**	**4.67**	**59**	P	**Pn**	**02 43 42.0**	**+3.2**
	0.6nm,0.1s,SNR=7.9						
PMAFR	**Mafra**	**4.67**	**59**	*e*Pn	**Pn**	**02 43 42.4**	**+3.6**
PMAFR				*e*Sn	**Sn**	**02 44 31.1**	**-2.0**
	6.4nm,0.6s						
PMAFR				S	**Sn**	**02 44 32.2**	**-0.8**
	1.3nm,0.1s,SNR=7.9						
PNCL	**Nicolau / Gran**	**4.91**	**71**	*e*Pn	**Pn**	**02 43 45.4**	**+3.3**
PNCL				*e*Sn	**Sn**	**02 44 37.0**	**-1.9**
PNCL				A	A	02 44 40.3	
	1.8nm,0.5s						
PNCL	**Nicolau / Gran**	**4.91**	**71**	*e*Pn	**Pn**	**02 43 45.4**	**+3.3**
PNCL				*e*Sn	**Sn**	**02 44 37.0**	**-1.9**
	1.8nm,0.5s						
MESJ	**Messejana**	**5.08**	**75**	*e*Pn	**Pn**	**02 43 48.1**	**+3.6**
MESJ				*e*Sn	**Sn**	**02 44 41.3**	**-1.9**
MESJ				A	A	02 44 48.3	
	1.5nm,0.7s						
MESJ	**Messejana**	**5.08**	**75**	P	**Pn**	**02 43 48.1**	**+3.6**
MESJ				S	**Sn**	**02 44 41.3**	**-1.9**
	1.5nm,0.7s						
MESJ	**Messejana**	**5.08**	**75**	*e*Pn	**Pn**	**02 43 48.1**	**+3.6**
MESJ				S	**Sn**	**02 44 41.3**	**-1.9**
	1.5nm,0.7s						
PCVE	**Castro Verde**	**5.19**	**77**	*e*Sn	**Sn**	**02 44 43.7**	**-2.1**
PCVE	**Castro Verde**	**5.19**	**77**	S	**Sn**	**02 44 43.7**	**-2.1**
PCVE	**Castro Verde**	**5.19**	**77**	S	**Sn**	**02 44 43.7**	**-2.1**
EVO	**Evora**	**5.42**	**68**	*e*Sn	**Sn**	**02 44 49.5**	**-2.0**
EVO	**Evora**	**5.42**	**68**	S	**Sn**	**02 44 49.5**	**-2.0**
EVO	**Evora**	**5.42**	**68**	S	**Sn**	**02 44 49.5**	**-2.0**
PMTG	**Montargil**	**5.46**	**62**	*e*Pn	**Pn**	**02 43 52.8**	**+3.1**
PMTG				*e*Sn	**Sn**	**02 44 50.5**	**-2.0**
PMTG				A	A	02 44 53.3	
	1.4nm,0.8s						
PMTG	**Montargil**	**5.46**	**62**	*e*Pn	**Pn**	**02 43 52.8**	**+3.1**
PMTG				*e*Sn	**Sn**	**02 44 50.5**	**-2.0**
	1.4nm,0.8s						
PCAS	**Casmilo, Conde**	**5.76**	**52**	*e*Sn	**Sn**	**02 44 58.0**	**-1.9**
PESTR	**Estremoz**	**5.84**	**66**	*e*Sn	**Sn**	**02 44 59.7**	**-2.3**
PESTR				A	A	02 45 03.2	
	1.1nm,0.8s						
PESTR	**Estremoz**	**5.84**	**66**	*e*Sn	**Sn**	**02 44 59.7**	**-2.3**
	1.1nm,0.8s						
PBAR	**Barrancos**	**6.06**	**73**	*e*Sn	**Sn**	**02 45 05.1**	**-2.3**
PBAR				A	A	02 45 17.0	
	2.1nm,0.7s						
PBAR	**Barrancos**	**6.06**	**73**	S	**Sn**	**02 45 05.1**	**-2.3**
	2.1nm,0.7s						
PBAR	**Barrancos**	**6.06**	**73**	S	**Sn**	**02 45 05.1**	**-2.3**
	2.1nm,0.7s						
PMRV	**Marv??o**	**6.20**	**61**	*e*Pn	**Pn**	**02 44 04.0**	**+4.2**
PMRV				*e*Sn	**Sn**	**02 45 08.3**	**-2.4**
PMRV				A	A	02 45 19.8	
	1.4nm,0.7s						
PMRV	**Marv??o**	**6.20**	**61**	P	**Pn**	**02 44 04.0**	**+4.2**
PMRV				S	**Sn**	**02 45 08.3**	**-2.4**
	1.4nm,0.7s						
PMRV	**Marv??o**	**6.20**	**61**	P	**Pn**	**02 44 04.0**	**+4.2**
PMRV				S	**Sn**	**02 45 08.3**	**-2.4**
	1.4nm,0.7s						
EBAD	**Badajoz**	**6.23**	**68**	S	**Sn**	**02 45 08.6**	**-2.9**
	0.4nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**6.23**	**68**	S	**Sn**	**02 45 08.6**	**-2.9**
	0.4nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**6.28**	**77**	S	**Sn**	**02 45 08.4**	**-4.3**
	0.2nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**6.28**	**77**	S	**Sn**	**02 45 08.4**	**-4.3**
	0.2nm,0.2s,SNR=7.9						
MTE	**Manteigas**	**6.56**	**53**	*e*Sn	**Sn**	**02 45 14.5**	**-5.2**
MTE	**Manteigas**	**6.56**	**53**	S	**Sn**	**02 45 14.5**	**-5.2**
POLO	**Lamas de Olo**	**6.99**	**46**	*e*Sn	**Sn**	**02 45 27.4**	**-2.8**
PGAV	**Gavieira, Arco**	**7.13**	**40**	*e*Sn	**Sn**	**02 45 30.1**	**-3.7**
ELOB	**Lobios**	**7.17**	**41**	P	**Pn**	**02 44 15.7**	**+2.5**
	0.3nm,0.2s,SNR=7.9						
ELOB				S	**Sn**	**02 45 30.4**	**-4.4**
	0.3nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**7.17**	**41**	P	**Pn**	**02 44 15.7**	**+2.5**
	0.3nm,0.2s,SNR=7.9						
ECAB	**El Cabril**	**7.30**	**76**	P	**Pn**	**02 44 18.3**	**+3.3**
	0.1nm,0.1s,SNR=7.9						
ECAB				S	**Sn**	**02 45 33.9**	**-4.1**
	0.1nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**7.31**	**50**	*e*Pn	**Pn**	**02 44 18.6**	**+3.5**
MVO				*e*Sn	**Sn**	**02 45 34.4**	**-3.8**
MVO	**Moncorvo**	**7.31**	**50**	S	**Sn**	**02 45 32.6**	**-5.6**
	0.4nm,0.2s,SNR=7.9						
MVO	**Moncorvo**	**7.31**	**50**	*e*Pn	**Pn**	**02 44 18.6**	**+3.5**
EPLA	**Plasencia**	**7.38**	**60**	S	**Sn**	**02 45 36.4**	**-3.5**
	0.2nm,0.1s,SNR=7.9						

*DDA **11** 02:47:48.6, 34.61N×33.14E, h14km, Md3.0*
*CSEM **11** 02:47:49.7±0.6, 34.54N×33.26E, h2km, ML2.9, Error ellipse: s-maj=13.0km s-min=8.1km az=179.0*
*ISK **11** 02:47:49.2, 34.57N×33.26E, h7km, ML2.9*
*IDC **11** 02:47:50.6±4.4, 34.67N×33.15E, h0km, mb1 2.6/2, mb1mx2.5/34, mbtmp2.6/2, ML2.5/2, Error ellipse: s-maj=78.2km s-min=26.0km az=66.0*

ISC 11 02:47:52.3±2.1, **34.75N**±0.05×**33.31E**±0.04, **h11**km±14km, **n36,** σ1§51/46, **Cyprus region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEF	**Lefka**	**0.50**	**317**	*e*PG	**Pb**	**02 48 02.4**	**-0.8**
LEF				*e*SG	**Sb**	**02 48 11.3**	**+0.9**
LEF	**Lefka**	**0.50**	**317**	*e*Pg	**Pb**	**02 48 02.4**	**-0.8**
LEF				*e*Sg	**Sb**	**02 48 11.4**	**+0.9**
LFK	**Lefkose**	**0.56**	**19**	*e*PG	**Pb**	**02 48 03.8**	**-0.4**
LFK				*e*SG	**Sn**	**02 48 15.1**	**-0.5**
LFK	**Lefkose**	**0.56**	**19**	*e*Pg	**Pb**	**02 48 03.8**	**-0.4**
LFK				*e*Sg	**Sn**	**02 48 15.1**	**-0.5**
AKDN	**Akdeniz- K¯–br**	**0.61**	**333**	*e*PG	**Pb**	**02 48 04.6**	**-0.5**
AKDN	**Akdeniz- K¯–br**	**0.61**	**333**	*e*Pg	**Pb**	**02 48 04.6**	**-0.5**
GAZI	**Gazipasa**	**1.69**	**332**	*i* P	**Pn**	**02 48 21.4**	**-0.4**
GAZI				*i* S	**Sg**	**02 48 45.9**	**-0.8**
GAZI	**Gazipasa**	**1.69**	**332**	P	**Pn**	**02 48 21.4**	**-0.4**
GAZI				S	**Sg**	**02 48 45.8**	**-0.8**
KIZK	**Mersin**	**1.86**	**21**	*i* P	**Pb**	**02 48 25.5**	**-0.8**
KIZK				*i* S	**Sg**	**02 48 53.1**	**+1.1**
KIZK	**Mersin**	**1.86**	**21**	P	**Pb**	**02 48 25.5**	**-0.8**
KIZK				S	**Sg**	**02 48 53.2**	**+1.1**
ERMK	**Ermenek**	**1.92**	**350**	*i* P	**Pn**	**02 48 25.1**	**0.0**
ERMK				*i* S	**Sg**	**02 48 59.3**	**+5.3**
ERMK	**Ermenek**	**1.92**	**350**	P	**Pn**	**02 48 25.1**	**0.0**
MERS	**Mersin**	**2.33**	**25**	*e*PN	**Pn**	**02 48 31.7**	**+1.0**
MERS	**Mersin**	**2.33**	**25**	*e*Pn	**Pn**	**02 48 31.7**	**+1.0**
MMAI	**Mount Meron Ar**	**2.46**	**134**	Pn	**Pn**	**02 48 32.9**	**+0.5**
	2.5nm,0.3s,baz=315,slow=13,SNR=16						
MMAI				Sn	**Sn**	**02 49 03.9**	**+1.5**
	1.7nm,0.3s,baz=312,slow=17,SNR=3.7						
MMAI				T	T	02 50 42.7	
	2.0nm,0.3s,baz=328,slow=19,SNR=5.0						
YAYL	**Yayladag**	**2.62**	**60**	*i* P	**Pn**	**02 48 34.7**	**0.0**
YAYL				*i* S	**Sn**	**02 49 05.0**	**-1.6**
YAYL	**Yayladag**	**2.62**	**60**	P	**Pn**	**02 48 34.7**	**0.0**
YAYL				S	**Sn**	**02 49 05.0**	**-1.6**
KERG	**Konya-Eregli**	**2.74**	**14**	*i* P	**Pb**	**02 48 39.9**	**-1.6**
KERG				*i* S	**Sg**	**02 49 17.5**	**-3.0**
KERG	**Konya-Eregli**	**2.74**	**14**	P	**Pb**	**02 48 39.9**	**-1.6**
KERG				S	**Sg**	**02 49 17.5**	**-3.0**
KARA	**Karaisali**	**2.88**	**29**	*e*PN	**Pn**	**02 48 39.8**	**+1.6**
KARA	**Karaisali**	**2.88**	**29**	*e*Pn	**Pn**	**02 48 39.8**	**+1.6**
KONT	**Konya--Tatoy**	**3.28**	**347**	*e*PN	**Pn**	**02 48 45.7**	**+2.0**
KONT	**Konya--Tatoy**	**3.28**	**347**	*e*Pn	**Pn**	**02 48 45.7**	**+2.0**
SUTC	**Sutluce-Ispart**	**3.30**	**326**	*e*PN	**Pn**	**02 48 45.4**	**+1.4**
SUTC	**Sutluce-Ispart**	**3.30**	**326**	*e*Pn	**Pn**	**02 48 45.4**	**+1.4**
KOZT	**Kozan**	**3.41**	**36**	*e*PN	**Pn**	**02 48 46.7**	**+1.4**
KOZT	**Kozan**	**3.41**	**36**	*e*Pn	**Pn**	**02 48 46.7**	**+1.4**
DALY	**Dalyan (Mu¯la**	**4.31**	**300**	*e*PN	**Pn**	**02 48 57.5**	**-0.3**
DALY	**Dalyan (Mu¯la**	**4.31**	**300**	*e*Pn	**Pn**	**02 48 57.5**	**-0.3**
YER	**Yerkesik**	**4.72**	**302**	*e*PN	**Pn**	**02 49 03.4**	**-0.1**
YER	**Yerkesik**	**4.72**	**302**	*e*Pn	**Pn**	**02 49 03.4**	**-0.1**
BRTR	**Keskin Array B**	**4.97**	**3**	Pn	**Pn**	**02 49 09.3**	**+2.2**
	0.1nm,0.3s,baz=179,slow=15,SNR=3.9						
I48TN	**KESRA INFRASON**	**19.60**	**280**	*i*		04 30 10.0	
	baz=86,slow=322,SNR=51						
I26DE	**FREYUNG INFRAS**	**20.21**	**320**	*i*		04 41 15.0	
	baz=133,slow=310,SNR=5.8						
I42PT	**GRACIOSA ISLAN**	**48.41**	**294**	*i*		07 40 50.0	
	baz=74,slow=308,SNR=2.0						
I11CV	**MAIO ISLAND IN**	**54.04**	**264**	*i*		08 11 00.0	
	baz=60,slow=312,SNR=0.7						

*IDC **11** 03:03:42.0±1.1, 3.43S×146.70E, h0km, mb3.9/10, mb1 4.1/11, mb1mx3.9/37, mbtmp3.9/11, ML2.1/1, MS3.5/10, Ms1 3.6/10, ms1mx3.3/34, Error ellipse: s-maj=38.1km s-min=17.1km az=105.0*
*ISCJB **11** 03:03:44.3±0.7, 3.42S±0.07×146.6E±0.2, h25km, mb3.9/11, MS3.6/9, Error ellipse: s-maj=24.6km s-min=10.1km az=5.9*
*NEIC **11** 03:03:47.3±0.7, 3.40S×146.70E, h35km, mb4.2/2, Error ellipse: s-maj=24.8km s-min=10.3km az=94.0*

ISC 11 03:03:46.6±0.8, **3.32S**±0.08×**146.7E**±0.2, **h25**km, **n28,** σ1§84/18, **mb4.0**/11, **MS3.6/9, Bismarck Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**6.00**	**278**	LR	LR	03 07 12.7	
	comp=Z,27nm,18.7s,baz=2.0,slow=35						
PMG	**Port Moresby**	**6.07**	**175**	Pn	**Pn**	**03 05 13.0**	**-1.7**
	3.4nm,0.3s,baz=29,slow=11,SNR=5.3						
PMG	**Port Moresby**	**6.07**	**175**	*e*Pn	**Pn**	**03 05 12.6**	**-2.2**
CTA	**Charters Tower**	**16.67**	**181**	Pn	**P**	**03 07 41.1**	**+0.2**
	0.4nm,0.3s,baz=9.5,slow=16,SNR=5.7						
CTAO	**Charters Tower**	**16.67**	**181**	*e*Pn	**Pn**	**03 07 39.1**	**+0.5**
	192nm,1.4s						
GUMO	**Guam**	**16.89**	**354**	LR	LR	03 13 22.5	
	comp=Z,52nm,18.7s,baz=160,slow=34						
WRAB	**Tennant Creek**	**20.41**	**215**	*e*P	**P**	**03 08 21.1**	**-0.9**
	12nm,0.8s						
WRA	**Warramunga Arr**	**20.43**	**215**	P	**P**	**03 08 20.4**	**-1.8**
	12nm,0.9s,baz=38,slow=11,SNR=19						
DAV	**Davao City (W)**	**23.43**	**296**	LR	LR	03 17 59.6	
	comp=Z,72nm,18.9s,baz=350,slow=36						
ASAR	**Alice Springs**	**23.68**	**210**	P	**P**	**03 08 54.9**	**-1.6**
	3.6nm,0.7s,baz=40,slow=8.8,SNR=29						
ASAR				LR	LR	03 19 02.3	
	comp=Z,183nm,19.1s,baz=72,slow=39						
FITZ	**Fitzroy Crossi**	**25.29**	**233**	P	**P**	**03 09 08.8**	**-2.5**
	2.9nm,0.9s,baz=60,slow=11,SNR=3.3						
FITZ				LR	LR	03 20 29.3	
	comp=Z,143nm,18.1s,baz=66,slow=40						
FITZ	**Fitzroy Crossi**	**25.29**	**233**	*e*P	**P**	**03 09 10.9**	**-0.4**
	6.4nm,1.0s						
STKA	**Stephens Creek**	**28.80**	**189**	P	**P**	**03 09 47.2**	**+4.5**
	5.2nm,1.0s,baz=45,slow=8.2,SNR=3.3						
STKA				LR	LR	03 22 26.1	
	comp=Z,294nm,19.1s,baz=42,slow=39						
H11S3	**WAKE ISLAND Hy**	**29.32**	**42**	T	T	03 40 50.2	
	baz=222						
H11S2	**WAKE ISLAND Hy**	**29.32**	**42**	T	T	03 40 40.6	
	baz=222						
H11S1	**WAKE ISLAND Hy**	**29.33**	**42**	T	T	03 40 49.3	
	baz=222						
MJAR	**Matsushiro Arr**	**40.43**	**349**	P	**P**	**03 11 21.0**	**-2.0**
	0.4nm,0.3s,baz=167,slow=8.3,SNR=4.1						
RAO	**Raoul Island**	**42.37**	**131**	LR	LR	03 25 30.4	
	comp=Z,219nm,20.4s,baz=164,slow=31						
USRK	**Ussuriysk Ar.**	**49.10**	**346**	P	**P**	**03 12 33.0**	**+1.1**
	1.5nm,0.7s,baz=174,slow=7.2,SNR=2.8						
CMAR	**Chiang Mai Arr**	**51.72**	**297**	P	**P**	**03 12 52.6**	**+0.4**
	1.1nm,0.4s,baz=119,slow=5.2,SNR=3.9						
CMAR				LR	LR	03 34 39.8	
	comp=Z,12nm,19.0s,baz=205,slow=36						
PETK	**Petropavlovsk-**	**56.99**	**8**	LR	LR	03 35 47.1	
	comp=Z,46nm,19.8s,baz=193,slow=34						
SONM	**Songino Array**	**61.91**	**330**	P	**P**	**03 14 04.9**	**+0.6**
	0.2nm,0.4s,baz=134,slow=8.4,SNR=3.0						
MKAR	**Makanchi Array**	**75.23**	**320**	P	**P**	**03 15 26.8**	**-0.5**
	1.0nm,0.9s,baz=97,slow=9.9,SNR=5.2						
ZALV	**Zalesovo Beam**	**76.58**	**328**	P	**P**	**03 15 36.3**	**+1.6**
	0.6nm,0.4s,baz=108,slow=9.3,SNR=1.7						
ZALV				LR	LR	03 48 51.9	
	comp=Z,24nm,21.5s,baz=72,slow=35						
ILAR	**Eielson Array**	**83.17**	**23**	P	**P**	**03 16 09.3**	**-1.0**
	0.6nm,0.9s,baz=261,slow=5.1,SNR=7.7						
BBB	**Bella Bella**	**89.67**	**38**	LR	LR	03 47 47.2	
	comp=Z,41nm,20.3s,baz=268,slow=30						
YKA	**Yellowknife Ar**	**96.97**	**28**	P	**P**	**03 17 15.9**	**+0.1**
	0.2nm,0.8s,baz=270,slow=4.3,SNR=3.5						
TORD	**Torodi Ar. Bea**	**144.02**	**288**	PKhKP	PKPpre	03 23 18.2	
	1.1nm,1.1s,baz=50,slow=3.1,SNR=2.7						

*ISCJB **11** 03:09:37.1±0.7, 35.98S±0.04×177.98E±0.07, h10km, mb4.6/10, MS3.6/3, Error ellipse: s-maj=8.1km s-min=5.7km az=153.7*
*WEL **11** 03:09:40.1±1.1, 35.89S×178.10E, h33km, ML4.5/10, Error ellipse: s-maj=8.7km s-min=8.0km az=90.0*
*NEIC **11** 03:09:40.5, 35.91S×178.05E, h37km, mb4.3/1, ML4.5(WEL), After WEL.*
*IDC **11** 03:09:43.2±4.5, 36.06S×178.07E, h48km±37km, mb4.1/6, mb1 4.2/7, mb1mx4.0/30, mbtmp4.3/7, ML3.4/1, MS3.5/4, Ms1 3.5/4, ms1mx3.2/23, Error ellipse: s-maj=36.5km s-min=20.1km az=42.0*

ISC 11 03:09:38.2±0.8, **35.95S**±0.07×**177.97E**±0.08, **h10**km, **n33,** σ1§14/33, **mb4.6**/10, **MS3.5/3, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.80**	**185**	*e*P*	**Pn**	**03 10 08.0**	**-1.3**
HAZ				*e*S*	**Sn**	**03 10 32.1**	**-0.1**
HAZ				AML	AML	03 10 45.8	
HAZ				AML	AML	03 10 46.8	
HAZ				AML	AML	03 10 46.8	
PKGZ	**Pakihiroa**	**1.93**	**177**	PN	**Pn**	**03 10 11.0**	**-0.1**
KUZ	**Kuaotunu**	**1.98**	**246**	PN	**Pn**	**03 10 12.2**	**+0.5**
KUZ				*e*SN	**Sn**	**03 10 36.9**	**+0.4**
KUZ				AML	AML	03 10 38.6	
RUGZ	**Raukumara Rang**	**2.02**	**186**	P*	**Pn**	**03 10 13.1**	**+0.7**
GRZ	**Great Barrier**	**2.05**	**261**	PN	**Pn**	**03 10 12.8**	**+0.1**
GRZ				AML	AML	03 10 51.4	
GRZ				AML	AML	03 10 55.8	
PUZ	**Puketiti**	**2.13**	**174**	PN	**Pn**	**03 10 14.0**	**+0.2**
PUZ				AML	AML	03 10 46.1	
PUZ				AML	AML	03 10 57.6	
URZ	**Urewera**	**2.40**	**196**	P	**Pn**	**03 10 17.8**	**+0.3**
	9.4nm,0.3s,baz=286,slow=7.9,SNR=36						
URZ				S	**Sn**	**03 10 47.2**	**+0.2**
	24nm,0.3s,baz=299,slow=22,SNR=8.5						
URZ				LR	LR	03 11 29.1	
	comp=Z,968nm,20.0s,baz=350,slow=46						
URZ	**Urewera**	**2.40**	**196**	*e*Pn	**Pn**	**03 10 17.5**	**0.0**
URZ				*e*S	**Sn**	**03 10 45.8**	**-1.1**
URZ	**Urewera**	**2.40**	**196**	P*	**Pn**	**03 10 17.4**	**-0.1**
URZ				AML	AML	03 10 56.5	
URZ				AML	AML	03 11 07.6	
CNGZ	**Carnagh Statio**	**2.53**	**176**	PN	**Pn**	**03 10 21.8**	**+2.5**
CNGZ				AML	AML	03 11 02.9	
CNGZ				AML	AML	03 11 14.5	
MKAZ	**Moumakai**	**2.53**	**242**	PN	**Pn**	**03 10 20.6**	**+1.3**
MKAZ				AML	AML	03 11 04.9	
MKAZ				AML	AML	03 11 05.2	
SNGZ	**Shannon Statio**	**2.87**	**190**	PN	**Pn**	**03 10 26.2**	**+2.2**
SNGZ				AML	AML	03 11 06.9	
SNGZ				AML	AML	03 11 24.8	
KNZ	**Kokohu**	**3.07**	**184**	AML	AML	03 11 47.9	
OUZ	**Omahuta**	**3.64**	**280**	*e*Pn	**Pn**	**03 10 34.2**	**-0.3**
OUZ				*e*S	**Sn**	**03 11 17.1**	**-0.3**
OUZ	**Omahuta**	**3.64**	**280**	PN	**Pn**	**03 10 34.6**	**+0.1**
OUZ				AML	AML	03 11 21.1	
OUZ				AML	AML	03 11 53.9	
SNZO	**South Karori**	**5.92**	**205**	Pn	**Pn**	**03 11 05.7**	**-0.2**
SNZO				*e*S	**Sn**	**03 12 13.5**	**-0.4**
DZM	**Mont Dzumac**	**17.09**	**321**	*e*LR	LR	03 18 03.9	
	746nm,23.6s						
TBI	**Tubuai**	**30.82**	**75**	*e*LR	LR	03 24 55.6	
	140nm,22.2s						
PPT2	**Papeete2**	**34.05**	**66**	*e*LQ	LQ	03 25 02.3	
	231nm

CTAO	Charters Tower 238nm,1.4s	34.14	282	*e*P		P	03 20 10.1	+1.2
ASAR	Alice Springs 11nm,0.7s,baz=109,slow=7.7,SNR=73	42.98	269	P		P	03 21 22.9	-0.2
ASAR				PcP		PcP	03 23 15.5	+2.0
	0.9nm,0.8s,baz=111,slow=5.1,SNR=2.1							
WRAB	Tennant Creek 43nm,1.1s	44.16	274	*e*P		P	03 21 32.1	-0.6
WRA	Warramunga Arr 17nm,0.5s,baz=115,slow=7.7,SNR=0.1	44.16	274	P		P	03 21 32.2	-0.4
WRA				PcP		PcP	03 23 20.4	+3.0
	1.3nm,0.8s,baz=121,slow=3.2,SNR=3.0							
FORT	Forrest 274nm,0.6s	45.48	257	*e*P		P	03 21 42.0	-1.0
SYO	Syowa Base	75.04	193‖	*e*P		P	03 25 03.7	-1.1
SYO	Syowa Base	75.04	193‖	*e*pP		P	03 25 06.6	+1.8
MJAR	Matsushiro Arr 1.4nm,0.9s,baz=163,slow=5.9,SNR=5.9	79.95	326	P		P	03 25 32.4	-0.2
PLCA	Paso Flores 1.4nm,0.8s,baz=247,slow=7.7,SNR=2.9	81.11	133	P		P	03 25 40.4	+1.2
KSRS	Korea Array 2.0nm,0.7s,baz=141,slow=5.8,SNR=6.6	85.92	320	P		P	03 26 04.5	+1.1
KSAR	Wonju Array Be	85.94	320	P		P	03 26 04.5	+1.0
PETK	Petropavlovsk- 3.7nm,0.7s,baz=112,slow=6.9,SNR=4.4	87.85	346	P		P	03 26 12.8	+0.3
USRK	Ussuriysk Ar. 2.0nm,0.7s,baz=109,slow=3.9,SNR=5.8	88.89	327	P		P	03 26 18.4	+0.7
PDAR	Pinedale Array comp=Z,33nm,18.6s,baz=257,slow=34	97.70	44	LR		LR	04 07 48.4	
MKAR	Makanchi Array 0.6nm,0.7s,baz=98,slow=1.8,SNR=5.6	119.08	309	PKP		PKPdf	03 32 12.1	-0.1
KURK	Kurchatov	122.46	313	*e*PKPdf		PKPdf	03 32 18.5	0.0
GEYT	Alibeck 1.1nm,0.3s,baz=153,slow=1.3,SNR=4.1	134.37	293	PKP		PKPdf	03 32 42.9	+1.3
ARCES	ARCESS Array B 1.0nm,0.7s,baz=14,slow=2.5,SNR=3.6	140.64	347	PKhKP		PKPpre	03 32 48.1	
KBZ	Khabaz 4.7nm,0.8s,baz=111,slow=3.1,SNR=7.2	146.20	301	PKPbc		PKPab	03 33 04.0	-0.5
NB2	NORSAR Subarra comp=Z,3.8nm,0.9s,baz=15,slow=4.1	150.83	351	PKP		PKPbc	03 33 15.1	-0.3
NOA	NORSAR Array B comp=Z,2.2nm,0.7s,baz=14,slow=4.1,SNR=8.6	150.83	351	PKPbc		PKPbc	03 33 15.2	-0.2
AKASG	Malin Array Be comp=Z,2.7nm,0.8s,baz=54,slow=2.5,SNR=8.6	152.92	320	PKPbc		PKPbc	03 33 20.7	+0.3
BRTR	Keskin Array B comp=Z,2.9nm,1.0s,baz=116,slow=2.9,SNR=13	153.50	295	PKPbc		PKPbc	03 33 22.1	-0.2
DPC	Dobruska-Polom	159.24	333	*e*PKPAB		PKPab	03 33 58.8	0.0
DPC				*ex*		x	03 34 11.0	
CLL	Collm comp=Z,6.0nm,1.0s	159.54	340	↓*i*PKPab		PKPab	03 33 59.7	-0.3
CLL				*i*			03 34 04.6	
TORD	Torodi Ar. Bea comp=Z,0.7nm,1.0s,baz=198,slow=4.2,SNR=3.3	160.71	179	PKP		PKPdf	03 33 24.3	+0.1
TORD				PKPab		PKPab	03 34 06.5	+0.6
	comp=Z,1.4nm,0.8s,baz=192,slow=2.9,SNR=8.5							
KHC	Kasperske Hory	161.25	336	*e*PKPAB		PKPab	03 34 07.8	+0.2
KHC				*ex*		x	03 34 19.4	
CONA	Conrad Observa comp=Z,2.8nm,0.8s	161.34	330	*i* PKPab		PKPab	03 34 08.3	+0.2
GERES	GERESS Array B comp=Z,1.3nm,0.8s,baz=30,slow=3.2,SNR=8.5	161.45	335	PKPab		PKPab	03 34 08.2	-0.3
ARSA	Arzberg comp=Z,1.8nm,0.6s	162.01	329	*i* PKPab		PKPab	03 34 10.3	-0.7
MOA	Molln comp=Z,1.5nm,0.7s	162.06	332	*i* PKPab		PKPab	03 34 09.7	-1.4
SOKA	Soboth comp=Z,2.8nm,1.1s	162.66	328	*i* PKPab		PKPab	03 34 13.0	-0.9
OBKA	Obir comp=Z,1.0nm,0.6s	163.01	329	*i* PKPab		PKPab	03 34 12.9	-2.5
MYKA	Terra Mystica comp=Z,2.3nm,0.8s	163.29	331	*i* PKPab		PKPab	03 34 15.6	-1.1
WTTA	Wattenberg comp=Z,1.7nm,0.5s	163.52	336	*i* PKPab		PKPab	03 34 18.1	+0.3
RETA	Reutte comp=Z,5.6nm,1.3s	163.61	338	*i* PKPab		PKPab	03 34 18.1	+0.1
MOTA	Moosalm comp=Z,3.1nm,0.8s	163.63	337	*i* PKPab		PKPab	03 34 18.5	+0.3
ABTA	Abfaltersbach comp=Z,3.1nm,0.8s	163.65	333	*i* PKPab		PKPab	03 34 17.1	-1.1
FETA	Feichten comp=Z,4.3nm,1.0s	164.03	338	*i* PKPab		PKPab	03 34 20.1	+0.1
DAVA	Damuels comp=Z,4.7nm,1.3s	164.06	340	*i* PKPab		PKPab	03 34 20.4	+0.3

*MEX **11** 03:14:30.6±1.1, 16.°73N×95.°15W, h88km±16km, MD4.3*
*NEIC **11** 03:14:31.1, 16.°74N×95.°14W, h86km, mb4.0/1,*
MD4.3(MEX), After MEX.

ISC 11 03:14:29.0±0.9, 16.°72N±0.°05×95.°11W±0.°03, h90km±11km, n108, σ2°01/120, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HUIG	Huatulco	1.35	225	*e*P	Pn	03 14 51.6	-1.3
HUIG				*i* S	Sn	03 15 10.7	-0.2
HUIG	Huatulco	1.35	225	*e*P	Pn	03 14 51.6	-1.3
HUIG				*e*S	Sn	03 15 10.4	-0.5
TUIG	Tuzandepetl	1.46	27	*e*P	Pn	03 14 53.9	-0.4
TUIG				*i* S	Sn	03 15 12.5	-0.9
VHO	Vista Hermosa	1.59	283	*e*P	Pn	03 14 56.7	+0.6
VHO				*e*S	Sn	03 15 16.3	-0.4
VHO	Vista Hermosa	1.59	283	*e*P	Pn	03 14 56.4	+0.3
VHO				*e*S	Sn	03 15 17.0	+0.3
TGIG		1.91	88	*e*P	Pn	03 14 59.8	-0.2
TGIG				*i* S	Sn	03 15 23.6	-0.1
TGIG		1.91	88	*e*P	Pn	03 14 59.8	-0.2
TGIG				*e*S	Sn	03 15 21.0	-2.7
PCIG		2.08	119	*i* P	Pn	03 15 03.4	+1.1
PCIG				*i* S	Sn	03 15 29.0	+1.4
PCIG		2.08	119	*i* P	Pn	03 15 03.4	+1.1
PCIG				*i* S	Sn	03 15 29.4	+1.7
TPIG	Tehuac#an	2.73	308	*i* P	Pn	03 15 11.5	+0.4
TPIG				*i* S	Sn	03 15 42.5	-0.9
PNIG	Pinotepa	2.91	264	*e*P	Pn	03 15 11.9	-1.5
PNIG				*i* S	Sn	03 15 45.9	-1.7
MEIG	Mezcala	4.47	286	*e*P	Pn	03 15 35.2	+0.7
MEIG				*i* S	Sn	03 16 24.7	-0.7
MEIG	Mezcala	4.47	286	*e*P	Pn	03 15 35.2	+0.7
MEIG				*i* S	Sn	03 16 23.3	-2.1
ARIG	Puente Sto Nin	5.23	288	*e*P	Pn	03 15 46.0	+1.2
ARIG				*i* S	Sn	03 16 42.4	-1.6
933A	Laredo baz=160	11.50	341	P	Pn	03 17 12.2	+2.0
835A	Beeville baz=167	11.78	348	P	Pn	03 17 15.3	+1.4
834A	Tilden baz=164	11.78	345	P	Pn	03 17 16.7	+2.8
737A	Port Lavaca baz=174	12.05	354	P	Pn	03 17 17.6	+0.2
833A	Chaparral WMA, baz=160	12.20	342	P	Pn	03 17 23.5	+3.9
734A	La Parita Cree baz=165	12.48	346	P	Pn	03 17 25.1	+1.8
638A	Rosharon baz=179	12.64	359	P	Pn	03 17 24.6	-0.9
633A	Saathoff Ranch baz=163	13.21	344	P	Pn	03 17 35.5	+2.4
645A	Chauvin baz=199	13.34	17	P	Pn	03 17 28.7	-6.0
534A	Blanco baz=166,SNR=40	13.60	347	P	Pn	03 17 40.4	+2.3
533A	Kerrville baz=164	13.77	346	P	Pn	03 17 42.8	+2.5
435B	Jarrell baz=170,SNR=5.9	14.18	351	P	Pn	03 17 48.8	+3.1
434A	Burnet baz=168	14.32	349	P	Pn	03 17 50.8	+3.3
JCT	Junction City baz=162	14.35	343	P	P	03 17 52.5	+0.2
433A	Art baz=165,SNR=9.9	14.43	346	P	Pn	03 17 52.2	+3.3
337A	Centerville baz=177	14.54	357	P	Pn	03 17 51.8	+1.5
335A	Moody baz=171	14.65	352	P	Pn	03 17 55.2	+3.5
334A	Lometa baz=168,SNR=12	14.82	349	P	Pn	03 17 57.3	+3.3
333A	Richland Sprin baz=166,SNR=7.6	14.96	347	P	P	03 17 59.8	+0.8
WHTX	Lake Whitney, baz=172	15.35	352	P	Pn	03 18 03.4	+2.8
WHTX	Lake Whitney,	15.35	352	*e*Pn	Pn	03 18 03.1	+2.5
243A	Waterproof baz=193	15.45	12	P	Pn	03 17 59.4	-2.4
234A	Clairette baz=169,SNR=8.5	15.46	350	P	P	03 18 05.5	+0.9
133A	Hamilton Ranch baz=167	16.19	348	P	P	03 18 15.1	+2.4
ABTX	Abilene, Hawle baz=165	16.35	346	P	P	03 18 18.3	+3.8
ABTX	Abilene, Hawle 4.6nm,0.4s	16.35	346	*e*Pn	Pn	03 18 15.7	+2.4
Z36A	Blue Ridge baz=176	16.52	356	P	Pn	03 18 17.4	+2.2
Z33A	Whitaker Ranch baz=168	16.82	349	P	P	03 18 22.2	+2.6
Y35A	Marietta baz=174,SNR=9.6	17.20	355	P	Pn	03 18 25.3	+1.8
Y42A	Garnett, Star baz=191	17.30	9	P	Pn	03 18 23.3	-1.5
Y34A	Reagan Ranch, baz=172	17.33	353	P	P	03 18 27.2	+2.0
Z47A	Carrollton baz=203	17.59	20	P	P	03 18 22.9	-5.2
X35A	Drake baz=174	17.68	355	P	P	03 18 29.9	+0.8
X39A	Fountain Ranch baz=183	17.74	3	P	P	03 18 29.5	-0.2
X37A	Clayton baz=179	17.79	359	P	P	03 18 30.9	+0.6
MIAR	Mount Ida baz=185	17.80	4	P	P	03 18 29.7	-0.7
X41A	Kaden, Bauxite baz=188	17.85	7	P	P	03 18 28.9	-2.0
X34A	Smith Ranch, M baz=172,SNR=11	17.97	353	P	Pn	03 18 36.1	+3.2
X33A	Lawton baz=170	18.00	351	P	Pn	03 18 35.4	+2.1
X32A	Elmer baz=167	18.02	349	P	P	03 18 34.9	+2.1
WMOK	Wichita Mounta 0.9nm,0.7s	18.24	350	P	Pn	03 18 38.4	+2.2
W37B	Quinton baz=179	18.34	359	P	P	03 18 36.3	-0.1
X45A	UM Field Stati baz=198	18.36	15	P	P	03 18 33.5	-3.0
W39A	Magazine baz=184	18.43	3	P	P	03 18 36.4	-0.9
V36A	Jenks baz=178	19.00	358	P	P	03 18 42.6	-0.9
AMTX	Amarillo baz=160	19.02	343	P	P	03 18 46.1	+2.2
V35A	Meyer Ranch, C baz=175	19.02	356	P	P	03 18 42.9	-1.0
V38A	Canehill baz=182	19.07	2	P	P	03 18 43.4	-1.0
V37A	Hulbert baz=180	19.08	360	P	P	03 18 43.5	-1.0
V39A	Pettigrew baz=184,SNR=5.2	19.08	4	P	P	03 18 43.0	-1.5
V40A	Witts Springs baz=187	19.11	6	P	P	03 18 42.9	-2.0
V34A	Guthrie baz=173	19.16	354	P	P	03 18 45.0	-0.2
V41A	Mountainview baz=189	19.17	7	P	P	03 18 44.1	-1.3
V33A	Lossen Ranch, baz=171	19.23	352	P	P	03 18 45.5	-0.6
V42A	Cord baz=191	19.29	9	P	P	03 18 44.6	-2.2
U35A	Pawnee baz=176	19.62	356	P	P	03 18 49.1	-1.2
U39A	Green Forest baz=185	19.63	4	P	P	03 18 48.8	-1.7
U38A	Gravette baz=182	19.65	2	P	P	03 18 49.3	-1.3
U40A	Yellville baz=186,SNR=8.9	19.66	5	P	P	03 18 49.2	-1.5
U41A	Viola baz=189,SNR=7.8	19.75	8	P	P	03 18 49.8	-1.9
U42A	Revenden baz=191,SNR=5.1	19.85	9	P	P	03 18 50.4	-2.4
T35A	Sooner Cattle baz=176	20.15	357	P	P	03 18 54.6	-1.4
T38A	Diamond baz=182	20.25	2	P	P	03 18 55.1	-2.0
T34A	McClaskey Farm baz=174	20.30	355	P	P	03 18 57.2	-0.5
T37A	Cheneyville 18 baz=181	20.32	0	P	P	03 18 56.6	-1.3
T41A	Mountain View baz=189	20.46	8	P	P	03 18 56.5	-2.9
S38A	Stockton baz=183	20.85	3	P	P	03 19 02.0	-1.6
S35A	Otter Creek Ra baz=177	20.91	357	P	P	03 19 02.8	-1.3
S40A	Lennon baz=187	20.92	6	P	P	03 19 01.8	-2.6
S39A	Bolivar baz=185	20.95	4	P	P	03 19 02.4	-2.3
S37A	Fort Scott baz=181	20.96	1	P	P	03 19 03.2	-1.5
S41A	Jillco Farms, baz=189	21.00	7	P	P	03 19 03.3	-1.9
R38A	Fenwick Farm, baz=183	21.41	3	P	P	03 19 08.7	-0.8
R37A	Teagarden Farm baz=181	21.51	1	P	P	03 19 09.4	-1.2
R36A	Gordon, Harris baz=179	21.52	359	P	P	03 19 10.0	-0.7
R39A	Chumby, Stover baz=186	21.59	4	P	P	03 19 09.7	-1.7
R40A	Maddies Statio baz=188	21.63	6	P	P	03 19 09.2	-2.7
R44A	Waltonville baz=196	22.09	13	P	P	03 19 12.4	-4.4
Q39A	Willow Grove F baz=185	22.32	4	P	P	03 19 16.8	-2.4
Q40A	Laux Farm, Aux baz=188	22.35	6	P	P	03 19 16.3	-3.2
Q32A	Meitler Ranch, baz=171	22.39	353	P	P	03 19 19.3	-0.7
Q42A	Golden Eagle baz=192	22.47	9	P	P	03 19 17.3	-3.5
P39B	Salisbury baz=186	22.77	5	P	P	03 19 20.8	-3.1
P40A	Paris baz=188	22.88	6	P	P	03 19 21.6	-3.4
P42A	Winchester baz=192	23.16	9	P	P	03 19 24.1	-3.6
O40A	La Belle baz=188	23.48	6	P	P	03 19 27.1	-3.6
O41A	Passleys Farm, baz=190	23.60	8	P	P	03 19 28.9	-2.8
N38A	Joes South For baz=184	24.04	3	P	P	03 19 33.7	-2.0
L36A	Harm Buss Farm baz=181	25.30	1	P	P	03 19 45.5	-1.5
L37A	Phoenix Point, baz=183	25.34	2	P	P	03 19 45.3	-2.2
L38A	Oak Wood Farm, baz=185	25.40	4	P	P	03 19 45.8	-2.2
O20A	White River Ci baz=150	25.97	337	P	P	03 19 53.3	-0.1
J36A	Seneca 1, Swea baz=182	26.53	1	P	P	03 19 56.2	-2.0
J38A	Wedel Dairy, R baz=186	26.60	4	P	P	03 19 56.3	-2.5

IDC 11 03:21:04.8±7.1, 32.°98N×96.°52E, h47km±73km, mb3.3/3, mb1 3.4/5, mb1mx3.2/32, mbtmp3.5/5, ML3.1/2, MS2.9/1, Ms1 2.9/1, ms1mx2.4/20, Error ellipse: s-maj=78.0km s-min=33.6km az=70.0, Qinghai

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SONM	Songino Array 0.1nm,0.3s,baz=206,slow=9.6,SNR=2.4	16.61	24	P	Pn	03 24 54.5	+0.1
SONM				LR	LR	03 31 19.8	
	comp=Z,47nm,20.2s,baz=66,slow=37						
MKAR	Makanchi Array 0.1nm,0.3s,baz=141,slow=14,SNR=6.9	17.55	326	P	Pn	03 25 05.9	-0.1
WRA	Warramunga Arr 0.7nm,0.9s,baz=336,slow=7.0,SNR=3.0	63.84	140	P	P	03 31 32.6	0.0
ASAR	Alice Springs 0.2nm,0.3s,baz=330,slow=6.4,SNR=4.8	66.67	143	P	P	03 31 50.6	-0.2
YKA	Yellowknife Ar 0.1nm,0.7s,baz=314,slow=3.8,SNR=3.9	81.62	14	P	P	03 33 17.4	0.0

*ISCJB **11** 03:28:21.6±1.1, 20.°7S±0.°2×177.°5W±0.°2, h400km, mb3.5/6,*
Error ellipse: s-maj=30.3km s-min=22.8km az=171.0

*IDC **11** 03:28:25.1±8.0, 20.°67S×177.°53W, h424km±84km, mb3.2/6,*
mb1 3.5/7, mb1mx3.2/29, mbtmp4.1/7, Error ellipse:
s-maj=35.8km s-min=27.0km az=63.0

ISC 11 03:28:23.7±1.1, 20.°7S±0.°2×177.°5W±0.°2, h400km, n8, σ2°08/8, mb3.6/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac 1.3nm,0.3s,baz=78,slow=20,SNR=3.7	15.01	262	P	P	03 31 36.9	+0.5
JAY	Jayapura 0.4nm,0.3s,baz=85,slow=23,SNR=4.8	44.52	288	P	P	03 35 57.8	-0.3
ASAR	Alice Springs 3.7nm,0.7s,baz=100,slow=8.0,SNR=36	44.92	257	P	P	03 36 00.1	-0.9
WRA	Warramunga Arr 2.1nm,0.7s,baz=98,slow=8.4,SNR=13	45.02	262	P	P	03 36 00.9	-0.9
VNDA	Vanda 0.6nm,0.6s,baz=17,slow=6.3,SNR=4.1	57.79	185	P	P	03 37 34.2	0.0
MJAR	Matsushiro Arr 0.8nm,0.6s,baz=140,slow=7.7,SNR=3.9	70.61	323	P	P	03 38 56.9	-0.2
TXAR	Lajitas Array 0.9nm,0.8s,baz=220,slow=7.4,SNR=10	86.77	57	P	P	03 40 22.9	-1.4
GERES	GERESS Array B 0.4nm,0.6s,baz=48,slow=8.0,SNR=5.4	150.47	345	PKPbc	PKPdf	03 47 27.2	+4.2

GUC 11 03:48:29.0±0.3, 34.°76S×71.°71W, h34km±1km, ML3.7, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	Pichilemu	0.43	327	*i* P	Pb	03 48 38.2	-0.5
CHPI				*i* S	Sb	03 48 44.9	-0.4
TALC	Talca	0.65	174	*i* P	Pn	03 48 41.4	-0.2
TALC				*i* S	Sn	03 48 50.7	0.0
RCDM	Rinconada Maip	1.47	31	*i* P	Pn	03 48 54.4	+1.3
RCDM				*i* S	Sb	03 49 13.4	-0.8
FSR	Penalolen	1.61	38	*i* P	Pb	03 48 56.6	-1.6
FSR				*i* S	Sb	03 49 18.0	-0.2
PEL	Peldehue	1.82	28	*i* P	Pb	03 48 59.9	-1.9
PEL				*i* S	Sb	03 49 23.6	-0.6
PEL				IAML		03 49 30.8	
	comp=N,951nm,0.2s						
FCH	Farellones	1.85	40	*i* P	Pb	03 49 00.9	-1.5
FCH				*i* S	Sb	03 49 25.6	+0.2
CCHI	Chillan	1.87	189	*i* P	Pn	03 49 00.5	+2.0
CCHI				*i* S	Sb	03 49 24.4	-1.1
ROCH	El Roble	1.87	18	*i* P	Pb	03 49 01.0	-1.7
ROCH				*i* S	Sb	03 49 25.6	-0.3
ROCH				IAML		03 49 30.8	
	comp=N,1μm,0.5s						

*NEIC **11** 03:50:53.8±0.6, 32.°53S×178.°03W, h10km, mb4.7/4, Error*
ellipse: s-maj=15.7km s-min=12.3km az=99.0
*ISCJB **11** 03:50:54.8±0.8, 32.°43S±0.°08×178.°2W±0.°1, h20km,*
mb4.7/13, MS4.0/5, Error ellipse: s-maj=18.4km
s-min=10.8km az=9.4
*IDC **11** 03:51:01.4±3.6, 32.°22S×178.°19W, h59km±27km, mb4.2/8,*
mb1 4.3/9, mb1mx4.0/28, mbtmp4.5/9, ML4.6/1, MS4.0/7,
Ms1 3.9/7, ms1mx3.5/31, Error ellipse: s-maj=31.8km
s-min=18.4km az=127.0

ISC 11 03:50:55.9±0.7, 32.°46S±0.°07×178.°2W±0.°1, h20km, n57, σ1°52/50, mb4.6/13, MS4.1/5, 1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island 85nm,0.3s,baz=85,slow=16,SNR=3.4	3.21	4	P	Pn	03 51 47.1	+2.0
RAO				S	Sn	03 52 20.7	-2.1
	241nm,0.3s,baz=200,slow=23,SNR=6.4						
RAO	Raoul Island	3.21	4	*e*Pn	Pn	03 51 45.1	0.0
RAO				*e*S	Sn	03 52 18.0	-4.8
URZ	Urewera 3.0nm,0.3s,baz=78,slow=3.0,SNR=14	6.96	212	P	Pn	03 52 34.1	-2.5
URZ				S	Sn	03 53 51.8	-3.4
	12nm,0.3s,baz=225,slow=23,SNR=12						
SNZO	South Karori	10.52	211	Pn	Pn	03 53 33.8	+8.3
DZM	Mont Dzumac 0.5nm,0.3s,baz=95,slow=19,SNR=7.1	17.15	303	P	P	03 54 59.2	+3.2
DZM				LR	LR	04 00 23.7	
	comp=Z,511nm,21.6s,baz=183,slow=33						
DZM	Mont Dzumac 76nm,1.1s	17.15	303	*e*P	P	03 54 57.2	+1.2
DZM	Mont Dzumac 44nm,1.3s	17.15	303	*e*Pn	P	03 54 57.3	+1.3
RAR	Rarotonga comp=Z,174nm,18.7s,baz=258,slow=38	19.83	60	LR	LR	04 03 27.8	
TBI	Tubuai 161nm,23.0s	26.86	78	*e*LR	LR	04 03 24.8	
EIDS	Eidsvold 4.7nm,0.6s	27.78	277	*e*P	P	03 56 44.5	+0.9
PPT2	Papeete2 112nm,21.0s	29.70	67	*e*LR	LR	04 04 39.5	
PPT	Papeete comp=Z,163nm,18.5s,baz=224,slow=34	29.72	67	LR	LR	04 07 55.9	
STKA	Stephens Creek 2.2nm,0.8s,baz=22,slow=9.1,SNR=3.8	33.94	260	P	P	03 57 39.4	+1.6
STKA				LR	LR	04 11 21.1	
	comp=Z,337nm,18.1s,baz=40,slow=36						
CTA	Charters Tower 6.6nm,0.6s,baz=106,slow=10,SNR=9.6	34.06	282	P	P	03 57 40.8	+1.8
CTAO	Charters Tower 42nm,0.7s	34.06	282	*e*P	P	03 57 40.6	+1.6
RKT	Rikitea 132nm,24.5s	39.09	87	*e*LR	LR	04 09 01.8	
PMG	Port Moresby comp=Z,106nm,18.3s,baz=129,slow=35	39.41	298	LR	LR	04 14 02.7	
TAOE	Nuku Hiva Isla 78nm,22.0s	42.27	65	*e*LR	LR	04 10 32.3	
ASAR	Alice Springs 11nm,0.8s,baz=108,slow=7.4,SNR=73	42.91	269	P	P	03 58 53.1	-0.3
WRAB	Tennant Creek 20nm,1.0s	44.08	274	*e*P	P	03 59 02.2	-0.6
WRA	Warramunga Arr 10nm,0.5s,baz=115,slow=7.8,SNR=1.7	44.09	274	P	P	03 59 02.3	-0.6
FORT	Forrest 226nm,0.7s	45.43	257	*e*P	P	03 59 11.8	-1.7
FITZ	Fitzroy Crossi comp=Z,237nm,18.2s,baz=116,slow=36	52.26	272	LR	LR	04 22 48.2	
QSPA	South Pole Qui 11nm,0.9s	57.65	180	*e*P	P	04 00 46.6	+2.1
MAW	Mawson 1.2nm,0.6s,baz=90,slow=10,SNR=4.0	70.34	201	P	P	04 02 11.1	+3.5
MAW				LR	LR	04 31 18.1	
	comp=Z,146nm,19.8s,baz=64,slow=34						
SYO	Syowa Base	75.08	193‖	*e*P	P	04 02 35.0	-0.8
SNAA	Sanae 51nm,0.8s	76.10	178	*e*P	P	04 02 42.2	+0.4
MJAR	Matsushiro Arr 0.6nm,0.4s,baz=156,slow=3.3,SNR=3.8	79.86	326	P	P	04 03 01.9	-1.1
PETK	Petropavlovsk- 2.3nm,0.7s,baz=140,slow=5.6,SNR=3.5	87.77	346	P	P	04 03 43.4	+0.4
USRK	Ussuriysk Ar. 0.9nm,0.4s,baz=140,slow=5.6,SNR=6.7	88.81	327	P	P	04 03 48.4	+0.3
MKAR	Makanchi Array 0.3nm,0.3s,baz=96,slow=2.9,SNR=10.0	118.99	309	PKP	PKPdf	04 09 41.7	-1.1
KURK	Kurchatov	122.37	313	PKP	PKPdf	04 09 47.6	-1.4
KURBB	Kurchatov Arra 1.3nm,0.7s,baz=109,slow=1.8,SNR=15	122.41	313	PKP	PKPdf	04 09 47.6	-1.5
KKAR	Karatay Array	126.09	302	*e*PKPdf	PKPdf	04 09 56.2	-0.3
BVAR	Borovoye Array 0.7nm,0.4s,baz=95,slow=3.5,SNR=5.1	127.78	315	PKP	PKPdf	04 09 59.7	+0.3
AKTO	Aktyubinsk 0.9nm,0.8s,baz=171,slow=7.9,SNR=3.4	135.38	311	PKP	PKPdf	04 10 14.1	+0.2
ARCES	ARCESS Array B 1.7nm,0.8s,baz=354,slow=3.7,SNR=4.3	140.57	347	PKhKP	PKPpre	04 10 20.5	
KBZ	Khabaz 3.8nm,0.8s,baz=332,slow=2.3,SNR=7.2	146.12	301	PKPbc	PKPdf	04 10 33.7	+0.4
KVAR	Kislovodsk Arr 8.7nm,1.0s,baz=150,slow=5.8,SNR=3.0	146.24	302	PKPbc	PKPbc	04 10 35.1	+0.2
NB2	NORSAR Subarra comp=Z,5.3nm,1.2s,baz=29,slow=2.6	150.76	351	PKP	PKPbc	04 10 45.0	-1.0
NOA	NORSAR Array B comp=Z,1.5nm,0.8s,baz=16,slow=4.2,SNR=6.8	150.76	351	PKPbc	PKPbc	04 10 45.3	-0.8
AKASG	Malin Array Be comp=Z,2.2nm,0.8s,baz=60,slow=2.3,SNR=

TORD	**Torodi Ar. Bea**	**160.77**	**180**	PKPab	**PKPab**	**04 11 36.8**	**-0.1**
	comp=Z,2.2nm,0.8s,baz=180,slow=2.9,SNR=10						
KHC	**Kasperske Hory**	**161.17**	**336**	*e*PKPAB	**PKPab**	**04 11 38.1**	**+0.1**
GERES	**GERESS Array B**	**161.37**	**335**	PKPab	**PKPab**	**04 11 38.3**	**-0.6**
	comp=Z,0.5nm,0.5s,baz=32,slow=7.8,SNR=6.1						
SOKA	**Soboth**	**162.58**	**328**	*i* PKPab	**PKPab**	**04 11 43.6**	**-0.7**
	comp=Z,0.7nm,0.5s						
OBKA	**Obir**	**162.92**	**329**	*i* PKPab	**PKPab**	**04 11 47.2**	**+1.4**
	comp=Z,2.5nm,1.1s						
KBA	**Koelnbreinsper**	**162.97**	**332**	*i* PKPab	**PKPab**	**04 11 46.9**	**+0.8**
	comp=Z,2.4nm,0.8s						
MYKA	**Terra Mystica**	**163.21**	**331**	*i* PKPab	**PKPab**	**04 11 46.3**	**-0.8**
	comp=Z,2.9nm,0.9s						
WATA	**Walderalm**	**163.40**	**336**	*i* PKPab	**PKPab**	**04 11 47.1**	**-0.8**
	comp=Z,2.7nm,0.6s						
WTTA	**Wattenberg**	**163.44**	**336**	*i* PKPab	**PKPab**	**04 11 48.4**	**+0.3**
	comp=Z,5.4nm,1.1s						
ABTA	**Abfaltersbach**	**163.56**	**333**	*i* PKPab	**PKPab**	**04 11 47.5**	**-1.1**
	comp=Z,3.7nm,0.8s						
DAVA	**Damuels**	**163.98**	**340**	*i* PKPab	**PKPab**	**04 11 50.7**	**+0.2**
	comp=Z,3.1nm,0.8s						

IDC ***11*** *04:04:24.9±2.9, 31°.49S×70°.25W, h82km±84km, mb1 3.5/5, mb1mx3.3/25, mbtmp3.6/5, ML3.7/4, Error ellipse: s-maj=44.1km s-min=23.7km az=96.0*

ISCJB ***11*** *04:04:26.1±0.6, 31°.41S±0°.06×70°.11W±0°.07, h97km±10km, Error ellipse: s-maj=12.9km s-min=4.9km az=135.8*

GUC ***11*** *04:04:26.8±0.7, 31°.54S×70°.14W, h101km±30km, ML3.4*

SJA ***11*** *04:04:27.8±0.6, 31°.59S×69°.86W, h106km±4km, ML3.7, MW3.8*

ISC 11 04:04:26.5±0.9**, 31°.45S**±0°.08×**70°.10W**±0°.08**, h103**km±14**km, n19, σ1§07/32, 2C-4D, Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RTLS	**Leoncito**	**0.77**	**117**	*e*P		**Pn**		**04 04 46.0**	**+0.8**
RTLS				*e*S		**Sn**		**04 04 59.0**	**-0.2**
AUSP	**Uspallata**	**0.98**	**142**	*e*P		**Pn**		**04 04 47.9**	**+0.6**
AUSP				*e*S		**Sn**		**04 05 02.3**	**-0.6**
SJA	**San Juan**	**1.32**	**94**	*e*P		**Pn**		**04 04 51.1**	**+0.3**
SJA				*e*S		**Sn**		**04 05 07.9**	**-1.3**
SJA				IAML				04 05 11.5	
	comp=Z,1μm,0.2s								
RTCV	**Cerro Valdivia**	**1.39**	**108**	*e*P		**Pn**		**04 04 51.2**	**-0.5**
RTCV				*e*S		**Sn**		**04 05 08.8**	**-2.0**
RTLL	**Cerro Villicun**	**1.40**	**85**	*e*P		**Pn**		**04 04 51.5**	**-0.2**
RTLL				*e*S		**Sn**		**04 05 09.7**	**-1.2**
ASAL	**Salagasta**	**1.56**	**137**	*e*P		**Pn**		**04 04 53.4**	**-0.4**
ROCH	**El Roble**	**1.70**	**207**	⇓*i*P		**Pn**		**04 04 56.1**	**+0.5**
ROCH				*i* S		**Sn**		**04 05 18.2**	**+0.4**
ARCO	**CERRO ARCO**	**1.71**	**145**	*e*P		**Pn**		**04 04 55.2**	**-0.5**
ARCO				IAML				04 05 20.3	
	comp=Z,647nm,0.3s								
PEL	**Peldehue**	**1.76**	**196**	⇓*i*P		**Pn**		**04 04 55.5**	**-0.7**
PEL				*i* S		**Sn**		**04 05 18.3**	**-0.4**
PEL				IAML				04 05 22.6	
	comp=N,381nm,0.2s								
FCH	**Farellones**	**1.88**	**185**	⇓*i*P		**Pn**		**04 04 58.5**	**+0.5**
FCH				*i* S		**Sn**		**04 05 22.2**	**+0.3**
FCH				IAML				04 05 26.5	
	comp=N,476nm,0.3s								
AAGR	**Agrelo**	**1.95**	**147**	*e*P		**Pn**		**04 04 58.3**	**-0.5**
CLCH	**Cerro Calan**	**1.97**	**191**	⇓*i*P		**Pn**		**04 04 59.2**	**+0.2**
CLCH				*i* S		**Sn**		**04 05 23.8**	**+0.1**
CLCH				IAML				04 05 28.5	
	comp=E,441nm,0.6s								
RCDM	**Rinconada Maip**	**2.12**	**196**	⇑*i*P		**Pn**		**04 05 00.5**	**-0.3**
RCDM				*i* S		**Sn**		**04 05 26.1**	**-0.8**
ANTU	**Antumapu**	**2.16**	**192**	⇑*i*P		**Pn**		**04 05 01.4**	**0.0**
ANTU				*i* S		**Sn**		**04 05 27.4**	**-0.5**
ANTU				IAML				04 05 28.7	
	comp=E,376nm,0.4s								
LVC	**Limon Verde**	**8.87**	**7**	P		**Pn**		**04 06 32.6**	**+0.4**
	comp=E,17nm,0.3s,baz=188,slow=7.1,SNR=2.5								
LVC				S		**Sn**		**04 08 08.6**	**-2.0**
	comp=E,11nm,0.3s,baz=192,slow=19,SNR=1.5								
PLCA	**Paso Flores**	**9.27**	**182**	P		**Pn**		**04 06 34.4**	**-2.9**
	comp=E,0.2nm,0.3s,baz=6.4,slow=13,SNR=8.2								
CPUP	**Villa Florida**	**12.30**	**69**	P		**Pn**		**04 07 20.5**	**+2.4**
	comp=E,0.1nm,0.3s,baz=239,slow=17,SNR=1.5								
CPUP				S		**Sn**		**04 09 34.4**	**+1.1**
	comp=E,0.1nm,0.3s,baz=288,slow=20,SNR=1.7								
LPAZ	**La Paz**	**15.20**	**7**	P		**P**		**04 07 58.4**	**-0.6**
	comp=E,0.2nm,0.3s,baz=185,slow=11,SNR=7.9								
SIV	**San Ignacio**	**17.45**	**30**	P		**Pn**		**04 08 23.1**	**-0.5**
	comp=E,0.2nm,0.3s,baz=199,slow=12,SNR=2.5								

CASC 11 04:07:29.9±1.3**, 12°.46N×87°.86W, h45**km±52**km, MD3.5, ML3.2, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**0.81**	**2**	*e*P			Pn	04 07 45.3	+0.2
CNCH				*e*S			Sn	04 07 57.3	+1.2
LCY	**Lacayo**	**1.04**	**336**	*e*P			Pn	04 07 48.6	+0.3
LCY				*e*S			Sn	04 08 02.0	+0.2
PACA	**Pacayal**	**1.10**	**336**	*e*P			Pn	04 07 49.2	+0.2
PACA				*e*S			Sn	04 08 04.0	+0.9
CNGN	**Cerro Negro**	**1.13**	**88**	*e*P			Pn	04 07 49.5	+0.1
CNGN				*e*S			Sn	04 08 04.8	+0.9
CNGN				AML		AML		04 08 08.2	
	comp=N,493nm,0.4s								
COPN	**Copaltepe**	**1.27**	**103**	*e*P			Pn	04 07 51.2	0.0
COPN				*e*S			Sn	04 08 07.2	+0.1
MOMN	**Momotombo**	**1.29**	**92**	*e*P			Pn	04 07 51.4	-0.1
CAHU	**Cacaocuatique**	**1.34**	**345**	*e*P			Pn	04 07 51.6	-0.8
XAVN	**Gruta Xavier**	**1.53**	**102**	*e*P			Pn	04 07 54.8	0.0
MGAN	**Managua**	**1.61**	**101**	*e*P			Pn	04 07 56.0	+0.2
LFRS	**El Faro**	**1.64**	**315**	*e*P			Pn	04 07 57.0	+0.5
LFRS				*e*S			Sn	04 08 16.8	+0.3
TGUH	**Tegucigalpa,Un**	**1.68**	**20**	*e*P			Pn	04 07 57.4	+0.5
LBRS	**Las Brisas**	**1.71**	**318**	*e*P			Pn	04 07 57.9	+0.5
LBRS				*e*S			Sn	04 08 18.0	-0.1
LFU	**La Fuente**	**1.77**	**316**	*e*P			Pn	04 07 57.9	-0.2
BOQS	**Boqueron**	**1.88**	**313**	*e*P			Pn	04 08 00.9	+1.2
BOQS				*e*S			Sn	04 08 24.0	+1.7

SOME ***11*** *04:08:28.5, 41°.65N×81°.78E, h10km*

NNC ***11*** *04:08:30.8±3.2, 41°.92N×82°.01E, h0km, mb3.7, mpv3.2, Error ellipse: s-maj=24.8km s-min=14.7km az=153.0*

ISC 11 04:08:29.4±2.5**, 41°.8N**±0°.1×**82°.09E**±0°.09**, h10**km**, n18, σ1§33/35, 4C-5D, Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**2.10**	**310**	*e*P			**Pb**	**04 09 06.3**	**-1.5**
	55nm,0.3s								
SHLS				*e*S			**Sb**	**04 09 33.1**	**-1.0**
	251nm,0.3s								
PDGK	**Podgornoye**	**2.44**	**309**	⇓Pn			**Pn**	**04 09 09.7**	**+0.5**
	30nm,0.6s								
PDGK				⇑Sn			**Sb**	**04 09 41.5**	**-2.0**
	34nm,0.4s								
UZB	**Uzynbulak**	**2.62**	**301**	*e*P			**Pb**	**04 09 14.6**	**-2.0**
	16nm,0.3s								
UZB				*e*S			**Sb**	**04 09 47.6**	**-1.4**
	133nm,0.5s								
SATY	**Saty**	**2.99**	**296**	*e*P			**Pb**	**04 09 21.7**	**-1.1**
	29nm,0.2s								
SATY				*e*S			**Sb**	**04 09 59.7**	**+0.2**
	79nm,0.4s								
ZHN	**Zhinishke**	**3.02**	**298**	*e*P			**Pb**	**04 09 22.2**	**-1.0**
	16nm,0.1s								
ZHN				*e*S			**Sb**	**04 10 00.0**	**-0.2**
	167nm,0.2s								
DJR	**Jarkent**	**3.02**	**327**	*e*P			**Pn**	**04 09 18.8**	**+1.4**
	20nm,0.5s								
DJR				*e*S			**Sn**	**04 09 54.5**	**+0.8**
	31nm,0.3s								
KURS	**Kuram**	**3.33**	**301**	*e*P			**Pb**	**04 09 27.4**	**-1.3**
	4.5nm,0.7s								
KURS				*e*S			**Sb**	**04 10 09.5**	**+0.2**
	24nm,1.1s								
ARXS	**Arharly**	**3.93**	**309**	*e*P			**Pb**	**04 09 38.0**	**-0.8**
	17nm,0.4s								
ARXS				*e*S			**Sb**	**04 10 27.4**	**+0.9**
	23nm,0.5s								
MDOK	**Medeo**	**3.96**	**291**	*e*P			**Pb**	**04 09 38.6**	**-0.7**
	8.6nm,0.6s								
MDOK				*e*S			**Sb**	**04 10 28.4**	**+1.1**
	22nm,0.5s								
KAPS	**Kapalarasan**	**3.99**	**331**	*e*P			**Pn**	**04 09 33.6**	**+3.0**
	19nm,0.4s								
KAPS				*e*S			**Sn**	**04 10 19.4**	**+1.9**
	50nm,0.3s								
TNSS	**Tian-Shan**	**4.00**	**289**	*e*P			**Pb**	**04 09 38.8**	**-1.3**
	15nm,0.7s								
TNSS				*e*S			**Sb**	**04 10 28.6**	**0.0**
	19nm,0.5s								
IZV	**Izvestkoviy**	**4.23**	**288**	*e*P			**Pb**	**04 09 42.3**	**-1.7**
	18nm,0.7s								
IZV				*e*S			**Sb**	**04 10 34.9**	**-0.3**
	32nm,0.5s								
CHKK	**Chushkaly**	**4.26**	**300**	*e*P			**Pb**	**04 09 43.6**	**-0.8**
	2.4nm,0.4s								
CHKK				*e*S			**Sb**	**04 10 36.8**	**+0.8**
	22nm,0.5s								
KTBS	**Karatobe**	**4.40**	**297**	*e*P			**Pb**	**04 09 45.4**	**-1.5**
KTBS				*e*S			**Sb**	**04 10 40.2**	**+0.2**
DGS	**Degeres**	**4.88**	**289**	*e*P			**Pb**	**04 09 54.3**	**-0.6**
	4.8nm,0.4s								
DGS				*e*S			**Sb**	**04 10 55.0**	**+1.4**
	14nm,0.6s								
TKM2	**Tokmak 2**	**4.93**	**285**	⇓Pn			**Pn**	**04 09 45.2**	**+1.5**
	5.5nm,0.7s								
TKM2				⇑Lg			Lg	04 11 01.1	
	6.8nm,0.5s								
MK31	**Makanchi Array**	**4.97**	**2**	⇓Pn			**Pn**	**04 09 45.4**	**+1.2**
	0.2nm,0.2s,baz=177,slow=12,SNR=6.6								
MK31				⇑Pg			**Pg**	**04 10 02.7**	**-1.9**
	1.1nm,0.4s,baz=171,slow=13,SNR=5.6								
MK31				Sn			**Sn**	**04 10 43.2**	**+1.6**
	2.2nm,0.5s,baz=178,slow=26,SNR=5.4								
MK31				⇓Lg			Lg	04 11 04.6	
	5.8nm,0.6s,baz=187,slow=30,SNR=6.8								
AAK	**Ala-Archa**	**5.69**	**281**	⇓Pg			**Pg**	**04 10 17.5**	**-0.9**
	2.8nm,0.6s								
AAK				⇑Lg			Lg	04 11 25.0	
	6.6nm,0.6s								

IDC ***11*** *04:09:22.5±0.8, 29°.45S×176°.13W, h0km, mb4.1/7, mb1 4.4/8, mb1mx4.1/28, mbtmp4.2/8, ML4.2/1, MS3.5/4, Ms1 3.5/4, ms1mx3.0/38, Error ellipse: s-maj=35.3km s-min=17.4km az=172.0*

NEIC ***11*** *04:09:24.0±0.5, 29°.58S×176°.16W, h10km, mb4.5/3, Error ellipse: s-maj=15.7km s-min=11.3km az=140.0*

ISCJB ***11*** *04:09:25.7±0.6, 29°.78S±0°.07×176°.15W±0°.07, h28km, mb4.3/11, MS3.5/3, Error ellipse: s-maj=10.4km s-min=8.9km az=165.4*

ISC 11 04:09:26.7±0.7**, 29°.65S**±0°.09×**176°.19W**±0°.08**, h28**km**, n26, σ1§13/22, mb4.2/10, MS3.6/3, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.56**	**284**	Pn			**Pn**	**04 09 53.1**	**+0.6**
	539nm,0.3s,baz=15,slow=3.9,SNR=17								
RAO				Sn			**Sb**	**04 10 14.3**	**+0.1**
	315nm,0.3s,baz=101,slow=23,SNR=7.4								
RAO				LR			LR	04 10 41.7	
	comp=Z,466nm,21.9s,baz=233,slow=50								
URZ	**Urewera**	**10.23**	**211**	Pn			**Pn**	**04 11 49.4**	**-2.2**
	0.1nm,0.3s,baz=281,slow=8.4,SNR=1.9								
URZ				Sn			**Sn**	**04 13 44.8**	**-0.5**
	3.0nm,0.3s,baz=276,slow=19,SNR=5.5								
RAR	**Rarotonga**	**17.03**	**64**	LR			LR	04 18 41.3	
	comp=Z,87nm,19.4s,baz=275,slow=33								
RPZ	**Rata Peaks**	**17.34**	**212**	P			**P**	**04 13 27.5**	**-0.3**
	0.9nm,0.3s,baz=26,slow=8.5,SNR=2.8								
TBI	**Tubuai**	**24.70**	**82**	*e*LR			LR	04 20 34.2	
	168nm,28.8s								
PPT2	**Papeete2**	**27.11**	**70**	*e*LR			LR	04 21 34.6	
	151nm,27.0s								
PPT	**Papeete**	**27.12**	**70**	LR			LR	04 24 37.0	
	comp=Z,66nm,18.2s,baz=224,slow=34								
STKA	**Stephens Creek**	**36.18**	**256**	P			**P**	**04 16 28.9**	**+2.0**
	1.6nm,0.6s,baz=99,slow=11,SNR=6.0								
STKA				LR			LR	04 30 57.0	
	comp=Z,100nm,18.7s,baz=34,slow=36								
TAOE	**Nuku Hiva Isla**	**39.57**	**66**	*e*LR			LR	04 27 20.5	
	77nm,26.4s								
ASAR	**Alice Springs**	**44.73**	**265**	P			**P**	**04 17 37.3**	**-0.4**
	1.1nm,0.5s,baz=97,slow=7.5,SNR=19								
ASAR				LR			LR	04 36 52.7	
	comp=Z,92nm,18.0s,baz=94,slow=37								
WRA	**Warramunga Arr**	**45.65**	**270**	P			**P**	**04 17 44.5**	**-0.6**
	2.1nm,0.7s,baz=109,slow=7.7,SNR=6.1								
QSPA	**South Pole Qui**	**60.46**	**180**	*e*P			**P**	**04 19 35.9**	**+2.2**
	3.7nm,0.9s								
SNAA	**Sanae**	**78.85**	**178**	*e*P			**P**	**04 21 27.5**	**+0.6**
	75nm,0.8s								
WUAZ	**Wupatki**	**89.00**	**48**	*e*P			**P**	**04 22 19.9**	**+0.7**
	2.3nm,1.0s								
TXAR	**Lajitas Array**	**90.67**	**56**	P			**P**	**04 22 27.3**	**+0.3**
	0.4nm,0.7s,baz=226,slow=5.0,SNR=4.9								
PDAR	**Pinedale Array**	**94.52**	**43**	P			**P**	**04 22 44.5**	**-0.1**
	0.1nm,0.3s,baz=247,slow=9.4,SNR=2.4								
BOZ	**Bozeman (W)**	**95.08**	**39**	*e*P			**P**	**04 22 46.6**	**-0.4**
	2.3nm,1.1s								
ILAR	**Eielson Array**	**96.86**	**12**	P			**P**	**04 22 53.1**	**-1.3**
	0.6nm,0.7s,baz=222,slow=5.3,SNR=6.0								
LPAZ	**La Paz**	**97.00**	**113**	P			Pdif	04 22 57.9	+0.7
	0.7nm,0.8s,baz=205,slow=5.3,SNR=2.7								
MKAR	**Makanchi Array**	**118.49**	**310**	PKP			**PKPdf**	**04 28 10.4**	**-1.1**
	0.4nm,0.6s,baz=91,slow=0.8,SNR=3.8								
ARCES	**ARCESS Array B**	**138.18**	**349**	PKP			**PKPdf**	**04 28 47.4**	**-0.8**
	0.8nm,0.6s,baz=59,slow=3.5,SNR=3.1								
NB2	**NORSAR Subarra1**	**148.22**	**353**	PKP			**PKPbc**	**04 29 08.3**	**-1.1**
	comp=Z,1.1nm,0.7s,baz=12,slow=2.9								
NOA	**NORSAR Array B**	**148.22**	**353**	PKPbc			**PKPbc**	**04 29 08.4**	**-1.0**
	comp=Z,1.1nm,0.7s,baz=48,slow=2.1,SNR=6.1								
AKASG	**Malin Array Be**	**151.62**	**325**	PKPbc			**PKPbc**	**04 29 17.5**	**-0.5**
	comp=Z,3.0nm,0.6s,baz=45,slow=2.8,SNR=11								
BRTR	**Keskin Array B**	**153.60**	**300**	PKPbc			**PKPbc**	**04 29 24.1**	**+1.1**
	comp=Z,0.5nm,0.7s,baz=25,slow=3.8,SNR=2.9								
TORD	**Torodi Ar. Bea**	**163.46**	**173**	PKPab			**PKPab**	**04 30 19.4**	**+1.0**
	comp=Z,1.1nm,0.7s,baz=212,slow=2.1,SNR=6.9								

NIED ***11*** *04:29:00, 39°.30N×142°.10E, h50km, Mw5.2 Best double couple: M0 6.78000×10^16 NP1:φs189.00000°, δ20.00000°, λ74.00000°. NP2:φs26.00000°, δ71.00000°, λ96.00000°.*

BJI ***11*** *04:29:24.3, 39°.23N×142°.22E, h45km, mb4.8/71, mB5.0/54, Ms4.6/81, Ms7 4.5/73*

MOS ***11*** *04:29:26.7±0.9, 39°.40N×141°.91E, h49km, mb5.3/103, MS4.4/22, Error ellipse: s-maj=7.2km s-min=4.6km az=93.9*

IDC ***11*** *04:29:28.0±0.3, 39°.32N×141°.89E, h44km±1km, mb4.5/40, mb1 4.5/43, mb1mx4.5/58, mbtmp4.7/43, MS4.4/25, Ms1 4.4/25, ms1mx4.3/37, Error ellipse: s-maj=8.2km s-min=6.5km az=98.0*

JMA ***11*** *04:29:28.3, 39°.34N×142°.06E, h48km±1km, M5.1 Broadband fault plane solution: P waves. NP1: φs31.00000°, δ71.00000°, λ97.00000°. NP2:φs189.00000°, δ20.00000°, λ70.00000°. Principal axes: T Plg63.0000°, Azm312.0000°; N Plg7.0000°, Azm208.0000°; P Plg26.0000°, Azm115.0000°;*

JMA Felt IV J1.

ISCJB ***11*** *04:29:28.1±0.2, 39°.38N±0°.02×141°.93E±0°.02, h58km±1km, mb5.1/287, MS4.6/56 Error ellipse: s-maj=3.3km s-min=2.3km az=149.3*

GCMT ***11*** *04:29:30.5±0.2, 39°.43N×142°.06E, h51km±1km, MW5.2/101, Moment Tensor Solution. s75,c126; s101,c188; Duration: 1§0 Moment tensor: Scale 10^17 Nm; Mrr0.63±.02; Mθθ-0.06±.01; Mφφ-0.56±.01; Mrθ0.26±.01; Mθφ-0.14±.01; Mφr0.49±.01; Best double couple: M0 0.82900×10^17 NP1:φs23.00000°, δ66.00000°, λ97.00000°. NP2:φs187.00000°, δ25.00000°, λ75.00000°. Principal axes: T 0.8480, Plg68.0000°, Azm306.0000°; N -0.0390, Plg6.0000°, Azm201.0000°; P -0.8100, Plg21.0000°, Azm108.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***11*** *04:29:30.5±0.4, 39°.35N×141°.86E, h66km±3km, mb5.2/174 Error ellipse: s-maj=3.7km s-min=2.4km az=140.0*

NEIC Felt at Furukawa. Recorded [4 JMA] in Iwate.

ISC 11 04:29:28.0±0.2**, 39°.36N**±0°.02×**141°.94E**±0°.03**, h44**km±1km**, h44**km**:pP-P, n949, σ1§36/1053, mb5.1/289, MS4.7/56, 50C-38D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.23**	**337**	⇓P			**Pn**	**04 29 37.2**	**+1.1**
MIYJ				S			**Sn**	**04 29 43.3**	**+1.6**
OFUJ	**Ofunato**	**0.35**	**217**	⇓P			**Pn**	**04 29 38.3**	**+1.1**
OFUJ				S			**Sn**	**04 29 45.2**	**+1.5**
JOM	**Ohasama**	**0.51**	**283**	⇓P			**Pn**	**04 29 40.8**	**+1.7**
JOM				S			**Sn**	**04 29 50.1**	**+3.1**
JTH	**Tanohata**	**0.58**	**354**	⇓P			**Pn**	**04 29 40.8**	**+0.8**
JTH				S			**Sn**	**04 29 49.5**	**+1.0**
JMK	**Ichinoseki**	**0.69**	**234**	⇓P			**Pn**	**04 29 42.7**	**+1.2**
JMK				S			**Sn**	**04 29 52.9**	**+1.7**
JKZ	**Kuzumaki**	**0.78**	**323**	⇓P			**Pn**	**04 29 44.4**	**+1.7**
JKZ				S			**Sn**	**04 29 56.3**	**+3.0**
JRG	**Rokugo**	**1.01**	**272**	⇓P			**Pn**	**04 29 47.4**	**+1.6**
JIO	**Ouri**	**1.02**	**207**	⇓P			**Pn**	**04 29 46.3**	**+0.4**
JIO				S			**Sn**	**04 29 59.1**	**+0.1**
JANG	**Nango**	**1.06**	**342**	⇓P			**Pn**	**04 29 47.3**	**+0.8**
JANG				*e*S			**Sn**	**04 30 01.4**	**+1.3**
JAH	**Hinai**	**1.30**	**310**	⇓P			**Pn**	**04 29 51.4**	**+1.7**
JYK	**Kaneyama**	**1.31**	**251**	⇓P			**Pn**	**04 29 51.5**	**+1.7**
JOU	**Okura**	**1.41**	**225**	⇓P			**Pn**	**04 29 52.2**	**+1.0**
JYS	**Shirataka**	**1.85**	**233**	⇓P			**Pn**	**04 29 59.1**	**+1.7**
JTB	**Tobi-shima**	**1.86**	**266**	⇓P			**Pn**	**04 29 58.5**	**+1.2**
JYA	**Atsumi**	**1.90**	**247**	⇓P			**Pn**	**04 29 59.6**	**+1.7**
JIW	**Iwasaki**	**1.93**	**310**	⇓P			**Pn**	**04 30 00.4**	**+2.1**
JAW	**Awa shima**	**2.29**	**248**	⇓P			**Pn**	**04 30 05.2**	**+2.0**
JSR	**Shiriuchi**	**2.46**	**332**	⇓P			**Pn**	**04 30 07.6**	**+2.0**
ERM	**Erimo**	**2.81**	**19**	*d*iP			**Pn**	**04 30 10.3**	**-0.1**
ERM				pmax			pmax		
	comp=Z,165nm,0.8s								
ERM	**Erimo**	**2.81**	**19**	*e*Pn			**Pn**	**04 30 10.7**	**+0.3**
ERM				*e*S			**Sn**	**04 30 51.0**	**+8.1**
JSD	**Sado**	**3.17**	**246**	⇓P			**Pn**	**04 30 17.0**	**+1.6**
JCH	**Churui**	**3.42**	**18**	⇑P			**Pn**	**04 30 18.9**	**+0.1**
MAJO	**Matsushiro**	**4.08**	**227**	*d*iP			**Pn**	**04 30 29.3**	**+1.4**
MAJO	**Matsushiro**	**4.08**	**227**	*e*Pn			**Pn**	**04 30 30.6**	**+2.8**
MAT	**Matsushiro**	**4.08**	**227**	P			**Pn**	**04 30 31.2**	**+3.3**
MAT				S			**Sn**	**04 31 21.3**	**+7.0**
MJAR	**Matsushiro Arr**	**4.08**	**227**	P			**Pn**	**04 30 30.5**	**+2.6**
	comp=Z,24nm,0.3s,baz=35,slow=11,SNR=285								
MJAR				S			**Sn**	**04 31 11.1**	**-3.2**
	comp=Z,21nm,0.3s,baz=15,slow=16,SNR=6.3								
MJAR				LR			LR	04 32 16.3	
	comp=Z,4μm,21.3s,baz=60,slow=42								
MJB9	**Matsu-Tunnel**	**4.08**	**228**	*e*Pn			**Pn**	**04 30 31.0**	**+3.1**
JRY	**Ryogami san**	**4.12**	**217**	⇑P			**Pn**	**04 30 30.8**	**+2.3**
ASAJ	**Asahikawa**	**4.78**	**6**	P			**Pn**	**04 30 38.2**	**+0.8**
ASAJ				S			**Sn**	**04 31 31.5**	**+0.1**
ASAJ	**Asahikawa**	**4.78**	**6**	*e*Pn			**Pn**	**04 30 38.1**	**+0.8**
ASAJ				*e*S			**Sn**	**04 31 26.3**	**-5.2**
JNY	**Yasuok**	**5.15**	**220**	⇑P			**Pn**	**04 30 45.5**	**+2.8**
YUK	**Yuzh-Kuril'sk**	**5.51**	**31**	*i* P			**Pn**	**04 30 46.5**	**-1.0**
INU	**Inuyama**	**5.61**	**226**	*e*Pn			**Pn**	**04 30 52.0**	**+3.1**
JHJ	**Hachijo jima 2**	**6.47**	**196**	P			**Pn**	**04 30 59.9**	**-0.8**
	comp=Z,44nm,0.3s,baz=326,slow=22,SNR=31								
JHJ				S			**Sn**	**04 32 09.6**	**-3.6**
	comp=Z,165nm,0.3s,baz=44,slow=22,SNR=7.1								
JHJ2	**Mitsune**	**6.47**	**196**	*e*Pn			**Pn**	**04 31 00.3**	**-0.3**
JHJ2				*e*S			**Sn**	**04 32 09.2**	**-4.0**
KUR	**Kuril'sk**	**7.33**	**35**	*e*P			**Pn**	**04 31 12.1**	**-0.3**
KUR				*i* S			**Sn**	**04 32 29.5**	**-4.7**
KUR				pmax			pmax		
	comp=Z,207nm,0.6s								
KUR				pmax			pmax		
	comp=E,74nm,0.3s								
KUR				pmax			pmax		
	comp=N,83nm,0.4s								
KUR				smax			smax		
	comp=N,240nm,0.4s								
YSS	**Yuzh-Sakhalins**	**7.61**	**4**	⇑*i*P			**Pn**	**04 31 16.9**	**+0.6**
YSS				*i* S			**Sn**	**04 32 44.1**	**+3.0**
YSS				MLR			MLR		
	comp=Z,2μm,14.0s								
YSS				MLR			MLR		
	comp=N,2μm,15.0s								
YSS				MLR			MLR		
	comp=E,1μm,17.0s				

comp=Z,63nm,0.7s
SKR MLR MLR
comp=Z,700nm,16.0s
DL2 Dalian 15.77 275 P **Pn** **04 33 08.4 +1.4**
DL2 sP **sP** **04 33 23.9 -2.5**
DL2 S **S** **04 36 08.9 -4.7**
DL2 pmax pmax
comp=Z,35nm,0.8s
DL2 pmax pmax
comp=Z,400nm,5.7s
DL2 LR LR
comp=Z,680nm,12.7s
DL2 LR LR
comp=Z,670nm,12.0s
DL2 LR LR
comp=Z,2µm,26.7s
PEA0 Petropavlovsk- 17.49 33 *e*Pn **Pn** **04 33 25.1 -3.4**
PETK Petropavlovsk- 17.49 33 P **Pn** **04 33 24.9 -3.5**
comp=Z,0.5nm,0.3s,baz=210,slow=8.9,SNR=11
PETK pP **pP** **04 33 39.9 +0.2**
comp=Z,0.5nm,0.3s,baz=193,slow=12,SNR=3.8
PETK sP **sP** **04 33 45.1 -0.2**
comp=Z,0.5nm,0.3s,baz=206,slow=9.7,SNR=3.3
PETK LR LR 04 41 06.4
comp=Z,607nm,18.5s,baz=218,slow=40
PETK Petropavlovsk- 17.49 33 P **Pn** **04 33 25.0 -3.5**
PETK pmax pmax
comp=Z,1.0nm,0.3s
PETK MLR MLR
comp=Z,607nm,18.5s
PET Petropavlovsk 17.84 35 *e*P **P** **04 33 33.4 +0.4**
PET *e*S **Sn** **04 36 49.3 -1.2**
PET pmax pmax
comp=Z,200nm,3.3s
PET pmax pmax
comp=Z,200nm,13.2s
PET pmax pmax
comp=Z,69nm,1.2s
PET MLR MLR
comp=Z,700nm,19.0s
PET Petropavlovsk 17.84 35 *e*Pn **P** **04 33 33.2 +0.2**
HIA Hailar 18.65 309 *e*P **P** **04 33 40.4 -1.7**
HIA pmax pmax
comp=Z,37nm,0.9s
HIA Hailar 18.65 309 *e*Pn **P** **04 33 40.4 -1.7**
comp=Z,38nm,0.9s
SSE Sheshan 18.82 250 P **Pn** **04 33 45.2 +0.3**
SSE sP **sP** **04 34 02.8 +2.6**
SSE S **Sn** **04 37 13.6 -1.0**
SSE pmax pmax
comp=Z,66nm,0.8s
SSE pmax pmax
comp=Z,150nm,3.2s
SSE LR LR
comp=Z,650nm,16.7s
SSE LR LR
comp=Z,440nm,16.5s
SSE LR LR
comp=Z,770nm,22.2s
BJI Beijing 19.82 280 P **P** **04 33 53.2 -1.6**
BJI S **S** **04 37 31.3 -4.3**
BJI pmax pmax
comp=Z,31nm,1.0s
BJI pmax pmax
comp=Z,250nm,3.1s
BJI LR LR
comp=Z,380nm,13.5s
BJI LR LR
comp=Z,830nm,25.2s
BJI LR LR
comp=Z,2µm,29.4s
BJT Baijiatuau 19.83 280 *e*P **P** **04 33 53.5 -1.4**
BJT pmax pmax
comp=Z,75nm,0.9s
BJT Baijiatuau 19.83 280 *e*P **P** **04 33 53.5 -1.4**
comp=Z,75nm,0.9s
TIA Tai'an 19.85 269 ⇓P **P** **04 33 54.9 -0.3**
TIA S **S** **04 37 31.9 -4.3**
TIA pmax pmax
comp=Z,50nm,1.3s
TIA pmax pmax
comp=Z,290nm,4.0s
TIA LR LR
comp=Z,1µm,17.0s
TIA LR LR
comp=Z,1µm,19.0s
TIA LR LR
comp=Z,2µm,24.0s
NJ2 Nanjing 20.08 256 *e*P **P** **04 33 57.7 0.0**
NJ2 S Sn 04 37 45.6 +0.7
NJ2 pmax pmax
comp=Z,38nm,0.8s
NJ2 LR LR
comp=Z,2µm,22.2s
NJ2 LR LR
comp=Z,1µm,26.0s
NJ2 LR LR
comp=Z,2µm,22.8s
CLNS Chul'man 20.76 333 *e*P **P** **04 34 01.5 -3.4**
CLNS pmax pmax
comp=Z,30nm,0.9s
CLNS pmax pmax
comp=E,21nm,1.1s
CLNS pmax pmax
comp=N,32nm,1.1s
CLNS MLR MLR
comp=Z,1µm,15.0s
CLNS MLR MLR
comp=N,848nm,16.0s
CLNS MLR MLR
comp=E,406nm,18.0s
MA2 Magadan 20.99 13 P **P** **04 34 07.3 -0.1**
comp=E,40nm,0.6s,baz=195,slow=9.5,SNR=20
MA2 sP **sP** **04 34 24.0 +0.4**
comp=E,90nm,0.7s,baz=195,slow=9.5,SNR=11
MA2 LR LR 04 42 32.1
comp=E,513nm,19.7s,baz=199,slow=37
YHNB Yeheng 22.70 236 *e*P **P** **04 34 24.6 -1.4**
comp=E,12nm,0.6s
NACB Ninganchiao 22.91 235 *e*P **P** **04 34 26.1 -2.0**
comp=E,4.1nm,0.4s
HHC Hu-ho-hao-te 23.23 283 *e*P **P** **04 34 30.3 -1.0**
HHC sP pP 04 34 44.7 +2.4
HHC PP **PnPn** **04 35 06.7 +8.6**
HHC S **S** **04 38 39.5 -0.6**
HHC sS sS 04 38 58.2 -1.5
HHC pmax pmax
comp=E,9.0nm,1.0s
HHC pmax pmax
comp=E,150nm,8.4s
HHC LR LR
comp=E,620nm,14.9s
HHC LR LR
comp=E,1µm,17.5s
HHC LR LR
comp=E,2µm,17.7s
CIT Chita 23.35 312 *e*P **P** **04 34 29.8 -2.6**
CIT *e* 04 34 43.2
CIT *e* 04 34 49.9
CIT *e* 04 35 10.6
SSLB Suanglung 23.59 235 *e*P **P** **04 34 32.7 -2.2**
comp=E,33nm,0.6s
YULB Yu-li 23.66 234 *e*P **P** **04 34 34.2 -1.3**
comp=E,30nm,0.8s
YAK Yakutsk 23.90 346 P **P** **04 34 35.9 -1.5**
comp=E,102nm,0.6s,baz=165,slow=1.7,SNR=19
YAK sP **sP** **04 34 54.0 -0.3**
comp=E,80nm,0.6s,baz=0.6,slow=6.1,SNR=2.4
YAK LR LR 04 44 32.2
comp=E,982nm,18.6s,baz=158,slow=38
YAK Yakutsk 23.90 346 *e*P **P** **04 34 35.5 -1.8**
YAK *e**PP **pP** **04 34 46.4 -2.6**
YAK *e* 04 35 05.0
YAK *e* 04 38 17.7
YAK *e*S **S** **04 38 47.7 -2.6**
YAK *e**SS **sS** **04 39 05.0 -4.9**
YAK pmax pmax
comp=Z,64nm,0.8s
YAK pmax pmax
comp=N,39nm,1.0s
YAK pmax pmax
comp=E,14nm,0.8s
YAK pmax pmax
comp=N,108nm,1.4s
YAK pmax pmax
comp=Z,84nm,1.1s

YAK pmax pmax
comp=E,76nm,1.4s
YAK smax smax
comp=N,417nm,2.3s
YAK smax smax
comp=E,177nm,2.5s
YAK Yakutsk 23.90 346 *e*P **P** **04 34 35.8 -1.5**
comp=E,124nm,0.7s
YAK sP **sP** **04 34 54.0 -0.3**
WHN Wuhan 24.19 257 ⇓*i*P **P** **04 34 40.2 -0.1**
WHN sP **sP** **04 34 57.7 +0.3**
WHN S **S** **04 38 52.7 -2.8**
WHN LR LR
comp=E,1µm,17.8s
WHN LR LR
comp=E,2µm,12.1s
WHN LR LR
comp=E,3µm,19.1s
TWG Pinlang 24.22 233 *e*P **P** **04 34 39.8 -0.9**
comp=E,302nm,0.8s
QZH Quanzhou 24.35 241 ⇑*i*P P 04 34 32.1 -10
QZH sP pP 04 34 48.5 -5.0
QZH S S 04 38 46.4 -12
QZH pmax pmax
comp=Z,1µm,3.9s
QZH LR LR
comp=N,2µm,18.8s
QZH LR LR
comp=E,640nm,13.0s
QZH LR LR
comp=Z,2µm,20.6s
BTO Baotou 24.42 283 *e*P **P** **04 34 42.6 +0.1**
SEY Seymchan 24.43 12 P **P** **04 34 42.5 +0.3**
comp=Z,15nm,0.7s,baz=206,slow=7.9,SNR=43
SEY sP **sP** **04 34 59.5 +0.2**
comp=Z,248nm,1.1s,baz=194,slow=6.7,SNR=25
GUMO Guam 25.80 173 LR LR 04 44 59.4
comp=Z,330nm,21.9s,baz=1.5,slow=36
BOD Bodaibo 25.82 325*d*/*i*P **P** **04 34 54.1 -0.8**
BOD pmax pmax
comp=Z,101nm,1.5s
SONA1 Songino Array 26.90 300 *e*P **P** **04 35 04.4 -0.4**
SONM Songino Array 26.90 300 P **P** **04 35 04.4 -0.5**
comp=Z,2.1nm,0.7s,baz=92,slow=8.8,SNR=17
SONM pP **pP** **04 35 17.4 +0.8**
comp=Z,6.8nm,0.8s,baz=96,slow=8.3,SNR=9.3
SONM sP **sP** **04 35 21.7 -0.2**
comp=Z,5.6nm,0.6s,baz=94,slow=8.7,SNR=8.0
SONM LR LR 04 46 18.8
comp=Z,2µm,18.5s,baz=91,slow=38
XAN Xi'an 26.91 269 P **P** **04 35 05.4 +0.4**
XAN sP sP 04 35 22.6 +0.6
XAN PP **PnPn** **04 35 49.1 +0.7**
XAN S **S** **04 39 33.7 -5.1**
XAN pmax pmax
comp=Z,22nm,0.6s
XAN pmax pmax
comp=Z,220nm,6.9s
XAN LR LR
comp=Z,320nm,22.1s
XAN LR LR
comp=Z,780nm,33.5s
XAN LR LR
comp=Z,910nm,25.2s
ENH Enshi 28.02 261 *e*P **P** **04 35 14.2 -0.8**
comp=E,80nm,0.9s
IRK Irkutsk 28.90 309 *e*P P 04 35 37.4 +15
IRK pmax pmax
comp=Z,128nm,1.7s
H11N2 WAKE ISLAND Hy 29.07 125 T T 05 05 46.7
baz=318,slow=75
H11N1 WAKE ISLAND Hy 29.07 125 T T 05 05 54.4
baz=318,slow=75
H11N3 WAKE ISLAND Hy 29.08 125 T T 05 05 48.1
baz=318,slow=75
TLY Talaya 29.18 308 P **P** **04 35 25.5 +0.5**
comp=Z,6.5nm,0.8s,baz=100,slow=7.7,SNR=14
TLY sP **sP** **04 35 42.4 +0.3**
comp=Z,8.5nm,0.6s,baz=108,slow=6.7,SNR=5.4
TLY LR LR 04 47 43.9
comp=Z,2µm,19.1s,baz=109,slow=38
TLY Talaya 29.18 308 P **P** **04 35 25.2 +0.2**
TLY *e* 04 36 42.1
TLY *e*S **S** **04 40 14.9 +0.8**
TLY pmax pmax
comp=Z,44nm,1.6s
TLY MLR MLR
comp=Z,2µm,17.6s
TLY Talaya 29.18 308 *e*P **P** **04 35 24.8 -0.2**
comp=Z,39nm,1.2s
TLY sP **sP** **04 35 42.4 +0.3**
GZH Guangzhou 29.18 245 P P 04 35 18.2 -7.0
GZH S S 04 40 02.6 -12
GZH pmax pmax
comp=Z,17nm,0.9s
ZAK Zakamensk 29.21 305 *e*P **P** **04 35 25.0 -0.4**
ZAK pmax pmax
comp=Z,18nm,0.9s
H11S1 WAKE ISLAND Hy 29.85 127 T T 05 07 00.1
baz=319,slow=76,SNR=1199
H11S3 WAKE ISLAND Hy 29.86 127 T T 05 06 47.3
baz=319,slow=76,SNR=1086
H11S2 WAKE ISLAND Hy 29.87 127 T T 05 06 48.5
baz=319,slow=76,SNR=735
LZH Lanzhou 30.16 276 *e*P **P** **04 35 34.3 +0.3**
LZH pP pP 04 35 46.6 +0.7
LZH sP sP 04 35 52.2 +1.0
LZH S **S** **04 40 25.0 -5.2**
LZH sS sS 04 40 49.1 -0.9
LZH SS **ScP** **04 42 13.0 0.0**
LZH pmax pmax
comp=Z,27nm,1.0s
LZH pmax pmax
comp=Z,170nm,4.5s
LZH LR LR
comp=Z,470nm,11.0s
LZH LR LR
comp=Z,900nm,11.6s
LZH LR LR
comp=Z,1µm,12.0s
MOY Mondy 30.81 307 *e*P P 04 35 50.9 +11
BILL Bilibino 31.68 17*c*/*i*P **P** **04 35 47.1 +0.2**
BILL *i* 04 35 55.7
BILL *i* 04 38 38.2
BILL pmax pmax
comp=Z,13nm,1.2s
BILL Bilibino 31.68 17 *e*P **P** **04 35 46.7 -0.2**
comp=Z,49nm,1.2s
GYA Guiyang 32.08 257 ⇑*i*P **P** **04 35 49.9 -1.1**
GYA pP sP 04 36 06.4 -1.7
GYA PP **PP** **04 37 01.0 -3.0**
GYA PcP **PcP** **04 38 42.6 +3.0**
GYA S **S** **04 40 53.1 -7.2**
GYA sS sS 04 41 23.3 +3.2
GYA ScP **ScP** **04 42 20.5 +1.0**
GYA SS **SnSn** **04 42 56.0 +3.1**
GYA pmax pmax
comp=Z,50nm,0.8s
GYA pmax pmax
comp=Z,140nm,5.3s
GYA LR LR
comp=Z,470nm,17.8s
GYA LR LR
comp=Z,590nm,15.7s
GYA LR LR
comp=Z,840nm,17.6s
CD2 Chengdu 32.15 267 *e*P **P** **04 35 51.2 -0.3**
CD2 pP pP 04 36 03.6 +0.2
CD2 sP sP 04 36 09.5 +0.9
CD2 S **S** **04 41 01.3 +0.2**
CD2 sS sS 04 41 22.8 +1.8
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,250nm,5.0s
CD2 LR LR
comp=Z,850nm,15.9s
CD2 LR LR
comp=Z,900nm,21.8s
CD2 LR LR
comp=Z,1µm,14.9s
GTA Gaotai 32.34 284 P **P** **04 35 53.4 +0.2**
GTA pP pP 04 36 05.4 +0.3
GTA sP sP 04 36 10.9 +0.6
GTA PcP **PcP** **04 38 39.8 -0.4**
GTA S **S** **04 41 04.8 +0.7**

GTA sS sS 04 41 25.3 +1.3
GTA PcS **PcS** **04 42 25.2 0.0**
GTA SS **SnSn** **04 43 03.6 +4.6**
GTA pmax pmax
comp=Z,5.0nm,1.2s
GTA pmax pmax
comp=Z,200nm,5.5s
GTA LR LR
comp=Z,840nm,19.0s
GTA LR LR
comp=Z,2µm,18.5s
GTA LR LR
comp=Z,2µm,19.0s
TIXI Tiksi 33.03 352 P **P** **04 35 58.0 -0.7**
comp=Z,7.3nm,0.9s,baz=147,slow=8.5,SNR=14
TIXI sP **sP** **04 36 15.4 -0.5**
comp=Z,15nm,0.6s,baz=154,slow=6.2,SNR=8.4
TIXI Tiksi 33.03 352*c*/*i*P **P** **04 35 57.9 -0.7**
TIXI pmax pmax
comp=Z,12nm,1.0s
TIXI Tiksi 33.03 352 *e*P **P** **04 35 58.0 -0.7**
comp=Z,19nm,0.8s
TIXI sP **sP** **04 36 15.4 -0.5**
QIZ Qiongzhong 34.31 243 P **P** **04 36 11.7 +1.4**
QIZ S **S** **04 41 37.4 +2.8**
QIZ LR LR
comp=Z,500nm,21.9s
QIZ LR LR
comp=Z,380nm,22.2s
QIZ LR LR
comp=Z,620nm,17.8s
KMI Kunming 35.78 259 P **P** **04 36 23.0 -0.2**
KMI sP sP 04 36 40.5 +0.1
KMI PP **PnPn** **04 37 41.4 -2.6**
KMI S **S** **04 41 51.1 -6.5**
KMI pmax pmax
comp=Z,41nm,1.3s
KMI pmax pmax
comp=Z,280nm,4.4s
KMI LR LR
comp=Z,240nm,18.2s
KMI LR LR
comp=Z,800nm,16.5s
KMI LR LR
comp=Z,800nm,20.4s
WMQ Urumqi 40.20 295 ⇑*i*P **P** **04 37 01.1 +1.0**
WMQ pP pP 04 37 13.1 +0.9
WMQ sP sP 04 37 18.5 +1.0
WMQ PcP **PcP** **04 39 04.3 +0.8**
WMQ S **S** **04 43 03.6 -0.4**
WMQ sS sS 04 43 28.6 +4.4
WMQ pmax pmax
comp=Z,64nm,1.1s
WMQ pmax pmax
comp=Z,340nm,4.5s
WMQ LR LR
comp=Z,650nm,16.0s
WMQ LR LR
comp=Z,770nm,18.4s
WMQ LR LR
comp=Z,1µm,20.8s
KKM Kota Kinabalu 40.48 222 *e*P **P** **04 37 03.3 +0.6**
ZAA0 Zalesovo Array 40.69 310 *e*P **P** **04 37 03.9 0.0**
ZALV Zalesovo Beam 40.69 310 P **P** **04 37 03.6 -0.3**
comp=Z,12nm,0.5s,baz=88,slow=7.7,SNR=74
ZALV pP **pP** **04 37 16.6 +0.6**
comp=Z,30nm,0.5s,baz=94,slow=7.6,SNR=16
ZALV sP **sP** **04 37 21.3 +0.1**
comp=Z,117nm,0.7s,baz=93,slow=7.9,SNR=30
ZALV LR LR 04 54 47.1
comp=Z,2µm,18.3s,baz=70,slow=37
KHON Khomkaen 41.05 247 P **P** **04 37 07.8 +0.5**
comp=Z,22nm,0.8s
NRIK Noril'sk 41.34 334 P **P** **04 37 08.6 -0.4**
comp=Z,5.7nm,0.7s,baz=99,slow=8.0,SNR=13
NRIK sP **sP** **04 37 26.3 -0.1**
comp=Z,5.0nm,0.5s,baz=92,slow=3.8,SNR=3.1
NRIK LR LR 04 55 21.0
comp=Z,2µm,20.1s,baz=108,slow=38
NVS Novosibirsk 41.56 312 *e*P P 04 37 23.4 +12
NVS pmax pmax
comp=Z,36nm,0.4s
NVS pmax pmax
comp=N,9.0nm,0.5s
NVS pmax pmax
comp=E,39nm,0.5s
JAY Jayapura 41.69 182 P **P** **04 37 11.3 -1.2**
comp=E,1.7nm,0.9s,baz=92,slow=23,SNR=3.3
JAY LR LR 04 51 52.6
comp=E,7.9nm,21.7s,baz=5.0,slow=32
UTTA Uttaradit 41.78 251 P **P** **04 37 14.2 +0.9**
comp=E,7.4nm,0.9s,comp=E,147nm
LAMP Lampang 41.97 253 P **P** **04 37 16.0 +1.2**
comp=E,11nm,0.8s,comp=E,96nm
PBKT Sadao Pong 42.24 249 P **P** **04 37 17.3 +0.3**
comp=E,20nm,0.9s
CMMT Chiang Mai 42.30 254 P **P** **04 37 17.9 +0.4**
comp=E,31nm,1.0s
CHTO Chiang Mai 42.30 254 P **P** **04 37 18.0 +0.4**
comp=E,106nm,1.0s
CHTO Chiang Mai 42.30 254 *e*P **P** **04 37 17.9 +0.4**
CHTO pmax pmax
comp=Z,25nm,0.8s
CHTO Chiang Mai 42.30 254 *e*P **P** **04 37 17.9 +0.3**
comp=Z,25nm,0.8s
LSA Lhasa 42.46 273 *e*P **P** **04 37 20.8 +1.6**
LSA pmax pmax
comp=Z,6.0nm,0.6s
LSA Lhasa 42.46 273 *e*P **P** **04 37 20.8 +1.6**
comp=Z,6.3nm,0.6s
CMAR Chiang Mai Arr 42.52 253 P **P** **04 37 19.4 +0.1**
comp=Z,5.2nm,0.8s,baz=46,slow=6.7,SNR=26
CMAR LR LR 04 57 37.7
comp=Z,134nm,19.4s,baz=54,slow=40
CM01 Chiang Mai Arr 42.54 253 *e*P **P** **04 37 19.7 +0.3**
MRSI Marisa 42.80 210 P **P** **04 37 24.6 +3.1**
MK01 Makanchi Array 43.27 300 *e*P **P** **04 37 24.5 -0.6**
MK31 Makanchi Array 43.27 300 *i* P **P** **04 37 25.2 +0.1**
MK31 pmax pmax
comp=Z,14nm,0.8s
MK31 Makanchi Array 43.27 300 *e*P **P** **04 37 25.4 +0.3**
MKAR Makanchi Array 43.27 300 P **P** **04 37 25.4 +0.3**
comp=Z,10nm,0.7s,baz=83,slow=9.9,SNR=84
MKAR sP **sP** **04 37 42.5 -0.1**
comp=Z,39nm,0.7s,baz=82,slow=9.6,SNR=22
MKAR LR LR 04 56 07.8
comp=Z,944nm,21.1s,baz=70,slow=37
TT01 Tatalina 43.28 36 *e*P **P** **04 37 25.9 +0.9**
TTA Tatalina 43.29 36 *e*P **P** **04 37 26.6 +1.5**
TTA pmax pmax
comp=Z,24nm,1.3s
TTA Tatalina 43.29 36 *e*P **P** **04 37 26.6 +1.5**
comp=Z,24nm,1.3s
SVW2 Sparrevohn 43.44 39 *e*P **P** **04 37 27.9 +1.7**
comp=Z,25nm,1.2s
MAKZ Makanchi 43.48 300 P **P** **04 37 26.3 -0.5**
MAKZ pmax pmax
comp=Z,32nm,1.3s
MAKZ Makanchi 43.48 300 *e*P **P** **04 37 27.0 +0.3**
comp=Z,116nm,1.1s
UMPA Umpang Tak 44.01 251 P **P** **04 37 33.6 +2.2**
comp=Z,12nm,1.3s,comp=Z,908nm
OHAK Old Harbor 44.78 44 *e*P **P** **04 37 36.7 -0.3**
comp=Z,44nm,1.3s
RSO Redoubt South 44.83 40 *e*P **P** **04 37 38.8 +1.1**
KURK Kurchatov 44.85 306 *e*P **P** **04 37 37.6 -0.1**
KURK *SP **sP** **04 37 55.6 +0.5**
KURK Kurchatov 44.85 306 *e*P **P** **04 37 37.5 -0.1**
comp=Z,2µm,1.0s
KURK sP **sP** **04 37 55.5 +0.5**
KURBB Kurchatov Arra 44.93 306 P **P** **04 37 38.2 0.0**
comp=Z,31nm,0.8s,baz=82,slow=8.2,SNR=316
KURBB sP **sP** **04 37 55.5 -0.2**
comp=Z,130nm,0.9s,baz=80,slow=8.6,SNR=22
PPLA Purkeypile 45.04 36 *e*P **P** **04 37 40.5 +1.4**
comp=Z,56nm,1.2s
PPLA *ePcP **PcP** **04 39 17.2 -2.1**
CAST Castle Rocks 45.08 35 *e*P **P** **04 37 40.2 +0.9**
comp=Z,22nm,1.0s
KDAK Kodiak Island 45.11 43 *e*P **P** **04 37 39.9 +0.3**
KDAK pmax pmax
comp=Z,103nm,0.8s
KDAK Kodiak Island 45.11 43 *e*P **P** **04 37 39.9 +0.3**
comp=Z,103nm,0.8s
SPU Mount Spurr 45.15 39 *e*P **P** **04 37 41.1 +1.2**
KTH Kantishna Hill 45.60 35 *e*P **P** **04 37 44.8 +1.2**

comp=Z,94nm,1.3s
CNPM China Poot 45.66 41 *e*P P 04 37 44.9 +0.9
comp=Z,20nm,0.9s
SUA Susitna One 45.76 38 *e*P P 04 37 46.7 +1.8
comp=Z,28nm,0.9s
TRF Thorofare Moun 45.89 35 *e*P P 04 37 46.2 +0.3
comp=Z,42nm,1.4s
COLD Coldfoot 45.93 30 *e*P P 04 37 46.9 +1.0
comp=Z,50nm,1.2s
PDGK Podgornoye 46.09 296 P P 04 37 47.3 -0.2
PDGK pmax pmax
comp=Z,29nm,1.1s
RC01 Rabbit Creek A 46.27 39 *e*P P 04 37 48.8 0.0
comp=Z,36nm,0.9s
MCK McKinley 46.48 35 *e*P P 04 37 50.8 +0.4
MCK pmax pmax
comp=Z,51nm,1.3s
MCK McKinley 46.48 35 *e*P P 04 37 50.8 +0.4
comp=Z,51nm,1.3s
PMR Palmer 46.52 38 *e*P P 04 37 50.3 -0.4
PMR pmax pmax
comp=Z,17nm,0.8s
PMR Palmer 46.52 38 *e*P P 04 37 50.3 -0.4
comp=Z,17nm,0.8s
RND Reindeer 46.53 35 *e*P P 04 37 51.4 +0.5
RND pmax pmax
comp=Z,59nm,1.2s
RND Reindeer 46.53 35 *e*P P 04 37 51.4 +0.5
comp=Z,59nm,1.2s
WRH Wood River Hil 46.82 34 *e*P P 04 37 53.8 +0.8
comp=Z,17nm,0.9s
SML Sawmill 46.88 38 *e*P P 04 37 54.0 +0.4
SML pmax pmax
comp=Z,118nm,1.6s
SML Sawmill 46.88 38 *e*P P 04 37 54.0 +0.4
comp=Z,118nm,1.6s
COLA College 46.90 33 *e*P P 04 37 54.5 +0.9
COLA pmax pmax
comp=Z,32nm,0.9s
COLA College 46.90 33 *e*P P 04 37 54.5 +0.9
comp=Z,32nm,0.9s
CCB Clear Creek Bu 46.93 34 *e*P P 04 37 54.5 +0.7
comp=Z,16nm,1.0s
DHY Denali Highway 47.22 36 *e*P P 04 37 52.9 -3.4
comp=Z,40nm,1.2s
RAMN Ramite 47.29 272 *e*P P 04 37 57.7 +0.2
comp=Z,86nm,0.8s
HDA Harding Lake 47.31 34 *e*P P 04 37 56.9 0.0
comp=Z,28nm,0.9s
ILAR Eielson Array 47.32 33 P P 04 37 56.9 0.0
comp=Z,7.1nm,0.6s,baz=268,slow=6.3,SNR=72
ILAR pP **pP** 04 38 10.1 +0.9
comp=Z,8.9nm,0.7s,baz=263,slow=5.8,SNR=12
ILAR sP **sP** 04 38 14.9 +0.5
comp=Z,19nm,0.8s,baz=261,slow=5.6,SNR=11
ILB Eielson Array 47.32 33 *e*P P 04 37 57.0 +0.1
IL1 Eielson Array 47.32 33 *e*P P 04 37 56.1 -0.7
SCM Sheep Creek Mo 47.36 38 *e*P P 04 37 58.4 +1.0
SCM pmax pmax
comp=Z,43nm,1.0s
SCM Sheep Creek Mo 47.36 38 *e*P P 04 37 58.4 +1.0
comp=Z,43nm,1.0s
GUN Gumba 47.38 274 *e*P P 04 37 58.6 +0.3
comp=Z,110nm,0.7s
KSM Kuching 47.47 225 *e*P P 04 37 59.2 +0.6
comp=Z,68nm,1.3s
KKN Kakani 47.90 274 *e*P P 04 38 02.6 +0.5
comp=Z,85nm,0.7s
PKIN Phulchoki 47.91 274 *e*P P 04 38 02.8 +0.5
comp=Z,37nm,0.6s
STKI Sintang 48.01 223 P P 04 38 04.9 +2.1
KLU Klutina 48.06 38 *e*P P 04 38 03.7 +0.9
comp=Z,40nm,1.0s
PAX Paxson 48.10 36 P P 04 38 03.0 -0.1
PAX pmax pmax
comp=Z,15nm,0.6s
DMN Daman 48.12 274 *e*P P 04 38 04.2 +0.3
comp=Z,80nm,0.9s
DIV Divide 48.18 38 *e*P P 04 38 04.3 +0.6
comp=Z,65nm,1.2s
EYAK Cordova Ski Ar 48.28 39 *e*P P 04 38 04.3 0.0
comp=Z,39nm,1.0s
GKN Gorkha 48.29 275 *e*P P 04 38 05.4 +0.3
comp=Z,118nm,0.7s
DOT Dot Lake 48.65 35 *e*P P 04 38 07.2 -0.1
comp=Z,42nm,1.0s
KAPI Kappang 48.68 210 *e*P P 04 38 07.8 -0.1
comp=Z,28nm,1.1s
BMRM Bremner River 48.77 38 *e*P P 04 38 08.9 +0.7
comp=Z,50nm,1.0s
DANN Dangsing 48.80 276 *e*P P 04 38 10.0 +0.8
MENT Mentasta 48.90 36 *e*P P 04 38 10.8 +1.7
comp=Z,41nm,1.0s
TKM2 Tokmak 2 48.92 297 P P 04 38 10.3 +0.5
TKM2 pmax pmax
comp=Z,52nm,1.0s
CHKZ Chkalovo 49.05 312 P P 04 38 09.8 -0.5
CHKZ pmax pmax
comp=Z,29nm,1.1s
KOLN Koldanda 49.21 275 *e*P P 04 38 12.7 +0.5
comp=Z,100nm,0.9s
BVA0 Borovoye Array 49.34 311 P P 04 38 12.5 -0.1
BVA0 pmax pmax
comp=Z,16nm,0.9s
BVAR Borovoye Array 49.34 311 P P 04 38 12.8 +0.2
comp=Z,8.7nm,0.6s,baz=79,slow=7.9,SNR=40
BVAR pP **pP** 04 38 25.3 +0.3
comp=Z,7.5nm,0.6s,baz=77,slow=7.6,SNR=8.6
BVAR sP **sP** 04 38 30.5 +0.3
comp=Z,13nm,0.6s,baz=77,slow=7.7,SNR=7.3
BVAR PcP **PcP** 04 39 34.9 +0.3
comp=Z,9.9nm,0.7s,baz=64,slow=3.4,SNR=5.1
BRVK Borovoye 49.39 311 P P 04 38 13.1 +0.1
BRVK pmax pmax
comp=Z,20nm,1.0s
BRVK Borovoye 49.39 311 *e*P P 04 38 12.9 -0.1
comp=Z,51nm,1.1s
OTUK Ortayu 49.42 304 P P 04 38 12.9 -0.5
OTUK pmax pmax
comp=Z,25nm,0.9s
CRQM Cirque 49.51 39 *e*P P 04 38 15.6 +1.6
comp=Z,90nm,1.4s
PYUN Piuthan 49.52 276 *e*P P 04 38 15.0 +0.4
comp=Z,333nm,1.1s
FRU Bishkek 49.63 297⇑ *i*P P 04 38 15.0 0.0
FRU *i* 04 38 33.0
FRU pmax pmax
comp=Z,130nm,2.3s
EGAK Eagle 49.76 33 *e*P P 04 38 15.7 +0.1
comp=Z,23nm,1.0s
AAK Ala-Archa 49.78 297 P P 04 38 16.6 +0.4
comp=Z,7.4nm,0.6s,baz=101,slow=4.6,SNR=16
AAK sP **sP** 04 38 34.5 +0.6
comp=Z,23nm,0.8s,baz=89,slow=5.1,SNR=9.6
AAK Ala-Archa 49.78 297 P P 04 38 16.3 0.0
AAK pmax pmax
comp=Z,15nm,0.9s
AAK Ala-Archa 49.78 297 *e*P P 04 38 16.7 +0.4
comp=Z,42nm,0.9s
AAK sP **sP** 04 38 34.5 +0.6
BALM Baldy 49.84 38 *e*P P 04 38 17.3 +0.8
BALM pmax pmax
comp=Z,84nm,1.6s
BALM Baldy 49.84 38 *e*P P 04 38 17.3 +0.8
comp=Z,84nm,1.6s
KSH Kashi 49.87 292 *e*P P 04 38 21.2 +4.2
KSH *e*pP sP 04 38 33.9 -0.7
KSH *e*sP pP 04 38 39.1 +10
KSH *e*PcP **PcP** 04 39 41.3 +4.3
KSH PcS **PcS** 04 43 36.7 +2.7
KSH S **S** 04 45 27.5 +3.7
KSH pmax pmax
comp=Z,10.0nm,0.8s
KSH pmax pmax
comp=Z,87nm,3.0s
KSH LR LR
comp=Z,370nm,14.2s
KSH LR LR
comp=Z,290nm,13.0s
KSH LR LR
comp=Z,470nm,16.9s
ZRNK Zerenda 50.16 311 P P 04 38 19.1 +0.2
ZRNK pmax pmax
comp=Z,31nm,0.9s
ZRNK Zerenda 50.16 311 *e*P P 04 38 19.2 +0.3
comp=Z,67nm,1.0s
KULM Kulim 50.36 239 *e*P P 04 38 20.9 +0.1
comp=Z,57nm,1.4s
DAWY Dawson 50.63 34 *e*P P 04 38 22.9 +0.5
comp=Z,32nm,1.8s
IPM Ipoh 50.72 238 *e*P P 04 38 23.0 -0.6
comp=Z,31nm,0.5s
MNAS Manas 51.21 297 P P 04 38 27.5 +0.4
MNAS pmax pmax
comp=Z,49nm,0.9s
HNR Honiara 51.35 157 P P 04 38 29.1 +1.0
comp=Z,111nm,0.6s,baz=205,slow=4.2,SNR=2.1
INK Inuvik 52.13 28 P P 04 38 34.1 +0.7
comp=Z,12nm,1.0s,baz=276,slow=6.9,SNR=21
INK pP **pP** 04 38 47.2 +1.4
comp=Z,19nm,1.0s,baz=268,slow=7.1,SNR=14
INK sP **sP** 04 38 52.3 +1.3
comp=Z,34nm,0.8s,baz=279,slow=7.4,SNR=16
INK LR LR 05 04 17.8
comp=Z,164nm,18.7s,baz=267,slow=40
HYT Haines Junctio 52.20 38 *e*P P 04 38 36.0 +1.9
comp=Z,88nm,1.1s
KK31 Karatay Array 52.34 299 *i* P P 04 38 35.3 -0.1
KK31 pmax pmax
comp=Z,18nm,0.9s
KKAR Karatay Array 52.34 299 *e*P P 04 38 35.3 -0.1
KKAR *e* 04 40 28.5
KKAR Karatay Array 52.34 299 *e*P P 04 38 35.3 -0.1
KKAR *e*PP **PP** 04 40 28.5 -5.6
COEN Coen 53.05 178 *e*P P 04 38 40.1 -0.7
comp=Z,63nm,1.3s
PSI Prapat 53.36 238 P P 04 38 43.1 -0.2
comp=Z,9.4nm,0.9s,baz=37,slow=3.9,SNR=4.5
SKAG Skagway 53.62 39 *e*P P 04 38 45.5 +1.1
comp=Z,35nm,1.3s
NDI New Delhi 53.67 280 *e*P P 04 38 38.5 -6.8
SVE Sverdlovsk 53.69 318*d* *i*P P 04 38 45.7 +0.6
SVE pmax pmax
comp=Z,63nm,0.8s
SVE MLR MLR
comp=Z,2µm,17.0s
SDSI Sungai Dareh 54.61 233 P pP 04 39 03.9 -0.9
SOKR Solikamsk 54.74 322*c* *i*P P 04 38 51.1 -1.5
SOKR pmax pmax
comp=Z,19nm,0.8s
SOKR MLR MLR
comp=Z,324nm,15.0s
ARU Arti 54.91 318 P P 04 38 54.1 +0.2
comp=Z,27nm,0.6s,baz=76,slow=3.7,SNR=58
ARU sP **sP** 04 39 11.8 +0.2
comp=Z,14nm,0.4s,baz=70,slow=3.1,SNR=3.5
ARU Arti 54.91 318*c* *i*P P 04 38 54.1 +0.2
ARU 04 39 57.3
ARU 04 40 54.4
ARU S **S** 04 46 36.3 +4.3
ARU SS **SS** 04 50 17.3 +2.1
ARU pmax pmax
comp=Z,114nm,1.7s
ARU MLR MLR
comp=Z,2µm,18.0s
ARU Arti 54.91 318 *e*P P 04 38 54.1 +0.2
comp=Z,63nm,1.0s
ARU sP **sP** 04 39 11.8 +0.2
UGM Wanagama 55.32 219 P P 04 38 59.4 +2.0
LHSI Lahat 55.65 229 P P 04 39 03.4 +3.6
KASI Kota Agung 56.48 227 P pP 04 39 22.5 +4.3
DLBC Dease Lake 56.55 39 P P 04 39 07.3 +1.6
comp=Z,2.4nm,0.7s,baz=294,slow=8.8,SNR=5.3
DLBC pP **pP** 04 39 20.0 +1.7
comp=Z,8.0nm,0.9s,baz=286,slow=9.1,SNR=7.7
DLBC sP **sP** 04 39 25.7 +2.3
comp=Z,5.1nm,0.7s,baz=315,slow=13,SNR=4.9
AB31 Akbulak array 56.77 309 P P 04 38 57.6 -10
AB31 pmax pmax
comp=Z,1.0nm,0.6s
ABKAR Akbulak array 56.77 309 *e*P P 04 39 07.0 -0.3
comp=Z,28nm,0.6s
KBL Kabul 56.99 290 *e*P P 04 39 09.5 +0.1
KBL pmax pmax
comp=Z,73nm,1.3s
KBL Kabul 56.99 290 *e*P P 04 39 09.5 +0.1
comp=Z,73nm,1.3s
AKTO Aktyubinsk 57.44 311 P P 04 39 11.8 -0.3
comp=Z,17nm,0.8s,baz=71,slow=13,SNR=35
AKTO sP **sP** 04 39 29.7 -0.1
comp=Z,12nm,0.7s,baz=65,slow=10,SNR=5.1
SPITS Spitsbergen Ar 58.32 349 P P 04 39 18.2 +0.3
comp=Z,18nm,1.0s,baz=95,slow=5.1,SNR=7.8
SPITS Spitsbergen Ar 58.32 349 P P 04 39 18.2 +0.3
SPITS pmax pmax
comp=Z,36nm,1.2s
KBS Kingsbay 58.44 350 *e*P P 04 39 18.7 +0.1
KBS pmax pmax
comp=Z,21nm,0.8s
KBS Kingsbay 58.44 350 *e*P P 04 39 18.7 +0.1
comp=Z,22nm,0.8s
HYB Hyderabad 58.70 267 *i* P P 04 39 21.0 -0.4
WRAB Tennant Creek 59.41 188 *i* P P 04 39 23.6 -2.4
WRAB pmax pmax
comp=Z,25nm,1.0s
WRAB Tennant Creek 59.41 188 *e*P P 04 39 24.6 -1.5
comp=Z,15nm,0.8s
WB2 Warramunga Arr 59.42 188 *e*P P 04 39 24.8 -1.3
comp=Z,16nm,0.8s
WRA Warramunga Ar 59.42 188 P P 04 39 24.6 -1.5
comp=Z,335nm,1.0s,baz=6.0,slow=7.0,SNR=45
WRA pP **pP** 04 39 37.8 -1.0
comp=Z,9.2nm,0.4s,baz=5.9,slow=7.1,SNR=13
WRA sP **sP** 04 39 44.7 +0.8
comp=Z,12nm,0.6s,baz=6.8,slow=7.1,SNR=6.9
LVZ Lovozero 60.16 335 *e*P P 04 39 29.7 -1.1
LVZ pmax pmax
comp=Z,9.0nm,1.0s
RES Resolute Bay 60.25 15 P P 04 39 30.8 -0.4
comp=Z,10nm,0.8s,baz=305,slow=8.6,SNR=3.0
RES pP **pP** 04 39 44.2 +0.4
comp=Z,20nm,0.9s,baz=337,slow=4.7,SNR=2.7
RES sP **sP** 04 39 49.4 +0.5
comp=Z,28nm,1.0s,baz=302,slow=3.5,SNR=3.4
RES Resolute Bay 60.25 15 *e*P P 04 39 31.3 +0.2
RES pP **pP** 04 39 44.2 +0.4
RES sP **sP** 04 39 49.4 +0.5
APA Apatity 60.74 335⇓ *i*P P 04 39 32.8 -1.8
APA *i* 04 39 49.2
APA *i*S S 04 47 37.0 -11
APA pmax pmax
comp=Z,8.0nm,0.7s
APA MLR MLR
comp=Z,700nm,21.0s
YKA Yellowknife Ar 61.59 31 P P 04 39 40.3 -0.1
comp=Z,1.8nm,0.7s,baz=300,slow=6.8,SNR=21
YKA pP **pP** 04 39 53.4 +0.3
comp=Z,2.6nm,0.5s,baz=300,slow=6.4,SNR=15
YKA sP **sP** 04 39 58.8 +0.6
comp=Z,4.5nm,0.7s,baz=302,slow=6.6,SNR=10
YKA LR LR 05 07 05.1
comp=Z,10nm,21.4s,baz=0.0,slow=37
ARA0 ARCESS Array S 61.97 339 *e*P P 04 39 42.8 -0.2
ARCES ARCESS Array B 61.97 339 P P 04 39 42.7 -0.2
comp=Z,3.4nm,0.6s,baz=48,slow=5.9,SNR=22
ARCES pP **pP** 04 39 56.4 +0.8
comp=Z,2.9nm,0.6s,baz=61,slow=7.5,SNR=3.6
ARCES sP **sP** 04 40 01.1 +0.3
comp=Z,3.2nm,0.5s,baz=57,slow=8.8,SNR=4.3
ARCES LR LR 05 11 08.2
comp=Z,250nm,19.9s,baz=50,slow=40
KLMR Klimovskoe 62.02 327 *e*P P 04 39 41.3 -2.0
KLMR *e* 04 41 58.3
KLMR pmax pmax
comp=Z,51nm,1.5s
GEYT Alibeck 63.09 298 P P 04 39 51.1 +0.2
comp=Z,11nm,0.6s,baz=28,slow=3.5,SNR=15
GEYT pP **pP** 04 40 04.3 +0.6
comp=Z,4.9nm,0.6s,baz=18,slow=5.2,SNR=2.5
GEYT sP **sP** 04 40 09.1 +0.3
comp=Z,12nm,0.8s,baz=93,slow=23,SNR=5.8
GEYT LR LR 05 09 06.6
comp=Z,429nm,18.4s,baz=110,slow=38
AS01 Alice Springs 63.14 188 *e*P P 04 39 49.7 -1.5
AS31 Alice Springs 63.15 188 *e*P P 04 39 50.8 -0.5
comp=Z,3.6nm,0.8s
ASAR Alice Springs 63.15 188 P P 04 39 50.4 -0.9
comp=Z,5.5nm,0.8s,baz=12,slow=6.7,SNR=42
ASAR pP **pP** 04 40 03.5 -0.5
comp=Z,5.3nm,0.8s,baz=359,slow=4.7,SNR=7.7
ASAR sP **sP** 04 40 08.7 -0.4
comp=Z,7.5nm,0.8s,baz=2.4,slow=5.0,SNR=8.3
ASAR LR LR 05 06 54.1
comp=Z,190nm,22.0s,baz=34,slow=36
DAG Danmarks Havn 63.49 355⇑ *i*P P 04 39 52.4 -0.5
comp=Z,13nm,0.8s
DAG *i* 04 40 10.0
DAG Danmarks Havn 63.49 355⇑ *i*P P 04 39 52.4 -0.5
DAG *i* 04 40 10.0
DAG pmax pmax
comp=Z,10.0nm,0.8s
A04D Lummi Island 64.82 47 P P 04 40 03.1 +1.1
baz=302
NLWA Neilton Lookou 64.85 48 *e*P P 04 40 02.6 +0.3
comp=Z,33nm,1.3s
B05A Bryant 65.41 47 P P 04 40 06.9 +1.0
baz=302
E03A Lebam 65.47 49 *e*P P 04 40 08.0 +1.6
comp=Z,30nm,1.0s
MOS Moscow 65.63 323 *e*P P 04 40 07.2 0.0
MOS *e* 04 40 25.2
MOS *e* 04 40 34.9
MOS *e* 04 42 33.6
MOS *e*PPP PPP 04 44 03.7
MOS pmax pmax
comp=Z,71nm,0.8s
MSVF Nonsavu 66.07 142 *e*P P 04 40 09.3 -1.2
MSVF pmax pmax
comp=Z,19nm,1.4s
VRH Novokhopyorsk 66.14 317 *e*P P 04 40 08.8 -1.7
VRH pmax pmax
comp=Z,20nm,0.8s
G03D McMinnville, O 66.36 50 P P 04 40 12.8 +0.7
baz=303
TDL Tradedollar La 66.36 49 P P 04 40 13.3 +1.1
LON Longmire 66.39 48 *e*P P 04 40 13.2 +0.9
LON pmax pmax
comp=Z,7.0nm,1.0s
LON Longmire 66.39 48 *e*P P 04 40 13.2 +0.9
comp=Z,7.3nm,1.0s
OBN Obninsk 66.49 323 P P 04 40 12.7 0.0
comp=Z,25nm,0.4s,baz=100,slow=7.3,SNR=8.3
OBN sP **sP** 04 40 30.0 -0.6
comp=Z,29nm,0.4s,baz=44,slow=12,SNR=1.5
OBN Obninsk 66.49 323 *i*P P 04 40 12.5 -0.2
OBN *i* 04 40 29.8
OBN *i* 04 40 46.2
OBN *i* 04 42 41.9
OBN pmax pmax
comp=Z,29nm,1.0s
OBN MLR MLR
comp=Z,761nm,16.0s
COR Corvallis 66.67 51 *e*P P 04 40 15.5 +1.4
COR pmax pmax
comp=Z,39nm,1.0s
COR Corvallis 66.67 51 *e*P P 04 40 15.5 +1.4
comp=Z,39nm,1.0s
B08A Colville Reser 66.91 46 *e*P P 04 40 16.4 +0.8
comp=Z,32nm,1.4s
NAC Naches 66.96 48 P P 04 40 16.9 +0.9
I03D Drain, OR 67.13 52 P P 04 40 17.0 0.0
baz=303
SAW Saint Andrews 67.23 46 P P 04 40 18.2 +0.5
EDM Edmonton 67.27 39 *e*P P 04 40 17.8 0.0
EDM pmax pmax
comp=Z,37nm,1.1s
EDM Edmonton 67.27 39 *e*P P 04 40 17.8 0.0
comp=Z,38nm,1.1s
VSR Storozhevoye 67.46 318 *e*P P 04 40 18.5 -0.5
VSR pmax pmax
comp=Z,60nm,1.8s
G05D Wamic, OR 67.50 49 P P 04 40 20.2 +0.8
baz=304
L02D Cave Junction, 67.81 53 P P 04 40 22.0 +0.6
baz=304
D08A Wollman Farm, 67.87 47 *e*P P 04 40 22.1 +0.4
comp=Z,30nm,1.4s
HAWA Hanford 67.89 48 *e*P P 04 40 22.3 +0.5
comp=Z,36nm,1.4s
HUMO Hull Mountain 67.97 52 *e*P P 04 40 23.0 +0.6
comp=Z,23nm,1.5s
I05D Terrebonne, OR 67.98 50 P P 04 40 22.5 0.0
baz=304
NEW Newport 68.18 45 P P 04 40 24.0 +0.3
comp=Z,3.9nm,0.8s,baz=339,slow=6.1,SNR=2.9
NEW pP **pP** 04 40 37.0 +0.5
comp=Z,8.6nm,0.9s,baz=313,slow=5.2,SNR=4.3
NEW Newport 68.18 45 P P 04 40 23.6 -0.1
baz=305
NEW Newport 68.18 45 *e*P P 04 40 23.5 -0.1
comp=Z,23nm,1.1s
NEW pP **pP** 04 40 37.0 +0.5
SUMG Summit 68.36 0⇑ *i*P P 04 40 25.2 +0.4
comp=Z,21nm,0.9s
SUMG Summit 68.36 0⇑ *i*P P 04 40 25.2 +0.4
SUMG pmax pmax
comp=Z,21nm,0.9s
SUMG Summit 68.36 0 *e*P P 04 40 24.8 0.0
comp=Z,30nm,1.0s
KHMM Horse Mountain 68.44 54 *e*P P 04 40 27.0 +1.4
comp=Z,42nm,1.2s
YBH Yreka Blue Hor 68.61 53 *e*P P 04 40 27.8 +1.3
YBH pmax pmax
comp=Z,49nm,1.4s
YBH Yreka Blue Hor 68.61 53 *e*P P 04 40 27.8 +1.3
comp=Z,49nm,1.4s
J05D Fort Rock, OR 68.64 51 P P 04 40 27.5 +0.8
baz=304
VSU Vasula 68.66 329*c* *i*P P 04 40 26.7 +0.4
VSU pmax pmax
comp=Z,63nm,0.9s
M02C Callahan 68.71 54 P P 04 40 28.1 +1.0
baz=304
GOF Gofitskoye 68.86 311⇑ *i*P P 04 40 28.3 +0.4
GOF *e*S S 04 49 49.8 +21
GOF pmax pmax
comp=Z,82nm,0.9s
N02D Trinity Center 69.03 54 P P 04 40 29.4 +0.2
baz=304
M04C Macdoel 69.12 53 P P 04 40 30.1 +0.4
baz=305
K05A Summer Lake 69.16 51 *e*P P 04 40 31.7 +1.7
comp=Z,75nm,1.3s
WDC Whiskeytown Da 69.36 54 *e*P P 04 40 35.1 +4.1
WDC pmax pmax
comp=Z,19nm,1.2s
WDC Whiskeytown Da 69.36 54 *e*P P 04 40 35.1 +4.1
comp=Z,19nm,1.2s
NCK Nalchik 69.43 310 *e*P P 04 40 31.0 -0.4
NCK pmax pmax
comp=Z,14nm,0.9s
WALA Waterton Lakes 69.44 43 *e*P P 04 40 32.1 +0.5
comp=Z,78nm,1.8s
F10A Beach Ranch, E 69.45 47 *e*P P 04 40 32.4 +0.7
comp=Z,6.9nm,0.8s
GUDG Gudauri 69.49 308 P P 04 40 32.7 +0.6
ZEI Tsey 69.65 309 *e*P P 04 40 30.7 -2.4
LTIM Timbered Crate 69.68 53 P P 04 40 34.4 +1.2
BSMT Bassoo Peak 69.69 44 P P 04 40 34.2 +1.0
KIV Kislovodsk 69.70 311 *e*P P 04 40 33.7 +0.5
KIV *e* 04 40 52.6
KIV *e*S **S** 04 49 41.2 +2.5
KIV pmax pmax
comp=Z,64nm,0.9s
KIV pmax pmax
comp=Z,67nm,3.8s
KIV MLR MLR
comp=Z,327nm,17.0s
KIV Kislovodsk 69.70 311 *e*P P 04 40 34.0 +0.7
comp=Z,147nm,1.3s
KBZ Khabaz 69.71 310 P P 04 40 33.6 +0.5
comp=Z,13nm,0.8s,baz=57,slow=4.2,SNR=25
KBZ sP **sP** 04 40 51.9 +0.8
comp=Z,21nm,0.9s,baz=81,slow=6.3,SNR=8.1
KBZ LR LR 05 16 15.1
comp=Z,305nm,18.0s,baz=46,slow=40
TBLG Delisi 69.75 308 P P 04 40 33.3 -0.1
TBLG Delisi 69.75 308 P P 04 40 33.3 -0.1
SCO Scoresbysund 69.84 354 *i*P P 04 40 33.8 +0.4
comp=Z,16nm,1.4s
SCO Scoresbysund 69.84 354 *e*P P 04 40 33.8 +0.4
SCO pmax pmax
comp=Z,16nm,1.4s
O03D Paynes Creek 69.98 54 P P 04 40 35.1 +0.1
baz=305
MOD Modoc Plateau 69.99 52 *e*P P 04 40 36.0 +0.9
comp=Z,21nm,1.1s
JTMT Jette 70.03 44 *e*P P 04 40 36.4 +1.1
ONI Oni 70.03 309 P P 04 40 35.9 +0.6

ONI Oni 70.03 309 P **P** 04 40 35.8 +0.6
BMO Blue Mountains 70.06 48 *e*P **P** 04 40 35.9 +0.5
comp=Z,11nm,0.9s
NEY Neytrino 70.09 310 *e*P **P** 04 40 36.2 +0.5
NEY pmax pmax
comp=Z,2.0nm,0.8s
YBMT Yellow Bay 70.11 44 *e*P **P** 04 40 38.2 +2.5
SWMT Swartz Lake 70.33 44 *e*P **P** 04 40 37.9 +0.9
ORV Oroville 70.60 55 *e*P **P** 04 40 39.0 +0.3
ORV pmax pmax
comp=Z,15nm,1.0s
ORV Oroville 70.60 55 *e*P **P** 04 40 39.0 +0.3
comp=Z,15nm,1.0s
GNI Garni 70.66 306 *i* P **P** 04 40 40.3 +1.1
GNI pmax pmax
comp=Z,69nm,1.2s
GNI Garni 70.66 306 *e*P **P** 04 40 39.8 +0.6
comp=Z,27nm,0.5s
WVOR Wild Horse Val 70.69 51 *e*P **P** 04 40 40.3 +1.0
WVOR pmax pmax
comp=Z,38nm,1.4s
WVOR Wild Horse Val 70.69 51 *e*P **P** 04 40 40.3 +1.0
comp=Z,38nm,1.4s
AKH Akhalkalaki 70.69 308 P **P** 04 40 39.7 +0.2
AKH Akhalkalaki 70.69 308 P **P** 04 40 39.6 +0.2
SLMT Seeley Lake 70.76 44 *e*P **P** 04 40 39.9 +0.2
MSO Missoula 70.77 45 P **P** 04 40 39.7 0.0
baz=307
MSO Missoula 70.77 45 *e*P **P** 04 40 40.2 +0.5
comp=Z,20nm,1.2s
MICGM Minsk 70.80 326 *e* **P** 04 40 38.0 -1.6
MNK Minsk 70.80 326 *e*P **P** 04 40 38.0 -1.6
STKA Stephens Creek 70.88 180 P **P** 04 40 40.3 +0.1
comp=Z,1.3nm,0.7s,baz=351,slow=6.7,SNR=2.1
STKA pP **pP** 04 40 52.5 -0.7
comp=Z,3.9nm,0.9s,baz=54,slow=12,SNR=3.3
STKA LR LR 05 12 52.6
comp=Z,163nm,19.3s,baz=24,slow=37
FORT Forrest 70.97 193 *e*P **P** 04 40 41.4 +0.6
NACGM Naroch 71.01 326 *e* **P** 04 40 40.0 -0.9
NACGM *e*LR LR 05 11 54.0
CHMT Chamberlain Mo 71.09 44 *e*P **P** 04 40 42.0 +0.2
FFC Flin Flon 71.53 33 *e*P **P** 04 40 43.9 -0.1
FFC pmax pmax
comp=Z,35nm,1.4s
FFC Flin Flon 71.53 33 *e*P **P** 04 40 43.9 -0.1
comp=Z,35nm,1.4s
MFID Camas Ranch 71.77 49 *e*P **P** 04 40 46.2 +0.4
comp=Z,29nm,1.4s
PAHR Pah Rah Range 71.84 53 *e*P **P** 04 40 47.2 +0.9
comp=Z,35nm,1.2s
NC405 NORSAR Array S 71.99 337 *e*P **P** 04 40 46.7 0.0
NC303 NORSAR Array S 72.01 337 *e*P **P** 04 40 46.7 -0.1
HFS Hagfors 72.14 336 P **P** 04 40 47.1 -0.4
comp=Z,10.0nm,0.8s,baz=43,slow=6.7,SNR=31
HFS pP **pP** 04 41 00.7 +0.2
comp=Z,10nm,0.9s,baz=39,slow=6.8,SNR=5.3
HFS sP **PcP** 04 41 06.0 +0.3
comp=Z,8.4nm,0.6s,baz=38,slow=7.5,SNR=4.1
NC204 NORSAR Array S 72.15 338 *e*P **P** 04 40 48.4 +0.7
CMB Columbia Colle 72.19 55 *e*P **P** 04 40 48.4 0.0
CMB pmax pmax
comp=Z,27nm,1.1s
CMB Columbia Colle 72.19 55 *e*P **P** 04 40 48.4 0.0
comp=Z,27nm,1.1s
NB2 NORSAR Subarra 72.20 337 P **P** 04 40 47.4 -0.6
comp=Z,16nm,0.8s,baz=38,slow=6.2
NB2 NORSAR Subarra 72.20 337 P **P** 04 40 47.4 -0.6
baz=38,slow=6.2
NB2 NORSAR Subarra 72.20 337 P **P** 04 40 47.4 -0.6
NOA NORSAR Array B 72.20 337 P **P** 04 40 47.7 -0.3
comp=Z,8.8nm,0.7s,baz=38,slow=6.0,SNR=46
NOA pP **pP** 04 41 01.3 +0.3
comp=Z,0.7nm,0.4s,baz=43,slow=4.6,SNR=5.4
NOA sP **PcP** 04 41 06.3 +0.3
comp=Z,3.0nm,0.9s,baz=43,slow=4.6,SNR=5.8
NOA LR LR 05 15 14.1
comp=Z,405nm,21.8s,baz=30,slow=38
ANN Anapa 72.22 314 *e*P **P** 04 40 46.0 -2.3
ANN *e**PP **pP** 04 40 56.2 -5.1
ANN *e* 04 41 04.5
ANN *e*S **S** 04 50 06.9 -0.7
ANN pmax pmax
comp=Z,47nm,1.6s
ANN MLR MLR
comp=N,325nm,19.0s
ANN MLR MLR
comp=Z,335nm,19.0s
ANN MLR MLR
comp=E,274nm,19.0s
NBO02 NORSAR Array S 72.30 337 *e*P **P** 04 40 48.4 -0.2
NBO00 NORSAR Array S 72.34 337 *e*P **P** 04 40 48.9 +0.1
HLID Hailey 72.49 48 P **P** 04 40 50.4 +0.1
baz=308
AKASG Malin Array Be 72.71 322 P **P** 04 40 50.8 -0.4
comp=E,10.0nm,0.6s,baz=44,slow=6.6,SNR=52
AKASG pP **pP** 04 41 04.2 0.0
comp=E,5.7nm,0.5s,baz=45,slow=6.3,SNR=6.3
AKASG sP **sP** 04 41 09.1 0.0
comp=E,5.6nm,0.5s,baz=45,slow=6.5,SNR=5.5
AKASG LR LR 05 16 15.5
comp=E,343nm,18.1s,baz=55,slow=39
KIEV Kiev 72.72 322 *c i*P **P** 04 40 50.4 -0.8
KIEV pmax pmax
comp=Z,17nm,0.9s
KIEV Kiev 72.72 322 *e*P **P** 04 40 50.8 -0.4
comp=Z,28nm,1.0s
BMN Battle Mountai 72.73 52 *e*P **P** 04 40 52.9 +1.2
BMN pmax pmax
comp=Z,44nm,1.4s
BMN Battle Mountai 72.73 52 *e*P **P** 04 40 52.9 +1.2
comp=Z,44nm,1.4s
AK11 Malin Array Si 72.75 322 *e*P **P** 04 40 51.1 -0.3
BOZ Bozeman (W) 72.76 45 P **P** 04 40 51.9 +0.2
baz=309
SUW Suwalki 73.15 327 *e*P **P** 04 40 53.5 -0.2
SUW Suwalki 73.15 327 *e*P **P** 04 40 53.5 -0.2
ELK Elko 73.74 51 *e*P **P** 04 40 57.0 -0.7
ELK pmax pmax
comp=Z,16nm,1.5s
ELK Elko 73.74 51 *e*P **P** 04 40 57.0 -0.7
comp=Z,16nm,1.5s
KLNR Kaliningrad 73.94 329 *e*P **P** 04 40 57.7 -0.6
KLNR pmax pmax
comp=Z,34nm,0.9s
SIM Simferopol' 73.96 315 *ce*P **P** 04 40 58.4 -0.2
SIM *e*S **SKiKP** 04 50 24.0 +0.9
SIM pmax pmax
comp=Z,15nm,0.8s
SIM MLR MLR
comp=Z,200nm,20.0s
H17A Grant Village 74.13 45 P **P** 04 41 00.5 +0.5
baz=310
H17A Grant Village 74.13 45 *e*P **P** 04 41 01.4 +1.5
comp=Z,28nm,1.1s
IMW Indian Meadow 74.25 46 *e*P **P** 04 41 02.0 +1.3
VES Vestal, Richgr 74.34 56 P **P** 04 41 00.9 -0.1
baz=308,SNR=6.0
RLMT Red Lodge 74.38 44 P **P** 04 41 01.5 +0.2
baz=310
RLMT Red Lodge 74.38 44 *e*P **P** 04 41 01.7 +0.3
comp=Z,42nm,1.5s
PKM Mcpherson Peak 74.44 58 P **P** 04 41 01.5 -0.4
baz=307
TPAW Teton Pass 74.50 46 *e*P **P** 04 41 03.1 +0.9
SBC Santa Barbara 74.78 58 P **P** 04 41 04.2 +0.6
baz=308
SORM Soroca 74.86 321 ⇑*i*P **P** 04 41 02.0 -1.7
SORM Soroca 74.86 321 ⇑P **P** 04 41 02.0 -1.7
LAO LASA Array 74.95 41 P **P** 04 41 04.5 0.0
baz=312
LAO LASA Array 74.95 41 *e*P **P** 04 41 05.5 +1.1
comp=Z,52nm,1.2s
R11A Troy Canyon, C 75.01 53 P **P** 04 41 05.2 +0.1
baz=309,SNR=9.0
R11A Troy Canyon, C 75.01 53 *e*P **P** 04 41 05.8 +0.7
comp=Z,42nm,1.4s
MPMC Manual Prospec 75.23 55 P **P** 04 41 06.5 +0.1
baz=308,SNR=7.7
OSI Osito Audit: C 75.32 57 P **P** 04 41 07.2 +0.4
baz=308
HWUT Hardware Ranch 75.36 48 *e*P **P** 04 41 07.7 +0.7
comp=Z,34nm,1.4s
FURC Furnace Creek, 75.38 55 P **P** 04 41 07.1 +0.2
baz=308,SNR=6.0
KIS Kishinev 75.39 319 *e*P P 04 41 20.0 +13
KIS LRM MLR 05 16 44.0
comp=Z,1μm,16.0s
KIS Kishinev 75.39 319 *e*P P 04 41 20.0 +13
KIS *e* 04 51 38.0
KIS MLR MLR
comp=Z,1μm,16.0s
KIS MLR MLR
comp=N,400nm,19.0s
KIS MLR MLR
comp=E,300nm,18.0s
KIS MLR MLR
comp=Z,1μm,16.0s
BORG Borgarnes 75.39 353 *e*P **P** 04 41 07.8 +1.2
BORG pmax pmax
comp=Z,12nm,0.7s
BORG Borgarnes 75.39 353 *e*P **P** 04 41 07.8 +1.2
comp=Z,12nm,0.7s
B25A Knox Farm, Ray 75.41 39 P **P** 04 41 06.7 -0.3
baz=314
TPNV Topopah Spring 75.47 54 P **P** 04 41 07.6 -0.1
baz=308,SNR=36
TPNV Topopah Spring 75.47 54 *e*P **P** 04 41 08.3 +0.6
TPNV pmax pmax
comp=Z,53nm,1.3s
TPNV Topopah Spring 75.47 54 *e*P **P** 04 41 08.3 +0.6
comp=Z,53nm,1.3s
A26A Wade Farm, Ken 75.51 38 P **P** 04 41 07.6 0.0
baz=314
DUG Dugway, Tooele 75.53 50 P **P** 04 41 08.0 0.0
baz=310
DUG Dugway, Tooele 75.53 50 *e*P **P** 04 41 08.6 +0.6
DUG pmax pmax
comp=Z,21nm,1.0s
DUG Dugway, Tooele 75.53 50 *e*P **P** 04 41 08.6 +0.6
comp=Z,22nm,1.0s
BSD Bornholm Skovb 75.59 332 ⇑*i*P **P** 04 41 07.2 -0.6
comp=Z,22nm,0.9s
BSD Bornholm Skovb 75.59 332 ⇑*i*P **P** 04 41 07.2 -0.6
BSD pmax pmax
comp=Z,22nm,0.9s
EDW2 Edwards Air Fo 75.63 57 P **P** 04 41 08.2 -0.3
baz=308
LVV L'vov 75.75 324 *e*P **P** 04 41 08.9 +0.1
BW06 Boulder Array 75.75 46 P **P** 04 41 09.0 -0.3
baz=311
PDAR Pinedale Array 75.75 46 P **P** 04 41 09.3 0.0
comp=Z,3.1nm,0.6s,baz=268,slow=3.0,SNR=7.6
PDAR pP **pP** 04 41 22.9 +0.6
comp=Z,4.7nm,0.5s,baz=281,slow=1.8,SNR=7.5
B26A Jensen Ranch, 75.78 38 P **P** 04 41 09.5 +0.3
baz=314
A27A Ledoux Ranch, 75.85 37 P **P** 04 41 09.6 +0.1
baz=315
COP Copenhagen 76.03 333 *i* P **P** 04 41 10.5 +0.2
COP Copenhagen 76.03 333 *e*P **P** 04 41 10.5 +0.2
GKP Gorka Klasztor 76.11 329 *e*P **P** 04 41 10.8 -0.1
GKP Gorka Klasztor 76.11 329 *e*P **P** 04 41 10.8 -0.1
GSC Goldstone, Bar 76.14 56 P **P** 04 41 11.6 +0.1
baz=309
BFSC Mount Baldy Ra 76.24 57 P **P** 04 41 11.7 -0.4
baz=308
A28A Rude Farm, Bot 76.34 37 P **P** 04 41 12.6 +0.3
baz=315
SHPR Sheep Range 76.43 54 *e*P **P** 04 41 14.6 +1.4
comp=Z,29nm,1.1s
KWP Kalwaria Pacla 76.48 324 *e*P **P** 04 41 13.8 +0.7
KWP Kalwaria Pacla 76.48 324 *e*P **P** 04 41 13.8 +0.7
B28A Dugan Ranch, T 76.62 37 P **P** 04 41 13.9 0.0
baz=315
BUR08 Bucovina Ar. S 76.73 322 *e*P **P** 04 41 15.0 +0.4
HEC Hector,Ludlow 76.73 56 P **P** 04 41 15.0 +0.1
baz=309
BURAR Bucovina Array 76.74 322 ⇑*i*P **P** 04 41 14.9 +0.2
BURAR Bucovina Array 76.74 322 ⇑P **P** 04 41 14.9 +0.2
A29A Manning Farm, 76.81 36 P **P** 04 41 15.2 +0.2
baz=316
TESR Tescani 76.81 320 ⇑*i*P **P** 04 41 15.0 0.0
CCUT Cedar City 76.88 52 *e*P **P** 04 41 16.0 +0.2
comp=Z,31nm,1.3s
MURC Murrieta 76.94 57 P **P** 04 41 16.3 +0.3
CFR Carcaliu 76.98 318 ⇑*i*P **P** 04 41 15.8 -0.1
CFR Carcaliu 76.98 318 ⇑P **P** 04 41 15.8 -0.1
MSU Marysvale 76.98 51 *e*P **P** 04 41 17.9 +1.5
MSU Marysvale 76.98 51 *e*P **P** 04 41 17.9 +1.5
B29A Wagenman Farm, 77.08 37 P **P** 04 41 16.2 -0.3
baz=316
KOLS Kolonicke sedl 77.18 324 *e*P **P** 04 41 17.2 +0.2
KOLS *e* 04 41 32.8
KOLS *e* 04 44 15.7
KOLS pmax pmax
comp=Z,12nm,1.3s
KOLS Kolonicke sedl 77.18 324 *e*P **P** 04 41 17.2 +0.2
KOLS *e* 04 41 32.8
KOLS *e*PP **PP** 04 44 15.7 +5.1
GMRC Granite Mounta 77.19 56 P **P** 04 41 17.6 +0.1
baz=309
A30A Hoffart Farm, 77.22 36 P **P** 04 41 17.2 0.0
baz=316
PLOR Plostina 77.27 320 ⇓*i*P **P** 04 41 18.4 +0.8
PLOR Plostina 77.27 320 ⇓P **P** 04 41 18.4 +0.8
MTPU Mount Pierson 77.28 51 *e*P **P** 04 41 19.9 +1.7
comp=Z,42nm,1.3s
LCMT Little Creek M 77.30 52 *e*P **P** 04 41 19.1 +1.1
comp=Z,39nm,1.2s
STHS Stebnicka Huta 77.30 325 *e*P **P** 04 41 18.3 +0.7
STHS pmax pmax
comp=Z,11nm,1.0s
STHS Stebnicka Huta 77.30 325 *e*P **P** 04 41 18.3 +0.7
TIRR Tirgusor 77.33 318 ⇓*i*P **P** 04 41 18.2 +0.3
TIRR Tirgusor 77.33 318 ⇓P **P** 04 41 18.2 +0.3
TIRR Tirgusor 77.33 318 *e*P **P** 04 41 17.6 -0.3
ULM Lac du Bonnet 77.34 34 P **P** 04 41 17.3 -0.5
comp=Z,8.0nm,0.9s,baz=303,slow=5.6,SNR=7.2
ULM pP **pP** 04 41 30.2 -0.7
comp=Z,6.8nm,0.8s,baz=325,slow=8.2,SNR=4.5
OJC Ojcow 77.34 326 *e*P **P** 04 41 18.3 +0.4
OJC Ojcow 77.34 326 *e*P **P** 04 41 18.2 +0.4
OJC pmax pmax
comp=Z,37nm,1.1s
OJC Ojcow 77.34 326 *e*P **P** 04 41 18.2 +0.4
comp=Z,37nm,1.1s
LDFC Landfair 77.36 55 *e*P **P** 04 41 22.5 +4.1
UZH Uzhgorod 77.39 324 *e*P **P** 04 41 17.7 -0.4
UZH *e* 04 41 27.3
UZH *i* 04 41 31.1
MDND Maddock 77.41 37 P **P** 04 41 18.4 +0.1
baz=316
MDND Maddock 77.41 37 *e*P **P** 04 41 19.0 +0.8
comp=Z,80nm,1.2s
PFO Pinyon Flats O 77.41 57 P **P** 04 41 18.6 -0.2
baz=309
PFO Pinyon Flats O 77.41 57 *e*P **P** 04 41 19.6 +0.9
PFO pmax pmax
comp=Z,1.0nm,0.5s
PFO Pinyon Flats O 77.41 57 *e*P **P** 04 41 19.6 +0.9
comp=Z,0.7nm,0.5s
TPFO Pinon Flats 77.42 57 P **P** 04 41 18.7 0.0
baz=309
TLB Topalu 77.44 318 ⇓*i*P **P** 04 41 18.1 -0.4
TLB Topalu 77.44 318 ⇓P **P** 04 41 18.1 -0.4
BELC Belle Mtn. Jos 77.47 56 P **P** 04 41 18.9 -0.2
baz=309
K22A Casper 77.50 45 P **P** 04 41 19.0 -0.1
baz=312
ARCR ARCALIA 77.53 322 ⇑*i*P **P** 04 41 20.4 +1.4
KNB Kanab 77.55 52 *e*P **P** 04 41 21.1 +1.6
KNB pmax pmax
comp=Z,58nm,1.4s
KNB Kanab 77.55 52 *e*P **P** 04 41 21.1 +1.6
comp=Z,58nm,1.4s
B30A Myrvik Farm, E 77.56 36 P **P** 04 41 18.6 -0.5
baz=317
CRVS Cervenica-Dubn 77.57 324 *e*P **P** 04 41 19.6 +0.4
CRVS Cervenica-Dubn 77.57 324 *e*P **P** 04 41 19.6 +0.4
BR131 Keskin Array S 77.62 311 *e*P **P** 04 41 19.4 -0.4
BRTR Keskin Array B 77.62 311 P **P** 04 41 19.9 0.0
comp=Z,2.3nm,0.6s,baz=95,slow=4.2,SNR=19
BRTR sP **sP** 04 41 38.0 +0.1
comp=Z,3.2nm,0.5s,baz=111,slow=3.2,SNR=6.1
BRTR LR LR 05 20 07.9
comp=Z,186nm,19.3s,baz=54,slow=39
TRPA Tarpa 77.64 323 ⇑*e*SKKPbc **P** 04 41 20.2 +0.7
H25A Fruitdale 77.70 42 P **P** 04 41 19.9 -0.2
baz=314
NIE Niedzica 77.71 325 *e*P **P** 04 41 20.4 +0.4
NIE Niedzica 77.71 325 *e*P **P** 04 41 20.4 +0.4
MMU Miners Mountai 77.71 51 *e*P **P** 04 41 21.5 +0.9
DOPR Dopca 77.82 320 ⇑*i*P **P** 04 41 22.8 +2.2
RSSD Black Hills 77.82 42 P **P** 04 41 20.7 -0.3
baz=314
RSSD Black Hills 77.82 42 *e*P **P** 04 41 20.9 0.0
RSSD pmax pmax
comp=Z,25nm,1.2s
RSSD Black Hills 77.82 42 *e*P **P** 04 41 20.9 0.0
comp=Z,25nm,1.2s
ISR Istrita 77.84 319 ⇓*i*P **P** 04 41 22.1 +1.3
ISR Istrita 77.84 319 ⇓P **P** 04 41 22.1 +1.3
MLR Muntele Rosu 77.88 320 ⇑*i*P **P** 04 41 21.0 -0.1
MLR Muntele Rosu 77.88 320 *e*P **P** 04 41 21.4 +0.3
MLR pmax pmax
comp=Z,13nm,1.1s
MLR Muntele Rosu 77.88 320 *e*P **P** 04 41 21.4 +0.3
comp=Z,13nm,1.1s
B31A Greenbush Farm 77.89 36 P **P** 04 41 20.9 -0.1
baz=317
IRM Iron Mountain 77.92 56 P **P** 04 41 21.6 +0.2
baz=310,SNR=5.2
ANTO Ankara 78.02 312 *e*P **P** 04 41 22.3 +0.4
ANTO pmax pmax
comp=Z,32nm,0.6s
ANTO Ankara 78.02 312 *e*P **P** 04 41 22.3 +0.4
comp=Z,32nm,0.6s
BC3 Big Chuckawall 78.04 56 P **P** 04 41 22.0 -0.1
baz=310
C30A Mose, Pekin 78.04 37 P **P** 04 41 21.3 -0.5
baz=317
BR231 Keskin MP Arra 78.04 312 *e*P **P** 04 41 20.4 -1.7
A32A Rocking H Ranc 78.05 35 P **P** 04 41 21.2 -0.6
baz=318
O20A White River Ci 78.23 47 P **P** 04 41 22.3 -0.9
baz=312
IKP In-Ko-Pah, Jac 78.25 57 P **P** 04 41 22.2 -1.1
baz=309
U15A North Rim 78.26 52 *e*P **P** 04 41 24.6 +1.0
comp=Z,66nm,1.4s
LANS Liptovska Anna 78.28 326 *e*P **P** 04 41 24.2 +1.1
LANS Liptovska Anna 78.28 326 *e*P **P** 04 41 24.2 +1.1
C31A Landman Farms, 78.31 36 P **P** 04 41 22.6 -0.7
baz=317
KECS Kecovo 78.32 325 *e*P **P** 04 41 24.0 +0.7
KECS pmax pmax
comp=Z,3.0nm,1.1s
KECS Kecovo 78.32 325 *e*P **P** 04 41 24.0 +0.7
OKC Ostrava-Krasne 78.33 327 AMS AMS 05 18 20.0
comp=Z,600nm,18.6s
KSP Ksiaz 78.34 328 *e*P **P** 04 41 23.9 +0.5
KSP Ksiaz 78.34 328 *e*P **P** 04 41 23.9 +0.5
VOIR 78.36 320 ⇓*i*P **P** 04 41 24.4 +0.7
VOIR 78.36 320 ⇓P **P** 04 41 24.4 +0.7
B32A Ashes, Strandq 78.42 35 P **P** 04 41 23.6 -0.2
baz=318
A33A Warroad 78.52 34 P **P** 04 41 24.0 -0.5
baz=318
DRGR 78.53 322 ⇑*i*P **P** 04 41 25.0 +0.4
DRGR 78.53 322 ⇑P **P** 04 41 25.1 +0.4
Y12C Blythe 78.57 56 P **P** 04 41 24.6 -0.4
baz=310,SNR=5.1
Y12C Blythe 78.57 56 *e*P **P** 04 41 25.9 +0.9
comp=Z,20nm,1.0s
ARR Arges 78.62 320 ⇑*i*P **P** 04 41 26.3 +1.2
MORC Moravsky Berou 78.64 327 ⇓*i*P **P** 04 41 25.6 +0.5
MORC Moravsky Berou 78.64 327 *e*P **P** 04 41 25.7 +0.5
MORC pmax pmax
comp=Z,58nm,0.8s
MORC Moravsky Berou 78.64 327 *e*P **P** 04 41 25.6 +0.5
comp=Z,58nm,0.8s
DPC Dobruska-Polom 78.71 328 *e*P **P** 04 41 26.3 +0.8
DPC *e*pP **pP** 04 41 39.7 +1.1
DPC AMS AMS 05 18 50.0
comp=Z,500nm,17.0s
DPC Dobruska-Polom 78.71 328 *e*P **P** 04 41 26.3 +0.8
DPC *e* 04 41 39.7
DPC MLR MLR
comp=Z,500nm,17.0s
UPC Upice 78.71 328 *e*P **P** 04 41 26.0 +0.5
UPC *ex* x 04 41 39.5
UPC AMS AMS 05 18 50.0
comp=Z,700nm,16.8s
UPC Upice 78.71 328 *e*P **P** 04 41 26.0 +0.5
UPC *e* 04 41 39.5
UPC MLR MLR
comp=Z,700nm,16.8s
AGMN Agassiz Nation 78.79 35 P **P** 04 41 24.7 -1.2
baz=318
AGMN Agassiz Nation 78.79 35 *e*P **P** 04 41 25.4 -0.6
comp=Z,4.7nm,0.8s
PV09 Paradox Valley 78.80 49 *e*P **P** 04 41 27.6 +1.0
GLA Glamis 78.82 56 P **P** 04 41 25.0 -1.4
baz=310
PV10 Paradox Valley 78.93 49 *e*P **P** 04 41 28.4 +1.2
PV04 Paradox Valley 79.00 49 *e*P **P** 04 41 27.7 +0.2
PSZ Piszkesteto 79.00 324 ⇑*i*P **P** 04 41 27.9 +0.7
PSZ Piszkesteto 79.00 324 *e*P **P** 04 41 27.8 +0.6
PSZ pmax pmax
comp=Z,118nm,2.0s
PSZ Piszkesteto 79.00 324 *e*P **P** 04 41 27.8 +0.6
comp=Z,118nm,2.0s
PSZ Piszkesteto 79.00 324 ⇑*e*SKKPdf **P** 04 41 27.7 +0.6
N23A Red Feather La 79.01 46 P **P** 04 41 26.4 -1.2
baz=313
VYHS Vyhne 79.05 325 *e*P **P** 04 41 27.8 +0.5
VYHS pmax pmax
comp=Z,11nm,1.4s
VYHS Vyhne 79.05 325 *e*P **P** 04 41 27.8 +0.5
PV05 Paradox Valley 79.10 49 *e*P **P** 04 41 28.9 +0.8
E31A Nome 79.15 37 P **P** 04 41 27.3 -0.6
baz=317
G29A Hoven 79.16 39 P **P** 04 41 27.4 -0.7
baz=316
B34A Aery, Baudette 79.19 34 P **P** 04 41 27.0 -1.1
baz=319
C33A Trail 79.23 35 P **P** 04 41 27.6 -0.8
baz=318
BRG Berggiesshubel 79.26 329 *i* P **P** 04 41 28.6 +0.1
comp=Z,16nm,1.0s
BRG *es*P **sP** 04 41 46.8 +0.2
comp=Z,11nm,1.0s
comp=N,11μm,17.0s
comp=E,201nm,15.7s
comp=Z,628nm,16.1s
BRG Berggiesshubel 79.26 329 *i* P **P** 04 41 28.5 +0.1
BRG *e**SP **sP** 04 41 46.8 +0.2
BRG pmax pmax
comp=Z,16nm,1.0s
BRG MLR MLR
comp=E,201nm,15.7s
BRG MLR MLR
comp=Z,628nm,16.1s
PVCC Panska Ves 79.28 329 *e*P **P** 04 41 29.3 +0.7
PVCC *ex* x 04 41 42.6
PVCC AMS AMS 05 19 10.0
comp=Z,700nm,19.4s
PVCC Panska Ves 79.28 329 *e*P **P** 04 41 29.3 +0.7
PVCC *e* 04 41 42.6
PVCC MLR MLR
comp=Z,700nm,19.4s
CLL Collm 79.28 330 ⇑*i*P **P** 04 41 28.4 -0.1
comp=Z,23nm,0.9s
CLL *e* 04 41 36.0
CLL *e* 04 41 46.0
CLL *e*PS **PnS** 04 52 12.0 -0.6
CLL *e*SSS SSS 05 00 06.0
CLL Collm 79.28 330 *e*P **P** 04 41 28.5 -0.1
CLL pmax pmax
comp=Z,20nm,0.9s
CLL Collm 79.28 330 *e*P **P** 04 41 28.4 -0.1
comp=Z,20nm,0.9s
PV01 Paradox Valley 79.37 49 *e*P **P** 04 41 30.0 +0.4
VRAC Vranov 79.39 327 ⇑*i*P **P** 04 41 30.0 +0.8
VRAC Vranov 79.39 327 ⇑P **P** 04 41 30.0 +0.8
WUAZ Wupatki 79.41 53 P **P** 04 41 28.9 -0.9
baz=311,SNR=6.6
WUAZ Wupatki 79.41 53 *e*P **P** 04 41 30.5 +0.7
comp=Z,36nm,1.1s
Y14A Wickenburg 79.42 55 *e*P **P** 04 41 30.6 +0.9
comp=Z,112nm,1.3s
F31A Hecla 79.48 38 P **P** 04 41 29.1 -0.6
baz=317
SMCO Snowmass 79.59 48 *e*P **P** 04 41 30.3 -0.7
comp=Z,39nm,1.5s

GOPC **GO Pecny, Ondr** 79.67 328 *e*P **P** 04 41 31.1 +0.4
GOPC *e*pP **sP** 04 41 48.6 -0.3
GOPC AMS AMS 05 19 20.0
comp=Z,600nm,21.7s
GOPC **GO Pecny, Ondr** 79.67 328 *e*P **P** 04 41 31.1 +0.4
GOPC *e* 04 41 48.6
GOPC MLR MLR
comp=Z,600nm,21.7s
B35A **Bob, Littlefor** 79.69 34 P **P** 04 41 30.2 -0.6
baz=320
PRU **Pruhonice** 79.71 329 *e*P **P** 04 41 31.4 +0.5
PRU AMS AMS 05 19 20.0
comp=Z,700nm,20.6s
PRU **Pruhonice** 79.71 329 *e*P **P** 04 41 31.4 +0.5
PRU MLR MLR
comp=Z,700nm,20.6s
ISCO **Idaho Springs** 79.94 46 P **P** 04 41 32.1 -0.7
baz=314
ISCO **Idaho Springs** 79.94 46 *e*P **P** 04 41 33.5 +0.8
ISCO pmax pmax
comp=Z,53nm,1.7s
ISCO **Idaho Springs** 79.94 46 *e*P **P** 04 41 33.5 +0.8
comp=Z,53nm,1.7s
D34A **Park Rapids** 80.00 36 P **P** 04 41 32.2 -0.4
baz=319
MVCO **Mesa Verde** 80.03 50 P **P** 04 41 32.4 -0.8
baz=312
MVCO **Mesa Verde** 80.03 50 *e*P **P** 04 41 33.6 +0.4
comp=Z,56nm,1.5s
E33A **Westby DABS, E** 80.06 36 P **P** 04 41 32.3 -0.6
baz=318
C35A **Jirik Farms, M** 80.08 35 P **P** 04 41 32.1 -0.9
baz=319
X16A **Lo Mia Camp, P** 80.09 54 *e*P **P** 04 41 29.8 -3.7
comp=Z,31nm,1.4s
SUSD **Miller** 80.17 39 P **P** 04 41 32.6 -0.9
baz=317
G32A **Webster** 80.29 38 P **P** 04 41 33.5 -0.7
baz=318
NKC **Novy Kostel** 80.35 330 *e*P **P** 04 41 34.7 +0.3
NKC AMS AMS 05 20 20.0
comp=Z,400nm,17.1s
NKC **Novy Kostel** 80.35 330 *e*P **P** 04 41 34.7 +0.3
NKC MLR MLR
comp=Z,400nm,17.1s
F33A **5 Mile Ranch,** 80.42 37 P **P** 04 41 34.6 -0.3
baz=318
E34A **Wadena** 80.44 36 P **P** 04 41 34.4 -0.5
baz=319
MDVR **Moldovita** 80.47 321⇓ *i*P **P** 04 41 35.0 -0.2
D35A **Remer** 80.51 35 P **P** 04 41 34.5 -0.8
baz=320
C36A **Pine Crest Far** 80.53 34 P **P** 04 41 34.9 -0.5
baz=320
S22A **4UR Ranch, Cre** 80.65 48 P **P** 04 41 36.2 -0.4
baz=313
S22A **4UR Ranch, Cre** 80.65 48 *e*P **P** 04 41 37.5 +1.0
comp=Z,34nm,1.4s
J30A **Dallas** 80.72 40 P **P** 04 41 35.8 -0.7
baz=316
CONA **Conrad Observa** 80.77 327 *i*P **P** 04 41 37.7 +0.9
comp=Z,3.8nm,0.6s,SNR=14
Q24A **Divide** 80.78 47 P **P** 04 41 37.1 -0.2
baz=314
KHC **Kasperske Hory** 80.78 329 *e*P **P** 04 41 37.2 +0.5
KHC *e*pP **sP** 04 41 54.4 -0.5
KHC AMS AMS 05 20 00.0
comp=Z,700nm,20.0s
KHC **Kasperske Hory** 80.78 329 *e*P **P** 04 41 36.8 0.0
KHC pmax pmax
comp=Z,6.0nm,0.9s
KHC **Kasperske Hory** 80.78 329 *e*P **P** 04 41 36.8 0.0
comp=Z,6.1nm,0.9s
214A **Organ Pipe Nat** 80.83 56 P **P** 04 41 37.1 -0.2
baz=311
214A **Organ Pipe Nat** 80.83 56 *e*P **P** 04 41 38.8 +1.5
comp=Z,89nm,1.2s
C37A **Embarrass** 80.83 34 P **P** 04 41 36.4 -0.6
baz=321
G33A **Ortonville** 80.83 38 P **P** 04 41 36.7 -0.4
baz=318
F34A **Alexandria** 80.94 37 P **P** 04 41 37.0 -0.7
baz=319
GEC2 **GERESS Array S** 80.95 328 *e*P **P** 04 41 37.7 -0.1
GEC2 pmax pmax
comp=Z,6.0nm,0.8s
GEC2 **GERESS Array S** 80.95 328 *e*P **P** 04 41 37.7 -0.1
comp=Z,6.0nm,0.8s
GERES **GERESS Array B** 80.95 328 P **P** 04 41 37.5 -0.2
comp=Z,3.4nm,0.6s,baz=36,slow=5.4,SNR=34
GERES sP **sP** 04 41 56.2 +0.3
comp=Z,1.8nm,0.6s,baz=39,slow=6.8,SNR=4.2
GERES LR LR 05 20 39.6
comp=Z,681nm,19.2s,baz=30,slow=38
GEA0 **GERESS Array S** 80.96 328 *e*P **P** 04 41 37.0 -0.7
EYMN **Ely** 80.96 33 P **P** 04 41 36.9 -0.8
baz=321
EYMN **Ely** 80.96 33 *e*P **P** 04 41 36.8 -0.9
comp=Z,7.1nm,0.9s
H33A **Prehn Over Nor** 81.07 38 P **P** 04 41 37.9 -0.4
baz=318
OGNE **Ogallala** 81.10 44 P **P** 04 41 38.0 -0.7
baz=315
J31A **Geddes** 81.12 40 P **P** 04 41 38.1 -0.6
baz=317
K30A **Basset** 81.13 41 P **P** 04 41 38.5 -0.2
baz=316
F35A **Swanville** 81.20 36 P **P** 04 41 38.4 -0.6
baz=319
I32A **Karley and Nic** 81.21 39 P **P** 04 41 38.0 -1.0
baz=318
C38A **Sawbill Land.** 81.23 33 P **P** 04 41 38.4 -0.8
baz=321
GRFO **Grafenberg** 81.26 330 *e*P **P** 04 41 39.8 +0.5
GRFO pmax pmax
comp=Z,34nm,1.1s
GRFO **Grafenberg** 81.26 330 *e*P **P** 04 41 39.8 +0.5
comp=Z,34nm,1.1s
E36A **McGregor** 81.30 35 P **P** 04 41 38.4 -1.1
baz=320
VTS **Vitosha** 81.33 319⇑ *i*P **P** 04 41 40.8 +0.9
VTS **Vitosha** 81.33 319 *e*P **P** 04 41 40.4 +0.4
VTS pmax pmax
comp=Z,17nm,0.9s
VTS **Vitosha** 81.33 319 *e*P **P** 04 41 40.4 +0.4
comp=Z,17nm,0.9s
SDCO **Great Sand Dun** 81.41 48 P **P** 04 41 40.5 -0.2
baz=314
SDCO **Great Sand Dun** 81.41 48 *e*P **P** 04 41 41.0 +0.3
comp=Z,20nm,1.4s
ARSA **Arzberg** 81.44 326 *i*P **P** 04 41 40.6 +0.4
comp=Z,2.4nm,0.5s,SNR=6.0
MOA **Molln** 81.50 327 *i*P **P** 04 41 41.2 +0.6
comp=Z,3.2nm,0.7s,SNR=6.4
K31A **O'Neill** 81.60 41 P **P** 04 41 41.0 -0.2
baz=317
F36A **Milaca** 81.68 36 P **P** 04 41 40.8 -0.8
baz=320
KOGS **Kog** 81.74 325 *e*P **P** 04 41 40.9 -0.9
ECSD **EROS Data Cent** 81.84 39 P **P** 04 41 42.0 -0.4
baz=318
ECSD **EROS Data Cent** 81.84 39 *e*P **P** 04 41 41.8 -0.6
comp=Z,28nm,1.2s
TUC **Tucson** 81.89 55 *e*P **P** 04 41 39.6 -3.4
TUC pmax pmax
comp=Z,25nm,1.3s
TUC **Tucson** 81.89 55 *e*P **P** 04 41 39.6 -3.4
comp=Z,25nm,1.3s
H35A **Sunnyside Ranc** 81.96 37 P **P** 04 41 42.8 -0.3
baz=319
PERS **Pernice** 82.09 326 *i*P **P** 04 41 43.8 0.0
SOKA **Soboth** 82.09 326 *i*P **P** 04 41 44.1 +0.3
comp=Z,2.0nm,0.3s,SNR=28
KSCO **Kaye Shedlock'** 82.15 45 P **P** 04 41 44.0 -0.3
baz=315
KSCO **Kaye Shedlock'** 82.15 45 *e*P **P** 04 41 44.3 0.0
comp=Z,72nm,1.4s
MEM **Membach** 82.42 333 P **P** 04 41 45.0 -0.3
comp=Z,7.9nm,1.1s
OBKA **Obir** 82.43 326 *i*P **P** 04 41 45.6 0.0
comp=Z,6.4nm,0.7s,SNR=5.7
T25A **Trinidad** 82.46 48 P **P** 04 41 46.1 +0.1
baz=314,SNR=5.9
T25A **Trinidad** 82.46 48 *e*P **P** 04 41 46.9 +0.8
comp=Z,37nm,1.4s
H36A **Jessenland, He** 82.47 37 P **P** 04 41 45.6 -0.2
baz=320
KBA **Koelnbreinsper** 82.49 327 *i*P **P** 04 41 46.1 +0.1
comp=Z,9.9nm,0.8s,SNR=15
MYKA **Terra Mystica** 82.72 327 *i*P **P** 04 41 46.5 -0.5
comp=Z,7.3nm,0.7s,SNR=10
LAZ **Ladron** 82.74 51 *e*P **P** 04 41 49.0 +1.4
ANMO **Albuquerque** 82.78 50 P **P** 04 41 47.2 -0.5
baz=314
ANMO **Albuquerque** 82.78 50 *e*P **P** 04 41 47.5 -0.2
ANMO pmax pmax
comp=Z,4.0nm,1.0s
ANMO **Albuquerque** 82.78 50 *e*P **P** 04 41 48.7 +0.9
comp=Z,24nm,1.1s
LJU **Ljubljana** 82.81 326 *i*P **P** 04 41 46.9 -0.6
BCLA **Clavier** 82.82 334 P **P** 04 41 47.0 -0.4
comp=Z,4.6nm,0.9s
K34A **Le Mars** 82.87 39 P **P** 04 41 46.9 -0.9
baz=319
CWF **Charnwood Fore** 82.89 338 *e*P **P** 04 41 47.9 +0.2
comp=Z,12nm,0.9s
BOJS **Bojanci** 82.91 325 *i*P **P** 04 41 47.6 -0.3
SCHQ **Schefferville** 82.99 16 P **P** 04 41 48.2 0.0
comp=Z,6.7nm,0.9s,baz=352,slow=5.1,SNR=4.8
SCHQ LR LR 05 20 50.9
comp=Z,125nm,21.2s,baz=356,slow=37
WATA **Walderalm** 83.02 329 *i*PcP **P** 04 41 49.5 +0.8
comp=Z,4.2nm,0.4s
WTTA **Wattenberg** 83.05 328 *i*PcP **P** 04 41 49.6 +0.7
comp=Z,4.5nm,0.6s
SNF **Semafe** 83.09 334 P **P** 04 41 48.5 -0.3
ABTA **Abfaltersbach** 83.10 328 *i*P **P** 04 41 46.9 -2.2
comp=Z,3.8nm,0.1s
O31A **Woolen Ranch,** 83.11 43 P **P** 04 41 48.8 -0.3
baz=317
LANF **Langenberg** 83.13 332⇑ *e*P **P** 04 41 49.1 0.0
MOTA **Moosalm** 83.20 329 *i*P **P** 04 41 49.7 +0.1
comp=Z,13nm,0.9s,SNR=10.0
BNM **Barren Site** 83.22 51 *e*P **P** 04 41 51.1 +1.0
RETA **Reutte** 83.22 329 *i*P **P** 04 41 49.9 +0.3
comp=Z,11nm,0.9s,SNR=21
J36A **Seneca 1, Swea** 83.23 38 P **P** 04 41 48.9 -0.8
baz=320
DOU **Dourbes** 83.34 334 P **P** 04 41 49.9 -0.1
COWI **Conover** 83.41 33 *e*P **P** 04 41 50.2 -0.4
comp=Z,31nm,1.6s
PDG **Podgorica** 83.41 321⇑ *i*P **P** 04 41 50.5 -0.1
319A **Douglas** 83.47 55 *e*P **P** 04 41 52.6 +1.4
comp=Z,33nm,1.0s
BFO **Black Forest** 83.47 331 *e*P **P** 04 41 50.8 -0.1
BFO pmax pmax
comp=Z,15nm,0.9s
BFO **Black Forest** 83.47 331 *e*P **P** 04 41 50.8 -0.1
comp=Z,15nm,0.9s
FETA **Feichten** 83.61 329 *i*P **P** 04 41 51.9 +0.1
comp=Z,8.2nm,0.8s,SNR=13
J37A **Redenius Farm,** 83.62 37 P **P** 04 41 50.7 -0.9
baz=320
121A **Cookes Peak, D** 83.62 53 P **P** 04 41 52.1 0.0
baz=313,SNR=6.0
121A **Cookes Peak, D** 83.62 53 *e*P **P** 04 41 53.3 +1.2
comp=Z,39nm,1.2s
I38A **Scanlan Farm,** 83.62 36 P **P** 04 41 50.9 -0.8
baz=321
K36A **Gilmore City** 83.70 38 P **P** 04 41 51.8 -0.3
baz=320
DAVA **Damuels** 83.73 329 *i*P **P** 04 41 52.5 +0.1
comp=Z,16nm,0.8s,SNR=15
WLS **Welschbruch** 83.77 331 *e*P **P** 04 41 52.5 +0.1
CDF **Champ du Feu** 83.80 332 *e*P **P** 04 41 51.7 -0.9
CDF pmax pmax
comp=Z,27nm,1.4s
P32A **Huiting Farm,** 83.87 43 P **P** 04 41 52.1 -1.0
baz=317
M35A **Neola** 83.98 40 P **P** 04 41 53.1 -0.4
baz=319
K37A **Belmond** 83.99 38 P **P** 04 41 53.0 -0.6
baz=320
ECH **Echery** 84.01 331⇑ *e*P **P** 04 41 53.1 -0.5
N34A **Lincoln** 84.05 41 P **P** 04 41 53.1 -0.8
baz=318
J38A **Wedel Dairy, R** 84.11 37 P **P** 04 41 53.4 -0.8
baz=321
FUORN **Ofenpass-Fuorn** 84.12 329 *e*P **P** 04 41 54.7 +0.2
comp=Z,35nm,0.9s
MOF **Molkenrain** 84.32 331⇑ *e*P **P** 04 41 54.7 -0.6
Q32A **Meitler Ranch,** 84.36 43 P **P** 04 41 54.6 -1.0
baz=318
AGG **Agios Georgios** 84.39 317 *e*P **P** 04 41 54.5 -1.2
AGG pmax pmax
comp=Z,162nm,1.8s
AGG **Agios Georgios** 84.39 317 *e*P **P** 04 41 54.5 -1.2
comp=Z,162nm,1.8s
THEF **They Montfort** 84.43 332⇑ *e*P **P** 04 41 55.3 -0.4
L37A **Phoenix Point,** 84.43 38 P **P** 04 41 55.4 -0.4
baz=320
M36A **Felix, Anita** 84.43 39 P **P** 04 41 55.3 -0.6
baz=320
O34A **Beatrice** 84.44 41 P **P** 04 41 55.2 -0.7
baz=318
HINF **Hinteralfeld** 84.45 331 *e*P **P** 04 41 54.7 -1.2
HINF pmax pmax
comp=Z,3.0nm,0.7s
J39A **Decorah** 84.45 36 P **P** 04 41 55.0 -0.9
baz=321
N35A **Tabor** 84.47 40 P **P** 04 41 55.6 -0.4
baz=319
P33A **Williams Farm,** 84.48 42 P **P** 04 41 55.3 -0.8
baz=318
TUE **Stuetta** 84.61 329 *e*P **P** 04 41 56.4 -0.5
comp=Z,14nm,0.9s
R32A **Long Quarter,** 84.69 43 P **P** 04 41 56.5 -0.7
baz=317
Q33A **Connelly Farm,** 84.73 43 P **P** 04 41 56.6 -0.8
baz=318
L38A **Oak Wood Farm,** 84.80 38 P **P** 04 41 57.0 -0.7
baz=321
M37A **Trindle Farm,** 84.83 39 P **P** 04 41 57.3 -0.6
baz=320
J40A **Soldiers Grove** 84.84 36 P **P** 04 41 56.7 -1.2
baz=322
P34A **Walnut Farm, R** 84.85 42 P **P** 04 41 57.2 -0.8
baz=318
LOMF **Lomont** 84.85 331⇑ *e*P **P** 04 41 57.5 -0.5
SCIA **State Center** 84.85 38 *e*P **P** 04 41 58.0 0.0
comp=Z,75nm,1.3s
K39A **Oelwein** 84.86 37 P **P** 04 41 57.1 -0.9
baz=321
S32A **Newby Ranch, P** 85.10 44 P **P** 04 41 58.6 -0.7
baz=317
R33A **Olander Ranch,** 85.16 43 P **P** 04 41 58.9 -0.7
baz=318
J41A **Loganville** 85.19 35 P **P** 04 41 58.8 -0.8
baz=322
K40A **Colesburg** 85.21 36 P **P** 04 41 58.9 -0.8
baz=322
M38A **Pleasantville** 85.24 38 P **P** 04 41 59.3 -0.5
baz=320
N37A **Lee Faris, Mou** 85.25 39 P **P** 04 41 59.5 -0.4
baz=320
Q34A **Chapman** 85.26 42 P **P** 04 41 59.1 -0.9
baz=318
L39A **Vinton** 85.26 37 P **P** 04 41 59.6 -0.4
baz=321
P35A **Duane Minner,** 85.28 41 P **P** 04 41 59.4 -0.7
baz=319
KSU1 **Kansas State U** 85.29 42 P **P** 04 41 59.5 -0.7
baz=319
KSU1 **Kansas State U** 85.29 42 *e*P **P** 04 41 58.9 -1.3
comp=Z,20nm,1.0s
PPT2 **Papeete2** 85.33 117 *e*S **S** 04 52 36.2 +8.0
comp=Z,107nm,27.5s
PPT2 **Papeete2** 85.33 117 *e*LR LR 05 08 37.0
comp=Z,690nm,22.5s,baz=315
PPT2 **Papeete2** 85.33 117 *e*T T 06 16 02.0
comp=Z,44nm,0.3s
O36A **Bolckow** 85.36 40 P **P** 04 41 59.8 -0.7
baz=320
PAE **Paea** 85.38 117 *e*T T 06 16 05.0
comp=Z,4.2nm,0.3s
TIAR **Tiarei** 85.47 117 *e*T T 06 16 12.0
comp=Z,8.1nm,0.3s
T32A **Huddler Ranch,** 85.49 44 P **P** 04 41 59.9 -1.4
baz=317
SENIN **Lac Senin/Sane** 85.50 330 *e*P **P** 04 42 01.1 -0.3
comp=Z,13nm,0.9s
R34A **Isabella, Hill** 85.56 43 P **P** 04 42 00.9 -0.7
baz=318
AMTX **Amarillo** 85.62 48 P **P** 04 42 00.7 -1.3
baz=316
AMTX **Amarillo** 85.62 48 *e*P **P** 04 42 02.1 0.0
comp=Z,71nm,1.8s
P36A **Good Intent, A** 85.62 41 P **P** 04 42 01.0 -0.8
baz=319
MSTX **Muleshoe** 85.64 49 P **P** 04 42 02.0 -0.2
baz=316,SNR=5.1
MSTX **Muleshoe** 85.64 49 *e*P **P** 04 42 02.0 -0.2
comp=Z,47nm,1.5s
K41A **Shullsburg** 85.66 36 P **P** 04 42 01.1 -0.9
baz=322
MNTX **Cornudas Mount** 85.67 52 P **P** 04 42 02.2 -0.1
baz=314,SNR=6.6
MNTX **Cornudas Mount** 85.67 52 *e*P **P** 04 42 02.7 +0.5
comp=Z,32nm,1.5s
L40A **Anamosa** 85.67 37 P **P** 04 42 01.2 -0.8
baz=322
M39A **Webster** 85.68 38 P **P** 04 42 01.4 -0.7
baz=321
TVO **Taravao** 85.69 117 *e*T T 06 16 10.4
comp=Z,1.7nm,0.3s
N38A **Joes South For** 85.70 39 P **P** 04 42 01.8 -0.4
baz=320
O37A **Wolven Farm, M** 85.73 40 P **P** 04 42 01.8 -0.6
baz=320
CABF **La Chapelle** 85.75 331 *e*P **P** 04 42 01.4 -1.1
CABF pmax pmax
comp=Z,9.0nm,1.1s
Q35A **Mercer Eighty,** 85.77 42 P **P** 04 42 01.8 -0.8
baz=319
N39A **Derby Farms, D** 85.99 38 P **P** 04 42 03.2 -0.4
baz=321
L41A **Preston** 85.99 36 P **P** 04 42 02.6 -1.0
baz=322
P37A **Lathrop** 86.08 40 P **P** 04 42 03.3 -0.8
baz=320
S34A **Willow Spring** 86.08 43 P **P** 04 42 03.4 -0.7
baz=318
R35A **Emporia Munici** 86.09 42 P **P** 04 42 03.5 -0.7
baz=319
VLDQ **Val d'Or** 86.14 25 *e*P **P** 04 42 03.1 -1.1
comp=Z,31nm,1.3s
FLN **La Foliniere** 86.15 336 *e*P **P** 04 42 03.1 -1.2
FLN pmax pmax
comp=Z,17nm,1.0s
TAOE **Nuku Hiva Isla** 86.34 104 *e*LR LR 05 09 15.9
comp=Z,845nm,32.6s
TAOE **Nuku Hiva Isla** 86.34 104 *e*T T 06 17 23.1
comp=Z,164nm,0.3s
LPL **La Plagne** 86.42 330 *e*P **P** 04 42 05.1 -0.9
LPL pmax pmax
comp=Z,10.0nm,0.8s
LPG **La Plagne** 86.43 330 *e*P **P** 04 42 05.2 -0.9
LPG pmax pmax
comp=Z,17nm,1.0s
R36A **Gordon, Harris** 86.45 42 P **P** 04 42 05.6 -0.3
baz=319,SNR=5.7
O39A **Kirksville** 86.45 39 P **P** 04 42 05.5 -0.4
baz=321
P38A **Dawn** 86.45 40 P **P** 04 42 05.6 -0.3
baz=320
V32A **Arapaho** 86.49 45 P **P** 04 42 05.9 -0.3
baz=317
S35A **Otter Creek Ra** 86.51 43 P **P** 04 42 05.8 -0.4
baz=319,SNR=11
T34A **McClaskey Farm** 86.54 43 P **P** 04 42 06.1 -0.3
baz=318
MEH **Mehetia** 86.57 116 *e*T T 06 17 34.8
comp=Z,201nm,0.3s
AVF **Avril sur Loir** 86.59 333 *e*P **P** 04 42 05.6 -0.9
AVF pmax pmax
comp=Z,28nm,0.8s
W32A **Sentinel** 86.82 46 P **P** 04 42 07.9 0.0
baz=317
V33A **Lossen Ranch,** 86.84 45 P **P** 04 42 07.3 -0.6
baz=318
S36A **Lake Cedric, C** 86.86 42 P **P** 04 42 07.4 -0.6
baz=319,SNR=6.5
O40A **La Belle** 86.88 38 P **P** 04 42 07.4 -0.5
baz=321
Q38A **Cooks Store, C** 86.92 40 P **P** 04 42 07.3 -0.9
baz=320
P39B **Salisbury** 86.94 39 P **P** 04 42 07.3 -1.1
baz=321
T35A **Sooner Cattle** 86.98 43 P **P** 04 42 08.0 -0.6
baz=319
TIP **Timpagrande** 87.12 320 *e*P **P** 04 42 08.9 -0.4
comp=Z,13nm,1.4s
Q39A **Willow Grove F** 87.17 40 P **P** 04 42 09.0 -0.4
baz=321,SNR=12
PLDF **La Plantade** 87.20 332 *e*P **P** 04 42 09.8 +0.2
T36A **Boggs Farm, Ca** 87.20 43 P **P** 04 42 09.1 -0.6
baz=319
S37A **Fort Scott** 87.22 42 P **P** 04 42 09.2 -0.6
baz=320,SNR=9.9
W33A **Caddo, Fort Co** 87.23 46 P **P** 04 42 09.3 -0.6
baz=318
V34A **Guthrie** 87.25 44 P **P** 04 42 09.2 -0.7
baz=318
ORIF **Oris-en-Rattie** 87.25 330 *e*P **P** 04 42 10.6 +0.7
ORIF pmax pmax
comp=Z,6.0nm,1.0s
P40A **Paris** 87.25 39 P **P** 04 42 09.3 -0.6
baz=321
U35A **Pawnee** 87.27 44 P **P** 04 42 09.3 -0.7
baz=319
AGO **Saint Agoulin** 87.30 333 *e*P **P** 04 42 10.2 +0.2
X32A **Elmer** 87.31 46 P **P** 04 42 09.5 -0.7
baz=317
O41A **Passleys Farm,** 87.36 38 P **P** 04 42 09.6 -0.7
baz=322
WMOK **Wichita Mounta** 87.36 46 P **P** 04 42 09.7 -0.8
baz=318
WMOK **Wichita Mounta** 87.36 46 *e*P **P** 04 42 10.4 -0.1
WMOK pmax pmax
comp=Z,20nm,1.4s
WMOK **Wichita Mounta** 87.36 46 *e*P **P** 04 42 10.3 -0.1
comp=Z,20nm,1.4s
R38A **Fenwick Farm,** 87.37 41 P **P** 04 42 09.5 -0.9
baz=320
PYM **Petit Puy Mans** 87.61 333 *e*P **P** 04 42 11.8 +0.3
Q40A **Laux Farm, Aux** 87.66 39 P **P** 04 42 11.1 -0.7
baz=321,SNR=5.6
T37A **Cheneyville 18** 87.66 42 P **P** 04 42 10.9 -0.9
baz=320,SNR=5.4
X33A **Lawton** 87.66 46 P **P** 04 42 11.3 -0.6
baz=318
V35A **Meyer Ranch, C** 87.67 44 P **P** 04 42 11.5 -0.4
baz=319
R39A **Chumby, Stover** 87.71 40 P **P** 04 42 11.1 -0.9
baz=321,SNR=12
HDIL **Hopedale** 87.75 36 P **P** 04 42 11.8 -0.4
baz=323
HDIL **Hopedale** 87.75 36 *e*P **P** 04 42 12.1 -0.1
comp=Z,36nm,1.1s
VIVF **Saint-Julien-l** 87.76 331 *e*P **P** 04 42 11.4 -0.8
VIVF pmax pmax
comp=Z,13nm,1.3s
U36A **Oologah** 87.78 43 P **P** 04 42 11.3 -1.2
baz=319
S38A **Stockton** 87.79 41 P **P** 04 42 11.8 -0.7
baz=320
LBL **Lubilhac** 87.97 332 *e*P **P** 04 42 13.5 +0.3
Y33A **Hilltop Ranch,** 87.98 46 P **P** 04 42 12.6 -0.8
baz=318
X34A **Smith Ranch, M** 87.99 45 P **P** 04 42 13.3 -0.2
baz=318
P42A **Winchester** 88.03 38 P **P** 04 42 12.7 -0.8
baz=322,SNR=5.9
S39A **Bolivar** 88.04 41 P **P** 04 42 12.8 -0.8
baz=321,SNR=8.9
T38A **Diamond** 88.05 42 P **P** 04 42 12.8 -1.0
baz=320,SNR=11
U37A **Salina** 88.10 43 P **P** 04 42 13.4 -0.6
baz=320
W35A **Tecumseh** 88.10 45 P **P** 04 42 13.4 -0.6
baz=319
R40A **Maddies Statio** 88.11 40 P **P** 04 42 13.0 -0.9
baz=321,SNR=10
TUL1 **Leonard** 88.12 43 P **P** 04 42 13.5 -0.6
baz=319
V36A **Jenks** 88.13 44 P **P** 04 42 13.4 -0.7
baz=319
TX31 **Lajitas Ar. Si** 88.38 53 *e*P **P** 04 42 15.8 +0.3
TXAR **Lajitas Array** 88.38 53 P **P** 04 42 15.4 -0.2
comp=Z,1.0nm,0.6s,baz=298,slow=2.8,SNR=13
TXAR pP **pP** 04 42 29.2 +0.4
comp=Z,4.1nm,0.9s,baz=297,slow=3.0,SNR=11

Z33A	**Whitaker Ranch**	**88.44**	**47**	P		**P**	**04 42 14.4**	**-1.2**
	baz=318								
U38A	**Gravette**	**88.46**	**42**	P		**P**	**04 42 15.2**	**-0.5**
	baz=320								
W36A	**Wetumka**	**88.46**	**44**	P		**P**	**04 42 15.4**	**-0.3**
	baz=319								
Q42A	**Golden Eagle**	**88.47**	**38**	P		**P**	**04 42 15.2**	**-0.4**
	baz=322								
V37A	**Hulbert**	**88.48**	**43**	P		**P**	**04 42 14.7**	**-1.1**
	baz=320,SNR=6.3								
Y34A	**Reagan Ranch,**	**88.51**	**46**	P		**P**	**04 42 16.0**	**+0.1**
	baz=318								
S40A	**Lebanon**	**88.53**	**40**	P		**P**	**04 42 15.3**	**-0.7**
	baz=321,SNR=5.5								
T39A	**Clever**	**88.53**	**41**	P		**P**	**04 42 14.9**	**-1.1**
	baz=320								
CAF	**Calviac**	**88.65**	**333**	*e*P		**P**	**04 42 16.1**	**-0.4**
CAF				pmax		pmax			
	comp=Z,6.0nm,0.8s								
TRQ	**Mont Tremblant**	**88.74**	**24**	*e*P		**P**	**04 42 16.8**	**0.0**
HHAR	**Hobbs**	**88.81**	**42**	*e*P		**P**	**04 42 17.0**	**-0.3**
	comp=Z,9.3nm,1.1s								
LMQ	**La Malbaie**	**88.82**	**21**	*e*P		**P**	**04 42 17.0**	**-0.1**
X36A	**Centrahoma**	**88.82**	**45**	P		**P**	**04 42 16.6**	**-0.8**
	baz=319								
Q43A	**New Douglas**	**88.84**	**38**	P		**P**	**04 42 17.0**	**-0.4**
	baz=323								
133A	**Hamilton Ranch**	**88.85**	**48**	P		**P**	**04 42 17.2**	**-0.3**
	baz=318								
Z34A	**Collier Ranch,**	**88.85**	**46**	P		**P**	**04 42 16.6**	**-0.9**
	baz=318								
T40A	**Mansfield**	**88.87**	**41**	P		**P**	**04 42 17.0**	**-0.6**
	baz=321								
V38A	**Canehill**	**88.89**	**43**	P		**P**	**04 42 16.8**	**-0.8**
	baz=320,SNR=7.2								
SFIN	**Lafayette**	**88.89**	**35**	P		**P**	**04 42 16.9**	**-0.7**
	baz=324,SNR=5.1								
SFIN	**Lafayette**	**88.89**	**35**	*e*P		**P**	**04 42 17.5**	**0.0**
	comp=Z,49nm,1.5s								
W37B	**Quinton**	**88.89**	**44**	P		**P**	**04 42 17.3**	**-0.4**
	baz=319								
S41A	**Jillco Farms,**	**88.91**	**40**	P		**P**	**04 42 17.1**	**-0.7**
	baz=322								
Y35A	**Marietta**	**88.94**	**45**	P		**P**	**04 42 17.5**	**-0.4**
	baz=318								
U39A	**Green Forest**	**88.97**	**42**	P		**P**	**04 42 17.7**	**-0.4**
	baz=320,SNR=12								
Z35A	**Perchaven, San**	**89.25**	**46**	P		**P**	**04 42 19.0**	**-0.4**
	baz=318								
233A	**Rising Star**	**89.29**	**48**	P		**P**	**04 42 19.4**	**-0.2**
	baz=318								
V39A	**Pettigrew**	**89.30**	**42**	P		**P**	**04 42 19.5**	**-0.2**
	baz=320,SNR=6.0								
U40A	**Yellville**	**89.31**	**41**	P		**P**	**04 42 19.1**	**-0.6**
	baz=321,SNR=14								
T41A	**Mountain View**	**89.33**	**40**	P		**P**	**04 42 18.8**	**-1.0**
	baz=322,SNR=6.4								
X37A	**Clayton**	**89.34**	**44**	P		**P**	**04 42 18.9**	**-0.9**
	baz=319								
Y36A	**Durant**	**89.36**	**45**	P		**P**	**04 42 19.7**	**-0.2**
	baz=319								
TBI	**Tubuai**	**89.37**	**121**	*e*S		**S**	**04 53 12.9**	**+6.3**
	comp=Z,104nm,28.3s								
TBI	**Tubuai**	**89.37**	**121**	*e*LR		LR	05 10 18.0		
	comp=Z,436nm,34.8s,baz=306								
TBI	**Tubuai**	**89.37**	**121**	*e*T		T	06 21 02.7		
	comp=Z,102nm,0.3s								
W38A	**Poteau**	**89.43**	**43**	P		**P**	**04 42 19.9**	**-0.3**
	baz=320								
X38A	**Whitesboro**	**89.57**	**44**	P		**P**	**04 42 19.6**	**-1.3**
	baz=320								
R44A	**Waltonville**	**89.69**	**38**	P		**P**	**04 42 20.3**	**-1.1**
	baz=323								
W39A	**Magazine**	**89.72**	**43**	P		**P**	**04 42 20.5**	**-1.1**
	baz=320								
234A	**Clairette**	**89.74**	**47**	P		**P**	**04 42 21.2**	**-0.6**
	baz=318								
S43A	**Fulton Ridge,**	**89.75**	**39**	P		**P**	**04 42 20.7**	**-1.0**
	baz=322								
333A	**Richland Sprin**	**89.75**	**48**	P		**P**	**04 42 21.4**	**-0.5**
	baz=318								
V40A	**Witts Springs**	**89.75**	**42**	P		**P**	**04 42 20.8**	**-1.0**
	baz=321								
Z36A	**Blue Ridge**	**89.75**	**46**	P		**P**	**04 42 21.3**	**-0.4**
	baz=319								
OLIL	**Olney**	**89.76**	**37**	*e*P		**P**	**04 42 21.8**	**+0.1**
	comp=Z,23nm,1.0s								
U41A	**Viola**	**89.80**	**41**	P		**P**	**04 42 21.5**	**-0.5**
	baz=321								
JCT	**Junction City**	**89.89**	**50**	P		**P**	**04 42 21.8**	**-0.7**
	baz=317								
JCT	**Junction City**	**89.89**	**50**	*e*P		**P**	**04 42 22.0**	**-0.5**
JCT				pmax		pmax			
	comp=Z,11nm,0.8s								
JCT	**Junction City**	**89.89**	**50**	*e*P		**P**	**04 42 22.0**	**-0.5**
	comp=Z,10nm,0.8s								
S44A	**Carbondale**	**90.05**	**38**	P		**P**	**04 42 22.6**	**-0.4**
	baz=323								
SIUC	**Southern Illin**	**90.05**	**38**	*e*P		**P**	**04 42 21.7**	**-1.4**
	comp=Z,27nm,0.6s								
X39A	**Fountain Ranch**	**90.07**	**43**	P		**P**	**04 42 22.8**	**-0.5**
	baz=320,SNR=5.1								
W40A	**Ferguson Farm,**	**90.10**	**42**	P		**P**	**04 42 22.8**	**-0.6**
	baz=321								
433A	**Art**	**90.11**	**49**	P		**P**	**04 42 23.0**	**-0.5**
	baz=318								
V41A	**Mountainview**	**90.11**	**41**	P		**P**	**04 42 22.4**	**-1.0**
	baz=321,SNR=6.9								
U42A	**Revenden**	**90.13**	**40**	P		**P**	**04 42 22.8**	**-0.7**
	baz=322								
WHTX	**Lake Whitney,**	**90.13**	**47**	P		**P**	**04 42 23.4**	**-0.2**
	baz=318								
334A	**Lometa**	**90.17**	**48**	P		**P**	**04 42 23.5**	**-0.3**
	baz=318								
Y38A	**Idabel**	**90.19**	**44**	P		**P**	**04 42 23.2**	**-0.6**
	baz=320								
PBMO	**Poplar Bluff**	**90.20**	**39**	*e*P		**P**	**04 42 24.0**	**+0.2**
	comp=Z,45nm,1.5s								
136A	**Ennis**	**90.30**	**46**	P		**P**	**04 42 24.0**	**-0.3**
	baz=319								
MIAR	**Mount Ida**	**90.33**	**43**	P		**P**	**04 42 24.0**	**-0.5**
	baz=320								
MIAR	**Mount Ida**	**90.33**	**43**	*e*P		**P**	**04 42 24.0**	**-0.5**
MIAR				pmax		pmax			
	comp=Z,34nm,1.4s								
MIAR	**Mount Ida**	**90.33**	**43**	*e*P		**P**	**04 42 24.0**	**-0.5**
	comp=Z,34nm,1.4s								
S45A	**Carrier Mills**	**90.38**	**38**	P		**P**	**04 42 23.9**	**-0.7**
	baz=323								
X201	**Greenbrier Sit**	**90.39**	**42**	*e*P		**P**	**04 42 24.6**	**-0.1**
	comp=Z,25nm,1.2s								
ERPA	**Erie**	**90.40**	**30**	*e*P		**P**	**04 42 25.2**	**+0.5**
	comp=Z,62nm,1.4s								
X301	**Greenbrier Sit**	**90.41**	**42**	*e*P		**P**	**04 42 25.3**	**+0.5**
	comp=Z,15nm,1.1s								
WHAR	**Wooly Hollow**	**90.43**	**42**	*e*P		**P**	**04 42 24.8**	**0.0**
	comp=Z,30nm,1.3s								
V42A	**Cord**	**90.48**	**41**	P		**P**	**04 42 24.3**	**-0.8**
	baz=322								
Y39A	**Lockesburg**	**90.52**	**44**	P		**P**	**04 42 24.9**	**-0.4**
	baz=320								
W41B	**Gary Mavity, V**	**90.54**	**42**	P		**P**	**04 42 24.8**	**-0.6**
	baz=321								
434A	**Burnet**	**90.54**	**48**	P		**P**	**04 42 24.7**	**-0.9**
	baz=318								
Z38A	**Mt. Pleasant**	**90.56**	**45**	P		**P**	**04 42 24.9**	**-0.6**
	baz=320								
533A	**Kerrville**	**90.64**	**49**	P		**P**	**04 42 25.2**	**-0.9**
	baz=318								
MMNY	**Mt. Morris Dam**	**90.66**	**28**	*e*P		**P**	**04 42 25.9**	**+0.1**
X40A	**Basin Creek Fa**	**90.76**	**42**	P		**P**	**04 42 25.0**	**-1.4**
	baz=321								
ACSO	**Alum Creek Sta**	**90.79**	**33**	*e*P		**P**	**04 42 26.2**	**-0.3**
	comp=Z,16nm,0.9s								
336A	**Riesel**	**90.93**	**47**	P		**P**	**04 42 26.0**	**-1.3**
	baz=319								
534A	**Blanco**	**91.00**	**49**	P		**P**	**04 42 27.1**	**-0.6**
	baz=318								
WCI	**Wyandotte Cave**	**91.00**	**36**	*e*P		**P**	**04 42 27.2**	**-0.3**
WCI				pmax		pmax			
	comp=Z,12nm,1.0s								
WCI	**Wyandotte Cave**	**91.00**	**36**	*e*P		**P**	**04 42 27.2**	**-0.3**
	comp=Z,12nm,1.0s								
633A	**Saathoff Ranch**	**91.00**	**50**	P		**P**	**04 42 26.9**	**-0.8**
	baz=317								
M54A	**Oil Creek Stat**	**91.05**	**30**	P		**P**	**04 42 27.1**	**-0.6**
	baz=329								
WLAR	**White Oak Lake**	**91.23**	**43**	*e*P		**P**	**04 42 29.4**	**+0.8**
	comp=Z,15nm,0.8s								
Y41A	**Eaglette Beard**	**91.35**	**43**	P		**P**	**04 42 28.2**	**-0.9**
	baz=321								
N54A	**Moraine State**	**91.39**	**30**	P		**P**	**04 42 27.9**	**-1.4**
	baz=329								
535A	**Dale**	**91.52**	**48**	P		**P**	**04 42 28.8**	**-1.3**
	baz=318								
Y42A	**Garnett, Star**	**91.81**	**42**	P		**P**	**04 42 30.7**	**-0.6**
	baz=322								
WVT	**Waverly**	**91.98**	**38**	*e*P		**P**	**04 42 32.1**	**+0.1**
WVT				pmax		pmax			
	comp=Z,6.0nm,1.0s								
WVT	**Waverly**	**91.98**	**38**	*e*P		**P**	**04 42 32.1**	**+0.1**
	comp=Z,6.2nm,1.0s								
Z42A	**Norrel Spur, H**	**92.17**	**43**	P		**P**	**04 42 31.6**	**-1.3**
	baz=321								
636A	**Smothers Creek**	**92.23**	**48**	P		**P**	**04 42 33.4**	**+0.1**
	baz=318								
933A	**Laredo**	**92.29**	**51**	P		**P**	**04 42 34.3**	**+0.7**
	baz=317								
Y44A	**Strider, Charl**	**92.53**	**41**	P		**P**	**04 42 34.3**	**-0.3**
	baz=322								
O56A	**Blue Knob Stat**	**92.54**	**30**	P		**P**	**04 42 34.3**	**-0.3**
	baz=330								
Y45A	**Yeager Farm, C**	**92.94**	**41**	P		**P**	**04 42 35.9**	**-0.6**
	baz=323								
Z44A	**Pea Ridge, Bel**	**92.95**	**42**	P		**P**	**04 42 36.1**	**-0.5**
	baz=322								
N59A	**State Game Lan**	**93.02**	**28**	P		**P**	**04 42 36.5**	**-0.3**
	baz=332								
034A	**Hebbronville**	**93.05**	**51**	P		**P**	**04 42 37.2**	**+0.1**
	baz=318								
Y46A	**Houston**	**93.27**	**40**	P		**P**	**04 42 37.3**	**-0.7**
	baz=323								
KEST	**Kesra**	**93.42**	**323**	LR		LR	05 29 18.6		
	comp=Z,136nm,18.2s,baz=334,slow=38								
SWET	**Sewanee**	**93.62**	**37**	*e*P		**P**	**04 42 39.2**	**-0.5**
	comp=Z,6.8nm,1.5s								
TZTN	**Tazewell**	**93.62**	**35**	*e*P		**P**	**04 42 39.3**	**-0.4**
	comp=Z,5.0nm,1.1s								
244A	**Avery, Jackson**	**93.79**	**43**	P		**P**	**04 42 40.4**	**-0.1**
	baz=322								
CPCT	**Cooper Cave**	**94.09**	**36**	*e*P		**P**	**04 42 41.6**	**-0.2**
	comp=Z,3.0nm,0.9s								
245A	**Little AP, Sta**	**94.21**	**42**	P		**P**	**04 42 42.0**	**-0.4**
	baz=322								
344A	**Westbrook Farm**	**94.23**	**43**	P		**P**	**04 42 42.6**	**+0.1**
	baz=322								
TKL	**Tuckaleechee C**	**94.26**	**36**	*e*P		**P**	**04 42 42.5**	**-0.1**
TKL	**Tuckaleechee C**	**94.26**	**36**	*e*P		**P**	**04 42 42.5**	**-0.1**
TKL				*e*PcP		**PcP**	**04 42 45.5**	**+2.5**
ES19	**SONSECA Array**	**95.33**	**334**	*e*P		**P**	**04 42 46.9**	**-0.6**
ESDC	**Sonseca Array**	**95.38**	**334**	P		**P**	**04 42 46.8**	**-0.9**
	comp=Z,0.4nm,0.4s,baz=27,slow=4.3,SNR=5.9								
ESDC				sP		**sP**	**04 43 05.9**	**-0.1**
	comp=Z,0.4nm,0.5s,baz=45,slow=4.4,SNR=2.3								
ESDC				LR		LR	05 30 58.8		
	comp=Z,297nm,18.9s,baz=335,slow=39								
RKT	**Rikitea**	**99.25**	**112**	*e*LR		LR	05 15 13.5		
	comp=Z,569nm,25.5s,baz=307								
TORD	**Torodi Ar. Bea**	**115.96**	**316**	PKP		**PKPdf**	**04 48 05.5**	**-1.0**
	comp=Z,0.6nm,0.6s,baz=18,slow=1.6,SNR=6.7								
VNDA	**Vanda**	**117.26**	**175**	PKP		**PKPdf**	**04 48 05.8**	**-1.3**
	comp=Z,0.5nm,0.8s,baz=292,slow=3.8,SNR=2.9								
MAW	**Mawson**	**121.81**	**206**	PKP		**PKPdf**	**04 48 15.0**	**-1.0**
	comp=Z,1.6nm,0.7s,baz=322,slow=4.6,SNR=4.2								
MAW	**Mawson**	**121.81**	**206**	PKIKP		**PKPdf**	**04 48 15.0**	**-1.0**
MAW				pmax		pmax			
	comp=Z,1.0nm,0.4s								
ROSC	**El Rosal**	**124.75**	**46**	PKP		**PKPdf**	**04 48 24.9**	**+1.0**
	comp=Z,0.9nm,0.3s,baz=312,slow=7.1,SNR=2.6								
DBIC	**Dimbokro**	**124.85**	**318**	PKP		**PKPdf**	**04 48 22.9**	**-0.6**
	comp=Z,1.1nm,0.5s,baz=29,slow=9.3,SNR=2.8								
BOSA	**Boshof**	**127.37**	**261**	PKP		**PKPdf**	**04 48 28.0**	**-0.1**
	comp=Z,2.2nm,0.8s,baz=72,slow=4.6,SNR=3.7								
NNA	**Nana**	**136.19**	**62**	PKP		**PKPdf**	**04 48 44.9**	**-0.1**
	comp=Z,5.7nm,0.9s,baz=308,slow=11,SNR=1.8								
SAML	**Samuel**	**142.29**	**43**	*e*PKPpre		PKPpre	04 48 50.3		
SNAA	**Sanae**	**143.09**	**198**	*e*PKPpre		PKPpre	04 48 51.3		
LPAZ	**La Paz**	**145.12**	**57**	PKP		**PKPbc**	**04 49 00.2**	**-1.1**
	comp=Z,2.3nm,0.5s,baz=356,slow=4.1,SNR=16								
RCBR	**Riachuelo**	**146.56**	**356**	PKPbc		**PKPdf**	**04 49 04.2**	**+0.6**
	comp=Z,10nm,0.9s,baz=52,slow=7.0,SNR=2.4								
LVC	**Limon Verde**	**148.92**	**67**	PKPbc		**PKPbc**	**04 49 11.9**	**+0.2**
	comp=Z,20nm,0.9s,baz=326,slow=7.8,SNR=4.0								
SIV	**San Ignacio**	**149.23**	**47**	PKP		**PKPdf**	**04 49 08.2**	**+0.3**
	comp=Z,7.4nm,0.9s,baz=335,slow=1.7,SNR=11								
SIV				PKPbc		**PKPbc**	**04 49 12.1**	**-0.1**
	comp=Z,7.4nm,0.9s,baz=332,slow=2.4,SNR=11								
LCO	**Las Campanas**	**151.23**	**79**	*e*PKPbc		**PKPbc**	**04 49 16.8**	**-0.2**
BDFB	**Brasilia**	**154.81**	**23**	PKPbc		**PKPbc**	**04 49 26.2**	**+1.2**
PLCA	**Paso Flores**	**155.16**	**104**	PKPbc		PKPdf	04 49 24.5	+8.4
	comp=Z,1.6nm,0.8s,baz=286,slow=9.4,SNR=3.3								
CPUP	**Villa Florida**	**159.29**	**57**	PKPab		**PKPab**	**04 49 58.6**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=330,slow=2.9,SNR=3.9								

IDC ***11*** *04:34:34.6±0.6, 15.˚10S×173.˚54W, h0km, mb4.3/9, mb1 4.5/9, mb1mx4.2/33, mbtmp4.3/9, MS3.4/3, Ms1 3.4/3, ms1mx3.1/29, Error ellipse: s-maj=31.7km s-min=16.9km az=131.0*

NEIC ***11*** *04:34:36.1±0.2, 15.˚06S×173.˚58W, h10km, mb4.7/20, Error ellipse: s-maj=13.1km s-min=6.2km az=131.0*

ISCJB ***11*** *04:34:37.7±0.4, 15.˚0S±0.˚1×173.˚7W±0.˚1, h30km, mb4.7/32, MS3.4/3, Error ellipse: s-maj=22.5km s-min=9.4km az=42.0*

ISC 11 04:34:39.2±0.5, 15.˚1S±0.˚1×173.˚6W±0.˚2, h30km, n74, σ0s58/55, mb4.6/32, MS3.2/3, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
AFI	**Afiamalu**	**2.09**	**57**		Pn	Pn	04 35 05.1	-7.3
	222nm,0.3s,baz=194,slow=1.8,SNR=131							
AFI					Sn	Sn	04 35 25.0	-12
	973nm,0.3s,baz=222,slow=18,SNR=20							
AFI	**Afiamalu**	**2.09**	**57**	*e*P		Pn	04 35 05.0	-7.3
AFI				*e*S		Sn	04 35 24.6	-13
DZM	**Mont Dzumac**	**20.16**	**247**	P		Pn	04 39 15.3	+1.9
	7.4nm,0.6s,baz=248,slow=16,SNR=3.5							
PPT	**Papeete**	**23.18**	**99**	LR		LR	04 46 00.1	
	comp=Z,81nm,20.4s,baz=242,slow=30							
PAE	**Paea**	**23.18**	**100**	*e*T		T	05 02 55.8	
	3.8nm,0.3s							
PPT2	**Papeete2**	**23.18**	**100**	*e*LR		LR	04 45 05.7	
	166nm,24.8s							
PPT2	**Papeete2**	**23.18**	**100**	*e*T		T	05 02 56.8	
	6.1nm,0.4s							
TIAR	**Tiarei**	**23.39**	**99**	*e*T		T	05 03 12.4	
	3.8nm,0.4s							
TVO	**Taravao**	**23.50**	**100**	*e*T		T	05 03 19.4	
	1.7nm,0.3s							
TBI	**Tubuai**	**24.20**	**114**	*e*LR		LR	04 45 26.3	
	187nm,27.0s							
TBI	**Tubuai**	**24.20**	**114**	*e*T		T	05 04 03.5	
	12nm,0.3s							
URZ	**Urwera**	**24.53**	**198**	P		**P**	**04 39 56.0**	**-0.1**
	12nm,0.8s,baz=264,slow=10,SNR=2.7							
URZ					LR	LR	04 47 52.3	
	comp=Z,251nm,19.5s,baz=324,slow=33							
VAH	**Vaihoa**	**25.05**	**94**	*e*T		T	05 05 20.6	
	7.7nm,0.3s							
TAOE	**Nuku Hiva Isla**	**33.26**	**83**	*e*LR		LR	04 49 45.5	
	165nm,25.8s							
RKT	**Rikitea**	**37.27**	**108**	*e*T		T	05 20 26.2	
	6.9nm,0.3s							
H11S2	**WAKE ISLAND Hy**	**38.58**	**329**	T		T	05 23 33.5	
	baz=149,slow=76,SNR=15							
H11S3	**WAKE ISLAND Hy**	**38.59**	**329**	T		T	05 23 33.5	
	baz=149,slow=76,SNR=14							
H11S1	**WAKE ISLAND Hy**	**38.60**	**329**	T		T	05 23 33.5	
	baz=149,slow=76,SNR=17							
H11N3	**WAKE ISLAND Hy**	**39.53**	**330**	T		T	05 24 40.8	
	baz=150,slow=76,SNR=8.6							
H11N1	**WAKE ISLAND Hy**	**39.53**	**330**	T		T	05 24 41.1	
	baz=150,slow=76,SNR=13							
H11N2	**WAKE ISLAND Hy**	**39.55**	**330**	T		T	05 24 41.5	
	baz=150,slow=76,SNR=12							
STKA	**Stephens Creek**	**44.05**	**240**	P		**P**	**04 42 44.4**	**-0.2**
	3.1nm,0.9s,baz=92,slow=14,SNR=2.9							
WRA	**Warramunga Arr**	**49.75**	**256**	P		**P**	**04 43 28.6**	**-0.6**
	294nm,1.0s,baz=92,slow=6.9,SNR=6.7							
ASAR	**Alice Springs**	**50.05**	**252**	P		**P**	**04 43 30.8**	**-0.8**
	4.2nm,0.6s,baz=87,slow=7.9,SNR=32							
VNDA	**Vanda**	**63.70**	**186**	P		**P**	**04 45 08.1**	**+0.7**
	0.7nm,0.9s,baz=14,slow=3.7,SNR=4.4							
MOD	**Modoc Plateau**	**74.97**	**38**	*e*P		**P**	**04 46 18.0**	**+0.1**
	8.2nm,1.1s							
QSPA	**South Pole Qui**	**74.98**	**180**	*e*P		**P**	**04 46 18.1**	**+0.5**
	3.9nm,0.5s							
R11A	**Troy Canyon, C**	**75.94**	**43**	*e*P		**P**	**04 46 22.8**	**-0.7**
TUC	**Tucson**	**76.32**	**51**	*e*P		**P**	**04 46 25.9**	**+0.3**
	9.0nm,1.2s							
BMO	**Blue Mountains**	**78.46**	**37**	*e*P		**P**	**04 46 37.2**	**-0.2**
	2.8nm,0.9s							
MFID	**Camas Ranch**	**78.54**	**39**	*e*P		**P**	**04 46 38.0**	**+0.1**
	6.8nm,1.0s							
121A	**Cookes Peak, D**	**78.68**	**52**	*e*P		**P**	**04 46 39.5**	**+0.5**
	4.8nm,1.0s							
HLID	**Hailey**	**79.48**	**39**	*e*P		**P**	**04 46 43.5**	**+0.3**
	9.4nm,0.9s							
MNTX	**Cornudas Mount**	**80.17**	**53**	*e*P		**P**	**04 46 46.8**	**-0.2**
HWUT	**Hardware Ranch**	**80.27**	**42**	*e*P		**P**	**04 46 47.1**	**-0.4**
	1.9nm,0.6s							
TRF	**Thorofare Moun**	**80.32**	**10**	*e*P		**P**	**04 46 47.1**	**-0.2**
	7.2nm,1.1s							
PV04	**Paradox Valley**	**80.50**	**46**	*e*P		**P**	**04 46 49.0**	**+0.2**
TXAR	**Lajitas Array**	**80.57**	**56**	P		**P**	**04 46 49.8**	**+0.5**
	2.7nm,0.9s,baz=227,slow=5.0,SNR=10							
PV01	**Paradox Valley**	**80.62**	**46**	*e*P		**P**	**04 46 49.6**	**+0.1**
	164nm,0.6s							
ANMO	**Albuquerque**	**80.72**	**50**	*e*P		**P**	**04 46 50.4**	**+0.3**
	196nm,1.1s							
MCK	**McKinley**	**80.82**	**11**	*e*P		**P**	**04 46 49.8**	**+0.1**
	9.4nm,0.9s							
DLMT	**Dillon**	**81.54**	**39**	*e*P		**P**	**04 46 53.9**	**-0.2**
	1.4nm,0.4s							
TPAW	**Teton Pass**	**81.60**	**41**	*e*P		**P**	**04 46 55.1**	**+0.4**
	6.4nm,1.1s							
DOT	**Dot Lake**	**81.72**	**13**	*e*P		**P**	**04 46 52.8**	**-1.7**
	18nm,1.0s							
IMW	**Indian Meadow**	**81.81**	**40**	*e*P		**P**	**04 46 56.1**	**+0.4**
	17nm,1.3s							
COLA	**College**	**82.06**	**11**	*e*P		**P**	**04 46 56.3**	**+0.1**
PDAR	**Pinedale Array**	**82.13**	**42**	P		**P**	**04 46 57.5**	**0.0**
	3.3nm,0.8s,baz=204,slow=3.3,SNR=16							
ILAR	**Eielson Array**	**82.15**	**11**	P		**P**	**04 46 56.7**	**0.0**
	1.5nm,0.8s,baz=216,slow=5.9,SNR=16							
SMCO	**Snowmass**	**82.20**	**46**	*e*P		**P**	**04 46 58.5**	**+0.4**
	7.6nm,1.1s							
SDCO	**Great Sand Dun**	**82.62**	**48**	*e*P		**P**	**04 47 00.0**	**-0.2**
	17nm,1.7s							
MSTX	**Muleshoe**	**83.09**	**52**	*e*P		**P**	**04 47 02.2**	**-0.3**
	18nm,1.3s							
AMTX	**Amarillo**	**84.28**	**52**	*e*P		**P**	**04 47 08.1**	**-0.5**
	15nm,0.9s							
ABTX	**Abilene, Hawle**	**85.01**	**54**	*e*P		**P**	**04 47 12.0**	**-0.2**
	25nm,0.9s							
RSSD	**Black Hills**	**86.33**	**43**	*e*P		**P**	**04 47 18.3**	**-0.4**
	0.8nm,0.4s							
MAW	**Mawson**	**88.06**	**199**	P		**P**	**04 47 26.6**	**+0.2**
	1.1nm,0.5s,baz=91,slow=7.8,SNR=3.5							
YKA	**Yellowknife Ar**	**89.86**	**23**	P		**P**	**04 47 34.6**	**-0.1**
	0.9nm,0.7s,baz=237,slow=4.8,SNR=11							
YKA					LR	LR	05 20 02.5	
	comp=Z,9.6nm,20.0s,baz=0.0,slow=30							
ARCES	**ARCESS Array B**	**124.25**	**352**	PKP		**PKPdf**	**04 53 34.7**	**+0.2**
	1.4nm,0.6s,baz=22,slow=1.3,SNR=12							
KHC	**Kasperske Hory**	**145.52**	**352**	*e*PKP		**PKPab**	**04 54 15.7**	**+0.9**
KHC				*ex*		x	04 54 33.6	
KHC	**Kasperske Hory**	**145.52**	**352**	*e*PKPdf		**PKPab**	**04 54 15.7**	**+0.9**
BRTR	**Keskin Array B**	**145.78**	**321**	PKPbc		**PKPab**	**04 54 17.2**	**+0.9**
	3.2nm,0.7s,baz=110,slow=2.7,SNR=19							
GERES	**GERESS Array B**	**145.78**	**351**	PKPbc		**PKPab**	**04 54 16.1**	**+0.3**
	1.7nm,0.7s,baz=20,slow=4.3,SNR=16							
CONA	**Conrad Observa**	**146.31**	**349**	*i* pPKPdf		**PKPab**	**04 54 18.3**	**+0.4**
	3.4nm,1.0s							
MOA	**Molln**	**146.66**	**350**	*i* pPKPdf		**PKPab**	**04 54 19.0**	**-0.2**
	1.6nm,0.6s							
ARSA	**Arzberg**	**147.02**	**349**	*i* sPKPdf		**PKPab**	**04 54 20.5**	**-0.1**
	3.2nm,1.1s							
RETA	**Reutte**	**147.47**	**355**	*i* sPKPdf		**PKPbc**	**04 54 21.5**	**+1.1**
	1.7nm,0.7s							
KBA	**Koelnbreinsper**	**147.56**	**351**	*i*

ASAR	**Alice Springs**	**17.50**	**167**	P		Pn	05 20 25.5	+1.0
	0.4nm,0.3s,baz=339,slow=10,SNR=18							
ASAR				S		S	05 23 35.5	-4.1
	0.1nm,0.3s,baz=354,slow=24,SNR=4.4							
MKAR	**Makanchi Array**	**67.71**	**327**	P		P	05 27 11.8	-0.2
	0.4nm,0.5s,baz=121,slow=7.6,SNR=3.8							

NIED ***11*** *05:19:00,38˚.10N×143˚.90E,h5km,Mw3.6 Best double couple: M₀2.72000×10¹⁴ NP1:φ=195.00000°,δ=33.00000°, λ=-60.00000°. NP2:φ=341.00000°,δ=62.00000°, λ=-108.00000°.*

IDC ***11*** *05:19:38.0±1.1,37˚.99N×144˚.07E,h0km,mb3.5/5, mb1 3.6/7,mb1mx3.4/37,mbtmp3.5/7,ML3.3/1,Error ellipse: s-maj=26.6km s-min=19.1km az=87.0*

ISCJB ***11*** *05:19:41.2±0.7,38˚.08N±0˚.04×143˚.92E±0˚.06,h33km, mb3.5/5,Error ellipse: s-maj=6.5km s-min=6.1km az=138.1*

JMA ***11*** *05:19:41.1±0.2,38˚.10N×143˚.89E,h39km,M3.8*

ISC 11 05:19:43.4±1.1,38˚.07N±0˚.05×143˚.87E±0˚.08,h35km,n21, σ1ₛ58/32,mb3.5/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
OFUJ	**Ofunato**	**2.00**	**301**	P	**Pn**		**05 20 13.7**	**-1.0**
OFUJ				*e*S	**Sn**		**05 20 38.1**	**-0.4**
JIO	**Ouri**	**2.02**	**282**	P	**Pn**		**05 20 14.1**	**-0.9**
JIO				*e*S	**Sn**		**05 20 38.0**	**-1.1**
MIYJ	**Miyakonagasawa**	**2.20**	**314**	P	**Pn**		**05 20 15.7**	**-1.8**
MIYJ				*e*S	**Sn**		**05 20 42.3**	**-1.2**
JMK	**Ichinoseki**	**2.26**	**294**	*e*S	**Sn**		**05 20 44.6**	**-0.3**
JOM	**Ohasama**	**2.46**	**306**	P	**Pn**		**05 20 20.5**	**-0.5**
JOM				*e*S	**Sn**		**05 20 49.7**	**-0.1**
JOU	**Okura**	**2.54**	**278**	P	**Pn**		**05 20 21.9**	**-0.3**
JOU				S	**Sn**		**05 20 51.6**	**-0.4**
JFT	**Otama**	**2.85**	**260**	P	**Pn**		**05 20 26.4**	**0.0**
JFT				*e*S	**Sn**		**05 20 58.9**	**-0.7**
JRG	**Rokugo**	**2.86**	**299**	P	**Pn**		**05 20 26.1**	**-0.4**
JRG				*e*S	**Sn**		**05 20 59.8**	**+0.1**
JYK	**Kaneyama**	**2.88**	**288**	P	**Pn**		**05 20 26.8**	**-0.1**
JYK				*e*S	**Sn**		**05 21 01.1**	**+0.8**
JANG	**Nango**	**2.94**	**322**	*e*S	**Sn**		**05 20 59.7**	**-2.1**
JTM	**Tenmabayashi**	**3.48**	**322**	S	**Sn**		**05 21 12.3**	**-2.6**
JRY	**Ryogami san**	**4.47**	**244**	P	**Pn**		**05 20 47.9**	**-0.8**
JRY				*e*S	**Sn**		**05 21 36.5**	**-3.0**
JOD2	**Odawara 2**	**4.75**	**235**	*e*S	**Sn**		**05 21 42.7**	**-3.8**
MJAR	**Matsushiro Arr**	**4.76**	**253**	Pn	**Pn**		**05 20 53.5**	**+0.8**
	1.2nm,0.3s,baz=78,slow=13,SNR=7.6							
MJAR				Sn	**Sn**		**05 21 50.6**	**+3.8**
	1.0nm,0.3s,baz=70,slow=15,SNR=3.2							
ASAJ	**Asahikawa**	**6.12**	**351**	Pn	**Pn**		**05 21 10.6**	**-0.8**
	baz=201,slow=14							
ASAJ				Sn	**Sn**		**05 22 22.6**	**+2.5**
	0.6nm,0.3s,baz=118,slow=29,SNR=2.6							
SONM	**Songino Array**	**28.87**	**302**	P	**P**		**05 25 40.4**	**+1.7**
	0.4nm,0.6s,baz=98,slow=6.4,SNR=2.8							
MKAR	**Makanchi Array**	**45.23**	**302**	P	**P**		**05 27 58.0**	**+0.8**
	0.3nm,0.5s,baz=80,slow=12,SNR=2.8							
KURBB	**Kurchatov Arra**	**46.91**	**308**	P	**P**		**05 28 10.8**	**+0.6**
	0.7nm,0.5s,baz=82,slow=8.3,SNR=7.0							
ILAR	**Eielson Array**	**47.57**	**33**	P	**P**		**05 28 15.2**	**-0.1**
	0.3nm,0.9s,baz=269,slow=7.2,SNR=3.5							
WRA	**Warramunga Arr**	**58.39**	**191**	P	**P**		**05 29 34.4**	**-1.0**
	baz=10.0,slow=7.1,SNR=12							
ASAR	**Alice Springs**	**62.12**	**190**	P	**P**		**05 30 00.6**	**-0.3**
	0.4nm,0.6s,baz=0.0,slow=6.5,SNR=3.7							

ISCJB ***11*** *05:32:05.5±0.7,38˚.79N±0˚.03×39˚.10E±0˚.07,h10km, Error ellipse: s-maj=8.1km s-min=4.3km az=21.9*

ISK ***11*** *05:32:05.5,38˚.69N×39˚.61E,h12km, MD2.1*

CSEM ***11*** *05:32:05.6±0.3,38˚.78N×39˚.12E,h10km,MD2.1, Error ellipse: s-maj=9.7km s-min=6.5km az=104.0*

DDA ***11*** *05:32:06.0,38˚.77N×39˚.16E,h7km,Md2.5*

ISC 11 05:32:04.5±1.0,38˚.79N±0˚.04×39˚.10E±0˚.05,h10km,n14, σ1ₛ44/22,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
PTK	**Pertek**	**0.25**	**66**	PG	**Pb**		**05 32 11.5**	**+1.9**
PTK				*e*SG	**Sb**		**05 32 15.8**	**+2.7**
PTK	**Pertek**	**0.25**	**66**	*i* Pg	**Pb**		**05 32 11.5**	**+1.9**
PTK				*e*Sg	**Sb**		**05 32 15.8**	**+2.7**
ELZG	**Elazig**	**0.31**	**197**	*i* P	**Pb**		**05 32 12.2**	**0.0**
ELZG				*i* S	**Sb**		**05 32 17.2**	**-0.2**
ELZG	**Elazig**	**0.31**	**197**	P	**Pb**		**05 32 12.2**	**0.0**
ELZG				S	**Sb**		**05 32 17.2**	**-0.2**
SVRC	**Sivrice-ELAZID**	**0.45**	**159**	*e*PG	**Pg**		**05 32 13.8**	**+0.5**
SVRC				*e*SG	**Sg**		**05 32 19.8**	**+0.7**
SVRC	**Sivrice-ELAZID**	**0.45**	**159**	*e*Pg	**Pg**		**05 32 13.8**	**+0.5**
SVRC				*e*Sg	**Sg**		**05 32 19.8**	**+0.7**
TNCL	**Tunceli-Merkez**	**0.47**	**47**	*i* P	**Pb**		**05 32 14.4**	**-0.6**
TNCL				*i* S	**Sb**		**05 32 22.2**	**+0.2**
TNCL	**Tunceli-Merkez**	**0.47**	**47**	P	**Pb**		**05 32 14.4**	**-0.6**
TNCL				S	**Sb**		**05 32 22.2**	**+0.2**
KEMA	**Kemaliye**	**0.67**	**315**	*i* P	**Pn**		**05 32 19.9**	**-0.2**
KEMA	**Kemaliye**	**0.67**	**315**	P	**Pn**		**05 32 20.0**	**-0.2**
ERZN	**Erzincan**	**0.93**	**31**	*e*PG	**Pn**		**05 32 23.3**	**-0.4**
EZC	**Erzincan**	**0.98**	**11**	*e*Pg	**Pb**		**05 32 23.3**	**-0.3**
YEDI	**Yedisu-Bingol**	**1.29**	**60**	*e*PG	**Pn**		**05 32 26.0**	**-2.8**
YEDI	**Yedisu-Bingol**	**1.29**	**60**	*e*Pg	**Pn**		**05 32 26.0**	**-2.8**

NEIC ***11*** *05:38:03.0±0.2,29˚.48S×176˚.36W,h10km,mb4.9/56, Error ellipse: s-maj=9.7km s-min=5.4km az=147.0*

ISCJB ***11*** *05:38:03.6±0.2,29˚.49S±0˚.06×176˚.42W±0˚.04,h21km, mb4.8/67,MS3.8/5,Error ellipse: s-maj=8.6km s-min=4.9km az=159.0*

BJI ***11*** *05:38:09.7,28˚.82S×176˚.34W,h54km,mb5.1/14, mB5.4/14,Ms5.1/7,Ms7 5.0/5*

IDC ***11*** *05:38:09.1±2.6,29˚.25S×176˚.48W,h49km±21km,mb4.2/15, mb1 4.3/15,mb1mx4.2/30,mbtmp4.4/15,MS3.7/7, Ms1 3.7/7,ms1mx3.4/29,Error ellipse: s-maj=20.8km s-min=19.4km az=93.0*

ISC 11 05:38:04.7±0.4,29˚.41S±0˚.07×176˚.37W±0˚.06,h21km, n143,σ1ₛ55/148,mb4.8/66,MS3.9/5,1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
RAO	**Raoul Island**	**1.36**	**276**	P	**Pb**		**05 38 30.7**	**+1.2**
	485nm,0.3s,baz=59,slow=1.8,SNR=14							
RAO				S	**Sn**		**05 38 46.0**	**+0.1**
	2μm,0.3s,baz=79,slow=15,SNR=17							
URZ	**Urewera**	**10.35**	**210**	P	**Pn**		**05 40 28.9**	**-3.1**
	2.4nm,0.3s,baz=315,slow=4.7,SNR=3.9							
URZ				S	**Sn**		**05 42 24.6**	**-2.8**
	4.8nm,0.3s,baz=139,slow=22,SNR=5.8							
URZ				LR	LR		05 44 39.2	
	comp=Z,198nm,19.0s,baz=15,slow=37							
THZ	**Tophouse**	**15.08**	**212**	*e*Pn	**Pn**		**05 41 35.2**	**-1.4**
	118nm,1.3s							
KHZ	**Kahutara**	**15.32**	**209**	*e*Pn	**Pn**		**05 41 38.0**	**-1.7**
	81nm,0.9s							
OXZ	**Oxford**	**16.71**	**211**	*e*Pn	**Pn**		**05 41 52.3**	**-5.2**
	155nm,1.5s							
RAR	**Rarotonga**	**17.07**	**65**	LR	LR		05 48 34.7	
	comp=Z,176nm,18.1s,baz=256,slow=37							
RAR	**Rarotonga**	**17.07**	**65**	*e*Pn	**Pn**		**05 42 00.3**	**-1.9**
	30nm,0.8s							
DZM	**Mont Dzumac**	**17.11**	**291**	P	**P**		**05 42 07.1**	**+2.7**
	0.5nm,0.3s,baz=139,slow=14,SNR=3.5							
DZM	**Mont Dzumac**	**17.11**	**291**	*e*P	**P**		**05 42 05.3**	**+0.9**
	104nm,0.9s							
DZM				*e*LR	LR		05 46 10.7	
	624nm,21.6s							
DZM	**Mont Dzumac**	**17.11**	**291**	*e*Pn	**Pn**		**05 42 03.5**	**+0.8**
	38nm,1.2s							
RPZ	**Rata Peaks**	**17.46**	**212**	P	**Pn**		**05 42 04.3**	**-2.6**
	1.6nm,0.3s,baz=11,slow=6.5,SNR=5.8							
TBI	**Tubuai**	**24.82**	**82**	*e*LR	LR		05 49 16.5	
	248nm,28.8s							
PPT2	**Papeete2**	**27.18**	**70**	*e*LQ	LQ		05 48 57.1	
	214nm,25.5s							
PPT2				*e*LR	LR		05 50 16.0	
	234nm,29.8s							
PPT	**Papeete**	**27.19**	**70**	LR	LR		05 53 17.2	
	comp=Z,87nm,18.3s,baz=260,slow=33							
EIDS	**Eidsvold**	**29.12**	**270**	*e*P	**P**		**05 44 05.8**	**+1.5**
	36nm,1.5s							
RMQ	**Roma**	**30.87**	**267**	P	**P**		**05 44 21.7**	**+1.9**
	baz=31,SNR=4.8							
CMSA	**Cobar Meteorol**	**32.66**	**257**	P	**P**		**05 44 37.1**	**+1.6**
	baz=33,SNR=5.0							
QLP	**Quilpie**	**34.79**	**265**	P	**P**		**05 44 54.5**	**+0.5**
	baz=35,SNR=4.0							
CTAO	**Charters Tower**	**35.06**	**277**	*e*P	**P**		**05 44 57.4**	**+1.0**
	8.8nm,0.7s							
STKA	**Stephens Creek**	**36.09**	**255**	P	**P**		**05 45 06.0**	**+0.8**
	14nm,0.6s,baz=95,slow=10.0,SNR=28							
STKA				LR	LR		05 57 50.1	
	comp=Z,179nm,18.9s,baz=54,slow=33							
STKA	**Stephens Creek**	**36.09**	**255**	P	**P**		**05 45 05.7**	**+0.6**
	baz=36,SNR=19							
STKA	**Stephens Creek**	**36.09**	**255**	*e*P	**P**		**05 45 06.9**	**+1.8**
	3.3nm,0.8s							
MTSU	**Mount Surprise**	**37.52**	**278**	P	**P**		**05 45 18.1**	**+0.6**
	baz=38,SNR=7.2							
HTT	**Hallett**	**38.14**	**252**	P	**P**		**05 45 23.3**	**+0.7**
	baz=38,SNR=16							
PMG	**Port Moresby**	**39.49**	**293**	LR	LR		06 00 19.7	
	comp=Z,114nm,20.1s,baz=52,slow=34							
BBOO	**Buckleboo**	**40.60**	**253**	P	**P**		**05 45 43.1**	**0.0**
	baz=41,SNR=12							
BBOO	**Buckleboo**	**40.60**	**253**	*e*P	**P**		**05 45 43.6**	**+0.5**
	28nm,0.9s							
AS01	**Alice Springs**	**44.55**	**265**	*e*P	**P**		**05 46 14.1**	**-1.2**
AS31	**Alice Springs**	**44.59**	**265**	*e*P	**P**		**05 46 15.5**	**-0.1**
	2.6nm,0.8s							
ASAR	**Alice Springs**	**44.59**	**265**	P	**P**		**05 46 14.9**	**-0.7**
	5.8nm,0.6s,baz=97,slow=6.5,SNR=72							
ASAR				LR	LR		06 05 23.1	
	comp=Z,221nm,18.3s,baz=102,slow=37							
WB2	**Warramunga Arr**	**45.48**	**270**	*e*P	**P**		**05 46 21.6**	**-1.1**
	30nm,1.0s							
WRAB	**Tennant Creek**	**45.48**	**270**	*e*P	**P**		**05 46 23.1**	**+0.4**
	28nm,1.0s							
WR1	**Warramunga Arr**	**45.49**	**270**	*e*P	**P**		**05 46 21.7**	**-1.1**
	29nm,1.0s							
WR1				*e*			06 04 35.4	
WRA	**Warramunga Arr**	**45.49**	**270**	P	**P**		**05 46 21.7**	**-1.1**
	17nm,0.2s,baz=108,slow=7.7,SNR=44							
WRA				LR	LR		06 04 35.4	
	comp=Z,158nm,19.1s,baz=135,slow=35							
FORT	**Forrest**	**47.67**	**254**	P	**P**		**05 46 39.3**	**-0.5**
	baz=48,SNR=10							
JAY	**Jayapura**	**48.73**	**295**	P	**P**		**05 46 49.0**	**+0.8**
	0.8nm,0.9s,baz=98,slow=24,SNR=2.8							
WRKA	**Warakurna**	**49.02**	**261**	P	**P**		**05 46 49.3**	**-1.0**
	baz=49,SNR=20							
SBA	**Scott Base**	**49.13**	**185**	*e*P	**P**		**05 46 53.8**	**+3.5**
	18nm,1.6s							
VNDA	**Vanda**	**49.22**	**186**	P	**P**		**05 46 54.5**	**+3.4**
	0.9nm,0.9s,baz=12,slow=5.0,SNR=4.4							
FITZ	**Fitzroy Crossi**	**53.79**	**268**	P	**P**		**05 47 25.8**	**-0.2**
	baz=54,SNR=7.3							
FITZ	**Fitzroy Crossi**	**53.79**	**268**	*e*P	**P**		**05 47 26.5**	**+0.5**
	22nm,0.9s							
KLBR	**Kellerberrin**	**56.01**	**250**	P	**P**		**05 47 40.6**	**-1.4**
	baz=56,SNR=5.9							
QSPA	**South Pole Qui**	**60.70**	**180**	*e*P	**P**		**05 48 16.6**	**+2.3**
MAW	**Mawson**	**73.72**	**200**	P	**P**		**05 49 38.5**	**+1.8**
	1.8nm,0.7s,baz=116,slow=4.2,SNR=3.2							
MJAR	**Matsushiro Arr**	**78.25**	**324**	P	**P**		**05 50 02.7**	**-0.2**
	2.8nm,0.8s,baz=160,slow=5.4,SNR=8.9							
MAJO	**Matsushiro**	**78.25**	**324**	*e*P	**P**		**05 50 02.4**	**-0.6**
	8.1nm,0.4s							
MJB9	**Matsu-Tunnel**	**78.26**	**324**	*e*P	**P**		**05 50 02.4**	**-0.6**
	2.1nm,0.4s							
SYO	**Syowa Base**	**78.39**	**192**	*e*P	**P**		**05 50 03.0**	**-0.2**
SNAA	**Sanae**	**79.10**	**178**	P	**P**		**05 50 07.7**	**+0.4**
SNAA	**Sanae**	**79.10**	**178**	*e*P	**P**		**05 50 08.0**	**+0.8**
	6.2nm,1.1s							
VNA1	**Neumayer--Stat**	**79.86**	**176**	P	**P**		**05 50 12.0**	**+0.8**
ASAJ	**Asahikawa**	**82.23**	**331**	P	**P**		**05 50 25.3**	**+1.1**
	1.2nm,0.3s							
ASAJ	**Asahikawa**	**82.23**	**331**	*e*P	**P**		**05 50 25.0**	**+0.9**
	42nm,1.9s							
KSRS	**Korea Array**	**84.53**	**319**	P	**P**		**05 50 37.8**	**+1.7**
CMB	**Columbia Colle**	**85.09**	**41**	*e*P	**P**		**05 50 39.2**	**+0.2**
	5.2nm,1.1s							
PETK	**Petropavlovsk-**	**85.22**	**345**	P	**P**		**05 50 37.5**	**-1.8**
	1.5nm,0.5s,baz=141,slow=14,SNR=3.0							
PEA1	**Petropavlovsk-**	**85.23**	**345**	*e*P	**P**		**05 50 37.5**	**-1.8**
WDC	**Whiskeytown Da**	**85.66**	**38**	*e*P	**P**		**05 50 42.6**	**+0.8**
	7.5nm,1.0s							
PNTR	**Pine Nut**	**86.26**	**41**	*e*P	**P**		**05 50 45.0**	**-0.1**
	8.0nm,0.9s							
TVH2	**Borealis Mine**	**86.26**	**42**	*e*P	**P**		**05 50 44.2**	**-0.9**
	2.8nm,1.0s							
YBH	**Yreka Blue Hor**	**86.39**	**37**	*e*P	**P**		**05 50 46.2**	**+0.8**
	5.4nm,0.9s							
PSI	**Prapat**	**86.75**	**275**	P	**P**		**05 50 47.4**	**-0.5**
	10.0nm,0.9s,baz=138,slow=14,SNR=4.1							
PSI	**Prapat**	**86.75**	**275**	*e*P	**P**		**05 50 47.0**	**-0.9**
	15nm,1.0s							
PAHR	**Pah Rah Range**	**86.80**	**40**	*e*P	**P**		**05 50 47.9**	**+0.3**
	3.8nm,1.0s							
TPNV	**Topopah Spring**	**86.80**	**44**	*e*P	**P**		**05 50 48.5**	**+0.8**
	4.0nm,1.0s							
HUMO	**Hull Mountain**	**86.88**	**36**	*e*P	**P**		**05 50 48.4**	**+0.6**
	19nm,1.8s							
Y14A	**Wickenburg**	**86.92**	**48**	*e*P	**P**		**05 50 49.2**	**+1.0**
	53nm,1.7s							
USRK	**Usuriysk Ar.**	**87.13**	**326**	P	**P**		**05 50 49.1**	**+0.2**
	2.3nm,0.8s,baz=167,slow=9.2,SNR=6.0							
SHPR	**Sheep Range**	**87.18**	**45**	*e*P	**P**		**05 50 50.8**	**+1.2**
	17nm,1.9s							
TUC	**Tucson**	**87.39**	**51**	*e*P	**P**		**05 50 49.6**	**-1.0**
	3.8nm,0.9s							
K05A	**Summer Lake**	**88.05**	**37**	*e*P	**P**		**05 50 54.2**	**+0.6**
	5.2nm,0.9s							
X16A	**Lo Mia Camp, P**	**88.24**	**49**	*e*P	**P**		**05 50 55.8**	**+1.1**
	3.2nm,1.0s							
LCMT	**Little Creek M**	**88.69**	**46**	*e*P	**P**		**05 50 57.2**	**+0.5**
	4.9nm,1.3s							
U15A	**North Rim**	**88.93**	**47**	*e*P	**P**		**05 50 59.5**	**+1.4**
	3.9nm,0.8s							
WUAZ	**Wupatki**	**88.95**	**48**	*e*P	**P**		**05 50 59.3**	**+1.3**
	15nm,1.6s							
CCUT	**Cedar City**	**88.96**	**45**	*e*P	**P**		**05 50 58.4**	**+0.3**
	3.8nm,1.3s							
KNB	**Kanb**	**88.96**	**46**	*e*P	**P**		**05 50 59.4**	**+1.4**
	6.3nm,1.2s							
SZCU	**Shurtz Canyon**	**89.15**	**45**	*e*P	**P**		**05 51 00.8**	**+1.3**
	5.3nm,1.1s							
E03A	**Lebam**	**89.40**	**33**	*e*P	**P**		**05 51 00.8**	**+1.3**
	11nm,0.9s							
NLWA	**Neilton Lookou**	**89.86**	**33**	*e*P	**P**		**05 51 02.9**	**+1.1**
	8.4nm,0.9s							
MTPU	**Mount Pierson**	**89.99**	**45**	*e*P	**P**		**05 51 04.8**	**+1.8**
	6.3nm,1.2s							
CN2	**Changchun**	**90.22**	**322**	*e*P	**P**		**05 51 00.6**	**-2.9**
LON	**Longmire**	**90.39**	**34**	*e*P	**P**		**05 51 04.6**	**+0.3**
	7.1nm,1.1s							
D05A	**Enumclaw**	**90.61**	**34**	*e*P	**P**		**05 51 06.5**	**+1.2**
	16nm,1.1s							
LTX	**Lajitas**	**90.67**	**56**	*e*P	**P**		**05 51 06.6**	**+0.5**
TX31	**Lajitas Ar. Si**	**90.67**	**56**	*e*P	**P**		**05 51 06.5**	**+0.4**
TXAR	**Lajitas Array**	**90.67**	**56**	P	**P**		**05 51 06.6**	**+0.5**
	2.0nm,1.2s,baz=230,slow=3.1,SNR=7.1							
MNTX	**Cornudas Mount**	**90.76**	**54**	*e*P	**P**		**05 51 06.7**	**+0.4**
	9.1nm,1.8s							
G08A	**Pilot Rock**	**90.82**	**37**	*e*P	**P**		**05 51 07.1**	**+0.7**
	9.7nm,1.2s							
MFID	**Camas Ranch**	**91.26**	**39**	*e*P	**P**		**05 51 09.1**	**+0.6**
	6.0nm,1.2s							
BRLK	**Bradley Lake**	**91.30**	**13**	*e*P	**P**		**05 51 08.5**	**+0.3**
	21nm,1.4s							
TMUT	**Trail Mountain**	**91.36**	**45**	*e*P	**P**		**05 51 09.3**	**0.0**
	20nm,2.0s							
D08A	**Wollman Farm,**	**92.04**	**35**	*e*P	**P**		**05 51 12.6**	**+0.7**
	9.3nm,0.8s							
HLID	**Hailey**	**92.14**	**40**	*e*P	**P**		**05 51 12.7**	**+0.1**
	5.1nm,0.6s							
F10A	**Beach Ranch, E**	**92.18**	**37**	*e*P	**P**		**05 51 12.3**	**-0.4**
	9.1nm,0.8s							
ENH	**Enshi**	**92.22**	**304**	*e*P	**P**		**05 51 15.0**	**+1.8**
	40nm,1.2s							
GYA	**Guiyang**	**92.30**	**299**	*e*P	**P**		**05 51 15.0**	**+1.3**
GYA				pP	sP		05 51 31.2	+8.0
GYA				PP	**PP**		**05 54 58.0**	**+3.2**
GYA				SKS	**SKSac**		**06 01 42.3**	**-3.9**
GYA				S	**S**		**06 02 11.8**	**-4.3**
GYA				pmax	pmax			
	comp=Z,10.0nm,1.0s							
GYA				pmax	pmax			
	comp=Z,110nm,5.7s							
SNOW	**Snow King Moun**	**94.16**	**42**	*e*P	**P**		**05 51 22.9**	**+0.7**
	4.6nm,0.8s							
CM01	**Chiang Mai Arr**	**94.39**	**289**	*e*P	**P**		**05 51 25.1**	**+1.8**
CMAR	**Chiang Mai Ar**	**94.42**	**289**	P	**P**		**05 51 25.1**	**+1.6**
	0.8nm,0.4s,baz=140,slow=3.1,SNR=7.4							
PD31	**Pinedale Array**	**94.45**	**43**	*e*P	**P**		**05 51 23.5**	**+0.1**
PDAR	**Pinedale Array**	**94.45**	**43**	P	**P**		**05 51 23.1**	**-0.3**
	0.7nm,0.8s,baz=204,slow=3.3,SNR=5.4							
KMI	**Kunming**	**94.65**	**296**	P	**P**		**05 51 24.4**	**-0.3**
KMI				pmax	pmax			
	comp=Z,9.0nm,1.1s							
BOZ	**Bozeman (W)**	**94.99**	**40**	*e*P	**P**		**05 51 26.1**	**+0.3**
	3.2nm,0.8s							
WRH	**Wood River Hil**	**96.16**	**12**	*e*P	**P**		**05 51 30.1**	**-0.3**
	12nm,1.7s							
HHC	**Hu-ho-hao-te**	**96.57**	**313**	*e*P	**P**		**05 51 34.4**	**+1.4**
HHC				pmax	pmax			
	comp=Z,11nm,0.9s							
HHC				pmax	pmax			
	comp=Z,52nm,5.8s							
IL1	**Eielson Array**	**96.66**	**12**	*e*P	**P**		**05 51 31.9**	**-0.8**
ILAR	**Eielson Array**	**96.66**	**12**	P	**P**		**05 51 32.0**	**-0.6**
	1.3nm,0.9s,baz=219,slow=6.1,SNR=10							
ILB	**Eielson Array**	**96.66**	**12**	*e*P	**P**		**05 51 32.0**	**-0.6**
LPAZ	**La Paz**	**97.25**	**113**	P	Pdif		05 51 38.7	+1.3
	0.8nm,0.8s,baz=233,slow=4.2,SNR=4.0							
WMQ	**Urumqi**	**113.73**	**308**	*e*PKP	**PKiKP**		**05 56 44.0**	**+2.4**
MK01	**Makanchi Array**	**118.21**	**310**	*e*PKPdf	**PKPdf**		**05 56 49.1**	**-1.0**
MK32	**Makanchi Array**	**118.22**	**310**	*e*PKPdf	**PKPdf**		**05 56 49.2**	**-0.9**
MKAR	**Makanchi Array**	**118.22**	**310**	PKP	**PKPdf**		**05 56 49.2**	**-0.9**
	1.3nm,0.8s,baz=78,slow=1.7,SNR=7.3							
ZALV	**Zalesovo Beam**	**118.23**	**318**	PKP	**PKPdf**		**05 56 48.9**	**-1.0**
	0.6nm,0.5s,baz=172,slow=5.2,SNR=2.6							
ZAA1	**Zalesovo Array**	**118.23**	**318**	*e*PKPdf	**PKPdf**		**05 56 48.9**	**-1.0**
KSH	**Kashi**	**120.95**	**301**	*e*PKP	**PKPdf**		**05 56 57.4**	**+1.7**
KSH				*es*PKP			05 57 13.1	
KSH				*e*PP	**PP**		**05 58 26.3**	**+0.9**
KSH				SKS	**SKSdf**		**06 04 04.4**	**-2.3**
KSH				SKKS	**SKKSac**		**06 05 14.7**	**-8.9**
KSH				AMB	AMB			
	comp=Z,58nm,3.8s							
KSH				LR	LR			
	comp=N,89nm,8.2s							
KSH				LR	LR			
	comp=E,69nm,6.9s							
KSH				LR	LR			
	comp=Z,110nm,6.0s							
KURK	**Kurchatov**	**121.38**	**314**	*e*PKPdf	**PKPdf**		**05 56 55.4**	**-0.6**
KKAR	**Karatay Array**	**125.70**	**304**	*e*PKPdf	**PKPdf**		**05 57 04.5**	**-0.1**
BVAR	**Borovoye Array**	**126.68**	**316**	PKP	**PKPdf**		**05 57 05.9**	**-0.2**
	2.4nm,0.7s,baz=67,slow=3.9,SNR=9.3							
ZRNK	**Zerenda**	**127.51**	**316**	*e*PKPdf	**PKPdf**		**05 57 07.4**	**-0.3**
ARCES	**ARCESS Array B**	**137.91**	**349**	PKP	**PKPdf**		**05 57 28.1**	**+1.3**
	0.6nm,0.6s,baz=352,slow=1.8,SNR=5.3							
FIA1	**FINESS Array S**	**144.68**	**341**	*e*PKPdf	**PKPab**		**05 57 36.9**	**-1.0**
FIA0	**FINESS Array S**	**144.68**	**341**	*e*PKPdf	**PKPab**		**05 57 37.3**	**-0.6**
FINES	**FINESS Array B**	**144.68**	**341**	PKP	**PKPab**		**05 57 37.3**	**-0.6**
	6.8nm,0.7s,baz=80,slow=2.1,SNR=16							
KBZ	**Khabaz**	**145.71**	**305**	PKPbc	**PKPab**		**05 57 43.6**	**+1.4**
	1.3nm,0.5s,baz=34,slow=3.4,SNR=4.1							
NC303	**NORSAR Array S**	**147.77**	**353**	*e*PKPbc	**PKPbc**		**05 57 46.6**	**-0.6**
NB2	**NORSAR Subarra**	**147.97**	**353**	PKP	**PKPbc**		**05 57 47.1**	**-0.8**
	comp=Z,2.0nm,0.8s,baz=9.1,slow=2.9							
NB200	**NORSAR Array S**	**147.97**	**353**	*e*PKPbc	**PKPbc**		**05 57 47.0**	**-0.8**
NOA	**NORSAR Array B**	**147.97**	**353**	PKPbc	**PKPbc**		**05 57 47.0**	**-0.8**

	300nm,0.3s,baz=37,slow=11,SNR=10								
LPAZ	**La Paz**	**3.38**	**17**	P		**Pn**	**05 53 38.2**	**+1.3**	
	1.1nm,0.3s,baz=209,slow=5.0,SNR=53								
SIV	**San Ignacio**	**8.48**	**67**	P		**Pn**	**05 54 45.1**	**-0.5**	
	0.6nm,0.3s,baz=273,slow=12,SNR=7.4								
CPUP	**Villa Florida**	**12.83**	**124**	P		**Pn**	**05 55 44.9**	**+0.9**	
	0.1nm,0.3s,baz=304,slow=9.5,SNR=5.3								
TORD	**Torodi Ar. Bea**	**76.94**	**71**	P		**P**	**06 04 26.4**	**-0.4**	
	0.2nm,0.3s,baz=251,slow=4.9,SNR=6.3								
YKA	**Yellowknife Ar**	**89.26**	**341**	P		**P**	**06 05 30.4**	**+1.3**	
	0.1nm,0.4s,baz=114,slow=8.2,SNR=3.4								
YKA				pP		**pP**	**06 05 52.7**	**-4.0**	
	0.2nm,0.5s,baz=133,slow=4.6,SNR=5.8								

SIGU ***11*** *06:05:56.7±0.2, 47.41N±0.01×18.27E±0.01, h6km, mb3.2/10*

ISCJB ***11*** *06:05:58.3±0.3, 47.47N±0.01×18.32E±0.01, h6km±2km, Error ellipse: s-maj=1.8km s-min=1.6km az=19.1*

IPEC ***11*** *06:05:59.6±0.1, 47.45N×18.33E, h15km±1km, ML3.3/4, Error ellipse: s-maj=1.2km s-min=0.8km az=25.0*

CSEM ***11*** *06:05:59.6±0.1, 47.47N×18.36E, h8km, ML3.8/7, Error ellipse: s-maj=1.6km s-min=1.5km az=60.0*

BEO ***11*** *06:05:59.5±0.9, 47.55N×18.54E, h8km±5km, M3.5/9*

BGR ***11*** *06:06:01.1±0.5, 47.38N×18.39E, h10km, ML3.6/10, Error ellipse: s-maj=18.9km s-min=4.4km az=169.0*

PRU ***11*** *06:06:02.1, 47.56N×18.21E, h10km*

ISC 11 06:05:59.8±0.8, 47.48N±0.01×18.38E±0.01, h10km±6km, n187, σ1♀42/317, 32C-18D, Hungary

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CSKK	**Cs˘ˇtkako**	**0.14**	**215**	⇓*eP*g	**Pg**	**06 06 02.7**	**-0.3**
CSKK				⇓*eS*g	**Sg**	**06 06 04.8**	**-0.4**
CSKK	**Cs˘ˇtkako**	**0.14**	**215**	⇓*eP*g	**Pg**	**06 06 02.7**	**-0.3**
CSKK				*eS*g	**Sg**	**06 06 04.8**	**-0.4**
BUD	**Budapest**	**0.44**	**89**	*eP*g	**Pg**	**06 06 08.8**	**+0.3**
BUD				*eS*g	**Sg**	**06 06 15.3**	**+1.0**
BUD	**Budapest**	**0.44**	**89**	⇑*eP*g	**Pg**	**06 06 08.8**	**+0.3**
BUD				⇑*eS*g	**Sg**	**06 06 15.3**	**+1.0**
BUD	**Budapest**	**0.44**	**89**	⇑*eP*g	**Pg**	**06 06 08.8**	**+0.3**
BUD				*eS*g	**Sg**	**06 06 15.3**	**+1.0**
VYHS	**Vyhne**	**1.06**	**17**	*eP*g	**Pn**	**06 06 20.6**	**-0.2**
VYHS				*eS*g	**Sg**	**06 06 34.1**	**-0.1**
VYHS	**Vyhne**	**1.06**	**17**	*eP*G	**Pn**	**06 06 20.6**	**-0.2**
VYHS				*eS*G	**Sg**	**06 06 34.1**	**-0.1**
VYHS				*eL*G	Lg	06 06 36.8	
PSZ	**Piszkesteto**	**1.12**	**66**	⇓*iP*	**Pb**	**06 06 21.0**	**-0.3**
PSZ				S	**Sg**	**06 06 35.0**	**-0.9**
PSZ	**Piszkesteto**	**1.12**	**66**	*eP*n	**Pb**	**06 06 20.9**	**-0.3**
PSZ				*eS*g	**Sn**	**06 06 37.8**	**+0.7**
PSZ	**Piszkesteto**	**1.12**	**66**	⇓*iP*	**Pb**	**06 06 21.0**	**-0.3**
PSZ				Sg	**Sn**	**06 06 37.8**	**+0.7**
PSZ	**Piszkesteto**	**1.12**	**66**	⇓*eP*g	**Pb**	**06 06 20.9**	**-0.3**
SMOL	**Smolenice**	**1.22**	**329**	*eP*g	**Pn**	**06 06 22.5**	**-0.4**
SMOL				*eS*g	**Sb**	**06 06 38.4**	**-0.3**
SMOL	**Smolenice**	**1.22**	**329**	*eP*G	**Pn**	**06 06 22.5**	**-0.4**
SMOL				*eS*G	**Sb**	**06 06 38.4**	**-0.3**
JAVC	**Velka Javorina**	**1.46**	**341**	*eP*g	**Pn**	**06 06 26.3**	**0.0**
JAVC				*eS*g	**Sb**	**06 06 45.9**	**+0.1**
	300nm,0.5s						
BEHE	**Becsehely**	**1.49**	**228**	⇑*iP*g	**Pn**	**06 06 26.5**	**-0.1**
BEHE	**Becsehely**	**1.49**	**228**	⇓*eP*n	**Pb**	**06 06 26.8**	**-0.7**
BEHE				*eS*g	**Sg**	**06 06 46.5**	**-1.1**
BEHE	**Becsehely**	**1.49**	**228**	⇓*eP*n	**Pb**	**06 06 26.8**	**-0.7**
BEHE				*eS*n	**Sg**	**06 06 54.8**	**-2.2**
KECS	**Kecovo**	**1.74**	**54**	*eP*n	**Pn**	**06 06 30.5**	**+0.4**
KECS	**Kecovo**	**1.74**	**54**	*eP*N	**Pn**	**06 06 30.5**	**+0.4**
KECS				*eP*G	**Pg**	**06 06 32.9**	**-0.3**
KECS				*eL*G	Lg	06 07 03.5	
CONA	**Conrad Observa**	**1.76**	**286**	Pn	**Pn**	**06 06 29.8**	**-0.6**
	12nm,0.3s,SNR=26						
CONA				Sn	**Sb**	**06 06 53.2**	**-1.1**
	169nm,0.5s						
CONA	**Conrad Observa**	**1.76**	**286**	Pn	**Pn**	**06 06 29.8**	**-0.6**
CONA				Sg	**Sb**	**06 06 53.2**	**-1.1**
	169nm,0.5s						
KOGS	**Kog**	**1.78**	**236**	*i* Pn	**Pg**	**06 06 33.4**	**-0.6**
KOGS				*i* Sn	**Sg**	**06 06 58.4**	**+1.4**
	comp=Z,178nm,0.6s						
KOGS	**Kog**	**1.78**	**236**	Pn	**Pg**	**06 06 33.4**	**-0.6**
LANS	**Liptovska Anna**	**1.83**	**23**	*eP*n	**Pn**	**06 06 32.1**	**+0.8**
LANS	**Liptovska Anna**	**1.83**	**23**	*eP*N	**Pn**	**06 06 32.1**	**+0.8**
LANS				*eP*G	**Pg**	**06 06 34.4**	**-0.5**
LANS				*eS*N	**Sb**	**06 06 57.2**	**+0.9**
ARSA	**Arzberg**	**1.95**	**264**	*eP*n	**Pn**	**06 06 33.4**	**+0.4**
	comp=Z,11nm,0.3s,SNR=18						
ARSA				*i* Sn	**Sb**	**06 06 59.5**	**-0.3**
	comp=Z,102nm,0.5s						
ARSA	**Arzberg**	**1.95**	**264**	*eP*n	**Pn**	**06 06 33.7**	**+0.7**
ARSA				*eS*g	**Sg**	**06 07 00.9**	**-1.6**
ARSA	**Arzberg**	**1.95**	**264**	Pn	**Pn**	**06 06 33.4**	**+0.4**
ARSA				Sn	**Sb**	**06 06 59.5**	**-0.3**
ARSA				Sg	**Sg**	**06 07 00.9**	**-1.6**
KRUC	**Moravsky**	**2.07**	**321**	*eP*n	**Pn**	**06 06 33.8**	**-0.8**
KRUC				*eS*n	**Sn**	**06 06 59.7**	**-0.6**
	comp=Z,166nm,0.8s						
VRAC	**Vranov**	**2.19**	**328**	⇑*iP*	**Pn**	**06 06 35.8**	**-0.4**
VRAC	**Vranov**	**2.19**	**328**	S	**Sn**	**06 07 04.1**	**+0.8**
VRAC	**Vranov**	**2.19**	**328**	⇑*iP*	**Pn**	**06 06 35.8**	**-0.4**
VRAC				*eS*n	**Sn**	**06 07 02.9**	**-0.4**
	comp=Z,106nm,0.9s						
NIE	**Niedzica**	**2.33**	**33**	*eP*n	**Pn**	**06 06 39.8**	**+1.5**
NIE				*eP*g	**Pg**	**06 06 43.5**	**-0.9**
NIE				*eS*b	**Sb**	**06 07 12.5**	**+1.8**
NIE				*eS*n	**Sg**	**06 07 15.6**	**+1.0**
NIE	**Niedzica**	**2.33**	**33**	*eP*n	**Pn**	**06 06 39.7**	**+1.5**
MORC	**Moravsky Berou**	**2.37**	**347**	⇓*iP*	**Pn**	**06 06 39.9**	**+1.1**
MORC	**Moravsky Berou**	**2.37**	**347**	S	**Sn**	**06 07 08.4**	**+0.5**
MORC	**Moravsky Berou**	**2.37**	**347**	*eP*n	**Pn**	**06 06 38.3**	**-0.5**
MORC	**Moravsky Berou**	**2.37**	**347**	⇓*iP*	**Pn**	**06 06 39.9**	**+1.1**
MORC				*eS*g	**Sg**	**06 07 14.5**	**-1.4**
	comp=Z,147nm,0.8s						
OKC	**Ostrava-Krasne**	**2.37**	**356**	*eP*N	**Pn**	**06 06 39.2**	**+0.5**
OKC				*eP*G	**Pg**	**06 06 43.7**	**-1.5**
OKC				*eS*N	**Sn**	**06 07 06.5**	**-1.3**
OKC	**Ostrava-Krasne**	**2.37**	**356**	*eP*n	**Pn**	**06 06 39.2**	**+0.5**
SOKA	**Soboth**	**2.42**	**252**	*eP*n	**Pn**	**06 06 39.5**	**0.0**
	comp=Z,7.5nm,0.4s,SNR=18						
SOKA				*i* Sn	**Sn**	**06 07 09.2**	**0.0**
	comp=Z,22nm,0.4s						
SOKA	**Soboth**	**2.42**	**252**	Pn	**Pn**	**06 06 39.5**	**0.0**
SOKA				Sn	**Sn**	**06 07 09.2**	**0.0**
CRVS	**Cervenica-Dubn**	**2.51**	**54**	*eP*n	**Pn**	**06 06 41.5**	**+0.8**
CRVS	**Cervenica-Dubn**	**2.51**	**54**	*eP*N	**Pn**	**06 06 41.5**	**+0.8**
CRVS				*eP*G	**Pg**	**06 06 46.8**	**-1.1**
CRVS				*eS*G	**Sg**	**06 07 22.1**	**+1.6**
FRGS	**Fruska Gora**	**2.52**	**156**	⇑*iP*n	**Pn**	**06 06 40.9**	**0.0**
FGSL	**Fruska Gora**	**2.52**	**156**	⇑*iP*n	**Pn**	**06 06 40.9**	**0.0**
SIRR	**Siria**	**2.56**	**117**	⇑*iP*	**Pn**	**06 06 40.9**	**-0.4**
SIRR	**Siria**	**2.56**	**117**	⇑*iP*	**Pn**	**06 06 40.9**	**-0.4**
SIRR				S	**Sn**	**06 07 09.1**	**-3.4**
CRES	**Cresnjev**	**2.60**	**232**	*eP*n	**Pn**	**06 06 42.2**	**+0.3**
MRAK	**Mrakovica**	**2.67**	**203**	*eP*n	**Pn**	**06 06 43.5**	**+0.6**
MRAK				*eS*n	**Sn**	**06 07 15.6**	**+0.3**
STHS	**Stebnicka Huta**	**2.72**	**43**	*eP*n	**Pn**	**06 06 45.2**	**+1.6**
STHS	**Stebnicka Huta**	**2.72**	**43**	*eP*N	**Pn**	**06 06 45.2**	**+1.6**
STHS				*eL*G	Lg	06 07 37.8	
OZLJ	**Ozalj**	**2.74**	**228**	*i* Pn	**Pn**	**06 06 43.3**	**-0.5**
OZLJ	**Ozalj**	**2.74**	**228**	*i* Pn	**Pn**	**06 06 43.2**	**-0.5**
OBKA	**Obir**	**2.79**	**251**	*eP*n	**Pn**	**06 06 45.1**	**+0.5**
	comp=Z,13nm,0.4s,SNR=17						
OBKA				*i* Sn	**Sn**	**06 07 18.0**	**-0.4**
	comp=Z,44nm,0.5s						
OBKA	**Obir**	**2.79**	**251**	*eP*n	**Pn**	**06 06 45.4**	**+0.8**
OBKA	**Obir**	**2.79**	**251**	Pn	**Pn**	**06 06 45.1**	**+0.5**
OBKA				Sn	**Sn**	**06 07 17.9**	**-0.4**
MOA	**Molln**	**2.80**	**279**	*i* Pn	**Pn**	**06 06 45.6**	**+0.9**
	comp=Z,1.2nm,0.2s						
MOA				*i* Sn	**Sn**	**06 07 18.9**	**+0.4**
	comp=Z,51nm,0.5s						
MOA	**Molln**	**2.80**	**279**	*eP*n	**Pn**	**06 06 45.6**	**+0.9**
MOA				*eS*g	**Sg**	**06 07 30.6**	**+0.8**
MOA	**Molln**	**2.80**	**279**	Pn	**Pn**	**06 06 45.6**	**+0.9**
MOA				Sn	**Sn**	**06 07 18.9**	**+0.4**
MOA				Sg	**Sg**	**06 07 30.6**	**+0.8**
BLY	**Banja Luka**	**2.85**	**197**	*eP*n	**Pn**	**06 06 46.0**	**+0.7**
BLY				*eS*g	**Sg**	**06 07 33.1**	**+1.7**
BLY	**Banja Luka**	**2.85**	**197**	*eP*n	**Pn**	**06 06 45.8**	**+0.5**
BLY				*eS*n	**Sn**	**06 07 20.1**	**+0.4**
BLY				*eS*g	**Sg**	**06 07 33.1**	**+1.7**
UZH	**Uzhgorod**	**2.87**	**65**	*eP*n	**Pn**	**06 06 47.7**	**+2.1**
UZH				Pmn		06 06 49.9	
UZH				*eS*n	**Sb**	**06 07 25.1**	**-1.2**
UZH				Smn		06 07 26.7	
TRPA	**Tarpa**	**2.88**	**75**	*eP*n	**Pn**	**06 06 45.3**	**-0.4**
TRPA	**Tarpa**	**2.88**	**75**	*eP*n	**Pn**	**06 06 45.3**	**-0.4**
TRPA				*eS*n	**Sg**	**06 07 31.9**	**-0.5**
OJC	**Ojcow**	**2.90**	**18**	*eP*n	**Pn**	**06 06 47.0**	**+0.9**
OJC				*eP*b	**Pg**	**06 06 54.4**	**-1.0**
OJC				*eP*g	**Pb**	**06 06 54.6**	**+2.9**
OJC				*eS*n	**Sn**	**06 07 20.9**	**-0.1**
OJC				*eS*g	**Sg**	**06 07 33.0**	**0.0**
OJC	**Ojcow**	**2.90**	**18**	*eP*n	**Pn**	**06 06 47.0**	**+0.9**
ONO	**Onokovtsy**	**2.91**	**64**	*eP*n	**Pn**	**06 06 48.1**	**+2.0**
ONO				*eS*n	**Sb**	**06 07 26.3**	**-1.0**
BZS	**Buzias**	**2.91**	**129**	⇓*iP*	**Pn**	**06 06 46.1**	**0.0**
BZS	**Buzias**	**2.91**	**129**	⇑*iP*n	**Pn**	**06 06 46.1**	**0.0**
BZS	**Buzias**	**2.91**	**129**	⇓*iP*	**Pn**	**06 06 46.1**	**0.0**
BZS				S	**Sn**	**06 07 22.6**	**+1.5**
BERU	**Beregovo**	**2.98**	**74**	*eP*n	**Pn**	**06 06 49.1**	**+2.1**
BERU				*eS*n	**Sb**	**06 07 27.7**	**-1.5**
KOLS	**Kolonicke sedl**	**2.99**	**59**	*eP*n	**Pn**	**06 06 48.2**	**+1.0**
KOLS	**Kolonicke sedl**	**2.99**	**59**	*eP*N	**Pn**	**06 06 48.2**	**+1.0**
KOLS				*eL*G	Lg	06 07 44.4	
LJU	**Ljubljana**	**3.01**	**243**	*eP*n	**Pn**	**06 06 48.3**	**+0.8**
TEKS	**Tekeris**	**3.04**	**164**	*eP*n	**Pn**	**06 06 48.4**	**+0.5**
TEKS				*eS*n	**Sn**	**06 07 23.7**	**-0.6**
TEKS	**Tekeris**	**3.04**	**164**	*eP*n	**Pn**	**06 06 48.2**	**+0.3**
TEKS				*eS*n	**Sn**	**06 07 23.7**	**-0.6**
DRGR		**3.04**	**101**	⇑*iP*	**Pn**	**06 06 47.7**	**-0.3**
DRGR		**3.04**	**101**	⇑*iP*	**Pn**	**06 06 47.7**	**-0.3**
DRGR				S	**Sn**	**06 07 25.0**	**+0.6**
MUKU	**Mukachevo**	**3.06**	**70**	*eP*n	**Pn**	**06 06 50.3**	**+2.1**
MUKU				Pmn		06 06 53.0	
MUKU				*eS*n	**Sb**	**06 07 30.0**	**-1.6**
MUKU				Smn		06 07 32.6	
TRSU	**Trosnyk**	**3.15**	**77**	*eP*n	**Pn**	**06 06 51.6**	**+2.2**
TRSU				Pmn		06 06 52.4	
TRSU				*eS*n	**Sb**	**06 07 32.6**	**-1.7**
TRSU				Smn		06 07 33.0	
DPC	**Dobruska-Polom**	**3.18**	**336**	*eP*n	**Pn**	**06 06 50.5**	**+0.6**
DPC				*eP*G	**Pg**	**06 07 02.5**	**+1.8**
DPC				*eS*N	**Sn**	**06 07 26.8**	**-1.1**
DPC				*eS*G	**Sg**	**06 07 45.3**	**+3.4**
DPC				AMS	AMS	06 08 20.0	
	comp=Z,100nm,5.6s						
DPC	**Dobruska-Polom**	**3.18**	**336**	*eP*n	**Pn**	**06 06 50.5**	**+0.6**
DPC				*eS*n	**Sn**	**06 07 26.8**	**-1.1**
CEY	**Cerknica**	**3.23**	**239**	*eP*n	**Pn**	**06 06 50.9**	**+0.3**
CEY				*eS*n	**Sn**	**06 07 29.3**	**+0.2**
STZU	**Stuzhytsa**	**3.23**	**60**	*eP*n	**Pn**	**06 06 53.2**	**+2.6**
STZU				Pmn		06 06 54.9	
STZU				*eS*n	**Sb**	**06 07 35.0**	**-1.6**
STZU				Smn		06 07 36.4	
STZU				Smn		06 07 36.4	
BRIU	**Brid**	**3.24**	**73**	*eP*n	**Pn**	**06 06 52.8**	**+2.1**
BRIU				Pmn		06 06 55.7	
BRIU				*eS*n	**Sb**	**06 07 35.0**	**-1.9**
BRIU				Smn		06 07 36.7	
KORU	**Korolevo**	**3.28**	**76**	*eP*n	**Pn**	**06 06 53.7**	**+2.5**
KORU				Pmn		06 06 54.0	
KORU				*eS*n	**Sb**	**06 07 36.1**	**-1.9**
MYKA	**Terra Mystica**	**3.34**	**257**	*i* Pn	**Pn**	**06 06 53.2**	**+0.9**
	comp=Z,3.1nm,0.3s						
MYKA				*eS*n	**Sn**	**06 07 33.6**	**+1.6**
	comp=Z,23nm,0.4s,SNR=4.9						
MYKA	**Terra Mystica**	**3.34**	**257**	Pn	**Pn**	**06 06 53.1**	**+0.9**
MYKA				Sn	**Sn**	**06 07 33.6**	**+1.6**
GOPC	**GO Pecny, Ondr**	**3.41**	**317**	*eP*N	**Pn**	**06 06 52.7**	**-0.3**
GOPC				*eP*G	**Pg**	**06 07 04.7**	**-0.4**
GOPC				*eS*N	**Sn**	**06 07 32.5**	**-0.9**
GOPC				*eS*G	**Sb**	**06 07 43.7**	**+2.0**
	comp=Z,26nm,0.5s						
GOPC	**GO Pecny, Ondr**	**3.41**	**317**	*eP*n	**Pn**	**06 06 52.7**	**-0.3**
GOPC				*eS*n	**Sn**	**06 07 32.5**	**-0.9**
GOPC				Sg	**Sb**	**06 07 43.7**	**+2.0**
	comp=Z,26nm,0.5s						
UPC	**Upice**	**3.41**	**334**	*eP*N	**Pn**	**06 06 53.8**	**+0.8**
UPC				*eS*N	**Sn**	**06 07 32.8**	**-0.7**
UPC				AMS	AMS	06 08 40.0	
	comp=Z,100nm,6.2s						
UPC	**Upice**	**3.41**	**334**	*eP*n	**Pn**	**06 06 53.8**	**+0.8**
UPC				*eS*n	**Sn**	**06 07 32.8**	**-0.7**
KBA	**Koelnbreinsper**	**3.45**	**265**	*i* Pn	**Pn**	**06 06 54.7**	**+1.0**
	comp=Z,5.8nm,0.2s,SNR=4.6						
KBA				*i* Sn	**Sn**	**06 07 34.6**	**-0.1**
	comp=Z,14nm,0.5s						
KBA	**Koelnbreinsper**	**3.45**	**265**	*eP*n	**Pn**	**06 06 54.8**	**+1.0**
KBA	**Koelnbreinsper**	**3.45**	**265**	Pn	**Pn**	**06 06 54.6**	**+1.0**
KBA				Sn	**Sn**	**06 07 34.6**	**-0.1**
BMR	**Baia Mare**	**3.47**	**85**	⇑*iP*	**Pb**	**06 07 03.7**	**+2.3**
BMR	**Baia Mare**	**3.47**	**85**	S	**Sg**	**06 07 53.0**	**+1.7**
DEV	**Deva**	**3.50**	**115**	S	**Sn**	**06 07 35.6**	**-0.1**
DEV	**Deva**	**3.50**	**115**	S	**Sn**	**06 07 35.6**	**-0.1**
TRUS	**Trudelj**	**3.55**	**156**	⇓*iP*n	**Pn**	**06 06 55.0**	**+0.1**
TRUS				*eS*n	**Sn**	**06 07 38.0**	**+1.1**
TRUS	**Trudelj**	**3.55**	**156**	⇓*iP*n	**Pn**	**06 06 55.0**	**+0.1**
TRUS				*eS*n	**Sn**	**06 07 38.0**	**+1.1**
MDVR	**Moldovita**	**3.56**	**138**	⇓*iP*	**Pn**	**06 06 55.4**	**+0.3**
MDVR	**Moldovita**	**3.56**	**138**	⇓*iP*	**Pn**	**06 06 55.4**	**+0.3**
MDVR				S	**Sn**	**06 07 37.2**	**0.0**
DIVS	**Divibare**	**3.56**	**161**	⇑*iP*n	**Pn**	**06 06 55.2**	**0.0**
DIVS	**Divibare**	**3.56**	**161**	⇑*iP*n	**Pn**	**06 06 55.2**	**0.0**
DIVS				*eS*n	**Sn**	**06 07 36.1**	**-1.3**
PRU	**Pruhonice**	**3.57**	**316**	*eP*N	**Pn**	**06 06 58.0**	**-0.2**
PRU				*eP*G	**Pg**	**06 07 06.6**	**-1.6**
PRU				*eS*N	**Sn**	**06 07 36.0**	**-1.5**
PRU				*eS*G	**Sg**	**06 07 50.2**	**-4.3**
	comp=Z,42nm,0.6s						
PRU				AMS	AMS	06 08 50.0	
	comp=Z,100nm,6.9s						
PRU	**Pruhonice**	**3.57**	**316**	*eP*n	**Pn**	**06 06 55.0**	**-0.2**
PRU				*eS*n	**Sn**	**06 07 36.0**	**-1.5**
PRU				Sg	**Sg**	**06 07 50.2**	**-4.3**
	comp=Z,42nm,0.6s						
KWP	**Kalwaria Pacla**	**3.60**	**52**	*eP*n	**Pn**	**06 06 57.3**	**+1.7**
KWP	**Kalwaria Pacla**	**3.60**	**52**	*eP*n	**Pn**	**06 06 57.3**	**+1.7**
MEZ	**Mezhgor'ye**	**3.60**	**71**	*eP*n	**Pn**	**06 06 58.7**	**+3.0**
MEZ				Pmn		06 06 59.5	
MEZ				*eS*n	**Sb**	**06 07 45.0**	**-2.4**
MEZ				Smn		06 07 46.8	
KHC	**Kasperske Hory**	**3.60**	**299**	*eP*N	**Pn**	**06 06 56.2**	**+0.5**
KHC				*eP*G	**Pg**	**06 07 07.4**	**-1.5**
KHC				*ex*	x	06 07 11.3	
KHC				*eS*N	**Sn**	**06 07 37.2**	**-1.1**
KHC				*eS*G	**Sg**	**06 07 55.0**	**-0.5**
	comp=Z,71nm,0.6s						
KHC				AMS	AMS	06 08 30.0	
	comp=Z,100nm,6.9s						
KHC	**Kasperske Hory**	**3.60**	**299**	*eP*n	**Pn**	**06 06 56.2**	**+0.5**
KHC				*eS*n	**Sn**	**06 07 37.2**	**-1.1**
KHC				Sg	**Sg**	**06 07 55.0**	**-0.5**
	comp=Z,71nm,0.6s						
KSP	**Ksiaz**	**3.64**	**339**	*eP*n	**Pn**	**06 06 57.1**	**+1.0**
KSP				*eS*n	**Sn**	**06 07 39.3**	**+0.2**
KSP	**Ksiaz**	**3.64**	**339**	*eP*n	**Pn**	**06 06 57.1**	**+1.0**
KSP				*eS*n	**Sn**	**06 07 39.3**	**+0.2**
CJR	**Cluj-Napoca**	**3.65**	**100**	⇑*iP*	**Pn**	**06 06 57.0**	**+0.6**
CJR	**Cluj-Napoca**	**3.65**	**100**	⇑*iP*	**Pn**	**06 06 57.0**	**+0.6**
CJR				S	**Sn**	**06 07 40.6**	**+1.2**
BBLS	**Lazi?i**	**3.68**	**168**	*eP*n	**Pn**	**06 06 57.3**	**+0.4**
BBLS				*eS*g	**Sg**	**06 07 57.4**	**-0.6**
BBLS	**Lazi?i**	**3.68**	**168**	⇑*iP*n	**Pn**	**06 06 57.2**	**+0.4**
BBLS				*eS*n	**Sn**	**06 07 39.3**	**-1.0**
BBLS				*eS*g	**Sg**	**06 07 57.4**	**-0.6**
SHIU	**Shidnytsya**	**3.76**	**60**	*eP*n	**Pn**	**06 07 00.7**	**+2.9**
SHIU				Pmn		06 07 03.3	
SHIU				*eS*n	**Sb**	**06 08 48.9**	**-2.9**
NVLJ	**Novalja**	**3.80**	**221**	*eP*n	**Pn**	**06 06 58.6**	**+0.2**
NVLJ				Sn	**Sn**	**06 07 44.0**	**+1.0**
NVLJ	**Novalja**	**3.80**	**221**	*eP*n	**Pn**	**06 06 58.5**	**+0.2**
NVLJ				Sn	**Sn**	**06 07 44.0**	**+1.0**
KUBS	**Kucevo**	**3.83**	**142**	*i* Pn	**Pn**	**06 06 57.4**	**-1.4**
KUBS	**Kucevo**	**3.83**	**142**	*i* Pn	**Pn**	**06 06 57.4**	**-1.4**
GRUS	**Gruza**	**3.94**	**155**	⇑*iP*n	**Pn**	**06 07 00.7**	**+0.3**
GRUS				*eS*n	**Sn**	**06 07 47.1**	**+0.4**
GRUS	**Gruza**	**3.94**	**155**	⇑*iP*n	**Pn**	**06 07 00.7**	**+0.3**
GRUS				*eS*n	**Sn**	**06 07 47.1**	**+0.4**
RAKU	**Rahkiv**	**3.95**	**80**	*eP*n	**Pn**	**06 07 03.9**	**+3.5**
RAKU				Pmn		06 07 04.7	
RAKU				*eS*n	**Sb**	**06 07 54.1**	**-3.1**
RAKU				Smn		06 07 56.1	
PVCC	**Panska Ves**	**3.95**	**322**	*eP*N	**Pn**	**06 07 00.3**	**-0.1**
PVCC				*eS*N	**Sn**	**06 07 46.4**	**-0.4**
PVCC				*ex*	x	06 08 00.2	
	comp=Z,50nm,0.7s						
PVCC	**Panska Ves**	**3.95**	**322**	*eP*n	**Pn**	**06 07 00.3**	**-0.1**
WET	**Wettzell**	**4.03**	**296**	*eP*n	**Pn**	**06 07 02.3**	**+0.7**
WET	**Wettzell**	**4.03**	**296**	Pn	**Pn**	**06 07 02.3**	**+0.7**
ABTA	**Abfaltersbach**	**4.07**	**262**	*i* Pg	**Pg**	**06 07 17.3**	**-0.5**
	comp=Z,1.2nm,0.2s						
ABTA				*i* Sg	**Sg**	**06 08 13.8**	**+3.3**
	comp=Z,1.3nm,0.2s						
ABTA	**Abfaltersbach**	**4.07**	**262**	Pg	**Pg**	**06 07 17.3**	**-0.5**
	comp=Z,1.2nm,0.2s						
ABTA				Sg	**Sg**	**06 08 13.8**	**+3.3**
	comp=Z,1.3nm,0.2s						
IVAS	**Ivanjica**	**4.09**	**162**	*eP*n	**Pn**	**06 07 02.5**	**0.0**
IVAS	**Ivanjica**	**4.09**	**162**	*eP*n	**Pn**	**06 07 02.5**	**0.0**
NSLU	**Nyzhne Selyshc**	**4.16**	**78**	*eP*n	**Pn**	06 06 56.9	-6.4
NSLU				Pmn		06 06 57.5	
NSLU				*eS*n	Sn	06 07 41.9	-10
NSLU				Smn		06 07 44.8	
LOT	**Lotru**	**4.24**	**117**	⇑*iP*	**Pn**	**06 07 04.1**	**-0.5**
LOT	**Lotru**	**4.24**	**117**	⇑*iP*	**Pn**	**06 07 04.1**	**-0.5**
LOT				S	**Sn**	**06 07 53.3**	**-0.9**
STNU	**Starunia**	**4.29**	**71**	*eP*n	**Pn**	**06 07 09.0**	**+3.9**
STNU				*eS*n	**Sb**	**06 08 03.4**	**-3.6**
UPM	**Unac-Piva**	**4.29**	**175**	⇑*iP*n	**Pn**	**06 07 05.5**	**+0.2**
UPM				*eS*n	**Sn**	**06 07 53.7**	**-1.7**
SRE	**Strehaia**	**4.38**	**128**	⇓*iP*	**Pn**	**06 07 08.3**	**+1.9**
SRE	**Strehaia**	**4.38**	**128**	⇓*iP*	**Pn**	**06 07 08.3**	**+1.9**
SRE				S	**Sn**	**06 07 58.5**	**+1.0**
BRG	**Berggiesshubel**	**4.47**	**321**	PN	**Pn**	**06 07 07.4**	**-0.2**
BRG				PG	**Pg**	**06 07 24.5**	**-0.9**
BRG				*i*		06 08 09.0	
BRG	**Berggiesshubel**	**4.47**	**321**	SG	**Sg**	**06 08 28.1**	**+4.7**
	comp=Z,18nm,0.6s						
BOVS	**Bovan**	**4.50**	**147**	*eP*n	**Pn**	**06 07 07.8**	**-0.1**
BOVS	**Bovan**	**4.50**	**147**	*eP*n	**Pn**	**06 07 07.8**	**-0.1**
BRY	**Bratogost**	**4.58**	**178**	*eP*n	**Pn**	**06 07 10.0**	**+0.8**
BRY				*eS*n	**Sn**	**06 08 00.0**	**-2.4**
KSV	**Kosov**	**4.58**	**77**	*eP*n	**Pn**	**06 07 13.0**	**+3.9**
WTTA	**Wattenberg**	**4.58**	**270**	*i* Pn	**Pn**	**06 07 09.6**	**+0.2**
	comp=Z,1.

4.4nm,0.2s
KURBB ⇑Sn Sn 06 14 27.1 -1.2
4.0nm,0.3s
KURBB ⇓Lg Lg 06 15 04.8
4.1nm,0.5s
MK31 Makanchi Array 7.88 210 ⇑Pn Pn 06 13 29.4 +0.3
0.2nm,0.2s,baz=30,slow=13,SNR=9.9
MK31 ⇑Sn Sn 06 14 58.8 -0.1
0.5nm,0.3s,baz=32,slow=27,SNR=5.9
MK31 ⇑Lg Lg 06 15 41.6
0.3nm,0.3s,baz=16,slow=36,SNR=5.3
MKAR Makanchi Array 7.88 210 Pn Pn 06 13 30.1 +1.0
0.3nm,0.3s,baz=30,slow=14,SNR=9.1
MKAR Sn Sn 06 14 59.3 +0.4
0.5nm,0.3s,baz=32,slow=24,SNR=7.8
MKAR Lg Lg 06 15 41.0
0.3nm,0.3s,baz=20,slow=29,SNR=3.4
BVAR Borovoye Array 10.58 273 Pn Pn 06 14 04.7 -1.2
0.2nm,0.3s,baz=79,slow=17,SNR=2.8
BVAR Sn Sn 06 15 59.6 -5.5
0.3nm,0.3s,baz=74,slow=26,SNR=3.6

ISCJB ***11*** *06:16:10.2±0.7,38°.48N±0'.03×39°.25E±0'.05,h1km±6km, Error ellipse: s-maj=6.5km s-min=4.1km az=165.5*
CSEM ***11*** *06:16:10.4±0.2,38°.48N×39°.27E,h2km,ML2.7, Error ellipse: s-maj=5.7km s-min=4.1km az=66.0*
ISK ***11*** *06:16:10.2,38°.48N×39°.27E,h9km,ML2.7*
DDA ***11*** *06:16:10.5,38°.49N×39°.31E,h7km,Md2.8*
ISC 11 06:16:10.5±0.9,38°.48N±0'.02×39°.28E±0'.03,h8km±8km, n32,σ0§64/44,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.11**	**167**		PG		**Pg**	**06 16 12.9**	**-0.2**
SVRC					*e*SG		**Sg**	**06 16 15.1**	**+0.2**
SVRC	**Sivrice-ELAZID**	**0.11**	**167**		*i* Pg		**Pg**	**06 16 12.9**	**-0.2**
SVRC					*e*Sg		**Sg**	**06 16 15.1**	**+0.2**
PTK	**Pertek**	**0.42**	**13**		PG		**Pg**	**06 16 18.8**	**+0.1**
PTK					*e*SG		**Sb**	**06 16 25.9**	**-1.0**
PTK	**Pertek**	**0.42**	**13**		*i* Pg		**Pg**	**06 16 18.8**	**+0.1**
PTK					*e*Sg		**Sb**	**06 16 25.9**	**-1.0**
TNCL	**Tunceli-Merkez**	**0.66**	**18**		*i* P		**Pg**	**06 16 22.6**	**-0.7**
TNCL					*i* S		**Sg**	**06 16 32.1**	**+0.1**
TNCL	**Tunceli-Merkez**	**0.66**	**18**		P		**Pg**	**06 16 22.6**	**-0.7**
TNCL					S		**Sg**	**06 16 32.1**	**+0.1**
DYBB	**Diyarbakir**	**0.86**	**128**		*e*PG		**Pb**	**06 16 27.6**	**-0.2**
DIYA	**Diyarbakir**	**0.87**	**130**		*i* P		**Pg**	**06 16 27.3**	**+0.1**
DIYA					*i* S		**Sb**	**06 16 39.8**	**0.0**
DIYA	**Diyarbakir**	**0.87**	**130**		P		**Pg**	**06 16 27.3**	**+0.1**
DIYA					S		**Sb**	**06 16 39.8**	**0.0**
DIY	**Diyarbakir**	**0.95**	**128**		*e*Pg		**Pg**	**06 16 27.6**	**-1.2**
KEMA	**Kemaliye**	**0.99**	**322**		*i* P		**Pg**	**06 16 29.1**	**-0.5**
KEMA	**Kemaliye**	**0.99**	**322**		P		**Pg**	**06 16 29.1**	**-0.5**
BINT	**Bingol**	**1.03**	**67**		*e*Pn		**Pn**	**06 16 34.0**	**+2.6**
ERZN	**Erzincan**	**1.16**	**17**		*e*PN		**Pg**	**06 16 32.4**	**-0.3**
BNGB	**Bing¶ll**	**1.21**	**65**		*e*PN		**Pn**	**06 16 34.0**	**+0.2**
YEDI	**Yedisu-Bingol**	**1.37**	**46**		*e*PN		**Pn**	**06 16 35.8**	**-0.4**
YEDI	**Yedisu-Bingol**	**1.37**	**46**		*e*Pn		**Pn**	**06 16 35.8**	**-0.4**
MAZI	**Mazidag**	**1.38**	**137**		*e*PN		**Pn**	**06 16 35.5**	**-0.8**
MAZI	**Mazidag**	**1.38**	**137**		*e*Pn		**Pn**	**06 16 35.5**	**-0.8**
DARE	**Darende-Malaty**	**1.41**	**274**		*e*PN		**Pn**	**06 16 36.7**	**+0.1**
DARE	**Darende-Malaty**	**1.41**	**274**		*e*Pn		**Pn**	**06 16 36.7**	**+0.1**
BNGL	**BINGOL**	**1.54**	**72**		*i* P		**Pg**	**06 16 40.5**	**+0.5**
CUKAN	**kangal_SIVAS**	**1.64**	**301**		*i* P		**Pb**	**06 16 41.2**	**+0.1**
CUKAN	**kangal_SIVAS**	**1.64**	**301**		P		**Pb**	**06 16 41.2**	**+0.1**
KELT	**Kelkit**	**1.66**	**359**		*i* P		**Pb**	**06 16 41.5**	**0.0**
KELT					*i* S		**Sb**	**06 17 03.3**	**+0.6**
KELT	**Kelkit**	**1.66**	**359**		P		**Pb**	**06 16 41.5**	**0.0**
KELT					S		**Sb**	**06 17 03.3**	**+0.6**
BTMN	**Batman**	**1.68**	**110**		*i* P		**Pb**	**06 16 41.4**	**-0.3**
BTMN					*i* S		**Sb**	**06 17 03.6**	**+0.5**
BTMN	**Batman**	**1.68**	**110**		P		**Pb**	**06 16 41.4**	**-0.3**
BTMN					S		**Sb**	**06 17 03.6**	**+0.5**
GAZ	**Gaziantep**	**2.09**	**232**		*e*PN		**Pn**	**06 16 46.6**	**+0.6**
GAZ	**Gaziantep**	**2.09**	**232**		*e*Pn		**Pn**	**06 16 46.6**	**+0.6**
KMRS	**Kahramanmaras**	**2.12**	**243**		*e*PN		**Pn**	**06 16 46.8**	**+0.5**
KMRS	**Kahramanmaras**	**2.12**	**243**		*e*Pn		**Pn**	**06 16 46.8**	**+0.5**

ISK ***11*** *06:19:44.9,38°.48N×39°.36E,h4km,MD2.6*
ISCJB ***11*** *06:19:45.3±0.5,38°.49N±0'.03×39°.32E±0'.04,h6km±6km, Error ellipse: s-maj=5.4km s-min=4.4km az=157.0*
CSEM ***11*** *06:19:45.2±0.2,38°.48N×39°.32E,h2km,MD2.6,Error ellipse: s-maj=5.7km s-min=4.5km az=66.0*
DDA ***11*** *06:19:45.4,38°.50N×39°.29E,h7km,Md2.6*
ISC 11 06:19:45.5±0.9,38°.48N±0'.02×39°.32E±0'.03,h8km±7km, n25,σ0§72/37,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.10**	**186**		*e*PG		**Pg**	**06 19 47.5**	**-0.5**
SVRC					*e*SG		**Sg**	**06 19 50.1**	**+0.3**
SVRC	**Sivrice-ELAZID**	**0.10**	**186**		*e*Pg		**Pg**	**06 19 47.6**	**-0.5**
SVRC					*e*Sg		**Sg**	**06 19 50.1**	**+0.3**
ELZG	**Elazig**	**0.26**	**274**		*i* P		**Pg**	**06 19 50.8**	**0.0**
ELZG					*i* S		**Sg**	**06 19 54.3**	**-0.1**
ELZG	**Elazig**	**0.26**	**274**		P		**Pg**	**06 19 50.8**	**0.0**
ELZG					S		**Sg**	**06 19 54.3**	**-0.1**
PTK	**Pertek**	**0.42**	**8**		*e*PG		**Pg**	**06 19 53.4**	**-0.3**
PTK					*e*SG		**Sg**	**06 20 00.1**	**+0.9**
PTK	**Pertek**	**0.42**	**8**		*e*Pg		**Pg**	**06 19 53.4**	**-0.3**
PTK					*e*Sg		**Sg**	**06 20 00.1**	**+0.9**
TNCL	**Tunceli-Merkez**	**0.66**	**15**		*i* P		**Pg**	**06 19 57.4**	**-0.8**
TNCL					*i* S		**Sg**	**06 20 07.0**	**+0.1**
TNCL	**Tunceli-Merkez**	**0.66**	**15**		P		**Pg**	**06 19 57.4**	**-0.8**
TNCL					S		**Sg**	**06 20 07.0**	**+0.1**
DYBB	**Diyarbakir**	**0.83**	**129**		*e*PG		**Pg**	**06 20 01.4**	**-0.1**
DIYA	**Diyarbakir**	**0.84**	**131**		*i* P		**Pb**	**06 20 02.2**	**-0.2**
DIYA					*i* S		**Sb**	**06 20 14.7**	**+0.9**
DIYA	**Diyarbakir**	**0.84**	**131**		P		**Pb**	**06 20 02.2**	**-0.2**
DIYA					S		**Sb**	**06 20 14.7**	**+0.9**
DIY	**Diyarbakir**	**0.92**	**129**		*e*Pg		**Pg**	**06 20 01.4**	**-1.8**
BINT	**Bingol**	**1.00**	**66**		*e*Pn		**Pn**	**06 20 07.7**	**+1.8**
KEMA	**Kemaliye**	**1.02**	**321**		*i* P		**Pg**	**06 20 04.1**	**-1.0**
KEMA					*i* S		**Sb**	**06 20 18.6**	**-0.5**
KEMA	**Kemaliye**	**1.02**	**321**		P		**Pg**	**06 20 04.1**	**-1.0**
KEMA					S		**Sb**	**06 20 18.6**	**-0.5**
AKCD	**Akcadag**	**1.11**	**261**		*i* P		**Pg**	**06 20 06.1**	**-0.8**
AKCD	**Akcadag**	**1.11**	**261**		P		**Pg**	**06 20 06.1**	**-0.8**
ERZN	**Erzincan**	**1.15**	**16**		*e*PN		**Pg**	**06 20 06.5**	**-1.1**
BNGB	**Bing¶ll**	**1.18**	**64**		*e*PN		**Pg**	**06 20 07.7**	**-0.9**
MAZI	**Mazidag**	**1.35**	**138**		*e*PN		**Pn**	**06 20 10.5**	**-0.3**
MAZI	**Mazidag**	**1.35**	**138**		*e*Pn		**Pn**	**06 20 10.5**	**-0.3**
YEDI	**Yedisu-Bingol**	**1.35**	**45**		*e*PN		**Pn**	**06 20 11.0**	**+0.2**
YEDI	**Yedisu-Bingol**	**1.35**	**45**		*e*Pn		**Pn**	**06 20 11.0**	**+0.2**
DARE	**Darende-Malaty**	**1.44**	**274**		*e*PN		**Pg**	**06 20 13.5**	**+0.3**
DARE	**Darende-Malaty**	**1.44**	**274**		*e*Pn		**Pg**	**06 20 13.5**	**+0.3**

SKHL ***11*** *06:28:37.8±0.3,47°.05N×152°.31E,h148km±5km,mb4.5/1, msh5.2/1*
ISCJB ***11*** *06:28:38.8±0.1,47°.24N±0'.04×152°.11E±0'.04,h124km, mb4.3/47,Error ellipse: s-maj=5.6km s-min=2.2km az=149.4*
MOS ***11*** *06:28:42.5±1.0,47°.40N×151°.87E,h159km,mb4.2/24, Error ellipse: s-maj=11.6km s-min=4.8km az=62.0*
NEIC ***11*** *06:28:44.5±0.7,47°.34N×151°.86E,h163km±6km,mb4.4/28, Error ellipse: s-maj=8.3km s-min=3.8km az=139.0*
IDC ***11*** *06:28:45.2±2.2,47°.38N×151°.80E,h170km±20km, mb3.8/17,mb1 4.0/22,mb1mx3.8/51,mbtmp4.3/22,MS3.5/1, Ms1 3.5/1,ms1mx2.4/61,Error ellipse: s-maj=15.1km s-min=9.2km az=132.0*
JMA ***11*** *06:28:46.0±0.6,46°.03N×152°.28E,h181km,M4.3*
ISC 11 06:28:40.2±0.4,47°.29N±0'.05×152°.03E±0'.05,h124km, n411,σ1§56/424,mb4.3/47,3C-4D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.54**	**236**	*c*	*i* PN		Pn	06 29 37.5	+3.7
KUR					*i* S		**Sn**	**06 30 19.7**	**+4.6**
KUR					pmax	pmax			
	comp=Z,108nm,0.5s								
KUR					pmax	pmax			
	comp=E,41nm,0.3s								
KUR					pmax	pmax			
	comp=N,75nm,0.2s								
KUR					smax	smax			
	comp=N,496nm,0.4s								
KUR					smax	smax			
	comp=E,265nm,0.2s								
KUR	**Kuril'sk**	**3.54**	**236**		*e*P		**Pn**	**06 29 36.5**	**+2.7**
KUR					AMB	AMB		06 29 39.3	
KUR					AMB	AMB		06 29 41.9	
	comp=E,90nm,2.0s								
KUR					AMB	AMB		06 29 41.9	
	comp=E,50nm,0.5s								
KUR					*e*S		**Sn**	**06 30 18.4**	**+3.3**
KUR					A	A		06 30 22.7	
	comp=E,1μm,2.0s								
KUR					A	A		06 30 22.7	
	comp=E,800nm,2.0s								
KUR					A	A		06 30 24.7	
	comp=E,70nm,0.2s								
KUR					A	A		06 30 24.7	
	comp=E,40nm,0.2s								
SKR	**Severo-Kuril's**	**4.33**	**37**		*e*PN		**Pn**	**06 29 48.6**	**+4.5**
SKR					*e*S		**Sn**	**06 30 36.7**	**+2.9**
SKR					pmax	pmax			
	comp=Z,96nm,0.9s								
SKR					smax	smax			
	comp=E,346nm,1.0s								
SKR					smax	smax			
	comp=N,374nm,0.6s								
SKR	**Severo-Kuril's**	**4.33**	**37**		*e*P		**Pn**	**06 29 47.7**	**+3.6**
SKR					AMB	AMB		06 29 51.5	
	comp=N,100nm,0.9s								
SKR					*e*S		**Sn**	**06 30 36.8**	**+2.9**
SKR					A	A		06 30 40.9	
	comp=N,370nm,0.9s								
SKR					A	A		06 30 40.9	
	comp=N,350nm,0.9s								
PAU	**Pauzhetka**	**5.22**	**35**		PN		**Pn**	**06 29 59.5**	**+3.5**
PAU					S		**Sn**	**06 30 56.2**	**+1.2**
PAU	**Pauzhetka**	**5.22**	**35**		*e*P		**Pn**	**06 29 58.5**	**+2.5**
PAU					AMB	AMB		06 29 59.2	
	comp=N,100nm,1.0s								
PAU					*e*S		**Sn**	**06 30 56.0**	**+1.0**
PAU					A	A		06 30 59.4	
	comp=N,30nm,0.1s								
YUK	**Yuzh-Kuril'sk**	**5.41**	**235**	*c*	*i* PN		**Pn**	**06 30 01.1**	**+2.4**
YUK					*i* S		**Sn**	**06 31 00.1**	**+0.3**
YUK					pmax	pmax			
	comp=N,24nm,0.2s								
YUK					pmax	pmax			
	comp=E,85nm,0.2s								
YUK					pmax	pmax			
	comp=Z,200nm,0.2s								
YUK					smax	smax			
	comp=N,569nm,0.5s								
YUK					smax	smax			
	comp=E,424nm,0.3s								
YUK	**Yuzh-Kuril'sk**	**5.41**	**235**	*i*	P		**Pn**	**06 30 01.1**	**+2.4**
YUK					AMB	AMB		06 30 03.4	
	comp=E,90nm,0.2s								
YUK					AMB	AMB		06 30 03.4	
	comp=E,20nm,0.2s								
YUK					*i* S		**Sn**	**06 31 00.2**	**+0.4**
YUK					A	A		06 31 05.3	
	comp=E,60nm,0.2s								
YUK					A	A		06 31 05.3	
	comp=E,40nm,0.2s								
JRA	**Rausu**	**5.89**	**238**		P		**Pn**	**06 30 07.3**	**+2.2**
NEM2	**Nemuro 2**	**5.92**	**231**		P		**Pn**	**06 30 05.3**	**-0.2**
NEM2					*e*S		**Sn**	**06 31 06.7**	**-5.4**
YSS	**Yuzh-Sakhalins**	**6.34**	**270**		*e*PN		Pn	06 30 16.3	+5.2
YSS	**Yuzh-Sakhalins**	**6.34**	**270**		*e*P		Pn	06 30 15.9	+4.8
JNK	**Nakash**	**6.34**	**237**		P		**Pn**	**06 30 12.7**	**+1.5**
ASAK	**Asacha**	**6.35**	**35**		PN		**Pn**	**06 30 15.0**	**+3.6**
JTKR	**Abashiri--Toko**	**6.59**	**243**		P		**Pn**	**06 30 17.0**	**+2.4**
RUS	**Russkaya**	**6.63**	**37**		PN		**Pn**	**06 30 17.0**	**+1.9**
RUS	**Russkaya**	**6.63**	**37**		*e*P		**Pn**	**06 30 17.0**	**+1.9**
JAK	**Akkeshi**	**6.73**	**233**		*e*S		**Sn**	**06 31 27.1**	**-4.6**
PETK	**Petropavlovsk-**	**6.86**	**30**		P		**Pn**	**06 30 22.3**	**+4.1**
	comp=E,2.6nm,0.3s,baz=209,slow=11,SNR=25								
UGL	**Uglegorsk**	**6.89**	**289**		*e*PN		**Pn**	**06 30 19.9**	**+1.3**
UGL					*e*S		**Sn**	**06 31 36.9**	**+1.4**
UGL	**Uglegorsk**	**6.89**	**289**		*e*P		Pn	06 30 23.5	+4.9
JSE	**Soyaes**	**6.96**	**254**		P		Pn	06 30 25.4	+5.8
JAR	**Ashorobuto**	**7.06**	**239**		P		**Pn**	**06 30 23.1**	**+2.2**
PET	**Petropavlovsk**	**7.14**	**34**		*e*P		**Pn**	**06 30 26.0**	**+4.1**
PET					*e*S		**Sn**	**06 31 41.7**	**+0.2**
PET					A	A		06 31 50.5	
	comp=E,50nm,0.6s								
PET					A	A		06 31 50.5	
	comp=E,30nm,0.6s								
DALK	**Dalny**	**7.18**	**34**		PN		**Pn**	**06 30 25.4**	**+2.9**
DALK					S		**Sn**	**06 31 40.7**	**-1.8**
JOB	**Onbets**	**7.27**	**236**		P		**Pn**	**06 30 24.1**	**+0.4**
JOB					*e*S		**Sn**	**06 31 40.7**	**-4.0**
ASAJ	**Asahikawa**	**7.33**	**248**		P		**Pn**	**06 30 28.2**	**+3.7**
ASAJ	**Asahikawa**	**7.33**	**248**		*e*Pn		Pn	06 30 28.3	+3.8
	comp=E,33nm,0.6s								
ASAJ					*e*Sn		**Sn**	**06 31 49.8**	**+3.7**
HRK	**Horoka**	**7.34**	**242**		*e*P		**Pn**	**06 30 27.0**	**+2.2**
KOK	**Koryaka**	**7.34**	**33**		PN		**Pn**	**06 30 28.1**	**+3.3**
UGLR	**Uglovaya**	**7.35**	**34**		PN		**Pn**	**06 30 27.1**	**+2.2**
JKK2	**Kamakawa 2**	**7.35**	**246**		P		**Pn**	**06 30 27.7**	**+2.8**
AVH	**Avacha**	**7.36**	**33**		PN		**Pn**	**06 30 28.1**	**+3.1**
AVH	**Avacha**	**7.36**	**33**		*e*P		**Pn**	**06 30 28.1**	**+3.1**
KRER	**Koryakskii**	**7.40**	**33**		PN		**Pn**	**06 30 29.0**	**+3.4**
KRER					S		**Sn**	**06 31 44.6**	**-3.4**
KRX	**Arik**	**7.40**	**32**		PN		**Pn**	**06 30 27.7**	**+2.1**
SDLR	**Sedlovina**	**7.43**	**34**		PN		**Pn**	**06 30 28.7**	**+2.8**
GNL	**Ganaly**	**7.43**	**28**		PN		**Pn**	**06 30 28.5**	**+2.5**
JSS	**Shosan**	**7.67**	**252**		P		Pn	06 30 34.2	+5.1
JCH	**Churui**	**7.72**	**236**		P		**Pn**	**06 30 29.6**	**-0.2**
JCH					*e*S		**Sn**	**06 31 50.5**	**-5.2**
SPN	**Mys Shipunski**	**7.75**	**38**		PN		**Pn**	**06 30 31.2**	**+1.1**
JFR	**Furan**	**7.83**	**242**		P		**Pn**	**06 30 34.3**	**+2.9**
MYR	**Moyori**	**7.98**	**234**		*e*P		**Pn**	**06 30 32.3**	**-1.0**
JBT2	**Biratori 2**	**8.20**	**240**		P		**Pn**	**06 30 37.7**	**+1.5**
JBT2					*e*S		**Sn**	**06 32 04.8**	**-2.4**
ERM	**Erimo**	**8.23**	**233**		*e*PN		**Pn**	**06 30 37.8**	**+1.1**
ERM					pmax	pmax			
	comp=Z,20nm,0.3s								
ERM	**Erimo**	**8.23**	**233**		*e*Pn		**Pn**	**06 30 37.8**	**+1.1**
	comp=Z,20nm,0.3s								
ERM					*e*Sn		**Sn**	**06 32 01.5**	**-6.5**
ERM	**Erimo**	**8.23**	**233**		*e*P		**Pn**	**06 30 39.6**	**+2.9**
JEM	**Erimo**	**8.23**	**233**		P		**Pn**	**06 30 36.8**	**+0.1**
JEM					*e*S		**Sn**	**06 32 01.6**	**-6.4**
JNBK	**Urakawa-nobuka**	**8.28**	**236**		P		**Pn**	**06 30 36.6**	**-0.8**
JNBK					*e*S		**Sn**	**06 32 02.4**	**-6.8**
JNB	**Noboribetsu**	**9.17**	**242**		P		**Pn**	**06 30 49.5**	**+0.1**
JNB					*e*S		**Sn**	**06 32 26.1**	**-4.6**
MKZ	**Mys Kozlova**	**9.50**	**37**		PN		**Pn**	**06 30 52.9**	**-0.8**
JKB	**Kayabe**	**9.52**	**239**		P		**Pn**	**06 30 52.8**	**-1.3**
JKB					*e*S		**Sn**	**06 32 30.8**	**-8.4**
JSH	**Shimam**	**9.68**	**246**		P		**Pn**	**06 30 57.7**	**+1.5**
JYM2	**Yakumo 2**	**9.78**	**242**		P		**Pn**	**06 30 57.0**	**-0.5**
JOSM	**Okushiri--Mats**	**10.34**	**244**		P		**Pn**	**06 31 04.4**	**-0.7**
JTH	**Tanohata**	**10.40**	**229**		*e*S		Sn	06 32 48.9	-12
SRKR	**Sorokina**	**10.93**	**28**		PN		**Pn**	**06 31 11.9**	**-1.1**
KBG	**Krutoberegovo**	**11.13**	**32**		PN		**Pn**	**06 31 14.5**	**-1.1**
JRG	**Rokugo**	**11.44**	**230**		P		**Pn**	**06 31 16.8**	**-3.0**
HABR	**Khabarovsk**	**11.46**	**282**		*e*PN		**Pn**	**06 31 20.3**	**+0.3**
HABR					*e*S		**Sn**	**06 33 26.7**	**+0.6**
HABR					pmax	pmax			
	comp=Z,8.0nm,1.0s								
HABR					pmax	pmax			
	comp=N,5.0nm,1.0s								
HABR					pmax	pmax			
	comp=E,6.0nm,0.6s								
HABR					MLR	MLR			
	comp=Z,65nm,15.0s								
HABR	**Khabarovsk**	**11.46**	**282**		*e*P		**Pn**	**06 31 20.3**	**+0.3**
BKI	**Bering**	**11.78**	**43**		PN		**Pn**	**06 31 24.7**	**+0.6**
EKMR	**Ekimchan**	**13.50**	**302**		*e*P		**P**	**06 31 52.5**	**+1.1**
EKMR					AMB	AMB		06 32 00.1	
	comp=Z,40nm,0.6s								
KLR	**Kul'dur**	**13.64**	**286**		P		**P**	**06 31 51.5**	**-1.5**
	comp=Z,0.5nm,0.3s,baz=71,slow=7.9,SNR=12								
USRK	**Ussuriysk Ar.**	**14.32**	**265**		P		**P**	**06 31 58.5**	**-2.1**
	comp=Z,1.7nm,0.3s,baz=74,slow=13,SNR=15								
MJAR	**Matsushiro Arr**	**14.85**	**229**		P		**P**	**06 32 06.8**	**+0.3**
	comp=Z,1.8nm,0.3s,baz=25,slow=12,SNR=20								
MAJO	**Matsushiro**	**14.85**	**229**		*d* P		**P**	**06 32 07.7**	**+1.2**
MAT	**Matsushiro**	**14.85**	**229**		P		**P**	**06 32 06.0**	**-0.5**
MSHR	**Mys Shultsa**	**15.50**	**260**		¶P		**P**	**06 32 12.4**	**-1.2**
SEY	**Seymchan**	**15.68**	**1**		P		**P**	**06 32 15.6**	**+0.2**
	comp=Z,1.1nm,0.3s,baz=157,slow=7.8,SNR=22								
SEY	**Seymchan**	**15.68**	**1**		*e*P		**P**	**06 32 15.8**	**+0.4**
BMKR	**Bomnak**	**16.32**	**306**		*e*P		**P**	**06 32 24.0**	**+1.4**
BMKR					AMB	AMB		06 32 28.0	
	comp=Z,2.0nm,0.6s								
KROS	**Kirovskiy**	**17.29**	**304**		*e*P		**Pn**	**06 32 33.5**	**-0.3**
KROS					AMB	AMB		06 32 35.7	
	comp=Z,3.0nm,0.6s								
KSRS	**Korea Array**	**20.27**	**250**		P		Pn	06 33 06.8	-2.1
	comp=Z,17nm,0.7s,baz=56,slow=10.0,SNR=41								
KSRS	**Korea Array**	**20.27**	**250**		*e*P		Pn	06 33 07.2	-1.8
KSAR	**Wonju Array Be**	**20.30**	**250**		P		**P**	**06 33 06.9**	**+0.7**
KSAR	**Wonju Array Be**	**20.30**	**250**		P		**P**	**06 33 06.8**	**+0.7**
JNU	**Nakatsue**	**21.38**	**236**		P		**P**	**06 33 19.4**	**+1.6**
	comp=Z,6.6nm,0.6s,baz=55,slow=8.7,SNR=5.5								
TIXI	**Tiksi**	**26.74**	**344**	⇑	*e*P		**P**	**06 34 06.3**	**-1.3**
TIXI					pmax	pmax			
	comp=Z,1.0nm,0.5s								
H11N2	**WAKE ISLAND Hy**	**30.05**	**151**		T		T	07 06 30.5	
	baz=340,slow=76,SNR=342								
H11N1	**WAKE ISLAND Hy**	**30.07**	**151**		T		T	07 06 22.3	
	baz=340,slow=76,SNR=220								
H11N3	**WAKE ISLAND Hy**	**30.07**	**151**		T		T	07 06 31.8	
	baz=340,slow=76,SNR=196								
SONM	**Songino Array**	**30.45**	**288**		P		**P**	**06 34 39.9**	**-1.1**
	comp=Z,0.2nm,0.5s,baz=58,slow=8.7,SNR=2.0								
H11S1	**WAKE ISLAND Hy**	**31.13**	**152**		T		T	07 07 48.4	
	baz=340,slow=76,SNR=340								
H11S3	**WAKE ISLAND Hy**	**31.14**	**152**		T		T	07 07 51.3	
	baz=340,slow=76,SNR=318								
H11S2	**WAKE ISLAND Hy**	**31.15**	**152**		T		T	07 07 52.5	
	baz=340,slow=76,SNR=263								
KTH	**Kantishna Hill**	**34.84**	**41**		*e*P		**P**	**06 35 20.0**	**+1.1**
	comp=Z,22nm,1.2s								
TRF	**Thorofare Moun**	**35.12**	**41**		*e*P		**P**	**06 35 22.0**	**+0.5**
	comp=Z,4.7nm,0.7s								
COLD	**Coldfoot**	**35.30**	**35**		*e*P		**P**	**06 35 23.8**	**+0.9**
	comp=Z,2.9nm,0.5s								
MCK	**McKinley**	**35.72**	**41**		*e*P		**P**	**06 35 27.3**	**+0.8**
MCK					pmax	pmax			
	comp=Z,4.0nm,0.6s								
MCK	**McKinley**	**35.72**	**41**		*e*P		**P**	**06 35 27.3**	**+0.8**
	comp=Z,3.8nm,0.6s								
MCK	**McKinley**	**35.72**	**41**		*e*P		**P**	**06 35 27.3**	**+0.8**
PMR	**Palmer**	**35.73**	**44**		*e*P		**P**	**06 35 26.9**	**+0.4**
PMR					pmax	pmax			
	comp=Z,2.0nm,0.7s								
PMR	**Palmer**	**35.73**	**44**		*e*P		**P**	**06 35 26.9**	**+0.4**
	comp=Z,2.0nm,0.7s								
SML	**Sawmill**	**36.09**	**44**		*e*P		**P**	**06 35 30.6**	**+0.9**
SML					pmax	pmax			
	comp=Z,6.0nm,0.7s								
SML	**Sawmill**	**36.09**	**44**		*e*P		**P**	**06 35 30.6**	**+0.9**
	comp=Z,6.4nm,0.7s								
COLA	**College**	**36.18**	**39**		*e*P		**P**	**06 35 31.5**	**+1.2**
COLA					pmax	pmax			
	comp=Z,10.0nm,0.8s								
COLA	**College**	**36.18**	**39**		*e*P		**P**	**06 35 31.5**	**+1.2**
	comp=Z,9.7nm,0.8s								
COLA	**College**	**36.18**	**39**		*e*P		**P**	**06 35 31.4**	**+1.2**
ILAR	**Eielson Array**	**36.59**	**39**		P		**P**	**06 35 34.2**	**+0.4**
	comp=Z,1.6nm,0.5s,baz=263,slow=6.8,SNR=41								
DIV	**Divide**	**37.38**	**45**		*e*P		**P**	**06 35 41.8**	**+1.2**
	comp=Z,3.5nm,0.5s								
BMRM	**Bremner River**	**37.97**	**45**		*e*P		**P**	**06 35 46.6**	**+1.0**
	comp=Z,5.9nm,0.7s								
EGAK	**Eagle**	**39.04**	**39**		*e*P		**P**	**06 35 54.8**	**+0.5**
	comp=Z,2.8nm,0.4s								
INK	**Inuvik**	**41.59**	**33**		*e*P		**P**	**06 36 16.7**	**+1.4**
INK					pmax	pmax			

DLMT	Dillon	61.67	53	eP	P	06 38 46.2	+1.2	
	comp=Z,1.2nm,0.5s							
HLID	Hailey	61.81	55	P	P	06 38 46.7	+0.7	
	baz=310							
BOZ	Bozeman (W)	62.01	52	P	P	06 38 48.5	+1.3	
	baz=310							
BOZ	Bozeman (W)	62.01	52	eP	P	06 38 48.5	+1.3	
BOZ				pmax	pmax			
	comp=Z,3.0nm,0.5s							
BOZ	Bozeman (W)	62.01	52	eP	P	06 38 48.5	+1.3	
	comp=Z,3.5nm,0.5s							
BMN	Battle Mountai	62.20	60	eP	P	06 38 49.8	+1.2	
BMN				pmax	pmax			
	comp=Z,2.0nm,0.6s							
BMN	Battle Mountai	62.20	60	eP	P	06 38 49.8	+1.2	
	comp=Z,1.8nm,0.6s							
FINES	FINESS Array B	63.23	334	P	P	06 38 53.7	-1.1	
	comp=Z,1.7nm,0.3s,baz=49,slow=4.7,SNR=14							
FINES	FINESS Array B	63.23	334	eP	P	06 38 54.7	-0.1	
FINES				pmax	pmax			
	comp=Z,2.0nm,0.3s							
FINES	FINESS Array B	63.23	334	eP	P	06 38 54.7	-0.1	
RLMT	Red Lodge	63.61	51	P	P	06 38 58.9	+1.0	
	baz=312							
RLMT	Red Lodge	63.61	51	eP	P	06 38 58.1	+0.1	
	comp=Z,4.1nm,0.4s							
LAO	LASA Array	64.16	48	P	P	06 39 02.5	+1.2	
	baz=312							
CWC	Cottonwood Cre	64.26	64	P	P	06 39 02.8	+0.5	
	baz=311							
GRAC	Grapevine Rang	64.33	63	P	P	06 39 03.4	+0.9	
	baz=311							
R11A	Troy Canyon, C	64.51	60	P	P	06 39 04.4	+0.6	
	baz=311,SNR=7.9							
SBC	Santa Barbara	64.56	66	P	P	06 39 04.6	+0.6	
	baz=311							
HWUT	Hardware Ranch	64.68	56	eP	P	06 39 05.8	+0.9	
	comp=Z,2.8nm,0.7s							
MPMC	Manual Prospec	64.87	64	P	P	06 39 06.8	+0.6	
	baz=312							
DUG	Dugway, Tooele	64.91	57	P	P	06 39 07.3	+0.9	
	baz=312							
FURC	Furnace Creek,	64.98	63	P	P	06 39 07.5	+0.8	
	baz=312							
BW06	Boulder Array	65.02	53	P	P	06 39 07.5	+0.3	
	baz=312							
PDAR	Pinedale Array	65.02	53	P	P	06 39 07.8	+0.6	
	comp=Z,4.2nm,0.8s,baz=289,slow=1.5,SNR=35							
TPNV	Topopah Spring	65.04	62	P	P	06 39 07.8	+0.5	
	baz=312,SNR=5.2							
EDW2	Edwards Air Fo	65.34	65	P	P	06 39 09.7	+0.5	
	baz=312							
GSC	Goldstone, Bar	65.79	64	P	P	06 39 12.1	0.0	
	baz=312							
A29A	Manning Farm,	66.02	43	P	P	06 39 13.2	0.0	
	baz=315							
TUQ	Turquoise Moun	66.24	63	P	P	06 39 15.5	+0.5	
	baz=312							
HEC	Hector,Ludlow	66.39	64	P	P	06 39 16.1	+0.2	
	baz=312							
MURC	Murrieta	66.69	65	P	P	06 39 17.9	+0.1	
	baz=312							
K22A	Casper	66.75	52	P	P	06 39 18.5	+0.4	
	baz=314							
B30A	Myrvik Farm, E	66.78	43	P	P	06 39 18.2	+0.1	
	baz=316							
GMRC	Granite Mounta	66.83	63	P	P	06 39 18.7	0.0	
	baz=312							
RSSD	Black Hills	67.04	49	P	P	06 39 19.9	-0.1	
	baz=314							
RSSD	Black Hills	67.04	49	eP	P	06 39 20.3	+0.3	
RSSD				pmax	pmax			
	comp=Z,2.0nm,0.5s							
RSSD	Black Hills	67.04	49	eP	P	06 39 20.3	+0.3	
	comp=Z,2.0nm,0.5s							
BELC	Belle Mtn. Jos	67.15	64	P	P	06 39 20.7	-0.1	
	baz=313							
NB2	NORSAR Subarra	67.47	341	P	P	06 39 21.9	-0.3	
	comp=Z,0.9nm,0.5s,baz=27,slow=6.5							
NOA	NORSAR Array B	67.47	341	P	P	06 39 21.9	-0.3	
	comp=Z,1.1nm,0.5s,baz=29,slow=6.5,SNR=8.5							
O20A	White River Ci	67.53	55	P	P	06 39 23.4	+0.2	
	baz=314							
IRM	Iron Mountain	67.57	64	P	P	06 39 23.8	+0.5	
	baz=313							
BC3	Big Chuckawall	67.72	64	P	P	06 39 24.7	+0.3	
	baz=313							
N23A	Red Feather La	68.27	53	P	P	06 39 28.4	+0.5	
	baz=314							
E31A	Nome	68.35	44	P	P	06 39 28.3	+0.3	
	baz=317							
C33A	Trail	68.46	42	P	P	06 39 28.2	-0.4	
	baz=318							
PV01	Paradox Valley	68.73	57	eP	P	06 39 30.9	+0.2	
	comp=Z,270nm,1.0s							
WRA	Warramunga Arr	68.79	198	P	P	06 39 29.7	-1.2	
	comp=Z,3.1nm,0.9s,baz=13,slow=6.6,SNR=9.1							
WUAZ	Wupatki	68.91	60	P	P	06 39 32.1	+0.3	
	baz=314							
ISCO	Idaho Springs	69.22	54	P	P	06 39 34.3	+0.4	
	baz=315							
ISCO	Idaho Springs	69.22	54	eP	P	06 39 34.1	+0.3	
ISCO				pmax	pmax			
	comp=Z,2.0nm,0.7s							
ISCO	Idaho Springs	69.22	54	eP	P	06 39 34.1	+0.3	
	comp=Z,1.7nm,0.7s							
E33A	Westby DABS, E	69.28	43	P	P	06 39 33.7	0.0	
	baz=318							
FITZ	Fitzroy Crossi	69.28	207	P	P	06 39 34.3	+0.4	
	comp=Z,4.2nm,0.8s,baz=71,slow=9.6,SNR=3.6							
MVCO	Mesa Verde	69.41	57	P	P	06 39 35.5	+0.5	
	baz=314							
MVCO	Mesa Verde	69.41	57	eP	P	06 39 35.6	+0.7	
	comp=Z,3.1nm,0.7s							
H31A	Wolsey	69.58	46	P	P	06 39 35.9	+0.3	
	baz=317							
F33A	5 Mile Ranch,	69.63	44	P	P	06 39 35.6	-0.3	
	baz=318							
J30A	Dallas	69.92	47	P	P	06 39 37.5	-0.2	
	baz=317							
S22A	4UR Ranch, Cre	69.98	56	P	P	06 39 38.9	+0.3	
	baz=315							
G33A	Ortonville	70.04	44	P	P	06 39 38.0	-0.3	
	baz=318							
Q24A	Divide	70.06	54	P	P	06 39 38.9	-0.1	
	baz=315							
C37A	Embarrass	70.09	40	P	P	06 39 38.8	+0.1	
	baz=320							
OGNE	Ogallala	70.33	51	P	P	06 39 40.8	+0.4	
	baz=316							
G34A	Benson	70.39	44	P	P	06 39 40.3	-0.2	
	baz=318							
C38A	Sawbill Land.	70.50	40	P	P	06 39 41.0	-0.1	
	baz=320							
214A	Organ Pipe Nat	70.50	64	P	P	06 39 42.0	+0.6	
	baz=314							
E36A	McGregor	70.53	42	P	P	06 39 41.3	0.0	
	baz=319							
SDCO	Great Sand Dun	70.73	55	P	P	06 39 43.1	0.0	
	baz=316							
SDCO	Great Sand Dun	70.73	55	eP	P	06 39 43.7	+0.7	
	comp=Z,0.9nm,0.5s							
F36A	Milaca	70.91	42	P	P	06 39 42.9	-0.7	
	baz=319							
G35A	Watkins	70.94	43	P	P	06 39 44.4	+0.5	
	baz=319							
ECSD	EROS Data Cent	71.04	46	P	P	06 39 44.2	-0.3	
	baz=318							
ECSD	EROS Data Cent	71.04	46	eP	P	06 39 44.0	-0.4	
	comp=Z,6.9nm,0.8s							
L31A	Butterfield Fa	71.08	48	P	P	06 39 44.9	0.0	
	baz=317							
H35A	Sunnyside Ranc	71.17	44	P	P	06 39 45.4	+0.1	
	baz=319							
TUC	Tucson	71.49	62	P	P	06 39 47.7	+0.2	
	baz=315							
M31A	Lambtecht Ranc	71.62	49	P	P	06 39 48.5	+0.4	
	baz=318							
H36A	Jessenland, He	71.69	43	P	P	06 39 48.7	+0.3	
	baz=319							
SPMN	Marine on St.	71.72	42	P	P	06 39 48.2	-0.3	
	baz=320							
T25A	Trinidad	71.77	55	P	P	06 39 48.5	-0.7	
	baz=316							
BGNE	Belgrade	72.00	48	P	P	06 39 49.4	-0.9	
	baz=318							
N31A	Bailey Ranch,	72.02	49	P	P	06 39 50.1	-0.4	
	baz=318							
H37A	Dierke Farm, C	72.16	43	P	P	06 39 51.1	-0.1	
	baz=320							
ANMO	Albuquerque	72.18	58	P	P	06 39 51.7	0.0	
	baz=316							
I37A	Lemond, Waseca	72.36	44	P	P	06 39 52.3	-0.1	
	baz=320							
K35A	Storm Lake	72.47	45	P	P	06 39 52.6	-0.4	
	baz=319							
ASAR	Alice Springs	72.50	197	P	P	06 39 53.8	+0.5	
	comp=Z,3.0nm,0.6s,baz=10,slow=5.9,SNR=28							
J37A	Redenius Farm,	72.83	44	P	P	06 39 54.6	-0.5	
	baz=320							
I38A	Scanlan Farm,	72.84	43	P	P	06 39 55.3	+0.1	
	baz=320							
K36A	Gilmore City	72.91	45	P	P	06 39 55.1	-0.5	
	baz=319							
P32A	Huiting Farm,	73.09	50	P	P	06 39 56.0	-0.8	
	baz=318							
SCHQ	Schefferville	73.09	22	P	P	06 39 56.5	0.0	
	comp=Z,2.4nm,0.4s,baz=303,slow=12,SNR=5.5							
121A	Cookes Peak, D	73.12	60	P	P	06 39 57.5	+0.2	
	baz=316							
K37A	Belmond	73.20	44	P	P	06 39 56.6	-0.8	
	baz=320							
O33A	Hebron	73.27	49	P	P	06 39 57.4	-0.4	
	baz=318							
J38A	Wedel Dairy, R	73.33	43	P	P	06 39 57.7	-0.4	
	baz=320							
L37A	Phoenix Point,	73.63	45	P	P	06 39 59.6	-0.3	
	baz=320							
O34A	Beatrice	73.65	48	P	P	06 39 59.1	-0.9	
	baz=319							
J39A	Decorah	73.67	43	P	P	06 39 59.1	-1.0	
	baz=321							
Q33A	Connelly Farm,	73.95	50	P	P	06 40 00.8	-1.0	
	baz=319,SNR=5.4							
L38A	Oak Wood Farm,	74.00	45	P	P	06 40 01.2	-0.8	
	baz=320							
M37A	Trindle Farm,	74.03	46	P	P	06 40 02.0	-0.2	
	baz=320							
P34A	Walnut Farm, R	74.06	49	P	P	06 40 01.6	-0.8	
	baz=319							
J40A	Soldiers Grove	74.07	42	P	P	06 40 01.4	-1.0	
	baz=321							
K39A	Oelwein	74.07	44	P	P	06 40 01.4	-1.1	
	baz=321							
S32A	Newby Ranch, P	74.34	51	P	P	06 40 03.2	-0.9	
	baz=318							
R33A	Olander Ranch,	74.39	50	P	P	06 40 03.5	-0.9	
	baz=319							
J41A	Loganville	74.43	42	P	P	06 40 03.7	-0.8	
	baz=322							
K40A	Colesburg	74.43	43	P	P	06 40 03.7	-0.8	
	baz=321							
M38A	Pleasantville	74.44	45	P	P	06 40 04.2	-0.3	
	baz=320							
N37A	Lee Faris, Mou	74.45	46	P	P	06 40 04.6	-0.1	
	baz=320							
L39A	Vinton	74.47	44	P	P	06 40 04.0	-0.7	
	baz=321							
KSU1	Kansas State U	74.50	49	P	P	06 40 03.8	-1.2	
	baz=319							
T32A	Huddler Ranch,	74.73	51	P	P	06 40 05.9	-0.5	
	baz=318							
M39A	Webster	74.89	44	P	P	06 40 06.4	-0.7	
	baz=321,SNR=5.4							
N38A	Joes South For	74.90	46	P	P	06 40 07.1	-0.1	
	baz=320							
S33A	Kaszmaul Farm,	74.91	51	P	P	06 40 06.8	-0.6	
	baz=319							
AMTX	Amarillo	74.93	55	P	P	06 40 07.8	+0.1	
	baz=318							
AMTX	Amarillo	74.93	55	eP	P	06 40 07.8	+0.1	
	comp=Z,14nm,0.8s							
Q35A	Mercer Eighty,	74.98	49	P	P	06 40 07.9	+0.1	
	baz=319							
MSTX	Muleshoe	74.98	56	P	P	06 40 08.1	+0.1	
	baz=317							
MNTX	Cornudas Mount	75.13	59	P	P	06 40 09.2	+0.4	
	baz=317							
L41A	Preston	75.21	43	P	P	06 40 08.3	-0.7	
	baz=322							
P37A	Lathrop	75.28	47	P	P	06 40 08.8	-0.6	
	baz=320							
U32A	Winter Ranch,	75.28	52	P	P	06 40 09.1	-0.5	
	baz=318							
O38A	Galt	75.30	46	P	P	06 40 09.0	-0.5	
	baz=320							
R35A	Emporia Munici	75.30	49	P	P	06 40 09.2	-0.4	
	baz=319							
O39A	Kirksville	75.65	46	P	P	06 40 11.4	-0.2	
	baz=321							
P38A	Dawn	75.65	47	P	P	06 40 11.1	-0.4	
	baz=320,SNR=5.6							
R36A	Gordon, Harris	75.66	49	P	P	06 40 10.7	-0.9	
	baz=320							
U33A	Lingo Farm, Me	75.72	52	P	P	06 40 11.4	-0.6	
	baz=319							
S35A	Otter Creek Ra	75.72	50	P	P	06 40 11.2	-0.8	
	baz=320							
Q37A	Longview Farm,	75.77	48	P	P	06 40 11.2	-1.0	
	baz=320							
T34A	McClaskey Farm	75.77	51	P	P	06 40 11.4	-0.9	
	baz=319							
R37A	Teagarden Farm	76.01	48	P	P	06 40 12.8	-0.8	
	baz=320							
U34A	Anderson Ranch	76.02	51	P	P	06 40 13.7	0.0	
	baz=319							
S36A	Lake Cedric, C	76.07	49	P	P	06 40 13.4	-0.6	
	baz=320							
O40A	La Belle	76.08	45	P	P	06 40 13.6	-0.4	
	baz=321							
V33A	Lossen Ranch,	76.09	52	P	P	06 40 13.8	-0.3	
	baz=319							
W32A	Sentinel	76.09	53	P	P	06 40 14.5	+0.4	
	baz=319							
P39B	Salisbury	76.14	46	P	P	06 40 14.2	-0.2	
	baz=321							
T35A	Sooner Cattle	76.20	50	P	P	06 40 14.4	-0.3	
	baz=320							
Q39A	Willow Grove F	76.37	47	P	P	06 40 15.2	-0.4	
	baz=321							
T36A	Boggs Farm, Ca	76.42	50	P	P	06 40 15.7	-0.3	
	baz=320							
S37A	Fort Scott	76.43	49	P	P	06 40 15.4	-0.6	
	baz=320,SNR=10							
P40A	Paris	76.45	46	P	P	06 40 15.8	-0.3	
	baz=321							
V34A	Guthrie	76.49	52	P	P	06 40 16.2	-0.2	
	baz=319							
U35A	Pawnee	76.50	51	P	P	06 40 16.4	-0.1	
	baz=320,SNR=5.6							
O41A	Passleys Farm,	76.56	45	P	P	06 40 15.8	-0.9	
	baz=322							
R38A	Fenwick Farm,	76.57	48	P	P	06 40 15.7	-1.1	
	baz=320							
X32A	Elmer	76.59	54	P	P	06 40 17.0	0.0	
	baz=319							
WMOK	Wichita Mounta	76.63	53	P	P	06 40 17.1	-0.2	
	baz=319							
Q40A	Laux Farm, Aux	76.86	46	P	P	06 40 18.3	-0.1	
	baz=321							
T37A	Cheneyville 18	76.87	49	P	P	06 40 18.1	-0.4	
	baz=320,SNR=7.2							
V35A	Meyer Ranch, C	76.90	51	P	P	06 40 18.3	-0.4	
	baz=320							
R39A	Chumby, Stover	76.91	47	P	P	06 40 17.8	-0.9	
	baz=321							
X33A	Lawton	76.93	53	P	P	06 40 19.7	+0.8	
	baz=319							
HDIL	Hopedale	76.97	43	P	P	06 40 18.6	-0.3	
	baz=322							
S38A	Stockton	77.00	48	P	P	06 40 18.3	-0.9	
	baz=321							
U36A	Oologah	77.01	50	P	P	06 40 18.8	-0.4	
	baz=320							
P42A	Winchester	77.23	45	P	P	06 40 19.6	-0.8	
	baz=322							
S39A	Bolivar	77.25	48	P	P	06 40 20.1	-0.5	
	baz=321,SNR=5.3							
T38A	Diamond	77.26	49	P	P	06 40 20.0	-0.7	
	baz=320,SNR=13							
Y33A	Hilltop Ranch,	77.26	53	P	P	06 40 20.2	-0.5	
	baz=319							
R40A	Maddies Statio	77.31	47	P	P	06 40 19.9	-1.0	
	baz=321							
U37A	Salina	77.32	50	P	P	06 40 20.6	-0.4	
	baz=320							
TUL1	Leonard	77.34	50	P	P	06 40 20.9	-0.2	
	baz=320							
W35A	Tecumseh	77.34	52	P	P	06 40 21.2	0.0	
	baz=320							
GERES	GERESS Array B	77.64	333	P	P	06 40 21.9	-0.8	
	comp=Z,0.5nm,0.4s,baz=35,slow=4.9,SNR=5.1							
GERES	GERESS Array B	77.64	333	eP	P	06 40 22.8	+0.1	
GERES				pmax	pmax			
	comp=Z,1.0nm,0.4s							
GERES	GERESS Array B	77.64	333	eP	P	06 40 22.8	+0.1	
U38A	Gravette	77.67	49	P	P	06 40 22.5	-0.5	
	baz=321							
Q42A	Golden Eagle	77.67	45	P	P	06 40 22.9	0.0	
	baz=322							
W36A	Wetumka	77.70	51	P	P	06 40 22.7	-0.5	
	baz=320							
V37A	Hulbert	77.70	50	P	P	06 40 22.7	-0.4	
	baz=320,SNR=7.1							
S40A	Lebanon	77.73	47	P	P	06 40 22.4	-0.9	
	baz=321							
T39A	Clever	77.73	48	P	P	06 40 22.5	-0.8	
	baz=321							
Y34A	Reagan Ranch,	77.77	53	P	P	06 40 23.3	-0.3	
	baz=319							
X35A	Drake	77.86	52	P	P	06 40 23.5	-0.6	
	baz=320							
TXAR	Lajitas Array	77.87	60	P	P	06 40 24.6	+0.3	
	comp=Z,2.9nm,0.5s,baz=296,slow=4.9,SNR=84							
Q43A	New Douglas	78.05	45	P	P	06 40 24.4	-0.6	
	baz=322							
V38A	Canehill	78.10	50	P	P	06 40 24.9	-0.5	
	baz=321,SNR=6.4							
S41A	Jillco Farms,	78.11	47	P	P	06 40 25.0	-0.4	
	baz=322							
SFIN	Lafayette	78.12	42	P	P	06 40 25.1	-0.2	
	baz=324							
W37B	Quinton	78.12	51	P	P	06 40 25.2	-0.3	
	baz=320							
133A	Hamilton Ranch	78.15	55	P	P	06 40 25.4	-0.3	
	baz=319							
U39A	Green Forest	78.18	49	P	P	06 40 25.0	-0.8	
	baz=321,SNR=17							
Q44A	Meyer Farm, Va	78.40	44	P	P	06 40 26.6	-0.4	
	baz=323							
V39A	Pettigrew	78.51	49	P	P	06 40 26.8	-0.9	
	baz=321,SNR=7.0							
U40A	Yellville	78.52	48	P	P	06 40 26.7	-0.9	
	baz=321,SNR=13							
T41A	Mountain View	78.53	47	P	P	06 40 26.8	-0.9	
	baz=322							
233A	Rising Star	78.61	55	P	P	06 40 27.9	-0.3	
	baz=319							
Y36A	Durant	78.61	52	P	P	06 40 27.6	-0.6	
	baz=320							
134A	White-Moore Ra	78.64	54	P	P	06 40 27.8	-0.6	
	baz=320							
W38A	Poteau	78.65	50	P	P	06 40 28.0	-0.4	
	baz=321							
X38A	Whitesboro	78.80	51	P	P	06 40 28.5	-0.7	
	baz=321							
W39A	Magazine	78.94	50	P	P	06 40 29.2	-0.8	
	baz=321							
S43A	Fulton Ridge,	78.95	46	P	P	06 40 29.1	-0.9	
	baz=322							
V40A	Witts Springs	78.96	49	P	P	06 40 29.1	-1.0	
	baz=321							
Z36A	Blue Ridge	79.01	53	P	P	06 40 30.1	-0.2	
	baz=320							
135A	Vickery Place,	79.02	54	P	P	06 40 30.2	-0.2	
	baz=320							
333A	Richland Sprin	79.08	55	P	P	06 40 30.1	-0.7	
	baz=319							
S44A	Carbondale	79.25	45	P	P	06 40 30.9	-0.7	
	baz=323							
JCT	Junction City	79.25	57	P	P	06 40 31.8	-0.1	
	baz=319							
X39A	Fountain Ranch	79.29	50	P	P	06 40 31.2	-0.7	
	baz=321							
W40A	Ferguson Farm,	79.31	49	P	P	06 40 31.7	-0.3	
	baz=321							
V41A	Mountainview	79.31	48	P	P	06 40 31.1	-1.0	
	baz=322,SNR=8.9							
U42A	Revenden	79.33	47	P	P	06 40 31.4	-0.7	
	baz=322							
STKA	Stephens Creek	79.36	189	P	P	06 40 31.9	-0.1	
	comp=Z,0.7nm,0.4s,baz=320,slow=6.2,SNR=3.1							
STKA	Stephens Creek	79.36	189	eP	P	06 40 31.2	-0.8	
STKA				pmax	pmax			
	comp=Z,1.0nm,0.4s							
WHTX	Lake Whitney,	79.43	54	P	P	06 40 32.9	+0.3	
	baz=320							
433A	Art	79.45	56	P	P	06 40 32.8	-0.1	
	baz=319							
334A	Lometa	79.49	55	P	P	06 40 32.7	-0.4	
	baz=320							
Z37A	Pogue Cattle C	79.50	52	P	P	06 40 32.9	-0.1	
	baz=320							
MIAR	Mount Ida	79.55	50	P	P	06 40 33.1	-0.2	
	baz=321							
136A	Ennis	79.57	53	P	P	06 40 32.9	-0.5	
	baz=320							
S45A	Carrier Mills	79.58	45	P	P	06 40 32.6	-0.8	
	baz=323							
V42A	Cord	79.68	48	P	P	06 40 33.3	-0.7	
	baz=322							
W41B	Gary Mavity, V	79.74	49	P	P	06 40 34.1	-0.2	
	baz=322							
Y39A	Lockesburg	79.75	51	P	P	06 40 34.2	-0.2	
	baz=321							
434A	Burnet	79.87	55	P	P	06 40 35.0	-0.1	
	baz=320							
X40A	Basin Creek Fa	79.98	49	P	P	06 40 35.1	-0.5	
	baz=322							
533A	Kerrville	80.00	56	P	P	06 40 35.7	-0.1	
	baz=319							
X41A	Kaden, Bauxite	80.14	49	P	P	06 40 36.2	-0.2	
	baz=322							
138A	Matatall Enter	80.20	52	P	P	06 40 36.3	-0.6	
	baz=321							
534A	Blanco	80.34	56	P	P	06 40 37.3	-0.4	
	baz=320							
633A	Saathoff Ranch	80.38	57	P	P	06 40 37.8	-0.1	
	baz=319							
M54A	Oil Creek Stat	80.40	37	P	P	06 40 36.9	-0.9	
	baz=327							
V44A	Blytheville	80.41	47	P	P	06 40 37.4	-0.5	
	baz=323							
139A	Bunkhouse Ranc	80.56	52	P	P	06 40 38.7	-0.1	
	baz=321							
Y41A	Eaglette Beard	80.57	50	P	P	06 40 38.4	-0.4	
	baz=322							
Z40A	Long Farm, Mag	80.64	51	P	P	06 40 38.9	-0.2	
	baz=321							
238A	Jacksonville	80.69	52	P	P	06 40 39.0	-0.4	
	baz=321							
N54A	Moraine State	80.73	37	P	P	06 40 39.0	-0.5	
	baz=327							
832A	Faith Ranch, C	80.80	58	P	P	06 40 40.1	0.0	
	baz=319							
733A	Divot King Ran	80.87	57	P	P	06 40 40.5	+0.1	
	baz=320							
140A	Cam and Jess,	81.03	51	P	P	06 40 41.7	+0.5	
	baz=321							
Y42A	Garnett, Star	81.03	49	P	P	06 40 41.3	+0.1	
	baz=322							
833A	Chaparral WMA,	81.11	58	P	P	06 40 41.5	-0.3	
	baz=320							
NATX	Nacogdoches	81.13	52	P	P	06 40 42.2	+0.4	
	baz=321							
Z42A	Norrel Spur, H	81.38	50	P	P	06 40 42.5	-0.6	
	baz=322							
141A	Papa Simpson,	81.41	51	P	P	06 40 42.2	-1.0	
	baz=322							
537A	Green Hill Far	81.52	55	P	P	06 40 44.7	+0.8	
	baz=320							
735A	Kenedy	81.61	56	P	P	06 40 44.7	+0.3	
	baz=320							
933A	Laredo	81.72	58	P	P	06 40 45.4	+0.5	
	baz=320							
Y44A	Strider, Charl	81.73	48	P	P	06 40 45.4	+0.5	
	baz=323							
439A	Center Grove,	81.82	53	P	P	06 40 44.6	-0.8	
	baz=321							
O56A	Blue Knob Stat	81.89	37	P	P	06 40 45.4	-0.4	
	baz=328							
Y45A	Yeager Farm, C

	baz=320								
242A	**Grayson**	**82.23**	**50**	P		**P**	**06 40 47.5**	**0.0**	
	baz=322								
034A	**Hebbronville**	**82.47**	**58**	P		**P**	**06 40 49.0**	**+0.1**	
	baz=320								
Y46A	**Houston**	**82.47**	**47**	P		**P**	**06 40 48.6**	**-0.2**	
	baz=323								
342A	**Flagon Creek P**	**82.67**	**51**	P		**P**	**06 40 48.8**	**-1.0**	
	baz=322								
Y47A	**UCPARC, Winfie**	**82.96**	**46**	P		**P**	**06 40 50.8**	**-0.5**	
	baz=324								
244A	**Avery, Jackson**	**83.01**	**49**	P		**P**	**06 40 51.5**	**-0.1**	
	baz=323								
146A	**Union**	**83.37**	**48**	P		**P**	**06 40 53.6**	**+0.1**	
	baz=323								
Z47A	**Carrollton**	**83.42**	**47**	P		**P**	**06 40 53.5**	**-0.1**	
	baz=324								
344A	**Westbrook Farm**	**83.45**	**50**	P		**P**	**06 40 53.9**	**0.0**	
	baz=323								
Z48A	**Northport**	**83.53**	**47**	P		**P**	**06 40 53.7**	**-0.5**	
	baz=324								
147A	**Livingston**	**83.73**	**47**	P		**P**	**06 40 55.3**	**0.0**	
	baz=324								
346A	**Big Creek Wild**	**84.16**	**49**	P		**P**	**06 40 57.7**	**+0.3**	
	baz=323								
347A	**Saraland**	**84.62**	**48**	P		**P**	**06 41 00.4**	**+0.6**	
	baz=324								
TIGA	**Tifton**	**87.04**	**45**	P		**P**	**06 41 11.9**	**+0.2**	
	baz=326								
TORD	**Torodi Ar. Bea**	**114.24**	**328**	PKiKP		**PKiKP**	**06 47 03.8**	**-1.5**	
	comp=Z,0.5nm,1.0s,baz=16,slow=2.2,SNR=2.9								
BDFB	**Brasilia**	**144.33**	**34**	PKP		PKPbc	06 48 01.3	+0.8	
	comp=Z,1.3nm,0.5s,baz=348,slow=27,SNR=4.2								
CPUP	**Villa Florida**	**148.83**	**58**	PKPbc		**PKPbc**	**06 48 12.6**	**-0.5**	
	comp=Z,1.2nm,0.7s,baz=254,slow=1.2,SNR=8.0								
PLCA	**Paso Flores**	**148.99**	**94**	PKPbc		**PKPbc**	**06 48 12.8**	**-0.4**	
	comp=Z,1.6nm,0.8s,baz=230,slow=9.6,SNR=3.9								

IDC 11 06:31:51.5±7.3, 6°22S×147°45E, h116km±72km, mb3.9/2, mb1 3.9/4, mb1mx3.4/40, mbtmp4.1/4, Error ellipse: s-maj=92.2km s-min=51.8km az=129.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**3.17**	**185**	P		Pn	06 32 40.2	+0.2
	8.4nm,0.3s,baz=322,slow=12,SNR=6.1							
PMG				S		Sn	06 33 18.0	+0.5
	18nm,0.3s,baz=54,slow=24,SNR=14							
WRA	**Warramunga Arr**	**18.66**	**222**	P		P	06 36 00.2	-0.3
	0.7nm,0.3s,baz=40,slow=11,SNR=32							
ASAR	**Alice Springs**	**21.69**	**216**	P		P	06 36 33.5	+0.2
	1.0nm,0.4s,baz=52,slow=8.7,SNR=23							
FITZ	**Fitzroy Crossi**	**24.34**	**239**	P		P	06 36 58.5	-0.2
	21nm,0.8s,baz=50,slow=7.7,SNR=46							
TORD	**Torodi Ar. Bea**	**145.58**	**284**	PKPbc		PKPdf	06 51 16.8	-0.4
	0.2nm,0.4s,baz=88,slow=4.2,SNR=2.9							

NIED ***11*** *06:36:00.38˚10N×143˚36˚90E, h5km, Mw3.5 Best double couple: M₀1.93000×10¹⁴ NP1:φs184.00000°, δ32.00000°, λ-126.00000°. NP2:φs45.00000°, δ65.00000°, λ-70.00000°*

JMA 11 06:36:18.5±0.2, 38°10N×143°86E, h34km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**1.98**	**300**	P		Pn	06 36 50.9	+1.4
JIO	**Ouri**	**2.01**	**281**	P		Pn	06 36 51.4	+1.4
JIO				S		Sn	06 37 15.3	+1.4
MIYJ	**Miyakonagasawa**	**2.17**	**313**	P		Pn	06 36 53.1	+0.9
JMK	**Ichinoseki**	**2.24**	**293**	P		Pn	06 36 55.2	+2.1
JOM	**Ohasama**	**2.43**	**305**	P		Pn	06 36 58.3	+2.5
JOM				S		Sn	06 37 26.7	+2.4
JOU	**Okura**	**2.53**	**277**	P		Pn	06 36 59.3	+2.1
JOU				S		Sn	06 37 29.1	+2.3
JRG	**Rokugo**	**2.83**	**298**	P		Pn	06 37 03.7	+2.3
JRG				*e*S		Sn	06 37 37.0	+2.7
JFT	**Otama**	**2.85**	**259**	S		Sn	06 37 36.8	+2.1
JYK	**Kaneyama**	**2.87**	**288**	P		Pn	06 37 04.4	+2.6
JYK				S		Sn	06 37 38.8	+3.7
JAH	**Hinai**	**3.26**	**311**	P		Pn	06 37 10.1	+2.9
JTM	**Tenmabayashi**	**3.44**	**322**	S		Sn	06 37 50.0	+0.6
JRY	**Ryogami san**	**4.48**	**244**	*e*S		Sn	06 38 14.0	-0.9
JCH	**Churui**	**4.53**	**355**	P		Pn	06 37 24.7	+0.1
JOD2	**Odawara 2**	**4.77**	**235**	P		Pn	06 37 29.0	+1.1

IDC ***11*** *06:37:18.0±0.4,29˚04S×177˚00W, h0km, mb5.0/24, mb1 5.1/25,mb1mx4.9/40,mbtmp5.0/25,ML3.7/1,MS4.9/14, Ms1 4.9/14,ms1mx4.5/37, Error ellipse: s-maj=16.9km s-min=12.0km az=156.0*

GCMT ***11*** *06:37:19.4±0.1,29˚11S×176˚79W, h28km, MW5.4/100, Moment Tensor Solution. s96,c159; s100,c160; Duration: 1ŝ2 Moment tensor: Scale 10¹⁷Nm; Mrr1.08±.03; Mθθ-0.04±.02; Mφφ-1.04±.02; Mrθ0.20±.04; Mθφ-0.28±.01; Mφr0.89±.04; Best double couple: M₀1.42900×10¹⁷ NP1:φs13.00000°, δ65.00000°, λ89.00000°. NP2:φs196.00000°, δ25.00000°, λ92.00000°. Principal axes: T 1.4130, Plg70.0000°, Azm282.0000°; N 0.0300, Plg1.0000°, Azm14.0000°; P -1.4450, Plg20.0000°, Azm104.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***11*** *06:37:19.4±0.1,29˚27S×177˚07W, h10km, mb5.3/121, MS5.2/298 Error ellipse: s-maj=6.7km s-min=3.6km az=136.0*

ISCJB ***11*** *06:37:21.1±0.1,29˚39S±0˚03×177˚05W±0˚03, h31km, mb5.3/147, MS5.2/317, Error ellipse: s-maj=5.2km s-min=2.8km az=145.4*

MOS ***11*** *06:37:22.7±1.0,29˚01S×177˚15W, h33km, mb5.5/52, MS5.1/28, Error ellipse: s-maj=11.6km s-min=8.6km az=65.7*

BJI ***11*** *06:37:22.7, 28˚74S×176˚54W, h42km, mb5.4/38, mB5.5/35, Ms5.3/32, Ms7 5.1/33*

ISC 11 06:37:22.7±0.2, 29°31S±0°04×176°98W±0°04, h31km, n898, σ1ŝ48/745, mb5.3/146, MS5.2/318, 47C-18D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**0.82**	**274**	Pn		**Pb**	**06 37 38.6**	**+0.2**
	5μm,0.3s,baz=74,slow=2.9,SNR=173							
RAO				Sn		**Sb**	**06 37 51.8**	**+2.7**
	17μm,0.3s,baz=120,slow=20,SNR=22							
RAO				LR		LR	06 37 54.8	
	comp=Z,14μm,18.4s,baz=262,slow=44							
RAO	**Raoul Island**	**0.82**	**274**	*e*P		**Pn**	**06 37 36.7**	**-1.3**
RAO				*e*			06 37 47.2	
RAO	**Raoul Island**	**0.82**	**274**	*e*Pg		**Pn**	**06 37 36.7**	**-1.3**
RAO				*e*Sg		**Sn**	**06 37 47.2**	**-1.9**
OUZ	**Omahuta**	**9.91**	**231**	*e*Pn		**Pn**	**06 39 43.3**	**+0.3**
OUZ				*e*Sn		**Sn**	**06 41 33.8**	**+0.6**
URZ	**Urewera**	**10.19**	**207**	Pn		Pn	06 39 41.7	-5.0
	0.7nm,0.3s,baz=267,slow=5.7,SNR=8.5							
URZ				Sn		**Sn**	**06 41 37.5**	**-2.4**
	14nm,0.3s,baz=238,slow=23,SNR=13							
URZ	**Urewera**	**10.19**	**207**	*e*Pn		**Pn**	**06 39 44.5**	**-2.2**
URZ				*e*Sn		**Sn**	**06 41 36.7**	**-3.2**
BKZ	**Black Stump Fm**	**11.21**	**207**	*e*Pn		**Pn**	**06 39 57.1**	**-3.8**
BKZ				*e*Sn		**Sn**	**06 42 07.1**	**+2.0**
MSVF	**Nonsavu**	**12.39**	**337**	*c i*P		**Pn**	**06 40 20.9**	**+3.9**
BFZ	**Birch Farm**	**12.62**	**204**	*e*Pn		**Pn**	**06 40 17.3**	**-2.8**
BFZ				*e*Sn		**Sn**	**06 42 36.1**	**-3.4**
SNZO	**South Karori**	**13.75**	**207**	*e*Pn		**Pn**	**06 40 34.5**	**-0.9**
SNZO				*e*Sn		**Sn**	**06 42 59.1**	**-7.9**
THZ	**Tophouse**	**14.89**	**211**	*e*Pn		**Pn**	**06 40 51.2**	**+0.3**
THZ				*e*Sn		Sn	06 43 25.4	-10
KHZ	**Kahutara**	**15.15**	**208**	*e*Pn		**Pn**	**06 40 50.9**	**-3.5**
	109nm,0.8s							
KHZ				*e*Sn		Sn	06 43 27.9	-13
LTZ	**Lake Taylor**	**15.99**	**210**	*e*Pn		**Pn**	**06 41 05.7**	**+0.4**
	248nm,1.7s							
LTZ				*e*Sn		Sn	06 43 50.0	-12
AFI	**Afiamalu**	**16.07**	**19**	Pn		**Pn**	**06 41 05.0**	**-1.4**
	2.6nm,0.3s,baz=232,slow=13,SNR=2.8							
AFI				Sn		Sn	06 43 47.3	-16
	2.4nm,0.3s,baz=209,slow=19,SNR=3.5							
AFI	**Afiamalu**	**16.07**	**19**	*e*P		**Pn**	**06 41 05.0**	**-1.4**
AFI				pmax		pmax		
	comp=Z,84nm,0.9s							
AFI	**Afiamalu**	**16.07**	**19**	*e*Pn		**Pn**	**06 41 05.0**	**-1.4**
	comp=Z,84nm,0.9s							
AFI				*e*Sn		Sn	06 43 47.3	-16
CRLZ	**Canterbury Las**	**16.49**	**208**	*e*Pn		**Pn**	**06 41 11.4**	**-0.1**
	comp=Z,226nm,1.5s							
CRLZ				*e*Sn		Sn	06 43 56.9	-17
OXZ	**Oxford**	**16.53**	**209**	*e*Pn		**Pn**	**06 41 07.1**	**-5.0**
	comp=Z,139nm,0.9s							
OXZ				*e*Sn		Sn	06 43 57.9	-17
DZM	**Mont Dzumac**	**16.58**	**292**	LR		LR	06 46 33.8	
	comp=Z,8μm,18.5s,baz=125,slow=34							
DZM	**Mont Dzumac**	**16.58**	**292**	*e*P		**P**	**06 41 16.7**	**+1.5**
	comp=Z,473nm,1.7s							
DZM				*e*LR		LR	06 45 11.6	
	comp=Z,11μm,23.6s							
MQZ	**McQueen's Vall**	**16.59**	**207**	*e*Pn		**Pn**	**06 41 09.8**	**-3.0**
	comp=Z,40nm,0.8s							
MQZ				*e*Sn		Sn	06 43 59.6	-16
RPZ	**Rata Peaks**	**17.27**	**210**	P		**Pn**	**06 41 20.7**	**-0.7**
	comp=Z,5.9nm,0.3s,baz=333,slow=3.3,SNR=18							
RPZ				S		Sn	06 44 19.2	-13
	comp=Z,3.8nm,0.3s,baz=107,slow=12,SNR=6.8							
RPZ	**Rata Peaks**	**17.27**	**210**	*e*Pn		**Pn**	**06 41 20.5**	**-0.9**
	comp=Z,354nm,1.9s							
RPZ				*e*Sn		**Sn**	**06 44 22.7**	**-10**
RAR	**Rarotonga**	**17.52**	**67**	P		**Pn**	**06 41 21.7**	**-2.9**
	comp=Z,2.7nm,0.3s,baz=239,slow=9.0,SNR=6.8							
RAR				S		Sn	06 44 18.2	-21
	comp=Z,1.5nm,0.3s,baz=70,slow=17,SNR=3.2							
RAR				LR		LR	06 46 37.0	
	comp=Z,2μm,20.4s,baz=254,slow=32							
RAR	**Rarotonga**	**17.52**	**67**	*e*P		**Pn**	**06 41 23.9**	**-0.7**
RAR				pmax		pmax		
	comp=Z,838nm,2.0s							
RAR	**Rarotonga**	**17.52**	**67**	*e*Pn		**Pn**	**06 41 23.9**	**-0.7**
	comp=Z,838nm,2.0s							
ODZ	**Otahua Downs**	**18.51**	**209**	*e*P		**P**	**06 41 36.4**	**+0.1**
	comp=Z,308nm,1.9s							
LHI	**Lord Howe Isla**	**20.77**	**258**	P		Pn	06 42 03.4	-0.2
	baz=21,SNR=4.2							
LHI	**Lord Howe Isla**	**20.77**	**258**	*e*P		Pn	06 42 05.5	+1.9
	comp=Z,512nm,0.9s							
TBI	**Tubuai**	**25.34**	**83**	*e*P		**P**	**06 42 46.4**	**-0.5**
	comp=Z,107nm,1.1s							
TBI				*e*S		**S**	**06 47 07.3**	**-4.0**
	comp=Z,877nm,26.8s							
TBI				*e*LR		LR	06 49 01.7	
	comp=Z,5μm,27.5s,baz=254							
TBI	**Tubuai**	**25.34**	**83**	*e*T		T	07 09 00.8	
	comp=Z,16nm,0.3s							
ARMA	**Armidale**	**27.20**	**260**	P		**P**	**06 43 05.5**	**+1.7**
	baz=27,SNR=8.9							
ARMA	**Armidale**	**27.20**	**260**	*e*P		**P**	**06 43 04.3**	**+0.5**
	comp=Z,94nm,1.4s							
ARMA				LR		LR		
	comp=Z,4μm,20.0s							
MGCD	**Mangrove Creek**	**27.49**	**254**	P		**P**	**06 43 09.7**	**+3.5**
	baz=27,SNR=4.2							
PAE	**Paea**	**27.61**	**71**	*e*P		**P**	**06 43 07.4**	**0.0**
	comp=Z,20nm,1.3s							
PAE	**Paea**	**27.61**	**71**	*e*T		T	07 11 34.3	
	comp=Z,7.2nm,0.2s							
PPT2	**Papeete2**	**27.64**	**71**	*e*S		**S**	**06 47 46.2**	**-1.7**
	comp=Z,448nm,24.0s							
PPT2				*e*LQ		LQ	06 48 43.9	
	comp=Z,2μm,24.0s							
PPT2				*e*LR		LR	06 50 03.2	
	comp=Z,5μm,25.8s,baz=237							
PPT2	**Papeete2**	**27.64**	**71**	*e*T		T	07 11 37.6	
	comp=Z,5.3nm,0.3s							
PPT	**Papeete**	**27.66**	**71**	LR		LR	06 51 19.2	
	comp=Z,1μm,20.7s,baz=248,slow=30							
TVO	**Taravao**	**27.82**	**72**	*e*T		T	07 11 51.3	
	comp=Z,1.4nm,0.3s							
TIAR	**Tiarei**	**27.85**	**71**	*e*P		**P**	**06 43 09.8**	**+0.2**
	comp=Z,12nm,0.9s							
EIDS	**Eidsvold**	**28.59**	**270**	P		**P**	**06 43 17.1**	**+1.0**
	baz=28,SNR=12							
EIDS	**Eidsvold**	**28.59**	**270**	*e*P		**P**	**06 43 17.4**	**+1.2**
	comp=Z,59nm,1.0s							
EIDS				LR		LR		
	comp=Z,3μm,18.0s							
CNB	**Canberra Magne**	**28.98**	**249**	P		**P**	**06 43 21.0**	**+1.5**
	baz=29,SNR=10							
CAN	**Canberra**	**29.27**	**249**	*e*P		**P**	**06 43 24.2**	**+2.0**
CAN				pmax		pmax		
	comp=Z,63nm,0.9s							
CAN	**Canberra**	**29.27**	**249**	*e*P		**P**	**06 43 24.2**	**+2.0**
	comp=Z,63nm,0.9s							
HNR	**Honiara**	**29.30**	**308**	LR		LR	06 53 15.3	
	comp=Z,943nm,19.5s,baz=153,slow=33							
YNG	**Young**	**29.75**	**251**	P		**P**	**06 43 28.4**	**+2.1**
	baz=30,SNR=5.9							
RMQ	**Roma**	**30.35**	**267**	P		**P**	**06 43 33.4**	**+1.7**
	baz=30,SNR=31							
VAH	**Vaihoa**	**30.46**	**69**	*e*T		T	07 15 04.4	
	comp=Z,22nm,0.2s							
MOO	**Moorlands**	**31.61**	**236**	P		**P**	**06 43 43.8**	**+1.1**
	baz=32,SNR=4.6							
TARA	**Tarawa**	**31.98**	**341**	PFAKE			06 44 00.0	+14
TARA				LR		LR		
	comp=Z,2μm,19.0s							
CMSA	**Cobar Meteorol**	**32.16**	**257**	P		**P**	**06 43 48.7**	**+1.1**
	baz=32,SNR=32							
TOO	**Toolangi**	**32.21**	**245**	P		**P**	**06 43 49.7**	**+1.6**
	baz=32,SNR=6.9							
QLP	**Quilpie**	**34.27**	**265**	P		**P**	**06 44 06.6**	**+0.5**
	baz=34,SNR=10							
CTA	**Charters Tower**	**34.52**	**277**	P		**P**	**06 44 08.5**	**+0.1**
	comp=Z,35nm,0.7s,baz=101,slow=11,SNR=36							
CTAO	**Charters Tower**	**34.52**	**277**	*e*P		**P**	**06 44 09.1**	**+0.7**
CTAO				pmax		pmax		
	comp=Z,59nm,0.9s							
CTAO				MLR		MLR		
	comp=Z,5μm,18.0s							
CTAO	**Charters Tower**	**34.52**	**277**	*e*P		**P**	**06 44 09.1**	**+0.7**
	comp=Z,59nm,0.9s							
CTAO				LR		LR		
	comp=Z,5μm,18.0s							
ARPS	**Mount Arapiles**	**35.10**	**247**	P		**P**	**06 44 14.6**	**+1.4**
	baz=35,SNR=4.7							
STKA	**Stephens Creek**	**35.60**	**255**	P		**P**	**06 44 17.4**	**-0.1**
	comp=Z,32nm,0.8s,baz=93,slow=11,SNR=27							
STKA				LR		LR	06 57 55.3	
	comp=Z,3μm,18.2s,baz=91,slow=35							
STKA	**Stephens Creek**	**35.60**	**255**	P		**P**	**06 44 17.6**	**+0.1**
	baz=35,SNR=35							
STKA	**Stephens Creek**	**35.60**	**255**	*e*P		**P**	**06 44 17.6**	**+0.1**
STKA				pmax		pmax		
	comp=Z,15nm,1.1s							
STKA				MLR		MLR		
	comp=Z,800nm,18.0s							
STKA	**Stephens Creek**	**35.60**	**255**	*e*P		**P**	**06 44 17.6**	**+0.1**
	comp=Z,15nm,1.1s							
STKA				LR		LR		
	comp=Z,800nm,18.0s							
MTSU	**Mount Surprise**	**36.98**	**279**	P		**P**	**06 44 29.8**	**+0.3**
	baz=37,SNR=14							
HTT	**Hallett**	**37.66**	**252**	P		**P**	**06 44 35.2**	**0.0**
	baz=37,SNR=29							
RKT	**Rikitea**	**38.04**	**91**	*e*S		**S**	**06 50 27.3**	**-1.7**
	comp=Z,559nm,29.5s							
RKT				*e*LQ		LQ	06 53 17.9	
	comp=Z,465nm,24.3s							
RKT				*e*LR		LR	06 54 57.6	
	comp=Z,3μm,27.2s,baz=259							
RKT	**Rikitea**	**38.04**	**91**	*e*T		T	07 25 02.8	
	comp=Z,1.7nm,0.3s							
RABL	**Rabaul**	**38.45**	**305**	PFAKE			06 44 50.0	+8.1
RABL				LR		LR		
	comp=Z,2μm,21.0s							
PMG	**Port Moresby**	**38.96**	**293**	PFAKE			06 45 00.0	+14
PMG				LR		LR		
	comp=Z,2μm,20.0s							
COEN	**Coen**	**39.84**	**284**	P		**P**	**06 44 53.1**	**-0.4**
	baz=40,SNR=5.1							
COEN	**Coen**	**39.84**	**284**	*e*P		**P**	**06 44 53.5**	**-0.1**
	comp=Z,49nm,1.1s							
COEN				LR		LR		
	comp=Z,4μm,19.0s							
TAOE	**Nuku Hiva Isla**	**40.07**	**67**	*e*S		**S**	**06 50 58.2**	**-1.6**
	comp=Z,332nm,24.4s							
TAOE				*e*LR		LR	06 55 46.7	
	comp=Z,3μm,25.9s,baz=243							
BBOO	**Buckleboo**	**40.12**	**253**	P		**P**	**06 44 55.2**	**-0.5**
	baz=40,SNR=25							
BBOO	**Buckleboo**	**40.12**	**253**	*e*P		**P**	**06 44 56.1**	**+0.4**
	comp=Z,84nm,0.9s							
QIS	**Mount Isa**	**40.13**	**272**	P		**P**	**06 44 55.8**	**-0.1**
	baz=40,SNR=4.1							
KWAJ	**Kwajalein Atol**	**40.69**	**336**	PFAKE			06 45 10.0	+10
KWAJ				LR		LR		
	comp=Z,2μm,19.0s							
MANU	**Manus Island**	**43.41**	**302**	*e*P		**P**	**06 45 19.0**	**-3.7**
	comp=Z,60nm,1.0s							
MANU				LR		LR		
	comp=Z,2μm,20.0s							
AS01	**Alice Springs**	**44.02**	**265**	*e*P		**P**	**06 45 26.7**	**-1.0**
AS31	**Alice Springs**	**44.06**	**265**	*e*P		**P**	**06 45 27.6**	**-0.4**
	comp=Z,13nm,1.0s							
AS31				LR		LR		
	comp=Z,100nm,21.0s							
ASAR	**Alice Springs**	**44.06**	**265**	P		**P**	**06 45 26.9**	**-1.1**
	comp=Z,40nm,1.0s,baz=112,slow=7.9,SNR=119							
ASAR				ScP		**ScP**	**06 51 05.3**	**+2.6**
	comp=Z,4.5nm,1.0s,baz=116,slow=4.4,SNR=7.0							
ASAR				S		**S**	**06 51 58.2**	**-0.4**
	comp=Z,5.7nm,1.3s,baz=113,slow=15,SNR=6.7							
ASAR				LR		LR	07 03 41.0	
	comp=Z,4μm,18.0s,baz=113,slow=36							
WR0	**Warramunga Arr**	**44.77**	**271**	PFAKE			06 45 40.0	+6.3
WR0				LR		LR		
	comp=Z,2μm,18.0s							
WR9	**Warramunga Arr**	**44.80**	**271**	PFAKE			06 45 40.0	+6.1
WR9				LR		LR		
	comp=Z,2μm,18.0s							
WR8	**Warramunga Arr**	**44.81**	**271**	PFAKE			06 45 40.0	+6.0
WR8				LR		LR		
	comp=Z,2μm,18.0s							
WR7	**Warramunga Arr**	**44.83**	**271**	PFAKE			06 45 50.0	+16
WR7				LR		LR		
	comp=Z,2μm,19.0s							
WR6	**Warramunga Arr**	**44.85**	**271**	PFAKE			06 45 50.0	+16
WR6				LR		LR		
	comp=Z,2μm,20.0s							
WR3	**Warramunga Arr**	**44.91**	**271**	PFAKE			06 45 50.0	+15
WR3				LR		LR		
	comp=Z,2μm,18.0s							
WR2	**Warramunga Arr**	**44.93**	**271**	PFAKE			06 45 50.0	+15
WR2				LR		LR		
	comp=Z,2μm,19.0s							
WB2	**Warramunga Arr**	**44.94**	**271**	*e*P		**P**	**06 45 34.5**	**-0.6**
	comp=Z,64nm,0.9s							
WB2				LR		LR		
	comp=Z,2μm,18.0s							
WC4	**Warramunga Arr**	**44.95**	**270**	PFAKE			06 45 50.0	+15
WC4				LR		LR		
	comp=Z,2μm,19.0s							
WB3	**Warramunga Arr**	**44.95**	**271**	PFAKE			06 45 50.0	+15
WB3				LR		LR		
	comp=Z,2μm,20.0s							
WRAB	**Tennant Creek**	**44.95**	**271**	*c i*P		**P**	**06 45 33.8**	**-1.3**
WRAB				pmax		pmax		
	comp=Z,180nm,1.0s							
WRAB	**Tennant Creek**	**44.95**	**271**	*e*P		**P**	**06 45 34.1**	**-1.0**
	comp=Z,64nm,1.0s							
WRAB				LR		LR		
	comp=Z,2μm,19.0s							
WB4	**Warramunga Arr**	**44.95**	**271**	PFAKE			06 45 50.0	+15
WB4				LR		LR		
	comp=Z,2μm,20.0s							
WR1	**Warramunga Arr**	**44.95**	**271**	*e*P		**P**	**06 45 34.1**	**-1.0**
	comp=Z,76nm,1.0s							
WR1				*e*S		**S**	**06 52 09.4**	**-2.2**
WR1				LR		LR		
	comp=Z,2μm,20.0s							
WB5	**Warramunga Arr**	**44.95**	**271**	PFAKE			06 45 50.0	+15
WB5				LR		LR		
	comp=Z,2μm,19.0s							
WRA	**Warramunga Arr**	**44.95**	**271**	P		**P**	**06 45 34.1**	**-1.0**
	comp=Z,53nm,0.9s,baz=107,slow=8.0,SNR=99							
WRA				ScP		**ScP**	**06 51 08.0**	**+1.6**
	comp=Z,3.3nm,1.1s,baz=104,slow=3.7,SNR=6.2							
WRA				S		**S**	**06 52 09.4**	**-2.2**
	comp=Z,2.1nm,0.8s,baz=110,slow=14,SNR=4.5							
WRA				LR		LR	07 03 45.8	
	comp=Z,1μm,18.2s,baz=110,slow=35							
WC1	**Warramunga Arr**	**44.96**	**271**	PFAKE			06 45 50.0	+15
WC1				LR		LR		
	comp=Z,2μm,22.0s							
WB6	**Warramunga Arr**	**44.96**	**271**	PFAKE			06 45 50.0	+15
WB6				LR		LR		
	comp=Z,2μm,18.0s							
WB8	**Warramunga Arr**	**44.97**	**271**	PFAKE			06 45 50.0	+15
WB8				LR		LR		
	comp=Z,2μm,19.0s							
WB9	**Warramunga Arr**	**44.97**	**271**	PFAKE			06 45 50.0	+15
WB9				LR		LR		
	comp=Z,3μm,20.0s							
WB0	**Warramunga Arr**	**44.97**	**271**	PFAKE			06 45 50.0	+15
WB0				LR		LR		
	comp=Z,2μm,18.0s							
FORT	**Forrest**	**47.19**	**254**	P		**P**	**06 45 50.8**	**-1.8**
	baz=47,SNR=21							
FORT	**Forrest**	**47.19**	**254**	*e*P		**P**	**06 45 51.0**	**-1.6**
	comp=Z,2μm,1.7s							
WRKA	**Warakurna**	**48.50**	**261**	P		**P**	**06 46 01.2**	**-1.8**
	baz=48,SNR=23							
SBA	**Scott Base**	**49.19**	**184**	*e*P		**P**	**06 46 10.6**	**+3.2**
SBA				pmax		pmax		
	comp=Z,97nm,1.1s							
SBA	**Scott Base**	**49.19**	**184**	*e*P		**P**	**06 46 10.6**	**+3.2**
	comp=Z,97nm,1.1s							
VNDA	**Vanda**	**49.27**	**186**	P		**P**	**06 46 11.4**	**+3.5**
	comp=Z,6.1nm,1.1s,baz=11,slow=8.9,SNR=14							
VNDA	**Vanda**	**49.27**	**186**	*e*P		**P**	**06 46 11.5**	**+3.5**
VNDA				pmax		pmax		
	comp=Z,45nm,1.5s							
VNDA	**Vanda**	**49.27**	**186**	*e*P		**P**	**06 46 11.5**	**+3.5**
	comp=Z,45nm,1.5s							
MTN	**Manton Dam**	**50.70**	**277**	PFAKE			06 46 30.0	+10
MTN				LR		LR

MORW **Morawa** 57.69 252 P P 06 47 08.8 -1.7
baz=57,SNR=5.4
SOEI **Soe** 58.09 277 P P 06 47 14.6 +1.0
SOEI **Soe** 58.09 277 eP P 06 47 14.1 +0.5
comp=Z,66nm,0.9s
SOEI LR LR
comp=Z,2µm,18.0s
MMRI **Maumere** 60.38 277 P P 06 47 39.0 +10
MMRI **Maumere** 60.38 277 PFAKE 06 47 40.0 +11
MMRI LR LR
comp=Z,1µm,18.0s
QSPA **South Pole Qui** 60.80 180 eP P 06 47 34.3 +2.7
comp=Z,67nm,0.9s
QSPA LR LR
comp=Z,1µm,21.0s
GIRL **Giralia** 61.42 259 P P 06 47 36.2 -0.1
baz=61,SNR=3.1
PLAI **Plampang** 64.17 274 P P 06 47 53.0 -1.7
KAPI **Kappang** 64.30 279 P P 06 47 54.4 -1.1
comp=Z,13nm,1.1s,baz=93,slow=6.6,SNR=3.8
KAPI LR LR 07 14 40.7
comp=Z,618nm,21.7s,baz=124,slow=35
KAPI **Kappang** 64.30 279 eP P 06 47 54.4 -1.1
comp=Z,53nm,1.4s
TWSI **Taliwang, Sumb** 64.99 274 P P 06 48 01.4 +1.4
TTSI **Tana Toraja** 65.23 281 P P 06 48 00.0 -1.6
DAV **Davao City (W)** 65.98 294 LR LR 07 14 22.5
comp=Z,255nm,21.0s,baz=120,slow=34
PCI **Palu** 66.32 283 P P 06 48 09.3 +0.7
comp=Z,68nm,1.1s
JAGI **Jajag, Banyuwa** 67.49 273 P P 06 48 14.4 -1.8
JAGI **Jajag, Banyuwa** 67.49 273 eP P 06 48 14.3 -1.8
comp=Z,82nm,1.2s
JAGI LR LR
comp=Z,900nm,19.0s
GMJI **Gumukmas** 68.20 273 P P 06 48 19.0 -1.6
BBKI **Banjar Baru** 69.31 278 P P 06 48 28.1 +0.6
PWJI **Pagerwojo** 69.75 272 P P 06 48 29.9 -0.3
PCJI **Pacitan** 70.22 272 P P 06 48 32.1 -1.0
NGJI **Ngawi** 70.36 273 P P 06 48 38.7 +4.8
UGM **Wanagama** 70.92 272 P P 06 48 41.8 +4.4
KKM **Kota Kinabalu** 73.07 287 eP P 06 48 47.8 -2.5
comp=Z,72nm,1.5s
KKM LR LR
comp=Z,400nm,21.0s
CISI **Cisompet, Garu** 73.45 271 P P 06 48 54.6 +2.0
CISI **Cisompet, Garu** 73.45 271 PFAKE 06 49 00.0 +7.4
CISI LR LR
comp=Z,700nm,20.0s
MAW **Mawson** 73.64 200 P P 06 48 54.8 +2.1
comp=Z,25nm,0.9s,baz=122,slow=7.0,SNR=44
MAW LR LR 07 20 48.5
comp=Z,800nm,19.5s,baz=120,slow=35
MAW **Mawson** 73.64 200 P P 06 48 54.5 +1.9
baz=73,SNR=30
MAW **Mawson** 73.64 200 eP P 06 48 54.6 +1.9
MAW pmax pmax
comp=Z,40nm,1.6s
MAW MLR MLR
comp=Z,200nm,20.0s
MAW **Mawson** 73.64 200 eP P 06 48 54.6 +1.9
comp=Z,40nm,1.6s
MAW LR LR
comp=Z,200nm,20.0s
STKI **Sintang** 73.98 279 P P 06 48 55.9 +0.3
CNJI **Cibinong** 74.17 270 P P 06 48 58.9 +2.2
SBUM **Sibu** 74.55 282 eP P 06 48 58.1 -0.8
comp=Z,19nm,1.0s
SBUM LR LR
comp=Z,500nm,19.0s
DBJI **Dramaga** 74.86 271 P P 06 48 59.8 -0.9
KSM **Kuching** 75.69 280 eP P 06 49 04.6 -0.9
comp=Z,68nm,1.6s
KSM LR LR
comp=Z,2µm,18.0s
CGJI **Cibinong** 75.75 270 P P 06 49 04.6 -1.2
JOW **Kunigami** 76.59 311 PFAKE 06 49 20.0 +10
JOW LR LR
comp=Z,900nm,19.0s
KASI **Kota Agung** 77.31 271 P P 06 49 16.7 +2.0
INU **Inuyama** 77.56 323 eP P 06 49 13.8 -1.7
comp=Z,24nm,0.9s
INU LR LR
comp=Z,400nm,20.0s
MJAR **Matsushiro Arr** 77.86 325 P P 06 49 15.9 -1.2
comp=Z,11nm,0.9s,baz=162,slow=5.8,SNR=28
MAJO **Matsushiro** 77.86 325 eP P 06 49 16.0 -1.2
MAJO pmax pmax
comp=Z,25nm,0.9s
MAJO MLR MLR
comp=Z,300nm,21.0s
MAJO **Matsushiro** 77.86 325 eP P 06 49 16.0 -1.2
comp=Z,25nm,0.9s
MAJO LR LR
comp=Z,300nm,21.0s
MAT **Matsushiro** 77.86 325 P P 06 49 15.8 -1.4
MAT S S 06 59 06.6 -1.4
MJB9 **Matsu-Tunnel** 77.86 325 eP P 06 49 15.9 -1.3
comp=Z,6.3nm,0.9s
LWLI **Liwa** 77.94 271 P P 06 49 19.7 +1.4
SYO **Syowa Base** 78.37 193 ‖ iP P 06 49 19.3 -0.3
SYO **Syowa Base** 78.37 193 ‖ ipP P 06 49 21.4 +1.8
TWG **Pinlang** 78.98 304 PFAKE 06 49 30.0 +6.3
TWG LR LR
comp=Z,3µm,18.0s
YULB **Yu-li** 79.17 305 PFAKE 06 49 40.0 +15
YULB LR LR
comp=Z,700nm,19.0s
SNAA **Sanae** 79.22 178 P P 06 49 25.7 +1.3
SNAA **Sanae** 79.22 178 eP P 06 49 25.8 +1.5
SNAA pmax pmax
comp=Z,33nm,1.1s
SNAA MLR MLR
comp=Z,900nm,21.0s
SNAA **Sanae** 79.22 178 eP P 06 49 25.8 +1.5
comp=Z,33nm,1.1s
SNAA LR LR
comp=Z,900nm,21.0s
JNU **Nakatsue** 79.34 318 P P 06 49 25.6 +0.2
comp=Z,5.2nm,0.7s,baz=112,slow=10,SNR=4.5
JNU **Nakatsue** 79.34 318 eP P 06 49 24.9 -0.5
comp=Z,38nm,1.1s
NACB **Ninganchiao** 79.44 305 PFAKE 06 49 40.0 +14
NACB LR LR
comp=Z,500nm,20.0s
TPUB **Ta-pu** 79.59 304 PFAKE 06 49 40.0 +13
TPUB LR LR
comp=Z,400nm,21.0s
SSLB **Suanglung** 79.66 305 PFAKE 06 49 40.0 +13
SSLB LR LR
comp=Z,600nm,20.0s
KSI **Kapahiang** 79.87 271 P P 06 49 31.7 +2.8
comp=Z,80nm,0.7s
ERM **Erimo** 79.93 331 deP P 06 49 28.8 +0.4
ERM pmax pmax
comp=Z,60nm,1.7s
ERM **Erimo** 79.93 331 eP P 06 49 29.8 +1.4
comp=Z,108nm,1.8s
ERM LR LR
comp=Z,1µm,20.0s
VNA1 **Neumayer--Stat** 80.00 176 P P 06 49 30.6 +2.1
NVL **N'lazarevskaya** 80.01 183 eP P 06 49 32.0 +3.4
NVL e*PP sP 06 49 42.4 +0.4
NVL eS S 06 59 32.5 +2.4
KUR **Kuril'sk** 80.79 336 c iP P 06 49 32.5 -0.4
KUR e 06 52 36.3
KUR i S S 06 59 38.2 -0.5
KUR pmax pmax
comp=Z,55nm,1.6s
KUR pmax pmax
comp=Z,149nm,6.2s
MYKOM **Kota Tinggi** 81.43 277 PFAKE 06 49 50.0 +13
MYKOM LR LR
comp=Z,1µm,20.0s
ASAJ **Asahikawa** 81.89 332 P P 06 49 39.3 +0.5
comp=Z,34nm,0.9s,baz=270,slow=20
ASAJ **Asahikawa** 81.89 332 eP P 06 49 39.5 +0.7
comp=Z,59nm,1.0s
ASAJ LR LR
comp=Z,900nm,18.0s
SMY **Shemya** 82.06 355 PFAKE 06 49 50.0 +11
SMY LR LR
comp=Z,900nm,19.0s
QZH **Quanzhou** 82.07 304 P P 06 49 29.4 -11
QZH **Quanzhou** 82.07 304 S S 06 59 41.8 -11
QZH LR LR
comp=Z,630nm,13.8s
PLCA **Paso Flores** 82.60 133 P P 06 49 44.9 +1.9
comp=Z,8.6nm,1.1s,baz=243,slow=11,SNR=4.9
BKNI **Bangkinang** 83.16 274 PFAKE 06 50 00.0 +14
BKNI LR LR
comp=Z,700nm,20.0s
LPIG **La Paz** 83.21 58 LR LR 07 22 34.8
comp=Z,319nm,18.1s,baz=306,slow=33
SAO **San Andreas Ge** 83.88 42 PFAKE 06 50 00.0 +11
SAO LR LR
comp=Z,2µm,18.0s
PAGB **Antelope Grade** 83.88 43 PFAKE 06 50 00.0 +11
PAGB LR LR
comp=Z,1µm,18.0s
PMPB **Monarch Peak** 83.88 43 PFAKE 06 50 00.0 +11
PMPB LR LR
comp=Z,1µm,19.0s
MCCM **Marconi Confer** 84.02 40 PFAKE 06 50 00.0 +10
MCCM LR LR
comp=Z,1µm,20.0s
OSI **Osito Audit: C** 84.06 45 PFAKE 06 50 00.0 +10
OSI LR LR
comp=Z,900nm,19.0s
PASC **Pasadena Art C** 84.10 45 PFAKE 06 50 00.0 +9.5
PASC LR LR
comp=Z,900nm,18.0s
KSRS **Korea Array** 84.10 319 P P 06 49 50.5 +0.1
comp=Z,7.6nm,0.9s,baz=137,slow=5.7,SNR=13
KS15 **Wonju Array Si** 84.11 319 eP P 06 49 53.0 +2.5
KS01 **Wonju Array Si** 84.13 319 eP P 06 49 50.0 -0.6
YSS **Yuzh-Sakhalins** 84.16 334 ‖ eP P 06 49 51.1 +0.7
YSS e 06 49 58.0
YSS pmax pmax
comp=Z,100nm,1.1s
YSS MLR MLR
comp=Z,400nm,18.0s
YSS **Yuzh-Sakhalins** 84.16 334 eP P 06 49 51.5 +1.0
comp=Z,126nm,1.1s
YSS LR LR
comp=Z,300nm,22.0s
MWC **Mount Wilson** 84.21 46 PFAKE 06 50 00.0 +8.7
MWC LR LR
comp=Z,800nm,19.0s
MONP2 **Monument Peak** 84.38 47 P P 06 49 53.4 +1.2
baz=230
HOPS **Hopland Field** 84.51 39 PFAKE 06 50 00.0 +7.5
HOPS LR LR
comp=Z,1µm,19.0s
GDXM **Geysers** 84.53 40 PFAKE 06 50 00.0 +7.3
GDXM LR LR
comp=Z,2µm,18.0s
PET **Petropavlovsk** 84.69 346 eP P 06 49 52.3 -0.7
PET eS S 07 00 16.0 -2.1
PET eSS SS 07 05 51.7 +0.7
PET pmax pmax
comp=Z,200nm,12.7s
PET **Petropavlovsk** 84.69 346 PFAKE 06 50 00.0 +7.0
PET LR LR
comp=Z,800nm,18.0s
PFO **Pinyon Flats O** 84.82 47 PFAKE 06 50 10.0 +16
PFO LR LR
comp=Z,800nm,20.0s
INCN **Inchon** 84.86 318 PFAKE 06 50 10.0 +16
INCN LR LR
comp=Z,600nm,18.0s
ISA **Isabella, Lake** 84.90 44 PFAKE 06 50 10.0 +15
ISA LR LR
comp=Z,700nm,19.0s
PEA0 **Petropavlovsk-** 84.98 345 eP P 06 49 53.8 -0.7
PEA0B **Petropavlovsk-** 84.98 345 eP P 06 49 53.1 -1.4
comp=Z,80nm,1.4s
PEA0B LR LR
comp=Z,700nm,19.0s
PETK **Petropavlovsk-** 84.98 345 P P 06 49 53.8 -0.8
comp=Z,10nm,0.8s,baz=122,slow=6.5,SNR=15
PEA1 **Petropavlovsk-** 84.99 345 eP P 06 49 53.8 -0.8
KMRM **Mail Ridge** 85.03 38 PFAKE 06 50 10.0 +15
KMRM LR LR
comp=Z,1µm,20.0s
IPM **Ipoh** 85.21 278 eP P 06 49 55.8 -0.9
comp=Z,28nm,1.0s
IPM LR LR
comp=Z,1µm,20.0s
LRMC **Laurel Mtn Rad** 85.27 45 P P 06 49 58.0 +1.5
baz=229
JCC **Jacoby Creek,** 85.28 37 PFAKE 06 50 10.0 +14
JCC LR LR
comp=Z,600nm,19.0s
QIZ **Qiongzhong** 85.33 295 P P 06 49 58.1 +1.0
QIZ S S 07 00 25.2 -0.8
QIZ LR LR
comp=Z,230nm,21.8s
QIZ **Qiongzhong** 85.33 295 PFAKE 06 50 10.0 +13
QIZ LR LR
comp=Z,600nm,20.0s
BELC **Belle Mtn. Jos** 85.36 47 P P 06 49 58.1 +1.1
baz=230
CMB **Columbia Colle** 85.36 41 eP P 06 49 56.4 -0.4
CMB pmax pmax
comp=Z,18nm,1.5s
CMB MLR MLR
comp=Z,1µm,18.0s
CMB **Columbia Colle** 85.36 41 eP P 06 49 56.4 -0.4
comp=Z,18nm,1.5s
CMB LR LR
comp=Z,1µm,18.0s
KHMM **Horse Mountain** 85.48 38 eP P 06 49 58.6 +1.1
comp=Z,13nm,1.0s
GLA **Glamis** 85.51 48 PFAKE 06 50 10.0 +12
GLA LR LR
comp=Z,800nm,20.0s
AFDM **Forest Hills D** 85.65 40 eP P 06 49 58.9 +0.7
comp=Z,13nm,1.5s
AFDM LR LR
comp=Z,1µm,19.0s
HEC **Hector,Ludlow** 85.68 46 P P 06 49 59.6 +1.1
baz=230
GSC **Goldstone, Bar** 85.69 45 P P 06 49 59.0 +0.4
baz=230
GSC **Goldstone, Bar** 85.69 45 eP P 06 49 58.9 +0.3
GSC pmax pmax
comp=Z,13nm,1.1s
GSC MLR MLR
comp=Z,900nm,20.0s
GSC **Goldstone, Bar** 85.69 45 eP P 06 49 58.9 +0.3
comp=Z,12nm,1.1s
GSC LR LR
comp=Z,900nm,20.0s
MPMC **Manual Prospec** 85.77 44 P P 06 49 59.2 +0.1
baz=229
ORV **Oroville** 85.77 40 eP P 06 49 59.1 +0.3
ORV pmax pmax
comp=Z,43nm,2.0s
ORV MLR MLR
comp=Z,700nm,19.0s
ORV **Oroville** 85.77 40 eP P 06 49 59.1 +0.3
comp=Z,42nm,2.0s
ORV LR LR
comp=Z,700nm,19.0s
WDC **Whiskeytown Da** 85.91 38 eP P 06 49 59.6 +0.1
WDC pmax pmax
comp=Z,17nm,1.2s
WDC MLR MLR
comp=Z,800nm,19.0s
WDC **Whiskeytown Da** 85.91 38 eP P 06 49 59.6 +0.1
comp=Z,16nm,1.2s
WDC LR LR
comp=Z,800nm,19.0s
KULM **Kulim** 85.93 278 eP P 06 49 58.9 -1.3
comp=Z,23nm,0.9s
KULM LR LR
comp=Z,900nm,21.0s
MSHR **Mys Shultsa** 85.98 324 ‖ eP P 06 49 58.8 -0.9
IRM **Iron Mountain** 86.01 47 P P 06 50 01.0 +0.9
baz=230
113A **Mohawk Valley,** 86.03 49 PFAKE 06 50 10.0 +10
113A LR LR
comp=Z,600nm,20.0s
N02D **Trinity Center** 86.10 38 P P 06 50 00.9 +0.4
baz=225
O03D **Paynes Creek** 86.12 39 P P 06 50 01.3 +0.7
baz=226
PSI **Prapat** 86.21 275 P P 06 49 59.1 -2.6
comp=Z,3.3nm,0.3s,baz=176,slow=7.5,SNR=5.9
PSI **Prapat** 86.21 275 eP P 06 49 58.7 -3.0
PSI pmax pmax
comp=Z,44nm,1.3s
PSI **Prapat** 86.21 275 eP P 06 49 58.7 -3.0
comp=Z,44nm,1.3s
NJ2 **Nanjing** 86.21 310 eP P 06 50 01.5 +0.4
NJ2 pmax pmax
comp=Z,13nm,0.8s
WAKR **Walker** 86.23 42 eP P 06 50 00.6 -0.8
comp=Z,68nm,2.0s
WAKR LR LR
comp=Z,1µm,18.0s
M02C **Callahan** 86.32 38 P P 06 50 02.7 +1.2
baz=225
TVH3 **East Aurora ar** 86.49 42 eP P 06 50 02.9 +0.3
comp=Z,26nm,1.8s
PNTR **Pine Nut** 86.53 41 eP P 06 50 04.0 +1.1
TVH2 **Borealis Mine** 86.54 42 eP P 06 50 03.0 +0.1
comp=Z,4.5nm,1.0s
TVH1 **TV Hill, Hawth** 86.59 42 eP P 06 50 01.3 -2.0
comp=Z,24nm,1.5s
TVH1 LR LR
comp=Z,900nm,18.0s
LDFC **Landfair** 86.61 46 eP P 06 50 03.6 +0.4
comp=Z,32nm,1.1s
LDFC LR LR
comp=Z,1µm,20.0s
YBH **Yreka Blue Hor** 86.63 37 eP P 06 50 03.2 +0.1
YBH pmax pmax
comp=Z,28nm,1.5s
YBH MLR MLR
comp=Z,1µm,20.0s
YBH **Yreka Blue Hor** 86.63 37 eP P 06 50 03.2 +0.1
comp=Z,28nm,1.5s
YBH LR LR
comp=Z,1µm,20.0s
YERR **Yerington** 86.67 41 PFAKE 06 50 10.0 +6.5
YERR LR LR
comp=Z,1µm,19.0s
USRK **Ussuriysk Ar.** 86.75 326 P P 06 50 03.6 +0.2
comp=Z,24nm,0.9s,baz=137,slow=3.4,SNR=65
UBPT **Khong Chiam** 86.89 289 P P 06 50 06.1 +1.3
comp=Z,20nm,1.4s
PAHR **Pah Rah Range** 87.07 41 eP P 06 50 05.3 0.0
TPNV **Topopah Spring** 87.10 44 P P 06 50 06.6 +1.0
baz=230
TPNV **Topopah Spring** 87.10 44 eP P 06 50 06.8 +1.2
TPNV pmax pmax
comp=Z,12nm,1.1s
TPNV MLR MLR
comp=Z,700nm,19.0s
TPNV **Topopah Spring** 87.10 44 eP P 06 50 06.8 +1.2
comp=Z,12nm,1.1s
TPNV LR LR
comp=Z,700nm,19.0s
HUMO **Hull Mountain** 87.12 37 eP P 06 50 06.3 +0.9
comp=Z,25nm,1.6s
HUMO LR LR
comp=Z,500nm,19.0s
Y14A **Wickenburg** 87.25 48 eP P 06 50 07.2 +1.0
comp=Z,32nm,1.0s
Y14A LR LR
comp=Z,3µm,20.0s
W13A **Hualapai Mount** 87.41 47 eP P 06 50 07.5 +0.4
comp=Z,26nm,2.0s
W13A LR LR
comp=Z,500nm,19.0s
TYV **Tymovskoe** 87.42 336 eP P 06 50 06.0 -0.5
TYV pmax pmax
comp=Z,40nm,1.2s
SHPR **Sheep Range** 87.49 45 eP P 06 50 09.6 +2.1
I03D **Drain, OR** 87.69 36 P P 06 50 08.5 +0.5
baz=225
TUC **Tucson** 87.74 51 eP P 06 50 10.0 +1.3
TUC pmax pmax
comp=Z,18nm,1.1s
TUC MLR MLR
comp=Z,600nm,20.0s
TUC **Tucson** 87.74 51 eP P 06 50 10.0 +1.3
comp=Z,18nm,1.1s
TUC LR LR
comp=Z,600nm,20.0s
MOD **Modoc Plateau** 88.05 39 PFAKE 06 50 20.0 +10
MOD LR LR
comp=Z,800nm,20.0s
319A **Douglas** 88.22 52 PFAKE 06 50 20.0 +9.0
319A LR LR
comp=Z,500nm,19.0s
CHBT **CHBT** 88.22 286 P P 06 50 16.4 +5.2
comp=Z,5µm,0.8s
MDJ **Mudanjiang** 88.23 325 P P 06 50 10.8 +0.2
MDJ pP pP 06 50 20.4 -0.1
MDJ sP sP 06 50 24.2 +0.1
MDJ PP PP 06 53 38.6 +0.1
MDJ S S 07 00 56.5 +3.5
MDJ pmax pmax
comp=Z,36nm,1.1s
MDJ pmax pmax
comp=Z,160nm,6.7s
MDJ LR LR
comp=Z,260nm,20.1s
MDJ LR LR
comp=Z,120nm,20.1s
MDJ LR LR
comp=Z,400nm,21.0s
MDJ **Mudanjiang** 88.23 325 eP P 06 50 10.7 +0.1
comp=Z,56nm,1.2s
MDJ LR LR
comp=Z,700nm,20.0s
I04A **Tendick Farm,** 88.24 36 P P 06 50 10.7 0.0
baz=225
K05A **Summer Lake** 88.29 38 eP P 06 50 12.2 +1.1
comp=Z,24nm,1.4s
K05A LR LR
comp=Z,800nm,18.0s
COR **Corvallis** 88.34 35 PFAKE 06 50 20.0 +8.9
COR LR LR
comp=Z,1µm,18.0s
WHN **Wuhan** 88.40 306 P P 06 50 13.0 +1.3
WHN S S 07 00 53.7 -1.5
WHN LR LR
comp=Z,1µm,24.0s
R11A **Troy Canyon, C** 88.41 44 P P 06 50 12.0 +0.2
baz=230
R11A **Troy Canyon, C** 88.41 44 eP P 06 50 12.6 +0.8
comp=Z,13nm,1.8s
R11A LR LR
comp=Z,800nm,18.0s
OHAK **Old Harbor** 88.49 13 eP P 06 50 11.8 +0.4
comp=Z,56nm,1.4s
OHAK LR LR
comp=Z,800nm,20.0s
J05D **Fort Rock, OR** 88.50 37 P P 06 50 12.2 +0.1
baz=226
HABR **Khabarovsk** 88.53 330 ceP P 06 50 10.9 -1.0
HABR e*PP pP 06 50 21.5 -0.3
HABR e*SP sP 06 50 25.5 +0.1
HABR eS SKSac 07 00 36.1 -2.3
HABR e 07 00 59.8
HABR eSS SS 07 06 46.4 -1.0
HABR eSSS SSS 07 10 21.1
HABR MLR MLR
comp=Z,486nm,21.0s
X16A **Lo Mia Camp, P** 88.57 49 eP P 06 50 12.8 0.0
comp=Z,7.4nm,0.8s
X16A LR LR
comp=Z,700nm,20.0s
BMN **Battle Mountai** 88.79 41 eP P 06 50 14.2 +0.7
BMN pmax pmax
comp=Z,28nm,1.9s
BMN MLR MLR
comp=Z,1µm,18.0s
BMN **Battle Mountai** 88.79 41 eP P 06 50 14.2 +0.7
comp=Z,28nm,1.9s
BMN LR LR
comp=Z,1µm,18.0s
SKNT **Sakolnakorn** 88.99 290 P P 06 50 15.4 +0.6
comp=Z,31nm,1.4s
LCMT **Little Creek M** 89.00 46 eP P 06 50 16.1 +1.4
comp=Z,9.3nm,1.3s
LCMT LR LR
comp=Z,800nm,19.0s
LHMI **Lhok Sumawe** 89.11 276 PFAKE 06 50 30.0 +15
LHMI LR LR
comp=Z,900nm,21.0s
KDAK **Kodiak Island** 89.15 13 eP P 06 50 12.2 -2.3
KDAK pmax pmax
comp=Z,44nm,1.4s
KDAK MLR MLR

comp=Z,700nm,19.0s
KDAK Kodiak Island 89.15 13 *e*P **P 06 50 12.2 -2.3**
comp=Z,44nm,1.4s
KDAK LR LR
comp=Z,700nm,19.0s
I05D Terrebonne, OR 89.17 36 P **P 06 50 15.4 +0.3**
baz=226
F03A Seaside 89.17 34 PFAKE 06 50 30.0 +15
F03A LR LR
comp=Z,700nm,18.0s
U15A North Rim 89.25 47 *e*P **P 06 50 17.2 +1.3**
comp=Z,14nm,1.0s
U15A LR LR
comp=Z,500nm,20.0s
CCUT Cedar City 89.26 45 *e*P **P 06 50 16.7 +0.8**
comp=Z,18nm,1.7s
CCUT LR LR
comp=Z,900nm,18.0s
KNB Kanab 89.27 46 *e*P **P 06 50 17.5 +1.6**
KNB pmax pmax
comp=Z,19nm,1.3s
KNB MLR MLR
comp=Z,600nm,19.0s
KNB Kanab 89.27 46 *e*P **P 06 50 17.5 +1.6**
comp=Z,19nm,1.3s
KNB LR LR
comp=Z,600nm,19.0s
WUAZ Wupatki 89.28 48 P **P 06 50 17.7 +1.7**
baz=233
WUAZ Wupatki 89.28 48 *e*P **P 06 50 17.7 +1.7**
comp=Z,15nm,1.1s
WUAZ LR LR
comp=Z,800nm,18.0s
WVOR Wild Horse Val 89.32 39 *e*P **P 06 50 16.9 +0.9**
WVOR pmax pmax
comp=Z,19nm,1.7s
WVOR MLR MLR
comp=Z,1μm,19.0s
WVOR Wild Horse Val 89.32 39 *e*P **P 06 50 16.9 +0.9**
comp=Z,19nm,1.7s
WVOR LR LR
comp=Z,1μm,19.0s
SZCU Shurtz Canyon 89.46 46 *e*P **P 06 50 18.5 +1.7**
comp=Z,27nm,1.7s
SZCU LR LR
comp=Z,700nm,18.0s
PSUT Pine Spring 89.57 44 PFAKE 06 50 30.0 +13
PSUT LR LR
comp=Z,1μm,21.0s
E03A Lebam 89.61 34 *e*P **P 06 50 18.4 +1.4**
comp=Z,19nm,1.0s
E03A LR LR
comp=Z,900nm,18.0s
X18A Snowflake 89.62 49 PFAKE 06 50 30.0 +12
X18A LR LR
comp=Z,600nm,18.0s
F04A Amboy 89.73 35 *e*P **P 06 50 18.3 +0.7**
comp=Z,22nm,1.1s
F04A LR LR
comp=Z,500nm,19.0s
CN2 Changchun 89.81 322 ⇑P **P 06 50 17.8 -0.2**
CN2 *e*pP pP 06 50 29.8 +1.8
CN2 pmax pmax
comp=Z,70nm,1.0s
CN2 pmax pmax
comp=Z,200nm,3.0s
TIA Tai'an 89.88 312 ⇑P **P 06 50 19.0 +0.4**
TIA pmax pmax
comp=Z,50nm,1.1s
TIA pmax pmax
comp=Z,250nm,4.0s
TIA LR LR
comp=Z,340nm,26.0s
TIA LR LR
comp=Z,320nm,26.0s
TIA LR LR
comp=Z,560nm,28.0s
NLWA Neilton Lookou 90.07 33 *e*P **P 06 50 19.7 +0.6**
comp=Z,16nm,1.2s
W18A Petrified Fore 90.11 49 PFAKE 06 50 30.0 +10
W18A LR LR
comp=Z,800nm,20.0s
G06A Carlson Farm, 90.15 36 *e*P **P 06 50 20.3 +0.6**
comp=Z,22nm,1.3s
G06A LR LR
comp=Z,900nm,20.0s
MTPU Mount Pierson 90.30 46 *e*P **P 06 50 23.1 +2.1**
comp=Z,30nm,1.9s
MTPU LR LR
comp=Z,900nm,21.0s
TCRU Three Creeks R 90.48 45 PFAKE 06 50 30.0 +8.3
TCRU LR LR
comp=Z,600nm,20.0s
KLR Kul'dur 90.55 329 P **P 06 50 21.7 +0.4**
comp=Z,12nm,0.9s,baz=126,slow=2.7,SNR=38
LON Longmire 90.61 34 *e*P **P 06 50 22.5 +0.7**
LON pmax pmax
comp=Z,19nm,1.8s
LON MLR MLR
comp=Z,400nm,22.0s
LON Longmire 90.61 34 *e*P **P 06 50 22.4 +0.7**
comp=Z,19nm,1.8s
LON LR LR
comp=Z,400nm,22.0s
D05A Enumclaw 90.83 34 *e*P **P 06 50 23.7 +1.0**
comp=Z,77nm,1.5s
D05A LR LR
comp=Z,500nm,20.0s
CNPM China Poot 91.03 13 *e*P **P 06 50 23.1 -0.3**
comp=Z,38nm,1.0s
CNPM LR LR
comp=Z,800nm,19.0s
LTX Lajitas 91.06 57 *e*P **P 06 50 24.5 +0.1**
LTX Lajitas 91.06 57 *e*P **P 06 50 24.4 +0.1**
TX31 Lajitas Ar. Si 91.06 57 *e*P **P 06 50 24.9 +0.5**
TXAR Lajitas Array 91.06 57 P **P 06 50 24.4 +0.1**
comp=Z,1.0nm,1.1s,baz=217,slow=6.1,SNR=7.2
G08A Pilot Rock 91.06 37 *e*P **P 06 50 24.1 +0.2**
comp=Z,18nm,1.1s
G08A LR LR
comp=Z,600nm,20.0s
HOM Homer 91.08 13 *e*P **P 06 50 23.8 +0.2**
comp=Z,100nm,1.0s
HOM LR LR
comp=Z,900nm,20.0s
MNTX Cornudas Mount 91.13 54 *e*P **P 06 50 24.8 +0.3**
comp=Z,15nm,1.5s
PBKT Sadao Pong 91.27 288 P P 06 50 30.3 +4.9
BRLK Bradley Lake 91.32 13 *e*P **P 06 50 24.7 0.0**
comp=Z,39nm,1.1s
BRLK LR LR
comp=Z,800nm,18.0s
Y22D IRIS PASSCAL I 91.40 51 PFAKE 06 50 40.0 +14
Y22D LR LR
comp=Z,900nm,18.0s
LAZ Ladron 91.44 51 *e*P **P 06 50 26.8 +0.7**
E07A Sunnyside 91.45 35 PFAKE 06 50 40.0 +14
E07A LR LR
comp=Z,900nm,20.0s
MFID Camas Ranch 91.52 40 *e*P **P 06 50 26.6 +0.4**
comp=Z,7.6nm,1.1s
MFID LR LR
comp=Z,600nm,18.0s
LTY Liberty 91.52 35 PFAKE 06 50 40.0 +14
LTY LR LR
comp=Z,600nm,19.0s
B05A Bryant 91.53 33 P **P 06 50 26.5 +0.6**
baz=226
BGU Big Grassy Mou 91.56 43 PFAKE 06 50 40.0 +14
BGU LR LR
comp=Z,900nm,19.0s
RSO Redoubt South 91.63 12 *e*P **P 06 50 25.7 -0.7**
BMO Blue Mountains 91.64 38 *e*P **P 06 50 27.3 +0.6**
comp=Z,32nm,2.0s
TMUT Trail Mountain 91.67 45 PFAKE 06 50 40.0 +13
TMUT LR LR
comp=Z,900nm,18.0s
ENH Enshi 91.72 304 *e*P **P 06 50 27.9 +0.6**
comp=Z,71nm,1.0s
ENH LR LR
comp=Z,1μm,20.0s
SVW2 Sparrevohn 91.75 10 PFAKE 06 50 40.0 +13
SVW2 LR LR
comp=Z,500nm,20.0s
GYA Guiyang 91.78 299 *e*P **P 06 50 28.0 +0.2**
GYA pP sP 06 50 41.2 -0.1
GYA PP **PP 06 54 10.4 +3.1**
GYA SKS **SKSac 07 00 56.0 -2.7**
GYA S **S 07 01 24.8 -2.1**
GYA sS sS 07 01 44.0 +0.6
GYA SS **SS 07 07 36.8 +1.2**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.7s
GYA LR LR
comp=Z,870nm,17.8s
GYA LR LR
comp=Z,690nm,18.7s
GYA LR LR
comp=Z,740nm,17.6s
SRU San Rafael Swe 91.98 46 *e*P **P 06 50 29.5 +1.0**
SRU pmax pmax
comp=Z,6.0nm,1.0s
SRU MLR MLR
comp=Z,900nm,21.0s
SRU San Rafael Swe 91.98 46 *e*P **P 06 50 29.5 +1.0**
comp=Z,5.5nm,1.0s
SRU LR LR
comp=Z,900nm,21.0s
B06A Marblemount 92.00 33 PFAKE 06 50 40.0 +12
B06A LR LR
comp=Z,600nm,18.0s
P17A Butcher Ranch, 92.06 45 PFAKE 06 50 40.0 +11
P17A LR LR
comp=Z,800nm,19.0s
SPUT South Promonto 92.14 43 PFAKE 06 50 40.0 +11
SPUT LR LR
comp=Z,800nm,20.0s
CTU Camp Tracy 92.18 44 PFAKE 06 50 40.0 +11
CTU LR LR
comp=Z,1μm,19.0s
ANMO Albuquerque 92.21 51 P **P 06 50 30.0 +0.4**
baz=236
ANMO Albuquerque 92.21 51⇑*e*P **P 06 50 30.0 +0.4**
ANMO pmax pmax
comp=Z,6.0nm,1.5s
ANMO Albuquerque 92.21 51 *e*P **P 06 50 30.6 +0.9**
comp=Z,7.8nm,1.3s
ANMO LR LR
comp=Z,500nm,20.0s
HVU Hansel Valley 92.24 42 PFAKE 06 50 40.0 +10
HVU LR LR
comp=Z,1μm,20.0s
D08A Wollman Farm, 92.26 35 *e*P **P 06 50 30.4 +1.0**
comp=Z,11nm,1.1s
D08A LR LR
comp=Z,900nm,18.0s
E09A Wood Farm, Sta 92.30 36 PFAKE 06 50 40.0 +10
E09A LR LR
comp=Z,900nm,18.0s
JLU Jordanelle 92.31 44 PFAKE 06 50 40.0 +10
JLU LR LR
comp=Z,1μm,18.0s
HLID Hailey 92.41 40 P **P 06 50 30.9 +0.6**
baz=231
HLID Hailey 92.41 40 *e*P **P 06 50 31.3 +1.0**
comp=Z,6.6nm,1.3s
F10A Beach Ranch, E 92.42 37 *e*P **P 06 50 29.6 -0.7**
comp=Z,25nm,1.5s
F10A LR LR
comp=Z,500nm,20.0s
SPU Mount Spurr 92.42 12 *e*P **P 06 50 29.0 -0.8**
P18A Preston Nutter 92.46 45 PFAKE 06 50 40.0 +9.1
P18A LR LR
comp=Z,700nm,20.0s
MA2 Magadan 92.48 344 P **P 06 50 28.7 -1.3**
comp=Z,3.5nm,0.3s,baz=144,slow=10,SNR=3.5
TCUT Toone Canyon 92.65 44 *e*P **P 06 50 31.6 0.0**
comp=Z,47nm,1.8s
TCUT LR LR
comp=Z,2μm,19.0s
BJT Baijiatuau 92.76 315 PFAKE 06 50 40.0 +8.2
BJT LR LR
comp=Z,800nm,18.0s
RC01 Rabbit Creek A 92.77 13 *e*P **P 06 50 30.4 -0.9**
comp=Z,41nm,1.4s
RC01 LR LR
comp=Z,600nm,20.0s
BJI Beijing 92.77 315 P **P 06 50 31.7 -0.1**
BJI S **S 07 01 37.1 +2.2**
BJI pmax pmax
comp=Z,21nm,1.3s
BJI pmax pmax
comp=Z,220nm,4.3s
BJI LR LR
comp=Z,160nm,20.2s
BJI LR LR
comp=Z,290nm,21.3s
BJI LR LR
comp=Z,340nm,24.2s
HWUT Hardware Ranch 92.85 43 PFAKE 06 50 40.0 +7.5
HWUT LR LR
comp=Z,1μm,19.0s
NNA Nana 92.86 105 LR LR 07 22 41.8
comp=Z,212nm,19.5s,baz=254,slow=29
SUA Susitna One 92.92 12 *e*P **P 06 50 31.9 -0.3**
comp=Z,12nm,1.0s
B08A Colville Reser 92.93 34 PFAKE 06 50 40.0 +7.5
B08A LR LR
comp=Z,700nm,20.0s
C09A Chrisman Ranch 93.09 35 PFAKE 06 50 40.0 +6.8
C09A LR LR
comp=Z,900nm,20.0s
EYAK Cordova Ski Ar 93.11 15 PFAKE 06 50 40.0 +7.1
EYAK LR LR
comp=Z,700nm,19.0s
PMR Palmer 93.35 13 *e*P **P 06 50 33.5 -0.5**
PMR pmax pmax
comp=Z,19nm,1.3s
PMR MLR MLR
comp=Z,499nm,20.0s
PMR Palmer 93.35 13 *e*P **P 06 50 33.5 -0.5**
comp=Z,19nm,1.3s
PMR LR LR
comp=Z,499nm,20.0s
TT01 Tatalina 93.41 9 *e*P **P 06 50 34.2 -0.1**
WRAK Wrangell Islan 93.41 23 PFAKE 06 50 50.0 +16
WRAK LR LR
comp=Z,600nm,21.0s
TTA Tatalina 93.44 9 *e*P **P 06 50 35.0 +0.5**
TTA pmax pmax
comp=Z,17nm,1.2s
TTA Tatalina 93.44 9 *e*P **P 06 50 35.0 +0.5**
comp=Z,17nm,1.2s
S22A 4UR Ranch, Cre 93.55 48 P **P 06 50 36.7 +0.8**
baz=235
DIV Divide 93.63 15 *e*P **P 06 50 35.0 -0.4**
comp=Z,19nm,1.2s
LVC Limon Verde 93.68 118 LR LR 07 22 51.8
comp=Z,2μm,20.3s,baz=217,slow=29
SML Sawmill 93.70 13 PFAKE 06 50 50.0 +14
SML LR LR
comp=Z,399nm,19.0s
BMRM Bremner River 93.75 15 *e*P **P 06 50 36.2 +0.3**
comp=Z,17nm,1.1s
BMRM LR LR
comp=Z,900nm,19.0s
AHID Auburn Hatcher 93.82 42 PFAKE 06 50 50.0 +13
AHID LR LR
comp=Z,1μm,19.0s
CMAR Chiang Mai Arr 93.88 289 P **P 06 50 38.2 +0.7**
comp=Z,2.9nm,1.1s,baz=145,slow=3.2,SNR=9.4
CRQM Cirque 93.90 16 PFAKE 06 50 50.0 +13
CRQM LR LR
comp=Z,800nm,22.0s
KLU Klutina 93.92 14 PFAKE 06 50 50.0 +13
KLU LR LR
comp=Z,500nm,18.0s
SCM Sheep Creek Mo 93.93 14 *e*P **P 06 50 36.5 -0.3**
SCM pmax pmax
comp=Z,16nm,1.0s
SCM MLR MLR
comp=Z,500nm,18.0s
SCM Sheep Creek Mo 93.93 14 *e*P **P 06 50 36.5 -0.3**
comp=Z,16nm,1.0s
SCM LR LR
comp=Z,500nm,18.0s
PPLA Purkeypile 94.00 11 PFAKE 06 50 50.0 +13
PPLA LR LR
comp=Z,500nm,20.0s
CHTO Chiang Mai 94.05 289 PFAKE 06 50 50.0 +12
CHTO LR LR
comp=Z,900nm,19.0s
MCMT McKenzie Canyo 94.07 40 *e*P **P 06 50 39.0 +0.9**
KMI Kunming 94.12 296 P **P 06 50 40.9 +2.1**
KMI pP sP 06 50 51.9 -0.4
KMI sP pP 06 50 56.3 +7.6
KMI PP **PP 06 54 32.5 +6.7**
KMI S **S 07 01 45.1 -2.9**
KMI sS sS 07 02 03.5 -1.0
KMI pmax pmax
comp=Z,9.0nm,2.0s
KMI pmax pmax
comp=Z,57nm,4.3s
KMI LR LR
comp=Z,110nm,23.2s
KMI LR LR
comp=Z,140nm,25.0s
KMI LR LR
comp=Z,240nm,24.4s
REDW Red Top Meadow 94.33 42 *e*P **P 06 50 38.8 -0.5**
comp=Z,21nm,1.5s
REDW LR LR
comp=Z,1μm,18.0s
BALM Baldy 94.34 16 *e*P **P 06 50 39.2 +0.5**
BALM *e*S **S 07 01 51.4 +3.4**
BALM pmax pmax
comp=Z,26nm,1.5s
BALM MLR MLR
comp=Z,600nm,20.0s
BALM Baldy 94.34 16 *e*P **P 06 50 39.2 +0.5**
comp=Z,26nm,1.5s
BALM *e*S **S 07 01 51.4 +3.4**
BALM LR LR
comp=Z,600nm,20.0s
TPAW Teton Pass 94.35 42 PFAKE 06 50 50.0 +11
TPAW LR LR
comp=Z,1μm,18.0s
SNOW Snow King Moun 94.44 42 *e*P **P 06 50 40.7 +0.9**
comp=Z,6.9nm,1.0s
SNOW LR LR
comp=Z,1μm,18.0s
CAST Castle Rocks 94.51 11 *e*P **P 06 50 37.9 -1.5**
comp=Z,10nm,1.0s
CAST LR LR
comp=Z,500nm,19.0s
DLMT Dillon 94.54 40 *e*P **P 06 50 41.1 +1.0**
comp=Z,7.7nm,1.3s
IMW Indian Meadow 94.60 42 PFAKE 06 50 50.0 +9.4
IMW LR LR
comp=Z,1μm,19.0s
MOOW Moose Ponds 94.62 42 PFAKE 06 50 50.0 +9.4
MOOW LR LR
comp=Z,2μm,21.0s
LOHW Long Hollow 94.62 42 PFAKE 06 50 50.0 +9.4
LOHW LR LR
comp=Z,2μm,21.0s
BW06 Boulder Array 94.74 43 *e*P **P 06 50 40.8 -0.4**
BW06 LR LR
comp=Z,1μm,20.0s
PD31 Pinedale Array 94.74 43 *e*P **P 06 50 41.6 +0.5**
PDAR Pinedale Array 94.74 43 P **P 06 50 40.3 -0.9**
comp=Z,0.8nm,0.9s,baz=202,slow=1.6,SNR=7.0
PDAR PKKPbc **PKKPbc 07 07 39.2 0.0**
comp=Z,0.5nm,0.6s,baz=186,slow=1.5,SNR=3.8
T25A Trinidad 94.80 50 PFAKE 06 50 50.0 +8.4
T25A LR LR
comp=Z,1μm,20.0s
KTH Kantishna Hill 94.83 11 *e*P **P 06 50 39.6 -1.2**
comp=Z,7.3nm,0.9s
KTH LR LR
comp=Z,600nm,21.0s
TRF Thorofare Moun 94.84 12 *e*P **P 06 50 40.4 -0.7**
comp=Z,11nm,0.9s
TRF LR LR
comp=Z,900nm,18.0s
FLWY Flagg Ranch 94.85 41 PFAKE 06 50 50.0 +8.4
FLWY LR LR
comp=Z,1μm,18.0s
YPP Pitchstone Pla 94.90 41 PFAKE 06 50 50.0 +8.0
YPP LR LR
comp=Z,1μm,18.0s
SKAG Skagway 94.90 20 PFAKE 06 50 50.0 +8.8
SKAG LR LR
comp=Z,600nm,18.0s
YFT Old Faithful 94.99 41 PFAKE 06 50 50.0 +7.7
YFT LR LR
comp=Z,2μm,18.0s
YMR Madison River 95.04 41 PFAKE 06 50 50.0 +7.5
YMR LR LR
comp=Z,800nm,20.0s
DHY Denali Highway 95.05 13 PFAKE 06 50 50.0 +8.0
DHY LR LR
comp=Z,600nm,19.0s
RND Reindeer 95.06 12 *e*P **P 06 50 41.6 -0.3**
RND pmax pmax
comp=Z,23nm,1.1s
RND MLR MLR
comp=Z,700nm,21.0s
RND Reindeer 95.06 12 *e*P **P 06 50 41.6 -0.3**
comp=Z,23nm,1.1s
RND LR LR
comp=Z,700nm,21.0s
H17A Grant Village 95.10 41 PFAKE 06 50 50.0 +7.2
H17A LR LR
comp=Z,1μm,18.0s
SEY Seymchan 95.12 346 P **P 06 50 40.8 -1.3**
comp=Z,6.1nm,0.8s,baz=165,slow=6.1,SNR=13
SEY Seymchan 95.12 346⇑*i*P **P 06 50 41.3 -0.8**
YHH Holmes Hill 95.18 41 PFAKE 06 50 50.0 +6.8
baz=233
YHH LR LR
comp=Z,900nm,18.0s
YNR Norris Junctio 95.23 41 PFAKE 06 50 50.0 +6.6
YNR LR LR
comp=Z,1μm,19.0s
BOZ Bozeman (W) 95.26 40 P **P 06 50 43.6 +0.2**
baz=233
BOZ Bozeman (W) 95.26 40 *e*P **P 06 50 43.9 +0.5**
BOZ pmax pmax
comp=Z,7.0nm,1.4s
BOZ Bozeman (W) 95.26 40 *e*P **P 06 50 43.9 +0.5**
comp=Z,7.4nm,1.4s
LKWY Lake 95.31 41 PFAKE 06 51 00.0 +16
LKWY LR LR
comp=Z,3μm,21.0s
Q24A Divide 95.32 48 PFAKE 06 51 00.0 +16
Q24A LR LR
comp=Z,1μm,20.0s
PAX Paxson 95.34 14 PFAKE 06 50 50.0 +6.8
PAX LR LR
comp=Z,599nm,18.0s
MCK McKinley 95.35 12 *e*P **P 06 50 42.9 -0.3**
MCK pmax pmax
comp=Z,11nm,1.1s
MCK MLR MLR
comp=Z,700nm,21.0s
MCK McKinley 95.35 12 *e*P **P 06 50 42.9 -0.3**
comp=Z,11nm,1.1s
MCK LR LR
comp=Z,700nm,21.0s
HYT Haines Junctio 95.41 18 PFAKE 06 50 50.0 +6.4
HYT LR LR
comp=Z,1μm,21.0s
MENT Mentasta 95.69 15 *e*P **P 06 50 44.4 -0.4**
comp=Z,4.0nm,0.8s
MENT LR LR
comp=Z,500nm,20.0s
ABTX Abilene, Hawle 95.73 56 PFAKE 06 51 00.0 +14
ABTX LR LR
comp=Z,2μm,18.0s
DLBC Dease Lake 95.78 23 PFAKE 06 51 00.0 +15
DLBC LR LR
comp=Z,900nm,18.0s
N23A Red Feather La 95.88 46 PFAKE 06 51 00.0 +13
N23A LR LR
comp=Z,1μm,19.0s
HHC Hu-ho-hao-te 96.12 314 *e*P **P 06 50 49.4 +2.0**
HHC pP sP 06 51 00.2 -0.7
HHC sP pP 06 51 06.1 +8.8
HHC pmax pmax
comp=Z,21nm,1.0s
HHC pmax pmax
comp=Z,100nm,5.2s
HHC LR LR
comp=Z,320nm,22.7s
HHC LR LR
comp=Z,320nm,22.4s
HHC LR LR
comp=Z,760nm,18.8s

WALA Waterton Lakes 96.12 36 PFAKE 06 51 00.0 +13
WALA LR LR
comp=Z,1µm,20.0s
WRH Wood River Hil 96.17 12 *e*P **P 06 50 46.4 -0.5**
comp=Z,15nm,1.1s
WRH LR LR
comp=Z,600nm,20.0s
CD2 Chengdu 96.26 302 *e*P **P 06 50 48.5 +0.3**
CD2 pP sP 06 51 00.7 -1.0
CD2 PP **PP 06 54 42.1 0.0**
CD2 SKS **SKSac 07 01 21.6 -1.1**
CD2 S **S 07 02 05.2 -0.7**
CD2 sS sS 07 02 26.1 +3.6
CD2 SS **SS 07 08 39.6 +0.3**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
CD2 LR LR
comp=Z,360nm,15.4s
CD2 LR LR
comp=Z,240nm,19.9s
CD2 LR LR
comp=Z,220nm,19.4s
HDA Harding Lake 96.33 13 *e*P **P 06 50 47.2 -0.5**
comp=Z,35nm,1.8s
HDA LR LR
comp=Z,500nm,21.0s
HIA Hailar 96.36 324 PFAKE 06 51 00.0 +12
HIA LR LR
comp=Z,1µm,20.0s
CCB Clear Creek Bu 96.39 12 *e*P **P 06 50 46.5 -1.3**
comp=Z,8.0nm,1.1s
CCB LR LR
comp=Z,600nm,22.0s
PHWY Pilot Hill 96.41 46 PFAKE 06 51 00.0 +11
PHWY LR LR
comp=Z,1µm,18.0s
K22A Casper 96.50 44 PFAKE 06 51 00.0 +11
K22A LR LR
comp=Z,1µm,18.0s
TGUH Tegucigalpa,Un 96.50 78 PFAKE 06 51 00.0 +10
TGUH LR LR
comp=Z,1µm,20.0s
COLA College 96.58 12 PFAKE 06 51 00.0 +11
COLA LR LR
comp=Z,500nm,20.0s
IL1 Eielson Array 96.67 12 *e*P **P 06 50 47.8 -1.3**
ILAR Eielson Array 96.67 12 P **P 06 50 48.0 -1.1**
comp=Z,2.3nm,0.9s,baz=219,slow=5.6,SNR=23
ILB Eielson Array 96.67 12 *e*P **P 06 50 48.4 -0.8**
KSCO Kaye Shedlock' 97.00 49 PFAKE 06 51 00.0 +8.6
KSCO LR LR
comp=Z,1µm,20.0s
WHTX Lake Whitney, 97.00 57 PFAKE 06 51 00.0 +8.5
WHTX LR LR
comp=Z,2µm,20.0s
WMOK Wichita Mounta 97.42 54 PFAKE 06 51 00.0 +6.6
WMOK LR LR
comp=Z,1µm,20.0s
DAWY Dawson 97.65 16 *e*P Pdif 06 50 54.1 +0.4
comp=Z,15nm,1.8s
DAWY LR LR
comp=Z,800nm,19.0s
EGAK Eagle 97.85 15 PFAKE 06 51 10.0 +16
EGAK LR LR
comp=Z,600nm,19.0s
BILL Bilibino 97.86 354 *i* P **P 06 50 53.7 -0.7**
BILL pmax pmax
comp=Z,6.0nm,1.6s
COLD Coldfoot 98.34 10 PFAKE 06 51 10.0 +13
COLD LR LR
comp=Z,500nm,21.0s
W34A Bridge Creek, 98.39 54 PFAKE 06 51 10.0 +12
W34A LR LR
comp=Z,500nm,19.0s
FYU Fort Yukon 98.59 12 PFAKE 06 51 10.0 +12
FYU LR LR
comp=Z,600nm,21.0s
LZH Lanzhou 98.78 306 *e*P Pdif 06 51 00.6 +1.0
LZH pP sP 06 51 11.6 -1.5
LZH sP pP 06 51 16.8 +7.2
LZH pmax pmax
comp=Z,15nm,1.0s
RSSD Black Hills 98.83 44 PFAKE 06 51 10.0 +10
RSSD LR LR
comp=Z,1µm,19.0s
U34A Anderson Ranch 99.15 53 PFAKE 06 51 10.0 +9.0
U34A LR LR
comp=Z,900nm,19.0s
TUL1 Leonard 100.13 55 PFAKE 06 51 20.0 +15
TUL1 LR LR
comp=Z,700nm,21.0s
YAK Yakutsk 100.58 337 PFAKE 06 51 20.0 +13
YAK LR LR
comp=Z,700nm,18.0s
WLAR White Oak Lake 101.02 58 PFAKE 06 51 20.0 +11
WLAR LR LR
comp=Z,1µm,22.0s
BGNE Belgrade 101.17 49 PFAKE 06 51 20.0 +10
BGNE LR LR
comp=Z,2µm,22.0s
HHAR Hobbs 101.62 55 PFAKE 06 51 20.0 +8.0
HHAR LR LR
comp=Z,1µm,20.0s
UALR University of 102.08 57 PFAKE 06 51 30.0 +16
UALR LR LR
comp=Z,800nm,18.0s
X301 Greenbrier Sit 102.25 57 PFAKE 06 51 30.0 +15
X301 LR LR
comp=Z,2µm,18.0s
X201 Greenbrier Sit 102.31 56 PFAKE 06 51 30.0 +15
X201 LR LR
comp=Z,800nm,19.0s
WHAR Wooly Hollow 102.36 56 PFAKE 06 51 30.0 +15
WHAR LR LR
comp=Z,1µm,18.0s
INK Inuvik 102.50 15 PFAKE 06 51 30.0 +15
INK LR LR
comp=Z,700nm,20.0s
SONA0 Songino Array 102.93 318 *e*Pdif **Pdif 06 51 16.2 -1.5**
SONM Songino Array 102.93 318 P **Pdif 06 51 16.2 -1.5**
comp=Z,0.7nm,0.8s,baz=123,slow=5.3,SNR=3.1
HELC Santa Helena 102.98 90 PFAKE 06 51 30.0 +11
HELC LR LR
comp=Z,4µm,18.0s
MDND Maddock 103.38 43 PFAKE 06 51 30.0 +10
MDND LR LR
comp=Z,2µm,19.0s
ROSC El Rosal 103.39 92 PFAKE 06 51 30.0 +9.1
ROSC LR LR
comp=Z,300nm,19.0s
MET Memphis--Engin 104.01 58 PFAKE 06 51 30.0 +7.4
MET LR LR
comp=Z,1µm,21.0s
YKA Yellowknife Ar 104.08 25 PKKPbc PKKPbc 07 07 12.4 -0.6
comp=Z,1.0nm,0.8s,baz=42,slow=3.0,SNR=12
PALK Pallekele 104.24 270 PFAKE 06 51 40.0 +16
PALK LR LR
comp=Z,900nm,20.0s
PBMO Poplar Bluff 104.37 56 PFAKE 06 51 40.0 +16
PBMO LR LR
comp=Z,900nm,20.0s
PVMO Portageville 104.74 56 PFAKE 06 51 40.0 +14
PVMO LR LR
comp=Z,1µm,18.0s
LSA Lhasa 105.36 296 PFAKE 06 55 50.0
LSA LR LR
comp=Z,900nm,18.0s
FFC Flin Flon 105.40 36 PFAKE 06 55 50.0
FFC LR LR
comp=Z,900nm,19.0s
SIUC Southern Illin 105.64 55 PFAKE 06 55 50.0
SIUC LR LR
comp=Z,1µm,18.0s
WVT Waverly 105.99 57 PFAKE 06 56 00.0
WVT LR LR
comp=Z,1µm,19.0s
TLY Talaya 106.31 320 PFAKE 06 56 00.0
TLY LR LR
comp=Z,500nm,19.0s
SPMN Marine on St. 106.38 47 PFAKE 06 56 00.0
SPMN LR LR
comp=Z,700nm,20.0s
ULM Lac du Bonnet 106.66 41 PFAKE 06 56 00.0
ULM LR LR
comp=Z,1µm,19.0s
MTDJ Mount Denham 106.72 78 PFAKE 06 56 00.0
MTDJ LR LR
comp=Z,2µm,18.0s
USIN University of 106.87 56 PFAKE 06 56 00.0
USIN LR LR
comp=Z,1µm,18.0s
SWET Sewanee 107.02 59 PFAKE 06 56 00.0
SWET LR LR
comp=Z,400nm,19.0s
TIGA Tifton 107.28 63 PFAKE 06 56 00.0
TIGA LR LR
comp=Z,2µm,18.0s
TIXI Tiksi 107.45 344 PFAKE 06 56 00.0
TIXI LR LR
comp=Z,800nm,19.0s
DWPF Disney Wildern 107.63 67 PFAKE 06 56 00.0
DWPF LR LR
comp=Z,900nm,22.0s
WCI Wyandotte Cave 107.96 56 PFAKE 06 56 00.0
WCI LR LR
comp=Z,900nm,21.0s
BLO Bloomington 108.17 55 PFAKE 06 56 00.0
BLO LR LR
comp=Z,600nm,20.0s
CPCT Cooper Cave 108.17 59 PFAKE 06 56 00.0
CPCT LR LR
comp=Z,800nm,20.0s
SFIN Lafayette 108.24 54 PFAKE 06 56 00.0
SFIN LR LR
comp=Z,800nm,19.0s
SDV Santo Domingo 108.52 90 PFAKE 06 56 00.0
SDV LR LR
comp=Z,2µm,21.0s
TKL Tuckaleechee C 108.81 59 PFAKE 06 56 00.0
TKL LR LR
comp=Z,1µm,20.0s
KMSC Kings Mountain 110.46 61 PFAKE 06 56 00.0
KMSC LR LR
comp=Z,1µm,18.0s
SDDR Presa de Saban 112.40 80 PFAKE 06 56 10.0
SDDR LR LR
comp=Z,800nm,18.0s
PTGA Pitinga 112.99 105 PFAKE 06 56 10.0
PTGA LR LR
comp=Z,1µm,20.0s
WMQ Urumqi 113.25 308 *e*PKP **PKiKP 06 55 59.1 +2.0**
WMQ LR LR
comp=Z,570nm,20.6s
WMQ LR LR
comp=Z,1µm,23.0s
WMQ LR LR
comp=Z,1µm,20.7s
BDFB Brasilia 113.50 125 PFAKE 06 56 10.0
BDFB LR LR
comp=Z,1µm,22.0s
GRTK Grand Turk 113.56 78 PFAKE 06 56 10.0
GRTK LR LR
comp=Z,700nm,22.0s
ALLY Alegheny Colle 113.60 54 PFAKE 06 56 10.0
ALLY LR LR
comp=Z,1µm,18.0s
SSPA Standing Stone 114.90 56 PFAKE 06 56 10.0 +10
SSPA LR LR
comp=Z,1µm,19.0s
SADO Sadowa 115.26 51 PFAKE 06 56 10.0 +9.2
SADO LR LR
comp=Z,2µm,18.0s
MPR Mayaguez 115.66 83 PFAKE 06 56 10.0 +7.7
MPR LR LR
comp=Z,2µm,22.0s
RES Resolute Bay 115.95 17 PFAKE 06 56 10.0 +8.7
RES LR LR
comp=Z,700nm,19.0s
SUR Sutherland 116.36 197 PFAKE 06 56 20.0 +16
SUR LR LR
comp=Z,900nm,19.0s
SJG San Juan 116.48 83 PFAKE 06 56 20.0 +16
SJG LR LR
comp=Z,2µm,20.0s
KSPA Keystone Colle 116.70 55 PFAKE 06 56 20.0 +16
KSPA LR LR
comp=Z,1µm,20.0s
PLVO Plevna 116.74 51 PFAKE 06 56 20.0 +16
PLVO LR LR
comp=Z,700nm,18.0s
HUMP Col San Antoni 116.75 83 PFAKE 06 56 20.0 +16
HUMP LR LR
comp=Z,1µm,20.0s
BRNJ Basking Ridge 117.33 57 PFAKE 06 56 20.0 +15
BRNJ LR LR
comp=Z,900nm,20.0s
STVI Saint Thomas 117.62 84 PFAKE 06 56 20.0 +14
STVI LR LR
comp=Z,1µm,22.0s
MK01 Makanchi Array 117.73 310 *e*PKPdf **PKPdf 06 56 04.5 -1.1**
MK31 Makanchi Array 117.75 310 *e*PKIKP **PKPdf 06 56 04.6 -1.0**
MK31 Makanchi Array 117.75 310 *e*PKPdf **PKPdf 06 56 04.5 -1.0**
MK32 Makanchi Array 117.75 310 *e*PKPdf **PKPdf 06 56 04.5 -1.1**
MKAR Makanchi Array 117.75 310 PKP **PKPdf 06 56 04.5 -1.1**
comp=Z,1.6nm,0.5s,baz=72,slow=4.0,SNR=21
MKAR Makanchi Array 117.75 310 *e*PKIKP **PKPdf 06 56 04.8 -0.8**
MKAR Makanchi Array 117.75 310 *e*PKPdf **PKPdf 06 56 04.8 -0.8**
ZAA0 Zalesovo Array 117.80 319 *e*PKPdf **PKPdf 06 56 04.1 -1.3**
ZALV Zalesovo Beam 117.80 319 PKP **PKPdf 06 56 04.0 -1.4**
comp=Z,1.3nm,0.5s,baz=180,slow=1.5,SNR=5.5
ZAA1 Zalesovo Array 117.80 319 *e*PKPdf **PKPdf 06 56 04.0 -1.4**
GRGR Grenville 117.85 91 PFAKE 06 56 20.0 +13
GRGR LR LR
comp=Z,2µm,18.0s
MAKZ Makanchi 117.96 310 *e*PKIKP **PKPdf 06 56 05.3 -0.7**
MAKZ MLR MLR
comp=Z,500nm,18.0s
MAKZ Makanchi 117.96 310 *e*PKPdf **PKPdf 06 56 05.3 -0.7**
MAKZ LR LR
comp=Z,500nm,18.0s
BOSA Boshof 118.60 202 PKP **PKPdf 06 56 08.2 +0.1**
comp=Z,6.6nm,0.9s,baz=140,slow=2.7,SNR=8.9
BOSA Boshof 118.60 202 *e*PKPdf **PKPdf 06 56 08.2 +0.1**
BOSA *e*PKPdf **PKiKP 06 56 09.6 +1.5**
SABA Saba 118.81 85 PFAKE 06 56 20.0 +12
SABA LR LR
comp=Z,3µm,18.0s
PDGK Podgornoye 118.82 306 PKIKP **PKPdf 06 56 06.0 -1.7**
PDGK pmax pmax
comp=Z,7.0nm,0.9s
NVS Novosibirsk 118.89 319 *i* PKIKP **PKPdf 06 56 06.4 -1.0**
SEUS St. Eustatius 118.98 85 PFAKE 06 56 20.0 +11
SEUS LR LR
comp=Z,2µm,20.0s
NRIK Noril'sk 119.00 336 PKP **PKPdf 06 56 06.1 -1.2**
comp=Z,3.2nm,0.8s,baz=68,slow=5.0,SNR=5.5
FRNY Flat Rock 119.09 52 PFAKE 06 56 20.0 +12
FRNY LR LR
comp=Z,1µm,18.0s
SMRT St. Maarten 119.13 85 PFAKE 06 56 20.0 +11
SMRT LR LR
comp=Z,2µm,18.0s
QUA2 Belchertown 119.35 55 PFAKE 06 56 20.0 +11
QUA2 LR LR
comp=Z,1µm,22.0s
FDF Fort de France 119.43 89 PFAKE 06 56 20.0 +10
FDF LR LR
comp=Z,3µm,18.0s
GDHS Morne Mazeau, 119.54 87 PFAKE 06 56 20.0 +10
GDHS LR LR
comp=Z,3µm,19.0s
HNH Hanover 119.74 54 PFAKE 06 56 20.0 +11
HNH LR LR
comp=Z,2µm,18.0s
ANWB Willy Bob 120.09 86 PFAKE 06 56 20.0 +9.1
ANWB LR LR
comp=Z,2µm,19.0s
FFD Franklin Falls 120.13 54 PFAKE 06 56 20.0 +10
FFD LR LR
comp=Z,2µm,19.0s
BCX Boston College 120.22 56 PFAKE 06 56 20.0 +10
BCX LR LR
comp=Z,2µm,18.0s
KSH Kashi 120.44 301 *e*PKP **PKPdf 06 56 12.1 +0.9**
KSH *es*PKP 06 56 26.4
KSH *e*PP **PP 06 57 43.2 +4.7**
KSH PKS **PKSdf 06 59 48.7 +0.8**
KSH SKS **SKSdf 07 03 19.4 -1.6**
KSH SKKS **SKKSac 07 04 31.7 -3.9**
KSH SS **SS 07 14 06.0 +0.2**
KSH AMB AMB
comp=Z,85nm,5.2s
KSH LR LR
comp=Z,380nm,9.4s
KSH LR LR
comp=Z,620nm,11.5s
KSH LR LR
comp=Z,410nm,8.0s
KURK Kurchatov 120.93 314 *c i*PKIKP **PKPdf 06 56 10.3 -1.2**
KURK pmax pmax
comp=Z,98nm,1.7s
KURK Kurchatov 120.93 314 *e*PKPdf **PKPdf 06 56 10.7 -0.8**
KURK *e*PKPdf **PKiKP 06 56 10.9 -0.8**
KURK LR LR
comp=Z,800nm,21.0s
KURBB Kurchatov Arra 120.97 314 PKP **PKPdf 06 56 10.9 -0.7**
comp=Z,6.3nm,0.8s,baz=104,slow=1.9,SNR=28
TKM2 Tokmak 2 121.50 305 PKIKP **PKPdf 06 56 11.1 -2.1**
TKM2 pmax pmax
comp=Z,10.0nm,1.2s
FRU Bishkek 122.19 304 *e*PKIKP **PKPdf 06 56 11.0 -3.3**
FRU pmax pmax
comp=Z,45nm,2.0s
AAK Ala-Archa 122.24 304 PKP **PKPdf 06 56 13.7 -0.9**
comp=Z,1.6nm,0.4s,baz=128,slow=4.2,SNR=6.8
AAK Ala-Archa 122.24 304 *e*PKIKP **PKPdf 06 56 13.7 -0.9**
AAK MLR MLR
comp=Z,901nm,19.0s
AAK Ala-Archa 122.24 304 *e*PKPdf **PKPdf 06 56 13.7 -0.9**
AAK LR LR
comp=Z,901nm,19.0s
MNAS Manas 123.65 304 PKIKP **PKPdf 06 56 16.1 -1.1**
MNAS pmax pmax
comp=Z,17nm,1.3s
KBL Kabul 124.60 294 *e*PKIKP **PKPdf 06 56 20.0 +0.6**
KBL MLR MLR
comp=Z,800nm,20.0s
KBL Kabul 124.60 294 *e*PKPdf **PKPdf 06 56 20.0 +0.6**
KBL LR LR
comp=Z,800nm,20.0s
KK31 Karatay Array 125.20 304 *i* PKIKP **PKPdf 06 56 19.0 -1.0**
KK31 pmax pmax
comp=Z,11nm,1.0s
KKAR Karatay Array 125.20 304 *e*PKIKP **PKPdf 06 56 19.4 -0.6**
KKAR Karatay Array 125.20 304 *e*PKPdf **PKPdf 06 56 19.4 -0.6**
VOSK Vostochnaya 125.87 316 *e*PKIKP **PKPdf 06 56 20.3 -0.7**
VOSK MLR MLR
comp=Z,900nm,19.0s
VOSK Vostochnaya 125.87 316 *e*PKPdf **PKPdf 06 56 20.3 -0.7**
VOSK LR LR
comp=Z,900nm,19.0s
BVA0 Borovoye Array 126.24 316 PKIKP **PKPdf 06 56 20.5 -1.2**
BVA0 pmax pmax
comp=Z,30nm,1.4s
BVAR Borovoye Array 126.24 316 PKP **PKPdf 06 56 21.5 -0.1**
comp=Z,7.7nm,0.8s,baz=90,slow=3.0,SNR=35
BRVK Borovoye 126.30 316 PKIKP **PKPdf 06 56 20.2 -1.6**
BRVK pmax pmax
comp=Z,25nm,1.2s
BRVK Borovoye 126.30 316 *e*PKPdf **PKPdf 06 56 21.4 -0.3**
BRVK LR LR
comp=Z,601nm,20.0s
ZRNK Zerenda 127.07 316 PKIKP **PKPdf 06 56 21.7 -1.6**
ZRNK pmax pmax
comp=Z,21nm,1.1s
ZRNK Zerenda 127.07 316 *e*PKPdf **PKPdf 06 56 22.4 -0.9**
ZRNK LR LR
comp=Z,1µm,18.0s
RCBR Riachuelo 128.83 127 PFAKE 06 56 40.0 +12
RCBR LR LR
comp=Z,900nm,18.0s
LSZ Lusaka 129.45 212 *e*PKIKP **PKPdf 06 56 31.3 +2.1**
LSZ MLR MLR
comp=Z,500nm,18.0s
LSZ Lusaka 129.45 212 *e*PKPdf **PKPdf 06 56 31.3 +2.1**
LSZ LR LR
comp=Z,500nm,18.0s
TSUM Tsumeb 129.76 198 PFAKE 06 56 40.0 +10
TSUM LR LR
comp=Z,700nm,18.0s
KBS Kingsbay 130.14 358 PFAKE 06 56 40.0 +12
KBS LR LR
comp=Z,600nm,21.0s
SFJD Kangerlussuaq 130.64 25 PFAKE 06 56 40.0 +10
SFJD LR LR
comp=Z,600nm,19.0s
SPITS Spitsbergen Ar 130.68 356 PKP **PKPdf 06 56 30.6 +1.1**
comp=Z,8.0nm,0.8s,baz=133,slow=12,SNR=3.5
SUMG Summit 131.42 15 *i* P **PKPdf 06 56 32.6 +1.1**
SUMG Summit 131.42 15 *e*PKIKP **PKPdf 06 56 32.6 +1.1**
SUMG Summit 131.42 15 PFAKE 06 56 40.0 +8.5
SUMG LR LR
comp=Z,598nm,20.0s
UOSS Minazif 132.79 278 PFAKE 06 56 50.0 +15
UOSS LR LR
comp=Z,2µm,21.0s
ARU Arti 132.80 321 PKP **PKPdf 06 56 34.2 +0.2**
comp=Z,3.9nm,0.4s,baz=134,slow=2.4,SNR=8.2
ARU Arti 132.80 321 *i* PKIKP **PKPdf 06 56 33.6 -0.4**
ARU 06 58 54.5
ARU Arti 132.80 321 *e*PKPdf **PKPdf 06 56 33.8 -0.3**
ARU LR LR
comp=Z,1µm,19.0s
AB31 Akbulak array 132.86 311 *i* PKIKP **PKPdf 06 56 33.2 -1.1**
AB31 pmax pmax
comp=Z,6.0nm,1.1s
ABKAR Akbulak array 132.86 311 *e*PKPdf **PKPdf 06 56 33.8 -0.5**
SOKR Solikamsk 132.99 326 *c i*PKIKP **PKPdf 06 56 32.5 -1.7**
SOKR pmax pmax
comp=Z,28nm,1.5s
GEYT Alibeck 133.89 296 PKP **PKPdf 06 56 36.9 +0.2**
comp=Z,2.6nm,0.3s,baz=270,slow=1.5,SNR=5.1
AKTO Aktyubinsk 134.01 313 PKP **PKPdf 06 56 36.3 -0.2**
comp=Z,3.1nm,0.7s,baz=300,slow=3.8,SNR=9.5
AKTO Aktyubinsk 134.01 313 PKIKP **PKPdf 06 56 34.9 -1.6**
AKTO pmax pmax
comp=Z,12nm,0.9s
KMBO Kilima Mbogo 135.43 233 PFAKE 06 56 50.0 +9.4
KMBO LR LR
comp=Z,800nm,20.0s
SCO Scoresbysund 136.45 12 *i* P **PKPdf 06 56 42.8 +2.4**
SCO Scoresbysund 136.45 12 *e*PKIKP **PKPdf 06 56 42.8 +2.4**
ARA0 ARCESS Array S 137.71 348 *e*PKPdf **PKPdf 06 56 42.9 +0.1**
ARCES ARCESS Array B 137.71 348 PKP **PKPdf 06 56 44.0 +1.2**
comp=Z,8.3nm,0.8s,baz=48,slow=1.3,SNR=13
H10S3 ASCENSION HYDR 138.32 153 T T 09 32 11.7
baz=204,slow=75,SNR=73
H10S2 ASCENSION HYDR 138.32 153 T T 09 32 11.9
baz=204,slow=75,SNR=113
H10S1 ASCENSION HYDR 138.33 153 T T 09 32 13.4
baz=204,slow=75,SNR=89
H10N3 ASCENSION HYDR 139.39 153 T T 09 33 36.2
baz=203,slow=75,SNR=69
H10N1 ASCENSION HYDR 139.40 153 T T 09 33 31.9
baz=203,slow=75,SNR=74
H10N2 ASCENSION HYDR 139.41 153 T T 09 33 34.1
baz=203,slow=75,SNR=61
KLMR Klimovskoe 140.21 333 *e*PKIKP **PKPdf 06 56 44.5 -3.1**
KLMR pmax pmax
comp=Z,41nm,1.4s
AKT Akhty 141.97 301 *e*P **Pdif 06 54 03.6 -7.9**
AKT pmax pmax
comp=Z,11nm,0.1s
VRH Novokhopyorsk 143.84 318 *e*PKIKP **PKPdf 06 56 54.4 0.0**
VRH pmax pmax
comp=Z,10.0nm,0.6s
MOS Moscow 143.92 327 *e*PKIKP PKPab 06 56 51.4 -0.2
MOS pmax pmax
comp=Z,66nm,0.8s
TBLG Delisi 144.18 302 P PKPbc 06 56 53.6 +0.1
TBLG Delisi 144.18 302 PKIKP **PKPab 06 56 53.6 +0.5**
GUDG Gudauri 144.28 303 P PKPbc 06 56 54.3 +0.2
GNI Garni 144.33 299 *c i*PKIKP **PKPab 06 56 54.2 +0.3**
GNI Garni 144.33 299 *e*PKPdf PKPbc 06 56 55.1 +0.8
FIA0 FINESS Array S 144.41 341 *e*PKIKP **PKPab 06 56 52.9 -0.4**
FIA0 FINESS Array S 144.41 341 *e*PKPdf **PKPab 06 56 52.9 -0.4**
FINES FINESS Array B 144.41 341 PKP **PKPab 06 56 52.9 -0.4**
comp=Z,31nm,0.8s,baz=90,slow=3.8,SNR=55
ZEI Tsey 144.66 304 *i* PKHKP PKPpre 06 56 52.7
ZEI pmax pmax
comp=Z,114nm,0.9s
NCK Nalchik 144.76 305 *e*PKIKP **PKPdf 06 56 56.4 +0.1**
OBN Obninsk 144.77 327 *c i*PKIKP **PKPab 06 56 54.6 -0.2**

OBN pmax pmax
comp=Z,111nm,1.1s
OBN Obninsk 144.77 327 *e*PKPdf **PKPab 06 56 54.8 0.0**
GOF Gofitskoye 144.84 308⇑*i*PKIKP **PKPab 06 56 55.6 +0.2**
GOF pmax pmax
comp=Z,130nm,1.0s
ONI Oni 145.01 303 P **PKPdf 06 56 56.8 0.0**
ONI Oni 145.01 303 PKIKP **PKPdf 06 56 56.8 0.0**
CLDR Caldiran 145.04 297 *e*P **PKPdf 06 56 57.5 +0.2**
BGD Bogdanovka 145.09 301 P **PKPdf 06 56 57.6 +0.4**
EAK Akyaka 145.15 300 *i*P **PKPdf 06 56 57.7 +0.5**
AKH Akhalkalaki 145.15 301 *e*P **PKPdf 06 56 57.8 +0.5**
AKH Akhalkalaki 145.15 301⇑*i*P **PKPdf 06 56 57.7 +0.5**
AKH Akhalkalaki 145.15 301 P **PKPdf 06 56 57.6 +0.4**
AKH Akhalkalaki 145.15 301 PKIKP **PKPdf 06 56 57.6 +0.4**
KBZ Khabaz 145.22 305 PKPbc **PKPbc 06 56 56.7 0.0**
comp=Z,24nm,0.9s,baz=119,slow=2.4,SNR=46
HKR Hakkari 145.25 295 *e*P **PKPbc 06 56 57.6 +0.3**
HAKT HAKKARI 145.28 295 *i*P **PKPdf 06 56 58.0 +0.4**
VSR Storozhevoye 145.30 319 *e*PKIKP **PKPbc 06 56 56.1 -0.7**
VSR pmax pmax
comp=Z,120nm,1.0s
KIV Kislovodsk 145.32 306 *e*P **PKPbc 06 56 57.0 -0.2**
KIV Kislovodsk 145.32 306 *e*PKIKP **PKPbc 06 56 56.9 -0.3**
KIV pmax pmax
comp=Z,94nm,1.1s
KIV Kislovodsk 145.32 306 *e*PKPbc **PKPbc 06 56 56.6 -0.6**
CUKT Cukurca 145.36 294 *e*P **PKPbc 06 56 57.7 +0.1**
NEY Neytrino 145.43 305*c i*PKIKP **PKPab 06 56 58.1 +0.2**
VANB Van 145.48 296 *e*P **PKPbc 06 56 58.2 +0.3**
KARS Kars 145.55 300 *e*P **PKPab 06 56 58.8 +0.4**
AGRB Hanur-Agry 145.72 298 *e*P **PKPdf 06 56 58.7 +0.4**
CHVG Ch'k'valeri 145.99 304 *e*P **PKPab 06 57 00.5 +0.7**
CHVG Ch'k'valeri 145.99 304 P **PKPbc 06 56 59.6 +0.4**
SENK Senkaya-Erzuru 146.11 300 *e*P **PKPab 06 57 00.7 +0.1**
SIRT Sirnak 146.28 295 *e*P **PKPbc 06 57 00.5 +0.1**
DAGI Agillar 146.37 301 *i*P **PKPbc 06 57 01.1 +0.6**
HOMI Horasan 146.51 299 *i*P **PKPbc 06 57 01.6 +0.5**
DBOC Borcka 146.52 302 *i*P **PKPab 06 57 01.7 -0.3**
DDEM Demirkent 146.52 301 *i*P **PKPbc 06 57 02.2 +0.1**
VSU Vasula 146.57 337*c i*PKP2 **PKPbc 06 56 59.9 -0.5**
ERZM Erzurum 146.94 299 *i*P **PKPab 06 57 03.5 -0.3**
EZM Erzurum 146.94 299 *e*P **PKPbc 06 57 02.8 +0.3**
BNGL BINGOL 147.20 297 *i*P **PKPab 06 57 04.7 -0.2**
SVAN Silvan-Diyarba 147.23 296 *e*P **PKPbc 06 57 03.8 +0.8**
SOC Sochi 147.50 306*c i*PKP2 **PKPbc 06 57 03.0 -0.5**
SOC *e* 07 00 37.2
SOC *e*PPP PPP 07 03 42.9
SOC pmax pmax
comp=Z,87nm,0.9s
BNGB Bing¶ll 147.56 297 *e*P **PKPdf 06 57 02.5 +1.1**
NC303 NORSAR Array S 147.60 352 *e*PKPbc **PKPbc 06 57 02.5 -0.8**
NC204 NORSAR Array S 147.62 353 *e*PKPbc **PKPbc 06 57 03.0 -0.4**
YEDI Yedisu-Bingol 147.62 298 *e*P **PKPbc 06 57 05.0 +0.8**
NC405 NORSAR Array S 147.67 352 *e*PKPbc **PKPbc 06 57 03.1 -0.4**
NB2 NORSAR Subarra147.80 353 PKP **PKPbc 06 57 03.1 -0.7**
comp=Z,52nm,0.9s,baz=3,slow=2.9
NB2 NORSAR Subarra147.80 353 PKP **PKPbc 06 57 03.1 -0.7**
baz=13,slow=2.9
NB2 NORSAR Subarra147.80 353 PKP2 **PKPbc 06 57 03.0 -0.7**
NB200 NORSAR Array S 147.80 353 *e*PKPbc **PKPbc 06 57 03.2 -0.7**
NOA NORSAR Array B 147.80 353 PKPbc **PKPbc 06 57 03.2 -0.7**
comp=Z,17nm,0.9s,baz=6.3,slow=4.0,SNR=56
NBO02 NORSAR Array S 147.83 353 *e*PKPbc **PKPdf 06 57 02.4 +1.5**
NBO00 NORSAR Array S 147.85 353 *e*PKPbc **PKPbc 06 57 03.2 -0.8**
KTUT Trabzon 147.99 301 *e*P **PKPbc 06 57 05.3 +0.4**
NAO01 NORSAR Array S 148.03 353 *e*PKPbc **PKPbc 06 57 03.3 -1.1**
NC602 NORSAR Array S 148.08 353 *e*PKPbc **PKPbc 06 57 03.3 -1.1**
DYBB Diyarbakir 148.09 296 *e*P **PKPbc 06 57 06.1 +0.7**
TNCL Tunceli-Merkez 148.43 298 *i*P **PKPbc 06 57 07.9 +1.6**
KELT Kelkit 148.51 300 *i*P **PKPbc 06 57 07.6 +1.0**
PTK Pertek 148.57 297 *e*P **PKPbc 06 57 08.2 +1.4**
SVRC Sivrice-ELAZID 148.69 296 *e*P **PKPbc 06 57 08.1 +1.0**
ANN Anapa 148.75 309 *i*PKP2 **PKPbc 06 57 06.3 -0.4**
ANN *e* 07 00 36.5
ANN *e*SS SS 07 19 40.0 -5.4
ANN pmax pmax
comp=Z,241nm,1.4s
IZAR Zarasai 148.81 334 *e*P **PKPbc 06 57 06.5 0.0**
IZAR IAmb IAmb 06 57 08.2
comp=Z,49nm,0.9s
IDID Didziasalis 148.95 334 *e*P **PKPbc 06 57 07.0 +0.1**
IDID IAmb IAmb 06 57 08.6
comp=Z,39nm,1.1s
ISAL Salakas 148.99 334 *e*P **PKPbc 06 57 07.1 +0.1**
ISAL IAmb IAmb 06 57 08.7
comp=Z,30nm,1.0s
REFA Refahiye_ERZ¯ 148.99 299 *i*P **PKPbc 06 57 08.9 +1.1**
MICGM Minsk 149.07 332⇑*e*P **PKPbc 06 57 06.0 -1.2**
MICGM PM 06 57 08.0
comp=Z,0.4nm,1.5s
MNK Minsk 149.07 332⇑*e*PKP2 **PKPbc 06 57 06.0 -1.2**
MNK pmax pmax
comp=Z,350nm,1.5s
KSRV Kasrt alli 149.10 292 *i*P **PKPbc 06 57 09.3 +1.4**
GRSN GIRESUNGRSN 149.12 302 *i*P **PKPbc 06 57 07.7 -0.2**
KEMA Kemaliye 149.22 298 *i*P **PKPbc 06 57 09.3 +1.0**
NACGM Naroch 149.23 333 *e*P **PKPbc 06 57 07.0 -0.6**
NACGM PM 06 57 09.0
comp=Z,0.3nm,0.6s
SUSE Susehri 149.30 300 *i*P **PKPbc 06 57 09.7 +1.2**
KONO Kongsberg 149.33 353⇓*i*PKP2 **PKPbc 06 57 07.6 -0.1**
KONO Kongsberg 149.33 353 *e*PKPbc **PKPbc 06 57 07.2 -0.6**
ORDU Ordu-Boztepe 149.41 302 *i*P **PKPbc 06 57 09.3 +0.7**
CUKAN kangal_SIVAS 150.00 299 *i*P **PKPbc 06 57 11.5 +1.2**
DARE Darende-Malaty 150.09 297 *e*P **PKPbc 06 57 11.4 +1.0**
ERBA Erbaa 150.29 302 *i*P **PKPbc 06 57 11.5 +0.7**
GAZ Gaziantep 150.46 294 *e*P **PKPbc 06 57 12.1 +0.7**
ZALF Zalf 150.48 286 *i*P **PKPbc 06 57 12.2 +0.8**
ROOS tl_alroos 150.54 288 *i*P **PKPbc 06 57 12.8 +1.2**
KMRS Kahramanmaras 150.68 295 *e*P **PKPbc 06 57 12.4 +0.6**
HCB Kahramanmara¯ 150.69 295 *i*P **PKPbc 06 57 12.7 +0.9**
KVT Kavak 150.73 303 *e*P **PKPbc 06 57 12.5 +0.6**
KAMA Osmaniye 150.90 295 *i*P **PKPbc 06 57 12.9 +0.5**
CUSAR Sarkisla-SIVAS 150.92 299 *i*P **PKPbc 06 57 13.1 +0.6**
SIM Simferopol' 150.92 311 *e*PKIKP **PKPbc 06 57 12.8 +0.7**
SIM pmax pmax
comp=Z,77nm,1.0s
SARI SarD1z-Kayseri 150.94 297 *e*P **PKPbc 06 57 13.2 +0.6**
AKASG Malin Array Be 150.95 325 PKPbc **PKPbc 06 57 11.3 -0.6**
comp=Z,46nm,0.9s,baz=45,slow=3.0,SNR=101
AKBB Malin Array Si 150.95 325 *e*PKIKP **PKPbc 06 57 11.5 -0.4**
AKBB Malin Array Si 150.95 325 *e*PKPbc **PKPbc 06 57 11.5 -0.4**
KIEV Kiev 150.96 325*c i*PKIKP **PKPbc 06 57 11.2 -0.7**
SALA Sala 150.97 285 *i*P **PKPbc 06 57 14.0 +1.2**
AK11 Malin Array Si 150.99 325 *e*PKPbc **PKPbc 06 57 11.5 -0.5**
ANDN Andirin 151.11 295 *i*P **PKPbc 06 57 13.9 +1.0**
SNOP Sinop 151.11 305 *e*P **PKPbc 06 57 12.6 0.0**
MARH Ras Al Marh 151.21 288 *i*P **PKPbc 06 57 13.8 +0.3**
TOTH TOTAH 151.25 287 *i*P **PKPbc 06 57 14.2 +1.0**
HAWK Haweek 151.27 289 *i*P **PKPbc 06 57 14.1 +0.8**
SUW Suwalki 151.29 335 *e*PKP **PKPbc 06 57 12.6 0.0**
SUW Suwalki 151.29 335 *e*PKIKP **PKPbc 06 57 12.6 0.0**
BNN Bunyan 151.32 298 *e*P **PKPbc 06 57 13.5 +0.2**
BIDA Albida 151.32 290 *i*P **PKPbc 06 57 14.1 +0.6**
TAHT Tahtakopru-Hat 151.35 293 *e*P **PKPbc 06 57 14.0 +0.6**
BOYT Boyabat 151.49 304 *i*P **PKPbc 06 57 14.9 +1.4**
KOZT Kozan 151.53 295 *e*P **PKPbc 06 57 13.9 +0.1**
TCHB Talchebab 151.62 285 *i*P **PKPbc 06 57 15.1 +1.0**
CEYT Ceyhan 151.65 294 *e*P **PKPbc 06 57 14.7 +0.7**
BRBR Barbar 151.65 287 *i*P **PKPbc 06 57 14.9 +0.5**
COAL Corum-Alaca 151.70 301 *i*P **PKPbc 06 57 14.4 +0.3**
YURE YUREGIR 151.76 294 *i*P **PKPbc 06 57 15.6 +1.3**
YAHY KAYSERI_Yahyal 151.81 297 *i*P **PKPbc 06 57 15.3 +0.8**
KLNR Kaliningrad 151.83 339*c i*PKIKP **PKPbc 06 57 13.7 -0.1**
CORM Corum 151.99 301 *e*P **PKPbc 06 57 15.5 +0.6**
KARA Karaisali 152.17 295 *e*P **PKPbc 06 57 15.2 0.0**
HRFI Mount Harif 152.21 279 *e*P **PKPbc 06 57 16.1 +0.5**
TOS Tosya 152.23 303 *e*P **PKPbc 06 57 15.2 -0.2**
EIL Elat 152.24 279 *e*P **PKPbc 06 57 16.4 +0.9**
NIG Nigde 152.40 297 *e*P **PKPbc 06 57 16.7 +0.7**
MUD Monsted U'grnd 152.52 353 *i*P **PKPbc 06 57 15.2 -0.1**
comp=Z,83nm,1.4s
MUD Monsted U'grnd 152.52 353 *i*PKIKP **PKPbc 06 57 15.2 -0.1**
MUD pmax pmax
comp=Z,83nm,1.4s
CANT Cankiri 152.63 303 *e*P **PKPbc 06 57 16.4 +0.2**
MERS Mersin 152.64 294 *e*P **PKPbc 06 57 16.3 0.0**
GULA Gulagac 152.65 297 *e*P **PKPbc 06 57 16.9 +0.5**
COP Copenhagen 152.79 348 *i*P **PKPbc 06 57 15.8 -0.1**
COP Copenhagen 152.79 348 *i*PKIKP **PKPbc 06 57 15.8 -0.1**

BSD Bornholm Skovb 152.83 345⇑*i*P **PKPbc 06 57 15.6 -0.4**
comp=Z,37nm,1.1s
BSD Bornholm Skovb 152.83 345⇑*i*PKIKP **PKPbc 06 57 15.6 -0.4**
BSD pmax pmax
comp=Z,37nm,1.1s
BR101 Keskin Array S 152.83 301 *e*PKPbc **PKPbc 06 57 16.4 -0.4**
BR101 *e*PKPab **PKPab 06 57 26.8 -1.1**
BR131 Keskin Array S 152.83 301 *e*PKPbc **PKPbc 06 57 14.4 -2.3**
BRTR Keskin Array B 152.83 301 PKPbc **PKPbc 06 57 16.4 -0.4**
comp=Z,18nm,1.1s,baz=129,slow=2.0,SNR=15
BRTR PKPab **PKPab 06 57 26.8 -1.1**
comp=Z,7.8nm,0.7s,baz=104,slow=3.4,SNR=12
KZIT Kziot 152.85 281 *e*P **PKPbc 06 57 16.9 0.0**
KAMT Kaman 152.85 300 *e*P **PKPbc 06 57 16.5 -0.3**
SORM Soroca 152.92 321⇓*i*P **PKPbc 06 57 16.5 0.0**
SORM Soroca 152.92 321⇓⇓PKIKP **PKPbc 06 57 16.5 0.0**
KIZK Mersin 152.98 293 *i*P **PKPbc 06 57 18.0 +0.9**
LLD Lille Linde 153.16 348 *i*P **PKPbc 06 57 17.0 +0.3**
comp=Z,43nm,0.8s
LLD Lille Linde 153.16 348 *i*PKIKP **PKPbc 06 57 17.0 +0.3**
LLD pmax pmax
comp=Z,43nm,0.8s
SULT Sultanhani-AKS 153.23 297 *e*P **PKPbc 06 57 15.9 -1.7**
KIS Kishinev 153.29 318 *e*PKP **PKPbc 06 57 19.0 +1.7**
KIS Kishinev 153.29 318 *e*PKIKP **PKPbc 06 57 19.0 +1.7**
KIS *e* 06 57 25.0
KIS *e* 07 01 02.0
KIS *e* 07 04 40.0
AFSR Af˙ar-Bala (A 153.32 300 *e*P **PKPbc 06 57 17.8 0.0**
BR231 Keskin MP Arra 153.45 301 *e*PKPbc **PKPbc 06 57 17.1 -1.0**
LFK Lefkose 153.59 291 *e*P **PKPbc 06 57 18.4 0.0**
CSS Mathiatis 153.78 290 *e*PKPbc **PKPbc 06 57 18.7 -0.1**
CSS *e*PKPab **PKPab 06 57 30.9 -1.0**
CSS LR LR
comp=Z,200nm,21.0s
LVV L'vov 154.04 328 *e*PKIKP **PKPbc 06 57 18.4 -0.5**
LADK Ladik-KONYA 154.12 298 *e*P **PKPbc 06 57 18.4 -1.2**
LEF Lefka 154.13 291 *e*P **PKPbc 06 57 20.0 +0.5**
KONT Konya--Tatoy 154.17 297 *e*P **PKPbc 06 57 18.7 -0.9**
TLCR 154.21 315⇑*i*P **PKPab 06 57 27.3 -6.0**
TLCR 154.21 315⇑⇑PKIKP **PKPbc 06 57 27.3 -6.0**
KDHN Kadinhani 154.25 299 *i*P **PKPbc 06 57 19.9 0.0**
KIZT Kizilcal 154.35 299 *e*P **PKPbc 06 57 20.4 +0.3**
MDUB Mudurnu 154.45 303 *e*P **PKPbc 06 57 19.3 -0.9**
CFR Carcaliu 154.63 316⇑*i*P **PKPab 06 57 28.0 -7.1**
CFR Carcaliu 154.63 316⇑⇑PKIKP **PKPab 06 57 28.0 -7.1**
KWP Kalwaria Pacla 154.78 329 *e*PKP **PKPdf 06 57 12.1 +0.3**
KWP *e* 06 57 35.5
KWP Kalwaria Pacla 154.78 329 *e*PKIKP **PKPdf 06 57 12.1 +0.3**
KWP *e* 06 57 35.5
TESR Tescani 154.80 319⇑*i*P **PKPab 06 57 32.9 -2.9**
TIRR Tirgusor 154.81 314⇑*i*P **PKPbc 06 57 18.8 -1.9**
TIRR Tirgusor 154.81 314⇑⇑PKIKP **PKPbc 06 57 18.8 -1.9**
TIRR Tirgusor 154.81 314 *e*PKPbc **PKPbc 06 57 21.1 +0.4**
TIRR *e*PKPab **PKPab 06 57 34.7 -1.2**
BUR08 Bucovina Ar. S 154.91 323 *e*PKPbc **PKPbc 06 57 22.2 +1.2**
BUR08 *e*PKPab **PKPab 06 57 35.9 -0.5**
BURAR Bucovina Array 154.92 323⇑*i*P **PKPbc 06 57 19.6 -1.4**
BURAR Bucovina Array 154.92 323⇑⇑PKIKP **PKPbc 06 57 19.6 -1.4**
TLB Topalu 154.99 314⇑*i*P **PKPbc 06 57 22.1 +1.1**
TLB Topalu 154.99 314⇑⇑PKIKP **PKPbc 06 57 22.1 +1.1**
PLOR Plostina 155.17 318⇑*i*P **PKPab 06 57 37.6 +0.2**
PLOR Plostina 155.17 318⇑⇑PKP2 **PKPab 06 57 37.6 +0.2**
KOLS Kolonicke sedl 155.48 328 *e*PKIKP **PKPdf 06 57 12.9 +0.1**
KOLS *e* 06 57 21.6
KOLS Kolonicke sedl 155.48 328 *e*PKP **PKPdf 06 57 12.9 +0.1**
KOLS *e* 06 57 21.6
KOLS *e* 06 57 38.7
OJC Ojcow 155.56 333 *e*PKP **PKPdf 06 57 12.3 -0.6**
OJC Ojcow 155.56 333 *e*PKIKP **PKPdf 06 57 12.3 -0.6**
OJC Ojcow 155.56 333 *e*PKPdf **PKPdf 06 57 12.8 -0.1**
OJC *e*PKPbc **PKPbc 06 57 22.1 -0.2**
OJC *e*PKPab **PKPab 06 57 38.5 -0.4**
STHS Stebnicka Huta 155.59 330 *e* PKPab 06 57 27.3 -12
STHS Stebnicka Huta 155.59 330 *e*PKP **PKPab 06 57 39.6 +0.6**
MLR Muntele Rosu 155.78 318⇓*i*P PKPab 06 57 27.9 -12
MLR Muntele Rosu 155.78 318 *e*PKP2 **PKPab 06 57 39.8 -0.4**
MLR Muntele Rosu 155.78 318 *e*PKPab **PKPab 06 57 39.8 -0.4**
DOPR Dopca 155.83 320⇓*i*P **PKPab 06 57 40.4 +0.2**
CRVS Cervenica-Dubn 155.87 329 *e*PKIKP **PKPdf 06 57 13.1 -0.3**
CRVS *e* 06 57 28.1
CRVS *e* 06 57 39.7
CRVS Cervenica-Dubn 155.87 329 *e*PKP **PKPdf 06 57 13.1 -0.3**
CRVS *e* 06 57 28.1
CRVS *e* 06 57 39.7
NIE Niedzica 155.99 332 *e*PKP **PKPdf 06 57 14.3 +0.8**
NIE Niedzica 155.99 332 *e*PKIKP **PKPdf 06 57 14.4 +0.8**
PRD Provadia 156.05 312 *i*P **PKPab 06 57 42.4 +1.2**
KSP Ksiaz 156.28 339 *e*PKP **PKPdf 06 57 13.7 -0.1**
KSP *e* 06 57 41.7
KSP Ksiaz 156.28 339 *e*PKIKP **PKPdf 06 57 13.7 -0.1**
KSP *e* 06 57 41.7
VOIR 156.33 319⇓*i*P **PKPab 06 57 42.1 -0.4**
VOIR 156.33 319⇓⇓PKP2 **PKPab 06 57 42.1 -0.4**
CWF Charnwood Fore 156.38 7 *e*PKPab **PKPab 06 57 41.5 -0.7**
LANS Liptovska Anna 156.54 332 *e*PKP2 **PKPab 06 57 43.2 +0.1**
LANS Liptovska Anna 156.54 332 *e*PKP **PKPab 06 57 43.2 +0.1**
ARR Arges 156.61 319⇑*i*P **PKPab 06 57 44.7 +1.0**
KECS Kecovo 156.62 330 *e*PKP2 **PKPab 06 57 43.0 -0.5**
KECS Kecovo 156.62 330 *e*PKP **PKPab 06 57 43.0 -0.5**
UPC Upice 156.66 339 *e*PKPAB **PKPab 06 57 43.9 +0.3**
UPC *e*PP **PP 07 01 17.4 -3.9**
UPC Upice 156.66 339 *e*PKP2 **PKPab 06 57 43.9 +0.3**
UPC *e* 07 01 17.4
DPC Dobruska-Polom 156.70 338 *e*PKPDF **PKPdf 06 57 14.8 +0.3**
DPC *ex* x 06 57 25.0
DPC *e*PKPAB **PKPab 06 57 44.1 +0.3**
DPC *ex* x 06 57 50.8
DPC *ex* x 06 57 54.5
DPC Dobruska-Polom 156.70 338 *e*PKIKP **PKPdf 06 57 14.8 +0.3**
DPC *e* 06 57 25.0
MORC Moravsky Berou 156.77 336⇑*i*P PKPdf 06 57 25.2 +11
MORC Moravsky Berou 156.77 336 *e*PKIKP **PKPdf 06 57 14.2 -0.4**
MORC Moravsky Berou 156.77 336 *e*PKPdf **PKPdf 06 57 14.2 -0.4**
MORC *e*PKPab **PKPab 06 57 43.9 -0.3**
CLL Collm 156.79 344 *e*PKPdf **PKPdf 06 57 15.0 +0.6**
CLL *e* 06 57 25.0
CLL *e*PKPdiff PKPab 06 57 32.0 -12
comp=Z,15nm,1.2s
CLL ⇓⇓*i*PKPab PKPab 06 57 43.2 -0.8
comp=Z,22nm,1.1s
CLL *ep*PKPab **pPKPab 06 57 53.0 -1.0**
CLL Collm 156.79 344⇓*e*PKIKP **PKPdf 06 57 15.0 +0.6**
BRG Berggiesshubel 156.94 342 *e*PKP **PKPdf 06 57 14.1 -0.6**
comp=Z,26nm,1.8s
BRG *i* 06 57 44.3
comp=Z,47nm,1.6s
BRG Berggiesshubel 156.94 342 *e*PKP2 **PKPab 06 57 40.7 -4.1**
BRG pmax pmax
comp=Z,26nm,1.8s
LOT Lotru 157.05 320 *e*P **PKPdf 06 57 16.9 +1.8**
PVCC Panska Ves 157.08 341 *e*PKPAB **PKPab 06 57 45.9 +0.5**
PVCC *e*PP **PP 07 01 21.0 -2.6**
PVCC Panska Ves 157.08 341 *e*PKP2 **PKPab 06 57 45.9 +0.5**
PVCC *e* 07 01 21.0
PSZ Piszkesteto 157.30 330⇑*i*P **PKPab 06 57 46.3 -0.2**
PSZ Piszkesteto 157.30 330 *e*PKIKP **PKPdf 06 57 15.8 +0.5**
PSZ Piszkesteto 157.30 330 *e*PKPdf **PKPdf 06 57 15.8 +0.5**
PSZ *e*PKPab **PKPab 06 57 46.4 -0.2**
PSZ Piszkesteto 157.30 330⇓*e*PKPdf **PKPdf 06 57 15.2 -0.1**
PSZ ⇓⇓*ex* x 06 57 46.1
VYHS Vyhne 157.31 332 *e*PKIKP **PKPdf 06 57 16.0 +0.8**
VYHS Vyhne 157.31 332 *e*PKP **PKPdf 06 57 16.0 +0.8**
VYHS *e* 06 57 46.0
VRAC Vranov 157.50 336⇑*i*P **PKPab 06 57 47.0 -0.2**
VRAC Vranov 157.50 336⇑⇑PKP2 **PKPab 06 57 47.0 -0.2**
GOPC GO Pecny, Ondr 157.56 340 *e*PKPAB **PKPab 06 57 47.6 +0.1**
GOPC GO Pecny, Ondr 157.56 340 *e*PKP2 **PKPab 06 57 47.6 +0.1**
PRU Pruhonice 157.57 340 *e*PKPAB **PKPab 06 57 47.5 0.0**
PRU *e*PP **PP 07 01 24.0 -2.3**
PRU Pruhonice 157.57 340 *e*PKP2 **PKPab 06 57 47.5 0.0**
PRU *e* 07 01 24.0
NKC Novy Kostel 157.91 344 *e*PKPAB **PKPab 06 57 48.2 -0.8**
NKC Novy Kostel 157.91 344 *e*PKP2 **PKPab 06 57 48.2 -0.8**
BZS Buzias 158.11 323⇓*i*P **PKPab 06 57 47.2 -2.8**
BZS Buzias 158.11 323⇓⇓PKP2 **PKPab 06 57 47.2 -2.8**
MPEP Malo Peshtene 158.28 316 *i*P **PKPab 06 57 51.6 +0.8**
PGB Panagyurishte 158.44 313 *i*P **PKPab 06 57 52.1 +0.4**
MDVR Moldovita 158.60 321⇓*i*P **PKPab 06 57 52.0 -0.2**
KHC Kasperske Hory 158.62 341 *e*PKPDF **PKPdf 06 57 16.9 0.0**

KHC *ex* x 06 57 28.5
KHC *e*PKPAB **PKPab 06 57 52.3 +0.2**
KHC *ep*PKP pPKP 06 57 57.5
KHC *e*PP **PP 07 01 28.8 -3.3**
KHC Kasperske Hory 158.62 341 *e*PKIKP **PKPdf 06 57 16.7 -0.2**
KHC *e* 06 57 52.0
KHC Kasperske Hory 158.62 341 *e*PKPdf **PKPdf 06 57 16.7 -0.2**
KHC *e*PKPab **PKPab 06 57 52.0 -0.1**
SNF Seneffe 158.80 358 PKPab **PKPab 06 57 52.7 0.0**
GERES GERESS Array B 158.84 340 PKP **PKPdf 06 57 15.7 -1.5**
comp=Z,0.6nm,0.6s,baz=221,slow=5.3,SNR=7.8
BCLA Clavier 158.84 356 PKPab **PKPab 06 57 52.7 -0.2**
GEA0 GERESS Array S 158.85 340 *e*PKPdf **PKPdf 06 57 16.4 -0.8**
GEA0 *e*PKPab **PKPab 06 57 52.7 -0.5**
CONA Conrad Observa 158.93 335 *i*PKPab **PKPab 06 57 53.8 +0.3**
comp=Z,41nm,1.5s,SNR=7.3
VTS Vitosha 159.02 315⇓⇓*i*P **PKPab 06 57 54.2 0.0**
VTS Vitosha 159.02 315 *e*PKP2 **PKPab 06 57 54.3 0.0**
VTS Vitosha 159.02 315 *i*P **PKPab 06 57 54.8 +0.5**
VTS Vitosha 159.02 315 *e*PKPab **PKPab 06 57 54.3 0.0**
DOU Dourbes 159.20 357 PKPab **PKPab 06 57 53.7 -0.8**
KKB Krupnik 159.48 313 *i*P **PKPab 06 57 56.2 0.0**
MOA Molln 159.54 338 *i*PKPab **PKPab 06 57 56.2 0.0**
comp=Z,25nm,1.1s,SNR=11
ARSA Arzberg 159.62 335 *i*PKPab **PKPab 06 57 55.8 -0.7**
comp=Z,9.7nm,0.9s,SNR=5.0
SOKA Soboth 160.28 335 *i*PKPab **PKPab 06 57 59.0 -0.5**
comp=Z,39nm,1.4s,SNR=13
KBA Koelnbreinsper 160.52 338 *i*PKPab **PKPab 06 58 01.2 +0.6**
comp=Z,21nm,1.1s
OBKA Obir 160.60 335 *i*PKPab **PKPab 06 57 60.0 -0.9**
comp=Z,14nm,1.1s
LEGS Legarje 160.78 333 *e*PKPdf **PKPdf 06 57 18.4 -0.9**
LEGS *e*PKPab **PKPab 06 58 00.4 -1.2**
WATA Walderalm 160.81 342 *i*PKPab **PKPab 06 58 02.4 +0.6**
comp=Z,8.3nm,0.7s
MYKA Terra Mystica 160.82 337 *i*PKPab **PKPab 06 58 00.9 -0.9**
comp=Z,27nm,1.5s,SNR=7.9
WTTA Wattenberg 160.86 342 *i*PKPab **PKPab 06 58 02.0 -0.1**
comp=Z,25nm,1.4s
RETA Reutte 160.88 344 *i*PKPab **PKPab 06 58 01.7 -0.3**
comp=Z,20nm,1.3s,SNR=6.1
MOTA Moosalm 160.93 343 *i*PKPab **PKPab 06 58 01.1 -1.3**
comp=Z,17nm,1.2s
LJU Ljubljana 161.01 335 *e*PKPdf **PKPdf 06 57 18.4 -1.2**
LJU *i*PKPab **PKPab 06 58 01.2 -1.4**
ABTA Abfaltersbach 161.08 340 *i*PKPab **PKPab 06 58 01.9 -1.0**
comp=Z,23nm,1.1s,SNR=7.1
BOJS Bojanci 161.17 332 *e*PKPdf **PKPdf 06 57 19.1 -0.7**
BOJS *e*PKPab **PKPab 06 58 02.1 -1.2**
DAVA Damuels 161.27 345 *i*PKPab **PKPab 06 58 03.8 -0.1**
comp=Z,2.7nm,0.7s
FETA Feichten 161.32 343 *i*PKPab **PKPab 06 58 04.0 -0.1**
comp=Z,14nm,1.1s,SNR=5.2
PDG Podgorica 161.48 319⇑*i*P **PKPab 06 58 04.9 +0.2**
FUORN Ofenpass-Fuorn 161.81 344 *e*PKPdf **PKPdf 06 57 20.4 -0.4**
FUORN *e*PKPab **PKPab 06 58 06.3 -0.1**
SENIN Lac Senin/Sane 162.65 350 *e*PKPdf **PKPdf 06 57 21.8 +0.3**
TOA0 Torodi Ar. Sit 163.87 175 *e*PKPdf **PKPdf 06 57 23.3 0.0**
TOA0 *e*PKPab **PKPab 06 58 17.3 +1.5**
TORD Torodi Ar. Bea 163.87 175 PKP **PKPdf 06 57 23.2 -0.2**
comp=Z,7.0nm,1.1s,baz=322,slow=0.9,SNR=20
TORD PKPab **PKPab 06 58 16.8 +1.1**
comp=Z,6.8nm,1.0s,baz=181,slow=2.2,SNR=9.3
TOA1 Torodi Ar. Sit 163.88 175 *e*PKPdf **PKPdf 06 57 23.2 -0.2**
TOA1 *e*PKPab **PKPab 06 58 16.8 +1.1**
SSB Saint Sauveur 164.01 356 *e*PKIKP **PKPdf 06 57 22.6 -0.1**
SSB Saint Sauveur 164.01 356 *e*PKPdf **PKPdf 06 57 22.6 -0.1**
TIP Timpagrande 164.98 315 *e*PKPdf **PKPdf 06 57 24.6 +0.8**
TIP *e*PKPab **PKPab 06 58 20.6 +0.2**
CUC Castrocucco 165.03 319 *e*PKPab **PKPab 06 58 19.2 -1.3**
CEL Celeste 166.07 313 *e*PKPab **PKPab 06 58 25.8 +0.6**
PAB San Pablo 168.12 29 *e*PKIKP **PKPdf 06 57 27.9 +1.7**
PAB San Pablo 168.12 29 *e*PKPdf **PKPdf 06 57 27.9 +1.7**
ESDC Sonseca Array 168.17 27 PKP **PKPdf 06 57 26.6 +0.4**
comp=Z,0.2nm,0.3s,baz=24,slow=1.3,SNR=11
ESDC PKPab **PKPab 06 58 33.9 -0.4**
comp=Z,0.3nm,0.3s,baz=318,slow=1.7,SNR=3.6
ESLA Sonseca Array 168.17 27 *e*PKPdf **PKPdf 06 57 27.7 +1.5**
ES19 SONSECA Array 168.17 27 *e*PKPdf **PKPdf 06 57 27.5 +1.3**
KEST Kesra 171.66 322 PKP **PKPdf 06 57 27.1 -1.3**
comp=Z,3.7nm,0.9s,baz=131,slow=5.9,SNR=5.0
KEST PKPab **PKPab 06 58 48.5 -1.4**
comp=Z,11nm,1.0s,baz=108,slow=1.3,SNR=7.9
KEST Kesra 171.66 322 *e*PKPdf **PKPdf 06 57 28.9 +0.5**
KEST *e*PKPab **PKPab 06 58 49.8 -0.2**
MDT Midelt 172.58 60 PKP **PKPdf 06 57 27.5 -1.5**
comp=Z,5.7nm,1.1s,baz=224,slow=6.4,SNR=4.0
TAM Tamanrasset 173.13 200 *e*PKIKP **PKPdf 06 57 31.2 +1.7**
TAM *e* 06 58 59.1
TAM Tamanrasset 173.13 200 *e*PKPdf **PKPdf 06 57 31.2 +1.7**
TAM *e*PKPab **PKPab 06 58 59.1 +2.3**

NEIC ***11*** *06:51:03.0±0.5,29.08S×176.86W,h10km,mb4.8/4, Error ellipse: s-maj=13.8km s-min=9.9km az=102.0*
ISCJB ***11*** *06:51:04.8±0.6,29.13S±0.09×176.80W±0.09,h36km, mb4.6/16,MS5.4/1, Error ellipse: s-maj=13.3km s-min=11.2km az=153.1*
IDC ***11*** *06:51:09.0±2.5,28.99S×176.98W,h50km±18km,mb4.1/11, mb1 4.2/11,mb1mx4.1/29,mbtmp4.3/11,MS5.4/1, Ms1 5.4/1,ms1mx3.9/34,Error ellipse: s-maj=27.9km s-min=23.6km az=126.0*
ISC 11 06:51:06.8±0.5,29.17S±0.08×176.87W±0.08,h36km,n38, σ1s53/41,mb4.5/16,1C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.92**	**265**	P		**Pn**		**06 51 24.8**	**+1.6**
	1μm,0.3s,baz=36,slow=7.5,SNR=26								
RAO				S		**Sn**		**06 51 37.6**	**+2.4**
	2μm,0.3s,baz=90,slow=20,SNR=16								
RAO	**Raoul Island**	**0.92**	**265**	*e*Pn		**Pn**		**06 51 24.5**	**+1.3**
RAO				*e*Sn		**Sn**		**06 51 36.5**	**+1.3**
URZ	**Urewera**	**10.35**	**207**	P		**Pn**		**06 53 29.9**	**-2.9**
	0.5nm,0.3s,baz=194,slow=19

KKAR	Karatay Array	125.21 304	*e*PKPdf	PKPdf	07 10 03.8	+0.3		
ABKAR	Akbulak array	132.84 312	*e*PKPdf	PKPdf	07 10 17.6	-0.2		
ARCES	ARCESS Array B	137.59 349	PKP	PKPdf	07 10 27.0	+1.0		
	1.6nm,0.8s,baz=25,slow=5.9,SNR=3.8							
KBZ	Khabaz	145.22 306	PKPbc	PKPab	07 10 40.3	+0.1		
	4.4nm,1.0s,baz=75,slow=3.1,SNR=10							
KVAR	Kislovodsk Arr	145.32 306	PKPbc	PKPab	07 10 41.7	+0.8		
	3.6nm,0.4s,baz=48,slow=2.2,SNR=8.4							
NB2	NORSAR Subarra	147.68 353	PKP	PKPbc	07 10 46.1	-0.8		
	comp=Z,1.5nm,0.6s,baz=12,slow=2.9							
NOA	NORSAR Array B	147.68 353	PKPbc	PKPbc	07 10 46.5	-0.4		
	comp=Z,2.0nm,0.6s,baz=15,slow=4.4,SNR=6.2							
AKASG	Malin Array Be	150.89 325	PKPbc	PKPbc	07 10 55.2	-0.1		
	comp=Z,6.1nm,0.7s,baz=46,slow=3.0,SNR=22							
KIEV	Kiev	150.90 325	*e*PKPbc	PKPbc	07 10 54.9	-0.3		
EIL	Elat	152.32 279	PKPbc	PKPbc	07 10 59.8	+0.6		
	comp=Z,4.5nm,0.6s,baz=309,slow=4.4,SNR=4.5							
BRTR	Keskin Array B	152.85 301	PKPbc	PKPbc	07 10 59.2	-1.1		
	comp=Z,2.1nm,0.8s,baz=134,slow=3.6,SNR=10.0							
TORD	Torodi Ar. Bea	164.00 175	PKPab	PKPab	07 12 00.8	+1.0		
	comp=Z,2.7nm,0.9s,baz=183,slow=3.9,SNR=9.1							

IDC ***11*** *06:52:08.5±1.0,29.°11S×176.°67W,h0km,mb4.6/9, mb1 4.7/10,mb1mx4.5/28,mbtmp4.6/10,ML3.5/1,MS4.7/3, Ms1 4.7/3,ms1mx4.1/38,Error ellipse: s-maj=37.7km s-min=16.9km az=161.0*

ISCJB ***11*** *06:52:10.6±0.5,29.°56S±0.°06×176.°78W±0.°06,h21km, mb4.9/24,MS4.4/1,Error ellipse: s-maj=8.8km s-min=7.3km az=160.4*

NEIC ***11*** *06:52:10.9±0.5,29.°30S×176.°94W,h10km,mb5.2/13, Error ellipse: s-maj=13.3km s-min=10.9km az=139.0*

GCMT ***11*** *06:52:10.9±0.2,29.°09S×176.°56W,h13km,MW5.2/93, Moment Tensor Solution. s61,c84; s93,c135; Duration: 1s0 Moment tensor: Scale 10¹⁷Nm; Mrr0.66±.03; Mθθ-0.01±.02; Mϕϕ-0.65±.02; Mrθ0.29±.06; Mrϕ-0.22±.01; Mθϕ0.51±.06; Best double couple: M₀0.90500×10¹⁷ NP1:ϕs25.00000°,δ65.00000°,λ98.00000°. NP2: ϕs188.00000°,δ26.00000°,λ74.00000°. Principal axes: T 0.8820, Plg69.0000°, Azm311.0000°; N 0.0460, Plg7.0000°, Azm202.0000°; P -0.9280, Plg20.0000°, Azm110.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 11 06:52:12.0±0.5, 29.°42S±0.°06×176.°65W±0.°06, h21km, n80, σ2s94/75, mb4.8/24, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.12 278		Pn		Pn		06 52 32.7	+0.3
	318nm,0.3s,baz=336,slow=20,SNR=1.5								
RAO				Sn		Sb		06 52 48.7	+2.0
	3µm,0.3s,baz=37,slow=21,SNR=6.1								
RAO				LR		LR		06 53 00.5	
	comp=Z,20µm,21.1s,baz=112,slow=47								
RAO	Raoul Island	1.12 278		*e*Pg		Pn		06 52 30.2	-2.2
RAO				*e*Sg		Sb		06 52 43.7	-3.0
URZ	Urewera	10.22 209		Pn		Pn		06 54 34.8	-2.6
	1.2nm,0.3s,baz=82,slow=7.1,SNR=2.1								
URZ				Sn		Sn		06 56 31.0	-0.4
	11nm,0.3s,baz=93,slow=16,SNR=6.5								
URZ	Urewera	10.22 209		Pn		Pn		06 54 34.8	-2.6
URZ				Sn		Sn		06 56 31.0	-0.4
MSVF	Nonsavu	12.60 336		*e*Pn		Pn		06 55 07.7	-2.5
DZM	Mont Dzumac	16.88 292		LR		LR		07 01 22.1	
	comp=Z,8µm,18.3s,baz=122,slow=33								
DZM	Mont Dzumac	16.88 292		*e*P		P		06 56 12.6	+3.5
	143nm,1.4s								
RAR	Rarotonga	17.30 66		P		Pn		06 56 10.2	-2.1
	1.7nm,0.3s,baz=192,slow=9.3,SNR=2.6								
RAR				LR		LR		07 03 07.6	
	comp=Z,1µm,18.4s,baz=241,slow=38								
RAR	Rarotonga	17.30 66		*e*Pn		Pn		06 56 10.6	-1.7
RAR				*e*Sn		Sn		06 59 17.9	-6.3
RPZ	Rata Peaks	17.32 211		P		Pn		06 56 10.4	-2.0
	1.3nm,0.3s,baz=292,slow=19,SNR=2.6								
RPZ				S		Sn		06 59 09.0	-15
	1.0nm,0.3s,baz=180,slow=20,SNR=2.5								
RPZ	Rata Peaks	17.32 211		P		Pn		06 56 10.4	-2.0
RPZ				S		Sn		06 59 09.0	-15
TBI	Tubuai	25.07 82		*e*LR		LR		07 03 44.7	
	3µm,28.0s,baz=254								
PPT2	Papeete2	27.41 71		*e*LQ		LQ		07 03 16.5	
	2µm,24.5s								
PPT2				*e*LR		LR		07 04 44.2	
	3µm,26.2s,baz=238								
HNR	Honiara	29.59 307		LR		LR		07 09 19.6	
	comp=Z,838nm,18.1s,baz=149,slow=35								
TARA	Tarawa	32.19 340		*e*P		P		06 58 35.2	-3.3
	1.0nm,0.2s								
CTA	Charters Tower	34.82 277		P		P		06 59 01.2	-0.3
	11nm,0.6s,baz=99,slow=8.1,SNR=5.2								
CTA	Charters Tower	34.82 277		P		P		06 59 01.2	-0.3
CTAO	Charters Tower	34.82 277		*e*P		P		06 58 59.8	-1.8
	52nm,0.6s								
STKA	Stephens Creek	35.85 255		P		P		06 59 09.8	-0.5
	6.3nm,0.6s,baz=113,slow=10,SNR=6.5								
STKA	Stephens Creek	35.85 255		P		P		06 59 09.8	-0.5
RKT	Rikitea	37.75 90		*e*LR		LR		07 09 39.4	
	2µm,27.8s,baz=257								
TAOE	Nuku Hiva Isla	39.85 67		*e*LR		LR		07 10 27.3	
	2µm,26.1s,baz=242								
BBOO	Buckleboo	40.37 253		*e*P		P		06 59 47.6	-0.8
	5.2nm,0.6s								
ASAR	Alice Springs	44.34 265		P		P		07 00 19.8	-1.1
	7.9nm,0.5s,baz=100,slow=6.3,SNR=19								
ASAR	Alice Springs	44.34 265		P		P		07 00 19.8	-1.1
WRAB	Tennant Creek	45.24 270		*e*P		P		07 00 26.8	-1.2
	5.9nm,0.6s								
WRA	Warramunga Arr	45.24 270		P		P		07 00 26.8	-1.3
	5.4nm,0.5s,baz=110,slow=6.1,SNR=14								
WRA	Warramunga Arr	45.24 270		P		P		07 00 26.8	-1.3
SBA	Scott Base	49.10 185		*e*P		P		07 00 59.6	+2.2
FITZ	Fitzroy Crossi	53.54 268		*e*P		P		07 01 31.0	-0.5
	2.8nm,0.5s								
MBWA	Marble Bar	57.50 262		*e*P		P		07 01 59.0	-1.0
	41nm,0.6s								
QSPA	South Pole Qui	60.69 180		*e*P		P		07 02 25.0	+3.5
	33nm,0.8s								
MJAR	Matsushiro Arr	78.12 324		P		P		07 04 06.6	-2.8
	1.2nm,0.3s,baz=156,slow=4.5,SNR=3.7								
MJAR	Matsushiro Arr	78.12 324		P		P		07 04 06.6	-2.8
SNAA	Sanae	79.09 178		*e*P		P		07 04 18.4	+4.0
	631nm,1.1s								
KSRS	Korea Array	84.37 319		P		P		07 04 43.2	+0.6
	2.6nm,1.0s,baz=166,slow=5.8,SNR=3.6								
KSAR	Wonju Array Be	84.39 319		P		P		07 04 43.2	+0.5
PETK	Petropavlovsk-	85.17 345		P		P		07 04 44.6	-1.6
	3.9nm,0.7s,baz=159,slow=8.5,SNR=3.2								
PETK	Petropavlovsk-	85.17 345		P		P		07 04 44.6	-1.6
USRK	Ussuriysk Ar.	87.00 326		P		P		07 04 54.6	-0.9
	2.8nm,0.9s,baz=107,slow=1.5,SNR=6.6								
HUMO	Hull Mountain	87.04 37		*e*P		P		07 04 57.8	+2.1
	68nm,1.5s								
TUC	Tucson	87.59 51		*e*P		P		07 05 00.5	+1.8
	31nm,1.4s								
BMN	Battle Mountai	88.69 41		*e*P		P		07 05 05.9	+2.1
	9.9nm,1.4s								
WUAZ	Wupatki	89.14 48		*e*P		P		07 05 09.8	+3.6
	24nm,1.3s								
TXAR	Lajitas Array	90.88 57		P		P		07 05 15.7	+1.4
	8.0nm,1.2s,baz=205,slow=5.5,SNR=5.8								
TXAR	Lajitas Array	90.88 57		P		P		07 05 15.7	+1.4
ENH	Enshi	92.02 304		*e*P		P		07 05 20.0	+0.5
	51nm,1.2s								
ANMO	Albuquerque	92.06 51		*e*P		P		07 05 21.3	+1.6
	7.6nm,1.3s								
PDAR	Pinedale Array	94.62 43		P		P		07 05 34.8	+3.3
	0.2nm,0.6s,baz=274,slow=4.4,SNR=3.0								
PDAR	Pinedale Array	94.62 43		P		P		07 05 34.8	+3.3
ILAR	Eielson Array	96.72 12		P		P		07 05 39.4	-0.8
	0.4nm,0.7s,baz=224,slow=6.6,SNR=4.8								
ILAR	Eielson Array	96.72 12		P		P		07 05 39.4	-0.8
MKAR	Makanchi Array	118.04 310		PKP		PKPdf		07 10 56.2	-0.8
	0.7nm,0.6s,baz=80,slow=1.4,SNR=4.8								
MKAR	Makanchi Array	118.04 310		PKP		PKPdf		07 10 56.2	-0.8
ZALV	Zalesovo Beam	118.08 319		PKP		PKPdf		07 10 54.3	-2.5
	0.5nm,0.3s,baz=81,slow=3.9,SNR=2.2								
ZALV	Zalesovo Beam	118.08 319		PKP		PKPdf		07 10 54.3	-2.5
ARCES	ARCESS Array B	137.88 349		PKP		PKPdf		07 11 34.0	0.0
	1.4nm,0.7s,baz=70,slow=14,SNR=5.3								
ARCES	ARCESS Array B	137.88 349		PKP		PKPdf		07 11 34.0	0.0
KBZ	Khabaz	145.52 305		PKPbc		PKPdf		07 11 48.6	+0.2
	4.0nm,0.8s,baz=63,slow=2.6,SNR=4.7								
KBZ	Khabaz	145.52 305		PKPbc		PKPdf		07 11 48.6	+0.2
KVAR	Kislovodsk Arr	145.62 306		PKPbc		PKPdf		07 11 47.8	-0.9
	4.0nm,0.4s,baz=291,slow=4.7,SNR=4.2								
KVAR	Kislovodsk Arr	145.62 306		PKPbc		PKPdf		07 11 47.8	-0.9
NB2	NORSAR Subarra	147.95 353		PKP		PKPbc		07 11 54.5	-0.6
	comp=Z,4.0nm,0.8s,baz=16,slow=3.2								
NOA	NORSAR Array B	147.95 353		PKPbc		PKPdf		07 11 54.3	+2.3
	comp=Z,2.1nm,0.6s,baz=14,slow=4.4,SNR=3.4								
NOA	NORSAR Array B	147.95 353		PKPbc		PKPdf		07 11 54.3	+2.3
AKASG	Malin Array Be	151.20 325		PKPbc		PKPbc		07 12 01.9	-1.4
BRTR	Keskin Array B	153.14 301		PKPbc		PKPbc		07 12 07.3	-1.0
	comp=Z,1.9nm,0.6s,baz=128,slow=4.1,SNR=4.2								
BRTR	Keskin Array B	153.14 301		PKPbc		PKPbc		07 12 07.3	-1.0
CONA	Conrad Observa	159.15 336		*i* sPKPab		PKPab		07 12 53.0	+7.7
	comp=Z,4.6nm,0.7s								
MOA	Molln	159.76 338		*i* sPKPab		PKPab		07 12 54.1	+6.2
	comp=Z,4.2nm,1.1s								
SOKA	Soboth	160.51 335		*i* sPKPab		PKPab		07 12 57.6	+6.3
	comp=Z,3.1nm,1.0s								
OBKA	Obir	160.82 336		*i* sPKPab		PKPab		07 13 00.4	+7.7
	comp=Z,2.6nm,1.0s								
WTTA	Wattenberg	161.06 342		*i* sPKPab		PKPab		07 12 58.4	+4.6
	comp=Z,2.5nm,0.6s								
RETA	Reutte	161.07 344		*i* sPKPab		PKPab		07 13 01.3	+7.7
	comp=Z,0.9nm,0.4s								
MOTA	Moosalm	161.12 344		*i* pPKPab		PKPab		07 12 56.2	+2.2
	comp=Z,2.8nm,0.7s								
ABTA	Abfaltersbach	161.28 340		*i* sPKPab		PKPab		07 13 01.8	+7.2
	comp=Z,2.7nm,0.6s								
DAVA	Damuels	161.45 346		*i* sPKPab		PKPab		07 13 02.8	+7.3
	comp=Z,3.2nm,0.8s								
TORD	Torodi Ar. Bea	163.73 174		PKPab		PKPab		07 13 07.9	+1.9
	comp=Z,4.5nm,0.7s,baz=185,slow=4.2,SNR=9.8								
TORD	Torodi Ar. Bea	163.73 174		PKPab		PKPab		07 13 07.9	+1.9

ISCJB ***11*** *07:15:41.4±1.2,29.°68S±0.°02×176.°56W±0.°03,h7km±7km, mb5.5/232,MS6.0/529,Error ellipse: s-maj=5.2km s-min=2.9km az=41.8*

BJI ***11*** *07:15:42.2,29.°03S×176.°04W,h7km,mb5.5/52,mB6.1/65, Ms5.9/73,Ms7 5.6/67*

GCMT ***11*** *07:15:43.8±0.1,29.°14S×176.°24W,h12km,MW5.9/140, Moment Tensor Solution. s124,c256; s140,c453; Duration: 2s2 Moment tensor: Scale 10¹⁸Nm; Mrr0.64±.01; Mθθ0.02±.01; Mϕϕ-0.65±.00; Mrθ0.12±.01; Mθϕ-0.15±.00; Mrϕ0.68±.01; Best double couple: M₀0.95700×10¹⁸ NP1:ϕs11.00000°,δ68.00000°, λ89.00000°. NP2:ϕs194.00000°,δ22.00000°,λ93.00000°. Principal axes: T 0.9300, Plg67.0000°, Azm279.0000°; N 0.0540, Plg1.0000°, Azm11.0000°; P -0.9840, Plg23.0000°, Azm102.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

IDC ***11*** *07:15:43.1±0.4,28.°98S×176.°84W,h0km,mb5.1/24, mb1 5.1/25,mb1mx5.0/37,mbtmp5.0/25,ML3.7/1,MS5.8/24, Ms1 5.8/24,ms1mx5.7/33 Error ellipse: s-maj=15.9km s-min=11.8km az=162.0*

NEIC ***11*** *07:15:43.8±0.2,29.°49S×176.°58W,h11km,mb5.5/199, ME6.0,MS6.0/299,MW5.9,MW6.1,Error ellipse: s-maj=7.5km s-min=4.3km az=144.0,Moment Tensor Solution. s36 Moment tensor: Scale 10¹⁸Nm; Mrr-0.25; Mθθ0.60; Mϕϕ-0.35; Mrθ0.33; Mϕθ0.14; Mϕr1.44; Best double couple: M₀1.60000×10¹⁸ NP1:ϕs105.00000°, δ16.00000°,λ-6.00000°. NP2:ϕs200.00000°,δ88.00000°, λ-106.00000°. Principal axes: T 1.3000, Plg41.0000°, Azm305.0000°; N 0.4500, Plg16.0000°, Azm201.0000°; P -1.7500, Plg44.0000°, Azm94.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*

NEIC ***11*** *07:15:44.0±0.0,29.°48S×176.°51W,h15km,Moment Tensor Solution. s7 Moment tensor: Scale 10¹⁸Nm; Mrr0.48; Mθθ-0.01; Mϕϕ-0.47; Mrθ0.20; Mϕr0.22; Mθr1.04; Best double couple: M₀0.89000×10¹⁸ NP1:ϕs12.00000°, δ77.00000°,λ85.00000°. NP2:ϕs214.00000°,δ14.00000°, λ112.00000°. Principal axes: T 1.1500, Plg58.0000°, Azm275.0000°; N 0.0600, Plg5.0000°, Azm13.0000°; P -1.2100, Plg32.0000°, Azm106.0000°;*

MOS ***11*** *07:15:47.5±1.6,29.°05S×176.°68W,h33km,mb5.7/58, MS6.0/66 Error ellipse: s-maj=9.6km s-min=7.7km az=67.6*

ISC 11 07:15:46.0±0.6, 29.°49S±0.°04×176.°63W±0.°04, h19km±2km, n1290, σ2s902/1043, mb5.5/228, MS6.0/531, 45C-15D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.15 281		Pn		Pn		07 16 06.1	-0.9
	662nm,0.3s,baz=124,slow=9.9,SNR=24								
RAO				Sn		Sb		07 16 21.3	-0.3
	4µm,0.3s,baz=107,slow=20,SNR=13								
PKGZ	Pakihiroa	9.47 206		PN		Pn		07 17 59.4	-1.9
PKGZ				SN		Sn		07 19 47.5	+0.3
HAZ	Te Kaha	9.47 208		PN		Pn		07 17 58.8	-2.5
PUZ	Puketiti	9.56 205		PN		Pn		07 17 58.2	-4.3
CNGZ	Carnagh Statio	9.94 204		PN		Pn		07 18 03.0	-4.8
OUZ	Omahuta	10.05 233		*e*Pn		Pn		07 18 08.7	-0.5
URZ	Urewera	10.18 209		Pn		Pn		07 18 07.0	-4.0
	2.0nm,0.3s,baz=356,slow=19,SNR=13								
URZ				Sn		Sn		07 20 07.7	+3.1
	21nm,0.3s,baz=341,slow=20,SNR=8.3								
URZ				LR		LR		07 22 23.1	
	comp=Z,61µm,18.2s,baz=27,slow=38								
URZ	Urewera	10.18 209		*e*Pn		Pn		07 18 07.8	-3.2
URZ				*e*Sn		Sn		07 20 02.5	-2.1
URZ	Urewera	10.18 209		PN		Pn		07 18 06.6	-4.4
RIGZ	Rimuhau	10.30 205		PN		Pn		07 18 12.2	-0.6
RIGZ				SN		Sn		07 20 06.2	-1.5
KNZ	Kokohu	10.61 205		PN		Pn		07 18 11.7	-5.2
BKZ	Black Stump Fm	11.20 209		*e*Pn		Pn		07 18 24.2	-0.9
BHHZ	Black Hill Sta	11.65 209		PN		Pn		07 18 29.3	-2.0
BHHZ				SN		Sn		07 20 38.8	-2.0
WNVZ	Wahianoa	11.72 211		PN		Pn		07 18 32.1	-0.3
TSZ	Takapari Road	12.17 208		PN		Pn		07 18 37.4	-1.0
ANWZ	Angora Road	12.31 205		PN		Pn		07 18 38.8	-1.4
BFZ	Birch Farm	12.59 206		*e*Pn		Pn		07 18 40.6	-3.5
BFZ				*e*Sn		Sn		07 21 02.6	-1.2
BFZ	Birch Farm	12.59 206		PN		Pn		07 18 40.6	-3.5
MSVF	Nonsavu	12.67 336		*e*P		Pn		07 18 42.8	-2.5
MSVF	Nonsavu	12.67 336		*e*Pn		Pn		07 18 42.8	-2.5
MRZ	Mangatainoka R	12.84 205		PN		Pn		07 18 43.5	-3.9
HOWZ	Holdsworth Sta	13.06 207		PN		Pn		07 18 46.7	-3.8
OGWZ	Otaki Gorge	13.14 208		PN		Pn		07 18 47.7	-3.7
KIW	Kapiti Island	13.28 209		PN		Pn		07 18 50.5	-3.0
PLWZ	Palliser	13.74 206		PN		Pn		07 18 58.5	-1.3
SNZO	South Karori	13.74 209		*e*Pn		Pn		07 18 57.2	-2.5
SNZO				*e*Sn		Sn		07 21 27.7	-4.0
TCW	Tory Channel	13.84 210		PN		Pn		07 18 57.3	-3.8
TUWZ	Tuamarina	14.16 210		PN		Pn		07 19 00.9	-4.6
NNZ	Nelson	14.25 212		PN		Pn		07 19 02.7	-4.0
THZ	Tophouse	14.90 212		*e*Pn		Pn		07 19 11.3	-4.3
	157nm,0.9s								
THZ				*e*Sn		Sn		07 21 53.7	-6.4
THZ	Tophouse	14.90 212		PN		Pn		07 19 11.6	-4.0
KHZ	Kahutara	15.14 209		*e*Pn		Pn		07 19 14.1	-4.7
	247nm,0.8s								
KHZ				*e*Sn		Sn		07 22 00.7	-5.2
KHZ	Kahutara	15.14 209		PN		Pn		07 19 13.2	-5.6
LTZ	Lake Taylor	15.99 211		*e*Pn		Pn		07 19 25.7	-4.2
	102nm,0.9s								
LTZ	Lake Taylor	15.99 211		PN		Pn		07 19 25.6	-4.2
AFI	Afiamalu	16.14 17		Pn		Pn		07 19 22.1	-10
	6.4nm,0.3s,baz=80,slow=7.2,SNR=6.5								
AFI				Sn		Sn		07 22 06.3	-24
	4.9nm,0.3s,baz=80,slow=22,SNR=4.4								
AFI				LR		LR		07 26 47.5	
	comp=Z,6µm,18.9s,baz=198,slow=42								
AFI	Afiamalu	16.14 17		*e*P		Pn		07 19 22.8	-9.1
AFI				pmax		pmax			
	comp=Z,139nm,0.8s								
AFI	Afiamalu	16.14 17		*e*Pn		Pn		07 19 22.8	-9.2
	comp=Z,139nm,0.8s								
AFI				*e*Sn		Sn		07 22 06.3	-24
INZ	Inchbonnie	16.33 213		PN		Pn		07 19 30.0	-4.1
CRLZ	Canterbury Las	16.48 209		*e*Pn		Pn		07 19 36.1	+0.1
	comp=Z,276nm,1.3s								
CRLZ				*e*Sn		Sn		07 22 27.3	-11
OXZ	Oxford	16.53 210		*e*Pn		Pn		07 19 33.6	-3.1
	comp=Z,547nm,1.4s								
OXZ				*e*Sn		Sn		07 22 27.0	-13
MQZ	McQueen's Vall	16.57 208		*e*Pn		Pn		07 19 36.0	-1.2
	comp=Z,89nm,0.9s								
MQZ				*e*Sn		Sn		07 22 31.1	-10
MQZ	McQueen's Vall	16.57 208		*e*Pn		Pn		07 19 32.7	-4.6
DZM	Mont Dzumac	16.93 292		Pn		Pn		07 19 37.0	-4.9
	comp=Z,0.3nm,0.3s,baz=135,slow=18,SNR=2.3								
DZM				LR		LR		07 24 44.4	
	comp=Z,46µm,20.9s,baz=118,slow=33								
DZM	Mont Dzumac	16.93 292		*e*P		P		07 19 44.6	+0.8
	comp=Z,704nm,1.7s								
DZM				*e*LR		LR		07 23 37.5	
	comp=Z,75µm,26.4s								
DZM	Mont Dzumac	16.93 292		*e*Pn		P		07 19 43.2	-0.6
RPZ	Rata Peaks	17.27 211		P		Pn		07 19 44.0	-2.1
	comp=Z,7.6nm,0.3s,baz=311,slow=2.0,SNR=20								
RPZ				LR		LR		07 27 05.2	
	comp=Z,32µm,19.5s,baz=32,slow=39								
RPZ	Rata Peaks	17.27 211		*e*Pn		Pn		07 19 45.0	-1.1
	comp=Z,126nm,0.8s								
RPZ	Rata Peaks	17.27 211		PN		Pn		07 19 41.6	-4.4
RAR	Rarotonga	17.31 65		P		Pn		07 19 38.2	-8.4
	comp=Z,3.4nm,0.3s,baz=203,slow=1.9,SNR=6.5								
RAR				S		Sn		07 22 30.7	-28
	comp=Z,2.4nm,0.3s,baz=48,slow=15,SNR=3.0								
RAR				LR		LR		07 25 24.9	
	comp=Z,30µm,19.0s,baz=243,slow=34								
ODZ	Otahua Downs	18.50 209		*e*P		P		07 20 00.7	-0.3
	comp=Z,180nm,1.0s								
ODZ	Otahua Downs	18.50 209		P*		P		07 19 58.5	-2.5
JCZ	Jackson Bay	18.62 215		P*		P		07 19 58.9	-3.5
TUZ	Tuapeka	19.66 210		P*		Pn		07 20 14.8	-0.3
MLZ	Mavora Lakes	19.89 213		*e*P		P		07 20 16.8	+0.5
	comp=Z,301nm,1.7s								
WHZ	Wether Hill Ro	20.36 212		*e*P		Pn		07 20 23.1	-0.3
	comp=Z,425nm,2.0s								
WHZ				LR		LR			
	comp=Z,26µm,19.0s								
DCZ	Deep Cove	20.43 214		PFAKE				07 20 30.0	+5.8
DCZ				LR		LR			
	comp=Z,47µm,18.0s								
LHI	Lord Howe Isla	21.03 258		PFAKE				07 20 40.0	+11
LHI				LR		LR			
	comp=Z,24µm,18.0s								
PYZ	Puysegur Point	21.17 214		PFAKE				07 20 40.0	+10
PYZ				LR		LR			
	comp=Z,24µm,18.0s								
FUNA	Funafuti	21.22 349		PFAKE				07 20 40.0	+9.3
FUNA				LR		LR			
	comp=Z,17µm,19.0s								
TBI	Tubuai	25.06 82		*e*P		P		07 21 10.8	+1.6
	comp=Z,138nm,0.9s								
TBI				*e*LQ		LQ		07 25 50.5	
	comp=Z,16µm,30.5s								
TBI				*e*LR		LR		07 27 08.8	
	comp=Z,28µm,31.2s,baz=252								
TBI	Tubuai	25.06 82		*e*T		T		07 46 40.8	
	comp=Z,12nm,0.3s								
PAE	Paea	27.37 71		*e*P		P		07 21 30.9	+0.7
	comp=Z,28nm,1.1s								
PAE	Paea	27.37 71		*e*T		T		07 49 34.2	
	comp=Z,6.4nm,0.3s								
PPT2	Papeete2	27.41 70		*e*P		P		07 21 31.7	+1.1
	comp=Z,155nm,1.1s								
PPT2				*e*LQ		LQ		07 26 44.5	
	comp=Z,26µm,24.8s								
PPT2				*e*LR		LR		07 28 10.8	
	comp=Z,17µm,22.2s,baz=239								
PPT2	Papeete2	27.41 70		*e*T		T		07 49 37.4	
	comp=Z,4.7nm,0.3s								
PPT	Papeete	27.43 70		P		P		07 21 31.9	+1.2
	comp=Z,153nm,1.0s,baz=302,slow=5.5,SNR=13								
PPT				LR		LR		07 30 25.6	
	comp=Z,17µm,18.6s,baz=248,slow=32								
ARMA	Armidale	27.47 260		P		P		07 21 33.6	+2.5
	baz=28,SNR=7.5								
ARMA	Armidale	27.47 260		*e*P		P		07 21 32.9	+1.8
	comp=Z,74nm,1.3s								
ARMA				LR		LR			
	comp=Z,35µm,18.0s								
TVO	Taravao	27.58 71		*e*P		P		07 21 33.0	+0.8
	comp=Z,16nm,0.9s								
TVO	Taravao	27.58 71		*e*T		T		07 49 45.2	
	comp=Z,1.6nm,0.3s								
TIAR	Tiarei	27.62 71		*e*P		P		07 21 33.5	+1.1
	comp=Z

baz=38,SNR=37
RABL Rabaul 38.80 304 PFAKE 07 23 20.0 +10
RABL LR LR
comp=Z,10μm,20.0s
PMG Port Moresby 39.31 293 LR LR 07 36 46.3
comp=Z,11μm,20.7s,baz=118,slow=32
PMG Port Moresby 39.31 293 PFAKE 07 23 30.0 +16
PMG LR LR
comp=Z,12μm,19.0s
TAOE Nuku Hiva Isla 39.86 66 *e*S **S 07 29 16.8 -5.8**
comp=Z,3μm,24.5s
TAOE *e*LR LR 07 33 52.0
comp=Z,13μm,21.3s,baz=243
TAOE Nuku Hiva Isla 39.86 66 PFAKE 07 23 30.0 +11
TAOE LR LR
comp=Z,16μm,18.0s
COEN Coen 40.18 284 P **P 07 23 20.6 -0.7**
baz=40,SNR=9.6
COEN Coen 40.18 284 *e*P **P 07 23 22.2 +0.9**
comp=Z,29nm,0.9s
COEN LR LR
comp=Z,41μm,19.0s
BBOO Buckleboo 40.37 253 P **P 07 23 22.7 0.0**
baz=40,SNR=14
BBOO Buckleboo 40.37 253 *e*P **P 07 23 24.0 +1.3**
comp=Z,65nm,0.8s
BBOO LR LR
comp=Z,14μm,18.0s
QIS Mount Isa 40.45 272 P **P 07 23 22.0 -1.4**
baz=40,SNR=6.0
KWAJ Kwajalein Atol 40.98 336 PFAKE 07 23 40.0 +12
KWAJ LR LR
comp=Z,12μm,20.0s
PTCN Pitcairn Islan 41.39 95 PFAKE 07 23 40.0 +8.8
PTCN LR LR
comp=Z,22μm,19.0s
PATS Pohnpei 43.41 322 PFAKE 07 24 00.0 +12
PATS LR LR
comp=Z,7μm,19.0s
MANU Manus Island 43.76 302 *e*P **P 07 23 50.6 +0.1**
comp=Z,45nm,0.7s
MANU LR LR
comp=Z,7μm,18.0s
AS01 Alice Springs 44.31 265 *e*P **P 07 23 52.5 -2.5**
AS31 Alice Springs 44.35 265 *e*P **P 07 23 52.4 -2.9**
comp=Z,15nm,0.5s
AS31 LR LR
comp=Z,600nm,19.0s
ASAR Alice Springs 44.35 265 P **P 07 23 52.7 -2.6**
comp=Z,26nm,0.5s,baz=101,slow=6.4,SNR=86
ASAR PcP **PcP 07 25 40.1 +0.9**
comp=Z,16nm,1.1s,baz=112,slow=3.6,SNR=3.3
ASAR S **S 07 30 22.9 -6.0**
comp=Z,2.0nm,1.0s,baz=103,slow=17,SNR=4.3
ASAR LR LR 07 42 45.4
comp=Z,41μm,18.5s,baz=117,slow=37
WR0 Warramunga Arr 45.08 271 PFAKE 07 24 10.0 +8.9
WR0 LR LR
comp=Z,16μm,19.0s
WR9 Warramunga Arr 45.10 271 PFAKE 07 24 10.0 +8.7
WR9 LR LR
comp=Z,16μm,18.0s
WR8 Warramunga Arr 45.12 271 PFAKE 07 24 10.0 +8.6
WR8 LR LR
comp=Z,16μm,19.0s
WR7 Warramunga Arr 45.14 271 PFAKE 07 24 10.0 +8.4
WR7 LR LR
comp=Z,15μm,19.0s
WR6 Warramunga Arr 45.16 271 PFAKE 07 24 10.0 +8.3
WR6 LR LR
comp=Z,16μm,19.0s
WR5 Warramunga Arr 45.18 271 PFAKE 07 24 10.0 +8.1
WR5 LR LR
comp=Z,16μm,19.0s
WR4 Warramunga Arr 45.20 271 PFAKE 07 24 10.0 +8.0
WR4 LR LR
comp=Z,16μm,18.0s
WR3 Warramunga Arr 45.22 271 PFAKE 07 24 10.0 +7.8
WR3 LR LR
comp=Z,16μm,18.0s
WC3 Warramunga Arr 45.23 271 PFAKE 07 24 10.0 +7.7
WC3 LR LR
comp=Z,16μm,19.0s
WR2 Warramunga Arr 45.24 271 PFAKE 07 24 10.0 +7.6
WR2 LR LR
comp=Z,16μm,19.0s
WC2 Warramunga Arr 45.25 271 PFAKE 07 24 10.0 +7.6
WC2 LR LR
comp=Z,19μm,18.0s
WB2 Warramunga Arr 45.25 271 *e*P **P 07 23 59.6 -2.9**
comp=Z,81nm,0.9s
WB2 LR LR
comp=Z,17μm,19.0s
WC4 Warramunga Arr 45.26 270 PFAKE 07 24 10.0 +7.5
WC4 LR LR
comp=Z,17μm,18.0s
WB3 Warramunga Arr 45.26 271 PFAKE 07 24 10.0 +7.5
WB3 LR LR
comp=Z,16μm,18.0s
WRAB Tennant Creek 45.26 271⇑ *e*P **P 07 24 00.7 -1.8**
WRAB pmax pmax
comp=Z,117nm,1.0s
WRAB Tennant Creek 45.26 271 *e*P **P 07 24 01.0 -1.5**
comp=Z,71nm,0.9s
WRAB LR LR
comp=Z,17μm,19.0s
WB4 Warramunga Arr 45.26 271 PFAKE 07 24 10.0 +7.5
WB4 LR LR
comp=Z,16μm,18.0s
WR1 Warramunga Arr 45.26 271 *e*P **P 07 23 59.2 -3.3**
comp=Z,92nm,0.9s
WRA Warramunga Arr 45.26 271 P **P 07 23 59.2 -3.3**
comp=Z,18nm,0.6s,baz=109,slow=7.2,SNR=58
WRA S **S 07 30 35.1 -7.0**
comp=Z,0.9nm,0.8s,baz=109,slow=15,SNR=2.4
WRA LR LR 07 42 50.1
comp=Z,16μm,18.5s,baz=110,slow=36
WC1 Warramunga Arr 45.27 271 PFAKE 07 24 10.0 +7.4
WC1 LR LR
comp=Z,13μm,18.0s
WB6 Warramunga Arr 45.27 271 PFAKE 07 24 10.0 +7.4
WB6 LR LR
comp=Z,15μm,19.0s
WB8 Warramunga Arr 45.27 271 PFAKE 07 24 10.0 +7.4
WB8 LR LR
comp=Z,15μm,18.0s
WB9 Warramunga Arr 45.28 271 PFAKE 07 24 10.0 +7.3
WB9 LR LR
comp=Z,33μm,19.0s
WB0 Warramunga Arr 45.28 271 PFAKE 07 24 10.0 +7.3
WB0 LR LR
comp=Z,14μm,19.0s
JOHN Johnston Islan 46.46 9 PFAKE 07 24 20.0 +8.2
JOHN LR LR
comp=Z,8μm,20.0s
FORT Forrest 47.43 254 P **P 07 24 18.3 -1.2**
baz=48,SNR=26
FORT Forrest 47.43 254 *e*P **P 07 24 18.2 -1.3**
comp=Z,976nm,0.8s
JAY Jayapura 48.56 295 LR LR 07 42 47.6
comp=Z,157nm,21.1s,baz=98,slow=34
SBA Scott Base 49.04 185 PFAKE 07 24 40.0 +8.8
SBA LR LR
comp=Z,9μm,19.0s
VNDA Vanda 49.12 186 P **P 07 24 36.3 +4.4**
comp=Z,4.6nm,0.7s,baz=19,slow=6.2,SNR=19
VNDA LR LR 07 41 46.5
comp=Z,9μm,20.6s,baz=24,slow=32
VNDA Vanda 49.12 186 *e*P **P 07 24 35.0 +3.1**
VNDA pmax pmax
comp=Z,106nm,1.8s
VNDA Vanda 49.12 186 *e*P **P 07 24 35.0 +3.1**
comp=Z,106nm,1.8s
MTN Manton Dam 51.03 277 PFAKE 07 25 00.0 +13
MTN LR LR
comp=Z,36μm,18.0s
UWE Uwekahuna 52.80 26 PFAKE 07 25 10.0 +10
UWE LR LR
comp=Z,7μm,20.0s
POHA Pohakuloa 53.02 25 PFAKE 07 25 10.0 +8.0
POHA LR LR
comp=Z,8μm,19.0s
HPAH Hawaii Prepara 53.21 25 *e*P **P 07 25 03.1 -0.1**
comp=Z,106nm,0.9s
HPAH LR LR
comp=Z,8μm,19.0s
FITZ Fitzroy Crossi 53.56 269 P **P 07 25 03.9 -2.0**
comp=Z,8.7nm,0.9s,baz=133,slow=5.9,SNR=15
FITZ Fitzroy Crossi 53.56 269 P **P 07 25 05.5 -0.4**
baz=54,SNR=8.4
FITZ Fitzroy Crossi 53.56 269 *e*P **P 07 25 05.5 -0.4**
comp=Z,70nm,1.1s
FITZ LR LR
comp=Z,10μm,18.0s
HLK Haleakala 53.68 24 PFAKE 07 25 20.0 +13
HLK LR LR
comp=Z,7μm,19.0s
KIP Kipapa 53.70 22 *d*P **P 07 25 07.6 +0.9**
KIP Kipapa 53.70 22 *e*P **P 07 25 06.7 0.0**
comp=Z,621nm,0.8s
KIP LR LR
comp=Z,6μm,20.0s
KEKH Kekaha 53.70 20 PFAKE 07 25 20.0 +13
KEKH LR LR
comp=Z,6μm,19.0s
OPA Opana 53.95 22 PFAKE 07 25 20.0 +11
OPA LR LR
comp=Z,6μm,19.0s
FAKI Fak Fak 55.15 289 PFAKE 07 25 30.0 +12
FAKI LR LR
comp=Z,5μm,20.0s
NWAO Narrogin (SRO) 55.83 248 LR LR 07 45 38.9
comp=Z,4μm,21.1s,baz=340,slow=32
NWAO Narrogin (SRO) 55.83 248 PFAKE 07 25 30.0 +7.8
NWAO LR LR
comp=Z,13μm,18.0s
MEEK Meekatharra 56.55 256 P **P 07 25 25.7 -1.8**
baz=57,SNR=6.8
GUMO Guam 56.69 314 P **P 07 25 24.6 -3.9**
comp=Z,58nm,0.6s,baz=134,slow=11,SNR=11
GUMO LR LR 07 47 00.9
comp=Z,3μm,21.1s,baz=140,slow=33
GUMO Guam 56.69 314 *e*P **P 07 25 27.2 -1.2**
GUMO MLR MLR
comp=Z,4μm,18.0s
GUMO Guam 56.69 314 *e*P **P 07 25 27.2 -1.2**
GUMO LR LR
comp=Z,4μm,18.0s
MIDW Midway 57.38 359 PFAKE 07 25 40.0 +7.0
MIDW LR LR
comp=Z,11μm,20.0s
MBWA Marble Bar 57.51 263 *e*P **P 07 25 34.3 -0.1**
comp=Z,62nm,1.0s
MBWA LR LR
comp=Z,34μm,18.0s
MORW Morawa 57.93 252 P P 07 25 45.3 +8.1
baz=58,SNR=3.6
SOEI Soe 58.41 277 PFAKE 07 25 50.0 +9.1
SOEI LR LR
comp=Z,19μm,19.0s
QSPA South Pole Qui 60.62 180 *e*P **P 07 25 56.1 +0.7**
QSPA LR LR
comp=Z,14μm,18.0s
MMRI Maumere 60.70 277 P **P 07 26 00.6 +4.1**
MMRI Maumere 60.70 277 PFAKE 07 26 10.0 +13
MMRI LR LR
comp=Z,15μm,18.0s
LUWI Luwuk 64.10 284 P P 07 26 28.3 +9.1
PLAI Plampang 64.48 274 P **P 07 26 25.4 +3.6**
KAPI Kappang 64.63 279 PFAKE 07 26 30.0 +7.3
KAPI LR LR
comp=Z,5μm,19.0s
TTSI Tana Toraja 65.56 281 P **P 07 26 32.9 +4.1**
DAV Davao City (W) 66.33 294⇓ *i*P **P 07 26 34.1 +0.4**
PCI Palu 66.66 283 P P 07 26 40.9 +5.1
comp=Z,110nm,1.2s,comp=Z,3μm
JAGI Jajag, Banyuwa 67.81 273 P P 07 26 51.3 +8.2
JAGI Jajag, Banyuwa 67.81 273 *e*P **P 07 26 45.9 +2.8**
comp=Z,81nm,1.3s
JAGI LR LR
comp=Z,9μm,18.0s
GMJI Gumukmas 68.52 273 P P 07 26 55.4 +7.8
BBKI Banjar Baru 69.64 278 P P 07 27 01.9 +7.3
PWJI Pagerwojo 70.06 272 P **P 07 27 01.1 +3.9**
PCJI Pacitan 70.53 272 P **P 07 27 02.6 +2.6**
NGJI Ngawi 70.67 272 P P 07 27 10.7 +10
UGM Wanagama 71.23 271 PFAKE 07 27 20.0 +16
UGM LR LR
comp=Z,7μm,19.0s
PMSA Palmer Station 72.60 156 PFAKE 07 27 20.0 +8.3
PMSA LR LR
comp=Z,8μm,19.0s
KKM Kota Kinabalu 73.41 287 *e*P **P 07 27 18.1 +0.7**
comp=Z,118nm,1.8s
MAW Mawson 73.58 200 P **P 07 27 20.4 +3.1**
comp=Z,13nm,0.8s,baz=141,slow=8.9,SNR=17
MAW LR LR 08 00 24.0
comp=Z,11μm,18.1s,baz=116,slow=36
MAW Mawson 73.58 200 P **P 07 27 20.2 +2.8**
baz=74,SNR=21
MAW Mawson 73.58 200 *e*P **P 07 27 21.0 +3.7**
MAW pmax pmax
comp=Z,17nm,1.4s
MAW Mawson 73.58 200 *e*P **P 07 27 21.0 +3.7**
comp=Z,17nm,1.4s
CISI Cisompet, Garu 73.76 270 PFAKE 07 27 30.0 +11
CISI LR LR
comp=Z,3μm,19.0s
XMIS Christmas Isla 74.28 267 PFAKE 07 27 30.0 +7.6
XMIS LR LR
comp=Z,9μm,18.0s
STKI Sintang 74.31 279 P **P 07 27 24.9 +2.3**
CNJI Cibinong 74.48 270 P P 07 27 30.6 +7.0
JHJ Hachijo jima 2 74.71 323 P **P 07 27 21.6 -2.9**
comp=Z,31nm,0.2s,baz=76,slow=19,SNR=2.6
SBUM Sibu 74.89 282 *e*P **P 07 27 27.0 +1.0**
comp=Z,121nm,2.0s
SBUM LR LR
comp=Z,2μm,18.0s
DBJI Dramaga 75.17 271 P P 07 27 34.0 +6.4
KSM Kuching 76.03 280 PFAKE 07 27 40.0 +7.5
KSM LR LR
comp=Z,4μm,18.0s
CGJI Cibinong 76.06 270 P **P 07 27 36.1 +3.4**
JOW Kunigami 76.94 311 PFAKE 07 27 50.0 +13
JOW LR LR
comp=Z,2μm,21.0s
KASI Kota Agung 77.62 271 P **P 07 27 43.0 +1.5**
PPBI Pangkal Pinang 77.82 274 P P 07 27 48.1 +5.5
INU Inuyama 77.88 323 *e*P **P 07 27 41.7 -0.7**
comp=Z,68nm,1.3s
INU LR LR
comp=Z,3μm,18.0s
MJAR Matsushiro Arr 78.18 324 P **P 07 27 41.6 -2.4**
comp=Z,7.4nm,0.7s,baz=160,slow=5.4,SNR=18
MAJO Matsushiro 78.18 324 *ci*P **P 07 27 43.5 -0.6**
MAJO pmax pmax
comp=Z,87nm,0.9s
MAJO Matsushiro 78.18 324 *e*P **P 07 27 43.6 -0.4**
comp=Z,118nm,1.6s
MAJO LR LR
comp=Z,3μm,20.0s
MAT Matsushiro 78.18 324 P **P 07 27 44.1 0.0**
MAT S **S 07 37 38.0 +0.3**
MJB9 Matsu-Tunnel 78.19 324 *e*P **P 07 27 42.2 -1.8**
comp=Z,30nm,1.6s
MJB9 LR LR
comp=Z,2μm,21.0s
LWLI Liwa 78.25 271 P P 07 27 51.1 +6.0
SYO Syowa Base 78.27 193‖ *e*P **P 07 27 42.0 -2.1**
YOJ Yonaguni jima 78.97 306 PFAKE 07 28 00.0 +11
YOJ LR LR
comp=Z,3μm,19.0s
SNAA Sanae 79.03 178 P **P 07 27 47.8 -0.6**
SNAA Sanae 79.03 178 *e*P **P 07 27 47.2 -1.2**
SNAA pmax pmax
comp=Z,52nm,1.0s
SNAA MLR MLR
comp=Z,6μm,19.0s
SNAA Sanae 79.03 178 *e*P **P 07 27 47.2 -1.2**
comp=Z,52nm,1.0s
SNAA LR LR
comp=Z,6μm,19.0s
TWG Pinlang 79.33 304 PFAKE 07 28 00.0 +9.3
TWG LR LR
comp=Z,10μm,21.0s
YULB Yu-li 79.52 304 PFAKE 07 28 00.0 +8.3
YULB LR LR
comp=Z,3μm,22.0s
MNAI Manna 79.53 271 PFAKE 07 28 00.0 +8.0
MNAI LR LR
comp=Z,7μm,20.0s
JNU Nakatsue 79.68 317 P **P 07 27 50.4 -2.0**
comp=Z,31nm,0.8s,baz=87,slow=5.5,SNR=14
JNU Nakatsue 79.68 317 *e*P **P 07 27 51.2 -1.2**
comp=Z,179nm,1.4s
JNU LR LR
comp=Z,3μm,21.0s
NACB Ninganchiao 79.79 305 PFAKE 07 28 00.0 +6.9
NACB LR LR
comp=Z,2μm,19.0s
VNA1 Neumayer--Stat 79.80 176 P **P 07 27 52.4 -0.1**
NVL N'lazarevskaya 79.85 183 *e*P **P 07 27 54.9 +2.1**
NVL *e* 07 31 01.4
NVL *e*S **S 07 37 55.5 +0.9**
TPUB Ta-pu 79.94 304 PFAKE 07 28 00.0 +6.0
TPUB LR LR
comp=Z,3μm,18.0s
SSLB Suanglung 80.01 304 *e*P **P 07 27 54.4 +0.1**
comp=Z,20nm,0.8s
SSLB LR LR
comp=Z,3μm,22.0s
KSI Kapahiang 80.18 271 P **P 07 27 57.1 +1.4**
ERM Erimo 80.23 331 *d*P **P 07 27 54.6 -0.5**
ERM Erimo 80.23 331 PFAKE 07 28 10.0 +15
ERM LR LR
comp=Z,10μm,20.0s
YHNB Yeheng 80.26 305 PFAKE 07 28 10.0 +14
YHNB LR LR
comp=Z,2μm,22.0s
TATO Taipei 80.37 306 PFAKE 07 28 10.0 +14
TATO LR LR
comp=Z,4μm,19.0s
YUK Yuzh-Kuril'sk 80.81 334‖ *e*P **P 07 28 00.5 +2.4**
KUR Kuril'sk 81.08 335 *c*/*i*P P 07 27 51.6 -7.9
KUR *i*S **S 07 38 10.8 +2.9**
KUR pmax pmax
comp=Z,33nm,1.7s
KUR pmax pmax
comp=Z,456nm,7.8s
KUR MLR MLR
comp=N,3μm,19.0s
KUR MLR MLR
comp=E,2μm,19.0s
KUR MLR MLR
comp=Z,3μm,19.0s
COCO West Island 81.12 261 PFAKE 07 28 10.0 +9.4
COCO LR LR
comp=Z,7μm,18.0s
PAF Port-aux-Franc 81.59 217 PFAKE 07 28 10.0 +7.6
PAF LR LR
comp=Z,13μm,18.0s
MYKOM Kota Tinggi 81.76 277 *e*P **P 07 28 04.4 +0.4**
comp=Z,27nm,0.8s
MYKOM LR LR
comp=Z,4μm,21.0s
ASAJ Asahikawa 82.19 332 P **P 07 28 04.5 -1.0**
comp=Z,11nm,0.7s
ASAJ Asahikawa 82.19 332 *e*P **P 07 28 06.5 +1.0**
comp=Z,24nm,0.7s
ASAJ LR LR
comp=Z,8μm,20.0s
PLCA Paso Flores 82.25 133 P **P 07 28 09.6 +3.3**
comp=Z,4.7nm,1.0s,baz=201,slow=6.0,SNR=3.5
PLCA LR LR 07 59 03.4
comp=Z,6μm,18.0s,baz=289,slow=31
PLCA Paso Flores 82.25 133 *e*P **P 07 28 06.7 +0.4**
PLCA pmax pmax
comp=Z,103nm,2.0s
PLCA Paso Flores 82.25 133 *e*P **P 07 28 06.7 +0.4**
comp=Z,103nm,2.0s
NIKH Nikolski High 82.39 5 PFAKE 07 28 20.0 +14
NIKH LR LR
comp=Z,3μm,21.0s
QZH Quanzhou 82.42 304⇑ *i*P P 07 27 57.6 -9.5
QZH Quanzhou 82.42 304 S S 07 38 10.8 -12
QZH pmax pmax
comp=Z,2μm,3.5s
QZH LR LR
comp=N,2μm,13.9s
QZH LR LR
comp=E,2μm,15.1s
QZH LR LR
comp=Z,4μm,17.7s
SNCC San Nicolas Is 82.56 45 PFAKE 07 28 20.0 +12
SNCC LR LR
comp=Z,8μm,20.0s
EFI East Falkland 82.90 147 PFAKE 07 28 20.0 +11
EFI LR LR
comp=Z,6μm,18.0s
SCI2 San Clemente I 82.99 46 P **P 07 28 10.0 +0.1**
baz=228
SCZ2 Santa Cruz Isl 82.99 45 P **P 07 28 10.1 +0.2**
baz=227
SLBS Sierra La Lagu 83.07 58 PFAKE 07 28 20.0 +9.4
SLBS LR LR
comp=Z,16μm,18.0s
SBC Santa Barbara 83.25 44 P **P 07 28 10.6 -0.6**
baz=227
CIS Catalina Islan 83.35 46 P **P 07 28 10.8 -1.0**
baz=228
BLG Laguna Peak, P 83.42 45 P **P 07 28 11.3 -0.8**
baz=228
BKNI Bangkinang 83.47 274 PFAKE 07 28 20.0 +7.1
BKNI LR LR
comp=Z,11μm,18.0s
PKM Mcpherson Peak 83.49 44 P **P 07 28 12.2 -0.5**
baz=227
SRIG Santa Rosalia 83.58 54 PFAKE 07 28 20.0 +6.9
SRIG LR LR
comp=Z,6μm,18.0s
FMP Fort Macarthur 83.63 46 P **P 07 28 12.3 -0.9**
baz=228
SMMC Simmler 83.67 43 P **P 07 28 12.8 -0.6**
baz=227
PAGB Antelope Grade 83.80 43 *e*P **P 07 28 14.2 +0.2**
comp=Z,42nm,1.1s
PAGB LR LR
comp=Z,9μm,18.0s
AKUT Akutan 83.80 6 PFAKE 07 28 20.0 +6.5
AKUT LR LR
comp=Z,5μm,19.0s
PMPB Monarch Peak 83.80 42 *e*P **P 07 28 13.1 -1.1**
comp=Z,51nm,1.1s
PMPB LR LR
comp=Z,11μm,20.0s
SAO San Andreas Ge 83.81 42 *e*P **P 07 28 12.8 -1.2**
SAO pmax pmax
comp=Z,47nm,1.1s
SAO MLR MLR
comp=Z,11μm,20.0s
SAO San Andreas Ge 83.81 42 *e*P **P 07 28 12.8 -1.2**
comp=Z,47nm,1.1s
SAO LR LR
comp=Z,11μm,20.0s
109C Camp Elliot, M 83.84 47 P **P 07 28 13.4 -0.8**
baz=229
MCCM Marconi Confer 83.96 40 PFAKE 07 28 20.0 +5.3
MCCM LR LR
comp=Z,11μm,19.0s
DECC Green Verdugo 83.97 45 P **P 07 28 14.5 -0.4**
baz=228
OSI Osito Audit: C 83.97 45 P **P 07 28 14.1 -0.8**
baz=228
OSI Osito Audit: C 83.97 45 PFAKE 07 28 30.0 +15
OSI LR LR
comp=Z,8μm,19.0s
BAR Barrett 83.98 47 *e*P **P 07 28 14.0 -1.1**
comp=Z,87nm,1.9s
BAR LR LR
comp=Z,7μm,18.0s
PASC Pasadena Art C 84.00 45 *e*P **P 07 28 16.5 +1.4**
comp=Z,26nm,0.9s
PASC LR LR
comp=Z,8μm,20.0s
MWC Mount Wilson 84.12 45 *e*P **P 07 28 15.2 -0.7**
MWC pmax pmax
comp=Z,33nm,1.0s
MWC MLR MLR
comp=Z,8μm,19.0s
MWC Mount Wilson 84.12 45 *e*P **P 07 28 15.2 -0.7**
comp=Z,33nm,1.0s
MWC LR LR
comp=Z,8μm,19.0s
ARVC Arvin 84.24 44 P **P 07 28 15.6 -0.7**
baz=228,SNR=9.1
MURC Murrieta 84.24 46 P **P 07 28 15.8 -0.6**
baz=229,SNR=19
MONP2 Monument Peak 84.27 47 P **P 07 28 16.0 -0.8**
baz=229,SNR=23

IKP	**In-Ko-Pah, Jac**	**84.32**	**48**	P	**P**	**07 28 16.2**	**-0.6**
	baz=230,SNR=6.9						
BFSC	**Mount Baldy Ra**	**84.37**	**46**	P	**P**	**07 28 15.9**	**-1.2**
	baz=228,SNR=10						
SSE	**Sheshan**	**84.41**	**310**	P	**P**	**07 28 17.3**	**+0.1**
SSE				S	**S**	**07 38 41.9**	**-0.6**
SSE				sS	**ScS**	**07 38 58.6**	**+4.4**
SSE				pmax	pmax		
	comp=Z,34nm,0.8s						
SSE				pmax	pmax		
	comp=Z,1μm,9.4s						
SSE				LR	LR		
	comp=Z,1μm,27.3s						
SSE				LR	LR		
	comp=Z,1μm,27.8s						
SSE				LR	LR		
	comp=Z,2μm,22.5s						
KSRS	**Korea Array**	**84.43**	**319**	P	**P**	**07 28 14.9**	**-2.2**
	comp=Z,6.4nm,0.8s,baz=140,slow=5.5,SNR=11						
KSRS				LR	LR	07 59 38.7	
	comp=Z,1μm,21.1s,baz=117,slow=31						
KS15	**Wonju Array Si**	**84.45**	**319**	*e*P	**P**	**07 28 16.7**	**-0.5**
KSAR	**Wonju Array Be**	**84.45**	**319**	P	**P**	**07 28 15.0**	**-2.3**
KSAR	**Wonju Array Be**	**84.45**	**319**	P	**P**	**07 28 14.9**	**-2.3**
HOPS	**Hopland Field**	**84.45**	**39**	*e*P	**P**	**07 28 16.6**	**-0.6**
	comp=Z,79nm,1.1s						
HOPS				LR	LR		
	comp=Z,15μm,20.0s						
YSS	**Yuzh-Sakhalins**	**84.45**	**333**	*α iP*	**P**	**07 28 18.2**	**+1.2**
YSS				*e**SP	**sP**	**07 28 27.4**	**+1.8**
YSS				*e*S	**S**	**07 38 44.5**	**+2.3**
YSS				pmax	pmax		
	comp=Z,30nm,1.0s						
YSS	**Yuzh-Sakhalins**	**84.45**	**333**	*e*P	**P**	**07 28 18.3**	**+1.3**
	comp=Z,46nm,0.7s						
YSS				LR	LR		
	comp=Z,1μm,20.0s						
KS01	**Wonju Array Si**	**84.46**	**319**	*e*P	**P**	**07 28 16.0**	**-1.4**
GDXM	**Geysers**	**84.47**	**39**	PFAKE		07 28 30.0	+13
GDXM				LR	LR		
	comp=Z,17μm,20.0s						
VES	**Vestal, Richgr**	**84.57**	**44**	P	**P**	**07 28 16.6**	**-1.3**
	baz=228,SNR=23						
EDW2	**Edwards Air Fo**	**84.59**	**45**	P	**P**	**07 28 17.2**	**-1.0**
	baz=228,SNR=7.8						
SWSC	**Sam W. Stewart**	**84.71**	**48**	P	**P**	**07 28 17.8**	**-0.9**
	baz=230						
TPFO	**Pinon Flats**	**84.72**	**47**	P	**P**	**07 28 18.5**	**-0.4**
	baz=229,SNR=12						
PFO	**Pinyon Flats O**	**84.72**	**47**	P	**P**	**07 28 16.7**	**-2.2**
	comp=Z,30nm,1.1s,baz=271,slow=3.9,SNR=18						
PFO	**Pinyon Flats O**	**84.72**	**47**	P	**P**	**07 28 17.6**	**-1.3**
	baz=229						
PFO	**Pinyon Flats O**	**84.72**	**47**	*e*P	**P**	**07 28 16.5**	**-2.4**
PFO				pmax	pmax		
	comp=Z,35nm,1.0s						
PFO				MLR	MLR		
	comp=Z,10μm,19.0s						
PFO	**Pinyon Flats O**	**84.72**	**47**	*e*P	**P**	**07 28 16.5**	**-2.4**
	comp=Z,35nm,1.0s						
PFO				LR	LR		
	comp=Z,10μm,19.0s						
ISA	**Isabella, Lake**	**84.82**	**44**	P	**P**	**07 28 18.6**	**-0.7**
	baz=228,SNR=6.6						
ISA	**Isabella, Lake**	**84.82**	**44**	*e*P	**P**	**07 28 19.1**	**-0.2**
ISA				pmax	pmax		
	comp=Z,47nm,1.1s						
ISA				MLR	MLR		
	comp=Z,7μm,20.0s						
ISA	**Isabella, Lake**	**84.82**	**44**	*e*P	**P**	**07 28 19.1**	**-0.2**
	comp=Z,46nm,1.1s						
ISA				LR	LR		
	comp=Z,7μm,20.0s						
BBRC	**Big Bear Solar**	**84.85**	**46**	P	**P**	**07 28 18.6**	**-1.1**
	baz=229						
PET	**Petropavlovsk**	**84.94**	**345**	*e*P	**P**	**07 28 15.2**	**-4.1**
PET				*e*		07 31 29.7	
PET				*i* S	**S**	**07 38 43.1**	**-3.7**
PET				*e*PS	**PnS**	**07 39 39.2**	**-4.3**
PET				*e*PPS	PPS	07 40 00.0	
PET				*e*SS	**SS**	**07 44 20.7**	**+0.1**
PET				pmax	pmax		
	comp=Z,800nm,10.9s						
PET				pmax	pmax		
	comp=Z,800nm,14.8s						
PET				smax	smax		
	comp=N,2μm,14.3s						
PET				smax	smax		
	comp=E,2μm,12.6s						
PET				smax	smax		
	comp=E,2μm,16.1s						
PET				smax	smax		
	comp=N,2μm,13.9s						
PET				MLR	MLR		
	comp=Z,6μm,18.0s						
PET	**Petropavlovsk**	**84.94**	**345**	PFAKE		07 28 30.0	+11
PET				LR	LR		
	comp=Z,5μm,19.0s						
MNSI	**Mandailing Nat**	**84.97**	**274**	P	P	07 28 31.8	+11
KMRM	**Mail Ridge**	**84.98**	**38**	*e*P	**P**	**07 28 20.1**	**+0.1**
	comp=Z,63nm,1.0s						
KMRM				LR	LR		
	comp=Z,12μm,19.0s						
LRMC	**Laurel Mtn Rad**	**85.18**	**45**	P	**P**	**07 28 20.5**	**-0.7**
	baz=228						
INCN	**Inchon**	**85.20**	**318**	PFAKE		07 28 30.0	+8.9
INCN				LR	LR		
	comp=Z,2μm,22.0s						
RRX	**Edison Barstow**	**85.20**	**45**	P	**P**	**07 28 20.5**	**-0.7**
	baz=229						
GZH	**Guangzhou**	**85.22**	**300**	P	**P**	**07 28 21.2**	**-0.3**
GZH				PP	**PP**	**07 31 37.4**	**-2.1**
GZH				S	**S**	**07 38 51.7**	**+0.8**
GZH				pmax	pmax		
	comp=Z,3μm,7.1s						
PEA0	**Petropavlovsk-**	**85.23**	**345**	*e*P	**P**	**07 28 20.4**	**-0.4**
PEA0B	**Petropavlovsk-**	**85.23**	**345**	*e*P	**P**	**07 28 21.1**	**+0.2**
	comp=Z,55nm,1.3s						
PEA0B				LR	LR		
	comp=Z,7μm,20.0s						
PETK	**Petropavlovsk-**	**85.23**	**345**	P	**P**	**07 28 17.5**	**-3.3**
	comp=Z,16nm,0.9s,baz=115,slow=7.2,SNR=15						
PETK				LR	LR	08 02 17.0	
	comp=Z,6μm,19.9s,baz=158,slow=33						
JCC	**Jacoby Creek,**	**85.24**	**37**	*e*P	**P**	**07 28 18.2**	**-2.9**
	comp=Z,74nm,1.4s						
JCC				LR	LR		
	comp=Z,9μm,18.0s						
PEA1	**Petropavlovsk-**	**85.24**	**345**	*e*P	**P**	**07 28 17.5**	**-3.4**
BELC	**Belle Mtn. Jos**	**85.26**	**47**	P	**P**	**07 28 20.8**	**-0.8**
	baz=230,SNR=27						
CMB	**Columbia Colle**	**85.29**	**41**	*e*P	**P**	**07 28 18.0**	**-3.6**
CMB				pmax	pmax		
	comp=Z,45nm,1.1s						
CMB				MLR	MLR		
	comp=Z,9μm,18.0s						
CMB	**Columbia Colle**	**85.29**	**41**	*e*P	**P**	**07 28 18.0**	**-3.6**
	comp=Z,45nm,1.1s						
CMB				LR	LR		
	comp=Z,9μm,18.0s						
BC3	**Big Chuckawall**	**85.39**	**47**	P	**P**	**07 28 21.1**	**-1.2**
	baz=230,SNR=22						
GLA	**Glamis**	**85.40**	**48**	P	**P**	**07 28 21.5**	**-0.7**
	baz=230,SNR=9.9						
GLA	**Glamis**	**85.40**	**48**	*e*P	**P**	**07 28 21.6**	**-0.7**
GLA				pmax	pmax		
	comp=Z,61nm,1.1s						
GLA				MLR	MLR		
	comp=Z,7μm,19.0s						
GLA	**Glamis**	**85.40**	**48**	*e*P	**P**	**07 28 21.6**	**-0.7**
	comp=Z,61nm,1.1s						
GLA				LR	LR		
	comp=Z,7μm,19.0s						
KHMM	**Horse Mountain**	**85.44**	**37**	*e*P	**P**	**07 28 22.2**	**-0.2**
	comp=Z,83nm,1.2s						
KHMM				LR	LR		
	comp=Z,9μm,18.0s						
HSIG		**85.52**	**53**	*e*P	**P**	**07 28 20.4**	**-2.5**
	comp=Z,56nm,1.1s						
HSIG				LR	LR		
	comp=Z,4μm,19.0s						
IPM	**Ipoh**	**85.53**	**278**	*e*P	**P**	**07 28 22.8**	**-0.5**
	comp=Z,26nm,0.8s						
IPM				LR	LR		
	comp=Z,5μm,18.0s						
CWC	**Cottonwood Cre**	**85.57**	**44**	P	**P**	**07 28 22.5**	**-0.7**
	baz=228						
HEC	**Hector,Ludlow**	**85.58**	**46**	P	**P**	**07 28 22.2**	**-0.9**
	baz=229,SNR=16						
AFDM	**Forest Hills D**	**85.59**	**40**	*e*P	**P**	**07 28 21.0**	**-2.0**
	comp=Z,35nm,1.1s						
AFDM				LR	LR		
	comp=Z,12μm,20.0s						
GSC	**Goldstone, Bar**	**85.60**	**45**	P	**P**	**07 28 22.4**	**-0.7**
	baz=229,SNR=27						
GSC	**Goldstone, Bar**	**85.60**	**45**	*e*P	**P**	**07 28 22.5**	**-0.7**
GSC				pmax	pmax		
	comp=Z,44nm,1.0s						
GSC				MLR	MLR		
	comp=Z,9μm,18.0s						
GSC	**Goldstone, Bar**	**85.60**	**45**	*e*P	**P**	**07 28 22.5**	**-0.7**
	comp=Z,44nm,1.0s						
GSC				LR	LR		
	comp=Z,9μm,18.0s						
SDPT	**Sand Point**	**85.62**	**9**	PFAKE		07 28 30.0	+7.3
SDPT				LR	LR		
	comp=Z,3μm,19.0s						
MPMC	**Manual Prospec**	**85.68**	**44**	P	**P**	**07 28 22.6**	**-1.1**
	baz=228,SNR=33						
QIZ	**Qiongzhong**	**85.69**	**295**	P	**P**	**07 28 25.8**	**+1.9**
QIZ				S	**S**	**07 38 50.9**	**-4.8**
QIZ				SS	**SS**	**07 44 36.3**	**+3.5**
QIZ				LR	LR		
	comp=Z,630nm,17.1s						
QIZ				LR	LR		
	comp=Z,960nm,19.2s						
QIZ				LR	LR		
	comp=Z,2μm,45.2s						
ORV	**Oroville**	**85.71**	**40**	*e*P	**P**	**07 28 22.4**	**-1.2**
ORV				pmax	pmax		
	comp=Z,28nm,1.0s						
ORV				MLR	MLR		
	comp=Z,8μm,20.0s						
ORV	**Oroville**	**85.71**	**40**	*e*P	**P**	**07 28 22.4**	**-1.2**
	comp=Z,28nm,1.0s						
ORV				LR	LR		
	comp=Z,8μm,20.0s						
DAC	**Darwin (Calif)**	**85.76**	**44**	*e*P	**P**	**07 28 23.1**	**-1.1**
DAC				pmax	pmax		
	comp=Z,30nm,1.1s						
DAC				MLR	MLR		
	comp=Z,11μm,20.0s						
DAC	**Darwin (Calif)**	**85.76**	**44**	*e*P	**P**	**07 28 23.1**	**-1.1**
	comp=Z,30nm,1.1s						
DAC				LR	LR		
	comp=Z,11μm,20.0s						
WDC	**Whiskeytown Da**	**85.86**	**38**	*e*P	**P**	**07 28 21.1**	**-3.2**
WDC				pmax	pmax		
	comp=Z,60nm,0.9s						
WDC				MLR	MLR		
	comp=Z,11μm,20.0s						
WDC	**Whiskeytown Da**	**85.86**	**38**	*e*P	**P**	**07 28 21.1**	**-3.2**
	comp=Z,60nm,0.9s						
WDC				LR	LR		
	comp=Z,11μm,20.0s						
TIN	**Tinemaha, Big**	**85.89**	**43**	P	**P**	**07 28 23.8**	**-0.9**
	baz=228						
IRM	**Iron Mountain**	**85.90**	**47**	P	**P**	**07 28 24.3**	**-0.4**
	baz=230,SNR=24						
113A	**Mohawk Valley,**	**85.92**	**49**	*e*P	**P**	**07 28 23.9**	**-0.9**
	comp=Z,30nm,1.0s						
113A				LR	LR		
	comp=Z,8μm,18.0s						
MLAC	**Mammoth, Mammo**	**85.92**	**42**	P	**P**	**07 28 24.1**	**-0.9**
	baz=228						
GMRC	**Granite Mounta**	**85.98**	**46**	P	**P**	**07 28 24.7**	**-0.5**
	baz=230,SNR=20						
214A	**Organ Pipe Nat**	**86.04**	**50**	P	**P**	**07 28 24.2**	**-1.2**
	baz=232						
214A	**Organ Pipe Nat**	**86.04**	**50**	*e*P	**P**	**07 28 23.9**	**-1.5**
	comp=Z,310nm,1.4s						
Y12C	**Blythe**	**86.04**	**48**	P	**P**	**07 28 25.1**	**-0.3**
	baz=230,SNR=5.6						
Y12C	**Blythe**	**86.04**	**48**	*e*P	**P**	**07 28 24.9**	**-0.4**
	comp=Z,42nm,1.3s						
Y12C				LR	LR		
	comp=Z,6μm,18.0s						
N02D	**Trinity Center**	**86.05**	**38**	P	**P**	**07 28 25.0**	**-0.3**
	baz=225,SNR=28						
O03D	**Paynes Creek**	**86.06**	**39**	P	**P**	**07 28 24.0**	**-1.4**
	baz=225,SNR=21						
O03D	**Paynes Creek**	**86.06**	**39**	*e*P	**P**	**07 28 23.7**	**-1.7**
WAKR	**Walker**	**86.16**	**41**	*e*P	**P**	**07 28 25.3**	**-0.8**
	comp=Z,56nm,1.0s						
WAKR				LR	LR		
	comp=Z,9μm,19.0s						
TUQ	**Turquoise Moun**	**86.23**	**46**	P	**P**	**07 28 24.9**	**-1.5**
	baz=230						
KULM	**Kulim**	**86.26**	**278**	*e*P	**P**	**07 28 27.6**	**+0.7**
	comp=Z,82nm,1.5s						
KULM				LR	LR		
	comp=Z,5μm,19.0s						
M02C	**Callahan**	**86.27**	**37**	P	**P**	**07 28 25.2**	**-1.2**
	baz=225,SNR=23						
MSHR	**Mys Shultsa**	**86.30**	**324**	*‖ eP*	**P**	**07 28 27.0**	**+0.6**
SHOC	**Shoshone, Teco**	**86.32**	**45**	P	**P**	**07 28 25.4**	**-1.3**
	baz=229,SNR=7.6						
FURC	**Furnace Creek,**	**86.33**	**44**	P	**P**	**07 28 24.9**	**-1.7**
	baz=229,SNR=12						
GRAC	**Grapevine Rang**	**86.37**	**44**	P	**P**	**07 28 25.9**	**-1.0**
	baz=228,SNR=37						
TVH3	**East Aurora ar**	**86.42**	**42**	*e*P	**P**	**07 28 26.2**	**-1.1**
	comp=Z,38nm,1.1s						
TVH3				LR	LR		
	comp=Z,6μm,19.0s						
L02D	**Cave Junction,**	**86.42**	**37**	P	**P**	**07 28 26.3**	**-0.7**
	baz=224,SNR=5.4						
PNTR	**Pine Nut**	**86.46**	**41**	*e*P	**P**	**07 28 24.7**	**-2.9**
	comp=Z,60nm,0.9s						
PNTR				LR	LR		
	comp=Z,12μm,20.0s						
TVH2	**Borealis Mine**	**86.47**	**42**	*e*P	**P**	**07 28 24.2**	**-3.4**
	comp=Z,23nm,1.0s						
TVH2				LR	LR		
	comp=Z,6μm,20.0s						
PAYG	**Puerto Ayora**	**86.49**	**89**	PFAKE		07 28 40.0	+12
PAYG				LR	LR		
	comp=Z,9μm,18.0s						
SPIA	**Saint Paul Isl**	**86.49**	**3**	PFAKE		07 28 40.0	+13
SPIA				LR	LR		
	comp=Z,4μm,20.0s						
LDFC	**Landfair**	**86.51**	**46**	*e*P	**P**	**07 28 25.4**	**-2.4**
	comp=Z,147nm,1.2s						
LDFC				LR	LR		
	comp=Z,9μm,20.0s						
TVH1	**TV Hill, Hawth**	**86.52**	**42**	*e*P	**P**	**07 28 26.4**	**-1.6**
	comp=Z,62nm,1.3s						
TVH1				LR	LR		
	comp=Z,8μm,20.0s						
PSI	**Prapat**	**86.53**	**275**	*e*P	**P**	**07 28 27.3**	**-1.1**
PSI				pmax	pmax		
	comp=Z,60nm,1.2s						
PSI				MLR	MLR		
	comp=Z,7μm,18.0s						
PSI	**Prapat**	**86.53**	**275**	*e*P	**P**	**07 28 27.3**	**-1.1**
	comp=Z,60nm,1.2s						
PSI				LR	LR		
	comp=Z,7μm,18.0s						
NJ2	**Nanjing**	**86.56**	**310**	*e*P	**P**	**07 28 29.4**	**+1.5**
NJ2				SKS	**SKSac**	**07 38 56.3**	**+2.7**
NJ2				S	**S**	**07 39 07.1**	**+3.4**
NJ2				pmax	pmax		
	comp=Z,31nm,0.9s						
NJ2				pmax	pmax		
	comp=Z,2μm,9.8s						
NJ2				LR	LR		
	comp=Z,2μm,21.7s						
NJ2				LR	LR		
	comp=Z,1μm,20.4s						
NJ2				LR	LR		
	comp=Z,2μm,23.9s						
YBH	**Yreka Blue Hor**	**86.59**	**37**	*e*P	**P**	**07 28 26.5**	**-1.5**
YBH				pmax	pmax		
	comp=Z,39nm,1.0s						
YBH				MLR	MLR		
	comp=Z,10μm,19.0s						
YBH	**Yreka Blue Hor**	**86.59**	**37**	*e*P	**P**	**07 28 26.5**	**-1.5**
	comp=Z,39nm,1.0s						
YBH				LR	LR		
	comp=Z,10μm,19.0s						
YERR	**Yerington**	**86.60**	**41**	*e*P	**P**	**07 28 24.4**	**-3.8**
	comp=Z,42nm,1.1s						
YERR				LR	LR		
	comp=Z,9μm,20.0s						
NEE2	**Needles Airpor**	**86.63**	**47**	P	**P**	**07 28 27.0**	**-1.2**
	baz=230						
CHGN	**Chignik**	**86.84**	**10**	*e*P	**P**	**07 28 29.8**	**+1.1**
GSI	**Gunungsitoli**	**86.97**	**273**	PFAKE		07 28 40.0	+10
GSI				LR	LR		
	comp=Z,12μm,18.0s						
PAHR	**Pah Rah Range**	**87.00**	**41**	*e*P	**P**	**07 28 28.8**	**-1.3**
	comp=Z,29nm,1.0s						
PAHR				LR	LR		
	comp=Z,15μm,19.0s						
TPNV	**Topopah Spring**	**87.01**	**44**	P	**P**	**07 28 29.3**	**-1.0**
	baz=229,SNR=59						
TPNV	**Topopah Spring**	**87.01**	**44**	*e*P	**P**	**07 28 27.1**	**-3.1**
TPNV				pmax	pmax		
	comp=Z,50nm,1.0s						
TPNV				MLR	MLR		
	comp=Z,8μm,20.0s						
TPNV	**Topopah Spring**	**87.01**	**44**	*e*P	**P**	**07 28 27.1**	**-3.1**
	comp=Z,50nm,1.0s						
TPNV				LR	LR		
	comp=Z,8μm,20.0s						
USRK	**Ussuriysk Ar.**	**87.06**	**326**	P	**P**	**07 28 27.3**	**-2.8**
	comp=Z,11nm,0.8s,baz=143,slow=4.3,SNR=18						
USRK				LR	LR	08 03 44.7	
	comp=Z,6μm,19.9s,baz=127,slow=33						
HUMO	**Hull Mountain**	**87.08**	**37**	*e*P	**P**	**07 28 28.6**	**-1.6**
	comp=Z,66nm,1.5s						
HUMO				LR	LR		
	comp=Z,5μm,19.0s						
M04C	**Macdoel**	**87.08**	**38**	P	**P**	**07 28 29.4**	**-1.0**
	baz=225,SNR=8.6						
Y14A	**Wickenburg**	**87.14**	**48**	*e*P	**P**	**07 28 28.1**	**-2.7**
	comp=Z,156nm,1.0s						
Y14A				LR	LR		
	comp=Z,42μm,19.0s						
UBPT	**Khong Chiam**	**87.24**	**289**	P	P	07 28 36.4	+4.8
	comp=Z,58nm,2.2s						
W13A	**Hualapai Mount**	**87.30**	**47**	*e*P	**P**	**07 28 30.6**	**-1.1**
	comp=Z,29nm,1.0s						
W13A				LR	LR		
	comp=Z,8μm,18.0s						
SHPR	**Sheep Range**	**87.40**	**45**	*e*P	**P**	**07 28 31.1**	**-1.1**
	comp=Z,93nm,1.6s						
MOIG	**Morelia**	**87.56**	**66**	PFAKE		07 28 40.0	+6.6
MOIG				LR	LR		
	comp=Z,7μm,20.0s						
TUC	**Tucson**	**87.62**	**51**	P	**P**	**07 28 31.9**	**-1.3**
	baz=233						
TUC	**Tucson**	**87.62**	**51**	*e*P	**P**	**07 28 30.7**	**-2.5**
TUC				pmax	pmax		
	comp=Z,53nm,1.0s						
TUC				MLR	MLR		
	comp=Z,6μm,19.0s						
TUC	**Tucson**	**87.62**	**51**	*e*P	**P**	**07 28 30.7**	**-2.5**
	comp=Z,53nm,1.0s						
TUC				LR	LR		
	comp=Z,6μm,19.0s						
I03D	**Drain, OR**	**87.65**	**36**	P	**P**	**07 28 33.0**	**+0.1**
	baz=224						
TYV	**Tymovskoe**	**87.71**	**336**	*e*P	**P**	**07 28 32.0**	**-1.0**
TYV				*e*S	**S**	**07 39 07.0**	**-6.9**
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
TYV				pmax	pmax		
	comp=Z,2μm,10.0s						
TYV				smax	smax		
	comp=N,4μm,11.0s						
TYV				MLR	MLR		
	comp=N,4μm,19.0s						
TYV				MLR	MLR		
	comp=Z,6μm,19.0s						
K04D	**Chiloquin, OR**	**87.72**	**37**	P	**P**	**07 28 33.3**	**-0.1**
	baz=225						
MOD	**Modoc Plateau**	**87.99**	**38**	*e*P	**P**	**07 28 34.1**	**-0.8**
	comp=Z,32nm,0.9s						
MOD				LR	LR		
	comp=Z,11μm,19.0s						
319A	**Douglas**	**88.08**	**52**	*e*P	**P**	**07 28 35.9**	**+0.5**
	comp=Z,45nm,0.9s						
319A				LR	LR		
	comp=Z,7μm,19.0s						
HPIG		**88.10**	**58**	*e*P	**P**	**07 28 32.0**	**-3.7**
	comp=Z,24nm,0.8s						
HPIG				LR	LR		
	comp=Z,17μm,18.0s						
ZAIG	**Zacatecas**	**88.14**	**63**	*e*P	**P**	**07 28 34.7**	**-1.4**
	comp=Z,23nm,1.2s						
ZAIG				LR	LR		
	comp=Z,7μm,20.0s						
I04A	**Tendick Farm,**	**88.20**	**36**	P	**P**	**07 28 34.7**	**-0.9**
	baz=225,SNR=9.9						
K05A	**Summer Lake**	**88.24**	**38**	*e*P	**P**	**07 28 32.8**	**-3.3**
	comp=Z,71nm,1.1s						
K05A				LR	LR		
	comp=Z,9μm,19.0s						
COR	**Corvallis**	**88.31**	**35**	PFAKE		07 28 50.0	+14
COR				LR	LR		
	comp=Z,12μm,19.0s						
R11A	**Troy Canyon, C**	**88.32**	**43**	P	**P**	**07 28 35.8**	**-0.8**
	baz=230						
R11A	**Troy Canyon, C**	**88.32**	**43**	*e*P	**P**	**07 28 34.6**	**-2.0**
	comp=Z,12nm,1.1s						
R11A				LR	LR		
	comp=Z,8μm,19.0s						
J05D	**Fort Rock, OR**	**88.45**	**37**	P	**P**	**07 28 36.0**	**-0.9**
	baz=226,SNR=31						
X16A	**Lo Mia Camp, P**	**88.46**	**49**	*e*P	**P**	**07 28 34.8**	**-2.5**
	comp=Z,41nm,0.9s						
X16A				LR	LR		
	comp=Z,8μm,19.0s						
LCO	**Las Campanas**	**88.47**	**123**	PFAKE		07 28 50.0	+12
LCO				LR	LR		
	comp=Z,8μm,19.0s						
MDJ	**Mudanjiang**	**88.56**	**325**	P	**P**	**07 28 38.3**	**+1.1**
MDJ				PP	**PP**	**07 32 05.0**	**-1.0**
MDJ				SKS	**SKSac**	**07 39 04.2**	**-0.9**
MDJ				S	**ScS**	**07 39 27.3**	**-0.6**
MDJ				SS	**SS**	**07 45 16.1**	**+2.1**
MDJ				pmax	pmax		
	comp=Z,20nm,1.7s						
MDJ				pmax	pmax		
	comp=Z,1μm,9.2s						
MDJ				LR	LR		
	comp=Z,2μm,28.1s						
MDJ				LR	LR		
	comp=Z,1μm,32.8s						
MDJ				LR	LR		
	comp=Z,1μm,31.2s						
MDJ	**Mudanjiang**	**88.56**	**325**	PFAKE		07 28 50.0	+13
MDJ				LR	LR		
	comp=Z,8μm,21.0s						
TLIG	**Tlapa**	**88.56**	**69**	PFAKE		07 28 50.0	+12
TLIG				LR	LR		
	comp=Z,7μm,19.0s						
OHAK	**Old Harbor**	**88.59**	**12**	*e*P	**P**	**07 28 35.1**	**-1.9**
	comp=Z,149nm,1.9s						
BMN	**Battle Mountai**	**88.72**	**41**	*e*P	**P**	**07 28 36.9**	**-1.4**
BMN				pmax	pmax		
	comp=Z,22nm,0.9s						
BMN				MLR	MLR		
	comp=Z,10μm,20.0s						
BMN	**Battle Mountai**	**88.72**	**41**	*e*P	**P**	**07 28 36.9**	**-1.4**
	comp=Z,22nm,0.9s						
BMN				LR	LR		
	comp=Z,10μm,20.0s						
WHN	**Wuhan**	**88.75**	**306**	*⇑ iP*	**P**	**07 28 39.4**	**+0.9**
WHN				SKS	**SKSac**	**07 39 09.5**	**+2.5**
WHN				S	**ScS**	**07 39 30.4**	**+0.3**
WHN				pmax	pmax		
	comp=Z,3μm,10.0s						
WHN				LR	LR		
	comp=Z,5μm,17.9s						
WHN				LR	LR		
	comp=Z,2μm,17.8s						
WHN				LR	LR		
	comp=Z,7μm,23.4s						
G03D	**McMinnville, O**	**88.78**	**35**	P	**P**	**07 28 38.0**	**-0.2**
	baz=224						
HABR	**Khabarovsk**	**88.83**	**330**	*c*eP	**P**	**07 28 38.9**	**+0.5**
HABR				*e**SP	**sP**	**07 28 46.7**	**-0.3**
HABR				*e*S	**SKSac**	**07 39 05.5**	**-1.1**
HABR				*e**SS	**SKKSac**	**07 39 16.6**	**-1.4**
HABR				*e*SS	**SS**	**07 45 18.8**	**+1.0**
HABR				MLR	MLR		
	comp=Z,3μm,19.0s						
LCMT	**Little Creek M**	**88.91**	**46**	*e*P	**P**	**07 28 38.7**	**-0.6**
	comp=Z,34nm,1.0s						

LCMT LR LR
comp=Z,7μm,20.0s
UNM Universidad Na 88.98 67 PFAKE 07 28 50.0 +10
UNM LR LR
comp=Z,8μm,19.0s
DL2 Dalian 89.09 317⇑ *i*P **P 07 28 38.9 -1.0**
DL2 pP **sP 07 28 50.2 +1.7**
DL2 SKS **SKSac 07 39 11.9 +3.3**
DL2 S **S 07 39 30.3 +2.7**
DL2 pmax pmax
comp=Z,26nm,0.8s
DL2 pmax pmax
comp=Z,830nm,7.4s
DL2 LR LR
comp=Z,1μm,16.7s
DL2 LR LR
comp=Z,1μm,18.8s
DL2 LR LR
comp=Z,2μm,23.0s
I05D Terrebonne, OR 89.13 36 P **P 07 28 39.4 -0.6**
baz=226
U15A North Rim 89.14 47 *e*P **P 07 28 37.7 -2.9**
U15A LR LR
comp=Z,5μm,20.0s
F03A Seaside 89.15 34 *e*P **P 07 28 39.7 -0.2**
comp=Z,80nm,1.5s
F03A LR LR
comp=Z,5μm,20.0s
CCUT Cedar City 89.17 45 *e*P **P 07 28 36.9 -3.7**
comp=Z,32nm,1.1s
CCUT LR LR
comp=Z,7μm,20.0s
WUAZ Wupatki 89.17 48 P **P 07 28 39.1 -1.4**
baz=232
WUAZ Wupatki 89.17 48 *e*P **P 07 28 38.1 -2.5**
comp=Z,72nm,1.0s
WUAZ LR LR
comp=Z,6μm,20.0s
KNB Kanab 89.17 46 *e*P **P 07 28 37.8 -2.8**
KNB pmax pmax
comp=Z,56nm,1.1s
KNB Kanab 89.17 46 *e*P **P 07 28 37.8 -2.8**
comp=Z,56nm,1.1s
TRQA Tornquist 89.23 134 *e*P **P 07 28 39.4 -1.4**
comp=Z,37nm,1.5s
TRQA LR LR
comp=Z,8μm,18.0s
KDAK Kodiak Island 89.25 13 *e*P **P 07 28 37.0 -3.1**
KDAK pmax pmax
comp=Z,70nm,1.5s
KDAK MLR MLR
comp=Z,8μm,19.0s
KDAK Kodiak Island 89.25 13 *e*P **P 07 28 37.0 -3.1**
comp=Z,70nm,1.5s
KDAK LR LR
comp=Z,8μm,19.0s
WVOR Wild Horse Val 89.26 39 *e*P **P 07 28 38.4 -2.3**
WVOR pmax pmax
comp=Z,36nm,1.3s
WVOR MLR MLR
comp=Z,14μm,20.0s
WVOR Wild Horse Val 89.26 39 *e*P **P 07 28 38.4 -2.3**
comp=Z,36nm,1.3s
WVOR LR LR
comp=Z,14μm,20.0s
SKNT Sakolnakorn 89.33 290 P **P 07 28 42.9 +1.4**
comp=Z,158nm,1.4s
SZCU Shurtz Canyon 89.37 45 *e*P **P 07 28 39.3 -2.2**
comp=Z,46nm,1.2s
SZCU LR LR
comp=Z,8μm,20.0s
PSUT Pine Spring 89.48 44 PFAKE 07 28 50.0 +8.0
PSUT LR LR
comp=Z,6μm,20.0s
X18A Snowflake 89.51 49 *e*P **P 07 28 39.7 -2.5**
comp=Z,42nm,1.0s
X18A LR LR
comp=Z,5μm,20.0s
F04D Rainier, OR 89.52 34 P **P 07 28 41.5 -0.2**
baz=224
E03A Lebam 89.59 33 *e*P **P 07 28 41.1 -0.8**
comp=Z,85nm,1.0s
E03A LR LR
comp=Z,8μm,19.0s
F04A Amboy 89.71 34 *e*P **P 07 28 41.5 -1.0**
comp=Z,53nm,0.9s
F04A LR LR
comp=Z,6μm,19.0s
PKCU Pink Cliffs 89.76 46 *e*P **P 07 28 43.6 +0.1**
comp=Z,48nm,1.2s
PKCU LR LR
comp=Z,7μm,19.0s
HOPE Hope Point 89.76 158 PFAKE 07 28 50.0 +7.1
HOPE LR LR
comp=Z,9μm,20.0s
CROR Criterion Ridg 89.76 36 P **P 07 28 42.1 -0.8**
G05D Wamic, OR 89.77 36 P **P 07 28 42.1 -0.8**
baz=226
121A Cookes Peak, D 89.79 52 P **P 07 28 42.5 -1.0**
baz=234
121A Cookes Peak, D 89.79 52 *e*P **P 07 28 43.2 -0.3**
comp=Z,32nm,1.2s
LVP Lakeview Peak 89.81 34 *e*P **P 07 28 42.6 -0.6**
SNY Shenyang 89.86 320 ⇓P **P 07 28 43.0 -0.3**
SNY SKS **SKSac 07 39 16.0 +3.1**
SNY S **ScS 07 39 40.2 +1.5**
SNY SS **SS 07 45 33.2 +0.3**
SNY pmax pmax
comp=Z,34nm,2.5s
SNY pmax pmax
comp=Z,1μm,12.0s
SNY LR LR
comp=Z,2μm,16.1s
SNY LR LR
comp=Z,1μm,19.0s
SNY LR LR
comp=Z,3μm,18.1s
KHON Khomkaen 89.96 289 P P 07 28 54.3 +10
W18A Petrified Fore 90.00 49 P **P 07 28 43.1 -1.4**
baz=233
W18A Petrified Fore 90.00 49 PFAKE 07 28 50.0 +5.5
W18A LR LR
comp=Z,6μm,20.0s
NLWA Neilton Lookou 90.05 33 *e*P **P 07 28 44.1 -0.1**
comp=Z,36nm,1.0s
ELK Elko 90.07 42 *e*P **P 07 28 43.6 -1.1**
ELK pmax pmax
comp=Z,21nm,1.5s
ELK Elko 90.07 42 *e*P **P 07 28 43.6 -1.1**
comp=Z,21nm,1.5s
TDL Tradedollar La 90.10 34 *e*P **P 07 28 43.8 -0.8**
G06A Carlson Farm, 90.11 36 *e*P **P 07 28 44.0 -0.6**
comp=Z,59nm,1.2s
CN2 Changchun 90.14 322 *e*P **P 07 28 43.4 -1.3**
CN2 *e*pP pP 07 28 49.0 -2.1
CN2 SKS **SKSac 07 39 12.9 -1.6**
CN2 *e*S **S 07 39 36.0 -1.1**
CN2 pmax pmax
comp=Z,30nm,1.2s
CN2 pmax pmax
comp=Z,1μm,7.0s
CN2 LR LR
comp=Z,2μm,18.0s
CN2 LR LR
comp=Z,2μm,18.0s
CN2 LR LR
comp=Z,2μm,20.0s
MTPU Mount Pierson 90.20 45 *e*P **P 07 28 43.3 -2.3**
comp=Z,28nm,0.9s
MTPU LR LR
comp=Z,8μm,18.0s
TIA Tai'an 90.23 312 *e*P **P 07 28 43.3 -2.0**
TIA SKS **SKSac 07 39 19.4 +4.0**
TIA S **ScS 07 39 46.4 +4.2**
TIA pmax pmax
comp=Z,70nm,1.0s
TIA pmax pmax
comp=Z,2μm,7.0s
TIA LR LR
comp=Z,2μm,25.0s
TIA LR LR
comp=Z,1μm,18.0s
TIA LR LR
comp=Z,3μm,25.0s
TCRU Three Creeks R 90.39 45 PFAKE 07 29 00.0 +14
TCRU LR LR
comp=Z,6μm,20.0s
MSU Marysvale 90.50 45 *e*P **P 07 28 46.0 -0.8**
MSU Marysvale 90.50 45 *e*P **P 07 28 46.0 -0.8**
LON Longmire 90.58 34 *e*P **P 07 28 46.9 +0.2**
LON pmax pmax
comp=Z,28nm,1.2s
LON MLR MLR
comp=Z,4μm,19.0s
LON Longmire 90.58 34 *e*P **P 07 28 46.9 +0.2**
comp=Z,28nm,1.2s
LON LR LR
comp=Z,4μm,19.0s
D05A Enumclaw 90.80 34 *e*P **P 07 28 47.7 +0.1**
comp=Z,75nm,1.0s
D05A LR LR
comp=Z,5μm,19.0s
DIB Dawson Inlet, 90.85 25 *e*P **P 07 28 49.2 +1.5**
comp=Z,40nm,1.1s
KLR Kul'dur 90.86 329 P **P 07 28 45.1 -2.7**
comp=Z,8.0nm,0.8s,baz=130,slow=1.5,SNR=25
KLR LR LR 08 06 19.6
comp=Z,5μm,19.8s,baz=142,slow=34
LTX Lajitas 90.90 57 *e*P **P 07 28 45.8 -2.9**
LTX Lajitas 90.90 57 *e*P **P 07 28 45.8 -2.9**
TX31 Lajitas Ar. Si 90.90 57 *e*P **P 07 28 46.0 -2.7**
TXAR Lajitas Array 90.90 57 P **P 07 28 45.8 -2.9**
comp=Z,12nm,1.0s,baz=215,slow=6.1,SNR=21
TXAR LR LR 08 02 23.1
comp=Z,5μm,20.0s,baz=0.0,slow=31
GSM Grass Mountain 90.91 34 P **P 07 28 47.6 -0.7**
GSM Grass Mountain 90.91 34 P **P 07 28 47.6 -0.7**
MNTX Cornudas Mount 90.98 54 P **P 07 28 47.8 -1.1**
baz=236,SNR=21
MNTX Cornudas Mount 90.98 54 *e*P **P 07 28 45.5 -3.4**
comp=Z,30nm,1.2s
MNTX LR LR
comp=Z,3μm,20.0s
PAT2 Paterson 2 91.01 36 *e*P **P 07 28 48.9 +0.2**
G08A Pilot Rock 91.02 37 *e*P **P 07 28 47.1 -1.8**
comp=Z,63nm,1.1s
G08A LR LR
comp=Z,5μm,20.0s
CNPM China Poot 91.14 13 *e*P **P 07 28 47.6 -1.4**
comp=Z,56nm,1.3s
CNPM LR LR
comp=Z,7μm,20.0s
PGC Sidney 91.15 32 *e*P **P 07 28 48.8 -0.4**
comp=Z,32nm,1.0s
PGC LR LR
comp=Z,6μm,20.0s
DUG Dugway, Tooele 91.15 43 P **P 07 28 48.8 -0.8**
baz=231
DUG Dugway, Tooele 91.15 43 *e*P **P 07 28 49.5 -0.2**
DUG pmax pmax
comp=Z,20nm,1.2s
DUG MLR MLR
comp=Z,8μm,20.0s
DUG Dugway, Tooele 91.15 43 *e*P **P 07 28 49.5 -0.2**
comp=Z,20nm,1.2s
DUG LR LR
comp=Z,8μm,20.0s
HOM Homer 91.19 12 *e*P **P 07 28 49.4 +0.3**
comp=Z,93nm,0.9s
HOM LR LR
comp=Z,8μm,20.0s
Y22D IRIS PASSCAL I 91.27 51 P **P 07 28 49.4 -0.9**
baz=235
Y22D IRIS PASSCAL I 91.27 51 *e*P **P 07 28 48.6 -1.7**
comp=Z,49nm,0.8s
Y22D LR LR
comp=Z,8μm,18.0s
LAZ Ladron 91.31 51 *e*P **P 07 28 48.0 -2.7**
E07A Sunnyside 91.42 35 PFAKE 07 29 00.0 +9.4
E07A LR LR
comp=Z,13μm,19.0s
BRLK Bradley Lake 91.43 13 *e*P **P 07 28 48.4 -1.9**
comp=Z,37nm,1.1s
BRLK LR LR
comp=Z,6μm,20.0s
NLU North Lily Min 91.45 44 *e*P **P 07 28 49.3 -1.9**
comp=Z,14nm,1.0s
NLU LR LR
comp=Z,7μm,18.0s
MFID Camas Ranch 91.46 40 *e*P **P 07 28 49.8 -1.2**
comp=Z,43nm,1.3s
MFID LR LR
comp=Z,8μm,20.0s
HAWA Hanford 91.47 36 *e*P **P 07 28 51.0 +0.2**
comp=Z,36nm,1.0s
BGU Big Grassy Mou 91.48 43 PFAKE 07 29 00.0 +8.8
BGU LR LR
comp=Z,8μm,18.0s
LTY Liberty 91.50 34 PFAKE 07 29 00.0 +9.0
LTY LR LR
comp=Z,6μm,19.0s
MDW Midway 91.50 35 P **P 07 28 51.1 +0.2**
MDW Midway 91.50 35 P **P 07 28 51.1 +0.2**
B05A Bryant 91.51 33 P **P 07 28 50.2 -0.7**
baz=225,SNR=5.9
BNM Barren Site 91.51 51 *e*P **P 07 28 49.2 -2.4**
A04D Lummi Island 91.54 32 P **P 07 28 50.5 -0.5**
baz=225
TMUT Trail Mountain 91.58 45 *e*P **P 07 28 51.1 -0.8**
comp=Z,37nm,1.0s
TMUT LR LR
comp=Z,7μm,20.0s
BMO Blue Mountains 91.59 38 *e*P **P 07 28 50.0 -1.6**
comp=Z,38nm,1.4s
BMO LR LR
comp=Z,8μm,19.0s
LPM Los Pinos Moun 91.60 51 *e*P **P 07 28 50.8 -1.1**
PBKT Sadao Pong 91.61 288 P **P 07 28 56.3 +4.2**
BBB Bella Bella 91.74 27 *e*P **P 07 28 53.5 +1.6**
comp=Z,34nm,1.1s
RSO Redoubt South 91.74 12 *e*P **P 07 28 52.7 +0.8**
MPU Maple Canyon 91.76 44 *e*P **P 07 28 52.6 0.0**
comp=Z,12nm,1.0s
MPU LR LR
comp=Z,8μm,18.0s
C06D Leavenworth 91.85 34 P **P 07 28 52.1 -0.4**
baz=226
SVW2 Sparrevohn 91.88 10 *e*P **P 07 28 55.1 +2.8**
comp=Z,31nm,1.8s
SVW2 LR LR
comp=Z,3μm,19.0s
SRU San Rafael Swe 91.89 45 *e*P **P 07 28 51.8 -1.4**
SRU pmax pmax
comp=Z,36nm,1.1s
SRU MLR MLR
comp=Z,7μm,18.0s
SRU San Rafael Swe 91.89 45 *e*P **P 07 28 51.8 -1.4**
comp=Z,36nm,1.1s
SRU LR LR
comp=Z,7μm,18.0s
P17A Butcher Ranch, 91.97 45 *e*P **P 07 28 52.7 -0.8**
comp=Z,18nm,1.0s
P17A LR LR
comp=Z,8μm,20.0s
B06A Marblemount 91.98 33 PFAKE 07 29 00.0 +7.0
B06A LR LR
comp=Z,8μm,19.0s
MVCO Mesa Verde 92.04 48 P **P 07 28 52.2 -1.8**
baz=234
MVCO Mesa Verde 92.04 48 *e*P **P 07 28 54.6 +0.6**
comp=Z,13nm,0.9s
MVCO LR LR
comp=Z,8μm,18.0s
SPUT South Promonto 92.06 43 PFAKE 07 29 00.0 +6.1
SPUT LR LR
comp=Z,8μm,20.0s
MID Middleton Isla 92.07 15 PFAKE 07 29 00.0 +6.8
MID LR LR
comp=Z,5μm,18.0s
ENH Enshi 92.08 304 *e*P **P 07 28 52.1 -1.9**
comp=Z,188nm,0.9s
ENH LR LR
comp=Z,2μm,20.0s
ANMO Albuquerque 92.08 51 P **P 07 28 53.1 -1.1**
baz=235
ANMO Albuquerque 92.08 51⇑ *e*P **P 07 28 50.9 -3.2**
ANMO pmax pmax
comp=Z,18nm,1.2s
ANMO Albuquerque 92.08 51 *e*P **P 07 28 51.0 -3.2**
comp=Z,17nm,0.9s
ANMO LR LR
comp=Z,8μm,18.0s
CTU Camp Tracy 92.10 44 *e*P **P 07 28 52.6 -1.5**
comp=Z,20nm,1.1s
CTU LR LR
comp=Z,8μm,20.0s
GYA Guiyang 92.14 299⇑ *i*P **P 07 28 54.0 -0.5**
GYA PP **PP 07 32 39.4 +4.4**
GYA SKS **SKSac 07 39 27.8 +0.8**
GYA S **S 07 39 56.4 0.0**
GYA SS **SS 07 46 11.2 +4.5**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,740nm,8.9s
GYA LR LR
comp=Z,4μm,19.8s
GYA LR LR
comp=Z,3μm,19.7s
GYA LR LR
comp=Z,5μm,18.6s
WTV Waterville 92.15 34 *e*P **P 07 28 53.2 -0.8**
HVU Hansel Valley 92.16 42 *e*P **P 07 28 53.9 -0.4**
HVU pmax pmax
comp=Z,28nm,1.0s
HVU MLR MLR
comp=Z,7μm,19.0s
HVU Hansel Valley 92.16 42 *e*P **P 07 28 53.9 -0.4**
comp=Z,28nm,1.0s
HVU LR LR
comp=Z,7μm,19.0s
PV05 Paradox Valley 92.17 47 *e*P **P 07 28 52.4 -2.2**
JLU Jordanelle 92.22 44 *e*P **P 07 28 54.6 -0.2**
comp=Z,22nm,1.3s
JLU LR LR
comp=Z,10μm,20.0s
D08A Wollman Farm, 92.23 35 *e*P **P 07 28 53.3 -1.0**
comp=Z,49nm,1.0s
D08A LR LR
comp=Z,11μm,19.0s
E09A Wood Farm, Sta 92.26 36 *e*P **P 07 28 54.1 -0.4**
comp=Z,48nm,1.0s
E09A LR LR
comp=Z,6μm,19.0s
HLID Hailey 92.34 40 P **P 07 28 54.3 -0.9**
baz=230,SNR=32
HLID Hailey 92.34 40 *e*P **P 07 28 52.0 -3.2**
comp=Z,28nm,1.1s
HLID LR LR
comp=Z,6μm,20.0s
P18A Preston Nutter 92.37 45 PFAKE 07 29 10.0 +14
P18A LR LR
comp=Z,8μm,20.0s
F10A Beach Ranch, E 92.38 37 PFAKE 07 29 10.0 +15
F10A LR LR
comp=Z,6μm,20.0s
PV10 Paradox Valley 92.38 47 *e*P **P 07 28 55.1 -0.5**
PV09 Paradox Valley 92.39 47 *e*P **P 07 28 55.1 -0.5**
CRAG Craig 92.43 23 PFAKE 07 29 10.0 +15
CRAG LR LR
comp=Z,4μm,19.0s
PV04 Paradox Valley 92.48 47 *e*P **P 07 28 54.6 -1.3**
NNA Nana 92.52 105 PFAKE 07 29 10.0 +13
NNA LR LR
comp=Z,4μm,18.0s
PB04 IPOC Station P 92.52 117 PFAKE 07 29 10.0 +13
PB04 LR LR
comp=Z,5μm,19.0s
SPU Mount Spurr 92.53 12 *e*P **P 07 28 54.9 -0.5**
PV01 Paradox Valley 92.54 47 *e*P **P 07 28 52.5 -3.8**
TCUT Toone Canyon 92.56 43 *e*P **P 07 28 55.8 -0.5**
comp=Z,108nm,1.5s
TCUT LR LR
comp=Z,11μm,20.0s
HWUT Hardware Ranch 92.77 43 *e*P **P 07 28 57.1 -0.1**
comp=Z,70nm,2.0s
HWUT LR LR
comp=Z,9μm,18.0s
RC01 Rabbit Creek A 92.87 13 *e*P **P 07 28 57.5 +0.6**
comp=Z,48nm,1.3s
RC01 LR LR
comp=Z,3μm,19.0s
B08A Colville Reser 92.91 34 *e*P **P 07 28 57.7 +0.3**
comp=Z,7.7nm,0.9s
B08A LR LR
comp=Z,3μm,20.0s
SUA Susitna One 93.03 12 *e*P **P 07 28 59.1 +1.3**
comp=Z,16nm,0.9s
C09A Chrisman Ranch 93.06 35 *e*P **P 07 28 58.0 -0.2**
comp=Z,45nm,1.5s
C09A LR LR
comp=Z,12μm,19.0s
832A Faith Ranch, C 93.06 59 P **P 07 28 57.1 -1.5**
baz=238
BJT Baijiatuau 93.11 315 *e*P **P 07 29 02.0 +3.5**
BJT MLR MLR
comp=Z,2μm,18.0s
BJT Baijiatuau 93.11 315 *e*P **P 07 29 02.0 +3.5**
BJT LR LR
comp=Z,2μm,18.0s
BJI Beijing 93.11 315 P **P 07 28 59.8 +1.3**
BJI PP **PP 07 32 40.0 -2.3**
BJI SKS **SKSac 07 39 31.2 -0.3**
BJI S **ScS 07 40 10.4 +4.5**
BJI SS **SS 07 46 26.6 +6.6**
BJI pmax pmax
comp=Z,24nm,2.0s
BJI pmax pmax
comp=Z,1μm,9.6s
BJI LR LR
comp=Z,2μm,20.8s
BJI LR LR
comp=Z,1μm,22.5s
BJI LR LR
comp=Z,2μm,36.7s
EYAK Cordova Ski Ar 93.21 15 PFAKE 07 29 10.0 +12
EYAK LR LR
comp=Z,6μm,18.0s
933A Laredo 93.24 60 P **P 07 28 58.1 -1.3**
baz=238
LLLB Lillooet 93.26 31 *e*P **P 07 28 59.1 +0.1**
comp=Z,16nm,1.1s
LVC Limon Verde 93.33 118 *e*P **P 07 29 03.1 +2.5**
comp=Z,30nm,1.4s
LVC LR LR
comp=Z,7μm,19.0s
034A Hebbronville 93.40 61 P **P 07 28 59.0 -1.2**
baz=238
S22A 4UR Ranch, Cre 93.43 48 P **P 07 28 59.0 -1.5**
baz=235,SNR=24
S22A 4UR Ranch, Cre 93.43 48 *e*P **P 07 29 00.7 +0.2**
comp=Z,21nm,1.0s
S22A LR LR
comp=Z,7μm,18.0s
PMR Palmer 93.45 13 *e*P **P 07 28 59.3 -0.2**
PMR pmax pmax
comp=Z,47nm,1.8s
PMR MLR MLR
comp=Z,3μm,19.0s
PMR Palmer 93.45 13 *e*P **P 07 28 59.3 -0.2**
comp=Z,47nm,1.8s
PMR LR LR
comp=Z,3μm,19.0s
WRAK Wrangell Islan 93.46 23 *e*P **P 07 29 01.6 +1.9**
comp=Z,20nm,1.0s
WRAK LR LR
comp=Z,3μm,19.0s
833A Chaparral WMA, 93.52 59 P **P 07 28 59.4 -1.3**
baz=238
TT01 Tatalina 93.54 9 *e*P **P 07 29 00.6 +0.7**
035Z Hargill 93.56 62 P **P 07 28 59.1 -1.8**
baz=239
DIV Divide 93.72 14 *e*P **P 07 29 02.7 +1.8**
comp=Z,24nm,1.2s
DIV LR LR
comp=Z,5μm,19.0s
PB01 IPOC Station P 93.74 117 PFAKE 07 29 10.0 +7.8
PB01 LR LR
comp=Z,8μm,18.0s
AHID Auburn Hatcher 93.75 42 *e*P **P 07 29 01.2 -0.5**
comp=Z,40nm,1.1s
AHID LR LR
comp=Z,7μm,20.0s
035A Encino 93.78 61 P **P 07 29 00.8 -1.1**
baz=239
YKU2 Yakutat 93.79 18 PFAKE 07 29 10.0 +8.9
YKU2 LR LR
comp=Z,7μm,19.0s
733A Divot King Ran 93.80 59 P **P 07 29 00.6 -1.4**
baz=238

934A	**Benavides**	93.80	60	P		**P**	07 29 00.6	-1.4	
	baz=239								
SML	**Sawmill**	93.81	13	PFAKE			07 29 10.0	+8.7	
SML				LR		LR			
	comp=Z,4µm,20.0s								
DHAK	**Deception Hill**	93.83	19	PFAKE			07 29 10.0	+8.6	
DHAK				LR		LR			
	comp=Z,6µm,20.0s								
BMRM	**Bremner River**	93.84	15	*eP*		**P**	07 29 00.3	-1.2	
	comp=Z,19nm,1.2s								
BMRM				LR		LR			
	comp=Z,6µm,20.0s								
O20A	**White River Ci**	93.91	46	P		**P**	07 29 01.7	-0.8	
	baz=234								
O20A	**White River Ci**	93.91	46	*eP*		**P**	07 29 01.7	-0.8	
	comp=Z,22nm,1.1s								
O20A				LR		LR			
	comp=Z,4µm,18.0s								
NEW	**Newport**	93.94	35	P		**P**	07 29 01.9	-0.3	
	baz=229								
CRQM	**Cirque**	93.99	16	*eP*		**P**	07 29 03.7	+1.4	
	comp=Z,25nm,1.2s								
MCMT	**McKenzie Canyo**	94.01	40	*eP*		**P**	07 29 02.2	-0.7	
KLU	**Klutina**	94.02	14	*eP*		**P**	07 29 01.3	-1.0	
	comp=Z,20nm,1.4s								
KLU				LR		LR			
	comp=Z,4µm,20.0s								
SCM	**Sheep Creek Mo**	94.03	13	*eP*		**P**	07 29 00.9	-1.4	
SCM				pmax		pmax			
	comp=Z,12nm,0.8s								
SCM				MLR		MLR			
	comp=Z,5µm,20.0s								
SCM	**Sheep Creek Mo**	94.03	13	*eP*		**P**	07 29 00.9	-1.4	
	comp=Z,12nm,0.8s								
SCM				LR		LR			
	comp=Z,5µm,20.0s								
834A	**Tilden**	94.05	60	P		**P**	07 29 01.9	-1.3	
	baz=239								
MSTX	**Muleshoe**	94.07	53	P		**P**	07 29 01.6	-1.6	
	baz=237,SNR=14								
MSTX	**Muleshoe**	94.07	53	*eP*		**P**	07 29 03.2	-0.1	
	comp=Z,35nm,0.9s								
MSTX				LR		LR			
	comp=Z,4µm,20.0s								
PPLA	**Purkeypile**	94.11	11	PFAKE			07 29 10.0	+7.2	
PPLA				LR		LR			
	comp=Z,6µm,20.0s								
PCA	**Pinnacle**	94.13	17	PFAKE			07 29 10.0	+7.2	
PCA				LR		LR			
	comp=Z,11µm,20.0s								
TIY	**Taiyuan**	94.15	311	*eP*		**P**	07 29 05.4	+1.9	
TIY				SKS		**SKSac**	07 39 33.1	-4.4	
TIY				S		**S**	07 40 09.7	-3.9	
TIY				pmax		pmax			
	comp=Z,600nm,10.7s								
TIY				LR		LR			
	comp=Z,670nm,13.7s								
TIY				LR		LR			
	comp=Z,700nm,16.1s								
TIY				LR		LR			
	comp=Z,2µm,26.7s								
SMCO	**Snowmass**	94.16	47	*eP*		**P**	07 29 03.1	-0.8	
	comp=Z,20nm,1.0s								
SMCO				LR		LR			
	comp=Z,6µm,20.0s								
CM01	**Chiang Mai Arr**	94.19	289	*eP*		**P**	07 29 02.1	-2.0	
CMAR	**Chiang Mai Arr**	94.23	289	P		**P**	07 29 01.6	-2.6	
	comp=Z,13nm,0.4s,baz=141,slow=2.7,SNR=3.5								
KVTX	**Kingsville**	94.25	61	PFAKE			07 29 10.0	+5.9	
KVTX				LR		LR			
	comp=Z,6µm,18.0s								
REDW	**Red Top Meadow**	94.25	42	*eP*		**P**	07 29 03.4	-0.7	
	comp=Z,34nm,1.1s								
REDW				LR		LR			
	comp=Z,7µm,20.0s								
633A	**Saathoff Ranch**	94.27	59	P		**P**	07 29 02.2	-2.0	
	baz=238								
TPAW	**Teton Pass**	94.27	42	*eP*		**P**	07 29 03.4	-0.8	
	comp=Z,32nm,1.3s								
TPAW				LR		LR			
	comp=Z,6µm,20.0s								
SDCO	**Great Sand Dun**	94.30	49	P		**P**	07 29 03.3	-1.2	
	baz=236								
SDCO	**Great Sand Dun**	94.30	49	*eP*		**P**	07 29 01.3	-3.2	
	comp=Z,27nm,1.5s								
SDCO				LR		LR			
	comp=Z,4µm,20.0s								
PB11	**IPOC Station P**	94.31	115	PFAKE			07 29 10.0	+5.1	
PB11				LR		LR			
	comp=Z,4µm,19.0s								
JCT	**Junction City**	94.34	57	P		**P**	07 29 03.1	-1.4	
	baz=238								
JCT	**Junction City**	94.34	57	*eP*		**P**	07 29 02.9	-1.6	
JCT				pmax		pmax			
	comp=Z,15nm,0.9s								
JCT				MLR		MLR			
	comp=Z,14µm,18.0s								
JCT	**Junction City**	94.34	57	*eP*		**P**	07 29 02.9	-1.6	
	comp=Z,15nm,0.9s								
JCT				LR		LR			
	comp=Z,14µm,18.0s								
SNOW	**Snow King Moun**	94.37	42	*eP*		**P**	07 29 01.8	-2.9	
	comp=Z,46nm,1.0s								
SNOW				LR		LR			
	comp=Z,7µm,19.0s								
CHTO	**Chiang Mai**	94.40	289	PFAKE			07 29 20.0	+15	
CHTO				LR		LR			
	comp=Z,2µm,18.0s								
734A	**La Parita Cree**	94.42	59	P		**P**	07 29 03.8	-1.0	
	baz=239								
BALM	**Baldy**	94.42	16	*eP*		**P**	07 29 03.2	-1.0	
BALM				MLR		MLR			
	comp=Z,7µm,20.0s								
BALM	**Baldy**	94.42	16	*eP*		**P**	07 29 03.1	-1.0	
BALM				LR		LR			
	comp=Z,7µm,20.0s								
KMI	**Kunming**	94.48	296	P		**P**	07 29 07.0	+1.5	
KMI				pP		sP	07 29 15.4	+1.3	
KMI				sP		pP	07 29 18.9	+7.0	
KMI				PP		**PP**	07 32 58.8	+5.3	
KMI				SKS		**SKSac**	07 39 41.4	+1.2	
KMI				S		**S**	07 40 15.0	-2.3	
KMI				SS		**SS**	07 46 49.3	+8.8	
KMI				pmax		pmax			
	comp=Z,18nm,2.0s								
KMI				pmax		pmax			
	comp=Z,580nm,7.2s								
KMI				LR		LR			
	comp=Z,970nm,18.6s								
KMI				LR		LR			
	comp=Z,1µm,19.4s								
KMI				LR		LR			
	comp=Z,2µm,20.3s								
DLMT	**Dillon**	94.48	39	*eP*		**P**	07 29 04.0	-0.9	
	comp=Z,20nm,1.0s								
DLMT				LR		LR			
	comp=Z,9µm,20.0s								
XAN	**Xi'an**	94.51	307	P		**P**	07 29 06.6	+1.4	
XAN				sP		sP	07 29 13.9	0.0	
XAN				PP		**PP**	07 32 57.5	+4.0	
XAN				SKS		**SKSac**	07 39 41.0	+1.4	
XAN				S		**S**	07 40 15.9	-1.0	
XAN				SS		**SS**	07 46 42.4	+2.0	
XAN				pmax		pmax			
	comp=Z,21nm,1.4s								
XAN				pmax		pmax			
	comp=Z,900nm,10.5s								
XAN				LR		LR			
	comp=Z,1µm,19.0s								
XAN				LR		LR			
	comp=Z,1µm,20.3s								
XAN				LR		LR			
	comp=Z,2µm,20.3s								
IMW	**Indian Meadow**	94.53	41	*eP*		**P**	07 29 04.8	-0.6	
	comp=Z,21nm,1.1s								
IMW				LR		LR			
	comp=Z,7µm,20.0s								
LOHW	**Long Hollow**	94.55	42	*eP*		**P**	07 29 04.0	-1.4	
	comp=Z,25nm,1.3s								
LOHW				LR		LR			
	comp=Z,6µm,19.0s								
MOOW	**Moose Ponds**	94.55	42	*eP*		**P**	07 29 05.1	-0.3	
	comp=Z,12nm,0.9s								
MOOW				LR		LR			
	comp=Z,7µm,20.0s								
CAST	**Castle Rocks**	94.62	11	*eP*		**P**	07 29 03.5	-1.5	
	comp=Z,9.3nm,1.0s								
CAST				LR		LR			
	comp=Z,6µm,19.0s								
BW06	**Boulder Array**	94.66	43	P		**P**	07 29 04.4	-1.5	
	baz=234,SNR=6.1								
BW06	**Boulder Array**	94.66	43	*eP*		**P**	07 29 07.0	+1.1	
BW06				LR		LR			
	comp=Z,8µm,20.0s								
PD31	**Pinedale Array**	94.66	43	*eP*		**P**	07 29 06.8	+0.9	
PDAR	**Pinedale Array**	94.66	43	P		**P**	07 29 04.7	-1.2	
	comp=Z,9.9nm,1.0s,baz=190,slow=5.3,SNR=15								
PDAR				PP		**PP**	07 32 55.0	+0.4	
	comp=Z,0.2nm,0.5s,baz=230,slow=7.0,SNR=2.6								
PDAR				PKKPbc		**PKKPdf**	07 46 06.5	+1.5	
	comp=Z,1.1nm,0.8s,baz=80,slow=8.1,SNR=6.4								
PDAR				LR		LR	08 06 07.2		
	comp=Z,7µm,19.2s,baz=250,slow=32								
MSO	**Missoula**	94.67	38	P		**P**	07 29 05.2	-0.5	
	baz=231								
MSO	**Missoula**	94.67	38	*eP*		**P**	07 29 10.1	+4.4	
	comp=Z,12nm,1.3s								
MSO				LR		LR			
	comp=Z,9µm,19.0s								
835A	**Beeville**	94.68	60	P		**P**	07 29 05.0	-1.0	
	baz=239								
T25A	**Trinidad**	94.68	50	P		**P**	07 29 04.6	-1.5	
	baz=236,SNR=9.3								
T25A	**Trinidad**	94.68	50	*eP*		**P**	07 29 04.7	-1.5	
	comp=Z,30nm,1.4s								
T25A				LR		LR			
	comp=Z,4µm,20.0s								
533A	**Kerrville**	94.69	58	P		**P**	07 29 05.2	-0.9	
	baz=238								
FLWY	**Flagg Ranch**	94.78	41	*eP*		**P**	07 29 06.5	+0.1	
	comp=Z,40nm,1.0s								
FLWY				LR		LR			
	comp=Z,8µm,19.0s								
QLMT	**Earthquake Lak**	94.81	40	*eP*		**P**	07 29 06.1	-0.4	
YPP	**Pitchstone Pla**	94.83	41	*eP*		**P**	07 29 05.0	-1.8	
	comp=Z,14nm,1.2s								
YPP				LR		LR			
	comp=Z,11µm,18.0s								
634A	**China Grove, S**	94.85	59	P		**P**	07 29 05.3	-1.5	
	baz=239								
LRM	**Limekiln Ridge**	94.85	39	*eP*		**P**	07 29 04.5	-2.2	
YHB	**Horse Butte**	94.90	41	*eP*		**P**	07 29 05.1	-1.8	
	comp=Z,28nm,1.3s								
YHB				LR		LR			
	comp=Z,8µm,20.0s								
YFT	**Old Faithful**	94.92	41	*eP*		**P**	07 29 06.6	-0.5	
	comp=Z,22nm,1.0s								
YFT				LR		LR			
	comp=Z,14µm,18.0s								
KTH	**Kantishna Hill**	94.94	11	*eP*		**P**	07 29 05.2	-1.2	
	comp=Z,10nm,1.0s								
KTH				LR		LR			
	comp=Z,7µm,19.0s								
TRF	**Thorofare Moun**	94.95	12	*eP*		**P**	07 29 06.3	-0.4	
	comp=Z,91nm,2.0s								
TRF				LR		LR			
	comp=Z,10µm,19.0s								
SKAG	**Skagway**	94.97	20	PFAKE			07 29 20.0	+13	
SKAG				LR		LR			
	comp=Z,2µm,18.0s								
YMR	**Madison River**	94.98	41	*eP*		**P**	07 29 07.4	0.0	
	comp=Z,33nm,1.2s								
YMR				LR		LR			
	comp=Z,6µm,20.0s								
735A	**Kenedy**	94.98	60	P		**P**	07 29 06.4	-1.0	
	baz=239								
433A	**Art**	95.00	58	P		**P**	07 29 06.2	-1.4	
	baz=239								
H17A	**Grant Village**	95.03	41	P		**P**	07 29 06.8	-0.8	
	baz=233								
H17A	**Grant Village**	95.03	41	PFAKE			07 29 20.0	+12	
H17A				LR		LR			
	comp=Z,9µm,20.0s								
534A	**Blanco**	95.09	58	P		**P**	07 29 07.0	-0.9	
	baz=239								
CHMT	**Chamberlain Mo**	95.09	38	*eP*		**P**	07 29 06.3	-1.5	
YHH	**Holmes Hill**	95.11	41	PFAKE			07 29 20.0	+12	
YHH				LR		LR			
	comp=Z,6µm,20.0s								
DHY	**Denali Highway**	95.15	13	PFAKE			07 29 20.0	+12	
DHY				LR		LR			
	comp=Z,4µm,19.0s								
SLMT	**Seeley Lake**	95.17	38	*eP*		**P**	07 29 09.9	+1.8	
YNR	**Norris Junctio**	95.17	41	PFAKE			07 29 20.0	+12	
YNR				LR		LR			
	comp=Z,7µm,20.0s								
RND	**Reindeer**	95.17	12	*eP*		**P**	07 29 07.3	-0.2	
RND				pmax		pmax			
	comp=Z,34nm,1.3s								
RND				MLR		MLR			
	comp=Z,6µm,19.0s								
RND	**Reindeer**	95.17	12	*eP*		**P**	07 29 07.3	-0.2	
	comp=Z,34nm,1.3s								
RND				LR		LR			
	comp=Z,6µm,19.0s								
BOZ	**Bozeman (W)**	95.20	40	P		**P**	07 29 06.4	-1.8	
	baz=232,SNR=23								
BOZ	**Bozeman (W)**	95.20	40	*eP*		**P**	07 29 06.8	-1.4	
BOZ				pmax		pmax			
	comp=Z,61nm,1.7s								
BOZ				MLR		MLR			
	comp=Z,7µm,20.0s								
BOZ	**Bozeman (W)**	95.20	40	*eP*		**P**	07 29 06.8	-1.4	
	comp=Z,61nm,1.7s								
BOZ				LR		LR			
	comp=Z,7µm,20.0s								
Q24A	**Divide**	95.21	48	P		**P**	07 29 07.4	-1.2	
	baz=236								
Q24A	**Divide**	95.21	48	PFAKE			07 29 20.0	+11	
Q24A				LR		LR			
	comp=Z,9µm,18.0s								
LKWY	**Lake**	95.24	41	PFAKE			07 29 20.0	+11	
LKWY				LR		LR			
	comp=Z,16µm,18.0s								
635A	**Leesville**	95.28	59	P		**P**	07 29 07.4	-1.4	
	baz=239								
AMTX	**Amarillo**	95.32	53	P		**P**	07 29 08.2	-0.8	
	baz=238								
AMTX	**Amarillo**	95.32	53	*eP*		**P**	07 29 10.2	+1.2	
	comp=Z,11nm,0.7s								
AMTX				LR		LR			
	comp=Z,5µm,18.0s								
SEY	**Seymchan**	95.37	346	P		**P**	07 29 06.3	-2.0	
	comp=Z,4.1nm,0.8s,baz=215,slow=3.0,SNR=4.9								
SEY	**Seymchan**	95.37	346	*iP*		**P**	07 29 08.5	+0.2	
333A	**Richland Sprin**	95.38	57	P		**P**	07 29 07.7	-1.5	
	baz=239								
ISCO	**Idaho Springs**	95.38	47	P		**P**	07 29 08.6	-0.8	
	baz=236								
ISCO	**Idaho Springs**	95.38	47	*eP*		**P**	07 29 10.4	+1.0	
ISCO				pmax		pmax			
	comp=Z,11nm,1.4s								
ISCO				MLR		MLR			
	comp=Z,6µm,18.0s								
ISCO	**Idaho Springs**	95.38	47	*eP*		**P**	07 29 10.4	+1.0	
	comp=Z,11nm,1.4s								
ISCO				LR		LR			
	comp=Z,6µm,18.0s								
PAX	**Paxson**	95.44	14	*eP*		**P**	07 29 07.2	-1.6	
PAX				pmax		pmax			
	comp=Z,8.0nm,1.2s								
PAX				MLR		MLR			
	comp=Z,4µm,20.0s								
PAX	**Paxson**	95.44	14	*eP*		**P**	07 29 07.2	-1.6	
	comp=Z,8.2nm,1.2s								
PAX				LR		LR			
	comp=Z,4µm,20.0s								
MCK	**McKinley**	95.45	12	*eP*		**P**	07 29 09.3	+0.6	
MCK				pmax		pmax			
	comp=Z,12nm,1.0s								
MCK				MLR		MLR			
	comp=Z,7µm,19.0s								
MCK	**McKinley**	95.45	12	*eP*		**P**	07 29 09.3	+0.6	
	comp=Z,12nm,1.0s								
MCK				LR		LR			
	comp=Z,7µm,19.0s								
ABTX	**Abilene, Hawle**	95.57	56	P		**P**	07 29 08.4	-1.7	
	baz=238								
ABTX	**Abilene, Hawle**	95.57	56	*eP*		**P**	07 29 09.9	-0.2	
	comp=Z,19nm,1.1s								
ABTX				LR		LR			
	comp=Z,8µm,18.0s								
736A	**Circle Diamond**	95.59	60	P		**P**	07 29 08.5	-1.7	
	baz=239								
434A	**Burnet**	95.64	58	P		**P**	07 29 08.8	-1.6	
	baz=239								
535A	**Dale**	95.76	59	P		**P**	07 29 09.1	-1.9	
	baz=239								
MENT	**Mentasta**	95.78	14	*eP*		**P**	07 29 09.3	-1.0	
	comp=Z,7.7nm,1.0s								
MENT				LR		LR			
	comp=Z,5µm,18.0s								
N23A	**Red Feather La**	95.78	46	P		**P**	07 29 09.7	-1.4	
	baz=236								
N23A	**Red Feather La**	95.78	46	*eP*		**P**	07 29 09.0	-2.2	
	comp=Z,8.9nm,1.0s								
N23A				LR		LR			
	comp=Z,4µm,20.0s								
233A	**Rising Star**	95.80	57	P		**P**	07 29 09.3	-1.8	
	baz=239								
DLBC	**Dease Lake**	95.82	23	PFAKE			07 29 20.0	+9.4	
DLBC				LR		LR			
	comp=Z,3µm,18.0s								
636A	**Smothers Creek**	95.87	60	P		**P**	07 29 09.2	-2.3	
	baz=239								
334A	**Lometa**	95.93	57	P		**P**	07 29 10.0	-1.7	
	baz=239								
WALA	**Waterton Lakes**	96.08	36	*eP*		**P**	07 29 12.0	-0.1	
	comp=Z,10nm,1.1s								
WALA				LR		LR			
	comp=Z,6µm,19.0s								
133A	**Hamilton Ranch**	96.09	56	P		**P**	07 29 11.0	-1.4	
	baz=239								
435B	**Jarrell**	96.13	58	P		**P**	07 29 11.0	-1.6	
	baz=239								
RLMT	**Red Lodge**	96.22	41	P		**P**	07 29 11.3	-1.6	
	baz=234								
RLMT	**Red Lodge**	96.22	41	*eP*		**P**	07 29 15.5	+2.6	
	comp=Z,14nm,1.2s								
RLMT				LR		LR			
	comp=Z,8µm,19.0s								
TGUH	**Tegucigalpa,Un**	96.24	77	PFAKE			07 29 20.0	+6.6	
TGUH				LR		LR			
	comp=Z,5µm,19.0s								
WRH	**Wood River Hil**	96.28	12	*eP*		**P**	07 29 10.5	-2.0	
	comp=Z,13nm,1.0s								
WRH				LR		LR			
	comp=Z,4µm,20.0s								
PHWY	**Pilot Hill**	96.32	46	PFAKE			07 29 20.0	+6.4	
PHWY				LR		LR			
	comp=Z,4µm,18.0s								
DOT	**Dot Lake**	96.33	14	*eP*		**P**	07 29 13.2	+0.4	
	comp=Z,38nm,1.3s								
DOT				LR		LR			
	comp=Z,11µm,22.0s								
234A	**Clairette**	96.35	57	P		**P**	07 29 12.4	-1.2	
	baz=239								
K22A	**Casper**	96.41	44	P		**P**	07 29 12.6	-1.3	
	baz=236								
K22A	**Casper**	96.41	44	*eP*		**P**	07 29 10.8	-3.1	
	comp=Z,16nm,0.9s								
K22A				LR		LR			
	comp=Z,10µm,19.0s								
HDA	**Harding Lake**	96.44	12	PFAKE			07 29 20.0	+6.8	
HDA				LR		LR			
	comp=Z,4µm,18.0s								
HHC	**Hu-ho-hao-te**	96.46	314	*eP*		**P**	07 29 15.0	+1.0	
HHC				pmax		pmax			
	comp=Z,21nm,1.0s								
HHC				pmax		pmax			
	comp=Z,730nm,7.4s								
HHC				LR		LR			
	comp=Z,1µm,21.6s								
HHC				LR		LR			
	comp=Z,1µm,23.0s								
HHC				LR		LR			
	comp=Z,3µm,21.8s								
CCB	**Clear Creek Bu**	96.50	12	*eP*		**P**	07 29 11.3	-2.1	
	comp=Z,34nm,1.8s								
CCB				LR		LR			
	comp=Z,4µm,19.0s								
Z33A	**Whitaker Ranch**	96.55	56	P		**P**	07 29 13.8	-0.7	
	baz=239								
CD2	**Chengdu**	96.61	302	P		**P**	07 29 16.0	+1.1	
CD2				pP		pP	07 29 19.3	-2.0	
CD2				PP		**PP**	07 33 11.1	+1.3	
CD2				SKS		**SKSac**	07 39 52.9	+2.0	
CD2				S		**ScS**	07 40 38.2	+2.5	
CD2				sS		sS	07 40 43.9	-2.0	
CD2				SS		**SS**	07 47 15.3	+5.0	
CD2				pmax		pmax			
	comp=Z,50nm,0.8s								
CD2				LR		LR			
	comp=Z,2µm,18.4s								
CD2				LR		LR			
	comp=Z,2µm,22.8s								
CD2				LR		LR			
	comp=Z,3µm,23.8s								
134A	**White-Moore Ra**	96.68	56	P		**P**	07 29 13.1	-2.0	
	baz=239								
HIA	**Hailar**	96.68	324	PFAKE			07 29 30.0	+15	
HIA				LR		LR			
	comp=Z,6µm,20.0s								
COLA	**College**	96.69	12	*eP*		**P**	07 29 11.6	-2.7	
COLA				pmax		pmax			
	comp=Z,15nm,1.0s								
COLA				MLR		MLR			
	comp=Z,5µm,19.0s								
COLA	**College**	96.69	12	*eP*		**P**	07 29 11.6	-2.7	
	comp=Z,15nm,1.0s								
COLA				LR		LR			
	comp=Z,5µm,19.0s								
X32A	**Elmer**	96.76	54	P		**P**	07 29 14.0	-1.4	
	baz=239								
ILAR	**Eielson Array**	96.78	12	P		**P**	07 29 12.1	-2.6	
	comp=Z,2.7nm,0.8s,baz=221,slow=5.3,SNR=19								
ILAR				PP		**PP**	07 33 08.7	-1.6	
	comp=Z,2.3nm,1.0s,baz=207,slow=8.3,SNR=4.3								
ILAR				LR		LR	08 07 39.2		
	comp=Z,2µm,19.5s,baz=210,slow=32								
ILB	**Eielson Array**	96.78	12	*eP*		**P**	07 29 14.4	-0.3	
IL1	**Eielson Array**	96.78	12	*eP*		**P**	07 29 11.7	-3.0	
WHTX	**Lake Whitney,**	96.84	57	P		**P**	07 29 14.3	-1.5	
	baz=239								
WHTX	**Lake Whitney,**	96.84	57	PFAKE			07 29 30.0	+14	
WHTX				LR		LR			
	comp=Z,12µm,18.0s								
KSCO	**Kaye Shedlock'**	96.88	49	PFAKE			07 29 30.0	+14	
KSCO				LR		LR			
	comp=Z,3µm,18.0s								
336A	**Riesel**	96.98	58	P		**P**	07 29 15.1	-1.4	
	baz=240								
Y33A	**Hilltop Ranch,**	97.02	55	P		**P**	07 29 15.4	-1.2	
	baz=239								
HDC	**Heredia**	97.02	83	PFAKE			07 29 30.0	+13	
HDC				LR		LR			
	comp=Z,4µm,18.0s								
W32A	**Sentinel**	97.15	54	P		**P**	07 29 15.8	-1.4	
	baz=239								
135A	**Vickery Place,**	97.16	57	P		**P**	07 29 17.0	-0.2	
	baz=240								
Z34A	**Collier Ranch,**	97.20	56	P		**P**	07 29 16.0	-1.5	
	baz=239								
OTAV	**Otavalo**	97.24	94	PFAKE			07 29 30.0	+11	
OTAV				LR		LR			
	comp=Z,5µm,19.0s								
WMOK	**Wichita Mounta**	97.28	54	P		**P**	07 29 17.0	-0.8	
	baz=239								
WMOK	**Wichita Mounta**	97.28	54	PFAKE			07 29 30.0	+12	
WMOK				LR		LR			
	comp=Z,4µm,18.0s								
X33A	**Lawton**	97.38	55	P		**P**	07 29 17.7	-0.5	
	baz=239								
LPAZ	**La Paz**	97.42	113	P		Pdif	07 29 20.4	+0.7	
	comp=Z,1.2nm,0.9s,baz=165,slow=4.0,SNR=8.6								
LPAZ				LR		LR	08 07 05.2		
	comp=Z,3µm,18.1s,baz=230,slow=32								
Y34A	**Reagan Ranch,**	97.61	55	P		**P**	07 29 19.1	-0.2	
	baz=240								
DAWY	**Dawson**	97.74	16	*eP*		Pdif	07 29 19.8	+0.6	
	comp=Z,5.9nm,1.1s								
DAWY				LR		LR			
	comp=Z,6µm,20.0s								
X34A	**Smith Ranch, M**	97.88	55	P		**P**	07 29 19.7	-0.8	
	baz=240								
EGAK	**Eagle**	97.94

BILL pmax pmax
comp=Z,7.0nm,1.4s
BILL MLR MLR
comp=Z,3µm,19.0s
BILL Bilibino 98.06 354 PFAKE 07 29 30.0 +10
BILL LR LR
comp=Z,4µm,21.0s
Y35A Marietta 98.10 56 P **P 07 29 20.6 -0.8**
baz=240
V33A Lossen Ranch, 98.17 54 P **P 07 29 20.4 -1.4**
baz=240
Z36A Blue Ridge 98.22 57 P **P 07 29 19.3 -2.7**
baz=240
W34A Bridge Creek, 98.24 54 P **P 07 29 21.9 -0.2**
baz=240
W34A Bridge Creek, 98.24 54 PFAKE 07 29 30.0 +7.9
W34A LR LR
comp=Z,4µm,18.0s
OGNE Ogallala 98.30 48 PFAKE 07 29 30.0 +7.7
OGNE LR LR
comp=Z,9µm,19.0s
X35A Drake 98.39 55 Pdiff **P 07 29 21.3 -1.4**
baz=240
T32A Huddler Ranch, 98.42 52 Pdiff **P 07 29 22.1 -0.7**
baz=239
COLD Coldfoot 98.46 10 PFAKE 07 29 30.0 +7.7
COLD LR LR
comp=Z,3µm,19.0s
Y36A Durant 98.64 56 Pdiff Pdif 07 29 24.2 +0.3
baz=240
S32A Newby Ranch, P 98.67 52 Pdiff **P 07 29 21.5 -2.5**
baz=239
FYU Fort Yukon 98.70 12 PFAKE 07 29 30.0 +6.7
FYU LR LR
comp=Z,3µm,20.0s
CBKS Cedar Bluff 98.70 50 PFAKE 07 29 30.0 +5.9
CBKS LR LR
comp=Z,8µm,19.0s
V34A Guthrie 98.72 54 PFAKE 07 29 30.0 +5.8
V34A LR LR
comp=Z,3µm,19.0s
RSSD Black Hills 98.74 44 Pdiff **P 07 29 23.7 -0.7**
baz=237
RSSD Black Hills 98.74 44 *e*P **P 07 29 22.7 -1.6**
RSSD pmax pmax
comp=Z,30nm,1.0s
RSSD MLR MLR
comp=Z,10µm,18.0s
RSSD Black Hills 98.74 44 *e*P **P 07 29 22.7 -1.6**
comp=Z,30nm,1.0s
RSSD LR LR
comp=Z,10µm,18.0s
NATX Nacogdoches 98.79 59 PFAKE 07 29 30.0 +5.4
NATX LR LR
comp=Z,10µm,18.0s
W35A Tecumseh 98.84 55 Pdiff Pdif 07 29 25.1 +0.4
baz=240
LAO LASA Array 98.86 41 Pdiff **P 07 29 24.3 -0.3**
baz=236
LAO LASA Array 98.86 41 *e*P Pdif 07 29 25.4 +0.8
comp=Z,22nm,1.4s
LAO LR LR
comp=Z,7µm,18.0s
X36A Centrahoma 98.92 55 Pdiff Pdif 07 29 25.5 +0.4
baz=240
EDM Edmonton 98.95 33 PFAKE 07 29 40.0 +15
EDM LR LR
comp=Z,6µm,20.0s
U34A Anderson Ranch 99.01 53 PFAKE 07 29 40.0 +15
U34A LR LR
comp=Z,5µm,18.0s
LZH Lanzhou 99.14 306 *e*P **Pdif 07 29 28.1 +1.8**
LZH pP sP 07 29 37.3 +2.4
LZH SKS **SKSac 07 40 08.7 +4.9**
LZH *e*S **S 07 40 52.0 -4.8**
LZH sS ScS 07 41 01.7 +4.9
LZH pmax pmax
comp=Z,37nm,1.0s
LZH pmax pmax
comp=Z,270nm,5.6s
LZH LR LR
comp=Z,690nm,16.0s
LZH LR LR
comp=Z,1µm,18.0s
LZH LR LR
comp=Z,2µm,20.1s
V35A Meyer Ranch, C 99.17 54 Pdiff **Pdif 07 29 24.8 -1.4**
baz=240
R32A Long Quarter, 99.19 51 Pdiff **Pdif 07 29 23.8 -2.5**
baz=240
H25A Fruitdale 99.27 44 Pdiff **Pdif 07 29 27.3 +0.7**
baz=238
441A DeRidder 99.41 60 Pdiff **Pdif 07 29 26.9 -0.4**
baz=241
U35A Pawnee 99.54 54 Pdiff **Pdif 07 29 28.9 +1.0**
baz=240
T34A McClaskey Farm 99.54 53 Pdiff **Pdif 07 29 27.7 -0.2**
baz=240
Q32A Meitler Ranch, 99.58 51 Pdiff **Pdif 07 29 28.5 +0.5**
baz=240
R33A Olander Ranch, 99.63 51 Pdiff **Pdif 07 29 28.1 -0.1**
baz=240
341A Kurthwood 99.70 60 Pdiff **Pdif 07 29 28.9 +0.2**
baz=241
V36A Jenks 99.81 55 Pdiff **Pdif 07 29 30.1 +1.0**
baz=241
TUL1 Leonard 99.98 54 Pdiff **Pdif 07 29 30.2 +0.4**
baz=241
TUL1 Leonard 99.98 54 PFAKE 07 29 40.0 +10
TUL1 LR LR
comp=Z,6µm,19.0s
X38A Whitesboro 100.07 56 Pdiff **Pdif 07 29 28.2 -2.1**
baz=241
R34A Isabella, Hill 100.13 52 Pdiff **Pdif 07 29 30.9 +0.5**
baz=240
U36A Oologah 100.25 54 Pdiff **Pdif 07 29 32.6 +1.6**
baz=241
Y39A Lockesburg 100.25 57 Pdiff **Pdif 07 29 31.4 +0.3**
baz=241
342A Flagon Creek P 100.35 60 Pdiff **Pdif 07 29 32.4 +0.8**
baz=242
P33A Williams Farm, 100.39 51 Pdiff **Pdif 07 29 33.3 +1.7**
baz=240
V37A Hulbert 100.43 55 Pdiff **Pdif 07 29 31.6 -0.2**
baz=241
S35A Otter Creek Ra 100.47 53 Pdiff **Pdif 07 29 30.6 -1.4**
baz=241
T36A Boggs Farm, Ca 100.47 53 Pdiff **Pdif 07 29 32.4 +0.4**
baz=241
W38A Poteau 100.48 56 Pdiff **Pdif 07 29 31.2 -0.9**
baz=241
K30A Basset 100.74 47 Pdiff **Pdif 07 29 33.7 +0.6**
baz=240
343A Vidalia 100.85 60 Pdiff **Pdif 07 29 33.3 -0.4**
baz=242
WLAR White Oak Lake 100.86 58 PFAKE 07 29 40.0 +6.3
WLAR LR LR
comp=Z,12µm,19.0s
YAK Yakutsk 100.86 337 PFAKE 07 29 40.0 +7.0
YAK LR LR
comp=Z,2µm,21.0s
MIAR Mount Ida 100.92 57 PFAKE 07 29 40.0 +6.0
MIAR LR LR
comp=Z,6µm,19.0s
V38A Canehill 100.94 55 Pdiff **Pdif 07 29 34.5 +0.4**
baz=242
KSU1 Kansas State U 100.96 51 PFAKE 07 29 40.0 +5.9
KSU1 LR LR
comp=Z,4µm,19.0s
DGMT Dagmar 100.98 40 Pdiff **Pdif 07 29 33.7 -0.3**
baz=238
DGMT Dagmar 100.98 40 PFAKE 07 29 40.0 +6.0
DGMT LR LR
comp=Z,6µm,20.0s
P34A Walnut Farm, R 101.03 51 Pdiff **Pdif 07 29 36.1 +1.7**
baz=241
BGNE Belgrade 101.05 49 PFAKE 07 29 40.0 +5.5
BGNE LR LR
comp=Z,4µm,20.0s
J30A Dallas 101.14 46 Pdiff **Pdif 07 29 35.5 +0.7**
baz=240
T37A Cheneyville 18 101.18 54 Pdiff **Pdif 07 29 34.3 -0.8**
baz=241
D26A Manning 101.23 42 Pdiff **Pdif 07 29 36.0 +0.8**
baz=239
444A Pine Grove 101.25 61 Pdiff **Pdif 07 29 35.7 +0.1**
baz=242

HHAR Hobbs 101.47 55 PFAKE 07 29 50.0 +14
HHAR LR LR
comp=Z,5µm,18.0s
A25A Svangstu Ranch 101.83 40 Pdiff **Pdif 07 29 36.9 -0.9**
baz=239
UALR University of 101.92 57 PFAKE 07 29 50.0 +12
UALR LR LR
comp=Z,6µm,19.0s
CCAR Cane Creek 101.95 58 PFAKE 07 29 50.0 +11
CCAR LR LR
comp=Z,12µm,18.0s
O35A Humboldt 101.99 51 Pdiff **Pdif 07 29 39.2 +0.5**
baz=242
PRAC Prado 102.04 93 PFAKE 07 29 50.0 +10
PRAC LR LR
comp=Z,5µm,19.0s
X301 Greenbrier Sit 102.10 56 PFAKE 07 29 50.0 +11
X301 LR LR
comp=Z,9µm,20.0s
VBMS Vicksburg 102.11 60 PFAKE 07 29 50.0 +11
VBMS LR LR
comp=Z,5µm,19.0s
X201 Greenbrier Sit 102.15 56 PFAKE 07 29 50.0 +11
X201 LR LR
comp=Z,10µm,19.0s
P36A Good Intent, A 102.16 51 Pdiff **Pdif 07 29 41.1 +1.7**
baz=242
W41B Gary Mavity, V 102.18 57 Pdiff **Pdif 07 29 41.7 +2.1**
baz=242
WHAR Wooly Hollow 102.20 56 PFAKE 07 29 50.0 +10
WHAR LR LR
comp=Z,9µm,19.0s
T39A Clever 102.22 54 Pdiff **Pdif 07 29 41.3 +1.6**
baz=242
INK Inuvik 102.59 15 P **Pdif 07 29 38.5 -2.0**
comp=Z,1.1nm,0.9s,baz=324,slow=4.3,SNR=3.5
INK Inuvik 102.59 15 *e*P **Pdif 07 29 39.0 -1.6**
INK MLR MLR
comp=Z,8µm,20.0s
INK Inuvik 102.59 15 *e*Pdif **Pdif 07 29 39.0 -1.6**
INK LR LR
comp=Z,8µm,20.0s
HELC Santa Helena 102.67 90 PFAKE 07 29 50.0 +7.2
HELC LR LR
comp=Z,6µm,19.0s
P37A Lathrop 102.73 52 Pdiff **Pdif 07 29 42.5 +0.5**
baz=242
ROSC El Rosal 103.08 92 PFAKE 07 29 50.0 +5.4
ROSC LR LR
comp=Z,5µm,18.0s
F31A Hecla 103.15 45 Pdiff **Pdif 07 29 44.5 +0.8**
baz=241
ECSD EROS Data Cent 103.17 47 *e*Pdif **Pdif 07 29 46.8 +3.0**
ECSD LR LR
comp=Z,7µm,19.0s
SONA0 Songino Array 103.27 318 *e*Pdif **Pdif 07 29 42.6 -1.7**
SONM Songino Array 103.27 318 P **Pdif 07 29 42.6 -1.7**
comp=Z,0.8nm,0.8s,baz=131,slow=3.1,SNR=2.2
SONA1 Songino Array 103.27 318 *e*Pdif **Pdif 07 29 47.3 +3.0**
MDND Maddock 103.31 42 PFAKE 07 29 50.0 +5.7
MDND LR LR
comp=Z,6µm,18.0s
H33A Prehn Over Nor 103.53 46 Pdiff **Pdif 07 29 46.1 +0.7**
baz=242
MET Memphis--Engin 103.85 57 PFAKE 07 30 00.0 +13
MET LR LR
comp=Z,7µm,19.0s
OXF Oxford 103.96 58 PFAKE 07 30 00.0 +12
OXF LR LR
comp=Z,10µm,18.0s
A29A Manning Farm, 104.04 42 Pdiff **Pdif 07 29 46.0 -1.5**
baz=241
YKA Yellowknife Ar 104.11 25 Pdiff **Pdif 07 29 48.0 +0.5**
comp=Z,0.6nm,0.9s,baz=230,slow=4.3,SNR=5.0
YKA PP **PKiKP 07 34 01.1 -3.3**
comp=Z,1.3nm,1.0s,baz=238,slow=7.6,SNR=5.6
YKA PKKPbc **PKKPbc 07 45 37.4 -0.5**
comp=Z,1.0nm,0.8s,baz=39,slow=2.7,SNR=10.0
YKA Yellowknife Ar 104.11 25 P **Pdif 07 29 48.0 +0.5**
YKA Yellowknife Ar 104.11 25 Pdif **Pdif 07 29 48.0 +0.5**
YKB5 Yellowknife Ar 104.11 25 *e*Pdif **Pdif 07 29 48.0 +0.5**
YKB5 *e*PP **PKiKP 07 34 01.1 -3.3**
PBMO Poplar Bluff 104.22 56 PFAKE 07 30 00.0 +11
PBMO LR LR
comp=Z,12µm,19.0s
DGAR Diego Garcia 104.24 253 PFAKE 07 30 00.0 +11
DGAR LR LR
comp=Z,6µm,18.0s
BRAL Brewton 104.28 62 PFAKE 07 30 00.0 +11
BRAL LR LR
comp=Z,3µm,19.0s
Z47A Carrollton 104.39 60 Pdiff **Pdif 07 29 48.4 -1.0**
baz=244
PALK Pallekele 104.55 270 PFAKE 07 30 00.0 +9.3
PALK LR LR
comp=Z,6µm,18.0s
SCIA State Center 104.55 50 PFAKE 07 30 00.0 +10
SCIA LR LR
comp=Z,6µm,19.0s
PVMO Portageville 104.58 56 PFAKE 07 30 00.0 +10
PVMO LR LR
comp=Z,9µm,18.0s
HALT Halls 104.63 57 PFAKE 07 30 00.0 +10
HALT LR LR
comp=Z,4841µm,20.0s
LRAL Lakeview Retre 105.13 60 PFAKE 07 34 20.0
LRAL LR LR
comp=Z,4µm,18.0s
FFC Flin Flon 105.37 35 PFAKE 07 34 20.0
FFC LR LR
comp=Z,6µm,19.0s
F35A Swanville 105.43 46 Pdiff **PKiKP 07 34 09.2 +1.8**
baz=244
SAML Samuel 105.49 110 PFAKE 07 34 20.0
SAML LR LR
comp=Z,4µm,18.0s
SIUC Southern Illin 105.49 55 PFAKE 07 34 20.0
SIUC LR LR
comp=Z,11µm,18.0s
LSA Lhasa 105.71 295 PFAKE 07 34 20.0
LSA LR LR
comp=Z,1µm,21.0s
AGMN Agassiz Nation 105.73 43 PFAKE 07 34 20.0
AGMN LR LR
comp=Z,6µm,19.0s
WVT Waverly 105.83 57 PFAKE 07 34 20.0
WVT LR LR
comp=Z,4µm,20.0s
H37A Dierke Farm, C 105.92 48 PKiKP **PKiKP 07 34 07.7 -0.7**
baz=244
L40A Anamosa 105.96 51 PKiKP **PKiKP 07 34 07.7 -0.8**
baz=245
I38A Scanlan Farm, 106.07 48 PKiKP **PKiKP 07 34 07.9 -0.7**
baz=244
ZAK Zakamensk 106.27 319 *e*P **Pdif 07 30 10.2 +13**
ZAK pmax pmax
comp=Z,4.0nm,1.7s
SPMN Marine on St. 106.27 47 PFAKE 07 34 20.0
SPMN LR LR
comp=Z,5µm,18.0s
MTDJ Mount Denham 106.46 78 PFAKE 07 34 20.0
MTDJ LR LR
comp=Z,3µm,20.0s
ULM Lac du Bonnet 106.59 41 PFAKE 07 34 20.0
ULM LR LR
comp=Z,7µm,18.0s
HDIL Hopedale 106.64 53 PFAKE 07 34 20.0
HDIL LR LR
comp=Z,4µm,19.0s
TLY Talaya 106.64 320 PFAKE 07 34 20.0
TLY LR LR
comp=Z,3µm,20.0s
USIN University of 106.71 56 PFAKE 07 34 20.0
USIN LR LR
comp=Z,10µm,19.0s
OLIL Olney 106.72 55 PFAKE 07 34 20.0
OLIL LR LR
comp=Z,6µm,18.0s
SWET Sewanee 106.85 59 PFAKE 07 34 20.0
SWET LR LR
comp=Z,3µm,19.0s
JFWS Jewell Farm 106.97 50 PFAKE 07 34 20.0
JFWS LR LR
comp=Z,6µm,19.0s
TIGA Tifton 107.08 63 PFAKE 07 34 20.0
TIGA LR LR
comp=Z,3µm,20.0s
C36A Pine Crest Far 107.33 45 PKiKP **PKiKP 07 34 10.3 -0.6**
baz=245
DWPF Disney Wildern 107.42 67 PFAKE 07 34 20.0
DWPF LR LR
comp=Z,1µm,18.0s
TIXI Tiksi 107.70 344 PFAKE 07 34 20.0
TIXI LR LR
comp=Z,3µm,20.0s
WCI Wyandotte Cave 107.81 56 PFAKE 07 34 20.0
WCI LR LR
comp=Z,9µm,19.0s
GOGA Godfrey 107.98 61 PFAKE 07 34 20.0
GOGA LR LR
comp=Z,4µm,18.0s
CPCT Cooper Cave 108.00 59 PFAKE 07 34 20.0
CPCT LR LR
comp=Z,6µm,18.0s
BLO Bloomington 108.02 55 PFAKE 07 34 20.0
BLO LR LR
comp=Z,11µm,18.0s
SFIN Lafayette 108.10 53 PFAKE 07 34 20.0
SFIN LR LR
comp=Z,6µm,18.0s
SPB Sao Paulo 108.10 132 PFAKE 07 34 20.0
SPB LR LR
comp=Z,4µm,19.0s
SDV Santo Domingo 108.22 90 PFAKE 07 34 20.0
SDV LR LR
comp=Z,4µm,19.0s
EYMN Ely 108.23 45 PFAKE 07 34 20.0
EYMN LR LR
comp=Z,6µm,20.0s
TKL Tuckaleechee C 108.64 59 PFAKE 07 34 20.0
TKL LR LR
comp=Z,9µm,19.0s
COWI Conover 108.98 47 PFAKE 07 34 20.0
COWI LR LR
comp=Z,5µm,18.0s
TZTN Tazewell 109.15 58 PFAKE 07 34 30.0
TZTN LR LR
comp=Z,6µm,19.0s
GTBY Guantanamo Bay 109.25 78 PFAKE 07 34 30.0
GTBY LR LR
comp=Z,3µm,19.0s
KMSC Kings Mountain 110.28 60 PFAKE 07 34 30.0
KMSC LR LR
comp=Z,5µm,18.0s
NHSC New Hope 110.39 63 PFAKE 07 34 30.0
NHSC LR LR
comp=Z,4µm,19.0s
ACSO Alum Creek Sta 110.95 55 PFAKE 07 34 30.0
ACSO LR LR
comp=Z,8µm,19.0s
FCC Fort Churchill 111.04 34 PFAKE 07 34 30.0
FCC LR LR
comp=Z,6µm,20.0s
AAM Ann Arbor 111.22 53 PFAKE 07 34 30.0
AAM LR LR
comp=Z,4µm,19.0s
BLA Blacksburg 111.73 59 PFAKE 07 34 30.0
BLA LR LR
comp=Z,5µm,18.0s
SDDR Presa de Saban 112.13 80 PFAKE 07 34 30.0
SDDR LR LR
comp=Z,2µm,19.0s
PTGA Pitinga 112.65 104 PFAKE 07 34 30.0
PTGA LR LR
comp=Z,4µm,18.0s
CNNC Cliffs of the 112.94 61 PFAKE 07 34 30.0
CNNC LR LR
comp=Z,4µm,19.0s
MCWV Mont Chateau 113.01 56 PFAKE 07 34 30.0
MCWV LR LR
comp=Z,4µm,19.0s
BDFB Brasilia 113.15 125 PFAKE 07 34 30.0
BDFB LR LR
comp=Z,9µm,20.0s
GRTK Grand Turk 113.30 78 PFAKE 07 34 30.0
GRTK LR LR
comp=Z,2µm,19.0s
ALLY Alegheny Colle 113.46 54 PFAKE 07 34 30.0
ALLY LR LR
comp=Z,7µm,18.0s
WMQ Urumqi 113.59 308 *e*PKP **PKiKP 07 34 23.8 +0.9**
WMQ PP **PP 07 35 19.0 +3.5**
WMQ SKS **SKSdf 07 41 27.6 -6.4**
WMQ SKKS **SKKSac 07 42 07.0 -9.0**
WMQ SS **SS 07 51 05.4 +3.1**
WMQ AMB AMB
comp=Z,110nm,5.0s
WMQ LR LR
comp=Z,1µm,17.6s
WMQ LR LR
comp=Z,2µm,19.3s
WMQ LR LR
comp=Z,2µm,21.2s
ERPA Erie 113.72 54 PFAKE 07 34 30.0
ERPA LR LR
comp=Z,4µm,18.0s
CBN Corbin Frederi 114.34 59 PFAKE 07 34 40.0 +16
CBN LR LR
comp=Z,4µm,19.0s
SSPA Standing Stone 114.74 56 PFAKE 07 34 40.0 +15
SSPA LR LR
comp=Z,8µm,19.0s
SADO Sadowa 115.13 51 PFAKE 07 34 40.0 +14
SADO LR LR
comp=Z,3µm,18.0s
MPR Mayaguez 115.38 83 PFAKE 07 34 40.0 +13
MPR LR LR
comp=Z,2µm,19.0s
MVL Millersville 115.66 57 PFAKE 07 34 40.0 +13
MVL LR LR
comp=Z,6µm,18.0s
ABPO Ambohimpanom 115.86 227 PFAKE 07 34 40.0 +12
ABPO LR LR
comp=Z,5µm,18.0s
RES Resolute Bay 116.03 17 PFAKE 07 34 40.0 +13
RES LR LR
comp=Z,5µm,20.0s
SJG San Juan 116.20 83 PFAKE 07 34 40.0 +11
SJG LR LR
comp=Z,3µm,18.0s
SUR Sutherland 116.28 196 PFAKE 07 34 40.0 +11
SUR LR LR
comp=Z,5µm,19.0s
PSUB Penn St. - Bra 116.30 57 PFAKE 07 34 40.0 +12
PSUB LR LR
comp=Z,5µm,18.0s
HUMP Col San Antoni 116.47 83 PFAKE 07 34 40.0 +11
HUMP LR LR
comp=Z,3µm,18.0s
KSPA Keystone Colle 116.55 55 PFAKE 07 34 40.0 +11
KSPA LR LR
comp=Z,10µm,19.0s
BINY Binghamton 116.58 55 PFAKE 07 34 40.0 +11
BINY LR LR
comp=Z,5µm,18.0s
PLVO Plevna 116.61 51 PFAKE 07 34 40.0 +11
PLVO LR LR
comp=Z,4µm,18.0s
BRNJ Basking Ridge 117.17 57 PFAKE 07 34 40.0 +10
BRNJ LR LR
comp=Z,7µm,19.0s
ODNJ Ogdensburg 117.25 56 PFAKE 07 34 40.0 +10
ODNJ LR LR
comp=Z,7µm,18.0s
STVI Saint Thomas 117.33 83 PFAKE 07 34 40.0 +9.3
STVI LR LR
comp=Z,3µm,19.0s
GRGR Grenville 117.54 91 PFAKE 07 34 40.0 +8.8
GRGR LR LR
comp=Z,2µm,19.0s
PAL Palisades 117.74 57 PFAKE 07 34 40.0 +9.2
PAL LR LR
comp=Z,8µm,19.0s
MK01 Makanchi Array 118.08 310 *e*PKPdf **PKPdf 07 34 30.0 -1.4**
MK31 Makanchi Array 118.09 310 *e*PKIKP **PKPdf 07 34 30.4 -1.0**
MK31 Makanchi Array 118.09 310 *e*PKPdf **PKPdf 07 34 30.4 -1.0**
MK32 Makanchi Array 118.09 310 *e*PKPdf **PKPdf 07 34 30.2 -1.2**
MKAR Makanchi Array 118.09 310 PKP **PKPdf 07 34 30.2 -1.2**
comp=Z,4.7nm,0.8s,baz=68,slow=2.4,SNR=19
MKAR Makanchi Array 118.09 310 *e*PKIKP **PKPdf 07 34 30.4 -1.0**
MKAR Makanchi Array 118.09 310 *e*PKPdf **PKPdf 07 34 30.4 -1.0**

ZAA0 Zalesovo Array 118.14 318 ePKPdf PKPdf 07 34 30.8 -0.4
ZALV Zalesovo Beam 118.14 318 PKP PKPdf 07 34 29.8 -1.4
comp=Z,2.3nm,0.7s,baz=202,slow=0.8,SNR=5.6
ZAA1 Zalesovo Array 118.14 318 ePKPdf PKPdf 07 34 29.8 -1.5
LONY Lake Ozonia 118.22 52 PFAKE 07 34 40.0 +8.3
LONY LR LR
comp=Z,4µm,19.0s
NCB Newcomb 118.30 53 PFAKE 07 34 40.0 +8.1
NCB LR LR
comp=Z,100nm,18.0s
MAKZ Makanchi 118.31 310 ePKIKP PKPdf 07 34 32.1 +0.3
MAKZ MLR MLR
comp=Z,2µm,18.0s
MAKZ Makanchi 118.31 310 ePKPdf PKPdf 07 34 32.1 +0.3
MAKZ LR LR
comp=Z,2µm,18.0s
TRY Troy 118.37 55 PFAKE 07 34 40.0 +8.0
TRY LR LR
comp=Z,13µm,18.0s
SABA Saba 118.52 85 PFAKE 07 34 40.0 +7.0
SABA LR LR
comp=Z,3µm,19.0s
YLE Yale 118.53 56 PFAKE 07 34 40.0 +7.7
YLE LR LR
comp=Z,11µm,19.0s
BOSA Boshof 118.56 202 PKP PKPdf 07 34 34.6 +1.5
comp=Z,7.8nm,1.0s,baz=146,slow=5.5,SNR=4.9
SEUS St. Eustatius 118.69 85 PFAKE 07 34 40.0 +6.7
SEUS LR LR
comp=Z,2µm,19.0s
SMRT St. Maarten 118.84 85 PFAKE 07 34 40.0 +6.3
SMRT LR LR
comp=Z,2µm,19.0s
FRNY Flat Rock 118.95 52 PFAKE 07 34 40.0 +6.9
FRNY LR LR
comp=Z,5µm,19.0s
FDF Fort de France 119.12 89 PFAKE 07 34 40.0 +5.7
FDF LR LR
comp=Z,2µm,18.0s
PDGK Podgornoye 119.17 306 PKIKP PKPdf 07 34 28.1 -5.6
PDGK pmax pmax
comp=Z,8.0nm,1.3s
QUA2 Belchertown 119.20 55 PFAKE 07 34 40.0 +6.4
QUA2 LR LR
comp=Z,10µm,18.0s
NVS Novosibirsk 119.22 319 i PKIKP PKPdf 07 34 32.7 -0.5
NRIK Noril'sk 119.28 336 PKP PKPdf 07 34 32.9 -0.1
comp=Z,1.4nm,0.4s,baz=263,slow=3.4,SNR=3.4
HNH Hanover 119.59 54 PFAKE 07 34 50.0 +16
HNH LR LR
comp=Z,7µm,20.0s
BRYW Bryant College 119.69 56 PFAKE 07 34 50.0 +15
BRYW LR LR
comp=Z,13µm,20.0s
ANWB Willy Bob 119.80 86 PFAKE 07 34 50.0 +15
ANWB LR LR
comp=Z,2µm,19.0s
HRV Adam Dziewonsk 119.82 55 PFAKE 07 34 50.0 +15
HRV LR LR
comp=Z,10µm,18.0s
WES Weston 119.97 56 PFAKE 07 34 50.0 +15
WES LR LR
comp=Z,18µm,18.0s
FFD Franklin Falls 119.98 54 PFAKE 07 34 50.0 +15
FFD LR LR
comp=Z,12µm,18.0s
BCX Boston College 120.06 56 PFAKE 07 34 50.0 +15
BCX LR LR
comp=Z,28µm,18.0s
KURK Kurchatov 121.27 314 PKIKP PKPdf 07 34 35.6 -1.7
KURK pmax pmax
comp=Z,16nm,1.0s
KURK Kurchatov 121.27 314 ePKPdf PKPdf 07 34 36.9 -0.4
KURK LR LR
comp=Z,2µm,19.0s
WVL Waterville 121.63 53 PFAKE 07 34 50.0 +12
WVL LR LR
comp=Z,6µm,18.0s
LMQ La Malbaie 121.74 50 PFAKE 07 34 50.0 +12
LMQ LR LR
comp=Z,7µm,18.0s
PKME Peaks-Kenny Pk 122.02 53 PFAKE 07 34 50.0 +11
PKME LR LR
comp=Z,4µm,18.0s
BBSR BB Station 122.45 68 PFAKE 07 34 50.0 +10
BBSR LR LR
comp=Z,2µm,19.0s
FRU Bishkek 122.54 304 ePKIKP PKPdf 07 34 42.0 +1.9
FRU e 07 34 52.0
FRU e 07 41 45.0
AAK Ala-Archa 122.59 304⇑iPKIKP PKPdf 07 34 41.0 +0.6
AAK Ala-Archa 122.59 304 PFAKE 07 34 50.0 +10
AAK LR LR
comp=Z,2µm,20.0s
EMMW East Machias 123.20 54 PFAKE 07 34 50.0 +8.8
EMMW LR LR
comp=Z,7µm,21.0s
GGN Saint George 123.70 53 PFAKE 07 34 50.0 +7.9
GGN LR LR
comp=Z,5µm,18.0s
MNAS Manas 124.00 304 PKIKP PKPdf 07 34 41.8 -1.3
MNAS pmax pmax
comp=Z,21nm,1.4s
SCHQ Schefferville 124.77 42 PFAKE 07 34 50.0 +6.0
SCHQ LR LR
comp=Z,9µm,19.0s
KBL Kabul 124.95 293 PFAKE 07 35 00.0 +15
KBL LR LR
comp=Z,1µm,20.0s
OTUK Ortayu 124.98 310 PKIKP PKPdf 07 34 44.5 -0.1
OTUK pmax pmax
comp=Z,14nm,1.1s
LMN Caledonia Moun 125.23 53 PFAKE 07 35 00.0 +15
LMN LR LR
comp=Z,7µm,19.0s
KK31 Karatay Array 125.55 304 i PKIKP PKPdf 07 34 45.1 -0.8
KK31 pmax pmax
comp=Z,9.0nm,0.9s
KKAR Karatay Array 125.55 304 ePKIKP PKPdf 07 34 45.3 -0.6
KKAR Karatay Array 125.55 304 ePKPdf PKPdf 07 34 45.3 -0.6
VOSK Vostochnaya 126.20 316 ePKIKP PKPdf 07 34 45.6 -1.2
VOSK Vostochnaya 126.20 316 ePKPdf PKPdf 07 34 45.6 -1.2
BVA0 Borovoye Array 126.58 316 i PKIKP PKPdf 07 34 46.6 -0.9
BVA0 pmax pmax
comp=Z,20nm,1.0s
BRVK Borovoye 126.64 316 PKIKP PKPdf 07 34 47.2 -0.4
BRVK pmax pmax
comp=Z,28nm,1.4s
BRVK Borovoye 126.64 316 ePKPdf PKPdf 07 34 48.1 +0.6
BRVK LR LR
comp=Z,2µm,20.0s
ZRNK Zerenda 127.41 316 PKIKP PKPdf 07 34 48.6 -0.5
ZRNK pmax pmax
comp=Z,12nm,1.0s
ZRNK Zerenda 127.41 316 ePKPdf PKPdf 07 34 49.2 +0.2
ZRNK LR LR
comp=Z,2µm,20.0s
RCBR Riachuelo 128.47 126 PFAKE 07 35 00.0 +7.6
RCBR LR LR
comp=Z,7µm,18.0s
LSZ Lusaka 129.46 212 PFAKE 07 35 10.0 +16
LSZ LR LR
comp=Z,5µm,18.0s
TSUM Tsumeb 129.69 198 PFAKE 07 35 10.0 +15
TSUM LR LR
comp=Z,11µm,19.0s
KBS Kingsbay 130.33 358 PFAKE 07 35 00.0 +6.1
KBS LR LR
comp=Z,2µm,20.0s
DRLN Deer Lake 130.39 49 PFAKE 07 35 10.0 +15
DRLN LR LR
comp=Z,8µm,18.0s
SFJD Kangerlussuaq 130.68 25 PFAKE 07 35 10.0 +15
SFJD LR LR
comp=Z,6µm,18.0s
SUMG Summit 131.51 16 i P PKPdf 07 34 56.1 -0.7
SUMG Summit 131.51 16 ePKIKP PKPdf 07 34 57.2 +0.4
SUMG MLR MLR
comp=Z,4µm,20.0s
SUMG Summit 131.51 16 ePKPdf PKPdf 07 34 57.2 +0.4
SUMG LR LR
comp=Z,4µm,20.0s
UOSS Minazif 133.12 278 PFAKE 07 35 10.0 +9.2
UOSS LR LR
comp=Z,1µm,19.0s

ARU Arti 133.13 321 i PKIKP PKPdf 07 34 57.4 -2.4
ARU 07 37 24.4
ARU MLR MLR
comp=Z,5µm,23.0s
ARU Arti 133.13 321 PFAKE 07 35 10.0 +10
ARU LR LR
comp=Z,4µm,20.0s
AB31 Akbulak array 133.21 311 i PKHKP PKPpre 07 34 48.7
AB31 pmax pmax
comp=Z,7.0nm,1.2s
SOKR Solikamsk 133.31 326⇑iPKIKP PKPdf 07 34 57.6 -2.4
SOKR 07 37 21.8
SOKR PS PS 07 47 36.5 -9.3
SOKR pmax pmax
comp=Z,13nm,1.0s
GEYT Alibeck 134.24 296 PKP PKPdf 07 35 00.7 -1.9
comp=Z,2.0nm,0.5s,baz=242,slow=3.1,SNR=2.9
AKTO Aktyubinsk 134.35 313 PKIKP PKPdf 07 34 59.5 -2.8
AKTO pmax pmax
comp=Z,10.0nm,1.1s
KMBO Kilima Mbogo 135.57 233 PFAKE 07 35 20.0 +14
KMBO LR LR
comp=Z,3µm,18.0s
LVZ Lovozero 137.33 343 PFAKE 07 35 20.0 +13
LVZ LR LR
comp=Z,3µm,20.0s
APA Apatity 137.89 343⇓iPKHKP PKPpre 07 34 46.0
APA i 07 35 07.5
APA pmax pmax
comp=Z,7.0nm,1.2s
APA MLR MLR
comp=Z,2µm,22.0s
ARCES ARCESS Array B 137.94 349 PKP PKPdf 07 35 06.5 -1.9
comp=Z,0.7nm,0.5s,baz=100,slow=1.5,SNR=5.4
ARE0 ARCESS Array S 137.94 349 PFAKE 07 35 20.0 +12
ARE0 LR LR
comp=Z,4µm,20.0s
ASCN Ascension 139.07 153 PFAKE 07 35 20.0 +7.8
ASCN LR LR
comp=Z,2µm,19.0s
DAMY Dhamar 139.41 258 PFAKE 07 35 20.0 +6.9
DAMY LR LR
comp=Z,2µm,20.0s
MBAR Mbarara 140.28 226 PFAKE 07 35 30.0 +15
MBAR LR LR
comp=Z,4µm,20.0s
KLMR Klimovskoe 140.50 333 ePKHKP PKPpre 07 35 05.2
KLMR pmax pmax
comp=Z,20nm,1.1s
FURI Furi 141.10 245 PFAKE 07 35 30.0 +14
FURI LR LR
comp=Z,5µm,18.0s
BORG Borgarnes 141.46 17 PFAKE 07 35 30.0 +15
BORG LR LR
comp=Z,2µm,20.0s
MOS Moscow 144.24 327 ePKIKP PKPdf 07 35 23.3 +3.2
MOS MLR MLR
comp=Z,2µm,20.0s
TBLG Delisi 144.54 301 P PKPab 07 35 19.1 -0.5
TBLG Delisi 144.54 301 PKIKP PKPab 07 35 19.0 -0.5
GUDG Gudauri 144.64 303 P PKPdf 07 35 22.0 +0.4
GNI Garni 144.69 299 ePKIKP PKPdf 07 35 22.2 +0.6
GNI MLR MLR
comp=Z,1µm,20.0s
GNI Garni 144.69 299 ePKPdf PKPdf 07 35 22.2 +0.6
GNI LR LR
comp=Z,1µm,20.0s
ZEI Tsey 145.01 303 i PKIKP PKPbc 07 35 21.1 -0.4
ZEI pmax pmax
comp=Z,81nm,0.6s
OBN Obninsk 145.08 327 PKP PKPbc 07 35 19.5 -1.5
comp=Z,38nm,0.6s,baz=12,slow=4.0,SNR=18
OBN Obninsk 145.08 327c iPKIKP PKPbc 07 35 19.5 -1.5
OBN pmax pmax
comp=Z,62nm,1.0s
OBN Obninsk 145.08 327 ePKPbc PKPbc 07 35 21.1 +0.1
OBN LR LR
comp=Z,2µm,20.0s
NCK Nalchik 145.11 305⇓iPKIKP PKPdf 07 35 23.6 +1.5
GOF Gofitskoye 145.19 308⇑ePKIKP PKPbc 07 35 21.6 -0.2
GOF pmax pmax
comp=Z,121nm,0.9s
ONI Oni 145.37 303 P PKPbc 07 35 22.6 0.0
ONI Oni 145.37 303 PKIKP PKPbc 07 35 22.5 0.0
CLDR Caldiran 145.39 297 eP PKPbc 07 35 21.7 -1.2
BGD Bogdanovka 145.44 301 P PKPab 07 35 24.0 +0.8
AKH Akhalkalaki 145.50 301 eP PKPab 07 35 24.4 +1.0
AKH Akhalkalaki 145.50 301⇑iP PKPab 07 35 24.6 +1.2
AKH Akhalkalaki 145.50 301 P PKPdf 07 35 22.7 -0.3
AKH Akhalkalaki 145.50 301 PKIKP PKPdf 07 35 22.7 -0.3
KBZ Khabaz 145.57 305 PKPbc PKPdf 07 35 21.4 -1.4
comp=Z,18nm,0.9s,baz=87,slow=1.6,SNR=20
HAKT HAKKARI 145.63 294 i P PKPdf 07 35 23.1 -0.3
VSR Storozhevoye 145.64 319 ePKIKP PKPdf 07 35 22.3 -0.3
VSR pmax pmax
comp=Z,90nm,0.7s
KVAR Kislovodsk Arr 145.67 306 PKPbc PKPdf 07 35 22.7 -0.4
comp=Z,20nm,0.8s,baz=164,slow=1.7,SNR=15
KIV Kislovodsk 145.68 306 eP PKPdf 07 35 22.3 -0.8
KIV Kislovodsk 145.68 306 ePKHKP PKPpre 07 35 17.1
KIV i 07 35 21.6
KIV e 07 38 39.9
KIV eSS SS 07 57 34.0 -3.3
KIV pmax pmax
comp=Z,59nm,1.1s
KIV Kislovodsk 145.68 306 ePKPdf PKPdf 07 35 21.6 -1.5
KIV LR LR
comp=Z,2µm,20.0s
CUKT Cukurca 145.71 294 eP PKPab 07 35 24.2 0.0
NEY Neytrino 145.78 305c iPKP2 PKPdf 07 35 23.8 +0.4
VANB Van 145.84 296 eP PKPbc 07 35 24.4 +0.2
KARS Kars 145.91 300 eP PKPab 07 35 25.0 +0.1
AGRB Hanur-Agry 146.08 298 eP PKPab 07 35 26.0 +0.4
GEVA Gevas 146.11 296 i P PKPab 07 35 27.1 +1.3
TUTA Tutak 146.23 298 i P PKPab 07 35 28.0 +1.8
SIRT Sirnak 146.64 294 eP PKPab 07 35 27.4 -0.3
DAGI Agillar 146.73 301 i P PKPab 07 35 28.8 +0.8
VSU Vasula 146.85 338d iPKP2 PKPab 07 35 27.6 -0.1
HOMI Horasan 146.86 299 i P PKPab 07 35 32.2 +3.5
EZM Erzurum 147.29 299 eP PKPbc 07 35 29.0 +0.4
NC303 NORSAR Array S 147.81 353 ePKPbc PKPbc 07 35 29.2 +0.3
NC204 NORSAR Array S 147.83 353 ePKPbc PKPbc 07 35 28.7 -0.3
SOC Sochi 147.86 306c ePKHKP PKPpre 07 35 24.0
SOC i 07 35 30.3
SOC eSSS SSS 08 03 26.5
SOC pmax pmax
comp=Z,9.0nm,0.6s
SOC pmax pmax
comp=Z,26nm,0.8s
NC405 NORSAR Array S 147.88 352 ePKPbc PKPbc 07 35 28.9 -0.3
BNGB Bingˆ¶l 147.92 297 eP PKPdf 07 35 28.2 +1.1
NB2 NORSAR Subarra 148.01 353 PKP PKPdf 07 35 27.8 +1.4
comp=Z,21nm,1.0s,baz=17,slow=2.6
NB200 NORSAR Array S 148.01 353 ePKPdf PKPdf 07 35 27.2 +0.7
NOA NORSAR Array B 148.01 353 PKPbc PKPdf 07 35 27.2 +0.7
comp=Z,1.7nm,0.6s,baz=15,slow=4.4,SNR=22
NBO00 NORSAR Array S 148.07 353 ePKPbc PKPdf 07 35 28.0 +1.5
MZRK Al-Mazaregh 148.12 291 i P PKPab 07 35 33.9 +0.4
NAO01 NORSAR Array S 148.24 353 ePKPbc PKPbc 07 35 30.3 +0.2
NC602 NORSAR Array S 148.27 352 ePKPbc PKPbc 07 35 29.8 -0.3
DYBB Diyarbakir 148.43 295 eP PKPbc 07 35 30.6 -0.9
HFS Hagfors 148.57 350 PKPbc PKPbc 07 35 29.4 -1.6
comp=Z,13nm,0.6s,baz=66,slow=1.8,SNR=19
TNCL Tunceli-Merkez 148.78 298 i P PKPab 07 35 34.9 -1.3
KELT Kelkit 148.86 300 i P PKPbc 07 35 34.1 +1.5
PTK Pertek 148.93 297 eP PKPdf 07 35 28.6 -0.3
IZAR Zarasai 149.10 335 eP PKPbc 07 35 33.3 +0.9
IZAR IAmb IAmb 07 35 51.2
comp=Z,38nm,0.9s
ANN Anapa 149.10 309 i PKP2 PKPbc 07 35 32.3 -0.5
ANN e 07 38 59.3
ANN pmax pmax
comp=Z,88nm,1.4s
IDID Didziasalis 149.24 334 eP PKPbc 07 35 33.5 +0.8
IDID IAmb IAmb 07 35 52.5
comp=Z,21nm,0.7s
ISAL Salakas 149.28 335 eP PKPbc 07 35 33.7 +0.9
ISAL IAmb IAmb 07 35 51.7
comp=Z,28nm,1.1s
ELZG Elazig 149.29 297 i P PKPab 07 35 36.6 -1.7
MICGM Minsk 149.37 332 ePKP1 PKPdf 07 35 29.0 +0.3
MICGM ePKP2 PKPab 07 35 48.0 +10
MICGM ePP PP 07 39 06.0 +0.8
MICGM ePPP PPP 07 42 12.0

MICGM eSKSP 07 49 20.0
MICGM eSS SS 07 58 14.0 -3.2
MICGM eSSS SSS 08 03 10.0
MICGM eLR LR 08 34 50.0
MICGM LRM MLR 08 41 06.0
comp=Z,3.4nm,20.0s
MNK Minsk 149.37 332 ePKIKP PKPdf 07 35 29.0 +0.3
MNK e 07 39 06.0
MNK eSS SS 07 58 14.0 -3.2
MNK MLR MLR
comp=Z,3µm,20.0s
KSRV Kasrt alli 149.46 291 i P PKPbc 07 35 36.1 +2.1
GRSN GIRESUNGRSN 149.47 301 i P PKPbc 07 35 34.8 +0.9
NACGM Naroch 149.53 333 eP PKPbc 07 35 34.0 +0.5
NACGM eLR LR 08 41 40.0
NACGM LRM MLR 08 46 52.0
comp=Z,2.6nm,20.0s
KONO Kongsberg 149.54 354 ePKP2 PKPbc 07 35 33.5 +0.1
KONO MLR MLR
comp=Z,2µm,21.0s
KONO Kongsberg 149.54 354 ePKPbc PKPbc 07 35 33.5 +0.1
KONO LR LR
comp=Z,2µm,21.0s
KEMA Kemaliye 149.57 298 i P PKPbc 07 35 36.6 +2.3
SUSE Susehri 149.65 300 i P PKPbc 07 35 36.8 +2.3
JHLN Al Jahlan 149.92 291 i P PKPbc 07 35 37.2 +2.1
DARE Darende-Malaty 150.45 297 eP PKPbc 07 35 34.9 -1.5
GAZ Gaziantep 150.82 294 eP PKPdf 07 35 32.3 +0.6
ZALF Zalf 150.82 285 i P PKPbc 07 35 35.7 -1.7
ROOS tl_alroos 150.88 288 i P PKPbc 07 35 37.2 -0.4
KMRS Kahramanmaras 151.03 295 eP PKPdf 07 35 33.5 +1.5
HCB Kahramanmara¯ 151.04 295 i P PKPbc 07 35 39.8 +2.0
KVT Kavak 151.09 302 eP PKPdf 07 35 32.3 +0.4
SACV Santiago Islan 151.25 114 PFAKE 07 35 40.0 +1.2
SACV LR LR
comp=Z,2µm,19.0s
KAMA Osmaniye 151.25 294 i P PKPbc 07 35 40.0 +1.6
AKASG Malin Array Be 151.27 325 PKPbc PKPbc 07 35 36.5 -1.3
comp=Z,20nm,0.7s,baz=47,slow=2.8,SNR=39
AKBB Malin Array Si 151.27 325 ePKIKP PKPbc 07 35 35.9 -1.9
AKBB MLR MLR
comp=Z,2µm,19.0s
AKBB Malin Array Si 151.27 325 ePKPbc PKPbc 07 35 35.9 -1.9
AKBB LR LR
comp=Z,2µm,19.0s
SIM Simferopol' 151.27 311 ePKIKP PKPbc 07 35 37.8 -0.2
SIM pmax pmax
comp=Z,45nm,0.7s
KIEV Kiev 151.28 325 ePKIKP PKPbc 07 35 36.6 -1.2
KIEV MLR MLR
comp=Z,2µm,19.0s
KIEV Kiev 151.28 325 ePKPbc PKPbc 07 35 36.6 -1.2
KIEV LR LR
comp=Z,2µm,19.0s
SALA Sala 151.31 285 i P PKPbc 07 35 37.6 -1.1
ANDN Andirin 151.46 295 i P PKPbc 07 35 41.4 +2.6
SUW Suwalki 151.57 335 ePKP PKPbc 07 35 39.1 +0.7
SUW Suwalki 151.57 335 ePKIKP PKPbc 07 35 39.1 +0.7
TOTH TOTAH 151.59 286 i P PKPbc 07 35 38.2 -1.0
HAWK Haweek 151.61 289 i P PKPbc 07 35 37.6 -1.7
TAHT Tahtakopru-Hat 151.70 293 eP PKPdf 07 35 35.3 +2.3
YAYL Yayladag 151.79 292 i P PKPbc 07 35 39.5 -0.2
KOZT Kozan 151.88 295 eP PKPdf 07 35 32.5 -0.7
BRBR Barbar 151.99 286 i P PKPbc 07 35 38.0 -2.3
CEYT Ceyhan 152.00 294 eP PKPdf 07 35 32.1 -1.3
COAL Corum-Alaca 152.06 301 i P PKPbc 07 35 43.2 +3.0
YURE YUREGIR 152.11 294 i P PKPab 07 35 45.8 -4.1
CORM Corum 152.34 301 eP PKPdf 07 35 34.7 +0.7
ROSA Rosais 152.37 62 ePKPdf PKPdf 07 35 24.4 -10
ROSA Rosais 152.37 62 PFAKE 07 35 40.0 -0.7
ROSA LR LR
comp=Z,3µm,20.0s
PGRA Graciosa 152.51 61 ePKPdf PKPdf 07 35 24.3 -10
TOS Tosya 152.58 303 eP PKPbc 07 35 42.6 +1.3
MUD Monsted U'grnd 152.73 353 i P PKPbc 07 35 39.0 -1.9
MUD Monsted U'grnd 152.73 353 i PKIKP PKPbc 07 35 39.0 -1.9
MERS Mersin 152.99 294 eP PKPdf 07 35 36.7 +1.7
COP Copenhagen 153.03 349 i P PKPdf 07 35 35.8 +1.5
COP Copenhagen 153.03 349 i PKIKP PKPdf 07 35 35.8 +1.5
BSD Bornholm Skovb 153.07 345 i P PKPdf 07 35 35.3 +0.9
BSD Bornholm Skovb 153.07 345 i PKIKP PKPdf 07 35 35.3 +0.9
BR101 Keskin Array S 153.18 300 ePKPdf PKPdf 07 35 33.6 -1.7
BR101 ePKPbc PKPbc 07 35 41.4 -1.3
BR101 ePKPab PKPab 07 35 53.5 -0.9
BR131 Keskin Array S 153.18 300 ePKPbc PKPbc 07 35 40.7 -2.1
BRTR Keskin Array B 153.18 300 PKP PKPdf 07 35 33.6 -1.7
comp=Z,0.8nm,0.9s,baz=80,slow=1.4,SNR=3.8
BRTR PKPbc PKPbc 07 35 41.4 -1.3
comp=Z,12nm,1.0s,baz=132,slow=1.8,SNR=23
BRTR PKPab PKPab 07 35 53.5 -0.9
comp=Z,13nm,0.8s,baz=154,slow=3.6,SNR=16
SORM Soroca 153.25 321⇓iP PKPbc 07 35 43.0 +0.7
SORM Soroca 153.25 321 ⇓PKIKP PKPbc 07 35 43.0 +0.7
KIS Kishinev 153.62 319 ePKP PKPdf 07 35 30.0 -5.4
KIS Kishinev 153.62 319 ePsP 07 35 50.0
KIS eSKP SKPdf 07 39 20.0 +12
KIS Kishinev 153.62 319 ePP PP 07 40 02.0 +32
KIS Kishinev 153.62 319 ePKIKP PKPdf 07 35 30.0 -5.4
KIS ePS PKPab 07 35 50.0 -5.8
KIS e 07 42 54.0
EKA Eskdalemuir Ar 153.75 8 PKPbc PKPbc 07 35 43.2 0.0
comp=Z,2.6nm,0.7s,baz=0.0,slow=2.8,SNR=6.9
ESK Eskdalemuir 153.76 9 PFAKE 07 35 50.0 -6.1
ESK LR LR
comp=Z,2µm,20.0s
ANTO Ankara 153.78 301 PFAKE 07 35 50.0 +6.1
ANTO LR LR
comp=Z,2µm,20.0s
BR231 Keskin MP Arra 153.80 301 ePKPbc PKPbc 07 35 40.8 -3.2
RGN Rugen 153.94 347 PFAKE 07 35 50.0 +6.4
RGN LR LR
comp=Z,2µm,19.0s
CSS Mathiatis 154.12 290 PFAKE 07 35 50.0 +5.3
CSS LR LR
comp=Z,600nm,19.0s
LVV L'vov 154.36 328 ePKIKP PKPdf 07 35 38.2 +1.8
PSET Sete Cidades 154.47 63 ePKPdf PKPdf 07 35 27.1 -10
KONT Konya--Tatoy 154.53 297 eP PKPab 07 36 00.4 +0.3
CMLA Cha da Macela 154.64 63 ePKPdf PKPdf 07 35 27.7 -10
CMLA Cha da Macela 154.64 63 PFAKE 07 35 50.0 +4.3
CMLA LR LR
comp=Z,3µm,20.0s
GAZI Gazipasa 154.83 293 i P PKPab 07 36 02.5 +1.1
BART Pico Bartolome 154.91 63 ePKPdf PKPdf 07 35 28.1 -10
CFR Carcaliu 154.98 316⇑iP PKPbc 07 35 47.1 +1.0
CFR Carcaliu 154.98 316 ⇑PKIKP PKPbc 07 35 47.1 +1.0
PSMN Pico do Norte, 155.13 65 ePKPdf PKPdf 07 35 28.1 -10
TESR Tescani 155.13 320⇑iP PKPab 07 36 01.3 -1.0
TIRR Tirgusor 155.16 314⇑iP PKPab 07 35 52.8 -10
TIRR Tirgusor 155.16 314 ⇑PKIKP PKPab 07 35 52.8 -10
TIRR Tirgusor 155.16 314 PFAKE 07 35 50.0 +12
TIRR LR LR
comp=Z,2µm,20.0s
DSB Dublin 155.21 14 PFAKE 07 35 50.0 -12
DSB LR LR
comp=Z,2µm,20.0s
BUR08 Bucovina Ar. S 155.24 323 ePKPab PKPab 07 36 03.2 +0.4
BURAR Bucovina Array 155.25 323⇑iP PKPdf 07 35 48.6 +11
BURAR Bucovina Array 155.25 323 ⇑PKIKP PKPdf 07 35 48.6 +11
GULT Gulveren 155.31 304 eP PKPab 07 36 02.4 -1.0
TLB Topalu 155.33 314⇑iP PKPab 07 35 54.2 -9.0
TLB Topalu 155.33 314 ⇑PKIKP PKPab 07 35 54.2 -9.0
HARR Harsova 155.35 315⇑iP PKPab 07 36 00.9 -2.4
HARR Harsova 155.35 315 ⇑PKP2 PKPab 07 36 00.9 -2.4
PLOR Plostina 155.50 318⇑iP PKPab 07 36 03.9 -0.1
PLOR Plostina 155.50 318 ⇑PKP2 PKPab 07 36 03.9 -0.1
LIC Lamto 155.54 159 ePKP2 PKPab 07 35 52.5 -12
comp=Z,87nm,2.3s
PSN Preselentsi 155.67 312 i P PKPab 07 36 07.9 +3.2
SUTC Sutluce-Ispart 155.68 296 eP PKPab 07 36 04.4 -0.8
KIC Kosan Boka 155.76 160 ePKP2 PKPdf 07 35 52.7 +13
comp=Z,35nm,0.9s
KOLS Kolonicke sedl 155.79 329 ePKIKP PKPdf 07 35 39.4 +1.0
KOLS e 07 35 52.8
KOLS Kolonicke sedl 155.79 329 ePKP PKPdf 07 35 39.4 +1.0
KOLS e 07 35 52.8
CAVI Cavuskoy 155.87 303 eP PKPab 07 36 05.2 -0.6
ADVT Abdulvahap 155.87 304 eP PKPab 07 36 05.3 -0.3
STHS Stebnicka Huta 155.89 331 ePKP2 PKPab 07 36 07.4 +1.9
STHS Stebnicka Huta 155.89 331 ePKP PKPab 07 36 07.4 +1.9
TIC Toumodi 155.94 159 ePKP2 PKPab 07 35 54.2 -12
UZH Uzhgorod 156.00 328 ePKIKP PKPdf 07 35 38.1 -0.6

UZH				*e*			07 35 50.3	
UZH				*e*			07 36 02.5	
MLR	**Muntele Rosu**	**156.12 318**		PKP	**PKPdf**	**07 35 39.4**	**+0.3**	
	comp=Z,0.1nm,0.3s,baz=108,slow=5.8,SNR=2.3							
MLR				PKPab	**PKPab**	**07 36 05.6**	**-1.1**	
	comp=Z,2.7nm,0.9s,baz=44,slow=8.6,SNR=11							
MLR	**Muntele Rosu**	**156.12 318**	⇑	*i*P	**PKPab**	**07 36 08.8**	**+2.1**	
MLR	**Muntele Rosu**	**156.12 318**		*e*PKIKP	**PKPdf**	**07 35 39.1**	**0.0**	
MLR				*e*		07 36 03.6		
MLR				MLR	MLR			
	comp=Z,2μm,20.0s							
MLR	**Muntele Rosu**	**156.12 318**		*e*PKPdf	**PKPdf**	**07 35 39.0**	**0.0**	
MLR				*e*PKPab	**PKPab**	**07 36 03.6**	**-3.1**	
MLR				LR	LR			
	comp=Z,2μm,20.0s							
DOPR	**Dopca**	**156.16 320**	⇑	*i*P	**PKPab**	**07 36 08.5**	**+1.7**	
CRVS	**Cervenica-Dubn**	**156.18 330**		*e*PKIKP	**PKPdf**	**07 35 41.7**	**+2.8**	
CRVS				*e*		07 36 05.4		
CRVS	**Cervenica-Dubn**	**156.18 330**		*e*PKP	**PKPdf**	**07 35 41.7**	**+2.8**	
CRVS				*e*		07 36 05.4		
NIE	**Niedzica**	**156.29 332**		*e*PKP	**PKPdf**	**07 35 41.9**	**+2.8**	
NIE	**Niedzica**	**156.29 332**		*e*PKIKP	**PKPdf**	**07 35 41.9**	**+2.8**	
TVSB	**Tavsanli**	**156.37 302**		*e*P	**PKPab**	**07 36 05.5**	**-2.5**	
CWF	**Charnwood Fore**	**156.51 7**		*e*PKPab	**PKPab**	**07 36 08.2**	**+0.3**	
CWF				LR	LR			
	comp=Z,4μm,20.0s							
KSP	**Ksiaz**	**156.56 339**		*e*PKP	**PKPdf**	**07 35 40.0**	**+0.6**	
KSP	**Ksiaz**	**156.56 339**		*e*PKIKP	**PKPdf**	**07 35 40.0**	**+0.6**	
VOIR		**156.66 319**	⇑	*i*P	**PKPab**	**07 36 10.2**	**+1.2**	
VOIR		**156.66 319**	⇑	PKP2	**PKPab**	**07 36 10.2**	**+1.2**	
OKC	**Ostrava-Krasne**	**156.79 335**		*e*PKPDF	**PKPdf**	**07 35 40.2**	**+0.5**	
OKC				AMS	AMS	08 51 20.0		
	comp=Z,2μm,18.8s							
OKC	**Ostrava-Krasne**	**156.79 335**		*e*PKIKP	**PKPdf**	**07 35 40.2**	**+0.5**	
OKC				MLR	MLR			
	comp=Z,2μm,18.8s							
LANS	**Liptovska Anna**	**156.84 332**		*e*PKP2	**PKPab**	**07 36 10.9**	**+1.4**	
LANS	**Liptovska Anna**	**156.84 332**		*e*PKP	**PKPab**	**07 36 10.9**	**+1.4**	
KECS	**Kecovo**	**156.92 330**		*e*PKP2	**PKPab**	**07 36 10.6**	**+0.7**	
KECS	**Kecovo**	**156.92 330**		*e*PKP	**PKPab**	**07 36 10.6**	**+0.7**	
UPC	**Upice**	**156.94 339**		*e*PKPDF	**PKPdf**	**07 35 41.2**	**+1.3**	
UPC				*e*PKPAB	**PKPab**	**07 36 11.0**	**+1.1**	
UPC				*ex*	x	07 36 19.7		
UPC				*ex*	x	07 36 24.7		
UPC				*e*SKP		07 39 12.5		
UPC				*e*PP	**PP**	**07 39 45.6**	**-2.3**	
UPC				*e*SS	SS	07 59 37.7	-2.1	
UPC				AMS	AMS	08 47 20.0		
	comp=Z,3μm,20.8s							
UPC	**Upice**	**156.94 339**		*e*PKIKP	**PKPdf**	**07 35 41.2**	**+1.3**	
UPC				*e*		07 39 45.6		
UPC				*e*SS	SS	07 59 37.7	-2.1	
UPC				MLR	MLR			
	comp=Z,3μm,20.8s							
ARR	**Arges**	**156.94 319**	⇑	*i*P	**PKPab**	**07 36 09.3**	**-0.9**	
DPC	**Dobruska-Polom**	**156.98 338**		*e*PKPDF	**PKPdf**	**07 35 40.6**	**+0.6**	
DPC				*e*PKPAB	**PKPab**	**07 36 09.6**	**-0.5**	
DPC				*ex*	x	07 36 20.1		
DPC				*ex*	x	07 36 25.1		
DPC				*e*PP	**PP**	**07 39 46.0**	**-2.2**	
DPC				*e*SS	SS	07 59 39.5	-0.8	
DPC				AMS	AMS	08 58 10.0		
	comp=Z,2μm,18.9s							
DPC	**Dobruska-Polom**	**156.98 338**		*e*PKIKP	**PKPdf**	**07 35 40.6**	**+0.6**	
DPC				*e*		07 39 46.0		
DPC				*e*SS	SS	07 59 39.5	-0.8	
DPC				MLR	MLR			
	comp=Z,2μm,18.9s							
CLL	**Collm**	**157.04 344**		*e*PKPdf	**PKPdf**	**07 35 40.0**	**+0.1**	
CLL				*e*PKPdiff	PKPab	07 35 54.0	-16	
CLL				*e*PKPab	PKPab	07 36 09.0	-1.2	
	comp=Z,11nm,0.9s							
CLL				*ep*PKPab	**pPKPab**	**07 36 15.0**	**-1.7**	
CLL				*e*		07 36 33.0		
CLL				*e*PP	**PP**	**07 39 47.0**	**-1.3**	
CLL				*e*		07 40 46.0		
CLL				*e*PPP	PPP	07 43 24.0		
CLL				*e*SKKSac	SKKSac	07 46 38.0	+1.1	
CLL				*e*		07 47 06.0		
CLL				*e*PSKS		07 50 09.0		
CLL				*e*PPS	PPS	07 51 18.0		
CLL				*e*		07 54 24.0		
CLL				*e*SS	SS	07 59 42.0	+1.4	
CLL				LmH		08 48 00.0		
	comp=N,2μm,20.9s							
CLL				LmH		08 48 00.0		
	comp=E,1μm,20.5s							
CLL				LmH		08 48 00.0		
	comp=Z,2μm,20.5s							
CLL				LmV		08 56 00.0		
	comp=Z,3μm,19.3s							
CLL	**Collm**	**157.04 344**		*e*PKIKP	**PKPdf**	**07 35 40.0**	**+0.1**	
CLL				*e*		07 35 54.0		
CLL				MLR	MLR			
	comp=Z,3μm,19.3s							
CLL	**Collm**	**157.04 344**		PFAKE		07 35 50.0	+10	
CLL				LR	LR			
	comp=Z,3μm,20.0s							
MORC	**Moravsky Berou**	**157.06 336**	⇓	*i*P	**PKPab**	**07 36 09.5**	**-1.0**	
MORC	**Moravsky Berou**	**157.06 336**	⇓	PKP2	**PKPab**	**07 36 09.5**	**-1.0**	
MORC	**Moravsky Berou**	**157.06 336**		PFAKE		07 35 50.0	+10	
MORC				LR	LR			
	comp=Z,13μm,19.0s							
DRGR		**157.08 324**	⇑	*i*P	PKPdf	07 35 32.2	-8.1	
DRGR		**157.08 324**	⇑	PKIKP	PKPdf	07 35 32.2	-8.1	
BRG	**Berggiesshubel**	**157.21 343**		*e*PKP	**PKPdf**	**07 35 40.5**	**+0.3**	
	comp=Z,2.9nm,0.9s							
BRG				*e*		07 36 09.7		
	comp=Z,7.4nm,0.9s							
BRG				PP	**PP**	**07 39 48.0**	**-1.3**	
BRG				SS	SS	07 59 31.0	-11	
	comp=N,2μm,18.4s							
	comp=E,839nm,24.2s							
	comp=Z,2μm,18.6s							
BRG	**Berggiesshubel**	**157.21 343**		*e*PKIKP	**PKPdf**	**07 35 40.5**	**+0.3**	
BRG				*e*		07 39 48.0		
BRG				SS	SS	07 59 31.0	-11	
BRG				pmax	pmax			
	comp=Z,3.0nm,0.9s							
BRG				MLR	MLR			
	comp=N,2μm,18.4s							
BRG				MLR	MLR			
	comp=E,839nm,24.2s							
BRG				MLR	MLR			
	comp=Z,2μm,18.6s							
PVCC	**Panska Ves**	**157.35 341**		*e*PKPDF	**PKPdf**	**07 35 40.5**	**+0.1**	
PVCC				*e*SKP		07 39 14.2		
PVCC				*e*PP	**PP**	**07 39 45.7**	**-4.4**	
PVCC				AMS	AMS	08 58 50.0		
	comp=Z,3μm,17.9s							
PVCC	**Panska Ves**	**157.35 341**		*e*PKIKP	**PKPdf**	**07 35 40.5**	**+0.1**	
PVCC				*e*		07 39 45.7		
PVCC				MLR	MLR			
	comp=Z,3μm,17.9s							
PSZ	**Piszkesteto**	**157.61 330**		*e*PKP2	**PKPab**	**07 36 13.9**	**+0.9**	
PSZ				MLR	MLR			
	comp=Z,5μm,20.0s							
PSZ	**Piszkesteto**	**157.61 330**		*e*PKPab	**PKPab**	**07 36 13.9**	**+0.9**	
PSZ				LR	LR			
	comp=Z,5μm,20.0s							
VYHS	**Vyhne**	**157.61 332**		*e*PKIKP	**PKPdf**	**07 35 41.5**	**+0.7**	
VYHS	**Vyhne**	**157.61 332**		*e*PKP	**PKPdf**	**07 35 41.5**	**+0.7**	
VYHS				*e*		07 36 14.0		
VRAC	**Vranov**	**157.78 337**		PKP	**PKPdf**	**07 35 41.1**	**+0.2**	
	comp=Z,1.8nm,0.3s,baz=213,slow=7.1,SNR=3.0							
VRAC				PKPab	**PKPab**	**07 36 12.3**	**-1.3**	
	comp=Z,7.0nm,0.8s,baz=96,slow=1.7,SNR=5.6							
VRAC	**Vranov**	**157.78 337**	⇑	*i*P	**PKPab**	**07 36 14.0**	**+0.4**	
VRAC	**Vranov**	**157.78 337**	⇑	PKP2	**PKPab**	**07 36 14.0**	**+0.4**	
GOPC	**GO Pecny, Ondr**	**157.84 340**		*e*PKPDF	**PKPdf**	**07 35 40.5**	**-0.5**	
GOPC				*e*SKP		07 39 15.0		
GOPC				*e*PP	**PP**	**07 39 51.3**	**-1.5**	
GOPC				*e*SS	SS	07 59 47.3	-2.0	
GOPC				AMS	AMS	08 58 20.0		
	comp=Z,2μm,17.9s							
GOPC	**GO Pecny, Ondr**	**157.84 340**		*e*PKIKP	**PKPdf**	**07 35 40.5**	**-0.5**	
GOPC				*e*		07 39 51.3		
GOPC				*e*SS	SS	07 59 47.3	-2.0	
GOPC				MLR	MLR			
	comp=Z,2μm,17.9s							
PRU	**Pruhonice**	**157.84 341**		*e*PKPDF	**PKPdf**	**07 35 39.0**	**-2.0**	
PRU				*e*PKPAB	**PKPab**	**07 36 14.3**	**+0.5**	
PRU				*e*SKP		07 39 15.3		
PRU				*e*PP	**PP**	**07 39 51.7**	**-1.1**	
PRU				*e*SS	SS	07 59 44.3	-5.0	
PRU				AMS	AMS	08 55 30.0		
	comp=Z,4μm,19.2s							
PRU	**Pruhonice**	**157.84 341**		*e*PKIKP	**PKPdf**	**07 35 39.0**	**-2.0**	
PRU				*e*		07 39 51.7		
PRU				*e*SS	SS	07 59 44.3	-5.0	
PRU				MLR	MLR			
	comp=Z,4μm,19.2s							
NKC	**Novy Kostel**	**158.17 344**		*e*PKPDF	**PKPdf**	**07 35 41.8**	**+0.4**	
NKC				*e*PKPAB	**PKPab**	**07 36 15.8**	**+0.6**	
NKC				*e*SKP		07 39 15.0		
NKC				*e*PP	**PP**	**07 39 53.4**	**-1.2**	
NKC				AMS	AMS	08 59 00.0		
	comp=Z,2μm,19.0s							
NKC	**Novy Kostel**	**158.17 344**		*e*PKIKP	**PKPdf**	**07 35 41.8**	**+0.4**	
NKC				*e*		07 39 53.4		
NKC				MLR	MLR			
	comp=Z,2μm,19.0s							
BZS	**Buzias**	**158.43 323**	⇑	*i*P	**PKPdf**	**07 35 41.7**	**-0.2**	
BZS	**Buzias**	**158.43 323**	⇑	PKIKP	**PKPdf**	**07 35 41.7**	**-0.2**	
MPEP	**Malo Peshtene**	**158.62 316**		*i*P	**PKPab**	**07 36 16.2**	**-1.2**	
PGB	**Panagyurishte**	**158.79 314**		*i*P	**PKPab**	**07 36 21.1**	**+2.8**	
KHC	**Kasperske Hory**	**158.89 341**		*e*PKPDF	**PKPdf**	**07 35 42.5**	**+0.2**	
KHC				*e*PKPAB	**PKPab**	**07 36 15.8**	**-2.6**	
KHC				*ex*	x	07 36 28.2		
KHC				*ex*	x	07 36 32.7		
KHC				*e*SKP		07 39 11.3		
KHC				*e*PP	**PP**	**07 39 57.4**	**-1.2**	
KHC				*e*SS	SS	08 00 02.3	+1.8	
KHC				AMS	AMS	08 59 10.0		
	comp=Z,3μm,17.7s							
KHC	**Kasperske Hory**	**158.89 341**		*e*PKIKP	**PKPdf**	**07 35 42.5**	**+0.2**	
KHC				*e*		07 36 15.8		
KHC				*e*		07 39 57.4		
KHC				*e*SS	SS	08 00 02.3	+1.8	
KHC				MLR	MLR			
	comp=Z,3μm,17.0s							
KHC	**Kasperske Hory**	**158.89 341**		*e*PKPab	**PKPab**	**07 36 15.9**	**-2.5**	
KHC				LR	LR			
	comp=Z,1μm,18.0s							
MDVR	**Moldovita**	**158.93 321**	⇑	*i*P	**PKPdf**	**07 35 49.0**	**+6.4**	
GRFO	**Grafenberg**	**158.96 346**		PFAKE		07 35 50.0	+7.6	
GRFO				LR	LR			
	comp=Z,3μm,21.0s							
KARP	**Karpathos**	**159.07 293**		*e*PKPdf	**PKPdf**	**07 35 40.2**	**-2.8**	
KARP				*e*PKPab	**PKPab**	**07 36 21.4**	**+1.7**	
KARP				LR	LR			
	comp=Z,800nm,19.0s							
GEC2	**GERESS Array S**	**159.11 341**		PFAKE		07 35 50.0	+7.3	
GEC2				LR	LR			
	comp=Z,3μm,18.0s							
GERES	**GERESS Array B**	**159.11 341**		PKP	**PKPdf**	**07 35 40.4**	**-2.3**	
	comp=Z,0.4nm,0.2s,baz=153,slow=0.9,SNR=3.2							
CONA	**Conrad Observa**	**159.21 336**		*i* PKPab	**PKPab**	**07 36 18.4**	**-1.5**	
	comp=Z,22nm,1.2s							
VTS	**Vitosha**	**159.36 315**	⇑	*i*P	**PKPab**	**07 36 21.5**	**+0.6**	
VTS	**Vitosha**	**159.36 315**		*e*PKIKP	**PKPdf**	**07 35 43.6**	**+0.3**	
VTS				*e*		07 36 20.9		
VTS				MLR	MLR			
	comp=Z,3μm,20.0s							
VTS	**Vitosha**	**159.36 315**		*i* P	**PKPab**	**07 36 23.1**	**+2.2**	
VTS	**Vitosha**	**159.36 315**		*e*PKPdf	**PKPdf**	**07 35 43.6**	**+0.3**	
VTS				*e*PKPab	**PKPab**	**07 36 20.9**	**0.0**	
VTS				LR	LR			
	comp=Z,3μm,20.0s							
MMB	**Musomiste**	**159.55 312**		*i* P	**PKPab**	**07 36 24.2**	**+2.6**	
WLF	**Walferdange**	**159.74 355**		PFAKE		07 35 50.0	+6.8	
WLF				LR	LR			
	comp=Z,3μm,19.0s							
MOA	**Molln**	**159.82 338**		*i* pPKPab	**PKPab**	**07 36 23.6**	**+1.1**	
	comp=Z,19nm,1.2s							
KKB	**Krupnik**	**159.83 313**		*i* P	**PKPab**	**07 36 25.5**	**+2.7**	
ARSA	**Arzberg**	**159.91 335**		*i* PKPab	**PKPab**	**07 36 22.6**	**-0.3**	
	comp=Z,16nm,1.5s							
LAST	**Lasithi**	**160.49 293**		*e*PKPab	**PKPab**	**07 36 27.3**	**+1.3**	
SOKA	**Soboth**	**160.57 335**		*i* PKPab	**PKPab**	**07 36 26.3**	**+0.5**	
	comp=Z,25nm,1.2s							
PERS	**Pernice**	**160.58 335**		*i* PKPdf	**PKPdf**	**07 35 43.9**	**-0.5**	
PERS				*e*PKPab	**PKPab**	**07 36 25.5**	**-0.3**	
KBA	**Koelnbreinsper**	**160.80 339**		*i* pPKPab	**PKPab**	**07 36 30.0**	**+3.0**	
	comp=Z,14nm,1.4s							
OBKA	**Obir**	**160.89 336**		*i* PKPab	**PKPab**	**07 36 27.6**	**+0.4**	
	comp=Z,7.4nm,1.1s							
IDI	**Anoyia**	**160.94 293**		PKPab	**PKPab**	**07 36 28.1**	**+0.1**	
	comp=Z,16nm,0.8s,baz=65,slow=11,SNR=5.7							
WATA	**Walderalm**	**161.07 343**		*i* pPKPab	**PKPab**	**07 36 29.7**	**+1.6**	
	comp=Z,5.2nm,0.6s							
MYKA	**Terra Mystica**	**161.10 338**		*i* PKPab	**PKPab**	**07 36 28.1**	**0.0**	
	comp=Z,14nm,1.2s							
WTTA	**Wattenberg**	**161.12 342**		*i* pPKPab	**PKPab**	**07 36 29.8**	**+1.4**	
	comp=Z,13nm,1.2s							
RETA	**Reutte**	**161.13 344**		*i* PKPab	**PKPab**	**07 36 26.5**	**-1.7**	
	comp=Z,8.0nm,1.1s							
MOTA	**Moosalm**	**161.18 344**		*i* PKPab	**PKPab**	**07 36 28.5**	**-0.1**	
	comp=Z,3.3nm,0.4s							
LJU	**Ljubljana**	**161.29 335**		*e*PKPdf	**PKPdf**	**07 35 45.4**	**+0.3**	
LJU				*e*		07 39 58.3		
ABTA	**Abfaltersbach**	**161.35 340**		*i* PKPab	**PKPab**	**07 36 29.3**	**+0.1**	
	comp=Z,12nm,1.2s							
BOJS	**Bojanci**	**161.47 333**		*e*PKPdf	**PKPdf**	**07 35 45.7**	**+0.4**	
BOJS				*e*PKPab	**PKPab**	**07 36 29.5**	**-0.2**	
BOJS				*e*		07 50 54.1		
BOJS				*e*SS	SS	08 00 29.8	+1.8	
DAVA	**Damuels**	**161.52 346**		*i* pPKPab	**PKPab**	**07 36 31.6**	**+1.6**	
	comp=Z,3.9nm,0.9s							
FETA	**Feichten**	**161.58 344**		*i* sPKPab	**PKPab**	**07 36 34.1**	**+3.8**	
	comp=Z,11nm,1.1s							
FUORN	**Ofenpass-Fuorn**	**162.06 344**		*e*PKPdf	**PKPdf**	**07 35 46.6**	**+0.4**	
FUORN				*e*PKPab	**PKPab**	**07 36 32.5**	**-0.1**	
PMOZ	**Porto Moniz, M**	**162.09 74**		eLR	LR	08 37 29.8		
	comp=Z,4μm,18.0s							
TUE	**Stuetta**	**162.41 346**		*e*PKPdf	**PKPdf**	**07 35 47.2**	**+0.7**	
TOA0	**Torodi Ar. Sit**	**163.67 174**		*e*PKPdf	**PKPdf**	**07 35 48.9**	**+0.5**	
TOA0				*e*PKPab	**PKPab**	**07 36 38.9**	**-1.0**	
TORD	**Torodi Ar. Bea**	**163.67 174**		PKP	**PKPdf**	**07 35 49.4**	**+1.1**	
	comp=Z,4.2nm,1.1s,baz=303,slow=0.9,SNR=8.4							
TORD				PKPab	**PKPab**	**07 36 40.1**	**+0.1**	
	comp=Z,15nm,0.7s,baz=185,slow=3.3,SNR=19							
TORD				PP	**PP**	**07 40 29.4**	**+5.5**	
	comp=Z,1.9nm,0.9s,baz=180,slow=5.6,SNR=3.9							
TOA1	**Torodi Ar. Sit**	**163.67 174**		*e*PKPdf	**PKPdf**	**07 35 49.4**	**+1.1**	
TOA1				*e*PKPab	**PKPab**	**07 36 40.1**	**+0.1**	
TOA1				*e*PP	**PP**	**07 40 29.4**	**+5.4**	
PGAV	**Gavieira, Arco**	**164.39 34**		*e*PKPdf	**PKPdf**	**07 35 51.1**	**+2.7**	
PGAV	**Gavieira, Arco**	**164.39 34**		*e*SS	SS	08 01 03.1	+4.3	
PGAV	**Gavieira, Arco**	**164.39 34**		eLR	LR	08 37 54.4		
	comp=Z,4μm,20.0s							
POLO	**Lamas de Olo**	**165.07 34**		*e*PKPdf	**PKPdf**	**07 35 50.4**	**+1.4**	
POLO	**Lamas de Olo**	**165.07 34**		*e*SS	SS	08 01 14.7	+8.9	
PVRL	**Vila Real**	**165.18 35**		*e*PKPdf	**PKPdf**	**07 35 52.9**	**+3.9**	
PBRG	**Braganca**	**165.23 31**		*e*PKPdf	**PKPdf**	**07 35 50.6**	**+1.6**	
TIP	**Timpagrande**	**165.32 315**		*e*PKPab	**PKPab**	**07 36 48.2**	**+1.2**	
PVIS	**Viseu**	**165.51 36**		*e*PKPdf	**PKPdf**	**07 35 51.3**	**+2.0**	
MVO	**Moncorvo**	**165.60 33**		*e*PKPdf	**PKPdf**	**07 35 50.7**	**+1.3**	
MVO	**Moncorvo**	**165.60 33**		*e*SS	SS	08 01 19.4	+8.3	
MVO	**Moncorvo**	**165.60 33**		eLR	LR	08 40 33.3		
	comp=Z,5μm,18.0s							
PCAS	**Casmilo, Conde**	**165.65 40**		*e*PKPdf	**PKPdf**	**07 35 52.0**	**+2.6**	
PCAS	**Casmilo, Conde**	**165.65 40**		*e*SS	SS	08 01 19.4	+7.5	
PMAFR	**Mafra**	**165.91 45**		*e*PKPdf	**PKPdf**	**07 35 51.1**	**+1.5**	
PMAFR	**Mafra**	**165.91 45**		*e*SS	SS	08 01 25.9	+11	
MTE	**Manteigas**	**165.92 36**		*e*PKPdf	**PKPdf**	**07 35 52.0**	**+2.3**	
MTE	**Manteigas**	**165.92 36**		*e*SS	SS	08 01 24.1	+10	
MTE	**Manteigas**	**165.92 36**		eLR	LR	08 40 59.5		
	comp=Z,4μm,18.0s							
PTOM	**Tomar**	**166.00 41**		*e*PKPdf	**PKPdf**	**07 35 47.5**	**-2.2**	
PMST	**Lisbon--Monsan**	**166.11 45**		*e*PKPdf	**PKPdf**	**07 35 51.7**	**+1.9**	
LIS	**Lisbon**	**166.15 45**		*e*P	**PKPdf**	**07 35 48.8**	**-1.0**	
LIS				AMS	AMS	08 48 28.8		
	comp=Z,5μm,16.7s							
PCBR	**Castelo Branco**	**166.36 38**		*e*PKPdf	**PKPdf**	**07 35 53.9**	**+4.0**	
CEL	**Celeste**	**166.41 313**		*e*PKPab	**PKPab**	**07 36 52.5**	**+0.7**	
PMTG	**Montargil**	**166.47 42**		*e*PKPdf	**PKPdf**	**07 35 52.4**	**+2.4**	
PMTG	**Montargil**	**166.47 42**		*e*SS	SS	08 01 29.4	+9.0	
PMRV	**Marv??o**	**166.70 39**		*e*PKPdf	**PKPdf**	**07 35 52.3**	**+2.0**	
PMRV	**Marv??o**	**166.70 39**		*e*SS	SS	08 01 31.3	+8.8	
PMRV	**Marv??o**	**166.70 39**		eLR	LR	08 38 18.9		
	comp=Z,3μm,20.0s							
PNCL	**Nicolau / Gran**	**166.90 46**		*e*PKPdf	**PKPdf**	**07 35 51.2**	**+0.8**	
PNCL	**Nicolau / Gran**	**166.90 46**		*e*SS	SS	08 01 36.0	+11	
EVO	**Evora**	**166.95 43**		*e*PKPdf	**PKPdf**	**07 35 51.8**	**+1.4**	
PESTR	**Estremoz**	**166.98 41**		*e*PKPdf	**PKPdf**	**07 35 51.9**	**+1.4**	
PESTR	**Estremoz**	**166.98 41**		*e*SS	SS	08 01 33.5	+8.0	
PTEO	**Sao Teotonio**	**167.11 48**		*e*PKPdf	**PKPdf**	**07 35 53.7**	**+3.1**	
MESJ	**Messejana**	**167.26 46**		*e*P	**PKPdf**	**07 35 50.1**	**-0.5**	
MESJ				AMS	AMS	08 50 25.4		
	comp=Z,4μm,19.7s							
MESJ	**Messejana**	**167.26 46**		*e*PKPdf	**PKPdf**	**07 35 52.9**	**+2.2**	
MORF	**Marmelete**	**167.29 49**		*e*P	**PKPdf**	**07 35 49.9**	**-0.9**	
MORF				AMS	AMS	08 52 50.4		
	comp=Z,4μm,21.3s							
MORF	**Marmelete**	**167.29 49**		*e*PKPdf	**PKPdf**	**07 35 53.2**	**+2.4**	
PBEJ	**Beja**	**167.36 45**		*e*PKPdf	**PKPdf**	**07 35 52.2**	**+1.4**	
PCVE	**Castro Verde**	**167.50 46**		*e*PKPdf	**PKPdf**	**07 35 53.2**	**+2.3**	
PCVE	**Castro Verde**	**167.50 46**		*e*SS	SS	08 01 38.3	+7.3	
PBAR	**Barrancos**	**167.76 42**		*e*PKPdf	**PKPdf**	**07 35 53.0**	**+2.0**	
PBAR	**Barrancos**	**167.76 42**		*e*SS	SS	08 01 42.0	+8.6	
PBDV	**Barranco-do-Ve**	**167.80 48**		*e*PKPdf	**PKPdf**	**07 35 54.5**	**+3.4**	
PBDV	**Barranco-do-Ve**	**167.80 48**		*e*SS	SS	08 01 47.8	+14	
ESDC	**Sonseca Array**	**168.18 29**		PKP	**PKPdf**	**07 35 51.4**	**+0.1**	
	comp=Z,0.2nm,0.3s,baz=344,slow=2.5,SNR=7.5							
ESDC				PKPab	**PKPab**	**07 36 58.6**	**-0.8**	
	comp=Z,2.3nm,0.7s,baz=315,slow=4.9,SNR=8.4							
ESDC				PP	**PP**	**07 40 49.1**	**+1.3**	
	comp=Z,0.1nm,0.3s,baz=330,slow=4.6,SNR=4.1							
ES19	**SONSECA Array**	**168.19 28**		*e*PKPdf	**PKPdf**	**07 35 53.1**	**+1.8**	
ES19				*e*PKPab	**PKPab**	**07 36 59.5**	**0.0**	
MDT	**Midelt**	**172.40 62**		PKP	**PKPdf**	**07 35 55.1**	**+1.1**	
	comp=Z,6.0nm,1.1s,baz=296,slow=5.9,SNR=4.9							

ISCJB ***11*** *07:21:56.9±0.4, 39.°08N±0.°03×29.°03E±0.°03, h8km±5km, Error ellipse: s-maj=5.6km s-min=3.8km az=163.0*
DDA ***11*** *07:21:56.9, 39.°12N×29.°04E, h7km, Md2.6*
ISK ***11*** *07:21:56.6, 39.°11N×29.°05E, h9km, ML2.4*
CSEM ***11*** *07:21:57.0±0.1, 39.°09N×29.°03E, h8km, MD2.6, Error ellipse: s-maj=2.7km s-min=2.3km az=164.0*

ISC 11 07:21:57.2±0.9, 39.°10N±0.°03×29.°03E±0.°02, h13km±8km, n41, σ0°51/56, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.25**	**257**	*i* P	**Pg**	**07 22 02.8**	**+0.2**
DEMI				*i* S	**Sg**	**07 22 06.4**	**+0.2**
DEMI	**Demirci**	**0.25**	**257**	P	**Pg**	**07 22 02.8**	**+0.2**
DEMI				S	**Sg**	**07 22 06.4**	**+0.2**
GEDZ	**Gediz**	**0.30**	**100**	*e*PG	**Pg**	**07 22 03.2**	**-0.3**
GEDZ				*e*SG	**Sg**	**07 22 08.1**	**+0.3**
GEDZ	**Gediz**	**0.30**	**100**	*e*Pg	**Pg**	**07 22 03.2**	**-0.3**
GEDZ				*e*Sg	**Sg**	**07 22 08.1**	**+0.3**
GDZ	**Gediz**	**0.35**	**91**	*i* P	**Pg**	**07 22 04.2**	**-0.2**
GDZ				*i* S	**Sg**	**07 22 09.2**	**-0.1**
GDZ	**Gediz**	**0.35**	**91**	P	**Pg**	**07 22 04.2**	**-0.2**
GDZ				S	**Sg**	**07 22 09.2**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**44**	*e*PG	**Pg**	**07 22 06.2**	**-0.7**
TVSB				*e*SG	**Sg**	**07 22 12.6**	**-0.8**
TVSB	**Tavsanli**	**0.49**	**44**	*e*Pg	**Pg**	**07 22 06.2**	**-0.7**
TVSB				*e*Sg	**Sg**	**07 22 12.6**	**-0.8**
MANT	**Manisa**	**0.71**	**211**	*i* P	**Pg**	**07 22 10.0**	**-1.0**
MANT				*i* S	**Sg**	**07 22 19.1**	**-1.3**
MANT	**Manisa**	**0.71**	**211**	P	**Pg**	**07 22 10.0**	**-1.0**
MANT				S

ISC 11 07:43:33.0±0.3, 29°13S±0′06×176°75W±0′06, h36km, n228, σ1947/251, mb5.0/55, MS5.0/7, 7C-10D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
RAO	**Raoul Island**	**1.03**	**263**	Pn	**Pn**		**07 43 50.0**	**-0.8**
	1μm,0.3s,baz=70,slow=1.0,SNR=39							
RAO				Sn	**Sn**		**07 44 05.8**	**+1.8**
	5μm,0.3s,baz=107,slow=19,SNR=16							
RAO				LR	LR		07 44 17.6	
	comp=Z,17μm,21.9s,baz=154,slow=48							
RAO	**Raoul Island**	**1.03**	**263**	*e*Pg	**Pn**		**07 43 50.0**	**-0.8**
RAO				*e*Pn	Pn		07 43 50.2	-0.6
RAO				*e*Sn	**Sn**		**07 44 05.8**	**+1.8**
OUZ	**Omahuta**	**10.18**	**231**	*e*Pn	Pn		07 45 51.0	-5.6
OUZ				*e*Sn	**Sn**		**07 47 51.2**	**+1.7**
URZ	**Urewera**	**10.44**	**208**	Pn	Pn		07 45 51.8	-8.2
	2.5nm,0.3s,baz=268,slow=4.1,SNR=13							
URZ				Sn	**Sn**		**07 47 49.9**	**-5.8**
	8.0nm,0.3s,baz=192,slow=20,SNR=9.0							
MSVF	**Nonsavu**	**12.31**	**336**	‖*e*P	**Pn**		**07 46 24.4**	**-1.4**
THZ	**Tophouse**	**15.14**	**211**	*e*Pn	**Pn**		**07 46 59.7**	**-4.5**
	56nm,0.8s							
AFI	**Afiamalu**	**15.84**	**18**	Pn	**Pn**		**07 47 07.8**	**-5.5**
	1.3nm,0.3s,baz=73,slow=20,SNR=2.1							
AFI				Sn	Sn		07 49 47.7	-20
	1.0nm,0.3s,baz=274,slow=19,SNR=2.1							
DZM	**Mont Dzumac**	**16.70**	**291**	Pn	**P**		**07 47 31.2**	**+4.9**
	1.0nm,0.3s,baz=139,slow=13,SNR=4.7							
DZM				LR	LR		07 52 17.3	
	comp=Z,2μm,21.9s,baz=104,slow=32							
OXZ	**Oxford**	**16.78**	**209**	*e*Pn	**Pn**		**07 47 22.6**	**-2.5**
	75nm,0.6s							
OXZ				*e*Sn	Sn		07 50 13.6	-17
RAR	**Rarotonga**	**17.26**	**67**	LR	LR		07 52 53.6	
	comp=Z,2μm,19.9s,baz=238,slow=33							
RPZ	**Rata Peaks**	**17.52**	**211**	P	**Pn**		**07 47 29.4**	**-5.0**
	3.5nm,0.3s,baz=329,slow=2.0,SNR=7.9							
CTA	**Charters Tower**	**34.70**	**277**	P	**P**		**07 50 19.1**	**-0.4**
	14nm,0.7s,baz=96,slow=12,SNR=14							
CTA				LR	LR		08 02 36.1	
	comp=Z,2μm,18.1s,baz=72,slow=33							
CTAO	**Charters Tower**	**34.70**	**277**	*e*P	**P**		**07 50 20.8**	**+1.2**
CTAO				pmax	pmax			
	comp=Z,17nm,0.8s							
CTAO	**Charters Tower**	**34.70**	**277**	*e*P	**P**		**07 50 20.8**	**+1.2**
	comp=Z,17nm,0.8s							
STKA	**Stephens Creek**	**35.84**	**255**	P	**P**		**07 50 28.9**	**-0.4**
	comp=Z,7.4nm,0.7s,baz=100,slow=10,SNR=15							
STKA				LR	LR		08 03 50.1	
	comp=Z,2μm,18.7s,baz=54,slow=34							
STKA	**Stephens Creek**	**35.84**	**255**	*e*P	**P**		**07 50 29.1**	**-0.1**
STKA				pmax	pmax			
	comp=Z,3.0nm,0.8s							
STKA	**Stephens Creek**	**35.84**	**255**	*e*P	**P**		**07 50 29.1**	**-0.1**
	comp=Z,2.6nm,0.8s							
AS01	**Alice Springs**	**44.24**	**265**	*e*P	**P**		**07 51 37.2**	**-1.9**
AS31	**Alice Springs**	**44.28**	**265**	*e*P	**P**		**07 51 38.3**	**-1.1**
	comp=Z,3.6nm,0.6s							
ASAR	**Alice Springs**	**44.28**	**265**	P	**P**		**07 51 37.5**	**-1.9**
	comp=Z,8.5nm,0.6s,baz=102,slow=6.5,SNR=100							
ASAR				PcP	**PcP**		**07 53 24.1**	**+0.7**
	comp=Z,1.8nm,0.7s,baz=121,slow=3.6,SNR=5.4							
ASAR				LR	LR		08 08 46.9	
	comp=Z,1μm,18.5s,baz=68,slow=34							
WB2	**Warramunga Arr**	**45.15**	**270**	*e*P	**P**		**07 51 44.6**	**-1.7**
	comp=Z,17nm,0.8s							
WRAB	**Tennant Creek**	**45.15**	**270**	‖*e*P	**P**		**07 51 45.4**	**-0.9**
WRAB				pmax	pmax			
	comp=Z,41nm,0.8s							
WR1	**Warramunga Arr**	**45.16**	**270**	*e*P	**P**		**07 51 44.6**	**-1.8**
	comp=Z,21nm,0.8s							
WRA	**Warramunga Arr**	**45.16**	**270**	P	**P**		**07 51 44.6**	**-1.8**
	comp=Z,14nm,0.7s,baz=109,slow=7.8,SNR=58							
FORT	**Forrest**	**47.43**	**254**	*e*P	**P**		**07 52 01.9**	**-2.3**
SBA	**Scott Base**	**49.38**	**185**	*e*P	**P**		**07 52 21.1**	**+2.7**
SBA				pmax	pmax			
	comp=Z,30nm,1.1s							
SBA	**Scott Base**	**49.38**	**185**	*e*P	**P**		**07 52 21.1**	**+2.7**
	comp=Z,30nm,1.1s							
VNDA	**Vanda**	**49.46**	**186**	P	**P**		**07 52 20.8**	**+1.8**
	comp=Z,8.0nm,1.0s,baz=2.7,slow=7.3,SNR=26							
VNDA	**Vanda**	**49.46**	**186**	*e*P	**P**		**07 52 21.2**	**+2.1**
VNDA				pmax	pmax			
	comp=Z,21nm,1.4s							
VNDA	**Vanda**	**49.46**	**186**	*e*P	**P**		**07 52 21.2**	**+2.1**
	comp=Z,21nm,1.4s							
QSPA	**South Pole Qui**	**60.97**	**180**	*e*P	**P**		**07 53 43.4**	**+1.1**
MAW	**Mawson**	**73.87**	**200**	P	**P**		**07 55 04.4**	**+0.8**
	comp=Z,6.8nm,0.7s,baz=122,slow=7.6,SNR=18							
MAW	**Mawson**	**73.87**	**200**	*e*P	**P**		**07 55 05.5**	**+1.9**
MAW				pmax	pmax			
	comp=Z,2.0nm,0.8s							
MAW	**Mawson**	**73.87**	**200**	*e*P	**P**		**07 55 05.5**	**+1.9**
	comp=Z,2.2nm,0.8s							
MJAR	**Matsushiro Arr**	**77.84**	**324**	P	**P**		**07 55 25.4**	**-1.3**
	comp=Z,3.7nm,0.8s,baz=158,slow=5.2,SNR=10							
MAJO	**Matsushiro**	**77.84**	**324**	‖*e*P	**P**		**07 55 25.9**	**-0.8**
MAJO				pmax	pmax			
	comp=Z,77nm,1.4s							
SYO	**Syowa Base**	**78.59**	**193**	‖*e*P	**P**		**07 55 29.4**	**-1.0**
SYO	**Syowa Base**	**78.59**	**193**	‖*e*pP	**P**		**07 55 32.3**	**+1.9**
SNAA	**Sanae**	**79.38**	**178**	P	**P**		**07 55 35.7**	**+0.8**
SNAA	**Sanae**	**79.38**	**178**	*e*P	**P**		**07 55 35.5**	**+0.6**
SNAA				pmax	pmax			
	comp=Z,17nm,1.1s							
SNAA	**Sanae**	**79.38**	**178**	*e*P	**P**		**07 55 35.5**	**+0.6**
	comp=Z,17nm,1.1s							
VNA1	**Neumayer--Stat**	**80.16**	**176**	P	**P**		**07 55 40.0**	**+1.0**
PLCA	**Paso Flores**	**82.57**	**133**	P	**P**		**07 55 52.4**	**0.0**
	comp=Z,5.6nm,1.0s,baz=247,slow=7.5,SNR=5.8							
PLCA	**Paso Flores**	**82.57**	**133**	*e*P	**P**		**07 55 52.4**	**0.0**
PLCA				pmax	pmax			
	comp=Z,17nm,1.4s							
PLCA	**Paso Flores**	**82.57**	**133**	*e*P	**P**		**07 55 52.4**	**0.0**
	comp=Z,17nm,1.4s							
MURC	**Murrieta**	**84.08**	**46**	P	**P**		**07 56 00.7**	**+0.7**
	baz=229							
YSS	**Yuzh-Sakhalins**	**84.09**	**333**	*e*P	**P**		**07 56 01.0**	**+1.3**
YSS				pmax	pmax			
	comp=Z,20nm,0.8s							
KSRS	**Korea Array**	**84.10**	**319**	P	**P**		**07 55 58.3**	**-1.7**
	comp=Z,2.9nm,1.0s,baz=138,slow=5.4,SNR=5.4							
MONP2	**Monument Peak**	**84.11**	**47**	P	**P**		**07 56 01.0**	**+0.5**
	baz=230							
KS15	**Wonju Array Si**	**84.12**	**319**	*e*P	**P**		**07 56 01.6**	**+1.5**
KS01	**Wonju Array Si**	**84.13**	**319**	*e*P	**P**		**07 56 00.5**	**+0.3**
BFSC	**Mount Baldy Ra**	**84.20**	**46**	P	**P**		**07 56 00.8**	**0.0**
	baz=229							
PETK	**Petropavlovsk-**	**84.87**	**345**	P	**P**		**07 56 02.8**	**-0.7**
	comp=Z,4.3nm,0.7s,baz=153,slow=4.7,SNR=3.1							
PEA1	**Petropavlovsk-**	**84.88**	**345**	*e*P	**P**		**07 56 02.8**	**-0.7**
BELC	**Belle Mtn. Jos**	**85.09**	**47**	P	**P**		**07 56 06.5**	**+1.2**
	baz=230							
BC3	**Big Chuckawall**	**85.22**	**47**	P	**P**		**07 56 07.8**	**+1.9**
	baz=230							
GLA	**Glamis**	**85.24**	**48**	P	**P**		**07 56 07.5**	**+1.6**
	baz=231							
HEC	**Hector,Ludlow**	**85.41**	**46**	P	**P**		**07 56 07.9**	**+1.1**
	baz=230							
GSC	**Goldstone, Bar**	**85.42**	**45**	P	**P**		**07 56 08.2**	**+1.3**
	baz=229							
QIZ	**Qiongzhong**	**85.45**	**295**	P	**P**		**07 56 08.1**	**+0.9**
QIZ				S	**S**		**08 06 36.5**	**+0.3**
QIZ				LR	LR			
	comp=Z,1μm,16.1s							
QIZ				LR	LR			
	comp=Z,680nm,19.5s							
QIZ				LR	LR			
	comp=Z,2μm,19.0s							
MPMC	**Manual Prospec**	**85.50**	**44**	P	**P**		**07 56 08.3**	**+0.9**
	baz=229							
IRM	**Iron Mountain**	**85.74**	**47**	P	**P**		**07 56 09.5**	**+1.1**
	baz=230							
GMRC	**Granite Mounta**	**85.81**	**46**	P	**P**		**07 56 09.5**	**+0.6**
	baz=230							
N02D	**Trinity Center**	**85.84**	**38**	P	**P**		**07 56 10.3**	**+1.5**
	baz=225							
O03D	**Paynes Creek**	**85.85**	**39**	P	**P**		**07 56 09.9**	**+1.1**
	baz=226							
MSHR	**Mys Shultsa**	**85.96**	**324**	‖*e*P	**P**		**07 56 10.7**	**+1.5**
M02C	**Callahan**	**86.05**	**38**	P	**P**		**07 56 11.0**	**+1.2**
	baz=225							
SHOC	**Shoshone, Teco**	**86.14**	**45**	P	**P**		**07 56 11.6**	**+1.3**
	baz=230							
GRAC	**Grapevine Rang**	**86.19**	**44**	P	**P**		**07 56 11.9**	**+1.4**
	baz=229							
TVH3	**East Aurora ar**	**86.22**	**42**	*e*P	**P**		**07 56 12.4**	**+1.5**
	comp=Z,17nm,1.8s							
NJ2	**Nanjing**	**86.26**	**310**	*e*P	**P**		**07 56 11.9**	**+1.0**
NJ2				pmax	pmax			
	comp=Z,11nm,0.6s							
LDFC	**Landfair**	**86.34**	**46**	*e*P	**P**		**07 56 12.4**	**+0.9**
	comp=Z,52nm,1.9s							
YBH	**Yreka Blue Hor**	**86.37**	**37**	*e*P	**P**		**07 56 13.1**	**+1.7**
YBH				pmax	pmax			
	comp=Z,7.0nm,1.1s							
YBH	**Yreka Blue Hor**	**86.37**	**37**	*e*P	**P**		**07 56 13.1**	**+1.7**
	comp=Z,7.1nm,1.1s							
USRK	**Ussuriysk Ar.**	**86.72**	**326**	P	**P**		**07 56 10.8**	**-2.1**
	comp=Z,3.4nm,0.9s,baz=82,slow=4.1,SNR=9.5							
TPNV	**Topopah Spring**	**86.83**	**44**	P	**P**		**07 56 14.7**	**+0.9**
	baz=230							
TPNV	**Topopah Spring**	**86.83**	**44**	*e*P	**P**		**07 56 15.2**	**+1.3**
TPNV				pmax	pmax			
	comp=Z,5.0nm,1.0s							
TPNV	**Topopah Spring**	**86.83**	**44**	*e*P	**P**		**07 56 15.2**	**+1.3**
	comp=Z,5.3nm,1.0s							
HUMO	**Hull Mountain**	**86.86**	**37**	*e*P	**P**		**07 56 14.5**	**+0.8**
	comp=Z,7.7nm,1.4s							
Y14A	**Wickenburg**	**86.98**	**48**	*e*P	**P**		**07 56 16.0**	**+1.4**
	comp=Z,80nm,1.7s							
I03D	**Drain, OR**	**87.43**	**36**	P	**P**		**07 56 18.4**	**+2.1**
	baz=225							
TUC	**Tucson**	**87.47**	**51**	P	**P**		**07 56 18.6**	**+1.6**
	baz=233							
TUC	**Tucson**	**87.47**	**51**	*e*P	**P**		**07 56 18.2**	**+1.2**
TUC				pmax	pmax			
	comp=Z,19nm,1.4s							
TUC	**Tucson**	**87.47**	**51**	*e*P	**P**		**07 56 18.2**	**+1.2**
	comp=Z,19nm,1.4s							
MDJ	**Mudanjiang**	**88.21**	**325**	P	**P**		**07 56 21.9**	**+1.8**
MDJ				pmax	pmax			
	comp=Z,8.0nm,0.9s							
MDJ				pmax	pmax			
	comp=Z,350nm,9.7s							
X16A	**Lo Mia Camp, P**	**88.30**	**49**	*e*P	**P**		**07 56 22.8**	**+1.8**
	comp=Z,3.9nm,0.8s							
U15A	**North Rim**	**88.98**	**47**	*e*P	**P**		**07 56 25.3**	**+1.0**
	comp=Z,36nm,1.9s							
CCUT	**Cedar City**	**89.00**	**45**	*e*P	**P**		**07 56 24.9**	**+0.6**
	comp=Z,9.3nm,1.5s							
KNB	**Kanab**	**89.00**	**46**	*e*P	**P**		**07 56 25.9**	**+1.6**
KNB	**Kanab**	**89.00**	**46**	*e*P	**P**		**07 56 25.9**	**+1.6**
WUAZ	**Wupatki**	**89.01**	**48**	P	**P**		**07 56 25.6**	**+1.2**
	baz=232							
WUAZ	**Wupatki**	**89.01**	**48**	*e*P	**P**		**07 56 25.5**	**+1.2**
	comp=Z,11nm,1.3s							
WVOR	**Wild Horse Val**	**89.05**	**39**	*e*P	**P**		**07 56 24.1**	**-0.2**
WVOR				pmax	pmax			
	comp=Z,8.0nm,1.5s							
WVOR	**Wild Horse Val**	**89.05**	**39**	*e*P	**P**		**07 56 24.1**	**-0.2**
	comp=Z,8.2nm,1.5s							
CN2	**Changchun**	**89.80**	**322**	*e*P	**P**		**07 56 28.4**	**+0.8**
CN2				*e*pP	pP		07 56 37.7	-1.3
CN2				pmax	pmax			
	comp=Z,10.0nm,1.0s							
W18A	**Petrified Fore**	**89.84**	**49**	P	**P**		**07 56 29.3**	**+1.1**
	baz=234							
W18A	**Petrified Fore**	**89.84**	**49**	*e*P	**P**		**07 56 29.3**	**+1.1**
	comp=Z,19nm,1.5s							
MTPU	**Mount Pierson**	**90.03**	**45**	*e*P	**P**		**07 56 31.3**	**+2.0**
	comp=Z,26nm,1.8s							
KLR	**Kul'dur**	**90.50**	**329**	P	**P**		**07 56 30.1**	**-0.6**
	comp=Z,1.7nm,0.8s							
LTX	**Lajitas**	**90.79**	**57**	*e*P	**P**		**07 56 33.4**	**+0.7**
LTX	**Lajitas**	**90.79**	**57**	*e*P	**P**		**07 56 33.4**	**+0.7**
TX31	**Lajitas Ar. Si**	**90.79**	**57**	*e*P	**P**		**07 56 32.9**	**+0.2**
TXAR	**Lajitas Array**	**90.79**	**57**	P	**P**		**07 56 33.4**	**+0.7**
	comp=Z,2.7nm,1.1s,baz=213,slow=6.3,SNR=12							
G08A	**Pilot Rock**	**90.80**	**37**	*e*P	**P**		**07 56 33.0**	**+0.7**
	comp=Z,12nm,1.4s							
MNTX	**Cornudas Mount**	**90.86**	**54**	P	**P**		**07 56 33.8**	**+0.9**
	baz=236							
MFID	**Camas Ranch**	**91.25**	**40**	*e*P	**P**		**07 56 35.2**	**+0.7**
	comp=Z,5.4nm,1.3s							
NLU	**North Lily Min**	**91.27**	**44**	*e*P	**P**		**07 56 30.9**	**-3.9**
	comp=Z,5.0nm,1.0s							
B05A	**Bryant**	**91.27**	**33**	P	**P**		**07 56 35.6**	**+1.3**
	baz=225							
ENH	**Enshi**	**91.80**	**304**	*e*P	**P**		**07 56 38.3**	**+1.0**
	comp=Z,24nm,0.9s							
GYA	**Guiyang**	**91.88**	**299**	*e*P	**P**		**07 56 39.0**	**+1.2**
GYA				pP	pP		07 56 50.2	+1.0
GYA				PP	**PP**		**08 00 20.4**	**+2.8**
GYA				SKS	**SKSac**		**08 07 07.7**	**-0.5**
GYA				S	**S**		**08 07 33.5**	**-3.3**
GYA				sS	sS		08 07 53.0	-2.8
GYA				SS	**SS**		**08 13 45.4**	**-0.7**
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
GYA				pmax	pmax			
	comp=Z,120nm,5.6s							
GYA				LR	LR			
	comp=Z,470nm,18.8s							
GYA				LR	LR			
	comp=Z,390nm,18.7s							
GYA				LR	LR			
	comp=Z,340nm,18.6s							
ANMO	**Albuquerque**	**91.94**	**51**	P	**P**		**07 56 38.1**	**+0.1**
	baz=235							
ANMO	**Albuquerque**	**91.94**	**51**	‖*e*P	**P**		**07 56 38.6**	**+0.6**
ANMO				pmax	pmax			
	comp=Z,8.0nm,1.9s							
HLID	**Hailey**	**92.14**	**40**	P	**P**		**07 56 39.1**	**+0.4**
	baz=231							
HLID	**Hailey**	**92.14**	**40**	*e*P	**P**		**07 56 40.1**	**+1.4**
	comp=Z,2.8nm,1.0s							
F10A	**Beach Ranch, E**	**92.16**	**37**	*e*P	**P**		**07 56 38.6**	**0.0**
	comp=Z,5.7nm,0.8s							
BJI	**Beijing**	**92.80**	**315**	P	**P**		**07 56 42.7**	**+1.2**
BJI				pmax	pmax			
	comp=Z,10.0nm,0.9s							
BJI				pmax	pmax			
	comp=Z,1μm,12.9s							
S22A	**4UR Ranch, Cre**	**93.28**	**48**	P	**P**		**07 56 45.0**	**+0.7**
	baz=235							
MSTX	**Muleshoe**	**93.94**	**53**	P	**P**		**07 56 47.6**	**+0.5**
	baz=237							
MSTX	**Muleshoe**	**93.94**	**53**	*e*P	**P**		**07 56 47.6**	**+0.5**
	comp=Z,5.4nm,0.8s							
TPAW	**Teton Pass**	**94.08**	**42**	*e*P	**P**		**07 56 45.9**	**-1.9**
	comp=Z,7.4nm,1.3s							
SDCO	**Great Sand Dun**	**94.15**	**49**	P	**P**		**07 56 48.3**	**+0.1**
	baz=236							
PDAR	**Pinedale Array**	**94.47**	**43**	P	**P**		**07 56 49.1**	**-0.4**
	comp=Z,0.4nm,0.7s,baz=224,slow=4.1,SNR=3.9							
PDAR				PKKPbc	**PKKPbc**		**08 13 49.4**	**-0.2**
	comp=Z,0.3nm,0.5s,baz=90,slow=3.0,SNR=4.8							
433A	**Art**	**94.90**	**58**	P	**P**		**07 56 51.2**	**-0.3**
	baz=239							
BOZ	**Bozeman (W)**	**94.99**	**40**	P	**P**		**07 56 52.5**	**+0.8**
	baz=233							
BOZ	**Bozeman (W)**	**94.99**	**40**	*e*P	**P**		**07 56 52.9**	**+1.2**
BOZ				pmax	pmax			
	comp=Z,6.0nm,1.4s							
BOZ	**Bozeman (W)**	**94.99**	**40**	*e*P	**P**		**07 56 52.9**	**+1.2**
	comp=Z,6.1nm,1.4s							
SEY	**Seymchan**	**95.00**	**346**	‖*e*P	**P**		**07 56 51.0**	**-0.1**
WRH	**Wood River Hil**	**95.96**	**12**	*e*P	**P**		**07 56 55.2**	**-0.2**
	comp=Z,17nm,2.0s							
HHC	**Hu-ho-hao-te**	**96.15**	**314**	*e*P	**P**		**07 56 58.9**	**+1.8**
HHC				pmax	pmax			
	comp=Z,11nm,1.0s							
HHC				pmax	pmax			
	comp=Z,200nm,8.6s							
CD2	**Chengdu**	**96.34**	**302**	P	**P**		**07 56 57.8**	**-0.3**
CD2				sP	sP		07 57 13.7	0.0
CD2				PP	**PP**		**08 00 51.2**	**-1.2**
CD2				SKS	**SKSac**		**08 07 31.1**	**-1.0**
CD2				S	**S**		**08 08 14.6**	**-1.1**
CD2				sS	sS		08 08 34.3	-0.5
CD2				SS	**SS**		**08 14 48.8**	**-0.8**
CD2				pmax	pmax			
	comp=Z,10.0nm,0.5s							
CD2				pmax	pmax			
	comp=Z,120nm,5.0s							
ILAR	**Eielson Array**	**96.46**	**12**	P	**P**		**07 56 56.6**	**-1.2**
	comp=Z,0.6nm,0.8s,baz=219,slow=6.3,SNR=7.3							
LZH	**Lanzhou**	**98.85**	**306**	*e*P	Pdif		07 57 14.3	+4.8
LZH				pP	pP		07 57 21.4	+0.5
LZH				sP	sP		07 57 25.6	+0.6
LZH				pmax	pmax			
	comp=Z,17nm,1.0s							
YKA	**Yellowknife Ar**	**103.84**	**25**	PKKPbc	PKKPbc		08 13 21.7	-1.6
	comp=Z,0.6nm,0.8s,baz=43,slow=3.1,SNR=6.7							
WMQ	**Urumqi**	**113.30**	**308**	*e*PKP	**PKiKP**		**08 02 06.7**	**-0.1**
WMQ				LR	LR			
	comp=Z,430nm,20.5s							
WMQ				LR	LR			
	comp=Z,350nm,17.7s							
WMQ				LR	LR			
	comp=Z,370nm,17.8s							
MK01	**Makanchi Array**	**117.78**	**310**	*e*PKPdf	**PKPdf**		**08 02 14.3**	**-0.9**
MK31	**Makanchi Array**	**117.79**	**310**	*e*PKIKP	**PKPdf**		**08 02 14.2**	**-1.1**
MK31	**Makanchi Array**	**117.79**	**310**	*e*PKPdf	**PKPdf**		**08 02 14.2**	**-1.1**
MK32	**Makanchi Array**	**117.79**	**310**	*e*PKPdf	**PKPdf**		**08 02 13.4**	**-1.8**
MKAR	**Makanchi Array**	**117.79**	**310**	PKP	**PKPdf**		**08 02 13.5**	**-1.8**
	comp=Z,2.0nm,0.9s,baz=80,slow=2.6,SNR=13							
MKAR	**Makanchi Array**	**117.79**	**310**	*e*PKIKP	**PKPdf**		**08 02 14.2**	**-1.0**
MKAR	**Makanchi Array**	**117.79**	**310**	*e*PKPdf	**PKPdf**		**08 02 14.2**	**-1.0**
ZAA1	**Zalesovo Array**	**117.81**	**319**	*e*PKPdf	**PKPdf**		**08 02 13.7**	**-1.3**
ZALV	**Zalesovo Beam**	**117.81**	**319**	PKP	**PKPdf**		**08 02 13.7**	**-1.3**
	comp=Z,0.6nm,0.4s,baz=315,slow=0.4,SNR=4.1							
MAKZ	**Makanchi**	**118.00**	**310**	*e*PKIKP	**PKPdf**		**08 02 14.8**	**-0.8**
MAKZ	**Makanchi**	**118.00**	**310**	*e*PKPdf	**PKPdf**		**08 02 14.8**	**-0.8**
BOSA	**Boshof**	**118.84**	**202**	PKP	**PKPdf**		**08 02 18.2**	**+0.1**
	comp=Z,2.7nm,0.8s,baz=207,slow=3.4,SNR=4.1							
KSH	**Kashi**	**120.53**	**301**	*e*PKP	**PKPdf**		**08 02 21.8**	**+0.9**
KSH				*es*PKP			08 02 36.5	
KSH				*e*PP	**PP**		**08 03 52.5**	**+3.8**
KSH				PKS	**PKSdf**		**08 05 57.1**	**-0.5**
KSH				SKS	**SKSdf**		**08 09 27.1**	**-3.1**
KSH				SKKS	**SKKSac**		**08 10 40.7**	**-4.6**
KSH				SS	**SS**		**08 20 13.7**	**-2.3**
KSH				AMB	AMB			
	comp=Z,32nm,3.7s							
KSH				LR	LR			
	comp=Z,120nm,7.7s							
KSH				LR	LR			
	comp=Z,310nm,9.1s							
KSH				LR	LR			
	comp=Z,290nm,10.5s							
KURK	**Kurchatov**	**120.96**	**314**	*c i*PKIKP	**PKPdf**		**08 02 20.7**	**-0.4**
KURK	**Kurchatov**	**120.96**	**314**	*e*PKPdf	**PKPdf**		**08 02 21.0**	**-0.2**
KURBB	**Kurchatov Arra**	**121.00**	**314**	PKP	**PKPdf**		**08 02 20.1**	**-1.1**
	comp=Z,3.3nm,0.8s,baz=104,slow=2.0,SNR=24							
FRU	**Bishkek**	**122.26**	**304**	*e*PKIKP	**PKPdf**		**08 02 20.0**	**-4.0**
FRU				*e*			08 02 32.0	
AAK	**Ala-Archa**	**122.31**	**304**	‖*e*PKIKP	**PKPdf**		**08 02 24.6**	**+0.4**
KKAR	**Karatay Array**	**125.27**	**304**	*e*PKIKP	**PKPdf**		**08 02 29.3**	**-0.5**
KKAR	**Karatay Array**	**125.27**	**304**	*e*PKPdf	**PKPdf**		**08 02 29.2**	**-0.5**
VOSK	**Vostochnaya**	**125.88**	**316**	*e*PKIKP	**PKPdf**		**08 02 30.2**	**-0.4**
VOSK	**Vostochnaya**	**125.88**	**316**	*e*PKPdf	**PKPdf**		**08 02 30.2**	**-0.4**
BVAR	**Borovoye Array**	**126.25**	**316**	PKP	**PKPdf**		**08 02 30.5**	**-0.8**
	comp=Z,3.1nm,0.7s,baz=85,slow=1.8,SNR=19							
BRVK	**Borovoye**	**126.32**	**316**	*ce*PKIKP	**PKPdf**		**08 02 31.4**	**0.0**
BRVK	**Borovoye**	**126.32**	**316**	*e*PKPdf	**PKPdf**		**08 02 31.8**	**+0.4**
ZRNK	**Zerenda**	**127.09**	**316**	*e*PKIKP	**PKPdf**		**08 02 32.7**	**-0.2**
ZRNK	**Zerenda**	**127.09**	**316**	*e*PKPdf	**PKPdf**		**08 02 32.7**	**-0.2**
ARU	**Arti**	**132.79**	**322**	PKP	**PKPdf**		**08 02 44.1**	**+0.5**
	comp=Z,4.6nm,0.2s,baz=308,slow=11,SNR=4.1							
ARU	**Arti**	**132.79**	**322**	*i* PKIKP	**PKPdf**		**08 02 43.9**	**+0.3**
ARU							08 05 05.3	
ABKAR	**Akbulak array**	**132.90**	**312**	*e*PKPdf	**PKPdf**		**08 02 45.0**	**+1.0**
GEYT	**Alibeck**	**134.00**	**296**	PKP	**PKPdf**		**08 02 47.3**	**+0.8**
	comp=Z,1.5nm,0.2s,baz=81,slow=2.0,SNR=4.6							
AKTO	**Aktyubinsk**	**134.04**	**313**	PKP	**PKPdf**		**08 02 46.5**	**+0.4**
	comp=Z,2.5nm,0.9s,baz=157,slow=2.3,SNR=6.7							
ARCES	**ARCESS Array B**	**137.58**	**349**	PKP	**PKPdf**		**08 02 53.5**	**+1.4**
	comp=Z,1.8nm,0.8s,baz=57,slow=4.5,SNR=4.3							
KLMR	**Klimovskoe**	**140.14**	**333**	*e*PKIKP	**PKPdf**		**08 02 56.5**	**-0.5**
KLMR				pmax	pmax			
	comp=Z,8.0nm,1.1s							
GUDG	**Gudauri

VTS	**Vitosha**	**159.04**	**315**	*e*PKPab	**PKPab**	**08 04 04.8**	**+0.8**
TOA0	**Torodi Ar. Sit**	**164.03**	**174**	*e*PKPab	**PKPab**	**08 04 26.4**	**+0.4**
TORD	**Torodi Ar. Bea**	**164.03**	**174**	PKP	**PKPdf**	**08 03 32.8**	**-0.3**
	comp=Z,0.9nm,0.9s,baz=348,slow=2.8,SNR=3.9						
TORD				PKPab	**PKPab**	**08 04 27.1**	**+1.1**
	comp=Z,9.1nm,0.9s,baz=187,slow=4.1,SNR=22						
TOA1	**Torodi Ar. Sit**	**164.03**	**174**	*e*PKPdf	**PKPdf**	**08 03 32.8**	**-0.3**
TOA1				*e*PKPab	**PKPab**	**08 04 27.1**	**+1.0**

KRSC 11 07:45:03.2±1.5, 51.02N×157.69E, h104km±22km, ML3.5, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.05**	**252**	*e*P	Pn	07 45 25.5	+1.1
SKR				*e*S	Sn	07 45 41.1	+0.7
ASAK	**Asacha**	**1.37**	**5**	*e*P	Pn	07 45 30.3	+2.1
RUS	**Russkaya**	**1.51**	**19**	*e*P	Pn	07 45 32.0	+2.4
RUS				*e*S	Sn	07 45 52.3	+2.6
DALK	**Dalny**	**2.12**	**18**	*e*S	Sn	07 46 05.2	+1.7
UGLR	**Uglovaya**	**2.30**	**17**	*e*P	Pn	07 45 43.4	+3.5
SDLR	**Sedlovina**	**2.38**	**17**	*e*P	Pn	07 45 43.1	+2.2
SDLR				*e*S	Sn	07 46 11.5	+1.7
KRER	**Koryakskii**	**2.38**	**15**	*e*P	Pn	07 45 43.4	+2.4
NLC	**Nalytchevo**	**2.38**	**25**	*e*S	Sn	07 46 10.2	+0.5
SPN	**Mys Shipunski**	**2.53**	**34**	*e*P	Pn	07 45 44.8	+2.1
SPN				*e*S	Sn	07 46 15.0	+1.9
GNL	**Ganaly**	**2.69**	**3**	*e*P	Pn	07 45 46.6	+1.7
MKZ	**Mys Kozlova**	**4.31**	**33**	*e*P	Pn	07 46 08.0	+1.6
MKZ				*e*S	Sn	07 46 55.6	0.0

CSEM ***11*** *07:47:36.6±0.1, 39.14N×28.95E, h5km, MD2.8, Error ellipse: s-maj=3.5km s-min=2.6km az=152.0*
ISK ***11*** *07:47:36.4, 39.17N×28.96E, h6km, ML2.6*
DDA ***11*** *07:47:36.3, 39.10N×29.01E, h7km, Md2.8*
ISC 11 07:47:36.6±0.9, 39.14N±0.03×28.98E±0.02, h9km±9km, n47, σ0°58/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**244**	*i* P	**Pg**	**07 47 41.7**	**+0.5**
DEMI				*i* S	**Sg**	**07 47 45.0**	**+0.6**
DEMI	**Demirci**	**0.23**	**244**	P	**Pg**	**07 47 41.7**	**+0.5**
DEMI				S	**Sg**	**07 47 45.0**	**+0.6**
GEDZ	**Gediz**	**0.35**	**106**	*e*PG	**Pb**	**07 47 44.8**	**-0.2**
GEDZ	**Gediz**	**0.35**	**106**	*e*Pg	**Pb**	**07 47 44.8**	**-0.2**
GDZ	**Gediz**	**0.39**	**98**	*i* P	**Pg**	**07 47 44.1**	**-0.2**
GDZ				*i* S	**Sg**	**07 47 49.4**	**-0.2**
GDZ	**Gediz**	**0.39**	**98**	P	**Pg**	**07 47 44.1**	**-0.2**
GDZ				S	**Sg**	**07 47 49.4**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**50**	*e*PG	**Pg**	**07 47 46.0**	**0.0**
TVSB				*e*SG	**Sg**	**07 47 52.3**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**50**	*e*Pg	**Pg**	**07 47 46.0**	**0.0**
TVSB				*e*Sg	**Sg**	**07 47 52.3**	**-0.1**
MANT	**Manisa**	**0.73**	**207**	*i* P	**Pg**	**07 47 49.5**	**-1.2**
MANT				*i* S	**Sg**	**07 47 58.9**	**-1.3**
MANT	**Manisa**	**0.73**	**207**	P	**Pg**	**07 47 49.5**	**-1.2**
MANT				S	**Sg**	**07 47 58.9**	**-1.3**
KHL	**Karahalli**	**0.92**	**152**	*e*PG	**Pb**	**07 47 54.8**	**0.0**
KHL	**Karahalli**	**0.92**	**152**	*e*Pg	**Pb**	**07 47 54.8**	**0.0**
AKS	**Akhisar**	**0.95**	**254**	*e*PG	**Pb**	**07 47 54.9**	**-0.3**
AKS	**Akhisar**	**0.95**	**254**	*e*Pg	**Pb**	**07 47 54.9**	**-0.3**
BALB	**Balikesir**	**0.99**	**301**	*e*PG	**Pg**	**07 47 55.1**	**-0.5**
BALB	**Balikesir**	**0.99**	**301**	*e*Pg	**Pg**	**07 47 55.1**	**-0.5**
IGD	**Bursa**	**1.13**	**9**	*i* P	**Pg**	**07 47 57.5**	**-0.8**
IGD				*i* S	**Sn**	**07 48 14.8**	**+0.4**
BALY	**Balya**	**1.21**	**300**	*i* P	**Pn**	**07 48 00.5**	**+0.8**
BALY	**Balya**	**1.21**	**300**	P	**Pn**	**07 48 00.5**	**+0.8**
KCTX	**Karacabey (Bur**	**1.22**	**337**	*e*PN	**Pn**	**07 48 00.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.22**	**337**	*e*Pn	**Pn**	**07 48 00.1**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.23**	**357**	*e*PN	**Pg**	**07 47 59.0**	**-1.1**
MDNY	**Mudanya-Bursa**	**1.23**	**357**	*e*Pn	**Pg**	**07 47 59.0**	**-1.1**
CAVI	**Cavuskoy**	**1.25**	**32**	*e*PN	**Pn**	**07 48 00.8**	**+0.5**
CAVI	**Cavuskoy**	**1.25**	**32**	*e*Pn	**Pn**	**07 48 00.8**	**+0.5**
IZI	**Iznik**	**1.25**	**18**	*e*PN	**Pn**	**07 48 01.1**	**+0.7**
IZI	**Iznik**	**1.25**	**18**	*e*Pn	**Pn**	**07 48 01.1**	**+0.7**
BORA	**Eskisehir**	**1.36**	**57**	*i* P	**Pn**	**07 48 01.9**	**+0.1**
BORA				*i* S	**Sn**	**07 48 20.8**	**+0.8**
BORA	**Eskisehir**	**1.36**	**57**	P	**Pn**	**07 48 01.9**	**+0.1**
BORA				S	**Sn**	**07 48 20.8**	**+0.8**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*PN	**Pg**	**07 48 03.5**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*Pn	**Pg**	**07 48 03.5**	**-0.2**
ARMT	**Armutlu**	**1.42**	**356**	*e*PN	**Pn**	**07 48 03.0**	**+0.3**
ARMT	**Armutlu**	**1.42**	**356**	*e*Pn	**Pn**	**07 48 03.0**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**216**	*e*PN	**Pg**	**07 48 04.6**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**216**	*e*Pn	**Pg**	**07 48 04.6**	**-0.2**
ESKT	**Eskisehir**	**1.50**	**75**	*e*PN	**Pn**	**07 48 04.1**	**+0.3**
ESKT	**Eskisehir**	**1.50**	**75**	*i* P	**Pn**	**07 48 04.1**	**+0.3**
ESKT				*i* S	**Sg**	**07 48 24.6**	**-0.1**
ESKT	**Eskisehir**	**1.50**	**75**	*e*Pn	**Pn**	**07 48 04.1**	**+0.3**
SEYT	**Eskypehyr**	**1.50**	**75**	P	**Pn**	**07 48 04.1**	**+0.3**
SEYT				S	**Sg**	**07 48 24.6**	**-0.1**
IZM	**Izmir**	**1.54**	**242**	*e*PN	**Pb**	**07 48 05.1**	**-0.1**
IZM	**Izmir**	**1.54**	**242**	*e*Pn	**Pb**	**07 48 05.1**	**-0.1**
GPA	**Golpazari**	**1.54**	**41**	*e*PN	**Pb**	**07 48 05.0**	**-0.2**
GPA	**Golpazari**	**1.54**	**41**	*e*Pn	**Pb**	**07 48 05.0**	**-0.2**
GULT	**Gulveren**	**1.75**	**42**	*e*PN	**Pn**	**07 48 07.9**	**+0.7**
GULT	**Gulveren**	**1.75**	**42**	*e*Pn	**Pn**	**07 48 07.9**	**+0.7**
HRT	**Hereke**	**1.76**	**17**	*e*PN	**Pb**	**07 48 08.4**	**-0.7**
HRT	**Hereke**	**1.76**	**17**	*e*Pn	**Pb**	**07 48 08.4**	**-0.7**

IDC 11 07:50:16.2±2.2, 28.44S×176.84W, h0km, mb3.8/2, mb1 4.1/2, mb1mx3.6/29, mbtmp3.8/2, Error ellipse: s-maj=49.2km s-min=27.5km az=127.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.24**	**229**	Pn	Pb	07 50 40.7	+0.1
	100nm,0.3s,baz=143,slow=20,SNR=5.6						
RAO				Sn	Sn	07 50 59.9	+1.6
	592nm,0.3s,baz=52,slow=19,SNR=10						
ASAR	**Alice Springs**	**44.27**	**264**	P	P	07 58 27.6	-0.2
	0.5nm,0.5s,baz=104,slow=6.8,SNR=7.7						
WRA	**Warramunga Arr**	**45.08**	**270**	P	P	07 58 33.9	-0.5
	1.2nm,0.6s,baz=109,slow=7.9,SNR=7.8						
AKASG	**Malin Array Be**	**150.31**	**326**	PKPbc	PKPbc	08 10 09.1	0.0
	0.2nm,0.3s,baz=40,slow=1.8,SNR=2.6						

ISCJB ***11*** *07:55:25.2±0.7, 15.71S±0.05×174.81W±0.05, h198km±6km, mb4.5/66, Error ellipse: s-maj=9.7km s-min=6.0km az=148.3*
IDC ***11*** *07:55:25.7±1.1, 15.67S×174.77W, h193km±11km, mb4.1/21, mb1 4.2/22, mb1mx4.1/36, mbtmp4.6/22, MS4.3/1, Ms1 4.3/1, ms1mx3.7/32, Error ellipse: s-maj=14.8km s-min=8.9km az=132.0*
NEIC ***11*** *07:55:26.1±0.7, 15.69S×174.77W, h195km±6km, mb4.6/35, Error ellipse: s-maj=8.2km s-min=4.7km az=142.0*
MOS ***11*** *07:55:26.7±1.0, 15.63S×174.82W, h206km, mb4.7/14, Error ellipse: s-maj=13.5km s-min=10.8km az=151.8*
ISC 11 07:55:26.5±0.8, 15.70S±0.07×174.75W±0.06, h199km±7km, n207, σ0°95/202, mb4.6/66, 31C-12D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.38**	**59**	P	**Pn**	**07 56 20.7**	**0.0**
	626nm,0.3s,baz=131,slow=0.8,SNR=684						
AFI				S	**Sn**	**07 57 02.0**	**-1.2**
	209nm,0.3s,baz=218,slow=21,SNR=3.0						
AFI	**Afiamalu**	**3.38**	**59**	*e*P	**Pn**	**07 56 20.8**	**0.0**
AFI				*e*		07 57 03.8	
AFI	**Afiamalu**	**3.38**	**59**	*e*Pn	**Pn**	**07 56 20.8**	**0.0**
AFI				*e*Sn	**Sn**	**07 57 03.8**	**+0.7**
MSVF	**Nonsavu**	**7.19**	**253**	*de*P	**Pn**	**07 57 11.3**	**+1.9**
MSVF	**Nonsavu**	**7.19**	**253**	*e*Pn	**Pn**	**07 57 07.9**	**-1.4**
FUNA	**Funafuti**	**9.26**	**320**	*e*Pn	**Pn**	**07 57 35.5**	**-0.8**
RAR	**Rarotonga**	**15.23**	**113**	P	**P**	**07 58 53.3**	**+1.3**
DZM	**Mont Dzumac**	**18.88**	**248**	P	**P**	**07 59 32.3**	**+0.1**
	1.5nm,0.3s,baz=72,slow=20,SNR=10						
DZM	**Mont Dzumac**	**18.88**	**248**	*e*P	**P**	**07 59 31.2**	**-1.0**
	48nm,0.9s						
URZ	**Urewera**	**23.59**	**196**	P	**P**	**08 00 18.7**	**-0.6**
	17nm,0.5s,baz=46,slow=3.1,SNR=7.3						
RPZ	**Rata Peaks**	**30.43**	**201**	P	**P**	**08 01 21.0**	**+0.7**
	16nm,0.7s,baz=169,slow=1.7,SNR=4.4						
RPZ	**Rata Peaks**	**30.43**	**201**	*e*P	**P**	**08 01 21.0**	**+0.7**
WHZ	**Wether Hill Ro**	**33.42**	**202**	*e*P	**P**	**08 01 46.6**	**+0.2**
	166nm,1.3s						
ARMA	**Armidale**	**34.08**	**239**	*e*P	**P**	**08 01 52.3**	**-0.1**
	18nm,0.8s						
CTA	**Charters Tower**	**37.31**	**257**	P	**P**	**08 02 19.1**	**-0.8**
	3.1nm,0.5s,baz=82,slow=11,SNR=6.2						
CTA				PcP	**PcP**	**08 04 35.0**	**0.0**
	4.2nm,0.7s,baz=113,slow=3.9,SNR=3.8						
COEN	**Coen**	**40.67**	**267**	*e*P	**P**	**08 02 49.0**	**+1.3**
	43nm,0.8s						
TOO	**Toolangi**	**41.27**	**230**	P	**P**	**08 02 52.9**	**+0.4**
TOO				pmax	pmax		
	comp=Z,50nm,1.3s						
STKA	**Stephens Creek**	**42.76**	**240**	P	**P**	**08 03 04.1**	**-0.5**
	comp=Z,12nm,0.7s,baz=80,slow=9.1,SNR=33						
STKA				PcP	**PcP**	**08 04 52.8**	**+0.5**
	comp=Z,3.1nm,0.6s,baz=76,slow=5.2,SNR=6.7						
STKA	**Stephens Creek**	**42.76**	**240**	*e*P	**P**	**08 03 04.5**	**-0.1**
STKA				pmax	pmax		
	comp=Z,3.0nm,0.7s						
STKA	**Stephens Creek**	**42.76**	**240**	*e*P	**P**	**08 03 04.5**	**-0.1**
	comp=Z,2.5nm,0.7s						
JAY	**Jayapura**	**45.77**	**282**	P	**P**	**08 03 28.0**	**-0.7**
	comp=Z,1.5nm,0.7s,baz=100,slow=23,SNR=4.2						
WB2	**Warramunga Arr**	**48.50**	**257**	*e*P	**P**	**08 03 48.7**	**-1.0**
	comp=Z,34nm,0.8s						
WRAB	**Tennant Creek**	**48.50**	**257**	*de*P	**P**	**08 03 48.2**	**-1.5**
WRAB				pmax	pmax		
	comp=Z,83nm,0.8s						
WRAB	**Tennant Creek**	**48.50**	**257**	*e*P	**P**	**08 03 48.9**	**-0.8**
	comp=Z,31nm,0.8s						
WR1	**Warramunga Arr**	**48.51**	**257**	*e*P	**P**	**08 03 48.6**	**-1.2**
	comp=Z,39nm,0.8s						
WR1				*e*PcP	**PcP**	**08 05 12.4**	**-0.2**
WRA	**Warramunga Arr**	**48.51**	**257**	P	**P**	**08 03 48.6**	**-1.2**
	comp=Z,26nm,0.8s,baz=90,slow=7.0,SNR=236						
WRA				PcP	**PcP**	**08 05 12.4**	**-0.2**
	comp=Z,7.9nm,0.6s,baz=93,slow=3.5,SNR=12						
AS01	**Alice Springs**	**48.74**	**252**	*e*P	**P**	**08 03 50.4**	**-1.1**
AS31	**Alice Springs**	**48.78**	**252**	*e*P	**P**	**08 03 51.3**	**-0.6**
	comp=Z,10nm,0.6s						
ASAR	**Alice Springs**	**48.78**	**252**	P	**P**	**08 03 51.0**	**-0.8**
	comp=Z,33nm,0.7s,baz=87,slow=8.2,SNR=528						
ASAR				PcP	**PcP**	**08 05 13.4**	**-0.2**
	comp=Z,7.9nm,0.7s,baz=97,slow=4.3,SNR=10.0						
GUMO	**Guam**	**49.41**	**304**	LR	LR	08 21 47.5	
	comp=Z,302nm,20.7s,baz=161,slow=32						
ANA2	**Anatahan**	**50.36**	**307**	*e*P	**P**	**08 04 04.1**	**+0.4**
FORT	**Forrest**	**54.12**	**243**	*e*P	**P**	**08 04 30.2**	**-1.0**
	comp=Z,294nm,0.6s						
FITZ	**Fitzroy Crossi**	**56.88**	**258**	P	**P**	**08 04 51.1**	**+0.1**
	comp=Z,2.6nm,0.6s,baz=72,slow=4.0,SNR=14						
FITZ	**Fitzroy Crossi**	**56.88**	**258**	*e*P	**P**	**08 04 51.6**	**+0.5**
	comp=Z,45nm,1.6s						
SBA	**Scott Base**	**62.85**	**184**	*e*P	**P**	**08 05 32.4**	**+1.6**
SBA				pmax	pmax		
	comp=Z,19nm,1.1s						
SBA	**Scott Base**	**62.85**	**184**	*e*P	**P**	**08 05 32.4**	**+1.6**
	comp=Z,19nm,1.1s						
VNDA	**Vanda**	**62.95**	**186**	P	**P**	**08 05 31.3**	**-0.1**
	comp=Z,9.3nm,0.9s,baz=4.9,slow=6.3,SNR=41						
VNDA	**Vanda**	**62.95**	**186**	*e*P	**P**	**08 05 32.2**	**+0.8**
VNDA				pmax	pmax		
	comp=Z,15nm,1.0s						
VNDA	**Vanda**	**62.95**	**186**	*e*P	**P**	**08 05 32.2**	**+0.8**
	comp=Z,15nm,1.0s						
PCI	**Palu**	**66.12**	**276**	P	**P**	**08 05 53.5**	**+0.5**
	comp=Z,98nm,0.5s						
MJAR	**Matsushiro Arr**	**68.33**	**321**	P	**P**	**08 06 05.4**	**-1.1**
	comp=Z,3.0nm,0.8s,baz=141,slow=6.6,SNR=7.2						
MAJO	**Matsushiro**	**68.34**	**321**	*e*P	**P**	**08 06 05.0**	**-1.5**
MAJO				pmax	pmax		
	comp=Z,30nm,0.9s						
MYLDM	**Lahad Datu**	**69.23**	**282**	*e*P	**P**	**08 06 14.8**	**+2.3**
	comp=Z,21nm,1.0s						
KUR	**Kuril'sk**	**69.48**	**333**	*e*P	**P**	**08 06 14.3**	**+1.0**
ASAJ	**Asahikawa**	**71.11**	**329**	P	**P**	**08 06 23.5**	**+0.3**
	comp=Z,3.0nm,0.4s,baz=288,slow=3.6,SNR=5.1						
ASAJ	**Asahikawa**	**71.11**	**329**	*e*P	**P**	**08 06 23.9**	**+0.7**
	comp=Z,30nm,1.7s						
PWJI	**Pagerwojo**	**72.00**	**267**	P	**P**	**08 06 28.9**	**-0.3**
PETK	**Petropavlovsk-**	**72.52**	**343**	P	**P**	**08 06 31.2**	**-0.2**
	comp=Z,10.0nm,0.7s,baz=124,slow=8.0,SNR=23						
PEA1	**Petropavlovsk-**	**72.53**	**343**	*e*P	**P**	**08 06 31.2**	**-0.3**
PCJI	**Pacitan**	**72.56**	**266**	P	**P**	**08 06 32.4**	**-0.1**
OAT	**Oat Mountain**	**72.95**	**46**	*e*P	**P**	**08 06 39.3**	**+4.8**
YSS	**Yuzh-Sakhalins**	**73.11**	**331**	*e*P	**P**	**08 06 35.6**	**+0.6**
YSS				pmax	pmax		
	comp=Z,14nm,1.1s						
NACB	**Ninganchiao**	**73.69**	**301**	*e*P	**P**	**08 06 39.0**	**+0.2**
	comp=Z,62nm,0.4s						
QSPA	**South Pole Qui**	**74.35**	**180**	*e*P	**P**	**08 06 42.4**	**+0.2**
STKI	**Sintang**	**74.41**	**275**	P	**P**	**08 06 44.3**	**+1.0**
GSC	**Goldstone, Bar**	**74.72**	**46**	*e*P	**P**	**08 06 45.7**	**+0.9**
GSC				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GSC	**Goldstone, Bar**	**74.72**	**46**	*e*P	**P**	**08 06 45.7**	**+0.9**
	comp=Z,4.7nm,0.9s						
KSRS	**Korea Array**	**75.47**	**316**	P	**P**	**08 06 49.8**	**+1.0**
	comp=Z,0.9nm,0.8s,baz=127,slow=6.1,SNR=5.6						
KS15	**Wonju Array Si**	**75.48**	**316**	*e*P	**P**	**08 06 49.8**	**+0.8**
MSHR	**Mys Shultsa**	**76.35**	**322**	*e*P	**P**	**08 06 54.3**	**+0.6**
SHPR	**Sheep Range**	**76.49**	**46**	*e*P	**P**	**08 06 55.6**	**+0.7**
	comp=Z,8.4nm,1.6s						
FRIS	**Frissel Point**	**76.50**	**36**	*e*P	**P**	**08 06 54.8**	**0.0**
USRK	**Ussuriysk Ar.**	**76.85**	**324**	P	**P**	**08 06 55.2**	**-1.2**
	comp=Z,0.9nm,0.6s,baz=110,slow=2.8,SNR=4.9						
TUC	**Tucson**	**77.58**	**51**	P	**P**	**08 07 02.2**	**+1.2**
TUC				pmax	pmax		
	comp=Z,8.0nm,1.5s						
CGJI	**Cibinong**	**78.22**	**266**	P	**P**	**08 07 03.4**	**-1.4**
WUAZ	**Wupatki**	**78.66**	**48**	*e*P	**P**	**08 07 08.8**	**+0.9**
	comp=Z,3.3nm,1.0s						
PPBI	**Pangkal Pinang**	**78.94**	**271**	P	**P**	**08 07 08.1**	**-0.6**
KASI	**Kota Agung**	**79.65**	**267**	P	**P**	**08 07 10.5**	**-2.0**
TT01	**Tatalina**	**79.71**	**9**	*e*P	**P**	**08 07 12.1**	**+0.3**
F10A	**Beach Ranch, E**	**80.33**	**37**	*e*P	**P**	**08 07 15.3**	**-0.2**
	comp=Z,3.3nm,0.8s						
CN2	**Changchun**	**80.48**	**321**	*e*P	**P**	**08 07 19.0**	**+2.7**
TMUT	**Trail Mountain**	**80.59**	**45**	*e*P	**P**	**08 07 17.6**	**+0.1**
	comp=Z,3.2nm,1.0s						
HLID	**Hailey**	**80.68**	**40**	*e*P	**P**	**08 07 17.9**	**+0.3**
	comp=Z,2.2nm,0.8s						
MNTX	**Cornudas Mount**	**81.45**	**54**	*e*P	**P**	**08 07 21.9**	**+0.2**
	comp=Z,4.1nm,1.1s						
LTX	**Lajitas**	**81.86**	**57**	*e*P	**P**	**08 07 24.6**	**+0.5**
LTX	**Lajitas**	**81.86**	**57**	*e*P	**P**	**08 07 24.6**	**+0.5**
TX31	**Lajitas Ar. Si**	**81.86**	**57**	*e*P	**P**	**08 07 24.2**	**+0.1**
TXAR	**Lajitas Array**	**81.86**	**57**	P	**P**	**08 07 24.6**	**+0.5**
	comp=Z,1.2nm,0.9s,baz=218,slow=8.6,SNR=12						
ANMO	**Albuquerque**	**81.99**	**50**	*i* P	**P**	**08 07 25.8**	**+1.1**
ANMO				pmax	pmax		
	comp=Z,7.0nm,1.5s						
ANMO	**Albuquerque**	**81.99**	**50**	*e*P	**P**	**08 07 25.3**	**+0.6**
	comp=Z,5.0nm,1.4s						
MYKOM	**Kota Tinggi**	**82.21**	**274**	*e*P	**P**	**08 07 26.7**	**+0.6**
	comp=Z,26nm,1.1s						
MCMT	**McKenzie Canyo**	**82.30**	**39**	*e*P	**P**	**08 07 26.5**	**+0.3**
SEY	**Seymchan**	**82.47**	**345**	*e*P	**P**	**08 07 25.8**	**-0.5**
WRH	**Wood River Hil**	**82.49**	**11**	*e*P	**P**	**08 07 25.7**	**-0.7**
	comp=Z,12nm,1.3s						
CCB	**Clear Creek Bu**	**82.70**	**11**	*e*P	**P**	**08 07 26.8**	**-0.6**
	comp=Z,24nm,1.8s						
BSMT	**Bassoo Peak**	**82.76**	**36**	*e*P	**P**	**08 07 28.0**	**-0.4**
SNOW	**Snow King Moun**	**82.92**	**41**	*e*P	**P**	**08 07 29.9**	**+0.5**
	comp=Z,3.1nm,0.8s						
ILAR	**Eielson Array**	**82.99**	**12**	P	**P**	**08 07 27.9**	**-1.0**
	comp=Z,1.0nm,0.5s,baz=213,slow=5.6,SNR=19						
ILB	**Eielson Array**	**82.99**	**12**	*e*P	**P**	**08 07 28.3**	**-0.7**
IL1	**Eielson Array**	**82.99**	**12**	*e*P	**P**	**08 07 27.7**	**-1.2**
IMW	**Indian Meadow**	**83.02**	**41**	*e*P	**P**	**08 07 30.4**	**+0.5**
	comp=Z,4.1nm,0.7s						
BW06	**Boulder Array**	**83.36**	**42**	*e*P	**P**	**08 07 31.3**	**-0.3**
PD31	**Pinedale Array**	**83.36**	**42**	*e*P	**P**	**08 07 31.1**	**-0.6**
PDAR	**Pinedale Array**	**83.36**	**42**	P	**P**	**08 07 31.2**	**-0.4**
	comp=Z,2.0nm,0.5s,baz=209,slow=3.1,SNR=22						
BOZ	**Bozeman (W)**	**83.46**	**39**	*e*P	**P**	**08 07 31.3**	**-0.7**
BOZ				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BOZ	**Bozeman (W)**	**83.46**	**39**	*e*P	**P**	**08 07 31.3**	**-0.7**
	comp=Z,3.2nm,1.0s						
EGAK	**Eagle**	**84.21**	**14**	*e*P	**P**	**08 07 35.2**	**0.0**
	comp=Z,3.4nm,0.8s						
UBPT	**Khong Chiam**	**84.58**	**287**	P	**P**	**08 07 39.8**	**+1.7**
	comp=Z,12nm,0.9s						
BILL	**Bilibino**	**84.64**	**353**	*e*P	**P**	**08 07 37.4**	**+0.2**
BILL				pmax	pmax		
	comp=Z,10.0nm,1.2s						
IPM	**Ipoh**	**85.66**	**276**	*e*P	**P**	**08 07 44.0**	**+0.5**
	comp=Z,30nm,0.7s						
ENH	**Enshi**	**85.98**	**303**	*e*P	**P**	**08 07 45.9**	**+1.1**
	comp=Z,18nm,0.8s						
ABTX	**Abilene, Hawle**	**86.29**	**55**	*e*P	**P**	**08 07 45.4**	**-0.9**
	comp=Z,15nm,1.1s						
SKNT	**Sakolnakorn**	**86.45**	**289**	P	**P**	**08 07 48.3**	**+1.0**
	comp=Z,18nm,1.0s						
SKLT	**Songkhla**	**86.79**	**278**	P	**P**	**08 07 50.9**	**+1.9**
	comp=Z,24nm,0.9s						
MAW	**Mawson**	**87.09**	**199**	P	**P**	**08 07 49.4**	**0.0**
	comp=Z,18nm,0.8s,baz=128,slow=6.3,SNR=43						
MAW	**Mawson**	**87.09**	**199**	*e*P	**P**	**08 07 49.4**	**0.0**
MAW				pmax	pmax		
	comp=Z,5.0nm,0.8s						
MAW	**Mawson**	**87.09**	**199**	*e*P	**P**	**08 07 49.4**	**0.0**
	comp=Z,4.7nm,0.8s						
XAN	**Xi'an**	**87.75**	**306**	P	**P**	**08 07 54.3**	**+1.0**
XAN				pP	PcP	08 08 01.7	+6.8
XAN				pmax	pmax		
	comp=Z,20nm,1.2s						
HHC	**Hu-ho-hao-te**	**88.28**	**313**	*e*P	**P**	**08 07 56.7**	**+1.0**
HHC				pmax	pmax		
	comp=Z,16nm,1.0s						
LAMP	**Lampang**	**90.86**	**289**	P	**P**	**08 08 10.0**	**+1.9**
	comp=Z,6.0nm,0.8s						
YKA	**Yellowknife Ar**	**90.89**	**24**	P	**P**	**08 08 06.7**	**-0.4**
	comp=Z,0.5nm,0.7s,baz=240,slow=4.2,SNR=7.6						
YKB5	**Yellowknife Ar**	**90.89**	**24**	*e*P	**P**	**08 08 07.0**	**-0.2**
CMAR	**Chiang Mai Arr**	**91.48**	**289**	P	**P**	**08 08 12.1**	**+1.1**
	comp=Z,5.1nm,0.7s,baz=93,slow=2.8,SNR=23						
CMMT	**Chiang Mai**	**91.57**	**289**	P	**P**	**08 08 12.4**	**+1.1**
	comp=Z,21nm,1.3s						
CHTO	**Chiang Mai**	**91.57**	**289**	P	**P**	**08 08 12.5**	**+1.1**
	comp=Z,73nm,0.9s						
CHTO	**Chiang Mai**	**91.57**	**289**	*e*P	**P**	**08 08 12.5**	**+1.1**
CHTO				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CHTO	**Chiang Mai**	**91.57**	**289**	*e*P	**P**	**08 08 12.5**	**+1.1**
	comp=Z,9.6nm,0.8s						
SYO	**Syowa Base**	**92.05**	**192**	*e*P	**P**	**08 08 10.1**	**-2.5**
SNAA	**Sanae**	**92.67**	**177**	*e*P	**P**	**08 08 17.7**	**+2.2**
SONA0	**Songino Array**	**94.20**	**318**	*e*P	**P**	**08 08 23.0**	**0.0**
	comp=Z,9.6nm,2.0s						
SONM	**Songino Array**	**94.20**	**318**	P	**P**	**08 08 23.0**	**0.0**
	comp=Z,0.6nm,0.7s,baz=126,slow=3.3,SNR=4.9						
NNA	**Nana**	**94.25**	**104**	*i* P	**P**	**08 08 20.9**	**-3.0**
TIXI	**Tiksi**	**94.94**	**345**	*e*P	**P**	**08 08 24.9**	**-0.7**
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.8s						
MK32	**Makanchi Array**	**110.11**	**315**	*e*PKiKP	**PKiKP**	**08 13 32.8**	**-1.7**
MKAR	**Makanchi Array**	**110.11**	**315**	PKiKP	**PKiKP**	**08 13 32.8**	**-1.7**
	comp=Z,0.5nm,0.5s,baz=31,slow=0.9,SNR=6.2

VTS	Vitosha	149.08 334	⇑*i*P	PKPbc	08 14 51.5	-0.1
VTS	Vitosha	149.08 334	⇑PKP2	PKPbc	08 14 51.5	-0.1
PDG	Podgorica	150.77 338	‖*i*P	PKPbc	08 14 54.8	-0.6
TORD	Torodi Ar. Bea	175.72 126	PKP	PKPdf	08 15 11.8	-1.8
	comp=N,1.2nm,1.1s,baz=186,slow=1.4,SNR=3.0					
TOA1	Torodi Ar. Sit	175.72 126	*e*PKPdf	PKPdf	08 15 11.8	-1.8

ISCJB ***11*** *08:00:19.7±1.2,29.66S±0.08×176.3W±0.1, h21km, mb4.0/5, Error ellipse: s-maj=14.0km s-min=11.6km az=162.1*
IDC ***11*** *08:00:19.0±1.2,29.55S×176.41W, h0km, mb4.0/4, mb1 4.3/5, mb1mx3.9/27, mbtmp4.1/5, ML3.6/1, Error ellipse: s-maj=33.4km s-min=21.4km az=2.0*
NEIC ***11*** *08:00:20.5±0.8,29.56S×176.44W, h10km, mb4.2/1, Error ellipse: s-maj=17.8km s-min=12.7km az=191.0*

ISC 11 08:00:22.1±1.1, 29.5S±0.1×176.40W±0.0, 09, h21km, n10, σ0 883/13, mb4.0/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.36**	**281**	Pn	**Pb**	**08 00 46.4**	**-0.4**
	193nm,0.3s,baz=108,slow=7.3,SNR=11						
RAO				Sn	**Sb**	**08 01 04.2**	**+0.6**
	566nm,0.3s,baz=102,slow=23,SNR=12						
RAO	**Raoul Island**	**1.36**	**281**	*e*Pg	**Pn**	**08 00 46.1**	**+0.3**
RAO				*e*Sg	**Sb**	**08 01 03.5**	**-0.2**
URZ	**Urewera**	**10.24**	**210**	Pn	**Pn**	**08 02 46.6**	**-1.1**
	0.5nm,0.3s,baz=6.0,slow=19,SNR=4.9						
URZ				Sn	**Sn**	**08 04 42.9**	**+1.0**
	2.5nm,0.3s,baz=4.5,slow=21,SNR=8.2						
STKA	**Stephens Creek**	**36.03**	**255**	P	**P**	**08 07 22.4**	**+0.3**
	2.6nm,0.9s,baz=75,slow=11,SNR=3.0						
ASAR	**Alice Springs**	**44.55**	**265**	P	**P**	**08 08 32.3**	**-0.4**
	1.1nm,0.5s,baz=103,slow=6.8,SNR=11						
WRAB	**Tennant Creek**	**45.46**	**270**	*e*P	**P**	**08 08 40.0**	**+0.1**
	2.9nm,1.0s						
WRA	**Warramunga Arr**	**45.47**	**270**	P	**P**	**08 08 38.7**	**-1.3**
	0.9nm,0.6s,baz=109,slow=8.0,SNR=6.2						
TXAR	**Lajitas Array**	**90.75**	**56**	P	**P**	**08 13 23.5**	**-0.3**
	1.0nm,1.1s,baz=201,slow=6.7,SNR=5.3						
AKASG	**Malin Array Be**	**151.42**	**325**	PKPbc	**PKPbc**	**08 20 15.1**	**+1.1**
	0.4nm,0.4s,baz=51,slow=3.8,SNR=3.9						
TORD	**Torodi Ar. Bea**	**163.60**	**173**	PKPab	**PKPab**	**08 21 16.2**	**+0.7**
	1.7nm,0.9s,baz=176,slow=4.4,SNR=6.5						

IDC 11 08:16:39.0±45.0, 15.95S×174.17W, h0km, mb4.4/3, mb1 4.6/3, mb1mx3.8/35, mbtmp4.4/3, Error ellipse: s-maj=866.2km s-min=161.2km az=79.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**43.12**	**240**	P	P	08 24 42.0	+0.6
	1.8nm,0.5s,baz=85,slow=9.8,SNR=14						
WRA	**Warramunga Arr**	**49.00**	**257**	P	P	08 25 27.1	-0.8
	0.7nm,0.4s,baz=97,slow=7.5,SNR=24						
ASAR	**Alice Springs**	**49.24**	**252**	P	P	08 25 29.5	-0.2
	8.4nm,0.5s,baz=89,slow=8.0,SNR=133						

NEIC 11 08:18:54.2, 51.67N×179.85E, h6km, ML3.5(AEIC), After AEIC., Rat Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GALAA	**Gareloi Lava P**	**0.86**	**83**	P	Pg	08 19 10.8	0.0
GANE	**Gareloi Northe**	**0.87**	**80**	P	Pg	08 19 11.2	+0.3
GANE				S	Sb	08 19 23.1	-0.5
GAEA	**Gareloi East**	**0.88**	**82**	P	Pg	08 19 11.3	+0.1
TANO	**Tanaga North**	**1.28**	**78**	P	Pn	08 19 18.2	-0.5
TASE	**Tanaga Southea**	**1.32**	**82**	P	Pn	08 19 18.6	-0.7
TAFP	**Tanaga Falls P**	**1.37**	**79**	P	Pn	08 19 18.9	-0.9
TAFP				S	Sn	08 19 38.2	-0.1
TAFL	**Tanaga Flats**	**1.40**	**86**	P	Pn	08 19 19.7	-0.6
KICM	**Kanaga Island**	**1.85**	**81**	P	Pn	08 19 25.9	-0.6
KIKV	**Kanaga Island**	**1.86**	**82**	P	Pn	08 19 26.5	-0.2
KIKV				S	Sb	08 19 52.5	+0.3
KINC	**Kanaga Island**	**1.90**	**81**	P	Pn	08 19 27.1	0.0
KIRH	**Kanaga Island**	**1.91**	**82**	P	Pn	08 19 27.3	-0.1
KIRH				S	Sb	08 19 53.0	-0.6
ADAG	**Mount Adagdak**	**2.22**	**81**	P	Pn	08 19 31.6	0.0
ETKA	**Kagalaska Isla**	**2.33**	**84**	P	Pn	08 19 33.5	+0.4
GSCK	**Great Sitkin C**	**2.50**	**81**	P	Pn	08 19 34.7	-0.7
GSTD	**Great Sitkin T**	**2.51**	**80**	P	Pn	08 19 36.6	+0.9
GSTD				S	Sb	08 20 09.6	-1.3
GSMY	**Great Sitkin M**	**2.57**	**80**	P	Pn	08 19 36.3	0.0
KOKL	**Mount Kliuchef**	**3.74**	**78**	P	Pn	08 19 53.0	+0.5
KOFP	**Korovin Flat P**	**3.79**	**78**	P	Pn	08 19 54.8	+1.6

JMA ***11*** *08:22:51.2±0.1, 40.00N×142.49E, h35km±1km, M3.9*
JMA Felt I J1.
IDC ***11*** *08:22:53.4±2.5, 40.00N×142.73E, h66km±21km, mb3.6/12, mb1 3.7/16, mb1mx3.5/47, mbtmp3.9/16, Error ellipse: s-maj=23.1km s-min=16.4km az=93.0*

ISC 11 08:22:49.0±1.7, 39.99N±0.05×142.65E±0.08, h26km±11km, n35, σ1 880/35, mb4.0/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.61**	**265**	P	**Pb**	**08 23 01.6**	**+0.5**
JTH				S	**Sb**	**08 23 09.1**	**-0.2**
MIYJ	**Miyakonagasawa**	**0.76**	**237**	P	**Pb**	**08 23 04.0**	**+0.3**
MIYJ				S	**Sb**	**08 23 12.9**	**-0.8**
JANG	**Nango**	**0.95**	**294**	P	**Pn**	**08 23 06.3**	**-0.4**
JKZ	**Kuzumaki**	**1.01**	**270**	P	**Pn**	**08 23 07.8**	**+0.2**
JKZ				*e*S	**Sb**	**08 23 19.7**	**-1.2**
JOM	**Ohasama**	**1.17**	**244**	P	**Pn**	**08 23 10.2**	**+0.5**
OFUJ	**Ofunato**	**1.19**	**220**	P	**Pn**	**08 23 10.7**	**+0.8**
OFUJ				*e*S	**Sn**	**08 23 25.3**	**+0.1**
JTM	**Tenmabayashi**	**1.45**	**304**	P	**Pn**	**08 23 14.2**	**+0.7**
JMK	**Ichinoseki**	**1.52**	**227**	P	**Pn**	**08 23 15.5**	**+1.0**
JMK				*e*S	**Sn**	**08 23 33.1**	**-0.3**
JAH	**Hinai**	**1.56**	**278**	P	**Pn**	**08 23 15.9**	**+0.9**
JAH				S	**Sn**	**08 23 34.4**	**0.0**
JRG	**Rokugo**	**1.67**	**250**	P	**Pn**	**08 23 17.9**	**+1.4**
ASAJ	**Asahikawa**	**4.12**	**359**	P	**Pn**	**08 23 53.9**	**+3.6**
	4.6nm,0.3s,baz=218,slow=9.0,SNR=13						
ASAJ				S	**Sb**	**08 24 45.1**	**-5.0**
	3.8nm,0.3s,baz=274,slow=24,SNR=4.0						
MJAR	**Matsushiro Arr**	**4.91**	**227**	P	**Pn**	**08 24 04.9**	**+3.8**
	3.4nm,0.3s,baz=34,slow=13,SNR=59						
MAT	**Matsushiro**	**4.91**	**227**	P	**Pn**	**08 24 04.1**	**+3.0**
JHJ	**Hachijo jima 2**	**7.24**	**199**	S	**Sn**	**08 25 50.6**	**-3.8**
	3.7nm,0.3s,baz=102,slow=19,SNR=2.9						
USRK	**Ussuriysk Ar.**	**8.97**	**301**	P	**Pn**	**08 25 00.7**	**+3.9**
	0.6nm,0.3s,baz=120,slow=14,SNR=14						
KSRS	**Korea Array**	**11.78**	**262**	P	Pn	08 25 40.4	+5.1
	0.4nm,0.3s,baz=74,slow=14,SNR=4.5						
SEY	**Seymchan**	**23.70**	**11**	P	**P**	**08 27 59.0**	**+0.5**
	2.4nm,0.8s,baz=212,slow=6.7,SNR=6.9						
SONM	**Songino Array**	**27.07**	**299**	P	**P**	**08 28 29.7**	**+0.2**
	0.7nm,0.5s,baz=107,slow=8.2,SNR=5.8						
H11N2	**WAKE ISLAND Hy**	**28.99**	**127**	T	T	08 59 29.3	
	baz=319,slow=75,SNR=134						
H11N1	**WAKE ISLAND Hy**	**29.00**	**127**	T	T	08 59 36.8	
	baz=319,slow=75,SNR=179						
H11N3	**WAKE ISLAND Hy**	**29.01**	**127**	T	T	08 59 37.4	
	baz=319,slow=75,SNR=100						
H11S1	**WAKE ISLAND Hy**	**29.81**	**129**	T	T	09 00 30.8	
	baz=321,slow=76,SNR=41						
H11S3	**WAKE ISLAND Hy**	**29.81**	**129**	T	T	09 00 38.3	
	baz=321,slow=76,SNR=17						
H11S2	**WAKE ISLAND Hy**	**29.82**	**129**	T	T	09 00 32.7	
	baz=321,slow=76,SNR=29						
ZALV	**Zalesovo Beam**	**40.70**	**310**	P	**P**	**08 30 26.9**	**-0.2**
	1.2nm,0.4s,baz=111,slow=9.8,SNR=3.9						
MKAR	**Makanchi Array**	**43.43**	**300**	P	**P**	**08 30 49.5**	**-0.1**
	0.7nm,0.5s,baz=84,slow=9.9,SNR=8.5						
KURBB	**Kurchatov Arra**	**45.00**	**306**	P	**P**	**08 31 01.9**	**-0.1**
	3.5nm,0.6s,baz=81,slow=8.4,SNR=27						
BVAR	**Borovoye Array**	**49.34**	**311**	P	**P**	**08 31 36.1**	**+0.3**
	2.2nm,0.6s,baz=78,slow=9.2,SNR=12						
ARU	**Arti**	**54.81**	**317**	P	**P**	**08 32 16.9**	**+0.5**
	5.9nm,0.2s,baz=101,slow=2.1,SNR=4.3						
AKTO	**Aktyubinsk**	**57.45**	**311**	P	**P**	**08 32 35.4**	**0.0**
	2.3nm,0.7s,baz=66,slow=12,SNR=7.9						
WRA	**Warramunga Arr**	**60.12**	**189**	P	**P**	**08 32 54.0**	**-0.2**
	0.6nm,0.7s,baz=7.7,slow=6.9,SNR=6.9						
YKA	**Yellowknife Ar**	**60.77**	**31**	P	**P**	**08 32 57.0**	**-1.1**
	0.1nm,0.6s,baz=301,slow=6.5,SNR=3.0						
ASAR	**Alice Springs**	**63.85**	**189**	P	**P**	**08 33 19.2**	**+0.1**
	0.3nm,0.6s,baz=7.7,slow=10,SNR=4.3						
NOA	**NORSAR Array B**	**71.83**	**337**	P	**P**	**08 34 09.1**	**0.0**
	1.3nm,0.7s,baz=39,slow=5.9,SNR=6.0						
AKASG	**Malin Array Be**	**72.55**	**322**	P	**P**	**08 34 13.4**	**-0.1**
	0.6nm,0.3s,baz=43,slow=6.1,SNR=4.6						

IDC ***11*** *08:30:03.3±2.2, 39.34N×143.97E, h0km, mb3.7/5, mb1 3.7/8, mb1mx3.5/39, mbtmp3.7/8, ML3.1/2, Error ellipse: s-maj=53.3km s-min=25.5km az=77.0*
ISCJB ***11*** *08:30:04.7±0.8, 39.45N±0.05×143.72E±0.06, h11km, mb3.6/5, Error ellipse: s-maj=8.4km s-min=4.4km az=42.1*
JMA ***11*** *08:30:06.5±0.1, 39.44N×143.74E, h36km, M3.9*

ISC 11 08:30:05.2±1.2, 39.41N±0.06×143.74E±0.08, h11km, n22, σ1 867/33, mb3.8/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.50**	**277**	P	**Pb**	**08 30 31.9**	**-1.1**
MIYJ				*e*S	**Sn**	**08 30 49.9**	**-1.6**
JTH	**Tanohata**	**1.54**	**290**	P	**Pb**	**08 30 32.3**	**-1.5**
JTH				*e*S	**Sn**	**08 30 51.3**	**-1.3**
OFUJ	**Ofunato**	**1.64**	**259**	P	**Pb**	**08 30 33.9**	**-1.6**
OFUJ				*e*S	**Sn**	**08 30 53.7**	**-1.4**
JOM	**Ohasama**	**1.90**	**273**	P	**Pb**	**08 30 38.0**	**-1.8**
JOM				*e*S	**Sn**	**08 31 00.6**	**-0.8**
JANG	**Nango**	**1.96**	**300**	P	**Pn**	**08 30 37.9**	**-0.5**
JMK	**Ichinoseki**	**2.01**	**258**	P	**Pn**	**08 30 39.4**	**-2.4**
JMK				*e*S	**Sn**	**08 31 03.5**	**-0.7**
JYK	**Kaneyama**	**2.67**	**260**	P	**Pn**	**08 30 49.0**	**+0.8**
JYK				*e*S	**Sn**	**08 31 20.5**	**-0.1**
JOT	**Ohata**	**2.84**	**315**	P	**Pn**	**08 30 50.5**	**-0.1**
JNBK	**Urakawa-nobuka**	**2.96**	**346**	P	**Pn**	**08 30 53.4**	**+1.3**
JNBK				*e*S	**Sn**	**08 31 28.2**	**+0.6**
JCH	**Churui**	**3.21**	**355**	P	**Pn**	**08 30 55.8**	**+0.2**
JCH				S	**Sn**	**08 31 32.9**	**-0.9**
JFT	**Otama**	**3.27**	**236**	P	**Pn**	**08 30 57.2**	**+0.7**
JAK	**Akkeshi**	**3.65**	**11**	P	**Pn**	**08 31 01.6**	**0.0**
JAK				*e*S	**Sn**	**08 31 42.2**	**-2.5**
JAR	**Ashorobuto**	**3.88**	**0**	P	**Pn**	**08 31 04.4**	**-0.4**
JAR				*e*S	**Sn**	**08 31 47.0**	**-3.3**
ASAJ	**Asahikawa**	**4.78**	**350**	Pn	**Pn**	**08 31 18.9**	**+1.7**
MJAR	**Matsushiro Arr**	**5.23**	**238**	Pn	**Pn**	**08 31 24.7**	**+1.4**
	2.5nm,0.3s,baz=43,slow=12,SNR=24						
MAT	**Matsushiro**	**5.23**	**238**	P	**Pn**	**08 31 25.6**	**+2.3**
MAT				S	**Sn**	**08 32 19.3**	**-4.3**
USRK	**Ussuriysk Ar.**	**9.99**	**302**	Pn	**Pn**	**08 32 31.1**	**+2.5**
	0.4nm,0.3s,baz=99,slow=13,SNR=4.7						
SONM	**Songino Array**	**28.09**	**300**	P	**P**	**08 35 58.1**	**+1.2**
	0.4nm,0.5s,baz=88,slow=9.3,SNR=3.7						
MKAR	**Makanchi Array**	**44.45**	**300**	P	**P**	**08 38 16.9**	**+0.7**
	0.5nm,0.7s,baz=88,slow=8.6,SNR=4.9						
KURBB	**Kurchatov Arra**	**46.02**	**307**	P	**P**	**08 38 29.2**	**+0.7**
	1.1nm,0.7s,baz=80,slow=8.3,SNR=8.3						
BVAR	**Borovoye Array**	**50.35**	**311**	P	**P**	**08 39 03.5**	**+1.5**
	0.5nm,0.4s,baz=49,slow=8.6,SNR=3.5						
WRA	**Warramunga Arr**	**59.70**	**190**	P	**P**	**08 40 09.4**	**-0.4**
	0.7nm,0.8s,baz=8.6,slow=7.1,SNR=5.2						

MEX 11 08:43:31.3±0.6, 15.35N×92.99W, h59km±59km, MD3.8, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGIG		**1.43**	**355**	*e*P	Pn	08 43 53.5	-1.6
TGIG				*i* S	Sn	08 44 11.1	-1.9

JMA 11 08:47:17.6±0.1, 36.17N×141.26E, h42km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.57**	**215**	P	Pn	08 47 29.5	+0.2
CHOJ				*e*S	Sn	08 47 37.7	+0.1
JHO	**Hitachi**	**0.71**	**308**	P	Pn	08 47 31.2	0.0
JHO				*e*S	Sn	08 47 41.2	+0.2
JYT	**Yasato**	**0.86**	**274**	P	Pn	08 47 33.5	+0.2
ONAJ	**Iwakimizuishiy**	**1.00**	**338**	P	Pn	08 47 35.3	0.0
JFK	**Kawauchi**	**1.23**	**346**	P	Pn	08 47 38.3	-0.1
JFK				*e*S	Sn	08 47 53.2	-0.7
JAG	**Ashikaga**	**1.48**	**280**	P	Pn	08 47 42.4	+0.6
JFT	**Otama**	**1.54**	**331**	P	Pn	08 47 43.9	+1.4
JFT				*e*S	Sn	08 48 02.7	+1.4
MAT	**Matsushiro**	**2.49**	**279**	P	Pn	08 47 57.8	+2.1
MAT				S	Sn	08 48 25.3	+0.4

IDC 11 08:53:21.5±6.7, 5.18S×130.17E, h178km±64km, mb3.5/6, mb1 3.7/9, mb1mx3.4/51, mbtmp4.1/9, MS4.3/3, Ms1 4.3/3, ms1mx3.8/39, Error ellipse: s-maj=68.9km s-min=17.6km az=61.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**13.58**	**199**	Pn		08 56 26.8	-0.3
	0.4nm,0.3s,baz=339,slow=8.3,SNR=7.8						
FITZ				S	Sn	08 58 45.1	-13
	1.2nm,0.3s,baz=240,slow=20,SNR=3.6						
WRA	**Warramunga Arr**	**15.22**	**165**	P	Pn	08 56 46.9	-0.7
	1.6nm,0.3s,baz=342,slow=13,SNR=37						
WRA				S	Sn	08 59 27.6	-10
	2.8nm,0.3s,baz=336,slow=21,SNR=7.3						
ASAR	**Alice Springs**	**18.73**	**169**	P	P	08 57 27.4	+0.6
	2.5nm,0.3s,baz=348,slow=11,SNR=141						
ASAR				S		09 00 51.5	+0.7
	0.5nm,0.3s,baz=348,slow=23,SNR=3.8						
STKA	**Stephens Creek**	**28.64**	**159**	P	P	08 59 01.3	-0.2
	1.5nm,0.5s,baz=335,slow=8.5,SNR=9.4						
USRK	**Ussuriysk Ar.**	**49.18**	**2**	LR	LR	09 20 58.4	
	comp=Z,404nm,21.8s,baz=197,slow=34						
KLR	**Kul'dur**	**54.20**	**1**	LR	LR	09 25 58.5	
	comp=Z,211nm,19.5s,baz=196,slow=36						
SONM	**Songino Array**	**56.78**	**341**	P	P	09 02 48.0	+0.8
	0.4nm,0.4s,baz=150,slow=6.1,SNR=3.8						
MKAR	**Makanchi Array**	**66.81**	**326**	P	P	09 03 54.4	+0.4
	2.8nm,0.7s,baz=122,slow=8.1,SNR=27						
YAK	**Yakutsk**	**67.02**	**360**	LR	LR	09 33 25.9	
	comp=Z,331nm,20.9s,baz=208,slow=36						
KURBB	**Kurchatov Arra**	**71.06**	**328**	P	P	09 04 20.2	+0.1
	1.5nm,0.7s,baz=130,slow=5.2,SNR=22						
BVAR	**Borovoye Array**	**76.63**	**328**	P	P	09 04 50.7	-1.8
	0.3nm,0.3s,baz=134,slow=6.2,SNR=3.7						
ILAR	**Eielson Array**	**91.64**	**25**	P	P	09 06 07.6	-0.5
	0.2nm,0.8s,baz=269,slow=4.8,SNR=3.9						
LPAZ	**La Paz**	**152.02**	**140**	PKPbc	PKPbc	09 12 57.6	+0.1
	1.1nm,0.4s,baz=305,slow=4.5,SNR=13						

BJI ***11*** *08:53:53.0,4.20S×121.60E, h13km, mb4.9/53, mB5.4/40, Ms5.0/43, Ms7 4.7/41*
ISCJB ***11*** *08:53:56.2±0.2,4.10S±0.02×121.79E±0.02, h33km, mb5.0/108, MS5.0/159, Error ellipse: s-maj=3.6km s-min=3.1km az=28.1*
MOS ***11*** *08:53:56.4±1.8,4.09S×121.65E, h33km, mb5.4/37, MS4.8/8, Error ellipse: s-maj=13.1km s-min=6.5km az=118.9*
DJA ***11*** *08:53:57.6±0.2,4.3S±2.2×12.2E±.1, h10km, M5.3/38, mb5.1/38, mB5.7/30, MLv5.6/14, Mw(mB)5.3/30, Mwp5.8/2*
GCMT ***11*** *08:53:58.1±0.1,4.10S×121.62E, h12km, MW5.5/134, Moment Tensor Solution. s102,c159; s134,c246; Duration: 1s3 Moment tensor: Scale 10^17Nm; Mrr-2.01±.04; Mθθ1.46±.03; Mφφ0.55±.03; Mrθ0.18±.07; Mθφ-1.07±.02; Mrφ0.18±.09; Best double couple: M◎2.10700×10^17 NP1:φs296.00000°, δ46.00000°, λ-100.00000°. NP2:φs131.00000°, δ45.00000°, λ-79.00000°. Principal axes: T 2.1710, Plg1.0000°, Azm33.0000°; N -0.1190, Plg8.0000°, Azm303.0000°; P -2.0440, Plg82.0000°, Azm129.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***11*** *08:53:58.1±0.2,4.06S×121.69E, h35km, mb5.1/50, MS5.1/135 Error ellipse: s-maj=6.2km s-min=4.3km az=66.0*
NEIC Felt [IV] at Kolaka and [III] at Kendari. Also felt at Makassar.
IDC ***11*** *08:53:58.1±2.3,4.09S×121.57E, h39km±20km, mb4.4/37, mb1 4.5/41, mb1mx4.5/57, mbtmp4.7/41, ML4.4/3, MS4.6/21, Ms1 4.6/21, ms1mx4.4/50, Error ellipse: s-maj=14.1km s-min=9.2km az=65.0*

ISC 11 08:53:58.6±0.3, 4.15S±0.03×121.72E±0.04, h35km, n392, σ2 813/293, mb5.0/108, MS5.0/159, 10C-13D, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KDI	**Kendari**	**0.92**	**78**	P	**Pn**	**08 54 11.9**	**-3.1**
KDI				S	**Sn**	**08 54 28.0**	**+0.9**
KAPI	**Kappang**	**2.14**	**246**	Pn	**Pn**	**08 54 29.3**	**-2.4**
	432nm,0.3s,baz=89,slow=4.1,SNR=396						
KAPI				Sn	**Sn**	**08 54 57.3**	**+0.2**
	2µm,0.3s,baz=258,slow=21,SNR=40						
KAPI				LR	LR	08 55 19.4	
	comp=Z,28µm,20.8s,baz=43,slow=40						
KAPI	**Kappang**	**2.14**	**246**	*e*Pn	**Pn**	**08 54 29.1**	**-2.7**
KAPI				*e*Sn	**Sn**	**08 54 59.3**	**+2.2**
TTSI	**Tana Toraja**	**2.19**	**300**	P	**Pn**	**08 54 31.9**	**-0.6**
TTSI				S	**Sn**	**08 55 05.1**	**+6.7**
LUWI	**Luwuk**	**3.27**	**19**	P	**Pn**	**08 54 45.6**	**-1.7**
LUWI				S	**Sn**	**08 55 26.1**	**+1.1**
LUWI	**Luwuk**	**3.27**	**19**	*e*Pn	**Pn**	**08 54 45.2**	**-2.1**
LUWI				*e*Sn	**Sn**	**08 55 23.0**	**-2.0**
PCI	**Palu**	**3.73**	**330**	P	**Pn**	**08 54 53.3**	**-0.5**
PCI				S	**Sn**	**08 55 40.2**	**+3.6**
PCI	**Palu**	**3.73**	**330**	P	**Pn**	**08 54 53.7**	**-0.1**
MMRI	**Maumere**	**4.48**	**173**	P	**Pn**	**08 55 02.6**	**-1.5**
MMRI	**Maumere**	**4.48**	**173**	*e*Pn	**Pn**	**08 55 05.2**	**+1.1**
MMRI				*e*Sn	**Sn**	**08 55 59.6**	**+4.5**
MRSI	**Marisa**	**4.61**	**3**	P	**Pn**	**08 55 05.8**	**0.0**
SANI	**Sanana**	**4.75**	**64**	P	**Pn**	**08 55 05.8**	**-1.9**
GTOI	**Gorontalo**	**4.93**	**15**	P	Pn	08 55 20.1	+10
KMSI	**Cibinong**	**5.21**	**26**	P	**Pn**	**08 55 17.8**	**+3.7**
	1µm,0.7s,23µm49µm9.1nm						
NLAI	**Namlea**	**5.45**	**81**	P	Pn	08 55 07.6	-10
BKB	**Balikpapan**	**5.61**	**301**	P	**Pn**	**08 55 22.5**	**+3.0**
	471nm,0.8s,8µm2.5nm						
WSI	**Waingapu**	**5.66**	**194**	P	**Pn**	**08 55 24.4**	**+4.2**
	2µm,0.7s,19µm5.6nm						
PLAI	**Plampang**	**6.07**	**220**	P	**Pn**	**08 55 24.4**	**-1.5**
SOEI	**Soe**	**6.11**	**156**	P	Pn	08 55 33.0	+6.4
	708nm,0.8s,7µm1.9nm						
SOEI	**Soe**	**6.11**	**156**	*e*Pn	**Pn**	**08 55 29.9**	**+3.3**
BASI	**Baing, Sumba**	**6.13**	**191**	P	Pn	08 55 33.6	+6.9
TWSI	**Taiwang, Sumb**	**6.62**	**226**	P	**Pn**	**08 55 32.1**	**-1.3**
	191nm,0.8s,3µm0.8nm						
LBMI	**Labuha**	**6.75**	**59**	P	Pn	08 55 42.1	+6.8
BBKI	**Banjar Baru**	**6.89**	**275**	P	**Pn**	**08 55 37.7**	**+0.5**
	320nm,1.1s,7µm2.5nm						
MTKI	**Muara Teweh, K**	**7.52**	**295**	P	Pn	08 55 51.8	+5.9
SRBI	**Singaraja**	**7.55**	**239**	P	**Pn**	**08 55 47.6**	**+1.3**
	399nm,0.6s,5µm1.4nm						
DNP	**Denpasar**	**7.87**	**235**	P	**Pn**	**08 55 53.7**	**+3.0**
	512nm,0.6s,32µm34µm3.2nm						
JAGI	**Jajag, Banyuwa**	**8.65**	**240**	P	**Pn**	**08 56 03.3**	**+1.9**
	166nm,0.6s,3µm						
JAGI	**Jajag, Banyuwa**	**8.65**	**240**	*e*Pn	**Pn**	**08 56 01.8**	**+0.4**
JAGI				*e*Sn	**Sn**	**08 57 38.9**	**+1.0**
GMJI	**Gumukmas**	**9.18**	**243**	P	**Pn**	**08 56 10.7**	**+2.0**
	101nm,1.4s,2µm						
MYLDM	**Lahad Datu**	**9.81**	**341**	*e*Pn	**Pn**	**08 56 17.9**	**+0.7**
SIJI	**Sorong**	**10.08**	**71**	Pn	**Pn**	**08 56 23.7**	**+2.7**
	6.3nm,0.3s,baz=157,slow=13,SNR=1.6						
PWJI	**Pagerwojo**	**10.58**	**248**	P	**Pn**	**08 56 29.8**	**+2.0**
	65nm,1.3s,2µm						
NGJI	**Ngawi**	**10.69**	**252**	P	**Pn**	**08 56 31.2**	**+1.9**
	87nm,0.8s,4µm						
STKI	**Sintang**	**11.06**	**292**	P	**Pn**	**08 56 38.7**	**+4.4**
	56nm,1.8s						
PCJI	**Pacitan**	**11.22**	**249**	P	**Pn**	**08 56 39.3**	**+2.7**
	154nm,1.3s,3µm						
KKM	**Kota Kinabalu**	**11.52**	**331**	*e*Pn	**Pn**	**08 56 44.7**	**+3.9**
KKM				*e*Sn	**Sn**	**08 58 44.7**	**-3.7**
SBUM	**Sibu**	**11.54**	**304**	*e*Pn	**Pn**	**08 56 43.7**	**+2.8**
UGM	**Wanagama**	**11.74**	**251**	P	**Pn**	**08 56 46.4**	**+2.7**
	169nm,1.7s						
UGM	**Wanagama**	**11.74**	**251**	*e*Pn	**Pn**	**08 56 44.5**	**+0.8**
DAV	**Davao City (W)**	**11.80**	**19**	Pn	**Pn**	**08 56 45.2**	**+0.7**
	84nm,0.3s,baz=141,slow=3.9,SNR=8.0						
DAV				LR	LR	09 02 51.2	
	comp=Z,5µm,18.9s,baz=194,slow=45						
DAV	**Davao City (W)**	**11.80**	**19**	P	**Pn**	**08 56 47.9**	**+3.4**
	SNR=

comp=Z,1μm,17.2s
QIZ LR LR
comp=Z,780nm,17.9s
QIZ Qiongzhong 25.83 333 *e*P **P 08 59 27.4 +0.5**
comp=Z,112nm,1.2s
QIZ LR LR
comp=Z,1μm,22.0s
COCO West Island 25.87 251 PFAKE 08 59 40.0 +13
COCO LR LR
comp=Z,1μm,19.0s
SKNT Sakolnakorn 27.34 321 P **P 08 59 40.9 +0.3**
comp=Z,88nm,1.0s
KHON Khomkaen 27.63 318 P **P 08 59 49.6 +6.5**
GZH Guangzhou 28.28 344 P **P 08 59 52.0 +3.2**
GZH S **S 09 04 39.7 +6.8**
GZH pmax pmax
comp=Z,26nm,1.5s
YHNB Yeheng 28.65 359 PFAKE 09 00 00.0 +7.8
YHNB LR LR
comp=Z,2μm,22.0s
CTA Charters Tower 28.67 126 P **P 08 59 53.5 +1.0**
comp=Z,6.9nm,0.9s,baz=306,slow=13,SNR=6.4
CTAO Charters Tower 28.67 126 *e*P **P 08 59 54.1 +1.7**
CTAO MLR MLR
comp=Z,3μm,20.0s
CTAO Charters Tower 28.67 126 *e*P **P 08 59 54.1 +1.7**
CTAO LR LR
comp=Z,3μm,20.0s
NWAO Narrogin (SRO) 28.93 188 PFAKE 09 00 10.0 +15
NWAO LR LR
comp=Z,2μm,22.0s
GUMO Guam 28.96 52 PFAKE 09 00 10.0 +15
GUMO LR LR
comp=Z,1μm,21.0s
PBKT Sadao Pong 29.06 316 P **P 08 59 56.7 +0.8**
comp=Z,39nm,0.9s
UTTA Uttaradit 30.16 317 P **P 09 00 07.1 +1.5**
comp=Z,8.8nm,0.9s,comp=Z,162nm
UMPA Umpang Tak 30.34 312 P **P 09 00 10.7 +3.5**
comp=Z,14nm,1.0s,comp=Z,808nm
LAMP Lampang 31.33 317 P **P 09 00 20.5 +4.6**
comp=Z,6.5nm,1.1s
BBOO Buckleboo 31.51 156 *e*P **P 09 00 17.7 +0.3**
comp=Z,24nm,1.0s
CM01 Chiang Mai Arr 31.72 316 *e*P **P 09 00 18.1 -1.2**
CMAR Chiang Mai Arr 31.76 316 P **P 09 00 19.0 -0.7**
comp=Z,9.3nm,0.6s,baz=142,slow=7.4,SNR=39
CMAR LR LR 09 14 36.9
comp=Z,1μm,20.3s,baz=149,slow=39
CMMT Chiang Mai 32.00 316 P **P 09 00 21.9 +0.1**
comp=Z,47nm,1.1s,comp=Z,707nm
CHTO Chiang Mai 32.00 316 P **P 09 00 22.0 +0.2**
comp=Z,137nm,1.1s,comp=Z,3μm
CHTO Chiang Mai 32.00 316 *e*P **P 09 00 21.2 -0.6**
CHTO pmax pmax
comp=Z,26nm,0.9s
CHTO MLR MLR
comp=Z,2μm,21.0s
CHTO Chiang Mai 32.00 316 P **P 09 00 21.3 -0.5**
SNR=12
CHTO P **P 09 00 21.3 -0.5**
SNR=12
CHTO Chiang Mai 32.00 316 *e*P **P 09 00 21.2 -0.6**
comp=Z,26nm,0.9s
CHTO LR LR
comp=Z,2μm,21.0s
MHMT Maesarieng 32.28 314 P **P 09 00 26.2 +1.9**
comp=Z,17nm,2.0s
STKA Stephens Creek 33.30 148 P **P 09 00 32.6 -0.4**
comp=Z,21nm,1.0s,baz=316,slow=9.3,SNR=16
STKA LR LR 09 15 00.7
comp=Z,2μm,19.2s,baz=309,slow=38
STKA Stephens Creek 33.30 148 *e*P **P 09 00 32.7 -0.4**
STKA pmax pmax
comp=Z,5.0nm,1.0s
STKA Stephens Creek 33.30 148 *e*P **P 09 00 32.6 -0.4**
comp=Z,5.0nm,1.0s
GYA Guiyang 33.74 335 P **P 09 00 36.1 -1.0**
GYA PP **PP 09 01 53.4 -0.5**
GYA PcP **PcP 09 03 18.9 +2.6**
GYA S **S 09 06 03.0 +4.5**
GYA ScP **ScP 09 07 01.8 +3.3**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,4.9s
GYA LR LR
comp=Z,470nm,16.8s
GYA LR LR
comp=Z,490nm,17.0s
GYA LR LR
comp=Z,440nm,16.6s
KMI Kunming 34.45 329 P **P 09 00 43.0 -0.4**
KMI pP pP 09 00 49.4 -4.1
KMI sP sP 09 00 51.7 -6.1
KMI S **S 09 06 14.2 +4.5**
KMI pmax pmax
comp=Z,26nm,1.7s
KMI LR LR
comp=Z,790nm,23.0s
KMI LR LR
comp=Z,1μm,24.3s
KMI LR LR
comp=Z,1μm,18.1s
WHN Wuhan 35.21 349⇑ *i*P **P 09 00 49.4 -0.2**
WHN S **S 09 06 24.5 +3.7**
WHN LR LR
comp=Z,3μm,21.0s
ENH Enshi 36.18 342 *e*P **P 09 00 56.5 -1.4**
comp=Z,33nm,1.0s
ENH LR LR
comp=Z,2μm,21.0s
JNU Nakatsue 38.08 13 P **P 09 01 12.9 -1.1**
comp=Z,12nm,1.0s,baz=81,slow=2.0,SNR=5.0
JNU Nakatsue 38.08 13 *e*P **P 09 01 13.2 -0.8**
comp=Z,20nm,1.1s
HNR Honiara 38.30 100 LR LR 09 18 02.9
comp=Z,455nm,21.7s,baz=276,slow=38
HNR Honiara 38.30 100 PFAKE 09 01 30.0 +14
HNR LR LR
comp=Z,722nm,22.0s
CD2 Chengdu 38.86 335 *e*P **P 09 01 21.4 +0.7**
CD2 pP pP 09 01 25.5 -5.4
CD2 PP **PP 09 02 51.0 +0.8**
CD2 S **S 09 07 20.8 +4.3**
CD2 sS sS 09 07 27.8 -5.5
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,220nm,5.2s
CD2 LR LR
comp=Z,2μm,16.1s
CD2 LR LR
comp=Z,1μm,13.7s
CD2 LR LR
comp=Z,1μm,12.9s
XAN Xi'an 39.86 343 P **P 09 01 27.0 -2.0**
XAN pmax pmax
comp=Z,27nm,1.2s
XAN pmax pmax
comp=Z,260nm,11.4s
XAN LR LR
comp=Z,890nm,20.5s
XAN LR LR
comp=Z,2μm,23.0s
XAN LR LR
comp=Z,1μm,24.6s
CAN Canberra 39.98 144 PFAKE 09 01 40.0 +10
CAN LR LR
comp=Z,1μm,21.0s
JHJ Hachijo jima 2 40.83 23 LR LR 09 17 11.5
comp=Z,520nm,20.7s,baz=216,slow=34
INCN Inchon 41.68 6 PFAKE 09 01 50.0 +6.1
INCN LR LR
comp=Z,802nm,21.0s
KS15 Wonju Array Si 41.78 7 *e*P **P 09 01 44.3 -0.3**
KSRS Korea Array 41.80 7 P **P 09 01 43.2 -1.6**
comp=Z,2.3nm,0.8s,baz=194,slow=7.9,SNR=5.9
KS01 Wonju Array Si 41.81 7 *e*P **P 09 01 44.1 -0.9**
INU Inuyama 41.84 19 *e*P **P 09 01 45.0 -0.2**
comp=Z,40nm,1.1s
PALK Pallekele 42.48 285 LR LR 09 20 55.3
comp=Z,1μm,19.1s,baz=112,slow=38
MAJO Matsushiro 43.32 19⇑ *i*P **P 09 01 57.1 -0.2**
MAJO pmax pmax
comp=Z,439nm,2.9s
comp=Z,430nm,13.3s
KSH LR LR
comp=Z,2μm,18.4s
CLNS Chul'man 60.84 2 *e*P **P 09 04 05.4 -1.9**
CLNS pmax pmax
comp=N,10.0nm,0.9s
CLNS pmax pmax
comp=Z,15nm,1.0s
CLNS pmax pmax
comp=E,7.0nm,1.0s
MK31 Makanchi Array 61.51 330 *e*P **P 09 04 10.6 -1.4**
MK31 Makanchi Array 61.51 330 *e*P **P 09 04 10.6 -1.4**
MK32 Makanchi Array 61.51 330 *e*P **P 09 04 10.6 -1.4**
MKAR Makanchi Array 61.51 330 P **P 09 04 10.6 -1.4**
comp=E,7.2nm,1.0s,baz=133,slow=7.8,SNR=13
MKAR Makanchi Array 61.51 330 *e*P **P 09 04 10.6 -1.4**
MKAR pmax pmax
comp=Z,63nm,0.8s
MKAR Makanchi Array 61.51 330 *e*P **P 09 04 10.6 -1.4**
comp=Z,63nm,0.8s
MAKZ Makanchi 61.67 330 *e*P **P 09 04 11.2 -1.9**
MAKZ pmax pmax
comp=Z,19nm,1.4s
MAKZ Makanchi 61.67 330 *e*P **P 09 04 11.2 -1.9**
comp=Z,19nm,1.4s
BOD Bodaibo 62.09 355 *e*P **P 09 04 12.9 -2.7**
BOD pmax pmax
comp=Z,36nm,1.8s
KBL Kabul 62.70 312 *e*P **P 09 04 18.6 -1.9**
KBL pmax pmax
comp=Z,17nm,0.7s
KBL Kabul 62.70 312 *e*P **P 09 04 18.6 -1.9**
comp=Z,17nm,0.7s
AAK Ala-Archa 63.17 323 P **P 09 04 22.1 -1.3**
comp=Z,5.3nm,0.7s,baz=121,slow=7.0,SNR=12
AAK LR LR 09 35 00.2
comp=Z,931nm,20.7s,baz=92,slow=39
AAK Ala-Archa 63.17 323⇓ *e*P **P 09 04 21.9 -1.5**
AAK pmax pmax
comp=Z,66nm,2.0s
AAK Ala-Archa 63.17 323 *e*P **P 09 04 22.5 -0.9**
comp=Z,12nm,1.1s
AAK LR LR
comp=Z,1μm,22.0s
FRU Bishkek 63.21 323 *e*P **P 09 04 20.0 -3.5**
FRU pmax pmax
comp=Z,60nm,1.8s
PEA0 Petropavlovsk- 64.58 23 *e*P **P 09 04 31.9 -0.3**
PETK Petropavlovsk- 64.58 23 P **P 09 04 32.2 -0.1**
comp=Z,2.9nm,0.7s,baz=198,slow=5.2,SNR=6.6
PETK LR LR 09 31 31.2
comp=Z,353nm,22.0s,baz=294,slow=35
PEA1 Petropavlovsk- 64.59 23 *e*P **P 09 04 32.2 -0.1**
PET Petropavlovsk 64.90 24 *e*P **P 09 04 34.7 +0.5**
PET *e*S **S 09 13 15.8 +2.6**
PET *e*SS **SS 09 17 30.4 +5.0**
PET pmax pmax
comp=Z,600nm,15.2s
PET Petropavlovsk 64.90 24 PFAKE 09 04 50.0 +16
PET LR LR
comp=Z,451nm,19.0s
ZAA0 Zalesovo Array 65.58 337 *e*P **P 09 04 36.3 -2.3**
ZALV Zalesovo Beam 65.58 337 P **P 09 04 35.7 -3.0**
comp=Z,12nm,0.9s,baz=128,slow=4.7,SNR=15
ZAA1 Zalesovo Array 65.58 337 *e*P **P 09 04 35.7 -3.0**
KKAR Karatay Array 65.88 321 *e*P **P 09 04 39.6 -1.3**
KKAR pmax pmax
comp=Z,39nm,0.9s
KKAR Karatay Array 65.88 321 *e*P **P 09 04 39.6 -1.3**
comp=Z,39nm,0.9s
KURBB Kurchatov Arra 65.94 331 P **P 09 04 38.8 -2.2**
comp=Z,2.3nm,0.7s,baz=144,slow=5.7,SNR=6.4
KURK Kurchatov 65.95 332 *d* iP **P 09 04 39.0 -2.2**
KURK pmax pmax
comp=Z,87nm,1.7s
KURK Kurchatov 65.95 332 *e*P **P 09 04 39.1 -2.0**
comp=Z,11nm,0.9s
KURK LR LR
comp=Z,2μm,20.0s
YAK Yakutsk 66.28 4 P **P 09 04 40.3 -2.7**
comp=Z,37nm,0.6s,baz=139,slow=1.5,SNR=4.8
YAK Yakutsk 66.28 4 *e*P **P 09 04 43.0 0.0**
YAK pmax pmax
comp=Z,24nm,0.9s
YAK Yakutsk 66.28 4 *e*P **P 09 04 40.3 -2.7**
comp=Z,68nm,0.9s
YAK LR LR
comp=Z,743nm,20.0s
MIDW Midway 66.79 57 PFAKE 09 05 00.0 +13
MIDW LR LR
comp=Z,517nm,19.0s
NVS Novosibirsk 66.86 337 *e*P **P 09 04 45.1 -1.8**
MA2 Magadan 67.55 16 *i* P **P 09 04 53.6 +2.4**
MA2 Magadan 67.55 16 PFAKE 09 05 00.0 +8.8
MA2 LR LR
comp=Z,1μm,20.0s
BIDO Bidbid 67.75 297 P **P 09 04 53.8 +0.6**
SNR=6.1
HOQ Hoqain 68.49 297 P **P 09 04 56.5 -1.4**
SNR=5.7
SEY Seymchan 70.82 14⇑ *e*P **P 09 05 11.1 -0.3**
VOSK Vostochnaya 70.92 330 *e*P **P 09 05 10.0 -2.2**
VOSK pmax pmax
comp=Z,56nm,1.8s
VOSK Vostochnaya 70.92 330 *e*P **P 09 05 10.0 -2.2**
comp=Z,56nm,1.8s
BVAR Borovoye Array 71.39 330 P **P 09 05 13.1 -2.0**
comp=Z,4.6nm,0.8s,baz=126,slow=7.8,SNR=15
BRVK Borovoye 71.46 330⇓ *e*P **P 09 05 13.5 -2.0**
BRVK pmax pmax
comp=Z,70nm,1.7s
BRVK Borovoye 71.46 330 *e*P **P 09 05 13.5 -2.0**
comp=Z,60nm,1.8s
BRVK LR LR
comp=Z,428nm,20.0s
ZRNK Zerenda 72.04 330 *e*P **P 09 05 16.9 -2.0**
ZRNK pmax pmax
comp=Z,60nm,1.8s
ZRNK Zerenda 72.04 330 *e*P **P 09 05 16.9 -2.0**
comp=Z,60nm,1.8s
GEYT Alibeck 72.14 312 P **P 09 05 18.4 -1.5**
comp=Z,2.1nm,0.3s,baz=152,slow=6.7,SNR=5.6
ABPO Ambohimpanom 74.00 252 PFAKE 09 05 40.0 +8.5
ABPO LR LR
comp=Z,753nm,20.0s
MAW Mawson 74.68 200 P **P 09 05 34.3 +0.1**
comp=Z,1.2nm,0.6s,baz=14,slow=9.8,SNR=4.6
MAW LR LR 09 32 44.8
comp=Z,407nm,21.1s,baz=53,slow=31
ABKAR Akbulak array 75.24 323 *e*P **P 09 05 36.3 -1.5**
comp=Z,54nm,0.6s
TIXI Tiksi 75.81 2 P **P 09 05 38.9 -1.7**
comp=Z,8.4nm,0.6s,baz=171,slow=5.0,SNR=13
TIXI Tiksi 75.81 2⇓ *e*P **P 09 05 38.3 -2.2**
TIXI pmax pmax
comp=Z,34nm,1.9s
TIXI Tiksi 75.81 2 *e*P **P 09 05 38.4 -2.2**
comp=Z,21nm,1.1s
TIXI LR LR
comp=Z,806nm,20.0s
VNDA Vanda 76.34 172 P **P 09 05 43.0 -0.7**
comp=Z,4.1nm,0.7s,baz=311,slow=6.8,SNR=21
VNDA LR LR 09 36 49.5
comp=Z,590nm,21.9s,baz=330,slow=34
VNDA Vanda 76.34 172 *e*P **P 09 05 43.6 0.0**
VNDA pmax pmax
comp=Z,9.0nm,1.1s
VNDA Vanda 76.34 172 *e*P **P 09 05 43.6 0.0**
comp=Z,9.4nm,1.1s
AKTO Aktyubinsk 76.86 324 P **P 09 05 45.5 -1.6**
comp=Z,8.3nm,0.7s,baz=106,slow=6.9,SNR=31
AKTO LR LR 09 41 33.8
comp=Z,329nm,18.6s,baz=112,slow=37
NRIK Noril'sk 76.96 348 P **P 09 05 46.0 -1.2**
comp=Z,8.1nm,1.0s,baz=147,slow=6.1,SNR=15
SBA Scott Base 77.31 171 *e*P **P 09 05 49.9 +0.8**
SBA pmax pmax
comp=Z,10.0nm,1.0s
SBA Scott Base 77.31 171 *e*P **P 09 05 49.9 +0.8**
comp=Z,9.8nm,1.0s
RAR Rarotonga 77.80 111 LR LR 09 35 48.6
comp=Z,160nm,20.8s,baz=176,slow=32
BILL Bilibino 78.42 16 PFAKE 09 06 10.0 +15
BILL LR LR
comp=Z,548nm,19.0s
ARU Arti 79.03 330 P **P 09 05 56.2 -2.7**
comp=Z,5.2nm,0.2s,baz=116,slow=5.3,SNR=11

MAJO Matsushiro 43.32 19 *e*P **P 09 01 56.5 -0.8**
comp=Z,78nm,1.6s
MAJO LR LR
comp=Z,1μm,21.0s
MJAR Matsushiro Arr 43.32 19 P **P 09 01 55.6 -1.7**
comp=Z,11nm,0.9s,baz=195,slow=8.7,SNR=20
MJB9 Matsu-Tunnel 43.32 19 *e*P **P 09 01 57.3 0.0**
comp=Z,7.1nm,0.5s
LZH Lanzhou 43.39 339 *e*P **P 09 01 57.4 -0.6**
LZH pP pP 09 02 03.1 -5.2
LZH sP sP 09 02 07.0 -5.5
LZH pmax pmax
comp=Z,21nm,1.0s
BJT Baijiatuan 44.25 354 PFAKE 09 02 20.0 +15
BJT LR LR
comp=Z,1μm,20.0s
BJI Beijing 44.27 354 P **P 09 02 08.0 +3.2**
BJI pmax pmax
comp=Z,12nm,1.0s
BJI pmax pmax
comp=Z,600nm,13.3s
BJI LR LR
comp=Z,300nm,19.2s
BJI LR LR
comp=Z,910nm,18.6s
BJI LR LR
comp=Z,920nm,24.6s
LSA Lhasa 44.62 321 *e*P **P 09 02 08.0 -0.4**
LSA pmax pmax
comp=Z,43nm,1.3s
LSA MLR MLR
comp=Z,755nm,20.0s
LSA Lhasa 44.62 321 *e*P **P 09 02 08.0 -0.4**
comp=Z,43nm,1.3s
LSA LR LR
comp=Z,755nm,20.0s
HHC Hu-ho-hao-te 45.74 349 *e*P **P 09 02 19.5 +2.9**
HHC S S 09 09 08.2 +10
HHC pmax pmax
comp=Z,17nm,0.9s
HHC pmax pmax
comp=Z,320nm,10.2s
HHC LR LR
comp=Z,710nm,15.2s
HHC LR LR
comp=Z,990nm,17.2s
HHC LR LR
comp=Z,680nm,22.6s
MSHR Mys Shultsa 47.30 9 *d* iP **P 09 02 27.5 -1.1**
HYB Hyderabad 47.69 298 *i* P **P 09 02 30.0 -2.2**
GTA Gaotai 47.82 337 *e*P **P 09 02 32.1 -0.9**
GTA pP pP 09 02 36.5 -6.9
GTA sP sP 09 02 39.0 -8.6
GTA PcP **PcP 09 04 04.8 +3.3**
GTA pmax pmax
comp=Z,12nm,1.5s
CN2 Changchun 47.85 4 *e*P P 09 02 39.5 +6.5
USRK Ussuriysk Ar. 49.01 10 P **P 09 02 40.8 -1.1**
comp=Z,23nm,0.8s,baz=196,slow=8.2,SNR=35
MDJ Mudanjiang 49.06 7 P **P 09 02 41.6 -0.7**
MDJ PP **PP 09 04 34.0 -2.2**
MDJ S **S 09 09 52.2 +7.5**
MDJ pmax pmax
comp=Z,20nm,1.4s
MDJ pmax pmax
comp=Z,380nm,6.3s
MDJ LR LR
comp=Z,670nm,35.4s
MDJ LR LR
comp=Z,760nm,27.6s
MDJ LR LR
comp=Z,1μm,36.8s
MDJ Mudanjiang 49.06 7 *e*P **P 09 02 41.3 -1.0**
comp=Z,32nm,0.8s
MDJ LR LR
comp=Z,791nm,21.0s
DGAR Diego Garcia 49.10 264 PFAKE 09 02 50.0 +6.9
DGAR LR LR
comp=Z,1μm,19.0s
ERM Erimo 49.92 21 PFAKE 09 03 00.0 +11
ERM LR LR
comp=Z,1μm,21.0s
ASAJ Asahikawa 51.59 19 *e*P **P 09 03 01.4 0.0**
comp=Z,39nm,1.2s
HIA Hailar 53.23 358⇓ *e*P **P 09 03 14.1 +0.6**
HIA pmax pmax
comp=Z,29nm,1.3s
HIA Hailar 53.23 358 PFAKE 09 03 20.0 +6.5
HIA LR LR
comp=Z,972nm,20.0s
SONA0 Songino Array 53.49 347 *e*P **P 09 03 13.6 -2.0**
comp=Z,16nm,1.0s
SONM Songino Array 53.49 347 P **P 09 03 13.6 -2.0**
comp=Z,4.2nm,0.7s,baz=164,slow=8.0,SNR=23
SONA1 Songino Array 53.50 347 *e*P **P 09 03 13.8 -1.9**
HABR Khabarovsk 53.69 11 *c e*P **P 09 03 14.6 -2.2**
HABR *e* 09 05 15.6
HABR *e*PPP PPP 09 06 22.2
HABR *e*S **S 09 10 49.1 +0.7**
HABR *e**SS sS 09 10 54.7 -11
HABR *e* 09 13 04.1
HABR *e*SSS SSS 09 16 24.9
HABR pmax pmax
comp=E,22nm,2.0s
HABR pmax pmax
comp=Z,46nm,2.0s
HABR pmax pmax
comp=N,8.0nm,1.0s
HABR MLR MLR
comp=Z,347nm,20.0s
YSS Yuzh-Sakhalins 54.18 18⇓ *e*P **P 09 03 23.4 +3.0**
YSS pmax pmax
comp=Z,24nm,1.2s
YSS Yuzh-Sakhalins 54.18 18 *e*P **P 09 03 19.5 -0.9**
comp=Z,20nm,0.9s
YSS LR LR
comp=Z,320nm,20.0s
KUR Kuril'sk 54.43 23 *e*P **P 09 03 24.8 +2.5**
KUR *e*S **S 09 10 59.3 +0.8**
KUR *e*SS **SS 09 14 40.1 -1.3**
KUR pmax pmax
comp=Z,31nm,1.7s
KUR MLR MLR
comp=N,180nm,16.0s
KUR MLR MLR
comp=E,263nm,16.0s
KUR MLR MLR
comp=Z,511nm,16.0s
ZAK Zakamensk 56.60 346 *e*P **P 09 03 34.0 -4.0**
ZAK pmax pmax
comp=Z,4.0nm,1.3s
MSVF Nonsavu 56.72 108⇑ *e*P **P 09 03 37.9 -1.5**
MSVF pmax pmax
comp=Z,19nm,1.1s
FUNA Funafuti 57.25 97 PFAKE 09 04 00.0 +17
FUNA LR LR
comp=Z,4μm,19.0s
TYV Tymovskoe 57.68 16 *e*P **P 09 03 49.8 +4.4**
TYV pmax pmax
comp=Z,4.0nm,0.6s
TLY Talaya 57.72 347 P **P 09 03 44.3 -1.4**
comp=Z,3.0nm,0.6s,baz=233,slow=3.8,SNR=5.3
TLY Talaya 57.72 347 *e*P **P 09 03 44.8 -1.0**
TLY pmax pmax
comp=Z,9.0nm,1.0s
TLY Talaya 57.72 347 *e*P **P 09 03 44.7 -1.0**
comp=Z,7.7nm,1.0s
TLY LR LR
comp=Z,556nm,20.0s
MOY Mondy 58.35 345 *e*P **P 09 03 53.2 +2.9**
RPZ Rata Peaks 58.61 140 P **P 09 03 52.4 +0.2**
comp=Z,84nm,0.9s,baz=321,slow=10,SNR=14
RPZ Rata Peaks 58.61 140 *e*P **P 09 03 52.4 +0.2**
comp=Z,80nm,0.9s
KSH Kashi 60.47 320 P **P 09 04 04.3 -0.9**
KSH *e*pP pP 09 04 08.7 -7.2
KSH PcS **PcS 09 08 50.4 -2.0**
KSH S **S 09 12 14.0 -4.5**
KSH ScS SKKSac 09 13 50.8 -2.7
KSH pmax pmax
comp=Z,10.0nm,0.6s
KSH pmax pmax
comp=Z,420nm,8.4s
KSH LR LR
comp=Z,760nm,17.1s
KSH LR LR

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
ARU	Arti	79.03	330	d iP	P	09 05 56.6	-2.3
ARU				S	S	09 15 53.5	-1.8
ARU				pmax	pmax		
	comp=Z,33nm,1.7s						
ARU	Arti	79.03	330	eP	P	09 05 56.4	-2.5
	comp=Z,36nm,1.4s						
ARU				LR	LR		
	comp=Z,573nm,19.0s						
GNI	Garni	82.76	311	P	P	09 06 17.2	-2.2
	comp=Z,6.9nm,0.5s,baz=245,slow=6.9,SNR=4.8						
GNI	Garni	82.76	311	⇓eP	P	09 06 21.0	+1.6
GNI				pmax	pmax		
	comp=Z,70nm,1.4s						
GNI	Garni	82.76	311	eP	P	09 06 17.2	-2.2
GNI				LR	LR		
	comp=Z,525nm,20.0s						
SYO	Syowa Base	83.32	201	⇓eP	P	09 06 19.9	-1.6
SYO	Syowa Base	83.32	201	⇑ePcP	PcP	09 06 25.0	-0.9
ZEI	Tsey	83.90	314	eP	P	09 06 23.7	-1.6
ZEI				pmax	pmax		
	comp=Z,91nm,1.3s						
KMBO	Kilima Mbogo	84.40	269	P	P	09 06 27.4	-1.1
	comp=Z,2.0nm,0.7s,baz=134,slow=3.3,SNR=5.2						
KMBO				LR	LR	09 43 31.1	
	comp=Z,537nm,18.1s,baz=100,slow=35						
KMBO	Kilima Mbogo	84.40	269	eP	P	09 06 27.4	-1.1
KMBO				pmax	pmax		
	comp=Z,16nm,1.5s						
KMBO				MLR	MLR		
	comp=Z,868nm,19.0s						
KMBO	Kilima Mbogo	84.40	269	eP	P	09 06 27.4	-1.1
	comp=Z,16nm,1.5s						
KMBO				LR	LR		
	comp=Z,868nm,19.0s						
KBZ	Khabaz	84.80	314	P	P	09 06 28.4	-1.1
	comp=Z,6.0nm,0.8s,baz=136,slow=3.5,SNR=11						
KBZ				LR	LR	09 52 50.1	
	comp=Z,256nm,18.2s,baz=82,slow=42						
NEY	Neytrino	84.84	314	⇓eP	P	09 06 30.7	+0.7
NEY				pmax	pmax		
	comp=Z,19nm,2.3s						
GOF	Gofitskoye	84.95	316	⇑eP	P	09 06 29.9	-0.4
GOF				pmax	pmax		
	comp=Z,57nm,1.5s						
KVAR	Kislovodsk Arr	84.98	315	P	P	09 06 29.0	-1.7
	comp=Z,5.3nm,0.4s,baz=88,slow=5.6,SNR=4.9						
KIV	Kislovodsk	84.99	315	eP	P	09 06 32.2	+1.5
KIV				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KIV	Kislovodsk	84.99	315	P	P	09 06 31.4	+0.7
	SNR=7.4						
KIV	Kislovodsk	84.99	315	eP	P	09 06 31.8	+1.2
	comp=Z,68nm,1.8s						
KIV				LR	LR		
	comp=Z,331nm,19.0s						
QSPA	South Pole Qui	85.81	180	eP	P	09 06 33.8	-0.5
QSPA				LR	LR		
	comp=Z,749nm,20.0s						
SOC	Sochi	87.05	314	iP	P	09 06 41.2	+0.5
SOC				pmax	pmax		
	comp=Z,12nm,0.5s						
ASF	Jabal al Asfar	87.81	302	P	P	09 06 44.2	-0.6
	comp=Z,0.7nm,0.3s,baz=20,slow=1.8,SNR=5.5						
ANN	Anapa	88.84	315	eP	P	09 06 47.4	-1.8
ANN				eS	SKSac	09 17 16.5	+0.3
ANN				pmax	pmax		
	comp=Z,55nm,1.5s						
KLMR	Klimovskoe	89.80	331	eP	P	09 06 49.9	-3.4
KLMR				pmax	pmax		
	comp=Z,14nm,1.0s						
OBN	Obninsk	90.60	325	iP	P	09 06 57.9	+0.8
OBN				i		09 10 32.1	
OBN				pmax	pmax		
	comp=Z,35nm,1.2s						
OBN	Obninsk	90.60	325	PFAKE		09 07 10.0	+13
OBN				LR	LR		
	comp=Z,508nm,20.0s						
MBAR	Mbarara	90.93	269	PFAKE		09 07 10.0	+10
MBAR				LR	LR		
	comp=Z,1µm,22.0s						
CSS	Mathiatis	91.03	305	PFAKE		09 07 10.0	+10
CSS				LR	LR		
	comp=Z,114nm,19.0s						
BR101	Keskin Array S	91.15	310	eP	P	09 06 58.5	-1.8
BRTR	Keskin Array B	91.15	310	P	P	09 06 58.5	-1.8
	comp=Z,1.6nm,0.8s,baz=126,slow=6.0,SNR=7.2						
BRTR				LR	LR	09 55 08.6	
	comp=Z,114nm,18.6s,baz=77,slow=40						
KDAK	Kodiak Island	91.19	32	PFAKE		09 07 10.0	+10
KDAK				LR	LR		
	comp=Z,416nm,21.0s						
ANTO	Ankara	91.81	310	PFAKE		09 07 10.0	+6.7
ANTO				LR	LR		
	comp=Z,263nm,20.0s						
BR231	Keskin MP Arra	91.82	310	eP	P	09 06 58.7	-4.7
CAST	Castle Rocks	91.98	27	eP	P	09 07 02.9	-0.6
	comp=Z,4.9nm,1.0s						
LSZ	Lusaka	92.31	255	PFAKE		09 07 20.0	+14
LSZ				LR	LR		
	comp=Z,708nm,20.0s						
SUA	Susitna One	92.44	29	eP	P	09 07 01.8	-3.9
LVZ	Lovozero	92.71	338	PFAKE		09 07 20.0	+13
LVZ				LR	LR		
	comp=Z,547nm,19.0s						
COLD	Coldfoot	93.06	23	eP	P	09 07 08.1	-0.3
	comp=Z,4.1nm,1.0s						
APA	Apatity	93.16	337	eP	P	09 07 24.0	+15
APA				i		09 17 38.0	
APA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
APA				MLR	MLR		
	comp=Z,600nm,18.0s						
MCK	McKinley	93.41	26	eP	P	09 07 09.7	-0.4
MCK				pmax	pmax		
	comp=Z,13nm,1.3s						
MCK	McKinley	93.41	26	eP	P	09 07 09.7	-0.4
	comp=Z,13nm,1.3s						
BOSA	Boshof	93.69	241	P	P	09 07 10.8	-1.5
	comp=Z,2.6nm,0.9s,baz=107,slow=5.1,SNR=4.3						
BOSA				LR	LR	09 42 44.1	
	comp=Z,545nm,20.7s,baz=24,slow=31						
WRH	Wood River Hil	93.80	26	eP	P	09 07 12.1	+0.3
	comp=Z,42nm,2.0s						
COLA	College	93.92	25	PFAKE		09 07 20.0	+7.7
COLA				LR	LR		
	comp=Z,587nm,19.0s						
CCB	Clear Creek Bu	93.93	26	eP	P	09 07 11.4	-1.0
	comp=Z,27nm,1.9s						
HDA	Harding Lake	94.30	26	eP	P	09 07 13.5	-0.6
	comp=Z,88nm,2.0s						
ILAR	Eielson Array	94.33	25	P	P	09 07 14.3	+0.1
	comp=Z,0.7nm,0.8s,baz=229,slow=5.9,SNR=7.0						
ILAR				PP	PP	09 11 00.6	-0.9
	comp=Z,0.5nm,1.1s,baz=280,slow=6.2,SNR=4.3						
ILAR				PKKPbc	PKKPdf	09 24 13.7	-2.6
	comp=Z,0.6nm,0.8s,baz=82,slow=1.4,SNR=10						
AKASG	Malin Array Be	94.77	320	P	P	09 07 14.1	-2.5
	comp=Z,2.1nm,0.7s,baz=76,slow=4.2,SNR=8.9						
AKASG				LR	LR	09 56 04.1	
	comp=Z,207nm,21.6s,baz=60,slow=39						
KIEV	Kiev	94.78	320	⇑eP	P	09 07 18.1	+1.5
KIEV	Kiev	94.78	320	PFAKE		09 07 30.0	+13
KIEV				LR	LR		
	comp=Z,387nm,20.0s						
VSU	Vasula	96.13	328	⇑eP	P	09 07 24.6	+2.1
VSU				pmax	pmax		
	comp=Z,39nm,1.7s						
EGAK	Eagle	96.78	25	PFAKE		09 07 40.0	+15
EGAK				LR	LR		
	comp=Z,587nm,20.0s						
SUR	Sutherland	96.97	237	PFAKE		09 07 40.0	+13
SUR				LR	LR		
	comp=Z,1µm,19.0s						
MLR	Muntele Rosu	96.99	315	P	P	09 07 25.1	-1.8
	comp=Z,0.4nm,0.5s,baz=80,slow=1.9,SNR=5.5						
MLR	Muntele Rosu	96.99	315	eP	P	09 07 26.4	-0.6
MLR				pmax	pmax		
	comp=Z,34nm,2.0s						
MLR	Muntele Rosu	96.99	315	eP	P	09 07 26.4	-0.6
	comp=Z,34nm,2.0s						
SANT	Santorini	97.48	306	PFAKE		09 07 40.0	+11
SANT				LR	LR		
	comp=Z,325nm,19.0s						
DAWY	Dawson	97.61	26	eP	P	09 07 28.3	-0.9
	comp=Z,16nm,1.9s						
KBS	Kingsbay	97.81	349	PFAKE		09 07 40.0	+10
KBS				LR	LR		
	comp=Z,707nm,20.0s						
CRVS	Cervenica-Dubn	99.86	319	ePDIFF	Pdif	09 07 40.8	+1.2
PSZ	Piszkesteto	100.99	318	PFAKE		09 08 00.0	+15
PSZ				LR	LR		
	comp=Z,304nm,19.0s						
TIR	Tirane	101.63	311	PFAKE		09 08 00.0	+12
TIR				LR	LR		
	comp=Z,355nm,20.0s						
TSUM	Tsumeb	101.92	249	PFAKE		09 08 00.0	+10
TSUM				LR	LR		
	comp=Z,719nm,21.0s						
WRAK	Wrangell Islan	102.24	33	PFAKE		09 08 00.0	+10
WRAK				LR	LR		
	comp=Z,802nm,21.0s						
TIP	Timpagrande	104.20	309	PFAKE		09 08 10.0	+11
TIP				LR	LR		
	comp=Z,427nm,20.0s						
KONO	Kongsberg	104.64	331	PFAKE		09 08 10.0	+9.4
KONO				LR	LR		
	comp=Z,545nm,21.0s						
CUC	Castrocucco	104.83	310	PFAKE		09 08 10.0	+8.0
CUC				LR	LR		
	comp=Z,210nm,20.0s						
CEL	Celeste	104.98	308	PFAKE		09 08 10.0	+7.3
CEL				LR	LR		
	comp=Z,360nm,21.0s						
AQU	L'Aquila	106.30	313	PFAKE		09 12 30.0	
AQU				LR	LR		
	comp=Z,343nm,20.0s						
WDD	Wied Dalam	106.35	306	PFAKE		09 12 30.0	
WDD				LR	LR		
	comp=Z,420nm,19.0s						
CLTB	Caltabellotta	107.17	308	PFAKE		09 12 30.0	
CLTB				LR	LR		
	comp=Z,122nm,19.0s						
VLC	Villacollemand	108.12	315	PFAKE		09 12 30.0	
VLC				LR	LR		
	comp=Z,155nm,20.0s						
TUE	Stuetta	108.32	318	PFAKE		09 12 30.0	
TUE				LR	LR		
	comp=Z,431nm,19.0s						
BFO	Black Forest	108.53	320	PFAKE		09 12 30.0	
BFO				LR	LR		
	comp=Z,241nm,20.0s						
YKA	Yellowknife Ar	108.69	24	PKiKP	PKiKP	09 12 23.2	-0.4
	comp=Z,0.3nm,0.7s,baz=305,slow=2.1,SNR=6.6						
YKA				PKKPbc	PKKPbc	09 23 31.6	-3.5
	comp=Z,0.7nm,0.8s,baz=126,slow=4.3,SNR=14						
NLWA	Neilton Lookou	109.44	41	PFAKE		09 12 40.0	
NLWA				LR	LR		
	comp=Z,1µm,19.0s						
WLF	Walferdange	109.53	322	PFAKE		09 12 40.0	
WLF				LR	LR		
	comp=Z,326nm,19.0s						
VSL	Villasalto	109.81	310	PFAKE		09 12 40.0	
VSL				LR	LR		
	comp=Z,261nm,19.0s						
BNI	Bardonecchia	110.49	317	PFAKE		09 12 40.0	
BNI				LR	LR		
	comp=Z,488nm,21.0s						
PMSA	Palmer Station	111.11	177	PFAKE		09 12 40.0	
PMSA				LR	LR		
	comp=Z,530nm,21.0s						
SSB	Saint Sauveur	111.87	317	PFAKE		09 12 40.0	
SSB				LR	LR		
	comp=Z,295nm,21.0s						
HAWA	Hanford	112.58	41	PFAKE		09 12 40.0	
HAWA				LR	LR		
	comp=Z,548nm,19.0s						
ESK	Eskdalemuir	112.67	329	PFAKE		09 12 40.0	
ESK				LR	LR		
	comp=Z,492nm,19.0s						
NEW	Newport	113.48	39	PFAKE		09 12 40.0	
NEW				LR	LR		
	comp=Z,785nm,22.0s						
BORG	Borgarnes	114.01	344	PFAKE		09 12 40.0	+6.4
BORG				LR	LR		
	comp=Z,464nm,20.0s						
WVOR	Wild Horse Val	114.43	45	PFAKE		09 12 50.0	+15
WVOR				LR	LR		
	comp=Z,567nm,20.0s						
BMO	Blue Mountains	114.57	42	PFAKE		09 12 50.0	+15
BMO				LR	LR		
	comp=Z,679nm,20.0s						
TAM	Tamanrasset	115.72	293	PFAKE		09 12 50.0	+12
TAM				LR	LR		
	comp=Z,295nm,19.0s						
HLID	Hailey	116.97	43	PFAKE		09 12 50.0	+10
HLID				LR	LR		
	comp=Z,615nm,19.0s						
SFJD	Kangerlussuaq	117.04	357	PFAKE		09 12 50.0	+11
SFJD				LR	LR		
	comp=Z,358nm,19.0s						
BOZ	Bozeman (W)	117.97	40	PFAKE		09 12 50.0	+7.9
BOZ				LR	LR		
	comp=Z,721nm,19.0s						
FFC	Flin Flon	118.49	27	PFAKE		09 12 50.0	+7.4
FFC				LR	LR		
	comp=Z,775nm,22.0s						
PFO	Pinyon Flats O	118.59	54	PFAKE		09 12 50.0	+6.4
PFO				LR	LR		
	comp=Z,789nm,21.0s						
LKWY	Lake	119.22	40	PFAKE		09 13 00.0	+15
LKWY				LR	LR		
	comp=Z,2µm,19.0s						
DUG	Dugway, Tooele	119.31	46	PFAKE		09 13 00.0	+15
DUG				LR	LR		
	comp=Z,1µm,19.0s						
AHID	Auburn Hatcher	119.51	42	PFAKE		09 13 00.0	+15
AHID				LR	LR		
	comp=Z,927nm,19.0s						
HWUT	Hardware Ranch	119.66	44	PFAKE		09 13 00.0	+15
HWUT				LR	LR		
	comp=Z,733nm,20.0s						
RLMT	Red Lodge	119.69	39	PFAKE		09 13 00.0	+15
RLMT				LR	LR		
	comp=Z,739nm,20.0s						
PAB	San Pablo	119.98	314	PFAKE		09 13 00.0	+14
PAB				LR	LR		
	comp=Z,254nm,19.0s						
TOA0	Torodi Ar. Sit	120.16	283	ePKPdf	PKPdf	09 12 45.4	-1.5
TORD	Torodi Ar. Bea	120.16	283	PKP	PKPdf	09 12 45.8	-1.1
	comp=Z,1.8nm,0.7s,baz=62,slow=2.0,SNR=11						
TOA1	Torodi Ar. Sit	120.16	283	ePKPdf	PKPdf	09 12 45.8	-1.1
BW06	Boulder Array	120.54	42	PFAKE		09 13 00.0	+13
BW06				LR	LR		
	comp=Z,882nm,20.0s						
LAO	LASA Array	120.81	37	PFAKE		09 13 00.0	+13
LAO				LR	LR		
	comp=Z,564nm,20.0s						
DGMT	Dagmar	121.03	34	PFAKE		09 13 00.0	+12
DGMT				LR	LR		
	comp=Z,654nm,19.0s						
MTE	Manteigas	121.90	316	PFAKE		09 13 00.0	+10
MTE				LR	LR		
	comp=Z,295nm,19.0s						
WUAZ	Wupatki	122.02	50	PFAKE		09 13 00.0	+10
WUAZ				LR	LR		
	comp=Z,586nm,19.0s						
TUC	Tucson	123.53	54	PFAKE		09 13 00.0	+6.9
TUC				LR	LR		
	comp=Z,1µm,21.0s						
MVCO	Mesa Verde	123.57	47	PFAKE		09 13 00.0	+6.8
MVCO				LR	LR		
	comp=Z,663nm,19.0s						
RTC	Rabat Centre	123.83	309	PFAKE		09 13 00.0	+6.6
RTC				LR	LR		
	comp=Z,1µm,19.0s						
ISCO	Idaho Springs	124.52	43	PFAKE		09 13 10.0	+15
ISCO				LR	LR		
	comp=Z,918nm,19.0s						
SDCO	Great Sand Dun	125.51	46	PFAKE		09 13 10.0	+13
SDCO				LR	LR		
	comp=Z,584nm,19.0s						
AGMN	Agassiz Nation	125.55	30	PFAKE		09 13 10.0	+14
AGMN				LR	LR		
	comp=Z,531nm,20.0s						
ANMO	Albuquerque	125.98	49	PFAKE		09 13 10.0	+12
ANMO				LR	LR		
	comp=Z,671nm,19.0s						
OGNE	Ogallala	126.35	41	PFAKE		09 13 10.0	+12
OGNE				LR	LR		
	comp=Z,615nm,19.0s						
EYMN	Ely	127.90	28	PFAKE		09 13 10.0	+9.1
EYMN				LR	LR		
	comp=Z,629nm,22.0s						
MNTX	Cornudas Mount	128.05	52	PFAKE		09 13 10.0	+8.4
MNTX				LR	LR		
	comp=Z,562nm,19.0s						
ECSD	EROS Data Cent	128.08	35	PFAKE		09 13 10.0	+8.7
ECSD				LR	LR		
	comp=Z,514nm,19.0s						
CBKS	Cedar Bluff	128.97	42	PFAKE		09 13 10.0	+6.8
CBKS				LR	LR		
	comp=Z,509nm,19.0s						
COWI	Conover	130.35	28	PFAKE		09 13 20.0	+14
COWI				LR	LR		
	comp=Z,562nm,19.0s						
KSU1	Kansas State U	130.85	40	PFAKE		09 13 20.0	+13
KSU1				LR	LR		
	comp=Z,730nm,19.0s						
SCIA	State Center	131.17	35	PFAKE		09 13 20.0	+13
SCIA				LR	LR		
	comp=Z,1µm,20.0s						
WMOK	Wichita Mounta	131.72	46	PFAKE		09 13 20.0	+11
WMOK				LR	LR		
	comp=Z,711nm,19.0s						
JFWS	Jewell Farm	132.10	32	PFAKE		09 13 20.0	+11
JFWS				LR	LR		
	comp=Z,465nm,20.0s						
JCT	Junction City	132.92	51	PFAKE		09 13 20.0	+9.0
JCT				LR	LR		
	comp=Z,389nm,19.0s						
HDIL	Hopedale	134.26	33	PFAKE		09 13 20.0	+6.9
HDIL				LR	LR		
	comp=Z,524nm,19.0s						
MIAR	Mount Ida	135.45	43	PFAKE		09 13 30.0	+14
MIAR				LR	LR		
	comp=Z,617nm,20.0s						
KVTX	Kingsville	135.68	54	PFAKE		09 13 30.0	+14
KVTX				LR	LR		
	comp=Z,718nm,22.0s						
AAM	Ann Arbor	135.79	27	PFAKE		09 13 30.0	+14
AAM				LR	LR		
	comp=Z,572nm,20.0s						
NATX	Nacogdoches	136.20	47	PFAKE		09 13 30.0	+13
NATX				LR	LR		
	comp=Z,727nm,19.0s						
LONY	Lake Ozonia	137.23	17	PFAKE		09 13 30.0	+11
LONY				LR	LR		
	comp=Z,425nm,21.0s						
ACSO	Alum Creek Sta	137.73	28	PFAKE		09 13 30.0	+10
ACSO				LR	LR		
	comp=Z,562nm,20.0s						
TRQA	Tornquist	137.86	176	PFAKE		09 13 30.0	+10
TRQA				LR	LR		
	comp=Z,531nm,20.0s						
PKME	Peaks-Kenny Pk	137.93	12	PFAKE		09 13 30.0	+10
PKME				LR	LR		
	comp=Z,601nm,19.0s						
BINY	Binghamton	138.96	20	PFAKE		09 13 30.0	+8.2
BINY				LR	LR		
	comp=Z,507nm,19.0s						
BLA	Blacksburg	141.34	29	PFAKE		09 13 40.0	+14
BLA				LR	LR		
	comp=Z,440nm,20.0s						
BRAL	Brewton	141.86	42	PFAKE		09 13 40.0	+13
BRAL				LR	LR		
	comp=Z,536nm,20.0s						
CBN	Corbin Frederi	141.90	25	PFAKE		09 13 40.0	+13
CBN				LR	LR		
	comp=Z,392nm,20.0s						
GOGA	Godfrey	142.60	36	ePKIKP	PKPdf	09 13 30.2	+1.6
GOGA				MLR	MLR		
	comp=Z,569nm,19.0s						
GOGA	Godfrey	142.60	36	ePKPdf	PKPdf	09 13 30.2	+1.6
GOGA				LR	LR		
	comp=Z,569nm,19.0s						
TIGA	Tifton	143.91	38	ePKPdf	PKPbc	09 13 29.5	+0.8
CNNC	Cliffs of the	144.14	28	PFAKE		09 13 40.0	+8.8
CNNC				LR	LR		
	comp=Z,423nm,19.0s						
NHSC	New Hope	144.68	33	PFAKE		09 13 40.0	+7.8
NHSC				LR	LR		
	comp=Z,405nm,20.0s						
LCO	Las Campanas	144.93	161	ePKPbc	PKPab	09 13 32.2	-0.1
CPUP	Villa Florida	149.68	182	PKPbc	PKPbc	09 13 43.9	-1.5
	comp=Z,6.0nm,0.8s,baz=165,slow=2.6,SNR=18						
CPUP	Villa Florida	149.68	182	ePKP2	PKPbc	09 13 45.2	-0.2
CPUP	Villa Florida	149.68	182	ePKPbc	PKPbc	09 13 45.2	-0.2
SPB	Sao Paulo	150.46	201	PFAKE		09 13 50.0	+2.6
SPB				LR	LR		
	comp=Z,414nm,19.0s						
LVC	Limon Verde	151.44	159	ePKPab	PKPab	09 13 57.0	-1.4
RCBR	Riachuelo	155.55	246	PFAKE		09 14 00.0	+10
RCBR				LR	LR		
	comp=Z,396nm,19.0s						
MTDJ	Mount Denham	156.54	52	PFAKE		09 14 00.0	+9.0
MTDJ				LR	LR		
	comp=Z,353nm,21.0s						
GTBY	Guantanamo Bay	157.31	45	PFAKE		09 14 00.0	+8.2
GTBY				LR	LR		
	comp=Z,440nm,20.0s						
LPAZ	La Paz	157.47	155	PKP	PKPdf	09 13 52.5	-0.5
	comp=Z,0.6nm,0.7s,baz=270,slow=10,SNR=3.3						
LPAZ				PKPab	PKPab	09 14 24.0	-0.4
	comp=Z,2.7nm,0.9s,baz=176,slow=3.3,SNR=7.9						
GRTK	Grand Turk	158.71	35	PFAKE		09 14 00.0	+6.5
GRTK				LR	LR		
	comp=Z,392nm,19.0s						
OTAV	Otavalo	159.48	100	PFAKE		09 14 10.0	+15
OTAV				LR	LR		
	comp=Z,259nm,20.0s						
SDDR	Presa de Saban	160.54	40	PFAKE		09 14 10.0	+14
SDDR				LR	LR		
	comp=Z,405nm,20.0s						
SJG	San Juan	164.13	28	PFAKE		09 14 10.0	+11
SJG				LR	LR		
	comp=Z,300nm,21.0s						
SAML	Samuel	166.10	159	PFAKE		09 14 10.0	+8.9
SAML				LR	LR		
	comp=Z,432nm,19.0s						
ANWB	Willy Bob	166.14	14	PFAKE		09 14 10.0	+9.0
ANWB				LR	LR		
	comp=Z,226nm,21.0s						
SDV	Santo Domingo	166.86	68	PFAKE		09 14 10.0	+8.1
SDV				LR	LR		
	comp=Z,488nm,20.0s						
FDF	Fort de France	169.12	15	PFAKE		09 14 10.0	+6.8
FDF				LR	LR		
	comp=Z,282nm,19.0s						
GRGR	Grenville	171.40	23	PFAKE		09 14 10.0	+5.5
GRGR				LR	LR		
	comp=Z,355nm,21.0s						

JMA 11 08:56:01.4±0.2, 37°.10N×143°.81E, h60km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	2.36	277	eS	Sn	08 57 06.6	+1.0
JIO	Ouri	2.37	305	P	Pn	08 56 39.1	+1.2
JIO				eS	Sn	08 57 06.9	+1.1
ONAJ	Iwakimizuishiy	2.41	271	P	Pn	08 56 39.5	+1.1
JMM	Marumori	2.52	289	eS	Sn	08 57 10.6	+1.2
JMK	Ichinoseki	2.76	313	eS	Sn	08 57 16.5	+1.2
JFT	Otama	2.80	280	eS	Sn	08 57 18.8	+2.4
JOM	Ohasama	3.09	321	eS	Sn	08 57 24.1	+0.7
JYK	Kaneyama	3.27	305	eS	Sn	08 57 29.9	+1.9
JAG	Ashikaga	3.56	260	P	Pn	08 56 55.5	+1.3
JRY	Ryogami san	4.10	256	P	Pn	08 57 02.1	+0.6
MAT	Matsushiro	4.53	265	P	Pn	08 57 10.2	+2.8
MAT				S	Sn	08 57 59.9	+1.1
JOT	Ohata	4.78	334	P	Pn	08 57 12.4	+1.5
JHJ2	Mitsune	5.15	221	P	Pn	08 57 16.5	+0.6
JCH	Churui	5.52	357	P	Pn	08 57 20.1	-0.8

IDC 11 08:57:46.7±1.5, 29°.44S×176°.39W, h0km, mb4.0/2, mb1 4.3/3, mb1mx3.8/36, mbtmp4.1/3, ML3.4/1, Error ellipse: s-maj=34.8km s-min=26.1km az=8.0

ISC 11 08:57:49.4±1.5, 29°.5S±0°.1×176°.4W±0°.1, h21km, n6, σ1§50/9, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
RAO	Raoul Island	1.39	280	Pn	Pb	08 58 14.4	-0.3
	242nm,0.3s,baz=84,slow=18,SNR=6.9						

RAO				Sn		**Sb**	**08 58 33.2**	**+1.2**
	352nm,0.3s,baz=45,slow=22,SNR=6.8							
URZ	**Urewera**	**10.28 210**		Pn		**Pn**	**09 00 14.5**	**-1.1**
	0.3nm,0.3s,baz=256,slow=4.2,SNR=1.9							
URZ				Sn		**Sn**	**09 02 10.7**	**+0.5**
	3.1nm,0.3s,baz=259,slow=21,SNR=7.5							
ASAR	**Alice Springs**	**44.60 265**	P			**P**	**09 06 00.1**	**-0.3**
	1.4nm,0.5s,baz=101,slow=6.6,SNR=18							
WRA	**Warramunga Arr**	**45.51 270**	P			**P**	**09 06 06.8**	**-0.9**
	0.8nm,0.4s,baz=109,slow=8.1,SNR=8.0							
AKASG	**Malin Array Be**	**151.43 325**	PKPbc			**PKPbc**	**09 17 42.0**	**+0.7**
	1.0nm,0.6s,baz=43,slow=2.5,SNR=4.7							
AKASG			PKPab			**PKPab**	**09 17 48.3**	**-1.4**
	0.7nm,0.3s,baz=47,slow=3.5,SNR=5.9							
TORD	**Torodi Ar. Bea**	**163.62 173**	PKPab			**PKPab**	**09 18 45.6**	**+2.7**
	0.4nm,0.6s,baz=183,slow=5.3,SNR=5.1							

*IDC **11** 09:06:29.5±2.9, 10°.56N×124°.50E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/67, mbtmp3.5/4, Error ellipse: s-maj=288.0km s-min=22.0km az=65.0*
*ISCJB **11** 09:06:32.0±0.9, 9°.31N±0°.07×122°.13E±0°.06, h10km, mb3.6/4, Error ellipse: s-maj=10.0km s-min=9.0km az=166.6*
*MAN **11** 09:06:31, 9°.21N×122°.16E, h13km, mb4.3, ML3.1, MS2.9*

ISC 11 09:06:33.3±1.3, 9°.31N±0°.10×122°.30E±0°.09, h10km, n7, σ1§64/9, mb3.6/4, 2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.93**	**88**	**⇓***eP*	**Pg**	**09 06 49.4**	**-1.8**
SNPH				*i* S	**Sn**	**09 07 06.6**	**+0.7**
LLP	**Lapu-Lapu**	**1.92**	**59**	*eP*	**Pb**	**09 07 08.3**	**-0.2**
LLP				*i* S	**Sn**	**09 07 33.2**	**+2.8**
RCP	**Roxas**	**2.27**	**11**	**⇓***eP*	**Pn**	**09 07 10.8**	**-0.2**
RCP				*eS*	**Sn**	**09 07 40.1**	**+1.0**
WRA	**Warramunga Arr**	**31.40 158**	P		**P**	**09 12 56.2**	**+1.5**
	0.5nm,0.9s,baz=342,slow=8.4,SNR=3.1						
ASAR	**Alice Springs**	**34.69 161**	P		P	09 13 25.8	+2.3
	0.7nm,0.6s,baz=348,slow=7.3,SNR=6.2						
MKAR	**Makanchi Array**	**50.49 325**	P		**P**	**09 15 31.4**	**-0.2**
	0.4nm,0.6s,baz=130,slow=7.4,SNR=5.3						
KURBB	**Kurchatov Arra**	**54.69 327**	P		**P**	**09 16 01.6**	**-1.1**
	0.5nm,0.6s,baz=132,slow=6.5,SNR=7.5						

*NEIC **11** 09:12:39.8±0.7, 32°.15S×177°.96W, h10km, mb4.8/1, Error ellipse: s-maj=18.8km s-min=13.3km az=116.0*
*ISCJB **11** 09:12:43.2±0.9, 32°.27S±0°.09×178°.3W±0°.2, h35km, mb4.8/10, Error ellipse: s-maj=19.1km s-min=13.3km az=4.4*
*IDC **11** 09:12:46.3±3.6, 31°.81S×178°.24W, h45km±30km, mb4.2/7, mb1 4.3/8, mb1mx3.9/31, mbtmp4.4/8, ML4.6/1, Error ellipse: s-maj=32.1km s-min=22.3km az=143.0*

ISC 11 09:12:43.9±0.7, 32°.22S±0°.09×178°.2W±0°.2, h35km, n35, σ1§35/33, mb4.5/10, 2D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**2.97**	**5**	P	**Pn**	**09 13 25.1**	**-3.5**
	131nm,0.3s,baz=194,slow=21,SNR=10						
RAO				S	Sn	09 13 47.3	-16
	415nm,0.3s,baz=20,slow=22,SNR=7.9						
URZ	**Urewera**	**7.13 211**		P	**Pn**	**09 14 22.9**	**-2.8**
	4.7nm,0.3s,baz=256,slow=4.6,SNR=18						
URZ				S	**Sn**	**09 15 43.8**	**-1.7**
	8.0nm,0.3s,baz=262,slow=21,SNR=8.5						
URZ	**Urewera**	**7.13 211**		P	**Pn**	**09 14 22.9**	**-2.8**
URZ				*e*Pn	Pn	09 14 24.2	-1.5
URZ				S	**Sn**	**09 15 43.8**	**-1.7**
URZ				*e*Sn	Sn	09 15 46.7	+1.2
OUZ	**Omahuta**	**7.45 244**	*e*Pn		Pn	09 14 35.1	+5.0
	29nm,0.5s						
RPZ	**Rata Peaks**	**14.24 213**	P		Pn	09 15 57.5	-5.5
	2.7nm,0.3s,baz=77,slow=5.2,SNR=8.7						
RPZ				S	Sn	09 18 23.7	-16
	0.5nm,0.3s,baz=258,slow=19,SNR=5.0						
STKA	**Stephens Creek**	**33.93 260**	P		**P**	**09 19 25.9**	**+2.2**
	3.2nm,0.7s,baz=99,slow=10,SNR=8.2						
CTA	**Charters Tower**	**33.95 282**	P		**P**	**09 19 26.1**	**+2.0**
	5.3nm,0.5s,baz=114,slow=9.6,SNR=13						
CTAO	**Charters Tower**	**33.95 282**	*e*P		**P**	**09 19 24.9**	**+0.8**
	82nm,1.0s						
ASAR	**Alice Springs**	**42.86 269**	P		**P**	**09 20 39.0**	**+0.1**
	3.6nm,0.7s,baz=108,slow=7.3,SNR=33						
WRAB	**Tennant Creek**	**44.01 274**	*e*P		**P**	**09 20 48.3**	**+0.1**
	6.5nm,0.5s						
WRA	**Warramunga Arr**	**44.02 274**	P		**P**	**09 20 48.2**	**0.0**
	8.1nm,0.4s,baz=112,slow=8.1,SNR=195						
FITZ	**Fitzroy Crossi**	**52.20 271**	P		**P**	**09 21 52.0**	**+0.5**
	3.0nm,0.7s,baz=144,slow=5.0,SNR=6.7						
FITZ	**Fitzroy Crossi**	**52.20 271**	P		**P**	**09 21 52.0**	**+0.5**
FITZ				*e*P	**P**	**09 21 52.5**	**+1.1**
QSPA	**South Pole Qui**	**57.89 180**	P		**P**	**09 22 33.9**	**+1.7**
	36nm,0.7s						
MAW	**Mawson**	**70.54 201**	P		P	09 24 00.1	+5.3
	0.9nm,0.4s,baz=90,slow=10,SNR=4.7						
SYO	**Syowa Base**	**75.30 193**	**⇓***eP*		**P**	**09 24 22.6**	**-0.3**
SYO	**Syowa Base**	**75.30 193**	**⇓***esP*		P	09 24 28.4	+5.5
SNAA	**Sanae**	**76.34 178**	P		**P**	**09 24 30.6**	**+1.7**
SNAA	**Sanae**	**76.34 178**	*e*P		**P**	**09 24 29.1**	**+0.1**
	254nm,0.9s						
VNA1	**Neumayer--Stat**	**77.17 177**	P		**P**	**09 24 35.1**	**+1.6**
PETK	**Petropavlovsk-**	**87.53 346**	P		**P**	**09 25 27.4**	**-0.2**
	1.7nm,0.7s,baz=135,slow=5.8,SNR=2.7						
MKAR	**Makanchi Array**	**118.79 309**	PKP		**PKPdf**	**09 31 27.6**	**-0.5**
	0.8nm,0.8s,baz=153,slow=0.3,SNR=5.2						
KURK	**Kurchatov**	**122.17 313**	PKPpre		PKPpre	09 31 28.4	
KURK			PKP		**PKPdf**	**09 31 34.4**	**0.0**
KURBB	**Kurchatov Arra**	**122.20 313**	PKhKP		PKPpre	09 31 28.4	
	1.1nm,0.8s,baz=128,slow=1.7,SNR=5.0						
KURBB			PKP		**PKPdf**	**09 31 34.4**	**-0.1**
	1.2nm,0.6s,baz=112,slow=2.0,SNR=12						
KKAR	**Karatay Array**	**125.91 303**	*e*PKPdf		**PKPdf**	**09 31 41.4**	**-0.5**
BVAR	**Borovoye Array**	**127.57 315**	PKP		**PKPdf**	**09 31 45.0**	**+0.3**
	0.8nm,0.4s,baz=116,slow=3.4,SNR=5.6						
AKTO	**Aktyubinsk**	**135.18 311**	PKP		**PKPdf**	**09 31 59.5**	**+0.3**
	1.4nm,0.6s,baz=316,slow=4.0,SNR=6.3						
ARCES	**ARCESS Array B**	**140.32 347**	PKhKP		PKPpre	09 32 02.8	
	0.9nm,0.6s,baz=29,slow=2.8,SNR=6.0						
KBZ	**Khabaz**	**145.94 302**	PKPbc		**PKPab**	**09 32 20.9**	**+0.8**
	2.2nm,0.7s,baz=82,slow=6.0,SNR=4.2						
NB2	**NORSAR Subarra**	**150.52 351**	PKP		**PKPbc**	**09 32 31.1**	**-0.1**
	comp=Z,1.3nm,0.5s,baz=14,slow=4.1						
NOA	**NORSAR Array B**	**150.52 351**	PKPbc		**PKPbc**	**09 32 31.6**	**+0.4**
	comp=Z,1.4nm,0.4s,baz=15,slow=4.1,SNR=8.2						
AKASG	**Malin Array Be**	**152.61 320**	PKPbc		**PKPbc**	**09 32 36.5**	**+0.2**
	comp=Z,1.3nm,0.5s,baz=54,slow=2.7,SNR=6.3						
KIEV	**Kiev**	**152.62 320**	*e*PKPbc		**PKPbc**	**09 32 36.2**	**-0.1**
BRTR	**Keskin Array B**	**153.26 295**	PKPbc		**PKPbc**	**09 32 38.4**	**+0.2**
	comp=Z,1.2nm,0.4s,baz=149,slow=3.9,SNR=6.3						
TORD	**Torodi Ar. Bea**	**161.01 180**	PKPab		**PKPab**	**09 33 24.4**	**+0.6**
	comp=Z,1.5nm,0.7s,baz=175,slow=3.8,SNR=12						

JMA 11 09:13:31.5±0.2, 38°.10N×143°.40E, h35km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.65 283**		P	Pn	09 13 59.1	+1.1
JIO				*e*S	Sn	09 14 18.8	+0.8
OFUJ	**Ofunato**	**1.67 306**		P	Pn	09 13 59.4	+1.1
JMK	**Ichinoseki**	**1.91 297**		P	Pn	09 14 02.9	+1.4
JMK				*e*S	Sn	09 14 26.0	+1.7
JOM	**Ohasama**	**2.14 310**		P	Pn	09 14 06.5	+1.8
JOM				*e*S	Sn	09 14 32.2	+2.1
JOU	**Okura**	**2.17 278**		P	Pn	09 14 07.1	+1.9
JOU				*e*S	Sn	09 14 32.8	+2.0
JFT	**Otama**	**2.50 257**		P	Pn	09 14 11.4	+1.8
JFT				S	Sn	09 14 40.5	+1.7
JRG	**Rokugo**	**2.52 302**		P	Pn	09 14 11.9	+2.0
JYK	**Kaneyama**	**2.52 290**		P	Pn	09 14 11.9	+1.9
JANG	**Nango**	**2.70 328**		P	Pn	09 14 14.6	+2.2
JANG				*e*S	Sn	09 14 46.3	+2.4
JAG	**Ashikaga**	**3.56 243**		P	Pn	09 14 25.2	+0.9
BSO1	**Boso 1**	**3.96 210**		P	Pn	09 14 28.7	-0.5
BSO1				*e*S	Sn	09 15 13.5	-0.6
JRY	**Ryogami san**	**4.16 241**		P	Pn	09 14 33.5	+1.0
JRY				*e*S	Sn	09 15 18.7	-1.1

*ISCJB **11** 09:16:55.9±0.5, 36°.50N±0°.04×71°.36E±0°.06, h114km, mb3.6/7, Error ellipse: s-maj=7.7km s-min=4.7km az=138.1*
*IDC **11** 09:16:56.9±3.1, 36°.36N×71°.36E, h131km±27km, mb3.4/7, mb1 3.5/13, mb1mx3.2/64, mbtmp3.8/13, Error ellipse: s-maj=23.8km s-min=17.4km az=3.0*
*NNC **11** 09:17:05.5±2.1, 37°.03N×71°.32E, h135km±56km, mb3.0, mpv3.8, Error ellipse: s-maj=27.0km s-min=13.7km az=127.0*

ISC 11 09:16:55.8±0.6, 36°.47N±0°.06×71°.45E±0°.06, h114km, n27, σ2§11/36, mb3.5/7, 4C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZET	**Dzherino**	**3.13 319**		**⇑**P	**Pn**	**09 17 47.2**	**+3.6**
	24nm,0.3s						
DZET				**⇓**S	**Sn**	**09 18 21.3**	**+0.7**
	262nm,0.6s						
MNAS	**Manas**	**6.07**	**7**	**⇓**P	**Pn**	**09 18 27.0**	**+3.8**
	4.4nm,0.3s						
MNAS				**⇑**S	**Sn**	**09 19 28.3**	**-3.0**
	12nm,0.4s						
AAK	**Ala-Archa**	**6.60**	**20**	P	**Pn**	**09 18 34.2**	**+3.9**
	3.3nm,0.3s,baz=173,slow=5.2,SNR=10						
AAK				S	**Sn**	**09 19 42.2**	**-2.0**
	0.9nm,0.3s,baz=327,slow=21,SNR=15						
AAK	**Ala-Archa**	**6.60**	**20**	**⇓**P	**Pn**	**09 18 33.6**	**+3.3**
	4.8nm,0.4s						
AAK				**⇑**S	**Sn**	**09 19 42.1**	**-2.0**
	16nm,0.7s						
KK31	**Karatay Array**	**6.67 354**		P	**Pn**	**09 18 33.3**	**+2.2**
	1.4nm,0.3s,baz=177,slow=13,SNR=61						
KK31				**⇓**S	**Sn**	**09 19 42.1**	**-3.5**
	4.1nm,0.3s,baz=172,slow=25,SNR=17						
SDNR	**Sundarnagar**	**6.75 136**		*e*P	Pn	09 18 38.0	+5.7
SDNR				*e*S	**Sn**	**09 19 49.0**	**+1.2**
TKM2	**Tokmak 2**	**7.20**	**25**	**⇓**P	**Pn**	**09 18 42.2**	**+3.8**
	2.2nm,0.5s						
TKM2				**⇑**S	**Sn**	**09 19 59.0**	**+0.3**
	2.2nm,0.6s						
GEYT	**Alibeck**	**10.73 282**		P	**Pn**	**09 19 26.9**	**+0.7**
	2.1nm,0.3s,baz=344,slow=41,SNR=3.2						
GEYT				S	**Sn**	**09 21 23.5**	**-0.9**
	2.2nm,0.3s,baz=201,slow=7.7,SNR=3.4						
PYUN	**Piuthan**	**12.83 127**	*e*P		**Pn**	**09 19 56.8**	**+2.6**
	10nm,0.3s						
PYUN				*e*S	**Sn**	**09 22 12.2**	**-3.4**
MKAR	**Makanchi Array**	**13.11 35**	P		**Pn**	**09 19 58.1**	**+0.6**
	0.1nm,0.3s,baz=213,slow=13,SNR=5.5						
KOLN	**Koldanda**	**13.45 127**	*e*P		**Pn**	**09 20 04.8**	**+2.5**
	5.1nm,0.3s						
KOLN				*e*S	**Sn**	**09 22 27.6**	**-3.0**
GKN	**Gorkha**	**13.98 123**	*e*P		**P**	**09 20 11.9**	**-1.4**
	12nm,0.3s						
DMN	**Daman**	**14.55 123**	*e*P		**P**	**09 20 19.4**	**-0.4**
	8.7nm,0.3s						
KKN	**Kakani**	**14.55 123**	*e*P		**P**	**09 20 19.3**	**-0.5**
	13nm,0.4s						
PKIN	**Phulchoki**	**14.77 123**	*e*P		**P**	**09 20 22.6**	**+0.4**
	10nm,0.4s						
GUN	**Gumba**	**14.89 121**	*e*P		**P**	**09 20 24.2**	**+0.6**
	9.4nm,0.3s						
KURBB	**Kurchatov Arra**	**15.04 18**	P		**P**	**09 20 24.5**	**-0.2**
	0.0nm,0.3s,baz=204,slow=10,SNR=5.6						
BVAR	**Borovoye Array**	**16.57 358**	P		**P**	**09 20 41.7**	**0.0**
	baz=155,slow=12,SNR=2.7						
ZALV	**Zalesovo Beam**	**19.80 24**	P		**P**	**09 21 17.4**	**+0.5**
	0.9nm,0.3s,baz=204,slow=10.0,SNR=8.0						
ARCES	**ARCESS Array B**	**41.31 337**	P		**P**	**09 24 29.9**	**+0.3**
	1.6nm,0.8s,baz=112,slow=9.3,SNR=8.1						
HFS	**Hagfors**	**43.32 322**	P		**P**	**09 24 46.1**	**+0.2**
	2.8nm,0.5s,baz=99,slow=9.8,SNR=19						
NB2	**NORSAR Subarra**	**44.62 323**	P		**P**	**09 24 56.3**	**-0.1**
	comp=Z,1.6nm,0.5s,baz=95,slow=7.9						
NOA	**NORSAR Array B**	**44.62 323**	P		**P**	**09 24 56.4**	**-0.1**
	comp=Z,1.2nm,0.5s,baz=96,slow=7.7,SNR=6.3						
TORD	**Torodi Ar. Bea**	**66.08 269**	P		**P**	**09 27 29.1**	**-1.7**
	comp=Z,0.3nm,0.4s,baz=50,slow=6.0,SNR=6.6						
YKA	**Yellowknife Ar**	**81.26**	**3**	P	**P**	**09 28 58.1**	**-0.6**
	comp=Z,0.2nm,0.5s,baz=352,slow=5.4,SNR=6.8						
WRA	**Warramunga Arr**	**81.67 122**	P		**P**	**09 29 00.9**	**-0.6**
	comp=Z,0.5nm,0.9s,baz=324,slow=5.0,SNR=7.9						
ASAR	**Alice Springs**	**83.94 125**	P		**P**	**09 29 12.7**	**-0.6**
	comp=Z,0.3nm,0.7s,baz=314,slow=4.6,SNR=4.6						

MAN 11 09:18:39, 9°.04N×122°.18E, h20km, mb4.1, ML2.9, MS2.7, 1C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.08**	**74**	**⇓***iP*	Pb	09 18 58.0	-1.1
SNPH				*i* S	Sn	09 19 13.4	-0.1
LLP	**Lapu-Lapu**	**2.17**	**54**	*eP*	Pb	09 19 16.9	-0.7
LLP				*i* S	Sn	09 19 41.6	+1.3
RCP	**Roxas**	**2.56**	**12**	**⇑***eP*	Pn	09 19 19.6	+0.2
RCP				*eS*	Sn	09 19 45.1	-5.0

IDC 11 09:27:55.5±4.1, 53°.65N×88°.03E, h0km, mb1 2.8/2, mb1mx2.7/45, mbtmp2.8/2, ML2.4/2, Error ellipse: s-maj=42.3km s-min=18.1km az=46.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.93 280**		*i*		09 39 50.0	
	baz=99,slow=321,SNR=10						
ZALV	**Zalesovo Beam**	**1.93 280**		Pg	Pn	09 28 29.3	-0.2
	1.2nm,0.3s,baz=102,slow=13,SNR=20						
ZALV				Lg	Lg	09 28 57.1	
	2.3nm,0.3s,baz=106,slow=26,SNR=11						
KURBB	**Kurchatov Arra**	**6.58 246**		Pn	Pn	09 29 34.1	+0.7
	0.1nm,0.3s,baz=92,slow=14,SNR=8.5						
MKAR	**Makanchi Array**	**7.78 210**		Pn	Pn	09 29 51.1	+1.2
	0.1nm,0.3s,baz=25,slow=15,SNR=3.2						

*IDC **11** 09:29:06.8±0.9, 4°.14S×121°.52E, h0km, mb3.6/10, mb1 3.8/10, mb1mx3.6/49, mbtmp3.7/10, Error ellipse: s-maj=28.6km s-min=17.1km az=67.0*
*DJA **11** 09:29:08.2±0.6, 4°.3S×7°.7×12°.2E±°, h10km, M4.0/7, MLv4.0/7*
*ISCJB **11** 09:29:09.8±0.6, 4°.13S±0°.07×121°.72E±0°.06, h33km, mb3.7/9, Error ellipse: s-maj=10.5km s-min=8.1km az=159.4*

ISC 11 09:29:11.6±0.7, 4°.23S±0°.07×121°.74E±0°.06, h35km, n16, σ1§88/16, mb3.8/9, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KDI	**Kendari**	**0.92**	**73**	P	**Pn**	**09 29 27.2**	**-0.8**
KAPI	**Kappang**	**2.13 249**		Pn	**Pn**	**09 29 42.6**	**-2.1**
	30nm,0.3s,baz=116,slow=1.0,SNR=27						
KAPI				Sn	**Sn**	**09 30 11.2**	**+1.3**
	125nm,0.3s,baz=56,slow=22,SNR=28						
TTSI	**Tana Toraja**	**2.25 302**		P	**Pn**	**09 29 46.4**	**0.0**
TTSI				S	**Sn**	**09 30 17.0**	**+4.0**
LUWI	**Luwuk**	**3.33**	**18**	P	Pn	09 30 12.1	+11
PCI	**Palu**	**3.81 330**		P	Pn	09 30 14.0	+6.1
MRSI	**Marisa**	**4.68**	**2**	P	**Pn**	**09 30 18.4**	**-1.5**
WRA	**Warramunga Arr**	**19.86 143**		P	**Pn**	**09 33 41.3**	**-0.4**
	0.7nm,0.7s,baz=315,slow=12,SNR=6.8						
ASAR	**Alice Springs**	**22.61 150**		P	**P**	**09 34 12.4**	**+2.9**
	0.5nm,0.6s,baz=342,slow=13,SNR=13						
CMAR	**Chiang Mai Arr**	**31.83 316**		P	**P**	**09 35 31.7**	**-1.7**
	0.7nm,0.4s,baz=134,slow=6.5,SNR=2.5						
STKA	**Stephens Creek**	**33.22 148**		P	**P**	**09 35 46.2**	**+0.8**
	1.2nm,0.8s,baz=315,slow=14,SNR=3.5						
MJAR	**Matsushiro Arr**	**43.39 19**		P	**P**	**09 37 11.9**	**+1.1**
	0.5nm,0.3s,baz=202,slow=7.9,SNR=4.0						
USRK	**Ussuriysk Ar.**	**49.09 10**		P	**P**	**09 37 55.8**	**+0.3**
	2.3nm,0.8s,baz=180,slow=7.1,SNR=4.7						
SONM	**Songino Array**	**53.57 347**		P	**P**	**09 38 30.0**	**+0.7**
	0.4nm,0.7s,baz=123,slow=5.3,SNR=3.0						
MKAR	**Makanchi Array**	**61.59 330**		P	**P**	**09 39 24.1**	**-1.4**
	0.3nm,0.9s,baz=178,slow=5.5,SNR=3.6						
ZALV	**Zalesovo Beam**	**65.66 337**		P	**P**	**09 39 51.2**	**-1.0**
	0.3nm,0.3s,baz=153,slow=1.6,SNR=2.4						
BVAR	**Borovoye Array**	**71.47 330**		P	**P**	**09 40 26.8**	**-1.8**
	0.4nm,0.4s,baz=133,slow=6.1,SNR=3.3						

*IDC **11** 09:35:16.4±0.8, 29°.46S×176°.42W, h0km, mb4.2/10, mb1 4.4/12, mb1mx4.2/42, mbtmp4.2/12, ML4.0/2, MS4.3/1, Ms1 4.4/1, ms1mx3.1/36, Error ellipse: s-maj=24.5km s-min=17.9km az=163.0*
*ISCJB **11** 09:35:18.9±0.3, 29°.61S±0°.07×176°.54W±0°.08, h21km, mb4.7/34, MS4.4/1, Error ellipse: s-maj=13.1km s-min=6.7km az=136.7*
*NEIC **11** 09:35:18.7±0.3, 29°.51S×176°.54W, h10km, mb4.7/23, Error ellipse: s-maj=13.3km s-min=7.0km az=149.0*

ISC 11 09:35:20.2±0.6, 29°.54S±0°.09×176°.46W±0°.08, h21km, n46, σ1§06/46, mb4.7/34, 2C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.30 282**		Pn	**Pb**	**09 35 43.5**	**-0.4**
	139nm,0.3s,baz=96,slow=19,SNR=4.1						
RAO				Sn	**Sb**	**09 36 02.4**	**+2.2**
	368nm,0.3s,baz=84,slow=22,SNR=11						
RAO				LR	LR	09 36 09.3	
	comp=Z,830nm,21.6s,baz=304,slow=40						
URZ	**Urewera**	**10.20 210**		Pn	**Pn**	**09 37 44.6**	**-0.7**
	0.8nm,0.3s,baz=330,slow=20,SNR=4.0						
URZ				Sn	**Sn**	**09 39 40.2**	**+1.2**
	2.8nm,0.3s,baz=82,slow=17,SNR=7.0						
RPZ	**Rata Peaks**	**17.30 212**	P		**P**	**09 39 21.3**	**-0.4**
	0.8nm,0.3s,baz=353,slow=0.8,SNR=3.0						
CTA	**Charters Tower**	**35.00 277**	P		**P**	**09 42 11.1**	**-0.2**
	1.1nm,0.3s,baz=111,slow=13,SNR=2.6						
STKA	**Stephens Creek**	**35.98 255**	P		**P**	**09 42 19.5**	**-0.1**
	2.3nm,0.7s,baz=100,slow=7.7,SNR=6.8						
ASAR	**Alice Springs**	**44.50 265**	P		**P**	**09 43 29.0**	**-1.4**
	3.1nm,0.7s,baz=99,slow=6.8,SNR=25						
WRA	**Warramunga Arr**	**45.41 270**	P		**P**	**09 43 36.0**	**-1.7**
	2.0nm,0.7s,baz=110,slow=6.1,SNR=9.7						
FITZ	**Fitzroy Crossi**	**53.70 268**	P		**P**	**09 44 40.2**	**-0.6**
	2.8nm,0.7s,baz=100,slow=18,SNR=2.9						
MAW	**Mawson**	**73.57 200**	P		**P**	**09 46 52.4**	**+1.2**
	0.4nm,0.3s,baz=110,slow=16,SNR=2.2						
SYO	**Syowa Base**	**78.24 193**	**⇑***epP*		pP	09 47 23.0	-1.8
SYO	**Syowa Base**	**78.24 193**	**⇑***ePcP*		**PcP**	**09 47 27.1**	**-0.2**
MJAR	**Matsushiro Arr**	**78.31 324**	P		**P**	**09 47 16.8**	**-1.8**
	0.5nm,0.5s,baz=134,slow=3.5,SNR=3.2						
CMB	**Columbia Colle**	**85.24**	**41**	*eP*	**P**	**09 47 55.6**	**+0.4**
	8.8nm,0.8s						
PETK	**Petropavlovsk-**	**85.33 345**	P		**P**	**09 47 55.3**	**+0.1**
	1.3nm,0.7s,baz=120,slow=5.8,SNR=3.1						
TPNV	**Topopah Spring**	**86.95**	**44**	*eP*	**P**	**09 48 04.2**	**+0.4**
	4.5nm,0.8s						
HUMO	**Hull Mountain**	**87.03**	**36**	*eP*	**P**	**09 48 06.5**	**+2.5**
	4.6nm,1.1s						
Y14A	**Wickenburg**	**87.07**	**48**	*eP*	**P**	**09 48 04.8**	**+0.5**
	24nm,1.1s						
W13A	**Hualapai Mount**	**87.23**	**47**	*eP*	**P**	**09 48 06.4**	**+1.1**
	5.1nm,1.4s						
TUC	**Tucson**	**87.54**	**51**	*eP*	**P**	**09 48 07.5**	**+0.8**
K05A	**Summer Lake**	**88.20**	**37**	*eP*	**P**	**09 48 10.2**	**+0.5**
	6.0nm,1.0s						
LCMT	**Little Creek M**	**88.84**	**46**	*eP*	**P**	**09 48 14.4**	**+1.5**
	3.7nm,0.9s						
U15A	**North Rim**	**89.07**	**47**	*eP*	**P**	**09 48 14.8**	**+0.7**
	4.7nm,0.9s						
WUAZ	**Wupatki**	**89.10**	**48**	*eP*	**P**	**09 48 14.1**	**0.0**
	6.3nm,1.0s						
CCUT	**Cedar City**	**89.10**	**45**	*eP*	**P**	**09 48 14.4**	**+0.3**
	4.1nm,1.0s						
MTPU	**Mount Pierson**	**90.14**	**45**	*eP*	**P**	**09 48 19.1**	**0.0**
	7.8nm,1.4s						
D05A	**Enumclaw**	**90.77**	**34**	*eP*	**P**	**09 48 23.7**	**+2.3**
	34nm,1.6s						
TX31	**Lajitas Ar. Si**	**90.81**	**57**	*eP*	**P**	**09 48 21.9**	**-0.2**
TXAR	**Lajitas Array**	**90.81**	**57**	P	**P**	**09 48 20.5**	**-1.6**
	2.4nm,1.1s,baz=224,slow=7.5,SNR=6.2						
MNTX	**Cornudas Mount**	**90.90**	**54**	*eP*	**P**	**09 48 24.3**	**+1.8**
	3.0nm,1.3s						
G08A	**Pilot Rock**	**90.97**	**37**	*eP*	**P**	**09 48 23.0**	**+0.4**
	6.9nm,1.3s						
TMUT	**Trail Mountain**	**91.51**	**45**	*eP*	**P**	**09 48 26.5**	**+1.0**
	4.2nm,1.0s						
SRU	**San Rafael Swe**	**91.82**	**45**	*eP*	**P**	**09 48 27.2**	**+0.5**
	3.2nm,1.0s						
ANMO	**Albuquerque**	**92.00**	**51**	*eP*	**P**	**09 48 27.6**	**-0.1**
	2.1nm,0.8s						
ENH	**Enshi**	**92.23 304**		*eP*	**P**	**09 48 28.7**	**0.0**
	30nm,0.9s						
HLID	**Hailey**	**92.

mb1 4.6/4, **mb1mx3.8**/46, **mbtmp4.4**/4, **Error ellipse: s-maj=141.2km s-min=72.9km az=153.0, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**41.60**	**240**	P	P	09 49 13.8	+0.7
	2.2nm,0.4s,baz=89,slow=9.9,SNR=20						
WRA	**Warramunga Arr**	**47.30**	**257**	P	P	09 49 57.9	-1.0
	1.2nm,0.6s,baz=96,slow=7.4,SNR=22						
WRA				PcP	PcP	09 51 28.4	-1.7
	0.8nm,1.0s,baz=87,slow=3.6,SNR=3.4						
ASAR	**Alice Springs**	**47.58**	**252**	P	P	09 50 00.3	-0.7
	12nm,0.6s,baz=88,slow=8.1,SNR=242						
ASAR				PcP	PcP	09 51 32.5	+1.4
	0.3nm,0.4s,baz=105,slow=4.1,SNR=4.4						
FITZ	**Fitzroy Crossi**	**55.67**	**259**	P	P	09 51 02.4	+0.7
	4.4nm,0.9s,baz=92,slow=7.1,SNR=5.5						

MAN 11 09:46:54.12˙90N×124˙81E, h33km, mb4.4, ML3.2, MS3.0, 2C-1D, Samar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**1.73**	**175**↑	*e*P	Pn	09 47 23.1	+1.3
PLP				*e*S	Sn	09 47 43.2	+0.4
RCP	**Roxas**	**2.42**	**237**↑	*e*P	Pn	09 47 32.1	+0.8
RCP				*e*S	Sn	09 48 01.4	+1.6
GQP	**Guinayangan**	**2.51**	**294**↓	*e*P	Pn	09 47 33.6	+1.2
GQP				*e*S	Sn	09 48 03.2	+1.3

SJA ***11*** *09:48:14.9±0.9, 34˙69S×71˙99W, h65km±15km, MD3.3, ML3.5*
ISCJB ***11*** *09:48:17.3±1.0, 34˙72S±0˙07×71˙8W±0˙1, h43km±33km, Error ellipse: s-maj=20.4km s-min=8.8km az=23.2*
GUC ***11*** *09:48:17.3±0.4, 34˙75S×71˙68W, h56km±7km, ML3.8*
ISC 11 09:48:16.9±2.0, 34˙71S±0˙06×71˙8W±0˙1, h30km±16km, n18, σ0s91/26, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NICH	**Los Niches**	**0.57**	**121**	*i* P	**Pb**	**09 48 28.3**	**-0.2**
NICH				*i* S	**Sb**	**09 48 36.5**	**+0.1**
TALC	**Talca**	**0.70**	**167**	*i* P	**Pb**	**09 48 30.4**	**-0.3**
TALC				*i* S	**Sn**	**09 48 40.2**	**-0.4**
ANTU	**Antumapu**	**1.51**	**41**	*i* P	**Pn**	**09 48 41.5**	**-0.4**
ANTU				*i* S	**Sn**	**09 48 59.6**	**-1.1**
FSR	**Penalolen**	**1.64**	**42**	*i* P	**Pn**	**09 48 43.3**	**-0.5**
FSR				*i* S	**Sn**	**09 49 02.5**	**-1.3**
CLCH	**Cerro Calan**	**1.69**	**40**	*i* P	**Pn**	**09 48 44.3**	**-0.3**
CLCH				*i* S	**Sn**	**09 49 04.4**	**-0.9**
CLCH				IAML		09 49 09.2	
	comp=N,2μm,0.6s						
PEL	**Peldehue**	**1.83**	**32**	*i* P	**Pn**	**09 48 46.1**	**-0.3**
PEL				*i* S	**Sn**	**09 49 08.0**	**-0.7**
PEL				IAML		09 49 13.2	
	comp=N,1μm,0.3s						
ROC1	**El Roble**	**1.86**	**21**	*e*P	**Pn**	**09 48 46.8**	**-0.2**
ROC1				*e*S	**Sn**	**09 49 10.6**	**+1.0**
ROCH	**El Roble**	**1.86**	**22**	*i* P	**Pn**	**09 48 47.4**	**+0.3**
ROCH				*i* S	**Sn**	**09 49 10.0**	**+0.3**
ROCH				IAML		09 49 15.9	
	comp=N,1μm,0.7s						
FCH	**Farellones**	**1.88**	**43**	*i* P	**Pn**	**09 48 47.1**	**-0.3**
FCH				*i* S	**Sn**	**09 49 09.7**	**-0.5**
AAGR	**Agrelo**	**2.98**	**58**	*e*P	**Pn**	**09 49 03.6**	**+1.4**
ARCO	**CERRO ARCO**	**3.05**	**53**	IAML		09 49 15.2	
	comp=Z,124nm,0.3s						
AUSP	**Uspallata**	**3.21**	**40**	*e*P	**Pn**	**09 49 07.2**	**+1.6**
ASAL	**Salagasta**	**3.27**	**51**	*e*P	**Pn**	**09 49 08.2**	**+2.0**
RTLS	**Leoncito**	**3.60**	**37**	*e*P	**Pn**	**09 49 12.4**	**+1.5**
RTCV	**Cerro Valdivia**	**3.96**	**45**	*e*P	**Pn**	**09 49 16.5**	**+0.8**
RTLL	**Cerro Villicun**	**4.39**	**41**	*e*P	**Pn**	**09 49 22.2**	**+0.6**
ACAN	**Cantantal**	**4.58**	**59**	*e*P	**Pn**	**09 49 24.5**	**+0.4**
AMOG	**MOGNA**	**4.70**	**38**	*e*P	**Pn**	**09 49 26.0**	**+0.2**

BJI ***11*** *09:57:28.1, 15˙26N×147˙58E, h7km, mb4.8/45, mB5.0/29, Ms4.6/20, Ms7 4.2/18*
IDC ***11*** *09:57:31.7±0.5, 15˙55N×147˙23E, h0km, mb4.5/32, mb1 4.6/34, mb1mx4.5/53, mbtmp4.5/34, ML4.6/2, MS3.8/13, Ms1 3.9/13, ms1mx3.6/53, Error ellipse: s-maj=17.3km s-min=10.2km az=94.0*
ISCJB ***11*** *09:57:35.9±0.2, 15˙60N±0˙04×147˙18E±0˙03, h33km, mb4.7/132, MS4.0/15, Error ellipse: s-maj=5.6km s-min=4.3km az=144.5*
MOS ***11*** *09:57:36.5±0.9, 15˙54N×147˙12E, h45km, mb4.9/53, Error ellipse: s-maj=11.7km s-min=6.1km az=105.3*
NEIC ***11*** *09:57:38.7±0.8, 15˙55N×147˙14E, h46km±7km, mb4.8/64, Error ellipse: s-maj=5.6km s-min=4.5km az=93.0*
NEIC Felt on Saipan.
ISC 11 09:57:37.1±0.4, 15˙53N±0˙05×147˙29E±0˙06, h33km, n210, σ1s22/217, mb4.8/132, MS3.9/16, 4C-5D, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANA2	**Anatahan**	**1.72**	**298**	*e*Pn	**Pb**	**09 58 05.2**	**-2.8**
SARN	**Sarigan**	**1.86**	**309**	*e*Pn	**Pb**	**09 58 06.8**	**-3.6**
GUMO	**Guam**	**3.04**	**231**	Pn	**Pn**	**09 58 22.1**	**-0.7**
	51nm,0.3s,baz=60,slow=3.4,SNR=34						
GUMO				Sn	**Sn**	**09 58 56.7**	**-1.4**
	169nm,0.3s,baz=230,slow=23,SNR=10						
GUMO				LR	LR	09 59 00.8	
	comp=Z,274nm,18.0s,baz=80,slow=30						
GUMO	**Guam**	**3.04**	**231**	*e*Pn	**Pn**	**09 58 22.2**	**-0.7**
GUMO				*e*Pg	Pb	09 58 22.6	-7.9
GUMO				*e*Sn	**Sn**	**09 58 57.6**	**-0.4**
MANU	**Manus Island**	**17.46**	**180**	*e*Pn	**P**	**10 01 40.5**	**+1.3**
	106nm,1.8s						
JHJ2	**Mitsune**	**18.77**	**340**	*e*P	**Pn**	**10 01 53.9**	**-0.2**
H11S3	**WAKE ISLAND Hy**	**18.79**	**78**	T	T	10 21 08.2	
	baz=267,slow=80,SNR=76						
JHJ	**Hachijo jima 2**	**18.79**	**340**	P	**Pn**	**10 01 53.3**	**-1.0**
	13nm,0.3s,baz=94,slow=21,SNR=10						
H11S1	**WAKE ISLAND Hy**	**18.80**	**78**	T	T	10 21 12.6	
	baz=267,slow=80,SNR=81						
H11S2	**WAKE ISLAND Hy**	**18.80**	**78**	T	T	10 21 11.0	
	baz=267,slow=80,SNR=67						
H11N1	**WAKE ISLAND Hy**	**19.14**	**75**	T	T	10 21 39.0	
	baz=260,slow=75,SNR=34						
H11N2	**WAKE ISLAND Hy**	**19.15**	**75**	T	T	10 21 39.0	
	baz=260,slow=75,SNR=35						
H11N3	**WAKE ISLAND Hy**	**19.16**	**75**	T	T	10 21 40.5	
	baz=260,slow=75,SNR=46						
JOW	**Kunigami**	**20.96**	**306**	*e*P	**P**	**10 02 16.9**	**-0.6**
	175nm,2.0s						
INU	**Inuyama**	**21.78**	**337**	*e*P	**P**	**10 02 25.4**	**-0.6**
	16nm,1.0s						
MJAR	**Matsushiro Arr**	**22.43**	**341**	P	**P**	**10 02 31.0**	**-2.2**
	3.2nm,0.6s,baz=337,slow=7.6,SNR=14						
MAJO	**Matsushiro**	**22.43**	**341**↓	*e*P	**P**	**10 02 31.3**	**-1.9**
MAJO				pmax	pmax		
	comp=Z,30nm,0.6s						
MAJO	**Matsushiro**	**22.43**	**341**	*e*P	**P**	**10 02 31.9**	**-1.3**
MAJO				*e*pP	pP	10 02 33.3	-8.8
MAT	**Matsushiro**	**22.43**	**341**	P	**P**	**10 02 31.0**	**-2.2**
MAT				*e*S	**S**	**10 06 37.4**	**-0.2**
MJB9	**Matsu-Tunnel**	**22.44**	**341**	*e*P	**P**	**10 02 32.4**	**-0.9**
MJB9				*e*pP	pP	10 02 33.2	-8.9
JNU	**Nakatsue**	**22.97**	**323**	P	**P**	**10 02 38.5**	**-0.4**
	comp=Z,4.5nm,0.7s,baz=63,slow=4.9,SNR=6.1						
JNU				LR	LR	10 09 22.3	
	comp=Z,501nm,20.6s,baz=120,slow=31						
JNU	**Nakatsue**	**22.97**	**323**	*e*P	**P**	**10 02 38.6**	**-0.4**
	comp=Z,17nm,1.0s						
FAKI	**Fak Fak**	**23.61**	**220**	*e*P	**P**	**10 02 46.1**	**+0.8**
	comp=Z,66nm,1.2s						
PMG	**Port Moresby**	**24.78**	**180**	P	**P**	**10 02 55.1**	**-0.9**
	comp=Z,25nm,0.7s,baz=80,slow=1.7,SNR=8.6						
PMG	**Port Moresby**	**24.78**	**180**	*e*P	**P**	**10 02 55.2**	**-0.9**
	comp=Z,34nm,0.9s						
TGY	**Tagaytay City**	**25.51**	**270**	P	**P**	**10 03 05.6**	**+2.8**
	comp=Z,182nm,0.3s,baz=293,slow=13,SNR=3.6						
TGY				LR	LR	10 11 28.3	
	comp=Z,260nm,20.1s,baz=83,slow=33						
YULB	**Yu-li**	**25.69**	**292**	*e*P	**P**	**10 03 03.7**	**-0.7**
	comp=Z,43nm,1.5s						
YHNB	**Yeheng**	**25.94**	**295**	*e*P	**P**	**10 03 07.0**	**+0.3**
	comp=Z,152nm,1.8s						
SSLB	**Suanglung**	**26.09**	**292**	*e*P	**P**	**10 03 08.4**	**+0.4**
	comp=Z,65nm,1.5s						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERM	**Erimo**	**26.63**	**353**↓	*e*P	**P**	**10 03 13.9**	**+1.3**
ERM				pmax	pmax		
	comp=Z,14nm,1.4s						
ERM	**Erimo**	**26.63**	**353**	*e*P	**P**	**10 03 13.2**	**+0.7**
	comp=Z,12nm,0.6s						
KSRS	**Korea Array**	**27.77**	**326**	P	**P**	**10 03 21.0**	**-1.8**
	comp=Z,3.3nm,0.6s,baz=138,slow=8.4,SNR=15						
KSRS				LR	LR	10 12 40.6	
	comp=Z,393nm,19.5s,baz=56,slow=33						
KSAR	**Wonju Array Be**	**27.78**	**325**	P	**P**	**10 03 21.0**	**-1.9**
HNR	**Honiara**	**27.79**	**152**	LR	LR	10 13 20.1	
	comp=Z,352nm,19.8s,baz=329,slow=34						
ASAJ	**Asahikawa**	**28.77**	**353**	*e*P	**P**	**10 03 33.0**	**+1.3**
	comp=Z,28nm,0.7s						
USRK	**Ussuriysk Ar.**	**31.39**	**339**	P	**P**	**10 03 53.5**	**-1.4**
	comp=Z,2.5nm,0.5s,baz=132,slow=8.3,SNR=7.7						
YSS	**Yuzh-Sakhalins**	**31.56**	**354**↑	*i* P	**P**	**10 03 56.8**	**+0.5**
YSS	**Yuzh-Sakhalins**	**31.56**	**354**	*e*P	**P**	**10 03 56.9**	**+0.5**
	comp=Z,16nm,0.5s						
WHN	**Wuhan**	**33.64**	**302**	*e*P	P	10 04 21.8	+7.0
CN2	**Changchun**	**33.76**	**331**	*e*P	**P**	**10 04 16.6**	**+0.9**
CTA	**Charters Tower**	**35.41**	**182**	P	**P**	**10 04 29.7**	**-0.5**
	comp=Z,1.9nm,0.4s,baz=348,slow=13,SNR=4.3						
TYV	**Tymovskoe**	**35.44**	**355**	*e*P	**P**	**10 04 30.8**	**+0.7**
TYV				pmax	pmax		
	comp=Z,18nm,0.8s						
QIZ	**Qiongzhong**	**35.88**	**281**	P	**P**	**10 04 34.1**	**-0.2**
QIZ				S	**S**	**10 10 13.8**	**+3.4**
QIZ				LR	LR		
	comp=Z,280nm,19.0s						
QIZ				LR	LR		
	comp=Z,260nm,17.9s						
KLR	**Kul'dur**	**35.93**	**343**	P	**P**	**10 04 32.8**	**-1.5**
	comp=Z,4.8nm,0.5s,baz=148,slow=6.3,SNR=25						
BJI	**Beijing**	**36.48**	**318**	P	**P**	**10 04 39.3**	**+0.2**
BJI				S	**S**	**10 10 19.5**	**+0.5**
BJI				pmax	pmax		
	comp=Z,7.0nm,1.2s						
BJI				LR	LR		
	comp=Z,200nm,16.7s						
BJI				LR	LR		
	comp=Z,280nm,16.7s						
BJI				LR	LR		
	comp=Z,250nm,22.4s						
WRAB	**Tennant Creek**	**37.47**	**200**↑	*e*P	**P**	**10 04 46.7**	**-1.0**
WRAB				pmax	pmax		
	comp=Z,37nm,2.3s						
WRA	**Warramunga Arr**	**37.48**	**200**	P	**P**	**10 04 46.8**	**-1.1**
	comp=Z,1.1nm,0.6s,baz=21,slow=8.9,SNR=13						
PETK	**Petropavlovsk-**	**38.38**	**10**	P	**P**	**10 04 53.7**	**-1.4**
	comp=Z,1.8nm,0.6s,baz=188,slow=4.1,SNR=3.4						
PETK				LR	LR	10 19 40.3	
	comp=Z,165nm,19.9s,baz=209,slow=35						
XAN	**Xi'an**	**39.12**	**305**	P	**P**	**10 05 00.5**	**-1.1**
XAN				pP	pP	10 05 09.6	-1.7
XAN				pmax	pmax		
	comp=Z,20nm,0.6s						
GYA	**Guiyang**	**39.30**	**293**	*e*P	**P**	**10 05 03.2**	**-0.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
FITZ	**Fitzroy Crossi**	**39.65**	**213**	P	**P**	**10 05 05.1**	**-0.9**
	comp=Z,1.4nm,0.5s,baz=27,slow=6.5,SNR=14						
HHC	**Hu-ho-hao-te**	**39.91**	**316**	*e*P	**P**	**10 05 09.3**	**+1.1**
HHC				pmax	pmax		
	comp=Z,19nm,1.2s						
HHC				pmax	pmax		
	comp=Z,200nm,8.0s						
ASAR	**Alice Springs**	**41.10**	**199**	P	**P**	**10 05 17.5**	**-0.6**
	comp=Z,1.0nm,0.6s,baz=23,slow=8.0,SNR=28						
SKNT	**Sakolnakorn**	**41.54**	**278**	P	**P**	**10 05 22.9**	**+1.1**
	comp=Z,25nm,0.8s						
CD2	**Chengdu**	**42.55**	**299**	*e*P	**P**	**10 05 29.0**	**-1.0**
CD2				sP	pP	10 05 33.0	-6.7
CD2				PP	**PP**	**10 07 07.5**	**-1.4**
CD2				PcS	**PcS**	**10 11 13.8**	**-0.6**
CD2				S	**S**	**10 11 52.2**	**+1.7**
CD2				SS	**SS**	**10 15 02.9**	**+1.9**
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.4s						
KMI	**Kunming**	**42.68**	**290**	P	**P**	**10 05 32.1**	**+0.7**
KMI				pmax	pmax		
	comp=Z,11nm,1.1s						
KHON	**Khomkaen**	**42.70**	**277**	P	**P**	**10 05 33.0**	**+1.7**
	comp=Z,13nm,0.6s						
LZH	**Lanzhou**	**43.70**	**306**	*e*P	**P**	**10 05 39.5**	**+0.1**
LZH				pP	pP	10 05 43.4	-5.7
LZH				sP	sP	10 05 46.6	-6.5
LZH				S	**S**	**10 12 07.6**	**+0.1**
LZH				pmax	pmax		
	comp=Z,60nm,1.0s						
LZH				pmax	pmax		
	comp=Z,160nm,7.0s						
LZH				LR	LR		
	comp=Z,400nm,14.7s						
LZH				LR	LR		
	comp=Z,510nm,17.0s						
LZH				LR	LR		
	comp=Z,690nm,17.5s						
MA2	**Magadan**	**44.05**	**3**	P	**P**	**10 05 42.5**	**+1.0**
	comp=Z,9.5nm,0.8s,baz=174,slow=7.8,SNR=6.3						
PBKT	**Sadao Pong**	**44.45**	**278**	P	**P**	**10 05 46.2**	**+0.8**
	comp=Z,18nm,0.9s						
UTTA	**Uttaradit**	**44.74**	**280**	P	**P**	**10 05 47.8**	**+0.1**
	comp=Z,6.6nm,0.7s						
CMMT	**Chiang Mai**	**46.19**	**281**	P	**P**	**10 05 59.9**	**+0.7**
	comp=Z,10nm,0.7s						
CHTO	**Chiang Mai**	**46.20**	**281**	P	**P**	**10 06 00.0**	**+0.7**
	comp=Z,44nm,0.7s						
CHTO	**Chiang Mai**	**46.20**	**281**	*e*P	**P**	**10 05 59.4**	**+0.2**
	comp=Z,7.4nm,0.8s						
CM01	**Chiang Mai Arr**	**46.21**	**281**	*e*P	**P**	**10 05 59.1**	**-0.2**
CMAR	**Chiang Mai Arr**	**46.22**	**281**	P	**P**	**10 05 59.5**	**+0.1**
	comp=Z,6.6nm,0.6s,baz=77,slow=6.3,SNR=22						
CMAR				LR	LR	10 25 06.7	
	comp=Z,69nm,19.6s,baz=100,slow=36						
UMPA	**Umpang Tak**	**46.50**	**278**	P	**P**	**10 06 03.9**	**+2.2**
	comp=Z,10nm,0.7s						
SONM	**Songino Array**	**46.56**	**323**	P	**P**	**10 06 01.5**	**-0.4**
	comp=Z,3.0nm,0.6s,baz=136,slow=8.3,SNR=24						
SONM				LR	LR	10 24 53.8	
	comp=Z,196nm,20.0s,baz=95,slow=35						
SONA1	**Songino Array**	**46.56**	**323**	*e*P	**P**	**10 06 01.1**	**-0.8**
SEY	**Seymchan**	**47.48**	**3**	P	**P**	**10 06 09.0**	**+0.4**
	comp=Z,3.5nm,0.7s,baz=160,slow=9.2,SNR=8.7						
GTA	**Gaotai**	**47.70**	**309**	*e*P	**P**	**10 06 10.6**	**-0.3**
GTA				pP	pP	10 06 15.1	-5.6
GTA				sP	sP	10 06 17.7	-7.0
GTA				pmax	pmax		
	comp=Z,6.0nm,0.8s						
YAK	**Yakutsk**	**48.10**	**349**	P	**P**	**10 06 13.1**	**-0.3**
	comp=Z,50nm,0.5s,baz=250,slow=0.4,SNR=11						
YAK	**Yakutsk**	**48.10**	**349**	*e*P	**P**	**10 06 13.3**	**-0.1**
YAK				pmax	pmax		
	comp=Z,35nm,0.8s						
YAK	**Yakutsk**	**48.10**	**349**	*e*P	**P**	**10 06 13.6**	**+0.2**
	comp=Z,72nm,0.5s						
PSI	**Prapat**	**49.26**	**260**	LR	LR	10 26 41.1	
	comp=Z,84nm,20.0s,baz=58,slow=36						
ZAK	**Zakamensk**	**49.59**	**324**	*e*P	**P**	**10 06 23.0**	**-2.2**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.7s						
TLY	**Talaya**	**50.02**	**326**	P	**P**	**10 06 27.6**	**-0.7**
	comp=Z,4.7nm,0.6s,baz=215,slow=1.0,SNR=3.5						
TLY	**Talaya**	**50.02**	**326**	*e*P	**P**	**10 06 28.0**	**-0.3**
TLY				pmax	pmax		
	comp=Z,8.0nm,0.6s						
BILL	**Bilibino**	**53.88**	**9**	*i* P	**P**	**10 06 57.3**	**+0.5**
BILL				pmax	pmax		
	comp=Z,14nm,1.5s						
TIXI	**Tiksi**	**57.17**	**353**	P	**P**	**10 07 19.8**	**-0.5**
	comp=Z,3.9nm,0.4s,baz=150,slow=8.5,SNR=6.8						
TIXI	**Tiksi**	**57.17**	**353**↑	*e*P	**P**	**10 07 20.4**	**0.0**
TIXI				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TIXI	**Tiksi**	**57.17**	**353**	*e*P	**P**	**10 07 19.9**	**-0.5**
	comp=Z,5.9nm,0.5s						
RAMN	**Ramite**	**57.23**	**292**	*e*P	**P**	**10 07 21.9**	**0.0**
	comp=Z,10nm,0.4s						
WMQ	**Urumqi**	**57.54**	**312**	P	**P**	**10 07 24.4**	**+0.9**
WMQ				pP	pP	10 07 33.8	+0.2
WMQ				pmax	pmax		
	comp=Z,19nm,0.7s						
WMQ				pmax	pmax		
	comp=Z,230nm,7.4s						
WMQ				LR	LR		
	comp=Z,190nm,25.2s						
WMQ				LR	LR		
	comp=Z,340nm,19.2s						
WMQ				LR	LR		
	comp=Z,640nm,19.1s						
GUN	**Gumba**	**57.85**	**293**	*e*P	**P**	**10 07 26.2**	**-0.1**
	comp=Z,33nm,0.4s						
PKIN	**Phulchoki**	**58.28**	**293**	*e*P	**P**	**10 07 29.0**	**-0.3**
	comp=Z,14nm,0.6s						
KKN	**Kakani**	**58.38**	**293**	*e*P	**P**	**10 07 29.1**	**-0.8**
	comp=Z,7.7nm,0.3s						
DMN	**Daman**	**58.54**	**293**	*e*P	**P**	**10 07 30.4**	**-0.7**
	comp=Z,16nm,0.4s						
GKN	**Gorkha**	**58.94**	**294**	*e*P	**P**	**10 07 33.7**	**-0.1**
KOLN	**Koldanda**	**59.87**	**293**	*e*P	**P**	**10 07 39.7**	**-0.5**
	comp=Z,9.8nm,0.5s						
PYUN	**Piuthan**	**60.39**	**294**	*e*P	**P**	**10 07 43.5**	**-0.3**
SVW2	**Sparrevohn**	**60.87**	**28**	*e*P	**P**	**10 07 47.4**	**+1.2**
	comp=Z,6.6nm,0.9s						
ZAA0	**Zalesovo Array**	**61.44**	**323**	*e*P	**P**	**10 07 49.7**	**-0.5**
ZALV	**Zalesovo Beam**	**61.44**	**323**	P	**P**	**10 07 48.9**	**-1.3**
	comp=Z,3.9nm,0.4s,baz=114,slow=8.2,SNR=14						
ZALV				LR	LR	10 33 29.0	
	comp=Z,74nm,19.5s,baz=70,slow=35						
MK01	**Makanchi Array**	**61.74**	**315**	*e*P	**P**	**10 07 51.8**	**-0.6**
MK31	**Makanchi Array**	**61.75**	**315**	*i* P	**P**	**10 07 52.1**	**-0.4**
MK31				pmax	pmax		
	comp=Z,3.0nm,0.5s						
MK31	**Makanchi Array**	**61.75**	**315**	*e*P	**P**	**10 07 52.2**	**-0.3**
MKAR	**Makanchi Array**	**61.75**	**315**	P	**P**	**10 07 52.1**	**-0.4**
	comp=Z,6.0nm,0.4s,baz=88,slow=8.7,SNR=86						
MKAR				LR	LR	10 36 48.8	
	comp=Z,67nm,18.5s,baz=80,slow=38						
MKAR	**Makanchi Array**	**61.75**	**315**	*e*P	**P**	**10 07 52.2**	**-0.3**
MAKZ	**Makanchi**	**61.97**	**315**	P	**P**	**10 07 53.2**	**-0.7**
MAKZ				pmax	pmax		
	comp=Z,8.0nm,0.5s						
MAKZ	**Makanchi**	**61.97**	**315**	*e*P	**P**	**10 07 53.5**	**-0.4**
	comp=Z,14nm,0.7s						
CNPM	**China Poot**	**62.38**	**30**	*e*P	**P**	**10 07 56.5**	**+0.1**
	comp=Z,16nm,0.8s						
BRLK	**Bradley Lake**	**62.62**	**30**	*e*P	**P**	**10 07 57.7**	**-0.4**
	comp=Z,13nm,0.7s						
PPLA	**Purkeypile**	**63.01**	**27**	*e*P	**P**	**10 08 02.0**	**+1.2**
	comp=Z,8.3nm,0.8s						
CAST	**Castle Rocks**	**63.23**	**26**	*e*P	**P**	**10 08 02.6**	**+0.5**
	comp=Z,10nm,0.8s						
PDGK	**Podgornoye**	**63.40**	**311**	P	**P**	**10 08 02.9**	**-0.6**
PDGK				pmax	pmax		
	comp=Z,12nm,0.7s						
RC01	**Rabbit Creek A**	**63.55**	**29**	*e*P	**P**	**10 08 04.3**	**+0.2**
	comp=Z,15nm,0.8s						
KTH	**Kantishna Hill**	**63.77**	**26**	*e*P	**P**	**10 08 06.0**	**+0.4**
	comp=Z,15nm,0.8s						
PMR	**Palmer**	**63.97**	**28**	*e*P	**P**	**10 08 06.7**	**-0.2**
	comp=Z,38nm,2.0s						
TRF	**Thorofare Moun**	**64.01**	**26**	*e*P	**P**	**10 08 07.6**	**+0.3**
	comp=Z,12nm,1.0s						
SML	**Sawmill**	**64.40**	**28**	*e*P	**P**	**10 08 10.4**	**+0.6**
	comp=Z,19nm,0.9s						
RND	**Reindeer**	**64.61**	**27**	*e*P	**P**	**10 08 11.5**	**+0.4**
	comp=Z,6.6nm,0.8s						
KURK	**Kurchatov**	**64.64**	**319**	*d* iP	**P**	**10 08 10.8**	**-0.7**
KURK	**Kurchatov**	**64.64**	**319**	*e*P	**P**	**10 08 10.6**	**-0.9**
	comp=Z,24nm,0.8s						
SCM	**Sheep Creek Mo**	**64.86**	**28**	*e*P	**P**	**10 08 13.6**	**+0.8**
	comp=Z,29nm,1.0s						
NRIK	**Noril'sk**	**65.09**	**340**	P	**P**	**10 08 13.8**	**-0.3**
	comp=Z,9.2nm,0.6s,baz=116,slow=10,SNR=4.9						
NRIK				LR	LR	10 37 24.1	
	comp=Z,128nm,19.6s,baz=116,slow=37						
DHY	**Denali Highway**	**65.16**	**27**	*e*P	**P**	**10 08 15.8**	**+0.9**
	comp=Z,13nm,1.5s						
WRH	**Wood River Hil**	**65.24**	**26**	*e*P	**P**	**10 08 15.0**	**-0.1**
	comp=Z,9.9nm,1.0s						
COLD	**Coldfoot**	**65.27**	**22**	*e*P	**P**	**10 08 16.7**	**+1.4**
	comp=Z,7.1nm,0.8s						
CCB	**Clear Creek Bu**	**65.41**	**25**	*e*P	**P**	**10 08 15.8**	**-0.4**
	comp=Z,26nm,1.8s						
DIV	**Divide**	**65.42**	**29**	*e*P	**P**	**10 08 17.9**	**+1.4**
	comp=Z,9.7nm,0.9s						
KLU	**Klutina**	**65.44**	**29**	*e*P	**P**	**10 08 17.3**	**+0.7**
	comp=Z,9.3nm,1.0s						
COLA	**College**	**65.45**	**25**	*e*P	**P**	**10 08 17.6**	**+1.1**
	comp=Z,5.5nm,0.8s						
IL1	**Eielson Array**	**65.82**	**25**	*e*P	**P**	**10 08 17.3**	**-1.6**
ILAR	**Eielson Array**	**65.82**	**25**	P	**P**	**10 08 17.6**	**-1.3**
	comp=Z,1.5nm,0.5s,baz=248,slow=6.0,SNR=35						
ILAR				LR	LR	10 34 03.4	
	comp=Z,78nm,21.3s,baz=266,slow=33						
ILB	**Eielson Array**	**65.82**	**25**	*e*P	**P**	**10 08 17.9**	**-1.0**
KSH	**Kashi**	**65.95**	**307**	P	**P**	**10 08 23.4**	**+3.0**
KSH				*e*PcP	**PcP**	**10 08 53.6**	**+2.6**
KSH				*e*PP	**PP**	**10 10 51.2**	**+5.5**
KSH				S	**S**	**10 17 10.8**	**+4.9**
KSH				ScS	**ScS**	**10 18 16.9**	**+2.5**
KSH				pmax	pmax		
	comp=Z,120nm,3.7s						
KSH				LR	LR		
	comp=Z,99nm,8.1s						
KSH				LR	LR		
	comp=Z,91nm,6.2

AB31					pmax	pmax			
	comp=Z,2.0nm,0.4s								
ABKAR	**Akbulak array**	**76.69**	**318**	*e*P		**P**		**10 09 23.8**	**-1.1**
AKTO	**Aktyubinsk**	**77.73**	**319**	P		**P**		**10 09 29.8**	**-1.0**
	comp=Z,3.1nm,0.5s,baz=89,slow=8.2,SNR=16								
AKTO	**Aktyubinsk**	**77.73**	**319**	*i* P		**P**		**10 09 29.3**	**-1.5**
AKTO					pmax	pmax			
	comp=Z,3.0nm,0.5s								
HUMO	**Hull Mountain**	**79.48**	**49**	*e*P		**P**		**10 09 42.1**	**+1.5**
	comp=Z,1.6nm,1.8s								
YBH	**Yreka Blue Hor**	**79.84**	**50**	*e*P		**P**		**10 09 43.6**	**+1.0**
	comp=Z,3.7nm,0.8s								
GEYT	**Alibeck**	**79.98**	**307**	P		**P**		**10 09 43.4**	**-0.1**
	comp=Z,4.0nm,0.5s,baz=80,slow=1.8,SNR=6.1								
YKA	**Yellowknife Ar**	**80.06**	**28**	P		**P**		**10 09 43.0**	**-0.3**
	comp=Z,3.9nm,0.6s,baz=286,slow=5.3,SNR=71								
YKA	**Yellowknife Ar**	**80.06**	**28**	P		**P**		**10 09 43.0**	**-0.3**
YKA					pmax	pmax			
	comp=Z,4.0nm,0.6s								
YKA	**Yellowknife Ar**	**80.06**	**28**	P		**P**		**10 09 43.0**	**-0.3**
B08A	**Colville Reser**	**80.77**	**42**	*e*P		**P**		**10 09 48.0**	**+0.6**
	comp=Z,6.7nm,0.7s								
K05A	**Summer Lake**	**80.95**	**48**	*e*P		**P**		**10 09 49.7**	**+1.0**
	comp=Z,9.0nm,1.1s								
C09A	**Chrisman Ranch**	**81.59**	**43**	*e*P		**P**		**10 09 52.8**	**+1.0**
	comp=Z,4.6nm,0.7s								
NEW	**Newport**	**82.23**	**42**	P		**P**		**10 09 55.8**	**+0.7**
NEW					pmax	pmax			
	comp=Z,6.0nm,0.8s								
NEW	**Newport**	**82.23**	**42**	*e*P		**P**		**10 09 55.8**	**+0.7**
	comp=Z,5.9nm,0.8s								
WVOR	**Wild Horse Val**	**82.64**	**48**	P		**P**		**10 09 57.6**	**+0.1**
WVOR					pmax	pmax			
	comp=Z,3.0nm,1.1s								
WVOR	**Wild Horse Val**	**82.64**	**48**	*e*P		**P**		**10 09 58.1**	**+0.5**
	comp=Z,3.7nm,1.0s								
BMO	**Blue Mountains**	**82.97**	**46**	*e*P		**P**		**10 09 59.6**	**+0.4**
	comp=Z,5.3nm,0.9s								
EDM	**Edmonton**	**83.20**	**37**	*e*P		**P**		**10 10 01.1**	**+1.0**
	comp=Z,7.2nm,0.8s								
BSMT	**Bassoo Peak**	**83.85**	**42**	*e*P		**P**		**10 10 04.5**	**+0.7**
YBMT	**Yellow Bay**	**84.35**	**42**	*e*P		**P**		**10 10 07.0**	**+0.8**
KLMR	**Klimovskoe**	**84.95**	**332**	*e*P		**P**		**10 10 06.7**	**-2.1**
KLMR				*e*				10 13 24.1	
KLMR					pmax	pmax			
	comp=Z,6.0nm,0.8s								
HLID	**Hailey**	**85.32**	**46**	*e*P		**P**		**10 10 11.8**	**+0.6**
	comp=Z,2.4nm,0.9s								
ARCES	**ARCESS Array B**	**85.95**	**343**	P		**P**		**10 10 13.0**	**-0.6**
	comp=Z,3.7nm,0.5s,baz=83,slow=9.9,SNR=19								
R11A	**Troy Canyon, C**	**85.96**	**51**	*e*P		**P**		**10 10 15.2**	**+0.6**
	comp=Z,11nm,1.9s								
LRM	**Limekiln Ridge**	**85.98**	**44**	*e*P		**P**		**10 10 15.0**	**+0.4**
DLMT	**Dillon**	**86.02**	**44**	*e*P		**P**		**10 10 15.0**	**+0.3**
	comp=Z,12nm,1.6s								
SGF	**Sodankyl**	**86.83**	**341**	P		**P**		**10 10 18.8**	**+0.8**
SGF					pmax	pmax			
	comp=Z,17nm,2.3s								
YHB	**Horse Butte**	**87.16**	**44**	*e*P		**P**		**10 10 22.1**	**+1.8**
	comp=Z,9.7nm,0.8s								
DUG	**Dugway, Tooele**	**87.47**	**49**	P		**P**		**10 10 22.3**	**+0.4**
DUG					pmax	pmax			
	comp=Z,4.0nm,1.5s								
JOF	**Joensuu**	**87.51**	**336**	P		**P**		**10 10 20.3**	**-1.0**
JOF					pmax	pmax			
	comp=Z,9.0nm,2.0s								
IMU	**Iron Mountain**	**87.70**	**51**	*e*P		**P**		**10 10 22.0**	**-1.0**
FLWY	**Flagg Ranch**	**87.71**	**45**	*e*P		**P**		**10 10 24.5**	**+1.5**
	comp=Z,8.2nm,0.6s								
CCUT	**Cedar City**	**87.88**	**52**	*e*P		**P**		**10 10 24.0**	**+0.1**
	comp=Z,13nm,1.8s								
RLMT	**Red Lodge**	**88.32**	**44**	*e*P		**P**		**10 10 27.0**	**+1.1**
	comp=Z,6.2nm,0.8s								
JLU	**Jordanelle**	**88.33**	**48**	*e*P		**P**		**10 10 27.0**	**+0.9**
	comp=Z,4.7nm,0.9s								
OUL	**Oulu**	**88.37**	**339**	P		**P**		**10 10 24.4**	**-1.0**
OUL					pmax	pmax			
	comp=Z,8.0nm,0.7s								
OBN	**Obninsk**	**88.75**	**327**	*i* P		**P**		**10 10 26.2**	**-1.1**
OBN					pmax	pmax			
	comp=Z,5.0nm,0.7s								
PDAR	**Pinedale Array**	**88.94**	**46**	P		**P**		**10 10 29.1**	**+0.3**
	comp=Z,0.5nm,0.7s,baz=297,slow=6.5,SNR=5.1								
U15A	**North Rim**	**89.04**	**52**	*e*P		**P**		**10 10 30.7**	**+1.1**
	comp=Z,4.3nm,0.9s								
Y14A	**Wickenburg**	**89.27**	**55**	*e*P		**P**		**10 10 31.3**	**+0.9**
	comp=Z,19nm,0.9s								
KBZ	**Khabaz**	**89.45**	**315**	P		**P**		**10 10 30.8**	**-0.1**
	comp=Z,2.2nm,0.7s,baz=113,slow=7.0,SNR=4.8								
SRU	**San Rafael Swe**	**89.49**	**50**	P		**P**		**10 10 32.2**	**+0.7**
SRU					pmax	pmax			
	comp=Z,3.0nm,0.7s								
SRU	**San Rafael Swe**	**89.49**	**50**	*e*P		**P**		**10 10 32.2**	**+0.7**
	comp=Z,2.7nm,0.7s								
SUF	**Sumiainen**	**89.63**	**337**	P		**P**		**10 10 29.6**	**-1.7**
SUF					pmax	pmax			
	comp=Z,9.0nm,2.6s								
NEY	**Neytrino**	**89.74**	**315**	⇓*e*P		**P**		**10 10 33.1**	**+0.6**
NEY					pmax	pmax			
	comp=Z,1.0nm,0.8s								
WUAZ	**Wupatki**	**90.04**	**53**	*e*P		**P**		**10 10 35.7**	**+1.6**
	comp=Z,5.5nm,0.9s								
N23A	**Red Feather La**	**92.14**	**47**	*e*P		**P**		**10 10 45.0**	**+1.2**
	comp=Z,6.9nm,1.0s								
NOA	**NORSAR Array B**	**96.05**	**340**	P		**P**		**10 10 59.7**	**-1.4**
	comp=Z,0.5nm,0.5s,baz=38,slow=5.1,SNR=3.9								
BRTR	**Keskin Array B**	**97.40**	**315**	P		**P**		**10 11 06.3**	**-1.5**
	comp=Z,0.6nm,0.7s,baz=118,slow=4.7,SNR=3.5								
CLL	**Collm**	**102.43**	**333**	*i* Pdif		**Pdif**		**10 11 31.9**	**+2.1**
	comp=Z,3.0nm,0.9s								
CLL	**Collm**	**102.43**	**333**	*i* P		**Pdif**		**10 11 31.9**	**+2.1**
CLL					pmax	pmax			
	comp=Z,3.0nm,0.9s								
TORD	**Torodi Ar. Bea**	**135.61**	**308**	PKhKP		PKPpre		10 16 49.3	
	comp=Z,0.4nm,0.9s,baz=36,slow=1.3,SNR=2.6								
TORD					PKP	**PKiKP**		**10 16 55.1**	**-1.5**
	comp=Z,0.6nm,0.6s,baz=42,slow=1.6,SNR=6.2								
DBIC	**Dimbokro**	**144.67**	**307**	PKP		**PKPdf**		**10 17 10.4**	**-1.0**
	comp=Z,8.6nm,0.6s,baz=21,slow=3.3,SNR=16								
KIC	**Kosan Boka**	**144.77**	**306**	*e*PKP2		**PKPdf**		**10 17 10.5**	**-1.2**
	comp=Z,165nm,2.1s								
TIC	**Toumodi**	**144.81**	**307**	*e*PKP2		**PKPdf**		**10 17 10.8**	**-0.9**
LIC	**Lamto**	**145.08**	**306**	*e*PKP2		**PKPdf**		**10 17 11.7**	**-0.5**
	comp=Z,26nm,0.7s								
LPAZ	**La Paz**	**145.96**	**96**	PKPbc		**PKPab**		**10 17 16.1**	**+0.5**
	comp=Z,4.7nm,0.8s,baz=262,slow=4.4,SNR=18								
SAML	**Samuel**	**149.54**	**81**	*e*PKPbc		**PKPbc**		**10 17 24.4**	**+0.3**
CPUP	**Villa Florida**	**154.67**	**119**	PKPab		**PKPab**		**10 17 49.7**	**-0.6**
	comp=Z,1.2nm,0.7s,baz=273,slow=5.1,SNR=4.0								

ISCJB ***11*** *09:58:23.1±1.3, 16°.8S±0°.3×174°.6W±0°.2, h172km, mb3.9/7, Error ellipse: s-maj=53.6km s-min=10.2km az=142.6*
IDC ***11*** *09:58:24.4±2.6, 16°.99S×174°.54W, h172km±23km, mb3.6/6, mb1 3.9/7, mb1mx3.5/38, mbtmp4.1/7, Error ellipse: s-maj=45.2km s-min=16.1km az=143.0*

ISC 11 09:58:24.4±1.3, 16°.9S±0°.3×174°.5W±0°.3, h172km, n9, σ1§07/12, mb3.8/7, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**3.97**	**42**	P	**Pn**	**09 59 26.3**	**+1.4**
	27nm,0.3s,baz=191,slow=2.6,SNR=126						
AFI				S	**Sn**	**10 00 09.9**	**-2.3**
	35nm,0.3s,baz=115,slow=23,SNR=12						
STKA	**Stephens Creek**	**42.37**	**241**	P	**P**	**10 06 01.4**	**-0.3**
	7.8nm,0.8s,baz=83,slow=9.6,SNR=12						
WRA	**Warramunga Arr**	**48.46**	**258**	P	**P**	**10 06 49.1**	**-0.7**
	1.2nm,0.5s,baz=96,slow=7.1,SNR=12						
WRA				PcP	**PcP**	**10 08 13.1**	**-0.3**
	0.6nm,0.6s,baz=100,slow=3.5,SNR=3.5						
ASAR	**Alice Springs**	**48.63**	**253**	P	**P**	**10 06 50.4**	**-0.8**
	26nm,0.6s,baz=88,slow=8.4,SNR=202						
ASAR				PcP	**PcP**	**10 08 14.0**	**0.0**
	0.8nm,0.7s,baz=104,slow=3.6,SNR=3.4						
MJAR	**Matsushiro Arr**	**69.37**	**321**	P	**P**	**10 09 14.4**	**+0.9**
	0.4nm,0.4s,baz=141,slow=6.7,SNR=3.9						
TXAR	**Lajitas Array**	**82.33**	**56**	P	**P**	**10 10 27.8**	**+0.5**
	0.9nm,0.9s,baz=224,slow=7.0,SNR=9.2						
ILAR	**Eielson Array**	**84.09**	**12**	P	**P**	**10 10 34.8**	**-0.5**
	0.4nm,0.6s,baz=222,slow=4.9,SNR=5.0						
SONM	**Songino Array**	**95.21**	**318**	P	**P**	**10 11 28.9**	**+0.4**
	0.6nm,1.0s,baz=114,slow=3.6,SNR=3.6						
BRTR	**Keskin Array B**	**146.57**	**319**	PKPbc	**PKPbc**	**10 17 46.2**	**+0.2**
	0.5nm,0.4s,baz=98,slow=2.5,SNR=4.0						

WEL 11 10:15:43.4±0.1, 40°.65S×176°.04E, h24km±1km, ML3.7/49, 6C-11D, Error ellipse: s-maj=1.6km s-min=1.0km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PRWZ	**Pori Road**	**0.11**	**334**	⇓P*	Pb	10 15 47.5	-0.5
PRWZ				S*	Sb	10 15 51.0	-0.2
PRWZ				AML	AML	10 15 51.2	
BFZ	**Birch Farm**	**0.16**	**101**	⇑P*	Pb	10 15 48.8	+0.2
BFZ				S*	Sb	10 15 53.1	+1.0
BFZ				AML	AML	10 15 54.7	
BFZ				AML	AML	10 15 54.8	
BFZ				AML	AML	10 15 54.8	
TIWZ	**Tintock**	**0.17**	**222**	⇓P*	Pb	10 15 49.0	+0.3
TIWZ				S*	Sb	10 15 53.5	+1.2
TIWZ				AML	AML	10 15 54.3	
CPWZ	**Castlepoint**	**0.29**	**154**	⇓P*	Pn	10 15 52.1	+0.1
CPWZ				AML	AML	10 16 01.8	
CPWZ				AML	AML	10 16 02.5	
POWZ	**Post Office Ro**	**0.33**	**322**	⇓P*	Pb	10 15 50.0	-0.8
POWZ				S*	Sb	10 15 55.8	-0.4
POWZ				AML	AML	10 15 56.6	
MRZ	**Mangatainoka R**	**0.35**	**268**	⇓P*	Pb	10 15 50.7	-0.4
MRZ				AML	AML	10 15 56.3	
MRZ				AML	AML	10 15 56.5	
DVHZ	**Dannevirke**	**0.37**	**16**	⇑P*	Pb	10 15 50.4	-1.0
DVHZ				AML	AML	10 15 56.4	
DVHZ				AML	AML	10 15 56.6	
ANWZ	**Angora Road**	**0.39**	**60**	P*	Pb	10 15 51.9	+0.2
ANWZ				S*	Sn	10 15 58.8	-1.2
ANWZ				AML	AML	10 16 01.6	
HOWZ	**Holdsworth Sta**	**0.46**	**238**	P*	Pb	10 15 53.3	+0.3
HOWZ				AML	AML	10 16 03.2	
HOWZ				AML	AML	10 16 03.3	
TMWZ	**Te Maipa**	**0.47**	**193**	P*	Pn	10 15 54.4	-0.2
TMWZ				S*	Sn	10 16 03.4	+1.2
TMWZ				AML	AML	10 16 04.5	
TSZ	**Takapari Road**	**0.59**	**355**	⇓P*	Pb	10 15 54.2	-1.1
TSZ				S*	Sb	10 16 02.1	-1.2
TSZ				AML	AML	10 16 02.3	
PRHZ	**Porangahau**	**0.60**	**50**	⇓P*	Pb	10 15 55.3	+0.1
PRHZ				AML	AML	10 16 07.1	
PRHZ				AML	AML	10 16 07.9	
MTW	**Mount Morrison**	**0.65**	**218**	P*	Pn	10 15 56.6	-0.5
MTW				AML	AML	10 16 08.4	
MTW				AML	AML	10 16 08.7	
WPHZ	**Waipukurau**	**0.66**	**28**	⇓P*	Pb	10 15 56.3	-0.1
WPHZ				AML	AML	10 16 07.6	
WPHZ				AML	AML	10 16 09.2	
OGWZ	**Otaki Gorge**	**0.68**	**256**	⇓P*	Pb	10 15 56.6	+0.1
OGWZ				AML	AML	10 16 08.8	
OGWZ				AML	AML	10 16 10.0	
PNHZ	**Pukenui**	**0.75**	**10**	P*	Pb	10 15 57.1	-0.6
PNHZ				AML	AML	10 16 09.7	
PNHZ				AML	AML	10 16 09.8	
TRWZ	**Traveller**	**0.79**	**199**	P*	Pb	10 15 58.7	+0.2
TRWZ				AML	AML	10 16 17.4	
TRWZ				AML	AML	10 16 23.2	
PAWZ	**Paruwai Farm**	**0.86**	**212**	P*	Pb	10 15 59.3	-0.4
PAWZ				AML	AML	10 16 14.5	
PAWZ				AML	AML	10 16 18.0	
CAW	**Cannon Point**	**0.86**	**238**	⇑P*	Pb	10 15 59.6	-0.1
CAW				AML	AML	10 16 14.9	
CAW				AML	AML	10 16 15.2	
KIW	**Kapiti Island**	**0.88**	**256**	P*	Pb	10 15 60.0	0.0
KIW				AML	AML	10 16 13.0	
KIW				AML	AML	10 16 13.2	
PXZ	**Pawanui**	**0.89**	**46**	P*	Pb	10 15 59.2	-0.8
PXZ				AML	AML	10 16 13.7	
PXZ				AML	AML	10 16 16.7	
PXZ				AML	AML	10 16 22.9	
PXZ				AML	AML	10 16 22.9	
MSWZ	**Moikau Station**	**0.97**	**218**	⇑P*	Pn	10 16 00.6	-0.8
MSWZ				AML	AML	10 16 19.8	
MSWZ				AML	AML	10 16 20.4	
KRHZ	**Kereru**	**1.04**	**14**	PN	Pn	10 16 01.6	-0.8
KRHZ				AML	AML	10 16 16.7	
KRHZ				AML	AML	10 16 16.8	
KAHZ	**Kahuranaki**	**1.07**	**37**	PN	Pn	10 16 01.9	-1.0
KAHZ				AML	AML	10 16 31.0	
KAHZ				AML	AML	10 16 32.2	
PLWZ	**Palliser**	**1.09**	**212**	P*	Pn	10 16 02.2	-1.0
PLWZ				AML	AML	10 16 17.9	
PLWZ				AML	AML	10 16 18.0	
WEL	**Wellington**	**1.15**	**236**	P*	Pn	10 16 03.3	-0.6
WEL				AML	AML	10 16 21.3	
WEL				AML	AML	10 16 21.7	
WEL				AML	AML	10 16 30.7	
BHW	**Baring Head**	**1.16**	**229**	P*	Pn	10 16 03.3	-0.8
BHW				AML	AML	10 16 19.7	
BHW				AML	AML	10 16 21.0	
BHHZ	**Black Hill Sta**	**1.16**	**1**	⇑PN	Pn	10 16 03.7	-0.5
BHHZ				AML	AML	10 16 19.8	
BHHZ				AML	AML	10 16 23.0	
WAZ	**Wanganui**	**1.20**	**318**	⇓PN	Pb	10 16 05.4	-0.1
WAZ				AML	AML	10 16 25.6	
WAZ				AML	AML	10 16 25.7	
KWHZ	**Kaweka Forest**	**1.26**	**14**	PN	Pn	10 16 04.9	-0.7
KWHZ				AML	AML	10 16 23.3	
KWHZ				AML	AML	10 16 23.9	
MOVZ	**Moawhango**	**1.26**	**350**	PN	Pn	10 16 05.4	-0.2
MOVZ				AML	AML	10 16 23.1	
MOVZ				AML	AML	10 16 23.2	
CKHZ	**Cape Kidnapper**	**1.27**	**39**	AML	AML	10 16 34.8	
CKHZ				AML	AML	10 16 41.2	
MCHZ	**McNeill Hill**	**1.31**	**23**	AML	AML	10 16 35.3	
MCHZ				AML	AML	10 16 46.5	
WNVZ	**Wahianoa**	**1.36**	**346**	PN	Pn	10 16 07.2	+0.1
WHVZ	**Whangaehu Hut**	**1.41**	**346**	⇑PN	Pn	10 16 08.0	+0.2
WHVZ				AML	AML	10 16 26.1	
WHVZ				AML	AML	10 16 26.9	
FWVZ	**Far West T-bar**	**1.44**	**345**	PN	Pb	10 16 09.3	-0.4
FWVZ				AML	AML	10 16 27.0	
FWVZ				AML	AML	10 16 27.7	
TCW	**Tory Channel**	**1.44**	**247**	PN	Pn	10 16 07.3	-0.7
TCW				AML	AML	10 16 33.8	
TCW				AML	AML	10 16 34.9	
OTVZ	**Oturere**	**1.51**	**349**	⇓PN	Pn	10 16 09.4	+0.3
OTVZ				AML	AML	10 16 35.0	
OTVZ				AML	AML	10 16 37.8	
BKZ	**Black Stump Fm**	**1.53**	**13**	PN	Pn	10 16 08.2	-0.9
BKZ				AML	AML	10 16 32.2	
BKZ				AML	AML	10 16 32.6	
WTVZ	**West Tongariro**	**1.57**	**347**	PN	Pn	10 16 10.4	+0.6
WTVZ				AML	AML	10 16 32.9	
WTVZ				AML	AML	10 16 34.6	
KRVZ	**Karewarewa**	**1.58**	**349**	PN	Pn	10 16 10.7	+0.7
KRVZ				AML	AML	10 16 33.8	
KRVZ				AML	AML	10 16 36.0	
DUWZ	**D'Urville Isla**	**1.61**	**264**	PN	Pn	10 16 10.0	-0.3
DUWZ				AML	AML	10 16 37.5	
DUWZ				AML	AML	10 16 38.1	
TWVZ	**Taurewa**	**1.65**	**344**	PN	Pn	10 16 11.3	+0.4
TWVZ				AML	AML	10 16 36.4	
TWVZ				AML	AML	10 16 41.6	
TUWZ	**Tuamarina**	**1.76**	**243**	PN	Pn	10 16 11.1	-1.2
TUWZ				AML	AML	10 16 45.8	
TUWZ				AML	AML	10 16 47.5	
VRZ	**Vera Road**	**1.81**	**327**	PN	Pn	10 16 13.4	+0.4
VRZ				AML	AML	10 16 43.1	
VRZ				AML	AML	10 16 51.3	
BSWZ	**Blackbirch Sta**	**1.94**	**236**	AML	AML	10 16 52.3	
BSWZ				AML	AML	10 16 53.8	
PREZ	**Palmer Road**	**1.95**	**312**	AML	AML	10 16 49.2	
PREZ				AML	AML	10 16 54.1	
NNZ	**Nelson**	**2.09**	**253**	PN	Pn	10 16 16.3	-0.5
NNZ				AML	AML	10 16 54.2	
NNZ				AML	AML	10 17 01.4	
THZ	**Tophouse**	**2.61**	**244**	PN	Pn	10 16 22.7	-1.3
THZ				AML	AML	10 17 13.4	
THZ				AML	AML	10 17 23.5	
ODZ	**Otahua Downs**	**5.91**	**220**	AML	AML	10 18 27.3	
ODZ				AML	AML	10 19 31.8	

DJA 11 10:17:59.1±0.4, 3°S±3°×12°1E±°, h11km, M3.7/5, MLv3.7/5, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KDI	**Kendari**	**1.55**	**132**	P	Pg	10 18 29.8	+0.9
KDI				S	Sn	10 18 44.2	-2.6
LUWI	**Luwuk**	**2.27**	**35**	P	Pn	10 18 35.1	-1.4
LUWI				S	Sb	10 19 06.8	-1.3
PCI	**Palu**	**2.58**	**321**	P	Pn	10 18 36.8	-4.0

IDC ***11*** *10:20:41.5±1.0, 3°.32S×146°.74E, h0km, mb4.0/12, mb1 4.3/13, mb1mx4.1/41, mbtmp4.1/13, ML2.0/1, MS3.7/11, Ms1 3.7/11, ms1mx3.4/45, Error ellipse: s-maj=36.3km s-min=16.2km az=108.0*
ISCJB ***11*** *10:20:45.3±0.6, 3°.30S±0°.06×146°.7E±0°.1, h35km, mb4.0/14, MS3.8/7, Error ellipse: s-maj=20.3km s-min=9.0km az=7.5*
NEIC ***11*** *10:20:47.7±2.8, 3°.31S×146°.64E, h41km±29km, mb4.6/1, Error ellipse: s-maj=23.3km s-min=15.0km az=116.0*

ISC 11 10:20:47.0±0.7, 3°.30S±0°.08×146°.7E±0°.2, h35km, n31, σ1§10/21, mb4.0/14, MS3.7/7, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**6.03**	**277**	LR	LR	10 24 15.1	
	comp=Z,17nm,19.0s,baz=178,slow=35						
PMG	**Port Moresby**	**6.08**	**176**	Pn	**Pn**	**10 22 14.1**	**-0.3**
	2.4nm,0.3s,baz=15,slow=2.5,SNR=9.4						
PMG				LR	LR	10 24 07.8	
	comp=Z,121nm,18.6s,baz=316,slow=34						
HNR	**Honiara**	**14.51**	**115**	LR	LR	10 29 27.2	
	comp=Z,176nm,20.1s,baz=279,slow=36						
CTA	**Charters Tower**	**16.69**	**181**	Pn	**P**	**10 24 40.5**	**+0.2**
	0.3nm,0.3s,baz=0.8,slow=14,SNR=6.2						
CTA				LR	LR	10 31 58.4	
	comp=Z,724nm,18.3s,baz=284,slow=41						
GUMO	**Guam**	**16.88**	**354**	LR	LR	10 30 17.2	
	comp=Z,87nm,19.1s,baz=158,slow=34						
WRAB	**Tennant Creek**	**20.45**	**215**	*e*P	**P**	**10 25 20.4**	**-1.2**
	23nm,0.8s						
WRA	**Warramunga Arr**	**20.46**	**215**	P	**P**	**10 25 20.5**	**-1.3**
	17nm,0.8s,baz=42,slow=10,SNR=58						
SOEI	**Soe**	**23.17**	**253**	*e*P	**P**	**10 25 51.0**	**+0.2**
	60nm,1.0s						
DAV	**Davao City (W)**	**23.45**	**296**	LR	LR	10 34 55.2	
	comp=Z,173nm,18.1s,baz=120,slow=36						
ASAR	**Alice Springs**	**23.72**	**210**	P	**P**	**10 25 54.8**	**-1.3**
	6.7nm,0.8s,baz=44,slow=7.1,SNR=57						
ASAR				LR	LR	10 36 17.2	
	comp=Z,257nm,21.1s,baz=66,slow=39						
FITZ	**Fitzroy Crossi**	**25.33**	**233**	P	**P**	**10 26 11.2**	**+0.4**
	13nm,0.9s,baz=82,slow=9.9,SNR=8.0						
FITZ				LR	LR	10 36 05.2	
	comp=Z,178nm,19.3s,baz=66,slow=36						
FITZ	**Fitzroy Crossi**	**25.33**	**233**	P	**P**	**10 26 11.2**	**+0.4**
FITZ				*e*P	**P**	**10 26 11.2**	**+0.4**
DZM	**Mont Dzumac**	**26.76**	**136**	LR	LR	10 34 22.1	
	comp=Z,710nm,19.2s,baz=328,slow=31						
STKA	**Stephens Creek**	**28.83**	**189**	P	**P**	**10 26 43.8**	**+1.7**
	1.7nm,0.9s,baz=349,slow=16,SNR=2.1						
H11S3	**WAKE ISLAND Hy**	**29.28**	**42**	T	T	10 57 51.8	
	baz=218						
H11S2	**WAKE ISLAND Hy**	**29.29**	**42**	T	T	10 57 45.1	
	baz=218						
H11S1	**WAKE ISLAND Hy**	**29.30**	**42**	T	T	10 57 41.1	
	baz=218						
MJAR	**Matsushiro Arr**	**40.42**	**349**	P	**P**	**10 28 20.6**	**-1.3**
	0.7nm,0.7s,baz=168,slow=6.2,SNR=3.5						
KSRS	**Korea Array**	**44.14**	**338**	LR	LR	10 45 58.9	
	comp=Z,58nm,18.6s,baz=150,slow=34						
CMAR	**Chiang Mai Arr**	**51.74**	**297**	P	**P**	**10 29 51.9**	**+0.5**
	0.9nm,0.4s,baz=115,slow=6.3,SNR=2.8						
PETK	**Petropavlovsk-**	**56.96**	**8**	P	**P**	**10 30 30.1**	**+1.3**
	1.1nm,0.6s,baz=225,slow=14,SNR=3.7						
SONM	**Songino Array**	**61.91**	**330**	P	**P**	**10 31 04.6**	**+1.3**
	0.2nm,0.3s,baz=120,slow=5.2,SNR=3.5						
SEY	**Seymchan**	**66.20**	**3**	P	**P**	**10 31 30.2**	**-0.6**
	1.6nm,0.7s,baz=152,slow=4.5,SNR=4.2						
MKAR	**Makanchi Array**	**75.23**	**320**	P	**P**	**10 32 26.8**	**+0.5**
	0.5nm,0.6s,baz=96,slow=7.4,SNR=8.7						
ZALV	**Zalesovo Beam**	**76.58**	**328**	P	**P**	**10 32 32.9**	**-0.9**
	0.3nm,0.3s,baz=110,slow=12,SNR=2.8						
KURK	**Kurchatov**	**78.88**	**323**	*e*P	**P**	**10 32 46.8**	**+0.1**
	35nm,1.3s						
AAK	**Ala-Archa**	**79.24**	**314**	LR	LR	11 08 11.5	
	comp=Z,58nm,20.5s,baz=44,slow=36						
ILAR	**Eielson Array**	**83.14**	**23**	P	**P**	**10 33 08.6**	**-0.5**
	1.0nm,0.9s,baz=257,slow=4.3,SNR=7.9						
ARU	**Arti**	**91.69**	**326**	LR	LR	11 12 03.5	
	comp=Z,58nm,20.6s,baz=135,slow=34						
YKA	**Yellowknife Ar**	**96.94**	**28**	P	**P**	**10 34 15.0**	**+0.4**
	0.3nm,0.9s,baz=278,slow=3.7,SNR=4.2						
TORD	**Torodi Ar. Bea**	**144.05**	**288**	PKP	**PKPdf**	**10 40 17.6**	**-2.4**
	0.7nm,1.0s,baz=343,slow=3.0,SNR=3.0

NIED ***11*** *10:28:00.35°.50N×137°.40E,h62km,Mw3.6 Best double couple: M₀3.17000×10¹⁴ NP1:φ₈217.00000°,δ51.00000°, λ-22.00000°. NP2:φ₈321.00000°,δ73.00000°, λ-139.00000°.*

JMA 11 10:28:47.7, 35°.49N×137°.37E, h62km±1km, M3.5, 4C-3D Broadband fault plane solution: P waves. NP1: φ₈226.00000°,δ79.00000°,λ-12.00000°. **NP2:** φ₈318.00000°,δ78.00000°,λ-169.00000°. **Principal axes:** T Plg1.0000°, Azm272.0000°; N Plg74.0000°, Azm5.0000°; P Plg16.0000°, Azm182.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAO	**Obara**	**0.24**	**202**	⇓P	Pn	10 28 57.7	0.0
JAO				S	Sn	10 29 05.0	+0.1
JNY	**Yasuok**	**0.42**	**108**	⇑P	Pn	10 28 59.2	+0.1
JNY				S	Sn	10 29 07.7	+0.2
SHZ3	**Shizuoka 3**	**0.81**	**121**	⇑P	Pn	10 29 03.1	-0.3
SHZ3				S	Sn	10 29 14.6	-0.4
JYN	**Shimob**	**0.96**	**89**	P	Pn	10 29 05.7	+0.4
JYN				S	Sn	10 29 21.1	+2.7
TSUJ	**Tsu 2**	**1.10**	**225**	P	Pn	10 29 07.3	+0.2
JKG	**Kaga**	**1.15**	**313**	⇑P	Pn	10 29 08.3	+0.5
TK04	**Tokai 4**	**1.18**	**159**	⇓P	Pn	10 29 08.7	+0.7
TK04				S	Sn	10 29 24.9	+1.7
JIE	**Ise**	**1.22**	**207**	⇓P	Pn	10 29 08.7	0.0
JIE				S	Sn	10 29 23.7	-0.7
MAT	**Matsushiro**	**1.25**	**33**	P	Pn	10 29 09.0	-0.1
MAT				S	Sn	10 29 27.3	+2.2
MAT	**Matsushiro**	**1.25**	**33**	P	Pn	10 29 09.2	+0.1
MAT				S	Sn	10 29 26.7	+1.6
JRY	**Ryogami san**	**1.35**	**67**	⇑P	Pn	10 29 11.2	+0.7
JRY				S	Sn	10 29 29.0	+1.4
JOD2	**Odawara 2**	**1.42**	**99**	P	Pn	10 29 12.0	+0.6

IDC ***11*** *10:29:57.7±2.7, 3°.77S×146°.44E, h0km, mb3.7/4, mb1 4.0/6, mb1mx3.7/40, mbtmp3.8/6, ML3.8/1 Error ellipse: s-maj=69.7km s-min=24.7km az=87.0*

ISCJB ***11*** *10:30:02.5±1.9, 3°.8S±0°.1×146°.2E±0°.3, h33km, mb3.6/4, Error ellipse: s-maj=41.8km s-min=16.6km az=161.6*

ISC 11 10:30:04.5±1.9, 3°.9S±0°.2×146°.1E±0°.3, h35km, n7, σ0§78/7, mb3.8/4, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**5.56**	**170**	Pn	**Pn**	**10 31 25.0**	**+0.2**
	3.2nm,0.3s,baz=55,slow=5.6,SNR=9.4						
CTA	**Charters Tower**	**16.09**	**180**	Pn	**P**	**10 33 51.1**	**0.0**
	0.3nm,0.3s,baz=2.6,slow=12,SNR=2.8						
WRA	**Warramunga Arr**	**19.66**	**215**	P	**Pn**	**10 34 31.7**	**-0.4**
	0.3nm,0.3s,baz=40,slow=12,SNR=37						
ASAR	**Alice Springs**	**22.93**	**210**	P	**P**	**10 35 06.1**	**+0.4**
	1.7nm,0.7s,baz=44,slow=8.1,SNR=24						
FITZ	**Fitzroy Crossi**	**24.53**	**233**	P	**P**	**10 35 20.4**	**-0.6**
	3.2nm,0.9s,baz=49,slow=11,SNR=2.6						
CMAR	**Chiang Mai Arr**	**51.52**	**297**	P	**P**	**10 39 08.3**	**+1.0**
	1.0nm,0.8s,baz=111,slow=7.3,SNR=4.2						
MKAR	**Makanchi Array**	**75.34**	**320**	P	**P**	**10 41 43.6**	**-0.8**
	0.2nm,0.7s,baz=119,slow=5.1,SNR=2.3						

NEIC ***11*** *10:37:34.7±0.7, 29°.28S×176°.56W, h10km, mb4.6/1, Error ellipse: s-maj=18.5km s-min=14.1km az=1.0*

IDC ***11*** *10:37:41.8±2.9, 29°.08S×176°.81W, h54km±21km, mb4.0/6, mb1 4.2/6, mb1mx3.7/40, mbtmp4.2/6, Error ellipse: s-maj=55.3km s-min=27.0km az=171.0*

ISC 11 10:37:36.4±0.8, 29°.38S±0°.10×176°.47W±0°.09, h21km, n17, σ1§30/22, mb4.4/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.27**	**275**	P	**Pb**	**10 37 59.7**	**+0.1**
	318nm,0.3s,baz=89,slow=10,SNR=9.4						
RAO				S	**Sb**	**10 38 18.2**	**+2.7**
	673nm,0.3s,baz=8.3,slow=23,SNR=7.4						
URZ	**Urewera**	**10.34**	**209**	P	**Pn**	**10 40 02.4**	**-1.0**
	1.0nm,0.3s,baz=356,slow=13,SNR=4.9						
URZ				S	**Sn**	**10 41 58.6**	**0.0**
	2.5nm,0.3s,baz=45,slow=19,SNR=7.5						
URZ	**Urewera**	**10.34**	**209**	P	**Pn**	**10 40 02.4**	**-1.0**
URZ				*e*Pn	Pn	10 40 03.4	-0.1
URZ				S	**Sn**	**10 41 58.6**	**0.0**
CTA	**Charters Tower**	**34.97**	**277**	P	**P**	**10 44 26.6**	**-0.7**
	4.1nm,0.8s,baz=95,slow=7.8,SNR=3.2						
CTAO	**Charters Tower**	**34.97**	**277**	*e*P	**P**	**10 44 26.1**	**-1.2**
STKA	**Stephens Creek**	**36.01**	**255**	P	**P**	**10 44 36.2**	**+0.1**
	1.7nm,0.7s,baz=104,slow=12,SNR=6.0						
ASAR	**Alice Springs**	**44.50**	**265**	P	**P**	**10 45 45.2**	**-1.4**
	3.0nm,0.7s,baz=104,slow=7.4,SNR=53						
ASAR				PcP	**PP**	**10 47 30.7**	**+0.1**
	0.5nm,0.6s,baz=120,slow=4.0,SNR=4.2						
WRAB	**Tennant Creek**	**45.40**	**270**	*e*P	**P**	**10 45 52.3**	**-1.4**
	7.4nm,1.0s						
WRA	**Warramunga Arr**	**45.40**	**270**	P	**P**	**10 45 52.1**	**-1.7**
	3.4nm,0.7s,baz=109,slow=7.7,SNR=22						
WRA				PcP	**PcP**	**10 47 33.8**	**+0.9**
	1.1nm,0.8s,baz=118,slow=3.2,SNR=4.4						
FITZ	**Fitzroy Crossi**	**53.70**	**268**	P	**P**	**10 46 55.3**	**-1.8**
	5.1nm,1.0s,baz=100,slow=6.1,SNR=3.1						
QSPA	**South Pole Qui**	**60.73**	**180**	*e*P	**P**	**10 47 48.3**	**+2.1**
TXAR	**Lajitas Array**	**90.72**	**57**	P	**P**	**10 50 38.7**	**+0.8**
	1.0nm,1.0s,baz=225,slow=8.7,SNR=3.8						
MKAR	**Makanchi Array**	**118.13**	**310**	PKP	**PKPdf**	**10 56 20.9**	**-0.7**
	0.3nm,0.7s,baz=82,slow=3.1,SNR=2.2						
KBZ	**Khabaz**	**145.62**	**305**	PKPbc	**PKPdf**	**10 57 13.1**	**+0.1**
	1.2nm,0.5s,baz=270,slow=3.0,SNR=3.9						
AKASG	**Malin Array Be**	**151.26**	**325**	PKPbc	**PKPbc**	**10 57 27.2**	**-0.7**
	0.8nm,0.3s,baz=46,slow=2.8,SNR=4.4						
BRTR	**Keskin Array B**	**153.25**	**301**	PKPab	**PKPab**	**10 57 44.8**	**-0.1**
	1.6nm,0.8s,baz=134,slow=3.2,SNR=5.9						
TORD	**Torodi Ar. Bea**	**163.76**	**174**	PKPab	**PKPab**	**10 58 32.5**	**+2.0**
	1.0nm,0.9s,baz=192,slow=4.6,SNR=4.5						

GUC ***11*** *10:40:57.2±0.3, 40°.53S×72°.10W, h6km±2km, ML3.8*

ISCJB ***11*** *10:40:58.7±0.8, 40°.56S±0°.08×72°.15W±0°.09, h33km, mb3.9/8, Error ellipse: s-maj=13.4km s-min=6.5km az=36.4*

IDC ***11*** *10:41:01.6±4.0, 40°.33S×71°.75W, h31km±23km, mb3.8/8, mb1 4.0/8, mb1mx3.8/31, mbtmp4.0/8, Error ellipse: s-maj=47.2km s-min=24.6km az=55.0*

ISC 11 10:41:00.2±0.9, 40°.6S±0°.1×72°.16W±0°.08, h35km, n18, σ1§79/21, mb3.9/8, Central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VLCH	**Valdivia**	**1.15**	**314**	*i* P	**Pn**	**10 41 16.9**	**-2.8**
VLCH				*i* S	**Sn**	**10 41 31.9**	**-2.4**
PLCA	**Paso Flores**	**1.23**	**96**	Pg	**Pn**	**10 41 19.6**	**-1.4**
	201nm,0.3s,baz=301,slow=12,SNR=6262						
PLCA				Lg	Lg	10 41 35.4	
	381nm,0.3s,baz=32,slow=19,SNR=24						
PLCA	**Paso Flores**	**1.23**	**96**	*i* P	**Pn**	**10 41 18.2**	**-2.8**
PLCA				*i* S	**Sn**	**10 41 34.4**	**-2.1**
CCHI	**Chillan**	**4.00**	**1**	*i* P	**Pn**	**10 41 58.2**	**-0.8**
CCHI				*i* S	**Sn**	**10 42 44.5**	**0.0**
CPUP	**Villa Florida**	**18.83**	**45**	P	**Pn**	**10 45 19.0**	**+1.4**
	0.1nm,0.3s,baz=222,slow=11,SNR=4.2						
LPAZ	**La Paz**	**24.48**	**9**	P	**P**	**10 46 16.6**	**-0.1**
	1.3nm,0.8s,baz=234,slow=6.2,SNR=4.6						
SIV	**San Ignacio**	**26.35**	**25**	P	**P**	**10 46 30.1**	**-2.9**
	2.1nm,0.8s,baz=221,slow=8.8,SNR=5.4						
TXAR	**Lajitas Array**	**75.47**	**332**	P	**P**	**10 52 42.8**	**+2.2**
	1.3nm,1.1s,baz=156,slow=6.9,SNR=3.8						
BOSA	**Boshof**	**77.15**	**117**	P	**P**	**10 52 51.0**	**+0.5**
	2.4nm,0.9s,baz=214,slow=3.6,SNR=2.5						
DBIC	**Dimbokro**	**77.47**	**70**	P	**P**	**10 52 52.9**	**+0.6**
	2.8nm,0.5s,baz=194,slow=6.1,SNR=6.1						
LBTB	**Lobatse**	**79.67**	**114**	P	**P**	**10 53 04.8**	**+0.4**
	2.3nm,0.8s,baz=189,slow=5.0,SNR=3.7						
TORD	**Torodi Ar. Bea**	**86.59**	**70**	P	**P**	**10 53 39.1**	**-0.9**
	0.9nm,1.0s,baz=225,slow=5.4,SNR=3.4						
PDAR	**Pinedale Array**	**89.61**	**333**	P	**P**	**10 53 55.0**	**+0.9**
	0.1nm,0.3s,baz=156,slow=4.7,SNR=3.6						
AKTO	**Aktyubinsk**	**144.35**	**57**	PKhKP	PKPpre	11 00 30.2	
	1.3nm,0.6s,baz=275,slow=6.3,SNR=6.3						
TIXI	**Tiksi**	**147.15**	**348**	PKPbc	**PKPab**	**11 00 38.4**	**-1.6**
	1.5nm,0.4s,baz=40,slow=5.4,SNR=4.5						
BVAR	**Borovoye Array**	**151.86**	**51**	PKPbc	**PKPbc**	**11 00 52.4**	**+1.9**
	0.8nm,0.6s,baz=253,slow=4.5,SNR=3.8						
KURBB	**Kurchatov Arra**	**157.32**	**54**	PKP	**PKPdf**	**11 00 53.2**	**+1.6**
	0.7nm,0.9s,baz=279,slow=1.2,SNR=4.1						
MKAR	**Makanchi Array**	**160.57**	**63**	PKP	**PKPdf**	**11 00 57.5**	**+1.8**
	0.2nm,0.4s,baz=250,slow=3.6,SNR=4.0						
MKAR				PKPab	**PKPab**	**11 01 37.1**	**-0.3**
	0.3nm,0.7s,baz=270,slow=2.9,SNR=2.9						

ISCJB ***11*** *10:42:58.7±0.8, 31°.89N±0°.03×114°.94W±0°.03, h6km±5km, Error ellipse: s-maj=5.5km s-min=3.7km az=18.7*

ECX ***11*** *10:43:03.2±0.6, 31°.94N×115°.02W, h10km, MD3.6, ML3.8, Fault plane solution: NP1:φ₈138.33000°,δ90.00000°, λ30.00000°.*

NEIC ***11*** *10:43:03.8, 31°.95N×115°.10W, h10km, MD4.2(MEX), ML3.8(ECX), After ECX.*

MEX ***11*** *10:43:04.7±0.6, 32°.00N×115°.03W, h25km±30km, MD4.2*

ISC 11 10:42:59.7±1.3, 31°.96N±0°.03×115°.03W±0°.03, h8km±10km, n51, σ1§28/76, 1C-7D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.47**	**343**	*e*P	**Pn**	**10 43 11.8**	**-0.9**
MBIG				*i* S	**Sb**	**10 43 17.9**	**+0.4**
MBIG	**Mexicali**	**0.47**	**343**	⇓*e*P	**Pn**	**10 43 11.9**	**-0.9**
CPBX	**Cerro Prieto**	**0.52**	**334**	⇓*e*P	**Pn**	**10 43 12.8**	**-0.6**
CPBX				*e*S	**Sb**	**10 43 19.9**	**+1.2**
CPBX	**Cerro Prieto**	**0.52**	**334**	*e*P	**Pn**	**10 43 12.8**	**-0.6**
CPBX				*i* S	**Sb**	**10 43 18.1**	**-0.6**
DREC	**Desert Rsrch C**	**0.92**	**338**	*e*P	**Pn**	**10 43 19.4**	**+0.5**
SPX	**San Pedro Mart**	**0.98**	**202**	*e*P	**Pn**	**10 43 20.5**	**+0.3**
SPX				*e*S	**Sn**	**10 43 34.0**	**-0.3**
SPX	**San Pedro Mart**	**0.98**	**202**	*e*P	**Pn**	**10 43 20.4**	**+0.3**
SPX				*e*S	**Sn**	**10 43 34.0**	**-0.3**
WESC	**Westside Schoo**	**0.99**	**324**	*e*P	**Pn**	**10 43 20.7**	**+0.7**
RMX	**La Rumorosa**	**1.09**	**306**	*e*P	**Pn**	**10 43 22.0**	**+0.4**
RMX				*e*S	**Sn**	**10 43 36.2**	**-0.7**
RMX				⇓*e*		10 43 38.0	
RMX				IAML		10 43 38.0	
	comp=N,1μm,0.2s						
GLA	**Glamis**	**1.11**	**9**	P	**Pb**	**10 43 20.7**	**-0.4**
	baz=192,SNR=480						
GLA				S	**Sg**	**10 43 35.7**	**+0.3**
	baz=192						
IKP	**In-Ko-Pah, Jac**	**1.15**	**307**	P	**Pb**	**10 43 21.8**	**-0.1**
	baz=129						
IKP				S	**Sn**	**10 43 38.4**	**+0.3**
	baz=129						
ZAX	**El Zacaton**	**1.15**	**248**	*e*P	**Pg**	**10 43 22.6**	**+0.9**
ZAX				IAML		10 43 41.9	
	comp=N,3μm,0.9s						
ZAX				⇑*e*		10 43 41.9	
ZAX				⇓*e*		10 43 43.3	
ZAX				IAML		10 43 43.3	
	comp=E,2μm,0.8s						
SWSC	**Sam W. Stewart**	**1.18**	**327**	P	**Pb**	**10 43 21.5**	**-0.9**
	baz=149,SNR=37						
SWSC				S	**Sn**	**10 43 39.6**	**+0.7**
	baz=149						
ECNX	**Esteban Cantu**	**1.36**	**258**	*e*P	**Pb**	**10 43 26.6**	**+1.0**
ECNX				⇓*e*P	**Pg**	**10 43 26.4**	**+0.5**
CBX	**Cerro Bola**	**1.43**	**285**	*e*P	**Pb**	**10 43 26.6**	**-0.1**
CBX				*i* S	**Sn**	**10 43 43.9**	**-1.3**
CBX	**Cerro Bola**	**1.43**	**285**	⇓*e*P	**Pg**	**10 43 27.8**	**+0.6**
CBX				IAML		10 43 51.0	
	comp=N,2μm,0.5s						
CBX	**Cerro Bola**	**1.43**	**285**	*e*P	**Pb**	**10 43 26.6**	**-0.1**
CBX				*i* S	**Sb**	**10 43 45.2**	**+0.1**
TJIG	**Tijuana**	**1.47**	**289**	*e*P	**Pn**	**10 43 26.6**	**0.0**
TJIG				*i* S	**Sn**	**10 43 43.9**	**-2.1**
MONP2	**Monument Peak**	**1.50**	**309**	P	**Pn**	**10 43 27.0**	**-0.2**
MONP2	baz=130,SNR=268						
	baz=130			S	**Sb**	**10 43 47.7**	**+0.3**
BAR	**Barrett**	**1.56**	**298**	⇓*e*P	**Pn**	**10 43 28.3**	**+0.4**
BC3	**Big Chuckawall**	**1.73**	**348**	P	**Pn**	**10 43 29.9**	**-0.3**
BC3	baz=170,SNR=58						
	baz=170			S	**Sn**	**10 43 51.0**	**-1.7**
Y12C	**Blythe**	**1.84**	**13**	P	**Pn**	**10 43 31.5**	**-0.2**
Y12C	baz=195,SNR=43						
	baz=195			Sb	**Sg**	**10 43 58.4**	**-0.5**
214A	**Organ Pipe Nat**	**1.89**	**89**	P	**Pn**	**10 43 31.2**	**-1.1**
214A	baz=270						
	baz=270			S	**Sn**	**10 43 53.9**	**-2.5**
214A	**Organ Pipe Nat**	**1.89**	**89**	*e*Pn	**Pn**	**10 43 31.6**	**-0.7**
109C	**Camp Elliot, M**	**1.98**	**299**	P	**Pn**	**10 43 34.2**	**+0.5**
109C	baz=118,SNR=56						
	baz=118			Sb	**Sg**	**10 44 03.1**	**-0.4**
TPFO	**Pinon Flats**	**2.04**	**324**	P	**Pn**	**10 43 34.0**	**-0.5**
TPFO	baz=145,SNR=22						
	baz=145			Sb	**Sg**	**10 44 04.6**	**-0.5**
PFO	**Pinyon Flats O**	**2.04**	**324**	P	**Pn**	**10 43 34.1**	**-0.5**
PFO	baz=145,SNR=29						
	baz=145			Sb	**Sg**	**10 44 05.4**	**0.0**
BELC	**Belle Mtn. Jos**	**2.19**	**339**	P	**Pn**	**10 43 36.5**	**-0.2**
	baz=160						
IRM	**Iron Mountain**	**2.20**	**358**	P	**Pn**	**10 43 36.5**	**-0.1**
IRM	baz=179,SNR=21						
	baz=179			Sb	**Sg**	**10 44 09.4**	**-1.0**
MURC	**Murrieta**	**2.45**	**313**	P	**Pn**	**10 43 40.2**	**+0.1**
MURC	baz=133						
	baz=133			Sb	**Sg**	**10 44 17.8**	**-0.7**
BBRC	**Big Bear Solar**	**2.79**	**326**	Pb	**Pb**	**10 43 50.5**	**+0.4**
BBRC	baz=146						
	baz=146			S	**Sn**	**10 44 20.2**	**+1.2**
GMRC	**Granite Mounta**	**2.87**	**350**	P	**Pn**	**10 43 46.1**	**+0.2**
	baz=170,SNR=13						
HEC	**Hector,Ludlow**	**3.07**	**340**	Pg	**Pg**	**10 43 59.4**	**+0.9**
	baz=160						
BFSC	**Mount Baldy Ra**	**3.17**	**317**	P	**Pn**	**10 43 50.4**	**+0.4**
BFSC	baz=136						
	baz=136			Sb	**Sg**	**10 44 39.1**	**-2.4**
CIS	**Catalina Islan**	**3.20**	**298**	P	**Pn**	**10 43 50.2**	**-0.1**
CIS	baz=117						
	baz=117			Sb	**Sb**	**10 44 38.9**	**+3.0**
FMP	**Fort Macarthur**	**3.26**	**303**	Pb	**Pb**	**10 43 57.9**	**+0.1**
FMP	baz=122						
	baz=122			Sb	**Sg**	**10 44 41.3**	**-3.0**
RRX	**Edison Barstow**	**3.34**	**331**	Pg	**Pg**	**10 44 05.2**	**+1.4**
	baz=151						
TUQ	**Turquoise Moun**	**3.55**	**348**	P	**Pn**	**10 43 54.9**	**-0.4**
	baz=169						
DECC	**Green Verdugo**	**3.59**	**310**	Sb	**Sg**	**10 44 51.4**	**-3.9**
	baz=130						
TUC	**Tucson**	**3.62**	**83**	P	**Pn**	**10 43 54.5**	**-1.8**
	baz=266						
TUC	**Tucson**	**3.62**	**83**	*e*P	**Pn**	**10 43 55.2**	**-1.0**
EDW2	**Edwards Air Fo**	**3.83**	**320**	Sb	**Sg**	**10 44 59.0**	**-3.7**
	baz=140						
ARVC	**Arvin**	**4.48**	**316**	Pg	**Pg**	**10 44 25.8**	**+0.2**
	baz=135						
MPMC	**Manual Prospec**	**4.57**	**334**	Pg	**Pg**	**10 44 28.4**	**+1.1**
	baz=154						
WUAZ	**Wupatki**	**4.68**	**40**	P	**Pn**	**10 44 11.5**	**+0.6**
	baz=222,SNR=16						
WUAZ	**Wupatki**	**4.68**	**40**	*e*Pn	**Pn**	**10 44 12.8**	**+1.9**
W18A	**Petrified Fore**	**5.43**	**53**	*e*Pn	**Pn**	**10 44 23.4**	**+2.2**
121A	**Cookes Peak, D**	**6.17**	**83**	P	**Pn**	**10 44 31.2**	**-0.1**
	baz=267,SNR=8.1						
121A	**Cookes Peak, D**	**6.17**	**83**	*e*Pn	**Pn**	**10 44 31.8**	**+0.5**
MVCO	**Mesa Verde**	**7.52**	**44**	*e*Pn	**Pn**	**10 44 53.9**	**+4.0**
PV04	**Paradox Valley**	**8.15**	**36**	*e*Pn	Pn	10 45 03.2	+4.8

IDC 11 10:43:30.7±2.9, 29°.97S×176°.22W, h0km, mb3.7/3, mb1 4.0/4, mb1mx3.7/38, mbtmp3.9/4, ML3.4/1, Error ellipse: s-maj=51.7km s-min=42.6km az=88.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.64**	**295**	Pn	Pn	10 44 01.2	+0.4
	98nm,0.3s,baz=17,slow=21,SNR=4.7						
RAO				Sn	Sn	10 44 15.1	-7.5
	164nm,0.3s,baz=83,slow=23,SNR=4.1						
URZ	**Urewera**	**9.94**	**212**	Pn	Pn	10 45 55.1	+0.2
	0.3nm,0.3s,baz=296,slow=5.7,SNR=3.7						
URZ				Sn	Sn	10 47 45.5	-1.6
	0.8nm,0.3s,baz=74,slow=4.8,SNR=5.2						
STKA	**Stephens Creek**	**36.07**	**256**	P	P	10 50 34.6	+0.4
	1.0nm,0.6s,baz=83,slow=9.7,SNR=4.2						
ASAR	**Alice Springs**	**44.67**	**266**	P	P	10 51 45.1	-0.4
	0.3nm,0.5s,baz=105,slow=7.7,SNR=8.8						
WRA	**Warramunga Arr**	**45.62**	**271**	P	P	10 51 52.7	-0.5
	1.5nm,0.7s,baz=110,slow=8.1,SNR=12						
FINES	**FINESS Array B**	**145.25**	**341**	PKPbc	PKPbc	11 03 08.6	-0.7
	0.4nm,0.3s,baz=58,slow=3.4,SNR=3.6						

MOS ***11*** *10:46:34.6±1.3, 50°.43N×155°.78E, h234km, mb4.2/1, Error ellipse: s-maj=99.9km s-min=13.1km az=66.8*

KRSC 11 10:46:34.6±1.7, 50°.43N×155°.78E, h234km±11km, ML4.0, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**0.33**	**40**	⇓*i* PN	Pn	10 47 06.1	+1.0
SKR				*i* S	S	10 47 30.9	+1.8
SKR				pmax	pmax		
	comp=Z,45nm,0.5s						
SKR				smax	smax		
	comp=N,124nm,0.6s						
SKR				smax	smax		
	comp=E,92nm,0.8s						
SKR	**Severo-Kuril's**	**0.33**	**40**	*e*P	Pn	10 47 06.2	+1.1
SKR				*e*S	S	10 47 28.8	-0.3
RUS	**Russkaya**	**2.64**	**39**	PN	Pn	10 47 24.2	+2.2
RUS				S	S	10 47 59.8	+0.5
RUS	**Russkaya**	**2.64**	**39**	*e*P	Pn	10 47 24.2	+2.2
RUS				*e*S	S	10 47 59.8	+0.5
DALK	**Dalny**	**3.19**	**34**	PN	Pn	10 47 31.0	+2.9
DALK				S	S	10 48 11.6	+1.2
DALK	**Dalny**	**3.19**	**34**	*e*P	Pn	10 47 31.0	+2.9
DALK				*e*S	S	10 48 11.6	+1.2
AVH	**Avacha**	**3.38**	**32**	PN	Pn	10 47 32.5	+2.1
AVH	**Avacha**	**3.38**	**32**	*e*P	Pn	10 47 32.5	+2.1
KRER	**Koryakskii**	**3.42**	**31**	PN	Pn	10 47 32.5	+1.6
KRER				S	S	10 48 14.9	-0.4
KRER	**Koryakskii**	**3.42**	**31**	*e*P	Pn	10 47 32.5	+1.6
KRER				*e*S	S	10 48 14.9	-0.4
SDLR	**Sedlovina**	**3.44**	**33**	PN	Pn	10 47 33.1	+2.0
SDLR				S	S	10 48 16.4	+0.7
SDLR	**Sedlovina**	**3.44**	**33**	*e*P	Pn	10 47 33.1	+2.0
SDLR				*e*S	S	10 48 16.4	+0.7
GNL	**Ganaly**	**3.53**	**21**	PN	Pn	10 47 31.9	-0.2
GNL	**Ganaly**	**3.53**	**21**	*e*P	Pn	10 47 31.9	-0.2
SPN	**Mys Shipunski**	**3.75**	**43**	PN	Pn	10 47 36.7	+2.1
SPN				S	S	10 48 21.7	-0.3
SPN	**Mys Shipunski**	**3.75**	**43**	*e*P	Pn	10 47 36.7	+2.1
SPN				*e*S	S	10 48 21.7	-0.3
MKZ	**Mys Kozlova**	**5.50**	**39**	PN	Pn	10 47 57.0	+1.1
MKZ				S	S	10 48 57.6	-3.1
MKZ	**Mys Kozlova**	**5.50**	**39**	*e*P	Pn	10 47 57.0	+1.1
MKZ				*e*S	S	10 48 57.6	-3.1
BKI	**Bering**	**7.81**	**48**	*e*S	S	10 49 50.6	-3.3

IDC ***11*** *10:48:29.2±0.3, 22°.83S×174°.69W, h0km, mb5.4/36, mb1 5.4/36, mb1mx5.4/39, mbtmp5.4/36, MS5.1/23, Ms1 5.1/23, ms1mx4.9/41, Error ellipse: s-maj=12.5km s-min=9.8km az=19.0*

ISCJB ***11*** *10:48:30.4±1.7, 22°.79S±0°.03×174°.61W±0°.02, h17km±11km, mb5.5/277, MS5.3/212, Error ellipse: s-maj=5.2km s-min=3.5km az=159.0*

BJI ***11*** *10:48:30.6, 22°.32S×174°.41W, h12km, mb5.4/51, mB6.1/54, Ms5.3/63, Ms7 5.1/55*

NEIC ***11*** *10:48:31.0±0.0, 22°.48S×174°.52W, h15km, Moment Tensor Solution. s7 Moment tensor: Scale 10¹⁷Nm; Mrr-2.60; Mθθ1.80; Mφφ0.80; Mrθ-0.10; Mθφ1.90; Mφr-1.10; Best double couple: M₀3.00000×10¹⁷ NP1:φ₈34.00000°, δ54.00000°, λ-113.00000°. NP2:φ₈251.00000°, δ41.00000°, λ-61.00000°. Principal axes: T 3.4000, Plg7.0000°, Azm140.0000°; N -0.4000, Plg18.0000°, Azm48.0000°; P -3.0000, Plg69.0000°, Azm251.0000°;*

NEIC ***11*** *10:48:33.0±1.9, 22°.68S×174°.75W, h21km±13km, mb5.6/220, MS5.4/156, MW5.6 Error ellipse: s-maj=4.5km s-min=3.2km az=150.0*

GCMT ***11*** *10:48:33.0±0.1, 22°.80S×174°.22W, h12km, MW5.6/141, Moment Tensor Solution. s109,c192; s141,c338; Duration: 1§5 Moment tensor: Scale 10¹⁷Nm; Mrr-2.68±.02; Mθθ1.94±.02; Mφφ0.74±.02; Mrθ0.86±.07; Mθφ1.11±.02; Mφr0.55±.07; Best double couple: M₀2.83300×10¹⁷ NP1:φ₈239.00000°, δ56.00000°, λ-91.00000°. NP2:φ₈60.00000°, δ34.00000°, λ-89.00000°. Principal axes: T 2.7940, Plg11.0000°, Azm329.0000°; N 0.0810, Plg1.0000°, Azm239.0000°; P -2.8720, Plg79.0000°, Azm146.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

MOS ***11*** *10:48:33.7±1.2, 22°.64S×174°.76W, h33km, mb5.7/88, MS5.3/47 Error ellipse: s-maj=7.7km s-min=6.8km az=78.5*

ISC 11 10:48:35.0±0.5, 22°.82S±0°.04×174°.64W±0°.04, h34km±1km, h34km:pP-P, n1364, σ1§60/1365, mb5.6/275, MS5.3/213, 77C-30D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**7.05**	**204**	Sn	**Sn**	**10 51 34.5**	**-0.3**
	baz=259,slow=22,SNR=4.6						
RAO				LR

TBI eLR LR 10 59 00.0
comp=Z,9μm,21.2s,baz=272
TBI Tubuai 23.17 96 eT T 11 17 53.3
comp=Z,13nm,0.3s
CRLZ Canterbury Las 23.23 204 eP **P 10 53 42.6 +3.6**
comp=Z,498nm,1.9s
OXZ Oxford 23.24 205 eP **P 10 53 37.7 -1.5**
comp=Z,103nm,0.8s
OXZ LR LR
comp=Z,5μm,22.0s
RPZ Rata Peaks 23.96 206 P **P 10 53 43.1 -3.0**
comp=Z,25nm,0.8s,baz=345,slow=2.9,SNR=11
RPZ S **S 10 57 57.9 -2.7**
comp=Z,15nm,1.0s,baz=109,slow=18,SNR=3.1
RPZ LR LR 11 03 09.6
comp=Z,5μm,21.6s,baz=27,slow=37
RPZ Rata Peaks 23.96 206 eP **P 10 53 45.1 -1.1**
comp=Z,276nm,1.6s
RPZ S **S 10 57 57.9 -2.7**
PAE Paea 24.05 82 eP **P 10 53 44.2 -3.0**
comp=Z,38nm,1.0s
PAE Paea 24.05 82 eT T 11 18 50.8
comp=Z,27nm,0.3s
PPT2 Papeete2 24.08 82 eP **P 10 53 44.7 -2.8**
comp=Z,157nm,1.0s
PPT2 eS **S 10 57 57.7 -5.3**
comp=Z,13μm,26.0s
PPT2 eLR LR 10 59 33.6
comp=Z,9μm,21.0s,baz=258
PPT2 Papeete2 24.08 82 eT T 11 18 53.0
comp=Z,19nm,0.3s
PPT Papeete 24.08 82 P **P 10 53 45.5 -2.0**
comp=Z,194nm,1.0s,baz=316,slow=4.0,SNR=19
PPT S **S 10 58 08.1 +5.2**
comp=Z,9.9nm,0.5s,baz=233,slow=20,SNR=3.9
PPT LR LR 11 01 32.5
comp=Z,9μm,19.2s,baz=264,slow=32
PPT Papeete 24.08 82 eP **P 10 53 46.8 -0.7**
PPT S **S 10 58 08.1 +5.2**
TIAR Tiarei 24.30 82 eP **P 10 53 46.7 -2.7**
comp=Z,71nm,0.9s
TIAR Tiarei 24.30 82 eT T 11 19 09.0
comp=Z,3.5nm,0.3s
TVO Taravao 24.32 83 eP **P 10 53 46.7 -3.0**
comp=Z,83nm,1.0s
TVO Taravao 24.32 83 eT T 11 19 12.4
comp=Z,3.2nm,0.3s
FOZ Fox Glacier 24.34 208 eP **P 10 53 49.6 +0.1**
comp=Z,807nm,1.6s
FOZ LR LR
comp=Z,7μm,19.0s
LBZ Lake Benmore 24.87 206 eP **P 10 53 54.1 -0.3**
comp=Z,406nm,1.9s
LBZ LR LR
comp=Z,7μm,18.0s
ODZ Otahua Downs 25.23 205 eP **P 10 53 55.1 -2.5**
comp=Z,325nm,1.8s
MEH Mehetia 25.38 84 eP **P 10 53 57.0 -2.3**
comp=Z,21nm,0.9s
MEH Mehetia 25.38 84 eT T 11 20 30.7
comp=Z,33nm,0.2s
WKZ Wanaka 25.72 207 eP **P 10 54 01.5 -0.5**
comp=Z,646nm,1.9s
MLZ Mavora Lakes 26.53 208 eP **P 10 54 10.3 +0.8**
comp=Z,425nm,2.0s
VAH Vaihoa 26.60 78 eP **P 10 54 08.1 -2.2**
comp=Z,58nm,1.0s
TARA Tarawa 26.91 332 eP **P 10 54 11.4 -1.6**
comp=Z,227nm,1.2s
TARA LR LR
comp=Z,4μm,20.0s
WHZ Wether Hill Ro 27.02 207 eP **P 10 54 14.6 +0.8**
comp=Z,132nm,0.8s
DCZ Deep Cove 27.03 209 eP **P 10 54 14.4 +0.5**
comp=Z,61nm,0.9s
HNR Honiara 27.74 295 P **P 10 54 19.8 -0.7**
comp=Z,237nm,0.8s,baz=270,slow=2.3,SNR=7.5
HNR LR LR 11 05 00.8
comp=Z,1μm,18.8s,baz=131,slow=36
HNR Honiara 27.74 295 eP **P 10 54 19.8 -0.7**
comp=Z,231nm,0.9s
XMAS Kiritimati 29.86 36 eP **P 10 54 38.6 -0.8**
comp=Z,118nm,1.0s
ARMA Armidale 31.00 249 eP **P 10 54 49.3 -0.2**
comp=Z,42nm,0.9s
ARMA LR LR
comp=Z,4μm,18.0s
EIDS Eidsvold 31.34 258 eP **P 10 54 51.4 -1.1**
comp=Z,22nm,0.8s
EIDS LR LR
comp=Z,7μm,18.0s
CAN Canberra 33.95 240 PFAKE 10 55 30.0 +15
CAN LR LR
comp=Z,5μm,19.0s
TAOE Nuku Hiva Isla 35.86 73 eS **S 11 01 06.6 -1.2**
comp=Z,723nm,24.5s
TAOE eLR LR 11 04 54.5
comp=Z,6μm,21.1s,baz=241
CTA Charters Tower 36.42 267 P **P 10 55 35.1 -1.6**
comp=Z,22nm,0.6s,baz=101,slow=12
CTA S **S 11 01 11.3 -4.9**
comp=Z,3.7nm,1.0s,baz=211,slow=19,SNR=3.6
CTAO Charters Tower 36.42 267 eP **P 10 55 35.3 -1.4**
CTAO pmax pmax
comp=Z,47nm,0.8s
CTAO MLR MLR
comp=Z,2μm,19.0s
CTAO Charters Tower 36.42 267 eP **P 10 55 35.3 -1.4**
comp=Z,47nm,0.8s
CTAO LR LR
comp=Z,2μm,19.0s
RKT Rikitea 36.45 98 eS **S 11 01 14.5 -2.0**
comp=Z,854nm,26.8s
RKT eLQ LQ 11 03 50.0
comp=Z,2μm,29.8s
RKT eLR LR 11 04 52.2
comp=Z,6μm,28.8s,baz=261
RKT Rikitea 36.45 98 eT T 11 34 29.0
comp=Z,6.1nm,0.3s
RABL Rabaul 37.05 295 eP **P 10 55 39.4 -2.7**
comp=Z,68nm,0.5s
TOO Toolangi 37.17 237 P **P 10 55 42.5 -0.4**
TOO pmax pmax
comp=Z,46nm,1.1s
PMG Port Moresby 38.91 284*d* iP **P 10 55 55.0 -2.7**
PMG Port Moresby 38.91 284 eP **P 10 55 56.3 -1.4**
comp=Z,179nm,0.9s
PMG LR LR
comp=Z,3μm,19.0s
JOHN Johnston Islan 39.62 8 PFAKE 10 56 10.0 +6.6
JOHN LR LR
comp=Z,280nm,20.0s
STKA Stephens Creek 39.69 247 P **P 10 56 02.5 -1.5**
comp=Z,13nm,0.5s,baz=87,slow=9.2,SNR=31
STKA LR LR 11 10 41.7
comp=Z,4μm,20.8s,baz=86,slow=34
STKA Stephens Creek 39.69 247 eP **P 10 56 03.0 -1.1**
comp=Z,3.9nm,0.6s
PTCN Pitcairn Islan 40.64 102 PFAKE 10 56 20.0 +8.0
PTCN LR LR
comp=Z,6μm,20.0s
COEN Coen 40.87 275 eP **P 10 56 12.7 -1.3**
comp=Z,69nm,1.0s
MANU Manus Island 42.24 294 eP **P 10 56 25.0 -0.2**
comp=Z,55nm,0.9s
BBOO Buckleboo 44.39 246 eP **P 10 56 41.2 -1.2**
comp=Z,40nm,1.1s
POHA Pohakuloa 46.24 25 eP **P 10 56 54.5 -2.9**
comp=Z,216nm,1.1s
POHA LR LR
comp=Z,2μm,20.0s
HPAH Hawaii Prepara 46.43 25 eP **P 10 56 56.2 -2.4**
comp=Z,90nm,0.9s
KIP Kipapa 46.86 21⇑ eP **P 10 56 59.3 -2.6**
KIP pmax pmax
comp=Z,694nm,1.1s
KIP Kipapa 46.86 21 eP **P 10 56 59.5 -2.4**
comp=Z,111nm,1.1s
AS01 Alice Springs 47.03 258 eP **P 10 57 01.6 -1.8**
AS31 Alice Springs 47.07 258 eP **P 10 57 01.8 -2.0**
comp=Z,16nm,0.8s
ASAR Alice Springs 47.07 258 P **P 10 57 01.6 -2.2**
comp=Z,83nm,1.0s,baz=92,slow=8.0,SNR=186
ASAR PcP **PcP 10 58 35.6 +0.2**
comp=Z,9.3nm,0.7s,baz=93,slow=5.2,SNR=4.3
ASAR S **S 11 03 49.0 -4.8**
comp=Z,5.3nm,1.1s,baz=87,slow=17,SNR=12
ASAR LR LR 11 16 59.1
comp=Z,4μm,19.2s,baz=104,slow=36
WB2 Warramunga Arr 47.40 263 eP **P 10 57 03.6 -2.6**
comp=Z,40nm,0.9s
WRAB Tennant Creek 47.40 263*de*P **P 10 57 03.8 -2.5**
WRAB pmax pmax
comp=Z,83nm,1.0s
WRAB Tennant Creek 47.40 263 eP **P 10 57 04.1 -2.2**
comp=Z,26nm,0.7s
WRAB LR LR
comp=Z,3μm,20.0s
WRA Warramunga Arr 47.41 263 P **P 10 57 03.6 -2.8**
comp=Z,22nm,0.8s,baz=91,slow=8.4,SNR=156
WRA PcP **PcP 10 58 36.5 -0.2**
comp=Z,14nm,0.8s,baz=98,slow=3.6,SNR=6.3
WRA S **S 11 03 50.7 -7.9**
comp=Z,3.5nm,1.0s,baz=86,slow=11,SNR=5.1
WRA LR LR 11 16 58.6
comp=Z,3μm,20.0s,baz=105,slow=36
WRA Warramunga Arr 47.41 263 P **P 10 57 03.6 -2.8**
WRA 10 58 36.5
WRA S **S 11 03 50.7 -7.9**
WRA pmax pmax
comp=Z,11nm,0.3s
WRA smax smax
comp=N,4.0nm,1.0s
WRA MLR MLR
comp=Z,3μm,20.0s
JAY Jayapura 47.73 288 P **P 10 57 07.0 -2.0**
comp=Z,9.2nm,0.7s,baz=102,slow=22,SNR=26
JAY Jayapura 47.73 288 P **P 10 57 06.0 -3.0**
JAY Jayapura 47.73 288 P **P 10 57 07.0 -2.0**
JAY pmax pmax
comp=Z,9.0nm,0.7s
GENI Genyem 48.17 288 P **P 10 57 09.0 -3.3**
MIDW Midway 50.80 357 PFAKE 10 57 40.0 +8.0
MIDW LR LR
comp=Z,2μm,20.0s
FORT Forrest 51.29 248 eP **P 10 57 34.3 -1.6**
comp=Z,963nm,0.6s
MTN Manton Dam 52.32 271 eP **P 10 57 41.3 -2.4**
comp=Z,87nm,1.4s
GUMO Guam 53.68 308 P **P 10 57 52.1 -1.6**
comp=Z,175nm,0.7s,baz=180,slow=8.1,SNR=25
GUMO Guam 53.68 308 eP **P 10 57 52.0 -1.6**
GUMO pmax pmax
comp=Z,203nm,0.8s
GUMO MLR MLR
comp=Z,681nm,20.0s
GUMO Guam 53.68 308 eP **P 10 57 52.0 -1.6**
comp=Z,203nm,0.8s
GUMO LR LR
comp=Z,681nm,20.0s
ANA2 Anatahan 54.95 312 eP **P 10 58 01.9 -1.0**
SBA Scott Base 55.80 185 eP **P 10 58 12.1 +3.9**
SBA pmax pmax
comp=Z,254nm,2.0s
SBA MLR MLR
comp=Z,3μm,21.0s
SBA Scott Base 55.80 185 eP **P 10 58 12.1 +3.9**
comp=Z,254nm,2.0s
SBA LR LR
comp=Z,3μm,21.0s
FITZ Fitzroy Crossi 55.83 263 eP **P 10 58 08.2 -1.1**
comp=Z,33nm,0.9s
VNDA Vanda 55.92 186 P **P 10 58 12.0 +3.0**
comp=Z,15nm,0.8s,baz=8.2,slow=7.1,SNR=46
VNDA LR LR 11 18 14.0
comp=Z,2μm,20.4s,baz=22,slow=32
VNDA Vanda 55.92 186 eP **P 10 58 12.1 +3.0**
comp=Z,83nm,1.7s
SWI Sorong 56.85 285 P **P 10 58 13.6 -3.1**
RPN Rapa Nui 58.78 109 PFAKE 10 58 40.0 +10
RPN LR LR
comp=Z,985nm,19.0s
NLAI Namlea 59.58 280 P **P 10 58 34.6 -1.2**
SOEI Soe 59.70 272 P **P 10 58 34.4 -2.3**
SOEI Soe 59.70 272 eP **P 10 58 36.3 -0.4**
comp=Z,169nm,0.7s
NWAO Narrogin (SRO) 60.15 244 P **P 10 58 38.6 -0.9**
comp=Z,5.8nm,0.5s,baz=101,slow=5.2,SNR=4.0
NWAO Narrogin (SRO) 60.15 244 P **P 10 58 38.6 -0.9**
NWAO LR LR
comp=Z,2μm,21.0s
LBMI Labuha 60.32 283 P **P 10 58 37.9 -3.0**
MBWA Marble Bar 60.41 258 eP **P 10 58 39.7 -1.7**
comp=Z,62nm,1.3s
MBWA LR LR
comp=Z,3μm,20.0s
SANI Sanana 61.08 281 P **P 10 58 42.6 -3.4**
MMRI Maumere 61.96 272 P **P 10 58 48.5 -3.5**
MMRI Maumere 61.96 272 eP **P 10 58 49.9 -2.1**
comp=Z,115nm,1.2s
KDI Kendari 63.38 277 P **P 10 59 01.4 0.0**
LUWI Luwuk 64.42 280 P **P 10 59 07.0 -1.3**
LUWI Luwuk 64.42 280 eP **P 10 59 06.8 -1.5**
comp=Z,107nm,1.1s
DAV Davao City (W) 65.56 290 PFAKE 10 59 30.0 +14
DAV LR LR
comp=Z,800nm,20.0s
KAPI Kappang 65.60 275 PFAKE 10 59 30.0 +14
KAPI LR LR
comp=Z,782nm,19.0s
SPSI Sidrap Palu 65.99 276 P **P 10 59 14.7 -3.8**
PLAI Plampang 66.01 270 P **P 10 59 14.3 -4.3**
TTSI Tana Toraja 66.30 277 P **P 10 59 18.8 -1.7**
TWSI Taliwang, Sumb 66.87 270 P **P 10 59 20.9 -3.2**
PCI Palu 67.15 279 P **P 10 59 24.5 -1.4**
QSPA South Pole Qui 67.27 180 eP **P 10 59 27.7 +1.8**
QSPA LR LR
comp=Z,3μm,20.0s
SRBI Singaraja 68.64 270 P **P 10 59 32.2 -3.1**
JAGI Jajag, Banyuwa 69.48 269 P **P 10 59 37.6 -2.9**
JAGI Jajag, Banyuwa 69.48 269 eP **P 10 59 38.5 -2.0**
comp=Z,98nm,1.1s
GMJI Gumukmas 70.21 269 P **P 10 59 41.2 -3.7**
JHJ2 Mitsune 70.56 321 eP **P 10 59 46.5 -0.2**
comp=Z,391nm,1.4s
JHJ Hachijo jima 2 70.59 321 P **P 10 59 46.2 -0.6**
comp=Z,59nm,0.4s,baz=202,slow=6.7,SNR=8.1
BBKI Banjar Baru 70.71 274 P **P 10 59 46.5 -1.6**
MYLDM Lahad Datu 70.94 284 eP **P 10 59 48.9 -0.5**
PWJI Pagerwojo 71.81 269 P **P 10 59 51.5 -3.2**
SDKM Sandakan 72.31 284 ⇑P **P 10 59 57.8 +0.1**
PCJI Pacitan 72.33 268 P **P 10 59 55.9 -1.9**
NGJI Ngawi 72.36 269 P **P 11 00 00.8 +2.8**
WOJI Wonogiri, Jawa 72.69 269 P **P 10 59 56.3 -3.6**
TGY Tagaytay City 72.95 294 P **P 11 00 01.4 -0.1**
comp=Z,218nm,0.4s,baz=88,slow=9.2,SNR=3.0
UGM Wanagama 73.03 268 P **P 11 00 04.7 +2.7**
UGM Wanagama 73.03 268 eP **P 11 00 01.3 -0.8**
comp=Z,139nm,1.3s
KDM Kudat 73.19 285 ⇑P **P 11 00 03.4 +0.5**
KKM Kota Kinabalu 73.36 284 ⇓P **P 11 00 03.5 -0.5**
KKM Kota Kinabalu 73.36 284 eP **P 11 00 03.4 -0.7**
KKM LR LR
comp=Z,512nm,22.0s
INU Inuyama 73.78 321 eP **P 11 00 08.2 +2.3**
comp=Z,66nm,1.5s
MJAR Matsushiro Arr 73.93 322 P **P 11 00 05.8 -1.0**
comp=Z,22nm,0.8s,baz=158,slow=5.9,SNR=37
MJAR S **S 11 09 37.9 +1.4**
comp=Z,2.7nm,0.4s,baz=20,slow=34,SNR=7.5
MJAR Matsushiro Arr 73.93 322 P **P 11 00 05.8 -1.0**
MJAR S **S 11 09 37.9 +1.4**
MJAR pmax pmax
comp=Z,25nm,0.8s
MJAR smax smax
comp=N,3.0nm,0.4s
MAJO Matsushiro 73.93 322 eP **P 11 00 05.8 -1.0**
MAJO pmax pmax
comp=Z,31nm,0.8s
MAJO MLR MLR
comp=Z,600nm,20.0s
MAJO Matsushiro 73.93 322 eP **P 11 00 05.8 -1.0**
comp=Z,31nm,0.8s
MAJO LR LR
comp=Z,600nm,20.0s
MAT Matsushiro 73.93 322 P **P 11 00 05.9 -0.9**
MAT S **SKiKP 11 09 34.0 +1.0**
MJB9 Matsu-Tunnel 73.94 322 eP **P 11 00 06.2 -0.6**
comp=Z,8.1nm,0.8s
STKI Sintang 75.18 276 P **P 11 00 15.9 +1.4**
ERM Erimo 75.39 329*c* iP **P 11 00 14.9 -0.1**
ERM pmax pmax
comp=Z,89nm,1.9s
ERM Erimo 75.39 329 eP **P 11 00 15.4 +0.4**
comp=Z,45nm,1.0s
ERM LR LR
comp=Z,1μm,20.0s
SBUM Sibu 75.46 279 ⇑P **P 11 00 16.2 +0.1**
SBUM Sibu 75.46 279 eP **P 11 00 16.2 +0.1**
NIKH Nikolski High 75.63 4 eP **P 11 00 18.3 +2.1**
comp=Z,220nm,1.0s
CISI Cisompet, Garu 75.66 268 P **P 11 00 18.1 +0.7**
CISI Cisompet, Garu 75.66 268 eP **P 11 00 16.2 -1.1**
comp=Z,278nm,1.9s
KUR Kuril'sk 75.85 334*d* iP **P 11 00 15.9 -1.7**
KUR *i* S **S 11 09 54.2 -3.2**
KUR pmax pmax
comp=Z,557nm,4.2s
KUR pmax pmax
comp=Z,88nm,1.6s
KUR MLR MLR
comp=N,377nm,19.0s
KUR MLR MLR
comp=E,159nm,19.0s
KUR MLR MLR
comp=Z,659nm,19.0s
SMY Shemya 75.86 353 eP **P 11 00 17.5 +0.1**
SMY pmax pmax
comp=Z,129nm,1.0s
SMY Shemya 75.86 353 eP **P 11 00 17.5 +0.1**
comp=Z,129nm,1.0s
JNU Nakatsue 76.10 315 P **P 11 00 18.5 -0.9**
comp=Z,30nm,1.0s,baz=82,slow=6.7,SNR=7.4
JNU S **S 11 10 09.3 +8.5**
comp=Z,8.9nm,1.1s,baz=72,slow=21,SNR=23
JNU LR LR 11 29 53.3
comp=Z,608nm,20.2s,baz=122,slow=33
JNU Nakatsue 76.10 315 eP **P 11 00 17.6 -1.7**
comp=Z,29nm,1.3s
JNU S **S 11 10 09.3 +8.5**
CNJI Cibinong 76.38 268 P **P 11 00 22.8 +1.4**
UNV Unalaska Valle 76.67 5 eP **P 11 00 20.8 -1.2**
comp=Z,65nm,0.9s
KSM Kuching 76.81 277 eP **P 11 00 23.1 -0.8**
KSM LR LR
comp=Z,2μm,20.0s
CBJI Citeko 76.97 268 P **P 11 00 29.0 +4.3**
DBJI Dramaga 77.01 268 P **P 11 00 26.7 +1.7**
SCI2 San Clemente I 77.07 46 P **P 11 00 24.6 -0.3**
baz=232
SBC Santa Barbara 77.23 44 P **P 11 00 24.7 -1.0**
baz=231
TWG Pinlang 77.25 302 eP **P 11 00 24.6 -1.5**
comp=Z,124nm,0.8s
ASAJ Asahikawa 77.26 330 P **P 11 00 26.3 +0.7**
comp=Z,89nm,0.9s,baz=180,slow=3.2
ASAJ Asahikawa 77.26 330 eP **P 11 00 26.3 +0.7**
comp=Z,124nm,1.0s
YULB Yu-li 77.37 302 eP **P 11 00 26.3 -0.4**
comp=Z,102nm,1.9s
CIS Catalina Islan 77.42 45 P **P 11 00 25.5 -1.3**
baz=232
BLG Laguna Peak, P 77.43 45 P **P 11 00 26.2 -0.6**
baz=231
PKM Mcpherson Peak 77.44 44 P **P 11 00 27.0 -0.1**
baz=231
SMMC Simmler 77.60 43 P **P 11 00 27.0 -0.8**
baz=230
SKR Severo-Kuril's 77.60 341 eP **P 11 00 27.0 -0.3**
SKR *i* 11 00 38.9
SKR *i* S **S 11 10 17.6 +1.3**
SKR *e* 11 10 51.0
SKR pmax pmax
comp=Z,800nm,4.5s
SKR pmax pmax
comp=Z,107nm,1.2s
SKR MLR MLR
comp=Z,900nm,19.0s
SAO San Andreas Ge 77.64 41 eP **P 11 00 28.2 +0.3**
SAO pmax pmax
comp=Z,62nm,1.3s
SAO San Andreas Ge 77.64 41 eP **P 11 00 28.2 +0.3**
comp=Z,62nm,1.3s
FMP Fort Macarthur 77.69 45 P **P 11 00 28.1 -0.1**
baz=232
SSLB Suanglung 77.85 302 eP **P 11 00 28.6 -0.8**
comp=Z,32nm,1.0s
TPUB Ta-pu 77.85 302 eP **P 11 00 27.4 -2.0**
comp=Z,62nm,0.8s
PMSA Palmer Station 77.92 156 P **P 11 00 29.2 +0.1**
comp=Z,13nm,0.8s,baz=271,slow=4.6,SNR=11
PMSA Palmer Station 77.92 156 eP **P 11 00 29.5 +0.4**
comp=Z,35nm,0.6s
PMSA LR LR
comp=Z,1μm,20.0s
CGJI Cibinong 77.96 268 P **P 11 00 29.5 -0.8**
OSI Osito Audit: C 77.97 44 P **P 11 00 29.2 -0.7**
baz=231
109C Camp Elliot, M 77.98 47 P **P 11 00 28.6 -1.3**
baz=233
YHNB Yeheng 77.98 303 eP **P 11 00 29.4 -0.8**
comp=Z,84nm,1.3s
YHNB LR LR
comp=Z,1μm,20.0s
DECC Green Verdugo 78.00 45 P **P 11 00 28.5 -1.5**
baz=232
SLBS Sierra La Lagu 78.02 58 eP **P 11 00 31.2 +0.8**
comp=Z,62nm,1.4s
PASC Pasadena Art C 78.05 45 eP **P 11 00 29.8 -0.5**
comp=Z,21nm,1.0s
BAR Barrett 78.14 47 eP **P 11 00 30.4 -0.5**
comp=Z,57nm,1.7s
HOPS Hopland Field 78.15 39 eP **P 11 00 31.7 +1.0**
comp=Z,140nm,1.4s
MWC Mount Wilson 78.16 45 eP **P 11 00 31.5 +0.4**
MWC pmax pmax
comp=Z,36nm,1.2s
MWC Mount Wilson 78.16 45 eP **P 11 00 31.5 +0.4**
comp=Z,36nm,1.2s
ARVC Arvin 78.22 44 P **P 11 00 30.1 -1.1**
baz=231
MURC Murrieta 78.35 46 P **P 11 00 30.8 -1.2**
baz=233
BFSC Mount Baldy Ra 78.43 45 P **P 11 00 31.7 -0.8**
baz=232
MONP2 Monument Peak 78.44 47 P **P 11 00 31.8 -1.0**
baz=233
IKP In-Ko-Pah, Jac 78.50 47 P **P 11 00 32.4 -0.6**
baz=234
VES Vestal, Richgr 78.51 43 P **P 11 00 31.9 -0.8**
baz=231
EDW2 Edwards Air Fo 78.61 44 P **P 11 00 32.7 -0.7**
baz=232
KMRM Mail Ridge 78.62 37 eP **P 11 00 34.0 +0.6**
comp=Z,90nm,1.0s
ISA Isabella, Lake 78.78 44 P **P 11 00 33.4 -0.9**
baz=231
ISA Isabella, Lake 78.78 44 eP **P 11 00 34.5 +0.1**
ISA pmax pmax
comp=Z,89nm,1.4s
ISA Isabella, Lake 78.78 44 eP **P 11 00 34.5 +0.1**
comp=Z,89nm,1.4s
SDPT Sand Point 78.78 8 eP **P 11 00 32.8 -1.0**
comp=Z,61nm,0.8s
PFO Pinyon Flats O 78.84 46 P **P 11 00 33.7 -1.1**
baz=233
PFO Pinyon Flats O 78.84 46 eP **P 11 00 34.6 -0.2**
PFO pmax pmax
comp=Z,32nm,1.2s
PFO MLR MLR
comp=Z,2μm,21.0s
PFO Pinyon Flats O 78.84 46 eP **P 11 00 34.6 -0.2**
comp=Z,32nm,1.2s
PFO LR LR
comp=Z,2μm,21.0s
TPFO Pinon Flats 78.84 46 P **P 11 00 34.0 -0.8**
baz=233
JCC Jacoby Creek, 78.85 37 eP **P 11 00 34.9 +0.4**
comp=Z,32nm,0.9s
SWSC Sam W. Stewart 78.89 47 P **P 11 00 34.1 -0.8**
baz=234
BBRC Big Bear Solar 78.93 46 P **P 11 00 34.2 -1.2**
baz=233
PET Petropavlovsk 79.01 344 eP **P 11 00 34.2 -0.9**
PET *e* 11 03 38.9
PET *i* S **S 11 10 31.7 +0.4**
PET *e*PS **PnS 11 11 13.8 -3.8**
PET *e*PPS PPS 11 11 32.7
PET *e*SS **SS 11 15 43.5 +5.5**
PET pmax pmax
comp=Z,400nm,8.1s

PET pmax pmax
comp=Z,25nm,0.8s
PET MLR MLR
comp=Z,800nm,19.0s
PET Petropavlovsk 79.01 344 *e*P **P 11 00 33.8 -1.2**
comp=Z,229nm,1.9s
PET LR LR
comp=Z,1μm,20.0s
KHMM Horse Mountain 79.06 37 *e*P **P 11 00 36.4 +0.5**
comp=Z,44nm,1.0s
CMB Columbia Colle 79.10 41 *e*P **P 11 00 35.6 -0.4**
CMB pmax pmax
comp=Z,73nm,1.4s
CMB Columbia Colle 79.10 41 *e*P **P 11 00 35.6 -0.4**
comp=Z,72nm,1.4s
LRMC Laurel Mtn Rad 79.18 44 P **P 11 00 36.2 -0.4**
baz=232
PPBI Pangkal Pinang 79.23 272 P **P 11 00 38.4 +1.1**
RRX Edison Barstow 79.25 45 P **P 11 00 36.1 -0.8**
baz=232
PEA0 Petropavlovsk- 79.33 343 *e*P **P 11 00 36.3 -0.5**
PEA0B Petropavlovsk- 79.33 343 *e*P **P 11 00 36.1 -0.7**
comp=Z,139nm,1.0s
PETK Petropavlovsk- 79.33 343 P **P 11 00 36.0 -0.9**
comp=Z,80nm,0.8s,baz=117,slow=7.8,SNR=59
PETK LR LR 11 30 21.6
comp=Z,473nm,21.8s,baz=152,slow=32
AFDM Forest Hills D 79.35 40 *e*P **P 11 00 36.9 -0.4**
comp=Z,68nm,1.4s
YSS Yuzh-Sakhalins 79.38 332 *α iP* **P 11 00 37.7 +0.5**
YSS *e**SP **pP 11 00 47.7 -0.3**
YSS *e* 11 03 35.6
YSS *i* S **S 11 10 39.0 +3.5**
YSS pmax pmax
comp=Z,1μm,5.0s
YSS Yuzh-Sakhalins 79.38 332 *e*P **P 11 00 37.5 +0.3**
comp=Z,129nm,1.1s
BELC Belle Mtn. Jos 79.38 46 P **P 11 00 37.2 -0.6**
baz=233
ORV Oroville 79.44 39 *e*P **P 11 00 37.2 -0.6**
ORV pmax pmax
comp=Z,44nm,1.2s
ORV Oroville 79.44 39 *e*P **P 11 00 37.2 -0.6**
comp=Z,44nm,1.2s
KASI Kota Agung 79.47 268 P **P 11 00 37.8 -0.8**
CWC Cottonwood Cre 79.52 43 P **P 11 00 38.1 -0.4**
baz=232
WDC Whiskeytown Da 79.52 38 *e*P **P 11 00 38.4 +0.2**
WDC pmax pmax
comp=Z,100nm,1.3s
WDC Whiskeytown Da 79.52 38 *e*P **P 11 00 38.4 +0.2**
comp=Z,100nm,1.3s
BC3 Big Chuckawall 79.54 47 P **P 11 00 38.0 -0.6**
baz=234
GLA Glamis 79.61 48 P **P 11 00 38.2 -0.8**
baz=234
GLA Glamis 79.61 48 *e*P **P 11 00 39.3 +0.4**
GLA pmax pmax
comp=Z,93nm,1.4s
GLA Glamis 79.61 48 *e*P **P 11 00 39.3 +0.4**
comp=Z,93nm,1.4s
GSC Goldstone, Bar 79.63 45 P **P 11 00 38.3 -0.8**
baz=233
GSC Goldstone, Bar 79.63 45 *e*P **P 11 00 38.5 -0.6**
GSC pmax pmax
comp=Z,38nm,1.2s
GSC Goldstone, Bar 79.63 45 *e*P **P 11 00 38.5 -0.6**
comp=Z,38nm,1.2s
MPMC Manual Prospec 79.66 44 P **P 11 00 38.4 -0.9**
baz=232
HEC Hector,Ludlow 79.66 45 P **P 11 00 38.2 -1.0**
baz=233
N02D Trinity Center 79.69 37 P **P 11 00 39.2 0.0**
baz=228,SNR=27
DAC Darwin (Calif) 79.72 44 *e*P **P 11 00 39.4 -0.3**
DAC pmax pmax
comp=Z,73nm,1.7s
DAC Darwin (Calif) 79.72 44 *e*P **P 11 00 39.4 -0.3**
comp=Z,73nm,1.7s
O03D Paynes Creek 79.75 38 P **P 11 00 38.8 -0.8**
baz=228,SNR=22
MLAC Mammoth, Mammo 79.79 42 P **P 11 00 40.1 0.0**
baz=231
TIN Tinemaha, Big 79.80 43 P **P 11 00 39.5 -0.5**
baz=231
M02C Callahan 79.89 37 P **P 11 00 40.3 0.0**
baz=228,SNR=42
WAKR Walker 79.98 41 *e*P **P 11 00 41.0 0.0**
comp=Z,126nm,1.4s
CHGN Chignik 80.00 9 *e*P **P 11 00 38.4 -1.9**
L02D Cave Junction, 80.00 36 P **P 11 00 41.0 +0.2**
baz=227,SNR=22
IRM Iron Mountain 80.05 47 P **P 11 00 40.8 -0.5**
baz=234
LWLI Liwa 80.06 269 P **P 11 00 43.3 +1.4**
GMRC Granite Mounta 80.07 46 P **P 11 00 40.7 -0.8**
baz=233
HSIG 80.09 53 *e*P **P 11 00 40.9 -0.7**
comp=Z,30nm,1.1s
113A Mohawk Valley, 80.17 48 *e*P **P 11 00 41.0 -0.9**
comp=Z,64nm,1.6s
YBH Yreka Blue Hor 80.20 37 *e*P **P 11 00 41.9 -0.1**
YBH pmax pmax
comp=Z,59nm,0.9s
YBH Yreka Blue Hor 80.20 37 *e*P **P 11 00 41.9 -0.1**
comp=Z,59nm,0.9s
Y12C Blythe 80.22 47 P **P 11 00 41.5 -0.7**
baz=234
Y12C Blythe 80.22 47 *e*P **P 11 00 42.3 +0.2**
comp=Z,40nm,1.3s
QZH Quanzhou 80.28 302 ⇑ *i*P P 11 00 35.0 -7.7
QZH S S 11 10 35.6 -10
QZH pmax pmax
comp=Z,1μm,4.9s
QZH LR LR
comp=N,2μm,16.5s
QZH LR LR
comp=E,1μm,16.2s
QZH LR LR
comp=Z,2μm,18.9s
TUQ Turquoise Moun 80.29 45 P **P 11 00 41.8 -0.8**
baz=233
FURC Furnace Creek, 80.31 44 P **P 11 00 41.9 -0.6**
baz=232
GRAC Grapevine Rang 80.31 43 P **P 11 00 42.3 -0.3**
baz=232
SHOC Shoshone, Teco 80.34 45 P **P 11 00 42.0 -0.8**
baz=233
214A Organ Pipe Nat 80.38 49 P **P 11 00 42.0 -1.1**
baz=236
MAW Mawson 80.43 199 P **P 11 00 44.2 +1.5**
comp=Z,64nm,0.7s,baz=138,slow=5.6,SNR=86
MAW LR LR 11 34 57.5
comp=Z,2μm,19.9s,baz=118,slow=35
MAW Mawson 80.43 199 *e*P **P 11 00 44.3 +1.5**
comp=Z,72nm,0.7s
USHA Ushuaia 80.48 146 P **P 11 00 43.9 +0.6**
comp=Z,99nm,0.8s,baz=224,slow=5.1,SNR=8.6
USHA LR LR 11 28 25.5
comp=Z,4μm,20.9s,baz=221,slow=30
LDFC Landfair 80.61 46 *e*P **P 11 00 44.4 0.0**
comp=Z,169nm,1.4s
HUMO Hull Mountain 80.66 36 *e*P **P 11 00 44.5 +0.1**
comp=Z,71nm,1.3s
KSRS Korea Array 80.69 317 P **P 11 00 44.9 +0.4**
comp=Z,18nm,0.9s,baz=138,slow=5.8,SNR=18
KSRS LR LR 11 32 18.0
comp=Z,707nm,20.4s,baz=137,slow=33
KS15 Wonju Array Si 80.71 317 *e*P **P 11 00 45.8 +1.2**
KSAR Wonju Array Be 80.71 317 P **P 11 00 44.9 +0.2**
KSAR Wonju Array Be 80.71 317 P **P 11 00 44.9 +0.2**
M04C Macdoel 80.72 37 P **P 11 00 44.5 -0.4**
baz=228
KS01 Wonju Array Si 80.72 317 *e*P **P 11 00 44.8 0.0**
NEE2 Needles Airpor 80.75 46 P **P 11 00 44.4 -0.6**
baz=234
PAHR Pah Rah Range 80.78 40 *e*P **P 11 00 44.9 -0.4**
comp=Z,64nm,1.3s
TPNV Topopah Spring 80.99 44 P **P 11 00 45.6 -0.8**
baz=233
TPNV Topopah Spring 80.99 44 *e*P **P 11 00 45.9 -0.5**
TPNV pmax pmax
comp=Z,39nm,1.0s
TPNV Topopah Spring 80.99 44 *e*P **P 11 00 45.9 -0.5**
comp=Z,39nm,1.0s
LHSI Lahat 81.00 270 P **P 11 00 44.0 -2.9**
I03D Drain, OR 81.19 35 P **P 11 00 46.4 -0.7**
baz=227,SNR=32
K04D Chiloquin, OR 81.33 37 P **P 11 00 47.5 -0.6**
baz=228
Y14A Wickenburg 81.36 48 *e*P **P 11 00 48.0 -0.4**
comp=Z,188nm,1.4s
SHPR Sheep Range 81.42 45 *e*P **P 11 00 48.7 -0.1**
comp=Z,48nm,1.3s
W13A Hualapai Mount 81.44 46 *e*P **P 11 00 48.8 -0.2**
comp=Z,52nm,1.5s
INCN Inchon 81.52 317 *e*P **P 11 00 50.2 +1.1**
comp=Z,54nm,1.1s
INCN LR LR
comp=Z,552nm,20.0s
MOD Modoc Plateau 81.66 38 *e*P **P 11 00 49.8 0.0**
comp=Z,24nm,0.8s
OHAK Old Harbor 81.73 12 *e*P **P 11 00 49.2 -0.4**
comp=Z,249nm,1.8s
I04A Tendick Farm, 81.76 35 P **P 11 00 49.3 -0.8**
baz=228
COR Corvallis 81.83 34 *e*P **P 11 00 50.5 +0.1**
COR pmax pmax
comp=Z,68nm,1.3s
COR Corvallis 81.83 34 *e*P **P 11 00 50.5 +0.1**
comp=Z,68nm,1.3s
K05A Summer Lake 81.87 37 *e*P **P 11 00 50.9 -0.1**
comp=Z,82nm,1.1s
VLA Vladivostok 81.98 324 ⇑ *e*P **P 11 00 51.1 -0.2**
VLA pmax pmax
comp=Z,51nm,0.9s
TUC Tucson 82.00 50 P **P 11 00 51.7 0.0**
baz=237
TUC Tucson 82.00 50 *e*P **P 11 00 51.9 +0.1**
TUC pmax pmax
comp=Z,20nm,0.9s
TUC MLR MLR
comp=Z,4μm,20.0s
TUC Tucson 82.00 50 *e*P **P 11 00 51.9 +0.1**
comp=Z,20nm,0.9s
TUC LR LR
comp=Z,4μm,20.0s
MSHR Mys Shultsa 82.03 323 *d iP* **P 11 00 52.1 +0.6**
J05D Fort Rock, OR 82.05 36 P **P 11 00 51.2 -0.6**
baz=228
R11A Troy Canyon, C 82.25 43 P **P 11 00 52.4 -0.7**
baz=233
R11A Troy Canyon, C 82.25 43 *e*P **P 11 00 52.5 -0.7**
comp=Z,30nm,1.4s
G03D McMinnville, O 82.28 34 P **P 11 00 52.6 -0.2**
baz=227,SNR=14
KDAK Kodiak Island 82.38 12 *e*P **P 11 00 52.8 -0.2**
KDAK pmax pmax
comp=Z,760nm,1.6s
KDAK MLR MLR
comp=Z,808nm,20.0s
KDAK Kodiak Island 82.38 12 *e*P **P 11 00 52.8 -0.2**
comp=Z,760nm,1.6s
KDAK LR LR
comp=Z,808nm,20.0s
TYV Tymovskoe 82.44 334 *e*P **P 11 00 53.0 -0.5**
TYV *e*S **S 11 11 05.0 -2.3**
TYV pmax pmax
comp=Z,1μm,6.0s
TYV smax smax
comp=N,2μm,8.0s
TYV MLR MLR
comp=N,700nm,18.0s
TYV MLR MLR
comp=Z,900nm,18.0s
BMN Battle Mountai 82.52 40 *e*P **P 11 00 54.0 -0.4**
BMN pmax pmax
comp=Z,94nm,1.4s
BMN Battle Mountai 82.52 40 *e*P **P 11 00 54.0 -0.4**
comp=Z,94nm,1.4s
319A Douglas 82.57 52 *e*P **P 11 00 55.1 +0.3**
comp=Z,57nm,1.2s
F03A Seaside 82.62 33 *e*P **P 11 00 54.9 +0.3**
comp=Z,198nm,1.4s
USRK Ussuriysk Ar. 82.64 324 P **P 11 00 55.6 +0.9**
comp=Z,67nm,0.9s,baz=130,slow=3.3,SNR=65
G04A Mulino 82.68 34 *e*P **P 11 00 54.6 -0.3**
I05D Terrebonne, OR 82.70 35 P **P 11 00 54.7 -0.4**
baz=228
X16A Lo Mia Camp, P 82.70 48 *e*P **P 11 00 55.7 +0.1**
comp=Z,33nm,1.0s
MYKOM Kota Tinggi 82.86 275 *e*P **P 11 00 56.8 +0.1**
WVOR Wild Horse Val 82.95 38 *e*P **P 11 00 56.1 -0.5**
WVOR pmax pmax
comp=Z,121nm,1.4s
WVOR Wild Horse Val 82.95 38 *e*P **P 11 00 56.1 -0.5**
comp=Z,121nm,1.4s
LCMT Little Creek M 82.97 45 *e*P **P 11 00 56.8 0.0**
comp=Z,95nm,1.4s
F04D Rainier, OR 83.00 33 P **P 11 00 56.6 0.0**
baz=227
HPIG 83.00 57 *e*P **P 11 00 56.0 -1.3**
comp=Z,19nm,1.1s
E03A Lebam 83.04 33 P **P 11 00 56.7 0.0**
CCUT Cedar City 83.20 45 *e*P **P 11 00 57.4 -0.7**
comp=Z,86nm,1.5s
U15A North Rim 83.26 46 *e*P **P 11 00 58.4 -0.1**
comp=Z,163nm,1.4s
G05D Wamic, OR 83.31 35 P **P 11 00 57.6 -0.6**
baz=228,SNR=8.8
WUAZ Wupatki 83.36 47 P **P 11 00 58.2 -0.7**
baz=236
WUAZ Wupatki 83.36 47 *e*P **P 11 00 59.0 +0.1**
WUAZ comp=Z,84nm,1.4s LR LR
comp=Z,2μm,20.0s
ZAIG Zacatecas 83.47 62 *e*P **P 11 00 59.9 0.0**
comp=Z,40nm,1.4s
NLWA Neilton Lookou 83.48 32 *e*P **P 11 00 59.1 +0.1**
comp=Z,79nm,1.1s
NLWA LR LR
comp=Z,2μm,19.0s
EKU East Kanab 83.49 45 *e*P **P 11 00 59.4 -0.2**
GZH Guangzhou 83.57 298 P **P 11 01 01.0 +1.0**
GZH S **S 11 11 23.0 +3.1**
GZH pmax pmax
comp=Z,1μm,6.5s
G06A Carlson Farm, 83.67 35 *e*P **P 11 00 59.5 -0.5**
comp=Z,84nm,1.1s
NJ2 Nanjing 83.75 308 *e*P **P 11 01 01.5 +0.8**
NJ2 pmax pmax
comp=Z,23nm,1.2s
PKCU Pink Cliffs 83.82 45 *e*P **P 11 01 02.8 +1.4**
comp=Z,177nm,1.5s
ELK Elko 83.91 41 *e*P **P 11 01 01.2 -0.5**
ELK pmax pmax
comp=Z,48nm,1.3s
ELK Elko 83.91 41 *e*P **P 11 01 01.2 -0.5**
comp=Z,48nm,1.3s
HABR Khabarovsk 84.01 329 *e*P **P 11 00 59.8 -1.8**
HABR *e* 11 06 15.2
HABR *e*S **S 11 11 22.0 -1.3**
HABR *e*SS **SS 11 16 53.5 +0.8**
HABR pmax pmax
comp=Z,355nm,2.4s
HABR pmax pmax
comp=Z,148nm,1.8s
HABR MLR MLR
comp=Z,360nm,19.0s
SDSI Sungai Dareh 84.04 271 P **P 11 01 00.1 -2.6**
DIB Dawson Inlet, 84.06 24 *e*P **P 11 01 02.5 +0.8**
comp=Z,42nm,1.1s
LON Longmire 84.07 33 *e*P **P 11 01 01.5 -0.6**
LON pmax pmax
comp=Z,65nm,1.5s
LON Longmire 84.07 33 *e*P **P 11 01 01.5 -0.6**
comp=Z,65nm,1.5s
MDJ Mudanjiang 84.21 324 P **P 11 01 03.5 +0.7**
MDJ PP **PP 11 04 13.6 -4.3**
MDJ S **S 11 11 32.8 +7.3**
MDJ SS **SS 11 16 59.6 +3.7**
MDJ pmax pmax
comp=Z,44nm,1.1s
MDJ pmax pmax
comp=Z,790nm,6.1s
MDJ LR LR
comp=Z,240nm,31.8s
MDJ LR LR
comp=Z,500nm,27.2s
MDJ LR LR
comp=Z,780nm,30.7s
MDJ Mudanjiang 84.21 324 PFAKE 11 01 10.0 +7.2
MDJ LR LR
comp=Z,929nm,20.0s
MTPU Mount Pierson 84.25 45 *e*P **P 11 01 04.3 +0.7**
comp=Z,190nm,1.3s
W18A Petrified Fore 84.26 48 P **P 11 01 03.3 -0.3**
baz=237
W18A Petrified Fore 84.26 48 *e*P **P 11 01 04.2 +0.6**
comp=Z,119nm,1.4s
121A Cookes Peak, D 84.26 51 P **P 11 01 03.2 -0.3**
baz=239
121A Cookes Peak, D 84.26 51 *e*P **P 11 01 03.7 +0.1**
comp=Z,38nm,1.3s
CNPM China Poot 84.27 12 *e*P **P 11 01 02.1 -0.7**
D05A Enumclaw 84.27 33 *e*P **P 11 01 03.4 +0.3**
comp=Z,378nm,1.3s
HOM Homer 84.32 11 *e*P **P 11 01 03.4 +0.4**
TLIG Tlapa 84.48 68 *e*P **P 11 01 05.3 +0.3**
comp=Z,56nm,1.3s
MSU Marysvale 84.52 44 *e*P **P 11 01 05.3 +0.5**
MSU Marysvale 84.52 44 *e*P **P 11 01 05.3 +0.5**
PAYG Puerto Ayora 84.54 88 PFAKE 11 01 20.0 +15
PAYG LR LR
comp=Z,2μm,19.0s
PGC Sidney 84.56 31 *e*P **P 11 01 03.7 -0.7**
comp=Z,97nm,1.2s
BRLK Bradley Lake 84.56 12 *e*P **P 11 01 03.5 -0.7**
G08A Pilot Rock 84.60 36 *e*P **P 11 01 04.1 -0.8**
comp=Z,108nm,1.1s
QIZ Qiongzhong 84.64 293 P **P 11 01 06.2 +0.6**
QIZ S **S 11 11 34.7 +3.8**
QIZ LR LR
comp=Z,390nm,20.7s
QIZ LR LR
comp=Z,610nm,20.3s
QIZ Qiongzhong 84.64 293 PFAKE 11 01 20.0 +14
QIZ LR LR
comp=Z,642nm,20.0s
B05A Bryant 84.95 32 P **P 11 01 06.0 -0.3**
baz=227,SNR=44
E07A Sunnyside 84.95 34 *e*P **P 11 01 06.8 +0.3**
comp=Z,114nm,1.1s
A04D Lummi Island 84.96 32 P **P 11 01 06.1 -0.3**
baz=227,SNR=24
NKL Nikolayevsk 84.99 335 *e*P **P 11 01 05.0 -1.4**
NKL *e*S **S 11 11 28.0 -4.8**
NKL pmax pmax
comp=Z,77nm,1.0s
NKL pmax pmax
comp=Z,700nm,7.0s
NKL smax smax
comp=N,1μm,10.0s
NKL smax smax
comp=E,1μm,10.0s
NKL MLR MLR
comp=N,500nm,18.0s
NKL MLR MLR
comp=Z,600nm,18.0s
BBB Bella Bella 85.01 27 *e*P **P 11 01 06.4 -0.2**
comp=Z,78nm,1.2s
HAWA Hanford 85.01 35 *e*P **P 11 01 06.9 +0.1**
comp=Z,146nm,1.4s
HAWA LR LR
comp=Z,2μm,20.0s
SVW2 Sparrevohn 85.03 9 *e*P **P 11 01 05.4 -1.1**
comp=Z,21nm,1.0s
DUG Dugway, Tooele 85.08 43 P **P 11 01 06.8 -0.7**
baz=235
DUG Dugway, Tooele 85.08 43 *e*P **P 11 01 07.2 -0.3**
DUG pmax pmax
comp=Z,42nm,1.4s
DUG MLR MLR
comp=Z,1μm,19.0s
DUG Dugway, Tooele 85.08 43 *e*P **P 11 01 07.2 -0.3**
comp=Z,42nm,1.4s
DUG LR LR
comp=Z,1μm,19.0s
SYO Syowa Base 85.14 192 ⇑ *e*P **P 11 01 06.4 -0.8**
SYO Syowa Base 85.14 192 ⇑ *i PcP* **P 11 01 08.0 +0.8**
BMO Blue Mountains 85.23 37 *e*P **P 11 01 06.8 -1.2**
comp=Z,44nm,1.1s
BMO LR LR
comp=Z,1μm,19.0s
C06D Leavenworth 85.31 33 P **P 11 01 07.6 -0.7**
baz=228
BGU Big Grassy Mou 85.37 42 *e*P **P 11 01 08.1 -0.9**
comp=Z,39nm,1.5s
PLCA Paso Flores 85.42 132 P **P 11 01 08.8 -0.5**
comp=Z,10nm,0.9s,baz=252,slow=5.2,SNR=13
PLCA PKKPbc **PKKPbc 11 19 14.8 +1.1**
comp=Z,2.0nm,0.9s,baz=54,slow=5.9,SNR=3.6
PLCA LR LR 11 30 58.5
comp=Z,2μm,21.1s,baz=272,slow=30
PLCA Paso Flores 85.42 132 *e*P **P 11 01 10.3 +1.0**
comp=Z,28nm,1.1s
DL2 Dalian 85.56 315 ⇓ *iP* **P 11 01 09.9 +0.2**
DL2 SKS **SKSac 11 11 32.0 -0.4**
DL2 S **SKKSac 11 11 40.9 +1.6**
DL2 sS **sS 11 11 53.1 -3.9**
DL2 pmax pmax
comp=Z,88nm,1.0s
DL2 pmax pmax
comp=Z,580nm,4.3s
DL2 LR LR
comp=Z,280nm,17.3s
DL2 LR LR
comp=Z,400nm,17.9s
DL2 LR LR
comp=Z,850nm,26.7s
TMUT Trail Mountain 85.58 44 *e*P **P 11 01 10.4 +0.2**
comp=Z,109nm,1.2s
MNTX Cornudas Mount 85.59 53 P **P 11 01 09.6 -0.5**
baz=240
MNTX Cornudas Mount 85.59 53 *e*P **P 11 01 09.6 -0.5**
comp=Z,39nm,1.1s
MNTX LR LR
comp=Z,2μm,20.0s
SNAA Sanae 85.60 177 P **P 11 01 10.1 +0.6**
SNAA Sanae 85.60 177 *e*P **P 11 01 09.8 +0.2**
SNAA pmax pmax
comp=Z,155nm,1.9s
SNAA Sanae 85.60 177 *e*P **P 11 01 09.8 +0.2**
comp=Z,155nm,1.9s
CRAG Craig 85.61 22 *e*P **P 11 01 09.8 +0.3**
comp=Z,117nm,1.6s
SPU Mount Spurr 85.67 11 *e*P **P 11 01 08.2 -1.6**
Y22D IRIS PASSCAL I 85.68 50 P **P 11 01 10.3 -0.3**
baz=239
LAZ Ladron 85.69 50 *e*P **P 11 01 10.9 +0.2**
TX31 Lajitas Ar. Si 85.72 56 *e*P **P 11 01 10.0 -0.8**
TX31 *e*P **P 11 01 10.6 -0.2**
TXAR Lajitas Array 85.72 56 P **P 11 01 10.5 -0.4**
comp=Z,24nm,0.9s,baz=214,slow=5.2,SNR=84
TXAR PKKPbc **PKKPbc 11 19 16.1 +2.6**
comp=Z,0.3nm,0.7s,baz=98,slow=2.5,SNR=4.3
TXAR LR LR 11 32 46.9
comp=Z,2μm,19.6s,baz=0.0,slow=31
D08A Wollman Farm, 85.76 35 *e*P **P 11 01 10.2 -0.3**
comp=Z,118nm,1.4s
E09A Wood Farm, Sta 85.82 35 *e*P **P 11 01 10.1 -0.7**
comp=Z,80nm,1.3s
SRU San Rafael Swe 85.92 45 *e*P **P 11 01 11.4 -0.4**
SRU pmax pmax
comp=Z,121nm,1.3s
SRU San Rafael Swe 85.92 45 *e*P **P 11 01 11.4 -0.4**
comp=Z,121nm,1.3s
BNM Barren Site 85.93 50 *e*P **P 11 01 11.9 0.0**
P17A Butcher Ranch, 85.98 44 *e*P **P 11 01 12.4 +0.3**
comp=Z,109nm,1.4s
RC01 Rabbit Creek A 86.00 12 *e*P **P 11 01 11.0 -0.4**
LPM Los Pinos Moun 86.01 50 *e*P **P 11 01 12.2 -0.1**
HVU Hansel Valley 86.02 41 *e*P **P 11 01 11.5 -0.6**
HVU pmax pmax
comp=Z,66nm,1.4s
HVU Hansel Valley 86.02 41 *e*P **P 11 01 11.5 -0.6**
comp=Z,66nm,1.4s
CTU Camp Tracy 86.03 43 *e*P **P 11 01 12.0 -0.3**
comp=Z,120nm,1.2s
CN2 Changchun 86.04 321 ⇓ *iP* **P 11 01 11.8 -0.2**
CN2 *ep*P PcP 11 01 14.8 +0.2
CN2 *e*S **S 11 11 44.3 +0.6**
CN2 pmax pmax
comp=Z,60nm,1.2s
CN2 pmax pmax
comp=Z,1μm,4.0s
CN2 LR LR
comp=Z,200nm,20.0s
CN2 LR LR
comp=Z,400nm,20.0s
CN2 LR LR

comp=Z,400nm,20.0s
HLID Hailey 86.08 39 P P 11 01 11.8 -0.7
baz=234
HLID Hailey 86.08 39 eP P 11 01 11.6 -0.8
comp=Z,43nm,1.4s
HLID LR LR
comp=Z,906nm,20.0s
KLR Kul'dur 86.12 328 P P 11 01 12.5 +0.3
comp=Z,4.6nm,0.8s,baz=121,slow=4.8,SNR=13
KLR LR LR 11 36 12.5
comp=Z,1μm,20.3s,slow=33
JLU Jordanelle 86.17 43 eP P 11 01 12.8 -0.2
comp=Z,91nm,1.7s
SUA Susitna One 86.17 11 eP P 11 01 11.8 -0.5
MVCO Mesa Verde 86.23 47 P P 11 01 12.8 -0.6
baz=238
MVCO Mesa Verde 86.23 47 eP P 11 01 13.2 -0.2
comp=Z,38nm,1.4s
MVCO LR LR
comp=Z,2μm,20.0s
PV05 Paradox Valley 86.29 46 eP P 11 01 14.1 +0.4
VNA1 Neumayer--Stat 86.30 175 P P 11 01 13.7 +0.8
WHN Wuhan 86.32 305⇑ iP P 11 01 14.6 +0.9
WHN S SKSac 11 11 40.6 +3.0
WHN pmax pmax
comp=Z,1μm,8.6s
WHN LR LR
comp=Z,2μm,17.9s
WHN LR LR
comp=Z,2μm,19.9s
WHN LR LR
comp=Z,1μm,19.2s
EYAK Cordova Ski Ar 86.33 14 eP P 11 01 12.0 -0.9
GAMB Gambell 86.33 1 eP P 11 01 13.5 +0.6
B08A Colville Reser 86.39 33 eP P 11 01 12.7 -1.0
comp=Z,40nm,1.1s
MNSI Mandailing Nat 86.41 272 P P 11 01 14.0 -0.5
ANMO Albuquerque 86.46 50 P P 11 01 14.2 -0.3
baz=239
ANMO Albuquerque 86.46 50 dP P 11 01 14.1 -0.3
ANMO pmax pmax
comp=Z,63nm,1.7s
ANMO Albuquerque 86.46 50 eP P 11 01 14.2 -0.3
comp=Z,70nm,1.3s
ANMO LR LR
comp=Z,3μm,20.0s
TCUT Toone Canyon 86.48 43 eP P 11 01 14.1 -0.4
comp=Z,224nm,1.4s
PV10 Paradox Valley 86.49 46 eP P 11 01 12.3 -2.4
PV09 Paradox Valley 86.50 46 eP P 11 01 14.2 -0.6
IPM Ipoh 86.50 276 eP P 11 01 15.4 +0.4
NVL N'lazarevskaya 86.56 182 eP P 11 01 14.6 +0.4
NVL eS SKSac 11 11 40.1 +2.1
C09A Chrisman Ranch 86.57 34 eP P 11 01 14.3 -0.2
comp=Z,85nm,1.4s
PMR Palmer 86.58 12 eP P 11 01 13.2 -1.0
PMR pmax pmax
comp=Z,157nm,1.6s
PMR Palmer 86.58 12 eP P 11 01 13.2 -1.0
comp=Z,157nm,1.6s
PV04 Paradox Valley 86.59 46 eP P 11 01 14.5 -0.5
WRAK Wrangell Islan 86.63 22 eP P 11 01 15.0 +0.5
comp=Z,78nm,1.4s
WRAK LR LR
comp=Z,918nm,19.0s
LLLB Lillooet 86.64 31 eP P 11 01 14.4 -0.4
comp=Z,80nm,1.3s
HWUT Hardware Ranch 86.66 42 eP P 11 01 14.3 -1.1
comp=Z,42nm,1.5s
HWUT LR LR
comp=Z,2μm,20.0s
PV01 Paradox Valley 86.67 46 eP P 11 01 14.7 -0.8
TT01 Tatalina 86.70 8 eP P 11 01 14.4 -0.4
TTA Tatalina 86.72 8 eP P 11 01 15.8 +0.8
TTA pmax pmax
comp=Z,84nm,1.2s
TTA Tatalina 86.72 8 eP P 11 01 15.8 +0.8
comp=Z,84nm,1.2s
UBPT Khong Chiam 86.83 288 P P 11 01 17.2 +0.8
comp=Z,47nm,1.6s,comp=Z,1μm
DIV Divide 86.84 14 eP P 11 01 15.3 -0.3
MA2 Magadan 86.86 343 PFAKE 11 01 30.0 +14
MA2 LR LR
comp=Z,1μm,20.0s
SML Sawmill 86.93 12 eP P 11 01 15.4 -0.6
SML Sawmill 86.93 12 eP P 11 01 15.4 -0.6
BMRM Bremner River 86.96 14 eP P 11 01 15.5 -0.7
DHAK Deception Hill 86.96 18 eP P 11 01 16.7 +0.6
CRQM Cirque 87.11 15 eP P 11 01 17.0 -0.1
TIA Tai'an 87.14 311 ⇓P P 11 01 17.9 +0.3
TIA S SKSac 11 11 44.7 +2.3
TIA pmax pmax
comp=Z,60nm,1.3s
TIA pmax pmax
comp=Z,790nm,5.0s
TIA LR LR
comp=Z,300nm,30.0s
TIA LR LR
comp=Z,430nm,30.0s
TIA LR LR
comp=Z,1μm,32.0s
KLU Klutina 87.14 13 eP P 11 01 16.8 -0.3
SCM Sheep Creek Mo 87.16 13 eP P 11 01 16.6 -0.5
SCM Sheep Creek Mo 87.16 13 eP P 11 01 16.6 -0.5
KULM Kulim 87.17 277 eP P 11 01 16.5 -1.7
KULM LR LR
comp=Z,633nm,20.0s
PPLA Purkeypile 87.26 10 eP P 11 01 16.4 -1.2
EFI East Falkland 87.44 146⇓ eP P 11 01 18.1 -0.8
EFI pmax pmax
comp=Z,106nm,0.9s
EFI East Falkland 87.44 146 eP P 11 01 19.7 +0.8
comp=Z,82nm,0.8s
EFI LR LR
comp=Z,2μm,20.0s
NEW Newport 87.47 34 P P 11 01 18.0 -0.9
baz=231
NEW Newport 87.47 34 eP P 11 01 18.2 -0.7
NEW pmax pmax
comp=Z,43nm,1.6s
NEW MLR MLR
comp=Z,2μm,19.0s
NEW Newport 87.47 34 eP P 11 01 18.1 -0.7
comp=Z,43nm,1.6s
NEW LR LR
comp=Z,2μm,19.0s
BALM Baldy 87.55 15 eP P 11 01 18.7 -0.3
BALM Baldy 87.55 15 eP P 11 01 18.7 -0.3
AHID Auburn Hatcher 87.60 41 eP P 11 01 19.6 -0.3
comp=Z,42nm,1.2s
AHID LR LR
comp=Z,1μm,20.0s
S22A 4UR Ranch, Cre 87.64 47 P P 11 01 19.6 -0.7
baz=239
S22A 4UR Ranch, Cre 87.64 47 eP P 11 01 20.1 -0.2
comp=Z,96nm,1.8s
MCMT McKenzie Canyo 87.74 39 eP P 11 01 20.0 -0.6
CAST Castle Rocks 87.77 10 eP P 11 01 17.9 -2.1
PSI Prapat 87.79 274 P P 11 01 20.4 -1.0
comp=Z,59nm,0.9s,baz=126,slow=5.4,SNR=15
PSI Prapat 87.79 274 eP P 11 01 20.9 -0.5
comp=Z,83nm,1.0s
SKLT Songkhla 87.93 279 P P 11 01 23.4 +1.6
comp=Z,104nm,2.0s,comp=Z,2μm
O20A White River Ci 87.96 45 P P 11 01 20.0 -1.6
baz=238
KTH Kantishna Hill 88.08 10 eP P 11 01 19.9 -1.6
832A Faith Ranch, C 88.08 58 P P 11 01 20.8 -1.5
baz=243
REDW Red Top Meadow 88.08 41 eP P 11 01 21.5 -0.7
comp=Z,24nm,1.1s
TRF Thorofare Moun 88.09 11 eP P 11 01 20.5 -1.2
TPAW Teton Pass 88.10 41 eP P 11 01 22.1 -0.3
comp=Z,17nm,1.1s
SKAG Skagway 88.11 19 eP P 11 01 22.1 +0.5
comp=Z,156nm,1.5s
DLMT Dillon 88.19 39 eP P 11 01 21.9 -0.6
comp=Z,20nm,1.2s
SNOW Snow King Moun 88.20 41 eP P 11 01 22.6 -0.2
comp=Z,52nm,1.4s
DHY Denali Highway 88.28 12 eP P 11 01 22.1 -0.5
SMCO Snowmass 88.29 46 eP P 11 01 22.9 -0.7
comp=Z,26nm,1.1s
MSO Missoula 88.30 37 P P 11 01 21.5 -1.5
baz=234
MSO Missoula 88.30 37 eP P 11 01 21.5 -1.5
comp=Z,30nm,1.4s
RND Reindeer 88.30 11 eP P 11 01 21.3 -1.2
RND Reindeer 88.30 11 eP P 11 01 21.3 -1.2
IMW Indian Meadow 88.33 40 eP P 11 01 23.3 -0.2
comp=Z,12nm,0.8s
933A Laredo 88.33 59 P P 11 01 22.7 -0.8
baz=243
MOOW Moose Ponds 88.37 41 eP P 11 01 23.1 -0.4
comp=Z,20nm,1.6s
LOHW Long Hollow 88.37 41 eP P 11 01 23.2 -0.3
comp=Z,24nm,1.4s
BSMT Bassoo Peak 88.45 36 eP P 11 01 22.9 -0.8
GSI Gunungsitoli 88.45 272 P P 11 01 24.2 -0.2
GSI Gunungsitoli 88.45 272 eP P 11 01 24.6 +0.3
comp=Z,203nm,1.0s
SDCO Great Sand Dun 88.54 48 P P 11 01 23.5 -1.1
baz=240
SDCO Great Sand Dun 88.54 48 eP P 11 01 23.5 -1.1
comp=Z,22nm,1.3s
SDCO LR LR
comp=Z,2μm,20.0s
BW06 Boulder Array 88.55 42 P P 11 01 23.2 -1.3
baz=237
BW06 Boulder Array 88.55 42 eP P 11 01 22.5 -1.9
BW06 eP P 11 01 23.1 -1.3
BW06 LR LR
comp=Z,1μm,19.0s
LRM Limekiln Ridge 88.55 38 eP P 11 01 23.8 -0.6
PD31 Pinedale Array 88.55 42 eP P 11 01 23.1 -1.3
PDAR Pinedale Array 88.55 42 P P 11 01 23.1 -1.3
comp=Z,9.1nm,0.8s,baz=200,slow=3.9,SNR=42
PDAR LR LR 11 35 33.8
comp=Z,997nm,19.5s,baz=254,slow=32
833A Chaparral WMA, 88.56 59 P P 11 01 23.7 -0.9
baz=243
034A Hebbronville 88.56 60 P P 11 01 24.4 -0.2
baz=244
PAX Paxson 88.56 13 eP P 11 01 22.9 -0.9
PAX Paxson 88.56 13 eP P 11 01 22.9 -0.9
QLMT Earthquake Lak 88.57 39 eP P 11 01 24.9 +0.4
FLWY Flagg Ranch 88.58 40 eP P 11 01 24.7 +0.2
comp=Z,21nm,1.1s
CHBT CHBT 88.58 284 P P 11 01 26.4 +1.5
comp=Z,67nm,1.5s,comp=Z,11μm
MCK McKinley 88.59 11 eP P 11 01 22.9 -0.9
MCK McKinley 88.59 11 eP P 11 01 22.9 -0.9
HYT Haines Junctio 88.61 17 eP P 11 01 24.3 +0.1
comp=Z,86nm,1.6s
MSTX Muleshoe 88.61 52 P P 11 01 23.6 -1.2
baz=241
MSTX Muleshoe 88.61 52 eP P 11 01 24.0 -0.8
comp=Z,98nm,1.5s
YHB Horse Butte 88.66 40 eP P 11 01 25.3 +0.3
comp=Z,21nm,1.3s
SWMT Swartz Lake 88.67 36 eP P 11 01 23.4 -1.3
CHMT Chamberlain Mo 88.73 37 eP P 11 01 23.4 -1.8
035Z Hargill 88.79 61 P P 11 01 24.8 -0.8
baz=244
SLMT Seeley Lake 88.79 37 eP P 11 01 24.0 -1.4
733A Divot King Ran 88.81 58 P P 11 01 24.9 -0.9
baz=243
SKNT Sakolnakorn 88.82 289 P P 11 01 26.6 +0.6
comp=Z,100nm,1.7s,comp=Z,3μm
H17A Grant Village 88.83 40 P P 11 01 25.9 +0.1
baz=236
H17A Grant Village 88.83 40 eP P 11 01 26.6 +0.8
comp=Z,12nm,1.1s
YBMT Yellow Bay 88.87 36 eP P 11 01 24.5 -1.2
MENT Mentasta 88.90 14 eP P 11 01 24.9 -0.4
comp=Z,67nm,1.1s
BOZ Bozeman (W) 88.92 39 P P 11 01 24.6 -1.4
baz=235
BOZ Bozeman (W) 88.92 39 eP P 11 01 25.3 -0.7
BOZ pmax pmax
comp=Z,52nm,1.5s
BOZ MLR MLR
comp=Z,1μm,20.0s
BOZ Bozeman (W) 88.92 39 eP P 11 01 25.3 -0.7
comp=Z,52nm,1.5s
BOZ LR LR
comp=Z,1μm,20.0s
934A Benavides 88.93 60 P P 11 01 25.6 -0.6
baz=244
035A Encino 88.97 60 P P 11 01 25.7 -0.8
baz=244
T25A Trinidad 88.99 49 P P 11 01 25.2 -1.4
baz=240
T25A Trinidad 88.99 49 eP P 11 01 25.8 -0.8
comp=Z,17nm,1.1s
DLBC Dease Lake 88.99 22 P P 11 01 25.6 -0.3
comp=Z,11nm,0.8s,baz=200,slow=3.6,SNR=18
DLBC Dease Lake 88.99 22 eP P 11 01 26.1 +0.2
comp=Z,98nm,1.5s
LKWY Lake 89.03 40 PFAKE 11 01 40.0 +13
LKWY LR LR
comp=Z,2μm,19.0s
TRTT Trang 89.03 279 P P 11 01 28.9 +1.8
comp=Z,106nm,1.2s,comp=Z,2μm
834A Tilden 89.14 59 P P 11 01 26.5 -0.8
baz=244
JCT Junction City 89.21 56 P P 11 01 26.0 -1.6
baz=243
JCT Junction City 89.21 56 eP P 11 01 24.0 -3.6
JCT pmax pmax
comp=Z,87nm,1.8s
JCT MLR MLR
comp=Z,3μm,19.0s
JCT Junction City 89.21 56 eP P 11 01 24.0 -3.6
comp=Z,87nm,1.8s
JCT LR LR
comp=Z,3μm,19.0s
633A Saathoff Ranch 89.24 58 P P 11 01 27.0 -0.7
baz=243
SEY Seymchan 89.36 346 P P 11 01 26.9 -0.5
comp=Z,26nm,0.9s,baz=131,slow=4.4,SNR=20
Q24A Divide 89.40 47 P P 11 01 27.6 -1.0
baz=240
Q24A Divide 89.40 47 eP P 11 01 27.2 -1.4
comp=Z,29nm,1.2s
KVTX Kingsville 89.40 60 PFAKE 11 01 40.0 +12
KVTX LR LR
comp=Z,1μm,19.0s
HRY Holter Researc 89.41 38 eP P 11 01 29.2 +1.0
WRH Wood River Hil 89.42 11 eP P 11 01 26.8 -0.9
734A La Parita Cree 89.45 58 P P 11 01 27.7 -1.0
baz=244
DOT Dot Lake 89.46 13 eP P 11 01 27.5 -0.5
ISCO Idaho Springs 89.51 46 P P 11 01 28.2 -1.0
baz=240
ISCO Idaho Springs 89.51 46 eP P 11 01 28.6 -0.5
ISCO pmax pmax
comp=Z,7.0nm,1.0s
ISCO MLR MLR
comp=Z,1μm,20.0s
ISCO Idaho Springs 89.51 46 eP P 11 01 28.6 -0.5
comp=Z,7.2nm,1.0s
ISCO LR LR
comp=Z,1μm,20.0s
KHON Khomkaen 89.58 288 P P 11 01 31.1 +1.6
comp=Z,24nm,0.9s,comp=Z,1μm
SURA Surathani 89.61 280 P P 11 01 32.3 +2.6
comp=Z,36nm,1.8s
533A Kerrville 89.62 57 P P 11 01 28.4 -1.1
baz=243
CCB Clear Creek Bu 89.63 11 eP P 11 01 27.1 -1.6
WALA Waterton Lakes 89.64 35 eP P 11 01 28.5 -0.8
comp=Z,50nm,1.1s
BJT Baijiatuau 89.72 314 PFAKE 11 01 40.0 +10
BJT LR LR
comp=Z,574nm,20.0s
BJI Beijing 89.73 314 P P 11 01 30.1 +0.4
BJI PP PP 11 04 58.7 -3.8
BJI SKS SKSac 11 11 58.8 +1.1
BJI S ScS 11 12 23.1 -0.2
BJI pmax pmax
comp=Z,36nm,2.1s
BJI pmax pmax
comp=Z,1μm,4.0s
BJI LR LR
comp=Z,330nm,22.7s
BJI LR LR
comp=Z,540nm,21.5s
BJI LR LR
comp=Z,820nm,25.7s
835A Beeville 89.78 59 P P 11 01 28.9 -1.4
baz=244
COLA College 89.83 11 eP P 11 01 28.6 -0.9
COLA pmax pmax
comp=Z,133nm,1.3s
COLA MLR MLR
comp=Z,1μm,21.0s
COLA College 89.83 11 eP P 11 01 28.6 -0.9
comp=Z,133nm,1.3s
COLA LR LR
comp=Z,1μm,21.0s
AMTX Amarillo 89.84 52 P P 11 01 29.3 -1.2
baz=242
AMTX Amarillo 89.84 52 eP P 11 01 30.0 -0.6
comp=Z,36nm,1.2s
N23A Red Feather La 89.85 45 P P 11 01 29.8 -0.9
baz=239
N23A Red Feather La 89.85 45 eP P 11 01 30.2 -0.4
comp=Z,17nm,1.0s
634A China Grove, S 89.85 58 P P 11 01 29.7 -0.9
baz=244
433A Art 89.89 56 P P 11 01 29.5 -1.2
baz=243
IL1 Eielson Array 89.91 12 eP P 11 01 29.8 -0.2
ILAR Eielson Array 89.91 12 P P 11 01 28.8 -1.2
comp=Z,22nm,0.9s,baz=217,slow=5.3,SNR=74
ILAR PKKP PKKPdf 11 19 00.4 -0.7
comp=Z,0.2nm,0.8s,baz=349,slow=4.4,SNR=4.2
ILAR LR LR 11 38 48.3
comp=Z,419nm,18.7s,baz=209,slow=34
ILB Eielson Array 89.91 12 eP P 11 01 28.9 -1.1
ENH Enshi 89.92 303 PFAKE 11 01 40.0 +9.1
ENH LR LR
comp=Z,597nm,20.0s
RLMT Red Lodge 90.01 40 P P 11 01 30.1 -1.1
baz=237
RLMT Red Lodge 90.01 40 eP P 11 01 30.8 -0.4
comp=Z,25nm,1.3s
RLMT LR LR
comp=Z,1μm,20.0s
534A Blanco 90.04 57 P P 11 01 30.2 -1.3
baz=244
735A Kenedy 90.04 59 P P 11 01 30.8 -0.6
baz=244
GCMT Greycliff 90.14 39 eP P 11 01 31.8 +0.1
333A Richland Sprin 90.22 56 P P 11 01 30.9 -1.3
baz=243
635A Leesville 90.30 58 P P 11 01 32.2 -0.5
baz=244
ABTX Abilene, Hawle 90.31 55 P P 11 01 32.0 -0.7
baz=243
ABTX Abilene, Hawle 90.31 55 eP P 11 01 32.1 -0.5
comp=Z,94nm,1.4s
PHWY Pilot Hill 90.37 45 eP P 11 01 32.3 -0.8
comp=Z,21nm,1.4s
K22A Casper 90.38 43 P P 11 01 32.0 -1.0
baz=239
K22A Casper 90.38 43 eP P 11 01 32.3 -0.6
comp=Z,36nm,1.4s
GYA Guiyang 90.50 298⇑ iP P 11 01 33.6 -0.2
GYA PP PP 11 05 11.8 +2.7
GYA SKS SKSac 11 12 03.6 +0.5
GYA S S 11 12 27.0 0.0
GYA SS SS 11 18 31.4 +2.6
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,150nm,6.2s
GYA LR LR
comp=Z,970nm,18.8s
GYA LR LR
comp=Z,890nm,19.0s
GYA LR LR
comp=Z,840nm,18.6s
LCO Las Campanas 90.50 122 PFAKE 11 01 50.0 +16
LCO LR LR
comp=Z,1μm,20.0s
434A Burnet 90.55 57 P P 11 01 32.7 -1.1
baz=244
233A Rising Star 90.60 55 P P 11 01 32.9 -1.1
baz=244
736A Circle Diamond 90.67 59 P P 11 01 34.6 +0.3
baz=244
535A Dale 90.74 58 P P 11 01 34.0 -0.7
baz=244
334A Lometa 90.80 56 P P 11 01 34.0 -1.0
baz=244
133A Hamilton Ranch 90.85 55 P P 11 01 33.8 -1.3
baz=244
DAWY Dawson 90.86 15 eP P 11 01 33.4 -1.1
comp=Z,63nm,1.0s
636A Smothers Creek 90.91 58 P P 11 01 35.3 -0.1
baz=244
435B Jarrell 91.06 57 P P 11 01 34.9 -1.2
baz=244
EGAK Eagle 91.07 14 eP P 11 01 34.6 -0.7
comp=Z,82nm,1.3s
EGAK LR LR
comp=Z,1μm,20.0s
737A Port Lavaca 91.09 59 P P 11 01 35.5 -0.8
baz=245
KSCO Kaye Shedlock' 91.13 48 P P 11 01 35.2 -1.3
baz=241
KSCO Kaye Shedlock' 91.13 48 eP P 11 01 35.9 -0.6
comp=Z,85nm,1.4s
TIY Taiyuan 91.14 311 eP P 11 01 37.5 +1.0
TIY SKS SKSac 11 12 06.3 +0.1
TIY S S 11 12 29.8 -2.5
TIY pmax pmax
comp=Z,25nm,0.6s
TIY pmax pmax
comp=Z,480nm,4.7s
TIY LR LR
comp=Z,220nm,13.3s
TIY LR LR
comp=Z,480nm,20.1s
536A Bastrop 91.16 58 P P 11 01 35.6 -1.0
baz=244
234A Clairette 91.17 56 P P 11 01 35.5 -1.2
baz=244
Z33A Whitaker Ranch 91.26 54 P P 11 01 36.0 -1.0
baz=244
PBKT Sadao Pong 91.30 287 P P 11 01 39.0 +1.5
comp=Z,48nm,1.5s
X32A Elmer 91.38 53 P P 11 01 36.3 -1.3
baz=243
335A Moody 91.40 57 P P 11 01 36.0 -1.7
baz=244
637A Eagle Lake 91.46 59 P P 11 01 35.9 -2.1
baz=245
134A White-Moore Ra 91.46 55 P P 11 01 37.1 -0.9
baz=244
COLD Coldfoot 91.61 9 eP P 11 01 38.2 +0.4
436A Wall Ranch, Ga 91.67 57 P P 11 01 38.1 -0.8
baz=244
BILL Bilibino 91.68 353 dP P 11 01 37.3 -0.8
BILL i 11 01 49.5
BILL pmax pmax
comp=Z,37nm,1.2s
BILL Bilibino 91.68 353 PFAKE 11 01 50.0 +12
BILL LR LR
comp=Z,2μm,21.0s
WHTX Lake Whitney, 91.69 56 P P 11 01 38.0 -1.1
baz=244
WHTX Lake Whitney, 91.69 56 eP P 11 01 38.1 -0.9
comp=Z,56nm,1.3s
Y33A Hilltop Ranch, 91.69 54 P P 11 01 37.5 -1.5
baz=244
W32A Sentinel 91.73 53 P P 11 01 37.8 -1.4
baz=243
537A Green Hill Far 91.75 58 P P 11 01 38.9 -0.5
baz=245
336A Riesel 91.89 57 P P 11 01 38.6 -1.5
baz=244
WMOK Wichita Mounta 91.90 53 P P 11 01 38.3 -1.7
baz=244
WMOK Wichita Mounta 91.90 53 eP P 11 01 39.1 -0.9
WMOK pmax pmax
comp=Z,26nm,1.5s
WMOK MLR MLR
comp=Z,2μm,20.0s
WMOK Wichita Mounta 91.90 53 eP P 11 01 39.1 -0.9
comp=Z,26nm,1.5s
WMOK LR LR
comp=Z,2μm,20.0s
Z34A Collier Ranch, 91.94 55 P P 11 01 39.1 -1.1
baz=244
135A Vickery Place, 91.97 55 P P 11 01 39.0 -1.3
baz=244
XAN Xi'an 92.01 306 P P 11 01 41.1 +0.5

XAN sP pP 11 01 48.3 -3.2
XAN SKS **SKSac** **11 12 11.9 +0.7**
XAN S **ScS** **11 12 44.8 +2.1**
XAN pmax pmax
comp=Z,46nm,1.0s
XAN pmax pmax
comp=Z,300nm,7.1s
XAN LR LR
comp=Z,250nm,25.0s
XAN LR LR
comp=Z,390nm,23.7s
XAN LR LR
comp=Z,610nm,20.8s
X33A Lawton 92.02 53 P **P** **11 01 39.4 -1.1**
baz=244
UTTA Uttaradit 92.13 288 P **P** **11 01 43.0 +1.6**
comp=Z,10nm,1.2s,comp=Z,91nm
V32A Arapaho 92.14 52 P **P** **11 01 38.7 -2.4**
baz=244
638A Rosharon 92.15 59 P **P** **11 01 38.7 -2.5**
baz=245
437A Phantom Ranch, 92.20 58 P **P** **11 01 40.5 -1.0**
baz=245
W33A Caddo, Fort Co 92.31 53 P **P** **11 01 41.0 -0.9**
baz=244
Y34A Reagan Ranch, 92.31 54 P **P** **11 01 39.9 -2.0**
baz=244
EDM Edmonton 92.38 32 *e*P **P** **11 01 40.8 -1.0**
EDM pmax pmax
comp=Z,85nm,1.1s
EDM Edmonton 92.38 32 *e*P **P** **11 01 40.8 -1.0**
comp=Z,84nm,1.1s
HIA Hailar 92.39 323 *c i*P **P** **11 01 42.9 +1.0**
HIA pmax pmax
comp=Z,62nm,3.3s
HIA Hailar 92.39 323 PFAKE 11 01 50.0 +8.1
HIA LR LR
comp=Z,1µm,20.0s
236A Katherine and 92.40 56 P **P** **11 01 40.6 -1.7**
baz=245
Z35A Perchaven, San 92.42 55 P **P** **11 01 41.0 -1.4**
baz=244
538A Harpers Horsep 92.45 58 P **P** **11 01 40.4 -2.2**
baz=245
OGNE Ogallala 92.45 46 P **P** **11 01 41.0 -1.5**
baz=242
OGNE Ogallala 92.45 46 PFAKE 11 01 50.0 +7.5
OGNE LR LR
comp=Z,2µm,20.0s
NNA Nana 92.46 104 PFAKE 11 01 50.0 +6.8
NNA LR LR
comp=Z,3µm,20.0s
U32A Winter Ranch, 92.47 51 P **P** **11 01 41.3 -1.3**
baz=244
TRQA Tornquist 92.52 133 PFAKE 11 01 50.0 +7.0
TRQA LR LR
comp=Z,2µm,19.0s
X34A Smith Ranch, M 92.54 54 P **P** **11 01 41.7 -1.3**
baz=244
136A Ennis 92.60 56 P **P** **11 01 42.2 -1.1**
baz=245
337A Centerville 92.61 57 P **P** **11 01 40.8 -2.5**
baz=245
LAO LASA Array 92.64 40 P **P** **11 01 42.4 -0.8**
baz=239
LAO LASA Array 92.64 40 *e*P **P** **11 01 43.5 +0.3**
comp=Z,119nm,1.3s
LAO LR LR
comp=Z,574nm,20.0s
RSSD Black Hills 92.68 43 P **P** **11 01 42.0 -1.7**
baz=241
RSSD Black Hills 92.68 43 *e*P **P** **11 01 42.6 -1.0**
RSSD pmax pmax
comp=Z,76nm,1.3s
RSSD Black Hills 92.68 43 *e*P **P** **11 01 42.6 -1.0**
comp=Z,76nm,1.3s
438A Sam Houston St 92.69 58 P **P** **11 01 41.8 -1.9**
baz=245
V33A Lossen Ranch, 92.74 52 P **P** **11 01 41.8 -2.0**
baz=244
Y35A Marietta 92.83 54 P **P** **11 01 43.0 -1.3**
baz=244
W34A Bridge Creek, 92.86 53 P **P** **11 01 43.4 -1.0**
baz=244
W34A Bridge Creek, 92.86 53 *e*P **P** **11 01 44.3 -0.1**
comp=Z,150nm,1.5s
T32A Huddler Ranch, 92.88 51 P **P** **11 01 43.5 -1.0**
baz=244
237A Washetta, Mont 92.95 57 P **P** **11 01 43.6 -1.3**
baz=245
TGUH Tegucigalpa,Un 92.98 76 *e*P **P** **11 01 47.6 +2.2**
comp=Z,29nm,0.8s
ATAH Atahualpa 92.99 99 P **P** **11 01 46.9 +0.9**
comp=Z,6.2nm,0.8s,baz=331,slow=5.9,SNR=4.6
539A Cross D Ranch, 93.01 59 P **P** **11 01 44.2 -1.0**
baz=246
Z36A Blue Ridge 93.01 55 P **P** **11 01 44.2 -0.9**
baz=245
UMPA Umpang Tak 93.03 286 P P 11 01 53.0 +7.4
comp=Z,6.8nm,1.1s,comp=Z,1µm
CBKS Cedar Bluff 93.04 49 P **P** **11 01 43.7 -1.5**
baz=243
CBKS Cedar Bluff 93.04 49 PFAKE 11 02 00.0 +15
CBKS LR LR
comp=Z,3µm,20.0s
338A Crockett 93.07 57 P **P** **11 01 44.4 -1.0**
baz=245
X35A Drake 93.09 54 P **P** **11 01 44.1 -1.4**
baz=245
S32A Newby Ranch, P 93.10 50 P **P** **11 01 44.3 -1.2**
baz=244
U33A Lingo Farm, Me 93.13 52 P **P** **11 01 44.1 -1.5**
baz=244
KMI Kunming 93.17 296 P **P** **11 01 47.2 +0.8**
KMI pP PcP 11 01 51.4 +4.5
KMI sP pP 11 01 53.1 -4.2
KMI PP **PP** **11 05 27.2 -3.1**
KMI SKS **SKSac** **11 12 20.5 +2.1**
KMI S **S** **11 12 52.4 +1.1**
KMI SS **SS** **11 19 12.4 +4.9**
KMI pmax pmax
comp=Z,29nm,1.7s
KMI pmax pmax
comp=Z,340nm,3.9s
KMI LR LR
comp=Z,180nm,22.0s
KMI LR LR
comp=Z,440nm,18.9s
KMI LR LR
comp=Z,600nm,18.9s
HHC Hu-ho-hao-te 93.20 313 *e*P **P** **11 01 46.0 0.0**
HHC SKS **SKSac** **11 12 21.0 +3.3**
HHC S **ScS** **11 12 55.6 +3.2**
HHC pmax pmax
comp=Z,19nm,1.1s
HHC pmax pmax
comp=Z,350nm,6.3s
HHC LR LR
comp=Z,300nm,19.4s
HHC LR LR
comp=Z,540nm,19.2s
HHC LR LR
comp=Z,590nm,19.2s
H25A Fruitdale 93.20 43 P **P** **11 01 44.9 -1.0**
baz=241
LAMP Lampang 93.24 289 P **P** **11 01 48.7 +2.2**
comp=Z,15nm,0.8s,comp=Z,122nm
137A Heron Place, G 93.25 56 P **P** **11 01 44.6 -1.6**
baz=245
439A Center Grove, 93.26 58 P **P** **11 01 45.4 -0.9**
baz=246
V34A Guthrie 93.31 53 P **P** **11 01 45.1 -1.4**
baz=244
V34A Guthrie 93.31 53 *e*P **P** **11 01 45.9 -0.6**
comp=Z,62nm,1.4s
T33A Patterson Ranc 93.32 51 P **P** **11 01 44.9 -1.6**
baz=244
Y36A Durant 93.39 55 P **P** **11 01 45.8 -1.1**
baz=245
238A Jacksonville 93.48 57 P **P** **11 01 46.6 -0.7**
baz=245
W35A Tecumseh 93.49 53 P **P** **11 01 46.1 -1.2**
baz=245
U34A Anderson Ranch 93.55 52 P **P** **11 01 46.4 -1.1**
baz=244
U34A Anderson Ranch 93.55 52 *e*P **P** **11 01 48.3 +0.7**
comp=Z,33nm,1.3s

R32A Long Quarter, 93.58 50 P **P** **11 01 46.7 -1.0**
baz=244
Z37A Pogue Cattle C 93.60 56 P **P** **11 01 46.3 -1.6**
baz=245
X36A Centrahoma 93.63 54 P **P** **11 01 46.4 -1.5**
baz=245
339A Huntington 93.65 58 P **P** **11 01 47.1 -1.0**
baz=246
S33A Kaszmaul Farm, 93.72 51 P **P** **11 01 47.5 -0.9**
baz=244
NATX Nacogdoches 93.74 57 P **P** **11 01 47.4 -1.1**
baz=246
NATX Nacogdoches 93.74 57 PFAKE 11 02 00.0 +11
NATX LR LR
comp=Z,4µm,19.0s
V35A Meyer Ranch, C 93.77 53 P **P** **11 01 47.4 -1.2**
baz=245
138A Matatall Enter 93.78 56 P **P** **11 01 47.0 -1.7**
baz=246
CM01 Chiang Mai Arr 93.79 288 *e*P **P** **11 01 50.2 +1.1**
CMAR Chiang Mai Arr 93.82 288 P **P** **11 01 49.6 +0.4**
comp=Z,13nm,0.9s,baz=117,slow=3.4,SNR=38
CMAR LR LR 11 42 21.6
comp=Z,382nm,20.1s,baz=120,slow=34
440A Kirbyville 93.87 58 P **P** **11 01 47.4 -1.8**
baz=246
O31A Woolen Ranch, 93.92 48 P **P** **11 01 47.9 -1.3**
baz=244
Y37A Hugo 93.93 55 P **P** **11 01 48.0 -1.3**
baz=245
Q32A Meitler Ranch, 93.94 49 P **P** **11 01 47.6 -1.7**
baz=244
CMMT Chiang Mai 93.95 289 P **P** **11 01 51.3 +1.5**
comp=Z,43nm,1.6s,comp=Z,640nm
CHTO Chiang Mai 93.95 289 P **P** **11 01 51.3 +1.5**
comp=Z,104nm,2.0s,comp=Z,2µm
CHTO Chiang Mai 93.95 289 *e*P **P** **11 01 51.1 +1.3**
CHTO pmax pmax
comp=Z,64nm,1.3s
CHTO MLR MLR
comp=Z,501nm,21.0s
CHTO Chiang Mai 93.95 289 *e*P **P** **11 01 51.1 +1.3**
comp=Z,64nm,1.3s
CHTO LR LR
comp=Z,501nm,21.0s
W36A Wetumka 93.96 54 P **P** **11 01 47.6 -1.9**
baz=245
239A Gary 93.99 57 P **P** **11 01 47.2 -2.5**
baz=246
R33A Olander Ranch, 94.04 50 P **P** **11 01 47.8 -2.0**
baz=244
T34A McClaskey Farm 94.06 52 P **P** **11 01 48.5 -1.4**
baz=245
Z38A Mt. Pleasant 94.11 56 P **P** **11 01 48.6 -1.6**
baz=246
U35A Pawnee 94.11 52 P **P** **11 01 48.7 -1.4**
baz=245
P32A Huiting Farm, 94.19 49 P **P** **11 01 49.2 -1.2**
baz=244
340A Bronson 94.20 58 P **P** **11 01 49.1 -1.5**
baz=246
X37A Clayton 94.37 54 P **P** **11 01 49.5 -1.8**
baz=246
S34A Willow Spring 94.40 51 P **P** **11 01 50.0 -1.5**
baz=245
V36A Jenks 94.44 53 P **P** **11 01 50.6 -1.0**
baz=245
Q33A Connelly Farm, 94.45 50 P **P** **11 01 50.8 -0.9**
baz=244
N31A Bailey Ranch, 94.47 48 P **P** **11 01 50.4 -1.3**
baz=244
441A DeRidder 94.48 59 P **P** **11 01 49.9 -2.0**
baz=246
T35A Sooner Cattle 94.50 52 P **P** **11 01 50.4 -1.5**
baz=245
240A Hunter Patters 94.55 57 P **P** **11 01 50.7 -1.5**
baz=246
W37B Quinton 94.55 54 P **P** **11 01 50.7 -1.4**
baz=246
R34A Isabella, Hill 94.56 50 P **P** **11 01 50.8 -1.4**
baz=245
Y38A Idabel 94.58 55 P **P** **11 01 50.9 -1.5**
baz=246
MHMT Maesarieng 94.60 288 P P 11 02 04.3 +12
TUL1 Leonard 94.61 53 P **P** **11 01 51.2 -1.2**
baz=245
TUL1 Leonard 94.61 53 *e*P **P** **11 01 52.0 -0.4**
comp=Z,44nm,1.3s
CD2 Chengdu 94.66 301 P **P** **11 01 52.5 -0.3**
CD2 pP PcP 11 01 55.8 +2.6
CD2 PP **PP** **11 05 40.5 -1.1**
CD2 SKS **SKSac** **11 12 27.7 +1.8**
CD2 S **ScS** **11 13 05.8 +0.9**
CD2 sS S 11 13 11.4 +7.6
CD2 SS **SS** **11 19 30.5 +2.2**
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,410nm,6.4s
CD2 LR LR
comp=Z,660nm,18.4s
CD2 LR LR
comp=Z,660nm,20.4s
CD2 LR LR
comp=Z,710nm,17.9s
M31A Lambtecht Ranc 94.69 47 P **P** **11 01 51.8 -1.0**
baz=244
Z39A Irene McRaven, 94.72 56 P **P** **11 01 52.2 -0.7**
baz=246
DGMT Dagmar 94.72 39 P **P** **11 01 52.4 -0.3**
baz=241
DGMT Dagmar 94.72 39 *e*P **P** **11 01 52.4 -0.3**
comp=Z,182nm,1.2s
DGMT LR LR
comp=Z,1µm,19.0s
341A Kurthwood 94.73 58 P **P** **11 01 52.2 -0.9**
baz=246
P33A Williams Farm, 94.74 49 P **P** **11 01 52.0 -1.0**
baz=244
LVC Limon Verde 94.81 117 P **P** **11 01 55.7 +1.5**
comp=Z,31nm,0.9s,baz=242,slow=4.3,SNR=7.1
LVC Limon Verde 94.81 117 P **P** **11 01 55.7 +1.5**
LVC LR LR
comp=Z,3µm,19.0s
X38A Whitesboro 94.81 54 P **P** **11 01 52.0 -1.3**
baz=246
U36A Oologah 94.85 53 P **P** **11 01 52.1 -1.4**
baz=245
K30A Basset 94.85 46 P **P** **11 01 53.0 -0.4**
baz=244
N32A Stulken Farm, 94.90 48 P **P** **11 01 52.9 -0.7**
baz=244
C25A Freed Ranch, W 94.90 40 P **P** **11 01 53.5 -0.1**
baz=241
140A Cam and Jess, 94.94 57 P **P** **11 01 53.4 -0.6**
baz=246
S35A Otter Creek Ra 94.96 51 P **P** **11 01 52.5 -1.5**
baz=245
T36A Boggs Farm, Ca 95.02 52 P **P** **11 01 53.1 -1.2**
baz=245
Q34A Chapman 95.05 50 P **P** **11 01 53.4 -1.0**
baz=245
442A Mamou 95.06 59 P **P** **11 01 53.0 -1.6**
baz=247
Y39A Lockesburg 95.07 55 P **P** **11 01 53.0 -1.6**
baz=246
D26A Manning 95.07 41 P **P** **11 01 53.6 -0.7**
baz=242
V37A Hulbert 95.08 53 P **P** **11 01 53.4 -1.2**
baz=246
O33A Hebron 95.09 49 P **P** **11 01 53.4 -1.1**
baz=245
L31A Butterfield Fa 95.15 46 P **P** **11 01 53.7 -1.1**
baz=244
241A Mo Tay, Goldon 95.20 58 P **P** **11 01 54.2 -1.0**
baz=246
HOPE Hope Point 95.20 157 PFAKE 11 02 10.0 +15
HOPE LR LR
comp=Z,2µm,21.0s
W38A Poteau 95.21 54 P **P** **11 01 54.5 -0.7**
baz=246
J30A Dallas 95.22 45 P **P** **11 01 54.2 -0.9**
baz=244
B25A Knox Farm, Ray 95.23 40 P **P** **11 01 54.7 -0.3**
baz=242
BGNE Belgrade 95.28 47 P **P** **11 01 54.7 -0.7**
baz=244
X39A Fountain Ranch 95.28 55 P **P** **11 01 54.2 -1.4**
baz=246
U37A Salina 95.31 53 P **P** **11 01 54.4 -1.2**
baz=246
R35A Emporia Munici 95.32 51 P **P** **11 01 54.6 -1.0**
baz=245
Z40A Long Farm, Mag 95.32 56 P **P** **11 01 54.5 -1.3**
baz=246
KSU1 Kansas State U 95.36 50 P **P** **11 01 55.1 -0.6**
baz=245
KSU1 Kansas State U 95.36 50 PFAKE 11 02 10.0 +14
KSU1 LR LR
comp=Z,3µm,20.0s
P34A Walnut Farm, R 95.39 49 P **P** **11 01 55.2 -0.8**
baz=245
K31A O'Neill 95.40 46 P **P** **11 01 55.4 -0.6**
baz=244
YAK Yakutsk 95.44 337 P **P** **11 01 54.4 -1.1**
comp=Z,18nm,0.6s,baz=121,slow=2.6,SNR=3.9
YAK LR LR 11 41 42.3
comp=Z,344nm,19.8s,baz=98,slow=34
YAK Yakutsk 95.44 337 *e*P **P** **11 01 55.1 -0.4**
YAK *e**PP **sP** **11 02 11.9 +1.5**
YAK *e* 11 05 45.6
YAK *e*PPP PPP 11 07 47.9
YAK *e*S **SKSac** **11 12 25.4 -3.0**
YAK *e* 11 13 07.0
YAK *e*SS **SS** **11 19 35.7 -2.1**
YAK *e*SSS SSS 11 23 17.8
YAK pmax pmax
comp=Z,17nm,0.9s
YAK pmax pmax
comp=N,7.0nm,1.1s
YAK pmax pmax
comp=E,7.0nm,1.1s
YAK pmax pmax
comp=Z,64nm,2.3s
YAK pmax pmax
comp=N,21nm,2.3s
YAK pmax pmax
comp=E,37nm,2.8s
YAK smax smax
comp=N,163nm,4.6s
YAK smax smax
comp=E,152nm,6.1s
YAK Yakutsk 95.44 337 *e*P **P** **11 01 54.3 -1.2**
comp=E,27nm,0.8s
141A Papa Simpson, 95.44 57 P **P** **11 01 55.3 -1.0**
baz=247
N33A J Bar K, Exete 95.46 48 P **P** **11 01 55.0 -1.2**
baz=245
I30A Oacoma 95.53 45 P **P** **11 01 54.8 -1.7**
baz=244
V38A Canehill 95.61 54 P **P** **11 01 56.2 -0.9**
baz=246
Q35A Mercer Eighty, 95.66 50 P **P** **11 01 56.0 -1.2**
baz=245
J31A Geddes 95.70 45 P **P** **11 01 56.5 -0.8**
baz=244
MIAR Mount Ida 95.70 55 *e*P **P** **11 01 56.7 -0.8**
MIAR pmax pmax
comp=Z,14nm,1.3s
MIAR MLR MLR
comp=Z,3µm,20.0s
MIAR Mount Ida 95.70 55 *e*P **P** **11 01 56.6 -0.8**
comp=Z,14nm,1.3s
MIAR LR LR
comp=Z,3µm,20.0s
INK Inuvik 95.71 14 P **P** **11 01 55.6 -1.0**
comp=Z,8.9nm,0.8s,baz=199,slow=5.8,SNR=10
INK Inuvik 95.71 14 *e*P **P** **11 01 55.7 -1.0**
comp=Z,46nm,1.5s
Y40A Okolona 95.72 56 P **P** **11 01 56.4 -1.1**
baz=246
T37A Cheneyville 18 95.75 52 P **P** **11 01 56.3 -1.3**
baz=246
O34A Beatrice 95.75 49 P **P** **11 01 55.8 -1.7**
baz=245
G29A Hoven 95.78 43 P **P** **11 01 56.0 -1.6**
baz=244
Z41A Richland Creek 95.78 56 P **P** **11 01 56.4 -1.4**
baz=247
OTAV Otavalo 95.80 92 PFAKE 11 02 10.0 +11
OTAV LR LR
comp=Z,1µm,19.0s
W39A Magazine 95.81 54 P **P** **11 01 56.8 -1.1**
baz=246
R36A Gordon, Harris 95.82 51 P **P** **11 01 56.5 -1.4**
baz=246
B26A Jensen Ranch, 95.82 40 P **P** **11 01 56.4 -1.3**
baz=242
K32A Verdigre 95.94 46 P **P** **11 01 56.9 -1.5**
baz=245
P35A Duane Minner, 95.95 50 P **P** **11 01 57.5 -1.0**
baz=246
M33A Taylor Creek F 95.99 47 P **P** **11 01 57.9 -0.7**
baz=245
SUSD Miller 96.06 44 P **P** **11 01 57.6 -1.3**
baz=244
S37A Fort Scott 96.07 52 P **P** **11 01 57.9 -1.2**
baz=246
Q36A Arnold C. Orve 96.11 50 P **P** **11 01 57.2 -2.0**
baz=246
F29A Eureka 96.12 43 P **P** **11 01 57.6 -1.5**
baz=244
HHAR Hobbs 96.13 53 *e*P **P** **11 01 60.0 +0.6**
comp=Z,24nm,1.4s
I31A Royce, Wessing 96.16 45 P **P** **11 01 58.0 -1.3**
baz=244
N34A Lincoln 96.16 48 P **P** **11 01 58.2 -1.3**
baz=245
V39A Pettigrew 96.17 54 P **P** **11 01 59.1 -0.6**
baz=246
T38A Diamond 96.17 53 P **P** **11 01 58.6 -1.0**
baz=246
Y41A Eaglette Beard 96.17 56 P **P** **11 01 58.8 -0.8**
baz=247
A26A Wade Farm, Ken 96.18 39 P **P** **11 01 58.8 -0.6**
baz=242
X40A Basin Creek Fa 96.24 55 P **P** **11 01 59.4 -0.5**
baz=247
R37A Teagarden Farm 96.30 51 P **P** **11 01 58.9 -1.2**
baz=246
J32A Parkston 96.32 46 P **P** **11 01 58.6 -1.4**
baz=245
O35A Humboldt 96.33 49 P **P** **11 01 58.7 -1.5**
baz=246
M34A Aspy Farms, Fr 96.38 48 P **P** **11 01 59.0 -1.4**
baz=245
H31A Wolsey 96.39 44 P **P** **11 01 58.8 -1.5**
baz=244
Z42A Norrel Spur, H 96.45 57 P **P** **11 01 59.9 -0.9**
baz=247
U39A Green Forest 96.51 53 P **P** **11 01 59.7 -1.4**
baz=247
P36A Good Intent, A 96.56 50 P **P** **11 01 59.8 -1.4**
baz=246
F30A Leola 96.63 43 P **P** **11 01 59.6 -1.8**
baz=244
LZH Lanzhou 96.65 306 *e*P **P** **11 02 03.4 +1.4**
LZH pP pP 11 02 08.2 -4.7
LZH sP sP 11 02 11.8 -5.0
LZH PP **PP** **11 05 57.1 0.0**
LZH SKS **SKSac** **11 12 38.2 +1.7**
LZH S **S** **11 13 18.1 -3.0**
LZH sS sS 11 13 30.6 -8.7
LZH pmax pmax
comp=Z,41nm,1.3s
LZH pmax pmax
comp=Z,260nm,4.5s
LZH LR LR
comp=Z,840nm,16.9s
LZH LR LR
comp=Z,690nm,17.8s
LZH LR LR
comp=Z,1µm,20.2s
A27A Ledoux Ranch, 96.67 39 P **P** **11 02 00.1 -1.4**
baz=243
S38A Stockton 96.69 52 P **P** **11 01 59.8 -2.1**
baz=247
V40A Witts Springs 96.77 54 P **P** **11 02 00.9 -1.5**
baz=247
Q37A Longview Farm, 96.79 51 P **P** **11 02 00.0 -2.3**
baz=246
T39A Clever 96.84 53 P **P** **11 02 01.2 -1.4**
baz=247
I32A Karley and Nic 96.85 45 P **P** **11 02 01.4 -1.1**
baz=245

J33A	Davis	96.88	46	P	P	11 02 01.4	-1.2		
	baz=245								
R38A	Fenwick Farm,	96.91	52	P	P	11 02 00.9	-2.0		
	baz=247								
U40A	Yellville	96.96	54	P	P	11 02 01.9	-1.3		
	baz=247								
B28A	Dugan Ranch, T	96.97	40	P	P	11 02 01.6	-1.2		
	baz=244								
H32A	Carlson Farm,	97.07	45	P	P	11 02 02.1	-1.4		
	baz=245								
F31A	Hecla	97.13	43	P	P	11 02 02.4	-1.3		
	baz=245								
S39A	Bolivar	97.14	52	P	P	11 02 02.4	-1.5		
	baz=247								
P37A	Lathrop	97.15	50	P	P	11 02 02.4	-1.6		
	baz=246								
MDND	Maddock	97.15	41	P	P	11 02 02.2	-1.5		
	baz=244								
A28A	Rude Farm, Bot	97.23	40	P	P	11 02 03.2	-0.9		
	baz=244								
V41A	Mountainview	97.26	54	P	P	11 02 03.5	-1.1		
	baz=247								
ECSD	EROS Data Cent	97.29	46	P	P	11 02 03.1	-1.4		
	baz=246								
ECSD	EROS Data Cent	97.29	46	*e*P	P	11 02 03.9	-0.6		
	comp=Z,79nm,1.4s								
ECSD				LR	LR				
	comp=Z,2µm,20.0s								
I33A	Coleman	97.30	45	P	P	11 02 03.5	-1.0		
	baz=246								
YKA	Yellowknife Ar	97.33	24	P	P	11 02 03.3	-0.8		
	comp=Z,6.2nm,0.8s,baz=236,slow=4.3,SNR=47								
YKA				PKiKP	PKiKP	11 06 39.8	+0.7		
	comp=Z,0.7nm,0.8s,baz=248,slow=1.3,SNR=5.1								
YKA				PKKP	PKKPbc	11 18 44.2	-0.6		
	comp=Z,0.8nm,0.8s,baz=36,slow=2.7,SNR=10								
YKA				LR	LR	11 40 14.9			
	comp=Z,65nm,20.1s,baz=180,slow=32								
L35A	Bielow Farm, R	97.34	47	P	P	11 02 03.3	-1.4		
	baz=246								
G32A	Webster	97.35	44	P	P	11 02 03.4	-1.3		
	baz=245								
Q38A	Cooks Store, C	97.42	51	P	P	11 02 03.6	-1.6		
	baz=247								
Y43A	Makayla and Ka	97.48	56	P	P	11 02 04.0	-1.5		
	baz=248								
T40A	Mansfield	97.52	53	P	P	11 02 04.7	-0.9		
	baz=247								
B29A	Wagenman Farm,	97.57	40	P	P	11 02 04.7	-0.9		
	baz=244								
R39A	Chumby, Stover	97.59	52	P	P	11 02 04.7	-1.3		
	baz=247								
H33A	Prehn Over Nor	97.60	45	P	P	11 02 04.7	-1.1		
	baz=246								
U41A	Viola	97.65	54	P	P	11 02 04.9	-1.3		
	baz=248								
E31A	Nome	97.65	43	P	P	11 02 04.8	-1.2		
	baz=245								
346A	Big Creek Wild	97.67	59	P	P	11 02 04.9	-1.5		
	baz=248								
S40A	Lebanon	97.70	53	P	P	11 02 05.1	-1.4		
	baz=247								
P38A	Dawn	97.75	50	P	P	11 02 05.1	-1.5		
	baz=247								
C30A	Mose, Pekin	97.77	41	P	P	11 02 05.9	-0.7		
	baz=245								
V42A	Cord	97.84	55	P	P	11 02 05.8	-1.3		
	baz=248								
A29A	Manning Farm,	97.84	40	P	P	11 02 05.8	-1.0		
	baz=244								
Q39A	Willow Grove F	97.92	51	P	P	11 02 06.3	-1.1		
	baz=247								
L36A	Harm Buss Farm	97.93	48	P	P	11 02 06.5	-0.9		
	baz=247								
G33A	Ortonville	98.01	44	P	P	11 02 06.3	-1.3		
	baz=246								
T41A	Mountain View	98.03	53	P	P	11 02 06.5	-1.5		
	baz=248								
M37A	Trindle Farm,	98.08	49	P	P	11 02 06.6	-1.5		
	baz=247								
R40A	Maddies Statio	98.14	52	P	P	11 02 07.0	-1.4		
	baz=248								
P39B	Salisbury	98.25	51	P	P	11 02 07.6	-1.2		
	baz=247								
S41A	Jillco Farms,	98.25	53	P	P	11 02 07.3	-1.7		
	baz=248								
C31A	Landman Farms,	98.27	42	Pdiff	P	11 02 07.2	-1.6		
	baz=245								
LPAZ	La Paz	98.30	111	P	P	11 02 09.9	-0.5		
	comp=Z,2.5nm,0.9s,baz=199,slow=2.4,SNR=5.9								
LPAZ				PKKP	PKKPdf	11 18 43.7	-0.1		
	comp=Z,1.6nm,0.6s,baz=69,slow=2.0,SNR=5.4								
LPAZ				LR	LR	11 40 35.0			
	comp=Z,472nm,18.1s,baz=228,slow=32								
LPAZ	La Paz	98.30	111	P	P	11 02 10.0	-0.5		
LPAZ				pmax	pmax				
	comp=Z,3.0nm,0.9s								
LPAZ	La Paz	98.30	111	*e*P	Pdif	11 02 13.0	+2.5		
	comp=Z,13nm,1.5s								
F33A	5 Mile Ranch,	98.36	44	Pdiff	P	11 02 08.1	-1.1		
	baz=246								
A30A	Hoffart Farm,	98.41	40	Pdiff	P	11 02 08.4	-0.9		
	baz=245								
I35A	Creekview Farm	98.42	46	Pdiff	P	11 02 09.1	-0.4		
	baz=247								
G34A	Benson	98.54	45	Pdiff	P	11 02 09.7	-0.4		
	baz=246								
Q40A	Laux Farm, Aux	98.55	51	Pdiff	P	11 02 09.6	-0.7		
	baz=248								
B31A	Greenbush Farm	98.58	41	Pdiff	P	11 02 09.2	-0.9		
	baz=246								
M38A	Pleasantville	98.68	49	Pdiff	P	11 02 10.3	-0.5		
	baz=248								
P40A	Paris	98.77	51	Pdiff	P	11 02 10.5	-0.7		
	baz=248								
W44A	Shelby Farms P	98.78	56	Pdiff	P	11 02 09.9	-1.5		
	baz=248								
X45A	UM Field Stati	98.85	56	Pdiff	P	11 02 10.7	-0.9		
	baz=249								
H35A	Sunnyside Ranc	98.85	45	Pdiff	P	11 02 11.1	-0.3		
	baz=247								
SCIA	State Center	98.85	48	PFAKE		11 02 20.0	+8.5		
SCIA				LR	LR				
	comp=Z,2µm,20.0s								
FFC	Flin Flon	98.89	34	PFAKE		11 02 20.0	+8.6		
FFC				LR	LR				
	comp=Z,1µm,20.0s								
N39A	Derby Farms, D	98.96	50	Pdiff	P	11 02 11.4	-0.6		
	baz=248								
G35A	Watkins	99.28	45	Pdiff	Pdif	11 02 12.8	-0.5		
	baz=247								
H36A	Jessenland, He	99.40	46	Pdiff	Pdif	11 02 13.8	-0.1		
	baz=248								
F35A	Swanville	99.47	44	Pdiff	Pdif	11 02 13.8	-0.4		
	baz=247								
A32A	Rocking H Ranc	99.48	41	Pdiff	Pdif	11 02 13.2	-0.9		
	baz=246								
BRAL	Brewton	99.52	60	PFAKE		11 02 30.0	+15		
BRAL				LR	LR				
	comp=Z,2µm,20.0s								
P41A	Barry, Barry	99.53	51	Pdiff	Pdif	11 02 13.5	-1.0		
	baz=248								
I37A	Lemond, Waseca	99.53	46	Pdiff	Pdif	11 02 13.4	-1.1		
	baz=248								
SONA1	Songino Array	99.55	318	*e*P	Pdif	11 02 13.7	-0.9		
SONA1				*e*PP	PP	11 06 16.4	-2.6		
SONM	Songino Array	99.55	318	P	Pdif	11 02 13.7	-0.9		
	comp=Z,1.1nm,0.7s,baz=118,slow=2.6,SNR=4.8								
SONM				LR	LR	11 42 29.8			
	comp=Z,232nm,21.5s,baz=116,slow=33								
AGMN	Agassiz Nation	99.62	42	Pdiff	Pdif	11 02 13.9	-0.9		
	baz=247								
AGMN	Agassiz Nation	99.62	42	*e*P	Pdif	11 02 13.9	-0.9		
	comp=Z,25nm,1.4s								
AGMN				LR	LR				
	comp=Z,749nm,20.0s								
B33A	Robert and Kas	99.78	42	Pdiff	Pdif	11 02 14.6	-0.9		
	baz=247								
O41A	Passleys Farm,	99.82	51	Pdiff	Pdif	11 02 15.1	-0.8		
	baz=249								
P42A	Winchester	100.01	51	Pdiff	Pdif	11 02 16.0	-0.7		
	baz=249								
F36A	Milaca	100.15	45	Pdiff	Pdif	11 02 16.5	-0.7		
	baz=248								
A33A	Warroad	100.16	41	Pdiff	Pdif	11 02 16.4	-0.7		
	baz=247								
I38A	Scanlan Farm,	100.26	47	Pdiff	Pdif	11 02 17.2	-0.5		
	baz=248								
SPMN	Marine on St.	100.38	45	Pdiff	Pdif	11 02 18.0	-0.2		
	baz=248								
ULM	Lac du Bonnet	100.38	40	P	Pdif	11 02 16.4	-1.7		
	comp=Z,2.8nm,0.7s,baz=300,slow=4.3,SNR=5.6								
ULM	Lac du Bonnet	100.38	40	P	Pdif	11 02 16.4	-1.7		
ULM				pmax	pmax				
	comp=Z,6.0nm,0.9s								
J39A	Decorah	100.42	47	Pdiff	Pdif	11 02 18.3	-0.1		
	baz=249								
B34A	Aery, Baudette	100.44	42	Pdiff	Pdif	11 02 18.7	+0.3		
	baz=248								
C35A	Jirik Farms, M	100.56	43	Pdiff	Pdif	11 02 18.2	-0.8		
	baz=248								
E36A	McGregor	100.57	44	Pdiff	Pdif	11 02 17.9	-1.2		
	baz=248								
GTA	Gaotai	100.85	308	*e*P	Pdif	11 02 21.3	+0.7		
GTA				pP	pP	11 02 26.2	-5.5		
GTA				sP	sP	11 02 28.3	-7.3		
GTA				PP	PP	11 06 31.4	+2.3		
GTA				SKS	SKSac	11 12 58.6	+1.2		
GTA				S	Sdif	11 13 54.7	-1.7		
GTA				sS	sS	11 14 02.5	-12		
GTA				SS	SS	11 20 57.0	+1.7		
GTA				pmax	pmax				
	comp=Z,5.0nm,1.5s								
GTA				pmax	pmax				
	comp=Z,150nm,5.2s								
GTA				LR	LR				
	comp=Z,180nm,21.9s								
GTA				LR	LR				
	comp=Z,620nm,21.4s								
GTA				LR	LR				
	comp=Z,760nm,21.4s								
D36A	Goodland	100.87	43	Pdiff	Pdif	11 02 20.2	-0.2		
	baz=248								
B35A	Bob, Littlefor	100.96	42	Pdiff	Pdif	11 02 20.1	-0.6		
	baz=248								
J40A	Soldiers Grove	101.10	48	Pdiff	Pdif	11 02 21.1	-0.4		
	baz=249								
HDIL	Hopedale	101.11	51	PFAKE		11 02 30.0	+8.4		
HDIL				LR	LR				
	comp=Z,3µm,20.0s								
JFWS	Jewell Farm	101.27	48	PFAKE		11 02 30.0	+7.8		
JFWS				LR	LR				
	comp=Z,2µm,20.0s								
C36A	Pine Crest Far	101.29	43	Pdiff	Pdif	11 02 21.7	-0.5		
	baz=249								
D37A	Cotton	101.33	44	Pdiff	Pdif	11 02 22.0	-0.4		
	baz=249								
ROSC	El Rosal	101.37	90	P	Pdif	11 02 23.1	-0.8		
	comp=Z,5.8nm,0.4s,baz=66,slow=20,SNR=2.8								
TIXI	Tiksi	101.79	344	P	Pdif	11 02 24.7	+0.8		
	comp=Z,2.0nm,0.5s,baz=118,slow=2.1,SNR=3.4								
TIXI	Tiksi	101.79	344	*e*P	Pdif	11 02 24.6	+0.8		
TIXI				pmax	pmax				
	comp=Z,6.0nm,1.1s								
TIXI	Tiksi	101.79	344	*e*Pdif	Pdif	11 02 26.3	+2.4		
TIXI				LR	LR				
	comp=Z,858nm,21.0s								
CPUP	Villa Florida	102.11	125	PKKP	PKKPdf	11 18 35.3	-0.6		
	comp=Z,1.0nm,0.4s,baz=67,slow=1.8,SNR=3.4								
EYMN	Ely	102.20	43	Pdiff	Pdif	11 02 25.9	-0.4		
	baz=250								
EYMN	Ely	102.20	43	PFAKE		11 02 40.0	+14		
EYMN				LR	LR				
	comp=Z,1µm,20.0s								
C38A	Sawbill Land.	102.27	43	Pdiff	Pdif	11 02 26.3	-0.3		
	baz=250								
TLY	Talaya	102.64	321	PFAKE		11 02 40.0	+12		
TLY				LR	LR				
	comp=Z,736nm,20.0s								
COWI	Conover	103.10	45	PFAKE		11 02 40.0	+10		
COWI				LR	LR				
	comp=Z,1µm,20.0s								
GOGA	Godfrey	103.13	59	PFAKE		11 02 40.0	+9.3		
GOGA				LR	LR				
	comp=Z,2µm,20.0s								
MTDJ	Mount Denham	103.20	76	PFAKE		11 02 40.0	+8.5		
MTDJ				LR	LR				
	comp=Z,929nm,19.0s								
LSA	Lhasa	104.42	296	PFAKE		11 02 50.0	+13		
LSA				LR	LR				
	comp=Z,377nm,22.0s								
ACSO	Alum Creek Sta	105.58	53	PFAKE		11 07 10.0			
ACSO				LR	LR				
	comp=Z,2µm,20.0s								
NHSC	New Hope	105.66	60	PFAKE		11 07 10.0			
NHSC				LR	LR				
	comp=Z,2µm,20.0s								
AAM	Ann Arbor	105.68	50	PFAKE		11 07 10.0			
AAM				LR	LR				
	comp=Z,2µm,20.0s								
SAML	Samuel	105.90	107	PFAKE		11 07 10.0			
SAML				LR	LR				
	comp=Z,2µm,20.0s								
GTBY	Guantanamo Bay	105.93	75	PFAKE		11 07 10.0			
GTBY				LR	LR				
	comp=Z,465nm,20.0s								
SDV	Santo Domingo	106.25	87	PFAKE		11 07 10.0			
SDV				LR	LR				
	comp=Z,1µm,21.0s								
BLA	Blacksburg	106.64	56	PFAKE		11 07 10.0			
BLA				LR	LR				
	comp=Z,1µm,19.0s								
DGAR	Diego Garcia	107.86	254	PFAKE		11 07 10.0			
DGAR				LR	LR				
	comp=Z,747nm,19.0s								
CNNC	Cliffs of the	108.08	59	PFAKE		11 07 10.0			
CNNC				LR	LR				
	comp=Z,1µm,19.0s								
M54A	Oil Creek Stat	108.34	52	PKiKP	PKiKP	11 06 59.5	-0.3		
	baz=256								
O56A	Blue Knob Stat	108.84	54	PKiKP	PKiKP	11 06 60.0	-0.9		
	baz=256								
SDDR	Presa de Saban	109.05	77	PFAKE		11 07 10.0			
SDDR				LR	LR				
	comp=Z,862nm,21.0s								
CBN	Corbin Frederi	109.23	56	PFAKE		11 07 10.0			
CBN				LR	LR				
	comp=Z,2µm,20.0s								
GRTK	Grand Turk	109.95	74	PFAKE		11 07 20.0			
GRTK				LR	LR				
	comp=Z,743nm,19.0s								
WMQ	Urumqi	110.80	310	*e*PKP	PKiKP	11 07 06.3	+1.9		
WMQ				PP	PP	11 07 41.5	-0.9		
WMQ				SKKS		11 14 40.5			
WMQ				AMB	AMB				
	comp=Z,160nm,5.8s								
WMQ				LR	LR				
	comp=Z,310nm,16.4s								
WMQ				LR	LR				
	comp=Z,580nm,17.2s								
WMQ				LR	LR				
	comp=Z,800nm,29.7s								
SPB	Sao Paulo	111.01	128	PFAKE		11 07 20.0			
SPB				LR	LR				
	comp=Z,5µm,20.0s								
BINY	Binghamton	111.17	52	PFAKE		11 07 20.0			
BINY				LR	LR				
	comp=Z,2µm,20.0s								
PTGA	Pitinga	112.35	101	PFAKE		11 07 20.0			
PTGA				LR	LR				
	comp=Z,35µm,20.0s								
LONY	Lake Ozonia	112.64	50	PFAKE		11 07 20.0			
LONY				LR	LR				
	comp=Z,2µm,20.0s								
SJG	San Juan	113.42	79	PFAKE		11 07 20.0			
SJG				LR	LR				
	comp=Z,596nm,19.0s								
ZAA0	Zalesovo Array	114.25	320	*e*PKiKP	PKPdf	11 07 08.9	-1.7		
ZAA0				*e*PKiKP	PKiKP	11 07 09.8	-0.8		
ZALV	Zalesovo Beam	114.25	320	PKP	PKPdf	11 07 08.9	-1.6		
	comp=Z,4.1nm,0.7s,baz=101,slow=1.3,SNR=10								
ZALV	Zalesovo Beam	114.25	320	PKIKP	PKPdf	11 07 09.0	-1.6		
ZALV				pmax	pmax				
	comp=Z,4.0nm,0.7s								
MK01	Makanchi Array	115.04	312	*e*PKiKP	PKPdf	11 07 10.9	-1.5		
MK31	Makanchi Array	115.05	312	*i* PKIKP	PKPdf	11 07 10.5	-1.9		
MK31				pmax	pmax				
	comp=Z,2.0nm,0.5s								
MK31	Makanchi Array	115.05	312	*e*PKiKP	PKPdf	11 07 11.4	-1.0		
MKAR	Makanchi Array	115.05	312	PKP	PKPdf	11 07 10.8	-1.6		
	comp=Z,3.0nm,0.5s,baz=195,slow=0.8,SNR=28								
MKAR	Makanchi Array	115.05	312	*e*PKiKP	PKPdf	11 07 11.4	-1.0		
GRGR	Grenville	115.65	87	PFAKE		11 07 30.0	+16		
GRGR				LR	LR				
	comp=Z,618nm,19.0s								
PKME	Peaks-Kenny Pk	116.45	50	PFAKE		11 07 30.0	+15		
PKME				LR	LR				
	comp=Z,2µm,19.0s								
PDGK	Podgornoye	116.60	308	PKIKP	PKPdf	11 07 14.0	-1.4		
PDGK				pmax	pmax				
	comp=Z,7.0nm,1.0s								
FDF	Fort de France	116.96	85	PFAKE		11 07 30.0	+13		
FDF				LR	LR				
	comp=Z,642nm,19.0s								
ANWB	Willy Bob	117.26	81	PFAKE		11 07 30.0	+13		
ANWB				LR	LR				
	comp=Z,617nm,20.0s								
KURK	Kurchatov	117.81	317	*d i* PKIKP	PKPdf	11 07 15.9	-1.6		
KURK				pmax	pmax				
	comp=Z,33nm,0.8s								
KURK	Kurchatov	117.81	317	*e*PKPdf	PKPdf	11 07 16.4	-1.1		
KURK				PP	PP	11 08 29.8	-1.8		
KURK				LR	LR				
	comp=Z,998nm,20.0s								
KURBB	Kurchatov Arra	117.86	316	PKP	PKPdf	11 07 15.6	-2.0		
	comp=Z,6.7nm,0.8s,baz=101,slow=1.9,SNR=34								
KURBB				PP	PP	11 08 29.8	-2.2		
	comp=Z,1.7nm,0.8s,baz=98,slow=5.5,SNR=5.8								
BBGH	Gun Hill	117.92	87	PFAKE		11 07 30.0	+11		
BBGH				LR	LR				
	comp=Z,3µm,19.0s								
BBSR	BB Station	118.15	64	PFAKE		11 07 30.0	+11		
BBSR				LR	LR				
	comp=Z,947nm,21.0s								
KSH	Kashi	118.77	304	PKP	PKPdf	11 07 21.7	+1.8		
KSH				*e*PP	PP	11 08 45.7	+6.9		
KSH				PKS	PKSdf	11 10 57.4	+0.7		
KSH				SKS	SKSdf	11 14 32.9	+3.3		
KSH				SS	SS	11 25 03.1	+7.3		
KSH				AMB	AMB				
	comp=Z,160nm,5.6s								
KSH				LR	LR				
	comp=Z,250nm,11.9s								
KSH				LR	LR				
	comp=Z,580nm,18.4s								
KSH				LR	LR				
	comp=Z,430nm,16.9s								
TKM2	Tokmak 2	119.39	307	PKIKP	PKPdf	11 07 18.6	-2.5		
TKM2				pmax	pmax				
	comp=Z,6.0nm,0.8s								
FRU	Bishkek	120.10	307	*i e*PKIKP	PKPdf	11 07 21.0	-1.3		
FRU				pmax	pmax				
	comp=Z,36nm,2.0s								
AAK	Ala-Archa	120.18	307	PKP	PKPdf	11 07 21.3	-1.3		
	comp=Z,2.6nm,0.4s,baz=155,slow=4.9,SNR=5.2								
AAK	Ala-Archa	120.18	307	*e*PKPdf	PKPdf	11 07 22.7	+0.1		
AAK				LR	LR				
	comp=Z,306nm,20.0s								
MNAS	Manas	121.64	307	PKIKP	PKPdf	11 07 23.9	-1.5		
MNAS				pmax	pmax				
	comp=Z,11nm,0.7s								
ABPO	Ambohimpanom	121.68	228	PFAKE		11 07 40.0	+14		
ABPO				LR	LR				
	comp=Z,323nm,19.0s								
OTUK	Ortayu	121.87	314	PKIKP	PKPdf	11 07 23.9	-1.6		
OTUK				pmax	pmax				
	comp=Z,11nm,0.8s								
CHKZ	Chkalovo	122.66	320	PKIKP	PKPdf	11 07 25.0	-1.7		
CHKZ				pmax	pmax				
	comp=Z,7.0nm,0.9s								
BVAR	Borovoye Array	122.86	319	PKP	PKPdf	11 07 25.6	-1.6		
	comp=Z,3.6nm,0.5s,baz=90,slow=3.0,SNR=22								
BRVK	Borovoye	122.92	319	*d i* PKIKP	PKPdf	11 07 25.9	-1.4		
BRVK				pmax	pmax				
	comp=Z,17nm,0.8s								
BRVK	Borovoye	122.92	319	*e*PKPdf	PKPdf	11 07 26.7	-0.6		
BRVK				LR	LR				
	comp=Z,348nm,20.0s								
KK31	Karatay Array	123.12	307	*i* PKIKP	PKPdf	11 07 26.4	-1.7		
KK31				pmax	pmax				
	comp=Z,7.0nm,0.8s								
KKAR	Karatay Array	123.12	307	*e*PKIKP	PKPdf	11 07 26.5	-1.5		
KKAR	Karatay Array	123.12	307	*e*PKPdf	PKPdf	11 07 26.5	-1.5		
SUR	Sutherland	123.16	196	PKP	PKPdf	11 07 27.6	-1.3		
	comp=Z,1.1nm,0.8s,baz=137,slow=4.0,SNR=10								
SUR	Sutherland	123.16	196	*e*PKPdf	PKPdf	11 07 31.2	+2.3		
SUR				LR	LR				
	comp=Z,3µm,21.0s								
ZRNK	Zerenda	123.70	319	PKIKP	PKPdf	11 07 27.4	-1.4		
ZRNK				pmax	pmax				
	comp=Z,11nm,0.9s								
ZRNK	Zerenda	123.70	319	*e*PKPdf	PKPdf	11 07 27.7	-1.1		
KBL	Kabul	123.73	297	*e*PKIKP	PKPdf	11 07 29.9	+0.2		
KBL	Kabul	123.73	297	*e*PKPdf	PKPdf	11 07 29.9	+0.2		
KBS	Kingsbay	123.74	358	PFAKE		11 07 40.0	+12		
KBS				LR	LR				
	comp=Z,534nm,19.0s								
SFJD	Kangerlussuaq	123.88	23	*i* P	PKPdf	11 07 27.4	-1.3		
SFJD	Kangerlussuaq	123.88	23	*e*PKIKP	PKPdf	11 07 27.4	-1.3		
SFJD	Kangerlussuaq	123.88	23	PFAKE		11 07 40.0	+11		
SFJD				LR	LR				
	comp=Z,811nm,20.0s								
DZET	Dzherino	124.24	302	PKIKP	PKPdf	11 07 29.9	-0.6		
DZET				pmax	pmax				
	comp=Z,21nm,0.7s								
SUMG	Summit	124.63	15	*i* P	PKPdf	11 07 29.7	-0.9		
SUMG	Summit	124.63	15	*e*PKIKP	PKPdf	11 07 29.6	-0.9		
SUMG	Summit	124.63	15	*e*PKPdf	PKPdf	11 07 29.6	-0.9		
DAG	Danmarks Havn	124.70	7	*i* P	PKPdf	11 07 29.3	-0.8		
DAG	Danmarks Havn	124.70	7	*i* PKIKP	PKPdf	11 07 29.3	-0.8		
BOSA	Boshof	125.39	202	PKP	PKPdf	11 07 33.4	+0.3		
	comp=Z,6.6nm,0.8s,baz=131,slow=3.0,SNR=7.9								
BOSA	Boshof	125.39	202	*e*PKPdf	PKPdf	11 07 34.3	+1.2		
SOKR	Solikamsk	128.65	329	*i* PKIKP	PKPdf	11 07 36.6	-1.4		
SOKR				pmax	pmax				
	comp=Z,10.0nm,0.7s								
SOKR				MLR	MLR				
	comp=Z,354nm,20.0s								
ARU	Arti	128.87	325	PKP	PKPdf	11 07 38.1	-0.5		
	comp=Z,3.9nm,0.3s,baz=100,slow=1.8,SNR=7.8								
ARU	Arti	128.87	325	*i* PKIKP	PKPdf	11 07 37.8	-0.8		
ARU						11 09 43.5			
ARU						11 14 48.5			
ARU				SP	SP	11 19 47.0	-2.5		
ARU				PS	PS	11 19 58.3	+3.5		
ARU	Arti	128.87	325	PKP	PKPdf	11 07 38.1	-0.5		
ARU				LR	LR				
	comp=Z,588nm,20.0s								
AB31	Akbulak array	129.91	316	PKIKP	PKPpre	11 07 32.1			
AB31				pmax	pmax				
	comp=Z,3.0nm,0.9s								
ABKAR	Akbulak array	129.91	316	*e*PKPpre	PKPpre	11 07 33.1			
RCBR	Riachuelo	130.63	120	PFAKE		11 08 00.0	+17		
RCBR				LR	LR				
	comp=Z,2µm,19.0s						

FINES	**FINESS Array B**	**138.83**	**345**	PKhKP	PKPpre	11 07 48.1			
	comp=Z,1.6nm,0.6s,baz=64,slow=4.4,SNR=4.6								
FINES				PKP	**PKPdf**	**11 07 55.7**	**-1.4**		
	comp=Z,4.3nm,0.6s,baz=87,slow=4.0,SNR=8.4								
FINES	**FINESS Array B**	**138.83**	**345**	PKIKP	**PKPdf**	**11 07 55.7**	**-1.4**		
FINES				pmax	pmax				
	comp=Z,8.0nm,0.8s								
MOS	**Moscow**	**139.39**	**332**	*e*PKIKP	**PKPdf**	**11 07 57.5**	**-0.8**		
MOS				*e*		11 10 51.3			
SHEL	**Horse Pasture**	**139.96**	**163**	PFAKE		11 08 10.0	+9.4		
SHEL				LR	LR				
	comp=Z,430nm,20.0s								
OBN	**Obninsk**	**140.26**	**332**	*i* PKIKP	**PKPdf**	**11 08 00.1**	**+0.3**		
OBN				*i*		11 08 11.2			
OBN				pmax	pmax				
	comp=Z,8.0nm,1.1s								
OBN	**Obninsk**	**140.26**	**332**	PFAKE		11 08 10.0	+10		
OBN				LR	LR				
	comp=Z,634nm,20.0s								
KMBO	**Kilima Mbogo**	**140.87**	**237**	PKhKP	PKPpre	11 07 57.0			
	comp=Z,2.3nm,0.8s,baz=73,slow=11,SNR=3.8								
KMBO	**Kilima Mbogo**	**140.87**	**237**	PKPpre	PKPpre	11 07 57.0			
KMBO				LR	LR				
	comp=Z,646nm,20.0s								
VSU	**Vasula**	**141.22**	**342**⇓	*e*PKIKP	**PKPdf**	**11 07 57.8**	**-3.7**		
NC303	**NORSAR Array S**	**141.39**	**355**	*e*PKPpre	PKPpre	11 07 55.9			
VSR	**Storozhevoye**	**141.44**	**326**	*e*PKIKP	**PKPdf**	**11 07 58.1**	**-4.0**		
VSR				pmax	pmax				
	comp=Z,10.0nm,1.0s								
NC405	**NORSAR Array S**	**141.47**	**355**	*e*PKPpre	PKPpre	11 07 56.4			
NB2	**NORSAR Subarra1**	**141.59**	**355**	PKP	PKPpre	11 07 56.4			
	comp=Z,2.4nm,0.7s,baz=17,slow=4.0								
NOA	**NORSAR Array B**	**141.59**	**355**	PKhKP	PKPpre	11 07 55.8			
	comp=Z,3.9nm,0.8s,baz=15,slow=2.4,SNR=10								
NBO00	**NORSAR Array S**	**141.62**	**356**	*e*PKPdf	**PKPdf**	**11 08 03.3**	**+1.1**		
GUDG	**Gudauri**	**142.09**	**311**	P	**PKPdf**	**11 08 03.5**	**-0.4**		
TBLG	**Delisi**	**142.14**	**309**	P	PKPpre	11 07 58.2			
TBLG	**Delisi**	**142.14**	**309**	PKHKP	PKPpre	11 07 58.2			
GOF	**Gofitskoye**	**142.14**	**315**⇑	*e*PKIKP	**PKPdf**	**11 08 06.6**	**+3.0**		
GNI	**Garni**	**142.58**	**307**	PKhKP	PKPpre	11 08 00.0			
	comp=Z,5.0nm,0.4s,baz=21,slow=8.6,SNR=3.2								
GNI	**Garni**	**142.58**	**307**	PKPpre	PKPpre	11 08 00.0			
GNI				LR	LR				
	comp=Z,560nm,21.0s								
KBZ	**Khabaz**	**142.75**	**313**	PKhKP	PKPpre	11 08 00.8			
	comp=Z,6.0nm,0.8s,baz=350,slow=7.3,SNR=5.3								
ONI	**Oni**	**142.77**	**311**	P	PKPpre	11 08 00.5			
ONI	**Oni**	**142.77**	**311**	PKIKP	PKPpre	11 08 00.4			
KVAR	**Kislovodsk Arr**	**142.80**	**314**	PKhKP	PKPpre	11 08 01.7			
	comp=Z,9.9nm,0.9s,baz=299,slow=4.6,SNR=4.8								
KIV	**Kislovodsk**	**142.80**	**314**	*i* PKIKP	**PKPdf**	**11 08 01.2**	**-3.8**		
KIV				*e*SS	SS	11 29 45.7	-3.7		
KIV				*e*SSS	SSS	11 35 05.8			
KIV				pmax	pmax				
	comp=Z,11nm,1.1s								
KIV	**Kislovodsk**	**142.80**	**314**	PFAKE		11 08 20.0	+15		
KIV				LR	LR				
	comp=Z,799nm,20.0s								
NEY	**Neytrino**	**143.04**	**312***c*	*i* PKIKP	**PKPdf**	**11 08 05.9**	**+0.4**		
KONO	**Kongsberg**	**143.07**	**356**	*e*PKIKP	PKPab	11 08 00.6	+0.4		
KONO				MLR	MLR				
	comp=Z,595nm,20.0s								
KONO	**Kongsberg**	**143.07**	**356**	*e*PKPpre	PKPab	11 08 00.6	+0.4		
KONO				LR	LR				
	comp=Z,595nm,20.0s								
AKH	**Akhalkalaki**	**143.12**	**309**⇑	*i*P	PKPab	11 08 01.7	+0.5		
AKH	**Akhalkalaki**	**143.12**	**309**	P	PKPbc	11 08 02.7	+0.1		
AKH	**Akhalkalaki**	**143.12**	**309**	PKIKP	PKPbc	11 08 02.7	0.0		
CLDR	**Caldiran**	**143.46**	**305**	*e*P	PKPbc	11 08 03.7	0.0		
KARS	**Kars**	**143.66**	**308**	*e*P	PKPbc	11 08 04.4	+0.3		
ASCN	**Ascension**	**143.85**	**145**	PFAKE		11 08 20.0	+12		
ASCN				LR	LR				
	comp=Z,1μm,20.0s								
HKR	**Hakkari**	**143.97**	**303**	*e*P	PKPab	11 08 04.6	-0.1		
AGRB	**Hanur-Agry**	**144.04**	**307**	*e*P	PKPbc	11 08 05.5	+0.2		
MICGM	**Minsk**	**144.12**	**338**	*e*P	PKPbc	11 08 05.0	+0.1		
MICGM				*e*LR	LR	12 04 20.0			
MNK	**Minsk**	**144.12**	**338**	*e*PKIKP	PKPbc	11 08 05.0	+0.1		
CUKT	**Cukurca**	**144.15**	**302**	*e*P	**PKPab**	**11 08 04.9**	**-0.4**		
NACGM	**Naroch**	**144.18**	**339**	*e*	**PKPab**	**11 08 04.0**	**-0.6**		
SENK	**Senkaya-Erzuru**	**144.21**	**308**	*e*P	**PKPab**	**11 08 05.9**	**+0.4**		
SOC	**Sochi**	**144.92**	**314**	*e*PKIKP	**PKPab**	**11 08 06.4**	**-1.3**		
SOC				*e*		11 11 23.6			
SOC				*e*PPP	PPP	11 14 37.0			
SOC				*e*SS	SS	11 30 11.4	-2.1		
SOC				pmax	pmax				
	comp=Z,24nm,0.9s								
SIRT	**Sirnak**	**145.00**	**303**	*e*P	**PKPbc**	**11 08 08.0**	**-0.3**		
EZM	**Erzurum**	**145.14**	**308**	*e*P	**PKPbc**	**11 08 09.1**	**+0.1**		
SVAN	**Silvan-Diyarba**	**145.78**	**305**	*e*P	**PKPdf**	**11 08 10.6**	**+0.4**		
YEDI	**Yedisu-Bingol**	**145.88**	**307**	*e*P	**PKPdf**	**11 08 10.8**	**+0.2**		
KTUT	**Trabzon**	**145.91**	**310**	*e*P	**PKPdf**	**11 08 10.8**	**+0.5**		
BNGB	**Bing¶ll**	**145.92**	**306**	*e*P	**PKPdf**	**11 08 10.9**	**+0.3**		
MBAR	**Mbarara**	**146.05**	**230**	*e*PKP2	**PKPbc**	**11 08 12.8**	**+0.3**		
MBAR				MLR	MLR				
	comp=Z,1μm,22.0s								
MBAR	**Mbarara**	**146.05**	**230**	*e*PKPdf	**PKPbc**	**11 08 12.8**	**+0.3**		
MBAR				LR	LR				
	comp=Z,1μm,22.0s								
SUW	**Suwalki**	**146.06**	**341**	*e*PKP	**PKPbc**	**11 08 11.2**	**+0.2**		
SUW	**Suwalki**	**146.06**	**341**	*e*PKP2	**PKPbc**	**11 08 11.2**	**+0.2**		
MUD	**Monsted U'grnd**	**146.28**	**356**	*i* P	**PKPdf**	**11 08 10.2**	**-0.2**		
MUD				*i*		11 08 27.9			
MUD	**Monsted U'grnd**	**146.28**	**356**	*i* PKP2	**PKPdf**	**11 08 10.2**	**-0.2**		
KLNR	**Kaliningrad**	**146.35**	**344**	*e*PKP2	**PKPdf**	**11 08 11.2**	**+0.6**		
ERZN	**Erzincan**	**146.44**	**308**	*e*P	**PKPbc**	**11 08 13.2**	**+0.4**		
AKASG	**Malin Array Be**	**146.53**	**332**	PKPbc	**PKPdf**	**11 08 11.2**	**+0.2**		
	comp=Z,69nm,0.8s,baz=40,slow=4.1,SNR=54								
KIEV	**Kiev**	**146.54**	**332**	*e*PKIKP	**PKPdf**	**11 08 10.3**	**-0.7**		
KIEV				MLR	MLR				
	comp=Z,643nm,20.0s								
KIEV	**Kiev**	**146.54**	**332**	*e*PKPdf	**PKPdf**	**11 08 10.3**	**-0.7**		
KIEV				LR	LR				
	comp=Z,643nm,20.0s								
MAZI	**Mazidag**	**146.54**	**304**	*e*P	**PKPdf**	**11 08 11.5**	**-0.1**		
DYBB	**Diyarbakir**	**146.64**	**305**	*e*P	**PKPdf**	**11 08 12.4**	**+0.7**		
ESPY	**Espiye-Giresun**	**146.67**	**311**	*e*P	**PKPdf**	**11 08 11.5**	**-0.2**		
COP	**Copenhagen**	**146.75**	**353**	*i* P	**PKPbc**	**11 08 13.0**	**0.0**		
COP	**Copenhagen**	**146.75**	**353**	*i* PKP2	**PKPbc**	**11 08 13.0**	**0.0**		
PTK	**Pertek**	**146.91**	**307**	*e*P	**PKPdf**	**11 08 13.2**	**+0.9**		
ESK	**Eskdalemuir**	**146.92**	**9**	*e*PKP2	**PKPdf**	**11 08 12.5**	**+1.0**		
ESK				MLR	MLR				
	comp=Z,855nm,20.0s								
ESK	**Eskdalemuir**	**146.92**	**9**	*e*PKPdf	**PKPdf**	**11 08 12.5**	**+1.0**		
ESK				LR	LR				
	comp=Z,855nm,20.0s								
BSD	**Bornholm Skovb**	**146.96**	**350**	*i* P	**PKPdf**	**11 08 12.5**	**+0.9**		
BSD	**Bornholm Skovb**	**146.96**	**350**	*i* PKP2	**PKPdf**	**11 08 12.5**	**+0.9**		
SVRC	**Sivrice-ELAZID**	**147.13**	**306**	*e*P	**PKPdf**	**11 08 14.1**	**+1.3**		
SIM	**Simferopol'**	**147.76**	**320**	*e*PKP2	**PKPbc**	**11 08 15.9**	**-0.3**		
SIM				pmax	pmax				
	comp=Z,58nm,0.9s								
GKP	**Gorka Klasztor**	**148.28**	**346**	*e*PKP	**PKPbc**	**11 08 17.1**	**-0.1**		
GKP	**Gorka Klasztor**	**148.28**	**346**	*e*PKP2	**PKPbc**	**11 08 17.1**	**-0.1**		
DSB	**Dublin**	**148.33**	**13**	*e*PKPbc	**PKPbc**	**11 08 16.3**	**-1.1**		
DARE	**Darende-Malaty**	**148.42**	**307**	*e*P	**PKPdf**	**11 08 15.4**	**+0.6**		
TOKT	**Tokat**	**148.43**	**311**	*e*P	**PKPbc**	**11 08 18.7**	**+0.6**		
VAL	**Valentia**	**148.53**	**19**	*e*P	**PKPdf**	**11 08 14.8**	**+0.5**		
SNOP	**Sinop**	**148.59**	**315**	*e*P	**PKPbc**	**11 08 18.2**	**-0.2**		
SORM	**Soroca**	**148.78**	**330**⇑	*i*P	**PKPbc**	**11 08 18.0**	**-0.7**		
SORM	**Soroca**	**148.78**	**330**⇑	PKP2	**PKPbc**	**11 08 18.1**	**-0.7**		
GAZ	**Gaziantep**	**149.09**	**305**	*e*P	**PKPdf**	**11 08 16.3**	**+0.4**		
BYBT	**Boyabat**	**149.14**	**314**	*e*P	**PKPbc**	**11 08 20.5**	**+0.7**		
KMRS	**Kahramanmaras**	**149.22**	**306**	*e*P	**PKPdf**	**11 08 15.8**	**-0.2**		
SARI	**SarD1z-Kayseri**	**149.26**	**308**	*e*P	**PKPdf**	**11 08 15.5**	**-0.7**		
LVV	**L'vov**	**149.31**	**336**	*e*PKP2	**PKPbc**	**11 08 19.1**	**-0.9**		
KIS	**Kishinev**	**149.36**	**328**	M	M	11 08 06.5			
	comp=Z,200nm,2.0s								
KIS	**Kishinev**	**149.36**	**328**⇓	*i* PKP	**PKPdf**	**11 08 16.0**	**+0.2**		
KIS	**Kishinev**	**149.36**	**328**	*i* PsP		11 08 38.0			
KIS	**Kishinev**	**149.36**	**328**	*e*PP	PP	11 12 00.0	+7.8		
KIS				*e*SKKS		11 18 34.0			
KIS				LRM	MLR	12 13 40.0			
	comp=Z,600nm,21.0s								
KIS	**Kishinev**	**149.36**	**328***k*	*i*PKIKP	**PKPdf**	**11 08 16.0**	**+0.2**		
KIS				*e*		11 12 00.0			
KIS				pmax	pmax				
	comp=Z,200nm,2.0s								
KIS				MLR	MLR				
	comp=Z,600nm,21.0s								
KIS				MLR	MLR				
	comp=Z,600nm,22.0s								
BZK	**Bozkurt**	**149.40**	**315**	*e*P	**PKPdf**	**11 08 16.3**	**+0.2**		
BNN	**Bunyan**	**149.51**	**309**	*e*P	**PKPdf**	**11 08 16.3**	**-0.2**		
CMLA	**Cha da Macela**	**149.62**	**54**	PFAKE		11 08 30.0	+3.6		
CMLA				LR	LR				
	comp=Z,832nm,20.0s								
CWF	**Charnwood Fore**	**149.69**	**8**	*e*PKPdf	**PKPdf**	**11 08 16.6**	**+0.4**		
CORM	**Corum**	**149.82**	**312**	*e*P	**PKPdf**	**11 08 17.2**	**+0.2**		
TOS	**Tosya**	**149.84**	**314**	*e*P	**PKPbc**	**11 08 21.8**	**+0.1**		
KWP	**Kalwaria Pacla**	**149.95**	**337**	*e*PKP	**PKPbc**	**11 08 21.6**	**0.0**		
KWP	**Kalwaria Pacla**	**149.95**	**337**	*e*PKP2	**PKPbc**	**11 08 21.6**	**0.0**		
LEOM	**Leova**	**150.01**	**327**⇑	*i*P	**PKPbc**	**11 08 21.9**	**+0.1**		
LEOM	**Leova**	**150.01**	**327**⇑	PKP2	**PKPbc**	**11 08 21.9**	**+0.1**		
KOZT	**Kozan**	**150.03**	**306**	*e*P	**PKPdf**	**11 08 17.2**	**0.0**		
ZALF	**Zalf**	**150.09**	**297**	*e*P	**PKPdf**	**11 08 13.1**	**-4.4**		
TAHT	**Tahtakopru-Hat**	**150.12**	**304**	*e*P	**PKPdf**	**11 08 17.6**	**+0.2**		
CEYT	**Ceyhan**	**150.25**	**305**	*e*P	**PKPbc**	**11 08 22.9**	**+0.2**		
CANT	**Cankiri**	**150.31**	**313**	*e*P	**PKPdf**	**11 08 18.2**	**+0.5**		
OJC	**Ojcow**	**150.40**	**341**	*e*PKP	**PKPbc**	**11 08 22.4**	**-0.2**		
OJC	**Ojcow**	**150.40**	**341**	*e*PKIKP	**PKPbc**	**11 08 22.5**	**-0.2**		
OJC	**Ojcow**	**150.40**	**341**	*e*PKPbc	**PKPbc**	**11 08 22.8**	**+0.1**		
BUR08	**Bucovina Ar. S**	**150.56**	**332**	*e*PKPbc	**PKPbc**	**11 08 21.8**	**-1.5**		
BURAR	**Bucovina Array**	**150.58**	**332**⇑	*i*P	**PKPbc**	**11 08 23.6**	**+0.3**		
BURAR	**Bucovina Array**	**150.58**	**332**⇑	PKIKP	**PKPbc**	**11 08 23.7**	**+0.4**		
TLCR		**150.59**	**325**⇓	*i*P	**PKPbc**	**11 08 23.0**	**-0.2**		
TLCR		**150.59**	**325**	⇓PKIKP	**PKPbc**	**11 08 23.1**	**-0.2**		
ASF	**Jabal al Asfar**	**150.60**	**295**	PKPbc	**PKPbc**	**11 08 23.7**	**-0.1**		
	comp=Z,33nm,0.8s,baz=42,slow=1.0,SNR=29								
SAFT	**Safranbolu**	**150.62**	**315**	*e*P	**PKPbc**	**11 08 22.0**	**-1.5**		
SALA	**Sala**	**150.63**	**296**	*e*P	**PKPdf**	**11 08 18.0**	**-0.5**		
STHS	**Stebnicka Huta**	**150.64**	**339**	*e*PKIKP	**PKPbc**	**11 08 23.9**	**+0.6**		
STHS				*e*		11 08 31.6			
STHS	**Stebnicka Huta**	**150.64**	**339**	*e*PKP	**PKPbc**	**11 08 23.9**	**+0.6**		
STHS				*e*		11 08 31.6			
KRTS	**Karatas**	**150.68**	**305**	*e*P	**PKPbc**	**11 08 23.3**	**-0.4**		
KARA	**Karaisali**	**150.68**	**306**	*e*P	**PKPdf**	**11 08 17.6**	**-0.7**		
KOLS	**Kolonicke sedl**	**150.69**	**337**	*e*PKIKP	**PKPbc**	**11 08 24.0**	**+0.6**		
KOLS	**Kolonicke sedl**	**150.69**	**337**	*e*PKP	**PKPbc**	**11 08 24.0**	**+0.6**		
NIG	**Nigde**	**150.69**	**308**	*e*P	**PKPbc**	**11 08 23.3**	**-0.8**		
BR131	**Keskin Array S**	**150.70**	**312**	*e*PKPbc	**PKPbc**	**11 08 22.9**	**-1.0**		
BRTR	**Keskin Array B**	**150.70**	**312**	PKP	**PKPdf**	**11 08 16.9**	**-1.5**		
	comp=Z,0.5nm,0.6s,baz=126,slow=1.7,SNR=3.8								
BRTR				PKPbc	**PKPbc**	**11 08 23.4**	**-0.6**		
	comp=Z,27nm,0.8s,baz=133,slow=2.4,SNR=45								
TOTH	**TOTAH**	**150.74**	**298**	*e*P	**PKPdf**	**11 08 15.1**	**-3.5**		
KSP	**Ksiaz**	**150.75**	**346**	*e*PKP	**PKPbc**	**11 08 23.7**	**+0.2**		
KSP	**Ksiaz**	**150.75**	**346**	*e*PKIKP	**PKPbc**	**11 08 23.7**	**+0.2**		
TESR	**Tescani**	**150.76**	**329**⇑	*i*P	**PKPbc**	**11 08 23.6**	**0.0**		
KAMT	**Kaman**	**150.81**	**311**	*e*P	**PKPbc**	**11 08 24.0**	**-0.2**		
WTSB	**Winterswijk**	**150.88**	**358**	*e*PKP	**PKPdf**	**11 08 17.7**	**-0.3**		
CLL	**Collm**	**150.94**	**350**	*e*PKPdf	**PKPdf**	**11 08 18.0**	**-0.2**		
CLL				⇓*i*PKPbc	**PKPbc**	**11 08 23.7**	**-0.2**		
	comp=Z,71nm,1.2s								
CLL				*i*		11 08 26.6			
	comp=Z,81nm,1.0s								
CLL				*i*		11 08 31.7			
	comp=Z,54nm,1.0s								
CLL				*i*		11 08 38.3			
	comp=Z,159nm,1.3s								
CLL				*e*		11 08 47.0			
CLL				*e*		11 11 51.0			
CLL				*e*PP	**PP**	**11 12 07.0**	**+6.3**		
CLL				*e*SKKSac	SKKSac	11 18 51.0	+1.6		
CLL				*e*PSKS		11 22 18.0			
CLL				*e*		11 32 18.0			
CLL				*e*SSS	SSS	11 37 18.0			
CLL				*e*SSSS		11 41 12.0			
CLL				LmV		12 23 00.0			
	comp=Z,800nm,19.4s								
CLL	**Collm**	**150.94**	**350**⇓	*e*PKIKP	**PKPdf**	**11 08 18.0**	**-0.2**		
CLL				*i*		11 08 23.7			
CLL				*i*		11 08 26.6			
	comp=Z,800nm,19.4s								
NIE	**Niedzica**	**150.95**	**340**	*e*PKP	**PKPbc**	**11 08 24.4**	**+0.4**		
NIE	**Niedzica**	**150.95**	**340**	*e*PKIKP	**PKPbc**	**11 08 24.4**	**+0.4**		
CFR	**Carcaliu**	**150.96**	**326**⇑	*i*P	**PKPbc**	**11 08 24.0**	**-0.1**		
CFR	**Carcaliu**	**150.96**	**326**⇑	PKIKP	**PKPbc**	**11 08 24.1**	**-0.1**		
CRVS	**Cervenica-Dubn**	**151.00**	**338**	*e*PKP	**PKPdf**	**11 08 19.0**	**+0.6**		
CRVS				*e*		11 08 24.3			
SERE	**Sereflikochisa**	**151.10**	**310**	*e*P	**PKPbc**	**11 08 22.5**	**-2.3**		
ODBI	**Odobesti**	**151.10**	**328**⇑	*i*P	**PKPbc**	**11 08 25.4**	**+1.0**		
BRBR	**Barbar**	**151.12**	**298**	*e*P	**PKPdf**	**11 08 16.0**	**-3.3**		
UPC	**Upice**	**151.13**	**346**	*e*PKPDF	**PKPdf**	**11 08 18.4**	**-0.1**		
UPC				⇑*e*PKP	**PKPbc**	**11 08 24.7**	**+0.3**		
UPC				*e*PKPAB	**PKPab**	**11 08 32.9**	**+0.8**		
UPC				*e*PP	**PP**	**11 11 59.3**	**-2.6**		
UPC				AMS	AMS	12 27 50.0			
	comp=Z,700nm,19.8s								
UPC	**Upice**	**151.13**	**346**	*e*PKIKP	**PKPdf**	**11 08 18.4**	**-0.1**		
UPC				*e*		11 08 24.7			
UPC				*e*		11 08 32.9			
UPC				*e*		11 11 59.3			
UPC				MLR	MLR				
	comp=Z,700nm,19.8s								
BRG	**Berggiesshubel**	**151.20**	**349**	*i* PKP	**PKPbc**	**11 08 24.6**	**+0.1**		
	comp=Z,74nm,1.4s								
BRG				*i*		11 08 31.8			
	comp=Z,41nm,1.1s								
BRG				*i*		11 08 40.1			
	comp=Z,77nm,1.0s								
BRG				*e*PP	PP	11 12 11.1	+8.8		
	comp=Z,8.5nm,1.4s								
	comp=N,441nm,17.0s								
	comp=E,239nm,19.6s								
	comp=Z,761nm,17.9s								
BRG	**Berggiesshubel**	**151.20**	**349**	*i* PKIKP	**PKPbc**	**11 08 24.6**	**+0.1**		
BRG				*i*		11 08 31.8			
BRG				*i*		11 08 40.1			
BRG				*e*		11 12 11.1			
BRG				pmax	pmax				
	comp=Z,74nm,1.4s								
BRG				MLR	MLR				
	comp=N,441nm,17.0s								
BRG				MLR	MLR				
	comp=E,239nm,19.6s								
BRG				MLR	MLR				
	comp=Z,761nm,17.9s								
DPC	**Dobruska-Polom**	**151.21**	**345**	*e*PKPDF	**PKPdf**	**11 08 18.8**	**+0.1**		
DPC				⇑*e*PKP	**PKPbc**	**11 08 25.0**	**+0.4**		
DPC				*e*PKPAB	**PKPab**	**11 08 33.9**	**+1.4**		
DPC				*e*pPKP	**pPKPdf**	**11 08 39.0**	**+9.1**		
DPC				*e*PP	**PP**	**11 12 02.2**	**-0.2**		
DPC				AMS	AMS	12 23 00.0			
	comp=Z,800nm,19.6s								
DPC	**Dobruska-Polom**	**151.21**	**345**	*e*PKIKP	**PKPdf**	**11 08 18.8**	**+0.1**		
DPC				*e*		11 08 25.0			
DPC				*e*		11 08 33.9			
DPC				*e*		11 12 02.2			
DPC				MLR	MLR				
	comp=Z,800nm,19.6s								
ANTO	**Ankara**	**151.21**	**313**	PFAKE		11 08 30.0	-3.0		
ANTO				LR	LR				
	comp=Z,497nm,20.0s								
OKC	**Ostrava-Krasne**	**151.21**	**343**	*e*PKPDF	**PKPdf**	**11 08 18.4**	**-0.2**		
OKC				⇑*e*PKP	**PKPbc**	**11 08 24.7**	**+0.1**		
OKC				*e*PKPAB	**PKPab**	**11 08 34.0**	**+1.5**		
OKC				*e*pPKP	**pPKPdf**	**11 08 39.8**	**+10**		
OKC				*e*PP	**PP**	**11 12 01.5**	**-0.9**		
OKC				AMS	AMS	12 28 50.0			
	comp=Z,600nm,20.5s								
OKC	**Ostrava-Krasne**	**151.21**	**343**	*e*PKIKP	**PKPdf**	**11 08 18.4**	**-0.2**		
OKC				*e*		11 08 24.7			
OKC				*e*		11 08 34.0			
OKC				*e*		11 12 01.5			
OKC				MLR	MLR				
	comp=Z,600nm,20.5s								
AFSR	**Af˙ar-Bala (A**	**151.22**	**312**	*e*P	**PKPdf**	**11 08 19.2**	**+0.1**		
MERS	**Mersin**	**151.22**	**306**	*e*P	**PKPdf**	**11 08 17.6**	**-1.6**		
LOD	**Lodumlu**	**151.22**	**313**	*e*P	**PKPdf**	**11 08 18.1**	**-1.1**		
PLOR	**Plostina**	**151.24**	**328**⇓	*i*P	**PKPbc**	**11 08 24.4**	**-0.4**		
PLOR	**Plostina**	**151.24**	**328**	⇓PKIKP	**PKPbc**	**11 08 24.4**	**-0.4**		
BR231	**Keskin MP Arra**	**151.24**	**313**	*e*PKPbc	**PKPbc**	**11 08 25.6**	**+0.4**		
TCHB	**Talchebab**	**151.27**	**297**	*e*P	**PKPbc**	**11 08 24.4**	**-0.9**		
TIRR	**Tirgusor**	**151.29**	**324**⇑	*i*P	**PKPbc**	**11 08 24.8**	**-0.1**		
TIRR	**Tirgusor**	**151.29**	**324**	⇑PKIKP	**PKPbc**	**11 08 24.8**	**-0.1**		
TIRR	**Tirgusor**	**151.29**	**324**	*e*PKPbc	**PKPbc**	**11 08 24.8**	**-0.1**		
KRLC	**Kraliky**	**151.35**	**345**⇓	*e*PKP	**PKPbc**	**11 08 25.3**	**+0.3**		
KRLC				*e*PKPAB	**PKPab**	**11 08 34.2**	**+1.1**		
KRLC	**Kraliky**	**151.35**	**345**	*e*PKIKP	**PKPbc**	**11 08 25.3**	**+0.3**		
KRLC				*e*		11 08 34.2			
ARCR	**ARCALIA**	**151.36**	**332**⇑	*i*P	**PKPbc**	**11 08 26.4**	**+1.4**		
HARR	**Harsova**	**151.39**	**325**⇑	*i*P	**PKPbc**	**11 08 25.3**	**+0.2**		
HARR	**Harsova**	**151.39**	**325**	⇑PKIKP	**PKPbc**	**11 08 25.3**	**+0.2**		
TLB	**Topalu**	**151.41**	**325**⇑	*i*P	**PKPbc**	**11 08 25.3**	**+0.1**		
TLB	**Topalu**	**151.41**	**325**	⇑PKIKP	**PKPbc**	**11 08 25.3**	**+0.1**		
PVCC	**Panska Ves**	**151.41**	**348**	*e*PKPDF	**PKPdf**	**11 08 19.4**	**+0.5**		
PVCC				⇑*e*PKP	**PKPbc**	**11 08 25.3**	**+0.3**		
PVCC				*e*PKPAB	**PKPab**	**11 08 34.2**	**+0.9**		
PVCC				*e*pPKP	**pPKPdf**	**11 08 36.2**	**+6.0**		
PVCC				*e*PP	**PP**	**11 12 02.6**	**-0.9**		
PVCC				*e*x	x	11 21 57.0			
PVCC				AMS	AMS	12 27 20.0			
	comp=Z,700nm,18.2s								
PVCC	**Panska Ves**	**151.41**	**348**	*e*PKIKP	**PKPdf**	**11 08 19.4**	**+0.5**		
PVCC				*e*		11 08 25.3			
PVCC				*e*		11 08 34.2			
PVCC				*e*		11 12 02.6			
PVCC				MLR	MLR				
	comp=Z,700nm,18.2s								
EFOR	**EFORIE**	**151.42**	**323**⇑	*i*P	**PKPbc**	**11 08 27.4**	**+2.2**		
MORC	**Moravsky Berou**	**151.43**	**343**⇑	*i*P	**PKPbc**	**11 08 25.1**	**-0.1**		
MORC	**Moravsky Berou**	**151.43**	**343**	⇑PKIKP	**PKPbc**	**11 08 25.1**	**-0.1**		
MORC	**Moravsky Berou**	**151.43**	**343**	*e*PKPbc	**PKPbc**	**11 08 25.3**	**+0.1**		
LANS	**Liptovska Anna**	**151.44**	**340**	*e*PKIKP	**PKPdf**	**11 08 18.9**	**-0.2**		
LANS				*e*		11 08 26.1			
LANS	**Liptovska Anna**	**151.44**	**340**	*e*PKP	**PKPdf**	**11 08 18.9**	**-0.2**		
LANS				*e*		11 08 26.1			
SULT	**Sultanhani-AKS**	**151.44**	**309**	*e*P	**PKPdf**	**11 08 15.8**	**-3.7**		
SACV	**Santiago Islan**	**151.54**	**101**	PFAKE		11 08 30.0	+3.6		
SACV				LR	LR				
	comp=Z,561nm,22.0s								
MANR	**Mangalia**	**151.61**	**323**⇑	*i*P	**PKPbc**	**11 08 26.7**	**+1.0**

BZS	**Buzias**	**153.68**	**334**	⇑PKIKP	**PKPbc**	**11 08 30.0**	**-0.2**
FLN	**La Foliniere**	**153.69**	**9**	*e*PKIKP	**PKPdf**	**11 08 24.9**	**+2.6**
FLN				pmax	pmax		
	comp=Z,23nm,0.8s						
ISP	**Isparta**	**153.74**	**310**	⇓*i*P	**PKPbc**	**11 08 31.7**	**+0.9**
ISP	**Isparta**	**153.74**	**310**	⇓PKIKP	**PKPbc**	**11 08 31.7**	**+0.9**
ISP	**Isparta**	**153.74**	**310**	PFAKE		11 08 30.0	-0.8
ISP				LR	LR		
	comp=Z,836nm,20.0s						
LANF	**Langenberg**	**153.82**	**356**	PKP	**PKPbc**	**11 08 30.8**	**+0.3**
GRR	**Gorron**	**154.00**	**9**	*e*PKIKP	**PKPdf**	**11 08 26.7**	**+3.9**
GRR				pmax	pmax		
	comp=Z,22nm,0.8s						
MOA	**Molln**	**154.02**	**346**	*i* PKPdf	**PKPdf**	**11 08 22.0**	**-0.9**
	comp=Z,18nm,1.2s						
ARSA	**Arzberg**	**154.28**	**344**	*i* PKPdf	**PKPdf**	**11 08 22.4**	**-0.9**
	comp=Z,15nm,1.4s						
MDVR	**Moldovita**	**154.31**	**332**	⇑*i*P	**PKPdf**	**11 08 24.6**	**+1.2**
BFO	**Black Forest**	**154.43**	**355***c*	*i* PKIKP	**PKPbc**	**11 08 31.8**	**0.0**
BFO	**Black Forest**	**154.43**	**355**	*e*PKPbc	**PKPbc**	**11 08 31.5**	**-0.3**
BFO				*e*PKPab	**PKPab**	**11 08 44.4**	**-1.7**
BFO				LR	LR		
	comp=Z,527nm,20.0s						
ECH	**Echery**	**154.61**	**357**	PKP	**PKPbc**	**11 08 32.5**	**+0.3**
THEF	**They Montfort**	**154.64**	**359**	PKP	**PKPbc**	**11 08 31.8**	**-0.4**
PGB	**Panagyurishte**	**154.85**	**326**	*i* P	**PKPab**	**11 08 51.5**	**+3.4**
SOKA	**Soboth**	**154.94**	**344**	*i* PKPdf	**PKPdf**	**11 08 23.5**	**-0.8**
	comp=Z,33nm,1.1s,SNR=5.8						
KBA	**Koelnbreinsper**	**154.95**	**347**	*i* PKPdf	**PKPdf**	**11 08 23.3**	**-1.1**
	comp=Z,16nm,1.0s						
PERS	**Pernice**	**154.96**	**344**	*i* PKPdf	**PKPdf**	**11 08 22.9**	**-1.4**
MOF	**Molkenrain**	**154.98**	**357**	PKP	**PKPbc**	**11 08 33.2**	**+0.1**
RETA	**Reutte**	**155.00**	**351**	*i* PKPdf	**PKPdf**	**11 08 23.7**	**-0.6**
	comp=Z,12nm,0.8s						
WATA	**Walderalm**	**155.03**	**350**	*i* PKPdf	**PKPdf**	**11 08 22.1**	**-2.4**
	comp=Z,3.1nm,0.4s						
WTTA	**Wattenberg**	**155.09**	**350**	*i* PKPdf	**PKPdf**	**11 08 25.5**	**+0.9**
	comp=Z,20nm,1.1s						
MOTA	**Moosalm**	**155.09**	**351**	*i* PKPdf	**PKPdf**	**11 08 23.4**	**-1.1**
	comp=Z,12nm,0.8s						
RZN	**Rozhen**	**155.16**	**324**	*i* P	**PKPab**	**11 08 53.1**	**+3.5**
OBKA	**Obir**	**155.22**	**345**	*i* PKPdf	**PKPdf**	**11 08 24.6**	**-0.1**
	comp=Z,9.7nm,0.8s						
VTS	**Vitosha**	**155.30**	**327**	⇑*i*P	PKPdf	11 08 35.4	+10
VTS	**Vitosha**	**155.30**	**327**	⇑PKIKP	PKPdf	11 08 35.4	+10
VTS	**Vitosha**	**155.30**	**327**	*i* P	**PKPab**	**11 08 50.1**	**-0.1**
VTS	**Vitosha**	**155.30**	**327**	*e*PKPbc	PKPdf	11 08 35.0	+10
VTS				*e*PKPab	**PKPab**	**11 08 50.4**	**+0.2**
DAVA	**Damuels**	**155.31**	**353**	*i* PKPdf	**PKPdf**	**11 08 25.3**	**+0.4**
	comp=Z,30nm,1.1s						
MYKA	**Terra Mystica**	**155.31**	**346**	*i* PKPdf	**PKPdf**	**11 08 23.8**	**-1.0**
	comp=Z,12nm,0.7s						
ABTA	**Abfaltersbach**	**155.43**	**348**	*i* PKPdf	**PKPdf**	**11 08 24.0**	**-0.9**
	comp=Z,12nm,0.8s,SNR=5.2						
FETA	**Feichten**	**155.46**	**351**	*i* PKPdf	**PKPdf**	**11 08 24.8**	**-0.3**
	comp=Z,10nm,0.9s,SNR=5.5						
LOMF	**Lomont**	**155.49**	**358**	PKP	PKPdf	11 08 34.4	+9.4
LJU	**Ljubljana**	**155.66**	**344**	*i* PKPdf	**PKPdf**	**11 08 23.8**	**-1.4**
LJU				*e*PKPab	**PKPab**	**11 08 50.8**	**-0.6**
SSF	**Saint Saulge**	**155.76**	**3**	*e*PKIKP	**PKPdf**	**11 08 26.2**	**+0.9**
SSF				pmax	pmax		
	comp=Z,12nm,1.1s						
KKB	**Krupnik**	**155.90**	**326**	*i* P	**PKPab**	**11 08 55.8**	**+3.2**
FUORN	**Ofenpass-Fuorn**	**155.92**	**352**	*e*PKPdf	**PKPdf**	**11 08 27.0**	**+1.2**
FUORN				*e*PKPab	**PKPab**	**11 08 50.8**	**-2.0**
BOJS	**Bojanci**	**155.97**	**343**	*i* PKPdf	**PKPdf**	**11 08 25.1**	**-0.5**
BOJS				*e*PKPab	**PKPab**	**11 08 52.2**	**-0.5**
TUE	**Stuetta**	**156.18**	**353**	*e*PKPdf	**PKPdf**	**11 08 27.6**	**+1.5**
TUE				LR	LR		
	comp=Z,932nm,20.0s						
PDG	**Podgorica**	**157.26**	**333**	⇓*i*P	**PKPab**	**11 08 55.8**	**-2.5**
SSB	**Saint Sauveur**	**157.58**	**2**	*e*PKP2	**PKPab**	**11 08 54.4**	**-5.2**
SSB				MLR	MLR		
	comp=Z,772nm,19.0s						
SSB	**Saint Sauveur**	**157.58**	**2**	*e*PKPab	**PKPab**	**11 08 54.4**	**-5.2**
SSB				LR	LR		
	comp=Z,772nm,19.0s						
PMOZ	**Porto Moniz, M**	**157.74**	**58**	*e*LR	LR	12 08 07.1	
	comp=Z,766nm,20.0s						
PGAV	**Gavieira, Arco**	**157.76**	**28**	*e*PKPdf	**PKPdf**	**11 08 27.9**	**-0.2**
PGAV	**Gavieira, Arco**	**157.76**	**28**	*e*LR	LR	12 09 50.9	
	comp=Z,1µm,20.0s						
CAF	**Calviac**	**157.78**	**6**	*e*PKIKP	**PKPdf**	**11 08 28.4**	**+0.4**
CAF				pmax	pmax		
	comp=Z,13nm,1.5s						
BNI	**Bardonecchia**	**157.79**	**358**	PFAKE		11 08 40.0	+12
BNI				LR	LR		
	comp=Z,1µm,21.0s						
TIR	**Tirane**	**157.86**	**330**	PFAKE		11 08 40.0	+12
TIR				LR	LR		
	comp=Z,1µm,19.0s						
ORIF	**Oris-en-Rattie**	**157.95**	**359**	*e*PKIKP	**PKPdf**	**11 08 28.0**	**-0.3**
ORIF				pmax	pmax		
	comp=Z,7.0nm,1.0s						
SANT	**Santorini**	**157.97**	**312**	PFAKE		11 08 40.0	+12
SANT				LR	LR		
	comp=Z,459nm,20.0s						
AGG	**Agios Georgios**	**158.31**	**322**	*e*PKP2	**PKPab**	**11 09 04.4**	**+1.3**
AGG	**Agios Georgios**	**158.31**	**322**	*e*PKPab	**PKPab**	**11 09 04.4**	**+1.3**
VLC	**Villacollemand**	**158.31**	**350**	PFAKE		11 08 40.0	+11
VLC				LR	LR		
	comp=Z,298nm,21.0s						
POLO	**Lamas de Olo**	**158.45**	**28**	*e*PKPdf	**PKPdf**	**11 08 29.3**	**+0.3**
POLO	**Lamas de Olo**	**158.45**	**28**	*e*PKPab	**PKPab**	**11 09 04.0**	**+0.3**
PBRG	**Braganca**	**158.52**	**25**	*e*PKPdf	**PKPdf**	**11 08 29.1**	**+0.1**
PBRG	**Braganca**	**158.52**	**25**	*e*PKPab	**PKPab**	**11 09 03.4**	**-0.5**
PVRL	**Vila Real**	**158.56**	**28**	*e*PKPdf	**PKPdf**	**11 08 28.8**	**-0.3**
IDI	**Anoyia**	**158.93**	**310**	PKP	**PKPdf**	**11 08 29.1**	**-0.6**
	comp=Z,5.5nm,0.8s,baz=90,slow=5.1,SNR=2.3						
IDI				PKPab	**PKPab**	**11 09 03.8**	**-2.2**
	comp=Z,5.6nm,0.7s,baz=56,slow=10.0,SNR=3.0						
PVIS	**Viseu**	**158.94**	**29**	*e*PKPdf	**PKPdf**	**11 08 28.4**	**-1.1**
PVIS	**Viseu**	**158.94**	**29**	*e*PKPab	PKPab	11 09 19.3	+14
MVO	**Moncorvo**	**158.94**	**27**	*e*PKPdf	**PKPdf**	**11 08 29.9**	**+0.3**
MVO	**Moncorvo**	**158.94**	**27**	*e*PKPab	**PKPab**	**11 09 05.1**	**-0.7**
MVO	**Moncorvo**	**158.94**	**27**	*e*LR	LR	12 08 44.4	
	comp=Z,1µm,20.0s						
PCAS	**Casmilo, Conde**	**159.19**	**31**	*e*PKPdf	**PKPdf**	**11 08 33.5**	**+3.7**
MTE	**Manteigas**	**159.35**	**29**	*e*PKPdf	**PKPdf**	**11 08 30.3**	**+0.2**
MTE	**Manteigas**	**159.35**	**29**	*e*LR	LR	12 08 32.6	
	comp=Z,1µm,20.0s						
MTE	**Manteigas**	**159.35**	**29**	PFAKE		11 08 40.0	+10
MTE				LR	LR		
	comp=Z,1µm,21.0s						
AQU	**L'Aquila**	**159.39**	**343**	*e*PKP2	**PKPab**	**11 09 12.7**	**+5.1**
AQU				MLR	MLR		
	comp=Z,1µm,20.0s						
AQU	**L'Aquila**	**159.39**	**343**	*e*PKPab	**PKPab**	**11 09 12.7**	**+5.1**
AQU				LR	LR		
	comp=Z,1µm,20.0s						
PTOM	**Tomar**	**159.57**	**32**	*e*PKPdf	**PKPdf**	**11 08 30.9**	**+0.7**
PTOM	**Tomar**	**159.57**	**32**	*e*PKPab	**PKPab**	**11 09 07.8**	**-0.6**
PMAFR	**Mafra**	**159.63**	**34**	*e*PKPdf	**PKPdf**	**11 08 28.8**	**-1.5**
PMAFR	**Mafra**	**159.63**	**34**	*e*PKPab	**PKPab**	**11 09 07.4**	**-1.4**
PCBR	**Castelo Branco**	**159.83**	**30**	*e*PKPdf	**PKPdf**	**11 08 30.8**	**+0.3**
PCBR	**Castelo Branco**	**159.83**	**30**	*e*PKPab	**PKPab**	**11 09 07.7**	**-1.9**
PMST	**Lisbon--Monsan**	**159.84**	**35**	*e*PKPdf	**PKPdf**	**11 08 31.2**	**+0.6**
PMTG	**Montargil**	**160.08**	**32**	*e*PKPdf	**PKPdf**	**11 08 30.3**	**-0.5**
PMRV	**Marv??o**	**160.20**	**30**	*e*PKPdf	**PKPdf**	**11 08 30.9**	**-0.1**
PMRV	**Marv??o**	**160.20**	**30**	*e*PKPab	**PKPab**	**11 09 10.3**	**-0.9**
PMRV	**Marv??o**	**160.20**	**30**	*e*LR	LR	12 08 51.6	
	comp=Z,1µm,20.0s						
GUD	**Guadarrama**	**160.50**	**22**	*e*PKIKP	**PKPdf**	**11 08 32.5**	**+1.1**
PESTR	**Estremoz**	**160.55**	**32**	*e*PKPdf	**PKPdf**	**11 08 30.0**	**-1.4**
PESTR	**Estremoz**	**160.55**	**32**	*e*PKPab	**PKPab**	**11 09 12.3**	**-0.5**
EVO	**Evora**	**160.60**	**33**	*e*PKPdf	**PKPdf**	**11 08 31.6**	**+0.2**
PNCL	**Nicolau / Gran**	**160.65**	**35**	*e*PKPdf	**PKPdf**	**11 08 31.3**	**-0.2**
LIC	**Lamto**	**160.70**	**147**	*e*P	**PKPdf**	**11 08 29.9**	**-2.4**
	comp=Z,46nm,1.5s						
CUC	**Castrocucco**	**160.71**	**335**	*e*PKPab	**PKPab**	**11 09 15.5**	**+2.0**
CUC				LR	LR		
	comp=Z,461nm,20.0s						
KIC	**Kosan Boka**	**160.96**	**148**	*e*P	**PKPdf**	**11 08 28.8**	**-3.8**
	comp=Z,30nm,1.0s						
PTEO	**Sao Teotonio**	**160.96**	**36**	*e*PKPdf	**PKPdf**	**11 08 33.0**	**+1.2**
TIP	**Timpagrande**	**161.01**	**332**	PFAKE		11 08 40.0	+8.1
TIP				LR	LR		
	comp=Z,2µm,20.0s						
MESJ	**Messejana**	**161.02**	**35**	*e*P	**PKPdf**	**11 08 30.8**	**-1.1**
MESJ					**PP**	**11 12 57.0**	**-0.3**
MESJ				AMS	AMS	12 16 19.1	
	comp=Z,1µm,25.9s						
MESJ	**Messejana**	**161.02**	**35**	*e*PKPdf	**PKPdf**	**11 08 32.5**	**+0.6**
PBEJ	**Beja**	**161.06**	**34**	*e*PKPdf	**PKPdf**	**11 08 33.0**	**+1.1**
PBEJ	**Beja**	**161.06**	**34**	*e*PKPab	**PKPab**	**11 09 14.2**	**-0.8**
TIC	**Toumodi**	**161.07**	**147**	*e*P	**PKPdf**	**11 08 31.2**	**-1.5**
DBIC	**Dimbokro**	**161.17**	**147**	PKP	**PKPdf**	**11 08 31.9**	**-0.9**
	comp=Z,11nm,0.8s,baz=106,slow=0.8,SNR=14						
DBIC				PKPab	**PKPab**	**11 09 15.4**	**-0.6**
	comp=Z,8.6nm,0.8s,baz=198,slow=7.6,SNR=5.1						
DBIC	**Dimbokro**	**161.17**	**147**	*e*PKPdf	**PKPdf**	**11 08 32.6**	**-0.2**
DBIC				PKPab	**PKPab**	**11 09 15.4**	**-0.6**
MORF	**Marmelete**	**161.18**	**37**	*e*P	**PKPdf**	**11 08 31.2**	**-1.0**
MORF				*e*PP	**PP**	**11 12 58.0**	**-0.3**
MORF				AMS	AMS	12 18 42.1	
	comp=Z,2µm,21.8s						
MORF	**Marmelete**	**161.18**	**37**	*e*PKPdf	**PKPdf**	**11 08 32.9**	**+0.7**
PCVE	**Castro Verde**	**161.27**	**35**	*e*PKPdf	**PKPdf**	**11 08 32.6**	**+0.4**
PCVE	**Castro Verde**	**161.27**	**35**	*e*PKPab	**PKPab**	**11 09 14.4**	**-1.5**
PBAR	**Barrancos**	**161.36**	**32**	*e*PKPdf	**PKPdf**	**11 08 32.8**	**+0.6**
PBAR	**Barrancos**	**161.36**	**32**	*e*PKPab	**PKPab**	**11 09 15.6**	**-0.7**
PAB	**San Pablo**	**161.39**	**24**	*e*PKIKP	**PKPdf**	**11 08 33.0**	**+0.6**
PAB				MLR	MLR		
	comp=Z,1µm,20.0s						
PAB	**San Pablo**	**161.39**	**24**	*e*PKPdf	**PKPdf**	**11 08 33.0**	**+0.6**
PAB				LR	LR		
	comp=Z,1µm,20.0s						
ES19	**SONSECA Array**	**161.42**	**23**	*e*PKPdf	**PKPdf**	**11 08 32.7**	**+0.4**
ESDC	**Sonseca Array**	**161.42**	**23**	PKP	**PKPdf**	**11 08 32.6**	**+0.3**
	comp=Z,2.4nm,0.8s,baz=346,slow=2.8,SNR=8.1						
ESDC				PKPab	**PKPab**	**11 09 16.2**	**-0.3**
	comp=Z,4.3nm,0.8s,baz=320,slow=3.7,SNR=9.5						
ESDC				PP	**PP**	**11 13 01.8**	**+2.6**
	comp=Z,0.1nm,0.2s,baz=328,slow=4.8,SNR=5.6						
PBDV	**Barranco-do-Ve**	**161.62**	**36**	*e*PKPdf	**PKPdf**	**11 08 33.6**	**+1.0**
CEL	**Celeste**	**162.15**	**332**	PFAKE		11 08 40.0	+6.9
CEL				LR	LR		
	comp=Z,925nm,20.0s						
VSL	**Villasalto**	**163.02**	**349**	PFAKE		11 08 40.0	+6.1
VSL				LR	LR		
	comp=Z,923nm,19.0s						
CLTB	**Caltabellotta**	**163.81**	**337**	PFAKE		11 08 50.0	+15
CLTB				LR	LR		
	comp=Z,647nm,19.0s						
RTC	**Rabat Centre**	**164.54**	**41**	PFAKE		11 08 50.0	+15
RTC				LR	LR		
	comp=Z,3µm,20.0s						
WDD	**Wied Dalam**	**164.77**	**330**	PFAKE		11 08 50.0	+14
WDD				LR	LR		
	comp=Z,2µm,20.0s						
KEST	**Kesra**	**166.67**	**346**	PKP	**PKPdf**	**11 08 37.9**	**+0.6**
	comp=Z,5.2nm,0.9s,baz=278,slow=3.9,SNR=5.8						
KEST				PKPab	**PKPab**	**11 09 39.2**	**-0.5**
	comp=Z,6.5nm,0.8s,baz=294,slow=5.5,SNR=5.9						
KEST	**Kesra**	**166.67**	**346**	*e*PKPdf	**PKPdf**	**11 08 39.1**	**+1.9**
KEST				*e*PKPab	**PKPab**	**11 09 42.6**	**+2.9**
TORD	**Torodi Ar. Bea**	**169.78**	**159**	PKP	**PKPdf**	**11 08 38.6**	**-1.3**
	comp=Z,4.0nm,0.8s,baz=315,slow=0.4,SNR=18						
TORD				PKPab	**PKPab**	**11 09 53.6**	**-0.2**
	comp=Z,5.4nm,0.9s,baz=200,slow=3.7,SNR=7.6						
TORD				PP	**PP**	**11 13 48.3**	**+5.9**
	comp=Z,3.6nm,1.0s,baz=161,slow=2.0,SNR=6.2						
TAM	**Tamanrasset**	**179.84**	**261**	*e*PKIKP	**PKPdf**	**11 08 43.6**	**+0.8**
TAM				MLR	MLR		
	comp=Z,895nm,20.0s						
TAM	**Tamanrasset**	**179.84**	**261**	*e*PKPdf	**PKPdf**	**11 08 43.6**	**+0.8**
TAM				LR	LR		
	comp=Z,895nm,20.0s						

*ISK **11** 10:53:17.7,37.°06N×29.°09E,h8km,MD2.5,ML2.1*
*DDA **11** 10:53:17.7,37.°11N×29.°03E,h7km,Md2.9*
*CSEM **11** 10:53:18.0±0.2,37.°09N×29.°08E,h5km,MD2.5,Error ellipse: s-maj=4.7km s-min=3.0km az=175.0*

ISC 11 10:53:18.2±1.0,37.°11N±0.°03×29.°09E±0.°02,h7km±9km, n25,σ1°§33/41,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
GLHS	**Glhisar (BURDU**	**0.33**	**82**	*e*PG		**Pg**	**10 53 25.0**	**+0.3**
GLHS				*e*SG		**Sg**	**10 53 30.1**	**+1.0**
GLHS	**Glhisar (BURDU**	**0.33**	**82**	*e*Pg		**Pg**	**10 53 25.0**	**+0.3**
GLHS				*e*Sg		**Sg**	**10 53 30.1**	**+1.0**
GOLH	**Golhisar**	**0.40**	**72**	*i* P		**Pg**	**10 53 25.9**	**-0.1**
GOLH				*i* S		**Sb**	**10 53 33.1**	**-0.9**
GOLH	**Golhisar**	**0.40**	**72**	P		**Pg**	**10 53 25.9**	**-0.1**
GOLH				S		**Sb**	**10 53 33.1**	**-0.9**
DALY	**Dalyan (Mu¨la**	**0.46**	**230**	*e*PG		**Pg**	**10 53 26.4**	**-0.6**
DALY				*e*SG		**Sg**	**10 53 33.1**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.46**	**230**	*e*Pg		**Pg**	**10 53 26.4**	**-0.6**
DALY				*e*Sg		**Sg**	**10 53 33.1**	**+0.1**
TURN	**Turunc**	**0.46**	**239**	*i* P		**Pn**	**10 53 31.3**	**+0.1**
TURN				*i* S		**Sb**	**10 53 42.2**	**+6.6**
DNZL	**Cakiroluk**	**0.58**	**357**	*i* P		**Pg**	**10 53 28.4**	**-1.0**
DNZL				*i* S		**Sg**	**10 53 37.6**	**+0.7**
DNZL	**Cakiroluk**	**0.58**	**357**	P		**Pg**	**10 53 28.4**	**-1.0**
DNZL				S		**Sg**	**10 53 37.6**	**+0.7**
YER	**Yerkesik**	**0.64**	**272**	*e*PG		**Pg**	**10 53 30.5**	**-0.1**
YER				*e*SG		**Sb**	**10 53 40.3**	**-0.8**
YER	**Yerkesik**	**0.64**	**272**	*e*Pg		**Pg**	**10 53 30.5**	**-0.1**
YER				*e*Sg		**Sb**	**10 53 40.3**	**-0.8**
ELL	**Elmali**	**0.75**	**119**	*e*PG		**Pg**	**10 53 32.0**	**-0.7**
ELL	**Elmali**	**0.75**	**119**	*e*Pg		**Pg**	**10 53 32.0**	**-0.7**
AKAS	**Kas**	**0.97**	**155**	*i* P		**Pg**	**10 53 36.0**	**-0.8**
AKAS				*i* S		**Sn**	**10 53 54.2**	**+1.6**
AKAS	**Kas**	**0.97**	**155**	P		**Pg**	**10 53 36.0**	**-0.8**
KORT	**Korkueli**	**1.02**	**96**	*i* P		**Pn**	**10 53 38.4**	**-0.6**
KORT				*i* S		**Sn**	**10 53 54.3**	**+0.6**
KORT	**Korkueli**	**1.02**	**96**	P		**Pn**	**10 53 38.4**	**-0.6**
KORT				S		**Sn**	**10 53 54.3**	**+0.6**
KHL	**Karahalli**	**1.26**	**16**	*e*PN		**Pg**	**10 53 43.3**	**+1.0**
KHL	**Karahalli**	**1.26**	**16**	*e*Pn		**Pg**	**10 53 43.3**	**+1.0**
AYDB	**Zeytinkoy-Aydi**	**1.26**	**312**	*e*PN		**Pg**	**10 53 42.8**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.26**	**312**	*e*Pn		**Pg**	**10 53 42.8**	**+0.3**
BDRM	**Kayabasi**	**1.31**	**268**	*i* P		**Pn**	**10 53 41.8**	**-1.2**
BDRM				*i* S		**Sn**	**10 54 00.3**	**-0.5**
BDRM	**Kayabasi**	**1.31**	**268**	P		**Pn**	**10 53 41.8**	**-1.2**
BDRM				S		**Sn**	**10 54 00.3**	**-0.5**
BODT	**Bodrum**	**1.42**	**269**	*e*PN		**Pb**	**10 53 44.5**	**-0.6**
BODT	**Bodrum**	**1.42**	**269**	*e*Pn		**Pb**	**10 53 44.5**	**-0.6**

*NIED **11** 10:54:00,25.°10N×128.°10E,h86km,Mw4.5 Best double couple: M06.42000×10^15^ NP1:φs325.00000°,δ20.00000°, λ61.00000°. NP2:φs176.00000°,δ73.00000°,λ100.00000°.*
*IDC **11** 10:54:53.3±0.8,24.°92N×128.°15E,h0km,mb4.0/12, mb1 4.1/14,mb1mx3.9/62,mbtmp3.9/14,ML3.3/2,MS4.1/2, Ms1 4.2/2,ms1mx3.1/47,Error ellipse: s-maj=34.0km s-min=15.8km az=80.0*
*ISCJB **11** 10:54:54.9±1.4,24.°99N±0.°03×128.°09E±0.°04, h25km±11km,mb3.8/15,MS5.0/1,Error ellipse: s-maj=6.9km s-min=4.2km az=43.2*
*NEIC **11** 10:54:54.7±0.5,24.°93N×128.°06E,h10km,mb4.1/1,Error ellipse: s-maj=11.1km s-min=7.7km az=123.0*
*JMA **11** 10:54:57.0±0.3,25.°08N×128.°09E,h78km,M3.7*

ISC 11 10:54:54.3±2.5,24.°96N±0.°05×128.°17E±0.°05,h13km±15km, n45,σ2°§20/61,mb3.9/15,Southeast of Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
JJT2	**Tamagusuku 2**	**1.24**	**342**	P		**Pn**	**10 55 17.7**	**+0.3**
JJT2				S		**Sg**	**10 55 32.6**	**-1.7**
JNTH	**Nagotoyohara**	**1.56**	**355**	P		**Pn**	**10 55 21.5**	**-0.3**
JNTH				*e*S		**Sn**	**10 55 39.7**	**-2.1**
JAGN	**Aguni-jima**	**1.83**	**333**	P		**Pn**	**10 55 25.8**	**+0.4**
JAGN				*e*S		**Sn**	**10 55 46.9**	**-1.5**
JKE	**Kume jima 2**	**1.85**	**318**	P		**Pn**	**10 55 25.7**	**0.0**
JKE				S		**Sn**	**10 55 47.0**	**-2.0**
JOW	**Kunigami**	**1.87**	**3**	P		**Pn**	**10 55 26.0**	**0.0**
JOW				S		**Sn**	**10 55 47.0**	**-2.5**
JOW	**Kunigami**	**1.87**	**3**	*e*Pn		**Pn**	**10 55 26.2**	**+0.2**
JIH	**Iheya**	**2.08**	**355**	P		**Pn**	**10 55 29.3**	**+0.4**
JIH				S		**Sn**	**10 55 51.5**	**-3.1**
JOKE	**Okinoerabujima**	**2.42**	**8**	P		**Pn**	**10 55 39.7**	**-3.4**
JOKE				S		**Sn**	**10 55 59.7**	**-3.4**
JOGS	**Gusukube**	**2.52**	**266**	P		**Pn**	**10 55 35.1**	**+0.1**
JOGS				S		**Sn**	**10 56 03.1**	**-2.4**
JIKM	**Ikemajima**	**2.65**	**270**	P		**Pn**	**10 55 37.0**	**+0.2**
JIKM				S		**Sn**	**10 56 07.2**	**-1.7**
JIRB	**Irabujima**	**2.73**	**268**	P		**Pn**	**10 55 37.5**	**-0.3**
JIRB				S		**Sn**	**10 56 07.4**	**-3.2**
JMZ	**Minamidaito 2**	**2.89**	**72**	P		**Pn**	**10 55 38.1**	**-1.9**
JMZ				S		**Sn**	**10 56 09.7**	**-4.9**
JTK	**Tokunoshima**	**2.90**	**14**	P		**Pn**	**10 55 40.4**	**+0.2**
JTK				S		**Sn**	**10 56 11.1**	**-3.9**
JTJ	**Tarama**	**3.17**	**265**	P		**Pn**	**10 55 43.5**	**-0.4**
JTJ				*e*S		**Sn**	**10 56 18.3**	**-3.3**
JAMN	**Amaminishikomi**	**3.39**	**15**	P		**Pn**	**10 55 47.4**	**+0.4**
JAMN				*e*S		**Sn**	**10 56 23.7**	**-3.4**
JISG	**Ishigakijimahi**	**3.53**	**265**	P		**Pn**	**10 55 48.1**	**-0.7**
JISG				*e*S		**Sn**	**10 56 25.2**	**-5.3**
JAM	**Amami Oshima**	**3.67**	**20**	P		**Pn**	**10 55 51.5**	**+0.7**
JAM				*e*S		**Sn**	**10 56 29.6**	**-4.3**
JZK	**Kikaishima**	**3.71**	**25**	P		**Pn**	**10 55 52.5**	**+1.2**
JIJ	**Ishigaki jima**	**3.71**	**262**	P		**Pn**	**10 55 50.6**	**-0.8**
JIJ				S		**Sn**	**10 56 29.9**	**-5.1**
JKRS	**Kuro-shima**	**3.86**	**260**	P		**Pn**	**10 55 53.0**	**-0.3**
IRIF	**Iriomote-Funau**	**4.09**	**262**	P		**Pn**	**10 55 55.8**	**-0.7**
JTAJ	**Takarajima**	**4.28**	**12**	P		**Pn**	**10 55 59.8**	**+0.7**
YULB	**Yu-li**	**6.47**	**257**	*e*Pn		**Pn**	**10 56 26.5**	**-2.8**
	18nm,0.7s							
TPUB	**Ta-pu**	**7.08**	**258**	*e*Pn		**Pn**	**10 56 37.4**	**-0.4**
	15nm,0.3s							
JNU	**Nakatsue**	**8.47**	**16**	Pn		**Pn**	**10 56 58.1**	**+1.3**
	0.6nm,0.3s,baz=192,slow=8.4,SNR=10.0							
JNU				Sn		**Sn**	**10 58 30.0**	**-2.3**
	0.3nm,0.3s,baz=79,slow=18,SNR=3.2							
KSRS	**Korea Array**	**12.46**	**359**	LR		LR	11 02 01.7	
	comp=Z,171nm,18.4s,baz=312,slow=34							
JHJ2	**Mitsune**	**13.02**	**49**	*e*Pn		**Pn**	**10 58 00.9**	**+1.9**
USRK	**Ussuriysk Ar.**	**19.45**	**8**	P		**Pn**	**10 59 23.5**	**+1.8**
	0.1nm,0.3s,baz=198,slow=12,SNR=4.4							
KLR	**Kul'dur**	**24.39**	**6**	P		**P**	**11 00 12.7**	**+0.4**
	1.5nm,0.8s,baz=177,slow=9.3,SNR=4.9							
SONM	**Songino Array**	**28.60**	**329**	P		**P**	**11 00 46.4**	**-3.9**
	0.2nm,0.4s,baz=126,slow=8.0,SNR=3.3							
MKAR	**Makanchi Array**	**42.35**	**313**	P		**P**	**11 02 49.3**	**+1.2**
	0.7nm,0.5s,baz=94,slow=11,SNR=7.6							
FITZ	**Fitzroy Crossi**	**42.87**	**184**	P		**P**	**11 02 52.9**	**+0.4**
	4.4nm,0.8s,baz=5.5,slow=6.4,SNR=2.9							
ZALV	**Zalesovo Beam**	**43.23**	**324**	P		**P**	**11 02 56.4**	**+1.3**
	1.2nm,0.6s,baz=119,slow=8.3,SNR=5.1							
WRA	**Warramunga Arr**	**45.03**	**172**	P		**P**	**11 03 10.3**	**+0.4**
	3.9nm,0.8s,baz=353,slow=8.8,SNR=7.1							
KURK	**Kurchatov**	**45.71**	**317**	P		**P**	**11 03

2.6nm,0.3s,baz=96,slow=7.6,SNR=280
FITZ Fitzroy Crossi 52.89 262 P **P** **11 37 45.8 -0.6**
1.5nm,0.6s,baz=96,slow=9.2,SNR=8.4
MJAR Matsushiro Arr 69.97 324 P **P** **11 39 37.2 -0.6**
1.4nm,0.5s,baz=156,slow=6.2,SNR=4.8
PETK Petropavlovsk- 76.06 345 P **P** **11 40 12.4 +0.2**
3.3nm,0.7s,baz=116,slow=6.8,SNR=4.7
KSRS Korea Array 76.65 319 P **P** **11 40 16.3 +0.6**
0.6nm,0.6s,baz=130,slow=5.8,SNR=4.0
USRK Ussuriysk Ar. 78.73 326 P **P** **11 40 26.9 +0.1**
2.2nm,0.7s,baz=78,slow=4.9,SNR=4.7
ILAR Eielson Array 88.18 13 P **P** **11 41 13.3 -0.1**
0.3nm,0.4s,baz=214,slow=5.8,SNR=6.0
CMAR Chiang Mai Arr 89.91 290 P **P** **11 41 23.7 +1.2**
1.0nm,0.8s,baz=103,slow=2.6,SNR=5.6
AKASG Malin Array Be 142.78 331 PKhKP PKPpre 11 47 48.1
2.3nm,0.5s,baz=43,slow=4.6,SNR=13
BRTR Keskin Array B 146.60 312 PKPbc **PKPbc** **11 48 01.2 -0.7**
0.5nm,0.5s,baz=50,slow=2.3,SNR=3.1

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*IDC **11** 11:38:35.0±0.4,4.˚08S×121.˚65E,h0km,mb4.6/26, mb1 4.6/28,mb1mx4.5/46,mbtmp4.6/28,ML4.1/2,MS4.3/23, Ms1 4.3/23,ms1mx4.1/57,Error ellipse: s-maj=15.4km s-min=10.2km az=68.0*
*BJI **11** 11:38:37.3,4.˚10S×121.˚70E,h23km,mb4.7/41,mB5.1/29, Ms4.6/22,Ms7 4.3/23*
*ISCJB **11** 11:38:38.5±0.2,4.˚13S±0.˚02×121.˚71E±0.˚02,h33km, mb4.8/62,MS4.3/24,Error ellipse: s-maj=3.6km s-min=3.4km az=160.5*
*MOS **11** 11:38:38.5±1.3,4.˚12S×121.˚70E,h36km,mb5.1/14,Error ellipse: s-maj=11.5km s-min=6.4km az=117.1*
*DJA **11** 11:38:38.3±0.2,4.˚S±2.˚×12.˚2E±.˚,h10km,M5.0/24, mb4.8/24,mB5.5/14,MLv5.2/18,Mw(mB)4.9/14,Mwp5.5/1*
*GCMT **11** 11:38:40.5±0.2,4.˚09S×121.˚64E,h12km,MW5.2/113, Moment Tensor Solution. s74,c98; s113,c183; Duration: 1§0 Moment tensor: Scale 10^17^Nm; Mrr-0.81±.01; Mθθ0.45±.01; Mϕϕ0.36±.01; Mrθ0.13±.04; Mθϕ-0.34±.01; Mϕr0.12±.04; Best double couple: Mo0.79600×10^17^ NP1:ϕs301.00000°,δ47.00000°, λ-105.00000°. NP2:ϕs142.00000°,δ45.00000°, λ-75.00000°. Principal axes: T 0.7500, Plg1.0000°, Azm42.0000°; N 0.0940, Plg11.0000°, Azm311.0000°; P -0.8420, Plg79.0000°, Azm135.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **11** 11:38:40.5±0.5,4.˚15S×121.˚68E,h38km±5km,mb4.8/12 Error ellipse: s-maj=6.3km s-min=4.1km az=56.0*
NEIC Felt [III] at Kendari. Also felt at Katobu.
ISC 11 11:38:41.0±0.3,**4.˚11S**±0.˚04×**121.˚75E**±0.˚04,**h35km,n172,** σ1§**91**/179,**mb4.8**/62,**MS4.2**/24,**9C-7D,Sulawesi**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KDI	**Kendari**	**0.88**	**80**	P	**Pn**	**11 38 54.7**	**-2.2**
KDI				S	**Sn**	**11 39 08.6**	**+0.1**
SPSI	**Sidrap Palu**	**1.98**	**274**	P	**Pn**	**11 39 08.1**	**-3.9**
SPSI				S	**Sn**	**11 39 34.6**	**-0.9**
KAPI	**Kappang**	**2.18**	**246**	Pn	**Pn**	**11 39 10.7**	**-4.1**
	90nm,0.3s,baz=78,slow=5.9,SNR=206						
KAPI				Sn	**Sn**	**11 39 40.0**	**-0.6**
	1μm,0.3s,baz=58,slow=21,SNR=28						
KAPI				LR	LR	11 40 02.3	
	comp=Z,10μm,20.2s,baz=347,slow=42						
KAPI	**Kappang**	**2.18**	**246**	*e*Pn	**Pn**	**11 39 11.3**	**-3.5**
KAPI				Sn	**Sn**	**11 39 40.0**	**-0.6**
TTSI	**Tana Toraja**	**2.19**	**299**	P	**Pn**	**11 39 12.4**	**-2.5**
LUWI	**Luwuk**	**3.21**	**19**	P	**Pn**	**11 39 27.7**	**-1.3**
LUWI	**Luwuk**	**3.21**	**19**	*e*Pn	**Pn**	**11 39 28.2**	**-0.8**
PCI	**Palu**	**3.71**	**329**	P	**Pn**	**11 39 35.1**	**-0.7**
PCI	**Palu**	**3.71**	**329**	P	**Pn**	**11 39 34.8**	**-1.0**
MMRI	**Maumere**	**4.53**	**174**	P	**Pn**	**11 39 45.8**	**-1.3**
MMRI	**Maumere**	**4.53**	**174**	*e*Pn	**Pn**	**11 39 46.2**	**-0.8**
MRSI	**Marisa**	**4.56**	**2**	P	**Pn**	**11 39 46.0**	**-1.5**
SANI	**Sanana**	**4.70**	**64**	P	**Pn**	**11 39 50.3**	**+0.8**
KMSI	**Cibinong**	**5.16**	**26**	P	**Pn**	**11 39 56.5**	**+0.8**
	1μm,0.8s,10μm17μm3.6nm						
WSI	**Waingapu**	**5.71**	**195**	P	**Pn**	**11 40 06.4**	**+3.1**
	835nm,0.8s,10μm3.2nm						
PLAI	**Plampang**	**6.13**	**220**	P	**Pn**	**11 40 06.6**	**-2.5**
	353nm,0.7s,3μm1.4nm						
SOEI	**Soe**	**6.14**	**156**	P	**Pn**	**11 40 12.1**	**+2.7**
SOEI	**Soe**	**6.14**	**156**	*e*Pn	**Pn**	**11 40 13.9**	**+4.5**
BASI	**Baing, Sumba**	**6.18**	**191**	P	**Pn**	**11 40 09.9**	**+0.1**
BATI	**Baumata**	**6.35**	**163**	P	**Pn**	**11 40 15.3**	**+3.1**
TWSI	**Taliwang, Sumb**	**6.67**	**226**	P	**Pn**	**11 40 16.9**	**+0.3**
	106nm,0.7s,1μm0.4nm						
LBMI	**Labuha**	**6.70**	**59**	P	**Pn**	**11 40 17.4**	**+0.4**
	135nm,1.1s,2μm0.5nm						
BBKI	**Banjar Baru**	**6.92**	**275**	P	**Pn**	**11 40 19.0**	**-1.0**
	136nm,0.8s,4μm0.8nm						
SRBI	**Singaraja**	**7.60**	**238**	P	**Pn**	**11 40 29.0**	**-0.3**
	178nm,0.7s,2μm0.6nm						
JAGI	**Jajag, Banyuwa**	**8.70**	**240**	P	**Pn**	**11 40 43.1**	**-1.4**
	103nm,0.9s,2μm						
JAGI	**Jajag, Banyuwa**	**8.70**	**240**	*e*Pn	**Pn**	**11 40 44.2**	**-0.3**
GMJI	**Gumukmas**	**9.23**	**243**	P	**Pn**	**11 40 52.4**	**+0.7**
	57nm,1.1s						
MYLDM	**Lahad Datu**	**9.78**	**341**	*e*Pn	**Pn**	**11 41 00.4**	**+1.2**
SWI	**Sorong**	**10.04**	**72**	P	**Pn**	**11 41 02.3**	**-0.4**
SWI				pmax	pmax		
	comp=Z,59nm,1.8s						
FAKI	**Fak Fak**	**10.55**	**84**	*e*Pn	**Pn**	**11 41 10.7**	**+0.9**
PWJI	**Pagerwojo**	**10.62**	**248**	P	**Pn**	**11 41 10.1**	**-0.7**
	comp=Z,39nm,2.2s						
NGJI	**Ngawi**	**10.73**	**252**	P	**Pn**	**11 41 13.6**	**+1.3**
	comp=Z,54nm,1.1s						
PCJI	**Pacitan**	**11.26**	**248**	P	**Pn**	**11 41 22.9**	**+3.3**
	comp=Z,83nm,2.1s,comp=Z,2μm						
WOJI	**Wonogiri, Jawa**	**11.38**	**250**	P	Pn	11 41 27.5	+6.3
KKM	**Kota Kinabalu**	**11.50**	**331**	*e*Pn	**Pn**	**11 41 22.7**	**-0.1**
SBUM	**Sibu**	**11.54**	**304**	*e*Pn	**Pn**	**11 41 22.6**	**-0.7**
DAV	**Davao City (W)**	**11.74**	**19**	LR	LR	11 46 23.1	
	comp=Z,976nm,18.2s,baz=195,slow=40						
UGM	**Wanagama**	**11.78**	**251**	*e*Pn	**Pn**	**11 41 24.5**	**-2.2**
KSM	**Kuching**	**12.70**	**296**	*e*Pn	**Pn**	**11 41 38.9**	**-0.4**
KSM				*e*		11 41 50.0	
MTN	**Manton Dam**	**12.70**	**134**	*e*Pn	**Pn**	**11 41 36.7**	**-2.6**
CISI	**Cisompet, Garu**	**14.28**	**255**	*e*Pn	**Pn**	**11 42 01.1**	**+0.3**
FITZ	**Fitzroy Crossi**	**14.42**	**165**	Pn	**Pn**	**11 42 01.3**	**-1.4**
	comp=Z,0.5nm,0.3s,baz=355,slow=7.6,SNR=6.3						
FITZ				LR	LR	11 48 07.4	
	comp=Z,1μm,19.6s,baz=346,slow=40						
FITZ	**Fitzroy Crossi**	**14.42**	**165**	*e*Pn	**Pn**	**11 42 00.8**	**-1.9**
CBJI	**Citeko**	**15.01**	**261**	P	**P**	**11 42 22.8**	**+7.1**
DBJI	**Dramaga**	**15.13**	**260**	P	**P**	**11 42 18.4**	**+1.4**
CGJI	**Cibinong**	**16.18**	**260**	P	**P**	**11 42 31.2**	**+2.6**
LHSI	**Lahat**	**18.18**	**270**	P	**P**	**11 42 55.6**	**+4.8**
JAY	**Jayapura**	**18.99**	**86**	LR	LR	11 52 59.5	
	comp=Z,20nm,18.1s,baz=190,slow=45						
KSI	**Kapahiang**	**19.11**	**271**	P	**Pn**	**11 43 08.4**	**+6.2**
WRA	**Warramunga Arr**	**19.96**	**143**	P	**P**	**11 43 09.1**	**-1.2**
	comp=Z,29nm,1.0s,baz=316,slow=12,SNR=78						
WRA				LR	LR	11 51 20.1	
	comp=Z,525nm,19.0s,baz=330,slow=38						
WRAB	**Tennant Creek**	**19.96**	**143**	*c*e*i*P	**P**	**11 43 09.6**	**-0.7**
WRAB				pmax	pmax		
	comp=Z,94nm,1.0s						
WRAB	**Tennant Creek**	**19.96**	**143**	*e*P	**P**	**11 43 09.5**	**-0.7**
	comp=Z,47nm,1.2s						
WB2	**Warramunga Arr**	**19.97**	**143**	*e*P	**P**	**11 43 09.4**	**-1.0**
	comp=Z,40nm,1.0s						
SDSI	**Sungai Dareh**	**20.54**	**278**	P	Pn	11 43 20.5	+1.5
	comp=Z,36nm,1.3s,comp=Z,5μm						
AS31	**Alice Springs**	**22.71**	**150**	*e*P	**P**	**11 43 40.2**	**+0.3**
	comp=Z,6.1nm,0.8s						
ASAR	**Alice Springs**	**22.71**	**150**	P	**P**	**11 43 39.5**	**-0.5**
	comp=Z,8.3nm,0.6s,baz=323,slow=7.9,SNR=139						
ASAR				PcP	**PcP**	**11 47 30.7**	**-0.8**
	comp=Z,1.2nm,0.8s,baz=346,slow=2.2,SNR=4.2						
ASAR				LR	LR	11 53 00.4	
	comp=Z,614nm,18.9s,baz=326,slow=38						
AS01	**Alice Springs**	**22.74**	**150**	*e*P	**P**	**11 43 39.8**	**-0.4**
COEN	**Coen**	**23.29**	**116**	*e*P	**P**	**11 43 46.5**	**+0.6**
	comp=Z,83nm,1.6s						
PSI	**Prapat**	**23.82**	**286**	P	**P**	**11 43 49.5**	**-1.6**
	comp=Z,77nm,1.2s,baz=119,slow=3.5,SNR=10						
PSI				LR	LR	11 53 42.8	
	comp=Z,1μm,19.9s,baz=116,slow=38						
PSI	**Prapat**	**23.82**	**286**	*e*P	**P**	**11 43 49.8**	**-1.3**
PSI				pmax	pmax		
	comp=Z,126nm,1.3s						
PSI	**Prapat**	**23.82**	**286**	*e*P	**P**	**11 43 49.8**	**-1.3**
	comp=Z,126nm,1.3s						
SKLT	**Songkhla**	**23.88**	**298**	P	**P**	**11 43 52.4**	**+0.9**
	comp=Z,40nm,1.1s,comp=Z,1μm						
TRTT	**Trang**	**25.00**	**298**	P	**P**	**11 44 07.2**	**+5.4**
	comp=Z,99nm,1.4s						
UBPT	**Khong Chiam**	**25.12**	**320**	P	**P**	**11 44 03.8**	**+1.0**
	comp=Z,44nm,1.3s,comp=Z,1μm						
KRAB	**Krabi**	**25.61**	**299**	P	**P**	**11 44 12.2**	**+4.9**
	comp=Z,3μm,1.6s,comp=Z,277μm						
PMG	**Port Moresby**	**25.77**	**103**	P	**P**	**11 44 08.8**	**0.0**
	comp=Z,18nm,0.7s,baz=234,slow=2.1,SNR=3.6						
PMG				LR	LR	11 57 59.0	
	comp=Z,439nm,18.2s,baz=262,slow=45						
QIZ	**Qiongzhong**	**25.80**	**333**	P	**P**	**11 44 09.4**	**+0.4**
QIZ				pmax	pmax		
	comp=Z,13nm,1.2s						
QIZ				LR	LR		
	comp=Z,420nm,17.5s						
QIZ				LR	LR		
	comp=Z,240nm,20.6s						
QIZ				LR	LR		
	comp=Z,720nm,19.6s						
FORT	**Forrest**	**27.19**	**168**	*e*P	**P**	**11 44 21.5**	**+0.1**
	comp=Z,220nm,0.9s						
SKNT	**Sakolnakorn**	**27.33**	**321**	P	**P**	**11 44 25.0**	**+2.2**
	comp=Z,43nm,1.0s						
CTA	**Charters Tower**	**28.68**	**126**	P	**P**	**11 44 34.8**	**-0.1**
	comp=Z,4.7nm,0.8s,baz=358,slow=9.3,SNR=5.3						
CTAO	**Charters Tower**	**28.68**	**126**	*e*P	**P**	**11 44 35.2**	**+0.4**
CTAO				pmax	pmax		
	comp=Z,40nm,1.8s						
CTAO	**Charters Tower**	**28.68**	**126**	*e*P	**P**	**11 44 35.2**	**+0.4**
	comp=Z,40nm,1.8s						
NWAO	**Narrogin (SRO)**	**28.98**	**188**	LR	LR	11 56 24.5	
	comp=Z,702nm,18.2s,baz=282,slow=37						
PBKT	**Sadao Pong**	**29.05**	**316**	P	**P**	**11 44 38.2**	**+0.1**
	comp=Z,10nm,1.1s,comp=Z,884nm						
BBOO	**Buckleboo**	**31.54**	**157**	*e*P	**P**	**11 44 59.6**	**-0.4**
	comp=Z,110nm,1.9s						
CM01	**Chiang Mai Arr**	**31.71**	**316**	*e*P	**P**	**11 45 01.4**	**-0.2**
CMAR	**Chiang Mai Arr**	**31.75**	**316**	P	**P**	**11 45 01.4**	**-0.6**
	comp=Z,4.9nm,0.8s,baz=142,slow=7.0,SNR=29						
CMAR				PcP	**PcP**	**11 47 53.6**	**+0.5**
	comp=Z,1.2nm,0.5s,baz=173,slow=2.9,SNR=7.3						
CMAR				LR	LR	12 01 29.4	
	comp=Z,459nm,18.1s,baz=152,slow=43						
CMMT	**Chiang Mai**	**31.98**	**316**	P	**P**	**11 45 04.1**	**0.0**
	comp=Z,17nm,1.4s						
CHTO	**Chiang Mai**	**31.98**	**316**	P	**P**	**11 45 04.1**	**0.0**
	comp=Z,84nm,1.5s						
CHTO	**Chiang Mai**	**31.98**	**316**	*e*P	**P**	**11 45 03.7**	**-0.4**
CHTO				pmax	pmax		
	comp=Z,47nm,1.8s						
CHTO	**Chiang Mai**	**31.98**	**316**	*e*P	**P**	**11 45 03.7**	**-0.4**
	comp=Z,47nm,1.8s						
STKA	**Stephens Creek**	**33.32**	**148**	P	**P**	**11 45 15.2**	**-0.5**
	comp=Z,12nm,0.7s,baz=318,slow=9.7,SNR=40						
STKA				LR	LR	11 59 42.2	
	comp=Z,487nm,19.1s,baz=309,slow=38						
STKA	**Stephens Creek**	**33.32**	**148**	*e*P	**P**	**11 45 15.8**	**+0.1**
STKA				pmax	pmax		
	comp=Z,4.0nm,0.8s						
STKA	**Stephens Creek**	**33.32**	**148**	*e*P	**P**	**11 45 15.8**	**+0.1**
	comp=Z,3.7nm,0.8s						
GYA	**Guiyang**	**33.71**	**335**	P	**P**	**11 45 21.0**	**+1.8**
GYA				pP	pP	11 45 27.8	-1.5
GYA				PP	**PnPn**	**11 46 30.4**	**-1.6**
GYA				PcP	**PcP**	**11 48 00.8**	**+2.2**
GYA				ScP	**ScP**	**11 51 42.0**	**+1.2**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,4.9s						
GYA				LR	LR		
	comp=Z,470nm,16.8s						
GYA				LR	LR		
	comp=Z,490nm,17.0s						
GYA				LR	LR		
	comp=Z,440nm,16.6s						
KMI	**Kunming**	**34.43**	**329**	P	**P**	**11 45 27.0**	**+1.4**
KMI				pP	pP	11 45 34.2	-1.5
KMI				sP	sP	11 45 36.2	-3.7
KMI				pmax	pmax		
	comp=Z,14nm,1.4s						
KMI				pmax	pmax		
	comp=Z,250nm,7.4s						
JNU	**Nakatsue**	**38.02**	**12**	LR	LR	12 01 58.5	
	comp=Z,428nm,19.4s,baz=120,slow=37						
HNR	**Honiara**	**38.28**	**100**	LR	LR	12 04 24.2	
	comp=Z,186nm,18.7s,baz=279,slow=40						
CD2	**Chengdu**	**38.83**	**335**	*e*P	**P**	**11 46 03.5**	**+0.7**
CD2				sP	pP	11 46 13.7	+0.7
CD2				PP	**PP**	**11 47 33.2**	**+1.0**
CD2				S	**S**	**11 52 01.7**	**+3.3**
CD2				sS	sS	11 52 13.9	-1.4
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,220nm,5.2s						
CD2				LR	LR		
	comp=Z,550nm,18.4s						
CD2				LR	LR		
	comp=Z,430nm,17.9s						
CD2				LR	LR		
	comp=Z,500nm,14.9s						
KSAR	**Wonju Array Be**	**41.73**	**7**	P	**P**	**11 46 27.2**	**+0.5**
KSAR	**Wonju Array Be**	**41.73**	**7**	P	**P**	**11 46 27.1**	**+0.5**
KSRS	**Korea Array**	**41.75**	**7**	P	**P**	**11 46 27.1**	**+0.4**
	comp=Z,1.7nm,0.8s,baz=187,slow=7.1,SNR=5.1						
KSRS				LR	LR	12 03 25.5	
	comp=Z,342nm,20.9s,baz=188,slow=36						
MAJO	**Matsushiro**	**43.27**	**19**	*c*i*P*	**P**	**11 46 39.9**	**+0.7**
MAJO				pmax	pmax		
	comp=Z,57nm,0.9s						
MAJO	**Matsushiro**	**43.27**	**19**	*e*P	**P**	**11 46 39.2**	**0.0**
	comp=Z,7.7nm,0.8s						
MAT	**Matsushiro**	**43.27**	**19**	P	**P**	**11 46 37.7**	**-1.5**
MJAR	**Matsushiro Arr**	**43.27**	**19**	P	**P**	**11 46 38.0**	**-1.2**
	comp=Z,8.6nm,0.8s,baz=194,slow=8.7,SNR=19						
MJAR				LR	LR	12 03 09.6	
	comp=Z,525nm,21.4s,baz=200,slow=34						
MJAR	**Matsushiro Arr**	**43.27**	**19**	P	**P**	**11 46 38.0**	**-1.2**
MJB9	**Matsu-Tunnel**	**43.27**	**19**	*e*P	**P**	**11 46 39.2**	**0.0**
	comp=Z,2.0nm,0.9s						
BJI	**Beijing**	**44.23**	**354**	P	**P**	**11 46 48.4**	**+1.6**
BJI				PP	**PcP**	**11 48 33.4**	**+2.3**
BJI				S	**S**	**11 53 19.9**	**+1.9**
BJI				pmax	pmax		
	comp=Z,9.0nm,0.6s						
BJI				pmax	pmax		
	comp=Z,290nm,10.1s						
BJI				LR	LR		
	comp=Z,310nm,19.3s						
BJI				LR	LR		
	comp=Z,410nm,17.0s						
BJI				LR	LR		
	comp=Z,340nm,27.1s						
HHC	**Hu-ho-hao-te**	**45.70**	**349**	*e*P	**P**	**11 47 00.9**	**+2.2**
HHC				pmax	pmax		
	comp=Z,14nm,0.9s						
HHC				pmax	pmax		
	comp=Z,130nm,6.7s						
MSHR	**Mys Shultsa**	**47.25**	**9**	*i*P	**P**	**11 47 10.9**	**+0.3**
GTA	**Gaotai**	**47.79**	**337**	P	**P**	**11 47 14.6**	**-0.5**
GTA				pP	pP	11 47 21.6	-4.0
GTA				sP	sP	11 47 25.5	-4.2
GTA				pmax	pmax		
	comp=Z,11nm,1.2s						
CN2	**Changchun**	**47.80**	**4**	*e*P	**P**	**11 47 17.9**	**+2.9**
VLA	**Vladivostok**	**47.89**	**10**	*e*P	**P**	**11 47 18.1**	**+2.4**
VLA				pmax	pmax		
	comp=Z,29nm,1.3s						
USRK	**Ussuriysk Ar.**	**48.96**	**10**	P	**P**	**11 47 23.2**	**-0.7**
	comp=Z,16nm,0.7s,baz=193,slow=6.7,SNR=30						
USRK				LR	LR	12 08 33.5	
	comp=Z,215nm,19.2s,baz=186,slow=37						
MDJ	**Mudanjiang**	**49.01**	**7**	P	**P**	**11 47 25.1**	**+0.8**
MDJ				pmax	pmax		
	comp=Z,16nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,100nm,3.7s						
ERM	**Erimo**	**49.87**	**21**	*de*P	**P**	**11 47 33.1**	**+2.3**
ERM	**Erimo**	**49.87**	**21**	*e*P	**P**	**11 47 32.8**	**+2.0**
	comp=Z,671nm,0.4s						
ASAJ	**Asahikawa**	**51.53**	**19**	*e*P	**P**	**11 47 44.9**	**+1.5**
HIA	**Hailar**	**53.19**	**358**	*i*e*i*P	**P**	**11 47 56.9**	**+1.3**
HIA				pmax	pmax		
	comp=Z,8.0nm,1.1s						
SONM	**Songino Array**	**53.45**	**347**	P	**P**	**11 47 56.5**	**-1.2**
	comp=Z,4.1nm,0.9s,baz=170,slow=9.0,SNR=7.8						
SONM				LR	LR	12 11 51.5	
	comp=Z,301nm,19.6s,baz=133,slow=37						
SONA1	**Songino Array**	**53.46**	**347**	*e*P	**P**	**11 47 57.8**	**0.0**
KLR	**Kul'dur**	**53.83**	**8**	P	**P**	**11 47 59.3**	**-1.0**
	comp=Z,5.0nm,0.8s,baz=219,slow=3.6,SNR=12						
KLR				LR	LR	12 11 58.8	
	comp=Z,206nm,19.0s,slow=37						
ZAK	**Zakamensk**	**56.56**	**346**	*e*P	**P**	**11 48 17.4**	**-2.7**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
WMQ	**Urumqi**	**56.69**	**331**	*e*P	**P**	**11 48 24.0**	**+2.9**
WMQ				pP	pP	11 48 31.6	-0.1
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.7s						
WMQ				pmax	pmax		
	comp=Z,81nm,4.6s						
WMQ				LR	LR		
	comp=Z,380nm,19.2s						
WMQ				LR	LR		
	comp=Z,210nm,24.0s						
WMQ				LR	LR		
	comp=Z,230nm,17.7s						
TLY	**Talaya**	**57.68**	**347**	P	**P**	**11 48 27.0**	**-0.9**
	comp=Z,0.7nm,0.3s,baz=176,slow=3.3,SNR=5.8						
TLY	**Talaya**	**57.68**	**347**	*e*P	**P**	**11 48 29.1**	**+1.2**
TLY				pmax	pmax		
	comp=Z,6.0nm,1.3s						
TLY	**Talaya**	**57.68**	**347**	*e*P	**P**	**11 48 28.8**	**+0.9**
RPZ	**Rata Peaks**	**58.63**	**140**	P	**P**	**11 48 34.7**	**0.0**
	comp=Z,54nm,0.8s,baz=277,slow=3.2,SNR=15						
RPZ	**Rata Peaks**	**58.63**	**140**	*e*P	**P**	**11 48 35.2**	**+0.4**
KSH	**Kashi**	**60.46**	**320**	*e*P	**P**	**11 48 46.3**	**-1.2**
KSH				*es*P	pP	11 48 56.3	-1.9
KSH				PcS	**PcS**	**11 53 32.5**	**-2.2**
KSH				S	**S**	**11 56 54.2**	**-6.4**
KSH				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KSH				pmax	pmax		
	comp=Z,76nm,3.8s						
KSH				LR	LR		
	comp=Z,100nm,8.5s						
KSH				LR	LR		
	comp=Z,160nm,7.8s						
KSH				LR	LR		
	comp=Z,220nm,7.6s						
MK01	**Makanchi Array**	**61.46**	**330**	*e*P	**P**	**11 48 52.2**	**-1.9**
MK31	**Makanchi Array**	**61.48**	**330**	*e*P	**P**	**11 48 52.9**	**-1.3**
MK31	**Makanchi Array**	**61.48**	**330**	*e*P	**P**	**11 48 52.9**	**-1.3**
MKAR	**Makanchi Array**	**61.48**	**330**	P	**P**	**11 48 52.7**	**-1.5**
	comp=Z,3.3nm,0.8s,baz=128,slow=7.9,SNR=19						
MKAR				LR	LR	12 16 55.3	
	comp=Z,125nm,21.1s,baz=122,slow=38						
MKAR	**Makanchi Array**	**61.48**	**330**	*e*P	**P**	**11 48 52.9**	**-1.3**
MKAR	**Makanchi Array**	**61.48**	**330**	*e*P	**P**	**11 48 52.9**	**-1.3**
MAKZ	**Makanchi**	**61.65**	**330**	*e*P	**P**	**11 48 54.3**	**-1.0**
MAKZ	**Makanchi**	**61.65**	**330**	*e*P	**P**	**11 48 54.3**	**-1.0**
BOD	**Bodaibo**	**62.04**	**355**	*e*P	**P**	**11 48 54.5**	**-3.2**
BOD				pmax	pmax		
	comp=Z,13nm,1.7s						
KBL	**Kabul**	**62.69**	**312**	*e*P	**P**	**11 49 01.2**	**-1.6**
KBL	**Kabul**	**62.69**	**312**	*e*P	**P**	**11 49 01.2**	**-1.6**
AAK	**Ala-Archa**	**63.15**	**323**	*d*i*P*	**P**	**11 49 05.0**	**-0.7**
AAK				pmax	pmax		
	comp=Z,11nm,0.8s						
FRU	**Bishkek**	**63.19**	**323**	*e*P	P	11 48 53.0	-13
FRU				*e*		11 49 10.0	
PETK	**Petropavlovsk-**	**64.53**	**23**	P	**P**	**11 49 14.0**	**-0.2**
	comp=Z,2.8nm,0.9s,baz=194,slow=2.5,SNR=4.7						
PETK				LR	LR	12 16 02.7	
	comp=Z,190nm,21.6s,baz=271,slow=35						
ZALV	**Zalesovo Beam**	**65.55**	**337**	P	**P**	**11 49 18.5**	**-2.4**
	comp=Z,5.7nm,0.9s,baz=138,slow=5.4,SNR=15						
KKAR	**Karatay Array**	**65.86**	**321**	*e*P	**P**	**11 49 22.3**	**-0.9**
KKAR	**Karatay Array**	**65.86**	**321**	*e*P	**P**	**11 49 22.3**	**-0.9**
KURK	**Kurchatov**	**65.93**	**332**	*e*P	**P**	**11 49 21.7**	**-1.7**
KURK	**Kurchatov**	**65.93**	**332**	*e*P	**P**	**11 49 21.7**	**-1.7**
YAK	**Yakutsk**	**66.23**	**4**	P	**P**	**11 49 23.8**	**-1.3**
	comp=Z,14nm,0.5s,baz=228,slow=0.4,SNR=6.0						
YAK	**Yakutsk**	**66.23**	**4**	*e*P	**P**	**11 49 24.4**	**-0.7**
YAK				pmax	pmax		
	comp=Z,14nm,0.8s						
YAK	**Yakutsk**	**66.23**	**4**	*e*P	**P**	**11 49 24.8**	**-0.3**
MA2	**Magadan**	**67.50**	**16**	LR	LR	12 20 57.4	
	comp=Z,131nm,18.7s,baz=186,slow=38						
SEY	**Seymchan**	**70.77**	**14**	P	**P**	**11 49 52.9**	**-0.5**
	comp=Z,2.6nm,0.8s,baz=207,slow=4.5,SNR=6.8						
SEY	**Seymchan**	**70.77**	**14**	*i*e*i*P	**P**	**11 49 53.7**	**+0.3**
BRVK	**Borovoye**	**71.44**	**330**	*i*e*i*P	**P**	**11 49 55.0**	**-2.7**
BRVK				pmax	pmax		
	comp=Z,18nm,1.7s						
BRVK	**Borovoye**	**71.44**	**330**	*e*P	**P**	**11 49 56.1**	**-1.5**
GEYT	**Alibeck**	**72.13**	**312**	P	**P**	**11 50 01.3**	**-1.0**
	comp=Z,2.3nm,0.4s,baz=134,slow=4.2,SNR=5.1						
MAW	**Mawson**	**74.73**	**200**	P	**P**	**11 50 16.5**	**-0.5**
	comp=Z,2.1nm,0.8s,baz=47,slow=10

*ISCJB **11** 11:46:29.7±2.5,30.34S±0.08×176.2W±0.2, h24km, mb3.8/2, Error ellipse: s-maj=29.2km s-min=9.8km az=169.2*

ISC 11 11:46:32.1±1.3,30.23S±0.10×176.3W±0.1, h24km, n9, σ0.59/11, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.72**	**304**	Pn	**Pn**	**11 47 00.5**	**-0.1**
	98nm,0.3s,baz=114,slow=19,SNR=6.6						
RAO				Sn	**Sn**	**11 47 22.2**	**+0.4**
	833nm,0.3s,baz=53,slow=20,SNR=16						
URZ	**Urewera**	**9.69**	**213**	Pn	**Pn**	**11 48 49.3**	**-0.7**
	0.3nm,0.3s,baz=283,slow=10.0,SNR=5.9						
URZ				Sn	**Sn**	**11 50 38.7**	**+0.6**
	1.1nm,0.3s,baz=160,slow=8.0,SNR=6.9						
ASAR	**Alice Springs**	**44.60**	**266**	P	**P**	**11 54 42.5**	**-0.2**
	0.7nm,0.7s,baz=107,slow=7.9,SNR=11						
WRA	**Warramunga Arr**	**45.57**	**271**	P	**P**	**11 54 50.1**	**-0.3**
	1.2nm,0.6s,baz=110,slow=7.8,SNR=18						
KURBB	**Kurchatov Arra**	**122.05**	**314**	PKP	**PKPdf**	**12 05 24.4**	**+0.2**
	0.9nm,0.2s,baz=81,slow=2.4,SNR=4.4						
BVAR	**Borovoye Array**	**127.32**	**316**	PKP	**PKPdf**	**12 05 34.6**	**+0.4**
	0.5nm,0.5s,baz=116,slow=3.4,SNR=4.2						
FINES	**FINESS Array B**	**145.48**	**341**	PKPbc	**PKPdf**	**12 06 06.6**	**-0.8**
	1.9nm,0.5s,baz=64,slow=3.2,SNR=11						
AKASG	**Malin Array Be**	**152.05**	**324**	PKPbc	**PKPbc**	**12 06 25.2**	**+0.3**
	1.1nm,0.4s,baz=46,slow=2.8,SNR=6.3						
TORD	**Torodi Ar. Bea**	**162.89**	**173**	PKPab	**PKPab**	**12 07 22.8**	**+0.9**
	0.7nm,0.8s,baz=188,slow=4.1,SNR=3.5						

*ISCJB **11** 11:47:18.5±0.3,41.93N±0.03×142.29E±0.04, h73km±3km, mb3.6/10, Error ellipse: s-maj=6.0km s-min=3.8km az=43.0*

*JMA **11** 11:47:18.7±0.2,41.93N×142.30E, h70km±3km, M3.4*

*IDC **11** 11:47:20.3±1.5,41.98N×142.28E, h74km±13km, mb3.3/10, mb1 3.5/14, mb1mx3.3/64, mbtmp3.7/14, MS3.6/1, Ms1 3.6/1, ms1mx2.8/33, Error ellipse: s-maj=19.9km s-min=11.5km az=106.0*

ISC 11 11:47:19.5±0.8,41.91N±0.04×142.28E±0.04, h64km±7km, n38, σ1.54/48, mb3.6/10, 3C-5D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNBK	**Urakawa-nobuka**	**0.51**	**43**	⇑P	**Pn**	**11 47 30.7**	**-1.2**
JNBK				*e*S	**Sn**	**11 47 40.1**	**-0.9**
JEM	**Erimo**	**0.66**	**80**	⇑P	**Pn**	**11 47 33.2**	**-0.3**
JEM				*e*S	**Sn**	**11 47 43.8**	**0.0**
JBT2	**Biratori 2**	**0.87**	**4**	⇓P	**Pn**	**11 47 35.2**	**-0.8**
JBT2				*e*S	**Sn**	**11 47 47.5**	**-0.8**
JKB	**Kayabe**	**0.93**	**269**	⇓P	**Pn**	**11 47 36.4**	**-0.4**
JKB				*e*S	**Sn**	**11 47 49.6**	**0.0**
JOT	**Ohata**	**1.06**	**241**	⇓P	**Pn**	**11 47 38.4**	**-0.1**
JOT				*e*S	**Sn**	**11 47 52.9**	**+0.3**
JCH	**Churui**	**1.07**	**48**	⇑P	**Pn**	**11 47 38.0**	**-0.5**
JCH				*e*S	**Sn**	**11 47 52.5**	**-0.2**
JNB	**Noboribetsu**	**1.08**	**302**	⇓P	**Pn**	**11 47 37.6**	**-1.1**
JNB				*e*S	**Sn**	**11 47 52.2**	**-0.8**
JEW	**Eniwo**	**1.12**	**327**	⇓P	**Pn**	**11 47 38.8**	**-0.4**
JEW				*e*S	**Sn**	**11 47 53.8**	**0.0**
JFR	**Furan**	**1.27**	**10**	P	**Pn**	**11 47 40.3**	**-1.0**
JFR				*e*S	**Sn**	**11 47 56.5**	**-1.1**
JYM2	**Yakumo 2**	**1.44**	**279**	P	**Pn**	**11 47 42.9**	**-0.5**
JSR	**Shiriuchi**	**1.45**	**255**	P	**Pn**	**11 47 43.4**	**-0.1**
JSR				*e*S	**Sn**	**11 48 02.3**	**+0.7**
JTM	**Tenmabayashi**	**1.45**	**220**	P	**Pn**	**11 47 44.0**	**+0.5**
JTM				*e*S	**Sn**	**11 48 02.9**	**+1.3**
JOB	**Onbets**	**1.52**	**49**	P	**Pn**	**11 47 44.7**	**+0.2**
JOB				*e*S	**Sn**	**11 48 03.7**	**+0.3**
JANG	**Nango**	**1.64**	**201**	P	**Pn**	**11 47 46.5**	**+0.4**
JANG				*e*S	**Sn**	**11 48 07.4**	**+1.1**
JAR	**Ashorobuto**	**1.77**	**38**	P	**Pn**	**11 47 47.4**	**-0.5**
JAR				*e*S	**Sn**	**11 48 08.9**	**-0.5**
JHR	**Hokuryu**	**1.88**	**348**	P	**Pn**	**11 47 49.6**	**+0.3**
JHR				*e*S	**Sn**	**11 48 13.2**	**+1.2**
ASAJ	**Asahikawa**	**2.22**	**6**	P	**Pn**	**11 47 54.3**	**+0.4**
	baz=224,slow=12						
ASAJ				S	**Sn**	**11 48 20.3**	**0.0**
	9.0nm,0.3s,baz=326,slow=27,SNR=7.0						
MJAR	**Matsushiro Arr**	**6.22**	**212**	P	**Pn**	**11 48 52.3**	**+3.6**
	0.3nm,0.3s,baz=25,slow=14,SNR=3.3						
USRK	**Ussuriysk Ar.**	**7.88**	**290**	P	**Pn**	**11 49 12.8**	**+1.6**
	0.2nm,0.3s,baz=66,slow=19,SNR=4.7						
JHJ	**Hachijo jima 2**	**9.00**	**194**	P	**Pn**	**11 49 27.2**	**+0.7**
	2.3nm,0.3s,baz=61,slow=21,SNR=4.9						
JHJ				S	**Sn**	**11 50 59.3**	**-7.0**
	2.5nm,0.3s,baz=331,slow=22,SNR=3.5						
KSRS	**Korea Array**	**11.92**	**253**	P	**Pn**	**11 50 11.1**	**+4.6**
	0.3nm,0.3s,baz=66,slow=13,SNR=4.2						
YAK	**Yakutsk**	**21.52**	**344**	LR	LR	12 00 42.6	
	comp=Z,163nm,20.5s,baz=93,slow=37						
H11N2	**WAKE ISLAND Hy**	**30.39**	**129**	T	T	12 25 04.2	
	baz=323,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy**	**30.40**	**129**	T	T	12 25 01.8	
	baz=323,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy**	**30.41**	**129**	T	T	12 25 07.1	
	baz=323,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**31.25**	**131**	T	T	12 25 57.5	
	baz=325,slow=76,SNR=32						
H11S3	**WAKE ISLAND Hy**	**31.25**	**131**	T	T	12 26 13.3	
	baz=325,slow=76,SNR=31						
H11S2	**WAKE ISLAND Hy**	**31.27**	**131**	T	T	12 26 09.0	
	baz=325,slow=76,SNR=21						
ZALV	**Zalesovo Beam**	**39.28**	**308**	P	**P**	**11 54 41.1**	**-0.5**
	0.6nm,0.3s,baz=128,slow=9.6,SNR=4.1						
MKAR	**Makanchi Array**	**42.27**	**298**	P	**P**	**11 55 05.8**	**-0.6**
	0.4nm,0.4s,baz=84,slow=11,SNR=5.6						
KURBB	**Kurchatov Arra**	**43.67**	**304**	P	**P**	**11 55 16.9**	**-0.6**
	1.8nm,0.6s,baz=78,slow=9.1,SNR=6.5						
ILAR	**Eielson Array**	**45.07**	**35**	P	**P**	**11 55 27.8**	**-0.8**
	0.4nm,0.9s,baz=272,slow=6.9,SNR=3.9						
BVAR	**Borovoye Array**	**47.90**	**309**	P	**P**	**11 55 50.3**	**-0.5**
	1.0nm,0.4s,baz=91,slow=9.6,SNR=7.0						
YKA	**Yellowknife Ar**	**59.28**	**32**	P	**P**	**11 57 13.2**	**-0.7**
	0.2nm,0.4s,baz=304,slow=8.5,SNR=8.5						
WRA	**Warramunga Arr**	**61.98**	**188**	P	**P**	**11 57 32.1**	**-0.6**
	0.2nm,0.4s,baz=5.6,slow=6.8,SNR=5.0						
FINES	**FINESS Array B**	**64.83**	**332**	P	**P**	**11 57 50.2**	**-0.9**
	0.9nm,0.4s,baz=54,slow=7.7,SNR=10						
ASAR	**Alice Springs**	**65.70**	**188**	P	**P**	**11 57 57.1**	**0.0**
	0.1nm,0.4s,baz=358,slow=6.5,SNR=3.5						
PDAR	**Pinedale Array**	**73.81**	**47**	P	**P**	**11 58 47.7**	**+0.5**
	0.4nm,0.6s,baz=258,slow=4.2,SNR=3.0						

IDC 11 11:51:47.4±2.5,30.00S×176.74W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.6/32, mbtmp3.5/2, Error ellipse: s-maj=60.9km s-min=33.8km az=42.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.27**	**306**	Pn	Pn	11 52 12.6	+0.2
	90nm,0.3s,baz=72,slow=20,SNR=2.9						
RAO				Sn	Sn	11 52 30.4	+0.3
	139nm,0.3s,baz=108,slow=20,SNR=3.3						
ASAR	**Alice Springs**	**44.22**	**266**	P	P	11 59 58.4	-0.2
	0.3nm,0.9s,baz=105,slow=7.9,SNR=7.4						
WRA	**Warramunga Arr**	**45.18**	**271**	P	P	12 00 06.2	-0.1
	0.6nm,0.5s,baz=113,slow=6.7,SNR=11						
FINES	**FINESS Array B**	**145.13**	**341**	PKPbc	PKPbc	12 11 24.9	-0.8
	0.7nm,0.5s,baz=35,slow=5.1,SNR=4.6						

*IDC **11** 11:55:51.7±1.1,32.23S×178.15W, h0km, mb4.5/5, mb1 4.6/8, mb1mx4.1/41, mbtmp4.6/8, ML4.5/3, MS4.3/1, Ms1 4.3/1, ms1mx3.2/34, Error ellipse: s-maj=33.7km s-min=20.5km az=121.0*

*ISCJB **11** 11:55:53.0±1.0,32.30S±0.06×178.1W±0.2, h24km, mb4.8/9, MS4.3/1, Error ellipse: s-maj=23.4km s-min=6.7km az=16.2*

*NEIC **11** 11:55:52.4±0.8,32.25S×177.95W, h10km, mb4.7/2, Error ellipse: s-maj=22.9km s-min=13.6km az=116.0*

ISC 11 11:55:55.6±0.8,32.21S±0.08×178.2W±0.2, h24km, n26, σ1.27/28, mb4.7/9, 2D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.96**	**5**	Pn	**Pn**	**11 56 39.3**	**-1.8**
	114nm,0.3s,baz=19,slow=21,SNR=6.9						
RAO				Sn	**Sn**	**11 57 15.5**	**-0.5**
	249nm,0.3s,baz=90,slow=20,SNR=4.1						
URZ	**Urewera**	**7.13**	**211**	Pn	**Pn**	**11 57 36.2**	**-2.2**
	5.3nm,0.3s,baz=27,slow=14,SNR=16						
URZ				Sn	**Sn**	**11 58 57.8**	**-0.8**
	6.3nm,0.3s,baz=307,slow=20,SNR=8.6						
URZ	**Urewera**	**7.13**	**211**	Pn	**Pn**	**11 57 36.2**	**-2.2**
URZ				*e*Pn	**Pn**	**11 57 38.4**	**0.0**
URZ				Sn	**Sn**	**11 58 57.8**	**-0.8**
OUZ	**Omahuta**	**7.43**	**244**	*e*Pn	Pn	11 57 47.8	+5.2
	34nm,0.5s						
RPZ	**Rata Peaks**	**14.24**	**213**	Pn	**Pn**	**11 59 13.6**	**-2.1**
	1.6nm,0.3s,baz=96,slow=4.0,SNR=5.6						
RPZ				Sn	Sn	12 01 39.9	-13
	0.8nm,0.3s,baz=21,slow=14,SNR=4.0						
EIDS	**Eidsvold**	**27.67**	**276**	*e*P	**P**	**12 01 44.0**	**+2.2**
	12nm,0.9s						
STKA	**Stephens Creek**	**33.91**	**260**	P	**P**	**12 02 37.6**	**+0.8**
	3.7nm,0.8s,baz=87,slow=9.5,SNR=6.1						
CTAO	**Charters Tower**	**33.93**	**282**	*e*P	**P**	**12 02 38.3**	**+1.3**
ASAR	**Alice Springs**	**42.84**	**269**	P	**P**	**12 03 52.2**	**+0.2**
	6.2nm,0.9s,baz=107,slow=7.7,SNR=27						
WRAB	**Tennant Creek**	**43.99**	**274**	*e*P	**P**	**12 04 01.2**	**0.0**
	8.3nm,0.6s						
WRA	**Warramunga Arr**	**43.99**	**274**	P	**P**	**12 04 01.4**	**+0.1**
	8.0nm,0.7s,baz=114,slow=7.9,SNR=93						
FORT	**Forrest**	**45.41**	**257**	*e*P	**P**	**12 04 11.8**	**-0.7**
	183nm,0.7s						
FITZ	**Fitzroy Crossi**	**52.17**	**271**	P	**P**	**12 05 05.0**	**+0.4**
	3.6nm,0.9s,baz=125,slow=7.2,SNR=5.0						
FITZ				LR	LR	12 26 41.0	
	comp=Z,280nm,19.6s,baz=102,slow=35						
QSPA	**South Pole Qui**	**57.90**	**180**	P	**P**	**12 05 46.8**	**+1.3**
	47nm,0.8s						
SYO	**Syowa Base**	**75.31**	**193**	*e*P	**P**	**12 07 35.4**	**-0.9**
SYO	**Syowa Base**	**75.31**	**193**	*e*SP	**P**	**12 07 39.3**	**+3.0**
PETK	**Petropavlovsk-**	**87.51**	**346**	P	**P**	**12 08 41.1**	**+0.2**
	3.6nm,0.8s,baz=115,slow=6.7,SNR=5.0						
MKAR	**Makanchi Array**	**118.77**	**309**	PKP	**PKPdf**	**12 14 41.5**	**0.0**
	1.1nm,0.7s,baz=90,slow=2.3,SNR=7.7						
ARCES	**ARCESS Array B**	**140.31**	**347**	PKhKP	PKPpre	12 15 17.8	
	1.3nm,0.7s,baz=28,slow=2.1,SNR=4.0						
KBZ	**Khabaz**	**145.92**	**302**	PKPbc	**PKPab**	**12 15 33.2**	**-0.1**
	3.8nm,0.8s,baz=90,slow=1.0,SNR=6.3						
FINES	**FINESS Array B**	**146.76**	**339**	PKPbc	**PKPbc**	**12 15 34.5**	**-0.4**
	14nm,0.8s,baz=45,slow=3.8,SNR=44						
NB2	**NORSAR Subarra**	**150.50**	**351**	PKP	**PKPbc**	**12 15 45.8**	**+1.2**
	comp=Z,6.6nm,1.0s,baz=20,slow=4.1						
NOA	**NORSAR Array B**	**150.50**	**351**	PKPbc	**PKPbc**	**12 15 44.6**	**0.0**
	comp=Z,1.3nm,0.6s,baz=18,slow=4.1,SNR=6.2						
AKASG	**Malin Array Be**	**152.59**	**320**	PKPbc	**PKPbc**	**12 15 49.8**	**+0.2**
	comp=Z,8.4nm,1.0s,baz=54,slow=2.6,SNR=10						
BRTR	**Keskin Array B**	**153.23**	**295**	PKPbc	**PKPbc**	**12 15 51.2**	**-0.4**
	comp=Z,4.0nm,1.0s,baz=134,slow=3.6,SNR=8.8						
TORD	**Torodi Ar. Bea**	**161.02**	**180**	PKPab	**PKPab**	**12 16 37.0**	**-0.2**
	comp=Z,1.5nm,0.6s,baz=172,slow=3.4,SNR=8.9						

*IDC **11** 11:59:59.4±1.0,37.84N×143.39E, h0km, mb3.9/7, mb1 4.0/12, mb1mx3.8/61, mbtmp3.9/12, ML3.7/3, Error ellipse: s-maj=24.9km s-min=16.4km az=113.0*

*ISCJB **11** 12:00:00.4±0.5,37.86N±0.03×143.29E±0.05, h19km, mb3.9/10, Error ellipse: s-maj=6.4km s-min=4.6km az=21.2*

*JMA **11** 12:00:01.5±0.1,37.93N×143.34E, h44km, M4.2*

*NEIC **11** 12:00:04.5±0.6,37.90N×143.33E, h35km, mb4.1/2, Error ellipse: s-maj=13.3km s-min=8.1km az=124.0*

ISC 11 12:00:02.5±0.9,37.92N±0.05×143.27E±0.09, h19km, n36, σ1.61/45, mb3.9/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.61**	**290**	P	**Pn**	**12 00 29.0**	**-0.9**
JIO				S	**Sn**	**12 00 48.9**	**-1.2**
OFUJ	**Ofunato**	**1.71**	**313**	P	**Pn**	**12 00 30.0**	**-1.3**
OFUJ				*e*S	**Sn**	**12 00 50.9**	**-1.8**
JMK	**Ichinoseki**	**1.92**	**303**	P	**Pn**	**12 00 33.3**	**-0.8**
JOM	**Ohasama**	**2.19**	**316**	P	**Pn**	**12 00 37.2**	**-0.8**
JOM				S	**Sn**	**12 01 03.8**	**-0.8**
JFT	**Otama**	**2.36**	**261**	P	**Pn**	**12 00 40.4**	**+0.1**
JYK	**Kaneyama**	**2.50**	**294**	P	**Pn**	**12 00 42.0**	**-0.1**
JAG	**Ashikaga**	**3.40**	**245**	P	**Pn**	**12 00 54.2**	**-0.3**
BSO1	**Boso 1**	**3.75**	**210**	P	**Pn**	**12 00 57.9**	**-1.0**
BSO1				*e*S	**Sn**	**12 01 41.2**	**-1.0**
JRY	**Ryogami san**	**3.98**	**243**	P	**Pn**	**12 01 02.5**	**-0.1**
JRY				*e*S	**Sn**	**12 01 47.8**	**-1.0**
ERM	**Erimo**	**4.09**	**359**	*e*Pn	**Pn**	**12 01 03.7**	**-0.3**
MJAR	**Matsushiro Arr**	**4.27**	**253**	Pn	**Pn**	**12 01 07.1**	**+0.5**
	3.7nm,0.3s,baz=74,slow=14,SNR=45						
MJAR				Sn	**Sn**	**12 02 00.0**	**+4.2**
	2.1nm,0.3s,baz=92,slow=9.5,SNR=6.1						
MAJO	**Matsushiro**	**4.27**	**253**	*e*Pn	**Pn**	**12 01 07.7**	**+1.1**
MAT	**Matsushiro**	**4.27**	**253**	P	**Pn**	**12 01 08.2**	**+1.7**
MAT				S	**Sn**	**12 01 55.6**	**-0.3**
JOD2	**Odawara 2**	**4.29**	**233**	P	**Pn**	**12 01 06.0**	**-0.8**
JOD2				*e*S	**Sn**	**12 01 54.5**	**-1.7**
JHJ	**Hachijo jima 2**	**5.57**	**212**	Pn	**Pn**	**12 01 23.1**	**-1.3**
	24nm,0.3s,baz=56,slow=19,SNR=22						
JHJ				Sn	**Sn**	**12 02 22.3**	**-5.6**
	23nm,0.3s,baz=60,slow=20,SNR=5.3						
ASAJ	**Asahikawa**	**6.21**	**355**	Pn	**Pn**	**12 01 33.4**	**+0.2**
	baz=184,slow=13						
ASAJ				Sn	**Sn**	**12 02 40.9**	**-2.8**
	baz=342,slow=20						
ASAJ	**Asahikawa**	**6.21**	**355**	*e*Pn	**Pn**	**12 01 33.3**	**+0.1**
	3.4nm,0.6s						
ASAJ				Pn	**Pn**	**12 01 33.4**	**+0.2**
ASAJ				Sn	**Sn**	**12 02 40.9**	**-2.8**
USRK	**Ussuriysk Ar.**	**10.58**	**310**	Pn	**Pn**	**12 02 36.5**	**+3.5**
	0.2nm,0.3s,baz=100,slow=13,SNR=4.3						
KSRS	**Korea Array**	**12.17**	**273**	Pn	**Pn**	**12 02 55.1**	**+0.2**
	0.1nm,0.3s,baz=87,slow=13,SNR=5.4						
KSAR	**Wonju Array Be**	**12.21**	**272**	Pn	**Pn**	**12 02 55.1**	**-0.2**
PETK	**Petropavlovsk-**	**18.19**	**29**	P	**Pn**	**12 04 13.4**	**-0.4**
	0.1nm,0.3s,baz=188,slow=8.2,SNR=4.9						
SEY	**Seymchan**	**25.66**	**10**	P	**P**	**12 05 31.2**	**+0.5**
	2.3nm,0.8s,baz=182,slow=9.5,SNR=5.8						
H11N2	**WAKE ISLAND Hy**	**27.38**	**125**	T	T	12 34 24.7	
	baz=317,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**27.39**	**125**	T	T	12 34 34.2	
	baz=317,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy**	**27.40**	**125**	T	T	12 34 37.8	
	baz=317,slow=75,SNR=28						
ENH	**Enshi**	**28.88**	**265**	P	**P**	**12 06 00.2**	**0.0**
MKAR	**Makanchi Array**	**44.91**	**302**	P	**P**	**12 08 16.3**	**+0.4**
	1.0nm,0.6s,baz=82,slow=9.4,SNR=8.4						
KURK	**Kurchatov**	**46.56**	**308**	P	**P**	**12 08 29.7**	**+0.9**
KURBB	**Kurchatov Arra**	**46.63**	**308**	P	**P**	**12 08 29.7**	**+0.3**
	1.6nm,0.4s,baz=83,slow=8.0,SNR=9.7						
ILAR	**Eielson Array**	**47.95**	**33**	P	**P**	**12 08 39.5**	**+0.1**
	0.9nm,0.8s,baz=268,slow=6.9,SNR=12						
BVAR	**Borovoye Array**	**51.08**	**312**	P	**P**	**12 09 06.3**	**+2.8**
	0.2nm,0.3s,baz=72,slow=6.7,SNR=2.9						
WRAB	**Tennant Creek**	**58.15**	**190**	P	**P**	**12 09 54.5**	**-0.6**
	4.2nm,1.0s						
WRA	**Warramunga Arr**	**58.16**	**190**	P	**P**	**12 09 54.3**	**-0.9**
	2.7nm,0.8s,baz=8.3,slow=7.3,SNR=11						
ABKAR	**Akbulak array**	**58.50**	**310**	*e*P	**P**	**12 09 57.3**	**0.0**
	0.6nm,0.9s						
ASAR	**Alice Springs**	**61.89**	**190**	P	**P**	**12 10 20.3**	**-0.4**
	0.7nm,0.8s,baz=10,slow=7.6,SNR=4.5						
FINES	**FINESS Array B**	**68.72**	**333**	P	**P**	**12 11 05.2**	**+0.7**
	0.8nm,0.7s,baz=48,slow=6.2,SNR=3.2						

*ISCJB **11** 12:04:09.0±0.6,37.86N±0.02×37.96E±0.03, h1km±5km, Error ellipse: s-maj=3.8km s-min=2.8km az=35.4*

*CSEM **11** 12:04:09.7±0.1,37.90N×37.92E, h2km, ML3.7, Error ellipse: s-maj=3.8km s-min=2.5km az=134.0*

*ISK **11** 12:04:09.0,37.91N×37.92E, h5km, ML3.2*

*NSSC **11** 12:04:09.6±1.5,37.50N×37.95E, h167km±17km, ML3.4*

*DDA **11** 12:04:09.5,37.91N×37.88E, h13km, Ml3.7*

ISC 11 12:04:09.4±1.1,37.89N±0.02×37.94E±0.02, h9km±9km, n69, σ1.02/99, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKCD	**Akcadag**	**0.41**	**358**	*i* P	**Pb**	**12 04 17.7**	**-1.2**
AKCD				*i* S	**Sb**	**12 04 23.5**	**-1.8**
AKCD	**Akcadag**	**0.41**	**358**	P	**Pb**	**12 04 17.7**	**-1.2**
AKCD				S	**Sb**	**12 04 23.5**	**-1.8**
ATAB	**Bozova**	**0.51**	**146**	*i* P	**Pb**	**12 04 20.4**	**-0.1**
ATAB	**Bozova**	**0.51**	**146**	P	**Pb**	**12 04 20.4**	**-0.1**
DARE	**Darende-Malaty**	**0.77**	**332**	*e*PG	**Pg**	**12 04 23.7**	**-0.6**
DARE				*e*SG	**Sb**	**12 04 34.8**	**-0.9**
DARE	**Darende-Malaty**	**0.77**	**332**	*e*Pg	**Pg**	**12 04 23.7**	**-0.6**
DARE				*e*Sg	**Sb**	**12 04 34.8**	**-0.9**
KMRS	**Kahramanmaras**	**0.91**	**245**	*e*PG	**Pg**	**12 04 26.8**	**-0.1**
KMRS				*e*SG	**Sg**	**12 04 38.8**	**+0.1**
KMRS	**Kahramanmaras**	**0.91**	**245**	*e*Pg	**Pg**	**12 04 26.8**	**-0.1**
KMRS				*e*Sg	**Sg**	**12 04 38.8**	**+0.1**
GAZ	**Gaziantep**	**0.92**	**219**	*e*PG	**Pg**	**12 04 27.4**	**+0.3**
GAZ				*e*SG	**Sb**	**12 04 40.5**	**+0.5**
GAZ	**Gaziantep**	**0.92**	**219**	*e*Pg	**Pg**	**12 04 27.4**	**+0.3**
GAZ				*e*Sg	**Sb**	**12 04 40.5**	**+0.5**
HCB	**Kahramanmara¯**	**0.98**	**237**	*i* P	**Pb**	**12 04 28.4**	**-0.2**
HCB				*i* S	**Sb**	**12 04 41.8**	**0.0**
ELZG	**Elazig**	**1.02**	**53**	*i* P	**Pn**	**12 04 30.9**	**+0.8**
ELZG	**Elazig**	**1.02**	**53**	P	**Pn**	**12 04 30.9**	**+0.8**
SVRC	**Sivrice-ELAZID**	**1.18**	**65**	*e*PN	**Pb**	**12 04 32.0**	**-0.2**
SVRC	**Sivrice-ELAZID**	**1.18**	**65**	*e*Pn	**Pb**	**12 04 32.0**	**-0.2**
KAMA	**Osmaniye**	**1.23**	**236**	*i* P	**Pg**	**12 04 32.6**	**-0.4**
KAMA				*i* S	**Sg**	**12 04 48.6**	**-0.4**
ANDN	**Andirin**	**1.30**	**257**	*i* P	**Pg**	**12 04 33.9**	**-0.5**
ANDN				*i* S	**Sb**	**12 04 51.1**	**+0.1**
ANDN	**Andirin**	**1.30**	**257**	P	**Pg**	**12 04 33.9**	**-0.5**
ANDN				S	**Sb**	**12 04 51.1**	**+0.1**
SARI	**SarD1z-Kayseri**	**1.31**	**294**	*e*PN	**Pg**	**12 04 33.9**	**-0.6**
KUZU	**Kuzuini**	**1.31**	**212**	*i* P	**Pn**	**12 04 34.4**	**+0.4**
KUZU				*i* S	**Sn**	**12 04 52.7**	**+1.1**
KUZU	**Kuzuini**	**1.31**	**212**	P	**Pn**	**12 04 34.4**	**+0.4**
KUZU				S	**Sn**	**12 04 52.7**	**+1.1**
KEMA	**Kemaliye**	**1.44**	**17**	*i* P	**Pb**	**12 04 36.2**	**-0.4**
KEMA				*i* S	**Sn**	**12 04 56.2**	**+1.2**
KEMA	**Kemaliye**	**1.44**	**17**	P	**Pb**	**12 04 36.2**	**-0.4**
KEMA				S	**Sn**	**12 04 56.2**	**+1.2**
CUKAN	**kangal_SIVAS**	**1.47**	**346**	*i* P	**Pg**	**12 04 37.5**	**-0.2**
CUKAN				*i* S	**Sn**	**12 04 56.8**	**+1.0**
CUKAN	**kangal_SIVAS**	**1.47**	**346**	P	**Pg**	**12 04 37.5**	**-0.2**
CUKAN				S	**Sn**	**12 04 56.8**	**+1.0**
PTK	**Pertek**	**1.52**	**48**	*e*PN	**Pn**	**12 04 37.4**	**+0.4**
PTK	**Pertek**	**1.52**	**48**	*e*Pn	**Pn**	**12 04 37.4**	**+0.4**
DRWC	**Darouich**	**1.62**	**219**	*i* P	**Pn**	**12 04 38.7**	**+0.4**
CUALT	**Altinyayla-SIV**	**1.66**	**327**	*i* P	**Pb**	**12 04 39.7**	**-0.6**
CUALT				*i* S	**Sg**	**12 05 04.2**	**+1.3**
CUALT	**Altinyayla-SIV**	**1.66**	**327**	P	**Pb**	**12 04 39.7**	**-0.6**
CUALT				S	**Sg**	**12 05 04.2**	**+1.3**
SLMH	**Al Salmeh**	**1.67**	**180**	*i* P	**Pn**	**12 04 39.4**	**+0.5**
SLMH				*e*S	**Sn**	**12 05 00.5**	**0.0**
SLMH				AML	AML	12 05 08.0	
	comp=E,488nm,0.6s						
SLMH				AML	AML	12 05 17.1	
	comp=N,395nm,0.5s						
KOZT	**Kozan**	**1.73**	**257**	*e*PN	**Pn**	**12 04 39.9**	**+0.3**
KOZT	**Kozan**	**1.73**	**257**	*e*Pn	**Pn**	**12 04 39.9**	**+0.3**
DIYA	**Diyarbakir**	**1.73**	**88**	*i* P	**Pb**	**12 04 41.3**	**0.0**
DIYA				*i* S	**Sg**	**12 05 06.6**	**+1.7**
DIYA	**Diyarbakir**	**1.73**	**88**	P	**Pb**	**12 04 41.3**	**0.0**
DIYA				S	**Sg**	**12 05 06.6**	**+1.7**
DYBB	**Diyarbakir**	**1.74**	**87**	*e*PN	**Pn**	**12 04 40.9**	**+0.9**
TNCL	**Tunceli-Merkez**	**1.75**	**45**	*i* P	**Pg**	**12 04 42.6**	**-0.5**
TNCL				*i* S	**Sb**	**12 05 04.6**	**+0.5**
TNCL	**Tunceli-Merkez**	**1.75**	**45**	P	**Pg**	**12 04 42.6**	**-0.5**
TNCL				S	**Sb**	**12 05 04.6**	**+0.5**
DIY	**Diyarbakir**	**1.81**	**89**	*e*Pn	**Pn**	**12

MJAR	**Matsushiro Arr**	**4.22**	**264**	Pn	**Pn**	**12 16 32.3**	**+0.6**
	1.9nm,0.3s,baz=88,slow=15,SNR=18						
JOT	**Ohata**	**4.69**	**338**	P	**Pn**	**12 16 38.1**	**+0.1**
JOT				*e*S	**Sn**	**12 17 28.9**	**-2.1**
JHJ2	**Mitsune**	**4.93**	**218**	P	Pn	12 16 39.5	-1.9
JHJ2				*e*S	Sn	12 17 31.9	-5.2
JHJ	**Hachijo jima 2**	**4.94**	**218**	Pn	Pn	12 16 40.1	-1.5
	3.4nm,0.3s,baz=118,slow=16,SNR=18						
JHJ				Sn	Sn	12 17 30.6	-6.8
	12nm,0.3s,baz=74,slow=23,SNR=10.0						
JCH	**Churui**	**5.54**	**360**	P	Pn	12 16 47.4	-2.3
JCH				*e*S	Sn	12 17 46.4	-5.6
KURBB	**Kurchatov Arra**	**47.24**	**308**	P	**P**	**12 23 60.0**	**+2.3**
	0.3nm,0.5s,baz=85,slow=8.3,SNR=3.7						
WRA	**Warramunga Arr**	**57.35**	**190**	P	**P**	**12 25 12.5**	**-0.3**
	0.3nm,0.4s,baz=8.1,slow=7.1,SNR=6.7						
ASAR	**Alice Springs**	**61.07**	**190**	P	**P**	**12 25 38.6**	**+0.2**
	0.1nm,0.5s,baz=4.9,slow=6.8,SNR=4.5						

*JMA **11** 12:15:57.8±0.1,23°.22N×121°.61E,h40km±3km,M3.0*
*TAP **11** 12:15:57.6,23°.16N×121°.68E,h37km±1km,ML3.7,C*
*ISCJB **11** 12:15:58.2±0.3,23°.20N±0°.02×121°.67E±0°.02,h29km±2km,*
Error ellipse: s-maj=3.1km s-min=2.2km az=138.7

ISC 11 12:15:59.5±1.5,**23°.20N**±0°.02×**121°.64E**±0°.02,**h35**km±3km,
n60,σ1**8**:**30**/109,**2C-1D**,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CHKT	**Chengkung**	**0.27**	**249**	P		**Pn**	**12 16 06.5**	**-0.7**
	baz=257							
CHKT				S		**Sn**	**12 16 11.9**	**-0.9**
	baz=257							
TWF1	**Yuli**	**0.35**	**296**	P		**Pn**	**12 16 07.1**	**-1.0**
	baz=299							
TWF1				*e*S		**Sn**	**12 16 15.8**	**+1.6**
	baz=299							
EHY	**Hungye**	**0.42**	**316**	P		**Pn**	**12 16 07.8**	**-1.3**
	baz=316							
EHY				*e*S		**Sn**	**12 16 13.9**	**-1.8**
	baz=316							
TEGC	**Jichi Village**	**0.52**	**349**	*e*P		**Pn**	**12 16 09.8**	**-0.5**
	baz=347							
TEGC				*e*S		**Sn**	**12 16 18.0**	**0.0**
	baz=347							
ELDTW	**Lidau**	**0.58**	**269**	P		**Pn**	**12 16 09.6**	**-1.7**
	baz=272							
ELDTW				*e*S		**Sn**	**12 16 16.7**	**-2.9**
	baz=272							
TTN	**Taitung**	**0.64**	**226**	*e*P		**Pn**	**12 16 10.7**	**-1.3**
	baz=229							
TTN				*e*S		**Sn**	**12 16 22.1**	**+1.2**
	baz=229							
ESL	**Shilin**	**0.64**	**343**	*e*P		**Pn**	**12 16 10.4**	**-1.7**
	baz=341							
ESL				*e*S		**Sn**	**12 16 18.4**	**-2.7**
	baz=341							
TWG	**Pinlang**	**0.65**	**234**	*e*P		**Pn**	**12 16 10.8**	**-1.4**
	baz=238							
TWG				S		**Sn**	**12 16 19.7**	**-1.5**
	baz=238							
YUS	**Yu-Shan**	**0.70**	**295**	P		**Pn**	**12 16 12.3**	**-1.0**
	baz=296							
YUS				S		**Sn**	**12 16 21.0**	**-2.1**
	baz=296							
WDT	**Danda**	**0.72**	**320**	P		**Pn**	**12 16 12.1**	**-1.5**
	baz=320							
WDT				*e*S		**Sn**	**12 16 21.4**	**-2.1**
	baz=320							
HWA	**Hwalien**	**0.78**	**357**	*e*S		**Sn**	**12 16 24.2**	**-0.1**
	baz=355							
STYT	**Tauyuan**	**0.82**	**268**	P		**Pn**	**12 16 13.6**	**-0.9**
	baz=270							
STYT				*e*S		**Sn**	**12 16 24.0**	**-1.4**
	baz=270							
ALS	**Alishan**	**0.83**	**292**	⇑*i*P		**Pn**	**12 16 14.3**	**-0.7**
	baz=293							
ALS				*e*S		**Sn**	**12 16 24.7**	**-1.4**
	baz=293							
ECL	**Taimali**	**0.87**	**227**	P		**Pn**	**12 16 13.8**	**-1.5**
	baz=229							
ECL				*e*S		**Sn**	**12 16 23.9**	**-2.9**
	baz=229							
TWD	**Chiawan**	**0.88**	**357**	P		**Pn**	**12 16 13.9**	**-1.4**
	baz=355							
TWD				*e*S		**Sn**	**12 16 25.2**	**-1.7**
	baz=355							
WTP	**Ta-pu**	**0.95**	**273**	⇓*i*P		**Pn**	**12 16 16.3**	**-0.1**
	baz=274							
WTP				*e*S		**Sn**	**12 16 28.1**	**-0.6**
	baz=274							
SMLT	**Sun Moon Lake**	**0.96**	**315**	P		**Pn**	**12 16 15.9**	**-0.7**
	baz=315							
SMLT				*e*S		**Sn**	**12 16 27.4**	**-1.8**
	baz=315							
CHN5	**Tsauling**	**0.97**	**294**	*e*P		**Pn**	**12 16 16.6**	**0.0**
	baz=295							
CHN5				*e*S		**Sn**	**12 16 29.2**	**-0.1**
	baz=295							
CHN4	**Tsaushan**	**0.98**	**279**	⇑*i*P		**Pn**	**12 16 16.8**	**+0.1**
	baz=280							
CHN4				*e*S		**Sn**	**12 16 29.9**	**+0.5**
	baz=280							
SGST	**Jiashian**	**0.98**	**263**	P		**Pn**	**12 16 16.9**	**+0.1**
	baz=265							
SGST				S		**Sn**	**12 16 30.1**	**+0.6**
	baz=265							
WHF	**Hehuan Shan**	**1.00**	**340**	*e*P		**Pn**	**12 16 16.7**	**-0.8**
	baz=339							
TYC	**Yuchr**	**1.01**	**314**	*e*P		**Pn**	**12 16 16.6**	**-0.5**
	baz=315							
TYC				*e*S		**Sn**	**12 16 29.5**	**-0.5**
	baz=315							
CHN1	**Nanshi**	**1.03**	**269**	*e*P		**Pn**	**12 16 17.6**	**+0.2**
	baz=271							
CHN1				*e*S		**Sn**	**12 16 31.3**	**+0.7**
	baz=271							
TWK	**Hsinying**	**1.06**	**274**	*e*P		**Pn**	**12 16 18.7**	**+0.8**
	baz=275							
TWK				S		**Sn**	**12 16 32.4**	**+0.9**
	baz=275							
TAW	**Tawu**	**1.08**	**220**	*e*S		**Sn**	**12 16 30.7**	**-1.3**
	baz=221							
EAST	**Anshuo**	**1.09**	**222**	*e*P		**Pn**	**12 16 17.5**	**-0.9**
	baz=224							
EAST				*e*S		**Sn**	**12 16 31.2**	**-1.1**
	baz=224							
WGK	**Gukeng**	**1.10**	**296**	*e*P		**Pn**	**12 16 18.4**	**-0.1**
	baz=297							
WGK				S		**Sn**	**12 16 32.8**	**+0.3**
	baz=297							
WNT	**Mingjian**	**1.11**	**308**	*e*P		**Pn**	**12 16 18.8**	**+0.3**
	baz=308							
WNT				S		**Sn**	**12 16 33.1**	**+0.5**
	baz=308							
CHN2	**Minshiung**	**1.12**	**287**	*e*P		**Pn**	**12 16 19.2**	**+0.5**
	baz=288							
CHN2				*e*S		**Sn**	**12 16 34.1**	**+1.2**
	baz=288							
TWT	**Tachien**	**1.13**	**338**	P		**Pn**	**12 16 18.7**	**-0.3**
	baz=336							
TWT				*e*S		**Sn**	**12 16 31.6**	**-1.8**
	baz=336							
LAY	**Lan-yu**	**1.16**	**184**	P		**Pn**	**12 16 18.3**	**-0.9**
	baz=185							
LAY				S		**Sn**	**12 16 31.3**	**-2.5**
	baz=185							
CHY	**Chiayi**	**1.16**	**285**	*e*P		**Pn**	**12 16 19.2**	**0.0**
	baz=286							
CHY				*e*S		**Sn**	**12 16 34.1**	**+0.3**
	baz=286							
CHN3	**Shinhua**	**1.18**	**264**	*e*S		**Sn**	**12 16 37.7**	**+3.3**
	baz=266							
TWM1	**Shoushan**	**1.19**	**252**	*e*P		**Pn**	**12 16 21.4**	**+1.8**
	baz=253							
TWM1				*e*S		**Sn**	**12 16 38.3**	**+3.8**
	baz=253							
ENA	**Nanau**	**1.23**	**4**	*e*P		**Pn**	**12 16 19.4**	**-0.7**
	baz=2.0							
ENA				*e*S		**Sn**	**12 16 33.8**	**-1.7**
	baz=2.0							
SCZT	**Fangliau**	**1.25**	**229**	*e*P		**Pn**	**12 16 21.0**	**+0.5**
	baz=230							
SCZT				*e*S		**Sn**	**12 16 38.6**	**+2.5**
	baz=230							
NNS	**Nan Shan**	**1.26**	**349**	*e*S		**Sn**	**12 16 34.4**	**-2.1**
	baz=347							
TCU	**Taichung**	**1.29**	**317**	*e*P		**Pn**	**12 16 21.9**	**+0.8**
	baz=317							
TCU				*e*S		**Sn**	**12 16 38.6**	**+1.4**
	baz=317							
CHN8	**Yiju**	**1.32**	**277**	*e*P		**Pn**	**12 16 21.4**	**-0.1**
	baz=277							
CHN8				*e*S		**Sn**	**12 16 38.3**	**+0.4**
	baz=277							
TWQ1	**Liyutan**	**1.39**	**325**	P		**Pn**	**12 16 23.1**	**+0.6**
	baz=325							
TWQ1				S		**Sn**	**12 16 40.9**	**+1.2**
	baz=325							
WTCT	**Ta-ch'eng**	**1.41**	**298**	*e*P		**Pn**	**12 16 22.4**	**-0.3**
	baz=298							
WTCT				*e*S		**Sn**	**12 16 40.0**	**-0.1**
	baz=298							
TWC	**Suao**	**1.42**	**8**	*e*P		**Pn**	**12 16 23.2**	**+0.5**
	baz=6.0							
TWC				*e*S		**Sn**	**12 16 41.4**	**+1.3**
	baz=6.0							
ENTT	**Nioudou**	**1.44**	**357**	*e*P		**Pn**	**12 16 22.7**	**-0.4**
	baz=356							
HEN	**Hengchun**	**1.45**	**215**	*e*S		**Sn**	**12 16 43.2**	**+2.1**
	baz=216							
NSY	**Sanyi**	**1.46**	**326**	*e*P		**Pn**	**12 16 24.0**	**+0.7**
	baz=326							
NSY				*e*S		**Sn**	**12 16 43.0**	**+1.9**
	baz=326							
TSEB	**Hengchuen, Pin**	**1.46**	**208**	*e*S		**Sn**	**12 16 42.4**	**+1.1**
	baz=211							
NSK	**Sanguang**	**1.49**	**350**	*e*P		**Pn**	**12 16 24.0**	**+0.2**
	baz=349							
NSK				*e*S		**Sn**	**12 16 40.4**	**-1.8**
	baz=349							
TWE	**Neicheng**	**1.52**	**1**	*e*P		**Pn**	**12 16 26.2**	**+2.1**
TWE				*e*S		**Sn**	**12 16 42.9**	**+0.3**
NSTT	**Nanjuang**	**1.54**	**338**	P		**Pn**	**12 16 24.7**	**+0.2**
	baz=337							
NSTT				*e*S		**Sn**	**12 16 43.2**	**0.0**
	baz=337							
JYNG	**Yonagunijimaku**	**1.73**	**43**	P		**Pn**	**12 16 27.0**	**0.0**
JYNG				*e*S		**Sn**	**12 16 47.7**	**-0.1**
YOJ	**Yonaguni jima**	**1.77**	**45**	P		**Pn**	**12 16 28.1**	**+0.4**
YOJ				*e*S		**Sn**	**12 16 49.4**	**+0.4**
NWF	**Wu-fen Shan**	**1.87**	**4**	*e*S		**Sn**	**12 16 52.5**	**+1.1**
	baz=2.0							
TWS1	**Kuangyinshan**	**1.90**	**354**	*e*S		**Sn**	**12 16 54.4**	**+2.2**
	baz=353							
PNG	**Penghu**	**1.95**	**281**	*e*P		**Pn**	**12 16 29.0**	**-1.1**
	baz=281							
PNG				*e*S		**Sn**	**12 16 51.6**	**-1.8**
	baz=281							
IRIF	**Iriomote-Funau**	**2.22**	**59**	P		**Pn**	**12 16 34.3**	**+0.5**
IRIF				S		**Sn**	**12 17 00.2**	**+0.2**
JKRS	**Kuro-shima**	**2.40**	**64**	P		**Pn**	**12 16 37.1**	**+0.8**
JKRS				*e*S		**Sn**	**12 17 04.9**	**+0.4**
JIJ	**Ishigaki jima**	**2.57**	**63**	P		**Pn**	**12 16 38.5**	**-0.1**
JIJ				S		**Sn**	**12 17 07.8**	**-0.8**
JISG	**Ishigakijimahi**	**2.81**	**60**	P		**Pn**	**12 16 41.6**	**-0.2**
JISG				S		**Sn**	**12 17 13.4**	**-1.0**
JTJ	**Tarama**	**3.15**	**62**	P		**Pn**	**12 16 46.8**	**+0.3**
JTJ				S		**Sn**	**12 17 21.6**	**-1.2**
JIRB	**Irabujima**	**3.61**	**63**	*e*S		**Sn**	**12 17 33.9**	**-0.5**

*IDC **11** 12:19:08.1±0.9,30°.38N×94°.90E,h0km,mb3.8/9,*
mb1 3.8/12,mb1mx3.6/65,mbtmp3.7/12,ML3.7/3,MS4.0/1,
Ms1 4.0/1,ms1mx3.0/52,Error ellipse: s-maj=38.9km
s-min=16.2km az=58.0
*ISCJB **11** 12:19:09.5±0.7,30°.4N±0°.1×94°.9E±0°.2,h23km,mb3.7/9,*
MS3.9/1,Error ellipse: s-maj=25.0km s-min=10.9km
az=155.3

ISC 11 12:19:11.7±0.8,**30°.4N**±0°.1×**94°.9E**±0°.2,**h23**km,**n12**,
σ0**6**:**62**/12,**mb3.8**/9,**Xizang**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CMAR	**Chiang Mai Arr**	**12.46**	**162**	Pn		**Pn**	**12 22 08.0**	**+0.4**
	0.3nm,0.3s,baz=330,slow=13,SNR=5.6							
MKAR	**Makanchi Array**	**19.05**	**333**	P		**P**	**12 23 32.6**	**+0.4**
	0.1nm,0.3s,baz=154,slow=14,SNR=6.8							
SONM	**Songino Array**	**19.53**	**24**	P		**P**	**12 23 37.8**	**+0.2**
	0.2nm,0.3s,baz=212,slow=13,SNR=2.9							
KURBB	**Kurchatov Arra**	**23.61**	**333**	P		**P**	**12 24 21.8**	**+1.0**
	1.4nm,0.7s,baz=144,slow=10,SNR=12							
ZALV	**Zalesovo Beam**	**24.63**	**346**	P		**P**	**12 24 30.9**	**+0.7**
	1.9nm,0.7s,baz=163,slow=9.0,SNR=7.5							
BVAR	**Borovoye Array**	**28.80**	**329**	P		**P**	**12 25 07.8**	**0.0**
	1.5nm,0.9s,baz=123,slow=11,SNR=5.4							
BVAR				LR		LR	12 38 20.5	
	comp=Z,290nm,18.5s,baz=232,slow=40							
BRTR	**Keskin Array B**	**50.12**	**298**	P		**P**	**12 28 04.6**	**-0.7**
	0.8nm,0.6s,baz=88,slow=7.6,SNR=5.0							
AKASG	**Malin Array Be**	**52.03**	**313**	P		**P**	**12 28 19.4**	**+0.1**
	1.8nm,0.7s,baz=76,slow=6.9,SNR=7.1							
NOA	**NORSAR Array B**	**60.90**	**326**	P		**P**	**12 29 23.0**	**+0.6**
	0.6nm,0.6s,baz=82,slow=6.8,SNR=3.1							
WRA	**Warramunga Arr**	**62.83**	**138**	P		**P**	**12 29 35.5**	**-0.3**
	0.7nm,0.9s,baz=324,slow=8.2,SNR=4.2							
ASAR	**Alice Springs**	**65.53**	**141**	P		**P**	**12 29 53.4**	**-0.1**
	0.9nm,0.9s,baz=322,slow=6.2,SNR=9.8							
ILAR	**Eielson Array**	**73.75**	**23**	P		**P**	**12 30 42.8**	**-0.8**
	0.3nm,0.9s,baz=312,slow=5.4,SNR=4.1							

*ISCJB **11** 12:19:24.1±0.7,30°.06S±0°.07×139°.69E±0°.10,h10km,*
Error ellipse: s-maj=14.8km s-min=6.1km az=142.6
*IDC **11** 12:19:24.6±2.1,30°.17S×139°.64E,h0km,mb1 3.4/4,*
mb1mx3.3/40,mbtmp3.2/4,ML3.0/4,Error ellipse:
s-maj=70.3km s-min=19.5km az=48.0
*AUST **11** 12:19:25.5±0.9,30°.20S×139°.73E,h4km,Error ellipse:*
s-maj=12.1km s-min=4.0km az=166.0

ISC 11 12:19:25.5±1.0,**30°.11S**±0°.08×**139°.74E**±0°.07,**h10**km,**n9**,
σ1**8**:**15**/12,**South Australia**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
STKA	**Stephens Creek**	**2.37**	**138**	Pn		**Pn**	**12 20 04.6**	**+0.2**
	1.0nm,0.3s,baz=313,slow=15,SNR=34							
STKA				Sn		**Sn**	**12 20 37.1**	**-0.6**
	5.6nm,0.3s,baz=253,slow=11,SNR=12							
STKA	**Stephens Creek**	**2.37**	**138**	P		**Pn**	**12 20 04.7**	**+0.2**
	baz=2.3							
HTT	**Hallett**	**3.38**	**192**	P		**Pn**	**12 20 18.6**	**+0.2**
	baz=3.3							
BBOO	**Buckleboo**	**4.14**	**229**	P		**Pn**	**12 20 28.8**	**0.0**
	baz=4.1							
CMSA	**Cobar Meteorol**	**5.31**	**107**	P		**Pn**	**12 20 45.3**	**+0.5**
	baz=5.3							
ARPS	**Mount Arapiles**	**6.87**	**166**	P		**Pn**	**12 21 06.0**	**-0.3**
	baz=6.8							
ASAR	**Alice Springs**	**8.27**	**320**	Pn		**Pn**	**12 21 26.9**	**+1.3**
	0.1nm,0.3s,baz=140,slow=13,SNR=8.4							
ASAR				Sn		**Sn**	**12 22 60.0**	**+0.9**
	0.1nm,0.3s,baz=142,slow=22,SNR=4.5							
WRA	**Warramunga Arr**	**11.24**	**333**	Pn		**Pn**	**12 22 06.9**	**+0.5**
	0.1nm,0.3s,baz=155,slow=13,SNR=9.7							
WRA				Sn		**Sn**	**12 24 09.4**	**-2.8**
	0.1nm,0.3s,baz=158,slow=25,SNR=3.4							
FITZ	**Fitzroy Crossi**	**17.55**	**310**	P		**Pn**	**12 23 29.7**	**-0.6**
	0.1nm,0.3s,baz=128,slow=17,SNR=4.8							

*IDC **11** 12:21:00.5±13.0,37°.12N×72°.35E,h170km±72km,mb3.1/3,*
mb1 3.3/8,mb1mx3.0/58,mbtmp3.7/8,MS3.8/1,Ms1 3.8/1,
ms1mx2.9/26,Error ellipse: s-maj=134.5km s-min=47.0km
az=4.0
*NNC **11** 12:21:07.8±1.4,37°.81N×71°.99E,h173km±15km,mb2.6,*
mpv3.7,Error ellipse: s-maj=14.3km s-min=6.0km
az=143.0

ISC 11 12:21:02.8±1.6,**37°.6N**±0°.1×**72°.16E**±0°.08,**h150**km,**n16**,
σ2**39**/22,**mb3.4**/3,**8C-4D**,**Tajikistan**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DZET	**Dzherino**	**2.91**	**296**	⇑P		**Pn**	**12 21 52.5**	**+3.3**
	7.7nm,0.3s							
DZET				⇑S		**Sn**	**12 22 27.2**	**+2.2**
	98nm,0.4s							
MNAS	**Manas**	**4.93**	**3**	⇓P		**Pn**	**12 22 17.6**	**+2.3**
	12nm,0.5s							
MNAS				⇓S		**Sn**	**12 23 12.6**	**+0.6**
	11nm,0.4s							
AAK	**Ala-Archa**	**5.38**	**19**	P		**Pn**	**12 22 23.9**	**+2.5**
	6.4nm,0.3s,baz=160,slow=5.6,SNR=19							
AAK				S		**Sn**	**12 23 24.5**	**+1.9**
	1.5nm,0.3s,baz=326,slow=22,SNR=11							
AAK	**Ala-Archa**	**5.38**	**19**	⇓P		**Pn**	**12 22 23.4**	**+2.0**
	8.1nm,0.4s							
AAK				⇓S		**Sn**	**12 23 24.2**	**+1.5**
	8.2nm,0.6s							
KK31	**Karatay Array**	**5.68**	**348**	⇑P		**Pn**	**12 22 27.4**	**+2.2**
	2.7nm,0.3s,baz=172,slow=15,SNR=49							
KK31				⇑S		**Sn**	**12 23 29.8**	**+0.1**
	7.9nm,0.3s,baz=181,slow=23,SNR=24							
TKM2	**Tokmak 2**	**5.96**	**25**	⇑P		**Pn**	**12 22 31.2**	**+2.0**
	2.3nm,0.4s							
TKM2				⇑S		**Sn**	**12 23 40.0**	**+3.2**
	1.8nm,0.6s							
KURBB	**Kurchatov Arra**	**13.83**	**17**	P		**P**	**12 24 15.5**	**-0.3**
	0.0nm,0.3s,baz=208,slow=10,SNR=8.5							
AB31	**Akbulak array**	**14.66**	**327**	P		**Pn**	**12 24 24.7**	**+1.9**
	0.1nm,0.3s,baz=136,slow=13,SNR=9.6							
AB31				⇑S		**Sn**	**12 26 59.6**	**-5.7**
	0.3nm,0.3s,baz=135,slow=24,SNR=4.2							
BVAR	**Borovoye Array**	**15.52**	**356**	P		**P**	**12 24 35.6**	**+1.0**
	0.2nm,0.3s,baz=152,slow=11,SNR=3.5							
AKTO	**Aktyubinsk**	**16.37**	**326**	P		**Pn**	**12 24 45.0**	**+1.1**
	0.3nm,0.3s,baz=120,slow=13,SNR=5.0							
AKTO	**Aktyubinsk**	**16.37**	**326**	⇑P		**Pn**	**12 24 44.8**	**+0.9**
	0.9nm,0.5s							
ZALV	**Zalesovo Beam**	**18.57**	**24**	P		**P**	**12 25 07.6**	**-0.4**
	0.7nm,0.3s,baz=222,slow=10,SNR=10							
ARCES	**ARCESS Array B**	**40.53**	**337**	P		**P**	**12 28 26.2**	**-0.6**
	0.9nm,0.9s,baz=126,slow=9.1,SNR=4.7							
KLR	**Kul'dur**	**43.77**	**55**	LR		LR	12 48 47.5	
	comp=Z,106nm,19.0s,baz=328,slow=38							
ILAR	**Eielson Array**	**73.50**	**16**	P		**P**	**12 32 16.2**	**-2.4**
	0.4nm,0.7s,baz=336,slow=4.0,SNR=4.3							
YKA	**Yellowknife Ar**	**80.14**	**3**	P		**P**	**12 32 53.5**	**-2.2**
	0.3nm,0.4s,baz=351,slow=5.5,SNR=12							

*ISCJB **11** 12:22:52.7±0.4,32°.28N±0°.02×115°.30W±0°.02,h24km±3km,*
Error ellipse: s-maj=4.0km s-min=3.4km az=163.1
*ECX **11** 12:22:54.0±0.5,32°.27N×115°.34W,h6km,MD3.1,ML3.3*
*NEIC **11** 12:22:54.0,32°.27N×115°.34W,h6km,ML3.3(ECX),*
ML3.1(PAS),After ECX.
*MEX **11** 12:22:54.5±0.5,32°.37N×115°.19W,h21km±5km,MD3.9*

ISC 11 12:22:51.8±1.1,**32°.28N**±0°.03×**115°.32W**±0°.02,
h13km±10km,**n49**,σ0**9**:**94**/70,**4C-4D**,**California-Baja**
California border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CPBX	**Cerro Prieto**	**0.14**	**6**	*e*P		**Pb**	**12 22 56.5**	**+0.2**
CPBX				*e*S		**Sb**	**12 22 59.7**	**+0.5**
CPBX				IAML			12 23 02.4	
	comp=N,25μm,0.2s							
CPBX				⇓*e*			12 23 02.4	
CPBX	**Cerro Prieto**	**0.14**	**6**	*e*P		**Pb**	**12 22 56.3**	**0.0**
CPBX				*i* S		**Sb**	**12 22 59.1**	**-0.1**
MBIG	**Mexicali**	**0.16**	**40**	*e*P		**Pb**	**12 22 57.3**	**+0.6**
MBIG				*e*S		**Sb**	**12 22 59.4**	**-0.6**
MBIG	**Mexicali**	**0.16**	**40**	*e*P		**Pb**	**12 22 57.4**	**+0.6**
SGL	**Mount Signal**	**0.50**	**317**	⇓*i*P		**Pb**	**12 23 02.5**	**0.0**
EMSC	**East Mesa**	**0.54**	**32**	*i* P		**Pn**	**12 23 04.1**	**-1.0**
ERPC	**Ernies Place**	**0.54**	**328**	⇑*i*P		**Pb**	**12 23 04.1**	**+0.9**
WESC	**Westside Schoo**	**0.59**	**324**	*e*P		**Pb**	**12 23 04.5**	**+0.5**
COA	**Coachella**	**0.60**	**16**	⇑*i*P		**Pn**	**12 23 05.1**	**-1.0**
YUH	**Yuha Desert**	**0.63**	**306**	⇓*i*P		**Pb**	**12 23 04.4**	**-0.2**
COK	**Cook Ranch**	**0.66**	**329**	⇓*i*P		**Pb**	**12 23 05.8**	**+0.6**
YMD	**Yuma Desert**	**0.71**	**67**	⇑*i*P		**Pn**	**12 23 07.0**	**-0.6**
RMX	**La Rumorosa**	**0.72**	**297**	*e*P		**Pg**	**12 23 05.7**	**-0.1**
RMX				*e*S		**Sg**	**12 23 15.4**	**+0.2**
IKP	**In-Ko-Pah, Jac**	**0.76**	**299**	P		**Pb**	**12 23 07.0**	**0.0**
	baz=120							
IKP				S		**Sb**	**12 23 17.2**	**0.0**
	baz=120							
SWSC	**Sam W. Stewart**	**0.78**	**329**	P		**Pb**	**12 23 07.0**	**-0.1**
	baz=150,SNR=6.9							
SWSC				S		**Sb**	**12 23 18.1**	**+0.6**
	baz=150							
GLA	**Glamis**	**0.88**	**28**	P		**Pb**	**12 23 08.9**	**0.0**
	baz=209							
GLA				S		**Sb**	**12 23 21.1**	**+0.6**
	baz=209							
MONP2	**Monument Peak**	**1.11**	**304**	P		**Pb**	**12 23 13.0**	**0.0**
	baz=124,SNR=15							
MONP2				S		**Sb**	**12 23 27.7**	**+0.2**
	baz=124							
ZAX	**El Zacaton**	**1.11**	**227**	*e*P		**Pn**	**12 23 13.0**	**-0.2**
ZAX				*e*S		**Sg**	**12 23 28.0**	**+0.2**
ZAX				IAML			12 23 32.3	
	comp=N,644nm,0.6s							
ZAX				⇑*e*			12 23 32.3	
CBX	**Cerro Bola**	**1.14**	**272**	*e*P		**Pg**	**12 23 13.8**	**0.0**
CBX				*e*S		**Sg**	**12 23 28.7**	**+0.1**
CBX	**Cerro Bola**	**1.14**	**272**	*e*P		**Pg**	**12 23 13.7**	**0.0**
CBX				IAML			12 23 33.1	
	comp=N,834nm,0.6s							
CBX				*e*			12 23 33.1	
CBX	**Cerro Bola**	**1.14**	**272**	*e*P		**Pg**	**12 23 13.8**	**0.0**
CBX				*e*S		**Sg**	**12 23 28.9**	**+0.3**
TJIG	**Tijuana**	**1.16**	**278**	*i* P		**Pn**	**12 23 13.8**	**+0.2**
TJIG				*i* S		**Sb**	**12 23 28.5**	**0.0**
TJIG	**Tijuana**	**1.16**	**278**	*e*P		**Pn**	**12 23 13.8**	**+0.2**
BAR	**Barrett**	**1.21**	**290**	*e*P		**Pg**	**12 23 14.9**	**-0.2**
SPX	**San Pedro Mart**	**1.24**	**186**	*e*P		**Pg**	**12 23 15.2**	**-0.5**
SPX				IAML			12 23 33.5	
	comp=E,306nm,0.5s							
SPX	**San Pedro Mart**	**1.24**	**186**	*i* P		**Pg**	**12 23 15.2**	**-0.5**
SPX				*e*S		**

IDC 11 12:39:13.4±5.5, 20°31'S×176°54'W, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.7/35, mbtmp3.7/4, MS4.6/1, Ms1 4.6/1, ms1mx3.1/38, Error ellipse: s-maj=263.1km s-min=30.0km az=147.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RPZ	**Rata Peaks**	**25.54**	**201**	LR	LR	12 53 50.8	
	comp=Z,1μm,18.1s,baz=36,slow=34						
ASAR	**Alice Springs**	**45.89**	**256**	P	P	12 47 37.2	-0.8
	0.8nm,0.5s,baz=90,slow=7.5,SNR=36						
WRA	**Warramunga Arr**	**45.98**	**262**	P	P	12 47 39.2	+0.5
	0.7nm,0.5s,baz=96,slow=7.8,SNR=40						
ILAR	**Eielson Array**	**87.83**	**12**	P	P	12 52 05.5	+1.3
	0.4nm,0.9s,baz=212,slow=5.0,SNR=3.6						
YKA	**Yellowknife Ar**	**95.77**	**24**	P	P	12 52 39.3	-1.7
	0.3nm,0.9s,baz=224,slow=3.5,SNR=3.1						

CSEM 11 12:40:35.9±0.3, 37°.92N×37°.90E, h5km, MD2.6, Error ellipse: s-maj=8.5km s-min=4.5km az=120.0
DDA 11 12:40:35.4, 37°.91N×37°.91E, h7km, Md2.6
ISCJB 11 12:40:36.2±0.7, 37°.93N±0°.04×37°.86E±0°.07, h9km, Error ellipse: s-maj=8.4km s-min=4.1km az=24.4
ISK 11 12:40:36.4, 37°.91N×37°.81E, h10km, ML1.8
ISC 11 12:40:35.7±1.1, 37°.89N±0°.03×37°.95E±0°.04, h9km, n21, σ0s80/28, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKCD	**Akcadag**	**0.40**	**357**	*i* P	**Pg**	**12 40 43.5**	**-0.1**
AKCD				*i* S	**Sg**	**12 40 48.5**	**-0.4**
AKCD	**Akcadag**	**0.40**	**357**	P	**Pg**	**12 40 43.5**	**-0.1**
AKCD				S	**Sg**	**12 40 48.5**	**-0.4**
DARE	**Darende-Malaty**	**0.77**	**332**	*e*PG	**Pg**	**12 40 50.6**	**+0.1**
DARE				*e*SG	**Sg**	**12 41 00.7**	**+0.2**
DARE	**Darende-Malaty**	**0.77**	**332**	*e*Pg	**Pg**	**12 40 50.6**	**+0.1**
DARE				*e*Sg	**Sg**	**12 41 00.7**	**+0.2**
KMRS	**Kahramanmaras**	**0.92**	**245**	*e*PG	**Pg**	**12 40 52.6**	**-0.7**
KMRS				*e*SG	**Sg**	**12 41 04.6**	**-0.6**
KMRS	**Kahramanmaras**	**0.92**	**245**	*e*Pg	**Pg**	**12 40 52.6**	**-0.7**
KMRS				*e*Sg	**Sg**	**12 41 04.6**	**-0.6**
GAZ	**Gaziantep**	**0.93**	**219**	*e*PG	**Pg**	**12 40 53.7**	**+0.2**
GAZ	**Gaziantep**	**0.93**	**219**	*e*Pg	**Pg**	**12 40 53.7**	**+0.2**
ELZG	**Elazig**	**1.02**	**53**	*i* P	**Pg**	**12 40 54.9**	**-0.3**
ELZG	**Elazig**	**1.02**	**53**	P	**Pg**	**12 40 54.9**	**-0.3**
KUZU	**Kuzuini**	**1.32**	**212**	*i* P	**Pg**	**12 41 01.1**	**+0.2**
KUZU				*i* S	**Sg**	**12 41 19.4**	**+1.4**
KUZU	**Kuzuini**	**1.32**	**212**	P	**Pg**	**12 41 01.1**	**+0.2**
KUZU				S	**Sg**	**12 41 19.4**	**+1.4**
CUKAN	**kangal_SIVAS**	**1.47**	**345**	*i* P	**Pg**	**12 41 06.5**	**+2.7**
PTK	**Pertek**	**1.51**	**48**	*e*PN	**Pg**	**12 41 05.2**	**+0.5**
PTK	**Pertek**	**1.51**	**48**	*e*Pn	**Pg**	**12 41 05.2**	**+0.5**
CUALT	**Altinyayla-SIV**	**1.66**	**326**	*i* P	**Pn**	**12 41 04.2**	**-0.9**
CUALT				*i* S	**Pg**	**12 41 08.3**	**+0.7**
CUALT	**Altinyayla-SIV**	**1.66**	**326**	P	**Pn**	**12 41 04.2**	**-0.9**
KOZT	**Kozan**	**1.73**	**257**	*e*PN	**Pn**	**12 41 05.9**	**0.0**
KOZT	**Kozan**	**1.73**	**257**	*e*Pn	**Pn**	**12 41 05.9**	**0.0**
AKO	**Adana**	**2.03**	**258**	*i* P	Pn	12 41 01.5	-8.5
SUSE	**Susehri**	**2.32**	**5**	*i* P	Pg	12 41 27.6	+7.5

IDC 11 12:42:34.9±1.0, 32°.07S×177°.98W, h0km, mb4.4/7, mb1 4.6/8, mb1mx4.1/33, mbtmp4.5/8, ML4.9/1, MS4.0/4, Ms1 4.0/4, ms1mx3.5/33, Error ellipse: s-maj=32.1km s-min=23.0km az=136.0
ISCJB 11 12:42:36.1±0.8, 32°.21S±0°.06×178°.0W±0°.2, h24km, mb4.9/11, MS4.0/1, Error ellipse: s-maj=20.2km s-min=7.5km az=14.9
NEIC 11 12:42:36.1±0.5, 32°.23S×178°.00W, h10km, mb4.6/1, Error ellipse: s-maj=15.9km s-min=11.4km az=108.0
ISC 11 12:42:37.7±0.7, 32°20S±0°.07×178°.0W±0°.2, h24km, n32, σ1s33/31, mb4.6/11, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**2.94**	**2**	Pn	**Pn**	**12 43 21.7**	**-1.3**
	175nm,0.3s,baz=123,slow=17,SNR=8.7						
RAO				Sn	**Sn**	**12 43 56.2**	**-1.3**
	190nm,0.3s,baz=270,slow=20,SNR=4.0						
RAO	**Raoul Island**	**2.94**	**2**	Pn	**Pn**	**12 43 21.7**	**-1.3**
RAO				*e*Pn	Pb	12 43 21.9	-7.5
RAO				Sn	**Sn**	**12 43 56.2**	**-1.3**
URZ	**Urewera**	**7.23**	**212**	Pn	**Pn**	**12 44 19.2**	**-2.7**
	2.4nm,0.3s,baz=225,slow=4.3,SNR=8.3						
URZ				Sn	**Sn**	**12 45 42.1**	**-1.1**
	18nm,0.3s,baz=100,slow=18,SNR=17						
URZ				LR	LR	12 47 04.9	
	comp=Z,685nm,20.1s,baz=30,slow=37						
RPZ	**Rata Peaks**	**14.34**	**214**	Pn	Pn	12 45 54.2	-5.0
	0.8nm,0.3s,baz=307,slow=20,SNR=3.1						
RPZ				Sn	Sn	12 48 23.0	-14
	2.0nm,0.3s,baz=65,slow=20,SNR=11						
DZM	**Mont Dzumac**	**17.08**	**302**	LR	LR	12 51 31.1	
	comp=Z,752nm,21.0s,baz=88,slow=31						
RAR	**Rarotonga**	**19.62**	**61**	LR	LR	12 55 05.2	
	comp=Z,384nm,18.4s,baz=238,slow=38						
STKA	**Stephens Creek**	**34.08**	**260**	P	**P**	**12 49 22.2**	**+1.9**
	2.6nm,0.6s,baz=96,slow=12,SNR=6.5						
CTA	**Charters Tower**	**34.09**	**282**	P	**P**	**12 49 22.7**	**+2.1**
	5.6nm,0.4s,baz=107,slow=11,SNR=14						
CTAO	**Charters Tower**	**34.09**	**282**	*e*P	**P**	**12 49 23.0**	**+2.4**
	124nm,1.1s						
PMG	**Port Moresby**	**39.37**	**297**	LR	LR	13 04 32.3	
	comp=Z,215nm,18.5s,baz=112,slow=34						
ASAR	**Alice Springs**	**43.01**	**269**	P	**P**	**12 50 36.2**	**+0.7**
	2.3nm,0.3s,baz=106,slow=7.3,SNR=76						
WRAB	**Tennant Creek**	**44.15**	**274**	*e*P	**P**	**12 50 44.8**	**+0.1**
	5.5nm,0.6s						
WRA	**Warramunga Arr**	**44.16**	**274**	P	**P**	**12 50 45.3**	**+0.6**
	6.2nm,0.4s,baz=114,slow=7.9,SNR=120						
FORT	**Forrest**	**45.58**	**257**	*e*P	**P**	**12 50 56.0**	**+0.1**
	211nm,0.6s						
FITZ	**Fitzroy Crossi**	**52.34**	**271**	P	**P**	**12 51 48.7**	**+0.8**
	1.5nm,0.5s,baz=116,slow=7.0,SNR=6.2						
QSPA	**South Pole Qui**	**57.92**	**180**	*e*P	**P**	**12 52 28.4**	**+0.7**
	28nm,0.7s						
SYO	**Syowa Base**	**75.36**	**193**	*e*P	**P**	**12 54 18.4**	**-0.3**
SNAA	**Sanae**	**76.36**	**178**	P	**P**	**12 54 25.6**	**+1.1**
	369nm,1.0s						
PETK	**Petropavlovsk-**	**87.54**	**346**	P	**P**	**12 55 23.1**	**0.0**
	0.8nm,0.7s,baz=93,slow=5.8,SNR=3.6						
USRK	**Ussuriysk Ar.**	**88.64**	**327**	P	**P**	**12 55 28.5**	**0.0**
	0.9nm,0.5s,baz=304,slow=4.3,SNR=5.6						
MKAR	**Makanchi Array**	**118.89**	**309**	PKP	**PKPdf**	**13 01 25.3**	**+1.4**
	0.2nm,0.4s,baz=119,slow=1.8,SNR=2.5						
KURK	**Kurchatov**	**122.26**	**313**	PKP	**PKPdf**	**13 01 30.3**	**+0.2**
KURBB	**Kurchatov Arra**	**122.29**	**313**	PKP	**PKPdf**	**13 01 30.3**	**+0.2**
	0.7nm,0.6s,baz=108,slow=1.9,SNR=5.8						
BVAR	**Borovoye Array**	**127.66**	**315**	PKP	**PKPdf**	**13 01 41.3**	**+0.9**
	0.8nm,0.5s,baz=125,slow=3.5,SNR=6.7						
AKTO	**Aktyubinsk**	**135.27**	**311**	PKP	**PKPdf**	**13 01 57.4**	**+2.5**
	0.4nm,0.4s,baz=167,slow=3.3,SNR=3.0						
KBZ	**Khabaz**	**146.05**	**302**	PKPbc	**PKPab**	**13 02 15.9**	**-0.1**
	12nm,1.1s,baz=45,slow=2.9,SNR=8.5						
FINES	**FINESS Array B**	**146.81**	**339**	PKPbc	**PKPab**	**13 02 17.6**	**-0.7**
	2.9nm,0.4s,baz=46,slow=2.9,SNR=29						
NB2	**NORSAR Subarra**	**150.52**	**351**	PKP	**PKPbc**	**13 02 28.2**	**+1.5**
	comp=Z,0.8nm,0.7s,baz=9.0,slow=3.5						
NOA	**NORSAR Array B**	**150.52**	**351**	PKPbc	**PKPbc**	**13 02 27.4**	**+0.7**
	comp=Z,1.8nm,0.8s,baz=18,slow=4.2,SNR=3.3						
AKASG	**Malin Array Be**	**152.69**	**321**	PKPbc	**PKPbc**	**13 02 33.3**	**+1.4**
	comp=Z,0.6nm,0.3s,baz=53,slow=2.4,SNR=4.6						
BRTR	**Keskin Array B**	**153.38**	**295**	PKPbc	**PKPbc**	**13 02 35.2**	**+1.2**
	comp=Z,0.8nm,0.6s,baz=126,slow=2.5,SNR=4.9						
TORD	**Torodi Ar. Bea**	**161.03**	**179**	PKPab	**PKPab**	**13 03 20.5**	**+1.2**
	comp=Z,1.7nm,1.0s,baz=187,slow=3.8,SNR=5.3						

IDC 11 12:46:39.7±3.3, 36°.87N×141°.49E, h0km, mb3.3/2, mb1 3.4/4, mb1mx3.2/51, mbtmp3.3/4, ML2.8/2, Error ellipse: s-maj=56.2km s-min=32.7km az=26.0
JMA 11 12:46:40.2±0.1, 36°.90N×141°.45E, h30km±1km, M3.3
ISC 11 12:46:40.2±2.0, 36°94N±0°.04×141°39E±0°.07, h11km±13km, n14, σ0s84/26, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.50**	**289**	P	**Pb**	**12 46 51.1**	**0.0**
ONAJ				S	**Sb**	**12 46 58.8**	**+0.3**
JFK	**Kawauchi**	**0.59**	**316**	P	**Pb**	**12 46 52.7**	**0.0**
JFK				S	**Sb**	**12 47 01.5**	**+0.4**
JHO	**Hitachi**	**0.74**	**244**	P	**Pg**	**12 46 54.6**	**+0.1**
JHO				S	**Sb**	**12 47 05.1**	**-0.1**
JFT	**Otama**	**1.02**	**305**	P	**Pn**	**12 47 00.3**	**-0.3**
JFT				S	**Sn**	**12 47 14.3**	**-0.6**
JMM	**Marumori**	**1.04**	**333**	P	**Pb**	**12 46 59.9**	**-0.4**
JMM				*e*S	**Sb**	**12 47 14.0**	**0.0**
JYT	**Yasato**	**1.20**	**234**	P	**Pn**	**12 47 01.1**	**-1.8**
JYT				*e*S	**Sb**	**12 47 16.4**	**-2.0**
JFY	**Yanaizu**	**1.43**	**290**	P	**Pn**	**12 47 06.4**	**+0.3**
JFY				S	**Sb**	**12 47 25.6**	**+0.5**
JIO	**Ouri**	**1.51**	**359**	P	**Pn**	**12 47 06.9**	**-0.4**
JIO				S	**Sn**	**12 47 25.9**	**-1.1**
JOU	**Okura**	**1.54**	**338**	P	**Pb**	**12 47 08.4**	**-0.4**
JOU				*e*S	**Sb**	**12 47 28.5**	**+0.2**
MJAR	**Matsushiro Arr**	**2.59**	**262**	Pn	**Pn**	**12 47 23.2**	**+1.1**
	1.0nm,0.3s,baz=83,slow=16,SNR=7.0						
MJAR				Sn	**Sb**	**12 47 57.6**	**-0.9**
	1.7nm,0.3s,baz=82,slow=20,SNR=4.1						
MAT	**Matsushiro**	**2.59**	**262**	P	**Pn**	**12 47 23.1**	**+1.0**
MAT				S	**Sn**	**12 47 53.4**	**-0.2**
JHJ	**Hachijo jima 2**	**4.03**	**200**	Pn	**Pn**	**12 47 42.6**	**+0.7**
	3.5nm,0.3s,baz=52,slow=15,SNR=9.5						
JHJ				Sn	**Sn**	**12 48 30.0**	**+0.7**
	3.2nm,0.3s,baz=72,slow=20,SNR=2.5						
WRA	**Warramunga Arr**	**56.97**	**188**	P	**P**	**12 56 25.7**	**0.0**
	0.2nm,0.5s,baz=4.5,slow=7.3,SNR=4.1						
ASAR	**Alice Springs**	**60.69**	**188**	P	**P**	**12 56 52.8**	**+1.1**
	0.4nm,0.9s,baz=3.8,slow=5.5,SNR=3.0						

IDC 11 12:48:56.1±8.9, 39°.07N×145°.72E, h0km, mb4.0/3, mb1 3.9/4, mb1mx3.4/50, mbtmp3.9/4, ML2.3/1, Error ellipse: s-maj=369.5km s-min=125.0km az=22.0
NIED 11 12:49:00, 38°.10N×142°.20E, h5km, Mw3.7 Best double couple: M0 4.63000×10^14 NP1:ϕs196.00000°, δ24.00000°, λ-48.00000°. NP2:ϕs331.00000°, δ72.00000°, λ-106.00000°.
JMA 11 12:49:12.4±0.1, 38°.17N×142°.11E, h16km±1km, M3.9
JMA Felt I J1.
ISC 11 12:49:09.0±2.2, 38°13N±0°.05×142°24E±0°.09, h5km±10km, n15, σ0s73/25, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.77**	**295**	P	**Pb**	**12 49 25.2**	**+0.2**
JIO				S	**Sg**	**12 49 33.9**	**0.0**
OFUJ	**Ofunato**	**1.05**	**335**	P	**Pn**	**12 49 30.2**	**-0.3**
OFUJ				*e*S	**Sg**	**12 49 43.1**	**+0.2**
JMK	**Ichinoseki**	**1.15**	**316**	P	**Pn**	**12 49 32.1**	**+0.3**
JMK				S	**Sg**	**12 49 45.9**	**0.0**
JMM	**Marumori**	**1.17**	**258**	P	**Pn**	**12 49 32.0**	**-0.1**
JMM				*e*S	**Sg**	**12 49 46.6**	**0.0**
JOU	**Okura**	**1.26**	**281**	P	**Pg**	**12 49 34.1**	**+0.9**
JOU				*e*S	**Sb**	**12 49 49.6**	**-0.3**
JFK	**Kawauchi**	**1.32**	**235**	P	**Pg**	**12 49 34.2**	**-0.1**
JFK				*e*S	**Sb**	**12 49 51.0**	**-0.5**
JOM	**Ohasama**	**1.54**	**332**	P	**Pg**	**12 49 38.2**	**-0.3**
JOM				*e*S	**Sn**	**12 49 56.8**	**-0.7**
JFT	**Otama**	**1.62**	**249**	P	**Pg**	**12 49 39.8**	**-0.3**
JFT				*e*S	**Sb**	**12 50 00.1**	**-0.2**
JYK	**Kaneyama**	**1.67**	**299**	P	**Pb**	**12 49 39.8**	**-0.5**
JYK				*e*S	**Sn**	**12 49 59.8**	**-1.0**
JYS	**Shirataka**	**1.71**	**274**	P	**Pb**	**12 49 41.0**	**0.0**
JYS				*e*S	**Sn**	**12 50 01.8**	**-0.2**
JRG	**Rokugo**	**1.78**	**316**	P	**Pb**	**12 49 41.9**	**-0.3**
JRG				*e*S	**Sn**	**12 50 03.9**	**+0.3**
USRK	**Ussuriysk Ar.**	**9.82**	**311**	Pn	Pn	12 51 41.4	+11
	0.2nm,0.3s,baz=119,slow=12,SNR=6.0						
ZALV	**Zalesovo Beam**	**41.67**	**311**	P	**P**	**12 56 56.9**	**-1.4**
	0.3nm,0.3s,baz=90,slow=7.2,SNR=2.5						
MKAR	**Makanchi Array**	**44.10**	**301**	P	**P**	**12 57 19.9**	**+1.7**
	0.5nm,0.7s,baz=74,slow=8.8,SNR=2.8						
KURBB	**Kurchatov Arra**	**45.85**	**307**	P	**P**	**12 57 33.5**	**+1.5**
	0.6nm,0.3s,baz=84,slow=8.1,SNR=5.6						

IDC 11 12:49:16.3±1.9, 36°.35N×142°.08E, h0km, mb3.7/6, mb1 3.7/9, mb1mx3.5/53, mbtmp3.7/9, ML3.5/3, Error ellipse: s-maj=49.0km s-min=21.2km az=67.0
ISCJB 11 12:49:20.4±1.5, 36°.24N±0°.05×141°.9E±0°.1, h40km±12km, mb3.6/6, Error ellipse: s-maj=16.9km s-min=7.6km az=165.3
JMA 11 12:49:21.3±0.2, 36°.20N×141°.78E, h69km±4km, M3.3
ISC 11 12:49:21.3±1.8, 36°25N±0°.07×142°0E±0°.2, h36km±4km, n23, σ1s29/20, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.04**	**239**	P	**Pn**	**12 49 38.4**	**-0.9**
CHOJ				*e*S	**Sn**	**12 49 51.2**	**-1.4**
JHO	**Hitachi**	**1.18**	**288**	P	**Pn**	**12 49 40.3**	**-0.9**
ONAJ	**Iwakimizuishiy**	**1.26**	**313**	P	**Pn**	**12 49 42.0**	**-0.4**
ONAJ				S	**Sn**	**12 49 57.4**	**-0.8**
JYT	**Yasato**	**1.43**	**270**	P	**Pn**	**12 49 43.6**	**-1.0**
JYT				*e*S	**Sn**	**12 50 01.2**	**-0.9**
BSO1	**Boso 1**	**1.78**	**207**	P	**Pn**	**12 49 49.5**	**+0.5**
BSO1				S	**Sn**	**12 50 10.8**	**+0.7**
BSO4	**Boso 4**	**1.82**	**227**	P	**Pn**	**12 49 50.6**	**+0.7**
BSO3	**Boso 3**	**1.86**	**220**	P	**Pn**	**12 49 50.3**	**-0.1**
MJAR	**Matsushiro Arr**	**3.04**	**277**	Pn	**Pn**	**12 50 07.5**	**+0.7**
	7.2nm,0.3s,baz=90,slow=16,SNR=31						
MAT	**Matsushiro**	**3.04**	**277**	P	**Pn**	**12 50 07.9**	**+1.1**
MAT				S	**Sn**	**12 50 44.6**	**+2.6**
JHJ	**Hachijo jima 2**	**3.60**	**210**	Pn	**Pn**	**12 50 14.2**	**-0.3**
	17nm,0.3s,baz=346,slow=21,SNR=20						
JHJ				Sn	**Sn**	**12 50 52.9**	**-2.8**
	34nm,0.3s,baz=100,slow=23,SNR=11						
KSRS	**Korea Array**	**11.31**	**280**	Pn	**Pn**	**12 52 01.3**	**+1.1**
	0.2nm,0.3s,baz=87,slow=14,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**27.37**	**120**	T	T	13 24 46.6	
	baz=316,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy**	**27.38**	**120**	T	T	13 24 47.4	
	baz=316,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy**	**27.39**	**120**	T	T	13 24 49.4	
	baz=316,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**28.07**	**122**	T	T	13 25 44.3	
	baz=318,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy**	**28.07**	**122**	T	T	13 25 42.4	
	baz=318,slow=76,SNR=26						
H11S2	**WAKE ISLAND Hy**	**28.08**	**122**	T	T	13 25 42.1	
	baz=318,slow=76,SNR=27						
SONM	**Songino Array**	**28.59**	**305**	P	P	12 55 15.0	+1.0
	0.6nm,0.4s,baz=111,slow=6.8,SNR=3.8						
MKAR	**Makanchi Array**	**44.91**	**303**	P	**P**	**12 57 31.6**	**-0.7**
	0.5nm,0.6s,baz=89,slow=8.8,SNR=3.7						
KURBB	**Kurchatov Arra**	**46.83**	**309**	P	**P**	**12 57 46.6**	**-0.8**
	1.6nm,0.2s,baz=83,slow=8.0,SNR=8.9						
BVAR	**Borovoye Array**	**51.42**	**313**	P	P	12 58 24.3	+1.8
	0.3nm,0.5s,baz=66,slow=14,SNR=3.1						
WRA	**Warramunga Arr**	**56.35**	**189**	P	**P**	**12 58 59.1**	**+0.4**
	0.7nm,1.0s,baz=5.0,slow=7.2,SNR=4.7						
ASAR	**Alice Springs**	**60.07**	**189**	P	P	12 59 27.3	+2.6
	0.1nm,0.5s,baz=0.2,slow=5.0,SNR=4.4						

CSEM 11 12:51:40.8±0.4, 36°.62N×29°.93E, h12km, MD2.7, Error ellipse: s-maj=10.8km s-min=7.5km az=153.0
DDA 11 12:51:40.4, 36°.63N×30°.00E, h7km, Md2.9
ISCJB 11 12:51:41.2±0.7, 36°.65N±0°.05×29°.90E±0°.06, h11km±6km, Error ellipse: s-maj=9.2km s-min=5.9km az=138.7
ISK 11 12:51:41.0, 36°.63N×29°.90E, h9km, MD2.7
ISC 11 12:51:40.6±1.2, 36°60N±0°.04×29°94E±0°.03, h6km±9km, n21, σ1s10/27, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ELL	**Elmali**	**0.15**	**352**	PG	**Pg**	**12 51 43.8**	**+0.1**
ELL				*e*SG	**Sg**	**12 51 46.6**	**+0.7**
ELL	**Elmali**	**0.15**	**352**	*i* Pg	**Pg**	**12 51 43.8**	**+0.1**
ELL				*e*Sg	**Sg**	**12 51 46.6**	**+0.7**
AKAS	**Kas**	**0.45**	**216**	*i* P	**Pg**	**12 51 49.4**	**+0.1**
AKAS				*i* S	**Sb**	**12 51 58.9**	**+0.9**
AKAS	**Kas**	**0.45**	**216**	P	**Pg**	**12 51 49.4**	**+0.1**
AKAS				S	**Sb**	**12 51 58.9**	**+0.9**
KORT	**Korkueli**	**0.52**	**39**	*i* P	**Pg**	**12 51 50.1**	**-0.5**
KORT	**Korkueli**	**0.52**	**39**	P	**Pg**	**12 51 50.1**	**-0.5**
ANTB	**Antalya**	**0.65**	**62**	*e*PG	**Pg**	**12 51 54.2**	**+1.1**
ANTB				*e*SG	**Sb**	**12 52 04.1**	**+0.5**
ANTB	**Antalya**	**0.65**	**62**	*e*Pg	**Pg**	**12 51 54.2**	**+1.1**
ANTB				*e*Sg	**Sb**	**12 52 04.1**	**+0.5**
GLHS	**Glhisar (BURDU**	**0.66**	**328**	*e*PG	**Pb**	**12 51 53.6**	**-0.9**
GLHS	**Glhisar (BURDU**	**0.66**	**328**	*e*Pg	**Pb**	**12 51 53.6**	**-0.9**
GOLH	**Golhisar**	**0.71**	**335**	*i* P	**Pg**	**12 51 53.8**	**-0.3**
GOLH				*i* S	**Sn**	**12 52 10.6**	**+2.2**
GOLH	**Golhisar**	**0.71**	**335**	P	**Pg**	**12 51 53.8**	**-0.3**
DALY	**Dalyan (Mu˘la**	**1.05**	**282**	*e*PG	**Pn**	**12 52 01.1**	**-0.7**
DALY	**Dalyan (Mu˘la**	**1.05**	**282**	*e*Pg	**Pn**	**12 52 01.1**	**-0.7**
TURN	**Turunc**	**1.11**	**285**	*i* P	Pn	12 52 07.5	+4.9
SUTC	**Sutluce-Ispart**	**1.22**	**44**	*e*PN	**Pg**	**12 52 05.4**	**+1.4**
SUTC	**Sutluce-Ispart**	**1.22**	**44**	*e*Pn	**Pg**	**12 52 05.4**	**+1.4**
YER	**Yerkesik**	**1.43**	**293**	*e*PN	**Pn**	**12 52 06.8**	**-0.3**
YER	**Yerkesik**	**1.43**	**293**	*e*Pn	**Pn**	**12 52 06.8**	**-0.3**
KERG	**Konya-Eregli**	**3.45**	**75**	*i* P	**Pn**	**12 52 32.7**	**-2.2**
KERG	**Konya-Eregli**	**3.45**	**75**	P	**Pn**	**12 52 32.7**	**-2.2**

MEX 11 12:52:24.0±0.4, 14°04N×92°30W, h20km±999km, MD3.7, Near coast of Chiapas

IDC 11 13:01:05.1±0.6, 22°.68S×174°.76W, h0km, mb4.3/16, mb1 4.5/17, mb1mx4.4/36, mbtmp4.3/17, ML3.7/1, MS4.1/9, Ms1 4.1/9, ms1mx3.7/29, Error ellipse: s-maj=22.4km s-min=16.5km az=134.0
MOS 11 13:01:09.5±1.4, 22°.83S×174°.65W, h38km, mb5.2/26, Error ellipse: s-maj=11.0km s-min=8.9km az=58.0
ISCJB 11 13:01:09.2±0.2, 22°.76S±0°.04×174°.57W±0°.05, h35km, mb5.0/107, MS4.3/11, Error ellipse: s-maj=7.3km s-min=4.4km az=37.8
BJI 11 13:01:10.6, 22°.88S×174°.36W, h50km, mb5.0/25, mB5.5/19, Ms5.1/13, Ms7 4.8/14
GCMT 11 13:01:12.1±0.4, 22°.92S×174°.42W, h20km±1km, MW5.0/70, Moment Tensor Solution. s19,c25; s70,c89; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=2.95±.26; Mθθ0.97±.17; Mϕϕ1.98±.17; Mrθ-0.92±.35; Mrϕ1.28±.12; Mθϕ2.60±.32; Best double couple: Mo3.90700×10^16 NP1:ϕs184.00000°, δ66.00000°, λ-113.00000°. NP2: ϕs51.00000°, δ33.00000°, λ-48.00000°. Principal axes: T 3.3990, Plg18.0000°, Azm291.0000°; N 1.0160, Plg21.0000°, Azm194.0000°; P -4.4140, Plg62.0000°, Azm59.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
NEIC 11 13:01:12.1±0.1, 22°.71S×174°.65W, mb5.0/85 Error ellipse: s-maj=6.5km s-min=3.8km az=127.0
ISC 11 13:01:10.5±0.3, 22°87S±0°.05×174°64W±0°.07, h35km, h35km:pP-P, n283, σ1s74/292, mb5.0/106, MS4.2/11, 21C-6D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**7.01**	**204**	*e*P	**Pn**	**13 02 51.9**	**+1.2**
RAO	**Raoul Island**	**7.01**	**204**	*e*Pn	**Pn**	**13 02 51.9**	**+1.2**
MSVF	**Nonsavu**	**8.55**	**305**	*e*P	Pn	13 03 15.4	+3.4
MSVF	**Nonsavu**	**8.55**	**305**	*e*Pn	**Pn**	**13 03 14.1**	**+2.0**
AFI	**Afiamalu**	**9.31**	**17**	Pn	Pn	13 03 11.6	-11
	12nm,0.3s,baz=176,slow=2.9,SNR=16						
AFI				Sn	Sn	13 04 45.3	-21
	3.8nm,0.3s,baz=143,slow=20,SNR=2.3						
AFI	**Afiamalu**	**9.31**	**17**	*e*P	Pn	13 03 12.2	-10
AFI	**Afiamalu**	**9.31**	**17**	*e*Pn	Pn	13 03 12.2	-10
AFI				Sn	Sn	13 04 45.3	-21
RAR	**Rarotonga**	**13.88**	**86**	Pn	Pn	13 04 15.6	-9.2
	9.8nm,0.3s,baz=269,slow=8.5,SNR=19						
RAR				Sn	Sn	13 06 35.3	-22
	2.7nm,0.3s,baz=203,slow=13,SNR=4.9						
RAR				LR	LR	13 09 06.6	
	comp=Z,1μm,19.3s,baz=266,slow=34						
RAR	**Rarotonga**	**13.88**	**86**	*e*P	Pn	13 04 16.1	-8.7
RAR	**Rarotonga**	**13.88**	**86**	*e*Pn	Pn	13 04 16.1	-8.8
RAR				Sn	Sn	13 06 35.3	-22
FUNA	**Funafuti**	**15.44**	**336**	*e*Pn	**Pn**	**13 04 45.5**	**-0.3**
	243nm,1.4s						
URZ	**Urewera**	**16.89**	**203**	P	**Pn**	**13 05 04.3**	**+0.1**
	0.3nm,0.3s,baz=90,slow=19,SNR=2.0						
URZ				S	**Sn**	**13 08 00.8**	**-10**
	0.7nm,0.3s,baz=350,slow=20,SNR=5.9						
URZ	**Urewera**	**16.89**	**203**	*e*Pn	**P**	**13 05 08.7**	**+2.8**
	213nm,1.7s						
URZ				S	**Sn**	**13 08 00.8**	**-10**
DZM	**Mont Dzumac**	**17.51**	**269**	*e*Pn	**P**	**13 05 14.5**	**+1.6**
	14nm,0.8s						
BKZ	**Black Stump Fm**	**17.92**	**203**	*e*Pn	**P**	**13 05 18.6

comp=Z,1.5nm,0.9s,baz=21,slow=6.3,SNR=7.0
VNDA LR LR 13 30 57.4
comp=Z,116nm,20.6s,baz=255,slow=32
VNDA Vanda 55.87 186 *e*P **P 13 10 46.2 +2.1**
VNDA pmax pmax
comp=Z,7.0nm,1.4s
VNDA Vanda 55.87 186 *e*P **P 13 10 46.2 +2.1**
comp=Z,6.6nm,1.4s
SWI Sorong 56.87 285 P **P 13 10 55.5 +3.3**
SWI pmax pmax
comp=Z,32nm,1.0s
QSPA South Pole Qui 67.22 180 *e*P **P 13 12 03.2 +2.1**
comp=Z,66nm,1.4s
ERM Erimo 75.44 329 *ce*P **P 13 12 52.2 +1.5**
ERM pmax pmax
comp=Z,58nm,0.8s
KUR Kuril'sk 75.90 334⇑ *e*P **P 13 12 55.6 +2.3**
KSM Kuching 76.83 277 *e*P **P 13 13 00.5 +1.2**
comp=Z,7.1nm,0.8s
EDW2 Edwards Air Fo 78.64 44 P **P 13 13 08.6 -0.5**
baz=232
TPFO Pinon Flats 78.87 46 P **P 13 13 10.8 +0.4**
baz=233
CMB Columbia Colle 79.14 41 *e*P **P 13 13 11.2 -0.5**
CMB pmax pmax
comp=Z,5.0nm,0.9s
CMB Columbia Colle 79.14 41 *e*P **P 13 13 11.2 -0.5**
comp=Z,4.5nm,0.9s
AFDM Forest Hills D 79.38 40 *e*P **P 13 13 12.8 -0.1**
comp=Z,15nm,1.6s
PEA0 Petropavlovsk- 79.38 343 *e*P **P 13 13 11.8 -0.8**
PEA0B Petropavlovsk- 79.38 343 *e*P **P 13 13 11.9 -0.7**
PEA0B *ep*P **sP 13 13 25.9 -1.7**
PETK Petropavlovsk- 79.38 343 P **P 13 13 11.9 -0.7**
comp=Z,6.3nm,0.7s,baz=126,slow=8.2,SNR=13
BELC Belle Mtn. Jos 79.41 46 P **P 13 13 12.0 -1.4**
baz=233
YSS Yuzh-Sakhalins 79.42 332⇓ *e*P **P 13 13 14.6 +1.7**
YSS pmax pmax
comp=Z,26nm,1.3s
YSS Yuzh-Sakhalins 79.42 332 *e*P **P 13 13 13.0 +0.1**
comp=Z,65nm,1.7s
CWC Cottonwood Cre 79.55 43 P **P 13 13 13.9 -0.2**
baz=232
WDC Whiskeytown Da 79.56 38 *e*P **P 13 13 13.6 -0.3**
WDC pmax pmax
comp=Z,15nm,1.3s
WDC Whiskeytown Da 79.56 38 *e*P **P 13 13 13.6 -0.3**
comp=Z,15nm,1.3s
BC3 Big Chuckawall 79.57 47 P **P 13 13 14.0 -0.2**
baz=234
GLA Glamis 79.64 48 P **P 13 13 13.9 -0.6**
baz=234
GSC Goldstone, Bar 79.67 45 P **P 13 13 14.3 -0.4**
baz=232
GSC Goldstone, Bar 79.67 45 *e*P **P 13 13 14.4 -0.3**
GSC pmax pmax
comp=Z,25nm,1.8s
GSC Goldstone, Bar 79.67 45 *e*P **P 13 13 14.4 -0.3**
comp=Z,25nm,1.8s
MPMC Manual Prospec 79.69 44 P **P 13 13 14.4 -0.5**
baz=232
N02D Trinity Center 79.73 37 P **P 13 13 14.6 -0.3**
baz=228
DAC Darwin (Calif) 79.76 44 *e*P **P 13 13 14.9 -0.4**
DAC pmax pmax
comp=Z,19nm,1.8s
DAC Darwin (Calif) 79.76 44 *e*P **P 13 13 14.9 -0.4**
comp=Z,19nm,1.8s
O03D Paynes Creek 79.79 38 P **P 13 13 14.2 -1.1**
baz=228
M02C Callahan 79.93 37 P **P 13 13 16.1 +0.2**
baz=227
WAKR Walker 80.01 41 *e*P **P 13 13 16.1 -0.5**
comp=Z,13nm,1.1s
IRM Iron Mountain 80.08 46 P **P 13 13 16.9 0.0**
baz=234
YBH Yreka Blue Hor 80.24 37 *e*P **P 13 13 17.1 -0.5**
YBH pmax pmax
comp=Z,9.0nm,0.9s
YBH Yreka Blue Hor 80.24 37 *e*P **P 13 13 17.1 -0.5**
comp=Z,8.6nm,0.9s
MAW Mawson 80.39 199 P **P 13 13 20.0 +2.1**
comp=Z,5.6nm,0.8s,baz=133,slow=9.2,SNR=11
MAW LR LR 13 50 19.2
comp=Z,129nm,18.0s,baz=63,slow=37
MAW Mawson 80.39 199 *e*P **P 13 13 20.3 +2.3**
MAW pmax pmax
comp=Z,2.0nm,0.8s
MAW Mawson 80.39 199 *e*P **P 13 13 20.3 +2.3**
comp=Z,1.7nm,0.8s
LDFC Landfair 80.64 46 *e*P **P 13 13 19.8 -0.2**
comp=Z,42nm,1.6s
HUMO Hull Mountain 80.70 36 *e*P **P 13 13 19.7 -0.3**
comp=Z,13nm,1.4s
KSRS Korea Array 80.73 317 P **P 13 13 19.3 -0.9**
comp=Z,1.6nm,0.9s,baz=136,slow=5.7,SNR=3.6
KSRS LR LR 13 44 19.4
comp=Z,64nm,21.2s,baz=140,slow=32
KSAR Wonju Array Be 80.75 317 P **P 13 13 19.4 -1.0**
KSAR Wonju Array Be 80.75 317 P **P 13 13 19.4 -1.0**
M04C Macdoel 80.76 37 P **P 13 13 20.0 -0.5**
baz=228
KS01 Wonju Array Si 80.77 317 *e*P **P 13 13 21.6 +1.2**
TPNV Topopah Spring 81.02 44 *e*P **P 13 13 21.5 -0.5**
TPNV pmax pmax
comp=Z,9.0nm,1.4s
TPNV Topopah Spring 81.02 44 *e*P **P 13 13 21.5 -0.5**
comp=Z,1.1nm,1.4s
Y14A Wickenburg 81.39 48 *e*P **P 13 13 22.8 -1.2**
comp=Z,117nm,0.4s
SHPR Sheep Range 81.46 45 *e*P **P 13 13 23.0 -1.4**
comp=Z,12nm,1.6s
K05A Summer Lake 81.91 37 *e*P **P 13 13 25.3 -1.4**
comp=Z,20nm,1.4s
MSHR Mys Shultsa 82.07 323⇑ *i*P **P 13 13 29.8 +2.6**
R11A Troy Canyon, C 82.29 43 P **P 13 13 27.4 -1.3**
baz=233
R11A Troy Canyon, C 82.29 43 *e*P **P 13 13 27.7 -1.0**
comp=Z,5.8nm,1.4s
BMN Battle Mountai 82.56 40 *e*P **P 13 13 29.5 -0.5**
BMN pmax pmax
comp=Z,17nm,1.4s
BMN Battle Mountai 82.56 40 *e*P **P 13 13 29.5 -0.5**
comp=Z,17nm,1.4s
X16A Lo Mia Camp, P 82.73 48 *e*P **P 13 13 31.2 0.0**
comp=Z,14nm,1.4s
I05D Terrebonne, OR 82.74 35 P **P 13 13 30.1 -0.6**
baz=228
MYKOM Kota Tinggi 82.87 275 *e*P **P 13 13 32.6 +0.5**
comp=Z,39nm,1.3s
WVOR Wild Horse Val 82.99 38 *e*P **P 13 13 31.4 -0.8**
WVOR pmax pmax
comp=Z,22nm,1.5s
WVOR Wild Horse Val 82.99 38 *e*P **P 13 13 31.4 -0.8**
comp=Z,22nm,1.5s
LCMT Little Creek M 83.00 45 *e*P **P 13 13 32.0 -0.3**
comp=Z,14nm,1.4s
CCUT Cedar City 83.23 45 *e*P **P 13 13 32.5 -1.3**
comp=Z,20nm,1.6s
U15A North Rim 83.29 46 *e*P **P 13 13 33.7 -0.4**
comp=Z,15nm,1.2s
WUAZ Wupatki 83.39 47 P **P 13 13 34.2 -0.3**
baz=236
WUAZ Wupatki 83.39 47 *e*P **P 13 13 34.0 -0.5**
comp=Z,27nm,1.8s
ELK Elko 83.94 41 *e*P **P 13 13 36.9 -0.4**
ELK pmax pmax
comp=Z,8.0nm,1.4s
ELK Elko 83.94 41 *e*P **P 13 13 36.9 -0.4**
comp=Z,8.0nm,1.4s
LON Longmire 84.11 33 *e*P **P 13 13 36.7 -1.1**
LON pmax pmax
comp=Z,19nm,1.9s
LON Longmire 84.11 33 *e*P **P 13 13 36.6 -1.1**
comp=Z,19nm,1.9s
MDJ Mudanjiang 84.26 324 P **P 13 13 40.0 +1.5**
MDJ pmax pmax
comp=Z,11nm,1.1s
MDJ pmax pmax
comp=Z,60nm,3.7s
MTPU Mount Pierson 84.28 45 *e*P **P 13 13 39.7 +0.5**
comp=Z,55nm,1.7s
121A Cookes Peak, D 84.29 51 P **P 13 13 39.8 +0.7**
baz=238
D05A Enumclaw 84.31 33 *e*P **P 13 13 38.8 +0.1**
comp=Z,42nm,1.2s

MSU Marysvale 84.55 44 *e*P **P 13 13 40.0 -0.4**
MSU Marysvale 84.55 44 *e*P **P 13 13 40.0 -0.4**
G08A Pilot Rock 84.64 36 *e*P **P 13 13 39.7 -0.8**
comp=Z,9.9nm,1.0s
QIZ Qiongzhong 84.67 293 P **P 13 13 41.8 +0.7**
QIZ S **S 13 24 06.9 +0.4**
QIZ LR LR
comp=Z,150nm,20.2s
HAWA Hanford 85.05 35 *e*P **P 13 13 41.4 -1.1**
comp=Z,28nm,1.5s
SYO Syowa Base 85.09 192⇑ *e*P **P 13 13 41.5 -0.9**
SYO Syowa Base 85.09 192⇓ *ep*P pP 13 13 56.0 +2.6
DUG Dugway, Tooele 85.11 43 P **P 13 13 43.3 +0.2**
baz=235
BMO Blue Mountains 85.27 37 *e*P **P 13 13 42.4 -1.3**
comp=Z,5.6nm,0.9s
SNAA Sanae 85.54 177 P **P 13 13 45.5 +0.7**
SNAA Sanae 85.54 177 *e*P **P 13 13 45.7 +0.9**
SNAA pmax pmax
comp=Z,24nm,1.7s
SNAA Sanae 85.54 177 *e*P **P 13 13 45.6 +0.9**
comp=Z,24nm,1.7s
MNTX Cornudas Mount 85.61 53 P **P 13 13 44.9 -0.8**
baz=240
MNTX Cornudas Mount 85.61 53 *e*P **P 13 13 45.3 -0.3**
comp=Z,8.6nm,1.3s
TMUT Trail Mountain 85.62 44 *e*P **P 13 13 45.7 -0.2**
comp=Z,50nm,1.8s
LAZ Ladron 85.72 50 *e*P **P 13 13 45.6 -0.7**
TX31 Lajitas Ar. Si 85.74 56 *e*P **P 13 13 45.2 -1.2**
TXAR Lajitas Array 85.74 56 P **P 13 13 45.5 -0.9**
comp=Z,1.7nm,0.9s,baz=212,slow=6.8,SNR=18
TXAR LR LR 13 46 37.0
comp=Z,119nm,18.8s,baz=0.0,slow=32
D08A Wollman Farm, 85.80 35 *e*P **P 13 13 45.7 -0.4**
comp=Z,16nm,1.4s
BNM Barren Site 85.95 50 *e*P **P 13 13 45.5 -2.1**
SRU San Rafael Swe 85.95 45 *e*P **P 13 13 46.2 -1.2**
SRU pmax pmax
comp=Z,43nm,1.8s
SRU San Rafael Swe 85.95 45 *e*P **P 13 13 46.2 -1.2**
comp=Z,43nm,1.8s
F10A Beach Ranch, E 86.01 36 *e*P **P 13 13 46.3 -1.1**
comp=Z,13nm,1.4s
P17A Butcher Ranch, 86.02 44 *e*P **P 13 13 46.7 -1.0**
comp=Z,19nm,1.5s
LPM Los Pinos Moun 86.04 50 *e*P **P 13 13 47.8 0.0**
HLID Hailey 86.12 39 P **P 13 13 47.9 -0.1**
baz=233
HLID Hailey 86.12 39 *e*P **P 13 13 47.3 -0.8**
comp=Z,2.9nm,0.8s
KLR Kul'dur 86.16 328 P **P 13 13 47.9 0.0**
comp=Z,0.6nm,0.5s,baz=119,slow=10,SNR=4.5
JLU Jordanelle 86.20 43 *e*P **P 13 13 48.1 -0.5**
comp=Z,22nm,1.8s
VNA1 Neumayer--Stat 86.24 175 P **P 13 13 49.1 +1.0**
ANMO Albuquerque 86.48 50 P **P 13 13 49.2 -0.9**
baz=239
ANMO Albuquerque 86.48 50⇓ *e*P **P 13 13 49.9 -0.2**
ANMO pmax pmax
comp=Z,10.0nm,1.2s
ANMO Albuquerque 86.48 50 *e*P **P 13 13 49.6 -0.5**
comp=Z,24nm,1.8s
TCUT Toone Canyon 86.52 43 *e*P **P 13 13 49.4 -0.8**
comp=Z,45nm,1.5s
IPM Ipoh 86.52 276 *e*P **P 13 13 50.5 0.0**
comp=Z,25nm,1.2s
PMR Palmer 86.63 12 *e*P **P 13 13 48.8 -1.1**
PMR pmax pmax
comp=Z,34nm,1.8s
PMR Palmer 86.63 12 *e*P **P 13 13 48.8 -1.1**
comp=Z,34nm,1.8s
PV01 Paradox Valley 86.71 46 *e*P **P 13 13 49.7 -1.5**
comp=Z,262nm,1.1s
TT01 Tatalina 86.75 8 *e*P **P 13 13 50.0 -0.4**
S22A 4UR Ranch, Cre 87.67 47 P **P 13 13 55.4 -0.5**
baz=239
S22A 4UR Ranch, Cre 87.67 47 *e*P **P 13 13 55.2 -0.8**
comp=Z,7.6nm,1.4s
CAST Castle Rocks 87.82 10 *e*P **P 13 13 53.4 -2.2**
CAST *ep*P **sP 13 14 08.0 -2.7**
TRF Thorofare Moun 88.14 11 *e*P **P 13 13 55.9 -1.5**
comp=Z,49nm,1.7s
SKAG Skagway 88.15 19 *e*P **P 13 13 56.5 -0.7**
comp=Z,27nm,1.5s
DHY Denali Highway 88.33 12 *e*P **P 13 13 57.9 -0.4**
comp=Z,29nm,1.9s
RND Reindeer 88.35 11 *e*P **P 13 13 57.2 -1.0**
RND pmax pmax
comp=Z,28nm,1.2s
RND Reindeer 88.35 11 *e*P **P 13 13 57.2 -1.0**
comp=Z,28nm,1.2s
SDCO Great Sand Dun 88.57 48 P **P 13 13 59.3 -0.9**
baz=240
SDCO Great Sand Dun 88.57 48 *e*P **P 13 13 59.1 -1.1**
comp=Z,12nm,1.8s
BW06 Boulder Array 88.58 42 *e*P **P 13 13 58.6 -1.4**
PDAR Pinedale Array 88.58 42 P **P 13 13 58.9 -1.1**
comp=Z,0.9nm,0.7s,baz=190,slow=4.2,SNR=7.6
PAX Paxson 88.61 13 *e*P **P 13 13 58.9 -0.6**
PAX pmax pmax
comp=Z,7.0nm,1.1s
PAX Paxson 88.61 13 *e*P **P 13 13 58.9 -0.6**
comp=Z,7.4nm,1.1s
MCK McKinley 88.64 11 *e*P **P 13 13 58.8 -0.7**
MCK *e**PP **sP 13 14 13.7 -1.0**
MCK McKinley 88.64 11 *e*P **P 13 13 58.8 -0.7**
MCK *ep*P **sP 13 14 13.7 -1.0**
MENT Mentasta 88.95 14 *e*P **P 13 14 00.5 -0.6**
comp=Z,13nm,1.3s
BOZ Bozeman (W) 88.95 39 P **P 13 14 00.9 -0.7**
baz=235
BOZ Bozeman (W) 88.95 39 *e*P **P 13 14 00.7 -0.9**
BOZ pmax pmax
comp=Z,19nm,1.8s
BOZ Bozeman (W) 88.95 39 *e*P **P 13 14 00.7 -0.9**
comp=Z,19nm,1.8s
DLBC Dease Lake 89.04 22 *e*P **P 13 14 02.1 +0.5**
comp=Z,7.1nm,1.3s
SEY Seymchan 89.41 346 P **P 13 14 02.6 -0.5**
comp=Z,2.3nm,0.8s,baz=110,slow=3.1,SNR=6.4
SEY Seymchan 89.41 346⇑ *e*P **P 13 14 03.2 +0.1**
WRH Wood River Hil 89.47 11 *e*P **P 13 14 02.3 -1.1**
comp=Z,33nm,1.2s
DOT Dot Lake 89.51 13 *e*P **P 13 14 01.8 -1.8**
comp=Z,36nm,1.2s
HDA Harding Lake 89.62 12 *e*P **P 13 14 02.1 -2.0**
comp=Z,14nm,1.1s
WALA Waterton Lakes 89.67 35 *e*P **P 13 14 02.8 -2.1**
comp=Z,4.9nm,1.0s
CCB Clear Creek Bu 89.68 11 *e*P **P 13 14 02.8 -1.5**
CCB *ep*P **sP 13 14 17.6 -1.8**
BJI Beijing 89.77 314 P **P 13 14 06.9 +1.6**
BJI pmax pmax
comp=Z,6.0nm,0.6s
COLA College 89.88 11 *e*P **P 13 14 04.2 -1.0**
COLA pmax pmax
comp=Z,26nm,1.3s
COLA College 89.88 11 *e*P **P 13 14 04.2 -1.0**
comp=Z,26nm,1.3s
433A Art 89.91 56 P **P 13 14 05.3 -0.9**
baz=243
ENH Enshi 89.95 303 *e*P **P 13 14 07.0 +0.5**
comp=Z,61nm,1.4s
ILAR Eielson Array 89.96 12 P **P 13 14 04.7 -1.0**
comp=Z,1.5nm,0.8s,baz=214,slow=5.0,SNR=15
ILB Eielson Array 89.96 12 *e*P **P 13 14 04.0 -1.6**
IL1 Eielson Array 89.96 12 *e*P **P 13 14 04.1 -1.5**
GYA Guiyang 90.53 298 *e*P **P 13 14 10.0 +0.6**
GYA pP sP 13 14 24.5 0.0
GYA PP **PP 13 17 47.0 +2.3**
GYA SKS **SKSac 13 24 34.3 -4.3**
GYA S **S 13 24 59.2 -3.4**
GYA sS sS 13 25 23.8 +2.7
GYA SS **SS 13 31 05.5 +0.9**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.6s
GYA LR LR
comp=Z,420nm,18.0s
GYA LR LR
comp=Z,440nm,18.2s
GYA LR LR
comp=Z,380nm,18.4s
334A Lometa 90.82 56 P **P 13 14 10.6 +0.1**

baz=244
DAWY Dawson 90.91 15 *e*P **P 13 14 09.6 -0.6**
comp=Z,12nm,1.1s
EGAK Eagle 91.12 14 *e*P **P 13 14 11.0 0.0**
comp=Z,10.0nm,1.1s
BILL Bilibino 91.73 353 *e*P **P 13 14 14.0 +0.2**
BILL pmax pmax
comp=Z,12nm,1.7s
EDM Edmonton 92.42 32 *e*P **P 13 14 15.1 -2.3**
EDM pmax pmax
comp=Z,6.0nm,0.9s
EDM Edmonton 92.42 32 *e*P **P 13 14 15.1 -2.3**
comp=Z,6.4nm,0.9s
RSSD Black Hills 92.72 43 *e*P **P 13 14 18.5 -0.8**
RSSD pmax pmax
comp=Z,20nm,1.8s
RSSD Black Hills 92.72 43 *e*P **P 13 14 18.4 -0.8**
comp=Z,20nm,1.8s
KMI Kunming 93.20 296 P **P 13 14 25.5 +3.6**
KMI pP sP 13 14 36.7 -0.4
KMI sP pP 13 14 40.6 +7.5
KMI pmax pmax
comp=Z,8.0nm,1.2s
HHC Hu-ho-hao-te 93.24 313 *e*P **P 13 14 23.8 +2.2**
HHC pmax pmax
comp=Z,21nm,1.0s
HHC pmax pmax
comp=Z,130nm,4.9s
CM01 Chiang Mai Arr 93.81 288 *e*P **P 13 14 25.7 +1.1**
CMAR Chiang Mai Arr 93.84 288 P **P 13 14 25.9 +1.2**
comp=Z,3.2nm,1.0s,baz=115,slow=2.5,SNR=15
CHTO Chiang Mai 93.97 289 *e*P **P 13 14 25.6 +0.3**
CHTO Chiang Mai 93.97 289 *e*P **P 13 14 25.6 +0.3**
CD2 Chengdu 94.69 301 *e*P **P 13 14 28.2 -0.2**
CD2 PP **PP 13 18 16.7 -0.6**
CD2 SKS **SKSac 13 25 00.4 -1.1**
CD2 S **ScS 13 25 38.9 -1.6**
CD2 SS **SS 13 32 04.6 +0.5**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,6.2s
LZH Lanzhou 96.69 306 *e*P **P 13 14 40.1 +2.5**
LZH pP sP 13 14 51.2 -1.5
LZH pmax pmax
comp=Z,16nm,1.0s
ECSD EROS Data Cent 97.32 46 *e*P **P 13 14 38.7 -1.4**
comp=Z,14nm,1.5s
YKA Yellowknife Ar 97.37 24 P Pdif 13 14 38.9 -0.9
comp=Z,0.6nm,0.7s,baz=239,slow=4.6,SNR=10
WMQ Urumqi 110.84 310 *e*PKP **PKiKP 13 19 39.6 -0.3**
WMQ LR LR
comp=Z,150nm,21.0s
WMQ LR LR
comp=Z,190nm,23.2s
WMQ LR LR
comp=Z,200nm,24.0s
KURK Kurchatov 117.85 316⇓ *i*PKIKP **PKPdf 13 19 53.4 +0.4**
KSH Kashi 118.80 304 *e*PKP **PKPdf 13 19 55.1 -0.3**
KSH SKS **SKSdf 13 27 02.7 -2.3**
KSH SKKS **SKKSac 13 28 01.8 -10**
KSH AMB AMB
comp=Z,77nm,5.0s
KSH LR LR
comp=Z,79nm,7.5s
KSH LR LR
comp=Z,100nm,5.9s
KSH LR LR
comp=Z,110nm,6.1s
BRVK Borovoye 122.96 319⇑ *i*PKIKP **PKPdf 13 20 04.9 +2.1**
ZRNK Zerenda 123.74 319 *e*PKIKP **PKPdf 13 20 03.0 -1.3**
ZRNK Zerenda 123.74 319 *e*PKPdf **PKPdf 13 20 03.0 -1.3**
FINES FINESS Array B 138.89 345 PKP **PKPdf 13 20 31.7 -0.9**
comp=Z,1.1nm,0.7s,baz=129,slow=4.4,SNR=2.9
HFS Hagfors 142.30 353 PKhKP PKPpre 13 20 34.0
comp=Z,2.0nm,0.7s,baz=275,slow=6.7,SNR=4.1
ANN Anapa 145.87 318 *i* PKP2 **PKPab 13 20 46.5 -0.1**
ANN pmax pmax
comp=Z,50nm,1.5s
SUW Suwalki 146.12 341 *e*PKP **PKPab 13 20 46.9 -0.4**
SUW Suwalki 146.12 341 *e*PKP2 **PKPab 13 20 46.8 -0.4**
AKASG Malin Array Be 146.57 332 PKPbc **PKPbc 13 20 47.2 -0.9**
comp=Z,1.6nm,0.6s,baz=36,slow=3.8,SNR=9.7
KIEV Kiev 146.59 332 *e*PKIKP **PKPdf 13 20 45.8 -0.7**
KIEV Kiev 146.59 332 *e*PKPdf **PKPdf 13 20 45.8 -0.7**
AK11 Malin Array Si 146.62 332 *e*PKPdf **PKPbc 13 20 46.8 -1.4**
SIM Simferopol' 147.81 320 *e*PKP2 **PKPab 13 20 53.5 -0.7**
SIM pmax pmax
comp=Z,11nm,0.7s
CWF Charnwood Fore 149.74 8 *e*PKPdf **PKPbc 13 20 53.7 -2.7**
CWF *e*PKPbc **PKiKP 13 20 57.9 +0.5**
OJC Ojcow 150.45 341 *e*PKP **PKPbc 13 20 59.6 +1.4**
OJC Ojcow 150.45 341 *e*PKIKP **PKPbc 13 20 59.6 +1.4**
BUR08 Bucovina Ar. S 150.62 332 *e*PKPbc **PKPbc 13 20 59.4 +0.6**
ASF Jabal al Asfar 150.63 295 PKPbc **PKPbc 13 20 58.6 -0.7**
comp=Z,1.7nm,0.3s,baz=37,slow=3.0,SNR=4.2
BURAR Bucovina Array 150.63 332⇑ *i*P **PKPbc 13 20 59.9 +1.0**
BURAR Bucovina Array 150.63 332⇑ PKIKP **PKPbc 13 20 59.9 +1.0**
KOLS Kolonicke sedl 150.74 337 *e*PKIKP **PKPbc 13 21 00.5 +1.5**
KOLS Kolonicke sedl 150.74 337 *e*PKP **PKPbc 13 21 00.5 +1.5**
BR131 Keskin Array S 150.74 312 *e*PKPbc **PKPbc 13 20 59.1 -0.3**
BRTR Keskin Array B 150.74 312 PKPbc **PKPbc 13 20 59.1 -0.3**
comp=Z,2.0nm,0.8s,baz=129,slow=3.0,SNR=9.7
KSP Ksiaz 150.80 346 *e*PKP **PKPbc 13 20 59.3 +0.3**
KSP Ksiaz 150.80 346 *e*PKIKP **PKPbc 13 20 59.3 +0.3**
CLL Collm 151.00 350 *e*PKPbc **PKPbc 13 20 59.0 -0.4**
comp=Z,37nm,1.8s
CLL *e*PKPab **PKPab 13 21 06.0 -0.9**
comp=Z,11nm,1.2s
CLL *i* pPKPbc **pPKPbc 13 21 13.4 +2.5**
comp=Z,25nm,1.1s
CLL *e* 13 21 27.0
CLL LmV 14 32 00.0
comp=Z,100nm,19.6s
CLL Collm 151.00 350 *e*PKIKP **PKPbc 13 20 59.0 -0.4**
CLL *e* 13 21 06.0
CLL *i* 13 21 13.4
CLL pmax pmax
comp=Z,37nm,1.8s
CLL pmax pmax
comp=Z,11nm,1.2s
CLL Collm 151.00 350 *e*PKPbc **PKPbc 13 20 59.2 -0.3**
NIE Niedzica 151.00 340 *e*PKP **PKPbc 13 21 01.2 +1.6**
NIE Niedzica 151.00 340 *e*PKIKP **PKPbc 13 21 01.2 +1.6**
CFR Carcaliu 151.00 326⇑ *i*P **PKPbc 13 20 59.7 +0.1**
CFR Carcaliu 151.00 326⇑ PKIKP **PKPbc 13 20 59.7 +0.1**
CRVS Cervenica-Dubn 151.05 338 *e*PKIKP **PKPbc 13 21 01.9 +2.2**
CRVS Cervenica-Dubn 151.05 338 *e*PKP **PKPbc 13 21 01.9 +2.2**
BRG Berggiesshubel 151.26 349 *e*PKP **PKPbc 13 21 00.9 +0.8**
comp=Z,18nm,1.5s
BRG *e* 13 21 14.4
comp=Z,15nm,1.2s
BRG Berggiesshubel 151.26 349 *e*PKIKP **PKPbc 13 21 00.9 +0.8**
BRG *e* 13 21 14.4
BRG pmax pmax
comp=Z,18nm,1.5s
DPC Dobruska-Polom 151.26 345⇑ *e*PKP **PKPbc 13 21 01.3 +1.1**
DPC *e*PKPAB **PKPab 13 21 10.2 +2.1**
DPC *ep*PKP **pPKPdf 13 21 14.3 +8.6**
DPC *e*PKP PKP 13 21 22.1
DPC Dobruska-Polom 151.26 345 *e*PKIKP **PKPbc 13 21 01.3 +1.1**
DPC *e* 13 21 10.2
DPC *e* 13 21 14.3
BR231 Keskin MP Arra 151.28 312 *e*PKPbc **PKPbc 13 20 59.8 -0.9**
PLOR Plostina 151.28 328⇑ *i*P **PKPbc 13 21 00.6 +0.2**
PLOR Plostina 151.28 328⇑ PKIKP **PKPbc 13 21 00.6 +0.2**
TIRR Tirgusor 151.34 324⇑ *i*P **PKPbc 13 21 01.1 +0.7**
TIRR Tirgusor 151.34 324⇑ PKIKP **PKPbc 13 21 01.1 +0.7**
MORC Moravsky Berou 151.48 343⇑ *i*P **PKPbc 13 21 01.5 +0.8**
MORC Moravsky Berou 151.48 343 *e*PKIKP **PKPbc 13 21 01.0 +0.3**
MORC Moravsky Berou 151.48 343 *e*PKPbc **PKPbc 13 21 01.0 +0.3**
LANS Liptovska Anna 151.49 340 *e*PKIKP **PKPbc 13 21 01.7 +0.9**
LANS Liptovska Anna 151.49 340 *e*PKP **PKPbc 13 21 01.7 +0.9**
MMAI Mount Meron Ar 151.69 298 PKPbc **PKPbc 13 21 02.5 +0.8**
comp=Z,1.7nm,0.6s,baz=144,slow=1.2,SNR=2.8
MMAI PKPab **PKPab 13 21 10.2 -0.4**
comp=Z,0.6nm,0.3s,baz=19,slow=5.3,SNR=4.1
MLR Muntele Rosu 151.89 328 PKPbc **PKPbc 13 21 02.7 +0.8**
comp=Z,0.4nm,0.6s,baz=106,slow=4.0,SNR=4.4
MLR Muntele Rosu 151.89 328⇑ *i*P **PKPbc 13 21 02.7 +0.8**
MLR Muntele Rosu 151.89 328 *e*PKIKP **PKPbc 13 21 02.3 +0.4**
MLR Muntele Rosu 151.89 328 *e*PKPbc **PKPbc 13 21 02.3 +0.4**
VYHS Vyhne 152.27 341 *e*PKIKP **PKPbc 13 21 03.5 +1.0**
VYHS Vyhne 152.27 341 *e*PKP **PKPbc 13 21 03.5 +1.0**

DRGR		**152.33 334**	*i*P	**PKPbc**	**13 21 04.9**	**+2.1**
DRGR		**152.33 334**	⇓PKIKP	**PKPbc**	**13 21 04.9**	**+2.1**
VOIR		**152.35 329**	⇑*i*P	**PKPbc**	**13 21 02.5**	**-0.4**
VOIR		**152.35 329**	⇑PKIKP	**PKPbc**	**13 21 02.5**	**-0.4**
KHC	**Kasperske Hory**	**152.99 348**	*e*PKIKP	**PKPdf**	**13 20 56.5**	**-0.3**
KHC	**Kasperske Hory**	**152.99 348**	*e*PKPdf	**PKPdf**	**13 20 56.5**	**-0.3**
ESDC	**Sonseca Array**	**161.47 23**	PKPab	**PKPab**	**13 21 51.3**	**-0.9**
	comp=Z,0.3nm,0.4s,baz=20,slow=1.5,SNR=3.1					
TORD	**Torodi Ar. Bea**	**169.72 160**	PKPab	**PKPab**	**13 22 29.1**	**+0.1**
	comp=Z,0.5nm,0.7s,baz=211,slow=4.0,SNR=3.0					

*ISCJB **11** 13:04:12.8±0.7, 15°.6S±0°.2×177°.6W±0°.1, h400km, mb3.8/12, Error ellipse: s-maj=28.4km s-min=12.3km az=154.0*
*IDC **11** 13:04:15.4±2.0, 15°.79S×177°.47W, h423km±22km, mb3.5/12, mb1 3.7/13, mb1mx3.4/39, mbtmp4.3/13, Error ellipse: s-maj=30.2km s-min=12.6km az=148.0*
ISC 11 13:04:13.7±0.7, 15°.7S±0°.2×177°.6W±0°.1, h400km, n18, σ1℗08/18, mb3.9/12, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**5.86**	**73**	P	**Pn**	**13 05 46.2**	**+1.3**
	4.9nm,0.3s,baz=287,slow=19,SNR=4.3						
CTA	**Charters Tower**	**34.68**	**257**	P	**P**	**13 10 29.9**	**+2.1**
	2.1nm,0.6s,baz=98,slow=14,SNR=2.6						
PMG	**Port Moresby**	**34.98**	**276**	P	**P**	**13 10 31.9**	**+1.4**
	11nm,0.8s,baz=86,slow=16,SNR=2.5						
STKA	**Stephens Creek**	**40.44**	**239**	P	**P**	**13 11 14.8**	**-0.5**
	1.5nm,0.5s,baz=86,slow=13,SNR=3.5						
WRA	**Warramunga Arr**	**45.88**	**257**	P	**P**	**13 11 57.8**	**-0.8**
	0.6nm,0.3s,baz=90,slow=7.1,SNR=7.5						
WRA				PcP	**PcP**	**13 13 27.0**	**-1.1**
	0.5nm,0.6s,baz=90,slow=3.6,SNR=3.2						
ASAR	**Alice Springs**	**46.22**	**252**	P	**P**	**13 12 00.7**	**-0.4**
	6.7nm,0.6s,baz=85,slow=7.9,SNR=23						
ASAR				PcP	**PcP**	**13 13 27.9**	**-1.3**
	0.7nm,0.6s,baz=95,slow=3.6,SNR=3.7						
PETK	**Petropavlovsk-**	**71.77**	**345**	P	**P**	**13 14 53.6**	**-0.1**
	3.1nm,0.8s,baz=124,slow=9.6,SNR=3.9						
SEY	**Seymchan**	**81.82**	**347**	P	**P**	**13 15 48.4**	**-0.5**
	2.2nm,0.6s,baz=169,slow=7.6,SNR=5.6						
ILAR	**Eielson Array**	**83.56**	**13**	P	**P**	**13 15 57.0**	**-0.8**
	2.1nm,0.6s,baz=222,slow=5.1,SNR=22						
TXAR	**Lajitas Array**	**84.12**	**57**	P	**P**	**13 16 02.5**	**+1.0**
	2.1nm,0.8s,baz=220,slow=7.1,SNR=11						
PDAR	**Pinedale Array**	**85.19**	**43**	P	**P**	**13 16 06.2**	**-0.5**
	0.4nm,0.4s,baz=132,slow=2.2,SNR=4.2						
MAW	**Mawson**	**86.21**	**200**	P	**P**	**13 16 10.2**	**-0.6**
	1.3nm,0.7s,baz=108,slow=11,SNR=3.6						
YKA	**Yellowknife Ar**	**91.99**	**24**	P	**P**	**13 16 37.2**	**-0.5**
	0.7nm,0.6s,baz=238,slow=4.6,SNR=10						
ARCES	**ARCESS Array B**	**124.29**	**350**	PKP	**PKPdf**	**13 22 23.6**	**-1.5**
	2.7nm,0.9s,baz=0.0,slow=1.5,SNR=4.7						
BRTR	**Keskin Array B**	**143.77**	**317**	PKP	PKPab	13 23 00.8	-0.1
	5.4nm,0.8s,baz=93,slow=2.2,SNR=12						
MLR	**Muntele Rosu**	**144.34**	**331**	PKP	PKPbc	13 23 01.9	-0.6
	0.4nm,0.5s,baz=108,slow=3.2,SNR=5.5						
MMAI	**Mount Meron Ar**	**145.58**	**306**	PKPbc	**PKPdf**	**13 23 06.0**	**+0.3**
	2.0nm,0.5s,baz=94,slow=5.0,SNR=3.6						
GERES	**GERESS Array B**	**145.68**	**347**	PKPbc	**PKPdf**	**13 23 05.9**	**+0.6**
	1.1nm,0.4s,baz=26,slow=4.6,SNR=6.6						

*IDC **11** 13:09:19.8±0.9, 29°.32S×176°.06W, h0km, mb4.1/5, mb1 4.3/6, mb1mx4.0/26, mbtmp4.1/6, ML3.4/1, MS3.8/2, Ms1 3.8/2, ms1mx3.2/27, Error ellipse: s-maj=38.6km s-min=19.8km az=167.0*
*NEIC **11** 13:09:21.5±0.8, 29°.27S×176°.11W, h10km, mb4.2/1, Error ellipse: s-maj=22.9km s-min=17.3km az=154.0*
ISC 11 13:09:24.3±0.8, 29°.42S±0°.09×176°.20W±0°.07, h28km, n25, σ1℗30/21, mb4.1/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.51**	**276**	Pn	**Pb**	**13 09 51.8**	**+0.1**
	447nm,0.3s,baz=101,slow=6.5,SNR=23						
RAO				Sn	**Sb**	**13 10 12.0**	**+1.6**
	878nm,0.3s,baz=5.5,slow=23,SNR=13						
RAO	**Raoul Island**	**1.51**	**276**	*e*Pn	**Pb**	**13 09 51.8**	**+0.1**
RAO				*e*Sn	**Sn**	**13 10 06.9**	**-1.4**
URZ	**Urewera**	**10.43**	**210**	Pn	**Pn**	**13 11 50.6**	**-1.3**
	0.3nm,0.3s,baz=343,slow=14,SNR=3.2						
URZ				Sn	**Sn**	**13 13 46.2**	**-1.5**
	2.4nm,0.3s,baz=120,slow=20,SNR=10						
URZ	**Urewera**	**10.43**	**210**	Pn	**Pn**	**13 11 51.8**	**-0.1**
URZ				Sn	**Sn**	**13 13 46.2**	**-1.5**
RAR	**Rarotonga**	**16.93**	**65**	LR	LR	13 18 35.3	
	comp=Z,90nm,19.6s,baz=256,slow=33						
RPZ	**Rata Peaks**	**17.52**	**212**	S	Sn	13 16 25.1	-16
	0.3nm,0.3s,baz=73,slow=17,SNR=2.4						
STKA	**Stephens Creek**	**36.23**	**255**	P	**P**	**13 16 26.2**	**+1.2**
	3.3nm,1.1s,baz=88,slow=12,SNR=3.3						
ASAR	**Alice Springs**	**44.74**	**265**	P	**P**	**13 17 35.1**	**-0.3**
	0.9nm,0.4s,baz=106,slow=7.6,SNR=18						
ASAR				PcP	**PP**	**13 19 20.7**	**+0.6**
	0.5nm,0.9s,baz=96,slow=3.7,SNR=3.0						
WRAB	**Tennant Creek**	**45.63**	**270**	*e*P	**P**	**13 17 42.9**	**+0.3**
	2.5nm,0.8s						
WRA	**Warramunga Arr**	**45.64**	**270**	P	**P**	**13 17 41.6**	**-1.0**
	1.8nm,0.5s,baz=109,slow=7.9,SNR=18						
GUMO	**Guam**	**56.92**	**313**	LR	LR	13 40 45.3	
	comp=Z,344nm,21.4s,baz=298,slow=33						
QSPA	**South Pole Qui**	**60.69**	**180**	*e*P	**P**	**13 19 36.3**	**+3.4**
TXAR	**Lajitas Array**	**90.54**	**56**	P	**P**	**13 22 23.6**	**-0.4**
	0.8nm,1.1s,baz=187,slow=6.2,SNR=5.1						
ILAR	**Eielson Array**	**96.63**	**12**	P	**P**	**13 22 50.2**	**-0.8**
	0.3nm,0.8s,baz=233,slow=5.1,SNR=4.8						
H10S3	**ASCENSION HYDR**	**37.91**	**152**	T	T	16 04 22.4	
	baz=202						
H10S2	**ASCENSION HYDR**	**37.91**	**152**	T	T	16 04 23.0	
	baz=202						
H10S1	**ASCENSION HYDR**	**37.93**	**152**	T	T	16 04 21.3	
	baz=202						
H10N3	**ASCENSION HYDR**	**38.98**	**152**	T	T	16 05 27.1	
	baz=205						
H10N1	**ASCENSION HYDR**	**38.98**	**152**	T	T	16 05 24.5	
	baz=205						
H10N2	**ASCENSION HYDR**	**39.00**	**152**	T	T	16 05 26.7	
	baz=205						
FINES	**FINESS Array B**	**144.73**	**342**	PKP	**PKPab**	**13 28 56.0**	**-0.6**
	2.1nm,0.8s,baz=47,slow=8.4,SNR=6.0						
NB2	**NORSAR Subarra**	**147.99**	**353**	PKP	**PKPbc**	**13 29 05.6**	**-0.8**
	comp=Z,0.9nm,0.5s,baz=8.7,slow=2.9						
NOA	**NORSAR Array B**	**147.99**	**353**	PKPbc	**PKPbc**	**13 29 04.8**	**-1.7**
	comp=Z,2.2nm,0.8s,baz=12,slow=4.5,SNR=5.0						
AKASG	**Malin Array Be**	**151.43**	**325**	PKPbc	**PKPbc**	**13 29 14.7**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=45,slow=2.6,SNR=6.2						
TORD	**Torodi Ar. Bea**	**163.69**	**173**	PKPab	**PKPab**	**13 30 17.5**	**+0.4**
	comp=Z,0.7nm,0.9s,baz=203,slow=3.9,SNR=3.1						

*NEIC **11** 13:10:59.7±1.1, 39°.01N×144°.85E, h10km, mb4.5/4, Error ellipse: s-maj=20.8km s-min=7.8km az=121.0*
*NIED **11** 13:11:00, 39°.40N×143°.70E, h14km, Mw3.9 Best double couple: M0 7.51000×10^14 NP1:φ0=196.00000°, δ36.00000°, λ86.00000°. NP2:φ0=21.00000°, δ54.00000°, λ93.00000°.*
*ISCJB **11** 13:11:06.5±0.5, 39°.44N±0°.04×143°.68E±0°.06, h11km, mb4.0/17, Error ellipse: s-maj=7.3km s-min=3.7km az=33.7*
*IDC **11** 13:11:06.6±1.0, 39°.34N×143°.65E, h0km, mb3.7/9, mb1 3.8/13, mb1mx3.7/52, mbtmp3.8/13, ML3.2/4, Error ellipse: s-maj=23.8km s-min=18.5km az=109.0*
*JMA **11** 13:11:08.3±0.2, 39°.42N×143°.71E, h37km, M4.2*
ISC 11 13:11:07.8±0.8, 39°.41N±0°.05×143°.74E±0°.07, h11km, n51, σ1℗62/59, mb4.1/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.50**	**277**	P	**Pn**	**13 11 33.2**	**-1.4**
JTH	**Tanohata**	**1.54**	**291**	P	**Pn**	**13 11 33.7**	**-1.5**
OFUJ	**Ofunato**	**1.64**	**259**	P	**Pn**	**13 11 35.2**	**-1.4**
OFUJ				*e*S	**Sn**	**13 11 54.9**	**-2.8**
JOM	**Ohasama**	**1.90**	**273**	P	**Pn**	**13 11 39.4**	**-0.7**
JANG	**Nango**	**1.96**	**300**	P	**Pn**	**13 11 39.2**	**-1.8**
JMK	**Ichinoseki**	**2.01**	**258**	P	**Pn**	**13 11 40.8**	**-0.9**
JMK				*e*S	**Sn**	**13 12 03.9**	**-2.9**
JIO	**Ouri**	**2.10**	**244**	P	**Pn**	**13 11 41.5**	**-1.3**
JIO				S	**Sn**	**13 12 06.0**	**-2.9**
JRG	**Rokugo**	**2.41**	**271**	P	**Pn**	**13 11 46.6**	**-0.5**
JTM	**Tenmabayashi**	**2.47**	**305**	P	**Pn**	**13 11 47.3**	**-0.7**
JTM				*e*S	**Sn**	**13 12 16.5**	**-1.6**
JAH	**Hinai**	**2.52**	**289**	P	**Pn**	**13 11 48.2**	**-0.4**
JOU	**Okura**	**2.62**	**247**	P	**Pn**	**13 11 49.3**	**-0.7**
JOU				*e*S	**Sn**	**13 12 20.8**	**-1.0**
ERM	**Erimo**	**2.64**	**351**	*e*Pn	**Pn**	**13 11 49.5**	**-0.8**
JYK	**Kaneyama**	**2.67**	**260**	P	**Pn**	**13 11 50.3**	**-0.5**
JOT	**Ohata**	**2.85**	**315**	P	**Pn**	**13 11 52.4**	**-0.8**
JNBK	**Urakawa-nobuka**	**2.96**	**346**	P	**Pn**	**13 11 55.0**	**+0.2**
JNBK				*e*S	**Sn**	**13 12 29.1**	**-1.2**
JCH	**Churui**	**3.21**	**355**	P	**Pn**	**13 11 57.6**	**-0.6**
JCH				*e*S	**Sn**	**13 12 33.8**	**-2.7**
JAK	**Akkeshi**	**3.65**	**11**	P	**Pn**	**13 12 03.4**	**-0.8**
JAK				*e*S	**Sn**	**13 12 45.1**	**-2.2**
ASAJ	**Asahikawa**	**4.78**	**350**	*e*Pn	**Pn**	**13 12 19.5**	**-0.2**
MAJO	**Matsushiro**	**5.22**	**239**	*e*Pn	**Pn**	**13 12 26.5**	**+0.6**
MAT	**Matsushiro**	**5.22**	**239**	P	**Pn**	**13 12 26.6**	**+0.7**
MAT				S	**Sn**	**13 13 28.1**	**+2.0**
MJAR	**Matsushiro Arr**	**5.22**	**238**	Pn	**Pn**	**13 12 26.5**	**+0.6**
	2.5nm,0.3s,baz=53,slow=11,SNR=66						
MJB9	**Matsu-Tunnel**	**5.23**	**239**	*e*Pn	**Pn**	**13 12 26.6**	**+0.7**
INU	**Inuyama**	**6.71**	**235**	*e*Pn	**Pn**	**13 12 46.1**	**-0.2**
JHJ2	**Mitsune**	**7.04**	**208**	Pn	Pn	13 12 42.6	-8.2
JHJ	**Hachijo jima 2**	**7.04**	**208**	Pn	**Pn**	**13 12 50.0**	**-0.9**
	3.4nm,0.3s,baz=56,slow=14,SNR=4.0						
JHJ				Sn	**Sn**	**13 14 03.2**	**-7.7**
	4.2nm,0.3s,baz=18,slow=15,SNR=4.7						
USRK	**Ussuriysk Ar.**	**9.99**	**302**	Pn	**Pn**	**13 13 31.9**	**+0.7**
	0.5nm,0.3s,baz=101,slow=6.0,SNR=20						
KSRS	**Korea Array**	**12.56**	**266**	Pn	**Pn**	**13 14 06.8**	**+0.4**
	0.1nm,0.3s,baz=82,slow=13,SNR=4.4						
CN2	**Changchun**	**14.37**	**294**	*e*P	**P**	**13 14 37.0**	**-1.1**
PEA0	**Petropavlovsk-**	**16.71**	**30**	*e*Pn	Pn	13 14 53.9	-7.9
SEY	**Seymchan**	**24.12**	**10**	P	**P**	**13 16 24.1**	**+0.8**
	2.4nm,0.9s,baz=151,slow=7.6,SNR=4.0						
HHC	**Hu-ho-hao-te**	**24.57**	**284**	*e*P	**P**	**13 16 27.4**	**-0.4**
HHC				pmax	pmax		
	comp=Z,12nm,1.0s						
HHC				pmax	pmax		
	comp=Z,190nm,7.8s						
SONA1	**Songino Array**	**28.09**	**300**	*e*P	**P**	**13 16 58.9**	**-0.6**
SONM	**Songino Array**	**28.09**	**300**	P	**P**	**13 16 59.3**	**-0.2**
	comp=Z,0.8nm,0.5s,baz=93,slow=9.1,SNR=6.9						
BILL	**Bilibino**	**31.23**	**16**	*e*P	P	13 17 19.9	-7.1
	comp=Z,31nm,1.8s						
GTA	**Gaotai**	**33.69**	**284**	P	**P**	**13 17 49.7**	**+0.8**
GTA				pP	sP	13 17 58.7	+5.0
GTA				sP	pP	13 18 02.7	+10
GTA				pmax	pmax		
	comp=Z,6.0nm,1.1s						
KMI	**Kunming**	**37.16**	**260**	P	**P**	**13 18 21.7**	**+2.7**
KMI				pmax	pmax		
	comp=Z,5.0nm,0.9s						
WMQ	**Urumqi**	**41.45**	**295**	*e*P	**P**	**13 18 56.3**	**+1.8**
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
ZAA0	**Zalesovo Array**	**41.72**	**310**	*e*P	**P**	**13 18 56.4**	**-0.1**
ZALV	**Zalesovo Beam**	**41.72**	**310**	P	**P**	**13 18 56.6**	**+0.2**
	comp=Z,2.8nm,0.5s,baz=90,slow=7.6,SNR=12						
ZALV				PcP	**PcP**	**13 20 52.9**	**+0.1**
	comp=Z,0.5nm,0.3s,baz=96,slow=2.9,SNR=3.1						
MK01	**Makanchi Array**	**44.45**	**300**	*e*P	**P**	**13 19 18.3**	**-0.4**
MK31	**Makanchi Array**	**44.45**	**300**	*e*P	**P**	**13 19 18.6**	**-0.2**
MKAR	**Makanchi Array**	**44.45**	**300**	P	**P**	**13 19 18.7**	**-0.1**
	comp=Z,1.5nm,0.7s,baz=83,slow=9.7,SNR=15						
MKAR	**Makanchi Array**	**44.45**	**300**	*e*P	**P**	**13 19 18.6**	**-0.2**
MAKZ	**Makanchi**	**44.66**	**301**	*e*P	**P**	**13 19 19.9**	**-0.5**
	comp=Z,2.0nm,0.7s						
KURK	**Kurchatov**	**45.95**	**307**	*e*P	**P**	**13 19 30.0**	**-0.5**
	comp=Z,5.2nm,0.5s						
ILAR	**Eielson Array**	**46.51**	**34**	P	**P**	**13 19 36.6**	**+1.9**
	comp=Z,0.4nm,0.9s,baz=267,slow=6.3,SNR=3.5						
ABKAR	**Akbulak array**	**57.82**	**310**	*e*P	**P**	**13 20 59.0**	**-0.1**
	comp=Z,0.9nm,0.6s						
WRA	**Warramunga Arr**	**59.69**	**190**	P	**P**	**13 21 11.2**	**-1.2**
	comp=Z,0.3nm,0.6s,baz=9.5,slow=6.8,SNR=4.4						
YKA	**Yellowknife Ar**	**60.83**	**31**	P	**P**	**13 21 21.4**	**+1.8**
	comp=Z,0.2nm,0.8s,baz=302,slow=7.0,SNR=4.3						
ASAR	**Alice Springs**	**63.42**	**190**	P	**P**	**13 21 37.9**	**+0.5**
	comp=Z,0.3nm,0.9s,baz=24,slow=7.2,SNR=2.9						
FINES	**FINESS Array B**	**67.56**	**333**	P	**P**	**13 22 04.6**	**+0.8**
	comp=Z,1.0nm,0.8s,baz=30,slow=11,SNR=2.6						

*CSEM **11** 13:20:00.8±0.6, 36°.96N×37°.55E, h10km, MD2.4, Error ellipse: s-maj=11.5km s-min=9.1km az=141.0*
*ISK **11** 13:20:00.5, 36°.95N×37°.53E, h9km, MD2.4*
*DDA **11** 13:20:02.5, 37°.10N×37°.48E, h7km, Md2.7*
*ISCJB **11** 13:20:04.0±0.9, 37°.09N±0°.04×37°.47E±0°.05, h12km±6km, Error ellipse: s-maj=6.6km s-min=6.2km az=21.0*
*NSSC **11** 13:20:06.6±1.0, 36°.17N×37°.38E, h10km±18km, ML1.9*
ISC 11 13:20:02.1±1.0, 37°.02N±0°.04×37°.51E±0°.03, h13km±8km, n20, σ0℗83/32, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GAZ	**Gaziantep**	**0.28**	**303**	*e*PG	**Pg**	**13 20 07.7**	**-0.4**
GAZ				*e*SG	**Sg**	**13 20 12.9**	**+0.8**
GAZ	**Gaziantep**	**0.28**	**303**	*e*Pg	**Pg**	**13 20 07.7**	**-0.4**
GAZ				*e*Sg	**Sg**	**13 20 12.9**	**+0.8**
KMRS	**Kahramanmaras**	**0.69**	**315**	*e*PG	**Pg**	**13 20 15.4**	**-0.1**
KMRS				*e*SG	**Sb**	**13 20 26.3**	**+1.0**
KMRS	**Kahramanmaras**	**0.69**	**315**	*e*Pg	**Pg**	**13 20 15.4**	**-0.1**
KMRS				*e*Sg	**Sb**	**13 20 26.3**	**+1.0**
KAMA	**Osmaniye**	**0.69**	**284**	*i* P	**Pg**	**13 20 13.9**	**-1.7**
DRWC	**Darouich**	**0.78**	**240**	*e*P	**Pn**	**13 20 20.3**	**+1.4**
DRWC				*e*S	**Sn**	**13 20 31.0**	**+0.6**
DRWC				AML	AML	13 20 37.6	
	comp=E,23nm,0.5s						
DRWC				AML	AML	13 20 38.1	
	comp=N,41nm,0.3s						
ANDN	**Andirin**	**1.08**	**302**	*i* P	**Pb**	**13 20 22.6**	**-0.1**
ANDN				*i* S	**Sn**	**13 20 37.7**	**-0.2**
ANDN	**Andirin**	**1.08**	**302**	P	**Pb**	**13 20 22.6**	**-0.1**
ANDN				S	**Sn**	**13 20 37.7**	**-0.2**
TAHT	**Tahtakopru-Hat**	**1.24**	**239**	*e*PN	**Pn**	**13 20 24.4**	**-0.7**
TAHT	**Tahtakopru-Hat**	**1.24**	**239**	*e*Pn	**Pn**	**13 20 24.4**	**-0.7**
AKCD	**Akcadag**	**1.32**	**14**	*i* P	**Pb**	**13 20 26.8**	**0.0**
AKCD				*i* S	**Sb**	**13 20 43.2**	**-0.4**
AKCD	**Akcadag**	**1.32**	**14**	P	**Pb**	**13 20 26.8**	**0.0**
AKCD				S	**Sb**	**13 20 43.2**	**-0.4**
KOZT	**Kozan**	**1.42**	**290**	*e*PN	**Pn**	**13 20 27.6**	**0.0**
KOZT	**Kozan**	**1.42**	**290**	*e*Pn	**Pn**	**13 20 27.6**	**0.0**
DARE	**Darende-Malaty**	**1.55**	**359**	*e*PN	**Pb**	**13 20 30.4**	**-0.3**
DARE	**Darende-Malaty**	**1.55**	**359**	*e*Pn	**Pb**	**13 20 30.4**	**-0.3**
SARI	**SarD1z-Kayseri**	**1.63**	**328**	*e*PN	**Pn**	**13 20 31.0**	**+0.3**
KSRV	**Kasrt alli**	**1.67**	**133**	*i* P	**Pg**	**13 20 35.3**	**+1.1**
KSRV				*e*S	**Sg**	**13 20 55.2**	**-0.6**
KSRV				AML	AML	13 21 03.7	
	comp=E,21nm,0.2s						
KSRV				AML	AML	13 21 07.8	
	comp=N,26nm,0.4s						
SFNV	**Sufian**	**2.18**	**105**	*i* P	**Pg**	**13 20 42.8**	**-1.2**
SFNV				*e*S	**Sg**	**13 21 10.2**	**-2.0**
SFNV				AML	AML	13 21 19.9	
	comp=E,18nm,0.4s						
SFNV				AML	AML	13 21 30.0	
	comp=N,14nm,0.4s						
KBSD	**Kabsdagh**	**2.43**	**89**	*i* P	**Pg**	**13 20 49.9**	**+1.2**
KBSD				*e*S	**Sg**	**13 21 20.7**	**+0.4**
KBSD				AML	AML	13 21 27.9	
	comp=E,18nm,0.4s						
KBSD				AML	AML	13 21 29.3	
	comp=N,20nm,0.4s						

MEX 11 13:20:31.5±0.4, 15°.89N×98°.27W, h15km±82km, MD3.6, Off coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.52**	**15**	*e*P	Pg	13 20 40.3	-1.5
PNIG				*e*S	Sg	13 20 47.3	-1.6
TLIG	**Tlapa**	**1.69**	**350**	*e*P	Pn	13 20 57.4	-3.2
TLIG				*i* S	Sn	13 21 16.7	-5.4
MEIG	**Mezcala**	**2.40**	**328**	*e*P	Pn	13 21 06.7	-3.8
MEIG				*e*S	Sn	13 21 35.7	-3.9

*NIED **11** 13:21:00, 38°.10N×143°.40E, h14km, Mw3.9 Best double couple: M0 7.36000×10^14 NP1:φ0=194.00000°, δ24.00000°, λ126.00000°. NP2:φ0=335.00000°, δ71.00000°, λ75.00000°.*
*IDC **11** 13:21:30.3±1.1, 38°.00N×143°.62E, h0km, mb3.8/10, mb1 4.0/14, mb1mx3.8/44, mbtmp3.9/14, ML3.3/4, MS3.6/1, Ms1 3.6/1, ms1mx2.7/47, Error ellipse: s-maj=28.7km s-min=17.7km az=89.0*
*ISCJB **11** 13:21:31.3±0.6, 37°.95N±0°.04×143°.52E±0°.06, h19km, mb4.0/13, Error ellipse: s-maj=7.2km s-min=4.8km az=29.1*
*NEIC **11** 13:21:31.6±0.5, 38°.01N×143°.62E, h10km, mb4.6/3, Error ellipse: s-maj=11.3km s-min=5.8km az=106.0*
*JMA **11** 13:21:33.7±0.2, 38°.07N×143°.40E, h37km, M4.0*
ISC 11 13:21:33.5±0.8, 37°.92N±0°.06×143°.47E±0°.09, h19km, n47, σ1℗46/50, mb3.9/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.75**	**288**	P	**Pn**	**13 22 01.4**	**-1.4**
OFUJ	**Ofunato**	**1.82**	**310**	P	**Pn**	**13 22 01.7**	**-2.1**
JMK	**Ichinoseki**	**2.04**	**301**	P	**Pn**	**13 22 05.2**	**-1.6**
JMM	**Marumori**	**2.12**	**269**	P	**Pn**	**13 22 07.1**	**-0.7**
JMM				*e*S	**Sn**	**13 22 30.9**	**-2.7**
JFK	**Kawauchi**	**2.13**	**256**	P	**Pn**	**13 22 07.2**	**-0.9**
JOU	**Okura**	**2.26**	**282**	P	**Pn**	**13 22 09.2**	**-0.6**
JOM	**Ohasama**	**2.30**	**313**	P	**Pn**	**13 22 08.7**	**-1.7**
JFT	**Otama**	**2.52**	**262**	P	**Pn**	**13 22 13.5**	**+0.1**
JFT				S	**Sn**	**13 22 42.8**	**-0.7**
JYK	**Kaneyama**	**2.64**	**293**	P	**Pn**	**13 22 14.2**	**-0.8**
JRG	**Rokugo**	**2.66**	**304**	P	**Pn**	**13 22 14.1**	**-1.2**
JANG	**Nango**	**2.88**	**329**	P	**Pn**	**13 22 17.5**	**-0.8**
JNS	**Sasagawa**	**3.29**	**269**	P	**Pn**	**13 22 24.1**	**+0.2**
JAW	**Awa shima**	**3.37**	**280**	P	**Pn**	**13 22 25.2**	**+0.2**
JTM	**Tenmabayashi**	**3.41**	**328**	P	**Pn**	**13 22 27.6**	**+2.0**
JAG	**Ashikaga**	**3.54**	**246**	P	**Pn**	**13 22 27.6**	**+0.2**
JAG				S	**Sn**	**13 23 07.6**	**-1.1**
BSO1	**Boso 1**	**3.83**	**212**	P	**Pn**	**13 22 31.2**	**+0.2**
BSO1				*e*S	**Sn**	**13 23 15.6**	**+0.4**
JOT	**Ohata**	**3.93**	**332**	P	**Pn**	**13 22 32.0**	**-0.7**
ERM	**Erimo**	**4.09**	**357**	*e*Pn	**Pn**	**13 22 32.7**	**-2.3**
JSD	**Sado**	**4.12**	**273**	P	**Pn**	**13 22 34.5**	**-0.8**
JRY	**Ryogami san**	**4.12**	**244**	P	**Pn**	**13 22 35.9**	**+0.4**
MJAR	**Matsushiro Arr**	**4.42**	**253**	Pn	**Pn**	**13 22 41.0**	**+1.4**
	3.0nm,0.3s,baz=75,slow=15,SNR=32						
MJAR				Sn	**Sn**	**13 23 32.4**	**+1.9**
	2.2nm,0.3s,baz=353,slow=8.8,SNR=4.0						
MAJO	**Matsushiro**	**4.42**	**253**	*e*Pn	**Pn**	**13 22 40.6**	**+1.1**
MAT	**Matsushiro**	**4.42**	**253**	P	**Pn**	**13 22 41.3**	**+1.8**
MAT				S	**Sn**	**13 23 33.2**	**+2.7**
JHJ2	**Mitsune**	**5.65**	**213**	*e*Pn	**Pn**	**13 22 56.4**	**0.0**
JHJ	**Hachijo jima 2**	**5.66**	**213**	Pn	**Pn**	**13 22 56.2**	**-0.3**
	16nm,0.3s,baz=336,slow=22,SNR=40						
JHJ				Sn	**Sn**	**13 23 55.0**	**-5.9**
	20nm,0.3s,baz=90,slow=20,SNR=8.9						
ASAJ	**Asahikawa**	**6.22**	**354**	Pn	**Pn**	**13 23 02.5**	**-1.7**
	baz=234,slow=8.7						
USRK	**Ussuriysk Ar.**	**10.69**	**310**	Pn	**Pn**	**13 24 06.4**	**+0.8**
	0.2nm,0.3s,baz=129,slow=15,SNR=3.7						
JNU	**Nakatsue**	**11.32**	**249**	Pn	**Pn**	**13 24 15.5**	**+1.3**
	0.1nm,0.3s,baz=34,slow=3.6,SNR=3.4						
JNU				LR	LR	13 29 12.3	
	comp=Z,293nm,20.2s,baz=300,slow=40						
H11N2	**WAKE ISLAND Hy**	**27.26**	**125**	T	T	13 56 00.3	
	baz=317,slow=74,SNR=14						
H11N1	**WAKE ISLAND Hy**	**27.27**	**125**	T	T	13 55 59.1	
	baz=317,slow=74,SNR=10.0						
H11N3	**WAKE ISLAND Hy**	**27.28**	**125**	T	T	13 55 59.1	
	baz=317,slow=74,SNR=12						
H11S1	**WAKE ISLAND Hy**	**28.03**	**127**	T	T	13 56 58

1.1nm,0.3s

WRA	**Warramunga Arr**	**47.48**	**264**	P	**P**	**13 37 11.1**	**-2.1**
	0.8nm,0.5s,baz=93,slow=8.4,SNR=39						
PETK	**Petropavlovsk-**	**79.55**	**343**	P	**P**	**13 40 44.6**	**+0.4**
	2.8nm,0.8s,baz=103,slow=4.7,SNR=5.9						
MAW	**Mawson**	**80.28**	**199**	P	**P**	**13 40 49.0**	**+0.9**
	1.5nm,0.4s,baz=172,slow=10,SNR=4.4						
TXAR	**Lajitas Array**	**85.75**	**56**	P	**P**	**13 41 17.7**	**+0.6**
	1.3nm,1.0s,baz=205,slow=8.0,SNR=9.9						
PDAR	**Pinedale Array**	**88.63**	**42**	P	**P**	**13 41 30.2**	**-0.8**
	0.1nm,0.3s,baz=284,slow=4.5,SNR=3.4						
ILAR	**Eielson Array**	**90.08**	**11**	P	**P**	**13 41 36.5**	**-0.4**
	1.1nm,1.0s,baz=210,slow=6.3,SNR=6.0						
CMAR	**Chiang Mai Arr**	**93.97**	**288**	P	**P**	**13 41 56.7**	**+0.6**
	1.5nm,1.1s,baz=152,slow=4.1,SNR=3.4						
YKA	**Yellowknife Ar**	**97.47**	**24**	P	**P**	**13 42 10.5**	**-0.4**
	0.3nm,0.7s,baz=239,slow=4.6,SNR=5.9						
SCHQ	**Schefferville**	**118.63**	**39**	PKP	**PKPdf**	**13 47 25.2**	**+0.1**
	3.0nm,0.6s,baz=206,slow=18,SNR=2.5						
AKASG	**Malin Array Be**	**146.75**	**332**	PKPbc	**PKPdf**	**13 48 18.5**	**+0.9**
	0.7nm,0.5s,baz=38,slow=4.0,SNR=5.5						
BRTR	**Keskin Array B**	**150.91**	**312**	PKPbc	**PKPbc**	**13 48 29.9**	**-0.7**
	0.8nm,0.7s,baz=85,slow=2.6,SNR=5.2						

*IDC **11** 13:39:40.0±0.6,28.˚50S×176.˚81W,h0km,mb4.5/14, mb1 4.7/14,mb1mx4.5/27,mbtmp4.5/14,MS4.3/22, Ms1 4.3/22,ms1mx4.2/32,Error ellipse: s-maj=20.5km s-min=14.8km az=138.0*

*ISCJB **11** 13:39:43.0±0.4,28.˚48S±0.˚08×176.˚83W±0.˚08,h29km, mb4.8/23,MS4.3/19,Error ellipse: s-maj=12.6km s-min=8.1km az=138.1*

*NEIC **11** 13:39:43.9±3.2,28.˚51S×176.˚85W,h24km±22km,mb5.4/11, Error ellipse: s-maj=11.4km s-min=8.8km az=164.0*

*GCMT **11** 13:39:43.9±0.3,28.˚59S×176.˚43W,h23km,MW5.1/74, Moment Tensor Solution. s59,c70; s74,c111; Duration: 0 Moment tensor: Scale 10^16^Nm; Mrr4.69±.23; Mθθ-0.23±.16; Mϕϕ-4.46±.15; Mrθ0.43±.26; Mrϕ-1.51±.10; Mθϕ2.60±.20; Best double couple: M05.49200×10^16^ NP1:ϕs202.00000°,δ31.00000°,λ97.00000°. Principal axes: T 5.3770, Plg75.0000°, Azm271.0000°; N 0.2250, Plg4.0000°, Azm16.0000°; P -5.6060, Plg14.0000°, Azm107.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 11 13:39:44.3±0.4,28.˚49S±0.˚09×176.˚72W±0.˚08,h29km,n76, σ1ᵖ56/56,mb4.8/23,MS4.3/19,1C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.30**	**234**	Pn	**Pn**	**13 40 05.7**	**-0.8**
	1µm,0.3s,baz=286,slow=3.7,SNR=44						
RAO				Sn	**Sn**	**13 40 22.1**	**-0.7**
	4µm,0.3s,baz=120,slow=20,SNR=15						
OUZ	**Omahuta**	**10.62**	**228**	*e*Pn	Pn	13 42 21.1	+6.7
URZ	**Urewera**	**11.02**	**206**	Pn	Pn	13 42 09.9	-10
	0.2nm,0.3s,baz=98,slow=18,SNR=4.7						
URZ				Sn	Sn	13 44 09.9	-12
	10.0nm,0.3s,baz=302,slow=11,SNR=14						
URZ	**Urewera**	**11.02**	**206**	P	Pn	13 42 13.4	-6.5
URZ				Sn	Sn	13 44 09.9	-12
MSVF	**Nonsavu**	**11.74**	**335**	P	Pn	13 42 39.8	+10
AFI	**Afiamalu**	**15.22**	**19**	Pn	**Pn**	**13 43 13.2**	**-4.2**
	3.2nm,0.3s,baz=232,slow=12,SNR=4.4						
AFI				Sn	Sn	13 45 51.1	-14
	1.8nm,0.3s,baz=168,slow=19,SNR=2.4						
AFI				LR	LR	13 49 34.8	
	comp=Z,311nm,19.9s,baz=204,slow=39						
KHZ	**Kahutara**	**15.98**	**207**	*e*Pn	Pn	13 43 19.6	-7.4
	137nm,0.5s						
DZM	**Mont Dzumac**	**16.51**	**289**	Pn	**P**	**13 43 36.7**	**+0.3**
	0.6nm,0.3s,baz=52,slow=19,SNR=4.6						
DZM				LR	LR	13 48 58.0	
	comp=Z,4µm,18.1s,baz=124,slow=34						
DZM	**Mont Dzumac**	**16.51**	**289**	*e*P	**P**	**13 43 40.0**	**+3.7**
	26nm,0.7s						
DZM				*e*LR	LR	13 47 46.5	
	4µm,23.5s						
DZM	**Mont Dzumac**	**16.51**	**289**	P	**P**	**13 43 39.1**	**+2.8**
RAR	**Rarotonga**	**16.99**	**69**	P	**Pn**	**13 43 36.7**	**-3.2**
	1.9nm,0.3s,baz=227,slow=19,SNR=3.5						
RAR				S	Sn	13 46 28.8	-19
	1.7nm,0.3s,baz=144,slow=22,SNR=3.0						
RAR				LR	LR	13 48 43.0	
	comp=Z,864nm,20.2s,baz=246,slow=32						
RAR	**Rarotonga**	**16.99**	**69**	*e*P	**Pn**	**13 43 40.5**	**+0.6**
RAR				S	Sn	13 46 28.8	-19
RPZ	**Rata Peaks**	**18.09**	**210**	P	Pn	13 43 45.6	-7.8
	2.7nm,0.3s,baz=39,slow=2.8,SNR=12						
RPZ				S	Sn	13 46 49.4	-25
	0.8nm,0.3s,baz=107,slow=19,SNR=4.2						
RPZ				LR	LR	13 51 23.1	
	comp=Z,1µm,19.5s,baz=38,slow=39						
TBI	**Tubuai**	**25.02**	**84**	*e*LQ	LQ	13 49 53.0	
	884nm,28.0s						
TBI				*e*LR	LR	13 51 03.5	
	2µm,28.0s,baz=257						
PPT2	**Papeete2**	**27.17**	**72**	*e*LQ	LQ	13 50 42.6	
	1µm,25.2s						
PPT2				*e*LR	LR	13 52 08.6	
	2µm,26.5s,baz=238						
PPT	**Papeete**	**27.18**	**72**	LR	LR	13 53 15.8	
	comp=Z,519nm,20.7s,baz=246,slow=30						
EIDS	**Eidsvold**	**28.83**	**269**	*e*P	**P**	**13 45 39.4**	**-0.8**
CTA	**Charters Tower**	**34.66**	**276**	P	**P**	**13 46 31.4**	**0.0**
	6.3nm,0.4s,baz=91,slow=11,SNR=24						
CTA				LR	LR	13 59 28.8	
	comp=Z,2µm,19.6s,baz=98,slow=34						
CTAO	**Charters Tower**	**34.66**	**276**	*e*P	**P**	**13 46 32.2**	**+0.7**
	76nm,0.8s						
STKA	**Stephens Creek**	**36.04**	**254**	P	**P**	**13 46 42.4**	**-0.8**
	7.4nm,0.5s,baz=98,slow=13,SNR=30						
STKA				LR	LR	14 00 20.1	
	comp=Z,825nm,18.2s,baz=81,slow=34						
RKT	**Rikitea**	**37.82**	**92**	*e*S	S	13 52 25.6	-22
	185nm,30.5s						
RKT				*e*LR	LR	13 56 57.2	
	926nm,28.5s,baz=254						
PMG	**Port Moresby**	**38.87**	**292**	LR	LR	14 01 20.4	
	comp=Z,883nm,19.2s,baz=123,slow=34						
TAOE	**Nuku Hiva Isla**	**39.54**	**68**	*e*LR	LR	13 57 50.5	
	827nm,26.3s,baz=245						
ASAR	**Alice Springs**	**44.37**	**264**	P	**P**	**13 47 51.0**	**-1.4**
	5.9nm,0.6s,baz=97,slow=6.8,SNR=44						
ASAR				PcP	**PP**	**13 49 35.7**	**-0.4**
	2.3nm,0.7s,baz=112,slow=4.2,SNR=6.0						
ASAR				ScP	**ScP**	**13 53 30.6**	**+4.5**
	1.1nm,0.9s,baz=113,slow=4.7,SNR=4.8						
ASAR				LR	LR	14 05 35.2	
	comp=Z,2µm,19.3s,baz=108,slow=35						
WRAB	**Tennant Creek**	**45.18**	**270**	*e*P	**P**	**13 47 56.5**	**-2.3**
	16nm,0.9s						
WRA	**Warramunga Arr**	**45.19**	**270**	P	**P**	**13 47 57.6**	**-1.3**
	13nm,0.9s,baz=107,slow=7.9,SNR=22						
WRA				PcP	**PcP**	**13 49 39.1**	**+0.2**
	5.8nm,0.9s,baz=106,slow=3.9,SNR=8.7						
WRA				ScP	**ScP**	**13 53 33.6**	**+4.0**
	0.7nm,0.9s,baz=114,slow=4.0,SNR=3.1						
FORT	**Forrest**	**47.64**	**253**	*e*P	**P**	**13 48 15.3**	**-2.7**
	346nm,0.9s						
JAY	**Jayapura**	**48.07**	**295**	LR	LR	14 06 41.6	
	comp=Z,13nm,20.5s,slow=34						
SBA	**Scott Base**	**50.02**	**185**	*e*P	**P**	**13 48 37.1**	**+1.5**
	12nm,0.8s						
VNDA	**Vanda**	**50.10**	**186**	P	**P**	**13 48 37.3**	**+1.1**
	2.2nm,0.7s,baz=20,slow=4.4,SNR=7.0						
VNDA				LR	LR	14 05 55.8	
	comp=Z,229nm,21.2s,baz=8.0,slow=32						
FITZ	**Fitzroy Crossi**	**53.52**	**268**	P	**P**	**13 49 01.3**	**-1.2**
	4.4nm,0.7s,baz=90,slow=7.0,SNR=10.0						
QSPA	**South Pole Qui**	**61.61**	**180**	*e*P	**P**	**13 49 59.1**	**+0.1**
	34nm,0.8s						
JHJ	**Hachijo jima 2**	**73.88**	**323**	LR	LR	14 19 44.6	
	comp=Z,80nm,20.4s,baz=122,slow=33						
MAW	**Mawson**	**74.48**	**200**	P	**P**	**13 51 19.8**	**+0.3**
	7.4nm,0.7s,baz=120,slow=8.7,SNR=12						
MAW				LR	LR	14 24 03.0	
	comp=Z,376nm,18.9s,baz=70,slow=36						
MJAR	**Matsushiro Arr**	**77.34**	**324**	P	**P**	**13 51 35.9**	**-0.3**
	5.7nm,0.9s,baz=161,slow=5.5,SNR=13						
MJAR				LR	LR	14 21 06.9	
	comp=Z,100nm,20.9s,baz=160,slow=32						
MAJO	**Matsushiro**	**77.34**	**324**	*e*P	**P**	**13 51 35.9**	**-0.4**
	6.3nm,0.8s						
MAT	**Matsushiro**	**77.34**	**324**	P	**P**	**13 51 35.9**	**-0.3**
SYO	**Syowa Base**	**79.22**	**193**	*e*P	P	13 51 40.4	-5.8
SNAA	**Sanae**	**80.02**	**178**	*e*P	**P**	**13 51 49.6**	**-1.1**
	342nm,1.1s						
PLCA	**Paso Flores**	**82.98**	**133**	P	**P**	**13 52 07.1**	**+0.2**
	3.2nm,1.0s,baz=141,slow=4.5,SNR=3.4						
PLCA				LR	LR	14 20 26.7	
	comp=Z,118nm,19.2s,baz=328,slow=30						
YSS	**Yuzh-Sakhalins**	**83.54**	**333**	*e*P	**P**	**13 52 11.1**	**+1.9**
	8.8nm,0.6s						
KSRS	**Korea Array**	**83.64**	**319**	P	**P**	**13 52 10.9**	**+1.0**
	1.4nm,0.9s,baz=127,slow=5.7,SNR=3.9						
KSRS				LR	LR	14 27 17.7	
	comp=Z,93nm,18.3s,baz=120,slow=34						
KSAR	**Wonju Array Be**	**83.66**	**319**	P	**P**	**13 52 10.9**	**+0.9**
PETK	**Petropavlovsk-**	**84.26**	**345**	P	**P**	**13 52 13.7**	**+0.9**
	7.2nm,0.7s,baz=124,slow=6.9,SNR=16						
PETK				LR	LR	14 25 24.1	
	comp=Z,128nm,20.3s,baz=161,slow=33						
USRK	**Ussuriysk Ar.**	**86.21**	**326**	P	**P**	**13 52 24.3**	**+1.6**
	1.4nm,0.7s,baz=126,slow=3.3,SNR=8.7						
KLR	**Kul'dur**	**89.97**	**329**	LR	LR	14 28 00.6	
	comp=Z,32nm,19.5s,baz=138,slow=32						
TXAR	**Lajitas Array**	**90.42**	**57**	P	**P**	**13 52 44.3**	**+1.0**
	0.9nm,0.9s,baz=201,slow=6.4,SNR=7.2						
TXAR				LR	LR	14 28 00.6	
	comp=Z,143nm,18.2s,baz=0.0,slow=32						
ENH	**Enshi**	**91.46**	**304**	*e*P	**P**	**13 52 47.9**	**-0.1**
	49nm,1.7s						
MA2	**Magadan**	**91.76**	**344**	LR	LR	14 29 12.9	
	comp=Z,52nm,20.9s,baz=153,slow=32						
NEW	**Newport**	**93.18**	**35**	LR	LR	14 32 00.6	
	comp=Z,239nm,18.0s,baz=212,slow=34						
PDAR	**Pinedale Array**	**93.98**	**43**	P	**P**	**13 53 01.0**	**+1.3**
	0.4nm,0.6s,baz=232,slow=4.9,SNR=4.3						
PDAR				LR	LR	14 31 39.9	
	comp=Z,190nm,18.4s,baz=250,slow=33						
COLA	**College**	**95.74**	**12**	*e*P	**P**	**13 53 07.0**	**+0.3**
	9.1nm,0.6s						
LPAZ	**La Paz**	**97.88**	**113**	LR	LR	14 28 15.7	
	comp=Z,65nm,21.6s,baz=268,slow=30						
MKAR	**Makanchi Array**	**117.40**	**311**	PKP	**PKPdf**	**13 58 25.9**	**-1.0**
	1.6nm,0.7s,baz=90,slow=1.2,SNR=14						
KURK	**Kurchatov**	**120.53**	**314**	PKP	**PKPdf**	**13 58 32.1**	**-0.6**
KURK				*e*PKPdf	**PKiKP**	**13 58 32.4**	**-0.4**
KURBB	**Kurchatov Arra**	**120.57**	**314**	PKP	**PKPdf**	**13 58 32.1**	**-0.7**
	2.6nm,0.8s,baz=103,slow=1.8,SNR=22						
KKAR	**Karatay Array**	**124.94**	**305**	*e*PKPdf	**PKPdf**	**13 58 41.8**	**+0.4**
BVAR	**Borovoye Array**	**125.81**	**317**	PKP	**PKPdf**	**13 58 43.0**	**+0.2**
	2.2nm,0.7s,baz=96,slow=2.9,SNR=5.1						
AKTO	**Aktyubinsk**	**133.62**	**314**	PKP	**PKPdf**	**13 58 58.8**	**+1.1**
	1.5nm,0.5s,baz=52,slow=3.4						
GEYT	**Alibeck**	**133.74**	**297**	PKP	**PKPdf**	**13 58 59.0**	**+0.6**
	1.0nm,0.3s,baz=151,slow=3.4,SNR=3.7						
ARCES	**ARCESS Array B**	**136.96**	**349**	PKP	**PKPdf**	**13 59 03.8**	**+0.4**
	1.7nm,0.7s,baz=337,slow=1.6,SNR=9.1						
H10S3	**ASCENSION HYDR**	**138.93**	**152**	T	T	16 34 48.3	
	baz=204,slow=74,SNR=11						
H10S2	**ASCENSION HYDR**	**138.93**	**152**	T	T	16 34 45.5	
	baz=204,slow=74,SNR=21						
H10S1	**ASCENSION HYDR**	**138.95**	**152**	T	T	16 34 49.6	
	baz=204,slow=74,SNR=14						
H10N3	**ASCENSION HYDR**	**140.00**	**152**	T	T	16 36 09.7	
	baz=203,slow=75,SNR=18						
H10N1	**ASCENSION HYDR**	**140.01**	**152**	T	T	16 36 12.0	
	baz=203,slow=75,SNR=23						
H10N2	**ASCENSION HYDR**	**140.02**	**152**	T	T	16 36 11.0	
	baz=203,slow=75,SNR=18						
FINES	**FINESS Array B**	**143.72**	**342**	PKhKP	PKPpre	13 59 12.8	
	4.8nm,0.8s,baz=29,slow=4.4,SNR=16						
KBZ	**Khabaz**	**144.93**	**306**	PKP	PKPbc	13 59 17.8	+0.1
	1.6nm,0.6s,baz=103,slow=4.3,SNR=4.7						
NB2	**NORSAR Subarra**	**147.02**	**353**	PKP	**PKPdf**	**13 59 22.5**	**+0.9**
	baz=203,slow=75,SNR=23			PKPbc	**PKPbc**	**13 59 23.2**	**-0.5**
NOA	**NORSAR Array B**	**147.02**	**353**				
	comp=Z,3.4nm,0.7s,baz=14,slow=4.4,SNR=14						
AKASG	**Malin Array Be**	**150.41**	**326**	PKPbc	**PKPbc**	**13 59 32.3**	**-0.3**
	comp=Z,12nm,0.8s,baz=47,slow=3.0,SNR=31						
KIEV	**Kiev**	**150.43**	**326**	*e*PKPbc	**PKPbc**	**13 59 32.1**	**-0.5**
BRTR	**Keskin Array B**	**152.61**	**302**	PKPbc	**PKPbc**	**13 59 37.6**	**-0.6**
	comp=Z,2.1nm,0.7s,baz=132,slow=4.1,SNR=10						
GERES	**GERESS Array B**	**158.15**	**341**	PKPab	**PKPab**	**14 00 11.5**	**-0.6**
	comp=Z,0.5nm,0.5s,baz=28,slow=4.4,SNR=5.8						
TORD	**Torodi Ar. Bea**	**164.66**	**174**	PKP	**PKPdf**	**13 59 46.0**	**0.0**
	comp=Z,0.4nm,0.7s,baz=89,slow=0.3,SNR=3.0						
TORD				PKPab	**PKPab**	**14 00 39.9**	**-1.2**
	comp=Z,0.7nm,0.6s,baz=175,slow=1.9,SNR=4.8						

IDC 11 13:39:50.7±2.8,6.˚11S×130.˚50E,h72km±37km,mb3.2/1, mb1 3.5/4,mb1mx3.2/32,mbtmp3.6/4,ML3.6/4,Error ellipse: s-maj=63.9km s-min=21.0km az=93.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**5.26**	**8**	P	Pn	13 41 06.8	-0.1
	17nm,0.3s,baz=355,slow=13,SNR=2.3						
SIJI				S	Sn	13 41 57.4	-8.8
	14nm,0.3s,baz=1.0,slow=12,SNR=3.0						
FITZ	**Fitzroy Crossi**	**12.83**	**201**	P	Pn	13 42 51.3	+1.1
	0.1nm,0.3s,baz=30,slow=13,SNR=22						
FITZ				S	Sn	13 45 09.1	-2.1
	0.3nm,0.3s,baz=311,slow=17,SNR=4.6						
WRA	**Warramunga Arr**	**14.25**	**165**	P	Pn	13 43 07.2	-1.8
	0.2nm,0.3s,baz=349,slow=13,SNR=13						
WRA				S	Sn	13 45 35.6	-10
	0.5nm,0.3s,baz=344,slow=23,SNR=8.5						
ASAR	**Alice Springs**	**17.76**	**170**	P	Pn	13 43 54.4	+1.2
	0.3nm,0.3s,baz=350,slow=11,SNR=33						
ASAR				S	Sn	13 47 02.4	-8.4
	0.1nm,0.3s,baz=349,slow=24,SNR=5.5						
MKAR	**Makanchi Array**	**67.76**	**326**	P	P	13 50 40.7	-0.1
	0.2nm,0.4s,baz=123,slow=7.1,SNR=2.9						

*SOME **11** 13:45:42.3,44.˚22N×83.˚05E,h20km*
*NNC **11** 13:45:44.9±1.9,44.˚25N×83.˚16E,h0km,mb2.8,mpv2.5, Error ellipse: s-maj=18.4km s-min=6.3km az=120.0*

ISC 11 13:45:41.6±2.4,44.˚33N±0.˚07×83.˚0E±0.˚1,h10km,n9, σ1ᵖ73/18,3C-3D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**2.33**	**271**	*e*P	**Pg**	**13 46 25.0**	**-1.3**
	13nm,0.3s						
DJR				*e*S	**Sg**	**13 46 55.6**	**-1.0**
	10nm,0.2s						
MK31	**Makanchi Array**	**2.52**	**348**	⇓Pn	**Pg**	**13 46 28.5**	**-1.4**
	0.4nm,0.2s,baz=165,slow=15,SNR=5.7						
MK31				⇑Sn	**Sg**	**13 47 02.1**	**-0.5**
	2.3nm,0.4s,baz=165,slow=28,SNR=12						
SHLS	**Shalkode**	**2.57**	**244**	*e*P	**Pb**	**13 46 28.5**	**+0.6**
	9.8nm,0.2s						
SHLS				*e*S	**Sg**	**13 47 02.1**	**-2.1**
	26nm,0.6s						
MAKZ	**Makanchi**	**2.59**	**344**	⇓Pn	**Pg**	**13 46 30.5**	**-0.7**
	0.5nm,0.2s						
MAKZ				⇑Sn	**Sg**	**13 47 03.4**	**-1.3**
	1.3nm,0.3s						
PDGK	**Podgornoye**	**2.76**	**250**	⇑Pn	**Pb**	**13 46 31.3**	**+0.3**
	0.6nm,0.2s						
PDGK				⇓Sn	**Sb**	**13 47 06.6**	**+1.8**
	3.4nm,0.4s						
KAPS	**Kapalarasan**	**2.79**	**291**	*e*P	**Pb**	**13 46 33.0**	**+1.5**
	2.4nm,0.2s						
KAPS				*e*S	**Sg**	**13 47 09.5**	**-1.7**
	4.4nm,0.3s						
SATY	**Saty**	**3.59**	**251**	*e*P	**Pb**	**13 46 46.4**	**+1.1**
	1.6nm,0.1s						
SATY				*e*S	**Sb**	**13 47 32.1**	**+3.1**
	10nm,0.2s						
ARXS	**Arharly**	**3.75**	**270**	*e*P	**Pg**	**13 46 51.2**	**-2.2**
	2.6nm,0.4s						
ARXS				*e*S	**Sg**	**13 47 40.8**	**-1.1**
	5.1nm,0.4s						
CHKK	**Chushkaly**	**4.38**	**266**	*e*P	**Pb**	**13 46 59.0**	**+0.5**
	1.3nm,0.4s						
CHKK				*e*S	**Sb**	**13 47 54.2**	**+2.8**
	4.9nm,0.3s						

*IDC **11** 13:51:51.1±1.6,28.˚82S×176.˚91W,h0km,mb3.5/3, mb1 3.7/3,mb1mx3.5/33,mbtmp3.5/3,MS4.2/2,Ms1 4.2/2, ms1mx3.3/19,Error ellipse: s-maj=56.7km s-min=29.8km az=159.0*

*ISCJB **11** 13:51:56.2±2.3,29.˚66S±0.˚09×177.˚0W±0.˚2,h36km, mb3.5/3,MS4.3/1,Error ellipse: s-maj=26.4km s-min=10.8km az=165.0*

ISC 11 13:51:57.2±1.5,29.˚5S±0.˚1×177.˚0W±0.˚1,h36km,n16, σ1ᵖ41/9,mb3.4/3,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.82**	**284**	Pn	**Pn**	**13 52 12.1**	**-0.2**
	477nm,0.3s,baz=74,slow=23,SNR=33						
RAO				Sn	**Sn**	**13 52 23.5**	**+0.3**
	1µm,0.3s,baz=60,slow=20,SNR=18						
URZ	**Urewera**	**10.04**	**208**	Sn	**Sn**	**13 56 09.1**	**-1.1**
	0.5nm,0.3s,baz=43,slow=15,SNR=3.7						
RAR	**Rarotonga**	**17.60**	**66**	LR	LR	14 00 58.5	
	comp=Z,896nm,21.9s,baz=136,slow=32						
STKA	**Stephens Creek**	**35.54**	**255**	P	**P**	**13 58 51.8**	**+0.8**
	1.4nm,0.9s,baz=107,slow=17,SNR=2.6						
ASAR	**Alice Springs**	**44.03**	**266**	P	**P**	**14 00 02.7**	**+1.0**
	0.3nm,0.6s,baz=101,slow=6.8,SNR=6.2						
WRA	**Warramunga Arr**	**44.94**	**271**	P	**P**	**14 00 08.2**	**-0.7**
	0.2nm,0.4s,baz=109,slow=6.2,SNR=8.3						
JNU	**Nakatsue**	**79.44**	**318**	LR	LR	14 31 46.3	
	comp=Z,135nm,19.7s,baz=169,slow=30						
H10S3	**ASCENSION HYDR**	**138.19**	**153**	T	T	16 46 44.8	
	baz=204						
H10S2	**ASCENSION HYDR**	**138.19**	**153**	T	T	16 46 44.8	
	baz=204						
H10S1	**ASCENSION HYDR**	**138.21**	**153**	T	T	16 46 44.3	
	baz=204						
H10N3	**ASCENSION HYDR**	**139.27**	**153**	T	T	16 48 02.9	
	baz=205						
H10N1	**ASCENSION HYDR**	**139.27**	**153**	T	T	16 48 01.8	
	baz=205						
H10N2	**ASCENSION HYDR**	**139.28**	**153**	T	T	16 48 01.2	
	baz=205						
FINES	**FINESS Array B**	**144.55**	**341**	PKP	**PKPab**	**14 11 26.6**	**-1.1**
	0.8nm,0.8s,baz=343,slow=7.6,SNR=2.3						
AKASG	**Malin Array Be**	**151.06**	**324**	PKPbc	**PKPbc**	**14 11 44.3**	**-1.7**
	0.3nm,0.3s,baz=42,slow=2.4,SNR=2.9						
TORD	**Torodi Ar. Bea**	**163.72**	**175**	PKPab	**PKPab**	**14 12 51.0**	**+2.1**
	0.3nm,0.8s,baz=174,slow=3.9,SNR=2.7						

*ISCJB **11** 13:56:12.4±0.2,60.˚39N±0.˚02×152.˚08W±0.˚04, h100km±2km,mb3.8/15,Error ellipse: s-maj=4.2km s-min=2.9km az=44.5*

*NEIC **11** 13:56:13.5±0.1,60.˚38N×152.˚11W,h92km±1km, MG3.4(AEIC),Error ellipse: s-maj=2.4km s-min=1.7km az=138.0*

*IDC **11** 13:56:16.4±2.9,60.˚65N×152.˚03W,h110km±24km, mb3.6/15,mb1 3.6/19,mb1mx3.4/49,mbtmp3.9/19,MS3.6/2, Ms1 3.6/2,ms1mx2.9/37,Error ellipse: s-maj=22.6km s-min=15.8km az=14.0*

ISC 11 13:56:13.5±0.7,60.˚39N±0.˚03×152.˚13W±0.˚03,h92km±5km, n113,σ0ᵖ72/125,mb3.9/15,Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RDT	**Redoubt**	**0.23**	**323**	P	**Pn**	**13 56 26.6**	**-0.4**
RED	**Redoubt Volcan**	**0.32**	**275**	P	**Pn**	**13 56 27.0**	**-0.4**
RDWB	**Redoubt West**	**0.37**	**285**	P	**Pn**	**13 56 27.1**	**-0.6**
RDWB				S	**Sn**	**13 56 37.7**	**-0.6**
RDJH	**Redoubt Jeurge**	**0.39**	**301**	P	**Pn**	**13 56 27.5**	**-0.3**
RDJH				S	**Sn**	**13 56 37.8**	**-0.7**
BGRM	**Barrier Glacie**	**0.39**	**339**	P	**Pn**	**13 56 27.5**	**-0.3**
NCT	**North Crescent**	**0.43**	**293**	P	**Pn**	**13 56 27.6**	**-0.5**
ILIM	**Iliamna**	**0.52**	**233**	P	**Pn**	**13 56 28.4**	**-0.3**
ILS	**Iliamna Low So**	**0.64**	**228**	P	**Pn**	**13 56 29.7**	**0.0**
HOM	**Homer**	**0.78**	**162**	P	**Pn**	**13 56 31.3**	**+0.4**
HOM				S	**Sn**	**13 56 44.9**	**+1.0**
SPCR	**Spurr Chakacha**	**0.81**	**357**	P	**Pn**	**13 56 31.2**	**-0.2**
CKL	**Chakachamna La**	**0.81**	**353**	P	**Pn**	**13 56 31.4**	**0.0**
CRP	**Crater Peak**	**0.88**	**359**	P	**Pn**	**13 56 32.2**	**0.0**
BRLK	**Bradley Lake**	**0.89**	**135**	P	**Pn**	**13 56 32.1**	**0.0**
BRLK				S	**Sn**	**13 56 46.1**	**+0.1**
SPWE	**Spurr West**	**0.91**	**347**	P	**Pn**	**13 56 32.7**	**+0.3**
OPT	**Oil Point**	**0.93**	**217**	P	**Pn**	**13 56 32.8**	**+0.3**
SLKM	**Skilak Lake**	**0.95**	**82**	P	**Pn**	**13 56 32.7**	**-0.2**
CNPM	**China Poot**	**0.98**	**152**	P	**Pn**	**13 56 33.4**	**+0.3**
CNPM				S	**Sn**	**13 56 47.4**	**-0.4**
VOGL	**Vogel Lake**	**1.03**	**53**	P	**Pn**	**13 56 35.0**	**+1.3**
STLK	**Strandline Lak**	**1.12**	**7**	P	**Pn**	**13 56 35.0**	**+0.3**
AUL	**Augustine Lava**	**1.21**	**214**	P	**Pn**	**13 56 36.2**	**+0.5**
AUE	**Augustine Isla**	**1.21**	**212**	P	**Pn**	**13

PCA	Pinnacle	5.92	88	P	Pn	13 57 38.9	+0.3
EGAK	Eagle	6.70	44	*e*Pn	Pn	13 57 48.8	-0.4
	9.4nm,0.5s						
COLD	Coldfoot	6.92	6	P	Pn	13 57 51.7	-0.3
DAWY	Dawson	6.99	53	P	Pn	13 57 52.6	-0.6
DHAK	Deception Hill	7.15	94	P	Pn	13 57 54.4	-0.9
BM3	Burnt Mountain	7.79	22	P	Pn	13 58 03.4	-0.6
INK	Inuvik	11.26	37	P	Pn	13 58 51.0	-0.1
	0.2nm,0.3s,baz=246,slow=20,SNR=5.7						
DLBC	Dease Lake	11.41	90	P	Pn	13 58 55.4	+2.1
	0.4nm,0.3s,baz=230,slow=9.5,SNR=5.9						
YKA	Yellowknife Ar	17.89	67	P	Pn	14 00 16.3	+0.3
	0.1nm,0.3s,baz=278,slow=11,SNR=7.7						
SEY	Seymchan	25.77	300	P	P	14 01 35.0	-0.2
	0.9nm,0.5s,baz=43,slow=19,SNR=3.4						
MA2	Magadan	27.82	294	P	P	14 01 53.8	+0.2
	3.7nm,0.8s,baz=150,slow=17,SNR=3.3						
KLR	Kul'dur	42.81	291	P	P	14 04 02.1	+0.3
	1.0nm,0.6s,baz=57,slow=8.3,SNR=3.9						
TXAR	Lajitas Array	44.72	112	P	P	14 04 18.7	+1.3
	0.4nm,0.6s,baz=324,slow=5.9,SNR=7.9						
ARCES	ARCESS Array B	50.35	1	P	P	14 04 59.4	-0.9
	1.0nm,0.7s,baz=353,slow=6.4,SNR=3.4						
KSRS	Korea Array	53.52	283	P	P	14 05 25.3	+1.1
	1.1nm,0.6s,baz=41,slow=6.7,SNR=4.6						
KSAR	Wonju Array Be	53.55	283	P	P	14 05 25.3	+0.9
SONM	Songino Array	54.91	306	P	P	14 05 36.0	+1.6
	1.8nm,0.5s,baz=49,slow=6.3,SNR=13						
ZALV	Zalesovo Beam	57.31	324	P	P	14 05 51.3	+0.1
	0.7nm,0.3s,baz=31,slow=6.7,SNR=5.0						
FINES	FINESS Array B	58.48	1	P	P	14 05 58.5	-0.7
	0.7nm,0.6s,baz=297,slow=6.1,SNR=3.0						
ARU	Arti	61.02	341	P	P	14 06 16.9	+0.1
	0.9nm,0.2s,baz=90,slow=20,SNR=3.7						
BVAR	Borovoye Array	61.92	332	P	P	14 06 22.0	-0.9
	0.2nm,0.3s,baz=45,slow=8.6,SNR=3.9						
KURK	Kurchatov	61.95	326	P	P	14 06 23.4	+0.4
KURBB	Kurchatov Arra	62.06	326	P	P	14 06 23.4	-0.3
	0.8nm,0.5s,baz=29,slow=6.6,SNR=6.1						
MKAR	Makanchi Array	64.39	322	P	P	14 06 38.9	-0.5
	0.4nm,0.4s,baz=43,slow=5.6,SNR=6.1						
AKASG	Malin Array Be	69.25	359	P	P	14 07 08.4	-1.6
	0.5nm,0.4s,baz=359,slow=5.7,SNR=3.2						
RAR	Rarotonga	81.55	187	LR	LR	14 42 56.0	
	comp=Z,169nm,18.6s,baz=72,slow=34						
CMAR	Chiang Mai Arr	83.09	295	P	P	14 08 28.8	-0.2
	0.4nm,0.5s,baz=9.9,slow=5.8,SNR=3.1						
BOSA	Boshof	148.18	4	PKPbc	PKPbc	14 15 47.2	-1.0
	1.5nm,0.7s,baz=284,slow=4.2,SNR=3.1						

IDC 11 14:01:56.0±5.6, 28.84S×175.57W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/28, mbtmp3.7/3, Error ellipse: s-maj=194.2km s-min=49.4km az=22.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	2.09	258	Sn	Sn	14 02 52.7	-6.4
	148nm,0.3s,baz=73,slow=19,SNR=2.2						
STKA	Stephens Creek	36.91	254	P	P	14 09 07.0	+0.3
	2.4nm,1.0s,baz=82,slow=7.1,SNR=3.3						
ASAR	Alice Springs	45.33	264	P	P	14 10 15.7	-0.5
	0.4nm,0.7s,baz=105,slow=7.5,SNR=10						
WRA	Warramunga Arr	46.19	269	P	P	14 10 22.9	0.0
	0.7nm,0.7s,baz=109,slow=8.1,SNR=9.4						
TORD	Torodi Ar. Bea	164.18	170	PKPab	PKPab	14 22 55.1	-0.4
	0.8nm,1.2s,baz=193,slow=5.9,SNR=2.6						

*ISK **11** 14:02:46.9, 39.11N×29.06E, h6km, MD2.0*
*ISCJB **11** 14:02:47.2±0.7, 39.08N±0.05×29.06E±0.07, h9km, Error ellipse: s-maj=9.2km s-min=4.1km az=40.1*
*CSEM **11** 14:02:47.3±0.2, 39.09N×29.06E, h8km, MD2.0, Error ellipse: s-maj=6.7km s-min=2.9km az=118.0*
*DDA **11** 14:02:48.8, 38.94N×29.22E, h7km, Md2.6*

ISC 11 14:02:47.4±1.0, 39.09N±0.04×29.05E±0.05, h9km, n13, σ0.9s30/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GDZ	Gediz	0.33	90	*i* P	Pg	14 02 53.9	-0.1
GDZ				*i* S	Sg	14 02 58.4	-0.1
TVSB	Tavsanli	0.48	41	*e*PG	Pg	14 02 56.5	-0.2
TVSB				*e*SG	Sg	14 03 03.3	+0.2
TVSB	Tavsanli	0.48	41	*e*Pg	Pg	14 02 56.5	-0.2
TVSB				*e*Sg	Sg	14 03 03.3	+0.2
KULA	Kula-Manisa	0.65	208	*e*PG	Pg	14 03 00.3	+0.3
KULA				*e*SG	Sb	14 03 10.0	-0.2
KULA	Kula-Manisa	0.65	208	*e*Pg	Pg	14 03 00.3	+0.3
KULA				*e*Sg	Sb	14 03 10.0	-0.2
MANT	Manisa	0.71	213	*i* P	Pg	14 03 00.9	-0.2
MANT				*i* S	Sg	14 03 10.1	-0.4
MANT	Manisa	0.71	213	P	Pg	14 03 00.9	-0.2
MANT				S	Sg	14 03 10.1	-0.4
KHL	Karahalli	0.85	154	*e*PG	Pg	14 03 04.0	+0.3
KHL	Karahalli	0.85	154	*e*Pg	Pg	14 03 04.0	+0.3
CAVI	Cavuskoy	1.27	29	*e*PN	Pn	14 03 11.1	-0.2
CAVI	Cavuskoy	1.27	29	*e*Pn	Pn	14 03 11.1	-0.2
ARMT	Armutlu	1.48	354	*e*PN	Pn	14 03 14.7	+0.5
ARMT	Armutlu	1.48	354	*e*Pn	Pn	14 03 14.7	+0.5

IDC 11 14:43:41.5±1.8, 14.80S×167.76E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.6/25, mbtmp3.5/5, ML3.5/1, Error ellipse: s-maj=55.2km s-min=28.8km az=124.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	7.34	190	Pn	Pn	14 45 30.4	+0.3
	0.7nm,0.3s,baz=338,slow=19,SNR=4.4						
DZM				Sn	Sn	14 46 49.1	-5.1
	baz=131,slow=20,SNR=2.3						
WRA	Warramunga Arr	32.27	256	P	P	14 50 11.1	-1.2
	0.4nm,0.8s,baz=84,slow=8.5,SNR=2.9						
ASAR	Alice Springs	33.09	249	P	P	14 50 19.8	+0.3
	0.4nm,0.6s,baz=77,slow=8.7,SNR=9.6						
SONM	Songino Array	82.84	323	P	P	14 56 09.2	+1.3
	0.2nm,0.4s,baz=137,slow=5.4,SNR=2.7						
ILAR	Eielson Array	86.45	18	P	P	14 56 24.9	-0.8
	0.3nm,0.7s,baz=238,slow=5.2,SNR=3.5						

*IDC **11** 14:44:11.8±0.9, 32.37S×177.80W, h0km, mb4.4/6, mb1 4.5/8, mb1mx4.2/23, mbtmp4.4/8, ML3.7/2, MS3.6/2, Ms1 3.6/2, ms1mx3.0/30, Error ellipse: s-maj=34.7km s-min=24.5km az=148.0*
*ISCJB **11** 14:44:17.5±1.0, 32.46S±0.08×178.3W±0.2, h33km, mb5.0/10, Error ellipse: s-maj=21.5km s-min=10.4km az=13.3*
*NEIC **11** 14:44:20.0±3.0, 32.12S×177.99W, h53km±24km, mb4.7/1, Error ellipse: s-maj=21.7km s-min=13.2km az=134.0*

ISC 11 14:44:15.7±0.7, 32.29S±0.08×178.1W±0.2, h20km, n33, σ1.9s35/34, mb4.7/10, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	3.02	2	Sn	Sn	14 45 36.0	-2.1
	96nm,0.3s,baz=140,slow=21,SNR=2.5						
URZ	Urewera	7.15	212	Pn	Pn	14 45 58.0	-1.1
	1.2nm,0.3s,baz=61,slow=10,SNR=7.9						
URZ				Sn	Sn	14 47 17.1	-2.7
	8.2nm,0.3s,baz=53,slow=22,SNR=12						
OUZ	Omahuta	7.54	245	*e*P	Pn	14 46 12.6	+8.0
RPZ	Rata Peaks	14.26	214	Pn	Pn	14 47 34.9	-1.7
	0.4nm,0.3s,baz=221,slow=18,SNR=2.6						
RPZ				Sn	Sn	14 49 59.6	-15
	1.0nm,0.3s,baz=3.8,slow=20,SNR=6.3						
RAR	Rarotonga	19.67	60	LR	LR	14 55 24.5	
	comp=Z,158nm,20.4s,baz=226,slow=34						
EIDS	Eidsvold	27.84	276	*e*P	P	14 50 05.6	+1.7
PPT	Papeete	29.58	67	LR	LR	15 01 30.4	
	comp=Z,113nm,18.1s,baz=226,slow=35						
STKA	Stephens Creek	34.05	260	P	P	14 51 00.1	+1.4
	3.6nm,0.7s,baz=102,slow=11,SNR=9.6						
CTA	Charters Tower	34.10	282	P	P	14 51 01.6	+2.5
	7.6nm,0.8s,baz=112,slow=11,SNR=8.4						
CTAO	Charters Tower	34.10	282	*e*P	P	14 51 00.8	+1.6
	60nm,0.9s						
ASAR	Alice Springs	42.99	269	P	P	14 52 14.1	+0.2
	3.7nm,0.6s,baz=108,slow=7.4,SNR=78						
ASAR				PcP	PcP	14 54 03.9	-0.3
	0.4nm,0.8s,baz=123,slow=3.4,SNR=2.6						
ASAR				ScP	ScP	14 57 55.2	+1.0
	0.8nm,1.1s,baz=123,slow=3.4,SNR=3.3						
WRAB	Tennant Creek	44.15	274	*e*P	P	14 52 22.9	-0.3
	16nm,1.1s						
WRA	Warramunga Arr	44.15	274	P	P	14 52 23.3	0.0
	4.8nm,0.5s,baz=113,slow=8.0,SNR=95						
FORT	Forrest	45.55	257	*e*P	P	14 52 33.9	-0.3
	185nm,0.6s						
QSPA	South Pole Qui	57.83	180	*e*P	P	14 54 08.1	+2.5
	47nm,1.1s						
SYO	Syowa Base	75.27	193	*e*PcP	PcP	14 56 10.0	-0.1
SNAA	Sanae	76.28	178	P	P	14 56 04.0	+1.4
	373nm,1.1s						
PETK	Petropavlovsk-	87.62	346	P	P	14 57 02.4	+0.4
	2.6nm,1.0s,baz=128,slow=6.3,SNR=3.5						
USRK	Ussuriysk Ar.	88.70	327	P	P	14 57 06.7	-0.7
	2.0nm,0.9s,baz=199,slow=9.9,SNR=4.9						
MKAR	Makanchi Array	118.94	309	PKP	PKPdf	15 03 00.9	-1.6
	0.2nm,0.3s,baz=93,slow=2.8,SNR=2.7						
ZALV	Zalesovo Beam	119.40	318	PKP	PKPdf	15 03 03.3	+0.2
	0.3nm,0.3s,baz=99,slow=1.9,SNR=2.3						
KURK	Kurchatov	122.31	313	PKP	PKPdf	15 03 08.2	-0.6
KURBB	Kurchatov Arra	122.34	313	PKP	PKPdf	15 03 08.2	-0.7
	0.5nm,0.5s,baz=112,slow=2.0,SNR=8.0						
BVAR	Borovoye Array	127.71	315	PKP	PKPdf	15 03 19.1	0.0
	0.8nm,0.5s,baz=131,slow=3.1,SNR=5.6						
AKTO	Aktyubinsk	135.32	311	PKP	PKPdf	15 03 33.9	+0.3
	0.6nm,0.5s,baz=162,slow=6.4,SNR=3.0						
KBZ	Khabaz	146.09	302	PKPbc	PKPbc	15 03 53.9	-0.1
	1.2nm,0.5s,baz=134,slow=3.8,SNR=5.4						
FINES	FINESS Array B	146.89	339	PKPbc	PKPbc	15 03 55.5	-0.4
	4.9nm,0.6s,baz=64,slow=4.4,SNR=20						
ASF	Jabal al Asfar	150.51	279	PKPbc	PKPbc	15 04 07.3	+1.0
	3.6nm,0.7s,baz=32,slow=3.6,SNR=5.0						
HFS	Hagfors	151.07	348	PKPbc	PKPbc	15 04 05.5	-1.1
	2.6nm,0.9s,baz=90,slow=4.7,SNR=6.0						
EIL	Elat	151.64	274	PKPbc	PKPbc	15 04 06.8	-2.1
	6.0nm,0.7s,baz=87,slow=18,SNR=4.9						
MMAI	Mount Meron Ar	151.88	281	PKPbc	PKPbc	15 04 10.6	+1.1
	6.8nm,0.8s,baz=51,slow=6.6,SNR=5.2						
AKASG	Malin Array Be	152.74	320	PKPbc	PKPbc	15 04 10.6	0.0
	1.0nm,0.5s,baz=61,slow=2.1,SNR=5.8						
TORD	Torodi Ar. Bea	160.95	179	PKP	PKPdf	15 04 12.8	-2.3
	1.2nm,1.2s,baz=248,slow=4.0,SNR=3.8						
TORD				PKPab	PKPab	15 04 57.2	-0.4
	0.7nm,0.7s,baz=189,slow=3.6,SNR=3.9						

*ISK **11** 14:52:54.1, 37.25N×28.17E, h3km, MD2.6*
*CSEM **11** 14:52:55.2±0.2, 37.28N×28.17E, h2km, MD2.9, Error ellipse: s-maj=5.7km s-min=5.1km az=32.0*
*DDA **11** 14:52:55.9, 37.23N×28.20E, h7km, Md2.6*

ISC 11 14:52:55.6±1.2, 37.26N±0.04×28.17E±0.03, h7km±11km, n19, σ1.9s46/25, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YER	Yerkesik	0.15	144	*e*PG	Pg	14 52 58.0	-0.8
YER	Yerkesik	0.15	144	*e*Pg	Pg	14 52 58.0	-0.8
TURN	Turunc	0.52	138	*i* P	Pg	14 53 04.3	-1.3
TURN				*i* S	Sg	14 53 12.3	0.0
DALY	Dalyan (Mu¨la	0.58	138	*e*PG	Pg	14 53 06.2	-0.7
DALY				*e*SG	Sb	14 53 15.1	-1.5
DALY	Dalyan (Mu¨la	0.58	138	*e*Pg	Pg	14 53 06.2	-0.7
DALY				*e*Sg	Sb	14 53 15.1	-1.5
BDRM	Kayabasi	0.61	252	*i* P	Pg	14 53 07.6	+0.2
BDRM				*i* S	Sb	14 53 17.6	+0.1
BDRM	Kayabasi	0.61	252	P	Pg	14 53 07.6	+0.2
BODT	Bodrum	0.71	255	*e*PG	Pg	14 53 08.6	-0.8
BODT	Bodrum	0.71	255	*e*Pg	Pg	14 53 08.6	-0.8
AYDB	Zeytinkoy-Aydi	0.72	342	*e*PG	Pg	14 53 08.9	-0.7
AYDB	Zeytinkoy-Aydi	0.72	342	*e*Pg	Pg	14 53 08.9	-0.7
DNZL	Cakiroluk	0.82	58	*i* P	Pg	14 53 11.2	-0.2
DNZL	Cakiroluk	0.82	58	P	Pg	14 53 11.2	-0.2
GOLH	Golhisar	1.11	91	*i* P	Pg	14 53 16.5	-0.5
GOLH	Golhisar	1.11	91	P	Pg	14 53 16.5	-0.5
MANT	Manisa	1.27	14	*i* P	Pn	14 53 18.8	-1.2
MANT				*i* S	Sn	14 53 39.6	+2.1
MANT	Manisa	1.27	14	P	Pn	14 53 18.8	-1.2
AKAS	Kas	1.54	131	*i* P	Pg	14 53 25.3	+0.1
AKAS				*i* S	Sg	14 53 50.2	+5.1
AKAS	Kas	1.54	131	P	Pg	14 53 25.3	+0.1

*CSEM **11** 14:53:14.7, 39.84N×40.48E, h11km, MD2.7*

ISK 11 14:53:14.7, 39.84N×40.48E, h11km, MD2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YEDI	Yedisu-Bingol	0.41	173	*e*PG	Pg	14 53 23.1	+0.3
YEDI				*e*SG	Sb	14 53 29.3	-1.0
YEDI	Yedisu-Bingol	0.41	173	*e*Pg	Pg	14 53 23.1	+0.3
YEDI				*e*Sg	Sb	14 53 29.3	-1.0
ERZN	Erzincan	0.64	247	*e*PG	Pb	14 53 27.8	-0.2
EZM	Erzurum	0.68	84	*e*PG	Pg	14 53 27.2	-0.7
BNGB	Bing¶l	0.86	170	*e*PG	Pg	14 53 31.6	+0.2
BNGB				*e*SG	Sn	14 53 44.5	-1.1
EZC	Erzincan	0.87	264	*e*Pg	Pg	14 53 27.8	-3.8
BINT	Bingol	0.96	180	*e*Pg	Pg	14 53 31.6	-1.7
BINT				*e*Sg	Sg	14 53 44.5	-1.4
PTK	Pertek	1.27	222	*e*PN	Pb	14 53 38.9	+0.2
PTK	Pertek	1.27	222	*e*Pn	Pb	14 53 38.9	+0.1

*ISCJB **11** 14:54:39.6±0.6, 32.21N±0.04×115.16W±0.04, h25km±5km, Error ellipse: s-maj=7.2km s-min=6.4km az=178.0*
*ECX **11** 14:54:40.8±0.5, 32.14N×115.17W, h3km±7km, ML2.9*
*NEIC **11** 14:54:40.8, 32.14N×115.17W, h3km, ML2.9(ECX), ML2.9(PAS), After ECX.*
*MEX **11** 14:54:41.9±0.8, 32.23N×115.13W, h12km±195km, MD3.7*

ISC 11 14:54:38.3±1.1, 32.16N±0.04×115.19W±0.03, h14km±10km, n21, σ0.9s63/29, 2C-1D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MBIG	Mexicali	0.25	358	*e*P	Pn	14 54 46.1	-1.6
MBIG				*e*S	Sb	14 54 48.5	-0.5
CPBX	Cerro Prieto	0.28	339	*e*P	Pb	14 54 46.3	+1.1
CPBX				*e*S	Sb	14 54 51.1	+1.4
CPBX				IAML		14 54 53.3	
	comp=N,4µm,0.2s						
CPBX				⇑*e*		14 54 53.3	
CPBX	Cerro Prieto	0.28	339	*e*P	Pb	14 54 46.3	+1.1
CPBX				*i* S	Sg	14 54 47.9	-0.4
RMX	La Rumorosa	0.88	301	*e*P	Pb	14 54 55.2	-0.2
RMX				*e*S	Sg	14 55 07.3	+0.4
GLA	Glamis	0.94	19	*e*Pg	Pn	14 54 56.6	-0.6
GLA				*e*		14 55 08.5	
ZAX	El Zacaton	1.12	236	*e*P	Pg	14 55 00.3	+0.3
ZAX				IAML		14 55 17.2	
	comp=N,330nm,0.5s						
ZAX				*e*		14 55 17.2	
ZAX				⇓*e*		14 55 17.4	
ZAX				IAML		14 55 17.5	
	comp=E,295nm,0.6s						
SPX	San Pedro Mart	1.13	192	*e*P	Pg	14 55 00.6	+0.4
SPX	San Pedro Mart	1.13	192	*e*P	Pg	14 55 00.6	+0.4
SPX				*e*S	Sn	14 55 16.1	+0.6
CBX	Cerro Bola	1.26	278	*e*P	Pg	14 55 02.4	-0.3
CBX				*i* S	Sg	14 55 19.0	-0.2
CBX	Cerro Bola	1.26	278	*e*P	Pg	14 55 03.3	+0.6
CBX				⇑*e*		14 55 20.4	
CBX				IAML		14 55 20.4	
	comp=E,360nm,0.2s						
CBX	Cerro Bola	1.26	278	*e*P	Pg	14 55 02.4	-0.3
CBX				*i* S	Sb	14 55 18.0	-0.1
TJIG	Tijuana	1.29	283	*e*P	Pb	14 55 02.3	-0.1
TJIG				*i* S	Sb	14 55 18.9	0.0
TJIG	Tijuana	1.29	283	*e*P	Pg	14 55 03.6	+0.4
ECNX	Esteban Cantu	1.30	248	*e*P	Pg	14 55 03.5	+0.2
113A	Mohawk Valley,	1.35	63	*e*Pn	Pb	14 55 02.8	-0.5
BAR	Barrett	1.36	293	*e*Pn	Pb	14 55 03.3	-0.3
PBX	Punta Banda	1.37	253	*e*P	Pg	14 55 04.7	0.0
Y12C	Blythe	1.69	19	*e*Pn	Pg	14 55 10.9	+0.2
PFO	Pinyon Flats O	1.81	324	*e*Pn	Pn	14 55 08.7	-0.5
214A	Organ Pipe Nat	2.02	95	*e*Pn	Pn	14 55 11.8	-0.3
Y14A	Wickenburg	2.55	45	*e*Pn	Pn	14 55 19.2	-0.2

*ISCJB **11** 15:01:06.5±0.2, 43.92N±0.01×11.84E±0.01, h13km±1km, mb3.9/6, Error ellipse: s-maj=2.1km s-min=1.6km az=2.0*

*ROM **11** 15:01:06.6±0.1, 43.92N×11.86E, h7km, Ml3.6/41, Error ellipse: s-maj=1.1km s-min=0.7km az=28.0*
*NEIC **11** 15:01:06.0, 43.92N×11.86E, h7km, ML3.6(ROM), After ROM.*
NEIC Felt in the Bologna-Cesena-Florence area.
*BGR **11** 15:01:06.8±0.6, 43.68N×12.04E, h10km, ML4.0/9, Error ellipse: s-maj=10.0km s-min=6.7km az=173.0*
*GEN **11** 15:01:07.9, 43.98N×11.91E, h10km, ML3.6*
*PRU **11** 15:01:07.2, 44.01N×11.91E, h0km*
*IASPEI **11** 15:01:07.1±0.9, 43.91N±0.02×11.85E±0.02, h7km±4km, mb3.9/6, Error ellipse: s-maj=3.6km s-min=2.2km az=21.1, GT5 selection from ISC bulletin GT5 identified by Bond¨ı¡r and McLaughlin (2009) selection criteria Bond¨ı¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*CSEM **11** 15:01:07.3±0.1, 43.90N×11.85E, h10km, ML4.0/35, Error ellipse: s-maj=2.0km s-min=1.7km az=33.0*
*LDG **11** 15:01:07.7±0.2, 43.91N×11.99E, h10km, Md3.2/3, Ml3.7/17, Error ellipse: s-maj=3.9km s-min=3.2km az=145.0*
*IDC **11** 15:01:08.9±1.1, 44.14N×12.00E, h0km, mb3.8/5, mb1 3.8/12, mb1mx3.6/56, mbtmp3.7/12, ML3.7/7, Error ellipse: s-maj=21.7km s-min=13.3km az=117.0*
*STR **11** 15:01:10.3±0.3, 43.96N×11.50E, h10km, Ml4.3, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 11 15:01:07.4±0.7, 43.91N±0.01×11.86E±0.01, h6km±4km, n349, σ1.9s63/518, mb3.9/6, 11C-1D, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SFI	Santa Sofia	0.01	262	⇑*i* Pg	Pg	15 01 08.3	-0.3
SFI				Sg	Sg	15 01 09.3	-0.1
	171µm,0.5s						
SFI	Santa Sofia	0.01	262	⇑*i* Pg	Pg	15 01 08.3	-0.3
SFI				Sg	Sg	15 01 09.3	-0.1
	171µm,0.5s						
ASQU	Asqua	0.12	204	⇑*i* Pg	Pg	15 01 10.3	+0.4
ASQU				Sg	Sg	15 01 13.3	+1.6
	57µm,0.5s						
ASQU	Asqua	0.12	204	⇑*i* Pg	Pg	15 01 10.3	+0.4
ASQU				Sg	Sg	15 01 13.3	+1.6
	57µm,0.5s						
T0502	Localit¨ San	0.20	91	⇑*i* Pg	Pg	15 01 11.3	-0.1
T0502				Sg	Sg	15 01 15.0	+0.8
	1204µm,8.2s						
VMG	Vicchio	0.23	284	Pg	Pg	15 01 12.2	+0.2
VMG	Vicchio	0.23	284	Pg	Pg	15 01 12.2	+0.2
CRE	Caprese Michel	0.29	166	⇑*i* Pg	Pg	15 01 13.3	+0.1
CRE				Sg	Sb	15 01 18.9	-1.3
	11µm,0.5s						
CRE	Caprese Michel	0.29	166	⇑*i* Pg	Pg	15 01 13.3	+0.1
CRE				Sg	Sb	15 01 18.9	-1.3
	11µm,0.5s						
CPGN	Carpegna, Ital	0.35	107	Pg	Pb	15 01 14.8	-1.3
CPGN				Sg	Sb	15 01 21.0	-0.9
	215µm,5.9s						
CPGN	Carpegna, Ital	0.35	107	Pg	Pb	15 01 14.8	-1.3
CPGN				Sg	Sb	15 01 21.0	-0.9
	215µm,5.9s						
PARC	Parchiule	0.38	133	Pg	Pb	15 01 14.7	-1.8
PARC				Sg	Sb	15 01 21.0	-1.6
	4µm,0.7s						
PARC	Parchiule	0.38	133	Pg	Pb	15 01 14.7	-1.8
PARC				Sg	Sb	15 01 21.0	-1.6
	4µm,0.7s						
FIR	Firenze	0.45	253	Pg	Pg	15 01 16.4	+0.3
	11µm,0.5s						
FIR	Firenze	0.45	253	Pg	Pg	15 01 16.4	+0.3
	11µm,0.5s						
IMOL	Imola, Italy	0.46	350	Pg	Pb	15 01 16.7	-1.2
	2µm,0.6s						
IMOL	Imola, Italy	0.46	350	Pg	Pb	15 01 16.7	-1.2
	2µm,0.6s						
BADI	Badiali	0.49	144	Pg	Pg	15 01 16.5	-0.2
BADI				Sg	Sb	15 01 24.3	-1.4
	4µm,0.8s						
BADI	Badiali	0.49	144	Pg	Pg	15 01 16.5	-0.2
BADI				Sg	Sb	15 01 24.3	-1.4
	4µm,0.8s						
ATMC	Monte Cedrone	0.52	152	Pg	Pg	15 01 17.2	-0.2
ATMC				Sg	Sb	15 01 25.9	-0.8
	4µm,0.4s						
ATMC	Monte Cedrone	0.52	152	Pg	Pg	15 01 17.2	-0.2
ATMC				Sg	Sb	15 01 25.9	-0.8
	4µm,0.4s						
MTRZ	Monterenzio	0.55	329	Pg	Pg	15 01 17.3	-0.6
	8µm,0.5s						
MTRZ	Monterenzio	0.55	329	Pg	Pg	15 01 17.3	-0.6
	8µm,0.5s						
PTF	Prato	0.57	276	Pg	Pg	15 01 18.1	-0.3
PTF				Sg	Sg	15 01 26.8	+1.0
PTF	Prato	0.57	276	Pg	Pg	15 01 18.1	-0.3
PTF				Sg	Sg	15 01 26.8	+1.0
CAFI	Castiglion Fio	0.58	172	Pg	Pg	15 01 18.6	0.0
CAFI				Sg	Sb	15 01 27.9	-0.5
	4µm,0.7s						
CAFI	Castiglion Fio	0.58	172	Pg	Pg	15 01 18.6	0.0
CAFI				Sg	Sb	15 01 27.9	-0.5
	4µm,0.7s						
FNVD	Fontana Vidola	0.59	297	Pg	Pg	15 01 18.2	-0.5
FNVD				Sg	Sg	15 01 27.5	+1.1
	5µm,0

SSFR	Montelago di S	0.82	125	Pg	Pg	15 01 22.4	-0.7
	1µm,0.3s							
SSFR	Montelago di S	0.82	125	Pg	Pg	15 01 22.4	-0.7
	1µm,0.3s							
ATCC	AVT- Casa Cast	0.92	141	Pg	Pb	15 01 24.7	-1.0
ATCC				Sg	Sb	15 01 37.9	-0.2
	3µm,0.8s							
ATCC	AVT- Casa Cast	0.92	141	Pg	Pb	15 01 24.7	-1.0
ATCC				Sg	Sb	15 01 37.9	-0.2
	3µm,0.8s							
BDI	Bagni Di Lucca	0.92	280	Pg	Pg	15 01 24.5	-0.6
BDI				Sg	Sg	15 01 37.9	+0.9
	2µm,0.8s							
BDI	Bagni Di Lucca	0.92	280	Pg	Pg	15 01 24.5	-0.6
BDI				Sg	Sg	15 01 37.9	+0.9
	2µm,0.8s							
MAIM	Mastiano	0.99	271	Pg	Pg	15 01 25.9	-0.3
MAIM				Sg	Sg	15 01 39.7	+0.6
	1µm,0.6s							
MAIM	Mastiano	0.99	271	P	Pg	15 01 26.0	-0.3
MAIM				S	Sg	15 01 39.5	+0.4
MGAB	Montegabbione	1.01	169	Pg	Pb	15 01 26.7	-0.5
	3µm,0.8s							
MGAB	Montegabbione	1.01	169	Pg	Pb	15 01 26.7	-0.5
	3µm,0.8s							
SNTG	Esanatoglia	1.02	129	Pg	Pg	15 01 26.2	-0.8
	820nm,0.6s							
SNTG	Esanatoglia	1.02	129	Pg	Pg	15 01 26.2	-0.8
	820nm,0.6s							
SACS	San Casciano d	1.06	178	Pg	Pb	15 01 27.3	-0.8
	1µm,0.5s							
SARO	Sassorosso	1.08	285	P	Pg	15 01 27.9	-0.3
SARO				S	Sg	15 01 42.2	-0.1
ARCI	Arcidosso	1.09	195	Pg	Pg	15 01 27.6	-0.7
	2µm,0.6s							
ARCI	Arcidosso	1.09	195	Pg	Pg	15 01 27.6	-0.7
	2µm,0.6s							
VLC	Villacollemand	1.09	284	Pg	Pg	15 01 27.6	-0.6
	771nm,0.9s							
VLC	Villacollemand	1.09	284	Pg	Pg	15 01 27.6	-0.6
	771nm,0.9s							
VLC	Villacollemand	1.09	284	ePg	Pg	15 01 27.6	-0.6
FDMO	Fiordimonte	1.25	134	Pg	Pg	15 01 30.1	-1.2
	1µm,1.0s							
FDMO	Fiordimonte	1.25	134	Pg	Pg	15 01 30.1	-1.2
	1µm,1.0s							
LATE	Laterza	1.29	182	Pg	Pg	15 01 31.4	-0.7
	902nm,0.7s							
LATE	Laterza	1.29	182	Pg	Pg	15 01 31.4	-0.7
	902nm,0.7s							
CASP	Castiglione de	1.33	213	Pg	Pn	15 01 30.9	-1.5
	339nm,0.7s							
CASP	Castiglione de	1.33	213	Pg	Pn	15 01 30.9	-1.5
	339nm,0.7s							
CESX	Cesi	1.40	158	Pg	Pn	15 01 32.6	-0.8
	921nm,0.7s							
CESX	Cesi	1.40	158	Pg	Pn	15 01 32.6	-0.8
	921nm,0.7s							
GRAM	Graiana	1.41	295	P	Pn	15 01 33.8	+0.2
GRAM				S	Sb	15 01 49.6	-2.8
TEOL	Teolo	1.46	355	ePg	Pn	15 01 33.0	-1.2
TEOL				eSg	Sg	15 01 53.8	-0.5
TEOL	Teolo	1.46	355	ePg	Pn	15 01 33.0	-1.2
TEOL				eSg	Sg	15 01 53.8	-0.5
GROG	Isola di Gorgo	1.50	252	Pg	Pn	15 01 33.6	-1.2
	249nm,0.5s							
GROG	Isola di Gorgo	1.50	252	Pg	Pn	15 01 33.6	-1.2
	249nm,0.5s							
MSSA	Maissana	1.73	285	Pg	Pn	15 01 37.1	-0.9
	593nm,1.0s							
MARN	Marana (Italy)	1.79	345	ePg	Pn	15 01 37.8	-1.0
MARN				eSg	Sn	15 02 01.0	-0.9
MARN	Marana (Italy)	1.79	345	ePg	Pn	15 01 37.8	-1.0
MARN				eSg	Sn	15 02 01.0	-0.9
ROVR	Rover¯¤ Verone	1.83	343	Pg	Pn	15 01 38.3	-1.1
FIAM	Fiamignano	1.88	150	Pn	Pn	15 01 40.2	+0.1
	376nm,0.7s							
FIAM	Fiamignano	1.88	150	Pn	Pn	15 01 40.2	+0.1
	376nm,0.7s							
MTLO	Montello	1.92	5	ePn	Pn	15 01 39.6	-0.9
MTLO	Montello	1.92	5	eP	Pn	15 01 39.6	-0.9
AQU	L'Aquila	1.92	143	ePn	Pb	15 01 42.5	-0.3
AQU	L'Aquila	1.92	143	ePn	Pg	15 01 42.8	-1.4
BALD	Monte Baldo	1.93	338	ePn	Pn	15 01 40.1	-0.7
BALD	Monte Baldo	1.93	338	eP	Pn	15 01 40.1	-0.7
SALO	Salr	1.96	331	Pn	Pn	15 01 41.0	-0.1
SALO				Sn	Sn	15 02 06.3	+0.3
	1µm,0.8s							
SALO	Salr	1.96	331	Pn	Pn	15 01 41.0	-0.1
SALO				Sn	Sn	15 02 06.3	+0.3
	1µm,0.8s							
CGRP	Cima Grappa	1.98	359	Pg	Pn	15 01 40.1	-1.4
CGRP				Sg	Sn	15 02 06.2	-0.4
	1µm,0.6s							
CGRP	Cima Grappa	1.98	359	ePn	Pn	15 01 39.8	-1.7
CGRP	Cima Grappa	1.98	359	eP	Pn	15 01 39.8	-1.7
DDS	Dosso del Somm	2.03	347	ePn	Pn	15 01 40.9	-1.3
DDS				eSn	Sb	15 02 10.8	+0.5
DDS	Dosso del Somm	2.03	347	ePn	Pn	15 01 40.9	-1.3
DDS				eSn	Sb	15 02 10.8	+0.5
MAGA	Magasa	2.06	335	Pn	Pn	15 01 41.8	-0.8
	9µm,1.5s							
MAGA	Magasa	2.06	335	Pn	Pn	15 01 41.8	-0.8
	9µm,1.5s							
VARN	Col Varnada, M	2.10	5	ePn	Pn	15 01 41.2	-1.8
VARN				eSn	Sn	15 02 08.8	-0.6
VARN	Col Varnada, M	2.10	5	ePn	Pn	15 01 41.2	-1.8
VARN				eSn	Sn	15 02 08.8	-0.6
POLC	Polcenigo	2.17	12	ePn	Pn	15 01 42.8	-1.2
POLC	Polcenigo	2.17	12	eP	Pn	15 01 42.8	-1.2
PANI	Panarotta	2.18	350	ePn	Pn	15 01 43.4	-0.9
PANI	Panarotta	2.18	350	eP	Pn	15 01 43.4	-0.9
SKDS	Skadanscina	2.25	42	i Pn	Pn	15 01 43.1	-2.0
SKDS	Skadanscina	2.25	42	i Pn	Pn	15 01 43.1	-2.0
RNI	Roncone	2.25	338	ePn	Pn	15 01 44.7	-0.6
RNI	Roncone	2.25	338	eP	Pn	15 01 44.7	-0.6
TRI	Trieste	2.26	36	ePn	Pn	15 01 43.2	-1.9
TRI	Trieste	2.26	36	eP	Pn	15 01 43.2	-1.9
TRI	Trieste	2.26	36	ePn	Pn	15 01 43.0	-2.2
NVLJ	Novalja	2.27	72	ePn	Pn	15 01 45.2	-0.1
NVLJ				Sn	Sn	15 02 13.4	0.0
NVLJ	Novalja	2.27	72	ePn	Pn	15 01 45.1	-0.1
NVLJ				Sn	Sn	15 02 13.4	0.0
SABO	M.te Sabotino	2.42	30	ePn	Pn	15 01 46.0	-1.4
SABO	M.te Sabotino	2.42	30	eP	Pn	15 01 46.0	-1.4
CIMO	Cimolais	2.44	10	ePn	Pn	15 01 45.7	-2.0
CIMO	Cimolais	2.44	10	eP	Pn	15 01 45.7	-2.0
PCP	Piancastagn	2.46	286	P	Pn	15 01 46.5	-1.6
COLI	Coloredo	2.48	25	ePn	Pn	15 01 46.7	-1.5
COLI	Coloredo	2.48	25	eP	Pn	15 01 46.7	-1.5
PGF	Pioggiola	2.49	238	ePn	Pn	15 01 47.3	-1.2
	SNR=1.0							
PGF				eSn	Sn	15 02 16.9	-2.3
	70nm,0.4s							
PGF	Pioggiola	2.49	238	ePn	Pn	15 01 47.3	-1.2
	SNR=1.0							
PGF				eSn	Sn	15 02 16.9	-2.3
	35nm,0.4s							
JAVS	Javornik	2.53	38	i Pn	Pn	15 01 47.3	-1.8
JAVS				eSn	Sn	15 02 19.0	-1.3
JAVS	Javornik	2.53	38	i Pn	Pn	15 01 47.3	-1.8
JAVS				eSn	Sn	15 02 19.0	-1.3
VINO	Villanova	2.56	23	ePn	Pn	15 01 47.7	-1.7
VINO	Villanova	2.56	23	eP	Pn	15 01 47.7	-1.7
OZOL	Ozolo	2.56	347	ePn	Pn	15 01 49.2	-0.3
OZOL	Ozolo	2.56	347	eP	Pn	15 01 49.2	-0.3
CEY	Cerknica	2.59	44⇑	i Pn	Pn	15 01 47.8	-2.0
DRE	Drenchia	2.60	29	ePn	Pn	15 01 48.5	-1.4
DRE	Drenchia	2.60	29	eP	Pn	15 01 48.5	-1.4
CARE	Lago del Cares	2.65	342	ePn	Pn	15 01 50.3	-0.5
CARE	Lago del Cares	2.65	342	eP	Pn	15 01 50.3	-0.5
CADS	Cadrg	2.68	29	i Pn	Pn	15 01 49.4	-1.6
CADS				eSn	Sn	15 02 23.2	-0.6
CADS	Cadrg	2.68	29	i Pn	Pn	15 01 49.4	-1.6
CADS				eSn	Sn	15 02 23.2	-0.6
ZOU	Zoufplan	2.77	16	ePn	Pn	15 01 50.9	-1.4
ZOU	Zoufplan	2.77	16	ePn	Pn	15 01 51.0	-1.4
ZOU	Zoufplan	2.77	16	eP	Pn	15 01 51.0	-1.4
LSR	Lussari	2.83	24	ePn	Pn	15 01 52.1	-1.1
LSR	Lussari	2.83	24	eP	Pn	15 01 52.1	-1.1
LJU	Ljubljana	2.86	41⇑	ePn	Pn	15 01 52.5	-0.9
LJU	Ljubljana	2.86	41⇑	i Pn	Pn	15 01 52.3	-1.1
IMI	Imperia	2.86	271	P	Pn	15 01 52.5	-1.1
UDBI	Udbina	2.88	76	i Pn	Pb	15 01 55.8	-3.3
UDBI				Sn	Sn	15 02 29.9	+1.1
UDBI	Udbina	2.88	76	i Pn	Pb	15 01 55.8	-3.3
UDBI				Sn	Sn	15 02 29.8	+1.1
ABTA	Abfaltersbach	2.88	9	ePn	Pn	15 01 53.3	-0.5
	26nm,0.5s,SNR=25							
ABTA				Sn	Sn	15 02 29.2	+0.4
	178nm,0.7s							
ABTA	Abfaltersbach	2.88	9	Pn	Pn	15 01 53.3	-0.5
	26nm,0.5s,SNR=25							
ABTA				Sn	Sn	15 02 29.2	+0.4
	178nm,0.7s							
ACOM	Acomizza, Ital	2.89	23	ePn	Pn	15 01 53.4	-0.6
ACOM	Acomizza, Ital	2.89	23	eP	Pn	15 01 53.4	-0.6
MYKA	Terra Mystica	3.00	24	ePn	Pn	15 01 53.3	-2.2
	2.4nm,0.2s							
MYKA				Sn	Sn	15 02 32.0	+0.2
	58nm,0.5s							
MYKA	Terra Mystica	3.00	24	Pn	Pn	15 01 53.3	-2.2
	2.4nm,0.2s							
MYKA				Sn	Sn	15 02 32.0	+0.2
	58nm,0.5s							
NEGI	Seborga	3.00	270	P	Pn	15 01 54.5	-1.0
OZLJ	Ozalj	3.09	55	ePn	Pn	15 01 56.7	+0.2
OZLJ				Sn	Sn	15 02 31.5	-2.2
OZLJ	Ozalj	3.09	55	ePn	Pn	15 01 56.7	+0.2
OZLJ				Sn	Sn	15 02 31.5	-2.2
TUE	Stuetta	3.12	326	ePn	Pn	15 01 57.6	+0.4
TUE	Stuetta	3.12	326	ePn	Pn	15 01 57.6	+0.4
DAVOX	Davos/Dischmat	3.19	335	Pn	Pn	15 01 59.6	+1.3
	8.4nm,0.3s,baz=153,slow=14,SNR=30							
DAVOX				Sn	Sn	15 02 38.0	+1.3
	14nm,0.3s,baz=2.8,slow=18,SNR=9							
SBF	Sospel	3.20	271	ePn	Pn	15 01 57.6	-0.5
	SNR=1.0							
SBF				eSn	Sn	15 02 31.5	-5.0
	125nm,0.5s							
SBF	Sospel	3.20	271	ePn	Pn	15 01 57.6	-0.5
	SNR=1.0							
SBF				eSn	Sn	15 02 31.5	-5.0
	62nm,0.5s							
AUTN	L'Aution	3.20	273	P	Pn	15 01 57.3	-1.0
AUTN				S	Sn	15 02 35.5	-1.3
AUTN	L'Aution	3.20	273	P	Pn	15 01 57.3	-1.0
AUTN				S	Sn	15 02 35.5	-1.3
CRES	Cresnjev	3.20	52⇑	i Pn	Pn	15 01 57.1	-1.1
FETA	Feichten	3.21	346	i Pn	Pn	15 01 59.4	+0.9
	57nm,0.6s,SNR=74							
FETA				i Sn	Sn	15 02 38.8	+1.6
	74nm,0.5s							
FETA	Feichten	3.21	346	Pn	Pn	15 01 59.4	+0.9
	57nm,0.6s,SNR=74							
FETA				Sn	Sn	15 02 38.8	+1.6
	74nm,0.5s							
OBKA	Obir	3.23	35	i Pn	Pn	15 01 57.9	-0.7
	6.3nm,0.2s,SNR=12							
OBKA				i Sn	Sn	15 02 37.9	+0.6
	52nm,0.4s							
OBKA	Obir	3.23	35	ePn	Pn	15 01 57.9	-0.7
OBKA				ePg	Pg	15 02 06.8	-2.3
OBKA				eSg	Sg	15 02 52.2	+1.3
OBKA	Obir	3.23	35	Pn	Pn	15 01 57.9	-0.7
OBKA	Obir	3.23	35	Pg	Pg	15 02 06.8	-2.3
OBKA				Sn	Sn	15 02 37.9	+0.6
	52nm,0.4s							
OBKA				Sg	Sg	15 02 52.2	+1.3
REVF	Revere	3.25	269	P	Pn	15 01 58.0	-0.9
REVF	Revere	3.25	269	P	Pn	15 01 58.0	-0.9
LUCF	Luceram	3.26	271	P	Pn	15 01 57.9	-1.1
LUCF				S	Sn	15 02 36.4	-1.7
LUCF	Luceram	3.26	271	P	Pn	15 01 57.9	-1.1
LUCF				S	Sn	15 02 36.4	-1.7
TRAV	Traversella	3.34	300	P	Pn	15 02 00.4	+0.3
KBA	Koelnbreinsper	3.34	18	i Pn	Pn	15 01 59.8	-0.5
	23nm,0.5s,SNR=22							
KBA	Koelnbreinsper	3.34	18	ePn	Pn	15 01 59.9	-0.3
KBA				ePg	Pg	15 02 12.0	+0.6
KBA				eSn	Sn	15 02 39.2	-1.1
KBA	Koelnbreinsper	3.34	18	Pn	Pn	15 01 59.9	-0.3
WTTA	Wattenberg	3.36	357	i Pn	Pn	15 02 01.6	+1.0
	13nm,0.3s,SNR=10							
WTTA				i Sn	Sn	15 02 42.7	+1.9
	56nm,0.5s							
WTTA	Wattenberg	3.36	357	ePN	Pn	15 02 01.5	+1.0
WTTA	Wattenberg	3.36	357	ePn	Pn	15 02 01.5	+1.0
WTTA				ePg	Pg	15 02 13.8	+2.1
WTTA				eSn	Sn	15 02 42.7	+1.9
WTTA				eSg	Sg	15 02 57.7	+2.4
WTTA	Wattenberg	3.36	357	Pn	Pn	15 02 01.5	+1.0
MVIF	Mont Vial	3.40	271	P	Pn	15 02 00.2	-0.8
MVIF				S	Sn	15 02 40.3	-1.4
MVIF	Mont Vial	3.40	271	P	Pn	15 02 00.2	-0.8
MVIF				S	Sn	15 02 40.3	-1.4
BHB	Bricherasio	3.42	287	P	Pn	15 02 01.7	+0.5
WATA	Walderalm	3.44	357	i Pn	Pn	15 02 02.8	+1.3
	36nm,0.3s,SNR=30							
WATA	Walderalm	3.44	357	Pn	Pn	15 02 02.8	+1.3
	36nm,0.3s,SNR=30							
MOTA	Moosalm	3.48	352	i Pn	Pn	15 02 02.7	+0.6
	38nm,0.4s,SNR=40							
MOTA				eSn	Sn	15 02 45.9	+2.2
	53nm,0.4s							
MOTA	Moosalm	3.48	352	Pn	Pn	15 02 02.7	+0.6
	38nm,0.4s,SNR=40							
MOTA				Sn	Sn	15 02 45.9	+2.2
	53nm,0.4s							
SOKA	Soboth	3.57	38	i Pn	Pn	15 02 02.2	-1.0
	8.9nm,0.4s,SNR=9.1							
SOKA	Soboth	3.57	38	Pn	Pn	15 02 02.2	-1.0
	8.9nm,0.4s,SNR=9.1							
PLONS	Plons/SG	3.59	332	ePn	Pn	15 02 05.8	+2.2
PLONS				eSn	Sn	15 02 48.0	+1.6
PLONS	Plons/SG	3.59	332	Pn	Pn	15 02 05.8	+2.2
PLONS				Sn	Sn	15 02 48.0	+1.6
DAVA	Damuels	3.65	338	i Pn	Pn	15 02 06.0	+1.4
	SNR=28							
DAVA				i Sn	Sn	15 02 50.4	+2.4
	151nm,0.5s							
DAVA	Damuels	3.65	338	ePn	Pn	15 02 06.2	+1.7
DAVA				eSn	Sn	15 02 50.6	+2.6
DAVA	Damuels	3.65	338	Pn	Pn	15 02 06.2	+1.7
DAVA				Sn	Sn	15 02 50.4	+2.4
	151nm,0.5s							
RETA	Reutte	3.66	348	i Pn	Pn	15 02 05.4	+0.8
	22nm,0.4s,SNR=17							
RETA				eSn	Sn	15 02 50.1	+2.0
	87nm,0.6s							
RETA	Reutte	3.66	348	Pn	Pn	15 02 05.4	+0.8
	22nm,0.4s,SNR=17							
RETA				Sn	Sn	15 02 50.1	+2.0
	87nm,0.6s							
MBDF	Montbardon	3.74	284	ePn	Pn	15 02 05.0	-0.7
	SNR=1.0							
MBDF				eSn	Sn	15 02 48.4	-1.7
	34nm,0.5s,SNR=1.0							
MBDF	Montbardon	3.74	284	ePn	Pn	15 02 05.0	-0.7
	SNR=1.0							
MBDF				eSn	Sn	15 02 48.4	-1.7
	17nm,0.5s,SNR=1.0							
RRL	Rocca Remolon	3.77	287	P	Pn	15 02 06.8	+0.6
RRL				S	Sn	15 02 48.3	-2.6
FRF	La Foret Royal	3.79	267	ePn	Pn	15 02 05.6	-0.6
	SNR=1.0							
FRF				eSn	Sn	15 02 48.8	-2.3
	35nm,0.5s							
FRF	La Foret Royal	3.79	267	ePn	Pn	15 02 05.6	-0.6
	SNR=1.0							
FRF				eSn	Sn	15 02 48.8	-2.3
	18nm,0.5s							
RJOB	Jochberg	3.89	9	ePn	Pn	15 02 08.9	+1.2
RJOB				eSn	Sn	15 02 55.3	+1.7
RJOB	Jochberg	3.89	9	Pn	Pn	15 02 08.9	+1.2
RJOB				Sn	Sn	15 02 55.3	+1.7
LMR	La Mourre	3.92	263	ePn	Pn	15 02 06.6	-1.5
	SNR=1.0							
LMR				eSn	Sn	15 02 49.9	-4.5
	15nm,0.4s							
LMR	La Mourre	3.92	263	ePn	Pn	15 02 06.6	-1.5
	SNR=1.0							
LMR				eSn	Sn	15 02 49.9	-4.5
	7.3nm,0.4s							
LPL	La Plagne	3.99	296	ePn	Pn	15 02 11.4	+2.2
	SNR=1.0							
LPL				eSn	Sn	15 02 53.2	-3.2
	47nm,0.5s							
LPL	La Plagne	3.99	296	ePn	Pn	15 02 11.4	+2.2
	SNR=1.0							
LPL				eSn	Sn	15 02 53.2	-3.2
	24nm,0.5s							
WILA	Wila	4.07	331	ePn	Pn	15 02 11.2	+1.0
WILA				eSn	Sn	15 02 58.6	+0.4
WILA	Wila	4.07	331	Pn	Pn	15 02 11.2	+1.0
WILA				Sn	Sn	15 02 58.6	+0.4
ARSA	Arzberg	4.22	36	i Pn	Pn	15 02 10.9	-1.3
	15nm,0.4s,SNR=14							
ARSA				eSn	Sn	15 03 00.0	-1.8
	22nm,0.5s							
ARSA	Arzberg	4.22	36	ePn	Pn	15 02 11.0	-1.2
ARSA				eSn	Sn	15 02 59.6	-2.2
ARSA	Arzberg	4.22	36	Pn	Pn	15 02 11.0	-1.2
ARSA				Sn	Sn	15 02 59.6	-2.2
MOA	Molln	4.29	22	i Pn	Pn	15 02 12.9	-0.2
	5.7nm,0.4s,SNR=12							
MOA				i Sn	Sn	15 03 02.3	-1.1
	64nm,0.6s							
MOA	Molln	4.29	22	ePn	Pn	15 02 13.0	-0.1
MOA				eSn	Sn	15 03 02.7	-0.7
MOA	Molln	4.29	22	Pn	Pn	15 02 13.0	-0.1
MOA				Sn	Sn	15 03 02.7	-0.7
OG01	Vacheresse	4.39	305	P	Pn	15 02 13.0	-1.6
OG01				S	Sn	15 03 06.2	+0.2
OG01	Vacheresse	4.39	305	P	Pn	15 02 13.0	-1.6
OG01				S	Sn	15 03 06.2	+0.2
ORIF	Oris-en-Rattie	4.40	285	ePn	Pn	15 02 15.5	+0.8
	SNR=1.0							
ORIF				eSn	Sn	15 03 05.9	-0.4
	43nm,0.6s,SNR=1.0							
ORIF	Oris-en-Rattie	4.40	285	ePn	Pn	15 02 15.5	+0.8
	SNR=1.0							
ORIF				eSn	Sn	15 03 05.9	-0.4
	21nm,0.6s,SNR=1.0							
SULZ	Cheisacher	4.47	325	ePn	Pn	15 02 16.5	+0.9
SULZ				eSn	Sn	15 03 07.7	-0.2
SULZ	Cheisacher	4.47	325	Pn	Pn	15 02 16.5	+0.9
SULZ				Sn	Sn	15 03 07.7	-0.2
BALST	Balsthal	4.50	321	ePn	Pn	15 02 16.7	+0.6
BALST				eSn	Sn	15 03 07.6	-1.2
BALST	Balsthal	4.50	321	Pn	Pn	15 02 16.7	+0.6
BALST				Sn	Sn	15 03 07.6	-1.2
SLE	Schleitheim	4.52	330	ePn	Pn	15 02 16.5	+0.2
SLE				eSn	Sn	15 03 06.2	-2.9
SLE	Schleitheim	4.52	330	Pn	Pn	15 02 16.5	+0.2
SLE				Sn	Sn	15 03 06.2	-2.9
SMRF	Simiane la Rot	4.54	273	ePn	Pn	15 02 16.2	-0.3
	SNR=1.0							
SMRF	Simiane la Rot	4.54	273	ePn	Pn	15 02 16.2	-0.3
	SNR=1.0							
OG26	St.-Nazaire-De	4.76	280	P	Pn	15 02 17.5	-2.1
OG26	St.-Nazaire-De	4.76	280	P	Pn	15 02 17.5	-2.1
VSL	Villasalto	4.78	204	ePn	Pn	15 02 20.9	+1.0
VSL	Villasalto	4.78	204	ePn	Pn	15 02 20.9	+1.0
FELD	Feldberg im Sc	4.79	327	P	Pn	15 02 19.9	-0.3
CABF	La Chapelle	4.89	306	ePn	Pn	15 02 22.2	+0.8
	SNR=1.0							
CABF	La Chapelle	4.89	306	ePn	Pn	15 02 22.2	+0.8
	SNR=1.0							
CONA	Conrad Observa	4.90	33	i Pn	Pn	15 02 20.3	-1.3
	12nm,0.5s							
CONA				i Sn	Sn	15 03 17.8	-0.7
	28nm,0.5s							
CONA	Conrad Observa	4.90	33	Pn	Pn	15 02 20.3	-1.3
	12nm,0.5s							
CONA				Sn	Sn	15 03 17.8	-0.7
	28nm,0.5s							
BRY	Bratogost	4.97	99	ePn	Pn	15 02 23.2	+0.6
BFO	Black Forest	5.06	332	ePn	Pn	15 02 23.6	-0.1
BFO				eSn	Sn	15 03 19.1	-3.3
BFO	Black Forest	5.06	332	ePn	Pn	15 02 23.2	-0.5
	34nm,0.6s							
BFO				Sn	Sn	15 03 19.1	-3.3
BFO	Black Forest	5.06	332	ePn	Pn	15 02 23.2	-0.5
	34nm,0.6s							
GERES	GERESS Array B	5.10	14	Pn	Pn	15 02 22.6	-1.7
	1.8nm,0.3s,baz=194,slow=13,SNR=29							
GERES				Sn	Sn	15 03 20.5	-3.1
	5.8nm,0.3s,baz=198,slow=24,SNR=9.8							
MOF	Molkenrain	5.14	322	P	Pn	15 02 24.8	-0.1
MOF	Molkenrain	5.14	322	P	Pn	15 02 24.8	-0.1
UPM	Unac-Piva	5.17	95⇓	i Pn	Pn	15 02 27.6	+2.2
STU	Stuttgart	5.20	340	Pn	Pn	15 02 25.9	+0.2
STU				Sn	Sn	15 03 24.7	-1.2
STU	Stuttgart	5.20	340	Pn	Pn	15 02 25.9	+0.2
VIVF	Saint-Julien-I	5.24	283	ePn	Pn	15 02 25.8	-0.3
	SNR=1.0							
VIVF				eSn	Sn	15 03 24.0	-2.8
	4.0nm,0.4s							
VIVF	Saint-Julien-I	5.24	283	ePn	Pn	15 02 25.8	-0.3
	SNR=1.0							
VIVF				eSn	Sn	15 03 24.0	-2.8
	2.0nm,0.4s							
HINF	Hinteralfeld	5.24	320	ePn	Pn	15 02 26.1	-0.1
	SNR=1.0							
HINF				eSn	Sn	15 03 23.6	-3.4
	143nm,0.7s,SNR=1.0							
HINF	Hinteralfeld	5.24	320	ePn	Pn	15 02 26.1	-0.1
	SNR=1.0							
HINF				eSn	Sn	15 03 23.6	-3.4
	72nm,0.7s,SNR=1.0							
WET	Wettzell	5.29	7	ePn	Pn	15 02 25.7	-1.1
WET				eSn	Sn	15 03 25.1	-2.9
WET	Wettzell

SMF				*e*Sn		**Sn**	**15 03 50.7**	**-1.8**
	10.0nm,0.4s							
LBL	**Lubilhac**	**6.29**	**285**	P		**Pn**	**15 02 39.2**	**-1.5**
LBL	**Lubilhac**	**6.29**	**285**	P		**Pn**	**15 02 39.2**	**-1.5**
PAGF	**Fort de Pagny**	**6.30**	**320**	*e*P		**Pn**	**15 02 43.2**	**+2.5**
VRAC	**Vranov**	**6.31**	**29**	Pn		**Pn**	**15 02 41.4**	**+0.6**
	0.5nm,0.3s,baz=214,slow=11,SNR=4.4							
VRAC				Sn		**Sn**	**15 03 49.5**	**-3.7**
	1.1nm,0.3s,baz=134,slow=21,SNR=5.7							
GOPC	**GO Pecny, Ondr**	**6.34**	**17**	*e*PN		**Pn**	**15 02 40.0**	**-1.2**
GOPC				*e*SN		**Sn**	**15 03 49.3**	**-4.6**
GOPC				*e*SG		**Sg**	**15 04 36.8**	**+6.1**
GOPC	**GO Pecny, Ondr**	**6.34**	**17**	Pn		**Pn**	**15 02 40.0**	**-1.2**
NKC	**Novy Kostel**	**6.34**	**3**	*e*PN		**Pn**	**15 02 41.4**	**+0.1**
NKC				*e*SN		**Sn**	**15 03 49.3**	**-4.7**
NKC	**Novy Kostel**	**6.34**	**3**	Pn		**Pn**	**15 02 41.4**	**+0.1**
PRU	**Pruhonice**	**6.36**	**16**	*e*PN		**Pn**	**15 02 41.1**	**-0.4**
PRU				*e*PG		**Pg**	**15 03 07.2**	**-1.8**
PRU				*e*SN		**Sn**	**15 03 49.7**	**-4.6**
PRU				*ex*		x	15 04 04.6	
PRU	**Pruhonice**	**6.36**	**16**	Pn		**Pn**	**15 02 41.1**	**-0.4**
SFTF	**Sexfontaines**	**6.40**	**315**	*e*Pn		**Pn**	**15 02 42.9**	**+0.8**
SFTF	**Sexfontaines**	**6.40**	**315**	*e*Pn		**Pn**	**15 02 42.9**	**+0.8**
GRUS	**Gruza**	**6.40**	**87**	*e*Pn		**Pn**	**15 02 43.7**	**+1.6**
LOR	**Lormes**	**6.54**	**304**	*e*Pn		**Pn**	**15 02 44.5**	**+0.5**
	SNR=1.0							
LOR				*e*Sn		**Sn**	**15 03 55.1**	**-3.8**
	30nm,0.4s							
LOR	**Lormes**	**6.54**	**304**	*e*Pn		**Pn**	**15 02 44.5**	**+0.5**
	SNR=1.0							
AVF	**Avril sur Loir**	**6.65**	**299**	*e*Pn		**Pn**	**15 02 44.9**	**-0.6**
AVF	**Avril sur Loir**	**6.65**	**299**	*e*Pn		**Pn**	**15 02 44.9**	**-0.6**
SSF	**Saint Saulge**	**6.66**	**301**	*e*Pn		**Pn**	**15 02 46.0**	**+0.3**
	SNR=1.0							
SSF				*e*Sn		**Sn**	**15 03 59.8**	**-2.1**
	13nm,0.4s,SNR=1.0							
SSF	**Saint Saulge**	**6.66**	**301**	*e*Pn		**Pn**	**15 02 46.0**	**+0.3**
	SNR=1.0							
SSF				*e*Sn		**Sn**	**15 03 59.8**	**-2.1**
	6.4nm,0.4s,SNR=1.0							
RUP	**Ruppelstein**	**6.67**	**332**	P		**Pn**	**15 02 45.8**	**0.0**
VYHS	**Vyhne**	**6.67**	**44**	*e*Pn		**Pn**	**15 02 44.3**	**-1.6**
VYHS	**Vyhne**	**6.67**	**44**	*e*PN		**Pn**	**15 02 44.2**	**-1.6**
VYHS				*e*SN		Sn	15 03 49.3	-13
TNS	**Taunus Mts**	**6.73**	**341**	*e*Pn		**Pn**	**15 02 47.6**	**+0.9**
TNS				*e*Sn		**Sn**	**15 04 01.3**	**-2.4**
TNS	**Taunus Mts**	**6.73**	**341**	Pn		**Pn**	**15 02 47.6**	**+0.9**
TNS				Sn		**Sn**	**15 04 01.3**	**-2.4**
MOX	**Moxa**	**6.75**	**359**	*e*Pn		**Pn**	**15 02 44.8**	**-2.0**
MOX				*e*Sn		**Sn**	**15 03 58.8**	**-5.1**
MOX	**Moxa**	**6.75**	**359**	Pn		**Pn**	**15 02 44.8**	**-2.0**
SELS	**Selova**	**6.76**	**93**	*e*Pn		**Pn**	**15 02 46.5**	**-0.6**
BGF	**Bois d'Agland**	**6.89**	**296**	*e*Pn		**Pn**	**15 02 49.8**	**+1.0**
	SNR=1.0							
BGF	**Bois d'Agland**	**6.89**	**296**	*e*Pn		**Pn**	**15 02 49.8**	**+1.0**
	SNR=1.0							
WLF	**Walferdange**	**6.96**	**328**	Pn		**Pn**	**15 02 51.3**	**+1.5**
	9.3nm,0.6s							
WLF	**Walferdange**	**6.96**	**328**	Pn		**Pn**	**15 02 51.3**	**+1.5**
	9.3nm,0.6s							
MTLF	**Montolieu**	**7.02**	**269**	*e*Pn		**Pn**	**15 02 49.0**	**-1.6**
	SNR=1.0							
MTLF				*e*Sn		**Sn**	**15 04 05.0**	**-5.6**
	1.9nm,0.4s							
MTLF	**Montolieu**	**7.02**	**269**	*e*Pn		**Pn**	**15 02 49.0**	**-1.6**
	SNR=1.0							
CAF	**Calviac**	**7.09**	**282**	*e*Pn		**Pn**	**15 02 50.6**	**-0.9**
CAF				*e*Sn		**Sn**	**15 04 09.3**	**-3.0**
	3.6nm,0.2s,SNR=1.0							
CAF	**Calviac**	**7.09**	**282**	*e*Pn		**Pn**	**15 02 50.6**	**-0.9**
CAF				*e*Sn		**Sn**	**15 04 09.3**	**-3.0**
	1.8nm,0.2s,SNR=1.0							
BRG	**Berggiesshubel**	**7.11**	**11**	PN		**Pn**	**15 02 51.1**	**-0.7**
BRG				*i*			15 04 08.5	
BRG				*i*			15 04 21.8	
	12nm,0.7s							
DPC	**Dobruska-Polom**	**7.13**	**24**	*e*SN		**Sn**	**15 04 07.5**	**-5.9**
DPC				*ex*		x	15 04 20.8	
UPC	**Upice**	**7.18**	**22**	*e*SN		**Sn**	**15 04 08.9**	**-5.8**
TCF	**Toulx Ste Croi**	**7.23**	**293**	*e*Pn		**Pn**	**15 02 51.8**	**-1.7**
TCF				*e*Sn		**Sn**	**15 04 11.9**	**-4.0**
	6.3nm,0.5s,SNR=1.0							
TCF	**Toulx Ste Croi**	**7.23**	**293**	*e*Pn		**Pn**	**15 02 51.8**	**-1.7**
BARS	**Barje**	**7.34**	**95**	*e*Pn		**Pn**	**15 02 55.8**	**+0.8**
CLL	**Collm**	**7.45**	**6**	*e*Pn		**Pn**	**15 02 56.0**	**-0.4**
CLL				*e*(Sn)		**Sn**	**15 04 14.0**	**-7.1**
CLL				*e*			15 04 32.0	
CLL				*e*Sg		**Sg**	**15 05 04.0**	**-2.3**
LFF	**La Frestale**	**8.03**	**281**	*e*Pn		**Pn**	**15 03 02.6**	**-1.8**
	SNR=1.0							
LFF	**La Frestale**	**8.03**	**281**	*e*Pn		**Pn**	**15 03 02.6**	**-1.8**
	SNR=1.0							
KEST	**Kesra**	**8.39**	**194**	Pn		Pn	15 03 15.3	+5.9
	1.3nm,0.3s,baz=351,slow=7.1,SNR=11							
MFF	**Saint Martin d**	**8.88**	**292**	*e*Pn		**Pn**	**15 03 15.6**	**-0.6**
	SNR=1.0							
MFF	**Saint Martin d**	**8.88**	**292**	*e*Pn		**Pn**	**15 03 15.6**	**-0.6**
	SNR=1.0							
ESDC	**Sonseca Array**	**12.54**	**256**	Pn		**Pn**	**15 04 09.9**	**+3.7**
	0.3nm,0.3s,baz=61,slow=13,SNR=3.5							
EKA	**Eskdalemuir Ar**	**14.98**	**325**	Pn		**Pn**	**15 04 39.9**	**+0.5**
	baz=132,slow=14,SNR=4.6							
FINES	**FINESS Array B**	**19.49**	**21**	P		**Pn**	**15 05 34.9**	**-1.0**
	0.1nm,0.3s,baz=205,slow=8.4,SNR=4.1							
TORD	**Torodi Ar. Bea**	**31.87**	**199**	P		**P**	**15 07 33.4**	**+0.2**
	2.9nm,0.6s,baz=12,slow=8.9,SNR=21							
KURBB	**Kurchatov Arra**	**44.35**	**57**	P		**P**	**15 09 19.6**	**+1.6**
	0.5nm,0.7s,baz=296,slow=8.4,SNR=4.3							
KURK	**Kurchatov**	**44.38**	**57**	P		**P**	**15 09 19.6**	**+1.3**
KURK	**Kurchatov**	**44.38**	**57**	P		**P**	**15 09 19.6**	**+1.3**
MKAR	**Makanchi Array**	**48.05**	**61**	P		**P**	**15 09 48.4**	**+1.1**
	0.9nm,0.6s,baz=284,slow=6.7,SNR=14							
SONM	**Songino Array**	**61.83**	**50**	P		**P**	**15 11 27.2**	**+0.1**
	0.4nm,0.7s,baz=275,slow=8.3,SNR=3.8							
YKA	**Yellowknife Ar**	**65.63**	**336**	P		**P**	**15 11 53.4**	**+1.7**
	1.8nm,0.9s,baz=43,slow=6.6,SNR=16							
TXAR	**Lajitas Array**	**86.28**	**308**	P		**P**	**15 13 52.3**	**+2.1**
	0.5nm,0.9s,baz=70,slow=3.8,SNR=5.1							

IDC 11 15:02:55.5±1.9, 4.°18N×126.°76E, h0km, mb3.4/4, mb1 3.6/4, mb1mx3.3/59, mbtmp3.4/4, MS3.3/1, Ms1 3.3/1, ms1mx2.6/26, Error ellipse: s-maj=114.2km s-min=23.9km az=70.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**22.16**	**183**			P	P	15 07 53.8	+0.5
	3.4nm,0.9s,baz=18,slow=9.6,SNR=2.5								
WRA	**Warramunga Arr**	**25.10**	**163**			P	P	15 08 20.9	-1.2
	0.3nm,0.6s,baz=340,slow=11,SNR=7.0								
PSI	**Prapat**	**27.81**	**268**			LR	LR	15 22 58.0	
	comp=Z,56nm,18.6s,baz=130,slow=43								
ASAR	**Alice Springs**	**28.54**	**166**			P		15 08 53.8	+0.6
	0.3nm,0.9s,baz=346,slow=7.6,SNR=3.1								
MKAR	**Makanchi Array**	**57.21**	**325**	P		P		15 12 44.6	+0.1
	0.2nm,0.3s,baz=119,slow=8.8,SNR=3.3								

*ISCJB **11** 15:07:10.0±0.5, 9.°45N±0.°05×122.°13E±0.°04, h29km, mb3.8/14, Error ellipse: s-maj=7.4km s-min=5.8km az=17.0*

*MAN **11** 15:07:11, 9.°64N×122.°31E, h154km, mb4.7, ML3.6, MS3.5*

MAN INTENSITY II - SIPALAY NEGROS OCCIDENTAL.

*IDC **11** 15:07:11.9±0.7, 9.°55N×122.°23E, h30km±3km, mb3.7/14, mb1 3.8/14, mb1mx3.5/67, mbtmp3.8/14, MS2.8/1, Ms1 2.8/1, ms1mx2.4/45, Error ellipse: s-maj=51.8km s-min=12.1km az=64.0*

ISC 11 15:07:11.6±0.5, 9.°52N±0.°05×122.°22E±0.°06, h29km, n22, σ1§15/36, mb3.9/14, 3C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.02**	**100**	⇓	*iP*	Pn	**Pn**	15 07 24.5	-5.5
SNPH					*i*	S	**Sn**	**15 07 40.9**	**-2.5**
LLP	**Lapu-Lapu**	**1.89**	**65**	⇑	*eP*	P	**Pn**	**15 07 43.2**	**+1.1**
LLP					*e*	S	**Sb**	**15 08 08.0**	**-0.9**
RCP	**Roxas**	**2.09**	**14**	⇓	*eP*	P	**Pn**	**15 07 45.6**	**+0.8**
RCP					*e*	S	**Sb**	**15 08 14.0**	**-0.6**
CGP	**Cagayan de Oro**	**2.66**	**113**	⇑	*eP*	P	**Pn**	**15 07 54.8**	**+2.1**
CGP					*e*	S	**Sn**	**15 08 25.5**	**+1.5**
CTBH	**Cotabato--PC H**	**3.04**	**139**		*eP*	P	**Pn**	**15 07 59.1**	**+1.3**
CTBH					*i*	S	**Sn**	**15 08 29.3**	**-4.0**
PLP	**Palo**	**3.17**	**59**	⇑	*iP*	P	**Pn**	**15 08 00.7**	**+1.1**
PLP					*e*	S	**Sn**	**15 08 36.7**	**+0.2**
DAV	**Davao City (W)**	**4.12**	**126**			LR	LR	15 09 32.1	
	comp=Z,132nm,21.8s,baz=336,slow=34								
CMAR	**Chiang Mai Arr**	**24.25**	**294**		P	P		**15 12 26.8**	**+0.4**
	0.7nm,0.6s,baz=106,slow=7.2,SNR=6.6								
WRA	**Warramunga Arr**	**31.61**	**158**		P	P		**15 13 31.7**	**-0.6**
	1.6nm,0.9s,baz=332,slow=10,SNR=5.6								
WRA					PcP	**PcP**		**15 16 23.9**	**-0.4**
	1.0nm,0.9s,baz=346,slow=3.0,SNR=5.4								
ASAR	**Alice Springs**	**34.91**	**161**		P	P		**15 14 01.6**	**+0.6**
	1.7nm,0.6s,baz=335,slow=6.7,SNR=13								
ASAR					pP	**pP**		**15 14 10.2**	**+0.7**
	2.4nm,0.7s,baz=338,slow=7.1,SNR=3.9								
ASAR					PcP	**PcP**		**15 16 33.1**	**-0.4**
	0.8nm,0.9s,baz=345,slow=3.0,SNR=7.0								
SONM	**Songino Array**	**40.46**	**344**		P	P		**15 14 47.9**	**+0.1**
	0.3nm,0.4s,baz=163,slow=9.0,SNR=6.0								
SONM					pP	**pP**		**15 14 56.7**	**+0.3**
	1.1nm,0.8s,baz=167,slow=7.0,SNR=3.2								
STKA	**Stephens Creek**	**45.14**	**157**		P	P		**15 15 26.5**	**+0.7**
	3.1nm,0.8s,baz=338,slow=7.7,SNR=4.4								
MKAR	**Makanchi Array**	**50.28**	**325**		P	P		**15 16 06.3**	**+0.8**
	0.8nm,0.7s,baz=117,slow=9.7,SNR=7.8								
MKAR					pP	**pP**		**15 16 15.5**	**+1.2**
	2.8nm,0.9s,baz=125,slow=7.6,SNR=11								
ZALV	**Zalesovo Beam**	**53.44**	**333**		P	P		**15 16 28.7**	**-0.2**
	0.2nm,0.3s,baz=104,slow=4.6,SNR=2.7								
ZALV					pP	**pP**		**15 16 37.5**	**-0.2**
	1.0nm,0.7s,baz=112,slow=6.4,SNR=2.4								
KURBB	**Kurchatov Arra**	**54.48**	**327**		P	P		**15 16 37.0**	**+0.5**
	0.8nm,0.8s,baz=120,slow=8.6,SNR=3.6								
KURBB					pP	**pP**		**15 16 45.9**	**+0.4**
	1.6nm,0.8s,baz=133,slow=6.2,SNR=3.4								
BVAR	**Borovoye Array**	**60.06**	**327**		P	P		**15 17 16.0**	**0.0**
	0.2nm,0.4s,baz=117,slow=1.9,SNR=3.4								
NRIK	**Noril'sk**	**63.80**	**347**		P	P		**15 17 40.5**	**-0.3**
	1.9nm,0.6s,baz=173,slow=4.0,SNR=3.8								
AKTO	**Aktyubinsk**	**66.37**	**321**		P	P		**15 17 57.4**	**-0.4**
	0.7nm,0.5s,baz=95,slow=11,SNR=2.9								
AKTO					pP	**pP**		**15 18 07.4**	**+0.4**
	1.0nm,0.7s,baz=81,slow=9.7,SNR=3.6								
BRTR	**Keskin Array B**	**82.91**	**309**		P	P		**15 19 34.1**	**-0.1**
	0.6nm,0.7s,baz=89,slow=7.9,SNR=3.4								
BRTR					pP	**pP**		**15 19 43.5**	**+0.1**
	1.0nm,0.8s,baz=67,slow=4.8,SNR=3.4								
AKASG	**Malin Array Be**	**84.61**	**320**		P	P		**15 19 41.1**	**-1.3**
	0.4nm,0.3s,baz=73,slow=4.9,SNR=4.2								
AKASG					pP	**pP**		**15 19 50.6**	**-1.1**
	0.9nm,0.4s,baz=75,slow=4.3,SNR=3.5								
FINES	**FINESS Array B**	**84.64**	**331**		P	P		**15 19 42.0**	**-0.4**
	1.1nm,0.7s,baz=34,slow=4.3,SNR=4.0								
PLCA	**Paso Flores**	**146.91**	**162**		PKPbc	**PKPbc**		**15 26 52.3**	**+0.5**
	3.5nm,0.9s,baz=239,slow=5.6,SNR=3.8								

*ISCJB **11** 15:07:54.4±0.5, 2.°75S±0.°05×122.°77E±0.°04, h33km, mb3.8/4, MS3.1/1, Error ellipse: s-maj=7.3km s-min=5.6km az=153.8*

*DJA **11** 15:07:54.0±0.3, 3.°S±3.°×12.°3E±.°, h10km, M4.7/11, mb4.9/1, mB5.5/1, MLv4.5/11, Mw(mB)5.0/1*

*IDC **11** 15:07:57.4±0.9, 2.°75S×122.°70E, h48km±11km, mb3.5/5, mb1 3.8/6, mb1mx3.4/60, mbtmp3.8/6, ML4.4/2, MS3.0/2, Ms1 3.0/2, ms1mx2.6/35, Error ellipse: s-maj=15.6km s-min=11.8km az=147.0*

ISC 11 15:07:55.9±0.7, 2.°71S±0.°06×122.°75E±0.°06, h35km, n18, σ1§52/23, mb3.7/4, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KDI	**Kendari**	**1.25**	**186**			P	**Pn**	**15 08 16.1**	**-0.8**
LUWI	**Luwuk**	**1.65**	**1**			P	**Pn**	**15 08 22.6**	**+0.2**
TTSI	**Tana Toraja**	**2.94**	**263**			P	**Pn**	**15 08 39.9**	**-0.3**
MRSI	**Marisa**	**3.26**	**346**			P	**Pn**	**15 08 44.7**	**+0.1**
SANI	**Sanana**	**3.30**	**79**			P	**Pn**	**15 08 42.9**	**-2.2**
PCI	**Palu**	**3.42**	**302**			P	**Pn**	**15 08 47.8**	**+1.1**
KMSI	**Cibinong**	**3.48**	**21**			P	**Pn**	**15 08 50.0**	**+2.4**
KAPI	**Kappang**	**3.77**	**232**			P	**Pn**	**15 08 52.3**	**+0.8**
	10nm,0.3s,baz=9.7,slow=3.0,SNR=34								
KAPI						S	**Sn**	**15 09 34.3**	**-0.4**
	36nm,0.3s,baz=272,slow=18,SNR=16								
KAPI						LR	LR	15 10 22.5	
	comp=Z,120nm,21.5s,baz=96,slow=39								
NLAI	**Namlea**	**4.38**	**97**			P	**Pn**	**15 09 01.6**	**+1.7**
LBMI	**Labuha**	**5.17**	**67**			P	**Pn**	**15 09 11.1**	**+0.2**
SOEI	**Soe**	**7.17**	**168**			P	**Pn**	**15 09 41.6**	**+3.2**
SIJI	**Sorong**	**8.71**	**78**			P	**Pn**	**15 10 00.9**	**+1.4**
	14nm,0.3s,baz=184,slow=16,SNR=2.6								
SIJI						S	**Sn**	**15 11 38.1**	**+1.6**
	12nm,0.3s,baz=182,slow=19,SNR=2.4								
FITZ	**Fitzroy Crossi**	**15.56**	**170**			P	**Pn**	**15 11 29.9**	**-2.9**
	0.2nm,0.3s,baz=7.8,slow=12,SNR=5.2								
WRA	**Warramunga Arr**	**20.53**	**147**			P	**P**	**15 12 30.7**	**-0.8**
	1.9nm,0.6s,baz=325,slow=11,SNR=13								
WRA						LR	LR	15 23 14.4	
	comp=Z,72nm,18.7s,baz=125,slow=45								
ASAR	**Alice Springs**	**23.47**	**154**			P	**P**	**15 13 02.2**	**-0.3**
	2.3nm,0.6s,baz=324,slow=8.7,SNR=44								
ASAR						pP	**sP**	**15 13 16.5**	**0.0**
	1.9nm,0.7s,baz=327,slow=11,SNR=5.3								
CMAR	**Chiang Mai Arr**	**31.49**	**313**			P	**P**	**15 14 15.4**	**+0.8**
	0.5nm,0.6s,baz=136,slow=8.2,SNR=3.6								
CMAR						pP	**sP**	**15 14 27.5**	**-1.5**
	0.8nm,0.7s,baz=134,slow=7.3,SNR=3.6								
STKA	**Stephens Creek**	**34.01**	**151**			P	**P**	**15 14 37.2**	**+0.6**
	2.6nm,0.7s,baz=322,slow=8.3,SNR=8.1								
SONM	**Songino Array**	**52.33**	**346**			P	**P**	**15 17 04.8**	**+0.5**
	0.4nm,0.6s,baz=169,slow=8.2,SNR=2.7								
SONM						pP	**sP**	**15 17 17.4**	**-1.6**
	0.5nm,0.8s,baz=169,slow=8.3,SNR=3.7								

*NIED **11** 15:12:00, 40.°20N×144.°30E, h5km, Mw3.8 Best double couple: M₀6.01000×10¹⁴ NP1:φ₁167.00000°, δ42.00000°, λ-87.00000°. NP2:φ₂342.00000°, δ48.00000°, λ-93.00000°.*

*IDC **11** 15:12:45.0±0.8, 39.°99N×144.°50E, h0km, mb3.9/17, mb1 4.0/21, mb1mx3.9/67, mbtmp3.9/21, ML3.5/4, MS2.9/1, Ms1 2.9/1, ms1mx2.4/46, Error ellipse: s-maj=20.9km s-min=16.8km az=114.0*

*NEIC **11** 15:12:46.8±0.5, 40.°05N×144.°44E, h10km, mb4.6/2, Error ellipse: s-maj=10.1km s-min=5.9km az=111.0*

*ISCJB **11** 15:12:48.8±0.5, 40.°15N±0.°03×144.°31E±0.°04, h34km, mb3.9/19, Error ellipse: s-maj=5.6km s-min=3.1km az=37.2*

*JMA **11** 15:12:48.5±0.2, 40.°15N×144.°30E, h41km, M4.0*

ISC 11 15:12:50.2±0.7, 40.°09N±0.°04×144.°39E±0.°07, h34km, n49, σ1§96/73, mb4.0/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.94**	**266**			P	**Pn**	**15 13 19.0**	**-1.8**
JTH						*e*S	**Sn**	**15 13 41.8**	**-2.3**
MIYJ	**Miyakonagasawa**	**2.04**	**256**			P	**Pn**	**15 13 20.9**	**-1.3**
MIYJ						S	**Sn**	**15 13 44.2**	**-2.3**
ERM	**Erimo**	**2.14**	**335**		*e*P	n	**Pn**	**15 13 22.0**	**-1.5**
JEM	**Erimo**	**2.14**	**335**		P	Pn	**Pn**	**15 13 22.0**	**-1.5**
JEM						*e*S	**Sn**	**15 13 47.1**	**-1.8**
JANG	**Nango**	**2.22**	**278**		P	P	**Pn**	**15 13 23.0**	**-1.6**
JANG						*e*S	**Sn**	**15 13 48.1**	**-2.7**
JOM	**Ohasama**	**2.46**	**257**		P	P	**Pn**	**15 13 27.3**	**-0.7**
JOM						S	**Sn**	**15 13 55.7**	**-1.2**
JNBK	**Urakawa-nobuka**	**2.52**	**331**		P	P	**Pn**	**15 13 27.6**	**-1.1**
JNBK						S	**Sn**	**15 13 56.6**	**-1.6**
JTM	**Tenmabayashi**	**2.63**	**287**		P	P	**Pn**	**15 13 29.5**	**-0.7**
JTM						S	**Sn**	**15 13 59.3**	**-1.6**
JCH	**Churui**	**2.64**	**343**		P	P	**Pn**	**15 13 28.3**	**-2.1**
JCH						S	**Sn**	**15 13 57.9**	**-3.4**
JMK	**Ichinoseki**	**2.70**	**246**		P	P	**Pn**	**15 13 30.3**	**-0.9**
JOT	**Ohata**	**2.85**	**298**		P	P	**Pn**	**15 13 32.4**	**-0.9**
JOT						*e*S	**Sn**	**15 14 04.0**	**-2.4**
JAH	**Hinai**	**2.88**	**273**		P	P	**Pn**	**15 13 33.2**	**-0.5**
JAH						S	**Sn**	**15 14 06.6**	**-0.5**
JAK	**Akkeshi**	**2.92**	**4**		P	P	**Pn**	**15 13 32.0**	**-2.2**
JAK						S	**Sn**	**15 14 05.0**	**-3.1**
JRG	**Rokugo**	**2.97**	**258**		P	P	**Pn**	**15 13 35.1**	**+0.1**
JRG						S	**Sn**	**15 14 09.4**	**-0.1**
JKB	**Kayabe**	**3.11**	**306**		P	P	**Pn**	**15 13 36.0**	**-0.9**
JAR	**Ashorobuto**	**3.24**	**352**		P	P	**Pn**	**15 13 36.2**	**-2.5**
JAR						S	**Sn**	**15 14 12.1**	**-4.0**
JYK	**Kaneyama**	**3.33**	**251**		P	P	**Pn**	**15 13 39.3**	**-0.6**
JYK						S	**Sn**	**15 14 17.2**	**-1.0**
JOU	**Okura**	**3.36**	**240**		P	P	**Pn**	**15 13 39.5**	**-0.9**
JOU						S	**Sn**	**15 14 16.9**	**-2.2**
NEM2	**Nemuro 2**	**3.43**	**17**		P	P	**Pn**	**15 13 37.9**	**-3.4**
NEM2						*e*S	**Sn**	**15 14 15.6**	**-5.1**
JTKR	**Abashiri--Toko**	**3.90**	**355**		P	Pn	**Pn**	**15 13 46.2**	**-1.5**
JTKR						S	**Sn**	**15 14 29.2**	**-3.0**
JFT	**Otama**	**4.07**	**232**		P	P	**Pn**	**15 13 49.2**	**-0.9**
JFT						*e*S	**Sn**	**15 14 33.5**	**-3.1**
JOSM	**Okushiri--Mats**	**4.21**	**300**		P	P	**Pn**	**15 13 51.3**	**-0.7**
ASAJ	**Asahikawa**	**4.24**	**342**		*e*Pn	P	**Pn**	**15 13 51.6**	**-0.9**
MJAR	**Matsushiro Arr**	**6.01**	**236**		Pn	Pn	**Pn**	**15 14 16.5**	**-0.2**
	2.0nm,0.3s,baz=49,slow=11,SNR=22								
MJAR						LR	LR	15 16 50.5	
	comp=Z,118nm,19.8s,baz=55,slow=41								
MAJO	**Matsushiro**	**6.01**	**236**		*e*Pn		**Pn**	**15 14 16.7**	**-0.1**
	16nm,0.6s								
MAT	**Matsushiro**	**6.01**	**236**		P	P	**Pn**	**15 14 16.8**	**0.0**
MAT						*e*S	**Sn**	**15 15 25.1**	**+0.7**
JHJ2	**Mitsune**	**7.87**	**209**		*e*Pn	Pn	**Pn**	**15 14 39.8**	**-2.4**
JHJ	**Hachijo jima 2**	**7.88**	**209**		Pn	Pn	**Pn**	**15 14 38.9**	**-3.4**
	9.3nm,0.3s,baz=86,slow=23,SNR=11								
JHJ						Sn	**Sn**	**15 16 02.3**	**-8.0**
	14nm,0.3s,baz=31,slow=24,SNR=2.4								
USRK	**Ussuriysk Ar.**	**10.08**	**298**		Pn	Pn	**Pn**	**15 15 14.3**	**+1.8**
	0.5nm,0.3s,baz=101,slow=13,SNR=9.6								
KLR	**Kul'dur**	**12.81**	**320**		Pn	Pn	**Pn**	**15 15 48.9**	**-0.9**
	0.2nm,0.3s,baz=127,slow=15,SNR=6.9								
SEY	**Seymchan**	**23.38**	**9**		P	P	**P**	**15 17 56.4**	**+0.9**
	2.5nm,0.7s,baz=194,slow=8.1,SNR=6.9								
YAK	**Yakutsk**	**23.72**	**343**		P	P	**P**	**15 17 58.9**	**+0.1**
	4.4nm,0.3s,baz=128,slow=1.5,SNR=4.2								
SONM	**Songino Array**	**28.20**	**299**		P	P	**P**	**15 18 40.6**	**+0.9**
	0.8nm,0.6s,baz=81,slow=8.3,SNR=5.8								
ZALV	**Zalesovo Beam**	**41.66**	**310**		P	P	**P**	**15 20 36.0**	**+0.8**
	1.1nm,0.5s,baz=97,slow=8.6,SNR=6.1								
ZALV					PcP	**PcP**	**PcP**	**15 22 31.9**	**+0.5**
	1.0nm,0.5s,baz=96,slow=3.0,SNR=4.0								
CMAR	**Chiang Mai Arr**	**44.54**	**255**		P	P	**P**	**15 21 00.1**	**+1.3**
	0.6nm,0.8s,baz=40,slow=6.9,SNR=4.3								
MKAR	**Makanchi Array**	**44.54**	**300**		P	P	**P**	**15 20 59.1**	**+0.5**
	1.0nm,0.6s,baz=83,slow=9.3,SNR=12								
ILAR	**Eielson Array**	**45.67**	**34**		P	P	**P**	**15 21 07.8**	**+0.5**
	0.5nm,0.9s,baz=258,slow=7.6,SNR=5.0								
KURK	**Kurchatov**	**45.95**	**306**		*e*P	P	**P**	**15 21 09.9**	**+0.3**
	15nm,0.8s								
KURK					PcP	**PcP**	**PcP**	**15 22 47.2**	**+1.2**
KURBB	**Kurchatov Arra**	**46.03**	**306**		P	P	**P**	**15 21 10.4**	**+0.2**
	3.1nm,0.7s,baz=

1.6nm,0.6s,baz=90,slow=5.6,SNR=8.0
NOA NORSAR Array B 148.10 353 PKPbc **PKPdf 15 37 36.2 +0.7**
1.4nm,0.7s,baz=13,slow=4.3,SNR=3.4
AKASG Malin Array Be 151.54 325 PKPbc **PKPbc 15 37 46.3 -1.1**
1.2nm,0.5s,baz=47,slow=2.9,SNR=4.6
AKASG PKPab **PKPab 15 37 55.8 -0.2**
0.5nm,0.4s,baz=48,slow=3.5,SNR=3.5

IDC 11 15:18:25.4±3.6, 29°.17S×177°.32W, h0km, mb4.1/3, mb1 4.2/3, mb1mx3.8/20, mbtmp4.1/3, Error ellipse: s-maj=189.1km s-min=29.6km az=160.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.53**	**261**	Pn	Pb	15 18 38.6	+1.0
	457nm,0.3s,baz=65,slow=8.9,SNR=7.4						
STKA	**Stephens Creek**	**35.35**	**255**	P	P	15 25 24.0	+1.3
	2.4nm,0.7s,baz=87,slow=13,SNR=4.6						
ASAR	**Alice Springs**	**43.78**	**265**	P	P	15 26 34.2	+1.0
	0.9nm,0.6s,baz=105,slow=7.4,SNR=5.3						
WRA	**Warramunga Arr**	**44.66**	**271**	P	P	15 26 41.0	+0.8
	2.3nm,0.6s,baz=113,slow=6.7,SNR=10						
FINES	**FINESS Array B**	**144.19**	**341**	PKP	PKPab	15 38 00.5	+0.2
	3.6nm,0.7s,baz=50,slow=4.3,SNR=11						
AKASG	**Malin Array Be**	**150.66**	**325**	PKPbc	PKPbc	15 38 18.6	-0.6
	0.5nm,0.4s,baz=47,slow=2.3,SNR=4.2						
BRTR	**Keskin Array B**	**152.51**	**301**	PKPab	PKPab	15 38 33.9	-0.4
	1.0nm,0.8s,baz=114,slow=3.5,SNR=4.6						

*SKHL **11** 15:19:20.1±0.0, 48°.00N×156°.17E, h16km±4km, mb4.1/1*
*MOS **11** 15:19:21.5±2.4, 48°.11N×156°.86E, h16km, mb4.2/1, Error ellipse: s-maj=82.6km s-min=7.4km az=82.8*

KRSC 11 15:19:21.5±3.5, 48°.11N×156°.87E, h16km±35km, ML4.1, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**2.62**	**350**	*e*PN	Pn	15 20 02.3	-0.9
SKR				*e*S	Sn	15 20 34.6	-0.1
SKR				pmax	pmax		
	comp=Z,71nm,0.6s						
SKR				smax	smax		
	comp=E,116nm,0.3s						
SKR				smax	smax		
	comp=N,118nm,0.2s						
SKR	**Severo-Kuril's**	**2.62**	**350**	*e*P	Pn	15 20 02.1	-1.1
SKR				*e*S	Sn	15 20 33.6	-1.1
SKR	**Severo-Kuril's**	**2.62**	**350**	*e*P	Pn	15 20 02.3	-0.9
SKR				AMB	AMB	15 20 03.6	
	comp=N,30nm,0.4s						
SKR				*e*S	Sn	15 20 33.9	-0.8
SKR				A	A	15 20 36.7	
	comp=N,70nm,0.2s						
SKR				A	A	15 20 36.7	
	comp=N,10.0nm,0.2s						
PAU	**Pauzhetka**	**3.36**	**359**	*e*P	Pn	15 20 14.5	+1.2
PAU				*e*S	Sn	15 20 55.3	+2.4
ASAK	**Asacha**	**4.33**	**8**	PN	Pn	15 20 30.5	+3.8
ASAK	**Asacha**	**4.33**	**8**	*e*P	Pn	15 20 30.5	+3.8
RUS	**Russkaya**	**4.46**	**13**	PN	Pn	15 20 31.8	+3.4
RUS				S	Sn	15 21 24.8	+4.9
RUS	**Russkaya**	**4.46**	**13**	*e*P	Pn	15 20 31.8	+3.4
RUS				*e*S	Sn	15 21 24.8	+4.9
RUS	**Russkaya**	**4.46**	**13**	*e*P	Pn	15 20 31.6	+3.2
PET	**Petropavlovsk**	**5.05**	**12**	PN	Pn	15 20 39.6	+3.1
PET				*i* S	Sn	15 21 42.0	+7.5
PET	**Petropavlovsk**	**5.05**	**12**	*e*S	Sn	15 21 40.5	+6.0
DALK	**Dalny**	**5.08**	**13**	PN	Pn	15 20 41.3	+4.5
DALK				S	Sn	15 21 42.1	+7.1
DALK	**Dalny**	**5.08**	**13**	*e*P	Pn	15 20 41.3	+4.5
DALK				*e*S	Sn	15 21 42.1	+7.1
UGLR	**Uglovaya**	**5.26**	**13**	PN	Pn	15 20 44.2	+4.7
UGLR	**Uglovaya**	**5.26**	**13**	*e*P	Pn	15 20 44.2	+4.7
AVH	**Avacha**	**5.30**	**12**	PN	Pn	15 20 45.5	+5.5
AVH	**Avacha**	**5.30**	**12**	*e*P	Pn	15 20 45.5	+5.5
AVH	**Avacha**	**5.30**	**12**	*e*P	Pn	15 20 45.5	+5.5
NLC	**Nalychevo**	**5.31**	**16**	*e*S	Sn	15 21 46.3	+5.5
SDLR	**Sedlovina**	**5.33**	**13**	PN	Pn	15 20 44.4	+3.9
SDLR	**Sedlovina**	**5.33**	**13**	*e*P	Pn	15 20 44.4	+3.9
KRER	**Koryakskii**	**5.34**	**12**	PN	Pn	15 20 45.6	+4.9
KRER	**Koryakskii**	**5.34**	**12**	*e*P	Pn	15 20 45.6	+4.9
KRX	**Arik**	**5.38**	**11**	PN	Pn	15 20 46.8	+5.6
KRX				S	Sb	15 21 51.8	-7.6
KRX	**Arik**	**5.38**	**11**	*e*P	Pn	15 20 46.8	+5.6
KRX				*e*S	Sb	15 21 51.8	-7.6
GNL	**Ganaly**	**5.64**	**7**	PN	Pn	15 20 48.2	+3.5
GNL	**Ganaly**	**5.64**	**7**	*e*P	Pn	15 20 48.2	+3.5
MKZ	**Mys Kozlova**	**7.14**	**23**	PN	Pn	15 21 09.7	+4.6
MKZ	**Mys Kozlova**	**7.14**	**23**	*e*P	Pn	15 21 09.7	+4.6
MKZ	**Mys Kozlova**	**7.14**	**23**	*e*P	Pn	15 21 09.7	+4.6

MAN 11 15:26:22, 9°.31N×122°.20E, h18km, mb4.2, ML3.0, MS2.7, 1C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.03**	**88**	*i* P	Pb	15 26 38.1	-3.2
SNPH				*i* S	Sn	15 26 56.3	+0.7
LLP	**Lapu-Lapu**	**2.01**	**60**	*e*P	Pb	15 26 57.5	-0.5
LLP				*e*S	Sb	15 27 22.0	-0.8
RCP	**Roxas**	**2.30**	**14**	*e*P	Pn	15 27 00.6	+1.5
RCP				*e*S	Sn	15 27 28.1	+1.1

*ISCJB **11** 15:35:53.2±0.1, 20°.65S±0°.04×178°.15W±0°.04, h534km, mb4.7/144, Error ellipse: s-maj=5.8km s-min=3.5km az=141.6*
*NEIC **11** 15:35:53.6±0.1, 20°.59S×178°.10W, mb4.7/114, Error ellipse: s-maj=5.5km s-min=3.3km az=130.0*
*BJI **11** 15:35:53.0, 20°.49S×177°.83W, h539km, mb4.7/27, mB4.8/19*
*IDC **11** 15:35:55.7±1.6, 20°.42S×178°.16W, h546km±17km, mb4.1/25, mb1 4.2/26, mb1mx4.1/36, mbtmp4.9/26, Error ellipse: s-maj=12.5km s-min=9.1km az=150.0*
*MOS **11** 15:35:55.6±2.6, 20°.07S×178°.20W, h529km, mb4.7/16, Error ellipse: s-maj=10.1km s-min=9.6km az=63.0*

ISC 11 15:35:54.0±0.3, 20°.50S±0°.07×178°.09W±0°.06, h534km, n458, σ0.99/485, mb4.7/144, 20C-25D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSVF	**Nonsavu**	**4.58**	**306**	*e*P	**P**	**15 37 19.9**	**+0.4**
MSVF	**Nonsavu**	**4.58**	**306**	*e*P	**P**	**15 37 19.9**	**+0.4**
AFI	**Afiamalu**	**8.91**	**44**	P	**P**	**15 37 56.3**	**-4.3**
	24nm,0.3s,baz=184,slow=1.9,SNR=36						
AFI				S	S	15 39 33.5	-11
	44nm,0.3s,baz=167,slow=22,SNR=12						
DZM	**Mont Dzumac**	**14.50**	**261**	P	**P**	**15 38 58.8**	**0.0**
	2.3nm,0.3s,baz=86,slow=17,SNR=11						
DZM	**Mont Dzumac**	**14.50**	**261**	*e*P	**P**	**15 38 57.3**	**-1.4**
OUZ	**Omahuta**	**16.39**	**205**	*e*P	**P**	**15 39 18.0**	**+0.4**
	87nm,1.2s						
URZ	**Urewera**	**18.18**	**192**	P	**P**	**15 39 31.6**	**-2.5**
	8.8nm,0.3s,baz=343,slow=16,SNR=37						
URZ	**Urewera**	**18.18**	**192**	*e*P	**P**	**15 39 31.7**	**-2.3**
	108nm,1.4s						
HIZ	**Hauiti**	**18.96**	**197**	*e*P	**P**	**15 39 40.4**	**-0.9**
	827nm,2.0s						
BKZ	**Black Stump Fm**	**19.18**	**193**	*e*P	**P**	**15 39 40.2**	**-3.1**
	112nm,1.7s						
BFZ	**Birch Farm**	**20.69**	**192**	*e*P	**P**	**15 39 54.9**	**-2.0**
	181nm,1.7s						
SNZO	**South Karori**	**21.63**	**195**	*e*P	**P**	**15 40 03.8**	**-1.5**
	127nm,1.3s						
THZ	**Tophouse**	**22.52**	**198**	*e*P	**P**	**15 40 12.2**	**-1.2**
	246nm,1.8s						
KHZ	**Kahutara**	**22.96**	**196**	*e*P	**P**	**15 40 16.0**	**-1.3**
	305nm,2.0s						
OXZ	**Oxford**	**24.21**	**198**	*e*P	**P**	**15 40 26.4**	**-2.0**
	30nm,0.7s						
CRLZ	**Canterbury Las**	**24.28**	**197**	*e*P	**P**	**15 40 26.9**	**-2.1**
	413nm,2.0s						
MQZ	**McQueen's Vall**	**24.39**	**196**	*e*P	**P**	**15 40 27.9**	**-2.1**
	229nm,1.8s						
RPZ	**Rata Peaks**	**24.86**	**199**	P	**P**	**15 40 32.5**	**-1.6**
	10nm,0.5s,baz=303,slow=3.0,SNR=7.6						
RPZ	**Rata Peaks**	**24.86**	**199**	*e*P	**P**	**15 40 32.4**	**-1.7**
	212nm,1.9s						
LBZ	**Lake Benmore**	**25.73**	**200**	*e*P	**P**	**15 40 38.9**	**-3.0**
	210nm,1.9s						
ODZ	**Otahua Downs**	**26.19**	**198**	*e*P	**P**	**15 40 46.3**	**+0.4**
	195nm,1.9s						
WKZ	**Wanaka**	**26.51**	**201**	*e*P	**P**	**15 40 47.4**	**-1.3**
	431nm,1.9s						
PPT	**Papeete**	**27.09**	**89**	P	**P**	**15 40 54.2**	**-0.1**
	21nm,0.7s,baz=253,slow=14,SNR=1.9						
MLZ	**Mavora Lakes**	**27.28**	**202**	*e*P	**P**	**15 40 55.4**	**-0.1**
	204nm,1.8s						
DCZ	**Deep Cove**	**27.71**	**203**	*e*P	**P**	**15 40 58.8**	**-0.4**
	194nm,1.7s						
WHZ	**Wether Hill Ro**	**27.80**	**201**	*e*P	**P**	**15 40 59.5**	**-0.5**
	235nm,1.8s						
EIDS	**Eidsvold**	**28.77**	**254**	*e*P	**P**	**15 41 08.0**	**-0.7**
	19nm,0.6s						
ARMA	**Armidale**	**28.99**	**244**	*e*P	**P**	**15 41 11.7**	**+0.9**
	34nm,1.4s						
CTA	**Charters Tower**	**33.41**	**264**	P	**P**	**15 41 49.1**	**+0.4**
	30nm,0.4s,baz=94,slow=11,SNR=54						
CTAO	**Charters Tower**	**33.41**	**264**	*e*P	**P**	**15 41 49.0**	**+0.4**
CTAO				pmax	pmax		
	comp=Z,48nm,0.9s						
CTAO	**Charters Tower**	**33.41**	**264**	*e*P	**P**	**15 41 49.0**	**+0.4**
	comp=Z,48nm,0.9s						
PMG	**Port Moresby**	**35.26**	**283**	P	**P**	**15 42 04.4**	**+0.2**
	comp=Z,59nm,0.9s,baz=87,slow=5.1,SNR=8.2						
PMG	**Port Moresby**	**35.26**	**283**	*de*P	**P**	**15 42 04.4**	**+0.2**
PMG				pmax	pmax		
	comp=Z,160nm,0.7s						
PMG	**Port Moresby**	**35.26**	**283**	*e*P	**P**	**15 42 04.2**	**-0.1**
	comp=Z,44nm,0.8s						
COEN	**Coen**	**37.50**	**274**	*e*P	**P**	**15 42 22.8**	**+0.1**
	comp=Z,54nm,1.3s						
STKA	**Stephens Creek**	**37.71**	**244**	P	**P**	**15 42 24.8**	**+0.6**
	comp=Z,8.0nm,0.6s,baz=92,slow=11,SNR=26						
STKA				PcP	**PcP**	**15 44 28.4**	**+1.0**
	comp=Z,3.4nm,0.6s,baz=94,slow=5.5,SNR=4.2						
STKA	**Stephens Creek**	**37.71**	**244**	*e*P	**P**	**15 42 24.5**	**+0.3**
STKA						15 44 28.4	
STKA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
STKA	**Stephens Creek**	**37.71**	**244**	*e*P	**P**	**15 42 24.5**	**+0.3**
	comp=Z,2.1nm,0.7s						
STKA				PcP	**PcP**	**15 44 28.4**	**+1.0**
BBOO	**Buckleboo**	**42.47**	**243**	*e*P	**P**	**15 43 01.8**	**-0.5**
	comp=Z,116nm,1.9s						
JAY	**Jayapura**	**43.97**	**289**	P	**P**	**15 43 14.7**	**+0.5**
	comp=Z,6.1nm,0.5s,baz=262,slow=23,SNR=37						
AS01	**Alice Springs**	**44.40**	**257**	*e*P	**P**	**15 43 17.2**	**-0.3**
AS31	**Alice Springs**	**44.44**	**257**	*e*P	**P**	**15 43 17.5**	**-0.3**
	comp=Z,16nm,0.6s						
ASAR	**Alice Springs**	**44.44**	**257**	P	**P**	**15 43 17.9**	**+0.1**
	comp=Z,48nm,0.6s,baz=92,slow=8.0,SNR=1342						
ASAR				PcP	**PcP**	**15 44 50.2**	**+0.3**
	comp=Z,6.3nm,0.7s,baz=104,slow=3.4,SNR=8.2						
ASAR				S	**S**	**15 49 12.4**	**-1.6**
	comp=Z,2.9nm,0.9s,baz=93,slow=14,SNR=12						
WRAB	**Tennant Creek**	**44.51**	**262**	*d* iP	**P**	**15 43 17.7**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,109nm,1.0s						
WRAB	**Tennant Creek**	**44.51**	**262**	*e*P	**P**	**15 43 17.5**	**-0.8**
	comp=Z,44nm,1.0s						
WRA	**Warramunga Arr**	**44.52**	**262**	P	**P**	**15 43 17.9**	**-0.5**
	comp=Z,28nm,0.6s,baz=97,slow=7.5,SNR=484						
WRA				PcP	**PcP**	**15 44 50.6**	**+0.4**
	comp=Z,4.5nm,1.0s,baz=107,slow=3.9,SNR=4.7						
WRA				S	**S**	**15 49 13.3**	**-1.9**
	comp=Z,1.5nm,0.9s,baz=98,slow=13,SNR=4.8						
MTN	**Manton Dam**	**49.08**	**271**	*e*P	**P**	**15 43 52.3**	**-0.6**
	comp=Z,45nm,0.6s						
FORT	**Forrest**	**49.22**	**247**	*e*P	**P**	**15 43 52.9**	**-0.8**
	comp=Z,235nm,0.8s						
GUMO	**Guam**	**49.74**	**310**	P	**P**	**15 43 57.9**	**+0.3**
	comp=Z,105nm,1.2s,baz=160,slow=7.6,SNR=6.2						
FITZ	**Fitzroy Crossi**	**52.95**	**262**	*e*P	**P**	**15 44 21.0**	**+0.1**
	comp=Z,26nm,1.2s						
SOEI	**Soe**	**56.42**	**272**	*e*P	**P**	**15 44 46.8**	**+1.4**
	comp=Z,99nm,0.7s						
VNDA	**Vanda**	**57.90**	**185**	P	**P**	**15 44 56.4**	**+2.0**
	comp=Z,1.2nm,0.5s,baz=354,slow=7.5,SNR=19						
VNDA				ScP	**ScP**	**15 48 49.6**	**+1.4**
	comp=Z,1.4nm,0.9s,baz=12,slow=2.9,SNR=6.4						
VNDA	**Vanda**	**57.90**	**185**	*e*P	**P**	**15 44 56.2**	**+1.8**
VNDA						15 48 49.7	
VNDA				pmax	pmax		
	comp=Z,8.0nm,1.7s						
VNDA	**Vanda**	**57.90**	**185**	*e*P	**P**	**15 44 56.2**	**+1.8**
	comp=Z,7.6nm,1.7s						
VNDA				ScP	**ScP**	**15 48 49.6**	**+1.4**
MMRI	**Maumere**	**58.67**	**272**	*e*P	**P**	**15 45 00.5**	**-0.2**
	comp=Z,60nm,1.0s						
LUWI	**Luwuk**	**60.85**	**281**	*e*P	**P**	**15 45 14.8**	**-0.3**
	comp=Z,62nm,1.0s						
JAGI	**Jajag, Banyuwa**	**66.30**	**270**	*e*P	**P**	**15 45 48.8**	**-1.3**
	comp=Z,48nm,1.1s						
MYLDM	**Lahad Datu**	**67.26**	**285**	*e*P	**P**	**15 45 54.9**	**-1.0**
	comp=Z,17nm,0.8s						
SBUM	**Sibu**	**71.93**	**280**	*e*P	**P**	**15 46 24.4**	**+0.6**
	comp=Z,8.7nm,1.1s						
KSM	**Kuching**	**73.33**	**278**	*e*P	**P**	**15 46 31.7**	**-0.2**
	comp=Z,36nm,1.2s						
TPUB	**Ta-pu**	**73.91**	**303**	*e*P	**P**	**15 46 33.6**	**-1.4**
	comp=Z,42nm,1.0s						
YSS	**Yuzh-Sakhalins**	**75.86**	**334**	*e*P	**P**	**15 46 46.1**	**+0.7**
YSS				pmax	pmax		
	comp=Z,43nm,1.0s						
YSS	**Yuzh-Sakhalins**	**75.86**	**334**	*e*P	**P**	**15 46 46.1**	**+0.7**
	comp=Z,42nm,1.0s						
PEA0	**Petropavlovsk-**	**76.25**	**345**	*e*P	**P**	**15 46 47.2**	**-0.2**
PEA0B	**Petropavlovsk-**	**76.25**	**345**	*e*P	**P**	**15 46 47.0**	**-0.4**
	comp=Z,17nm,0.8s						
PETK	**Petropavlovsk-**	**76.25**	**345**	P	**P**	**15 46 47.3**	**-0.1**
	comp=Z,16nm,0.7s,baz=129,slow=7.4,SNR=40						
KSRS	**Korea Array**	**76.84**	**319**	P	**P**	**15 46 51.7**	**+0.8**
	comp=Z,5.5nm,0.7s,baz=132,slow=6.5,SNR=9.3						
KSAR	**Wonju Array Be**	**76.85**	**319**	P	**P**	**15 46 51.7**	**+0.7**
KSAR	**Wonju Array Be**	**76.85**	**319**	P	**P**	**15 46 51.7**	**+0.7**
MSHR	**Mys Shultsa**	**78.27**	**324**	*e*P	**P**	**15 46 59.3**	**+0.7**
FMP	**Fort Macarthur**	**78.42**	**47**	P	**P**	**15 47 01.7**	**+2.1**
	baz=236						
KMRM	**Mail Ridge**	**78.81**	**39**	*e*P	**P**	**15 47 03.0**	**+1.3**
	comp=Z,28nm,0.9s						
USRK	**Ussuriysk Ar.**	**78.92**	**326**	P	**P**	**15 47 03.4**	**+1.4**
	comp=Z,11nm,0.7s,baz=119,slow=4.3,SNR=13						
VES	**Vesl, Richgr**	**79.09**	**45**	P	**P**	**15 47 04.3**	**+1.1**
	baz=235						
MURC	**Murrieta**	**79.12**	**48**	P	**P**	**15 47 04.5**	**+1.1**
	baz=236						
BFSC	**Mount Baldy Ra**	**79.15**	**47**	P	**P**	**15 47 04.5**	**+0.8**
	baz=236						
MONP2	**Monument Peak**	**79.27**	**49**	P	**P**	**15 47 05.5**	**+1.0**
	baz=237						
EDW2	**Edwards Air Fo**	**79.28**	**46**	P	**P**	**15 47 05.4**	**+1.1**
	baz=236						
IKP	**In-Ko-Pah, Jac**	**79.36**	**49**	P	**P**	**15 47 05.5**	**+0.7**
	baz=237						
CMB	**Columbia Colle**	**79.52**	**43**	*e*P	**P**	**15 47 05.3**	**-0.2**
CMB				pmax	pmax		
	comp=Z,6.0nm,1.0s						
CMB	**Columbia Colle**	**79.52**	**43**	*e*P	**P**	**15 47 05.3**	**-0.2**
	comp=Z,6.5nm,1.0s						
PFO	**Pinyon Flats O**	**79.64**	**48**	P	**P**	**15 47 06.9**	**+0.6**
	baz=237						
TPFO	**Pinon Flats**	**79.64**	**48**	P	**P**	**15 47 07.2**	**+0.9**
	baz=237						
AFDM	**Forest Hills D**	**79.69**	**42**	*e*P	**P**	**15 47 05.5**	**-0.8**
	comp=Z,6.0nm,0.9s						
WDC	**Whiskeytown Da**	**79.73**	**40**	*e*P	**P**	**15 47 05.6**	**-0.8**
WDC				pmax	pmax		
	comp=Z,6.0nm,0.8s						
WDC	**Whiskeytown Da**	**79.73**	**40**	*e*P	**P**	**15 47 05.6**	**-0.8**
	comp=Z,5.5nm,0.8s						
SWSC	**Sam W. Stewart**	**79.74**	**49**	P	**P**	**15 47 07.8**	**+1.2**
	baz=237						
N02D	**Trinity Center**	**79.88**	**39**	P	**P**	**15 47 08.9**	**+1.6**
	baz=231,SNR=6.8						
M02C	**Callahan**	**80.05**	**39**	P	**P**	**15 47 09.9**	**+1.7**
	baz=231,SNR=12						
L02D	**Cave Junction,**	**80.09**	**38**	P	**P**	**15 47 09.9**	**+1.6**
	baz=231						
CWC	**Cottonwood Cre**	**80.10**	**45**	P	**P**	**15 47 09.9**	**+1.2**
	baz=235						
BELC	**Belle Mtn. Jos**	**80.17**	**48**	P	**P**	**15 47 10.2**	**+1.2**
	baz=237						
OHAK	**Old Harbor**	**80.17**	**13**	*e*P	**P**	**15 47 07.9**	**-0.3**
	comp=Z,24nm,1.2s						
MPMC	**Manual Prospec**	**80.28**	**46**	P	**P**	**15 47 10.6**	**+0.9**
	baz=236						
GSC	**Goldstone, Bar**	**80.32**	**47**	P	**P**	**15 47 11.1**	**+1.3**
	baz=236						
YBH	**Yreka Blue Hor**	**80.34**	**39**	*e*P	**P**	**15 47 10.6**	**+0.9**
YBH				pmax	pmax		
	comp=Z,15nm,0.7s						
YBH	**Yreka Blue Hor**	**80.34**	**39**	*e*P	**P**	**15 47 10.6**	**+0.9**
	comp=Z,15nm,0.7s						
BC3	**Big Chuckawall**	**80.37**	**49**	P	**P**	**15 47 11.2**	**+1.2**
	baz=237						
HEC	**Hector,Ludlow**	**80.39**	**47**	P	**P**	**15 47 11.1**	**+0.9**
	baz=237						
WAKR	**Walker**	**80.40**	**43**	*e*P	**P**	**15 47 11.1**	**+0.8**
	comp=Z,11nm,1.0s						
HABR	**Khabarovsk**	**80.41**	**330**	*e*P	**P**	**15 47 09.7**	**0.0**
HABR				*e*		15 47 14.5	
HABR				*e**PP	**pP**	**15 49 01.7**	**-2.7**
HABR				*e**SP	**sP**	**15 49 55.5**	**-3.5**
HABR				*e*		15 50 22.4	
HABR				*e*S	**S**	**15 56 34.1**	**+2.3**
HABR				*e*		15 56 48.0	
HABR				*e*SS	**SS**	**16 02 01.5**	**+1.9**
HABR				pmax	pmax		
	comp=N,3.0nm,0.6s						
HABR				pmax	pmax		
	comp=Z,28nm,1.1s						
HABR				pmax	pmax		
	comp=E,17nm,1.1s						
HABR				MLR	MLR		
	comp=Z,88nm,17.0s						
MDJ	**Mudanjiang**	**80.47**	**325**	P	**P**	**15 47 11.6**	**+1.4**
MDJ				pmax	pmax		
	comp=Z,13nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,42nm,3.9s						
GLA	**Glamis**	**80.49**	**50**	P	**P**	**15 47 11.5**	**+0.8**
	baz=238						
HUMO	**Hull Mountain**	**80.75**	**38**	*e*P	**P**	**15 47 12.8**	**+1.1**
	comp=Z,12nm,1.2s						
GMRC	**Granite Mounta**	**80.83**	**48**	P	**P**	**15 47 13.4**	**+0.9**
	baz=237						
KDAK	**Kodiak Island**	**80.84**	**14**	*i* P	**P**	**15 47 13.1**	**+1.4**
IRM	**Iron Mountain**	**80.85**	**48**	P	**P**	**15 47 13.3**	**+0.8**
	baz=238						
GRAC	**Grapevine Rang**	**80.89**	**45**	P	**P**	**15 47 13.7**	**+1.1**
	baz=236						
M04C	**Macdoel**	**80.89**	**39**	P	**P**	**15 47 13.7**	**+1.1**
	baz=232						
TUQ	**Turquoise Moun**	**81.00**	**47**	P	**P**	**15 47 14.1**	**+0.8**
	baz=237						
Y12C	**Blythe**	**81.07**	**49**	P	**P**	**15 47 14.6**	**+1.0**
	baz=238						
PAHR	**Pah Rah Range**	**81.14**	**42**	*e*P	**P**	**15 47 14.5**	**+0.5**
	comp=Z,6.3nm,0.8s						
I03D	**Drain, OR**	**81.21**	**37**	P	**P**	**15 47 15.6**	**+1.6**
	baz=231						
MAW	**Mawson**	**81.53**	**200**	P	**P**	**15 47 15.8**	**+0.4**
	comp=Z,2.0nm,0.8s,baz=175,slow=11,SNR=4.8						
TPNV	**Topopah Spring**	**81.60**	**46**	P	**P**	**15 47 17.6**	**+1.1**
	baz=236						
TPNV	**Topopah Spring**	**81.60**	**46**	*e*P	**P**	**15 47 16.8**	**+0.3**
TPNV				pmax	pmax		
	comp=Z,6.0nm,0.9s						
TPNV	**Topopah Spring**	**81.60**	**46**	*e*P	**P**	**15 47 16.8**	**+0.3**
	comp=Z,5.6nm,0.9s						
I04A	**Tendick Farm,**	**81.80**	**37**	P	**P**	**15 47 18.2**	**+1.1**
	baz=231						
MOD	**Modoc Plateau**	**81.87**	**40**	*e*P	**P**	**15 47 18.5**	**+0.8**
	comp=Z,12nm,1.0s						
K05A	**Summer Lake**	**82.02**	**39**	*e*P	**P**	**15 47 19.6**	**+1.1**
	comp=Z,25nm,1.0s						
SHPR	**Sheep Range**	**82.10**	**46**	*e*P	**P**	**15 47 20.1**	**+1.1**
	comp=Z,3.6nm,1.0s						
J05D	**Fort Rock, OR**	**82.16**	**38**	P	**P**	**15 47 20.0**	**+0.9**
	baz=232						
G03D	**McMinnville, O**	**82.22**	**36**	P	**P**	**15 47 20.3**	**+1.2**
	baz=230						
W13A	**Hualapai Mount**	**82.23**	**48**	*e*P	**P**	**15 47 20.6**	**+0.8**
	comp=Z,5.0nm,1.1s						
Y14A	**Wickenburg**	**82.25**	**50**	*e*P	**P**	**15 47 20.2**	**+0.5**
	comp=Z,23nm,0.8s						
CN2	**Changchun**	**82.25**	**322**	*e*P	**P**	**15 47 21.0**	**+1.6**
WHN	**Wuhan**	**82.38**	**306**	P	**P**	**15 47 21.5**	**+1.2**
KLR	**Kul'dur**	**82.49**	**329**	P	**P**	**15 47 21.4**	**+0.9**
	comp=Z,2.4nm,0.6s,baz=136,slow=5.7,SNR=4.3						
CNPM	**China Poot**	**82.72**	**13**	*e*P	**P**	**15 47 21.4**	**+0.1**
	comp=Z,21nm,0.8s						
I05D	**Terrebonne, OR**	**82.74**	**37**	P	**P**	**15 47 23.2**	**+1.2**
	baz=232						
HOM	**Homer**	**82.75**	**13**	*e*P	**P**	**15 47 24.5**	**+3.1**
	comp=Z,182nm,0.4s						
R11A	**Troy Canyon, C**	**82.81**	**45**	P	**P**	**15 47 23.3**	**+0.7**
	baz=237						
BMN	**Battle Mountai**	**82.91**	**42**	*e*P	**P**	**15 47 23.6**	**+0.6**
BMN				pmax	pmax		
	comp=Z,9.0nm,0.9s						
BMN	**Battle Mountai**	**82.91**	**42**	*e*P	**P**	**15 47 23.6**	**+0.6**
	comp=Z,9.4nm,0.9s						
BRLK	**Bradley Lake**	**83.01**	**13**	*e*P	**P**	**15 47 22.5**	**-0.4**
	comp=Z,23nm,0.8s						
TUC	**Tucson**	**83.05**	**52**	P	**P**	**15 47 24.9**	**+1.1**
	baz=240						
TUC

SCM	Sheep Creek Mo	85.66	14	*e*P		P		15 47 35.8	-0.1	
SCM	comp=Z,31nm,0.7s			pmax		pmax				
SCM	Sheep Creek Mo	85.66	14	*e*P		P		15 47 35.8	-0.1	
KLU	comp=Z,31nm,0.7s Klutina	85.69	15	*e*P		P		15 47 35.8	-0.2	
D08A	comp=Z,7.1nm,0.9s Wollman Farm,	85.73	36	*e*P		P		15 47 37.4	+0.9	
WRAK	comp=Z,7.4nm,0.8s Wrangell Islan	85.75	24	*e*P		P		15 47 37.0	+0.7	
CRQM	comp=Z,14nm,0.4s Cirque	85.76	16	*e*P		P		15 47 36.4	-0.1	
BJT	comp=Z,21nm,1.2s Baijiatuau	85.83	315	*e*P		P		15 47 37.8	+0.7	
BJT	comp=Z,25nm,0.8s			pmax		pmax				
BJT	Baijiatuau	85.83	315	*e*P		P		15 47 37.8	+0.7	
BJI	comp=Z,25nm,0.8s Beijing	85.84	315	P		P		15 47 38.0	+0.9	
BJI	comp=Z,32nm,1.0s			pmax		pmax				
BJI	comp=Z,160nm,4.5s			pmax		pmax				
ENH	Enshi	85.97	304	*e*P		P		15 47 39.0	+1.0	
F10A	comp=Z,18nm,0.8s Beach Ranch, E	86.06	38	*e*P		P		15 47 38.2	+0.1	
CAST	comp=Z,21nm,0.8s Castle Rocks	86.10	11	*e*P		P		15 47 36.3	-1.6	
NONG	comp=Z,15nm,0.7s Nongkai	86.19	291	P		P		15 47 40.6	+1.3	
BALM	comp=Z,54nm,1.2s Baldy	86.21	17	*e*P		P		15 47 38.1	-0.5	
BALM	comp=Z,12nm,0.8s			pmax		pmax				
BALM	Baldy	86.21	17	*e*P		P		15 47 38.0	-0.5	
TMUT	comp=Z,12nm,0.8s Trail Mountain	86.22	46	*e*P		P		15 47 40.5	+1.1	
B08A	comp=Z,11nm,1.3s Colville Reser	86.28	35	*e*P		P		15 47 39.1	0.0	
SEY	comp=Z,6.6nm,0.8s Seymchan	86.36	347	P		P		15 47 39.2	+0.2	
SEY	comp=Z,18nm,0.7s,baz=137,slow=6.1,SNR=46 Seymchan	86.36	347	*de*P		P		15 47 39.1	+0.1	
HLID	Hailey	86.38	41	P		P		15 47 41.1	+1.2	
HLID	baz=237 Hailey	86.38	41	*e*P		P		15 47 40.1	+0.2	
CHAI	comp=Z,3.2nm,0.8s Chaiyaphum	86.39	288	P		P		15 47 41.4	+1.1	
KTH	comp=Z,4.4nm,0.6s Kantishna Hill	86.44	12	*e*P		P		15 47 38.2	-1.3	
TRF	comp=Z,12nm,0.9s Thorofare Moun	86.47	12	*e*P		P		15 47 38.9	-0.9	
GYA	comp=Z,24nm,0.8s Guiyang	86.58	300	*e*P		P		15 47 41.2	+0.1	
GYA				pP		pP		15 49 39.8	+1.8	
GYA				sP		sP		15 50 33.0	+0.9	
GYA				PP		PP		15 51 15.6	+2.4	
GYA				SKS		SKSac		15 57 15.2	-2.0	
GYA	comp=Z,10.0nm,1.0s			pmax		pmax				
SYO	Syowa Base	86.70	193	⇓*e*P		P		15 47 39.0	-1.7	
RND	Reindeer	86.72	13	*e*P		P		15 47 40.3	-0.5	
RND	comp=Z,32nm,0.7s			pmax		pmax				
RND	Reindeer	86.72	13	*e*P		P		15 47 40.3	-0.5	
LAZ	comp=Z,32nm,0.7s Ladron	86.72	52	*e*P		P		15 47 42.8	+1.0	
MNTX	Cornudas Mount	86.82	55	P		P		15 47 42.8	+0.8	
MNTX	baz=244 Cornudas Mount	86.82	55	*e*P		P		15 47 42.9	+0.9	
MCK	comp=Z,6.6nm,1.0s McKinley	86.99	13	*e*P		P		15 47 41.6	-0.5	
MCK	comp=Z,14nm,0.7s			pmax		pmax				
MCK	McKinley	86.99	13	*e*P		P		15 47 41.5	-0.5	
MVCO	comp=Z,14nm,0.7s Mesa Verde	87.06	49	P		P		15 47 44.4	+1.1	
TX31	baz=242 Lajitas Ar. Si	87.13	57	*e*P		P		15 47 44.5	+0.9	
TXAR	Lajitas Array	87.13	57	P		P		15 47 44.6	+1.0	
TXAR	comp=Z,3.1nm,0.7s,baz=218,slow=6.9,SNR=37			pP		pP		15 49 43.1	+2.5	
HYT	comp=Z,0.6nm,0.9s,baz=197,slow=2.8,SNR=4.0 Haines Junctio	87.41	19	*e*P		P		15 47 44.6	+0.4	
NEW	Newport	87.42	36	P		P		15 47 45.2	+0.7	
ANMO	baz=235 Albuquerque	87.47	51	P		P		15 47 46.1	+0.9	
ANMO	baz=243 Albuquerque	87.47	51	⇓*i*P		P		15 47 45.6	+0.4	
ANMO	comp=Z,3.0nm,0.9s			pmax		pmax				
ANMO	Albuquerque	87.47	51	*e*P		P		15 47 45.7	+0.4	
PBKT	comp=Z,2.8nm,0.8s Sadao Pong	87.55	289	P		P		15 47 47.8	+2.1	
WRH	comp=Z,16nm,1.1s Wood River Hil	87.82	13	*e*P		P		15 47 45.2	-0.7	
DOT	comp=Z,21nm,0.7s Dot Lake	87.99	14	*e*P		P		15 47 46.3	-0.4	
HDA	comp=Z,26nm,1.0s Harding Lake	88.00	13	*e*P		P		15 47 46.2	-0.6	
MCMT	comp=Z,22nm,0.6s McKenzie Canyo	88.01	40	*e*P		P		15 47 48.6	+1.1	
CCB	Clear Creek Bu	88.04	13	*e*P		P		15 47 45.9	-1.0	
XAN	comp=Z,28nm,0.6s Xi'an	88.07	307	P		P		15 47 49.0	+1.1	
XAN	comp=Z,25nm,0.9s			pmax		pmax				
XAN	comp=Z,23nm,5.0s			pmax		pmax				
DLBC	Dease Lake	88.09	23	P		P		15 47 48.1	+0.8	
DLBC	comp=Z,3.7nm,0.8s,baz=211,slow=5.9,SNR=9.4 Dease Lake	88.09	23	*e*P		P		15 47 48.4	+1.0	
COLA	comp=Z,5.8nm,0.9s College	88.23	12	*e*P		P		15 47 47.2	-0.5	
COLA	College	88.23	12	*e*P		P		15 47 47.2	-0.5	
ILAR	comp=Z,102nm,0.3s Eielson Array	88.34	13	P		P		15 47 47.4	-0.9	
ILB	comp=Z,7.3nm,0.6s,baz=214,slow=5.4,SNR=67 Eielson Array	88.34	13	*e*P		P		15 47 47.4	-0.9	
IL1	Eielson Array	88.34	13	*e*P		P		15 47 47.3	-1.0	
MSO	Missoula	88.42	38	P		P		15 47 50.2	+1.0	
DLMT	baz=237 Dillon	88.44	40	*e*P		P		15 47 50.2	+0.8	
S22A	comp=Z,18nm,1.5s 4UR Ranch, Cre	88.48	49	P		P		15 47 50.8	+0.8	
S22A	baz=242 4UR Ranch, Cre	88.48	49	*e*P		P		15 47 50.6	+0.6	
REDW	comp=Z,4.1nm,1.1s Red Top Meadow	88.49	42	*e*P		P		15 47 50.5	+0.6	
BSMT	comp=Z,13nm,1.3s Bassoo Peak	88.49	37	*e*P		P		15 47 49.5	-0.2	
O20A	White River Ci	88.62	46	P		P		15 47 51.3	+0.8	
IMW	baz=242 Indian Meadow	88.71	42	*e*P		P		15 47 51.5	+0.6	
FLWY	comp=Z,8.4nm,1.0s Flagg Ranch	88.95	42	*e*P		P		15 47 52.5	+0.6	
YHB	comp=Z,9.2nm,0.9s Horse Butte	88.98	41	*e*P		P		15 47 53.2	+1.2	
BW06	comp=Z,8.1nm,0.8s Boulder Array	89.02	43	P		P		15 47 53.0	+0.7	
BW06	baz=241 Boulder Array	89.02	43	*e*P		P		15 47 52.1	-0.2	
PD31	Pinedale Array	89.02	43	*e*P		P		15 47 52.3	0.0	
PDAR	Pinedale Array	89.02	43	P		P		15 47 52.2	0.0	
BILL	comp=Z,3.3nm,0.6s,baz=213,slow=3.4,SNR=30 Bilibino	89.03	354	*e*P		P		15 47 52.2	+0.7	
BILL	comp=Z,5.0nm,1.0s			pmax		pmax				
BOZ	Bozeman (W)	89.17	40	P		P		15 47 54.1	+1.3	
BOZ	baz=239 Bozeman (W)	89.17	40	*e*P		P		15 47 53.6	+0.8	
BOZ	comp=Z,7.0nm,0.9s			pmax		pmax				
BOZ	Bozeman (W)	89.17	40	*e*P		P		15 47 53.6	+0.8	
H17A	comp=Z,6.8nm,0.9s Grant Village	89.18	41	P		P		15 47 54.3	+1.3	
KMI	baz=240 Kunming	89.28	297	P		P		15 47 55.5	+1.6	
KMI				pP		pP		15 49 50.5	-1.0	
KMI	comp=Z,17nm,0.9s			pmax		pmax				
HHC	Hu-ho-hao-te	89.30	314	*e*P		P		15 47 55.1	+1.6	
HHC	comp=Z,10.0nm,1.1s			pmax		pmax				
HHC	comp=Z,46nm,5.4s			pmax		pmax				
SDCO	Great Sand Dun	89.42	49	P		P		15 47 54.8	+0.5	
	baz=243									
LAMP	Lampang	89.45	290	P		P		15 47 56.6	+2.0	
DAWY	Dawson	89.49	16	*e*P		P		15 47 54.0	+0.3	
EGAK	comp=Z,15nm,0.8s Eagle	89.63	15	*e*P		P		15 47 54.3	0.0	
WALA	comp=Z,13nm,0.8s Waterton Lakes	89.64	36	*e*P		P		15 47 55.2	+0.3	
MSTX	comp=Z,4.9nm,0.9s Muleshoe	89.78	54	P		P		15 47 56.4	+0.5	
COLD	baz=245 Coldfoot	89.90	10	*e*P		P		15 47 56.0	+0.5	
T25A	comp=Z,7.2nm,0.8s Trinidad	89.93	50	P		P		15 47 57.5	+0.8	
933A	baz=244 Laredo	89.95	61	P		P		15 47 57.5	+0.8	
CM01	baz=247 Chiang Mai Arr	90.01	290	*e*P		P		15 47 58.5	+1.3	
CM31	Chiang Mai Arr	90.04	290	*e*P		P		15 47 58.9	+1.6	
CMAR	Chiang Mai Arr comp=Z,9.6nm,0.8s,baz=118,slow=2.9,SNR=56	90.04	290	P		P		15 47 58.8	+1.5	
CHTO	Chiang Mai	90.17	290	*e*P		P		15 47 59.2	+1.3	
CHTO	comp=Z,19nm,0.6s			pmax		pmax				
CHTO	Chiang Mai	90.17	290	*e*P		P		15 47 59.2	+1.3	
034A	comp=Z,19nm,0.6s Hebbronville	90.22	61	P		P		15 47 58.6	+0.6	
ISCO	baz=247 Idaho Springs	90.26	47	P		P		15 47 58.6	+0.4	
RLMT	baz=243 Red Lodge	90.35	41	P		P		15 47 59.1	+0.7	
N23A	baz=241 Red Feather La	90.53	46	P		P		15 48 00.3	+0.9	
633A	baz=243 Saathoff Ranch	90.75	59	P		P		15 48 01.1	+0.8	
K22A	baz=247 Casper	90.94	44	P		P		15 48 01.9	+0.8	
AMTX	baz=243 Amarillo	90.98	53	P		P		15 48 02.0	+0.6	
533A	baz=246 Kerrville	91.10	58	P		P		15 48 02.5	+0.5	
433A	baz=247 Art	91.33	58	P		P		15 48 03.3	+0.3	
534A	baz=247 Blanco	91.53	59	P		P		15 48 04.4	+0.4	
ABTX	baz=247 Abilene, Hawle	91.62	56	P		P		15 48 04.6	+0.2	
333A	baz=247 Richland Sprin	91.63	57	P		P		15 48 04.6	+0.2	
434A	baz=247 Burnet	92.00	58	P		P		15 48 06.3	+0.1	
YAK	baz=247 Yakutsk	92.09	338	P		P		15 48 05.0	-0.7	
YAK	comp=Z,13nm,0.6s,baz=264,slow=0.5,SNR=13 Yakutsk	92.09	338	*e*P		P		15 48 05.2	-0.5	
YAK	comp=Z,16nm,0.9s			pmax		pmax				
YAK	Yakutsk	92.09	338	*e*P		P		15 48 04.9	-0.7	
133A	comp=Z,29nm,0.8s Hamilton Ranch	92.18	56	P		P		15 48 07.4	+0.5	
334A	baz=247 Lometa	92.22	57	P		P		15 48 07.5	+0.4	
535A	baz=247 Dale	92.26	59	P		P		15 48 07.7	+0.5	
W32A	baz=248 Sentinel	92.91	54	P		P		15 48 10.7	+0.5	
WHTX	baz=247 Lake Whitney,	93.09	57	P		P		15 48 11.9	+0.8	
436A	baz=248 Wall Ranch, Ga	93.16	58	P		P		15 48 12.1	+0.8	
RSSD	baz=248 Black Hills	93.21	44	P		P		15 48 12.2	+0.6	
CIT	baz=244 Chita	93.45	325	*e*P		P		15 48 13.0	+0.7	
CIT	comp=Z,69nm,1.1s			pmax		pmax				
W34A	Bridge Creek,	94.06	54	P		P		15 48 16.5	+1.0	
INK	baz=248 Inuvik	94.30	15	P		P		15 48 13.9	-1.8	
INK	comp=Z,2.2nm,0.7s,baz=218,slow=4.8,SNR=5.6 Inuvik	94.30	15	*e*P		P		15 48 14.8	-0.8	
INK	comp=Z,4.0nm,1.0s			pmax		pmax				
INK	Inuvik	94.30	15	*e*P		P		15 48 14.8	-0.8	
S33A	comp=Z,4.4nm,1.0s Kaszmaul Farm,	94.78	52	P		P		15 48 19.3	+0.6	
SONM	baz=248 Songino Array	95.70	319	P		P		15 48 22.2	-0.5	
YKA	comp=Z,0.7nm,0.4s,baz=136,slow=3.4,SNR=9.3 Yellowknife Ar	96.55	25	P		P		15 48 25.7	-0.3	
YKA	comp=Z,0.5nm,0.5s,baz=238,slow=4.2,SNR=5.9			pP		pP		15 50 23.2	-1.1	
T38A	comp=Z,0.2nm,0.7s,baz=242,slow=1.3,SNR=1.4 Diamond	97.34	53	Pdiff		P		15 48 30.8	+0.6	
A29A	baz=250 Manning Farm,	98.18	41	Pdiff		P		15 48 34.2	+0.6	
546A	baz=248 Slidell	98.70	61	Pdiff		Pdif		15 48 36.1	-0.2	
R39A	baz=251 Chumby, Stover	98.70	52	Pdiff		P		15 48 36.5	+0.2	
S40A	baz=251 Lebanon	98.87	53	Pdiff		Pdif		15 48 36.9	0.0	
H34A	baz=251 Spellman Lake,	98.89	46	Pdiff		P		15 48 37.1	+0.2	
ZAA0	baz=250 Zalesovo Array	110.44	321	*e*PKiKP		PKiKP		15 53 24.2	-1.1	
ZALV	Zalesovo Beam comp=Z,2.9nm,0.6s,baz=107,slow=0.5,SNR=6.7	110.44	321	PKiKP		PKiKP		15 53 24.2	-1.1	
MK31	Makanchi Array	111.14	313	*e*PKiKP		PKiKP		15 53 26.4	-0.5	
MKAR	Makanchi Array comp=Z,0.6nm,0.7s,baz=101,slow=5.7,SNR=4.9	111.14	313	Pdiff		Pdif		15 49 33.3	+2.0	
MKAR				PKiKP		PKiKP		15 53 26.0	-0.9	
MKAR	comp=Z,2.0nm,0.5s,baz=82,slow=1.0,SNR=9.8 Makanchi Array	111.14	313	P		Pdif		15 49 33.3	+2.0	
MKAR				*i*				15 53 26.4		
MKAR	Makanchi Array	111.14	313	Pdif		Pdif		15 49 33.3	+2.0	
MKAR				*e*PKiKP		PKiKP		15 53 26.4	-0.5	
KSH	Kashi	114.82	305	*e*PKP		PKPdf		15 53 34.9	+0.6	
KSH				*e*PP		PP		15 54 52.8	+10	
KSH				*es*PKP				15 56 33.4		
KSH				PKS		PKSdf		15 57 10.7	-0.4	
KSH				SKS		SKSdf		15 59 56.4	+0.5	
KSH				SKKS		SKKSac		16 00 48.6	+0.2	
BRVK	Borovoye	119.09	320	*d i*PKIKP		PKPdf		15 53 41.0	-0.9	
ZRNK	Zerenda	119.87	320	*e*PKIKP		PKPdf		15 53 42.1	-1.3	
ZRNK	Zerenda	119.87	320	*e*PKPdf		PKPdf		15 53 42.1	-1.3	
SUMG	Summit	123.18	13	*i* P		PKPdf		15 53 50.4	+0.6	
SUMG	Summit	123.18	13	*i* PKIKP		PKPdf		15 53 50.4	+0.6	
ARU	Arti	125.16	325	*i* PKIKP		PKPdf		15 53 53.4	-0.1	
ARU								15 55 52.4		
ARU								16 00 14.8		
ARU				SP		SP		16 04 58.8	-0.2	
ARU				SS		SS		16 12 04.2	-3.1	
BOSA	Boshof	126.22	206	PKP		PKPdf		15 53 57.4	+0.8	
GEYT	comp=Z,4.3nm,1.0s,baz=125,slow=5.5,SNR=3.5 Alibeck	128.72	303	PKP		PKPdf		15 54 00.9	0.0	
ARCES	comp=Z,3.2nm,0.6s,baz=139,slow=2.2,SNR=5.8 ARCESS Array B	128.91	350	PKP		PKPdf		15 54 00.1	-0.2	
KLMR	comp=Z,4.6nm,0.6s,baz=48,slow=1.8,SNR=8.6 Klimovskoe	131.85	336	*e*PKIKP		PKPdf		15 54 05.1	-0.9	
KLMR	comp=Z,3.0nm,0.6s			pmax		pmax				
FINES	FINESS Array B	135.75	344	PKP		PKPdf		15 54 11.6	-1.7	
VRH	comp=Z,1.4nm,0.4s,baz=86,slow=3.5,SNR=8.2 Novokhopyorsk	136.36	324	*e*PKIKP		PKPdf		15 54 13.8	-1.0	
VRH	comp=Z,8.0nm,0.3s			pmax		pmax				
VSR	Storozhevoye	137.73	326	*e*PKIKP		PKPdf		15 54 18.2	+0.9	
VSR	comp=Z,10.0nm,1.4s			pmax		pmax				
NC303	NORSAR Array S	138.78	353	*e*PKPpre		PKPpre		15 54 09.0		
KIV	Kislovodsk	138.90	314	*e*PKIKP		PKPdf		15 54 20.0	+0.2	
KIV	comp=Z,14nm,1.0s			pmax		pmax				
NB2	NORSAR Subarra	138.97	353	PKP		PKPpre		15 54 10.0		
NOA	comp=Z,1.6nm,0.6s,baz=12,slow=3.4 NORSAR Array B	138.97	353	PKhKP		PKPpre		15 54 10.1		
NEY	comp=Z,0.5nm,0.6s,baz=314,slow=15,SNR=9.5 Neytrino	139.13	313	⇓*e*PKIKP		PKPdf		15 54 19.3	-1.1	
KBSD	Kabsdagh	142.65	305	*i* P		PKPdf		15 54 23.5	-3.2	
SUW	Suwalki	142.81	339	*e*PKP		PKPdf		15 54 24.0	-2.4	
AKASG	Malin Array Be	142.98	331	PKhKP		PKPpre		15 54 23.6		
AKASG	comp=Z,31nm,0.6s,baz=43,slow=4.4,SNR=97			SKPbc		SKiKP		15 57 17.0	+1.3	
KIEV	comp=Z,0.2nm,0.3s,baz=42,slow=3.5,SNR=4.1 Kiev	142.99	331	*e*PKHKP		PKPpre		15 54 23.3		
KIEV	Kiev	142.99	331	*e*PKPpre		PKPpre		15 54 23.3		
AK11	Malin Array Si	143.02	331	*e*PKPpre		PKPpre		15 54 23.3		
SFNV	Sufian	143.13	304	*i* P		PKPab		15 54 25.3	0.0	
MUD	Monsted U'grnd	143.69	353	⇓*i*P		PKPab		15 54 26.5	-0.2	
SIM	comp=Z,52nm,0.9s Simferopol'	143.94	320	*e*PKIKP		PKPdf		15 54 28.4	-0.2	
SIM	comp=Z,60nm,0.9s			pmax		pmax				
COP	Copenhagen	143.99	350	*i* P		PKPbc		15 54 27.2	-0.5	
BSD	comp=Z,25nm,0.9s Bornholm Skovb	144.07	347	⇓*i*P		PKPbc		15 54 27.3	-0.6	
KSRV	comp=Z,55nm,0.8s Kasrt alli	144.15	303	*i* P		PKPbc		15 54 28.2	-0.7	
MBAR	Mbarara	144.84	237	*e*PKPdf		PKPdf		15 54 31.6	+0.2	
ESK	Eskdalemuir	145.03	5	*e*PKIKP		PKPbc		15 54 31.3	+0.4	
ESK	Eskdalemuir	145.03	5	*e*PKPdf		PKPbc		15 54 31.3	+0.4	
SORM	Soroca	145.17	329	⇑*i*P		PKPdf		15 54 31.0	+0.4	
SORM	Soroca	145.17	329	⇑PKIKP		PKPdf		15 54 31.0	+0.4	
ZALF	Zalf	146.19	299	*i* P		PKPdf		15 54 33.4	+0.5	
LEOM	Leova	146.34	326	⇑*i*P		PKPbc		15 54 35.4	+0.5	
LEOM	Leova	146.34	326	⇑PKIKP		PKPbc		15 54 35.4	+0.5	
MARH	Ras Al Marh	146.62	301	*i* P		PKPab		15 54 38.2	-1.0	
DSB	Dublin	146.70	9	*e*PKPbc		PKPbc		15 54 35.3	-0.4	
BR131	Keskin Array S	146.78	312	*e*PKPbc		PKPbc		15 54 36.0	-0.6	
BRTR	Keskin Array B	146.78	312	PKP		PKPdf		15 54 33.6	-0.2	
BRTR	comp=Z,7.5nm,0.6s,baz=120,slow=2.9,SNR=40			PKPbc		PKPbc		15 54 36.2	-0.4	
TOTH	comp=Z,7.9nm,0.6s,baz=140,slow=3.4,SNR=39 TOTAH	146.83	300	*i* P		PKPbc		15 54 37.5	+0.7	
TLCR		146.87	324	⇓*i*P		PKPbc		15 54 36.5	+0.1	
TLCR		146.87	324	⇓PKIKP		PKPbc		15 54 36.5	+0.1	
TESR	Tescani	147.12	328	⇓*i*P		PKPbc		15 54 36.4	-0.7	
OJC	Ojcow	147.13	339	*e*PKP		PKPbc		15 54 37.1	+0.1	
OJC	Ojcow	147.13	339	*e*PKIKP		PKPbc		15 54 36.9	-0.1	
OJC	Ojcow	147.13	339	*e*PKPbc		PKPbc		15 54 36.9	-0.1	
CFR	Carcaliu	147.24	325	⇓*i*P		PKPbc		15 54 37.4	0.0	
CFR	Carcaliu	147.24	325	⇓PKIKP		PKPbc		15 54 37.4	0.0	
KOLS	Kolonicke sedl	147.28	335	*e*PKIKP		PKPbc		15 54 38.2	+0.8	
KOLS				*e*				15 54 41.6		
KOLS	Kolonicke sedl	147.28	335	*e*PKP		PKPbc		15 54 38.2	+0.8	
KOLS				*e*				15 54 41.6		
STHS	Stebnicka Huta	147.29	336	*e*PKP2		PKPbc		15 54 38.3	+0.9	
STHS	Stebnicka Huta	147.29	336	*e*PKP		PKPbc		15 54 38.3	+0.9	
STHS				*e*				15 54 42.7		
ANTO	Ankara	147.30	313	*e*PKIKP		PKPbc		15 54 38.0	+0.1	
ANTO	Ankara	147.30	313	*e*PKPbc		PKPbc		15 54 38.0	+0.1	
BR231	Keskin MP Arra	147.32	313	*e*PKPdf		PKPdf		15 54 34.5	-0.2	
BR231				*e*PKPbc		PKPbc		15 54 37.0	-1.0	
UZH	Uzhgorod	147.51	335	⇓*i*PKHKP		PKPpre		15 54 31.9		
UZH				*e*				15 54 35.7		
UZH				*e*				15 54 39.5		
TIRR	Tirgusor	147.54	323	⇓*i*P		PKPbc		15 54 38.4	+0.2	
TIRR	Tirgusor	147.54	323	⇓PKIKP		PKPbc		15 54 38.4	+0.2	
TIRR	Tirgusor	147.54	323	*e*PKPbc		PKPbc		15 54 38.3	+0.1	
PLOR	Plostina	147.58	327	⇓*i*P		PKPbc		15 54 38.2	-0.1	
PLOR	Plostina	147.58	327	⇓PKIKP		PKPbc		15 54 38.2	-0.1	
CRVS	Cervenica-Dubn	147.62	336	*e*PKIKP		PKPbc		15 54 39.0	+0.7	
CRVS				*e*				15 54 43.2		
CRVS	Cervenica-Dubn	147.62	336	*e*PKP		PKPbc		15 54 39.0	+0.7	
CRVS				*e*				15 54 43.2		
NIE	Niedzica	147.63	337	*e*PKP		PKPbc		15 54 39.0	+0.6	
NIE	Niedzica	147.63	337	*e*PKIKP		PKPbc		15 54 39.0	+0.6	
TLB	Topalu	147.67	324	⇓*i*P		PKPbc		15 54 38.6	+0.1	
TLB	Topalu	147.67	324	⇓PKIKP		PKPbc		15 54 38.6	+0.1	
KSP	Ksiaz	147.67	343	*e*PKP		PKPbc		15 54 39.0	+0.6	
KSP	Ksiaz	147.67	343	*e*PKIKP		PKPbc		15 54 39.0	+0.6	
CWF	Charnwood Fore	147.73	4	*e*PKPbc		PKPbc		15 54 37.6	-0.8	
OKC	Ostrava-Krasne	148.01	340	AMS		AMS		16 35 10.0		
CLL	comp=Z,200nm,13.3s Collm	148.05	347	*e*PKIKP		PKPbc		15 54 39.0	-0.3	
CLL	Collm	148.05	347	*e*PKPbc		PKPbc		15 54 39.0	-0.3	
UPC	Upice	148.05	343	⇑*e*PKP		PKPbc		15 54 40.0	+0.7	
UPC				*e*PKPAB		PKPab		15 54 45.0	+0.9	
UPC	Upice	148.05	343	*e*PKIKP		PKPbc		15 54 40.0	+0.7	
UPC				*e*				15 54 45.0		
DPC	Dobruska-Polom	148.11	342	⇑*e*PKP		PKPbc		15 54 40.3	+0.8	
DPC				*e*PKPAB		PKPab		15 54 45.4	+1.0	
DPC	Dobruska-Polom	148.11	342	*e*PKIKP		PKPbc		15 54 40.3	+0.8	
DPC				*e*				15 54 45.4		
DOPR	Dopca	148.13	328	⇓*i*P		PKPbc		15 54 40.5	+0.8	
LANS	Liptovska Anna	148.15	338	*e*PKP2		PKPbc		15 54 41.2	+1.5	
LANS	Liptovska Anna	148.15	338	*e*PKP		PKPbc		15 54 41.2	+1.5	
LANS				*e*				15 54 46.1		
MLR	Muntele Rosu	148.18	327	⇓*i*P		PKPbc		15 54 40.0	0.0	
MLR	Muntele Rosu	148.18	327	*e*PKHKP		PKPbc		15 54 39.5	-0.5	
MLR	Muntele Rosu	148.18	327	*e*PKPbc		PKPbc		15 54 39.5	-0.5	
KRLC	Kraliky	148.22	342	*e*PKPAB		PKPab		15 54 45.5	+0.7	
KRLC	Kraliky	148.22	342	*e*PKP2		PKPab		15 54 45.5	+0.7	
BRG	Berggiesshubel	148.24	345	*i* PKP		PKPbc		15 54 40.0	+0.3	
BRG	comp=Z,22nm,0.6s			*i*				15 54 44.9		
MORC	comp=Z,16nm,0.9s Moravsky Berou	148.25	341	⇑*i*P		PKPbc		15 54 40.1	+0.2	
MORC	Moravsky Berou	148.25	341	*e*PKPbc		PKPbc		15 54 39.6	-0.3	
KECS	Kecovo	148.34	336	*e*PKP		PKPbc		15 54 40.8	+0.7	
KECS				*e*			

VTS	**Vitosha**	**151.62 326**	⇑*i*P	**PKPbc**	**15 54 48.1**	**-0.1**
VTS	**Vitosha**	**151.62 326**	*e*PKIKP	**PKPbc**	**15 54 47.6**	**-0.6**
VTS	**Vitosha**	**151.62 326**	P	**PKPbc**	**15 54 46.5**	**-1.7**
VTS	**Vitosha**	**151.62 326**	*e*PKPbc	**PKPbc**	**15 54 47.6**	**-0.6**
BFO	**Black Forest**	**151.76 351**	*e*PKIKP	**PKPbc**	**15 54 47.7**	**-0.5**
BFO			*e*		15 54 58.6	
BFO	**Black Forest**	**151.76 351**	*e*PKPbc	**PKPbc**	**15 54 47.7**	**-0.5**
BFO			*e*PKPab	**PKPab**	**15 54 58.6**	**-1.0**
SOKA	**Soboth**	**151.78 341**	*i* PKPbc	**PKPbc**	**15 54 47.6**	**-0.7**
	comp=Z,6.2nm,0.7s,SNR=6.2					
PERS	**Pernice**	**151.79 341**	*i* PKPbc	**PKPbc**	**15 54 47.7**	**-0.6**
KBA	**Koelnbreinsper**	**151.90 343**	*i* PKPbc	**PKPbc**	**15 54 47.8**	**-1.0**
	comp=Z,6.0nm,0.5s					
MMB	**Musomiste**	**152.02 324**	P	**PKPbc**	**15 54 48.5**	**-0.5**
OBKA	**Obir**	**152.08 341**	*i* PKPbc	**PKPbc**	**15 54 48.2**	**-0.8**
	comp=Z,3.7nm,0.6s					
WTTA	**Wattenberg**	**152.16 346**	*i* PKiKP	**PKPbc**	**15 54 49.0**	**-0.3**
	comp=Z,9.0nm,0.6s					
MOTA	**Moosalm**	**152.20 347**	*i* PKPbc	**PKPbc**	**15 54 48.7**	**-0.7**
	comp=Z,6.1nm,0.6s					
MYKA	**Terra Mystica**	**152.23 343**	*i* PKPbc	**PKPbc**	**15 54 48.3**	**-1.1**
	comp=Z,6.3nm,0.5s,SNR=5.7					
ABTA	**Abfaltersbach**	**152.43 344**	*i* PKPbc	**PKPbc**	**15 54 49.0**	**-0.8**
	comp=Z,15nm,0.6s,SNR=8.1					
LJU	**Ljubljana**	**152.50 341**	*i* PKPbc	**PKPbc**	**15 54 49.7**	**-0.2**
FETA	**Feichten**	**152.59 347**	*i* PKiKP	**PKPbc**	**15 54 50.1**	**-0.2**
	comp=Z,6.8nm,0.7s					
BOJS	**Bojanci**	**152.75 339**	*i* PKPbc	**PKPbc**	**15 54 50.5**	**+0.1**
FUORN	**Ofenpass-Fuorn**	**153.07 347**	*e*PKPbc	**PKPbc**	**15 54 50.3**	**-1.1**
FUORN			*e*PKPab	**PKPab**	**15 55 05.8**	**+0.2**
TUE	**Stuetta**	**153.39 348**	*e*PKPbc	**PKPbc**	**15 54 52.0**	**-0.1**
SENIN	**Lac Senin/Sane**	**153.83 352**	*e*PKPab	**PKPab**	**15 55 08.6**	**-0.1**
TIP	**Timpagrande**	**157.43 329**	*e*PKPab	**PKPab**	**15 55 24.2**	**0.0**
ES19	**SONSECA Array**	**160.23 13**	*e*PKPab	**PKPab**	**15 55 35.7**	**-0.7**
ESDC	**Sonseca Array**	**160.24 14**	PKPab	**PKPab**	**15 55 36.4**	**-0.1**
	comp=Z,0.8nm,0.5s,baz=340,slow=4.2,SNR=8.4					
TOA0	**Torodi Ar. Sit**	**172.68 178**	*e*PKPdf	**PKPdf**	**15 55 00.9**	**-1.7**
TORD	**Torodi Ar. Bea**	**172.68 178**	PKP	**PKPdf**	**15 55 01.5**	**-1.1**
	comp=Z,2.3nm,0.8s,baz=211,slow=1.2,SNR=13					
TORD			PKPab	**PKPab**	**15 56 32.4**	**+0.6**
	comp=Z,0.6nm,0.7s,baz=168,slow=4.3,SNR=3.8					

*IDC **11** 15:36:46.6±2.3,51.86N×172.08W,h0km,mb3.6/4, mb1 3.9/6,mb1mx3.5/54,mbtmp3.5/6,ML2.5/2,Error ellipse: s-maj=60.0km s-min=32.4km az=1.0*

*ISCJB **11** 15:36:54.9±1.0,52.0N±0.2×171.28W±0.10,h44km, mb3.5/4,Error ellipse: s-maj=25.0km s-min=4.7km az=163.2*

*NEIC **11** 15:36:55.9,52.07N×171.35W,h42km,ML3.7(AEIC),After AEIC.*

ISC 11 15:36:56.6±1.2,52.1N±0.2×171.33W±0.08,h44km,n25, σ0s80/20,mb3.6/4,Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**1.70**	**280**	P	**Pn**	**15 37 23.2**	**-0.7**
KOFP	**Korovin Flat P**	**1.72**	**278**	P	**Pn**	**15 37 23.7**	**-0.4**
NIKH	**Nikolski High**	**1.76**	**58**	P	**Pn**	**15 37 23.1**	**-1.5**
NIKH				S	**Sn**	**15 37 46.5**	**+0.7**
KOWE	**Korovin West**	**1.82**	**281**	P	**Pn**	**15 37 25.7**	**+0.1**
OKWR	**Okmok West Rim**	**2.34**	**53**	P	**Pn**	**15 37 33.3**	**+0.7**
OKAK	**Okmok**	**2.35**	**49**	P	**Pn**	**15 37 31.4**	**-1.3**
OKTU	**Okmok Mt. Tuli**	**2.39**	**55**	P	**Pn**	**15 37 33.9**	**+0.5**
GSMY	**Great Sitkin M**	**2.92**	**271**	P	**Pn**	**15 37 40.9**	**+0.3**
GSCK	**Great Sitkin C**	**2.99**	**271**	P	**Pn**	**15 37 41.3**	**-0.2**
ADAG	**Mount Adagdak**	**3.26**	**271**	P	**Pn**	**15 37 45.0**	**-0.3**
UNV	**Unalaska Valle**	**3.42**	**57**	P	**Pn**	**15 37 47.5**	**+0.2**
UNV				S	**Sn**	**15 38 27.4**	**+0.8**
KIKV	**Kanaga Island**	**3.62**	**269**	P	**Pn**	**15 37 50.2**	**0.0**
AKUT	**Akutan**	**3.94**	**56**	P	**Pn**	**15 37 54.3**	**0.1**
ILAR	**Eielson Array**	**17.89**	**35**	P	**P**	**15 41 02.5**	**+0.5**
	0.0nm,0.3s,baz=231,slow=10,SNR=3.8						
PETK	**Petropavlovsk-**	**18.78**	**285**	P	P	15 41 02.7	-9.2
	0.1nm,0.3s,baz=92,slow=12,SNR=2.9						
DLBC	**Dease Lake**	**24.07**	**58**	P	**P**	**15 42 09.1**	**+1.5**
	1.0nm,0.6s,baz=256,slow=8.3,SNR=3.4						
YKA	**Yellowknife Ar**	**31.34**	**48**	P	**P**	**15 43 11.3**	**-1.2**
	0.3nm,0.6s,baz=267,slow=7.9,SNR=3.4						
H11N2	**WAKE ISLAND Hy**	**36.48**	**216**	T	T	16 22 26.9	
	baz=21,slow=76,SNR=4.5						
H11N3	**WAKE ISLAND Hy**	**36.49**	**216**	T	T	16 22 32.5	
	baz=21,slow=76,SNR=4.9						
H11N1	**WAKE ISLAND Hy**	**36.50**	**216**	T	T	16 22 26.7	
	baz=21,slow=76,SNR=7.0						
H11S1	**WAKE ISLAND Hy**	**37.68**	**216**	T	T	16 24 00.1	
	baz=19,slow=74,SNR=8.0						
H11S2	**WAKE ISLAND Hy**	**37.69**	**215**	T	T	16 24 02.0	
	baz=19,slow=74,SNR=12						
H11S3	**WAKE ISLAND Hy**	**37.70**	**216**	T	T	16 24 00.1	
	baz=19,SNR=9.4						
PDAR	**Pinedale Array**	**41.64**	**78**	P	**P**	**15 44 40.7**	**+0.1**
	0.8nm,0.5s,baz=323,slow=3.3,SNR=9.4						
TXAR	**Lajitas Array**	**53.96**	**87**	P	**P**	**15 46 15.6**	**-0.4**
	0.4nm,0.6s,baz=301,slow=5.2,SNR=6.6						

*ISK **11** 15:39:05.5,37.54N×36.11E,h5km,MD2.4*

*CSEM **11** 15:39:06.6±0.2,37.51N×36.12E,h8km,MD2.7,Error ellipse: s-maj=6.2km s-min=4.3km az=4.0*

*DDA **11** 15:39:07.3,37.47N×36.19E,h7km,Md2.7*

ISC 11 15:39:06.9±0.9,37.51N±0.03×36.12E±0.02,h10km±8km, n26,σ0s92/35,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANDN	**Andirin**	**0.19**	**69**	*i* P	**Pg**	**15 39 10.7**	**-0.3**
ANDN				*i* S	**Sg**	**15 39 14.9**	**+1.1**
ANDN	**Andirin**	**0.19**	**69**	P	**Pg**	**15 39 10.7**	**-0.3**
ANDN				S	**Sg**	**15 39 14.9**	**+1.1**
KOZT	**Kozan**	**0.24**	**263**	*e*PG	**Pg**	**15 39 10.6**	**-1.2**
KOZT	**Kozan**	**0.24**	**263**	*e*Pg	**Pg**	**15 39 10.6**	**-1.2**
AKO	**Adana**	**0.54**	**265**	*i* P	Pg	15 39 06.5	-11
KAMA	**Osmaniye**	**0.54**	**127**	*i* P	**Pg**	**15 39 15.7**	**-1.8**
KAMA				*i* S	**Sg**	**15 39 25.0**	**+0.4**
CEYT	**Ceyhan**	**0.58**	**211**	*e*PG	**Pg**	**15 39 17.6**	**-0.6**
CEYT				*e*SG	**Sb**	**15 39 26.4**	**-1.0**
CEYT	**Ceyhan**	**0.58**	**211**	*e*Pg	**Pg**	**15 39 17.6**	**-0.6**
CEYT				*e*Sg	**Sb**	**15 39 26.4**	**-1.0**
KMRS	**Kahramanmaras**	**0.62**	**90**	*e*PG	**Pg**	**15 39 18.4**	**-0.4**
KMRS				*e*SG	**Sg**	**15 39 27.1**	**+0.1**
KMRS	**Kahramanmaras**	**0.62**	**90**	*e*Pg	**Pg**	**15 39 18.4**	**-0.4**
KMRS				*e*Sg	**Sg**	**15 39 27.1**	**+0.1**
HCB	**Kahramanmara˜**	**0.65**	**105**	*i* P	**Pg**	**15 39 18.5**	**-0.9**
YURE	**YUREGIR**	**0.79**	**210**	*i* P	**Pg**	**15 39 21.9**	**-0.2**
YURE	**YUREGIR**	**0.79**	**210**	P	**Pg**	**15 39 21.9**	**-0.2**
YAHY	**KAYSERI_Yahyal**	**0.84**	**314**	*i* P	**Pb**	**15 39 23.7**	**+0.1**
YAHY	**KAYSERI_Yahyal**	**0.84**	**314**	P	**Pb**	**15 39 23.7**	**+0.1**
KARA	**Karaisali**	**0.89**	**254**	*e*PG	**Pg**	**15 39 23.1**	**-0.9**
KARA	**Karaisali**	**0.89**	**254**	*e*Pg	**Pg**	**15 39 23.1**	**-0.9**
SARI	**SarD1z-Kayseri**	**0.92**	**14**	*e*PG	**Pg**	**15 39 23.1**	**-1.6**
KUZU	**Kuzuini**	**1.06**	**134**	*i* P	**Pb**	**15 39 27.3**	**0.0**
KUZU				*i* S	**Sn**	**15 39 42.8**	**+0.2**
KUZU	**Kuzuini**	**1.06**	**134**	P	**Pb**	**15 39 27.3**	**0.0**
KUZU				S	**Sn**	**15 39 42.8**	**+0.2**
GULE	**Gulek**	**1.10**	**258**	*i* P	**Pn**	**15 39 29.1**	**+0.7**
GULE				*i* S	**Sn**	**15 39 46.2**	**+2.5**
GULE	**Gulek**	**1.10**	**258**	P	**Pn**	**15 39 29.1**	**+0.7**
TAHT	**Tahtakopru-Hat**	**1.14**	**178**	*e*PN	**Pg**	**15 39 27.9**	**-0.8**
TAHT	**Tahtakopru-Hat**	**1.14**	**178**	*e*Pn	**Pg**	**15 39 27.9**	**-0.8**
NIG	**Nigde**	**1.34**	**297**	*e*PN	**Pn**	**15 39 31.7**	**-0.1**
NIG	**Nigde**	**1.34**	**297**	*e*Pn	**Pn**	**15 39 31.7**	**-0.1**

*NIED **11** 15:42:00,39.20N×143.80E,h11km,Mw4.6 Best double couple: M07.65000×1015 NP1:φs195.00000°,δ34.00000°, λ83.00000°. NP2:φs23.00000°,δ57.00000°,λ95.00000°.*

*IDC **11** 15:42:54.9±0.7,39.21N×143.62E,h0km,mb4.1/19, mb1 4.3/25,mb1mx4.2/52,mbtmp4.2/25,ML3.5/6,MS3.8/16, Ms1 3.8/16,ms1mx3.5/68,Error ellipse: s-maj=17.6km s-min=13.3km az=127.0*

*ISCJB **11** 15:42:54.7±0.3,39.26N±0.03×143.64E±0.04,h11km, mb4.5/45,MS4.1/24,Error ellipse: s-maj=5.1km s-min=3.4km az=42.9*

*JMA **11** 15:42:54.4±0.2,39.25N×143.77E,h20km,M4.5*

*MOS **11** 15:42:57.4±1.2,39.37N×143.46E,h22km,mb4.8/21,Error ellipse: s-maj=8.7km s-min=6.0km az=110.0*

*BJI **11** 15:42:58.6,39.50N×143.13E,h21km,mb4.6/47,mB4.9/34, Ms4.5/41,Ms7 4.3/40*

*NEIC **11** 15:42:58.2±1.6,39.28N×143.55E,h20km±11km,mb4.8/10, Error ellipse: s-maj=8.7km s-min=4.8km az=114.0*

ISC 11 15:42:57.6±0.5,39.32N±0.04×143.40E±0.04,h11km,n151, σ2s42/176,mb4.6/45,MS4.2/24,9C-4D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.25**	**282**	P	**Pn**	**15 43 21.4**	**+0.4**
MIYJ				*e*S	**Sg**	**15 43 41.2**	**+3.4**
JTH	**Tanohata**	**1.33**	**298**	P	**Pn**	**15 43 22.3**	**+0.1**
JTH				S	**Sg**	**15 43 42.4**	**+1.8**
OFUJ	**Ofunato**	**1.36**	**260**	P	**Pn**	**15 43 22.8**	**+0.3**
OFUJ				*e*S	**Sg**	**15 43 43.8**	**+2.3**
JOM	**Ohasama**	**1.64**	**276**	P	**Pn**	**15 43 27.3**	**+1.0**
JMK	**Ichinoseki**	**1.73**	**258**	P	**Pn**	**15 43 28.3**	**+0.7**
JMK				S	**Sb**	**15 43 52.2**	**+1.1**
JANG	**Nango**	**1.79**	**307**	P	**Pn**	**15 43 28.3**	**-0.1**
JYK	**Kaneyama**	**2.40**	**261**	P	**Pn**	**15 43 37.8**	**+1.0**
ERM	**Erimo**	**2.70**	**356**	*d* iP	**Pn**	**15 43 39.8**	**-1.1**
ERM				pmax	pmax		
	comp=Z,48nm,1.2s						
ERM	**Erimo**	**2.70**	**356**	*e*Pn	**Pn**	**15 43 39.8**	**-1.1**
JOT	**Ohata**	**2.73**	**320**	P	**Pn**	**15 43 42.1**	**+0.7**
JNBK	**Urakawa-nobuka**	**3.00**	**351**	P	**Pn**	**15 43 45.0**	**0.0**
JNBK				S	**Sn**	**15 44 21.5**	**+0.6**
JFT	**Otama**	**3.00**	**234**	P	**Pn**	**15 43 45.7**	**+0.6**
JKB	**Kayabe**	**3.13**	**326**	P	**Pn**	**15 43 48.5**	**+1.6**
JCH	**Churui**	**3.29**	**360**	P	**Pn**	**15 43 48.0**	**-1.1**
JAW	**Awa shima**	**3.35**	**256**	P	**Pn**	**15 43 51.7**	**+1.9**
ASAJ	**Asahikawa**	**4.83**	**353**	*e*Pn	**Pn**	**15 44 10.1**	**-0.2**
MJA0	**Matsu Arr-Jizo**	**4.92**	**237**	*e*P	**Pn**	**15 44 13.3**	**+1.7**
MJA0				pmax	pmax		
	comp=Z,7.0nm,0.3s						
MJAR	**Matsushiro Arr**	**4.95**	**238**	Pn	**Pn**	**15 44 13.3**	**+1.4**
	comp=Z,6.9nm,0.3s,baz=50,slow=12,SNR=203						
MJAR				Sn	**Sn**	**15 45 09.9**	**+0.8**
	baz=54,slow=11,SNR=2.0						
MJAR				LR	LR	15 46 25.6	
	comp=Z,602nm,18.9s,baz=60,slow=42						
MAJO	**Matsushiro**	**4.95**	**238**	*c* iP	**Pn**	**15 44 13.6**	**+1.7**
MAJO	**Matsushiro**	**4.95**	**238**	*e*Pn	**Pn**	**15 44 13.2**	**+1.3**
MAT	**Matsushiro**	**4.95**	**238**	P	**Pn**	**15 44 13.2**	**+1.3**
MAT				*e*S	**Sn**	**15 45 12.3**	**+3.1**
MJB9	**Matsu-Tunnel**	**4.95**	**238**	*e*Pn	**Pn**	**15 44 13.2**	**+1.3**
INU	**Inuyama**	**6.44**	**234**	*e*Pn	**Pn**	**15 44 33.1**	**+0.7**
KUR	**Kuril'sk**	**6.78**	**28**	*c* iP	**Pn**	**15 44 36.3**	**-0.6**
KUR				*i* S	**Sn**	**15 45 46.3**	**-7.7**
KUR				pmax	pmax		
	comp=N,5.0nm,0.3s						
KUR				pmax	pmax		
	comp=E,6.0nm,0.3s						
KUR				pmax	pmax		
	comp=Z,13nm,0.3s						
KUR				smax	smax		
	comp=E,70nm,0.6s						
KUR				smax	smax		
	comp=N,20nm,0.3s						
JHJ2	**Mitsune**	**6.84**	**206**	*e*Pn	**Pn**	**15 44 36.1**	**-1.7**
JHJ	**Hachijo jima 2**	**6.84**	**206**	Pn	**Pn**	**15 44 35.6**	**-2.2**
	comp=N,14nm,0.3s,baz=76,slow=12,SNR=9.3						
JHJ				Sn	**Sn**	**15 45 47.3**	**-8.4**
	comp=N,31nm,0.3s,baz=37,slow=23,SNR=2.0						
YSS	**Yuzh-Sakhalins**	**7.64**	**357**	⇑*e*P	**Pn**	**15 44 49.6**	**+0.8**
YSS				*e*S	**Sn**	**15 46 14.2**	**-1.2**
YSS				MLR	MLR		
	comp=Z,1μm,13.0s						
YSS				MLR	MLR		
	comp=N,1μm,15.0s						
YSS				MLR	MLR		
	comp=E,400nm,16.0s						
YSS	**Yuzh-Sakhalins**	**7.64**	**357**	*e*Pn	**Pn**	**15 44 49.5**	**+0.7**
VLA	**Vladivostok**	**9.47**	**297**	⇑*i*P	**Pn**	**15 45 17.5**	**+3.7**
MSHR	**Mys Shultsa**	**9.81**	**293**	*c*eP	**Pn**	**15 45 17.2**	**-1.4**
USRK	**Ussuriysk Ar.**	**9.82**	**303**	Pn	**Pn**	**15 45 21.9**	**+3.3**
	comp=E,0.6nm,0.3s,baz=112,slow=14,SNR=12						
HABR	**Khabarovsk**	**10.95**	**329**	*e*P	**Pn**	**15 45 33.5**	**-0.5**
HABR				*e*S	**Sn**	**15 47 36.3**	**-0.1**
HABR				pmax	pmax		
	comp=N,8.0nm,1.4s						
HABR				pmax	pmax		
	comp=E,9.0nm,1.4s						
HABR				pmax	pmax		
	comp=Z,22nm,1.4s						
HABR				MLR	MLR		
	comp=Z,611nm,14.0s						
MDJ	**Mudanjiang**	**11.55**	**302**	P	**Pn**	**15 45 44.6**	**+2.2**
MDJ				S	**Sn**	**15 47 56.9**	**+5.5**
MDJ				PcP	**PcP**	**15 51 38.0**	**+4.5**
MDJ				ScP	**ScP**	**15 55 08.1**	**+2.0**
MDJ				PcS	**PcS**	**15 55 11.7**	**+4.4**
MDJ				pmax	pmax		
	comp=Z,15nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,150nm,7.4s						
MDJ				LR	LR		
	comp=Z,290nm,16.9s						
MDJ				LR	LR		
	comp=Z,960nm,14.2s						
MDJ				LR	LR		
	comp=Z,1μm,14.6s						
MDJ	**Mudanjiang**	**11.55**	**302**	*e*Pn	**Pn**	**15 45 44.3**	**+1.9**
TYV	**Tymovskoe**	**11.55**	**358**	*e*P	**Pn**	**15 45 47.0**	**+4.6**
TYV				*e*		15 47 46.0	
TYV				pmax	pmax		
	comp=Z,22nm,1.0s						
TYV				MLR	MLR		
	comp=N,1μm,16.0s						
TYV				MLR	MLR		
	comp=Z,2μm,16.0s						
JNU	**Nakatsue**	**11.85**	**242**	Pn	**Pn**	**15 45 47.1**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=58,slow=10,SNR=7.5						
JNU				LR	LR	15 50 52.6	
	comp=Z,712nm,18.7s,baz=82,slow=40						
JNU	**Nakatsue**	**11.85**	**242**	*e*Pn	**Pn**	**15 45 46.6**	**+0.1**
KSRS	**Korea Array**	**12.29**	**266**	Pn	**Pn**	**15 45 55.5**	**+3.1**
	comp=Z,0.1nm,0.3s,baz=85,slow=13,SNR=5.8						
KSRS				LR	LR	15 50 30.9	
	comp=Z,364nm,18.3s,baz=86,slow=36						
KSAR	**Wonju Array Be**	**12.32**	**266**	P	**Pn**	**15 45 55.5**	**+2.6**
KSAR	**Wonju Array Be**	**12.32**	**266**	Pn	**Pn**	**15 45 55.5**	**+2.6**
KLR	**Kul'dur**	**12.94**	**324**	Pn	**Pn**	**15 46 02.0**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=136,slow=8.1,SNR=8.8						
KLR				LR	LR	15 51 20.9	
	comp=Z,614nm,18.8s,baz=130,slow=38						
KLR	**Kul'dur**	**12.94**	**324**	P	**Pn**	**15 46 02.0**	**+0.7**
KLR				MLR	MLR		
	comp=Z,614nm,18.8s						
CN2	**Changchun**	**14.16**	**294**	*e*P	**Pn**	**15 46 14.0**	**-4.0**
DL2	**Dalian**	**16.90**	**276**	P	**Pn**	**15 46 55.2**	**+1.2**
DL2				S	**Sn**	**15 49 58.2**	**-3.5**
DL2				pmax	pmax		
	comp=Z,49nm,1.0s						
DL2				pmax	pmax		
	comp=Z,230nm,7.6s						
DL2				LR	LR		
	comp=Z,430nm,14.1s						
DL2				LR	LR		
	comp=Z,560nm,16.3s						
DL2				LR	LR		
	comp=Z,570nm,15.6s						
PETK	**Petropavlovsk-**	**16.93**	**31**	LR	LR	15 54 47.2	
	comp=Z,97nm,18.4s,baz=215,slow=42						
HIA	**Hailar**	**19.56**	**308**	*e*P	**P**	**15 47 23.7**	**-1.6**
HIA	**Hailar**	**19.56**	**308**	*e*P	**P**	**15 47 23.7**	**-1.6**
MA2	**Magadan**	**20.81**	**11**	P	**P**	**15 47 39.2**	**+0.5**
	comp=Z,8.1nm,0.9s,baz=174,slow=5.3,SNR=5.3						
MA2				LR	LR	15 57 03.2	
	comp=Z,152nm,18.4s,baz=200,slow=41						
YAK	**Yakutsk**	**24.24**	**344**	P	**P**	**15 48 13.8**	**-0.4**
	comp=Z,21nm,0.7s,baz=115,slow=4.1,SNR=15						
YAK				LR	LR	15 58 14.3	
	comp=Z,162nm,19.5s,baz=90,slow=38						
YAK	**Yakutsk**	**24.24**	**344**	*d* iP	**P**	**15 48 13.5**	**-0.7**
YAK				*e**PP	**sP**	**15 48 23.1**	**+4.2**
YAK				*e*PPP	PPP	15 48 51.4	
YAK				*e*		15 51 53.6	
YAK				*e*S	**S**	**15 52 26.9**	**-5.4**
YAK				*e*SSS	SSS	15 53 23.2	
YAK				pmax	pmax		
	comp=N,13nm,1.0s						
YAK				pmax	pmax		
	comp=E,6.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,33nm,1.0s						
YAK				smax	smax		
	comp=N,68nm,3.0s						
YAK				smax	smax		
	comp=E,43nm,2.3s						
YAK				MLR	MLR		
	comp=Z,376nm,13.0s						
YAK				MLR	MLR		
	comp=N,322nm,14.0s						
YAK				MLR	MLR		
	comp=E,121nm,14.0s						
YAK	**Yakutsk**	**24.24**	**344**	*e*P	**P**	**15 48 13.2**	**-1.0**
	comp=E,29nm,0.8s						
SEY	**Seymchan**	**24.26**	**10**	P	**P**	**15 48 14.8**	**+0.4**
	comp=E,5.0nm,0.8s,baz=182,slow=8.6,SNR=5.7						
HHC	**Hu-ho-hao-te**	**24.34**	**284**	*e*P	**P**	**15 48 13.6**	**-1.9**
HHC				sP	pP	15 48 19.7	+0.9
HHC				PP	**PnPn**	**15 48 48.1**	**+2.7**
HHC				S	**S**	**15 52 25.3**	**-9.3**
HHC				pmax	pmax		
	comp=E,13nm,0.9s						
HHC				pmax	pmax		
	comp=E,130nm,7.0s						
HHC				LR	LR		
	comp=E,220nm,14.2s						
HHC				LR	LR		
	comp=E,570nm,15.7s						
HHC				LR	LR		
	comp=E,670nm,16.1s						
WHN	**Wuhan**	**25.29**	**259**	⇓*i*P	**P**	**15 48 24.4**	**+0.4**
WHN				pP	**sP**	**15 48 33.2**	**+4.5**
WHN				S	**S**	**15 52 49.4**	**-0.3**
WHN				pmax	pmax		
	comp=E,210nm,1.4s						
WHN				LR	LR		
	comp=E,470nm,10.6s						
WHN				LR	LR		
	comp=E,1μm,11.7s						
WHN				LR	LR		
	comp=E,1μm,16.3s						
BOD	**Bodaibo**	**26.52**	**324**	*e*P	**P**	**15 48 34.6**	**-0.3**
BOD				pmax	pmax		
	comp=Z,18nm,1.1s						
SONA1	**Songino Array**	**27.90**	**300**	*e*P	**P**	**15 48 47.7**	**+0.1**
SONM	**Songino Array**	**27.90**	**300**	P	**P**	**15 48 48.3**	**+0.7**
	comp=Z,3.4nm,0.7s,baz=93,slow=8.1,SNR=18						
SONM				LR	LR	16 00 33.2	
	comp=Z,298nm,19.8s,baz=74,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.13**	**127**	T	T	16 17 56.7	
	baz=318,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy**	**28.14**	**127**	T	T	16 17 58.6	
	baz=318,slow=75,SNR=31						
H11N3	**WAKE ISLAND Hy**	**28.14**	**127**	T	T	16 18 00.1	
H11S1	**WAKE ISLAND Hy**	**28.94**	**129**	T	T	16 19 04.2	
	baz=330,SNR=4.9						
H11S3	**WAKE ISLAND Hy**	**28.94**	**129**	T	T	16 19 04.7	
	baz=330						
H11S2	**WAKE ISLAND Hy**	**28.95**	**129**	T	T	16 19 03.3	
	baz=330						
ENH	**Enshi**	**29.13**	**262**	*e*P	**P**	**15 48 58.6**	**-0.1**
	comp=Z,18nm,1.0s						
TLY	**Talaya**	**30.10**	**307**	P	**P**	**15 49 08.1**	**+1.2**
	comp=Z,4.2nm,0.6s,baz=93,slow=7.0,SNR=3.2						
TLY				LR	LR	16 01 40.0	
	comp=Z,63nm,18.9s,baz=70,slow=37						
TLY	**Talaya**	**30.10**	**307**	*e*P	**P**	**15 49 08.5**	**+1.5**
TLY				*e*S	**S**	**15 54 05.1**	**-0.2**
TLY				pmax	pmax		
	comp=Z,8.0nm,1.0s						
TLY				MLR	MLR		
	comp=Z,316nm,13.0s						
ZAK	**Zakamensk**	**30.16**	**305**	*e*P	**P**	**15 49 07.9**	**+0.3**
ZAK				pmax	pmax		
	comp=Z,29nm,1.1s						
BILL	**Bilibino**	**31.40**	**16**	*e*P	**P**	**15 49 15.7**	**-2.5**
BILL				pmax	pmax		
	comp=Z,5.0nm,1.1s						
TGY	**Tagaytay City**	**31.97**	**224**	LR	LR	16 02 44.8	
	comp=Z,56nm,19.3s,baz=70,slow=37						
GYA	**Guiyang**	**33.18**	**258**	P	**P**	**15 49 34.8**	**+0.4**
GYA				pP	sP	15 49 41.0	+1.9
GYA				PP	**PnPn**	**15 50 43.4**	**-0.8**
GYA				PcP	**PcP**	**15 52 22.0**	**+4.8**
GYA				S	**S**	**15 54 48.7**	**-5.3**
GYA				ScP	**ScP**	**15 56 03.3**	**+2.0**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,4.9s						
GYA				LR	LR		
	comp=Z,480nm,16.8s						
GYA				LR	LR		
	comp=Z,460nm,17.0s						
GYA				LR	LR		
	comp=Z,420nm,16.6s						
CD2	**Chengdu**	**33.28**	**268**	*e*P	**P**	**15 49 33.8**	**-1.4**
CD2				sP	sP	15 49 43.1	+3.2
CD2				PP	**PnPn**	**15 50 47.5**	**+2.1**
CD2				S	**S**	**15 54 48.7**	**-6.7**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.2s						
GTA	**Gaotai**	**33.45**	**284**	SKKS		16 22 12.6	
GTA	**Gaotai**	**33.45**	**284**	P	**P**	**15 49 37.7**	**+1.0**
GTA				pP	sP	15 49 43.2	+1.8
GTA				sP	pP	15 49 45.8

ZALV MLR MLR
comp=Z,107nm,19.5s
NRIK Noril'sk 41.88 334 LR LR 16 09 20.9
comp=Z,211nm,18.1s,baz=113,slow=38
CMAR Chiang Mai Arr 43.60 255 P **P 15 51 02.5 +0.6**
comp=Z,0.7nm,0.3s,baz=51,slow=7.4,SNR=5.8
CMAR LR LR 16 10 28.7
comp=Z,39nm,18.9s,baz=20,slow=38
CMAR Chiang Mai Arr 43.60 255 *e*P **P 15 51 01.7 -0.3**
CMAR pmax pmax
comp=Z,1.0nm,0.3s
MK01 Makanchi Array 44.27 300 *e*P **P 15 51 06.9 -0.2**
MK31 Makanchi Array 44.27 300 *e*P **P 15 51 07.1 0.0**
MK31 Makanchi Array 44.27 300 *e*P **P 15 51 07.1 0.0**
MKAR Makanchi Array 44.27 300 P **P 15 51 07.5 +0.4**
comp=Z,3.3nm,0.7s,baz=82,slow=9.9,SNR=27
MKAR LR LR 16 10 30.3
comp=Z,116nm,18.2s,baz=78,slow=37
MKAR Makanchi Array 44.27 300 *e*P **P 15 51 07.7 +0.6**
MKAR pmax pmax
comp=Z,3.0nm,0.7s
MKAR Makanchi Array 44.27 300 *e*P **P 15 51 07.0 -0.1**
MAKZ Makanchi 44.48 301 *e*P **P 15 51 08.5 -0.2**
MAKZ pmax pmax
comp=Z,7.0nm,0.9s
MAKZ Makanchi 44.48 301 *e*P **P 15 51 08.4 -0.2**
comp=Z,6.9nm,0.9s
ILAR Eielson Array 46.73 34 P **P 15 51 24.5 -1.7**
comp=Z,0.9nm,0.7s,baz=245,slow=6.3,SNR=8.4
ILAR Eielson Array 46.73 34 *e*P **P 15 51 27.2 +0.9**
ILAR pmax pmax
comp=Z,1.0nm,0.7s
ILB Eielson Array 46.73 34 *e*P **P 15 51 30.9 +4.7**
IL1 Eielson Array 46.73 34 *e*P **P 15 51 30.2 +3.9**
PDGK Podgornoye 47.12 297 P **P 15 51 30.9 +1.3**
PDGK pmax pmax
comp=Z,5.0nm,1.9s
MENT Mentasta 48.27 36 *e*P P 15 51 43.2 +4.9
comp=Z,5.8nm,1.1s
RAMN Ramite 48.42 273 *e*P **P 15 51 40.3 +0.1**
comp=Z,27nm,0.8s
KKN Kakani 49.03 275 *e*P **P 15 51 45.1 +0.3**
comp=Z,27nm,0.8s
PKIN Phulchoki 49.04 275 *e*P **P 15 51 45.3 +0.3**
GKN Gorkha 49.42 276 *e*P **P 15 51 47.8 0.0**
BRVK Borovoye 50.27 311*c i*P **P 15 51 53.8 +0.1**
BRVK pmax pmax
comp=Z,20nm,1.0s
BRVK Borovoye 50.27 311 *e*P **P 15 51 53.6 -0.1**
comp=Z,6.6nm,0.8s
KOLN Koldanda 50.34 276 *e*P **P 15 51 54.7 -0.1**
comp=Z,22nm,0.8s
OTUK Ortayu 50.38 305 P **P 15 51 55.2 +0.6**
OTUK pmax pmax
comp=Z,4.0nm,1.3s
PYUN Piuthan 50.65 277 *e*P **P 15 51 57.5 +0.4**
FRU Bishkek 50.65 298 *e*P **P 15 51 55.0 -1.8**
KSH Kashi 50.93 293 *e*P **P 15 52 03.0 +4.0**
KSH *e*pP sP 15 52 09.3 +5.5
KSH *e*PcP **PcP 15 53 20.7 +5.4**
KSH S **S 15 59 14.7 -0.9**
KSH SS **SS 16 02 47.0 -3.1**
KSH pmax pmax
comp=Z,83nm,5.6s
KSH LR LR
comp=Z,140nm,8.7s
KSH LR LR
comp=Z,170nm,11.1s
KSH LR LR
comp=Z,270nm,12.5s
ZRNK Zerenda 51.04 311 *e*P **P 15 51 59.3 -0.2**
ZRNK pmax pmax
comp=Z,10.0nm,0.6s
ZRNK Zerenda 51.04 311 *e*P **P 15 51 59.3 -0.2**
comp=Z,9.9nm,0.6s
INK Inuvik 51.64 28 P **P 15 52 03.4 -0.4**
comp=Z,1.2nm,0.5s,baz=297,slow=6.9,SNR=4.5
MNAS Manas 52.23 298 P **P 15 52 09.7 +1.0**
MNAS pmax pmax
comp=Z,6.0nm,1.0s
KKAR Karatay Array 53.35 299 *e*P **P 15 52 17.0 +0.1**
KKAR Karatay Array 53.35 299 *e*P **P 15 52 17.0 +0.1**
SVE Sverdlovsk 54.48 318 *e*P **P 15 52 25.5 +0.6**
SVE pmax pmax
comp=Z,19nm,1.2s
ARU Arti 55.70 318*c i*P **P 15 52 33.7 0.0**
ARU 15 53 27.4
ARU 15 54 35.9
ARU S **S 16 00 19.1 -0.6**
ARU SS **SS 16 04 01.8 -2.6**
ARU pmax pmax
comp=Z,23nm,1.2s
ARU MLR MLR
comp=Z,410nm,15.0s
ARU Arti 55.70 318 *e*P **P 15 52 33.5 -0.2**
comp=Z,23nm,1.3s
ABKAR Akbulak array 57.68 310 *e*P **P 15 52 47.5 -0.3**
SPITS Spitsbergen Ar 58.59 349 LR LR 16 19 49.2
comp=Z,92nm,19.2s,baz=150,slow=38
WRA Warramunga Arr 59.56 190 P **P 15 52 58.9 -2.2**
comp=Z,1.4nm,0.7s,baz=8.5,slow=6.9,SNR=9.9
WRA Warramunga Arr 59.56 190 *e*P **P 15 52 59.8 -1.4**
WRA pmax pmax
comp=Z,1.0nm,0.7s
YKA Yellowknife Ar 61.05 31 P **P 15 53 09.8 -1.1**
comp=Z,0.6nm,0.6s,baz=295,slow=6.2,SNR=5.3
YKA Yellowknife Ar 61.05 31 *e*P **P 15 53 11.8 +0.9**
YKA pmax pmax
comp=Z,1.0nm,0.6s
KLMR Klimovskoe 62.66 328 *e*P **P 15 53 19.6 -2.2**
KLMR pmax pmax
comp=Z,6.0nm,1.1s
ASAR Alice Springs 63.28 190 P **P 15 53 24.9 -1.5**
comp=Z,0.6nm,0.8s,baz=21,slow=8.1,SNR=5.2
ASAR Alice Springs 63.28 190 *e*P **P 15 53 26.9 +0.6**
ASAR pmax pmax
comp=Z,1.0nm,0.8s
GEYT Alibeck 64.10 299 P **P 15 53 31.9 +0.1**
comp=Z,2.4nm,0.8s,baz=21,slow=4.9,SNR=5.8
OBN Obninsk 67.20 323 *e*P P 15 53 58.9 +7.5
OBN pmax pmax
comp=Z,6.0nm,0.7s
FINES FINESS Array B 67.52 332 P **P 15 53 53.0 -0.3**
comp=Z,3.0nm,0.8s,baz=53,slow=7.4,SNR=8.5
FINES LR LR 16 26 25.6
comp=Z,300nm,18.2s,baz=163,slow=39
FINES FINESS Array B 67.52 332 *e*P **P 15 53 53.5 +0.2**
FINES pmax pmax
comp=Z,3.0nm,0.8s
FINES FINESS Array B 67.52 332 P **P 15 53 53.0 -0.3**
VSU Vasula 69.27 330*ce*P **P 15 54 05.6 +1.3**
VSU pmax pmax
comp=Z,15nm,0.8s
GOF Gofitskoye 69.73 312‖*e*P **P 15 54 05.5 -2.0**
GOF pmax pmax
comp=Z,31nm,0.9s
NCK Nalchik 70.32 310‖*e*P **P 15 54 13.5 +2.4**
NCK pmax pmax
comp=Z,8.0nm,0.8s
KIV Kislovodsk 70.58 311 *e*P **P 15 54 13.5 +0.7**
KIV pmax pmax
comp=Z,29nm,1.1s
KIV MLR MLR
comp=Z,112nm,18.0s
KIV Kislovodsk 70.58 311 *e*P **P 15 54 13.5 +0.7**
comp=Z,29nm,1.1s
KBZ Khabaz 70.59 311 P **P 15 54 12.3 -0.4**
comp=Z,7.5nm,1.0s,baz=48,slow=4.8,SNR=8.8
KBZ Khabaz 70.59 311 P **P 15 54 12.3 -0.4**
KBZ pmax pmax
comp=Z,6.0nm,0.8s
NB2 NORSAR Subarra 72.67 338 P **P 15 54 25.1 +0.1**
comp=Z,1.5nm,0.8s,baz=37,slow=6.2
NOA NORSAR Array B 72.67 338 P **P 15 54 25.3 +0.2**
comp=Z,2.1nm,0.7s,baz=37,slow=6.0,SNR=5.6
PDAR Pinedale Array 74.96 47 P **P 15 54 39.2 +0.2**
comp=Z,0.4nm,0.6s,baz=270,slow=2.3,SNR=4.2
DPC Dobruska-Polom 79.34 329 *e*P **P 15 55 04.5 +1.3**
DPC Dobruska-Polom 79.34 329 *e*P **P 15 55 04.5 +1.3**
UPC Upice 79.34 329 AMS AMS 16 33 20.0
comp=Z,200nm,15.9s
CLL Collm 79.88 331 *e*(P) **P 15 55 06.0 -0.1**
CLL Collm 79.88 331 *e*P **P 15 55 06.0 -0.1**
PVCC Panska Ves 79.90 330 AMS AMS 16 33 50.0
comp=Z,200nm,15.1s
KHC Kasperske Hory 81.40 329 *e*P **P 15 55 15.1 +0.8**
KHC AMS AMS 16 34 50.0
comp=Z,200nm,12.1s
KHC Kasperske Hory 81.40 329 *e*P **P 15 55 15.1 +0.8**
KHC MLR MLR
comp=Z,200nm,12.1s
BFO Black Forest 84.06 332 *i* P **P 15 55 30.2 +2.0**
FUORN Ofenpass-Fuorn 84.74 330 *e*P **P 15 55 32.0 +0.1**
comp=Z,8.7nm,0.8s
TXAR Lajitas Array 87.50 54 P **P 15 55 44.7 -1.0**
comp=Z,0.2nm,0.7s,baz=290,slow=2.6,SNR=2.9

*IDC **11** 15:47:18.3±0.7,49.79°S×114.34°W,h0km,mb4.3/7, mb1 4.5/7,mb1mx4.1/31,mbtmp4.3/7,Error ellipse: s-maj=35.2km s-min=22.1km az=150.0*
*ISCJB **11** 15:47:19.4±0.8,49.9°S±0.2°×114.3°W±0.3°,h14km,mb4.5/8, Error ellipse: s-maj=29.6km s-min=18.3km az=35.0*
*NEIC **11** 15:47:19.8±0.6,49.80°S×114.29W,h10km,mb4.8/1,Error ellipse: s-maj=25.6km s-min=17.7km az=136.0*
ISC 11 15:47:20.8±0.7,**49.8S**±0.2°×**114.4W**±0.2°,**h14**km,**n25,** σ1ᵖ**36**/16,**mb4.5/8,Southern East Pacific Rise**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
QSPA	**South Pole Qui**	**40.38**	**180**	*e*P		**P**		**15 54 57.9**	**-0.1**
	24nm,1.0s								
LVC	**Limon Verde**	**44.67**	**69**	P		**P**		**15 55 32.4**	**-1.1**
	29nm,1.0s,baz=249,slow=9.0,SNR=5.5								
CPUP	**Villa Florida**	**49.27**	**83**	P		**P**		**15 56 08.8**	**-0.2**
	1.7nm,0.7s,baz=229,slow=7.5,SNR=4.8								
LPAZ	**La Paz**	**50.01**	**65**	P		**P**		**15 56 15.0**	**-0.4**
	16nm,1.1s,baz=193,slow=4.5,SNR=16								
MAW	**Mawson**	**62.88**	**179**	P		**P**		**15 57 47.1**	**+1.4**
	2.7nm,0.8s,baz=196,slow=11,SNR=6.0								
TXAR	**Lajitas Array**	**79.37**	**9**	P		**P**		**15 59 27.1**	**+1.1**
	1.2nm,0.9s,baz=174,slow=10.0,SNR=6.3								
ASAR	**Alice Springs**	**85.17**	**239**	P		**P**		**15 59 55.3**	**-1.4**
	2.3nm,0.8s,baz=150,slow=4.3,SNR=15								
H01W1	**Cape Leeuwin H**	**85.35**	**218**	T		T		17 35 03.0	
	baz=150,slow=76,SNR=16								
H01W2	**Cape Leeuwin H**	**85.35**	**218**	T		T		17 35 03.5	
	baz=150,slow=76,SNR=18								
H01W3	**Cape Leeuwin H**	**85.36**	**218**	T		T		17 35 02.7	
	baz=150,slow=76,SNR=16								
PDAR	**Pinedale Array**	**92.30**	**4**	P		**P**		**16 00 30.0**	**-0.2**
	0.6nm,0.9s,baz=193,slow=4.6,SNR=3.9								
H11S2	**WAKE ISLAND Hy**	**97.02**	**290**	T		T		17 48 53.0	
	baz=140,slow=75,SNR=317								
H11S3	**WAKE ISLAND Hy**	**97.03**	**290**	T		T		17 48 54.3	
	baz=140,slow=75,SNR=250								
H11S1	**WAKE ISLAND Hy**	**97.04**	**290**	T		T		17 48 54.5	
	baz=140,slow=75,SNR=237								
H11N3	**WAKE ISLAND Hy**	**97.83**	**291**	T		T		17 49 53.5	
	baz=142,slow=75,SNR=41								
H11N1	**WAKE ISLAND Hy**	**97.84**	**291**	T		T		17 49 55.0	
	baz=142,slow=75,SNR=29								
H11N2	**WAKE ISLAND Hy**	**97.85**	**291**	T		T		17 49 55.8	
	baz=142,slow=75,SNR=27								
GERES	**GERESS Array B**	**146.69**	**71**	PKPbc		**PKPdf**		**16 06 58.4**	**-1.3**
	1.0nm,0.8s,baz=239,slow=4.2,SNR=7.2								
KHC	**Kasperske Hory**	**146.72**	**71**	*e*PKPAB		**PKPab**		**16 07 02.5**	**-0.1**
CLL	**Collm**	**147.12**	**67**	*e*(P)		**PKPab**		**16 07 07.0**	**+2.9**
DPC	**Dobruska-Polom**	**148.81**	**70**	*e*PKPAB		**PKPab**		**16 07 13.2**	**+2.2**
MLR	**Muntele Rosu**	**153.14**	**84**	PKPbc		**PKPbc**		**16 07 16.8**	**-0.7**
	0.2nm,0.6s,baz=260,slow=4.1,SNR=2.3								
SONM	**Songino Array**	**153.33**	**282**	PKPbc		**PKPbc**		**16 07 17.1**	**-0.7**
	0.6nm,0.9s,baz=145,slow=5.3,SNR=3.5								
BRTR	**Keskin Array B**	**155.31**	**102**	PKPab		**PKPab**		**16 07 37.9**	**-0.7**
	3.2nm,1.1s,baz=225,slow=3.0,SNR=7.9								
MKAR	**Makanchi Array**	**168.51**	**261**	PKPab		**PKPab**		**16 08 36.8**	**+0.8**
	0.2nm,0.2s,baz=103,slow=3.1,SNR=3.1								

*IDC **11** 15:50:14.7±1.1,2.68S×138.87E,h0km,mb3.3/5, mb1 3.6/6,mb1mx3.5/30,mbtmp3.4/6,ML3.4/1,Error ellipse: s-maj=27.3km s-min=25.4km az=53.0*
*ISCJB **11** 15:50:17.8±0.8,2.7°S±0.1°×138.92E±0.07,h37km,mb3.4/5, Error ellipse: s-maj=16.8km s-min=10.2km az=171.5*
ISC 11 15:50:19.7±0.9,**2.7S**±0.1°×**138.97E**±0.09,**h37**km,**n7,** σ1ᵖ**78**/8,**mb3.5**/5,**Irian Jaya**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**1.74**	**84**	Pn		**Pn**		**15 50 46.0**	**-1.5**
	0.6nm,0.3s,baz=270,slow=20,SNR=23								
JAY				Sn		**Sn**		**15 51 08.8**	**+0.3**
	0.4nm,0.3s,baz=93,slow=23,SNR=4.9								
WRA	**Warramunga Arr**	**17.72**	**194**	P		**Pn**		**15 54 24.2**	**+0.6**
	0.1nm,0.3s,baz=17,slow=13,SNR=5.6								
ASAR	**Alice Springs**	**21.41**	**193**	P		**P**		**15 55 04.6**	**+0.1**
	0.2nm,0.5s,baz=10,slow=11,SNR=4.0								
CMAR	**Chiang Mai Arr**	**44.66**	**300**	P		**P**		**15 58 27.5**	**-1.8**
	0.3nm,0.5s,baz=121,slow=8.5,SNR=3.6								
SONM	**Songino Array**	**57.83**	**335**	P		**P**		**16 00 09.2**	**+1.5**
	0.2nm,0.4s,baz=154,slow=6.5,SNR=2.8								
MKAR	**Makanchi Array**	**69.94**	**322**	P		**P**		**16 01 26.0**	**-1.4**
	0.8nm,0.7s,baz=103,slow=6.2,SNR=8.3								
ILAR	**Eielson Array**	**85.72**	**24**	P		**P**		**16 02 57.1**	**+2.4**
	0.2nm,0.6s,baz=274,slow=5.3,SNR=3.5								

*IDC **11** 15:51:21.9±0.5,50.07S×114.26W,h0km,mb4.5/13, mb1 4.7/13,mb1mx4.5/32,mbtmp4.5/13,MS5.2/21, Ms1 5.2/21,ms1mx5.1/23,Error ellipse: s-maj=22.3km s-min=15.9km az=151.0*
*MOS **11** 15:51:22.9±1.1,49.87S×114.12W,h10km,mb5.1/20, MS5.3/34,Error ellipse: s-maj=27.7km s-min=12.1km az=80.1*
*ISCJB **11** 15:51:22.2±0.3,50.07S±0.06×114.0W±0.1,h10km, mb5.0/54,MS5.5/401,Error ellipse: s-maj=10.0km s-min=8.1km az=12.5*
*BJI **11** 15:51:23.5,49.90S×114.00W,h10km,mB5.3/22, Ms5.5/24,Ms7 5.3/24*
*NEIC **11** 15:51:23.5±0.2,49.93S×114.08W,h10km,mb5.1/45, MS5.5/298,Error ellipse: s-maj=9.0km s-min=7.1km az=123.0*
*GCMT **11** 15:51:23.5±0.1,50.08S×114.09W,h15km,MW5.7/127, Moment Tensor Solution. s112,c208; s127,c327; Duration: 1s7 Moment tensor: Scale 10¹⁷Nm; M_{rr}0.12±.04; $M_{\theta\theta}$1.05±.05; $M_{\phi\phi}$-1.17±.04; $M_{r\theta}$-0.28±.08; $M_{\theta\phi}$3.74±.04; $M_{r\phi}$0.30±.08; Best double couple: M_o3.92100×10¹⁷ NP1:ϕ_s98.00000°,δ87.00000°, λ-4.00000°. NP2:ϕ_s188.00000°,δ86.00000°, λ-177.00000°. Principal axes: T 3.8420, Plg1.0000°, Azm143.0000°; N 0.1590, Plg84.0000°, Azm240.0000°; P -4.0010, Plg6.0000°, Azm53.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
ISC 11 15:51:23.9±0.3,**49.76S**±0.08×**114.07W**±0.07,**h10**km, **n559,** σ1ᵖ**53**/229,**mb5.1**/53,**MS5.4**/401,**3D,Southern East Pacific Rise**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PTCN	**Pitcairn Islan**	**27.62**	**327**	PFAKE				15 57 20.0	+8.5
PTCN				LR	LR				
	comp=Z,13μm,20.0s								
USHA	**Ushuaia**	**27.96**	**118**	LR	LR		LR	16 05 24.1	
	comp=Z,60μm,19.7s,baz=245,slow=30								
PMSA	**Palmer Station**	**29.96**	**139**	P		**P**		**15 57 31.2**	**-0.7**
	comp=Z,9.9nm,0.9s,baz=279,slow=6.4,SNR=8.4								
PMSA				LR	LR			16 06 31.3	
	comp=Z,12μm,18.2s,baz=261,slow=30								
PMSA	**Palmer Station**	**29.96**	**139**	*e*P		**P**		**15 57 30.9**	**-1.0**
	comp=Z,77nm,1.7s								
RKT	**Rikitea**	**31.25**	**321**	*e*LR		LR		16 05 56.0	
	comp=Z,21μm,27.2s,baz=152								
RKT	**Rikitea**	**31.25**	**321**	*e*T		T		16 30 21.3	
	comp=Z,4.9nm,0.2s								
PLCA	**Paso Flores**	**31.55**	**90**	LR		LR		16 07 20.5	
	comp=Z,2μm,19.7s,baz=257,slow=30								
EFI	**East Falkland**	**34.77**	**115**	PFAKE				15 58 30.0	+16
EFI				LR	LR				
	comp=Z,7μm,20.0s								
ROC1	**El Roble**	**35.84**	**79**	PFAKE				15 58 40.0	+16
ROC1				LR	LR				
	comp=Z,100nm,22.0s								
TBI	**Tubuai**	**38.20**	**301**	*e*S		**S**		**16 04 35.5**	**-1.6**
	comp=Z,881nm,30.8s								
TBI				*e*LR		LR		16 08 58.2	
	comp=Z,9μm,27.8s,baz=148								
TRQA	**Tornquist**	**38.57**	**93**	*e*P		**P**		**15 58 46.2**	**-0.5**
	comp=Z,21nm,1.1s								
TRQA				LR	LR				
	comp=Z,3μm,20.0s								
SBA	**Scott Base**	**39.67**	**199**	*e*P		**P**		**15 58 55.8**	**+0.4**
SBA				pmax	pmax				
	comp=Z,55nm,1.8s								
SBA				MLR	MLR				
	comp=Z,2μm,18.0s								
SBA	**Scott Base**	**39.67**	**199**	*e*P		**P**		**15 58 55.8**	**+0.4**
	comp=Z,55nm,1.8s								
SBA				LR	LR				
	comp=Z,2μm,18.0s								
VNDA	**Vanda**	**40.75**	**199**	P		**P**		**15 59 05.0**	**+0.6**
	comp=Z,2.0nm,0.9s,baz=104,slow=7.3,SNR=5.2								
VNDA				LR	LR			16 11 42.5	
	comp=Z,2μm,21.9s,baz=102,slow=30								
VNDA	**Vanda**	**40.75**	**199**	P		**P**		**15 59 05.0**	**+0.6**
VNDA				pmax	pmax				
	comp=Z,2.0nm,0.9s								
VNDA	**Vanda**	**40.75**	**199**	*e*P		**P**		**15 59 05.0**	**+0.6**
	comp=Z,34nm,1.9s								
MEH	**Mehetia**	**41.91**	**307**	*e*T		T		16 43 41.1	
	comp=Z,57nm,0.3s								
TVO	**Taravao**	**42.60**	**306**	*e*T		T		16 44 33.2	
	comp=Z,5.9nm,0.3s								
TIAR	**Tiarei**	**42.84**	**306**	*e*T		T		16 44 45.9	
	comp=Z,5.0nm,0.3s								
PAE	**Paea**	**42.88**	**306**	*e*T		T		16 44 50.0	
	comp=Z,4.0nm,0.3s								
PPT2	**Papeete2**	**42.93**	**306**	*e*S		**S**		**16 05 44.4**	**-3.5**
	comp=Z,1μm,25.2s								
PPT2				*e*LQ		LQ		16 09 15.2	
	comp=Z,14μm,27.2s								
PPT2				*e*LR		LR		16 11 09.1	
	comp=Z,16μm,26.8s,baz=147								
PPT2	**Papeete2**	**42.93**	**306**	*e*T		T		16 44 47.2	
	comp=Z,5.9nm,0.3s								
PPT	**Papeete**	**42.95**	**306**	LR		LR		16 13 02.9	
	comp=Z,5μm,18.1s,baz=139,slow=30								
VAH	**Vaihoa**	**43.91**	**310**	*e*T		T		16 46 11.7	
	comp=Z,14nm,0.2s								
PB04	**IPOC Station P**	**43.94**	**68**	PFAKE				15 59 50.0	+19
PB04				LR	LR				
	comp=Z,4μm,19.0s								
LVC	**Limon Verde**	**44.48**	**69**	P		**P**		**15 59 36.5**	**+0.8**
	comp=Z,95nm,0.9s,baz=229,slow=7.5,SNR=23								
LVC	**Limon Verde**	**44.48**	**69**	*e*P		**P**		**15 59 36.0**	**+0.3**
	comp=Z,37nm,1.0s								
LVC				LR	LR				
	comp=Z,4μm,20.0s								
PB01	**IPOC Station P**	**45.32**	**67**	*e*P		**P**		**15 59 41.5**	**-0.5**
	comp=Z,32nm,1.1s								
PB01				LR	LR				
	comp=Z,7μm,22.0s								
HOPE	**Hope Point**	**45.70**	**127**	PFAKE				16 00 00.0	+15
HOPE				LR	LR				
	comp=Z,11μm,19.0s								
RAR	**Rarotonga**	**45.86**	**291**	LR		LR		16 13 37.2	
	comp=Z,1μm,20.2s,baz=97,slow=29								
PB11	**IPOC Station P**	**46.20**	**66**	*e*P		**P**		**15 59 48.8**	**-0.3**
	comp=Z,43nm,1.1s								
PB11				LR	LR				
	comp=Z,6μm,21.0s								
TAOE	**Nuku Hiva Isla**	**46.21**	**323**	*e*S		**S**		**16 06 33.2**	**-2.4**
	comp=Z,1μm,25.8s								
TAOE				*e*LR		LR		16 12 52.3	
	comp=Z,14μm,26.3s,baz=174								
TAOE	**Nuku Hiva Isla**	**46.21**	**323**	PFAKE				16 00 00.0	+11
TAOE				LR	LR				
	comp=Z,8μm,18.0s								
BFZ	**Birch Farm**	**48.28**	**253**	PFAKE				16 00 20.0	+15
BFZ				LR	LR				
	comp=Z,6μm,21.0s								
NNA	**Nana**	**48.52**	**52**	PFAKE				16 00 20.0	+13
NNA				LR	LR				
	comp=Z,6μm,18.0s								
VNA1	**Neumayer--Stat**	**48.79**	**155**	P		**P**		**16 00 07.7**	**-0.7**
MXZ	**Matakaoa Point**	**48.83**	**257**	PFAKE				16 00 20.0	+11
MXZ				LR	LR				
	comp=Z,4μm,19.0s								
SNZO	**South Karori**	**48.87**	**251**	PFAKE				16 00 20.0	+11
SNZO				LR	LR				
	comp=Z,6μm,18.0s								
BKZ	**Black Stump Fm**	**49.01**	**255**	PFAKE				16 00 20.0	+9.3
BKZ				LR	LR				
	comp=Z,7μm,18.0s								
CPUP	**Villa Florida**	**49.08**	**83**	P		**P**		**16 00 10.6**	**-0.7**
	comp=Z,6.2nm,0.8s,baz=245,slow=7.0,SNR=15								
CPUP				LR	LR			16 17 26.4	
	comp=Z,4μm,20.9s,baz=232,slow=32								
URZ	**Urewera**	**49.17**	**256**	LR		LR		16 16 38.5	
	comp=Z,5μm,19.1s,baz=148,slow=31								
OXZ	**Oxford**	**49.33**	**248**	PFAKE				16 00 20.0	+7.0
OXZ				LR	LR				
	comp=Z,4μm,19.0s								
SNAA	**Sanae**	**49.62**	**157**	*e*P		**P**		**16 00 12.9**	**-2.0**
SNAA				pmax	pmax				
	comp=Z,35nm,1.5s								
SNAA				MLR	MLR				
	comp=Z,5μm,22.0s								
SNAA	**Sanae**	**49.62**	**157**	*e*P		**P**		**16 00 12.9**	**-2.0**
	comp=Z,35nm,1.5s								
SNAA				LR	LR				
	comp=Z,5μm,22.0s								
RPZ	**Rata Peaks**	**49.69**	**247**	LR		LR		16 16 41.3	
	comp=Z,2μm,19.8s,baz=120,slow=31								
LPAZ	**La Paz**	**49.81**	**65**	P		**P**		**16 00 18.5**	**+0.9**
	comp=Z,29nm,0.9s,baz=200,slow=5.2,SNR=80								
LPAZ				LR	LR			16 16 22.8	
	comp=Z,2μm,18.9s,baz=228,slow=30								
LPAZ	**La Paz**	**49.81**	**65**	*e*P		**P**		**16 00 18.3**	**+0.7**
	comp=Z,42nm,0.9s								
HIZ	**Hauiti**	**50.43**	**254**	PFAKE				16 00 30.0	+8.6
HIZ				LR	LR				
	comp=Z,6μm,20.0s								
RAO	**Raoul Island**	**51.70**	**268**	LR		LR		16 16 28.2	
	comp=Z,956nm,21.3s,baz=182,slow=29								
ATAH	**Atahualpa**	**51.93**	**47**	P		**P**		**16 00 35.6**	**+2.3**
	comp=Z,11nm,1.1s,baz=236,slow=7.5,SNR=4.1								
PAYG	**Puerto Ayora**	**52.97**	**30**	PFAKE				16 00 50.0	+9.5
PAYG				LR	LR				
	comp=Z,5μm,20.0s								
SPB	**Sao Paulo**	**57.39**	**89**	PFAKE				16 01 20.0	+7.5
SPB				LR	LR				
	comp=Z,2μm,20.0s								
OTAV	**Otavalo**	**58.40**	**43**	*e*P		**P**		**16 01 20.9**	**+0.8**
	comp=Z,43nm,1.7s								
OTAV				LR	LR				
	comp=Z,3μm,22.0s								
SAML	**Samuel**	**58.55**	**64**	*e*P		**P**		**16 01 20.1**	**-0.5**
	comp=Z,45nm,1.6s								
SAML				LR	LR				
	comp=Z,700nm,21.0s								
AFI	**Afiamalu**	**58.79**	**286**	LR		LR		16 23 18.3	
	comp=Z,633nm,18.2s,baz=146,slow=33								
SYO	**Syowa Base**	**59.95**	**169**‖	*e*P		**P**		**16 01 26.4**	**-3.2**
SYO	**Syowa Base**	**59.95**	**169**‖	*e*pP		**P**		**16 01 29.6**	**0.0**
MSVF	**Nonsavu**	**62.41**	**275**	*e*P		**P**		**16 01 47.0**	**-0.1**
MSVF				pmax	pmax				
	comp=Z,131nm,1.9s								
MSVF	**Nonsavu**	**62.41**	**275**	*e*P		**P**		**16 01 47.0**	**-0.1**
	comp=Z,131nm,1.9s								
BDFB	**Brasilia**	**62.77**	**82**	P		**P**		**16 01 50.4**	**+0.8**
	comp=Z,7.9nm,0.7s,baz=258,slow=5.2								
BDFB				LR	LR			16 26 25.8	
	comp=Z,2μm,20.0s,baz=258,slow=33								
BDFB	**Brasilia**	**62.77**	**82**	*e*P		**P**		**16 01 47.2**	**-2.3**
	comp=Z,15nm,0.8s								
MAW	**Mawson**	**62.94**	**179**	P		**P**		**16 01 47.0**	**-2.7**
	comp=Z,3.5nm,0.6s,baz=180,slow=11,SNR=3.9								
MAW				LR	LR			16 28 10.0	
	comp=Z,4μm,18.0s,baz=178,slow=35								
MAW	**Mawson**	**62.94**	**179**	*e*P		**P**		**16 01 48.6**	**-1.2**
	comp=Z,18nm,2.0s								
PRAC	**Prado**	**63.09**	**45**	PFAKE				16 02 00.0	+8.5
PRAC				L

comp=Z,3µm,19.0s
HDC **Heredia** **65.03** **33** PFAKE 16 02 20.0 +16
HDC LR LR
comp=Z,3µm,20.0s
DZM **Mont Dzumac** **66.79** **263** LR LR 16 25 25.3
comp=Z,2µm,18.8s,baz=130,slow=31
DZM **Mont Dzumac** **66.79** **263** *e*LQ LQ 16 19 15.6
comp=Z,5µm,27.4s
DZM *e*LR LR 16 22 05.5
comp=Z,5µm,23.4s
PTGA **Pitinga** **67.06** **62** *e*P **P** **16 02 15.9 -1.4**
comp=Z,27nm,1.5s
PTGA LR LR
comp=Z,2µm,20.0s
TGUH **Tegucigalpa,Un** **67.79** **28** PFAKE 16 02 30.0 +8.2
TGUH LR LR
comp=Z,2µm,21.0s
CAN **Canberra** **68.03** **241** PFAKE 16 02 30.0 +6.6
CAN LR LR
comp=Z,2µm,20.0s
TLIG **Tlapa** **68.42** **16** PFAKE 16 02 40.0 +14
TLIG LR LR
comp=Z,2µm,18.0s
SDV **Santo Domingo** **69.61** **46** PFAKE 16 02 50.0 +17
SDV LR LR
comp=Z,2µm,20.0s
UNM **Universidad Na** **70.04** **15** PFAKE 16 02 50.0 +14
UNM LR LR
comp=Z,1µm,21.0s
SLBS **Sierra La Lagu** **73.21** **4** PFAKE 16 03 10.0 +15
SLBS LR LR
comp=Z,2µm,21.0s
PCRV **Puerto La Cruz** **73.65** **51** P **P** **16 02 55.8 -1.8**
comp=Z,5.5nm,0.6s,baz=284,slow=4.4,SNR=2.4
EIDS **Eidsvold** **74.05** **250** PFAKE 16 03 10.0 +10
EIDS LR LR
comp=Z,3µm,20.0s
STKA **Stephens Creek** **74.72** **239** P **P** **16 03 02.8 -1.1**
comp=Z,5.6nm,1.1s,baz=131,slow=5.7,SNR=4.8
STKA LR LR 16 30 37.9
comp=Z,2µm,18.1s,baz=133,slow=32
STKA **Stephens Creek** **74.72** **239** *e*P **P** **16 03 02.6 -1.2**
comp=Z,5.2nm,1.5s
MTDJ **Mount Denham** **75.02** **36** PFAKE 16 03 20.0 +14
MTDJ LR LR
comp=Z,3µm,18.0s
HPIG **76.72** **8** PFAKE 16 03 30.0 +15
HPIG LR LR
comp=Z,2µm,21.0s
SRIG **Santa Rosalia** **76.75** **2** PFAKE 16 03 30.0 +15
SRIG LR LR
comp=Z,2µm,21.0s
GRGR **Grenville** **76.83** **53** PFAKE 16 03 30.0 +14
GRGR LR LR
comp=Z,1µm,22.0s
BBOO **Buckleboo** **77.00** **234** *e*P **P** **16 03 15.4 -1.4**
BBOO LR LR
comp=Z,5µm,22.0s
RCBR **Riachuelo** **77.93** **85** PFAKE 16 03 30.0 +7.8
RCBR LR LR
comp=Z,4µm,22.0s
SVB **Belmont** **78.00** **52** PFAKE 16 03 30.0 +7.6
SVB LR LR
comp=Z,2µm,19.0s
SDDR **Presa de Saban** **78.21** **41** PFAKE 16 03 40.0 +16
SDDR LR LR
comp=Z,1µm,20.0s
KVTX **Kingsville** **78.30** **15** PFAKE 16 03 40.0 +16
KVTX LR LR
comp=Z,1µm,20.0s
HSIG **78.48** **3** PFAKE 16 03 40.0 +15
HSIG LR LR
comp=Z,2µm,21.0s
HPAH **Hawaii Prepara** **78.67** **320** PFAKE 16 03 40.0 +14
HPAH LR LR
comp=Z,2µm,19.0s
BBGH **Gun Hill** **78.77** **54** PFAKE 16 03 40.0 +13
BBGH LR LR
comp=Z,2µm,22.0s
FDF **Fort de France** **79.28** **52** PFAKE 16 03 40.0 +10
FDF LR LR
comp=Z,3µm,20.0s
TXAR **Lajitas Array** **79.29** **9** P **P** **16 03 30.7 +1.4**
comp=Z,1.2nm,0.9s,baz=178,slow=7.5,SNR=12
TXAR LR LR 16 32 12.5
comp=Z,1µm,19.8s,baz=0.0,slow=31
TX31 **Lajitas Ar. Si** **79.29** **9** *e*P **P** **16 03 29.7 +0.4**
MPR **Mayaguez** **79.37** **45** PFAKE 16 03 40.0 +10
MPR LR LR
comp=Z,1µm,22.0s
SJG **San Juan** **79.74** **46** PFAKE 16 03 40.0 +8.1
SJG LR LR
comp=Z,1µm,20.0s
HUMP **Col San Antoni** **79.91** **46** PFAKE 16 03 40.0 +7.2
HUMP LR LR
comp=Z,2µm,21.0s
CBYP **Canovanas** **80.02** **46** PFAKE 16 03 50.0 +17
CBYP LR LR
comp=Z,2µm,20.0s
GDHS **Morne Mazeau,** **80.28** **50** PFAKE 16 03 50.0 +15
GDHS LR LR
comp=Z,3µm,20.0s
STVI **Saint Thomas** **80.51** **47** PFAKE 16 03 50.0 +14
STVI LR LR
comp=Z,1µm,18.0s
GRTK **Grand Turk** **80.53** **40** PFAKE 16 03 50.0 +14
GRTK LR LR
comp=Z,1µm,19.0s
SABA **Saba** **80.70** **49** PFAKE 16 03 50.0 +13
SABA LR LR
comp=Z,2µm,20.0s
SEUS **St. Eustatius** **80.72** **49** PFAKE 16 03 50.0 +13
SEUS LR LR
comp=Z,3µm,19.0s
KIP **Kipapa** **80.88** **319** PFAKE 16 03 50.0 +12
KIP LR LR
comp=Z,3µm,19.0s
JCT **Junction City** **80.89** **12** *e*P **P** **16 03 39.0 +1.2**
JCT MLR MLR
comp=Z,1µm,22.0s
JCT **Junction City** **80.89** **12** *e*P **P** **16 03 39.0 +1.2**
JCT LR LR
comp=Z,1µm,22.0s
319A **Douglas** **80.89** **4** PFAKE 16 03 50.0 +12
319A LR LR
comp=Z,1µm,21.0s
SMRT **St. Maarten** **81.15** **48** PFAKE 16 03 50.0 +11
SMRT LR LR
comp=Z,2µm,18.0s
433A **Art** **81.26** **13** P **P** **16 03 41.8 +1.9**
baz=190
214A **Organ Pipe Nat** **81.37** **1** P **P** **16 03 42.2 +1.8**
baz=181
ANWB **Willy Bob** **81.45** **50** PFAKE 16 03 50.0 +8.9
ANWB LR LR
comp=Z,2µm,20.0s
MNTX **Cornudas Mount** **81.47** **7** P **P** **16 03 42.2 +1.4**
baz=186
MNTX **Cornudas Mount** **81.47** **7** *e*P **P** **16 03 42.0 +1.1**
comp=Z,26nm,2.0s
MNTX LR LR
comp=Z,1µm,20.0s
TUC **Tucson** **81.76** **3** P **P** **16 03 44.1 +1.6**
baz=182
TUC **Tucson** **81.76** **3** *e*P **P** **16 03 42.7 +0.2**
TUC pmax pmax
comp=Z,23nm,1.5s
TUC MLR MLR
comp=Z,2µm,21.0s
TUC **Tucson** **81.76** **3** *e*P **P** **16 03 42.7 +0.2**
comp=Z,23nm,1.5s
TUC LR LR
comp=Z,2µm,21.0s
BAR **Barrett** **82.11** **358** PFAKE 16 04 00.0 +16
BAR LR LR
comp=Z,2µm,22.0s
113A **Mohawk Valley,** **82.17** **0** PFAKE 16 04 00.0 +16
113A LR LR
comp=Z,2µm,18.0s
GLA **Glamis** **82.45** **359** PFAKE 16 04 00.0 +14
GLA LR LR
comp=Z,2µm,18.0s
WHTX **Lake Whitney,** **82.72** **14** PFAKE 16 04 00.0 +13
WHTX LR LR
comp=Z,900nm,20.0s
DWPF **Disney Wildern** **82.79** **29** PFAKE 16 04 00.0 +12
DWPF LR LR
comp=Z,2µm,19.0s
SNCC **San Nicolas Is** **82.79** **355** PFAKE 16 04 00.0 +12
SNCC LR LR
comp=Z,3µm,19.0s
NATX **Nacogdoches** **82.98** **17** PFAKE 16 04 00.0 +11
NATX LR LR
comp=Z,800nm,20.0s
TPFO **Penon Flats** **83.03** **358** P **P** **16 03 51.3 +2.2**
baz=178
PFO **Pinyon Flats O** **83.04** **358** P **P** **16 03 51.5 +2.3**
comp=Z,0.7nm,0.3s,baz=181,slow=2.7,SNR=4.6
PFO **Pinyon Flats O** **83.04** **358** *e*P **P** **16 03 49.5 +0.3**
PFO pmax pmax
comp=Z,25nm,1.5s
PFO MLR MLR
comp=Z,2µm,19.0s
PFO **Pinyon Flats O** **83.04** **358** *e*P **P** **16 03 49.5 +0.3**
comp=Z,25nm,1.5s
PFO LR LR
comp=Z,2µm,19.0s
BC3 **Big Chuckawall** **83.06** **359** P **P** **16 03 51.3 +2.0**
baz=179
Y12C **Blythe** **83.15** **360** PFAKE 16 04 00.0 +10
Y12C LR LR
comp=Z,2µm,19.0s
Y14A **Wickenburg** **83.34** **1** PFAKE 16 04 00.0 +9.3
Y14A LR LR
comp=Z,7µm,20.0s
CRZF **Crozet Islands** **83.41** **170** PFAKE 16 04 00.0 +8.9
CRZF LR LR
comp=Z,4µm,21.0s
BELC **Belle Mtn. Jos** **83.42** **358** P **P** **16 03 53.5 +2.4**
baz=179
IRM **Iron Mountain** **83.56** **359** P **P** **16 03 53.6 +1.9**
baz=179
PASC **Pasadena Art C** **83.65** **357** PFAKE 16 04 00.0 +7.8
PASC LR LR
comp=Z,2µm,20.0s
MWC **Mount Wilson** **83.69** **357** PFAKE 16 04 00.0 +7.4
MWC LR LR
comp=Z,2µm,21.0s
Y22D **IRIS PASSCAL I** **83.71** **6** PFAKE 16 04 00.0 +7.3
Y22D LR LR
comp=Z,1µm,19.0s
X16A **Lo Mia Camp, P** **83.85** **2** *e*P **P** **16 03 54.2 +0.8**
comp=Z,7.4nm,0.7s
X16A *e* 16 04 01.7
X16A LR LR
comp=Z,1µm,20.0s
LPM **Los Pinos Moun** **83.97** **6** *e*P **P** **16 03 53.2 -0.8**
MSTX **Muleshoe** **83.97** **9** PFAKE 16 04 10.0 +16
MSTX LR LR
comp=Z,1µm,18.0s
X18A **Snowflake** **84.00** **3** PFAKE 16 04 10.0 +16
X18A LR LR
comp=Z,2µm,22.0s
LAZ **Ladron** **84.02** **6** *e*P **P** **16 03 54.5 +0.2**
BRAL **Brewton** **84.08** **23** PFAKE 16 04 10.0 +16
BRAL LR LR
comp=Z,2µm,21.0s
GMRC **Granite Mounta** **84.19** **359** P **P** **16 03 57.2 +2.1**
baz=179
HEC **Hector,Ludlow** **84.25** **358** P **P** **16 03 56.9 +1.6**
baz=178
W13A **Hualapai Mount** **84.49** **0** *e*P **P** **16 03 57.4 +0.6**
comp=Z,11nm,1.4s
W13A LR LR
comp=Z,2µm,19.0s
W18A **Petrified Fore** **84.60** **4** PFAKE 16 04 10.0 +13
W18A LR LR
comp=Z,1µm,22.0s
ANMO **Albuquerque** **84.61** **6** P **P** **16 03 58.7 +1.5**
baz=185
ANMO **Albuquerque** **84.61** **6** *e*P **P** **16 03 58.3 +1.0**
ANMO pmax pmax
comp=Z,10.0nm,1.3s
ANMO MLR MLR
comp=Z,1µm,18.0s
ANMO **Albuquerque** **84.61** **6** *e*P **P** **16 03 58.3 +1.0**
comp=Z,10nm,1.3s
ANMO LR LR
comp=Z,1µm,18.0s
GSC **Goldstone, Bar** **84.73** **358** P **P** **16 03 59.8 +2.0**
baz=178
GSC **Goldstone, Bar** **84.73** **358** *e*P **P** **16 03 58.7 +1.0**
GSC pmax pmax
comp=Z,13nm,1.3s
GSC MLR MLR
comp=Z,2µm,19.0s
GSC **Goldstone, Bar** **84.73** **358** *e*P **P** **16 03 58.7 +1.0**
comp=Z,13nm,1.3s
GSC LR LR
comp=Z,2µm,19.0s
X32A **Elmer** **84.84** **12** P **P** **16 04 00.6 +2.4**
baz=190
TUQ **Turquoise Moun** **84.84** **358** P **P** **16 04 00.4 +2.0**
baz=179
WUAZ **Wupatki** **84.94** **2** P **P** **16 04 00.8 +1.9**
baz=182
WUAZ **Wupatki** **84.94** **2** PFAKE 16 04 10.0 +11
WUAZ LR LR
comp=Z,1µm,22.0s
AMTX **Amarillo** **84.99** **10** PFAKE 16 04 10.0 +11
AMTX LR LR
comp=Z,1µm,18.0s
WMOK **Wichita Mounta** **85.22** **13** *e*P **P** **16 04 00.3 +0.1**
WMOK pmax pmax
comp=Z,26nm,0.9s
WMOK MLR MLR
comp=Z,800nm,20.0s
WMOK **Wichita Mounta** **85.22** **13** *e*P **P** **16 04 00.3 +0.1**
comp=Z,26nm,0.9s
WMOK LR LR
comp=Z,800nm,20.0s
TIGA **Tifton** **85.26** **26** PFAKE 16 04 10.0 +10
TIGA LR LR
comp=Z,902nm,19.0s
AS01 **Alice Springs** **85.34** **239** *e*P **P** **16 03 58.7 -2.7**
VES **Vestal, Richgr** **85.35** **356** P **P** **16 04 02.4 +1.7**
baz=177
ASAR **Alice Springs** **85.36** **239** P **P** **16 03 59.0 -2.4**
comp=Z,4.0nm,0.9s,baz=151,slow=3.4,SNR=30
ASAR LR LR 16 37 16.5
comp=Z,2µm,18.5s,baz=154,slow=32
AS31 **Alice Springs** **85.36** **239** *e*P **P** **16 04 00.2 -1.2**
comp=Z,1.8nm,0.9s
MPMC **Manual Prospec** **85.50** **357** P **P** **16 04 03.2 +1.5**
baz=178
H01W1 **Cape Leeuwin H** **85.51** **218** T T 17 39 08.2
baz=150,slow=76,SNR=167
H01W2 **Cape Leeuwin H** **85.51** **218** T T 17 39 08.5
baz=150,slow=76,SNR=104
H01W3 **Cape Leeuwin H** **85.52** **218** T T 17 39 09.1
baz=150,slow=76,SNR=129
DAC **Darwin (Calif)** **85.72** **357** *e*P **P** **16 04 04.2 +1.4**
DAC pmax pmax
comp=Z,11nm,1.1s
DAC MLR MLR
comp=Z,2µm,21.0s
DAC **Darwin (Calif)** **85.72** **357** *e*P **P** **16 04 04.2 +1.4**
comp=Z,11nm,1.1s
DAC LR LR
comp=Z,2µm,21.0s
X39A **Fountain Ranch** **85.75** **16** P **P** **16 04 04.5 +1.7**
baz=193
U15A **North Rim** **85.83** **1** *e*P **P** **16 04 04.9 +1.4**
comp=Z,44nm,1.9s
U15A LR LR
comp=Z,2µm,19.0s
LRAL **Lakeview Retre** **85.87** **23** PFAKE 16 04 10.0 +6.6
LRAL LR LR
comp=Z,1µm,22.0s
SHPR **Sheep Range** **85.90** **359** *e*P **P** **16 04 05.4 +1.7**
comp=Z,24nm,1.6s
TPNV **Topopah Spring** **86.36** **358** P **P** **16 04 08.2 +2.2**
baz=179
TPNV **Topopah Spring** **86.36** **358** *e*P **P** **16 04 07.5 +1.6**
TPNV pmax pmax
comp=Z,28nm,1.6s
TPNV MLR MLR
comp=Z,1µm,20.0s
TPNV **Topopah Spring** **86.36** **358** *e*P **P** **16 04 07.5 +1.6**
comp=Z,28nm,1.6s
TPNV LR LR
comp=Z,1µm,20.0s
SAO **San Andreas Ge** **86.40** **354** PFAKE 16 04 20.0 +14
SAO LR LR
comp=Z,3µm,18.0s
LCMT **Little Creek M** **86.41** **1** PFAKE 16 04 20.0 +14
LCMT LR LR
comp=Z,1µm,18.0s
W39A **Magazine** **86.48** **17** P **P** **16 04 07.8 +1.4**
baz=193
MVCO **Mesa Verde** **86.74** **4** P **P** **16 04 09.6 +1.7**
baz=184
MVCO **Mesa Verde** **86.74** **4** *e*P **P** **16 04 08.4 +0.5**
MVCO LR LR
comp=Z,1µm,21.0s
X301 **Greenbrier Sit** **86.79** **18** PFAKE 16 04 20.0 +12
X301 LR LR
comp=Z,700nm,19.0s
PKCU **Pink Cliffs** **86.85** **1** PFAKE 16 04 20.0 +11
PKCU LR LR
comp=Z,2µm,21.0s
X201 **Greenbrier Sit** **86.85** **18** PFAKE 16 04 20.0 +12
X201 LR LR
comp=Z,700nm,21.0s
WHAR **Wooly Hollow** **86.86** **18** PFAKE 16 04 20.0 +12
WHAR LR LR
comp=Z,800nm,22.0s
CCUT **Cedar City** **86.94** **1** *e*P **P** **16 04 08.1 -0.8**
comp=Z,9.7nm,1.3s
CCUT LR LR
comp=Z,1µm,21.0s
T25A **Trinidad** **86.95** **8** P **P** **16 04 10.6 +1.7**
baz=186
T25A **Trinidad** **86.95** **8** *e*P **P** **16 04 09.6 +0.7**
comp=Z,20nm,1.5s
T25A LR LR
comp=Z,1µm,22.0s
GOGA **Godfrey** **87.16** **25** *e*P **P** **16 04 10.7 +1.0**
GOGA **Godfrey** **87.16** **25** *e*P **P** **16 04 10.7 +1.0**
S22A **4UR Ranch, Cre** **87.37** **6** *e*P **P** **16 04 11.5 +0.5**
comp=Z,24nm,1.9s
S22A LR LR
comp=Z,2µm,21.0s
MTPU **Mount Pierson** **87.44** **1** *e*P **P** **16 04 12.1 +0.6**
comp=Z,19nm,1.8s
MTPU LR LR
comp=Z,2µm,18.0s
SDCO **Great Sand Dun** **87.46** **7** P **P** **16 04 13.6 +2.1**
baz=186
SDCO **Great Sand Dun** **87.46** **7** *e*P **P** **16 04 12.7 +1.3**
comp=Z,20nm,1.9s
SDCO LR LR
comp=Z,700nm,20.0s
COEN **Coen** **87.51** **251** PFAKE 16 04 20.0 +8.0
COEN LR LR
comp=Z,2µm,18.0s
CMB **Columbia Colle** **87.60** **355** *e*P **P** **16 04 12.0 +0.2**
CMB MLR MLR
comp=Z,3µm,18.0s
CMB **Columbia Colle** **87.60** **355** *e*P **P** **16 04 12.0 +0.2**
CMB LR LR
comp=Z,3µm,18.0s
R11A **Troy Canyon, C** **87.75** **359** P **P** **16 04 14.3 +1.6**
baz=179
R11A **Troy Canyon, C** **87.75** **359** *e*P **P** **16 04 13.3 +0.7**
comp=Z,16nm,1.6s
R11A LR LR
comp=Z,2µm,19.0s
NHSC **New Hope** **87.82** **28** PFAKE 16 04 20.0 +7.1
NHSC LR LR
comp=Z,2µm,18.0s
MCCM **Marconi Confer** **87.88** **353** PFAKE 16 04 20.0 +7.0
MCCM LR LR
comp=Z,2µm,22.0s
WAKR **Walker** **88.02** **356** PFAKE 16 04 30.0 +16
WAKR LR LR
comp=Z,3µm,18.0s
HALT **Halls** **88.07** **20** PFAKE 16 04 30.0 +16
HALT LR LR
comp=Z,1012µm,20.0s
WRA **Warramunga Arr** **88.07** **241** P **P** **16 04 12.6 -2.1**
comp=Z,1.4nm,1.0s,baz=146,slow=4.9,SNR=5.4
WRA LR LR 16 39 53.7
comp=Z,2µm,18.1s,baz=190,slow=33
WRAB **Tennant Creek** **88.08** **241** PFAKE 16 04 30.0 +15
WRAB LR LR
comp=Z,2µm,19.0s
SWET **Sewanee** **88.21** **23** PFAKE 16 04 30.0 +15
SWET LR LR
comp=Z,400nm,21.0s
PMG **Port Moresby** **88.51** **257** PFAKE 16 04 30.0 +13
PMG LR LR
comp=Z,2µm,21.0s
AFDM **Forest Hills D** **88.55** **355** PFAKE 16 04 30.0 +14
AFDM LR LR
comp=Z,2µm,20.0s
SRU **San Rafael Swe** **88.55** **3** *e*P **P** **16 04 16.6 +0.1**
SRU pmax pmax
comp=Z,4.0nm,1.1s
SRU MLR MLR
comp=Z,1µm,21.0s
SRU **San Rafael Swe** **88.55** **3** *e*P **P** **16 04 16.6 +0.1**
comp=Z,4.4nm,1.1s
SRU *e*PKKPdf **PKKPdf** **16 21 54.2 +0.3**
SRU LR LR
comp=Z,1µm,21.0s
T40A **Mansfield** **88.62** **17** P **P** **16 04 18.4 +1.8**
baz=194
WVT **Waverly** **88.62** **21** *e*P **P** **16 04 17.2 +0.6**
WVT pmax pmax
comp=Z,23nm,1.4s
WVT MLR MLR
comp=Z,800nm,20.0s
WVT **Waverly** **88.62** **21** *e*P **P** **16 04 17.2 +0.6**
comp=Z,23nm,1.4s
WVT LR LR
comp=Z,800nm,20.0s
Q24A **Divide** **88.70** **7** PFAKE 16 04 30.0 +13
Q24A LR LR
comp=Z,800nm,19.0s
TMUT **Trail Mountain** **88.72** **2** *e*P **P** **16 04 17.3 -0.1**
comp=Z,22nm,1.6s
TMUT *e*PP **PP** **16 07 42.6 -4.2**
TMUT LR LR
comp=Z,1µm,21.0s
HOPS **Hopland Field** **88.74** **353** PFAKE 16 04 30.0 +13
HOPS LR LR
comp=Z,2µm,19.0s
SMCO **Snowmass** **88.78** **6** PFAKE 16 04 30.0 +12
SMCO LR LR
comp=Z,1µm,18.0s
CPCT **Cooper Cave** **88.79** **24** PFAKE 16 04 30.0 +13
CPCT LR LR
comp=Z,800nm,21.0s
P17A **Butcher Ranch,** **88.91** **3** PFAKE 16 04 30.0 +12
P17A LR LR
comp=Z,1µm,20.0s
SUR **Sutherland** **88.94** **143** PFAKE 16 04 30.0 +11
SUR LR LR
comp=Z,3µm,21.0s
KSCO **Kaye Shedlock'** **88.97** **9** PFAKE 16 04 30.0 +12
KSCO LR LR
comp=Z,2µm,20.0s
S40A **Lebanon** **89.06** **17** P **P** **16 04 21.1 +2.4**
baz=194
P18A **Preston Nutter** **89.08** **3** PFAKE 16 04 30.0 +11
P18A LR LR
comp=Z,1µm,22.0s
CBKS **Cedar Bluff** **89.10** **11** PFAKE 16 04 30.0 +11
CBKS LR LR
comp=Z,900nm,19.0s
TKL **Tuckaleechee C** **89.19** **24** PFAKE 16 04 30.0 +11
TKL LR LR
comp=Z,900nm,20.0s
KMSC **Kings Mountain** **89.38** **26** PFAKE 16 04 30.0 +10
KMSC LR LR
comp=Z,900nm,18.0s
MPU **Maple Canyon** **89.43** **2** PFAKE 16 04 30.0 +9.4
MPU LR LR
comp=Z,2µm,19.0s
ISCO **Idaho Springs** **89.50** **7** PFAKE 16 04 30.0 +9.0
ISCO LR LR
comp=Z,2µm,19.0s
DUG **Dugway, Tooele** **89.59** **1** P **P** **16 04 22.3 +1.1**
baz=181
DUG **Dugway, Tooele** **89.59** **1** PFAKE 16 04 30.0 +8.8
DUG LR LR
comp=Z,1µm,19.0s
O20A **White River Ci** **89.67** **4** PFAKE 16 04 30.0 +8.3

O20A LR LR
comp=Z,800nm,22.0s
KSU1 **Kansas State U** **89.82 14** PFAKE 16 04 30.0 +7.8
KSU1 LR LR
comp=Z,1µm,18.0s
BMN **Battle Mountai** **89.86 358** PFAKE 16 04 30.0 +7.5
BMN LR LR
comp=Z,2µm,20.0s
WDC **Whiskeytown Da** **90.27 354** *eP* **P** **16 04 24.2 0.0**
WDC pmax pmax
comp=Z,29nm,1.8s
WDC MLR MLR
comp=Z,2µm,20.0s
WDC **Whiskeytown Da** **90.27 354** *eP* **P** **16 04 24.2 0.0**
comp=Z,29nm,1.8s
WDC LR LR
comp=Z,2µm,20.0s
BGU **Big Grassy Mou** **90.31 1** PFAKE 16 04 40.0 +15
BGU LR LR
comp=Z,1µm,18.0s
CNNC **Cliffs of the** **90.50 29** PFAKE 16 04 40.0 +15
CNNC LR LR
comp=Z,2µm,20.0s
TCUT **Toone Canyon** **90.53 2** PFAKE 16 04 40.0 +14
TCUT LR LR
comp=Z,3µm,19.0s
N23A **Red Feather La** **90.56 6** PFAKE 16 04 40.0 +14
N23A LR LR
comp=Z,2µm,21.0s
SPUT **South Promonto** **90.70 1** PFAKE 16 04 40.0 +14
SPUT LR LR
comp=Z,900nm,20.0s
OGNE **Ogallala** **90.95 9** PFAKE 16 04 40.0 +12
OGNE LR LR
comp=Z,2µm,20.0s
WCI **Wyandotte Cave** **90.99 22** PFAKE 16 04 40.0 +12
WCI LR LR
comp=Z,1µm,21.0s
PHWY **Pilot Hill** **91.00 6** PFAKE 16 04 40.0 +12
PHWY LR LR
comp=Z,2µm,20.0s
HWUT **Hardware Ranch** **91.02 2** PFAKE 16 04 40.0 +12
HWUT LR LR
comp=Z,2µm,19.0s
HVU **Hansel Valley** **91.17 1** PFAKE 16 04 40.0 +11
HVU LR LR
comp=Z,1µm,21.0s
YBH **Yreka Blue Hor** **91.43 354** PFAKE 16 04 40.0 +10
YBH LR LR
comp=Z,4µm,20.0s
BLA **Blacksburg** **91.57 26** PFAKE 16 04 40.0 +10
BLA LR LR
comp=Z,1µm,20.0s
BLO **Bloomington** **91.83 21** PFAKE 16 04 40.0 +8.5
BLO LR LR
comp=Z,1µm,20.0s
BGNE **Belgrade** **91.86 12** PFAKE 16 04 40.0 +8.3
BGNE LR LR
comp=Z,1µm,20.0s
WVOR **Wild Horse Val** **91.90 357** *eP* **P** **16 04 32.7 +0.7**
WVOR pmax pmax
comp=Z,21nm,1.4s
WVOR MLR MLR
comp=Z,2µm,21.0s
WVOR **Wild Horse Val** **91.90 357** *eP* **P** **16 04 32.7 +0.7**
comp=Z,21nm,1.4s
WVOR LR LR
comp=Z,2µm,21.0s
AHID **Auburn Hatcher** **92.19 2** PFAKE 16 04 40.0 +6.7
AHID LR LR
comp=Z,2µm,18.0s
BW06 **Boulder Array** **92.23 3** P **P** **16 04 34.1 +0.5**
baz=183
BW06 **Boulder Array** **92.23 3** *eP* **P** **16 04 33.0 -0.6**
BW06 LR LR
comp=Z,1µm,20.0s
PDAR **Pinedale Array** **92.23 3** P **P** **16 04 34.2 +0.6**
comp=Z,0.7nm,0.8s,baz=222,slow=2.0,SNR=5.8
PDAR LR LR 16 38 39.3
comp=Z,979nm,21.6s,baz=187,slow=31
K22A **Casper** **92.27 6** P **P** **16 04 35.3 +1.6**
baz=185
K22A **Casper** **92.27 6** *eP* **P** **16 04 34.0 +0.3**
comp=Z,58nm,1.8s
K22A LR LR
comp=Z,700nm,18.0s
K05A **Summer Lake** **92.30 355** *eP* **P** **16 04 34.4 +0.5**
comp=Z,35nm,1.7s
K05A LR LR
comp=Z,1µm,19.0s
HUMO **Hull Mountain** **92.32 353** *eP* **P** **16 04 33.7 -0.1**
HUMO LR LR
comp=Z,2µm,20.0s
HDIL **Hopedale** **92.55 19** PFAKE 16 04 50.0 +15
HDIL LR LR
comp=Z,900nm,20.0s
REDW **Red Top Meadow** **92.79 2** PFAKE 16 04 50.0 +14
REDW LR LR
comp=Z,2µm,18.0s
SFIN **Lafayette** **92.85 20** PFAKE 16 04 50.0 +14
SFIN LR LR
comp=Z,900nm,20.0s
SNOW **Snow King Moun** **92.89 2** PFAKE 16 04 50.0 +13
SNOW LR LR
comp=Z,2µm,19.0s
TPAW **Teton Pass** **92.91 2** PFAKE 16 04 50.0 +13
TPAW LR LR
comp=Z,2µm,18.0s
HLID **Hailey** **92.94 360** *eP* **P** **16 04 38.2 +1.4**
comp=Z,8.9nm,1.4s
HLID LR LR
comp=Z,1µm,19.0s
LOHW **Long Hollow** **93.04 3** PFAKE 16 04 50.0 +13
LOHW LR LR
comp=Z,2µm,18.0s
MOOW **Moose Ponds** **93.18 2** PFAKE 16 04 50.0 +12
MOOW LR LR
comp=Z,2µm,18.0s
IMW **Indian Meadow** **93.32 2** PFAKE 16 04 50.0 +11
IMW LR LR
comp=Z,1µm,18.0s
CBN **Corbin Frederi** **93.39 28** PFAKE 16 04 50.0 +11
CBN LR LR
comp=Z,2µm,20.0s
FLWY **Flagg Ranch** **93.51 2** PFAKE 16 04 50.0 +11
FLWY LR LR
comp=Z,2µm,18.0s
YPP **Pitchstone Pla** **93.70 2** PFAKE 16 04 50.0 +10
YPP LR LR
comp=Z,2µm,19.0s
ACSO **Alum Creek Sta** **93.70 23** PFAKE 16 04 50.0 +10
ACSO LR LR
comp=Z,1µm,20.0s
H17A **Grant Village** **93.83 3** PFAKE 16 04 50.0 +9.1
H17A LR LR
comp=Z,2µm,21.0s
YFT **Old Faithful** **93.88 2** PFAKE 16 04 50.0 +8.8
YFT LR LR
comp=Z,2µm,19.0s
BOSA **Boshof** **94.00 145** LR LR 16 40 55.4
comp=Z,1µm,18.2s,baz=203,slow=32
LKWY **Lake** **94.00 3** PFAKE 16 04 50.0 +8.2
LKWY LR LR
comp=Z,2µm,18.0s
MCWV **Mont Chateau** **94.01 26** PFAKE 16 04 50.0 +8.4
MCWV LR LR
comp=Z,900nm,19.0s
YMR **Madison River** **94.09 2** PFAKE 16 04 50.0 +7.9
YMR LR LR
comp=Z,800nm,19.0s
YNR **Norris Junctio** **94.14 2** PFAKE 16 04 50.0 +7.6
YNR LR LR
comp=Z,1µm,18.0s
YHH **Holmes Hill** **94.21 2** PFAKE 16 04 50.0 +7.2
YHH LR LR
comp=Z,800nm,22.0s
MCMT **McKenzie Canyo** **94.22 1** *eP* **P** **16 04 43.1 +0.4**
BMO **Blue Mountains** **94.28 358** PFAKE 16 04 50.0 +7.2
BMO LR LR
comp=Z,2µm,20.0s
ECSD **EROS Data Cent** **94.36 13** PFAKE 16 04 50.0 +6.9
ECSD LR LR
comp=Z,1µm,18.0s
FITZ **Fitzroy Crossi** **94.36 235** PFAKE 16 04 50.0 +6.1
FITZ LR LR
comp=Z,3µm,22.0s

RLMT **Red Lodge** **94.60 3** PFAKE 16 05 00.0 +16
RLMT LR LR
comp=Z,1µm,20.0s
DLMT **Dillon** **94.75 1** PFAKE 16 05 00.0 +15
DLMT LR LR
comp=Z,1µm,20.0s
MBWA **Marble Bar** **94.84 229** PFAKE 16 05 00.0 +14
MBWA LR LR
comp=Z,2µm,18.0s
BOZ **Bozeman (W)** **95.05 2** *eP* **P** **16 04 47.6 +1.2**
BOZ pmax pmax
comp=Z,16nm,1.8s
BOZ MLR MLR
comp=Z,800nm,19.0s
BOZ **Bozeman (W)** **95.05 2** *eP* **P** **16 04 47.5 +1.2**
comp=Z,16nm,1.8s
BOZ LR LR
comp=Z,800nm,19.0s
MVL **Millersville** **95.36 28** PFAKE 16 05 00.0 +12
MVL LR LR
comp=Z,2µm,19.0s
F10A **Beach Ranch, E** **95.39 358** PFAKE 16 05 00.0 +12
F10A LR LR
comp=Z,2µm,20.0s
SSPA **Standing Stone** **95.48 27** *eP* **P** **16 04 47.9 -0.4**
comp=Z,24nm,1.8s
SSPA LR LR
comp=Z,2µm,20.0s
AAM **Ann Arbor** **95.48 22** PFAKE 16 05 00.0 +12
AAM LR LR
comp=Z,800nm,20.0s
PSUB **Penn St. - Bra** **95.57 29** PFAKE 16 05 00.0 +11
PSUB LR LR
comp=Z,1µm,20.0s
MTN **Manton Dam** **95.57 243** PFAKE 16 05 00.0 +11
MTN LR LR
comp=Z,3µm,20.0s
F04A **Amboy** **95.59 354** PFAKE 16 05 00.0 +11
F04A LR LR
comp=Z,1µm,20.0s
F03A **Seaside** **95.67 353** PFAKE 16 05 00.0 +11
F03A LR LR
comp=Z,2µm,20.0s
HAWA **Hanford** **95.89 356** PFAKE 16 05 00.0 +10
HAWA LR LR
comp=Z,1µm,20.0s
E09A **Wood Farm, Sta** **95.96 357** PFAKE 16 05 00.0 +10
E09A LR LR
comp=Z,2µm,18.0s
MSO **Missoula** **96.21 0** PFAKE 16 05 00.0 +8.4
MSO LR LR
comp=Z,700nm,20.0s
ERPA **Erie** **96.26 25** PFAKE 16 05 00.0 +8.2
ERPA LR LR
comp=Z,2µm,21.0s
SPMN **Marine on St.** **96.40 15** PFAKE 16 05 00.0 +7.6
SPMN LR LR
comp=Z,700nm,20.0s
D08A **Wollman Farm,** **96.53 357** PFAKE 16 05 00.0 +7.1
D08A LR LR
comp=Z,1µm,20.0s
BRNJ **Basking Ridge** **96.53 29** PFAKE 16 05 00.0 +7.0
BRNJ LR LR
comp=Z,2µm,19.0s
D05A **Enumclaw** **96.81 355** PFAKE 16 05 10.0 +16
D05A LR LR
comp=Z,1µm,20.0s
KSPA **Keystone Colle** **96.96 28** PFAKE 16 05 10.0 +15
KSPA LR LR
comp=Z,1µm,20.0s
PAL **Palisades** **97.04 29** PFAKE 16 05 10.0 +15
PAL LR LR
comp=Z,2µm,22.0s
H11S2 **WAKE ISLAND Hy** **97.18 290** T T 17 53 09.6
baz=140,slow=75,SNR=259
H11S3 **WAKE ISLAND Hy** **97.19 290** T T 17 53 12.1
baz=140,slow=75,SNR=210
H11S1 **WAKE ISLAND Hy** **97.19 290** T T 17 53 11.3
baz=140,slow=75,SNR=232
C09A **Chrisman Ranch** **97.25 357** PFAKE 16 05 10.0 +14
C09A LR LR
comp=Z,1µm,19.0s
EGMT **Eagleton** **97.48 3** PFAKE 16 05 10.0 +13
EGMT LR LR
comp=Z,14µm,21.0s
BINY **Binghamton** **97.48 28** PFAKE 16 05 10.0 +13
BINY LR LR
comp=Z,2µm,19.0s
YLE **Yale** **97.63 30** PFAKE 16 05 10.0 +12
YLE LR LR
comp=Z,2µm,18.0s
COWI **Conover** **97.91 17** PFAKE 16 05 10.0 +11
COWI LR LR
comp=Z,900nm,20.0s
DGMT **Dagmar** **98.22 7** PFAKE 16 05 10.0 +9.4
DGMT LR LR
comp=Z,700nm,19.0s
WALA **Waterton Lakes** **98.44 0** PFAKE 16 05 10.0 +8.3
WALA LR LR
comp=Z,2µm,18.0s
BRYW **Bryant College** **98.63 31** PFAKE 16 05 10.0 +7.5
BRYW LR LR
comp=Z,2µm,20.0s
QUA2 **Belchertown** **98.69 30** PFAKE 16 05 10.0 +7.3
QUA2 LR LR
comp=Z,2µm,19.0s
SADO **Sadowa** **98.95 24** PFAKE 16 05 20.0 +16
SADO LR LR
comp=Z,2µm,21.0s
TSUM **Tsumeb** **99.11 134** PFAKE 16 05 20.0 +14
TSUM LR LR
comp=Z,1µm,19.0s
WES **Weston** **99.12 31** *eP* **Pdif** **16 05 01.9 -2.7**
WES MLR MLR
comp=Z,3µm,22.0s
WES **Weston** **99.12 31** *eP* **Pdif** **16 05 01.9 -2.7**
comp=Z,65nm,0.8s
WES LR LR
comp=Z,3µm,22.0s
BCX **Boston College** **99.12 31** PFAKE 16 05 20.0 +15
BCX LR LR
comp=Z,1µm,20.0s
HRV **Adam Dziewonsk** **99.15 30** *eP* **Pdif** **16 05 05.1 +0.3**
HRV MLR MLR
comp=Z,2µm,21.0s
HRV **Adam Dziewonsk** **99.15 30** *eP* **Pdif** **16 05 05.1 +0.3**
HRV LR LR
comp=Z,2µm,21.0s
EYMN **Ely** **99.26 15** PFAKE 16 05 20.0 +15
EYMN LR LR
comp=Z,1µm,22.0s
FFD **Franklin Falls** **99.98 30** PFAKE 16 05 20.0 +12
FFD LR LR
comp=Z,3µm,22.0s
HNH **Hanover** **99.99 29** PFAKE 16 05 20.0 +12
HNH LR LR
comp=Z,2µm,21.0s
LONY **Lake Ozonia** **100.11 27** PFAKE 16 05 20.0 +11
LONY LR LR
comp=Z,2µm,19.0s
FRNY **Flat Rock** **100.60 28** PFAKE 16 05 20.0 +8.8
FRNY LR LR
comp=Z,2µm,22.0s
ULM **Lac du Bonnet** **100.85 12** PFAKE 16 05 20.0 +7.9
ULM LR LR
comp=Z,1µm,21.0s
WVL **Waterville** **101.61 31** PFAKE 16 05 30.0 +14
WVL LR LR
comp=Z,2µm,20.0s
SOEI **Soe** **101.97 239** PFAKE 16 05 30.0 +12
SOEI LR LR
comp=Z,4µm,20.0s
BBB **Bella Bella** **102.27 351** PFAKE 16 05 30.0 +12
BBB LR LR
comp=Z,900nm,18.0s
PKME **Peaks-Kenny Pk** **102.35 31** PFAKE 16 05 30.0 +11
PKME LR LR
comp=Z,1µm,21.0s
EDM **Edmonton** **102.61 0** PFAKE 16 05 30.0 +10
EDM LR LR
comp=Z,3µm,19.0s
FAKI **Fak Fak** **102.81 250** PFAKE 16 05 30.0 +8.1
FAKI LR LR
comp=Z,1µm,19.0s
DIB **Dawson Inlet,** **103.77 349** PFAKE 16 05 40.0 +15
DIB LR LR
comp=Z,1µm,22.0s
MMRI **Maumere** **104.01 238** PFAKE 16 05 40.0 +13
MMRI LR LR
comp=Z,2µm,20.0s
LMQ **La Malbaie** **104.04 29** PFAKE 16 05 40.0 +14
LMQ LR LR
comp=Z,2µm,21.0s
LMN **Caledonia Moun** **104.40 33** PFAKE 16 05 40.0 +12
LMN LR LR
comp=Z,1µm,21.0s
FFC **Flin Flon** **104.61 7** PFAKE 16 05 40.0 +11
FFC LR LR
comp=Z,800nm,20.0s
KAPI **Kappang** **108.38 238** PFAKE 16 10 00.0
KAPI LR LR
comp=Z,2µm,20.0s
JAGI **Jajag, Banyuwa** **108.42 231** PFAKE 16 10 00.0
JAGI LR LR
comp=Z,1µm,19.0s
DLBC **Dease Lake** **108.63 351** PFAKE 16 10 00.0
DLBC LR LR
comp=Z,2µm,20.0s
FCC **Fort Churchill** **109.40 11** PFAKE 16 10 00.0
FCC LR LR
comp=Z,1µm,20.0s
ABPO **Ambohimpanom** **109.54 161** PFAKE 16 10 10.0
ABPO LR LR
comp=Z,3µm,19.0s
LUWI **Luwuk** **109.93 243** PFAKE 16 10 10.0
LUWI LR LR
comp=Z,700nm,21.0s
DHAK **Deception Hill** **110.28 347** PFAKE 16 10 10.0
DHAK LR LR
comp=Z,2µm,20.0s
PCA **Pinnacle** **111.55 346** PFAKE 16 10 10.0
PCA LR LR
comp=Z,3µm,20.0s
KDAK **Kodiak Island** **111.78 339** PFAKE 16 10 10.0
KDAK LR LR
comp=Z,3µm,18.0s
UNV **Unalaska Valle** **112.27 330** PFAKE 16 10 10.0
UNV LR LR
comp=Z,2µm,21.0s
CISI **Cisompet, Garu** **112.28 226** PFAKE 16 10 10.0
CISI LR LR
comp=Z,800nm,20.0s
CRQM **Cirque** **112.64 345** PFAKE 16 10 10.0
CRQM LR LR
comp=Z,2µm,20.0s
BALM **Baldy** **112.77 346** PFAKE 16 10 10.0
BALM LR LR
comp=Z,1µm,19.0s
EYAK **Cordova Ski Ar** **112.90 344** PFAKE 16 10 10.0
EYAK LR LR
comp=Z,3µm,20.0s
CNPM **China Poot** **113.05 340** PFAKE 16 10 10.0
CNPM LR LR
comp=Z,2µm,19.0s
BMRM **Bremner River** **113.08 344** PFAKE 16 10 10.0
BMRM LR LR
comp=Z,2µm,20.0s
BRLK **Bradley Lake** **113.19 341** PFAKE 16 10 10.0
BRLK LR LR
comp=Z,2µm,18.0s
HOM **Homer** **113.26 340** PFAKE 16 10 10.0
HOM LR LR
comp=Z,2µm,19.0s
DIV **Divide** **113.44 344** PFAKE 16 10 10.0
DIV LR LR
comp=Z,3µm,21.0s
KLU **Klutina** **113.81 344** PFAKE 16 10 10.0
KLU LR LR
comp=Z,2µm,18.0s
RC01 **Rabbit Creek A** **114.16 342** PFAKE 16 10 10.0 +7.9
RC01 LR LR
comp=Z,2µm,19.0s
SCM **Sheep Creek Mo** **114.38 343** PFAKE 16 10 10.0 +7.4
SCM LR LR
comp=Z,2µm,22.0s
PAX **Paxson** **115.11 345** PFAKE 16 10 20.0 +16
PAX LR LR
comp=Z,1µm,18.0s
DAWY **Dawson** **115.21 348** PFAKE 16 10 20.0 +16
DAWY LR LR
comp=Z,2µm,21.0s
DOT **Dot Lake** **115.51 346** PFAKE 16 10 20.0 +15
DOT LR LR
comp=Z,4µm,22.0s
DHY **Denali Highway** **115.54 344** PFAKE 16 10 20.0 +15
DHY LR LR
comp=Z,2µm,18.0s
RND **Reindeer** **116.11 343** PFAKE 16 10 20.0 +14
RND LR LR
comp=Z,2µm,18.0s
EGAK **Eagle** **116.13 347** PFAKE 16 10 20.0 +14
EGAK LR LR
comp=Z,2µm,18.0s
PPLA **Purkeypile** **116.30 342** PFAKE 16 10 20.0 +14
PPLA LR LR
comp=Z,1µm,20.0s
TRF **Thorofare Moun** **116.42 343** PFAKE 16 10 20.0 +13
TRF LR LR
comp=Z,2µm,19.0s
MCK **McKinley** **116.42 343** PFAKE 16 10 20.0 +14
MCK LR LR
comp=Z,2µm,18.0s
TOC5 **Torodi Ar. Sit** **116.50 101** PFAKE 16 10 20.0 +12
TOC5 LR LR
comp=Z,2µm,19.0s
TOC4 **Torodi Ar. Sit** **116.51 101** PFAKE 16 10 20.0 +12
TOC4 LR LR
comp=Z,2µm,19.0s
TOB4 **Torodi Ar. Sit** **116.51 101** PFAKE 16 10 20.0 +12
TOB4 LR LR
comp=Z,2µm,20.0s
TOB5 **Torodi Ar. Sit** **116.52 101** PFAKE 16 10 20.0 +12
TOB5 LR LR
comp=Z,2µm,19.0s
TOB3 **Torodi Ar. Sit** **116.53 101** PFAKE 16 10 20.0 +12
TOB3 LR LR
comp=Z,2µm,20.0s
TOA0 **Torodi Ar. Sit** **116.53 101** PFAKE 16 10 20.0 +12
TOA0 LR LR
comp=Z,2µm,20.0s
TOA1 **Torodi Ar. Sit** **116.53 101** PFAKE 16 10 20.0 +12
TOA1 LR LR
comp=Z,2µm,20.0s
TOC7 **Torodi Ar. Sit** **116.53 101** PFAKE 16 10 20.0 +12
TOC7 LR LR
comp=Z,2µm,20.0s
TOC3 **Torodi Ar. Sit** **116.53 101** PFAKE 16 10 20.0 +12
TOC3 LR LR
comp=Z,2µm,20.0s
TOB1 **Torodi Ar. Sit** **116.54 101** PFAKE 16 10 20.0 +12
TOB1 LR LR
comp=Z,2µm,20.0s
TOB2 **Torodi Ar. Sit** **116.54 101** PFAKE 16 10 20.0 +12
TOB2 LR LR
comp=Z,2µm,19.0s
TOC1 **Torodi Ar. Sit** **116.55 101** PFAKE 16 10 20.0 +12
TOC1 LR LR
comp=Z,2µm,19.0s
TOC2 **Torodi Ar. Sit** **116.55 101** PFAKE 16 10 20.0 +12
TOC2 LR LR
comp=Z,2µm,19.0s
KTH **Kantishna Hill** **116.64 343** PFAKE 16 10 20.0 +13
KTH LR LR
comp=Z,2µm,18.0s
CAST **Castle Rocks** **116.75 342** PFAKE 16 10 20.0 +13
CAST LR LR
comp=Z,2µm,19.0s
WRH **Wood River Hil** **116.95 344** PFAKE 16 10 20.0 +13
WRH LR LR
comp=Z,2µm,18.0s
ILAR **Eielson Array** **117.02 345** PKP **PKPdf** **16 10 09.4 +1.9**
comp=Z,0.1nm,0.3s,baz=216,slow=5.6,SNR=2.8
ILAR PP **PP** **16 11 17.6 -0.5**
comp=Z,0.2nm,0.8s,baz=186,slow=3.4,SNR=3.4
CCB **Clear Creek Bu** **117.06 344** PFAKE 16 10 20.0 +12
CCB LR LR
comp=Z,2µm,20.0s
COLA **College** **117.28 345** PFAKE 16 10 20.0 +12
COLA LR LR
comp=Z,2µm,18.0s
MYLDM **Lahad Datu** **117.44 243** PFAKE 16 10 20.0 +10

MYLDM LR LR
comp=Z,900nm,21.0s
FYU Fort Yukon 118.41 346 PFAKE 16 10 20.0 +10
FYU LR LR
comp=Z,2µm,20.0s
INK Inuvik 118.64 352 PFAKE 16 10 20.0 +10
INK LR LR
comp=Z,1µm,19.0s
SBUM Sibu 118.69 235 PFAKE 16 10 20.0 +7.6
SBUM LR LR
comp=Z,1µm,22.0s
KSM Kuching 118.87 233 PFAKE 16 10 20.0 +7.3
KSM LR LR
comp=Z,900nm,21.0s
KKM Kota Kinabalu 119.45 241 PFAKE 16 10 20.0 +6.0
KKM LR LR
comp=Z,500nm,18.0s
COLD Coldfoot 119.82 345 PFAKE 16 10 20.0 +7.2
COLD LR LR
comp=Z,2µm,20.0s
MBAR Mbarara 121.46 137 PFAKE 16 10 30.0 +12
MBAR LR LR
comp=Z,2µm,18.0s
GAMB Gambell 121.86 334 PFAKE 16 10 30.0 +13
GAMB LR LR
comp=Z,2µm,20.0s
MYKOM Kota Tinggi 122.34 227 PFAKE 16 10 30.0 +11
MYKOM LR LR
comp=Z,600nm,20.0s
KMBO Kilima Mbogo 123.64 145 PFAKE 16 10 30.0 +7.8
KMBO LR LR
comp=Z,2µm,18.0s
RES Resolute Bay 124.83 6 PFAKE 16 10 30.0 +7.8
RES LR LR
comp=Z,2µm,18.0s
PSI Prapat 125.47 222 PFAKE 16 10 40.0 +14
PSI LR LR
comp=Z,1µm,18.0s
RTC Rabat Centre 125.66 78 PFAKE 16 10 40.0 +15
RTC LR LR
comp=Z,4µm,20.0s
SFJD Kangerlussuaq 125.88 26 PFAKE 16 10 40.0 +16
SFJD LR LR
comp=Z,1µm,18.0s
IPM Ipoh 126.02 225 PFAKE 16 10 40.0 +14
IPM LR LR
comp=Z,700nm,19.0s
TAM Tamanrasset 126.07 97 PFAKE 16 10 40.0 +14
TAM LR LR
comp=Z,800nm,22.0s
PEA0B Petropavlovsk- 126.53 311 PFAKE 16 10 40.0 +14
PEA0B LR LR
comp=Z,2µm,21.0s
KULM Kulim 126.91 225 PFAKE 16 10 40.0 +12
KULM LR LR
comp=Z,700nm,19.0s
MAJO Matsushiro 127.61 284 PFAKE 16 10 40.0 +11
MAJO LR LR
comp=Z,500nm,22.0s
MJB9 Matsu-Tunnel 127.61 284 PFAKE 16 10 40.0 +11
MJB9 LR LR
comp=Z,100nm,22.0s
ERM Erimo 127.92 293 PFAKE 16 10 40.0 +11
ERM LR LR
comp=Z,1µm,21.0s
MTE Manteigas 129.22 71 PFAKE 16 10 40.0 +8.2
MTE LR LR
comp=Z,700nm,18.0s
ASAJ Asahikawa 129.48 295 PFAKE 16 10 40.0 +8.0
ASAJ LR LR
comp=Z,600nm,20.0s
PAB San Pablo 130.69 74 PFAKE 16 10 50.0 +15
PAB LR LR
comp=Z,500nm,20.0s
YSS Yuzh-Sakhalins 130.98 298 PFAKE 16 10 50.0 +15
YSS LR LR
comp=Z,400nm,19.0s
ESDC Sonseca Array 131.00 74 PKP **PKPdf 16 10 36.6 +1.4**
comp=Z,0.2nm,0.3s,baz=300,slow=2.8,SNR=2.4
ESLA Sonseca Array 131.00 74 PFAKE 16 10 50.0 +15
ESLA LR LR
comp=Z,500nm,19.0s
SUMG Summit 132.64 23 PFAKE 16 10 50.0 +12
SUMG LR LR
comp=Z,1µm,20.0s
FURI Furi 133.36 142 PFAKE 16 10 50.0 +9.2
FURI LR LR
comp=Z,2µm,21.0s
QIZ Qiongzhong 133.53 245 PFAKE 16 10 50.0 +10
QIZ LR LR
comp=Z,400nm,20.0s
BORG Borgarnes 134.50 37 PFAKE 16 10 50.0 +9.1
BORG LR LR
comp=Z,500nm,20.0s
INCN Inchon 135.54 278 PFAKE 16 11 00.0 +16
INCN LR LR
comp=Z,400nm,18.0s
PALK Pallekele 135.87 201 PFAKE 16 11 00.0 +15
PALK LR LR
comp=Z,1µm,19.0s
DSB Dublin 136.62 56 PFAKE 16 11 00.0 +15
DSB LR LR
comp=Z,600nm,20.0s
KEST Kesra 137.15 87 PFAKE 16 11 00.0 +13
KEST LR LR
comp=Z,1µm,22.0s
MDJ Mudanjiang 137.59 288 PKP **PKPdf 16 10 47.6 +0.3**
MDJ PP **PP 16 13 35.4 +1.0**
MDJ SS SS 16 31 44.2 +1.2
MDJ AMB AMB
comp=Z,73nm,9.3s
MDJ LR LR
comp=Z,170nm,23.9s
MDJ LR LR
comp=Z,350nm,22.6s
MDJ LR LR
comp=Z,560nm,27.9s
MDJ Mudanjiang 137.59 288 PFAKE 16 11 00.0 +13
MDJ LR LR
comp=Z,600nm,20.0s
CM01 Chiang Mai Arr 139.05 232 *e*PKPdf **PKPdf 16 10 50.4 -0.4**
CMAR Chiang Mai Arr 139.09 232 PKP **PKPdf 16 10 52.0 +1.2**
comp=Z,0.5nm,0.8s,baz=193,slow=3.7,SNR=3.7
ESK Eskdalemuir 139.17 55 PFAKE 16 11 00.0 +10
ESK LR LR
comp=Z,700nm,20.0s
SSB Saint Sauveur 139.32 72 PFAKE 16 11 00.0 +10
SSB LR LR
comp=Z,700nm,22.0s
VSL Villasalto 139.36 82 PFAKE 16 11 00.0 +9.3
VSL LR LR
comp=Z,600nm,18.0s
CHTO Chiang Mai 139.38 232 PFAKE 16 11 00.0 +8.6
CHTO LR LR
comp=Z,600nm,22.0s
CN2 Changchun 139.75 285 *e*PKP **PKPdf 16 10 49.1 -2.2**
BNI Bardonecchia 140.53 73 PFAKE 16 11 00.0 +7.2
BNI LR LR
comp=Z,1µm,21.0s
WDD Wied Dalam 140.57 91 PFAKE 16 11 00.0 +7.0
WDD LR LR
comp=Z,1µm,20.0s
DAMY Dhamar 140.75 146 PFAKE 16 11 10.0 +16
DAMY LR LR
comp=Z,2µm,20.0s
GYA Guiyang 141.06 249 PKP **PKPdf 16 10 54.0 -0.4**
GYA PP **PP 16 13 59.2 +3.3**
GYA AMB AMB
comp=Z,140nm,8.0s
SENIN Lac Senin/Sane 141.53 72 PFAKE 16 11 10.0 +15
SENIN LR LR
comp=Z,900nm,20.0s
ENH Enshi 142.03 256 PFAKE 16 11 10.0 +14
ENH LR LR
comp=Z,600nm,22.0s
WLF Walferdange 142.25 67 PFAKE 16 11 10.0 +14
WLF LR LR
comp=Z,600nm,20.0s
KMI Kunming 142.38 243 PKP **PKPdf 16 10 55.2 -1.7**
KMI pPKP pPKPdf 16 11 00.7 +0.4
KMI sPKP 16 11 04.5
KMI PP **PP 16 14 06.8 +2.9**
KMI AMB AMB
comp=Z,190nm,8.4s
KMI LR LR
comp=Z,340nm,20.7s
KMI LR LR
comp=Z,300nm,22.4s
KMI LR LR
comp=Z,570nm,22.4s
TUE Stuetta 142.84 73 PFAKE 16 11 10.0 +13
TUE LR LR
comp=Z,500nm,20.0s
CEL Celeste 142.87 89 PFAKE 16 11 10.0 +13
CEL LR LR
comp=Z,1µm,21.0s
BFO Black Forest 143.02 69 PFAKE 16 11 10.0 +13
BFO LR LR
comp=Z,600nm,20.0s
DAVOX Davos/Dischmat 143.31 73 PKP **PKPdf 16 10 57.3 -0.5**
comp=Z,2.2nm,0.6s,baz=182,slow=3.0,SNR=3.1
AQU L'Aquila 143.46 81 PFAKE 16 11 10.0 +12
AQU LR LR
comp=Z,900nm,20.0s
FUORN Ofenpass-Fuorn 143.48 73 *e*PKPdf **PKPdf 16 10 58.9 +0.7**
FUORN LR LR
comp=Z,700nm,20.0s
BJT Baijiatuau 143.72 274 PFAKE 16 11 10.0 +12
BJT LR LR
comp=Z,400nm,19.0s
STU Stuttgart 143.72 69 PFAKE 16 11 10.0 +12
STU LR LR
comp=Z,500nm,21.0s
BJI Beijing 143.72 274 PKP **PKPdf 16 10 58.0 -0.5**
BJI PP **PP 16 14 11.0 -1.0**
BJI SS SS 16 32 53.7 -1.0
BJI AMB AMB
comp=Z,220nm,9.6s
BJI LR LR
comp=Z,220nm,25.2s
BJI LR LR
comp=Z,230nm,23.0s
YAK Yakutsk 143.76 314 PKhKP PKPpre 16 10 54.3
comp=Z,2.5nm,0.5s,baz=123,slow=4.5,SNR=5.0
YAK Yakutsk 143.76 314 *e*PKHKP PKPpre 16 10 53.5
YAK pmax pmax
comp=Z,11nm,1.5s
CUC Castrocucco 143.78 86 PFAKE 16 11 10.0 +11
CUC LR LR
comp=Z,502nm,20.0s
FETA Feichten 143.94 73 *i* PKPdf PKPbc 16 10 56.6 -0.1
comp=Z,17nm,1.1s
TIP Timpagrande 143.95 88 *e*PKPpre PKPpre 16 10 55.3
TIP LR LR
comp=Z,900nm,21.0s
RETA Reutte 144.15 72 *i* PKPdf PKPbc 16 10 58.0 +0.7
comp=Z,17nm,1.3s
MOTA Moosalm 144.31 72 *i* PKPdf **PKPab 16 10 57.5 -0.1**
comp=Z,20nm,1.2s
WATA Walderalm 144.59 73 *i* PKPbc **PKPab 16 10 57.7 -0.9**
comp=Z,6.7nm,0.6s
WTTA Wattenberg 144.60 73 *i* PKPab PKPbc 16 10 58.8 0.0
comp=Z,10nm,0.8s
XAN Xi'an 144.89 260 PKP **PKPab 16 10 58.9 -1.0**
XAN sPKP 16 11 09.5
ABTA Abfaltersbach 144.93 74 *i* PKPbc **PKPab 16 10 58.9 -0.8**
comp=Z,25nm,1.1s
KBS Kingsbay 145.14 16 PFAKE 16 11 10.0 +10
KBS LR LR
comp=Z,1µm,18.0s
TRI Trieste 145.27 76 PFAKE 16 11 10.0 +9.0
TRI LR LR
comp=Z,500nm,20.0s
GRFO Grafenberg 145.30 69 PFAKE 16 11 10.0 +9.1
GRFO LR LR
comp=Z,600nm,20.0s
MYKA Terra Mystica 145.58 75 *i* PKPdf **PKPdf 16 11 00.4 -1.2**
comp=Z,8.6nm,1.1s
KBA Koelnbreinsper 145.59 74 *i* PKPab **PKPab 16 11 02.4 +0.1**
comp=Z,9.6nm,1.0s
HIA Hailar 145.69 290 *e*PKP2 **PKPdf 16 11 01.5 -0.2**
HIA MLR MLR
comp=Z,600nm,19.0s
HIA Hailar 145.69 290 *e*PKPdf **PKPdf 16 11 01.5 -0.2**
HIA *e*PKPdf **PKPab 16 11 02.5 +0.1**
HIA LR LR
comp=Z,600nm,19.0s
LJU Ljubljana 145.89 76 *e*PKPdf **PKPab 16 11 04.4 +1.2**
MOZS Mozjanca 145.94 76 *e*PKPdf **PKPab 16 11 05.2 +1.7**
CD2 Chengdu 146.03 251 PKPbc **PKPdf 16 11 02.0 -0.9**
OBKA Obir 146.10 75 *i* PKPdf **PKPdf 16 11 02.2 -0.3**
comp=Z,13nm,0.9s
NKC Novy Kostel 146.24 68 *e*PKP **PKPab 16 11 05.9 +1.5**
NKC AMS AMS 17 07 40.0
comp=Z,900nm,21.5s
NKC Novy Kostel 146.24 68 *e*PKP2 **PKPab 16 11 05.9 +1.5**
NKC MLR MLR
comp=Z,900nm,21.5s
MOA Molln 146.47 73 *i* PKPdf **PKPdf 16 11 03.3 +0.3**
comp=Z,15nm,1.1s
SOKA Soboth 146.48 75 *i* PKPbc **PKPbc 16 11 04.2 -0.4**
comp=Z,12nm,1.3s
GEA0 GERESS Array S 146.50 71 *e*PKPdf **PKPdf 16 11 02.9 -0.2**
GEC2 GERESS Array S 146.50 71 *e*PKP2 **PKPdf 16 11 03.2 0.0**
GEC2 MLR MLR
comp=Z,500nm,20.0s
GEC2 GERESS Array S 146.50 71 *e*PKPdf **PKPdf 16 11 03.1 0.0**
GEC2 LR LR
comp=Z,500nm,20.0s
GERES GERESS Array B 146.50 71 PKPbc **PKPdf 16 11 03.1 0.0**
comp=Z,3.0nm,0.8s,baz=207,slow=2.7,SNR=19
PERS Pernice 146.51 75 *e*PKPdf **PKPab 16 11 07.5 +1.8**
KHC Kasperske Hory 146.53 71 *e*PKP **PKPbc 16 11 04.0 -0.6**
KHC *ep*PKP **PKiKP 16 11 08.2 +0.7**
KHC AMS AMS 17 12 10.0
comp=Z,500nm,18.4s
KHC Kasperske Hory 146.53 71 *e*PKIKP **PKPdf 16 11 03.0 -0.1**
KHC MLR MLR
comp=Z,200nm,21.0s
KHC Kasperske Hory 146.53 71 *e*PKPdf **PKPdf 16 11 03.0 -0.1**
KHC LR LR
comp=Z,200nm,21.0s
IDI Anoyia 146.92 100 PFAKE 16 11 20.0 +12
IDI LR LR
comp=Z,700nm,19.0s
CLL Collm 146.93 67 *e*PKP2 **PKPbc 16 11 05.0 -0.6**
CLL MLR MLR
comp=Z,500nm,19.9s
CLL Collm 146.93 67 PFAKE 16 11 10.0 +3.0
CLL LR LR
comp=Z,500nm,20.0s
KONO Kongsberg 146.97 51 PFAKE 16 11 10.0 +3.1
KONO LR LR
comp=Z,500nm,19.0s
ARSA Arzberg 147.01 75 *i* PKPbc **PKPbc 16 11 05.7 -0.3**
comp=Z,12nm,1.2s
TIR Tirane 147.11 87 PFAKE 16 11 20.0 +12
TIR LR LR
comp=Z,599nm,20.0s
HHC Hu-ho-hao-te 147.14 272 *e*PKPbc **PKPab 16 11 08.0 -0.4**
HHC PP **PP 16 14 37.6 +5.2**
HHC SKKS 16 21 26.4
HHC AMB AMB
comp=Z,84nm,7.8s
HHC LR LR
comp=Z,190nm,19.8s
HHC LR LR
comp=Z,370nm,18.2s
HHC LR LR
comp=Z,380nm,20.4s
LAST Lasithi 147.22 101 PFAKE 16 11 20.0 +11
LAST LR LR
comp=Z,900nm,20.0s
BRG Berggiesshubel 147.35 68 *e*PKP **PKPbc 16 11 07.5 +0.7**
comp=Z,4.1nm,1.0s
BRG *e* 16 11 13.3
comp=Z,16nm,1.2s
comp=N,365nm,21.1s
comp=E,257nm,21.0s
comp=Z,558nm,21.8s
BRG Berggiesshubel 147.35 68 *e*PKP2 **PKPbc 16 11 07.5 +0.7**
BRG pmax pmax
comp=Z,4.0nm,1.0s
BRG MLR MLR
comp=N,365nm,21.1s
BRG MLR MLR
comp=E,257nm,21.0s
BRG MLR MLR
comp=Z,558nm,21.8s
PRU Pruhonice 147.42 69 *e*PKP **PKPbc 16 11 07.6 +0.6**
PRU *ep*PKP **PKiKP 16 11 13.4 +4.2**
PRU AMS AMS 17 07 10.0
comp=Z,600nm,26.0s
PRU Pruhonice 147.42 69 *e*PKP2 **PKPbc 16 11 07.6 +0.6**
PRU MLR MLR
comp=Z,600nm,26.0s
AGG Agios Georgios 147.47 92 PFAKE 16 11 20.0 +10
AGG LR LR
comp=Z,2µm,22.0s
CONA Conrad Observa 147.49 74 *i* PKPdf **PKPdf 16 11 06.1 +1.3**
comp=Z,16nm,1.1s
GOPC GO Pecny, Ondr 147.54 70 AMS AMS 17 07 30.0
comp=Z,600nm,23.6s
PVCC Panska Ves 147.61 69 AMS AMS 17 09 00.0
comp=Z,700nm,22.6s
NOA NORSAR Array B 147.92 48 PKPbc **PKPbc 16 11 07.8 -0.3**
comp=Z,0.6nm,0.8s,baz=268,slow=2.1,SNR=2.2
SANT Santorini 147.95 99 PFAKE 16 11 20.0 +8.4
SANT LR LR
comp=Z,600nm,21.0s
RGN Rugen 148.01 61 PFAKE 16 11 20.0 +8.8
RGN LR LR
comp=Z,1µm,20.0s
VRAC Vranov 148.44 72 PKPbc **PKPbc 16 11 10.4 +0.6**
comp=Z,1.6nm,0.3s,baz=243,slow=2.3,SNR=4.8
UPC Upice 148.48 69 AMS AMS 17 13 50.0
comp=Z,500nm,19.6s
KARP Karpathos 148.53 102 PFAKE 16 11 20.0 +6.0
KARP LR LR
comp=Z,300nm,20.0s
DPC Dobruska-Polom 148.62 70 *e*PKP **PKPbc 16 11 10.6 +0.3**
DPC *ep*PKP **PKPab 16 11 17.0 +3.1**
DPC AMS AMS 17 08 10.0
comp=Z,600nm,23.5s
DPC Dobruska-Polom 148.62 70 *e*PKP2 **PKPbc 16 11 10.6 +0.3**
DPC MLR MLR
comp=Z,600nm,23.5s
DPC MLR MLR
comp=Z,600nm,12.6s
EIL Elat 149.18 119 PKPbc **PKPbc 16 11 12.1 -0.2**
comp=Z,5.5nm,0.7s,baz=149,slow=5.9,SNR=6.3
MORC Moravsky Berou 149.18 71 ‖ */P* **PKPbc 16 11 10.5 -1.2**
MORC Moravsky Berou 149.18 71 *e*PKIKP **PKPdf 16 11 08.3 +0.8**
MORC MLR MLR
comp=Z,2µm,19.0s
MORC Moravsky Berou 149.18 71 *e*PKPdf **PKPdf 16 11 08.3 +0.8**
MORC LR LR
comp=Z,2µm,19.0s
LZH Lanzhou 149.41 258 *e*PKPbc **PKPdf 16 11 09.4 +1.0**
LZH LR LR
comp=Z,170nm,15.6s
LZH LR LR
comp=Z,170nm,18.0s
LZH LR LR
comp=Z,220nm,19.8s
VYHS Vyhne 149.55 74 *e*PKP2 **PKPbc 16 11 12.0 -0.6**
VYHS Vyhne 149.55 74 *e*PKP **PKPbc 16 11 12.0 -0.6**
VYHS *e* 16 11 19.3
OKC Ostrava-Krasne 149.57 71 *e*PKP **PKPab 16 11 18.9 +1.2**
OKC AMS AMS 17 19 50.0
comp=Z,400nm,16.9s
OKC Ostrava-Krasne 149.57 71 *e*PKP2 **PKPab 16 11 18.9 +1.2**
OKC MLR MLR
comp=Z,400nm,16.9s
VTS Vitosha 149.89 87 PFAKE 16 11 20.0 +0.5
VTS LR LR
comp=Z,500nm,19.0s
PSZ Piszkesteto 150.01 76 PFAKE 16 11 20.0 +0.3
PSZ LR LR
comp=Z,700nm,21.0s
LANS Liptovska Anna 150.16 73 *e*PKIKP **PKPbc 16 11 16.8 +2.7**
LANS *e* 16 11 21.4
LANS Liptovska Anna 150.16 73 *e*PKP **PKPbc 16 11 16.8 +2.7**
LANS *e* 16 11 21.4
CIT Chita 150.30 293 *e*PKIKP **PKPbc 16 11 13.8 -0.6**
KECS Kecovo 150.57 75 *e*PKP **PKPbc 16 11 15.6 +0.5**
BOD Bodaibo 151.04 305 *e*PKIKP **PKPbc 16 11 13.4 -2.4**
BOD pmax pmax
comp=Z,16nm,1.5s
UZH Uzhgorod 151.76 75 *e*PKIKP **PKPbc 16 11 16.3 -1.5**
UZH *e* 16 11 22.7
CSS Mathiatis 152.00 110 PFAKE 16 11 20.0 +1.2
CSS LR LR
comp=Z,300nm,22.0s
ISP Isparta 152.05 102 PFAKE 16 11 20.0 +1.0
ISP LR LR
comp=Z,600nm,21.0s
LSA Lhasa 152.34 233 *e*PKPab **PKPab 16 11 28.8 -1.5**
LSA LR LR
comp=Z,1µm,21.0s
ARE0 ARCESS Array S 152.40 29 PFAKE 16 11 20.0 +1.3
ARE0 LR LR
comp=Z,900nm,22.0s
MLR Muntele Rosu 152.94 84 PFAKE 16 11 20.0 -0.8
MLR LR LR
comp=Z,1µm,22.0s
SONA1 Songino Array 153.50 282 *e*PKPdf **PKPdf 16 11 12.4 -1.8**
SONA1 *e*PKPbc **PKiKP 16 11 22.0 0.0**
SONM Songino Array 153.50 282 PKP **PKPdf 16 11 13.6 -0.6**
comp=Z,0.2nm,0.5s,baz=145,slow=5.4,SNR=3.7
SONM PKPbc **PKPbc 16 11 21.1 -0.8**
comp=Z,1.5nm,0.9s,baz=153,slow=1.4,SNR=11
GTA Gaotai 153.95 260 *e*PKPbc **PKPbc 16 11 25.2 +2.0**
GTA PP PP 16 15 25.5 +14
UOSS Minazif 154.09 159 PFAKE 16 11 30.0 +6.3
UOSS LR LR
comp=Z,1µm,19.0s
TIRR Tirgusor 154.11 87 PFAKE 16 11 30.0 -6.9
TIRR LR LR
comp=Z,500nm,22.0s
ANTO Ankara 154.68 100 PFAKE 16 11 30.0 +5.4
ANTO LR LR
comp=Z,600nm,20.0s
IRK Irkutsk 155.93 291 *e*PKIKP PKPdf 16 11 25.6 +8.3
IRK pmax pmax
comp=Z,30nm,2.3s
LVZ Lovozero 156.12 29 PFAKE 16 11 30.0 +13
LVZ LR LR
comp=Z,600nm,20.0s
KIEV Kiev 156.64 74 *e*PKIKP **PKPdf 16 11 17.1 -1.1**
KIEV *e* 16 11 23.4
KIEV MLR MLR
comp=Z,700nm,20.0s
KIEV Kiev 156.64 74 *e*PKPdf **PKPdf 16 11 17.1 -1.1**
KIEV *e*PKPbc PKPbc 16 11 23.4
KIEV LR LR
comp=Z,700nm,20.0s
AKASG Malin Array Be 156.65 74 PKP **PKPdf 16 11 18.0 -0.2**
comp=Z,0.1nm,0.2s,baz=278,slow=1.8,SNR=4.5
AKASG Malin Array Be 156.65 74 PKIKP **PKPdf 16 11 18.0 -0.2**
AKBB Malin Array Si 156.65 74 PFAKE 16 11 30.0 +12
AKBB LR LR
comp=Z,800nm,20.0s
NRIK Noril'sk 157.76 340 PKPab **PKPab 16 11 53.4 +1.6**
comp=Z,1.0nm,0.4s,baz=43,slow=6.3,SNR=4.3
WMQ Urumqi 163.98 257 *e*PKP **PKPdf 16 11 24.3 -2.4**
WMQ pPKP pPKPdf 16 11 32.5 +2.4
WMQ PP **PP 16 16 09.2 +3.1**
WMQ SKKS 16 22 50.0
WMQ AMB AMB
comp=Z,110nm,6.3s
WMQ LR LR
comp=Z,930nm,20.4s
WMQ LR LR
comp=Z,510nm,22.4s
WMQ LR LR
comp=Z,870nm,20.2s
KSH Kashi 167.52 219 *e*PKP **PKPdf 16 11 32.0 +2.2**
KSH PKS **PKSdf 16 15 03.1 +0.7**
KSH *e*PP **PP 16 16 29.7 +5.8**
KSH SKS **SKSdf 16 18 33.5 0.0**
KSH SKKS **SKKSac 16 23 15.4 +4.2**
KSH AMB AMB
comp=Z,100nm,5.2s
KSH LR LR
comp=Z,550nm,17.5s
KSH LR LR
comp=Z,220nm,14.1s
KSH LR LR
comp=Z,630nm,19.8s
ZAA0 Zalesovo Array 167.60 297 *e*PKPab **PKPab 16 12 33.0 -2.5**
ZALV Zalesovo Beam 167.60 297 PKPab **PKPab 16 12 33.8 -1.7**
comp=Z,0.3nm,0.3s,baz=35,slow=5.3,SNR=3.2
MKAR Makanchi Array 168.70 261 PKP **PKPdf 16 11 28.9 -1.3**
comp=Z,0.1nm,0.3s,baz=48,slow=2.1,SNR=3.2
MKAR PKPab **PKPab 16 12 37.2 -3.4**

comp=Z,0.2nm,0.4s,baz=116,slow=3.4,SNR=2.4

ZRNK	**Zerenda**	**176.27**	**330**	*e*PKP2	**PKPab**	**16 13 15.2**	**+1.4**
ZRNK	**Zerenda**	**176.27**	**330**	*e*PKPab	**PKPab**	**16 13 15.2**	**+1.4**

CSEM ***11*** *15:52:02.5±0.1,40˚.37N×27˚.87E, h2km, MD2.6, Error ellipse: s-maj=3.9km s-min=2.9km az=14.0*
ISK ***11*** *15:52:02.0, 40˚.36N×27˚.86E, h5km, MD2.6*
DDA ***11*** *15:52:02.7, 40˚.31N×27˚.83E, h7km, Md2.8*

ISC 11 15:52:02.5±0.9**, 40˚.35N**±0˚.03×**27˚.87E**±0˚.02**, h5**km±6km, **n37,** σ0°**58**/44**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDC	**Edincik**	**0.01**	**207**	*e*PG	**Pg**	**15 52 03.1**	**-0.3**
EDC	**Edincik**	**0.01**	**207**	*e*Pg	**Pg**	**15 52 03.1**	**-0.3**
MRMT	**Marmara Adasi**	**0.33**	**321**	*e*PG	**Pg**	**15 52 09.0**	**+0.2**
MRMT	**Marmara Adasi**	**0.33**	**321**	*e*Pg	**Pg**	**15 52 09.0**	**+0.2**
GONE	**Gonen-Balikesi**	**0.33**	**204**	*e*PG	**Pg**	**15 52 09.6**	**+0.7**
GONE	**Gonen-Balikesi**	**0.33**	**204**	*e*Pg	**Pg**	**15 52 09.6**	**+0.7**
KCTX	**Karacabey (Bur**	**0.38**	**103**	*e*PG	**Pg**	**15 52 09.6**	**-0.3**
KCTX				*e*SG	**Sg**	**15 52 15.6**	**+0.6**
KCTX	**Karacabey (Bur**	**0.38**	**103**	*e*Pg	**Pg**	**15 52 09.6**	**-0.3**
KCTX				*e*Sg	**Sg**	**15 52 15.6**	**+0.6**
KRBG	**Karabiga-Canak**	**0.44**	**276**	*e*PG	**Pg**	**15 52 10.3**	**-0.6**
KRBG	**Karabiga-Canak**	**0.44**	**276**	*e*Pg	**Pg**	**15 52 10.3**	**-0.6**
RKY	**Sarkoy-Tekirda**	**0.62**	**303**	*e*PG	**Pg**	**15 52 14.4**	**-0.1**
RKY	**Sarkoy-Tekirda**	**0.62**	**303**	*e*Pg	**Pg**	**15 52 14.4**	**-0.1**
BALB	**Balikesir**	**0.71**	**179**	*e*PG	**Pg**	**15 52 15.9**	**-0.2**
BALB	**Balikesir**	**0.71**	**179**	*e*Pg	**Pg**	**15 52 15.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**0.78**	**88**	*e*PG	**Pg**	**15 52 16.5**	**-0.9**
MDNY	**Mudanya-Bursa**	**0.78**	**88**	*e*Pg	**Pg**	**15 52 16.5**	**-0.9**
ARMT	**Armutlu**	**0.79**	**74**	*e*PG	**Pg**	**15 52 18.1**	**+0.5**
ARMT	**Armutlu**	**0.79**	**74**	*e*Pg	**Pg**	**15 52 18.1**	**+0.5**
LPK	**Lapseki**	**0.85**	**272**	*e*PG	**Pb**	**15 52 19.3**	**-0.3**
LPK	**Lapseki**	**0.85**	**272**	*e*Pg	**Pb**	**15 52 19.3**	**-0.3**
CTKS	**Kestanelik-??a**	**1.01**	**29**	*e*PG	**Pg**	**15 52 22.0**	**+0.2**
CTKS	**Kestanelik-??a**	**1.01**	**29**	*e*Pg	**Pg**	**15 52 22.0**	**+0.2**
KESN	**Edirne-Kesan**	**1.02**	**298**	*i* P	**Pb**	**15 52 22.8**	**-0.1**
KESN				*i* S	**Sb**	**15 52 37.5**	**+0.8**
KESN	**Edirne-Kesan**	**1.02**	**298**	P	**Pb**	**15 52 22.8**	**-0.1**
KESN				S	**Sb**	**15 52 37.5**	**+0.8**
IGD	**Bursa**	**1.02**	**94**	*i* P	**Pg**	**15 52 21.1**	**-1.0**
IGD				*i* S	**Sn**	**15 52 37.6**	**-0.6**
BGKT	**Bogazkoy**	**1.08**	**39**	*e*PG	**Pg**	**15 52 23.1**	**0.0**
BGKT	**Bogazkoy**	**1.08**	**39**	*e*Pg	**Pg**	**15 52 23.1**	**0.0**
IZI	**Iznik**	**1.23**	**90**	*e*PN	**Pg**	**15 52 26.2**	**+0.2**
IZI	**Iznik**	**1.23**	**90**	*e*Pn	**Pg**	**15 52 26.2**	**+0.2**
KLYT	**Kilyos**	**1.27**	**44**	*e*PN	**Pb**	**15 52 26.9**	**+0.2**
KLYT	**Kilyos**	**1.27**	**44**	*e*Pn	**Pb**	**15 52 27.0**	**+0.2**
DEMI	**Demirci**	**1.46**	**153**	*i* P	**Pb**	**15 52 30.1**	**-0.1**
DEMI				*i* S	**Sg**	**15 52 50.8**	**+1.4**
DEMI	**Demirci**	**1.46**	**153**	P	**Pb**	**15 52 30.1**	**-0.1**
DEMI				S	**Sg**	**15 52 50.8**	**+1.4**
ALN	**Alexandroupoli**	**1.49**	**292**	*e*PN	**Pn**	**15 52 28.9**	**-0.9**
ALN	**Alexandroupoli**	**1.49**	**292**	*e*Pn	**Pn**	**15 52 29.0**	**-0.9**
MANT	**Manisa**	**1.93**	**164**	*i* P	**Pb**	**15 52 37.9**	**-0.4**
MANT	**Manisa**	**1.93**	**164**	P	**Pb**	**15 52 37.9**	**-0.4**

ISCJB ***11*** *15:56:24.2±0.6,50˚.0S±0˚.1×114˚.1W±0˚.2, h10km, mb4.5/13, Error ellipse: s-maj=19.9km s-min=13.8km az=33.0*
IDC ***11*** *15:56:24.0±0.7,49˚.90S×114˚.21W, h0km, mb4.3/10, mb1 4.5/10, mb1mx4.3/35, mbtmp4.3/10, Error ellipse: s-maj=32.7km s-min=18.0km az=140.0*
NEIC ***11*** *15:56:25.6±0.5,49˚.88S×114˚.15W, h10km, mb4.6/1, Error ellipse: s-maj=18.2km s-min=12.9km az=127.0*
GCMT ***11*** *15:56:25.6±0.3,49˚.87S×114˚.11W, h19kmc 1km, MW5.3/74, Moment Tensor Solution. s24,c33; s74,c118; Duration: 1s1 Moment tensor: Scale 10^17Nm; Mrr-0.11±.04; Mθθ0.39±.04; Mφφ-0.28±.04; Mrθ-0.07±.07; Mrφ0.83±.03; Mθφ0.52±.09; Best double couple: M0 1.04300×10^17 NP1:φs193.0000°, δ81.0000°, λ-151.0000°. NP2: φs98.0000°, δ62.0000°, λ-10.0000°. Principal axes: T 1.0070, Plg13.0000°, Azm323.0000°; N 0.0700, Plg60.0000°, Azm209.0000°; P -1.0780, Plg26.0000°, Azm59.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 11 15:56:25.7±0.7**, 49˚.9S**±0˚.1×**114˚.2W**±0˚.2**, h10**km**, n37,** σ1°**14**/18**, mb4.6**/13**, 2D, Southern East Pacific Rise**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMSA	**Palmer Station** 41nm,0.8s	**29.92**	**139**	*e*P	**P**	**16 02 32.8**	**-0.5**
RKT	**Rikitea** 4μm,27.5s,baz=149	**31.30**	**321**	*e*LR	LR	16 10 57.7	
RKT	**Rikitea** 3.7nm,0.2s	**31.30**	**321**	*e*T	T	16 35 10.7	
TBI	**Tubuai** 2μm,28.2s,baz=144	**38.21**	**301**	*e*LR	LR	16 13 59.8	
QSPA	**South Pole Qui** 60nm,1.1s	**40.34**	**180**	*e*P	**P**	**16 04 03.8**	**+0.7**
VNDA	**Vanda** 1.4nm,1.0s,baz=100,slow=6.3,SNR=2.3	**40.64**	**199**	P	**P**	**16 04 05.3**	**0.0**
MEH	**Mehetia** 39nm,0.3s	**41.93**	**307**	*e*T	T	16 48 37.9	
TVO	**Taravao** 2.6nm,0.3s	**42.62**	**306**	*e*T	T	16 49 20.0	
TIAR	**Tiarei** 3.3nm,0.3s	**42.86**	**306**	*e*T	T	16 49 32.8	
PPT2	**Papeete2** 3μm,27.0s	**42.95**	**306**	*e*LQ	LQ	16 14 16.2	
PPT2	3μm,27.5s,baz=146			*e*LR	LR	16 16 10.4	
PPT2	**Papeete2** 5.1nm,0.2s	**42.95**	**306**	*e*T	T	16 49 38.7	
VAH	**Vaihoa** 13nm,0.3s	**43.94**	**310**	*e*T	T	16 50 41.2	
LVC	**Limon Verde** 42nm,1.0s,baz=223,slow=7.9,SNR=7.2	**44.56**	**69**	P	**P**	**16 04 38.3**	**+0.2**
TAOE	**Nuku Hiva Isla** 3μm,26.3s	**46.26**	**323**	*e*LR	LR	16 17 57.0	
CPUP	**Villa Florida** 4.5nm,1.1s,baz=245,slow=7.9,SNR=5.6	**49.14**	**83**	P	**P**	**16 05 12.9**	**-0.6**
LPAZ	**La Paz** 13nm,1.0s,baz=248,slow=5.0,SNR=12	**49.90**	**65**	P	**P**	**16 05 20.7**	**+0.6**
SYO	**Syowa Base**	**59.86**	**169**	*e*P	**P**	**16 06 29.0**	**-1.8**
SYO	**Syowa Base**	**59.86**	**169**	*e*sP	**P**	**16 06 33.6**	**+2.8**
MAW	**Mawson** 3.3nm,0.8s,baz=135,slow=3.8,SNR=4.3	**62.84**	**179**	P	**P**	**16 06 51.2**	**+0.3**
STKA	**Stephens Creek** 3.9nm,1.1s,baz=187,slow=8.1,SNR=3.8	**74.63**	**239**	P	**P**	**16 08 05.6**	**+0.6**
TXAR	**Lajitas Array** 0.8nm,0.8s,baz=190,slow=9.2,SNR=2.3	**79.39**	**9**	P	**P**	**16 08 33.2**	**+1.5**
JCT	**Junction City** 4.5nm,0.7s	**81.00**	**13**	*e*P	**P**	**16 08 40.6**	**+0.3**
ASAR	**Alice Springs** 4.4nm,0.9s,baz=145,slow=4.2,SNR=24	**85.27**	**239**	P	**P**	**16 09 01.4**	**-1.4**
H01W1	**Cape Leeuwin H** baz=150,slow=76,SNR=58	**85.39**	**218**	T	T	17 44 07.8	
H01W2	**Cape Leeuwin H** baz=150,slow=76,SNR=77	**85.40**	**218**	T	T	17 44 08.4	
H01W3	**Cape Leeuwin H** baz=150,slow=76,SNR=51	**85.41**	**218**	T	T	17 44 09.0	
WRA	**Warramunga Arr** 3.1nm,1.2s,baz=148,slow=3.6,SNR=6.1	**87.98**	**241**	P	**P**	**16 09 15.2**	**-0.9**
PDAR	**Pinedale Array** 0.2nm,0.4s,baz=120,slow=5.3,SNR=3.0	**92.34**	**3**	P	**P**	**16 09 35.3**	**-0.6**
H11S2	**WAKE ISLAND Hy** baz=141,slow=76,SNR=51	**97.16**	**290**	T	T	17 58 02.8	
H11S3	**WAKE ISLAND Hy** baz=141,slow=76,SNR=48	**97.18**	**290**	T	T	17 58 05.6	
H11S1	**WAKE ISLAND Hy** baz=141,slow=76,SNR=49	**97.18**	**290**	T	T	17 58 02.8	
H11N3	**WAKE ISLAND Hy** baz=142,slow=75,SNR=39	**97.98**	**291**	T	T	17 59 14.9	
H11N1	**WAKE ISLAND Hy** baz=142,slow=75,SNR=21	**97.99**	**291**	T	T	17 59 16.5	
H11N2	**WAKE ISLAND Hy** baz=142,slow=75,SNR=29	**98.00**	**291**	T	T	17 59 15.9	
GERES	**GERESS Array B** 0.6nm,0.6s,baz=204,slow=2.9,SNR=5.3	**146.58**	**71**	PKPbc	**PKPdf**	**16 16 04.0**	**-1.0**
SONM	**Songino Array** 0.6nm,0.7s,baz=121,slow=2.4,SNR=4.3	**153.47**	**281**	PKPbc	**PKPbc**	**16 16 24.0**	**+0.3**
BRTR	**Keskin Array B** 2.5nm,1.0s,baz=198,slow=2.9,SNR=6.5	**155.17**	**102**	PKPab	**PKPab**	**16 16 43.6**	**0.0**

ISCJB ***11*** *16:02:18.5±0.7,45˚.5N±0˚.1×27˚.9W±0˚.1, h14km, mb3.8/15, MS3.9/9, Error ellipse: s-maj=20.7km s-min=9.9km az=6.3*

IDC ***11*** *16:02:18.1±0.8,45˚.50N×27˚.91W, h0km, mb3.8/14, mb1 3.9/16, mb1mx3.8/60, mbtmp3.7/16, ML4.1/2, MS4.0/11, Ms1 4.0/11, ms1mx3.6/47, Error ellipse: s-maj=25.8km s-min=15.9km az=9.0*
NEIC ***11*** *16:02:19.6±0.4,45˚.48N×27˚.92W, h10km, mb4.6/1, Error ellipse: s-maj=13.2km s-min=7.3km az=186.0*
CSEM ***11*** *16:02:19.6,45˚.48N×27˚.92W, h10km, mb4.6/1*

ISC 11 16:02:20.2±0.8**, 45˚.5N**±0˚.2×**27˚.90W**±0˚.09**, h14**km**, n36,** σ0°**66**/26**, mb3.8**/15**, MS3.8**/9**, Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EKA	**Eskdalemuir Ar** baz=249,slow=11,SNR=7.4	**18.50**	**49**	P	**Pn**	**16 06 35.9**	**0.0**
ESDC	**Sonseca Array** 0.3nm,0.3s,baz=302,slow=12,SNR=4.8	**18.53**	**100**	P	**Pn**	**16 06 36.4**	**0.0**
ESDC	comp=Z,279nm,18.7s,baz=290,slow=33			LR	LR	16 12 32.6	
BORG	**Borgarnes** comp=Z,117nm,18.3s,baz=256,slow=31	**19.65**	**8**	LR	LR	16 12 22.0	
MDT	**Midelt** comp=Z,163nm,21.3s,baz=338,slow=32	**21.96**	**117**	LR	LR	16 13 53.3	
SFJD	**Kangerlussuaq** comp=Z,300nm,20.1s,baz=144,slow=31	**24.70**	**339**	LR	LR	16 15 10.5	
DAVOX	**Dados/Dischmat** comp=Z,230nm,18.3s,baz=248,slow=34	**26.05**	**73**	LR	LR	16 17 16.3	
SCHQ	**Schefferville** 2.2nm,0.8s,baz=84,slow=16,SNR=3.0	**26.33**	**305**	P	**P**	**16 07 55.2**	**-0.1**
SCHQ	comp=Z,311nm,18.9s,baz=90,slow=32			LR	LR	16 16 33.7	
KHC	**Kasperske Hory**	**28.11**	**67**	*e*P	**P**	**16 08 12.7**	**+1.3**
GERES	**GERESS Array B** 0.3nm,0.6s,baz=268,slow=9.6,SNR=2.6	**28.23**	**68**	P	**P**	**16 08 13.5**	**+0.9**
FRB	**Frobisher Bay** 2.6nm,0.8s,baz=117,slow=6.8,SNR=3.1	**29.08**	**323**	P	**P**	**16 08 20.2**	**+0.4**
FRB	comp=Z,198nm,19.6s,baz=64,slow=30			LR	LR	16 17 03.8	
KEST	**Kesra** comp=Z,267nm,21.8s,baz=285,slow=33	**29.68**	**96**	LR	LR	16 18 40.8	
VRAC	**Vranov** comp=Z,364nm,18.6s,baz=202,slow=35	**30.03**	**66**	LR	LR	16 19 54.2	
FINES	**FINESS Array B** 1.4nm,0.7s,baz=235,slow=4.9,SNR=4.6	**34.71**	**43**	P	**P**	**16 09 08.8**	**-0.5**
MLR	**Muntele Rosu** 0.6nm,1.0s,baz=290,slow=5.8,SNR=2.4	**37.15**	**70**	P	**P**	**16 09 31.8**	**+1.3**
AKASG	**Malin Array Be** 0.7nm,0.5s,baz=280,slow=8.3,SNR=3.7	**37.69**	**61**	P	**P**	**16 09 34.6**	**-0.2**
TORD	**Torodi Ar. Bea** 1.6nm,0.7s,baz=331,slow=8.0,SNR=10	**40.84**	**133**	P	**P**	**16 10 01.2**	**-0.3**
TORD	comp=Z,345nm,18.1s,baz=325,slow=35			LR	LR	16 25 54.9	
MIAR	**Mount Ida** 7.3nm,0.9s	**50.18**	**282**	*e*P	**P**	**16 11 15.2**	**-0.1**
MIAR	**Mount Ida** 7.3nm,0.9s	**50.18**	**282**	*e*P	**P**	**16 11 15.2**	**-0.1**
H10N2	**ASCENSION HYDR** baz=349,slow=75,SNR=8.3	**54.42**	**164**	T	T	17 10 09.9	
H10N3	**ASCENSION HYDR** baz=349,slow=75,SNR=7.9	**54.43**	**164**	T	T	17 10 10.4	
H10N1	**ASCENSION HYDR** baz=349,slow=75,SNR=8.9	**54.44**	**164**	T	T	17 10 10.8	
AKTO	**Aktyubinsk** 0.5nm,0.5s,baz=259,slow=5.2,SNR=2.8	**54.66**	**51**	P	**P**	**16 11 47.7**	**-0.6**
H10S1	**ASCENSION HYDR** baz=350	**55.47**	**164**	T	T	17 11 36.3	
H10S3	**ASCENSION HYDR** baz=350,slow=74,SNR=4.1	**55.48**	**164**	T	T	17 11 36.6	
H10S2	**ASCENSION HYDR** baz=350,slow=74,SNR=3.6	**55.49**	**164**	T	T	17 11 35.1	
PDAR	**Pinedale Array** 1.1nm,0.9s,baz=60,slow=5.3,SNR=4.9	**56.22**	**299**	P	**P**	**16 11 59.9**	**-0.1**
TXAR	**Lajitas Array** 0.8nm,0.7s,baz=67,slow=6.9,SNR=7.3	**60.17**	**283**	P	**P**	**16 12 27.9**	**+0.3**
ILAR	**Eielson Array** 0.3nm,0.6s,baz=40,slow=7.1,SNR=3.4	**60.26**	**334**	P	**P**	**16 12 27.9**	**+0.3**
ZALV	**Zalesovo Beam** 0.3nm,0.4s,baz=343,slow=4.5,SNR=2.5	**65.63**	**37**	P	**P**	**16 13 03.7**	**+0.2**
MKAR	**Makanchi Array** 0.3nm,0.4s,baz=337,slow=7.0,SNR=3.1	**69.54**	**43**	P	**P**	**16 13 28.9**	**+0.6**
MKAR				PP	**PP**	**16 16 00.7**	**-0.8**
SONM	**Songino Array** 0.1nm,0.3s,baz=346,slow=5.2,SNR=3.2	**78.80**	**29**	P	**P**	**16 14 22.9**	**+0.4**
VNDA	**Vanda** 1.6nm,1.0s,baz=238,slow=3.2,SNR=5.8	**147.62**	**184**	PKPbc	**PKPbc**	**16 22 03.4**	**+0.8**
WRA	**Warramunga Arr** 0.6nm,0.5s,baz=331,slow=2.2,SNR=10	**150.60**	**36**	PKPbc	**PKPbc**	**16 22 11.0**	**-0.8**
WRA	0.8nm,0.5s,baz=336,slow=4.6,SNR=11			PKPab	**PKPab**	**16 22 17.7**	**-0.9**
ASAR	**Alice Springs** 0.4nm,0.6s,baz=347,slow=2.0,SNR=7.9	**153.70**	**40**	PKPbc	**PKPbc**	**16 22 17.7**	**-1.0**
ASAR	0.6nm,0.6s,baz=332,slow=3.6,SNR=13			PKPab	**PKPab**	**16 22 30.9**	**-0.5**
ASAR	**Alice Springs**	**153.70**	**40**	PKPab	**PKPab**	**16 22 31.0**	**-0.5**

NEIC ***11*** *16:02:42.0±0.3, 15˚.73N×92˚.31W, mb4.6/83, MD4.4(MEX), Error ellipse: s-maj=6.7km s-min=4.4km az=216.0*
IDC ***11*** *16:02:41.1±0.7, 15˚.74N×92˚.49W, h186km±6km, mb3.9/12, mb1 4.1/12, mb1mx3.7/44, mbtmp4.4/12, Error ellipse: s-maj=18.6km s-min=9.1km az=45.0*
MEX ***11*** *16:02:44.4±0.6, 15˚.64N×92˚.65W, h184km±7km, MD4.4*

ISC 11 16:02:41.8±0.4**, 15˚.71N**±0˚.06×**92˚.50W**±0˚.05**, h200**km**, n413,** σ1°**47**/433**, mb4.4**/64**, Mexico-Guatemala border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**1.22**	**331**	*e*P	**Pn**	**16 03 12.8**	**-0.3**
TGIG				*i* S	**Sn**	**16 03 35.4**	**-2.3**
TGIG		**1.22**	**331**	*e*P	**Pn**	**16 03 12.8**	**-0.3**
TGIG				*i* S	**Sn**	**16 03 35.4**	**-2.3**
CMIG	**Matias Romero** 576nm,0.3s,baz=103,slow=7.7,SNR=4965	**2.67**	**301**	P	**Pn**	**16 03 26.9**	**-0.6**
CMIG	201nm,0.3s,baz=324,slow=19,SNR=24			S	**Sn**	**16 04 00.0**	**-3.3**
TUIG	**Tuzandepetl**	**2.95**	**322**	*e*P	**Pn**	**16 03 30.1**	**-0.7**
TUIG				*e*S	**Sn**	**16 04 07.4**	**-1.9**
TUIG	**Tuzandepetl**	**2.95**	**322**	*e*P	**Pn**	**16 03 29.7**	**-1.1**
TUIG				*e*S	**Sn**	**16 04 07.4**	**-1.9**
HUIG	**Huatulco**	**3.47**	**271**	*e*P	**Pn**	**16 03 36.0**	**-1.1**
HUIG				*i* S	**Sn**	**16 04 16.2**	**-4.2**
HUIG	**Huatulco**	**3.47**	**271**	*e*P	**Pn**	**16 03 36.0**	**-1.1**
HUIG				*e*S	**Sn**	**16 04 16.8**	**-3.6**
VHO	**Vista Hermosa**	**4.28**	**289**	*e*P	**Pn**	**16 03 48.6**	**+1.3**
VHO				*e*S	**Sn**	**16 04 35.3**	**-3.5**
VHO	**Vista Hermosa**	**4.28**	**289**	*e*P	**Pn**	**16 03 48.6**	**+1.3**
VHO				*e*S	**Sn**	**16 04 35.3**	**-3.5**
TGUH	**Tegucigalpa,Un**	**5.32**	**107**	*e*Pn	**Pn**	**16 03 57.7**	**-2.5**
TPIG	**Tehuac#an**	**5.37**	**301**	*i* P	**Pn**	**16 04 01.7**	**+0.6**
TPIG				*i* S	**Sn**	**16 05 01.6**	**-2.2**
TPIG	**Tehuac#an**	**5.37**	**301**	*i* P	**Pn**	**16 04 01.7**	**+0.6**
TPIG				*i* S	**Sn**	**16 05 03.7**	**0.0**
PNIG	**Pinotepa**	**5.45**	**278**	*e*P	**Pn**	**16 04 02.7**	**+0.7**
PNIG				*e*S	**Sn**	**16 05 01.3**	**-4.1**
PNIG	**Pinotepa**	**5.45**	**278**	*e*P	**Pn**	**16 04 02.7**	**+0.7**
PNIG				*e*S	**Sn**	**16 05 01.3**	**-4.1**
TLIG	**Tlapa**	**6.10**	**288**	*i* P	**Pn**	**16 04 11.0**	**+0.5**
TLIG				*i* S	**Sn**	**16 05 17.9**	**-2.6**
TLIG	**Tlapa**	**6.10**	**288**	*e*Pn	**Pn**	**16 04 12.2**	**+1.7**
UNM	**Universidad Na**	**7.31**	**300**	*e*Pn	**Pn**	**16 04 29.5**	**+3.1**
MOIG	**Morelia**	**9.17**	**297**	*e*Pn	**Pn**	**16 04 54.4**	**+3.9**
ZAIG	**Zacatecas**	**11.81**	**308**	*e*Pn	**P**	**16 05 27.4**	**-2.3**
034A	**Hebbronville** baz=151,SNR=12	**12.67**	**334**	P	**P**	**16 05 37.1**	**-1.7**
KVTX	**Kingsville**	**12.79**	**338**	*e*Pn	**P**	**16 05 38.2**	**-1.9**
934A	**Benavides** baz=153	**13.08**	**336**	P	**P**	**16 05 41.9**	**-1.5**
933A	**Laredo** baz=150	**13.41**	**333**	P	**P**	**16 05 46.5**	**-0.5**
835A	**Beeville** baz=157	**13.45**	**339**	P	**P**	**16 05 47.6**	**+0.2**
834A	**Tilden** baz=154	**13.56**	**337**	P	**P**	**16 05 49.1**	**+0.4**
736A	**Circle Diamond** baz=161	**13.84**	**343**	P	**P**	**16 05 51.8**	**0.0**
833A	**Chaparral WMA,** baz=151,SNR=7.1	**14.08**	**334**	P	**P**	**16 05 53.9**	**-0.5**
637A	**Eagle Lake** baz=164	**14.11**	**346**	P	**P**	**16 05 53.9**	**-0.9**
832A	**Faith Ranch, C** baz=149,SNR=7.1	**14.29**	**332**	P	**P**	**16 05 58.1**	**+1.3**
636A	**Smothers Creek** baz=161,SNR=5.4	**14.33**	**344**	P	**P**	**16 05 57.2**	**0.0**
733A	**Divot King Ran** baz=152,SNR=7.9	**14.38**	**335**	P	**P**	**16 05 58.8**	**+0.9**
635A	**Leesville** baz=159	**14.45**	**341**	P	**P**	**16 05 58.3**	**-0.2**
539A	**Cross D Ranch,** baz=171	**14.47**	**352**	P	**P**	**16 05 59.2**	**+0.4**
540A	**Vidor** baz=174	**14.49**	**355**	P	**P**	**16 05 58.6**	**-0.4**
546A	**Slidell** baz=190	**14.68**	**10**	P	**P**	**16 05 59.8**	**-1.2**
537A	**Green Hill Far** baz=165	**14.72**	**347**	P	**P**	**16 06 01.2**	**-0.4**
536A	**Bastrop** baz=162	**14.90**	**344**	P	**P**	**16 06 04.4**	**+0.9**
441A	**DeRidder** baz=177	**14.98**	**358**	P	**P**	**16 06 05.4**	**+1.0**
535A	**Dale** baz=160	**14.99**	**343**	P	**P**	**16 06 04.3**	**-0.3**
633A	**Saathoff Ranch** baz=154,SNR=10	**15.00**	**337**	P	**P**	**16 06 05.7**	**+1.1**
440A	**Kirbyville** baz=174	**15.02**	**355**	P	**P**	**16 06 05.1**	**+0.2**
438A	**Sam Houston St** baz=168	**15.21**	**350**	P	**P**	**16 06 07.0**	**0.0**
534A	**Blanco** baz=157,SNR=7.3	**15.27**	**340**	P	**P**	**16 06 09.0**	**+1.4**
446A	**Poplarville** baz=191	**15.28**	**10**	P	**Pn**	**16 06 06.2**	**-1.2**
436A	**Wall Ranch, Ga** baz=164	**15.50**	**346**	P	**P**	**16 06 10.3**	**+0.2**
533A	**Kerrville** baz=155,SNR=13	**15.50**	**338**	P	**P**	**16 06 11.9**	**+1.7**
341A	**Kurthwood** baz=177	**15.56**	**358**	P	**P**	**16 06 10.8**	**-0.1**
342A	**Flagon Creek P** baz=180	**15.59**	**1**	P	**P**	**16 06 11.2**	**+0.1**
339A	**Huntington** baz=172	**15.66**	**353**	P	**Pn**	**16 06 12.8**	**+0.8**
340A	**Bronson** baz=174	**15.68**	**356**	P	**Pn**	**16 06 12.8**	**+0.5**
345A	**Thompson Farm,** baz=188	**15.69**	**8**	P	**Pn**	**16 06 12.6**	**+0.3**
344A	**Westbrook Farm** baz=186	**15.75**	**6**	P	**Pn**	**16 06 13.7**	**+0.6**
338A	**Crockett** baz=169	**15.78**	**351**	P	**Pn**	**16 06 14.7**	**+1.2**
337A	**Centerville** baz=167	**15.84**	**349**	P	**Pn**	**16 06 15.4**	**+1.2**
346A	**Big Creek Wild** baz=190	**15.85**	**10**	P	**Pn**	**16 06 14.3**	**0.0**
434A	**Burnet** baz=159,SNR=5.2	**15.93**	**342**	P	**Pn**	**16 06 16.0**	**+0.7**
347A	**Saraland** baz=193	**16.03**	**12**	P	**Pn**	**16 06 16.5**	**+0.1**
NATX	**Nacogdoches** baz=172	**16.10**	**353**	P	**Pn**	**16 06 17.3**	**+0.1**
NATX	**Nacogdoches** 18nm,0.8s	**16.10**	**353**	*e*P	**Pn**	**16 06 16.9**	**-0.3**
336A	**Riesel** baz=164	**16.10**	**346**	P	**Pn**	**16 06 17.1**	**-0.1**
335A	**Moody** baz=162	**16.14**	**345**	P	**Pn**	**16 06 18.0**	**+0.3**
433A	**Art** baz=156,SNR=12	**16.14**	**339**	P	**Pn**	**16 06 19.0**	**+1.2**
JCT	**Junction City** baz=153,SNR=5.6	**16.15**	**337**	P	**Pn**	**16 06 18.8**	**+0.9**
JCT	**Junction City** 25nm,0.6s	**16.15**	**337**	*e*P	**Pn**	**16 06 18.9**	**+0.9**
241A	**Mo Tay, Goldon** baz=178	**16.24**	**359**	P	**Pn**	**16 06 17.8**	**-1.2**
242A	**Grayson** baz=180	**16.28**	**1**	P	**Pn**	**16 06 18.5**	**-0.9**
240A	**Hunter Patters** baz=175	**16.29**	**356**	P	**Pn**	**16 06 17.9**	**-1.0**
239A	**Gary** baz=173	**16.33**	**354**	P	**Pn**	**16 06 21.1**	**+1.1**
244A	**Avery, Jackson** baz=186,SNR=5.7	**16.34**	**5**	P	**Pn**	**16 06 19.4**	**-0.7**
238A	**Jacksonville** baz=170	**16.39**	**352**	P	**Pn**	**16 06 21.4**	**+0.6**
334A	**Lometa** baz=160,SNR=12	**16.41**	**342**	P	**Pn**	**16 06 21.2**	**+0.2**
245A	**Little AP, Sta** baz=176	**16.42**	**8**	P	**Pn**	**16 06 21.0**	**0.0**
VBMS	**Vicksburg** baz=186	**16.53**	**6**	P	**Pn**	**16 06 22.4**	**0.0**
VBMS	**Vicksburg** 46nm,0.6s	**16.53**	**6**	*e*P	**Pn**	**16 06 22.8**	**+0.4**
HPIG	36nm,1.0s	**16.57**	**315**	*e*P	**Pn**	**16 06 25.0**	**+1.8**
333A	**Richland Sprin** baz=157,SNR=9.3	**16.63**	**340**	P	**Pn**	**16 06 23.8**	**+0.2**
247A	**Quitman** baz=192	**16.65**	**12**	P	**Pn**	**16 06 22.9**	**-0.9**
141A	**Papa Simpson,** baz=178	**16.82**	**359**	P	**Pn**	**16 06 25.7**	**-0.2**
WHTX	**Lake Whitney,** baz=163	**16.82**	**345**	P	**Pn**	**16 06 26.3**	**+0.3**
WHTX	**Lake Whitney,** 24nm,1.2s	**16.82**	**345**	*e*P	**Pn**	**16 06 25.9**	**0.0**
248A	**Dixon Mills** baz=195	**16.87**	**14**	P	**Pn**	**16 06 26.0**	**-0.5**
140A	**Cam and Jess,** baz=176	**16.88**	**357**	P	**Pn**	**16 06 27.3**	**+0.7**
143A	**Socs Landing,** baz=183	**16.95**	**3**	P	**Pn**	**16 06 27.6**	**+0.2**
139A	**Bunkhouse Ranc** baz=173	**16.98**	**355**	P	**Pn**	**16 06 28.1**	**+0.3**
234A	**Clairette** baz=161,SNR=11	**17.01**	**343**	P	**Pn**	**16 06 28.8**	**+0.6**
TX31	**Lajitas Ar. Si**	**17.02**	**325**	*e*P	**Pn**	**16 06 30.2**	**+1.8**
TXAR	**Lajitas Array** 1.1nm,0.3s,baz=154,slow=12,SNR=111	**17.02**	**325**	P	**Pn**	**16 06 30.2**	**+1.8**
TXAR	0.1nm,0.3s,baz=216,slow=38,SNR=8.0			ScP	**ScP**	**16 14 19.3**	**+1.6**
138A	**Matatall Enter** baz=171	**17.04**	**353**	P	**Pn**	**16 06 29.0**

	53nm,0.6s								
DBBC	**Dabeiba**	18.15	117	*eP*	P	16 06 40.0	+0.5		
Z48A	**Northport**	18.15	13	P	P	16 06 39.2	+0.1		
	baz=195								
Y39A	**Lockesburg**	18.20	356	P	Pn	16 06 40.4	-1.7		
	baz=174								
Y40A	**Okolona**	18.23	358	P	Pn	16 06 40.5	-1.9		
	baz=177								
Y38A	**Idabel**	18.25	354	P	Pn	16 06 40.6	-2.0		
	baz=173								
Z34A	**Collier Ranch,**	18.25	345	P	Pn	16 06 40.9	-1.8		
	baz=163								
Y45A	**Yeager Farm, C**	18.27	8	P	Pn	16 06 41.0	-1.9		
	baz=188								
Y46A	**Houston**	18.39	10	P	Pn	16 06 42.9	-1.4		
	baz=191,SNR=9.0								
Z33A	**Whitaker Ranch**	18.39	343	P	Pn	16 06 43.7	-0.6		
	baz=160,SNR=25								
Y37A	**Hugo**	18.40	352	P	Pn	16 06 42.7	-1.8		
	baz=170								
Y36A	**Durant**	18.43	350	P	Pn	16 06 43.1	-1.7		
	baz=168								
Y35A	**Marietta**	18.57	348	P	Pn	16 06 45.5	-1.0		
	baz=166,SNR=19								
Y47A	**UCPARC, Winfie**	18.59	12	P	P	16 06 44.4	+0.4		
	baz=194,SNR=9.1								
X40A	**Basin Creek Fa**	18.70	359	P	P	16 06 45.1	0.0		
	baz=178								
X41A	**Kaden, Bauxite**	18.70	360	P	P	16 06 44.9	-0.2		
	baz=179								
X39A	**Fountain Ranch**	18.77	356	P	P	16 06 45.9	-0.1		
	baz=175								
Y34A	**Reagan Ranch,**	18.77	346	P	P	16 06 46.4	+0.4		
	baz=164,SNR=9.8								
MIAR	**Mount Ida**	18.78	357	P	Pn	16 06 46.6	-2.3		
	baz=176,SNR=14								
MIAR	**Mount Ida**	18.78	357	*eP*	P	16 06 46.3	+0.3		
	19nm,0.8s								
X44A	**Crenshaw**	18.83	6	P	P	16 06 46.8	+0.3		
	baz=186								
X37A	**Clayton**	18.97	353	P	Pn	16 06 48.9	-2.3		
	baz=171,SNR=12								
UALR	**University of**	18.98	0	*eP*	P	16 06 48.2	0.0		
	21nm,0.7s								
X38A	**Whitesboro**	18.99	354	P	Pn	16 06 49.3	-2.1		
	baz=173,SNR=21								
Y33A	**Hilltop Ranch,**	19.04	344	P	Pn	16 06 49.5	-2.4		
	baz=161,SNR=11								
X35A	**Drake**	19.04	349	P	Pn	16 06 49.5	-2.4		
	baz=166,SNR=13								
X36A	**Centrahoma**	19.09	350	P	Pn	16 06 50.3	-2.3		
	baz=168,SNR=12								
HELC	**Santa Helena**	19.15	118	*eP*	P	16 06 48.6	-1.9		
	23nm,1.0s								
W38A	**Poteau**	19.36	355	P	P	16 06 52.6	+0.4		
	baz=174								
W41B	**Gary Mavity, V**	19.38	1	P	P	16 06 51.7	-0.8		
	baz=180								
W40A	**Ferguson Farm,**	19.41	359	P	P	16 06 52.1	-0.7		
	baz=178								
X34A	**Smith Ranch, M**	19.41	347	P	P	16 06 53.0	+0.2		
	baz=164								
GOGA	**Godfrey**	19.42	23	*eP*	P	16 06 53.4	+0.4		
	20nm,0.6s								
W39A	**Magazine**	19.44	357	P	Pn	16 06 54.0	-2.7		
	baz=176,SNR=8.1								
X301	**Greenbrier Sit**	19.45	0	*eP*	Pn	16 06 55.0	-1.8		
	12nm,1.2s								
CLNB	**Carlsbad**	19.46	330	*eP*	Pn	16 06 56.4	-0.7		
WHAR	**Wooly Hollow**	19.50	1	*eP*	Pn	16 06 56.2	-1.2		
	8.8nm,0.7s								
X201	**Greenbrier Sit**	19.50	0	*eP*	Pn	16 06 55.6	-1.9		
	22nm,1.4s								
X33A	**Lawton**	19.51	345	P	P	16 06 54.2	+0.4		
	baz=162,SNR=15								
W37B	**Quinton**	19.52	353	P	P	16 06 54.6	+0.6		
	baz=171,SNR=16								
W45A	**Hickory Valley**	19.59	8	P	P	16 06 54.1	-0.6		
	baz=189								
X32A	**Elmer**	19.60	343	P	Pn	16 06 56.1	-2.7		
	baz=160,SNR=14								
W36A	**Wetumka**	19.63	351	P	P	16 06 54.8	-0.3		
	baz=169								
W35A	**Tecumseh**	19.75	349	P	P	16 06 56.3	-0.2		
	baz=167,SNR=24								
WMOK	**Wichita Mounta**	19.77	345	P	P	16 06 56.8	+0.1		
	baz=161,SNR=35								
WMOK	**Wichita Mounta**	19.77	345	*eP*	P	16 06 56.5	-0.2		
	26nm,0.9s								
MNTX	**Cornudas Mount**	19.78	326	P	Pn	16 06 58.3	-2.6		
	baz=140,SNR=48								
MNTX	**Cornudas Mount**	19.78	326	*eP*	Pn	16 06 58.3	-2.6		
	25nm,0.8s								
V41A	**Mountainview**	19.99	1	P	P	16 06 58.3	-0.8		
	baz=180,SNR=6.0								
W34A	**Bridge Creek,**	20.01	347	P	P	16 06 59.7	+0.5		
	baz=164,SNR=26								
W34A	**Bridge Creek,**	20.01	347	*eP*	P	16 06 59.4	+0.2		
	202nm,0.5s								
V40A	**Witts Springs**	20.01	359	P	P	16 06 58.5	-0.7		
	baz=179								
NORC	**Norcasia**	20.03	118	*eP*	P	16 06 58.0	-1.7		
V42A	**Cord**	20.04	3	P	P	16 06 58.6	-0.8		
	baz=183								
V39A	**Pettigrew**	20.07	357	P	P	16 07 00.1	+0.2		
	baz=176,SNR=7.4								
W33A	**Caddo, Fort Co**	20.08	346	P	P	16 07 00.5	+0.5		
	baz=163,SNR=21								
V38A	**Canehill**	20.14	355	P	P	16 07 00.3	-0.3		
	baz=174,SNR=7.9								
V44A	**Blytheville**	20.17	6	P	P	16 07 00.1	-0.8		
	baz=187								
V37A	**Hulbert**	20.23	354	P	P	16 07 01.2	-0.3		
	baz=172,SNR=16								
V36A	**Jenks**	20.23	352	P	P	16 07 00.9	-0.6		
	baz=170								
W32A	**Sentinel**	20.25	344	P	P	16 07 02.4	+0.5		
	baz=160,SNR=27								
SWET	**Sewanee**	20.30	16	*eP*	P	16 07 01.4	-0.9		
	3.4nm,0.9s								
TUL1	**Leonard**	20.33	352	P	P	16 07 02.3	-0.3		
	baz=170								
TUL1	**Leonard**	20.33	352	*eP*	P	16 07 02.9	+0.3		
	18nm,0.5s								
V35A	**Meyer Ranch, C**	20.34	350	P	P	16 07 02.3	-0.4		
	baz=167,SNR=7.0								
MSTX	**Muleshoe**	20.40	335	P	P	16 07 04.1	+0.6		
	baz=150,SNR=21								
MSTX	**Muleshoe**	20.40	335	*eP*	P	16 07 04.0	+0.4		
	26nm,0.5s								
HHAR	**Hobbs**	20.52	357	*eP*	P	16 07 05.2	+0.5		
	15nm,0.5s								
V34A	**Guthrie**	20.53	348	P	P	16 07 04.4	-0.3		
	baz=166,SNR=14								
V34A	**Guthrie**	20.53	348	*eP*	P	16 07 04.5	-0.3		
	70nm,0.6s								
U41A	**Viola**	20.55	1	P	P	16 07 04.8	-0.2		
	baz=181								
U40A	**Yellville**	20.56	359	P	P	16 07 04.5	-0.6		
	baz=178								
U42A	**Revenden**	20.59	3	P	P	16 07 04.6	-0.7		
	baz=183								
U39A	**Green Forest**	20.60	358	P	P	16 07 04.7	-0.9		
	baz=177								
CMBC	**Cumbal**	20.62	134	*eP*	Pn	16 07 11.2	-0.7		
V33A	**Lossen Ranch,**	20.68	347	P	P	16 07 06.0	-0.4		
	baz=164,SNR=12								
OTAV	**Otavalo**	20.71	137	*eP*	P	16 07 07.1	-0.2		
	35nm,1.4s								
U38A	**Gravette**	20.71	356	P	P	16 07 06.5	-0.2		
	baz=174,SNR=7.1								
U37A	**Salina**	20.74	354	P	P	16 07 06.3	-0.7		
	baz=172,SNR=13								
WVT	**Waverly**	20.76	11	*eP*	P	16 07 06.0	-1.1		
	6.1nm,0.8s								
V32A	**Arapaho**	20.77	345	P	P	16 07 07.2	-0.2		
	baz=162,SNR=11								
AMTX	**Amarillo**	20.79	338	P	P	16 07 07.9	+0.2		
	baz=154								
AMTX	**Amarillo**	20.79	338	*eP*	P	16 07 08.2	+0.6		
	75nm,1.0s								
U36A	**Oologah**	20.80	353	P	P	16 07 07.2	-0.4		
	baz=171								
ROSC	**El Rosal**	20.88	119	P	P	16 07 08.0	-1.0		
	6.5nm,0.3s,baz=256,slow=8.3,SNR=3.3								
CPCT	**Cooper Cave**	20.91	19	*eP*	P	16 07 08.6	-0.2		
	3.2nm,0.7s								
U35A	**Pawnee**	20.92	350	P	P	16 07 07.6	-1.3		
	baz=168								
BARC	**Barichara**	20.99	113	*eP*	P	16 07 08.5	-1.7		
PRAC	**Prado**	21.04	123	*eP*	P	16 07 10.6	+0.2		
PRAC	**Prado**	21.04	123	*eP*	P	16 07 10.4	+0.1		
	39nm,0.6s								
PBMO	**Poplar Bluff**	21.06	5	*eP*	P	16 07 08.7	-1.7		
	12nm,0.8s								
JSC	**Jenkinsville**	21.08	27	*eP*	P	16 07 11.4	+0.8		
	10nm,0.6s								
U34A	**Anderson Ranch**	21.12	349	P	P	16 07 09.9	-1.1		
	baz=166								
U34A	**Anderson Ranch**	21.12	349	*eP*	P	16 07 09.8	-1.3		
	30nm,1.0s								
U33A	**Lingo Farm, Me**	21.23	347	P	P	16 07 11.4	-0.8		
	baz=164								
T39A	**Clever**	21.24	358	P	P	16 07 12.0	-0.3		
	baz=177,SNR=7.1								
T38A	**Diamond**	21.30	356	P	P	16 07 11.5	-1.4		
	baz=175								
TKL	**Tuckaleechee C**	21.34	20	P	P	16 07 13.2	-0.2		
	5.1nm,0.6s,baz=189,slow=11,SNR=7.1								
TKL	**Tuckaleechee C**	21.34	20	*eP*	P	16 07 14.2	+0.9		
	13nm,0.6s								
T40A	**Mansfield**	21.35	360	P	P	16 07 13.0	-0.5		
	baz=179,SNR=5.8								
T35A	**Sooner Cattle**	21.42	351	P	P	16 07 13.2	-0.9		
	baz=169,SNR=6.5								
T37A	**Cheneyville 18**	21.43	355	P	P	16 07 13.6	-0.7		
	baz=173,SNR=22								
T36A	**Boggs Farm, Ca**	21.47	353	P	P	16 07 13.4	-1.2		
	baz=171,SNR=5.5								
CHIC	**Chingaza**	21.48	119	*eP*	P	16 07 14.4	-1.0		
T34A	**McClaskey Farm**	21.63	350	P	P	16 07 15.2	-1.1		
	baz=167,SNR=16								
121A	**Cookes Peak, D**	21.75	323	P	P	16 07 20.5	+2.8		
	baz=136,SNR=10								
121A	**Cookes Peak, D**	21.75	323	*eP*	P	16 07 20.2	+2.4		
	31nm,1.1s								
KMSC	**Kings Mountain**	21.79	25	P	P	16 07 17.9	0.0		
	baz=210,SNR=7.0								
KMSC	**Kings Mountain**	21.79	25	*eP*	P	16 07 18.4	+0.6		
	35nm,1.3s								
319A	**Douglas**	21.86	318	*eP*	P	16 07 21.6	+2.9		
	12nm,0.9s								
S38A	**Stockton**	21.87	357	P	P	16 07 17.4	-1.3		
	baz=176,SNR=13								
T33A	**Patterson Ranc**	21.89	348	P	P	16 07 17.9	-1.0		
	baz=165								
S39A	**Bolivar**	21.90	358	P	P	16 07 17.9	-1.1		
	baz=177,SNR=12								
S37A	**Fort Scott**	22.06	355	P	P	16 07 19.4	-1.0		
	baz=174,SNR=7.3								
S36A	**Lake Cedric, C**	22.09	353	P	P	16 07 19.8	-1.0		
	baz=172,SNR=5.4								
SIUC	**Southern Illin**	22.11	7	*eP*	P	16 07 20.6	-0.3		
	45nm,1.3s								
T32A	**Huddler Ranch,**	22.13	346	P	P	16 07 21.1	-0.1		
	baz=163,SNR=10								
S35A	**Otter Creek Ra**	22.14	352	P	P	16 07 20.4	-0.8		
	baz=170,SNR=5.9								
S45A	**Carrier Mills**	22.15	8	P	P	16 07 19.4	-1.9		
	baz=190								
TZTN	**Tazewell**	22.23	19	*eP*	P	16 07 21.9	-0.2		
	40nm,0.9s								
S34A	**Willow Spring**	22.28	350	P	P	16 07 21.0	-1.6		
	baz=168								
S33A	**Kaszmaul Farm,**	22.33	348	P	P	16 07 21.9	-1.1		
	baz=166								
BNM	**Barren Site**	22.34	328	*eP*	P	16 07 25.6	+2.2		
SDV	**Santo Domingo**	22.41	105	P	P	16 07 22.9	-1.3		
	9.4nm,0.5s,baz=298,slow=8.3,SNR=3.8								
SDV	**Santo Domingo**	22.41	105	*eP*	P	16 07 22.4	-1.8		
	11nm,0.8s								
R38A	**Fenwick Farm,**	22.42	357	P	P	16 07 22.9	-0.9		
	baz=176,SNR=7.2								
LPM	**Los Pinos Moun**	22.47	328	*eP*	P	16 07 26.9	+2.4		
R40A	**Maddies Statio**	22.49	0	P	P	16 07 22.5	-2.0		
	baz=180								
R39A	**Chumby, Stover**	22.52	359	P	P	16 07 22.0	-2.7		
	baz=178,SNR=7.3								
USIN	**University of**	22.57	10	*eP*	P	16 07 25.1	-0.2		
	18nm,0.4s								
R37A	**Teagarden Farm**	22.61	355	P	P	16 07 24.2	-1.3		
	baz=174								
S32A	**Newby Ranch, P**	22.63	347	P	P	16 07 26.1	+0.3		
	baz=163,SNR=5.0								
R36A	**Gordon, Harris**	22.68	354	P	P	16 07 25.4	-0.8		
	baz=172								
R35A	**Emporia Munici**	22.76	352	P	P	16 07 26.3	-0.6		
	baz=170								
LAZ	**Ladron**	22.80	327	*eP*	P	16 07 30.3	+2.7		
ANMO	**Albuquerque**	22.88	329	P	P	16 07 28.0	-0.3		
	baz=143								
ANMO	**Albuquerque**	22.88	329	*eP*	P	16 07 30.4	+2.1		
	4.4nm,0.8s								
R34A	**Isabella, Hill**	22.89	350	P	P	16 07 28.2	+0.1		
	baz=168,SNR=7.5								
R33A	**Olander Ranch,**	23.02	349	P	P	16 07 29.0	-0.3		
	baz=166								
WCI	**Wyandotte Cave**	23.09	13	*eP*	P	16 07 29.0	-0.9		
	14nm,0.6s								
Q37A	**Longview Farm,**	23.14	356	P	P	16 07 29.9	-0.4		
	baz=175								
Q38A	**Cooks Store, C**	23.18	358	P	P	16 07 29.8	-0.8		
	baz=177,SNR=7.9								
Q39A	**Willow Grove F**	23.25	359	P	P	16 07 30.4	-0.9		
	baz=178								
OLIL	**Olney**	23.26	9	*eP*	P	16 07 29.8	-1.6		
	20nm,1.1s								
Q35A	**Mercer Eighty,**	23.27	353	P	P	16 07 30.1	-1.4		
	baz=171								
R32A	**Long Quarter,**	23.27	348	P	P	16 07 31.1	-0.5		
	baz=164,SNR=6.3								
TUC	**Tucson**	23.43	318	*eP*	P	16 07 35.1	+2.0		
	10nm,1.0s								
Q34A	**Chapman**	23.45	351	P	P	16 07 32.6	-0.5		
	baz=169								
KSU1	**Kansas State U**	23.58	352	P	P	16 07 33.5	-0.7		
	baz=170								
KSU1	**Kansas State U**	23.58	352	*eP*	P	16 07 34.3	0.0		
	24nm,1.1s								
Q33A	**Connelly Farm,**	23.66	350	P	P	16 07 33.7	-1.4		
	baz=167								
P39B	**Salisbury**	23.69	360	P	P	16 07 34.0	-1.3		
	baz=179								
P40A	**Paris**	23.73	1	P	P	16 07 34.4	-1.3		
	baz=181								
Q32A	**Meitler Ranch,**	23.79	348	P	P	16 07 36.1	-0.2		
	baz=165,SNR=7.1								
T25A	**Trinidad**	23.81	336	P	P	16 07 38.2	+1.4		
	baz=150,SNR=7.9								
T25A	**Trinidad**	23.81	336	*eP*	P	16 07 37.1	+0.3		
	14nm,0.7s								
P38A	**Dawn**	23.84	358	P	P	16 07 36.0	-0.7		
	baz=177								
P37A	**Lathrop**	23.84	356	P	P	16 07 35.8	-0.9		
	baz=175								
CBKS	**Cedar Bluff**	23.88	346	P	P	16 07 37.2	+0.1		
	baz=162								
P41A	**Barry, Barry**	23.91	3	P	P	16 07 35.8	-1.5		
	baz=183								
P35A	**Duane Minner,**	23.93	353	P	P	16 07 36.5	-0.9		
	baz=171,SNR=11								
P36A	**Good Intent, A**	23.94	355	P	P	16 07 36.8	-0.7		
	baz=173								
P34A	**Walnut Farm, R**	24.05	352	P	P	16 07 37.9	-0.6		
	baz=169,SNR=10								
O40A	**La Belle**	24.32	1	P	P	16 07 39.8	-1.3		
	baz=181								
O41A	**Passleys Farm,**	24.35	3	P	P	16 07 40.1	-1.3		
	baz=183								
O37A	**Wolven Farm, M**	24.41	357	P	P	16 07 41.3	-0.5		
	baz=176								
P32A	**Huiting Farm,**	24.41	349	P	P	16 07 41.2	-0.7		
	baz=165								
O36A	**Bolckow**	24.42	355	P	P	16 07 41.0	-1.0		
	baz=174								
O39A	**Kirksville**	24.45	360	P	P	16 07 41.1	-1.2		
	baz=180								
214A	**Organ Pipe Nat**	24.56	315	P	P	16 07 42.7	-0.6		
	baz=126								
O34A	**Beatrice**	24.65	352	P	P	16 07 43.8	-0.3		
	baz=170,SNR=8.0								
O33A	**Hebron**	24.68	351	P	P	16 07 42.9	-1.3		
	baz=168								
W18A	**Petrified Fore**	24.74	325	*eP*	P	16 07 47.4	+2.3		
	19nm,1.3s								
SDCO	**Great Sand Dun**	24.77	335	P	P	16 07 45.3	-0.3		
	baz=149								
SDCO	**Great Sand Dun**	24.77	335	*eP*	P	16 07 47.2	+1.7		
	2.7nm,0.8s								
N38A	**Joes South For**	25.00	359	P	P	16 07 45.9	-1.2		
	baz=178								
N37A	**Lee Faris, Mou**	25.00	357	P	P	16 07 45.9	-1.3		
	baz=176								
SFIN	**Lafayette**	25.02	10	P	P	16 07 46.2	-1.2		
	baz=192								
SFIN	**Lafayette**	25.02	10	*eP*	P	16 07 48.8	+1.5		
	17nm,1.0s								
O31A	**Woolen Ranch,**	25.07	348	P	P	16 07 47.6	-0.3		
	baz=164								
X16A	**Lo Mia Camp, P**	25.24	321	*eP*	P	16 07 52.3	+2.6		
	5.6nm,0.8s								
SJG	**San Juan**	25.32	81	P	P	16 07 51.5	+1.2		
	6.7nm,0.4s,baz=276,slow=15,SNR=1.8								
S22A	**4UR Ranch, Cre**	25.34	333	P	P	16 07 52.2	+1.5		
	baz=146,SNR=5.7								
S22A	**4UR Ranch, Cre**	25.34	333	*eP*	P	16 07 52.8	+2.2		
	6.5nm,1.0s								
URVA	**University of**	25.48	28	*eP*	P	16 07 51.6	0.0		
M38A	**Pleasantville**	25.62	359	P	P	16 07 51.8	-1.0		
	baz=178								
M37A	**Trindle Farm,**	25.63	357	P	P	16 07 52.4	-0.5		
	baz=176								
MVCO	**Mesa Verde**	25.68	329	*eP*	P	16 07 55.0	+1.4		
113A	**Mohawk Valley,**	25.69	315	*eP*	P	16 07 56.0	+2.5		
	27nm,1.8s								
Y14A	**Wickenburg**	25.90	318	*eP*	P	16 07 58.0	+2.5		
	20nm,1.1s								
M34A	**Aspy Farms, Fr**	25.94	353	P	P	16 07 56.2	+0.6		
	baz=171								
WUAZ	**Wupatki**	25.96	323	*eP*	P	16 07 58.4	+2.2		
	8.2nm,1.0s								
L40A	**Anamosa**	26.28	2	P	P	16 07 57.2	-1.5		
	baz=182								
MCWV	**Mont Chateau**	26.30	22	*eP*	P	16 07 57.0	-1.9		
L36A	**Harm Buss Farm**	26.36	356	P	P	16 07 58.8	-0.6		
	baz=175								
L34A	**Svendsen Farm,**	26.38	353	P	P	16 07 59.4	-0.2		
	baz=171								
GLA	**Glamis**	26.58	315	P	P	16 08 03.4	+1.8		
	baz=125								
GLA	**Glamis**	26.58	315	*eP*	P	16 08 04.6	+3.1		
	15nm,1.0s								
ISCO	**Idaho Springs**	26.59	337	P	P	16 08 02.8	+0.9		
	baz=150								
ATAH	**Atahualpa**	26.66	147	P	P	16 08 06.7	+3.9		
	7.7nm,0.7s,baz=0.4,slow=12,SNR=3.4								
Y12C	**Blythe**	26.78	316	P	P	16 08 05.5	+2.2		
	baz=126								
K41A	**Shullsburg**	26.87	4	P	P	16 08 05.3	+1.3		
	baz=184								
L31A	**Butterfield Fa**	26.93	350	P	P	16 08 06.6	+2.0		
	baz=166								
K37A	**Belmond**	26.98	358	P	P	16 08 04.2	-0.7		
	baz=177								
W13A	**Hualapai Mount**	27.20	319	*eP*	P	16 08 10.9	+3.6		
	3.4nm,0.8s								
IKP	**In-Ko-Pah, Jac**	27.25	312	P	P	16 08 09.3	+1.7		
	baz=122								
BC3	**Big Chuckawall**	27.35	315	P	P	16 08 11.3	+2.7		
	baz=125,SNR=8.4								
IRM	**Iron Mountain**	27.44	316	P	P	16 08 11.6	+2.4		
	baz=126								
J39A	**Decorah**	27.54	1	P	P	16 08 10.5	+0.6		
	baz=181								
J36A	**Seneca 1, Swea**	27.57	357	P	P	16 08 10.0	-0.1		
	baz=176								
MONP2	**Monument Peak**	27.60	313	P	P	16 08 12.5	+1.6		
	baz=122								
J35A	**Milford**	27.66	356	P	P	16 08 12.1	+1.1		
	baz=174								
PHWY	**Pilot Hill**	27.86	339	*eP*	P	16 08 13.3	+0.3		
	12nm,1.6s								
BELC	**Belle Mtn. Jos**	27.92	315	P	P	16 08 15.6	+1.9		
	baz=125								
O20A	**White River Ci**	27.93	334	P	P	16 08 15.2	+1.5		
	baz=146								
O20A	**White River Ci**	27.93	334	*eP*	P	16 08 15.2	+1.5		
	5.8nm,1.1s								
J32A	**Parkston**	27.94	352	P	P	16 08 13.6	+0.2		
	baz=169								
LDFC	**Landfair**	27.97	318	*eP*	P	16 08 17.4	+3.4		
	17nm,0.8s								
TPFO	**Pinon Flats**	28.02	314	P	P	16 08 15.4	+1.0		
	baz=124								
PFO	**Pinyon Flats O**	28.02	314	P	P	16 08 18.3	+3.9		
	4.7nm,0.9s,baz=126,slow=4.1,SNR=4.1								
PFO	**Pinyon Flats O**	28.02	314	P	P	16 08 15.1	+0.6		
	baz=124								
LCMT	**Little Creek M**	28.08	323	*eP*	P	16 08 18.0	+3.1		
	3.8nm,1.0s								
ECSD	**EROS Data Cent**	28.15	354	P	P	16 08 14.6	-0.7		
	baz=171,SNR=5.6								
ECSD	**EROS Data Cent**	28.15	354	*eP*	P	16 08 15.0	-0.3		
	16nm,1.5s								
GMRC	**Granite Mounta**	28.15	317	P	P	16 08 18.4	+2.8		
	baz=126,SNR=6.1								
MTPU	**Mount Pierson**	28.22	326	*eP*	P	16 08 19.2	+2.8		
	4.1nm,0.7s								
CCUT	**Cedar City**	28.52	324	*eP*	P	16 08 21.5	+2.5		
	5.0nm,0.9s								
MURC	**Murrieta**	28.53	313	P	P	16 08 20.9	+2.1		
	baz=122								
MSU	**Marysvale**	28.56	326	*eP*	P	16 08 20.4	+1.2		
HEC	**Hector,Ludlow**	28.63	316	P	P	16 08 22.3	+2.5		
	baz=126								
TUQ	**Turquoise Moun**	28.72	318	P	P	16 08 22.6	+2.0		
	baz=127								
GSC	**Goldstone, Bar**	29.22	316	P	P	16 08 27.8	+2.8		
	baz=126								
K22A	**Casper**	29.42	339	P	P	16 08 28.3	+1.5		
	baz=151								
K22A	**Casper**	29.

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
B29A	Wagenman Farm,	33.14	352	P	P	16 08 59.2	+0.1
	baz=168						
A33A	Warroad	33.22	357	P	P	16 08 58.7	-1.0
	baz=175						
A32A	Rocking H Ranc	33.27	355	P	P	16 08 59.2	-1.0
	baz=173						
B28A	Dugan Ranch, T	33.28	350	P	P	16 09 00.0	-0.2
	baz=166,SNR=5.1						
A30A	Hoffart Farm,	33.48	353	P	P	16 09 01.4	-0.6
	baz=170						
A29A	Manning Farm,	33.58	352	P	P	16 09 02.5	-0.3
	baz=168						
MCMT	McKenzie Canyo	33.73	334	eP	P	16 09 06.7	+2.2
A26A	Wade Farm, Ken	34.00	349	P	P	16 09 06.8	+0.3
	baz=163						
DGMT	Dagmar	34.05	346	P	P	16 09 07.5	+0.6
	baz=159						
A25A	Svangstu Ranch	34.26	348	P	P	16 09 09.3	+0.6
	baz=161						
ULM	Lac du Bonnet	34.56	356	P	P	16 09 09.1	-2.1
	2.3nm,0.5s,baz=143,slow=8.5,SNR=2.9						
ULM				pP	pP	16 09 52.9	+0.3
	5.1nm,0.8s,baz=164,slow=6.7,SNR=3.6						
WVOR	Wild Horse Val	34.81	325	eP	P	16 09 16.0	+2.3
	5.0nm,0.8s						
M04C	Macdoel	36.24	322	P	P	16 09 28.0	+2.2
	baz=127						
F10A	Beach Ranch, E	36.59	331	eP	P	16 09 29.9	+1.2
	5.6nm,0.8s						
L02D	Cave Junction,	37.52	321	P	P	16 09 38.4	+1.9
	baz=125						
I05D	Terrebonne, OR	37.55	325	P	P	16 09 38.8	+2.1
	baz=130						
I04A	Tendick Farm,	37.80	324	P	P	16 09 40.5	+1.6
	baz=128						
SAML	Samuel	37.99	128	eP	P	16 09 38.4	-2.4
	5.7nm,0.8s						
I03D	Drain, OR	38.28	323	P	P	16 09 43.5	+0.7
	baz=127,SNR=5.5						
G03D	McMinnville, O	39.16	325	P	P	16 09 52.2	+2.1
	baz=129						
LON	Longmire	39.39	328	eP	P	16 09 53.8	+1.8
	5.2nm,1.2s						
F04D	Rainier, OR	39.58	326	P	P	16 09 55.9	+2.4
	baz=130						
LPAZ	La Paz	39.87	142	P	P	16 09 58.2	+1.2
	12nm,0.6s,baz=330,slow=6.6,SNR=47						
LPAZ	La Paz	39.87	142	eP	P	16 09 58.1	+1.1
	13nm,0.7s						
PB11	IPOC Station P	41.80	147	eP	P	16 10 14.1	+1.9
	20nm,0.8s						
YKA	Yellowknife Ar	49.26	347	P	P	16 11 09.9	0.0
	6.0nm,0.4s,baz=151,slow=7.4,SNR=66						
YKA				pP	pP	16 11 53.3	-0.6
	2.0nm,0.7s,baz=150,slow=7.4,SNR=4.6						
YKB5	Yellowknife Ar	49.26	347	eP	P	16 11 09.3	-0.6
YKW3	Yellowknife Ar	49.32	347	eP	P	16 11 10.2	-0.1
	8.6nm,0.8s						
DLBC	Dease Lake	50.90	336	eP	P	16 11 24.6	+2.3
	11nm,1.3s						
BDFB	Brasilia	53.85	123	P	P	16 11 45.1	+0.4
	2.3nm,0.5s,baz=260,slow=11						
CPUP	Villa Florida	54.00	140	P	P	16 11 45.0	-0.4
	5.8nm,0.8s,baz=330,slow=8.2,SNR=16						
CPUP	Villa Florida	54.00	140	eP	P	16 11 44.8	-0.7
INK	Inuvik	58.67	343	P	P	16 12 18.7	+0.9
	1.8nm,0.5s,baz=106,slow=5.7,SNR=7.4						
INK				pP	pP	16 13 02.2	-1.1
	4.1nm,1.1s,baz=118,slow=4.7,SNR=3.6						
INK	Inuvik	58.67	343	eP	P	16 12 18.3	+0.5
	3.3nm,0.6s						
INK				pP	pP	16 13 02.2	-1.1
PLCA	Paso Flores	59.74	161	P	P	16 12 28.0	+2.4
	7.2nm,0.9s,baz=347,slow=5.6,SNR=5.8						
IL1	Eielson Array	61.08	337	eP	P	16 12 34.6	+0.3
ILAR	Eielson Array	61.08	337	P	P	16 12 35.1	+0.8
	0.9nm,0.7s,baz=125,slow=5.2,SNR=11						
ILAR				pP	pP	16 13 19.6	-0.7
	1.1nm,1.1s,baz=108,slow=5.8,SNR=2.1						
ESDC	Sonseca Array	79.04	52	pP	pP	16 15 10.9	-1.3
	0.3nm,0.3s,baz=284,slow=6.5,SNR=2.3						
WRA	Warramunga Arr	135.32	257	PKP	PKPdf	16 21 40.2	+1.7
	0.7nm,0.5s,baz=87,slow=2.5,SNR=14						
ASAR	Alice Springs	135.75	252	PKP	PKPdf	16 21 41.0	+1.7
	0.4nm,0.7s,baz=94,slow=1.9,SNR=5.6						
ASAR				SKPbc	SKPab	16 24 54.6	-2.6
	0.8nm,0.8s,baz=88,slow=3.0,SNR=7.4						
FITZ	Fitzroy Crossi	143.47	261	PKP	PKPdf	16 21 53.2	-0.1
	2.6nm,0.6s,baz=100,slow=6.1,SNR=11						
CMAR	Chiang Mai Arr	144.22	341	PKP	PKPdf	16 21 54.0	-0.7
	0.3nm,0.7s,baz=347,slow=3.1,SNR=4.7						
	comp=Z,28nm,18.9s,baz=145,slow=38						
MKAR	Makanchi Array	75.24	320	P	P	16 19 59.9	+1.4
	0.7nm,0.7s,baz=108,slow=7.6,SNR=3.7						
KURK	Kurchatov	78.90	323	P	P	16 20 19.8	+0.9
KURBB	Kurchatov Arra	78.93	323	P	P	16 20 19.8	+0.8
	0.2nm,0.5s,baz=133,slow=4.8,SNR=3.2						
ILAR	Eielson Array	83.48	23	P	P	16 20 42.5	-0.5
	0.5nm,0.8s,baz=240,slow=4.8,SNR=3.5						
BVAR	Borovoye Array	84.45	324	P	P	16 20 49.1	+0.9
	1.3nm,0.7s,baz=116,slow=6.6,SNR=7.7						

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*NIED **11** 16:07:00, 38°.40N×144°.00E, h20^{km}, Mw3.5 Best double couple: $M_0$2.30000×10^{14} NP1:ϕ_s3.00000°, δ20.00000°, λ-82.00000°. NP2:ϕ_s174.00000°, δ70.00000°, λ-93.00000°.*

JMA 11 16:07:11.7±0.1**, 38°.40N×144°.05E, h16^{km}, M3.7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.98	291	P	Pn	16 07 45.6	+1.0
MIYJ	Miyakonagasawa	2.10	305	P	Pn	16 07 46.8	+0.6
MIYJ				S	Sn	16 08 12.6	+0.7
JIO	Ouri	2.12	272	P	Pn	16 07 47.5	+1.0
JIO				S	Sn	16 08 13.3	+0.8
JMK	Ichinoseki	2.28	285	P	Pn	16 07 49.8	+1.1
JOM	Ohasama	2.40	297	P	Pn	16 07 51.8	+1.4
JOM				S	Sn	16 08 21.3	+1.8
JOU	Okura	2.66	270	P	Pn	16 07 55.5	+1.6
JOU				S	Sn	16 08 27.8	+1.9
JANG	Nango	2.78	316	P	Pn	16 07 56.8	+1.2
JANG				S	Sn	16 08 29.6	+0.8
JRG	Rokugo	2.84	292	P	Pn	16 07 58.5	+2.1
JRG				S	Sb	16 08 33.8	-2.9
JYK	Kaneyama	2.94	281	P	Pn	16 07 59.5	+1.8
JYK				S	Sn	16 08 35.2	+2.6
JFT	Otama	3.06	254	P	Pn	16 08 01.0	+1.5
JTM	Tenmabayashi	3.31	317	S	Sn	16 08 42.2	+0.3

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*IDC **11** 16:08:14.1±1.1, 3°.54S×146°.34E, h0^{km}, mb3.8/9, mb1 4.1/12, mb1mx3.9/38, mbtmp4.0/12, ML2.1/1, MS3.3/2, Ms1 3.4/2, ms1mx3.0/30, Error ellipse: s-maj=33.6km s-min=18.5km az=90.0*

*ISCJB **11** 16:08:15.6±0.6, 3°.62S±0°.07×146°.3E±0°.1, h20^{km}, mb3.8/8, MS3.3/1, Error ellipse: s-maj=15.5km s-min=10.5km az=175.9*

*NEIC **11** 16:08:19.3±0.7, 3°.59S×146°.36E, h35^{km}, mb4.1/2, Error ellipse: s-maj=16.2km s-min=11.5km az=85.0*

ISC 11 16:08:16.9±0.8**, 3°.6S**±0°.1×**146°.4E**±0°.1**, h20^{km}, n18, σ1§13**/18**, mb3.8**/8**, Bismarck Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JAY	Jayapura	5.78	280	LR	LR	16 11 46.8	
	comp=Z,7.3nm,21.6s,baz=181,slow=37						
PMG	Port Moresby	5.86	173	Pn	Pn	16 09 41.3	-1.5
	3.5nm,0.3s,baz=1.0,slow=11,SNR=15						
PMG				LR	LR	16 12 11.3	
	comp=Z,250nm,19.3s,baz=344,slow=40						
PMG	Port Moresby	5.86	173	ePn	Pn	16 09 41.8	-1.0
COEN	Coen	10.82	197	ePn	Pn	16 10 51.7	+0.9
HNR	Honiara	14.67	114	Pn	Pn	16 11 44.2	+0.7
	7.8nm,0.3s,baz=288,slow=3.2,SNR=3.6						
CTA	Charters Tower	16.44	180	Pn	P	16 12 08.6	-0.6
	0.8nm,0.3s,baz=4.4,slow=13,SNR=3.3						
WRAB	Tennant Creek	20.08	215	eP	P	16 12 48.5	-0.8
	6.8nm,0.8s						
WRA	Warramunga Arr	20.09	215	P	P	16 12 49.0	-0.6
	4.7nm,0.7s,baz=40,slow=11,SNR=35						
WRA				PcP	PcP	16 17 03.9	-0.9
	0.6nm,1.1s,baz=24,slow=2.5,SNR=2.3						
ASAR	Alice Springs	23.36	210	P	P	16 13 23.3	-1.0
	1.9nm,0.6s,baz=46,slow=7.8,SNR=34						
FITZ	Fitzroy Crossi	24.95	233	P	P	16 13 39.6	+0.4
	4.1nm,0.8s,baz=49,slow=11,SNR=3.1						
FITZ	Fitzroy Crossi	24.95	233	ePn	P	16 13 39.1	-0.1
	8.8nm,1.1s						
STKA	Stephens Creek	28.54	189	P	P	16 14 13.3	+2.0
	1.1nm,0.8s,baz=28,slow=17,SNR=2.2						
CMAR	Chiang Mai Arr	51.59	297	P	P	16 17 20.7	-1.6
	0.5nm,0.3s,baz=111,slow=4.9,SNR=4.2						
CMAR				LR	LR	16 40 57.0	

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*CSEM **11** 16:08:25.9, 38°.40N×22°.03E, h23^{km}, ML1.2/7*

ATH 11 16:08:25.9, 38°.40N×22°.03E, h23^{km}±5^{km}, ML1.2/7**, Error ellipse: s-maj=5.3km s-min=0.9km az=124.0, Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
UPR	University Cam	0.22	238	P	Pb	16 08 30.5	-1.0
UPR	University Cam	0.22	238	P	Pb	16 08 30.5	-1.0
KLV	Kalavryta, Ach	0.37	164	P	Pb	16 08 33.5	-0.4
KLV				S	Sb	16 08 40.2	+0.9
KLV	Kalavryta, Ach	0.37	164	P	Pb	16 08 33.5	-0.3
KLV				S	Sb	16 08 40.2	+1.0
KLV				AML	AML	16 08 40.8	
	comp=N,45µm,0.1s						
KLV				AML	AML	16 08 41.4	
	comp=E,41µm,0.2s						
DSF	Desfina	0.40	88	P	Pb	16 08 34.5	+0.2
DSF				S	Sb	16 08 41.0	+1.0
DSF	Desfina	0.40	88	P	Pb	16 08 34.5	+0.2
DSF				S	Sb	16 08 41.0	+1.0
DSF				AML	AML	16 08 41.7	
	comp=N,112µm,0.1s						
DSF				AML	AML	16 08 42.3	
	comp=E,85µm,0.1s						
PVO	Paravola	0.45	299	P	Pb	16 08 34.9	-0.2
PVO				S	Sb	16 08 42.6	+1.2
PVO	Paravola	0.45	299	P	Pb	16 08 34.9	-0.2
PVO				S	Sb	16 08 42.6	+1.2
PVO				AML	AML	16 08 46.0	
	comp=E,50µm,0.3s						
PVO				AML	AML	16 08 46.9	
	comp=N,40µm,0.3s						
DRO	Drossia	0.51	209	P	Pb	16 08 35.9	-0.3
DRO				S	Sb	16 08 43.8	+0.6
DRO	Drossia	0.51	209	P	Pb	16 08 35.9	-0.3
DRO				S	Sb	16 08 43.8	+0.6
DRO				AML	AML	16 08 45.0	
	comp=N,179µm,0.1s						
DRO				AML	AML	16 08 49.1	
	comp=E,150µm,0.2s						
EVR	Evrytania	0.54	342	P	Pb	16 08 36.0	-0.9
EVR				S	Sb	16 08 44.4	+0.1
EVR	Evrytania	0.54	342	P	Pb	16 08 36.0	-0.8
EVR				S	Sb	16 08 44.4	+0.1
EVR				AML	AML	16 08 47.6	
	comp=N,82µm,0.2s						
AXS	Araxos	0.55	249	P	Pn	16 08 37.6	-0.7
AXS				S	Sb	16 08 44.3	0.0
AXS	Araxos	0.55	249	P	Pb	16 08 37.6	+0.7
AXS				S	Sb	16 08 44.3	0.0
AGG	Agios Georgios	0.67	21	P	Pb	16 08 39.3	+0.4
AGG	Agios Georgios	0.67	21	P	Pb	16 08 39.3	+0.4
PDO	Prodromos	0.69	287	P	Pn	16 08 39.8	-0.5
PDO				S	Sn	16 08 49.8	-0.5
PDO	Prodromos	0.69	287	P	Pn	16 08 39.8	-0.4
PDO				S	Sn	16 08 49.8	-0.5
PDO				AML	AML	16 08 51.3	
	comp=E,44µm,0.4s						
PDO				AML	AML	16 08 54.7	
	comp=N,61µm,0.3s						
AMT	Artemida-Makis	0.90	196	P	Pb	16 08 43.0	+0.2
AMT				S	Sn	16 08 56.1	+0.6
AMT	Artemida-Makis	0.90	196	P	Pn	16 08 43.0	-0.2
AMT				S	Sn	16 08 56.1	+0.6
AMT				AML	AML	16 09 00.7	
	comp=N,44µm,0.4s						
AMT				AML	AML	16 09 01.9	
	comp=E,55µm,0.5s						

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*MOS **11** 16:09:11.7±1.1, 40°.23N×29°.98E, h9^{km}, mb4.6/32, Error ellipse: s-maj=4.4km s-min=3.4km az=79.6*

*IDC **11** 16:09:11.8±0.5, 40°.16N×30°.03E, h0^{km}, mb4.3/24, mb1 4.3/31, mb1mx4.2/49, mbtmp4.3/31, ML3.7/7, MS3.4/10, Ms1 3.4/10, ms1mx3.3/48, Error ellipse: s-maj=11.3km s-min=7.6km az=33.0*

*ISCJB **11** 16:09:12.8±0.3, 40°.20N±0°.01×29°.95E±0°.01, h15^{km}±2^{km}, mb4.5/57, MS3.7/6, Error ellipse: s-maj=2.0km s-min=1.7km az=170.8*

*NEIC **11** 16:09:13.0, 40°.25N×29°.95E, h5^{km}, mb4.5/25, ML4.7(THE), ML4.7(ISK), After ISK.*

NEIC Felt [II] at Istanbul. Also felt at Bilecik, Buyukcekmece, Gebze, Golcuk, Inegol and Sultanbey.

*ISK **11** 16:09:12.6, 40°.17N×29°.96E, h7^{km}, ML4.6*

*DDA **11** 16:09:12.3, 40°.14N×29°.97E, h26^{km}, Ml4.7*

*CSEM **11** 16:09:13.6±0.1, 40°.19N×29°.98E, h10^{km}, mb4.6/34, Error ellipse: s-maj=1.7km s-min=1.5km az=171.0*

*THE **11** 16:09:14.8, 40°.20N×29°.93E, h12^{km}±1^{km}, ML4.7/2, Error ellipse: s-maj=2.1km s-min=0.5km az=51.0*

ISC 11 16:09:13.5±0.8**, 40°.18N**±0°.01×**29°.96E**±0°.01**, h12^{km}**±4^{km}**, n733, σ1§16**/794**, mb4.6**/57**, MS3.5**/6**, 50C-34D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CAVI	Cavuskoy	0.09	283	PG	Pg	16 09 15.8	-0.5
CAVI	Cavuskoy	0.09	283	iPg	Pg	16 09 15.8	-0.5
GPA	Golpazari	0.29	68	PG	Pg	16 09 19.2	-0.3
GPA	Golpazari	0.29	68	P	Pg	16 09 19.2	-0.3
GPA	Golpazari	0.29	68	iPg	Pg	16 09 19.2	-0.3
GPA	Golpazari	0.29	68	Pg	Pg	16 09 19.2	-0.3
ADVT	Abdulvahap	0.30	326	PG	Pg	16 09 19.1	-0.7
ADVT	Abdulvahap	0.30	326	iPg	Pg	16 09 19.1	-0.7
ADVT	Abdulvahap	0.30	326	Pg	Pg	16 09 19.8	0.0
IZI	Iznik	0.40	293	PG	Pg	16 09 21.4	-0.2
IZI	Iznik	0.40	293	iPg	Pg	16 09 21.4	-0.2
IZI	Iznik	0.40	293	Pg	Pg	16 09 21.4	-0.2
BORA	Eskisehir	0.48	128	⇑iP	Pg	16 09 21.9	-1.2
BORA				iS	Sg	16 09 28.1	-1.4
BORA	Eskisehir	0.48	128	P	Pg	16 09 21.9	-1.2
BORA				S	Sg	16 09 28.1	-1.4
GULT	Gulveren	0.49	59	ePG	Pg	16 09 22.8	-0.5
GULT				eSG	Sg	16 09 30.2	+0.3
GULT	Gulveren	0.49	59	ePg	Pg	16 09 22.8	-0.5
GULT				eSg	Sg	16 09 30.2	+0.3
GULT	Gulveren	0.49	59	Pg	Pg	16 09 23.1	-0.2
SPNC	Sapanca-Adapaz	0.57	28	ePG	Pg	16 09 24.3	-0.4
SPNC	Sapanca-Adapaz	0.57	28	Pg	Pg	16 09 24.1	-0.6
SPNC	Sapanca-Adapaz	0.57	28	Pg	Pg	16 09 24.1	-0.6
IGD	Bursa	0.58	278	⇑iP	Pg	16 09 22.8	-2.2
IGD				iS	Sg	16 09 31.6	-1.1
GEMT	Gemlik	0.64	294	ePG	Pg	16 09 25.3	-0.7
GEMT	Gemlik	0.64	294	ePg	Pg	16 09 25.3	-0.7
HRT	Hereke	0.68	341	ePG	Pg	16 09 25.7	-1.0
HRT	Hereke	0.68	341	P	Pg	16 09 26.4	-0.3
HRT	Hereke	0.68	341	ePg	Pg	16 09 25.7	-1.0
HRT	Hereke	0.68	341	P	Pg	16 09 26.4	-0.3
TVSB	Tavsanli	0.82	208	ePG	Pg	16 09 28.7	-0.8
TVSB	Tavsanli	0.82	208	ePg	Pg	16 09 28.7	-0.8
MDNY	Mudanya-Bursa	0.84	283	ePG	Pg	16 09 29.3	-0.5
MDNY				eSG	Sb	16 09 41.5	+0.2
MDNY	Mudanya-Bursa	0.84	283	ePg	Pg	16 09 29.3	-0.5
MDNY				eSg	Sb	16 09 41.5	+0.2
BTAS	Taskesti	0.89	64	⇓iP	Pg	16 09 30.1	-0.6
BTAS				iS	Sb	16 09 43.4	+0.7
BTAS	Taskesti	0.89	64	P	Pg	16 09 30.1	-0.6
BTAS				S	Sb	16 09 43.4	+0.7
KAND	Kocaeli-Kandir	0.93	11	⇑iP	Pg	16 09 31.5	0.0
KAND				iS	Sb	16 09 44.1	+0.3
KAND	Kocaeli-Kandir	0.93	11	P	Pg	16 09 31.5	0.0
KAND				S	Sb	16 09 44.1	+0.3
ESKT	Eskisehir	0.95	134	ePG	Pg	16 09 31.1	-0.8
ESKT	Eskisehir	0.95	134	⇑iP	Pg	16 09 29.8	-2.1
ESKT				iS	Sb	16 09 44.9	+0.3
ESKT	Eskisehir	0.95	134	ePg	Pg	16 09 31.1	-0.8
SEYT	Eskypehyr	0.95	134	P	Pg	16 09 29.8	-2.1
SEYT				S	Sb	16 09 44.9	+0.3
SAHE	Sakarya_HENDEK	0.96	45	⇓iP	Pg	16 09 31.7	-0.3
SAHE				iS	Sn	16 09 45.6	-0.8
SAHE	Sakarya_HENDEK	0.96	45	P	Pg	16 09 31.7	-0.3
SAHE				S	Sn	16 09 45.6	-0.8
MDUB	Mudurnu	0.99	73	ePG	Pg	16 09 31.7	-0.9
MDUB				eSG	Sb	16 09 46.3	+0.6
MDUB	Mudurnu	0.99	73	ePg	Pg	16 09 31.7	-0.9
MDUB				eSg	Sb	16 09 46.3	+0.6
SILT	Sile	1.00	346	ePG	Pb	16 09 32.2	-0.6
SILT	Sile	1.00	346	ePg	Pb	16 09 32.2	-0.6
ISK	Istanbul-Kandi	1.12	323	ePN	Pb	16 09 34.5	-0.3
ISK	Istanbul-Kandi	1.12	323	P	Pb	16 09 34.4	-0.3
ISK				S	Sg	16 09 49.8	+0.2
ISK	Istanbul-Kandi	1.12	323	P	Pb	16 09 34.4	-0.3
ISK				S	Sg	16 09 49.8	+0.2
ISK	Istanbul-Kandi	1.12	323	P	Pb	16 09 34.4	-0.3
ISK				S	Sg	16 09 49.8	+0.2
ISK	Istanbul-Kandi	1.12	323	P	Pb	16 09 34.4	-0.3
ISK				S	Sg	16 09 49.8	+0.2
GDZ	Gediz	1.15	199	⇑iP	Pb	16 09 33.7	-1.7
GDZ				iS	Sb	16 09 50.0	-0.4
GDZ	Gediz	1.15	199	P	Pb	16 09 33.7	-1.7
GDZ				S	Sb	16 09 50.0	-0.4
GEDZ	Gediz	1.21	201	ePN	Pn	16 09 36.3	0.0
GEDZ	Gediz	1.21	201	ePn	Pn	16 09 36.3	0.0
KCTX	Karacabey (Bur	1.23	274	ePN	Pn	16 09 36.5	0.0
KCTX	Karacabey (Bur	1.23	274	ePn	Pn	16 09 36.5	0.0
KLYT	Kilyos	1.28	327	ePN	Pb	16 09 37.5	0.0
KLYT	Kilyos	1.28	327	ePn	Pb	16 09 37.5	0.0
BGKT	Bogazkoy	1.34	318	ePN	Pb	16 09 38.8	+0.1
BGKT	Bogazkoy	1.34	318	ePn	Pb	16 09 38.8	+0.1
SVRH	Sivrihisar-ESK	1.41	121	ePN	Pn	16 09 38.9	-0.2
SVRH	Sivrihisar-ESK	1.41	121	ePn	Pn	16 09 38.9	-0.2
DEMI	Demirci	1.49	221	⇑iP	Pn	16 09 39.9	-0.3
DEMI				iS	Sg	16 10 02.0	+0.6
DEMI	Demirci	1.49	221	S	Sg	16 10 02.0	+0.6
ELBA	Catalca	1.51	310	⇑iP	Pn	16 09 40.2	-0.2
ELBA				iS	Sb	16 10 01.0	+0.4
ELBA	Catalca	1.51	310	P	Pn	16 09 40.2	-0.2
ELBA				S	Sb	16 10 01.0	+0.4
CTKS	Kestanelik-??a	1.53	314	ePN	Pn	16 09 41.1	+0.5
CTKS	Kestanelik-??a	1.53	314	ePn	Pn	16 09 41.1	+0.5
KDZE	Karadeniz Ereo	1.60	44	ePN	Pn	16 09 42.1	+0.5
KDZE	Karadeniz Ereo	1.60	44	ePn	Pn	16 09 42.1	+0.5
EDC	Edincik	1.61	277	ePN	Pn	16 09 42.4	+0.6
EDC	Edincik	1.61	277	P	Pb	16 09 42.9	-0.3
EDC	Edincik	1.61	277	ePn	Pn	16 09 42.4	+0.6
EDC	Edincik	1.61	277	P	Pb	16 09 42.9	-0.3
BOLV	Bolvadin	1.65	152	⇑iP	Pn	16 09 42.6	+0.2
BOLV				iS	Sb	16 10 05.1	+0.4
BOLV	Bolvadin	1.65	152	P	Pn	16 09 42.6	+0.2
BOLV				S	Sb	16 10 05.1	+0.4
BALB	Balikesir	1.69	252	ePN	Pn	16 09 43.0	+0.2
BALB	Balikesir	1.69	252	ePn	Pn	16 09 43.0	+0.2
SLVT	Silivri	1.69	309	P	Pn	16 09 43.2	+0.3
SLVT				S	Sb	16 10 06.3	+0.5
BCAM	Yenicaga	1.73	68	⇓iP	Pn	16 09 43.6	+0.1
BCAM				iS	Sg	16 10 11.2	+2.0
BCAM	Yenicaga	1.73	68	P	Pn	16 09 43.6	+0.1
GONE	Gonen-Balikesi	1.75	266	ePN	Pn	16 09 44.0	+0.4
GONE	Gonen-Balikesi	1.75	266	ePn	Pn	16 09 44.0	+0.4
BALY	Balya	1.85	257	⇑iP	Pn	16 09 44.7	-0.4
BALY				iS	Sg	16 10 12.7	-0.3
BALY	Balya	1.85	257	P	Pn	16 09 44.7	-0.4
BALY				S	Sg	16 10 12.7	-0.3
MRMT	Marmara Adasi	1.85	284	ePN	Pn	16 09 46.0	+0.9
MRMT	Marmara Adasi	1.85	284	ePn	Pn	16 09 46.0	+0.9
KNL	Bal˜–kesir	1.86	274	iP	Pn	16 09 44.2	-1.0
KNL				iS	Sg	16 10 12.3	-1.2
KHL	Karahalli	1.89	190	ePN	Pn	16 09 46.0	+0.4
KHL	Karahalli	1.89	190	ePn	Pn	16 09 46.0	+0.4
CRLT	Corlu	1.94	300	ePN	Pn	16 09 47.1	+0.9
CRLT	Corlu	1.94	300	ePn	Pn	16 09 47.1	+0.9
KULA	Kula-Manisa	1.94	212	ePN	Pn	16 09 46.8	+0.4
KULA	Kula-Manisa	1.94	212	P	Pn	16 09 45.9	-0.5
KULA				S	Sn	16 10 10.7	-0.1
KULA	Kula-Manisa	1.94	212	P	Pn	16 09 45.9	-0.5
KULA	Kula-Manisa	1.94	212	ePn	Pn	16 09 46.8	+0.4
KULA				S	Sn	16 10 10.7	-0.1
KULA	Kula-Manisa	1.94	212	P	Pn	16 09 45.9	-0.5
KULA				S	Sn	16 10 10.7	-0.1
KIZT	Kizilcal	1.97	131	ePN	Pn	16 09 47.4	+0.5
KIZT	Kizilcal	1.97	131	ePn	Pn	16 09 47.4	+0.5
MANT	Manisa	2.01	213	iP	Pn	16 09 47.9	+0.4
MANT				iS	Sb	16 10 15.5	+0.4
MANT	Manisa	2.01	213	P	Pn	16 09 47.8	+0.4
MANT				S	Sb	16 10 15.5	+0.4
TKR	Tekirdag	2.01	294	ePN	Pn	16 09 47.9	+0.6
TKR	Tekirdag	2.01	294	ePn	Pn	16 09 47.9	+0.6
KRBG	Karabiga-Canak	2.05	277	ePN	Pn	16 09 48.5	+0.8
KRBG	Karabiga-Canak	2.05	277	ePn	Pn	16 09 48.5	+0.8
AKS	Akhisar	2.11	233	ePN	Pn	16 09 49.8	+1.2
AKS	Akhisar	2.11	233	ePn	Pn	16 09 49.8	+1.2
LOD	Lodumlu	2.17	97	ePN	Pn	16 09 50.3	+0.7
LOD	Lodumlu	2.17	97	ePn	Pn	16 09 50.3	+0.7
SART	Tekirdag	2.18	284	iP	Pn	16 09 49.5	-0.1
SART				iS	Sb	16 10 21.4	+1.4
SART	Tekirdag	2.18	284	P	Pn	16 09 49.5	-0.1
RKY	Sarkoy-Tekirda	2.18	284	ePN	Pn	16 09 50.3	+0.7
RKY	Sarkoy-Tekirda	2.18	284	ePn	Pn	16 09 50.3	+0.7
ANTO	Ankara	2.20	97	eP	Pn	16 09 49.7	-0.2
ANTO	Ankara	2.20	97	ePn	Pn	16 09 49.7	-0.2
ANTO	Ankara	2.20	97	ePn	Pn	16 09 49.7	-0.2
SAFT	Safranbolu	2.33	62	ePN	Pn	16 09 52.7	+1.1
SAFT	Safranbolu	2.33	62	ePn	Pn	16 09 52.7	+1.1
PHSR	Pinarhisar	2.34	309	ePN	Pn	16 09 52.9	+1.1
PHSR	Pinarhisar	2.34	309	ePn	Pn	16 09 52.9	+1.1
KDHN	Kadinhani	2.36	134	iP	Pn	16 09 51.9	-0.2
KDHN				iS	Sb	16 10 25.7	+0.7
KDHN	Kadinhani	2.36	134	P	Pn	16 09 51.9	-0.2
KDHN				S	Sb	16 10 25.7	+0.7
ISP	Isparta	2.40	169	ePN	Pn	16 09 53.8	+1.1
ISP	Isparta	2.40	169	P	Pn	16 09 52.2	-0.4
ISP				S	Sn	16 10 22.2	+0.2
ISP	Isparta	2.40	169	⇓iP	Pn	16 09 52.7	+0.1
ISP	Isparta	2.40	169	S	Sn	16 10 23.5	+1.5
ISP	Isparta	2.40	169c	iP	Pn	16 09 52.4	-0.2
ISP	Isparta	2.40	169	iP	Pn	16 09 52.4	-0.2
ISP				S	Sn	16 10 22.2	+0.2
ISP	Isparta	2.40	169	ePn	Pn	16 09 52.0	-0.7
ISP				S	Sn	16 10 22.2	+0.2
LPK	Lapseki	2.45	276	ePN	Pn	16 09 54.3	+1.0
LPK	Lapseki	2.45	276	ePn	Pn	16 09 54.3	+1.0
KKUL	Konya-Kulu	2.50	113	iP	Pn	16 09 54.0	0.0
KKUL				iS	Sg	16 10 37.0	+3.2
KKUL	Konya-Kulu	2.50	113	P	Pn	16 09 54.0	0.0
AFSR	Af¯ar-Bala (A	2.51	106	ePN	Pn	16 09 54.6	+0.4
AFSR	Af¯ar-Bala (A	2.51	106	ePn	Pn	16 09 54.6	+0.4
BBAL	Bala	2.52	104	⇓iP	Pn	16 09 54.6	+0.2
BBAL				iS	Sg	16 10 36.5	+2.0
BBAL	Bala	2.52	104	P	Pn	16 09 54.6	+0.2
DNZL	Cakiroluk	2.59	196	iP	Pn	16 09 56.2	+0.8
DNZL				iS	Sg	16 10 40.8	+4.1
DNZL	Cakiroluk	2.59	196	P	Pn	16 09 56.2	+0.8
DKL	Dikili	2.60	246	ePN	Pn	16 09 55.9	+0.5
DKL	Dikili	2.60	246	ePn	Pn	16 09 55.9	+0.5
ELDT	Eldivan	2.67	82	iP	Pn	16 09 56.8	+0.3
ELDT				iS	Sg	16 10 39.0	-0.3
ELDT	Eldivan	2.67	82	P	Pn	16 09 56.8	+0.3
GELI	Tayfur-Gelibol	2.67	276	ePN	Pn	16 09 57.4	+1.1
GELI	Tayfur-Gelibol	2.67	276	ePn	Pn	16 09 57.4	+1.1
ERIK	Erikli-Kesan	2.67	282	ePN	Pn	16 09 57.1	+0.7
ERIK	Erikli-Kesan	2.67	282	ePn	Pn	16 09 57.1	+0.7
LADK	Ladik-KONYA	2.72	136	ePN	Pn	16 09 58.0	+0.9
LADK	Ladik-KONYA	2.72	136	ePn	Pn	16 09 58.0	+0.9
IZM	Izmir	2.75	230	P	Pn	16 09 59.8	+2.4
IZM	Izmir	2.75	230	P	Pn	16 09 59.8	+2.4
AYDB	Zeytinkoy-Aydi	2.75	216	ePN	Pn	16 09 58.3	+0.8
AYDB	Zeytinkoy-Aydi	2.75	216	ePn	Pn	16 09 58.3	+0.8
BCK	Bucak	2.76	170	ePN	Pn	16 09 58.5	+0.8
BCK	Bucak	2.76	170	P	Pb	16 10 01.0	-1.8
BCK	Bucak	2.76	170	ePn	Pn	16 09 58.5	+0.8
BCK	Bucak	2.76	170	P	Pb	16 10 01.0	-1.8
CHBY	Cihanbeyli	2.78	124	ePN	Pn	16 09 58.4	+0.5
CHBY	Cihanbeyli	2.78	124	ePn	Pn	16 09 58.4	+0.5
EZN	Ezine	2.81	264	ePN	Pn	16 09 59.2	+1.0
EZN	Ezine	2.81	264	P	Pn	16 09 58.8	+0.6
EZN	Ezine	2.81	264	P	Pn	16 09 58.8	+0.6
EZN	Ezine	2.81	264	P	Pn	16 09 58.8	+0.6
EZN	Ezine	2.81	264	ePn	Pn	16 09 59.2	+1.0
EZN	Ezine	2.81	264	P	Pn	16 09 58.8	+0.6

BR131 Keskin Array S 2.87 98 ePn Pn 16 09 58.9 -0.3
BR131 Keskin Array S 2.87 98 ePn Pn 16 09 58.9 -0.3
BRTR Keskin Array B 2.87 98 Pn Pn 16 09 58.8 -0.3
11nm,0.3s,baz=268,slow=12,SNR=160
BRTR Sn Sn 16 10 34.9 +1.3
17nm,0.3s,baz=277,slow=23,SNR=4.5
BRTR Lg Lg 16 10 42.7
16nm,0.3s,baz=289,slow=18,SNR=6.6
BRTR LR LR 16 11 24.4
comp=Z,868nm,18.4s,baz=326,slow=47
KONT Konya--Tatoy 2.91 139 ePN Pn 16 10 00.5 +0.8
KONT Konya--Tatoy 2.91 139 ePn Pn 16 10 00.5 +0.8
EDRB Edirne 2.95 305 ePN Pn 16 10 01.1 +1.0
EDRB Edirne 2.95 305 P Pn 16 09 59.9 -0.2
EDRB Edirne 2.95 305 P Pn 16 09 59.9 -0.2
EDRB Edirne 2.95 305 ePn Pn 16 10 01.1 +1.0
EDRB Edirne 2.95 305 P Pn 16 09 59.9 -0.2
ENEZ Enez 2.96 282 ePN Pn 16 10 01.3 +1.1
ENEZ Enez 2.96 282 P Pn 16 10 00.3 +0.1
ENEZ Enez 2.96 282 P Pn 16 10 00.3 +0.1
ENEZ Enez 2.96 282 ePn Pn 16 10 01.3 +1.1
GOLH Golhisar 2.96 186 iP Pn 16 10 01.4 +1.0
GOLH iS Sg 16 10 53.6 +5.1
GOLH Golhisar 2.96 186 iP Pn 16 10 01.4 +1.0
ILGA Ilgaz 2.99 72 iP Pn 16 10 01.0 +0.1
ILGA iS Sg 16 10 55.8 +6.2
ILGA Ilgaz 2.99 72 P Pn 16 10 01.0 +0.1
PRK Paraskevi 2.99 253 P Pn 16 10 00.9 +0.2
PRK S Sn 16 10 36.9 +0.4
PRK Paraskevi 2.99 253 P Pn 16 10 00.9 +0.2
PRK S Sn 16 10 36.9 +0.4
PRK Paraskevi 2.99 253 P Pn 16 10 00.9 +0.2
PRK S Sn 16 10 36.9 +0.4
PRK Paraskevi 2.99 253 P Pn 16 10 00.9 +0.2
PRK S Sn 16 10 36.9 +0.4
KAMT Kaman 3.00 104 ePN Pn 16 10 01.3 +0.3
KAMT Kaman 3.00 104 ePn Pn 16 10 01.3 +0.3
GLHS Glhisar (BURDU 3.04 187 ePN Pn 16 10 02.4 +0.9
GLHS Glhisar (BURDU 3.04 187 ePn Pn 16 10 02.4 +0.9
SERE Sereflikochisa 3.05 113 ePN Pn 16 10 02.9 +1.3
SERE Sereflikochisa 3.05 113 ePn Pn 16 10 02.9 +1.3
KMER Konya-Meram 3.06 141 iP Pn 16 10 02.3 +0.6
KMER iS Sg 16 10 52.5 +0.8
KMER Konya-Meram 3.06 141 P Pn 16 10 02.3 +0.6
ALN Alexandroupoli 3.07 285 ePN Pn 16 10 03.5 +1.8
ALN Alexandroupoli 3.07 285 P Pn 16 10 01.6 -0.1
ALN Alexandroupoli 3.07 285 P Pn 16 10 01.6 -0.1
ALN Alexandroupoli 3.07 285 P Pn 16 10 01.6 -0.1
ALN Alexandroupoli 3.07 285 ePn Pn 16 10 03.6 +1.8
ALN Alexandroupoli 3.07 285 P Pn 16 10 01.6 -0.1
GADA Gvkgeada 3.11 271 ePN Pn 16 10 03.5 +1.2
GADA Gvkgeada 3.11 271 P Pn 16 10 03.0 +0.7
GADA Gvkgeada 3.11 271 P Pn 16 10 03.0 +0.7
GADA Gvkgeada 3.11 271 ePn Pn 16 10 03.5 +1.2
GADA Gvkgeada 3.11 271 P Pn 16 10 03.0 +0.7
TOS Tosya 3.21 73 ePN Pn 16 10 04.3 +0.5
TOS Tosya 3.21 73 ePn Pn 16 10 04.3 +0.5
SIGR SIGRI 3.31 254 ePN Pn 16 10 07.2 +2.1
SIGR SIGRI 3.31 254 P Pn 16 10 05.0 -0.1
SIGR SIGRI 3.31 254 P Pn 16 10 05.0 -0.1
SIGR SIGRI 3.31 254 ePn Pn 16 10 07.2 +2.1
SIGR SIGRI 3.31 254 P Pn 16 10 05.0 -0.1
YER Yerkesik 3.31 204 ePN Pn 16 10 06.2 +1.0
YER Yerkesik 3.31 204 P Pn 16 10 06.0 +0.8
YER Yerkesik 3.31 204 P Pn 16 10 06.0 +0.8
YER Yerkesik 3.31 204 P Pn 16 10 06.0 +0.8
YER Yerkesik 3.31 204 P Pn 16 10 06.0 +0.8
ANTB Antalya 3.32 170 ePN Pn 16 10 06.4 +1.2
ANTB Antalya 3.32 170 ePn Pn 16 10 06.4 +1.2
SMTH Samothraki Isl 3.40 276 P Pn 16 10 06.0 -0.3
SMTH Samothraki Isl 3.40 276 P Pn 16 10 06.0 -0.3
SMTH Samothraki Isl 3.40 276 P Pn 16 10 06.0 -0.3
SULT Sultanhani-AKS 3.40 124 ePN Pn 16 10 07.6 +1.2
SULT Sultanhani-AKS 3.40 124 ePn Pn 16 10 07.6 +1.2
ELL Elmali 3.43 181 ePN Pn 16 10 08.0 +1.2
ELL Elmali 3.43 181 P Pn 16 10 09.9 +3.0
ELL Elmali 3.43 181 ePn Pn 16 10 08.0 +1.2
ELL Elmali 3.43 181 P Pn 16 10 09.9 +3.0
DALY Dalyan (Mu¯la 3.51 197 ePN Pn 16 10 09.0 +1.2
DALY Dalyan (Mu¯la 3.51 197 ePn Pn 16 10 09.0 +1.2
CHOS Chios island 3.52 241 ePN Pn 16 10 09.8 +1.7
CHOS Chios island 3.52 241 P Pn 16 10 08.3 +0.2
CHOS S Sn 16 10 49.9 +0.3
CHOS Chios island 3.52 241 P Pn 16 10 08.3 +0.2
CHOS Chios island 3.52 241 ePn Pn 16 10 09.8 +1.7
CHOS S Sn 16 10 49.9 +0.3
CHOS Chios island 3.52 241 P Pn 16 10 08.3 +0.2
CHOS S Sn 16 10 49.9 +0.3
BZK Bozkurt 3.54 59 ePN Pn 16 10 09.6 +1.4
BZK Bozkurt 3.54 59 ePn Pn 16 10 09.6 +1.4
CORM Corum 3.58 89 ePN Pn 16 10 10.2 +1.3
CORM Corum 3.58 89 ePn Pn 16 10 10.2 +1.3
LIA Limnos Island 3.68 267 P Pn 16 10 10.5 +0.4
LIA Limnos Island 3.68 267 P Pn 16 10 10.5 +0.4
LIA Limnos Island 3.68 267 P Pn 16 10 10.5 +0.4
BODT Bodrum 3.74 214 ePN Pn 16 10 12.1 +1.1
BODT Bodrum 3.74 214 P Pn 16 10 10.9 -0.2
BODT Bodrum 3.74 214 P Pn 16 10 10.9 -0.2
BODT Bodrum 3.74 214 ePn Pn 16 10 12.1 +1.1
BODT Bodrum 3.74 214 P Pn 16 10 10.9 -0.2
BYBT Boyabat 3.87 69 ePN Pn 16 10 14.5 +1.7
BYBT Boyabat 3.87 69 ePn Pn 16 10 14.5 +1.7
EFOR EFORIE 4.02 346⇓iP Pn 16 10 15.1 +0.3
KSL Kastellorizon 4.04 184 P Pn 16 10 16.3 +1.2
KSL S Sn 16 11 02.5 +0.3
KSL Kastellorizon 4.04 184 P Pn 16 10 16.3 +1.2
NIG Nigde 4.17 118 ePN Pn 16 10 19.1 +2.0
NIG Nigde 4.17 118 ePn Pn 16 10 19.1 +2.0
ARG Arkhangelos 4.21 201 P Pn 16 10 18.6 +1.1
ARG Arkhangelos 4.21 201 P Pn 16 10 18.6 +1.1
ARG Arkhangelos 4.21 201 P Pn 16 10 18.6 +1.1
ARG Arkhangelos 4.21 201 P Pn 16 10 18.6 +1.1
KAVA Kavala 4.22 283 P Pn 16 10 17.5 -0.2
KAVA Kavala 4.22 283 P Pn 16 10 17.5 -0.2
KAVA Kavala 4.22 283 P Pn 16 10 17.5 -0.2
SNOP Sinop 4.37 63 ePN Pn 16 10 21.4 +1.7
SNOP Sinop 4.37 63 ePn Pn 16 10 21.4 +1.7
CVDA Cernavoda 4.39 342⇑iP Pn 16 10 21.1 +1.2
CVDA Cernavoda 4.39 342⇑iP Pn 16 10 21.1 +1.2
TIRR Tirgusor 4.42 346⇑iP Pn 16 10 21.1 +0.7
TIRR Tirgusor 4.42 346 eP Pn 16 10 20.4 0.0
TIRR Tirgusor 4.42 346 ePn Pn 16 10 20.4 0.0
TIRR Tirgusor 4.42 346⇑iP Pn 16 10 21.1 +0.7
TIRR Tirgusor 4.42 346 ePn Pn 16 10 20.4 0.0
OUR Ouranopolis 4.58 274 ePN Pn 16 10 24.2 +1.7
OUR Ouranopolis 4.58 274 P Pn 16 10 22.1 -0.4
OUR Ouranopolis 4.58 274 P Pn 16 10 22.1 -0.4
OUR Ouranopolis 4.58 274 P Pn 16 10 22.1 -0.4
OUR Ouranopolis 4.58 274 ePn Pn 16 10 24.2 +1.7
OUR Ouranopolis 4.58 274 P Pn 16 10 22.1 -0.4
TLB Topalu 4.62 343⇓iP Pn 16 10 24.0 +0.9
TLB Topalu 4.62 343⇓iP Pn 16 10 24.0 +0.9
APE Apeiranthos 4.66 230 P Pn 16 10 24.1 +0.4
APE Apeiranthos 4.66 230⇓iP Pg 16 10 42.1 -0.6
APE Apeiranthos 4.66 230⇑eP Pn 16 10 26.4 +2.7
APE Apeiranthos 4.66 230 P Pn 16 10 24.1 +0.4
APE Apeiranthos 4.66 230 P Pn 16 10 24.1 +0.4
HARR Harsova 4.75 342⇓iP Pn 16 10 26.2 +1.3
HARR Harsova 4.75 342⇓iP Pn 16 10 26.2 +1.3
NVR Nevrokopi 4.77 286 P Pn 16 10 25.2 -0.1
NVR Nevrokopi 4.77 286 P Pn 16 10 25.2 -0.1
NVR Nevrokopi 4.77 286 P Pn 16 10 25.2 -0.1
AOS Alonnisos 4.80 260 P Pn 16 10 25.8 +0.3
AOS Alonnisos 4.80 260 P Pn 16 10 25.8 +0.3
AOS Alonnisos 4.80 260 P Pn 16 10 25.8 +0.3
PAIG Paliouri 4.83 269 P Pn 16 10 25.5 -0.4
PAIG Paliouri 4.83 269 P Pn 16 10 25.5 -0.4
PAIG Paliouri 4.83 269 P Pn 16 10 25.5 -0.4
PAIG Paliouri 4.83 269 P Pn 16 10 25.5 -0.4
SRS Serrai 4.93 283 P Pn 16 10 27.1 -0.3
SRS Serrai 4.93 283 P Pn 16 10 27.1 -0.3
SRS Serrai 4.93 283 P Pn 16 10 27.1 -0.3
SRS Serrai 4.93 283 P Pn 16 10 27.1 -0.3
PLG Polygyros 4.99 274 P Pn 16 10 28.1 -0.1
PLG Polygyros 4.99 274 P Pn 16 10 28.1 -0.1
PLG Polygyros 4.99 274 P Pn 16 10 28.1 -0.1
PLG Polygyros 4.99 274 P Pn 16 10 28.1 -0.1
EREA Eretria 4.99 251 P Pn 16 10 28.7 +0.4
EREA Eretria 4.99 251 P Pn 16 10 28.7 +0.4
TLCR 5.07 351⇓iP Pn 16 10 30.6 +1.3
TLCR 5.07 351⇓iP Pn 16 10 30.6 +1.3
SOH Sokhos 5.08 279 P Pn 16 10 29.2 -0.2
SOH Sokhos 5.08 279 P Pn 16 10 29.2 -0.2
SOH Sokhos 5.08 279 P Pn 16 10 29.2 -0.2
SOH Sokhos 5.08 279 P Pn 16 10 29.2 -0.2
SKIA Skiathos 5.11 261 P Pn 16 10 29.5 -0.4
SKIA Skiathos 5.11 261 P Pn 16 10 29.5 -0.4
KARP Karpathos 5.13 206 P Pn 16 10 30.2 +0.1
KARP Karpathos 5.13 206 P Pn 16 10 30.2 +0.1
KARP Karpathos 5.13 206 ePn Pn 16 10 30.7 +0.6
KARP Karpathos 5.13 206 ePn Pn 16 10 30.7 +0.6
SEV Sevastopol' 5.15 31ceP Pn 16 10 30.8 +0.4
SEV iS Sn 16 11 32.1 +2.3
SEV pmax pmax
comp=Z,16nm,0.3s
SEV smax smax
comp=E,88nm,0.4s
SEV smax smax
comp=N,100nm,0.3s
SEV Sevastopol' 5.15 31 eP Pn 16 10 30.8 +0.4
comp=N,16nm,0.3s
SEV iS Sn 16 11 32.1 +2.3
comp=N,100nm,0.3s
CFR Carcaliu 5.17 346⇑iP Pn 16 10 30.8 +0.2
CFR Carcaliu 5.17 346⇑iP Pn 16 10 30.8 +0.2
SANT Santorini 5.20 224 ePn Pn 16 10 31.6 +0.5
SANT Santorini 5.20 224 ePn Pn 16 10 31.6 +0.5
HORT Hortiatis 5.25 277 P Pn 16 10 32.3 +0.4
HORT Hortiatis 5.25 277 P Pn 16 10 32.3 +0.4
HORT Hortiatis 5.25 277 P Pn 16 10 32.3 +0.4
NEO Neokhori 5.26 263 P Pn 16 10 31.9 -0.1
NEO Neokhori 5.26 263 P Pn 16 10 31.9 -0.1
NEO Neokhori 5.26 263 P Pn 16 10 31.9 -0.1
XOR Xorichti 5.28 263 P Pn 16 10 32.0 -0.2
XOR Xorichti 5.28 263 P Pn 16 10 32.0 -0.2
XOR Xorichti 5.28 263 P Pn 16 10 32.0 -0.2
YAL Yalta 5.31 34⇓eP Pn 16 10 33.1 +0.6
YAL e 16 11 32.0
YAL pmax pmax
comp=Z,83nm,0.3s
YAL smax smax
comp=N,259nm,0.5s
YAL smax smax
comp=E,5.0nm,0.5s
YAL Yalta 5.31 34 eP Pn 16 10 33.1 +0.6
comp=E,83nm,0.3s
YAL eS Sn 16 11 32.0 -1.6
VLY Voula,Athens 5.33 246 P Pn 16 10 33.7 +0.8
VLY Voula,Athens 5.33 246 P Pn 16 10 33.7 +0.8
VLY Voula,Athens 5.33 246 P Pn 16 10 33.7 +0.8
KNT Kendrikon 5.46 283 P Pn 16 10 35.2 +0.6
KNT Kendrikon 5.46 283 P Pn 16 10 35.2 +0.6
KNT Kendrikon 5.46 283 P Pn 16 10 35.2 +0.6
KNT Kendrikon 5.46 283 P Pn 16 10 35.2 +0.6
FYTO Fytoko, Volos 5.46 264 P Pn 16 10 34.9 +0.2
FYTO Fytoko, Volos 5.46 264 P Pn 16 10 34.9 +0.2
FYTO Fytoko, Volos 5.46 264 P Pn 16 10 34.9 +0.2
ISR Istrita 5.54 334⇑iP Pn 16 10 38.1 +2.3
ISR Istrita 5.54 334⇑iP Pn 16 10 38.1 +2.3
VILL Villia 5.54 251 P Pn 16 10 36.2 +0.4
VILL Villia 5.54 251 P Pn 16 10 36.2 +0.4
ALU Alushta 5.57 35 eP Pn 16 10 36.6 +0.5
ALU e 16 11 38.2
ALU smax smax
comp=N,964nm,0.5s
ALU smax smax
comp=E,200nm,0.5s
ALU Alushta 5.57 35 eP Pn 16 10 36.6 +0.5
ALU eS Sn 16 11 38.2 -1.8
ATAL Atalanti 5.57 257 P Pn 16 10 36.5 +0.3
ATAL Atalanti 5.57 257 P Pn 16 10 36.5 +0.3
ATAL Atalanti 5.57 257 P Pn 16 10 36.5 +0.3
LKR Lokris 5.60 256 P Pn 16 10 36.5 -0.1
LKR Lokris 5.60 256 P Pn 16 10 36.5 -0.1
LKR Lokris 5.60 256 P Pn 16 10 36.5 -0.1
VTS Vitosha 5.62 298 P Pn 16 10 37.5 +0.5
VTS Vitosha 5.62 298⇓iP Pn 16 10 37.3 +0.3
VTS Vitosha 5.62 298 eP Pn 16 10 37.3 +0.3
VTS Vitosha 5.62 298 ePn Pn 16 10 37.3 +0.3
VTS Vitosha 5.62 298 ePn Pn 16 10 37.3 +0.3
GRER 5.64 338⇑iP Pn 16 10 38.1 +1.0
GRER 5.64 338⇑iP Pn 16 10 38.1 +1.0
SIM Simferopol' 5.67 31 eP Pn 16 10 38.4 +0.9
SIM eS Sn 16 11 41.0 -1.4
SIM pmax pmax
comp=Z,119nm,0.7s
SIM MLR MLR
comp=Z,600nm,15.0s
SIM Simferopol' 5.67 31 eP Pn 16 10 38.4 +0.9
comp=Z,119nm,0.7s
SIM eS Sn 16 11 41.0 -1.4
comp=Z,600nm,15.0s
LIT Litokhoron 5.72 272 P Pn 16 10 38.4 +0.1
LIT Litokhoron 5.72 272 P Pn 16 10 38.4 +0.1
LIT Litokhoron 5.72 272 P Pn 16 10 38.4 +0.1
LIT Litokhoron 5.72 272 P Pn 16 10 38.4 +0.1
LTK Loutraki 5.85 251 P Pn 16 10 40.7 +0.7
LTK Loutraki 5.85 251 P Pn 16 10 40.7 +0.7
LTK Loutraki 5.85 251 P Pn 16 10 40.7 +0.7
CSS Mathiatis 5.86 152 P Pn 16 10 39.5 -0.6
CSS Mathiatis 5.86 152 P Pn 16 10 39.5 -0.6
CSS Mathiatis 5.86 152 ePn Pn 16 10 36.7 -3.5
ODBI Odobesti 5.97 340⇑iP Pn 16 10 44.6 +3.0
SUDU Sudak 6.00 37⇓eP Pn 16 10 42.2 +0.2
SUDU e 16 11 48.7
SUDU pmax pmax
comp=Z,153nm,0.5s
SUDU smax smax
comp=N,290nm,0.7s
SUDU smax smax
comp=E,850nm,0.7s
SUDU Sudak 6.00 37 eP Pn 16 10 42.2 +0.2
comp=E,153nm,0.5s
SUDU eS Sn 16 11 48.7 -1.9
AGG Agios Georgios 6.00 261 P Pn 16 10 42.7 +0.5
AGG Agios Georgios 6.00 261 eP Pn 16 10 42.5 +0.3
AGG Agios Georgios 6.00 261 ePn Pn 16 10 42.5 +0.3
AGG Agios Georgios 6.00 261 ePn Pn 16 10 42.5 +0.3
DSF Desfina 6.03 255 P Pn 16 10 42.7 +0.2
DSF Desfina 6.03 255 P Pn 16 10 42.7 +0.2
DSF Desfina 6.03 255 P Pn 16 10 42.7 +0.2
MLR Muntele Rosu 6.07 332 Pn Pn 16 10 44.8 +1.7
comp=E,0.8nm,0.3s,baz=134,slow=6.6,SNR=35
MLR Lg Lg 16 12 25.2
comp=E,1.3nm,0.3s,baz=322,slow=23,SNR=3.4
MLR LR LR 16 13 23.5
comp=E,160nm,20.1s,baz=128,slow=41
MLR Muntele Rosu 6.07 332⇓iP Pn 16 10 45.2 +2.0
MLR Muntele Rosu 6.07 332⇓iP Pn 16 10 45.2 +2.0
LAST Lasithi 6.14 217 ePn Pn 16 10 45.1 +1.0
LAST Lasithi 6.14 217 ePn Pn 16 10 45.1 +1.0
THL Klokotos Trika 6.14 267 P Pn 16 10 44.9 +0.9
THL Klokotos Trika 6.14 267 P Pn 16 10 44.9 +0.9
PLOR Plostina 6.16 338⇑iP Pn 16 10 45.8 +1.5
PLOR Plostina 6.16 338⇑iP Pn 16 10 45.8 +1.5
KZN Kozani 6.27 274 P Pn 16 10 45.7 -0.1
KZN Kozani 6.27 274 P Pn 16 10 45.7 -0.1
KZN Kozani 6.27 274 P Pn 16 10 45.7 -0.1
KZN Kozani 6.27 274 P Pn 16 10 45.7 -0.1
FEO Feodosiya 6.28 38 eP Pn 16 10 48.7 +2.8
FEO eS Sn 16 12 00.5 +3.0
FEO pmax pmax
comp=Z,124nm,0.5s
FEO smax smax
comp=N,300nm,0.4s
FEO smax smax
comp=E,58nm,0.4s
FEO Feodosiya 6.28 38 eP Pn 16 10 48.7 +2.8
comp=E,124nm,0.5s
FEO eS Sn 16 12 00.5 +3.0
IDI Anoyia 6.32 221 Pn Pn 16 10 49.7 +3.1
comp=E,0.5nm,0.3s,baz=18,slow=14,SNR=5.1
IDI Anoyia 6.32 221 P Pn 16 10 47.9 +1.3
IDI Anoyia 6.32 221 P Pn 16 10 47.9 +1.3
IDI Anoyia 6.32 221 ePn Pn 16 10 48.5 +1.9
IDI Anoyia 6.32 221 ePn Pn 16 10 48.5 +1.9
KALE Kalithea 6.32 256 P Pn 16 10 46.7 +0.1
KALE Kalithea 6.32 256 P Pn 16 10 46.7 +0.1
KALE Kalithea 6.32 256 P Pn 16 10 46.7 +0.1
VOIR 6.37 327⇓iP Pn 16 10 47.9 +0.7
VOIR 6.37 327⇓iP Pn 16 10 47.9 +0.7
ANX Ano Chora 6.42 258 P Pn 16 10 48.6 +0.6
ANX Ano Chora 6.42 258 P Pn 16 10 48.6 +0.6
EVR Evrytania 6.42 261 P Pn 16 10 48.6 +0.6
EVR Evrytania 6.42 261 P Pn 16 10 48.6 +0.6
EVR Evrytania 6.42 261 P Pn 16 10 48.6 +0.6
KLV Kalavryta, Ach 6.43 253 P Pn 16 10 48.5 +0.4
KLV Kalavryta, Ach 6.43 253 P Pn 16 10 48.5 +0.4
KLV Kalavryta, Ach 6.43 253 P Pn 16 10 48.5 +0.4
LAKA Lakka 6.49 255 P Pn 16 10 50.2 +1.3
LAKA Lakka 6.49 255 P Pn 16 10 50.2 +1.3
LAKA Lakka 6.49 255 P Pn 16 10 50.2 +1.3
ARR Arges 6.50 325⇓iP Pn 16 10 49.0 +0.1
ARR Arges 6.50 325⇓iP Pn 16 10 49.0 +0.1
VLI Veliai 6.50 240 P Pn 16 10 49.7 +0.7
VLI Veliai 6.50 240 P Pn 16 10 49.7 +0.7
VLI Veliai 6.50 240 P Pn 16 10 49.7 +0.7
VLX Vlachokerasia 6.55 247 P Pn 16 10 51.1 +1.3
VLX Vlachokerasia 6.55 247 P Pn 16 10 51.1 +1.3
VLX Vlachokerasia 6.55 247 P Pn 16 10 51.1 +1.3
FNA Florina 6.57 278 P Pn 16 10 50.6 +0.6
FNA Florina 6.57 278 P Pn 16 10 50.6 +0.6
FNA Florina 6.57 278 P Pn 16 10 50.6 +0.6
FNA Florina 6.57 278 P Pn 16 10 50.6 +0.6
BARS Barje 6.66 296⇑iPn Pn 16 10 51.7 +0.6
DOPR Dopca 6.68 331⇓iP Pn 16 10 52.8 +1.4
DOPR Dopca 6.68 331⇓iP Pn 16 10 52.8 +1.4
TESR Tescani 6.77 340⇑iP Pn 16 10 52.9 +0.3
TESR Tescani 6.77 340⇑iP Pn 16 10 52.9 +0.3
DRO Drossia 6.79 254 P Pn 16 10 54.3 +1.3
DRO Drossia 6.79 254 P Pn 16 10 54.3 +1.3
KIS Kishinev 6.86 353 eP Pn 16 10 53.0 -0.9
KIS LRM MLR 16 14 04.0
comp=E,700nm,8.0s
KIS Kishinev 6.86 353 eP Pn 16 10 53.0 -0.9
KIS i 16 12 22.0
KIS MLR MLR
comp=Z,900nm,8.0s
KIS MLR MLR
comp=Z,700nm,8.0s
KIS Kishinev 6.86 353 eP Pn 16 10 53.0 -0.9
KIS iS Sn 16 12 22.0 +10
comp=Z,700nm,8.0s
ITM Ithomi 6.96 247 P Pn 16 10 55.4 +0.1
ITM Ithomi 6.96 247 P Pn 16 10 55.4 +0.1
ITM Ithomi 6.96 247 P Pn 16 10 55.4 +0.1
KERU Kerch 7.01 41 eP Pb 16 11 07.1 -8.1
KERU Kerch 7.01 41 eP Pb 16 11 07.1 -8.1
BOVS Bovan 7.06 302 iPn Pn 16 10 56.9 +0.3
ANN Anapa 7.20 48 eP Pn 16 10 56.6 -1.9
ANN eS Sn 16 12 16.5 -3.6
ANN pmax pmax
comp=Z,23nm,0.7s
ANN Anapa 7.20 48 eP Pn 16 10 56.6 -1.9
comp=Z,23nm,0.7s
ANN eS Sn 16 12 16.5 -3.6
SELS Selova 7.28 298⇑iPn Pn 16 10 59.4 -0.2
KUBS Kucevo 7.45 307 iPn Pn 16 11 00.0 -2.0
MDVR Moldovita 7.63 310⇓iP Pn 16 11 04.1 -0.4
MDVR Moldovita 7.63 310⇓iP Pn 16 11 04.1 -0.4
GRUS Gruza 7.81 301⇑iPn Pn 16 11 07.0 +0.1
ARCR ARCALIA 8.01 331⇑iP Pn 16 11 11.4 +1.8
ARCR ARCALIA 8.01 331⇑iP Pn 16 11 11.4 +1.8
SOC Sochi 8.03 62 eP Pn 16 11 08.0 -2.0
SOC e 16 12 34.5
SOC smax smax
comp=N,12nm,0.6s
SOC smax smax
comp=E,7.0nm,0.5s
SOC MLR MLR
comp=Z,283nm,12.0s
SOC Sochi 8.03 62 eP Pn 16 11 08.0 -2.0
comp=Z,12nm,0.6s
SOC eS Sn 16 12 34.5 -6.2
comp=Z,283nm,12.0s
SORM Soroca 8.04 352⇑iP Pn 16 11 09.8 -0.1
SORM Soroca 8.04 352⇑iP Pn 16 11 09.8 -0.1
IVAS Ivanjica 8.06 298 iPn Pn 16 11 10.4 0.0
TRUS Trudelj 8.16 303 ePn Pn 16 11 11.5 -0.2
BZS Buzias 8.18 314⇑iP Pn 16 11 11.9 -0.1
BZS Buzias 8.18 314⇑iP Pn 16 11 11.9 -0.1
MMAI Mount Meron Ar 8.38 147 Pn Pn 16 11 15.0 +0.2
comp=Z,7.6nm,0.3s,baz=328,slow=12,SNR=22
DRGR 8.45 324⇑iP Pn 16 11 15.8 +0.1
DRGR 8.45 324⇑iP Pn 16 11 15.8 +0.1
SIRR Siria 8.58 318⇓iP Pn 16 11 16.6 -0.9
SIRR Siria 8.58 318⇓iP Pn 16 11 16.6 -0.9
BMR Baia Mare 8.82 330⇑iP Pn 16 11 22.0 +1.3
BMR Baia Mare 8.82 330⇑iP Pn 16 11 22.0 +1.3
ASF Jabal al Asfar 9.76 143 Pn Pn 16 11 23.8 -10
comp=Z,0.2nm,0.3s,baz=80,slow=5.0,SNR=6.2
NEY Neytrino 10.02 68⇑eP Pn 16 11 39.3 +1.9
NEY Neytrino 10.02 68 eP Pn 16 11 39.3 +1.9
KIV Kislovodsk 10.19 64 eP Pn 16 11 43.0 +3.4
KIV pmax pmax
comp=Z,10.0nm,1.1s
KIV MLR MLR
comp=Z,52nm,8.0s
KIV Kislovodsk 10.19 64 eP Pn 16 11 43.0 +3.4
comp=Z,52nm,8.0s
KVAR Kislovodsk Arr 10.19 64 Pn Pn 16 11 33.4 -6.3
baz=196,slow=5.3,SNR=3.6
KVAR LR LR 16 16 45.7
comp=Z,192nm,18.8s,baz=258,slow=45
TIP Timpagrande 10.23 269 ePn Pn 16 11 40.5 +0.4
TIP Timpagrande 10.23 269 ePn Pn 16 11 40.5 +0.4
KBZ Khabaz 10.27 66 Pn Pn 16 11 36.9 -3.7
comp=Z,0.1nm,0.3s,baz=57,slow=1.3,SNR=3.9
KBZ LR LR 16 16 27.9
comp=Z,178nm,19.3s,baz=274,slow=43
KOLS Kolonicke sedl 10.32 331 eP Pn 16 11 42.0 +0.7
KOLS Kolonicke sedl 10.32 331 ePn Pn 16 11 42.0 +0.7
KOLS Kolonicke sedl 10.32 331 ePN Pn 16 11 42.0 +0.7
AKH Akhalkalaki 10.34 79⇓iP Pn 16 11 43.5 +1.8
AKH Akhalkalaki 10.34 79⇓iP Pn 16 11 43.5 +1.8
LVV L'vov 10.51 338 eP Pn 16 11 44.5 +0.7
LVV L'vov 10.51 338 eP Pn 16 11 44.5 +0.7
AK11 Malin Array Si 10.51 357 ePn Pn 16 11 42.4 -1.5
AK11 Malin Array Si 10.51 357 ePn Pn 16 11 42.4 -1.5
KIEV Kiev 10.53 357⇑eP Pn 16 11 44.5 +0.4
KIEV Kiev 10.53 357 ePn Pn 16 11 43.3 -0.8
KIEV Kiev 10.53 357 eP Pn 16 11 44.5 +0.4
KIEV Kiev 10.53 357 ePn Pn 16 11 43.4 -0.8
AKASG Malin Array Be 10.53 357 Pn Pn 16 11 43.0 -1.2
comp=Z,3.3nm,0.3s,baz=174,slow=12,SNR=19
AKASG Sn Sn 16 13 38.6 -3.4
comp=Z,5.7nm,0.3s,baz=171,slow=23,SNR=5.6
AKBB Malin Array Si 10.53 357 eP Pn 16 11 43.8 -0.4
AKBB Malin Array Si 10.53 357 ePn Pn 16 11 43.8 -0.4
AKBB Malin Array Si 10.53 357 ePn Pn 16 11 43.8 -0.4
CRVS Cervenica-Dubn 10.61 328 eP Pn 16 11 48.1 +2.8
CRVS Cervenica-Dubn 10.61 328 ePn Pn 16 11 48.1 +2.8
CRVS Cervenica-Dubn 10.61 328 ePN Pn 16 11 48.1 +2.8
NCK Nalchik 10.70 68⇓eP Pn 16 11 47.3 +0.8
NCK Nalchik 10.70 68 eP Pn 16 11 47.3 +0.8
KECS Kecovo 10.71 324 eP Pn 16 11 46.5 -0.1
KECS Kecovo 10.71 324 ePn Pn 16 11 46.5 -0.1
KECS Kecovo 10.71 324 ePN Pn 16 11 46.5 -0.1
GOF Gofitskoye 10.80 59⇑eP Pn 16 11 43.9 -4.0
GOF Gofitskoye 10.80 59 eP Pn 16 11 43.9 -4.0
CUC Castrocucco 10.84 274 ePn Pn 16 11 48.0 -0.5
CUC Castrocucco 10.84 274 ePn Pn 16 11 48.0 -0.5
CEL Celeste 11.08 265 ePn Pn 16 11 51.1 -0.7
CEL Celeste 11.08 265 ePn Pn 16 11 51.1 -0.7
STHS Stebnicka Huta 11.11 329 eP Pn 16 11 54.4 +2.3
STHS Stebnicka Huta 11.11 329 ePn Pn 16 11 54.4 +2.3
STHS Stebnicka Huta 11.11 329 ePN Pn 16 11 54.4 +2.3
EIL Elat 11.26 157 Pn Pn 16 11 55.1 +1.0
comp=Z,0.4nm,0.3s,baz=333,slow=5.9,SNR=1.6
EIL LR LR 16 16 50.2
comp=Z,153nm,20.4s,baz=244,slow=41
GNI Garni 11.32 85 LR LR 16 16 36.3
comp=Z,234nm,18.5s,baz=256,slow=40
GNI Garni 11.32 85deP Pn 16 11 54.5 -0.6
GNI Garni 11.32 85 eP Pn 16 11 54.5 -0.6
GNI Garni 11.32 85 ePn Pn 16 11 50.3 -4.8
OKC Ostrava-Krasne 12.75 323 AMS AMS 16 18 10.0
comp=Z,600nm,13.3s
VSR Storozhevoye 12.76 27 eP Pn 16 12 16.0 +1.4
VSR pmax pmax
comp=Z,20nm,0.9s
VSR Storozhevoye 12.76 27 eP Pn 16 12 16.0 +1.4
comp=Z,20nm,0.9s
WDD Wied Dalam 12.92 255 ePn Pn 16 12 16.7 -0.2

WDD	Wied Dalam	12.92	255	*e*Pn	Pn	16 12 16.7	-0.2		
DPC	Dobruska-Polom	13.96	321	AMS	AMS	16 18 50.0			
	comp=Z,600nm,12.6s								
UPC	Upice	14.21	321	AMS	AMS	16 19 20.0			
	comp=Z,500nm,13.1s								
GEA0	GERESS Array S	14.45	312	*e*Pn	Pn	16 12 40.0	+2.2		
GEA0	GERESS Array S	14.45	312	*e*Pn	Pn	16 12 40.0	+2.2		
GERES	GERESS Array B	14.45	312	Pn	Pn	16 12 40.7	+2.8		
	comp=Z,0.0nm,0.3s,baz=108,slow=12,SNR=2.7								
GOPC	GO Pecny, Ondr	14.45	317	AMS	AMS	16 19 50.0			
	comp=Z,700nm,12.5s								
PRU	Pruhonice	14.63	317	AMS	AMS	16 19 40.0			
	comp=Z,400nm,10.3s								
KHC	Kasperske Hory	14.67	313	*e*P	P	16 12 44.9	-2.1		
KHC				*ex*	x	16 12 49.5			
KHC				*ex*	x	16 17 16.9			
KHC				AMS	AMS	16 19 40.0			
	comp=Z,400nm,10.5s								
KHC	Kasperske Hory	14.67	313	*e*P	P	16 12 44.9	-2.1		
KHC				MLR	MLR				
	comp=Z,400nm,10.5s								
KHC	Kasperske Hory	14.67	313	*e*P	P	16 12 44.9	-2.1		
	comp=Z,400nm,10.5s								
PVCC	Panska Ves	14.94	319	AMS	AMS	16 19 10.0			
	comp=Z,600nm,15.1s								
OBN	Obninsk	15.58	14	LR	LR	16 19 22.6			
	comp=Z,199nm,18.4s,baz=93,slow=39								
OBN	Obninsk	15.58	14	*i* P	Pn	16 12 50.6	-2.1		
OBN				pmax	pmax				
	comp=Z,23nm,1.1s								
OBN				MLR	MLR				
	comp=Z,195nm,19.0s								
RETA	Reutte	15.63	304	*i* sP	P	16 12 59.7	+1.9		
	comp=Z,5.5nm,0.8s								
RETA	Reutte	15.63	304	P	P	16 12 59.7	+1.9		
	comp=Z,5.5nm,0.8s								
VSL	Villasalto	15.82	274	*e*Pn	P	16 12 58.4	-1.5		
	comp=Z,19nm,1.0s								
VSL	Villasalto	15.82	274	*e*Pn	P	16 12 58.4	-1.5		
	comp=Z,19nm,1.0s								
NKC	Novy Kostel	15.88	315	AMS	AMS	16 19 00.0			
	comp=Z,500nm,15.6s								
DAVOX	Davos/Dischmat	15.97	301	Pn	P	16 13 00.5	-1.2		
	comp=Z,0.2nm,0.3s,baz=90,slow=9.7,SNR=3.2								
DAVA	Damuels	16.13	303	*e*pP	P	16 13 04.1	+0.7		
	comp=Z,20nm,1.1s								
DAVA	Damuels	16.13	303	P	P	16 13 04.1	+0.7		
	comp=Z,20nm,1.1s								
CLL	Collm	16.20	319	*i* P	Pn	16 13 01.7	+0.9		
	comp=Z,15nm,1.6s								
CLL				*i*		16 13 08.6			
CLL	Collm	16.20	319	*e*	P	16 13 16.0	+12		
CLL	Collm	16.20	319	*i* P	Pn	16 13 01.7	+0.9		
CLL				pmax	pmax				
	comp=Z,15nm,1.6s								
CLL	Collm	16.20	319	*e*Pn	Pn	16 13 01.6	+0.8		
	comp=Z,4.6nm,0.8s								
CLL	Collm	16.20	319	*e*Pn	Pn	16 13 01.6	+0.8		
	comp=Z,4.6nm,0.8s								
TUE	Stuetta	16.24	300	*e*Pn	Pn	16 13 02.8	+1.2		
	comp=Z,27nm,1.8s								
TUE	Stuetta	16.24	300	*e*Pn	Pn	16 13 02.8	+1.2		
	comp=Z,27nm,1.8s								
GRFO	Grafenberg	16.28	312	*e*P	P	16 13 04.1	-0.8		
GRFO				pmax	pmax				
	comp=Z,21nm,1.4s								
GRFO	Grafenberg	16.28	312	*e*Pn	P	16 13 04.1	-0.8		
	comp=Z,21nm,1.4s								
GRFO	Grafenberg	16.28	312	*e*Pn	P	16 13 04.0	-0.8		
	comp=Z,21nm,1.4s								
MOS	Moscow	16.37	16	*e*P	Pn	16 13 02.6	-0.4		
MOS				*e*S	Sn	16 16 00.3	-4.1		
MOS				pmax	pmax				
	comp=Z,57nm,1.2s								
KEST	Kesra	16.84	261	Pn	P	16 13 12.3	+1.1		
	comp=Z,0.5nm,0.3s,baz=27,slow=6.8,SNR=31								
KEST	Kesra	16.84	261	*e*Pn	P	16 13 11.6	+0.3		
	comp=Z,52nm,1.0s								
KEST	Kesra	16.84	261	*e*Pn	P	16 13 11.6	+0.3		
	comp=Z,52nm,1.0s								
BFO	Black Forest	17.46	305	*e*P	Pn	16 13 15.9	-0.9		
BFO				pmax	pmax				
	comp=Z,11nm,1.0s								
BFO	Black Forest	17.46	305	*e*Pn	Pn	16 13 15.9	-0.9		
	comp=Z,11nm,1.0s								
BFO	Black Forest	17.46	305	*e*Pn	Pn	16 13 15.9	-0.9		
	comp=Z,11nm,1.0s								
SENIN	Lac Senin/Sane	17.59	298	*e*Pn	Pn	16 13 18.8	+0.2		
	comp=Z,7.8nm,0.9s								
SENIN	Lac Senin/Sane	17.59	298	*e*Pn	Pn	16 13 18.8	+0.2		
	comp=Z,7.8nm,0.9s								
VSU	Vasula	18.41	355⇑	*e*P	Pn	16 13 29.5	+1.1		
VSU				pmax	pmax				
	comp=Z,21nm,0.6s								
VSU	Vasula	18.41	355	*e*P	Pn	16 13 29.5	+1.1		
	comp=Z,21nm,0.6s								
SSB	Saint Sauveur	19.32	294	*e*P	P	16 13 38.7	+0.3		
SSB				pmax	pmax				
	comp=Z,15nm,1.6s								
SSB	Saint Sauveur	19.32	294	*e*P	P	16 13 38.7	+0.3		
	comp=Z,15nm,1.6s								
SSB	Saint Sauveur	19.32	294	*e*P	P	16 13 38.7	+0.3		
	comp=Z,15nm,1.6s								
MEM	Membach	19.70	310	P	Pn	16 13 45.3	+1.2		
	comp=Z,19nm,1.2s								
MEM	Membach	19.70	310	P	Pn	16 13 45.2	+1.2		
	comp=Z,19nm,1.2s								
BCLA	Clavier	20.05	309	P	Pn	16 13 48.7	+0.6		
	comp=Z,22nm,1.6s								
BCLA	Clavier	20.05	309	P	Pn	16 13 48.6	+0.5		
	comp=Z,22nm,1.6s								
DOU	Dourbes	20.36	308	P	Pn	16 13 51.2	-0.6		
	comp=Z,7.2nm,1.0s								
DOU	Dourbes	20.36	308	P	Pn	16 13 51.1	-0.7		
	comp=Z,7.2nm,1.0s								
SNF	Seneffe	20.69	308	P	Pn	16 13 55.3	-0.3		
SNF	Seneffe	20.69	308	P	Pn	16 13 55.2	-0.4		
FINES	FINESS Array B	21.42	355	P	P	16 14 01.0	0.0		
	comp=Z,4.6nm,0.5s,baz=163,slow=10,SNR=20								
FINES				S	S	16 17 46.7	-12		
	comp=Z,1.3nm,0.6s,baz=159,slow=23,SNR=2.7								
FINES	FINESS Array B	21.42	355	P	P	16 14 01.0	0.0		
FINES				S	S	16 17 46.7	-12		
FINES				pmax	pmax				
	comp=Z,6.0nm,0.8s								
FINES				smax	smax				
	comp=N,1.0nm,0.6s								
FINES	FINESS Array S	21.42	355	P	P	16 14 01.0	0.0		
FIA1	FINESS Array S	21.42	355	*e*P	P	16 14 00.4	-0.7		
FIA1	FINESS Array S	21.42	355	*e*P	P	16 14 00.4	-0.7		
KLMR	Klimovskoe	21.53	13	*e*P	P	16 14 00.9	-1.3		
KLMR				*e*		16 18 00.5			
KLMR				pmax	pmax				
	comp=Z,39nm,1.3s								
KLMR	Klimovskoe	21.53	13	*e*P	P	16 14 00.9	-1.3		
	comp=Z,39nm,1.3s								
KLMR				*e*S	S	16 18 00.5	+0.1		
GEYT	Alibeck	21.95	87	P	P	16 14 07.8	+0.8		
	comp=Z,27nm,0.9s,baz=295,slow=14,SNR=44								
AKTK	Aktyubinsk	22.11	53	P	P	16 14 07.9	-0.7		
	comp=Z,9.0nm,0.8s								
AKTO	Aktyubinsk	22.11	53	P	P	16 14 07.8	-0.7		
	comp=Z,9.0nm,0.8s,baz=249,slow=11,SNR=9.3								
HFS	Hagfors	22.41	338	P	P	16 14 12.2	+0.6		
	comp=Z,7.8nm,0.8s,baz=146,slow=11,SNR=15								
HFS				LR	LR	16 24 25.4			
	comp=Z,137nm,18.6s,baz=157,slow=41								
HFS	Hagfors	22.41	338	P	P	16 14 12.2	+0.6		
HFS				pmax	pmax				
	comp=Z,5.0nm,0.7s								
HFS				MLR	MLR				
	comp=Z,137nm,18.6s								
ABKAR	Akbulak array	23.03	57	*e*P	P	16 14 15.7	-2.6		
NAO01	NORSAR Array S	23.80	337	*e*P	P	16 14 25.4	-0.5		
NAO01	NORSAR Array S	23.80	337	*e*P	P	16 14 25.4	-0.5		
NB2	NORSAR Subarra	23.86	337	P	P	16 14 27.9	+1.4		
	comp=Z,16nm,1.0s,baz=138,slow=10								
NB2	NORSAR Subarra	23.86	337	P	P	16 14 27.9	+1.4		
	comp=Z,16nm,1.0s,SNR=5.8								
NOA	NORSAR Array B	23.86	337	P	P	16 14 25.8	-0.7		
	comp=Z,13nm,1.0s,baz=141,slow=9.4,SNR=17								
NOA				LR	LR	16 25 30.4			
	comp=Z,105nm,20.5s,baz=145,slow=41								
NC303	NORSAR Array S	23.96	338	*e*P	P	16 14 27.5	+0.1		
NC303	NORSAR Array S	23.96	338	*e*P	P	16 14 27.5	+0.1		
NBO02	NORSAR Array S	23.98	337	*e*P	P	16 14 28.3	+0.8		
NBO02	NORSAR Array S	23.98	337	*e*P	P	16 14 28.3	+0.8		
NBO00	NORSAR Array S	23.98	337	*e*P	P	16 14 28.3	+0.7		
NBO00	NORSAR Array S	23.98	337	*e*P	P	16 14 28.3	+0.7		
NC204	NORSAR Array S	24.18	337	*e*P	P	16 14 29.0	-0.5		
NC204	NORSAR Array S	24.18	337	*e*P	P	16 14 29.0	-0.5		
ARU	Arti	24.76	39	P	P	16 14 34.2	-0.6		
	comp=Z,3.0nm,0.4s,baz=240,slow=7.2,SNR=4.4								
ARU	Arti	24.76	39	*d* iP	P	16 14 34.6	-0.2		
ARU						16 15 08.2			
ARU				S	S	16 18 56.9	+0.4		
ARU				SS	SnSn	16 19 42.9	-0.1		
ARU				pmax	pmax				
	comp=Z,6.0nm,1.0s								
ARU	Arti	24.76	39	*i* P	P	16 14 34.6	-0.2		
	comp=Z,6.0nm,1.0s								
ARU				S	S	16 18 56.9	+0.4		
ARU	Arti	24.76	39	*e*P	P	16 14 32.8	-1.9		
	comp=Z,14nm,1.0s								
SOKR	Solikamsk	25.70	32⇑	*i*P	P	16 14 42.3	-0.9		
SOKR				pmax	pmax				
	comp=Z,21nm,1.1s								
SOKR				MLR	MLR				
	comp=Z,176nm,20.0s								
ESDC	Sonseca Array	25.93	280	P	P	16 14 46.5	+0.9		
	comp=Z,1.4nm,0.5s,baz=67,slow=9.2,SNR=13								
SVE	Sverdlovsk	25.96	40	*e*P	P	16 14 46.3	+0.7		
SVE				pmax	pmax				
	comp=Z,17nm,1.1s								
SVE	Sverdlovsk	25.96	40	*e*P	P	16 14 46.3	+0.7		
	comp=Z,17nm,1.1s								
PAB	San Pablo	26.25	280	*e*P	P	16 14 49.4	+0.9		
PAB				pmax	pmax				
	comp=Z,18nm,1.1s								
PAB	San Pablo	26.25	280	*e*P	P	16 14 49.4	+0.9		
	comp=Z,18nm,1.1s								
PAB	San Pablo	26.25	280	*e*P	P	16 14 49.4	+0.9		
	comp=Z,18nm,1.1s								
EKA	Eskdalemuir Ar	26.61	316	P	P	16 14 52.1	+0.6		
	comp=Z,2.9nm,0.9s,baz=116,slow=16,SNR=7.9								
TAM	Tamanrasset	26.97	237	*e*P	P	16 14 53.9	-1.3		
TAM				pmax	pmax				
	comp=Z,6.0nm,1.1s								
TAM	Tamanrasset	26.97	237	*e*P	P	16 14 53.9	-1.3		
	comp=Z,5.8nm,1.1s								
TAM	Tamanrasset	26.97	237	*e*P	P	16 14 53.9	-1.3		
	comp=Z,5.8nm,1.1s								
ZRNK	Zerenda	29.34	51	P	P	16 15 15.7	-0.2		
ZRNK				pmax	pmax				
	comp=Z,9.0nm,1.1s								
ZRNK	Zerenda	29.34	51	P	P	16 15 15.7	-0.2		
	comp=Z,9.0nm,1.1s								
ZRNK	Zerenda	29.34	51	*e*P	P	16 15 16.7	+0.8		
	comp=Z,6.8nm,0.9s								
ARA0	ARCESS Array S	29.51	357	*e*P	P	16 15 17.5	+0.2		
ARA0	ARCESS Array S	29.51	357	*e*P	P	16 15 17.5	+0.2		
ARCES	ARCESS Array B	29.51	357	P	P	16 15 17.6	+0.3		
	comp=Z,8.3nm,0.8s,baz=170,slow=7.4,SNR=14								
BRVK	Borovoye	30.12	51⇑	*e*P	P	16 15 24.2	+1.4		
BRVK				pmax	pmax				
	comp=Z,11nm,1.0s								
BRVK	Borovoye	30.12	51	*e*P	P	16 15 24.2	+1.4		
	comp=Z,11nm,1.0s								
BVAR	Borovoye Array	30.18	51	LR	LR	16 28 54.5			
	comp=Z,103nm,19.7s,baz=331,slow=39								
VOSK	Vostochnaya	30.49	52	P	P	16 15 25.5	-0.6		
VOSK				pmax	pmax				
	comp=Z,11nm,0.8s								
VOSK	Vostochnaya	30.49	52	P	P	16 15 25.5	-0.6		
	comp=Z,11nm,0.8s								
OTUK	Ortayu	31.10	61	P	P	16 15 31.7	+0.2		
OTUK				pmax	pmax				
	comp=Z,28nm,0.9s								
OTUK	Ortayu	31.10	61	P	P	16 15 31.7	+0.2		
	comp=Z,28nm,0.9s								
AAK	Ala-Archa	33.20	71⇑	*e*P	P	16 15 51.9	+1.6		
AAK				pmax	pmax				
	comp=Z,9.0nm,1.0s								
AAK	Ala-Archa	33.20	71	*e*P	P	16 15 51.9	+1.6		
	comp=Z,9.0nm,1.0s								
FRU	Bishkek	33.26	71⇑	*i* P	P	16 15 52.0	+1.4		
FRU	Bishkek	33.26	71	*i* P	P	16 15 52.0	+1.4		
KSH	Kashi	35.03	76	*e*P	P	16 16 06.0	-0.1		
KSH				*e*PP	PnPn	16 17 23.4	+0.3		
KSH				*e*PcP	PcP	16 18 40.0	+2.0		
KSH				S	S	16 21 36.4	-1.6		
KSH				PcS	PcS	16 22 24.8	0.0		
KSH				LR	LR				
	comp=N,160nm,6.7s								
KSH				LR	LR				
	comp=E,110nm,8.4s								
KSH				LR	LR				
	comp=Z,150nm,9.8s								
KURBB	Kurchatov Arra	35.08	56	PcP	PcP	16 18 37.8	+0.1		
	comp=Z,0.8nm,0.8s,baz=274,slow=3.7,SNR=5.0								
KURK	Kurchatov	35.14	56	PcP	PcP	16 18 37.8	-0.1		
KURK	Kurchatov	35.14	56	PcP	PcP	16 18 37.8	-0.1		
TOA0	Torodi Ar. Sit	36.62	231	*e*P	P	16 16 19.8	0.0		
TOA0	Torodi Ar. Sit	36.62	231	*e*P	P	16 16 19.8	0.0		
TORD	Torodi Ar. Bea	36.62	231	P	P	16 16 20.0	+0.3		
	comp=Z,8.6nm,0.8s,baz=37,slow=9.4,SNR=30								
MAKZ	Makanchi	37.73	62	P	P	16 16 29.4	+0.5		
MAKZ				pmax	pmax				
	comp=Z,9.0nm,0.8s								
MAKZ	Makanchi	37.73	62	P	P	16 16 29.4	+0.5		
	comp=Z,9.0nm,0.8s								
MAKZ	Makanchi	37.73	62	*e*P	P	16 16 29.0	+0.1		
	comp=Z,10.0nm,0.9s								
NVS	Novosibirsk	37.89	49⇓	*i*P	P	16 16 32.3	+2.2		
NVS				pmax	pmax				
	comp=Z,14nm,1.0s								
NVS				pmax	pmax				
	comp=N,3.0nm,0.8s								
NVS				pmax	pmax				
	comp=E,7.0nm,0.8s								
NVS	Novosibirsk	37.89	49	*i* P	P	16 16 32.3	+2.2		
	comp=E,14nm,1.0s								
MK31	Makanchi Array	37.94	62	*i* P	P	16 16 31.4	+0.7		
MK31				pmax	pmax				
	comp=Z,14nm,0.6s								
MK31	Makanchi Array	37.94	62	*i* P	P	16 16 31.4	+0.7		
	comp=Z,14nm,0.6s								
MK31	Makanchi Array	37.94	62	*e*P	P	16 16 31.4	+0.7		
MKAR	Makanchi Array	37.94	62	P	P	16 16 31.5	+0.8		
	comp=Z,22nm,0.7s,baz=286,slow=6.6,SNR=167								
MK01	Makanchi Array	37.95	62	*e*P	P	16 16 31.5	+0.6		
ZAA0	Zalesovo Array	38.83	50	*e*P	P	16 16 38.1	+0.1		
ZAA0	Zalesovo Array	38.83	50	*e*P	P	16 16 38.1	+0.1		
ZALV	Zalesovo Beam	38.83	50	P	P	16 16 38.5	+0.5		
	comp=Z,6.2nm,0.8s,baz=266,slow=9.3,SNR=26								
WMQ	Urumqi	42.31	65	*e*P	P	16 17 08.2	+1.1		
WMQ				pmax	pmax				
	comp=Z,18nm,1.0s								
WMQ				pmax	pmax				
	comp=Z,110nm,6.3s								
DBIC	Dimbokro	45.66	232	P	P	16 17 34.1	+0.1		
	comp=Z,6.2nm,0.8s,baz=4.8,slow=8.0,SNR=6.4								
DBIC	Dimbokro	45.66	232	*e*P	P	16 17 34.2	+0.1		
	comp=Z,17nm,1.1s								
DBIC	Dimbokro	45.66	232	*e*P	P	16 17 34.1	+0.1		
	comp=Z,17nm,1.1s								
MOY	Mondy	48.86	51	*e*P	P	16 18 00.7	+1.9		
MOY	Mondy	48.86	51	*e*P	P	16 18 00.7	+1.9		
LSA	Lhasa	50.36	82	*e*P	P	16 18 08.5	-2.4		
LSA				pmax	pmax				
	comp=Z,8.0nm,0.8s								
LSA	Lhasa	50.36	82	*e*P	P	16 18 08.5	-2.4		
	comp=Z,8.0nm,0.8s								
LSA	Lhasa	50.36	82	*e*P	P	16 18 08.5	-2.4		
	comp=Z,7.7nm,0.8s								
TLY	Talaya	50.44	51	*e*P	P	16 18 13.2	+2.5		
TLY				pmax	pmax				
	comp=Z,8.0nm,0.9s								
TLY	Talaya	50.44	51	*e*P	P	16 18 13.2	+2.5		
	comp=Z,8.0nm,0.9s								
ZAK	Zakamensk	50.62	53	*e*P	P	16 18 13.1	+0.9		
ZAK				*e*		16 19 26.1			
ZAK				pmax	pmax				
	comp=Z,4.0nm,1.6s								
ZAK	Zakamensk	50.62	53	*e*P	P	16 18 13.1	+0.9		
	comp=Z,4.0nm,1.6s								
GTA	Gaotai	52.35	67	*e*P	P	16 18 25.8	+0.4		
GTA				pP	sP	16 18 30.8	-0.1		
GTA				sP	pP	16 18 34.3	+5.0		
GTA				pmax	pmax				
	comp=Z,6.0nm,1.1s								
SONA1	Songino Array	53.42	55	*e*P	P	16 18 32.0	-1.2		
SONA1	Songino Array	53.42	55	*e*P	P	16 18 32.0	-1.2		
SONM	Songino Array	53.42	55	P	P	16 18 33.5	+0.4		
	comp=Z,1.2nm,0.6s,baz=293,slow=8.3,SNR=11								
SONM				PcP	PcP	16 19 40.6	+0.3		
	comp=Z,1.0nm,0.7s,baz=264,slow=1.9,SNR=5.3								
BOD	Bodaibo	54.17	41	*e*P	P	16 18 37.9	-0.4		
BOD				pmax	pmax				
	comp=Z,8.0nm,1.0s								
BOD	Bodaibo	54.17	41	*e*P	P	16 18 37.9	-0.4		
	comp=Z,8.0nm,1.0s								
FRB	Frobisher Bay	58.32	329	P	P	16 19 08.9	+1.1		
	comp=Z,5.0nm,0.8s,baz=62,slow=7.4,SNR=5.3								
YAK	Yakutsk	59.62	33	*e*P	P	16 19 16.5	-0.3		
YAK				pmax	pmax				
	comp=Z,7.0nm,0.8s								
YAK	Yakutsk	59.62	33	*e*P	P	16 19 16.5	-0.3		
	comp=Z,7.0nm,0.8s								
YAK	Yakutsk	59.62	33	*e*P	P	16 19 16.2	-0.6		
	comp=Z,9.2nm,0.7s								
HHC	Hu-ho-hao-te	59.76	60	*e*P	P	16 19 19.4	+1.0		
HHC				PP	PP	16 21 39.2	+9.2		
HHC				S	S	16 27 30.1	+0.8		
HHC				pmax	pmax				
	comp=Z,10.0nm,1.0s								
HHC				pmax	pmax				
	comp=Z,65nm,7.0s								
HHC				LR	LR				
	comp=N,120nm,16.2s								
HHC				LR	LR				
	comp=E,140nm,17.7s								
HHC				LR	LR				
	comp=Z,110nm,18.1s								
KMI	Kunming	61.52	80	P	P	16 19 29.8	-0.9		
KMI				pP	pP	16 19 33.9	-0.8		
KMI				pmax	pmax				
	comp=Z,8.0nm,1.0s								
CHTO	Chiang Mai	62.21	88	*e*P	P	16 19 34.1	-1.0		
CHTO				pmax	pmax				
	comp=Z,5.0nm,0.8s								
CHTO	Chiang Mai	62.21	88	*e*P	P	16 19 34.1	-1.0		
	comp=Z,5.3nm,0.8s								
CHTO	Chiang Mai	62.21	88	*e*P	P	16 19 34.1	-1.0		
	comp=Z,5.3nm,0.8s								
CMAR	Chiang Mai Arr	62.42	89	P	P	16 19 35.6	-0.9		
	comp=Z,3.8nm,0.8s,baz=302,slow=7.8,SNR=31								
CM01	Chiang Mai Arr	62.45	89	*e*P	P	16 19 35.2	-1.6		
CM01	Chiang Mai Arr	62.45	89	*e*P	P	16 19 35.2	-1.6		
BJI	Beijing	63.22	59	P	P	16 19 40.0	-1.5		
BJI				pmax	pmax				
	comp=Z,3.0nm,0.8s								
BILL	Bilibino	67.23	16	*e*P	P	16 20 02.7	-4.4		
BILL				pmax	pmax				
	comp=Z,4.0nm,1.0s								
SEY	Seymchan	67.44	25⇑	*e*P	P	16 20 10.0	+1.4		
SEY	Seymchan	67.44	25	*e*P	P	16 20 10.0	+1.4		
BOSA	Boshof	68.58	184	P	P	16 20 16.5	+0.3		
	comp=Z,1.8nm,0.8s,baz=348,slow=3.9,SNR=3.3								
QIZ	Qiongzhong	70.39	81	P	P	16 20 26.8	-0.8		
QIZ				S	S	16 29 40.6	+0.4		
QIZ				LR	LR				
	comp=E,160nm,21.9s								
QIZ				LR	LR				
	comp=Z,140nm,18.5s								
USRK	Ussuriysk Ar.	70.63	48	P	P	16 20 28.2	-0.5		
	comp=Z,2.5nm,0.7s,baz=291,slow=5.6,SNR=6.3								
INK	Inuvik	71.12	354	P	P	16 20 31.8	+0.5		
	comp=Z,1.9nm,0.8s,baz=28,slow=9.5,SNR=4.2								
INK	Inuvik	71.12	354	*e*P	P	16 20 32.1	+0.9		
	comp=Z,5.5nm,1.3s								
INK	Inuvik	71.12	354	*e*P	P	16 20 32.1	+0.9		
	comp=Z,5.5nm,1.3s								
KS01	Wonju Array Si	72.23	56	*e*P	P	16 20 37.7	-0.8		
KS01	Wonju Array Si	72.23	56	*e*P	P	16 20 37.7	-0.8		
KSAR	Wonju Array Be	72.24	56	P	P	16 20 38.3	-0.2		
KSAR	Wonju Array Be	72.24	56	P	P	16 20 38.3	-0.2		
KSAR	Wonju Array Be	72.24	56	P	P	16 20 38.2	-0.2		
KSRS	Korea Array	72.26	56	P	P	16 20 38.2	-0.4		
	comp=Z,4.2nm,0.8s,baz=307,slow=5.8,SNR=12								
COLD	Coldfoot	72.92	0	*e*P	P	16 20 43.3	+1.3		
	comp=Z,4.4nm,1.0s								
COLD	Coldfoot	72.92	0	*e*P	P	16 20 43.3	+1.3		
	comp=Z,4.4nm,1.0s								
YKW3	Yellowknife Ar	73.72	344	*e*P	P	16 20 47.3	+0.5		
	comp=Z,5.7nm,1.0s								
YKW3	Yellowknife Ar	73.72	344	*e*P	P	16 20 47.3	+0.5		
	comp=Z,5.7nm,1.0s								
YKA	Yellowknife Ar	73.78	344	P	P	16 20 47.4	+0.3		
	comp=Z,2.0nm,0.8s,baz=28,slow=5.7,SNR=14								
YKB5	Yellowknife Ar	73.78	344	*e*P	P	16 20 46.9	-0.3		
YKB5	Yellowknife Ar	73.78	344	*e*P	P	16 20 46.9	-0.3		
YSS	Yuzh-Sakhalins	74.64	41⇑	*e*P	P	16 20 53.6	+1.1		
YSS				pmax	pmax				
	comp=Z,12nm,0.8s								
YSS	Yuzh-Sakhalins	74.64

TIR	**Tirane**	**0.36**	**269**	*i* Pg	**Pg**	**16 15 09.9**	**-0.2**
	SNR=90								
TIR				*i* Sg	**Sg**	**16 15 15.7**	**+0.9**
	SNR=90								
OHR	**Ohrid**	**0.42**	**125** ⇓	*i* Pg	**Pb**	**16 15 11.8**	**-1.0**
OHR				*i* Sg	**Sb**	**16 15 19.0**	**-0.5**
OHR				eLg	Lg	16 15 19.1	
	comp=N,17μm,0.5s						
OHR				eLg	Lg	16 15 19.3	
	comp=E,8μm,0.6s						
OHR	**Ohrid**	**0.42**	**125** ⇓	*i* Pg	**Pb**	**16 15 11.8**	**-1.0**
OHR				*i* Sg	**Sb**	**16 15 18.9**	**-0.5**
OHR				eLg	Lg	16 15 19.1	
	comp=E,17μm,0.5s						
FNA	**Florina**	**0.96**	**126**	P	**Pg**	**16 15 20.9**	**-0.7**
FNA				S	**Sb**	**16 15 35.2**	**0.0**
FNA	**Florina**	**0.96**	**126**	P	**Pg**	**16 15 20.9**	**-0.7**
FNA				S	**Sb**	**16 15 35.2**	**0.0**
ULC	**Ulcinj**	**1.02**	**307** ⇑	*i* Pg	**Pg**	**16 15 21.3**	**-1.4**
ULC				eSg	**Sg**	**16 15 36.2**	**+0.2**
ULC	**Ulcinj**	**1.02**	**307**	P	**Pg**	**16 15 21.4**	**-1.3**
ULC				eSg	**Sg**	**16 15 36.2**	**+0.2**
SKO	**Skopje**	**1.03**	**53**	P	**Pg**	**16 15 21.7**	**-1.1**
SKO				S	**Sb**	**16 15 36.9**	**0.0**
SKO	**Skopje**	**1.03**	**53** ⇓	*i* Pg	**Pg**	**16 15 22.4**	**-0.3**
SKO				*i* Sg	**Sb**	**16 15 37.5**	**+0.5**
SKO				eLg	Lg	16 15 37.8	
	comp=E,220nm,0.7s						
SKO				eLg	Lg	16 15 37.8	
	comp=N,272nm,0.4s						
SKO	**Skopje**	**1.03**	**53**	P	**Pg**	**16 15 21.7**	**-1.1**
SKO	**Skopje**	**1.03**	**53** ⇓	*i* Pg	**Pg**	**16 15 22.4**	**-0.3**
SKO				S	**Sb**	**16 15 36.9**	**0.0**
SKO				*i* Sg	**Sb**	**16 15 37.4**	**+0.5**
SKO				eLg	Lg	16 15 37.8	
	comp=N,272nm,0.4s						
NEST	**Nestorio**	**1.08**	**150**	P	**Pg**	**16 15 23.6**	**-0.1**
NEST				S	**Sn**	**16 15 39.8**	**-0.2**
NEST	**Nestorio**	**1.08**	**150**	P	**Pg**	**16 15 23.6**	**-0.1**
NEST				S	**Sn**	**16 15 39.8**	**-0.2**
DRME	**Dracevica, Mon**	**1.20**	**314** ⇓	*i* Pg	**Pg**	**16 15 24.8**	**-1.3**
DRME				eSg	**Sb**	**16 15 42.5**	**+0.5**
DRME	**Dracevica, Mon**	**1.20**	**314** ⇓	*i* Pn	**Pg**	**16 15 24.5**	**-1.6**
DRME	**Dracevica, Mon**	**1.20**	**314** ⇓	*i* Pg	**Pg**	**16 15 24.8**	**-1.3**
DRME				eSg	**Sb**	**16 15 42.5**	**+0.5**
PVY	**Plav**	**1.27**	**347** ⇑	*i* Pg	**Pg**	**16 15 26.5**	**-1.0**
PVY				eSg	**Sn**	**16 15 46.8**	**+1.9**
PVY	**Plav**	**1.27**	**347** ⇑	*i* Pg	**Pg**	**16 15 26.5**	**-1.0**
PVY				eSg	**Sn**	**16 15 46.8**	**+1.9**
PEJK	**Peje**	**1.29**	**358**	P	**Pb**	**16 15 28.5**	**+0.8**
PENT	**Pentalofos**	**1.30**	**152**	P	**Pb**	**16 15 27.9**	**-0.1**
PENT				S	**Sn**	**16 15 47.4**	**+1.8**
PENT	**Pentalofos**	**1.30**	**152**	P	**Pb**	**16 15 27.9**	**-0.1**
PENT				S	**Sn**	**16 15 47.4**	**+1.8**
PDG	**Podgorica**	**1.35**	**323**	P	**Pn**	**16 15 27.3**	**-1.0**
PDG				S	**Sn**	**16 15 47.2**	**+0.7**
PDG	**Podgorica**	**1.35**	**323** ⇓	*i* P	**Pn**	**16 15 27.3**	**-1.0**
PDG	**Podgorica**	**1.35**	**323** ⇓	*i* Pg	**Pn**	**16 15 27.1**	**-1.2**
PDG				eSg	**Sn**	**16 15 48.9**	**+2.4**
PDG	**Podgorica**	**1.35**	**323**	P	**Pn**	**16 15 27.3**	**-1.0**
PDG				S	**Sn**	**16 15 47.2**	**+0.7**
PDG				eSg	**Sn**	**16 15 48.3**	**+1.8**
TTG	**Podgorica**	**1.35**	**323** ⇑	*i* Pg	**Pn**	**16 15 27.5**	**-0.8**
TTG				eSg	**Sn**	**16 15 48.3**	**+1.8**
BUM	**Brajici-Budva**	**1.44**	**312** ⇓	*i* Pg	**Pn**	**16 15 29.2**	**-0.5**
BUM				eSg	**Sg**	**16 15 50.4**	**+1.1**
BUM	**Brajici-Budva**	**1.44**	**312** ⇓	*i* Pg	**Pn**	**16 15 29.2**	**-0.5**
BUM				eSg	**Sg**	**16 15 50.4**	**+1.1**
KZN	**Kozani**	**1.50**	**134**	P	**Pb**	**16 15 31.0**	**-0.4**
KZN				S	**Sg**	**16 15 51.7**	**+0.3**
KZN	**Kozani**	**1.50**	**134**	P	**Pb**	**16 15 31.0**	**-0.4**
KZN				S	**Sg**	**16 15 51.7**	**+0.3**
BEY	**Berane**	**1.55**	**348** ⇓	*i* Pg	**Pg**	**16 15 32.4**	**-0.4**
BEY	**Berane**	**1.55**	**348**	P	**Pg**	**16 15 33.3**	**+0.5**
BEY				eSg	**Sg**	**16 15 56.1**	**+3.1**
IVA	**Berane**	**1.55**	**348** ⇓	*i* Pg	**Pg**	**16 15 32.4**	**-0.4**
IVA				eSg	**Sg**	**16 15 56.1**	**+3.1**
KPRO	**Kipourio**	**1.60**	**151**	P	**Pb**	**16 15 32.7**	**-0.2**
KPRO	**Kipourio**	**1.60**	**151**	P	**Pb**	**16 15 32.7**	**-0.2**
CEME	**Cevo**	**1.60**	**319** ⇑	*i* Pg	**Pn**	**16 15 31.5**	**-0.4**
CEME				eSg	**Sg**	**16 15 56.0**	**+1.6**
CEME	**Cevo**	**1.60**	**319** ⇑	*i* Pg	**Pn**	**16 15 31.5**	**-0.4**
CEME				eSg	**Sg**	**16 15 56.0**	**+1.6**
GRG	**Griva**	**1.60**	**104**	P	**Pn**	**16 15 31.5**	**-0.4**
GRG				S	**Sb**	**16 15 53.3**	**-0.2**
GRG	**Griva**	**1.60**	**104**	P	**Pn**	**16 15 31.5**	**-0.4**
GRG				S	**Sb**	**16 15 53.3**	**-0.2**
VAY	**Valandovo**	**1.68**	**90**	P	**Pn**	**16 15 31.7**	**-1.1**
VAY				S	**Sn**	**16 15 54.9**	**+0.3**
VAY	**Valandovo**	**1.68**	**90** ⇑	*i* Pg	**Pg**	**16 15 34.7**	**-0.5**
VAY				*i* Sg	**Sg**	**16 15 58.5**	**+1.6**
VAY				eLg	Lg	16 16 00.8	
	comp=E,401nm,0.5s						
VAY				eLg	Lg	16 16 00.8	
	comp=N,374nm,0.6s						
VAY	**Valandovo**	**1.68**	**90**	*e*Pg	**Pn**	**16 15 33.3**	**+0.5**
VAY				eSg	**Sb**	**16 15 55.3**	**-0.3**
VAY	**Valandovo**	**1.68**	**90**	P	**Pn**	**16 15 31.7**	**-1.1**
VAY	**Valandovo**	**1.68**	**90** ⇑	*i* Pg	**Pn**	**16 15 34.6**	**-0.5**
VAY				S	**Sn**	**16 15 54.9**	**+0.3**
VAY				eSg	**Sb**	**16 15 55.3**	**-0.3**
VAY				eLg	Lg	16 16 00.8	
	comp=N,374nm,0.6s						
KEK	**Kerkira**	**1.69**	**194**	P	**Pb**	**16 15 33.8**	**-0.7**
KEK				S	**Sg**	**16 15 58.9**	**+1.6**
KEK	**Kerkira**	**1.69**	**194**	P	**Pb**	**16 15 33.8**	**-0.7**
KEK				S	**Sg**	**16 15 58.9**	**+1.6**
JAN	**Janina**	**1.74**	**167**	P	**Pb**	**16 15 34.8**	**-0.5**
JAN	**Janina**	**1.74**	**167**	P	**Pb**	**16 15 34.8**	**-0.5**
SGD	**Sagiada**	**1.74**	**183**	P	**Pb**	**16 15 35.0**	**-0.3**
SGD				S	**Sg**	**16 15 59.2**	**+0.3**
SGD	**Sagiada**	**1.74**	**183**	P	**Pb**	**16 15 35.0**	**-0.3**
SGD				S	**Sg**	**16 15 59.2**	**+0.3**
NKME	**Niksic**	**1.75**	**324** ⇓	*i* Pn	**Pn**	**16 15 33.9**	**-0.1**
NKME				eSn	**Sg**	**16 16 00.0**	**+0.7**
NKME	**Niksic**	**1.75**	**324** ⇓	*i* Pn	**Pn**	**16 15 33.9**	**-0.1**
NKME				eSn	**Sg**	**16 16 00.0**	**+0.7**
HCY	**Herceg Novi**	**1.76**	**309** ⇓	*i* Pn	**Pb**	**16 15 35.1**	**-0.6**
HCY				eSn	**Sg**	**16 15 59.1**	**-0.5**
HCY	**Herceg Novi**	**1.76**	**309** ⇓	*i* Pn	**Pb**	**16 15 35.1**	**-0.6**
HCY				eSn	**Sg**	**16 15 59.1**	**-0.5**
NKY	**Niksic**	**1.77**	**326** ⇑	*i* Pn	**Pn**	**16 15 34.4**	**+0.1**
NKY				eSn	**Sg**	**16 15 59.9**	**-0.1**
NKY	**Niksic**	**1.77**	**326** ⇑	*i* Pn	**Pn**	**16 15 34.4**	**+0.1**
NKY				eSn	**Sg**	**16 15 59.9**	**-0.1**
IGT	**Igoumenitsa**	**1.82**	**180**	P	**Pb**	**16 15 36.0**	**-0.7**
IGT				S	**Sg**	**16 16 01.2**	**-0.2**
IGT	**Igoumenitsa**	**1.82**	**180**	P	**Pb**	**16 15 36.0**	**-0.7**
IGT				S	**Sg**	**16 16 01.2**	**-0.2**
BARS	**Barje**	**1.83**	**36** ⇓	*i* Pg	**Pg**	**16 15 37.2**	**-0.8**
BARS				eSg	**Sg**	**16 16 02.2**	**+0.5**
KNT	**Kendrikon**	**1.94**	**95**	P	**Pn**	**16 15 36.0**	**-0.4**
KNT				S	**Sn**	**16 16 01.2**	**+0.2**
KNT	**Kendrikon**	**1.94**	**95**	P	**Pn**	**16 15 36.0**	**-0.4**
KNT				S	**Sn**	**16 16 01.2**	**+0.2**
SELS	**Selova**	**1.95**	**17**	*e*Pn	**Pn**	**16 15 36.4**	**-0.3**
SELS				eSn	**Sn**	**16 16 02.2**	**+0.7**
BRY	**Bratogost**	**2.05**	**320** ⇑	*i* Pn	**Pn**	**16 15 39.2**	**+1.1**
BRY				eSn	**Sb**	**16 16 07.0**	**+0.5**
BRY	**Bratogost**	**2.05**	**320** ⇑	*i* Pn	**Pn**	**16 15 39.2**	**+1.1**
BRY				eSn	**Sb**	**16 16 07.0**	**+0.5**
LIT	**Litokhoron**	**2.06**	**127**	P	**Pn**	**16 15 38.1**	**0.0**
LIT	**Litokhoron**	**2.06**	**127**	P	**Pn**	**16 15 38.1**	**0.0**
PLE	**Pljevlja**	**2.10**	**341** ⇓	*i* Pn	**Pb**	**16 15 41.1**	**-0.4**
PLE				eSn	**Sg**	**16 16 09.6**	**-0.9**
PLE	**Pljevlja**	**2.10**	**341** ⇓	*i* Pn	**Pb**	**16 15 41.1**	**-0.4**
PLE				eSn	**Sg**	**16 16 09.6**	**-0.9**
THE	**Thessaloniki**	**2.11**	**109**	P	**Pn**	**16 15 38.4**	**-0.4**
THE	**Thessaloniki**	**2.11**	**109**	P	**Pn**	**16 15 38.4**	**-0.4**
UPM	**Unac-Piva**	**2.13**	**330** ⇓	*i* Pn	**Pb**	**16 15 41.4**	**-0.8**
UPM				eSn	**Sb**	**16 16 09.4**	**+0.4**
UPM	**Unac-Piva**	**2.13**	**330** ⇓	*i* Pn	**Pb**	**16 15 41.4**	**-0.8**
UPM	**Unac-Piva**	**2.13**	**330**	P	**Pb**	**16 15 41.9**	**-0.3**
UPM				eSn	**Sb**	**16 16 09.4**	**+0.4**
THL	**Klokotos Trika**	**2.19**	**144**	P	**Pn**	**16 15 40.5**	**+0.5**
THL	**Klokotos Trika**	**2.19**	**144**	P	**Pn**	**16 15 40.5**	**+0.5**
HORT	**Hortiatis**	**2.22**	**109**	P	**Pn**	**16 15 40.1**	**-0.3**
HORT				S	**Sn**	**16 16 08.8**	**+0.7**
HORT	**Hortiatis**	**2.22**	**109**	P	**Pn**	**16 15 40.1**	**-0.3**
HORT				S	**Sn**	**16 16 08.8**	**+0.7**

IVAS	**Ivanjica**	**2.23**	**356**	*e*Pn	**Pn**	**16 15 40.1**	**-0.4**
IVAS	**Ivanjica**	**2.23**	**356**	*e*Pn	**Pn**	**16 15 40.1**	**-0.4**
DSL	**Palaion Diasel**	**2.29**	**165**	P	**Pn**	**16 15 42.6**	**+1.3**
DSL	**Palaion Diasel**	**2.29**	**165**	P	**Pn**	**16 15 42.6**	**+1.3**
SOH	**Sokhos**	**2.34**	**102**	P	**Pn**	**16 15 42.1**	**+0.1**
SOH	**Sokhos**	**2.34**	**102**	P	**Pn**	**16 15 42.1**	**+0.1**
SRS	**Serrai**	**2.46**	**94**	P	**Pn**	**16 15 43.2**	**-0.5**
SRS	**Serrai**	**2.46**	**94**	P	**Pn**	**16 15 43.2**	**-0.5**
VTS	**Vitosha**	**2.47**	**59**	P	**Pn**	**16 15 42.7**	**-1.2**
VTS	**Vitosha**	**2.47**	**59** ⇑	*i* P	**Pn**	**16 15 44.5**	**+0.6**
VTS	**Vitosha**	**2.47**	**59**	P	**Pn**	**16 15 42.7**	**-1.2**
BOVS	**Bovan**	**2.49**	**23**	*i* Pn	**Pn**	**16 15 44.5**	**+0.4**
BOVS	**Bovan**	**2.49**	**23**	*i* Pn	**Pn**	**16 15 44.5**	**+0.4**
PLG	**Polygyros**	**2.55**	**112**	P	**Pn**	**16 15 45.4**	**+0.5**
PLG				S	**Sn**	**16 16 16.6**	**+0.4**
PLG	**Polygyros**	**2.55**	**112**	P	**Pn**	**16 15 45.4**	**+0.5**
PLG				S	**Sn**	**16 16 16.6**	**+0.4**
GRUS	**Gruza**	**2.55**	**6** ⇑	*i* Pn	**Pn**	**16 15 45.6**	**+0.7**
GRUS	**Gruza**	**2.55**	**6** ⇑	*i* Pn	**Pn**	**16 15 45.6**	**+0.7**
ZAPS	**Zavoj**	**2.56**	**41**	*e*Pn	**Pn**	**16 15 46.9**	**+1.8**
ZAPS				*e*Sn	**Sn**	**16 16 17.0**	**+0.4**
ZAPS	**Zavoj**	**2.56**	**41**	*e*Pn	**Pn**	**16 15 46.9**	**+1.8**
ZAPS				*e*Sn	**Sn**	**16 16 17.0**	**+0.4**
BBLS	**Lazići**	**2.60**	**345** ⇓	*i* Pn	**Pn**	**16 15 47.2**	**+1.5**
BBLS	**Lazići**	**2.60**	**345** ⇓	*i* Pn	**Pn**	**16 15 47.2**	**+1.5**
NVR	**Nevrokopi**	**2.65**	**89**	P	**Pn**	**16 15 46.2**	**-0.1**
NVR	**Nevrokopi**	**2.65**	**89**	P	**Pn**	**16 15 46.2**	**-0.1**
EVR	**Evrytania**	**2.68**	**155**	P	**Pn**	**16 15 48.5**	**+1.8**
EVR	**Evrytania**	**2.68**	**155**	P	**Pn**	**16 15 48.5**	**+1.8**
DIVS	**Divibare**	**2.76**	**355**	P	**Pn**	**16 15 47.6**	**-0.2**
DIVS	**Divibare**	**2.76**	**355** ⇑	*i* Pn	**Pn**	**16 15 47.9**	**+0.1**
DIVS	**Divibare**	**2.76**	**355**	P	**Pn**	**16 15 47.6**	**-0.2**
DIVS	**Divibare**	**2.76**	**355** ⇑	*i* Pn	**Pn**	**16 15 47.9**	**+0.1**
FYTO	**Fytoko, Volos**	**2.77**	**134**	P	**Pn**	**16 15 48.1**	**+0.1**
FYTO	**Fytoko, Volos**	**2.77**	**134**	P	**Pn**	**16 15 48.1**	**+0.1**
AGG	**Agios Georgios**	**2.78**	**146**	P	**Pn**	**16 15 48.7**	**+0.6**
AGG	**Agios Georgios**	**2.78**	**146**	P	**Pn**	**16 15 48.7**	**+0.6**
PDO	**Prodromos**	**2.83**	**167**	P	**Pn**	**16 15 51.1**	**+2.4**
PDO	**Prodromos**	**2.83**	**167**	P	**Pn**	**16 15 51.1**	**+2.4**
TRUS	**Trudelj**	**2.87**	**1**	*e*Pn	**Pn**	**16 15 50.2**	**+0.9**
TRUS	**Trudelj**	**2.87**	**1**	*e*Pn	**Pn**	**16 15 50.2**	**+0.9**
PVO	**Paravola**	**2.88**	**161**	P	**Pn**	**16 15 51.8**	**+2.4**
PVO	**Paravola**	**2.88**	**161**	P	**Pn**	**16 15 51.8**	**+2.4**
PAIG	**Paliouri**	**2.91**	**118**	P	**Pn**	**16 15 49.8**	**0.0**
PAIG				S	**Sn**	**16 16 25.7**	**+0.6**
PAIG	**Paliouri**	**2.91**	**118**	P	**Pn**	**16 15 49.8**	**0.0**
PAIG				S	**Sn**	**16 16 25.7**	**+0.6**
OUR	**Ouranopolis**	**2.94**	**109**	P	**Pn**	**16 15 50.4**	**+0.2**
OUR				S	**Sn**	**16 16 26.9**	**+1.1**
OUR	**Ouranopolis**	**2.94**	**109**	P	**Pn**	**16 15 50.4**	**+0.2**
OUR				S	**Sn**	**16 16 26.9**	**+1.1**
XOR	**Xorichti**	**2.94**	**131**	P	**Pn**	**16 15 50.4**	**+0.1**
XOR	**Xorichti**	**2.94**	**131**	P	**Pn**	**16 15 50.4**	**+0.1**
NEO	**Neokhori**	**3.00**	**132**	P	**Pn**	**16 15 51.9**	**+0.8**
NEO	**Neokhori**	**3.00**	**132**	P	**Pn**	**16 15 51.9**	**+0.8**
ANX	**Ano Chora**	**3.01**	**156**	P	**Pb**	**16 15 54.2**	**-2.9**
ANX	**Ano Chora**	**3.01**	**156**	P	**Pb**	**16 15 54.2**	**-2.9**
KAVA	**Kavala**	**3.17**	**95**	P	**Pn**	**16 15 53.4**	**+0.1**
KAVA	**Kavala**	**3.17**	**95**	P	**Pn**	**16 15 53.4**	**+0.1**
VLS	**Valsamata**	**3.18**	**177**	P	**Pn**	**16 15 52.5**	**-1.0**
VLS	**Valsamata**	**3.18**	**177**	P	**Pn**	**16 15 52.5**	**-1.0**
KUBS	**Kucevo**	**3.21**	**17**	*i* Pn	**Pn**	**16 15 52.4**	**-1.6**
KUBS				*e*Sn	**Sn**	**16 16 32.1**	**-0.4**
KUBS	**Kucevo**	**3.21**	**17**	*i* Pn	**Pn**	**16 15 52.4**	**-1.6**
KUBS				*e*Sn	**Sn**	**16 16 32.1**	**-0.4**
SERG	**Sergoula**	**3.22**	**155**	P	**Pn**	**16 15 56.4**	**+2.3**
SERG	**Sergoula**	**3.22**	**155**	P	**Pn**	**16 15 56.4**	**+2.3**
SKIA	**Skiathos**	**3.24**	**131**	P	**Pn**	**16 15 54.2**	**-0.1**
SKIA	**Skiathos**	**3.24**	**131**	P	**Pn**	**16 15 54.2**	**-0.1**
TEKS	**Tekeris**	**3.25**	**350**	*i* Pn	**Pn**	**16 15 56.0**	**+1.5**
TEKS	**Tekeris**	**3.25**	**350**	*i* Pn	**Pn**	**16 15 56.0**	**+1.5**
KALE	**Kalithea**	**3.27**	**154**	P	**Pn**	**16 15 56.1**	**+1.3**
KALE	**Kalithea**	**3.27**	**154**	P	**Pn**	**16 15 56.1**	**+1.3**
LAKA	**Lakka**	**3.35**	**157**	P	**Pn**	**16 15 58.3**	**+2.3**
LAKA	**Lakka**	**3.35**	**157**	P	**Pn**	**16 15 58.3**	**+2.3**
LKR	**Lokris**	**3.38**	**142**	P	**Pn**	**16 15 57.0**	**+0.7**
LKR	**Lokris**	**3.38**	**142**	P	**Pn**	**16 15 57.0**	**+0.7**
DSF	**Desfina**	**3.38**	**150**	P	**Pn**	**16 15 56.6**	**+0.2**
DSF	**Desfina**	**3.38**	**150**	P	**Pn**	**16 15 56.6**	**+0.2**
AOS	**Alonnisos**	**3.47**	**128**	P	**Pn**	**16 15 58.0**	**+0.4**
AOS				S	**Sn**	**16 16 40.2**	**+1.2**
AOS	**Alonnisos**	**3.47**	**128**	P	**Pn**	**16 15 58.0**	**+0.4**
AOS				S	**Sn**	**16 16 40.2**	**+1.2**
TIP	**Timpagrande**	**3.50**	**233**	P	**Pn**	**16 15 56.7**	**-1.3**
TIP	**Timpagrande**	**3.50**	**233**	P	**Pn**	**16 15 56.7**	**-1.3**
DRO	**Drossia**	**3.56**	**162**	P	**Pn**	**16 16 00.7**	**+2.0**
DRO	**Drossia**	**3.56**	**162**	P	**Pn**	**16 16 00.7**	**+2.0**
MDVR	**Moldovita**	**3.57**	**16** ⇑	*i* P	**Pn**	**16 15 58.6**	**-0.3**
MDVR	**Moldovita**	**3.57**	**16** ⇑	*i* P	**Pn**	**16 15 58.6**	**-0.3**
KLV	**Kalavryta, Ach**	**3.59**	**157**	P	**Pn**	**16 16 01.2**	**+2.0**
KLV	**Kalavryta, Ach**	**3.59**	**157**	P	**Pn**	**16 16 01.2**	**+2.0**
CRAR	**CRAIOVA**	**3.91**	**39** ⇑	*i* P	**Pn**	**16 16 03.6**	**+0.1**
CRAR	**CRAIOVA**	**3.91**	**39** ⇑	*i* P	**Pn**	**16 16 03.6**	**+0.1**
ALN	**Alexandroupoli**	**4.33**	**94**	P	**Pn**	**16 16 09.3**	**0.0**
ALN	**Alexandroupoli**	**4.33**	**94**	P	**Pn**	**16 16 09.3**	**0.0**
ITM	**Ithomi**	**4.34**	**163**	P	**Pn**	**16 16 11.3**	**+1.7**
ITM	**Ithomi**	**4.34**	**163**	P	**Pn**	**16 16 11.3**	**+1.7**
BZS	**Buzias**	**4.36**	**12** ⇑	*i* P	**Pn**	**16 16 09.4**	**-0.4**
BZS	**Buzias**	**4.36**	**12** ⇑	*i* P	**Pn**	**16 16 09.4**	**-0.4**
VLY	**Voula,Athens**	**4.39**	**142**	P	**Pn**	**16 16 11.3**	**+1.1**
VLY	**Voula,Athens**	**4.39**	**142**	P	**Pn**	**16 16 11.3**	**+1.1**
UDBI	**Udbina**	**4.62**	**315**	*e*Pn	**Pn**	**16 16 14.1**	**+0.7**
UDBI				Sn	**Sn**	**16 17 07.8**	**+0.4**
UDBI	**Udbina**	**4.62**	**315**	*e*Pn	**Pn**	**16 16 14.1**	**+0.7**
UDBI				Sn	**Sn**	**16 17 07.8**	**+0.4**
SIRR	**Siria**	**5.00**	**11** ⇓	*i* P	**Pn**	**16 16 18.5**	**-0.1**
SIRR	**Siria**	**5.00**	**11** ⇓	*i* P	**Pn**	**16 16 18.5**	**-0.1**
NVLJ	**Novalja**	**5.14**	**310**	*e*Pn	**Pn**	**16 16 20.0**	**-0.4**
NVLJ				Sn	**Sn**	**16 17 16.8**	**-3.2**
NVLJ	**Novalja**	**5.14**	**310**	*e*Pn	**Pn**	**16 16 19.9**	**-0.5**
NVLJ				Sn	**Sn**	**16 17 16.8**	**-3.2**
CRES	**Cresnjev**	**5.71**	**323**	*e*Pn	**Pn**	**16 16 28.8**	**+0.5**
MLR	**Muntele Rosu**	**5.81**	**43** ⇑	*i* P	**Pn**	**16 16 30.3**	**+0.5**
MLR	**Muntele Rosu**	**5.81**	**43** ⇑	*i* P	**Pn**	**16 16 30.3**	**+0.5**
CEY	**Cerknica**	**6.14**	**318**	*e*Pn	**Pn**	**16 16 34.6**	**+0.4**
PSZ	**Piszkesteto**	**6.57**	**357** ⇑	P	**Pn**	**16 16 40.3**	**+0.1**
PSZ	**Piszkesteto**	**6.57**	**357** ⇑	P	**Pn**	**16 16 40.3**	**+0.1**
KECS	**Kecovo**	**7.13**	**1**	*e*PN	**Pn**	**16 16 50.4**	**+2.6**
VYHS	**Vyhne**	**7.22**	**352**	*e*Sn	**Sn**	**16 18 08.7**	**-2.6**
VYHS	**Vyhne**	**7.22**	**352**	*e*PN	**Pn**	**16 16 51.9**	**+2.6**
VYHS				*e*SN	**Sn**	**16 18 08.7**	**-2.6**
CRVS	**Cervenica-Dubn**	**7.59**	**6**	*e*Pn	**Pn**	**16 16 55.3**	**+1.2**
CRVS	**Cervenica-Dubn**	**7.59**	**6**	*e*PN	**Pn**	**16 16 55.3**	**+1.2**

*CSEM **11** 16:18:52.0,43°.34N×13°.26E,h6km,MD1.6/3*
ROM 11 16:18:52.0±0.2,**43°.34N×13°.26E,h6km**±1km,**Md1.6**/3,
Error ellipse: s-maj=2.0km s-min=1.0km az=83.0,
Central Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CING	**Cingoli**	**0.06**	**309**	Pg	**Pg**	16 18 54.1	+0.4
CING				Sg	**Sg**	16 18 55.1	+0.3
CING	**Cingoli**	**0.06**	**309**	Pg	**Pg**	16 18 54.1	+0.4
CING				Sg	**Sg**	16 18 55.1	+0.3
SNTG	**Esanatoglia**	**0.25**	**251**	Pg	**Pg**	16 18 57.7	+0.8
SNTG				Sg	**Sg**	16 19 01.8	+1.7
SNTG	**Esanatoglia**	**0.25**	**251**	Pg	**Pg**	16 18 57.7	+0.8
SNTG				Sg	**Sg**	16 19 01.8	+1.7
FDMO	**Fiordimonte**	**0.33**	**203**	Pg	**Pb**	16 18 59.3	-0.9
FDMO				Sg	**Sb**	16 19 04.9	-0.8
FDMO	**Fiordimonte**	**0.33**	**203**	Pg	**Pb**	16 18 59.3	-0.9
FDMO				Sg	**Sb**	16 19 04.9	-0.8
FRON	**Frontone**	**0.43**	**295**	Pg	**Pb**	16 19 01.2	-0.8
FRON				Sg	**Sb**	16 19 08.5	-0.2
FRON	**Frontone**	**0.43**	**295**	Pg	**Pb**	16 19 01.2	-0.8
FRON				Sg	**Sb**	16 19 08.5	-0.2

*GUC **11** 16:22:33.3±0.5,**21°.82S×68°.79W,h133**km±3km,**ML3.8,***
5C-3D,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB09	**IPOC Station P**	**0.42**	**273** ⇑	*e*P	Pn	16 22 52.7	+0.1
PB09				*e*S	Sn	16 23 07.8	+0.8
PB09				IAML		16 23 10.7	
	comp=E,4μm,0.1s						
PB01	**IPOC Station P**	**1.01**	**320** ⇑	*e*P	Pn	16 22 57.3	+0.5
PB01				*e*S	Sn	16 23 15.4	+0.9
PB01				IAML		16 23 16.8	
	comp=E,3μm,0.2s						
PB07	**IPOC Station P**	**1.02**	**275** ⇑	*e*P	Pn	16 22 57.9	+1.0
PB07				*e*S	Sn	16 23 16.5	+1.7
PB07				IAML		16 23 17.3	
	comp=N,2μm,0.1s						
PB06	**IPOC Station P**	**1.14**	**219** ⇑	*e*P	Pn	16 22 58.2	+0.1
PB06				*e*S	Sn	16 23 17.0	+0.2
PB06				IAML		16 23 17.4	
	comp=N,1μm,0.6s						
PB04	**IPOC Station P**	**1.36**	**248** ⇑	*e*P	Pn	16 23 01.2	+0.9
PB04				*e*S	Sn	16 23 21.9	+1.0
PB04				IAML		16 23 24.3	
	comp=N,1μm,0.1s						
PB08	**IPOC Station P**	**1.71**	**348** ⇓	*e*P	Pn	16 23 05.7	+1.3
PB08				*e*S	Sn	16 23 29.8	+1.7
PB08				IAML		16 23 30.9	
	comp=E,733nm,0.3s						
HMBC	**Humberstone**	**1.85**	**326** ⇓	*e*P	Pn	16 23 06.3	+0.6
HMBC				*e*S	Sn	16 23 31.7	+1.2
HMBC				IAML		16 23 33.9	
	comp=N,929nm,0.4s						
PB11	**IPOC Station P**	**2.21**	**338** ⇓	*e*P	Pn	16 23 10.7	+0.5
PB11				*e*S	Sn	16 23 39.3	+1.0

*ISK **11** 16:25:09.1,40°.03N×29°.93E,h8km,MD2.6*
*CSEM **11** 16:25:10.2±0.2,40°.08N×29°.94E,h8km,MD2.6,Error*
ellipse: s-maj=5.0km s-min=4.3km az=179.0
*DDA **11** 16:25:10.9,40°.12N×29°.97E,h7km,Md2.8*
ISC 11 16:25:11.0±1.0,**40.09N**±0°.02×**29.95E**±0°.02,**h12**km±8km,
n41,σ1§25/56,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CAVI	**Cavuskoy**	**0.14**	**325**	*

ASAR				PcP	**PcP**	**16 40 25.7**	**+2.3**
	0.3nm,0.6s,baz=118,slow=4.5,SNR=4.5						
WRAB	**Tennant Creek**	**45.17**	**270**	*eP*	**P**	**16 38 44.8**	**-1.5**
	2.8nm,0.9s						
WRA	**Warramunga Arr**	**45.18**	**270**	P	**P**	**16 38 44.4**	**-2.0**
	2.1nm,0.8s,baz=109,slow=7.7,SNR=18						
VNDA	**Vanda**	**49.58**	**186**	P	**P**	**16 39 19.8**	**0.0**
	0.3nm,0.3s,baz=346,slow=8.3,SNR=4.6						
QSPA	**South Pole Qui**	**61.09**	**180**	*eP*	**P**	**16 40 43.2**	**+0.2**
PETK	**Petropavlovsk-**	**84.76**	**345**	P	**P**	**16 43 03.1**	**+0.3**
	0.7nm,0.6s,baz=160,slow=8.9,SNR=4.0						
FINES	**FINESS Array B**	**144.21**	**341**	PKP	**PKPab**	**16 50 01.7**	**-0.3**
	1.5nm,0.8s,baz=58,slow=3.4,SNR=4.4						
AKASG	**Malin Array Be**	**150.84**	**325**	PKPbc	**PKPbc**	**16 50 20.2**	**-0.8**
	1.1nm,0.6s,baz=48,slow=2.3,SNR=4.4						
AKASG				PKPab	**PKPab**	**16 50 29.6**	**+1.3**
	0.7nm,0.4s,baz=44,slow=3.3,SNR=4.4						
MMAI	**Mount Meron Ar**	**152.24**	**286**	PKPbc	**PKPbc**	**16 50 24.3**	**-0.7**
	0.6nm,0.4s,baz=81,slow=9.1,SNR=2.5						
BRTR	**Keskin Array B**	**152.87**	**301**	PKPbc	**PKPbc**	**16 50 28.6**	**+2.3**
	0.5nm,0.8s,baz=61,slow=2.5,SNR=3.0						
TORD	**Torodi Ar. Bea**	**164.14**	**174**	PKPab	**PKPab**	**16 51 26.2**	**-0.1**
	1.0nm,1.0s,baz=165,slow=5.2,SNR=3.2						

IDC 11 16:33:56.9±3.6, 17.12S×69.84W, h165km±15km, mb3.7/5, mb1 3.7/5, mb1mx3.4/28, mbtmp4.1/5, Error ellipse: s-maj=71.2km s-min=19.9km az=125.0, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LPAZ	**La Paz**	**1.84**	**64**	P		Pn	16 34 33.4	+1.6
	41nm,0.3s,baz=230,slow=6.0,SNR=833							
LPAZ				S		Sn	16 34 58.4	-0.2
	4.3nm,0.3s,baz=83,slow=21,SNR=9.0							
BDFB	**Brasilia**	**21.00**	**89**	P		P	16 38 29.0	+1.3
	2.3nm,0.3s,baz=258,slow=10							
PLCA	**Paso Flores**	**23.54**	**181**	P		P	16 38 51.9	-0.4
	1.1nm,0.5s,baz=3.0,slow=10,SNR=3.0							
PMSA	**Palmer Station**	**47.78**	**177**	P		P	16 42 17.0	-0.1
	1.5nm,0.6s,baz=341,slow=8.6,SNR=2.5							
DBIC	**Dimbokro**	**68.42**	**75**	P		P	16 44 40.3	-1.1
	3.6nm,0.7s,baz=239,slow=7.2,SNR=4.8							
TORD	**Torodi Ar. Bea**	**76.77**	**72**	P		P	16 45 31.1	+0.3
	1.4nm,0.4s,baz=258,slow=5.2,SNR=13							

*TIR **11** 16:34:57.9±3.5, 41.41N×20.36E, h15km±17km, ML3.5*
*PRU **11** 16:34:59.4, 41.05N×20.59E, h0km*
*PDG **11** 16:35:03.7±0.7, 41.39N×20.35E, h4km±1km, MD3.6/4, ML3.5/13, Error ellipse: s-maj=0.9km s-min=1.2km az=0.0*
*ISCJB **11** 16:35:03.5±0.4, 41.42N±0.01×20.35E±0.02, h5km±3km, mb2.9/1, Error ellipse: s-maj=2.9km s-min=2.0km az=144.4*
*THE **11** 16:35:03.9, 41.42N×20.38E, h0km±1km, ML3.2/8, Error ellipse: s-maj=1.8km s-min=0.8km az=327.0*
*SKO **11** 16:35:03.7, 41.37N×20.33E, h8km, M2.7, ML3.3*
*CSEM **11** 16:35:03.8±0.1, 41.38N×20.34E, h2km, ML3.2, Error ellipse: s-maj=3.4km s-min=2.2km az=55.0*
*BEO **11** 16:35:04.6±0.4, 41.40N×20.32E, h5km±2km, M3.2/1*
*IDC **11** 16:35:06.4±4.3, 41.39N×20.25E, h17km±28km, mb3.0/3, mb1 3.3/7, mb1mx3.2/39, mbtmp3.3/7, ML2.9/4, Error ellipse: s-maj=28.9km s-min=14.5km az=6.0*

ISC 11 16:35:04.3±0.9, 41.36N±0.02×20.32E±0.02, h11km±7km, n150, σ1°19/228, 31C-22D, Albania

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
TIR	**Tirane**	**0.34**	**268**	*i* Pg		**Pg**	**16 35 10.7**	**-0.5**
TIR				*i* Sg		**Sg**	**16 35 16.6**	**+1.0**
TIR	**Tirane**	**0.34**	**268**	⇑*i* P		**Pg**	**16 35 10.5**	**-0.6**
TIR				S		**Sg**	**16 35 16.3**	**+0.7**
TIR	**Tirane**	**0.34**	**268**	⇑*i* Pg		**Pg**	**16 35 10.6**	**-0.5**
TIR				*e*Sg		**Sg**	**16 35 16.4**	**+0.8**
TIR	**Tirane**	**0.34**	**268**	⇑*i* P		**Pg**	**16 35 10.5**	**-0.6**
TIR				*e*Sg		**Sg**	**16 35 16.4**	**+0.8**
OHR	**Ohrid**	**0.44**	**124**	⇑*i* Pg		**Pg**	**16 35 12.8**	**-0.2**
OHR				⇑*i* Sg		**Sb**	**16 35 19.8**	**-0.9**
OHR				*e*Lg		Lg	16 35 20.2	
	comp=N,3μm,0.6s							
OHR				*e*Lg		Lg	16 35 20.2	
	comp=E,3μm,0.7s							
OHR	**Ohrid**	**0.44**	**124**	⇑*i* Pg		**Pg**	**16 35 12.8**	**-0.2**
OHR				⇑*i* Sg		**Sb**	**16 35 19.8**	**-0.9**
OHR				*e*Lg		Lg	16 35 20.1	
	comp=E,3μm,0.7s							
FNA	**Florina**	**0.99**	**125**	P		**Pg**	**16 35 22.6**	**-0.7**
FNA				S		**Sb**	**16 35 36.8**	**+0.3**
FNA	**Florina**	**0.99**	**125**	P		**Pg**	**16 35 22.6**	**-0.7**
FNA				S		**Sb**	**16 35 36.8**	**+0.3**
ULC	**Ulcinj**	**1.00**	**307**	⇑*i* Pg		**Pg**	**16 35 22.1**	**-1.5**
ULC				*e*Sg		**Sn**	**16 35 38.5**	**0.0**
ULC	**Ulcinj**	**1.00**	**307**	⇑*i* Pg		**Pg**	**16 35 22.1**	**-1.5**
ULC				*e*Sg		**Sn**	**16 35 38.5**	**0.0**
SKO	**Skopje**	**1.04**	**54**	P		**Pg**	**16 35 23.5**	**-0.8**
SKO				S		**Sg**	**16 35 37.6**	**-0.3**
SKO	**Skopje**	**1.04**	**54**	*e*Pg		**Pg**	**16 35 23.7**	**-0.6**
SKO				*i* Sg		**Sb**	**16 35 38.1**	**+0.1**
SKO				*e*Lg		Lg	16 35 38.3	
	comp=N,188nm,0.6s							
SKO				*e*Lg		Lg	16 35 38.4	
	comp=E,186nm,0.8s							
SKO	**Skopje**	**1.04**	**54**	P		**Pg**	**16 35 23.5**	**-0.8**
SKO				S		**Sg**	**16 35 37.6**	**-0.3**
SKO				*i* Sg		**Sb**	**16 35 38.1**	**+0.1**
SKO				*e*Lg		Lg	16 35 38.3	
	comp=E,186nm,0.8s							
NEST	**Nestorio**	**1.09**	**149**	P		**Pb**	**16 35 24.7**	**-0.6**
NEST				S		**Sn**	**16 35 41.6**	**+0.7**
NEST	**Nestorio**	**1.09**	**149**	P		**Pb**	**16 35 24.7**	**-0.6**
NEST				S		**Sn**	**16 35 41.6**	**+0.7**
DRME	**Dracevica, Mon**	**1.18**	**315**	⇑*i* Pg		**Pb**	**16 35 25.3**	**-1.5**
DRME				*e*Sg		**Sn**	**16 35 45.0**	**+2.1**
DRME	**Dracevica, Mon**	**1.18**	**315**	*e*Pn		**Pb**	**16 35 22.1**	**-4.7**
DRME	**Dracevica, Mon**	**1.18**	**315**	⇑*i* Pg		**Pb**	**16 35 25.3**	**-1.5**
DRME				*e*Sg		**Sn**	**16 35 45.0**	**+2.1**
PVY	**Plav**	**1.26**	**348**	⇓*i* Pg		**Pn**	**16 35 26.6**	**-1.4**
PVY				*e*Sg		**Sn**	**16 35 46.4**	**+1.3**
PVY	**Plav**	**1.26**	**348**	⇓*i* Pg		**Pn**	**16 35 26.6**	**-1.4**
PVY				*e*Sg		**Sn**	**16 35 46.4**	**+1.3**
PENT	**Pentalofos**	**1.32**	**151**	P		**Pn**	**16 35 28.6**	**-0.2**
PENT				S		**Sg**	**16 35 48.9**	**+2.1**
PENT	**Pentalofos**	**1.32**	**151**	P		**Pn**	**16 35 28.6**	**-0.2**
PENT				S		**Sg**	**16 35 48.9**	**+2.1**
PDG	**Podgorica**	**1.33**	**324**	P		**Pn**	**16 35 27.9**	**-0.9**
PDG				S		**Sg**	**16 35 48.1**	**+0.9**
PDG	**Podgorica**	**1.33**	**324**	⇑*i* P		**Pn**	**16 35 25.4**	**-3.4**
PDG	**Podgorica**	**1.33**	**324**	*e*Pg		**Pn**	**16 35 27.9**	**-0.9**
PDG				*e*Sg		**Sb**	**16 35 46.4**	**+0.1**
PDG	**Podgorica**	**1.33**	**324**	*e*Pn		**Pn**	**16 35 24.8**	**-4.0**
PDG	**Podgorica**	**1.33**	**324**	P		**Pn**	**16 35 27.9**	**-0.9**
PDG				*e*Sg		**Sb**	**16 35 46.4**	**+0.1**
PDG				S		**Sg**	**16 35 48.1**	**+0.9**
TTG	**Podgorica**	**1.33**	**324**	⇓*i* Pg		**Pn**	**16 35 27.9**	**-0.9**
TTG				*e*Sg		**Sg**	**16 35 49.7**	**+2.5**
BUM	**Brajici-Budva**	**1.42**	**312**	⇑*i* Pg		**Pn**	**16 35 29.7**	**-0.4**
BUM				*e*Sg		**Sg**	**16 35 52.5**	**+2.5**
BUM	**Brajici-Budva**	**1.42**	**312**	⇑*i* Pg		**Pn**	**16 35 29.7**	**-0.4**
BUM				*e*Sg		**Sg**	**16 35 52.5**	**+2.5**
KZN	**Kozani**	**1.52**	**133**	P		**Pn**	**16 35 31.6**	**0.0**
KZN				S		**Sg**	**16 35 54.3**	**+1.0**
KZN	**Kozani**	**1.52**	**133**	P		**Pn**	**16 35 31.6**	**0.0**
KZN				S		**Sg**	**16 35 54.3**	**+1.0**
BEY	**Berane**	**1.54**	**348**	⇓*i* Pg		**Pn**	**16 35 31.7**	**-0.2**
BEY				*e*Sg		**Sg**	**16 35 56.0**	**+2.0**
IVA	**Berane**	**1.54**	**348**	⇓*i* Pg		**Pn**	**16 35 31.7**	**-0.2**
IVA				*e*Sg		**Sg**	**16 35 56.0**	**+2.0**
CEME	**Cevo**	**1.58**	**319**	⇓*i* Pg		**Pb**	**16 35 33.1**	**-0.5**
CEME				*e*Sg		**Sg**	**16 35 56.6**	**+1.5**
CEME	**Cevo**	**1.58**	**319**	⇓*i* Pg		**Pb**	**16 35 33.1**	**-0.5**
CEME				*e*Sg		**Sg**	**16 35 56.6**	**+1.5**
KPRO	**Kipourio**	**1.61**	**150**	P		**Pb**	**16 35 34.1**	**0.0**
KPRO	**Kipourio**	**1.61**	**150**	P		**Pb**	**16 35 34.1**	**0.0**
GRG	**Griva**	**1.63**	**104**	P		**Pn**	**16 35 31.6**	**-1.3**
GRG	**Griva**	**1.63**	**104**	P		**Pn**	**16 35 31.6**	**-1.3**
KEK	**Kerkira**	**1.69**	**194**	P		**Pn**	**16 35 34.5**	**+0.7**
KEK				S		**Sg**	**16 35 59.0**	**+0.4**
KEK	**Kerkira**	**1.69**	**194**	P		**Pn**	**16 35 34.5**	**+0.7**
KEK				S		**Sg**	**16 35 59.0**	**+0.4**
VAY	**Valandovo**	**1.70**	**91**	P		**Pn**	**16 35 34.2**	**+0.3**
VAY				S		**Sb**	**16 35 57.0**	**+0.1**
VAY	**Valandovo**	**1.70**	**91**	*i* Pg		**Pb**	**16 35 35.6**	**0.0**
VAY				*i* Sg		**Sg**	**16 35 59.3**	**+0.4**
VAY				*e*Lg		Lg	16 36 00.9	
	comp=E,219nm,0.8s							
VAY				*e*Lg		Lg	16 36 01.1	
	comp=N,107nm,0.5s							
VAY	**Valandovo**	**1.70**	**91**	*e*Pg		**Pb**	**16 35 34.8**	**-0.7**
VAY				*e*Sg		**Sg**	**16 35 58.9**	**0.0**
VAY	**Valandovo**	**1.70**	**91**	P		**Pn**	**16 35 34.2**	**+0.3**
VAY	**Valandovo**	**1.70**	**91**	*i* Pg		**Pb**	**16 35 35.5**	**0.0**
VAY				S		**Sb**	**16 35 57.0**	**+0.1**
VAY				*e*Sg		**Sg**	**16 35 58.9**	**0.0**
VAY				*e*Lg		Lg	16 36 00.9	
	comp=N,219nm,0.8s							
NKME	**Niksic**	**1.73**	**325**	⇑*i* Pn		**Pn**	**16 35 34.8**	**+0.4**
NKME				*e*Sn		**Sg**	**16 36 00.9**	**+0.8**
NKME	**Niksic**	**1.73**	**325**	⇑*i* Pn		**Pn**	**16 35 34.8**	**+0.4**
NKME				*e*Sn		**Sg**	**16 36 00.9**	**+0.8**
HCY	**Herceg Novi**	**1.74**	**309**	⇑*i* Pn		**Pn**	**16 35 35.2**	**+0.7**
HCY				*e*Sn		**Sg**	**16 36 01.4**	**+1.1**
HCY	**Herceg Novi**	**1.74**	**309**	⇑*i* Pn		**Pn**	**16 35 35.2**	**+0.7**
HCY				*e*Sn		**Sg**	**16 36 01.4**	**+1.1**
SGD	**Sagiada**	**1.75**	**182**	P		**Pb**	**16 35 36.1**	**-0.2**
SGD				S		**Sg**	**16 36 00.3**	**-0.1**
SGD	**Sagiada**	**1.75**	**182**	P		**Pb**	**16 35 36.1**	**-0.2**
SGD				S		**Sg**	**16 36 00.3**	**-0.1**
JAN	**Janina**	**1.75**	**166**	P		**Pb**	**16 35 36.1**	**-0.3**
JAN	**Janina**	**1.75**	**166**	P		**Pb**	**16 35 36.1**	**-0.3**
NKY	**Niksic**	**1.75**	**326**	⇓*i* Pn		**Pn**	**16 35 35.6**	**+0.8**
NKY				*e*Sn		**Sg**	**16 36 01.4**	**+0.7**
NKY	**Niksic**	**1.75**	**326**	⇓*i* Pn		**Pn**	**16 35 35.6**	**+0.8**
NKY				*e*Sn		**Sg**	**16 36 01.4**	**+0.7**
IGT	**Igoumenitsa**	**1.82**	**180**	P		**Pb**	**16 35 36.9**	**-0.8**
IGT				S		**Sb**	**16 36 01.6**	**+1.1**
IGT	**Igoumenitsa**	**1.82**	**180**	P		**Pb**	**16 35 36.9**	**-0.8**
IGT				S		**Sb**	**16 36 01.6**	**+1.1**
BARS	**Barje**	**1.84**	**37**	*e*Pg		**Pb**	**16 35 38.0**	**+0.1**
BARS				*e*Sg		**Sb**	**16 36 01.8**	**+0.9**
SELS	**Selova**	**1.95**	**18**	*e*Pg		**Pn**	**16 35 37.3**	**-0.1**
SELS				*e*Sg		**Sg**	**16 36 06.6**	**-0.5**
KNT	**Kendrikon**	**1.96**	**95**	P		**Pn**	**16 35 37.6**	**+0.1**
KNT				S		**Sn**	**16 36 02.5**	**+0.5**
KNT	**Kendrikon**	**1.96**	**95**	P		**Pn**	**16 35 37.6**	**+0.1**
KNT				S		**Sn**	**16 36 02.5**	**+0.5**
BRY	**Bratogost**	**2.03**	**320**	⇓*i* Pn		**Pn**	**16 35 39.9**	**+1.3**
BRY				*e*Sn		**Sg**	**16 36 08.2**	**-1.4**
BRY	**Bratogost**	**2.03**	**320**	⇓*i* Pn		**Pn**	**16 35 39.9**	**+1.3**
BRY				*e*Sn		**Sg**	**16 36 08.2**	**-1.4**
LIT	**Litokhoron**	**2.08**	**127**	P		**Pn**	**16 35 39.5**	**+0.4**
LIT	**Litokhoron**	**2.08**	**127**	P		**Pn**	**16 35 39.5**	**+0.4**
PLE	**Pljevlja**	**2.09**	**341**	⇑*i* Pn		**Pn**	**16 35 40.3**	**+1.0**
PLE				*e*Sn		**Sb**	**16 36 08.7**	**+0.5**
PLE	**Pljevlja**	**2.09**	**341**	⇑*i* Pn		**Pn**	**16 35 40.3**	**+1.0**
PLE				*e*Sn		**Sb**	**16 36 08.7**	**+0.5**
UPM	**Unac-Piva**	**2.12**	**331**	⇓*i* Pn		**Pb**	**16 35 41.8**	**-1.0**
UPM				*e*Sn		**Sb**	**16 36 10.1**	**+0.9**
UPM	**Unac-Piva**	**2.12**	**331**	⇓*i* Pn		**Pb**	**16 35 41.8**	**-1.0**
UPM				*e*Sn		**Sb**	**16 36 10.1**	**+0.9**
THL	**Klokotos Trika**	**2.21**	**144**	P		**Pn**	**16 35 40.8**	**-0.1**
THL	**Klokotos Trika**	**2.21**	**144**	P		**Pn**	**16 35 40.8**	**-0.1**
IVAS	**Ivanjica**	**2.22**	**357**	*e*Pg		**Pn**	**16 35 42.2**	**+1.1**
IVAS				*e*Sg		**Sb**	**16 36 13.3**	**+1.3**
HORT	**Hortiatis**	**2.24**	**109**	P		**Pn**	**16 35 40.7**	**-0.7**
HORT				S		**Sb**	**16 36 10.9**	**-1.7**
HORT	**Hortiatis**	**2.24**	**109**	P		**Pn**	**16 35 40.7**	**-0.7**
HORT				S		**Sb**	**16 36 10.9**	**-1.7**
DSL	**Palaion Diasel**	**2.30**	**165**	P		**Pn**	**16 35 43.9**	**+1.7**
DSL	**Palaion Diasel**	**2.30**	**165**	P		**Pn**	**16 35 43.9**	**+1.7**
TAR1	**Taranto**	**2.44**	**251**	*e*Pn		**Pn**	**16 35 43.2**	**-0.9**
VTS	**Vitosha**	**2.48**	**59**	P		**Pn**	**16 35 45.2**	**+0.4**
VTS	**Vitosha**	**2.48**	**59**	⇓*i* P		**Pn**	**16 35 46.0**	**+1.2**
VTS	**Vitosha**	**2.48**	**59**	P		**Pn**	**16 35 45.2**	**+0.4**
BOVS	**Bovan**	**2.50**	**24**	*e*Pn		**Pn**	**16 35 44.0**	**-0.9**
BOVS	**Bovan**	**2.50**	**24**	*e*Pn		**Pn**	**16 35 44.0**	**-0.9**
PLG	**Polygyros**	**2.57**	**111**	P		**Pn**	**16 35 45.8**	**-0.1**
PLG	**Polygyros**	**2.57**	**111**	P		**Pn**	**16 35 45.8**	**-0.1**
ZAPS	**Zavoj**	**2.57**	**41**	*e*Pn		**Pn**	**16 35 46.9**	**+0.9**
ZAPS				*e*Sn		**Sn**	**16 36 17.9**	**+0.6**
ZAPS	**Zavoj**	**2.57**	**41**	*e*Pn		**Pn**	**16 35 46.9**	**+0.9**
ZAPS				*e*Sn		**Sn**	**16 36 17.9**	**+0.6**
BBLS	**Lazići**	**2.59**	**345**	⇓*i* Pn		**Pn**	**16 35 48.1**	**+1.8**
BBLS	**Lazići**	**2.59**	**345**	⇓*i* Pn		**Pn**	**16 35 48.1**	**+1.8**
NVR	**Nevrokopi**	**2.67**	**89**	P		**Pn**	**16 35 47.9**	**+0.6**
NVR	**Nevrokopi**	**2.67**	**89**	P		**Pn**	**16 35 47.9**	**+0.6**
DIVS	**Divibare**	**2.75**	**355**	P		**Pn**	**16 35 48.1**	**-0.3**
DIVS	**Divibare**	**2.75**	**355**	⇓*i* Pn		**Pn**	**16 35 49.7**	**+1.3**
DIVS				*e*Sn		**Sn**	**16 36 20.9**	**-0.8**
DIVS	**Divibare**	**2.75**	**355**	P		**Pn**	**16 35 48.1**	**-0.3**
DIVS	**Divibare**	**2.75**	**355**	⇓*i* Pn		**Pn**	**16 35 49.7**	**+1.3**
DIVS				*e*Sn		**Sn**	**16 36 20.9**	**-0.8**
FYTO	**Fytoko, Volos**	**2.79**	**133**	P		**Pn**	**16 35 49.2**	**+0.2**
FYTO	**Fytoko, Volos**	**2.79**	**133**	P		**Pn**	**16 35 49.2**	**+0.2**
PDO	**Prodromos**	**2.84**	**166**	P		**Pn**	**16 35 50.9**	**+1.4**
PDO	**Prodromos**	**2.84**	**166**	P		**Pn**	**16 35 50.9**	**+1.4**
TRUS	**Trudelj**	**2.86**	**1**	*i* Pn		**Pn**	**16 35 52.0**	**+2.1**
TRUS	**Trudelj**	**2.86**	**1**	*i* Pn		**Pn**	**16 35 52.0**	**+2.1**
PAIG	**Paliouri**	**2.93**	**118**	P		**Pn**	**16 35 51.5**	**+0.7**
PAIG	**Paliouri**	**2.93**	**118**	P		**Pn**	**16 35 51.5**	**+0.7**
XOR	**Xorichti**	**2.96**	**131**	P		**Pn**	**16 35 51.3**	**0.0**
XOR	**Xorichti**	**2.96**	**131**	P		**Pn**	**16 35 51.3**	**0.0**
KUBS	**Kucevo**	**3.21**	**18**	*e*Pn		**Pn**	**16 35 53.4**	**-1.3**
KUBS	**Kucevo**	**3.21**	**18**	*e*Pn		**Pn**	**16 35 53.4**	**-1.3**
TEKS	**Tekeris**	**3.24**	**350**	*i* Pn		**Pn**	**16 35 53.4**	**-1.3**
TEKS	**Tekeris**	**3.24**	**350**	*i* Pn		**Pn**	**16 35 56.0**	**+0.9**
TIP	**Timpagrande**	**3.48**	**232**	P		**Pn**	**16 35 56.0**	**+0.9**
TIP	**Timpagrande**	**3.48**	**232**	P		**Pn**	**16 35 57.5**	**-1.0**
MDVR	**Moldovita**	**3.57**	**16**	⇑*i* P		**Pn**	**16 35 57.5**	**-1.0**
MDVR	**Moldovita**	**3.57**	**16**	⇑*i* P		**Pn**	**16 35 58.7**	**-1.0**
BANR	**Banloc**	**4.07**	**8**	⇑*i* P		**Pn**	**16 35 58.7**	**-1.0**
BANR	**Banloc**	**4.07**	**8**	⇑*i* P		**Pn**	**16 36 06.1**	**-0.3**
BLY	**Banja Luka**	**4.09**	**327**	*e*Pn		**Pn**	**16 36 06.1**	**-0.3**
BZS	**Buzias**	**4.36**	**12**	⇑*i* P		**Pn**	**16 36 09.6**	**+2.8**
BZS	**Buzias**	**4.36**	**12**	⇑*i* P		**Pn**	**16 36 10.1**	**-0.4**
UDBI	**Udbina**	**4.60**	**315**	*e*Pn		**Pn**	**16 36 15.7**	**+1.8**
UDBI				S		**Sn**	**16 37 07.2**	**-0.1**
UDBI	**Udbina**	**4.60**	**315**	*e*Pn		**Pn**	**16 36 15.6**	**+1.8**
UDBI				S		**Sn**	**16 37 07.2**	**-0.1**
LOT	**Lotru**	**4.80**	**30**	⇓*i* P		**Pn**	**16 36 16.0**	**-0.6**
LOT	**Lotru**	**4.80**	**30**	⇓*i* P		**Pn**	**16 36 16.0**	**-0.6**
ARR	**Arges**	**5.09**	**37**	⇑*i* P		**Pn**	**16 36 20.9**	**+0.3**
ARR	**Arges**	**5.09**	**37**	⇑*i* P		**Pn**	**16 36 20.9**	**+0.3**
NVLJ	**Novalja**	**5.12**	**311**	*e*Pn		**Pn**	**16 36 21.1**	**+0.2**
NVLJ				S		**Sn**	**16 37 18.3**	**-1.6**
NVLJ	**Novalja**	**5.12**	**311**	*e*Pn		**Pn**	**16 36 21.1**	**+0.2**
NVLJ				S		**Sn**	**16 37 18.3**	**-1.6**
CRES	**Cresnjev**	**5.69**	**323**	*e*Pn		**Pn**	**16 36 29.5**	**+0.8**
DRGR		**5.70**	**17**	⇑*i* P		**Pn**	**16 36 28.8**	**-0.1**
DRGR		**5.70**	**17**	⇑*i* P		**Pn**	**16 36 28.8**	**-0.1**
MLR	**Muntele Rosu**	**5.82**	**43**	Pn		Pn	16 36 35.5	+4.9
	comp=N,0.2nm,0.3s,baz=221,slow=11,SNR=8.8							
MLR				Sn		**Sn**	**16 37 39.1**	**+1.7**
	comp=N,0.1nm,0.3s,baz=173,slow=19,SNR=2.5							
MLR				Lg		Lg	16 38 07.5	
	comp=N,0.0nm,0.3s,baz=180,slow=23,SNR=2.0							
CEY	**Cerknica**	**6.12**	**318**	*e*Pn		**Pn**	**16 36 35.7**	**+1.0**
PSZ	**Piszkesteto**	**6.57**	**358**	⇑*i* P		**Pn**	**16 36 40.7**	**-0.1**
PSZ	**Piszkesteto**	**6.57**	**358**	⇓*e*P		**Pn**	**16 36 42.7**	**+1.9**
PSZ	**Piszkesteto**	**6.57**	**358**	⇓*e*SKKPdf		**Pn**	**16 36 42.7**	**+1.9**
KECS	**Kecovo**	**7.12**	**1**	*e*Pn		**Pn**	**16 36 49.4**	**+1.0**
KECS				*e*Sn		**Sn**	**16 38 11.6**	**+2.2**
KECS	**Kecovo**	**7.12**	**1**	*e*PN		**Pn**	**16 36 49.4**	**+1.0**
KECS				*e*SN		**Sn**	**16 38 11.6**	**+2.2**
VYHS	**Vyhne**	**7.21**	**352**	*e*Sn		**Sn**	**16 38 12.0**	**+0.4**
VYHS	**Vyhne**	**7.21**	**352**	*e*PN		**Pn**	**16 36 52.4**	**+2.8**
VYHS				*e*SN		**Sn**	**16 38 11.9**	**+0.4**
CRVS	**Cervenica-Dubn**	**7.59**	**6**	*e*Pn		**Pn**	**16 36 54.5**	**-0.3**
CRVS	**Cervenica-Dubn**	**7.59**	**6**	*e*PN		**Pn**	**16 36 54.5**	**-0.3**
KOLS	**Kolonicke sedl**	**7.70**	**10**	*e*Pn		**Pn**	**16 36 58.3**	**+2.0**
KOLS	**Kolonicke sedl**	**7.70**	**10**	*e*PN		**Pn**	**16 36 58.3**	**+2.0**
GERES	**GERESS Array B**	**8.82**	**330**	Pn		**Pn**	**16 37 13.5**	**+1.6**
	comp=N,0.1nm,0.3s,baz=150,slow=14,SNR=11							
GERES				Sn		**Sn**	**16 38 50.2**	**-1.1**
	comp=N,0.1nm,0.3s,baz=111,slow=29,SNR=1.9							
KHC	**Kasperske Hory**	**9.11**	**331**	*e*PN		**Pn**	**16 37 16.5**	**+0.9**
KHC				*e*SN		**Sn**	**16 39 02.0**	**+3.9**
DAVOX	**Davos/Dischmat**	**9.26**	**309**	Pn		**Pn**	**16 37 20.1**	**+2.2**
	comp=N,0.3nm,0.3s,baz=135,slow=20,SNR=3.0							
DAVOX				Sn		**Sn**	**16 38 58.8**	**-3.3**
	comp=N,0.1nm,0.3s,baz=352,slow=21,SNR=1.5							
HFS	**Hagfors**	**19.24**	**350**	P		**P**	**16 39 28.3**	**0.0**
	comp=N,0.1nm,0.3s,baz=196,slow=15,SNR=2.3							
FINES	**FINESS Array B**	**20.42**	**8**	P		**P**	**16 39 40.4**	**-0.7**
	comp=N,1.3nm,0.7s,baz=206,slow=10,SNR=3.9							
NOA	**NORSAR Array B**	**20.48**	**347**	P		Pn	16 39 44.0	0.0
	comp=N,0.4nm,0.6s,baz=157,slow=11,SNR=2.6							
MKAR	**Makanchi Array**	**43.84**	**61**	P		**P**	**16 43 10.2**	**-0.1**
	comp=N,0.1nm,0.4s,baz=297,slow=6.3,SNR=2.0							

IDC 11 16:46:47.1±1.3, 4.07S×129.59E, h0km, mb3.7/4, mb1 3.9/5, mb1mx3.6/31, mbtmp3.8/5, ML4.0/1, Error ellipse: s-maj=90.3km s-min=20.6km az=57.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WRA	**Warramunga Arr**	**16.45**	**164**	P		Pn	16 50 34.2	-5.3
	0.2nm,0.3s,baz=350,slow=13,SNR=9.7							
ASAR	**Alice Springs**	**19.93**	**168**	P		P	16 51 20.8	+0.1
	0.4nm,0.3s,baz=348,slow=11,SNR=47							
ASAR				PcP		PcP	16 55 36.8	-1.2
	0.0nm,0.3s,baz=4.6,slow=1.2,SNR=4.8							
CTA	**Charters Tower**	**22.75**	**136**	P		P	16 51 51.9	+0.8
	3.4nm,0.8s,baz=329,slow=12,SNR=3.5							
STKA	**Stephens Creek**	**29.88**	**159**	P		P	16 52 56.3	-0.3
	0.6nm,0.5s,baz=339,slow=8.6,SNR=3.0							
CMAR	**Chiang Mai Ar**	**37.59**	**308**	P		P	16 54 04.2	+0.4
	0.4nm,0.6s,baz

BUM eSg **Sg** 17 13 22.7 +2.4
BUM Brajici-Budva 1.44 313 ⇑*i*Pg **Pn** 17 13 00.2 -0.3
BUM eSg **Sg** 17 13 22.7 +2.4
BEY Berane 1.57 349 ⇓*i*Pg **Pn** 17 13 02.7 +0.3
BEY eSg **Sg** 17 13 25.5 +0.8
IVA Berane 1.57 349 ⇓*i*Pg **Pn** 17 13 02.7 +0.3
IVA eSg **Sg** 17 13 25.5 +0.8
CEME Cevo 1.60 320 ⇓*i*Pn **Pb** 17 13 03.4 -0.5
CEME eSn **Sg** 17 13 26.6 +1.0
CEME Cevo 1.60 320 ⇓*i*Pn **Pb** 17 13 03.4 -0.5
CEME eSn **Sg** 17 13 26.6 +1.0
HCY Herceg Novi 1.76 310 *e*Pn **Pn** 17 13 05.2 +0.4
HCY eSn **Sg** 17 13 30.2 -0.4
HCY Herceg Novi 1.76 310 *e*Pn **Pn** 17 13 05.2 +0.4
HCY eSn **Sg** 17 13 30.2 -0.4
NKME Niksic 1.76 325 ⇑*i*Pn **Pn** 17 13 05.4 +0.5
NKME eSn **Sg** 17 13 30.2 -0.4
NKME Niksic 1.76 325 ⇑*i*Pn **Pn** 17 13 05.4 +0.5
NKME eSn **Sg** 17 13 30.2 -0.4
NKY Niksic 1.78 327 ⇑*i*Pn **Pn** 17 13 05.7 +0.5
NKY eSn **Sg** 17 13 30.7 -0.6
NKY Niksic 1.78 327 ⇑*i*Pn **Pn** 17 13 05.7 +0.5
NKY eSn **Sg** 17 13 30.7 -0.6
BRY Bratogost 2.05 321 ⇑*i*Pn **Pn** 17 13 10.0 +1.0
BRY eSn **Sb** 17 13 37.7 +0.3
BRY Bratogost 2.05 321 ⇑*i*Pn **Pn** 17 13 10.0 +1.0
BRY eSn **Sb** 17 13 37.7 +0.3
UPM Unac-Piva 2.15 331 ⇑*i*Pn **Pn** 17 13 11.4 +1.1
UPM eSn **Sb** 17 13 39.5 -0.6
UPM Unac-Piva 2.15 331 ⇑*i*Pn **Pn** 17 13 11.4 +1.1
UPM eSn **Sb** 17 13 39.5 -0.6

BJI ***11*** *17:16:07.4, 14˚.01S×177˚.09E, h13km, mb4.8/36, mB5.2/21, Ms4.9/10, Ms7 4.7/10*
IDC ***11*** *17:16:08.2±0.7, 14˚.01S×176˚.73E, h0km, mb4.5/19, mb1 4.6/19, mb1mx4.5/39, mbtmp4.5/19, MS3.9/10, Ms1 3.9/10, ms1mx3.6/39, Error ellipse: s-maj=24.4km s-min=17.0km az=123.0*
NEIC ***11*** *17:16:10.2±0.2, 13˚.93S×176˚.66E, h10km, mb5.0/66, Error ellipse: s-maj=7.0km s-min=5.6km az=144.0*
GCMT ***11*** *17:16:10.2±0.3, 13˚.92S×176˚.76E, h21km, MW5.0/67, Moment Tensor Solution. s27,c36; s67,c100; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr=4.09±.25; Mθθ1.87±.16; Mϕϕ2.22±.16; Mrθ-0.57±.32; Mϕθ1.59±.10; Mϕr-0.65±.30; Best double couple: M◎3.96200×10¹⁶ NP1:ϕs42.00000°, δ51.00000°, λ-90.00000°. NP2: ϕs222.00000°, δ39.00000°, λ-90.00000°. Principal axes: T 3.7390, Plg6.0000°, Azm132.0000°; N 0.4450, Plg0.0000°, Azm42.0000°; P -4.1850, Plg84.0000°, Azm311.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISCJB ***11*** *17:16:12.5±0.3, 13˚.89S±0˚.08×176˚.56E±0˚.05, h33km, mb4.8/98, MS4.0/10 Error ellipse: s-maj=10.8km s-min=6.3km az=173.0*
MOS ***11*** *17:16:12.3±1.1, 14˚.00S×176˚.61E, h33km, mb5.0/35, Error ellipse: s-maj=12.4km s-min=9.5km az=88.8*

ISC 11 17:16:13.9±0.4, **14˚00S**±0˚.07×**176˚68E**±0˚.08, **h35**km, **n270, σ1°23/260, mb4.9/98, MS4.0/10, 4C-6D, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**3.94**	**161**	*c*	*i*	P	**Pn**	**17 17 09.9**	**-2.1**
MSVF	**Nonsavu**	**3.94**	**161**		*e*	P	**Pn**	**17 17 09.8**	**-2.2**
FUNA	**Funafuti**	**5.97**	**25**		*e*	Pn	**Pn**	**17 17 36.7**	**-3.1**
AFI	**Afiamalu**	**11.21**	**91**	LR		LR	LR	17 21 58.4	
	comp=Z,448nm,21.0s,baz=306,slow=31								
HNR	**Honiara**	**17.00**	**284**	LR		LR	LR	17 25 37.2	
	comp=Z,1μm,21.2s,baz=119,slow=33								
RAR	**Rarotonga**	**23.54**	**111**	LR		LR	LR	17 28 29.5	
	comp=Z,419nm,18.2s,baz=306,slow=32								
PPT	**Papeete**	**32.64**	**101**	LR		LR	LR	17 32 58.8	
	comp=Z,120nm,20.9s,baz=283,slow=31								
TBI	**Tubuai**	**33.33**	**111**	*e*	S		**S**	**17 28 13.8**	**+6.5**
	156nm,32.0s								
TBI				*e*	LQ		LQ	17 30 16.7	
	690nm,28.5s								
TBI				*e*	LR		LR	17 31 52.4	
	883nm,30.2s,baz=287								
STKA	**Stephens Creek**	**36.67**	**235**	P		P	**P**	**17 23 18.2**	**+0.7**
	7.5nm,1.1s,baz=54,slow=7.5,SNR=3.7								
STKA	**Stephens Creek**	**36.67**	**235**	P		P	**P**	**17 23 18.2**	**+0.7**
STKA				pmax		pmax			
	comp=Z,7.0nm,1.1s								
WRAB	**Tennant Creek**	**40.84**	**256**	*de*	P		**P**	**17 23 51.2**	**-1.4**
WRAB				pmax		pmax			
	comp=Z,31nm,1.2s								
WRA	**Warramunga Arr**	**40.85**	**256**	P		P	**P**	**17 23 51.6**	**-1.1**
	comp=Z,6.5nm,0.9s,baz=89,slow=8.5,SNR=26								
ASAR	**Alice Springs**	**41.48**	**250**	P		P	**P**	**17 23 57.2**	**-0.6**
	comp=Z,11nm,0.8s,baz=79,slow=8.6,SNR=112								
ASAR				PcP		PcP	**PcP**	**17 25 55.2**	**0.0**
	comp=Z,1.6nm,1.0s,baz=113,slow=2.1,SNR=5.1								
ASAR				LR		LR	LR	17 38 58.1	
	comp=Z,121nm,18.7s,baz=76,slow=33								
GUMO	**Guam**	**41.76**	**310**	LR		LR	LR	17 40 37.9	
	comp=Z,86nm,18.4s,baz=138,slow=35								
MMRI	**Maumere**	**53.56**	**270**	*e*	P		**P**	**17 25 29.8**	**-2.0**
	comp=Z,55nm,1.0s								
NWAO	**Narrogin (SRO)**	**56.97**	**240**	LR		LR	LR	17 48 38.3	
	comp=Z,150nm,18.5s,slow=34								
MJAR	**Matsushiro Arr**	**62.00**	**325**	P		P	**P**	**17 26 30.0**	**-0.7**
	comp=Z,6.6nm,1.0s,baz=156,slow=6.6,SNR=20								
MJAR				LR		LR	LR	17 48 06.8	
	comp=Z,130nm,21.8s,baz=325,slow=31								
MJAR	**Matsushiro Arr**	**62.00**	**325**	P		P	**P**	**17 26 30.0**	**-0.7**
MJAR				pmax		pmax			
	comp=Z,6.0nm,1.0s								
MJAR				MLR		MLR			
	comp=Z,130nm,21.8s								
MAJO	**Matsushiro**	**62.00**	**325**	*d*	*i*	P	**P**	**17 26 30.6**	**-0.1**
MAJO				pmax		pmax			
	comp=Z,111nm,1.2s								
MAJO	**Matsushiro**	**62.00**	**325**		*e*	P	**P**	**17 26 30.2**	**-0.5**
	comp=Z,18nm,1.1s								
MAT	**Matsushiro**	**62.00**	**325**	P		P	**P**	**17 26 30.2**	**-0.5**
MJB9	**Matsu-Tunnel**	**62.00**	**325**		*e*	P	**P**	**17 26 30.3**	**-0.4**
	comp=Z,4.3nm,1.1s								
VNDA	**Vanda**	**63.98**	**184**	P		P	**P**	**17 26 42.2**	**-1.0**
	comp=Z,1.2nm,0.8s,baz=25,slow=5.9,SNR=6.9								
VNDA	**Vanda**	**63.98**	**184**		*e*	P	**P**	**17 26 43.9**	**+0.6**
	comp=Z,5.2nm,1.3s								
SBA	**Scott Base**	**64.06**	**182**		*e*	P	**P**	**17 26 45.4**	**+1.6**
SBA				pmax		pmax			
	comp=Z,11nm,1.0s								
SBA	**Scott Base**	**64.06**	**182**		*e*	P	**P**	**17 26 45.4**	**+1.6**
	comp=Z,11nm,1.0s								
JNU	**Nakatsue**	**64.08**	**318**	P		P	**P**	**17 26 44.8**	**+0.2**
	comp=Z,7.5nm,0.9s,baz=138,slow=10,SNR=4.0								
YSS	**Yuzh-Sakhalins**	**67.87**	**336**	⇓	*e*	P	**P**	**17 27 08.5**	**-0.1**
YSS				pmax		pmax			
	comp=Z,22nm,2.5s								
KSRS	**Korea Array**	**68.67**	**320**	P		P	**P**	**17 27 13.9**	**+0.1**
	comp=Z,2.0nm,0.8s,baz=123,slow=7.3,SNR=5.7								
KSRS				LR		LR	LR	17 53 02.6	
	comp=Z,176nm,22.0s,baz=334,slow=32								
KSRS	**Korea Array**	**68.67**	**320**	P		P	**P**	**17 27 14.0**	**+0.1**
KSRS				pmax		pmax			
	comp=Z,3.0nm,1.0s								
KSRS				MLR		MLR			
	comp=Z,176nm,22.0s								
KSAR	**Wonju Array Be**	**68.69**	**320**	P		P	**P**	**17 27 14.0**	**0.0**
KSAR	**Wonju Array Be**	**68.69**	**320**	P		P	**P**	**17 27 13.9**	**0.0**
PEA0	**Petropavlovsk-**	**68.80**	**348**		*e*	P	**P**	**17 27 14.3**	**0.0**
PEA0B	**Petropavlovsk-**	**68.80**	**348**		*e*	P	**P**	**17 27 14.9**	**+0.5**
	comp=Z,42nm,1.4s								
PETK	**Petropavlovsk-**	**68.80**	**348**	P		P	**P**	**17 27 14.6**	**+0.3**
	comp=Z,8.9nm,0.9s,baz=120,slow=8.8,SNR=14								
USRK	**Ussuriysk Ar.**	**70.77**	**328**	P		P	**P**	**17 27 26.8**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=142,slow=6.5,SNR=7.6								
MDJ	**Mudanjiang**	**72.32**	**327**	P		P	**P**	**17 27 37.0**	**+1.0**
MDJ				pmax		pmax			
	comp=Z,8.0nm,1.5s								
MDJ				pmax		pmax			
	comp=Z,81nm,4.5s								
QIZ	**Qiongzhong**	**73.54**	**295**	P		P	**P**	**17 27 43.5**	**-0.3**
QIZ				S		SKiKP	**SKiKP**	**17 37 15.0**	**+3.1**
QIZ				LR		LR	LR		
	comp=Z,220nm,19.9s								
QIZ				LR		LR	LR		
	comp=Z,270nm,19.1s								
CN2	**Changchun**	**74.08**	**324**		*e*	P	**P**	**17 27 48.2**	**+1.8**
KLR	**Kul'dur**	**74.40**	**331**	P		P	**P**	**17 27 49.1**	**+1.0**
	comp=Z,7.1nm,1.0s,baz=124,slow=3.3,SNR=18								
QSPA	**South Pole Qui**	**76.03**	**180**		*e*	P	**P**	**17 27 57.8**	**+0.2**
	comp=Z,76nm,1.3s								
MA2	**Magadan**	**76.26**	**347**	P		P	**P**	**17 27 57.6**	**-1.0**
	comp=Z,7.0nm,0.9s,baz=149,slow=3.9,SNR=4.8								
BJI	**Beijing**	**77.71**	**317**	P		P	**P**	**17 28 07.8**	**+0.6**
BJI				pmax		pmax			
	comp=Z,10.0nm,0.9s								
BJI				pmax		pmax			
	comp=Z,280nm,14.5s								
CNPM	**China Poot**	**77.74**	**16**		*e*	P	**P**	**17 28 06.9**	**-0.1**
	comp=Z,10nm,1.0s								
BRLK	**Bradley Lake**	**78.03**	**16**		*e*	P	**P**	**17 28 08.5**	**-0.1**
	comp=Z,17nm,1.0s								
RSO	**Redoubt South**	**78.15**	**15**		*e*	P	**P**	**17 28 08.2**	**-1.2**
WDC	**Whiskeytown Da**	**78.16**	**43**		*e*	P	**P**	**17 28 10.3**	**+0.6**
WDC				pmax		pmax			
	comp=Z,9.0nm,1.3s								
WDC	**Whiskeytown Da**	**78.16**	**43**		*e*	P	**P**	**17 28 10.2**	**+0.6**
	comp=Z,9.2nm,1.3s								
ENH	**Enshi**	**78.17**	**305**		*e*	P	**P**	**17 28 10.5**	**+0.4**
	comp=Z,42nm,1.6s								
N02D	**Trinity Center**	**78.25**	**42**	P		P	**P**	**17 28 11.5**	**+1.2**
	baz=240								
M02C	**Callahan**	**78.36**	**42**	P		P	**P**	**17 28 12.1**	**+1.1**
	baz=240								
AFDM	**Forest Hills D**	**78.42**	**45**		*e*	P	**P**	**17 28 11.6**	**+0.4**
	comp=Z,6.7nm,1.0s								
O03D	**Paynes Creek**	**78.51**	**43**	P		P	**P**	**17 28 12.2**	**+0.5**
	baz=240								
EDW2	**Edwards Air Fo**	**78.68**	**50**	P		P	**P**	**17 28 13.5**	**+0.7**
	baz=244								
HUMO	**Hull Mountain**	**78.92**	**41**		*e*	P	**P**	**17 28 15.2**	**+1.3**
	comp=Z,12nm,1.4s								
SEY	**Seymchan**	**78.99**	**349**	P		P	**P**	**17 28 13.6**	**-0.2**
	comp=Z,13nm,1.0s,baz=146,slow=5.6,SNR=20								
GYA	**Guiyang**	**79.00**	**301**		*e*	P	**P**	**17 28 15.0**	**+0.2**
GYA					PP		**PP**	**17 31 15.6**	**+1.3**
GYA					S		**S**	**17 38 19.4**	**+7.7**
GYA					SKS		**SKSac**	**17 38 25.6**	**-2.8**
GYA				pmax		pmax			
	comp=Z,10.0nm,1.0s								
GYA				pmax		pmax			
	comp=Z,110nm,6.2s								
GYA				LR		LR			
	comp=Z,450nm,18.8s								
GYA				LR		LR			
	comp=Z,460nm,18.0s								
GYA				LR		LR			
	comp=Z,420nm,18.6s								
MONP2	**Monument Peak**	**79.02**	**52**	P		P	**P**	**17 28 15.7**	**+0.8**
	baz=245								
IKP	**In-Ko-Pah, Jac**	**79.16**	**52**	P		P	**P**	**17 28 15.1**	**-0.4**
	baz=246								
M04C	**Macdoel**	**79.22**	**42**	P		P	**P**	**17 28 17.1**	**+1.4**
	baz=240								
I03D	**Drain, OR**	**79.23**	**40**	P		P	**P**	**17 28 16.6**	**+1.1**
	baz=239								
WAKR	**Walker**	**79.27**	**46**		*e*	P	**P**	**17 28 16.4**	**+0.2**
	comp=Z,14nm,1.3s								
TPFO	**Pinon Flats**	**79.29**	**51**	P		P	**P**	**17 28 16.4**	**+0.1**
	baz=245								
SWSC	**Sam W. Stewart**	**79.51**	**52**	P		P	**P**	**17 28 18.8**	**+1.4**
	baz=246								
SUA	**Susitna One**	**79.52**	**15**		*e*	P	**P**	**17 28 16.2**	**-0.7**
	comp=Z,18nm,1.4s								
TT01	**Tatalina**	**79.56**	**12**		*e*	P	**P**	**17 28 16.5**	**-0.3**
MPMC	**Manual Prospec**	**79.56**	**49**	P		P	**P**	**17 28 18.0**	**+0.2**
	baz=244								
BELC	**Belle Mtn. Jos**	**79.80**	**51**	P		P	**P**	**17 28 19.4**	**+0.3**
	baz=246								
H02S1	**DAWSON INLET T**	**79.82**	**28**	T		T	T	18 56 02.4	
	SNR=17								
PAHR	**Pah Rah Range**	**79.86**	**45**		*e*	P	**P**	**17 28 18.5**	**-0.7**
	comp=Z,7.7nm,1.1s								
I04A	**Tendick Farm,**	**79.86**	**40**	P		P	**P**	**17 28 18.9**	**-0.1**
	baz=240								
HEC	**Hector,Ludlow**	**79.89**	**50**	P		P	**P**	**17 28 19.7**	**+0.3**
	baz=245								
PMR	**Palmer**	**80.04**	**16**		*e*	P	**P**	**17 28 17.7**	**-1.8**
PMR				pmax		pmax			
	comp=Z,15nm,1.2s								
PMR	**Palmer**	**80.04**	**16**		*e*	P	**P**	**17 28 17.7**	**-1.8**
	comp=Z,15nm,1.2s								
BC3	**Big Chuckawall**	**80.07**	**52**	P		P	**P**	**17 28 21.2**	**+0.7**
	baz=246								
XAN	**Xi'an**	**80.14**	**309**	P		P	**P**	**17 28 22.0**	**+1.2**
XAN					pP		PcP	17 28 29.8	+1.8
XAN				pmax		pmax			
	comp=Z,14nm,1.5s								
FURC	**Furnace Creek,**	**80.19**	**49**	P		P	**P**	**17 28 21.3**	**+0.4**
	baz=244								
MOD	**Modoc Plateau**	**80.28**	**42**		*e*	P	**P**	**17 28 21.0**	**-0.5**
	comp=Z,15nm,1.4s								
K05A	**Summer Lake**	**80.29**	**42**		*e*	P	**P**	**17 28 21.8**	**+0.2**
	comp=Z,12nm,1.1s								
GLA	**Glamis**	**80.30**	**52**	P		P	**P**	**17 28 22.6**	**+1.0**
	baz=246								
GLA	**Glamis**	**80.30**	**52**		*e*	P	**P**	**17 28 22.4**	**+0.8**
GLA				pmax		pmax			
	comp=Z,27nm,1.4s								
GLA	**Glamis**	**80.30**	**52**		*e*	P	**P**	**17 28 22.4**	**+0.8**
	comp=Z,27nm,1.4s								
GMRC	**Granite Mounta**	**80.38**	**51**	P		P	**P**	**17 28 22.5**	**+0.3**
	baz=246								
HIA	**Hailar**	**80.49**	**326**	⇓	*e*	P	**P**	**17 28 23.2**	**+0.9**
HIA				pmax		pmax			
	comp=Z,18nm,1.7s								
IRM	**Iron Mountain**	**80.51**	**51**	P		P	**P**	**17 28 23.8**	**+1.1**
	baz=246								
TPNV	**Topopah Spring**	**80.84**	**48**	P		P	**P**	**17 28 24.9**	**+0.2**
	baz=245								
TPNV	**Topopah Spring**	**80.84**	**48**		*e*	P	**P**	**17 28 24.5**	**-0.1**
TPNV	**Topopah Spring**	**80.84**	**48**		*e*	P	**P**	**17 28 24.5**	**-0.1**
CAST	**Castle Rocks**	**80.87**	**14**		*e*	P	**P**	**17 28 22.8**	**-1.2**
	comp=Z,19nm,1.1s								
HHC	**Hu-ho-hao-te**	**81.19**	**316**		*e*	P	**P**	**17 28 26.1**	**-0.2**
HHC				pmax		pmax			
	comp=Z,12nm,0.9s								
HHC				pmax		pmax			
	comp=Z,270nm,8.6s								
TRF	**Thorofare Moun**	**81.32**	**14**		*e*	P	**P**	**17 28 25.7**	**-0.8**
	comp=Z,14nm,1.1s								
214A	**Organ Pipe Nat**	**81.45**	**54**	P		P	**P**	**17 28 29.2**	**+1.4**
	baz=248								
SHPR	**Sheep Range**	**81.45**	**49**		*e*	P	**P**	**17 28 28.1**	**+0.2**
	comp=Z,17nm,1.6s								
WVOR	**Wild Horse Val**	**81.62**	**43**		*e*	P	**P**	**17 28 27.7**	**-0.9**
WVOR				pmax		pmax			
	comp=Z,11nm,1.4s								
WVOR	**Wild Horse Val**	**81.62**	**43**		*e*	P	**P**	**17 28 27.7**	**-0.9**
	comp=Z,11nm,1.4s								
RND	**Reindeer**	**81.63**	**15**		*e*	P	**P**	**17 28 27.6**	**-0.5**
RND				pmax		pmax			
	comp=Z,26nm,1.0s								
RND	**Reindeer**	**81.63**	**15**		*e*	P	**P**	**17 28 27.6**	**-0.5**
	comp=Z,26nm,1.0s								
BMN	**Battle Mountai**	**81.67**	**45**		*e*	P	**P**	**17 28 29.7**	**+0.8**
BMN				pmax		pmax			
	comp=Z,10.0nm,0.9s								
BMN	**Battle Mountai**	**81.67**	**45**		*e*	P	**P**	**17 28 29.6**	**+0.8**
	comp=Z,9.8nm,0.9s								
KMI	**Kunming**	**81.84**	**298**	P		P	**P**	**17 28 32.0**	**+1.8**
KMI					pP		PcP	17 28 35.2	-0.7
KMI					sP		pP	17 28 37.8	-3.5
KMI				pmax		pmax			
	comp=Z,8.0nm,0.6s								
R11A	**Troy Canyon, C**	**81.91**	**47**	P		P	**P**	**17 28 30.4**	**+0.1**
	baz=245								
R11A	**Troy Canyon, C**	**81.91**	**47**		*e*	P	**P**	**17 28 30.7**	**+0.4**
	comp=Z,5.4nm,1.4s								
BILL	**Bilibino**	**82.16**	**356**		*i*	P	**P**	**17 28 29.3**	**-1.4**
BILL				pmax		pmax			
	comp=Z,6.0nm,1.2s								
WRH	**Wood River Hil**	**82.70**	**15**		*e*	P	**P**	**17 28 32.6**	**-0.9**
	comp=Z,11nm,0.6s								
G08A	**Pilot Rock**	**82.75**	**40**		*e*	P	**P**	**17 28 34.5**	**+0.1**
	comp=Z,13nm,1.4s								
CCB	**Clear Creek Bu**	**82.92**	**15**		*e*	P	**P**	**17 28 33.6**	**-1.1**
	comp=Z,17nm,1.2s								
HDA	**Harding Lake**	**82.94**	**15**		*e*	P	**P**	**17 28 34.4**	**-0.4**
	comp=Z,34nm,1.4s								
CD2	**Chengdu**	**82.98**	**304**		*e*	P	**P**	**17 28 34.8**	**-1.1**
CD2					pP		PcP	17 28 39.0	-1.5
CD2					PP		**PP**	**17 31 44.9**	**-2.2**
CD2					S		**S**	**17 38 53.8**	**+0.9**
CD2					SKS		**SKSac**	**17 38 55.1**	**-0.3**
CD2					SS		**SS**	**17 44 17.8**	**+0.5**
CD2				pmax		pmax			
	comp=Z,10.0nm,0.5s								
CD2				pmax		pmax			
	comp=Z,120nm,5.6s								
LCMT	**Little Creek M**	**83.07**	**49**		*e*	P	**P**	**17 28 36.2**	**-0.1**
	comp=Z,29nm,1.9s								
CM01	**Chiang Mai Arr**	**83.08**	**291**		*e*	P	**P**	**17 28 35.9**	**-0.7**
DOT	**Dot Lake**	**83.09**	**17**		*e*	P	**P**	**17 28 34.9**	**-0.7**
	comp=Z,25nm,1.0s								
CMAR	**Chiang Mai Arr**	**83.11**	**291**	P		P	**P**	**17 28 38.0**	**+1.4**
	comp=Z,1.2nm,1.0s,baz=106,slow=3.3,SNR=4.4								
ELK	**Elko**	**83.16**	**45**		*e*	P	**P**	**17 28 37.0**	**+0.1**
ELK				pmax		pmax			
	comp=Z,4.0nm,1.1s								
ELK	**Elko**	**83.16**	**45**		*e*	P	**P**	**17 28 37.0**	**+0.1**
	comp=Z,4.2nm,1.1s								
TUC	**Tucson**	**83.17**	**54**	P		P	**P**	**17 28 38.0**	**+1.1**
	baz=249								
TUC	**Tucson**	**83.17**	**54**		*e*	P	**P**	**17 28 37.8**	**+0.9**
TUC				pmax		pmax			
	comp=Z,17nm,1.3s								
TUC	**Tucson**	**83.17**	**54**		*e*	P	**P**	**17 28 37.8**	**+0.9**
	comp=Z,17nm,1.3s								
CCUT	**Cedar City**	**83.19**	**49**		*e*	P	**P**	**17 28 37.1**	**+0.1**
	comp=Z,12nm,1.3s								
ILAR	**Eielson Array**	**83.25**	**15**	P		P	**P**	**17 28 35.3**	**-1.1**
	comp=Z,9.6nm,1.0s,baz=236,slow=5.7,SNR=53								
ILAR	**Eielson Array**	**83.25**	**15**	P		P	**P**	**17 28 35.3**	**-1.1**
ILAR				pmax		pmax			
	comp=Z,9.0nm,1.0s								
ILB	**Eielson Array**	**83.25**	**15**		*e*	P	**P**	**17 28 35.2**	**-1.2**
IL1	**Eielson Array**	**83.25**	**15**		*e*	P	**P**	**17 28 35.0**	**-1.4**
BMO	**Blue Mountains**	**83.58**	**41**		*e*	P	**P**	**17 28 38.4**	**-0.3**
	comp=Z,4.9nm,1.2s								
319A	**Douglas**	**84.04**	**56**		*e*	P	**P**	**17 28 42.0**	**+0.6**
	comp=Z,18nm,1.0s								
F10A	**Beach Ranch, E**	**84.14**	**40**		*e*	P	**P**	**17 28 41.6**	**0.0**
	comp=Z,9.3nm,1.1s								
MTPU	**Mount Pierson**	**84.24**	**49**		*e*	P	**P**	**17 28 43.4**	**+0.9**
	comp=Z,15nm,1.1s								
YAK	**Yakutsk**	**84.25**	**340**	P		P	**P**	**17 28 40.3**	**-1.2**
	comp=Z,3.8nm,0.4s,baz=146,slow=1.0,SNR=4.8								
YAK	**Yakutsk**	**84.25**	**340**	⇓	*e*	P	**P**	**17 28 40.4**	**-1.1**
YAK				pmax		pmax			
	comp=Z,18nm,1.7s								
COLD	**Coldfoot**	**84.54**	**12**		*e*	P	**P**	**17 28 43.5**	**+0.6**
	comp=Z,11nm,1.0s								
X18A	**Snowflake**	**84.62**	**53**		*e*	P	**P**	**17 28 45.5**	**+1.2**
	comp=Z,20nm,1.1s								
DUG	**Dugway, Tooele**	**84.63**	**46**	P		P	**P**	**17 28 44.5**	**+0.2**
	baz=247								
DUG	**Dugway, Tooele**	**84.63**	**46**		*e*	P	**P**	**17 28 44.2**	**0.0**
DUG				pmax		pmax			
	comp=Z,9.0nm,1.1s								
DUG	**Dugway, Tooele**	**84.63**	**46**		*e*	P	**P**	**17 28 44.2**	**0.0**
	comp=Z,9.2nm,1.1s								
DAWY	**Dawson**	**84.75**	**18**		*e*	P	**P**	**17 28 43.9**	**-0.3**
	comp=Z,12nm,1.1s								
EGAK	**Eagle**	**84.77**	**17**		*e*	P	**P**	**17 28 44.0**	**-0.1**
	comp=Z,17nm,1.2s								
W18A	**Petrified Fore**	**85.00**	**52**	P		P	**P**	**17 28 47.0**	**+0.8**
	baz=249								
W18A	**Petrified Fore**	**85.00**	**52**		*e*	P	**P**	**17 28 46.2**	**0.0**
	comp=Z,26nm,1.3s								
HVU	**Hansel Valley**	**85.28**	**45**	P		P	**P**	**17 28 47.8**	**+0.4**
HVU				pmax		pmax			
	comp=Z,14nm,1.2s								
HVU	**Hansel Valley**	**85.28**	**45**		*e*	P	**P**	**17 28 47.8**	**+0.4**
	comp=Z,14nm,1.2s								
CIT	**Chita**	**85.29**	**326**		*e*	P	P	17 28 40.8	-6.3
CIT					*e*			17 28 48.2	
TMUT	**Trail Mountain**	**85.42**	**48**		*e*	P	**P**	**17 28 49.1**	**+0.6**
	comp=Z,13nm,1.1s								
121A	**Cookes Peak, D**	**85.63**	**55**	P		P	**P**	**17 28 50.4**	**+0.9**
	baz=250								
JLU	**Jordanelle**	**85.75**	**47**		*e*	P	**P**	**17 28 50.0**	**+0.1**
	comp=Z,28nm,1.5s								
TCUT	**Toone Canyon**	**85.97**	**46**		*e*	P	**P**	**17 28 49.8**	**-1.2**
	comp=Z,22nm,1.1s								
HWUT	**Hardware Ranch**	**86.05**	**46**		*e*	P	**P**	**17 28 51.5**	**+0.2**
	comp=Z,6.3nm,1.1s								
MCMT	**McKenzie Canyo**	**86.44**	**42**		*e*	P	**P**	**17 28 53.5**	**+0.2**
PV05	**Paradox Valley**	**86.52**	**50**		*e*	P	**P**	**17 28 53.6**	**-0.2**
MSO	**Missoula**	**86.56**	**40**	P		P	**P**	**17 28 54.1**	**+0.4**
	baz=246								
PV09	**Paradox Valley**	**86.64**	**49**		*e*	P	**P**	**17 28 54.5**	**+0.1**
PV10	**Paradox Valley**	**86.67**	**49**		*e*	P	**P**	**17 28 54.9**	**+0.3**
DLMT	**Dillon**	**86.82**	**42**		*e*	P	**P**	**17 28 53

MSTX	**Muleshoe** baz=253	**90.07**	**55**	P		**P**	**17 29 11.0**	**+0.4**
MSTX	**Muleshoe** comp=Z,12nm,1.1s	**90.07**	**55**	*e*P		**P**	**17 29 10.9**	**+0.3**
ZAK	**Zakamensk**	**90.41**	**322**	*e*P		**P**	**17 29 10.9**	**-0.9**
ZAK	comp=Z,3.0nm,1.3s			pmax	pmax			
JCT	**Junction City** baz=255	**91.53**	**59**	P		**P**	**17 29 17.4**	**0.0**
633A	**Saathoff Ranch** baz=255	**91.79**	**60**	P		**P**	**17 29 19.1**	**+0.6**
SYO	**Syowa Base**	**91.83**	**194**	*i*eX		**P**	**17 29 15.0**	**-3.0**
SYO	**Syowa Base**	**91.83**	**194**	*i*eX		pP	17 29 26.2	-2.9
934A	**Benavides** baz=255	**91.87**	**62**	P		**P**	**17 29 20.2**	**+1.2**
RSSD	**Black Hills** baz=253	**92.11**	**45**	P		**P**	**17 29 20.4**	**+0.4**
433A	**Art** baz=255	**92.19**	**59**	P		**P**	**17 29 20.0**	**-0.5**
ABTX	**Abilene, Hawle** baz=255	**92.22**	**57**	P		**P**	**17 29 20.2**	**-0.3**
133A	**Hamilton Ranch** baz=255	**92.81**	**57**	P		**P**	**17 29 24.3**	**+1.0**
YKA	**Yellowknife Ar** comp=Z,0.8nm,0.8s,baz=248,slow=4.9,SNR=6.3	**92.82**	**26**	P		**P**	**17 29 21.9**	**-0.6**
434A	**Burnet** baz=256	**92.89**	**59**	P		**P**	**17 29 23.9**	**+0.2**
W32A	**Sentinel** baz=255	**93.18**	**55**	P		**P**	**17 29 25.6**	**+0.7**
Y36A	**Durant** baz=257	**95.26**	**57**	P		**P**	**17 29 35.3**	**+0.9**
T34A	**McClaskey Farm** baz=257	**95.26**	**53**	P		**P**	**17 29 35.4**	**+1.0**
W36A	**Wetumka** baz=257	**95.59**	**55**	P		**P**	**17 29 36.4**	**+0.5**
X37A	**Clayton** baz=257	**96.15**	**56**	P		**P**	**17 29 39.2**	**+0.7**
X38A	**Whitesboro** baz=258	**96.61**	**56**	P		**P**	**17 29 41.1**	**+0.5**
V37A	**Hulbert** baz=258	**96.61**	**55**	P		**P**	**17 29 41.0**	**+0.4**
X39A	**Fountain Ranch** baz=258	**97.15**	**56**	P		Pdif	17 29 43.9	+0.8
S37A	**Fort Scott** baz=258	**97.26**	**53**	P		Pdif	17 29 44.0	+0.5
PLCA	**Paso Flores** comp=Z,20nm,18.4s,baz=148,slow=31	**97.43**	**135**	LR		LR	18 06 52.9	
MIAR	**Mount Ida** baz=258	**97.59**	**56**	P		Pdif	17 29 45.6	+0.6
MIAR	**Mount Ida** comp=Z,9.0nm,1.3s	**97.59**	**56**	*e*P		Pdif	17 29 45.7	+0.6
MIAR				pmax	pmax			
MIAR	**Mount Ida** comp=Z,8.6nm,1.3s	**97.59**	**56**	*e*P		Pdif	17 29 45.7	+0.7
WMQ	**Urumqi**	**98.82**	**313**	*e*P		Pdif	17 29 51.1	+0.7
WMQ	comp=Z,11nm,0.6s			pmax	pmax			
MKAR	**Makanchi Array** comp=Z,0.1nm,0.3s,baz=114,slow=5.4,SNR=3.7	**103.04**	**315**	Pdiff		**Pdif**	**17 30 08.6**	**-0.5**
PB01	**IPOC Station P**	**106.29**	**117**	*e*PKKPbc		PKKPbc	17 45 57.3	+0.8
KSH	**Kashi**	**106.97**	**307**	*e*Pdif		**Pdif**	**17 30 31.8**	**+5.0**
KSH				*e*PP		PP	17 35 03.0	+9.5
KSH				S		**Sdif**	**17 42 31.2**	**+4.8**
KSH	comp=Z,84nm,7.1s			LR		LR		
KSH	comp=Z,81nm,7.5s			LR		LR		
ARU	**Arti**	**117.00**	**327**	*i* PKIKP		**PKPdf**	**17 34 54.6**	**-0.2**
ARU							17 36 07.7	
ARU							17 42 05.4	
ARU				SS		SS	17 52 09.1	-0.9
KLMR	**Klimovskoe**	**123.92**	**336**	*e*PKIKP		**PKPdf**	**17 35 05.8**	**-2.2**
KLMR	comp=Z,6.0nm,1.2s			pmax	pmax			
FINES	**FINESS Array B** comp=Z,2.6nm,1.0s,baz=21,slow=6.9,SNR=5.7	**128.11**	**343**	PKP		**PKPdf**	**17 35 16.6**	**+0.6**
OBN	**Obninsk**	**128.66**	**332**	*i* PKIKP		**PKPdf**	**17 35 17.5**	**+0.3**
OBN	comp=Z,8.0nm,1.4s			pmax	pmax			
NEY	**Neytrino**	**131.03**	**316**	*i* PKIKP		**PKPdf**	**17 35 22.2**	**-0.2**
AKASG	**Malin Array Be** comp=Z,0.3nm,0.4s,baz=35,slow=2.0,SNR=4.6	**134.90**	**331**	PKP		**PKPdf**	**17 35 28.8**	**-0.4**
KIS	**Kishinev** comp=Z,700nm,20.0s	**137.55**	**327**	LRM		MLR	17 36 05.0	
BRTR	**Keskin Array B** comp=Z,0.7nm,1.0s,baz=68,slow=4.5,SNR=3.7	**138.69**	**315**	PKP		**PKPdf**	**17 35 37.4**	**+0.7**
KOLS	**Kolonicke sedl**	**139.29**	**334**	*e*PKIKP		**PKPdf**	**17 35 38.1**	**+0.7**
KOLS	**Kolonicke sedl**	**139.29**	**334**	*e*PKP		**PKPdf**	**17 35 38.1**	**+0.7**
CRVS	**Cervenica-Dubn**	**139.65**	**335**	*e*PKIKP		**PKPdf**	**17 35 42.0**	**+4.0**
CRVS	**Cervenica-Dubn**	**139.65**	**335**	*e*PKP		**PKPdf**	**17 35 42.0**	**+4.0**
KECS	**Kecovo**	**140.38**	**335**	*e*PKIKP		**PKPdf**	**17 35 42.0**	**+2.6**
KECS	**Kecovo**	**140.38**	**335**	*e*PKP		**PKPdf**	**17 35 42.0**	**+2.6**
CLL	**Collm** comp=Z,6.0nm,1.4s	**140.52**	**344**	*e*PKPdf		**PKPdf**	**17 35 40.0**	**+0.5**
CLL				*i*			17 35 42.8	
	comp=Z,8.0nm,1.2s							
CLL	**Collm**	**140.52**	**344**	*e*PKIKP		**PKPdf**	**17 35 40.0**	**+0.5**
CLL	comp=Z,6.0nm,1.4s			pmax	pmax			
BRG	**Berggiesshubel** comp=Z,3.2nm,1.0s	**140.65**	**343**	*e*PKP		**PKPdf**	**17 35 40.9**	**+1.2**
BRG	**Berggiesshubel** comp=Z,3.0nm,1.0s	**140.65**	**343**	*e*PKIKP		**PKPdf**	**17 35 40.9**	**+1.2**
BRG				pmax	pmax			
KHC	**Kasperske Hory**	**142.31**	**342**	*e*PKP		**PKPdf**	**17 35 43.8**	**+0.9**
KHC	**Kasperske Hory**	**142.31**	**342**	*e*PKIKP		**PKPdf**	**17 35 43.8**	**+0.9**
GERES	**GERESS Array B** comp=Z,0.7nm,0.8s,baz=55,slow=7.7,SNR=3.8	**142.52**	**341**	PKP		**PKPdf**	**17 35 42.2**	**-1.1**
ARSA	**Arzberg** comp=Z,1.6nm,0.7s	**143.30**	**338**	*i* PKPdf		PKPbc	17 35 43.1	+1.4
SOKA	**Soboth** comp=Z,4.3nm,1.2s	**143.97**	**338**	*e*PKPdf		**PKPdf**	**17 35 46.0**	**+0.1**
BFO	**Black Forest**	**144.43**	**347**	*e*PKIKP		**PKPab**	**17 35 44.7**	**-0.1**
BFO	**Black Forest**	**144.43**	**347**	*e*PKPdf		**PKPab**	**17 35 44.7**	**-0.1**
MYKA	**Terra Mystica** comp=Z,4.1nm,0.8s	**144.49**	**340**	*i* PKPdf		**PKPab**	**17 35 45.1**	**-0.1**
WATA	**Walderalm** comp=Z,2.6nm,0.5s	**144.51**	**342**	*i* PKPdf		**PKPdf**	**17 35 46.6**	**-0.3**
RETA	**Reutte** comp=Z,10nm,1.2s,SNR=5.2	**144.60**	**343**	*e*PKPdf		PKPbc	17 35 46.2	+0.5
MOTA	**Moosalm** comp=Z,8.4nm,1.2s	**144.64**	**343**	*i* PKPdf		PKPbc	17 35 46.3	+0.3
SQTA	**Sankt Quirin** comp=Z,0.1nm,1.1s	**144.72**	**343**	*i* PKPdf		**PKPdf**	**17 35 46.7**	**-0.5**
ABTA	**Abfaltersbach** comp=Z,14nm,1.2s	**144.75**	**341**	*e*PKPdf		**PKPab**	**17 35 46.0**	**-0.2**
ECH	**Echery**	**144.79**	**348**	PKP		**PKPdf**	**17 35 46.9**	**-0.3**
THEF	**They Montfort**	**145.01**	**349**	PKP		**PKPdf**	**17 35 47.7**	**+0.1**
DAVA	**Damuels** comp=Z,29nm,1.1s,SNR=13	**145.03**	**344**	*i* pPKPbc		**PKPdf**	**17 35 48.0**	**+0.2**
FETA	**Feichten** comp=Z,17nm,1.1s,SNR=9.4	**145.04**	**343**	*i* pPKPbc		**PKPdf**	**17 35 48.1**	**+0.2**
MOF	**Molkenrain**	**145.14**	**348**	PKP		**PKPdf**	**17 35 48.3**	**+0.4**
FUORN	**Ofenpass-Fuorn**	**145.54**	**343**	*e*PKPbc		**PKPab**	**17 35 49.9**	**+0.6**
LOMF	**Lomont**	**145.69**	**348**	PKP		**PKPab**	**17 35 50.2**	**+0.7**
TUE	**Stuetta**	**145.92**	**344**	*e*PKPdf		**PKPbc**	**17 35 50.1**	**0.0**
SENIN	**Lac Senin/Sane**	**146.52**	**347**	*e*PKPdf		**PKPab**	**17 35 52.9**	**0.0**
OG01	**Vacheresse**	**146.69**	**347**	PKP		**PKPab**	**17 35 53.4**	**0.0**
AGO	**Saint Agoulin**	**147.59**	**352**	PKP		**PKPbc**	**17 35 55.3**	**+0.6**
PLDF	**La Plantade**	**147.59**	**351**	PKP		**PKPbc**	**17 35 55.7**	**+0.9**
SSB	**Saint Sauveur**	**148.12**	**349**	*e*PKP2		**PKPbc**	**17 35 56.8**	**+0.7**
SSB	**Saint Sauveur**	**148.12**	**349**	*e*PKPbc		**PKPbc**	**17 35 56.8**	**+0.7**
LBL	**Lubilhac**	**148.37**	**351**	PKP		**PKPbc**	**17 35 57.7**	**+0.8**
CUC	**Castrocucco**	**149.14**	**331**	*e*PKPdf		**PKPbc**	**17 35 57.3**	**-1.6**
TIP	**Timpagrande**	**149.30**	**328**	*e*PKPbc		**PKPbc**	**17 35 59.5**	**+0.1**
ESDC	**Sonseca Array** comp=Z,2.3nm,0.8s,baz=348,slow=4.3,SNR=11	**154.42**	**1**	PKPab		**PKPab**	**17 36 25.4**	**+0.1**
TORD	**Torodi Ar. Bea** comp=Z,0.9nm,0.9s,baz=288,slow=1.4,SNR=4.0	**175.05**	**261**	PKP		**PKPdf**	**17 36 20.2**	**-0.9**
TORD	comp=Z,2.5nm,1.0s,baz=96,slow=5.2,SNR=9.4			PKPab		**PKPab**	**17 37 56.5**	**-0.2**

NIED ***11*** *17:18:00,38.˚40N×141.˚70E,h68km,Mw4.7 Best double couple: M₀1.15000×10¹⁶ NP1:φ₈66.00000°, δ40.00000°, λ168.00000°. NP2:φ₈165.00000°, δ83.00000°, λ50.00000°.*
ISCJB ***11*** *17:18:42.7±0.8,38.˚32N±0.˚04×141.˚74E±0.˚09,h58km±6km, mb3.5/5,Error ellipse: s-maj=11.7km s-min=5.3km az=19.7*
IDC ***11*** *17:18:43.6±2.7,38.˚38N×142.˚01E,h59km±22km,mb3.3/5, mb1 3.4/10,mb1mx3.2/50,mbtmp3.6/10,ML3.1/4,Error ellipse: s-maj=25.0km s-min=15.6km az=95.0*
JMA ***11*** *17:18:44.0,38.˚36N×141.˚67E,h53km±1km,M3.7*
JMA Felt II J1.

ISC 11 17:18:43.7±1.3,38.˚35N±0.˚05×141.˚77E±0.˚10,h49km±10km, n26,σ1ᵠ60/35,mb3.6/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.35**	**288**	P	**Pn**	**17 18 53.3**	**+0.2**
JIO				S	**Sn**	**17 18 59.6**	**-0.2**
OFUJ	**Ofunato**	**0.73**	**354**	P	**Pn**	**17 18 58.1**	**+0.3**
OFUJ				*e*S	**Sn**	**17 19 08.1**	**0.0**
JMK	**Ichinoseki**	**0.74**	**325**	P	**Pn**	**17 18 58.0**	**+0.1**
JMK				S	**Sn**	**17 19 07.7**	**-0.5**
JOU	**Okura**	**0.87**	**271**	P	**Pn**	**17 18 59.2**	**-0.4**
JOU				S	**Sn**	**17 19 10.3**	**-1.0**
JMM	**Marumori**	**0.91**	**238**	P	**Pn**	**17 18 59.5**	**-0.6**
JMM				S	**Sn**	**17 19 10.7**	**-1.5**
JOM	**Ohasama**	**1.18**	**342**	P	**Pn**	**17 19 03.9**	**+0.1**
JFK	**Kawauchi**	**1.21**	**216**	P	**Pn**	**17 19 04.0**	**-0.3**
JFK				S	**Sn**	**17 19 18.4**	**-1.2**
JYK	**Kaneyama**	**1.24**	**298**	P	**Pn**	**17 19 04.3**	**-0.3**
JYS	**Shirataka**	**1.35**	**265**	P	**Pn**	**17 19 05.8**	**-0.3**
JYS				*e*S	**Sn**	**17 19 21.8**	**-1.0**
JRG	**Rokugo**	**1.37**	**320**	P	**Pn**	**17 19 06.5**	**+0.1**
JFT	**Otama**	**1.41**	**234**	P	**Pn**	**17 19 06.9**	**0.0**
JFT				*e*S	**Sn**	**17 19 23.4**	**-0.9**
JYA	**Atsumi**	**1.63**	**279**	P	**Pn**	**17 19 09.7**	**-0.2**
MJAR	**Matsushiro Arr** 2.8nm,0.3s,baz=35,slow=13,SNR=39	**3.36**	**239**	P	**Pn**	**17 19 35.0**	**+1.4**
MJAR				S	**Sn**	**17 20 17.3**	**+5.0**
	1.1nm,0.3s,baz=277,slow=11,SNR=4.9						
MAT	**Matsushiro**	**3.36**	**239**	P	**Pn**	**17 19 35.0**	**+1.3**
MAT				*e*S	**Sn**	**17 20 10.0**	**-2.3**
JHJ	**Hachijo jima 2** 3.9nm,0.3s,baz=331,slow=23,SNR=8.4	**5.46**	**198**	P	**Pn**	**17 20 02.9**	**+0.3**
JHJ				S	**Sn**	**17 21 01.9**	**-2.2**
	6.9nm,0.3s,baz=73,slow=19,SNR=4.6						
ASAJ	**Asahikawa** baz=202,slow=19	**5.79**	**6**	P	**Pn**	**17 20 07.4**	**+0.4**
ASAJ				S	**Sn**	**17 21 08.0**	**-4.2**
	baz=126,slow=19						
USRK	**Ussuriysk Ar.** 0.4nm,0.3s,baz=121,slow=14,SNR=6.8	**9.40**	**312**	P	**Pn**	**17 20 57.0**	**+0.6**
KSRS	**Korea Array** 0.2nm,0.3s,baz=78,slow=14,SNR=3.6	**10.98**	**270**	P	**Pn**	**17 21 21.3**	**+3.2**
SONM	**Songino Array** 0.2nm,0.4s,baz=102,slow=6.2,SNR=2.3	**27.31**	**302**	P	**P**	**17 24 25.1**	**+1.4**
H11N2	**WAKE ISLAND Hy** baz=317	**28.61**	**123**	T	T	17 54 54.3	
H11N1	**WAKE ISLAND Hy** baz=317	**28.61**	**123**	T	T	17 54 53.3	
H11N3	**WAKE ISLAND Hy** baz=317	**28.62**	**123**	T	T	17 54 53.1	
ZALV	**Zalesovo Beam** 0.7nm,0.3s,baz=81,slow=7.5,SNR=4.8	**41.25**	**311**	P	**P**	**17 26 22.9**	**-0.7**
MKAR	**Makanchi Array** 0.5nm,0.4s,baz=88,slow=9.9,SNR=8.6	**43.67**	**301**	P	**P**	**17 26 42.7**	**-0.8**
WRA	**Warramunga Arr** 0.5nm,0.4s,baz=5.8,slow=7.0,SNR=10	**58.40**	**188**	P	**P**	**17 28 33.2**	**-1.0**
ASAR	**Alice Springs** 0.2nm,0.8s,baz=355,slow=3.7,SNR=7.6	**62.13**	**188**	P	**P**	**17 28 59.1**	**-0.5**

IDC 11 17:23:54.1±5.5,18.˚72N×145.˚21E,h242km±27km,mb2.9/4, mb1 3.1/5,mb1mx2.8/45,mbtmp3.5/5,Error ellipse: s-maj=150.3km s-min=23.8km az=78.0,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam** 0.9nm,0.3s,baz=180,slow=20,SNR=1.2	**5.12**	**184**	P	Pn	17 25 10.6	-0.5
GUMO				S		17 26 13.3	+0.9
	1.5nm,0.3s,baz=198,slow=20,SNR=1.6						
WRA	**Warramunga Arr** 1.0nm,0.6s,baz=18,slow=8.9,SNR=12	**39.88**	**196**	P	P	17 31 04.5	-0.2
SONM	**Songino Array** 0.1nm,0.3s,baz=141,slow=9.3,SNR=1.7	**42.84**	**322**	P	P	17 31 28.6	0.0
ASAR	**Alice Springs** 0.2nm,0.5s,baz=16,slow=8.0,SNR=9.0	**43.55**	**195**	P	P	17 31 34.0	-0.4
STKA	**Stephens Creek** 0.4nm,0.4s,baz=4.1,slow=14,SNR=1.0	**50.43**	**184**	P	P	17 32 27.6	+0.3

IDC 11 17:30:09.5±5.0,7.˚16S×129.˚06E,h75km±56km,mb3.6/2, mb1 3.7/4,mb1mx3.2/31,mbtmp3.9/4,ML4.1/3,Error ellipse: s-maj=87.9km s-min=22.0km az=77.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong** 22nm,0.3s,baz=180,slow=19,SNR=2.1	**6.63**	**19**	P	Pn	17 31 44.0	-0.4
SIJI				S	Sn	17 32 49.3	-9.3
	9.5nm,0.3s,baz=186,slow=9.2,SNR=2.8						
FITZ	**Fitzroy Crossi** 0.7nm,0.3s,baz=90,slow=20,SNR=2.9	**11.37**	**197**	S	Sn	17 35 01.3	+6.8
WRA	**Warramunga Arr** 0.7nm,0.3s,baz=336,slow=13,SNR=23	**13.70**	**159**	P	Pn	17 33 19.5	-1.1
WRA				S	Sn	17 35 44.0	-7.1
	1.1nm,0.3s,baz=342,slow=23,SNR=11						
ASAR	**Alice Springs** 0.3nm,0.3s,baz=345,slow=10,SNR=53	**17.06**	**165**	P	P	17 34 05.0	+1.0
ASAR				S	Sn	17 37 09.4	-3.1
	0.2nm,0.3s,baz=359,slow=28,SNR=6.0						
CTA	**Charters Tower** 20nm,0.6s,baz=297,slow=6.8,SNR=44	**21.05**	**129**	P	P	17 35 17.4	+30
STKA	**Stephens Creek** 1.2nm,0.7s,baz=322,slow=12,SNR=3.2	**27.23**	**156**	P	P	17 35 46.1	-0.4
MKAR	**Makanchi Array** 0.6nm,0.5s,baz=129,slow=6.8,SNR=7.5	**67.85**	**327**	P	P	17 41 00.1	+0.1

CSEM ***11*** *17:34:04.8,43.˚94N×11.˚87E,h8km,MD1.9/5*
ROM 11 17:34:04.8±0.1,43.˚94N×11.˚87E,h8km±1km,Md1.9/5, Ml1.3/1,Error ellipse: s-maj=2.0km s-min=1.2km az=17.0,Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFI	**Santa Sofia** 781nm,0.2s	**0.04**	**205**	Pg	Pg	17 34 06.5	0.0
SFI				Sg	Sg	17 34 07.6	-0.1
SFI	**Santa Sofia** 781nm,0.2s	**0.04**	**205**	Pg	Pg	17 34 06.5	0.0
SFI				Sg	Sg	17 34 07.6	-0.1
ASQU	**Asqua** 73nm,0.2s	**0.15**	**202**	Pg	Pg	17 34 08.6	+0.5
ASQU				Sg	Sg	17 34 11.8	+1.5
ASQU	**Asqua** 73nm,0.2s	**0.15**	**202**	Pg	Pg	17 34 08.6	+0.5
ASQU				Sg	Sg	17 34 11.8	+1.5
T0502	**Localit˙ San**	**0.20**	**101**	Pg	Pg	17 34 09.6	+0.7
T0502				Sg	Sg	17 34 13.4	+1.8
VMG	**Vicchio**	**0.23**	**276**	Pg	Pg	17 34 10.4	+0.9
VMG				Sg	Sg	17 34 14.6	+1.8
VMG	**Vicchio**	**0.23**	**276**	Pg	Pg	17 34 10.4	+0.9
VMG				Sg	Sg	17 34 14.6	+1.8
CRE	**Caprese Michel**	**0.32**	**169**	Pg	Pg	17 34 11.8	+0.6
CRE				Sg	Sb	17 34 17.5	-0.7
CRE	**Caprese Michel**	**0.32**	**169**	Pg	Pg	17 34 11.8	+0.6
CRE				Sg	Sb	17 34 17.5	-0.7
SEI	**Scarperia**	**0.39**	**288**	Pg	Pg	17 34 12.8	+0.4
SEI				Sg	Sb	17 34 19.5	-0.6
SEI	**Scarperia**	**0.39**	**288**	Pg	Pg	17 34 12.8	+0.4
SEI				Sg	Sb	17 34 19.5	-0.6

ISK ***11*** *17:34:42.0,40.˚13N×29.˚94E,h24km,MD2.5*
CSEM ***11*** *17:34:43.8±0.3,40.˚16N×29.˚96E,h10km,MD2.5,Error ellipse: s-maj=8.7km s-min=5.4km az=122.0*
DDA ***11*** *17:34:43.8,40.˚14N×29.˚98E,h7km,Md2.7*
ISC 11 17:34:43.7±1.1,40.˚15N±0.˚03×29.˚94E±0.˚03,h6km±11km, n21,σ1ᵠ00/35,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GPA	**Golpazari**	**0.31**	**64**	*e*Pg	**Pg**	**17 34 49.6**	**-0.3**
GPA	**Golpazari**	**0.31**	**64**	*e*Pg	**Pg**	**17 34 49.6**	**-0.3**
ADVT	**Abdulvahap**	**0.32**	**331**	*e*Pg	**Pg**	**17 34 50.1**	**+0.2**
ADVT	**Abdulvahap**	**0.32**	**331**	*e*Pg	**Pg**	**17 34 50.1**	**+0.2**
BORA	**Eskisehir**	**0.48**	**125**	*i* P	**Pg**	**17 34 53.0**	**0.0**
BORA				*i* S	**Sg**	**17 34 59.1**	**-0.2**
BORA	**Eskisehir**	**0.48**	**125**	P	**Pg**	**17 34 53.0**	**0.0**
BORA				S	**Sg**	**17 34 59.1**	**-0.2**
GULT	**Gulveren**	**0.52**	**58**	*e*Pg	**Pg**	**17 34 53.5**	**-0.3**
GULT				*e*Sg	**Sb**	**17 35 02.0**	**-1.2**
TVSB	**Tavsanli**	**0.79**	**208**	*e*Pg	**Pg**	**17 34 57.7**	**-1.3**
TVSB				*e*SG	**Sg**	**17 35 09.1**	**-0.2**
TVSB	**Tavsanli**	**0.79**	**208**	*e*Pg	**Pg**	**17 34 57.7**	**-1.3**
TVSB				*e*Sg	**Sg**	**17 35 09.1**	**-0.2**
KAND	**Kocaeli-Kandir**	**0.96**	**12**	*i* P	**Pg**	**17 35 02.4**	**+0.3**
KAND				*i* S	**Sn**	**17 35 18.7**	**+1.1**
KAND	**Kocaeli-Kandir**	**0.96**	**12**	P	**Pg**	**17 35 02.4**	**+0.3**
KAND				S	**Sn**	**17 35 18.7**	**+1.1**
SAHE	**Sakarya_HENDEK**	**0.99**	**45**	*i* P	**Pg**	**17 35 01.6**	**-1.1**
SAHE				*i* S	**Sb**	**17 35 16.5**	**0.0**
SAHE	**Sakarya_HENDEK**	**0.99**	**45**	P	**Pg**	**17 35 01.5**	**-1.1**
SAHE				S	**Sb**	**17 35 16.5**	**0.0**
SILT	**Sile**	**1.02**	**347**	*e*PG	**Pg**	**17 35 00.9**	**-2.5**
GDZ	**Gediz**	**1.12**	**199**	*i* P	**Pb**	**17 35 05.3**	**-0.3**
GDZ	**Gediz**	**1.12**	**199**	P	**Pb**	**17 35 05.3**	**-0.3**
DEMI	**Demirci**	**1.46**	**221**	*i* P	**Pg**	**17 35 11.4**	**-0.3**
DEMI				*i* S	**Sg**	**17 35 32.3**	**+1.8**
DEMI	**Demirci**	**1.46**	**221**	P	**Pg**	**17 35 11.4**	**-0.3**
DEMI				S	**Sg**	**17 35 32.3**	**+1.8**
BOLV	**Bolvadin**	**1.63**	**151**	*i* P	**Pg**	**17 35 14.4**	**-0.7**
BOLV				*i* S	**Sg**	**17 35 38.0**	**+1.8**
BOLV	**Bolvadin**	**1.63**	**151**	P	**Pg**	**17 35 14.4**	**-0.7**
BOLV				S	**Sg**	**17 35 38.0**	**+1.8**

NIED ***11*** *17:34:00,37.˚90N×143.˚30E,h14km,Mw4.0 Best double couple: M₀1.29000×10¹⁵ NP1:φ₈57.00000°, δ45.00000°, λ-49.00000°. NP2:φ₈186.00000°, δ58.00000°, λ-123.00000°.*
IDC ***11*** *17:34:44.5±2.1,37.˚68N×143.˚40E,h0km,mb3.6/4, mb1 3.8/7,mb1mx3.5/51,mbtmp3.7/7,ML3.2/3,Error ellipse: s-maj=42.8km s-min=24.7km az=73.0*
ISCJB ***11*** *17:34:45.4±1.0,37.˚88N±0.˚05×143.˚27E±0.˚08,h19km, mb3.6/4,Error ellipse: s-maj=9.7km s-min=6.4km az=10.4*
JMA ***11*** *17:34:47.1±0.2,37.˚95N×143.˚28E,h44km,M3.7*
ISC 11 17:34:45.8±1.4,37.˚85N±0.˚05×143.˚4E±0.˚1,h19km,n23, σ1ᵠ74/25,mb3.6/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.70**	**291**	P	**Pn**	**17 35 13.9**	**-0.6**
OFUJ	**Ofunato**	**1.81**	**313**	P	**Pn**	**17 35 14.9**	**-1.1**
OFUJ				*e*S	**Sn**	**17 35 35.7**	**-2.8**
JMK	**Ichinoseki**	**2.02**	**304**	P	**Pn**	**17 35 18.2**	**-0.6**
JMM	**Marumori**	**2.04**	**271**	P	**Pn**	**17 35 18.7**	**-0.4**
JMM				*e*S	**Sn**	**17 35 42.2**	**-1.9**
JFK	**Kawauchi**	**2.04**	**257**	P	**Pn**	**17 35 18.6**	**-0.6**
JOM	**Ohasama**	**2.30**	**315**	P	**Pn**	**17 35 22.0**	**-0.6**
JOM				*e*S	**Sn**	**17 35 48.5**	**-1.9**
JFT	**Otama**	**2.43**	**263**	P	**Pn**	**17 35 25.2**	**+0.7**
JFT				*e*S	**Sn**	**17 35 53.0**	**-0.7**
JYK	**Kaneyama**	**2.60**	**295**	P	**Pn**	**17 35 26.8**	**0.0**
JANG	**Nango**	**2.90**	**331**	P	**Pn**	**17 35 31.1**	**+0.1**
JAG	**Ashikaga**	**3.44**	**247**	P	**Pn**	**17 35 38.5**	**+0.1**
JOT	**Ohata**	**3.96**	**334**	*e*S	**Sn**	**17 36 29.0**	**-2.3**
JRY	**Ryogami san**	**4.02**	**244**	P	**Pn**	**17 35 47.1**	**+0.7**
JRY				*e*S	**Sn**	**17 36 31.0**	**-2.0**
JSD	**Sado**	**4.04**	**274**	P	**Pn**	**17 35 46.9**	**+0.2**
MJAR	**Matsushiro Arr** 2.1nm,0.3s,baz=85,slow=15,SNR=23	**4.32**	**254**	Pn	**Pn**	**17 35 51.7**	**+1.1**
MJAR				Sn	**Sn**	**17 36 41.4**	**+0.9**
	0.2nm,0.3s,baz=86,slow=24,SNR=4.2						
JHJ	**Hachijo jima 2** 12nm,0.3s,baz=319,slow=22,SNR=42	**5.56**	**213**	Pn	**Pn**	**17 36 07.0**	**-0.5**
JHJ				Sn	**Sn**	**17 37 05.2**	**-5.6**
	35nm,0.3s,baz=63,slow=24,SNR=13						
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=123,slow=11,SNR=4.1	**10.68**	**310**	Pn	Pn	17 37 22.2	+4.5
H11N2	**WAKE ISLAND Hy** baz=317,slow=75,SNR=16	**27.28**	**125**	T	T	18 09 32.2	
H11N1	**WAKE ISLAND Hy** baz=317,slow=75,SNR=9.7	**27.29**	**125**	T	T	18 09 40.0	
H11N3	**WAKE ISLAND Hy** baz=317,slow=75,SNR=8.5	**27.30**	**125**	T	T	18 09 19.5	
SONM	**Songino Array** 0.4nm,0.5s,baz=88,slow=8.6,SNR=4.3	**28.64**	**302**	P	**P**	**17 40 43.1**	**+1.9**
ZALV	**Zalesovo Beam** 0.4nm,0.3s,baz=85,slow=8.2,SNR=4.6	**32.12**	**312**	P	P	17 42 44.1	+4.3
MKAR	**Makanchi Array** 0.6nm,0.6s,baz=90,slow=5.8,SNR=8.1	**45.01**	**302**	P	**P**	**17 43 00.8**	**+0.8**
WRA	**Warramunga Arr** 0.4nm,0.5s,baz=7.7,slow=7.3,SNR=3.1	**58.11**	**190**	P	**P**	**17 44 38.7**	**+0.6**

ISCJB ***11*** *17:38:03.0±0.8,7.˚2S±0.˚1×124.˚5E±0.˚3,h400km,mb3.4/4, Error ellipse: s-maj=36.6km s-min=10.6km az=158.3*
IDC ***11*** *17:38:06.7±2.3,7.˚34S×124.˚50E,h435km±29km,mb3.1/4, mb1 3.2/7,mb1mx2.9/45,mbtmp4.0/7,Error ellipse: s-maj=33.2km s-min=11.5km az=64.0*
**ISC 11 17:38:04.1±0.9,7.˚2S±0.˚1

0.6nm,0.3s,baz=203,slow=19,SNR=8.6
ASAJ S **Sn** **17 44 44.8 -2.6**
0.4nm,0.3s,baz=207,slow=14,SNR=2.7
JHJ **Hachijo jima 2 5.64 197** P **Pn** **17 43 45.1 +0.1**
6.0nm,0.3s,baz=346,slow=18,SNR=15
JHJ S **Sn** **17 44 45.5 -3.0**
6.0nm,0.3s,baz=252,slow=19,SNR=4.4
USRK **Ussuriysk Ar. 9.22 311** P **Pn** **17 44 34.0 -0.1**
0.2nm,0.3s,baz=116,slow=15,SNR=3.6
PETK **Petropavlovsk- 18.27 32** LR LR 17 53 51.0
comp=Z,198nm,21.9s,baz=302,slow=38
H11N2 **WAKE ISLAND Hy 28.76 124** T T 18 18 47.1
baz=316,slow=75,SNR=39
H11N1 **WAKE ISLAND Hy 28.77 124** T T 18 18 34.1
baz=316,slow=75,SNR=41
H11N3 **WAKE ISLAND Hy 28.78 124** T T 18 18 34.7
baz=316,slow=75,SNR=47
H11S1 **WAKE ISLAND Hy 29.52 126** T T 18 19 30.3
baz=318,slow=74,SNR=14
H11S3 **WAKE ISLAND Hy 29.52 126** T T 18 19 30.4
baz=127,slow=74,SNR=22
ZALV **Zalesovo Beam 41.08 311** P **P** **17 50 01.4 -0.7**
0.5nm,0.4s,baz=88,slow=4.8,SNR=2.7
CMAR **Chiang Mai Arr 42.12 254** P **P** **17 50 12.6 +1.5**
0.3nm,0.3s,baz=14,slow=27,SNR=4.9
MKAR **Makanchi Array 43.52 301** P **P** **17 50 21.4 -0.7**
0.4nm,0.5s,baz=86,slow=11,SNR=6.9
WRA **Warramunga Arr 58.60 188** P **P** **17 52 14.9 -0.5**
0.4nm,0.7s,baz=5.6,slow=7.4,SNR=6.7
ASAR **Alice Springs 62.32 188** P **P** **17 52 40.4 -0.4**
0.4nm,1.1s,baz=358,slow=4.9,SNR=5.2

IDC 11 17:47:31.4±4.0, 29°68S×176°51W, h0km, mb3.7/3, mb1 4.0/4, mb1mx3.7/27, mbtmp3.9/4, ML3.4/1, Error ellipse: s-maj=62.9km s-min=32.1km az=60.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island 1.30 289**			Pn	Pn	17 47 57.3	+0.5
	31nm,0.3s,baz=53,slow=20,SNR=3.4						
RAO				Sn	Sn	17 48 14.9	0.0
	239nm,0.3s,baz=6.8,slow=21,SNR=5.4						
URZ	**Urewera 10.06 210**			Pn	Pn	17 49 55.7	-1.5
	0.3nm,0.3s,baz=287,slow=19,SNR=2.2						
URZ				Sn	Sn	17 51 52.0	+1.3
	0.7nm,0.3s,baz=150,slow=18,SNR=3.5						
STKA	**Stephens Creek 35.91 256**			P	P	17 54 35.4	+1.9
	1.3nm,0.7s,baz=97,slow=12,SNR=3.3						
ASAR	**Alice Springs 44.45 266**			P	P	17 55 44.0	-0.4
	0.4nm,0.5s,baz=94,slow=7.5,SNR=20						
WRA	**Warramunga Arr 45.38 271**			P	P	17 55 50.9	-1.0
	0.4nm,0.3s,baz=110,slow=8.0,SNR=8.6						

IDC 11 17:53:46.8±1.8, 35°71N×140°97E, h0km, mb3.3/3, mb1 3.3/6, mb1mx3.2/41, mbtmp3.3/6, ML3.2/2, Error ellipse: s-maj=45.5km s-min=22.6km az=74.0
ISCJB 11 17:53:51.7±0.8, 35°72N±0°05×140°82E±0°09, h57km±7km, mb3.3/3, Error ellipse: s-maj=13.4km s-min=7.6km az=154.5
JMA 11 17:53:53.4±0.1, 35°72N×140°68E, h44km±1km, M2.8
ISC 11 17:53:51.9±1.1, 35°74N±0°05×140°96E±0°08, h49km±10km, n19, σ2°13/19, mb3.3/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi 0.09 247**			P	**Pn**	**17 54 00.6**	**+1.0**
JCN	**Nagara 0.70 243**			P	**Pn**	**17 54 04.9**	**-0.7**
JYT	**Yasato 0.79 308**			P	**Pn**	**17 54 06.1**	**-0.7**
JYT				*e*S	**Sn**	**17 54 15.5**	**-2.2**
JHO	**Hitachi 0.93 340**			P	**Pn**	**17 54 09.9**	**+1.3**
BSO1	**Boso 1 1.08 179**			P	**Pn**	**17 54 11.6**	**+1.4**
JAG	**Ashikaga 1.40 300**			P	**Pn**	**17 54 13.9**	**-1.2**
JAG				S	**Sn**	**17 54 29.7**	**-2.7**
MJAR	**Matsushiro Arr 2.37 291**			Pn	**Pn**	**17 54 27.9**	**-0.5**
	3.8nm,0.3s,baz=100,slow=15,SNR=34						
MJAR				Sn	**Sn**	**17 55 01.2**	**+5.0**
	3.3nm,0.3s,baz=131,slow=18,SNR=6.0						
MAT	**Matsushiro 2.37 291**			P	**Pn**	**17 54 28.6**	**+0.2**
MAT				*e*S	**Sn**	**17 54 55.4**	**-0.8**
JHJ	**Hachijo jima 2 2.79 201**			Pn	**Pn**	**17 54 33.8**	**-0.3**
	13nm,0.3s,baz=330,slow=21,SNR=19						
JHJ				Sn	**Sn**	**17 55 03.8**	**-2.7**
	23nm,0.3s,baz=86,slow=22,SNR=7.8						
ASAJ	**Asahikawa 8.46 8**			Pn	**Pn**	**17 55 52.6**	**+0.8**
	baz=222,slow=14						
ASAJ				Sn	**Sn**	**17 57 22.5**	**-3.3**
	0.0nm,0.3s,baz=308,slow=19,SNR=2.2						
H11N2	**WAKE ISLAND Hy 27.83 118**			T	T	18 28 55.8	
	baz=310,slow=75,SNR=3.8						
H11N1	**WAKE ISLAND Hy 27.84 118**			T	T	18 28 50.3	
	baz=310,slow=75,SNR=6.5						
H11N3	**WAKE ISLAND Hy 27.85 118**			T	T	18 28 50.6	
	baz=310,slow=75,SNR=5.0						
H11S1	**WAKE ISLAND Hy 28.49 120**			T	T	18 29 45.0	
	baz=312,slow=75,SNR=9.8						
H11S3	**WAKE ISLAND Hy 28.49 120**			T	T	18 29 34.7	
	baz=312,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy 28.51 120**			T	T	18 29 31.4	
	baz=312,slow=75,SNR=7.5						
MKAR	**Makanchi Array 44.51 303**			P	**P**	**18 01 58.8**	**+0.4**
	0.3nm,0.5s,baz=94,slow=7.5,SNR=4.0						
WRA	**Warramunga Arr 55.73 188**			P	**P**	**18 03 24.2**	**+0.6**
	0.1nm,0.3s,baz=2.1,slow=7.6,SNR=7.2						
ASAR	**Alice Springs 59.46 188**			P	**P**	**18 03 51.7**	**+1.9**
	0.2nm,0.6s,baz=18,slow=12,SNR=5.9						

ISCJB 11 18:20:26.5±1.1, 30°30S±0°05×176°3W±0°1, h24km, mb4.2/7, MS3.5/1, Error ellipse: s-maj=16.6km s-min=6.8km az=172.8
IDC 11 18:20:26.0±1.0, 29°84S×176°29W, h0km, mb4.1/6, mb1 4.2/6, mb1mx3.9/30, mbtmp4.1/6, MS3.5/1, Ms1 3.5/1, ms1mx2.8/26, Error ellipse: s-maj=34.7km s-min=21.9km az=4.0
NEIC 11 18:20:27.1±0.7, 30°20S×176°34W, h10km, mb4.9/2, Error ellipse: s-maj=19.4km s-min=12.6km az=104.0
ISC 11 18:20:29.4±0.9, 30°08S±0°07×176°4W±0°1, h24km, n31, σ1°85/34, mb4.3/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island 1.60 301**			Pn	**Pn**	**18 20 56.5**	**+0.3**
	294nm,0.3s,baz=112,slow=6.6,SNR=18						
RAO				Sn	**Sb**	**18 21 17.3**	**-0.6**
	807nm,0.3s,baz=114,slow=20,SNR=5.8						
WMGZ	**Waiomatatini S 8.85 208**			PN	**Pn**	**18 22 34.6**	**-1.2**
WMGZ				SN	**Sn**	**18 24 17.4**	**+2.6**
PKGZ	**Pakihiroa 9.05 209**			PN	**Pn**	**18 22 36.9**	**-1.7**
HAZ	**Te Kaha 9.07 211**			PN	**Pn**	**18 22 37.7**	**-1.1**
HAZ				SN	**Sn**	**18 24 23.0**	**+2.9**
PUZ	**Puketiti 9.13 208**			PN	**Pn**	**18 22 37.5**	**-2.2**
CNGZ	**Carnagh Statio 9.51 207**			PN	**Pn**	**18 22 42.6**	**-2.3**
MWZ	**Matawai 9.66 210**			PN	**Pn**	**18 22 44.8**	**-2.1**
URZ	**Urewera 9.79 212**			Pn	**Pn**	**18 22 45.9**	**-2.7**
	2.9nm,0.3s,baz=268,slow=4.3,SNR=18						
URZ				Sn	**Sn**	**18 24 36.5**	**-1.2**
	7.3nm,0.3s,baz=69,slow=23,SNR=15						
URZ	**Urewera 9.79 212**			PN	**Pn**	**18 22 46.8**	**-1.8**
SNGZ	**Shannon Statio 10.12 209**			PN	**Pn**	**18 22 51.6**	**-1.6**
KNZ	**Kokohu 10.18 207**			PN	**Pn**	**18 22 50.4**	**-3.7**
ARHZ	**Aropaoanui 10.67 209**			PN	**Pn**	**18 22 57.8**	**-2.9**
KHZ	**Kahutara 14.75 211**			*e*P	**Pn**	**18 23 53.5**	**-2.9**
RPZ	**Rata Peaks 16.90 213**			Pn	**Pn**	**18 24 21.7**	**-2.6**
	2.1nm,0.3s,baz=38,slow=2.0,SNR=7.0						
RPZ				Sn	Sn	18 27 18.5	-13
	0.6nm,0.3s,baz=94,slow=19,SNR=4.2						
CTA	**Charters Tower 35.16 278**			P	**P**	**18 27 22.7**	**+1.1**
	1.6nm,0.3s,baz=106,slow=12,SNR=7.1						
CTAO	**Charters Tower 35.16 278**			*e*P	**P**	**18 27 21.9**	**+0.4**
	7.5nm,0.4s						
STKA	**Stephens Creek 35.94 256**			P	**P**	**18 27 30.1**	**+2.0**
	1.0nm,0.5s,baz=104,slow=12,SNR=4.4						
PMG	**Port Moresby 39.78 293**			LR	LR	18 39 43.7	
	comp=Z,75nm,20.9s,baz=246,slow=29						
ASAR	**Alice Springs 44.55 266**			P	**P**	**18 28 39.1**	**-0.5**
	0.3nm,0.3s,baz=102,slow=7.3,SNR=33						
WRA	**Warramunga Arr 45.52 271**			P	**P**	**18 28 46.1**	**-1.2**
	2.3nm,0.6s,baz=108,slow=7.8,SNR=9.1						
MJAR	**Matsushiro Arr 78.81 324**			P	**P**	**18 32 28.3**	**-1.9**
	1.3nm,0.7s,baz=158,slow=5.2,SNR=4.3						
PETK	**Petropavlovsk- 85.88 345**			P	**P**	**18 33 06.6**	**-0.1**
	1.7nm,0.9s,baz=121,slow=10,SNR=4.9						
ENH	**Enshi 92.61 304**			*e*P	**P**	**18 33 40.7**	**+1.5**
	1.6nm,0.4s						
MKAR	**Makanchi Array 118.67 310**			PKP	**PKPdf**	**18 39 14.9**	**-0.2**
	0.4nm,0.6s,baz=196,slow=0.7,SNR=5.1						
KURK	**Kurchatov 121.86 314**			*e*PKPdf	**PKPdf**	**18 39 21.2**	**+0.1**
BVAR	**Borovoye Array 127.17 316**			PKP	**PKPdf**	**18 39 32.2**	**+0.9**
	1.3nm,0.7s,baz=114,slow=1.7,SNR=8.6						
BRVK	**Borovoye 127.24 316**			*e*PKPdf	**PKPdf**	**18 39 31.8**	**+0.4**
FINES	**FINESS Array B 145.32 341**			PKPbc	**PKPbc**	**18 40 03.5**	**-0.7**
	2.2nm,0.6s,baz=49,slow=4.2,SNR=22						
NOA	**NORSAR Array B 148.63 353**			PKPbc	**PKPbc**	**18 40 13.8**	**0.0**
	0.7nm,0.7s,baz=13,slow=4.2,SNR=3.4						
AKASG	**Malin Array Be 151.90 324**			PKPbc	**PKPbc**	**18 40 21.8**	**-0.1**
	2.8nm,0.5s,baz=47,slow=2.8,SNR=11						
TORD	**Torodi Ar. Bea 163.05 173**			PKPab	**PKPab**	**18 41 22.0**	**+2.1**
	2.1nm,0.9s,baz=193,slow=3.9,SNR=8.6						

ISCJB 11 18:24:55.0±0.5, 5°50S±0°04×128°97E±0°09, h300km, mb3.4/7, Error ellipse: s-maj=12.7km s-min=5.9km az=0.0
IDC 11 18:24:57.5±1.8, 5°61S×128°89E, h320km±20km, mb3.1/7, mb1 3.3/12, mb1mx3.1/42, mbtmp4.0/12, Error ellipse: s-maj=24.7km s-min=9.2km az=75.0
ISC 11 18:24:55.9±0.7, 5°57S±0°06×129°0E±0°1, h300km, n12, σ1°30/16, mb3.4/7, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong 5.20 26**			P	**Pn**	**18 26 17.1**	**+1.4**
	5.3nm,0.3s,baz=180,slow=20,SNR=1.2						
SIJI				S	**S**	**18 27 17.8**	**-2.2**
	3.6nm,0.3s,baz=265,slow=23,SNR=6.0						
KAPI	**Kappang 9.21 273**			P	**Pn**	**18 27 04.4**	**0.0**
	1.0nm,0.3s,baz=117,slow=14,SNR=1.9						
FITZ	**Fitzroy Crossi 12.88 194**			P	**P**	**18 27 50.5**	**+0.9**
	0.9nm,0.3s,baz=7.5,slow=13,SNR=34						
FITZ				S	**S**	**18 30 10.5**	**-1.2**
	0.2nm,0.3s,baz=74,slow=19,SNR=2.4						
WRA	**Warramunga Arr 15.20 160**			P	**Pn**	**18 28 16.2**	**-0.5**
	0.8nm,0.3s,baz=340,slow=12,SNR=36						
WRA				S	**S**	**18 30 58.3**	**-2.5**
	0.6nm,0.3s,baz=344,slow=21,SNR=8.5						
ASAR	**Alice Springs 18.60 166**			P	**P**	**18 28 53.5**	**+1.4**
	0.6nm,0.3s,baz=343,slow=11,SNR=48						
ASAR				S	**S**	**18 32 07.0**	**-1.1**
	0.3nm,0.3s,baz=347,slow=22,SNR=20						
STKA	**Stephens Creek 28.71 157**			P	**P**	**18 30 26.7**	**+0.7**
	0.9nm,0.5s,baz=322,slow=12,SNR=5.0						
CMAR	**Chiang Mai Arr 38.05 310**			P	**P**	**18 31 46.0**	**-0.4**
	0.6nm,0.6s,baz=140,slow=7.1,SNR=6.4						
KSRS	**Korea Array 42.81 359**			P	**P**	**18 32 25.4**	**+0.6**
	1.4nm,0.8s,baz=169,slow=9.3,SNR=2.3						
USRK	**Ussuriysk Ar. 49.62 3**			P	**P**	**18 33 17.4**	**0.0**
	0.6nm,0.4s,baz=190,slow=7.9,SNR=2.5						
PETK	**Petropavlovsk- 63.30 19**			P	**P**	**18 34 53.7**	**+0.6**
	1.2nm,0.6s,baz=193,slow=5.9,SNR=3.1						
MKAR	**Makanchi Array 66.49 327**			P	**P**	**18 35 13.2**	**-0.6**
	0.4nm,0.3s,baz=113,slow=8.1,SNR=9.8						
ZALV	**Zalesovo Beam 69.87 334**			P	**P**	**18 35 33.0**	**-1.4**
	0.3nm,0.4s,baz=147,slow=6.0,SNR=2.6						

IDC 11 18:52:34.0±0.5, 41°97N×82°37E, h0km, mb4.4/28, mb1 4.4/36, mb1mx4.3/59, mbtmp4.3/36, ML4.0/8, MS3.2/12, Ms1 3.2/12, ms1mx3.0/43, Error ellipse: s-maj=11.2km s-min=8.6km az=25.0
MOS 11 18:52:34.8±1.0, 42°00N×82°41E, h16km, mb4.7/52, Error ellipse: s-maj=7.2km s-min=4.2km az=123.4
ISCJB 11 18:52:34.1±0.2, 41°92N±0°02×82°38E±0°04, h13km, mb4.4/67, MS3.3/12, Error ellipse: s-maj=4.0km s-min=3.3km az=162.3
NEIC 11 18:52:35.9±2.6, 41°96N×82°36E, h13km±17km, mb4.5/8, Error ellipse: s-maj=8.0km s-min=5.6km az=199.0
NNC 11 18:52:35.2±1.8, 41°93N×82°47E, h0km, mb4.9, mpv4.6, Error ellipse: s-maj=15.5km s-min=9.0km az=138.0
BJI 11 18:52:36.8, 41°97N×82°28E, h8km, mb4.2/19, mB4.6/13, ML4.5/11, Ms4.1/8, Ms7 3.9/6
SOME 11 18:52:37.8, 42°10N×82°37E, h25km, MS3.8
ISC 11 18:52:35.8±0.3, 41°89N±0°03×82°28E±0°02, h13km, n216, σ2°12/248, mb4.5/69, MS3.2/12, 41C-18D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHLS	**Shalkode 2.18 306**			*e*P	**Pb**	**18 53 17.2**	**+2.0**
	2μm,0.5s						
SHLS				*e*S	**Sb**	**18 53 45.2**	**+3.0**
	9μm,0.5s						
PDGK	**Podgornoye 2.51 306**			⇑Pn	**Pb**	**18 53 19.3**	**-1.5**
	411nm,0.4s						
PDGK				⇑Sn	**Sb**	**18 53 53.1**	**+1.5**
	5μm,0.8s						
PDGK	**Podgornoye 2.51 306**			PN	**Pb**	**18 53 19.2**	**-1.5**
PDGK						18 53 53.0	
PDGK				pmax	pmax		
	comp=Z,411nm,0.4s						
PDGK				smax	smax		
	comp=N,7μm,1.1s						
UZB	**Uzynbulak 2.72 299**			*e*P	**Pb**	**18 53 25.8**	**+1.4**
	comp=N,405nm,0.5s						
UZB				*e*S	**Sb**	**18 53 59.8**	**+2.2**
	comp=N,2μm,0.4s						
DJR	**Jarkent 3.04 324**			*e*P	**Pb**	**18 53 30.0**	**+0.1**
	comp=N,700nm,0.5s						
DJR				*e*S	**Sb**	**18 54 07.2**	**+0.3**
	comp=N,759nm,0.8s						
SATY	**Saty 3.10 293**			*e*P	**Pb**	**18 53 31.9**	**+1.1**
	comp=N,568nm,0.3s						
SATY				*e*S	**Sb**	**18 54 09.9**	**+1.4**
	comp=N,2μm,1.0s						
ZHN	**Zhinishke 3.12 295**			*e*P	**Pb**	**18 53 33.0**	**+1.9**
	comp=N,293nm,0.4s						
ZHN				*e*S	**Sb**	**18 54 12.8**	**+3.7**
	comp=N,2μm,0.2s						
KAPS	**Kapalarasan 4.00 329**			*e*P	**Pb**	**18 53 42.4**	**-3.8**
	comp=N,280nm,0.4s						
KAPS				*e*S	**Sn**	**18 54 28.2**	**+4.6**
	comp=N,407nm,0.5s						
ARXS	**Arharly 4.00 307**			*e*P	**Pb**	**18 53 48.1**	**+1.8**
	comp=N,361nm,0.7s						
ARXS				*e*S	**Sb**	**18 54 37.2**	**+2.6**
	comp=N,808nm,0.3s						
KOTS	**Kotyrbulak 4.05 291**			*e*P	**Pg**	**18 53 52.2**	**-1.1**
KOTS				*e*S	**Sg**	**18 54 44.7**	**-1.0**
MDOK	**Medeo 4.07 290**			*e*P	**Pb**	**18 53 48.6**	**+1.2**
	comp=N,326nm,0.6s						
MDOK				*e*S	**Sb**	**18 54 38.6**	**+2.0**
	comp=N,870nm,0.7s						
TNSS	**Tian-Shan 4.11 288**			*e*P	**Pb**	**18 53 50.1**	**+1.8**
	comp=N,283nm,0.5s						
TNSS				*e*S	**Sb**	**18 54 41.9**	**+3.9**
	comp=N,479nm,0.8s						
KNDC	**Almaty 4.14 290**			⇑Pn	**Pn**	**18 53 42.6**	**+3.8**
	comp=N,811nm,0.7s						
KNDC				⇓Lg	Lg	18 54 46.0	
	comp=N,932nm,0.8s						
AAA	**Alma-Ata 4.17 291**			*e*PN	**Pb**	**18 53 49.3**	**+0.2**
AAA				*e*S	**Sb**	**18 54 44.3**	**+4.9**
AAA				pmax	pmax		
	comp=Z,1μm,0.6s						
AAA				smax	smax		
	comp=N,962nm,1.0s						
AAA	**Alma-Ata 4.17 291**			*e*P	**Pb**	**18 53 52.2**	**+3.1**
	comp=N,1μm,0.6s						
AAA				*e*S	**Sb**	**18 54 44.3**	**+4.9**
	comp=N,1μm,0.6s						
WMQ	**Urumqi 4.42 62**			*e*Pg	**Pb**	**18 53 54.8**	**+1.5**
WMQ				Sg	**Sg**	**18 54 50.8**	**-6.9**
WMQ				smax	smax		
	comp=N,450nm,0.9s						
WMQ				smax	smax		
	comp=N,920nm,0.7s						
KTBS	**Karatobe 4.50 296**			*e*P	**Pb**	**18 53 58.8**	**+4.1**
KTBS				*e*S	**Sb**	**18 54 55.7**	**+6.8**
KUU	**Kurty 4.80 297**			*e*P	**Pg**	**18 54 04.8**	**-3.0**
	comp=N,213nm,0.7s						
KUU				⇑*i*S	**Sg**	**18 55 06.0**	**-3.9**
	comp=N,572nm,0.5s						
KST	**Kastek 4.81 286**			*e*P	**Pb**	**18 54 00.8**	**+0.7**
	comp=N,60nm,0.5s						
KST				⇓*i*S	**Sb**	**18 54 59.7**	**+1.7**
	comp=N,686nm,0.9s						

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MK31	**Makanchi Array 4.90 0**			⇑Pn	**Pn**	**18 53 50.9**	**+1.7**
	comp=N,16nm,0.3s,baz=183,slow=12,SNR=1472						
MK31				⇑Pg	**Pb**	**18 54 03.6**	**+2.2**
	comp=N,30nm,0.5s,baz=176,slow=15,SNR=10						
MK31				⇑Sn	**Sn**	**18 54 45.9**	**+0.2**
	comp=N,165nm,0.7s,baz=169,slow=26,SNR=4.9						
MK31				⇓Lg	Lg	18 55 05.3	
	comp=N,302nm,0.7s,baz=183,slow=30,SNR=4.4						
MK31	**Makanchi Array 4.90 0**			*e*PN	**Pn**	**18 53 50.9**	**+1.7**
MK31				pmax	pmax		
	comp=Z,17nm,0.4s						
MKAR	**Makanchi Array 4.90 0**			Pn	**Pn**	**18 53 51.2**	**+2.0**
	comp=Z,19nm,0.3s,baz=187,slow=12,SNR=452						
MKAR				Pg	**Pb**	**18 54 04.4**	**+3.0**
	comp=Z,31nm,0.3s,baz=171,slow=15,SNR=22						
MKAR				Sn	**Sn**	**18 54 46.3**	**+0.6**
	comp=Z,18nm,0.3s,baz=162,slow=17,SNR=5.3						
MKAR				Lg	Lg	18 55 06.0	
	comp=Z,38nm,0.3s,baz=175,slow=30,SNR=5.2						
MAKZ	**Makanchi 4.92 358**			⇑Pn	**Pn**	**18 53 51.3**	**+1.9**
	comp=Z,77nm,0.5s						
MAKZ				⇑Sn	**Sn**	**18 54 50.0**	**+3.9**
	comp=Z,222nm,0.7s						
MAKZ				⇓Lg	Lg	18 55 08.1	
	comp=Z,219nm,0.8s						
MAKZ	**Makanchi 4.92 358**			PN	**Pn**	**18 53 51.3**	**+1.9**
MAKZ						18 54 49.2	
MAKZ						18 55 04.8	
MAKZ				pmax	pmax		
	comp=Z,77nm,0.5s						
MAKZ				smax	smax		
	comp=N,222nm,0.7s						
DGS	**Degeres 4.99 288**			*e*P	**Pg**	**18 54 08.5**	**-3.0**
	comp=N,172nm,0.6s						
DGS				*e*S	**Sg**	**18 55 12.1**	**-4.0**
	comp=N,583nm,0.8s						
TKM2	**Tokmak 2 5.05 284**			⇑Pn	**Pn**	**18 53 54.1**	**+2.6**
	comp=N,120nm,0.8s						
TKM2				⇑Lg	Lg	18 55 13.8	
	comp=N,442nm,0.8s						
TKM2	**Tokmak 2 5.05 284**			PN	**Pn**	**18 53 54.1**	**+2.6**
TKM2						18 55 11.6	
TKM2				pmax	pmax		
	comp=Z,30nm,0.4s						
KSH	**Kashi 5.35 246**			Pn	Pb	18 54 05.1	-4.1
KSH				Sn	**Sb**	**18 55 08.1**	**-5.3**
KSH				smax	smax		
	comp=Z,430nm,0.8s						
KSH				smax	smax		
	comp=Z,450nm,0.9s						
FRU	**Bishkek 5.76 282**			*e*PN	**Pn**	**18 54 04.0**	**+3.0**
FRU				*i*		18 54 25.0	
FRU				*e*		18 55 34.0	
FRU				pmax	pmax		
	comp=Z,420nm,1.8s						
ZSN	**Zaisan 5.76 14**			*e*P	**Pg**	**18 54 24.1**	**-1.9**
	comp=Z,68nm,0.5s						
ZSN				*e*S	**Sg**	**18 55 39.7**	**-0.8**
	comp=Z,548nm,0.8s						
AAK	**Ala-Archa 5.83 280**			Pn	**Pn**	**18 54 04.2**	**+2.2**
	comp=Z,5.1nm,0.3s,baz=90,slow=10,SNR=16						
AAK				Pg	Pb	18 54 22.4	+5.0
	comp=Z,14nm,0.3s,baz=118,slow=11,SNR=14						
AAK				Lg	Lg	18 55 38.7	
	comp=Z,18nm,0.3s,baz=346,slow=23,SNR=8.4						
AAK	**Ala-Archa 5.83 280**			⇑Pn	**Pn**	**18 54 05.6**	**+3.6**
	comp=Z,20nm,0.8s						
AAK				⇓Pg	Pb	18 54 23.5	+6.1
	comp=Z,44nm,0.6s						
AAK				⇑Lg	Lg	18 55 40.4	
	comp=Z,367nm,0.8s						
AAK	**Ala-Archa 5.83 280**			*e*Pn	**Pn**	**18 54 04.0**	**+1.9**
	comp=Z,89nm,0.8s						
AAK				Pg	Pb	18 54 22.4	+5.0
AAK				Lg	Lg	18 55 38.7	
MNAS	**Manas 7.29 278**			⇑Pn	**Pn**	**18 54 25.2**	**+3.1**
	comp=Z,13nm,0.5s						
MNAS				⇓Lg	Lg	18 56 30.7	
	comp=Z,117nm,1.2s						
MNAS	**Manas 7.29 278**			P	**Pn**	**18 54 25.2**	**+3.1**
MNAS				pmax	pmax		
	comp=Z,13nm,0.5s						
KK31	**Karatay Array 8.78 282**			Pn	**Pn**	**18 54 43.5**	**+1.0**
	comp=Z,2.7nm,0.6s,baz=94,slow=13,SNR=14						
KK31				⇑Pg	Pg	18 55 19.3	-4.6
	comp=Z,7.3nm,0.5s,baz=87,slow=15,SNR=4.9						
KK31				⇓Lg	Lg	18 57 20.4	
	comp=Z,43nm,0.7s,baz=95,slow=27,SNR=4.5						
KK31	**Karatay Array 8.78 282**			P	**Pn**	**18 54 43.4**	**+1.0**
KK31				pmax	pmax		
	comp=Z,4.0nm,1.1s						
KKAR	**Karatay Array 8.78 282**			*e*P	**Pn**	**18 54 41.4**	**-1.1**
KKAR				pmax	pmax		
	comp=Z,9.0nm,0.4s						
KKAR	**Karatay Array 8.78 282**			*e*Pn	**Pn**	**18 54 41.4**	**-1.1**
	comp=Z,8.9nm,0.4s						
KURBB	**Kurchatov Arra 9.11 345**			Pn	**Pn**	**18 54 46.3**	**-0.5**
	comp=Z,0.6nm,0.3s,baz=171,slow=12,SNR=61						
KURBB				Sn	**Sn**	**18 56 31.1**	**+2.0**
	comp=Z,1.5nm,0.3s,baz=149,slow=22,SNR=6.1						
KURBB				Lg	Lg	18 57 20.0	
	comp=Z,1.2nm,0.3s,baz=157,slow=33,SNR=5.2						
KURBB	**Kurchatov Arra 9.11 345**			⇑Pn	**Pn**	**18 54 46.6**	**-0.2**
	comp=Z,47nm,0.7s						
KURBB				⇑Lg	Lg	18 57 25.3	
	comp=Z,258nm,0.7s						
KURK	**Kurchatov 9.18 345**			*e*P	**Pn**	**18 54 46.4**	**-1.4**
KURK						18 56 31.1	
KURK				pmax	pmax		
	comp=Z,420nm,0.8s						
KURK	**Kurchatov 9.18 345**			*e*Pn	**Pn**	**18 54 46.4**	**-1.4**
	comp=Z,420nm,0.8s						
KURK				Sn	**Sn**	**18 56 31.1**	**+0.2**
KURK

comp=Z,65nm,4.7s
GTA LR LR
comp=Z,340nm,7.7s
GTA LR LR
comp=Z,460nm,8.4s
GTA LR LR
comp=Z,400nm,8.7s
BVA0 Borovoye Array 13.71 328 ⇓Pn **Pn 18 55 51.1 +1.3**
comp=Z,17nm,0.7s,baz=131,slow=11,SNR=45
BVA0 ⇑Lg Lg 18 59 53.6
comp=Z,113nm,1.4s
BVA0 Borovoye Array 13.71 328 P **Pn 18 55 51.1 +1.3**
BVA0 pmax pmax
comp=Z,17nm,0.7s
BVAR Borovoye Array 13.71 328 Pn **Pn 18 55 48.9 -0.9**
comp=Z,0.9nm,0.3s,baz=146,slow=15,SNR=12
BVAR Lg Lg 18 59 38.3
comp=Z,0.5nm,0.3s,baz=124,slow=23,SNR=4.4
PYUN Piuthan 13.78 177 *eP* **Pn 18 55 55.3 +4.3**
BRVK Borovoye 13.78 328 *eP* **Pn 18 55 51.8 +1.1**
BRVK pmax pmax
comp=Z,91nm,0.7s
BRVK Borovoye 13.78 328 *e*Pn **Pn 18 55 51.8 +1.1**
comp=Z,91nm,0.7s
GKN Gorkha 13.99 171 *eP* **P 18 56 03.7 +1.8**
comp=Z,19nm,0.4s
LSA Lhasa 14.12 147 *eP* **Pn 18 55 55.9 -0.1**
LSA pmax pmax
comp=Z,9.0nm,1.3s
LSA Lhasa 14.12 147 *eP* **Pn 18 55 55.9 -0.1**
comp=Z,9.5nm,1.3s
KOLN Koldanda 14.13 175 *eP* **Pn 18 55 57.3 +1.4**
comp=Z,29nm,0.6s
ZRNK Zerenda 14.22 326 ⇓Pn **Pn 18 55 52.9 -3.9**
comp=Z,19nm,0.6s
ZRNK ⇑Lg Lg 19 00 10.9
comp=Z,66nm,1.1s
ZRNK Zerenda 14.22 326 P **Pn 18 55 52.9 -3.9**
ZRNK pmax pmax
comp=Z,19nm,0.6s
KKN Kakani 14.28 169 *eP* **P 18 56 06.9 +1.7**
comp=Z,27nm,0.6s
DMN Daman 14.44 170 *eP* **P 18 56 04.9 -2.1**
comp=Z,30nm,0.9s
PKIN Phulchoki 14.51 169 *eP* **P 18 56 06.8 -1.0**
KUDL Kundal 14.51 201 *eP* **Pn 18 55 58.1 -2.7**
KUDL *ex* x 18 58 35.8
KUDL IAML 18 58 39.3
comp=N,8.9nm,0.5s
KUDL IAML 18 58 41.2
comp=E,14nm,0.7s
RAMN Ramite 15.32 165 *eP* **Pn 18 56 11.1 -0.9**
comp=E,24nm,0.5s
KRAR Krasnoyarsk 15.72 22 ⇓*iP* **Pn 18 56 16.2 -0.6**
KRAR pmax pmax
comp=Z,1μm,1.6s
MOY Mondy 16.07 46 *eP* **P 18 56 26.4 +1.5**
MOY pmax pmax
comp=Z,19nm,2.6s
ZAK Zakamensk 16.80 53 *eP* **Pn 18 56 28.3 -2.5**
ZAK pmax pmax
comp=Z,8.0nm,1.4s
AB31 Akbulak array 17.25 303 Pn **Pn 18 56 34.5 -1.7**
comp=Z,5.4nm,0.6s,baz=106,slow=12,SNR=81
ABKAR Akbulak array 17.25 303 *eP* **Pn 18 56 33.7 -2.5**
comp=Z,6.7nm,0.6s
TLY Talaya 17.54 49 Lg Lg 19 01 43.4
comp=Z,0.0nm,0.3s,baz=332,slow=7.2,SNR=4.2
TLY LR LR 19 03 39.7
comp=Z,52nm,21.1s,baz=240,slow=38
TLY Talaya 17.54 49 *eP* Pn 18 56 31.0 -8.9
TLY pmax pmax
comp=Z,2.0nm,1.1s
TLY MLR MLR
comp=Z,123nm,15.0s
SONM Songino Array 18.06 63 P **Pn 18 56 45.4 -1.1**
comp=Z,0.4nm,0.3s,baz=260,slow=12,SNR=22
SONM Lg Lg 19 02 12.1
baz=273,slow=27,SNR=4.1
SHL Shillong 18.12 151 *eP* **Pn 18 56 47.0 -0.3**
BOK Bokaro 18.30 169 *eP* **P 18 56 50.0 +0.5**
BOK IAmb IAmb 18 56 51.7
comp=Z,9.6nm,0.4s
AKTO Aktyubinsk 18.79 305 P **P 18 56 54.6 -0.1**
comp=Z,0.7nm,0.3s,baz=100,slow=12,SNR=31
AKTO Lg Lg 19 02 30.0
comp=Z,0.1nm,0.3s,baz=357,slow=12,SNR=4.0
AKTO LR LR 19 04 41.5
comp=Z,97nm,18.7s,baz=137,slow=39
AKTO Aktyubinsk 18.79 305 ⇓Pn **P 18 56 54.5 -0.2**
comp=Z,7.7nm,0.7s
GEYT Alibeck 18.94 266 P **P 18 56 56.7 +0.2**
comp=Z,0.4nm,0.3s,baz=76,slow=6.6,SNR=13
BHPL Bhopal 19.04 194 *eP* **P 18 56 57.2 -0.5**
BHPL *ex* x 19 00 19.4
SVE Sverdlovsk 20.41 324 ⇓*eP* **P 18 57 12.4 +0.1**
SVE pmax pmax
comp=Z,39nm,1.2s
CD2 Chengdu 20.41 116 *eP* Pn 18 57 15.4 +0.6
CD2 pP sP 18 57 17.9 -0.1
CD2 S Sn 19 01 05.2 +0.6
CD2 sS sS 19 01 09.4 +2.5
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.0s
ARU Arti 21.11 322 P **P 18 57 19.9 0.0**
comp=Z,59nm,0.6s,baz=124,slow=5.3,SNR=157
ARU Lg Lg 19 03 33.6
comp=Z,2.3nm,0.7s,baz=288,slow=20,SNR=2.8
ARU LR LR 19 05 56.5
comp=Z,70nm,21.2s,baz=119,slow=38
ARU Arti 21.11 322*c iP* **P 18 57 19.9 0.0**
ARU 18 57 37.5
ARU S Sn 19 01 18.9 -2.0
ARU SS **SnSn 19 01 42.3 +6.6**
ARU pmax pmax
comp=Z,65nm,0.6s
SOKR Solikamsk 23.71 327 ⇑*iP* **P 18 57 51.7 +4.6**
SOKR S **S 19 01 52.8 -8.8**
SOKR pmax pmax
comp=Z,22nm,0.9s
SOKR MLR MLR
comp=Z,237nm,24.0s
ENH Enshi 24.75 109 *eP* **P 18 57 57.2 +0.1**
comp=Z,7.8nm,0.8s
BOD Bodaibo 25.60 41 *eP* **P 18 58 03.9 -0.6**
BOD pmax pmax
comp=Z,11nm,1.3s
CHTO Chiang Mai 27.03 143 P **P 18 58 20.7 +3.0**
CHTO pmax pmax
comp=Z,5.0nm,0.8s
CMAR Chiang Mai Arr 27.34 144 P **P 18 58 20.6 0.0**
comp=Z,0.2nm,0.3s,baz=320,slow=9.4,SNR=5.2
CMAR LR LR 19 10 34.6
comp=Z,27nm,20.9s,baz=115,slow=40
NRIK Noril'sk 27.65 4 P **P 18 58 22.2 -0.6**
comp=Z,2.5nm,0.3s,baz=170,slow=6.8,SNR=2.4
NRIK LR LR 19 10 28.3
comp=Z,40nm,19.4s,baz=75,slow=39
GNI Garni 28.23 279 P **P 18 58 29.3 +0.8**
comp=Z,2.0nm,0.4s,baz=219,slow=17,SNR=3.1
KVAR Kislovodsk Arr 28.87 288 LR LR 19 12 44.8
comp=Z,19nm,19.1s,baz=198,slow=42
KIV Kislovodsk 28.88 288 *eP* **P 18 58 33.2 -1.0**
KIV pmax pmax
comp=Z,4.0nm,1.1s
KIV MLR MLR
comp=Z,32nm,15.0s
KLMR Klimovskoe 31.96 321 *eP* **P 18 58 58.5 -2.6**
KLMR *e* 19 01 49.6
KLMR pmax pmax
comp=Z,23nm,1.4s
OBN Obninsk 32.43 310 *iP* **P 18 59 04.2 -1.1**
OBN pmax pmax
comp=Z,10.0nm,0.5s
YAK Yakutsk 34.42 38 P **P 18 59 21.9 -0.5**
comp=Z,6.0nm,0.3s,baz=120,slow=0.6,SNR=7.9
YAK Yakutsk 34.42 38 *eP* **P 18 59 22.0 -0.5**
YAK pmax pmax
comp=Z,12nm,0.9s
KLR Kul'dur 34.87 61 P **P 18 59 26.8 +0.2**
comp=Z,3.6nm,0.6s,baz=274,slow=10.0
KSAR Wonju Array Be 35.06 82 P **P 18 59 28.0 -0.4**
KSAR Wonju Array Be 35.06 82 P **P 18 59 28.0 -0.4**
KSRS Korea Array 35.09 82 P **P 18 59 28.0 -0.5**
comp=Z,1.5nm,0.8s,baz=284,slow=9.0,SNR=5.0
JOF Joensuu 36.23 323 P **P 18 59 38.2 +0.1**
JOF pmax pmax
comp=Z,9.0nm,0.8s
LVZ Lovozero 36.27 332 ⇓*eP* **P 18 59 37.7 -0.8**
LVZ pmax pmax
comp=Z,35nm,2.7s
BRTR Keskin Array B 36.49 283 P **P 18 59 42.4 +1.5**
comp=Z,2.7nm,0.5s,baz=96,slow=8.2,SNR=20
AKASG Malin Array Be 36.99 302 P **P 18 59 44.8 +0.1**
comp=Z,2.0nm,0.6s,baz=62,slow=10,SNR=3.8
AKASG LR LR 19 17 47.8
comp=Z,29nm,18.3s,baz=240,slow=41
KIEV Kiev 37.00 302 ⇓*eP* **P 18 59 44.8 0.0**
KIEV pmax pmax
comp=Z,7.0nm,0.9s
MMAI Mount Meron Ar 37.86 272 P **P 18 59 54.0 +1.6**
comp=Z,1.5nm,0.5s,baz=69,slow=12,SNR=4.2
VSU Vasula 38.01 315*c iP* **P 18 59 53.2 0.0**
VSU pmax pmax
comp=Z,37nm,0.7s
FINES FINESS Array B 38.47 320 P **P 18 59 57.0 0.0**
comp=Z,1.9nm,0.5s,baz=105,slow=11,SNR=13
FINES LR LR 19 16 56.6
comp=Z,40nm,19.4s,baz=93,slow=38
SUF Sumiainen 38.54 322 P **P 18 59 57.9 +0.2**
SUF pmax pmax
comp=Z,10.0nm,1.0s
CFR Carcaliu 38.78 294 ⇑*iP* **P 19 00 00.4 +0.5**
CFR Carcaliu 38.78 294 P **P 19 00 00.4 +0.5**
CFR pmax pmax
comp=Z,3.0nm,0.5s
OUL Oulu 38.95 326 P **P 19 00 00.5 -0.5**
OUL pmax pmax
comp=Z,10.0nm,3.0s
TESR Tescani 39.45 296 ⇑*iP* **P 19 00 06.3 +0.8**
PLOR Plostina 39.61 295 ⇑*iP* **P 19 00 08.4 +1.5**
PLOR Plostina 39.61 295 ⇑P **P 19 00 08.4 +1.5**
EIL Elat 39.82 268 P **P 19 00 11.1 +2.3**
comp=Z,6.7nm,0.8s,baz=0.0,slow=3.0,SNR=4.8
ARCES ARCESS Array B 39.95 333 P **P 19 00 09.6 +0.2**
comp=Z,6.7nm,0.6s,baz=93,slow=9.7,SNR=33
ARCES LR LR 19 17 07.5
comp=Z,40nm,18.5s,baz=98,slow=37
MLR Muntele Rosu 40.19 295 ⇑*iP* **P 19 00 13.5 +1.7**
MLR Muntele Rosu 40.19 295 ⇑P **P 19 00 13.5 +1.7**
SUW Suwalki 40.24 308 *eP* **P 19 00 12.3 +0.3**
SUW Suwalki 40.24 308 *eP* **P 19 00 12.3 +0.3**
DOPR Dopca 40.43 296 ⇑*iP* **P 19 00 15.3 +1.6**
VOIR 40.81 295 ⇑*iP* **P 19 00 18.0 +1.1**
VOIR 40.81 295 ⇑P **P 19 00 18.0 +1.1**
DRGR 42.00 298 ⇑*iP* **P 19 00 27.6 +1.0**
DRGR 42.00 298 ⇑P **P 19 00 27.6 +1.0**
STHS Stebnicka Huta 42.28 302 *eP* **P 19 00 29.1 +0.3**
STHS pmax pmax
comp=Z,37nm,3.0s
STHS Stebnicka Huta 42.28 302 *eP* **P 19 00 29.1 +0.3**
NIE Niedzica 42.87 302 *eP* **P 19 00 35.2 +1.5**
NIE Niedzica 42.87 302 *eP* **P 19 00 35.2 +1.5**
VTS Vitosha 42.95 292 ⇑*iP* **P 19 00 36.6 +2.1**
VTS Vitosha 42.95 292 ⇑P **P 19 00 36.6 +2.1**
OJC Ojcow 42.99 303 *eP* **P 19 00 35.2 +0.7**
OJC Ojcow 42.99 303 *eP* **P 19 00 35.3 +0.7**
KECS Kecovo 42.99 301 *eP* **P 19 00 35.8 +1.2**
KECS pmax pmax
comp=Z,2.0nm,0.8s
KECS Kecovo 42.99 301 *eP* **P 19 00 35.8 +1.2**
MJAR Matsushiro Arr 43.01 78 P **P 19 00 34.3 -0.6**
comp=Z,1.3nm,0.6s,baz=270,slow=10,SNR=3.1
VYHS Vyhne 44.05 301 *eP* **P 19 00 44.2 +1.1**
VYHS pmax pmax
comp=Z,33nm,3.5s
VYHS Vyhne 44.05 301 *eP* **P 19 00 44.2 +1.1**
MORC Moravsky Berou 44.51 303 ⇑*iP* **P 19 00 48.0 +1.1**
MORC Moravsky Berou 44.51 303 ⇑P **P 19 00 48.0 +1.1**
FNA Florina 44.88 290 P **P 19 00 49.9 -0.1**
FNA pmax pmax
comp=Z,3.0nm,0.9s
SEY Seymchan 44.94 38 ⇓*eP* **P 19 00 48.7 -1.3**
KSP Ksiaz 45.00 305 *eP* **P 19 00 51.6 +0.9**
KSP Ksiaz 45.00 305 *eP* **P 19 00 51.6 +0.9**
DPC Dobruska-Polom 45.12 304 *eP* **P 19 00 53.0 +1.3**
DPC *ep*P **sP 19 00 57.5 +0.1**
DPC Dobruska-Polom 45.12 304 *eP* **P 19 00 53.0 +1.3**
DPC *e* 19 00 57.5
UPC Upice 45.26 305 *eP* **P 19 00 53.9 +1.1**
UPC *ep*P **sP 19 00 59.0 +0.5**
UPC Upice 45.26 305 *eP* **P 19 00 53.9 +1.1**
UPC *e* 19 00 59.0
NB2 NORSAR Subarra 45.65 320 P **P 19 00 55.2 -0.5**
comp=Z,3.8nm,0.6s,baz=80,slow=7.9
NB2 NORSAR Subarra 45.65 320 P **P 19 00 55.1 -0.6**
NB2 pmax pmax
comp=Z,3.0nm,0.6s
NOA NORSAR Array B 45.65 320 P **P 19 00 55.6 -0.1**
comp=Z,4.3nm,0.7s,baz=81,slow=8.1,SNR=12
PDG Podgorica 45.74 293 ⇑*iP* **P 19 00 57.4 +0.8**
PVCC Panska Ves 46.14 305 *eP* **P 19 01 00.9 +1.2**
PVCC *ep*P **sP 19 01 05.9 +0.5**
PVCC Panska Ves 46.14 305 *eP* **P 19 01 00.9 +1.2**
PVCC *e* 19 01 05.9
PRU Pruhonice 46.32 304 *eP* **P 19 01 02.1 +1.0**
PRU Pruhonice 46.32 304 *eP* **P 19 01 02.1 +1.0**
BRG Berggiesshubel 46.42 306 *eP* **P 19 01 02.7 +0.7**
comp=Z,4.4nm,0.9s
BRG *e* 19 01 09.9
comp=Z,4.5nm,0.8s
BRG Berggiesshubel 46.42 306 *eP* **P 19 01 02.7 +0.7**
BRG *e* 19 01 09.9
BRG pmax pmax
comp=Z,4.0nm,0.9s
CLL Collm 46.87 306 ⇑*iP* **P 19 01 05.7 +0.3**
comp=Z,12nm,1.2s
CLL *e* 19 01 11.0
CLL Collm 46.87 306 ⇑*iP* **P 19 01 05.7 +0.3**
CLL *e* 19 01 11.0
CLL pmax pmax
comp=Z,12nm,1.2s
PERS Pernice 47.02 300 *iP* **P 19 01 07.2 +0.4**
KHC Kasperske Hory 47.18 303 *eP* **P 19 01 08.7 +0.8**
KHC Kasperske Hory 47.18 303 *eP* **P 19 01 08.7 +0.8**
KHC Kasperske Hory 47.18 303 *eP* **P 19 01 08.7 +0.8**
comp=Z,0.7nm,0.8s
GERES GERESS Array B 47.19 303 P **P 19 01 09.2 +1.1**
comp=Z,1.3nm,0.6s,baz=69,slow=8.7,SNR=15
VNDS Vrh nad Dolski 47.47 299 *iP* **P 19 01 10.8 +0.6**
WET Wettzell 47.61 304 P **P 19 01 11.9 +0.6**
WET pmax pmax
comp=Z,7.0nm,0.9s
MOX Moxa 47.90 306 P **P 19 01 13.9 +0.4**
MOX pmax pmax
comp=Z,4.0nm,1.2s
KBA Koelnbreinsper 48.01 301 P **P 19 01 15.0 +0.4**
KBA pmax pmax
comp=Z,4.0nm,1.0s
GRF Grafenberg Arr 48.45 305 P **P 19 01 19.0 +1.3**
GRF pmax pmax
comp=Z,18nm,1.1s
GRFO Grafenberg 48.45 305 *eP* **P 19 01 19.1 +1.3**
GRFO pmax pmax
comp=Z,9.0nm,1.1s
GRFO Grafenberg 48.45 305 *eP* **P 19 01 19.1 +1.3**
comp=Z,9.3nm,1.1s
CUC Castrocucco 49.09 291 *eP* **P 19 01 23.5 +0.7**
comp=Z,4.5nm,0.8s
PETK Petropavlovsk- 49.90 50 P **P 19 01 28.3 -0.5**
comp=Z,2.2nm,0.7s,baz=300,slow=3.2,SNR=5.8
PETK LR LR 19 23 47.5
comp=Z,41nm,18.6s,baz=176,slow=38
HINF Hinteralfeld 51.83 304 *eP* **P 19 01 43.2 -0.2**
HINF pmax pmax
comp=Z,3.0nm,0.8s
BAIF Baives 52.55 307 *eP* **P 19 01 48.9 +0.2**
BAIF pmax pmax
comp=Z,1.0nm,0.3s
LPG La Plagne 52.84 301 *eP* **P 19 01 51.6 +0.4**
LPG pmax pmax
comp=Z,9.0nm,0.8s
LPL La Plagne 52.84 301 *eP* **P 19 01 51.5 +0.3**
LPL pmax pmax
comp=Z,10.0nm,0.7s
MBDF Montbardon 53.15 300 *eP* **P 19 01 52.8 -0.6**
MBDF pmax pmax
comp=Z,3.0nm,0.8s
ORIF Oris-en-Rattie 53.64 301 *eP* **P 19 01 56.4 -0.5**
ORIF pmax pmax
comp=Z,4.0nm,0.7s
AVF Avril sur Loir 54.42 304 *eP* **P 19 02 02.0 -0.4**
AVF pmax pmax
comp=Z,10.0nm,0.9s
GRR Gorron 56.27 307 *eP* **P 19 02 15.0 -0.7**
GRR pmax pmax
comp=Z,36nm,1.6s
QUIF Quistinic 57.85 308 *eP* **P 19 02 26.4 -0.5**
QUIF pmax pmax
comp=Z,5.0nm,0.8s
ESDC Sonseca Array 62.56 300 P **P 19 02 59.6 +0.1**
comp=Z,1.7nm,0.5s,baz=53,slow=6.8,SNR=18
PAB San Pablo 62.88 300 P **P 19 03 01.8 +0.2**
PAB pmax pmax
comp=Z,4.0nm,2.6s
COLD Coldfoot 64.16 20 *eP* **P 19 03 09.2 -0.3**
comp=Z,6.3nm,0.8s
TAM Tamanrasset 65.54 279 P **P 19 03 20.0 +0.6**
TAM pmax pmax
comp=Z,4.0nm,1.4s
INK Inuvik 66.89 14 P **P 19 03 26.8 -0.3**
comp=Z,4.5nm,0.6s,baz=337,slow=7.6,SNR=11
INK Inuvik 66.89 14 *eP* **P 19 03 26.5 -0.6**
INK pmax pmax
comp=Z,10.0nm,1.0s
INK Inuvik 66.89 14 *eP* **P 19 03 26.5 -0.6**
comp=Z,9.8nm,1.0s
ILAR Eielson Array 66.93 21 P **P 19 03 26.6 -0.9**
comp=Z,2.9nm,0.7s,baz=317,slow=5.2,SNR=28
DAWY Dawson 69.37 18 *eP* **P 19 03 41.9 -0.9**
comp=Z,2.0nm,0.9s
FITZ Fitzroy Crossi 71.89 137 P **P 19 03 59.4 +0.8**
comp=Z,2.2nm,0.6s,baz=315,slow=7.1,SNR=8.7
TORD Torodi Ar. Bea 74.38 274 P **P 19 04 13.5 -0.1**
comp=Z,6.2nm,0.5s,baz=45,slow=5.0,SNR=87
YKA Yellowknife Ar 75.08 8 P **P 19 04 16.2 -0.7**
comp=Z,2.5nm,0.6s,baz=341,slow=5.4,SNR=12
DLBC Dease Lake 76.47 17 LR LR 19 42 02.7
comp=Z,100nm,18.2s,baz=323,slow=39
WRA Warramunga Arr 78.09 131 P **P 19 04 35.2 +0.7**
comp=Z,2.2nm,0.6s,baz=330,slow=5.3,SNR=19
ASAR Alice Springs 80.82 133 P **P 19 04 49.8 +0.4**
comp=Z,2.1nm,0.7s,baz=324,slow=5.4,SNR=20
DBIC Dimbokro 83.47 273 P **P 19 05 03.5 +0.1**
comp=Z,4.0nm,0.7s,baz=30,slow=6.4,SNR=6.2
KIC Kosan Boka 83.58 273 *eP* **P 19 05 03.8 -0.3**
comp=Z,29nm,1.1s
TIC Toumodi 83.61 273 *eP* **P 19 05 03.8 -0.4**
FFC Flin Flon 83.69 2 P **P 19 05 03.2 -0.7**
FFC pmax pmax
comp=Z,12nm,0.8s
LIC Lamto 83.89 273 *eP* **P 19 05 05.1 -0.5**
CTA Charters Tower 85.37 122 P **P 19 05 13.1 +0.2**
comp=Z,2.7nm,0.9s,baz=82,slow=15,SNR=2.6
CTA LR LR 19 46 59.4
comp=Z,219nm,20.9s,baz=50,slow=38
PDAR Pinedale Array 95.05 9 P **P 19 05 57.9 -0.7**
comp=Z,0.5nm,0.6s,baz=42,slow=4.6,SNR=5.0
LPAZ La Paz 143.99 306 PKP **PKPab 19 12 09.7 +0.3**
comp=Z,0.7nm,0.5s,baz=38,slow=1.0,SNR=4.9

NIED ***11*** *18:57:00,39.50N×142.60E,h5km,Mw3.7 Best double couple: M0 3.84000×10^14 NP1:φ=344.00000°,δ17.00000°, λ-3.00000°. NP2:φ=77.00000°,δ89.00000°,λ-107.00000°.*
JMA 11 18:57:46.4±0.1,39.53N×142.60E,h32km±1km,M3.6,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.60**	**275**	P		Pb	18 57 58.3	-0.3
MIYJ				*e*S		Sb	18 58 06.5	-0.5
JTH	**Tanohata**	**0.70**	**306**	P		Pn	18 57 59.7	-0.4
JTH				*e*S		Sb	18 58 09.1	-0.5
OFUJ	**Ofunato**	**0.85**	**238**	P		Pn	18 58 01.9	-0.2
JOM	**Ohasama**	**1.01**	**267**	P		Pn	18 58 04.7	+0.3
JOM				*e*S		Sb	18 58 18.0	-0.4
JKZ	**Kuzumaki**	**1.08**	**295**	P		Pn	18 58 05.8	+0.5
JKZ				*e*S		Sn	18 58 19.4	+0.2
JANG	**Nango**	**1.19**	**316**	P		Pn	18 58 06.7	-0.1
JMK	**Ichinoseki**	**1.22**	**242**	P		Pn	18 58 07.6	+0.4
JMK				*e*S		Sn	18 58 23.0	+0.5
JIO	**Ouri**	**1.45**	**223**	P		Pn	18 58 10.5	+0.1
JIO				*e*S		Sn	18 58 28.2	-0.1
JAH	**Hinai**	**1.65**	**294**	P		Pn	18 58 14.5	+1.4
JTM	**Tenmabayashi**	**1.72**	**317**	P		Pn	18 58 15.1	+1.0
JTM				*e*S		Sn	18 58 36.7	+1.8

IDC ***11*** *18:59:31.7±1.4,6.12N×127.36E,h0km,mb3.8/5, mb1 3.9/6,mb1mx3.5/50,mbtmp3.8/6,ML3.8/1,Error ellipse: s-maj=57.8km s-min=17.7km az=57.0*
ISC 11 18:59:35.3±1.2,5.7N±0.1×127.1E±0.2,h10km,n8,σ1s94/9,
mb3.9/5,2C,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DAV	**Davao City (W)**	**2.02**	**312**	Pn		**Pn**	**19 00 08.2**	**-1.3**
	36nm,0.3s,baz=82,slow=14,SNR=1.4							
DAV				Sn		**Sn**	**19 00 35.0**	**+0.2**
	35nm,0.3s,baz=246,slow=20,SNR=1.3							
KCP	**Kidapawan**	**2.37**	**303**	⇑*eP*		**Pn**	**19 00 15.4**	**+1.0**
BIPH	**Bislig**	**2.56**	**343**	⇑*iP*		Pg	19 00 28.5	+4.1
BIPH				*i* S		**Sg**	**19 00 59.2**	**+1.6**
FITZ	**Fitzroy Crossi**	**23.71**	**183**	P		**P**	**19 04 47.5**	**-0.2**
	3.1nm,0.9s,baz=6.5,slow=11,SNR=1.9							
WRA	**Warramunga Arr**	**26.47**	**165**	P		**P**	**19 05 13.9**	**+1.0**
	0.5nm,0.6s,baz=344,slow=9.5,SNR=4.7							
ASAR	**Alice Springs**	**29.95**	**167**	P		P	19 05 44.9	+0.9
	0.7nm,0.6s,baz=345,slow=7.2,SNR=8.5							
ASAR				PcP		**PcP**	**19 08 45.1**	**-1.5**
	0.2nm,0.4s,baz=353,slow=2.4,SNR=5.5							
STKA	**Stephens Creek**	**39.86**	**161**	P		**P**	**19 07 11.1**	**+1.8**
	1.3nm,0.5s,baz=346,slow=10,SNR=3.7							
MKAR	**Makanchi Array**	**56.15**	**324**	P		P	19 09 11.4	-3.9
	0.6nm,0.5s,baz=116,slow=7.9,SNR=8.5							
MKAR				PcP		**PcP**	**19 10 09.9**	**-3.3**
	0.3nm,0.6s,baz=127,slow=5.6,SNR=2.7							

ISCJB ***11*** *19:10:13.7±0.6,43.71N±0.06×105.33W±0.07,h0km,Error ellipse: s-maj=9.3km s-min=6.7km az=11.9*
NEIC ***11*** *19:10:14.4±0.7,43.65N×105.37W,h0km,ML2.9,Error ellipse: s-maj=10.8km s-min=7.3km az=187.0,Suspected Mining explosion.*
NEIC 73 km [45 miles] S of Gillette.
IDC ***11*** *19:10:14.8±2.2,43.47N×105.30W,h0km,mb1 3.6/2, mb1mx3.2/35,mbtmp3.4/2,ML3.2/2,Error ellipse: s-maj=52.1km s-min=11.6km az=155.0*
ISC 11 19:10:14.1±0.9,43.56N±0.05×105.35W±0.04,h0km,n22,
σ2s04/22,Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RSSD	**Black Hills**	**1.10**	**59**	*e*Pn		**Pg**	**19 10 35.5**	**+0.3**
K22A	**Casper**	**1.25**	**224**	*e*Pn		**Pg**	**19 10 38.6**	**+0.5**
PHWY	**Pilot Hill**	**2.26**	**182**	*e*Pn		**Pb**	**19 10 54.6**	**-1.3**
PDAR	**Pinedale Array**	**3.18**	**257**	Pn		**Pb**	**19 11 08.8**	**-2.8**
	2.9nm,0.3s,baz=78,slow=18,SNR=26							
PDAR				Lg		Lg	19 11 55.9	
	18nm,0.3s,baz=75,slow=35,SNR=18							
RLMT	**Red Lodge**	**3.21**	**300**	*e*Pn		**Pn**	**19 11 07.6**	**+1.6**
OGNE	**Ogallala**	**3.59**	**136**	*e*Pn		**Pn**	**19 11 13.3**	**+2.2**
ISCO	**Idaho Springs**	**3.77**	**183**	*e*Pn		**Pb**	**19 11 18.2**	**-3.4**
LOHW	**Long Hollow**	**3.82**	**273**	Pn		**Pn**	**19 11 16.0**	**+1.7**
H17A	**Grant Village**	**3.86**	**284**	*e*Pg		**Pg**	**19 11 30.1**	**+2.0**
FLWY	**Flagg Ranch**	**3.91**	**279**	*e*Pg		**Pg**	**19 11 27.7**	**-1.2**
MOOW	**Moose Ponds**	**3.92**	**275**	Pn		**Pn**	**19 11 17.1**	**+1.4**
MOOW				*e*Pg		**Pg**	**19 11 32.5**	**+3.3**
SNOW	**Snow King Moun**	**3.93**	**270**	*e*Pn		**Pn**	**19 11 15.4**	**-0.6**
REDW	**Red Top Meadow**	**4.01**	**269**	*e*Pg		**Pg**	**19 11 29.8**	**-1.1**
O20A	**White River Ci**	**4.05**	**213**	*e*Pn		**Pn**	**19 11 18.6**	**+1.1**
IMW	**Indian Meadow**	**4.06**	**277**	*e*Pn		**Pn**	**19 11 19.8**	**+2.1**
TPAW	**Teton Pass**	**4.07**	**271**	Pn		**Pn**	**19 11 19.9**	**+2.0**
AHID	**Auburn Hatcher**	**4.28**	**261**	*e*Pg		**Pg**	**19 11 36.9**	**+0.8**
BOZ	**Bozeman (W)**	**4.94**	**297**	*e*Pg		**Pg**	**19 11 46.7**	**-2.0**
HWUT	**Hardware Ranch**	**4.99**	**249**	Pn		**Pn**	**19 11 33.7**	**+3.3**
	4.0nm,0.5s							
DLMT	**Dillon**	**5.49**	**292**	*e*Pg		**Pg**	**19 12 00.6**	**+1.4**
	12nm,1.1s							
ULM	**Lac du Bonnet**	**9.31**	**41**	Pn		**Pn**	**19 12 29.4**	**-0.1**
	0.5nm,0.3s,baz=231,slow=14,SNR=3.2							

I56US	**NEWPORT INFRAS 9.46 304** *i*				20 08 10.0
	baz=116,slow=309,SNR=1.2				

*ISCJB **11** 19:14:43.9±0.7,23°.86S±0°.08×179°.9W±0°.1, h518km, mb4.2/10, Error ellipse: s-maj=14.2km s-min=10.8km az=2.4*
*IDC **11** 19:14:45.2±1.6,23°.83S×179°.83W, h522km±16km, mb3.7/9, mb1 3.8/11, mb1mx3.4/30, mbtmp4.7/11, Error ellipse: s-maj=20.2km s-min=15.0km az=20.0*

ISC 11 19:14:44.6±0.6, **23°.88S**±0°.08×**179°.8W**±0°.1, **h518km, n21,** σ1♀**33**/23, **mb4.2**/10, **1C, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**5.62**	**163**	P	**P**	**19 16 18.7**	**+0.7**
	201nm,0.3s,baz=88,slow=7.5,SNR=8.1						
RAO				S	**S**	19 17 36.8	+2.4
	31nm,0.3s,baz=240,slow=20,SNR=2.2						
AFI	**Afiamalu**	**12.50**	**39**	P	**P**	**19 17 27.9**	**-0.7**
	4.7nm,0.3s,baz=180,slow=7.8,SNR=4.9						
AFI				S	S	19 19 33.8	-10
	5.9nm,0.3s,baz=0.0,slow=20,SNR=3.3						
URZ	**Urewera**	**14.57**	**190**	P	**P**	**19 17 49.8**	**0.0**
	4.2nm,0.3s,baz=272,slow=2.5,SNR=13						
URZ				S	**S**	19 20 18.7	-3.9
	2.5nm,0.3s,baz=62,slow=22,SNR=12						
RPZ	**Rata Peaks**	**21.16**	**199**	P	**P**	**19 18 50.5**	**-2.0**
	9.8nm,0.6s,baz=55,slow=17,SNR=4.4						
CTA	**Charters Tower**	**31.63**	**270**	P	**P**	**19 20 26.0**	**+1.0**
	13nm,0.3s,baz=94,slow=11,SNR=34						
STKA	**Stephens Creek**	**34.87**	**248**	P	**P**	**19 20 52.9**	**+0.6**
	3.6nm,0.5s,baz=92,slow=10.0,SNR=20						
ASAR	**Alice Springs**	**42.19**	**261**	P	**P**	**19 21 52.2**	**+0.3**
	11nm,0.8s,baz=94,slow=7.6,SNR=208						
WRA	**Warramunga Arr**	**42.56**	**266**	P	**P**	**19 21 54.6**	**-0.2**
	14nm,0.5s,baz=96,slow=8.4,SNR=367						
FITZ	**Fitzroy Crossi**	**50.98**	**266**	P	**P**	**19 22 58.8**	**+0.3**
	6.4nm,0.6s,baz=112,slow=3.5,SNR=30						
VNDA	**Vanda**	**54.41**	**185**	P	**P**	**19 23 23.4**	**+1.3**
	1.3nm,0.5s,baz=4.4,slow=5.4,SNR=8.2						
NWAO	**Narrogin (SRO)**	**55.38**	**246**	P	**P**	**19 23 29.6**	**-0.1**
	4.9nm,0.8s,baz=349,slow=5.2,SNR=4.2						
MAW	**Mawson**	**77.82**	**200**	P	**P**	**19 25 48.3**	**+0.5**
	4.5nm,0.7s,baz=143,slow=6.3,SNR=14						
TXAR	**Lajitas Array**	**90.29**	**58**	P	**P**	**19 26 50.8**	**+0.4**
	0.5nm,0.8s,baz=225,slow=8.7,SNR=3.9						
MKAR	**Makanchi Array**	**112.25**	**313**	PKiKP	**PKiKP**	**19 32 19.7**	**-1.5**
	0.2nm,0.4s,baz=169,slow=1.6,SNR=4.9						
ARCES	**ARCESS Array B**	**131.90**	**348**	PKP	**PKPdf**	**19 32 56.9**	**-1.2**
	1.8nm,0.9s,baz=92,slow=2.2,SNR=6.8						
FINES	**FINESS Array B**	**138.48**	**342**	PKP	**PKPdf**	**19 33 11.5**	**+1.1**
	0.9nm,0.8s,baz=21,slow=9.2,SNR=3.2						
AKASG	**Malin Array Be**	**145.04**	**327**	PKPbc	**PKPdf**	**19 33 21.9**	**-0.5**
	0.6nm,0.4s,baz=38,slow=3.5,SNR=3.9						
BRTR	**Keskin Array B**	**147.69**	**307**	PKPbc	**PKPbc**	**19 33 30.7**	**-0.4**
	0.9nm,0.7s,baz=152,slow=5.2,SNR=4.5						
CLL	**Collm**	**150.88**	**343**	*iP*	**PKPbc**	**19 33 37.7**	**-0.5**
	comp=Z,5.0nm,0.8s						
BRG	**Berggiesshubel**	**151.01**	**342**	*eP*	**PKPbc**	**19 33 38.1**	**-0.4**
	comp=Z,3.7nm,0.5s						
TORD	**Torodi Ar. Bea**	**169.23**	**188**	PKPab	**PKPab**	**19 35 07.8**	**-0.7**
	comp=Z,1.1nm,0.6s,baz=174,slow=3.9,SNR=8.1						

JMA 11 19:18:27.4±0.1, **38°.17N**×**143°.40E, h16km, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.63**	**304**	P	Pn	19 18 56.0	+0.5
OFUJ				*eS*	Sb	19 19 17.1	-0.4
JIO	**Ouri**	**1.64**	**281**	P	Pn	19 18 56.0	+0.5
JIO				*eS*	Sn	19 19 16.4	+0.1
JMK	**Ichinoseki**	**1.88**	**295**	P	Pn	19 18 59.7	+0.9
JMK				*eS*	Sb	19 19 23.6	-1.0
JMM	**Marumori**	**2.08**	**262**	P	Pn	19 19 02.0	+0.4
JMM				*eS*	Sb	19 19 29.1	-1.3
JOM	**Ohasama**	**2.10**	**309**	P	Pn	19 19 03.1	+1.2
JOM				S	Sn	19 19 29.1	+1.4
JFK	**Kawauchi**	**2.16**	**249**	P	Pn	19 19 02.6	-0.1
JOU	**Okura**	**2.16**	**276**	P	Pn	19 19 03.9	+1.1
JOU				*eS*	Sn	19 19 30.8	+1.5
JRG	**Rokugo**	**2.48**	**300**	P	Pn	19 19 08.9	+1.7
JRG				*eS*	Sb	19 19 39.8	-2.2
JYK	**Kaneyama**	**2.50**	**288**	P	Pn	19 19 08.8	+1.4
JFT	**Otama**	**2.51**	**256**	P	Pn	19 19 08.9	+1.3

*ISCJB **11** 19:19:47.6±0.8, 6°.82N±0°.05×73°.10W±0°.06, h159km±7km, Error ellipse: s-maj=11.4km s-min=5.2km az=37.8*
*FUNV **11** 19:19:47.9, 6°.86N×73°.14W, h180km, MW2.8*
*RSNC **11** 19:19:49.7±0.8, 6°.77N×73°.11W, h146km±6km, ML2.6*

ISC 11 19:19:46.7±1.6, **6°.82N**±0°.05×**73°.07W**±0°.06, **h167km**±10km, **n16,** σ1♀**33**/27, **Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAMC	**Pamplona, Colo**	**0.64**	**35**	*eP*	**Pn**	**19 20 12.1**	**+0.9**
PAMC				*eS*	**Sn**	**19 20 29.1**	**-1.0**
BRRC	**Barranca, Sant**	**0.70**	**295**	*eP*	**Pn**	**19 20 11.3**	**+0.4**
BRRC				*eS*	**Sn**	**19 20 28.4**	**-1.2**
BRRC				*i*		19 20 30.8	
	comp=Z,77nm,0.1s						
RUSC	**La Rusia**	**0.92**	**181**	*eP*	**Pn**	**19 20 13.1**	**+0.1**
RUSC				*eS*	**Sn**	**19 20 31.1**	**-2.2**
RUSC				*i*		19 20 33.1	
	comp=Z,36nm,0.4s						
CBRI	**Barrientos, No**	**0.94**	**17**	*eP*	**Pn**	**19 20 14.1**	**+1.3**
CBRI				*eS*	**Sn**	**19 20 32.7**	**-0.2**
CBRI				*i*		19 20 34.6	
	comp=Z,32nm,0.3s						
CAPV	**Capacho**	**1.28**	**36**	*eP*	**Pn**	**19 20 17.1**	**+1.4**
CAPV				*eS*	**Sn**	**19 20 39.0**	**+0.8**
OCAC	**Ocana**	**1.44**	**350**	*eP*	**Pn**	**19 20 18.3**	**+1.2**
OCAC				*eS*	**Sn**	**19 20 40.2**	**-0.4**
OCAC				*i*		19 20 44.6	
	comp=Z,57nm,0.3s						
NORC	**Norcasia**	**2.18**	**235**	*eP*	**Pn**	**19 20 25.6**	**+0.6**
NORC				*eS*	**Sn**	**19 20 53.2**	**-1.3**
CHIC	**Chingaza**	**2.27**	**197**	*eP*	**Pn**	**19 20 27.2**	**+0.9**
CHIC				*eS*	**Sn**	**19 20 57.2**	**+0.1**
CHIC				*i*		19 21 00.4	
	comp=Z,13nm,0.4s						
ROSC	**El Rosal**	**2.32**	**212**	*eP*	**Pn**	**19 20 27.1**	**+0.1**
HELC	**Santa Helena**	**2.52**	**256**	*eP*	**Pn**	**19 20 30.6**	**+1.4**
HELC				*eS*	**Sn**	**19 21 01.7**	**-0.4**
HELC				*i*		19 21 10.2	
	comp=Z,21nm,0.3s						
VIGV	**El Vigia**	**2.63**	**40**	*eP*	**Pn**	**19 20 32.2**	**+1.9**
VIGV				*eS*	**Sn**	**19 21 03.5**	**-0.5**
SOCV	**Socops**	**2.64**	**56**	*eP*	**Pn**	**19 20 31.9**	**+1.6**
TOLC	**Tolima**	**3.15**	**225**	*eP*	**Pn**	**19 20 38.3**	**+1.4**
PRAC	**Prado**	**3.57**	**210**	*eP*	**Pn**	**19 20 43.1**	**+1.1**
PRAC				*i*		19 21 29.5	
	comp=Z,42nm,0.4s						
VIRV	**Villa del Rosa**	**3.72**	**10**	*eP*	**Pn**	**19 20 43.8**	**0.0**
VIRV				*eS*	**Sn**	**19 21 25.0**	**-3.5**
BAUV	**El Baul**	**5.41**	**67**	*eP*	**Pn**	**19 21 05.3**	**-0.5**

*NIED **11** 19:31:00, 35°.60N×142°.50E, h5km, Mw3.9 Best double couple: M0 8.84000×10^14 NP1:*φ*=359.00000°, δ31.00000°, λ=-91.00000°. NP2:*φ*=181.00000°, δ59.00000°, λ=-89.00000°.*
*IDC **11** 19:31:25.3±0.7, 35°.46N×142°.69E, h0km, mb3.8/13, mb1 3.9/17, mb1mx3.8/54, mbtmp3.8/17, ML3.7/3, MS2.9/5, Ms1 3.0/5, ms1mx2.6/37, Error ellipse: s-maj=19.9km s-min=15.4km az=100.0*
*ISCJB **11** 19:31:26.8±1.7, 35°.56N±0°.04×142°.46E±0°.06, h21km±12km, mb3.9/15, MS3.0/2, Error ellipse: s-maj=7.7km s-min=6.9km az=2.0*
*JMA **11** 19:31:27.8±0.2, 35°.56N×142°.48E, h60km, M3.5*
*NEIC **11** 19:31:30.8±0.6, 35°.41N×142°.54E, h35km, mb4.6/2, Error ellipse: s-maj=15.0km s-min=12.3km az=137.0*

ISC 11 19:31:26.8±3.0, **35°.58N**±0°.05×**142°.49E**±0°.07, **h10km**±17km, **n41,** σ2♀**09**/43, **mb3.9**/15, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.33**	**276**	P	**Pn**	**19 31 50.9**	**-0.6**
CHOJ				*eS*	**Sg**	**19 32 07.5**	**-2.3**
BSO1	**Boso 1**	**1.54**	**234**	P	**Pn**	**19 31 52.8**	**-1.1**
BSO1				*eS*	**Sn**	**19 32 12.5**	**-1.2**
JFK	**Kawauchi**	**2.21**	**324**	P	**Pn**	**19 32 02.9**	**-0.7**
JFK				*eS*	**Sn**	**19 32 28.8**	**-2.2**
JFT	**Otama**	**2.60**	**319**	P	**Pn**	**19 32 08.3**	**-0.6**
JFT				S	**Sn**	**19 32 39.3**	**-1.2**
JAG	**Ashikaga**	**2.60**	**290**	P	**Pn**	**19 32 08.4**	**-0.5**
JAG				*eS*	**Sn**	**19 32 38.6**	**-2.0**
JOD2	**Odawara 2**	**2.79**	**265**	P	**Pn**	**19 32 11.0**	**-0.6**
JOD2				S	**Sn**	**19 32 43.6**	**-1.8**
JHJ2	**Mitsune**	**3.31**	**223**	*ePn*	**Pn**	**19 32 18.2**	**-0.4**
JHJ	**Hachijo jima 2**	**3.32**	**223**	Pn	**Pn**	**19 32 17.7**	**-1.1**
	30nm,0.3s,baz=102,slow=1.5,SNR=20						
JHJ				Sn	**Sn**	**19 32 53.8**	**-4.5**
	83nm,0.3s,baz=35,slow=23,SNR=16						
MAJO	**Matsushiro**	**3.60**	**287**	*ePn*	**Pn**	**19 32 23.5**	**+0.8**
MAT	**Matsushiro**	**3.60**	**287**	P	**Pn**	**19 32 23.6**	**+0.9**
MAT				*eS*	**Sn**	**19 33 04.0**	**-1.2**
ERM	**Erimo**	**6.45**	**4**	*ePn*	**Pn**	**19 32 59.8**	**-2.0**
	8.2nm,0.4s						
ASAJ	**Asahikawa**	**8.53**	**1**	Pn	**Pn**	**19 33 29.8**	**-0.5**
	1.4nm,0.3s,baz=219,slow=7.6,SNR=15						
ASAJ				Sn	**Sn**	**19 35 01.0**	**-5.6**
	baz=360,slow=18						
ASAJ	**Asahikawa**	**8.53**	**1**	*ePn*	**Pn**	**19 33 29.6**	**-0.7**
	24nm,0.7s						
ASAJ				Sn	**Sn**	**19 35 01.0**	**-5.6**
JNU	**Nakatsue**	**9.91**	**259**	Pn	**Pn**	**19 33 51.0**	**+1.7**
	0.2nm,0.3s,baz=180,slow=20,SNR=3.1						
JNU				LR	LR	19 38 11.2	
	comp=Z,95nm,19.4s,baz=120,slow=40						
USRK	**Ussuriysk Ar.**	**11.79**	**320**	Pn	**Pn**	**19 34 17.4**	**+2.5**
	0.1nm,0.3s,baz=96,slow=14,SNR=4.4						
KSRS	**Korea Array**	**11.87**	**283**	LR	LR	19 39 05.5	
	comp=Z,33nm,19.5s,baz=117,slow=38						
KLR	**Kul'dur**	**15.76**	**333**	LR	LR	19 40 18.8	
	comp=Z,37nm,21.3s,baz=134,slow=34						
H11N2	**WAKE ISLAND Hy**	**26.66**	**120**	T	T	20 05 02.0	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**26.67**	**120**	T	T	20 05 18.3	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**26.68**	**120**	T	T	20 05 32.0	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**27.35**	**122**	T	T	20 05 49.8	
	baz=310						
H11S3	**WAKE ISLAND Hy**	**27.35**	**122**	T	T	20 05 50.9	
	baz=310						
H11S2	**WAKE ISLAND Hy**	**27.36**	**122**	T	T	20 05 51.1	
	baz=310						
ENH	**Enshi**	**28.12**	**269**	*eP*	**P**	**19 37 17.7**	**-1.3**
	6.3nm,0.8s						
SONM	**Songino Array**	**29.33**	**306**	P	**P**	**19 37 31.4**	**+1.7**
	1.7nm,0.7s,baz=106,slow=9.4,SNR=13						
CMAR	**Chiang Mai Arr**	**42.00**	**258**	LR	LR	19 58 22.6	
	comp=Z,16nm,20.3s,baz=310,slow=38						
ZALV	**Zalesovo Beam**	**43.54**	**314**	P	**P**	**19 39 33.7**	**+3.3**
	1.0nm,0.5s,baz=110,slow=7.6,SNR=4.1						
ZALV				PcP	**PcP**	**19 41 16.5**	**-1.6**
	0.5nm,0.3s,baz=93,slow=2.9,SNR=2.7						
MKAR	**Makanchi Array**	**45.64**	**303**	P	**P**	**19 39 48.8**	**+1.4**
	1.2nm,0.7s,baz=81,slow=9.1,SNR=15						
KAPI	**Kappang**	**45.68**	**213**	LR	LR	19 57 48.1	
	comp=Z,28nm,19.3s,baz=66,slow=35						
KURK	**Kurchatov**	**47.52**	**309**	*eP*	**P**	**19 40 06.1**	**+4.1**
	5.8nm,0.5s						
KURBB	**Kurchatov Arra**	**47.59**	**309**	P	**P**	**19 40 03.5**	**+1.0**
	0.6nm,0.6s,baz=84,slow=8.0,SNR=13						
ILAR	**Eielson Array**	**50.27**	**32**	P	**P**	**19 40 22.8**	**-0.1**
	0.8nm,0.6s,baz=265,slow=6.8,SNR=11						
BVAR	**Borovoye Array**	**52.20**	**313**	P	**P**	**19 40 39.7**	**+2.2**
	0.2nm,0.3s,baz=76,slow=6.1,SNR=2.4						
BVAR				PcP	**PcP**	**19 41 49.8**	**+0.8**
	0.3nm,0.5s,baz=101,slow=4.6,SNR=2.4						
INK	**Inuvik**	**55.29**	**27**	P	**P**	**19 40 59.6**	**-0.3**
	1.2nm,0.6s,baz=277,slow=4.9,SNR=4.4						
FITZ	**Fitzroy Crossi**	**55.72**	**199**	P	**P**	**19 41 03.7**	**+0.1**
	3.2nm,1.0s,baz=23,slow=7.7,SNR=4.8						
WRA	**Warramunga Arr**	**55.75**	**189**	P	**P**	**19 41 03.0**	**-0.8**
	1.0nm,0.6s,baz=9.5,slow=7.5,SNR=8.6						
ASAR	**Alice Springs**	**59.48**	**189**	P	**P**	**19 41 29.5**	**-0.5**
	0.6nm,0.8s,baz=357,slow=6.2,SNR=5.5						
YKA	**Yellowknife Ar**	**64.63**	**30**	P	**P**	**19 42 04.7**	**+0.6**
	0.4nm,0.6s,baz=326,slow=7.3,SNR=3.9						
BRTR	**Keskin Array B**	**80.47**	**312**	P	**P**	**19 43 40.7**	**+1.6**
	0.8nm,1.1s,baz=46,slow=4.2,SNR=3.6						
TXAR	**Lajitas Array**	**90.31**	**53**	P	**P**	**19 44 29.4**	**+1.0**
	0.4nm,0.8s,baz=300,slow=2.5,SNR=4.2						
TORD	**Torodi Ar. Bea**	**118.97**	**315**	PKP	**PKPdf**	**19 50 16.5**	**+0.2**
	0.2nm,0.8s,baz=56,slow=2.5,SNR=2.6						

*IDC **11** 19:32:19.3±0.8, 29°.02S×176°.90W, h0km, mb4.2/10, mb1 4.4/11, mb1mx4.2/29, mbtmp4.3/11, ML4.1/1, MS3.8/9, Ms1 3.8/9, ms1mx3.5/26, Error ellipse: s-maj=28.8km s-min=21.9km az=135.0*
*NEIC **11** 19:32:20.0±0.5, 29°.19S×176°.70W, h10km, mb4.7/5, Error ellipse: s-maj=16.7km s-min=9.0km az=116.0*
*ISCJB **11** 19:32:21.6±0.6, 29°.21S±0°.09×176°.53W±0°.09, h36km, mb4.4/14, MS3.8/7, Error ellipse: s-maj=13.4km s-min=10.5km az=161.0*

ISC 11 19:32:24.0±0.6, **29°.21S**±0°.10×**176°.66W**±0°.10, **h36km, n56,** σ1♀**30**/42, **mb4.5**/14, **MS3.8**/7, **1C-1D, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.10**	**267**	Pn	**Pn**	**19 32 43.7**	**+0.8**
	1μm,0.3s,baz=70,slow=6.4,SNR=77						
RAO				Sn	**Sn**	**19 32 59.2**	**+2.4**
	2μm,0.3s,baz=90,slow=20,SNR=15						
RAO				LR	LR	19 33 10.4	
	comp=Z,2μm,21.4s,baz=154,slow=55						
URZ	**Urewera**	**10.41**	**208**	Sn	**Sn**	**19 36 44.0**	**-2.0**
	2.0nm,0.3s,baz=253,slow=19,SNR=6.4						
KHZ	**Kahutara**	**15.38**	**208**	*eP*	**Pn**	**19 35 58.2**	**0.0**
DZM	**Mont Dzumac**	**16.80**	**291**	LR	LR	19 41 28.0	
	comp=Z,648nm,19.0s,baz=144,slow=33						
DZM	**Mont Dzumac**	**16.80**	**291**	*eLR*	LR	19 40 27.7	
	654nm,23.2s						
RAR	**Rarotonga**	**17.22**	**66**	LR	LR	19 41 07.5	
	comp=Z,232nm,20.3s,baz=229,slow=30						
RPZ	**Rata Peaks**	**17.50**	**211**	P	**Pn**	**19 36 24.2**	**-0.9**
	0.7nm,0.3s,baz=218,slow=19,SNR=2.9						
PPT2	**Papeete2**	**27.35**	**71**	*eLR*	LR	19 44 51.0	
	258nm,27.5s						
PPT	**Papeete**	**27.36**	**71**	LR	LR	19 46 12.3	
	comp=Z,61nm,20.6s,baz=192,slow=30						
STKA	**Stephens Creek**	**35.89**	**255**	P	**P**	**19 39 19.3**	**-1.5**
	2.2nm,0.8s,baz=100,slow=12,SNR=2.8						
STKA				LR	LR	19 52 28.9	
	comp=Z,157nm,20.1s,baz=46,slow=34						
RKT	**Rikitea**	**37.76**	**91**	*eLR*	LR	19 49 43.7	
	201nm,32.2s						
PMG	**Port Moresby**	**39.18**	**293**	LR	LR	19 52 39.0	
	comp=Z,230nm,21.4s,baz=111,slow=31						
TAOE	**Nuku Hiva Isla**	**39.77**	**67**	*eLR*	LR	19 50 36.5	
	149nm,26.7s						
ASAR	**Alice Springs**	**44.35**	**265**	P	**P**	**19 40 30.6**	**-0.4**
	3.4nm,0.9s,baz=97,slow=7.5,SNR=30						
ASAR				LR	LR	19 58 11.9	
	comp=Z,229nm,18.6s,baz=95,slow=35						
WRAB	**Tennant Creek**	**45.23**	**270**	*eP*	**P**	**19 40 37.4**	**-0.7**
	10.0nm,1.1s						
WRA	**Warramunga Arr**	**45.23**	**270**	P	**P**	**19 40 37.3**	**-0.8**
	6.1nm,0.9s,baz=108,slow=7.8,SNR=16						
VNDA	**Vanda**	**49.40**	**186**	LR	LR	20 00 06.4	
	comp=Z,38nm,19.6s,baz=307,slow=34						
FITZ	**Fitzroy Crossi**	**53.54**	**268**	P	**P**	**19 41 41.1**	**-0.4**
	6.9nm,0.9s,baz=131,slow=6.0,SNR=4.8						
FITZ	**Fitzroy Crossi**	**53.54**	**268**	*eP*	**P**	**19 41 41.1**	**-0.4**
	10.0nm,1.0s						
QSPA	**South Pole Qui**	**60.90**	**180**	*eP*	**P**	**19 42 32.7**	**-0.2**
	23nm,1.2s						
MAW	**Mawson**	**73.83**	**200**	P	**P**	**19 43 55.9**	**+1.4**
	1.8nm,0.9s,baz=72,slow=9.6,SNR=3.6						
MAW				LR	LR	20 16 45.4	
	comp=Z,89nm,18.1s,baz=66,slow=36						
SYO	**Syowa Base**	**78.53**	**193**	*iP*	**P**	**19 44 23.0**	**+1.8**
SYO	**Syowa Base**	**78.53**	**193**	*ieP*	P	19 44 33.0	+12
H06E1	**SOCORRO T-PHAS**	**79.34**	**62**	T	T	21 10 58.9	
	SNR=186						
KSRS	**Korea Array**	**84.21**	**319**	P	**P**	**19 44 51.0**	**-0.6**
	1.0nm,0.7s,baz=132,slow=5.1,SNR=3.6						
KSAR	**Wonju Array Be**	**84.22**	**319**	P	**P**	**19 44 51.0**	**-0.7**
PETK	**Petropavlovsk-**	**84.96**	**345**	P	**P**	**19 44 54.5**	**-0.6**
	4.6nm,0.8s,baz=143,slow=6.4,SNR=7.3						
USRK	**Ussuriysk Ar.**	**86.82**	**326**	P	**P**	**19 45 05.0**	**+0.5**
	2.4nm,0.9s,baz=70,slow=2.2,SNR=6.6						
KLR	**Kul'dur**	**90.60**	**329**	P	**P**	**19 45 20.4**	**-1.8**
	1.0nm,0.7s,baz=330,slow=2.8,SNR=4.3						
TXAR	**Lajitas Array**	**90.77**	**57**	P	**P**	**19 45 25.6**	**+2.0**
	0.3nm,0.9s,baz=253,slow=1.5,SNR=2.9						
TXAR				LR	LR	20 19 50.7	
	comp=Z,30nm,19.3s,baz=0.0,slow=31						
ENH	**Enshi**	**91.90**	**304**	*eP*	**P**	**19 45 28.2**	**-0.6**
	1.6nm,0.6s						
DLBC	**Dease Lake**	**95.58**	**23**	*eP*	**P**	**19 45 43.4**	**-1.7**
	1.5nm,0.6s						
MKAR	**Makanchi Array**	**117.89**	**310**	PKP	**PKPdf**	**19 51 06.5**	**0.0**
	0.2nm,0.2s,baz=58,slow=3.4,SNR=5.6						
KURK	**Kurchatov**	**121.06**	**314**	*ePKPdf*	**PKPdf**	**19 51 12.4**	**0.0**
BVAR	**Borovoye Array**	**126.36**	**316**	PKP	**PKPdf**	**19 51 23.2**	**+0.7**
	1.5nm,0.7s,baz=68,slow=4.0,SNR=10						
AKTO	**Aktyubinsk**	**134.15**	**313**	PKP	**PKPdf**	**19 51 38.6**	**+1.2**
	1.4nm,0.8s,baz=353,slow=4.2,SNR=5.0						
H10S3	**ASCENSION HYDR**	**138.28**	**153**	T	T	22 27 28.9	
	baz=204						
H10S2	**ASCENSION HYDR**	**138.28**	**153**	T	T	22 27 30.0	
	baz=204						
H10S1	**ASCENSION HYDR**	**138.30**	**153**	T	T	22 27 31.8	
	baz=204						
H10N3	**ASCENSION HYDR**	**139.35**	**152**	T	T	22 28 39.5	
	baz=205						
H10N1	**ASCENSION HYDR**	**139.36**	**152**	T	T	22 28 34.3	
	baz=205						
H10N2	**ASCENSION HYDR**	**139.37**	**152**	T	T	22 28 44.0	
	baz=205						
FINES	**FINESS Array B**	**144.41**	**341**	PKP	**PKPab**	**19 51 53.8**	**-0.1**
	2.8nm,0.9s,baz=46,slow=5.5,SNR=6.2						
KBZ	**Khabaz**	**145.39**	**306**	PKPbc	**PKPbc**	**19 51 56.4**	**-1.5**
	0.8nm,0.5s,baz=96,slow=3.5,SNR=4.2						
NB2	**NORSAR Subarra**	**147.73**	**353**	PKP	**PKPdf**	**19 52 00.5**	**-0.9**
	comp=Z,2.1nm,0.9s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**147.73**	**353**	PKPbc	**PKPbc**	**19 52 04.3**	**0.0**
	comp=Z,2.0nm,1.0s,baz=16,slow=4.4,SNR=4.6						
KBSD	**Kabsdagh**	**148.03**	**294**	*eP*	**PKPab**	**19 52 07.7**	**-1.0**
KSRV	**Kasrt alli**	**149.33**	**292**	*eP*	**PKPbc**	**19 52 11.1**	**+1.9**
ZALF	**Zalf**	**150.72**	**286**	*eP*	**PKPbc**	**19 52 14.1**	**+1.5**
ROOS	**tl_alroos**	**150.77**	**288**	*eP*	**PKPbc**	**19 52 14.5**	**+1.7**
AKASG	**Malin Array Be**	**151.03**	**325**	PKPbc	**PKPbc**	**19 52 13.0**	**+0.2**
	comp=Z,6.9nm,0.8s,baz=45,slow=3.0,SNR=16						
AKASG				PKPab	**PKPab**	**19 52 19.4**	**-0.9**
	comp=Z,4.5nm,0.7s,baz=46,slow=3.2,SNR=4.1						
SALA	**Sala**	**151.22**	**285**	*eP*	**PKPbc**	**19 52 15.9**	**+1.9**
HAWK	**Haweek**	**151.50**	**289**	*eP*	**PKPbc**	**19 52 16.6**	**+2.0**
TCHB	**Talchebab**	**151.86**	**285**	*eP*	**PKPbc**	**19 52 17.9**	**+2.5**
BRTR	**Keskin Array B**	**153.02**	**301**	PKPbc	**PKPbc**	**19 52 18.6**	**+0.8**
	comp=Z,3.4nm,1.1s,baz=132,slow=3.5,SNR=10						
BRTR				PKPab	**PKPab**	**19 52 28.4**	**-0.9**
	comp=Z,1.9nm,0.9s,baz=45,slow=2.4,SNR=6.8						
TORD	**Torodi Ar. Bea**	**163.95**	**174**	PKPab	**PKPab**	**19 53 18.3**	**+1.6**
	comp=Z,0.5nm,0.9s,baz=168,slow=4.2,SNR=2.9						

MEX 11 19:39:28.9±0.8, **15°.73N**×**91°.90W, h158km**±97km, **MD3.7, Mexico-Guatemala border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**1.57**	**312**	*i* P	Pn	19 40 06.8	+6.9

*AUST **11** 19:39:58.2±1.1, 20°.05S×116°.14E, h33km, Error ellipse: s-maj=0.1km s-min=0.1km az=290.0*
*IDC **11** 19:40:05.3±6.4, 20°.49S×117°.43E, h0km, mb3.6/1, mb1 3.7/4, mb1mx3.3/35, mbtmp3.6/4, ML3.5/3, Error ellipse: s-maj=93.1km s-min=48.1km az=142.0*

ISC 11 19:39:53.8±1.1, **20°.05S**±0°.10×**116°.57E**±0°.09, **h10km, n13,** σ3♀**75**/16, **Western Australia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GIRL	**Giralia**	**3.38**	**220**	P	**Pn**	**19 40 44.0**	**-2.7**
	baz=3.1						
MEEK	**Meekatharra**	**6.82**	**164**	P	**Pn**	**19 41 35.2**	**+1.2**
	baz=7.0						
FITZ	**Fitzroy Crossi**	**8.79**	**79**	Pn	**Pn

	12nm,0.6s						
SMCO	**Snowmass**	**4.91**	**191**	*e*Pg	**Pb**	**20 06 37.7**	**+0.8**
	15nm,0.6s						
PV04	**Paradox Valley**	**6.08**	**204**	*e*Pn	**Pn**	**20 06 43.4**	**+2.2**
I56US	**NEWPORT INFRAS**	**8.94**	**302**	*i*		20 58 35.0	
	baz=115,slow=314,SNR=4.9						
ULM	**Lac du Bonnet**	**9.20**	**44**	Pn	**Pn**	**20 07 21.4**	**-2.3**
	0.4nm,0.3s,baz=238,slow=14,SNR=2.9						
ULM				Lg	Lg	20 09 53.5	
	0.7nm,0.3s,baz=134,slow=20,SNR=3.8						
MKAR	**Makanchi Array**	**89.30**	**354**	P	**P**	**20 18 09.9**	**+2.1**
	0.4nm,0.6s,baz=358,slow=3.4,SNR=5.3						

NIED ***11*** *20:13:00,39.˚10N×142.˚40E,h29km,Mw3.9 Best double couple: M₀9.06000×10¹⁴ NP1:φs7.00000°,δ18.00000°, λ-80.00000°. NP2:φs176.00000°,δ72.00000°, λ-93.00000°.*

IDC ***11*** *20:13:48.9±0.7,38.˚97N×142.˚44E,h0km,mb3.9/13, mb1 4.0/16,mb1mx3.9/40,mbtmp3.9/16,ML3.4/4,MS3.2/5, Ms1 3.2/5,ms1mx2.9/52,Error ellipse: s-maj=19.8km s-min=15.5km az=102.0*

ISCJB ***11*** *20:13:53.0±0.9,39.˚06N±0.˚04×142.˚39E±0.˚08,h41km±7km, mb4.0/17,MS4.0/3,Error ellipse: s-maj=10.3km s-min=5.3km az=20.4*

JMA ***11*** *20:13:52.9±0.1,39.˚07N×142.˚41E,h35km±1km,M4.1*

JMA Felt II J1.

NEIC ***11*** *20:13:55.5±1.0,39.˚12N×142.˚38E,h47km±8km,mb4.5/3, Error ellipse: s-maj=12.9km s-min=6.9km az=125.0*

NEIC Recorded [2 JMA] in Iwate and Miyagi.

ISC 11 20:13:52.6±1.8,39.˚01N±0.˚04×142.˚41E±0.˚08,h26km±12km, n48,σ1ş55/51,mb4.1/17,MS4.0/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**277**	P		**Pb**	**Pb**	**20 14 04.5**	**+0.3**
OFUJ				S		**Sb**	**Sb**	**20 14 12.6**	**+0.5**
MIYJ	**Miyakonagasawa**	**0.73**	**321**	P		**Pn**	**Pn**	**20 14 05.8**	**-1.4**
MIYJ				S		**Sb**	**Sb**	**20 14 14.8**	**-1.5**
JMK	**Ichinoseki**	**0.93**	**267**	P		**Pn**	**Pn**	**20 14 09.7**	**-0.3**
JMK				S		**Sb**	**Sb**	**20 14 21.8**	**-0.2**
JOM	**Ohasama**	**0.98**	**299**	P		**Pn**	**Pn**	**20 14 10.2**	**-0.5**
JOM				S		**Sn**	**Sn**	**20 14 23.0**	**-0.8**
JIO	**Ouri**	**1.00**	**237**	P		**Pn**	**Pn**	**20 14 10.5**	**-0.4**
JIO				S		**Sb**	**Sb**	**20 14 23.6**	**-0.3**
JTH	**Tanohata**	**1.02**	**336**	P		**Pn**	**Pn**	**20 14 09.9**	**-1.3**
JTH				S		**Sn**	**Sn**	**20 14 22.6**	**-2.1**
JKZ	**Kuzumaki**	**1.28**	**320**	P		**Pn**	**Pn**	**20 14 14.6**	**-0.3**
JKZ				S		**Sn**	**Sn**	**20 14 30.3**	**-1.0**
JRG	**Rokugo**	**1.43**	**286**	P		**Pn**	**Pn**	**20 14 17.1**	**+0.2**
JOU	**Okura**	**1.51**	**245**	P		**Pn**	**Pn**	**20 14 18.5**	**+0.5**
JOU				S		**Sb**	**Sb**	**20 14 37.0**	**-1.7**
JANG	**Nango**	**1.53**	**333**	P		**Pn**	**Pn**	**20 14 17.5**	**-0.7**
JANG				S		**Sn**	**Sn**	**20 14 36.1**	**-1.2**
ERM	**Erimo**	**3.06**	**10**	*e*Pn		**Pn**	**Pn**	**20 14 39.1**	**-0.1**
MAJO	**Matsushiro**	**4.14**	**235**	*e*Pn		**Pn**	**Pn**	**20 14 57.3**	**+3.2**
MAT	**Matsushiro**	**4.14**	**235**	P		**Pn**	**Pn**	**20 14 56.9**	**+2.8**
MAT				*e*S		**Sb**	**Sb**	**20 15 49.5**	**-4.8**
ASAJ	**Asahikawa**	**5.11**	**2**	Pn		**Pn**	**Pn**	**20 15 07.9**	**+0.5**
	2.6nm,0.3s,baz=210,slow=6.6,SNR=26								
ASAJ	**Asahikawa**	**5.11**	**2**	*e*Pn		**Pn**	**Pn**	**20 15 07.5**	**+0.1**
JHJ2	**Mitsune**	**6.25**	**200**	*e*Pn		**Pn**	**Pn**	**20 15 21.6**	**-1.5**
JHJ	**Hachijo jima 2**	**6.25**	**201**	Pn		**Pn**	**Pn**	**20 15 22.0**	**-1.1**
	8.3nm,0.3s,baz=119,slow=23,SNR=16								
JHJ				Sn		**Sn**	**Sn**	**20 16 30.6**	**-3.0**
	baz=72,slow=19,SNR=2.3								
JHJ				LR		LR	LR	20 18 10.9	
	comp=Z,84nm,20.2s,baz=102,slow=42								
USRK	**Ussuriysk Ar.**	**9.37**	**307**	Pn		**Pn**	**Pn**	**20 16 07.8**	**+1.9**
	0.6nm,0.3s,baz=120,slow=13,SNR=15								
USRK				LR		LR	LR	20 19 27.4	
	comp=Z,98nm,21.9s,baz=73,slow=36								
JNU	**Nakatsue**	**11.02**	**241**	Pn		**Pn**	**Pn**	**20 16 31.2**	**+2.6**
	0.4nm,0.3s,baz=90,slow=2.6,SNR=4.6								
KSRS	**Korea Array**	**11.50**	**267**	Pn		**Pn**	**Pn**	**20 16 38.1**	**+3.0**
	0.1nm,0.3s,baz=73,slow=13,SNR=2.4								
KSRS				LR		LR	LR	20 20 49.8	
	comp=Z,75nm,18.3s,baz=89,slow=36								
KSAR	**Wonju Array Be**	**11.53**	**267**	Pn		**Pn**	**Pn**	**20 16 38.1**	**+2.6**
KLR	**Kul'dur**	**12.76**	**327**	Pn		**Pn**	**Pn**	**20 16 52.7**	**+0.5**
	0.1nm,0.3s,baz=128,slow=19,SNR=3.0								
YAK	**Yakutsk**	**24.34**	**345**	P		**P**	**P**	**20 19 05.0**	**-2.9**
	5.7nm,0.3s,baz=140,slow=2.9,SNR=5.9								
SEY	**Seymchan**	**24.71**	**11**	P		**P**	**P**	**20 19 11.8**	**+0.5**
	2.2nm,0.7s,baz=217,slow=6.7,SNR=7.1								
SONM	**Songino Array**	**27.40**	**301**	P		**P**	**P**	**20 19 36.2**	**+0.2**
	0.7nm,0.5s,baz=101,slow=9.2,SNR=8.4								
ENH	**Enshi**	**28.33**	**262**	*e*P		**P**	**P**	**20 19 43.6**	**-0.8**
	7.2nm,0.8s								
H11N2	**WAKE ISLAND Hy**	**28.56**	**125**	T		T	T	20 50 07.6	
	baz=318,slow=75,SNR=477								
H11N1	**WAKE ISLAND Hy**	**28.57**	**125**	T		T	T	20 50 08.7	
	baz=318,slow=75,SNR=418								
H11N3	**WAKE ISLAND Hy**	**28.58**	**125**	T		T	T	20 50 07.6	
	baz=318,slow=75,SNR=376								
H11S1	**WAKE ISLAND Hy**	**29.35**	**127**	T		T	T	20 51 09.2	
	baz=319,slow=76,SNR=46								
H11S3	**WAKE ISLAND Hy**	**29.35**	**127**	T		T	T	20 51 07.5	
	baz=319,slow=76,SNR=54								
H11S2	**WAKE ISLAND Hy**	**29.36**	**127**	T		T	T	20 51 09.8	
	baz=319,slow=76,SNR=42								
ZALV	**Zalesovo Beam**	**41.20**	**311**	P		**P**	**P**	**20 21 34.9**	**+0.2**
	2.2nm,0.5s,baz=94,slow=8.1,SNR=16								
ZALV				LR		LR	LR	20 38 06.8	
	comp=Z,28nm,19.8s,baz=63,slow=35								
CMAR	**Chiang Mai Arr**	**42.78**	**254**	P		**P**	**P**	**20 21 48.9**	**+0.8**
	0.6nm,0.6s,baz=60,slow=6.5,SNR=5.5								
LSA	**Lhasa**	**42.84**	**274**	*e*P		**P**	**P**	**20 21 49.5**	**+0.4**
MKAR	**Makanchi Array**	**43.77**	**301**	P		**P**	**P**	**20 21 56.0**	**+0.2**
	3.5nm,0.8s,baz=85,slow=9.7,SNR=32								
KURK	**Kurchatov**	**45.36**	**307**	*e*P		**P**	**P**	**20 22 07.6**	**-0.8**
	60nm,0.8s								
ILAR	**Eielson Array**	**47.41**	**33**	P		**P**	**P**	**20 22 25.0**	**+0.6**
	2.0nm,0.6s,baz=267,slow=6.4,SNR=25								
INK	**Inuvik**	**52.28**	**28**	P		**P**	**P**	**20 23 02.2**	**+1.0**
	1.8nm,0.6s,baz=297,slow=8.8,SNR=6.4								
ABKAR	**Akbulak array**	**57.28**	**309**	*e*P		**P**	**P**	**20 23 36.9**	**-0.9**
	1.0nm,0.4s								
WRA	**Warramunga Arr**	**59.12**	**189**	P		**P**	**P**	**20 23 50.8**	**-0.1**
	0.6nm,0.3s,baz=7.1,slow=7.0,SNR=19								
ASAR	**Alice Springs**	**62.85**	**189**	P		**P**	**P**	**20 24 16.6**	**+0.4**
	0.3nm,0.7s,baz=359,slow=5.0,SNR=5.4								
FINES	**FINESS Array B**	**67.44**	**332**	P		**P**	**P**	**20 24 46.2**	**+0.7**
	0.5nm,0.6s,baz=342,slow=8.7,SNR=2.8								
AFI	**Afiamalu**	**67.81**	**131**	LR		LR	LR	20 47 35.5	
	comp=Z,95nm,21.6s,baz=3.5,slow=30								
AKASG	**Malin Array Be**	**73.22**	**322**	P		**P**	**P**	**20 25 20.7**	**-0.3**
	0.5nm,0.4s,baz=42,slow=5.2,SNR=4.3								
PDAR	**Pinedale Array**	**75.73**	**46**	P		**P**	**P**	**20 25 36.4**	**+0.2**
	0.4nm,0.6s,baz=245,slow=2.5,SNR=3.9								
IDI	**Anoyia**	**86.22**	**313**	LR		LR	LR	21 08 12.7	
	comp=Z,431nm,19.0s,baz=342,slow=38								
TXAR	**Lajitas Array**	**88.30**	**53**	P		**P**	**P**	**20 26 42.4**	**+0.2**
	0.2nm,0.5s,baz=323,slow=2.6,SNR=4.2								

ISK ***11*** *20:15:42.9,40.˚15N×26.˚19E,h14km,MD2.5*

ATH ***11*** *20:15:43.6,40.˚16N×26.˚17E,h4km±3km,ML1.6/5,Error ellipse: s-maj=3.3km s-min=1.0km az=102.0*

CSEM ***11*** *20:15:43.8±0.2,40.˚16N×26.˚22E,h2km,ML1.7,Error ellipse: s-maj=3.8km s-min=3.2km az=96.0*

THE ***11*** *20:15:43.6,40.˚17N×26.˚14E,h12km±2km,ML1.7/5,Error ellipse: s-maj=2.6km s-min=0.7km az=320.0*

ISC 11 20:15:43.1±0.9,40.˚16N±0.˚02×26.˚20E±0.˚02,h14km±7km, n46,σ0ş51/74,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GADA	**Gvkgeada**	**0.23**	**279**	*e*PG		**Pg**	**Pg**	**20 15 48.2**	**+0.1**
GADA				*e*SG		**Sg**	**Sg**	**20 15 52.1**	**+0.5**
GADA	**Gvkgeada**	**0.23**	**279**	P		**Pg**	**Pg**	**20 15 48.1**	**-0.1**
GADA				S		**Sg**	**Sg**	**20 15 51.6**	**0.0**
GADA	**Gvkgeada**	**0.23**	**279**	*e*Pg		**Pg**	**Pg**	**20 15 48.2**	**+0.1**
GADA				S		**Sg**	**Sg**	**20 15 51.6**	**0.0**
GADA				*e*Sg		Sg	Sg	20 15 52.1	+0.5
GELI	**Tayfur-Gelibol**	**0.32**	**41**	*e*PG		**Pb**	**Pb**	**20 15 50.1**	**-0.4**
GELI				*e*SG		**Sb**	**Sb**	**20 15 55.5**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.32**	**41**	*e*Pg		**Pb**	**Pb**	**20 15 50.1**	**-0.4**
GELI				*e*Sg		**Sb**	**Sb**	**20 15 55.5**	**-0.1**
EZN	**Ezine**	**0.34**	**164**	*e*PG		**Pg**	**Pg**	**20 15 50.3**	**+0.2**
EZN				*e*SG		**Sg**	**Sb**	**20 15 55.6**	**-0.6**
EZN	**Ezine**	**0.34**	**164**	*e*Pg		**Pg**	**Pb**	**20 15 50.8**	**-0.1**
EZN				*e*Sg		**Sb**	**Sb**	**20 15 55.6**	**-0.6**
EZN				S		**Sb**	**Sb**	**20 15 56.3**	**+0.1**
LPK	**Lapseki**	**0.48**	**63**	*e*PG		**Pb**	**Pb**	**20 15 52.9**	**-0.4**
LPK	**Lapseki**	**0.48**	**63**	*e*Pg		**Pb**	**Pb**	**20 15 52.9**	**-0.4**
ERIK	**Erikli-Kesan**	**0.57**	**25**	*e*PG		**Pb**	**Pb**	**20 15 54.7**	**0.0**
ERIK	**Erikli-Kesan**	**0.57**	**25**	*e*Pg		**Pb**	**Pb**	**20 15 54.7**	**0.0**
ENEZ	**Enez**	**0.58**	**357**	*e*PG		**Pb**	**Pb**	**20 15 54.9**	**-0.1**
ENEZ	**Enez**	**0.58**	**357**	P		**Pb**	**Pb**	**20 15 54.6**	**-0.4**
ENEZ				S		**Sg**	**Sg**	**20 16 01.8**	**-0.4**
ENEZ	**Enez**	**0.58**	**357**	P		**Pb**	**Pb**	**20 15 54.6**	**-0.4**
ENEZ	**Enez**	**0.58**	**357**	*e*Pg		**Pb**	**Pb**	**20 15 54.9**	**-0.1**
ENEZ				S		**Sg**	**Sg**	**20 16 01.8**	**-0.4**
SMTH	**Samothraki Isl**	**0.60**	**302**	P		**Pg**	**Pg**	**20 15 54.6**	**-0.2**
SMTH				S		**Sg**	**Sg**	**20 16 02.1**	**-0.7**
SMTH	**Samothraki Isl**	**0.60**	**302**	P		**Pg**	**Pg**	**20 15 54.6**	**-0.2**
SMTH				S		**Sg**	**Sg**	**20 16 02.1**	**-0.7**
SMTH	**Samothraki Isl**	**0.60**	**302**	P		**Pg**	**Pg**	**20 15 54.6**	**-0.2**
SMTH				S		**Sg**	**Sg**	**20 16 03.1**	**+0.3**
SMTH				AML		AML	AML	20 16 06.9	
	comp=N,196μm,0.1s								
SMTH				AML		AML	AML	20 16 07.7	
	comp=E,155μm,0.1s								
ALN	**Alexandroupoli**	**0.75**	**351**	*e*PG		**Pb**	**Pb**	**20 15 58.0**	**+0.2**
ALN	**Alexandroupoli**	**0.75**	**351**	P		**Pb**	**Pb**	**20 15 57.8**	**-0.1**
ALN				S		**Sb**	**Sb**	**20 16 07.9**	**0.0**
ALN	**Alexandroupoli**	**0.75**	**351**	*e*Pg		**Pb**	**Pb**	**20 15 58.0**	**+0.2**
ALN				S		**Sb**	**Sb**	**20 16 07.9**	**0.0**
ALN	**Alexandroupoli**	**0.75**	**351**	P		**Pb**	**Pb**	**20 15 58.1**	**+0.2**
ALN				S		**Sb**	**Sb**	**20 16 08.1**	**+0.1**
ALN				AML		AML	AML	20 16 09.8	
	comp=N,35μm,0.3s								
ALN				AML		AML	AML	20 16 10.3	
	comp=E,32μm,0.5s								
LIA	**Limnos Island**	**0.82**	**252**	P		**Pg**	**Pg**	**20 15 58.7**	**-0.3**
LIA				S		**Sg**	**Sg**	**20 16 09.3**	**-0.5**
LIA	**Limnos Island**	**0.82**	**252**	P		**Pg**	**Pg**	**20 15 58.7**	**-0.3**
LIA				S		**Sb**	**Sb**	**20 16 10.6**	**+0.6**
KRBG	**Karabiga-Canak**	**0.87**	**74**	*e*PG		**Pb**	**Pb**	**20 16 00.2**	**+0.2**
KRBG	**Karabiga-Canak**	**0.87**	**74**	*e*Pg		**Pb**	**Pb**	**20 16 00.2**	**+0.2**
PRK	**Paraskevi**	**0.91**	**176**	P		**Pn**	**Pn**	**20 16 01.7**	**+0.3**
PRK				S		**Sn**	**Sn**	**20 16 15.2**	**+0.9**
PRK	**Paraskevi**	**0.91**	**176**	P		**Pn**	**Pn**	**20 16 01.7**	**+0.3**
PRK				S		**Sn**	**Sn**	**20 16 15.2**	**+0.9**
PRK	**Paraskevi**	**0.91**	**176**	P		**Pg**	**Pg**	**20 15 59.6**	**-1.0**
PRK				S		**Sn**	**Sn**	**20 16 15.3**	**+1.1**
PRK				AML		AML	AML	20 16 19.6	
	comp=E,115μm,0.7s								
PRK				AML		AML	AML	20 16 21.4	
	comp=N,85μm,0.4s								
SIGR	**SIGRI**	**0.98**	**196**	P		**Pb**	**Pb**	**20 16 01.5**	**-0.2**
SIGR				S		**Sn**	**Sn**	**20 16 15.9**	**-0.1**
SIGR	**SIGRI**	**0.98**	**196**	P		**Pb**	**Pb**	**20 16 01.6**	**-0.2**
SIGR				S		**Sn**	**Sn**	**20 16 15.9**	**-0.1**
SIGR	**SIGRI**	**0.98**	**196**	P		**Pb**	**Pb**	**20 16 01.6**	**-0.2**
SIGR				S		**Sb**	**Sb**	**20 16 15.3**	**+0.8**
SIGR				AML		AML	AML	20 16 17.0	
	comp=E,74μm,0.5s								
SIGR				AML		AML	AML	20 16 22.2	
	comp=N,109μm,0.5s								
MRMT	**Marmara Adasi**	**1.16**	**67**	*e*PN		**Pg**	**Pg**	**20 16 05.2**	**-0.2**
MRMT	**Marmara Adasi**	**1.16**	**67**	*e*Pn		**Pg**	**Pg**	**20 16 05.2**	**-0.2**
KAVA	**Kavala**	**1.53**	**304**	P		**Pg**	**Pg**	**20 16 13.5**	**+1.0**
KAVA				S		**Sb**	**Sb**	**20 16 31.2**	**+0.7**
KAVA	**Kavala**	**1.53**	**304**	P		**Pg**	**Pg**	**20 16 13.5**	**+1.0**
CHOS	**Chios island**	**1.77**	**184**	P		**Pb**	**Pb**	**20 16 15.5**	**+0.2**
CHOS	**Chios island**	**1.77**	**184**	P		**Pb**	**Pb**	**20 16 15.5**	**+0.2**
PAIG	**Paliouri**	**1.95**	**264**	P		**Pg**	**Pg**	**20 16 20.2**	**-0.2**
PAIG	**Paliouri**	**1.95**	**264**	P		**Pg**	**Pg**	**20 16 20.2**	**-0.2**
AOS	**Alonnisos**	**2.04**	**242**	P		**Pb**	**Pb**	**20 16 19.5**	**-0.4**
AOS	**Alonnisos**	**2.04**	**242**	P		**Pb**	**Pb**	**20 16 19.5**	**-0.4**
SRS	**Serrai**	**2.20**	**297**	P		**Pb**	**Pb**	**20 16 22.2**	**-0.5**
SRS				S		**Sg**	**Sg**	**20 16 52.3**	**-1.6**
SRS	**Serrai**	**2.20**	**297**	P		**Pb**	**Pb**	**20 16 22.2**	**-0.5**
SRS				S		**Sg**	**Sg**	**20 16 52.3**	**-1.6**
SRS				AML		AML	AML	20 16 56.4	
	comp=E,21μm,0.4s								
SRS				AML		AML	AML	20 17 01.8	
	comp=N,20μm,0.6s								

ISCJB ***11*** *20:21:26.6±0.6,15.˚9S±0.˚1×177.˚6W±0.˚1,h400km, mb4.0/14,Error ellipse: s-maj=20.3km s-min=11.5km az=147.7*

IDC ***11*** *20:21:28.8±1.8,15.˚92S×177.˚48W,h414km±19km, mb3.7/14,mb1 3.9/15,mb1mx3.7/34,mbtmp4.5/15,Error ellipse: s-maj=23.7km s-min=11.1km az=140.0*

ISC 11 20:21:27.6±0.6,15.˚9S±0.˚1×177.˚5W±0.˚1,h400km,n63, σ1ş56/46,mb4.1/14,12C-4D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**5.90**	**71**	P		**Pn**	**Pn**	**20 22 59.4**	**+0.1**
	28nm,0.3s,baz=20,slow=2.6,SNR=27								
URZ	**Urewera**	**22.79**	**191**	P		**P**	**P**	**20 25 55.7**	**-1.6**
	4.2nm,0.4s,baz=4.8,slow=12,SNR=4.5								
STKA	**Stephens Creek**	**40.36**	**239**	P		**P**	**P**	**20 28 29.5**	**+0.9**
	2.4nm,0.4s,baz=86,slow=10,SNR=14								
WRA	**Warramunga Arr**	**45.85**	**257**	P		**P**	**P**	**20 29 12.4**	**+0.3**
	2.4nm,0.5s,baz=97,slow=6.9,SNR=44								
WRA				PcP		**PcP**	**PcP**	**20 30 41.1**	**-0.8**
	0.8nm,0.6s,baz=94,slow=3.3,SNR=3.0								
ASAR	**Alice Springs**	**46.17**	**252**	P		**P**	**P**	**20 29 15.8**	**+1.2**
	30nm,0.5s,baz=86,slow=7.9,SNR=276								
ASAR				PcP		**PcP**	**PcP**	**20 30 42.1**	**-0.8**
	0.7nm,0.8s,baz=87,slow=8.4,SNR=3.6								
ASAR				S		**S**	**S**	**20 35 28.4**	**-1.8**
	1.0nm,0.9s,baz=82,slow=16,SNR=5.4								
JNU	**Nakatsue**	**69.27**	**315**	P		**P**	**P**	**20 31 53.5**	**+0.4**
	3.9nm,0.8s,baz=131,slow=3.4,SNR=4.1								
PETK	**Petropavlovsk-**	**71.95**	**345**	P		**P**	**P**	**20 32 08.2**	**-0.3**
	3.3nm,0.7s,baz=115,slow=7.8,SNR=3.7								
SEY	**Seymchan**	**82.00**	**347**	P		**P**	**P**	**20 33 03.2**	**-0.4**
	4.8nm,0.5s,baz=157,slow=8.6,SNR=14								
ILAR	**Eielson Array**	**83.73**	**13**	P		**P**	**P**	**20 33 11.2**	**-1.2**
	4.1nm,0.7s,baz=224,slow=6.0,SNR=36								
TXAR	**Lajitas Array**	**84.21**	**57**	P		**P**	**P**	**20 33 16.9**	**+1.1**
	3.2nm,0.8s,baz=218,slow=7.0,SNR=29								
PDAR	**Pinedale Array**	**85.31**	**43**	P		**P**	**P**	**20 33 20.4**	**-0.6**
	0.6nm,0.5s,baz=204,slow=3.3,SNR=5.4								
MAW	**Mawson**	**86.04**	**200**	P		**P**	**P**	**20 33 24.5**	**+0.7**
	2.4nm,0.7s,baz=127,slow=6.1,SNR=5.7								
CMAR	**Chiang Mai Arr**	**89.00**	**289**	P		**P**	**P**	**20 33 40.0**	**+1.2**
	1.2nm,0.9s,baz=98,slow=3.8,SNR=6.6								
YKA	**Yellowknife Ar**	**92.15**	**24**	P		**P**	**P**	**20 33 51.8**	**-0.5**
	1.1nm,0.6s,baz=245,slow=4.6,SNR=5.6								
SONM	**Songino Array**	**92.57**	**319**	P		**P**	**P**	**20 33 54.9**	**+0.1**
	0.4nm,0.8s,baz=135,slow=3.7,SNR=3.7								
MKAR	**Makanchi Array**	**108.32**	**315**	PKiKP		**PKiKP**	**PKiKP**	**20 39 07.7**	**-1.4**
	0.2nm,0.2s,baz=78,slow=1.7,SNR=2.5								
ARCES	**ARCESS Array B**	**124.47**	**350**	PKP		**PKPdf**	**PKPdf**	**20 39 38.7**	**-0.7**
	20nm,1.2s,baz=42,slow=2.0,SNR=14								
FINES	**FINESS Array B**	**131.46**	**345**	PKP		**PKPdf**	**PKPdf**	**20 39 52.9**	**+0.1**
	0.6nm,0.6s,baz=48,slow=2.8,SNR=3.5								
STHS	**Stebnicka Huta**	**143.22**	**339**	*e*PKP		PKPab	PKPab	20 40 13.1	+1.0
KOLS	**Kolonicke sedl**	**143.27**	**338**	*e*PKP		PKPab	PKPab	20 40 13.1	+0.8
CRVS	**Cervenica-Dubn**	**143.58**	**339**	*e*PKP		PKPab	PKPab	20 40 14.4	+0.9
CLL	**Collm**	**143.66**	**349**	*i* P		PKPab	PKPab	20 40 13.4	-0.2
	comp=Z,3.0nm,0.7s								
CFR	**Carcaliu**	**143.67**	**329**	⇑*i*P		PKPab	PKPab	20 40 15.0	+1.1
UPC	**Upice**	**143.77**	**345**	*e*PKP		PKPab	PKPab	20 40 14.2	+0.1
DPC	**Dobruska-Polom**	**143.84**	**345**	*e*PKP		PKPab	PKPab	20 40 14.7	+0.3
PLOR	**Plostina**	**143.90**	**331**	⇑*i*P		PKPab	PKPab	20 40 15.3	+0.5
BRTR	**Keskin Array B**	**143.91**	**317**	PKP		PKPab	PKPab	20 40 15.4	+0.2
	comp=Z,9.5nm,0.8s,baz=96,slow=2.5,SNR=46								
LANS	**Liptovska Anna**	**144.03**	**341**	*e*PKP		PKPbc	PKPbc	20 40 15.8	+0.6
MORC	**Moravsky Berou**	**144.04**	**343**	⇑*i*P		PKPbc	PKPbc	20 40 15.6	+0.4
TIRR	**Tirgusor**	**144.04**	**328**	⇑*i*P		PKPbc	PKPbc	20 40 15.3	0.0
TLB	**Topalu**	**144.14**	**328**	⇑*i*P		PKPbc	PKPbc	20 40 15.9	+0.3
KECS	**Kecovo**	**144.28**	**339**	*e*PKP		PKPbc	PKPbc	20 40 16.2	+0.3
DOPR	**Dopca**	**144.39**	**332**	⇑*i*P		PKPbc	PKPbc	20 40 17.2	+0.8
ISR	**Istrita**	**144.49**	**330**	⇓*i*P		PKPbc	PKPbc	20 40 17.0	+0.2
MLR	**Muntele Rosu**	**144.50**	**331**	⇑*i*P		PKPbc	PKPbc	20 40 17.7	+0.8
PRU	**Pruhonice**	**144.59**	**347**	*e*PKP		PKPbc	PKPbc	20 40 16.9	0.0
GOPC	**GO Pecny, Ondr**	**144.61**	**346**	*e*PKP		PKPbc	PKPbc	20 40 17.0	0.0
VRAC	**Vranov**	**144.72**	**344**	⇑*i*P		PKPbc	PKPbc	20 40 17.7	+0.3
NKC	**Novy Kostel**	**144.79**	**349**	*e*PKP		**PKPdf**	**PKPdf**	**20 40 17.5**	**0.0**
VYHS	**Vyhne**	**144.80**	**341**	*e*PKP		**PKPdf**	**PKPdf**	**20 40 17.8**	**+0.2**
DRGR		**144.88**	**336**	⇑*i*P		**PKPdf**	**PKPdf**	**20 40 17.9**	**0.0**
VOIR		**144.95**	**332**	⇑*i*P		**PKPdf**	**PKPdf**	**20 40 18.9**	**+0.9**
ARR	**Arges**	**145.19**	**332**	⇓*i*P		**PKPdf**	**PKPdf**	**20 40 20.1**	**+1.7**
SMOL	**Smolenice**	**145.21**	**342**	*e*PKP		**PKPdf**	**PKPdf**	**20 40 19.5**	**+1.2**
KHC	**Kasperske Hory**	**145.61**	**347**	*e*PKP		**PKPdf**	**PKPdf**	**20 40 20.1**	**+1.1**
KHC				*ex*		x	20 40 22.8		
SIRR	**Siria**	**145.72**	**336**	⇑*i*P		**PKPdf**	**PKPdf**	**20 40 20.7**	**+1.5**
GERES	**GERESS Array B**	**145.86**	**347**	PKPbc		**PKPdf**	**PKPdf**	**20 40 20.6**	**+1.0**
	comp=Z,2.0nm,0.5s,baz=25,slow=3.6,SNR=26								
ZIMR		**146.14**	**330**	⇓*i*P		**PKPdf**	**PKPdf**	**20 40 15.8**	**-4.2**
CONA	**Conrad Observa**	**146.18**	**344**	*i* PKPbc		**PKPdf**	**PKPdf**	**20 40 21.9**	**+1.9**
	comp=Z,5.4nm,0.7s,SNR=6.6								
BZS	**Buzias**	**146.27**	**335**	⇑*i*P		**PKPdf**	**PKPdf**	**20 40 21.8**	**+1.6**
MOA	**Molln**	**146.66**	**345**	*i* PKPbc		**PKPdf**	**PKPdf**	**20 40 22.9**	**+2.1**
	comp=Z,4.8nm,0.8s								
SOKA	**Soboth**	**147.55**	**344**	*i* PKPbc		**PKPdf**	**PKPdf**	**20 40 24.8**	**+2.4**
	comp=Z,3.3nm,0.9s								
WTTA	**Wattenberg**	**147.79**	**348**	*i* PKPbc		**PKPbc**	**PKPbc**	**20 40 26.1**	**-0.3**
	comp=Z,5.9nm,0.6s								
MOTA	**Moosalm**	**147.82**	**349**	*i* PKPbc		**PKPdf**	**PKPdf**	**20 40 25.7**	**+2.8**
	comp=Z,4.5nm,0.9s								
MYKA	**Terra Mystica**	**147.95**	**345**	*i* PKPbc		**PKPdf**	**PKPdf**	**20 40 25.5**	**+2.5**
	comp=

TLL IAML 20 29 31.2
comp=N,41µm,0.8s
CPCH Copiapo 2.12 25 *e*P **Pn 20 29 32.5 -0.4**
CPCH *e*S **Sn 20 29 57.0 -1.2**
CDCH Caldera 2.27 12 *e*P **Pn 20 29 34.9 0.0**
CDCH *e*S **Sn 20 30 00.8 -0.8**
VCA Vinchina 2.82 79 *i* P **Pn 20 29 44.0 +1.3**
VCA *i* S **Sn 20 30 21.1 +5.5**
VCA IAML 20 30 28.6
comp=Z,9µm,0.4s
RTLS Leoncito 3.07 145 *i* P **Pn 20 29 46.2 0.0**
RTLL Cerro Villicun 3.22 130 *i* P **Pn 20 29 48.1 0.0**
AUSP Uspallata 3.38 150 *i* P **Pn 20 29 50.7 +0.2**
RTCV Cerro Valdivia 3.54 137 *i* P **Pn 20 29 52.4 0.0**
AVFE Valle Fertil 3.66 113 *i* P **Pn 20 29 54.6 +0.6**
AVFE IAML 20 30 46.2
comp=Z,2µm,0.3s
ROC1 El Roble 3.69 175 *i* P **Pn 20 29 53.5 -1.1**
ACHE Chepes 4.48 116 *i* P **Pn 20 30 06.5 +1.2**
ACAN Cantantal 4.67 131 *i* P **Pn 20 30 08.6 +0.7**
CYA Choya 4.95 82 *i* P **Pn 20 30 14.0 +2.2**
CYA IAML 20 30 16.2
comp=Z,3µm,0.9s
CYA *i* S **Sn 20 31 13.5 +5.7**
AHML Horco Molle 5.89 66 *i* P **Pn 20 30 27.1 +2.5**
TCA Tanti 6.20 111 *i* S **Sn 20 31 41.0 +2.4**
TCA IAML 20 31 44.2
comp=Z,653nm,0.7s
LVC Limon Verde 7.01 19 P **Pn 20 30 38.3 -2.0**
comp=Z,146nm,0.3s,baz=162,slow=8.8,SNR=39
LVC LR LR 20 33 26.8
comp=Z,3µm,19.1s,baz=212,slow=38
LVC Limon Verde 7.01 19 *e*Pn **Pn 20 30 37.5 -2.9**
comp=Z,183nm,0.6s
AZAP Zapla 7.56 50 *i* P **Pn 20 30 50.2 +2.4**
ASTB Santa Barbara 8.16 51 *i* P **Pn 20 30 58.2 +2.3**
PLCA Paso Flores 11.44 177 P **Pn 20 31 38.9 -1.7**
comp=Z,0.5nm,0.3s,baz=20,slow=10,SNR=7.6
PLCA LR LR 20 36 32.4
comp=Z,312nm,20.1s,baz=350,slow=40
TRQA Tornquist 11.72 141 *e*Pn **Pn 20 31 42.1 -2.4**
comp=Z,96nm,1.0s
CPUP Villa Florida 12.77 80 P **Pn 20 31 54.5 -4.3**
comp=Z,2.1nm,0.3s,baz=254,slow=12,SNR=20
CPUP LR LR 20 37 17.0
comp=Z,659nm,18.1s,baz=257,slow=40
LPAZ La Paz 13.28 14 P **Pn 20 32 04.0 -2.4**
comp=Z,0.8nm,0.3s,baz=185,slow=7.5,SNR=26
LPAZ LR LR 20 37 38.5
comp=Z,193nm,21.1s,baz=176,slow=39
SIV San Ignacio 16.28 38 P **Pn 20 32 41.1 -4.3**
comp=Z,0.5nm,0.3s,baz=233,slow=12,SNR=9.6
SAML Samuel 21.65 22 *e*Pn **P 20 33 45.0 -1.4**
comp=Z,10nm,0.6s
BDFB Brasilia 25.43 63 P **P 20 34 21.8 -1.7**
comp=Z,11nm,0.9s,baz=258,slow=9.1
BDFB LR LR 20 45 27.2
comp=Z,239nm,18.8s,baz=169,slow=39
USHA Ushuaia 25.61 176 P **P 20 34 24.0 -0.6**
comp=Z,105nm,0.9s,baz=345,slow=8.6,SNR=13
USHA sP **sP 20 34 43.3 +0.7**
comp=Z,73nm,0.8s,baz=337,slow=7.3,SNR=4.7
PMSA Palmer Station 35.80 175 P **P 20 35 54.8 +0.6**
comp=Z,6.0nm,0.7s,baz=4.1,slow=8.1,SNR=7.3
PMSA sP **sP 20 36 12.9 +0.4**
comp=Z,5.4nm,0.9s,baz=337,slow=9.5,SNR=3.1
SNAA Sanae 55.74 159 *e*Pn **P 20 38 30.3 -1.1**
comp=Z,762nm,0.7s
QSPA South Pole Qui 60.93 180 *e*Pn **P 20 39 07.4 -0.4**
comp=Z,26nm,0.8s
034A Hebbronville 61.85 332 P **P 20 39 15.8 +1.6**
baz=153
448A Bay Minette 61.91 344 P **P 20 39 16.0 +1.4**
baz=164
933A Laredo 62.58 332 P **P 20 39 20.9 +1.8**
baz=152
833A Chaparral WMA, 63.25 332 P **P 20 39 25.4 +1.8**
baz=152
636A Smothers Creek 63.38 335 P **P 20 39 26.2 +1.9**
baz=155
832A Faith Ranch, C 63.45 332 P **P 20 39 27.1 +2.2**
baz=152
633A Saathoff Ranch 64.17 333 P **P 20 39 31.2 +1.6**
baz=153
533A Kerrville 64.66 334 P **P 20 39 34.4 +1.6**
baz=153
434A Burnet 65.03 335 P **P 20 39 36.6 +1.4**
baz=154
433A Art 65.29 334 P **P 20 39 38.0 +1.1**
baz=153,SNR=9.3
JCT Junction City 65.33 333 P **P 20 39 38.8 +1.6**
baz=153
JCT Junction City 65.33 333 *e*P **P 20 39 38.6 +1.5**
comp=Z,13nm,1.2s
334A Lometa 65.49 335 P **P 20 39 39.3 +1.2**
baz=154,SNR=5.7
333A Richland Sprin 65.76 334 P **P 20 39 40.9 +1.0**
baz=154
TXAR Lajitas Array 65.95 329 P **P 20 39 42.7 +1.4**
comp=Z,2.0nm,0.7s,baz=146,slow=8.2,SNR=17
TXAR pP **pP 20 39 56.7 +1.9**
comp=Z,1.4nm,0.8s,baz=154,slow=6.8,SNR=5.7
TXAR sP **sP 20 40 02.3 +2.1**
comp=Z,1.4nm,0.7s,baz=155,slow=8.8,SNR=5.5
234A Clairette 66.05 335 P **P 20 39 43.0 +1.2**
baz=154
233A Rising Star 66.35 335 P **P 20 39 45.3 +1.6**
baz=154
MIAR Mount Ida 66.87 340 P **P 20 39 48.7 +1.8**
baz=159
133A Hamilton Ranch 66.88 335 P **P 20 39 49.1 +2.0**
baz=154
W41B Gary Mavity, V 67.08 342 P **P 20 39 49.8 +1.6**
baz=160
ABTX Abilene, Hawle 67.17 334 P **P 20 39 50.5 +1.6**
baz=153
X38A Whitesboro 67.37 339 P **P 20 39 51.7 +1.7**
baz=158
Y35A Marietta 67.39 337 P **P 20 39 52.2 +2.0**
baz=156
Z33A Whitaker Ranch 67.44 335 P **P 20 39 51.9 +1.3**
baz=154
W39A Magazine 67.54 340 P **P 20 39 52.1 +1.0**
baz=159
V41A Mountainview 67.63 342 P **P 20 39 52.3 +0.6**
baz=160
W38A Poteau 67.64 340 P **P 20 39 52.9 +1.1**
baz=158
Y34A Reagan Ranch, 67.68 336 P **P 20 39 53.1 +1.1**
baz=155
X36A Centrahoma 67.76 338 P **P 20 39 53.3 +0.7**
baz=156
X35A Drake 67.81 337 P **P 20 39 54.0 +1.1**
baz=156
U42A Revenden 67.92 343 P **P 20 39 53.4 0.0**
baz=161,SNR=7.2
W37B Quinton 67.99 339 P **P 20 39 55.1 +1.2**
baz=157
U41A Viola 68.09 342 P **P 20 39 55.4 +0.8**
baz=160
V39A Pettigrew 68.10 341 P **P 20 39 55.5 +0.8**
baz=159
X34A Smith Ranch, M 68.29 337 P **P 20 39 56.9 +1.0**
baz=155
V38A Canehill 68.34 340 P **P 20 39 56.8 +0.6**
baz=158
U40A Yellville 68.36 341 P **P 20 39 57.0 +0.7**
baz=160
U39A Green Forest 68.56 341 P **P 20 39 58.3 +0.8**
baz=159
V37A Hulbert 68.58 339 P **P 20 39 58.9 +1.2**
baz=158
X32A Elmer 68.64 335 P **P 20 39 59.2 +1.1**
baz=154
T41A Mountain View 68.71 343 P **P 20 39 59.1 +0.6**
baz=161,SNR=5.6
S44A Carbondale 68.71 345 P **P 20 39 59.1 +0.7**
baz=163
MNTX Cornudas Mount 68.74 329 P **P 20 39 59.1 +0.4**
baz=148
V36A Jenks 68.75 339 P **P 20 39 59.9 +1.2**
baz=157
WMOK Wichita Mounta 68.75 336 P **P 20 39 59.9 +1.1**
baz=154
S43A Fulton Ridge, 68.78 344 P **P 20 39 59.6 +0.7**
baz=162,SNR=7.4
TUL1 Leonard 68.81 339 P **P 20 40 00.2 +1.1**
baz=157
VNDA Vanda 68.82 191 P **P 20 39 59.6 +0.9**
comp=Z,0.6nm,0.8s,baz=147,slow=3.5,SNR=6.1
U38A Gravette 68.87 340 P **P 20 40 00.3 +0.8**
baz=158
T40A Mansfield 69.01 342 P **P 20 40 01.6 +1.3**
baz=160
U37A Salina 69.06 340 P **P 20 40 01.8 +1.2**
baz=158
S41A Jillco Farms, 69.22 343 P **P 20 40 02.4 +0.8**
baz=161,SNR=5.5
W32A Sentinel 69.26 336 P **P 20 40 03.3 +1.3**
baz=154
T38A Diamond 69.40 341 P **P 20 40 03.6 +0.8**
baz=158,SNR=6.8
S40A Lebanon 69.42 342 P **P 20 40 03.7 +0.8**
baz=160
MSTX Muleshoe 69.58 332 P **P 20 40 05.3 +1.2**
baz=151
MSTX Muleshoe 69.58 332 *e*P **P 20 40 05.0 +1.0**
comp=Z,12nm,1.2s
T37A Cheneyville 18 69.66 340 P **P 20 40 04.9 +0.6**
baz=158
S39A Bolivar 69.73 342 P **P 20 40 05.3 +0.5**
baz=159,SNR=5.6
S38A Stockton 69.84 341 P **P 20 40 06.0 +0.6**
baz=159
N59A State Game Lan 69.97 356 P **P 20 40 07.9 +1.7**
baz=176
Q43A New Douglas 70.00 345 P **P 20 40 07.4 +1.0**
baz=163
R40A Maddies Statio 70.02 343 P **P 20 40 07.1 +0.7**
baz=160,SNR=7.6
Q42A Golden Eagle 70.17 344 P **P 20 40 08.0 +0.6**
baz=162
R39A Chumby, Stover 70.24 342 P **P 20 40 08.4 +0.5**
baz=160
T34A McClaskey Farm 70.28 338 P **P 20 40 09.5 +1.4**
baz=156
R38A Fenwick Farm, 70.36 341 P **P 20 40 09.7 +1.1**
baz=159
S35A Otter Creek Ra 70.61 339 P **P 20 40 11.2 +1.1**
baz=157
Q40A Laux Farm, Aux 70.63 343 P **P 20 40 11.3 +1.0**
baz=161
T33A Patterson Ranc 70.68 337 P **P 20 40 11.9 +1.3**
baz=155
R37A Teagarden Farm 70.74 341 P **P 20 40 12.0 +1.1**
baz=158
P42A Winchester 70.77 345 P **P 20 40 11.0 0.0**
baz=162
Q39A Willow Grove F 70.91 342 P **P 20 40 12.9 +0.9**
baz=160
T32A Huddle Ranch, 71.00 337 P **P 20 40 14.1 +1.6**
baz=154
Q38A Cooks Store, C 71.00 342 P **P 20 40 13.8 +1.3**
baz=159
P40A Paris 71.13 343 P **P 20 40 14.3 +1.1**
baz=161
O41A Passleys Farm, 71.40 344 P **P 20 40 14.2 -0.6**
baz=162
R34A Isabella, Hill 71.46 339 P **P 20 40 16.4 +1.1**
baz=156
P38A Dawn 71.60 342 P **P 20 40 16.6 +0.5**
baz=160
O40A La Belle 71.64 344 P **P 20 40 16.9 +0.6**
baz=161
O39A Kirksville 71.94 343 P **P 20 40 19.2 +1.1**
baz=160
P36A Good Intent, A 72.06 341 P **P 20 40 19.4 +0.5**
baz=158
Q32A Meitler Ranch, 72.51 338 P **P 20 40 22.6 +1.0**
baz=155
LIC Lamto 72.78 72 *e*P **P 20 40 21.7 -2.0**
comp=Z,10nm,0.7s
T25A Trinidad 72.99 333 P **P 20 40 26.7 +2.0**
baz=150
TIC Toumodi 73.01 72 *e*P **P 20 40 23.8 -1.3**
KIC Kosan Boka 73.09 72 *e*P **P 20 40 24.4 -1.2**
comp=Z,20nm,0.9s
DBIC Dimbokro 73.16 72 P **P 20 40 24.8 -1.2**
comp=Z,7.2nm,0.6s,baz=211,slow=6.1,SNR=16
DBIC pP **pP 20 40 38.8 -0.9**
comp=Z,4.8nm,0.7s,baz=198,slow=6.0,SNR=4.0
L40A Anamosa 73.33 345 P **P 20 40 26.9 +0.6**
baz=162
W18A Petrified Fore 73.58 328 P **P 20 40 29.9 +1.7**
baz=146
K41A Shullsburg 73.64 346 P **P 20 40 28.8 +0.7**
baz=163
L38A Oak Wood Farm, 73.82 343 P **P 20 40 30.2 +1.0**
baz=160
K40A Colesburg 73.91 345 P **P 20 40 30.7 +1.0**
baz=162
SDCO Great Sand Dun 73.95 332 P **P 20 40 32.1 +1.7**
baz=149
GLA Glamis 74.44 323 P **P 20 40 34.4 +1.4**
baz=141
J40A Soldiers Grove 74.49 345 P **P 20 40 33.9 +0.8**
baz=162
WUAZ Wupatki 74.67 327 P **P 20 40 37.0 +2.4**
baz=144
WUAZ Wupatki 74.67 327 *e*P **P 20 40 37.0 +2.4**
comp=Z,3.6nm,0.9s
MVCO Mesa Verde 74.76 330 P **P 20 40 37.0 +1.9**
baz=147
Q24A Divide 74.86 333 P **P 20 40 38.0 +2.3**
baz=150
BC3 Big Chuckawall 75.23 323 P **P 20 40 39.7 +1.9**
baz=141
IRM Iron Mountain 75.47 324 P **P 20 40 41.0 +2.0**
baz=141
PV01 Paradox Valley 75.56 331 *e*P **P 20 40 41.6 +1.9**
comp=Z,604nm,1.3s
I37A Lemond, Waseca 75.69 344 P **P 20 40 40.9 +0.9**
baz=160
TPFO Pinon Flats 75.73 322 P **P 20 40 42.2 +1.6**
baz=140
PFO Pinyon Flats O 75.73 322 P **P 20 40 42.4 +1.7**
baz=140
GMRC Granite Mounta 76.22 324 P **P 20 40 45.5 +2.1**
baz=141
ECSD EROS Data Cent 76.27 341 P **P 20 40 44.6 +1.3**
baz=157
J31A Geddes 76.48 340 P **P 20 40 45.6 +1.1**
baz=155
HEC Hector,Ludlow 76.60 323 P **P 20 40 47.8 +2.3**
baz=140
H35A Sunnyside Ranc 76.69 343 P **P 20 40 46.5 +0.8**
baz=159
SPMN Marine on St. 76.69 345 P **P 20 40 45.9 +0.3**
baz=161
GSC Goldstone, Bar 77.21 323 P **P 20 40 51.2 +2.2**
baz=140
F36A Milaca 77.46 344 P **P 20 40 50.6 +0.7**
baz=160
EDW2 Edwards Air Fo 77.52 322 P **P 20 40 52.4 +1.7**
baz=139
MAW Mawson 77.52 164 P **P 20 40 49.7 -0.5**
comp=Z,2.8nm,0.6s,baz=233,slow=6.7,SNR=9.4
MAW pP **pP 20 41 04.2 +0.2**
comp=Z,3.2nm,0.5s,baz=207,slow=7.9,SNR=6.5
MAW sP **sP 20 41 09.5 +0.2**
comp=Z,7.9nm,0.7s,baz=190,slow=7.7,SNR=10.0
E36A McGregor 78.01 345 P **P 20 40 54.2 +1.1**
baz=160
FURC Furnace Creek, 78.14 324 P **P 20 40 55.8 +1.9**
baz=140
MPMC Manual Prospec 78.15 323 P **P 20 40 55.7 +1.4**
baz=140
TPNV Topopah Spring 78.20 325 P **P 20 40 57.0 +2.4**
baz=141
ISA Isabella, Lake 78.37 322 P **P 20 40 57.2 +1.9**
baz=139
PKM Mcpherson Peak 78.51 321 P **P 20 40 58.4 +2.1**
baz=138
K22A Casper 78.56 334 P **P 20 40 57.9 +1.5**
baz=149
CWC Cottonwood Cre 78.75 323 P **P 20 40 59.6 +2.0**
baz=140
VES Vestal, Richgr 78.83 322 P **P 20 41 00.0 +2.3**
baz=139
SMMC Simmler 78.93 321 P **P 20 41 00.8 +2.4**
baz=138
RSSD Black Hills 78.94 337 P **P 20 40 59.5 +1.1**
baz=151
R11A Troy Canyon, C 78.96 326 P **P 20 41 00.5 +1.8**
baz=142
E32A Braaten, Kindr 79.03 342 P **P 20 41 00.9 +2.2**
baz=157
DUG Dugway, Tooele 79.13 329 P **P 20 41 01.2 +1.6**
baz=144
DUG Dugway, Tooele 79.13 329 *e*P **P 20 41 01.1 +1.6**
comp=Z,3.6nm,1.1s
HWUT Hardware Ranch 79.72 331 *e*P **P 20 41 03.8 +1.0**
comp=Z,7.3nm,0.8s
BW06 Boulder Array 79.85 332 P **P 20 41 04.4 +0.9**
baz=147
PDAR Pinedale Array 79.85 332 P **P 20 41 04.3 +0.9**
comp=Z,0.9nm,0.7s,baz=123,slow=5.5,SNR=8.2
PDAR pP **pP 20 41 17.9 +0.5**
comp=Z,0.9nm,0.6s,baz=100,slow=5.1,SNR=4.0
PDAR sP **sP 20 41 24.1 +1.4**
comp=Z,0.8nm,0.6s,baz=126,slow=6.8,SNR=3.6
B35A Bob, Littlefor 79.86 345 P **P 20 41 03.6 +0.6**
baz=160
TSUM Tsumeb 79.97 106 *e*P **P 20 41 04.3 -0.4**
comp=Z,2.7nm,0.8s
AGMN Agassiz Nation 80.30 344 P **P 20 41 06.6 +1.2**
baz=158
B32A Ashes, Strandq 80.56 343 P **P 20 41 07.7 +0.8**
baz=158
B31A Greenbush Farm 80.87 343 P **P 20 41 09.6 +1.1**
baz=157
B30A Myrvik Farm, E 81.07 342 P **P 20 41 10.6 +1.0**
baz=156
RLMT Red Lodge 81.71 334 P **P 20 41 14.2 +0.9**
baz=147
A29A Manning Farm, 81.75 342 P **P 20 41 14.5 +1.3**
baz=155
BOSA Boshof 81.76 118 P **P 20 41 12.7 -1.4**
comp=Z,3.4nm,0.6s,baz=246,slow=4.2,SNR=10
TORD Torodi Ar. Bea 82.07 70 P **P 20 41 14.4 -1.2**
comp=Z,6.2nm,0.6s,baz=271,slow=5.6,SNR=92
TORD pP **pP 20 41 28.4 -1.2**
comp=Z,4.0nm,0.7s,baz=253,slow=4.8,SNR=7.6
TORD sP **sP 20 41 34.3 -0.6**
comp=Z,3.3nm,0.5s,baz=267,slow=4.8,SNR=5.0
ULM Lac du Bonnet 82.12 344 P **P 20 41 14.8 -0.3**
comp=Z,2.5nm,0.4s,baz=161,slow=3.7,SNR=3.1
HLID Hailey 82.54 330 P **P 20 41 19.2 +1.5**
baz=143
HLID Hailey 82.54 330 *e*P **P 20 41 18.6 +0.9**
comp=Z,4.4nm,1.0s
DGMT Dagmar 82.81 339 P **P 20 41 19.8 +1.1**
baz=151
I05D Terrebonne, OR 86.32 327 P **P 20 41 37.4 +0.8**
baz=138
MDT Midelt 88.41 51 P **P 20 41 46.8 -0.3**
comp=Z,2.5nm,1.1s,baz=139,slow=17,SNR=3.1
YKA Yellowknife Ar 97.80 341 P **P 20 42 28.6 -0.8**
comp=Z,0.3nm,0.6s,baz=145,slow=5.1,SNR=2.3
BRTR Keskin Bay B 118.97 58 PKP **PKPdf 20 47 43.1 -0.3**
comp=Z,0.3nm,0.4s,baz=259,slow=6.0,SNR=3.7
ASAR Alice Springs 122.00 207 PKP **PKPdf 20 47 48.4 -1.3**
comp=Z,0.2nm,0.4s,baz=131,slow=2.6,SNR=4.9
WRA Warramunga Arr 125.13 210 PKP **PKPdf 20 47 54.4 -1.4**
comp=Z,1.0nm,0.6s,baz=151,slow=1.9,SNR=3.7
WRA pPKP **pPKPdf 20 48 11.5 +1.2**
comp=Z,1.0nm,0.5s,baz=155,slow=1.7,SNR=3.3
PETK Petropavlovsk- 137.17 318 PKP **PKPdf 20 48 19.4 +2.0**
comp=Z,2.2nm,0.9s,baz=132,slow=2.1,SNR=3.8
BVAR Borovoye Array 143.35 39 PKP PKPbc 20 48 25.7 -0.1
comp=Z,0.4nm,0.5s,baz=270,slow=1.3,SNR=2.1
YAK Yakutsk 144.45 343 PKP **PKPab 20 48 28.6 +0.1**
comp=Z,5.2nm,0.3s,baz=319,slow=0.7,SNR=5.4
YAK pPKP **pPKPdf 20 48 44.5 -0.3**
comp=Z,6.6nm,0.4s,baz=149,slow=1.9,SNR=2.4
KURK Kurchatov 148.94 38 PKPbc **PKPbc 20 48 42.2 +0.1**
KURK pPKPbc **pPKPbc 20 48 56.8 +0.2**
KURBB Kurchatov Arra 148.94 38 PKPbc **PKPbc 20 48 42.2 +0.1**
comp=Z,3.7nm,0.5s,baz=304,slow=3.1,SNR=114
KURBB pPKPbc **pPKPbc 20 48 56.8 +0.2**
comp=Z,2.8nm,0.5s,baz=305,slow=3.1,SNR=13
AAK Ala-Archa 149.54 55 PKPbc **PKPbc 20 48 44.5 +0.3**
comp=Z,5.4nm,0.6s,baz=217,slow=5.1,SNR=5.6
ZALV Zalesovo Beam 149.88 28 PKPbc **PKPbc 20 48 44.6 +0.2**
comp=Z,9.6nm,0.5s,baz=302,slow=3.7,SNR=52
ZALV pPKPbc **pPKPbc 20 48 59.2 +0.3**
comp=Z,7.0nm,0.4s,baz=294,slow=3.4,SNR=10
MKAR Makanchi Array 153.07 42 PKPbc **PKPbc 20 48 51.9 -0.2**
comp=Z,1.3nm,0.7s,baz=317,slow=2.1,SNR=13
MKAR PKPab **PKPab 20 49 03.0 -0.6**
comp=Z,1.8nm,0.6s,baz=34,slow=0.7,SNR=10
KLR Kul'dur 153.41 325 PKPbc **PKPbc 20 48 53.0 +0.4**
comp=Z,0.8nm,0.3s,baz=15,slow=4.4,SNR=4.0
KLR PKPab **PKPab 20 49 05.8 +0.9**
comp=Z,0.5nm,0.3s,baz=46,slow=4.7,SNR=2.4
SONM Songino Array 161.40 5 PKPab **PKPab 20 49 40.3 +0.8**
comp=Z,0.5nm,0.7s,baz=338,slow=3.4,SNR=2.6

IDC ***11*** *20:29:06.6±1.2, 32°.19S×179°.80E, h349km±15km, mb3.6/4, mb1 3.8/6, mb1mx3.3/30, mbtmp4.5/6, Error ellipse: s-maj=29.4km s-min=20.1km az=125.0*
ISC 11 20:29:09.9±1.8,**32°.5S**±0°.1×**179°.3E**±0°.2**, h350**km**, n21,**
σ1§56/25, mb3.8/4, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**4.01**	**38**	P		Pn		20 30 10.0	-9.0
	37nm,0.3s,baz=143,slow=20,SNR=3.5								
RAO				S		S		20 31 03.4	-11
	177nm,0.3s,baz=239,slow=19,SNR=5.4								
WMGZ	**Waiomatatini S**	**5.40**	**187**			PN	**Pn**	**20 30 35.4**	**+1.6**
WMGZ						SN	**S**	**20 31 41.6**	**-0.2**
HAZ	**Te Kaha**	**5.43**	**192**			PN	**Pn**	**20 30 36.1**	**+2.0**
HAZ						SN	**S**	**20 31 41.7**	**-0.7**
RUGZ	**Raukumara Rang**	**5.65**	**193**			PN	**Pn**	**20 30 38.7**	**+1.9**
PUZ	**Puketiti**	**5.67**	**188**			PN	**Pn**	**20 30 39.8**	**+3.0**
MWZ	**Matawai**	**6.04**	**193**			PN	**Pn**	**20 30 42.7**	**+1.6**
MWZ						SN	**S**	**20 31 54.7**	**-0.3**
URZ	**Urewera**	**6.06**	**196**	P		Pn		**20 30 42.3**	**+1.1**
	7.5nm,0.3s,baz=346,slow=0.6,SNR=62								
URZ				S		S		**20 31 54.2**	**-1.1**
	15nm,0.3s,baz=96,slow=21,SNR=16								
URZ	**Urewera**	**6.06**	**196**			PN	**Pn**	**20 30 42.1**	**+0.9**
URZ						SN	**S**	**20 31 54.5**	**-0.8**
RIGZ	**Rimuhau**	**6.36**	**191**			PN	**Pn**	**20 30 45.4**	**+0.7**
MHGZ	**Mahia Peninsul**	**6.78**	**189**			PN	**Pn**	**20 30 51.7**	**+2.2**
WHHZ	**Waihua**	**6.81**	**193**			PN	**Pn**	**20 30 52.0**	**+2.0**
NMHZ	**Naumai**	**6.92**	**196**			PN	**Pn**	**20 30 52.5**	**+1.2**
ARHZ	**Aropaoanui**	**7.04**	**194**			PN	**Pn**	**20 30 53.2**	**+0.6**
BKZ	**Black Stump Fm**	**7.07**	**198**			PN	**Pn**	**20 30 52.7**	**-0.2**
MRZ	**Mangatainoka R**	**8.71**	**199**			PN	**Pn**	**20 31 10.5**	**-1.8**
STKA	**Stephens Creek**	**31.77**	**261**	P		P		**20 35 03.7**	**+0.9**
	2.0nm,0.7s,baz=92,slow=12,SNR=4.7								
CTA	**Charters Tower**	**31.91**	**284**	P		P		**20 35 05.2**	**+1.0**
	4.2nm,0.6s,baz=122,slow=10,SNR=5.5								
ASAR	**Alice Springs**	**40.71**	**271**	P		P		**20 36 18.1**	**+0.2**
	2.7nm,0.7s,baz=108,slow=7.3,SNR=28								
WRA	**Warramunga Arr**	**41.89**	**276**	P		P		**20 36 27.3**	**-0.1**
	4.7nm,0.4s,baz=113,slow=7.9,SNR=110								
FINES	**FINESS Array B**	**146.18**	**337**	PKPbc		**PKPdf**		**20 48 04.5**	**-2.4**
	0.3nm,0.4s,baz=64,slow=4.4,SNR=4.3								
TORD	**Torodi Ar. Bea**	**160.66**	**187**	PKPab		**PKPab**		**20 49 10.2**	**-2.3**
	0.3nm,0.8s,baz=168,slow=5.3,SNR=4.0								

ISCJB ***11*** *20:35:56.2±0.8, 11°.00S±0°.09×165°.85E±0°.08, h61km, mb4.4/10, Error ellipse: s-maj=14.2km s-min=10.0km az=34.0*
NEIC ***11*** *20:35:56.9±1.6, 10°.93S×165°.93E, h53km±14km, mb4.9/4, Error ellipse: s-maj=14.6km s-min=11.6km az=68.0*
IDC ***11*** *20:35:58.3±3.5, 10°.94S×165°.89E, h68km±29km, mb4.2/8, mb1 4.4/10, mb1mx3.9/39, mbtmp4.6/10, ML4.8/2, MS3.8/2, Ms1 3.8/2, ms1mx3.6/48, Error ellipse: s-maj=25.8km s-min=18.3km az=61.0*
ISC 11 20:35:57.9±1.0,**11°.06S**±0°.09×**165°.9E**±0°.1**, h61**km**, n25,**
σ1§18/21, mb4.5/10, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**6.07**	**285**	P		P	**Pn**	**20 37 25.1**	**+0.1**
	22nm,0.3s,baz=160,slow=1.3,SNR=19								
HNR				S		**Sn**		**20 38 33.2**	**+0.1**
	3.4nm,0.3s,baz=186,slow=19,SNR=2.7								
HNR				LR		LR		20 39 54.7	
	comp=Z,855nm,21.4s,baz=76,slow=39								
HNR	**Honiara**	**6.07**	**285**	*e*P		P	**Pn**	**20 37 24.0**	**-1.0**
HNR	**Honiara**	**6.07**	**285**	*e*Pn		P	**Pn**	**20 37 24.0**	**-1.0**
	312nm,0.8s								
HNR				S		**Sn**		**20 38 33.2**	**+0.1**

DZM	**Mont Dzumac**	**10.97**	**177**	P		**Pn**	**20 38 34.2**	**+2.0**
	7.2nm,0.3s,baz=338,slow=8.9,SNR=25							
DZM				S		**Sn**	**20 40 31.0**	**-2.4**
	0.4nm,0.3s,baz=311,slow=19,SNR=2.8							
DZM	**Mont Dzumac**	**10.97**	**177**	*e*Pn		**Pn**	**20 38 32.5**	**+0.4**
	19nm,0.4s							
DZM				S		**Sn**	**20 40 31.0**	**-2.4**
PMG	**Port Moresby**	**18.51**	**273**	LR		LR	20 46 39.4	
	comp=Z,363nm,21.1s,baz=93,slow=35							
EIDS	**Eidsvold**	**19.98**	**223**	*e*P		Pn	20 40 27.8	+0.2
	56nm,1.0s							
CTA	**Charters Tower**	**20.92**	**242**	P		**P**	**20 40 37.1**	**+1.5**
	11nm,0.8s,baz=62,slow=11,SNR=9.5							
CTAO	**Charters Tower**	**20.92**	**242**	*e*P		**P**	**20 40 36.9**	**+1.3**
	38nm,0.6s							
H11S2	**WAKE ISLAND Hy**	**29.37**	**2**	T		T	21 12 18.8	
	baz=181,slow=76,SNR=60							
H11S3	**WAKE ISLAND Hy**	**29.37**	**2**	T		T	21 12 22.7	
	baz=181,slow=76,SNR=11							
H11S1	**WAKE ISLAND Hy**	**29.39**	**2**	T		T	21 12 19.9	
	baz=181,slow=76,SNR=7.6							
STKA	**Stephens Creek**	**30.53**	**224**	P		**P**	**20 42 06.0**	**+0.5**
	2.3nm,0.7s,baz=53,slow=10,SNR=6.8							
H11N1	**WAKE ISLAND Hy**	**30.59**	**2**	T		T	21 13 50.2	
	baz=182,slow=76,SNR=9.5							
H11N3	**WAKE ISLAND Hy**	**30.60**	**2**	T		T	21 13 49.8	
	baz=182,slow=76,SNR=6.8							
H11N2	**WAKE ISLAND Hy**	**30.61**	**2**	T		T	21 13 51.1	
	baz=182,slow=76,SNR=6.5							
WRAB	**Tennant Creek**	**31.60**	**250**	*e*P		**P**	**20 42 15.0**	**-0.2**
	28nm,1.0s							
WRA	**Warramunga Arr**	**31.61**	**250**	P		**P**	**20 42 14.9**	**-0.4**
	22nm,0.8s,baz=80,slow=9.2,SNR=74							
RPZ	**Rata Peaks**	**32.84**	**173**	P		**P**	**20 42 26.5**	**+0.8**
	19nm,0.8s,baz=252,slow=1.8,SNR=5.8							
ASAR	**Alice Springs**	**32.91**	**243**	P		**P**	**20 42 26.2**	**-0.4**
	4.3nm,0.6s,baz=64,slow=10,SNR=92							
CMAR	**Chiang Mai Arr**	**72.25**	**293**	P		**P**	**20 47 17.2**	**0.0**
	1.2nm,0.7s,baz=117,slow=4.5,SNR=8.8							
SONM	**Songino Array**	**78.76**	**324**	P		**P**	**20 47 53.1**	**-0.9**
	0.2nm,0.4s,baz=132,slow=6.2,SNR=3.8							
ILAR	**Eielson Array**	**83.48**	**18**	P		**P**	**20 48 17.5**	**-1.1**
	1.1nm,0.6s,baz=234,slow=5.4,SNR=13							
MAW	**Mawson**	**84.77**	**202**	P		**P**	**20 48 25.6**	**+0.4**
	3.4nm,0.9s,baz=114,slow=4.5,SNR=6.0							
EGAK	**Eagle**	**85.34**	**20**	*e*P		**P**	**20 48 28.5**	**+0.6**
	4.1nm,0.8s							

ISCJB ***11*** *20:37:04.6±1.0,37.°88N±0.°04×143.°34E±0.°09,h19km, mb3.5/5,Error ellipse: s-maj=10.5km s-min=6.1km az=7.2*
IDC ***11*** *20:37:04.8±17.0,38.°39N×143.°68E,h0km,mb3.5/5, mb1 3.6/5,mb1mx3.4/50,mbtmp3.5/5,Error ellipse: s-maj=429.5km s-min=33.9km az=170.0*
JMA ***11*** *20:37:06.2±0.2,37.°94N×143.°27E,h30km,M3.3*
ISC 11 20:37:05.2±1.2,37.°90N±0.°05×143.°44E±0.°10,h19km,n19, σ1§58/26,mb3.5/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.74**	**289**	P		**Pn**	**20 37 33.4**	**-0.9**
JIO				*e*S		**Sn**	**20 37 53.5**	**-2.5**
OFUJ	**Ofunato**	**1.82**	**311**	P		**Pn**	**20 37 34.3**	**-1.2**
JMK	**Ichinoseki**	**2.04**	**302**	P		**Pn**	**20 37 37.6**	**-0.8**
JOU	**Okura**	**2.24**	**283**	P		**Pn**	**20 37 41.0**	**-0.2**
JOM	**Ohasama**	**2.30**	**314**	P		**Pn**	**20 37 41.5**	**-0.6**
JOM				*e*S		**Sn**	**20 38 07.9**	**-1.9**
JFT	**Otama**	**2.49**	**262**	P		**Pn**	**20 37 44.7**	**0.0**
JFT				*e*S		**Sn**	**20 38 12.7**	**-1.9**
JYK	**Kaneyama**	**2.63**	**294**	P		**Pn**	**20 37 46.4**	**-0.1**
JRG	**Rokugo**	**2.66**	**305**	P		**Pn**	**20 37 47.5**	**+0.5**
JANG	**Nango**	**2.89**	**329**	P		**Pn**	**20 37 50.9**	**+0.8**
JANG				*e*S		**Sn**	**20 38 22.4**	**-1.9**
JAG	**Ashikaga**	**3.51**	**246**	P		**Pn**	**20 37 58.5**	**-0.2**
BSO1	**Boso 1**	**3.81**	**212**	P		**Pn**	**20 38 01.6**	**-0.7**
BSO1				S		**Sn**	**20 38 44.4**	**-1.8**
JRY	**Ryogami san**	**4.09**	**244**	P		**Pn**	**20 38 06.9**	**+0.1**
JOD2	**Odawara 2**	**4.38**	**234**	P		**Pn**	**20 38 10.4**	**-0.3**
JOD2				S		**Sn**	**20 38 57.8**	**-3.5**
MAT	**Matsushiro**	**4.39**	**254**	P		**Pn**	**20 38 13.1**	**+2.2**
MAT				*e*S		**Sn**	**20 39 03.3**	**+1.8**
SONM	**Songino Array**	**28.66**	**302**	P		**P**	**20 43 02.6**	**+1.8**
	0.2nm,0.5s,baz=108,slow=7.7,SNR=3.3							
ZALV	**Zalesovo Beam**	**42.53**	**312**	P		**P**	**20 45 00.4**	**+1.1**
	0.3nm,0.3s,baz=79,slow=7.5,SNR=2.4							
MKAR	**Makanchi Array**	**45.03**	**302**	P		**P**	**20 45 21.7**	**+2.2**
	0.2nm,0.2s,baz=90,slow=8.7,SNR=5.5							
KURBB	**Kurchatov Array**	**46.74**	**308**	P		**P**	**20 45 33.6**	**+0.7**
	1.1nm,0.7s,baz=81,slow=7.8,SNR=14							
ILAR	**Eielson Array**	**47.89**	**33**	P		**P**	**20 45 40.2**	**-1.4**
	0.2nm,0.6s,baz=263,slow=7.0,SNR=2.3							

IDC 11 20:40:57.0±2.0,6.°47S×128.°93E,h0km,mb3.7/1, mb1 3.8/3,mb1mx3.3/41,mbtmp3.6/3,ML3.7/2,Error ellipse: s-maj=114.1km s-min=30.7km az=67.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.38**	**159**	Pn		Pn	20 44 22.3	+0.1
	0.4nm,0.3s,baz=338,slow=12,SNR=14							
WRA				Sn		Sn	20 46 46.5	-16
	0.6nm,0.3s,baz=335,slow=22,SNR=7.7							
ASAR	**Alice Springs**	**17.75**	**165**	P		Pn	20 45 05.6	-0.3
	0.2nm,0.3s,baz=347,slow=10,SNR=12							
ASAR				S		Sn	20 48 09.8	-15
	0.2nm,0.3s,baz=341,slow=28,SNR=4.8							
MKAR	**Makanchi Array**	**67.21**	**327**	P		P	20 51 53.2	+0.1
	0.4nm,0.5s,baz=130,slow=7.8,SNR=4.4							

DDA ***11*** *20:43:13.7,38.°63N×44.°36E,h3km,Ml3.1*
CSEM ***11*** *20:43:15.9±0.6,38.°57N×44.°26E,h2km,ML2.5,Error ellipse: s-maj=12.2km s-min=7.4km az=86.0*
ISK ***11*** *20:43:16.8,38.°57N×44.°16E,h6km,ML2.5*
ISC 11 20:43:17.0±1.3,38.°52N±0.°03×44.°16E±0.°05,h14km±10km, n15,σ1§25/26,Turkey-Iran border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BASK	**Baskale_VAN**	**0.48**	**195**	*i* P		**Pg**	**20 43 26.5**	**-0.1**
BASK				*i* S		**Sn**	**20 43 36.1**	**-1.8**
BASK	**Baskale_VAN**	**0.48**	**195**	P		**Pg**	**20 43 26.5**	**-0.1**
BASK				S		**Sn**	**20 43 36.1**	**-1.8**
TVAN	**Van**	**0.59**	**271**	*i* P		**Pb**	**20 43 29.0**	**-0.2**
TVAN				*i* S		**Sn**	**20 43 40.2**	**-0.5**
TVAN	**Van**	**0.59**	**271**	P		**Pb**	**20 43 29.0**	**-0.2**
TVAN				S		**Sn**	**20 43 40.2**	**-0.5**
VANB	**Van**	**0.61**	**278**	*e*PG		**Pg**	**20 43 28.9**	**-0.1**
VANB				*e*SG		**Sg**	**20 43 37.4**	**+0.3**
VANB	**Van**	**0.61**	**278**	*e*Pg		**Pg**	**20 43 28.9**	**-0.1**
VANB				*e*Sg		**Sg**	**20 43 37.4**	**+0.3**
CLDR	**Caldiran**	**0.65**	**343**	*e*PG		**Pg**	**20 43 28.8**	**-1.1**
CLDR				*e*SG		**Sg**	**20 43 38.0**	**-0.6**
CLDR	**Caldiran**	**0.65**	**343**	*e*Pg		**Pg**	**20 43 28.8**	**-1.1**
CLDR				*e*Sg		**Sg**	**20 43 38.0**	**-0.6**
GEVA	**Gevas**	**0.89**	**257**	*i* P		**Pg**	**20 43 33.4**	**-0.8**
GEVA				*i* S		**Sn**	**20 43 49.3**	**+1.4**
GEVA	**Gevas**	**0.89**	**257**	P		**Pg**	**20 43 33.4**	**-0.8**
GEVA				S		**Sn**	**20 43 49.3**	**+1.4**
CUKT	**Cukurca**	**1.34**	**199**	*e*PN		**Pg**	**20 43 43.4**	**+0.6**
CUKT	**Cukurca**	**1.34**	**199**	*e*Pn		**Pg**	**20 43 43.4**	**+0.6**
AGRB	**Hanur-Agry**	**1.40**	**320**	*e*PN		**Pb**	**20 43 42.7**	**-0.2**
AGRB	**Hanur-Agry**	**1.40**	**320**	*e*Pn		**Pb**	**20 43 42.7**	**-0.2**
EAK	**Akyaka**	**2.21**	**349**	*i* P		**Pg**	**20 43 59.6**	**+0.3**
EAK				*i* S		**Sg**	**20 44 32.4**	**+4.3**

IDC ***11*** *20:47:01.5±0.3,9.°50N×122.°27E,h0km,mb5.4/62, mb1 5.4/64,mb1mx5.4/67,mbtmp5.4/64,ML4.9/2,MS6.1/48, Ms1 6.1/48,ms1mx5.9/63,Error ellipse: s-maj=10.7km s-min=7.6km az=72.0*
BJI ***11*** *20:47:02.7,9.65N×122.°15E,h20km,mb5.6/71,mB6.4/72, Ms6.6/79,Ms7 6.3/80*
MOS ***11*** *20:47:03.2±1.2,9.°52N×122.°33E,h25km,mb6.0/70, MS6.3/93,Error ellipse: s-maj=7.0km s-min=3.7km az=114.1*
MAN ***11*** *20:47:03,9.°51N×122.°02E,h4km,mb6.4,ML5.5,MS6.2*
MAN INTENSITY V - SIPALAY CITY NEGROS OCCIDENTAL; KABANGKALAN AND CAUAYAN NEGROS
PCCIDENTAL; INTENSITY IV - ILOILO CITY; OTON ILOILO; DUMAGUETE CITY; HINIGARAN AND SIBULAN.
NEIC ***11*** *20:47:04.3±0.1,9.°51N×122.°18E,h19km,mb6.1/5,ME6.2, MS6.1/101,MW6.4,MW6.2,Error ellipse: s-maj=4.3km s-min=3.3km az=82.0,Moment Tensor Solution. s39 Moment tensor: Scale 10¹⁸Nm; Mrr=1.85; Mθθ=0.18; Mϕϕ=-2.03; Mrθ=0.11; Mrϕ=-0.78; Mθϕ=-1.29; Best double couple: Mo=2.50000×10¹⁸ NP1:ϕs=184.00000°,δ=62.00000°, λ=75.00000°. NP2:ϕs=33.00000°,δ=32.00000°,λ=115.00000°. Principal axes: T 2.2900, Plg70.0000°, Azm263.0000°; N 0.3100, Plg13.0000°, Azm191.0000°; P -2.6000, Plg15.0000°, Azm285.0000°; Broadband fault plane solution: P waves. NP1:ϕs=330.00000°,δ=20.00000°, λ=90.00000°. NP2:ϕs=150.00000°,δ=70.00000°,λ=90.00000°. Principal axes: T Plg65.0000°, Azm60.0000°; N Plg0.0000°, Azm0.0000°; P Plg25.0000°, Azm240.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt [VI] at Kabankalan and Tanjay and [IV] at Bacolod. Felt [V PIVS] at Cawayan and Sipalay; [IV PIVS] at Binalbagan, Dumaguete, Hinigaran and Sibulan. Also felt [IV PIVS] at Iloilo and Oton, Panay and at Cebu City, Cebu. Felt widely in the Visayan Islands and in northern Mindanao.
GCMT ***11*** *20:47:04.3±0.0,9.°65N×122.°11E,h17km,MW6.5/147, Moment Tensor Solution. s147,c340; s146,c623; Duration: 4s3 Moment tensor: Scale 10¹⁸Nm; Mrr=4.13±.02; Mθθ=0.12±.01; Mϕϕ=-4.25±.02; Mrθ=-0.29±.05; Mθϕ=-0.25±.01; Mrϕ=-5.55±.08; Best double couple: Mo=6.96400×10¹⁸ NP1:ϕs=183.00000°,δ=71.00000°, λ=90.00000°. NP2:ϕs=4.00000°,δ=19.00000°,λ=90.00000°. Principal axes: T 6.8970, Plg64.0000°, Azm93.0000°; N 0.1370, Plg0.0000°, Azm183.0000°; P -7.0320, Plg26.0000°, Azm273.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.*
DJA ***11*** *20:47:04.1±0.2,10.°N×122.°2E±.°,h10km,M6.4/68, mb6.0/67,mB6.7/68,MLv6.4/4,Mw(mB)6.5/68,Mwp6.3/39*
NEIC ***11*** *20:47:04.0±0.0,9.°50N×122.°21E,h25km,Moment Tensor Solution. s69 Moment tensor: Scale 10¹⁸Nm; Mrr=3.51; Mθθ=0.16; Mϕϕ=-3.35; Mrθ=0.76; Mθϕ=-0.42; Mrr=-3.23; Best double couple: Mo=4.80000×10¹⁸ NP1:ϕs=174.00000°, δ=67.00000°,λ=80.00000°. NP2:ϕs=19.00000°,δ=25.00000°, λ=113.00000°. Principal axes: T 4.9400, Plg66.0000°, Azm65.0000°; N -0.3100, Plg9.0000°; Azm177.0000°; P -4.6300, Plg21.0000°, Azm271.0000°;*
ISCJB ***11*** *20:47:04.4±0.5,9.°52N±0.°01×122.°31E±0.°02,h31km±3km, mb5.7/186,MS6.2/207 Error ellipse: s-maj=2.8km s-min=2.2km az=175.0*
KLM ***11*** *20:47:09.5,9.°70N×122.°37E,h19km,mb6.3,MS6.8*
ISC 11 20:47:04.9±0.2,9.°53N±0.°02×122.°25E±0.°03,h22km±2km, h21km:pP-P,n1606,σ2§04/1948,mb5.8/202,MS6.3/213, 94C-57D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.99**	**101**	⇑*i*P		Pb	20 47 17.6	-5.9
SNPH				*i* S		**Sn**	**20 47 39.0**	**+2.0**
IPIL	**Ipil**	**1.76**	**169**	⇑*e*P		**Pn**	**20 47 31.9**	**-2.2**
IPIL				*e*S		**Sn**	**20 47 55.0**	**-0.5**
LLP	**Lapu-Lapu**	**1.87**	**65**	*e*P		**Pn**	**20 47 36.7**	**+1.1**
LLP				*e*S		**Sb**	**20 48 06.1**	**+4.8**
RCP	**Roxas**	**2.08**	**14**	⇑*e*P		**Pb**	**20 47 40.8**	**-1.1**
KALP	**Kalibo**	**2.14**	**2**	⇓*e*P		**Pn**	**20 47 40.9**	**+1.5**
CGP	**Cagayan de Oro**	**2.64**	**114**	⇑*i*P		**Pn**	**20 47 48.0**	**+1.7**
CGP				*i* S		**Sb**	**20 48 23.8**	**+0.2**
CTBH	**Cotabato--PC H**	**3.03**	**139**	*e*P		**Pn**	**20 47 51.7**	**+0.2**
CTBH				*i* S		**Sb**	**20 48 31.8**	**-2.9**
MMPH	**Masbate**	**3.12**	**26**	⇑*e*P		**Pb**	**20 47 57.9**	**-1.8**
MMPH				*i* S		**Sb**	**20 48 40.3**	**+2.9**
PLP	**Palo**	**3.14**	**59**	⇑*i*P		**Pn**	**20 47 53.9**	**+0.8**
PLP				*i* S		**Sn**	**20 48 28.5**	**-1.5**
BUSP	**Coron**	**3.18**	**321**	⇑*e*P		**Pn**	**20 47 50.8**	**-2.8**
PPR	**Puerto Princes**	**3.48**	**274**	⇑*e*P		**Pn**	**20 47 56.7**	**-1.0**
PPR				*e*S		**Sn**	**20 48 37.7**	**-0.5**
BESP	**Borongan**	**3.75**	**56**	⇓*e*P		**Pn**	**20 48 03.4**	**+1.8**
KCP	**Kidapawan**	**3.77**	**131**	⇑*i*P		**Pn**	**20 48 04.2**	**+2.4**
DMPH	**Davao City--Mi**	**4.04**	**127**	⇑*e*P		**Pn**	**20 48 09.1**	**+3.6**
DAV	**Davao City (W)**	**4.10**	**126**	Pn		**Pn**	**20 48 09.6**	**+3.2**
	46nm,0.3s,baz=329,slow=3.0,SNR=36							
DAV				LR		LR	20 50 08.1	
	comp=Z,655μm,18.6s,baz=272,slow=46							
DAV	**Davao City (W)**	**4.10**	**126**	⇑*e*P		**Pn**	**20 48 10.0**	**+3.6**
DAV	**Davao City (W)**	**4.10**	**126**	⇓*e*Pn		**Pn**	**20 48 09.3**	**+3.0**
BIPH	**Bislig**	**4.28**	**108**	⇑*e*P		Pn	20 48 14.1	+5.3
BIPH				*e*S		**Sb**	**20 49 11.9**	**+1.2**
GQP	**Guinayangan**	**4.36**	**3**	⇑*e*P		**Pn**	**20 48 06.3**	**-3.5**
LQP	**Lukban**	**4.61**	**351**	⇑*e*P		**Pn**	**20 48 14.8**	**+1.3**
TGY	**Tagaytay City**	**4.72**	**344**	Pn		**Pn**	**20 48 15.4**	**+0.5**
	222nm,0.3s,baz=247,slow=4.0,SNR=12							
TGY	**Tagaytay City**	**4.72**	**344**	⇑*i*P		**Pn**	**20 48 19.3**	**+4.4**
TGY				*i* S		**Sn**	**20 49 09.8**	**+0.7**
MYLDM	**Lahad Datu**	**5.70**	**221**	⇑P		**Pn**	**20 48 29.7**	**+1.5**
MYLDM	**Lahad Datu**	**5.70**	**221**	*e*Pn		**Pn**	**20 48 28.5**	**+0.3**
KDM	**Kudat**	**5.95**	**245**	⇑P		**Pn**	**20 48 31.4**	**-0.4**
PCPH	**Palayan**	**6.10**	**350**	⇑*e*P		**Pn**	**20 48 35.3**	**+1.5**
BALP	**Baler**	**6.21**	**354**	⇑*e*P		**Pn**	**20 48 37.0**	**+1.6**
SDKM	**Sandakan**	**6.32**	**233**	⇑P		**Pn**	**20 48 35.5**	**-1.4**
SGSI	**Sangihe**	**6.66**	**150**	P		Pn	20 48 47.0	+5.5
TSM	**Tawau**	**6.77**	**220**	⇑P		**Pn**	**20 48 42.6**	**-0.5**
KKM	**Kota Kinabalu**	**6.91**	**240**	⇑P		**Pn**	**20 48 44.4**	**-0.6**
KKM	**Kota Kinabalu**	**6.91**	**240**	*e*Pn		**Pn**	**20 48 43.1**	**-1.9**
CVP	**Callao Caves**	**8.14**	**357**	⇓*e*P		**Pn**	**20 49 04.5**	**+2.7**
PIP	**Pasuquin**	**8.89**	**350**	⇓*e*P		**Pn**	**20 49 16.5**	**+4.4**
MRSI	**Marisa**	**9.00**	**182**	P		**Pn**	**20 49 14.3**	**+0.7**
KMSI	**Cibinong**	**9.06**	**169**	P		**Pn**	**20 49 15.7**	**+1.2**
LUWI	**Luwuk**	**10.51**	**177**	P		**Pn**	**20 49 38.0**	**+3.6**
LUWI	**Luwuk**	**10.51**	**177**	*e*Pn		**Pn**	**20 49 36.0**	**+1.6**
PCI	**Palu**	**10.64**	**193**	P		**Pn**	**20 49 36.9**	**+0.8**
PCI	**Palu**	**10.64**	**193**	P		**Pn**	**20 49 37.3**	**+1.2**
PCI				pmax	pmax			
	comp=Z,415nm,1.0s							
BTM	**Bintulu**	**11.06**	**236**	⇑P		**Pn**	**20 49 40.8**	**-1.1**
LBMI	**Labuha**	**11.37**	**152**	P		**Pn**	**20 49 47.7**	**+1.5**
SANI	**Sanana**	**12.09**	**162**	P		**Pn**	**20 49 55.1**	**-0.9**
SBUM	**Sibu**	**12.20**	**235**	⇓P		**Pn**	**20 49 57.4**	**0.0**
SBUM	**Sibu**	**12.20**	**235**	*e*Pn		**Pn**	**20 49 56.2**	**-1.3**
PALU	**Palau**	**12.29**	**99**	P		**Pn**	**20 49 56.8**	**-1.9**
	baz=12,SNR=5.4							
MTKI	**Muara Teweh, K**	**12.72**	**216**	P		**Pn**	**20 50 08.9**	**+4.3**
TTSI	**Tana Toraja**	**12.72**	**191**	P		**Pn**	**20 50 07.5**	**+2.9**
TWG	**Pinlang**	**13.27**	**355**	*e*Pn		**Pn**	**20 50 13.1**	**+1.0**
KDI	**Kendari**	**13.40**	**178**	P		**Pn**	**20 50 13.6**	**-0.3**
	comp=Z,322nm,2.5s,comp=Z,18μmcomp=Z,52μm							
NLAI	**Namlea**	**13.57**	**159**	P		**Pn**	**20 50 15.3**	**-1.0**
SPSI	**Sidrap Palu**	**13.63**	**191**	P		**Pn**	**20 50 17.4**	**+0.4**
TPUB	**Ta-pu**	**13.78**	**354**	*e*Pn		**Pn**	**20 50 20.9**	**+1.7**
YULB	**Yu-li**	**13.82**	**356**	*e*Pn		**Pn**	**20 50 20.9**	**+1.4**
SSLB	**Suanglung**	**14.23**	**355**	*e*Pn		**Pn**	**20 50 26.0**	**+0.7**
STKI	**Sintang**	**14.26**	**229**	P		**Pn**	**20 50 27.9**	**+2.3**
	comp=Z,588nm,1.7s,comp=Z,18μmcomp=Z,98μm							
KSM	**Kuching**	**14.32**	**237**	⇑P		**Pn**	**20 50 26.5**	**0.0**
KSM	**Kuching**	**14.32**	**237**	*e*Pn		**Pn**	**20 50 25.1**	**-1.3**
MSAI	**Masohi**	**14.42**	**152**	P		**Pn**	**20 50 26.9**	**-1.0**
NACB	**Ninganchiao**	**14.58**	**358**	*e*Pn		**Pn**	**20 50 30.5**	**+0.6**
KAPI	**Kappang**	**14.66**	**190**	Pn		**Pn**	**20 50 30.8**	**-0.3**
	comp=Z,1.0nm,0.3s,baz=22,slow=12,SNR=28							
KAPI	**Kappang**	**14.66**	**190**	*e*Pn		**Pn**	**20 50 32.8**	**+1.7**
BBKI	**Banjar Baru**	**14.87**	**210**	P		**Pn**	**20 50 35.5**	**+1.6**
YOJ	**Yonaguni jima**	**14.87**	**3**	*e*P		**Pn**	**20 50 36.3**	**+2.4**
YOJ	**Yonaguni jima**	**14.87**	**3**	*e*Pn		**Pn**	**20 50 36.3**	**+2.4**
HKC	**Hong Kong Obse**	**14.88**	**330**	⇑P		**Pn**	**20 50 33.0**	**-1.0**
MCO	**Taipa Grande**	**15.05**	**327**	P		**P**	**20 50 40.0**	**-1.5**
YHNB	**Yeheng**	**15.08**	**357**	*e*Pn		**Pn**	**20 50 38.6**	**+1.7**
QIZ	**Qiongzhong**	**15.28**	**310**	P		**Pn**	**20 50 37.6**	**-1.8**
QIZ				LR	LR			
	comp=Z,336μm,13.7s							
QIZ	**Qiongzhong**	**15.28**	**310**	*e*Pn		**Pn**	**20 50 39.6**	**+0.2**
TATO	**Taipei**	**15.38**	**357**	*e*Pn		**Pn**	**20 50 41.9**	**+1.2**
QZH	**Quanzhou**	**15.72**	**348**	⇑*i*P		Pn	20 50 35.5	-10
QZH				S		**Sn**	**20 53 30.3**	**-8.5**
QZH				pmax	pmax			
	comp=Z,4μm,1.4s							
QZH				pmax	pmax			
	comp=Z,40μm,7.2s							
QZH				LR	LR			
	comp=N,307μm,15.4s							
QZH				LR	LR			
	comp=E,113μm,13.6s							
QZH				LR	LR			
	comp=Z,279μm,15.0s							
FAKI	**Fak Fak**	**15.88**	**141**	P		**Pn**	**20 50 46.7**	**-0.6**
FAKI	**Fak Fak**	**15.88**	**141**	*e*Pn		**Pn**	**20 50 46.5**	**-0.8**
BNDI	**Bandanaira**	**15.91**	**151**	P		**Pn**	**20 50 47.2**	**-0.4**
GZH	**Guangzhou**	**15.95**	**329**	P		**P**	**20 50 52.2**	**+0.7**
GZH				PP		**sP**	**20 51 06.2**	**+5.8**
GZH				S		**Sn**	**20 53 51.0**	**+6.6**
GZH				SS		S	20 54 11.1	+13
GZH				PcP		**PcP**	**20 55 47.4**	**+2.0**
GZH				pmax	pmax			
	comp=Z,26μm,8.0s							
PBKI	**Pangkalan Bun**	**16.08**	**221**	P		**P**	**20 50 51.6**	**-1.5**
UBPT	**Khong Chiam**	**17.35**	**291**	P		**P**	**20 51 07.6**	**+0.5**
	comp=Z,2μm,1.3s,comp=Z,52μm							
BWJI	**Bawean**	**18.02**	**212**	P		**P**	**20 51 18.2**	**+3.7**
MMRI	**Maumere**	**18.04**	**180**	P		**P**	**20 51 15.5**	**+0.7**
MMRI	**Maumere**	**18.04**	**180**	*e*Pn		**P**	**20 51 16.0**	**+1.2**
JOW	**Kunigami**	**18.13**	**18**	*e*Pn		**P**	**20 51 16.7**	**+1.0**
PLAI	**Plampang**	**18.77**	**194**	P		**Pn**	**20 51 24.7**	**+1.4**
SRBI	**Singaraja**	**18.85**	**202**	P		**Pn**	**20 51 25.2**	**+1.0**
TWSI	**Taliwang, Sumb**	**18.91**	**197**	P		**Pn**	**20 51 25.6**	**+0.6**
ABJI	**Asem Bagus**	**18.97**	**205**	P		**Pn**	**20 51 27.3**	**+1.6**
WSI	**Waingapu**	**19.17**	**186**	P		**P**	**20 51 26.8**	**-0.3**
	comp=Z,3μm,1.0s,comp=Z,51μmcomp=Z,46μm							
BLJI	**Banyuglugur**	**19.20**	**207**	P		**Pn**	**20 51 29.5**	**+1.0**
SKNT	**Sakolnakorn**	**19.25**	**295**	P		**Pn**	**20 51 28.9**	**-0.2**
	comp=Z,1μm,2.0s,comp=Z,66μm							
TBJI	**Tambak Boyo**	**19.26**	**213**	P		**Pn**	**20 51 32.7**	**+3.5**
SOEI	**Soe**	**19.26**	**174**	P		**P**	**20 51 28.8**	**+0.5**
SOEI	**Soe**	**19.26**	**174**	*e*P		**Pn**	**20 51 28.9**	**-0.4**
DNP	**Denpasar**	**19.39**	**201**	P		**Pn**	**20 51 31.9**	**+1.1**
KTDM	**Kuala Trenggan**	**19.40**	**259**	⇑P		**Pn**	**20 51 32.8**	**+1.9**
UWJI	**Ujung Watu**	**19.43**	**216**	P		**Pn**	**20 51 33.3**	**+2.0**
TPRI	**Tanjung Pinang**	**19.59**	**245**	P		**Pn**	**20 51 33.4**	**+0.1**
JAGI	**Jajag, Banyuwa**	**19.61**	**205**	P		**Pn**	**20 51 33.8**	**+0.4**
JAGI	**Jajag, Banyuwa**	**19.61**	**205**	*e*P		**Pn**	**20 51 33.2**	**-0.3**
BATI	**Baumata**	**19.66**	**176**	P		**Pn**	**20 51 34.7**	**+0.7**
BASI	**Baing, Sumba**	**19.69**	**185**	P		**Pn**	**20 51 33.7**	**-0.6**
GMJI	**Gumukmas**	**19.74**	**207**	P		**Pn**	**20 51 35.5**	**+0.6**
PPBI	**Pangkal Pinang**	**19.81**	**235**	P		**Pn**	**20 51 36.2**	**+0.4**
MYKOM	**Kota Tinggi**	**19.84**	**248**	⇑P		**Pn**	**20 51 37.7**	**+1.5**
MYKOM	**Kota Tinggi**	**19.84**	**248**	*e*P		**Pn**	**20 51 35.8**	**-0.4**
NGJI	**Ngawi**	**19.93**	**213**	P		**Pn**	**20 51 38.0**	**+0.8**
KHON	**Khomkaen**	**20.09**	**292**	P		Pn	20 51 38.4	-0.7
	comp=Z,458nm,1.3s,comp=Z,5μm							
DSRI	**Dabo**	**20.20**	**241**	P		Pn	20 51 42.7	+2.2
KGM	**Kluang**	**20.24**	**250**	⇑P		Pn	20 51 41.7	+0.8
NONG	**Nongkai**	**20.38**	**297**	P		**P**	**20 51 40.9**	**+0.5**
	comp=Z,425nm,2.2s,comp=Z,23μm							
WOJI	**Wonogiri, Jawa**	**20.61**	**214**	P		Pn	20 51 44.8	-0.4
CHAI	**Chaiyaphum**	**20.74**	**290**	P		**P**	**20 51 44.3**	**0.0**
	comp=Z,

LWLI	**Liwa**		**23.18**	**232**	P		**P**	**20 52 11.7**	**+1.3**
SDSI	**Sungai Dareh**		**23.19**	**244**	P		**P**	**20 52 11.7**	**+1.3**
KSI	**Kapahiang**		**23.56**	**237**	P		**P**	**20 52 15.3**	**+1.2**
MNAI	**Manna**		**23.66**	**235**	P		**P**	**20 52 16.8**	**+1.7**
MNAI	**Manna**		**23.66**	**235**	*e*P		**P**	**20 52 13.2**	**-1.9**
LAMP	**Lampang**		**23.67**	**295**	P		**P**	**20 52 15.8**	**+0.7**
	comp=Z,87nm,1.4s,comp=Z,1µm								
PKDT	**Phuket**		**23.69**	**268**	P		**P**	**20 52 17.7**	**+2.3**
	comp=Z,436nm,2.0s,comp=Z,18µm								
UMPA	**Umpang Tak**		**23.73**	**289**	P		**P**	**20 52 15.9**	**+0.1**
	comp=Z,162nm,1.2s,comp=Z,1µm								
ENH	**Enshi**		**23.83**	**332**	*e*P		**P**	**20 52 15.6**	**-1.0**
ENH					LR		LR		
	comp=Z,168µm,18.0s								
ANA2	**Anatahan**		**23.84**	**71**	*e*P		**P**	**20 52 16.9**	**+0.1**
MTN	**Manton Dam**		**23.91**	**158**	P		**P**	**20 52 16.2**	**-1.3**
	baz=24,SNR=51								
MTN	**Manton Dam**		**23.91**	**158**	*e*P		**P**	**20 52 16.2**	**-1.3**
SARN	**Sarigan**		**23.99**	**70**	*e*P		**P**	**20 52 19.3**	**+1.1**
PSI	**Prapat**		**24.12**	**255**	P		**P**	**20 52 19.7**	**+0.1**
	comp=Z,215nm,0.8s,baz=71,slow=6.8,SNR=45								
PSI					LR		LR	21 02 48.5	
	comp=Z,44µm,19.1s,baz=79,slow=39								
PSI	**Prapat**		**24.12**	**255**	*e*P		**P**	**20 52 19.0**	**-0.6**
MNSI	**Mandailing Nat**		**24.16**	**250**	P		**P**	**20 52 20.7**	**+0.9**
KMI	**Kunming**		**24.18**	**312**	P		**P**	**20 52 19.7**	**-0.5**
KMI					pP		sP	20 52 28.2	-1.2
KMI					sP		pP	20 52 32.3	+5.6
KMI					PP		**PnPn**	**20 52 54.6**	**+4.7**
KMI					S		**S**	**20 56 37.1**	**-0.4**
KMI					pmax		pmax		
	comp=Z,18µm,9.0s								
KMI					LR		LR		
	comp=Z,77µm,14.2s								
KMI					LR		LR		
	comp=Z,103µm,16.8s								
KMI					LR		LR		
	comp=Z,135µm,16.1s								
CM01	**Chiang Mai Arr**		**24.24**	**294**	*e*P		**P**	**20 52 18.7**	**-1.8**
CM31	**Chiang Mai Arr**		**24.27**	**294**	*e*P		**P**	**20 52 20.7**	**-0.1**
CMAR	**Chiang Mai Arr**		**24.27**	**294**	P		**P**	**20 52 21.0**	**+0.2**
	comp=Z,104nm,1.1s,baz=126,slow=7.5,SNR=115								
CMAR					PcP		**PcP**	**20 56 01.5**	**+0.7**
	comp=Z,4.6nm,1.0s,baz=103,slow=1.1,SNR=2.6								
CMAR					LR		LR	21 01 11.4	
	comp=Z,81µm,20.9s,baz=107,slow=35								
TSI	**Tuntungan**		**24.27**	**257**	P		**P**	**20 52 22.5**	**+1.7**
KDU	**Kakadu**		**24.30**	**155**	P		**P**	**20 52 19.4**	**-1.6**
	baz=24,SNR=49								
CMMT	**Chiang Mai**		**24.38**	**295**	P		**P**	**20 52 21.1**	**-0.7**
	comp=Z,303nm,1.4s,comp=Z,18µm								
CHTO	**Chiang Mai**		**24.38**	**295**	P		**P**	**20 52 21.1**	**-0.7**
	comp=Z,3µm,1.1s,comp=Z,80µm								
CHTO	**Chiang Mai**		**24.38**	**295**	*e*P		**P**	**20 52 19.9**	**-1.9**
CHTO					MLR		MLR		
	comp=Z,68µm,21.0s								
CHTO	**Chiang Mai**		**24.38**	**295**	*e*P		**P**	**20 52 19.9**	**-1.9**
CHTO					LR		LR		
	comp=Z,68µm,21.0s								
JNU	**Nakatsue**		**24.80**	**17**	P		**P**	**20 52 25.0**	**-0.4**
	comp=Z,27nm,1.0s,baz=179,slow=8.0,SNR=13								
JNU					LR		LR	21 03 02.6	
	comp=Z,53µm,19.8s,baz=214,slow=39								
JNU	**Nakatsue**		**24.80**	**17**	*e*P		**P**	**20 52 24.4**	**-1.0**
PPSI	**Pulau Pagai**		**25.30**	**242**	P		**P**	**20 52 32.6**	**+2.5**
LHMI	**Lhok Sumawe**		**25.44**	**262**	P		**P**	**20 52 33.7**	**+2.2**
LHMI	**Lhok Sumawe**		**25.44**	**262**	*e*P		**P**	**20 52 29.2**	**-2.2**
XMIS	**Christmas Isla**		**25.84**	**220**	*e*P		**P**	**20 52 35.5**	**+0.5**
KNRA	**Kununurra**		**25.86**	**165**	P		**P**	**20 52 33.4**	**-1.8**
	baz=26								
GSI	**Gunungsitoli**		**25.86**	**253**	P		**P**	**20 52 35.8**	**+0.5**
GSI	**Gunungsitoli**		**25.86**	**253**	*e*P		**P**	**20 52 34.1**	**-1.2**
TIA	**Tai'an**		**26.97**	**351**	⇑P		**P**	**20 52 44.3**	**-0.7**
TIA					S		**S**	**20 57 23.9**	**+2.7**
TIA					pmax		pmax		
	comp=Z,90nm,0.8s								
TIA					LR		LR		
	comp=Z,63µm,16.0s								
TIA					LR		LR		
	comp=Z,61µm,16.0s								
TIA					LR		LR		
	comp=Z,65µm,20.0s								
XAN	**Xi'an**		**27.29**	**335**	P		**P**	**20 52 47.1**	**-1.0**
XAN					pP		pP	20 52 52.9	-1.7
XAN					PP		**PnPn**	**20 53 33.3**	**+1.1**
XAN					PcP		**PcP**	**20 56 08.8**	**+1.3**
XAN					S		**S**	**20 57 20.7**	**-5.8**
XAN					SS		**SnSn**	**20 58 35.5**	**-0.2**
XAN					LR		LR		
	comp=Z,82µm,14.6s								
XAN					LR		LR		
	comp=Z,99µm,12.3s								
XAN					LR		LR		
	comp=Z,115µm,16.0s								
CD2	**Chengdu**		**27.36**	**324**	⇑*i*P		**P**	**20 52 47.4**	**-1.3**
CD2					pP		pP	20 52 53.2	-2.1
CD2					sP		sP	20 52 55.8	-2.2
CD2					PcP		**PcP**	**20 56 05.8**	**-1.9**
CD2					S		**S**	**20 57 23.7**	**-4.0**
CD2					sS		sS	20 57 37.5	-1.0
CD2					pmax		pmax		
	comp=Z,850nm,0.8s								
CD2					pmax		pmax		
	comp=Z,5µm,5.8s								
MANU	**Manus Island**		**27.54**	**113**	*e*P		**P**	**20 52 52.6**	**+2.2**
FITZ	**Fitzroy Crossi**		**27.66**	**173**	P		**P**	**20 52 50.4**	**-0.9**
	comp=Z,75nm,0.9s,baz=352,slow=9.9,SNR=38								
FITZ	**Fitzroy Crossi**		**27.66**	**173**	P		**P**	**20 52 50.3**	**-1.1**
	baz=28,SNR=47								
FITZ	**Fitzroy Crossi**		**27.66**	**173**	*e*P		**P**	**20 52 49.0**	**-2.3**
FITZ					e*p*P		**P**	**20 52 50.5**	**-0.9**
INCN	**Inchon**		**28.11**	**7**	*e*P		**P**	**20 52 53.1**	**-2.2**
KS15	**Wonju Array Si**		**28.25**	**10**	*e*P		**P**	**20 52 56.0**	**-0.6**
KSAR	**Wonju Array Be**		**28.25**	**10**	P		**P**	**20 52 56.8**	**+0.3**
KSAR								20 56 10.1	
KSAR	**Wonju Array Be**		**28.25**	**10**	P		**P**	**20 52 56.8**	**+0.3**
KSAR					PcP		**PcP**	**20 56 10.1**	**+0.4**
KSRS	**Korea Array**		**28.27**	**10**	P		**P**	**20 52 56.8**	**+0.1**
	comp=Z,25nm,0.7s,baz=183,slow=10,SNR=47								
KSRS					PcP		**PcP**	**20 56 10.1**	**+0.4**
	comp=Z,7.3nm,0.7s,baz=187,slow=2.6,SNR=6.0								
KS01	**Wonju Array Si**		**28.29**	**10**	*e*P		**P**	**20 52 56.4**	**-0.5**
KS01					e*P*cP		**PcP**	**20 56 10.2**	**+0.5**
JHJ	**Hachijo jima 2**		**28.51**	**32**	P		**P**	**20 52 59.6**	**+0.8**
	comp=Z,18nm,0.7s,baz=240,slow=20,SNR=2.3								
JHJ					LR		LR	21 04 42.2	
	comp=Z,37µm,19.3s,baz=249,slow=37								
JHJ2	**Mitsune**		**28.52**	**32**	*e*Pn		**P**	**20 53 02.0**	**+3.0**
	comp=Z,222nm,1.5s								
JHJ2					LR		LR		
	comp=Z,48µm,18.0s								
DGPR	**DIGLIPUR**		**28.96**	**280**	*e*P		**P**	**20 53 02.5**	**-0.5**
DGPR					IAmb		IAmb	20 53 08.7	
	comp=Z,333nm,1.2s								
DGPR					IAMs_20		IAMs_20	21 16 14.4	
	comp=Z,21µm,10.9s								
INU	**Inuyama**		**29.02**	**25**	*e*P		**P**	**20 53 01.4**	**-2.0**
INU					LR		LR		
	comp=Z,53µm,22.0s								
PBA	**Port Blair**		**29.07**	**277**	*e*P		P	20 53 05.2	+1.1
DL2	**Dalian**		**29.26**	**359**	⇑*i*P		**P**	**20 53 05.3**	**-0.1**
DL2					S		**S**	**20 57 59.0**	**+1.8**
DL2					pmax		pmax		
	comp=Z,200nm,1.1s								
DL2					pmax		pmax		
	comp=Z,2µm,6.7s								
DL2					LR		LR		
	comp=Z,76µm,15.9s								
DL2					LR		LR		
	comp=Z,36µm,13.7s								
DL2					LR		LR		
	comp=Z,60µm,16.6s								
TIY	**Taiyuan**		**29.43**	**344**	*e*P		**P**	**20 53 05.1**	**-1.9**
TIY					PP		**PnPn**	**20 54 04.2**	**+2.9**
TIY					S		**S**	**20 58 05.1**	**+5.1**
TIY					pmax		pmax		
	comp=Z,55nm,1.2s								
TIY					pmax		pmax		
	comp=Z,3µm,10.8s								
TIY					LR		LR		
	comp=Z,80µm,14.2s								
TIY					LR		LR		
	comp=Z,17µm,9.7s								
TIY					LR		LR		
	comp=Z,74µm,15.8s								
MAJO	**Matsushiro**		**30.55**	**26**	*ce*P		**P**	**20 53 13.1**	**-3.8**
MAJO					MLR		MLR		
	comp=Z,180µm,19.0s								
MAJO	**Matsushiro**		**30.55**	**26**	*e*P		**P**	**20 53 14.4**	**-2.5**
MAJO					LR		LR		
	comp=Z,63µm,20.0s								
MAT	**Matsushiro**		**30.55**	**26**	P		**P**	**20 53 14.9**	**-2.0**
MAT					S		S	20 58 29.0	+11
MBWA	**Marble Bar**		**30.59**	**185**	*e*P		**P**	**20 53 15.9**	**-1.6**
MBWA					LR		LR		
	comp=Z,19µm,20.0s								
BJT	**Baijiatuau**		**30.84**	**351**	*e*P		**P**	**20 53 19.1**	**-0.3**
BJT					MLR		MLR		
	comp=Z,52µm,20.0s								
BJT	**Baijiatuau**		**30.84**	**351**	*e*P		**P**	**20 53 19.1**	**-0.3**
BJT					LR		LR		
	comp=Z,52µm,20.0s								
BJI	**Beijing**		**30.86**	**351**	P		**P**	**20 53 20.3**	**+0.7**
BJI					S		**S**	**20 58 24.1**	**+1.8**
BJI					pmax		pmax		
	comp=Z,77nm,1.4s								
BJI					pmax		pmax		
	comp=Z,3µm,6.9s								
BJI					LR		LR		
	comp=Z,62µm,15.6s								
BJI					LR		LR		
	comp=Z,43µm,17.3s								
BJI					LR		LR		
	comp=Z,41µm,21.3s								
PMG	**Port Moresby**		**31.13**	**126**	*c i*P		**P**	**20 53 20.9**	**-1.3**
PMG					pmax		pmax		
	comp=Z,209nm,1.3s								
PMG					MLR		MLR		
	comp=Z,57µm,20.0s								
COEN	**Coen**		**31.24**	**138**	P		**P**	**20 53 20.8**	**-2.4**
	baz=31,SNR=7.4								
COEN	**Coen**		**31.24**	**138**	*e*P		**P**	**20 53 21.2**	**-1.9**
COEN					LR		LR		
	comp=Z,33µm,21.0s								
LZH	**Lanzhou**		**31.29**	**331**	*e*P		**P**	**20 53 23.5**	**-0.2**
LZH					pP		pP	20 53 30.0	-0.2
LZH					sP		sP	20 53 32.3	-0.6
LZH					PP		**PnPn**	**20 54 24.5**	**-1.6**
LZH					S		**S**	**20 58 32.0**	**+2.5**
LZH					sS		sS	20 58 40.0	-0.3
LZH					SS		**SnSn**	**21 00 12.8**	**-0.4**
LZH					pmax		pmax		
	comp=Z,57nm,1.0s								
LZH					pmax		pmax		
	comp=Z,270nm,4.5s								
LZH					LR		LR		
	comp=Z,174µm,15.6s								
WRAB	**Tennant Creek**		**31.61**	**158**	*d i*P		**P**	**20 53 24.8**	**-1.6**
WRAB					pmax		pmax		
	comp=Z,520nm,1.4s								
WRAB					MLR		MLR		
	comp=Z,43µm,21.0s								
WRAB	**Tennant Creek**		**31.61**	**158**	*e*P		**P**	**20 53 24.1**	**-2.3**
WRAB					LR		LR		
	comp=Z,11µm,20.0s								
WRA	**Warramunga Arr**		**31.61**	**158**	P		**P**	**20 53 24.9**	**-1.5**
	comp=Z,138nm,1.1s,baz=338,slow=9.1,SNR=110								
WRA					PcP		**PcP**	**20 56 18.1**	**-0.6**
	comp=Z,45nm,0.7s,baz=338,slow=3.0,SNR=8.8								
WRA					S		**S**	**20 58 30.6**	**-3.9**
	comp=Z,4.1nm,0.9s,baz=340,slow=14,SNR=2.5								
WRA					ScP		**ScP**	**21 00 03.8**	**+3.0**
	comp=Z,12nm,0.9s,baz=344,slow=3.7,SNR=4.8								
WRA					LR		LR	21 10 02.0	
	comp=Z,15µm,18.6s,baz=345,slow=44								
WB2	**Warramunga Arr**		**31.62**	**158**	*e*P		**P**	**20 53 24.4**	**-2.1**
SNY	**Shenyang**		**32.19**	**2**	⇑P		**P**	**20 53 30.0**	**-1.3**
SNY					S		**S**	**20 58 42.4**	**-0.7**
SNY					pmax		pmax		
	comp=Z,5µm,12.0s								
SNY					LR		LR		
	comp=Z,34µm,15.1s								
SNY					LR		LR		
	comp=Z,79µm,17.8s								
SNY					LR		LR		
	comp=Z,61µm,18.1s								
HHC	**Hu-ho-hao-te**		**32.60**	**345**	*e*P		**P**	**20 53 34.2**	**-0.8**
HHC					pP		pP	20 53 41.7	+0.1
HHC					PP		**PnPn**	**20 54 42.0**	**-1.0**
HHC					S		**S**	**20 58 51.8**	**+2.1**
HHC					sS		sS	20 58 59.0	-1.6
HHC					pmax		pmax		
	comp=Z,60nm,1.0s								
HHC					pmax		pmax		
	comp=Z,3µm,7.9s								
RABL	**Rabaul**		**32.78**	**113**	PFAKE			20 53 50.0	+13
RABL					LR		LR		
	comp=Z,18µm,21.0s								
BTO	**Baotou**		**32.80**	**343**	*e*P		**P**	**20 53 35.6**	**-1.2**
BTO					S		**S**	**20 58 48.6**	**-4.2**
BTO					LR		LR		
	comp=Z,19µm,15.7s								
BTO					LR		LR		
	comp=Z,20µm,12.8s								
GIRL	**Giralia**		**32.92**	**194**	P		**P**	**20 53 38.3**	**+0.4**
	baz=33,SNR=8.8								
SHL	**Shillong**		**32.93**	**303**	*e*P		**P**	**20 53 38.0**	**-0.3**
SHL					IAmb		IAmb	20 53 46.4	
	comp=Z,504nm,1.8s								
SHL					*ex*		x	20 59 00.0	
COCO	**West Island**		**33.22**	**230**	PFAKE			20 53 50.0	+9.5
COCO					LR		LR		
	comp=Z,13µm,19.0s								
CN2	**Changchun**		**34.26**	**4**	⇑P		**P**	**20 53 47.5**	**-1.8**
CN2					e*p*P		pP	20 53 55.4	-0.5
CN2					*e*S		**S**	**20 59 14.0**	**-1.1**
CN2					pmax		pmax		
	comp=Z,130nm,0.8s								
CN2					pmax		pmax		
	comp=Z,4µm,9.0s								
CN2					LR		LR		
	comp=Z,36µm,17.0s								
CN2					LR		LR		
	comp=Z,41µm,17.0s								
CN2					LR		LR		
	comp=Z,42µm,18.0s								
QIS	**Mount Isa**		**34.43**	**150**	P		**P**	**20 53 49.5**	**-1.5**
	baz=34,SNR=14								
WRKA	**Warakurna**		**34.86**	**170**	P		**P**	**20 53 53.3**	**-1.4**
	baz=35,SNR=382								
AS31	**Alice Springs**		**34.90**	**161**	*e*P		**P**	**20 53 53.3**	**-1.8**
ASAR	**Alice Springs**		**34.91**	**161**	P		**P**	**20 53 54.5**	**-0.6**
	comp=Z,89nm,0.6s,baz=336,slow=7.1,SNR=378								
ASAR					PcP		**PcP**	**20 56 27.2**	**-0.6**
	comp=Z,48nm,0.8s,baz=350,slow=3.0,SNR=7.6								
ASAR					LR		LR	21 11 19.2	
	comp=Z,11µm,18.5s,baz=352,slow=42								
AS01	**Alice Springs**		**34.92**	**161**	*e*P		**P**	**20 53 53.5**	**-1.8**
MTSU	**Mount Surprise**		**35.08**	**142**	P		**P**	**20 53 56.9**	**+0.1**
	baz=35,SNR=12								
LSA	**Lhasa**		**35.32**	**309**	P		**P**	**20 54 00.6**	**+1.4**
LSA					S		**S**	**20 59 38.0**	**+5.2**
LSA					pmax		pmax		
	comp=Z,41nm,1.2s								
LSA					pmax		pmax		
	comp=Z,8µm,10.3s								
LSA					LR		LR		
	comp=Z,17µm,17.9s								
LSA					LR		LR		
	comp=Z,19µm,16.3s								
LSA					LR		LR		
	comp=Z,44µm,17.4s								
LSA	**Lhasa**		**35.32**	**309**	*e*P		**P**	**20 54 00.1**	**+0.8**
LSA					MLR		MLR		
	comp=Z,39µm,19.0s								
LSA	**Lhasa**		**35.32**	**309**	*e*P		**P**	**20 54 00.1**	**+0.8**
LSA					LR		LR		
	comp=Z,39µm,19.0s								
MDJ	**Mudanjiang**		**35.53**	**9**	P		**P**	**20 54 01.8**	**+1.5**
MDJ					pP		pP	20 54 07.9	+1.0
MDJ					sP		sP	20 54 10.4	+0.8
MDJ					PP		**PP**	**20 55 22.1**	**+0.9**
MDJ					PcP		**PcP**	**20 56 29.4**	**+0.1**
MDJ					S		**S**	**20 59 37.7**	**+3.0**
MDJ					ScP		**ScP**	**21 00 14.4**	**+0.3**
MDJ					PcS		**PcS**	**21 00 17.3**	**+1.0**
MDJ					ScS		**ScS**	**21 04 19.3**	**+0.7**
MDJ					pmax		pmax		
	comp=Z,160nm,1.0s								
MDJ					pmax		pmax		
	comp=Z,5µm,12.8s								
MDJ					LR		LR		
	comp=Z,28µm,21.9s								
MDJ					LR		LR		
	comp=Z,32µm,27.7s								
MDJ					LR		LR		
	comp=Z,37µm,18.1s								
MDJ	**Mudanjiang**		**35.53**	**9**	*e*P		**P**	**20 54 00.8**	**+0.4**
MDJ					LR		LR		
	comp=Z,31µm,19.0s								
USRK	**Ussuriysk Ar.**		**35.56**	**12**	P		**P**	**20 54 00.8**	**+0.2**
	comp=Z,95nm,0.9s,baz=203,slow=7.4,SNR=157								
USRK					PcP		**PcP**	**20 56 29.7**	**+0.3**
	comp=Z,4.0nm,0.5s,baz=196,slow=3.0,SNR=4.6								
USRK					LR		LR	21 07 58.4	
	comp=Z,24µm,21.9s,baz=189,slow=35								
PATS	**Pohnpei**		**35.79**	**92**	*e*P		**P**	**20 54 05.5**	**+2.5**
PATS					LR		LR		
	comp=Z,39µm,21.0s								
GTA	**Gaotai**		**35.87**	**330**	⇑P		**P**	**20 54 02.6**	**-0.9**
GTA					pP		pP	20 54 08.7	-1.4
GTA					sP		sP	20 54 11.4	-1.4
GTA					PP		**PP**	**20 55 26.9**	**+1.7**
GTA					S		**S**	**20 59 42.0**	**+1.6**
GTA					sS		sS	20 59 53.0	+1.7
GTA					pmax		pmax		
	comp=Z,5µm,7.4s								
GTA					LR		LR		
	comp=Z,134µm,16.6s								
MEEK	**Meekatharra**		**36.12**	**186**	P		**P**	**20 54 04.0**	**-1.6**
	baz=36,SNR=55								
BWNR	**Bhubaneshwar**		**36.72**	**291**	*e*P		**P**	**20 54 09.7**	**-1.1**
BWNR					IAmb		IAmb	20 54 18.9	
ERM	**Erimo**		**37.22**	**26**	*d i*P		**P**	**20 54 12.5**	**-2.3**
ERM					pmax		pmax		
	comp=Z,62nm,2.1s								
ERM	**Erimo**		**37.22**	**26**	*e*P		**P**	**20 54 14.7**	**-0.1**
ERM					LR		LR		
	comp=Z,48µm,22.0s								
BOK	**Bokaro**		**37.48**	**297**	*e*P		**P**	**20 54 17.6**	**+0.4**
BOK					IAmb		IAmb	20 54 25.1	
	comp=Z,305nm,1.4s								
CTA	**Charters Tower**		**37.74**	**141**	P		**P**	**20 54 19.0**	**-0.5**
	comp=Z,14nm,0.6s,baz=326,slow=13								
CTA					PcP		**PcP**	**20 56 38.6**	**+2.2**
	comp=Z,20nm,0.8s,baz=304,slow=9.8,SNR=2.9								
CTA					LR		LR	21 10 52.1	
	comp=Z,22µm,21.7s,baz=322,slow=38								
CTAO	**Charters Tower**		**37.74**	**141**	*e*P		**P**	**20 54 17.9**	**-1.6**
CTAO					MLR		MLR		
	comp=Z,23µm,21.0s								
CTAO	**Charters Tower**		**37.74**	**141**	*e*P		**P**	**20 54 17.9**	**-1.6**
CTAO					LR		LR		
	comp=Z,23µm,21.0s								
RAMN	**Ramite**		**37.85**	**302**	*e*P		**P**	**20 54 21.2**	**+0.6**
	comp=Z,592nm,0.9s								
CHLP	**Challavanipeta**		**38.04**	**288**	*e*P		**P**	**20 54 21.4**	**-0.6**
CHLP					IAmb		IAmb	20 54 30.6	
	comp=Z,430nm,1.2s								
CHLP					*e*S		**S**	**21 00 10.7**	**-3.0**
CHLP					IVMs_BB		IVMs_BB	21 03 41.7	
	comp=Z,10µm,19.8s								
VIS	**Vishakhapatnam**		**38.62**	**286**	*e*P		**P**	**20 54 27.9**	**+0.9**
ASAJ	**Asahikawa**		**38.72**	**24**	P		**P**	**20 54 27.2**	**-0.2**
	comp=Z,68nm,1.1s,baz=237,slow=9.3								
ASAJ					PcP		**PcP**	**20 56 39.9**	**+1.0**
	baz=270,slow=20								
ASAJ	**Asahikawa**		**38.72**	**24**	*e*P		**P**	**20 54 26.4**	**-1.0**
ASAJ					PcP		**PcP**	**20 56 39.9**	**+1.0**
ASAJ					LR		LR		
	comp=Z,31µm,20.0s								
GUN	**Gumba**		**38.79**	**303**	*e*P		**P**	**20 54 28.7**	**+0.1**
	comp=Z,986nm,1.0s								
MORW	**Morawa**		**38.84**	**189**	P		**P**	**20 54 28.1**	**-0.4**
	baz=39,SNR=45								
PKIN	**Phulchoki**		**39.07**	**302**	*e*P		**P**	**20 54 31.4**	**+0.5**
	comp=Z,240nm,0.7s								
KKN	**Kakani**		**39.24**	**303**	*e*P		**P**	**20 54 32.0**	**-0.3**
	comp=Z,595nm,1.2s								
DMN	**Daman**		**39.32**	**302**	*e*P		**P**	**20 54 33.3**	**+0.3**
	comp=Z,633nm,1.2s								
HIA	**Hailar**		**39.67**	**357**	*c i*P		**P**	**20 54 33.8**	**-1.5**
HIA					pmax		pmax		
	comp=Z,65nm,1.0s								
HIA					MLR		MLR		
	comp=Z,31µm,17.0s								
HIA	**Hailar**		**39.67**	**357**	*e*P		**P**	**20 54 35.2**	**-0.1**
GKN	**Gorkha**		**39.85**	**303**	*e*P		**P**	**20 54 37.2**	**-0.1**
	comp=Z,589nm,1.3s								
PVM	**Polavaram**		**40.19**	**285**	*e*P		**P**	**20 54 39.6**	**-0.4**
PVM					IAmb		IAmb	20 54 48.2	
	comp=Z,91nm,1.2s								
PVM					IVMs_BB		IVMs_BB	21 08 41.4	
	comp=Z,12µm,22.7s								
BLDU	**Ballidu**		**40.26**	**187**	P		**P**	**20 54 39.4**	**-1.0**
	baz=40,SNR=13								
HABR	**Khabarovsk**		**40.29**	**13**	*ce*P		**P**	**20 54 38.7**	**-1.7**
HABR					*e**SP		**pP**	**20 54 45.9**	**-1.1**
HABR					*e*			20 56 10.1	
HABR					*e*			20 56 40.6	
HABR					*e*S		**S**	**21 00 45.5**	**-1.1**
HABR					*e**SS		**sS**	**21 00 54.7**	**-2.9**
HABR					*e*SS		**SS**	**21 03 43.4**	**-2.1**
HABR					*e*			21 04 42.2	
HABR					pmax		pmax		
	comp=Z,55nm,1.5s								
HABR					pmax		pmax		
	comp=N,13nm,0.8s								
HABR					pmax		pmax		
	comp=E,7.0nm,0.8s								
HABR					pmax		pmax		
	comp=Z,1µm,2.8s								
HABR					MLR		MLR		
	comp=E,17µm,16.0s								
HABR					MLR		MLR		
	comp=Z,28µm,16.0s								
HABR					MLR		MLR		
	comp=N,14µm,16.0s								
KLR	**Kul'dur**		**40.37**	**10**	P		**P**	**20 54 41.5**	**+0.5**
	comp=N,36nm,0.7s,baz=212,slow=5.5,SNR=77								
KLR					PcP		**PcP**	**20 56 43.9**	**-0.2**
	comp=N,38nm,0.9s,baz=200,slow=8.7,SNR=2.7								
KLR	**Kul'dur**		**40.37**	**10**	P		**P**	**20 54 41.5**	**+0.5**
KLR								20 56 43.9	
KLR					pm

YSS MLR MLR
comp=E,20µm,15.0s
YSS Yuzh-Sakhalins 41.18 21 *e*P **P** **20 54 47.6 -0.2**
YSS LR LR
comp=Z,12µm,20.0s
PYUN Piuthan 41.25 302 *e*P **P** **20 54 49.0 0.0**
comp=Z,1µm,1.1s
MDRS Chennai 41.30 279 *e*P **P** **20 54 50.2 +0.9**
MDRS IAmb IAmb 20 54 58.4
comp=Z,307nm,1.4s
ADKI Addanki 41.66 283 *e*P **P** **20 54 51.0 -1.1**
ADKI IAmb IAmb 20 55 00.7
comp=Z,202nm,1.4s
ADKI *e*S **S** **21 01 05.8 -2.2**
ADKI IVMs_BB IVMs_BB 21 08 37.7
comp=Z,14µm,31.6s
MUN Mundaring 41.67 188 P **P** **20 54 51.7 -0.3**
baz=42
QLP Quilpie 41.77 150 P **P** **20 54 50.9 -2.0**
baz=42,SNR=21
SKHT Srikalahasti 41.83 280 *e*P **P** **20 54 53.1 -0.4**
SKHT IAmb IAmb 20 55 02.2
comp=Z,212nm,1.3s
SKHT *e*S **S** **21 01 11.3 +0.8**
SKHT IVMs_BB IVMs_BB 21 08 40.6
comp=Z,10µm,30.6s
KUR Kuril'sk 41.86 27*c* *i*P **P** **20 54 52.5 -0.8**
KUR *i*S **S** **21 01 15.8 +5.7**
KUR pmax pmax
comp=Z,3µm,6.2s
KUR pmax pmax
comp=N,140nm,2.0s
KUR pmax pmax
comp=E,59nm,2.0s
KUR pmax pmax
comp=Z,239nm,2.0s
HNR Honiara 41.99 116 *e*P P 20 55 12.0 +17
HNR Honiara 41.99 116 PFAKE 20 55 10.0 +15
HNR LR LR
comp=Z,15µm,21.0s
NJS Nagarjunasagar 42.34 284 *e*P **P** **20 54 56.8 -1.0**
NJS IAmb IAmb 20 55 05.7
comp=Z,224nm,1.4s
NJS *e*S **S** **21 01 17.1 -0.9**
NJS IVMs_BB IVMs_BB 21 08 56.8
comp=Z,11µm,36.6s
NWAO Narrogin (SRO) 42.49 186 P **P** **20 54 58.2 -0.4**
comp=Z,171nm,0.7s,baz=248,slow=10.0
NWAO Narrogin (SRO) 42.49 186 P **P** **20 54 57.6 -1.1**
baz=43,SNR=68
NWAO P **P** **20 54 57.6 -1.1**
baz=43,SNR=68
NWAO Narrogin (SRO) 42.49 186 *e*P **P** **20 54 57.5 -1.1**
RPR Rampur 42.56 287 *e*P **P** **20 54 59.0 -0.6**
RPR IAmb IAmb 20 55 07.6
comp=Z,238nm,1.4s
RPR *e*S **S** **21 01 22.1 +0.8**
RPR IVMs_BB IVMs_BB 21 19 16.5
comp=Z,12µm,14.6s
RCLA Racherla 42.62 282 *e*P **P** **20 54 59.1 -1.0**
RCLA IAmb IAmb 20 55 07.9
comp=Z,175nm,1.2s
RCLA *e*S **S** **21 01 19.4 -2.8**
RCLA IVMs_BB IVMs_BB 21 13 39.3
comp=Z,13µm,18.1s
SRLM Srisailam 42.71 283 *e*P **P** **20 54 59.8 -1.0**
SRLM IAmb IAmb 20 55 08.6
comp=Z,108nm,0.9s
SRLM *e*S **S** **21 01 19.4 -4.2**
SRLM IVMs_BB IVMs_BB 21 09 08.4
comp=Z,10µm,30.4s
CIT Chita 42.96 352 *e*P **P** **20 55 01.5 -0.8**
CIT *e* 20 56 56.6
CIT *e*S **S** **21 01 26.8 +0.5**
CIT *e* 21 05 00.4
CIT pmax pmax
comp=Z,464nm,2.3s
NGP Nagpur 43.09 291 *e*P **P** **20 55 03.2 -0.6**
HYB Hyderabad 43.13 285 *i*P **P** **20 55 04.0 -0.2**
HYB *e* 20 55 11.0
HYB *e*PP **PcP** **20 56 50.0 -3.9**
HYB *e*S **S** **21 01 26.0 -3.7**
HYB LR LR
comp=Z,52nm,28.0s
HYB Hyderabad 43.13 285 *e*P **P** **20 55 04.2 0.0**
HYB IAmb IAmb 20 55 11.5
comp=Z,470nm,1.6s
HYBB Hyderabad (bro 43.13 285 *e*P **P** **20 55 03.2 -0.9**
HYBB IAmb IAmb 20 55 12.0
comp=Z,113nm,0.8s
HYBB *e*S **S** **21 01 29.0 -0.7**
HYBB IVMs_BB IVMs_BB 21 09 36.9
comp=Z,11µm,26.4s
SRSP Sriramsagar 43.47 287 *e*P **P** **20 55 05.9 -1.0**
SRSP IAmb IAmb 20 55 14.8
comp=Z,165nm,1.0s
SRSP *e*S **S** **21 01 31.5 -3.1**
SRSP IVMs_BB IVMs_BB 21 10 55.5
comp=Z,9µm,23.0s
ZAK Zakamensk 43.65 342 *e*P **P** **20 55 07.2 -0.8**
ZAK pmax pmax
comp=Z,77nm,1.6s
PTH Pithoragarh 44.02 303 *e*P **P** **20 55 14.1 +2.7**
RMQ Roma 44.10 145 P **P** **20 55 10.3 -1.5**
baz=44,SNR=14
BBOO Buckleboo 44.12 163 P **P** **20 55 10.5 -1.3**
baz=44,SNR=80
BBOO Buckleboo 44.12 163 *e*P **P** **20 55 10.9 -0.9**
RKGY Rocky Gully 44.18 186 P **P** **20 55 12.2 -0.1**
baz=44,SNR=44
TYV Tymovskoe 44.52 18 *e*P **P** **20 55 14.8 0.0**
TYV *e*S **S** **21 01 48.5 -0.4**
TYV pmax pmax
comp=Z,1µm,2.0s
TYV pmax pmax
comp=Z,8µm,12.0s
TYV smax smax
comp=E,2µm,3.5s
TYV smax smax
comp=E,22µm,10.0s
TYV MLR MLR
comp=E,33µm,21.0s
TYV MLR MLR
comp=Z,32µm,19.0s
EIDS Eidsvold 44.63 142 P **P** **20 55 14.3 -1.7**
baz=45,SNR=17
EIDS Eidsvold 44.63 142 *e*P **P** **20 55 13.5 -2.6**
EIDS LR LR
comp=Z,30µm,21.0s
TLY Talaya 44.71 344 P **P** **20 55 16.9 +0.6**
comp=Z,24nm,0.7s,baz=185,slow=5.7,SNR=30
TLY LR LR 21 16 10.7
comp=Z,49µm,18.5s,baz=143,slow=39
TLY Talaya 44.71 344*c* *i*P **P** **20 55 15.2 -1.1**
TLY *e*S **S** **21 01 51.1 -0.7**
TLY *e*SS **SS** **21 05 11.1 -1.5**
TLY *e*SSS SSS 21 06 00.1
TLY pmax pmax
comp=Z,236nm,1.1s
TLY MLR MLR
comp=Z,45µm,18.0s
TLY Talaya 44.71 344 *e*P **P** **20 55 17.0 +0.7**
TRD Trivandrum 44.72 272 *e*P **P** **20 55 17.1 +0.2**
KWAJ Kwajalein Atol 44.77 87 P P 20 55 22.3 +4.9
KWAJ Kwajalein Atol 44.77 87 P P 20 55 22.3 +5.0
BHPL Bhopal 44.92 293 *e*P **P** **20 55 18.4 -0.2**
BHPL IAMs_20 IAMs_20 21 19 12.3
comp=Z,29µm,15.9s
KLRI Killari 45.04 286 *e*P **P** **20 55 18.4 -1.1**
KLRI IAmb IAmb 20 55 27.1
comp=Z,222nm,0.8s
KLRI *e*S **S** **21 01 54.8 -2.8**
KLRI IVMs_BB IVMs_BB 21 11 26.2
comp=Z,16µm,19.2s
IRK Irkutsk 45.04 344 *e*P **P** **20 55 16.8 -2.2**
IRK *e* 20 56 58.2
IRK *e* 21 02 03.4
IRK pmax pmax
comp=Z,530nm,2.2s
STKA Stephens Creek 45.14 157 P **P** **20 55 19.6 -0.4**
comp=Z,57nm,0.6s,baz=331,slow=7.8,SNR=90
STKA PcP **PcP** **20 57 00.1 -0.2**
comp=Z,64nm,0.7s,baz=316,slow=3.1,SNR=2.9
STKA LR LR 21 16 57.2
comp=Z,5µm,18.1s,baz=339,slow=40

STKA Stephens Creek 45.14 157 P **P** **20 55 18.8 -1.2**
baz=45,SNR=56
STKA Stephens Creek 45.14 157 *e*P **P** **20 55 18.8 -1.2**
STKA PcP **PcP** **20 57 00.1 -0.2**
WMQ Urumqi 45.45 325⇓ *i*P **P** **20 55 24.0 +1.5**
WMQ pP pP 20 55 28.6 -0.6
WMQ sP sP 20 55 31.0 -0.9
WMQ PP **PP** **20 57 07.1 -1.9**
WMQ S **S** **21 02 03.7 +0.8**
WMQ sS sS 21 02 11.9 -2.1
WMQ SS **ScS** **21 05 18.6 +0.6**
WMQ pmax pmax
comp=Z,320nm,1.4s
WMQ pmax pmax
comp=Z,3µm,7.2s
WMQ LR LR
comp=Z,80µm,17.5s
MOY Mondy 45.48 342 *e*P **P** **20 55 23.4 +0.8**
MOY pmax pmax
comp=Z,404nm,1.8s
HTT Hallett 45.57 160 P **P** **20 55 22.4 -1.1**
baz=46,SNR=90
NKL Nikolayevsk 45.98 15 *i*P **P** **20 55 25.0 -1.3**
NKL *e*S **S** **21 02 08.0 -2.0**
NKL pmax pmax
comp=N,4µm,12.0s
NKL pmax pmax
comp=E,2µm,12.0s
NKL pmax pmax
comp=Z,6µm,12.0s
NKL pmax pmax
comp=N,400nm,1.6s
NKL pmax pmax
comp=E,350nm,1.6s
NKL pmax pmax
comp=Z,930nm,1.6s
NKL smax smax
comp=N,12µm,11.0s
NKL smax smax
comp=E,6µm,11.0s
NKL MLR MLR
comp=N,22µm,17.0s
NKL MLR MLR
comp=E,33µm,17.0s
NKL MLR MLR
comp=Z,32µm,17.0s
DDI Dehra Dun 46.04 303 *e*P **P** **20 55 27.1 -0.2**
DDI IAmb IAmb 20 55 35.8
comp=Z,212nm,0.7s
DDI IAMs_20 IAMs_20 21 24 34.8
comp=Z,13µm,16.1s
NDI New Delhi 46.29 301 IAmb IAmb 20 55 24.0
comp=Z,541nm,1.6s
NDI *e*P **P** **20 55 25.0 -4.2**
NDI *e*S **S** **21 02 10.0 -5.2**
CMSA Cobar Meteorol 46.60 152 P **P** **20 55 31.1 -0.4**
baz=47,SNR=48
SMLA Simla 47.01 304 *e*P **P** **20 55 34.3 -0.5**
CLNS Chul'man 47.24 2 *e*P **P** **20 55 35.6 -0.7**
CLNS *e**PP **pP** **20 55 43.8 +0.8**
CLNS *e* 20 57 08.2
CLNS *e* 20 57 23.7
CLNS *e*S **S** **21 02 26.1 -2.0**
CLNS *i* 21 05 27.3
CLNS *e*SS ScS 21 05 41.3 +12
CLNS pmax pmax
comp=Z,85nm,1.1s
CLNS pmax pmax
comp=E,24nm,1.1s
CLNS pmax pmax
comp=N,50nm,1.1s
CLNS pmax pmax
comp=N,50nm,1.3s
CLNS pmax pmax
comp=Z,83nm,1.2s
CLNS pmax pmax
comp=E,79nm,1.0s
CLNS smax smax
comp=N,7µm,12.2s
CLNS smax smax
comp=E,14µm,12.8s
CLNS MLR MLR
comp=E,18µm,16.0s
CLNS MLR MLR
comp=Z,12µm,14.0s
CLNS MLR MLR
comp=N,8µm,14.0s
SDNR Sundarnagar 47.28 304 *e*P **P** **20 55 38.0 +1.0**
GOA Goa 47.56 282 *e*P **P** **20 55 38.8 -0.5**
GOA IAmb IAmb 20 55 47.5
comp=Z,285nm,1.4s
POO Poona 47.67 286⇑ *i*P **P** **20 55 40.0 -0.2**
comp=Z,31nm,1.0s
POO *e*PPP PPP 21 01 11.5
POO *i*S **S** **21 02 40.0 +4.6**
POO *i*PPS PPS 21 06 25.0
POO *i*SSS SSS 21 12 44.5
POO *e*LR LR 21 16 28.0
POO Poona 47.67 286 *e*P **P** **20 55 40.3 +0.1**
BHK Bhakra 47.71 304 *e*P **P** **20 55 39.7 -0.6**
BOD Bodaibo 48.60 354 *e*P **P** **20 55 46.4 -0.3**
BOD pmax pmax
comp=Z,269nm,1.5s
BOM Bombay 48.68 287 *ex* pP 20 55 53.6 -1.1
ARMA Armidale 48.73 146 *e*P **P** **20 55 47.2 -1.0**
baz=49,SNR=26
ARMA Armidale 48.73 146 *e*P **P** **20 55 47.4 -0.9**
ZSN Zaisan 49.25 327⇑ *i*P P 20 56 00.7 +8.8
comp=Z,337nm,1.9s
ZSN *i*S S 21 03 06.5 +10
ZSN LR LR 21 17 01.6
comp=Z,15µm,14.1s
ARPS Mount Arapiles 49.60 159 P **P** **20 55 54.6 0.0**
baz=50,SNR=26
SKR Severo-Kuril's 49.62 28 *e*P **P** **20 55 52.4 -2.2**
SKR *e* 20 57 13.4
SKR *i*S **S** **21 03 03.5 +1.8**
SKR pmax pmax
comp=Z,7µm,17.6s
SKR pmax pmax
comp=Z,278nm,1.0s
SKR MLR MLR
comp=Z,15µm,18.0s
SHLS Shalkode 50.07 320 *i*P **P** **20 55 56.4 -2.0**
comp=Z,2µm,1.0s
SHLS *i*S **S** **21 03 03.9 -4.7**
SHLS LR LR 21 17 28.9
comp=Z,10µm,15.0s
PDGK Podgornoye 50.14 320 *i*P **P** **20 56 00.1 +1.2**
PDGK pmax pmax
comp=Z,893nm,1.1s
YNG Young 50.15 152 P **P** **20 55 58.3 -0.6**
baz=50,SNR=10
MK01 Makanchi Array 50.27 325 *e*P **P** **20 55 58.4 -1.3**
MK31 Makanchi Array 50.28 325 *i*P **P** **20 55 59.5 -0.3**
MK31 pmax pmax
comp=Z,199nm,0.8s
MK31 Makanchi Array 50.28 325 *e*P **P** **20 55 59.6 -0.2**
MKAR Makanchi Array 50.28 325 P **P** **20 55 59.8 0.0**
comp=Z,89nm,1.0s,baz=129,slow=7.2,SNR=159
MKAR PcP **PcP** **20 57 18.2 -0.3**
comp=Z,14nm,0.8s,baz=113,slow=4.2,SNR=1.7
MKAR LR LR 21 18 43.7
comp=Z,51µm,18.2s,baz=118,slow=38
MKAR PKPPKP **P'P'df** **21 26 47.0 -5.1**
comp=Z,4.1nm,1.1s,baz=298,slow=2.6,SNR=12
UZB Uzynbulak 50.35 319 *i*P **P** **20 56 00.4 -0.1**
comp=Z,2µm,1.1s
UZB *i*S **S** **21 03 11.2 -1.4**
UZB LR LR 21 17 36.6
comp=Z,15µm,14.2s
MAKZ Makanchi 50.47 325 *i*P **P** **20 56 02.8 +1.6**
MAKZ pmax pmax
comp=Z,625nm,1.4s
MAKZ Makanchi 50.47 325 *e*P **P** **20 56 00.4 -0.8**
MAKZ LR LR
comp=Z,66µm,18.0s
MGCD Mangrove Creek 50.61 148 P **P** **20 56 02.5 +0.1**
baz=51,SNR=5.7
SATY Saty 50.70 319⇑ *i*P **P** **20 56 03.2 0.0**
comp=Z,3µm,1.2s
SATY *i*S **S** **21 03 16.3 -1.2**
SATY LR LR 21 18 00.0
comp=Z,30µm,14.7s
ZHN Zhinishke 50.74 319⇑ *i*P **P** **20 56 03.2 -0.3**
comp=Z,979nm,1.6s

ZHN *i*S **S** **21 03 16.3 -1.6**
ZHN LR LR 21 17 51.8
comp=Z,9µm,12.7s
KSH Kashi 50.83 314 P **P** **20 56 05.5 +1.3**
KSH *e*sP sP 20 56 15.3 +1.7
KSH *e*PcP **PcP** **20 57 22.8 +2.0**
KSH *e*PP **PP** **20 58 03.2 +2.7**
KSH S **S** **21 03 19.0 -0.3**
KSH ScS **ScS** **21 05 52.4 -1.7**
KSH pmax pmax
comp=Z,350nm,1.7s
KSH pmax pmax
comp=Z,4µm,5.2s
KSH LR LR
comp=Z,16µm,13.7s
KSH LR LR
comp=Z,24µm,16.2s
KSH LR LR
comp=Z,32µm,20.1s
TARA Tarawa 51.04 96 *e*P **P** **20 56 06.1 +0.1**
TARA LR LR
comp=Z,12µm,18.0s
CAN Canberra 51.27 152 P **P** **20 56 07.2 -0.2**
baz=51
CAN Canberra 51.27 152 *e*P **P** **20 56 06.9 -0.5**
CAN MLR MLR
comp=Z,18µm,20.0s
CAN Canberra 51.27 152 *e*P **P** **20 56 06.9 -0.5**
CAN LR LR
comp=Z,18µm,20.0s
CNB Canberra Magne 51.44 152 P **P** **20 56 08.3 -0.3**
baz=52,SNR=5.3
MDOK Medeo 51.63 319⇓ *i*P **P** **20 56 10.1 -0.1**
comp=Z,816nm,1.8s
MDOK *i*PP **PP** **20 58 08.5 +0.7**
MDOK *i*S **S** **21 03 28.6 -1.7**
MDOK *i*SS **SS** **21 07 04.1 -2.7**
MDOK LR LR 21 18 39.6
comp=Z,13µm,13.7s
TOO Toolangi 51.66 156 P **P** **20 56 11.8 +1.6**
baz=52,SNR=12
AAA Alma-Ata 51.74 319 *e*P **P** **20 56 10.7 -0.2**
AAA *e*S **S** **21 03 27.1 -4.6**
AAA pmax pmax
comp=Z,8µm,8.7s
AAA smax smax
comp=E,22µm,11.5s
AAA MLR MLR
comp=Z,34µm,19.0s
AAA Alma-Ata 51.74 319 *e*P **P** **20 56 11.1 +0.2**
comp=Z,1µm,1.3s
AAA *e*S **S** **21 03 30.2 -1.5**
AAA *i*SS **SS** **21 07 10.7 +2.3**
AAA LR LR 21 18 50.0
comp=Z,14µm,13.7s
KRAR Krasnoyarsk 51.77 339*d* *i*P **P** **20 56 11.5 +0.8**
BHJ Bhuj 52.00 292 *e*P **P** **20 56 13.8 +0.8**
BHJ IAmb IAmb 20 56 23.2
comp=Z,482nm,0.8s
PEA0 Petropavlovsk- 52.00 26 *e*P **P** **20 56 12.0 -0.6**
PEA0B Petropavlovsk- 52.00 26 *e*P **P** **20 56 12.2 -0.4**
PEA0B LR LR
comp=Z,25µm,20.0s
PETK Petropavlovsk- 52.00 26 P **P** **20 56 12.5 0.0**
comp=Z,29nm,0.5s,baz=198,slow=4.9,SNR=15
PETK LR LR 21 18 59.1
comp=Z,20µm,20.2s,baz=220,slow=37
PETK PKPPKP **P'P'df** **21 26 49.2 -0.2**
comp=Z,4.5nm,1.0s,baz=170,slow=11,SNR=4.1
PET Petropavlovsk 52.37 27*c* *i*P **P** **20 56 14.1 -1.1**
PET *i*S **S** **21 03 38.2 -1.5**
PET *e*SS **SS** **21 07 16.2 -1.4**
PET pmax pmax
comp=Z,7µm,14.5s
PET pmax pmax
comp=Z,209nm,1.2s
PET smax smax
comp=N,11µm,16.3s
PET smax smax
comp=N,12µm,15.6s
PET MLR MLR
comp=Z,23µm,20.0s
PET MLR MLR
comp=Z,17µm,18.0s
PET Petropavlovsk 52.37 27 *e*P **P** **20 56 13.8 -1.5**
PET LR LR
comp=Z,28µm,22.0s
DGAR Diego Garcia 52.38 253 *e*P **P** **20 56 18.4 +2.4**
DGAR pmax pmax
comp=Z,469nm,1.1s
DGAR MLR MLR
comp=Z,18µm,19.0s
DGAR Diego Garcia 52.38 253 *e*P **P** **20 56 18.4 +2.4**
comp=Z,469nm,1.1s
DGAR LR LR
comp=Z,18µm,19.0s
KUU Kurty 52.42 319 *i*P **P** **20 56 15.7 -0.2**
comp=Z,5µm,1.1s
KUU *i*S **S** **21 03 39.0 -1.9**
KUU LR LR 21 18 55.9
comp=Z,22µm,15.3s
TKM2 Tokmak 2 52.48 318 *i*P **P** **20 56 17.6 +1.0**
TKM2 pmax pmax
comp=Z,481nm,1.4s
YAK Yakutsk 52.69 4 P **P** **20 56 17.8 +0.3**
comp=Z,82nm,0.8s,baz=196,slow=3.3,SNR=33
YAK LR LR 21 19 33.5
comp=Z,25µm,21.3s,baz=192,slow=37
YAK Yakutsk 52.69 4 *e*P **P** **20 56 17.4 -0.1**
YAK *e* 20 57 26.7
YAK *e* 20 58 15.4
YAK *e*PPP PPP 20 59 21.4
YAK *e*S **S** **21 03 40.7 -3.1**
YAK *e* 21 06 03.4
YAK *e*SS **SS** **21 07 22.8 +0.4**
YAK *e*SSS SSS 21 09 04.3
YAK pmax pmax
comp=Z,87nm,0.9s
YAK pmax pmax
comp=N,28nm,1.0s
YAK pmax pmax
comp=Z,955nm,3.8s
YAK pmax pmax
comp=N,249nm,2.0s
YAK pmax pmax
comp=E,121nm,2.3s
YAK smax smax
comp=N,6µm,9.1s
YAK smax smax
comp=E,11µm,9.1s
YAK Yakutsk 52.69 4 P **P** **20 56 16.2 -1.2**
FRU Bishkek 53.10 317 *e*P **P** **20 56 20.0 -1.0**
FRU *i*S **S** **21 03 46.0 -4.2**
FRU pmax pmax
comp=Z,255nm,2.0s
FRU pmax pmax
comp=E,2800µm,11.0s
AAK Ala-Archa 53.10 317 P **P** **20 56 21.4 +0.3**
comp=E,25nm,0.8s,baz=90,slow=5.4,SNR=60
AAK LR LR 21 21 04.8
comp=E,42µm,21.5s,baz=96,slow=38
AAK Ala-Archa 53.10 317 *i*P **P** **20 56 21.5 +0.3**
AAK pmax pmax
comp=Z,430nm,2.1s
AAK MLR MLR
comp=Z,102µm,22.0s
AAK Ala-Archa 53.10 317 P **P** **20 56 21.3 +0.1**
SNR=248
AAK P **P** **20 56 21.3 +0.1**
SNR=248
AAK P **P** **20 56 21.3 +0.1**
SNR=248
AAK Ala-Archa 53.10 317 *e*P **P** **20 56 21.1 -0.1**
ZAA0 Zalesovo Array 53.44 333 *e*P **P** **20 56 21.4 -1.8**
ZALV Zalesovo Beam 53.44 333 P **P** **20 56 23.2 0.0**
comp=Z,13nm,0.6s,baz=128,slow=6.3,SNR=68
ZALV LR LR 21 20 02.3
comp=Z,24µm,19.5s,baz=136,slow=37
ZALV PKPPKP **P'P'df** **21 26 45.1 -2.3**
comp=Z,0.5nm,0.3s,baz=260,slow=4.1,SNR=4.8
ZALV PKP2bc 21 26 54.8
comp=Z,2.5nm,0.7s,baz=337,slow=1.9,SNR=4.7
ZALV Zalesovo Beam 53.44 333 P **P** **20 56 23.2 0.0**
ZALV pmax pmax
comp=Z,21nm,0.7s
ZALV MLR MLR

comp=Z,24µm,19.5s
SEM Semipalatinsk 53.46 328 *i* P **P 20 56 22.1 -1.6**
comp=Z,402nm,1.7s
SEM *i* S **S 21 03 51.7 -3.4**
SEM LR LR 21 19 08.5
comp=Z,15µm,13.5s
DZM Mont Dzumac 53.52 126 *e*P **P 20 56 24.0 -0.4**
comp=Z,188nm,1.4s
DZM *e*S **S 21 03 58.0 +1.5**
comp=Z,35µm,32.0s
DZM *e*LR LR 21 12 01.6
comp=Z,52µm,34.0s
DZM Mont Dzumac 53.52 126 *e*P **P 20 56 24.5 +0.1**
DZM LR LR
comp=Z,17µm,22.0s
MA2 Magadan 54.36 17 P **P 20 56 29.8 0.0**
comp=Z,104nm,0.8s,baz=211,slow=5.4,SNR=24
MA2 LR LR 21 20 45.7
comp=Z,1µm,21.3s,baz=218,slow=37
MNAS Manas 54.40 316 *i* P **P 20 56 32.4 +1.8**
MNAS pmax pmax
comp=Z,623nm,1.4s
BTLS Baital 54.40 319 *i* P **P 20 56 30.5 +0.2**
comp=Z,324nm,1.0s
BTLS *i* S **S 21 04 06.2 -1.5**
BTLS LR LR 21 19 40.0
comp=Z,15µm,16.2s
KURBB Kurchatov Arra 54.49 327 P **P 20 56 31.5 +0.7**
comp=Z,58nm,0.9s,baz=133,slow=6.6,SNR=199
KURK Kurchatov 54.49 327 P **P 20 56 31.5 +0.6**
KURK pmax pmax
comp=Z,58nm,0.9s
KURK Kurchatov 54.49 327 P **P 20 56 31.5 +0.6**
KBL Kabul 54.51 306 *e*P **P 20 56 30.3 -1.3**
KBL MLR MLR
comp=Z,22µm,20.0s
KBL Kabul 54.51 306 *e*P **P 20 56 30.3 -1.3**
KBL LR LR
comp=Z,22µm,20.0s
NVS Novosibirsk 54.73 334⇑ *i*P **P 20 56 33.0 +0.5**
NVS *e*PPP PPP 20 59 54.6
NVS *i* S **S 21 04 15.3 +3.6**
NVS *i* 21 06 09.8
NVS pmax pmax
comp=Z,459nm,1.3s
NVS pmax pmax
comp=N,320nm,1.5s
NVS pmax pmax
comp=E,253nm,1.5s
NVS smax smax
comp=N,174nm,2.3s
NVS smax smax
comp=E,340nm,2.5s
IUG Iuzhnay 55.99 315 *i* P **P 20 56 41.8 -0.2**
comp=E,1µm,1.1s
IUG *i* S **S 21 04 27.2 -2.1**
IUG LR LR 21 21 01.7
comp=E,12µm,14.5s
KK31 Karatay Array 55.99 316 *i* P **P 20 56 42.9 +1.0**
KK31 pmax pmax
comp=Z,231nm,0.7s
CHM Chimkent 56.34 315 *e*P **P 20 56 45.4 +1.0**
comp=Z,200nm,1.0s
CHM *i* S **S 21 04 33.0 -0.8**
CHM *i* SS **SS 21 08 20.4 -0.4**
CHM LR LR 21 21 41.0
comp=Z,16µm,14.3s
BRZS Berezniki 57.41 324 *i* P **P 20 56 52.7 +0.8**
BRZS *i* S **S 21 04 46.8 -0.9**
BRZS LR LR 21 21 16.4
comp=Z,916nm,14.6s
SEY Seymchan 57.56 16 P **P 20 56 52.9 +0.3**
comp=Z,52nm,0.8s,baz=218,slow=5.1,SNR=73
SEY LR LR 21 23 48.9
comp=Z,13µm,18.3s,baz=210,slow=38
MIDW Midway 59.50 63 PFAKE 20 57 20.0 +13
MIDW LR LR
comp=Z,17µm,22.0s
VOSK Vostochnaya 59.61 327 *e*P **P 20 57 05.6 -1.5**
VOSK MLR MLR
comp=Z,28µm,18.0s
VOSK Vostochnaya 59.61 327 *e*P **P 20 57 05.6 -1.5**
VOSK LR LR
comp=Z,28µm,18.0s
SMY Shemya 59.93 34 *es*P **sP 20 57 17.1 -1.7**
SMY LR LR
comp=Z,13µm,20.0s
BVAR Borovoye Array 60.06 327 P **P 20 57 10.6 +0.4**
comp=Z,48nm,1.2s,baz=123,slow=7.9,SNR=84
BVAR LR LR 21 25 32.3
comp=Z,31µm,18.1s,baz=119,slow=38
BVAR PKP2bc 21 26 40.8
comp=Z,5,6nm,1.1s,baz=292,slow=4.3,SNR=10.0
BRVK Borovoye 60.13 327*c i*P **P 20 57 09.9 -0.8**
BRVK pmax pmax
comp=Z,259nm,1.2s
BRVK MLR MLR
comp=Z,75µm,18.0s
BRVK Borovoye 60.13 327 *e*P **P 20 57 09.8 -1.0**
BRVK LR LR
comp=Z,33µm,19.0s
CHKZ Chkalovo 60.23 327 *i* P **P 20 57 12.1 +0.7**
CHKZ pmax pmax
comp=Z,68nm,1.0s
ZRNK Zerenda 60.78 326 *i* P **P 20 57 14.6 -0.6**
ZRNK pmax pmax
comp=Z,406nm,1.4s
ZRNK Zerenda 60.78 326 *e*P **P 20 57 13.9 -1.3**
ZRNK LR LR
comp=Z,32µm,18.0s
MSVF Nonsavu 61.41 116 *e*P **P 20 57 19.8 -0.2**
MSVF MLR MLR
comp=Z,15µm,22.0s
MSVF Nonsavu 61.41 116 *e*P **P 20 57 19.8 -0.2**
MSVF LR LR
comp=Z,15µm,22.0s
WSAR Wadi Sarin 62.11 291 P **P 20 57 24.2 -0.5**
comp=Z,62nm,0.6s,baz=139,slow=4.7,SNR=51
WSAR S **S 21 05 46.0 -3.1**
comp=Z,8.0nm,1.0s,baz=49,slow=17,SNR=1.9
TIXI Tiksi 62.20 2 P **P 20 57 24.1 -0.3**
comp=Z,62nm,0.9s,baz=160,slow=5.2,SNR=69
TIXI PKPPKP **P'P'df 21 26 30.2 -3.1**
comp=Z,1.9nm,0.4s,baz=314,slow=4.0,SNR=5.0
TIXI LR LR 21 27 46.7
comp=Z,26µm,18.1s,baz=199,slow=39
TIXI Tiksi 62.20 2*ce*P **P 20 57 22.2 -2.1**
TIXI pmax pmax
comp=Z,98nm,1.0s
TIXI MLR MLR
comp=Z,25µm,17.0s
TIXI Tiksi 62.20 2 *e*P **P 20 57 22.3 -2.1**
TIXI P'P' 21 26 30.2
BIDO Bidbid 62.58 292 P **P 20 57 30.9 +3.0**
SNR=18
BIDO P **P 20 57 30.9 +3.0**
SNR=18
JMDO Jabal Madar 62.59 290 P **P 20 57 30.9 +3.0**
SNR=13
SMDO Samad 62.65 291 P **P 20 57 31.6 +3.2**
SNR=9.1
NRIK Noril'sk 63.80 347 P **P 20 57 35.0 0.0**
comp=Z,74nm,0.9s,baz=134,slow=6.1,SNR=61
NRIK PKP2bc 21 26 29.6
comp=Z,3.2nm,0.8s,baz=343,slow=4.7,SNR=3.8
NRIK LR LR 21 27 43.9
comp=Z,29µm,18.1s,baz=152,slow=38
GEYT Alibeck 63.83 308 P **P 20 57 36.6 +0.7**
comp=Z,19nm,0.6s,baz=132,slow=4.2,SNR=48
GEYT LR LR 21 28 14.2
comp=Z,20µm,20.0s,baz=85,slow=39
BANOM Banah 64.31 294 *i* P **P 20 57 38.2 -1.1**
SNR=22
BANOM Banah 64.31 294 P **P 20 57 42.5 +3.2**
SNR=8.8
BANOM P **P 20 57 42.5 +3.2**
SNR=8.8
BANOM P **P 20 57 42.5 +3.2**
SNR=8.8
HATD Hatta, Dubai 64.43 293 *i* P **P 20 57 38.4 -1.7**
SNR=19
HATD Hatta, Dubai 64.43 293 P **P 20 57 41.0 +0.9**
SNR=15
HATD P **P 20 57 41.0 +0.9**
SNR=15
ASHO Ashiyiah 64.50 293 *i* P **P 20 57 38.1 -2.4**
SNR=30
ASHO Ashiyiah 64.50 293 P **P 20 57 42.7 +2.1**
SNR=32
ASHO P **P 20 57 42.7 +2.1**
SNR=32
ASHO P **P 20 57 42.7 +2.1**
SNR=32
NAZ Nazwa, Dubai 64.86 293 *i* P **P 20 57 41.2 -1.7**
SNR=35
NAZ Nazwa, Dubai 64.86 293 P **P 20 57 43.3 +0.4**
SNR=27
NAZ P **P 20 57 43.3 +0.4**
SNR=27
NAZ P **P 20 57 43.3 +0.4**
SNR=27
ABKAR Akbulak array 64.87 320 *e*P **P 20 57 41.4 -1.1**
ABKAR ⇑*e* 21 26 28.6
FAQ Al Faqa, Dubai 64.92 293 *i* P **P 20 57 41.5 -1.8**
SNR=6.4
FAQ Al Faqa, Dubai 64.92 293 P **P 20 57 44.6 +1.4**
SNR=20
FAQ P **P 20 57 44.6 +1.4**
SNR=20
BILL Bilibino 65.22 17*c i*P **P 20 57 44.1 -0.3**
BILL *i* 20 57 51.1
BILL *i* S **S 21 06 21.6 -4.6**
BILL *i* SS **SS 21 10 40.8 +1.9**
BILL pmax pmax
comp=Z,92nm,1.2s
BILL MLR MLR
comp=Z,19µm,20.0s
BILL Bilibino 65.22 17 *e*P **P 20 57 42.8 -1.5**
BILL ⇑*e* 21 26 36.8
BILL LR LR
comp=Z,24µm,18.0s
OUZ Omahuta 65.80 135 PFAKE 20 58 00.0 +11
OUZ LR LR
comp=Z,18µm,21.0s
RBK Rabkut 66.35 285 P **P 20 57 56.6 +3.9**
SNR=14
AKTO Aktyubinsk 66.38 321 P **P 20 57 53.0 +0.8**
comp=Z,24nm,0.8s,baz=97,slow=6.6,SNR=55
AKTO PKP2bc 21 26 22.9
comp=Z,3.3nm,1.1s,baz=164,slow=3.2,SNR=6.8
AKTO LR LR 21 29 07.7
comp=Z,44µm,18.2s,baz=107,slow=38
AKTO Aktyubinsk 66.38 321 *i* P **P 20 57 52.2 0.0**
AKTO pmax pmax
comp=Z,257nm,1.1s
JOHN Johnston Islan 66.57 76 PFAKE 20 58 10.0 +16
JOHN LR LR
comp=Z,13µm,20.0s
SVE Sverdlovsk 66.72 328*de*P **P 20 57 52.9 -1.3**
SVE *e*S **S 21 06 44.6 -0.3**
SVE *e*SS **SS 21 11 05.0 +2.4**
SVE pmax pmax
comp=Z,392nm,1.5s
SVE MLR MLR
comp=Z,25µm,17.0s
SVE MLR MLR
comp=E,17µm,16.0s
ARU Arti 67.69 327 P **P 20 58 00.2 -0.2**
comp=E,23nm,0.7s,baz=116,slow=2.2,SNR=53
ARU PKP2bc 21 26 22.4
comp=E,3.4nm,0.7s,baz=297,slow=3.2,SNR=6.3
ARU LR LR 21 29 28.0
comp=E,29µm,19.8s,baz=108,slow=38
ARU Arti 67.69 327*c i*P **P 20 57 58.4 -2.0**
ARU 20 58 26.8
ARU 21 00 25.3
ARU PPP PPP 21 02 03.8
ARU S **S 21 06 55.3 -1.2**
ARU 21 07 54.2
ARU SS **SS 21 11 14.1 -3.5**
ARU SSS SSS 21 14 17.8
ARU pmax pmax
comp=Z,163nm,2.5s
ARU pmax pmax
comp=Z,3µm,15.4s
ARU MLR MLR
comp=Z,29µm,19.0s
ARU Arti 67.69 327 *e*P **P 20 57 58.8 -1.6**
ARU ⇑*e* 21 26 25.9
DCZ Deep Cove 67.99 148 *e*P **P 20 58 00.5 -1.9**
HIZ Hauiti 68.41 138 PFAKE 20 58 20.0 +15
HIZ LR LR
comp=Z,9µm,20.0s
WKZ Wanaka 68.58 146 PFAKE 20 58 20.0 +14
WKZ LR LR
comp=Z,16µm,19.0s
WHZ Wether Hill Ro 68.69 148 PFAKE 20 58 20.0 +13
WHZ LR LR
comp=Z,11µm,22.0s
THZ Tophouse 68.98 142 *e*P **P 20 58 09.1 +0.4**
THZ LR LR
comp=Z,22µm,22.0s
RPZ Rata Peaks 69.03 144 LR LR 21 27 35.3
comp=Z,12µm,21.9s,baz=313,slow=35
RPZ Rata Peaks 69.03 144 *e*P **P 20 58 09.9 +0.9**
LTZ Lake Taylor 69.19 143 *e*P **P 20 58 08.7 -1.4**
OXZ Oxford 69.38 143 *e*P **P 20 58 09.6 -1.5**
OXZ LR LR
comp=Z,11µm,20.0s
AFI Afiamalu 69.47 109 PFAKE 20 58 20.0 +7.7
AFI LR LR
comp=Z,15µm,22.0s
SOKR Solikamsk 69.51 330*c i*P **P 20 58 07.8 -3.8**
SOKR S **S 21 07 15.6 -2.4**
SOKR pmax pmax
comp=Z,164nm,1.2s
SOKR MLR MLR
comp=Z,37µm,15.0s
KHZ Kahutara 69.74 142 *e*P **P 20 58 13.4 +0.1**
comp=Z,149nm,0.6s
KHZ LR LR
comp=Z,28µm,22.0s
NIKH Nikolski High 69.78 37 PFAKE 20 58 30.0 +17
NIKH LR LR
comp=Z,15µm,22.0s
URZ Urewera 69.79 137 P **P 20 58 14.1 +0.4**
comp=Z,16nm,0.6s,baz=317,slow=16,SNR=5.2
URZ LR LR 21 28 35.4
comp=Z,11µm,21.5s,baz=304,slow=36
URZ Urewera 69.79 137 P **P 20 58 14.1 +0.4**
URZ *ep*P **pP 20 58 19.6 -1.1**
SNZO South Karori 69.84 140 *e*P **P 20 58 14.8 +0.8**
SNZO LR LR
comp=Z,17µm,22.0s
BKZ Black Stump Fm 69.84 138 *e*P **P 20 58 12.7 -1.4**
BKZ LR LR
comp=Z,12µm,22.0s
MXZ Matakaoa Point 70.26 136 PFAKE 20 58 30.0 +13
MXZ LR LR
comp=Z,18µm,22.0s
BFZ Birch Farm 70.48 139 *ep*P **pP 20 58 23.7 -1.2**
BFZ LR LR
comp=Z,8µm,22.0s
UNV Unalaska Valle 71.32 36 PFAKE 20 58 30.0 +7.2
UNV LR LR
comp=Z,18µm,22.0s
AKUT Akutan 71.79 36 PFAKE 20 58 40.0 +14
AKUT LR LR
comp=Z,16µm,21.0s
GROC Groznyy 73.67 312 *e*P **P 20 58 36.0 -1.1**
GROC *e* 20 58 48.4
GROC *e*S **S 21 08 08.9 +2.2**
GROC pmax pmax
comp=Z,484nm,1.2s
PAF Port-aux-Franc 74.19 212 *e*P **P 20 58 44.0 +4.1**
PAF Port-aux-Franc 74.19 212 *e*P **P 20 58 44.0 +4.1**
GNI Garni 74.38 309 P **P 20 58 42.8 +1.2**
comp=Z,143nm,1.4s,baz=176,slow=2.8,SNR=56
GNI Garni 74.38 309 *i* P **P 20 58 41.4 -0.2**
SNR=133
GNI Garni 74.38 309*c i*P **P 20 58 40.7 -0.9**
GNI pmax pmax
comp=Z,860nm,1.7s
GNI MLR MLR
comp=Z,32µm,21.0s
GNI Garni 74.38 309 P **P 20 58 43.1 +1.5**
SNR=229
GNI Garni 74.38 309 *e*P **P 20 58 42.7 +1.2**
GNI LR LR
comp=Z,10µm,21.0s
TBLG Delisi 74.41 311 P **P 20 58 43.1 +1.5**
TBLG Delisi 74.41 311 P **P 20 58 43.0 +1.5**
GUDG Gudauri 74.62 311 P **P 20 58 44.8 +1.8**
SDPT Sand Point 74.99 35 PFAKE 20 59 00.0 +16
SDPT LR LR
comp=Z,8µm,21.0s
CLDR Caldiran 75.02 308 *e*P **P 20 58 46.1 +0.7**
ZEI Tsey 75.05 312 *e*P **P 20 58 44.5 -0.9**
ZEI *e* 21 01 34.0
ZEI *e*PPP PPP 21 03 19.4
ZEI *e*S **S 21 08 24.5 +1.9**
ZEI pmax pmax
comp=Z,766nm,1.1s
ZEI pmax pmax
comp=N,690nm,0.9s
ZEI pmax pmax
comp=E,621nm,0.8s
HKR Hakkari 75.17 306 *e*P **P 20 58 48.6 +2.4**
EAK Akyaka 75.25 310 *i* P **P 20 58 48.7 +2.1**
BGD Bogdanovka 75.26 310 P P 20 58 55.3 +8.6
CUKT Cukurca 75.28 306 *e*P **P 20 58 46.7 0.0**
NCK Nalchik 75.28 312*d i*P **P 20 58 47.6 +1.1**
NCK pmax pmax
comp=Z,87nm,1.4s
AKH Akhalkalaki 75.34 310 *e*P **P 20 58 46.4 -0.7**
AKH Akhalkalaki 75.34 310‖ *i*P **P 20 58 49.0 +1.9**
AKH Akhalkalaki 75.34 310 P **P 20 58 49.7 +2.6**
AKH Akhalkalaki 75.34 310 P **P 20 58 49.7 +2.6**
ONI Oni 75.38 312 P **P 20 58 48.8 +1.6**
ONI Oni 75.38 312 P **P 20 58 48.7 +1.6**
DIGO Kars 75.43 309 *i* P **P 20 58 50.0 +2.3**
VANB Van 75.43 307 *e*P **P 20 58 47.0 -0.6**
KEKH Kekaha 75.47 70 PFAKE 20 59 00.0 +12
KEKH LR LR
comp=Z,10µm,22.0s
KARS Kars 75.66 310 *e*P **P 20 58 51.7 +2.8**
GOF Gofitskoye 75.70 314‖ *e*P **P 20 58 49.3 +0.4**
GOF *e*S **S 21 08 30.3 +0.9**
GOF pmax pmax
comp=Z,252nm,1.1s
GOF smax smax
comp=E,82nm,1.9s
GOF smax smax
comp=N,61nm,1.4s
AGRB Hanur-Agry 75.73 308 *e*P **P 20 58 50.1 +0.7**
KBZ Khabaz 75.79 313 P **P 20 58 50.6 +1.3**
comp=N,29nm,1.0s,baz=81,slow=5.4,SNR=48
KBZ LR LR 21 38 13.1
comp=N,15µm,18.1s,baz=75,slow=40
TUTA Tutak 75.87 308 *i* P **P 20 58 53.0 +2.8**
NEY Neytrino 75.92 312*ce*P **P 20 58 50.3 -0.1**
NEY pmax pmax
comp=Z,24nm,1.4s
NEY MLR MLR
comp=Z,10µm,17.0s
KVAR Kislovodsk Arr 75.94 313 P **P 20 58 51.9 +1.5**
comp=Z,72nm,0.9s,baz=79,slow=13,SNR=66
KIV Kislovodsk 75.95 313 *e*P **P 20 58 50.5 +0.1**
KIV Kislovodsk 75.95 313 *i* P **P 20 58 49.9 -0.5**
SNR=88
KIV Kislovodsk 75.95 313 *e*P **P 20 58 49.5 -0.9**
KIV *e* 21 01 39.6
KIV *e*PPP PPP 21 03 27.7
KIV *e*S **S 21 08 32.6 +0.3**
KIV *e*SSS SSS 21 16 46.3
KIV pmax pmax
comp=Z,227nm,3.7s
KIV pmax pmax
comp=Z,416nm,1.0s
KIV Kislovodsk 75.95 313 P **P 20 58 50.5 +0.1**
SNR=163
KIV P **P 20 58 50.5 +0.1**
SNR=163
KIV Kislovodsk 75.95 313 *e*P **P 20 58 51.1 +0.7**
KIV LR LR
comp=Z,15µm,18.0s
DAMY Dhamar 75.99 283 *e*P **P 20 58 51.1 -0.3**
DAMY LR LR
comp=Z,8µm,20.0s
CASY Casey 76.09 185 *e*P **P 20 58 48.9 -1.6**
SENK Senkaya-Erzuru 76.21 309 *e*P **P 20 58 54.9 +2.8**
CHGN Chignik 76.22 34 *e*P **P 20 58 52.5 +1.0**
SIRN S¨¨rnak 76.22 306 *i* P **P 20 58 53.7 +1.6**
CHVG Ch'k'valeri 76.39 312 *e*P **P 20 58 55.6 +2.8**
ARTV Artvin 76.52 310 *i* P **P 20 58 55.6 +1.7**
DAGI Agillar 76.53 310 *i* P **P 20 58 55.5 +1.7**
DDEM Demirkent 76.66 310 *i* P **P 20 58 57.0 +2.4**
VRH Novokhopyorsk 76.70 320 *e*P **P 20 58 54.4 0.0**
VRH *e*S **S 21 08 37.9 -2.2**
VRH pmax pmax
comp=Z,300nm,0.8s
VRH pmax pmax
comp=Z,110nm,0.5s
VRH smax smax
comp=E,530nm,2.4s
DBOC Borcka 76.72 310 *i* P **P 20 58 56.2 +1.5**
ERZM Erzurum 76.98 309 *i* P **P 20 59 00.0 +3.4**
EZM Erzurum 76.98 309 *e*P **P 20 58 59.5 +2.9**
OPA Opana 77.07 70 PFAKE 20 59 10.0 +13
OPA LR LR
comp=Z,10µm,20.0s
KIP Kipapa 77.09 70 PFAKE 20 59 10.0 +13
KIP LR LR
comp=Z,9µm,20.0s
BTMN Batman 77.12 307 *i* P **P 20 58 59.1 +2.0**
SVAN Silvan-Diyarba 77.16 307 *e*P **P 20 58 57.9 +0.6**
BNGL BINGOL 77.17 308 *i* P **P 20 59 00.8 +3.2**
MARD Mardin 77.53 306 *i* P **P 20 59 01.5 +2.0**
BNGB Bing¨ll 77.54 308 *e*P **P 20 59 00.5 +1.0**
YEDI Yedisu-Bingol 77.63 308 *e*P **P 20 59 00.6 +0.5**
KOPT Kop Dagi 77.64 309 *i* P **P 20 59 03.1 +2.8**
MAZI Mazidag 77.79 306 *e*P **P 20 59 00.9 0.0**
TT01 Tatalina 77.81 28 *e*P **P 20 59 00.7 +0.3**
TTA Tatalina 77.82 28 *e*P **pP 20 59 09.2 +1.6**
TTA MLR MLR
comp=Z,7µm,21.0s
TTA Tatalina 77.82 28 *ep*wP **pP 20 59 09.2 +1.6**
TTA LR LR
comp=Z,7µm,21.0s
ATD Arta Tunnel 77.85 280 P **P 20 59 03.3 +1.7**
comp=Z,20nm,1.0s,baz=72,slow=20,SNR=4.5
SVW2 Sparrevohn 77.94 29 *e*P **P 20 59 01.5 +0.3**
SVW2 LR LR
comp=Z,8µm,22.0s
DYBB Diyarbakir 78.01 307 *e*P **P 20 59 04.6 +2.5**
SOC Sochi 78.10 313*c i*P **P 20 59 00.6 -1.8**
SOC *e* 21 01 56.6
SOC *e*PPP PPP 21 03 42.8
SOC *e*S **S 21 08 54.4 -1.2**
SOC pmax pmax
comp=Z,239nm,1.0s
SOC smax smax
comp=N,5µm,12.6s
SOC smax smax
comp=E,7µm,12.7s
KTUT Trabzon 78.16 310 *e*P **P 20 59 03.3 +0.5**
KLMR Klimovskoe 78.20 330*c i*P **P 20 59 02.2 -0.4**
KLMR *e* 21 01 57.7
KLMR *i* S **S 21 08 59.0 +3.1**
KLMR pmax pmax
comp=Z,351nm,1.2s
VORR Voronezh 78.28 321 *e*P **P 20 59 03.0 -0.2**
VORR pmax pmax
comp=Z,1µm,1.4s
VSR Storozhevoye 78.31 320 *e*P **P 20 59 02.6 -0.8**
VSR *e*SP **pP 20 59 09.4 -1.1**
VSR *e*S **S 21 08 55.5 -2.0**
VSR pmax pmax
comp=Z,150nm,0.9s
VSR pmax pmax
comp=Z,230nm,1.8s
VSR smax smax
comp=N,2µm,3.9s
VSR MLR MLR
comp=Z,14µm,15.0s
TNCL Tunceli-Merkez 78.42 308 *i* P **P 20 59 06.8 +2.4**
PTK Pertek 78.55 308 *e*P **P 20 59 05.9 +0.6**
KELT Kelkit 78.59 309 *i* P **P 20 59 07.4 +1.9**
SVRC Sivrice-ELAZID 78.64 307 *e*P **P 20 59 08.2 +2.4**
HLK Haleakala 78.80 71 PFAKE 20 59 20.0 +13
HLK LR LR
comp=Z,10µm,20.0s
ELZG Elazig 78.89 307 *i* P P 20 59 16.1 +9.0
ESPY Espiye-Giresun 78.95 310 *e*P **P 20 59 08.3 +1.1**
OHAK Old Harbor 79.06 33 *e*P **P 20 59 08.7 +1.3**
OHAK LR LR

comp=Z,13µm,20.0s
OPO Ambohidratompo 79.09 249 LR LR 21 32 22.4
comp=Z,4µm,19.3s,baz=71,slow=34
ABPO Ambohimpanom 79.17 249 *e*P **P** **20 59 07.5 -1.4**
ABPO MLR MLR
comp=Z,7µm,18.0s
ABPO Ambohimpanom 79.17 249 *e*P **P** **20 59 07.5 -1.4**
ABPO LR LR
comp=Z,7µm,18.0s
MOS Moscow 79.17 325 *e*P **P** **20 59 08.5 +0.5**
MOS *e* 20 59 16.1
MOS *e* 21 02 12.5
MOS *e*S **S** **21 09 04.7 -1.8**
MOS *e*SS **SS** **21 14 16.3 +3.7**
MOS pmax pmax
comp=Z,179nm,0.9s
MOS pmax pmax
comp=Z,800nm,2.4s
MOS MLR MLR
comp=Z,19µm,18.0s
MOS MLR MLR
comp=E,14µm,17.0s
KEMA Kemaliye 79.22 308 *i*P P 20 59 18.0 +9.2
GRSN GIRESUNGRSN 79.30 310 *i*P **P** **20 59 08.9 -0.2**
RSO Redoubt South 79.31 30 *e*P **P** **20 59 08.4 -0.6**
HPAH Hawaii Prepara 79.39 71 PFAKE 20 59 20.0 +10
HPAH LR LR
comp=Z,7µm,20.0s
SUSE Susehri 79.39 309 *i*P **P** **20 59 11.2 +1.5**
KDAK Kodiak Island 79.44 33 *e*P **P** **20 59 09.2 -0.2**
KDAK MLR MLR
comp=Z,19µm,20.0s
KDAK Kodiak Island 79.44 33 *e*P **P** **20 59 09.2 -0.2**
KDAK LR LR
comp=Z,19µm,20.0s
PPLA Purkeypile 79.57 28 *e*P **P** **20 59 10.4 +0.1**
PPLA LR LR
comp=Z,8µm,18.0s
POHA Pohakuloa 79.57 72 PFAKE 20 59 20.0 +8.8
POHA LR LR
comp=Z,8µm,22.0s
CAST Castle Rocks 79.61 27 *e*P **P** **20 59 09.8 -0.6**
CAST LR LR
comp=Z,8µm,21.0s
SPU Mount Spurr 79.65 29 *e*P **P** **20 59 08.9 -1.7**
ANN Anapa 79.69 314*c* *i*P **P** **20 59 09.2 -1.9**
ANN *i* 20 59 16.9
ANN *e* 21 02 17.3
ANN *e*S **S** **21 09 11.8 -0.6**
ANN pmax pmax
comp=N,39nm,1.1s
ANN pmax pmax
comp=E,25nm,1.1s
ANN pmax pmax
comp=Z,133nm,1.1s
OBN Obninsk 79.79 324 P **P** **20 59 11.3 -0.1**
comp=Z,83nm,0.8s,baz=15,slow=1.0,SNR=39
OBN LR LR 21 36 15.7
comp=Z,19µm,18.2s,baz=94,slow=37
OBN Obninsk 79.79 324*c* *i*P **P** **20 59 09.4 -2.0**
OBN *i* 20 59 17.1
OBN *i*S **S** **21 09 10.0 -3.0**
OBN *i*SS **SS** **21 14 28.5 +6.7**
OBN pmax pmax
comp=Z,166nm,1.0s
OBN MLR MLR
comp=Z,17µm,17.0s
OBN Obninsk 79.79 324 *e*P **P** **20 59 10.9 -0.5**
UWE Uwekahuna 79.83 72 PFAKE 20 59 20.0 +7.5
UWE LR LR
comp=Z,9µm,21.0s
HOM Homer 79.88 31 PFAKE 20 59 20.0 +8.2
HOM LR LR
comp=Z,8µm,22.0s
CUKAN kangal_SIVAS 80.01 308 *i*P P 20 59 20.4 +7.2
DARE Darende-Malaty 80.06 308 *e*P **P** **20 59 16.0 +2.6**
CNPM China Poot 80.09 31 *e*P **P** **20 59 12.3 -0.7**
CNPM LR LR
comp=Z,8µm,22.0s
KTH Kantishna Hill 80.13 27 *e*P **P** **20 59 14.5 +1.3**
KTH LR LR
comp=Z,8µm,19.0s
BRLK Bradley Lake 80.26 31 *e*P **P** **20 59 13.0 -0.9**
BRLK LR LR
comp=Z,9µm,22.0s
SUA Susitna One 80.27 29 *e*P **P** **20 59 13.4 -0.7**
SUA LR LR
comp=Z,9µm,22.0s
LVZ Lovozero 80.33 337*de*P **P** **20 59 14.1 0.0**
LVZ pmax pmax
comp=Z,60nm,1.4s
LVZ MLR MLR
comp=Z,32µm,15.0s
LVZ Lovozero 80.33 337 *e*P **P** **20 59 14.2 0.0**
LVZ LR LR
comp=Z,9µm,19.0s
COLD Coldfoot 80.34 23 *e*P **P** **20 59 14.3 +0.2**
GAZ Gaziantep 80.38 306 *e*P **P** **20 59 17.3 +2.2**
TRF Thorofare Moun 80.42 27 *e*P **P** **20 59 14.5 -0.3**
KUZU Kuzuini 80.52 306 *i*P P 20 59 22.8 +7.0
CUALT Altinyayla-SIV 80.57 308 *i*P **P** **20 59 18.5 +2.3**
KMRS Kahramanmaras 80.60 307 *e*P **P** **20 59 15.8 -0.4**
HCB Kahramanmara˜ 80.61 306 *i*P **P** **20 59 17.3 +1.1**
TOKT Tokat 80.65 309 *e*P **P** **20 59 17.7 +1.2**
RC01 Rabbit Creek A 80.78 29 *e*P **P** **20 59 15.6 -1.0**
RC01 LR LR
comp=Z,9µm,21.0s
KAMA Osmaniye 80.81 306 *i*P **P** **20 59 18.6 +1.2**
APA Apatity 80.82 337‖ *i*P **P** **20 59 16.2 -0.5**
APA *i* 20 59 24.1
APA *i*S **S** **21 09 22.0 -1.5**
APA *i*PS **PnS** **21 10 05.0 -6.1**
APA pmax pmax
comp=Z,33nm,1.0s
SAMS Samsun-Alacam 80.83 310 *i*P **P** **20 59 18.7 +1.3**
CUSAR Sarkisla-SIVAS 80.95 309 *i*P **P** **20 59 18.7 +0.5**
KVT Kavak 80.96 310 *e*P **P** **20 59 18.4 +0.3**
MCK McKinley 81.01 27 *e*P **P** **20 59 16.6 -1.3**
MCK MLR MLR
comp=Z,12µm,22.0s
MCK McKinley 81.01 27 *e*P **P** **20 59 16.6 -1.3**
MCK LR LR
comp=Z,12µm,22.0s
ANDN Andirin 81.03 307 *i*P **P** **20 59 20.2 +1.6**
PMR Palmer 81.04 29 *e*P **P** **20 59 16.5 -1.5**
PMR MLR MLR
comp=Z,7µm,22.0s
PMR Palmer 81.04 29 *e*P **P** **20 59 16.5 -1.5**
PMR LR LR
comp=Z,7µm,22.0s
RND Reindeer 81.06 27 *e*P **P** **20 59 17.3 -0.9**
RND MLR MLR
comp=Z,7µm,20.0s
RND Reindeer 81.06 27 *e*P **P** **20 59 17.3 -0.9**
RND LR LR
comp=Z,7µm,20.0s
ASF Jabal al Asfar 81.08 301 P **P** **20 59 20.1 +1.1**
comp=Z,19nm,0.8s,baz=100,slow=0.7,SNR=41
TAHT Tahtakopru-Hat 81.27 305 *e*P **P** **20 59 19.5 -0.3**
BNN Bunyan 81.31 308 *e*P **P** **20 59 20.1 0.0**
WRH Wood River Hil 81.33 26 *e*P **P** **20 59 19.0 -0.5**
WRH LR LR
comp=Z,12µm,22.0s
YAYL Yayladag 81.36 305 *i*P **P** **20 59 19.9 -0.5**
SML Sawmill 81.41 29 *e*P **P** **20 59 19.8 -0.2**
SML MLR MLR
comp=Z,8µm,22.0s
SML Sawmill 81.41 29 *e*P **P** **20 59 19.8 -0.2**
SML LR LR
comp=Z,8µm,22.0s
COLA College 81.41 26 *e*P **P** **20 59 18.4 -1.5**
COLA pmax pmax
comp=Z,39nm,1.0s
COLA MLR MLR
comp=Z,12µm,22.0s
COLA College 81.41 26 *e*P **P** **20 59 18.4 -1.5**
comp=Z,39nm,1.0s
COLA LR LR
comp=Z,12µm,22.0s
CCB Clear Creek Bu 81.44 26 *e*P **P** **20 59 18.3 -1.8**
CCB LR LR
comp=Z,12µm,22.0s
KOZT Kozan 81.45 307 *e*P **P** **20 59 22.6 +1.9**
SNOP Sinop 81.51 311 *e*P **P** **20 59 20.2 -0.7**

CEYT Ceyhan 81.56 306 *e*P **P** **20 59 23.4 +2.2**
HWQ Hawqa 81.67 303 *e*P **P** **20 59 22.1 +0.1**
YURE YUREĞIR 81.67 306 *i*P **P** **20 59 24.1 +2.2**
AKO Adana 81.75 307 *i*P **P** **20 59 24.4 +2.1**
DHY Denali Highway 81.75 27 *e*P **P** **20 59 21.5 -0.5**
DHY LR LR
comp=Z,8µm,21.0s
YAHY KAYSERI_Yahyal 81.76 307 *i*P **P** **20 59 24.0 +1.5**
BOYT Boyabat 81.79 311 *i*P **P** **20 59 23.6 +1.1**
IL1 Eielson Array 81.83 26 *e*P **P** **20 59 20.1 -2.0**
ILAR Eielson Array 81.83 26 P **P** **20 59 20.5 -1.6**
comp=Z,6.0nm,0.8s,baz=252,slow=4.5,SNR=23
ILAR PKKPbc **PKKPbc** **21 17 55.9 +0.3**
comp=Z,3.0nm,1.0s,baz=93,slow=2.1,SNR=7.5
ILAR PKP2bc 21 25 46.8
comp=Z,0.9nm,1.0s,baz=180,slow=1.6,SNR=5.8
ILAR PKPPKP **P'P'df** **21 26 04.6 +4.8**
comp=Z,6.0nm,1.3s,baz=106,slow=0.3,SNR=8.0
ILAR LR LR 21 33 48.7
comp=Z,8µm,21.7s,baz=288,slow=34
ILB Eielson Array 81.83 26 *e*P **P** **20 59 20.6 -1.5**
HDA Harding Lake 81.83 26 *e*P **P** **20 59 24.0 +1.8**
HDA LR LR
comp=Z,12µm,22.0s
COAL Corum-Alaca 81.84 309 *i*P **P** **20 59 23.4 +0.5**
SCM Sheep Creek Mo 81.88 29 *e*P **P** **20 59 22.7 +0.1**
SCM MLR MLR
comp=Z,9µm,22.0s
SCM Sheep Creek Mo 81.88 29 *e*P **P** **20 59 22.7 +0.1**
SCM LR LR
comp=Z,9µm,22.0s
BYBT Boyabat 81.89 311 *e*P **P** **20 59 24.8 +1.8**
KRTS Karatas 81.90 306 *e*P **P** **20 59 25.4 +2.3**
BHL Bhannes 81.95 303 *e*P **P** **20 59 23.3 -0.3**
SIM Simferopol' 82.03 314 *e*P **P** **20 59 24.2 +0.6**
SIM *e* 21 02 33.0
SIM *e*S **S** **21 09 38.0 +1.1**
SIM pmax pmax
comp=Z,269nm,0.9s
KARA Karaisali 82.08 306 *e*P **P** **20 59 24.7 +0.7**
CORM Corum 82.12 309 *e*P **P** **20 59 24.6 +0.2**
MMAI Mount Meron Ar 82.25 302 P **P** **20 59 25.4 +0.3**
comp=Z,13nm,0.8s,baz=91,slow=7.8,SNR=24
FURI Furi 82.27 278 *e*P P 20 59 36.4 +11
GULE Gulek 82.30 306 *i*P P 20 59 32.2 +6.8
DED Mersin 82.32 306 *i*P **P** **20 59 25.9 +0.6**
NIG Nigde 82.35 307 *e*P **P** **20 59 28.0 +2.2**
CDAG Cicekdag 82.37 309 *i*P **P** **20 59 26.6 +0.9**
BZK Bozkurt 82.41 311 *e*P **P** **20 59 27.0 +1.4**
TOS Tosya 82.49 310 *e*P **P** **20 59 26.4 +0.1**
HOPEN Hopen 82.49 346 *e*P **P** **20 59 23.6 -1.7**
HOPEN IVmB_BB 20 59 34.4
comp=Z,4µm,2.5s
HOPEN *e*SKSac **SKSac** **21 09 43.9 -1.0**
HOPEN IVmS_BB IVmS_BB 21 43 04.2
comp=Z,17µm,15.8s
MERS Mersin 82.55 306 *e*P **P** **20 59 27.9 +1.3**
KLU Klutina 82.58 29 *e*P **P** **20 59 26.4 +0.2**
KLU LR LR
comp=Z,9µm,22.0s
PAX Paxson 82.63 27 PFAKE 20 59 40.0 +14
PAX LR LR
comp=Z,7µm,19.0s
DIV Divide 82.69 29 *e*P **P** **20 59 27.2 +0.3**
DIV LR LR
comp=Z,8µm,20.0s
EYAK Cordova Ski Ar 82.77 30 *e*P **P** **20 59 28.6 +1.5**
EYAK LR LR
comp=Z,12µm,18.0s
KERG Konya-Eregli 82.81 307 *i*P **P** **20 59 29.0 +1.0**
CANT Cankiri 82.84 310 *e*P **P** **20 59 28.1 +0.1**
HRFI Mount Harif 82.90 299 *e*P **P** **20 59 28.9 +0.4**
KAMT Kaman 82.91 309 *e*P **P** **20 59 29.4 +0.9**
BR131 Keskin Array S 82.92 309 *e*P **P** **20 59 27.6 -1.0**
BRTR Keskin Array B 82.92 309 P **P** **20 59 28.4 -0.1**
comp=Z,14nm,0.6s,baz=118,slow=5.3,SNR=74
BRTR PP PP 21 02 47.7 +8.6
comp=Z,35nm,1.2s,baz=94,slow=3.7,SNR=4.6
BRTR PKPPKP **P'P'df** **21 25 54.4 -4.5**
comp=Z,1.6nm,1.1s,baz=222,slow=1.7,SNR=4.4
BRTR LR LR 21 39 45.5
comp=Z,6µm,20.5s,baz=66,slow=38
EIL Elat 83.02 299 P **P** **20 59 30.6 +1.4**
comp=Z,16nm,0.7s,baz=103,slow=2.9,SNR=23
EIL Elat 83.02 299 *e*P **P** **20 59 29.1 -0.1**
SERE Sereflikochisa 83.07 308 *e*P **P** **20 59 29.8 +0.5**
DOT Dot Lake 83.18 27 *e*P **P** **20 59 28.4 -0.9**
SULT Sultanhani-AKS 83.19 308 *e*P **P** **20 59 30.0 0.0**
BMRM Bremner River 83.28 29 *e*P **P** **20 59 30.0 +0.2**
BMRM LR LR
comp=Z,8µm,21.0s
RAGM Ragged Mountai 83.31 30 PFAKE 20 59 40.0 +10
RAGM LR LR
comp=Z,14µm,21.0s
BBAL Bala 83.34 309 *i*P **P** **20 59 31.4 +0.7**
AFSR Afˆar-Bala (A 83.39 309 *e*P **P** **20 59 30.5 -0.4**
MENT Mentasta 83.43 27 *e*P **P** **20 59 29.6 -1.0**
MENT LR LR
comp=Z,11µm,21.0s
SAFT Safranbolu 83.47 311 *e*P **P** **20 59 32.4 +1.2**
ARA0 ARCESS Array S 83.50 339 *e*P **P** **20 59 30.5 -0.3**
ARCES ARCESS Array B 83.50 339 P **P** **20 59 30.8 +0.1**
comp=Z,52nm,0.9s,baz=91,slow=7.2,SNR=11
ARCES LR LR 21 40 59.0
comp=Z,12µm,18.3s,baz=72,slow=39
ARE0 ARCESS Array S 83.50 339 *e*P **P** **20 59 28.8 -2.0**
ARE0 ARCESS Array S 83.50 339 *e*P **P** **20 59 31.2 +0.4**
LFK Lefkose 83.53 305 *e*P **P** **20 59 32.7 +1.0**
ANTO Ankara 83.56 309 P **P** **20 59 31.2 -0.5**
SNR=83
ANTO P **P** **20 59 31.2 -0.5**
SNR=83
BR231 Keskin MP Arra 83.57 309 *e*P **P** **20 59 27.8 -4.1**
LOD Lodumlu 83.58 309 *e*P **P** **20 59 33.1 +1.3**
CHBY Cihanbeyli 83.64 308 *e*P **P** **20 59 33.8 +1.6**
CSS Mathiatis 83.73 304 P **P** **20 59 30.1 -2.6**
CSS Mathiatis 83.73 304 P **P** **20 59 30.1 -2.6**
CSS LR LR
comp=Z,2µm,22.0s
ERMK Ermenek 83.86 306 *i*P **P** **20 59 34.5 +0.9**
HAMF Hammerfest 83.91 341 *e*P **P** **20 59 32.1 -0.7**
HAMF IVmB_BB 20 59 42.2
comp=Z,3µm,4.4s
HAMF *e*SKSac **SKSac** **21 09 53.5 -0.9**
HAMF IVmS_BB IVmS_BB 21 42 36.4
comp=Z,7µm,15.3s
SPA0 Spitsbergen Ar 83.96 348 *e*P **P** **20 59 33.3 +0.3**
SPA0 IVmB_BB 20 59 42.3
comp=Z,4µm,1.6s
SPA0 *e*SKSac **SKSac** **21 09 53.7 -0.9**
SPA0 IVmS_BB IVmS_BB 21 41 34.7
comp=Z,7µm,16.3s
SPA0 Spitsbergen Ar 83.96 348 *e*P **P** **20 59 33.5 +0.5**
SPITS Spitsbergen Ar 83.96 348 P **P** **20 59 33.4 +0.4**
comp=Z,104nm,0.9s,baz=122,slow=14,SNR=40
SPITS LR LR 21 41 55.8
comp=Z,18µm,19.5s,baz=90,slow=39
SPITS Spitsbergen Ar 83.96 348 P **P** **20 59 33.4 +0.4**
SPITS pmax pmax
comp=Z,105nm,0.9s
SPITS MLR MLR
comp=Z,18µm,19.5s
CRQM Cirque 84.01 29 *e*P **P** **20 59 34.2 +0.4**
LEF Lefka 84.07 304 *e*P **P** **20 59 33.0 -1.4**
LADK Ladik-KONYA 84.09 308 *e*P **P** **20 59 33.3 -1.3**
KDHN Kadinhani 84.25 308 *i*P **P** **20 59 35.0 -0.3**
EGAK Eagle 84.26 25 *e*P **P** **20 59 34.6 -0.1**
EGAK LR LR
comp=Z,8µm,21.0s
BJO Bjornoya 84.35 345 *e*P **P** **20 59 33.9 -1.1**
BJO IVmBBB 20 59 44.3
comp=Z,3µm,3.7s
BJO *e*SKSac **SKSac** **21 09 56.9 -0.2**
BJO IVmB_BB 21 44 38.3
comp=Z,14µm,11.2s
BALM Baldy 84.35 29 *e*P **P** **20 59 35.5 +0.1**
BALM MLR MLR
comp=Z,5µm,22.0s
BALM Baldy 84.35 29 *e*P **P** **20 59 35.5 +0.1**
BALM LR LR
comp=Z,5µm,22.0s
KIZT Kizilcal 84.38 308 *e*P **P** **20 59 36.7 +0.7**
KDZE Karadeniz Ereo 84.39 311 *e*P **P** **20 59 34.6 -1.4**
HSPB Hornsund (broa 84.49 347 *e*P **P** **20 59 35.8 +0.1**

HSPB IVmB_BB 20 59 43.8
comp=Z,3µm,2.6s
HSPB *e*SKSac **SKSac** **21 09 58.7 +0.7**
HSPB IVmS_BB IVmS_BB 21 43 26.4
comp=Z,17µm,16.8s
HSPB Hornsund (broa 84.49 347 *e*P **P** **20 59 39.3 +3.6**
HSPB *e* 20 59 43.2
HSPB *e*S **S** **21 10 02.2 +1.5**
HSPB *e*SS **SS** **21 15 31.2 +0.4**
HSPB MLR MLR
comp=Z,35µm,20.1s
KBS Kingsbay 84.54 350 *e*P **P** **20 59 35.3 -0.6**
KBS *e*SKSac **SKSac** **21 09 57.7 -0.6**
KBS IVmS_BB IVmS_BB 21 40 25.4
comp=Z,8µm,19.2s
KBS Kingsbay 84.54 350 *e*P **P** **20 59 36.6 +0.7**
KBS MLR MLR
comp=Z,27µm,21.0s
KBS Kingsbay 84.54 350 *e*P **P** **20 59 36.6 +0.7**
KBS LR LR
comp=Z,27µm,21.0s
SVRH Sivrihisar-ESK 84.58 309 *e*P **P** **20 59 36.4 -0.6**
AKASG Malin Array Be 84.61 320 P **P** **20 59 36.1 -0.6**
comp=Z,43nm,0.8s,baz=72,slow=4.6,SNR=121
AKASG LR LR 21 40 56.4
comp=Z,14µm,18.4s,baz=80,slow=38
AKBB Malin Array Si 84.61 320 *e*P **P** **20 59 35.3 -1.5**
AKBB Malin Array Si 84.61 320 *e*P **P** **20 59 35.3 -1.5**
KIEV Kiev 84.63 320*c* *i*P **P** **20 59 34.5 -2.3**
KIEV pmax pmax
comp=Z,94nm,1.0s
KIEV MLR MLR
comp=Z,14µm,18.0s
KIEV Kiev 84.63 320 *e*P **P** **20 59 34.8 -2.1**
FIA1 FINESS Array S 84.65 331 *e*P **P** **20 59 35.4 -1.3**
FINES FINESS Array B 84.65 331 P **P** **20 59 36.0 -0.7**
comp=Z,37nm,0.7s,baz=84,slow=5.9,SNR=89
FINES PKKPbc **PKKPbc** **21 17 50.4 +1.5**
comp=Z,5.6nm,0.8s,baz=156,slow=2.3,SNR=6.5
FINES FINESS Array B 84.65 331 P **P** **20 59 36.0 -0.7**
FINES pmax pmax
comp=Z,37nm,0.7s
AK11 Malin Array Si 84.65 320 *e*P **P** **20 59 36.0 -1.0**
MDUB Mudurnu 84.69 310 *e*P **P** **20 59 38.4 +0.9**
BTAS Taskesti 84.83 310 *i*P **P** **20 59 38.0 -0.2**
VSU Vasula 84.83 328*d* *i*P **P** **20 59 37.2 -0.5**
VSU pmax pmax
comp=Z,530nm,0.9s
VSU MLR MLR
comp=Z,66µm,16.0s
MICGM Minsk 84.85 324‖ *e*P **P** **20 59 37.0 -0.9**
MICGM PM 20 59 38.0
comp=Z,0.6nm,0.8s
MICGM *e*PP **PP** **21 02 52.0 -2.1**
MICGM *e*PPP PPP 21 04 44.0
MICGM *e*SKS **SKSac** **21 09 56.0 -5.0**
MICGM *e*S **S** **21 10 05.0 0.0**
MICGM *e*PS **PnS** **21 10 54.0 -7.1**
MICGM *e*SS SS 21 15 20.0 -17
MICGM *e*SSS SSS 21 19 10.0
MICGM *e*LR LR 21 22 20.0
MICGM LRM MLR 21 39 16.0
comp=Z,21nm,16.0s
MICGM LRM MLR 21 39 20.0
comp=E,12nm,16.0s
MNK Minsk 84.85 324 *e*P **P** **20 59 37.0 -0.9**
MNK *e* 21 02 52.0
MNK *e*PPP PPP 21 04 44.0
MNK *e* 21 09 56.0
MNK *e*S **S** **21 10 05.0 0.0**
MNK *e*PS **PnS** **21 10 54.0 -7.1**
MNK *e*SSS SSS 21 19 10.0
MNK pmax pmax
comp=Z,560nm,0.8s
MNK MLR MLR
comp=Z,22µm,16.0s
MNK MLR MLR
comp=E,19µm,16.0s
SAHE Sakarya_HENDEK 84.89 310 *i*P **P** **20 59 38.6 +0.1**
ESKT Eskisehir 85.09 309 *e*P **P** **20 59 40.4 +0.8**
ESKT Eskisehir 85.09 309 *i*P **P** **20 59 40.1 +0.5**
BOLV Bolvadin 85.12 308 *i*P **P** **20 59 40.3 +0.5**
DAWY Dawson 85.15 26 *e*P **P** **20 59 38.8 -0.5**
GULT Gulveren 85.21 310 *e*P **P** **20 59 40.8 +0.7**
KMBO Kilima Mbogo 85.25 268 P **P** **20 59 41.6 +0.5**
comp=E,20nm,1.0s,baz=49,slow=8.0,SNR=18
KMBO LR LR 21 38 49.3
comp=E,11µm,18.1s,baz=80,slow=36
KMBO Kilima Mbogo 85.25 268 P **P** **20 59 43.0 +1.9**
SNR=19
KMBO P **P** **20 59 43.0 +1.9**
SNR=19
KMBO Kilima Mbogo 85.25 268 *e*P **P** **20 59 43.6 +2.6**
SUTC Sutluce-Ispart 85.26 307 *e*P **P** **20 59 42.5 +2.0**
SPNC Sapanca-Adapaz 85.33 310 *e*P **P** **20 59 41.6 +1.0**
IDID Didziasalis 85.36 325 *e*P **P** **20 59 40.0 -0.5**
IDID IAmb IAmb 20 59 49.4
comp=Z,321nm,0.9s
NACGM Naroch 85.41 325 *e*P **P** **20 59 39.0 -1.7**
NACGM *e*P **P** **20 59 39.0 -1.7**
NACGM PM 20 59 48.0
comp=Z,2.1nm,0.8s
NACGM *e*PP **PP** **21 02 51.0 -7.7**
NACGM *e*SKS **SKSac** **21 10 02.0 -2.6**
NACGM *e*S **SKKSac** **21 10 14.0 +2.8**
NACGM *e*PS **PnS** **21 10 55.0 -13**
NACGM *e*SS **SS** **21 15 56.0 +11**
NACGM *e*SSS SSS 21 19 40.0
NACGM *e*LQ LQ 21 32 02.0
NACGM *e*LR LR 21 35 14.0
NACGM LRM MLR 21 39 43.0
comp=Z,30nm,16.0s
KIS Kishinev 85.44 317⇑ *i*P **P** **20 59 38.0 -3.0**
comp=Z,300nm,2.0s
KIS Kishinev 85.44 317 *e*PP PP 21 03 00.0 +0.8
KIS Kishinev 85.44 317 *e*PPP PPP 21 05 05.0
KIS *i*S **S** **21 10 04.0 -7.2**
comp=Z,6µm,16.0s
KIS *i*ScS ScS 21 10 34.0 +13
KIS Kishinev 85.44 317 *i*PS 21 11 08.0
KIS *i*SS SS 21 16 02.0 +16
KIS LRM MLR 21 42 24.0
comp=Z,20µm,18.0s
KIS Kishinev 85.44 317‖ *i*P **P** **20 59 40.8 -0.2**
KIS Kishinev 85.44 317α *i*P **P** **20 59 38.0 -3.0**
KIS *e* 21 03 00.0
KIS *i*S **S** **21 10 04.0 -7.2**
KIS *i*PS **PnS** **21 11 08.0 -0.6**
KIS pmax pmax
comp=Z,300nm,2.0s
KIS pmax pmax
comp=Z,3µm,15.0s
KIS pmax pmax
comp=Z,3µm,14.0s
KIS smax smax
comp=E,6µm,16.0s
KIS smax smax
comp=E,13µm,10.0s
SORM Soroca 85.57 318‖ *i*P **P** **20 59 41.1 -0.5**
ISP Isparta 85.59 307 *e*P **P** **20 59 41.2 -0.9**
ISP Isparta 85.59 307 P **P** **20 59 39.8 -2.3**
ISP Isparta 85.59 307⇑ *i*P **P** **20 59 42.2 +0.1**
ISP Isparta 85.59 307 *i*P **P** **20 59 39.9 -2.2**
ISP pmax pmax
comp=Z,175nm,2.5s
ISP MLR MLR
comp=Z,10µm,24.0s
ISP Isparta 85.59 307 *e*P **P** **20 59 42.5 +0.4**
BCK Bucak 85.59 307 *e*P **P** **20 59 41.3 -0.8**
ANTB Antalya 85.62 307 *e*P **P** **20 59 42.5 +0.4**
ISAL Salakas 85.66 326 *e*P **P** **20 59 41.4 -0.5**
ISAL IAmb IAmb 20 59 50.7
comp=Z,184nm,0.9s
TLCR 85.73 315‖ *i*P **P** **20 59 42.2 -0.3**
TRO Tromso 85.73 340 *e*P **P** **20 59 41.0 -1.0**
TRO IVmB_BB 20 59 47.4
comp=Z,955nm,2.8s
TRO *e*SKSac **SKSac** **21 10 05.7 -0.3**
TRO IVmS_BB IVmS_BB 21 42 17.5
comp=Z,10µm,16.2s
HRT Hereke 85.79 311 *e*P **P** **20 59 43.5 +0.6**
ADVT Abdulvahap 85.80 310 *e*P **P** **20 59 43.7 +0.8**
KORT Korkueli 85.85 307 *i*P **P** **20 59 44.2 +0.8**
LEOM Leova 85.91 316 *e*P **P** **20 59 43.8 +0.4**

LEOM	**Leova**	**85.91**	**316**	⇑	*i*P	**P**	**20 59 42.9**	**-0.4**
IZI	**Iznik**	**86.01**	**310**		*e*P	**P**	**20 59 45.5**	**+1.4**
EFOR	**EFORIE**	**86.03**	**314**	⇓	*i*P	**P**	**20 59 44.4**	**+0.4**
MANR	**Mangalia**	**86.11**	**314**	⇑	*i*P	**P**	**20 59 44.3**	**-0.1**
TIRR	**Tirgusor**	**86.13**	**314**	⇓	*i*P	**P**	**20 59 43.7**	**-0.8**
TIRR	**Tirgusor**	**86.13**	**314**		*e*P	**P**	**20 59 42.8**	**-1.6**
TIRR	**Tirgusor**	**86.13**	**314**		*e*P	**P**	**20 59 42.8**	**-1.6**
TVSB	**Tavsanli**	**86.16**	**309**		*e*P	**P**	**20 59 44.0**	**-1.0**
KLYT	**Kilyos**	**86.19**	**311**		*e*P	**P**	**20 59 42.8**	**-2.0**
CFR	**Carcaliu**	**86.20**	**315**	⇓	*i*P	**P**	**20 59 44.7**	**-0.1**
ISK	**Istanbul-Kandi**	**86.21**	**311**		*e*P	**P**	**20 59 44.7**	**-0.3**
ISK	**Istanbul-Kandi**	**86.21**	**311**		P	**P**	**20 59 42.3**	**-2.6**
ISK	**Istanbul-Kandi**	**86.21**	**311**		P	**P**	**20 59 42.3**	**-2.6**
ISK	**Istanbul-Kandi**	**86.21**	**311**		P	**P**	**20 59 42.3**	**-2.6**
GEMT	**Gemlik**	**86.21**	**310**		*e*P	**P**	**20 59 45.0**	**0.0**
ELL	**Elmali**	**86.24**	**306**		*e*P	**P**	**20 59 45.0**	**-0.4**
IAS	**Iasi**	**86.25**	**317**	⇓	*i*P	**P**	**20 59 45.3**	**+0.3**
TLB	**Topalu**	**86.37**	**314**	⇑	*i*P	**P**	**20 59 44.8**	**-0.8**
BGKT	**Bogazkoy**	**86.40**	**311**		*e*P	**P**	**20 59 44.1**	**-1.8**
CVDA	**Cernavoda**	**86.41**	**314**	⇓	*i*P	**P**	**20 59 46.5**	**+0.6**
INK	**Inuvik**	**86.42**	**21**		P	**P**	**20 59 45.7**	**+0.3**
	comp=Z,72nm,1.0s,baz=283,slow=5.2,SNR=62							
INK					LR	LR	21 43 46.1	
	comp=Z,5μm,18.0s,baz=278,slow=39							
INK	**Inuvik**	**86.42**	**21**		*e*P	**P**	**20 59 43.7**	**-1.7**
PSN	**Preselentsi**	**86.42**	**314**		P	**P**	**20 59 45.0**	**-0.9**
HARR	**Harsova**	**86.43**	**315**	⇑	*i*P	**P**	**20 59 46.2**	**+0.3**
ARMT	**Armutlu**	**86.44**	**310**		*e*P	**P**	**20 59 45.3**	**-0.8**
GLHS	**Glhisar (BURDU**	**86.50**	**307**		*e*P	**P**	**20 59 46.8**	**+0.2**
CTKS	**Kestanelik-??a**	**86.59**	**311**		*e*P	**P**	**20 59 46.2**	**-0.6**
HYT	**Haines Junctio**	**86.71**	**29**		*e*P	**P**	**20 59 47.4**	**+0.2**
ODBI	**Odobesti**	**86.85**	**316**	⇓	*i*P	**P**	**20 59 48.5**	**+0.5**
AMRR	**Amara**	**86.86**	**315**	⇑	*i*P	**P**	**20 59 49.2**	**+1.1**
KCTX	**Karacabey (Bur**	**86.87**	**310**		*e*P	**P**	**20 59 46.8**	**-1.4**
KULA	**Kula-Manisa**	**86.93**	**308**		*e*P	**P**	**20 59 47.4**	**-1.2**
KULA	**Kula-Manisa**	**86.93**	**308**		P	**P**	**20 59 45.6**	**-3.1**
KULA	**Kula-Manisa**	**86.93**	**308**		P	**P**	**20 59 45.6**	**-3.1**
GRER		**86.97**	**315**	⇓	*i*P	**P**	**20 59 49.5**	**+0.9**
TESR	**Tescani**	**86.99**	**317**	⇓	*i*P	**P**	**20 59 47.5**	**-1.2**
PGOR	**Pogoanele**	**87.05**	**315**	⇓	*i*P	**P**	**20 59 50.1**	**+1.1**
PRD	**Provadia**	**87.06**	**313**		P	**P**	**20 59 48.0**	**-1.1**
PLOR	**Plostina**	**87.11**	**316**	⇓	*i*P	**P**	**20 59 48.9**	**-0.5**
PRAR	**RASCA**	**87.12**	**317**	⇑	*i*P	**P**	**20 59 49.7**	**+0.4**
PHSR	**Pinarhisar**	**87.25**	**312**		*e*P	**P**	**20 59 50.8**	**+0.7**
ISR	**Istrita**	**87.32**	**315**	⇑	*i*P	**P**	**20 59 50.7**	**+0.3**
BALB	**Balikesir**	**87.33**	**311**		*e*P	**P**	**20 59 50.2**	**-0.3**
MRMT	**Marmara Adasi**	**87.38**	**311**		*e*P	**P**	**20 59 49.0**	**-1.8**
YER	**Yerkesik**	**87.46**	**307**		*e*P	**P**	**20 59 51.1**	**-0.1**
YER	**Yerkesik**	**87.46**	**307**		P	**P**	**20 59 49.7**	**-1.5**
YER	**Yerkesik**	**87.46**	**307**		P	**P**	**20 59 49.7**	**-1.5**
YER	**Yerkesik**	**87.46**	**307**		P	**P**	**20 59 49.7**	**-1.5**
STEI	**Steigen**	**87.52**	**339**		*e*P	**P**	**20 59 49.6**	**-1.2**
SULR		**87.61**	**315**	⇓	*i*P	**P**	**20 59 52.3**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**87.62**	**308**		*e*P	**P**	**20 59 51.4**	**-0.7**
SUW	**Suwalki**	**87.65**	**324**		*e*P	**P**	**20 59 49.9**	**-1.8**
SUW					*e*S	**SKSac**	**21 10 18.0**	**-0.5**
SUW					*e*ScS	**ScS**	**21 10 36.4**	**-2.7**
SUW					LMZ	LR	21 42 04.2	
	comp=Z,17μm,20.3s							
SUW	**Suwalki**	**87.65**	**324**		*e*P	**P**	**20 59 49.9**	**-1.8**
SUW					*e*S	**SKSac**	**21 10 18.0**	**-0.5**
SUW					*e*		21 10 36.4	
SUW					MLR	MLR		
	comp=Z,17μm,20.3s							
MLR	**Muntele Rosu**	**87.67**	**316**		P	**P**	**20 59 52.4**	**+0.3**
	comp=Z,5.6nm,0.6s,baz=30,slow=3.0,SNR=52							
MLR					LR	LR	21 44 01.3	
	comp=Z,6μm,20.9s,baz=65,slow=39							
MLR	**Muntele Rosu**	**87.67**	**316**	⇓	*i*P	**P**	**20 59 51.3**	**-0.9**
MLR	**Muntele Rosu**	**87.67**	**316**		*e*P	**P**	**20 59 50.5**	**-1.7**
MAW	**Mawson**	**87.67**	**199**		P	**P**	**20 59 50.4**	**-1.0**
	comp=Z,21nm,1.0s,baz=64,slow=5.9,SNR=19							
MAW					PKKPbc	**PKKPbc**	**21 17 39.8**	**-2.6**
	comp=Z,4.3nm,0.7s,baz=337,slow=3.3,SNR=5.2							
MAW					PKPPKP	**P'P'df**	**21 25 47.9**	**+3.0**
	comp=Z,4.2nm,0.9s,baz=297,slow=2.3,SNR=6.4							
RKY	**Sarkoy-Tekirda**	**87.68**	**311**		*e*P	**P**	**20 59 53.0**	**+0.7**
EDRB	**Edirne**	**87.78**	**312**		*e*P	**P**	**20 59 51.7**	**-0.9**
EDRB	**Edirne**	**87.78**	**312**		P	**P**	**20 59 50.1**	**-2.5**
EDRB	**Edirne**	**87.78**	**312**		P	**P**	**20 59 50.1**	**-2.5**
DOPR	**Dopca**	**87.95**	**316**	⇓	*i*P	**P**	**20 59 53.3**	**-0.1**
IZM	**Izmir**	**88.03**	**308**		*e*P	**P**	**20 59 53.3**	**-0.7**
LPK	**Lapseki**	**88.05**	**310**		*e*P	**P**	**20 59 55.7**	**+1.8**
LVV	**L'vov**	**88.05**	**320**		*e*P	**P**	**20 59 53.6**	**-0.1**
LVV					*e*		21 03 26.7	
LVV					*e*		21 10 20.7	
LVV					*e*S	**S**	**21 10 34.2**	**-2.2**
LVV					*e*SSS	SSS	21 20 03.9	
LOF	**Lofoten**	**88.05**	**339**		*e*P	**P**	**20 59 51.0**	**-2.3**
LOF					IVmB_BB		20 59 58.4	
	comp=Z,1μm,3.0s							
LOF					*e*SKSac	**SKSac**	**21 10 21.2**	**+0.8**
LOF					IVMs_BB	IVMs_BB	21 46 07.0	
	comp=Z,12μm,14.3s							
SZH	**Strazhica**	**88.10**	**313**		P	**P**	**20 59 52.3**	**-1.8**
SKAG	**Skagway**	**88.11**	**30**		*e*P	**P**	**20 59 54.2**	**+0.5**
ERIK	**Erikli-Kesan**	**88.18**	**311**		*e*P	**P**	**20 59 55.4**	**+0.9**
DKL	**Dikili**	**88.18**	**309**		*e*P	**P**	**20 59 56.0**	**+1.5**
BODT	**Bodrum**	**88.23**	**307**		*e*P	**P**	**20 59 54.5**	**-0.4**
GELI	**Tayfur-Gelibol**	**88.26**	**311**		*e*P	**P**	**20 59 54.2**	**-0.7**
VOIR		**88.29**	**316**	⇑	*i*P	**P**	**20 59 54.7**	**-1.0**
MTUR	**Matau**	**88.33**	**315**	⇑	*i*P	**P**	**20 59 55.0**	**-0.3**
NIS1	**Nisyros Isl.**	**88.42**	**307**		*e*P	**P**	**20 59 57.6**	**+1.8**
ARCR	**ARCALIA**	**88.42**	**317**	⇑	*i*P	**P**	**20 59 55.5**	**-0.1**
ZIMR		**88.43**	**314**	⇓	*i*P	**P**	**20 59 54.5**	**-1.1**
ENEZ	**Enez**	**88.43**	**311**		*e*P	**P**	**20 59 56.3**	**+0.6**
ALN	**Alexandroupoli**	**88.48**	**311**		*e*P	**P**	**20 59 58.3**	**+2.4**
ALN	**Alexandroupoli**	**88.48**	**311**		P	P	20 59 49.1	-6.8
ALN	**Alexandroupoli**	**88.48**	**311**		P	P	20 59 49.1	-6.8
ALN	**Alexandroupoli**	**88.48**	**311**		P	P	20 59 49.1	-6.8
HUMR	**Humele**	**88.53**	**315**	⇓	*i*P	**P**	**20 59 55.2**	**-0.9**
ARR	**Arges**	**88.59**	**316**	⇑	*i*P	**P**	**20 59 56.2**	**-0.3**
KARP	**Karpathos**	**88.63**	**306**		*e*P	**P**	**21 00 00.0**	**+3.2**
KARP	**Karpathos**	**88.63**	**306**		*e*sP	sP	21 00 03.9	-2.7
GADA	**Gvkgeada**	**88.73**	**310**		*e*P	**P**	**20 59 58.8**	**+1.7**
KDZ	**Kurdzhali**	**88.80**	**312**		P	**P**	**20 59 55.0**	**-2.5**
BMR	**Baia Mare**	**88.86**	**318**	⇑	*i*P	**P**	**20 59 58.3**	**+0.7**
CJR	**Cluj-Napoca**	**89.01**	**317**	⇓	*i*P	**P**	**20 59 59.5**	**+1.1**
LOT	**Lotru**	**89.17**	**316**	⇑	*i*P	**P**	**20 59 59.1**	**-0.2**
KOLS	**Kolonicke sedl**	**89.37**	**319**		*e*P	**P**	**21 00 00.1**	**+0.1**
KOLS					*e*		21 00 08.6	
KOLS					*e*		21 03 30.1	
KOLS					*e*		21 10 30.6	
KOLS					*e*S	**S**	**21 10 48.5**	**-0.5**
KOLS					*e*SS	**SS**	**21 16 44.0**	**+0.5**
KOLS					pmax	pmax		
	comp=Z,154nm,1.6s							
KOLS	**Kolonicke sedl**	**89.37**	**319**		*e*P	**P**	**21 00 00.1**	**+0.1**
KOLS					*e*		21 00 08.6	
KOLS					*e*PP	**PP**	**21 03 30.0**	**-0.8**
KOLS					*e*		21 10 30.6	
KOLS					*e*S	**S**	**21 10 48.4**	**-0.5**
KOLS					*e*SS	**SS**	**21 16 44.0**	**+0.5**
KOLS					eL	L	21 46 43.2	
CRAR	**CRAIOVA**	**89.40**	**315**	⇓	*i*P	**P**	**21 00 00.4**	**+0.2**
UZH	**Uzhgorod**	**89.43**	**319**		*e*P	P	20 59 54.1	-6.1
UZH					*i*		21 00 00.9	
UZH					*e*S	S	21 10 38.4	-11
DRGR		**89.59**	**317**	⇓	*i*P	**P**	**21 00 01.7**	**+0.6**
KAVA	**Kavala**	**89.60**	**311**		P	**P**	**20 59 58.6**	**-2.6**
KAVA	**Kavala**	**89.60**	**311**		P	**P**	**20 59 58.6**	**-2.6**
MPEP	**Malo Peshtene**	**89.65**	**314**		P	**P**	**21 00 00.0**	**-1.4**
DEV	**Deva**	**89.67**	**316**	⇑	*i*P	**P**	**21 00 01.9**	**+0.5**
VNDA	**Vanda**	**89.72**	**172**		P	**P**	**20 59 59.9**	**-1.0**
	comp=Z,42nm,1.0s,baz=324,slow=5.7,SNR=48							
VNDA					PKPPKP	**P'P'df**	**21 25 45.0**	**+4.3**
	comp=Z,0.7nm,0.9s,baz=218,slow=4.7,SNR=3.2							
VNDA					LR	LR	21 40 04.1	
	comp=Z,6μm,21.8s,baz=339,slow=36							
VNDA	**Vanda**	**89.72**	**172**		*e*P	**P**	**20 59 59.2**	**-1.7**
VNDA	**Vanda**	**89.72**	**172**		*e*P	**P**	**20 59 59.2**	**-1.7**
VNDA					P'P'		21 25 45.0	
SRE	**Strehaia**	**89.74**	**315**	⇑	*i*P	**P**	**21 00 02.1**	**+0.3**
SANT	**Santorini**	**89.83**	**307**		*e*pP	pP	21 00 08.1	-1.5
CRVS	**Cervenica-Dubn**	**89.90**	**320**		*e*P	**P**	**21 00 02.6**	**+0.1**
CRVS					*e*		21 00 09.5	
CRVS					*e*		21 03 34.2	
CRVS					*e*S	**S**	**21 10 51.9**	**-1.9**
CRVS					*e*SS	**SS**	**21 16 51.6**	**+0.5**
CRVS	**Cervenica-Dubn**	**89.90**	**320**		*e*P	**P**	**21 00 02.6**	**+0.1**
CRVS					*e*		21 00 09.5	
CRVS					*e*PP	**PP**	**21 03 34.2**	**-0.8**
CRVS					*e*S	**S**	**21 10 51.9**	**-1.9**
CRVS					*e*SS	**SS**	**21 16 51.6**	**+0.5**
STHS	**Stebnicka Huta**	**89.91**	**320**		*e*P	**P**	**21 00 02.6**	**+0.1**
STHS					*e*		21 00 10.6	
STHS					*e*S	**S**	**21 10 55.3**	**+1.4**
STHS					pmax	pmax		
	comp=Z,56nm,1.1s							
STHS	**Stebnicka Huta**	**89.91**	**320**		*e*P	**P**	**21 00 02.6**	**+0.1**
STHS					*e*		21 00 10.6	
NVR	**Nevrokopi**	**90.00**	**312**		P	**P**	**21 00 00.6**	**-2.5**
NVR	**Nevrokopi**	**90.00**	**312**		P	**P**	**21 00 00.6**	**-2.5**
MMB	**Musomiste**	**90.00**	**312**		P	**P**	**21 00 01.5**	**-1.9**
LAST	**Lasithi**	**90.00**	**306**		*e*P	P	21 00 08.6	+5.0
OUR	**Ouranopolis**	**90.14**	**311**		*e*P	**P**	**21 00 03.0**	**-0.6**
OUR	**Ouranopolis**	**90.14**	**311**		P	**P**	**21 00 01.3**	**-2.4**
OUR	**Ouranopolis**	**90.14**	**311**		P	**P**	**21 00 01.3**	**-2.4**
OUR	**Ouranopolis**	**90.14**	**311**		P	**P**	**21 00 01.3**	**-2.4**
VTS	**Vitosha**	**90.20**	**313**		P	**P**	**21 00 01.4**	**-2.8**
VTS	**Vitosha**	**90.20**	**313**	⇑	*i*P	**P**	**21 00 03.5**	**-0.7**
VTS	**Vitosha**	**90.20**	**313**		*e*P	**P**	**21 00 04.0**	**-0.2**
VTS	**Vitosha**	**90.20**	**313**		P	**P**	**21 00 02.0**	**-2.2**
VTS	**Vitosha**	**90.20**	**313**		*e*P	**P**	**21 00 04.0**	**-0.2**
SRS	**Serrai**	**90.25**	**312**		P	**P**	**21 00 00.8**	**-3.5**
SRS	**Serrai**	**90.25**	**312**		P	**P**	**21 00 00.8**	**-3.5**
SRS	**Serrai**	**90.25**	**312**		P	**P**	**21 00 00.8**	**-3.5**
SIRR	**Siria**	**90.42**	**317**	⇓	*i*P	**P**	**21 00 05.4**	**+0.5**
PAIG	**Paliouri**	**90.45**	**310**		P	**P**	**21 00 02.1**	**-3.1**
PAIG	**Paliouri**	**90.45**	**310**		P	**P**	**21 00 02.1**	**-3.1**
PAIG	**Paliouri**	**90.45**	**310**		P	**P**	**21 00 02.1**	**-3.1**
AOS	**Alonnisos**	**90.47**	**310**		*e*P	**P**	**21 00 04.5**	**-0.8**
AOS	**Alonnisos**	**90.47**	**310**		P	**P**	**21 00 02.2**	**-3.1**
AOS	**Alonnisos**	**90.47**	**310**		P	**P**	**21 00 02.2**	**-3.1**
SOH	**Sokhos**	**90.49**	**311**		P	**P**	**21 00 03.5**	**-2.0**
SOH	**Sokhos**	**90.49**	**311**		P	**P**	**21 00 03.5**	**-2.0**
SOH	**Sokhos**	**90.49**	**311**		P	**P**	**21 00 03.5**	**-2.0**
IDI	**Anoyia**	**90.50**	**306**		P	**P**	**21 00 05.1**	**-0.6**
	comp=Z,4.2nm,0.5s,baz=86,slow=6.4,SNR=3.8							
IDI	**Anoyia**	**90.50**	**306**		P	**P**	**21 00 03.8**	**-1.8**
NIE	**Niedzica**	**90.50**	**320**		*e*P	**P**	**21 00 05.7**	**+0.4**
NIE					*e*PP	PP	21 03 47.6	+7.9
NIE					*e*S	**SKSac**	**21 10 41.7**	**+6.0**
NIE					*e*ScS	**ScS**	**21 11 02.5**	**-0.6**
NIE					LMZ	LR	21 47 36.3	
	comp=Z,20μm,16.5s							
NIE	**Niedzica**	**90.50**	**320**		*e*P	**P**	**21 00 05.7**	**+0.4**
NIE					*e*		21 03 47.7	
NIE					*e*		21 11 02.5	
NIE					MLR	MLR		
	comp=Z,20μm,16.5s							
PLG	**Polygyros**	**90.53**	**311**		P	**P**	**21 00 03.7**	**-1.9**
PLG	**Polygyros**	**90.53**	**311**		P	**P**	**21 00 03.7**	**-1.9**
PLG	**Polygyros**	**90.53**	**311**		P	**P**	**21 00 03.7**	**-1.9**
OJC	**Ojcow**	**90.60**	**321**		*e*P	**P**	**21 00 04.4**	**-1.3**
OJC					*e*PP	**PP**	**21 03 47.6**	**+7.1**
OJC					*e*S	**SKSac**	**21 10 40.4**	**+4.2**
OJC					*e*ScS	**S**	**21 11 01.6**	**+1.3**
OJC					*e*SS	SS	21 17 17.1	+16
OJC					LMZ	LR	21 45 53.5	
	comp=Z,15μm,18.1s							
OJC	**Ojcow**	**90.60**	**321**		*e*P	**P**	**21 00 04.4**	**-1.3**
OJC					*e*		21 03 47.6	
OJC					*e*S	**SKSac**	**21 10 40.4**	**+4.2**
OJC					*e*		21 11 01.6	
OJC					MLR	MLR		
	comp=Z,15μm,18.1s							
OJC	**Ojcow**	**90.60**	**321**		*e*P	**P**	**21 00 06.1**	**+0.4**
BZS	**Buzias**	**90.61**	**316**	⇑	*i*P	**P**	**21 00 05.3**	**-0.5**
KECS	**Kecovo**	**90.63**	**319**		*e*P	**P**	**21 00 06.1**	**+0.2**
KECS					*e*		21 00 12.6	
KECS					*e*		21 03 43.7	
KECS					*e*S	**S**	**21 11 00.8**	**+0.2**
KECS					pmax	pmax		
	comp=Z,47nm,1.0s							
KECS	**Kecovo**	**90.63**	**319**		*e*P	**P**	**21 00 06.0**	**+0.2**
KECS					*e*		21 00 12.6	
KECS					*e*PP	**PP**	**21 03 43.7**	**+2.9**
KECS					*e*S	**S**	**21 11 00.8**	**+0.2**
SBA	**Scott Base**	**90.67**	**171**		*e*P	**P**	**21 00 03.1**	**-2.2**
SBA	**Scott Base**	**90.67**	**171**		*e*P	**P**	**21 00 03.1**	**-2.2**
HORT	**Hortiatis**	**90.73**	**311**		*e*P	**P**	**21 00 05.9**	**-0.7**
HORT	**Hortiatis**	**90.73**	**311**		P	**P**	**21 00 04.8**	**-1.8**
HORT	**Hortiatis**	**90.73**	**311**		P	**P**	**21 00 04.8**	**-1.8**
MDVR	**Moldovita**	**90.74**	**316**	⇑	*i*P	**P**	**21 00 06.8**	**+0.3**
KNT	**Kendrikon**	**90.75**	**312**		P	**P**	**21 00 03.2**	**-3.4**
KNT	**Kendrikon**	**90.75**	**312**		P	**P**	**21 00 03.2**	**-3.4**
KNT	**Kendrikon**	**90.75**	**312**		P	**P**	**21 00 03.2**	**-3.4**
SKIA	**Skiathos**	**90.78**	**310**		P	**P**	**21 00 06.2**	**-0.6**
HFS	**Hagfors**	**90.84**	**332**		P	**P**	**21 00 05.5**	**-1.0**
	comp=Z,60nm,0.8s,baz=125,slow=3.2,SNR=19							
HFS					LR	LR	21 43 39.5	
	comp=Z,23μm,19.3s,baz=65,slow=37							
DAG	**Danmarks Havn**	**90.93**	**352**		*i*P	**P**	**21 00 04.4**	**-2.3**
	comp=Z,70nm,1.0s							
	comp=Z,10μm,17.0s							
DAG	**Danmarks Havn**	**90.93**	**352**		*i*P	**P**	**21 00 04.4**	**-2.3**
DAG					pmax	pmax		
	comp=Z,70nm,1.0s							
DAG					MLR	MLR		
	comp=Z,11nm,17.0s							
XOR	**Xorichti**	**90.94**	**310**		P	**P**	**21 00 08.0**	**+0.5**
XOR	**Xorichti**	**90.94**	**310**		P	**P**	**21 00 08.0**	**+0.5**
VAY	**Valandovo**	**90.96**	**312**		P	**P**	**21 00 04.7**	**-2.8**
VAY	**Valandovo**	**90.96**	**312**		*e*P	**P**	**21 00 05.0**	**-2.6**
VAY	**Valandovo**	**90.96**	**312**		P	**P**	**21 00 04.7**	**-2.8**
VAY	**Valandovo**	**90.96**	**312**		P	**P**	**21 00 04.7**	**-2.8**
BANR	**Banloc**	**90.99**	**316**	⇓	*i*P	**P**	**21 00 06.8**	**-0.8**
VAM	**Vamos**	**91.03**	**306**		P	**P**	**21 00 07.8**	**-0.2**
VAM	**Vamos**	**91.03**	**306**		P	**P**	**21 00 07.8**	**-0.2**
VAM	**Vamos**	**91.03**	**306**		P	**P**	**21 00 07.8**	**-0.2**
DLBC	**Dease Lake**	**91.04**	**30**		P	**P**	**21 00 08.0**	**+0.4**
	comp=Z,5.7nm,0.9s,baz=202,slow=19,SNR=5.0							
DLBC					LR	LR	21 43 29.9	
	comp=Z,4μm,19.7s,baz=300,slow=37							
DLBC	**Dease Lake**	**91.04**	**30**		*e*P	**P**	**21 00 09.0**	**+1.4**
SMIA	**Simia**	**91.04**	**310**		P	P	21 00 14.9	+6.9
LANS	**Liptovska Anna**	**91.10**	**320**		*e*P	**P**	**21 00 09.4**	**+1.3**
LANS					*e*		21 00 15.3	
LANS					*e*S	**S**	**21 11 08.7**	**+3.7**
LANS	**Liptovska Anna**	**91.10**	**320**		*e*P	**P**	**21 00 09.4**	**+1.3**
LANS					*e*		21 00 15.3	
PPT	**Papeete**	**91.11**	**108**		LR	LR	21 34 05.1	
	comp=Z,5μm,20.5s,baz=266,slow=31							
PPT2	**Papeete2**	**91.12**	**108**		*e*P	**P**	**21 00 09.5**	**+0.7**
	comp=Z,64nm,1.3s							
PPT2	**Papeete2**	**91.12**	**108**		*e*PP	PP	21 03 42.6	-3.2
	comp=Z,2μm,24.5s							
PPT2					*e*SKSac	**SKSac**	**21 10 38.0**	**-2.3**
	comp=Z,4μm,23.8s							
PPT2					*e*S	**S**	**21 11 05.9**	**-0.3**
	comp=Z,8μm,26.5s							
PPT2					*e*SS	**SS**	**21 17 09.4**	**-1.4**
	comp=Z,5μm,27.2s							
PPT2	**Papeete2**	**91.12**	**108**		*e*LR	LR	21 29 31.2	
	comp=Z,23μm,25.5s,baz=286							
VILL	**Villia**	**91.12**	**309**		P	**P**	**21 00 09.6**	**+1.2**
PSZ	**Piszkesteto**	**91.16**	**319**	⇑	*i*P	**P**	**21 00 08.6**	**+0.1**
PSZ	**Piszkesteto**	**91.16**	**319**		*e*P	**P**	**21 00 08.5**	**+0.1**
PSZ	**Piszkesteto**	**91.16**	**319**		*e*P	**P**	**21 00 08.5**	**0.0**
PSZ	**Piszkesteto**	**91.16**	**319**	⇓	*e*PKKPbc	**P**	**21 00 08.7**	**+0.3**
GRG	**Griva**	**91.17**	**312**		P	**P**	**21 00 05.4**	**-3.2**
GRG	**Griva**	**91.17**	**312**		P	**P**	**21 00 05.4**	**-3.2**
GRG	**Griva**	**91.17**	**312**		P	**P**	**21 00 05.4**	**-3.2**
IMMV	**Iera Moni Meta**	**91.19**	**306**		P	**P**	**21 00 05.4**	**-3.3**
ATAL	**Atalanti**	**91.22**	**309**		P	**P**	**21 00 04.9**	**-3.9**
ATAL	**Atalanti**	**91.22**	**309**		P	**P**	**21 00 04.9**	**-3.9**
LKR	**Lokris**	**91.25**	**309**		P	**P**	**21 00 09.7**	**+0.8**
LKR	**Lokris**	**91.25**	**309**		P	**P**	**21 00 09.7**	**+0.8**
GKP	**Gorka Klasztor**	**91.26**	**325**		*e*P	**P**	**21 00 06.0**	**-2.6**
GKP					*e*S	**SKSac**	**21 10 45.8**	**+6.1**
GKP					*e*ScS	**S**	**21 11 06.6**	**+0.5**
GKP					*e*SS	**SS**	**21 17 17.2**	**+6.9**
GKP					LMZ	LR	21 43 11.8	
	comp=Z,18μm,18.4s							
GKP	**Gorka Klasztor**	**91.26**	**325**		*e*P	**P**	**21 00 06.0**	**-2.6**
GKP					*e*		21 11 06.6	
GKP					*e*SS	SS	21 17 17.2	+6.8
GKP					MLR	MLR		
	comp=Z,18μm,18.4s							
LIT	**Litokhoron**	**91.30**	**311**		P	**P**	**21 00 04.8**	**-4.4**
LIT	**Litokhoron**	**91.30**	**311**		P	**P**	**21 00 04.8**	**-4.4**
LIT	**Litokhoron**	**91.30**	**311**		P	**P**	**21 00 04.8**	**-4.4**
DID	**Didima**	**91.33**	**308**		P	**P**	**21 00 07.0**	**-2.4**
DID	**Didima**	**91.33**	**308**		P	**P**	**21 00 07.0**	**-2.4**
NC405	**NORSAR Array S**	**91.39**	**333**		*e*P	**P**	**21 00 08.5**	**-0.6**
LTK	**Loutraki**	**91.42**	**309**		P	**P**	**21 00 06.1**	**-3.7**
LTK	**Loutraki**	**91.42**	**309**		P	**P**	**21 00 06.1**	**-3.7**
KRND	**KRANIDI**	**91.42**	**308**		P	**P**	**21 00 11.0**	**+1.2**
DIB	**Dawson Inlet,**	**91.43**	**35**		*e*P	**P**	**21 00 10.2**	**+0.8**
TVO	**Taravao**	**91.45**	**108**		*e*P	**P**	**21 00 10.7**	**+0.4**
	comp=Z,12nm,0.9s							
NC303	**NORSAR Array S**	**91.50**	**333**		*e*P	**P**	**21 00 08.9**	**-0.7**
MBAR	**Mbarara**	**91.58**	**270**		*e*P	**P**	**21 00 12.7**	**+1.5**
MBAR	**Mbarara**	**91.58**	**270**		*e*P	**P**	**21 00 12.7**	**+1.5**
NC602	**NORSAR Array S**	**91.61**	**333**		*e*P	**P**	**21 00 09.1**	**-1.0**
NC602	**NORSAR Array S**	**91.61**	**333**		*e*P	**P**	**21 00 09.8**	**-0.4**
SKO	**Skopje**	**91.62**	**313**		*e*P	**P**	**21 00 08.4**	**-2.2**
RAC	**Raciborz**	**91.63**	**321**		*e*P	**P**	**21 00 10.6**	**+0.1**
RAC					*e*		21 03 48.9	
RAC					*e*		21 10 42.6	
RAC					*e*S	**S**	**21 11 09.4**	**-0.2**
RAC					MLR	MLR		
	comp=Z,18μm,17.0s							
NB2	**NORSAR Subarra**	**91.64**	**333**		P	**P**	**21 00 08.9**	**-1.4**
	comp=Z,77nm,1.2s,baz=67,slow=4.6							
NB2	**NORSAR Subarra**	**91.64**	**333**		P	**P**	**21 00 08.9**	**-1.4**
	baz=67,slow=4.6							
NOA	**NORSAR Array B**	**91.64**	**333**		P	**P**	**21 00 09.3**	**-1.0**
	comp=Z,6.1nm,0.9s,baz=69,slow=4.9,SNR=12							
NOA					PP	**PP**	**21 03 48.3**	**-0.1**
	comp=Z,5.2nm,0.9s,baz=66,slow=8.2,SNR=3.7							
NOA					PKKPbc	**PKKPbc**	**21 17 31.0**	**-0.9

DPC	**Dobruska-Polom**	**92.70**	**322**	*e*P	**P**	**21 00 15.9**	**+0.4**
DPC				*e**PP	**pP**	**21 00 21.8**	**-0.9**
DPC				*e*		21 00 26.0	
DPC				*e*		21 03 59.0	
DPC				*e*		21 10 50.5	
DPC				*e*S	**ScS**	**21 11 21.6**	**+0.3**
DPC				*e*SP	**SP**	**21 12 28.8**	**-1.1**
DPC				*e*SS	**SS**	**21 17 32.1**	**+0.7**
DPC				MLR	MLR		
	comp=Z,12µm,16.4s						
PLE	**Pljevlja**	**92.73**	**315** ⇓	*i*P	**P**	**21 00 14.8**	**-1.1**
UPC	**Upice**	**92.84**	**322**	*e*P	**P**	**21 00 16.9**	**+0.9**
UPC				*e*PP	**pP**	**21 00 22.1**	**-1.1**
UPC				*e*SP	**sP**	**21 00 26.8**	**+1.0**
UPC				*e*PP	**PP**	**21 04 00.1**	**+2.0**
UPC				*e*SKS	**SKSac**	**21 10 51.0**	**+2.2**
UPC				*e*x	x	21 12 03.5	
UPC				*e*SP	**SP**	**21 12 29.5**	**-1.9**
UPC				AMS	AMS	21 45 00.0	
	comp=Z,13µm,15.2s						
UPC	**Upice**	**92.84**	**322**	*e*P	**P**	**21 00 16.9**	**+0.9**
UPC				*e**PP	**pP**	**21 00 22.1**	**-1.1**
UPC				*e*		21 00 26.8	
UPC				*e*		21 04 00.1	
UPC				*e*		21 10 51.0	
UPC				*e*SP	SP	21 12 29.5	-1.9
UPC				MLR	MLR		
	comp=Z,13µm,15.2s						
VRAC	**Vranov**	**92.86**	**321**	P	**P**	**21 00 16.9**	**+0.8**
	comp=Z,11nm,0.9s,baz=79,slow=5.0,SNR=21						
VRAC				PP	**PP**	**21 04 04.2**	**+5.9**
	comp=Z,8.0nm,1.2s,baz=78,slow=9.7,SNR=4.4						
VRAC				LR	LR	21 45 07.7	
	comp=Z,11µm,18.1s,baz=72,slow=38						
VRAC	**Vranov**	**92.86**	**321** ⇓	*i*P	**P**	**21 00 17.2**	**+1.0**
RES	**Resolute Bay**	**92.89**	**9**	P	**P**	**21 00 16.1**	**+0.3**
	comp=Z,33nm,1.0s,baz=316,slow=7.7,SNR=8.1						
TIR	**Tirane**	**92.92**	**313** ⇓	*i*P	**P**	**21 00 15.1**	**-1.5**
TIR	**Tirane**	**92.92**	**313**	*e*P	**P**	**21 00 16.3**	**-0.3**
TIR	**Tirane**	**92.92**	**313**	*e*P	**P**	**21 00 16.3**	**-0.3**
KONO	**Kongsberg**	**92.94**	**332**	*e*P	**P**	**21 00 16.2**	**0.0**
KONO				IVmB_BB		21 00 29.9	
	comp=Z,1µm,2.5s						
KONO				*e*PP	**PP**	**21 03 57.4**	**-1.2**
KONO				*e*SKSac	**SKSac**	**21 10 44.3**	**-4.6**
KONO				*e*		21 11 20.3	
KONO				*e*SS	**SS**	**21 17 34.8**	**+0.6**
KONO				IVMs_BB	IVMs_BB	21 46 18.8	
	comp=Z,12µm,15.4s						
KONO	**Kongsberg**	**92.94**	**332**	*e*P	P	21 00 22.1	+5.8
KONO	**Kongsberg**	**92.94**	**332**	*e*P	P	21 00 22.1	+5.8
AKN	**Aaknes**	**92.99**	**335**	*e*P	**P**	**21 00 15.7**	**-0.8**
AKN				IVmB_BB		21 00 31.1	
	comp=Z,2µm,2.7s						
AKN				*e*SKSac	**SKSac**	**21 10 46.5**	**-2.7**
AKN				*e*SS	**SS**	**21 17 35.8**	**+1.0**
AKN				IVMs_BB	IVMs_BB	21 46 47.3	
	comp=Z,26µm,14.4s						
IGT	**Igoumenitsa**	**93.05**	**311**	P	**P**	**21 00 14.3**	**-3.0**
IGT	**Igoumenitsa**	**93.05**	**311**	P	**P**	**21 00 14.3**	**-3.0**
IGT	**Igoumenitsa**	**93.05**	**311**	P	**P**	**21 00 14.3**	**-3.0**
PDG	**Podgorica**	**93.07**	**314**	P	**P**	**21 00 14.9**	**-2.4**
PDG	**Podgorica**	**93.07**	**314** ⇑	*i*P	**P**	**21 00 16.6**	**-0.7**
TTG	**Podgorica**	**93.07**	**314** ⇓	*i*P	**P**	**21 00 15.3**	**-2.0**
TTG	**Podgorica**	**93.07**	**314**	P	**P**	**21 00 14.9**	**-2.4**
TTG	**Podgorica**	**93.07**	**314**	P	**P**	**21 00 14.9**	**-2.4**
COP	**Copenhagen**	**93.08**	**328**	*i*P	**P**	**21 00 16.4**	**-0.6**
COP	**Copenhagen**	**93.08**	**328**	*i*S	**SKSac**	**21 10 50.6**	**+0.8**
	comp=Z,13µm,18.0s						
COP	**Copenhagen**	**93.08**	**328**	*e*P	**P**	**21 00 16.4**	**-0.6**
COP				*i*S	**SKSac**	**21 10 50.6**	**+0.8**
COP				MLR	MLR		
	comp=Z,13µm,18.0s						
SGD	**Sagiada**	**93.10**	**311**	P	**P**	**21 00 15.6**	**-1.9**
UPM	**Unac-Piva**	**93.11**	**315**	*e*P	**P**	**21 00 16.5**	**-1.2**
NKY	**Niksic**	**93.16**	**314**	*e*P	**P**	**21 00 16.8**	**-1.0**
ZKS	**Zakynthos**	**93.17**	**309**	P	**P**	**21 00 14.9**	**-3.0**
DRME	**Dracevica, Mon**	**93.19**	**314** ⇓	*i*P	**P**	**21 00 17.3**	**-0.6**
NKME	**Niksic**	**93.20**	**314**	*e*P	**P**	**21 00 16.0**	**-1.9**
VLS	**Valsamata**	**93.20**	**309**	P	**P**	**21 00 17.6**	**-0.4**
VLS	**Valsamata**	**93.20**	**309**	P	**P**	**21 00 17.6**	**-0.4**
VLS	**Valsamata**	**93.20**	**309**	P	**P**	**21 00 17.6**	**-0.4**
ULC	**Ulcinj**	**93.21**	**313** ⇓	*i*P	**P**	**21 00 16.8**	**-1.2**
CEME	**Cevo**	**93.28**	**314** ⇓	*i*P	**P**	**21 00 16.5**	**-1.8**
BUM	**Brajici-Budva**	**93.37**	**314** ⇓	*i*P	**P**	**21 00 18.1**	**-0.6**
KEK	**Kerkira**	**93.40**	**311**	P	**P**	**21 00 14.7**	**-4.2**
KEK	**Kerkira**	**93.40**	**311**	P	**P**	**21 00 14.7**	**-4.2**
BRY	**Bratogost**	**93.45**	**314** ⇓	*i*P	**P**	**21 00 17.8**	**-1.4**
HCY	**Herceg Novi**	**93.61**	**314** ⇓	*i*P	**P**	**21 00 18.7**	**-1.1**
BEHE	**Becsehely**	**93.61**	**318**	*e*P	**P**	**21 00 19.6**	**-0.1**
PVCC	**Panska Ves**	**93.70**	**322**	*e*P	**P**	**21 00 21.0**	**+1.0**
PVCC				*e*pP	**pP**	**21 00 26.7**	**-0.5**
PVCC				*e*sP	**sP**	**21 00 31.1**	**+1.3**
PVCC				*e*PP	**PP**	**21 04 09.7**	**+4.9**
PVCC				*e*SKS	**SKSac**	**21 10 51.5**	**-2.0**
PVCC				*e*S	**ScS**	**21 11 29.4**	**-0.2**
PVCC				*e*SP	**SP**	**21 12 43.7**	**+2.8**
PVCC				*e*SS	**SS**	**21 17 45.3**	**-0.3**
PVCC				AMS	AMS	21 44 40.0	
	comp=Z,14µm,16.4s						
PVCC	**Panska Ves**	**93.70**	**322**	*e*P	**P**	**21 00 21.0**	**+1.0**
PVCC				*e**PP	**pP**	**21 00 26.7**	**-0.5**
PVCC				*e*		21 00 31.1	
PVCC				*e*		21 04 09.7	
PVCC				*e*		21 10 51.5	
PVCC				*e*S	**ScS**	**21 11 29.4**	**-0.2**
PVCC				*e*SP	**SP**	**21 12 43.7**	**+2.8**
PVCC				*e*SS	**SS**	**21 17 45.3**	**-0.3**
PVCC				MLR	MLR		
	comp=Z,14µm,16.4s						
CONA	**Conrad Observa**	**93.75**	**320**	*i*P	**P**	**21 00 19.0**	**-1.5**
	comp=Z,48nm,1.3s,SNR=12						
GOPC	**GO Pecny, Ondr**	**93.78**	**322**	*e*P	**P**	**21 00 21.4**	**+1.0**
GOPC				*e*pP	**pP**	**21 00 27.1**	**-0.5**
GOPC				*e*sP	**sP**	**21 00 31.2**	**+1.0**
GOPC				*e*PP	**PP**	**21 04 08.4**	**+2.9**
GOPC				*e*SKS	**SKSac**	**21 10 57.2**	**+3.2**
GOPC				*e*S	**ScS**	**21 11 31.8**	**+1.5**
GOPC				*e*SP	**SP**	**21 12 38.0**	**-3.8**
GOPC				*e*SS	**SS**	**21 17 45.9**	**-0.9**
GOPC				AMS	AMS	21 49 50.0	
	comp=Z,14µm,15.8s						
GOPC	**GO Pecny, Ondr**	**93.78**	**322**	*e*P	**P**	**21 00 21.4**	**+1.0**
GOPC				*e**PP	**pP**	**21 00 27.1**	**-0.5**
GOPC				*e*		21 00 31.2	
GOPC				*e*		21 04 08.4	
GOPC				*e*		21 10 57.2	
GOPC				*e*S	**ScS**	**21 11 31.8**	**+1.5**
GOPC				*e*SP	**SP**	**21 12 38.0**	**-3.8**
GOPC				*e*SS	**SS**	**21 17 45.9**	**-0.9**
GOPC				MLR	MLR		
	comp=Z,14µm,15.8s						
HYA	**Hoyanger**	**93.80**	**334**	*e*P	**P**	**21 00 19.0**	**-1.2**
HYA				IVmBBB		21 00 26.2	
	comp=Z,820nm,3.9s						
HYA				*e*SKSac	**SKSac**	**21 10 54.0**	**+0.5**
HYA				IVMs_BB	IVMs_BB	21 46 32.7	
	comp=Z,13µm,15.2s						
PRU	**Pruhonice**	**93.90**	**322**	*e*P	**P**	**21 00 21.7**	**+0.8**
PRU				*e*pP	**pP**	**21 00 27.2**	**-0.9**
PRU				*e*sP	**sP**	**21 00 31.7**	**+1.0**
PRU				*e*PP	**PP**	**21 04 09.2**	**+2.8**
PRU				*e*SKS	**SKSac**	**21 10 58.3**	**+3.7**
PRU				*e*S	**ScS**	**21 11 32.6**	**+1.4**
PRU				*e*x	x	21 12 10.3	
PRU				*e*SP	**SP**	**21 12 37.7**	**-5.4**
PRU				*e*SS	**SS**	**21 17 51.4**	**+2.9**
PRU				AMS	AMS	21 45 00.0	
	comp=Z,14µm,17.4s						
PRU	**Pruhonice**	**93.90**	**322**	*e*P	**P**	**21 00 21.7**	**+0.8**
PRU				*e**PP	**pP**	**21 00 27.2**	**-0.9**
PRU				*e*		21 00 31.7	
PRU				*e*		21 04 09.2	
PRU				*e*		21 10 58.3	
PRU				*e*S	**ScS**	**21 11 32.6**	**+1.4**
PRU				*e*SP	**SP**	**21 12 37.7**	**-5.4**
PRU				*e*SS	**SS**	**21 17 51.4**	**+2.9**
PRU				MLR	MLR		
	comp=Z,14µm,17.4s						
BRG	**Berggiesshubel**	**93.96**	**323**	*i*P	**P**	**21 00 20.5**	**-0.7**
	comp=Z,43nm,1.1s						
BRG				*i*		21 00 27.9	
	comp=Z,173nm,0.9s						
BRG				PP	**PP**	**21 04 07.0**	**+0.2**
BRG				SKS	**SKSac**	**21 11 00.0**	**+5.1**
BRG				S	**ScS**	**21 11 35.0**	**+3.3**
BRG				PS	**PS**	**21 12 44.0**	**-3.0**
BRG				SS	**SS**	**21 17 45.0**	**-4.3**
	comp=N,12µm,17.0s						
	comp=E,17µm,17.8s						
	comp=Z,21µm,17.8s						
BRG	**Berggiesshubel**	**93.96**	**323**	*i*P	**P**	**21 00 20.5**	**-0.7**
BRG				*i*		21 00 27.9	
BRG						21 04 07.0	
BRG				S	**ScS**	**21 11 35.0**	**+3.3**
BRG				PS	**PS**	**21 12 44.0**	**-3.0**
BRG				SS	**SS**	**21 17 45.0**	**-4.3**
BRG				pmax	pmax		
	comp=Z,43nm,1.1s						
BRG				MLR	MLR		
	comp=N,12µm,17.0s						
BRG				MLR	MLR		
	comp=E,17µm,17.8s						
BRG				MLR	MLR		
	comp=Z,21µm,17.8s						
HOMB	**Homborsund**	**94.03**	**331**	*e*P	**P**	**21 00 16.9**	**-4.3**
HOMB				IVmB_BB		21 00 30.2	
	comp=Z,703nm,2.9s						
HOMB				*e*SKSac	**SKSac**	**21 10 53.4**	**-1.5**
HOMB				*e*SS	**SS**	**21 17 49.6**	**-0.1**
HOMB				IVMs_BB	IVMs_BB	21 47 28.4	
	comp=Z,10µm,15.6s						
FOO	**Floro**	**94.08**	**335**	*e*P	**P**	**21 00 21.2**	**-0.2**
FOO				IVmB_BB		21 00 31.1	
	comp=Z,1µm,4.7s						
FOO				*e*SKSac	**SKSac**	**21 10 55.2**	**+0.2**
FOO				IVMs_BB	IVMs_BB	21 47 36.0	
	comp=Z,23µm,14.5s						
ODD1	**Odda**	**94.18**	**333**	*e*P	**P**	**21 00 19.7**	**-2.3**
ODD1				*e*SKSac	**SKSac**	**21 10 59.2**	**+3.3**
ODD1				*e*		21 11 32.1	
ODD1				IVMs_BB	IVMs_BB	21 47 16.8	
	comp=Z,19µm,15.1s						
ARSA	**Arzberg**	**94.19**	**319**	*i*P	**P**	**21 00 20.7**	**-1.6**
	comp=Z,52nm,1.4s,SNR=13						
ARSA				*i* PP	**PP**	**21 04 09.7**	**+0.9**
	comp=Z,42nm,1.4s						
BBB	**Bella Bella**	**94.28**	**36**	LR	LR	21 42 45.3	
	comp=Z,2µm,18.6s,baz=290,slow=36						
CLL	**Collm**	**94.36**	**324** ⇓	*i*P	**P**	**21 00 23.2**	**+0.2**
	comp=Z,32nm,1.1s						
CLL				*i* pP	**pP**	**21 00 27.0**	**-3.2**
CLL				*i* sP	**pP**	**21 00 29.3**	**-0.9**
	comp=Z,101nm,1.0s						
CLL				*e*PP	**PP**	**21 04 11.0**	**+1.1**
CLL				*e*		21 04 19.0	
CLL				*e*PPP	PPP	21 06 12.0	
CLL				*e*SKSac	**SKSac**	**21 10 57.0**	**0.0**
CLL				*e*S	**ScS**	**21 11 35.0**	**0.0**
	comp=N,7µm,22.0s						
CLL				*e*S	**ScS**	**21 11 35.0**	**0.0**
	comp=E,5µm,22.3s						
CLL				*e*PS	**PS**	**21 12 54.0**	**+2.7**
CLL				*e*		21 13 36.0	
CLL				*e*SS	**SS**	**21 17 54.0**	**-1.0**
CLL				*e*SSS	SSS	21 21 36.0	
CLL				*e*		21 24 06.0	
CLL				*e*SSSS		21 24 48.0	
CLL				*e*PKPPKPdf	**P'P'df**	**21 25 36.0**	**-0.8**
CLL				Lm	MLR	21 47 00.0	
	comp=N,7µm,18.2s						
CLL				Lm	MLR	21 47 00.0	
	comp=E,17µm,18.2s						
CLL				Lm	MLR	21 47 00.0	
	comp=Z,16µm,19.8s						
CLL	**Collm**	**94.36**	**324** ⇓	*i*P	**P**	**21 00 23.2**	**+0.2**
CLL				*i* *SP	**pP**	**21 00 29.3**	**-0.9**
CLL				*e*		21 10 57.0	
CLL				*e*S	**ScS**	**21 11 35.0**	**0.0**
CLL				pmax	pmax		
	comp=Z,32nm,1.1s						
CLL				MLR	MLR		
	comp=Z,16µm,19.8s						
CLL	**Collm**	**94.36**	**324**	*e*P	**P**	**21 00 22.4**	**-0.6**
SUE	**Sulen**	**94.46**	**334**	*e*P	**P**	**21 00 20.3**	**-2.9**
SUE				IVmB_BB		21 00 24.9	
	comp=Z,1µm,2.6s						
SUE				*e*SKSac	**SKSac**	**21 10 54.3**	**-2.8**
SUE				IVMs_BB	IVMs_BB	21 47 47.6	
	comp=Z,19µm,14.0s						
MUD	**Monsted U'grnd**	**94.46**	**329**	*i*P	**P**	**21 00 23.0**	**-0.3**
MUD	**Monsted U'grnd**	**94.46**	**329**	*i*S	**SKSac**	**21 10 58.5**	**+1.2**
	comp=Z,28µm,16.0s						
MUD	**Monsted U'grnd**	**94.46**	**329**	*i*P	**P**	**21 00 23.0**	**-0.3**
MUD				*i*S	**SKSac**	**21 10 58.5**	**+1.2**
MUD				MLR	MLR		
	comp=Z,28µm,16.0s						
BLS5	**Blasjo**	**94.48**	**333**	*e*P	**P**	**21 00 24.5**	**+1.1**
BLS5				IVmB_BB		21 00 38.1	
	comp=Z,911nm,3.1s						
BLS5				*e*SKSac	**SKSac**	**21 10 54.0**	**-3.4**
BLS5				IVMs_BB	IVMs_BB	21 48 30.8	
	comp=Z,15µm,16.2s						
BER	**Bergen**	**94.53**	**334**	*e*P	**P**	**21 00 19.1**	**-4.5**
BER				*e*SKSac	**SKSac**	**21 10 55.8**	**-1.8**
BER				*e*		21 11 34.2	
BER				IVMs_BB	IVMs_BB	21 47 01.6	
	comp=Z,11µm,17.3s						
ASK	**Askoy**	**94.55**	**334**	*e*SKSac	**SKSac**	**21 10 57.6**	**0.0**
ASK				IVMsBB		21 40 52.1	
	comp=Z,44µm,59.4s						
ASK				IVMsBB		21 40 52.1	
	comp=Z,44µm,59.4s						
SNART	**Snartemo**	**94.61**	**331**	*e*P	**P**	**21 00 23.3**	**-0.7**
SNART				IVmB_BB		21 00 29.6	
	comp=Z,424nm,3.1s						
SNART				*e*S	**SKSac**	**21 10 57.9**	**-0.2**
SNART				IVMs_BB	IVMs_BB	21 47 13.1	
	comp=Z,6µm,14.5s						
PERS	**Pernice**	**94.65**	**319**	*e*P	**P**	**21 00 24.4**	**-0.2**
PERS				*e*PP	**PP**	**21 04 12.7**	**+0.2**
PERS				*e*		21 07 58.5	
SOKA	**Soboth**	**94.69**	**319**	*i*P	**P**	**21 00 22.9**	**-1.8**
	comp=Z,53nm,1.3s,SNR=12						
SOKA				*i* PP	**PP**	**21 04 15.5**	**+2.7**
	comp=Z,110nm,1.3s						
KHC	**Kasperske Hory**	**94.78**	**321**	*e*P	**P**	**21 00 25.6**	**+0.5**
KHC				*e*pP	**pP**	**21 00 31.2**	**-1.1**
KHC				*e*sP	**sP**	**21 00 35.4**	**+0.6**
KHC				*e*PP	**PP**	**21 04 16.0**	**+2.6**
KHC				*e*SKS	**SKSac**	**21 11 01.5**	**+2.0**
KHC				*e*S	**ScS**	**21 11 40.4**	**+1.7**
KHC				*e*SP	**SP**	**21 12 47.4**	**-5.5**
KHC				AMS	AMS	21 50 50.0	
	comp=Z,14µm,14.9s						
KHC	**Kasperske Hory**	**94.78**	**321**	*e*P	**P**	**21 00 25.4**	**+0.4**
MOA	**Molln**	**94.79**	**320**	*i*PcP	**P**	**21 00 24.1**	**-1.0**
	comp=Z,132nm,1.1s,SNR=22						
MOA				*i* PP	**PP**	**21 04 16.6**	**+3.2**
	comp=Z,35nm,1.2s						
GEC2	**GERESS Array S**	**94.81**	**321**	*e*P	**P**	**21 00 25.3**	**+0.1**
GEC2	**GERESS Array S**	**94.81**	**321**	*e*P	**P**	**21 00 25.3**	**+0.1**
GERES	**GERESS Array B**	**94.81**	**321**	P	**P**	**21 00 25.4**	**+0.1**
	comp=Z,3.9nm,0.9s,baz=70,slow=4.7,SNR=37						
GERES				PP	**PP**	**21 04 19.5**	**+5.8**
	comp=Z,7.3nm,1.0s,baz=67,slow=5.1,SNR=5.2						
GERES				PKKPbc	**PKKPbc**	**21 17 23.1**	**-0.2**
	comp=Z,1.7nm,0.8s,baz=207,slow=0.9,SNR=5.8						
GERES				LR	LR	21 46 26.3	
	comp=Z,9µm,18.9s,baz=72,slow=38						
GEA0	**GERESS Array S**	**94.81**	**321**	*e*P	**P**	**21 00 23.6**	**-1.7**
STAV	**Stavanger**	**95.05**	**332**	*e*P	P	21 00 21.0	-4.9
STAV				IVmB_BB		21 00 31.8	
	comp=Z,758nm,2.3s						
STAV				*e*SKSac	**SKSac**	**21 10 58.8**	**-1.5**
STAV				*e*		21 11 39.2	
STAV				IVMs_BB	IVMs_BB	21 47 33.8	
	comp=Z,12µm,17.0s						
OBKA	**Obir**	**95.06**	**319**	*i*P	**P**	**21 00 24.8**	**-1.7**
	comp=Z,46nm,1.3s,SNR=6.5						
OBKA				*i* PP	**PP**	**21 04 18.3**	**+2.6**
	comp=Z,62nm,1.4s						
NKC	**Novy Kostel**	**95.08**	**323**	*e*P	**P**	**21 00 27.1**	**+0.7**
NKC				*e*pP	**pP**	**21 00 32.4**	**-1.2**
NKC				*e*PP	**PP**	**21 04 19.2**	**+3.6**
NKC				*e*SKS	**SKSac**	**21 11 05.3**	**+4.3**
NKC				*e*S	**ScS**	**21 11 41.5**	**+0.4**
NKC				*e*SP	**SP**	**21 12 48.6**	**-7.5**
NKC				*e*SS	**SS**	**21 18 03.4**	**-1.9**
NKC				AMS	AMS	21 49 00.0	
	comp=Z,18µm,16.7s						
NKC	**Novy Kostel**	**95.08**	**323**	*e*P	**P**	**21 00 27.1**	**+0.7**
NKC				*e**PP	**pP**	**21 00 32.4**	**-1.2**
NKC				*e*		21 04 19.2	
NKC				*e*		21 11 05.3	
NKC				*e*S	**ScS**	**21 11 41.5**	**+0.4**
NKC				*e*SS	**SS**	**21 18 03.4**	**-1.9**
NKC				MLR	MLR		
	comp=Z,18µm,16.7s						
VNDS	**Vrh nad Dolski**	**95.09**	**318**	*i*P	**P**	**21 00 26.2**	**-0.3**
VNDS				*e*PP	**PP**	**21 04 17.3**	**+1.4**
KMY	**Karmoy**	**95.12**	**333**	IVMs_BB	IVMs_BB	21 47 45.2	
	comp=Z,1µm,16.3s						
LJU	**Ljubljana**	**95.23**	**318**	*e*P	**P**	**21 00 27.3**	**+0.1**
LJU				*e*PP	**PP**	**21 04 19.6**	**+2.7**
LJU				*e*		21 08 03.2	
LJU				*e*SKSac	**SKSac**	**21 11 01.1**	**-0.9**
LJU				*e*S	**S**	**21 11 39.9**	**-1.7**
LJU				*e*		21 13 01.6	
LJU				*e*SS	**SS**	**21 18 01.5**	**-6.2**
MOX	**Moxa**	**95.42**	**323**	P	**P**	**21 00 28.4**	**+0.5**
MYKA	**Terra Mystica**	**95.61**	**319**	*e*P	**P**	**21 00 26.8**	**-2.1**
	comp=Z,30nm,1.7s						
MYKA				*i* PP	**PP**	**21 04 22.6**	**+2.7**
	comp=Z,54nm,1.7s						
KBA	**Koelnbreinsper**	**95.64**	**319**	*i*P	**P**	**21 00 27.1**	**-2.1**
	comp=Z,21nm,0.8s,SNR=11						
KBA				*i* PP	**PP**	**21 04 21.6**	**+1.3**
	comp=Z,67nm,2.8s						
KBA	**Koelnbreinsper**	**95.64**	**319**	P	**P**	**21 00 29.0**	**-0.2**
TIP	**Timpagrande**	**95.81**	**311**	P	**P**	**21 00 27.4**	**-2.6**
TIP	**Timpagrande**	**95.81**	**311**	*e*P	**P**	**21 00 30.0**	**0.0**
TIP				*e*PP	**PP**	**21 04 26.1**	**+4.3**
TRI	**Trieste**	**95.84**	**318**	*e*P	P	21 00 34.8	+4.9
TRI	**Trieste**	**95.84**	**318**	*e*P	P	21 00 34.8	+4.9
TRI				*e*PP	PP	21 04 31.1	+9.5
GRFO	**Grafenberg**	**96.02**	**322**	*e*P	**P**	**21 00 31.5**	**+0.9**
GRFO	**Grafenberg**	**96.02**	**322**	*e*P	**P**	**21 00 31.5**	**+0.9**
GRFO				*e*PP	PP	21 04 34.8	+12
YKA	**Yellowknife Ar**	**96.02**	**23**	P	**P**	**21 00 29.9**	**-0.4**
	comp=Z,11nm,0.8s,baz=302,slow=4.4,SNR=30						
YKA				PKiKP	**PKiKP**	**21 05 08.3**	**-0.7**
	comp=Z,2.1nm,0.8s,baz=303,slow=2.1,SNR=4.0						
YKA				PKKPbc	**PKKPbc**	**21 17 20.2**	**-0.2**
	comp=Z,2.1nm,0.6s,baz=128,slow=3.0,SNR=8.7						
YKA				LR	LR	21 44 40.0	
	comp=Z,449nm,21.3s,baz=0.0,slow=36						
KULLO	**Kullorsuaq**	**96.05**	**360**	*i*P	**P**	**21 00 28.7**	**-1.6**
	comp=Z,7µm,18.0s						
KULLO	**Kullorsuaq**	**96.05**	**360**	*e*P	**P**	**21 00 28.7**	**-1.6**
KULLO				MLR	MLR		
	comp=Z,7µm,18.0s						
SYO	**Syowa Base**	**96.20**	**201** ⇑	*e*X	**P**	**21 00 28.0**	**-2.9**
SYO	**Syowa Base**	**96.20**	**201** ⇑	*i*PcP	**PcP**	**21 00 35.4**	**+4.4**
CUC	**Castrocucco**	**96.26**	**312**	*e*P	**P**	**21 00 31.2**	**-0.8**
CUC				*e*PP	PP	21 04 34.2	+9.1
ABTA	**Abfaltersbach**	**96.29**	**319**	*e*P	**P**	**21 00 29.9**	**-2.2**
	comp=Z,52nm,1.1s						
ABTA				*i* PP	**PP**	**21 04 27.3**	**+2.1**
	comp=Z,34nm,1.8s						
LSZ	**Lusaka**	**96.34**	**256**	*e*P	**P**	**21 00 33.8**	**+0.9**
LSZ	**Lusaka**	**96.34**	**256**	P	**P**	**21 00 34.8**	**+1.9**
	SNR=10						
LSZ				P	**P**	**21 00 34.8**	**+1.9**
	SNR=10						
LSZ	**Lusaka**	**96.34**	**256**	*e*P	**P**	**21 00 33.8**	**+0.9**
SCO	**Scoresbysund**	**96.54**	**349**	*i*P	**P**	**21 00 32.2**	**-0.3**
SCO	**Scoresbysund**	**96.54**	**349**	*i*S	**SKSac**	**21 11 09.8**	**+1.9**
	comp=Z,9µm,17.0s						
SCO	**Scoresbysund**	**96.54**	**349**	*e*P	**P**	**21 00 32.2**	**-0.3**
SCO				*i*S	**SKSac**	**21 11 09.8**	**+1.9**
SCO				MLR	MLR		
	comp=Z,9µm,17.0s						
WTTA	**Wattenberg**	**96.67**	**320**	*i*P	**P**	**21 00 32.2**	**-1.7**
	comp=Z,53nm,0.9s,SNR=9.2						
WTTA				*i* PP	**PP**	**21 04 30.9**	**+2.8**
	comp=Z,133nm,1.8s						
WATA	**Walderalm**	**96.68**	**320**	*e*PcP	**P**	**21 00 33.4**	**-0.4**
	comp=Z,40nm,1.0s,SNR=11						
SUMG	**Summit**	**97.10**	**354**	*i*P	**P**	**21 00 34.3**	**-1.3**
	comp=Z,84nm,1.2s						
SUMG	**Summit**	**97.10**	**354**	*i*P	**PKKPdf**	**21 17 22.6**	**+3.5**
	comp=Z,20nm,1.1s						
SUMG	**Summit**	**97.10**	**354**	*e*P	Pdif	21 00 36.0	+0.3
SUMG	**Summit**	**97.10**	**354**	*e*P	Pdif	21 00 36.0	+0.4
SUMG				*e*PKKPbc	**PKKPdf**	**21 17 22.2**	**+3.1**
RETA	**Reutte**	**97.13**	**321**	*i*PcP	Pdif	21 00 37.1	+1.1
	comp=Z,23nm,1.4s,SNR=7.7						
RETA				*i* PP	**PP**	**21 04 34.8**	**+3.2**
	comp=Z,72nm,1.4s						
AQU	**L'Aquila**	**97.22**	**315**	*e*P	Pdif	21 00 40.9	+4.5
AQU	**L'Aquila**	**97.22**	**315**	*e*P	Pdif	21 00 40.9	+4.4
FETA	**Feichten**	**97.33**	**320**	*e*P	**P**	**21 00 35.1**	**-1.8**
	comp=Z,58nm,1.4s,SNR=11						
FETA				*i* PP	**PP**	**21 04 35.8**	**+2.5**
	comp=Z,57nm,1.5s						
WTSB	**Winterswijk**	**97.64**	**326**	*e*P	Pdif	21 00 38.2	+0.3
DAVA	**Damuels**	**97.76**	**321**	*i*PcP	P

BOSA PP **PP** **21 04 58.5 -0.6**
BOSA PKKPbc **PKKPdf** **21 17 11.2 -1.3**
B08A Colville Reser 100.99 37 *e*Pdif **Pdif** **21 00 54.2 +1.2**
EKA Eskdalemuir Ar 101.04 332 P **Pdif** **21 00 52.9 -0.2**
comp=Z,4.8nm,1.0s,baz=54,slow=6.3,SNR=8.0
EKA PP **PP** **21 04 59.2 -1.8**
comp=Z,4.2nm,1.0s,baz=61,slow=8.7,SNR=3.5
EKA PKKPbc **PKKPbc** **21 17 04.3 -1.9**
comp=Z,3.4nm,0.6s,baz=243,slow=2.9,SNR=21
BORG Borgarnes 101.06 345 PKiKP **PKiKP** **21 05 17.2 -0.7**
comp=Z,19nm,1.1s,baz=33,slow=2.9,SNR=3.7
I04A Tendick Farm, 101.09 42 P **Pdif** **21 00 52.1 -1.5**
baz=295
CWF Charnwood Fore 101.59 329 *e*Pdif **Pdif** **21 01 00.8 +5.3**
CWF *e*PP **PKiKP** **21 05 13.9 -5.3**
CWF *e*PKKPbc **PKKPbc** **21 17 04.3 -0.2**
M02C Callahan 101.78 44 P **Pdif** **21 00 54.8 -2.0**
baz=294
D08A Wollman Farm, 101.84 38 *e*Pdif **Pdif** **21 00 58.6 +1.8**
NEW Newport 102.33 36 P **Pdif** **21 00 58.9 -0.1**
comp=Z,2.2nm,0.7s,baz=288,slow=20,SNR=2.9
NEW PP **PP** **21 05 14.6 +3.7**
comp=Z,1.4nm,0.4s,baz=290,slow=9.7,SNR=3.4
AGO Saint Agoulin 102.49 321 *e*P **Pdif** **21 01 01.1 +1.4**
KEST Kesra 102.51 310 P **Pdif** **21 01 03.4 -3.2**
comp=Z,7.2nm,0.9s,baz=92,slow=3.0,SNR=8.1
KEST PP **PP** **21 05 11.3 -1.6**
comp=Z,15nm,1.1s,baz=15,slow=8.3,SNR=4.6
KEST Kesra 102.51 310 *e*Pdif **Pdif** **21 01 07.0 +6.8**
KEST PP **PP** **21 05 11.3 -1.6**
LBL Lubilhac 102.80 321 *e*P **Pdif** **21 01 02.7 +1.5**
SFJD Kangerlussuaq 103.50 357 *i* P **Pdif** **21 01 03.7 0.0**
comp=Z,7µm,18.0s
SFJD Kangerlussuaq 103.50 357 *e*P **Pdif** **21 01 03.7 0.0**
SFJD MLR MLR
comp=Z,7µm,18.0s
MSO Missoula 104.91 36 *e*PKiKP **PKiKP** **21 05 26.9 +1.3**
MSO *e*PP **PP** **21 05 33.7 +3.3**
CHMT Chamberlain Mo 105.27 36 *e*P **PP** **21 05 34.4 +1.3**
SET Setif 105.28 312 P **PP** **21 05 33.0 -0.5**
RKT Rikitea 105.37 111 *e*PP PP 21 05 32.1 -2.8
comp=Z,2µm,28.0s
RKT *e*SKSac **SKSac** **21 11 48.9 -3.5**
comp=Z,4µm,27.0s
RKT Rikitea 105.37 111 *e*PS PS 21 14 52.7 +1.8
comp=Z,4µm,31.0s
RKT *e*SS SS 21 20 28.6 -2.3
comp=Z,6µm,32.2s
RKT Rikitea 105.37 111 *e*LQ LQ 21 31 30.3
comp=Z,8µm,35.8s
RKT *e*LR LR 21 36 01.1
comp=Z,16µm,27.2s,baz=281
FRB Frobisher Bay 106.48 5 PKKPbc PKKPbc 21 16 54.6 +4.4
comp=Z,3.2nm,0.6s,baz=240,slow=6.2,SNR=3.3
BOZ Bozeman (W) 106.90 36 P **PKiKP** **21 05 29.6 +0.2**
baz=304
ELK Elko 107.21 42 *e*PKiKP **PKiKP** **21 05 33.4 +3.2**
DAC Darwin (Calif) 107.67 47 *e*PKiKP **PKiKP** **21 05 29.1 -2.1**
R11A Troy Canyon, C 108.14 44 *e*PKiKP **PKiKP** **21 05 32.6 +0.7**
R11A *e*PKKPab **PKKPdf** **21 16 57.4 -0.9**
HVU Hansel Valley 108.29 40 *e*PKiKP **PKiKP** **21 05 38.0 +5.9**
GSC Goldstone, Bar 108.68 48 *e*PKiKP PKiKP 21 05 40.9 +8.0
DUG Dugway, Tooele 109.09 42 *e*PKiKP **PKiKP** **21 05 33.7 +0.1**
HWUT Hardware Ranch 109.15 40 *e*PKiKP **PKiKP** **21 05 33.9 +0.1**
SHPR Sheep Range 109.31 46 *e*PKiKP PKiKP 21 05 43.5 +9.3
SHPR *e*PKKPdf **PKKPdf** **21 16 57.3 +1.3**
PFO Pinyon Flats O 109.69 49 PKiKP **PKiKP** **21 05 36.0 +1.1**
comp=Z,2.3nm,0.8s,baz=300,slow=2.4,SNR=2.4
PFO PKKP **PKKPdf** **21 16 54.0 -1.3**
comp=Z,6.4nm,1.0s,baz=171,slow=4.6,SNR=4.6
BW06 Boulder Array 109.75 38 *e*PKiKP **PKiKP** **21 05 34.9 0.0**
PDAR Pinedale Array 109.75 38 Pdiff **Pdif** **21 01 35.8 +3.4**
comp=Z,0.1nm,0.3s,baz=310,slow=3.2,SNR=2.3
PDAR PKiKP **PKiKP** **21 05 36.0 +1.1**
comp=Z,2.5nm,0.6s,baz=90,slow=1.8,SNR=14
PDAR PKKPbc **PKKPbc** **21 16 42.8 +3.1**
comp=Z,2.3nm,1.0s,baz=80,slow=1.8,SNR=3.9
CCUT Cedar City 110.06 44 *e*PKiKP **PKiKP** **21 05 43.3 +7.7**
CCUT *e*PKKPbc **PKKPab** **21 16 45.5 -4.6**
ESDC Sonseca Array 110.19 318 Pdiff **Pdif** **21 01 40.4 +6.2**
comp=Z,0.7nm,0.8s,baz=66,slow=4.5,SNR=3.8
ESDC PP **PP** **21 06 13.0 +3.8**
comp=Z,22nm,1.2s,baz=54,slow=7.9,SNR=8.9
ESDC PKKPbc **PKKPbc** **21 16 40.1 +2.2**
comp=Z,0.3nm,0.4s,baz=273,slow=3.7,SNR=4.5
MSU Marysvale 110.38 43 *e*PKiKP **PKiKP** **21 05 39.2 +3.0**
MSU *e*PKKPbc **PKKPab** **21 16 44.5 -4.1**
TMUT Trail Mountain 110.61 42 *e*PKiKP **PKiKP** **21 05 39.7 +2.9**
TMUT *e*PKKPab **PKKPab** **21 16 48.0 +0.3**
MTPU Mount Pierson 110.62 43 *e*PKiKP **PKiKP** **21 05 38.5 +1.6**
PBRG Braganca 110.78 322 *e*Pdif **Pdif** **21 01 43.7 +7.0**
PBRG Braganca 110.78 322 *e*PP PP 21 06 14.2 +1.0
PBRG *e*SKS **SKSac** **21 12 15.4 +0.2**
PBRG *e*SS SS 21 21 55.2 +13
W13A Hualapai Mount 110.89 47 *e*PKiKP **PKiKP** **21 05 43.9 +6.7**
SRU San Rafael Swe 111.16 42 *e*PKiKP **PKiKP** **21 05 40.0 +2.4**
SRU *e* 21 16 46.4
SRU San Rafael Swe 111.16 42 *e*PKiKP **PKiKP** **21 05 40.0 +2.4**
SRU *e*PKKPab **PKKPab** **21 16 46.4 +1.3**
MVO Moncorvo 111.32 321 *e*Pdif **Pdif** **21 01 43.0 +3.8**
MVO Moncorvo 111.32 321 *e*PP PP 21 06 20.4 +3.2
MVO *e*SKS **SKSac** **21 12 17.2 -0.3**
MVO *e*SS **SS** **21 21 51.5 +2.2**
MVO Moncorvo 111.32 321 *e*LR LR 21 44 11.7
comp=Z,7µm,18.0s
U15A North Rim 111.36 45 *e*PKiKP **PKiKP** **21 05 40.2 +2.0**
U15A *e*PKKPab **PKKPab** **21 16 44.9 +0.7**
B29A Wagenman Farm, 111.61 28 P **PKiKP** **21 05 38.3 +0.4**
baz=315
PGAV Gavieira, Arco 111.61 322 *e*Pdif **Pdif** **21 01 46.6 +6.1**
PGAV Gavieira, Arco 111.61 322 *e*PP PP 21 06 20.8 +1.5
PGAV *e*SKS **SKSac** **21 12 20.1 +1.4**
PGAV *e*SS **SS** **21 21 56.2 +3.0**
PGAV Gavieira, Arco 111.61 322 *e*LR LR 21 44 12.1
comp=Z,10µm,18.0s
POLO Lamas de Olo 111.67 322 *e*Pdif **Pdif** **21 01 41.3 +0.5**
POLO Lamas de Olo 111.67 322 *e*PP PP 21 06 20.8 +1.1
POLO *e*SKS **SKSac** **21 12 14.9 -4.1**
POLO *e*SS SS 21 22 09.5 +15
PVRL Vila Real 111.68 322 *e*PP PP 21 06 18.9 -0.8
ULM Lac du Bonnet 111.84 25 PKiKP **PKiKP** **21 05 38.2 -0.1**
comp=Z,7.9nm,0.6s,baz=345,slow=4.1,SNR=5.7
ULM PKKPbc **PKKPab** **21 16 37.6 -4.3**
comp=Z,8.5nm,0.8s,baz=135,slow=3.8,SNR=3.6
ULM Lac du Bonnet 111.84 25 PKiKP **PKiKP** **21 05 38.2 -0.1**
ULM *e*PKKPab **PKKPab** **21 16 39.3 -2.6**
O20A White River Ci 112.06 40 *e*PKiKP **PKiKP** **21 05 41.3 +1.9**
MTE Manteigas 112.08 321 *e*Pdif **Pdif** **21 01 46.8 +4.2**
MTE Manteigas 112.08 321 *e*PP PP 21 06 27.0 +4.8
MTE *e*SKS **SKSac** **21 12 19.2 -1.4**
MTE *e*SS **SS** **21 22 08.0 +8.5**
MTE Manteigas 112.08 321 *e*LR LR 21 44 25.7
comp=Z,8µm,16.0s
B30A Myrvik Farm, E 112.09 28 P **PKiKP** **21 05 38.4 -0.5**
baz=316
PVIS Viseu 112.12 321 *e*Pdif Pdif 21 02 06.3 +24
PVIS Viseu 112.12 321 *e*PP PP 21 06 27.4 +4.5
RSSD Black Hills 112.14 34 *e*PKiKP **PKiKP** **21 05 40.3 +1.0**
PCBR Castelo Branco 112.36 320 *e*PP PP 21 06 24.5 -0.1
WUAZ Wupatki 112.47 45 *e*PKiKP **PKiKP** **21 05 43.2 +3.0**
PMRV Marv??o 112.54 320 *e*Pdif **Pdif** **21 01 49.5 +4.9**
PMRV Marv??o 112.54 320 *e*PP PP 21 06 29.5 +3.6
PMRV *e*SKS **SKSac** **21 12 21.2 -1.1**
PMRV *e*SS **SS** **21 22 12.0 +6.5**
PMRV Marv??o 112.54 320 *e*LR LR 21 44 56.1
comp=Z,9µm,18.0s
C31A Landman Farms, 112.84 28 P **PKiKP** **21 05 40.0 -0.3**
baz=317
PCAS Casmilo, Conde 112.88 321 *e*Pdif **Pdif** **21 01 46.5 +0.5**
PCAS Casmilo, Conde 112.88 321 *e*PP PP 21 06 27.3 -1.0
PCAS *e*SKS SKSdf 21 13 30.0 +38
PCAS *e*SS **SS** **21 22 10.5 +0.6**
PV01 Paradox Valley 112.97 42 *e*PKiKP **PKiKP** **21 05 43.9 +2.7**
X16A Lo Mia Camp, P 112.98 46 *e*PKiKP **PKiKP** **21 05 43.2 +2.0**
X16A *e*PKKPab **PKKPab** **21 16 35.6 -1.4**
PESTR Estremoz 112.99 319 *e*Pdif **Pdif** **21 01 50.1 +3.5**
PESTR Estremoz 112.99 319 *e*PP PP 21 06 32.2 +3.1
PESTR *e*SKS **SKSac** **21 12 32.9 +8.8**
PESTR *e*SS **SS** **21 22 21.8 +10**
PBAR Barrancos 113.02 318 *e*Pdif **Pdif** **21 01 54.7 +8.0**
PBAR Barrancos 113.02 318 *e*PP PP 21 06 29.2 -0.1
PBAR *e*SKS **SKSac** **21 12 23.5 -0.7**
PBAR Barrancos 113.02 318 *e*SS SS 21 22 32.0 +20

PHWY Pilot Hill 113.08 37 *e*PKiKP **PKiKP** **21 05 44.9 +3.6**
PMTG Montargil 113.28 320 *e*Pdif **Pdif** **21 01 50.1 +2.3**
PMTG Montargil 113.28 320 *e*PP PP 21 06 29.7 -1.4
PMTG *e*SKS **SKSac** **21 12 24.6 -0.6**
PMTG *e*SS **SS** **21 22 23.4 +8.2**
EVO Evora 113.45 319 *e*Pdif **Pdif** **21 01 52.4 +3.8**
EVO Evora 113.45 319 *e*PP PP 21 06 32.6 +0.2
MVCO Mesa Verde 113.53 42 *e*PKiKP **PKiKP** **21 05 42.7 +0.5**
G29A Hoven 113.62 31 P **PKiKP** **21 05 42.7 +0.8**
baz=314
PBEJ Beja 113.64 319 *e*Pdif **Pdif** **21 01 57.6 +8.1**
PBEJ Beja 113.64 319 *e*PP PP 21 06 26.6 -7.2
ISCO Idaho Springs 113.89 39 *e*PKiKP **PKiKP** **21 05 45.3 +2.4**
ISCO Idaho Springs 113.89 39 *e*PKiKP **PKiKP** **21 05 45.3 +2.4**
ISCO *e*PKKPab **PKKPab** **21 16 34.1 +0.9**
MESJ Messejana 113.98 319 *e*P **PKiKP** **21 05 42.5 -0.2**
MESJ *e*PP **PP** **21 06 36.3 +0.2**
MESJ *e*SS SS 21 22 26.5 +2.0
MESJ AMS AMS 22 04 22.9
comp=Z,10µm,22.1s
MESJ Messejana 113.98 319 *e*Pdif **Pdif** **21 01 51.1 +0.1**
MESJ Messejana 113.98 319 *e*PP PP 21 06 35.8 -0.3
PCVE Castro Verde 113.98 318 *e*Pdif **Pdif** **21 01 57.6 +6.6**
PCVE Castro Verde 113.98 318 *e*PP PP 21 06 37.4 +1.3
PCVE *e*SKS SKSdf 21 12 36.6 -17
PCVE *e*SS SS 21 22 06.1 -18
PMAFR Mafra 114.01 320 *e*Pdif **Pdif** **21 01 56.5 +5.4**
PMAFR Mafra 114.01 320 *e*PP **PP** **21 06 35.6 -0.7**
PMAFR *e*SKS SKSdf 21 13 39.8 +46
PMAFR *e*SS **SS** **21 22 23.2 -1.7**
PNCL Nicolau / Gran 114.02 319 *e*Pdif **Pdif** **21 01 55.9 +4.8**
PNCL Nicolau / Gran 114.02 319 *e*PP **PP** **21 06 37.7 +1.3**
PNCL Nicolau / Gran 114.02 319 *e*SS SS 21 22 35.2 +10
LIS Lisbon 114.07 320 *e*P PKPdf 21 05 42.5 -0.4
LIS *e*PP **PP** **21 06 36.9 +0.2**
LIS AMS AMS 22 00 07.2
comp=E,11µm,19.0s
PMST Lisbon--Monsan 114.08 320 *e*PP **PP** **21 06 34.1 -2.7**
PBDV Barranco-do-Ve 114.13 318 *e*Pdif **Pdif** **21 01 59.4 +7.7**
PBDV Barranco-do-Ve 114.13 318 *e*PP **PP** **21 06 37.9 +0.6**
PBDV *e*SKS SKSdf 21 13 35.6 +41
PBDV *e*SS **SS** **21 22 23.5 -3.1**
S22A 4UR Ranch, Cre 114.33 41 *e*PKiKP PKPdf 21 05 48.8 +4.9
PTEO Sao Teotonio 114.47 319 *e*PP **PP** **21 06 36.8 -2.8**
MORF Marmelete 114.56 318 *e*P PKPdf 21 05 43.6 -0.3
MORF *e*PP **PP** **21 06 40.6 +0.3**
MORF *e*SS SS 21 22 34.4 +2.0
MORF AMS AMS 22 04 31.9
comp=Z,9µm,15.7s
MORF Marmelete 114.56 318 *e*Pdif **Pdif** **21 01 59.4 +5.7**
MORF Marmelete 114.56 318 *e*PP **PP** **21 06 40.5 +0.1**
MORF *e*SKS SKSdf 21 13 42.4 +47
MORF *e*SS **SS** **21 22 36.7 +4.3**
C36A Pine Crest Far 115.04 25 P **PKPdf** **21 05 43.4 -1.2**
baz=321
SDCO Great Sand Dun 115.18 40 P **PKPdf** **21 05 45.1 -0.4**
baz=306
SDCO Great Sand Dun 115.18 40 *e*PKiKP **PKPdf** **21 05 46.5 +1.0**
SCHQ Schefferville 115.43 6 PKP **PKPdf** **21 05 45.3 +0.2**
comp=Z,3.5nm,0.6s,baz=277,slow=6.6,SNR=3.7
SCHQ PP **PP** **21 06 48.4 +2.9**
comp=Z,9.6nm,0.8s,baz=327,slow=4.8,SNR=4.3
EYMN Ely 115.45 24 P **PKPdf** **21 05 45.7 +0.4**
baz=323
EYMN Ely 115.45 24 *e*PKPdf **PKPdf** **21 05 46.6 +1.2**
D37A Cotton 115.68 26 P **PKPdf** **21 05 46.0 +0.2**
baz=322
E36A McGregor 115.82 26 P **PKPdf** **21 05 45.9 -0.2**
baz=321
H34A Spellman Lake, 116.06 29 P **PKPdf** **21 05 46.9 +0.3**
baz=318
319A Douglas 116.08 48 *e*pPKPdf pPKPdf 21 05 55.3 +0.8
ANMO Albuquerque 116.17 43 P **PKPdf** **21 05 47.7 +0.3**
baz=304
ANMO Albuquerque 116.17 43 *e*PKiKP **PKPdf** **21 05 47.8 +0.5**
ANMO Albuquerque 116.17 43 *e*PKPdf **PKPdf** **21 05 47.8 +0.5**
F36A Milaca 116.21 27 P **PKPdf** **21 05 46.7 -0.1**
baz=320
T25A Trinidad 116.24 40 *e*PKPdf **PKPdf** **21 05 49.1 +1.7**
T25A *e*SP SP 21 16 22.7 -9.0
ECSD EROS Data Cent 116.33 30 P **PKPdf** **21 05 47.3 +0.2**
baz=316
K32A Verdigre 116.40 32 P **PKPdf** **21 05 47.7 +0.3**
baz=315
LPM Los Pinos Moun 116.40 44 *e*PKPdf **PKPdf** **21 05 49.6 +1.8**
BNM Barren Site 116.50 44 *e*PKPdf **PKPdf** **21 05 49.9 +1.8**
BNM *e*SP SP 21 16 22.1 -12
121A Cookes Peak, D 116.57 46 *e*PKPdf **PKPdf** **21 05 49.1 +1.0**
G36A St. Michael 116.58 28 P **PKPdf** **21 05 48.2 +0.6**
baz=320
TOA0 Torodi Ar. Sit 116.82 290 *e*PKPdf **PKPdf** **21 05 47.4 -1.4**
TOA0 *e*PKPdf **PKiKP** **21 05 48.6 -0.2**
TOA0 *e*PKKPbc **PKKPab** **21 16 20.4 +0.9**
TORD Torodi Ar. Bea 116.82 290 PKP **PKPdf** **21 05 47.4 -1.4**
comp=Z,2.3nm,0.7s,baz=77,slow=1.5,SNR=12
TORD PP **PP** **21 06 54.1 -3.1**
comp=Z,18nm,0.9s,baz=71,slow=4.4,SNR=4.3
TORD PKKPbc **PKKPab** **21 16 20.6 +1.1**
comp=Z,3.1nm,1.0s,baz=253,slow=3.7,SNR=5.7
H36A Jessenland, He 117.00 28 P **PKPdf** **21 05 49.6 +1.2**
baz=319
SPMN Marine on St. 117.02 27 P **PKPdf** **21 05 48.3 -0.1**
baz=321
BGNE Belgrade 117.18 33 P **PKPdf** **21 05 49.5 +0.7**
baz=314
BGNE Belgrade 117.18 33 *e*PKPdf **PKPdf** **21 05 49.6 +0.7**
M33A Taylor Creek F 117.57 33 P **PKPdf** **21 05 49.6 0.0**
baz=315
I37A Lemond, Waseca 117.67 28 P **PKPdf** **21 05 49.5 -0.2**
baz=320
J36A Seneca 1, Swea 117.74 29 P **PKPdf** **21 05 49.4 -0.4**
baz=318
COWI Conover 117.89 24 *e*PKPdf **PKPdf** **21 05 50.3 +0.2**
L35A Bielow Farm, R 118.04 31 P **PKPdf** **21 05 50.9 +0.4**
baz=317
J37A Redenius Farm, 118.14 29 P **PKPdf** **21 05 51.0 +0.3**
baz=319
I38A Scanlan Farm, 118.15 28 P **PKPdf** **21 05 50.7 +0.1**
baz=321
P32A Hilting Farm, 118.16 35 P **PKPdf** **21 05 51.7 +0.9**
baz=313
K36A Gilmore City 118.20 30 P **PKPdf** **21 05 50.4 -0.4**
baz=318
O33A Hebron 118.41 34 P **PKPdf** **21 05 51.1 -0.2**
baz=314
L36A Harm Buss Farm 118.50 31 P **PKPdf** **21 05 51.6 +0.2**
baz=318
K37A Belmond 118.51 29 P **PKPdf** **21 05 50.5 -0.8**
baz=319
Q32A Meitler Ranch, 118.61 35 P **PKPdf** **21 05 52.4 +0.7**
baz=313
J38A Wedel Dairy, R 118.64 28 P **PKPdf** **21 05 51.2 -0.4**
baz=320
MNTX Cornudas Mount 118.73 46 *e*PKPdf **PKPdf** **21 05 52.6 +0.5**
baz=304
MNTX Cornudas Mount 118.73 46 *e*PKPdf **PKPdf** **21 05 52.1 0.0**
MNTX *e*PKKPbc **PKKPab** **21 16 10.4 -1.0**
LPIG La Paz 118.77 56 PKP **PKPdf** **21 05 51.1 -1.2**
comp=Z,18nm,0.3s,baz=173,slow=19,SNR=2.3
P33A Williams Farm, 118.79 35 P **PKPdf** **21 05 52.4 +0.4**
baz=314
M36A Felix, Anita 118.90 31 P **PKPdf** **21 05 52.2 0.0**
baz=317
R32A Long Quarter, 118.90 36 P **PKPdf** **21 05 52.6 +0.3**
baz=313
J39A Decorah 118.98 28 P **PKPdf** **21 05 51.1 -1.2**
baz=321
Q33A Connelly Farm, 119.02 35 P **PKPdf** **21 05 52.7 +0.2**
baz=314
P34A Walnut Farm, R 119.20 34 P **PKPdf** **21 05 52.9 +0.1**
baz=315
MSTX Muleshoe 119.21 42 P **PKPdf** **21 05 53.5 +0.4**
baz=307
MSTX Muleshoe 119.21 42 *e*PKPdf **PKPdf** **21 05 54.0 +0.8**
L38A Oak Wood Farm, 119.31 29 P **PKPdf** **21 05 52.4 -0.5**
baz=320
SCIA State Center 119.36 30 *e*PKPdf **PKPdf** **21 05 53.6 +0.6**
AMTX Amarillo 119.37 41 *e*PKPdf **PKPdf** **21 05 55.2 +1.8**
J40A Soldiers Grove 119.37 27 P **PKPdf** **21 05 52.4 -0.6**
baz=322
K39A Oelwein 119.39 28 P **PKPdf** **21 05 52.2 -0.8**
baz=321
R33A Olander Ranch, 119.40 36 P **PKPdf** **21 05 53.8 +0.6**
baz=313
Q34A Chapman 119.57 35 P **PKPdf** **21 05 53.7 +0.1**
baz=314
T32A Huddler Ranch, 119.61 37 P **PKPdf** **21 05 54.2 +0.5**
baz=312
KSU1 Kansas State U 119.63 34 *e*PKPdf **PKPdf** **21 05 54.8 +1.1**
P35A Duane Minner, 119.65 33 P **PKPdf** **21 05 52.3 -1.3**
baz=316
J41A Loganville 119.72 27 P **PKPdf** **21 05 53.0 -0.7**
baz=323
M38A Pleasantville 119.74 30 P **PKPdf** **21 05 53.5 -0.2**
baz=319
K40A Colesburg 119.74 28 P **PKPdf** **21 05 53.7 0.0**
baz=322
L39A Vinton 119.78 29 P **PKPdf** **21 05 53.2 -0.6**
baz=320
O36A Bolckow 119.78 32 P **PKPdf** **21 05 53.8 -0.1**
baz=317
R34A Isabella, Hill 119.83 35 P **PKPdf** **21 05 54.2 +0.1**
baz=314
JFWS Jewell Farm 119.98 27 *e*PKiKP **PKPdf** **21 05 52.8 -1.4**
JFWS Jewell Farm 119.98 27 *e*PKPdf **PKPdf** **21 05 52.8 -1.4**
VLDQ Val d'Or 120.02 15 *e*PKPdf **PKPdf** **21 05 53.5 -0.6**
P36A Good Intent, A 120.03 33 P **PKPdf** **21 05 54.7 +0.3**
baz=316
Q35A Mercer Eighty, 120.12 34 P **PKPdf** **21 05 54.4 -0.1**
baz=315
O37A Wolven Farm, M 120.19 32 P **PKPdf** **21 05 53.9 -0.7**
baz=318
K41A Shullsburg 120.19 27 P **PKPdf** **21 05 54.1 -0.5**
baz=322
M39A Webster 120.19 29 P **PKPdf** **21 05 53.8 -0.9**
baz=320
L40A Anamosa 120.20 28 P **PKPdf** **21 05 53.8 -0.8**
baz=321
R35A Emporia Munici 120.40 35 P **PKPdf** **21 05 56.0 +0.8**
baz=315
N39A Derby Farms, D 120.49 30 P **PKPdf** **21 05 54.8 -0.4**
baz=319
V32A Arapaho 120.50 39 P **PKPdf** **21 05 55.7 +0.3**
baz=311
P37A Lathrop 120.50 32 P **PKPdf** **21 05 55.2 0.0**
baz=317
L41A Preston 120.52 28 P **PKPdf** **21 05 54.8 -0.4**
baz=322
T34A McClaskey Farm 120.74 36 P **PKPdf** **21 05 56.0 +0.2**
baz=313
W32A Sentinel 120.76 39 P **PKPdf** **21 05 56.6 +0.6**
baz=311
S35A Otter Creek Ra 120.78 35 P **PKPdf** **21 05 56.4 +0.5**
baz=314
R36A Gordon, Harris 120.79 34 P **PKPdf** **21 05 55.8 -0.1**
baz=316
P38A Dawn 120.90 32 P **PKPdf** **21 05 56.3 +0.2**
baz=318
U34A Anderson Ranch 120.93 37 *e*PKPdf **PKPdf** **21 06 00.0 +3.8**
O39A Kirksville 120.94 31 P **PKPdf** **21 05 56.2 +0.1**
baz=319
HPIG 121.07 51 *e*PKPdf **PKPdf** **21 05 57.2 +0.2**
S36A Lake Cedric, C 121.17 35 P **PKPdf** **21 05 57.0 +0.4**
baz=315
R37A Teagarden Farm 121.17 34 P **PKPdf** **21 05 56.2 -0.4**
baz=316
T35A Sooner Cattle 121.21 36 P **PKPdf** **21 05 57.1 +0.4**
baz=314
TX31 Lajitas Ar. Si 121.27 47 *e*PKPdf **PKPdf** **21 05 56.4 -0.8**
TX31 *e*PKPdf **PKiKP** **21 05 56.7 -0.6**
TX31 *e*PKKPbc **PKKPab** **21 15 59.8 -0.7**
TX31 *e*PKKPbc **PKKPbc** **21 16 00.1 +1.0**
TXAR Lajitas Array 121.27 47 PKP **PKPdf** **21 05 57.0 -0.1**
comp=Z,4.1nm,0.6s,baz=228,slow=1.0,SNR=30
TXAR PKKPbc **PKKPbc** **21 15 57.6 -1.5**
comp=Z,4.2nm,1.1s,baz=130,slow=5.6,SNR=8.9
WMOK Wichita Mounta 121.30 39 P **PKPdf** **21 05 56.5 -0.5**
baz=311
WMOK Wichita Mounta 121.30 39 *e*PKiKP **PKPdf** **21 05 55.9 -1.1**
WMOK Wichita Mounta 121.30 39 *e*PKPdf **PKPdf** **21 05 55.9 -1.1**
Q38A Cooks Store, C 121.35 32 P **PKPdf** **21 05 56.8 -0.1**
baz=318
V34A Guthrie 121.35 37 *e*PKPdf **PKPdf** **21 05 57.6 +0.6**
O40A La Belle 121.37 30 P **PKPdf** **21 05 57.1 +0.2**
baz=320
P39B Salisbury 121.41 31 P **PKPdf** **21 05 56.6 -0.4**
baz=319
T36A Boggs Farm, Ca 121.47 35 P **PKPdf** **21 05 57.6 +0.4**
baz=315
S37A Fort Scott 121.57 34 P **PKPdf** **21 05 57.2 -0.2**
baz=316
Q39A Willow Grove F 121.62 32 P **PKPdf** **21 05 56.9 -0.5**
baz=318
P40A Paris 121.73 31 P **PKPdf** **21 05 57.4 -0.2**
baz=319
R38A Fenwick Farm, 121.76 33 P **PKPdf** **21 05 57.3 -0.4**
baz=317
O41A Passleys Farm, 121.87 30 P **PKPdf** **21 05 57.5 -0.4**
baz=321
Y33A Hilltop Ranch, 121.87 40 P **PKPdf** **21 05 58.6 +0.5**
baz=311
T37A Cheneyville 18 121.97 35 P **PKPdf** **21 05 58.3 +0.1**
baz=316
ABTX Abilene, Hawle 122.10 42 *e*PKPdf **PKPdf** **21 06 00.4 +1.8**
Q40A Laux Farm, Aux 122.12 31 P **PKPdf** **21 05 58.4 -0.1**
baz=319
R39A Chumby, Stover 122.13 32 P **PKPdf** **21 05 57.6 -0.9**
baz=318
PMPS Porto Santo 122.13 319 *e*PP PP 21 07 25.4 -7.3
S38A Stockton 122.16 34 P **PKPdf** **21 05 57.3 -1.3**
baz=317
Z33A Whitaker Ranch 122.25 41 P **PKPdf** **21 05 59.6 +0.8**
baz=310
HDIL Hopedale 122.28 28 P **PKPdf** **21 05 58.2 -0.4**
baz=323
HDIL Hopedale 122.28 28 *e*PKPdf **PKPdf** **21 05 58.7 0.0**
V36A Jenks 122.32 36 P **PKPdf** **21 05 59.3 +0.5**
baz=314
TUL1 Leonard 122.32 36 P **PKPdf** **21 05 59.4 +0.6**
baz=314
TUL1 Leonard 122.32 36 *e*PKPdf **PKPdf** **21 05 59.8 +0.9**
U37A Salina 122.36 35 P **PKPdf** **21 05 59.1 +0.1**
baz=315
T38A Diamond 122.38 34 P **PKPdf** **21 05 58.9 0.0**
baz=316
S39A Bolivar 122.44 33 P **PKPdf** **21 05 58.2 -0.8**
baz=317
Y34A Reagan Ranch, 122.45 39 P **PKPdf** **21 05 58.9 -0.3**
baz=312
TRQ Mont Tremblant 122.50 14 *e*PKPdf **PKPdf** **21 05 59.2 +0.2**
P42A Winchester 122.54 30 P **PKPdf** **21 05 59.2 0.0**
baz=321
R40A Maddies Statio 122.55 32 P **PKPdf** **21 05 58.4 -0.8**
baz=319
W36A Wetumka 122.59 37 P **PKPdf** **21 05 58.8 -0.6**
baz=313
SADO Sadowa 122.60 18 PKP **PKPdf** **21 05 58.6 -0.5**
comp=Z,20nm,0.7s,baz=334,slow=2.9,SNR=16
SADO PKKPbc **PKKPbc** **21 15 51.8 -2.6**
comp=Z,4.9nm,0.8s,baz=157,slow=4.1,SNR=3.3
V37A Hulbert 122.72 36 P **PKPdf** **21 05 59.1 -0.6**
baz=315
PMAR Madeira 122.72 319 *e*PP PP 21 07 41.2 +4.3
U38A Gravette 122.75 35 P **PKPdf** **21 05 58.8 -0.9**
baz=316
FUL Funchal 122.76 319 *e*PP PP 21 07 42.4 +5.5
PMOZ Porto Moniz, M 122.84 319 *e*PP PP 21 07 42.8 +5.2
PMOZ *e*SKS **SKSdf** **21 13 01.4 -10**
PMOZ Porto Moniz, M 122.84 319 *e*SS SS 21 24 23.6 +4.0
PMOZ Porto Moniz, M 122.84 319 *e*LR LR 21 50 13.9
comp=Z,7µm,18.0s
T39A Lever 122.89 34 P **PKPdf** **21 05 59.3 -0.6**
baz=317
X36A Centrahoma 122.91 38 P **PKPdf** **21 05 59.6 -0.5**
baz=313
S40A Lebanon 122.95 33 P **PKPdf** **21 05 59.7 -0.3**
baz=318
PLVO Plevna 122.95 16 *e*PKPdf **PKPdf** **21 05 59.2 -0.6**
Q42A Golden Eagle 122.97 30 P **PKPdf** **21 06 00.3 +0.3**
baz=321
W37B Quinton 123.07 37 P **PKPdf** **21 06 00.1 -0.3**
baz=314
HHAR Hobbs 123.12 35 *e*PKPdf **PKPdf** **21 05 59.6 -0.9**
134A White-Moore Ra 123.15 41 P **PKPdf** **21 06 00.6 0.0**
baz=310
V38A Canehill 123.15 35 P **PKPdf** **21 06 00.3 -0.2**
baz=316
AAM Ann Arbor 123.23 23 *e*PKiKP **PKPdf** **21 06 02.0 +1.6**
AAM Ann Arbor 123.23 23 *e*PKPdf **PKPdf** **21 06 02.0 +1.6**
T40A Mansfield 123.27 33 P **PKPdf** **21 05 59.9 -0.8**
baz=318
U39A Green Forest 123.30 34 P **PKPdf** **21 05 59.8 -0.9**

	baz=317						
JCT	Junction City	123.32	44	P	PKPdf	21 06 00.8	-0.2
	baz=308						
JCT	Junction City	123.32	44	ePKIKP	PKPdf	21 06 00.4	-0.6
JCT	Junction City	123.32	44	ePKPdf	PKPdf	21 06 00.4	-0.6
333A	Richland Sprin	123.35	42	P	PKPdf	21 06 00.5	-0.6
	baz=309						
Q43A	New Douglas	123.35	30	P	PKPdf	21 06 00.4	-0.4
	baz=322						
S41A	Jillco Farms,	123.35	32	P	PKPdf	21 06 00.2	-0.6
	baz=319						
Y36A	Durant	123.40	38	P	PKPdf	21 06 00.6	-0.4
	baz=313						
SFIN	Lafayette	123.42	27	P	PKPdf	21 06 00.2	-0.6
	baz=325						
SFIN	Lafayette	123.42	27	ePKPdf	PKPdf	21 06 00.2	-0.6
234A	Clairette	123.48	41	P	PKPdf	21 06 01.6	+0.4
	baz=310						
X37A	Clayton	123.48	37	P	PKPdf	21 06 01.1	0.0
	baz=314						
V39A	Pettigrew	123.60	35	P	PKPdf	21 06 01.2	-0.2
	baz=316						
433A	Art	123.64	43	P	PKPdf	21 06 01.3	-0.2
	baz=309						
W38A	Poteau	123.65	36	P	PKPdf	21 06 01.2	-0.2
	baz=315						
U40A	Yellville	123.67	34	P	PKPdf	21 06 00.6	-0.8
	baz=317						
X38A	Whitesboro	123.75	37	P	PKPdf	21 06 01.5	-0.2
	baz=314						
T41A	Mountain View	123.75	33	P	PKPdf	21 06 00.8	-0.8
	baz=319						
334A	Lometa	123.84	42	P	PKPdf	21 06 02.1	+0.2
	baz=310						
WHTX	Lake Whitney,	123.93	41	P	PKPdf	21 06 02.8	+0.7
	baz=311						
W39A	Magazine	123.98	36	P	PKPdf	21 06 02.4	+0.3
	baz=316						
LONY	Lake Ozonia	124.00	14	ePKPdf	PKPdf	21 06 02.1	+0.3
FRNY	Flat Rock	124.03	14	ePKPdf	PKPdf	21 06 01.8	-0.1
V40A	Witts Springs	124.09	34	P	PKPdf	21 06 01.4	-0.9
	baz=317						
533A	Kerrville	124.09	44	P	PKPdf	21 06 02.2	-0.3
	baz=308						
CMLA	Cha da Macela	124.12	329	ePKPdf	PKPdf	21 06 02.2	-0.1
434A	Burnet	124.15	42	P	PKPdf	21 06 02.0	-0.5
	baz=309						
PSET	Sete Cidades	124.18	329	ePKPdf	PKPdf	21 06 02.6	+0.2
U41A	Viola	124.19	33	P	PKPdf	21 06 01.7	-0.7
	baz=318						
S43A	Fulton Ridge,	124.23	31	P	PKPdf	21 06 01.9	-0.6
	baz=321						
X39A	Fountain Ranch	124.28	36	P	PKPdf	21 06 02.4	-0.2
	baz=315						
OLIL	Olney	124.28	29	ePKPdf	PKPdf	21 06 02.3	-0.2
OLIL				eSdif	Sdif	21 15 40.9	-4.3
PGRA	Graciosa	124.31	332	ePKPdf	PKPdf	21 06 02.9	+0.3
BUF	Buffalo	124.36	19	ePKPdf	PKPdf	21 06 03.1	+0.6
V41A	Mountainview	124.47	34	P	PKPdf	21 06 02.8	-0.2
	baz=318						
PSMN	Pico do Norte,	124.47	328	ePKPdf	PKPdf	21 06 02.7	-0.3
PKME	Peaks-Kenny Pk	124.48	10	ePKPdf	PKPdf	21 06 03.0	+0.3
534A	Blanco	124.50	43	P	PKPdf	21 06 03.0	-0.3
	baz=309						
LMN	Caledonia Moun	124.51	6	ePKPdf	PKPdf	21 06 03.5	+0.7
S44A	Carbondale	124.54	30	P	PKPdf	21 06 03.4	+0.3
	baz=321						
SIUC	Southern Illin	124.55	30	ePKPdf	PKPdf	21 06 03.9	+0.9
U42A	Revenden	124.55	33	P	PKPdf	21 06 02.5	-0.6
	baz=319						
MIAR	Mount Ida	124.57	36	P	PKPdf	21 06 03.2	0.0
	baz=316						
MIAR	Mount Ida	124.57	36	ePKIKP	PKPdf	21 06 01.6	-1.6
MIAR	Mount Ida	124.57	36	ePKPdf	PKPdf	21 06 01.6	-1.6
BLO	Bloomington	124.66	27	ePKIKP	PKPdf	21 06 02.7	-0.5
BLO	Bloomington	124.66	27	ePKPdf	PKPdf	21 06 02.7	-0.5
PMSA	Palmer Station	124.66	177	PKP	PKPdf	21 06 01.0	-1.4
	comp=Z,9.6nm,1.0s,baz=99,slow=3.7,SNR=5.2						
ROSA	Rosais	124.68	332	ePKPdf	PKPdf	21 06 04.8	+1.5
Y39A	Lockesburg	124.69	37	P	PKPdf	21 06 03.8	+0.3
	baz=315						
NCB	Newcomb	124.69	14	ePKPdf	PKPdf	21 06 03.3	0.0
ERPA	Erie	124.71	20	ePKPdf	PKPdf	21 06 02.7	-0.6
X201	Greenbrier Sit	124.72	34	ePKPdf	PKPdf	21 06 03.6	+0.1
X301	Greenbrier Sit	124.74	34	ePKPdf	PKPdf	21 06 04.2	+0.7
WHAR	Wooly Hollow	124.76	34	ePKPdf	PKPdf	21 06 03.8	+0.2
MMNY	Mt. Morris Dam	124.83	18	ePKPdf	PKPdf	21 06 02.9	-0.6
W41B	Gary Mavity, V	124.87	34	P	PKPdf	21 06 03.7	-0.1
	baz=317						
KIC	Kosan Boka	124.87	285	ePKIKP	PKPdf	21 06 03.8	-0.5
	comp=Z,46nm,0.8s						
V42A	Cord	124.87	33	P	PKPdf	21 06 03.7	0.0
	baz=318						
S45A	Carrier Mills	124.89	30	P	PKPdf	21 06 03.5	-0.2
	baz=322						
DBIC	Dimbokro	124.89	285	PKP	PKPdf	21 06 03.9	-0.5
	comp=Z,17nm,0.9s,baz=40,slow=1.3,SNR=5.7						
DBIC				PP	PP	21 07 54.9	+2.4
	comp=Z,45nm,1.1s,baz=55,slow=9.7,SNR=8.3						
DBIC	Dimbokro	124.89	285	PKIKP	PKPdf	21 06 03.9	-0.5
DBIC						21 07 54.9	
DBIC				pmax	pmax		
	comp=Z,3.0nm,0.7s						
DBIC				pmax	pmax		
	comp=Z,45nm,1.1s						
DBIC	Dimbokro	124.89	285	ePKPdf	PKPdf	21 06 08.1	+3.8
DBIC				ePP	PP	21 07 58.2	+5.7
MDV	Middlebury	124.92	14	ePKPdf	PKPdf	21 06 04.1	+0.5
TIC	Toumodi	125.06	285	ePKIKP	PKPdf	21 06 04.0	-0.7
WVL	Waterville	125.09	10	ePKPdf	PKPdf	21 06 03.7	-0.2
UALR	University of	125.11	35	ePKPdf	PKPdf	21 06 05.6	+1.4
LIC	Lamto	125.18	285	ePKIKP	PKPdf	21 06 04.3	-0.6
	comp=Z,37nm,1.0s						
ACSO	Alum Creek Sta	125.26	24	ePKPdf	PKPdf	21 06 04.2	-0.2
M54A	Oil Creek Stat	125.36	20	P	PKPdf	21 06 04.1	-0.5
	baz=333						
337A	Centerville	125.38	40	P	PKPdf	21 06 06.4	+1.6
	baz=312						
ACCN	Adirondack Com	125.38	14	ePKPdf	PKPdf	21 06 05.2	+0.6
HNH	Hanover	125.40	13	ePKPdf	PKPdf	21 06 04.8	+0.3
WLAR	White Oak Lake	125.45	36	ePKPdf	PKPdf	21 06 06.2	+1.3
H07S1	FLORES T-PHASE	125.45	335	ePKPdf	PKPdf	21 06 04.9	+0.1
WCI	Wyandotte Cave	125.53	28	ePKIKP	PKPdf	21 06 04.0	-1.0
WCI	Wyandotte Cave	125.53	28	ePKPdf	PKPdf	21 06 04.0	-1.0
ZAIG	Zacatecas	125.63	53	ePKPdf	PKPdf	21 06 08.6	+2.7
N54A	Moraine State	125.74	21	P	PKPdf	21 06 04.9	-0.4
	baz=333						
636A	Smothers Creek	125.80	43	P	PKPdf	21 06 06.9	+1.2
	baz=310						
NATX	Nacogdoches	125.86	39	epPKPdf	pPKPdf	21 06 13.3	+0.2
BINY	Binghamton	125.88	17	ePKPdf	PKPdf	21 06 04.9	-0.6
TRY	Troy	126.00	14	ePKPdf	PKPdf	21 06 06.7	+1.0
034A	Hebbronville	126.17	46	P	PKPdf	21 06 07.9	+1.4
	baz=307						
WVT	Waverly	126.48	30	ePKIKP	PKPdf	21 06 06.2	-0.6
WVT	Waverly	126.48	30	ePKPdf	PKPdf	21 06 06.2	-0.6
W45A	Hickory Valley	126.54	32	P	PKPdf	21 06 07.3	+0.3
	baz=320						
HRV	Adam Dziewonsk	126.70	13	ePKIKP	PKPdf	21 06 08.2	+1.1
HRV	Adam Dziewonsk	126.70	13	ePKPdf	PKPdf	21 06 08.2	+1.1
SSPA	Standing Stone	126.73	19	ePKPdf	PKPdf	21 06 06.3	-0.9
O56A	Blue Knob Stat	126.84	20	P	PKPdf	21 06 07.9	+0.4
	baz=334						
WES	Weston	126.87	13	ePKIKP	PKPdf	21 06 08.0	+0.6
WES	Weston	126.87	13	ePKPdf	PKPdf	21 06 08.0	+0.6
341A	Kurthwood	127.07	38	P	PKPdf	21 06 09.0	+0.9
	baz=314						
N59A	State Game Lan	127.13	17	P	PKPdf	21 06 08.0	0.0
	baz=338						
BRYW	Bryant College	127.27	13	ePKPdf	PKPdf	21 06 09.2	+1.0
ODNJ	Ogdensburg	127.30	16	ePKPdf	PKPdf	21 06 08.4	+0.2
Y45A	Yeager Farm, C	127.33	33	P	PKPdf	21 06 09.5	+1.0
	baz=319						
PAL	Palisades	127.56	15	ePKIKP	PKPdf	21 06 09.6	+0.9
PAL	Palisades	127.56	15	ePKPdf	PKPdf	21 06 09.6	+0.9
Y46A	Houston	127.69	33	P	PKPdf	21 06 09.4	+0.2
	baz=320						
MVL	Millersville	127.80	18	ePKPpre	PKPpre	21 06 03.1	
PSUB	Penn St. - Bra	128.13	17	ePKPdf	PKPdf	21 06 09.4	-0.5
SWET	Sewanee	128.14	29	ePKPpre	PKPpre	21 06 03.9	
TZTN	Tazewell	128.15	26	ePKPpre	PKPpre	21 06 04.5	
Y47A	UCPARC, Winfie	128.21	32	P	PKPdf	21 06 10.0	-0.2
	baz=321						
Z47A	Carrollton	128.63	33	P	PKPdf	21 06 11.5	+0.5
	baz=321						
Z48A	Northport	128.77	32	P	PKPdf	21 06 11.4	+0.1
	baz=321						
TKL	Tuckaleechee C	128.79	27	PKhKP	PKPpre	21 06 04.2	
	comp=Z,7.6nm,0.8s,baz=185,slow=1.8,SNR=11						
TKL				PKP	PKPdf	21 06 11.3	+0.1
	comp=Z,48nm,1.1s,baz=237,slow=0.4,SNR=17						
TKL	Tuckaleechee C	128.79	27	ePKPpre	PKPpre	21 06 05.3	
TKL				PKP	PKPdf	21 06 11.3	+0.1
BLA	Blacksburg	128.88	23	ePKIKP	PKPdf	21 06 11.3	-0.2
BLA	Blacksburg	128.88	23	ePKPdf	PKPdf	21 06 11.3	-0.2
147A	Livingston	128.93	33	P	PKPdf	21 06 11.2	-0.3
	baz=320						
VWCC	Virginia Weste	129.02	23	ePKPdf	PKPdf	21 06 12.8	+1.1
CBN	Corbin Frederi	129.10	20	ePKPdf	PKPdf	21 06 11.4	-0.3
LRAL	Lakeview Retre	129.33	32	ePKPdf	PKPdf	21 06 12.8	+0.5
JSRW	J. Sargeant Re	129.39	21	ePKPdf	PKPdf	21 06 11.4	-0.9
GOGA	Godfrey	130.78	29	ePKPpre	PKPpre	21 06 09.5	
JSC	Jenkinsville	131.06	26	ePKIKP	PKPdf	21 06 15.9	+0.3
JSC	Jenkinsville	131.06	26	ePKPdf	PKPdf	21 06 15.9	+0.3
USHA	Ushuaia	134.02	171	PKP	PKPdf	21 06 21.2	+0.8
	comp=Z,132nm,1.1s,baz=145,slow=19,SNR=5.8						
DWPF	Disney Wildern	136.13	31	ePKPdf	PKPdf	21 06 26.3	+1.1
GTBY	Guantanamo Bay	146.11	30	ePKPdf	PKPab	21 06 46.0	+1.2
MTDJ	Mount Denham	146.21	35	ePKPdf	PKPbc	21 06 45.0	+0.3
GRTK	Grand Turk	146.47	23	ePKPdf	PKPab	21 06 46.5	+0.4
PLCA	Paso Flores	146.91	162	PKPbc	PKPbc	21 06 45.7	-0.4
	comp=Z,162nm,0.8s,baz=234,slow=2.9,SNR=69						
PLCA	Paso Flores	146.91	162	ePKPdf	PKPdf	21 06 44.9	+0.6
SDDR	Presa de Saban	148.68	25	ePKPbc	PKPbc	21 06 51.3	-0.1
SDD	Santo Domingo	149.71	23	epPKPbc	pPKPbc	21 07 01.1	-0.3
AGP	Aguadilla	150.74	18	ePKPbc	PKPbc	21 06 56.0	-0.5
MPR	Mayaguez	150.92	19	ePKPdf	PKPdf	21 06 51.4	+0.2
ABVI	Anegada Island	151.18	13	ePKPbc	PKPbc	21 06 58.5	+1.0
CELP	Cerrillos	151.22	18	ePKPdf	PKPdf	21 06 50.4	-1.3
SJG	San Juan	151.31	17	PKPbc	PKPbc	21 06 57.6	-0.2
	comp=Z,49nm,0.6s,baz=342,slow=8.7,SNR=6.0						
SJG				PKPab	PKPab	21 07 07.1	+1.4
	comp=Z,128nm,0.7s,baz=25,slow=17,SNR=14						
TRQA	Tornquist	151.34	173	ePKPdf	PKPdf	21 06 52.0	+0.6
HUMP	Col San Antoni	151.37	16	ePKPdf	PKPdf	21 06 53.0	+1.1
STVI	Saint Thomas	151.40	14	ePKPdf	PKPdf	21 06 52.7	+0.7
CDVI	St. Croix	152.02	14	ePKPbc	PKPbc	21 06 59.6	+0.2
SMRT	St. Maarten	152.10	11	ePKPbc	PKPbc	21 06 59.4	-0.2
SABA	Saba	152.49	11	ePKPbc	PKPbc	21 07 01.2	+0.7
ANWB	Willy Bob	152.69	8	ePKPbc	PKPbc	21 07 00.8	-0.1
ROC1	El Roble	153.65	154	ePKPbc	PKPbc	21 07 02.6	-0.4
SJCC	San Jacinto, C	154.06	42	eP	PKPdf	21 06 52.9	-3.2
GDHS	Morne Mazeau,	154.06	9	ePKPbc	PKPbc	21 07 03.9	-0.2
MOTC	Monteria, Cord	154.53	45	eP	PKPdf	21 06 58.4	+1.8
URIC	Uribia, Colomb	154.60	34	eP	PKPdf	21 06 55.7	-1.0
LPA	La Plata	154.74	180	dePKP	PKPbc	21 07 03.0	-1.9
LPA				PKP(2)		21 07 16.0	
LPA				SKIKP		21 10 26.0	
LPA				PP	PP	21 10 56.0	+2.2
LPA				pPP		21 11 04.0	
LPA				SKIKS		21 14 03.0	
LPA				PPP	PPP	21 20 12.0	
FDF	Fort de France	155.66	8	ePKIKP	PKPdf	21 07 02.5	+4.3
FDF	Fort de France	155.66	8	epPKPdf	PKPdf	21 07 02.5	+4.3
HELC	Santa Helena	156.39	49	eP	PKPdf	21 06 58.4	-1.2
BRRC	Barranca, Sant	157.07	44	eP	PKPdf	21 07 01.3	+1.2
LCO	Las Campanas	157.12	150	ePKPdf	PKPdf	21 07 01.5	+1.4
OTAV	Otavalo	157.23	66	eP	PKPdf	21 07 02.4	+1.5
OTAV	Otavalo	157.23	66	ePKPdf	PKPdf	21 07 02.6	+1.7
CMBC	Cumbal	157.47	64	eP	PKPdf	21 07 05.2	+4.1
SDV	Santo Domingo	157.66	35	PKP	PKPdf	21 07 00.6	-0.5
	comp=Z,40nm,0.7s,baz=281,slow=4.6,SNR=21						
SDV	Santo Domingo	157.66	35	eP	PKPdf	21 07 01.3	+0.2
SDV	Santo Domingo	157.66	35	ePKPdf	PKPdf	21 07 00.4	-0.6
BARC	Barichara	157.80	44	eP	PKPdf	21 07 00.7	-0.6
RCBR	Riachuelo	158.04	278	PKP	PKPdf	21 07 01.9	+0.6
	comp=Z,20nm,1.2s,baz=150,slow=3.2,SNR=2.7						
RCBR				PKPab	PKPab	21 07 34.0	-0.7
	comp=Z,16nm,0.9s,baz=66,slow=7.9,SNR=3.7						
RCBR	Riachuelo	158.04	278	PKP	PKPdf	21 07 01.9	+0.6
RCBR				PKPab	PKPab	21 07 34.0	-0.7
RCBR				epPKPab	pPKPab	21 07 40.9	-1.0
ROSC	El Rosal	158.18	50	PKP	PKPdf	21 07 02.4	+0.5
	comp=Z,9.8nm,0.4s,baz=347,slow=4.1,SNR=5.8						
ROSC	El Rosal	158.18	50	eP	PKPdf	21 07 01.8	-0.1
RUSC	La Rusia	158.37	46	eP	PKPdf	21 07 03.0	+0.7
RUSC	La Rusia	158.37	46	ePKPdf	PKPdf	21 07 05.5	+3.2
PRAC	Prado	158.45	53	eP	PKPdf	21 07 03.5	+1.7
CHIC	Chingaza	158.76	49	eP	PKPdf	21 07 01.8	-0.8
PCRV	Puerto La Cruz	159.26	19	PKP	PKPdf	21 07 03.6	+0.9
	comp=Z,13nm,0.9s,baz=354,slow=8.7,SNR=4.8						
ATAH	Atahualpa	159.44	85	PKP	PKPdf	21 07 05.0	+1.6
	comp=Z,46nm,1.0s,baz=311,slow=5.7,SNR=11						
NNA	Nana	161.09	99	PKP	PKPdf	21 07 04.1	-0.7
	comp=Z,11nm,0.6s,baz=242,slow=7.7,SNR=3.1						
LVC	Limon Verde	163.16	142	PKP	PKPdf	21 07 09.6	+2.6
	comp=Z,48nm,0.6s,baz=186,slow=9.2,SNR=1.8						
CPUP	Villa Florida	163.28	181	PKP	PKPdf	21 07 06.5	-0.1
	comp=Z,5.3nm,0.7s,baz=94,slow=0.7,SNR=11						
CPUP				PKPab	PKPab	21 07 58.1	+1.3
	comp=Z,35nm,1.1s,baz=178,slow=3.4,SNR=5.4						
CPUP				PP	PP	21 11 45.3	+4.9
	comp=Z,9.5nm,1.0s,baz=210,slow=6.7,SNR=3.7						
CPUP	Villa Florida	163.28	181	PKIKP	PKPdf	21 07 06.5	-0.1
CPUP						21 07 58.2	
CPUP						21 11 45.3	
CPUP				pmax	pmax		
	comp=Z,8.0nm,1.0s						
CPUP				pmax	pmax		
	comp=Z,35nm,1.1s						
CPUP				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CPUP	Villa Florida	163.28	181	ePKPdf	PKPdf	21 07 06.2	-0.5
CPUP				PKPab	PKPab	21 07 58.1	+1.3
CPUP				PP	PP	21 11 45.3	+4.9
LPAZ	La Paz	167.86	125	PKP	PKPdf	21 07 11.6	+0.2
	comp=Z,39nm,1.2s,baz=25,slow=1.8,SNR=8.4						
LPAZ				PP	PP	21 12 01.3	-5.4
	comp=Z,9.3nm,1.1s,baz=188,slow=3.1,SNR=4.2						
BDFB	Brasilia	168.72	236	PKP	PKPdf	21 07 12.3	+0.9
	comp=Z,7.0nm,1.1s,baz=78,slow=3.6						
BDFB				PKPab	PKPab	21 08 23.4	+1.9
	baz=193,slow=0.7						
PTGA	Pitinga	170.99	14	PKP	PKPdf	21 07 11.0	-1.7
	comp=Z,11nm,1.0s,baz=24,slow=1.1,SNR=10						
PTGA				PKPab	PKPab	21 08 33.4	+2.2
	comp=Z,36nm,0.8s,baz=3.7,slow=6.0,SNR=8.3						
SIV	San Ignacio	172.81	154	PKP	PKPdf	21 07 12.7	-0.8
	comp=Z,28nm,1.1s,baz=210,slow=0.2,SNR=15						
SIV				PP	PP	21 12 37.2	+7.7
	comp=Z,12nm,1.1s,baz=238,slow=12,SNR=3.2						
SAML	Samuel	174.61	84	ePKPdf	PKPdf	21 07 13.2	-0.9

*ISCJB **11** 20:52:31.2±0.5, 9.42N±0.07×122.04E±0.06, h10km, mb4.4/22, Error ellipse: s-maj=10.8km s-min=8.6km az=173.0*
*IDC **11** 20:52:31.2±0.7, 9.48N×122.27E, h0km, mb4.4/20, mb1 4.5/20, mb1mx4.3/66, mbtmp4.4/20, Error ellipse: s-maj=27.4km s-min=17.1km az=69.0*
*NEIC **11** 20:52:32.5±0.4, 9.51N×122.36E, h10km, mb4.8/2, Error ellipse: s-maj=16.4km s-min=8.5km az=68.0*

ISC 11 20:52:32.8±0.7, 9.5N±0.1×122.25E±0.0, h10km, n32, σ0.8/86/31, mb4.6/22, 2C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TBP	Tagbilaran	1.60	83	i/P	Pg	20 53 06.0	+2.4
LLP	Lapu-Lapu	1.88	64	eP	Pg	20 53 08.4	-0.5
LLP				eS	Sg	20 53 34.6	+1.4
CMAR	Chiang Mai Arr	24.28	294	P	P	20 57 50.9	+0.3
	3.3nm,1.0s,baz=102,slow=7.4,SNR=4.6						
KSAR	Wonju Array Be	28.28	9	P	P	20 58 25.9	-0.6
KSRS	Korea Array	28.30	10	P	P	20 58 25.9	-0.7
	2.2nm,0.7s,baz=184,slow=8.6,SNR=3.9						
WRAB	Tennant Creek	31.58	158	eP	P	20 58 54.9	-0.9
	13nm,0.7s						
WRA	Warramunga Arr	31.58	158	P	P	20 58 54.7	-1.2
	6.9nm,1.0s,baz=330,slow=10,SNR=2.3						
ASAR	Alice Springs	34.87	161	P	P	20 59 25.7	+1.1
	5.0nm,0.6s,baz=338,slow=7.7,SNR=5.6						
MDJ	Mudanjiang	35.56	9	eP	P	20 59 27.9	-2.4
	6.7nm,0.6s						
USRK	Ussuriysk Ar.	35.59	12	P	P	20 59 31.4	+0.9
	9.6nm,0.8s,baz=210,slow=7.7,SNR=4.8						
KLR	Kul'dur	40.40	10	P	P	21 00 11.7	+0.7
	4.3nm,0.9s,baz=166,slow=8.3,SNR=3.1						
SONM	Songino Array	40.49	344	P	P	21 00 12.5	+0.5
	3.6nm,0.7s,baz=162,slow=8.0,SNR=5.1						
MKAR	Makanchi Array	50.31	325	P	P	21 01 30.5	+0.7
	9.1nm,0.8s,baz=123,slow=8.8,SNR=4.6						
ZALV	Zalesovo Beam	53.47	333	P	P	21 01 52.6	-0.6
	1.9nm,0.6s,baz=134,slow=4.2,SNR=2.3						
KURBB	Kurchatov Arra	54.52	327	P	P	21 02 01.3	+0.5
	3.5nm,0.9s,baz=122,slow=9.0,SNR=5.0						
KURK	Kurchatov	54.52	327	P	P	21 02 01.3	+0.4
KKAR	Karatay Array	56.01	316	eP	P	21 02 12.8	+0.9
BVAR	Borovoye Array	60.09	327	P	P	21 02 41.2	+1.0
	5.5nm,1.0s,baz=121,slow=11,SNR=2.2						
WSAR	Wadi Sarin	62.13	291	P	P	21 02 54.1	-0.5
	4.2nm,0.6s,baz=67,slow=13,SNR=5.3						
TIXI	Tiksi	62.23	2	P	P	21 02 53.4	-1.0
	7.1nm,1.0s,baz=192,slow=6.8,SNR=3.2						
GEYT	Alibeck	63.85	308	P	P	21 03 06.7	+0.8
	5.4nm,0.8s,baz=87,slow=5.9,SNR=2.9						
AKTO	Aktyubinsk	66.41	321	P	P	21 03 22.1	-0.1
	4.3nm,0.7s,baz=117,slow=9.0,SNR=2.6						
ARU	Arti	67.72	327	P	P	21 03 29.9	-0.4
	2.1nm,0.5s,baz=166,slow=4.2,SNR=2.3						
ILAR	Eielson Array	81.85	26	P	P	21 04 51.4	-0.7
	0.8nm,0.7s,baz=274,slow=4.4,SNR=3.9						
BRTR	Keskin Array B	82.95	309	P	P	21 04 58.0	-0.5
	1.2nm,0.8s,baz=67,slow=4.3,SNR=2.4						
AKASG	Malin Array Be	84.64	320	P	P	21 05 06.0	-0.8
	3.7nm,0.6s,baz=67,slow=4.9,SNR=4.1						
MLR	Mundulo Rosu	87.69	316	P	P	21 05 21.9	-0.2
	1.3nm,0.8s,baz=25,slow=6.7,SNR=4.0						
SYO	Syowa Base	96.17	201	eP	P	21 06 01.0	+0.4
SYO	Syowa Base	96.17	201	epP	pP	21 06 04.0	0.0
TORD	Torodi Ar. Bea	116.84	290	PKP	PKPdf	21 11 19.4	+0.6
	0.7nm,0.8s,baz=73,slow=0.7,SNR=2.0						
TXAR	Lajitas Array	121.29	47	PKP	PKPdf	21 11 27.0	-0.2
	0.8nm,0.8s,baz=29,slow=2.1,SNR=2.6						
PLCA	Paso Flores	146.88	162	PKPbc	PKPdf	21 12 14.5	+0.4
	11nm,0.8s,baz=222,slow=6.4,SNR=6.0						

*ISCJB **11** 20:54:39.6±0.3, 9.59N±0.04×122.18E±0.05, h10km, mb4.7/46, MS5.5/1, Error ellipse: s-maj=7.2km s-min=4.9km az=146.0*
*IDC **11** 20:54:39.6±0.5, 9.57N×122.16E, h0km, mb4.7/39, mb1 4.8/39, mb1mx4.6/68, mbtmp4.7/39, MS5.5/1, Ms1 5.5/1, ms1mx4.3/67, Error ellipse: s-maj=18.3km s-min=12.8km az=82.0*
*NEIC **11** 20:54:41.2±0.2, 9.57N×122.18E, h10km, mb5.3/5, Error ellipse: s-maj=8.4km s-min=5.1km az=82.0*
*MOS **11** 20:54:41.2±1.4, 9.50N×122.20E, h33km, mb5.0/33, Error ellipse: s-maj=16.8km s-min=8.8km az=111.6*

ISC 11 20:54:40.9±0.4, 9.60N±0.04×122.18E±0.05, h10km, n117, σ1.9/10/121, mb4.8/46, 12C-9D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	Sibulan	1.07	104	i/P	Pg	20 54 58.5	-3.0
SNPH				i S	Sg	20 55 13.9	-1.7
JAP	San Jose, Anti	1.16	349	i/P	Pb	20 54 59.9	-3.2
IPIL	Ipil	1.84	168	eP	Pb	20 55 13.5	-1.2
IPIL				eS	Sn	20 55 34.2	-1.8
LLP	Lapu-Lapu	1.90	68	eP	Pb	20 55 16.1	+0.4
LLP				eS	Sg	20 55 41.4	-0.6
KALP	Kalibo	2.07	4	eP	Pb	20 55 18.0	-0.6
BUSP	Coron	3.08	321	eP	Pn	20 55 28.7	-0.9
BUSP				eS	Sn	20 56 01.5	-5.1
MMPH	Masbate	3.08	27	eP	Pb	20 55 35.9	0.0
MMPH				i S	Sb	20 56 13.3	-0.4
LQP	Lukban	4.

KURK pmax pmax
comp=Z,8.0nm,0.9s
KURK Kurchatov 54.39 327 *eP* **P 21 04 09.0 +1.0**
comp=Z,41nm,0.7s
KKAR Karatay Array 55.89 316 *eP* **P 21 04 20.0 +0.9**
KKAR pmax pmax
comp=Z,27nm,0.9s
KKAR Karatay Array 55.89 316 *eP* **P 21 04 20.0 +0.9**
comp=Z,26nm,0.9s
BVAR Bovoye Array 59.97 327 P **P 21 04 48.0 +0.5**
comp=Z,6.6nm,1.0s,baz=119,slow=12,SNR=4.4
BVAR Borovoye Array 59.97 327 P **P 21 04 48.0 +0.5**
BVAR pmax pmax
comp=Z,6.0nm,1.0s
WSAR Wadi Sarin 62.03 291 P **P 21 05 01.5 -0.5**
comp=Z,5.8nm,0.9s,baz=142,slow=5.9,SNR=4.7
TIXI Tiksi 62.13 2 P **P 21 05 01.1 -0.7**
comp=Z,14nm,0.9s,baz=141,slow=5.5,SNR=5.9
NRIK Noril'sk 63.71 347 P **P 21 05 12.8 +0.4**
comp=Z,22nm,1.0s,baz=136,slow=5.0,SNR=6.3
GEYT Alibeck 63.73 308 P **P 21 05 14.2 +1.0**
comp=Z,11nm,1.0s,baz=90,slow=1.5,SNR=6.1
AKTO Aktyubinsk 66.28 321 P **P 21 05 29.3 -0.2**
comp=Z,12nm,0.9s,baz=100,slow=2.1,SNR=4.9
GNI Garni 74.29 309 P **P 21 06 18.6 -0.3**
comp=Z,35nm,1.3s,baz=98,slow=2.4,SNR=4.9
ZEI Tsey 74.95 312 *eP* **P 21 06 22.5 -0.3**
ZEI pmax pmax
comp=Z,54nm,0.9s
KBZ Khabaz 75.69 313 P **P 21 06 27.1 +0.5**
comp=Z,10nm,1.1s,baz=29,slow=6.7,SNR=3.8
KVAR Kislovodsk Arr 75.84 313 P **P 21 06 29.1 +1.4**
comp=Z,12nm,0.8s,baz=110,slow=15,SNR=5.1
KIV Kislovodsk 75.85 313 *eP* **P 21 06 28.8 +1.1**
KIV Kislovodsk 75.85 313 *eP* **P 21 06 28.8 +1.1**
VRH Novokhopyorsk 76.61 320 *eP* **P 21 06 31.1 -0.6**
VRH pmax pmax
comp=Z,30nm,1.0s
VSR Storozhevoye 78.21 320 *eP* **P 21 06 39.8 -1.0**
VSR pmax pmax
comp=Z,30nm,1.1s
OBN Obninsk 79.69 324 P **P 21 06 48.7 0.0**
comp=Z,17nm,0.7s,baz=183,slow=18,SNR=3.4
OBN Obninsk 79.69 324 *i* P **P 21 06 47.9 -0.8**
OBN pmax pmax
comp=Z,35nm,1.2s
ASF Jabal al Asfar 80.99 301 P **P 21 06 57.6 +1.2**
comp=Z,4.5nm,0.9s,baz=45,slow=7.1,SNR=3.5
MMAI Mount Meron Ar 82.16 302 P **P 21 07 03.0 +0.5**
comp=Z,0.6nm,0.4s,baz=67,slow=8.0,SNR=5.3
BRTR Keskin Array B 82.83 309 P **P 21 07 06.5 +0.5**
comp=Z,4.3nm,1.0s,baz=125,slow=6.2,SNR=4.8
ARCES ARCESS Array B 83.41 339 P **P 21 07 08.3 +0.1**
comp=Z,7.8nm,0.9s,baz=148,slow=7.1,SNR=4.2
SPITS Spitsbergen Ar 83.87 348 P **P 21 07 10.3 -0.2**
comp=Z,11nm,1.0s,baz=129,slow=11,SNR=4.1
AKASG Malin Array Be 84.52 320 P **P 21 07 14.0 -0.2**
comp=Z,15nm,1.0s,baz=71,slow=4.7,SNR=10
KIEV Kiev 84.53 320 *eP* **P 21 07 14.0 -0.3**
KIEV Kiev 84.53 320 *eP* **P 21 07 13.9 -0.3**
FINES FINESS Array B 84.55 331 P **P 21 07 14.0 -0.2**
comp=Z,5.2nm,0.9s,baz=90,slow=9.7,SNR=4.7
FINES FINESS Array B 84.55 331 P **P 21 07 14.0 -0.2**
FINES pmax pmax
comp=Z,5.0nm,0.9s
KMBO Kilima Mbogo 85.19 268 P **P 21 07 18.9 +0.3**
comp=Z,0.9nm,0.3s,baz=32,slow=7.4,SNR=3.6
SORM Soroca 85.47 318 *i*P **P 21 07 18.9 -0.2**
SORM Soroca 85.47 318 *i*P **P 21 07 18.9 -0.2**
TLCR 85.63 315 *i*P **P 21 07 20.8 +0.9**
TLCR 85.63 315 *i*P **P 21 07 20.8 +0.9**
TIRR Tirgusor 86.03 314 *i*P **P 21 07 22.3 +0.4**
TIRR Tirgusor 86.03 314 *i*P **P 21 07 22.3 +0.4**
CFR Carcaliu 86.10 315 *i*P **P 21 07 23.2 +0.9**
CFR Carcaliu 86.10 315 *i*P **P 21 07 23.2 +0.9**
TLB Topalu 86.27 314 *i*P **P 21 07 23.5 +0.4**
TLB Topalu 86.27 314 *i*P **P 21 07 23.5 +0.4**
INK Inuvik 86.37 21 P **P 21 07 23.4 +0.3**
comp=Z,3.3nm,0.9s,baz=298,slow=8.9,SNR=4.4
GRER 86.88 315 *i*P **P 21 07 28.8 +2.7**
MLR Muntele Rosu 87.57 316 P **P 21 07 30.0 +0.3**
comp=Z,2.0nm,0.9s,baz=17,slow=2.1,SNR=5.8
MLR Muntele Rosu 87.57 316 *i*P **P 21 07 29.9 +0.3**
MLR Muntele Rosu 87.57 316 P **P 21 07 30.0 +0.3**
MLR pmax pmax
comp=Z,2.0nm,0.9s
HUMR Humele 88.43 315 *i*P **P 21 07 33.3 -0.3**
VNDA Vanda 89.81 172 P **P 21 07 38.5 -0.7**
comp=Z,1.5nm,0.9s,baz=288,slow=6.4,SNR=2.2
SIRR Siria 90.32 317 *i*P **P 21 07 40.0 -2.4**
GERES GERESS Array B 94.71 321 P **P 21 08 03.3 +0.5**
comp=Z,1.7nm,1.0s,baz=56,slow=5.3,SNR=3.7
YKA Yellowknife Ar 95.97 23 P **P 21 08 07.6 -0.5**
comp=Z,2.5nm,1.0s,baz=302,slow=3.2,SNR=3.8
TORD Torodi Ar. Bea 116.74 290 PKP **PKPdf 21 13 26.0 -0.6**
comp=Z,0.7nm,1.0s,baz=71,slow=2.0,SNR=2.7
TXAR Lajitas Array 121.27 47 PKP **PKPdf 21 13 35.7 +0.5**
comp=Z,2.2nm,1.1s,baz=208,slow=2.4,SNR=4.3
Q39A Willow Grove F 121.59 32 P **PKPdf 21 13 35.5 +0.1**
baz=318
R39A Chumby, Stover 122.10 32 P **PKPdf 21 13 36.2 -0.2**
baz=318
S39A Bolivar 122.41 33 P **PKPdf 21 13 36.9 -0.1**
baz=317
P42A Winchester 122.51 30 P **PKPdf 21 13 37.4 +0.4**
baz=321
R40A Maddies Statio 122.53 32 P **PKPdf 21 13 37.2 0.0**
baz=319
V37A Hulbert 122.70 36 P **PKPdf 21 13 37.8 +0.2**
baz=315
U38A Gravette 122.73 35 P **PKPdf 21 13 37.6 0.0**
baz=316
T39A Clever 122.87 34 P **PKPdf 21 13 38.0 +0.1**
baz=317
Q42A Golden Eagle 122.94 30 P **PKPdf 21 13 38.3 +0.4**
baz=321
134A White-Moore Ra 123.14 41 P **PKPdf 21 13 39.5 +1.0**
baz=311
T40A Mansfield 123.24 33 P **PKPdf 21 13 38.6 0.0**
baz=318
U39A Green Forest 123.28 34 P **PKPdf 21 13 38.9 +0.2**
baz=317
JCT Junction City 123.31 44 P **PKPdf 21 13 39.0 0.0**
baz=308
S41A Jillco Farms, 123.33 32 P **PKPdf 21 13 38.9 +0.1**
baz=319
V39A Pettigrew 123.58 35 P **PKPdf 21 13 39.4 0.0**
baz=316
U40A Yellville 123.64 34 P **PKPdf 21 13 39.6 +0.2**
baz=317
T41A Mountain View 123.72 32 P **PKPdf 21 13 39.6 0.0**
baz=319
X38A Whitesboro 123.73 37 P **PKPdf 21 13 40.0 +0.4**
baz=315
V40A Witts Springs 124.06 34 P **PKPdf 21 13 40.2 0.0**
baz=317
434A Burnet 124.14 42 P **PKPdf 21 13 40.8 +0.3**
baz=310
U41A Viola 124.16 33 P **PKPdf 21 13 40.1 -0.3**
baz=318
X39A Fountain Ranch 124.26 36 P **PKPdf 21 13 41.1 +0.5**
baz=315
V41A Mountainview 124.45 34 P **PKPdf 21 13 41.0 +0.1**
baz=318
534A Blanco 124.49 43 P **PKPdf 21 13 41.6 +0.4**
baz=309
832A Faith Ranch, C 124.52 46 P **PKPdf 21 13 42.8 +1.5**
baz=307
U42A Revenden 124.52 33 P **PKPdf 21 13 41.4 +0.3**
baz=319
MIAR Mount Ida 124.55 36 P **PKPdf 21 13 42.0 +0.9**
baz=316
PLCA Paso Flores 147.00 162 PKPbc **PKPbc 21 14 25.0 +0.6**
comp=Z,14nm,1.1s,baz=191,slow=4.1,SNR=4.7

*IDC **11** 20:55:17.8±0.6, 9.62N×122.20E, h0km, mb4.5/14, mb1 4.5/14, mb1mx4.1/68, mbtmp4.5/14, Error ellipse: s-maj=23.1km s-min=14.0km az=75.0*
*ISCJB **11** 20:55:19.8±0.5, 9.59N±0.06×122.23E±0.06, h29km, mb4.5/15, Error ellipse: s-maj=9.6km s-min=7.8km az=33.8*
*NEIC **11** 20:55:19.3±0.3, 9.62N×122.20E, h10km, mb4.6/1, Error ellipse: s-maj=9.8km s-min=6.5km az=96.0*
ISC 11 20:55:21.8±0.6, **9.58N**±0.08×**122.30E**±0.08, **h29**km, **n21, σ1§01/22, mb4.5**/15, **1D, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.95**	**104**	*i*P			**Pn**	**20 55 36.5**	**-2.8**
SNPH				*i* S			**Sn**	**20 55 51.8**	**-0.1**
KSM	**Kuching**	**14.39**	**237**	*e*P			**Pn**	**20 58 42.1**	**-1.6**
KAPI	**Kappang**	**14.72**	**190**	*e*P			**Pn**	**20 58 48.7**	**+0.6**
GUMO	**Guam**	**22.46**	**78**	P			**Pn**	**21 00 19.8**	**+1.0**
	32nm,0.5s,baz=164,slow=13,SNR=3.6								
WRA	**Warramunga Arr**	**31.64**	**158**	P			**P**	**21 01 43.1**	**+0.5**
	4.5nm,1.0s,baz=342,slow=9.5,SNR=2.9								
ASAR	**Alice Springs**	**34.94**	**161**	P			**P**	**21 02 12.3**	**+0.9**
	12nm,0.7s,baz=342,slow=7.6,SNR=7.9								
MDJ	**Mudanjiang**	**35.47**	**9**	*e*P			**P**	**21 02 16.4**	**+0.7**
	5.7nm,0.6s								
USRK	**Ussuriysk Ar.**	**35.50**	**12**	P			**P**	**21 02 16.4**	**+0.4**
	7.0nm,0.8s,baz=189,slow=6.7,SNR=3.3								
ASAJ	**Asahikawa**	**38.65**	**24**	P			**P**	**21 02 43.0**	**+0.3**
	6.2nm,0.7s,baz=248,slow=16								
KLR	**Kul'dur**	**40.30**	**10**	P			**P**	**21 02 56.0**	**-0.5**
	2.4nm,0.6s,baz=200,slow=12,SNR=2.9								
NWAO	**Narrogin (SRO)**	**42.55**	**186**	P			**P**	**21 03 15.8**	**+0.8**
	15nm,0.7s,baz=37,slow=20,SNR=3.9								
STKA	**Stephens Creek**	**45.17**	**157**	P			**P**	**21 03 37.0**	**+0.9**
	5.8nm,0.6s,baz=330,slow=11,SNR=4.0								
AAK	**Ala-Archa**	**53.10**	**317**	P			**P**	**21 04 38.1**	**+1.2**
	3.1nm,0.5s,baz=186,slow=9.2,SNR=2.0								
KURBB	**Kurchatov Arra**	**54.47**	**327**	P			**P**	**21 04 46.5**	**-0.1**
	2.9nm,0.6s,baz=119,slow=9.6,SNR=4.1								
KURK	**Kurchatov**	**54.47**	**327**	P			**P**	**21 04 46.5**	**-0.1**
SEY	**Seymchan**	**57.49**	**16**	P			**P**	**21 05 08.7**	**+0.7**
	3.1nm,0.8s,baz=233,slow=20,SNR=3.7								
BVAR	**Borovoye Array**	**60.05**	**327**	P			**P**	**21 05 25.2**	**-0.8**
	0.6nm,0.6s,baz=195,slow=4.3,SNR=2.5								
WSAR	**Wadi Sarin**	**62.15**	**291**	P			**P**	**21 05 39.9**	**-0.9**
	6.1nm,0.7s,baz=148,slow=5.5,SNR=5.3								
GEYT	**Alibeck**	**63.84**	**308**	P			**P**	**21 05 51.3**	**-0.5**
	3.8nm,0.8s,baz=155,slow=4.8,SNR=2.7								
TXAR	**Lajitas Array**	**121.19**	**47**	PKP			**PKPdf**	**21 14 13.3**	**+0.5**
	0.6nm,0.8s,baz=331,slow=7.2,SNR=3.0								
PLCA	**Paso Flores**	**146.95**	**162**	PKPbc			**PKPbc**	**21 15 02.6**	**+0.6**
	9.1nm,0.8s,baz=274,slow=2.1,SNR=6.4								

*ISCJB **11** 20:57:26.5±0.4, 9.51N±0.07×122.10E±0.05, h10km, mb4.3/29, Error ellipse: s-maj=9.6km s-min=6.3km az=17.1*
*IDC **11** 20:57:26.6±0.5, 9.56N×122.18E, h0km, mb4.3/28, mb1 4.4/28, mb1mx4.2/63, mbtmp4.3/28, Error ellipse: s-maj=23.6km s-min=12.6km az=73.0*
*NEIC **11** 20:57:27.9±0.3, 9.51N×122.22E, h10km, mb4.6/2, Error ellipse: s-maj=17.2km s-min=7.9km az=71.0*
ISC 11 20:57:27.8±0.5, **9.52N**±0.08×**122.25E**±0.06, **h10**km, **n36, σ0§94/40, mb4.3**/29, **Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.99**	**100**	*i*P			**Pg**	**20 57 45.0**	**-2.0**
SNPH				*i* S			**Sn**	**20 58 02.2**	**+0.3**
LLP	**Lapu-Lapu**	**1.87**	**65**	*e*P			**Pb**	**20 58 03.2**	**+1.1**
LLP				*e*S			**Sg**	**20 58 28.6**	**+0.7**
CMAR	**Chiang Mai Arr**	**24.27**	**294**	P			**P**	**21 02 45.9**	**+0.4**
	1.0nm,0.5s,baz=119,slow=7.5,SNR=4.3								
KSAR	**Wonju Array Be**	**28.26**	**10**	P			**P**	**21 03 21.5**	**+0.2**
KSRS	**Korea Array**	**28.28**	**10**	P			**P**	**21 03 21.5**	**+0.1**
	1.1nm,0.9s,baz=180,slow=8.5,SNR=3.0								
WRAB	**Tennant Creek**	**31.60**	**158**	*e*P			**P**	**21 03 48.2**	**-2.8**
	2.6nm,0.7s								
WRA	**Warramunga Arr**	**31.61**	**158**	P			**P**	**21 03 51.2**	**+0.1**
	1.5nm,0.7s,baz=341,slow=9.4,SNR=4.9								
WRA				PcP			**PcP**	**21 06 43.0**	**-0.5**
	1.6nm,0.8s,baz=323,slow=3.7,SNR=3.8								
ASAR	**Alice Springs**	**34.90**	**161**	P			**P**	**21 04 21.6**	**+1.8**
	5.9nm,0.7s,baz=346,slow=7.1,SNR=6.7								
ASAR				PcP			**PcP**	**21 06 53.1**	**+0.4**
	1.5nm,0.8s,baz=342,slow=2.5,SNR=2.6								
USRK	**Ussuriysk Ar.**	**35.57**	**12**	P			**P**	**21 04 25.4**	**+0.1**
	4.9nm,0.8s,baz=208,slow=6.0,SNR=5.1								
ASAJ	**Asahikawa**	**38.73**	**24**	P			**P**	**21 04 53.5**	**+1.4**
	baz=186,slow=18								
KLR	**Kul'dur**	**40.37**	**10**	P			**P**	**21 05 06.6**	**+0.8**
	1.5nm,0.5s,baz=183,slow=7.2,SNR=4.3								
SONM	**Songino Array**	**40.47**	**344**	P			**P**	**21 05 07.2**	**+0.4**
	2.1nm,0.6s,baz=165,slow=10.0,SNR=4.4								
NWAO	**Narrogin (SRO)**	**42.48**	**186**	P			**P**	**21 05 24.1**	**+0.8**
	6.0nm,0.8s,baz=42,slow=19,SNR=2.8								
NWAO	**Narrogin (SRO)**	**42.48**	**186**	*e*P			**P**	**21 05 23.6**	**+0.3**
	25nm,0.9s								
STKA	**Stephens Creek**	**45.13**	**157**	P			**P**	**21 05 46.0**	**+1.3**
	3.5nm,0.8s,baz=333,slow=15,SNR=2.6								
MKAR	**Makanchi Array**	**50.29**	**325**	P			**P**	**21 06 23.8**	**-0.8**
	2.6nm,0.8s,baz=116,slow=9.8,SNR=4.0								
AAK	**Ala-Archa**	**53.11**	**317**	P			**P**	**21 06 47.2**	**+1.3**
	3.1nm,0.5s,baz=177,slow=6.6,SNR=3.5								
ZALV	**Zalesovo Beam**	**53.45**	**333**	P			**P**	**21 06 47.0**	**-1.0**
	1.1nm,0.6s,baz=123,slow=7.1,SNR=2.6								
KURBB	**Kurchatov Arra**	**54.49**	**327**	P			**P**	**21 06 56.5**	**+0.8**
	2.2nm,0.5s,baz=119,slow=9.1,SNR=12								
KURK	**Kurchatov**	**54.49**	**327**	P			**P**	**21 06 56.5**	**+0.8**
BVAR	**Borovoye Array**	**60.07**	**327**	P			**P**	**21 07 35.4**	**+0.3**
	0.7nm,0.5s,baz=119,slow=10,SNR=3.3								
WSAR	**Wadi Sarin**	**62.12**	**291**	P			**P**	**21 07 49.1**	**-0.5**
	3.9nm,0.6s,baz=144,slow=5.3,SNR=6.5								
TIXI	**Tiksi**	**62.21**	**2**	P			**P**	**21 07 48.6**	**-0.7**
	1.8nm,0.3s,baz=269,slow=19,SNR=2.1								
NRIK	**Noril'sk**	**63.80**	**347**	P			**P**	**21 07 58.9**	**-1.0**
	4.0nm,0.6s,baz=99,slow=6.1,SNR=2.9								
GEYT	**Alibeck**	**63.84**	**308**	P			**P**	**21 08 00.8**	**0.0**
	1.3nm,0.5s,baz=120,slow=5.2,SNR=3.2								
AKTO	**Aktyubinsk**	**66.39**	**321**	P			**P**	**21 08 17.5**	**+0.4**
	2.6nm,0.7s,baz=63,slow=11,SNR=4.2								
BRTR	**Keskin Array B**	**82.93**	**309**	P			**P**	**21 09 53.8**	**+0.3**
	1.6nm,0.8s,baz=110,slow=3.8,SNR=4.0								
ARCES	**ARCESS Array B**	**83.50**	**339**	P			**P**	**21 09 54.9**	**-0.7**
	3.3nm,0.9s,baz=68,slow=9.7,SNR=3.6								
SPITS	**Spitsbergen Ar**	**83.96**	**348**	P			**P**	**21 09 57.9**	**+0.1**
	5.9nm,0.8s,baz=76,slow=6.1,SNR=8.7								
AKASG	**Malin Array Be**	**84.62**	**320**	P			**P**	**21 10 01.1**	**-0.5**
	3.1nm,0.6s,baz=68,slow=4.8,SNR=8.2								
FINES	**FINESS Array B**	**84.65**	**331**	P			**P**	**21 10 01.2**	**-0.4**
	1.2nm,0.5s,baz=57,slow=7.0,SNR=5.4								
INK	**Inuvik**	**86.42**	**21**	P			**P**	**21 10 10.0**	**-0.2**
	2.3nm,0.8s,baz=293,slow=13,SNR=5.2								
MLR	**Muntele Rosu**	**87.67**	**316**	P			**P**	**21 10 15.5**	**-1.6**
	0.8nm,0.8s,baz=113,slow=11,SNR=4.5								
VNDA	**Vanda**	**89.72**	**172**	P			**P**	**21 10 25.9**	**+0.2**
	1.1nm,0.9s,baz=333,slow=2.3,SNR=3.1								
GERES	**GERESS Array B**	**94.81**	**321**	P			**P**	**21 10 50.5**	**+0.4**
	0.4nm,0.6s,baz=68,slow=8.6,SNR=3.0								
PLCA	**Paso Flores**	**146.91**	**162**	PKPbc			**PKPbc**	**21 17 11.2**	**+0.2**
	4.9nm,0.8s,baz=116,slow=2.3,SNR=4.3								

*IDC **11** 20:59:11.9±0.9, 9.44N×122.44E, h0km, mb4.1/11, mb1 4.2/11, mb1mx3.9/59, mbtmp4.1/11, Error ellipse: s-maj=141.7km s-min=14.8km az=66.0*
*NEIC **11** 20:59:13.3±0.8, 9.54N×122.76E, h10km, mb4.8/2, Error ellipse: s-maj=126.0km s-min=11.6km az=66.0*
*ISCJB **11** 20:59:14.6±0.6, 9.27N±0.07×122.16E±0.07, h29km, mb4.2/13, Error ellipse: s-maj=11.1km s-min=9.4km az=152.6*
ISC 11 20:59:16.5±0.7, **9.4N**±0.1×**122.32E**±0.09, **h29**km, **n16, σ1§24/17, mb4.2**/13, **1C, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TBP	**Tagbilaran**	**1.56**	**77**	*i*P			**Pb**	**20 59 45.0**	**+0.3**
LLP	**Lapu-Lapu**	**1.89**	**59**	*e*P			**Pn**	**20 59 47.6**	**+0.8**
LLP				*e*S			**Sb**	**21 00 12.5**	**-0.9**
WRAB	**Tennant Creek**	**31.41**	**158**	P			**P**	**21 05 35.1**	**-0.2**
	6.1nm,0.9s								
WRA	**Warramunga Arr**	**31.42**	**158**	P			**P**	**21 05 35.3**	**0.0**
	2.8nm,0.7s,baz=333,slow=11,SNR=6.5								
ASAR	**Alice Springs**	**34.71**	**161**	P			**P**	**21 06 04.8**	**+0.8**
	5.6nm,0.7s,baz=341,slow=7.7,SNR=8.4								
SONM	**Songino Array**	**40.68**	**344**	P			**P**	**21 06 53.5**	**-0.7**
	2.0nm,1.0s,baz=158,slow=8.4,SNR=3.9								
STKA	**Stephens Creek**	**44.94**	**157**	P			**P**	**21 07 27.9**	**-1.1**
	4.2nm,0.8s,baz=337,slow=8.0,SNR=4.0								
MKAR	**Makanchi Array**	**50.48**	**325**	P			**P**	**21 08 10.5**	**-1.3**
	1.4nm,0.8s,baz=122,slow=9.2,SNR=3.1								
ZALV	**Zalesovo Beam**	**53.64**	**333**	P			**P**	**21 08 32.8**	**-2.4**
	0.9nm,0.7s,baz=123,slow=10,SNR=2.5								
KURBB	**Kurchatov Arra**	**54.68**	**327**	P			**P**	**21 08 41.4**	**-1.4**
	0.6nm,0.7s,baz=119,slow=8.9,SNR=3.9								
KURK	**Kurchatov**	**54.68**	**327**	P			**P**	**21 08 44.5**	**+1.6**
	14nm,0.8s								
BVAR	**Borovoye Array**	**60.26**	**327**	P			**P**	**21 09 23.8**	**+1.7**
	1.4nm,0.9s,baz=123,slow=2.4,SNR=2.4								
AKASG	**Malin Array Be**	**84.80**	**320**	P			**P**	**21 11 48.5**	**+0.2**
	2.7nm,0.9s,baz=74,slow=4.0,SNR=3.7								
FINES	**FINESS Array B**	**84.84**	**331**	P			**P**	**21 11 49.8**	**+1.6**
	1.7nm,0.9s,baz=92,slow=7.0,SNR=3.6								
VNDA	**Vanda**	**89.53**	**172**	P			**P**	**21 12 10.4**	**-0.1**
	1.3nm,0.9s,baz=320,slow=5.1,SNR=2.9								
PLCA	**Paso Flores**	**146.72**	**162**	PKPbc			**PKPbc**	**21 18 56.0**	**0.0**
	6.0nm,0.8s,baz=148,slow=1.3,SNR=5.0								

*ISCJB **11** 21:01:05.2±0.3, 9.46N±0.04×122.28E±0.05, h10km, mb4.3/31, Error ellipse: s-maj=7.5km s-min=5.7km az=164.2*
*IDC **11** 21:01:05.6±0.5, 9.45N×122.18E, h0km, mb4.0/23, mb1 4.2/23, mb1mx4.0/58, mbtmp4.0/23, Error ellipse: s-maj=26.7km s-min=12.0km az=71.0*
*NEIC **11** 21:01:07.0±0.3, 9.48N×122.27E, h10km, mb4.9/10, Error ellipse: s-maj=8.7km s-min=5.4km az=80.0*
ISC 11 21:01:06.9±0.5, **9.50N**±0.07×**122.35E**±0.07, **h10**km, **n56, σ1§14/56, mb4.3**/31, **1C, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.89**	**100**	*i* P			**Pg**	**21 01 23.2**	**-0.7**
TBP	**Tagbilaran**	**1.50**	**83**	*e*P			**Pn**	**21 01 30.9**	**-2.9**
MYLDM	**Lahad Datu**	**5.75**	**222**	*e*Pn			**Pn**	**21 02 33.9**	**+1.6**
KKM	**Kota Kinabalu**	**6.99**	**241**	*e*Pn			**Pn**	**21 02 48.4**	**-1.0**
LUWI	**Luwuk**	**10.48**	**178**	*e*Pn			**Pn**	**21 03 38.8**	**+1.5**
SBUM	**Sibu**	**12.27**	**236**	*e*Pn			**Pn**	**21 04 00.9**	**-0.9**
KSM	**Kuching**	**14.39**	**237**	*e*Pn			**Pn**	**21 04 29.4**	**-1.5**
CM31	**Chiang Mai Arr**	**24.37**	**294**	*e*P			**P**	**21 06 24.1**	**-1.4**
CMAR	**Chiang Mai Arr**	**24.37**	**294**	P			**P**	**21 06 24.1**	**-1.4**
	0.5nm,0.5s,baz=116,slow=8.4,SNR=3.1								
FITZ	**Fitzroy Crossi**	**27.62**	**173**	P			**P**	**21 06 55.4**	**+0.7**
	3.7nm,0.9s,baz=356,slow=14,SNR=2.4								
FITZ	**Fitzroy Crossi**	**27.62**	**173**	*e*P			**P**	**21 06 52.5**	**-2.2**
	50nm,1.9s								
KS15	**Wonju Array Si**	**28.26**	**9**	*e*P			**P**	**21 07 01.7**	**+1.4**
KSAR	**Wonju Array Be**	**28.26**	**9**	P			**P**	**21 07 01.7**	**+1.4**
KSRS	**Korea Array**	**28.28**	**9**	P			**P**	**21 07 01.7**	**+1.3**
	1.4nm,0.7s,baz=187,slow=9.4,SNR=3.4								
WR1	**Warramunga Arr**	**31.55**	**158**	*e*P			**P**	**21 07 29.7**	**+0.1**
	45nm,1.6s								
WRA	**Warramunga Arr**	**31.55**	**158**	P			**P**	**21 07 29.7**	**+0.1**
	2.3nm,0.6s,baz=340,slow=9.2,SNR=8.6								
WB2	**Warramunga Arr**	**31.55**	**158**	*e*P			**P**	**21 07 29.9**	**+0.2**
AS31	**Alice Springs**	**34.85**	**161**	*e*P			**P**	**21 07 58.9**	**+0.5**
	3.3nm,1.2s								
ASAR	**Alice Springs**	**34.85**	**161**	P			**P**	**21 07 58.9**	**+0.5**
	3.4nm,0.6s,baz=342,slow=7.3,SNR=9.8								
AS01	**Alice Springs**	**34.86**	**161**	*e*P			**P**	**21 08 00.0**	**+1.5**
USRK	**Ussuriysk Ar.**	**35.57**	**12**	P			**P**	**21 08 06.3**	**+2.0**
	2.1nm,0.8s,baz=200,slow=5.2,SNR=4.1								
ASAJ	**Asahikawa**	**38.70**	**23**	*e*P			**P**	**21 08 32.8**	**+1.8**
	18nm,1.3s								
KLR	**Kul'dur**	**40.37**	**10**	P			**P**	**21 08 45.3**	**+0.4**
	0.9nm,0.6s,baz=153,slow=9.0,SNR=4.1								
SONA0	**Songino Array**	**40.52**	**343**	*e*P			**P**	**21 08 45.2**	**-1.0**
	16nm,1.9s								
SONM	**Songino Array**	**40.52**	**343**	P			**P**	**21 08 45.2**	**-1.0**
	0.6nm,0.6s,baz=165,slow=9.2,SNR=3.5								
BBOO	**Buckleboo**	**44.06**	**163**	*e*P			**P**	**21 09 14.9**	**-0.2**
	71nm,1.8s								
STKA	**Stephens Creek**	**45.08**	**157**	P			**P**	**21 09 23.8**	**+0.5**
	2.2nm,0.7s,baz=343,slow=12,SNR=2.9								
STKA	**Stephens Creek**	**45.08**	**157**	*e*P			**P**	**21 09 23.8**	**+0.5**
	12nm,1.9s								
ARMA	**Armidale**	**48.65**	**146**	*e*P			**P**	**21 09 51.9**	**+0.5**
	93nm,1.9s								
MK01	**Makanchi Array**	**50.35**	**325**	*e*P			**P**	**21 10 03.8**	**-0.3**
MK31	**Makanchi Array**	**50.37**	**325**	*e*P			**P**	**21 10 06.0**	**+1.8**
MK32	**Makanchi Array**	**50.37**	**325**	*e*P			**P**	**21 10 05.2**	**+1.0**
MKAR	**Makanchi Array**	**50.37**	**325**	P			**P**	**21 10 05.2**	**+1.0**
	2.3nm,0.8s,baz=133,slow=8.8,SNR=6.9								
MKAR	**Makanchi Array**	**50.37**	**325**	*e*P			**P**	**21 10 06.0**	**+1.8**
	35nm,1.1s								
ZALV	**Zalesovo Beam**	**53.51**	**333**	P			**P**	**21 10 27.4**	**-0.1**
	0.9nm,0.6s,baz=148,slow=5.3,SNR=2.9								
ZAA1	**Zalesovo Array**	**53.51**	**333**	*e*P			**P**	**21 10 27.4**	**-0.1**
KURBB	**Kurchatov Arra**	**54.56**	**327**	P			**P**	**21 10 35.8**	**+0.6**
	1.4nm,0.7s,baz=114,slow=9.1,SNR=6.1								
KURK	**Kurchatov**	**54.57**	**327**	*e*P			**P**	**21 10 35.8**	**+0.6**
SEY	**Seymchan**	**57.55**	**16**	P			**P**	**21 10 57.4**	**+1.0**
	1.0nm,0.5s,baz=233,slow=20,SNR=3.9								
BVAR	**Borovoye Array**	**60.14**	**327**	P			**P**	**21 11 15.4**	**+0.8**
	0.4nm,0.6s,baz=152,slow=9.6,SNR

MSF	**Maaselka**	**2.55**	**230**	P	**Pb**	**21 02 00.2**	**+0.1**
MSF				Sb	**Sg**	**21 02 34.8**	**-0.6**
SGF	**Sodankyl**	**2.81**	**270**	*e*PG	**Pg**	**21 02 06.9**	**-0.5**
SGF				*e*SB	**Sb**	**21 02 38.2**	**-1.3**
SGF	**Sodankyl**	**2.81**	**270**	Pg	**Pg**	**21 02 06.8**	**-0.5**
SGF				Sb	**Sb**	**21 02 38.2**	**-1.3**
RNF	**Rovaniemi**	**3.21**	**255**	*e*P	**Pn**	**21 02 06.4**	**+1.1**
RNF				*e*S	**Sn**	**21 02 44.8**	**+0.7**
RNF	**Rovaniemi**	**3.21**	**255**	P	**Pn**	**21 02 06.3**	**+1.1**
RNF				S	**Sn**	**21 02 44.8**	**+0.7**
ARA0	**ARCESS Array S** baz=123,slow=16	**3.62**	**306**	Pn	**Pn**	**21 02 11.3**	**+0.5**
ARA0	baz=120,slow=28			Sn	**Sn**	**21 02 53.0**	**-1.1**
ARA0	baz=110,slow=37			Lg	Lg	21 03 04.2	
ARA0	**ARCESS Array S** baz=123,slow=16	**3.62**	**306**	Pn	**Pn**	**21 02 11.3**	**+0.5**
ARA0	baz=120,slow=28			Sn	**Sn**	**21 02 53.0**	**-1.1**
ARA0	baz=110,slow=37			Lg	Lg	21 03 04.2	
ARA0	**ARCESS Array S** SNR=50	**3.62**	**306**	Pn	**Pn**	**21 02 11.3**	**+0.5**
ARA0	SNR=50			Sn	**Sn**	**21 02 53.0**	**-1.1**
ARA0	SNR=1.7			Lg	Lg	21 03 04.2	
ARE0	**ARCESS Array S**	**3.62**	**306**	*e*P	**Pn**	**21 02 11.6**	**+0.8**
ARE0				*e*S	**Sn**	**21 02 53.1**	**-1.1**
ARE0	**ARCESS Array S**	**3.62**	**306**	P	**Pn**	**21 02 11.5**	**+0.8**
ARE0				S	**Sn**	**21 02 53.0**	**-1.1**
FIA0	**FINESS Array S** baz=35,slow=22	**7.03**	**212**	Sn	**Sn**	**21 04 14.5**	**-3.4**
FIA0	baz=25,slow=37			Lg	Lg	21 04 52.0	
FIA0	**FINESS Array S** baz=35,slow=22	**7.03**	**212**	Sn	**Sn**	**21 04 14.5**	**-3.4**
FIA0	baz=25,slow=37			Lg	Lg	21 04 52.0	

ISCJB ***11*** *21:02:34.6±1.1, 9.˚2N±0.˚2×122.˚9E±0.˚4, h18km, mb3.8/7, Error ellipse: s-maj=65.1km s-min=13.8km az=150.6*
IDC ***11*** *21:02:34.1±1.3, 9.˚13N×122.˚76E, h0km, mb3.8/7, mb1 4.0/7, mb1mx3.6/56, mbtmp3.8/7, Error ellipse: s-maj=87.4km s-min=19.3km az=59.0*

ISC 11 21:02:36.5±1.4**, 9.˚3N**±0.˚3×**122.˚9E**±0.˚5**, h18**km**, n9,** σ1§**10**/8**, mb3.9**/7**, 1D, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
JAP	**San Jose, Anti**	**1.72**	**328**	⇓*i*P		**Pn**	**21 03 04.1**	**-1.5**
PGP	**Puerto Galera**	**4.60**	**336**	*e*P		Pg	21 04 11.2	+6.5
CMAR	**Chiang Mai Arr** 0.3nm,0.4s,baz=111,slow=9.8,SNR=4.3	**24.94**	**294**	P		**P**	**21 07 58.7**	**-0.3**
WRA	**Warramunga Arr** 1.1nm,0.9s,baz=335,slow=9.6,SNR=2.7	**31.15**	**159**	P		**P**	**21 08 53.4**	**-1.2**
ASAR	**Alice Springs** 1.2nm,0.6s,baz=339,slow=7.1,SNR=3.7	**34.47**	**162**	P		**P**	**21 09 23.6**	**-0.1**
MKAR	**Makanchi Array** 1.0nm,0.8s,baz=134,slow=8.6,SNR=3.1	**50.84**	**325**	P		**P**	**21 11 36.8**	**+0.6**
KURBB	**Kurchatov Arra** 0.8nm,0.6s,baz=126,slow=6.8,SNR=4.5	**55.03**	**327**	P		**P**	**21 12 07.5**	**+0.5**
BRTR	**Keskin Array B** 0.6nm,0.6s,baz=92,slow=4.6,SNR=3.2	**83.56**	**309**	P		**P**	**21 15 04.9**	**+0.8**
AKASG	**Malin Array Be** 0.9nm,0.6s,baz=66,slow=5.5,SNR=3.8	**85.20**	**320**	P		**P**	**21 15 13.0**	**+1.0**

IDC ***11*** *21:03:18.4±0.3, 9.˚66N×122.˚22E, h0km, mb4.8/48, mb1 4.9/50, mb1mx4.8/58, mbtmp4.8/50, ML4.9/2, Error ellipse: s-maj=13.3km s-min=8.8km az=73.0*
ISCJB ***11*** *21:03:19.0±0.1, 9.˚70N±0.˚02×122.˚27E±0.˚02, h10km, mb5.0/163, MS4.1/1, Error ellipse: s-maj=3.0km s-min=2.7km az=174.5*
MOS ***11*** *21:03:19.2±0.8, 9.˚67N×122.˚22E, h17km, mb5.2/83, Error ellipse: s-maj=11.0km s-min=5.7km az=109.1*
NEIC ***11*** *21:03:20.2±0.1, 9.˚67N×122.˚28E, h10km, mb5.1/80, Error ellipse: s-maj=4.0km s-min=3.2km az=90.0*
NEIC Felt [III PIVS] at Sipalay. Also felt at Bacolod, Dumaguete and Sibulan. Felt at Carcar, Cebu and at Iloilo, Panay.
MAN ***11*** *21:03:22, 9.˚69N×122.˚57E, h101km, mb6.0, ML5.1, MS5.7*
MAN INTENSITY III - SIPALAY CITY NEGROS OCCIDENTAL.
KLM ***11*** *21:03:25.5, 9.˚48N×122.˚44E, h70km, mb5.0, MS6.3*
BJI ***11*** *21:03:28.4, 10.˚01N×122.˚35E, h71km, mb4.9/46, mB5.2/7, Ms5.4/4, Ms7 5.2/7*
DJA ***11*** *21:03:37.1±0.8, 10˚N±3˚×12˚2E±˚, h173km±12km, M4.8/22, mb4.8/22*

ISC 11 21:03:20.4±0.2**, 9.˚67N**±0.˚03×**122.˚28E**±0.˚03**, h10**km**, n556,** σ1§**54**/571**, mb5.0**/163**, 47C-28D, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
SNPH	**Sibulan**	**1.00**	**109**	*i* P		**Pg**	**21 03 37.2**	**-2.4**
SNPH				*i* S		**Sg**	**21 03 52.6**	**-0.1**
TBP	**Tagbilaran**	**1.56**	**89**	⇑*i*P		**Pg**	**21 03 51.0**	**+0.5**
TBP				*i* S		**Sb**	**21 04 09.6**	**+0.3**
LLP	**Lapu-Lapu**	**1.78**	**69**	*e*P		**Pg**	**21 03 54.5**	**-0.2**
LLP				*e*S		**Sg**	**21 04 20.8**	**+2.9**
RCP	**Roxas**	**1.94**	**14**	⇓*e*P		**Pb**	**21 03 55.4**	**-0.4**
RCP				*e*S		**Sb**	**21 04 20.7**	**+0.7**
KALP	**Kalibo**	**2.00**	**2**	*e*P		**Pg**	**21 03 58.2**	**-0.6**
MMPH	**Masbate**	**2.98**	**26**	⇑*i*P		**Pb**	**21 04 13.2**	**-0.5**
MMPH				*i* S		**Sn**	**21 04 43.3**	**-0.4**
PLP	**Palo**	**3.05**	**61**	⇓*e*P		**Pn**	**21 04 10.9**	**+2.2**
CTBH	**Cotabato--PC H**	**3.12**	**141**	*i* P		**Pn**	**21 04 12.3**	**+2.7**
PPR	**Puerto Princes**	**3.50**	**272**	*e*P		**Pn**	**21 04 12.8**	**-2.1**
KCP	**Kidapawan**	**3.84**	**133**	⇓*e*P		**Pn**	**21 04 21.8**	**+2.2**
DAV	**Davao City (W)** 91nm,0.3s,baz=188,slow=7.1,SNR=3.3	**4.11**	**128**	Pn		**Pn**	**21 04 22.6**	**-1.4**
GQP	**Guinayangan**	**4.21**	**2**	⇓*e*P		**Pn**	**21 04 27.6**	**+2.8**
BIPH	**Bislig**	**4.30**	**110**	⇑*i*P		**Pb**	**21 04 34.0**	**-2.1**
BIPH				*i* S		Sn	21 05 01.7	-14
LQP	**Lukban**	**4.47**	**351**	⇑*e*P		**Pn**	**21 04 28.6**	**0.0**
TGY	**Tagaytay City** 53nm,0.3s,baz=329,slow=19,SNR=2.3	**4.60**	**344**	Pn		**Pn**	**21 04 29.4**	**-0.8**
TGY	144nm,0.3s,baz=230,slow=18,SNR=4.3			Sn		**Sn**	**21 05 27.3**	**+3.7**
MYLDM	**Lahad Datu**	**5.82**	**220**	⇑P		**Pn**	**21 04 47.8**	**+0.9**
MYLDM	**Lahad Datu**	**5.82**	**220**	*e*Pn		**Pn**	**21 04 48.1**	**+1.2**
KDM	**Kudat**	**6.04**	**243**	⇓P		**Pn**	**21 04 51.3**	**+1.4**
SDKM	**Sandakan**	**6.43**	**232**	⇑P		**Pn**	**21 04 54.3**	**-1.1**
TSM	**Tawau**	**6.90**	**220**	⇓P		**Pn**	**21 05 01.7**	**0.0**
TSM	**Tawau**	**6.90**	**220**	⇑P		**Pn**	**21 05 01.9**	**+0.2**
KKM	**Kota Kinabalu**	**7.00**	**239**	⇓P		**Pn**	**21 05 03.9**	**+0.7**
KKM	**Kota Kinabalu**	**7.00**	**239**	*e*Pn		**Pn**	**21 05 02.8**	**-0.4**
LUWI	**Luwuk**	**10.65**	**177**	*e*Pn		**Pn**	**21 05 56.4**	**+3.2**
PCI	**Palu**	**10.78**	**193**	P		Pn	21 06 03.4	+8.4
BTM	**Bintulu**	**11.17**	**235**	⇑P		**Pn**	**21 05 59.4**	**-0.9**
SBUM	**Sibu**	**12.30**	**235**	⇓P		**Pn**	**21 06 17.1**	**+1.3**
SBUM	**Sibu**	**12.30**	**235**	*e*Pn		**Pn**	**21 06 17.9**	**+2.1**
TPUB	**Ta-pu**	**13.65**	**354**	*e*Pn		**Pn**	**21 06 37.1**	**+2.9**
YULB	**Yu-li**	**13.68**	**356**	*e*Pn		**Pn**	**21 06 35.9**	**+1.3**
SSLB	**Suanglung**	**14.10**	**355**	*e*Pn		**Pn**	**21 06 44.0**	**+3.6**
STKI	**Sintang**	**14.37**	**229**	P		**P**	**21 06 53.2**	**+2.0**
KSM	**Kuching**	**14.42**	**236**	⇓P		**Pn**	**21 06 47.8**	**+3.0**
KSM	**Kuching**	**14.42**	**236**	⇓P		**P**	**21 06 54.4**	**+2.6**
KSM	**Kuching**	**14.42**	**236**	*e*Pn		**Pn**	**21 06 43.0**	**-1.8**
KAPI	**Kappang** 0.7nm,0.3s,baz=25,slow=13,SNR=6.2	**14.80**	**190**	Pn		**P**	**21 06 59.0**	**+3.1**
YHNB	**Yeheng**	**14.94**	**357**	*e*Pn		**Pn**	**21 06 53.6**	**+1.7**
QZH	**Quanzhou**	**15.59**	**347**	⇑*i*P		**Pn**	**21 06 58.3**	**-2.1**
QZH	comp=Z,140nm,1.0s			pmax		pmax		
PBKI	**Pangkalan Bun**	**16.21**	**221**	P		**P**	**21 07 15.6**	**+4.0**
UBPT	**Khong Chiam**	**17.33**	**290**	P		**P**	**21 07 26.4**	**+2.4**
JOW	**Kunigami** 33nm,0.9s	**17.99**	**18**	*e*P		**P**	**21 07 34.0**	**+2.7**
MMRI	**Maumere**	**18.18**	**180**	P		**P**	**21 07 36.9**	**+3.5**
MMRI	**Maumere** 107nm,0.9s	**18.18**	**180**	*e*P		**P**	**21 07 36.5**	**+3.1**
PLAI	**Plampang**	**18.91**	**194**	P		**Pn**	**21 07 45.1**	**+3.0**
TWSI	**Taliwang, Sumb**	**19.06**	**197**	P		**Pn**	**21 07 48.7**	**+4.9**
SKNT	**Sakolnakorn** 632nm,0.8s	**19.22**	**294**	P		**Pn**	**21 07 46.3**	**+0.5**
SOEI	**Soe**	**19.40**	**174**	P		Pn	21 07 57.5	+9.5
SOEI	**Soe** 103nm,1.0s	**19.40**	**174**	*e*P		**P**	**21 07 46.6**	**-0.3**
SOEI				*e*pP		sP	21 07 59.9	+8.8
KTGM	**Kuala Trenggan**	**19.46**	**259**	⇑P		**Pn**	**21 07 48.8**	**+0.1**
JAGI	**Jajag, Banyuwa**	**19.75**	**204**	P		**Pn**	**21 07 56.0**	**+3.8**
JAGI	**Jajag, Banyuwa** 72nm,1.0s	**19.75**	**204**	*e*P		**Pn**	**21 07 53.7**	**+1.5**
GMJI	**Gumukmas**	**19.88**	**207**	P		**Pn**	**21 07 58.2**	**+4.6**
PPBI	**Pangkal Pinang**	**19.91**	**235**	P		**Pn**	**21 07 54.3**	**+0.2**
MYKOM	**Kota Tinggi**	**19.92**	**248**	⇑P		**Pn**	**21 07 55.2**	**+1.0**
MYKOM	**Kota Tinggi** 66nm,0.9s	**19.92**	**248**	*e*P		**Pn**	**21 07 54.2**	**-0.1**
NGJI	**Ngawi**	**20.06**	**213**	P		Pn	21 07 58.5	+2.7
KHON	**Khomkaen** 31nm,0.9s,2µm	**20.07**	**291**	P		Pn	21 07 55.4	-0.6
SRAK	**Srakaew**	**20.27**	**284**	P		**P**	**21 07 51.2**	**-5.1**
KGM	**Kluang**	**20.32**	**249**	⇑P		Pn	21 07 58.0	-0.9
NONG	**Nongkai** 915nm,2.7s	**20.35**	**296**	P		Pn	21 07 58.3	-0.9
CHAI	**Chaiyaphum** 25nm,0.9s	**20.73**	**289**	P		**P**	**21 08 02.1**	**+0.8**
WOJI	**Wonogiri, Jawa**	**20.74**	**213**	P		Pn	21 08 04.7	+0.9
UGM	**Wanagama**	**21.03**	**214**	P		**P**	**21 08 10.4**	**+5.8**
UGM	**Wanagama** 162nm,1.1s	**21.03**	**214**	*e*P		**P**	**21 08 08.3**	**+3.8**
FRIM	**Kepong**	**21.48**	**254**	⇑P		**P**	**21 08 10.2**	**+0.7**
SKLT	**Songkhla** 1µm,2.3s	**21.57**	**265**	P		**P**	**21 08 11.4**	**+1.0**
IPM	**Ipoh** 55nm,0.7s	**21.70**	**258**	*e*P		**P**	**21 08 12.2**	**+0.3**
PBKT	**Sadao Pong** 110nm,1.3s	**21.84**	**291**	P		**P**	**21 08 15.6**	**+2.3**
KULM	**Kulim** 60nm,1.1s	**21.88**	**260**	*e*P		**P**	**21 08 14.3**	**+0.6**
JAY	**Jayapura** 0.9nm,0.9s,baz=90,slow=20,SNR=2.0	**21.99**	**122**	P		**P**	**21 08 14.4**	**-0.5**
CBJI	**Citeko**	**22.17**	**224**	P		**P**	**21 08 22.2**	**+5.3**
GYA	**Guiyang**	**22.30**	**321**	⇑*i*P		**P**	**21 08 22.8**	**+4.5**
GYA				pP		sP	21 08 36.2	+14
GYA				PP		**PnPn**	**21 08 50.0**	**+9.0**
GYA				S		**S**	**21 12 16.8**	**-7.0**
GYA				sS		Sn	21 12 43.5	+7.9
GYA				SS		**SnSn**	**21 13 00.4**	**+9.0**
GYA	comp=Z,20nm,0.8s			pmax		pmax		
GYA	comp=Z,120nm,6.2s			pmax		pmax		
GYA	comp=Z,620nm,15.6s			LR		LR		
SURA	**Surathani** 666nm,2.1s	**22.35**	**271**	P		**P**	**21 08 20.4**	**+1.6**
CISI	**Cisompet, Garu** 98nm,1.5s	**22.37**	**221**	P		**P**	**21 08 20.5**	**+1.5**
CISI	**Cisompet, Garu**	**22.37**	**221**	*e*P		**P**	**21 08 20.6**	**+1.5**
TRTT	**Trang**	**22.40**	**267**	P		**P**	**21 08 26.3**	**+7.0**
PHET	**Kaeng Krachan** 14nm,0.9s	**22.44**	**280**	P		**P**	**21 08 22.7**	**+3.0**
GUMO	**Guam** 104nm,0.9s,baz=192,slow=7.5,SNR=7.2	**22.46**	**78**	P		**P**	**21 08 21.5**	**+1.5**
NJ2	**Nanjing**	**22.50**	**352**	*e*P		**P**	**21 08 22.2**	**+2.0**
NJ2	comp=Z,29nm,0.7s			pmax		pmax		
UTTA	**Uttaradit** 4.8nm,0.8s	**22.56**	**293**	P		**P**	**21 08 22.1**	**+1.1**
CNJI	**Cibinong**	**22.63**	**222**	P		**P**	**21 08 22.9**	**+1.1**
LHSI	**Lahat**	**23.00**	**235**	P		**P**	**21 08 27.8**	**+2.2**
BKNI	**Bangkinang**	**23.08**	**248**	P		**P**	**21 08 28.5**	**+2.0**
BKNI	**Bangkinang** 274nm,1.2s	**23.08**	**248**	*e*P		**P**	**21 08 27.8**	**+1.2**
CGJI	**Cibinong**	**23.12**	**226**	P		**P**	**21 08 28.3**	**+1.4**
KASI	**Kota Agung**	**23.27**	**230**	P		**P**	**21 08 29.2**	**+0.8**
LWLI	**Liwa**	**23.29**	**232**	P		**P**	**21 08 30.6**	**+1.9**
LAMP	**Lampang** 7.6nm,1.1s	**23.64**	**294**	P		**P**	**21 08 32.9**	**+0.8**
KSI	**Kapahiang**	**23.66**	**237**	P		**P**	**21 08 34.8**	**+2.4**
ENH	**Enshi** 101nm,1.5s	**23.72**	**332**	*e*P		**P**	**21 08 32.9**	**+0.1**
ANA2	**Anatahan**	**23.76**	**71**	*e*P		**P**	**21 08 36.4**	**+3.1**
MTN	**Manton Dam** 69nm,1.1s	**24.03**	**158**	*e*P		**P**	**21 08 35.8**	**0.0**
KMI	**Kunming**	**24.11**	**312**	P		**P**	**21 08 37.5**	**+0.7**
KMI				pP		sP	21 08 54.7	+14
KMI				sP		pP	21 09 02.1	+22
KMI	comp=Z,18nm,2.0s			pmax		pmax		
PSI	**Prapat** 36nm,0.7s,baz=70,slow=6.9,SNR=16	**24.18**	**255**	P		**P**	**21 08 37.0**	**-0.4**
PSI	**Prapat**	**24.18**	**255**	*e*P		**P**	**21 08 36.2**	**-1.2**
PSI	comp=Z,62nm,0.9s			pmax		pmax		
PSI	**Prapat** comp=Z,62nm,0.9s	**24.18**	**255**	*e*P		**P**	**21 08 36.2**	**-1.2**
CM01	**Chiang Mai Arr**	**24.21**	**294**	*e*P		**P**	**21 08 36.7**	**-0.9**
CM31	**Chiang Mai Arr**	**24.24**	**294**	*e*P		**P**	**21 08 37.0**	**-0.8**
CMAR	**Chiang Mai Arr** comp=Z,9.3nm,0.9s,baz=122,slow=8.0,SNR=25	**24.24**	**294**	P		**P**	**21 08 37.0**	**-0.8**
MNSI	**Mandailing Nat**	**24.24**	**250**	P		**P**	**21 08 38.3**	**+0.5**
TSI	**Tuntungan**	**24.33**	**257**	P		**P**	**21 08 39.4**	**+0.8**
CMMT	**Chiang Mai** comp=Z,594nm,3.2s	**24.34**	**294**	P		**P**	**21 08 38.4**	**-0.4**
CHTO	**Chiang Mai** comp=Z,1µm,1.5s	**24.35**	**294**	P		**P**	**21 08 38.5**	**-0.3**
JNU	**Nakatsue** comp=Z,155nm,0.8s,baz=158,slow=8.7,SNR=7.5	**24.65**	**18**	P		**P**	**21 08 39.5**	**-1.9**
JNU	**Nakatsue** comp=Z,34nm,1.2s	**24.65**	**18**	*e*P		**P**	**21 08 39.9**	**-1.5**
LHMI	**Lhok Sumawe** comp=Z,180nm,1.0s	**25.49**	**262**	*e*P		**P**	**21 08 49.2**	**0.0**
GSI	**Gunungsitoli**	**25.93**	**253**	P		**P**	**21 08 52.9**	**-0.3**
GSI	**Gunungsitoli** comp=Z,113nm,0.8s	**25.93**	**253**	*e*P		**P**	**21 08 52.4**	**-0.8**
KNRA	**Kununurra** baz=26	**25.99**	**166**	P		**P**	**21 08 55.0**	**+1.4**
CD2	**Chengdu**	**27.27**	**323**	*e*P		**P**	**21 09 05.6**	**+0.4**
CD2				pP		sP	21 09 22.3	+13
CD2				sP		pP	21 09 30.8	+23
CD2				S		**S**	**21 13 40.6**	**-4.0**
CD2				sS		sS	21 14 10.0	+20
CD2	comp=Z,20nm,0.5s			pmax		pmax		
CD2	comp=Z,220nm,5.2s			pmax		pmax		
FITZ	**Fitzroy Crossi** comp=Z,9.3nm,0.8s,baz=164,slow=7.4,SNR=6.3	**27.79**	**173**	P		**P**	**21 09 09.6**	**-0.2**
FITZ	**Fitzroy Crossi** baz=28	**27.79**	**173**	P		**P**	**21 09 10.4**	**+0.6**
FITZ	**Fitzroy Crossi** comp=Z,15nm,0.9s	**27.79**	**173**	*e*P		**P**	**21 09 09.6**	**-0.2**
KS15	**Wonju Array Si**	**28.11**	**10**	*e*P		**P**	**21 09 13.6**	**+1.1**
KSAR	**Wonju Array Be**	**28.11**	**10**	P		**P**	**21 09 12.9**	**+0.4**
KSAR	**Wonju Array Be**	**28.11**	**10**	P		**P**	**21 09 12.9**	**+0.4**
KSRS	**Korea Array** comp=Z,10.0nm,0.8s,baz=182,slow=10,SNR=24	**28.13**	**10**	P		**P**	**21 09 12.9**	**+0.2**
KS01	**Wonju Array Si**	**28.15**	**10**	*e*P		**P**	**21 09 13.4**	**+0.6**
INU	**Inuyama** comp=Z,25nm,0.9s	**28.89**	**26**	*e*P		**P**	**21 09 19.8**	**+0.4**
MAJO	**Matsushiro**	**30.41**	**26**	*ce*P		**P**	**21 09 31.7**	**-1.3**
MAJO	comp=Z,68nm,1.7s			pmax		pmax		
MAT	**Matsushiro**	**30.41**	**26**	P		**P**	**21 09 31.0**	**-2.0**
BJI	**Beijing**	**30.73**	**351**	P		**P**	**21 09 34.9**	**-0.8**
MBWA	**Marble Bar** comp=Z,136nm,1.8s	**30.74**	**185**	*e*P		**P**	**21 09 35.2**	**-0.8**
LZH	**Lanzhou**	**31.18**	**330**	*e*P		**P**	**21 09 41.4**	**+1.4**
LZH				pP		sP	21 10 00.3	+16
LZH				sP		pP	21 10 08.6	+26
LZH	comp=Z,56nm,1.2s			pmax		pmax		
LZH	comp=Z,220nm,5.6s			pmax		pmax		
WRAB	**Tennant Creek**	**31.73**	**158**	⇑*e*P		**P**	**21 09 45.6**	**+0.9**
WRAB	comp=Z,59nm,1.2s			pmax		pmax		
WR1	**Warramunga Arr** comp=Z,34nm,1.1s	**31.73**	**158**	*e*P		**P**	**21 09 43.9**	**-0.8**
WR1				*e*PcP		**PcP**	**21 12 35.1**	**-1.4**
WRA	**Warramunga Arr** comp=Z,14nm,1.0s,baz=337,slow=9.5,SNR=14	**31.73**	**158**	P		**P**	**21 09 43.9**	**-0.9**
WRA	comp=Z,10nm,0.9s,baz=337,slow=3.3,SNR=8.1			PcP		**PcP**	**21 12 35.1**	**-1.4**
WB2	**Warramunga Arr**	**31.74**	**158**	*e*P		**P**	**21 09 44.8**	**-0.1**
SNY	**Shenyang**	**32.05**	**2**	⇑P		**P**	**21 09 46.7**	**-0.6**
SNY	comp=Z,21nm,0.9s			pmax		pmax		
CN2	**Changchun**	**34.12**	**4**	*e*P		**P**	**21 10 08.2**	**+2.8**
CN2	comp=Z,20nm,0.8s			pmax		pmax		
WRKA	**Warakurna** baz=35,SNR=6.2	**34.99**	**170**	P		**P**	**21 10 13.2**	**0.0**
AS31	**Alice Springs** comp=Z,11nm,0.8s	**35.03**	**161**	*e*P		**P**	**21 10 13.7**	**+0.2**
AS31				*e*PcP		**PcP**	**21 12 45.5**	**-0.2**
ASAR	**Alice Springs** comp=Z,17nm,0.8s,baz=338,slow=6.9,SNR=22	**35.03**	**161**	P		**P**	**21 10 13.4**	**-0.1**
ASAR	comp=Z,14nm,0.8s,baz=334,slow=2.8,SNR=6.9			PcP		**PcP**	**21 12 45.5**	**-0.2**
ASAR	**Alice Springs**	**35.03**	**161**	P		**P**	**21 10 13.4**	**-0.1**
ASAR							21 12 45.5	
ASAR	comp=Z,16nm,0.8s			pmax		pmax		
ASAR	**Alice Springs**	**35.03**	**161**	PcP		**PcP**	**21 12 45.5**	**-0.2**
AS01	**Alice Springs**	**35.04**	**161**	*e*P		**P**	**21 10 13.1**	**-0.5**
LSA	**Lhasa**	**35.25**	**309**	*e*P		**P**	**21 10 16.8**	**+0.8**
LSA	comp=Z,7.0nm,0.8s			pmax		pmax		
LSA	**Lhasa** comp=Z,7.0nm,0.8s	**35.25**	**309**	*e*P		**P**	**21 10 16.8**	**+0.8**
MDJ	**Mudanjiang**	**35.39**	**9**	P		**P**	**21 10 17.1**	**+0.7**
MDJ	comp=Z,140nm,0.9s			pmax		pmax		
MDJ	**Mudanjiang** comp=Z,129nm,0.9s	**35.39**	**9**	*e*P		**P**	**21 10 16.9**	**+0.6**
USRK	**Ussuriysk Ar.** comp=Z,66nm,0.8s,baz=199,slow=6.8,SNR=95	**35.42**	**12**	P		**P**	**21 10 17.2**	**+0.6**
GTA	**Gaotai**	**35.77**	**330**	*e*P		**P**	**21 10 19.1**	**-0.8**
GTA				pP		sP	21 10 37.9	+14
GTA				sP		pP	21 10 46.6	+24
GTA	comp=Z,39nm,1.1s			pmax		pmax		
MEEK	**Meekatharra** baz=36,SNR=7.3	**36.26**	**186**	P		**P**	**21 10 23.7**	**-0.4**
ERM	**Erimo**	**37.08**	**26**	⇓*e*P		**P**	**21 10 32.2**	**+1.3**
ERM	comp=Z,7.0nm,0.8s			pmax		pmax		
RAMN	**Ramite** comp=Z,24nm,0.8s	**37.80**	**302**	*e*P		**P**	**21 10 37.5**	**0.0**
CTA	**Charters Tower** baz=38	**37.83**	**141**	P		**P**	**21 10 38.7**	**+1.2**
ASAJ	**Asahikawa** comp=Z,23nm,0.8s,baz=228,slow=11	**38.58**	**24**	P		**P**	**21 10 43.7**	**+0.2**
ASAJ	**Asahikawa** comp=Z,69nm,1.1s	**38.58**	**24**	*e*P		**P**	**21 10 44.1**	**+0.5**
GUN	**Gumba** comp=Z,52nm,0.6s	**38.74**	**303**	*e*P		**P**	**21 10 45.6**	**+0.1**
MORW	**Morawa** baz=39,SNR=7.1	**38.98**	**189**	P		**P**	**21 10 47.2**	**+0.2**
PKIN	**Phulchoki** comp=Z,18nm,0.6s	**39.02**	**302**	*e*P		**P**	**21 10 47.3**	**-0.5**
KKN	**Kakani** comp=Z,19nm,0.8s	**39.19**	**302**	*e*P		**P**	**21 10 48.7**	**-0.5**
HIA	**Hailar** comp=Z,35nm,1.5s	**39.53**	**357**	⇓*e*P		**P**	**21 10 51.8**	**+0.4**
HIA				pmax		pmax		
GKN	**Gorkha**	**39.80**	**302**	*e*P		**P**	**21 10 53.5**	**-0.7**
KLR	**Kul'dur** comp=Z,35nm,0.9s,baz=252,slow=6.7,SNR=24	**40.22**	**10**	P		**P**	**21 10 57.0**	**-0.2**
SONA0	**Songino Array** comp=Z,35nm,1.2s	**40.34**	**343**	*e*P		**P**	**21 10 58.1**	**-0.3**
SONM	**Songino Array** comp=Z,7.0nm,0.8s,baz=162,slow=7.6,SNR=23	**40.34**	**343**	P		**P**	**21 10 58.1**	**-0.3**
SONA1	**Songino Array**	**40.35**	**343**	*e*P		**P**	**21 10 58.2**	**-0.2**
KOLN	**Koldanda** comp=Z,18nm,0.6s	**40.59**	**302**	*e*P		**P**	**21 11 00.1**	**-0.7**
FORT	**Forrest**	**40.60**	**172**	*e*P		**P**	**21 11 02.1**	**+1.7**
KMBL	**Kambalda** baz=41,SNR=6.3	**40.80**	**181**	P		**P**	**21 11 02.5**	**+0.4**
YSS	**Yuzh-Sakhalins**	**41.03**	**21**	⇓*i*P		**P**	**21 11 03.8**	**-0.1**
YSS	comp=Z,41nm,1.0s			pmax		pmax		
YSS	**Yuzh-Sakhalins** comp=Z,30nm,0.8s	**41.03**	**21**	*e*P		**P**	**21 11 04.3**	**+0.4**
PYUN	**Piuthan**	**41.20**	**302**	*e*P		**P**	**21 11 05.9**	**0.0**
KLBR	**Kellerberrin** baz=41,SNR=6.6	**41.25**	**186**	P		**P**	**21 11 05.5**	**-0.4**
QLP	**Quilpie** baz=42,SNR=7.6	**41.87**	**150**	P		**P**	**21 11 10.9**	**-0.1**
NWAO	**Narrogin (SRO)** comp=Z,14nm,0.8s,baz=232,slow=9.8,SNR=6.4	**42.63**	**186**	P		**P**	**21 11 16.9**	**-0.2**
NWAO	**Narrogin (SRO)** baz=43,SNR=5.1	**42.63**	**186**	P		**P**	**21 11 17.6**	**+0.5**
NWAO	baz=43,SNR=5.1			P		**P**	**21 11 17.6**	**+0.5**
HYB	**Hyderabad**	**43.12**	**285**	*i* P		**P**	**21 11 21.5**	**+0.1**
ZAK	**Zakamensk**	**43.53**	**342**	*e*P		**P**	**21 11 22.9**	**-1.4**
ZAK	comp=Z,6.0nm,1.7s			pmax		pmax		
BBOO	**Buckleboo** baz=44,SNR=8.0	**44.24**	**163**	P		**P**	**21 11 30.2**	**+0.1**
BBOO	**Buckleboo** comp=Z,79nm,0.9s	**44.24**	**163**	*e*P		**P**	**21 11 30.1**	**-0.1**
TLY	**Talaya** comp=Z,9.5nm,0.7s,baz=256,slow=5.8,SNR=3.6	**44.58**	**344**	P		**P**	**21 11 33.2**	**+0.6**
TLY	**Talaya**	**44.58**	**344**	*e*P		**P**	**21 11 33.3**	**+0.6**
TLY	comp=Z,16nm,0.9s			pmax		pmax		
EIDS	**Eidsvold** comp=Z,21nm,1.0s	**44.72**	**142**	*e*P		**P**	**21 11 33.1**	**-1.0

AAK pmax pmax
comp=Z,59nm,1.6s
AAK Ala-Archa 53.02 317 *e*P **P 21 12 39.4 +1.5**
ZAA0 Zalesovo Array 53.33 333 *e*P **P 21 12 38.7 -1.0**
ZALV Zalesovo Beam 53.33 333 P **P 21 12 38.6 -1.1**
comp=Z,6.2nm,0.8s,baz=130,slow=6.5,SNR=11
ZAA1 Zalesovo Array 53.33 333 *e*P **P 21 12 38.6 -1.1**
DZM Mont Dzumac 53.58 127 *e*P **P 21 12 39.9 -2.3**
comp=Z,32nm,1.3s
MA2 Magadan 54.22 17 P **P 21 12 46.4 +0.2**
comp=Z,25nm,0.7s,baz=198,slow=6.4,SNR=13
MNAS Manas 54.32 316 *i*P **P 21 12 47.5 +0.1**
MNAS pmax pmax
comp=Z,9.0nm,0.6s
KURBB Kurchatov Arra 54.39 327 P **P 21 12 47.3 -0.2**
comp=Z,11nm,0.8s,baz=132,slow=6.6,SNR=24
KURK Kurchatov 54.39 327 P **P 21 12 47.3 -0.2**
KURK pmax pmax
comp=Z,11nm,0.8s
KURK Kurchatov 54.39 327 *e*P **P 21 12 47.3 -0.2**
KBL Kabul 54.45 306 *e*P **P 21 12 49.3 +0.7**
KBL pmax pmax
comp=Z,18nm,0.9s
KBL Kabul 54.45 306 *e*P **P 21 12 49.3 +0.7**
comp=Z,18nm,0.9s
NVS Novosibirsk 54.62 333⇑ *i*P **P 21 12 48.4 -0.7**
NVS pmax pmax
comp=Z,21nm,1.1s
NVS pmax pmax
comp=N,19nm,1.8s
KKAR Karatay Array 55.91 316 *e*P **P 21 12 58.7 0.0**
KKAR Karatay Array 55.91 316 *e*P **P 21 12 58.7 0.0**
OTUK Ortayu 56.75 322 *i*P **P 21 13 04.8 +0.2**
OTUK pmax pmax
comp=Z,27nm,1.4s
SEY Seymchan 57.41 16 P **P 21 13 09.8 +0.9**
comp=Z,11nm,0.8s,baz=224,slow=4.9,SNR=22
VOSK Vostochnaya 59.51 327 *e*P **P 21 13 22.8 -1.0**
VOSK pmax pmax
comp=Z,12nm,0.9s
VOSK Vostochnaya 59.51 327 *e*P **P 21 13 22.8 -1.0**
comp=Z,12nm,0.9s
BVAR Bovoye Array 59.96 327 P **P 21 13 26.3 -0.6**
comp=Z,4.4nm,0.8s,baz=126,slow=9.3,SNR=14
BRVK Borovoye 60.03 327⇓ *i*P **P 21 13 27.0 -0.4**
BRVK pmax pmax
comp=Z,44nm,1.0s
BRVK Borovoye 60.03 327 *e*P **P 21 13 27.1 -0.4**
comp=Z,28nm,1.0s
ZRNK Zerenda 60.69 326 *i*P **P 21 13 30.7 -1.2**
ZRNK pmax pmax
comp=Z,15nm,0.9s
ZRNK Zerenda 60.69 326 *e*P **P 21 13 31.3 -0.6**
comp=Z,44nm,1.5s
TIXI Tiksi 62.06 2 P **P 21 13 39.7 -1.1**
comp=Z,15nm,0.9s,baz=171,slow=4.1,SNR=15
TIXI Tiksi 62.06 2*d i*P **P 21 13 39.5 -1.3**
TIXI pmax pmax
comp=Z,26nm,1.2s
TIXI Tiksi 62.06 2 *e*P **P 21 13 39.1 -1.7**
comp=Z,27nm,0.9s
NRIK Noril'sk 63.66 347 P **P 21 13 50.6 -1.0**
comp=Z,20nm,0.8s,baz=133,slow=6.1,SNR=20
GEYT Alibeck 63.77 307 P **P 21 13 53.0 +0.1**
comp=Z,16nm,1.2s,baz=108,slow=3.3,SNR=11
UOSS Minazif 64.34 293 *e*P **P 21 13 54.5 -2.4**
comp=Z,58nm,1.6s
AB31 Akbulak array 64.79 320 *i*P **P 21 13 58.4 -0.9**
AB31 pmax pmax
comp=Z,8.0nm,0.7s
ABKAR Akbulak array 64.79 320 *e*P **P 21 13 58.8 -0.5**
comp=Z,100nm,0.8s
BILL Bilibino 65.08 17*c i*P **P 21 14 00.6 -0.2**
BILL pmax pmax
comp=Z,22nm,0.9s
BILL Bilibino 65.08 17 *e*P **P 21 14 00.2 -0.6**
comp=Z,22nm,0.8s
AKTO Aktyubinsk 66.29 321 P **P 21 14 08.0 -1.1**
comp=Z,8.7nm,0.8s,baz=95,slow=6.7,SNR=20
AKTO Aktyubinsk 66.29 321 *i*P **P 21 14 06.9 -2.1**
AKTO pmax pmax
comp=Z,15nm,0.9s
SVE Sverdlovsk 66.62 328 *e*P **P 21 14 10.6 -0.4**
SVE pmax pmax
comp=Z,32nm,1.0s
ARU Arti 67.59 327 P **P 21 14 15.7 -1.4**
comp=Z,5.4nm,0.8s,baz=84,slow=2.0,SNR=8.4
ARU Arti 67.59 327*d i*P **P 21 14 16.0 -1.1**
ARU 21 14 43.1
ARU 21 16 45.0
ARU S **S 21 23 13.4 -0.5**
ARU SS **SS 21 27 29.9 -4.6**
ARU pmax pmax
comp=Z,31nm,2.5s
ARU Arti 67.59 327 *e*P **P 21 14 16.0 -1.1**
comp=Z,13nm,0.9s
THZ Tophouse 69.07 142 *e*P **P 21 14 25.6 -1.2**
comp=Z,319nm,1.9s
GROC Groznyy 73.60 312 *e*P **P 21 14 54.6 +0.5**
GROC pmax pmax
comp=Z,27nm,1.1s
GNI Garni 74.32 309 P **P 21 15 00.5 +1.9**
comp=Z,2.7nm,0.4s,baz=150,slow=4.5,SNR=7.3
GNI Garni 74.32 309⇑ *e*P **P 21 15 00.9 +2.3**
GNI pmax pmax
comp=Z,188nm,2.5s
GNI Garni 74.32 309 *e*P **P 21 15 01.0 +2.3**
ZEI Tsey 74.98 312 *e*P **P 21 15 01.4 -1.0**
ZEI pmax pmax
comp=Z,64nm,1.4s
NCK Nalchik 75.21 312⇓ *e*P **P 21 15 04.4 +0.9**
NCK pmax pmax
comp=Z,7.0nm,1.0s
GOF Gofitskoye 75.63 314⇑ *e*P P 21 15 16.8 +11
GOF pmax pmax
comp=Z,18nm,0.9s
KBZ Khabaz 75.72 313 P **P 21 15 05.8 -0.5**
comp=Z,5.9nm,1.0s,baz=77,slow=6.2,SNR=7.2
KBZ Khabaz 75.72 313 P **P 21 15 05.9 -0.5**
KBZ pmax pmax
comp=Z,7.0nm,1.1s
NEY Neytrino 75.85 312⇓ *e*P **P 21 15 08.3 +0.9**
NEY pmax pmax
comp=Z,8.0nm,1.8s
KVAR Kislovodsk Arr 75.87 313 P **P 21 15 07.5 +0.1**
comp=Z,9.1nm,0.9s,baz=311,slow=3.6,SNR=5.5
KIV Kislovodsk 75.87 313 *e*P **P 21 15 07.9 +0.5**
KIV pmax pmax
comp=Z,18nm,1.1s
KIV Kislovodsk 75.87 313 *e*P **P 21 15 07.7 +0.2**
comp=Z,38nm,0.9s
VRH Novokhopyorsk 76.62 320 *e*P **P 21 15 09.3 -2.0**
VRH pmax pmax
comp=Z,10.0nm,0.8s
TT01 Tatalina 77.67 28 *e*P **P 21 15 16.8 -0.2**
KLMR Klimovskoe 78.09 330 *e*P **P 21 15 17.6 -1.8**
KLMR *e* 21 15 26.5
KLMR pmax pmax
comp=Z,10.0nm,0.8s
VSR Storozhevoye 78.22 320 *e*P **P 21 15 18.6 -1.7**
VSR pmax pmax
comp=Z,20nm,1.2s
ABPO Ambohimpanom 79.25 248 *e*P **P 21 15 22.7 -4.1**
ABPO pmax pmax
comp=Z,40nm,1.4s
ABPO Ambohimpanom 79.25 248 *e*P **P 21 15 22.7 -4.1**
comp=Z,40nm,1.4s
CAST Castle Rocks 79.47 27 *e*P **P 21 15 26.6 -0.4**
comp=Z,20nm,1.2s
OBN Obninsk 79.69 324 *i*P **P 21 15 26.1 -2.2**
OBN pmax pmax
comp=Z,25nm,1.2s
BRLK Bradley Lake 80.13 31 *e*P **P 21 15 30.8 +0.2**
comp=Z,18nm,1.0s
SUA Susitna One 80.14 29 *e*P **P 21 15 29.8 -1.0**
comp=Z,14nm,0.8s
COLD Coldfoot 80.19 23 *e*P **P 21 15 31.2 +0.4**
comp=Z,12nm,1.0s
APA Apatity 80.70 337⇓ *i*P **P 21 15 36.5 +3.0**
APA *i* 21 15 45.2
APA *i*S **S 21 25 35.0 -6.0**
APA pmax pmax
comp=Z,5.0nm,1.1s
MCK McKinley 80.87 27 *e*P **P 21 15 33.9 -0.7**
MCK pmax pmax
comp=Z,20nm,1.0s
MCK McKinley 80.87 27 *e*P **P 21 15 33.9 -0.7**
comp=Z,20nm,1.0s
PMR Palmer 80.90 29 *e*P **P 21 15 33.7 -1.0**
PMR pmax pmax
comp=Z,10.0nm,0.7s
PMR Palmer 80.90 29 *e*P **P 21 15 33.7 -1.0**
comp=Z,9.5nm,0.7s
RND Reindeer 80.92 27 *e*P **P 21 15 34.0 -0.9**
RND pmax pmax
comp=Z,34nm,1.6s
RND Reindeer 80.92 27 *e*P **P 21 15 34.0 -0.9**
comp=Z,34nm,1.6s
WRH Wood River Hil 81.19 26 *e*P **P 21 15 36.3 +0.1**
comp=Z,7.4nm,1.0s
SML Sawmill 81.27 29 *e*P **P 21 15 36.2 -0.5**
SML pmax pmax
comp=Z,17nm,0.8s
SML Sawmill 81.27 29 *e*P **P 21 15 36.2 -0.5**
comp=Z,17nm,0.8s
CCB Clear Creek Bu 81.30 26 *e*P **P 21 15 36.4 -0.4**
comp=Z,5.1nm,0.9s
DHY Denali Highway 81.61 27 *e*P **P 21 15 38.6 0.0**
comp=Z,9.0nm,1.2s
IL1 Eielson Array 81.69 26 *e*P **P 21 15 37.1 -1.7**
ILAR Eielson Array 81.69 26 P **P 21 15 36.9 -1.9**
comp=Z,2.7nm,0.8s,baz=250,slow=4.9,SNR=24
ILB Eielson Array 81.69 26 *e*P **P 21 15 38.0 -0.8**
HDA Harding Lake 81.69 26 *e*P **P 21 15 37.9 -1.0**
comp=Z,9.4nm,0.8s
SCM Sheep Creek Mo 81.74 29 *e*P **P 21 15 39.5 +0.2**
SCM pmax pmax
comp=Z,20nm,1.0s
SCM Sheep Creek Mo 81.74 29 *e*P **P 21 15 39.5 +0.2**
comp=Z,20nm,1.0s
SIM Simferopol' 81.95 314 *e*P **P 21 15 40.9 +0.2**
SIM *e*S **S 21 25 58.0 +3.2**
SIM pmax pmax
comp=Z,95nm,1.1s
KLU Klutina 82.44 29 *e*P **P 21 15 43.2 +0.3**
comp=Z,7.8nm,0.9s
DIV Divide 82.55 29 *e*P **P 21 15 43.7 +0.1**
comp=Z,18nm,1.0s
BR101 Keskin Array S 82.86 309 *e*P **P 21 15 45.5 -0.2**
BR131 Keskin Array S 82.86 309 *e*P **P 21 15 45.7 0.0**
BRTR Keskin Array B 82.86 309 P **P 21 15 45.5 -0.2**
comp=Z,3.4nm,0.8s,baz=115,slow=4.7,SNR=13
DOT Dot Lake 83.04 27 *e*P **P 21 15 46.0 0.0**
comp=Z,17nm,1.0s
BMRM Bremner River 83.14 29 *e*P **P 21 15 46.9 +0.3**
comp=Z,17nm,1.0s
MENT Mentasta 83.29 27 *e*P **P 21 15 47.3 0.0**
comp=Z,6.3nm,0.8s
ARCES ARCESS Array B 83.38 339 P **P 21 15 47.1 -0.4**
comp=Z,10nm,0.9s,baz=90,slow=6.1,SNR=10
BR231 Keskin MP Arra 83.51 309 *e*P **P 21 15 45.7 -3.3**
CSS Mathiatis 83.68 304 *e*P **P 21 15 50.3 +0.4**
comp=Z,5.5nm,0.8s
SPA0 Spitsbergen Ar 83.83 348 *e*P **P 21 15 49.7 -0.1**
CRQM Cirque 83.88 29 *e*P **P 21 15 51.0 +0.5**
comp=Z,12nm,0.9s
EGAK Eagle 84.12 25 *e*P **P 21 15 52.0 +0.6**
comp=Z,9.3nm,0.9s
BALM Baldy 84.22 29 *e*P **P 21 15 53.9 +1.7**
BALM pmax pmax
comp=Z,23nm,1.4s
BALM Baldy 84.22 29 *e*P **P 21 15 53.9 +1.7**
comp=Z,23nm,1.4s
AKASG Malin Array Be 84.53 320 P **P 21 15 52.5 -1.3**
comp=Z,13nm,0.8s,baz=71,slow=4.7,SNR=21
AKBB Malin Array Si 84.53 320 *e*P **P 21 15 53.0 -0.8**
AKBB pmax pmax
comp=Z,31nm,0.9s
AKBB Malin Array Si 84.53 320 *e*P **P 21 15 53.0 -0.8**
comp=Z,31nm,0.9s
FIA1 FINESS Array S 84.54 331 *e*P **P 21 15 53.5 -0.1**
KIEV Kiev 84.54 320⇓ *e*P **P 21 15 52.7 -1.1**
KIEV pmax pmax
comp=Z,17nm,1.0s
KIEV Kiev 84.54 320 *e*P **P 21 15 51.8 -2.0**
comp=Z,32nm,1.0s
FIA0 FINESS Array S 84.54 331 *e*P **P 21 15 51.8 -1.8**
FIA0 FINESS Array S 84.54 331 *e*P **P 21 15 51.8 -1.8**
FINES FINESS Array B 84.54 331 P **P 21 15 51.8 -1.8**
comp=Z,4.2nm,0.9s,baz=72,slow=6.2,SNR=8.4
AK11 Malin Array Si 84.57 320 *e*P **P 21 15 52.7 -1.3**
VSU Vasula 84.73 328⇓ *i*P **P 21 15 53.6 -1.0**
VSU pmax pmax
comp=Z,58nm,0.9s
MICGM Minsk 84.75 324 *e* **P 21 15 55.0 +0.2**
MNK Minsk 84.75 324 *e*P **P 21 15 55.0 +0.2**
DAWY Dawson 85.01 26 *e*P **P 21 15 56.1 +0.1**
comp=Z,10nm,0.8s
KMBO Kilima Mbogo 85.28 268 P **P 21 15 57.8 -0.9**
comp=Z,2.1nm,0.7s,baz=292,slow=7.2,SNR=3.6
KMBO Kilima Mbogo 85.28 268 *e*P **P 21 15 57.8 -0.9**
comp=Z,10nm,1.0s
NACGM Naroch 85.31 325 *e* **P 21 15 57.0 -0.6**
SORM Soroca 85.49 318⇑ *i*P **P 21 15 57.3 -1.4**
SORM Soroca 85.49 318⇑P **P 21 15 57.3 -1.4**
TLCR 85.65 315⇑ *i*P **P 21 15 59.1 -0.4**
TLCR 85.65 315⇑P **P 21 15 59.1 -0.4**
TIRR Tirgusor 86.05 314⇑ *i*P **P 21 16 01.1 -0.4**
TIRR Tirgusor 86.05 314 *e*P **P 21 16 00.5 -1.0**
TIRR pmax pmax
comp=Z,18nm,1.0s
TIRR Tirgusor 86.05 314 *e*P **P 21 16 00.5 -1.0**
comp=Z,18nm,1.0s
CFR Carcaliu 86.12 315⇑ *i*P **P 21 16 01.5 -0.4**
CFR Carcaliu 86.12 315⇑P **P 21 16 01.5 -0.4**
INK Inuvik 86.28 21 P **P 21 16 01.8 -0.3**
comp=Z,16nm,0.8s,baz=288,slow=4.6,SNR=30
INK Inuvik 86.28 21 *e*P **P 21 16 01.8 -0.3**
comp=Z,24nm,1.0s
TLB Topalu 86.29 314⇑ *i*P **P 21 16 01.9 -0.8**
TLB Topalu 86.29 314⇑P **P 21 16 01.9 -0.8**
HARR Harsova 86.35 315⇓ *i*P **P 21 16 02.1 -0.9**
HARR Harsova 86.35 315⇓P **P 21 16 02.1 -0.9**
HYT Haines Junctio 86.58 29 *e*P **P 21 16 05.1 +1.1**
comp=Z,8.6nm,0.9s
GRER 86.90 315⇑ *i*P **P 21 16 06.3 +0.6**
TESR Tescani 86.91 317⇓ *i*P **P 21 16 05.1 -0.7**
PLOR Plostina 87.03 316⇑ *i*P **P 21 16 06.1 -0.3**
PLOR Plostina 87.03 316⇑P **P 21 16 06.1 -0.3**
PRAR RASCA 87.03 317⇓ *i*P **P 21 16 07.3 +0.9**
MLR Muntele Rosu 87.59 316 P **P 21 16 08.8 -0.5**
comp=Z,2.4nm,0.8s,baz=55,slow=1.6,SNR=16
MLR Muntele Rosu 87.59 316⇑ *i*P **P 21 16 09.1 -0.1**
MLR Muntele Rosu 87.59 316 *e*P **P 21 16 08.5 -0.7**
comp=Z,14nm,0.8s
MAW Mawson 87.81 199 P **P 21 16 08.6 -0.9**
comp=Z,0.8nm,0.3s,baz=19,slow=8.1,SNR=4.1
MAW Mawson 87.81 199 *e*P **P 21 16 08.6 -0.9**
comp=Z,1.5nm,0.8s
DOPR Dopca 87.87 316⇑ *i*P **P 21 16 10.1 -0.4**
SKAG Skagway 87.97 30 *e*P **P 21 16 13.4 +2.8**
comp=Z,10nm,1.0s
VOIR 88.22 316⇑ *i*P **P 21 16 11.3 -0.9**
VOIR 88.22 316⇑P **P 21 16 11.3 -0.9**
HUMR Humele 88.45 315⇑ *i*P **P 21 16 12.2 -1.0**
ARR Arges 88.52 316⇑ *i*P **P 21 16 13.0 -0.6**
KOLS Kolonicke sedl 89.28 319 *e*P **P 21 16 18.3 +1.3**
KOLS pmax pmax
comp=Z,16nm,1.7s
KOLS Kolonicke sedl 89.28 319 *e*P **P 21 16 18.3 +1.3**
DRGR 89.50 317⇑ *i*P **P 21 16 17.7 -0.5**
DRGR 89.50 317⇑P **P 21 16 17.7 -0.5**
CRVS Cervenica-Dubn 89.81 320 *e*P **P 21 16 19.1 -0.4**
CRVS Cervenica-Dubn 89.81 320 *e*P **P 21 16 19.1 -0.4**
STHS Stebnicka Huta 89.82 320 *e*P **P 21 16 20.0 +0.5**
STHS pmax pmax
comp=Z,3.0nm,0.9s
STHS Stebnicka Huta 89.82 320 *e*P **P 21 16 20.0 +0.5**
VNDA Vanda 89.86 172 *e*P **P 21 16 18.0 -1.0**
comp=Z,5.9nm,0.9s,baz=301,slow=6.5,SNR=14
VNDA Vanda 89.86 172 *e*P **P 21 16 18.6 -0.4**
VTS Vitosha 90.13 313⇑ *i*P **P 21 16 20.4 -0.8**
VTS Vitosha 90.13 313 *e*P **P 21 16 20.5 -0.8**
VTS pmax pmax
comp=Z,28nm,2.0s
VTS Vitosha 90.13 313 *e*P **P 21 16 20.5 -0.8**
comp=Z,28nm,2.0s
SIRR Siria 90.33 317⇑ *i*P **P 21 16 21.6 -0.4**
OJC Ojcow 90.52 321 *e*P **P 21 16 22.4 -0.3**
OJC pmax pmax
comp=Z,11nm,0.9s
OJC Ojcow 90.52 321 *e*P **P 21 16 22.4 -0.3**
comp=Z,11nm,0.9s
BZS Buzias 90.53 316⇑ *i*P **P 21 16 22.0 -0.9**
BZS Buzias 90.53 316⇑P **P 21 16 22.0 -0.9**
KECS Kecovo 90.54 319 *e*P **P 21 16 21.8 -1.1**
KECS pmax pmax
comp=Z,4.0nm,0.9s
KECS Kecovo 90.54 319 *e*P **P 21 16 21.8 -1.1**
DLBC Dease Lake 90.90 30 P **P 21 16 24.6 +0.2**
comp=Z,1.3nm,0.4s,baz=154,slow=6.4,SNR=4.1
DLBC Dease Lake 90.90 30 *e*P **P 21 16 24.6 +0.2**
comp=Z,32nm,2.0s
NB200 NORSAR Array S 91.53 333 *e*P **P 21 16 26.3 -1.0**
NOA NORSAR Array B 91.53 333 P **P 21 16 26.3 -1.0**
comp=Z,2.2nm,1.0s,baz=67,slow=4.6,SNR=3.5
VYHS Vyhne 91.60 320 *e*P **P 21 16 28.9 +1.1**
VYHS Vyhne 91.60 320 *e*P **P 21 16 28.9 +1.1**
KSP Ksiaz 92.47 322 P **P 21 16 34.0 +2.2**
KSP pmax pmax
comp=Z,10.0nm,2.5s
DPC Dobruska-Polom 92.61 322 *e*P **P 21 16 32.6 +0.1**
DPC Dobruska-Polom 92.61 322 *e*P **P 21 16 32.6 +0.1**
RES Resolute Bay 92.75 9 P **P 21 16 31.4 -1.1**
comp=Z,13nm,0.8s,baz=332,slow=6.2,SNR=5.1
RES Resolute Bay 92.75 9 *e*P **P 21 16 31.4 -1.1**
comp=Z,79nm,1.6s
VRAC Vranov 92.77 321 P **P 21 16 32.8 -0.4**
comp=Z,3.7nm,0.7s,baz=43,slow=4.8,SNR=6.6
VRAC Vranov 92.77 321⇓ *i*P **P 21 16 33.3 +0.1**
PDG Podgorica 93.00 314⇑ *i*P **P 21 16 33.0 -1.4**
PRU Pruhonice 93.81 322 P **P 21 16 39.2 +1.2**
PRU pmax pmax
comp=Z,2.0nm,1.0s
BRG Berggiesshubel 93.87 323 P **P 21 16 38.0 -0.2**
BRG pmax pmax
comp=Z,11nm,0.8s
CLL Collm 94.27 324 *e*P **P 21 16 39.0 -1.0**
CLL *i* 21 16 49.0
comp=Z,8.0nm,1.0s
CLL Collm 94.27 324 *e*P **P 21 16 39.0 -1.0**
CLL *i* 21 16 49.0
KHC Kasperske Hory 94.69 321 *e*P **P 21 16 41.8 -0.3**
KHC Kasperske Hory 94.69 321 *e*P **P 21 16 41.8 -0.3**
GERES GERESS Array B 94.72 321 P **P 21 16 41.3 -1.0**
comp=Z,1.1nm,0.7s,baz=72,slow=4.6,SNR=10.0
GEA0 GERESS Array S 94.72 321 *e*P **P 21 16 41.4 -0.9**
NKC Novy Kostel 94.98 323 *e*P **P 21 16 43.1 -0.3**
NKC Novy Kostel 94.98 323 *e*P **P 21 16 43.1 -0.3**
MOX Moxa 95.33 323 P **P 21 16 45.6 +0.7**
MOX pmax pmax
comp=Z,6.0nm,1.1s
YKA Yellowknife Ar 95.87 23 P **P 21 16 46.4 -0.7**
comp=Z,4.9nm,0.8s,baz=302,slow=4.4,SNR=15
YKB5 Yellowknife Ar 95.87 23 *e*P **P 21 16 46.4 -0.7**
SYO Syowa Base 96.34 201⇓ *e*P **P 21 16 50.0 +1.0**
DAVOX Davos/Dischmat 97.87 320 P **P 21 16 56.3 -0.5**
comp=Z,3.0nm,0.8s,baz=203,slow=21,SNR=4.0
ESK Eskdalemuir 100.97 332 P **Pdif 21 17 14.1 +3.9**
ESK pmax pmax
comp=Z,13nm,1.0s
PD31 Pinedale Array 109.62 38 *e*PKiKP **PKiKP 21 21 51.6 -0.6**
PDAR Pinedale Array 109.62 38 PKiKP **PKiKP 21 21 51.6 -0.6**
comp=Z,0.6nm,0.7s,baz=219,slow=2.3,SNR=3.2
T25A Trinidad 116.11 40 *e*PKPdf **PKPdf 21 22 05.8 +1.1**
ECSD EROS Data Cent 116.19 30 P **PKPdf 21 22 03.9 -0.5**
baz=316
ECSD EROS Data Cent 116.19 30 *e*PKPdf **PKPdf 21 22 04.0 -0.3**
H35A Sunnyside Ranc 116.35 29 P **PKPdf 21 22 04.0 -0.6**
baz=318
TOA0 Torodi Ar. Sit 116.81 290 *e*PKPdf **PKPdf 21 22 05.2 -1.1**
TORD Torodi Ar. Bea 116.81 290 PKP **PKPdf 21 22 04.4 -1.8**
comp=Z,1.6nm,0.9s,baz=36,slow=1.0,SNR=5.4
TOA1 Torodi Ar. Sit 116.81 290 *e*PKPdf **PKPdf 21 22 04.4 -1.8**
H36A Jessenland, He 116.86 28 P **PKPdf 21 22 05.3 -0.3**
baz=319
I37A Lemond, Waseca 117.54 28 P **PKPdf 21 22 05.4 -1.5**
baz=320
J36A Seneca 1, Swea 117.61 29 P **PKPdf 21 22 06.1 -1.0**
baz=318
P32A Huiting Farm, 118.02 35 P **PKPdf 21 22 06.5 -1.5**
baz=313
K36A Gilmore City 118.07 30 P **PKPdf 21 22 07.2 -0.8**
baz=318
K37A Belmond 118.37 29 P **PKPdf 21 22 07.5 -1.1**
baz=319
MNTX Cornudas Mount 118.61 46 *e*PKPdf **PKPdf 21 22 09.9 +0.5**
J39A Decorah 118.84 28 P **PKPdf 21 22 08.0 -1.5**
baz=321
Q33A Connelly Farm, 118.88 35 P **PKPdf 21 22 09.0 -0.7**
baz=314
P34A Walnut Farm, R 119.06 34 P **PKPdf 21 22 08.8 -1.2**
baz=315
K39A Oelwein 119.25 28 P **PKPdf 21 22 08.7 -1.5**
baz=321
K40A Colesburg 119.60 28 P **PKPdf 21 22 09.9 -1.1**
baz=322
L39A Vinton 119.64 29 P **PKPdf 21 22 10.0 -1.0**
baz=320
JFWS Jewell Farm 119.84 27 *e*PKIKP **PKPdf 21 22 10.8 -0.6**
JFWS Jewell Farm 119.84 27 *e*PKPdf **PKPdf 21 22 10.8 -0.6**
Q35A Mercer Eighty, 119.98 34 P **PKPdf 21 22 10.7 -1.2**
baz=315
K41A Shullsburg 120.05 27 P **PKPdf 21 22 10.6 -1.2**
baz=322
L40A Anamosa 120.06 28 P **PKPdf 21 22 10.7 -1.2**
baz=321
N39A Derby Farms, D 120.35 30 P **PKPdf 21 22 11.4 -1.0**
baz=319
P37A Lathrop 120.37 32 P **PKPdf 21 22 11.6 -0.9**
baz=317
S35A Otter Creek Ra 120.65 35 P **PKPdf 21 22 12.2 -0.9**
baz=314
R36A Gordon, Harris 120.66 34 P **PKPdf 21 22 12.1 -1.1**
baz=316
P38A Dawn 120.77 32 P **PKPdf 21 22 12.4 -0.9**
baz=318
O39A Kirksville 120.80 31 P **PKPdf 21 22 12.6 -0.7**
baz=319
S36A Lake Cedric, C 121.03 35 P **PKPdf 21 22 12.9 -0.9**
baz=315
T35A Sooner Cattle 121.07 36 P **PKPdf 21 22 13.0 -0.9**
baz=314
TX31 Lajitas Ar. Si 121.15 47 *e*PKPdf **PKPdf 21 22 14.2 -0.2**
TX31 *e*PKPdf **PKiKP 21 22 14.6 0.0**
LTX Lajitas 121.15 47 *e*PKIKP **PKPdf 21 22 13.7 -0.8**
LTX Lajitas 121.15 47 *e*PKPdf **PKPdf 21 22 13.7 -0.8**
TXAR Lajitas Array 121.15 47 PKP **PKPdf 21 22 13.7 -0.8**
comp=Z,3.4nm,0.8s,baz=247,slow=0.8,SNR=22
WMOK Wichita Mounta 121.17 39 P **PKPdf 21 22 13.3 -0.9**
baz=311
WMOK Wichita Mounta 121.17 39 *e*PKIKP **PKPdf 21 22 13.9 -0.3**
WMOK Wichita Mounta 121.17 39 *e*PKPdf **PKPdf 21 22 13.9 -0.3**
Q38A Cooks Store, C 121.21 32 P **PKPdf 21 22 13.1 -1.0**
baz=318
O40A La Belle 121.24 30 P **PKPdf 21 22 13.0 -1.2**
baz=320
P39B Salisbury 121.27 31 P **PKPdf 21 22 13.2 -1.1**
baz=319
T36A Boggs Farm, Ca 121.34 35 P **PKPdf 21 22 13.4 -1.0**
baz=315
S37A Fort Scott 121.43 34 P **PKPdf 21 22 13.5 -1.1**
baz=316
Q39A Willow Grove F 121.49 32 P **PKPdf 21 22 13.7 -1.0**
baz=318
P40A Paris 121.60 31 P **PKPdf 21 22 13.9 -1.0**
baz=319
R38A Fenwick Farm, 121.63 33 P **PKPdf 21 22 14.1 -0.9**
baz=317
O41A Passleys Farm, 121.73 30 P **PKPdf 21 22 14.2 -0.9**
baz=321
T37A Cheneyville 18 121.84 35 P **PKPdf 21 22 14.6 -0.8**
baz=316
P41A Barry, Barry 121.98 30 P **PKPdf 21 22 14.8 -0.8**
baz=320
Q40A Laux Farm, Aux 121.99 31 P **PKPdf 21 22 15.0 -0.6**
baz=316
R39A Chumby, Stover 122.00 32 P **PKPdf 21 22 14.8 -0.9**
baz=318
S38A Stockton 122.03 34 P **PKPdf 21 22 14.7 -1.0**
baz=317
U37A Salina 122.23 35 P **PKPdf 21 22 15.9 -0.2**
baz=315
T38A Diamond 122.25 34 P **PKPdf 21 22 15.3 -0.9**
baz=316
S39A Bolivar 122.30 33 P **PKPdf 21 22 15.4 -0.9**
baz=317

R40A	**Maddies Statio**	**122.42**	**32**	P	**PKPdf**	**21 22 15.6**	**-0.9**
	baz=319						
W36A	**Wetumka**	**122.46**	**37**	P	**PKPdf**	**21 22 16.2**	**-0.5**
	baz=313						
X35A	**Drake**	**122.52**	**38**	P	**PKPdf**	**21 22 16.7**	**-0.1**
	baz=312						
V37A	**Hulbert**	**122.59**	**36**	P	**PKPdf**	**21 22 16.4**	**-0.5**
	baz=315						
U38A	**Gravette**	**122.62**	**35**	P	**PKPdf**	**21 22 16.1**	**-0.9**
	baz=316						
T39A	**Clever**	**122.76**	**34**	P	**PKPdf**	**21 22 16.7**	**-0.5**
	baz=317						
X36A	**Centrahoma**	**122.78**	**38**	P	**PKPdf**	**21 22 16.6**	**-0.7**
	baz=313						
S40A	**Lebanon**	**122.81**	**33**	P	**PKPdf**	**21 22 16.4**	**-0.9**
	baz=318						
W37B	**Quinton**	**122.94**	**37**	P	**PKPdf**	**21 22 17.2**	**-0.4**
	baz=314						
HHAR	**Hobbs**	**122.99**	**35**	*e*PKPdf	**PKPdf**	**21 22 17.0**	**-0.7**
V38A	**Canehill**	**123.02**	**35**	P	**PKPdf**	**21 22 16.7**	**-1.0**
	baz=316						
134A	**White-Moore Ra**	**123.02**	**41**	P	**PKPdf**	**21 22 17.4**	**-0.4**
	baz=310						
T40A	**Mansfield**	**123.13**	**33**	P	**PKPdf**	**21 22 16.9**	**-1.0**
	baz=318						
U39A	**Green Forest**	**123.17**	**34**	P	**PKPdf**	**21 22 17.0**	**-1.1**
	baz=317						
JCT	**Junction City**	**123.20**	**44**	P	**PKPdf**	**21 22 17.9**	**-0.4**
	baz=308						
JCT	**Junction City**	**123.20**	**44**	*e*PKIKP	**PKPdf**	**21 22 18.5**	**+0.2**
JCT	**Junction City**	**123.20**	**44**	*e*PKPdf	**PKPdf**	**21 22 18.5**	**+0.2**
Q43A	**New Douglas**	**123.22**	**30**	P	**PKPdf**	**21 22 17.4**	**-0.6**
	baz=322						
S41A	**Jillco Farms,**	**123.22**	**32**	P	**PKPdf**	**21 22 17.3**	**-0.8**
	baz=319						
333A	**Richland Sprin**	**123.23**	**42**	P	**PKPdf**	**21 22 17.6**	**-0.7**
	baz=309						
Y36A	**Durant**	**123.27**	**38**	P	**PKPdf**	**21 22 17.8**	**-0.4**
	baz=313						
X37A	**Clayton**	**123.35**	**37**	P	**PKPdf**	**21 22 18.1**	**-0.3**
	baz=314						
234A	**Clairette**	**123.35**	**41**	P	**PKPdf**	**21 22 18.3**	**-0.2**
	baz=310						
135A	**Vickery Place,**	**123.46**	**40**	P	**PKPdf**	**21 22 18.5**	**-0.1**
	baz=311						
V39A	**Pettigrew**	**123.47**	**35**	P	**PKPdf**	**21 22 17.5**	**-1.2**
	baz=316						
433A	**Art**	**123.51**	**43**	P	**PKPdf**	**21 22 18.3**	**-0.5**
	baz=309						
W38A	**Poteau**	**123.52**	**36**	P	**PKPdf**	**21 22 18.5**	**-0.2**
	baz=315						
U40A	**Yellville**	**123.54**	**34**	P	**PKPdf**	**21 22 17.8**	**-0.9**
	baz=317						
T41A	**Mountain View**	**123.62**	**33**	P	**PKPdf**	**21 22 18.3**	**-0.5**
	baz=319						
X38A	**Whitesboro**	**123.62**	**37**	P	**PKPdf**	**21 22 18.7**	**-0.2**
	baz=315						
334A	**Lometa**	**123.72**	**42**	P	**PKPdf**	**21 22 18.7**	**-0.5**
	baz=310						
WHTX	**Lake Whitney,**	**123.80**	**41**	P	**PKPdf**	**21 22 19.0**	**-0.3**
	baz=311						
W39A	**Magazine**	**123.85**	**35**	P	**PKPdf**	**21 22 18.4**	**-0.9**
	baz=316						
V40A	**Witts Springs**	**123.95**	**34**	P	**PKPdf**	**21 22 18.7**	**-0.9**
	baz=317						
434A	**Burnet**	**124.02**	**42**	P	**PKPdf**	**21 22 19.2**	**-0.6**
	baz=310						
U41A	**Viola**	**124.05**	**33**	P	**PKPdf**	**21 22 18.9**	**-0.8**
	baz=318						
S43A	**Fulton Ridge,**	**124.09**	**31**	P	**PKPdf**	**21 22 18.6**	**-1.1**
	baz=320						
X39A	**Fountain Ranch**	**124.15**	**36**	P	**PKPdf**	**21 22 19.9**	**-0.1**
	baz=315						
Y38A	**Idabel**	**124.19**	**37**	P	**PKPdf**	**21 22 19.2**	**-0.8**
	baz=314						
V41A	**Mountainview**	**124.34**	**34**	P	**PKPdf**	**21 22 19.4**	**-0.9**
	baz=318						
534A	**Blanco**	**124.38**	**43**	P	**PKPdf**	**21 22 20.2**	**-0.4**
	baz=309						
832A	**Faith Ranch, C**	**124.40**	**46**	P	**PKPdf**	**21 22 21.3**	**+0.7**
	baz=307						
SIUC	**Southern Illin**	**124.41**	**30**	*e*PKPdf	**PKPdf**	**21 22 20.4**	**+0.1**
U42A	**Revenden**	**124.41**	**33**	P	**PKPdf**	**21 22 19.5**	**-0.9**
	baz=319						
MIAR	**Mount Ida**	**124.44**	**36**	P	**PKPdf**	**21 22 20.7**	**+0.3**
	baz=316						
MIAR	**Mount Ida**	**124.44**	**36**	*e*PKIKP	**PKPdf**	**21 22 21.1**	**+0.7**
MIAR	**Mount Ida**	**124.44**	**36**	*e*PKPdf	**PKPdf**	**21 22 21.1**	**+0.7**
PBMO	**Poplar Bluff**	**124.52**	**32**	*e*PKPdf	**PKPdf**	**21 22 20.0**	**-0.6**
X201	**Greenbrier Sit**	**124.58**	**34**	*e*PKPdf	**PKPdf**	**21 22 20.8**	**0.0**
X301	**Greenbrier Sit**	**124.60**	**34**	*e*PKPdf	**PKPdf**	**21 22 20.9**	**+0.2**
W41B	**Gary Mavity, V**	**124.74**	**34**	P	**PKPdf**	**21 22 19.8**	**-1.2**
	baz=317						
V42A	**Cord**	**124.74**	**33**	P	**PKPdf**	**21 22 20.1**	**-0.9**
	baz=318						
ACSO	**Alum Creek Sta**	**125.12**	**24**	*e*PKPdf	**PKPdf**	**21 22 20.9**	**-0.7**
M54A	**Oil Creek Stat**	**125.22**	**20**	P	**PKPdf**	**21 22 21.2**	**-0.6**
	baz=333						
337A	**Centerville**	**125.25**	**40**	P	**PKPdf**	**21 22 21.4**	**-0.8**
	baz=312						
933A	**Laredo**	**125.30**	**46**	P	**PKPdf**	**21 22 23.0**	**+0.7**
	baz=307						
WCI	**Wyandotte Cave**	**125.39**	**28**	*e*PKIKP	**PKPdf**	**21 22 22.5**	**+0.2**
WCI	**Wyandotte Cave**	**125.39**	**28**	*e*PKPdf	**PKPdf**	**21 22 22.5**	**+0.2**
N54A	**Moraine State**	**125.60**	**21**	P	**PKPdf**	**21 22 21.2**	**-1.3**
	baz=333						
636A	**Smothers Creek**	**125.68**	**43**	P	**PKPdf**	**21 22 24.4**	**+1.4**
	baz=310						
BINY	**Binghamton**	**125.74**	**17**	*e*PKPdf	**PKPdf**	**21 22 22.9**	**+0.1**
034A	**Hebbronville**	**126.05**	**46**	P	**PKPdf**	**21 22 25.0**	**+1.2**
	baz=307						
SSPA	**Standing Stone**	**126.59**	**19**	*e*PKPdf	**PKPdf**	**21 22 24.3**	**-0.1**
O56A	**Blue Knob Stat**	**126.70**	**20**	P	**PKPdf**	**21 22 24.8**	**+0.1**
	baz=334						
341A	**Kurthwood**	**126.94**	**38**	P	**PKPdf**	**21 22 26.0**	**+0.6**
	baz=314						
N59A	**State Game Lan**	**126.98**	**17**	P	**PKPdf**	**21 22 25.2**	**0.0**
	baz=338						
Y46A	**Houston**	**127.55**	**33**	P	**PKPdf**	**21 22 26.2**	**-0.3**
	baz=320						
MVL	**Millersville**	**127.66**	**18**	*e*PKPdf	**PKPdf**	**21 22 27.1**	**+0.7**
PSUB	**Penn St. - Bra**	**127.99**	**17**	*e*PKPdf	**PKPdf**	**21 22 27.0**	**-0.1**
Y47A	**UCPARC, Winfie**	**128.07**	**32**	P	**PKPdf**	**21 22 26.9**	**-0.6**
	baz=321						
Z48A	**Northport**	**128.63**	**32**	P	**PKPdf**	**21 22 28.0**	**-0.5**
	baz=321						
LRAL	**Lakeview Retre**	**129.19**	**32**	*e*PKPdf	**PKPdf**	**21 22 30.0**	**+0.4**
JSRW	**J. Sargeant Re**	**129.25**	**21**	*e*PKPdf	**PKPdf**	**21 22 29.8**	**+0.3**
JSC	**Jenkinsville**	**130.91**	**26**	*e*PKIKP	**PKPdf**	**21 22 34.4**	**+1.5**
JSC	**Jenkinsville**	**130.91**	**26**	*e*PKPdf	**PKPdf**	**21 22 34.4**	**+1.5**
PLCA	**Paso Flores**	**147.04**	**162**	PKPbc	**PKPbc**	**21 23 04.3**	**+0.3**
	comp=Z,39nm,0.8s,baz=228,slow=3.2,SNR=31						
PLCA	**Paso Flores**	**147.04**	**162**	*e*PKPdf	**PKPbc**	**21 23 04.5**	**+0.5**
SDDR	**Presa de Saban**	**148.54**	**25**	*e*PKPbc	**PKPbc**	**21 23 08.7**	**+0.1**
SJG	**San Juan**	**151.17**	**17**	*e*PKIKP	**PKPbc**	**21 23 14.6**	**-0.4**
SJG	**San Juan**	**151.17**	**17**	*e*PKPbc	**PKPbc**	**21 23 14.6**	**-0.4**
HUMP	**Col San Antoni**	**151.22**	**16**	*e*PKPbc	**PKPbc**	**21 23 14.4**	**-0.7**
STVI	**Saint Thomas**	**151.26**	**14**	*e*PKPbc	**PKPbc**	**21 23 15.1**	**-0.1**
TRQA	**Tornquist**	**151.48**	**173**	*e*PKPbc	**PKPbc**	**21 23 14.8**	**-0.4**
SDV	**Santo Domingo**	**157.53**	**35**	*e*PKPdf	**PKPdf**	**21 23 18.6**	**+0.2**
ATAH	**Atahualpa**	**159.40**	**85**	PKP	**PKPdf**	**21 23 21.5**	**+0.6**
	comp=Z,8.5nm,0.8s,baz=185,slow=6.8,SNR=4.0						
NNA	**Nana**	**161.08**	**99**	PKP	**PKPdf**	**21 23 23.0**	**+0.7**
	comp=Z,5.5nm,0.5s,baz=212,slow=3.4,SNR=4.3						
NNA	**Nana**	**161.08**	**99**	PKIKP	**PKPdf**	**21 23 23.0**	**+0.7**
NNA				pmax	pmax		
	comp=Z,6.0nm,0.5s						
CPUP	**Villa Florida**	**163.42**	**181**	PKP	**PKPdf**	**21 23 24.2**	**0.0**
	comp=Z,1.6nm,0.9s,baz=260,slow=4.5,SNR=3.1						
PB11	**IPOC Station P**	**164.72**	**132**	*e*PKPdf	**PKPdf**	**21 23 26.3**	**+0.5**
LPAZ	**La Paz**	**167.91**	**124**	PKP	**PKPdf**	**21 23 29.4**	**+0.4**
	comp=Z,4.2nm,0.9s,baz=81,slow=1.4,SNR=12						
LPAZ	**La Paz**	**167.91**	**124**	*e*PKPdf	**PKPdf**	**21 23 29.8**	**+0.8**
SAML	**Samuel**	**174.56**	**83**	*e*PKPdf	**PKPdf**	**21 23 31.5**	**-0.1**

GUC 11 21:04:23.0±0.4,19°52S×69°40W,h100km±2km, ML4.3, 6C-2D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
					Op	ISC	h	m	s	ISC
PB11	**IPOC Station P**	**0.34**	**225**	↑	*e*P	Pn	21	04	38.4	+0.4
PB11					*e*S	Sn	21	04	50.1	+0.8
MNMC	**Minye Minye**	**0.42**	**334**	↓	*e*P	Pn	21	04	39.0	+0.3
MNMC					*e*S	Sn	21	04	50.7	+0.3
PB08	**IPOC Station P**	**0.66**	**159**	↓	*e*P	Pn	21	04	41.3	+0.7
PB08					*e*S	Sn	21	04	54.9	+1.1
PB08					IAML		21	04	56.1	
	comp=E,10μm,0.2s									
PSGC	**Pisagua**	**0.69**	**263**	↑	*e*P	Pn	21	04	40.7	+0.2
PSGC					*e*S	Sn	21	04	54.3	+0.7
HMBC	**Humberstone**	**0.89**	**211**	↑	*e*P	Pn	21	04	42.7	+0.3
HMBC					*e*S	Sn	21	04	57.8	+0.8
PB13	**IPOC Station P**	**1.18**	**355**		*e*P	Pn	21	04	46.6	+0.5
PB13					*e*S	Sn	21	05	04.0	+0.6
PB13					IAML		21	05	05.6	
	comp=E,11μm,0.3s									
PB12	**IPOC Station P**	**1.25**	**316**	↑	*e*P	Pn	21	04	46.2	-0.3
PB12					*e*S	Sn	21	05	03.8	-0.3
PB12					IAML		21	05	05.5	
	comp=N,6μm,0.3s									
PB01	**IPOC Station P**	**1.52**	**183**	↑	*e*P	Pn	21	04	50.2	+0.5
PB01					*e*S	Sn	21	05	11.2	+1.3
PB09	**IPOC Station P**	**2.27**	**176**	↑	*e*P	Pn	21	05	00.3	+1.0

IDC ***11*** *21:04:36.1±0.3,9.°51N×122.°26E,h0km,mb4.9/43, mb1 5.0/43,mb1mx4.9/55,mbtmp4.9/43,Error ellipse: s-maj=15.4km s-min=8.9km az=75.0*

ISCJB ***11*** *21:04:38.0±1.6,9.°46N±0.°03×122.°19E±0.°03,h21km±11km, mb5.0/86,Error ellipse: s-maj=5.6km s-min=5.1km az=156.8*

NEIC ***11*** *21:04:37.6±0.1,9.°50N×122.°23E,h10km,mb5.3/22,Error ellipse: s-maj=5.4km s-min=3.7km az=78.0*

MOS ***11*** *21:04:39.2±0.8,9.°52N×122.°28E,h33km,mb5.3/50,Error ellipse: s-maj=15.0km s-min=7.6km az=105.8*

ISC 11 21:04:38.8±0.7,9.°57N±0.°03×122.°20E±0.°04,h17km±3km, n322,σ1°13/337,mb5.2/89,36C-14D,Negros

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
					Op	ISC	h	m	s	ISC
TBP	**Tagbilaran**	**1.65**	**86**	↑	*e*P	**Pg**	**21**	**05**	**09.8**	**-0.7**
LLP	**Lapu-Lapu**	**1.90**	**67**		*e*P	**Pb**	**21**	**05**	**13.2**	**+0.2**
LLP					*e*S	**Sg**	**21**	**05**	**38.6**	**-1.3**
RCP	**Roxas**	**2.05**	**15**	↓	*e*P	**Pg**	**21**	**05**	**17.4**	**-0.7**
KALP	**Kalibo**	**2.10**	**4**		*e*P	**Sn**	**21**	**05**	**34.4**	**-4.6**
CGP	**Cagayan de Oro**	**2.71**	**114**	↑	*e*P	**Pn**	**21**	**05**	**23.1**	**+1.5**
CGP					*e*S	**Sn**	**21**	**05**	**54.5**	**+0.6**
CTBH	**Cotabato--PC H**	**3.09**	**139**	↑	*i*P	**Pb**	**21**	**05**	**32.9**	**-0.5**
CTBH					*i* S	**Sb**	**21**	**06**	**12.1**	**+1.1**
PLP	**Palo**	**3.16**	**60**	↓	*e*P	**Pn**	**21**	**05**	**29.6**	**+1.7**
PLP					*e*S	**Sn**	**21**	**06**	**07.0**	**+1.7**
KKM	**Kota Kinabalu**	**6.88**	**240**		*e*Pn	**Pn**	**21**	**06**	**18.9**	**-0.2**
BCPH	**Baguio City Da**	**6.95**	**347**	↓	*e*P	**Pn**	**21**	**06**	**23.8**	**+3.6**
LUWI	**Luwuk**	**10.56**	**177**		*e*Pn	**Pn**	**21**	**07**	**09.7**	**+0.2**
SBUM	**Sibu**	**12.18**	**235**		*e*Pn	**Pn**	**21**	**07**	**31.6**	**-0.1**
TWG	**Pinlang**	**13.22**	**355**		*e*Pn	**Pn**	**21**	**07**	**45.6**	**-0.3**
TPUB	**Ta-pu**	**13.73**	**354**		*e*Pn	**Pn**	**21**	**07**	**55.0**	**+2.0**
YULB	**Yu-li**	**13.77**	**357**		*e*Pn	**Pn**	**21**	**07**	**51.2**	**-2.2**
KAPI	**Kappang**	**14.69**	**190**		Pn	**P**	**21**	**08**	**14.1**	**+1.9**
	0.7nm,0.3s,baz=356,slow=13,SNR=3.0									
FAKI	**Fak Fak**	**15.95**	**141**		*e*Pn	**Pn**	**21**	**08**	**23.6**	**+1.0**
	312nm,1.4s									
JOW	**Kunigami**	**18.11**	**18**		*e*Pn	**Pn**	**21**	**08**	**45.2**	**-4.5**
	70nm,1.2s									
SAUI	**Saumlaki**	**19.66**	**152**		*e*P	**P**	**21**	**09**	**05.3**	**-1.7**
	370nm,0.8s									
UGM	**Wanagama**	**20.90**	**214**		*e*P	**P**	**21**	**09**	**17.9**	**-2.7**
	760nm,2.0s									
IPM	**Ipoh**	**21.61**	**258**		*e*P	**P**	**21**	**09**	**28.8**	**+0.6**
	62nm,1.2s									
KULM	**Kulim**	**21.78**	**260**		*e*P	**P**	**21**	**09**	**30.1**	**0.0**
	49nm,1.2s									
JAY	**Jayapura**	**22.00**	**122**		P	**P**	**21**	**09**	**32.5**	**-0.1**
	0.7nm,0.8s,baz=270,slow=20,SNR=1.8									
GUMO	**Guam**	**22.56**	**78**		P	**P**	**21**	**09**	**40.5**	**+2.0**
	37nm,0.6s,baz=246,slow=18,SNR=2.7									
ANA2	**Anatahan**	**23.87**	**71**		*e*P	**P**	**21**	**09**	**52.1**	**+0.4**
MTN	**Manton Dam**	**23.97**	**158**		*e*P	**P**	**21**	**09**	**51.0**	**-1.6**
	238nm,1.8s									
PSI	**Prapat**	**24.08**	**255**		P	**P**	**21**	**09**	**54.3**	**+0.5**
	21nm,0.8s,baz=85,slow=5.8,SNR=3.7									
CM31	**Chiang Mai Arr**	**24.20**	**294**		*e*P	**P**	**21**	**09**	**55.1**	**+0.3**
CMAR	**Chiang Mai Arr**	**24.20**	**294**		P	**P**	**21**	**09**	**55.1**	**+0.3**
	6.7nm,1.0s,baz=116,slow=8.2,SNR=3.2									
JNU	**Nakatsue**	**24.77**	**18**		P	**P**	**21**	**10**	**00.5**	**+0.7**
	8.0nm,0.8s,baz=169,slow=15,SNR=3.2									
JNU					PcP	**PcP**	**21**	**13**	**36.4**	**-0.1**
	6.1nm,0.7s,baz=64,slow=2.5,SNR=4.6									
GSI	**Gunungsitoli**	**25.83**	**253**		*e*P	**P**	**21**	**10**	**09.3**	**-0.3**
	149nm,1.3s									
FITZ	**Fitzroy Crossi**	**27.71**	**173**		P	**P**	**21**	**10**	**24.9**	**-1.5**
	12nm,1.0s,baz=23,slow=7.0,SNR=5.1									
KS15	**Wonju Array Si**	**28.22**	**10**		*e*P	**P**	**21**	**10**	**31.6**	**+0.8**
KSAR	**Wonju Array Be**	**28.22**	**10**		P	**P**	**21**	**10**	**31.7**	**+0.8**
KSAR							21	13	45.1	
KSAR	**Wonju Array Be**	**28.22**	**10**		P	**P**	**21**	**10**	**31.6**	**+0.8**
KSAR					PcP	**PcP**	**21**	**13**	**45.1**	**+0.8**
KSRS	**Korea Array**	**28.24**	**10**		P	**P**	**21**	**10**	**31.6**	**+0.7**
	8.0nm,0.8s,baz=181,slow=10,SNR=7.2									
KSRS					PcP	**PcP**	**21**	**13**	**45.1**	**+0.8**
	2.9nm,0.7s,baz=192,slow=2.4,SNR=6.2									
MBWA	**Marble Bar**	**30.63**	**185**		*e*P	**P**	**21**	**10**	**52.1**	**-0.3**
	112nm,1.6s									
COEN	**Coen**	**31.30**	**138**		*e*P	**P**	**21**	**10**	**56.3**	**-2.1**
	25nm,1.1s									
WRAB	**Tennant Creek**	**31.67**	**158**		*ce*P	**P**	**21**	**11**	**00.3**	**-1.3**
WRAB					pmax	pmax				
	comp=Z,79nm,1.2s									
WRAB	**Tennant Creek**	**31.67**	**158**		*e*P	**P**	**21**	**10**	**59.7**	**-1.9**
	comp=Z,35nm,1.0s									
WR1	**Warramunga Arr**	**31.67**	**158**		*e*P	**P**	**21**	**11**	**00.2**	**-1.4**
	comp=Z,49nm,1.1s									
WRA	**Warramunga Arr**	**31.67**	**158**		P	**P**	**21**	**11**	**00.2**	**-1.4**
	comp=Z,24nm,1.0s,baz=342,slow=9.3,SNR=8.1									
WRA					PcP	**PcP**	**21**	**13**	**52.9**	**-0.6**
	comp=Z,22nm,0.8s,baz=340,slow=3.1,SNR=19									
WB2	**Warramunga Arr**	**31.68**	**158**		*e*P	**P**	**21**	**10**	**59.7**	**-1.9**
	comp=Z,30nm,0.9s									
WC3	**Warramunga Arr**	**31.70**	**158**		*e*P	**P**	**21**	**11**	**00.7**	**-1.1**
	comp=Z,27nm,0.8s									
ASAR	**Alice Springs**	**34.96**	**161**		P	**P**	**21**	**11**	**29.9**	**-0.4**
	comp=Z,29nm,0.7s,baz=342,slow=7.0,SNR=17									
ASAR					PcP	**PcP**	**21**	**14**	**02.1**	**-0.6**
	comp=Z,17nm,0.7s,baz=342,slow=2.8,SNR=14									
USRK	**Ussuriysk Ar.**	**35.53**	**12**		P	**P**	**21**	**11**	**36.5**	**+1.6**
	comp=Z,27nm,0.8s,baz=201,slow=7.5,SNR=8.9									
USRK					PcP	**PcP**	**21**	**14**	**02.9**	**-1.1**
	comp=Z,3.2nm,0.7s,baz=242,slow=2.5,SNR=6.2									
CTA	**Charters Tower**	**37.81**	**141**		P	**P**	**21**	**11**	**52.7**	**-2.0**
	comp=Z,3.2nm,0.7s,baz=328,slow=9.3,SNR=3.8									
HIA	**Hailar**	**39.62**	**357**	↓	*e*P	**P**	**21**	**12**	**10.8**	**+1.3**
HIA					pmax	pmax				
	comp=Z,32nm,2.3s									
KLR	**Kul'dur**	**40.33**	**10**		P	**P**	**21**	**12**	**15.9**	**+0.5**
	comp=Z,7.9nm,0.8s,baz=304,slow=7.9,SNR=3.4									
KLR					PcP	**PcP**	**21**	**14**	**19.2**	**+0.5**
	comp=Z,12nm,0.9s,baz=201,slow=2.5,SNR=4.2									
SONA0	**Songino Array**	**40.41**	**344**		*e*P	**P**	**21**	**12**	**17.1**	**+0.9**
	comp=Z,35nm,1.2s									
SONM	**Songino Array**	**40.41**	**344**		P	**P**	**21**	**12**	**17.1**	**+0.9**
	comp=Z,14nm,0.9s,baz=165,slow=8.9,SNR=8.7									
SONA1	**Songino Array**	**40.42**	**344**		*e*P	**P**	**21**	**12**	**17.1**	**+0.8**
YSS	**Yuzh-Sakhalins**	**41.16**	**21**	↓	*e*P	**P**	**21**	**12**	**22.9**	**+0.7**
YSS					pmax	pmax				
	comp=Z,27nm,1.0s									
NWAO	**Narrogin (SRO)**	**42.52**	**186**		P	**P**	**21**	**12**	**33.7**	**+0.1**
	comp=Z,45nm,0.7s,baz=246,slow=9.0,SNR=11									
TLY	**Talaya**	**44.65**	**344**		*e*P	**P**	**21**	**12**	**50.6**	**0.0**
	comp=Z,9.6nm,0.7s,baz=267,slow=4.5,SNR=4.3									
TLY	**Talaya**	**44.65**	**344**		*e*P	**P**	**21**	**12**	**51.4**	**+0.9**
TLY					pmax	pmax				
	comp=Z,25nm,1.1s									
STKA	**Stephens Creek**	**45.20**	**157**		P	**P**	**21**	**12**	**54.6**	**-0.5**
	comp=Z,19nm,0.7s,baz=322,slow=7.9,SNR=10									
BOD	**Bodaibo**	**48.55**	**354**		*e*P	**P**	**21**	**13**	**20.9**	**-0.1**
BOD					pmax	pmax				
	comp=Z,28nm,1.4s									
MK32	**Makanchi Array**	**50.22**	**325**		*e*P	**P**	**21**	**13**	**35.0**	**+1.0**
MKAR	**Makanchi Array**	**50.22**	**325**		P	**P**	**21**	**13**	**35.0**	**+1.0**
	comp=Z,9.8nm,0.8s,baz=130,slow=8.1,SNR=6.7									
MKAR	**Makanchi Array**	**50.22**	**325**		P	**P**	**21**	**13**	**35.0**	**+1.0**
MKAR					pmax	pmax				
	comp=Z,10.0nm,0.8s									
MKAR	**Makanchi Array**	**50.22**	**325**		P	**P**	**21**	**13**	**35.0**	**+1.0**
MKAR					*e*PcP	**pP**	**21**	**13**	**36.3**	**-2.9**
PETK	**Petropavlovsk-**	**51.99**	**26**		P	**P**	**21**	**13**	**46.8**	**-0.3**
	comp=Z,4.0nm,0.7s,baz=245,slow=5.9,SNR=2.7									
PEA1	**Petropavlovsk-**	**51.99**	**26**		*e*P	**P**	**21**	**13**	**46.8**	**-0.3**
YAK	**Yakutsk**	**52.65**	**4**		P	**P**	**21**	**13**	**50.9**	**-0.9**
	comp=Z,13nm,0.5s,baz=275,slow=1.3,SNR=5.3									
YAK	**Yakutsk**	**52.65**	**4**		*e*P	**P**	**21**	**13**	**51.7**	**-0.1**
YAK					pmax	pmax				
	comp=Z,28nm,0.9s									
AAK	**Ala-Archa**	**53.04**	**317**		P	**P**	**21**	**13**	**57.2**	**+1.9**
	comp=Z,18nm,0.9s,baz=140,slow=7.5,SNR=6.0									
AAK	**Ala-Archa**	**53.04**	**317**		*de*P	**P**	**21**	**13**	**57.9**	**+2.6**
AAK					pmax	pmax				
	comp=Z,49nm,0.9s									
ZALV	**Zalesovo Beam**	**53.38**	**333**		P	**P**	**21**	**13**	**57.2**	**-0.1**
	comp=Z,6.7nm,0.7s,baz=127,slow=6.4,SNR=7.5									
ZAA1	**Zalesovo Array**	**53.38**	**333**		*e*P	**P**	**21**	**13**	**57.2**	**-0.2**
MA2	**Magadan**	**54.34**	**17**		P	**P**	**21**	**14**	**05.0**	**+0.7**
	comp=Z,25nm,0.7s,baz=182,slow=7.7,SNR=8.3									
MA2	**Magadan**	**54.34**	**17**		P	**P**	**21**	**14**	**05.0**	**+0.7**
MA2					pmax	pmax				
	comp=Z,25nm,0.7s									
KURBB	**Kurchatov Arra**	**54.42**	**327**		P	**P**	**21**	**14**	**06.2**	**+1.1**
	comp=Z,16nm,0.8s,baz=132,slow=6.5,SNR=7.8									
KURK	**Kurchatov**	**54.43**	**327**		P	**P**	**21**	**14**	**06.2**	**+1.1**
KURK					pmax	pmax				
	comp=Z,16nm,0.8s									
KURK	**Kurchatov**	**54.43**	**327**		P	**P**	**21**	**14**	**06.2**	**+1.1**
SEY	**Seymchan**	**57.53**	**16**		P	**P**	**21**	**14**	**28.4**	**+1.3**
	comp=Z,18nm,0.7s,baz=215,slow=5.3,SNR=13									
BVAR	**Borovoye Array**	**60.00**	**327**		P	**P**	**21**	**14**	**44.9**	**+0.4**
	comp=Z,13nm,1.0s,baz=123,slow=5.5,SNR=5.9									
BRVK	**Borovoye**	**60.07**	**327**	↓	*i*P	**P**	**21**	**14**	**46.4**	**+1.4**
BRVK					pmax	pmax				
	comp=Z,71nm,1.0s									
MSVF	**Nonsavu**	**61.47**	**116**	↑	*e*P	**P**	**21**	**14**	**56.0**	**+0.8**
MSVF					pmax	pmax				
	comp=Z,52nm,1.9s									
TIXI	**Tiksi**	**62.16**	**2**		P	**P**	**21**	**14**	**58.4**	**-0.5**
	comp=Z,23nm,0.9s,baz=153,slow=5.6,SNR=7.0									
TIXI	**Tiksi**	**62.16**	**2**	↑	*e*P	**P**	**21**	**14**	**58.3**	**-0.5**
TIXI					pmax	pmax				
	comp=Z,33nm,1.0s									
NRIK	**Noril'sk**	**63.74**	**347**		P	**P**	**21**	**15**	**10.1**	**+0.8**
	comp=Z,25nm,0.8s,baz=136,slow=5.2,SNR=6.3									
GEYT	**Alibeck**	**63.77**	**308**		P	**P**	**21**	**15**	**10.8**	**+0.6**

MICGM	**Minsk**	84.78	324	*e*		**P**	21 17 13.0	+0.7	
MNK	**Minsk**	84.78	324	*e*P		**P**	21 17 13.0	+0.7	
KMBO	**Kilima Mbogo**	85.20	268	P		**P**	21 17 16.7	+1.2	
	comp=Z,6.8nm,0.8s,baz=30,slow=7.2,SNR=8.1								
IDID	**Didziasalis**	85.30	325	*e*P		**P**	21 17 15.5	+0.7	
IDID				IAmb		IAmb	21 17 16.7		
	comp=Z,38nm,0.9s								
NACGM	**Naroch**	85.35	325	*e*P		**P**	21 17 15.0	-0.1	
IZAR	**Zarasai**	85.50	326	*e*P		**P**	21 17 16.4	+0.6	
IZAR				IAmb		IAmb	21 17 17.6		
	comp=Z,26nm,0.8s								
SORM	**Soroca**	85.51	318	⇑*i*P		**P**	21 17 15.6	-0.4	
SORM	**Soroca**	85.51	318	⇑P		**P**	21 17 15.6	-0.4	
ISAL	**Salakas**	85.60	325	*e*P		**P**	21 17 16.5	+0.2	
ISAL				IAmb		IAmb	21 17 18.0		
	comp=Z,21nm,0.8s								
TLCR		85.66	315	⇑*i*P		**P**	21 17 17.7	+0.9	
TLCR		85.66	315	⇑P		**P**	21 17 17.7	+0.9	
TIRR	**Tirgusor**	86.06	314	⇑*i*P		**P**	21 17 19.1	+0.3	
TIRR	**Tirgusor**	86.06	314	⇑P		**P**	21 17 19.2	+0.4	
CFR	**Carcaliu**	86.14	315	⇑*i*P		**P**	21 17 19.6	+0.4	
CFR	**Carcaliu**	86.14	315	⇑P		**P**	21 17 19.7	+0.5	
TLB	**Topalu**	86.30	314	⇑*i*P		**P**	21 17 20.3	+0.3	
TLB	**Topalu**	86.30	314	⇑P		**P**	21 17 20.3	+0.3	
HARR	**Harsova**	86.36	315	⇑*i*P		**P**	21 17 21.3	+1.0	
HARR	**Harsova**	86.36	315	⇑P		**P**	21 17 21.3	+1.0	
INK	**Inuvik**	86.39	21	P		**P**	21 17 20.0	0.0	
	comp=Z,18nm,1.0s,baz=277,slow=11,SNR=6.1								
TESR	**Tescani**	86.93	316	⇑*i*P		**P**	21 17 23.5	+0.4	
PLOR	**Plostina**	87.05	316	⇓*i*P		**P**	21 17 24.7	+0.9	
PLOR	**Plostina**	87.05	316	⇓P		**P**	21 17 24.7	+0.9	
PRAR	**RASCA**	87.05	317	⇑*i*P		**P**	21 17 24.5	+0.8	
MLR	**Muntele Rosu**	87.60	316	P		**P**	21 17 27.2	+0.6	
	comp=Z,3.3nm,0.9s,baz=296,slow=4.5,SNR=4.1								
MAW	**Mawson**	87.69	199	P		**P**	21 17 25.5	-0.6	
	comp=Z,3.8nm,0.9s,baz=62,slow=8.5,SNR=4.4								
MAW	**Mawson**	87.69	199	*e*P		**P**	21 17 25.9	-0.3	
VOIR		88.23	316	⇑*i*P		**P**	21 17 31.6	+2.1	
VOIR		88.23	316	⇑P		**P**	21 17 31.6	+2.1	
ARR	**Arges**	88.53	316	⇓*i*P		**P**	21 17 31.5	+0.6	
KOLS	**Kolonicke sedl**	89.31	319	*e*P		**P**	21 17 35.9	+1.5	
KOLS				pmax		pmax			
	comp=Z,9.0nm,1.4s								
KOLS	**Kolonicke sedl**	89.31	319	*e*P		**P**	21 17 35.9	+1.5	
DRGR		89.52	317	⇑*i*P		**P**	21 17 36.3	+0.8	
DRGR		89.52	317	⇑P		**P**	21 17 36.3	+0.8	
VNDA	**Vanda**	89.77	172	P		**P**	21 17 35.1	-0.8	
	comp=Z,15nm,0.9s,baz=316,slow=5.5,SNR=16								
CRVS	**Cervenica-Dubn**	89.83	320	*e*P		**P**	21 17 37.8	+0.9	
CRVS	**Cervenica-Dubn**	89.83	320	*e*P		**P**	21 17 37.8	+0.9	
STHS	**Stebnicka Huta**	89.84	320	*e*P		**P**	21 17 38.2	+1.3	
STHS				pmax		pmax			
	comp=Z,69nm,3.4s								
STHS	**Stebnicka Huta**	89.84	320	*e*P		**P**	21 17 38.2	+1.3	
VTS	**Vitosha**	90.14	313	⇑*i*P		**P**	21 17 38.2	-0.4	
VTS	**Vitosha**	90.14	313	⇑P		**P**	21 17 38.2	-0.4	
SIRR	**Siria**	90.35	317	⇓*i*P		**P**	21 17 40.0	+0.7	
BZS	**Buzias**	90.54	316	⇑*i*P		P	21 17 33.9	-6.3	
BZS	**Buzias**	90.54	316	⇑P		P	21 17 33.9	-6.3	
KECS	**Kecovo**	90.56	319	*e*P		**P**	21 17 39.5	-0.8	
KECS				pmax		pmax			
	comp=Z,4.0nm,1.3s								
KECS	**Kecovo**	90.56	319	*e*P		**P**	21 17 39.5	-0.8	
DAG	**Danmarks Havn**	90.88	352	*i* P		**P**	21 17 41.1	-0.1	
	comp=Z,13nm,1.0s								
DAG	**Danmarks Havn**	90.88	352	*i* P		**P**	21 17 41.1	-0.1	
DAG				pmax		pmax			
	comp=Z,13nm,1.0s								
DPC	**Dobruska-Polom**	92.64	322	*e*P		**P**	21 17 50.9	+1.0	
DPC	**Dobruska-Polom**	92.64	322	*e*P		**P**	21 17 50.9	+1.0	
VRAC	**Vranov**	92.79	321	⇑*i*P		**P**	21 17 51.0	+0.4	
VRAC	**Vranov**	92.79	321	⇑P		**P**	21 17 51.0	+0.4	
PVCC	**Panska Ves**	93.64	322	*e*P		**P**	21 17 55.6	+1.2	
PVCC	**Panska Ves**	93.64	322	*e*P		**P**	21 17 55.6	+1.2	
PRU	**Pruhonice**	93.84	322	*e*P		**P**	21 17 55.5	+0.2	
PRU	**Pruhonice**	93.84	322	*e*P		**P**	21 17 55.5	+0.2	
BRG	**Berggiesshubel**	93.89	323	*e*P		**P**	21 17 56.0	+0.4	
	comp=Z,14nm,1.0s								
BRG				*e*			21 18 41.5		
	comp=Z,13nm,1.0s								
BRG	**Berggiesshubel**	93.89	323	*e*P		**P**	21 17 56.0	+0.4	
BRG				pmax		pmax			
	comp=Z,14nm,1.0s								
CLL	**Collm**	94.30	324	*i* P		**P**	21 17 57.7	+0.3	
	comp=Z,12nm,1.0s								
CLL				*i*			21 18 00.8		
CLL				*es*P		**sP**	21 18 06.0	+1.1	
CLL	**Collm**	94.30	324	*i* P		**P**	21 17 57.7	+0.3	
CLL				*e**SP		**sP**	21 18 06.0	+1.1	
CLL				pmax		pmax			
	comp=Z,12nm,1.0s								
KHC	**Kasperske Hory**	94.72	321	*e*P		**P**	21 18 02.5	+3.0	
NKC	**Novy Kostel**	95.01	323	*e*P		**P**	21 18 01.1	+0.3	
NKC	**Novy Kostel**	95.01	323	*e*P		**P**	21 18 01.1	+0.3	
YKA	**Yellowknife Ar**	95.99	23	P		**P**	21 18 04.3	-0.7	
	comp=Z,3.4nm,0.9s,baz=301,slow=4.4,SNR=5.9								
YKB5	**Yellowknife Ar**	95.99	23	*e*P		**P**	21 18 04.3	-0.7	
SYO	**Syowa Base**	96.22	201	⇑*ep*P		pP	21 18 10.2	-1.0	
MATP	**Matopo**	96.72	250	P		**P**	21 18 08.7	-0.6	
	comp=Z,6.0nm,0.9s,baz=0.0,slow=3.0,SNR=4.9								
F36A	**Milaca**	116.19	27	P		**PKPdf**	21 23 21.3	-0.2	
	baz=320								
ECSD	**EROS Data Cent**	116.31	30	P		**PKPdf**	21 23 20.7	-1.2	
	baz=316								
H35A	**Sunnyside Ranc**	116.47	29	P		**PKPdf**	21 23 22.1	0.0	
	baz=318								
TORD	**Torodi Ar. Bea**	116.76	290	PKP		**PKPdf**	21 23 21.9	-1.5	
	comp=Z,0.8nm,0.7s,baz=256,slow=3.0,SNR=3.7								
TOA1	**Torodi Ar. Sit**	116.76	290	*e*PKPdf		**PKPdf**	21 23 21.9	-1.5	
H36A	**Jessenland, He**	116.99	28	P		**PKPdf**	21 23 23.3	+0.2	
	baz=319								
I37A	**Lemond, Waseca**	117.66	28	P		**PKPdf**	21 23 24.4	0.0	
	baz=320								
J36A	**Seneca 1, Swea**	117.73	29	P		**PKPdf**	21 23 24.3	-0.3	
	baz=318								
J37A	**Redenius Farm,**	118.12	29	P		**PKPdf**	21 23 24.8	-0.5	
	baz=319								
I38A	**Scanlan Farm,**	118.14	28	P		**PKPdf**	21 23 24.9	-0.4	
	baz=321								
P32A	**Huiting Farm,**	118.15	35	P		**PKPdf**	21 23 25.0	-0.5	
	baz=313								
K36A	**Gilmore City**	118.19	30	P		**PKPdf**	21 23 25.2	-0.3	
	baz=318								
O33A	**Hebron**	118.40	34	P		**PKPdf**	21 23 25.3	-0.7	
	baz=314								
L36A	**Harm Buss Farm**	118.48	31	P		**PKPdf**	21 23 25.5	-0.5	
	baz=318								
K37A	**Belmond**	118.49	29	P		**PKPdf**	21 23 24.4	-1.7	
	baz=319								
MNTX	**Cornudas Mount**	118.73	46	P		**PKPdf**	21 23 27.0	+0.2	
	baz=304								
R32A	**Long Quarter,**	118.90	36	P		**PKPdf**	21 23 26.8	-0.2	
	baz=312								
J39A	**Decorah**	118.97	28	P		**PKPdf**	21 23 25.8	-1.1	
	baz=321								
L38A	**Oak Wood Farm,**	119.29	29	P		**PKPdf**	21 23 26.9	-0.7	
	baz=319								
K39A	**Oelwein**	119.37	28	P		**PKPdf**	21 23 26.7	-1.1	
	baz=321								
M38A	**Pleasantville**	119.72	30	P		**PKPdf**	21 23 28.2	-0.3	
	baz=319								
L39A	**Vinton**	119.77	29	P		**PKPdf**	21 23 27.7	-0.8	
	baz=320								
JFWS	**Jewell Farm**	119.96	27	*e*PKIKP		**PKPdf**	21 23 28.3	-0.5	
JFWS	**Jewell Farm**	119.96	27	*e*PKPdf		**PKPdf**	21 23 28.3	-0.5	
Q35A	**Mercer Eighty,**	120.11	34	P		**PKPdf**	21 23 29.0	-0.2	
	baz=315								
K41A	**Shullsburg**	120.18	27	P		**PKPdf**	21 23 28.8	-0.5	
	baz=322								
M39A	**Webster**	120.18	29	P		**PKPdf**	21 23 28.8	-0.6	
	baz=320								
L40A	**Anamosa**	120.18	28	P		**PKPdf**	21 23 28.7	-0.6	
	baz=321								
P37A	**Lathrop**	120.49	32	P		**PKPdf**	21 23 29.6	-0.4	
	baz=317								
L41A	**Preston**	120.51	28	P		**PKPdf**	21 23 28.6	-1.4	
	baz=322								
S35A	**Otter Creek Ra**	120.78	35	P		**PKPdf**	21 23 30.2	-0.4	
	baz=314								
R36A	**Gordon, Harris**	120.78	34	P		**PKPdf**	21 23 30.1	-0.5	
	baz=315								
R37A	**Teagarden Farm**	121.16	34	P		**PKPdf**	21 23 30.5	-0.8	
	baz=316								
T35A	**Sooner Cattle**	121.20	36	P		**PKPdf**	21 23 31.5	0.0	
	baz=314								
LTX	**Lajitas**	121.28	47	*e*PKIKP		**PKPdf**	21 23 32.2	+0.3	
LTX	**Lajitas**	121.28	47	*e*PKPdf		**PKPdf**	21 23 32.2	+0.3	
TXAR	**Lajitas Array**	121.28	47	PKP		**PKPdf**	21 23 32.2	+0.3	
	comp=Z,1.6nm,0.6s,baz=360,slow=0.6,SNR=15								
Q38A	**Cooks Store, C**	121.34	32	P		**PKPdf**	21 23 30.9	-0.7	
	baz=318								
O40A	**La Belle**	121.36	30	P		**PKPdf**	21 23 31.4	-0.3	
	baz=320								
P39B	**Salisbury**	121.40	31	P		**PKPdf**	21 23 31.2	-0.5	
	baz=319								
T36A	**Boggs Farm, Ca**	121.46	35	P		**PKPdf**	21 23 31.8	-0.1	
	baz=315								
S37A	**Fort Scott**	121.56	34	P		**PKPdf**	21 23 31.4	-0.7	
	baz=316								
Q39A	**Willow Grove F**	121.61	32	P		**PKPdf**	21 23 31.8	-0.4	
	baz=318								
R38A	**Fenwick Farm,**	121.75	33	P		**PKPdf**	21 23 31.2	-1.3	
	baz=317								
O41A	**Passleys Farm,**	121.85	30	P		**PKPdf**	21 23 31.7	-0.8	
	baz=321								
T37A	**Cheneyville 18**	121.96	35	P		**PKPdf**	21 23 32.8	-0.1	
	baz=316								
P41A	**Barry, Barry**	122.10	30	P		**PKPdf**	21 23 32.6	-0.5	
	baz=320								
R39A	**Chumby, Stover**	122.12	32	P		**PKPdf**	21 23 32.5	-0.7	
	baz=318								
S38A	**Stockton**	122.16	34	P		**PKPdf**	21 23 32.5	-0.7	
	baz=317								
T38A	**Diamond**	122.37	34	P		**PKPdf**	21 23 33.2	-0.5	
	baz=316								
S39A	**Bolivar**	122.43	33	P		**PKPdf**	21 23 33.2	-0.6	
	baz=317								
Y34A	**Reagan Ranch,**	122.45	39	P		**PKPdf**	21 23 33.8	-0.1	
	baz=311								
P42A	**Winchester**	122.53	30	P		**PKPdf**	21 23 33.6	-0.3	
	baz=321								
R40A	**Maddies Statio**	122.54	32	P		**PKPdf**	21 23 33.6	-0.3	
	baz=319								
SADO	**Sadowa**	122.58	18	*e*PKPdf		**PKPdf**	21 23 33.8	0.0	
133A	**Hamilton Ranch**	122.59	41	P		**PKPdf**	21 23 34.1	-0.2	
	baz=310								
W36A	**Wetumka**	122.59	37	P		**PKPdf**	21 23 33.9	-0.2	
	baz=313								
V37A	**Hulbert**	122.71	36	P		**PKPdf**	21 23 34.2	-0.2	
	baz=315								
U38A	**Gravette**	122.75	35	P		**PKPdf**	21 23 34.0	-0.5	
	baz=316								
T39A	**Clever**	122.89	34	P		**PKPdf**	21 23 34.3	-0.3	
	baz=317								
X36A	**Centrahoma**	122.90	38	P		**PKPdf**	21 23 33.9	-0.8	
	baz=313								
S40A	**Lebanon**	122.94	33	P		**PKPdf**	21 23 34.4	-0.4	
	baz=318								
Q42A	**Golden Eagle**	122.95	30	P		**PKPdf**	21 23 34.9	+0.1	
	baz=321								
W37B	**Quinton**	123.06	37	P		**PKPdf**	21 23 34.9	-0.2	
	baz=314								
HHAR	**Hobbs**	123.11	35	*e*PKPdf		**PKPdf**	21 23 35.2	+0.1	
V38A	**Canehill**	123.15	35	P		**PKPdf**	21 23 34.6	-0.6	
	baz=315								
134A	**White-Moore Ra**	123.15	41	P		**PKPdf**	21 23 35.8	+0.5	
	baz=310								
T40A	**Mansfield**	123.26	33	P		**PKPdf**	21 23 35.1	-0.3	
	baz=318								
U39A	**Green Forest**	123.30	34	P		**PKPdf**	21 23 34.8	-0.7	
	baz=317								
JCT	**Junction City**	123.33	44	P		**PKPdf**	21 23 35.8	0.0	
	baz=308								
Q43A	**New Douglas**	123.34	30	P		**PKPdf**	21 23 35.3	-0.1	
	baz=321								
S41A	**Jillco Farms,**	123.34	32	P		**PKPdf**	21 23 35.2	-0.3	
	baz=319								
Y36A	**Durant**	123.40	38	P		**PKPdf**	21 23 35.6	-0.1	
	baz=313								
234A	**Clairette**	123.48	41	P		**PKPdf**	21 23 36.1	+0.2	
	baz=310								
433A	**Art**	123.64	43	P		**PKPdf**	21 23 36.1	-0.2	
	baz=309								
W38A	**Poteau**	123.64	36	P		**PKPdf**	21 23 36.1	0.0	
	baz=315								
U40A	**Yellville**	123.66	34	P		**PKPdf**	21 23 35.8	-0.4	
	baz=317								
T41A	**Mountain View**	123.74	33	P		**PKPdf**	21 23 35.8	-0.5	
	baz=319								
X38A	**Whitesboro**	123.74	37	P		**PKPdf**	21 23 36.7	+0.3	
	baz=314								
334A	**Lometa**	123.84	42	P		**PKPdf**	21 23 36.8	+0.1	
	baz=310								
V40A	**Witts Springs**	124.08	34	P		**PKPdf**	21 23 36.6	-0.4	
	baz=317								
U41A	**Viola**	124.18	33	P		**PKPdf**	21 23 36.8	-0.4	
	baz=318								
R44A	**Wdonville**	124.18	30	P		**PKPdf**	21 23 36.8	-0.3	
	baz=322								
OLIL	**Olney**	124.27	29	*e*PKPdf		**PKPdf**	21 23 35.7	-1.6	
X39A	**Fountain Ranch**	124.27	36	P		**PKPdf**	21 23 37.4	0.0	
	baz=315								
534A	**Blanco**	124.50	43	P		**PKPdf**	21 23 37.8	-0.2	
	baz=309								
U42A	**Revenden**	124.54	33	P		**PKPdf**	21 23 37.4	-0.5	
	baz=319								
MIAR	**Mount Ida**	124.56	36	P		**PKPdf**	21 23 38.5	+0.6	
	baz=316								
MIAR	**Mount Ida**	124.56	36	*e*PKIKP		**PKPdf**	21 23 39.0	+1.0	
MIAR	**Mount Ida**	124.56	36	*e*PKPdf		**PKPdf**	21 23 39.0	+1.0	
PBMO	**Poplar Bluff**	124.64	32	*e*PKPdf		**PKPdf**	21 23 37.9	-0.1	
NCB	**Newcomb**	124.66	14	*e*PKPdf		**PKPdf**	21 23 38.7	+0.8	
V42A	**Cord**	124.86	33	P		**PKPdf**	21 23 38.2	-0.2	
	baz=318								
MDV	**Middlebury**	124.89	13	*e*PKPdf		**PKPdf**	21 23 39.0	+0.7	
833A	**Chaparral WMA,**	124.91	46	P		**PKPdf**	21 23 39.4	+0.6	
	baz=307								
USIN	**University of**	125.09	29	*e*PKPpre		PKPpre	21 23 27.7		
ACSO	**Alum Creek Sta**	125.24	24	*e*PKPdf		**PKPdf**	21 23 39.3	+0.2	
M54A	**Oil Creek Stat**	125.34	20	P		**PKPdf**	21 23 39.1	-0.2	
	baz=333								
HNH	**Hanover**	125.37	13	*e*PKPdf		**PKPdf**	21 23 40.5	+1.3	
933A	**Laredo**	125.42	46	P		**PKPdf**	21 23 40.4	+0.6	
	baz=307								
SSPA	**Standing Stone**	126.71	19	*e*PKPdf		**PKPdf**	21 23 42.2	+0.4	
O56A	**Blue Knob Stat**	126.82	20	P		**PKPdf**	21 23 42.3	+0.1	
	baz=334								
N59A	**State Game Lan**	127.10	17	P		**PKPdf**	21 23 42.9	+0.3	
	baz=338								
ODNJ	**Oqdensburg**	127.27	16	*e*PKPdf		**PKPdf**	21 23 43.5	+0.6	
MVL	**Millersville**	127.77	18	*e*PKPdf		**PKPdf**	21 23 45.0	+1.1	
Z48A	**Northport**	128.76	32	P		**PKPdf**	21 23 45.8	-0.2	
	baz=321								
JSRW	**J. Sargeant Re**	129.37	21	*e*PKPdf		**PKPdf**	21 23 48.1	+1.1	
PLCA	**Paso Flores**	146.97	162	PKPbc		**PKPbc**	21 24 21.3	+0.3	
	comp=Z,66nm,0.8s,baz=238,slow=3.4,SNR=24								
CBYP	**Canovanas**	151.22	16	*e*PKPbc		**PKPbc**	21 24 32.0	-0.4	
STVI	**Saint Thomas**	151.37	14	*e*PKPbc		**PKPbc**	21 24 33.2	+0.5	
TRQA	**Tornquist**	151.39	173	*e*PKPbc		**PKPbc**	21 24 32.3	0.0	
CPUP	**Villa Florida**	163.32	181	PKP		**PKPdf**	21 24 41.6	+0.2	
	comp=Z,5.2nm,1.0s,baz=223,slow=5.3,SNR=5.9								
CPUP				PKPab		**PKPab**	21 25 31.7	-0.1	
	comp=Z,5.7nm,1.0s,baz=179,slow=4.1,SNR=6.1								
CPUP	**Villa Florida**	163.32	181	*e*PKPab		**PKPab**	21 25 31.7	-0.1	
LPAZ	**La Paz**	167.93	125	PKP		**PKPdf**	21 24 46.9	+0.7	
	comp=Z,9.9nm,0.9s,baz=143,slow=1.2,SNR=13								
PTGA	**Pitinga**	170.96	14	PKP		**PKPdf**	21 24 46.0	-1.4	
	comp=Z,4.5nm,0.8s,baz=341,slow=2.4,SNR=8.7								
PTGA	**Pitinga**	170.96	14	PKP		**PKPdf**	21 24 46.0	-1.4	
PTGA				*e*PKPdf		PKPdf	21 24 46.9	-0.5	

*ISCJB **11** 21:05:21.8±0.3, 9.°64N±0.°05×122.°14E±0.°08, h10km, mb4.9/46, Error ellipse: s-maj=11.2km s-min=6.1km az=161.0*

*IDC **11** 21:05:22.3±0.5, 9.°66N×122.°04E, h0km, mb4.8/31, mb1 4.9/31, mb1mx4.7/58, mbtmp4.8/31, Error ellipse: s-maj=21.7km s-min=11.9km az=69.0*

*NEIC **11** 21:05:23.6±0.2, 9.°66N×122.°14E, h10km, mb4.9/7, Error ellipse: s-maj=10.3km s-min=5.3km az=70.0*

*MOS **11** 21:05:25.4±0.8, 9.°68N×122.°12E, h34km, mb5.0/27, Error ellipse: s-maj=23.8km s-min=9.9km az=108.8*

ISC 11 21:05:23.6±0.4, 9.°67N±0.°06×122.°12E±0.°10, h10km, n75, σ0s97/85, mb5.0/46, 1C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
MMPH	**Masbate**	**3.05**	**29**	⇓*i*P	**Pn**	**21**	**06 14.9**	**+3.0**
MMPH				*i* S	**Sb**	**21**	**06 54.3**	**-1.1**
CM31	**Chiang Mai Arr**	**24.10**	**294**	*e*P	**P**	**21**	**10 39.3**	**-0.4**
CMAR	**Chiang Mai Arr**	**24.10**	**294**	P	**P**	**21**	**10 39.3**	**-0.4**
	8.4nm,1.0s,baz=179,slow=25,SNR=4.5							
KS15	**Wonju Array Si**	28.14	10	*e*P	**P**	21	11 17.0	+1.1
KSAR	**Wonju Array Be**	28.14	10	P	**P**	21	11 17.0	+1.1
KSRS	**Korea Array**	28.16	10	P	**P**	21	11 17.0	+0.9
	4.1nm,0.8s,baz=186,slow=11,SNR=3.1							
KSRS	**Korea Array**	28.16	10	P	**P**	21	11 17.0	+0.9
KSRS				pmax	pmax			
	comp=Z,4.0nm,0.8s							
MBWA	**Marble Bar**	30.73	184	*e*P	**P**	21	11 39.0	0.0
	comp=Z,130nm,1.7s							
PMG	**Port Moresby**	31.31	127	P	**P**	21	11 45.4	+1.1
	comp=Z,18nm,0.9s,baz=152,slow=6.6,SNR=3.1							
WRAB	**Tennant Creek**	31.78	158	*e*P	**P**	21	11 47.3	-1.1
	comp=Z,29nm,1.1s							
WR1	**Warramunga Arr**	31.79	158	*e*P	**P**	21	11 48.1	-0.4
	comp=Z,24nm,0.8s							
WR1				*e*PcP	**PcP**	21	14 39.7	-0.1
WRA	**Warramunga Arr**	31.79	158	P	**P**	21	11 48.1	-0.4
	comp=Z,12nm,0.9s,baz=333,slow=11,SNR=5.1							
WRA				PcP	**PcP**	21	14 39.7	-0.1
	comp=Z,6.7nm,0.9s,baz=339,slow=3.5,SNR=3.1							
WB2	**Warramunga Arr**	31.79	158	*e*P	**P**	21	11 47.5	-1.0
	comp=Z,29nm,1.1s							
AS31	**Alice Springs**	35.08	161	*e*P	**P**	21	12 17.4	+0.3
	comp=Z,8.0nm,0.8s							
AS31				*e*PcP	**PcP**	21	14 48.9	-0.2
ASAR	**Alice Springs**	35.08	161	P	**P**	21	12 17.4	+0.3
	comp=Z,15nm,0.7s,baz=341,slow=6.9,SNR=5.2							
ASAR				PcP	**PcP**	21	14 48.9	-0.2
	comp=Z,6.0nm,0.9s,baz=358,slow=1.8,SNR=4.0							
ASAR	**Alice Springs**	35.08	161	P	**P**	21	12 17.4	+0.3
ASAR				PcP	**PcP**	21	14 48.9	-0.2
AS01	**Alice Springs**	35.09	161	*e*P	**P**	21	12 17.5	+0.2
USRK	**Ussuriysk Ar.**	35.45	12	P	**P**	21	12 21.2	+1.1
	comp=Z,29nm,0.8s,baz=198,slow=7.3,SNR=8.1							
ASAJ	**Asahikawa**	38.64	24	*e*P	**P**	21	12 47.9	+0.6
	comp=Z,67nm,1.4s							
KLR	**Kul'dur**	40.25	10	P	**P**	21	13 00.6	+0.1
	comp=Z,15nm,0.8s,baz=252,slow=6.7,SNR=4.2							
SONA0	**Songino Array**	40.30	344	*e*P	**P**	21	13 02.2	+1.1
	comp=Z,17nm,1.0s							
SONA0				*e*PcP	**PcP**	21	15 04.5	-0.3
SONM	**Songino Array**	40.30	344	P	**P**	21	13 02.2	+1.1
	comp=Z,12nm,0.9s,baz=166,slow=8.4,SNR=5.2							
SONM				PcP	**PcP**	21	15 04.5	-0.3
	comp=Z,1.7nm,0.8s,baz=169,slow=1.5,SNR=2.6							
SONA1	**Songino Array**	40.30	344	*e*P	**P**	21	13 01.2	-0.1
NWAO	**Narrogin (SRO)**	42.61	186	P	**P**	21	13 21.3	+1.2
	comp=Z,20nm,0.8s,baz=357,slow=7.7,SNR=2.1							
TLY	**Talaya**	44.54	344	P	**P**	21	13 36.8	+1.3
	comp=Z,2.1nm,0.4s,baz=179,slow=7.3,SNR=3.1							
STKA	**Stephens Creek**	45.32	156	P	**P**	21	13 42.9	+1.0
	comp=Z,10nm,0.7s,baz=330,slow=8.5,SNR=3.1							
STKA	**Stephens Creek**	45.32	156	*e*P	**P**	21	13 42.9	+1.0
	comp=Z,3.6nm,0.9s							
MK32	**Makanchi Array**	50.10	325

ISCJB ***11*** *21:08:56.4±0.9, 9.4N±0.2× 122.0E±0.3, h37km, mb3.8/10, Error ellipse: s-maj=40.8km s-min=14.5km az=153.4*

ISC 11 21:08:58.6±1.2, 9.3N±0.2× 121.9E±0.3, h37km, n10, σ0s80/10, mb3.8/10, Sulu Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**24.00**	**295**	P	**P**	**21 14 10.9**	**+0.8**
	1.1nm,0.8s,baz=113,slow=6.9,SNR=3.5						
WRA	**Warramunga Arr**	**31.58**	**157**	P	**P**	**21 15 18.1**	**+0.1**
	1.7nm,1.0s,baz=343,slow=9.4,SNR=3.1						
ASAR	**Alice Springs**	**34.85**	**160**	P	**P**	**21 15 47.0**	**+0.6**
	1.9nm,0.6s,baz=338,slow=7.1,SNR=4.1						
SONM	**Songino Array**	**40.54**	**344**	P	**P**	**21 16 33.9**	**-0.6**
	0.5nm,0.5s,baz=159,slow=13,SNR=2.5						
MKAR	**Makanchi Array**	**50.23**	**325**	P	**P**	**21 17 51.3**	**+0.2**
	0.6nm,0.6s,baz=126,slow=8.6,SNR=2.7						
ZALV	**Zalesovo Beam**	**53.44**	**334**	P	**P**	**21 18 14.3**	**-0.5**
	0.3nm,0.3s,baz=145,slow=5.3,SNR=2.4						
KURBB	**Kurchatov Arra**	**54.44**	**328**	P	**P**	**21 18 22.6**	**+0.4**
	0.7nm,0.7s,baz=118,slow=9.9,SNR=4.5						
BVAR	**Borovoye Array**	**60.02**	**327**	P	**P**	**21 19 01.8**	**+0.2**
	0.5nm,0.6s,baz=119,slow=8.4,SNR=2.6						
GEYT	**Alibeck**	**63.65**	**308**	P	**P**	**21 19 27.2**	**+0.8**
	1.8nm,0.8s,baz=99,slow=1.9,SNR=3.5						
OPO	**Ambohidratompo**	**78.67**	**249**	P	**P**	**21 20 56.3**	**-1.4**
	3.6nm,0.8s,baz=104,slow=12						

DSN 11 21:09:36.2±0.1, 26.87N×53.51E, h19km, ML3.9, Error ellipse: s-maj=5.3km s-min=3.2km az=249.0, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NAZ	**Nazwa, Dubai**	**2.70**	**134**	*e*P	Pn	21 10 18.6	-0.1
	SNR=12						
FAQ	**Al Faqa, Dubai**	**2.83**	**138**	*e*P	Pn	21 10 20.5	0.0
	SNR=10						
FAQ				S	Sn	21 10 54.4	+0.3
ASHO	**Ashiyiah**	**3.17**	**133**	*i* P	Pn	21 10 25.4	+0.2
	SNR=17						
ASHO				S	Sn	21 11 03.5	+1.0

IDC ***11*** *21:10:00.0±0.4, 9.49N×122.15E, h0km, mb4.2/28, mb1 4.3/28, mb1mx4.2/58, mbtmp4.2/28, Error ellipse: s-maj=20.2km s-min=10.2km az=71.0*

MAN ***11*** *21:10:00, 9.48N×122.01E, h14km, mb5.0, ML3.9, MS4.0*

NEIC ***11*** *21:10:01.6±0.2, 9.52N×122.24E, h10km, mb4.9/21, Error ellipse: s-maj=7.8km s-min=4.4km az=68.0*

NEIC Felt at Iloilo, Panay.

MOS ***11*** *21:10:03.9±3.0, 9.32N×122.39E, h27km, mb5.0/14, Error ellipse: s-maj=18.9km s-min=8.1km az=119.3*

BJI ***11*** *21:10:09.6, 9.14N×122.28E, h0km, mb4.7/23, mB5.0/3, Ms5.1/2, Ms7 4.9/5*

ISC 11 21:10:04.7±0.3, 9.39N±0.04×122.41E±0.04, h29km, n139, σ2s30/108, mb4.7/64, 19C-6D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.82**	**93**	*i* P	**Pn**	**21 10 17.4**	**-3.0**
SNPH				*i* S	**Sn**	**21 10 32.7**	**+1.1**
TBP	**Tagbilaran**	**1.47**	**78**	⇓*e*P	**Pb**	**21 10 31.3**	**-0.1**
LLP	**Lapu-Lapu**	**1.79**	**59**	*e*P	**Pb**	**21 10 36.4**	**-0.5**
LLP				*e*S	**Sb**	**21 11 01.7**	**+2.7**
CGP	**Cagayan de Oro**	**2.44**	**112**	⇑*e*P	**Pb**	**21 10 47.7**	**-0.3**
CGP				*i* S	**Sb**	**21 11 21.4**	**+3.7**
CTBH	**Cotabato--PC H**	**2.82**	**140**	*e*P	**Pn**	**21 10 47.7**	**-0.2**
CTBH				*i* S	**Sb**	**21 11 28.9**	**+0.4**
KKM	**Kota Kinabalu**	**6.98**	**242**	*e*Pn	**Pn**	**21 11 43.0**	**-2.1**
LUWI	**Luwuk**	**10.37**	**178**	*e*Pn	**Pn**	**21 12 31.9**	**+0.3**
SBUM	**Sibu**	**12.25**	**236**	*e*Pn	**Pn**	**21 12 55.4**	**-1.9**
KAPI	**Kappang**	**14.55**	**191**	Pn	**P**	**21 13 38.3**	**+3.3**
	0.7nm,0.3s,baz=53,slow=7.8,SNR=5.0						
FAKI	**Fak Fak**	**15.67**	**141**	*e*Pn	**Pn**	**21 13 44.9**	**+1.2**
	31nm,1.0s						
JAGI	**Jajag, Banyuwa**	**19.55**	**205**	*e*P	**Pn**	**21 14 31.8**	**0.0**
UGM	**Wanagama**	**20.87**	**215**	*e*P	Pn	21 14 48.5	+1.2
	135nm,1.3s						
KULM	**Kulim**	**21.95**	**261**	*e*P	**P**	**21 14 54.3**	**-2.1**
	66nm,1.6s						
GYA	**Guiyang**	**22.60**	**321**	⇑*i*P	P	21 15 10.0	+6.7
GYA				pP	sP	21 15 22.2	+7.4
GYA				PP	PnPn	21 15 40.4	+13
GYA				S	**S**	**21 19 11.8**	**+2.4**
GYA				SS	SnSn	21 19 56.0	+16
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.2s						
GYA				LR	LR		
	comp=Z,520nm,15.6s						
NJ2	**Nanjing**	**22.79**	**352**	*e*P	P	21 15 12.6	+7.5
PSI	**Prapat**	**24.24**	**256**	P	**P**	**21 15 17.9**	**-1.7**
	8.8nm,0.8s,baz=127,slow=10,SNR=3.4						
PSI	**Prapat**	**24.24**	**256**	*e*P	**P**	**21 15 17.9**	**-1.7**
	32nm,1.3s						
KMI	**Kunming**	**24.39**	**312**	P	P	21 15 27.7	+6.7
KMI				pP	sP	21 15 36.3	+3.3
KMI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
CM01	**Chiang Mai Arr**	**24.44**	**294**	*e*P	**P**	**21 15 22.1**	**+0.9**
CM31	**Chiang Mai Arr**	**24.47**	**294**	*e*P	**P**	**21 15 19.1**	**-2.4**
CMAR	**Chiang Mai Arr**	**24.47**	**294**	P	**P**	**21 15 19.1**	**-2.4**
	2.0nm,1.0s,baz=90,slow=9.0,SNR=4.2						
CBIJ	**Chichi jima**	**25.68**	**44**	*e*P	P	21 15 41.9	+10
	17nm,0.7s						
FITZ	**Fitzroy Crossi**	**27.50**	**173**	P	**P**	**21 15 49.3**	**+0.5**
	5.9nm,0.8s,baz=359,slow=7.1,SNR=5.3						
FITZ	**Fitzroy Crossi**	**27.50**	**173**	*e*P	**P**	**21 15 49.3**	**+0.5**
	57nm,1.9s						
CD2	**Chengdu**	**27.57**	**324**	*e*P	**P**	**21 15 55.5**	**+6.0**
CD2				pP	sP	21 16 08.4	+6.9
CD2				sP	pP	21 16 14.7	+17
CD2				S	**S**	**21 20 35.7**	**+6.5**
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,180nm,5.4s						
KSAR	**Wonju Array Be**	**28.37**	**9**	P	**P**	**21 15 57.2**	**+0.8**
KSAR	**Wonju Array Be**	**28.37**	**9**	P	**P**	**21 15 57.2**	**+0.8**
KSRS	**Korea Array**	**28.38**	**9**	P	**P**	**21 15 57.2**	**+0.7**
	1.6nm,0.9s,baz=185,slow=9.2,SNR=2.6						
MBWA	**Marble Bar**	**30.47**	**185**	*e*P	**P**	**21 16 15.4**	**+0.2**
	28nm,1.0s						
WR1	**Warramunga Arr**	**31.43**	**158**	*e*P	**P**	**21 16 24.6**	**+0.9**
	25nm,1.4s						
WR1				*e*PcP	**PcP**	**21 19 16.9**	**+0.1**
WRA	**Warramunga Arr**	**31.43**	**158**	P	**P**	**21 16 24.6**	**+0.9**
	3.6nm,0.6s,baz=332,slow=10,SNR=10						
WRA				PcP	**PcP**	**21 19 16.9**	**+0.1**
	2.7nm,0.6s,baz=341,slow=2.9,SNR=9.0						
WB2	**Warramunga Arr**	**31.43**	**158**	*e*P	**P**	**21 16 24.6**	**+0.9**
LZH	**Lanzhou**	**31.49**	**330**	*e*P	P	21 16 28.5	+4.2
LZH				pmax	pmax		
	comp=Z,19nm,1.0s						
HHC	**Hu-ho-hao-te**	**32.78**	**345**	*e*P	P	21 16 46.0	+11
CN2	**Changchun**	**34.38**	**4**	*e*P	P	21 17 01.1	+12
AS31	**Alice Springs**	**34.72**	**161**	*e*P	**P**	**21 16 54.2**	**+1.7**
	5.0nm,0.6s						
AS31				*e*PcP	**PcP**	**21 19 25.9**	**-0.2**
ASAR	**Alice Springs**	**34.72**	**161**	P	**P**	**21 16 54.0**	**+1.5**
	13nm,0.6s,baz=343,slow=7.5,SNR=29						
ASAR				PcP	**PcP**	**21 19 25.9**	**-0.2**
	3.2nm,0.7s,baz=342,slow=2.7,SNR=8.2						
AS01	**Alice Springs**	**34.73**	**161**	*e*P	**P**	**21 16 53.9**	**+1.4**
MDJ	**Mudanjiang**	**35.65**	**9**	P	P	21 17 07.9	+7.8
MDJ				pmax	pmax		
	comp=Z,10.0nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,15μm,14.6s						
USRK	**Ussuriysk Ar.**	**35.67**	**12**	P	**P**	**21 16 59.8**	**-0.5**
	2.4nm,0.8s,baz=201,slow=7.7,SNR=3.4						
GTA	**Gaotai**	**36.07**	**330**	*e*P	**P**	**21 17 06.6**	**+2.5**
GTA				pP	sP	21 17 18.6	+2.4
GTA				sP	pP	21 17 24.0	+11
GTA				pmax	pmax		
	comp=Z,11nm,1.1s						
FORT	**Forrest**	**40.30**	**172**	*e*P	**P**	**21 17 41.2**	**+1.6**
	256nm,0.6s						
KLR	**Kul'dur**	**40.48**	**9**	P	**P**	**21 17 41.8**	**+0.9**
	1.1nm,0.6s,baz=216,slow=7.0,SNR=3.8						
SONA0	**Songino Array**	**40.64**	**343**	*e*P	**P**	**21 17 39.1**	**-3.2**
	25nm,2.0s						
SONM	**Songino Array**	**40.64**	**343**	P	**P**	**21 17 39.1**	**-3.2**
	0.9nm,0.8s,baz=164,slow=7.0,SNR=3.3						
HNR	**Honiara**	**41.79**	**116**	P	**P**	**21 17 53.5**	**+1.5**
	32nm,0.3s,baz=99,slow=22,SNR=5.9						
NWAO	**Narrogin (SRO)**	**42.37**	**186**	P	**P**	**21 17 57.1**	**+0.6**
	18nm,0.6s,baz=242,slow=6.5,SNR=13						
BBOO	**Buckleboo**	**43.94**	**163**	*e*P	**P**	**21 18 10.6**	**+1.4**
	68nm,1.6s						
EIDS	**Eidsvold**	**44.42**	**142**	*e*P	**P**	**21 18 13.5**	**+0.3**
	29nm,1.6s						
TLY	**Talaya**	**44.88**	**344**	*e*P	P	21 18 23.7	+7.1
TLY				pmax	pmax		
	comp=Z,7.0nm,1.6s						
STKA	**Stephens Creek**	**44.95**	**157**	P	**P**	**21 18 18.2**	**+0.9**
	comp=Z,8.5nm,0.7s,baz=334,slow=7.9,SNR=9.6						
STKA	**Stephens Creek**	**44.95**	**157**	*e*P	**P**	**21 18 19.1**	**+1.8**
STKA				pmax	pmax		
	comp=Z,14nm,2.0s						
STKA	**Stephens Creek**	**44.95**	**157**	*e*P	**P**	**21 18 19.1**	**+1.8**
	comp=Z,14nm,2.0s						
WMQ	**Urumqi**	**45.66**	**325**	*e*P	P	21 18 30.5	+7.6
WMQ				pmax	pmax		
	comp=Z,17nm,0.6s						
ARMA	**Armidale**	**48.52**	**146**	*e*P	**P**	**21 18 47.6**	**+2.2**
	comp=Z,56nm,1.7s						
BOD	**Bodaibo**	**48.75**	**354**	*e*P	**P**	**21 18 42.1**	**-4.6**
BOD				pmax	pmax		
	comp=Z,7.0nm,1.6s						
MK01	**Makanchi Array**	**50.47**	**325**	*e*P	P	21 19 05.0	+4.9
MK31	**Makanchi Array**	**50.49**	**325**	*e*P	P	21 19 05.5	+5.3
MK31	**Makanchi Array**	**50.49**	**325**	*e*P	P	21 19 05.5	+5.3
MK32	**Makanchi Array**	**50.49**	**325**	*e*P	**P**	**21 18 59.5**	**-0.7**
MKAR	**Makanchi Array**	**50.49**	**325**	P	**P**	**21 18 59.5**	**-0.7**
	comp=Z,1.0nm,0.6s,baz=132,slow=7.9,SNR=4.2						
MKAR	**Makanchi Array**	**50.49**	**325**	*e*P	P	21 19 05.5	+5.3
MAKZ	**Makanchi**	**50.67**	**325**	*e*P	**P**	**21 19 01.4**	**-0.2**
MAKZ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MAKZ	**Makanchi**	**50.67**	**325**	*e*P	**P**	**21 19 01.4**	**-0.2**
	comp=Z,0.9nm,0.6s						
KSH	**Kashi**	**51.04**	**314**	P	P	21 19 13.4	+8.8
KSH				S	**S**	**21 26 28.1**	**+7.7**
KSH				SS	**SS**	**21 30 02.4**	**+6.7**
KSH				pmax	pmax		
	comp=Z,9.0nm,1.2s						
CAN	**Canberra**	**51.07**	**152**	*e*P	**P**	**21 19 05.5**	**+0.8**
CAN				pmax	pmax		
	comp=Z,169nm,2.0s						
CAN	**Canberra**	**51.07**	**152**	*e*P	**P**	**21 19 05.5**	**+0.8**
	comp=Z,169nm,2.0s						
AAK	**Ala-Archa**	**53.31**	**317**	⇑*e*P	P	21 19 28.2	+6.7
AAK				pmax	pmax		
	comp=Z,19nm,1.1s						
ZALV	**Zalesovo Beam**	**53.64**	**333**	P	**P**	**21 19 20.8**	**-2.6**
	comp=Z,0.5nm,0.4s,baz=90,slow=4.3,SNR=2.6						
ZAA1	**Zalesovo Array**	**53.64**	**333**	*e*P	**P**	**21 19 20.8**	**-2.7**
KURBB	**Kurchatov Arra**	**54.69**	**327**	P	**P**	**21 19 29.9**	**-1.3**
	comp=Z,0.9nm,0.6s,baz=118,slow=9.1,SNR=6.6						
KURK	**Kurchatov**	**54.69**	**327**	*e*P	**P**	**21 19 29.9**	**-1.3**
KURK	**Kurchatov**	**54.69**	**327**	*e*P	**P**	**21 19 29.9**	**-1.3**
KKAR	**Karatay Array**	**56.20**	**316**	*e*P	**P**	**21 19 44.3**	**+2.1**
KKAR	**Karatay Array**	**56.20**	**316**	*e*P	**P**	**21 19 44.3**	**+2.1**
	comp=Z,75nm,0.6s						
BVAR	**Borovoye Array**	**60.27**	**327**	P	**P**	**21 20 08.5**	**-1.9**
	comp=Z,0.4nm,0.4s,baz=101,slow=5.1,SNR=3.5						
BRVK	**Borovoye**	**60.34**	**327**	⇑*e*P	P	21 20 18.1	+7.2
BRVK				pmax	pmax		
	comp=Z,15nm,1.0s						
TIXI	**Tiksi**	**62.34**	**2**	P	**P**	**21 20 21.7**	**-2.4**
	comp=Z,0.9nm,0.3s,baz=32,slow=1.0,SNR=2.7						
NRIK	**Noril'sk**	**63.97**	**347**	P	**P**	**21 20 33.9**	**-1.1**
	comp=Z,4.1nm,0.6s,baz=142,slow=5.8,SNR=2.5						
GEYT	**Alibeck**	**64.04**	**308**	P	**P**	**21 20 33.4**	**-2.7**
	comp=Z,1.0nm,0.5s,baz=32,slow=5.8,SNR=3.0						
ABKAR	**Akbulak array**	**65.08**	**320**	*e*P	**P**	**21 20 41.1**	**-1.5**
	comp=Z,36nm,0.7s						
BILL	**Bilibino**	**65.31**	**17**	*e*P	P	21 20 53.0	+9.3
BILL				pmax	pmax		
	comp=Z,8.0nm,1.3s						
AKTO	**Aktyubinsk**	**66.59**	**321**	P	**P**	**21 20 51.5**	**-0.8**
	comp=Z,0.8nm,0.5s,baz=107,slow=15,SNR=2.3						
ARU	**Arti**	**67.89**	**327**	*c i*P	P	21 21 06.5	+6.1
ARU				S	S	21 30 06.0	+8.9
ARU				SS	**SS**	**21 34 27.6**	**+8.6**
ARU				pmax	pmax		
	comp=Z,11nm,1.7s						
GNI	**Garni**	**74.59**	**309**	⇑*e*P	**P**	**21 21 45.0**	**+3.4**
GNI				pmax	pmax		
	comp=Z,22nm,1.2s						
CASY	**Casey**	**75.97**	**185**	*e*P	**P**	**21 21 48.6**	**+0.1**
CASY				*e*S	**S**	**21 31 26.8**	**-2.6**
KBZ	**Khabaz**	**76.00**	**313**	P	**P**	**21 21 48.0**	**-1.3**
	comp=Z,2.9nm,1.1s,baz=90,slow=1.0,SNR=2.8						
KIV	**Kislovodsk**	**76.16**	**313**	*e*P	P	21 21 58.1	+7.7
KIV				pmax	pmax		
	comp=Z,12nm,1.0s						
KLMR	**Klimovskoe**	**78.40**	**330**	*e*P	P	21 22 07.4	+5.0
KLMR				pmax	pmax		
	comp=Z,6.0nm,0.8s						
OBN	**Obninsk**	**79.99**	**324**	*e*P	P	21 22 17.1	+5.9
OBN				pmax	pmax		
	comp=Z,9.0nm,1.0s						
BR101	**Keskin Array S**	**83.14**	**309**	*e*P	**P**	**21 22 26.9**	**-1.5**
BR131	**Keskin Array S**	**83.14**	**309**	*e*PcP	**PcP**	**21 22 36.2**	**+3.2**
BRTR	**Keskin Array B**	**83.14**	**309**	P	**P**	**21 22 26.9**	**-1.5**
	comp=Z,1.1nm,0.7s,baz=109,slow=4.9,SNR=4.1						
ARCES	**ARCESS Array B**	**83.69**	**339**	P	**P**	**21 22 29.6**	**-0.9**
	comp=Z,1.8nm,0.8s,baz=82,slow=6.5,SNR=2.7						
SPITS	**Spitsbergen Ar**	**84.12**	**349**	P	**P**	**21 22 30.8**	**-1.8**
	comp=Z,14nm,1.2s,baz=90,slow=2.9,SNR=2.9						
AKASG	**Malin Array Be**	**84.82**	**320**	P	**P**	**21 22 34.5**	**-2.1**
	comp=Z,0.9nm,0.5s,baz=70,slow=4.1,SNR=5.3						
AKBB	**Malin Array Si**	**84.82**	**320**	*e*P	**P**	**21 22 34.5**	**-2.1**
AKBB				pmax	pmax		
	comp=Z,7.0nm,0.8s						
AKBB	**Malin Array Si**	**84.82**	**320**	*e*P	**P**	**21 22 34.5**	**-2.1**
	comp=Z,6.9nm,0.8s						
KIEV	**Kiev**	**84.83**	**320**	⇓*e*P	P	21 22 42.9	+6.3
KIEV				pmax	pmax		
	comp=Z,9.0nm,0.9s						
FIA0	**FINESS Array S**	**84.84**	**331**	*e*P	**P**	**21 22 34.7**	**-1.8**
FIA0	**FINESS Array S**	**84.84**	**331**	*e*P	**P**	**21 22 34.7**	**-1.8**
FINES	**FINESS Array B**	**84.84**	**331**	P	**P**	**21 22 34.7**	**-1.8**
	comp=Z,0.6nm,0.4s,baz=69,slow=6.3,SNR=6.5						
AK11	**Malin Array Si**	**84.86**	**320**	*e*P	P	21 22 43.8	+7.0
VSU	**Vasula**	**85.03**	**328**	⇑*e*P	P	21 22 44.4	+6.9
VSU				pmax	pmax		
	comp=Z,33nm,0.7s						
KMBO	**Kilima Mbogo**	**85.40**	**268**	P	**P**	**21 22 39.1**	**-1.4**
	comp=Z,1.5nm,0.7s,baz=199,slow=8.4,SNR=3.1						
KMBO	**Kilima Mbogo**	**85.40**	**268**	*e*P	**P**	**21 22 39.1**	**-1.4**
KMBO				pmax	pmax		
	comp=Z,19nm,1.7s						
KMBO	**Kilima Mbogo**	**85.40**	**268**	*e*P	**P**	**21 22 39.1**	**-1.4**
	comp=Z,19nm,1.7s						
NACGM	**Naroch**	**85.62**	**325**	*e*	**P**	**21 22 39.0**	**-1.5**
SORM	**Soroca**	**85.78**	**318**	⇑*i*P	pP	21 22 48.2	-2.5
SORM	**Soroca**	**85.78**	**318**	⇑P	pP	21 22 48.2	-2.5
TLCR		**85.94**	**315**	⇓*i*P	pP	21 22 49.4	-2.2
TLCR		**85.94**	**315**	⇓P	pP	21 22 49.4	-2.2
TIRR	**Tirgusor**	**86.34**	**314**	⇑*i*P	pP	21 22 51.4	-2.2
TIRR	**Tirgusor**	**86.34**	**314**	⇑P	pP	21 22 51.4	-2.2
TIRR	**Tirgusor**	**86.34**	**314**	*e*P	pP	21 22 51.5	-2.2
	comp=Z,4.9nm,0.8s						
CFR	**Carcaliu**	**86.41**	**315**	⇑*i*P	pP	21 22 51.8	-2.1
CFR	**Carcaliu**	**86.41**	**315**	⇑P	pP	21 22 51.8	-2.1
TLB	**Topalu**	**86.58**	**314**	⇑*i*P	pP	21 22 52.7	-2.1
TLB	**Topalu**	**86.58**	**314**	⇑P	pP	21 22 52.7	-2.1
TESR	**Tescani**	**87.20**	**317**	⇑*i*P	pP	21 22 55.9	-1.9
PLOR	**Plostina**	**87.32**	**316**	⇓*i*P	pP	21 22 56.7	-1.8
PLOR	**Plostina**	**87.32**	**316**	⇓P	pP	21 22 56.7	-1.8
MLR	**Muntele Rosu**	**87.88**	**316**	P	**P**	**21 22 50.5**	**-1.4**
	comp=Z,0.4nm,0.6s,baz=325,slow=5.2,SNR=3.9						
MLR	**Muntele Rosu**	**87.88**	**316**	⇑*i*P	P	21 22 59.5	+7.6
MLR	**Muntele Rosu**	**87.88**	**316**	*e*P	**P**	**21 22 50.5**	**-1.4**
MLR				*e*		21 22 59.0	
MLR	**Muntele Rosu**	**87.88**	**316**	*e*P	**P**	**21 22 50.5**	**-1.4**
MLR				*e*PcP	**pP**	**21 22 59.0**	**-2.2**
VNDA	**Vanda**	**89.56**	**172**	P	**P**	**21 22 59.3**	**+0.4**
	comp=Z,2.2nm,0.7s,baz=317,slow=8.2,SNR=8.2						
VNDA	**Vanda**	**89.56**	**172**	*e*P	**P**	**21 22 59.4**	**+0.4**
VNDA				pmax	pmax		
	comp=Z,12nm,1.7s						
VNDA	**Vanda**	**89.56**	**172**	*e*P	**P**	**21 22 59.4**	**+0.4**
	comp=Z,12nm,1.7s						
BZS	**Buzias**	**90.81**	**316**	⇑*i*P	pP	21 23 12.0	-2.9
BZS	**Buzias**	**90.81**	**316**	⇑P	pP	21 23 12.0	-2.9
BRG	**Berggiesshubel**	**94.17**	**323**	*e*P	pP	21 23 28.2	-2.0
	comp=Z,3.4nm,0.8s						
BRG	**Berggiesshubel**	**94.17**	**323**	*e*P	**pP**	**21 23 28.2**	**-2.0**
BRG				pmax	pmax		
	comp=Z,3.0nm,0.8s						
CLL	**Collm**	**94.57**	**324**	*e*P	pP	21 23 29.0	-3.1
CLL	**Collm**	**94.57**	**324**	*e*P	pP	21 23 29.0	-3.1
LTX	**Lajitas**	**121.25**	**47**	*e*PKPdf	**PKPdf**	**21 28 55.7**	**-0.1**
TXAR	**Lajitas Array**	**121.25**	**47**	PKP	**PKPdf**	**21 28 55.7**	**-0.1**
	comp=Z,0.4nm,0.6s,baz=34,slow=0.3,SNR=2.8						
PLCA	**Paso Flores**	**146.73**	**162**	PKPbc	**PKPab**	**21 29 44.9**	**-0.6**
	comp=Z,12nm,0.8s,baz=272,slow=3.1,SNR=12						
PLCA	**Paso Flores**	**146.73**	**162**	*e*PKPdf	**PKPab**	**21 29 45.5**	**0.0**

INMG ***11*** *21:10:58.5±0.6, 37.13N×8.22W, h21km±2km, ML0.8, Error ellipse: s-maj=3.1km s-min=3.0km az=176.0*

CSEM ***11*** *21:10:59.9±0.8, 37.22N×8.22W, h20km, ML1.1, Error ellipse: s-maj=17.9km s-min=10.2km az=20.0*

MDD 11 21:10:57.5±1.8, 37.13N×8.21W, h20km±9km, mbLg1.1/4, 2C, Error ellipse: s-maj=14.6km s-min=5.9km az=3.0, PRXIMO, Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBDV	**Barranco-do-Ve**	**0.25**	**62**	⇑*i*Pg	Pg	21 11 03.9	+0.5
PBDV				*e*Sg	Sg	21 11 08.7	+1.2
PBDV				A	A	21 11 09.2	
	2.6nm,0.1s						
PBDV	**Barranco-do-Ve**	**0.25**	**62**	Pg	Pg	21 11 03.9	+0.5
PBDV				Lg	Lg	21 11 08.7	
	2.6nm,0.1s						
PBDV	**Barranco-do-Ve**	**0.25**	**62**	Pg	Pg	21 11 03.9	+0.5
PBDV				*e*Sg	Sg	21 11 08.7	+1.2
	2.6nm,0.1s						
MORF	**Marmelete**	**0.40**	**297**	*e*Sg	Sb	21 11 12.2	+0.5
MORF	**Marmelete**	**0.40**	**297**	Lg	Lg	21 11 12.2	
MORF	**Marmelete**	**0.40**	**297**	*e*Sg	Sb	21 11 12.2	+0.5
PCVE	**Castro Verde**	**0.52**	**15**	⇑*e*Pg	Pg	21 11 08.5	+0.4
PCVE				*e*Sg	Sg	21 11 15.8	+0.6
PCVE				A	A	21 11 16.8	
	4.8nm,0.5s						
PCVE	**Castro Verde**	**0.52**	**15**	Pg	Pg	21 11 08.5	+0.4
PCVE				Lg	Lg	21 11 15.8	
	4.8nm,0.5s						
PCVE	**Castro Verde**	**0.52**	**15**	Pg	Pg	21 11 08.5	+0.4
PCVE				*e*Sg	Sg	21 11 15.8	+0.6
	4.8nm,0.5s						
PTEO	**Sao Teotonio**	**0.59**	**315**	*e*Pg	Pb	21 11 09.2	0.0
PTEO				*e*Sg	Sb	21 11 17.1	0.0
PTEO	**Sao Teotonio**	**0.59**	**315**	Pg	Pb	21 11 09.2	0.0
PTEO				Lg	Lg	21 11 17.1	
PTEO	**Sao Teotonio**	**0.59**	**315**	Pg	Pb	21 11 09.2	0.0
PTEO				*e*Sg	Sb	21 11 17.1	0.0
EGRO	**El Granado**	**0.70**	**55**	Pg	Pb	21 11 10.6	-0.5
	0.4nm,0.1s,SNR=7.9						
EGRO				Lg	Lg	21 11 20.3	
	1.1nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**0.70**	**55**	Pg	Pb	21 11 10.6	-0.6
	0.4nm,0.1s,SNR=7.9						
EGRO				Lg	Lg	21 11 20.3	
	1.1nm,0.1s,SNR=7.9						
MESJ	**Messejana**	**0.71**	**359**	*e*P	Pg	21 11 11.5	-0.1
MESJ				*e*S	Sg	21 11 21.2	0.0
MESJ				A	A	21 11 21.8	
	2.3nm,0.1s						
MESJ	**Messejana**	**0.71**	**359**	Pg	Pg	21 11 11.5	-0.1
MESJ				Lg	Lg	21 11 21.2	
	2.3nm,0.1s						
MESJ	**Messejana**	**0.71**	**359**	*e*P	Pg	21 11 11.5	-0.1
MESJ				*e*S	Sg	21 11 21.2	0.0
	2.3nm,0.1s						
PNCL	**Nicolau / Gran**	**1.02**	**345**	*e*S	Sb	21 11 29.4	0.0
PNCL				A	A	21 11 30.3	
	1.8nm,0.1s						
PNCL	**Nicolau / Gran**	**1.02**	**345**	*e*S	Sb	21 11 29.4	0.0
	1.8nm,0.1s						
**E

TORD	**Torodi Ar. Bea**	**120.36**	**279**	PKP		**PKPdf**	**21 35 58.7**	**+1.1**
	0.3nm,0.5s,baz=79,slow=2.4,SNR=5.9							
TOA1	**Torodi Ar. Sit**	**120.36**	**279**	*e*PKPdf		**PKPdf**	**21 35 58.7**	**+1.0**

IDC **11** *21:19:47.0± 1.0, 9.74N× 122.3E, h0km, mb3.9/8, mb1 4.0/8, mb1mx3.7/62, mbtmp3.9/8, Error ellipse: s-maj=45.1km s-min=20.0km az=66.0*
ISCJB **11** *21:19:50.0± 0.7, 9.6N± 0.1× 122.15E± 0.09, h29km, mb3.9/8, Error ellipse: s-maj=21.4km s-min=8.5km az=30.6*
ISC 11 21:19:51.6± 0.8, 9.7N± 0.2× 122.3E± 0.1, h29km, n11, σ 0.66/11, mb4.0/8, 1C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBP	**Tagbilaran**	**1.58**	**91**	⇑*eP*	**Pb**	**21 20 20.0**	**-0.2**
CGP	**Cagayan de Oro**	**2.72**	**118**	⇓*eP*	**Pn**	**21 20 33.7**	**+0.3**
CGP				*eS*	**Sn**	**21 21 05.9**	**+0.6**
PPR	**Puerto Princes**	**3.48**	**271**	⇓*eP*	Pn	21 20 33.8	-10
CMAR	**Chiang Mai Arr**	**24.19**	**294**	P	**P**	**21 25 06.7**	**+0.8**
	0.3nm,0.3s,baz=119,slow=7.3,SNR=3.3						
WRA	**Warramunga Arr**	**31.80**	**158**	P	**P**	**21 26 14.3**	**+0.4**
	0.9nm,0.7s,baz=338,slow=9.4,SNR=2.2						
ASAR	**Alice Springs**	**35.09**	**161**	P	**P**	**21 26 41.1**	**-1.4**
	1.8nm,0.8s,baz=343,slow=8.6,SNR=4.9						
USRK	**Ussuriysk Ar.**	**35.36**	**12**	P	**P**	**21 26 44.2**	**-0.4**
	2.5nm,0.8s,baz=206,slow=7.7,SNR=5.8						
ZALV	**Zalesovo Beam**	**53.26**	**333**	P	**P**	**21 29 07.8**	**+0.3**
	0.6nm,0.3s,baz=126,slow=7.8,SNR=2.4						
BRTR	**Keskin Array B**	**82.81**	**309**	P	**P**	**21 32 13.4**	**-0.1**
	0.5nm,0.8s,baz=104,slow=5.2,SNR=4.2						
AKASG	**Malin Array Be**	**84.46**	**320**	P	**P**	**21 32 21.6**	**-0.1**
	1.3nm,0.7s,baz=70,slow=4.8,SNR=4.9						
FINES	**FINESS Array B**	**84.47**	**331**	P	**P**	**21 32 21.5**	**0.0**
	1.2nm,0.6s,baz=20,slow=6.1,SNR=6.3						

IDC **11** *21:24:03.8± 0.4, 9.52N× 122.23E, h0km, mb4.5/43, mb1 4.6/43, mb1mx4.5/59, mbtmp4.5/43, Error ellipse: s-maj=16.1km s-min=9.9km az=77.0*
MOS **11** *21:24:04.5± 0.9, 9.55N× 122.38E, h15km, mb4.9/45, Error ellipse: s-maj=12.9km s-min=5.9km az=114.0*
MAN **11** *21:24:04, 9.42N× 121.99E, h3km, mb4.8, ML3.7, MS3.7*
NEIC **11** *21:24:05.5± 0.2, 9.53N× 122.30E, h10km, mb4.9/39, Error ellipse: s-maj=6.0km s-min=4.2km az=86.0*
ISCJB **11** *21:24:07.6± 0.2, 9.52N± 0.02× 122.27E± 0.03, h33km, mb4.7/96, Error ellipse: s-maj=4.3km s-min=3.5km az=179.2*
KLM **11** *21:24:07.4, 9.39N× 122.51E, h70km, mb4.9, MS5.6*
DJA **11** *21:24:13.0± 3.0, 10.1N± 8.4× 12.2E± 1.0, h26km± 20km, M5.0/13, mb4.9/13, MLv5.0/2*
ISC 11 21:24:07.9± 1.1, 9.49N± 0.03× 122.30E± 0.04, h24km± 8km, n242, σ 1$40/238, mb4.7/96, 29C-15D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.94**	**99**	⇑*iP*	**Pb**	**21 24 23.2**	**-2.3**
SNPH				*i* S	**Sn**	**21 24 38.8**	**+0.6**
TBP	**Tagbilaran**	**1.56**	**82**	⇑*eP*	**Pb**	**21 24 37.5**	**+1.5**
RCP	**Roxas**	**2.11**	**12**	⇑*eP*	**Pn**	**21 24 42.8**	**+1.2**
RCP				*eS*	**Sb**	**21 25 11.8**	**+0.6**
CGP	**Cagayan de Oro**	**2.58**	**113**	⇑*iP*	**Pb**	**21 24 51.4**	**-2.1**
CGP				*i* S	**Sb**	**21 25 25.0**	**+0.2**
CTBH	**Cotabato--PC H**	**2.96**	**139**	⇓*eP*	**Pb**	**21 24 56.6**	**-3.4**
CTBH				*i* S	Sb	21 25 46.6	+11
PLP	**Palo**	**3.12**	**57**	⇓*iP*	**Pn**	**21 24 57.6**	**+2.0**
PLP				*i* S	**Sn**	**21 25 26.8**	**-5.3**
MMPH	**Masbate**	**3.14**	**24**	⇑*iP*	**Pn**	**21 25 02.8**	**-0.1**
MMPH				*i* S	**Sb**	**21 25 40.5**	**-0.3**
KCP	**Kidapawan**	**3.70**	**131**	⇓*eP*	**Pb**	**21 25 11.2**	**-1.4**
DAV	**Davao City (W)**	**4.04**	**126**	Pn	**Pb**	**21 25 21.8**	**+3.5**
	24nm,0.3s,baz=114,slow=14,SNR=3.8						
DAV	**Davao City (W)**	**4.04**	**126**	*e*Pn	**Pn**	**21 25 07.5**	**-0.7**
TGY	**Tagaytay City**	**4.78**	**344**	Pn	**Pn**	**21 25 18.8**	**+0.4**
	38nm,0.3s,baz=326,slow=11,SNR=2.4						
MYLDM	**Lahad Datu**	**5.70**	**222**	*e*Pn	**Pn**	**21 25 32.2**	**+1.2**
KDM	**Kudat**	**5.98**	**245**	⇑P	**Pn**	**21 25 35.5**	**+0.6**
TSM	**Tawau**	**6.78**	**221**	⇓P	**Pn**	**21 25 45.5**	**-0.4**
TSM	**Tawau**	**6.78**	**221**	⇑P	**Pn**	**21 25 46.5**	**+0.6**
KKM	**Kota Kinabalu**	**6.93**	**241**	⇑P	**Pn**	**21 25 47.6**	**-0.5**
KKM	**Kota Kinabalu**	**6.93**	**241**	*e*Pn	**Pn**	**21 25 46.1**	**-1.9**
KKM				*e*Sn	**Sn**	**21 27 02.1**	**-4.1**
LUWI	**Luwuk**	**10.47**	**177**	P	Pn	21 26 42.8	+6.3
LUWI	**Luwuk**	**10.47**	**177**	*e*Pn	Pn	21 26 42.2	+5.7
SBUM	**Sibu**	**12.21**	**236**	⇑P	**Pn**	**21 27 00.7**	**+0.3**
SBUM	**Sibu**	**12.21**	**236**	*e*Pn	**Pn**	**21 27 00.1**	**-0.3**
TPUB	**Ta-pu**	**13.83**	**354**	*e*Pn	**Pn**	**21 27 23.1**	**+0.7**
YULB	**Yu-li**	**13.86**	**356**	*e*Pn	**Pn**	**21 27 25.5**	**+2.6**
STKI	**Sintang**	**14.27**	**230**	P	**Pn**	**21 27 26.1**	**-2.4**
SSLB	**Suanglung**	**14.28**	**355**	*e*Pn	**P**	**21 27 37.1**	**+1.5**
KSM	**Kuching**	**14.34**	**237**	*e*Pn	**Pn**	**21 27 29.6**	**+0.1**
KAPI	**Kappang**	**14.63**	**190**	Pn	**Pn**	**21 27 34.6**	**+1.2**
	baz=339,slow=8.6,SNR=2.8						
YOJ	**Yonaguni jima**	**14.91**	**3**	*e*Pn	**Pn**	**21 27 38.6**	**+1.5**
YHNB	**Yeheng**	**15.12**	**357**	*e*Pn	**P**	**21 27 44.1**	**-0.9**
	32nm,0.9s						
FAKI	**Fak Fak**	**15.82**	**141**	*e*P	**P**	**21 27 54.9**	**+2.1**
	79nm,1.3s						
UBPT	**Khong Chiam**	**17.41**	**291**	P	**P**	**21 28 13.1**	**+2.7**
	242nm,1.6s						
PLAI	**Plampang**	**18.74**	**194**	P	**Pn**	**21 28 29.0**	**+3.4**
TWSI	**Taliwang, Sumb**	**18.89**	**197**	P	**Pn**	**21 28 31.9**	**+4.5**
SKNT	**Sakolnakorn**	**19.31**	**295**	P	**Pn**	**21 28 32.9**	**+0.4**
	110nm,1.1s						
JAGI	**Jajag, Banyuwa**	**19.60**	**205**	P	**Pn**	**21 28 35.7**	**-0.2**
JAGI	**Jajag, Banyuwa**	**19.60**	**205**	*e*P	**Pn**	**21 28 37.4**	**+1.5**
	47nm,1.0s						
GMJI	**Gumukmas**	**19.72**	**207**	P	**Pn**	**21 28 37.8**	**+0.4**
PPBI	**Pangkal Pinang**	**19.83**	**235**	P	**P**	**21 28 37.8**	**+0.8**
NGJI	**Ngawi**	**19.92**	**213**	P	**Pn**	**21 28 42.5**	**+2.7**
KHON	**Khomkaen**	**20.16**	**292**	P	Pn	21 28 42.6	+0.1
	22nm,0.9s,1μm						
PWJI	**Pagerwojo**	**20.29**	**211**	P	Pn	21 28 44.1	0.0
SRAK	**Srakaew**	**20.33**	**285**	P	Pn	21 28 49.7	+5.1
	47nm,1.2s						
WOJI	**Wonogiri, Jawa**	**20.60**	**214**	P	Pn	21 28 47.8	0.0
	169nm,0.9s						
CHAI	**Chaiyaphum**	**20.80**	**290**	P	Pn	21 28 49.0	-1.2
	11nm,1.1s,127nm						
UGM	**Wanagama**	**20.89**	**215**	*e*P	Pn	21 28 50.1	-1.0
	137nm,1.1s						
IPM	**Ipoh**	**21.69**	**258**	*e*P	**P**	**21 28 59.2**	**+2.1**
	14nm,0.7s						
KULM	**Kulim**	**21.86**	**261**	*e*P	**P**	**21 28 57.5**	**-1.6**
	29nm,1.2s						
CISI	**Cisompet, Garu**	**22.24**	**221**	*e*P	**P**	**21 29 04.8**	**+1.6**
	39nm,0.8s						
GYA	**Guiyang**	**22.45**	**321**	⇑*iP*	**P**	**21 29 08.2**	**+2.8**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
UTTA	**Uttaradit**	**22.65**	**294**	P	**P**	**21 29 08.6**	**+1.1**
	comp=Z,4.2nm,1.2s						
CGJI	**Cibinong**	**23.01**	**227**	P	**P**	**21 29 12.7**	**+1.5**
MTN	**Manton Dam**	**23.86**	**158**	*e*P	**P**	**21 29 20.1**	**+0.6**
	comp=Z,104nm,1.7s						
ENH	**Enshi**	**23.89**	**332**	*e*P	**P**	**21 29 20.0**	**+0.2**
	comp=Z,24nm,1.3s						
PSI	**Prapat**	**24.16**	**256**	P	**P**	**21 29 22.1**	**-0.5**
	comp=Z,4.6nm,0.4s,baz=41,slow=4.0,SNR=4.7						
PSI	**Prapat**	**24.16**	**256**	P	**P**	**21 29 22.1**	**-0.5**
PSI				pmax	pmax		
	comp=Z,8.0nm,0.6s						
PSI	**Prapat**	**24.16**	**256**	*e*P	**P**	**21 29 22.1**	**-0.5**
	comp=Z,108nm,1.8s						
KMI	**Kunming**	**24.25**	**312**	P	**P**	**21 29 25.7**	**+2.3**
KMI				pP	sP	21 29 38.4	+4.7
KMI				pmax	pmax		
	comp=Z,9.0nm,0.9s						
CM01	**Chiang Mai Arr**	**24.30**	**294**	*e*P	**P**	**21 29 23.0**	**-0.7**
CM31	**Chiang Mai Arr**	**24.33**	**294**	*e*P	**P**	**21 29 24.2**	**+0.2**
CM31				*e*PcP	**PcP**	**21 33 01.6**	**-1.8**
CMAR	**Chiang Mai Arr**	**24.33**	**294**	P	**P**	**21 29 23.4**	**-0.6**
	comp=Z,1.9nm,0.4s,baz=130,slow=8.6,SNR=23						
CMAR				PcP	**PcP**	**21 33 01.6**	**-1.9**
	comp=Z,0.3nm,0.3s,baz=131,slow=2.7,SNR=2.7						
CMMT	**Chiang Mai**	**24.44**	**295**	P	P	21 29 33.9	+8.9
CHTO	**Chiang Mai**	**24.44**	**295**	P	**P**	**21 29 25.4**	**+0.4**
	comp=Z,382nm,1.1s						
CHTO	**Chiang Mai**	**24.44**	**295**	*e*P	**P**	**21 29 24.2**	**-0.8**
	comp=Z,13nm,1.1s						
JNU	**Nakatsue**	**24.82**	**17**	P	**P**	**21 29 28.7**	**+0.5**
	comp=Z,2.8nm,0.7s,baz=270,slow=3.0,SNR=3.2						
JNU	**Nakatsue**	**24.82**	**17**	*e*P	**P**	**21 29 28.7**	**+0.5**
	comp=Z,13nm,1.0s						
MANU	**Manus Island**	**27.48**	**113**	*e*P	**P**	**21 29 51.1**	**-1.3**
	comp=Z,246nm,0.1s						
FITZ	**Fitzroy Crossi**	**27.61**	**173**	P	**P**	**21 29 53.6**	**+0.1**
	comp=Z,6.5nm,0.9s,baz=329,slow=4.2,SNR=4.3						
FITZ	**Fitzroy Crossi**	**27.61**	**173**	*e*P	**P**	**21 29 53.6**	**+0.1**
	comp=Z,24nm,1.4s						
KS15	**Wonju Array Si**	**28.29**	**9**	*e*P	**P**	**21 29 59.9**	**+0.4**
KSAR	**Wonju Array Be**	**28.29**	**9**	P	**P**	**21 29 59.9**	**+0.4**
KSRS	**Korea Array**	**28.30**	**9**	P	**P**	**21 29 59.9**	**+0.3**
	comp=Z,3.1nm,0.8s,baz=183,slow=11,SNR=7.9						
LZH	**Lanzhou**	**31.35**	**330**	*e*P	**P**	**21 30 28.3**	**+1.5**
LZH				pP	sP	21 30 39.8	+2.7
LZH				sP	pP	21 30 46.1	+12
LZH				pmax	pmax		
	comp=Z,31nm,1.2s						
WRAB	**Tennant Creek**	**31.55**	**158**	*ce*P	**P**	**21 30 24.0**	**-4.5**
WRAB				pmax	pmax		
	comp=Z,54nm,2.5s						
WRAB	**Tennant Creek**	**31.55**	**158**	*e*P	**P**	**21 30 31.8**	**+3.3**
	comp=Z,30nm,1.4s						
WR1	**Warramunga Arr**	**31.56**	**158**	*e*P	**P**	**21 30 28.1**	**-0.5**
	comp=Z,32nm,1.4s						
WR1				*e*PcP	**PcP**	**21 33 20.0**	**-1.1**
WRA	**Warramunga Arr**	**31.56**	**158**	P	**P**	**21 30 28.1**	**-0.5**
	comp=Z,4.0nm,0.8s,baz=336,slow=9.7,SNR=13						
WRA				PcP	**PcP**	**21 33 20.0**	**-1.1**
	comp=Z,2.5nm,0.7s,baz=337,slow=3.1,SNR=5.8						
WB2	**Warramunga Arr**	**31.56**	**158**	*e*P	**P**	**21 30 26.8**	**-1.8**
AS31	**Alice Springs**	**34.85**	**161**	*e*P	**P**	**21 30 58.4**	**+1.1**
	comp=Z,3.0nm,0.6s						
AS31				*e*PcP	**PcP**	**21 33 30.1**	**-0.1**
ASAR	**Alice Springs**	**34.85**	**161**	P	**P**	**21 30 58.0**	**+0.8**
	comp=Z,6.4nm,0.7s,baz=338,slow=7.1,SNR=33						
ASAR				PcP	**PcP**	**21 33 30.1**	**-0.1**
	comp=Z,3.2nm,0.9s,baz=339,slow=2.4,SNR=7.6						
AS01	**Alice Springs**	**34.86**	**161**	*e*P	**P**	**21 30 56.6**	**-0.8**
LSA	**Lhasa**	**35.38**	**309**	*e*P	**P**	**21 31 02.8**	**+0.4**
	comp=Z,4.3nm,0.7s						
MDJ	**Mudanjiang**	**35.56**	**9**	P	**P**	**21 31 04.2**	**+1.0**
MDJ				pmax	pmax		
	comp=Z,24nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,7μm,15.2s						
MDJ	**Mudanjiang**	**35.56**	**9**	*e*P	**P**	**21 31 04.0**	**+0.8**
	comp=Z,20nm,0.8s						
USRK	**Ussuriysk Ar.**	**35.59**	**12**	P	**P**	**21 31 03.5**	**0.0**
	comp=Z,12nm,0.8s,baz=200,slow=6.5,SNR=37						
GTA	**Gaotai**	**35.93**	**330**	*e*P	**P**	**21 31 06.6**	**0.0**
GTA				pP	pP	21 31 13.6	-0.4
GTA				sP	sP	21 31 17.6	+0.6
GTA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
RAMN	**Ramite**	**37.91**	**302**	*e*P	**P**	**21 31 24.1**	**+0.3**
	comp=Z,15nm,0.6s						
ASAJ	**Asahikawa**	**38.74**	**24**	*e*P	**P**	**21 31 30.9**	**+0.8**
	comp=Z,31nm,1.4s						
KKN	**Kakani**	**39.30**	**303**	*e*P	**P**	**21 31 35.1**	**-0.3**
	comp=Z,24nm,0.9s						
GKN	**Geha**	**39.91**	**303**	*e*P	**P**	**21 31 39.3**	**-1.1**
KLR	**Kul'dur**	**40.40**	**10**	P	**P**	**21 31 44.0**	**+0.1**
	comp=Z,4.2nm,0.7s,baz=203,slow=5.7,SNR=18						
KLR				PcP	**PcP**	**21 33 46.5**	**-0.3**
	comp=Z,0.9nm,0.6s,baz=312,slow=3.5,SNR=3.7						
FORT	**Forrest**	**40.41**	**172**	*e*P	**P**	**21 31 48.9**	**+4.7**
	comp=Z,248nm,0.8s						
SONA0	**Songino Array**	**40.52**	**343**	*e*P	**P**	**21 31 44.6**	**-0.5**
	comp=Z,6.4nm,0.8s						
SONM	**Songino Array**	**40.52**	**343**	P	**P**	**21 31 44.6**	**-0.5**
	comp=Z,5.8nm,0.8s,baz=165,slow=8.9,SNR=23						
SONA1	**Songino Array**	**40.52**	**344**	*e*P	**P**	**21 31 44.6**	**-0.6**
KOLN	**Koldanda**	**40.70**	**302**	*e*P	**P**	**21 31 46.7**	**-0.3**
	comp=Z,22nm,0.6s						
YSS	**Yuzh-Sakhalins**	**41.20**	**21**	⇓*eP*	**P**	**21 31 50.2**	**-0.3**
YSS				pmax	pmax		
	comp=Z,21nm,1.4s						
PYUN	**Piuthan**	**41.32**	**302**	*e*P	**P**	**21 31 51.9**	**-0.2**
	comp=Z,37nm,0.7s						
NWAO	**Narrogin (SRO)**	**42.45**	**186**	P	**P**	**21 32 01.6**	**+0.7**
	comp=Z,8.4nm,0.8s,baz=222,slow=10,SNR=4.5						
ZAK	**Zakamensk**	**43.71**	**342**	*e*P	**P**	**21 32 08.0**	**-3.0**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.7s						
BBOO	**Buckleboo**	**44.06**	**163**	*e*P	**P**	**21 32 14.4**	**+0.4**
	comp=Z,19nm,1.0s						
TLY	**Talaya**	**44.76**	**344**	P	**P**	**21 32 19.4**	**+0.1**
	comp=Z,5.0nm,0.6s,baz=196,slow=7.1,SNR=3.5						
TLY	**Talaya**	**44.76**	**344**	*e*P	**P**	**21 32 20.8**	**+1.5**
TLY				pmax	pmax		
	comp=Z,8.0nm,0.9s						
STKA	**Stephens Creek**	**45.08**	**157**	P	**P**	**21 32 23.3**	**+1.2**
	comp=Z,5.4nm,0.8s,baz=326,slow=6.1,SNR=9.0						
STKA	**Stephens Creek**	**45.08**	**157**	P	**P**	**21 32 23.3**	**+1.2**
STKA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
STKA	**Stephens Creek**	**45.08**	**157**	*e*P	**P**	**21 32 23.3**	**+1.2**
	comp=Z,2.3nm,1.0s						
MOY	**Mondy**	**45.53**	**342**	*e*P	**P**	**21 32 26.5**	**+0.9**
BOD	**Bodaibo**	**48.64**	**354**	*e*P	**P**	**21 32 49.3**	**-0.3**
BOD				pmax	pmax		
	comp=Z,9.0nm,0.9s						
ARMA	**Armidale**	**48.67**	**146**	*e*P	**P**	**21 32 51.4**	**+1.0**
	comp=Z,77nm,1.8s						
PDGK	**Podgornoye**	**50.20**	**320**	P	**P**	**21 33 02.3**	**+0.5**
PDGK				pmax	pmax		
	comp=Z,37nm,0.7s						
MK01	**Makanchi Array**	**50.33**	**325**	*e*P	**P**	**21 33 02.2**	**-0.5**
MK31	**Makanchi Array**	**50.35**	**325**	*e*P	**P**	**21 33 03.4**	**+0.5**
MK32	**Makanchi Array**	**50.35**	**325**	*e*P	**P**	**21 33 02.9**	**0.0**
MKAR	**Makanchi Array**	**50.35**	**325**	P	**P**	**21 33 02.9**	**0.0**
	comp=Z,11nm,0.8s,baz=121,slow=7.4,SNR=61						
MKAR	**Makanchi Array**	**50.35**	**325**	*e*P	**P**	**21 33 03.4**	**+0.5**
	comp=Z,72nm,0.8s						
MAKZ	**Makanchi**	**50.53**	**325**	*e*P	**P**	**21 33 04.7**	**+0.4**
	comp=Z,23nm,1.4s						
KSH	**Kashi**	**50.90**	**314**	P	**P**	**21 33 09.4**	**+2.1**
KSH				*es*P	sP	21 33 56.7	+39
KSH				S	S	21 40 13.4	-9.1
KSH				pmax	pmax		
	comp=Z,8.0nm,1.0s						
KSH				pmax	pmax		
	comp=Z,3μm,6.6s						
PETK	**Petropavlovsk-**	**52.02**	**26**	P	**P**	**21 33 15.6**	**+0.4**
	comp=Z,1.0nm,0.4s,baz=211,slow=8.2,SNR=3.1						
PEA1	**Petropavlovsk-**	**52.02**	**26**	*e*P	**P**	**21 33 15.7**	**+0.4**
YAK	**Yakutsk**	**52.73**	**4**	⇓*eP*	**P**	**21 33 19.8**	**-0.5**
YAK				pmax	pmax		
	comp=Z,11nm,0.7s						
AAK	**Ala-Archa**	**53.17**	**317**	P	**P**	**21 33 25.0**	**+0.8**
	comp=Z,3.5nm,0.4s,baz=125,slow=7.6,SNR=7.9						
AAK	**Ala-Archa**	**53.17**	**317**	⇓*eP*	**P**	**21 33 25.9**	**+1.7**
AAK				pmax	pmax		
	comp=Z,19nm,0.8s						
AAK	**Ala-Archa**	**53.17**	**317**	*e*P	**P**	**21 33 22.4**	**-1.8**
	comp=Z,9.3nm,0.8s						
ZAA0	**Zalesovo Array**	**53.50**	**333**	*e*P	**P**	**21 33 25.5**	**-0.7**
ZALV	**Zalesovo Beam**	**53.50**	**333**	P	**P**	**21 33 25.5**	**-0.7**
	comp=Z,5.2nm,0.7s,baz=132,slow=6.1,SNR=18						
ZAA1	**Zalesovo Array**	**53.50**	**333**	*e*P	**P**	**21 33 25.5**	**-0.7**
MA2	**Magadan**	**54.39**	**17**	P	**P**	**21 33 32.4**	**-0.2**
	comp=Z,4.7nm,0.4s,baz=193,slow=12,SNR=4.3						
MNAS	**Manas**	**54.46**	**316**	P	**P**	**21 33 34.5**	**+0.9**
MNAS				pmax	pmax		
	comp=Z,20nm,0.8s						
KURBB	**Kurchatov Arra**	**54.55**	**327**	P	**P**	**21 33 33.7**	**-0.2**
	comp=Z,7.3nm,0.7s,baz=129,slow=6.6,SNR=70						
KURK	**Kurchatov**	**54.55**	**327**	⇑*eP*	**P**	**21 33 33.9**	**0.0**
KURK				pmax	pmax		
	comp=Z,66nm,1.0s						
KURK	**Kurchatov**	**54.55**	**327**	*e*P	**P**	**21 33 33.9**	**0.0**
KBL	**Kabul**	**54.58**	**306**	P	**P**	**21 33 35.2**	**+0.5**
KBL				pmax	pmax		
	comp=Z,16nm,1.2s						
KBL	**Kabul**	**54.58**	**306**	*e*P	**P**	**21 33 34.8**	**+0.1**
	comp=Z,9.6nm,0.7s						
NVS	**Novosibirsk**	**54.78**	**334**	⇑*iP*	**P**	**21 33 35.4**	**-0.1**
NVS				pmax	pmax		
	comp=N,4.0nm,0.8s						
NVS				pmax	pmax		
	comp=E,5.0nm,0.8s						
NVS				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KKAR	**Karatay Array**	**56.05**	**316**	*e*P	**P**	**21 33 45.4**	**+0.5**
	comp=Z,129nm,0.6s						
OTUK	**Ortayu**	**56.91**	**322**	P	**P**	**21 33 52.1**	**+1.2**
OTUK				pmax	pmax		
	comp=Z,9.0nm,1.1s						
SEY	**Seymchan**	**57.58**	**16**	P	**P**	**21 33 55.9**	**+0.6**
	comp=Z,5.3nm,0.7s,baz=240,slow=3.6,SNR=14						
BVAR	**Borovoye Array**	**60.12**	**327**	P	**P**	**21 34 13.1**	**-0.2**
	comp=Z,1.4nm,0.7s,baz=125,slow=13,SNR=11						
BVAR	**Borovoye Array**	**60.12**	**327**	P	**P**	**21 34 13.1**	**-0.2**
BVAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
BRVK	**Borovoye**	**60.20**	**327**	⇓*eP*	**P**	**21 34 14.7**	**+1.0**
BRVK				pmax	pmax		
	comp=Z,14nm,1.0s						
BRVK	**Borovoye**	**60.20**	**327**	*e*P	**P**	**21 34 13.9**	**+0.2**
ZRNK	**Zerenda**	**60.85**	**326**	*e*P	**P**	**21 34 17.7**	**-0.5**
	comp=Z,7.1nm,0.8s						
WSAR	**Wadi Sarin**	**62.18**	**291**	P	**P**	**21 34 26.5**	**-1.2**
	comp=Z,7.0nm,0.7s,baz=147,slow=7.1,SNR=6.3						
TIXI	**Tiksi**	**62.24**	**2**	P	**P**	**21 34 26.1**	**-1.2**
	comp=Z,6.6nm,0.8s,baz=164,slow=6.5,SNR=9.5						
TIXI	**Tiksi**	**62.24**	**2**	⇓*eP*	**P**	**21 34 26.9**	**-0.3**
TIXI				pmax	pmax		
	comp=Z,8.0nm,1.0s						
NRIK	**Noril'sk**	**63.85**	**347**	P	**P**	**21 34 37.3**	**-0.6**
	comp=Z,10.0nm,0.7s,baz=139,slow=5.5,SNR=9.3						
GEYT	**Alibeck**	**63.90**	**308**	P	**P**	**21 34 38.5**	**-0.4**
	comp=Z,3.0nm,0.5s,baz=131,slow=4.1,SNR=5.9						
ABKAR	**Akbulak array**	**64.94**	**320**	*e*P	**P**	**21 34 43.5**	**-2.0**
	comp=Z,43nm,0.8s						
BILL	**Bilibino**	**65.24**	**17**	*e*P	**P**	**21 34 44.6**	**-2.5**
BILL				pmax	pmax		
	comp=Z,3.0nm,1.1s						
AKTO	**Aktyubinsk**	**66.44**	**321**	P	**P**	**21 34 54.9**	**-0.3**
	comp=Z,3.8nm,0.7s,baz=96,slow=8.4,SNR=16						
SVE	**Sverdlovsk**	**66.78**	**328**	*e*P	**P**	**21 34 56.6**	**-0.6**
ARU	**Arti**	**67.75**	**327**	P	**P**	**21 35 02.1**	**-1.3**
	comp=Z,2.2nm,0.4s,baz=126,slow=6.5,SNR=7.7						
ARU	**Arti**	**67.75**	**327**	*c iP*	**P**	**21 35 02.9**	**-0.4**
ARU						21 37 31.8	
ARU				S	**S**	**21 44 02.4**	**+2.8**
ARU				SS	**SS**	**21 48 20.1**	**-0.8**
ARU				pmax	pmax		
	comp=Z,11nm,1.7s						
ARU	**Arti**	**67.75**	**327**	*e*P	**P**	**21 35 02.4**	**-1.0**
	comp=Z,7.3nm,0.8s						
GNI	**Garni**	**74.45**	**309**	⇓*eP*	**P**	**21 35 46.0**	**+1.5**
GNI				pmax	pmax		
	comp=Z,60nm,1.4s						
GNI	**Garni**	**74.45**	**309**	*e*P	**P**	**21 35 41.7**	**-2.8**
	comp=Z,53nm,1.5s						
AKH	**Akhalkalaki**	**75.41**	**310**	⇑*iP*	**P**	**21 35 51.9**	**+1.9**
KEKH	**Kekaha**	**75.44**	**70**	*e*P	**P**	**21 35 49.7**	**-0.6**
	comp=Z,369nm,1.6s						
KBZ	**Khabaz**	**75.86**	**313**	P	**P**	**21 35 52.3**	**0.0**
	comp=Z,3.6nm,0.8s,baz=100,slow=4.1,SNR=8.1						
NEY	**Neytrino**	**75.98**	**312**	⇑*eP*	**P**	**21 35 54.8**	**+1.5**
NEY				pmax	pmax		
	comp=Z,1.0nm,1.0s						
KIV	**Kislovodsk**	**76.01**	**313**	*e*P	**P**	**21 35 55.0**	**+1.7**
KIV				pmax	pmax		
	comp=Z,20nm,1.0s						
KIV	**Kislovodsk**	**76.01**	**313**	*e*P	**P**	**21 35 51.9**	**-1.4**
	comp=Z,17nm,0.9s						
VRH	**Novokhopyorsk**	**76.77**	**320**	*e*P	**P**	**21 35 56.6**	**-0.7**
VRH				pmax	pmax		
	comp=Z,50nm,0.7s						
KLMR	**Klimovskoe**	**78.26**	**330**	*e*P	**P**	**21 36 03.0**	**-2.5**
KLMR				*e*		21 36 11.

comp=Z,0.8nm,0.4s,baz=315,slow=1.4,SNR=3.3

CLL	**Collm**	**94.42**	**324**	*es*P		sP	21	37	35.0	-1.8
GERES	**GERESS Array B**	**94.87**	**321**	P		**P**	**21**	**37**	**27.2**	**-0.9**
	comp=Z,1.2nm,1.1s,baz=60,slow=6.3,SNR=5.4									
MOX	**Moxa**	**95.48**	**323**	P		**P**	**21**	**37**	**30.3**	**-0.5**
MOX				pmax		pmax				
	comp=Z,4.0nm,1.3s									
CLZ	**Clausthal**	**95.75**	**325**	P		**P**	**21**	**37**	**31.6**	**-0.4**
CLZ				pmax		pmax				
	comp=Z,15nm,1.1s									
YKA	**Yellowknife Ar**	**96.03**	**23**	P		**P**	**21**	**37**	**31.8**	**-1.1**
	comp=Z,1.0nm,0.7s,baz=310,slow=4.2,SNR=4.7									
YKB5	**Yellowknife Ar**	**96.03**	**23**	*e*P		**P**	**21**	**37**	**31.8**	**-1.1**
TORD	**Torodi Ar. Bea**	**116.89**	**290**	PKP		**PKPdf**	**21**	**42**	**49.9**	**-1.6**
	comp=Z,0.4nm,0.7s,baz=11,slow=2.4,SNR=3.0									
TOA1	**Torodi Ar. Sit**	**116.89**	**290**	*e*PKPdf		**PKPdf**	**21**	**42**	**49.9**	**-1.6**
LTX	**Lajitas**	**121.26**	**47**	*e*PKPdf		**PKPdf**	**21**	**42**	**59.2**	**-0.5**
TXAR	**Lajitas Array**	**121.26**	**47**	PKP		**PKPdf**	**21**	**42**	**59.2**	**-0.5**
	comp=Z,0.4nm,0.7s,baz=182,slow=2.1,SNR=4.3									
SADO	**Sadowa**	**122.62**	**18**	PKP		**PKPdf**	**21**	**43**	**01.1**	**-0.6**
	comp=Z,2.1nm,0.4s,baz=24,slow=5.5,SNR=3.5									
PLCA	**Paso Flores**	**146.86**	**162**	PKPbc		**PKPbc**	**21**	**43**	**48.9**	**+0.4**
	comp=Z,11nm,0.7s,baz=212,slow=5.1,SNR=11									
PLCA	**Paso Flores**	**146.86**	**162**	*e*PKPbc		**PKPab**	**21**	**43**	**49.5**	**-0.3**
SJG	**San Juan**	**151.34**	**17**	PKP		**PKPdf**	**21**	**43**	**53.4**	**-1.0**
	comp=Z,5.8nm,0.3s,baz=353,slow=13,SNR=3.0									
SDV	**Santo Domingo**	**157.66**	**36**	PKP		**PKPdf**	**21**	**44**	**02.8**	**-0.8**
	comp=Z,4.2nm,0.7s,baz=235,slow=6.3,SNR=5.8									
LPAZ	**La Paz**	**167.79**	**125**	PKP		**PKPdf**	**21**	**44**	**14.4**	**+0.5**
	comp=Z,2.2nm,0.9s,baz=38,slow=7.4,SNR=7.9									
LPAZ	**La Paz**	**167.79**	**125**	*e*PKPdf		**PKPdf**	**21**	**44**	**15.0**	**+1.0**

IDC ***11*** *21:24:43.8±0.9, 9.63N×122.65E, h0km, mb4.3/7, mb1 4.4/7, mb1mx3.9/59, mbtmp4.3/7, Error ellipse: s-maj=58.5km s-min=22.1km az=78.0*
ISCJB ***11*** *21:24:46.5±0.8, 9.6N±0.1×122.8E±0.3, h29km, mb4.2/7, Error ellipse: s-maj=47.2km s-min=13.9km az=171.7*

ISC 11 21:24:48.4±0.8, 9.6N±0.1×122.7E±0.4, h29km, n10, σ0.9 90/10, mb4.4/7, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KMSI	**Cibinong**	**9.06**	**172**	P	P	**Pn**	**21 26 57.3**	**0.0**
WRA	**Warramunga Arr**	**31.52**	**159**	P	P	**P**	**21 31 07.8**	**-0.3**
	4.4nm,0.7s,baz=339,slow=9.6,SNR=7.0							
ASAR	**Alice Springs**	**34.83**	**162**	P		**P**	**21 31 36.9**	**-0.1**
	4.3nm,0.6s,baz=336,slow=6.9,SNR=5.3							
SEY	**Seymchan**	**57.37**	**16**	P		**P**	**21 34 34.5**	**+0.8**
	3.2nm,0.7s,baz=265,slow=5.0,SNR=4.3							
ILAR	**Eielson Array**	**81.57**	**26**	P		**P**	**21 37 01.8**	**-1.4**
	0.5nm,0.7s,baz=249,slow=5.1,SNR=4.1							
BRTR	**Keskin Array B**	**83.22**	**309**	P		**P**	**21 37 13.1**	**+0.5**
	0.6nm,0.6s,baz=86,slow=5.7,SNR=2.4							
FINES	**FINESS Array B**	**84.80**	**331**	P		**P**	**21 37 18.7**	**-1.2**
	1.9nm,0.7s,baz=99,slow=8.6,SNR=2.5							
INK	**Inuvik**	**86.19**	**21**	P		**P**	**21 37 26.9**	**+0.2**
	4.2nm,0.9s,baz=234,slow=8.2,SNR=4.4							
TXAR	**Lajitas Array**	**120.90**	**47**	PKP		**PKPdf**	**21 43 39.8**	**+1.0**
	0.6nm,0.7s,baz=278,slow=1.4,SNR=5.0							
PLCA	**Paso Flores**	**146.84**	**161**	PKPbc		**PKPbc**	**21 44 28.8**	**+0.5**
	2.9nm,0.7s,baz=165,slow=2.9,SNR=4.0							

IDC ***11*** *21:27:58.9±0.9, 9.37N×122.06E, h0km, mb3.8/8, mb1 3.9/8, mb1mx3.6/60, mbtmp3.8/8, Error ellipse: s-maj=48.0km s-min=18.8km az=66.0*
MAN ***11*** *21:28:01, 9.48N×122.14E, h8km, mb4.5, ML3.4, MS3.3*
ISCJB ***11*** *21:28:02.2±0.7, 9.35N±0.06×122.12E±0.05, h37km, mb3.8/8, Error ellipse: s-maj=8.9km s-min=7.8km az=176.6*

ISC 11 21:28:04.4±0.8, 9.46N±0.07×122.17E±0.08, h37km, n15, σ1.9 76/19, mb3.8/8, 3C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.06**	**96**	⇑*i*P		Pn	21 28 15.6	-7.0
SNPH				*i* S		**Sn**	**21 28 32.9**	**-3.3**
TBP	**Tagbilaran**	**1.68**	**82**	⇓*i*P		**Pn**	**21 28 31.6**	**+0.3**
LLP	**Lapu-Lapu**	**1.96**	**64**	*e*P		**Pn**	**21 28 34.8**	**-0.3**
LLP				*e*S		**Sn**	**21 29 01.4**	**+2.9**
RCP	**Roxas**	**2.16**	**15**	⇑*e*P		**Pn**	**21 28 38.2**	**+0.3**
RCP				*e*S		**Sn**	**21 29 05.7**	**+2.3**
CGP	**Cagayan de Oro**	**2.68**	**112**	⇑*e*P		**Pn**	**21 28 46.3**	**+1.3**
CGP				*e*S		**Sn**	**21 29 20.0**	**+3.7**
PLP	**Palo**	**3.24**	**58**	⇓*e*P		**Pn**	**21 28 51.4**	**-1.3**
PLP				*e*S		**Sn**	**21 29 28.2**	**-1.9**
CMAR	**Chiang Mai Arr**	**24.23**	**294**	P		**P**	**21 33 17.2**	**-0.8**
	1.1nm,0.7s,baz=101,slow=6.9,SNR=5.6							
WRA	**Warramunga Arr**	**31.58**	**158**	P		**P**	**21 34 22.6**	**-1.1**
	1.1nm,0.7s,baz=334,slow=10,SNR=4.5							
ASAR	**Alice Springs**	**34.86**	**161**	P		**P**	**21 34 52.1**	**-0.2**
	1.7nm,0.7s,baz=346,slow=7.6,SNR=6.3							
USRK	**Ussuriysk Ar.**	**35.65**	**12**	P		**P**	**21 34 59.6**	**+0.9**
	1.0nm,0.7s,baz=192,slow=13,SNR=3.8							
SONM	**Songino Array**	**40.30**	**344**	P		**P**	**21 35 40.6**	**+0.7**
	0.4nm,0.4s,baz=139,slow=6.8,SNR=2.5							
MKAR	**Makanchi Array**	**50.30**	**325**	P		**P**	**21 36 57.9**	**+0.6**
	2.4nm,0.8s,baz=123,slow=8.8,SNR=6.5							
KURBB	**Kurchatov Arra**	**54.51**	**327**	P		**P**	**21 37 28.2**	**-0.2**
	0.9nm,0.7s,baz=134,slow=6.6,SNR=4.6							
FINES	**FINESS Array B**	**84.67**	**331**	P		**P**	**21 40 32.8**	**-1.3**
	0.4nm,0.6s,baz=79,slow=7.2,SNR=3.1							
PLCA	**Paso Flores**	**146.87**	**162**	PKPbc		**PKPbc**	**21 47 42.9**	**-0.3**
	2.2nm,0.7s,baz=214,slow=6.0,SNR=3.2							

IDC 11 21:28:49.7±1.2, 9.60N×122.12E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.4/59, mbtmp3.6/5, Error ellipse: s-maj=149.6km s-min=19.5km az=66.0, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**31.73**	**158**	P		P	21 35 14.8	-0.7
	0.7nm,0.8s,baz=336,slow=10,SNR=3.2							
ASAR	**Alice Springs**	**35.01**	**161**	P		P	21 35 44.8	+0.6
	0.8nm,0.6s,baz=342,slow=7.4,SNR=4.1							
SONM	**Songino Array**	**40.36**	**344**	P		P	21 36 29.3	0.0
	0.5nm,0.7s,baz=143,slow=9.9,SNR=2.3							
MKAR	**Makanchi Array**	**50.15**	**325**	P		P	21 37 47.1	+0.2
	1.2nm,0.8s,baz=134,slow=8.4,SNR=3.3							
KURBB	**Kurchatov Arra**	**54.36**	**327**	P		P	21 38 17.5	-0.6
	0.4nm,0.6s,baz=116,slow=9.3,SNR=4.2							

IDC ***11*** *21:30:18.6±0.9, 9.65N×122.30E, h0km, mb3.7/7, mb1 3.8/7, mb1mx3.5/60, mbtmp3.7/7, Error ellipse: s-maj=49.0km s-min=18.8km az=67.0*
ISCJB ***11*** *21:30:21.3±0.8, 9.5N±0.1×122.04E±0.07, h29km, mb3.6/7, Error ellipse: s-maj=15.1km s-min=9.6km az=174.8*

ISC 11 21:30:23.0±0.9, 9.6N±0.1×122.20E±0.08, h29km, n10, σ0.9 70/12, mb3.7/7, 1C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**1.17**	**348**	⇓*e*P		Pn	21 30 37.2	-6.2
TBP	**Tagbilaran**	**1.65**	**87**	⇑*e*P		**Pb**	**21 30 52.1**	**-0.6**
LLP	**Lapu-Lapu**	**1.88**	**68**	*e*P		**Pn**	**21 30 54.7**	**+1.4**
LLP				*e*S		**Sb**	**21 31 19.7**	**-0.2**
CMAR	**Chiang Mai Arr**	**24.19**	**294**	P		**P**	**21 35 37.5**	**+0.3**
	0.3nm,0.3s,baz=106,slow=12,SNR=3.5							
WRA	**Warramunga Arr**	**31.70**	**158**	P		**P**	**21 36 43.7**	**-0.6**
	0.9nm,0.8s,baz=337,slow=9.0,SNR=3.4							
WRA				PcP		**PcP**	**21 39 35.7**	**-0.1**
	0.7nm,1.0s,baz=332,slow=3.5,SNR=3.5							
ASAR	**Alice Springs**	**34.99**	**161**	P		**P**	**21 37 13.7**	**+0.7**
	1.1nm,0.5s,baz=337,slow=7.0,SNR=8.1							
ASAR				PcP		**PcP**	**21 39 44.7**	**-0.3**
	0.5nm,0.7s,baz=339,slow=2.4,SNR=3.3							
USRK	**Ussuriysk Ar.**	**35.50**	**12**	P		**P**	**21 37 16.3**	**-0.9**
	1.1nm,0.6s,baz=213,slow=9.0,SNR=4.2							
SONM	**Songino Array**	**40.38**	**344**	P		**P**	**21 37 58.2**	**-0.2**
	0.4nm,0.6s,baz=172,slow=4.4,SNR=2.3							
MKAR	**Makanchi Array**	**50.20**	**325**	P		**P**	**21 39 16.4**	**+0.2**
	0.5nm,0.6s,baz=130,slow=8.0,SNR=3.5							
KURBB	**Kurchatov Arra**	**54.40**	**327**	P		**P**	**21 39 47.7**	**+0.4**
	0.5nm,0.6s,baz=120,slow=9.0,SNR=5.5							

IDC ***11*** *21:30:58.1±0.5, 9.61N×122.21E, h0km, mb4.2/31, mb1 4.3/31, mb1mx4.1/61, mbtmp4.2/31, Error ellipse: s-maj=23.5km s-min=12.0km az=70.0*
ISCJB ***11*** *21:30:59.2±1.5, 9.54N±0.05×122.13E±0.04, h18km±11km, mb4.4/47, Error ellipse: s-maj=8.4km s-min=6.6km az=140.9*
NEIC ***11*** *21:30:59.5±0.3, 9.59N×122.22E, h10km, mb4.7/19, Error ellipse: s-maj=9.7km s-min=5.7km az=74.0*

ISC 11 21:30:58.1±1.9, 9.56N±0.06×122.16E±0.06, h1km±12km, n75, σ0.9 93/84, mb4.4/47, 2C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.08**	**102**	⇑*i*P		**Pg**	**21 31 17.5**	**-1.4**
SNPH				*i* S		**Sb**	**21 31 34.0**	**-0.3**
LLP	**Lapu-Lapu**	**1.93**	**67**	*e*P		**Pg**	**21 31 34.8**	**-0.3**
LLP				*e*S		**Sg**	**21 32 00.7**	**+0.6**
PLP	**Palo**	**3.20**	**60**	⇓*e*P		**Pn**	**21 31 51.2**	**+1.7**
PLP				*e*S		**Sn**	**21 32 29.5**	**+1.2**
KKM	**Kota Kinabalu**	**6.85**	**240**	*e*Pn		**Pn**	**21 32 40.9**	**+1.1**
KKM				*e*Sn		**Sn**	**21 33 58.8**	**+0.2**
SBUM	**Sibu**	**12.15**	**235**	*e*Pn		Pn	21 33 58.2	+5.8
BKNI	**Bangkinang**	**22.94**	**248**	*e*P		**P**	**21 36 03.1**	**-0.9**
	114nm,0.4s							
CM01	**Chiang Mai Arr**	**24.15**	**294**	*e*P		**P**	**21 36 16.4**	**+0.4**
CM31	**Chiang Mai Arr**	**24.18**	**294**	*e*P		**P**	**21 36 16.5**	**+0.3**
CMAR	**Chiang Mai Arr**	**24.18**	**294**	P		**P**	**21 36 16.5**	**+0.3**
	1.4nm,0.6s,baz=105,slow=7.5,SNR=10							
MBWA	**Marble Bar**	**30.62**	**184**	*e*P		**P**	**21 37 13.2**	**-0.8**
	98nm,1.6s							
BJT	**Baijiatuao**	**30.80**	**351**	*e*P		**P**	**21 37 13.9**	**-1.4**
	14nm,1.3s							
WRA	**Warramunga Arr**	**31.68**	**158**	P		**P**	**21 37 23.2**	**-0.1**
	0.6nm,0.5s,baz=340,slow=9.4,SNR=5.9							
WRA				PcP		**PcP**	**21 40 15.0**	**-0.4**
	0.7nm,0.9s,baz=349,slow=3.1,SNR=4.8							
WR1	**Warramunga Arr**	**31.68**	**158**	*e*P		**P**	**21 37 23.2**	**-0.1**
	20nm,1.5s							
WR1				*e*PcP		**PcP**	**21 40 15.0**	**-0.4**
AS31	**Alice Springs**	**34.96**	**161**	*e*P		**P**	**21 37 53.1**	**+1.1**
	2.0nm,0.6s							
AS31				*e*PcP		**PcP**	**21 40 24.8**	**+0.2**
ASAR	**Alice Springs**	**34.96**	**161**	P		**P**	**21 37 53.1**	**+1.2**
	3.6nm,0.6s,baz=344,slow=7.3,SNR=15							
ASAR				PcP		**PcP**	**21 40 24.8**	**+0.2**
	1.1nm,0.8s,baz=0.6,slow=2.6,SNR=6.9							
AS01	**Alice Springs**	**34.98**	**161**	*e*P		**P**	**21 37 52.9**	**+0.8**
MDJ	**Mudanjiang**	**35.51**	**9**	*e*P		**P**	**21 37 55.8**	**-0.6**
	8.4nm,0.9s							
USRK	**Ussuriysk Ar.**	**35.55**	**12**	P		**P**	**21 37 57.9**	**+1.2**
	2.6nm,0.7s,baz=188,slow=8.3,SNR=8.1							
KLR	**Kul'dur**	**40.35**	**10**	P		**P**	**21 38 37.7**	**+0.5**
	1.3nm,0.8s,baz=169,slow=16,SNR=3.9							
SONA0	**Songino Array**	**40.41**	**344**	*e*P		**P**	**21 38 38.5**	**+0.6**
	2.4nm,0.8s							
SONM	**Songino Array**	**40.41**	**344**	P		**P**	**21 38 38.5**	**+0.6**
	1.6nm,0.6s,baz=164,slow=10,SNR=9.7							
SONA1	**Songino Array**	**40.41**	**344**	*e*P		**P**	**21 38 38.1**	**+0.1**
NWAO	**Narrogin (SRO)**	**42.51**	**186**	P		**P**	**21 38 56.0**	**+0.8**
	9.5nm,1.0s,baz=297,slow=9.0,SNR=3.6							
TLY	**Talaya**	**44.65**	**344**	*e*P		**P**	**21 39 10.7**	**-1.6**
	3.8nm,1.1s							
STKA	**Stephens Creek**	**45.21**	**156**	P		**P**	**21 39 17.9**	**+1.1**
	1.8nm,0.8s,baz=334,slow=8.2,SNR=3.8							
STKA	**Stephens Creek**	**45.21**	**156**	*e*P		**P**	**21 39 17.9**	**+1.1**
	8.1nm,1.9s							
MK01	**Makanchi Array**	**50.19**	**325**	*e*P		**P**	**21 39 56.2**	**+0.7**
MK31	**Makanchi Array**	**50.21**	**325**	*e*P		**P**	**21 39 57.0**	**+1.4**
MK32	**Makanchi Array**	**50.21**	**325**	*e*P		**P**	**21 39 57.0**	**+1.3**
MK32				*e*PcP		**PcP**	**21 41 14.6**	**-0.3**
MKAR	**Makanchi Array**	**50.21**	**325**	P		**P**	**21 39 57.0**	**+1.4**
	4.9nm,0.9s,baz=123,slow=8.8,SNR=18							
MKAR				PcP		**PcP**	**21 41 14.6**	**-0.3**
	0.5nm,0.7s,baz=152,slow=3.1,SNR=2.3							
MKAR	**Makanchi Array**	**50.21**	**325**	*e*P		**P**	**21 39 57.2**	**+1.5**
	38nm,0.8s							
MKAR				PcP		**PcP**	**21 41 14.6**	**-0.3**
MAKZ	**Makanchi**	**50.39**	**325**	*e*P		**P**	**21 39 57.6**	**+0.6**
	4.4nm,0.9s							
AAK	**Ala-Archa**	**53.02**	**317**	P		**P**	**21 40 17.6**	**+0.7**
	1.5nm,0.3s,baz=130,slow=7.3,SNR=4.8							
AAK	**Ala-Archa**	**53.02**	**317**	*e*P		**P**	**21 40 18.1**	**+1.2**
ZAA0	**Zalesovo Array**	**53.37**	**333**	*e*P		**P**	**21 40 19.2**	**+0.1**
ZALV	**Zalesovo Beam**	**53.37**	**333**	P		**P**	**21 40 18.1**	**-1.0**
	0.8nm,0.4s,baz=117,slow=6.8,SNR=5.0							
ZAA1	**Zalesovo Array**	**53.38**	**333**	*e*P		**P**	**21 40 18.1**	**-1.0**
KURBB	**Kurchatov Arra**	**54.41**	**327**	P		**P**	**21 40 27.4**	**+0.7**
	2.5nm,0.7s,baz=129,slow=6.7,SNR=13							
KURK	**Kurchatov**	**54.42**	**327**	*e*P		**P**	**21 40 27.7**	**+0.9**
KBL	**Kabul**	**54.42**	**306**	*e*P		**P**	**21 40 27.2**	**-0.2**
	3.9nm,1.0s							
KKAR	**Karatay Array**	**55.91**	**316**	*e*P		**P**	**21 40 39.1**	**+1.4**
	54nm,0.8s							
BVAR	**Borovoye Array**	**59.99**	**327**	P		**P**	**21 41 07.1**	**+0.9**
	0.6nm,0.5s,baz=130,slow=14,SNR=5.3							
ZRNK	**Zerenda**	**60.71**	**326**	*e*P		**P**	**21 41 11.5**	**+0.4**
	2.7nm,0.9s							
WSAR	**Wadi Sarin**	**62.02**	**291**	P		**P**	**21 41 20.1**	**-0.4**
	6.1nm,0.8s,baz=135,slow=5.9,SNR=5.7							
TIXI	**Tiksi**	**62.17**	**2**	P		**P**	**21 41 20.6**	**-0.1**
	3.5nm,0.9s,baz=241,slow=1.4,SNR=3.2							
NRIK	**Noril'sk**	**63.74**	**347**	P		**P**	**21 41 30.7**	**-0.4**
	4.8nm,0.6s,baz=131,slow=5.4,SNR=5.0							
GEYT	**Alibeck**	**63.74**	**308**	P		**P**	**21 41 33.4**	**+1.6**
	1.9nm,0.6s,baz=129,slow=4.0,SNR=6.1							
ABKAR	**Akbulak array**	**64.79**	**320**	*e*P		**P**	**21 41 39.0**	**+0.6**
	26nm,0.8s							
AKTO	**Aktyubinsk**	**66.30**	**321**	P		**P**	**21 41 48.9**	**+0.7**
	1.9nm,0.7s,baz=106,slow=11,SNR=5.8							
ARU	**Arti**	**67.61**	**327**	P		**P**	**21 41 56.0**	**-0.4**
	0.8nm,0.4s,baz=67,slow=13,SNR=2.9							
ARU	**Arti**	**67.61**	**327**	*e*P		**P**	**21 41 56.0**	**-0.4**
	18nm,2.0s							
GNI	**Garni**	**74.30**	**309**	P		**P**	**21 42 39.4**	**+1.8**
	3.9nm,1.0s,baz=7.1,slow=19,SNR=3.2							
KVAR	**Kislovodsk Arr**	**75.86**	**313**	P		**P**	**21 42 47.1**	**+0.6**
	3.3nm,0.8s,baz=96,slow=5.4,SNR=4.9							
KIV	**Kislovodsk**	**75.86**	**313**	*e*P		**P**	**21 42 47.1**	**+0.6**
	6.7nm,0.9s							
ILAR	**Eielson Array**	**81.83**	**26**	P		**P**	**21 43 17.7**	**-1.0**
	0.2nm,0.6s,baz=287,slow=3.4,SNR=2.7							
ILB	**Eielson Array**	**81.83**	**26**	*e*P		**P**	**21 43 17.7**	**-1.0**
BR101	**Keskin Array S**	**82.84**	**309**	*e*P		**P**	**21 43 24.5**	**-0.2**
BRTR	**Keskin Array B**	**82.84**	**309**	P		**P**	**21 43 24.5**	**-0.2**
	0.8nm,0.8s,baz=110,slow=5.3,SNR=5.1							
ARCES	**ARCESS Array B**	**83.44**	**339**	P		**P**	**21 43 25.7**	**-1.3**
	2.9nm,0.9s,baz=30,slow=9.3,SNR=3.1							
SPITS	**Spitsbergen Ar**	**83.91**	**348**	P		**P**	**21 43 29.6**	**+0.3**
	5.8nm,0.9s,baz=42,slow=4.9,SNR=2.9							
AKASG	**Malin Array Be**	**84.53**	**320**	P		**P**	**21 43 32.2**	**-0.7**
	2.2nm,0.7s,baz=71,slow=4.9,SNR=9.2							
AKBB	**Malin Array Si**	**84.53**	**320**	*e*P		**P**	**21 43 32.2**	**-0.7**
	4.9nm,0.7s							
FIA0	**FINESS Array S**	**84.58**	**331**	*e*P		**P**	**21 43 31.7**	**-1.2**
FINES	**FINESS Array B**	**84.58**	**331**	P		**P**	**21 43 31.7**	**-1.2**
	1.1nm,0.7s,baz=102,slow=6.6,SNR=4.0							
INK	**Inuvik**	**86.42**	**21**	P		**P**	**21 43 40.7**	**-1.3**
	0.9nm,0.7s,baz=96,slow=1.9,SNR=3.3							
INK	**Inuvik**	**86.42**	**21**	*e*P		**P**	**21 43 40.7**	**-1.3**
	10nm,1.7s							
MLR	**Muntele Rosu**	**87.58**	**316**	P		**P**	**21 43 48.3**	**0.0**
	0.7nm,0.7s,baz=50,slow=22,SNR=9.0							
MLR	**Muntele Rosu**	**87.58**	**316**	*e*P		**P**	**21 43 48.3**	**0.0**
	3.2nm,0.7s							
HFS	**Hagfors**	**90.77**	**332**	P		**P**	**21 44 01.4**	**-1.4**
	1.6nm,0.8s,baz=132,slow=6.2,SNR=4.7							
BRG	**Berggiesshubel**	**93.88**	**323**	*e*P		**P**	**21 44 17.8**	**+0.4**
	3.5nm,0.8s							
GERES	**GERESS Array B**	**94.73**	**321**	P		**P**	**21 44 20.5**	**-0.9**
	0.5nm,0.9s,baz=79,slow=2.9,SNR=4.1							
SYO	**Syowa Base**	**96.20**	**201**	⇑*e*pP		pP	21 44 30.3	+2.4
TORD	**Torodi Ar. Bea**	**116.73**	**290**	PKP		**PKPdf**	**21 49 43.5**	**-1.8**
	0.2nm,0.5s,baz=73,slow=1.1,SNR=3.1							
TOA1	**Torodi Ar. Sit**	**116.73**	**290**	*e*PKPdf		**PKPdf**	**21 49 43.5**	**-1.8**
PLCA	**Paso Flores**	**146.97**	**162**	PKPbc		**PKPab**	**21 50 43.8**	**-0.5**
	4.6nm,0.8s,baz=242,slow=2.5,SNR=4.7							

MAN ***11*** *21:35:18, 9.39N×122.08E, h9km, mb4.7, ML3.6, MS3.6*
IDC ***11*** *21:35:18.3±0.4, 9.56N×122.28E, h0km, mb4.3/40, mb1 4.4/40, mb1mx4.3/60, mbtmp4.3/40, Error ellipse: s-maj=17.4km s-min=10.9km az=77.0*
ISCJB ***11*** *21:35:19.1±0.2, 9.65N±0.03×122.33E±0.04, h10km, mb4.5/77, Error ellipse: s-maj=5.4km s-min=4.2km az=174.5*
NEIC ***11*** *21:35:20.0±0.2, 9.53N×122.25E, h10km, mb4.7/19, Error ellipse: s-maj=7.3km s-min=5.7km az=90.0*
MOS ***11*** *21:35:22.2±1.1, 9.59N×122.35E, h33km, mb4.9/28, Error ellipse: s-maj=13.4km s-min=5.8km az=114.0*
DJA ***11*** *21:35:26.8±1.5, 9.7N±9.7×12.2E±1.6, h10km, M4.8/13, mB6.1/1, mb4.8/13, MLv4.9/2, Mw(mB)5.7/1*

ISC 11 21:35:21.5±0.8, 9.53N±0.04×122.32E±0.05, h16km±4km, n193, σ1.9 39/200, mb4.6/77, 14C-14D, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.93**	**102**	⇑*i*P		Pg	21 35 31.9	-7.6
TBP	**Tagbilaran**	**1.53**	**84**	⇑*e*P		**Pn**	**21 35 46.9**	**-1.3**
LLP	**Lapu-Lapu**	**1.80**	**64**	*e*P		**Pb**	**21 35 54.1**	**-0.1**
LLP				*e*S		**Sg**	**21 36 21.1**	**+1.5**
RCP	**Roxas**	**2.06**	**12**	⇓*e*P		**Pb**	**21 35 56.9**	**-1.6**
RCP				*e*S		**Sb**	**21 36 24.8**	**+0.9**
CGP	**Cagayan de Oro**	**2.58**	**114**	⇓*e*P		**Pn**	**21 36 02.0**	**-0.7**
CGP				*e*S		**Sg**	**21 36 42.6**	**-1.9**
CTBH	**Cotabato--PC H**	**2.98**	**140**	*e*P		**Pn**	**21 36 08.5**	**+0.2**
CTBH				*i* S		**Sg**	**21 36 55.9**	**-1.6**
MMPH	**Masbate**	**3.09**	**24**	⇑*i*P		**Pb**	**21 36 14.4**	**-1.7**
MMPH				*i* S		**Sb**	**21 36 54.4**	**+0.8**
DAV	**Davao City (W)**	**4.05**	**127**	Pn		**Pn**	**21 36 25.9**	**+3.0**
	30nm,0.3s,baz=30,slow=16,SNR=3.3							
TGY	**Tagaytay City**	**4.74**	**344**	Pn		Pb	21 36 38.7	-5.6
	64nm,0.3s,baz=331,slow=15,SNR=2.9							
MYLDM	**Lahad Datu**	**5.75**	**221**	*e*Pn		**Pn**	**21 36 42.9**	**-3.3**
KKM	**Kota Kinabalu**	**6.97**	**241**	*e*Pn		Pn	21 36 57.4	-5.7
LUWI	**Luwuk**	**10.51**	**178**	*e*Pn		Pn	21 37 57.1	+5.4
SBUM	**Sibu**	**12.26**	**236**	*e*Pn		**Pn**	**21 38 11.7**	**-3.8**
STKI	**Sintang**	**14.31**	**230**	P		P	21 38 55.4	+4.7
KSM	**Kuching**	**14.38**	**237**	*e*Pn		**Pn**	**21 38 42.5**	**-2.0**
KAPI	**Kappang**	**14.67**	**190**	Pn		**Pn**	**21 38 50.7**	**+2.1**
	2.6nm,0.3s,baz=315,slow=8.6,SNR=6.2							
GZH	**Guangzhou**	**15.98**	**329**	P		**P**	**21 39 14.1**	**+4.8**
PBKI	**Pangkalan Bun**	**16.13**	**222**	P		**P**	**21 39 11.4**	**+0.4**
TWSI	**Taliwang, Sumb**	**18.94**	**197**	P		**Pn**	**21 39 44.8**	**+2.1**
SKNT	**Sakolnakorn**	**19.31**	**294**	P		**Pn**	**21 39 46.8**	**-0.3**
	99nm,1.2s							
JAGI	**Jajag, Banyuwa**	**19.64**	**205**	P		**Pn**	**21 39 52.1**	**+0.9**
GMJI	**Gumukmas**	**19.77**	**207**	P		**Pn**	**21 39 55.7**	**+3.1**
CHBT	**CHBT**	**19.87**	**281**	P		**Pn**	**21 39 53.6**	**-0.2**
	82nm,1.0s							
PPBI	**Pangk

BOD pmax pmax
comp=Z,10.0nm,1.6s
PDGK Podgornoye 50.18 320 P **P** **21 44 17.4 +0.9**
PDGK pmax pmax
comp=Z,21nm,0.9s
MK01 Makanchi Array 50.30 325 *e*P **P** **21 44 17.5 +0.1**
MK31 Makanchi Array 50.32 325 *e*P **P** **21 44 18.1 +0.5**
MK31 Makanchi Array 50.32 325 *e*P **P** **21 44 18.1 +0.5**
MK32 Makanchi Array 50.32 325 *e*P **P** **21 44 16.9 -0.6**
MKAR Makanchi Array 50.32 325 P **P** **21 44 16.9 -0.6**
comp=Z,2.3nm,0.8s,baz=133,slow=8.4,SNR=16
MKAR Makanchi Array 50.32 325 *e*P **P** **21 44 18.1 +0.5**
MKAR Makanchi Array 50.32 325 *e*P **P** **21 44 18.1 +0.5**
MAKZ Makanchi 50.51 325 *e*P **P** **21 44 19.5 +0.5**
MAKZ pmax pmax
comp=Z,5.0nm,0.7s
MAKZ Makanchi 50.51 325 *e*P **P** **21 44 19.5 +0.5**
comp=Z,4.9nm,0.7s
KSH Kashi 50.88 314 *e*P **P** **21 44 24.3 +2.3**
KSH *es*P PcP 21 45 46.1 +7.6
KSH *e*PP **PP** **21 46 25.2 +6.8**
KSH S S 21 51 22.3 -16
KSH pmax pmax
comp=Z,4.0nm,0.7s
PETK Petropavlovsk- 51.97 26 P **P** **21 44 27.8 -2.0**
comp=Z,1.0nm,0.4s,baz=183,slow=2.9,SNR=2.4
PEA1 Petropavlovsk- 51.97 26 *e*P **P** **21 44 27.8 -2.0**
AAK Ala-Archa 53.15 317 P **P** **21 44 36.4 -2.6**
comp=Z,1.3nm,0.3s,baz=248,slow=10,SNR=2.2
AAK Ala-Archa 53.15 317⇑ *e*P **P** **21 44 40.4 +1.5**
AAK pmax pmax
comp=Z,10.0nm,1.3s
ZAA0 Zalesovo Array 53.47 333 *e*P **P** **21 44 39.8 -1.0**
ZALV Zalesovo Beam 53.47 333 P **P** **21 44 39.4 -1.5**
comp=Z,1.7nm,0.8s,baz=129,slow=4.7,SNR=7.3
ZAA1 Zalesovo Array 53.47 333 *e*P **P** **21 44 39.4 -1.5**
MA2 Magadan 54.34 17 P **P** **21 44 46.2 -0.9**
comp=Z,3.6nm,0.2s,baz=217,slow=7.5,SNR=4.4
MNAS Manas 54.44 316 P **P** **21 44 49.7 +1.3**
MNAS pmax pmax
comp=Z,12nm,1.0s
KURBB Kurchatov Arra 54.52 327 P **P** **21 44 48.1 -0.4**
comp=Z,2.2nm,0.7s,baz=280,slow=28,SNR=6.2
KURK Kurchatov 54.52 327⇑ *i*P **P** **21 44 48.4 -0.2**
KURK pmax pmax
comp=Z,39nm,1.2s
KURK Kurchatov 54.52 327 *e*P **P** **21 44 48.9 +0.3**
NVS Novosibirsk 54.75 333 *e*P **P** **21 44 49.5 -0.7**
NVS pmax pmax
comp=N,5.0nm,1.2s
NVS pmax pmax
comp=Z,8.0nm,1.2s
NVS pmax pmax
comp=E,3.0nm,1.0s
KKAR Karatay Array 56.03 316 *e*P **P** **21 45 00.7 +1.0**
KKAR Karatay Array 56.03 316 *e*P **P** **21 45 00.7 +1.0**
OTUK Ortayu 56.88 322 P **P** **21 45 05.8 +0.1**
OTUK pmax pmax
comp=Z,7.0nm,1.4s
SEY Seymchan 57.53 16 P **P** **21 45 08.8 -1.1**
comp=Z,4.6nm,0.8s,baz=218,slow=9.0,SNR=8.3
SEY Seymchan 57.53 16*d**e*P **P** **21 45 09.5 -0.4**
BVAR Borovoye Array 60.10 327 P **P** **21 45 27.0 -1.0**
comp=Z,1.2nm,0.7s,baz=120,slow=8.9,SNR=5.6
BVAR Borovoye Array 60.10 327 P **P** **21 45 27.0 -1.0**
BRVK Borovoye 60.17 327⇓ *e*P **P** **21 45 28.6 +0.2**
BRVK pmax pmax
comp=Z,15nm,1.0s
ZRNK Zerenda 60.82 326 *e*P **P** **21 45 32.8 -0.1**
ZRNK pmax pmax
comp=Z,7.0nm,1.3s
ZRNK Zerenda 60.82 326 *e*P **P** **21 45 32.8 -0.1**
comp=Z,6.6nm,1.3s
TIXI Tiksi 62.20 2 P **P** **21 45 39.7 -2.2**
comp=Z,5.1nm,0.8s,baz=163,slow=4.0,SNR=6.1
TIXI Tiksi 62.20 2*d* *i*P **P** **21 45 40.9 -0.9**
TIXI pmax pmax
comp=Z,7.0nm,1.0s
TIXI Tiksi 62.20 2 *e*P **P** **21 45 41.0 -0.9**
NRIK Noril'sk 63.81 347 P **P** **21 45 51.6 -1.0**
comp=Z,5.1nm,0.8s,baz=137,slow=6.2,SNR=6.0
GEYT Alibeck 63.88 308 P **P** **21 45 54.8 +1.0**
comp=Z,1.2nm,0.7s,baz=114,slow=6.5,SNR=3.4
ABKAR Akbulak array 64.92 320 *e*P **P** **21 46 00.2 0.0**
BILL Bilibino 65.19 17⇓ *i*P **P** **21 46 01.5 -0.2**
BILL *i* 21 48 21.6
BILL pmax pmax
comp=Z,8.0nm,1.2s
AKTO Aktyubinsk 66.42 321 P **P** **21 46 09.0 -1.0**
comp=Z,1.7nm,0.7s,baz=109,slow=6.6,SNR=5.2
AKTO Aktyubinsk 66.42 321 *e*P **P** **21 46 09.0 -1.0**
SVE Sverdlovsk 66.75 328 *e*P **P** **21 46 11.5 -0.4**
SVE pmax pmax
comp=Z,8.0nm,1.1s
ARU Arti 67.72 327 P **P** **21 46 16.9 -1.2**
comp=Z,1.3nm,0.5s,baz=134,slow=2.1,SNR=3.7
ARU Arti 67.72 327*c* *i*P **P** **21 46 17.5 -0.6**
ARU S **S** **21 55 15.1 +0.1**
ARU SS **SS** **21 59 34.3 -1.8**
ARU pmax pmax
comp=Z,4.0nm,1.0s
ARU Arti 67.72 327 *e*P **P** **21 46 17.1 -1.0**
comp=Z,4.4nm,1.1s
GNI Garni 74.44 309⇓ *e*P **P** **21 47 00.8 +1.4**
GNI pmax pmax
comp=Z,29nm,1.6s
KBZ Khabaz 75.84 313 P **P** **21 47 07.3 +0.2**
comp=Z,1.3nm,0.7s,baz=266,slow=3.1,SNR=3.2
KVAR Kislovodsk Arr 75.99 313 P **P** **21 47 07.1 -1.1**
comp=Z,4.0nm,0.9s,baz=207,slow=4.2,SNR=5.2
KIV Kislovodsk 76.00 313 *e*P **P** **21 47 09.4 +1.2**
KIV pmax pmax
comp=Z,8.0nm,1.0s
KIV Kislovodsk 76.00 313 *e*P **P** **21 47 07.1 -1.1**
comp=Z,6.0nm,0.8s
KLMR Klimovskoe 78.23 330 *e*P **P** **21 47 17.3 -2.9**
KLMR *e* 21 47 27.0
KLMR pmax pmax
comp=Z,9.0nm,1.2s
OBN Obninsk 79.83 324 *i*P **P** **21 47 28.2 -0.9**
OBN *i* 21 47 35.5
OBN pmax pmax
comp=Z,6.0nm,0.9s
LVZ Lovozero 80.36 337 *e*P **P** **21 47 33.7 +1.9**
LVZ pmax pmax
comp=Z,14nm,1.6s
ILAR Eielson Array 81.79 26 P **P** **21 47 38.0 -1.5**
comp=Z,0.5nm,0.7s,baz=252,slow=4.4,SNR=5.5
ILB Eielson Array 81.79 26 *e*P **P** **21 47 38.0 -1.5**
BR101 Keskin Array S 82.98 309 *e*P **P** **21 47 45.9 -0.5**
BR131 Keskin Array S 82.98 309 *e*P **P** **21 47 46.4 0.0**
BRTR Keskin Array B 82.98 309 P **P** **21 47 45.9 -0.5**
comp=Z,1.1nm,0.8s,baz=106,slow=5.5,SNR=6.7
ARCES ARCESS Array B 83.52 339 P **P** **21 47 47.2 -1.1**
comp=Z,7.1nm,1.1s,baz=56,slow=7.4,SNR=4.7
BR231 Keskin MP Arra 83.62 309 *e*P **P** **21 47 46.9 -2.7**
SPITS Spitsbergen Ar 83.97 348 P **P** **21 47 50.1 -0.5**
comp=Z,9.8nm,0.9s,baz=126,slow=17,SNR=4.5
OUL Oulu 84.13 335 P **P** **21 47 51.8 +0.3**
OUL pmax pmax
comp=Z,15nm,2.5s
AKASG Malin Array Be 84.66 320 P **P** **21 47 53.6 -0.9**
comp=Z,4.0nm,0.9s,baz=73,slow=4.4,SNR=10
AKBB Malin Array Si 84.66 320 *e*P **P** **21 47 53.6 -0.9**
AKBB pmax pmax
comp=Z,9.0nm,1.0s
AKBB Malin Array Si 84.66 320 *e*P **P** **21 47 53.6 -0.9**
comp=Z,9.0nm,1.0s
KIEV Kiev 84.67 320⇓ *e*P **P** **21 47 53.4 -1.1**
KIEV pmax pmax
comp=Z,6.0nm,1.3s
KIEV Kiev 84.67 320 *e*P **P** **21 47 53.7 -0.9**
comp=Z,7.7nm,1.0s
FIA0 FINESS Array S 84.68 331 *e*P **P** **21 47 52.6 -1.8**
FIA0 FINESS Array S 84.68 331 *e*P **P** **21 47 52.6 -1.8**
FINES FINESS Array B 84.68 331 P **P** **21 47 52.6 -1.8**
comp=Z,1.8nm,0.8s,baz=42,slow=6.2,SNR=9.1
AK11 Malin Array Si 84.70 320 *e*P **P** **21 47 54.2 -0.4**
VSU Vasula 84.86 328⇑ *i*P **P** **21 47 54.5 -0.9**
VSU pmax pmax
comp=Z,48nm,1.1s
DAWY Dawson 85.11 26 *e*P **P** **21 47 57.0 +0.4**
comp=Z,14nm,1.5s
SORM Soroca 85.62 318⇓ *i*P **P** **21 47 57.5 -1.8**
SORM Soroca 85.62 318⇓ P **P** **21 47 57.6 -1.8**

TIRR Tirgusor 86.17 314⇓ *i*P **P** **21 48 02.1 -0.2**
TIRR Tirgusor 86.17 314 *e*P **P** **21 48 02.0 -0.2**
TIRR pmax pmax
comp=Z,5.0nm,0.9s
TIRR Tirgusor 86.17 314 *e*P **P** **21 48 01.9 -0.3**
comp=Z,4.7nm,0.9s
CFR Carcaliu 86.25 315⇓ *i*P **P** **21 48 02.2 -0.3**
CFR Carcaliu 86.25 315⇓ P **P** **21 48 02.2 -0.3**
INK Inuvik 86.39 21 P **P** **21 48 01.4 -1.3**
comp=Z,6.8nm,1.1s,baz=258,slow=7.0,SNR=10
INK Inuvik 86.39 21 *e*P **P** **21 48 02.8 0.0**
INK pmax pmax
comp=Z,7.0nm,1.0s
INK Inuvik 86.39 21 *e*P **P** **21 48 02.8 0.0**
comp=Z,7.1nm,1.0s
TLB Topalu 86.41 314⇑ *i*P **P** **21 48 03.3 -0.1**
TLB Topalu 86.41 314⇑ P **P** **21 48 03.3 -0.1**
MLR Muntele Rosu 87.71 316 P **P** **21 48 09.0 -0.9**
comp=Z,0.4nm,0.7s,baz=354,slow=11,SNR=6.8
MLR Muntele Rosu 87.71 316⇓ *i*P **P** **21 48 07.8 -2.1**
MLR Muntele Rosu 87.71 316 *e*P **P** **21 48 10.0 +0.1**
MLR pmax pmax
comp=Z,6.0nm,1.0s
MLR Muntele Rosu 87.71 316 *e*P **P** **21 48 10.0 +0.1**
comp=Z,6.1nm,1.0s
VNDA Vanda 89.72 172 P **P** **21 48 18.1 -0.3**
comp=Z,2.2nm,1.1s,baz=301,slow=5.7,SNR=5.7
HFS Hagfors 90.87 332 P **P** **21 48 22.4 -1.8**
comp=Z,1.8nm,0.8s,baz=146,slow=10,SNR=2.7
NB200 NORSAR Array S 91.67 333 *e*P **P** **21 48 26.2 -1.8**
NOA NORSAR Array B 91.67 333 P **P** **21 48 26.2 -1.8**
comp=Z,0.8nm,0.9s,baz=53,slow=19,SNR=2.5
BRG Berggiesshubel 94.00 323 *e*P **P** **21 48 39.1 +0.2**
comp=Z,3.0nm,0.8s
BRG *e* 21 48 46.8
comp=Z,6.8nm,1.1s
BRG Berggiesshubel 94.00 323 *e*P **P** **21 48 39.1 +0.2**
BRG *e* 21 48 46.8
BRG pmax pmax
comp=Z,3.0nm,0.8s
CLL Collm 94.40 324 *e*P **P** **21 48 40.0 -0.7**
CLL *es*P **sP** **21 48 48.0 -0.1**
CLL Collm 94.40 324 *e*P **P** **21 48 40.0 -0.7**
CLL *e**SP **sP** **21 48 48.0 -0.1**
GERES GERESS Array B 94.85 321 P **P** **21 48 41.8 -1.1**
comp=Z,0.4nm,0.8s,baz=31,slow=8.1,SNR=5.1
YKA Yellowknife Ar 95.98 23 P **P** **21 48 47.2 -0.5**
comp=Z,1.1nm,0.9s,baz=157,slow=33,SNR=3.1
YKB5 Yellowknife Ar 95.98 23 *e*P **P** **21 48 47.2 -0.5**
TORD Torodi Ar. Bea 116.89 290 PKP **PKPdf** **21 54 04.3 -2.1**
comp=Z,0.4nm,0.9s,baz=125,slow=2.3,SNR=2.2
TOA1 Torodi Ar. Sit 116.89 290 *e*PKPdf **PKPdf** **21 54 04.3 -2.1**
LTX Lajitas 121.22 47 *e*PKIKP **PKPdf** **21 54 14.4 -0.2**
LTX Lajitas 121.22 47 *e*PKPdf **PKPdf** **21 54 14.4 -0.2**
TXAR Lajitas Array 121.22 47 PKP **PKPdf** **21 54 14.4 -0.2**
comp=Z,0.5nm,0.7s,baz=207,slow=2.5,SNR=6.6
PLCA Paso Flores 146.90 162 PKPbc **PKPab** **21 55 04.0 -0.9**
comp=Z,13nm,0.8s,baz=235,slow=3.0,SNR=13
LPAZ La Paz 167.80 124 PKP **PKPdf** **21 55 29.7 +0.8**
comp=Z,2.0nm,0.9s,baz=51,slow=9.3,SNR=6.9
LPAZ La Paz 167.80 124 *e*PKIKP **PKPdf** **21 55 30.2 +1.3**
LPAZ La Paz 167.80 124 *e*PKPdf **PKPdf** **21 55 30.2 +1.3**

*IDC **11** 21:38:39.2±2.0, 9.77N×122.52E, h0km, mb3.6/4, mb1 3.7/4, mb1mx3.3/60, mbtmp3.6/4, Error ellipse: s-maj=240.3km s-min=21.9km az=63.0*
ISC 11 21:38:40.5±1.3, **9.73N**±0.08×**122.5E**±0.3, **h10**km, **n5,** σ1=**98**/6, **mb3.6**/4, **1C, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RCP	**Roxas**	**1.84**	**91**	*e*P	**Pg**	**21 39 13.8**	**-2.1**
RCP				*e*S	**Sg**	**21 39 42.4**	**+2.5**
WRA	**Warramunga Arr**	**31.72**	**158**	P	**P**	**21 45 04.9**	**+0.2**
	0.5nm,0.8s,baz=338,slow=9.2,SNR=2.9						
ASAR	**Alice Springs**	**35.02**	**162**	P	**P**	**21 45 34.1**	**+0.6**
	0.8nm,0.6s,baz=340,slow=7.7,SNR=5.2						
MKAR	**Makanchi Array**	**50.24**	**325**	P	**P**	**21 47 37.5**	**+0.6**
	0.4nm,0.8s,baz=143,slow=8.3,SNR=2.0						
KURBB	**Kurchatov Arra**	**54.44**	**327**	P	**P**	**21 48 07.8**	**-0.2**
	0.6nm,0.5s,baz=120,slow=9.0,SNR=5.8						

*IDC **11** 21:39:59.3±0.5, 9.59N×122.22E, h0km, mb4.2/26, mb1 4.2/26, mb1mx4.1/57, mbtmp4.2/26, Error ellipse: s-maj=24.9km s-min=11.2km az=73.0*
*NEIC **11** 21:40:01.0±0.3, 9.61N×122.35E, h10km, mb4.7/15, Error ellipse: s-maj=9.0km s-min=5.6km az=82.0*
*ISCJB **11** 21:40:02.4±0.3, 9.53N±0.04×122.09E±0.04, h29km, mb4.3/38, Error ellipse: s-maj=5.7km s-min=4.8km az=150.5*
*MAN **11** 21:40:02, 9.55N×122.14E, h7km, mb4.6, ML3.5, MS3.4*
ISC 11 21:40:03.6±0.4, **9.59N**±0.05×**122.26E**±0.04, **h29**km, **n70,** σ1=**36**/79, **mb4.3**/38, **2C-1D, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TBP	**Tagbilaran**	**1.58**	**86**⇑	*e*P	**Pn**	**21 40 27.3**	**-2.3**
LLP	**Lapu-Lapu**	**1.82**	**67**	*e*P	**Pb**	**21 40 35.5**	**-0.8**
LLP				*e*S	**Sb**	**21 41 01.1**	**+2.4**
RCP	**Roxas**	**2.01**	**14**⇑	*e*P	**Pb**	**21 40 37.4**	**-2.1**
RCP				*e*S	**Sb**	**21 41 05.0**	**+0.8**
CGP	**Cagayan de Oro**	**2.65**	**115**⇓	*i*P	**Pb**	**21 40 47.7**	**-2.7**
CGP				*i* S	**Sb**	**21 41 23.1**	**+0.5**
PPR	**Puerto Princes**	**3.49**	**273**	*i* P	**Pn**	**21 40 54.3**	**-1.6**
PPR				*i* S	**Sn**	**21 41 33.8**	**-2.5**
MYLDM	**Lahad Datu**	**5.76**	**221**	*e*Pn	**Pn**	**21 41 28.5**	**+1.4**
KKM	**Kota Kinabalu**	**6.95**	**240**	*e*Pn	**Pn**	**21 41 43.1**	**-0.5**
KKM				*e*Sn	**Sn**	**21 42 58.8**	**-3.1**
LUWI	**Luwuk**	**10.58**	**177**	*e*Pn	Pn	21 42 39.5	+6.3
SBUM	**Sibu**	**12.25**	**235**	*e*Pn	**Pn**	**21 42 56.4**	**+0.2**
IPM	**Ipoh**	**21.68**	**258**	*e*P	**P**	**21 44 54.0**	**+1.8**
	41nm,1.7s						
GUMO	**Guam**	**22.49**	**78**	P	**P**	**21 44 56.9**	**-4.0**
	21nm,0.3s,baz=18,slow=20,SNR=2.0						
CM31	**Chiang Mai Arr**	**24.26**	**294**	*e*P	**P**	**21 45 15.6**	**-2.8**
CMAR	**Chiang Mai Arr**	**24.26**	**294**	P	**P**	**21 45 15.6**	**-2.8**
	0.6nm,0.7s,baz=134,slow=9.5,SNR=5.6						
FITZ	**Fitzroy Crossi**	**27.72**	**173**	P	**P**	**21 45 49.3**	**-0.3**
	4.9nm,0.9s,baz=299,slow=6.2,SNR=4.4						
FITZ	**Fitzroy Crossi**	**27.72**	**173**	*e*P	**P**	**21 45 49.3**	**-0.3**
	27nm,1.4s						
WR1	**Warramunga Arr**	**31.67**	**158**	*e*P	**P**	**21 46 23.9**	**-0.7**
	32nm,1.7s						
WR1				*e*PcP	**PcP**	**21 49 16.2**	**-0.1**
WRA	**Warramunga Arr**	**31.67**	**158**	P	**P**	**21 46 23.9**	**-0.7**
	1.4nm,0.5s,baz=341,slow=9.3,SNR=8.6						
WRA				PcP	**PcP**	**21 49 16.2**	**-0.1**
	1.7nm,0.7s,baz=338,slow=2.9,SNR=8.6						
AS31	**Alice Springs**	**34.96**	**161**	*e*P	**P**	**21 46 54.8**	**+1.5**
	2.6nm,1.0s						
AS31				*e*PcP	**PcP**	**21 49 25.9**	**+0.4**
ASAR	**Alice Springs**	**34.96**	**161**	P	**P**	**21 46 54.5**	**+1.2**
	4.8nm,0.8s,baz=342,slow=7.3,SNR=24						
ASAR				PcP	**PcP**	**21 49 25.9**	**+0.4**
	1.6nm,0.7s,baz=341,slow=2.6,SNR=8.2						
AS01	**Alice Springs**	**34.97**	**161**	*e*P	**P**	**21 46 53.7**	**+0.2**
USRK	**Ussuriysk Ar.**	**35.50**	**12**	P	**P**	**21 46 58.2**	**+0.5**
	1.5nm,0.6s,baz=212,slow=6.8,SNR=6.6						
KLR	**Kul'dur**	**40.30**	**10**	P	**P**	**21 47 38.4**	**+0.3**
	1.3nm,0.5s,baz=178,slow=3.8,SNR=6.0						
SONA0	**Songino Array**	**40.41**	**343**	*e*P	**P**	**21 47 39.9**	**+0.7**
	3.9nm,1.0s						
SONM	**Songino Array**	**40.41**	**343**	P	**P**	**21 47 39.9**	**+0.7**
	1.5nm,0.7s,baz=164,slow=9.4,SNR=9.5						
SONA1	**Songino Array**	**40.41**	**344**	*e*P	**P**	**21 47 40.5**	**+1.1**
NWAO	**Narrogin (SRO)**	**42.55**	**186**	P	**P**	**21 47 58.6**	**+1.8**
	11nm,0.8s,baz=242,slow=9.6,SNR=5.7						
BBOO	**Buckleboo**	**44.17**	**163**	*e*P	**P**	**21 48 11.2**	**+1.3**
	39nm,1.2s						
STKA	**Stephens Creek**	**45.19**	**157**	P	**P**	**21 48 18.0**	**-0.1**
	4.1nm,0.8s,baz=323,slow=6.3,SNR=7.1						
STKA	**Stephens Creek**	**45.19**	**157**	*e*P	**P**	**21 48 18.0**	**-0.1**
	2.2nm,1.0s						
MK01	**Makanchi Array**	**50.22**	**325**	*e*P	**P**	**21 48 59.2**	**+2.2**
MK31	**Makanchi Array**	**50.24**	**325**	*e*P	**P**	**21 48 59.8**	**+2.7**
MK31				*e*S	**S**	**21 56 04.3**	**-3.3**
MK32	**Makanchi Array**	**50.24**	**325**	*e*P	**P**	**21 48 58.2**	**+1.0**
MKAR	**Makanchi Array**	**50.24**	**325**	P	**P**	**21 48 58.2**	**+1.0**
	0.9nm,0.8s,baz=120,slow=7.4,SNR=6.6						
MKAR	**Makanchi Array**	**50.24**	**325**	*e*P	**P**	**21 48 59.8**	**+2.7**
ZALV	**Zalesovo Beam**	**53.39**	**333**	P	**P**	**21 49 19.7**	**-0.8**
	0.8nm,0.5s,baz=116,slow=6.8,SNR=4.5						
ZAA1	**Zalesovo Array**	**53.39**	**333**	*e*P	**P**	**21 49 19.7**	**-0.8**
KURK	**Kurchatov**	**54.45**	**327**	*e*P	**P**	**21 49 29.6**	**+1.4**
KKAR	**Karatay Array**	**55.95**	**316**	*e*P	**P**	**21 49 41.5**	**+2.2**
	31nm,0.9s						
SEY	**Seymchan**	**57.49**	**16**	P	**P**	**21 49 50.8**	**+1.0**
	0.9nm,0.3s,baz=0.0,slow=20,SNR=3.7						
BVAR	**Borovoye Array**	**60.02**	**327**	P	**P**	**21 50 08.1**	**+0.5**
	0.9nm,0.8s,baz=97,slow=12,SNR=5.6						
ZRNK	**Zerenda**	**60.74**	**326**	*e*P	**P**	**21 50 13.0**	**+0.5**
	1.6nm,0.8s						
TIXI	**Tiksi**	**62.14**	**2**	P	**P**	**21 50 21.8**	**+0.2**
	2.0nm,0.3s,baz=117,slow=6.8,SNR=2.4						
GEYT	**Alibeck**	**63.81**	**308**	P	**P**	**21 50 33.8**	**+0.4**
	1.1nm,0.6s,baz=133,slow=11,SNR=3.1						
ARU	**Arti**	**67.64**	**327**	P	**P**	**21 50 57.7**	**0.0**
	1.1nm,0.4s,baz=90,slow=9.1,SNR=3.6						
ARU	**Arti**	**67.64**	**327**	*e*P	**P**	**21 50 57.7**	**0.0**
	2.3nm,0.7s						
GNI	**Garni**	**74.36**	**309**	P	**P**	**21 51 38.2**	**-0.8**
	1.4nm,0.3s,baz=168,slow=9.3,SNR=3.3						
KVAR	**Kislovodsk Arr**	**75.91**	**313**	P	**P**	**21 51 47.7**	**-0.1**
	2.7nm,0.7s,baz=94,slow=6.6,SNR=3.8						
KIV	**Kislovodsk**	**75.92**	**313**	*e*P	**P**	**21 51 47.7**	**-0.1**
	18nm,1.6s						
OBN	**Obninsk**	**79.75**	**324**	P	**P**	**21 52 09.0**	**+0.2**
	12nm,0.5s,baz=54,slow=16,SNR=4.3						
OBN	**Obninsk**	**79.75**	**324**	*e*P	**P**	**21 52 09.0**	**+0.2**
	21nm,0.4s						
ILAR	**Eielson Array**	**81.76**	**26**	P	**P**	**21 52 19.9**	**+0.6**
	0.2nm,0.6s,baz=268,slow=4.1,SNR=3.3						
ILB	**Eielson Array**	**81.76**	**26**	*e*P	**P**	**21 52 19.9**	**+0.6**
BR101	**Keskin Array S**	**82.90**	**309**	*e*P	**P**	**21 52 26.7**	**+0.6**
BRTR	**Keskin Array B**	**82.90**	**309**	P	**P**	**21 52 26.7**	**+0.6**
	0.6nm,0.7s,baz=119,slow=2.7,SNR=3.1						
ARCES	**ARCESS Array B**	**83.44**	**339**	P	**P**	**21 52 27.5**	**-0.6**
	2.7nm,0.9s,baz=69,slow=6.6,SNR=4.1						
AKASG	**Malin Array Be**	**84.58**	**320**	P	**P**	**21 52 34.2**	**0.0**
	0.8nm,0.5s,baz=71,slow=4.9,SNR=6.3						
AKBB	**Malin Array Si**	**84.58**	**320**	*e*P	**P**	**21 52 34.2**	**0.0**
	4.1nm,0.6s						
FIA0	**FINESS Array S**	**84.60**	**331**	*e*P	**P**	**21 52 34.2**	**+0.1**
FINES	**FINESS Array B**	**84.60**	**331**	P	**P**	**21 52 34.2**	**+0.1**
	1.0nm,0.7s,baz=131,slow=8.1,SNR=3.0						
INK	**Inuvik**	**86.35**	**21**	P	**P**	**21 52 42.4**	**-0.2**
	1.3nm,0.6s,baz=330,slow=2.1,SNR=4.1						
INK	**Inuvik**	**86.35**	**21**	*e*P	**P**	**21 52 42.4**	**-0.2**
	15nm,1.9s						
MLR	**Muntele Rosu**	**87.63**	**316**	P	**P**	**21 52 50.5**	**+0.9**
	0.3nm,0.5s,baz=117,slow=4.5						
MLR	**Muntele Rosu**	**87.63**	**316**	*e*P	**P**	**21 52 50.5**	**+0.9**
	4.9nm,1.1s						
VNDA	**Vanda**	**89.79**	**172**	P	**P**	**21 52 58.4**	**-0.4**
	0.9nm,0.8s,baz=267,slow=8.7,SNR=4.2						
BBB	**Bella Bella**	**94.21**	**36**	P	**P**	**21 53 20.2**	**+0.3**
	4.4nm,0.7s,baz=285,slow=17,SNR=2.5						
TORD	**Torodi Ar. Bea**	**116.82**	**290**	PKP	**PKPdf**	**21 58 45.4**	**-0.9**
	0.3nm,0.8s,baz=48,slow=2.1,SNR=2.5						
TOA1	**Torodi Ar. Sit**	**116.82**	**290**	*e*PKPdf	**PKPdf**	**21 58 45.4**	**-0.9**
LTX	**Lajitas**	**121.21**	**47**	*e*PKPdf	**PKPdf**	**21 58 54.4**	**-0.2**
TXAR	**Lajitas Array**	**121.22**	**47**	PKP	**PKPdf**	**21 58 54.4**	**-0.2**
	0.2nm,0.6s,baz=307,slow=3.3,SNR=2.6						
PLCA	**Paso Flores**	**146.97**	**162**	PKPbc	**PKPbc**	**21 59 43.8**	**0.0**
	5.5nm,0.8s,baz=324,slow=1.1,SNR=4.4						

*IDC **11** 21:43:06.5±1.5, 9.75N×122.65E, h0km, mb3.9/4, mb1 4.0/4, mb1mx3.4/52, mbtmp3.9/4, Error ellipse: s-maj=200.2km s-min=23.6km az=68.0*
ISC 11 21:43:08.0±1.2, **9.7N**±0.2×**122.6E**±0.3, **h10**km, **n5,** σ1=**31**/5, **mb3.8**/4, **Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.76**	**119**	*i* P	**Pn**	**21 43 24.9**	**+0.1**
WRA	**Warramunga Arr**	**31.67**	**159**	P	**P**	**21 49 31.5**	**-0.3**
	0.8nm,0.9s,baz=337,slow=9.1,SNR=3.0						
ASAR	**Alice Springs**	**34.98**	**162**	P	**P**	**21 50 00.8**	**+0.1**
	1.4nm,0.7s,baz=337,slow=6.9,SNR=7.7						
TLY	**Talaya**	**44.62**	**343**	P	**P**	**21 51 20.3**	**-0.2**
	3.3nm,0.6s,baz=298,slow=17,SNR=3.7						
MKAR	**Makanchi Array**	**50.31**	**325**	P	**P**	**21 52 05.2**	**+0.2**
	0.2nm,0.4s,baz=120,slow=8.7,SNR=2.9						

*ISCJB **11** 21:47:04.6±0.6, 9.31N±0.06×121.99E±0.07, h10km, mb3.8/10, Error ellipse: s-maj=10.3km s-min=8.2km az=43.6*
*IDC **11** 21:47:04.7±0.7, 9.43N×122.08E, h0km, mb3.8/10, mb1 3.9/10, mb1mx3.6/52, mbtmp3.8/10, Error ellipse: s-maj=42.4km s-min=15.7km az=64.0*
*MAN **11** 21:47:06, 9.35N×122.10E, h8km, mb4.5, ML3.4, MS3.3*
ISC 11 21:47:06.1±0.7, **9.40N**±0.08×**122.06E**±0.08, **h10**km, **n13,** σ0=**78**/17, **mb3.8**/10, **3C, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TBP	**Tagbilaran**	**1.80**	**81**⇑	*e*P	**Pn**	**21 47 38.3**	**-0.9**
LLP	**Lapu-Lapu**	**2.08**	**64**⇑	*e*P	**Pn**	**21 47 41.5**	**+0.3**
LLP				*i* S	**Sn**	**21 48 08.1**	**+0.8**
RCP	**Roxas**	**2.25**	**17**⇑	*e*P	**Pn**	**21 47 44.3**	**+0.9**
RCP				*e*S	**Sb**	**21 48 14.6**	**-0.2**
CMAR	**Chiang Mai Arr**	**24.15**	**294**	P	**P**	**21 52 22.6**	**-0.1**
	1.5nm,0.9s,baz=113,slow=8.1,SNR=8.9						
WRA	**Warramunga Arr**	**31.57**	**158**	P	**P**	**21 53 29.2**	**+0.2**
	0.5nm,0.5s,baz=340,slow=9.1,SNR=3.2						
WRA				PcP	**PcP**	**21 56 21.8**	**0.0**
	0.7nm,0.8s,baz=336,slow=2.4,SNR=3.8						
ASAR	**Alice Springs**	**34.85**	**161**	P	**P**	**21 53 57.5**	**-0.2**
	0.9nm,0.7s,baz=341,slow=7.6,SNR=6.1						
ASAR				PcP	**PcP**	**21 56 31.2**	**+0.3**
	0.3nm,0.6s,baz=346,slow=3.1,SNR=4.0						
SONM	**Songino Array**	**40.53**	**344**	P	**P**	**21 54 45.3**	**-0.4**
	0.2nm,0.3s,baz=156,slow=7.3,SNR=2.3						
STKA	**Stephens Creek**	**45.10**	**156**	P	**P**	**21 55 23.6**	**+0.9**
	2.2nm,0.9s,baz=260,slow=14,SNR=2.9						
MKAR	**Makanchi Array**	**50.28**	**325**	P	**P**	**21 56 04.2**	**+1.4**
	1.4nm,0.8s,baz=131,slow=8.3,SNR=13						
KURBB	**Kurchatov Arra**	**54.49**	**327

IDC ***11*** *21:51:47.9±0.6,29.˙79S×176.˙66W,h0km,mb4.5/13, mb1 4.7/15,mb1mx4.5/33,mbtmp4.5/15,ML4.0/2,MS4.6/1, Ms1 4.6/1,ms1mx3.7/37, Error ellipse: s-maj=21.7km s-min=18.0km az=161.0*

NEIC ***11*** *21:51:49.6±0.3,29.˙46S×176.˙61W,h10km,mb5.1/28, Error ellipse: s-maj=11.1km s-min=7.7km az=126.0*

ISCJB ***11*** *21:51:51.7±0.3,29.˙65S±0.˙05×176.˙70W±0.˙06,h31km, mb5.0/47,MS5.1/3, Error ellipse: s-maj=7.8km s-min=7.0km az=138.7*

MOS ***11*** *21:51:52.7±1.8,29.˙45S×176.˙85W,h33km,mb5.4/6, Error ellipse: s-maj=15.2km s-min=14.0km az=22.7*

BJI ***11*** *21:51:54.9,29.˙255S×176.˙52W,h54km,mb5.1/28,mB5.7/9, Ms5.5/12,Ms7 5.1/14*

ISC 11 21:51:52.8±0.3, 29.˙52S±0.˙06×176.˙72W±0.˙06, h31km, n190, σ1§67/212, mb5.0/47, MS5.1/3, 5C-2D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.08**	**284**	Pn		**Pb**	**21 52 12.8**	**-0.2**
	248nm,0.3s,baz=161,slow=5.3,SNR=15							
RAO				Sn		**Sb**	**21 52 27.3**	**+0.7**
	459nm,0.3s,baz=128,slow=22,SNR=8.6							
RAO				LR		LR	21 52 38.7	
	comp=Z,6µm,19.2s,baz=176,slow=42							
RAO	**Raoul Island**	**1.08**	**284**	*e*P		**Pb**	**21 52 13.4**	**+0.5**
RAO				*e*			21 52 28.2	
RAO	**Raoul Island**	**1.08**	**284**	*e*Pn		**Pb**	**21 52 13.4**	**+0.5**
RAO				*e*Sn		**Sb**	**21 52 28.2**	**+1.5**
MXZ	**Matakaoa Point**	**9.03**	**206**	*e*Pn		**Pn**	**21 54 03.2**	**+2.1**
URZ	**Urewera**	**10.11**	**209**	Pn		Pn	21 54 10.2	-5.7
	0.4nm,0.3s,baz=80,slow=11,SNR=2.2							
URZ				Sn		**Sn**	**21 56 05.1**	**-3.1**
	2.6nm,0.3s,baz=185,slow=23,SNR=6.8							
URZ	**Urewera**	**10.11**	**209**	*e*Pn		**Pn**	**21 54 19.1**	**+3.2**
URZ				*e*Sn		**Sn**	**21 56 05.1**	**-3.1**
THZ	**Tophouse**	**14.83**	**212**	*e*Pn		**Pn**	**21 55 21.2**	**+0.8**
KHZ	**Kahutara**	**15.08**	**209**	*e*Pn		**Pn**	**21 55 19.7**	**-3.9**
	93nm,1.3s							
DZM	**Mont Dzumac**	**16.86**	**292**	P		**P**	**21 55 50.3**	**+1.7**
	0.5nm,0.3s,baz=122,slow=15,SNR=12							
DZM				LR		LR	22 00 35.9	
	comp=Z,2µm,18.3s,baz=100,slow=31							
DZM	**Mont Dzumac**	**16.86**	**292**	*e*P		**P**	**21 55 49.0**	**+0.4**
	220nm,1.7s							
RPZ	**Rata Peaks**	**17.21**	**211**	Pn		**Pn**	**21 55 48.9**	**-2.0**
	1.6nm,0.3s,baz=175,slow=12,SNR=4.4							
ODZ	**Otahua Downs**	**18.44**	**209**	*e*P		**P**	**21 56 01.1**	**-4.5**
	194nm,1.7s							
FUNA	**Funafuti**	**21.23**	**349**	*e*P		**P**	**21 56 34.3**	**-2.0**
	179nm,1.3s							
HNR	**Honiara**	**29.60**	**308**	*e*P		**P**	**21 57 51.3**	**-4.0**
HNR				pmax		pmax		
	comp=Z,64nm,0.9s							
HNR	**Honiara**	**29.60**	**308**	*e*P		**P**	**21 57 51.3**	**-4.0**
	comp=Z,64nm,0.9s							
MCQ	**Macquarie Isla**	**30.52**	**208**	*e*P		**P**	**21 58 01.7**	**-1.4**
MCQ	**Macquarie Isla**	**30.52**	**208**	*e*P		**P**	**21 58 01.7**	**-1.4**
	comp=Z,838nm,1.9s							
CTA	**Charters Tower**	**34.77**	**277**	P		**P**	**21 58 42.1**	**+1.4**
	comp=Z,6.2nm,0.8s,baz=93,slow=9.8,SNR=4.9							
STKA	**Stephens Creek**	**35.77**	**255**	P		**P**	**21 58 48.2**	**-0.9**
	comp=Z,10nm,1.0s,baz=96,slow=9.0,SNR=9.4							
STKA	**Stephens Creek**	**35.77**	**255**	*e*P		**P**	**21 58 51.1**	**+2.0**
STKA				*e**PP		**sP**	**21 59 01.8**	**-0.2**
STKA	**Stephens Creek**	**35.77**	**255**	*e*P		**P**	**21 58 51.1**	**+2.0**
	comp=Z,3.0nm,1.0s							
STKA				*e*pP		**sP**	**21 59 01.8**	**-0.2**
XMAS	**Kiritimati**	**36.40**	**34**	*e*P		**P**	**21 58 50.9**	**-3.7**
	comp=Z,97nm,1.1s							
BBOO	**Buckleboo**	**40.28**	**253**	*e*P		**P**	**21 59 27.2**	**0.0**
	comp=Z,40nm,1.4s							
AS01	**Alice Springs**	**44.23**	**265**	*e*P		**P**	**21 59 59.4**	**-0.2**
AS31	**Alice Springs**	**44.27**	**265**	*e*P		**P**	**21 59 60.0**	**+0.1**
	comp=Z,4.1nm,0.6s							
ASAR	**Alice Springs**	**44.27**	**265**	P		**P**	**21 59 59.5**	**-0.3**
	comp=Z,3.1nm,0.7s,baz=96,slow=7.8,SNR=28							
WB2	**Warramunga Arr**	**45.17**	**271**	*e*P		**P**	**22 00 06.5**	**-0.6**
WR1	**Warramunga Arr**	**45.19**	**271**	*e*P		**P**	**22 00 05.7**	**-1.5**
	comp=Z,16nm,1.0s							
WRA	**Warramunga Arr**	**45.19**	**271**	P		**P**	**22 00 05.7**	**-1.5**
	comp=Z,15nm,1.1s,baz=108,slow=7.2,SNR=7.2							
FORT	**Forrest**	**47.35**	**254**	*e*P		**P**	**22 00 24.3**	**+0.3**
SBA	**Scott Base**	**49.00**	**185**	*e*P		**P**	**22 00 39.2**	**+3.1**
SBA				pmax		pmax		
	comp=Z,47nm,1.4s							
SBA	**Scott Base**	**49.00**	**185**	*e*P		**P**	**22 00 39.2**	**+3.1**
	comp=Z,47nm,1.4s							
VNDA	**Vanda**	**49.09**	**186**	P		**P**	**22 00 39.9**	**+3.1**
	comp=Z,1.7nm,0.9s,baz=358,slow=6.4,SNR=6.2							
VNDA	**Vanda**	**49.09**	**186**	*e*P		**P**	**22 00 41.5**	**+4.7**
VNDA				pmax		pmax		
	comp=Z,15nm,1.5s							
VNDA	**Vanda**	**49.09**	**186**	*e*P		**P**	**22 00 41.5**	**+4.7**
	comp=Z,15nm,1.5s							
FITZ	**Fitzroy Crossi**	**53.48**	**269**	P		**P**	**22 01 10.2**	**-0.3**
	comp=Z,8.7nm,0.9s,baz=140,slow=8.5,SNR=4.6							
FITZ	**Fitzroy Crossi**	**53.48**	**269**	*e*P		**P**	**22 01 11.1**	**+0.6**
	comp=Z,37nm,1.5s							
NWAO	**Narrogin (SRO)**	**55.75**	**248**	*e*P		**P**	**22 01 26.8**	**0.0**
NWAO	**Narrogin (SRO)**	**55.75**	**248**	*e*P		**P**	**22 01 26.8**	**0.0**
CASY	**Casey**	**56.44**	**208**	*e*P		**P**	**22 01 30.1**	**-1.1**
	comp=Z,13nm,0.8s							
ANA2	**Anatahan**	**58.25**	**316**	*e*P		**P**	**22 01 41.4**	**-3.2**
SOEI	**Soe**	**58.34**	**277**	*e*P		**P**	**22 01 44.1**	**-1.4**
	comp=Z,54nm,1.2s							
MAW	**Mawson**	**73.52**	**200**	P		**P**	**22 03 23.3**	**+1.2**
	comp=Z,2.5nm,0.9s,baz=98,slow=8.9,SNR=3.9							
MAW	**Mawson**	**73.52**	**200**	*e*P		**P**	**22 03 24.3**	**+2.1**
MAW				pmax		pmax		
	comp=Z,4.0nm,1.4s							
MAW	**Mawson**	**73.52**	**200**	*e*P		**P**	**22 03 24.3**	**+2.1**
	comp=Z,3.9nm,1.4s							
KSM	**Kuching**	**75.96**	**280**	*e*P		**P**	**22 03 38.1**	**+0.9**
	comp=Z,14nm,1.2s							
MAJO	**Matsushiro**	**78.16**	**324**	*e*P		**P**	**22 03 48.9**	**-0.1**
MAJO				pmax		pmax		
	comp=Z,41nm,1.7s							
MAJO	**Matsushiro**	**78.16**	**324**	*e*P		**P**	**22 03 48.9**	**-0.1**
	comp=Z,41nm,1.7s							
MAT	**Matsushiro**	**78.16**	**324**	P		**P**	**22 03 48.2**	**-0.9**
SYO	**Syowa Base**	**78.22**	**193**	*e*P		**P**	**22 03 47.4**	**-1.6**
SYO	**Syowa Base**	**78.22**	**193**	*e*pP		P	22 03 54.0	+5.0
SNAA	**Sanae**	**79.00**	**178**	P		**P**	**22 03 54.9**	**+1.5**
JNU	**Nakatsue**	**79.65**	**317**	P		**P**	**22 03 57.2**	**-0.1**
	comp=Z,30nm,1.2s,baz=23,slow=5.2,SNR=7.8							
VNA1	**Neumayer--Stat**	**79.78**	**176**	P		**P**	**22 03 59.7**	**+2.2**
PLCA	**Paso Flores**	**82.29**	**133**	P		**P**	**22 04 08.9**	**-2.6**
	comp=Z,6nm,0.7s,baz=101,slow=4.2,SNR=2.9							
PLCA	**Paso Flores**	**82.29**	**133**	*e*P		**P**	**22 04 09.0**	**-2.6**
PLCA				pmax		pmax		
	comp=Z,41nm,1.9s							
PLCA	**Paso Flores**	**82.29**	**133**	*e*P		**P**	**22 04 08.9**	**-2.6**
	comp=Z,41nm,1.9s							
HCOM	**Corn Cob Canyo**	**83.81**	**41**	*e*P		**P**	**22 04 19.2**	**+0.1**
KSRS	**Korea Array**	**84.41**	**319**	P		**P**	**22 04 23.3**	**+1.2**
	comp=Z,3.2nm,0.9s,baz=137,slow=5.8,SNR=8.9							
KS15	**Wonju Array Si**	**84.42**	**319**	*e*P		**P**	**22 04 23.3**	**+1.1**
KSAR	**Wonju Array Be**	**84.42**	**319**	P		**P**	**22 04 23.3**	**+1.1**
KSAR	**Wonju Array Be**	**84.42**	**319**	P		**P**	**22 04 23.3**	**+1.1**
KS01	**Wonju Array Si**	**84.44**	**319**	*e*P		**P**	**22 04 22.7**	**+0.4**
PEA0	**Petropavlovsk-**	**85.24**	**345**	*e*P		**P**	**22 04 26.3**	**+0.3**
PETK	**Petropavlovsk-**	**85.24**	**345**	P		**P**	**22 04 27.2**	**+1.2**
	comp=Z,1.3nm,0.5s,baz=116,slow=13,SNR=3.9							
PEA1	**Petropavlovsk-**	**85.25**	**345**	*e*P		**P**	**22 04 27.1**	**+1.1**
QIZ	**Qiongzhong**	**85.63**	**295**	P		**P**	**22 04 29.7**	**+1.0**
QIZ				S		**S**	**22 15 00.2**	**+1.1**
QIZ				LR		LR		
	comp=Z,1µm,16.5s							
NJ2	**Nanjing**	**86.52**	**310**	*e*P		**P**	**22 04 33.1**	**+0.3**
NJ2				pmax		pmax		
	comp=Z,14nm,1.0s							
USRK	**Ussuriysk Ar.**	**87.05**	**326**	P		**P**	**22 04 36.1**	**+1.0**
	comp=Z,5.5nm,1.0s,baz=127,slow=2.9,SNR=6.9							
MDJ	**Mudanjiang**	**88.54**	**325**	P		**P**	**22 04 43.5**	**+1.3**
MDJ				pmax		pmax		
	comp=Z,8.0nm,1.1s							
MDJ				pmax		pmax		
	comp=Z,930nm,14.1s							
U15A	**North Rim**	**89.22**	**47**	*e*P		**P**	**22 04 47.6**	**+1.6**
	comp=Z,9.4nm,1.1s							
WUAZ	**Wupatki**	**89.25**	**48**	*e*P		**P**	**22 04 48.9**	**+2.9**
	comp=Z,20nm,1.4s							
SKNT	**Sakolnakorn**	**89.27**	**290**	P		**P**	**22 04 48.7**	**+2.4**
	comp=Z,30nm,0.8s							
SNY	**Shenyang**	**89.83**	**320**	||P		**P**	**22 04 49.1**	**+0.8**
SNY				pmax		pmax		
	comp=Z,17nm,1.4s							
CN2	**Changchun**	**90.12**	**322**	*e*P		**P**	**22 04 52.5**	**+2.9**
TIA	**Tai'an**	**90.19**	**312**	⇑P		**P**	**22 04 51.4**	**+1.2**
TIA				pmax		pmax		
	comp=Z,30nm,1.1s							
MTPU	**Mount Pierson**	**90.28**	**45**	*e*P		**P**	**22 04 54.3**	**+3.3**
	comp=Z,14nm,1.6s							
NONG	**Nongkai**	**90.51**	**290**	P		**P**	**22 04 54.8**	**+2.7**
	comp=Z,73nm,1.0s,comp=Z,5µm							
KLR	**Kul'dur**	**90.84**	**329**	P		**P**	**22 04 54.2**	**+1.3**
	comp=Z,2.8nm,0.8s,baz=142,slow=3.9,SNR=4.9							
TX31	**Lajitas Ar. Si**	**90.98**	**57**	*e*P		**P**	**22 04 52.2**	**-1.9**
TX31				*e*pP		**pP**	**22 05 06.2**	**+2.1**
LTX	**Lajitas**	**90.98**	**57**	*e*P		**P**	**22 04 54.9**	**+0.7**
LTX	**Lajitas**	**90.98**	**57**	*e*P		**P**	**22 04 54.9**	**+0.7**
TXAR	**Lajitas Array**	**90.98**	**57**	P		**P**	**22 04 54.9**	**+0.7**
	comp=Z,0.4nm,0.9s,baz=224,slow=8.8,SNR=4.4							
MNTX	**Cornudas Mount**	**91.06**	**54**	*e*P		P	22 04 59.5	+5.1
	comp=Z,11nm,1.8s							
PBKT	**Sadao Pong**	**91.55**	**288**	P		**P**	**22 05 00.8**	**+3.9**
ENH	**Enshi**	**92.03**	**304**	*e*P		**P**	**22 04 56.7**	**-2.2**
	comp=Z,58nm,1.4s							
GYA	**Guiyang**	**92.08**	**299**	P		**P**	**22 05 00.2**	**+0.8**
GYA				pP		sP	22 05 14.8	+1.9
GYA				PP		**PP**	**22 08 41.3**	**+1.5**
GYA				SKS		**SKSac**	**22 15 28.0**	**-2.5**
GYA				S		**S**	**22 15 55.2**	**-4.6**
GYA				SS		**SS**	**22 22 08.9**	**-1.2**
GYA				pmax		pmax		
	comp=Z,20nm,1.0s							
GYA				pmax		pmax		
	comp=Z,120nm,6.2s							
GYA				LR		LR		
	comp=Z,540nm,18.8s							
GYA				LR		LR		
	comp=Z,530nm,19.0s							
GYA				LR		LR		
	comp=Z,520nm,19.6s							
BJI	**Beijing**	**93.08**	**315**	P		**P**	**22 05 04.2**	**+0.7**
BJI				pmax		pmax		
	comp=Z,9.0nm,1.7s							
NEW	**Newport**	**94.01**	**35**	*e*P		**P**	**22 05 03.8**	**-3.8**
NEW				pmax		pmax		
	comp=Z,18nm,0.3s							
NEW	**Newport**	**94.01**	**35**	*e*P		**P**	**22 05 03.8**	**-3.8**
	comp=Z,18nm,0.3s							
CM01	**Chiang Mai Arr**	**94.13**	**289**	*e*P		**P**	**22 05 10.0**	**+1.1**
KMI	**Kunming**	**94.42**	**296**	P		**P**	**22 05 12.0**	**+1.7**
KMI				pP		sP	22 05 25.1	+1.3
KMI				pmax		pmax		
	comp=Z,5.0nm,1.5s							
BW06	**Boulder Array**	**94.73**	**43**	*e*P		**P**	**22 05 10.2**	**-1.2**
	comp=Z,23nm,0.8s							
RND	**Reindeer**	**95.22**	**12**	*e*P		**P**	**22 05 13.8**	**+1.0**
RND				*e**PP		**pP**	**22 05 24.7**	**+1.9**
RND				pmax		pmax		
	comp=Z,14nm,1.2s							
RND	**Reindeer**	**95.22**	**12**	*e*P		**P**	**22 05 13.8**	**+1.0**
	comp=Z,14nm,1.2s							
RND				*e*pP		**pP**	**22 05 24.7**	**+1.9**
WRH	**Wood River Hil**	**96.33**	**12**	*e*P		**P**	**22 05 18.4**	**+0.6**
	comp=Z,8.1nm,1.3s							
HHC	**Hu-ho-hao-te**	**96.43**	**314**	*e*P		**P**	**22 05 20.6**	**+1.6**
HHC				pmax		pmax		
	comp=Z,11nm,1.1s							
CD2	**Chengdu**	**96.56**	**302**	*e*P		**P**	**22 05 20.5**	**+0.8**
CD2				pP		sP	22 05 34.1	+0.8
CD2				sP		pP	22 05 39.5	+10
CD2				SKS		**SKSac**	**22 15 53.0**	**-1.4**
CD2				S		**S**	**22 16 37.2**	**-1.5**
CD2				sS		sS	22 17 00.8	+5.5
CD2				SS		**SS**	**22 23 12.7**	**-1.1**
CD2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
CD2				pmax		pmax		
	comp=Z,120nm,5.0s							
ILAR	**Eielson Array**	**96.82**	**12**	P		**P**	**22 05 20.2**	**+0.2**
	comp=Z,0.8nm,1.0s,baz=212,slow=5.5,SNR=6.6							
ILB	**Eielson Array**	**96.82**	**12**	*e*P		**P**	**22 05 20.2**	**+0.2**
IL1	**Eielson Array**	**96.83**	**12**	*e*P		**P**	**22 05 19.9**	**-0.1**
SWET	**Sewanee**	**106.93**	**59**	*e*Pdif		**Pdif**	**22 06 08.5**	**+2.6**
WMQ	**Urumqi**	**113.55**	**308**	*e*PKP		**PKiKP**	**22 10 28.2**	**+0.3**
MK01	**Makanchi Array**	**118.04**	**310**	*e*PKPdf		**PKPdf**	**22 10 36.0**	**-0.3**
MK32	**Makanchi Array**	**118.05**	**310**	*e*PKPdf		**PKPdf**	**22 10 35.2**	**-1.1**
MKAR	**Makanchi Array**	**118.05**	**310**	PKP		**PKPdf**	**22 10 35.2**	**-1.1**
	comp=Z,0.2nm,0.2s,baz=22,slow=6.8,SNR=4.7							
ZALV	**Zalesovo Beam**	**118.11**	**318**	PKP		**PKPdf**	**22 10 37.0**	**+0.8**
	comp=Z,0.2nm,0.3s,baz=144,slow=3.2,SNR=2.5							
ZALV	**Zalesovo Beam**	**118.11**	**318**	PKiKP		**PKPdf**	**22 10 37.0**	**+0.8**
ZAA1	**Zalesovo Array**	**118.11**	**318**	*e*PKPdf		**PKPdf**	**22 10 37.0**	**+0.8**
KSH	**Kashi**	**120.75**	**301**	*e*PKP		**PKPdf**	**22 10 43.3**	**+1.4**
KSH				*es*PKP			22 10 58.5	
KSH				*e*PP		**PP**	**22 12 12.2**	**+1.5**
KSH				PKS		**PKSdf**	**22 14 19.7**	**+1.0**
KSH				SKS		**SKSdf**	**22 17 50.1**	**-1.7**
KSH				AMB		AMB		
	comp=Z,950nm,8.9s							
KSH				LR		LR		
	comp=Z,250nm,12.7s							
KURK	**Kurchatov**	**121.24**	**314**	*e*PKiKP		**PKPdf**	**22 10 41.8**	**-0.5**
KURK	**Kurchatov**	**121.24**	**314**	*e*PKPdf		**PKPdf**	**22 10 41.8**	**-0.5**
KURBB	**Kurchatov Arra**	**121.28**	**314**	PKP		**PKPdf**	**22 10 41.8**	**-0.6**
	comp=Z,0.5nm,0.7s,baz=106,slow=2.2,SNR=7.4							
BVAR	**Borovoye Array**	**126.54**	**316**	PKP		**PKPdf**	**22 10 52.0**	**-0.4**
	comp=Z,1.1nm,0.9s,baz=127,slow=3.8,SNR=5.8							
BVAR	**Borovoye Array**	**126.54**	**316**	PKiKP		**PKPdf**	**22 10 52.0**	**-0.4**
ZRNK	**Zerenda**	**127.38**	**316**	*e*PKiKP		**PKPdf**	**22 10 54.4**	**+0.4**
ZRNK	**Zerenda**	**127.38**	**316**	*e*PKPdf		**PKPdf**	**22 10 54.4**	**+0.4**
GEYT	**Alibeck**	**134.19**	**296**	PKP		**PKPdf**	**22 11 09.8**	**+2.3**
	comp=Z,0.8nm,0.6s,baz=115,slow=6.7,SNR=3.6							
AKTO	**Aktyubinsk**	**134.32**	**313**	PKP		**PKPdf**	**22 11 06.7**	**-0.5**
	comp=Z,0.4nm,0.6s,baz=225,slow=19,SNR=2.5							
GNI	**Garni**	**144.63**	**299**	PKP		**PKPab**	**22 11 23.9**	**-1.3**
	comp=Z,12nm,1.1s,baz=37,slow=2.9,SNR=9.1							
GNI	**Garni**	**144.63**	**299**	*e*PKPdf		**PKPab**	**22 11 23.9**	**-1.3**
GNI				*e*PKPdf		**PKPdf**	**22 11 26.6**	**+0.1**
FIA1	**FINESS Array S**	**144.68**	**341**	*e*PKPdf		**PKPab**	**22 11 24.0**	**-0.5**
FIA1				*e*PKPdf		PKPbc	22 11 25.2	+0.6
FIA0	**FINESS Array S**	**144.68**	**341**	*e*PKiKP		**PKPab**	**22 11 24.3**	**-0.2**
FIA0	**FINESS Array S**	**144.68**	**341**	*e*PKPdf		**PKPab**	**22 11 24.3**	**-0.2**
FINES	**FINESS Array B**	**144.68**	**341**	PKP		**PKPab**	**22 11 24.3**	**-0.2**
	comp=Z,2.3nm,0.6s,baz=46,slow=5.5,SNR=7.1							
ZEI	**Tsey**	**144.96**	**303**	*e*PKiKP		**PKPab**	**22 11 25.9**	**-0.5**
ZEI				pmax		pmax		
	comp=Z,123nm,1.4s							
OBN	**Obninsk**	**145.06**	**327**	PKPbc		**PKPbc**	**22 11 26.3**	**+0.3**
	comp=Z,12nm,0.6s,baz=91,slow=3.7,SNR=9.5							
OBN	**Obninsk**	**145.06**	**327**	*c i*PKiKP		**PKPbc**	**22 11 25.6**	**-0.4**
OBN				*i*			22 11 35.1	
OBN				pmax		pmax		
	comp=Z,31nm,1.4s							
OBN	**Obninsk**	**145.06**	**327**	*e*PKPdf		**PKPbc**	**22 11 26.0**	**0.0**
GOF	**Gofitskoye**	**145.15**	**307**	||*e*PKiKP		**PKPbc**	**22 11 26.9**	**+0.2**
GOF				pmax		pmax		
	comp=Z,27nm,1.0s							
KBZ	**Khabaz**	**145.53**	**305**	PKPbc		**PKPab**	**22 11 28.9**	**+0.7**
	comp=Z,3.6nm,0.8s,baz=86,slow=5.4,SNR=11							
KVAR	**Kislovodsk Arr**	**145.62**	**306**	PKPbc		**PKPab**	**22 11 29.6**	**+0.9**
	comp=Z,8.0nm,1.0s,baz=88,slow=7.3,SNR=9.0							
KIV	**Kislovodsk**	**145.63**	**306**	*e*PKP2		**PKPbc**	**22 11 28.6**	**+0.2**
KIV				pmax		pmax		
	comp=Z,13nm,1.0s							
KIV	**Kislovodsk**	**145.63**	**306**	*e*PKPdf		**PKPbc**	**22 11 28.8**	**+0.4**
NB2	**NORSAR Subarra**	**148.03**	**353**	PKP		**PKPab**	**22 11 37.8**	**+0.4**
	comp=Z,2.3nm,0.8s,baz=16,slow=3.2							
NB200	**NORSAR Array S**	**148.03**	**353**	*e*PKPbc		**PKPbc**	**22 11 35.6**	**+1.0**
NOA	**NORSAR Array B**	**148.03**	**353**	PKPbc		**PKPbc**	**22 11 35.6**	**+1.0**
	comp=Z,1.6nm,0.8s,baz=10,slow=4.1,SNR=2.9							
SFNV	**Sufian**	**148.48**	**292**	*e*P		**PKPbc**	**22 11 36.3**	**-0.4**
HFS	**Hagfors**	**148.59**	**350**	PKPbc		**PKPbc**	**22 11 38.2**	**+2.2**
	comp=Z,2.2nm,0.7s,baz=68,slow=4.0,SNR=8.7							
KSRV	**Kasrt alli**	**149.39**	**291**	*e*P		**PKPbc**	**22 11 40.4**	**+1.5**
JHLN	**Al Jahlan**	**149.86**	**291**	*e*P		**PKPbc**	**22 11 40.3**	**+0.3**
SLMH	**Al Salmeh**	**150.25**	**292**	*e*P		**PKPbc**	**22 11 38.8**	**-2.2**
ZALF	**Zalf**	**150.75**	**285**	*e*P		**PKPbc**	**22 11 43.7**	**+1.4**
ROOS	**tl_alroos**	**150.82**	**288**	*e*P		**PKPbc**	**22 11 44.4**	**+2.0**
ASF	**Jabal al Asfar**	**151.08**	**284**	PKPbc		**PKPbc**	**22 11 42.8**	**-0.3**
	comp=Z,2.6nm,0.6s,baz=116,slow=5.0,SNR=6.5							
AKASG	**Malin Array Be**	**151.25**	**325**	PKPbc		**PKPbc**	**22 11 42.7**	**-0.1**
	comp=Z,1.8nm,0.5s,baz=41,slow=2.6,SNR=20							
AKBB	**Malin Array Si**	**151.25**	**325**	*e*PKiKP		**PKPbc**	**22 11 42.5**	**-0.3**
AKBB	**Malin Array Si**	**151.25**	**325**	*e*PKPbc		**PKPbc**	**22 11 42.5**	**-0.3**
SALA	**Sala**	**151.25**	**285**	*e*P		**PKPbc**	**22 11 45.5**	**+1.9**
KIEV	**Kiev**	**151.26**	**325**	*e*PKIKP		**PKPbc**	**22 11 42.3**	**-0.5**
KIEV	**Kiev**	**151.26**	**325**	*e*PKPbc		**PKPbc**	**22 11 42.3**	**-0.5**
AK11	**Malin Array Si**	**151.29**	**325**	*e*PKPbc		**PKPbc**	**22 11 42.8**	**-0.1**
MARH	**Ras Al Marh**	**151.49**	**288**	*e*P		**PKPbc**	**22 11 44.4**	**0.0**
TCHB	**Talchebab**	**151.89**	**285**	*e*P		**PKPbc**	**22 11 46.6**	**+1.7**
MMAI	**Mount Meron Ar**	**152.38**	**285**	PKPbc		**PKPbc**	**22 11 47.6**	**+1.5**
	comp=Z,5.4nm,0.7s,baz=79,slow=6.3,SNR=8.9							
MMAI				PKPab		**PKPab**	**22 11 56.9**	**+0.6**
	comp=Z,2.5nm,0.5s,baz=96,slow=7.6,SNR=6.5							
EIL	**Elat**	**152.50**	**278**	PKPbc		**PKPbc**	**22 11 47.0**	**+0.7**
	comp=Z,2.9nm,0.7s,baz=203,slow=4.7,SNR=4.0							
EIL				PKPab		**PKPab**	**22 11 57.5**	**+0.7**
	comp=Z,7.4nm,1.0s,baz=29,slow=2.1,SNR=4.1							
BR101	**Keskin Array S**	**153.13**	**300**	*e*PKPbc		**PKPbc**	**22 11 47.9**	**+0.2**
BR101				*e*PKPab		**PKPab**	**22 11 59.5**	**+0.2**
BR131	**Keskin Array S**	**153.13**	**300**	*e*PKPbc		**PKPbc**	**22 11 49.9**	**+2.2**
BRTR	**Keskin Array B**	**153.13**	**300**	PKPbc		**PKPbc**	**22 11 47.9**	**+0.2**
	comp=Z,1.3nm,0.8s,baz=107,slow=3.0,SNR=8.5							
BRTR				PKPab		**PKPab**	**22 11 59.5**	**+0.2**
	comp=Z,3.3nm,1.1s,baz=132,slow=1.8,SNR=5.5							
BR231	**Keskin MP Arra**	**153.75**	**301**	*e*PKPbc		**PKPbc**	**22 11 48.3**	**-0.6**
TIRR	**Tirgusor**	**155.12**	**314**	*e*PKP2		**PKPbc**	**22 12 08.0**	**+0.6**
TIRR	**Tirgusor**	**155.12**	**314**	*e*PKPab		**PKPbc**	**22 12 08.0**	**+0.6**
KOLS	**Kolonicke sedl**	**155.78**	**328**	*e*PKP2		**PKPab**	**22 12 13.1**	**+3.0**
KOLS	**Kolonicke sedl**	**155.78**	**328**	*e*PKP		**PKPab**	**22 12 13.1**	**+3.0**
MLR	**Muntele Rosu**	**156.09**	**318**	PKPab		**PKPab**	**22 12 13.0**	**+1.3**
	comp=Z,0.5nm,1.0s,baz=349,slow=7.3,SNR=4.5							
CRVS	**Cervenica-Dubn**	**156.17**	**329**	*e*PKP2		**PKPab**	**22 12 12.0**	**+0.3**
CRVS	**Cervenica-Dubn**	**156.17**	**329**	*e*PKP		**PKPab**	**22 12 12.0**	**+0.3**
KECS	**Kecovo**	**156.91**	**330**	*e*PKP2		**PKPab**	**22 12 18.3**	**+3.4**
KECS	**Kecovo**	**156.91**	**330**	*e*PKP		**PKPab**	**22 12 18.3**	**+3.4**
DPC	**Dobruska-Polom**	**156.98**	**338**	||*e*PKP		PKPdf	22 11 56.8	+12
DPC				*e*PKPAB		**PKPab**	**22 12 15.8**	**+0.6**
DPC				*ex*		x	22 12 26.7	
DPC	**Dobruska-Polom**	**156.98**	**338**	*e*PKP2		**PKPab**	**22 12 15.8**

AS31	**Alice Springs**	**34.97**	**161**	*e*P	**P**	**22 00 58.4**	**-0.1**
	4.1nm,0.6s							
AS31				*e*PcP	**PcP**	**22 03 31.4**	**+0.3**
ASAR	**Alice Springs**	**34.97**	**161**	P	**P**	**22 00 59.9**	**+1.3**
	11nm,0.6s,baz=340,slow=7.3,SNR=37							
ASAR				PcP	**PcP**	**22 03 31.4**	**+0.3**
	2.9nm,0.7s,baz=342,slow=2.8,SNR=8.8							
AS01	**Alice Springs**	**34.98**	**161**	*e*P	**P**	**22 00 58.3**	**-0.4**
USRK	**Ussuriysk Ar.**	**35.48**	**12**	P	**P**	**22 01 03.2**	**+0.5**
	3.0nm,0.7s,baz=201,slow=7.6,SNR=6.0							
ASAJ	**Asahikawa**	**38.64**	**24**	*e*P	**P**	**22 01 27.1**	**-2.5**
	16nm,1.4s							
KLR	**Kul'dur**	**40.29**	**10**	P	**P**	**22 01 43.0**	**-0.2**
	3.1nm,1.0s,baz=270,slow=3.0,SNR=3.1							
SONA0	**Songino Array**	**40.40**	**343**	*e*P	**P**	**22 01 43.4**	**-1.0**
	3.4nm,1.2s							
SONM	**Songino Array**	**40.40**	**343**	P	**P**	**22 01 43.4**	**-1.0**
	0.8nm,0.7s,baz=157,slow=8.0,SNR=4.0							
NWAO	**Narrogin (SRO)**	**42.57**	**186**	P	**P**	**22 02 03.1**	**+1.0**
	14nm,0.7s,baz=250,slow=7.9,SNR=9.4							
BBOO	**Buckleboo**	**44.18**	**163**	*e*P	**P**	**22 02 15.1**	**0.0**
	91nm,1.8s							
EIDS	**Eidsvold**	**44.67**	**142**	*e*P	**P**	**22 02 17.3**	**-1.9**
	21nm,1.4s							
STKA	**Stephens Creek**	**45.20**	**157**	P	**P**	**22 02 24.0**	**+0.6**
	5.9nm,0.7s,baz=336,slow=6.5,SNR=9.7							
STKA	**Stephens Creek**	**45.20**	**157**	*e*P	**P**	**22 02 24.0**	**+0.6**
	3.0nm,1.3s							
ARMA	**Armidale**	**48.77**	**146**	*e*P	**P**	**22 02 49.9**	**-1.6**
	78nm,1.9s							
MK01	**Makanchi Array**	**50.22**	**325**	*e*P	**P**	**22 03 02.9**	**+0.7**
MK31	**Makanchi Array**	**50.24**	**325**	*e*P	**P**	**22 03 05.8**	**+3.5**
MK32	**Makanchi Array**	**50.24**	**325**	*e*P	**P**	**22 03 03.1**	**+0.8**
MKAR	**Makanchi Array**	**50.24**	**325**	P	**P**	**22 03 03.1**	**+0.8**
	2.1nm,0.8s,baz=125,slow=8.4,SNR=7.9							
MKAR	**Makanchi Array**	**50.24**	**325**	*e*P	**P**	**22 03 05.8**	**+3.5**
	21nm,0.8s							
ZALV	**Zalesovo Beam**	**53.39**	**333**	P	**P**	**22 03 24.9**	**-0.7**
	0.5nm,0.3s,baz=158,slow=6.8,SNR=4.5							
ZAA1	**Zalesovo Array**	**53.39**	**333**	*e*P	**P**	**22 03 24.9**	**-0.8**
KURBB	**Kurchatov Arra**	**54.44**	**327**	P	**P**	**22 03 32.9**	**-0.6**
	0.6nm,0.5s,baz=118,slow=9.0,SNR=3.4							
KURK	**Kurchatov**	**54.44**	**327**	*e*P	**P**	**22 03 32.9**	**-0.6**
BVAR	**Borovoye Array**	**60.02**	**327**	P	**P**	**22 04 14.4**	**+1.6**
	0.9nm,0.8s,baz=119,slow=8.9,SNR=3.9							
ABKAR	**Akbulak array**	**64.83**	**320**	*e*P	**P**	**22 04 46.0**	**+0.8**
	17nm,1.0s							
ILAR	**Eielson Array**	**81.74**	**26**	P	**P**	**22 06 23.6**	**-1.1**
	0.4nm,0.8s,baz=232,slow=5.6,SNR=2.6							
ILB	**Eielson Array**	**81.74**	**26**	*e*P	**P**	**22 06 23.6**	**-1.1**
BR101	**Keskin Array S**	**82.90**	**309**	*e*P	**P**	**22 06 31.4**	**-0.1**
BRTR	**Keskin Array B**	**82.90**	**309**	P	**P**	**22 06 31.4**	**-0.1**
	0.7nm,0.7s,baz=116,slow=5.6,SNR=4.6							
SPITS	**Spitsbergen Ar**	**83.89**	**348**	P	**P**	**22 06 37.0**	**+1.4**
	7.4nm,0.9s,baz=158,slow=9.0,SNR=4.2							
AKASG	**Malin Array Be**	**84.58**	**320**	P	**P**	**22 06 38.9**	**-0.7**
	0.4nm,0.4s,baz=67,slow=5.6,SNR=4.5							
AKBB	**Malin Array Si**	**84.58**	**320**	*e*P	**P**	**22 06 38.9**	**-0.7**
	6.3nm,0.9s							
FIA0	**FINESS Array S**	**84.60**	**331**	*e*P	**P**	**22 06 38.4**	**-1.0**
FINES	**FINESS Array B**	**84.60**	**331**	P	**P**	**22 06 38.4**	**-1.0**
	1.3nm,0.8s,baz=94,slow=13,SNR=2.6							
MLR	**Muntele Rosu**	**87.63**	**316**	P	**P**	**22 06 55.1**	**+0.1**
	0.4nm,0.6s,baz=325,slow=9.7,SNR=6.5							
MLR	**Muntele Rosu**	**87.63**	**316**	*e*P	**P**	**22 06 55.1**	**+0.1**
	11nm,1.4s							
VNDA	**Vanda**	**89.80**	**172**	P	**P**	**22 07 04.5**	**+0.3**
	1.5nm,0.7s,baz=334,slow=6.2,SNR=6.2							
SYO	**Syowa Base**	**96.28**	**201**⇑	*e*pP	pP	22 07 42.0	+4.4
LTX	**Lajitas**	**121.20**	**47**	*e*PKPdf	**PKPdf**	**22 12 59.8**	**-0.3**
TXAR	**Lajitas Array**	**121.20**	**47**	PKP	**PKPdf**	**22 12 59.8**	**-0.3**
	0.4nm,0.8s,baz=242,slow=2.7,SNR=4.2							
PLCA	**Paso Flores**	**146.98**	**162**	PKPbc	**PKPab**	**22 13 49.9**	**-0.8**
	8.5nm,0.7s,baz=220,slow=5.7,SNR=8.4							

*TAP **11** 21:56:15.8, 24°.83N×122°.01E, h103km±1km, ML3.7, D*
*JMA **11** 21:56:15.4±0.2, 24°.80N×121°.92E, h102km±2km, M2.4*
*ISCJB **11** 21:56:16.3±0.7, 24°.83N±0°.04×122°.00E±0°.02, h98km±5km,*
Error ellipse: s-maj=6.2km s-min=3.3km az=159.9
ISC 11 21:56:16.8±1.7,**24°.82N**±0°.06×**122°.00E**±0°.03,**h96**km±9km,
n41,σ0°**89**/76,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
EGS		**0.07**	**296**	P		P	**Pn**	**21 56 30.5**	**+0.2**
	baz=277								
EGS				*e*S			**Sn**	**21 56 38.6**	**-1.7**
	baz=277								
TWB1	**Santiao Chiao**	**0.19**	**357**	P		P	**Pn**	**21 56 30.4**	**-0.1**
	baz=356								
TWB1				*e*S			**Sn**	**21 56 40.6**	**-0.2**
	baz=356								
TWC	**Suao**	**0.25**	**214**	P		P	**Pn**	**21 56 30.9**	**+0.2**
	baz=210								
TWC				*e*S			**Sn**	**21 56 41.4**	**+0.4**
	baz=210								
TWE	**Neicheng**	**0.32**	**253**	P		P	**Pn**	**21 56 31.6**	**+0.6**
	baz=248								
TWE				*e*S			**Sn**	**21 56 42.6**	**+1.0**
	baz=248								
NWF	**Wu-fen Shan**	**0.32**	**322**	*e*P		P	**Pn**	**21 56 30.8**	**-0.4**
	baz=318								
NWF				*e*S			**Sn**	**21 56 39.4**	**-2.5**
	baz=318								
TWA	**Mucha**	**0.41**	**294**	*e*P		P	**Pn**	**21 56 31.5**	**-0.1**
	baz=290								
TWA				*e*S			**Sn**	**21 56 43.1**	**+0.4**
	baz=290								
ENTT	**Nioudou**	**0.43**	**246**	P		P	**Pn**	**21 56 32.3**	**+0.5**
	baz=243								
NSK	**Sanguang**	**0.60**	**257**	P		P	**Pn**	**21 56 32.7**	**-0.3**
	baz=254								
NSK				*e*S			**Sn**	**21 56 44.7**	**-0.5**
	baz=254								
TWS1	**Kuangyinshan**	**0.60**	**298**	P		P	**Pn**	**21 56 33.0**	**0.0**
	baz=296								
TWS1				*e*S			**Sn**	**21 56 45.9**	**+0.8**
	baz=296								
NNS	**Nan Shan**	**0.68**	**237**	P		P	**Pn**	**21 56 33.9**	**+0.1**
	baz=235								
NNS				*e*S			**Sn**	**21 56 47.9**	**+1.3**
	baz=235								
TWD	**Chiawan**	**0.82**	**207**	P		P	**Pn**	**21 56 34.7**	**-0.3**
	baz=206								
TWD				*e*S			**Sn**	**21 56 49.1**	**+0.5**
	baz=206								
NSTT	**Nanjuang**	**0.93**	**259**	P		P	**Pn**	**21 56 35.7**	**-0.5**
	baz=257								
NSTT				*e*S			**Sn**	**21 56 50.3**	**-0.4**
	baz=257								
JYNG	**Yonagunijimaku**	**0.93**	**113**	P		P	**Pn**	**21 56 36.2**	**0.0**
JYNG				S			**Sn**	**21 56 51.4**	**+0.6**
TWT	**Tachien**	**0.94**	**233**	P		P	**Pn**	**21 56 37.0**	**+0.5**
	baz=232								
TWT				*e*S			**Sn**	**21 56 51.8**	**+0.7**
	baz=232								
YOJ	**Yonaguni jima**	**0.99**	**111**	P		P	**Pn**	**21 56 36.7**	**-0.1**
YOJ				*e*S			**Sn**	**21 56 52.2**	**+0.4**
ESL	**Shilin**	**1.12**	**208**	*e*P		P	**Pn**	**21 56 39.0**	**+0.7**
	baz=206								
ESL				*e*S			**Sn**	**21 56 53.4**	**-1.1**
	baz=206								
NSY	**Sanyi**	**1.20**	**251**	*e*P		P	**Pn**	**21 56 39.0**	**-0.2**
	baz=249								
NSY				*e*S			**Sn**	**21 56 56.1**	**0.0**
	baz=249								
TWQ1	**Liyutan**	**1.21**	**248**	P		P	**Pn**	**21 56 39.1**	**-0.3**
	baz=246								
TWQ1				*e*S			**Sn**	**21 56 56.0**	**-0.3**
	baz=246								
SMLT	**Sun Moon Lake**	**1.37**	**227**	P		P	**Pn**	**21 56 41.4**	**+0.1**
	baz=226								
SMLT				*e*S			**Sn**	**21 57 01.3**	**+1.5**
	baz=226								
TYC	**Yuchr**	**1.38**	**229**	P		P	**Pn**	**21 56 41.2**	**-0.2**
	baz=228								
TYC				*e*S			**Sn**	**21 57 00.8**	**+0.8**
	baz=228								
TWF1	**Yuli**	**1.59**	**204**	P		P	**Pn**	**21 56 43.6**	**-0.4**
	baz=203								
TWF1				*e*S			**Sn**	**21 57 03.8**	**-0.9**
	baz=203								
YUS	**Yu-Shan**	**1.63**	**216**	*e*P		P	**Pn**	**21 56 45.8**	**+0.8**
	baz=215								
YUS				*e*S			**Sn**	**21 57 07.9**	**+1.6**
	baz=215								

IRIF	**Iriomote-Funau**	**1.65**	**107**	P		**Pn**	**21 56 44.5**	**-0.2**
IRIF				*e*S		**Sn**	**21 57 06.5**	**+0.6**
ALS	**Alishan**	**1.70**	**220**	P		**Pn**	**21 56 46.3**	**+0.7**
	baz=219							
ALS				*e*S		**Sn**	**21 57 08.3**	**+0.8**
	baz=219							
CHN5	**Tsauling**	**1.71**	**225**	P		**Pn**	**21 56 45.6**	**0.0**
	baz=224							
CHN5				*e*S		**Sn**	**21 57 07.7**	**+0.2**
	baz=224							
CHKT	**Chengkung**	**1.80**	**199**	*e*P		**Pn**	**21 56 46.1**	**-0.6**
	baz=198							
CHKT				*e*S		**Sn**	**21 57 08.0**	**-1.5**
	baz=198							
ELDTW	**Lidau**	**1.85**	**209**	*e*P		**Pn**	**21 56 47.7**	**+0.3**
	baz=208							
ELDTW				*e*S		**Sn**	**21 57 11.6**	**+0.8**
	baz=208							
CHN2	**Minshiung**	**1.89**	**228**	*e*S		**Sn**	**21 57 12.1**	**+0.7**
	baz=227							
JKRS	**Kuro-shima**	**1.92**	**107**	*e*S		**Sn**	**21 57 12.1**	**0.0**
CHN4	**Tsaushan**	**1.94**	**222**	P		**Pn**	**21 56 48.6**	**+0.1**
	baz=221							
CHN4				*e*S		**Sn**	**21 57 12.8**	**+0.1**
	baz=221							
STYT	**Tauyuan**	**2.00**	**215**	P		**Pn**	**21 56 49.1**	**-0.2**
	baz=214							
STYT				*e*S		**Sn**	**21 57 14.8**	**+0.7**
	baz=214							
JIJ	**Ishigaki jima**	**2.00**	**103**	*e*S		**Sn**	**21 57 13.8**	**-0.2**
WTP	**Ta-pu**	**2.01**	**219**	P		**Pn**	**21 56 48.7**	**-0.8**
	baz=218							
WTP				*e*S		**Sn**	**21 57 15.2**	**+0.9**
	baz=218							
TWK	**Hsinying**	**2.07**	**222**	*e*P		**Pn**	**21 56 49.4**	**-0.9**
	baz=221							
TWK				*e*S		**Sn**	**21 57 15.5**	**-0.2**
	baz=221							
CHN1	**Nanshi**	**2.11**	**220**	P		**Pn**	**21 56 50.7**	**0.0**
	baz=219							
CHN1				*e*S		**Sn**	**21 57 16.6**	**0.0**
	baz=219							
JISG	**Ishigakijimahi**	**2.12**	**96**	P		**Pn**	**21 56 51.2**	**+0.5**
JISG				*e*S		**Sn**	**21 57 17.0**	**+0.4**
SGST	**Jiashian**	**2.16**	**217**	*e*S		**Sn**	**21 57 17.9**	**+0.2**
	baz=216							
TWG	**Pinlang**	**2.16**	**203**	*e*P		**Pn**	**21 56 54.1**	**+2.7**
	baz=202							
TWG				*e*S		**Sn**	**21 57 16.1**	**-1.6**
	baz=202							
ECL	**Taimali**	**2.41**	**204**	P		**Pn**	**21 56 55.6**	**+1.0**
	baz=203							
ECL				*e*S		**Sn**	**21 57 22.8**	**-0.7**
	baz=203							
JTJ	**Tarama**	**2.46**	**93**	*e*S		**Sn**	**21 57 25.5**	**+0.6**
LAY	**Lan-yu**	**2.79**	**189**	*e*P		**Pn**	**21 56 58.6**	**-1.2**
	baz=188							
LAY				*e*S		**Sn**	**21 57 29.6**	**-3.2**
	baz=188							

*IDC **11** 21:56:44.9±0.5, 9°.58N×122°.32E, h0km, mb4.1/25,*
mb1 4.3/25, mb1mx4.1/55, mbtmp4.1/25, Error ellipse:
s-maj=26.7km s-min=11.5km az=71.0
*NEIC **11** 21:56:46.3±0.2, 9°.53N×122°.34E, h10km, mb4.7/18, Error*
ellipse: s-maj=8.0km s-min=5.2km az=75.0
*MAN **11** 21:56:46, 9°.55N×122°.14E, h5km, mb4.8, ML3.7, MS3.7*
*KLM **11** 21:57:06.0, 8°.65N×121°.40E, h100km, mb4.5, ML3.9,*
MS5.5
ISC 11 21:56:47.5±0.9,**9°.46N**±0°.05×**122°.24E**±0°.04,**h19**km±3km,
n89,σ1°**36**/101,**mb4.4**/42,**10C-6D**,**Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.99**	**96**	*e*P			**Pb**	**21 57 03.5**	**-2.6**
SNPH				*i* S			**Sn**	**21 57 19.9**	**0.0**
TBP	**Tagbilaran**	**1.62**	**82**⇑	*e*P			**Pg**	**21 57 17.8**	**-0.9**
LLP	**Lapu-Lapu**	**1.91**	**63**⇑	*e*P			**Pb**	**21 57 21.7**	**+0.1**
LLP				*i* S			**Sg**	**21 57 48.4**	**-0.6**
CGP	**Cagayan de Oro**	**2.62**	**112**⇑	*e*P			**Pb**	**21 57 32.3**	**-1.6**
CGP				*e*S			**Sb**	**21 58 06.2**	**+0.6**
CTBH	**Cotabato--PC H**	**2.98**	**138**⇓	*e*P			**Pb**	**21 57 37.5**	**-2.4**
CTBH				*i* S			**Sn**	**21 58 11.8**	**+2.9**
PLP	**Palo**	**3.19**	**58**⇓	*i*P			**Pn**	**21 57 38.5**	**+1.9**
MYLDM	**Lahad Datu**	**5.64**	**221**	*e*Pn			**Pn**	**21 58 12.9**	**+2.6**
KDM	**Kudat**	**5.92**	**245**	⇑P			**Pn**	**21 58 16.7**	**+2.6**
TSM	**Tawau**	**6.71**	**220**	⇓P			**Pn**	**21 58 26.4**	**+1.4**
KKM	**Kota Kinabalu**	**6.86**	**241**	⇓P			**Pn**	**21 58 28.3**	**+1.1**
KKM	**Kota Kinabalu**	**6.86**	**241**	*e*Pn			**Pn**	**21 58 27.9**	**+0.7**
KKM				*e*Sn			**Sn**	**21 59 41.2**	**-3.7**
BTM	**Bintulu**	**11.02**	**236**	⇑P			**Pn**	**21 59 25.2**	**+1.1**
SBUM	**Sibu**	**12.15**	**236**	⇑P			**Pn**	**21 59 40.7**	**+1.1**
SBUM	**Sibu**	**12.15**	**236**	*e*Pn			**Pn**	**21 59 40.6**	**+1.0**
ENH	**Enshi**	**23.89**	**332**	*e*P			**P**	**22 01 59.0**	**-1.0**
	6.4nm,0.9s								
CM01	**Chiang Mai Arr**	**24.26**	**294**	*e*P			**P**	**22 02 06.1**	**+2.5**
CM31	**Chiang Mai Arr**	**24.29**	**294**	*e*P			**P**	**22 02 06.2**	**+2.4**
CM31				*e*PcP			**PcP**	**22 05 46.4**	**+2.7**
CMAR	**Chiang Mai Arr**	**24.29**	**294**	P			**P**	**22 02 06.2**	**+2.4**
	0.5nm,0.3s,baz=102,slow=9.5,SNR=4.2								
CMAR				PcP			**PcP**	**22 05 46.4**	**+2.6**
	1.8nm,0.9s,baz=101,slow=2.0,SNR=7.1								
CHTO	**Chiang Mai**	**24.40**	**295**	*e*P			**P**	**22 02 03.6**	**-1.3**
	5.8nm,1.3s								
KS15	**Wonju Array Si**	**28.33**	**9**	*e*P			**P**	**22 02 40.4**	**+0.4**
KSAR	**Wonju Array Be**	**28.33**	**9**	P			**P**	**22 02 40.4**	**+0.4**
KSRS	**Korea Array**	**28.34**	**10**	P			**P**	**22 02 40.4**	**+0.3**
	1.4nm,0.8s,baz=188,slow=8.5,SNR=3.0								
PMG	**Port Moresby**	**31.09**	**126**	*e*P			**P**	**22 03 03.2**	**-1.6**
	62nm,1.4s								
WR1	**Warramunga Arr**	**31.55**	**158**	*e*P			**P**	**22 03 09.2**	**+0.4**
	18nm,1.5s								
WR1				*e*PcP			**PcP**	**22 06 02.1**	**+0.7**
WRA	**Warramunga Arr**	**31.55**	**158**	P			**P**	**22 03 09.2**	**+0.4**
	4.1nm,0.8s,baz=337,slow=9.8,SNR=11								
WRA				PcP			**PcP**	**22 06 02.1**	**+0.7**
	3.6nm,0.8s,baz=341,slow=3.1,SNR=13								
COCO	**West Island**	**33.16**	**230**	*e*P			**P**	**22 03 20.9**	**-2.0**
	350nm,1.4s								
AS31	**Alice Springs**	**34.84**	**161**	*e*P			**P**	**22 03 39.3**	**+1.8**
	2.3nm,0.8s								
AS31				*e*PcP			**PcP**	**22 06 11.2**	**+0.7**
ASAR	**Alice Springs**	**34.84**	**161**	P			**P**	**22 03 38.9**	**+1.4**
	6.0nm,0.7s,baz=344,slow=7.1,SNR=17								
ASAR				PcP			**PcP**	**22 06 11.2**	**+0.7**
	3.0nm,0.8s,baz=349,slow=2.6,SNR=14								
USRK	**Ussuriysk Ar.**	**35.63**	**12**	P			**P**	**22 03 44.2**	**+0.2**
	4.2nm,0.8s,baz=211,slow=11,SNR=6.8								
ASAJ	**Asahikawa**	**38.79**	**24**	*e*P			**P**	**22 04 12.6**	**+1.7**
	33nm,1.4s								
FORT	**Forrest**	**40.39**	**172**	*e*P			**P**	**22 04 26.0**	**+1.6**
	141nm,0.7s								
KLR	**Kul'dur**	**40.44**	**10**	P			**P**	**22 04 23.7**	**-0.8**
	1.9nm,0.6s,baz=232,slow=11,SNR=4.5								
SONA0	**Songino Array**	**40.53**	**344**	*e*P			**P**	**22 04 26.0**	**+0.5**
	2.6nm,0.8s								
SONM	**Songino Array**	**40.53**	**344**	P			**P**	**22 04 26.0**	**+0.5**
	1.5nm,0.6s,baz=164,slow=9.5,SNR=8.0								
SONA1	**Songino Array**	**40.54**	**344**	*e*P			**P**	**22 04 26.1**	**+0.5**
NWAO	**Narrogin (SRO)**	**42.41**	**186**	P			**P**	**22 04 42.6**	**+1.7**
	7.2nm,0.7s,baz=217,slow=20,SNR=4.4								
BBOO	**Buckleboo**	**44.05**	**163**	*e*P			**P**	**22 04 54.5**	**+0.4**
	89nm,1.8s								
STKA	**Stephens Creek**	**45.08**	**157**	P			**P**	**22 05 03.2**	**+0.9**
	1.5nm,0.6s,baz=330,slow=7.3,SNR=3.8								
STKA	**Stephens Creek**	**45.08**	**157**	*e*P			**P**	**22 05 03.2**	**+0.9**
	4.6nm,1.8s								
ARMA	**Armidale**	**48.68**	**146**	*e*P			**P**	**22 05 30.5**	**-0.2**
	54nm,1.6s								
MK01	**Makanchi Array**	**50.32**	**325**	*e*P			**P**	**22 05 43.8**	**+0.8**
MK31	**Makanchi Array**	**50.34**	**325**	*e*P			**P**	**22 05 44.2**	**+1.1**
MK32	**Makanchi Array**	**50.34**	**325**	*e*P			**P**	**22 05 44.0**	**+0.9**
MKAR	**Makanchi Array**	**50.34**	**325**	P			**P**	**22 05 44.0**	**+0.9**
	2.6nm,0.9s,baz=126,slow=8.0,SNR=9.1								
MAKZ	**Makanchi**	**50.52**	**325**	*e*P			**P**	**22 05 44.9**	**+0.4**
	7.9nm,1.1s								
ZAA0	**Zalesovo Array**	**53.50**	**333**	*e*P			**P**	**22 06 06.1**	**-0.4**
ZALV	**Zalesovo Beam**	**53.50**	**333**	P			**P**	**22 06 06.4**	**-0.1**
	1.2nm,0.6s,baz=134,slow=5.9,SNR=5.1								
ZAA1	**Zalesovo Array**	**53.50**	**333**	*e*P			**P**	**22 06 06.4**	**-0.1**
KURBB	**Kurchatov Arra**	**54.54**	**327**	P			**P**	**22 06 14.8**	**+0.7**
	1.1nm,0.6s,baz=126,slow=6.7,SNR=8.8								
KURK	**Kurchatov**	**54.55**	**327**	*e*P			**P**	**22 06 14.8**	**+0.7**
KKAR	**Karatay Array**	**56.03**	**316**	*e*P			**P**	**22 06 26.4**	**+1.3**
	54nm,0.8s								

BVAR	**Borovoye Array**	**60.12**	**327**	P		**P**	**22 06 53.1**	**-0.4**
	0.5nm,0.5s,baz=225,slow=27,SNR=4.5							
ZRNK	**Zerenda**	**60.84**	**326**	*e*P		**P**	**22 06 59.0**	**+0.5**
	3.8nm,1.1s							
TIXI	**Tiksi**	**62.27**	**2**	*e*P		**P**	**22 07 06.4**	**-1.4**
	4.5nm,0.8s							
NRIK	**Noril'sk**	**63.86**	**347**	P		**P**	**22 07 16.5**	**-1.9**
	2.2nm,0.7s,baz=106,slow=9.3,SNR=3.7							
GEYT	**Alibeck**	**63.87**	**308**	P		**P**	**22 07 18.3**	**-0.8**
	1.0nm,0.6s,baz=284,slow=27,SNR=2.7							
ABKAR	**Akbulak array**	**64.92**	**320**	*e*P		**P**	**22 07 26.4**	**+0.8**
ABKAR				*e*pP		**sP**	**22 07 34.6**	**+0.2**
AKTO	**Aktyubinsk**	**66.43**	**321**	P		**P**	**22 07 35.9**	**+0.4**
	1.5nm,0.7s,baz=75,slow=5.6,SNR=5.5							
KVAR	**Kislovodsk Arr**	**75.98**	**313**	P		**P**	**22 08 34.7**	**+1.2**
	2.4nm,0.8s,baz=64,slow=2.3,SNR=2.1							
KIV	**Kislovodsk**	**75.99**	**313**	*e*P		**P**	**22 08 34.7**	**+1.2**
	14nm,1.2s							
MLOA	**Mauna Loa Obse**	**79.58**	**72**	*e*P		**P**	**22 08 50.9**	**-3.6**
ILAR	**Eielson Array**	**81.89**	**26**	P		**P**	**22 09 04.8**	**-0.6**
	0.2nm,0.6s,baz=246,slow=5.1,SNR=4.7							
ILB	**Eielson Array**	**81.89**	**26**	*e*P		**P**	**22 09 04.8**	**-0.6**
BR101	**Keskin Array S**	**82.96**	**309**	*e*P		**P**	**22 09 11.6**	**-0.1**
BRTR	**Keskin Array B**	**82.96**	**309**	P		**P**	**22 09 11.6**	**-0.1**
	0.7nm,0.6s,baz=97,slow=5.1,SNR=4.5							
ARCES	**ARCESS Array B**	**83.56**	**339**	P		**P**	**22 09 12.8**	**-1.2**
	2.4nm,0.9s,baz=83,slow=5.3,SNR=3.6							
BR231	**Keskin MP Arra**	**83.61**	**309**	*e*P		**P**	**22 09 12.8**	**-2.2**
AKASG	**Malin Array Be**	**84.67**	**320**	P		**P**	**22 09 19.9**	**-0.1**
	2.1nm,0.8s,baz=73,slow=4.7,SNR=7.0							
AKBB	**Malin Array Si**	**84.67**	**320**	*e*P		**P**	**22 09 19.9**	**-0.1**
FIA0	**FINESS Array S**	**84.71**	**331**	*e*P		**P**	**22 09 20.1**	**+0.2**
FINES	**FINESS Array B**	**84.71**	**331**	P		**P**	**22 09 20.1**	**+0.2**
	2.3nm,0.6s,baz=65,slow=5.6,SNR=17							
SORM	**Soroca**	**85.62**	**318**⇑	*i*P		**P**	**22 09 24.0**	**-0.8**
TIRR	**Tirgusor**	**86.17**	**314**⇓	*i*P		**P**	**22 09 28.0**	**+0.4**
CFR	**Carcaliu**	**86.25**	**315**⇓	*i*P		**P**	**22 09 28.5**	**+0.6**
INK	**Inuvik**	**86.49**	**21**	*e*P		**P**	**22 09 29.2**	**+0.6**
	2.9nm,0.8s							
TESR	**Tescani**	**87.04**	**317**⇑	*i*P		**P**	**22 09 32.6**	**+0.8**
MLR	**Muntele Rosu**	**87.71**	**316**	P		**P**	**22 09 35.3**	**0.0**
	0.3nm,0.7s,baz=320,slow=7.6,SNR=6.3							
MLR	**Muntele Rosu**	**87.71**	**316**⇑	*i*P		**P**	**22 09 36.1**	**+0.8**
MLR	**Muntele Rosu**	**87.71**	**316**	*e*P		**P**	**22 09 35.3**	**0.0**
	10nm,1.3s							
VNDA	**Vanda**	**89.66**	**172**	P		**P**	**22 09 44.0**	**+0.5**
	1.6nm,0.8s,baz=309,slow=6.0,SNR=6.0							
HFS	**Hagfors**	**90.90**	**332**	P		**P**	**22 09 48.8**	**-0.9**
	1.8nm,0.8s,baz=344,slow=9.8,SNR=3.8							
PDG	**Podgorica**	**93.12**	**314**⇑	*i*P		**P**	**22 09 56.8**	**-3.6**
TORD	**Torodi Ar. Bea**	**116.84**	**290**	PKP		**PKPdf**	**22 15 31.1**	**-0.7**
	0.4nm,0.8s,baz=195,slow=2.2,SNR=1.9							
TOA1	**Torodi Ar. Sit**	**116.84**	**290**	*e*PKPdf		**PKPdf**	**22 15 31.1**	**-0.7**
LTX	**Lajitas**	**121.33**	**47**	*e*PKPdf		**PKPdf**	**22 15 40.5**	**+0.3**
TXAR	**Lajitas Array**	**121.33**	**47**	PKP		**PKPdf**	**22 15 40.5**	**+0.3**
	0.3nm,0.6s,baz=342,slow=0.9,SNR=5.2						

MKAR Makanchi Array 146.46 40 PKPbc **PKPab 22 18 42.5 -0.5**
comp=Z,0.7nm,0.6s,baz=315,slow=3.2,SNR=5.9

*ISCJB **11** 22:04:03.8±0.3,9.53N±0.03×122.04E±0.03, h10km, mb4.3/33, Error ellipse: s-maj=5.1km s-min=4.7km az=149.1*
*IDC **11** 22:04:03.7±0.6,9.56N×122.17E, h0km, mb4.1/21, mb1 4.2/21, mb1mx4.0/66, mbtmp4.1/21, Error ellipse: s-maj=32.1km s-min=11.6km az=68.0*
*MAN **11** 22:04:03, 9.68N×121.97E, h8km, mb4.9, ML3.8, MS3.8*
*NEIC **11** 22:04:04.7±0.3, 9.65N×122.35E, h10km, mb4.7/15, Error ellipse: s-maj=9.3km s-min=5.1km az=75.0*

ISC 11 22:04:04.9±0.4, 9.63N±0.05×122.07E±0.04, h10km, n60, σ1$52/67, mb4.4/33, 4C, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TBP	**Tagbilaran**	**1.77**	**88**	*e*P		**Pb**	**22 04 36.9**	**-0.6**
LLP	**Lapu-Lapu**	**1.99**	**70**	*e*P		**Pn**	**22 04 38.5**	**-0.2**
LLP				*i*S		Sn	22 05 05.1	+1.5
RCP	**Roxas**	**2.03**	**19**	*i*P		**Pb**	**22 04 39.0**	**-2.9**
RCP				*e*S		**Sg**	**22 05 07.6**	**-2.5**
CGP	**Cagayan de Oro**	**2.85**	**114**	*i*P		**Pn**	**22 04 51.4**	**+0.9**
CGP				*i*S		**Sb**	**22 05 29.0**	**-1.8**
CTBH	**Cotabato--PC H**	**3.22**	**138**	*e*P		**Pn**	**22 04 56.5**	**+0.8**
CTBH				*i*S		Sn	22 05 20.3	-14
PPR	**Puerto Princes**	**3.29**	**273**	*e*P		**Pb**	**22 04 59.4**	**-4.1**
PPR				*e*S		**Sn**	**22 05 34.2**	**-1.6**
MYLDM	**Lahad Datu**	**5.67**	**219**	*e*Pn		Pn	22 05 32.3	+3.0
KKM	**Kota Kinabalu**	**6.81**	**239**	*e*Pn		**Pn**	**22 05 46.7**	**+1.6**
KKM				*e*Sn		**Sn**	**22 07 01.1**	**-1.7**
LUWI	**Luwuk**	**10.63**	**176**	*e*Pn		**Pn**	**22 06 37.4**	**0.0**
SBUM	**Sibu**	**12.11**	**235**	*e*Pn		Pn	22 07 00.0	+2.3
JAGI	**Jajag, Banyuwa** 31nm,1.1s	**19.64**	**204**	*e*P		**Pn**	**22 08 37.5**	**+2.1**
CM01	**Chiang Mai Arr**	**24.04**	**294**	*e*P		**P**	**22 09 22.0**	**+1.6**
CM31	**Chiang Mai Arr**	**24.06**	**294**	*e*P		**P**	**22 09 22.5**	**+1.8**
CMAR	**Chiang Mai Arr** 0.9nm,0.4s,baz=121,slow=7.7,SNR=7.5	**24.06**	**294**	P		**P**	**22 09 22.5**	**+1.8**
FITZ	**Fitzroy Crossi** 4.9nm,0.9s,baz=355,slow=3.6,SNR=4.1	**27.78**	**173**	P		**P**	**22 09 53.8**	**-0.5**
FITZ	**Fitzroy Crossi** 44nm,1.9s	**27.78**	**173**	*e*P		**P**	**22 09 53.8**	**-0.5**
WR1	**Warramunga Arr** 14nm,1.3s	**31.78**	**158**	*e*P		**P**	**22 10 28.4**	**-1.3**
WR1				*e*PcP		**PcP**	**22 13 20.3**	**-0.8**
WRA	**Warramunga Arr** 2.4nm,1.0s,baz=339,slow=9.5,SNR=12	**31.78**	**158**	P		**P**	**22 10 28.4**	**-1.3**
WRA				PcP		**PcP**	**22 13 20.3**	**-0.8**
WB2	1.9nm,1.0s,baz=354,slow=3.1,SNR=6.2 **Warramunga Arr** 13nm,1.3s	**31.78**	**158**	*e*P		**P**	**22 10 28.3**	**-1.4**
AS31	**Alice Springs** 1.9nm,0.6s	**35.06**	**161**	*e*P		**P**	**22 10 58.0**	**-0.3**
AS31				*e*PcP		**PcP**	**22 13 29.6**	**-0.8**
ASAR	**Alice Springs** 5.0nm,0.6s,baz=341,slow=7.2,SNR=58	**35.06**	**161**	P		**P**	**22 10 58.0**	**-0.4**
ASAR				PcP		**PcP**	**22 13 29.6**	**-0.8**
AS01	1.5nm,0.7s,baz=344,slow=3.3,SNR=9.2 **Alice Springs**	**35.08**	**161**	*e*P		**P**	**22 10 57.3**	**-1.2**
MDJ	**Mudanjiang** 8.4nm,0.8s	**35.46**	**9**	*e*P		**P**	**22 10 59.5**	**-2.0**
USRK	**Ussuriysk Ar.** 1.5nm,0.7s,baz=193,slow=11,SNR=2.7	**35.50**	**12**	P		**P**	**22 11 03.6**	**+1.8**
KLR	**Kul'dur** 0.7nm,0.5s,baz=182,slow=8.5,SNR=3.3	**40.29**	**10**	P		**P**	**22 11 44.0**	**+1.7**
SONA0	**Songino Array** 2.6nm,1.1s	**40.31**	**344**	*e*P		**P**	**22 11 43.1**	**+0.5**
SONM	**Songino Array** 0.9nm,0.6s,baz=164,slow=7.7,SNR=6.8	**40.31**	**344**	P		**P**	**22 11 43.1**	**+0.5**
SONA1	**Songino Array**	**40.32**	**344**	*e*P		**P**	**22 11 43.4**	**+0.7**
HNR	**Honiara** 75nm,0.7s	**42.19**	**116**	*e*P		**P**	**22 11 53.8**	**-4.5**
NWAO	**Narrogin (SRO)** 6.4nm,0.6s,baz=260,slow=9.2,SNR=4.8	**42.57**	**186**	P		**P**	**22 12 02.0**	**+0.8**
STKA	**Stephens Creek** 4.7nm,0.8s,baz=322,slow=8.2,SNR=8.3	**45.31**	**156**	P		**P**	**22 12 22.8**	**-0.4**
STKA	**Stephens Creek** 8.7nm,1.9s	**45.31**	**156**	*e*P		**P**	**22 12 22.8**	**-0.4**
MK01	**Makanchi Array**	**50.08**	**325**	*e*P		**P**	**22 13 01.4**	**+1.2**
MK31	**Makanchi Array**	**50.10**	**325**	*e*P		**P**	**22 13 01.3**	**+1.1**
MK32	**Makanchi Array**	**50.10**	**325**	*e*P		**P**	**22 13 02.0**	**+1.7**
MKAR	**Makanchi Array** 2.0nm,0.8s,baz=128,slow=8.0,SNR=7.8	**50.10**	**325**	P		**P**	**22 13 02.0**	**+1.7**
MKAR	**Makanchi Array** 16nm,0.7s	**50.10**	**325**	*e*P		**P**	**22 13 01.7**	**+1.5**
MAKZ	**Makanchi** 3.9nm,1.2s	**50.28**	**325**	*e*P		**P**	**22 13 02.9**	**+1.2**
ZAA0	**Zalesovo Array**	**53.27**	**333**	*e*P		**P**	**22 13 23.9**	**+0.2**
ZALV	**Zalesovo Beam** 0.4nm,0.3s,baz=121,slow=5.6,SNR=3.6	**53.27**	**333**	P		**P**	**22 13 23.7**	**-0.1**
ZAA1	**Zalesovo Array**	**53.27**	**333**	*e*P		**P**	**22 13 23.7**	**-0.1**
KURBB	**Kurchatov Arra** 1.2nm,0.5s,baz=120,slow=9.4,SNR=13	**54.30**	**327**	P		**P**	**22 13 32.8**	**+1.3**
KURK	**Kurchatov**	**54.31**	**327**	*e*P		**P**	**22 13 32.8**	**+1.3**
KKAR	**Karatay Array** 18nm,0.6s	**55.79**	**316**	*e*P		**P**	**22 13 44.0**	**+1.6**
BVAR	**Borovoye Array** 0.3nm,0.5s,baz=25,slow=7.2,SNR=2.7	**59.88**	**327**	P		**P**	**22 14 11.3**	**+0.4**
WSAR	**Wadi Sarin** 4.8nm,0.8s,baz=37,slow=5.1,SNR=3.5	**61.91**	**291**	P		**P**	**22 14 26.5**	**+1.2**
GEYT	**Alibeck** 0.9nm,0.5s,baz=113,slow=3.7,SNR=3.6	**63.63**	**308**	P		**P**	**22 14 38.4**	**+1.9**
NRIK	**Noril'sk** 1.7nm,0.5s,baz=160,slow=3.3,SNR=2.4	**63.65**	**347**	P		**P**	**22 14 37.0**	**+1.0**
ABKAR	**Akbulak array** 31nm,0.5s	**64.68**	**320**	*e*P		**P**	**22 14 41.1**	**-2.0**
KVAR	**Kislovodsk Arr** 4.1nm,1.0s,baz=253,slow=7.1,SNR=2.6	**75.74**	**313**	P		**P**	**22 15 53.4**	**+2.2**
KIV	**Kislovodsk** 3.7nm,0.9s	**75.75**	**313**	*e*P		**P**	**22 15 53.4**	**+2.2**
OBN	**Obninsk** 10nm,0.4s,baz=74,slow=6.3,SNR=3.8	**79.60**	**324**	P		**P**	**22 16 13.3**	**+1.1**
OBN	**Obninsk** 11nm,0.5s	**79.60**	**324**	*e*P		**P**	**22 16 13.3**	**+1.1**
BR101	**Keskin Array S**	**82.72**	**309**	*e*P		**P**	**22 16 30.2**	**+0.7**
BRTR	**Keskin Array B** 0.7nm,0.8s,baz=94,slow=5.3,SNR=4.6	**82.72**	**309**	P		**P**	**22 16 30.2**	**+0.7**
AKASG	**Malin Array Be** 0.7nm,0.5s,baz=72,slow=4.3,SNR=4.2	**84.42**	**320**	P		**P**	**22 16 37.9**	**+0.1**
AKBB	**Malin Array Si** 3.8nm,0.7s	**84.42**	**320**	*e*P		**P**	**22 16 37.9**	**+0.2**
VNDA	**Vanda** 0.8nm,0.4s,baz=296,slow=5.2,SNR=5.1	**89.85**	**172**	P		**P**	**22 17 02.5**	**-1.0**
GERES	**GERESS Array B** 0.4nm,0.8s,baz=35,slow=3.6,SNR=3.2	**94.61**	**321**	P		**P**	**22 17 26.6**	**+0.3**
PLCA	**Paso Flores** 2.7nm,0.9s,baz=230,slow=6.9,SNR=4.9	**147.07**	**162**	PKPbc		**PKPab**	**22 23 48.6**	**-1.5**

*NIED **11** 22:06:00, 35.30N×141.20E, h44km, Mw4.4 Best double couple: M0 3.96000×10^15 NP1:φ,δ,λ 2.00000°, 44.00000°, 77.00000°. NP2:φ,δ,λ 200.00000°, 48.00000°, 102.00000°.*
*IDC **11** 22:06:51.4±0.6, 35.24N×141.08E, h0km, mb4.2/23, mb1 4.2/27, mb1mx4.0/70, mbtmp4.1/27, ML3.3/3, Error ellipse: s-maj=20.4km s-min=12.9km az=87.0*
*BJI **11** 22:06:53.6, 35.40N×141.30E, h35km, mb4.6/2*
*JMA **11** 22:06:53.8±0.1, 35.28N×141.22E, h32km±2km, M3.7*
*ISCJB **11** 22:06:53.9±0.8, 35.22N±0.03×141.20E±0.06, h29km±4km, mb4.4/35, Error ellipse: s-maj=7.9km s-min=4.8km az=179.1*
*NEIC **11** 22:06:56.1±0.5, 35.22N×141.10E, h33km±3km, mb4.9/15, Error ellipse: s-maj=6.4km s-min=5.7km az=86.0*

ISC 11 22:06:52.6±1.9, 35.27N±0.04×141.30E±0.07, h11km±11km, n96, σ1$45/91, mb4.3/35, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.56**	**321**	P		**Pb**	**22 07 04.5**	**0.0**
CHOJ				S		**Sb**	**22 07 11.8**	**-0.7**
BSO1	**Boso 1**	**0.66**	**203**	P		**Pb**	**22 07 06.3**	**+0.5**
BSO3	**Boso 3**	**0.79**	**235**	P		**Pb**	**22 07 08.1**	**-0.1**
KTR	**Katsuura**	**0.81**	**262**	P		**Pg**	**22 07 08.2**	**0.0**
BSO4	**Boso 4**	**0.83**	**251**	P		**Pg**	**22 07 08.7**	**+0.1**
JCN	**Nagara**	**0.91**	**280**	P		**Pg**	**22 07 10.2**	**+0.1**
JYT	**Yasato**	**1.31**	**317**	P		**Pn**	**22 07 16.5**	**-0.4**
JYT				*e*S		**Sb**	**22 07 32.8**	**-1.3**
JIM2	**Oshima 3**	**1.63**	**251**	P		**Pn**	**22 07 18.7**	**-2.5**
JHJ2	**Mitsune**	**2.47**	**210**	*e*Pn		**Pn**	**22 07 31.7**	**-1.1**
JHJ2				*e*Sn		**Sn**	**22 08 00.4**	**-2.6**
JHJ	**Hachijo jima 2** 46nm,0.3s,baz=351,slow=17,SNR=25	**2.48**	**211**	Pn		**Pn**	**22 07 31.9**	**-1.0**
JHJ				Sn		**Sn**	**22 08 01.5**	**-1.7**
MAJO	82nm,0.3s,baz=53,slow=20,SNR=5.9 **Matsushiro**	**2.81**	**298**	*e*Pn		**Pn**	**22 07 36.1**	**-1.5**
MAT	**Matsushiro**	**2.81**	**298**	P		**Pn**	**22 07 38.4**	**+0.9**
MAT				S		**Sn**	**22 08 11.9**	**+0.4**
INU	**Inuyama**	**3.50**	**273**	*e*Pn		**Pn**	**22 07 47.8**	**+0.9**
ERM	**Erimo**	**6.89**	**12**	*e*Pn		**Pn**	**22 08 31.9**	**-1.6**
ERM				*e*Sn		**Sn**	**22 09 45.8**	**-6.2**
JNU	**Nakatsue** 0.2nm,0.3s,baz=121,slow=8.4,SNR=3.3	**8.89**	**259**	Pn		**Pn**	**22 09 00.2**	**-0.8**
ASAJ	**Asahikawa** 2.2nm,0.3s,baz=227,slow=9.8,SNR=5.1	**8.90**	**6**	Pn		**Pn**	**22 08 59.5**	**-1.5**
ASAJ	**Asahikawa**	**8.90**	**6**	*e*Pn		Pn	22 08 54.8	-6.2
KSRS	**Korea Array** 0.2nm,0.3s,baz=104,slow=14,SNR=6.6	**11.00**	**285**	Pn		**Pn**	**22 09 33.2**	**+3.3**
KS15	**Wonju Array Si**	**11.03**	**285**	*e*Pn		**Pn**	**22 09 33.2**	**+2.9**
KSAR	**Wonju Array Be**	**11.03**	**285**	Pn		**Pn**	**22 09 33.2**	**+2.9**
USRK	**Ussuriysk Ar.** 0.1nm,0.3s,baz=141,slow=36,SNR=3.0	**11.44**	**324**	Pn		**Pn**	**22 09 34.4**	**-1.3**
KLR	**Kul'dur** 0.1nm,0.3s,baz=149,slow=18,SNR=2.5	**15.62**	**336**	Pn		**Pn**	**22 10 32.3**	**-0.3**
YULB	**Yu-li** 40nm,1.8s	**21.03**	**241**	*e*P		**P**	**22 11 35.7**	**-0.7**
PET	**Petropavlovsk**	**21.59**	**29**	*e*P		P	22 11 29.1	-13
MA2	**Magadan** 6.5nm,0.5s,baz=205,slow=6.9,SNR=4.7	**25.10**	**11**	P		**P**	**22 12 18.8**	**+1.8**
ENH	**Enshi** 9.7nm,1.1s	**27.14**	**268**	*e*P		**P**	**22 12 34.7**	**-1.1**
H11N2	**WAKE ISLAND Hy** baz=310,slow=75,SNR=166	**27.37**	**118**	T		T	22 41 39.9	
H11N1	**WAKE ISLAND Hy** baz=310,slow=75,SNR=152	**27.37**	**118**	T		T	22 41 40.5	
H11N3	**WAKE ISLAND Hy** baz=310,slow=75,SNR=165	**27.39**	**118**	T		T	22 41 41.3	
YAK	**Yakutsk** 9.6nm,0.4s,baz=90,slow=1.6,SNR=3.2	**27.77**	**348**	P		**P**	**22 12 41.1**	**-0.1**
YAK	**Yakutsk** 14nm,0.7s	**27.77**	**348**	*e*P		**P**	**22 12 41.1**	**-0.1**
H11S1	**WAKE ISLAND Hy** baz=312,slow=76,SNR=1103	**28.02**	**120**	T		T	22 42 28.8	
H11S3	**WAKE ISLAND Hy** baz=312,slow=76,SNR=1050	**28.02**	**120**	T		T	22 42 06.2	
H11S2	**WAKE ISLAND Hy** baz=312,slow=76,SNR=1038	**28.04**	**120**	T		T	22 42 07.4	
SONA1	**Songino Array**	**28.73**	**307**	*e*P		**P**	**22 12 49.2**	**-0.8**
SONA0	**Songino Array** 1.6nm,0.9s	**28.73**	**307**	*e*P		**P**	**22 12 49.8**	**-0.2**
SONM	**Songino Array** 1.0nm,0.7s,baz=114,slow=8.3,SNR=5.0	**28.73**	**307**	P		**P**	**22 12 49.8**	**-0.2**
GTA	**Gaotai**	**33.03**	**290**	*e*P		**P**	**22 13 30.2**	**+2.2**
GTA				pP		sP	22 13 34.8	+2.0
TIXI	**Tiksi** 2.3nm,0.5s,baz=136,slow=6.4,SNR=3.8	**37.03**	**354**	P		**P**	**22 14 02.5**	**+0.5**
ZAA0	**Zalesovo Array**	**43.05**	**314**	*e*P		**P**	**22 14 51.8**	**-0.3**
ZAA1	**Zalesovo Array**	**43.05**	**314**	*e*P		**P**	**22 14 51.5**	**-0.6**
ZALV	**Zalesovo Beam** 2.7nm,0.7s,baz=100,slow=6.8,SNR=9.0	**43.05**	**314**	P		**P**	**22 14 51.5**	**-0.6**
NRIK	**Noril'sk** 2.3nm,0.9s,baz=119,slow=11,SNR=2.9	**44.84**	**336**	P		**P**	**22 15 05.4**	**-0.8**
MK01	**Makanchi Array**	**44.99**	**304**	*e*P		**P**	**22 15 07.3**	**-0.6**
MK31	**Makanchi Array**	**45.00**	**304**	*e*P		**P**	**22 15 07.8**	**-0.2**
MK32	**Makanchi Array**	**45.00**	**304**	*e*P		**P**	**22 15 07.4**	**-0.5**
MKAR	**Makanchi Array** 2.6nm,0.7s,baz=89,slow=9.4,SNR=9.3	**45.00**	**304**	P		**P**	**22 15 07.4**	**-0.5**
MAKZ	**Makanchi** 3.6nm,0.9s	**45.21**	**304**	*e*P		**P**	**22 15 09.1**	**-0.5**
KURK	**Kurchatov**	**46.96**	**309**	*e*P		**P**	**22 15 22.8**	**-0.5**
SVW2	**Sparrevohn**	**46.99**	**36**	*e*P		**P**	**22 15 24.4**	**+1.0**
KURBB	**Kurchatov Arra** 7.1nm,0.8s,baz=86,slow=8.0,SNR=35	**47.03**	**309**	P		**P**	**22 15 23.2**	**-0.6**
PPLA	**Purkeypile** 32nm,1.4s	**48.68**	**34**	*e*P		**P**	**22 15 35.4**	**-1.2**
BVAR	**Borovoye Array** 2.0nm,0.8s,baz=90,slow=7.4,SNR=5.7	**51.70**	**313**	P		**P**	**22 15 59.8**	**+0.3**
BMRM	**Bremner River** 21nm,0.4s	**52.33**	**36**	*e*P		**P**	**22 15 59.7**	**-4.4**
ZRNK	**Zerenda** 3.0nm,0.8s	**52.54**	**313**	*e*P		**P**	**22 16 04.8**	**-0.9**
FITZ	**Fitzroy Crossi** 3.1nm,0.6s,baz=26,slow=8.9,SNR=3.9	**55.12**	**198**	P		**P**	**22 16 24.6**	**-0.3**
FITZ	**Fitzroy Crossi**	**55.12**	**198**	*e*P		**P**	**22 16 22.6**	**-2.3**
WB2	**Warramunga Arr**	**55.30**	**188**	*e*P		**P**	**22 16 25.0**	**-1.2**
WR1	**Warramunga Arr** 36nm,1.6s	**55.30**	**188**	*e*P		**P**	**22 16 25.2**	**-0.9**
WRA	**Warramunga Arr** 6.4nm,0.7s,baz=1.5,slow=7.6,SNR=57	**55.30**	**188**	P		**P**	**22 16 25.2**	**-0.9**
ARU	**Arti** 2.2nm,0.5s,baz=342,slow=2.7,SNR=6.5	**57.63**	**319**	P		**P**	**22 16 42.1**	**-0.3**
ARU	**Arti** 4.8nm,0.8s	**57.63**	**319**	*e*P		**P**	**22 16 42.1**	**-0.3**
ABKAR	**Akbulak array** 31nm,0.5s	**59.02**	**311**	*e*P		**P**	**22 16 51.8**	**-0.4**
AS31	**Alice Springs** 2.9nm,1.4s	**59.02**	**188**	*e*P		**P**	**22 16 53.6**	**+1.1**
ASAR	**Alice Springs** 1.4nm,0.6s,baz=16,slow=10,SNR=10.0	**59.03**	**188**	P		**P**	**22 16 53.6**	**+1.1**
AKTO	**Aktyubinsk** 1.7nm,0.8s,baz=71,slow=14,SNR=5.0	**59.79**	**313**	P		**P**	**22 16 57.6**	**0.0**
MSVF	**Nonsavu** 72nm,1.5s	**63.20**	**140**	*e*P		**P**	**22 17 22.5**	**+1.5**
FIA0	**FINESS Array S**	**70.33**	**333**	*e*P		**P**	**22 18 05.8**	**-0.1**
FINES	**FINESS Array B** 1.9nm,0.8s,baz=63,slow=7.1,SNR=5.7	**70.33**	**333**	P		**P**	**22 18 05.8**	**-0.1**
AKASG	**Malin Array Be** 0.7nm,0.4s,baz=46,slow=5.2,SNR=6.6	**75.64**	**323**	P		**P**	**22 18 37.2**	**-0.3**
AKBB	**Malin Array Si** 3.8nm,0.7s	**75.64**	**323**	*e*P		**P**	**22 18 37.2**	**-0.3**
HFS	**Hagfors** 1.7nm,0.8s,baz=68,slow=5.0,SNR=3.6	**75.66**	**336**	P		**P**	**22 18 38.4**	**+0.9**
NB2	**NORSAR Subarra** comp=Z,0.8nm,0.6s,baz=41,slow=5.9	**75.78**	**337**	P		**P**	**22 18 38.0**	**-0.2**
NB200	**NORSAR Array S**	**75.78**	**337**	*e*P		**P**	**22 18 38.4**	**+0.2**
NOA	**NORSAR Array B** comp=Z,1.1nm,0.7s,baz=39,slow=5.8,SNR=4.9	**75.78**	**337**	P		**P**	**22 18 38.4**	**+0.2**
BW06	**Boulder Array**	**78.97**	**45**	*e*P		**P**	**22 18 58.2**	**+1.5**
PD31	**Pinedale Array**	**78.97**	**45**	*e*P		**P**	**22 18 58.5**	**+1.8**
PDAR	**Pinedale Array** comp=Z,0.6nm,0.6s,baz=247,slow=2.6,SNR=7.2	**78.97**	**45**	P		**P**	**22 18 58.5**	**+1.8**
PDAR	**Pinedale Array**	**78.97**	**45**	P		**P**	**22 18 58.5**	**+1.8**
BR101	**Keskin Array S**	**79.95**	**312**	*e*P		**P**	**22 19 02.6**	**+0.7**
BRTR	**Keskin Array B** comp=Z,0.8nm,1.0s,baz=92,slow=3.7,SNR=3.7	**79.95**	**312**	P		**P**	**22 19 02.6**	**+0.7**
BR231	**Keskin MP Arra**	**80.41**	**312**	*e*P		**P**	**22 19 06.0**	**+1.6**
DPC	**Dobruska-Polom**	**81.90**	**328**	*e*P		**P**	**22 19 14.0**	**+1.9**
KHC	**Kasperske Hory**	**84.00**	**329**	*e*P		**P**	**22 19 24.3**	**+1.4**
GERES	**GERESS Array B** comp=Z,1.0nm,0.8s,baz=32,slow=5.2,SNR=7.2	**84.16**	**328**	P		**P**	**22 19 23.7**	**-0.1**
GEA0	**GERESS Array S**	**84.17**	**328**	*e*P		**P**	**22 19 23.8**	**-0.1**
SCHQ	**Schefferville** comp=Z,1.6nm,0.5s,baz=333,slow=2.3,SNR=2.1	**87.06**	**16**	P		**P**	**22 19 39.2**	**+1.2**
SCHQ	**Schefferville** comp=Z,51nm,1.8s	**87.06**	**16**	*e*P		P	**22 19 39.2**	**+1.2**
LTX	**Lajitas**	**91.27**	**52**	*e*P		**P**	**22 20 00.5**	**+2.0**
TXAR	**Lajitas Array** comp=Z,0.3nm,0.7s,baz=281,slow=3.1,SNR=4.4	**91.27**	**52**	P		**P**	**22 20 00.5**	**+2.0**
WCI	**Wyandotte Cave**	**94.61**	**36**	*e*sP		P	22 20 29.0	+15
WVT	**Waverly**	**95.52**	**38**	*e*sP		P	22 20 36.2	+18
SWET	**Sewanee** comp=Z,15nm,1.2s	**97.18**	**37**	*e*P		Pdif	22 20 25.7	+0.2
TOA1	**Torodi Ar. Sit**	**118.50**	**314**	*e*PKPdf		**PKPdf**	**22 25 40.2**	**-0.8**
TORD	**Torodi Ar. Bea** comp=Z,1.0nm,1.1s,baz=64,slow=3.4,SNR=3.2	**118.50**	**314**	PKP		**PKPdf**	**22 25 40.2**	**-0.8**
LPAZ	**La Paz** comp=Z,0.4nm,0.4s,baz=304,slow=3.6,SNR=3.1	**147.64**	**62**	PKPbc		**PKPbc**	**22 26 38.8**	**+0.4**

IDC 11 22:09:40.3±1.4, 0.12N×123.72E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.2/57, mbtmp3.3/4, Error ellipse: s-maj=160.1km s-min=23.4km az=66.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr** 0.2nm,0.5s,baz=330,slow=11,SNR=2.9	**22.49**	**153**	P		P	22 14 41.6	+0.1
ASAR	**Alice Springs** 0.7nm,0.6s,baz=341,slow=7.5,SNR=6.8	**25.63**	**158**	P		P	22 15 11.7	-0.1
SONM	**Songino Array** 0.2nm,0.4s,baz=160,slow=8.9,SNR=2.9	**49.86**	**345**	P		P	22 18 36.0	+0.5
MKAR	**Makanchi Array** 0.5nm,0.7s,baz=110,slow=7.1,SNR=3.6	**58.90**	**328**	P		P	22 19 40.7	-0.5

*ISCJB **11** 22:13:06.3±0.3, 9.40N±0.04×122.02E±0.03, h10km, mb4.1/35, Error ellipse: s-maj=5.8km s-min=4.5km az=165.6*
*IDC **11** 22:13:06.6±0.7, 9.41N×122.07E, h0km, mb4.0/26, mb1 4.1/26, mb1mx4.0/57, mbtmp4.0/26, ML4.7/1, Error ellipse: s-maj=24.2km s-min=16.3km az=70.0*
*MAN **11** 22:13:06, 9.65N×121.87E, h24km, mb4.7, ML3.6, MS3.6*
*NEIC **11** 22:13:09.9±2.5, 9.41N×122.08E, h22km±18km, mb4.6/11, Error ellipse: s-maj=8.9km s-min=5.5km az=70.0*

ISC 11 22:13:08.3±0.5, 9.44N±0.06×122.03E±0.04, h10km, n67, σ1$03/71, mb4.2/35, 3C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TBP	**Tagbilaran**	**1.82**	**82**	*e*P		**Pn**	**22 13 39.9**	**+0.1**
LLP	**Lapu-Lapu**	**2.10**	**65**	*e*P		**Pn**	**22 13 42.7**	**-0.9**
LLP				*e*S		**Sn**	**22 14 09.5**	**-0.2**
CGP	**Cagayan de Oro**	**2.81**	**110**	*e*P		**Pn**	**22 13 54.2**	**+0.8**
CTBH	**Cotabato--PC H**	**3.11**	**135**	*e*P		**Pb**	**22 14 03.0**	**-0.8**
CTBH				*i*S		Sg	22 14 59.5	+11
PPR	**Puerto Princes**	**3.27**	**276**	*i*P		**Pn**	**22 13 58.0**	**-1.7**
PPR				*i*S		**Sn**	**22 14 36.9**	**-1.7**
PLP	**Palo**	**3.37**	**59**	*e*P		**Pn**	**22 13 59.2**	**-1.8**
PLP				*e*S		**Sn**	**22 14 39.0**	**-2.1**
TGY	**Tagaytay City** 31nm,0.3s,baz=0.3,slow=18,SNR=2.0	**4.75**	**347**	Pn		**Pn**	**22 14 22.1**	**+2.0**
TGY				Sn		**Sn**	**22 15 17.1**	**+1.7**
MYLDM	48nm,0.3s,baz=252,slow=19,SNR=2.7 **Lahad Datu**	**5.49**	**220**	*e*Pn		**Pn**	**22 14 33.8**	**+3.5**
KKM	**Kota Kinabalu**	**6.68**	**240**	*e*Pn		**Pn**	**22 14 47.6**	**+0.9**
KKM				*e*Sn		**Sn**	**22 16 01.9**	**-1.0**
SBUM	**Sibu**	**11.97**	**235**	*e*Pn		Pn	22 15 56.1	-3.1
CM01	**Chiang Mai Arr**	**24.08**	**294**	*e*P		**P**	**22 18 23.6**	**-0.6**
CM31	**Chiang Mai Arr**	**24.11**	**294**	*e*P		**P**	**22 18 24.9**	**+0.4**
CMAR	**Chiang Mai Arr** 2.3nm,0.9s,baz=115,slow=7.7,SNR=11	**24.11**	**294**	P		**P**	**22 18 24.9**	**+0.4**
KS15	**Wonju Array Si**	**28.37**	**10**	*e*P		**P**	**22 19 01.1**	**-1.7**
KSAR	**Wonju Array Be**	**28.37**	**10**	P		**P**	**22 19 01.1**	**-1.7**
KSRS	**Korea Array** 1.7nm,0.8s,baz=198,slow=32,SNR=3.7	**28.39**	**10**	P		**P**	**22 19 01.1**	**-1.8**
WRAB	**Tennant Creek** 8.8nm,0.6s	**31.61**	**157**	*e*P		**P**	**22 19 29.9**	**-1.6**
WR1	**Warramunga Arr** 50nm,2.0s	**31.62**	**158**	*e*P		**P**	**22 19 30.6**	**-1.1**
WRA	**Warramunga Arr** 1.9nm,0.9s,baz=338,slow=9.8,SNR=4.6	**31.62**	**158**	P		**P**	**22 19 30.6**	**-1.1**
WB2	**Warramunga Arr** 23nm,1.5s	**31.62**	**157**	*e*P		**P**	**22 19 31.1**	**-0.5**
AS31	**Alice Springs** 1.6nm,0.9s	**34.89**	**161**	*e*P		**P**	**22 20 00.0**	**-0.2**
ASAR	**Alice Springs** 1.5nm,0.8s,baz=340,slow=6.8,SNR=8.0	**34.90**	**161**	P		**P**	**22 20 00.0**	**-0.2**
USRK	**Ussuriysk Ar.** 1.8nm,0.7s,baz=184,slow=13,SNR=4.7	**35.69**	**12**	P		**P**	**22 20 07.4**	**+0.5**
SONA0	**Songino Array** 7.2nm,1.4s	**40.48**	**344**	*e*P		**P**	**22 20 47.0**	**-0.4**
SONM	**Songino Array** 1.0nm,0.7s,baz=160,slow=8.6,SNR=6.4	**40.48**	**344**	P		**P**	**22 20 47.0**	**-0.4**
KLR	**Kul'dur** 0.9nm,0.5s,baz=135,slow=8.3,SNR=5.0	**40.49**	**10**	P		**P**	**22 20 47.4**	**+0.1**
SONA1	**Songino Array**	**40.49**	**344**	*e*P		**P**	**22 20 46.9**	**-0.6**
MK01	**Makanchi Array**	**50.21**	**325**	*e*P		**P**	**22 22 04.3**	**-0.1**
MK31	**Makanchi Array**	**50.23**	**325**	*e*P		**P**	**22 22 05.0**	**+0.3**
MK32	**Makanchi Array**	**50.23**	**325**	*e*P		**P**	**22 22 04.8**	**+0.2**
MKAR	**Makanchi Array** 3.2nm,0.9s,baz=127,slow=7.4,SNR=19	**50.23**	**325**	P		**P**	**22 22 04.8**	**+0.2**
MKAR	**Makanchi Array**	**50.23**	**325**	*e*P		**P**	**22 22 05.0**	**+0.3**
PETK	**Petropavlovsk-** 0.5nm,0.4s,baz=80,slow

IDC ***11*** *22:14:10.7±0.7,28°.87S×176°.80W, h0km, mb4.1/11, mb1 4.3/13,mb1mx4.2/34,mbtmp4.1/13,ML3.5/2,MS5.1/1, Ms1 5.1/1,ms1mx3.8/29,Error ellipse: s-maj=24.1km s-min=15.2km az=154.0*

NEIC ***11*** *22:14:11.7±0.4,29°.03S×176°.77W, h10km, mb4.5/7, Error ellipse: s-maj=13.6km s-min=9.0km az=157.0*

ISCJB ***11*** *22:14:14.4±0.5,29°.0S±0°.1×176°.81W±0°.07, h36km, mb4.2/14,MS5.2/1, Error ellipse: s-maj=14.7km s-min=8.7km az=164.7*

ISC 11 22:14:16.2±0.5, 28°.9S±0°.1×176°.82W±0°.08, h36km, n47, σ1§09/47, mb4.2/14, 1C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.02**	**251**	Pn	**Pn**		**22 14 34.5**	**+0.6**
	699nm,0.3s,baz=83,slow=3.6,SNR=29							
RAO				Sn	**Sn**		**22 14 47.5**	**+0.5**
	1μm,0.3s,baz=61,slow=19,SNR=12							
RAO				LR	LR		22 15 02.6	
	comp=Z,3μm,21.1s,baz=141,slow=49							
RAO	**Raoul Island**	**1.02**	**251**	*e*Pn	**Pn**		**22 14 34.8**	**+0.9**
RAO				*e*Sn	**Sn**		**22 14 47.5**	**+0.5**
URZ	**Urewera**	**10.59**	**207**	Pn	Pn		22 16 37.2	-8.1
	0.8nm,0.3s,baz=54,slow=19,SNR=5.0							
URZ				Sn	Sn		22 18 30.3	-12
	1.7nm,0.3s,baz=24,slow=16,SNR=4.1							
DZM	**Mont Dzumac**	**16.58**	**291**	Pn	**Pn**		**22 18 06.1**	**+0.1**
	0.4nm,0.3s,baz=241,slow=11,SNR=2.5							
DZM	**Mont Dzumac**	**16.58**	**291**	*e*Pn	**Pn**		**22 18 06.1**	**+0.1**
	26nm,1.2s							
RAR	**Rarotonga**	**17.23**	**67**	P	**Pn**		**22 18 13.3**	**-0.8**
	0.6nm,0.3s,baz=266,slow=13,SNR=2.4							
RAR	**Rarotonga**	**17.23**	**67**	*e*Pn	**Pn**		**22 18 13.3**	**-0.8**
	83nm,1.7s							
RPZ	**Rata Peaks**	**17.67**	**210**	P	**Pn**		**22 18 14.9**	**-4.4**
	1.7nm,0.3s,baz=131,slow=19,SNR=4.6							
STKA	**Stephens Creek**	**35.84**	**255**	P	**P**		**22 21 12.1**	**-0.3**
	2.2nm,0.6s,baz=93,slow=8.5,SNR=5.6							
STKA	**Stephens Creek**	**35.84**	**255**	*e*P	**P**		**22 21 12.1**	**-0.3**
	6.7nm,1.6s							
PMG	**Port Moresby**	**38.95**	**293**	P	**P**		**22 21 39.3**	**+0.4**
	baz=164,slow=18							
AS31	**Alice Springs**	**44.24**	**265**	*e*P	**P**		**22 22 21.4**	**-0.9**
	1.5nm,0.6s							
ASAR	**Alice Springs**	**44.24**	**265**	P	**P**		**22 22 21.4**	**-0.9**
	3.2nm,0.5s,baz=107,slow=6.8,SNR=24							
WR1	**Warramunga Arr**	**45.10**	**270**	*e*P	**P**		**22 22 28.2**	**-0.9**
	13nm,1.2s							
WRA	**Warramunga Arr**	**45.10**	**270**	P	**P**		**22 22 28.2**	**-0.9**
	4.4nm,0.7s,baz=108,slow=7.7,SNR=19							
VNDA	**Vanda**	**49.66**	**186**	P	**P**		**22 23 05.1**	**+1.3**
	0.4nm,0.4s,baz=16,slow=6.4,SNR=4.8							
FITZ	**Fitzroy Crossi**	**53.41**	**268**	P	**P**		**22 23 32.2**	**-0.4**
	2.9nm,0.8s,baz=128,slow=12,SNR=2.6							
FITZ	**Fitzroy Crossi**	**53.41**	**268**	*e*P	**P**		**22 23 32.2**	**-0.4**
	45nm,1.7s							
QSPA	**South Pole Qui**	**61.18**	**180**	*e*P	**P**		**22 24 27.0**	**+0.1**
TGY	**Tagaytay City**	**73.77**	**297**	LR	LR		22 53 26.0	
	comp=Z,1μm,21.7s,baz=180,slow=32							
MAW	**Mawson**	**74.04**	**200**	P	**P**		**22 25 47.9**	**+0.1**
	2.3nm,0.8s,baz=145,slow=9.0,SNR=6.5							
SYO	**Syowa Base**	**78.77**	**193**	*e*pP	**P**		**22 26 18.4**	**+3.8**
SNAA	**Sanae**	**79.59**	**178**	*e*P	**P**		**22 26 19.6**	**+0.4**
	12nm,1.6s							
PETK	**Petropavlovsk-**	**84.66**	**345**	P	**P**		**22 26 46.7**	**+1.0**
	1.2nm,0.6s,baz=167,slow=13,SNR=3.1							
PEA1	**Petropavlovsk-**	**84.66**	**345**	*e*P	**P**		**22 26 46.7**	**+1.0**
USRK	**Ussuriysk Ar.**	**86.52**	**326**	P	**P**		**22 26 54.4**	**-0.7**
	0.5nm,0.4s,baz=7.6,slow=38,SNR=3.8							
KLR	**Kul'dur**	**90.30**	**329**	P	**P**		**22 27 11.7**	**-1.2**
	0.5nm,0.5s,baz=174,slow=9.1,SNR=3.1							
LTX	**Lajitas**	**90.72**	**57**	*e*P	**P**		**22 27 16.0**	**+0.4**
TXAR	**Lajitas Array**	**90.72**	**57**	P	**P**		**22 27 16.0**	**+0.4**
	0.3nm,0.8s,baz=226,slow=6.1,SNR=3.4							
ILAR	**Eielson Array**	**96.27**	**12**	P	**P**		**22 27 39.8**	**-0.3**
	0.1nm,0.6s,baz=206,slow=3.9,SNR=2.7							
ILB	**Eielson Array**	**96.27**	**12**	*e*P	**P**		**22 27 39.8**	**-0.3**
MK32	**Makanchi Array**	**117.61**	**310**	*e*PKPdf	**PKPdf**		**22 32 57.6**	**-0.5**
MKAR	**Makanchi Array**	**117.61**	**310**	PKP	**PKPdf**		**22 32 57.6**	**-0.5**
	0.2nm,0.2s,baz=222,slow=1.9,SNR=3.1							
GEYT	**Alibeck**	**133.85**	**296**	PKP	**PKPdf**		**22 33 30.2**	**+0.8**
	0.7nm,0.6s,baz=46,slow=4.2,SNR=2.5							
FIA0	**FINESS Array S**	**144.10**	**341**	*e*PKPdf	**PKPab**		**22 33 44.9**	**0.0**
FINES	**FINESS Array B**	**144.10**	**341**	PKP	**PKPab**		**22 33 44.9**	**0.0**
	2.0nm,0.6s,baz=64,slow=4.4,SNR=11							
KBZ	**Khabaz**	**145.12**	**306**	PKPbc	**PKPdf**		**22 33 50.6**	**+1.1**
	1.3nm,0.6s,baz=51,slow=6.5,SNR=2.9							
NB2	**NORSAR Subarra**	**147.44**	**353**	PKP	**PKPbc**		**22 33 55.3**	**-0.3**
	comp=Z,3.9nm,1.2s,baz=10,slow=3.2							
NB200	**NORSAR Array S**	**147.44**	**353**	*e*PKPbc	**PKPbc**		**22 33 55.4**	**-0.3**
NOA	**NORSAR Array B**	**147.44**	**353**	PKPbc	**PKPbc**		**22 33 55.4**	**-0.3**
	comp=Z,1.4nm,0.8s,baz=16,slow=4.3,SNR=3.5							
AKASG	**Malin Array Be**	**150.72**	**325**	PKPbc	**PKPbc**		**22 34 03.9**	**-0.3**
	comp=Z,3.2nm,0.6s,baz=46,slow=3.0,SNR=10							
AKBB	**Malin Array Si**	**150.72**	**325**	*e*PKPbc	**PKPbc**		**22 34 03.9**	**-0.3**
BR101	**Keskin Array S**	**152.76**	**301**	*e*PKPbc	**PKPbc**		**22 34 08.6**	**-0.8**
BRTR	**Keskin Array B**	**152.76**	**301**	PKPbc	**PKPbc**		**22 34 08.6**	**-0.8**
	comp=Z,0.6nm,0.6s,baz=132,slow=3.8,SNR=5.2							
TORD	**Torodi Ar. Bea**	**164.24**	**175**	PKPab	**PKPab**		**22 35 09.6**	**-0.6**
	comp=Z,2.0nm,1.0s,baz=196,slow=5.0,SNR=7.7							
TOA1	**Torodi Ar. Sit**	**164.24**	**175**	*e*PKPab	**PKPab**		**22 35 09.6**	**-0.6**
ESDC	**Sonseca Array**	**167.77**	**27**	PKPab	**PKPab**		**22 35 25.6**	**+0.3**
	comp=Z,0.2nm,0.6s,baz=336,slow=3.3,SNR=3.0							

IDC ***11*** *22:14:53.6±0.6,9°.60N×122°.39E, h0km, mb4.1/18, mb1 4.2/18,mb1mx4.0/56,mbtmp4.1/18, Error ellipse: s-maj=38.4km s-min=13.8km az=62.0*

NEIC ***11*** *22:14:55.3±0.3,9°.60N×122°.32E, h10km, mb4.6/9, Error ellipse: s-maj=11.7km s-min=6.0km az=68.0*

ISC 11 22:14:54.9±1.9, 9°.54N±0°.06×122°.22E±0°.07, h7km±13km, n40, σ1§06/51, mb4.2/25, 2C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.02**	**101**	*i* P	**Pg**		**22 15 12.9**	**-1.6**
TBP	**Tagbilaran**	**1.62**	**85**	*e*P	**Pg**		**22 15 27.1**	**+1.1**
RCP	**Roxas**	**2.07**	**14**	*e*P	**Pb**		**22 15 31.2**	**-1.6**
RCP				*e*S	**Sb**		**22 15 57.9**	**-0.9**
PLP	**Palo**	**3.16**	**59**	*e*P	**Pn**		**22 15 46.9**	**+2.0**
PLP				*e*S	**Sn**		**22 16 22.5**	**-0.4**
MYLDM	**Lahad Datu**	**5.69**	**221**	*e*Pn	**Pn**		**22 16 23.2**	**+3.3**
MYLDM				*e*Sn	**Sn**		**22 17 23.0**	**-2.5**
KKM	**Kota Kinabalu**	**6.89**	**240**	*e*Pn	**Pn**		**22 16 36.1**	**-0.3**
CM31	**Chiang Mai Arr**	**24.24**	**294**	*e*P	**P**		**22 20 13.4**	**+0.7**
CMAR	**Chiang Mai Arr**	**24.24**	**294**	P	**P**		**22 20 13.4**	**+0.7**
	0.7nm,0.3s,baz=102,slow=8.4,SNR=4.5							
WRAB	**Tennant Creek**	**31.63**	**158**	*e*P	**P**		**22 21 18.9**	**+0.2**
	18nm,1.2s							
WR1	**Warramunga Arr**	**31.63**	**158**	*e*P	**P**		**22 21 18.7**	**0.0**
	5.6nm,0.6s							
WR1				*e*PcP	**PcP**		**22 24 10.8**	**-0.3**
WRA	**Warramunga Arr**	**31.63**	**158**	P	**P**		**22 21 18.7**	**-0.1**
	0.7nm,0.6s,baz=340,slow=9.5,SNR=5.3							
WRA				PcP	**PcP**		**22 24 10.7**	**-0.3**
	1.1nm,0.8s,baz=340,slow=2.7,SNR=5.1							
WB2	**Warramunga Arr**	**31.64**	**158**	*e*P	**P**		**22 21 18.4**	**-0.4**
	20nm,1.5s							
AS31	**Alice Springs**	**34.92**	**161**	*e*P	**P**		**22 21 48.7**	**+1.2**
	1.5nm,0.6s							
AS31				*e*PcP	**PcP**		**22 24 20.1**	**-0.2**
ASAR	**Alice Springs**	**34.92**	**161**	P	**P**		**22 21 48.7**	**+1.2**
	3.1nm,0.5s,baz=339,slow=7.1,SNR=13							
ASAR				PcP	**PcP**		**22 24 20.1**	**-0.2**
	0.9nm,0.7s,baz=340,slow=2.6,SNR=4.1							
AS01	**Alice Springs**	**34.94**	**161**	*e*P	**P**		**22 21 48.1**	**+0.5**
SONA0	**Songino Array**	**40.44**	**344**	*e*P	**P**		**22 22 34.2**	**+0.2**
	5.6nm,1.4s							
SONA0				*e*PcP	**PcP**		**22 24 35.8**	**-1.1**
SONM	**Songino Array**	**40.44**	**344**	P	**P**		**22 22 34.2**	**+0.2**
	0.6nm,0.5s,baz=162,slow=7.2,SNR=3.6							
SONM				PcP	**PcP**		**22 24 35.8**	**-1.1**
	0.3nm,0.6s,baz=186,slow=1.4,SNR=2.2							
STKA	**Stephens Creek**	**45.16**	**157**	P	**P**		**22 23 10.8**	**-1.5**
	2.0nm,0.7s,baz=304,slow=7.3,SNR=3.1							
STKA	**Stephens Creek**	**45.16**	**157**	*e*P	**P**		**22 23 10.8**	**-1.5**
	6.3nm,1.8s							
MK32	**Makanchi Array**	**50.26**	**325**	*e*P	**P**		**22 23 52.5**	**+0.6**
MK32				*e*PcP	**PcP**		**22 25 11.0**	**+0.2**
MKAR	**Makanchi Array**	**50.26**	**325**	P	**P**		**22 23 52.5**	**+0.6**
	1.0nm,0.7s,baz=126,slow=9.0,SNR=3.8							
MKAR				PcP	**PcP**		**22 25 11.0**	**+0.2**
	0.5nm,0.7s,baz=134,slow=4.2,SNR=2.4							
AAK	**Ala-Archa**	**53.08**	**317**	P	**P**		**22 24 14.6**	**+1.5**
	1.1nm,0.3s,baz=100,slow=12,SNR=3.4							
ZALV	**Zalesovo Beam**	**53.42**	**333**	P	**P**		**22 24 14.5**	**-0.7**
	0.7nm,0.6s,baz=130,slow=5.8,SNR=2.6							
ZAA1	**Zalesovo Array**	**53.42**	**333**	*e*P	**P**		**22 24 14.5**	**-0.7**
KURBB	**Kurchatov Arra**	**54.46**	**327**	P	**P**		**22 24 23.0**	**+0.1**
	4.4nm,0.2s,baz=129,slow=6.0,SNR=4.7							
KURK	**Kurchatov**	**54.47**	**327**	*e*P	**P**		**22 24 23.0**	**+0.1**
WSAR	**Wadi Sarin**	**62.09**	**291**	P	**P**		**22 25 16.1**	**-0.7**
	4.8nm,0.8s,baz=125,slow=4.9,SNR=4.2							
TIXI	**Tiksi**	**62.19**	**2**	P	**P**		**22 25 16.1**	**-0.4**
	1.4nm,0.2s,baz=188,slow=7.1,SNR=3.2							
NRIK	**Noril'sk**	**63.78**	**347**	P	**P**		**22 25 26.7**	**-0.4**
	1.8nm,0.6s,baz=129,slow=6.5,SNR=2.9							
GEYT	**Alibeck**	**63.80**	**308**	P	**P**		**22 25 29.7**	**+1.7**
	0.9nm,0.5s,baz=119,slow=8.9,SNR=3.1							
KVAR	**Kislovodsk Arr**	**75.91**	**313**	P	**P**		**22 26 43.9**	**+1.3**
	4.2nm,1.0s,baz=74,slow=2.1,SNR=2.9							
KIV	**Kislovodsk**	**75.92**	**313**	*e*P	**P**		**22 26 43.9**	**+1.3**
	5.8nm,1.1s							
BR101	**Keskin Array S**	**82.90**	**309**	*e*P	**P**		**22 27 20.6**	**-0.2**
BRTR	**Keskin Array B**	**82.90**	**309**	P	**P**		**22 27 20.6**	**-0.2**
	0.8nm,0.7s,baz=108,slow=4.0,SNR=4.3							
AKASG	**Malin Array Be**	**84.59**	**320**	P	**P**		**22 27 28.5**	**-0.5**
	0.7nm,0.5s,baz=68,slow=4.9,SNR=4.0							
AKBB	**Malin Array Si**	**84.59**	**320**	*e*P	**P**		**22 27 28.5**	**-0.5**
	3.8nm,0.7s							
FIA0	**FINESS Array S**	**84.62**	**331**	*e*P	**P**		**22 27 28.3**	**-0.6**
FINES	**FINESS Array B**	**84.62**	**331**	P	**P**		**22 27 28.3**	**-0.6**
	1.5nm,0.9s,baz=77,slow=6.3,SNR=3.0							
MLR	**Muntele Rosu**	**87.64**	**316**	P	**P**		**22 27 44.6**	**+0.2**
	0.3nm,0.6s							
MLR	**Muntele Rosu**	**87.64**	**316**	*e*P	**P**		**22 27 44.6**	**+0.2**
	8.7nm,1.6s							

ISCJB ***11*** *22:21:23.6±0.7,9°.28N±0°.06×122°.29E±0°.06, h10km, mb3.7/9, Error ellipse: s-maj=8.7km s-min=8.4km az=173.5*

IDC ***11*** *22:21:23.8±0.8,9°.37N×122°.37E, h0km, mb3.8/9, mb1 4.0/9,mb1mx3.7/43,mbtmp3.8/9, Error ellipse: s-maj=53.3km s-min=17.6km az=73.0*

MAN ***11*** *22:21:24,9°.32N×122°.07E, h25km, mb3.9, ML2.7, MS2.4*

ISC 11 22:21:25.2±0.8, 9°.36N±0°.08×122°.27E±0°.08, h10km, n14, σ1§47/16, mb3.9/9, 2C, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.95**	**91**	*i* P		Pb	22 21 39.1	-4.7
SNPH				*i* S		**Sb**	**22 21 52.6**	**-3.9**
TBP	**Tagbilaran**	**1.60**	**78**	*e*P		**Pn**	**22 21 55.3**	**+1.7**
LLP	**Lapu-Lapu**	**1.92**	**60**	*e*P		**Pn**	**22 21 58.9**	**+0.9**
LLP				*e*S		**Sn**	**22 22 24.7**	**+2.4**
RCP	**Roxas**	**2.24**	**12**	*e*P		**Pn**	**22 22 01.6**	**-0.8**
RCP				*e*S		**Sn**	**22 22 30.5**	**+0.4**
WRA	**Warramunga Arr**	**31.45**	**158**	P		**P**	**22 27 46.4**	**-0.7**
	0.6nm,0.6s,baz=342,slow=9.4,SNR=4.8							
ASAR	**Alice Springs**	**34.73**	**161**	P		**P**	**22 28 15.9**	**+0.2**
	1.3nm,0.7s,baz=344,slow=7.1,SNR=11							
SONM	**Songino Array**	**40.63**	**344**	P		**P**	**22 29 05.5**	**0.0**
	0.2nm,0.4s,baz=142,slow=7.3,SNR=2.4							
STKA	**Stephens Creek**	**44.98**	**157**	P		**P**	**22 29 41.1**	**+0.3**
	1.1nm,0.6s,baz=342,slow=11,SNR=2.8							
MKAR	**Makanchi Array**	**50.44**	**325**	P		**P**	**22 30 23.5**	**+0.4**
	0.1nm,0.3s,baz=127,slow=9.2,SNR=3.6							
PETK	**Petropavlovsk-**	**52.14**	**26**	P		**P**	**22 30 35.8**	**0.0**
	2.2nm,0.5s,baz=180,slow=4.4,SNR=5.1							
ILAR	**Eielson Array**	**81.97**	**26**	P		**P**	**22 33 44.8**	**-0.3**
	0.1nm,0.4s,baz=222,slow=6.6,SNR=2.9							
FINES	**FINESS Array B**	**84.81**	**331**	P		**P**	**22 34 00.0**	**+0.3**
	1.2nm,0.7s,baz=80,slow=1.6,SNR=4.1							
NOA	**NORSAR Array B**	**91.80**	**333**	P		**P**	**22 34 34.2**	**+0.9**
	1.2nm,0.8s,baz=69,slow=4.8,SNR=2.3							
PLCA	**Paso Flores**	**146.74**	**162**	PKPbc		**PKPbc**	**22 41 06.8**	**-1.1**
	3.8nm,0.9s,baz=180,slow=6.1,SNR=3.2							

IDC ***11*** *22:23:08.2±0.8,9°.49N×122°.28E, h0km, mb3.7/7, mb1 3.8/7,mb1mx3.6/43,mbtmp3.7/7, Error ellipse: s-maj=44.3km s-min=16.6km az=67.0*

ISCJB ***11*** *22:23:10.7±0.7,9°.48N±0°.06×122°.30E±0°.10, h29km, mb3.6/7, Error ellipse: s-maj=14.0km s-min=8.9km az=176.4*

ISC 11 22:23:12.2±0.8, 9°.47N±0°.07×122°.36E±0°.08, h29km, n11, σ1§54/14, mb3.7/7, 1C, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.88**	**98**	*i* P		**Pn**	**22 23 26.6**	**-2.1**
LLP	**Lapu-Lapu**	**1.79**	**62**	*e*P		**Pb**	**22 23 43.3**	**-1.1**
LLP				*e*S		**Sb**	**22 24 09.7**	**+3.2**
RCP	**Roxas**	**2.11**	**10**	*e*P		**Pn**	**22 23 45.0**	**-0.6**
RCP				*e*S		**Sn**	**22 24 09.4**	**-1.5**
CMAR	**Chiang Mai Arr**	**24.39**	**294**	P		**P**	**22 28 26.7**	**-1.6**
	0.4nm,0.5s,baz=99,slow=12,SNR=3.4							
WRA	**Warramunga Arr**	**31.52**	**158**	P		**P**	**22 29 32.7**	**+0.7**
	1.5nm,0.8s,baz=335,slow=9.6,SNR=6.0							
ASAR	**Alice Springs**	**34.82**	**161**	P		**P**	**22 30 02.2**	**+1.5**
	1.9nm,0.6s,baz=343,slow=7.4,SNR=17							
ASAR				PcP		**PcP**	**22 32 34.2**	**+0.4**
	0.5nm,0.6s,baz=337,slow=2.9,SNR=4.1							
KLR	**Kul'dur**	**40.40**	**9**	P		**P**	**22 30 47.4**	**-0.3**
	0.6nm,0.5s,baz=302,slow=5.1,SNR=1.8							
SONM	**Songino Array**	**40.55**	**343**	P		**P**	**22 30 50.1**	**+1.0**
	0.1nm,0.3s,baz=154,slow=4.6,SNR=2.4							
STKA	**Stephens Creek**	**45.05**	**157**	P		**P**	**22 31 25.8**	**+0.3**
	1.2nm,0.7s,baz=328,slow=9.5,SNR=2.2							
MKAR	**Makanchi Array**	**50.39**	**325**	P		**P**	**22 32 07.8**	**+0.8**
	0.6nm,0.7s,baz=139,slow=7.6,SNR=5.3							
TXAR	**Lajitas Array**	**121.23**	**47**	PKP		**PKPdf**	**22 42 02.7**	**-0.6**
	0.2nm,0.7s,baz=9.1,slow=2.3,SNR=2.5							

IDC ***11*** *22:26:05.4±0.8,9°.60N×122°.36E, h0km, mb3.9/12, mb1 4.0/12,mb1mx3.8/40,mbtmp3.9/12,MS4.3/2, Ms1 4.4/2,ms1mx3.5/49, Error ellipse: s-maj=49.1km s-min=16.3km az=66.0*

NEIC ***11*** *22:26:06.4±0.4,9°.52N×122°.32E, h10km, mb4.5/6, Error ellipse: s-maj=12.9km s-min=7.1km az=69.0*

ISCJB ***11*** *22:26:08.2±0.3,9°.45N±0°.04×122°.15E±0°.05, h29km, mb4.0/18,MS4.3/2, Error ellipse: s-maj=6.7km s-min=5.7km az=153.2*

MAN ***11*** *22:26:08,9°.48N×122°.16E, h18km, mb4.8, ML3.8, MS3.8*

ISC 11 22:26:09.3±0.5, 9°.54N±0°.05×122°.33E±0°.05, h29km, n38, σ1§60/44, mb4.0/18, 3C, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.92**	**102**	*i* P		**Pn**	**22 26 21.5**	**-4.8**
SNPH				*i* S		**Sb**	**22 26 38.3**	**-0.3**
TBP	**Tagbilaran**	**1.52**	**84**	*e*P		**Pb**	**22 26 38.1**	**+1.2**
LLP	**Lapu-Lapu**	**1.79**	**64**	*e*P		**Pb**	**22 26 41.1**	**-0.4**
LLP				*e*S		**Sb**	**22 27 07.7**	**+4.1**
RCP	**Roxas**	**2.05**	**12**	*e*P		**Pb**	**22 26 43.9**	**-2.0**
RCP				*e*S		**Sb**	**22 27 10.6**	**-0.4**
CTBH	**Cotabato--PC H**	**2.98**	**140**	*e*P		**Pn**	**22 26 56.9**	**+2.2**
CTBH				*i* S		**Sb**	**22 27 33.4**	**-4.4**
MYLDM	**Lahad Datu**	**5.76**	**221**	*e*Pn		**Pn**	**22 27 33.4**	**+0.6**
KKM	**Kota Kinabalu**	**6.98**	**241**	*e*Pn		**Pn**	**22 27 47.6**	**-2.1**
CM01	**Chiang Mai Arr**	**24.31**	**294**	*e*P		**P**	**22 31 22.3**	**-2.3**
CM01				*e*pP		**pP**	**22 31 32.6**	**-0.4**
CM31	**Chiang Mai Arr**	**24.33**	**294**	*e*P		**P**	**22 31 25.3**	**+0.5**
CMAR	**Chiang Mai Arr**	**24.33**	**294**	P		**P**	**22 31 25.3**	**+0.5**
	0.4nm,0.3s,baz=117,slow=9.2,SNR=5.0							
CMAR				LR		LR	22 40 52.4	
	comp=Z,435nm,20.6s,baz=359,slow=36							
WR1	**Warramunga Arr**	**31.59**	**158**	*e*P		**P**	**22 32 27.2**	**-2.4**
	26nm,1.5s							
WRA	**Warramunga Arr**	**31.59**	**158**	P		**P**	**22 32 27.3**	**-2.4**
	0.6nm,0.4s,baz=342,slow=9.7,SNR=4.9							
WB2	**Warramunga Arr**	**31.60**	**158**	*e*P		**P**	**22 32 28.3**	**-1.4**
	30nm,1.7s							
AS31	**Alice Springs**	**34.89**	**161**	*e*P		**P**	**22 32 59.0**	**+0.6**
	1.6nm,1.1s							
ASAR	**Alice Springs**	**34.89**	**161**	P		**P**	**22 32 59.0**	**+0.6**
	2.0nm,0.6s,baz=338,slow=7.2,SNR=16							
AS01	**Alice Springs**	**34.90**	**161**	*e*P		**P**	**22 32 59.3**	**+0.7**
SONA0	**Songino Array**	**40.48**	**343**	*e*P		**P**	**22 33 45.8**	**+0.2**
	3.9nm,1.4s							
SONM	**Songino Array**	**40.48**	**343**	P		**P**	**22 33 45.8**	**+0.2**
	1.1nm,0.8s,baz=163,slow=9.4,SNR=6.6							
SONA1	**Songino Array**	**40.48**	**343**	*e*P		**P**	**22 33 46.1**	**+0.4**
NWAO	**Narrogin (SRO)**	**42.51**	**186**	P		**P**	**22 34 02.9**	**+0.7**
	3.2nm,0.7s,baz=246,slow=10,SNR=2.9							
STKA	**Stephens Creek**	**45.12**	**157**	P		**P**	**22 34 23.9**	**+0.7**
	2.2nm,0.8s,baz=341,slow=9.1,SNR=4.1							
STKA	**Stephens Creek**	**45.12**	**157**	*e*P		**P**	**22 34 23.9**	**+0.7**
	2.6nm,1.0s							
MK32	**Makanchi Array**	**50.32**	**325**	*e*P		**P**	**22 35 04.2**	**+0.7**
MK32				*e*PcP		**PcP**	**22 36 21.8**	**-0.1**
MKAR	**Makanchi Array**	**50.32**	**325**	P		**P**	**22 35 04.2**	**+0.7**
	0.6nm,0.6s,baz=128,slow=7.7,SNR=5.9							
MKAR				PcP		**PcP**	**22 36 21.8**	**-0.1**
	0.1nm,0.4s,baz=134,slow=4.2,SNR=2.1							
ZALV	**Zalesovo Beam**	**53.47**	**333**	P		**P**	**22 35 26.3**	**-0.4**
	0.5nm,0.3s,baz=123,slow=5.3,SNR=3.4							
ZAA1	**Zalesovo Array**	**53.47**	**333**	*e*P		**P**	**22 35 26.3**	**-0.4**
NRIK	**Noril'sk**	**63.80**	**347**	P		**P**	**22 36 38.9**	**+0.5**
	1.1nm,0.5s,baz=156,slow=10.0,SNR=2.0							
GEYT	**Alibeck**	**63.89**	**308**	P		**P**	**22 36 41.4**	**+1.8**
	0.6nm,0.5s,baz=97,slow=12,SNR=2.6							
KBZ	**Khabaz**	**75.84**	**313**	LR		LR	23 15 06.1	
	comp=Z,314nm,19.7s,baz=304,slow=39							
BR101	**Keskin Array S**	**82.98**	**309**	*e*P		**P**	**22 38 32.2**	**+0.1**
BRTR	**Keskin Array B**	**82.98**	**309**	P		**P**	**22 38 32.2**	**+0.1**
	0.6nm,0.6s,baz=108,slow=6.2,SNR=5.2							
AKASG	**Malin Array Be**	**84.66**	**320**	P		**P**	**22 38 40.2**	**-0.1**
	0.2nm,0.3s,baz=77,slow=2.4,SNR=4.1							
AKBB	**Malin Array Si**	**84.66**	**320**	*e*P		**P**	**22 38 40.2**	**-0.1**
	13nm,1.5s							
FIA0	**FINESS Array S**	**84.68**	**331**	*e*P		**P**	**22 38 39.9**	**-0.3**
FINES	**FINESS Array B**	**84.68**	**331**	P		**P**	**22 38 39.9**	**-0.3**
	1.4nm,0.8s,baz=90,slow=3.8,SNR=6.7							
LTX	**Lajitas**	**121.21**	**47**	*e*PKPdf		**PKPdf**	**22 45 01.2**	**+0.9**
TXAR	**Lajitas Array**	**121.21**	**47**	PKP		**PKPdf**	**22 45 01.2**	**+0.9**
	0.1nm,0.4s,baz=315,slow=20,SNR=3.0							
PLCA	**Paso Flores**	**146.90**	**162**	PKPbc		**PKPab**	**22 45 50.6**	**-0.1**
	2.1nm,0.6s,baz=162,slow=5.3,SNR=3.7							

IDC ***11*** *22:27:47.7±2.5,18°.95S×177°.94W, h431km±26km, mb3.6/9, mb1 3.7/10,mb1mx3.5/31,mbtmp4.4/10, Error ellipse: s-maj=35.1km s-min=14.4km az=152.0*

ISCJB ***11*** *22:27:56.3±0.9,18°.9S±0°.3×178°.3W±0°.2, h532km, mb3.9/9, Error ellipse: s-maj=39.5km s-min=17.8km az=157.9*

ISC 11 22:27:57.1±0.8, 19°.0S±0°.2×178°.2W±0°.2, h532km, n19, σ0§97/18, mb3.9/9, Fiji Islands region

| Code | Station Name | Δ° | AZ°

	1.1nm,0.6s,baz=128,slow=8.4,SNR=4.8								
ZAA1	**Zalesovo Array**	**53.47**	**333**	*e*P	**P**		**22 39 14.9**	**+0.1**
KURK	**Kurchatov**	**54.51**	**327**	*e*P	**P**		**22 39 23.4**	**+0.9**
TIXI	**Tiksi**	**62.25**	**2**	*e*P	**P**		**22 40 15.2**	**-1.0**
	15nm,0.3s								
GEYT	**Alibeck**	**63.83**	**308**	P	**P**		**22 40 29.1**	**+1.7**
	0.8nm,0.4s,baz=64,slow=6.7,SNR=3.3								
NRIK	**Noril'sk**	**63.83**	**347**	P	**P**		**22 40 26.7**	**0.0**
	2.4nm,0.8s,baz=134,slow=8.9,SNR=4.2								
ABKAR	**Akbulak array**	**64.89**	**320**	*e*P	**P**		**22 40 34.6**	**+0.6**
	14nm,0.9s								
KBZ	**Khabaz**	**75.80**	**313**	P	**P**		**22 41 41.9**	**+1.0**
	1.3nm,0.8s,baz=56,slow=7.3,SNR=2.5								
RAR	**Rarotonga**	**82.40**	**113**	P	**P**		**22 42 16.4**	**-1.1**
	6.4nm,0.4s,baz=0.0,slow=9.1,SNR=3.0								
RAR	**Rarotonga**	**82.40**	**113**	*e*P	**P**		**22 42 16.4**	**-1.1**
	160nm,1.9s								
BR101	**Keskin Array S**	**82.92**	**309**	*e*P	**P**		**22 42 20.1**	**0.0**
BRTR	**Keskin Array B**	**82.92**	**309**	P	**P**		**22 42 20.1**	**0.0**
	0.6nm,0.6s,baz=125,slow=4.7,SNR=5.0								
AKASG	**Malin Array Be**	**84.63**	**320**	P	**P**		**22 42 28.0**	**-0.4**
	1.2nm,0.6s,baz=72,slow=4.5,SNR=5.6								
AKBB	**Malin Array Si**	**84.63**	**320**	*e*P	**P**		**22 42 28.0**	**-0.4**
	3.6nm,0.6s								
FIA0	**FINESS Array S**	**84.67**	**331**	*e*P	**P**		**22 42 27.9**	**-0.4**
FINES	**FINESS Array B**	**84.67**	**331**	P	**P**		**22 42 27.9**	**-0.4**
	1.7nm,0.5s,baz=36,slow=5.9,SNR=10								
LTX	**Lajitas**	**121.33**	**47**	*e*PKPdf	**PKPdf**		**22 48 49.2**	**+0.4**
TXAR	**Lajitas Array**	**121.33**	**47**	PKP	**PKPdf**		**22 48 49.2**	**+0.4**
	0.1nm,0.5s,baz=309,slow=1.9,SNR=3.0								
PLCA	**Paso Flores**	**146.88**	**162**	PKPbc	**PKPab**		**22 49 38.5**	**-0.4**
	4.6nm,0.7s,baz=236,slow=3.3,SNR=4.3								

ISCJB ***11*** *22:31:35.1±0.6, 9.49N±0.06×122.06E±0.04, h10km, mb3.9/10, MS3.6/1, Error ellipse: s-maj=8.5km s-min=6.3km az=177.7*

IDC ***11*** *22:31:35.0±0.8, 9.62N×122.22E, h0km, mb3.9/10, mb1 4.1/10, mb1mx3.8/35, mbtmp3.9/10, MS3.7/1, Ms1 3.7/1, ms1mx3.2/51, Error ellipse: s-maj=46.1km s-min=16.6km az=68.0*

MAN ***11*** *22:31:36, 9.61N×122.02E, h9km, mb4.5, ML3.3, MS3.2*

ISC 11 22:31:36.3±0.7, 9.57N±0.07×122.06E±0.05, h10km, n16, σ1§48/19, mb4.0/10, 2C, Negros

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.18**	**101**	*i* P			Pn	22 31 54.3	-4.7
SNPH				*i* S			**Sb**	**22 32 11.6**	**-2.7**
TBP	**Tagbilaran**	**1.78**	**86↑**	*e*P			**Pb**	**22 32 09.5**	**+0.4**
LLP	**Lapu-Lapu**	**2.02**	**68**	*e*P			**Pn**	**22 32 10.3**	**-0.1**
LLP				*e*S			**Sb**	**22 32 37.4**	**-0.9**
RCP	**Roxas**	**2.09**	**19↑**	*e*P			**Pn**	**22 32 11.8**	**+0.4**
RCP				*e*S			**Sb**	**22 32 38.6**	**-1.7**
PPR	**Puerto Princes**	**3.29**	**274**	*i* P			**Pn**	**22 32 28.2**	**+0.3**
PPR				*i* S			**Sn**	**22 33 02.9**	**-4.2**
CMAR	**Chiang Mai Arr**	**24.08**	**294**	P			**P**	**22 36 53.2**	**+1.0**
	0.7nm,0.5s,baz=113,slow=7.3,SNR=5.5								
KSRS	**Korea Array**	**28.26**	**10**	LR			LR	22 49 39.7	
	comp=Z,143nm,18.8s,baz=145,slow=38								
WRA	**Warramunga Arr**	**31.72**	**158**	P			**P**	**22 38 00.3**	**-0.3**
	2.1nm,0.9s,baz=335,slow=10,SNR=5.1								
ASAR	**Alice Springs**	**35.01**	**161**	P			**P**	**22 38 29.6**	**+0.3**
	3.9nm,0.7s,baz=342,slow=7.2,SNR=15								
ASAR				PcP			**PcP**	**22 41 01.6**	**+0.1**
	0.8nm,0.8s,baz=359,slow=3.7,SNR=4.7								
SONM	**Songino Array**	**40.37**	**344**	P			**P**	**22 39 15.4**	**+0.9**
	0.6nm,0.6s,baz=158,slow=9.4,SNR=3.5								
NWAO	**Narrogin (SRO)**	**42.51**	**186**	P			**P**	**22 39 33.2**	**+1.2**
	11nm,1.1s,baz=21,slow=3.2,SNR=2.1								
MKAR	**Makanchi Array**	**50.14**	**325**	P			**P**	**22 40 33.0**	**+1.0**
	1.8nm,0.7s,baz=123,slow=8.8,SNR=7.9								
ZALV	**Zalesovo Beam**	**53.32**	**334**	P			**P**	**22 40 56.5**	**+0.9**
	0.4nm,0.3s,baz=132,slow=7.8,SNR=2.6								
ILAR	**Eielson Array**	**81.86**	**26**	P			**P**	**22 43 55.3**	**-0.4**
	0.1nm,0.4s,baz=243,slow=4.0,SNR=2.5								
AKASG	**Malin Array Be**	**84.46**	**320**	P			**P**	**22 44 09.1**	**-0.3**
	0.3nm,0.5s,baz=66,slow=3.8,SNR=3.2								
FINES	**FINESS Array B**	**84.52**	**331**	P			**P**	**22 44 09.3**	**-0.1**
	1.4nm,1.0s,baz=90,slow=5.6,SNR=3.4								

IDC 11 22:41:05.7±7.9, 19.34S×177.06W, h0km, mb4.0/3, mb1 4.3/3, mb1mx3.8/27, mbtmp4.0/3, Error ellipse: s-maj=345.2km s-min=36.6km az=144.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**45.65**	**261**	P			P	22 49 28.2	-0.2
	1.3nm,0.6s,baz=97,slow=8.3,SNR=7.5								
ASAR	**Alice Springs**	**45.65**	**256**	P			P	22 49 28.4	-0.1
	2.0nm,0.4s,baz=89,slow=8.4,SNR=19								
ILAR	**Eielson Array**	**86.99**	**12**	P			P	22 53 52.4	0.0
	0.2nm,0.4s,baz=224,slow=5.0,SNR=3.6								

IDC 11 22:47:31.9±2.2, 1.80N×127.21E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.4/38, mbtmp3.6/3, Error ellipse: s-maj=183.0km s-min=25.1km az=66.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.71**	**162**	P			P	22 52 34.3	-1.2
	1.5nm,0.5s,baz=341,slow=11,SNR=5.8								
ASAR	**Alice Springs**	**26.13**	**166**	P			P	22 53 08.9	+0.9
	0.2nm,0.3s,baz=343,slow=11,SNR=2.9								
MKAR	**Makanchi Array**	**59.41**	**326**	P			P	22 57 36.3	-0.1
	0.3nm,0.4s,baz=122,slow=8.3,SNR=7.7								

BJI ***11*** *22:49:52.8, 8.98N×122.45E, h34km, mb4.8/56, mB5.1/48, Ms4.7/49, Ms7 4.6/47*

GCMT ***11*** *22:49:55.8±0.4, 9.64N×122.10E, h24km, MW5.3/73, Moment Tensor Solution. s14,c17; s73,c101; Duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_r0.63±.08; $M_{\theta\theta}$0.21±.04; $M_{\phi\phi}$-0.84±.05; $M_{r\theta}$-0.47±.06; $M_{r\phi}$-0.37±.03; $M_{\theta\phi}$-0.35±.07; Best double couple: M_o1.02200×10^{17} NP1:ϕs222.00000°, δ66.00000°, λ119.00000°. NP2: ϕs349.00000°, δ37.00000°, λ43.00000°. Principal axes: T 0.9430, Plg58.0000°, Azm173.0000°; N 0.1580, Plg26.0000°, Azm30.0000°; P -1.1020, Plg16.0000°, Azm291.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***11*** *22:49:55.8±0.2, 9.58N×122.26E, h10km, mb5.1/54 Error ellipse: s-maj=5.8km s-min=3.6km az=81.0*

NEIC Felt at Bacolod, Dauin, Dumaguete and Himamaylan. Felt [III] at Iloilo, Panay. Also felt at Abaca. Felt at Sindangan, Mindanao and at Carcar and Cebu City, Cebu.

KLM ***11*** *22:49:56.6, 9.71N×122.39E, h30km, mb5.0, MS6.0*

MOS ***11*** *22:49:57.5±0.9, 9.56N×122.21E, h33km, mb4.9/50, Error ellipse: s-maj=10.9km s-min=5.2km az=114.8*

DJA ***11*** *22:49:58.2±2.1, 10.1N±19.1×12.2E±.1, h10km, M5.0/7, mb5.1/7, mB5.4/6, MLv5.1/2, Mw(mB)4.8/6*

ISCJB ***11*** *22:49:58.4±0.4, 9.57N±0.02×122.22E±0.02, h39km±3km, mb4.8/115, MS4.6/21, Error ellipse: s-maj=3.9km s-min=2.8km az=164.7*

IDC ***11*** *22:49:58.0±3.0, 9.55N×122.20E, h24km±19km, mb4.4/35, mb1 4.5/36, mb1mx4.4/45, mbtmp4.5/36, ML5.1/1, MS4.4/10, Ms1 4.4/10, ms1mx4.0/50, Error ellipse: s-maj=19.2km s-min=8.6km az=76.0*

ISC 11 22:49:59.0±0.6, 9.58N±0.03×122.17E±0.03, h27km±3km, n335, σ1§92/377, mb4.8/115, MS4.6/22, 41C-21D, Negros

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.08**	**103**	*e*P			Pn	22 50 11.1	-7.3
SNPH				*i* S			**Sb**	**22 50 27.5**	**-5.2**
JAP	**San Jose, Anti**	**1.18**	**349↑**	*e*P			**Pn**	**22 50 17.6**	**-2.1**
TBP	**Tagbilaran**	**1.67**	**86↑**	*e*P			**Pb**	**22 50 27.2**	**-1.8**
IPIL	**Ipil**	**1.83**	**168↑**	*e*P			**Pn**	**22 50 26.9**	**-1.7**
IPIL				*e*S			**Sn**	**22 50 49.3**	**-1.7**
LLP	**Lapu-Lapu**	**1.91**	**67↑**	*e*P			**Pn**	**22 50 29.6**	**-0.2**
LLP				*e*S			**Sb**	**22 50 56.0**	**-0.6**
RCP	**Roxas**	**2.04**	**16↑**	*e*P			**Pn**	**22 50 31.4**	**-0.2**
RCP				*e*S			**Sb**	**22 50 59.5**	**-1.0**
KALP	**Kalibo**	**2.09**	**4**	*e*P			Pn	22 50 27.2	-5.1
CGP	**Cagayan de Oro**	**2.73**	**114↑**	*e*P			**Pn**	**22 50 42.0**	**+0.9**
CGP				*e*S			**Sn**	**22 51 15.1**	**+1.8**
BUSP	**Coron**	**3.09**	**321⇓**	*e*P			**Pn**	**22 50 43.5**	**-2.6**
BUSP				*e*S			**Sn**	**22 51 19.3**	**-2.8**
MMPH	**Masbate**	**3.10**	**27↑**	*i*P			**Pb**	**22 50 49.6**	**-4.0**
MMPH				*i* S			**Sb**	**22 51 27.5**	**-3.5**
CTBH	**Cotabato--PC H**	**3.12**	**139⇓**	*e*P			**Pn**	**22 50 47.2**	**+0.8**
CTBH				*i* S			**Sn**	**22 51 24.2**	**+1.4**
PLP	**Palo**	**3.18**	**60⇓**	*e*P			**Pn**	**22 50 46.9**	**-0.3**
PLP				*e*S			**Sn**	**22 51 22.6**	**-1.7**
PPR	**Puerto Princes**	**3.40**	**274**	*e*P			**Pn**	**22 50 48.6**	**-1.7**
PPR				*e*S			**Sn**	**22 51 27.2**	**-2.6**
DAV	**Davao City (W)**	**4.20**	**126**	LR			LR	22 52 20.5	
	comp=Z,1μm,18.8s,baz=141,slow=34								
DAV	**Davao City (W)**	**4.20**	**126**	*e*Pn			**Pn**	**22 50 59.3**	**-2.0**
GQP	**Guinayangan**	**4.30**	**4⇓**	*e*P			**Pn**	**22 51 02.2**	**-0.5**
GQP				*e*S			**Sn**	**22 51 53.7**	**+1.6**
BIPH	**Bislig**	**4.37**	**108↑**	*i*P			**Pn**	**22 51 07.3**	**+3.7**
BIPH				*i* S			**Sn**	**22 51 54.5**	**+0.9**
LQP	**Lukban**	**4.54**	**352↑**	*e*P			**Pn**	**22 51 10.5**	**+4.3**
TGY	**Tagaytay City**	**4.65**	**345**	Pn			**Pn**	**22 51 09.1**	**+1.5**
	83nm,0.3s,baz=156,slow=20,SNR=3.1								
TGY				Sn			**Sn**	**22 52 01.0**	**+0.3**
	50nm,0.3s,baz=49,slow=20,SNR=3.9								
TGY	**Tagaytay City**	**4.65**	**345↑**	*i*P			Pn	22 51 00.2	-7.3
MYLDM	**Lahad Datu**	**5.69**	**220**	⇓P			**Pn**	**22 51 23.2**	**+1.4**
MYLDM	**Lahad Datu**	**5.69**	**220**	*e*Pn			**Pn**	**22 51 22.0**	**+0.1**
KDM	**Kudat**	**5.91**	**244**	⇓P			**Pn**	**22 51 26.9**	**+2.0**
SDKM	**Sandakan**	**6.30**	**232**	⇓P			**Pn**	**22 51 28.7**	**-1.5**
TSM	**Tawau**	**6.77**	**219**	⇓P			**Pn**	**22 51 37.0**	**+0.3**
KKM	**Kota Kinabalu**	**6.87**	**240**	⇑P			**Pn**	**22 51 37.9**	**-0.2**
KKM	**Kota Kinabalu**	**6.87**	**240**	*e*Pn			**Pn**	**22 51 37.1**	**-1.0**
KKM				*e*Sn			**Sn**	**22 52 51.3**	**-4.2**
MRSI	**Marisa**	**9.05**	**181**	P			**Pn**	**22 52 07.6**	**-0.4**
KMSI	**Cibinong**	**9.13**	**169**	P			Pn	22 52 16.5	+7.5
LUWI	**Luwuk**	**10.57**	**177**	P			Pn	22 52 33.6	+4.8
LUWI	**Luwuk**	**10.57**	**177**	*e*Pn			**Pn**	**22 52 31.9**	**+3.1**
PCI	**Palu**	**10.68**	**193**	P			**Pn**	**22 52 32.1**	**+1.8**
	50nm,1.2s,824nm								
PCI	**Palu**	**10.68**	**193**	P			**Pn**	**22 52 33.0**	**+2.7**
PCI				pmax			pmax		
	comp=Z,39nm,1.2s								
BTM	**Bintulu**	**11.03**	**236**	⇓P			**Pn**	**22 52 33.6**	**-1.5**
LBMI	**Labuha**	**11.46**	**152**	P			Pn	22 52 48.7	+7.7
SBUM	**Sibu**	**12.17**	**235**	⇓P			**Pn**	**22 52 53.0**	**+2.3**
SBUM	**Sibu**	**12.17**	**235**	*e*Pn			**Pn**	**22 52 50.2**	**-0.5**
MTKI	**Muara Teweh, K**	**12.72**	**215**	P			P	22 53 14.1	+4.9
TTSI	**Tana Toraja**	**12.76**	**191**	P			**Pn**	**22 53 01.0**	**+2.2**
NLAI	**Namlea**	**13.65**	**159**	P			**P**	**22 53 17.2**	**-2.3**
SPSI	**Sidrap Palu**	**13.67**	**190**	P			**P**	**22 53 16.7**	**-3.0**
SSLB	**Suanglung**	**14.17**	**355**	*e*Pn			**Pn**	**22 53 17.5**	**-0.6**
STKI	**Sintang**	**14.24**	**229**	P			**P**	**22 53 29.9**	**+3.9**
KSM	**Kuching**	**14.29**	**236**	⇑P			**Pn**	**22 53 22.8**	**+3.2**
KSM	**Kuching**	**14.29**	**236**	*e*P			**P**	**22 53 28.4**	**+1.8**
KAPI	**Kappang**	**14.70**	**190**	Pn			**Pn**	**22 53 27.8**	**+2.6**
	comp=Z,0.4nm,0.3s,baz=253,slow=16,SNR=8.3								
KAPI				LR			LR	22 59 06.1	
	comp=Z,2μm,21.5s,baz=22,slow=37								
KAPI	**Kappang**	**14.70**	**190**	*e*Pn			**Pn**	**22 53 23.1**	**-2.2**
YOJ	**Yonaguni jima**	**14.82**	**3**	*e*P			**Pn**	**22 53 22.6**	**-4.2**
YOJ	**Yonaguni jima**	**14.82**	**3**	*e*Pn			**Pn**	**22 53 22.6**	**-4.2**
BBKI	**Banjar Baru**	**14.88**	**210**	P			**P**	**22 53 30.8**	**-2.3**
YHNB	**Yeheng**	**15.02**	**357**	*e*Pn			**Pn**	**22 53 29.2**	**-0.5**
	comp=Z,75nm,1.3s								
QIZ	**Qiongzhong**	**15.19**	**310**	P			**Pn**	**22 53 33.1**	**+1.3**
QIZ				S			**Sn**	**22 56 22.1**	**+2.8**
QIZ				LR			LR		
	comp=Z,2μm,14.5s								
QIZ				LR			LR		
	comp=Z,2μm,14.4s								
QIZ				LR			LR		
	comp=Z,2μm,14.2s								
QIZ	**Qiongzhong**	**15.19**	**310**	*e*Pn			**P**	**22 53 38.7**	**+2.1**
	comp=Z,60nm,1.1s								
QZH	**Quanzhou**	**15.65**	**348**	P			**Pn**	**22 53 34.4**	**-3.4**
QZH				*e*S			**Sn**	**22 56 29.4**	**-1.1**
QZH				pmax			pmax		
	comp=Z,120nm,0.8s								
QZH				LR			LR		
	comp=N,2μm,13.2s								
QZH				LR			LR		
	comp=E,2μm,11.2s								
QZH				LR			LR		
	comp=Z,5μm,17.1s								
GZH	**Guangzhou**	**15.87**	**329**	P			**P**	**22 53 49.5**	**+5.4**
GZH				S			**S**	**22 56 51.8**	**+2.3**
GZH				pmax			pmax		
	comp=Z,190nm,1.3s								
FAKI	**Fak Fak**	**15.97**	**141**	P			**P**	**22 53 45.4**	**+0.1**
FAKI	**Fak Fak**	**15.97**	**141**	*e*Pn			**Pn**	**22 53 41.7**	**-0.3**
	comp=Z,150nm,1.3s								
PBKI	**Pangkalan Bun**	**16.08**	**221**	P			**P**	**22 53 49.9**	**+3.4**
UBPT	**Khong Chiam**	**17.26**	**291**	P			**P**	**22 54 02.0**	**+2.4**
	comp=Z,89nm,1.9s,comp=Z,2μm								
MMRI	**Maumere**	**18.10**	**180**	P			**P**	**22 54 11.5**	**+2.6**
MMRI	**Maumere**	**18.10**	**180**	*e*Pn			**P**	**22 54 09.6**	**+0.7**
	comp=Z,197nm,1.1s								
PLAI	**Plampang**	**18.81**	**194**	P			**Pn**	**22 54 18.9**	**+1.6**
SRBI	**Singaraja**	**18.87**	**202**	P			**Pn**	**22 54 22.7**	**+4.7**
TWSI	**Taliwang, Sumb**	**18.95**	**196**	P			**Pn**	**22 54 22.1**	**+3.1**
SKNT	**Sakolnakorn**	**19.16**	**294**	P			**Pn**	**22 54 21.9**	**+0.4**
	comp=Z,79nm,0.6s								
SOEI	**Soe**	**19.32**	**174**	P			**Pn**	**22 54 28.5**	**+4.9**
SOEI	**Soe**	**19.32**	**174**	*e*P			**Pn**	**22 54 24.0**	**+0.4**
	comp=Z,172nm,1.2s								
KTGM	**Kuala Trenggan**	**19.34**	**259**	⇑P			**P**	**22 54 23.2**	**+0.6**
JAGI	**Jajag, Banyuwa**	**19.63**	**204**	P			**Pn**	**22 54 28.0**	**+0.8**
JAGI	**Jajag, Banyuwa**	**19.63**	**204**	*e*P			**P**	**22 54 25.9**	**+0.2**
	comp=Z,147nm,1.3s								
CHBT	**CHBT**	**19.72**	**281**	P			**Pn**	**22 54 28.5**	**+0.3**
	comp=Z,114nm,1.3s								
GMJI	**Gumukmas**	**19.75**	**206**	P			**Pn**	**22 54 30.4**	**+1.8**
MYKOM	**Kota Tinggi**	**19.80**	**248**	⇓P			**Pn**	**22 54 28.6**	**-0.5**
MYKOM	**Kota Tinggi**	**19.80**	**248**	*e*P			**P**	**22 54 28.5**	**+1.0**
	comp=Z,45nm,1.0s								
MYKOM				*e*sP			**sP**	**22 54 39.2**	**+0.8**
NGJI	**Ngawi**	**19.94**	**213**	P			**Pn**	**22 54 33.0**	**+2.2**
KHON	**Khomkaen**	**20.01**	**292**	P			Pn	22 54 31.5	-0.1
	comp=Z,38nm,1.0s								
SRAK	**Srakaew**	**20.19**	**285**	P			Pn	22 54 33.4	-0.4
	comp=Z,61nm,1.4s,comp=Z,754nm								
KGM	**Kluang**	**20.20**	**249**	⇓P			Pn	22 54 33.4	-0.5
NONG	**Nongkai**	**20.29**	**297**	P			**P**	**22 54 34.1**	**+1.2**
	comp=Z,21nm,1.1s,comp=Z,12μm								
CHAI	**Chaiyaphum**	**20.66**	**290**	P			**P**	**22 54 37.6**	**+0.7**
	comp=Z,17nm,1.2s,comp=Z,456nm								
UGM	**Wanagama**	**20.90**	**214**	*e*P			**P**	**22 54 38.0**	**-1.5**
	comp=Z,185nm,1.0s								
IPM	**Ipoh**	**21.59**	**258**	*e*P			**P**	**22 54 50.1**	**+3.2**
	comp=Z,25nm,0.7s								
IPM				*e*pP			**sP**	**22 54 58.7**	**+0.9**
GENI	**Genyem**	**21.63**	**123**	P			**P**	**22 54 50.5**	**+3.2**
KULM	**Kulim**	**21.76**	**260**	*e*P			**P**	**22 54 49.6**	**+0.8**
	comp=Z,42nm,1.2s								
PBKT	**Sadao Pong**	**21.78**	**291**	P			**P**	**22 54 49.9**	**+1.0**
	comp=Z,17nm,1.3s								
CISI	**Cisompet, Garu**	**22.24**	**221**	*e*P			**P**	**22 54 55.4**	**+1.4**
	comp=Z,95nm,1.0s								
GYA	**Guiyang**	**22.30**	**321↑**	*i*P			**P**	**22 54 56.7**	**+2.1**
GYA				pP			sP	22 55 06.2	+0.7
GYA				PP			**PnPn**	**22 55 25.0**	**+7.3**
GYA				S			**S**	**22 58 51.8**	**-6.8**
GYA				sS			Sn	22 59 12.4	+1.1
GYA				pmax			pmax		
	comp=Z,40nm,1.0s								
GYA				pmax			pmax		
	comp=Z,120nm,5.2s								
GYA				LR			LR		
	comp=Z,540nm,15.8s								
GYA				LR			LR		
	comp=Z,530nm,16.0s								
GYA				LR			LR		
	comp=Z,520nm,15.6s								
UTTA	**Uttaradit**	**22.50**	**293**	P			**P**	**22 54 58.0**	**+1.3**
	comp=Z,4.8nm,1.0s,comp=Z,61nm								
NJ2	**Nanjing**	**22.57**	**353**	*e*P			**P**	**22 54 57.4**	**+0.2**
NJ2				pmax			pmax		
	comp=Z,22nm,0.8s								
LAMP	**Lampang**	**23.58**	**295**	P			**P**	**22 55 08.9**	**+1.2**
	comp=Z,7.5nm,1.6s,comp=Z,91nm								
UMPA	**Umpang Tak**	**23.64**	**289**	P			**P**	**22 55 09.3**	**+0.9**
	comp=Z,8.9nm,1.1s,comp=Z,651nm								
ENH	**Enshi**	**23.75**	**332**	*e*P			**P**	**22 55 08.8**	**-0.4**
	comp=Z,43nm,1.4s								
MTN	**Manton Dam**	**23.99**	**158**	P			**P**	**22 55 10.9**	**-0.7**
	baz=24,SNR=5.0								
MTN	**Manton Dam**	**23.99**	**158**	*e*P			**P**	**22 55 10.6**	**-0.9**
	comp=Z,87nm,1.4s								
PSI	**Prapat**	**24.06**	**255**	*e*P			**P**	**22 55 13.3**	**+0.8**
PSI				*e**PP			**sP**	**22 55 22.1**	**-1.6**
PSI				pmax			pmax		
	comp=Z,43nm,1.0s								
PSI	**Prapat**	**24.06**	**255**	*e*P			**P**	**22 55 13.3**	**+0.8**
	comp=Z,43nm,1.0s								
PSI				*e*pP			**sP**	**22 55 22.1**	**-1.6**
KMI	**Kunming**	**24.09**	**312**	P			**P**	**22 55 13.2**	**+0.5**
KMI				pP			pP	22 55 21.5	+0.8
KMI				sP			sP	22 55 27.6	+3.6
KMI				PP			**PnPn**	**22 55 45.1**	**+2.8**
KMI				S			**S**	**22 59 28.4**	**-0.6**
KMI				sS			sS	22 59 42.1	+0.1
KMI				SS			SnSn	23 00 26.7	+16
KMI				pmax			pmax		
	comp=Z,130nm,4.4s								
KMI				LR			LR		
	comp=Z,820nm,13.5s								
KMI				LR			LR		
	comp=Z,820nm,15.9s								
KMI				LR			LR		
	comp=Z,1μm,19.6s								
CM01	**Chiang Mai Arr**	**24.15**	**294**	*e*P			**P**	**22 55 12.2**	**-0.9**
CM31	**Chiang Mai Arr**	**24.18**	**294**	*e*P			**P**	**22 55 13.8**	**+0.5**
CMAR	**Chiang Mai Arr**	**24.18**	**294**	P			**P**	**22 55 13.1**	**-0.3**
	comp=Z,8.6nm,0.9s,baz=120,slow=8.1,SNR=45								
CMAR				LR			LR	23 04 23.3	
	comp=Z,665nm,22.0s,baz=104,slow=36								
CMMT	**Chiang Mai**	**24.29**	**295**	P			**P**	**22 55 13.8**	**-0.6**
	comp=Z,26nm,1.4s								
CHTO	**Chiang Mai**	**24.29**	**295**	P			**P**	**22 55 13.9**	**-0.5**
	comp=Z,114nm,1.4s								
CHTO	**Chiang Mai**	**24.29**	**295**	*e*P			**P**	**22 55 13.9**	**-0.5**
CHTO				pmax			pmax		
	comp=Z,40nm,1.4s								
CHTO	**Chiang Mai**	**24.29**	**295**	*e*P			**P**	**22 55 13.9**	**-0.5**
	comp=Z,40nm,1.4s								
KDU	**Kakadu**	**24.38**	**155**	P			**P**	**22 55 14.6**	**-0.5**
	baz=24,SNR=9.9								
JNU	**Nakatsue**	**24.76**	**18**	P			**P**	**22 55 17.7**	**-0.8**
	comp=Z,6.6nm,0.9s,baz=181,slow=6.1,SNR=3.8								
JNU	**Nakatsue**	**24.76**	**18**	*e*P			**P**	**22 55 17.7**	**-0.8**
	comp=Z,28nm,1.3s								
GSI	**Gunungsitoli**	**25.81**	**253**	*e*P			**P**	**22 55 29.4**	**+1.2**
	comp=Z,130nm,1.0s								
KNRA	**Kununurra**	**25.93**	**165**	P			**P**	**22 55 28.9**	**-0.3**
	baz=26								
CD2	**Chengdu**	**27.28**	**324**	⇓P			**P**	**22 55 40.7**	**-0.7**
CD2				pP			pP	22 55 50.3	+1.0
CD2				sP			sP	22 55 54.7	+2.0
CD2				S			**S**	**23 00 19.6**	**+0.3**
CD2				sS			sS	23 00 36.2	+3.8
CD2				pmax			pmax		
	comp=Z,80nm,0.8s								
CD2				pmax			pmax		
	comp=Z,300nm,10.4s								
CD2				LR			LR		
	comp=Z,1μm,13.4s								
CD2				LR			LR		
	comp=Z,1μm,14.4s								
CD2				LR			LR		
	comp=Z,1μm,15.4s								
FITZ	**Fitzroy Crossi**	**27.72**	**173**	P			**P**	**22 55 44.5**	**-0.8**
	comp=Z,18nm,0.8s,baz=350,slow=8.6,SNR=18								
FITZ	**Fitzroy Crossi**	**27.72**	**173**	P			**P**	**22 55 44.3**	**-1.0**
	baz=28,SNR=11								
FITZ	**Fitzroy Crossi**	**27.72**	**173**	*e*P			**P**	**22 55 44.5

comp=Z,1.3nm,1.0s,baz=326,slow=2.5,SNR=5.1
AS01 Alice Springs 34.99 161 *e*P **P 22 56 47.2 -2.1**
AS01 *e*PcP **PcP 22 59 19.5 -1.9**
LSA Lhasa 35.23 309 *e*P **P 22 56 52.8 +0.9**
LSA pmax pmax
comp=Z,11nm,1.3s
LSA Lhasa 35.23 309 *e*P **P 22 56 52.8 +0.9**
comp=Z,12nm,1.3s
MDJ Mudanjiang 35.49 9 P **P 22 56 53.5 +0.2**
MDJ pP pP 22 57 02.3 +0.9
MDJ sP sP 22 57 06.1 +1.4
MDJ PP **PP 22 58 14.1 -0.1**
MDJ S **S 23 02 27.2 +0.2**
MDJ pmax pmax
comp=Z,16nm,0.9s
MDJ pmax pmax
comp=Z,90nm,5.8s
MDJ LR LR
comp=Z,490nm,33.1s
MDJ LR LR
comp=Z,460nm,29.0s
MDJ LR LR
comp=Z,640nm,25.0s
MDJ Mudanjiang 35.49 9 *e*P **P 22 56 56.1 +2.7**
comp=Z,34nm,1.0s
USRK Ussuriysk Ar. 35.52 12 P **P 22 56 53.2 -0.4**
comp=Z,6.3nm,0.8s,baz=204,slow=9.4,SNR=10
GTA Gaotai 35.79 330 P **P 22 56 56.2 0.0**
GTA pP sP 22 57 05.9 -1.6
GTA sP pP 22 57 09.9 +5.7
GTA S **S 23 02 33.3 +1.3**
GTA pmax pmax
comp=Z,9.0nm,1.4s
GTA pmax pmax
comp=Z,160nm,6.8s
GTA LR LR
comp=Z,930nm,18.1s
GTA LR LR
comp=Z,900nm,17.6s
GTA LR LR
comp=Z,2µm,16.6s
MEEK Meekatharra 36.17 185 P **P 22 56 58.5 -0.8**
baz=36,SNR=24
RAMN Ramite 37.76 302 *e*P **P 22 57 13.1 -0.1**
comp=Z,9.7nm,0.5s
CTA Charters Tower 37.83 141 P **P 22 57 12.7 -1.0**
comp=Z,7.0nm,0.9s,baz=318,slow=11,SNR=4.2
CTAO Charters Tower 37.83 141 *e*P **P**
CTAO pmax pmax
comp=Z,19nm,1.1s
CTAO Charters Tower 37.83 141 *e*P **P 22 57 12.6 -1.0**
comp=Z,19nm,1.1s
ASAJ Asahikawa 38.70 24 *e*P **P 22 57 25.0 +4.4**
comp=Z,50nm,1.0s
MORW Morawa 38.88 189 P **P 22 57 21.4 -0.8**
baz=39,SNR=8.4
PKIN Phulchoki 38.98 302 *e*P **P 22 57 23.0 -0.5**
comp=Z,8.5nm,0.6s
KKN Kakani 39.15 303 *e*P **P 22 57 23.6 -1.3**
comp=Z,17nm,0.7s
DMN Daman 39.23 302 *e*P **P 22 57 25.2 -0.5**
GKN Gorkha 39.76 303 *e*P **P 22 57 29.2 -0.7**
comp=Z,13nm,0.8s
BLDU Ballidu 40.31 187 P **P 22 57 33.0 -1.2**
baz=40,SNR=9.6
KLR Kul'dur 40.32 10 P **P 22 57 33.4 -0.7**
comp=Z,4.4nm,0.9s,baz=205,slow=6.6,SNR=13
KLR LR LR 23 15 07.5
comp=Z,556nm,19.5s,baz=201,slow=37
SONA0 Songino Array 40.39 344 *e*P **P 22 57 34.3 -0.5**
comp=Z,10nm,1.1s
SONM Songino Array 40.39 344 P **P 22 57 34.3 -0.5**
comp=Z,3.7nm,0.7s,baz=167,slow=9.2,SNR=28
SONM LR LR 23 16 10.1
comp=Z,630nm,20.1s,baz=147,slow=39
SONA1 Songino Array 40.40 344 *e*P **P 22 57 33.8 -1.1**
FORT Forrest 40.53 172 P **P 22 57 35.1 -0.8**
baz=41,SNR=18
FORT Forrest 40.53 172 *e*P **P 22 57 34.5 -1.4**
comp=Z,604nm,0.7s
KOLN Koldanda 40.55 302 *e*P **P 22 57 36.4 -0.1**
comp=Z,22nm,0.7s
KMBL Kambalda 40.72 180 P **P 22 57 36.7 -0.8**
baz=41,SNR=26
YSS Yuzh-Sakhalins 41.15 21 *e*P **P 22 57 44.0 +3.1**
KLBR Kellerberrin 41.16 186 P **P 22 57 40.3 -0.9**
baz=41,SNR=35
PYUN Piuthan 41.16 302 *e*P **P 22 57 41.6 0.0**
comp=Z,53nm,0.8s
MUN Mundaring 41.72 188 P **P 22 57 45.6 -0.2**
baz=42
QLP Quilpie 41.85 150 P **P 22 57 45.1 -1.8**
baz=42,SNR=7.8
NWAO Narrogin (SRO) 42.53 186 P **P 22 57 51.8 -0.6**
comp=Z,39nm,0.6s,baz=243,slow=8.0,SNR=32
NWAO Narrogin (SRO) 42.53 186 P **P 22 57 51.8 -0.6**
baz=43,SNR=25
NWAO P **P 22 57 51.8 -0.6**
baz=43,SNR=25
NWAO Narrogin (SRO) 42.53 186 *e*P **P 22 57 51.9 -0.4**
HYB Hyderabad 43.04 285 *i* P **P 22 57 57.0 +0.1**
ZAK Zakamensk 43.58 342 *e*P **P 22 57 56.3 -4.5**
ZAK pmax pmax
comp=Z,4.0nm,1.4s
BBOO Buckleboo 44.19 163 *e*P **P 22 58 05.3 -0.4**
comp=Z,35nm,0.8s
RKGY Rocky Gully 44.23 186 P **P 22 58 06.3 +0.3**
baz=44,SNR=13
TLY Talaya 44.63 344 P **P 22 58 09.5 +0.4**
comp=Z,5.0nm,0.5s,baz=131,slow=10.0,SNR=4.5
TLY Talaya 44.63 344 *e*P **P 22 58 09.3 +0.2**
TLY pmax pmax
comp=Z,13nm,1.1s
TLY MLR MLR
comp=Z,605nm,20.0s
EIDS Eidsvold 44.72 142 P **P 22 58 08.3 -1.8**
baz=45,SNR=3.5
EIDS Eidsvold 44.72 142 *e*P **P 22 58 08.5 -1.6**
comp=Z,89nm,1.9s
STKA Stephens Creek 45.22 157 P **P 22 58 12.9 -1.1**
comp=Z,23nm,0.7s,baz=334,slow=8.7,SNR=39
STKA PcP **PcP 22 59 52.2 -1.7**
comp=Z,6.2nm,0.7s,baz=331,slow=4.0,SNR=5.6
STKA Stephens Creek 45.22 157 P **P 22 58 12.7 -1.4**
baz=45,SNR=28
STKA Stephens Creek 45.22 157 *e*P **P 22 58 12.6 -1.4**
comp=Z,4.4nm,0.8s
STKA *e*PcP **PcP 22 59 52.2 -1.7**
WMQ Urumqi 45.37 325 *e*P **P 22 58 16.2 +1.1**
WMQ pP sP 22 58 25.7 -1.0
WMQ *e*S **S 23 04 56.7 +2.2**
WMQ pmax pmax
comp=Z,17nm,0.7s
WMQ pmax pmax
comp=Z,220nm,3.7s
WMQ LR LR
comp=Z,1µm,16.0s
WMQ LR LR
comp=Z,800nm,15.2s
WMQ LR LR
comp=Z,1µm,15.9s
MOY Mondy 45.40 342 *e*P **P 22 58 15.2 -0.1**
MOY pmax pmax
comp=Z,18nm,1.6s
HTT Hallett 45.65 160 P **P 22 58 17.2 -0.2**
baz=46,SNR=13
NKL Nikolayevsk 45.95 15 *e*P **P 22 58 21.0 +1.6**
CMSA Cobar Meteorol 46.68 152 P **P 22 58 25.0 -0.5**
baz=47,SNR=21
BOD Bodaibo 48.54 354 *e*P **P 22 58 38.3 -1.3**
BOD pmax pmax
comp=Z,13nm,1.4s
ARMA Armidale 48.82 146 P **P 22 58 41.8 -0.5**
baz=49,SNR=9.9
ARMA Armidale 48.82 146 *e*P **P 22 58 42.0 -0.3**
comp=Z,19nm,0.9s
ARPS Mount Arapiles 49.67 159 P **P 22 58 48.0 -0.5**
baz=50,SNR=6.0
PDGK Podgornoye 50.05 320 *i* P **P 22 58 50.9 -0.5**
PDGK pmax pmax
comp=Z,34nm,0.7s
MK01 Makanchi Array 50.18 325 *e*P **P 22 58 52.5 +0.1**
MK31 Makanchi Array 50.20 325 *i* P **P 22 58 52.3 -0.2**
MK31 pmax pmax
comp=Z,14nm,1.0s
MK31 Makanchi Array 50.20 325 *e*P **P 22 58 52.8 +0.3**
MK32 Makanchi Array 50.20 325 *e*P **P 22 58 52.8 +0.3**
MKAR Makanchi Array 50.20 325 P **P 22 58 52.8 +0.3**
comp=Z,7.6nm,0.9s,baz=123,slow=8.8,SNR=30
MKAR Makanchi Array 50.20 325 *e*P **P 22 58 52.8 +0.3**
comp=Z,67nm,0.9s
MAKZ Makanchi 50.38 325 *e*P **P 22 58 54.1 +0.2**
MAKZ pmax pmax
comp=Z,20nm,1.1s
MAKZ Makanchi 50.38 325 *e*P **P 22 58 54.1 +0.2**
comp=Z,20nm,1.1s
KSH Kashi 50.74 314 P **P 22 58 58.9 +2.0**
KSH *e*pP sP 22 59 08.6 +0.2
KSH *e*PP **PP 23 00 55.6 +2.5**
KSH PcS **PcS 23 04 11.4 +0.1**
KSH S **S 23 06 10.0 -0.9**
KSH ScS **ScS 23 08 44.6 -1.6**
KSH SS **SS 23 09 42.8 -2.8**
KSH pmax pmax
comp=Z,21nm,1.3s
KSH pmax pmax
comp=Z,120nm,4.0s
KSH LR LR
comp=Z,240nm,12.4s
KSH LR LR
comp=Z,440nm,13.4s
KSH LR LR
comp=Z,600nm,20.9s
CNB Canberra Magne 51.52 151 P **P 22 59 02.6 0.0**
baz=52
PEA0 Petropavlovsk- 51.99 26 *e*P **P 22 59 04.7 -1.1**
PETK Petropavlovsk- 51.99 26 P **P 22 59 06.5 +0.7**
comp=Z,1.8nm,0.7s,baz=220,slow=3.6,SNR=3.1
PEA1 Petropavlovsk- 51.99 26 *e*P **P 22 59 06.5 +0.6**
TKM2 Tokmak 2 52.40 318 *i* P **P 22 59 09.6 +0.3**
TKM2 pmax pmax
comp=Z,26nm,1.2s
FRU Bishkek 53.01 317 *e*P **P 22 59 13.0 -0.7**
FRU *e* 22 59 20.0
FRU pmax pmax
comp=Z,45nm,2.0s
AAK Ala-Archa 53.02 317 LR LR 23 24 26.1
comp=Z,386nm,19.8s,baz=353,slow=39
AAK Ala-Archa 53.02 317 *e*P **P 22 59 14.6 +0.8**
AAK pmax pmax
comp=Z,23nm,0.8s
AAK Ala-Archa 53.02 317 *e*P **P 22 59 15.3 +1.5**
comp=Z,20nm,1.0s
ZAA0 Zalesovo Array 53.36 333 *e*P **P 22 59 14.8 -1.1**
ZALV Zalesovo Beam 53.36 333 P **P 22 59 15.0 -0.9**
comp=Z,2.7nm,0.5s,baz=133,slow=5.6,SNR=16
ZALV Zalesovo Beam 53.36 333 P **P 22 59 15.0 -0.9**
ZALV pmax pmax
comp=Z,3.0nm,0.5s
ZAA1 Zalesovo Array 53.36 333 *e*P **P 22 59 15.0 -1.0**
MNAS Manas 54.31 316 *i* P **P 22 59 23.2 -0.1**
MNAS pmax pmax
comp=Z,15nm,0.7s
MA2 Magadan 54.33 17 P **P 22 59 22.1 -0.9**
comp=Z,5.5nm,0.7s,baz=167,slow=17,SNR=3.2
KURBB Kurchatov Arra 54.40 327 P **P 22 59 23.0 -0.6**
comp=Z,4.5nm,0.5s,baz=120,slow=8.9,SNR=6.2
KURK Kurchatov 54.40 327 *d* iP **P 22 59 23.6 0.0**
KURK pmax pmax
comp=Z,37nm,0.7s
KURK Kurchatov 54.40 327 *e*P **P 22 59 23.4 -0.2**
KBL Kabul 54.42 306 *e*P **P 22 59 25.0 +0.7**
KBL pmax pmax
comp=Z,19nm,0.9s
KBL Kabul 54.42 306 *e*P **P 22 59 25.0 +0.7**
comp=Z,19nm,0.9s
NVS Novosibirsk 54.65 334⇑ *i* P **P 22 59 24.4 -0.9**
NVS pmax pmax
comp=E,12nm,1.6s
NVS pmax pmax
comp=Z,15nm,1.6s
KK31 Karatay Array 55.90 316 *i* P **P 22 59 34.6 0.0**
KK31 pmax pmax
comp=Z,10.0nm,0.7s
KKAR Karatay Array 55.90 316 *e*P **P 22 59 35.1 +0.5**
KKAR Karatay Array 55.90 316 *e*P **P 22 59 35.1 +0.5**
comp=Z,94nm,0.8s
SEY Seymchan 57.52 16 P **P 22 59 46.2 +0.5**
comp=Z,1.8nm,0.6s,baz=233,slow=9.1,SNR=4.9
SMY Shemya 59.92 34 *e*P **P 22 59 59.2 -3.4**
SMY pmax pmax
comp=Z,77nm,1.4s
SMY Shemya 59.92 34 *e*P **P 22 59 59.2 -3.4**
comp=Z,77nm,1.4s
BVAR Borovoye Array 59.98 327 P **P 23 00 02.9 -0.1**
comp=Z,1.6nm,0.6s,baz=119,slow=9.2,SNR=15
BRVK Borovoye 60.05 327 *de*P **P 23 00 03.1 -0.4**
BRVK pmax pmax
comp=Z,22nm,1.2s
BRVK Borovoye 60.05 327 *e*P **P 23 00 03.3 -0.2**
comp=Z,17nm,1.0s
ZRNK Zerenda 60.70 326 *i* P **P 23 00 06.6 -1.3**
ZRNK pmax pmax
comp=Z,15nm,1.0s
ZRNK Zerenda 60.70 326 *e*P **P 23 00 07.8 -0.1**
comp=Z,17nm,1.1s
TIXI Tiksi 62.15 2 P **P 23 00 16.0 -1.4**
comp=Z,7.0nm,0.9s,baz=165,slow=2.7,SNR=4.4
TIXI Tiksi 62.15 2⇑ *e*P **P 23 00 19.7 +2.3**
TIXI pmax pmax
comp=Z,16nm,1.3s
TIXI Tiksi 62.15 2 *e*P **P 23 00 15.2 -2.2**
comp=Z,13nm,1.1s
NRIK Noril'sk 63.73 347 P **P 23 00 26.8 -1.1**
comp=Z,6.5nm,0.7s,baz=132,slow=7.3,SNR=10
GEYT Alibeck 63.74 308 P **P 23 00 29.0 +0.3**
comp=Z,3.1nm,0.7s,baz=116,slow=3.4,SNR=12
AB31 Akbulak array 64.78 320 *i* P **P 23 00 34.1 -1.1**
AB31 pmax pmax
comp=Z,2.0nm,0.5s
ABKAR Akbulak array 64.78 320 *e*P **P 23 00 34.7 -0.5**
comp=Z,43nm,0.9s
BILL Bilibino 65.19 17 *i* P **P 23 00 38.3 +0.8**
BILL *i* 23 01 12.5
BILL *i* 23 03 01.5
BILL pmax pmax
comp=Z,4.0nm,0.9s
ARU Arti 67.60 327 *c* iP **P 23 00 51.5 -1.7**
ARU 23 01 19.1
ARU 23 03 19.6
ARU S **S 23 09 47.6 -0.7**
ARU SS **SS 23 14 04.1 -5.1**
ARU pmax pmax
comp=Z,6.0nm,1.0s
ARU Arti 67.60 327 *e*P **P 23 00 51.9 -1.3**
comp=Z,8.9nm,0.9s
GNI Garni 74.29 309‖ *e*P **P 23 01 35.1 +0.7**
GNI pmax pmax
comp=Z,59nm,1.6s
GNI Garni 74.29 309 *e*P **P 23 01 36.1 +1.7**
comp=Z,29nm,1.2s
ZEI Tsey 74.96 312 *e*P **P 23 01 37.6 -0.6**
ZEI pmax pmax
comp=Z,27nm,0.3s
AKH Akhalkalaki 75.25 310⇑ *i*P **P 23 01 41.2 +1.3**
GOF Gofitskoye 75.61 314⇑ *e*P P 23 01 47.7 +6.0
KBZ Khabaz 75.70 313 P **P 23 01 42.3 +0.1**
comp=Z,3.4nm,0.9s,baz=158,slow=4.9,SNR=5.7
NEY Neytrino 75.83 312‖ *e*P **P 23 01 45.0 +1.8**
NEY pmax pmax
comp=Z,1.0nm,0.8s
KIV Kislovodsk 75.86 313 *e*P **P 23 01 43.5 +0.3**
KIV pmax pmax
comp=Z,17nm,1.1s
KIV Kislovodsk 75.86 313 *e*P **P 23 01 43.8 +0.6**
comp=Z,15nm,0.9s
VRH Novokhopyorsk 76.61 320 *e*P **P 23 01 46.0 -1.2**
VRH pmax pmax
comp=Z,20nm,0.8s
KLMR Klimovskoe 78.11 330 *e*P **P 23 01 52.8 -2.6**
KLMR *e* 23 04 48.9
KLMR pmax pmax
comp=Z,12nm,1.3s
VSR Storozhevoye 78.22 320 *e*P **P 23 01 54.2 -2.0**
VSR pmax pmax
comp=Z,10.0nm,0.7s
ANN Anapa 79.60 314 *e*P P 23 01 58.4 -5.5
ANN *e* 23 02 07.3
ANN *e**PP **PcP 23 02 11.4 -0.3**
ANN *e* 23 05 01.6
ANN *e*S **S 23 11 55.7 -8.6**
ANN pmax pmax
comp=Z,14nm,1.4s
ANN MLR MLR
comp=Z,289nm,21.0s
ANN MLR MLR
comp=N,307nm,21.0s
ANN MLR MLR
comp=E,192nm,21.0s
OBN Obninsk 79.70 324 *i* P **P 23 02 04.5 +0.3**
OBN *i* 23 02 10.2
OBN pmax pmax
comp=Z,5.0nm,0.9s
APA Apatity 80.74 337 *e*P **P 23 02 13.2 +3.6**
APA *i* 23 05 22.0
APA *i* S **S 23 12 15.0 -0.5**
APA pmax pmax
comp=Z,4.0nm,1.1s
APA MLR MLR
comp=Z,800nm,16.0s
ILAR Eielson Array 81.81 26 P **P 23 02 14.5 -0.8**
comp=Z,0.6nm,0.7s,baz=256,slow=3.5,SNR=3.7
BR101 Keskin Array S 82.83 309 *e*P **P 23 02 21.0 -0.5**
BR101 *e*PP **PP 23 05 35.1 +3.4**
BR131 Keskin Array S 82.83 309 *e*P **P 23 02 21.1 -0.4**
BRTR Keskin Array B 82.83 309 P **P 23 02 21.0 -0.4**
comp=Z,2.0nm,0.7s,baz=124,slow=4.7,SNR=13
BRTR PP **PP 23 05 35.1 +3.4**
comp=Z,0.7nm,0.6s,baz=99,slow=7.6,SNR=4.3
ARCES ARCESS Array B 83.42 339 P **P 23 02 23.3 -0.4**
comp=Z,4.0nm,0.9s,baz=64,slow=5.6,SNR=7.3
ARCES LR LR 23 45 05.2
comp=Z,266nm,18.0s,baz=240,slow=40
BR231 Keskin MP Arra 83.48 309 *e*P **P 23 02 21.3 -3.4**
CSS Mathiatis 83.64 304 *e*P **P 23 02 23.4 -2.1**
comp=Z,6.2nm,1.0s
AKASG Malin Array Be 84.53 320 P **P 23 02 28.6 -1.1**
comp=Z,2.4nm,0.6s,baz=69,slow=4.7,SNR=13
KIEV Kiev 84.54 320‖ *e*P **P 23 02 28.2 -1.5**
KIEV pmax pmax
comp=Z,16nm,2.5s
KIEV Kiev 84.54 320 *e*P **P 23 02 28.1 -1.6**
comp=Z,11nm,1.0s
FIA0 FINESS Array S 84.56 331 *e*P **P 23 02 28.7 -0.9**
FIA0 FINESS Array S 84.56 331 *e*P **P 23 02 28.7 -0.9**
FINES FINESS Array B 84.56 331 P **P 23 02 28.7 -0.9**
comp=Z,2.3nm,0.7s,baz=61,slow=4.8,SNR=19
AK11 Malin Array Si 84.56 320 *e*P **P 23 02 28.9 -1.0**
VSU Vasula 84.75 328⇑ *e*P **P 23 02 29.1 -1.5**
VSU pmax pmax
comp=Z,35nm,0.9s
MICGM Minsk 84.76 324 *e* **P 23 02 30.0 -0.8**
MNK Minsk 84.76 324 *e*P **P 23 02 30.0 -0.8**
SORM Soroca 85.48 318⇑ *i*P **P 23 02 33.0 -1.5**
SORM Soroca 85.48 318 ⇑P **P 23 02 33.0 -1.5**
TLCR 85.64 315⇑ *i*P **P 23 02 34.7 -0.6**
TLCR 85.64 315 ⇑P **P 23 02 34.7 -0.6**
LEOM Leova 85.82 316⇑ *i*P **P 23 02 35.9 -0.3**
LEOM Leova 85.82 316 ⇑P **P 23 02 35.9 -0.3**
TIRR Tirgusor 86.04 314⇑ *i*P **P 23 02 35.9 -1.4**
TIRR Tirgusor 86.04 314 *e*P **P 23 02 36.1 -1.2**
TIRR pmax pmax
comp=Z,10.0nm,1.0s
TIRR Tirgusor 86.04 314 *e*P **P 23 02 36.1 -1.2**
comp=Z,10nm,1.0s
CFR Carcaliu 86.11 315⇑ *i*P **P 23 02 37.3 -0.4**
CFR Carcaliu 86.11 315 ⇑P **P 23 02 37.3 -0.4**
TLB Topalu 86.28 314⇑ *i*P **P 23 02 38.0 -0.5**
TLB Topalu 86.28 314 ⇑P **P 23 02 38.0 -0.5**
INK Inuvik 86.39 21 P **P 23 02 38.0 -0.5**
comp=Z,3.7nm,0.8s,baz=271,slow=6.8,SNR=7.7
INK Inuvik 86.39 21 *e*P **P 23 02 40.0 +1.4**
comp=Z,8.1nm,0.9s
TESR Tescani 86.90 316⇑ *i*P **P 23 02 40.4 -1.2**
PLOR Plostina 87.02 316⇑ *i*P **P 23 02 42.2 0.0**
PLOR Plostina 87.02 316 ⇑P **P 23 02 42.2 0.0**
MLR Muntele Rosu 87.58 316⇑ *i*P **P 23 02 44.5 -0.5**
MLR Muntele Rosu 87.58 316 *e*P **P 23 02 43.8 -1.2**
MLR pmax pmax
comp=Z,12nm,1.0s
MLR Muntele Rosu 87.58 316 *e*P **P 23 02 43.8 -1.2**
comp=Z,12nm,1.0s
MAW Mawson 87.70 199 P **P 23 02 44.0 -0.8**
comp=Z,0.6nm,0.4s,baz=42,slow=16,SNR=4.4
ARR Arges 88.50 316⇑ *i*P P 23 02 57.2 +7.8
DRGR 89.50 317⇑ *i*P **P 23 02 58.3 +4.3**
VNDA Vanda 89.79 172 P **P 23 02 53.8 -0.7**
comp=Z,6.4nm,0.9s,baz=302,slow=5.6,SNR=13
VNDA Vanda 89.79 172 *e*P **P 23 02 53.3 -1.2**
VNDA pmax pmax
comp=Z,7.0nm,0.9s
VNDA Vanda 89.79 172 *e*P **P 23 02 53.3 -1.2**
comp=Z,6.6nm,0.9s
CRVS Cervenica-Dubn 89.81 320 *e*P **P 23 02 57.9 +2.6**
CRVS Cervenica-Dubn 89.81 320 *e*P **P 23 02 57.9 +2.6**
VTS Vitosha 90.11 313⇑ *i*P **P 23 02 58.6 +1.5**
VTS Vitosha 90.11 313 ⇑P **P 23 02 58.6 +1.5**
BZS Buzias 90.52 316⇑ *i*P **P 23 03 01.8 +3.1**
BZS Buzias 90.52 316 ⇑P **P 23 03 01.8 +3.1**
HFS Hagfors 90.76 332 P **P 23 02 58.2 -1.3**
comp=Z,1.3nm,0.8s,baz=84,slow=4.5,SNR=3.8
NB200 NORSAR Array S 91.56 333 *e*P **P 23 03 07.4 +4.2**
NOA NORSAR Array B 91.56 333 P **P 23 03 07.4 +4.2**
comp=Z,0.9nm,0.8s,baz=68,slow=4.5,SNR=3.4
NOA LR LR 23 48 11.5
comp=Z,356nm,18.6s,baz=245,slow=38
VYHS Vyhne 91.59 320 *e*P **P 23 03 05.9 +2.2**
VYHS *e* 23 08 43.4
VYHS pmax pmax
comp=Z,2.0nm,1.2s
VYHS Vyhne 91.59 320 *e*P **P 23 03 05.9 +2.2**
VYHS *e* 23 08 43.3
DPC Dobruska-Polom 92.61 322 *e*P **P 23 03 05.1 -3.3**
DPC Dobruska-Polom 92.61 322 *e*P **P 23 03 05.1 -3.3**
BRG Berggiesshubel 93.87 323 *e*PKP **P 23 03 13.0 -1.1**
comp=Z,3.0nm,0.9s
BRG *e* 23 03 22.1
comp=Z,6.7nm,1.0s
BRG Berggiesshubel 93.87 323 *e*P **P 23 03 13.0 -1.1**
BRG *e* 23 03 22.1
BRG pmax pmax
comp=Z,3.0nm,0.9s
CLL Collm 94.27 324 *es*P sP 23 03 24.0 -3.9
GERES GERESS Array B 94.72 321 P **P 23 03 16.6 -1.5**
comp=Z,0.9nm,0.8s,baz=104,slow=1.7,SNR=4.5
GERES LR LR 23 48 23.3
comp=Z,188nm,19.0s,baz=34,slow=37
GEA0 GERESS Array S 94.72 321 *e*P **P 23 03 16.1 -2.1**
YKA Yellowknife Ar 95.99 23 P **P 23 03 23.1 -0.5**
comp=Z,0.7nm,0.7s,baz=304,slow=4.4,SNR=3.0
YKB5 Yellowknife Ar 95.99 23 *e*P **P 23 03 23.1 -0.5**
TORD Torodi Ar. Bea 116.74 290 PKP **PKPdf 23 08 39.8 -2.1**
comp=Z,0.6nm,0.9s,baz=70,slow=2.4,SNR=2.8
TORD PP **PP 23 09 53.2 +3.2**
comp=Z,1.3nm,1.1s,baz=64,slow=5.7,SNR=5.5
TOA1 Torodi Ar. Sit 116.74 290 *e*PKPdf **PKPdf 23 08 39.8 -2.1**
TOA1 *e*PP **PP 23 09 53.2 +3.2**
LTX Lajitas 121.29 47 *e*PKIKP **PKPdf 23 08 49.4 -1.1**
LTX Lajitas 121.29 47 *e*PKPdf **PKPdf 23 08 49.4 -1.1**
TXAR Lajitas Array 121.29 47 PKP **PKPdf 23 08 49.4 -1.1**
comp=Z,0.4nm,0.6s,baz=34,slow=0.1,SNR=7.2
WVT Waverly 126.47 30 *e*PKIKP **PKPdf 23 08 59.2 -0.9**
WVT Waverly 126.47 30 *e*PKPdf **PKPdf 23 08 59.2 -0.9**
PLCA Paso Flores 146.99 162 PKPbc **PKPdf 23 09 38.2 +0.6**
comp=Z,27nm,0.8s,baz=246,slow=3.2,SNR=26
PLCA Paso Flores 146.99 162 *e*PKPdf **PKPdf 23 09 38.4 +0.7**
CPUP Villa Florida 163.34 182 PKPab **PKPab 23 10 50.1 -0.3**
comp=Z,2.7nm,0.8s,baz=175,slow=4.4,SNR=6.9
LPAZ La Paz 167.95 125 PKP **PKPdf 23 10 04.3 -0.5**
comp=Z,2.2nm,0.8s,baz=98,slow=2.6,SNR=10
LPAZ La Paz 167.95 125 *e*PKPdf **PKPdf 23 10 04.9 +0.2**

NIED ***11*** *22:56:00,38˚10N×143˚60E,h5km,Mw4.5 Best double couple: M0 7.05000×10^15 NP1:φs71.00000°,δ47.00000°, λ-6.00000°. NP2:φs165.00000°,δ85.00000°, λ-137.00000°.*
IDC ***11*** *22:56:16.7±0.6,38˚05N×143˚58E,h0km,mb4.3/33, mb1 4.4/38,mb1mx4.3/63,mbtmp4.3/38,ML3.5/5,MS4.0/4, Ms1 4.0/4,ms1mx3.4/57,Error ellipse: s-maj=15.9km s-min=12.7km az=129.0*
ISCJB ***11*** *22:56:16.8±1.1,38˚10N±0˚03×143˚50E±0˚03,h8km±7km, mb4.6/78,MS4.0/4,Error ellipse: s-maj=5.5km s-min=3.5km az=160.1*

JMA 11 22:56:18.7±0.1,38.15N×143.55E,h37km,M4.6
MOS 11 22:56:20.4±1.2,38.12N×143.55E,h33km,mb4.7/40,Error ellipse: s-maj=8.9km s-min=5.6km az=100.7
NEIC 11 22:56:22.4±0.3,38.11N×143.55E,h35km,mb4.8/37,Error ellipse: s-maj=7.8km s-min=5.0km az=157.0
ISC 11 22:56:20.7±0.6,38.08N±0.05×143.55E±0.05,h25km±3km, n193,σ1§47/205,mb4.6/78,MS4.1/4,7C-2D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.77**	**283**	P			**Pn**	**22 56 47.8**	**-1.9**
JIO				S			**Sn**	**22 57 08.8**	**-2.6**
OFUJ	**Ofunato**	**1.78**	**305**	P			**Pn**	**22 56 47.8**	**-2.0**
OFUJ				*eS*			**Sn**	**22 57 09.2**	**-2.4**
JMK	**Ichinoseki**	**2.02**	**296**	P			**Pn**	**22 56 51.4**	**-1.8**
JOM	**Ohasama**	**2.25**	**309**	P			**Pn**	**22 56 54.6**	**-1.6**
JOM				*eS*			**Sn**	**22 57 20.8**	**-2.4**
JOU	**Okura**	**2.29**	**278**	P			**Pn**	**22 56 55.9**	**-0.9**
JOU				*eS*			**Sn**	**22 57 22.9**	**-1.3**
JFT	**Otama**	**2.60**	**259**	P			**Pn**	**22 57 00.4**	**-0.8**
JFT				*eS*			**Sn**	**22 57 30.7**	**-1.3**
JRG	**Rokugo**	**2.63**	**301**	P			**Pn**	**22 57 00.3**	**-1.2**
JYK	**Kaneyama**	**2.64**	**290**	P			**Pn**	**22 57 00.6**	**-1.0**
JYK				S			**Sn**	**22 57 31.9**	**-0.9**
JANG	**Nango**	**2.78**	**326**	*eS*			**Sn**	**22 57 32.3**	**-4.1**
JNS	**Sasagawa**	**3.35**	**267**	P			**Pn**	**22 57 11.1**	**-0.4**
JAW	**Awa shima**	**3.40**	**278**	P			**Pn**	**22 57 11.7**	**-0.4**
JAG	**Ashikaga**	**3.66**	**244**	P			**Pn**	**22 57 14.5**	**-1.2**
JAG				*eS*			**Sn**	**22 57 57.1**	**-0.9**
ERM	**Erimo**	**3.94**	**356**	*ePn*			**Pn**	**22 57 17.3**	**-2.3**
ERM				*eSn*			**Sn**	**22 58 02.7**	**-2.3**
JSD	**Sado**	**4.17**	**271**	P			**Pn**	**22 57 21.6**	**-1.1**
JNBK	**Urakawa-nobuka**	**4.24**	**352**	P			**Pn**	**22 57 22.0**	**-1.7**
JRY	**Ryogami san**	**4.25**	**242**	P			**Pn**	**22 57 22.8**	**-1.0**
MAJO	**Matsushiro**	**4.52**	**252**	*ce*P			**Pn**	**22 57 28.1**	**+0.5**
MAJO					pmax	pmax			
	comp=Z,87nm,0.7s								
MAJO	**Matsushiro**	**4.52**	**252**	*e*Pn			**Pn**	**22 57 27.9**	**+0.3**
MAJO				*e*Sn			Sn	22 58 07.9	-11
MAT	**Matsushiro**	**4.52**	**252**	P			**Pn**	**22 57 27.4**	**-0.2**
MAT				*eS*			**Sn**	**22 58 14.5**	**-4.9**
JHJ2	**Mitsune**	**5.81**	**213**	*e*Pn			**Pn**	**22 57 43.5**	**-1.8**
JHJ	**Hachijo jima 2**	**5.82**	**213**	Pn			**Pn**	**22 57 43.9**	**-1.5**
	comp=Z,20nm,0.3s,baz=25,slow=17,SNR=22								
JHJ				Sn			**Sn**	**22 58 46.6**	**-4.7**
	comp=Z,160nm,0.3s,baz=73,slow=19,SNR=8.7								
INU	**Inuyama**	**5.91**	**245**	*e*Pn			**Pn**	**22 57 46.0**	**-0.6**
ASAJ	**Asahikawa**	**6.08**	**354**	*e*Pn			**Pn**	**22 57 46.7**	**-2.2**
YUK	**Yuzh-Kuril'sk**	**6.20**	**16**	*e*P			**Pn**	**22 57 50.1**	**-0.5**
USRK	**Ussuriysk Ar.**	**10.64**	**309**	Pn			**Pn**	**22 58 51.1**	**-0.3**
	comp=Z,0.7nm,0.3s,baz=114,slow=13,SNR=11								
USRK				LR			LR	23 02 57.3	
	comp=Z,574nm,18.1s,baz=143,slow=38								
JNU	**Nakatsue**	**11.43**	**248**	Pn			**Pn**	**22 59 00.5**	**-1.9**
	comp=Z,0.3nm,0.3s,baz=42,slow=13,SNR=8.5								
JNU	**Nakatsue**	**11.43**	**248**	*e*Pn			**Pn**	**22 59 02.2**	**-0.2**
MDJ	**Mudanjiang**	**12.35**	**306**	*e*Pn			**Pn**	**22 59 15.4**	**+0.6**
KSRS	**Korea Array**	**12.38**	**272**	Pn			**Pn**	**22 59 15.2**	**0.0**
	comp=Z,0.4nm,0.3s,baz=88,slow=13,SNR=20								
KS15	**Wonju Array Si**	**12.41**	**272**	*e*Pn			**Pn**	**22 59 16.9**	**+1.2**
KSAR	**Wonju Array Be**	**12.41**	**272**	P			**Pn**	**22 59 15.2**	**-0.5**
KSAR	**Wonju Array Be**	**12.41**	**272**	Pn			**Pn**	**22 59 15.2**	**-0.5**
KLR	**Kul'dur**	**14.02**	**326**	Pn			**Pn**	**22 59 34.6**	**-3.0**
	comp=Z,0.1nm,0.3s,baz=144,slow=9.6,SNR=6.8								
KLR	**Kul'dur**	**14.02**	**326**	*i* P			**Pn**	**22 59 36.5**	**-1.1**
SKR	**Severo-Kuril's**	**15.45**	**31**	*i* P			**Pn**	**22 59 57.9**	**+1.1**
PEA0	**Petropavlovsk-**	**17.95**	**29**	*e*Pn			**P**	**23 00 28.9**	**+0.1**
PEA0B	**Petropavlovsk-**	**17.95**	**29**	*e*Pn			**Pn**	**23 00 25.2**	**-3.2**
	comp=Z,148nm,1.9s								
PETK	**Petropavlovsk-**	**17.95**	**29**	P			**Pn**	**23 00 26.7**	**-1.6**
	comp=Z,0.2nm,0.3s,baz=198,slow=7.4,SNR=14								
PEA1	**Petropavlovsk-**	**17.95**	**29**	*e*Pn			**Pn**	**23 00 26.7**	**-1.7**
PET	**Petropavlovsk**	**18.25**	**30**	*i* P			**P**	**23 00 32.4**	**+0.3**
PET					pmax	pmax			
	comp=Z,46nm,1.4s								
HIA	**Hailar**	**20.44**	**311**	*i* P			**P**	**23 00 53.6**	**-2.5**
HIA					pmax	pmax			
	comp=Z,11nm,0.9s								
BJT	**Baijiatuau**	**21.32**	**284**	*e*P			**P**	**23 01 03.0**	**-2.7**
BJT					pmax	pmax			
	comp=Z,33nm,0.9s								
BJT	**Baijiatuau**	**21.32**	**284**	*e*P			**P**	**23 01 03.0**	**-2.7**
	comp=Z,33nm,0.9s								
MA2	**Magadan**	**22.01**	**10**	P			**P**	**23 01 11.5**	**-1.3**
	comp=Z,14nm,0.8s,baz=197,slow=7.9,SNR=6.2								
MA2				LR			LR	23 10 08.3	
	comp=Z,295nm,21.8s,baz=14,slow=38								
CLNS	**Chul'man**	**22.48**	**333**	*e*P			**P**	**23 01 17.4**	**-0.5**
CLNS					pmax	pmax			
	comp=E,7.0nm,1.2s								
CLNS					pmax	pmax			
	comp=N,18nm,1.1s								
CLNS					pmax	pmax			
	comp=Z,23nm,0.9s								
SEY	**Seymchan**	**25.46**	**9**	P			**P**	**23 01 46.5**	**+0.1**
	comp=Z,19nm,0.9s,baz=186,slow=6.0,SNR=19								
YAK	**Yakutsk**	**25.47**	**345**	P			**P**	**23 01 46.2**	**-0.1**
	comp=Z,20nm,0.4s,baz=193,slow=1.1,SNR=4.3								
YAK	**Yakutsk**	**25.47**	**345**	*e*P			**P**	**23 01 44.3**	**-2.1**
YAK				*e*				23 02 35.1	
YAK				*eS*			**S**	**23 06 15.5**	**+3.8**
YAK				*e*SS			SnSn	23 07 34.7	+30
YAK					pmax	pmax			
	comp=Z,16nm,0.8s								
YAK					pmax	pmax			
	comp=N,4.0nm,1.0s								
YAK					pmax	pmax			
	comp=E,12nm,1.0s								
YAK					smax	smax			
	comp=N,140nm,3.7s								
YAK					smax	smax			
	comp=E,92nm,2.8s								
YAK	**Yakutsk**	**25.47**	**345**	*e*P			**P**	**23 01 46.2**	**-0.1**
	comp=E,32nm,0.6s								
H11N2	**WAKE ISLAND Hy**	**27.30**	**125**	T			T	23 30 52.4	
	baz=317,slow=75,SNR=65								
H11N1	**WAKE ISLAND Hy**	**27.31**	**126**	T			T	23 31 02.0	
	baz=317,slow=75,SNR=75								
H11N3	**WAKE ISLAND Hy**	**27.32**	**125**	T			T	23 31 10.1	
	baz=317,slow=75,SNR=85								
BOD	**Bodaibo**	**27.59**	**325**	*e*P			**P**	**23 02 05.1**	**-0.5**
BOD					pmax	pmax			
	comp=Z,26nm,1.1s								
H11S1	**WAKE ISLAND Hy**	**28.07**	**128**	T			T	23 31 59.4	
	baz=318,slow=76,SNR=22								
H11S3	**WAKE ISLAND Hy**	**28.08**	**128**	T			T	23 32 01.8	
	baz=318,slow=76,SNR=33								
H11S2	**WAKE ISLAND Hy**	**28.09**	**128**	T			T	23 31 55.2	
	baz=318,slow=76,SNR=19								
SONA1	**Songino Array**	**28.64**	**302**	*e*P			**P**	**23 02 15.8**	**+0.6**
SONA0	**Songino Array**	**28.64**	**302**	*e*P			**P**	**23 02 14.8**	**-0.4**
	comp=Z,30nm,1.6s								
SONM	**Songino Array**	**28.64**	**302**	P			**P**	**23 02 14.8**	**-0.4**
	comp=Z,4.1nm,0.7s,baz=89,slow=8.9,SNR=23								
SONM	**Songino Array**	**28.64**	**302**	*e*P			**P**	**23 02 15.8**	**+0.5**
SONM					pmax	pmax			
	comp=Z,4.0nm,0.7s								
ENH	**Enshi**	**29.11**	**265**	*e*P			**P**	**23 02 20.4**	**+0.9**
	comp=Z,38nm,0.8s								
TLY	**Talaya**	**30.96**	**309**	P			**P**	**23 02 35.8**	**+0.2**
	comp=Z,3.5nm,0.5s,baz=118,slow=8.4,SNR=5.5								
TLY	**Talaya**	**30.96**	**309**	*e*P			**P**	**23 02 38.4**	**+2.8**
TLY					pmax	pmax			
	comp=Z,15nm,1.3s								
TLY					MLR	MLR			
	comp=Z,238nm,11.0s								
ZAK	**Zakamensk**	**30.98**	**307**	*e*P			**P**	**23 02 34.4**	**-1.5**
ZAK					pmax	pmax			
	comp=Z,15nm,1.3s								
BILL	**Bilibino**	**32.56**	**16**	*i* P			**P**	**23 02 47.6**	**-1.8**
BILL					pmax	pmax			
	comp=Z,8.0nm,1.2s								
MOY	**Mondy**	**32.59**	**309**	*e*P			**P**	**23 02 52.0**	**+2.0**
TIXI	**Tiksi**	**34.48**	**352**	P			**P**	**23 03 06.2**	**+0.2**
	comp=Z,2.9nm,0.8s,baz=76,slow=8.3,SNR=3.1								
TIXI				LR			LR	23 17 46.1	
	comp=Z,350nm,20.4s,baz=49,slow=37								
ZAA1	**Zalesovo Array**	**42.48**	**312**	*e*P			**P**	**23 04 13.4**	**-0.1**
ZAA1				*e*PcP			**PcP**	**23 06 06.1**	**+0.2**
ZAA0	**Zalesovo Array**	**42.48**	**312**	*e*P			**P**	**23 04 14.7**	**+1.2**
ZALV	**Zalesovo Beam**	**42.48**	**312**	P			**P**	**23 04 13.4**	**-0.1**
	comp=Z,6.0nm,0.6s,baz=88,slow=7.8,SNR=24								
ZALV				PcP			**PcP**	**23 06 06.1**	**+0.2**
	comp=Z,2.1nm,0.9s,baz=100,slow=3.5,SNR=2.5								
NRIK	**Noril'sk**	**43.04**	**334**	P			**P**	**23 04 19.0**	**+1.1**
	comp=Z,1.8nm,0.9s,baz=106,slow=15,SNR=2.5								
NRIK	**Noril'sk**	**43.04**	**334**	P			**P**	**23 04 19.0**	**+1.1**
NRIK					pmax	pmax			
	comp=Z,2.0nm,0.9s								
NVS	**Novosibirsk**	**43.36**	**313**	*e*P			P	23 04 15.0	-5.6
NVS					pmax	pmax			
	comp=Z,10.0nm,1.2s								
NVS					pmax	pmax			
	comp=N,3.0nm,1.0s								
NVS					pmax	pmax			
	comp=E,6.0nm,1.0s								
CMAR	**Chiang Mai Arr**	**43.40**	**256**	P			**P**	**23 04 21.6**	**+0.2**
	comp=E,1.1nm,0.7s,baz=48,slow=7.2,SNR=7.0								
LSA	**Lhasa**	**43.80**	**275**	*e*P			**P**	**23 04 29.4**	**+4.3**
LSA					pmax	pmax			
	comp=Z,7.0nm,0.8s								
LSA	**Lhasa**	**43.80**	**275**	*e*P			**P**	**23 04 29.4**	**+4.3**
	comp=Z,7.0nm,0.8s								
MK01	**Makanchi Array**	**45.01**	**302**	*e*P			**P**	**23 04 34.0**	**0.0**
MK31	**Makanchi Array**	**45.01**	**302**	*e*P			**P**	**23 04 34.4**	**+0.4**
MK31	**Makanchi Array**	**45.01**	**302**	*e*P			**P**	**23 04 34.4**	**+0.4**
MK32	**Makanchi Array**	**45.01**	**302**	*e*P			**P**	**23 04 34.1**	**+0.1**
MKAR	**Makanchi Array**	**45.01**	**302**	P			**P**	**23 04 34.1**	**+0.1**
	comp=Z,7.0nm,0.8s,baz=86,slow=9.7,SNR=23								
MKAR	**Makanchi Array**	**45.01**	**302**	*e*P			**P**	**23 04 37.0**	**+3.0**
MKAR					pmax	pmax			
	comp=Z,7.0nm,0.8s								
MKAR	**Makanchi Array**	**45.01**	**302**	*e*P			**P**	**23 04 34.4**	**+0.4**
RSO	**Redoubt South**	**45.03**	**39**	*e*P			**P**	**23 04 35.1**	**+0.9**
KDAK	**Kodiak Island**	**45.19**	**43**	*e*P			**P**	**23 04 35.0**	**-0.1**
KDAK					pmax	pmax			
	comp=Z,49nm,1.6s								
KDAK	**Kodiak Island**	**45.19**	**43**	*e*P			**P**	**23 04 35.0**	**-0.1**
	comp=Z,49nm,1.6s								
MAKZ	**Makanchi**	**45.22**	**302**	*e*P			**P**	**23 04 37.7**	**+2.1**
MAKZ					pmax	pmax			
	comp=Z,24nm,1.3s								
MAKZ	**Makanchi**	**45.22**	**302**	*e*P			**P**	**23 04 37.7**	**+2.1**
	comp=Z,24nm,1.3s								
KTH	**Kantishna Hill**	**45.93**	**35**	*e*P			**P**	**23 04 42.1**	**+1.0**
	comp=Z,16nm,1.0s								
RC01	**Rabbit Creek A**	**46.50**	**38**	*e*P			**P**	**23 04 45.5**	**0.0**
	comp=Z,14nm,1.0s								
KURK	**Kurchatov**	**46.63**	**308**	*i* P			**P**	**23 04 47.3**	**+0.6**
KURK				*i* *PP			**sP**	**23 04 56.5**	**-0.9**
KURK				*i* *SP			**pP**	**23 05 00.3**	**+5.9**
KURK	**Kurchatov**	**46.63**	**308**	*e*P			**P**	**23 04 46.5**	**-0.2**
KURBB	**Kurchatov Arra**	**46.70**	**308**	P			**P**	**23 04 46.8**	**-0.4**
	comp=Z,9.4nm,0.5s,baz=82,slow=8.6,SNR=25								
RND	**Reindeer**	**46.86**	**35**	*e*P			**P**	**23 04 48.6**	**+0.2**
RND					pmax	pmax			
	comp=Z,12nm,1.0s								
RND	**Reindeer**	**46.86**	**35**	*e*P			**P**	**23 04 48.6**	**+0.2**
	comp=Z,12nm,1.0s								
WRH	**Wood River Hil**	**47.19**	**33**	*e*P			**P**	**23 04 51.5**	**+0.7**
	comp=Z,5.7nm,0.9s								
SCM	**Sheep Creek Mo**	**47.62**	**37**	*e*P			**P**	**23 04 54.9**	**+0.6**
SCM					pmax	pmax			
	comp=Z,12nm,1.0s								
SCM	**Sheep Creek Mo**	**47.62**	**37**	*e*P			**P**	**23 04 54.9**	**+0.6**
	comp=Z,12nm,1.0s								
HDA	**Harding Lake**	**47.68**	**33**	*e*P			**P**	**23 04 55.5**	**+0.8**
	comp=Z,146nm,2.0s								
IL1	**Eielson Array**	**47.70**	**33**	*e*P			**P**	**23 04 54.0**	**-0.9**
ILAR	**Eielson Array**	**47.70**	**33**	P			**P**	**23 04 54.6**	**-0.2**
	comp=Z,6.8nm,0.8s,baz=266,slow=6.5,SNR=27								
ILB	**Eielson Array**	**47.70**	**33**	*e*P			**P**	**23 04 54.6**	**-0.2**
KLU	**Klutina**	**48.31**	**37**	*e*P			**P**	**23 05 00.4**	**+0.7**
	comp=Z,21nm,1.2s								
DIV	**Divide**	**48.42**	**38**	*e*P			**P**	**23 05 01.3**	**+0.8**
	comp=Z,21nm,1.0s								
RAMN	**Ramite**	**48.62**	**274**	*e*P			**P**	**23 05 02.6**	**-0.1**
	comp=Z,58nm,0.9s								
GUN	**Gumba**	**48.74**	**276**	*e*P			**P**	**23 05 04.0**	**+0.2**
	comp=Z,50nm,0.8s								
MENT	**Mentasta**	**49.21**	**35**	*e*P			**P**	**23 05 07.7**	**+1.2**
	comp=Z,11nm,1.0s								
KKN	**Kakani**	**49.26**	**276**	*e*P			**P**	**23 05 07.8**	**+0.2**
	comp=Z,52nm,0.8s								
PKIN	**Phulchoki**	**49.27**	**276**	*e*P			**P**	**23 05 07.2**	**-0.6**
	comp=Z,8.8nm,0.5s								
GKN	**Gorkha**	**49.67**	**277**	*e*P			**P**	**23 05 10.6**	**-0.1**
	comp=Z,83nm,1.1s								
CRQM	**Cirque**	**49.74**	**38**	*e*P			**P**	**23 05 11.9**	**+1.1**
	comp=Z,30nm,1.0s								
KOLN	**Koldanda**	**50.59**	**277**	*e*P			**P**	**23 05 17.4**	**-0.3**
	comp=Z,7.7nm,0.5s								
VOSK	**Vostochnaya**	**50.85**	**312**	*e*P			**P**	**23 05 19.1**	**0.0**
VOSK	**Vostochnaya**	**50.85**	**312**	*e*P			**P**	**23 05 19.1**	**0.0**
PYUN	**Piuhan**	**50.91**	**278**	*e*P			**P**	**23 05 20.4**	**+0.3**
	comp=Z,17nm,0.5s								
BVAR	**Borovoye Array**	**51.13**	**312**	P			**P**	**23 05 21.2**	**0.0**
	comp=Z,2.3nm,0.6s,baz=81,slow=6.7,SNR=7.4								
BRVK	**Borovoye**	**51.18**	**312**	*e*P			**P**	**23 05 23.3**	**+1.8**
BRVK					pmax	pmax			
	comp=Z,28nm,2.5s								
BRVK	**Borovoye**	**51.18**	**312**	*e*P			**P**	**23 05 23.1**	**+1.6**
	comp=Z,5.2nm,0.8s								
AAK	**Ala-Archa**	**51.49**	**298**	P			**P**	**23 05 24.0**	**-0.2**
	comp=Z,1.3nm,0.3s,baz=192,slow=7.1,SNR=3.3								
AAK	**Ala-Archa**	**51.49**	**298**	*i* P			**P**	**23 05 25.2**	**+1.0**
AAK					pmax	pmax			
	comp=Z,6.0nm,1.0s								
ZRNK	**Zerenda**	**51.96**	**312**	*e*P			**P**	**23 05 27.6**	**+0.2**
ZRNK					pmax	pmax			
	comp=Z,7.0nm,0.9s								
ZRNK	**Zerenda**	**51.96**	**312**	*e*P			**P**	**23 05 27.6**	**+0.2**
	comp=Z,7.2nm,0.9s								
HYT	**Haines Junctio**	**52.45**	**37**	*e*P			**P**	**23 05 32.9**	**+1.9**
	comp=Z,25nm,1.0s								
INK	**Inuvik**	**52.68**	**28**	P			**P**	**23 05 32.9**	**+0.4**
	comp=Z,4.0nm,1.0s,baz=306,slow=5.1,SNR=5.1								
INK	**Inuvik**	**52.68**	**28**	*e*P			**P**	**23 05 33.0**	**+0.5**
KKAR	**Karatay Array**	**54.07**	**300**	*e*P			**P**	**23 05 44.3**	**+1.2**
KKAR	**Karatay Array**	**54.07**	**300**	*e*P			**P**	**23 05 44.2**	**+1.2**
	comp=Z,85nm,1.3s								
SVE	**Sverdlovsk**	**55.49**	**319**	*e*P			**P**	**23 05 55.0**	**+1.9**
SVE					pmax	pmax			
	comp=Z,16nm,0.9s								
ARU	**Arti**	**56.70**	**319**	*d* *iP*			**P**	**23 06 03.2**	**+1.4**
ARU								23 08 10.3	
ARU				S			**S**	**23 13 54.1**	**+1.5**
ARU				SS			**SS**	**23 17 39.9**	**0.0**
ARU					pmax	pmax			
	comp=Z,12nm,1.2s								
ARU	**Arti**	**56.70**	**319**	*e*P			**P**	**23 06 02.4**	**+0.6**
	comp=Z,8.9nm,0.9s								
DLBC	**Dease Lake**	**56.76**	**39**	P			**P**	**23 06 04.1**	**+1.9**
	comp=Z,3.9nm,0.9s,baz=265,slow=7.8,SNR=6.7								
DLBC	**Dease Lake**	**56.76**	**39**	*e*P			**P**	**23 06 04.1**	**+1.9**
	comp=Z,7.6nm,1.0s								
WRAB	**Tennant Creek**	**58.35**	**190**	*i* P			**P**	**23 06 14.3**	**+0.6**
WRAB				*i* *PP			**sP**	**23 06 23.3**	**-1.3**
WRAB					pmax	pmax			
	comp=Z,10.0nm,1.2s								
WR1	**Warramunga Arr**	**58.36**	**190**	*e*P			**P**	**23 06 13.0**	**-0.8**
WRA	**Warramunga Arr**	**58.36**	**190**	P			**P**	**23 06 13.0**	**-0.8**
	comp=Z,9.4nm,0.8s,baz=9.7,slow=7.2,SNR=43								
WRA	**Warramunga Arr**	**58.36**	**190**	*e*P			**P**	**23 06 12.6**	**-1.2**
WRA					pmax	pmax			
	comp=Z,10.0nm,0.8s								
ABKAR	**Akbulak array**	**58.56**	**310**	*e*P			**P**	**23 06 14.8**	**-0.2**
	comp=Z,74nm,0.4s								
YKA	**Yellowknife Ar**	**62.05**	**31**	P			**P**	**23 06 37.6**	**-1.0**
	comp=Z,1.8nm,0.9s,baz=298,slow=6.6,SNR=4.4								
YKA	**Yellowknife Ar**	**62.05**	**31**	*e*P			**P**	**23 06 38.3**	**-0.3**
YKA					pmax	pmax			
	comp=Z,2.0nm,0.9s								
YKB5	**Yellowknife Ar**	**62.05**	**31**	*e*P			**P**	**23 06 37.6**	**-1.0**
AS01	**Alice Springs**	**62.07**	**190**	*e*P			**P**	**23 06 39.0**	**-0.2**
AS31	**Alice Springs**	**62.08**	**190**	*e*P			**P**	**23 06 39.3**	**0.0**
	comp=Z,2.2nm,0.6s								
ASAR	**Alice Springs**	**62.08**	**190**	P			**P**	**23 06 39.3**	**0.0**
	comp=Z,2.1nm,0.8s,baz=9.5,slow=6.7,SNR=15								
ASAR	**Alice Springs**	**62.08**	**190**	*e*P			**P**	**23 06 39.9**	**+0.6**
ASAR					pmax	pmax			
	comp=Z,2.0nm,0.8s								
KLMR	**Klimovskoe**	**63.77**	**328**	*e*P			**P**	**23 06 48.5**	**-1.6**
KLMR				*e*				23 09 08.7	
KLMR					pmax	pmax			
	comp=Z,13nm,1.5s								
GEYT	**Alibeck**	**64.81**	**299**	P			**P**	**23 06 56.8**	**-0.5**
	comp=Z,2.7nm,0.9s,baz=38,slow=7.5,SNR=5.6								
C09A	**Chrisman Ranch**	**67.80**	**46**	*e*P			**P**	**23 07 13.8**	**-2.5**
	comp=Z,21nm,0.3s								
OBN	**Obninsk**	**68.27**	**324**	*i* P			**P**	**23 07 18.3**	**-0.7**
OBN					pmax	pmax			
	comp=Z,5.0nm,0.8s								
FIA1	**FINESS Array S**	**68.67**	**333**	*e*P			**P**	**23 07 21.2**	**-0.2**
FIA0	**FINESS Array S**	**68.67**	**333**	*e*P			**P**	**23 07 21.2**	**-0.3**
FIA0	**FINESS Array S**	**68.67**	**333**	*e*P			**P**	**23 07 21.2**	**-0.3**
FINES	**FINESS Array B**	**68.67**	**333**	P			**P**	**23 07 21.2**	**-0.3**
	comp=Z,3.5nm,0.9s,baz=52,slow=9.9,SNR=8.5								
K05A	**Summer Lake**	**68.97**	**52**	*e*P			**P**	**23 07 25.3**	**+1.3**
	comp=Z,10nm,1.1s								
GOF	**Gofitskoye**	**70.65**	**312**	*e*P			**P**	**23 07 33.8**	**-0.2**
GOF					pmax	pmax			
	comp=Z,16nm,1.1s								
CHMT	**Chamberlain Mo**	**71.12**	**45**	*e*P			**P**	**23 07 40.0**	**+2.9**
KVAR	**Kislovodsk Arr**	**71.49**	**312**	P			**P**	**23 07 41.4**	**+2.1**
	comp=Z,7.0nm,0.9s,baz=210,slow=5.0,SNR=4.8								
KIV	**Kislovodsk**	**71.49**	**312**	*e*P			**P**	**23 07 41.3**	**+2.0**
KIV					pmax	pmax			
	comp=Z,21nm,1.0s								
KIV	**Kislovodsk**	**71.49**	**312**	*e*P			**P**	**23 07 41.1**	**+1.8**
	comp=Z,15nm,0.8s								
KBZ	**Khabaz**	**71.50**	**311**	P			**P**	**23 07 40.4**	**+1.3**
	comp=Z,3.6nm,0.9s,baz=266,slow=1.0,SNR=6.2								
FFC	**Flin Flon**	**71.91**	**34**	*e*P			**P**	**23 07 39.9**	**-1.5**
FFC					pmax	pmax			
	comp=Z,6.0nm,0.7s								
FFC	**Flin Flon**	**71.91**	**34**	*e*P			**P**	**23 07 39.9**	**-1.5**
	comp=Z,5.6nm,0.7s								
HLID	**Hailey**	**72.42**	**48**	*e*P			**P**	**23 07 45.1**	**+0.2**
	comp=Z,2.3nm,1.1s								
HFS	**Hagfors**	**73.82**	**336**	P			**P**	**23 07 52.5**	**-0.1**
	comp=Z,3.1nm,0.9s,baz=26,slow=3.8,SNR=5.3								
NB2	**NORSAR Subarra**	**73.87**	**338**	P			**P**	**23 07 52.5**	**-0.5**
	comp=Z,8.4nm,1.2s,baz=33,slow=6.2								
NB200	**NORSAR Array S**	**73.87**	**338**	*e*P			**P**	**23 07 52.4**	**-0.5**
NOA	**NORSAR Array B**	**73.87**	**338**	P			**P**	**23 07 52.4**	**-0.5**
	comp=Z,2.6nm,0.9s,baz=38,slow=5.8,SNR=5.6								
NOA	**NORSAR Array B**	**73.87**	**338**	*e*P			**P**	**23 07 52.7**	**-0.3**
NOA					pmax	pmax			
	comp=Z,3.0nm,0.9s								
AKASG	**Malin Array Be**	**74.50**	**323**	P			**P**	**23 07 57.4**	**+0.7**
	comp=Z,0.6nm,0.4s,baz=45,slow=7.3,SNR=4.2								
AKBB	**Malin Array Si**	**74.50**	**323**	*e*P			**P**	**23 07 57.4**	**+0.7**
AKBB					pmax	pmax			
	comp=Z,5.0nm,0.8s								
AKBB	**Malin Array Si**	**74.50**	**323**	*e*P			**P**	**23 07 57.4**	**+0.7**
	comp=Z,5.2nm,0.8s								
KIEV	**Kiev**	**74.51**	**323**	*i* P			**P**	**23 07 58.2**	**+1.4**
KIEV					pmax	pmax			
	comp=Z,3.0nm,1.2s								
R11A	**Troy Canyon, C**	**74.78**	**53**	*e*P			**P**	**23 07 59.6**	**+0.6**
	comp=Z,3.3nm,1.1s		

	5.9nm,0.6s,baz=266,slow=7.8,SNR=6.7							
STKA	**Stephens Creek**	**45.22**	**157**	P	**P**		**23 08 15.9**	**+0.3**
	4.6nm,0.7s,baz=329,slow=7.7,SNR=8.8							
STKA	**Stephens Creek**	**45.22**	**157**	*e*P	**P**		**23 08 15.9**	**+0.3**
	9.2nm,1.9s							
MK01	**Makanchi Array**	**50.20**	**325**	*e*P	**P**		**23 08 55.1**	**+1.0**
MK32	**Makanchi Array**	**50.21**	**325**	*e*P	**P**		**23 08 55.4**	**+1.1**
MKAR	**Makanchi Array**	**50.21**	**325**	P	**P**		**23 08 55.4**	**+1.1**
	0.6nm,0.6s,baz=132,slow=7.7,SNR=5.3							
MAKZ	**Makanchi**	**50.40**	**325**	*e*P	**P**		**23 08 57.8**	**+2.1**
	6.5nm,1.3s							
AAK	**Ala-Archa**	**53.04**	**317**	P	**P**		**23 09 17.0**	**+1.4**
	1.7nm,0.3s,baz=204,slow=1.2,SNR=3.6							
ZAA0	**Zalesovo Array**	**53.37**	**333**	*e*P	**P**		**23 09 17.4**	**-0.2**
ZALV	**Zalesovo Beam**	**53.37**	**333**	P	**P**		**23 09 17.5**	**-0.1**
	0.4nm,0.5s,baz=131,slow=5.9,SNR=3.7							
ZAA1	**Zalesovo Array**	**53.37**	**333**	*e*P	**P**		**23 09 17.5**	**-0.1**
KURBB	**Kurchatov Arra**	**54.41**	**327**	P	**P**		**23 09 26.1**	**+0.8**
	1.8nm,0.8s,baz=132,slow=6.6,SNR=7.5							
KURK	**Kurchatov**	**54.42**	**327**	*e*P	**P**		**23 09 26.5**	**+1.2**
KKAR	**Karatay Array**	**55.92**	**316**	*e*P	**P**		**23 09 37.8**	**+1.4**
	34nm,0.8s							
BVAR	**Borovoye Array**	**59.99**	**327**	P	**P**		**23 10 05.2**	**+0.4**
	0.8nm,0.8s,baz=120,slow=8.5,SNR=5.1							
BRVK	**Borovoye**	**60.06**	**327**	*e*P	**P**		**23 10 08.6**	**+3.4**
	5.1nm,1.0s							
ZRNK	**Zerenda**	**60.71**	**326**	*e*P	**P**		**23 10 10.4**	**+0.7**
	12nm,1.8s							
GEYT	**Alibeck**	**63.77**	**308**	P	**P**		**23 10 32.0**	**+1.4**
	0.7nm,0.4s,baz=126,slow=2.0,SNR=3.8							
ABKAR	**Akbulak array**	**64.81**	**320**	*e*P	**P**		**23 10 37.8**	**+0.8**
	24nm,1.1s							
AKTO	**Aktyubinsk**	**66.31**	**321**	P	**P**		**23 10 47.0**	**+0.2**
	0.9nm,0.7s,baz=109,slow=9.7,SNR=3.3							
ARU	**Arti**	**67.61**	**327**	P	**P**		**23 10 55.4**	**+0.5**
	0.8nm,0.5s,baz=87,slow=9.5,SNR=2.9							
ARU	**Arti**	**67.61**	**327**	*e*P	**P**		**23 10 55.4**	**+0.5**
	3.0nm,1.0s							
GNI	**Garni**	**74.32**	**309**	P	**P**		**23 11 37.8**	**+1.6**
	3.1nm,0.8s,baz=213,slow=8.1,SNR=4.2							
KVAR	**Kislovodsk Arr**	**75.88**	**313**	P	**P**		**23 11 45.8**	**+0.7**
	7.7nm,1.0s,baz=112,slow=5.4,SNR=5.3							
KIV	**Kislovodsk**	**75.88**	**313**	*e*P	**P**		**23 11 45.8**	**+0.7**
	6.7nm,1.0s							
OBN	**Obninsk**	**79.72**	**324**	P	**P**		**23 12 06.0**	**0.0**
	5.9nm,0.3s,baz=6.2,slow=20,SNR=3.2							
OBN	**Obninsk**	**79.72**	**324**	*e*P	**P**		**23 12 06.0**	**0.0**
	25nm,0.4s							
BR101	**Keskin Array S**	**82.87**	**309**	*e*P	**P**		**23 12 22.6**	**-0.7**
BRTR	**Keskin Array B**	**82.87**	**309**	P	**P**		**23 12 22.6**	**-0.7**
	1.3nm,0.8s,baz=108,slow=4.7,SNR=7.0							
BR231	**Keskin MP Arra**	**83.51**	**309**	*e*P	**P**		**23 12 24.1**	**-2.5**
AKASG	**Malin Array Be**	**84.55**	**320**	P	**P**		**23 12 31.2**	**-0.3**
	2.0nm,0.6s,baz=72,slow=4.7,SNR=11							
AKBB	**Malin Array Si**	**84.55**	**320**	*e*P	**P**		**23 12 31.2**	**-0.3**
	4.5nm,0.6s							
FIA0	**FINESS Array S**	**84.57**	**331**	*e*P	**P**		**23 12 31.2**	**-0.2**
FINES	**FINESS Array B**	**84.57**	**331**	P	**P**		**23 12 31.2**	**-0.2**
	1.6nm,0.8s,baz=101,slow=7.2,SNR=3.9							
KMBO	**Kilima Mbogo**	**85.24**	**268**	P	**P**		**23 12 37.3**	**+1.3**
	0.7nm,0.3s,baz=52,slow=20,SNR=3.2							
KMBO	**Kilima Mbogo**	**85.24**	**268**	*e*P	**P**		**23 12 37.3**	**+1.3**
	30nm,1.8s							
MLR	**Muntele Rosu**	**87.60**	**316**	P	**P**		**23 12 47.3**	**+0.4**
	0.7nm,0.9s,baz=63,slow=4.5							
MLR	**Muntele Rosu**	**87.60**	**316**	*e*P	**P**		**23 12 47.3**	**+0.4**
	2.9nm,0.8s							
VNDA	**Vanda**	**89.80**	**172**	P	**P**		**23 12 56.3**	**0.0**
	2.3nm,0.9s,baz=298,slow=5.4,SNR=7.8							
VNDA				PP	**PP**		**23 16 27.3**	**-1.4**
	0.6nm,0.8s,baz=306,slow=8.0,SNR=3.9							
VNDA	**Vanda**	**89.80**	**172**	*e*P	**P**		**23 12 56.2**	**-0.1**
	2.5nm,0.9s							
VNDA				*e*PP	**PP**		**23 16 27.3**	**-1.4**
LTX	**Lajitas**	**121.23**	**47**	*e*PKPdf	**PKPdf**		**23 18 51.6**	**-0.6**
TXAR	**Lajitas Array**	**121.23**	**47**	PKP	**PKPdf**		**23 18 51.6**	**-0.6**
	0.3nm,0.8s,baz=117,slow=0.3,SNR=3.6							
PLCA	**Paso Flores**	**146.99**	**162**	PKPbc	**PKPbc**		**23 19 41.6**	**+0.2**
	9.4nm,0.9s,baz=234,slow=3.0,SNR=9.1							

JMA 11 23:01:35.3±0.1, 38.14N×143.49E, h35km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.71**	**304**	P	Pn	23 02 03.8	+1.2
OFUJ				S	Sn	23 02 24.7	+1.5
JIO	**Ouri**	**1.71**	**281**	P	Pn	23 02 03.9	+1.3
JIO				*e*S	Sn	23 02 24.9	+1.6
JMK	**Ichinoseki**	**1.96**	**295**	P	Pn	23 02 07.4	+1.4
JMK				S	Sn	23 02 31.2	+1.9
JOM	**Ohasama**	**2.17**	**308**	P	Pn	23 02 11.0	+2.0
JOM				*e*S	Sn	23 02 37.0	+2.4
JOU	**Okura**	**2.24**	**277**	P	Pn	23 02 11.8	+1.9
JOU				S	Sn	23 02 38.9	+2.7
JRG	**Rokugo**	**2.56**	**300**	P	Pn	23 02 16.5	+2.2
JFT	**Otama**	**2.57**	**257**	P	Pn	23 02 16.6	+2.1
JYK	**Kaneyama**	**2.58**	**289**	P	Pn	23 02 16.6	+2.1
JAW	**Awa shima**	**3.35**	**277**	P	Pn	23 02 27.8	+2.6
JAG	**Ashikaga**	**3.65**	**243**	P	Pn	23 02 30.6	+1.4
JAG				*e*S	Sn	23 03 12.1	+1.1
JNBK	**Urakawa-nobuka**	**4.17**	**352**	P	Pn	23 02 37.9	+1.5
JNBK				*e*S	Sn	23 03 23.8	-0.2
MAT	**Matsushiro**	**4.50**	**251**	P	Pn	23 02 44.2	+3.2
MAT				*e*S	Sn	23 03 35.2	+3.1

*ISCJB **11** 23:03:19.1±0.7, 9.50N±0.07×122.01E±0.06, h10km, mb3.7/7, Error ellipse: s-maj=10.7km s-min=8.8km az=10.5*
*IDC **11** 23:03:23.2±0.9, 9.52N×122.02E, h27km±5km, mb3.6/7, mb1 3.8/7, mb1mx3.5/52, mbtmp3.8/7, Error ellipse: s-maj=63.7km s-min=14.3km az=61.0*
ISC 11 23:03:21.7±0.7, 9.61N±0.08×122.08E±0.08, h10km, n13, σ1°91/18, mb3.8/7, 2C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**1.14**	**353**	*i*P	**Pn**	**23 03 42.6**	**-1.0**
TBP	**Tagbilaran**	**1.76**	**87**	*e*P	**Pn**	**23 03 51.5**	**-0.7**
LLP	**Lapu-Lapu**	**1.98**	**69**	*e*P	**Pn**	**23 03 54.6**	**-0.8**
LLP				*e*S	**Sn**	**23 04 20.8**	**+0.5**
CTBH	**Cotabato--PC H**	**3.20**	**138**	*e*P	**Pn**	**23 04 11.3**	**-0.8**
CMAR	**Chiang Mai Arr**	**24.08**	**294**	P	**P**	**23 08 36.0**	**-1.6**
	0.6nm,0.6s,baz=134,slow=10,SNR=4.2						
WRA	**Warramunga Arr**	**31.75**	**158**	P	**P**	**23 09 44.2**	**-2.0**
	1.3nm,0.9s,baz=332,slow=10,SNR=3.6						
WRA				pP	**sP**	**23 09 51.5**	**+1.0**
	0.7nm,0.5s,baz=342,slow=9.3,SNR=3.0						
ASAR	**Alice Springs**	**35.04**	**161**	P	**P**	**23 10 13.3**	**-1.5**
	1.8nm,0.6s,baz=339,slow=7.1,SNR=9.8						
ASAR				pP	**sP**	**23 10 22.2**	**+3.0**
	1.4nm,0.6s,baz=339,slow=7.3,SNR=5.4						
SONM	**Songino Array**	**40.34**	**344**	P	**P**	**23 10 58.7**	**-0.8**
	0.6nm,0.8s,baz=162,slow=10.0,SNR=2.7						
MKAR	**Makanchi Array**	**50.12**	**325**	P	**P**	**23 12 17.0**	**-0.1**
	0.7nm,0.9s,baz=126,slow=7.3,SNR=3.1						
MKAR				pP	**sP**	**23 12 24.9**	**+3.3**
	1.0nm,0.8s,baz=133,slow=8.5,SNR=4.5						
BVAR	**Borovoye Array**	**59.90**	**327**	pP	pP	23 13 34.1	+3.1
	1.2nm,0.9s,baz=117,slow=8.5,SNR=4.6						
BRTR	**Keskin Array B**	**82.75**	**309**	P	**P**	**23 15 45.5**	**-0.9**
	0.4nm,0.6s,baz=99,slow=8.9,SNR=3.5						
BRTR				pP	**PcP**	**23 15 54.8**	**+3.5**
	0.5nm,0.6s,baz=93,slow=4.4,SNR=3.4						
AKASG	**Malin Array Be**	**84.45**	**320**	P	**P**	**23 15 52.9**	**-1.7**
	0.2nm,0.2s,baz=69,slow=5.1,SNR=4.6						
AKASG				pP	**sP**	**23 16 01.3**	**+2.2**
	0.3nm,0.3s,baz=73,slow=4.2,SNR=2.8						
PLCA	**Paso Flores**	**147.04**	**162**	PKPbc	**PKPdf**	**23 23 03.9**	**+0.6**
	1.6nm,0.7s,baz=248,slow=2.1,SNR=3.0						

*NEIC **11** 23:04:51.9±0.2, 9.53N×122.33E, h10km, mb4.9/33, Error ellipse: s-maj=5.7km s-min=4.1km az=85.0*
NEIC Felt [II PIVS] at Sipalay. Also felt at Dumaguete and Zamboanguita.
*MOS **11** 23:04:52.3±1.0, 9.58N×122.37E, h24km, mb5.0/30, Error ellipse: s-maj=12.4km s-min=5.9km az=115.9*
*MAN **11** 23:04:53, 9.49N×122.03E, h22km, mb4.6, ML3.5, MS3.4*
MAN INTENSITY II - SIPALAY CITY NEGROS OCCIDENTAL.
*ISCJB **11** 23:04:54.6±0.5, 9.49N±0.03×122.24E±0.03, h41km±5km, mb4.7/91, MS4.4/2, Error ellipse: s-maj=4.8km s-min=4.3km az=21.4*
*IDC **11** 23:04:54.9±0.6, 9.56N×122.29E, h27km±3km, mb4.3/36, mb1 4.4/36, mb1mx4.3/48, mbtmp4.5/36, Error ellipse: s-maj=17.7km s-min=9.0km az=70.0*
*BJI **11** 23:04:56.0, 9.60N×122.30E, h35km, mb4.6/39, mB5.1/18, Ms4.5/16, Ms7 4.3/15*
*KLM **11** 23:05:08.2, 9.06N×121.38E, h35km, mb4.8, ML4.2, MS5.9*
*DJA **11** 23:05:20.2±0.8, 9.1N±8.2×126.0E±1.0°, h10km, M4.9/4, mb5.3/4, mB5.9/3, MLv4.6/2, Mw(mB)5.5/3*
ISC 11 23:04:54.6±0.5, 9.50N±0.03×122.29E±0.04, h27km±3km, h26km:pP-P, n232, σ1°25/253, mb4.7/91, MS4.5/3, 35C-11D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.95**	**100**	*i* P	**Pn**	**23 05 08.2**	**-4.0**
SNPH				*i* S	**Sb**	**23 05 23.8**	**-0.8**
JAP	**San Jose, Anti**	**1.28**	**345**	*e*P	**Pn**	**23 05 15.2**	**-1.5**
TBP	**Tagbilaran**	**1.56**	**83**	*e*P	**Pb**	**23 05 23.4**	**+0.5**
IPIL	**Ipil**	**1.73**	**171**	*e*P	**Pn**	**23 05 22.8**	**-0.1**
IPIL				*e*S	**Sn**	**23 05 45.0**	**+0.9**
LLP	**Lapu-Lapu**	**1.84**	**64**	*e*P	**Pb**	**23 05 26.7**	**-0.9**
LLP				*e*S	**Sb**	**23 05 53.2**	**+3.1**
CGP	**Cagayan de Oro**	**2.59**	**113**	*e*P	**Pb**	**23 05 37.7**	**-2.7**
CGP				*e*S	**Sb**	**23 06 13.0**	**+1.1**
CTBH	**Cotabato--PC H**	**2.98**	**139**	*e*P	**Pn**	**23 05 42.6**	**+2.5**
CTBH				*i* S	**Sn**	**23 06 10.4**	**-4.6**
PLP	**Palo**	**3.12**	**58**	*i*P	**Pn**	**23 05 44.1**	**+2.1**
PLP				*i* S	**Sn**	**23 06 20.9**	**+2.5**
PPR	**Puerto Princes**	**3.52**	**275**	*e*P	**Pn**	**23 05 44.2**	**-3.4**
PPR				*e*S	**Sn**	**23 06 23.9**	**-4.4**
DAV	**Davao City (W)**	**4.05**	**126**	Pg	Pb	23 06 11.0	+5.7
	52nm,0.3s,baz=96,slow=15,SNR=4.3						
DAV	**Davao City (W)**	**4.05**	**126**	*e*Pb	Pb	23 06 11.0	+5.7
MYLDM	**Lahad Datu**	**5.71**	**221**	P	**Pn**	**23 06 18.8**	**+1.1**
MYLDM	**Lahad Datu**	**5.71**	**221**	*e*Pn	**Pn**	**23 06 19.2**	**+1.6**
KDM	**Kudat**	**5.98**	**245**	P	**Pn**	**23 06 20.8**	**-0.6**
SDKM	**Sandakan**	**6.34**	**233**	P	**Pn**	**23 06 24.5**	**-1.9**
TSM	**Tawau**	**6.78**	**221**	P	**Pn**	**23 06 32.6**	**+0.2**
KKM	**Kota Kinabalu**	**6.93**	**241**	P	**Pn**	**23 06 33.8**	**-0.7**
KKM	**Kota Kinabalu**	**6.93**	**241**	*e*Pn	**Pn**	**23 06 33.5**	**-1.1**
LUWI	**Luwuk**	**10.49**	**177**	*e*Pn	Pn	23 07 28.6	+5.3
LUWI				*e*Sn	**Sn**	**23 09 23.2**	**+3.2**
BTM	**Bintulu**	**11.08**	**236**	P	**Pn**	**23 07 31.0**	**-0.5**
SBUM	**Sibu**	**12.22**	**236**	P	**Pn**	**23 07 47.0**	**0.0**
SBUM	**Sibu**	**12.22**	**236**	*e*Pn	**Pn**	**23 07 47.0**	**0.0**
STKI	**Sintang**	**14.27**	**230**	P	**P**	**23 08 24.7**	**+2.7**
KSM	**Kuching**	**14.34**	**237**	P	**Pn**	**23 08 15.3**	**-0.7**
KSM	**Kuching**	**14.34**	**237**	*e*Pn	**Pn**	**23 08 15.7**	**-0.3**
GZH	**Guangzhou**	**15.99**	**329**	*e*P	**P**	**23 08 46.6**	**+5.5**
UBPT	**Khong Chiam**	**17.40**	**291**	P	**P**	**23 08 58.8**	**+2.1**
	56nm,1.0s,787nm						
SKNT	**Sakolnakorn**	**19.30**	**295**	P	**Pn**	**23 09 18.8**	**0.0**
	40nm,1.0s						
KTGM	**Kuala Trenggan**	**19.44**	**259**	P	**Pn**	**23 09 20.9**	**+0.4**
CHBT	**CHBT**	**19.85**	**281**	P	**Pn**	**23 09 25.4**	**+0.1**
	74nm,1.0s						
MYKOM	**Kota Tinggi**	**19.87**	**248**	P	**Pn**	**23 09 25.8**	**+0.2**
MYKOM	**Kota Tinggi**	**19.87**	**248**	*e*P	**P**	**23 09 24.0**	**+0.1**
	40nm,1.2s						
KHON	**Khomkaen**	**20.14**	**292**	P	Pn	23 09 28.2	-0.6
	24nm,0.9s						
KGM	**Kluang**	**20.27**	**250**	P	Pn	23 09 30.4	-0.1
SRAK	**Srakaew**	**20.32**	**285**	P	Pn	23 09 31.3	+0.4
	49nm,1.1s						
NONG	**Nongkai**	**20.43**	**297**	P	Pn	23 09 32.4	+0.2
	19nm,0.9s						
CHAI	**Chaiyaphum**	**20.79**	**290**	P	**P**	**23 09 34.5**	**+0.6**
	14nm,0.9s						
IPM	**Ipoh**	**21.68**	**258**	P	**P**	**23 09 45.1**	**+1.6**
IPM	**Ipoh**	**21.68**	**258**	*e*P	**P**	**23 09 45.1**	**+1.6**
	23nm,0.8s						
PBKT	**Sadao Pong**	**21.91**	**291**	P	**P**	**23 09 47.2**	**+1.3**
	19nm,1.0s						
WHN	**Wuhan**	**22.21**	**342**	P	**P**	**23 09 51.6**	**+2.6**
CISI	**Cisompet, Garu**	**22.25**	**221**	*e*P	**P**	**23 09 47.9**	**-1.8**
	68nm,1.1s						
GYA	**Guiyang**	**22.43**	**321**	*e*P	**P**	**23 09 52.0**	**+0.4**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
UTTA	**Uttaradit**	**22.64**	**294**	P	P	23 10 02.6	+8.9
	4.0nm,1.0s						
LAMP	**Lampang**	**23.72**	**295**	P	P	23 10 14.3	+10
UMPA	**Umpang Tak**	**23.78**	**289**	P	P	23 10 14.2	+9.0
MTN	**Manton Dam**	**23.88**	**158**	*e*P	**P**	**23 10 05.2**	**-0.8**
	203nm,1.9s						
PSI	**Prapat**	**24.15**	**255**	*e*P	**P**	**23 10 09.1**	**+0.2**
PSI				pmax	pmax		
	comp=Z,35nm,0.9s						
PSI	**Prapat**	**24.15**	**255**	*e*P	**P**	**23 10 09.1**	**+0.2**
	comp=Z,35nm,0.9s						
KMI	**Kunming**	**24.23**	**312**	P	**P**	**23 10 13.9**	**+4.3**
KMI				pP	sP	23 10 19.1	-1.7
KMI				sP	pP	23 10 22.4	+4.9
KMI				pmax	pmax		
	comp=Z,5.0nm,0.7s						
CM01	**Chiang Mai Arr**	**24.29**	**294**	*e*P	**P**	**23 10 09.4**	**-0.5**
CM31	**Chiang Mai Arr**	**24.32**	**294**	*e*P	**P**	**23 10 09.6**	**-0.6**
CMAR	**Chiang Mai Arr**	**24.32**	**294**	P	**P**	**23 10 09.6**	**-0.6**
	comp=Z,2.1nm,0.8s,baz=127,slow=7.8,SNR=11						
CMAR				pP	**pP**	**23 10 18.0**	**-0.1**
	comp=Z,9.5nm,0.9s,baz=121,slow=8.2,SNR=9.7						
CMMT	**Chiang Mai**	**24.42**	**295**	P	P	23 10 18.8	+7.6
GSI	**Gunungsitoli**	**25.90**	**253**	*e*P	**P**	**23 10 24.4**	**-0.2**
	comp=Z,76nm,0.9s						
CD2	**Chengdu**	**27.41**	**324**	*e*P	**P**	**23 10 38.0**	**-0.1**
CD2				pP	sP	23 10 47.8	-1.6
CD2				sP	pP	23 10 52.3	+6.2
CD2				S	**S**	**23 15 17.1**	**+0.2**
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.2s						
FITZ	**Fitzroy Crossi**	**27.63**	**173**	P	**P**	**23 10 40.7**	**+0.6**
	comp=Z,4.3nm,0.7s,baz=355,slow=6.2,SNR=5.7						
FITZ	**Fitzroy Crossi**	**27.63**	**173**	*e*P	**P**	**23 10 40.6**	**+0.6**
	comp=Z,85nm,1.8s						
KS15	**Wonju Array Si**	**28.27**	**9**	*e*P	**P**	**23 10 45.8**	**+0.1**
KS15				*e*PcP	**PcP**	**23 13 59.2**	**+0.6**
KSAR	**Wonju Array Be**	**28.27**	**9**	P	**P**	**23 10 45.8**	**+0.1**
KSAR	**Wonju Array Be**	**28.27**	**9**	P	**P**	**23 10 45.8**	**+0.1**
KSRS	**Korea Array**	**28.29**	**9**	P	**P**	**23 10 45.8**	**0.0**
	comp=Z,2.2nm,0.8s,baz=183,slow=12,SNR=6.2						
KSRS				PcP	**PcP**	**23 13 59.2**	**+0.6**
	comp=Z,1.4nm,0.6s,baz=193,slow=1.3,SNR=4.1						
MAJO	**Matsushiro**	**30.55**	**26**	*i* P	**P**	**23 11 05.0**	**-0.9**
MAJO				pmax	pmax		
	comp=Z,25nm,1.0s						
MBWA	**Marble Bar**	**30.57**	**185**	*e*P	**P**	**23 11 04.1**	**-2.1**
	comp=Z,126nm,2.0s						
BJI	**Beijing**	**30.89**	**351**	P	**P**	**23 11 09.5**	**+0.6**
BJI				S	**S**	**23 16 11.5**	**+0.2**
BJI				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BJI				LR	LR		
	comp=Z,250nm,12.1s						
BJI				LR	LR		
	comp=Z,320nm,15.6s						
BJI				LR	LR		
	comp=Z,400nm,21.8s						
WRAB	**Tennant Creek**	**31.57**	**158**	*e*P	**P**	**23 11 15.0**	**-0.1**
WRAB				pmax	pmax		
	comp=Z,16nm,1.1s						
WRAB	**Tennant Creek**	**31.57**	**158**	*e*P	**P**	**23 11 15.0**	**-0.1**
	comp=Z,16nm,1.1s						
WR1	**Warramunga Arr**	**31.57**	**158**	*e*P	**P**	**23 11 14.6**	**-0.5**
	comp=Z,46nm,1.6s						
WR1				*e*PcP	**PcP**	**23 14 07.2**	**-0.2**
WRA	**Warramunga Arr**	**31.57**	**158**	P	**P**	**23 11 14.6**	**-0.5**
	comp=Z,6.4nm,0.6s,baz=340,slow=9.5,SNR=22						
WRA				PcP	**PcP**	**23 14 07.2**	**-0.2**
	comp=Z,6.5nm,0.7s,baz=342,slow=3.1,SNR=21						
WB2	**Warramunga Arr**	**31.58**	**158**	*e*P	**P**	**23 11 15.2**	**+0.1**
HHC	**Hu-ho-hao-te**	**32.63**	**345**	*e*P	**P**	**23 11 26.5**	**+2.2**
HHC				pmax	pmax		
	comp=Z,11nm,1.0s						
CN2	**Changchun**	**34.28**	**4**	*e*P	**P**	**23 11 41.4**	**+2.9**
AS31	**Alice Springs**	**34.87**	**161**	*e*P	**P**	**23 11 44.6**	**+0.8**
	comp=Z,5.5nm,0.6s						
AS31				*e*PcP	**PcP**	**23 14 16.5**	**-0.1**
ASAR	**Alice Springs**	**34.87**	**161**	P	**P**	**23 11 44.7**	**+0.9**
	comp=Z,13nm,0.6s,baz=343,slow=7.5,SNR=60						
ASAR				PcP	**PcP**	**23 14 16.5**	**-0.1**
	comp=Z,5.9nm,0.7s,baz=346,slow=2.2,SNR=20						
AS01	**Alice Springs**	**34.88**	**161**	*e*P	**P**	**23 11 44.3**	**+0.4**
AS01				*e*PcP	**PcP**	**23 14 16.2**	**-0.4**
MDJ	**Mudanjiang**	**35.55**	**9**	P	**P**	**23 11 50.2**	**+0.8**
MDJ				pmax	pmax		
	comp=Z,20nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,470nm,14.2s						
MDJ	**Mudanjiang**	**35.55**	**9**	*e*P	**P**	**23 11 50.2**	**+0.8**
	comp=Z,20nm,0.9s						
USRK	**Ussuriysk Ar.**	**35.58**	**12**	P	**P**	**23 11 50.1**	**+0.5**
	comp=Z,8.8nm,0.8s,baz=201,slow=8.4,SNR=16						
GTA	**Gaotai**	**35.91**	**330**	*e*P	**P**	**23 11 53.4**	**+0.6**
GTA				pP	sP	23 12 03.2	-0.9
GTA				sP	pP	23 12 07.1	+6.2
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ASAJ	**Asahikawa**	**38.73**	**24**	*e*P	**P**	**23 12 16.9**	**+0.5**
	comp=Z,20nm,1.2s						
KLR	**Kul'dur**	**40.38**	**10**	P	**P**	**23 12 30.3**	**+0.2**
	comp=Z,3.0nm,0.6s,baz=211,slow=4.2,SNR=13						
KLR				PcP	**PcP**	**23 14 33.2**	**+0.2**
	comp=Z,3.6nm,0.8s,baz=248,slow=1.8,SNR=5.7						
KLR	**Kul'dur**	**40.38**	**10**	*ce*P	**P**	**23 12 30.6**	**+0.5**
FORT	**Forrest**	**40.43**	**172**	*e*P	**P**	**23 12 31.6**	**+0.8**
	comp=Z,228nm,0.6s						
SONA0	**Songino Array**	**40.50**	**343**	*e*P	**P**	**23 12 31.0**	**-0.3**
	comp=Z,7.8nm,1.1s						
SONM	**Songino Array**	**40.50**	**343**	P	**P**	**23 12 31.0**	**-0.3**
	comp=Z,3.9nm,0.8s,baz=166,slow=8.7,SNR=19						
SONA1	**Songino Array**	**40.51**	**344**	*e*P	**P**	**23 12 30.9**	**-0.4**
YSS	**Yuzh-Sakhalins**	**41.18**	**21**	*e*P	**P**	**23 12 37.8**	**+1.0**
YSS				pmax	pmax		
	comp=Z,6.0nm,0.6s						
NWAO	**Narrogin (SRO)**	**42.47**	**186**	P	**P**	**23 12 48.5**	**+1.0**
	comp=Z,13nm,0.7s,baz=260,slow=6.9,SNR=9.5						
HYB	**Hyderabad**	**43.17**	**285**	*i* P	P	23 13 02.5	+9.0
ZAK	**Zakamensk**	**43.69**	**342**	*e*P	**P**	**23 12 54.6**	**-2.7**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
BBOO	**Buckleboo**	**44.08**	**163**	*e*P	**P**	**23 13 01.2**	**+0.7**
	comp=Z,22nm,0.9s						
EIDS	**Eidsvold**	**44.59**	**142**	*e*P	**P**	**23 13 02.7**	**-1.9**
	comp=Z,9.8nm,0.9s						
KWAJ	**Kwajalein Atol**	**44.73**	**87**	*e*P	**P**	**23 13 03.7**	**-2.3**
KWAJ	**Kwajalein Atol**	**44.73**	**87**	*e*P	**P**	**23 13 03.6**	**-2.3**
	comp=Z,128nm,0.9s						
TLY	**Talaya**	**44.74**	**344**	P	**P**	**23 13 05.9**	**+0.4**
	comp=Z,2.3nm,0.6s,baz=195,slow=8.5,SNR=3.4						
TLY	**Talaya**	**44.74**	**344**	*e*P	**P**	**23 13 05.7**	**+0.1**
TLY				pmax	pmax		
	comp=Z,5.0nm,0.9s						
STKA	**Stephens Creek**	**45.10**	**157**	P	**P**	**23 13 09.2**	**+0.6**
	comp=Z,8.8nm,0.7s,baz=330,slow=7.3,SNR=17						
STKA				PcP	**PcP**	**23 14 49.2**	**+0.2**
	comp=Z,3.4nm,0.7s,baz=348,slow=3.7,SNR=3.5						
STKA	**Stephens Creek**	**45.10**	**157**	*e*P	**P**	**23 13 09.3**	**+0.6**
STKA				*e*		23 14 49.2	
STKA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
STKA	**Stephens Creek**	**45.10**	**157**	*e*P	**P**	**23 13 09.3**	**+0.6**
	comp=Z,1.9nm,0.7s						
STKA				*e*PcP	**PcP**	**23 14 49.2**	**+0.2**
WMQ	**Urumqi**	**45.50**	**325**	*e*P	**P**	**23 13 12.3**	**+0.5**
WMQ				pP	sP	23 13 23.7	+0.5
WMQ				pmax	pmax		
	comp=Z,11nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,140nm,3.6s						
WMQ				LR	LR		
	comp=

ZRNK pmax pmax
comp=Z,5.0nm,0.9s
ZRNK Zerenda 60.83 326 *e*P **P 23 15 04.2 -0.2**
comp=Z,5.2nm,0.9s
TIXI Tiksi 62.23 2 P **P 23 15 12.1 -1.4**
comp=Z,5.8nm,0.7s,baz=147,slow=4.3,SNR=6.1
TIXI Tiksi 62.23 2 *j*/*i*P **P 23 15 12.0 -1.4**
TIXI pmax pmax
comp=Z,5.0nm,0.7s
TIXI Tiksi 62.23 2 *e*P **P 23 15 12.4 -1.1**
NRIK Noril'sk 63.83 347 P **P 23 15 23.8 -0.4**
comp=Z,9.3nm,0.8s,baz=131,slow=6.0,SNR=11
GEYT Alibeck 63.88 308 P **P 23 15 26.1 +0.9**
comp=Z,1.5nm,0.7s,baz=134,slow=6.4,SNR=4.7
GEYT pP **pP 23 15 34.7 +1.1**
comp=Z,2.8nm,0.6s,baz=95,slow=6.7,SNR=7.0
ABKAR Akbulak array 64.92 320 *e*P **P 23 15 31.7 0.0**
comp=Z,53nm,1.0s
BILL Bilibino 65.23 17 *e*P **P 23 15 32.4 -1.0**
BILL *i* 23 16 06.4
BILL pmax pmax
comp=Z,6.0nm,1.1s
AKTO Aktyubinsk 66.42 321 P **P 23 15 41.4 -0.1**
comp=Z,2.2nm,0.6s,baz=97,slow=7.4,SNR=10
SVE Sverdlovsk 66.76 328 *e*P **P 23 15 42.6 -0.8**
SVE pmax pmax
comp=Z,7.0nm,0.9s
ARU Arti 67.73 327 P **P 23 15 48.7 -0.9**
comp=Z,2.2nm,0.6s,baz=106,slow=5.4,SNR=6.4
ARU Arti 67.73 327 *e*P **P 23 15 48.6 -0.9**
ARU pmax pmax
comp=Z,4.0nm,0.9s
ARU Arti 67.73 327 *e*P **P 23 15 48.6 -0.9**
comp=Z,4.2nm,0.9s
GNI Garni 74.43 309 P **P 23 16 33.4 +2.7**
comp=Z,4.1nm,0.7s,baz=163,slow=9.0,SNR=4.5
GNI Garni 74.43 309*c* *i*P **P 23 16 32.5 +1.7**
GNI pmax pmax
comp=Z,35nm,1.3s
NCK Nalchik 75.33 312 *e*P **P 23 16 36.5 +0.8**
NCK pmax pmax
comp=Z,14nm,1.3s
KBZ Khabaz 75.84 313 P **P 23 16 38.9 +0.3**
comp=Z,3.0nm,0.8s,baz=166,slow=4.2,SNR=3.9
KVAR Kislovodsk Arr 75.99 313 P **P 23 16 40.5 +0.9**
comp=Z,6.7nm,0.8s,baz=211,slow=7.9,SNR=6.6
KIV Kislovodsk 75.99 313 *e*P **P 23 16 40.3 +0.7**
KIV pmax pmax
comp=Z,14nm,1.1s
KIV Kislovodsk 75.99 313 *e*P **P 23 16 41.0 +1.4**
comp=Z,11nm,0.9s
VRH Novokhoyorsk 76.75 320 *e*P **P 23 16 42.7 -0.9**
VRH pmax pmax
comp=Z,30nm,0.7s
KLMR Klimovskoe 78.24 330 *e*P **P 23 16 49.9 -1.8**
KLMR pmax pmax
comp=Z,9.0nm,0.9s
VSR Storozhevoye 78.36 320 *e*P **P 23 16 50.8 -1.8**
VSR pmax pmax
comp=Z,10.0nm,0.8s
ANN Anapa 79.74 314 *e*P **P 23 16 58.9 -1.3**
ANN *e**PP **PcP 23 17 08.2 +0.3**
ANN *e* 23 20 04.0
ANN *e*S **S 23 27 00.6 -0.7**
ANN pmax pmax
comp=Z,15nm,1.1s
OBN Obninsk 79.83 324 *i* P **P 23 16 59.5 -1.0**
OBN *i* 23 17 07.4
OBN pmax pmax
comp=Z,8.0nm,0.9s
ILAR Eielson Array 81.83 26 P **P 23 17 09.3 -1.7**
comp=Z,0.7nm,0.7s,baz=247,slow=4.5,SNR=5.4
ILB Eielson Array 81.83 26 *e*P **P 23 17 09.3 -1.7**
HDA Harding Lake 81.83 26 *e*P **P 23 17 12.0 +0.9**
comp=Z,96nm,1.6s
BR101 Keskin Array S 82.97 309 *e*P **P 23 17 17.6 -0.2**
BR101 *e*pP **pP 23 17 27.0 +0.6**
BR131 Keskin Array S 82.97 309 *e*P **P 23 17 17.6 -0.2**
BRTR Keskin Array B 82.97 309 P **P 23 17 17.6 -0.2**
comp=Z,2.2nm,0.7s,baz=111,slow=5.0,SNR=13
BRTR pP **pP 23 17 27.0 +0.6**
comp=Z,1.7nm,0.6s,baz=120,slow=7.3,SNR=6.5
ARCES ARCESS Array B 83.54 339 P **P 23 17 20.0 +0.1**
comp=Z,5.9nm,0.9s,baz=96,slow=7.4,SNR=7.0
ARCES ARCESS Array B 83.54 339 P **P 23 17 20.0 +0.1**
BR231 Keskin MP Arra 83.62 309 *e*P **P 23 17 18.3 -2.8**
SPITS Spitsbergen Ar 83.99 348 P **P 23 17 22.0 -0.1**
comp=Z,12nm,0.9s,baz=108,slow=11,SNR=7.5
SPITS Spitsbergen Ar 83.99 348 P **P 23 17 22.0 -0.1**
AKASG Malin Array Be 84.66 320 P **P 23 17 24.9 -1.0**
comp=Z,6.7nm,0.6s,baz=69,slow=5.0,SNR=16
AKASG pP **pP 23 17 33.6 -1.0**
comp=Z,4.0nm,0.7s,baz=71,slow=4.8,SNR=5.2
AKBB Malin Array Si 84.66 320 *e*P **P 23 17 25.0 -0.9**
AKBB *e**PP **pP 23 17 33.6 -1.0**
AKBB Malin Array Si 84.66 320 *e*P **P 23 17 24.9 -0.9**
AKBB *e*pP **pP 23 17 33.6 -1.0**
FIA1 FINESS Array S 84.69 331 *e*P **P 23 17 24.9 -1.0**
FIA0 FINESS Array S 84.69 331 *e*P **P 23 17 24.8 -1.0**
FIA0 FINESS Array S 84.69 331 *e*P **P 23 17 24.8 -1.0**
FINES FINESS Array B 84.69 331 P **P 23 17 24.8 -1.0**
comp=Z,2.9nm,0.5s,baz=52,slow=5.7,SNR=20
AK11 Malin Array Si 84.70 320 *e*P **P 23 17 25.1 -1.0**
MICGM Minsk 84.89 324 *e* **P 23 17 27.0 0.0**
MNK Minsk 84.89 324 *e*P **P 23 17 27.0 0.0**
DAWY Dawson 85.15 26 *e*P **P 23 17 28.7 +0.5**
comp=Z,3.9nm,0.9s
KMBO Kilima Mbogo 85.29 268 P **P 23 17 31.2 +1.1**
comp=Z,0.8nm,0.2s,baz=57,slow=21,SNR=3.6
KMBO Kilima Mbogo 85.29 268 *e*P **P 23 17 31.2 +1.1**
KMBO pmax pmax
comp=Z,6.0nm,1.1s
KMBO Kilima Mbogo 85.29 268 *e*P **P 23 17 31.2 +1.1**
comp=Z,6.2nm,1.1s
SORM Soroca 85.62 318↑ *j*/*i*P **P 23 17 30.0 -0.8**
SORM Soroca 85.62 318 ↑↑P **P 23 17 30.0 -0.8**
TIRR Tirgusor 86.17 314↑ *j*/*i*P **P 23 17 33.3 -0.3**
TIRR Tirgusor 86.17 314 ↑↑P **P 23 17 33.3 -0.3**
CFR Carcaliu 86.25 315↑ *j*/*i*P **P 23 17 33.7 -0.2**
CFR Carcaliu 86.25 315 ↑↑P **P 23 17 33.7 -0.2**
INK Inuvik 86.42 21 P **P 23 17 34.4 +0.1**
comp=Z,5.6nm,1.0s,baz=266,slow=11,SNR=7.1
INK Inuvik 86.42 21 *e*P **P 23 17 34.5 +0.1**
INK pmax pmax
comp=Z,7.0nm,1.0s
INK Inuvik 86.42 21 *e*P **P 23 17 34.5 +0.1**
comp=Z,7.4nm,1.0s
TESR Tescani 87.04 317↑ *j*/*i*P **P 23 17 37.5 -0.3**
PLOR Plostina 87.16 316↑ *j*/*i*P **P 23 17 38.3 -0.2**
PLOR Plostina 87.16 316 ↑↑P **P 23 17 38.3 -0.2**
MLR Muntele Rosu 87.71 316 P **P 23 17 41.2 -0.1**
comp=Z,0.8nm,0.6s,baz=282,slow=2.7,SNR=8.5
MLR Muntele Rosu 87.71 316↑ *j*/*i*P **P 23 17 41.3 +0.1**
MLR Muntele Rosu 87.71 316 *e*P **P 23 17 41.4 +0.1**
MLR pmax pmax
comp=Z,7.0nm,1.1s
MLR Muntele Rosu 87.71 316 *e*P **P 23 17 41.4 +0.1**
comp=Z,6.7nm,1.1s
DRGR 89.63 317↑ *j*/*i*P **P 23 17 50.0 -0.2**
DRGR 89.63 317 ↑↑P **P 23 17 50.0 -0.2**
VNDA Vanda 89.69 172 P **P 23 17 49.6 0.0**
comp=Z,5.1nm,1.0s,baz=318,slow=6.6,SNR=17
VNDA Vanda 89.69 172 *e*P **P 23 17 50.0 +0.3**
VNDA pmax pmax
comp=Z,10.0nm,1.4s
VNDA Vanda 89.69 172 *e*P **P 23 17 50.0 +0.3**
comp=Z,9.7nm,1.4s
CRVS Cervenica-Dubn 89.94 320 *e*P **P 23 17 52.2 +0.6**
CRVS Cervenica-Dubn 89.94 320 *e*P **P 23 17 52.2 +0.6**
VTS Vitosha 90.25 313 *j*/*i*P **P 23 17 52.8 -0.5**
VTS Vitosha 90.25 313 *j*P **P 23 17 52.8 -0.5**
BZS Buzias 90.65 316 *j*/*i*P **P 23 17 53.4 -1.5**
BZS Buzias 90.65 316 *j*P **P 23 17 53.4 -1.5**
KECS Kecovo 90.68 319 *e*P **P 23 17 55.2 +0.2**
KECS pmax pmax
comp=Z,2.0nm,0.9s
KECS Kecovo 90.68 319 *e*P **P 23 17 55.2 +0.2**
DAG Danmarks Havn 90.96 352 P **P 23 17 56.0 +0.3**
DAG pmax pmax
comp=Z,5.0nm,2.9s
BRG Berggiesshubel 94.00 323 *e*PKP **P 23 18 10.4 +0.1**
comp=Z,5.1nm,1.1s
BRG *e* 23 18 18.9
comp=Z,2.9nm,0.9s
BRG Berggiesshubel 94.00 323 *e*P **P 23 18 10.4 +0.1**
BRG *e* 23 18 18.9
BRG pmax pmax
comp=Z,5.0nm,1.1s
CLL Collm 94.41 324 *e*P **P 23 18 09.0 -3.1**
CLL *e* 23 18 12.0
comp=Z,3.0nm,0.9s
CLL *e* 23 18 20.0
CLL Collm 94.41 324 *e*P **P 23 18 09.0 -3.1**
CLL *e* 23 18 12.0
CLL *e* 23 18 20.0
GERES GERESS Array B 94.85 321 P **P 23 18 14.1 -0.3**
comp=Z,0.4nm,0.7s,baz=64,slow=6.1,SNR=4.5
YKA Yellowknife Ar 96.02 23 P **P 23 18 18.6 -0.7**
comp=Z,0.9nm,0.7s,baz=301,slow=4.2,SNR=4.1
YKA pP **pP 23 18 26.9 -1.1**
comp=Z,1.0nm,0.7s,baz=303,slow=4.3,SNR=2.9
YKB5 Yellowknife Ar 96.02 23 *e*P **P 23 18 18.6 -0.7**
YKB5 *e*pP **pP 23 18 26.9 -1.1**
TORD Torodi Ar. Bea 116.87 290 PP PP 23 24 46.3 -0.2
comp=Z,1.6nm,1.0s,baz=77,slow=5.6,SNR=5.1
TOA1 Torodi Ar. Sit 116.87 290 *e*PP PP 23 24 46.3 -0.2
LTX Lajitas 121.26 47 *e*PKIKP **PKPdf 23 23 46.1 +0.1**
LTX Lajitas 121.26 47 *e*PKPdf **PKPdf 23 23 46.1 +0.1**
TXAR Lajitas Array 121.26 47 PKP **PKPdf 23 23 46.1 +0.1**
comp=Z,0.6nm,0.6s,baz=108,slow=1.1,SNR=7.2
PLCA Paso Flores 146.88 162 PKPbc **PKPab 23 24 35.7 -0.5**
comp=Z,22nm,0.7s,baz=231,slow=2.7,SNR=23
PLCA Paso Flores 146.88 162 *e*PKP2 **PKPab 23 24 35.9 -0.3**
PLCA Paso Flores 146.88 162 *e*PKPbc **PKPab 23 24 35.9 -0.3**
CPUP Villa Florida 163.26 181 PKP **PKPdf 23 24 56.9 +1.4**
comp=Z,1.8nm,1.0s,baz=176,slow=5.8,SNR=3.1
CPUP PKPab **PKPab 23 25 45.8 +0.1**
comp=Z,4.8nm,1.3s,baz=126,slow=2.0,SNR=3.0
LPAZ La Paz 167.81 125 PKP **PKPdf 23 25 01.0 +0.8**
comp=Z,2.5nm,0.8s,baz=57,slow=1.6,SNR=12

*ISCJB **11** 23:10:57.2±0.5, 9.39N±0.04×121.99E±0.06, h10km, mb3.8/8, Error ellipse: s-maj=8.7km s-min=5.7km az=152.4*
*IDC **11** 23:10:57.6±1.1, 9.40N×122.02E, h0km, mb3.7/8, mb1 3.8/8, mb1mx3.6/52, mbtmp3.7/8, Error ellipse: s-maj=161.9km s-min=18.0km az=66.0*
*MAN **11** 23:10:58, 9.44N×121.94E, h92km, mb5.4, ML4.4, MS4.7*
MAN INTENSITY II - SIPALAY CITY NEGROS OCCIDENTAL.
ISC 11 23:10:58.4±0.8, **9.42N**±0.05×**122.02E**±0.07, **h10km, n15,** σ1§**21/18, mb3.8/8,2C-3D,Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**1.33**	**357**	*j*/*i*P		**Pn**	**23 11 22.1**	**-1.0**
IPIL	**Ipil**	**1.71**	**161**	*e*P		**Pb**	**23 11 28.7**	**-1.2**
IPIL				*e*S		**Sn**	**23 11 47.8**	**-2.3**
TBP	**Tagbilaran**	**1.84**	**81**	*e*P		**Pb**	**23 11 30.7**	**-1.5**
LLP	**Lapu-Lapu**	**2.12**	**65**	*e*P		**Pn**	**23 11 33.7**	**-0.2**
LLP				*e*S		**Sn**	**23 12 00.6**	**+0.2**
CTBH	**Cotabato--PC H**	**3.10**	**134**	*e*P		**Pn**	**23 11 48.2**	**+0.7**
CTBH				*i* S		**Sn**	**23 12 23.8**	**-0.8**
BUSP	**Coron**	**3.13**	**325**	*j*/*e*P		**Pn**	**23 11 46.3**	**-1.6**
BUSP				*e*S		Sn	23 11 57.5	-28
PLP	**Palo**	**3.40**	**59**	*j*/*e*P		**Pn**	**23 11 50.5**	**-1.0**
WRA	**Warramunga Arr**	**31.59**	**157**	P		**P**	**23 17 22.1**	**+0.5**
	0.4nm,0.6s,baz=337,slow=9.4,SNR=3.8							
ASAR	**Alice Springs**	**34.87**	**161**	P		**P**	**23 17 51.0**	**+0.8**
	0.4nm,0.5s,baz=341,slow=7.0,SNR=4.8							
SONM	**Songino Array**	**40.51**	**344**	P		**P**	**23 18 39.1**	**+1.3**
	0.4nm,0.5s,baz=158,slow=8.6,SNR=3.6							
MKAR	**Makanchi Array**	**50.25**	**325**	P		**P**	**23 19 55.9**	**+1.0**
	1.3nm,0.7s,baz=134,slow=8.0,SNR=11							
ZALV	**Zalesovo Beam**	**53.44**	**334**	P		**P**	**23 20 19.1**	**+0.6**
	0.6nm,0.5s,baz=128,slow=9.3,SNR=3.0							
KURBB	**Kurchatov Arra**	**54.46**	**327**	P		**P**	**23 20 27.3**	**+1.3**
	0.8nm,0.2s,baz=125,slow=6.4,SNR=4.2							
BVAR	**Borovoye Array**	**60.03**	**327**	P		**P**	**23 21 06.7**	**+1.2**
	0.4nm,0.7s,baz=88,slow=3.6,SNR=3.6							
FINES	**FINESS Array B**	**84.63**	**331**	P		**P**	**23 23 31.8**	**-0.3**
	1.1nm,0.5s,baz=60,slow=6.0,SNR=15							

*IDC **11** 23:12:28.5±0.5, 9.43N×122.20E, h0km, mb4.1/18, mb1 4.2/18, mb1mx4.0/50, mbtmp4.1/18, Error ellipse: s-maj=33.9km s-min=12.0km az=69.0*
*NEIC **11** 23:12:29.7±0.3, 9.47N×122.34E, h10km, mb4.8/9, Error ellipse: s-maj=12.5km s-min=5.0km az=70.0*
NEIC Felt [II PIVS] at Sipalay.
ISC 11 23:12:30.6±1.6, **9.48N**±0.05×**122.27E**±0.05, **h16**km±10km, **n48,** σ1§**12/57, mb4.3**/26, **4D, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**1.30**	**346**	*j*/*e*P		**Pg**	**23 12 55.3**	**-0.5**
JAP				*e*S		Sg	23 13 34.5	+22
TBP	**Tagbilaran**	**1.59**	**82**	*j*/*i*P		**Pg**	**23 13 01.5**	**+0.3**
LLP	**Lapu-Lapu**	**1.87**	**63**	*e*P		**Pb**	**23 13 04.5**	**0.0**
LLP				*e*S		**Sg**	**23 13 30.9**	**0.0**
CGP	**Cagayan de Oro**	**2.60**	**113**	*j*/*e*P		**Pb**	**23 13 15.4**	**-1.6**
CGP				*e*S		**Sn**	**23 13 45.3**	**+1.8**
PLP	**Palo**	**3.15**	**58**	*j*/*e*P		**Pn**	**23 13 21.5**	**+1.8**
PLP				*e*S		**Sn**	**23 13 52.1**	**-4.9**
MYLDM	**Lahad Datu**	**5.67**	**221**	*e*Pn		**Pn**	**23 13 54.1**	**-0.2**
SBUM	**Sibu**	**12.18**	**236**	*e*Pn		**P**	**23 15 36.7**	**+0.5**
CM31	**Chiang Mai Arr**	**24.31**	**294**	*e*P		**P**	**23 17 48.2**	**+0.4**
CMAR	**Chiang Mai Arr**	**24.31**	**294**	P		**P**	**23 17 48.2**	**+0.4**
	0.9nm,0.3s,baz=112,slow=7.3,SNR=9.2							
KS15	**Wonju Array Si**	**28.30**	**9**	*e*P		**P**	**23 18 21.3**	**-2.3**
WRAB	**Tennant Creek**	**31.55**	**158**	*e*P		**P**	**23 18 50.7**	**-1.8**
	1.9nm,0.9s							
WR1	**Warramunga Arr**	**31.56**	**158**	*e*P		**P**	**23 18 52.0**	**-0.6**
	14nm,1.3s							
WR1				*e*PcP		**PcP**	**23 21 44.7**	**-0.6**
WRA	**Warramunga Arr**	**31.56**	**158**	P		**P**	**23 18 52.0**	**-0.6**
	2.4nm,0.9s,baz=341,slow=9.2,SNR=7.2							
WRA				PcP		**PcP**	**23 21 44.7**	**-0.6**
	1.6nm,0.8s,baz=334,slow=3.0,SNR=7.3							
WB2	**Warramunga Arr**	**31.56**	**158**	*e*P		**P**	**23 18 52.5**	**-0.2**
	39nm,1.9s							
AS31	**Alice Springs**	**34.85**	**161**	*e*P		**P**	**23 19 21.2**	**-0.1**
	1.6nm,0.8s							
AS31				*e*PcP		**PcP**	**23 21 54.1**	**-0.3**
ASAR	**Alice Springs**	**34.85**	**161**	P		**P**	**23 19 21.8**	**+0.5**
	4.1nm,0.7s,baz=342,slow=7.2,SNR=27							
ASAR				PcP		**PcP**	**23 21 54.1**	**-0.3**
	1.1nm,0.7s,baz=329,slow=2.5,SNR=6.6							
AS01	**Alice Springs**	**34.86**	**161**	*e*P		**P**	**23 19 21.5**	**0.0**
USRK	**Ussuriysk Ar.**	**35.61**	**12**	P		**P**	**23 19 28.9**	**+1.3**
	3.3nm,0.8s,baz=225,slow=6.7,SNR=7.7							
KLR	**Kul'dur**	**40.41**	**10**	P		**P**	**23 20 08.9**	**+0.8**
	1.6nm,1.0s,baz=204,slow=4.7,SNR=3.7							
SONA0	**Songino Array**	**40.52**	**344**	*e*P		**P**	**23 20 09.6**	**+0.4**
	6.7nm,1.6s							
SONM	**Songino Array**	**40.52**	**344**	P		**P**	**23 20 09.6**	**+0.4**
	1.1nm,0.8s,baz=164,slow=10,SNR=7.0							
SONA1	**Songino Array**	**40.53**	**344**	*e*P		**P**	**23 20 09.7**	**+0.5**
NWAO	**Narrogin (SRO)**	**42.44**	**186**	P		**P**	**23 20 25.6**	**+0.7**
	11nm,0.8s,baz=255,slow=12,SNR=3.9							
BBOO	**Buckleboo**	**44.06**	**163**	*e*P		**P**	**23 20 36.6**	**-1.4**
	63nm,1.7s							
STKA	**Stephens Creek**	**45.09**	**157**	P		**P**	**23 20 47.0**	**+0.8**
	3.8nm,0.7s,baz=340,slow=10,SNR=7.6							
STKA				PcP		**PcP**	**23 22 26.3**	**-0.5**
	1.6nm,0.6s,baz=257,slow=7.4,SNR=3.2							
STKA	**Stephens Creek**	**45.09**	**157**	*e*P		**P**	**23 20 47.0**	**+0.8**
	7.7nm,1.8s							
STKA				*e*PcP		**PcP**	**23 22 26.3**	**-0.5**
MK01	**Makanchi Array**	**50.32**	**325**	*e*P		**P**	**23 21 27.3**	**+0.6**
MK31	**Makanchi Array**	**50.34**	**325**	*e*P		**P**	**23 21 28.5**	**+1.6**
MK32	**Makanchi Array**	**50.34**	**325**	*e*P		**P**	**23 21 28.1**	**+1.2**
MKAR	**Makanchi Array**	**50.34**	**325**	P		**P**	**23 21 28.1**	**+1.2**
	2.5nm,0.7s,baz=135,slow=9.0,SNR=16							
MKAR	**Makanchi Array**	**50.34**	**325**	*e*P		**P**	**23 21 28.5**	**+1.6**
ZALV	**Zalesovo Beam**	**53.49**	**333**	P		**P**	**23 21 50.1**	**-0.1**
	0.8nm,0.5s,baz=134,slow=7.4,SNR=4.4							
ZAA1	**Zalesovo Array**	**53.50**	**333**	*e*P		**P**	**23 21 50.1**	**-0.2**
KURBB	**Kurchatov Arra**	**54.54**	**327**	P		**P**	**23 21 58.8**	**+0.8**
	2.9nm,0.2s,baz=134,slow=6.5,SNR=8.0							
KURK	**Kurchatov**	**54.54**	**327**	*e*P		**P**	**23 21 58.7**	**+0.7**
BVAR	**Borovoye Array**	**60.12**	**327**	P		**P**	**23 22 37.6**	**+0.3**
	0.6nm,0.7s,baz=142,slow=5.3,SNR=4.0							
NRIK	**Noril'sk**	**63.85**	**347**	P		**P**	**23 23 02.8**	**+0.7**
	3.2nm,1.0s,baz=108,slow=6.3,SNR=3.6							
ABKAR	**Akbulak array**	**64.93**	**320**	*e*P		**P**	**23 23 09.9**	**+0.4**
	11nm,0.9s							
AKTO	**Aktyubinsk**	**66.43**	**321**	P		**P**	**23 23 19.4**	**+0.1**
	1.5nm,1.0s,baz=110,slow=6.1,SNR=4.4							
BR101	**Keskin Array S**	**82.97**	**309**	*e*P		**P**	**23 24 55.5**	**0.0**
BRTR	**Keskin Array B**	**82.97**	**309**	P		**P**	**23 24 55.5**	**0.0**
	1.1nm,0.8s,baz=120,slow=5.7,SNR=5.9							
AKASG	**Malin Array Be**	**84.67**	**320**	P		**P**	**23 25 02.9**	**-0.8**
	2.5nm,0.8s,baz=69,slow=4.5,SNR=6.1							
AKBB	**Malin Array Si**	**84.67**	**320**	*e*P		**P**	**23 25 02.9**	**-0.8**
	4.3nm,0.6s							
FIA0	**FINESS Array S**	**84.70**	**331**	*e*P		**P**	**23 25 03.2**	**-0.5**
FINES	**FINESS Array B**	**84.70**	**331**	P		**P**	**23 25 03.2**	**-0.5**
	1.5nm,0.7s,baz=70,slow=6.3,SNR=5.1							
VNDA	**Vanda**	**89.67**	**172**	P		**P**	**23 25 27.1**	**-0.3**
	1.0nm,0.7s,baz=302,slow=4.7,SNR=6.2							
PLCA	**Paso Flores**	**146.86**	**162**	PKPbc		**PKPab**	**23 32 13.4**	**-0.6**
	4.8nm,0.8s,baz=254,slow=4.8,SNR=5.3							
LPAZ	**La Paz**	**167.81**	**125**	PKP		**PKPdf**	**23 32 39.2**	**+1.0**
	0.9nm,0.8s,baz=27,slow=7.3,SNR=3.8							

JMA 11 23:13:47.9, 33.03N×130.74E, h11km±1km, **M1.0, Kyushu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
JNU	**Nakatsue**	**0.15**	**52**	P		Pg	23 13 51.7	+0.3
JNU				*e*S		Sg	23 13 54.2	+0.4
JNU	**Nakatsue**	**0.15**	**52**	*e*PcP		Pg	23 13 51.8	+0.5
JTA	**Tamana**	**0.19**	**249**	P		Pg	23 13 52.0	+0.1
JTA				*e*S		Sg	23 13 54.7	0.0

*ISCJB **11** 23:16:48.7±0.6, 9.40N±0.09×122.13E±0.05, h10km, mb3.8/9, Error ellipse: s-maj=12.5km s-min=7.3km az=177.2*
*MAN **11** 23:16:50, 9.54N×122.08E, h14km, mb4.3, ML3.1, MS2.9*
MAN INTENSITY II - SIPALAY CITY NEGROS OCCIDENTAL.
*IDC **11** 23:16:52.4±1.1, 9.59N×122.34E, h26km±6km, mb3.7/9, mb1 3.9/9, mb1mx3.6/50, mbtmp3.8/9, Error ellipse: s-maj=67.2km s-min=14.0km az=61.0*
ISC 11 23:16:50.7±0.7, **9.5N**±0.1×**122.20E**±0.07, **h10**km, **n12,** σ1§**88/17, mb3.8/9,1C-1D,Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.03**	**97**	*j*/*i*P		Pb	23 17 05.8	-5.0
SNPH				*i* S		**Sb**	**23 17 21.7**	**-2.8**
TBP	**Tagbilaran**	**1.66**	**82**	*j*/*e*P		**Pn**	**23 17 21.2**	**+1.3**
LLP	**Lapu-Lapu**	**1.94**	**64**	*e*P		**Pn**	**23 17 24.2**	**+0.5**
LLP				*e*S		**Sn**	**23 17 50.0**	**+1.9**
CMAR	**Chiang Mai Arr**	**24.24**	**294**	P		**P**	**23 22 08.0**	**-0.1**
	1.2nm,0.3s,baz=130,slow=9.5,SNR=5.3							
WRA	**Warramunga Arr**	**31.58**	**158**	P		**P**	**23 23 13.0**	**-0.8**
	0.6nm,0.5s,baz=340,slow=9.4,SNR=8.8							
WRA				pP		**sP**	**23 23 21.1**	**+3.1**
	0.6nm,0.5s,baz=340,slow=9.3,SNR=2.9							
WRA				PcP		**PcP**	**23 26 04.3**	**-2.0**
	0.5nm,0.6s,baz=343,slow=3.1,SNR=4.9							
ASAR	**Alice Springs**	**34.87**	**161**	P		**P**	**23 23 42.8**	**+0.3**
	3.3nm,0.6s,baz=341,slow=7.4,SNR=31							
SONM	**Songino Array**	**40.50**	**344**	P		**P**	**23 24 28.4**	**-1.6**
	0.6nm,0.7s,baz=158,slow=10.0,SNR=4.3							
STKA	**Stephens Creek**	**45.11**	**156**	P		**P**	**23 25 07.5**	**+0.1**
	2.0nm,0.7s,baz=332,slow=5.5,SNR=4.5							
MKAR	**Makanchi Array**	**50.30**	**325**	P		**P**	**23 25 46.7**	**-0.9**
	0.5nm,0.6s,baz=123,slow=8.8,SNR=5.7							
MKAR				pP		**sP**	**23 25 55.0**	**+2.9**
	0.3nm,0.6s,baz=128,slow=7.9,SNR=3.0							
BVAR	**Borovoye Array**	**60.08**	**327**	P		**P**	**23 26 57.2**	**-0.8**
	0.3nm,0.4s,baz=109,slow=10,SNR=2.9							
BRTR	**Keskin Array B**	**82.92**	**309**	P		**P**	**23 29 15.6**	**-0.7**
	0.2nm,0.4s,baz=89,slow=4.0,SNR=2.4							
BRTR				pP		**PcP**	**23 29 24.0**	**+2.9**
	0.5nm,0.8s,baz=110,slow=7.1,SNR=3.3							
VNDA	**Vanda**	**89.68**	**172**	P		**P**	**23 29 47.8**	**-0.6**
	0.7nm,0.7s,baz=311,slow=8.2,SNR=4.7							

*ISCJB **11** 23:18:44.6±0.8, 9.57N±0.06×122.16E±0.06, h10km, mb3.6/4, Error ellipse: s-maj=9.3km s-min=7.8km az=27.9*
*IDC **11** 23:18:44.5±1.3, 9.60N×122.28E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.5/52, mbtmp3.6/4, Error ellipse: s-maj=162.4km s-min=21.1km az=68.0*
*MAN **11** 23:18:46, 9.52N×122.09E, h104km, mb4.5, ML3.4, MS3.3*
ISC 11 23:18:45.5±1.0, **9.58N**±0.06×**122.29E**±0.07, **h10**km, **n9,** σ2§**00/13, mb3.6/4,2C-1D,Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.97**	**104**	*i* P		**Pg**	**23 19 02.3**	**-1.8**
SNPH				*i* S		**Sn**	**23 19 19.0**	**-0.1**
TBP	**Tagbilaran**	**1.56**	**86**	*j*/*i*P		**Pg**	**23 19 17.6**	**+2.2**
IPIL	**Ipil**	**1.81**	**171**	*j*/*e*P		**Pb**	**23 19 17.6**	**-1.0**
IPIL				*e*S		**Sn**	**23 19 39.3**	**-0.4**
LLP	**Lapu-Lapu**	**1.81**	**66**	*e*P		**Pg**	**23 19 19.8**	**-0.5**
LLP				*e*S		**Sg**	**23 19 46.4**	**+2.7**
PLP	**Palo**	**3.08**	**59**	*j*/*e*P		**Pb**	**23 19 36.3**	**-4.1**
PLP				*e*S		**Sn**	**23 20 13.3**	**+2.1**
WRA	**Warramunga Arr**	**31.65**	**158**	P		**P**	**23 25 09.5**	**+0.4**
	0.4nm,0.5s,baz=339,slow=9.3,SNR=4.8							
ASAR	**Alice Springs**	**34.94**	**161**	P		**P**	**23 25 38.8**	**+0.9**
	1.3nm,0.6s,baz=337,slow=7.0,SNR=9.3							
SONM	**Songino Array**	**40.42**	**343**	P		**P**	**23 26 24.7**	**+0.7**
	0.7nm,1.0s,baz=166,slow=7.4,SNR=2.9							
MKAR	**Makanchi Array**	**50.26**	**325**	P		**P**	**23 27 42.0**	**0.0**
	0.6nm,0.7s,baz=128,slow=7.9,SNR=4.6							

*NEIC **11** 23:26:24.2±0.3, 9.64N×122.32E, h10km, mb4.5/7, Error ellipse: s-maj=10.4km s-min=5.1km az=73.0*
*MAN **11** 23:26:24, 9.70N×122.05E, h7km, mb4.4, ML3.3, MS3.1*
*ISCJB **11** 23:26:26.4±0.3, 9.54N±0.04×122.20E±0.04, h37km, mb4.1/21, Error ellipse: s-maj=6.5km s-min=5.7km az=24.0*
*IDC **11** 23:

1.1nm,0.6s,baz=161,slow=8.7,SNR=9.1
SONA1 **Songino Array** 40.25 344 *e*P P 23 34 02.5 +0.3
BBOO **Buckleboo** 44.34 163 *e*P P 23 34 32.9 -2.6
109nm,2.0s
STKA **Stephens Creek** 45.37 157 P P 23 34 42.5 -1.2
2.9nm,0.7s,baz=331,slow=11,SNR=6.5
STKA **Stephens Creek** 45.37 157 *e*P P 23 34 42.5 -1.2
3.7nm,1.7s
MK01 **Makanchi Array** 50.03 325 *e*P P 23 35 21.3 +1.6
MK32 **Makanchi Array** 50.05 325 *e*P P 23 35 21.4 +1.6
MKAR **Makanchi Array** 50.05 325 P P 23 35 21.4 +1.6
1.2nm,0.8s,baz=122,slow=8.5,SNR=11
MKAR pP pP 23 35 29.9 -0.9
1.1nm,0.7s,baz=126,slow=7.8,SNR=6.7
ZALV **Zalesovo Beam** 53.21 333 P P 23 35 43.8 +0.5
0.9nm,0.6s,baz=140,slow=4.5,SNR=4.1
ZAA1 **Zalesovo Array** 53.21 333 *e*P P 23 35 43.8 +0.5
KURBB **Kurchatov Arra** 54.25 327 P P 23 35 52.4 +1.5
1.4nm,0.6s,baz=123,slow=8.0,SNR=12
KURK **Kurchatov** 54.26 327 *e*P P 23 35 52.4 +1.4
BVAR **Borovoye Array** 59.83 327 P P 23 36 31.6 +1.2
0.6nm,0.7s,baz=123,slow=7.8,SNR=4.4
NRIK **Noril'sk** 63.57 347 P P 23 36 56.0 +0.7
0.9nm,0.4s,baz=149,slow=5.1,SNR=3.8
GEYT **Alibeck** 63.61 307 P P 23 36 58.1 +1.8
1.2nm,0.7s,baz=133,slow=8.7,SNR=3.7
BR101 **Keskin Array S** 82.70 309 *e*P P 23 38 49.9 +0.8
BRTR **Keskin Array B** 82.70 309 P P 23 38 49.9 +0.8
0.4nm,0.5s,baz=100,slow=4.3,SNR=3.5
BRTR pP pP 23 38 58.6 -2.1
0.9nm,0.9s,baz=108,slow=4.0,SNR=3.5
AKASG **Malin Array Be** 84.38 320 P P 23 38 57.3 0.0
1.7nm,0.6s,baz=72,slow=5.2,SNR=3.8
AKBB **Malin Array Si** 84.38 320 *e*P P 23 38 57.3 0.0
4.7nm,0.9s
FIA0 **FINESS Array S** 84.41 331 *e*P P 23 38 57.7 +0.5
FINES **FINESS Array B** 84.41 331 P P 23 38 57.7 +0.5
0.7nm,0.6s,baz=35,slow=5.1,SNR=5.1
PLCA **Paso Flores** 147.14 162 PKPbc PKPbc 23 46 08.1 -0.3
4.5nm,0.8s,baz=26,slow=3.4,SNR=4.7

ISCJB ***11*** *23:29:38.1±0.5, 9.°48N±0.°05× 122.°10E±0.°06, h37km, mb3.9/8, Error ellipse: s-maj=8.5km s-min=6.8km az=167.0*

IDC ***11*** *23:29:38.7±0.9, 9.°43N× 122.°14E, h25km±5km, mb3.7/8, mb1 3.9/8, mb1mx3.7/46, mbtmp3.9/8, Error ellipse: s-maj=55.9km s-min=14.3km az=60.0*

ISC 11 23:29:39.2±0.6, **9.°49N**±0.°05×**122.°10E**±0.°06, **h37km, n22,** σ1§**71/25, mb3.9/8, 2C-4D, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.13**	**97**	*i* P			Pn	23 29 51.7	-6.9
SNPH				S			Sn	**23 30 08.1**	**-4.8**
JAP	**San Jose, Anti**	**1.26**	**353**	*e* P			**Pn**	**23 29 58.3**	**-1.9**
JAP				*e* S			Sn	23 30 52.7	+37
TBP	**Tagbilaran**	**1.75**	**83**	*e* P			**Pn**	**23 30 07.2**	**+0.2**
IPIL	**Ipil**	**1.76**	**165**	*e* P			**Pn**	**23 30 06.3**	**-0.8**
IPIL				*e* S			**Sn**	**23 30 27.8**	**-0.5**
LLP	**Lapu-Lapu**	**2.02**	**66**	*e* P			**Pn**	**23 30 10.2**	**-0.5**
LLP				*i* S			**Sn**	**23 30 36.6**	**+1.9**
BUSP	**Coron**	**3.12**	**323**	*e* P			**Pn**	**23 30 24.1**	**-1.8**
BUSP				*e* S			Sn	23 30 33.5	-28
PLP	**Palo**	**3.29**	**59**	*e* P			**Pn**	**23 30 27.0**	**-1.2**
CMAR	**Chiang Mai Arr**	**24.15**	**294**	P		P	P	**23 34 53.5**	**+1.4**
	0.5nm,0.3s,baz=122,slow=8.3,SNR=5.0								
CMAR				pP		**pP**	**pP**	**23 35 01.5**	**-1.0**
	2.2nm,0.9s,baz=119,slow=7.3,SNR=3.1								
WRA	**Warramunga Arr**	**31.64**	**158**	P		P	P	**23 35 58.8**	**-0.3**
	2.3nm,1.0s,baz=341,slow=9.4,SNR=7.7								
WRA				pP		**pP**	**pP**	**23 36 06.8**	**-2.8**
	0.5nm,0.4s,baz=332,slow=10,SNR=2.8								
WRA				PcP		**PcP**	**PcP**	**23 38 50.5**	**-0.2**
	1.4nm,0.7s,baz=335,slow=3.3,SNR=4.9								
ASAR	**Alice Springs**	**34.92**	**161**	P		P	P	**23 36 28.0**	**+0.4**
	4.3nm,0.7s,baz=342,slow=7.6,SNR=26								
ASAR				PcP		**PcP**	**PcP**	**23 38 59.9**	**0.0**
	1.6nm,0.8s,baz=353,slow=2.2,SNR=9.2								
ASAR				pPcP				23 39 08.2	
	0.8nm,0.8s,baz=349,slow=3.5,SNR=4.4								
SONM	**Songino Array**	**40.46**	**344**	P		P	P	**23 37 15.6**	**+1.2**
	0.5nm,0.8s,baz=156,slow=10,SNR=2.8								
STKA	**Stephens Creek**	**45.17**	**156**	P		P	P	**23 37 53.3**	**+0.8**
	4.5nm,0.8s,baz=333,slow=5.7,SNR=6.9								
MKAR	**Makanchi Array**	**50.23**	**325**	P		P	P	**23 38 33.5**	**+1.8**
	0.3nm,0.3s,baz=139,slow=9.5,SNR=4.5								
MKAR				pP		**pP**	**pP**	**23 38 41.1**	**-1.6**
	2.9nm,1.0s,baz=120,slow=7.3,SNR=10.0								
KURBB	**Kurchatov Arra**	**54.44**	**327**	pP		pP	pP	23 39 11.6	-2.2
	1.9nm,0.8s,baz=133,slow=6.6,SNR=2.6								
BVAR	**Borovoye Array**	**60.01**	**327**	pP		pP	pP	23 39 51.0	-2.3
	0.5nm,0.7s,baz=106,slow=7.9,SNR=3.4								
GEYT	**Alibeck**	**63.74**	**308**	pP		pP	pP	23 40 17.8	-1.0
	1.8nm,0.8s,baz=134,slow=8.6,SNR=5.7								
BRTR	**Keskin Array B**	**82.83**	**309**	P		P	P	**23 42 01.3**	**+1.1**
	0.2nm,0.6s,baz=95,slow=7.2,SNR=2.8								
BRTR				pP		**pP**	**pP**	**23 42 09.7**	**-2.2**
	0.9nm,0.8s,baz=110,slow=3.8,SNR=5.4								
AKASG	**Malin Array Be**	**84.55**	**320**	pP		pP	pP	23 42 17.2	-2.9
	2.4nm,0.6s,baz=73,slow=4.7,SNR=4.1								
MLR	**Muntele Rosu**	**87.59**	**316**	pP		pP	pP	23 42 33.0	-2.5
	0.6nm,0.7s,baz=3.5,slow=0.3,SNR=4.4								
VNDA	**Vanda**	**89.71**	**172**	P		P	P	**23 42 33.6**	**+0.7**
	1.1nm,0.9s,baz=304,slow=4.4,SNR=4.0								
PLCA	**Paso Flores**	**146.92**	**162**	PKPbc		**PKPab**	**PKPab**	**23 49 19.8**	**+0.2**
	3.5nm,0.8s,baz=91,slow=1.9,SNR=4.6								
LPAZ	**La Paz**	**167.96**	**125**	PKP		**PKPdf**	**PKPdf**	**23 49 45.2**	**+1.7**
	1.1nm,1.0s,baz=81,slow=5.2,SNR=3.7								

IDC ***11*** *23:35:19.2±1.5, 19.°64S× 169.°56E, h211km±11km, mb4.3/20, mb1 4.5/22, mb1mx4.4/33, mbtmp4.9/22, MS4.6/2, Ms1 4.6/2, ms1mx3.6/34, Error ellipse: s-maj=14.6km s-min=11.5km az=111.0*

ISCJB ***11*** *23:35:20.5±0.8, 19.°61S±0.°05× 169.°35E±0.°04, h230km±7km, mb4.7/103, Error ellipse: s-maj=7.8km s-min=5.5km az=158.5*

MOS ***11*** *23:35:21.1±1.3, 19.°63S× 169.°42E, h238km, mb4.8/20, Error ellipse: s-maj=10.5km s-min=9.2km az=164.4*

NEIC ***11*** *23:35:21.2±0.8, 19.°62S× 169.°41E, h227km±7km, mb4.8/79, Error ellipse: s-maj=6.2km s-min=4.6km az=158.0*

ISC 11 23:35:20.1±0.9, **19.°63S**±0.°07×**169.°45E**±0.°06, **h219**km±7km, **n422,** σ1§**16/389, mb4.7/103, 28C-5D, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.72**	**229**	P			**Pn**	**23 36 19.4**	**+0.2**
	30nm,0.3s,baz=60,slow=18,SNR=184								
DZM				S			**S**	**23 37 05.7**	**+0.2**
	20nm,0.3s,baz=349,slow=20,SNR=12								
DZM	**Mont Dzumac**	**3.72**	**229**	*e* Pn			**Pn**	**23 36 18.1**	**-1.1**
DZM				*e* S			**S**	**23 37 05.7**	**+0.2**
MSVF	**Nonsavu**	**8.36**	**78**	*e* P			**Pn**	**23 37 19.4**	**+1.3**
MSVF	**Nonsavu**	**8.36**	**78**	*e* Pn			**Pn**	**23 37 19.4**	**+1.3**
HNR	**Honiara**	**13.69**	**316**	P		P	P	**23 38 27.1**	**-0.2**
	14nm,0.3s,baz=191,slow=3.8,SNR=5.1								
OUZ	**Omahuta**	**15.96**	**168**	*e* P		P	P	**23 38 49.1**	**-3.1**
	208nm,1.7s								
EIDS	**Eidsvold**	**17.90**	**248**	P		P	**Pn**	**23 39 16.4**	**+0.3**
	baz=18,SNR=6.7								
ARMA	**Armidale**	**19.37**	**233**	P		P	**Pn**	**23 39 32.8**	**-0.6**
	baz=19,SNR=5.9								
ARMA	**Armidale**	**19.37**	**233**	*e* P		P	**Pn**	**23 39 31.9**	**-1.5**
	42nm,1.4s								
URZ	**Urewera**	**19.72**	**162**	*e* P		P	P	**23 39 34.9**	**+1.9**
	171nm,2.0s								
RMQ	**Roma**	**20.21**	**246**	P		P	Pn	23 39 42.3	-1.3
	baz=20,SNR=6.8								
CTA	**Charters Tower**	**21.82**	**265**	P		P	P	**23 39 56.4**	**+1.2**
	21nm,0.8s,baz=94,slow=12,SNR=15								
CTAO	**Charters Tower**	**21.82**	**265**	*e* P		P	P	**23 39 56.5**	**+1.3**
CTAO					pmax	pmax			
	comp=Z,20nm,0.8s								
CTAO	**Charters Tower**	**21.82**	**265**	*e* P		P	P	**23 39 56.5**	**+1.3**
	comp=Z,20nm,0.8s								
THZ	**Tophouse**	**22.26**	**173**	*e* P		P	P	**23 39 58.4**	**-0.6**
	comp=Z,208nm,1.8s								
KHZ	**Kahutara**	**22.98**	**172**	*e* P		P	P	**23 40 06.4**	**+1.0**
	comp=Z,251nm,2.0s								
LTZ	**Lake Taylor**	**23.20**	**175**	*e* P		P	P	**23 40 08.2**	**+0.6**
	comp=Z,71nm,1.3s								
CNB	**Canberra Magne**	**23.63**	**224**	P		P	P	**23 40 13.2**	**+1.5**
	baz=24,SNR=12								
YNG	**Young**	**23.71**	**228**	P		P	P	**23 40 13.7**	**+1.4**
	baz=24								
MTSU	**Mount Surprise**	**23.83**	**269**	P		P	P	**23 40 15.3**	**+1.8**
	baz=24,SNR=13								
PMG	**Port Moresby**	**23.83**	**292**	P		P	P	**23 40 14.5**	**+1.0**
	comp=Z,74nm,0.7s,baz=112,slow=5.3,SNR=14								
PMG					LR		LR	23 47 33.6	
	comp=Z,348nm,19.3s,baz=148,slow=31								
PMG	**Port Moresby**	**23.83**	**292**	*ce* P			P		
PMG					pmax		pmax		
	comp=Z,499nm,1.7s								
CAN	**Canberra**	**23.88**	**225**	P		P	P	**23 40 15.3**	**+1.5**
	baz=24								
CAN	**Canberra**	**23.88**	**225**	*e* P		P	P	**23 40 15.4**	**+1.5**
CAN					pmax		pmax		
	comp=Z,63nm,1.5s								
CAN	**Canberra**	**23.88**	**225**	*e* P		P	P	**23 40 15.4**	**+1.5**
	comp=Z,63nm,1.5s								
QLP	**Quilpie**	**24.18**	**249**	P		P	P	**23 40 17.6**	**+1.0**
	baz=24,SNR=10								
CMSA	**Cobar Meteorol**	**24.43**	**236**	P		P	P	**23 40 19.7**	**+0.8**
	baz=24,SNR=22								
COEN	**Coen**	**25.77**	**279**	*e* P		P	P	**23 40 31.8**	**+0.7**
	comp=Z,59nm,1.4s								
STKA	**Stephens Creek**	**27.81**	**238**	P		P	P	**23 40 50.0**	**+0.9**
	comp=Z,12nm,0.7s,baz=74,slow=9.8,SNR=28								
STKA					PcP		**PcP**	**23 43 59.8**	**+0.2**
	comp=Z,2.7nm,0.6s,baz=72,slow=3.2,SNR=4.8								
STKA	**Stephens Creek**	**27.81**	**238**	P		P	P	**23 40 50.2**	**+1.1**
	baz=28,SNR=15								
HTT	**Hallett**	**30.45**	**237**	P		P	P	**23 41 13.1**	**+0.6**
	baz=30,SNR=8.9								
BBOO	**Buckleboo**	**32.56**	**239**	P		P	P	**23 41 31.2**	**+0.4**
	baz=33,SNR=24								
BBOO	**Buckleboo**	**32.56**	**239**	*e* P		P	P	**23 41 31.4**	**+0.6**
	comp=Z,21nm,0.8s								
WB7	**Warramunga Arr**	**32.98**	**264**	P		P	P	**23 41 33.9**	**-0.7**
	baz=33								
WB2	**Warramunga Arr**	**33.00**	**263**	*e* P		P	P	**23 41 34.2**	**-0.6**
	comp=Z,44nm,1.3s								
WRAB	**Tennant Creek**	**33.00**	**263**	*ce* P			P		
WRAB					pmax		pmax		
	comp=Z,106nm,2.5s								
WRAB	**Tennant Creek**	**33.00**	**263**	*e* P		P	P	**23 41 34.4**	**-0.4**
	comp=Z,43nm,1.3s								
WR1	**Warramunga Arr**	**33.01**	**263**	*e* P		P	P	**23 41 34.2**	**-0.7**
	comp=Z,44nm,1.3s								
WR1					ePcP		**PcP**	**23 44 13.2**	**-0.2**
WRA	**Warramunga Arr**	**33.01**	**263**	P		P	P	**23 41 34.2**	**-0.7**
	comp=Z,9.7nm,0.5s,baz=96,slow=6.1,SNR=121								
WRA					PcP		**PcP**	**23 44 13.2**	**-0.2**
	comp=Z,4.7nm,0.6s,baz=96,slow=2.7,SNR=12								
AS01	**Alice Springs**	**33.19**	**257**	*e* P		P	P	**23 41 36.0**	**-0.5**
AS31	**Alice Springs**	**33.23**	**257**	*e* P		P	P	**23 41 36.9**	**0.0**
	comp=Z,38nm,0.5s								
AS31					ePcP		**PcP**	**23 44 13.3**	**-0.7**
AS31					eScP		**ScP**	**23 47 38.5**	**+0.9**
ASAR	**Alice Springs**	**33.23**	**257**	P		P	P	**23 41 36.8**	**0.0**
	comp=Z,72nm,0.6s,baz=84,slow=9.2,SNR=162								
ASAR					PcP		**PcP**	**23 44 13.3**	**-0.7**
	comp=Z,3.9nm,0.8s,baz=103,slow=3.0,SNR=8.9								
ASAR					ScP		**ScP**	**23 47 38.5**	**+0.9**
	comp=Z,0.9nm,0.5s,baz=98,slow=3.9,SNR=7.9								
GENI	**Genyem**	**33.25**	**297**	P		P	P	**23 41 38.0**	**+1.0**
MTN	**Manton Dam**	**37.34**	**274**	P		P	P	**23 42 11.9**	**0.0**
	baz=37,SNR=12								
MTN	**Manton Dam**	**37.34**	**274**	*e* P		P	P	**23 42 12.1**	**+0.2**
	comp=Z,44nm,0.6s								
FORT	**Forrest**	**38.87**	**245**	P		P	P	**23 42 24.5**	**+0.1**
	baz=39,SNR=13								
FORT	**Forrest**	**38.87**	**245**	*e* P		P	P	**23 42 24.6**	**+0.2**
	comp=Z,254nm,0.7s								
KNRA	**Kununurra**	**38.91**	**269**	P		P	P	**23 42 24.9**	**0.0**
	baz=39								
FAKI	**Fak Fak**	**39.94**	**290**	P		P	P	**23 42 33.4**	**-0.1**
FAKI	**Fak Fak**	**39.94**	**290**	*e* P		P	P	**23 42 33.3**	**-0.1**
	comp=Z,36nm,0.8s								
FITZ	**Fitzroy Crossi**	**41.41**	**265**	P		P	P	**23 42 46.0**	**+0.6**
	comp=Z,24nm,0.6s,baz=102,slow=6.8,SNR=49								
FITZ	**Fitzroy Crossi**	**41.41**	**265**	P		P	P	**23 42 46.1**	**+0.7**
	baz=41,SNR=25								
FITZ	**Fitzroy Crossi**	**41.41**	**265**	*e* P		P	P	**23 42 46.4**	**+1.0**
KMBL	**Kambalda**	**44.20**	**245**	P		P	P	**23 43 07.2**	**-0.4**
	baz=44,SNR=4.8								
MBWA	**Marble Bar**	**46.48**	**259**	*e* P		P	P	**23 43 25.8**	**+0.1**
	comp=Z,65nm,1.4s								
MEEK	**Meekatharra**	**47.02**	**252**	P		P	P	**23 43 29.8**	**-0.1**
	baz=47,SNR=9.8								
KLBR	**Kellerberrin**	**47.73**	**245**	P		P	P	**23 43 34.7**	**-0.5**
	baz=48,SNR=11								
NWAO	**Narrogin (SRO)**	**48.22**	**243**	P		P	P	**23 43 38.8**	**-0.1**
	comp=Z,16nm,0.8s,baz=319,slow=7.4,SNR=7.7								
NWAO	**Narrogin (SRO)**	**48.22**	**243**	P		P	P	**23 43 38.7**	**-0.1**
	baz=48,SNR=6.7								
NWAO					P		P	**23 43 38.7**	**-0.1**
	baz=48,SNR=6.7								
RKGY	**Rocky Gully**	**48.52**	**241**	P		P	P	**23 43 41.4**	**+0.2**
	baz=48,SNR=13								
MORW	**Morawa**	**49.21**	**248**	P		P	P	**23 43 46.3**	**-0.2**
	baz=49,SNR=3.6								
KAPI	**Kappang**	**50.48**	**280**	P		P	P	**23 43 56.7**	**+0.5**
	comp=Z,13nm,0.7s,baz=156,slow=5.5,SNR=6.4								
KAPI	**Kappang**	**50.48**	**280**	*e* P		P	P	**23 43 56.7**	**+0.5**
	comp=Z,32nm,1.2s								
CBIJ	**Chichi jima**	**53.44**	**329**	*e* P		P	P	**23 44 15.8**	**-1.9**
	comp=Z,26nm,0.9s								
VNDA	**Vanda**	**58.05**	**182**	P		P	P	**23 44 49.7**	**0.0**
	comp=Z,2.5nm,0.7s,baz=4.3,slow=7.8,SNR=6.5								
VNDA	**Vanda**	**58.05**	**182**	*e* P		P	P	**23 44 50.2**	**+0.4**
VNDA	**Vanda**	**58.05**	**182**	*e* P		P	P	**23 44 50.2**	**+0.4**
UGM	**Wanagama**	**58.16**	**273**	*e* P		P	P	**23 44 52.2**	**+0.6**
	comp=Z,281nm,1.6s								
SBA	**Scott Base**	**58.28**	**181**	*e* P		P	P	**23 44 52.7**	**+1.3**
SBA					pmax		pmax		
	comp=Z,20nm,0.9s								
SBA	**Scott Base**	**58.28**	**181**	*e* P		P	P	**23 44 52.6**	**+1.3**
	comp=Z,20nm,0.9s								
CASY	**Casey**	**59.85**	**204**	*e* P		P	P	**23 45 02.0**	**-0.3**
	comp=Z,8.2nm,0.8s								
CBJI	**Citeko**	**62.09**	**273**	P		P	P	**23 45 17.9**	**-0.3**
DBJI	**Dramaga**	**62.14**	**273**	P		P	P	**23 45 18.9**	**+0.3**
	comp=Z,128nm,0.8s,comp=Z,9µm								
CGJI	**Cibinong**	**63.11**	**272**	P		P	P	**23 45 24.4**	**-0.6**
MAJO	**Matsushiro**	**63.19**	**332**	*e* P		P	P	**23 45 25.1**	**+0.1**
MAJO					pmax		pmax		
	comp=Z,22nm,1.2s								
MAJO	**Matsushiro**	**63.19**	**332**	*e* P		P	P	**23 45 25.1**	**+0.1**
	comp=Z,22nm,1.2s								
MAT	**Matsushiro**	**63.19**	**332**	P		P	P	**23 45 24.8**	**-0.2**
NACB	**Ninganchiao**	**63.79**	**311**	*e* P		P	P	**23 45 28.8**	**-0.4**
	comp=Z,19nm,0.7s								
TPUB	**Ta-pu**	**63.95**	**310**	*e* P		P	P	**23 45 29.5**	**-0.8**
	comp=Z,28nm,0.7s								
SSLB	**Suanglung**	**64.01**	**310**	*e* P		P	P	**23 45 29.9**	**-0.7**
	comp=Z,22nm,0.6s								
JNU	**Maetsue**	**64.10**	**324**	P		P	P	**23 45 31.1**	**+0.1**
	comp=Z,12nm,0.8s,baz=146,slow=6.8,SNR=8.6								
JNU	**Nakatsue**	**64.10**	**324**	*e* P		P	P	**23 45 31.3**	**+0.3**
YHNB	**Yeheng**	**64.26**	**311**	*e* P		P	P	**23 45 32.7**	**+0.4**
	comp=Z,64nm,1.3s								
KASI	**Kota Agung**	**64.59**	**273**	P		P	P	**23 45 33.8**	**-0.8**
ASAJ	**Asahikawa**	**68.04**	**339**	*e* P		P	P	**23 45 57.1**	**+1.3**
	comp=Z,16nm,0.7s								
KSRS	**Korea Array**	**68.94**	**326**	P		P	P	**23 46 01.6**	**+0.1**
	comp=Z,2.6nm,0.9s,baz=152,slow=7.1,SNR=7.4								
KS15	**Wonju Array Si**	**68.95**	**326**	*e* P		P	P	**23 46 01.6**	**0.0**
KSAR	**Wonju Array Be**	**68.95**	**326**	P		P	P	**23 46 01.6**	**0.0**
KSAR	**Wonju Array Be**	**68.95**	**326**	P		P	P	**23 46 01.6**	**0.0**
QSPA	**South Pole Qui**	**70.42**	**180**	*e* P		P	P	**23 46 10.4**	**0.0**
YSS	**Yuzh-Sakhalins**	**70.51**	**341**	*e* P		P	P	**23 46 12.0**	**+1.1**
IPM	**Ipoh**	**71.36**	**282**	*e* P		P	P	**23 46 17.2**	**+0.4**
	comp=Z,20nm,0.7s								
KULM	**Kulim**	**72.01**	**283**	*e* P		P	P	**23 46 19.6**	**-1.0**
	comp=Z,40nm,1.4s								
USRK	**Ussuriysk Ar.**	**72.18**	**333**	P		P	P	**23 46 21.6**	**+0.7**
	comp=Z,9.9nm,0.8s,baz=152,slow=4.1,SNR=16								
PEA0	**Petropavlovsk-**	**73.15**	**353**	*e* P		P	P	**23 46 26.9**	**+0.5**
PEA0B	**Petropavlovsk-**	**73.15**	**353**	*e* P		P	P	**23 46 26.0**	**-0.4**
	comp=Z,60nm,1.7s								
PETK	**Petropavlovsk-**	**73.15**	**353**	P		P	P	**23 46 26.9**	**+0.5**
	comp=Z,9.9nm,0.8s,baz=133,slow=7.2,SNR=13								
PEA1	**Petropavlovsk-**	**73.15**	**353**	*e* P		P	P	**23 46 26.9**	**+0.5**
SKNT	**Sakolnakorn**	**73.88**	**295**	P		P	P	**23 46 32.1**	**+0.6**
	comp=Z,41nm,0.8s								
NIKH	**Nikolski High**	**74.71**	**13**	*e* P		P	P	**23 46 34.9**	**-0.6**
	comp=Z,112nm,0.6s								
NONG	**Nongkai**	**75.08**	**296**	P		P	P	**23 46 39.4**	**+1.0**
	comp=Z,23nm,0.9s								
UNV	**Unalaska Valle**	**76.05**	**14**	*e* P		P	P	**23 46 41.3**	**-1.8**
	comp=Z,183nm,1.7s								
ENH	**Enshi**	**76.08**	**310**	*e* P		P	P	**23 46 44.2**	**+0.4**
	comp=Z,12nm,0.8s								
PBKT	**Sadao Pong**	**76.30**	**293**	P		P	P	**23 46 46.9**	**+1.7**
	comp=Z,15nm,1.0s								
UTTA	**Uttaradit**	**77.16**	**294**	P		P	P	**23 46 51.7**	**+1.6**
	comp=Z,3.5nm,0.9s								
UMPA	**Umpang Tak**	**77.98**	**292**	P		P	P	**23 46 57.4**	**+2.7**
	comp=Z,6.5nm,1.0s								
MAW	**Mawson**	**78.15**	**202**	P		P	P	**23 46 55.5**	**+0.8**
	comp=Z,11nm,0.7s,baz=107,slow=7.0,SNR=29								
MAW	**Mawson**	**78.15**	**202**	*e* P		P	P	**23 46 55.4**	**+0.8**
MAW					pmax		pmax		
	comp=Z,3.0nm,0.8s								
MAW	**Mawson**	**78.15**	**202**	*e* P		P	P	**23 46 55.4**	**+0.8**
	comp=Z,2.7nm,0.8s								
LAMP	**Lampang**	**78.28**	**295**	P		P	P	**23 46 58.0**	**+1.7**
	comp=Z,11nm,0.8s,comp=Z,112nm								
CM01	**Chiang Mai Arr**	**78.82**	**294**	*e* P		P	P	**23 47 00.5**	**+1.3**
CM31	**Chiang Mai Arr**	**78.85**	**294**	*e* P		P	P	**23 47 01.0**	**+1.6**
CMAR	**Chiang Mai Arr**	**78.85**	**294**	P		P	P	**23 47 01.0**	**+1.6**
	comp=Z,10nm,0.8s,baz=133,slow=4.1,SNR=26								
CMMT	**Chiang Mai**	**78.99**	**295**	P		P	P	**23 47 01.5**	**+1.3**
	comp=Z,20nm,0.8s								
CHTO	**Chiang Mai**	**79.00**	**295**	P		P	P	**23 47 01.6**	**+1.4**
	comp=Z,88nm,0.9s								
CHTO	**Chiang Mai**	**79.00**	**295**	*e* P		P	P	**23 47 00.9**	**+0.7**
CHTO					pmax		pmax		
	comp=Z,14nm,0.8s								
CHTO	**Chiang Mai**	**79.00**	**295**	*e* P		P	P	**23 47 00.9**	**+0.7**
	comp=Z,14nm,0.8s								
OHAK	**Old Harbor**	**82.66**	**19**	*e* P		P	P	**23 47 18.8**	**+0.2**
	comp=Z,36nm,1.0s								
KDAK	**Kodiak Island**	**83.33**	**19**	*ce* P		P	P	**23 47 22.5**	**+0.5**
SEY	**Seymchan**	**83.38**	**352**	LR		LR	LR	00 20 28.0	
	comp=Z,1µm,19.9s,baz=160,slow=32								
SEY	**Seymchan**	**83.38**	**352**	*ce* P		P	P	**23 47 23.0**	**+0.8**
SYO	**Syowa Base**	**84.62**	**196**	*i e* P		P	P	23 47 17.0	-12
SYO	**Syowa Base**	**84.62**	**196**	*i e* P		P	P	**23 47 26.9**	**-1.6**
SYO	**Syowa Base**	**84.62**	**196**	*i e* PcP		P	P	**23 47 30.0**	**+1.5**
KHMM	**Horse Mountain**	**86.35**	**44**	*e* P		P	P	**23 47 39.4**	**+1.6**
	comp=Z,21nm,1.0s								
WDC	**Whiskeytown Da**	**86.99**	**45**	*e* P		P	P	**23 47 41.7**	**+1.1**
WDC					pmax		pmax		
	comp=Z,22nm,1.6s								
WDC	**Whiskeytown Da**	**86.99**	**45**	*e* P		P	P	**23 47 41.7**	**+1.1**
	comp=Z,22nm,1.6s								
CMB	**Columbia Colle**	**87.27**	**48**	*e* P		P	P	**23 47 42.8**	**+0.7**
CMB					pmax		pmax		
	comp=Z,5.0nm,0.8s								
CMB	**Columbia Colle**	**87.27**	**48**	*e* P		P	P	**23 47 42.8**	**+0.7**
	comp=Z,5.0nm,0.8s								
AFDM	**Forest Hills D**	**87.28**	**47**	*e* P		P	P	**23 47 42.8**	**+0.7**
	comp=Z,12nm,1.1s								
BILL	**Bilibino**	**87.44**	**359**	*i* P		P	P	**23 47 41.6**	**-0.6**
BILL					pmax		pmax		
	comp=Z,9.0nm,1.1s								
SONA0	**Songino Array**	**87.65**	**323**	*e* P		P	P	**23 47 44.3**	**+0.5**
	comp=Z,15nm,1.0s								
SONM	**Songino Array**	**87.65**	**323**	P		P	P	**23 47 44.3**	**+0.5**
	comp=Z,8.9nm,0.8s,baz=134,slow=5.5,SNR=38								
SONA1	**Songino Array**	**87.65**	**323**	*

	comp=Z,1.7nm,0.7s							
SRU	San Rafael Swe	94.75	50	eP	P	23 48 17.7	+0.7	
SRU				pmax	pmax			
	comp=Z,3.0nm,1.0s							
SRU	San Rafael Swe	94.75	50	eP	P	23 48 17.7	+0.7	
	comp=Z,3.3nm,1.0s							
PD31	Pinedale Array	96.73	47	eP	P	23 48 26.0	0.0	
PDAR	Pinedale Array	96.73	47	P	P	23 48 26.0	0.0	
	comp=Z,0.3nm,0.5s,baz=210,slow=1.2,SNR=4.2							
TX31	Lajitas Ar. Si	96.77	61	eP	P	23 48 26.8	+0.5	
LTX	Lajitas	96.78	61	eP	P	23 48 27.1	+0.8	
LTX	Lajitas	96.78	61	eP	P	23 48 27.1	+0.8	
TXAR	Lajitas Array	96.78	61	P	P	23 48 27.1	+0.8	
	comp=Z,0.7nm,0.7s,baz=218,slow=5.8,SNR=12							
TXAR				PKKPbc	PKKPbc	00 05 06.6	-1.6	
	comp=Z,0.3nm,0.8s,baz=90,slow=3.8,SNR=4.4							
INK	Inuvik	96.85	18	P	P	23 48 24.6	-0.9	
	comp=Z,1.9nm,0.8s,baz=240,slow=3.2,SNR=4.6							
INK	Inuvik	96.85	18	eP	P	23 48 24.6	-0.9	
INK				pmax	pmax			
	comp=Z,6.0nm,1.3s							
INK	Inuvik	96.85	18	eP	P	23 48 24.6	-0.9	
	comp=Z,5.7nm,1.3s							
GCMT	Greycliff	97.70	44	eP	Pdif	23 48 31.0	+0.9	
GCMT				eS	S	23 59 40.8	+4.4	
RLMT	Red Lodge	97.74	45	eP	P	23 48 28.5	-1.9	
	comp=Z,7.4nm,0.4s							
MK32	Makanchi Array	102.16	315	ePdif	Pdif	23 48 50.7	+0.9	
MKAR	Makanchi Array	102.16	315	P	Pdif	23 48 50.7	+0.9	
	comp=Z,1.0nm,0.6s,baz=96,slow=4.7,SNR=5.4							
BRVK	Borovoye	110.91	320	c iPKIKP	PKiKP	23 53 26.4	-0.5	
BRVK				pmax	pmax			
	comp=Z,4.0nm,1.2s							
ARU	Arti	117.67	324	PKIKP	PKPdf	23 53 38.6	-1.1	
ARU	Arti	117.67	324	ePKPdf	PKPdf	23 53 38.3	-1.4	
GEYT	Alibeck	118.40	303	PKP	PKPdf	23 53 41.2	-0.5	
	comp=Z,2.5nm,0.7s,baz=228,slow=1.8,SNR=8.9							
BOSA	Boshof	120.87	217	PKP	PKPdf	23 53 46.4	-0.6	
	comp=Z,1.4nm,0.4s,baz=131,slow=1.9,SNR=12							
FRB	Frobisher Bay	121.42	26	PKP	PKPdf	23 53 45.2	-1.5	
	comp=Z,1.4nm,0.3s,baz=188,slow=2.1,SNR=5.5							
SCHQ	Schefferville	125.11	36	PKP	PKPdf	23 53 52.9	-1.2	
	comp=Z,2.9nm,0.8s,baz=282,slow=6.3,SNR=3.6							
ARCES	ARCESS Array B	125.50	345	PKP	PKPdf	23 53 53.8	-0.6	
	comp=Z,6.1nm,0.5s,baz=78,slow=1.6,SNR=44							
OBN	Obninsk	129.93	327	i PKIKP	PKPdf	23 54 02.5	-0.7	
OBN				i		23 54 57.5		
OBN				pmax	pmax			
	comp=Z,10.0nm,1.4s							
FIA1	FINESS Array S	131.02	338	ePKPdf	PKPdf	23 54 05.0	-0.2	
FIA0	FINESS Array S	131.02	338	ePKIKP	PKPdf	23 54 04.6	-0.5	
FIA0	FINESS Array S	131.02	338	ePKPdf	PKPdf	23 54 04.6	-0.5	
FIA0				eSKPbc	SKPab	23 57 09.3	-0.1	
FINES	FINESS Array B	131.02	338	PKP	PKPdf	23 54 04.6	-0.5	
	comp=Z,2.2nm,0.6s,baz=90,slow=1.8,SNR=10							
FINES				SKPbc	SKPab	23 57 09.3	-0.1	
	comp=Z,2.0nm,0.7s,baz=64,slow=4.4,SNR=6.9							
NB2	NORSAR Subarra	135.87	345	PKPdf	PKPdf	23 54 14.8	+0.5	
	comp=Z,2.2nm,0.6s,baz=31,slow=1.9							
NB200	NORSAR Array S	135.87	345	ePKPdf	PKPdf	23 54 14.0	-0.3	
NOA	NORSAR Array B	135.87	345	PKP	PKPdf	23 54 14.0	-0.3	
	comp=Z,2.6nm,0.7s,baz=38,slow=2.1,SNR=11							
NOA	NORSAR Array B	135.87	345	PKIKP	PKPdf	23 54 14.0	-0.3	
AKASG	Malin Array Be	135.93	324	PKP	PKPdf	23 54 13.9	-0.8	
	comp=Z,2.6nm,0.6s,baz=43,slow=2.6,SNR=6.5							
AKBB	Malin Array Si	135.93	324	ePKIKP	PKPdf	23 54 13.9	-0.8	
AKBB	Malin Array Si	135.93	324	ePKPdf	PKPdf	23 54 13.9	-0.8	
AK11	Malin Array Si	135.97	324	ePKPdf	PKPdf	23 54 14.3	-0.4	
BR231	Keskin MP Arra	137.82	308	ePKPdf	PKPdf	23 54 19.3	+0.6	
TIRR	Tirgusor	139.28	316	⇑ iP	PKPdf	23 54 21.0	0.0	
TIRR	Tirgusor	139.28	316	⇑PKIKP	PKPdf	23 54 21.0	0.0	
MLR	Muntele Rosu	140.39	319	⇑ iP	PKPdf	23 54 24.8	+1.6	
MLR	Muntele Rosu	140.39	319	⇑PKIKP	PKPdf	23 54 24.8	+1.6	
KOLS	Kolonicke sedl	140.66	326	ePKIKP	PKPdf	23 54 22.9	-0.6	
KOLS	Kolonicke sedl	140.66	326	ePKP	PKPdf	23 54 22.9	-0.6	
CRVS	Cervenica-Dubn	141.11	326	ePKIKP	PKPdf	23 54 23.0	-1.3	
CRVS	Cervenica-Dubn	141.11	326	ePKP	PKPdf	23 54 23.0	-1.3	
ARR	Arges	141.26	320	⇓ iP	PKPdf	23 54 19.7	-5.0	
HUMR	Humele	141.45	318	⇑ iP	PKPdf	23 54 19.8	-5.2	
DRGR		141.65	323	⇑ iP	PKPdf	23 54 21.0	-4.4	
DRGR		141.65	323	⇑PKIKP	PKPdf	23 54 21.0	-4.4	
LOT	Lotru	141.74	320	⇑ iP	PKPdf	23 54 21.9	-3.7	
MORC	Moravsky Berou	142.50	330	⇑ iP	PKPdf	23 54 22.6	-4.2	
MORC	Moravsky Berou	142.50	330	⇑PKIKP	PKPdf	23 54 22.6	-4.2	
SIRR	Siria	142.54	323	⇑ iP	PKPdf	23 54 23.5	-3.4	
DPC	Dobruska-Polom	142.66	331	ePKP	PKPdf	23 54 23.6	-3.4	
DPC				ex	x	23 54 25.6		
DPC	Dobruska-Polom	142.66	331	ePKIKP	PKPdf	23 54 23.6	-3.4	
VYHS	Vyhne	142.72	327	ePKIKP	PKPdf	23 54 23.5	-3.7	
VYHS	Vyhne	142.72	327	ePKP	PKPdf	23 54 23.5	-3.7	
MPEP	Malo Peshtene	142.80	317	eP	PKPdf	23 54 26.0	-1.4	
BZS	Buzias	142.93	322	⇑ iP	PKPdf	23 54 24.1	-3.5	
BZS	Buzias	142.93	322	⇑PKIKP	PKPdf	23 54 24.1	-3.5	
VRAC	Vranov	143.27	330	⇑ iP	PKPab	23 54 25.0	+0.5	
VRAC	Vranov	143.27	330	⇑PKIKP	PKPab	23 54 25.0	+0.5	
PVCC	Panska Ves	143.30	333	ePKP	PKPbc	23 54 25.6	-0.2	
PVCC	Panska Ves	143.30	333	ePKIKP	PKPbc	23 54 25.6	-0.2	
BRG	Berggiesshubel	143.31	334	i PKP	PKPbc	23 54 25.3	-0.5	
	comp=Z,13nm,0.7s							
BRG	Berggiesshubel	143.31	334	i PKIKP	PKPbc	23 54 25.3	-0.5	
MDVR	Moldovita	143.33	320	⇑ iP	PKPbc	23 54 25.7	-0.5	
CLL	Collm	143.35	335	⇓ iP	PKPab	23 54 25.3	+0.6	
	comp=Z,9.0nm,1.0s							
CLL	Collm	143.35	335	⇓ iPKIKP	PKPab	23 54 25.3	+0.6	
CLL				pmax	pmax			
	comp=Z,9.0nm,1.0s							
CLL	Collm	143.35	335	ePKPpre	PKPpre	23 54 24.6		
VTS	Vitosha	143.50	316	P	PKPbc	23 54 25.4	-1.5	
VTS	Vitosha	143.50	316	⇑ iP	PKPbc	23 54 26.7	-0.2	
VTS	Vitosha	143.50	316	⇑PKIKP	PKPbc	23 54 26.7	-0.2	
VTS	Vitosha	143.50	316	eP	PKPbc	23 54 26.0	-0.9	
VTS	Vitosha	143.50	316	ePKPpre	PKPbc	23 54 25.4	-1.5	
VTS				ePKPpre	PKPbc	23 54 26.6	-0.2	
VTS	Vitosha	143.50	316	ePKPpre	PKPbc	23 54 25.4	-1.5	
MMB	Musomiste	143.62	315	eP	PKPab	23 54 26.0	-0.1	
NVR	Nevrokopi	143.64	314	P	PKPab	23 54 26.1	-0.1	
NVR	Nevrokopi	143.64	314	P	PKPab	23 54 26.1	-0.1	
GOPC	GO Pecny, Ondr	143.66	332	ePKP	PKPbc	23 54 26.8	-0.1	
GOPC	GO Pecny, Ondr	143.66	332	ePKIKP	PKPbc	23 54 26.8	-0.1	
PRU	Pruhonice	143.72	332	ePKP	PKPbc	23 54 26.6	-0.4	
PRU	Pruhonice	143.72	332	ePKIKP	PKPbc	23 54 26.6	-0.4	
SRS	Serrai	143.92	314	P	PKPab	23 54 27.0	-0.3	
SRS	Serrai	143.92	314	PKIKP	PKPab	23 54 27.0	-0.3	
SRS	Serrai	143.92	314	P	PKPab	23 54 27.0	-0.3	
KKB	Krupnik	143.93	315	eP	PKPab	23 54 26.5	-0.8	
PLG	Polygyros	144.34	313	P	PKPab	23 54 28.0	-1.0	
PLG	Polygyros	144.34	313	PKIKP	PKPab	23 54 28.0	-1.0	
PLG	Polygyros	144.34	313	P	PKPab	23 54 28.0	-1.0	
PAIG	Paliouri	144.37	312	P	PKPab	23 54 27.9	-1.1	
PAIG	Paliouri	144.37	312	PKIKP	PKPab	23 54 27.9	-1.1	
PAIG	Paliouri	144.37	312	P	PKPab	23 54 27.9	-1.1	
THR6	Thira Island,	144.40	306	P	PKPab	23 54 28.1	-1.2	
THR6	Thira Island,	144.40	306	P	PKPab	23 54 28.1	-1.2	
NKC	Novy Kostel	144.41	334	ePKP	PKPbc	23 54 29.3	+0.2	
NKC				ex	x	23 54 32.3		
NKC	Novy Kostel	144.41	334	ePKIKP	PKPbc	23 54 29.3	+0.2	
VAY	Valandovo	144.52	315	i PKP	PKPab	23 54 29.0	-0.5	
NPS	Neapolis	144.56	304	P	PKPbc	23 54 30.1	+0.1	
NPS	Neapolis	144.56	304	PKIKP	PKPbc	23 54 30.1	+0.1	
NPS	Neapolis	144.56	304	P	PKPbc	23 54 30.1	+0.1	
CONA	Conrad Observa	144.58	329	i PKPdf	PKPdf	23 54 30.2	-0.4	
	comp=Z,27nm,0.7s,SNR=36							
LAST	Lasithi	144.69	304	P	PKPbc	23 54 30.6	+0.1	
LAST	Lasithi	144.69	304	ePKPbc	PKPbc	23 54 30.6	+0.1	
DIVS	Divibare	144.74	321	P	PKPbc	23 54 30.4	0.0	
KHC	Kasperske Hory	144.77	332	ePKP	PKPab	23 54 30.4	+0.1	
KHC	Kasperske Hory	144.77	332	ePKIKP	PKPab	23 54 30.4	+0.1	
KHC	Kasperske Hory	144.77	332	ePKPbc	PKPbc	23 54 30.1	-0.2	
GEC2	GERESS Array S	144.93	332	ePKIKP	PKPbc	23 54 30.9	0.0	
GEC2	GERESS Array S	144.93	332	ePKPbc	PKPbc	23 54 30.9	+0.1	
GERES	GERESS Array B	144.93	332	PKP	PKPbc	23 54 30.8	-0.1	
	comp=Z,17nm,0.7s,baz=38,slow=3.8,SNR=176							
GEA0	GERESS Array S	144.94	332	ePKPbc	PKPbc	23 54 30.6	-0.3	
XOR	Xorichti	144.94	311	P	PKPbc	23 54 28.9	-2.2	
XOR	Xorichti	144.94	311	P	PKPbc	23 54 28.9	-2.2	
SKO	Skopje	144.95	317	P	PKPbc	23 54 31.1	+0.1	
SKO	Skopje	144.95	317	i PKP	PKPdf	23 54 31.3	+0.1	
SKO	Skopje	144.95	317	ePKIKP	PKPbc	23 54 31.1	+0.1	
SKO	Skopje	144.95	317	ePKPbc	PKPbc	23 54 31.1	+0.1	
IDI	Anoyia	145.12	304	ePKPbc	PKPdf	23 54 31.5	-0.3	
LIT	Litokhoron	145.12	313	P	PKPdf	23 54 30.2	-1.4	
LIT	Litokhoron	145.12	313	ePKIKP	PKPdf	23 54 30.2	-1.4	
LIT	Litokhoron	145.12	313	ePKPbc	PKPdf	23 54 30.2	-1.4	
SMIA	Simia	145.13	311	P	PKPdf	23 54 30.7	-1.0	
ARSA	Arzberg	145.21	328	i PKPab	PKPbc	23 54 31.7	0.0	
	comp=Z,30nm,1.0s,SNR=15							
SIVA	Sivas	145.26	304	P	PKPab	23 54 32.4	-0.1	
SIVA	Sivas	145.26	304	P	PKPab	23 54 32.4	-0.1	
GRFO	Grafenberg	145.33	335	ePKP2	PKPab	23 54 32.5	+0.2	
GRFO	Grafenberg	145.33	335	ePKPdf	PKPab	23 54 32.5	+0.2	
MOA	Molln	145.40	330	i PKPab	PKPab	23 54 32.5	-0.2	
	comp=Z,23nm,0.6s,SNR=26							
FNA	Florina	145.57	315	P	PKPdf	23 54 32.0	-0.4	
FNA	Florina	145.57	315	PKP2	PKPdf	23 54 32.0	-0.4	
FNA	Florina	145.57	315	P	PKPdf	23 54 32.0	-0.4	
DID	Didima	145.64	308	P	PKPdf	23 54 31.6	-1.0	
DID	Didima	145.64	308	ePKPdf	PKPdf	23 54 31.6	-1.0	
LTK	Loutraki	145.64	309	P	PKPdf	23 54 31.7	-0.9	
LTK	Loutraki	145.64	309	ePKPdf	PKPdf	23 54 31.7	-0.9	
AGG	Agios Georgios	145.70	311	ePKIKP	PKPdf	23 54 32.0	-0.7	
AGG	Agios Georgios	145.70	311	ePKPdf	PKPdf	23 54 32.0	-0.7	
KRND	KRANIDI	145.75	308	P	PKPdf	23 54 32.2	-0.5	
OHR	Ohrid	145.79	316	i PKP	PKPbc	23 54 33.5	-0.2	
DSF	Desfina	145.81	310	P	PKPdf	23 54 32.4	-0.5	
DSF	Desfina	145.81	310	ePKPdf	PKPdf	23 54 32.4	-0.5	
SOKA	Soboth	145.85	328	i PKPab	PKPbc	23 54 33.3	-0.4	
	comp=Z,12nm,0.5s,SNR=9.5							
THAL	Thalero	145.86	310	P	PKPdf	23 54 32.5	-0.4	
KPRO	Kipourio	145.96	313	P	PKPdf	23 54 33.3	+0.2	
KALE	Kalithea	146.09	310	P	PKPdf	23 54 33.5	+0.1	
KALE	Kalithea	146.09	310	ePKPdf	PKPdf	23 54 33.5	+0.1	
KALE	Kalithea	146.09	310	ePKPdf	PKPdf	23 54 33.5	+0.1	
PDG	Podgorica	146.10	319	⇑ iP	PKPbc	23 54 34.2	-0.3	
EVR	Evrytania	146.11	312	P	PKPdf	23 54 34.0	+0.6	
EVR	Evrytania	146.11	312	P	PKPdf	23 54 34.0	+0.6	
SERG	Sergoula	146.14	311	P	PKPbc	23 54 34.2	-0.6	
ANKY	Antikythira Is	146.17	306	P	PKPdf	23 54 33.8	+0.3	
ANKY	Antikythira Is	146.17	306	ePKPdf	PKPdf	23 54 33.8	+0.3	
ANX	Ano Chora	146.17	311	P	PKPbc	23 54 34.7	-0.2	
CWF	Charnwood Fore	146.18	350	ePKPdf	PKPdf	23 54 32.7	-0.2	
KLV	Kalavryta, Ach	146.22	310	P	PKPbc	23 54 34.5	-0.6	
KLV	Kalavryta, Ach	146.22	310	ePKPdf	PKPbc	23 54 34.5	-0.6	
KLV	Kalavryta, Ach	146.22	310	ePKPdf	PKPbc	23 54 34.5	-0.6	
LAKA	Lakka	146.27	310	P	PKPbc	23 54 35.0	-0.2	
LAKA	Lakka	146.27	310	ePKPdf	PKPbc	23 54 35.0	-0.2	
LAKA	Lakka	146.27	310	ePKPdf	PKPbc	23 54 35.0	-0.2	
TIR	Tirane	146.29	317	⇑ iP	PKPbc	23 54 35.3	+0.2	
TIR	Tirane	146.29	317	⇑PKP2	PKPbc	23 54 35.3	+0.2	
TIR	Tirane	146.29	317	ePKPdf	PKPbc	23 54 35.0	-0.1	
VLX	Vlachokerasia	146.32	309	P	PKPdf	23 54 34.6	+0.7	
VLX	Vlachokerasia	146.32	309	ePKPdf	PKPdf	23 54 34.6	+0.7	
OZLJ	Ozalj	146.35	326	P	PKPbc	23 54 34.8	-0.3	
KBA	Koelnbreinsper	146.39	330	i PKPbc	PKPdf	23 54 34.5	+0.7	
	comp=Z,19nm,1.0s,SNR=15							
PVO	Paravola	146.44	311	P	PKPbc	23 54 35.8	+0.2	
JAN	Janina	146.45	313	P	PKPbc	23 54 35.3	-0.3	
JAN	Janina	146.45	313	PKP2	PKPbc	23 54 35.3	-0.3	
JAN	Janina	146.45	313	P	PKPbc	23 54 35.3	-0.3	
DSL	Palaion Diasel	146.51	312	P	PKPbc	23 54 35.6	-0.2	
DSL	Palaion Diasel	146.51	312	ePKPdf	PKPbc	23 54 35.6	-0.2	
MYKA	Terra Mystica	146.57	329	i PKPbc	PKPdf	23 54 34.9	+0.9	
	comp=Z,14nm,0.6s,SNR=7.1							
PDO	Prodromos	146.69	311	P	PKPbc	23 54 36.3	0.0	
ITM	Ithomi	146.73	309	P	PKPbc	23 54 35.7	-0.8	
ITM	Ithomi	146.73	309	P	PKPbc	23 54 35.7	-0.8	
AMT	Artemida-Makis	146.75	309	P	PKPbc	23 54 36.0	-0.6	
IGT	Igoumenitsa	146.86	313	P	PKPbc	23 54 36.0	-0.8	
IGT	Igoumenitsa	146.86	313	ePKP2	PKPbc	23 54 36.0	-0.8	
IGT	Igoumenitsa	146.86	313	ePKPdf	PKPbc	23 54 36.0	-0.8	
IGT	Igoumenitsa	146.86	313	ePKPdf	PKPbc	23 54 36.0	-0.8	
STU	Stuttgart	146.86	336	ePKP2	PKPbc	23 54 36.5	+0.1	
STU	Stuttgart	146.86	336	ePKPdf	PKPbc	23 54 36.5	+0.1	
SGD	Sagiada	146.89	314	P	PKPbc	23 54 36.2	-0.6	
UDBI	Udbina	146.90	325	P	PKPbc	23 54 36.3	-0.5	
PYL	PYLOS	146.97	308	P	PKPbc	23 54 36.2	-1.0	
PYL	PYLOS	146.97	308	ePKPdf	PKPbc	23 54 36.2	-1.0	
PYL	PYLOS	146.97	308	ePKPdf	PKPbc	23 54 36.2	-1.0	
WATA	Walderalm	147.00	332	i PKPbc	PKPbc	23 54 36.5	-0.6	
	comp=Z,24nm,1.0s,SNR=5.8							
ABTA	Abfaltersbach	147.02	330	i PKPbc	PKPbc	23 54 36.1	-1.0	
	comp=Z,21nm,0.7s,SNR=10							
WTTA	Wattenberg	147.03	332	i PKPbc	PKPbc	23 54 36.9	-0.3	
	comp=Z,16nm,0.9s,SNR=6.4							
MOTA	Moosalm	147.21	332	i PKPbc	PKPbc	23 54 37.2	-0.5	
	comp=Z,25nm,0.7s,SNR=23							
LANF	Langenberg	147.21	337	PKP	PKPbc	23 54 37.5	+0.1	
RETA	Reutte	147.24	333	i PKPbc	PKPbc	23 54 37.3	-0.4	
	comp=Z,13nm,0.7s,SNR=37							
BFO	Black Forest	147.56	336	c iPKP2	PKPbc	23 54 38.2	-0.3	
BFO	Black Forest	147.56	336	ePKPdf	PKPbc	23 54 38.1	-0.3	
FETA	Feichten	147.62	332	i PKPbc	PKPbc	23 54 38.7	-0.1	
	comp=Z,35nm,0.9s,SNR=19							
DAVA	Damuels	147.78	334	i PKPbc	PKPbc	23 54 38.9	-0.3	
	comp=Z,17nm,0.7s,SNR=9.5							
WLS	Welschbruch	147.85	337	PKP	PKPbc	23 54 38.8	-0.4	
ECH	Echery	148.08	337	PKP	PKPbc	23 54 39.3	-0.5	
FUORN	Ofenpass-Fuorn	148.13	332	ePKPdf	PKPdf	23 54 36.8	+0.1	
MOF	Molkenrain	148.40	337	PKP	PKPbc	23 54 40.2	-0.5	
THEF	They Montfort	148.49	339	PKP	PKPbc	23 54 40.6	-0.2	
LOMF	Lomont	148.93	310	PKP	PKPbc	23 54 43.1	-0.1	
TIP	Timpagrande	149.44	315	P	PKPbc	23 54 43.1	-0.5	
TIP	Timpagrande	149.44	315	ePKPbc	PKPbc	23 54 43.8	+0.2	
SENIN	Lac Senin/Sane	149.57	335	ePKPbc	PKPbc	23 54 43.6	-0.2	
AQU	L'Aquila	149.62	323	ePKP2	PKPbc	23 54 43.8	-0.1	
AQU	L'Aquila	149.62	323	ePKPbc	PKPbc	23 54 43.8	-0.1	
OG01	Vacheresse	149.84	336	PKP	PKPbc	23 54 44.5	+0.2	
RSL	Roselend	150.39	335	PKP	PKPbc	23 54 45.4	-0.4	
PLDF	La Plantade	151.25	339	PKP	PKPbc	23 54 47.6	0.0	
AGO	Saint Agoulin	151.34	340	PKP	PKPbc	23 54 47.7	-0.1	
SSB	Saint Sauveur	151.53	337	PKP	PKPbc	23 54 48.1	-0.2	
SSB	Saint Sauveur	151.53	337	ePKIKP	PKPbc	23 54 47.7	-0.5	
SSB	Saint Sauveur	151.53	337	ePKPbc	PKPbc	23 54 47.7	-0.5	
LUCF	Luceram	151.55	332	PKP	PKPbc	23 54 47.6	-0.8	
MVIF	Mont Vial	151.63	332	PKP	PKPbc	23 54 48.0	-0.7	
PYM	Petit Puy Mans	151.65	340	PKP	PKPbc	23 54 48.6	0.0	
REVF	Revere	151.66	332	PKP	PKPbc	23 54 47.8	-0.8	
LBL	Lubilhac	152.02	339	PKP	PKPbc	23 54 49.9	+0.5	
CLTB	Caltabellotta	152.65	316	ePKPbc	PKPbc	23 54 50.6	-0.5	
VSL	Villasalto	153.80	323	ePKPbc	PKPbc	23 54 53.2	-0.2	
KEST	Kesra	156.25	317	PKPbc	PKPdf	23 55 00.3	+11	
	comp=Z,1.4nm,0.6s,baz=227,slow=4.4,SNR=4.4							
KEST	Kesra	156.25	317	ePKPdif	PKPdf	23 55 00.3	+11	
KEST				ePKPab	PKPab	23 55 19.2	+1.3	
ES19	SONSECA Array	159.19	345	ePKPab	PKPab	23 55 30.1	-0.4	
ESDC	Sonseca Array	159.23	346	PKPab	PKPab	23 55 30.1	-0.5	
	comp=Z,0.2nm,0.5s,baz=17,slow=4.2,SNR=6.7							
ESDC	Sonseca Array	159.23	346	PKPab	PKPab	23 55 30.1	-0.5	
TAM	Tamanrasset	164.69	285	ePKP2	PKPab	23 55 56.4	+1.0	
TAM	Tamanrasset	164.69	285	ePKPab	PKPab	23 55 56.4	+1.0	
DBIC	Dimbokro	165.98	204	PKPab	PKPab	23 56 00.8	+0.1	
	comp=Z,1.7nm,0.7s,baz=145,slow=6.7,SNR=4.0							
TOA0	Torodi Ar. Sit	166.61	243	ePKPdf	PKPdf	23 54 59.0	-1.1	
TOA0				ePKPab	PKPab	23 56 03.6	-0.2	
TORD	Torodi Ar. Bea	166.61	243	PKP	PKPdf	23 54 58.9	-1.2	
	comp=Z,0.9nm,0.8s,baz=14,slow=0.7,SNR=7.0							
TORD				PKPab	PKPab	23 56 03.3	-0.4	
	comp=Z,1.1nm,0.6s,baz=102,slow=4.1,SNR=6.4							
TORD	Torodi Ar. Bea	166.61	243	PKPab	PKPab	23 56 03.4	-0.4	
TOA1	Torodi Ar. Sit	166.61	243	ePKPdf	PKPdf	23 54 58.9	-1.2	
TOA1				ePKPab	PKPab	23 56 03.4	-0.4	

MAN ***11*** *23:34:30, 9.59N×122.17E, h32km, mb3.9, ML2.7, MS2.4*
IDC ***11*** *23:35:23.5±5.2, 9.32N×122.32E, h0km, mb3.8/6, mb1 3.9/6, mb1mx3.6/42, mbtmp3.8/6, Error ellipse: s-maj=111.9km s-min=69.9km az=147.0*
ISC 11 23:35:31.2±2.7, 9.6N±0.4×122.1E±0.1, h37km, n9, σ0s95/10, mb3.9/6, 1D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	Sibulan	1.13	103	i P	Pn	23 35 56.8	+6.3
LLP	Lapu-Lapu	1.95	69	eP	Pn	23 36 01.1	-0.6
LLP				eS	Sn	23 36 26.7	+1.8
PLP	Palo	3.21	61	⇓ eP	Pn	23 36 18.8	-0.2
PLP				eS	Sn	23 36 55.1	-0.9
CMAR	Chiang Mai Arr	24.13	294	P	P	23 40 43.6	-0.2
	1.1nm,0.8s,baz=104,slow=7.1,SNR=4.7						
SONM	Songino Array	40.36	344	P	P	23 43 05.3	-0.1
	1.2nm,0.8s,baz=170,slow=9.6,SNR=7.3						
MKAR	Makanchi Array	50.15	325	P	P	23 44 24.3	+1.3
	0.9nm,0.6s,baz=128,slow=8.3,SNR=8.5						
ZALV	Zalesovo Beam	53.32	333	P	P	23 44 46.3	-0.2
	0.5nm,0.4s,baz=121,slow=5.7,SNR=3.9						
AKASG	Malin Array Be	84.48	320	P	P	23 48 00.1	0.0
	0.2nm,0.2s,baz=63,slow=5.6,SNR=3.3						
FINES	FINESS Array B	84.52	331	P	P	23 47 59.9	-0.3
	1.8nm,1.0s,baz=29,slow=4.4,SNR=5.1						

IDC ***11*** *23:37:50.3±0.8, 9.65N×122.29E, h0km, mb4.0/11, mb1 4.1/11, mb1mx3.9/39, mbtmp4.0/11, Error ellipse: s-maj=56.5km s-min=17.2km az=64.0*
ISCJB ***11*** *23:37:52.9±0.5, 9.60N±0.06×122.25E±0.05, h29km, mb3.9/11, Error ellipse: s-maj=9.1km s-min=6.0km az=29.8*
MAN ***11*** *23:37:55, 9.70N×122.28E, h33km, mb4.5, ML3.4, MS3.3*
ISC 11 23:37:54.3±0.6, 9.59N±0.06×122.27E±0.05, h29km, n20, σ1s47/24, mb3.9/11, 3C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	Sibulan	0.99	104	i P	Pn	23 38 07.8	-4.5
SNPH				i S	Sn	23 38 23.1	-2.1
JAP	San Jose, Anti	1.19	345	⇑

IDC 11 23:43:55.8±1.9, 9°.83N×122°.99E, h0km, mb3.8/4, mb1 3.9/4, mb1mx3.5/39, mbtmp3.8/4, Error ellipse: s-maj=248.7km s-min=24.2km az=65.0, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SNPH	Sibulan	0.54	153	*i* P	Pn	23 44 11.6	+0.7
SNPH				*i* S	Sn	23 44 31.1	+10
WRA	Warramunga Arr	31.63	159	P	P	23 50 20.6	-0.2
	0.5nm,0.6s,baz=338,slow=9.0,SNR=4.7						
ASAR	Alice Springs	34.96	162	P	P	23 50 50.0	+0.1
	0.6nm,0.7s,baz=342,slow=6.8,SNR=3.3						
MKAR	Makanchi Array	50.46	324	P	P	23 52 55.7	+0.3
	1.1nm,0.8s,baz=136,slow=8.1,SNR=4.7						
FINES	FINESS Array B	84.73	331	P	P	23 56 31.2	-0.4
	0.8nm,0.5s,baz=58,slow=4.7,SNR=5.2						

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*CSEM **11** 23:50:12.6, 41°.15N×14°.09E, h10km, MD2.0/4*
ROM 11 23:50:12.6±0.4, 41°.15N×14°.09E, h10km±4km, Md2.0/4, Ml1.1/3, Error ellipse: s-maj=6.0km s-min=5.2km az=91.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MSC	Monte Massico	0.10	297	Pg	Pg	23 50 15.5	+0.3
MSC				Sg	Sg	23 50 18.1	+1.0
MSC	Monte Massico	0.10	297	Pg	Pg	23 50 15.5	+0.3
MSC				Sg	Sg	23 50 18.1	+1.0
MODR	Mondragone	0.16	270	Pg	Pg	23 50 16.8	+0.6
MODR				Sg	Sg	23 50 19.9	+1.3
	41nm,0.7s						
MODR	Mondragone	0.16	270	Pg	Pg	23 50 16.8	+0.6
MODR				Sg	Sg	23 50 19.9	+1.3
	41nm,0.7s						
VAGA	Valle Agricola	0.29	22	Pg	Pg	23 50 18.7	+0.2
VAGA				Sg	Sb	23 50 24.1	-0.8
	28nm,0.7s						
VAGA	Valle Agricola	0.29	22	Pg	Pg	23 50 18.7	+0.2
VAGA				Sg	Sb	23 50 24.1	-0.8
	28nm,0.7s						
PTRJ	Pietraroja	0.40	56	Pg	Pb	23 50 21.3	-0.5
	21nm,0.5s						
PTRJ	Pietraroja	0.40	56	Pg	Pb	23 50 21.3	-0.5
	21nm,0.5s						

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*CSEM **11** 23:52:33.1, 34°.99N×24°.08E, h24km, ML1.6/3*
ATH 11 23:52:33.1, 34°.99N×24°.08E, h24km±4km, ML1.6/2, Error ellipse: s-maj=4.8km s-min=1.3km az=222.0, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GVD	Gavdhos	0.15	178	P	Pb	23 52 38.1	0.0
GVD				S	Sb	23 52 41.4	0.0
GVD	Gavdhos	0.15	178	P	Pb	23 52 38.1	+0.1
GVD				S	Sb	23 52 41.4	0.0
GVD				AML	AML	23 52 42.3	
	comp=E,466μm,0.2s						
GVD				AML	AML	23 52 42.8	
	comp=N,385μm,0.1s						
VAM	Vamos	0.43	13	P	Pb	23 52 42.3	+0.2
VAM				S	Sb	23 52 48.5	+0.2
IMMV	Iera Moni Meta	0.48	350	P	Pb	23 52 43.1	+0.1
IMMV				S	Sb	23 52 50.7	+1.0
IMMV	Iera Moni Meta	0.48	350	P	Pb	23 52 43.1	+0.1
IMMV				S	Sb	23 52 50.7	+1.0
IMMV				AML	AML	23 52 51.8	
	comp=E,256μm,0.4s						
IMMV				AML	AML	23 52 51.9	
	comp=N,142μm,0.3s						
SIVA	Sivas	0.60	87	P	Pn	23 52 45.9	-0.2
SIVA				S	Sn	23 52 54.5	-0.5
SIVA	Sivas	0.60	87	P	Pn	23 52 45.9	-0.1
SIVA				S	Sn	23 52 54.5	-0.5
IDI	Anoyia	0.73	65	P	Pb	23 52 45.9	-1.3
IDI				S	Sn	23 52 57.7	-0.6
IDI	Anoyia	0.73	65	P	Pb	23 52 45.9	-1.2
IDI				S	Sn	23 52 57.6	-0.7

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*IDC **11** 23:57:48.2±9.0, 37°.52N×143°.62E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.4/38, mbtmp3.7/3, Error ellipse: s-maj=328.7km s-min=31.8km az=66.0*
*ISCJB **11** 23:57:51.6±1.2, 37°.92N±0°.05×143°.13E±0°.09, h19km, mb3.6/3, Error ellipse: s-maj=10.9km s-min=6.1km az=18.4*
*JMA **11** 23:57:51.0±0.2, 37°.89N×143°.27E, h47km, M3.8*
ISC 11 23:57:48.5±1.6, 37°.90N±0°.05×143°.30E±0°.09, h19km, n18, σ2s.14/26, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.64	290	P	Pb	23 58 17.9	-0.1
JIO				*e*S	Sb	23 58 38.0	-0.3
OFUJ	Ofunato	1.74	313	P	Pb	23 58 19.1	-0.7
OFUJ				S	Sn	23 58 38.9	-0.4
JMK	Ichinoseki	1.94	303	P	Pb	23 58 22.3	-1.0
JMM	Marumori	1.99	270	P	Pb	23 58 22.8	-1.2
JMM				S	Sn	23 58 45.8	+0.4
JFK	Kawauchi	2.00	255	P	Pb	23 58 22.4	-1.9
JFK				S	Sn	23 58 45.2	-0.7
JOU	Okura	2.13	283	P	Pb	23 58 25.6	-0.9
JOM	Ohasama	2.22	315	P	Pb	23 58 26.3	-1.7
JOM				S	Sn	23 58 52.4	+1.2
JFT	Otama	2.38	262	P	Pb	23 58 29.1	-1.7
JFT				S	Sb	23 58 56.7	-3.2
JYK	Kaneyama	2.52	295	P	Pb	23 58 31.0	-2.2
JANG	Nango	2.83	331	P	Pb	23 58 35.6	-2.8
JANG				*e*S	Sn	23 59 07.6	+1.3
JAW	Awa shima	3.24	281	P	Pb	23 58 41.4	-4.0
JAG	Ashikaga	3.41	246	P	Pn	23 58 42.5	+1.8
JAG				S	Sn	23 59 21.7	+1.1
BSO1	Boso 1	3.75	211	P	Pn	23 58 45.2	+0.4
JRY	Ryogami san	4.00	243	P	Pn	23 58 50.9	+2.1
JRY				*e*S	Sn	23 59 33.8	-1.3
MAT	Matsushiro	4.29	253	P	Pn	23 58 56.5	+3.7
MAT				*e*S	Sn	23 59 47.1	+4.8
ZALV	Zalesovo Beam	42.45	312	P	P	00 05 48.4	+6.4
	0.9nm,0.7s,baz=77,slow=9.0,SNR=4.0						
MKAR	Makanchi Array	44.94	302	P	P	00 06 07.5	+5.5
	0.7nm,0.9s,baz=87,slow=9.6,SNR=5.4						
WRA	Warramunga Arr	58.15	190	P	P	00 07 41.4	+0.4
	0.6nm,0.5s,baz=8.6,slow=7.2,SNR=3.6						

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*ISCJB **12** 00:00:44.7±0.8, 9°.38N±0°.07×122°.05E±0°.06, h10km, mb3.7/5, Error ellipse: s-maj=9.7km s-min=8.6km az=177.9*
*IDC **12** 00:00:44.9±1.2, 9°.65N×122°.40E, h0km, mb3.7/5, mb1 3.8/5, mb1mx3.5/37, mbtmp3.7/5, Error ellipse: s-maj=165.8km s-min=20.7km az=67.0*
*MAN **12** 00:00:45, 9°.47N×122°.00E, h9km, mb4.4, ML3.3, MS3.2*
ISC 12 00:00:46.5±1.0, 9°.52N±0°.08×122°.16E±0°.07, h10km, n9, σ1s.22/12, mb3.7/5, 2C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SNPH	Sibulan	1.07	99⇑	*i*P	Pn	00 01 03.4	-4.3
SNPH				*i* S	Sb	00 01 20.4	-0.9
LLP	Lapu-Lapu	1.95	66⇓	*e*P	Pb	00 01 21.9	-0.2
LLP				*e*S	Sb	00 01 48.4	+1.9
RCP	Roxas	2.11	16⇑	*e*P	Pn	00 01 22.8	+0.9
RCP				*e*S	Sb	00 01 51.1	-0.1
PLP	Palo	3.22	59⇓	*e*P	Pn	00 01 38.5	+1.4
PLP				*e*S	Sn	00 02 13.6	-2.1
WRA	Warramunga Arr	31.63	158	P	P	00 07 09.9	-0.1
	0.3nm,0.6s,baz=335,slow=10.0,SNR=3.4						
ASAR	Alice Springs	34.92	161	P	P	00 07 39.4	+0.7
	0.7nm,0.7s,baz=343,slow=6.2,SNR=6.1						
SONM	Songino Array	40.45	344	P	P	00 08 24.3	-1.0
	0.5nm,0.7s,baz=151,slow=8.0,SNR=3.7						
MKAR	Makanchi Array	50.24	325	P	P	00 09 43.5	+0.6
	1.3nm,0.8s,baz=131,slow=8.8,SNR=13						
FINES	FINESS Array B	84.62	331	P	P	00 13 19.7	-0.4
	1.2nm,0.8s,baz=103,slow=6.1,SNR=4.4						

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*DDA **12** 00:03:29.9, 37°.15N×29°.06E, h7km, Md2.9*
*CSEM **12** 00:03:29.7±0.2, 37°.13N×29°.04E, h8km, MD2.6, Error ellipse: s-maj=4.3km s-min=3.1km az=6.0*
*ISK **12** 00:03:29.0, 37°.14N×29°.03E, h6km, MD2.6*
ISC 12 00:03:29.7±1.2, 37°.15N±0°.03×29°.04E±0°.02, h2km±11km, n29, σ0s.92/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GLHS	Glhisar (BURDU	0.37	88	*e*PG	Pg	00 03 36.9	+0.1
GLHS	Glhisar (BURDU	0.37	88	*e*Pg	Pg	00 03 36.9	+0.1
GOLH	Golhisar	0.43	77	*i* P	Pg	00 03 37.9	0.0
GOLH				*i* S	Sb	00 03 46.1	-0.8
GOLH	Golhisar	0.43	77	P	Pg	00 03 37.9	0.0
GOLH				S	Sb	00 03 46.1	-0.8
TURN	Turunc	0.44	232	*i* P	Pn	00 03 43.8	+0.8
TURN				*i* S	Sb	00 03 55.5	+8.3
DALY	Dalyan (Mu˜la	0.45	223	*e*PG	Pg	00 03 38.2	-0.1
DALY				*e*SG	Sg	00 03 44.6	+0.5
DALY	Dalyan (Mu˜la	0.45	223	*e*Pg	Pg	00 03 38.2	-0.1
DALY				*e*Sg	Sg	00 03 44.6	+0.5
DNZL	Cakiroluk	0.54	1	*i* P	Pg	00 03 40.3	+0.2
DNZL				*i* S	Sb	00 03 49.4	-1.0
DNZL	Cakiroluk	0.54	1	P	Pg	00 03 40.3	+0.2
DNZL				S	Sb	00 03 49.4	-1.0
YER	Yerkesik	0.60	269	*e*PG	Pg	00 03 40.9	-0.3
YER	Yerkesik	0.60	269	*e*Pg	Pg	00 03 40.9	-0.3
ELL	Elmali	0.80	119	*e*PG	Pg	00 03 44.3	-0.7
ELL				*e*SG	Sb	00 03 56.4	-1.3
ELL	Elmali	0.80	119	*e*Pg	Pg	00 03 44.3	-0.7
ELL				*e*Sg	Sb	00 03 56.4	-1.3
AKAS	Kas	1.02	153	*i* P	Pb	00 03 49.6	-0.5
AKAS				*i* S	Sn	00 04 08.6	+2.6
AKAS	Kas	1.02	153	P	Pb	00 03 49.6	-0.5
MLSB	Milas	1.02	279	*e*PG	Pg	00 03 48.9	-0.3
MLSB				*e*SG	Sb	00 04 03.1	-0.7
MLSB	Milas	1.02	279	*e*Pg	Pg	00 03 48.9	-0.3
MLSB				*e*Sg	Sb	00 04 03.1	-0.7
KORT	Korkueli	1.06	97	*i* P	Pb	00 03 50.2	-0.6
KORT				*i* S	Sn	00 04 09.2	+2.2
KORT	Korkueli	1.06	97	P	Pb	00 03 50.2	-0.6
AYDB	Zeytinkoy-Aydi	1.21	312	*e*PN	Pb	00 03 52.6	-0.8
AYDB	Zeytinkoy-Aydi	1.21	312	*e*Pn	Pb	00 03 52.6	-0.8
BDRM	Kayabasi	1.28	267	*i* P	Pg	00 03 54.5	+0.4
BDRM				*i* S	Sn	00 04 12.8	+0.6
BDRM	Kayabasi	1.28	267	P	Pg	00 03 54.5	+0.4
BDRM				S	Sn	00 04 12.8	+0.6
BODT	Bodrum	1.38	267	*e*PN	Pn	00 03 55.4	-0.6
BODT	Bodrum	1.38	267	*e*Pn	Pn	00 03 55.4	-0.6
MANT	Manisa	1.40	344	*i* P	Pn	00 03 55.5	-0.9
MANT				*i* S	Sg	00 04 16.4	+1.8
MANT	Manisa	1.40	344	P	Pn	00 03 55.5	-0.9
MANT				S	Sg	00 04 16.4	+1.8
KULA	Kula-Manisa	1.40	348	*e*PN	Pn	00 03 55.7	-0.6
KULA	Kula-Manisa	1.40	348	*e*Pn	Pn	00 03 55.7	-0.6

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*ISCJB **12** 00:08:38.5±0.3, 9°.58N±0°.04×122°.05E±0°.03, h10km, mb4.8/23, Error ellipse: s-maj=5.5km s-min=4.7km az=170.8*
*IDC **12** 00:08:38.2±0.6, 9°.67N×122°.33E, h0km, mb4.4/14, mb1 4.5/14, mb1mx4.3/41, mbtmp4.4/14, MS3.5/3, Ms1 3.6/3, ms1mx3.3/30, Error ellipse: s-maj=31.8km s-min=12.8km az=68.0*
*MAN **12** 00:08:38, 9°.66N×122°.01E, h8km, mb4.2, ML3.1, MS2.8*
*NEIC **12** 00:08:39.6±0.3, 9°.67N×122°.34E, h10km, mb5.1/12, Error ellipse: s-maj=9.1km s-min=5.3km az=71.0*
*MOS **12** 00:08:40.2±3.2, 9°.78N×121°.98E, h33km, mb5.4/16, Error ellipse: s-maj=27.7km s-min=8.6km az=123.8*
ISC 12 00:08:40.5±1.6, 9°.58N±0°.05×122°.23E±0°.05, h15km±10km, n89, σ1s.27/100, mb4.7/23, 3C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TBP	Tagbilaran	1.61	86	*e*P	Pg	00 09 10.9	-0.6
TBP				*e*S	Sg	00 09 31.9	-0.6
LLP	Lapu-Lapu	1.86	67⇑	*e*P	Pb	00 09 13.4	-0.8
LLP				*e*S	Sg	00 09 40.0	-0.4
RCP	Roxas	2.03	14⇑	*e*P	Pn	00 09 13.9	-0.3
CGP	Cagayan de Oro	2.68	115⇑	*i*P	Pb	00 09 26.1	-2.1
CGP				*i* S	Sb	00 10 02.3	+1.3
CTBH	Cotabato--PC H	3.08	139	*e*P	Pb	00 09 32.2	-2.8
CTBH				*i* S	Sb	00 10 15.9	+3.4
PLP	Palo	3.13	60⇓	*e*P	Pn	00 09 30.5	+1.1
PLP				*e*S	Sn	00 10 05.3	-1.2
PPR	Puerto Princes	3.46	273	*e*P	Pn	00 09 32.0	-1.8
DAV	Davao City (W)	4.15	127	LR	LR	00 11 05.1	
	comp=Z,254nm,19.4s,baz=179,slow=36						
TGY	Tagaytay City	4.67	344	LR	LR	00 11 46.3	
	comp=Z,638nm,20.1s,baz=135,slow=41						
MYLDM	Lahad Datu	5.73	220	*e*Pn	Pn	00 10 06.8	+1.7
MYLDM				*e*Sn	Sn	00 11 07.8	-2.9
KKM	Kota Kinabalu	6.92	240	*e*Pn	Pn	00 10 21.4	-0.2
LUWI	Luwuk	10.57	177	*e*Pn	Pn	00 11 13.4	+1.9
LUWI				*e*Sn	Sn	00 13 06.0	-3.8
SBUM	Sibu	12.21	235	*e*Pn	Pn	00 11 37.5	+3.4
MTN	Manton Dam	23.97	158	*e*P	P	00 13 54.4	-0.2
	30nm,1.1s						
CM31	Chiang Mai Arr	24.23	294	*e*P	P	00 13 57.8	+0.8
CMAR	Chiang Mai Arr	24.23	294	P	P	00 13 57.8	+0.8
	0.6nm,0.4s,baz=127,slow=9.1,SNR=6.6						
CMAR				LR	LR	00 22 54.2	
	comp=Z,192nm,20.4s,baz=110,slow=35						
FITZ	Fitzroy Crossi	27.71	173	P	P	00 14 29.8	+1.4
	4.2nm,0.6s,baz=2.3,slow=7.6,SNR=6.4						
FITZ	Fitzroy Crossi	27.71	173	*e*P	P	00 14 27.5	-0.9
	69nm,2.0s						
WR1	Warramunga Arr	31.67	158	*e*P	P	00 15 03.3	-0.3
	53nm,1.8s						
WR1				*e*PcP	PcP	00 17 55.6	+0.1
WRA	Warramunga Arr	31.67	158	P	P	00 15 03.3	-0.3
	3.8nm,0.5s,baz=337,slow=9.3,SNR=25						
WRA				PcP	PcP	00 17 55.6	+0.1
	3.3nm,0.6s,baz=342,slow=3.0,SNR=9.6						
AS31	Alice Springs	34.96	161	*e*P	P	00 15 32.8	+0.5
	5.9nm,0.6s						
AS31				*e*PcP	PcP	00 18 04.8	0.0
ASAR	Alice Springs	34.96	161	P	P	00 15 32.8	+0.5
	15nm,0.6s,baz=340,slow=7.2,SNR=152						
ASAR				PcP	PcP	00 18 04.8	0.0
	3.1nm,0.6s,baz=345,slow=2.9,SNR=6.0						
AS01	Alice Springs	34.98	161	*e*P	P	00 15 32.5	+0.1
USRK	Ussuriysk Ar.	35.51	12	P	P	00 15 36.3	-0.5
	7.6nm,0.6s,baz=184,slow=3.9,SNR=4.3						
FORT	Forrest	40.52	172	*e*P	P	00 16 20.4	+1.2
	148nm,0.8s						
NWAO	Narrogin (SRO)	42.54	186	P	P	00 16 36.4	+0.7
	11nm,0.6s,baz=228,slow=6.8,SNR=11						
NWAO	Narrogin (SRO)	42.54	186	*e*P	P	00 16 36.4	+0.7
NWAO				pmax	pmax		
	comp=Z,92nm,1.9s						
NWAO	Narrogin (SRO)	42.54	186	*e*P	P	00 16 36.4	+0.7
	comp=Z,92nm,1.9s						
STKA	Stephens Creek	45.20	157	P	P	00 16 57.4	+0.3
	comp=Z,6.4nm,0.7s,baz=330,slow=7.8,SNR=18						
STKA				PcP	PcP	00 18 37.1	-0.2
	comp=Z,3.5nm,0.6s,baz=342,slow=5.3,SNR=7.0						
STKA	Stephens Creek	45.20	157	*e*P	P	00 16 57.4	+0.3
STKA				*e*		00 18 37.4	
STKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
STKA	Stephens Creek	45.20	157	*e*P	P	00 16 57.4	+0.3
	comp=Z,1.4nm,0.8s						
STKA				*e*PcP	PcP	00 18 37.4	+0.2
MK01	Makanchi Array	50.21	325	*e*P	P	00 17 35.3	-0.6
MK31	Makanchi Array	50.23	325	*e*P	P	00 17 36.3	+0.2
MK31	Makanchi Array	50.23	325	*e*P	P	00 17 36.3	+0.2
MK32	Makanchi Array	50.23	325	*e*P	P	00 17 35.5	-0.5
MKAR	Makanchi Array	50.23	325	P	P	00 17 35.5	-0.5
	comp=Z,1.8nm,0.7s,baz=126,slow=8.8,SNR=19						
MKAR	Makanchi Array	50.23	325	*e*P	P	00 17 36.3	+0.2
MKAR	Makanchi Array	50.23	325	*e*P	P	00 17 36.3	+0.2
MAKZ	Makanchi	50.42	325	*e*P	P	00 17 37.3	-0.2
MAKZ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
MAKZ	Makanchi	50.42	325	*e*P	P	00 17 37.3	-0.2
	comp=Z,8.3nm,0.8s						
KURBB	Kurchatov Arra	54.43	327	P	P	00 18 06.4	-0.8
	comp=Z,1.6nm,0.6s,baz=120,slow=9.2,SNR=23						
KURK	Kurchatov	54.44	327	*e*P	P	00 18 06.8	-0.4
KURK	Kurchatov	54.44	327	*e*P	P	00 18 06.8	-0.4
KKAR	Karatay Array	55.94	316	*e*P	P	00 18 19.5	+1.3
KKAR				pmax	pmax		
	comp=Z,114nm,0.6s						
KKAR	Karatay Array	55.94	316	*e*P	P	00 18 19.5	+1.3
	comp=Z,114nm,0.6s						
GEYT	Alibeck	63.79	308	P	P	00 19 13.7	+1.4
	comp=Z,1.7nm,0.7s,baz=106,slow=5.4,SNR=6.4						
AB31	Akbulak array	64.82	320	P	P	00 19 18.2	-0.6
AB31				pmax	pmax		
	comp=Z,9.0nm,0.4s						
ABKAR	Akbulak array	64.82	320	*e*P	P	00 19 18.9	0.0
	comp=Z,257nm,0.4s						
BR101	Keskin Array S	82.88	309	*e*P	P	00 21 04.8	-0.3
BR131	Keskin Array S	82.88	309	*e*P	P	00 21 05.3	+0.3
BRTR	Keskin Array B	82.88	309	P	P	00 21 04.8	-0.3
	comp=Z,0.9nm,0.7s,baz=115,slow=4.5,SNR=9.2						
DOT	Dot Lake	83.13	27	*e*P	P	00 21 06.4	+0.6
	comp=Z,12nm,0.8s						
BR231	Keskin MP Arra	83.53	309	*e*P	P	00 21 06.0	-2.4
INK	Inuvik	86.37	21	P	P	00 21 21.1	-0.8
	comp=Z,2.1nm,0.6s,baz=271,slow=7.4,SNR=3.7						
INK	Inuvik	86.37	21	*e*P	P	00 21 21.1	-0.8
INK				pmax	pmax		
	comp=Z,20nm,1.8s						
INK	Inuvik	86.37	21	*e*P	P	00 21 21.1	-0.8
	comp=Z,20nm,1.8s						
MLR	Muntele Rosu	87.61	316	*e*P	P	00 21 27.8	-0.8
MLR				pmax	pmax		
	comp=Z,58nm,1.4s						
MLR	Muntele Rosu	87.61	316	*e*P	P	00 21 27.8	-0.8
	comp=Z,58nm,1.4s						
MAW	Mawson	87.72	199	P	P	00 21 28.1	-0.2
	comp=Z,0.7nm,0.5s,baz=80,slow=6.1,SNR=4.8						
MAW	Mawson	87.72	199	*e*P	P	00 21 28.1	-0.2
MAW				pmax	pmax		
	comp=Z,3.0nm,1.7s						
MAW	Mawson	87.72	199	*e*P	P	00 21 28.1	-0.2
	comp=Z,2.9nm,1.7s						
EZN	Ezine	88.43	310	P	P	00 21 28.4	-4.0
EZN	Ezine	88.43	310	P	P	00 21 28.4	-4.0
EZN	Ezine	88.43	310	P	P	00 21 28.4	-4.0
LTX	Lajitas	121.25	47	*e*PKIKP	PKPdf	00 27 33.9	0.0
LTX	Lajitas	121.25	47	*e*PKPdf	PKPdf	00 27 33.9	0.0
TXAR	Lajitas Array	121.25	47	PKP	PKPdf	00 27 33.9	0.0
	comp=Z,0.2nm,0.7s,baz=216,slow=1.3,SNR=3.9						
Q39A	Willow Grove F	121.58	32	P	PKPdf	00 27 33.1	-1.0
	baz=318						
R39A	Chumby, Stover	122.09	32	P	PKPdf	00 27 34.2	-0.9
	baz=318						
T38A	Diamond	122.34	34	P	PKPdf	00 27 35.4	-0.3
	baz=316						
S39A	Bolivar	122.40	33	P	PKPdf	00 27 35.2	-0.5
	baz=317						
R40A	Maddies Statio	122.52	32	P	PKPdf	00 27 35.3	-0.6
	baz=319						
V37A	Hulbert	122.68	36	P	PKPdf	00 27 35.9	-0.4
	baz=315						
T39A	Clever	122.86	34	P	PKPdf	00 27 36.2	-0.4
	baz=317						
V38A	Canehill	123.12	35	P	PKPdf	00 27 36.5	-0.7
	baz=315						
T40A	Mansfield	123.23	33	P	PKPdf	00 27 36.8	-0.6
	baz=318						
U39A	Green Forest	123.27	34	P	PKPdf	00 27 36.7	-0.7
	baz=317						
S41A	Jillco Farms,	123.31	32	P	PKPdf	00 27 36.8	-0.7
	baz=319						
V39A	Pettigrew	123.57	35	P	PKPdf	00 27 37.5	-0.6
	baz=316						
U40A	Yellville	123.63	34	P	PKPdf	00 27 37.7	-0.5
	baz=317						
X38A	Whitesboro	123.71	37	P	PKPdf	00 27 38.5	+0.2
	baz=314						
V40A	Witts Springs	124.05	34	P	PKPdf	00 27 38.2	-0.8
	baz=317						
U41A	Viola	124.15	33	P	PKPdf	00 27 38.8	-0.3
	baz=318						
X39A	Fountain Ranch	124.24	36	P	PKPdf	00 27 39.8	+0.4
	baz=315						
U42A	Revenden	124.51	33	P	PKPdf	00 27 39.9	+0.1
	baz=319						
MIAR	Mount Ida	124.53	36	P	PKPdf	00 27 40.5	+0.6
	baz=316						
WVT	Waverly	126.44	30	*e*PKIKP	PKPdf	00 27 43.4	-0.1
WVT	Waverly	126.44	30	*e*PKPdf	PKPdf	00 27 43.4	-0.1
PLCA	Paso Flores	146.97	162	PKPbc	PKPbc	00 28 23.5	+0.5
	comp=Z,12nm,0.7s,baz=247,slow=2.9,SNR=19						

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*NIED **12** 00:09:00, 45°.70N×151°.20E, h47km, Mw5.1 Best double couple: M0 4.97000×10^16 NP1:φs225.00000°, δ36.00000°, λ141.00000°. NP2:φs348.00000°, δ68.00000°, λ61.00000°.*
*BJI **12** 00:09:46.0, 45°.70N×151°.33E, h43km, mb5.3/70, mB5.1/50, Ms4.8/72, Ms7 4.6/68*
*JMA **12** 00:09:48.0±0.7, 45°.67N×151°.22E, h30km, M5.2*
JMA Felt I J1.
*ISCJB **12** 00:09:50.2±0.3, 45°.68N±0°.02×150°.89E±0°.02, h54km±2km, mb5.2/396, MS4.6/60, Error ellipse: s-maj=3.6km s-min=1.8km az=161.9*
*SKHL **12** 00:09:50.6±1.1, 45°.45N×151°.18E, h71km±8km, mb5.6/17, mbh5.6/2, Ms4.7/7*
*MOS **12** 00:09:51.2±1.0, 45°.68N×150°.82E, h68km, mb5.5/127, MS4.6/38, Error ellipse: s-maj=6.2km s-min=4.7km az=90.7*
*IDC **12** 00:09:52.7±2.0, 45°.76N×150°.71E, h61km±17km, mb4.7/35, mb1 4.9/42, mb1mx4.8/47, mbtmp5.0/42, MS4.5/30, Ms1 4.5/30, ms1mx4.4/35, Error ellipse: s-maj=9.7km s-min=6.8km az=137.0*
*GCMT **12** 00:09:53.9±0.3, 45°.66N×151°.22E, h44km, MW5.3/79, Moment Tensor Solution. s52,c75; s79,c121; Duration: 1s.0 Moment tensor: Scale 10^17Nm; Mrr0.88±.04; Mθθ-0.42±.03; Mφφ-0.46±.03; Mrθ0.19±.02; Mθφ-0.42±.01; Mφr0.34±.02; Best double couple: M0 0.95700×10^17 NP1:φs38.00000°, δ57.00000°, λ84.00000°. NP2: φs229.00000°, δ34.00000°, λ99.00000°. Principal axes: T 0.9690, Plg77.0000°, Azm288.0000°; N -0.0250, Plg5.0000°, Azm41.0000°; P -0.9440, Plg12.0000°, Azm132.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **12** 00:09:53.9±0.4, 45°.78N×150°.77E, h71km±3km, mb5.2/275 Error ellipse: s-maj=3.6km s-min=1.8km az=160.0*
NEIC Recorded [1 JMA] in eastern Hokkaido.
ISC 12 00:09:51.2±0.4, 45°.63N±0°.04×150°.90E±0°.03, h51km±2km, h51km:pP-P, n1534, σ1s.17/1643, mb5.2/404, MS4.7/64, 96C-27D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KUR	Kuril'sk	2.17	260*d*	*i*PN	Pn	00 10 25.7	+0.8
KUR				*i* S	Sn	00 10 52.4	+1.8
KUR				pmax	pmax		
	comp=Z,7μm,0.4s						
KUR				pmax	pmax		
	comp=E,437nm,0.2s						
KUR				pmax	pmax		
	comp=N,2μm,0.3s						
KUR				smax	smax		
	comp=N,12μm,0.3s						
KUR				smax	smax		
	comp=E,2μm,0.4s						
KUR	Kuril'sk	2.17	260	*i* P	Pn	00 10 25.7	+0.8
KUR				AMB	AMB	00 10 26.8	
	comp=E,2μm,0.4s						
KUR				AMB	AMB	00 10 26.8	
	comp=E,400nm,0.4s						
KUR				AMB	AMB	00 10 26.8	
	comp=E,7μm,0.4s						
KUR				*i* S	Sn	00 10 52.4	+1.8
KUR				A	A	00 10 56.1	
	comp=E,12μm,0.4s						
KUR				A	A	00 10 56.1	
	comp=E,2μm,0.4s						
KUR				A	A	00 11 07.1	
	comp=E,17μm,2.0s						
KUR				A	A	00 11 07.1	
	comp=E,10μm,2.0s						
YUK	Yuzh-Kuril'sk	3.92	248*c*	*i*PN	Pn	00 10 50.4	+1.5
YUK				*i* S	Sn	00 11 36.3	+2.6
YUK				pmax	pmax		
	comp=Z,4μm,0.4s						
YUK				pmax	pmax		
	comp=N,2μm,0.3s						
YUK				pmax	pmax		
	comp=E,2μm,0.3s						
YUK				smax	smax		
	comp=E,18μm,0.7s						

YUK smax smax
comp=N,9μm,0.6s
YUK smax smax
comp=N,20μm,2.0s
YUK smax smax
comp=E,12μm,1.0s
YUK Yuzh-Kuril'sk 3.92 248 *i* P **Pn 00 10 50.4 +1.5**
YUK AMB AMB 00 10 56.4
comp=E,2μm,0.4s
YUK AMB AMB 00 10 56.4
comp=E,2μm,0.4s
YUK AMB AMB 00 10 56.4
comp=E,4μm,0.4s
YUK *i* S **Sn 00 11 36.3 +2.6**
YUK A A 00 11 48.3
comp=E,9μm,0.7s
YUK A A 00 11 48.3
comp=E,2μm,0.7s
YUK A A 00 11 48.4
comp=E,20μm,2.0s
YUK A A 00 11 48.4
comp=E,2μm,2.0s
NEM2 Nemuro 2 4.33 240 P **Pn 00 10 54.4 -0.1**
NEM2 *e*S **Sn 00 11 42.2 -1.5**
JRA Rausu 4.45 250 P **Pn 00 10 57.8 +1.7**
JNK Nakash 4.87 247 P **Pn 00 11 02.8 +1.0**
JNK *e*S **Sn 00 11 57.4 +0.6**
JAK Akkeshi 5.17 242 P **Pn 00 11 05.2 -0.8**
JAK *e*S **Sn 00 12 02.7 -1.7**
JTKR Abashiri--Toko 5.25 254 P **Pn 00 11 08.7 +1.7**
JMP Maruseppu 5.61 256 P **Pn 00 11 14.4 +2.4**
JAR Ashorobuto 5.61 248 P **Pn 00 11 13.9 +1.8**
JAR *e*S **Sn 00 12 16.8 +1.6**
JOB Onbets 5.76 244 P **Pn 00 11 15.0 +0.9**
JOB *e*S **Sn 00 12 18.6 -0.2**
YSS Yuzh-Sakhalins 5.80 286 *ke*PN **Pn 00 11 17.3 +2.7**
YSS *e*S **Sn 00 12 22.0 +2.3**
YSS pmax pmax
comp=N,380nm,0.5s
YSS pmax pmax
comp=Z,340nm,0.5s
YSS MLR MLR
comp=Z,6μm,15.0s
YSS MLR MLR
comp=E,4μm,14.0s
YSS Yuzh-Sakhalins 5.80 286 *e*Pn **Pn 00 11 16.7 +2.1**
YSS Yuzh-Sakhalins 5.80 286 *e*P **Pn 00 11 17.6 +3.0**
YSS AMB AMB 00 11 20.6
comp=E,300nm,0.5s
YSS *e*S **Sn 00 12 22.0 +2.3**
YSS AMS AMS 00 13 16.5
comp=E,4μm,19.0s
YSS AMS AMS 00 13 16.5
comp=E,4μm,19.0s
YSS AMS AMS 00 13 16.5
comp=E,6μm,19.0s
JSE Soyaes 5.91 266 P **Pn 00 11 19.3 +3.2**
HRK Horoka 5.96 251 *e*P **Pn 00 11 19.4 +2.5**
JKK2 Kamakawa 2 6.07 256 P **Pn 00 11 21.0 +2.7**
ASAJ Asahikawa 6.09 259 P **Pn 00 11 21.8 +3.1**
ASAJ Asahikawa 6.09 259 *e*Pn **Pn 00 11 21.5 +2.8**
ASAJ *e*Sn Sn 00 12 38.2 +11
SKR Severo-Kuril's 6.14 33 ⇑ *i*PN **Pn 00 11 19.6 +0.4**
SKR pmax pmax
comp=Z,698nm,0.6s
SKR MLR MLR
comp=Z,4μm,17.0s
SKR MLR MLR
comp=Z,3μm,15.0s
SKR Severo-Kuril's 6.14 33 *e*P **Pn 00 11 19.6 +0.4**
SKR AMB AMB 00 11 26.8
comp=Z,700nm,0.5s
SKR *e*S **Sn 00 12 25.9 -2.1**
SKR A A 00 12 35.6
comp=Z,920nm,0.6s
SKR A A 00 12 35.6
comp=Z,1μm,0.6s
SKR AMS AMS 00 13 39.3
comp=Z,3μm,17.0s
SKR AMS AMS 00 13 39.3
comp=Z,4μm,17.0s
JCH Churui 6.21 244 P **Pn 00 11 20.3 +0.1**
JCH *e*S **Sn 00 12 28.6 -1.2**
JWK2 Keihoku 6.34 270 P **Pn 00 11 26.3 +4.3**
MYR Moyori 6.43 241 *e*P **Pn 00 11 23.4 +0.1**
MYR *e*S **Sn 00 12 33.5 -1.8**
JSS Shosan 6.53 262 P Pn 00 11 29.6 +5.0
JAB Ashibetsu 6.55 254 P **Pn 00 11 28.5 +3.5**
JEM Erimo 6.67 240 P **Pn 00 11 27.6 +1.1**
ERM Erimo 6.67 240 *de*PN **Pn 00 11 27.6 +1.1**
ERM pmax pmax
comp=Z,265nm,0.5s
ERM Erimo 6.67 240 *e*Pn **Pn 00 11 27.8 +1.3**
ERM *e*Sn **Sn 00 12 37.9 -3.2**
ERM Erimo 6.67 240 *e*P **Pn 00 11 27.6 +1.1**
JBT2 Biratori 2 6.77 248 P **Pn 00 11 28.7 +0.8**
JNBK Urakawa-nobuka 6.77 243 P **Pn 00 11 27.4 -0.5**
JNBK *e*S **Sn 00 12 44.6 +1.0**
JHR Hokuryu 6.81 257 P **Pn 00 11 33.0 +4.5**
UGL Uglegorsk 6.92 303 *d i*PN **Pn 00 11 30.2 +0.3**
UGL *e*S **Sn 00 12 48.7 +1.5**
UGL Uglegorsk 6.92 303 *i* P Pn 00 11 34.9 +5.0
UGL AMB AMB 00 11 35.0
comp=Z,500nm,4.0s
UGL AMB AMB 00 11 35.0
comp=Z,800nm,4.0s
UGL AMB AMB 00 11 35.0
comp=Z,1μm,4.0s
UGL AMB AMB 00 11 36.0
comp=Z,620nm,0.9s
UGL *e*S **Sn 00 12 51.7 +4.5**
UGL A A 00 13 07.0
comp=Z,2μm,5.0s
UGL A A 00 13 07.0
comp=Z,2μm,5.0s
UGL AMS AMS 00 14 24.0
comp=Z,3μm,18.0s
UGL AMS AMS 00 14 24.0
comp=Z,5μm,18.0s
UGL AMS AMS 00 14 24.0
comp=Z,6μm,18.0s
PAU Pauzhetka 7.03 32 *e*P **Pn 00 11 32.8 +1.4**
PAU AMB AMB 00 11 45.9
comp=Z,300nm,0.8s
PAU *e*S **Sn 00 12 47.7 -2.2**
PAU A A 00 12 58.8
comp=Z,1μm,0.9s
JEW Eniwo 7.34 251 P **Pn 00 11 37.7 +2.0**
JEW *e*S **Sn 00 13 01.8 +4.2**
TYV Tymovskoe 7.59 317 *e*PN **Pn 00 11 42.0 +2.9**
TYV *e*S Sn 00 13 15.0 +11
TYV pmax pmax
comp=Z,125nm,0.8s
TYV pmax pmax
comp=Z,1μm,8.0s
TYV smax smax
comp=E,2μm,8.0s
TYV MLR MLR
comp=E,5μm,20.0s
TYV MLR MLR
comp=Z,7μm,20.0s
TYV Tymovskoe 7.59 317 *e*P **Pn 00 11 41.8 +2.7**
TYV AMB AMB 00 11 43.8
comp=Z,130nm,0.8s
TYV AMB AMB 00 11 45.0
comp=Z,1μm,8.0s
TYV *e*S **Sn 00 13 08.0 +4.3**
TYV A A 00 13 16.8
comp=Z,90nm,0.9s
TYV AMS AMS 00 14 24.3
comp=Z,4μm,18.0s
TYV AMS AMS 00 14 24.3
comp=Z,4μm,18.0s
TYV AMS AMS 00 14 24.3
comp=Z,6μm,18.0s
JNB Noboribetsu 7.78 249 P **Pn 00 11 42.1 +0.4**
JNB *e*S **Sn 00 13 07.7 -0.6**
JSK Shakotan 7.79 257 P **Pn 00 11 44.9 +2.9**
JKB Kayabe 8.06 246 P **Pn 00 11 45.3 -0.3**
JKB *e*S **Sn 00 13 10.7 -4.7**
JSH Shimam 8.36 253 P **Pn 00 11 52.1 +2.4**
JYM2 Yakumo 2 8.38 249 P **Pn 00 11 50.2 +0.2**
JSR Shiriuchi 8.64 245 P **Pn 00 11 53.4 -0.2**
JSR *e*S **Sn 00 13 26.4 -3.2**
JANG Nango 8.65 236 P **Pn 00 11 50.9 -2.9**
JANG *e*S Sn 00 13 20.9 -9.0
JTM Tenmabayashi 8.66 239 P **Pn 00 11 52.6 -1.2**
JTM *e*S **Sn 00 13 21.4 -8.6**
PEA0 Petropavlovsk- 8.69 28 *e*Pn **Pn 00 11 54.3 +0.1**
PEA0 *e*Sn **Sn 00 13 31.3 +0.6**
PEA0B Petropavlovsk- 8.69 28 *e*Pn **Pn 00 11 54.9 +0.7**
PEA0B *e*Sn Sn 00 13 42.2 +12
PETK Petropavlovsk- 8.69 28 P **Pn 00 11 54.5 +0.3**
comp=Z,4.8nm,0.3s,baz=196,slow=12,SNR=40
PETK S **Sn 00 13 33.0 +2.3**
baz=177,slow=13,SNR=1.9
PETK LR LR 00 15 20.7
comp=Z,2μm,18.1s,baz=219,slow=38
PEA1 Petropavlovsk- 8.70 28 *e*Pn **Pn 00 11 54.5 +0.3**
PEA1 *e*Sn **Sn 00 13 33.0 +2.2**
PEA1 *e* 00 15 20.7
JTH Tanohata 8.75 233 P **Pn 00 11 52.7 -2.3**
PET Petropavlovsk 8.96 32 *e*PN **Pn 00 12 00.6 +2.8**
PET pmax pmax
comp=Z,100nm,7.7s
PET MLR MLR
comp=Z,2μm,18.0s
PET MLR MLR
comp=Z,3μm,15.0s
PET Petropavlovsk 8.96 32 *e*Pn **Pn 00 11 58.8 +1.0**
PET *e*Sn **Sn 00 13 35.0 -2.1**
PET Petropavlovsk 8.96 32 *e*P **Pn 00 11 58.2 +0.4**
PET AMB AMB 00 12 13.7
comp=Z,40nm,0.9s
PET *e*S **Sn 00 13 34.6 -2.6**
PET A A 00 13 40.1
comp=Z,100nm,0.5s
PET AMS AMS 00 15 33.0
comp=Z,2μm,14.0s
PET AMS AMS 00 15 33.0
comp=Z,2μm,14.0s
JOSM Okushiri--Mats 8.98 251 P **Pn 00 11 58.6 +0.3**
OKH Okha 9.46 330 *e*PN **Pn 00 12 08.0 +3.4**
OKH pmax pmax
comp=Z,4μm,2.0s
OKH MLR MLR
comp=Z,3μm,12.0s
OKH Okha 9.46 330 *e*P **Pn 00 12 08.0 +3.4**
OKH AMB AMB 00 12 09.8
comp=Z,3μm,2.0s
OKH AMB AMB 00 12 10.3
comp=Z,100nm,1.0s
OKH *e*S **Sn 00 13 52.0 +2.6**
OKH A A 00 13 54.8
comp=Z,2μm,0.7s
OKH AMS AMS 00 16 42.4
comp=Z,3μm,12.0s
OFUJ Ofunato 9.46 229 P **Pn 00 12 01.7 -3.1**
JRG Rokugo 9.81 234 P **Pn 00 12 07.3 -2.3**
JOG2 Oga 2 9.96 239 P **Pn 00 12 10.9 -0.8**
NKL Nikolayevsk 10.04 322 *e*PN **Pn 00 12 14.0 +1.4**
NKL *e*S Sn 00 14 14.0 +10
NKL pmax pmax
comp=N,600nm,3.0s
NKL pmax pmax
comp=E,700nm,3.0s
NKL pmax pmax
comp=Z,1μm,2.0s
NKL pmax pmax
comp=N,210nm,1.3s
NKL pmax pmax
comp=E,260nm,1.3s
NKL pmax pmax
comp=Z,430nm,1.3s
NKL smax smax
comp=E,1μm,12.0s
NKL MLR MLR
comp=N,2μm,19.0s
NKL MLR MLR
comp=E,3μm,19.0s
NKL MLR MLR
comp=Z,5μm,20.0s
NKL Nikolayevsk 10.04 322 *e*P **Pn 00 12 14.0 +1.4**
TEY Ternei 10.09 272 *e*P **Pn 00 12 17.8 +4.5**
TEY AMB AMB 00 12 18.0
comp=Z,500nm,2.0s
TEY AMB AMB 00 12 18.0
comp=Z,500nm,2.0s
TEY AMB AMB 00 12 18.0
comp=Z,20nm,0.5s
TEY AMS AMS 00 15 48.0
comp=Z,2μm,20.0s
TEY AMS AMS 00 15 48.0
comp=Z,3μm,20.0s
TEY AMS AMS 00 15 48.0
comp=Z,5μm,20.0s
JIO Ouri 10.09 228 P **Pn 00 12 10.5 -2.9**
JIO *e*S Sn 00 13 54.3 -11
JYA Atsumi 10.88 234 P **Pn 00 12 22.5 -1.7**
JYA *e*S **Sn 00 14 18.4 -6.0**
GRNR Gornyy 10.94 303 *e*P **Pn 00 12 28.2 +3.3**
GRNR AMB AMB 00 12 30.0
comp=Z,80nm,1.0s
HABR Khabarovsk 11.18 290 *de*PN **Pn 00 12 29.1 +0.8**
HABR *e*S **Sn 00 14 33.4 +1.8**
HABR pmax pmax
comp=N,17nm,1.4s
HABR pmax pmax
comp=Z,199nm,1.4s
HABR pmax pmax
comp=E,195nm,1.4s
HABR MLR MLR
comp=Z,2μm,13.0s
HABR Khabarovsk 11.18 290 *e*P **Pn 00 12 29.0 +0.8**
KLR Kul'dur 13.45 292 P **Pn 00 13 02.2 +3.0**
comp=Z,0.9nm,0.3s,baz=100,slow=14,SNR=89
KLR LR LR 00 18 39.1
comp=Z,3μm,18.4s,baz=106,slow=40
KLR Kul'dur 13.45 292 PN **Pn 00 13 02.2 +3.0**
KLR pmax pmax
comp=Z,1.0nm,0.3s
KLR MLR MLR
comp=Z,3μm,18.5s
USRK Ussuriysk Ar. 13.48 271 P **Pn 00 13 00.4 +0.7**
comp=Z,5.8nm,0.3s,baz=76,slow=12,SNR=66
USRK S **Sn 00 15 26.0 -1.8**
baz=104,slow=17,SNR=1.5
USRK LR LR 00 18 15.2
comp=Z,3μm,19.1s,baz=74,slow=38
VLA Vladivostok 13.83 266 *d i*P **Pn 00 13 05.7 +1.3**
VLA pmax pmax
comp=Z,49nm,0.8s
VLA Vladivostok 13.83 266 *e*P **Pn 00 13 05.7 +1.3**
EKMR Ekimchan 13.84 309 *e*P **Pn 00 13 07.0 +2.5**
EKMR AMB AMB 00 13 17.5
comp=Z,40nm,0.7s
MA2 Magadan 13.96 360 P **Pn 00 13 06.6 +0.4**
comp=Z,9.1nm,0.3s,baz=187,slow=9.9,SNR=23
MA2 LR LR 00 18 29.4
comp=Z,1μm,18.3s,baz=176,slow=37
MSHR Mys Shultsa 14.51 265 ⇓ *e*P **Pn 00 13 12.8 -0.6**
INU Inuyama 14.71 231 *e*Pn **Pn 00 13 15.0 -1.2**
MDJ Mudanjiang 15.07 274 P **Pn 00 13 21.6 +0.8**
MDJ S **Sn 00 16 06.7 +0.1**
MDJ PcP **PcP 00 18 27.3 +1.7**
MDJ ScP **ScP 00 21 57.8 +2.7**
MDJ PcS **PcS 00 22 02.4 +1.7**
MDJ pmax pmax
comp=Z,120nm,0.8s
MDJ pmax pmax
comp=Z,500nm,7.7s
MDJ LR LR
comp=Z,730nm,17.1s
MDJ LR LR
comp=Z,2μm,19.6s
MDJ LR LR
comp=Z,3μm,19.6s
MDJ Mudanjiang 15.07 274 *e*Pn **P 00 13 23.4 -1.8**
JHJ2 Mitsune 15.14 218 *e*Pn **Pn 00 13 23.9 +2.2**
comp=Z,161nm,0.9s
JHJ Hachijo jima 2 15.15 218 P **P 00 13 24.9 -1.1**
comp=Z,11nm,0.3s,baz=76,slow=2.0,SNR=5.6
JHJ S Sn 00 15 53.5 -15
comp=Z,40nm,0.3s,baz=108,slow=20,SNR=10.0
SMY Shemya 16.70 56 *e*P **Pn 00 13 40.7 -0.7**
SMY Shemya 16.70 56 *e*Pn **Pn 00 13 40.6 -0.7**
BMKR Bomnak 16.73 311 *e*P **P 00 13 42.9 -0.6**
BMKR AMB AMB 00 13 48.9
comp=Z,170nm,0.7s
ZEA Zeya 17.26 307 *e*P **P 00 13 49.6 +0.3**
comp=Z,40nm,1.0s,comp=E,40nm,1.0s,comp=N,40nm,1.0s
ZEA AMB AMB 00 13 52.9
comp=N,150nm,1.0s
ZEA AMB AMB 00 13 52.9
comp=N,210nm,1.0s
ZEA A A 00 17 18.0
comp=N,500nm,10.0s
ZEA AMS AMS 00 20 45.0
comp=N,600nm,17.0s
ZEA AMS AMS 00 20 45.0
comp=N,2μm,17.0s
ZEA AMS AMS 00 20 45.0
comp=N,3μm,17.0s
SEY Seymchan 17.36 2 P **Pn 00 13 48.7 -0.8**
comp=N,0.6nm,0.3s,baz=174,slow=9.4,SNR=40
KROS Kirovskiy 17.64 309 *e*P **P 00 13 53.6 +0.1**
KROS AMB AMB 00 13 58.6
comp=N,10.0nm,0.6s
KROS AMB AMB 00 13 58.6
comp=N,20nm,0.6s
KROS AMB AMB 00 13 58.6
comp=N,30nm,0.6s
CN2 Changchun 18.16 273 ⇓ P **P 00 13 59.0 -0.3**
CN2 *e*S **Sn 00 17 17.2 -4.1**
CN2 pmax pmax
comp=N,30nm,0.5s
CN2 pmax pmax
comp=N,400nm,8.0s
CN2 LR LR
comp=N,1μm,18.0s
CN2 LR LR
comp=N,2μm,18.0s
CN2 LR LR
comp=N,2μm,18.0s
KSRS Korea Array 19.00 253 P **P 00 14 08.3 -0.1**
comp=N,2.5nm,0.3s,baz=65,slow=10,SNR=53
KSRS S **S 00 17 40.1 -1.3**
comp=N,0.1nm,0.3s,baz=44,slow=17,SNR=2.1
KSRS PcP **PcP 00 18 32.1 +0.2**
baz=45,slow=0.9,SNR=6.6
KSRS LR LR 00 21 22.2
comp=N,1μm,19.3s,baz=60,slow=36
KS01 Wonju Array Si 19.00 253 *e*P **P 00 14 08.1 -0.5**
KS01 *e*PcP **PcP 00 18 32.8 +0.9**
KS15 Wonju Array Si 19.03 253 *e*P **Pn 00 14 09.8 -0.2**
KS15 *e*S **S 00 17 40.1 -1.9**
KS15 *e*PcP **PcP 00 18 32.1 +0.2**
KS15 *e* 00 21 22.2
KSAR Wonju Array Be 19.03 253 P **P 00 14 08.4 -0.5**
KSAR Wonju Array Be 19.03 253 P **P 00 14 08.3 -0.5**
CLNS Chul'man 19.64 314 *e*P **Pn 00 14 17.7 +0.6**
CLNS *e*S S 00 17 41.2 -13
CLNS pmax pmax
comp=N,29nm,1.1s
CLNS pmax pmax
comp=Z,69nm,0.9s
CLNS pmax pmax
comp=E,35nm,1.0s
CLNS smax smax
comp=N,120nm,14.1s
CLNS smax smax
comp=E,103nm,10.8s
CLNS MLR MLR
comp=N,797nm,17.0s
CLNS MLR MLR
comp=Z,1μm,16.0s
CLNS MLR MLR
comp=E,715nm,17.0s
JNU Nakatsue 19.83 238 P **P 00 14 18.4 +0.8**
comp=E,2.5nm,0.3s,baz=229,slow=5.9,SNR=22
JNU S **S 00 17 58.1 0.0**
comp=E,0.3nm,0.3s,baz=267,slow=16,SNR=2.1
JNU Nakatsue 19.83 238 *e*P **P 00 14 18.3 +0.6**
comp=E,91nm,0.9s
JNU *e*S **S 00 17 58.1 0.0**
INCN Inchon 19.85 254 P **Pn 00 14 19.3 -0.5**
SNR=7.3
INCN Inchon 19.85 254 *e*P **Pn 00 14 19.2 -0.5**
comp=E,118nm,0.6s
YAK Yakutsk 20.49 331 P **P 00 14 25.0 +0.5**
comp=E,317nm,0.7s,baz=331,slow=1.3,SNR=24
YAK S **S 00 18 07.4 -3.2**
comp=E,19nm,0.3s,baz=179,slow=1.9,SNR=1.9
YAK LR LR 00 22 08.8
comp=E,2μm,21.7s,baz=144,slow=36
YAK Yakutsk 20.49 331 *e*P Pn 00 14 26.1 -1.0
YAK *e*S **S 00 18 07.0 -3.7**
YAK *e*SSS SSS 00 18 30.5
YAK pmax pmax
comp=Z,359nm,0.9s
YAK pmax pmax
comp=E,111nm,1.0s
YAK pmax pmax
comp=N,125nm,1.2s
YAK smax smax
comp=N,127nm,2.2s
YAK smax smax
comp=E,34nm,1.5s
YAK MLR MLR
comp=E,1μm,22.0s
YAK MLR MLR
comp=Z,2μm,21.0s
YAK MLR MLR
comp=N,1μm,18.0s
YAK Yakutsk 20.49 331 *e*P Pn 00 14 26.5 -0.5
comp=N,386nm,0.8s
YAK *e*S **S 00 18 07.5 -3.2**
YAK *e*ScP **ScP 00 22 08.8 +2.6**
YAK Yakutsk 20.49 331 *e*P Pn 00 14 26.2 -0.9
DL2 Dalian 22.60 263 P **P 00 14 47.2 -0.2**
DL2 S **S 00 18 52.5 +1.2**
DL2 pmax pmax
comp=N,73nm,1.1s
DL2 pmax pmax
comp=N,220nm,4.2s
DL2 LR LR
comp=N,640nm,18.2s
DL2 LR LR
comp=N,1μm,23.5s
BILL Bilibino 23.84 14 ⇑ *e*P **P 00 15 00.6 +1.4**
BILL *e**PP **pP 00 15 11.8 -0.3**
BILL *e**SP **sP 00 15 21.2 +3.0**
BILL *e*SS Sn 00 20 02.1 +25
BILL pmax pmax
comp=Z,12nm,0.6s
BILL MLR MLR
comp=Z,1μm,17.0s
BILL Bilibino 23.84 14 *e*P **P 00 14 59.7 +0.5**
comp=Z,16nm,0.5s
BILL Bilibino 23.84 14 *e*P **P 00 15 00.6 +1.4**
BOD Bodaibo 25.55 312 *e*P **P 00 15 12.1 -2.8**
BOD pmax pmax
comp=Z,12nm,1.0s
BJI Beijing 25.93 270 P **P 00 15 18.7 +0.2**
BJI S **S 00 19 45.8 +0.7**
BJI pmax pmax
comp=Z,98nm,1.1s
BJI pmax pmax
comp=Z,560nm,4.5s
BJI LR LR
comp=Z,600nm,17.2s
BJT Baijiatuau 25.95 270 *e*P **P 00 15 19.0 +0.3**
BJT pmax pmax
comp=Z,85nm,0.9s
BJT Baijiatuau 25.95 270 *e*P **P 00 15 19.0 +0.3**
comp=Z,85nm,0.9s
JOW Kunigami 26.03 232 *e*P **P 00 15 20.1 +0.6**
comp=Z,59nm,0.9s
TIA Tai'an 27.03 262 ⇑ P **P 00 15 29.1 +0.6**
TIA S **S 00 20 02.2 -0.3**
TIA pmax pmax
comp=Z,80nm,1.0s
TIA LR LR
comp=Z,500nm,16.0s
TIA LR LR
comp=Z,880nm,19.0s
TIA LR LR
comp=Z,560nm,18.0s
TIXI Tiksi 28.13 345 P **P 00 15 35.3 -2.7**
comp=Z,15nm,0.5s,baz=137,slow=7.8,SNR=23
TIXI PcP **PcP 00 18 49.5 -1.1**
comp=Z,8.4nm,0.6s,baz=90,slow=5.1,SNR=6.1
TIXI Tiksi 28.13 345 ⇓ *e*P **P 00 15 38.2 +0.3**
TIXI pmax pmax
comp=Z,10.0nm,0.6s
TIXI Tiksi 28.13 345 *e*P **P 00 15 35.8 -2.1**
TIXI *e*PcP **PcP 00 18 50.4 -0.3**

TIXI	**Tiksi**	**28.13**	**345**	*e*P	**P**	**00 15 38.2**	**+0.3**
NJ2	**Nanjing**	**28.20**	**252**	*e*P	**P**	**00 15 39.9**	**+1.0**
NJ2				pP	**pP**	**00 15 53.9**	**+1.9**
NJ2				S	**S**	**00 20 26.0**	**+5.1**
NJ2				pmax	pmax		
	comp=Z,28nm,0.8s						
NJ2				LR	LR		
	comp=Z,760nm,14.1s						
NJ2				LR	LR		
	comp=Z,1μm,19.2s						
NJ2				LR	LR		
	comp=Z,1μm,17.4s						
HHC	**Hu-ho-hao-te**	**28.84**	**275**	*e*P	**P**	**00 15 45.6**	**+0.8**
HHC				S	**S**	**00 20 29.5**	**-1.7**
HHC				pmax	pmax		
	comp=Z,42nm,0.7s						
HHC				pmax	pmax		
	comp=Z,200nm,6.5s						
HHC				LR	LR		
	comp=Z,950nm,15.3s						
HHC				LR	LR		
	comp=Z,1μm,18.8s						
HHC				LR	LR		
	comp=Z,2μm,17.8s						
H11N2	**WAKE ISLAND Hy**	**29.02**	**148**	T	T	00 46 35.3	
	baz=336,slow=76						
H11N1	**WAKE ISLAND Hy**	**29.03**	**148**	T	T	00 46 33.3	
	baz=336,slow=76,SNR=5981						
H11N3	**WAKE ISLAND Hy**	**29.03**	**148**	T	T	00 46 33.6	
	baz=336,slow=76,SNR=9509						
TIY	**Taiyuan**	**29.57**	**268**	*e*P	**P**	**00 15 52.9**	**+1.7**
TIY				S	**S**	**00 20 48.4**	**+5.7**
TIY				pmax	pmax		
	comp=Z,52nm,0.8s						
TIY				pmax	pmax		
	comp=Z,200nm,7.0s						
TIY				LR	LR		
	comp=Z,160nm,11.0s						
TIY				LR	LR		
	comp=Z,860nm,18.1s						
TIY				LR	LR		
	comp=Z,1μm,19.0s						
BTO	**Baotou**	**30.02**	**275**	*e*P	**P**	**00 15 55.1**	**-0.1**
H11S1	**WAKE ISLAND Hy**	**30.06**	**149**	T	T	00 47 46.6	
	baz=336,slow=76,SNR=9588						
H11S3	**WAKE ISLAND Hy**	**30.07**	**149**	T	T	00 47 51.1	
	baz=336,slow=76,SNR=8342						
H11S2	**WAKE ISLAND Hy**	**30.08**	**149**	T	T	00 47 51.8	
	baz=336,slow=76,SNR=7765						
SONA1	**Songino Array**	**30.26**	**290**	*e*P	**P**	**00 15 58.2**	**+0.9**
SONA0	**Songino Array**	**30.27**	**290**	*e*P	**P**	**00 15 55.6**	**-1.8**
	comp=Z,6.5nm,0.8s						
SONA0				*e*PcP	**PcP**	**00 18 55.4**	**-1.3**
SONA0				*e*		00 29 13.5	
SONM	**Songino Array**	**30.27**	**290**	P	**P**	**00 15 55.6**	**-1.8**
	comp=Z,5.4nm,0.7s,baz=75,slow=7.1,SNR=41						
SONM				PcP	**PcP**	**00 18 55.4**	**-1.3**
	comp=Z,4.7nm,0.7s,baz=125,slow=2.4,SNR=5.8						
SONM				LR	LR	00 29 13.5	
	comp=Z,2μm,18.2s,baz=79,slow=39						
ZAK	**Zakamensk**	**31.77**	**296**	*e*P	**P**	**00 16 06.6**	**-3.9**
ZAK				*e*		00 18 57.4	
ZAK				pmax	pmax		
	comp=Z,54nm,1.3s						
WHN	**Wuhan**	**32.16**	**255**⇑	*i*P	**P**	**00 16 14.5**	**+0.6**
WHN				pP	**pP**	**00 16 27.9**	**+0.8**
WHN				S	**S**	**00 21 19.5**	**-3.5**
WHN				pmax	pmax		
	comp=Z,190nm,0.6s						
WHN				LR	LR		
	comp=Z,2μm,17.7s						
WHN				LR	LR		
	comp=Z,510nm,10.8s						
WHN				LR	LR		
	comp=Z,1μm,17.9s						
GUMO	**Guam**	**32.35**	**191**	LR	LR	00 27 11.3	
	comp=Z,351nm,21.9s,baz=342,slow=32						
YULB	**Yu-li**	**32.67**	**237**	*e*P	**P**	**00 16 20.9**	**+2.4**
	comp=Z,15nm,0.8s						
TPUB	**Ta-pu**	**33.14**	**238**	*e*P	**P**	**00 16 23.6**	**+1.1**
	comp=Z,42nm,0.8s						
TWG	**Pinlang**	**33.24**	**237**	*e*P	**P**	**00 16 22.4**	**-1.1**
	comp=Z,152nm,0.9s						
XAN	**Xi'an**	**33.89**	**265**	P	**P**	**00 16 29.4**	**+0.3**
XAN				PP	**PP**	**00 17 44.9**	**-1.5**
XAN				PcP	**PcP**	**00 19 05.8**	**-0.9**
XAN				S	**S**	**00 21 49.3**	**-0.6**
XAN				SS	**SnSn**	**00 24 00.5**	**+1.3**
XAN				pmax	pmax		
	comp=Z,53nm,1.1s						
XAN				pmax	pmax		
	comp=Z,210nm,11.7s						
XAN				LR	LR		
	comp=Z,520nm,15.8s						
XAN				LR	LR		
	comp=Z,450nm,17.8s						
XAN				LR	LR		
	comp=Z,790nm,16.4s						
TT01	**Tatalina**	**34.27**	**41**	*e*P	**P**	**00 16 32.1**	**+0.1**
TT01				*e*pP	**pP**	**00 16 40.8**	**-4.4**
ENH	**Enshi**	**35.65**	**259**	*e*P	**P**	**00 16 44.5**	**+0.2**
	comp=Z,48nm,0.8s						
ENH				*e*PcP	**PcP**	**00 19 13.2**	**+1.3**
OHAK	**Old Harbor**	**35.67**	**50**	*e*P	**P**	**00 16 43.5**	**-0.6**
	comp=Z,40nm,1.0s						
RSO	**Redoubt South**	**35.75**	**45**	*e*P	**P**	**00 16 46.1**	**+1.1**
KDAK	**Kodiak Island**	**36.00**	**49**	*e*P	**P**	**00 16 46.3**	**-0.6**
KDAK				pmax	pmax		
	comp=Z,45nm,0.9s						
KDAK	**Kodiak Island**	**36.00**	**49**	*e*P	**P**	**00 16 46.3**	**-0.6**
	comp=Z,45nm,0.9s						
PPLA	**Purkeypile**	**36.02**	**41**	*e*P	**P**	**00 16 47.8**	**+0.6**
	comp=Z,66nm,1.3s						
SPU	**Mount Spurr**	**36.08**	**44**	*e*P	**P**	**00 16 48.5**	**+0.9**
CAST	**Castle Rocks**	**36.08**	**40**	*e*P	**P**	**00 16 48.6**	**+1.0**
	comp=Z,20nm,0.9s						
LZH	**Lanzhou**	**36.39**	**272**	⇑P	**P**	**00 16 52.0**	**+1.3**
LZH				pP	pP	00 17 02.2	-1.8
LZH				sP	sP	00 17 06.0	-4.0
LZH				PP	**PP**	**00 18 15.0**	**+0.9**
LZH				S	**S**	**00 22 23.1**	**-5.4**
LZH				pmax	pmax		
	comp=Z,95nm,1.0s						
LZH				pmax	pmax		
	comp=Z,360nm,4.9s						
LZH				LR	LR		
	comp=Z,540nm,14.7s						
LZH				LR	LR		
	comp=Z,930nm,17.2s						
LZH				LR	LR		
	comp=Z,2μm,18.0s						
CNPM	**China Poot**	**36.56**	**46**	*e*P	**P**	**00 16 51.6**	**-0.1**
KTH	**Kantishna Hill**	**36.60**	**40**	*e*P	**P**	**00 16 52.8**	**+0.6**
	comp=Z,78nm,1.1s						
BRLK	**Bradley Lake**	**36.72**	**46**	*e*P	**P**	**00 16 53.4**	**+0.3**
TRF	**Thorofare Moun**	**36.89**	**40**	*e*P	**P**	**00 16 55.2**	**+0.6**
	comp=Z,17nm,0.7s						
COLD	**Coldfoot**	**37.12**	**34**	*e*P	**P**	**00 16 56.5**	**+0.2**
	comp=Z,24nm,0.9s						
RC01	**Rabbit Creek A**	**37.20**	**44**	*e*P	**P**	**00 16 57.1**	**0.0**
	comp=Z,18nm,0.9s						
PMR	**Palmer**	**37.47**	**43**	*e*P	**P**	**00 16 59.2**	**-0.1**
PMR				pmax	pmax		
	comp=Z,14nm,1.0s						
PMR	**Palmer**	**37.47**	**43**	*e*P	**P**	**00 16 59.1**	**-0.1**
	comp=Z,14nm,1.0s						
MCK	**McKinley**	**37.49**	**39**	*e*P	**P**	**00 16 59.8**	**+0.2**
MCK				pmax	pmax		
	comp=Z,29nm,1.0s						
MCK	**McKinley**	**37.49**	**39**	*e*P	**P**	**00 16 59.8**	**+0.2**
	comp=Z,29nm,1.0s						
MCK	**McKinley**	**37.49**	**39**	*e*P	**P**	**00 16 58.8**	**-0.8**
RND	**Reindeer**	**37.53**	**40**	*e*P	**P**	**00 16 59.9**	**-0.1**
RND				pmax	pmax		
	comp=Z,44nm,1.2s						
RND	**Reindeer**	**37.53**	**40**	*e*P	**P**	**00 16 59.9**	**-0.1**
	comp=Z,44nm,1.2s						
GTA	**Gaotai**	**37.63**	**279**	*e*P	**P**	**00 17 01.9**	**+0.7**
GTA				pP	pP	00 17 16.7	+2.2
GTA				PcP	**PcP**	**00 19 19.2**	**+1.4**
GTA				S	**S**	**00 22 46.5**	**-0.8**
GTA				sS	sS	00 23 11.0	+1.3
GTA				pmax	pmax		
	comp=Z,27nm,1.0s						
GTA				pmax	pmax		
	comp=Z,170nm,6.7s						
GTA				LR	LR		
	comp=Z,340nm,15.0s						
GTA				LR	LR		
	comp=Z,690nm,15.9s						
GTA				LR	LR		
	comp=Z,630nm,14.3s						
SML	**Sawmill**	**37.83**	**43**	*e*P	**P**	**00 17 02.4**	**-0.1**
SML				pmax	pmax		
	comp=Z,47nm,0.7s						
SML	**Sawmill**	**37.83**	**43**	*e*P	**P**	**00 17 02.4**	**-0.1**
	comp=Z,47nm,0.7s						
WRH	**Wood River Hil**	**37.86**	**38**	*e*P	**P**	**00 17 02.6**	**0.0**
	comp=Z,43nm,1.5s						
COLA	**College**	**37.96**	**37**	*e*P	**P**	**00 17 04.4**	**+0.9**
COLA				pmax	pmax		
	comp=Z,61nm,0.9s						
COLA	**College**	**37.96**	**37**	*e*P	**P**	**00 17 04.4**	**+0.9**
	comp=Z,61nm,0.9s						
COLA	**College**	**37.96**	**37**	*e*P	**P**	**00 17 04.4**	**+0.9**
CCB	**Clear Creek Bu**	**37.98**	**38**	*e*P	**P**	**00 17 03.5**	**-0.1**
	comp=Z,18nm,1.1s						
DHY	**Denali Highway**	**38.21**	**40**	*e*P	**P**	**00 17 05.8**	**0.0**
	comp=Z,61nm,1.4s						
SCM	**Sheep Creek Mo**	**38.31**	**42**	*e*P	**P**	**00 17 07.0**	**+0.4**
SCM				pmax	pmax		
	comp=Z,60nm,1.4s						
SCM	**Sheep Creek Mo**	**38.31**	**42**	*e*P	**P**	**00 17 07.0**	**+0.4**
	comp=Z,60nm,1.4s						
HDA	**Harding Lake**	**38.35**	**38**	*e*P	**P**	**00 17 07.2**	**+0.4**
	comp=Z,16nm,0.7s						
HDA				*e*S	**S**	**00 23 00.9**	**+3.4**
IL1	**Eielson Array**	**38.38**	**38**	*e*P	**P**	**00 17 05.4**	**-1.5**
ILAR	**Eielson Array**	**38.38**	**38**	P	**P**	**00 17 06.5**	**-0.5**
	comp=Z,20nm,1.1s,baz=256,slow=6.9,SNR=80						
ILAR				LR	LR	00 34 57.4	
	comp=Z,312nm,18.0s,baz=274,slow=39						
ILAR	**Eielson Array**	**38.38**	**38**	P	**P**	**00 17 06.5**	**-0.5**
ILAR				pmax	pmax		
	comp=Z,19nm,1.1s						
ILAR				MLR	MLR		
	comp=Z,312nm,18.0s						
ILB	**Eielson Array**	**38.38**	**38**	*e*P	**P**	**00 17 06.9**	**-0.1**
ILB				*e*		00 34 57.4	
NRIK	**Noril'sk**	**38.94**	**330**	P	**P**	**00 17 09.8**	**-1.8**
	comp=Z,2.6nm,0.4s,baz=84,slow=4.0,SNR=6.2						
NRIK				PcP	**PcP**	**00 19 21.6**	**+0.4**
	comp=Z,12nm,0.8s,baz=99,slow=4.7,SNR=6.4						
NRIK				LR	LR	00 34 00.7	
	comp=Z,586nm,19.1s,baz=102,slow=37						
KLU	**Klutina**	**39.01**	**43**	*e*P	**P**	**00 17 12.7**	**+0.3**
	comp=Z,62nm,1.4s						
FYU	**Fort Yukon**	**39.04**	**35**	*e*P	**P**	**00 17 13.7**	**+1.2**
	comp=Z,111nm,1.2s						
DIV	**Divide**	**39.12**	**43**	*e*P	**P**	**00 17 13.7**	**+0.3**
	comp=Z,124nm,1.7s						
EYAK	**Cordova Ski Ar**	**39.20**	**44**	*e*P	**P**	**00 17 12.1**	**-1.8**
CD2	**Chengdu**	**39.25**	**265**⇑	*i*P	**P**	**00 17 15.4**	**+0.6**
CD2				pP	pP	00 17 29.3	+1.1
CD2				S	**S**	**00 23 12.2**	**+0.5**
CD2				sS	sS	00 23 36.3	+2.0
CD2				SS	**SS**	**00 26 07.7**	**+1.4**
CD2				pmax	pmax		
	comp=Z,230nm,0.5s						
CD2				pmax	pmax		
	comp=Z,1μm,5.8s						
CD2				LR	LR		
	comp=Z,570nm,12.4s						
CD2				LR	LR		
	comp=Z,590nm,15.4s						
CD2				LR	LR		
	comp=Z,620nm,15.9s						
DOT	**Dot Lake**	**39.66**	**39**	*e*P	**P**	**00 17 17.4**	**-0.4**
	comp=Z,44nm,1.2s						
BMRM	**Bremner River**	**39.70**	**44**	*e*P	**P**	**00 17 19.0**	**+0.9**
	comp=Z,21nm,0.7s						
RAGM	**Ragged Mountai**	**39.75**	**44**	*e*P	**P**	**00 17 19.0**	**+0.4**
	comp=Z,21nm,0.8s						
MENT	**Mentasta**	**39.88**	**40**	*e*P	**P**	**00 17 20.0**	**+0.3**
	comp=Z,11nm,0.7s						
GYA	**Guiyang**	**39.97**	**257**⇑	*i*P	**P**	**00 17 21.2**	**+0.3**
GYA				PP	**PnPn**	**00 18 58.0**	**+0.9**
GYA				PcP	**PcP**	**00 19 25.9**	**+0.6**
GYA				S	**S**	**00 23 16.2**	**-6.5**
GYA				SS	**SS**	**00 26 14.8**	**-6.1**
GYA				pmax	pmax		
	comp=Z,70nm,0.8s						
GYA				pmax	pmax		
	comp=Z,250nm,9.6s						
GYA				LR	LR		
	comp=Z,540nm,17.8s						
GYA				LR	LR		
	comp=Z,530nm,18.0s						
GYA				LR	LR		
	comp=Z,520nm,17.6s						
TGY	**Tagaytay City**	**40.33**	**228**	P	**P**	**00 17 22.6**	**-1.2**
	comp=Z,94nm,0.3s,baz=277,slow=9.9,SNR=2.9						
CRQM	**Cirque**	**40.44**	**44**	*e*P	**P**	**00 17 25.1**	**+0.6**
	comp=Z,80nm,1.0s						
BALM	**Baldy**	**40.78**	**43**	*e*P	**P**	**00 17 27.8**	**+0.7**
BALM				pmax	pmax		
	comp=Z,37nm,1.1s						
BALM	**Baldy**	**40.78**	**43**	*e*P	**P**	**00 17 27.8**	**+0.7**
	comp=Z,37nm,1.1s						
EGAK	**Eagle**	**40.82**	**37**	*e*P	**P**	**00 17 27.1**	**-0.2**
	comp=Z,44nm,1.0s						
DAWY	**Dawson**	**41.67**	**38**	*e*P	**P**	**00 17 34.5**	**+0.1**
	comp=Z,22nm,1.4s						
PCA	**Pinnacle**	**41.97**	**44**	*e*P	**P**	**00 17 37.8**	**+1.0**
	comp=Z,49nm,0.8s						
ZAA1	**Zalesovo Array**	**42.02**	**306**	*e*P	**P**	**00 17 35.3**	**-1.9**
ZAA1				*e*PcP	**PcP**	**00 19 31.8**	**+0.4**
ZAA1				*e*SS	SS	00 26 35.2	-25
ZAA1				*e*		00 36 17.0	
ZAA0	**Zalesovo Array**	**42.02**	**306**	*e*P	**P**	**00 17 36.5**	**-0.8**
ZAA0				*e*PcP	**PcP**	**00 19 31.6**	**+0.2**
ZAA0				*e*PcP	**PcP**	**00 19 31.8**	**+0.4**
ZALV	**Zalesovo Beam**	**42.02**	**306**	P	**P**	**00 17 35.3**	**-1.9**
	comp=Z,2.6nm,0.4s,baz=76,slow=7.8,SNR=13						
ZALV				PcP	**PcP**	**00 19 31.8**	**+0.4**
	comp=Z,31nm,0.7s,baz=73,slow=2.8,SNR=41						
ZALV				PKiKP	**PKiKP**	**00 26 35.2**	**-1.6**
	comp=Z,0.5nm,0.4s,baz=45,slow=2.2,SNR=3.6						
ZALV				LR	LR	00 36 17.0	
	comp=Z,2μm,18.7s,baz=70,slow=38						
NVS	**Novosibirsk**	**42.65**	**308**⇓	*i*P	**P**	**00 17 43.2**	**+0.8**
NVS				pmax	pmax		
	comp=N,3.0nm,0.8s						
NVS				pmax	pmax		
	comp=E,4.0nm,0.8s						
NVS				pmax	pmax		
	comp=Z,7.0nm,0.8s						
QIZ	**Qiongzhong**	**42.99**	**246**	P	**P**	**00 17 46.4**	**+0.9**
QIZ				pP	**pP**	**00 17 59.5**	**+0.4**
QIZ				S	**S**	**00 24 09.5**	**+2.2**
QIZ				LR	LR		
	comp=Z,320nm,23.2s						
QIZ				LR	LR		
	comp=Z,400nm,22.7s						
QIZ				LR	LR		
	comp=Z,650nm,24.6s						
HYT	**Haines Junctio**	**43.14**	**43**	*e*P	**P**	**00 17 48.0**	**+1.6**
	comp=Z,83nm,1.2s						
INK	**Inuvik**	**43.41**	**32**	P	**P**	**00 17 48.8**	**+0.4**
	comp=Z,66nm,0.9s,baz=303,slow=6.1						
INK	**Inuvik**	**43.41**	**32**	*e*P	**P**	**00 17 49.0**	**+0.7**
INK				pmax	pmax		
	comp=Z,60nm,0.8s						
INK	**Inuvik**	**43.41**	**32**	*e*P	**P**	**00 17 49.0**	**+0.7**
	comp=Z,60nm,0.8s						
KMI	**Kunming**	**43.52**	**259**	P	**P**	**00 17 51.1**	**+1.1**
KMI				pP	pP	00 18 05.6	+2.0
KMI				PP	**PP**	**00 19 32.3**	**+0.4**
KMI				S	**S**	**00 24 17.4**	**+1.9**
KMI				pmax	pmax		
	comp=Z,68nm,1.2s						
KMI				pmax	pmax		
	comp=Z,330nm,4.2s						
KMI				LR	LR		
	comp=Z,520nm,18.6s						
KMI				LR	LR		
	comp=Z,330nm,20.9s						
KMI				LR	LR		
	comp=Z,540nm,16.2s						
WMQ	**Urumqi**	**43.90**	**291**	P	**P**	**00 17 54.5**	**+1.8**
WMQ				pP	pP	00 18 07.0	+0.8
WMQ				sP	sP	00 18 12.0	-0.2
WMQ				PP	**PP**	**00 19 32.3**	**-3.1**
WMQ				S	**S**	**00 24 23.4**	**+3.1**
WMQ				ScS	**ScS**	**00 27 46.8**	**0.0**
WMQ				pmax	pmax		
	comp=Z,43nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,260nm,4.5s						
WMQ				LR	LR		
	comp=Z,990nm,18.4s						
WMQ				LR	LR		
	comp=Z,470nm,17.3s						
WMQ				LR	LR		
	comp=Z,1μm,26.0s						
SKAG	**Skagway**	**44.54**	**44**	*e*P	**P**	**00 17 59.5**	**+2.0**
	comp=Z,17nm,0.9s						
MK31	**Makanchi Array**	**46.09**	**297**	*e*P	**P**	**00 18 10.0**	**0.0**
MK31	**Makanchi Array**	**46.09**	**297**	*e*P	**P**	**00 18 10.0**	**0.0**
MK32	**Makanchi Array**	**46.09**	**297**	*e*P	**P**	**00 18 08.6**	**-1.4**
MK32				*e*PcP	**PcP**	**00 19 45.7**	**+0.3**
MKAR	**Makanchi Array**	**46.09**	**297**	P	**P**	**00 18 08.6**	**-1.4**
	comp=Z,13nm,0.7s,baz=77,slow=7.7,SNR=36						
MKAR				PcP	**PcP**	**00 19 45.7**	**+0.3**
	comp=Z,14nm,0.6s,baz=104,slow=0.8,SNR=11						
MKAR	**Makanchi Array**	**46.09**	**297**	*e*P	**P**	**00 18 10.0**	**0.0**
MKAR	**Makanchi Array**	**46.09**	**297**	*e*P	**P**	**00 18 10.0**	**0.0**
MKAR	**Makanchi Array**	**46.09**	**297**	*e*P	**P**	**00 18 10.0**	**0.0**
MK01	**Makanchi Array**	**46.09**	**297**	*e*P	**P**	**00 18 08.6**	**-1.4**
MAKZ	**Makanchi**	**46.28**	**298**	*e*P	**P**	**00 18 11.4**	**0.0**
MAKZ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
MAKZ	**Makanchi**	**46.28**	**298**	*e*P	**P**	**00 18 11.4**	**0.0**
	comp=Z,8.3nm,0.8s						
KURK	**Kurchatov**	**46.70**	**304**	P	**P**	**00 18 13.5**	**-1.2**
KURK						00 19 48.1	
KURK				pmax	pmax		
	comp=Z,9.0nm,0.5s						
KURK	**Kurchatov**	**46.70**	**304**	*e*P	**P**	**00 18 13.5**	**-1.2**
KURK				*e*PcP	**PcP**	**00 19 48.0**	**+0.6**
KURBB	**Kurchatov Arra**	**46.79**	**304**	P	**P**	**00 18 13.5**	**-1.9**
	comp=Z,8.5nm,0.5s,baz=72,slow=8.6,SNR=52						
KURBB				PcP	**PcP**	**00 19 48.0**	**+0.3**
	comp=Z,11nm,0.8s,baz=71,slow=3.3,SNR=13						
WRAK	**Wrangell Islan**	**47.02**	**48**	*e*P	**P**	**00 18 19.4**	**+2.3**
	comp=Z,20nm,0.9s						
DLBC	**Dease Lake**	**47.47**	**44**	P	**P**	**00 18 22.2**	**+1.5**
	comp=Z,19nm,0.9s,baz=286,slow=6.7,SNR=23						
DLBC	**Dease Lake**	**47.47**	**44**	*e*P	**P**	**00 18 22.5**	**+1.9**
	comp=Z,32nm,1.0s						
NONG	**Nongkai**	**48.06**	**251**	P	**P**	**00 18 27.2**	**+1.6**
	comp=Z,27nm,1.5s,comp=Z,13μm						
DIB	**Dawson Inlet,**	**48.18**	**52**	*e*P	**P**	**00 18 27.6**	**+1.5**
	comp=Z,25nm,0.9s						
SKNT	**Sakolnakorn**	**48.29**	**249**	P	**P**	**00 18 29.1**	**+1.7**
	comp=Z,31nm,1.2s						
LSA	**Lhasa**	**48.79**	**273**	*e*P	**P**	**00 18 33.7**	**+2.0**
LSA				pmax	pmax		
	comp=Z,44nm,0.6s						
LSA	**Lhasa**	**48.79**	**273**	*e*P	**P**	**00 18 33.7**	**+2.0**
	comp=Z,44nm,0.6s						
PDGK	**Podgornoye**	**49.43**	**294**	*i*P	**P**	**00 18 33.0**	**-2.8**
PDGK				pmax	pmax		
	comp=Z,17nm,1.4s						
UTTA	**Uttaradit**	**50.02**	**253**	P	**P**	**00 18 41.9**	**+1.3**
	comp=Z,9.4nm,0.7s,comp=Z,76nm						
LAMP	**Lampang**	**50.09**	**255**	P	**P**	**00 18 42.8**	**+1.6**
	comp=Z,25nm,0.9s,comp=Z,183nm						
CMMT	**Chiang Mai**	**50.36**	**256**	P	**P**	**00 18 44.3**	**+1.1**
	comp=Z,94nm,1.0s,comp=Z,988nm						
CHTO	**Chiang Mai**	**50.36**	**256**	P	**P**	**00 18 44.4**	**+1.3**
	comp=Z,414nm,1.0s,comp=Z,4μm						
CHTO	**Chiang Mai**	**50.36**	**256**	*e*P	**P**	**00 18 44.5**	**+1.3**
CHTO				pmax	pmax		
	comp=Z,50nm,0.7s						
CHTO	**Chiang Mai**	**50.36**	**256**	P	**P**	**00 18 44.6**	**+1.4**
	SNR=14						
CHTO				P	**P**	**00 18 44.6**	**+1.4**
	SNR=14						
CHTO	**Chiang Mai**	**50.36**	**256**	*e*P	**P**	**00 18 44.5**	**+1.3**
	comp=Z,50nm,0.7s						
CHAI	**Chaiyaphum**	**50.38**	**250**	P	**P**	**00 18 44.9**	**+1.6**
	comp=Z,7.8nm,0.9s						
BRVK	**Borovoye**	**50.42**	**309**	*de*P	**P**	**00 18 43.9**	**+0.7**
BRVK				pmax	pmax		
	comp=Z,20nm,0.6s						
PBKT	**Sadao Pong**	**50.57**	**252**	P	**P**	**00 18 46.4**	**+1.6**
	comp=Z,26nm,0.8s						
CM31	**Chiang Mai Arr**	**50.61**	**255**	*e*P	**P**	**00 18 47.0**	**+2.0**
CM31				*e*PcP	**PcP**	**00 20 02.6**	**+0.5**
CM31				*e*PKKPdf	PKKPdf	00 41 50.3	+43
CMAR	**Chiang Mai Arr**	**50.61**	**255**	P	**P**	**00 18 46.1**	**+1.1**
	comp=Z,19nm,0.8s,baz=39,slow=7.4,SNR=63						
CMAR				PcP	**PcP**	**00 20 02.6**	**+0.5**
	comp=Z,5.4nm,0.6s,baz=19,slow=1.7,SNR=8.1						
CMAR				LR	LR	00 41 50.3	
	comp=Z,446nm,19.4s,baz=54,slow=38						
SHL	**Shillong**	**50.80**	**268**	*e*P	**P**	**00 18 47.2**	**+0.6**
ZRNK	**Zerenda**	**51.16**	**310**	*i*P	**P**	**00 18 48.0**	**-0.8**
ZRNK				pmax	pmax		
	comp=Z,7.0nm,0.5s						
ZRNK	**Zerenda**	**51.16**	**310**	*e*P	**P**	**00 18 47.0**	**-1.8**
	comp=Z,22nm,1.1s						
OTUK	**Ortayu**	**51.47**	**303**	P	**P**	**00 18 51.3**	**+0.1**
OTUK				pmax	pmax		
	comp=Z,9.0nm,0.7s						
MHMT	**Maesarieng**	**51.49**	**256**	P	**P**	**00 18 53.4**	**+1.7**
	comp=Z,72nm,0.8s						
SRAK	**Srakaew**	**51.72**	**249**	P	**P**	**00 18 52.2**	**-1.2**
	comp=Z,65nm,1.0s						
TKM2	**Tokmak 2**	**52.10**	**296**	*i*P	**P**	**00 18 57.4**	**+1.2**
TKM2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
UMPA	**Umpang Tak**	**52.25**	**253**	P	**P**	**00 19 00.5**	**+3.2**
	comp=Z,19nm,1.0s						
RES	**Resolute Bay**	**52.38**	**18**	*e*P	**P**	**00 18 57.6**	**+0.1**
RES				pmax	pmax		
	comp=Z,47nm,1.1s						
RES	**Resolute Bay**	**52.38**	**18**	*e*P	**P**	**00 18 57.6**	**+0.1**
	comp=Z,47nm,1.1s						
YKW3	**Yellowknife Ar**	**52.69**	**35**	*e*P	**P**	**00 18 59.6**	**-0.4**
	comp=Z,21nm,0.9s						
YKA	**Yellowknife Ar**	**52.73**	**36**	P	**P**	**00 19 00.4**	**+0.1**
	comp=Z,14nm,0.7s,baz=298,slow=6.9,SNR=40						
YKA				PcP	**PcP**	**00 20 09.7**	**+0.4**
	comp=Z,5.0nm,0.8s,baz=300,slow=3.9,SNR=5.5						
YKA				LR	LR	00 43 28.7	
	comp=Z,24nm,20.4s,baz=0.0,slow=38						
YKB5	**Yellowknife Ar**	**52.73**	**36**	*e*P	**P**	**00 18 59.4**	**-0.9**
YKB5				*e*PcP	**PcP**	**00 20 09.2**	**-0.1**
FRU	**Bishkek**	**52.77**	**296**	*e*P	**P**	**00 19 02.0**	**+1.1**
AAK	**Ala-Archa**	**52.95**	**296**	P	**P**	**00 19 02.3**	**-0.1**
	comp=Z,18nm,0.9s,baz=99,slow=3.1,SNR=10.0						
AAK	**Ala-Archa**	**52.95**	**296**	*d*P	**P**	**00 19 04.2**	**+

PKIN **Phulchoki** 54.10 274 *e*P P 00 19 11.9 +0.7
comp=Z,152nm,0.7s
PHET **Kaeng Krachan** 54.11 250 P P 00 19 13.8 +2.8
comp=Z,9.7nm,1.1s
MNAS **Manas** 54.27 297 *i* P P 00 19 08.4 -3.7
MNAS pmax pmax
comp=Z,14nm,0.9s
DMN **Daman** 54.28 275 *e*P P 00 19 13.7 +1.2
comp=Z,293nm,0.9s
GKN **Gorkha** 54.37 275 *e*P P 00 19 14.1 +1.1
comp=Z,379nm,0.8s
HSPB **Hornsund (broa** 54.48 349 *e*P P 00 19 12.3 -0.6
SBUM **Sibu** 54.73 230 *e*P P 00 19 15.2 -0.3
comp=Z,8.8nm,0.7s
ARU **Arti** 54.79 317 *c i*P P 00 19 12.9 -2.5
ARU *PP pP 00 19 29.9 +0.5
ARU *e* 00 20 16.7
ARU 00 21 17.5
ARU S S 00 26 49.3 -2.9
ARU *SS sS 00 27 13.7 -1.9
ARU SS SS 00 30 28.0 -7.2
ARU pmax pmax
comp=Z,45nm,0.6s
ARU MLR MLR
comp=Z,993nm,22.0s
ARU **Arti** 54.79 317 *e*P P 00 19 12.8 -2.6
comp=Z,56nm,0.6s
KKAR **Karatay Array** 55.18 298 *e*P P 00 19 18.4 -0.2
KKAR **Karatay Array** 55.18 298 *e*P P 00 19 18.4 -0.2
LLLB **Lillooet** 55.19 51 *e*P P 00 19 19.1 +0.6
comp=Z,15nm,0.9s
KOLN **Koldanda** 55.24 276 *e*P P 00 19 20.5 +1.1
comp=Z,309nm,0.9s
PYUN **Piuthan** 55.46 276 *e*P P 00 19 22.1 +1.1
comp=Z,268nm,0.7s
A04D **Lummi Island** 55.73 53 P P 00 19 22.7 +0.4
baz=302
NLWA **Neilton Lookou** 55.77 55 *e*P P 00 19 24.0 +1.3
comp=Z,27nm,1.1s
BOK **Bokaro** 56.13 270 *e*P P 00 19 26.4 +0.9
BOK IAmb IAmb 00 19 27.0
comp=Z,22nm,0.6s
MBW **Mount Baker** 56.14 53 P P 00 19 25.8 +0.2
CMW **Cultus Mountai** 56.22 53 P P 00 19 26.4 +0.4
B05A **Bryant** 56.31 53 P P 00 19 27.0 +0.5
baz=303,SNR=7.4
JCW **Jim Creek** 56.45 53 *e*P P 00 19 27.5 0.0
KSM **Kuching** 56.58 231 *e*P P 00 19 30.3 +1.5
comp=Z,18nm,0.8s
D05A **Enumclaw** 56.96 54 *e*P P 00 19 32.7 +1.6
comp=Z,28nm,1.2s
F04D **Rainier, OR** 56.98 56 P P 00 19 31.8 +0.5
baz=304
LVZ **Lovozero** 57.17 336⇑ *e*P P 00 19 31.9 -0.4
LVZ pmax pmax
comp=Z,77nm,2.8s
OBSR **Observation Ro** 57.22 55 *e*P P 00 19 33.9 +0.6
FMW **Mount Fremont** 57.28 54 *e*P P 00 19 34.5 +0.8
G03D **McMinnville, O** 57.31 57 P P 00 19 34.6 +1.0
baz=304
DDI **Dehra Dun** 57.53 282 *e*P P 00 19 36.3 +0.8
SDNR **Sundarnagar** 57.56 283 *e*P P 00 19 35.0 -0.6
KAPI **Kappang** 57.56 218 P P 00 19 36.2 +0.5
comp=Z,22nm,1.1s,baz=52,slow=3.5,SNR=4.3
KAPI **Kappang** 57.56 218 *e*P P 00 19 36.6 +1.0
comp=Z,38nm,1.3s
SMLA **Simla** 57.65 283 *e*P P 00 19 37.0 +0.8
DAG **Danmarks Havn** 57.69 357 *i* P P 00 19 34.6 -1.2
comp=Z,22nm,1.1s
DAG **Danmarks Havn** 57.69 357 *i* P P 00 19 34.6 -1.2
DAG pmax pmax
comp=Z,28nm,1.1s
APA **Apatity** 57.75 336⇓ *i*P P 00 19 35.0 -1.3
APA *i* 00 20 27.3
APA *i* S S 00 27 21.0 -10
APA pmax pmax
comp=Z,6.0nm,0.8s
APA MLR MLR
comp=Z,800nm,20.0s
I03D **Drain, OR** 58.11 58 P P 00 19 40.6 +1.3
baz=305
EDM **Edmonton** 58.19 45 *e*P P 00 19 39.9 +0.2
EDM pmax pmax
comp=Z,59nm,0.8s
EDM **Edmonton** 58.19 45 *e*P P 00 19 39.9 +0.2
comp=Z,59nm,0.8s
ARCES **ARCESS Array B** 58.39 340 P P 00 19 40.6 -0.2
comp=Z,7.0nm,1.0s,baz=38,slow=7.3,SNR=12
ARCES PcP PcP 00 20 31.1 -0.1
comp=Z,12nm,0.7s,baz=35,slow=4.4,SNR=13
ARCES LR LR 00 49 46.3
comp=Z,433nm,19.3s,baz=50,slow=41
DGPR **DIGLIPUR** 58.41 256 *e*P P 00 19 41.4 -0.3
G05D **Wamic, OR** 58.44 56 P P 00 19 42.7 +1.2
baz=305,SNR=7.2
I04A **Tendick Farm,** 58.62 58 P P 00 19 43.8 +0.9
baz=305
C09A **Chrisman Ranch** 58.70 52 *e*P P 00 19 44.0 +0.7
comp=Z,13nm,0.8s
D08A **Wollman Farm,** 58.77 53 *e*P P 00 19 44.1 +0.3
comp=Z,7.7nm,0.8s
CROR **Criterion Ridg** 58.77 56 P P 00 19 44.7 +0.7
HAWA **Hanford** 58.80 54 *e*P P 00 19 45.1 +1.1
comp=Z,29nm,1.4s
HAWA *e*pP pP 00 19 57.9 -0.2
G06A **Carlson Farm,** 58.84 56 *e*P P 00 19 45.7 +1.3
comp=Z,33nm,1.4s
G06A *e*pP pP 00 19 57.8 -0.6
L02D **Cave Junction,** 58.84 60 P P 00 19 45.4 +1.0
baz=306
VTHM **Trough** 58.91 56 P P 00 19 45.8 +0.9
I05D **Terrebonne, OR** 58.94 57 P P 00 19 46.0 +0.9
baz=305,SNR=5.1
HUMO **Hull Mountain** 58.97 59 *e*P P 00 19 46.4 +1.1
comp=Z,16nm,1.5s
NEW **Newport** 59.07 51 P P 00 19 46.1 +0.2
baz=306,SNR=12
NEW **Newport** 59.07 51 *e*P P 00 19 46.1 +0.2
NEW pmax pmax
comp=Z,17nm,0.9s
NEW **Newport** 59.07 51 *e*P P 00 19 46.1 +0.2
comp=Z,17nm,0.9s
NEW **Newport** 59.07 51 *e*P P 00 19 46.1 +0.2
NDI **New Delhi** 59.11 281 *e*P P 00 19 35.3 -11
NDI *e*P pP 00 19 41.0 -20
E09A **Wood Farm, Sta** 59.52 53 *e*P P 00 19 49.7 +0.7
comp=Z,33nm,1.3s
E09A *e*pP pP 00 20 02.3 -0.8
J05D **Fort Rock, OR** 59.61 58 P P 00 19 51.0 +1.2
baz=306,SNR=7.5
K04D **Chiloquin, OR** 59.69 59 P P 00 19 51.3 +1.0
baz=306
M02C **Callahan** 59.74 60 P P 00 19 52.1 +1.4
baz=306,SNR=6.1
G08A **Pilot Rock** 59.77 55 *e*P P 00 19 51.6 +0.7
comp=Z,11nm,1.1s
G08A *e*pP pP 00 20 02.8 -2.3
TRO **Tromso** 59.79 342 *e*P P 00 19 49.6 -0.8
MYKOM **Kota Tinggi** 60.00 238 *e*P P 00 19 54.6 +1.9
comp=Z,35nm,0.9s
N02D **Trinity Center** 60.08 61 P P 00 19 54.2 +1.1
baz=306
M04C **Macdoel** 60.13 59 P P 00 19 54.5 +1.1
baz=306
K05A **Summer Lake** 60.14 58 *e*P P 00 19 55.0 +1.4
comp=Z,27nm,1.1s
KLMR **Klimovskoe** 60.26 328 *e*P P 00 19 50.0 -3.8
KLMR pmax pmax
comp=Z,8.0nm,0.6s
WALA **Waterton Lakes** 60.33 49 *e*P P 00 19 55.1 +0.4
comp=Z,23nm,0.8s
F10A **Beach Ranch, E** 60.35 53 *e*P P 00 19 55.7 +0.9
comp=Z,9.3nm,0.9s
WDC **Whiskeytown Da** 60.41 61 *e*P P 00 19 56.4 +1.2
WDC *e*PP pP 00 20 09.1 -0.2
WDC pmax pmax
comp=Z,9.0nm,0.9s
WDC **Whiskeytown Da** 60.41 61 *e*P P 00 19 56.4 +1.2
comp=Z,9.2nm,0.9s
WDC *e*pP pP 00 20 09.1 -0.2
BSMT **Bassoo Peak** 60.58 50 *e*P P 00 19 57.4 +0.9
BLMT **Blacktail Moun** 60.72 50 *e*P P 00 19 58.2 +0.8
JTMT **Jette** 60.92 50 *e*P P 00 19 59.5 +0.8
BMO **Blue Mountains** 60.97 54 *e*P P 00 19 59.8 +0.7
comp=Z,28nm,1.5s

YBMT **Yellow Bay** 60.99 50 *e*P P 00 20 00.2 +1.0
O03D **Paynes Creek** 61.03 61 P P 00 19 59.8 +0.2
baz=307,SNR=6.5
KBL **Kabul** 61.04 291 *e*P P 00 19 59.8 0.0
KBL pmax pmax
comp=Z,42nm,0.7s
KBL **Kabul** 61.04 291 *e*P P 00 19 59.8 0.0
comp=Z,42nm,0.7s
SWMT **Swartz Lake** 61.22 50 *e*P P 00 20 01.3 +0.6
SLMT **Seeley Lake** 61.65 50 *e*P P 00 20 04.2 +0.5
WVOR **Wild Horse Val** 61.65 57 *e*P P 00 20 04.9 +1.1
WVOR pmax pmax
comp=Z,17nm,1.0s
WVOR **Wild Horse Val** 61.65 57 *e*P P 00 20 04.9 +1.1
comp=Z,17nm,1.0s
MSO **Missoula** 61.66 51 P P 00 20 04.1 +0.4
baz=308,SNR=26
MSO **Missoula** 61.66 51 *e*P P 00 20 04.2 +0.4
comp=Z,32nm,1.0s
SUMG **Summit** 61.91 3⇑ *i*P P 00 20 05.5 +0.2
comp=Z,175nm,0.9s
SUMG **Summit** 61.91 3⇑ *i*P P 00 20 05.5 +0.2
SUMG pmax pmax
comp=Z,180nm,0.9s
SUMG **Summit** 61.91 3 *e*P P 00 20 05.5 +0.2
comp=Z,160nm,0.8s
VIS **Vishakhapatnam** 61.92 267 *e*P P 00 20 06.6 +1.0
CHMT **Chamberlain Mo** 61.98 51 *e*P P 00 20 06.0 0.0
AFDM **Forest Hills D** 62.36 62 *e*P P 00 20 09.2 +0.8
comp=Z,18nm,1.6s
BHPL **Bhopal** 62.41 276 *e*P P 00 20 09.1 +0.1
FFC **Flin Flon** 62.58 39 *e*P P 00 20 09.9 +0.3
FFC pmax pmax
comp=Z,39nm,0.8s
FFC **Flin Flon** 62.58 39 *e*P P 00 20 09.9 +0.3
comp=Z,39nm,0.8s
FFC **Flin Flon** 62.58 39 *e*P P 00 20 09.9 +0.3
NGP **Nagpur** 62.64 273 *e*P P 00 20 10.3 -0.2
MFID **Camas Ranch** 62.69 55 *e*P P 00 20 11.2 +0.6
comp=Z,7.2nm,0.9s
PAHR **Pah Rah Range** 62.87 60 *e*P P 00 20 12.8 +0.9
comp=Z,15nm,1.1s
FCC **Fort Churchill** 63.03 32 *e*P P 00 20 12.4 -0.1
FCC pmax pmax
comp=Z,31nm,0.8s
FCC **Fort Churchill** 63.03 32 *e*P P 00 20 12.4 -0.1
comp=Z,31nm,0.8s
LRM **Limekiln Ridge** 63.09 51 *e*P P 00 20 13.9 +0.4
PNTR **Pine Nut** 63.11 61 *e*P P 00 20 14.9 +1.2
comp=Z,17nm,1.0s
CMB **Columbia Colle** 63.28 62 *e*P P 00 20 15.5 +0.9
CMB pmax pmax
comp=Z,11nm,0.9s
CMB **Columbia Colle** 63.28 62 *e*P P 00 20 15.5 +0.9
comp=Z,11nm,0.9s
DLMT **Dillon** 63.30 52 *e*P P 00 20 15.5 +0.8
comp=Z,26nm,1.4s
YERR **Yerington** 63.40 61 *e*P P 00 20 16.4 +0.9
comp=Z,21nm,0.9s
HLID **Hailey** 63.41 54 P P 00 20 16.1 +0.6
baz=309,SNR=14
HLID **Hailey** 63.41 54 *e*P P 00 20 15.2 -0.3
comp=Z,8.6nm,0.9s
MCMT **McKenzie Canyo** 63.49 52 *e*P P 00 20 16.6 +0.4
WAKR **Walker** 63.58 61 *e*P P 00 20 18.0 +1.3
comp=Z,15nm,1.2s
BOZ **Bozeman (W)** 63.65 51 P P 00 20 17.9 +0.9
baz=309,SNR=22
BOZ **Bozeman (W)** 63.65 51 *e*P P 00 20 18.0 +0.9
BOZ pmax pmax
comp=Z,16nm,0.7s
BOZ **Bozeman (W)** 63.65 51 *e*P P 00 20 18.0 +0.9
comp=Z,16nm,0.7s
BMN **Battle Mountai** 63.72 58 *e*P P 00 20 18.6 +1.0
BMN pmax pmax
comp=Z,10.0nm,0.7s
BMN **Battle Mountai** 63.72 58 *e*P P 00 20 18.6 +1.0
comp=Z,10nm,0.7s
TVH1 **TV Hill, Hawth** 64.02 61 *e*P P 00 20 20.9 +1.1
comp=Z,9.8nm,1.0s
TVH3 **East Aurora ar** 64.05 61 *e*P P 00 20 21.0 +1.2
comp=Z,8.9nm,1.0s
TVH2 **Borealis Mine** 64.07 61 *e*P P 00 20 21.2 +1.2
comp=Z,9.3nm,1.3s
SCO **Scoresbysund** 64.08 357⇑ *i*P P 00 20 19.2 0.0
comp=Z,27nm,0.9s
SCO **Scoresbysund** 64.08 357⇑ *i*P P 00 20 19.2 0.0
SCO pmax pmax
comp=Z,27nm,0.9s
QLMT **Earthquake Lak** 64.28 52 *e*P P 00 20 22.4 +1.1
ILULI **Ilulissat** 64.32 9 *i* P P 00 20 19.7 -1.1
comp=Z,50nm,0.9s
ILULI **Ilulissat** 64.32 9 *i* P P 00 20 19.7 -1.1
ILULI pmax pmax
comp=Z,50nm,0.9s
FIA1 **FINESS Array S** 64.38 334 *e*P P 00 20 20.2 -1.1
FIA0 **FINESS Array S** 64.38 334 *e*P P 00 20 20.2 -1.2
FIA0 **FINESS Array S** 64.38 334 *e*P P 00 20 20.1 -1.2
FIA0 *e* 00 51 06.8
FINES **FINESS Array B** 64.38 334 P P 00 20 20.1 -1.2
comp=Z,18nm,0.7s,baz=46,slow=8.2,SNR=58
FINES PcP PcP 00 20 54.6 -0.8
comp=Z,11nm,0.7s,baz=46,slow=5.5,SNR=7.1
FINES PKP2bc 00 49 18.4
comp=Z,1.4nm,0.7s,baz=164,slow=5.6,SNR=5.3
FINES LR LR 00 51 06.9
comp=Z,692nm,19.8s,baz=36,slow=38
YHB **Horse Butte** 64.46 51 *e*P P 00 20 23.7 +1.2
comp=Z,32nm,1.2s
MLAC **Mammoth, Mammo** 64.49 62 P P 00 20 23.8 +1.0
baz=309
GCMT **Greyliff** 64.62 50 *e*P P 00 20 24.2 +0.8
YHH **Holmes Hill** 64.62 51 *e*P P 00 20 24.7 +1.1
comp=Z,21nm,1.1s
ELK **Elko** 64.70 57 *e*P P 00 20 25.1 +1.0
ELK pmax pmax
comp=Z,3.0nm,0.9s
ELK **Elko** 64.70 57 *e*P P 00 20 25.1 +1.0
comp=Z,3.4nm,0.9s
YFT **Old Faithful** 64.84 52 *e*P P 00 20 27.5 +2.5
comp=Z,20nm,1.1s
H17A **Grant Village** 65.02 51 P P 00 20 28.1 +1.9
baz=310
H17A **Grant Village** 65.02 51 *e*P P 00 20 28.9 +2.7
comp=Z,22nm,1.0s
RCTC **Rector, Farmer** 65.07 63 P P 00 20 26.3 +0.1
baz=310
IMW **Indian Meadow** 65.14 52 *e*P P 00 20 28.3 +1.3
comp=Z,16nm,1.0s
FLWY **Flagg Ranch** 65.16 52 *e*P P 00 20 28.9 +1.9
comp=Z,11nm,1.0s
TIN **Timaha, Big** 65.23 62 P P 00 20 28.4 +0.9
baz=310
RLMT **Red Lodge** 65.27 50 P P 00 20 28.5 +0.8
baz=311,SNR=11
RLMT **Red Lodge** 65.27 50 *e*P P 00 20 28.5 +0.8
comp=Z,24nm,1.1s
MOOW **Moose Ponds** 65.35 52 *e*P P 00 20 29.4 +1.2
comp=Z,44nm,1.6s
OBN **Obninsk** 65.35 325⇓ *e*P P 00 20 26.0 -1.7
OBN *e*PP sP 00 20 46.3 -1.5
OBN *e*SP PcP 00 20 54.8 -4.7
OBN *e* 00 20 59.1
OBN *i* 00 29 50.5
OBN pmax pmax
comp=Z,7.0nm,0.6s
OBN MLR MLR
comp=Z,340nm,18.0s
OBN **Obninsk** 65.35 325 *e*P P 00 20 26.0 -1.7
TPAW **Teton Pass** 65.40 52 *e*P P 00 20 30.0 +1.3
comp=Z,32nm,1.0s
VES **Vestal, Richgr** 65.47 63 P P 00 20 28.5 -0.3
baz=310
HVU **Hansel Valley** 65.47 55 *e*P P 00 20 29.8 +0.8
HVU *e*PP pP 00 20 43.0 -0.3
HVU pmax pmax
comp=Z,11nm,1.0s
HVU **Hansel Valley** 65.47 55 *e*P P 00 20 29.8 +0.8
comp=Z,11nm,1.0s
HVU *e*pP pP 00 20 43.0 -0.3
HYB **Hyderabad** 65.47 270 *i* P P 00 20 30.0 +0.8
LOHW **Long Hollow** 65.51 52 *e*P P 00 20 30.5 +1.2
comp=Z,51nm,1.6s
SNOW **Snow King Moun** 65.53 52 *e*P P 00 20 30.9 +1.4
comp=Z,42nm,1.4s
REDW **Red Top Meadow** 65.54 52 *e*P P 00 20 30.6 +1.2

DGMT **Dagmar** 65.69 45 P P 00 20 30.1 0.0
baz=312
DGMT **Dagmar** 65.69 45 *e*P P 00 20 30.5 +0.4
comp=Z,30nm,0.8s
CWC **Cottonwood Cre** 65.71 62 P P 00 20 30.7 0.0
baz=310
AHID **Auburn Hatcher** 65.78 53 *e*P P 00 20 31.4 +0.4
comp=Z,19nm,1.3s
GRAC **Grapevine Rang** 65.80 61 P P 00 20 31.9 +0.8
baz=310
GEYT **Alibeck** 65.84 300 P P 00 20 31.6 +0.3
comp=Z,15nm,0.6s,baz=29,slow=3.4,SNR=33
GEYT LR LR 00 52 19.6
comp=Z,772nm,18.1s,baz=55,slow=39
LAO **LASA Array** 65.85 47 P P 00 20 31.8 +0.6
baz=312
VRH **Novokhopyorsk** 65.87 319 *e*P P 00 20 30.6 -0.5
VRH pmax pmax
comp=Z,40nm,0.6s
A25A **Svangstu Ranch** 65.90 44 P P 00 20 31.8 +0.4
baz=313
SPUT **South Promonto** 65.96 55 *e*P P 00 20 33.3 +1.2
comp=Z,17nm,1.1s
R11A **Troy Canyon, C** 66.02 59 P P 00 20 33.0 +0.4
baz=310,SNR=20
R11A **Troy Canyon, C** 66.02 59 *e*P P 00 20 33.0 +0.4
comp=Z,7.7nm,0.8s
DAC **Darwin (Calif)** 66.12 62 *e*P P 00 20 33.8 +0.5
DAC pmax pmax
comp=Z,5.0nm,0.8s
DAC **Darwin (Calif)** 66.12 62 *e*P P 00 20 33.8 +0.5
comp=Z,4.7nm,0.8s
HWUT **Hardware Ranch** 66.27 54 *e*P P 00 20 34.8 +0.6
comp=Z,14nm,1.0s
MPMC **Manual Prospec** 66.32 62 P P 00 20 34.9 +0.3
baz=310,SNR=12
B25A **Knox Farm, Ray** 66.33 45 P P 00 20 34.7 +0.5
baz=313
FURC **Furnace Creek,** 66.45 61 P P 00 20 35.7 +0.6
baz=310,SNR=8.8
DUG **Dugway, Tooele** 66.47 56 P P 00 20 36.0 +0.6
baz=311,SNR=19
DUG **Dugway, Tooele** 66.47 56 *e*P P 00 20 36.0 +0.6
DUG pmax pmax
comp=Z,23nm,1.1s
DUG **Dugway, Tooele** 66.47 56 *e*P P 00 20 36.0 +0.6
comp=Z,23nm,1.1s
VSU **Vasula** 66.48 332 *ce*P P 00 20 34.2 -0.7
VSU pmax pmax
comp=Z,60nm,2.5s
SFJD **Kangerlussuaq** 66.50 9 *i* P P 00 20 34.2 -0.8
comp=Z,28nm,0.9s
SFJD **Kangerlussuaq** 66.50 9 *e*P P 00 20 34.8 -0.2
SFJD pmax pmax
comp=Z,30nm,0.9s
SFJD **Kangerlussuaq** 66.50 9 *e*P P 00 20 34.8 -0.2
comp=Z,30nm,0.9s
TPNV **Topopah Spring** 66.51 61 P P 00 20 36.1 +0.3
baz=310,SNR=15
TPNV **Topopah Spring** 66.51 61 *e*P P 00 20 36.3 +0.5
TPNV pmax pmax
comp=Z,82nm,1.9s
TPNV **Topopah Spring** 66.51 61 *e*P P 00 20 36.3 +0.5
comp=Z,82nm,1.9s
BW06 **Boulder Array** 66.64 52 P P 00 20 36.7 +0.2
baz=311,SNR=20
BW06 **Boulder Array** 66.64 52 *e*P P 00 20 36.8 +0.2
PD31 **Pinedale Array** 66.64 52 *e*P P 00 20 36.7 +0.1
PDAR **Pinedale Array** 66.64 52 P P 00 20 36.5 -0.1
comp=Z,11nm,0.8s,baz=282,slow=2.0,SNR=95
PDAR LR LR 00 49 56.4
comp=Z,96nm,20.2s,baz=327,slow=36
C25A **Freed Ranch, W** 66.66 45 P P 00 20 36.8 +0.5
baz=313
TCUT **Toone Canyon** 66.68 55 *e*P P 00 20 37.7 +0.8
comp=Z,27nm,1.2s
B26A **Jensen Ranch,** 66.71 44 P P 00 20 37.2 +0.5
baz=313
EDW2 **Edwards Air Fo** 66.76 63 P P 00 20 37.6 +0.3
baz=311,SNR=7.0
A27A **Ledoux Ranch,** 66.80 43 P P 00 20 37.7 +0.5
baz=314
DECC **Green Verdugo** 66.95 64 P P 00 20 38.6 +0.2
baz=311
WRAB **Tennant Creek** 66.97 197 *ce*P P 00 20 38.5 +0.1
WRAB pmax pmax
comp=Z,102nm,1.2s
WR1 **Warramunga Arr** 66.98 197 *e*P P 00 20 38.5 0.0
comp=Z,28nm,0.7s
WRA **Warramunga Arr** 66.98 197 P P 00 20 38.5 0.0
comp=Z,30nm,0.8s,baz=15,slow=6.6,SNR=46
WRA LR LR 00 47 39.8
comp=Z,123nm,21.9s,baz=15,slow=34
WRA PKP2bc 00 49 06.7
comp=Z,2.3nm,0.9s,baz=196,slow=2.5,SNR=5.8
JLU **Jordanelle** 67.00 55 *e*P P 00 20 39.9 +1.0
comp=Z,19nm,1.2s
VSR **Storozhevoye** 67.01 321 *e*P P 00 20 38.1 -0.3
VSR pmax pmax
comp=Z,10.0nm,0.7s
VSR MLR MLR
comp=Z,820nm,21.0s
SHOC **Shoshone, Teco** 67.18 62 P P 00 20 40.3 +0.5
baz=311,SNR=5.3
GSC **Goldstone, Bar** 67.23 62 P P 00 20 40.5 +0.2
GSC **Goldstone, Bar** 67.23 62 *e*P P 00 20 40.8 +0.5
GSC pmax pmax
comp=Z,7.0nm,0.9s
GSC **Goldstone, Bar** 67.23 62 *e*P P 00 20 40.8 +0.5
comp=Z,6.6nm,0.9s
MPU **Maple Canyon** 67.27 56 *e*P P 00 20 41.6 +1.0
comp=Z,14nm,1.1s
A28A **Rude Farm, Bot** 67.29 43 P P 00 20 40.7 +0.3
baz=314
FMP **Fort Macarthur** 67.33 65 P P 00 20 41.2 +0.4
baz=311
BFSC **Mount Baldy Ra** 67.39 64 P P 00 20 41.4 +0.1
baz=311
FITZ **Fitzroy Crossi** 67.45 206 P P 00 20 42.2 +0.7
comp=Z,12nm,0.8s,baz=37,slow=5.6,SNR=12
FITZ LR LR 00 56 52.7
comp=Z,32nm,18.0s,baz=68,slow=42
FITZ **Fitzroy Crossi** 67.45 206 *e*P P 00 20 42.7 +1.2
comp=Z,14nm,0.8s
CIS **Catalina Islan** 67.45 65 P P 00 20 41.7 0.0
baz=311
SHPR **Sheep Range** 67.47 60 *e*P P 00 20 42.4 +0.6
comp=Z,15nm,1.1s
D26A **Manning** 67.53 45 P P 00 20 41.8 -0.1
baz=314
B28A **Dugan Ranch, T** 67.57 43 P P 00 20 42.2 +0.1
baz=314,SNR=5.7
TUQ **Turquoise Moun** 67.69 62 P P 00 20 43.6 +0.3
baz=311
A29A **Manning Farm,** 67.77 42 P P 00 20 43.5 +0.2
baz=315,SNR=23
HEC **Hector,Ludlow** 67.83 63 P P 00 20 44.5 +0.5
baz=311
CCUT **Cedar City** 67.87 59 *e*P P 00 20 44.1 -0.4
comp=Z,16nm,1.2s
MSU **Marysvale** 67.94 57 *e*P P 00 20 45.8 +0.9
MSU **Marysvale** 67.94 57 *e*P P 00 20 45.8 +0.9
TMUT **Trail Mountain** 67.99 56 *e*P P 00 20 46.2 +0.9
comp=Z,13nm,1.1s
SZCU **Shurtz Canyon** 68.01 58 *e*P P 00 20 46.1 +0.8
comp=Z,9.3nm,0.9s
POO **Poona** 68.02 274 *e*P P 00 20 45.9 +0.5
POO IAmb IAmb 00 20 47.0
comp=Z,43nm,0.9s
B29A **Wagenman Farm,** 68.04 42 P P 00 20 45.2 +0.2
baz=315,SNR=12
MURC **Murrieta** 68.10 64 P P 00 20 45.7 0.0
baz=311
P17A **Butcher Ranch,** 68.15 56 *e*P P 00 20 46.6 +0.5
comp=Z,31nm,1.2s
A30A **Hoffart Farm,** 68.19 42 P P 00 20 46.3 +0.3
baz=315,SNR=8.9
MOL **Molde** 68.23 343 *e*P P 00 20 46.0 0.0
MTPU **Mount Pierson** 68.25 58 *e*P P 00 20 48.0 +1.0
comp=Z,9.3nm,0.9s
GMRC **Granite Mounta** 68.28 62 P P 00 20 47.2 +0.3
baz=311,SNR=8.3
LCMT **Little Creek M** 68.30 59 *e*P P 00 20 47.9 +0.9
comp=Z,19nm,1.0s
ULM **Lac du Bonnet** 68.36 39 P P 00 20 46.5 -0.4
comp=Z,15nm,0.8s,baz=307,slow=6.3,SNR=11

ULM LR LR 00 53 28.5
comp=Z,107nm,20.3s,baz=322,slow=38
ULM Lac du Bonnet 68.36 39 *e*P **P 00 20 46.6 -0.4**
ULM pmax pmax
comp=Z,13nm,0.6s
ULM Lac du Bonnet 68.36 39 *e*P **P 00 20 46.6 -0.4**
comp=Z,13nm,0.6s
K22A Casper 68.39 51 P **P 00 20 47.5 0.0**
baz=313,SNR=14
K22A Casper 68.39 51 *e*P **P 00 20 47.6 0.0**
comp=Z,17nm,0.6s
SRU San Rafael Swe 68.51 56 *e*P **P 00 20 48.9 +0.5**
SRU pmax pmax
comp=Z,25nm,1.0s
SRU San Rafael Swe 68.51 56 *e*P **P 00 20 48.9 +0.5**
comp=Z,24nm,1.0s
B30A Myrvik Farm, E 68.53 42 P **P 00 20 48.4 +0.3**
baz=315,SNR=26
KNB Kanab 68.55 59 *e*P **P 00 20 49.6 +1.0**
KNB pmax pmax
comp=Z,27nm,1.1s
KNB Kanab 68.55 59 *e*P **P 00 20 49.6 +1.0**
comp=Z,27nm,1.1s
PFO Pinyon Flats O 68.55 64 P **P 00 20 48.9 +0.3**
baz=312
TPFO Pinon Flats 68.56 64 P **P 00 20 48.8 +0.1**
baz=312
NC303 NORSAR Array S 68.57 340 *e*P **P 00 20 47.9 -0.2**
BELC Belle Mtn. Jos 68.59 63 P **P 00 20 48.5 -0.4**
baz=312
NC405 NORSAR Array S 68.59 340 *e*P **P 00 20 48.1 -0.1**
H25A Fruitdale 68.60 48 P **P 00 20 48.5 -0.2**
baz=314
109C Camp Elliot, M 68.62 65 P **P 00 20 48.8 -0.1**
baz=312
NC204 NORSAR Array S 68.67 341 *e*P **P 00 20 47.5 -1.3**
AKN Aaknes 68.70 343 *e*P **P 00 20 48.2 -0.7**
RSSD Black Hills 68.72 48 P **P 00 20 49.6 0.0**
baz=314
RSSD Black Hills 68.72 48 *e*P **P 00 20 49.6 0.0**
RSSD pmax pmax
comp=Z,53nm,1.3s
RSSD Black Hills 68.72 48 *e*P **P 00 20 49.6 0.0**
comp=Z,53nm,1.3s
A31A Linda, St. Vin 68.72 41 P **P 00 20 48.9 -0.4**
baz=316
IZAR Zarasai 68.77 330 *e*P **P 00 20 48.5 -0.9**
IZAR IAmb IAmb 00 20 50.0
comp=Z,6.8nm,0.7s
NB2 NORSAR Subarra 68.77 340 P **P 00 20 48.8 -0.7**
comp=Z,18nm,0.7s,baz=28,slow=6.5
NB2 NORSAR Subarra 68.77 340 P **P 00 20 48.8 -0.7**
baz=28,slow=6.5
NB2 NORSAR Subarra 68.77 340 P **P 00 20 48.7 -0.7**
NB2 pmax pmax
comp=Z,15nm,0.6s
NB200 NORSAR Array S 68.77 340 *e*P **P 00 20 49.0 -0.4**
NOA NORSAR Array B 68.77 340 P **P 00 20 49.0 -0.4**
comp=Z,25nm,0.6s,baz=31,slow=6.7,SNR=79
NOA LR LR 00 55 52.5
comp=Z,281nm,19.4s,baz=45,slow=40
NOA NORSAR Array B 68.77 340 P **P 00 20 49.0 -0.4**
NOA pmax pmax
comp=Z,15nm,0.6s
NOA MLR MLR
comp=Z,281nm,19.4s
NBO02 NORSAR Array S 68.85 340 *e*P **P 00 20 49.2 -0.7**
B31A Greenbush Farm 68.87 42 P **P 00 20 50.2 0.0**
baz=316,SNR=5.5
NBO00 NORSAR Array S 68.88 340 *e*P **P 00 20 49.7 -0.4**
IDID Didziasalis 68.94 330 *e*P **P 00 20 49.7 -0.8**
IDID IAmb IAmb 00 20 52.8
comp=Z,11nm,0.8s
NEE2 Needles Airpor 68.94 62 P **P 00 20 51.0 +0.1**
baz=312
ISAL Salakas 68.95 330 *e*P **P 00 20 49.7 -0.9**
ISAL IAmb IAmb 00 20 52.2
comp=Z,10.0nm,0.8s
NC602 NORSAR Array S 68.96 340 *e*P **P 00 20 49.8 -0.7**
NC602 IAmb IAmb 00 20 50.7
comp=Z,23nm,1.1s
NC602 NORSAR Array S 68.96 340 *e*P **P 00 20 50.0 -0.6**
C30A Mose, Pekin 68.99 43 P **P 00 20 50.8 -0.2**
baz=316
IRM Iron Mountain 69.02 62 P **P 00 20 51.6 +0.2**
baz=312,SNR=7.5
NAO01 NORSAR Array S 69.02 340 *e*P **P 00 20 50.5 -0.5**
BAR Barrett 69.03 64 *e*P **P 00 20 52.0 +0.5**
comp=Z,8.7nm,1.0s
A32A Rocking H Ranc 69.05 41 P **P 00 20 50.9 -0.4**
baz=316,SNR=8.1
MONP2 Monument Peak 69.05 64 P **P 00 20 51.6 -0.3**
baz=312
O20A White River Ci 69.14 54 P **P 00 20 52.2 0.0**
baz=313,SNR=13
O20A White River Ci 69.14 54 *e*P **P 00 20 52.6 +0.4**
comp=Z,22nm,1.2s
BC3 Big Chuckawall 69.16 63 P **P 00 20 52.4 0.0**
baz=312
W13A Hualapai Mount 69.17 61 *e*P **P 00 20 53.2 +0.7**
comp=Z,6.7nm,0.9s
NACGM Naroch 69.24 329 *e* **P 00 20 51.0 -1.4**
U15A North Rim 69.26 59 *e*P **P 00 20 53.9 +0.7**
comp=Z,24nm,1.1s
C31A Landman Farms, 69.28 42 P **P 00 20 52.5 -0.2**
baz=316,SNR=8.1
B32A Ashes, Strandq 69.40 41 P **P 00 20 53.0 -0.5**
baz=316,SNR=10
IKP In-Ko-Pah, Jac 69.41 64 P **P 00 20 53.7 -0.2**
baz=312
SWSC Sam W. Stewart 69.41 64 P **P 00 20 53.8 0.0**
baz=312
GOF Gofitskoye 69.50 314⇓ *i*P **P 00 20 55.1 +0.9**
GOF pmax pmax
comp=Z,65nm,0.8s
A33A Warroad 69.53 40 P **P 00 20 53.8 -0.5**
baz=317,SNR=13
F29A Eureka 69.66 45 P **P 00 20 54.8 -0.4**
baz=315,SNR=5.1
Y12C Blythe 69.67 62 P **P 00 20 55.6 +0.2**
baz=312
Y12C Blythe 69.67 62 *e*P **P 00 20 56.0 +0.6**
comp=Z,11nm,0.8s
PV09 Paradox Valley 69.73 55 *e*P **P 00 20 56.4 +0.4**
HYA Hoyanger 69.78 343 *e*P **P 00 20 55.5 -0.1**
AGMN Agassiz Nation 69.78 41 P **P 00 20 55.3 -0.5**
baz=317,SNR=12
AGMN Agassiz Nation 69.78 41 *e*P **P 00 20 55.4 -0.5**
comp=Z,34nm,1.1s
BORG Borgarnes 69.79 356 *e*P **P 00 20 56.9 +1.3**
BORG pmax pmax
comp=Z,34nm,0.8s
BORG Borgarnes 69.79 356 *e*P **P 00 20 56.9 +1.3**
comp=Z,34nm,0.8s
D31A Mcclaflin, Tow 69.82 43 P **P 00 20 55.8 -0.3**
baz=316,SNR=7.5
C32A Crookston 69.82 42 P **P 00 20 55.5 -0.5**
baz=317
OSL Oslo 69.86 340 *e*P **P 00 20 56.1 +0.1**
PV10 Paradox Valley 69.87 56 *e*P **P 00 20 57.5 +0.6**
PHWY Pilot Hill 69.89 51 *e*P **P 00 20 57.3 +0.3**
comp=Z,5.9nm,0.8s
N23A Red Feather La 69.90 52 P **P 00 20 57.6 +0.6**
baz=314,SNR=15
N23A Red Feather La 69.90 52 *e*P **P 00 20 57.2 +0.2**
comp=Z,49nm,1.4s
B33A Robert and Kas 69.93 41 P **P 00 20 56.3 -0.5**
baz=317
GLA Glamis 69.95 63 P **P 00 20 57.5 +0.3**
baz=312
GLA Glamis 69.95 63 *e*P **P 00 20 58.0 +0.8**
GLA pmax pmax
comp=Z,12nm,0.9s
GLA Glamis 69.95 63 *e*P **P 00 20 58.0 +0.8**
comp=Z,12nm,0.9s
PV05 Paradox Valley 70.03 56 *e*P **P 00 20 58.3 +0.4**
F30A Leola 70.06 44 P **P 00 20 56.9 -0.7**
baz=316
G29A Hoven 70.07 45 P **P 00 20 57.1 -0.6**
baz=316
D32A Dogwood Acres, 70.09 42 P **P 00 20 57.2 -0.5**
baz=316
E31A Nome 70.09 43 P **P 00 20 57.4 -0.4**
baz=316,SNR=12
GOA Goa 70.10 272 *e*P **P 00 20 59.2 +1.0**
B34A Aery, Baudette 70.20 40 P **P 00 20 57.7 -0.7**
baz=318,SNR=7.2

C33A Trail 70.22 41 P **P 00 20 57.9 -0.7**
baz=317
PV01 Paradox Valley 70.30 55 *e*P **P 00 21 00.1 +0.6**
NCK Nalchik 70.32 312⇑ *e*P **P 00 20 59.6 +0.4**
NCK pmax pmax
comp=Z,32nm,0.8s
KONO Kongsberg 70.38 340 *e*P **P 00 20 59.1 -0.2**
KONO IAmb IAmb 00 21 14.6
comp=Z,72nm,1.9s
F31A Hecla 70.42 44 P **P 00 20 59.1 -0.6**
baz=316
WUAZ Wupatki 70.42 59 P **P 00 21 01.0 +0.7**
baz=313,SNR=9.7
WUAZ Wupatki 70.42 59 *e*P **P 00 21 00.9 +0.7**
comp=Z,13nm,1.0s
WUAZ *e*pP **sP 00 21 20.1 -0.3**
E32A Braaten, Kindr 70.46 43 P **P 00 20 59.7 -0.3**
baz=317
KIV Kislovodsk 70.46 313 *i* P **P 00 21 00.1 -0.1**
SNR=14
KIV Kislovodsk 70.46 313 *e*P **P 00 21 00.7 +0.5**
KIV pmax pmax
comp=Z,37nm,0.9s
KIV MLR MLR
comp=Z,935nm,18.0s
KIV Kislovodsk 70.46 313 P **P 00 21 01.3 +1.1**
SNR=8.4
KIV P **P 00 21 01.3 +1.1**
SNR=8.4
KIV Kislovodsk 70.46 313 *e*P **P 00 21 01.2 +1.0**
comp=Z,31nm,0.7s
Y14A Wickenburg 70.49 61 *e*P **P 00 21 00.9 +0.5**
comp=Z,69nm,1.0s
Y14A *e*PcP **PcP 00 21 23.9 +2.4**
SMCO Snowmass 70.50 54 *e*P **P 00 21 01.1 +0.2**
comp=Z,16nm,0.8s
KBZ Khabaz 70.51 313 P **P 00 21 00.4 +0.1**
comp=Z,29nm,0.8s,baz=86,slow=2.2,SNR=39
KBZ LR LR 00 55 59.9
comp=Z,2μm,19.7s,baz=51,slow=39
GUDG Gudauri 70.58 311 P **P 00 21 01.9 +0.8**
ZEI Tsey 70.66 312 *e*P **P 00 21 00.2 -1.3**
ZEI pmax pmax
comp=Z,22nm,0.3s
BER Bergen 70.67 343 *e*P **P 00 21 01.1 +0.1**
AS01 Alice Springs 70.67 196 *e*P **P 00 21 02.0 +0.6**
AS31 Alice Springs 70.68 196 *e*P **P 00 21 02.9 +1.4**
comp=Z,7.6nm,1.1s
ASAR Alice Springs 70.68 196 P **P 00 21 02.6 +1.1**
comp=Z,14nm,0.8s,baz=12,slow=5.6,SNR=26
ASAR LR LR 00 51 11.3
comp=Z,120nm,20.4s,baz=38,slow=35
C34A RKJ Ranch, Bem 70.69 41 P **P 00 21 00.1 -1.3**
baz=318
B35A Bob, Littlefor 70.71 40 P **P 00 21 00.9 -0.6**
baz=318,SNR=8.4
113A Mohawk Valley, 70.80 63 *e*P **P 00 21 02.8 +0.5**
comp=Z,9.5nm,1.1s
DGRG David-gareji 70.81 310 P **P 00 21 03.0 +0.6**
DGRG David-gareji 70.81 310 P **P 00 21 02.9 +0.6**
ODD1 Odda 70.82 342 *e*P **P 00 21 02.0 0.0**
ISCO Idaho Springs 70.84 52 P **P 00 21 03.6 +0.7**
baz=314,SNR=13
ISCO Idaho Springs 70.84 52 *e*P **P 00 21 03.4 +0.6**
ISCO pmax pmax
comp=Z,16nm,0.9s
ISCO Idaho Springs 70.84 52 *e*P **P 00 21 03.4 +0.6**
comp=Z,16nm,0.9s
NEY Neytrino 70.94 313⇑ *i*P **P 00 21 05.4 +2.2**
NEY pmax pmax
comp=Z,2.0nm,0.8s
TBLG Delisi 70.95 310 P **P 00 21 04.1 +1.0**
TBLG Delisi 70.95 310 P **P 00 21 04.1 +1.0**
MVCO Mesa Verde 70.97 56 P **P 00 21 03.7 +0.1**
baz=314,SNR=7.5
MVCO Mesa Verde 70.97 56 *e*P **P 00 21 04.0 +0.3**
comp=Z,19nm,0.9s
D34A Park Rapids 70.98 41 P **P 00 21 02.5 -0.7**
baz=318
PALK Pallekele 71.01 261 P **P 00 21 03.8 0.0**
comp=Z,31nm,1.0s,baz=116,slow=5.7,SNR=5.6
PALK Pallekele 71.01 261 *e*P **P 00 21 03.8 0.0**
comp=Z,65nm,1.1s
E33A Westby DABS, E 71.03 42 P **P 00 21 03.2 -0.3**
baz=317,SNR=6.5
ONI Oni 71.03 312 P **P 00 21 04.1 +0.4**
ONI Oni 71.03 312 P **P 00 21 04.0 +0.4**
C35A Jirik Farms, M 71.08 40 P **P 00 21 03.1 -0.7**
baz=318,SNR=6.1
SUSD Miller 71.09 45 P **P 00 21 03.4 -0.5**
baz=316
X16A Lo Mia Camp, P 71.12 60 *e*P **P 00 21 05.4 +0.9**
comp=Z,19nm,0.9s
G32A Webster 71.22 44 P **P 00 21 04.2 -0.5**
baz=317,SNR=9.0
SUW Suwalki 71.22 330 *e*P **P 00 21 03.6 -0.9**
SUW Suwalki 71.22 330 *e*P **P 00 21 03.6 -0.9**
H31A Wolsey 71.30 45 P **P 00 21 04.4 -0.7**
baz=316,SNR=5.8
BLS5 Blasjo 71.30 342 *e*P **P 00 21 04.3 -0.7**
F33A 5 Mile Ranch, 71.38 43 P **P 00 21 05.3 -0.3**
baz=317,SNR=10
E34A Wadena 71.41 42 P **P 00 21 05.2 -0.6**
baz=318
D35A Remer 71.51 41 P **P 00 21 05.5 -0.9**
baz=318,SNR=5.8
C36A Pine Crest Far 71.55 40 P **P 00 21 06.1 -0.5**
baz=319,SNR=17
S22A 4UR Ranch, Cre 71.57 55 P **P 00 21 08.1 +0.8**
baz=314,SNR=23
S22A 4UR Ranch, Cre 71.57 55 *e*P **P 00 21 08.1 +0.8**
comp=Z,20nm,0.9s
I31A Royce, Wessing 71.59 45 P **P 00 21 06.1 -0.8**
baz=316
AKASG Malin Array Be 71.60 325 P **P 00 21 05.4 -1.4**
comp=Z,3.6nm,0.4s,baz=36,slow=6.5,SNR=32
AKASG LR LR 00 55 06.8
comp=Z,860nm,19.2s,baz=45,slow=38
AKASG Malin Array Be 71.60 325 P **P 00 21 05.4 -1.4**
AKASG pmax pmax
comp=Z,4.0nm,0.4s
AKBB Malin Array Si 71.60 325 *e*P **P 00 21 06.3 -0.5**
AKBB pmax pmax
comp=Z,18nm,1.0s
AKBB Malin Array Si 71.60 325 *e*P **P 00 21 06.3 -0.5**
AKBB pmax pmax
comp=Z,18nm,1.0s
AKBB Malin Array Si 71.60 325 *e*P **P 00 21 06.3 -0.5**
comp=Z,18nm,1.0s
KIEV Kiev 71.61 325⇓ *e*P **P 00 21 06.2 -0.7**
KIEV pmax pmax
comp=Z,17nm,0.9s
KIEV Kiev 71.61 325⇓ *e*P **P 00 21 06.2 -0.7**
KIEV pmax pmax
comp=Z,17nm,0.9s
KIEV Kiev 71.61 325 *e*P **P 00 21 05.8 -1.1**
comp=Z,17nm,1.0s
KIEV Kiev 71.61 325 *e*P **P 00 21 06.2 -0.7**
J30A Dallas 71.62 46 P **P 00 21 06.8 -0.3**
baz=316,SNR=6.3
AK11 Malin Array Si 71.64 325 *e*P **P 00 21 06.5 -0.6**
Q24A Divide 71.68 53 P **P 00 21 08.0 +0.1**
baz=314,SNR=5.3
Q24A Divide 71.68 53 *e*P **P 00 21 08.2 +0.2**
comp=Z,11nm,0.9s
E35A Pequot Lakes 71.73 41 P **P 00 21 07.2 -0.6**
baz=318
G33A Ortonville 71.78 43 P **P 00 21 07.7 -0.4**
baz=317,SNR=14
H32A Carlson Farm, 71.80 44 P **P 00 21 07.3 -0.9**
baz=317,SNR=5.2
D36A Goodland 71.84 40 P **P 00 21 07.3 -1.0**
baz=319
AKH Akhalkalaki 71.84 311⇑ *i*P **P 00 21 10.1 +1.4**
C37A Embarrass 71.87 39 P **P 00 21 07.9 -0.6**
baz=319,SNR=8.9
BGD Bogdanovka 71.89 311 P **P 00 21 10.1 +1.1**
F34A Alexandria 71.90 42 P **P 00 21 08.3 -0.5**
baz=318
STAV Stavanger 71.91 342 *e*P **P 00 21 08.6 +0.1**
214A Organ Pipe Nat 71.94 63 P **P 00 21 09.7 +0.4**
baz=313
X18A Snowflake 71.94 59 *e*P **P 00 21 10.2 +0.8**
comp=Z,23nm,1.3s
OGNE Ogallala 71.99 50 P **P 00 21 09.6 +0.1**
baz=315,SNR=10
OGNE Ogallala 71.99 50 *e*P **P 00 21 09.8 +0.3**

comp=Z,102nm,0.7s
H33A Prehn Over Nor 72.00 44 P **P 00 21 09.1 -0.4**
baz=317,SNR=8.2
EYMN Ely 72.01 39 P **P 00 21 08.8 -0.5**
baz=319,SNR=8.9
EYMN Ely 72.01 39 *e*P **P 00 21 08.9 -0.5**
comp=Z,43nm,1.2s
J31A Geddes 72.02 46 P **P 00 21 09.1 -0.4**
baz=316,SNR=8.4
K30A Basset 72.02 47 P **P 00 21 09.1 -0.5**
baz=316
GNI Garni 72.06 309 *c i*P **P 00 21 11.2 +1.2**
GNI pmax pmax
comp=Z,138nm,1.4s
GNI Garni 72.06 309 *e*P **P 00 21 12.0 +1.9**
comp=Z,26nm,0.8s
SNART Snartemo 72.11 341 *e*P **P 00 21 09.9 +0.2**
SNART IAmb IAmb 00 21 10.6
comp=Z,23nm,0.6s
G34A Benson 72.13 43 P **P 00 21 10.0 -0.1**
baz=318
LRW Lerwick 72.14 346 *e*P **P 00 21 09.9 0.0**
F35A Swanville 72.17 42 P **P 00 21 09.6 -0.7**
baz=318
D37A Cotton 72.19 40 P **P 00 21 09.7 -0.8**
baz=319,SNR=7.3
SOC Sochi 72.23 315 *e*P **P 00 21 07.9 -2.8**
SOC *e*S **S 00 30 27.8 -1.6**
SOC MLR MLR
comp=Z,573nm,21.0s
C38A Sawbill Land. 72.28 39 P **P 00 21 10.2 -0.8**
baz=320,SNR=10
E36A McGregor 72.29 41 P **P 00 21 10.5 -0.6**
baz=319,SNR=16
SDCO Great Sand Dun 72.33 54 P **P 00 21 12.0 +0.2**
baz=315,SNR=20
SDCO Great Sand Dun 72.33 54 *e*P **P 00 21 12.1 +0.2**
comp=Z,8.7nm,0.9s
J32A Parkston 72.41 45 P **P 00 21 11.0 -0.9**
baz=317
I33A Coleman 72.44 44 P **P 00 21 11.5 -0.5**
baz=317,SNR=7.0
ANN Anapa 72.45 317 *e*P **P 00 21 11.7 -0.3**
ANN *e* 00 23 58.6
ANN *e*S **S 00 30 32.4 +0.5**
ANN pmax pmax
comp=Z,19nm,0.6s
ANN MLR MLR
comp=Z,421nm,20.0s
H34A Spellman Lake, 72.48 43 P **P 00 21 11.8 -0.4**
baz=318,SNR=6.5
K31A O'Neill 72.50 47 P **P 00 21 12.0 -0.4**
baz=317,SNR=6.3
F36A Milaca 72.66 41 P **P 00 21 12.4 -0.9**
baz=319,SNR=6.3
G35A Watkins 72.69 42 P **P 00 21 13.4 -0.1**
baz=318
ECSD EROS Data Cent 72.76 45 P **P 00 21 13.5 -0.4**
baz=318,SNR=18
ECSD EROS Data Cent 72.76 45 *e*P **P 00 21 13.6 -0.4**
comp=Z,53nm,1.1s
L31A Butterfield Fa 72.78 47 P **P 00 21 13.9 -0.2**
baz=317,SNR=12
K32A Verdigre 72.87 46 P **P 00 21 13.7 -0.9**
baz=317
J33A Davis 72.89 45 P **P 00 21 14.1 -0.6**
baz=317
I34A Hadley 72.91 44 P **P 00 21 14.6 -0.2**
baz=318
H35A Sunnyside Ranc 72.91 43 P **P 00 21 14.8 0.0**
baz=318,SNR=31
BSD Bornholm Skovb 72.94 335 *i*P **P 00 21 14.1 -0.6**
comp=Z,12nm,0.7s
comp=Z,760nm,22.0s
BSD Bornholm Skovb 72.94 335 *i*P **P 00 21 14.1 -0.6**
BSD pmax pmax
comp=Z,12nm,0.7s
BSD MLR MLR
comp=Z,770nm,22.0s
TUC Tucson 72.96 61 P **P 00 21 15.7 +0.3**
baz=314
TUC Tucson 72.96 61 *e*P **P 00 21 16.2 +0.8**
TUC pmax pmax
comp=Z,13nm,1.0s
TUC Tucson 72.96 61 *e*P **P 00 21 16.2 +0.8**
comp=Z,13nm,1.0s
G36A St. Michael 73.02 42 P **P 00 21 15.1 -0.4**
baz=319
KSCO Kaye Shedlock' 73.04 51 P **P 00 21 15.2 -0.6**
baz=316
COP Copenhagen 73.15 337 *i*P **P 00 21 15.2 -0.7**
comp=Z,11nm,0.6s
comp=Z,280nm,22.0s
COP Copenhagen 73.15 337 *i*P **P 00 21 15.2 -0.7**
COP pmax pmax
comp=Z,11nm,0.6s
COP MLR MLR
comp=Z,290nm,22.0s
M31A Lambtecht Ranc 73.31 48 P **P 00 21 16.4 -0.9**
baz=317
L32A Elgin 73.33 47 P **P 00 21 16.7 -0.6**
baz=317
MUD Monsted U'grnd 73.33 339 *e*P **P 00 21 17.1 +0.1**
MUD Monsted U'grnd 73.33 339 *i*P **P 00 21 16.8 -0.2**
comp=Z,12nm,0.7s
comp=Z,680nm,22.0s
MUD Monsted U'grnd 73.33 339 *i*P **P 00 21 16.8 -0.2**
MUD pmax pmax
comp=Z,12nm,0.7s
MUD MLR MLR
comp=Z,690nm,22.0s
T25A Trinidad 73.37 54 P **P 00 21 18.1 +0.2**
baz=315,SNR=20
T25A Trinidad 73.37 54 *e*P **P 00 21 18.1 +0.2**
comp=Z,25nm,0.9s
K33A Hardington 73.40 46 P **P 00 21 17.3 -0.4**
baz=318
H36A Jessenland, He 73.43 42 P **P 00 21 18.1 +0.3**
baz=319,SNR=12
I35A Creekview Farm 73.47 44 P **P 00 21 17.5 -0.5**
baz=318
SPMN Marine on St. 73.47 41 P **P 00 21 17.5 -0.6**
baz=319,SNR=6.5
SPMN Marine on St. 73.47 41 *e*P **P 00 21 17.7 -0.4**
comp=Z,22nm,1.0s
BGNE Belgrade 73.69 47 P **P 00 21 18.4 -1.1**
baz=317
N31A Bailey Ranch, 73.70 48 P **P 00 21 18.7 -0.9**
baz=317
LAZ Ladron 73.71 57 *e*P **P 00 21 20.9 +0.9**
J35A Milford 73.72 44 P **P 00 21 19.0 -0.6**
baz=318
ANMO Albuquerque 73.73 57 P **P 00 21 20.6 +0.5**
baz=315
ANMO Albuquerque 73.73 57 *c i*P **P 00 21 20.5 +0.5**
ANMO pmax pmax
comp=Z,15nm,1.2s
ANMO Albuquerque 73.73 57 *e*P **P 00 21 20.6 +0.5**
comp=Z,10nm,0.8s
K34A Le Mars 73.79 45 P **P 00 21 19.5 -0.5**
baz=316
I36A Fitzsimmons Fa 73.81 43 P **P 00 21 19.6 -0.4**
baz=319
GKP Gorka Klasztor 73.81 333 *e*P **P 00 21 19.6 -0.3**
GKP Gorka Klasztor 73.81 333 *e*P **P 00 21 19.6 -0.3**
H37A Dierke Farm, C 73.91 42 P **P 00 21 20.3 -0.3**
baz=319,SNR=7.8
SIM Simferopol' 73.91 319 *e*P **P 00 21 21.7 +1.1**
SIM S **SKiKP 00 30 45.0 +0.5**
SIM MLR MLR
comp=E,480nm,17.9s
SORM Soroca 73.97 324⇑ *i*P **P 00 21 20.3 -0.6**
M33A Taylor Creek F 74.06 46 P **P 00 21 20.8 -0.8**
baz=318
I37A Lemond, Waseca 74.11 43 P **P 00 21 21.9 +0.1**
baz=319,SNR=33
J36A Seneca 1, Swea 74.17 44 P **P 00 21 21.6 -0.6**
baz=319
L34A Svendsen Farm, 74.18 46 P **P 00 21 21.5 -0.8**
baz=318,SNR=6.9
BNM Barren Site 74.19 57 *e*P **P 00 21 23.4 +0.6**
K35A Storm Lake 74.19 44 P **P 00 21 21.4 -0.9**
baz=318,SNR=6.4
LVV L'vov 74.33 327 *e*P **P 00 21 22.2 -0.8**
LVV MLR MLR
comp=E,200nm,17.0s
LVV MLR MLR

comp=N,200nm,16.0s
LVV MLR MLR

comp=Z,200nm,17.0s
LVV L'vov 74.33 327 *e*P **P 00 21 22.2 -0.8**
COWI Conover 74.46 39 *e*P **P 00 21 23.1 -0.7**
comp=Z,15nm,0.7s
O32A Brockman Farm, 74.47 48 P **P 00 21 23.0 -1.1**
baz=317
L35A Bielow Farm, R 74.49 45 P **P 00 21 23.1 -1.0**
baz=318
319A Douglas 74.52 61 *e*P **P 00 21 25.3 +0.7**
comp=Z,57nm,0.9s
N33A J Bar K, Exete 74.54 47 P **P 00 21 23.1 -1.3**
baz=318
J37A Redenius Farm, 74.56 43 P **P 00 21 24.1 -0.4**
baz=319,SNR=14
I38A Scanlan Farm, 74.59 42 P **P 00 21 24.0 -0.6**
baz=320,SNR=12
121A Cookes Peak, D 74.63 59 P **P 00 21 26.1 +0.8**
baz=315,SNR=14
K36A Gilmore City 74.64 44 P **P 00 21 24.3 -0.6**
baz=319
CBKS Cedar Bluff 74.75 50 P **P 00 21 24.6 -1.0**
baz=317
P32A Huiting Farm, 74.76 49 P **P 00 21 24.5 -1.2**
baz=317,SNR=7.2
M35A Neola 74.89 46 P **P 00 21 26.1 -0.4**
baz=318,SNR=5.1
SCHQ Schefferville 74.92 22 P **P 00 21 26.2 -0.2**
comp=Z,19nm,0.9s,baz=0.5,slow=6.3,SNR=19
SCHQ LR LR 00 56 49.5
comp=Z,232nm,19.8s,baz=317,slow=38
L36A Harm Buss Farm 74.93 45 P **P 00 21 25.9 -0.7**
baz=319
K37A Belmond 74.93 44 P **P 00 21 26.0 -0.7**
baz=319,SNR=15
N34A Lincoln 74.95 46 P **P 00 21 25.7 -1.1**
baz=318
O33A Hebron 74.96 48 P **P 00 21 25.5 -1.3**
baz=318
KWP Kalwaria Pacla 74.97 328 *e*P **P 00 21 27.1 +0.4**
BANOM Banah 74.98 292 *i* P **P 00 21 27.7 +0.5**
SNR=13
BANOM Banah 74.98 292 P **P 00 21 27.7 +0.5**
BANOM P **P 00 21 27.7 +0.5**
J38A Wedel Dairy, R 75.07 42 P **P 00 21 26.6 -0.8**
baz=320,SNR=11
Q32A Meitler Ranch, 75.25 49 P **P 00 21 27.4 -1.2**
baz=318,SNR=7.9
LEOM Leova 75.33 323 ⇓*i*P **P 00 21 28.5 -0.3**
O34A Beatrice 75.34 47 P **P 00 21 27.7 -1.3**
baz=318,SNR=11
M36A Felix, Anita 75.35 45 P **P 00 21 28.5 -0.5**
baz=319,SNR=9.4
L37A Phoenix Point, 75.36 44 P **P 00 21 28.4 -0.6**
baz=319,SNR=5.4
N35A Tabor 75.37 46 P **P 00 21 28.5 -0.7**
baz=319
P33A Williams Farm, 75.37 48 P **P 00 21 27.9 -1.3**
baz=318
J39A Decorah 75.42 42 P **P 00 21 28.3 -1.1**
baz=320,SNR=17
K38A Parkersburg 75.44 43 P **P 00 21 28.7 -0.9**
baz=320
PRAR RASCA 75.45 325 ⇑*i*P **P 00 21 28.8 -0.7**
OJC Ojcow 75.54 330 *e*P **P 00 21 29.9 0.0**
OJC Ojcow 75.54 330 *e*P **P 00 21 30.0 0.0**
OJC pmax pmax
comp=Z,20nm,0.7s
OJC Ojcow 75.54 330 *e*P **P 00 21 30.0 0.0**
comp=Z,20nm,0.7s
KPL Plockton 75.54 347 *e*P **P 00 21 29.6 -0.2**
Q33A Connelly Farm, 75.62 49 P **P 00 21 29.7 -1.0**
baz=318,SNR=16
STHS Stebnicka Huta 75.69 329 *e*P **P 00 21 31.7 +0.8**
KOLS Kolonicke sedl 75.71 328 *e*P **P 00 21 30.9 -0.1**
UOSS Minazif 75.72 291 *e*P **P 00 21 31.7 +0.3**
comp=Z,66nm,0.9s
L38A Oak Wood Farm, 75.73 44 P **P 00 21 30.7 -0.5**
baz=320,SNR=9.7
P34A Walnut Farm, R 75.74 48 P **P 00 21 30.0 -1.3**
baz=318,SNR=14
M37A Trindle Farm, 75.76 45 P **P 00 21 31.0 -0.4**
baz=319
SCIA State Center 75.79 44 *e*P **P 00 21 29.6 -2.0**
comp=Z,79nm,1.0s
K39A Oelwein 75.82 43 P **P 00 21 30.5 -1.2**
baz=320,SNR=8.9
J40A Soldiers Grove 75.83 41 P **P 00 21 30.5 -1.2**
baz=321
HATD Hatta, Dubai 75.85 291 *i* P **P 00 21 32.8 +0.6**
SNR=12
HATD Hatta, Dubai 75.85 291 P **P 00 21 32.8 +0.6**
SNR=5.8
HOQ Hoqain 75.93 289 P **P 00 21 33.5 +0.8**
SNR=6.9
UZH Uzhgorod 75.95 328 ⇓*i*P **P 00 21 31.4 -0.9**
UZH *e* 00 21 41.8
UZH Uzhgorod 75.95 328 ⇓*i*P **P 00 21 31.4 -0.9**
UZH *e* 00 21 41.8
TESR Tescani 75.96 324 ⇑*i*P **P 00 21 32.4 -0.1**
S32A Newby Ranch, P 75.99 50 P **P 00 21 31.6 -1.2**
baz=318
ASHO Ashiyiah 75.99 291 *i* P **P 00 21 33.5 +0.5**
SNR=6.7
NIE Niedzica 76.03 329 *e*P **P 00 21 33.2 +0.4**
CRVS Cervenica-Dubn 76.04 328 *e*P **P 00 21 32.9 0.0**
NAZ Nazwa, Dubai 76.04 291 *i* P **P 00 21 33.5 +0.3**
SNR=8.7
R33A Olander Ranch, 76.05 49 P **P 00 21 31.8 -1.3**
baz=318,SNR=5.4
TLCR 76.10 322 ⇓*i*P **P 00 21 33.2 0.0**
Q34A Chapman 76.15 48 P **P 00 21 32.6 -1.1**
baz=318,SNR=5.5
M38A Pleasantville 76.17 44 P **P 00 21 33.3 -0.4**
baz=320
N37A Lee Faris, Mou 76.17 45 P **P 00 21 33.3 -0.4**
baz=319
P35A Duane Minner, 76.17 47 P **P 00 21 32.6 -1.2**
baz=319,SNR=8.8
K40A Colesburg 76.18 42 P **P 00 21 32.8 -1.0**
baz=321,SNR=12
J41A Loganville 76.19 41 P **P 00 21 32.9 -0.8**
baz=321,SNR=8.1
KSU1 Kansas State U 76.19 48 P **P 00 21 32.5 -1.4**
baz=318,SNR=9.1
KSU1 Kansas State U 76.19 48 *e*P **P 00 21 32.8 -1.1**
comp=Z,26nm,0.6s
KSP Ksiaz 76.19 332 *e*P **P 00 21 33.6 -0.1**
KSP Ksiaz 76.19 332 *e*P **P 00 21 33.6 -0.1**
L39A Vinton 76.21 43 P **P 00 21 33.3 -0.6**
baz=320,SNR=20
JMDO Jabal Madar 76.23 288 P **P 00 21 35.3 +0.9**
SNR=7.0
FAQ Al Faqa, Dubai 76.26 291 *i* P **P 00 21 34.6 +0.2**
SNR=14
O36A Bolckow 76.26 46 P **P 00 21 33.4 -0.8**
baz=319
T32A Huddler Ranch, 76.38 50 P **P 00 21 34.0 -1.0**
baz=318,SNR=6.9
CFR Carcaliu 76.40 322 ⇓*i*P **P 00 21 34.4 -0.5**
JFWS Jewell Farm 76.43 41 *e*P **P 00 21 34.4 -0.7**
JFWS pmax pmax
comp=Z,9.0nm,0.8s
JFWS Jewell Farm 76.43 41 *e*P **P 00 21 34.4 -0.7**
comp=Z,8.9nm,0.8s
OKC Ostrava-Krasne 76.43 331 ⇑*i*P **P 00 21 35.2 +0.2**
OKC AMS AMS 01 01 50.0
comp=Z,600nm,18.8s
OKC Ostrava-Krasne 76.43 331 ⇑*i*P **P 00 21 35.2 +0.2**
OKC MLR MLR
comp=Z,600nm,18.8s
R34A Isabella, Hill 76.45 49 P **P 00 21 34.4 -1.0**
baz=318
PLOR Plostina 76.49 324 ⇓*i*P P 00 21 28.8 -6.7
P36A Good Intent, A 76.52 47 P **P 00 21 34.8 -1.0**
baz=319,SNR=6.1
AMTX Amarillo 76.53 54 P **P 00 21 36.3 +0.3**
baz=317
AMTX Amarillo 76.53 54 *e*P **P 00 21 36.4 +0.3**
comp=Z,56nm,0.8s
LANS Liptovska Anna 76.55 330 *e*P **P 00 21 36.7 +0.9**
MSTX Muleshoe 76.56 55 P **P 00 21 36.1 -0.1**
baz=316,SNR=16
MSTX Muleshoe 76.56 55 *e*P **P 00 21 36.0 -0.2**
comp=Z,35nm,1.0s
S33A Kaszmaul Farm, 76.57 50 P **P 00 21 35.2 -0.9**
baz=318,SNR=6.4
UPC Upice 76.57 332 ⇑*i*P **P 00 21 35.9 0.0**
UPC AMS AMS 00 58 50.0
comp=Z,400nm,18.8s
UPC Upice 76.57 332 ⇑*i*P **P 00 21 35.9 0.0**
UPC MLR MLR
comp=Z,400nm,18.8s
DPC Dobruska-Polom 76.61 332 ⇑*i*P **P 00 21 36.4 +0.3**
DPC *es*P **sP 00 22 00.0 +3.6**
DPC AMS AMS 00 57 50.0
comp=Z,600nm,20.7s
DPC Dobruska-Polom 76.61 332 ⇑*i*P **P 00 21 36.4 +0.3**
DPC *e* 00 22 00.0
DPC MLR MLR
comp=Z,600nm,20.7s
ARQ Araqi 76.62 290 P **P 00 21 37.2 +0.7**
SNR=5.5
M39A Webster 76.62 44 P **P 00 21 35.7 -0.6**
baz=320,SNR=15
N38A Joes South For 76.62 45 P **P 00 21 35.9 -0.4**
baz=320
L40A Anamosa 76.63 43 P **P 00 21 35.4 -0.9**
baz=321,SNR=11
K41A Shullsburg 76.64 42 P **P 00 21 35.4 -0.9**
baz=321,SNR=5.4
O37A Wolven Farm, M 76.65 46 P **P 00 21 35.9 -0.5**
baz=320,SNR=7.5
MNTX Cornudas Mount 76.66 58 P **P 00 21 37.0 +0.4**
baz=316,SNR=25
MNTX Cornudas Mount 76.66 58 *e*P **P 00 21 37.1 +0.4**
comp=Z,15nm,0.8s
Q35A Mercer Eighty, 76.67 48 P **P 00 21 35.2 -1.4**
baz=319
MORC Moravsky Berou 76.69 331 ⇑*i*P **P 00 21 37.0 +0.4**
MORC Moravsky Berou 76.69 331 *e*P **P 00 21 36.7 +0.1**
MORC pmax pmax
comp=Z,90nm,0.8s
MORC Moravsky Berou 76.69 331 *e*P **P 00 21 36.7 +0.1**
comp=Z,90nm,0.8s
KRLC Kraliky 76.69 332 ⇑*i*P **P 00 21 36.7 +0.1**
KRLC Kraliky 76.69 332 ⇑*i*P **P 00 21 36.7 +0.1**
T33A Patterson Ranc 76.82 50 P **P 00 21 36.7 -0.8**
baz=318
CLL Collm 76.83 334 ⇑*i*P **P 00 21 36.8 -0.4**
comp=Z,36nm,0.6s
CLL Lm MLR 00 58 00.0
comp=N,500nm,20.1s
CLL Lm MLR 00 58 00.0
comp=E,200nm,18.8s
CLL Lm MLR 00 58 00.0
comp=Z,600nm,19.5s
CLL Collm 76.83 334 ⇑*i*P **P 00 21 36.8 -0.4**
CLL pmax pmax
comp=Z,36nm,0.6s
CLL MLR MLR
comp=Z,600nm,19.5s
CLL Collm 76.83 334 *e*P **P 00 21 36.6 -0.6**
comp=Z,32nm,0.8s
TIRR Tirgusor 76.85 322 ⇑*i*P **P 00 21 37.5 0.0**
TIRR Tirgusor 76.85 322 *e*P **P 00 21 36.3 -1.2**
TIRR pmax pmax
comp=Z,18nm,1.1s
TIRR Tirgusor 76.85 322 *e*P **P 00 21 36.3 -1.2**
comp=Z,18nm,1.1s
HARR Harsova 76.88 322 ⇑*i*P **P 00 21 37.6 0.0**
Q36A Arnold C. Orve 76.89 47 P **P 00 21 36.5 -1.3**
baz=319
TLB Topalu 76.91 322 ⇑*i*P **P 00 21 38.0 +0.2**
BRG Berggiesshubel 76.92 334 *e*P **P 00 21 37.1 -0.7**
comp=Z,11nm,0.8s
BRG Berggiesshubel 76.92 334 *e*P **P 00 21 37.1 -0.7**
BRG pmax pmax
comp=Z,11nm,0.9s
DOPR Dopca 76.92 324 ⇓*i*P **P 00 21 38.8 +0.9**
N39A Derby Farms, D 76.92 44 P **P 00 21 37.4 -0.6**
baz=320,SNR=7.5
U32A Winter Ranch, 76.92 51 P **P 00 21 37.8 -0.3**
baz=318,SNR=5.5
L41A Preston 76.96 42 P **P 00 21 37.1 -1.0**
baz=321,SNR=8.8
S34A Willow Spring 76.97 49 P **P 00 21 37.2 -1.1**
baz=318
P37A Lathrop 76.98 46 P **P 00 21 37.6 -0.7**
baz=319,SNR=11
R35A Emporia Munici 76.98 48 P **P 00 21 37.7 -0.7**
baz=319
O38A Galt 77.02 45 P **P 00 21 37.9 -0.7**
baz=320
PVCC Panska Ves 77.02 333 ⇑*i*P **P 00 21 38.4 0.0**
PVCC *ex* x 00 21 44.4
PVCC AMS AMS 00 59 10.0
comp=Z,800nm,18.5s
PVCC Panska Ves 77.02 333 ⇑*i*P **P 00 21 38.4 0.0**
PVCC *e* 00 21 44.4
PVCC MLR MLR
comp=Z,800nm,18.5s
CJR Cluj-Napoca 77.03 326 ⇑*i*P **P 00 21 38.9 +0.3**
ESK Eskdalemuir 77.06 345 *e*P **P 00 21 38.2 -0.3**
ESK pmax pmax
comp=Z,32nm,1.1s
ESK Eskdalemuir 77.06 345 *e*P **P 00 21 38.2 -0.3**
comp=Z,32nm,1.1s
MLR Muntele Rosu 77.07 324 ⇑*i*P **P 00 21 40.1 +1.2**
ISR Istrita 77.12 323 ⇑*i*P **P 00 21 39.8 +0.7**
DRGR 77.31 326 ⇑*i*P **P 00 21 40.2 0.0**
VYHS Vyhne 77.33 330 *e*P **P 00 21 40.5 +0.3**
R36A Gordon, Harris 77.34 48 P **P 00 21 39.7 -0.7**
baz=319,SNR=6.5
P38A Dawn 77.36 46 P **P 00 21 40.0 -0.5**
baz=320,SNR=15
U33A Lingo Farm, Me 77.37 51 P **P 00 21 40.1 -0.5**
baz=318
O39A Kirksville 77.38 45 P **P 00 21 40.1 -0.5**
baz=320
S35A Otter Creek Ra 77.40 49 P **P 00 21 40.1 -0.6**
baz=319,SNR=6.6
VRAC Vranov 77.41 331 ⇑*i*P **P 00 21 40.9 +0.3**
T34A McClaskey Farm 77.43 50 P **P 00 21 40.3 -0.6**
baz=318,SNR=14
PSZ Piszkesteto 77.43 329 ⇑*i*P **P 00 21 41.3 +0.5**
PSZ Piszkesteto 77.43 329 *e*P **P 00 21 40.2 -0.6**
comp=Z,50nm,1.4s
PSZ Piskesteto 77.43 329 *e*P **P 00 21 41.1 +0.3**
Q37A Longview Farm, 77.47 47 P **P 00 21 40.2 -0.9**
baz=320
GOPC GO Pecny, Ondr 77.48 333 ⇑*i*P **P 00 21 41.1 +0.1**
GOPC *ep*P **sP 00 22 00.1 -1.2**
GOPC AMS AMS 00 59 00.0
comp=Z,400nm,18.5s
GOPC GO Pecny, Ondr 77.48 333 ⇑*i*P **P 00 21 41.1 +0.1**
GOPC *e* 00 22 00.1
GOPC MLR MLR
comp=Z,400nm,18.5s
VOIR 77.49 324 ⇑*i*P **P 00 21 41.5 +0.3**
VOIR 77.49 324 P **P 00 21 41.5 +0.3**
PRU Pruhonice 77.50 333 ⇑*i*P **P 00 21 41.0 0.0**
PRU AMS AMS 00 59 20.0
comp=Z,700nm,18.9s
PRU Pruhonice 77.50 333 ⇑*i*P **P 00 21 41.0 0.0**
PRU MLR MLR
comp=Z,700nm,18.9s
VLDQ Val d'Or 77.50 31 *e*P **P 00 21 39.5 -1.6**
comp=Z,77nm,1.4s
PSN Preselentsi 77.57 321 P **P 00 21 41.0 -0.5**
SULR 77.60 323 ⇑*i*P **P 00 21 41.8 +0.1**
STKA Stephens Creek 77.61 188 P **P 00 21 42.9 +1.2**
comp=Z,8.8nm,0.7s,baz=353,slow=6.1,SNR=8.8
STKA LR LR 00 54 30.9
comp=Z,160nm,21.8s,baz=22,slow=34
STKA Stephens Creek 77.61 188 *e*P **P 00 21 42.9 +1.2**
comp=Z,2.3nm,0.8s
U34A Anderson Ranch 77.68 50 P **P 00 21 42.1 -0.2**
baz=318,SNR=9.0
U34A Anderson Ranch 77.68 50 *e*P **P 00 21 42.2 -0.1**
comp=Z,69nm,1.0s
R37A Teagarden Farm 77.70 47 P **P 00 21 41.3 -1.1**
baz=319
ARR Arges 77.71 324 ⇑*i*P **P 00 21 43.4 +1.0**
W32A Sentinel 77.71 52 P **P 00 21 42.9 +0.3**
baz=318,SNR=12
V33A Lossen Ranch, 77.73 51 P **P 00 21 42.4 -0.2**
baz=318
S36A Lake Cedric, C 77.75 48 P **P 00 21 42.1 -0.6**
baz=319,SNR=24
O40A La Belle 77.81 44 P **P 00 21 42.5 -0.4**
baz=321,SNR=25
SMOL Smolenice 77.81 330 *e*P **P 00 21 43.4 +0.6**
Q38A Cooks Store, C 77.83 46 P **P 00 21 42.4 -0.7**
baz=320,SNR=29
P39B Salisbury 77.86 45 P **P 00 21 42.5 -0.7**
baz=320,SNR=8.3
T35A Sooner Cattle 77.87 49 P **P 00 21 43.0 -0.4**
baz=319,SNR=17
NKC Novy Kostel 77.94 334 ⇑*i*P **P 00 21 43.2 -0.3**
NKC AMS AMS 01 00 00.0
comp=Z,600nm,16.0s
NKC Novy Kostel 77.94 334 ⇑*i*P **P 00 21 43.2 -0.3**
NKC MLR MLR
comp=Z,600nm,16.0s
WTSB Winterswijk 77.99 338 *i* P **P 00 21 43.5 -0.2**
comp=Z,45nm,0.6s
LOT Lotru 78.00 325 ⇑*i*P **P 00 21 43.6 -0.5**
Q39A Willow Grove F 78.08 46 P **P 00 21 44.0 -0.5**
baz=320,SNR=26
T36A Boggs Farm, Ca 78.09 49 P **P 00 21 44.2 -0.4**
baz=319,SNR=17
BUD Budapest 78.12 329 P **P 00 21 44.9 +0.4**
BUD Budapest 78.12 329 ⇑*e*P **P 00 21 45.1 +0.6**
S37A Fort Scott 78.12 48 P **P 00 21 44.0 -0.7**
baz=320,SNR=27
W33A Caddo, Fort Co 78.12 52 P **P 00 21 45.3 +0.5**
baz=318,SNR=5.9
BR101 Keskin Array S 78.13 316 *e*P **P 00 21 44.9 -0.1**
BR131 Keskin Array S 78.13 316 *e*P **P 00 21 45.3 +0.4**
BRTR Keskin Array B 78.13 316 P **P 00 21 44.9 -0.1**
comp=Z,16nm,0.8s,baz=82,slow=4.9,SNR=53
BRTR LR LR 01 01 33.1
comp=Z,414nm,19.3s,baz=48,slow=40
BRTR Keskin Array B 78.13 316 P **P 00 21 44.9 -0.1**
BRTR pmax pmax
comp=Z,15nm,0.9s
V34A Guthrie 78.14 51 P **P 00 21 44.7 -0.2**
baz=318,SNR=9.4
V34A Guthrie 78.14 51 *e*P **P 00 21 44.9 0.0**
comp=Z,54nm,1.0s
SIRR Siria 78.15 327 ⇑*i*P **P 00 21 44.9 +0.1**
U35A Pawnee 78.16 50 P **P 00 21 44.7 -0.2**
baz=319,SNR=16
P40A Paris 78.17 45 P **P 00 21 44.6 -0.4**
baz=321,SNR=19
X32A Elmer 78.21 53 P **P 00 21 45.2 -0.1**
baz=318,SNR=16
HUMR Humele 78.25 324 ⇑*i*P **P 00 21 44.1 -1.2**
WMOK Wichita Mounta 78.26 52 P **P 00 21 45.4 -0.1**
baz=318,SNR=25
WMOK Wichita Mounta 78.26 52 *e*P **P 00 21 45.3 -0.3**
WMOK pmax pmax
comp=Z,25nm,0.8s
WMOK Wichita Mounta 78.26 52 *e*P **P 00 21 45.3 -0.3**
comp=Z,25nm,0.8s
R38A Fenwick Farm, 78.27 47 P **P 00 21 44.1 -1.4**
baz=320,SNR=22
KSRV Kasrt alli 78.28 310 *i* P **P 00 21 45.7 +0.1**
O41A Passleys Farm, 78.29 44 P **P 00 21 45.2 -0.4**
baz=321,SNR=19
PRD Provadia 78.30 321 P **P 00 21 45.0 -0.6**
ANTO Ankara 78.43 316 P **P 00 21 47.4 +0.9**
SNR=9.4
ANTO P **P 00 21 47.4 +0.9**
SNR=9.4
W34A Bridge Creek, 78.44 51 P **P 00 21 46.6 0.0**
baz=318,SNR=5.1
W34A Bridge Creek, 78.44 51 *e*P **P 00 21 46.9 +0.3**
comp=Z,29nm,0.8s
BR231 Keskin MP Arra 78.46 316 *e*P **P 00 21 45.9 -0.8**
P41A Barry, Barry 78.55 44 P **P 00 21 46.7 -0.4**
baz=321,SNR=17
T37A Cheneyville 18 78.55 48 P **P 00 21 46.6 -0.5**
baz=320,SNR=23
KHC Kasperske Hory 78.55 333 ⇑*i*P **P 00 21 47.2 +0.3**
KHC AMS AMS 01 00 10.0
comp=Z,800nm,18.8s
KHC Kasperske Hory 78.55 333 *e*P **P 00 21 47.3 +0.3**
KHC pmax pmax
comp=Z,21nm,1.1s
KHC Kasperske Hory 78.55 333 *e*P **P 00 21 47.2 +0.3**
comp=Z,21nm,1.1s
V35A Meyer Ranch, C 78.56 50 P **P 00 21 46.9 -0.3**
baz=319
X33A Lawton 78.56 52 P **P 00 21 46.8 -0.4**
baz=318
Q40A Laux Farm, Aux 78.57 45 P **P 00 21 46.5 -0.7**
baz=321,SNR=11
R39A Chumby, Stover 78.61 46 P **P 00 21 46.5 -0.9**
baz=320,SNR=24
U36A Ologah 78.67 49 P **P 00 21 47.5 -0.3**
baz=319,SNR=5.3
S38A Stockton 78.69 47 P **P 00 21 46.7 -1.2**
baz=320,SNR=8.2
HDIL Hopedale 78.71 42 P **P 00 21 47.4 -0.5**
baz=322,SNR=14
HDIL Hopedale 78.71 42 *e*P **P 00 21 47.6 -0.3**
comp=Z,71nm,0.6s
BZS Buzias 78.71 326 ⇑*i*P **P 00 21 47.5 -0.3**
GEC2 GERESS Array S 78.76 333 *e*P **P 00 21 48.0 -0.2**
GEC2 pmax pmax
comp=Z,16nm,0.9s
GEC2 GERESS Array S 78.76 333 *e*P **P 00 21 48.0 -0.2**
comp=Z,16nm,0.9s
GERES GERESS Array B 78.76 333 P **P 00 21 47.5 -0.7**
comp=Z,11nm,0.7s,baz=34,slow=5.0,SNR=118
GERES LR LR 01 00 29.6
comp=Z,416nm,18.1s,baz=26,slow=39
GEA0 GERESS Array S 78.77 333 *e*P **P 00 21 47.2 -1.0**
GRF Grafenberg Arr 78.79 335 P **P 00 21 48.8 +0.6**
GRFO Grafenberg 78.79 335 *e*P **P 00 21 48.7 +0.5**
GRFO pmax pmax
comp=Z,40nm,0.8s
GRFO Grafenberg 78.79 335 *e*P **P 00 21 48.7 +0.5**
comp=Z,40nm,0.8s
ZIMR 78.80 323 ⇑*i*P **P 00 21 48.1 -0.2**
CONA Conrad Observa 78.85 331 *i* P **P 00 21 49.1 +0.4**
comp=Z,24nm,0.7s,SNR=23
SZH Strazhica 78.88 322 P **P 00 21 48.0 -0.8**
X34A Smith Ranch, M 78.88 52 P **P 00 21 49.2 +0.2**
baz=318,SNR=9.8
Y33A Hilltop Ranch, 78.88 52 P **P 00 21 48.7 -0.3**
baz=318,SNR=17
S39A Bolivar 78.94 47 P **P 00 21 48.1 -1.2**
baz=320,SNR=24
T38A Diamond 78.94 48 P **P 00 21 48.8 -0.5**
baz=320,SNR=60
P42A Winchester 78.97 44 P **P 00 21 48.8 -0.6**
baz=322,SNR=12
U37A Salina 78.99 49 P **P 00 21 49.3 -0.3**
baz=320,SNR=10
W35A Tecumseh 78.99 51 P **P 00 21 49.4 -0.2**
baz=319,SNR=9.4
TUL1 Leonard 79.01 49 P **P 00 21 49.3 -0.3**
baz=319,SNR=6.5
TUL1 Leonard 79.01 49 *e*P **P 00 21 49.5 -0.2**
comp=Z,59nm,1.4s
R40A Maddies Statio 79.02 46 P **P 00 21 49.0 -0.7**
baz=321,SNR=16
V36A Jenks 79.02 50 P **P 00 21 49.4 -0.3**
baz=319,SNR=5.6
CWF Charnwood Fore 79.15 343 *e*P **P 00 21 50.2 +0.2**
comp=Z,40nm,1.4s
HGN Heimansgroeve 79.31 338 *i* P **P 00 21 50.9 -0.1**
comp=Z,32nm,0.7s
ABTX Abilene, Hawle 79.33 54 P **P 00 21 51.5 0.0**
baz=318,SNR=7.3
ABTX Abilene, Hawle 79.33 54 *e*P **P 00 21 51.6 0.0**
comp=Z,30nm,1.0s
Z33A Whitaker Ranch 79.34 53 P **P 00 21 51.1 -0.4**
baz=318,SNR=9.9
BEBN Eben Emael 79.34 338 P **P 00 21 51.1 -0.1**
comp=Z,18nm,1.0s
U38A Gravette 79.35 48 P **P 00 21 50.8 -0.7**
baz=320,SNR=13
W36A Wetumka 79.35 50 P **P 00 21 51.4 -0.2**
baz=319,SNR=13
V37A Hulbert 79.37 49 P **P 00 21 51.2 -0.5**
baz=320,SNR=26
TX31 Lajitas Ar. Si 79.38 59 *e*P **P 00 21 51.8 -0.2**
LTX Lajitas 79.38 59 *e*P **P 00 21 52.1 +0.2**
LTX Lajitas 79.38 59 *e*P **P 00 21 52.1 +0.2**
TXAR Lajitas Array 79.38 59 P **P 00 21 52.1 +0.2**
comp=Z,26nm,0.6s,baz=300,slow=4.1,SNR=429
TXAR PKKPbc **PKKPbc 00 40 40.7 +1.8**
comp=Z,0.3nm,0.7s,baz=140,slow=4.8,SNR=4.4
Q42A Golden Eagle 79.40 44 P **P 00 21 51.5 -0.2**
baz=322,SNR=15

Y34A	Reagan Ranch,	79.40	52	P		P	00 21 51.6	-0.2	
	baz=319,SNR=12								
T39A	Clever	79.42	47	P		P	00 21 51.0	-0.9	
	baz=320,SNR=8.5								
MEM	Membach	79.43	338	P		P	00 21 51.3	-0.4	
	comp=Z,27nm,1.0s								
S40A	Lebanon	79.43	46	P		P	00 21 51.1	-0.8	
	baz=321,SNR=31								
MOA	Mollin	79.45	332	*i* P		P	00 21 51.9	0.0	
	comp=Z,14nm,0.8s,SNR=12								
X35A	Drake	79.50	51	P		P	00 21 51.9	-0.5	
	baz=319,SNR=20								
ARSA	Arzberg	79.55	331	*i* P		P	00 21 52.7	+0.2	
	comp=Z,18nm,1.1s,SNR=11								
DSB	Dublin	79.60	346	*e*P		P	00 21 52.5	0.0	
	comp=Z,32nm,0.9s								
SADO	Sadowa	79.68	34	P		P	00 21 51.9	-1.3	
	comp=Z,6.0nm,0.9s,baz=336,slow=8.4,SNR=5.0								
SADO	Sadowa	79.68	34	*e*P		P	00 21 51.9	-1.3	
	comp=Z,13nm,1.1s								
HHAR	Hobbs	79.70	48	*e*P		P	00 21 52.8	-0.7	
	comp=Z,31nm,1.0s								
X36A	Centrahoma	79.71	51	P		P	00 21 53.3	-0.2	
	baz=319,SNR=7.8								
MPEP	Malo Peshtene	79.73	324	P		P	00 21 53.0	-0.4	
Z34A	Collier Ranch,	79.75	52	P		P	00 21 53.4	-0.4	
	baz=319,SNR=8.5								
133A	Hamilton Ranch	79.76	54	P		P	00 21 53.5	-0.3	
	baz=318,SNR=11								
T40A	Mansfield	79.77	47	P		P	00 21 52.8	-1.0	
	baz=321,SNR=19								
V38A	Canehill	79.78	49	P		P	00 21 53.3	-0.5	
	baz=320,SNR=29								
W37B	Quinton	79.78	50	P		P	00 21 53.9	0.0	
	baz=320,SNR=12								
Q43A	New Douglas	79.78	44	P		P	00 21 53.4	-0.4	
	baz=322,SNR=5.5								
BCLA	Clavier	79.78	338	P		P	00 21 53.5	-0.1	
	comp=Z,25nm,1.3s								
BEHE	Becsehely	79.79	330⇑	*e*P		P	00 21 53.6	-0.1	
S41A	Jillco Farms,	79.82	46	P		P	00 21 53.3	-0.8	
	baz=321,SNR=21								
Y35A	Marietta	79.84	52	P		P	00 21 53.8	-0.3	
	baz=319								
U39A	Green Forest	79.86	48	P		P	00 21 53.6	-0.7	
	baz=320,SNR=60								
AAM	Ann Arbor	79.87	38	*e*P		P	00 21 54.2	0.0	
AAM				pmax		pmax			
	comp=Z,23nm,0.8s								
AAM	Ann Arbor	79.87	38	*e*P		P	00 21 54.2	0.0	
	comp=Z,23nm,0.8s								
SFIN	Lafayette	79.88	41	P		P	00 21 53.7	-0.6	
	baz=323,SNR=9.8								
SFIN	Lafayette	79.88	41	*e*P		P	00 21 53.8	-0.6	
	comp=Z,20nm,0.7s								
HPIG		79.89	62	*e*P		P	00 21 55.0	+0.2	
	comp=Z,18nm,0.9s								
HPIG				*e*S		S	00 31 50.4	-4.2	
SNF	Seneffe	79.96	339	P		P	00 21 54.4	-0.1	
Q44A	Meyer Farm, Va	80.14	43	P		P	00 21 55.3	-0.4	
	baz=322,SNR=7.3								
TRQ	Mont Tremblant	80.15	30	*e*P		P	00 21 54.9	-0.8	
Z35A	Perchaven, San	80.15	52	P		P	00 21 55.3	-0.6	
	baz=319,SNR=5.1								
V39A	Pettigrew	80.19	48	P		P	00 21 55.4	-0.7	
	baz=320,SNR=29								
GIVF	Givet	80.20	339	*e*P		P	00 21 54.8	-1.0	
GIVF				pmax		pmax			
	comp=Z,24nm,1.0s								
233A	Rising Star	80.20	54	P		P	00 21 56.1	-0.2	
	baz=318								
BISS	Bistriski jare	80.21	331	*i* P		P	00 21 55.8	-0.1	
BISS	Bistriski jare	80.21	331	*i* P		P	00 21 55.8	-0.2	
U40A	Yellville	80.21	47	P		P	00 21 55.5	-0.7	
	baz=321,SNR=62								
STU	Stuttgart	80.21	335	*e*P		P	00 21 56.3	+0.3	
STU				pmax		pmax			
	comp=Z,24nm,0.8s								
STU	Stuttgart	80.21	335	*e*P		P	00 21 56.2	+0.3	
	comp=Z,24nm,0.8s								
SOKA	Soboth	80.21	331	*i* P		P	00 21 56.1	0.0	
	comp=Z,31nm,0.8s,SNR=18								
PERS	Pernice	80.22	331	*i* P		P	00 21 55.9	-0.2	
PERS	Pernice	80.22	331	*i* P		P	00 21 55.9	-0.2	
X37A	Clayton	80.23	50	P		P	00 21 55.9	-0.4	
	baz=320,SNR=7.6								
T41A	Mountain View	80.23	46	P		P	00 21 55.5	-0.8	
	baz=321,SNR=18								
PLVO	Plevna	80.24	32	*e*P		P	00 21 55.3	-0.8	
WLF	Walferdange	80.25	338	P		P	00 21 56.2	0.0	
WLF	Walferdange	80.25	338	*e*P		P	00 21 56.6	+0.5	
WLF				pmax		pmax			
	comp=Z,14nm,0.9s								
WLF	Walferdange	80.25	338	*e*P		P	00 21 56.6	+0.5	
	comp=Z,14nm,0.9s								
134A	White-Moore Ra	80.25	53	P		P	00 21 56.3	-0.2	
	baz=319,SNR=6.1								
Y36A	Durant	80.25	51	P		P	00 21 56.1	-0.3	
	baz=319,SNR=15								
DOU	Dourbes	80.26	339	P		P	00 21 55.9	-0.3	
W38A	Poteau	80.32	49	P		P	00 21 56.6	-0.1	
	baz=320,SNR=16								
BAIF	Baives	80.39	339	*e*P		P	00 21 56.0	-0.9	
BAIF				pmax		pmax			
	comp=Z,31nm,1.2s								
LMQ	La Malbaie	80.41	27	*e*P		P	00 21 57.1	0.0	
KDZ	Kurdzhali	80.41	322	P		P	00 21 57.0	-0.2	
LANF	Langenberg	80.42	336⇑	*e*P		P	00 21 57.1	0.0	
LANF	Langenberg	80.42	336	*e*P		P	00 21 57.3	+0.2	
KBA	Koelnbreinsper	80.43	332	*i* P		P	00 21 57.9	+0.5	
	comp=Z,44nm,0.8s,SNR=28								
KBA	Koelnbreinsper	80.43	332	*e*P		P	00 21 58.2	+0.8	
X38A	Whitesboro	80.46	50	P		P	00 21 57.4	-0.1	
	baz=320,SNR=20								
ROOS	tl_alroos	80.48	310	*i* P		P	00 21 57.4	-0.3	
OBKA	Obir	80.52	331	*i* P		P	00 21 57.5	-0.3	
	comp=Z,15nm,0.7s,SNR=5.2								
Y37A	Hugo	80.56	51	P		P	00 21 57.7	-0.4	
	baz=320								
VTS	Vitosha	80.58	324	P		P	00 21 57.9	-0.3	
VTS	Vitosha	80.58	324	*i* P		P	00 21 58.3	+0.1	
VTS	Vitosha	80.58	324	*e*P		P	00 21 57.3	-0.9	
VTS				pmax		pmax			
	comp=Z,70nm,0.8s								
VTS	Vitosha	80.58	324	P		P	00 21 58.0	-0.3	
VTS	Vitosha	80.58	324	*e*P		P	00 21 57.3	-0.9	
	comp=Z,70nm,0.8s								
W39A	Magazine	80.61	49	P		P	00 21 57.9	-0.4	
	baz=320,SNR=13								
DIVS	Divibare	80.61	327	P		P	00 21 57.2	-1.1	
R44A	Waltonville	80.62	44	P		P	00 21 57.8	-0.5	
	baz=322,SNR=8.5								
135A	Vickery Place,	80.64	53	P		P	00 21 58.3	-0.2	
	baz=319,SNR=5.0								
234A	Clairette	80.64	54	P		P	00 21 58.5	-0.1	
	baz=319,SNR=8.9								
Z36A	Blue Ridge	80.64	52	P		P	00 21 58.1	-0.5	
	baz=319,SNR=5.8								
V40A	Witts Springs	80.65	48	P		P	00 21 57.7	-0.8	
	baz=321,SNR=14								
S43A	Fulton Ridge,	80.67	45	P		P	00 21 57.9	-0.7	
	baz=322,SNR=13								
333A	Richland Sprin	80.67	55	P		P	00 21 58.6	-0.2	
	baz=318,SNR=30								
U41A	Viola	80.69	47	P		P	00 21 58.0	-0.7	
	baz=321,SNR=15								
OLIL	Olney	80.71	43	*e*P		P	00 21 59.0	+0.2	
	comp=Z,161nm,1.8s								
MYKA	Terra Mystica	80.72	332	*i* P		P	00 21 58.3	-0.5	
	comp=Z,15nm,0.8s,SNR=7.1								
ALN	Alexandroupoli	80.75	321	P		P	00 21 58.5	-0.5	
ALN	Alexandroupoli	80.75	321	P		P	00 21 58.5	-0.5	
ALN	Alexandroupoli	80.75	321	P		P	00 21 58.5	-0.5	
WATA	Walderalm	80.77	333	*i* P		P	00 21 59.4	+0.2	
	comp=Z,60nm,1.1s,SNR=30								
WTTA	Wattenberg	80.81	333	*i* P		P	00 21 59.8	+0.3	
	comp=Z,32nm,0.6s,SNR=15								
JCT	Junction City	80.83	56	P		P	00 21 59.4	-0.1	
	baz=318,SNR=18								
JCT	Junction City	80.83	56	*e*P		P	00 21 59.5	-0.1	
JCT				pmax		pmax			
	comp=Z,73nm,1.4s								
JCT	Junction City	80.83	56	*e*P		P	00 21 59.5	-0.1	
	comp=Z,73nm,1.4s								
BFO	Black Forest	80.86	336	*e*P		P	00 21 58.4	-1.1	
BFO				pmax		pmax			
	comp=Z,33nm,1.0s								
BFO	Black Forest	80.86	336	*e*P		P	00 21 58.4	-1.1	
	comp=Z,33nm,1.0s								
RETA	Reutte	80.89	334	*i* P		P	00 21 59.7	0.0	
	comp=Z,23nm,0.8s,SNR=24								
MOTA	Moosalm	80.91	334	*i* P		P	00 21 59.9	0.0	
	comp=Z,36nm,0.8s,SNR=32								
LJU	Ljubljana	80.94	331	*i* P		P	00 21 59.1	-0.7	
LJU	Ljubljana	80.94	331	*i* P		P	00 21 59.2	-0.7	
X39A	Fountain Ranch	80.96	49	P		P	00 22 00.2	-0.1	
	baz=320,SNR=31								
S44A	Carbondale	80.97	44	P		P	00 21 59.9	-0.3	
	baz=322,SNR=13								
SIUC	Southern Illin	80.98	44	*e*P		P	00 22 00.1	-0.2	
	comp=Z,81nm,1.1s								
OZLJ	Ozalj	80.98	330	P		P	00 21 59.8	-0.3	
W40A	Ferguson Farm,	80.99	48	P		P	00 22 00.1	-0.3	
	baz=321,SNR=23								
ABTA	Abfaltersbach	80.99	332	*i* P		P	00 21 59.5	-0.8	
	comp=Z,17nm,1.0s,SNR=6.5								
V41A	Mountainview	81.01	47	P		P	00 21 59.6	-0.9	
	baz=321,SNR=27								
MARH	Ras Al Marh	81.03	310	*i* P		P	00 21 59.5	-1.4	
433A	Art	81.03	55	P		P	00 22 00.4	-0.3	
	baz=318,SNR=17								
U42A	Revenden	81.04	46	P		P	00 21 59.7	-0.9	
	baz=321,SNR=5.0								
WHTX	Lake Whitney,	81.04	53	P		P	00 22 00.5	-0.2	
	baz=319,SNR=8.4								
WHTX	Lake Whitney,	81.04	53	*e*P		P	00 22 01.0	+0.3	
	comp=Z,50nm,0.9s								
WLS	Welschbruch	81.06	336	*e*P		P	00 22 00.1	-0.5	
Y38A	Idabel	81.07	50	P		P	00 22 00.4	-0.4	
	baz=320								
CDF	Champ du Feu	81.08	336	*e*P		P	00 21 59.8	-0.9	
334A	Lometa	81.09	54	P		P	00 22 01.0	0.0	
	baz=319,SNR=33								
ROBS	Robic	81.11	332	*i* P		P	00 21 59.2	-1.6	
ROBS	Robic	81.11	332	*i* P		P	00 21 59.2	-1.6	
BLO	Bloomington	81.11	42	*e*P		P	00 22 00.9	0.0	
BLO				pmax		pmax			
	comp=Z,14nm,0.6s								
BLO	Bloomington	81.11	42	*e*P		P	00 22 00.9	0.0	
	comp=Z,14nm,0.6s								
PBMO	Poplar Bluff	81.11	45	*e*P		P	00 22 00.8	-0.2	
	comp=Z,186nm,1.8s								
Z37A	Pogue Cattle C	81.14	51	P		P	00 22 01.1	-0.1	
	baz=320,SNR=13								
BOJS	Bojanci	81.16	330	*i* P		P	00 22 00.6	-0.4	
BOJS	Bojanci	81.16	330	*i* P		P	00 22 00.6	-0.4	
MMB	Musomiste	81.19	323	P		P	00 22 01.5	+0.1	
136A	Ennis	81.19	52	P		P	00 22 01.2	-0.3	
	baz=319,SNR=10								
MIAR	Mount Ida	81.22	49	P		P	00 22 01.4	-0.2	
	baz=320,SNR=50								
MIAR	Mount Ida	81.22	49	*e*P		P	00 22 01.4	-0.2	
MIAR				pmax		pmax			
	comp=Z,54nm,0.9s								
MIAR	Mount Ida	81.22	49	*e*P		P	00 22 01.4	-0.2	
	comp=Z,54nm,0.9s								
KKB	Krupnik	81.23	323	P		P	00 22 01.0	-0.5	
X201	Greenbrier Sit	81.28	48	*e*P		P	00 22 01.3	-0.6	
	comp=Z,44nm,1.3s								
ECH	Echery	81.30	336⇑	*e*P		P	00 22 01.6	-0.2	
X301	Greenbrier Sit	81.30	48	*e*P		P	00 22 01.4	-0.6	
	comp=Z,39nm,1.2s								
FETA	Feichten	81.31	334	*i* P		P	00 22 02.1	0.0	
	comp=Z,17nm,1.0s,SNR=14								
S45A	Carrier Mills	81.32	44	P		P	00 22 01.9	-0.1	
	baz=323,SNR=11								
WHAR	Wooly Hollow	81.32	48	*e*P		P	00 22 01.6	-0.5	
	comp=Z,52nm,1.0s								
NVR	Nevrokopi	81.33	323	P		P	00 22 01.6	-0.5	
NVR	Nevrokopi	81.33	323	P		P	00 22 01.6	-0.5	
DAVA	Damuels	81.34	334	*i* P		P	00 22 02.1	-0.1	
	comp=Z,23nm,0.8s,SNR=16								
KAVA	Kavala	81.34	322	P		P	00 22 02.1	0.0	
KAVA	Kavala	81.34	322	P		P	00 22 02.1	0.0	
V42A	Cord	81.38	47	P		P	00 22 01.6	-0.8	
	baz=321,SNR=14								
ZALF	Zalf	81.40	309	*i* P		P	00 22 02.0	-0.6	
Y39A	Lockesburg	81.41	50	P		P	00 22 02.3	-0.3	
	baz=320,SNR=14								
W41B	Gary Mavity, V	81.43	48	P		P	00 22 02.2	-0.5	
	baz=321,SNR=30								
Z38A	Mt. Pleasant	81.45	51	P		P	00 22 02.6	-0.2	
	baz=320,SNR=7.1								
434A	Burnet	81.46	54	P		P	00 22 02.5	-0.5	
	baz=319,SNR=9.4								
KULA	Kula-Manisa	81.47	318	P		P	00 22 03.0	0.0	
KULA	Kula-Manisa	81.47	318	P		P	00 22 03.0	0.0	
TRI	Trieste	81.49	331	*e*P		P	00 22 01.9	-0.8	
	comp=Z,20nm,0.9s								
PLE	Plievlja	81.50	326⇑	*i*P		P	00 22 03.0	-0.1	
LONY	Lake Ozonia	81.52	31	*e*P		P	00 22 02.3	-0.7	
	comp=Z,8.7nm,0.8s								
137A	Heron Place, G	81.53	52	P		P	00 22 02.9	-0.3	
	baz=320								
USIN	University of	81.53	43	*e*P		P	00 22 03.5	+0.4	
	comp=Z,77nm,1.1s								
TOTH	TOTAH	81.56	310	*i* P		P	00 22 02.8	-0.7	
533A	Kerrville	81.57	55	P		P	00 22 03.5	-0.1	
	baz=318,SNR=16								
335A	Moody	81.59	54	P		P	00 22 03.6	0.0	
	baz=319								
THEF	They Montfort	81.61	337⇑	*e*P		P	00 22 03.5	+0.1	
MOF	Molkenrain	81.63	336⇑	*e*P		P	00 22 03.3	-0.4	
MOF	Molkenrain	81.63	336	P		P	00 22 03.6	-0.1	
SRS	Serrai	81.64	323	P		P	00 22 03.1	-0.6	
SRS	Serrai	81.64	323	P		P	00 22 03.1	-0.6	
SRS	Serrai	81.64	323	P		P	00 22 03.1	-0.6	
X40A	Basin Creek Fa	81.65	48	P		P	00 22 03.5	-0.3	
	baz=321,SNR=13								
IVA	Berane	81.69	326	*e*P		P	00 22 03.6	-0.4	
HINF	Hinteralfeld	81.75	336	*e*P		P	00 22 02.9	-1.3	
HINF				pmax		pmax			
	comp=Z,12nm,0.8s								
Y40A	Okolona	81.78	49	P		P	00 22 04.3	-0.3	
	baz=321,SNR=7.0								
UPM	Unac-Piva	81.79	327⇑	*i*P		P	00 22 03.9	-0.8	
X41A	Kaden, Bauxite	81.82	48	P		P	00 22 04.4	-0.3	
	baz=321,SNR=7.4								
FUORN	Ofenpass-Fuorn	81.82	334	*e*P		P	00 22 05.2	+0.3	
	comp=Z,35nm,1.1s								
UDBI	Udbina	81.82	329	P		P	00 22 03.8	-0.9	
SKO	Skopje	81.82	324	P		P	00 22 04.9	+0.2	
SKO	Skopje	81.82	324	*i* P		P	00 22 05.0	+0.4	
SKO	Skopje	81.82	324	P		P	00 22 04.9	+0.2	
SKO	Skopje	81.82	324	P		P	00 22 04.9	+0.2	
336A	Riesel	81.83	53	P		P	00 22 04.7	-0.2	
	baz=319								
138A	Matatall Enter	81.84	51	P		P	00 22 05.1	+0.2	
	baz=320								
ACSO	Alum Creek Sta	81.85	39	*e*P		P	00 22 03.9	-1.0	
	comp=Z,38nm,0.8s								
435B	Jarrell	81.87	54	P		P	00 22 04.8	-0.3	
	baz=319								
MMNY	Mt. Morris Dam	81.88	34	*e*P		P	00 22 04.7	-0.3	
ALLY	Alegheny Colle	81.89	36	*e*P		P	00 22 05.3	+0.3	
	comp=Z,52nm,0.8s								
SALA	Sala	81.89	309	*i* P		P	00 22 04.0	-1.4	
Z39A	Irene McRaven,	81.89	50	P		P	00 22 05.2	+0.1	
	baz=320,SNR=5.2								
KNT	Kendrikon	81.89	323	P		P	00 22 05.0	0.0	
KNT	Kendrikon	81.89	323	P		P	00 22 05.0	0.0	
KNT	Kendrikon	81.89	323	P		P	00 22 05.0	0.0	
PVY	Plav	81.89	326⇑	*i*P		P	00 22 04.7	-0.5	
VAY	Valandovo	81.90	323	P		P	00 22 05.0	0.0	
VAY	Valandovo	81.90	323	*i* P		P	00 22 05.3	+0.2	
VAY	Valandovo	81.90	323	P		P	00 22 05.0	0.0	
VAY	Valandovo	81.90	323	P		P	00 22 05.0	0.0	
534A	Blanco	81.93	55	P		P	00 22 05.3	-0.1	
	baz=319,SNR=20								
633A	Saathoff Ranch	81.94	56	P		P	00 22 05.6	+0.1	
	baz=319,SNR=6.7								
LIA	Limnos Island	81.94	321	P		P	00 22 04.4	-0.9	
LIA	Limnos Island	81.94	321	P		P	00 22 04.4	-0.9	
237A	Washetta, Mont	81.95	52	P		P	00 22 05.3	-0.1	
	baz=320,SNR=5.7								
TAOE	Nuku Hiva Isla	81.95	111	*e*LR		LR	00 47 45.9		
	comp=Z,655nm,26.3s								
GNAR	Gosnell	81.95	46	*e*P		P	00 22 06.3	+0.9	
CSS	Mathiatis	81.97	313	P		P	00 22 05.5	-0.1	
CSS	Mathiatis	81.97	313	*e*P		P	00 22 05.9	+0.3	
	comp=Z,8.3nm,0.8s								
WCI	Wyandotte Cave	81.97	42	*e*P		P	00 22 05.5	0.0	
WCI				pmax		pmax			
	comp=Z,27nm,0.7s								
WCI	Wyandotte Cave	81.97	42	*e*P		P	00 22 05.5	0.0	
	comp=Z,27nm,0.7s								
NKY	Niksic	82.09	326⇑	*i*P		P	00 22 04.8	-1.4	
NVLJ	Novalja	82.11	330	P		P	00 22 04.9	-1.2	
OUR	Ouranopolis	82.11	322	P		P	00 22 05.8	-0.4	
OUR	Ouranopolis	82.11	322	P		P	00 22 05.8	-0.4	
OUR	Ouranopolis	82.11	322	P		P	00 22 05.8	-0.4	
V44A	Blytheville	82.12	46	P		P	00 22 06.4	+0.1	
	baz=322								
WLAR	White Oak Lake	82.12	49	*e*P		P	00 22 06.7	+0.3	
	comp=Z,76nm,0.8s								
NKME	Niksic	82.14	326⇑	*i*P		P	00 22 05.3	-1.1	
LOMF	Lomont	82.18	336⇑	*e*P		P	00 22 06.5	0.0	
BRY	Bratogost	82.19	327	*e*P		P	00 22 05.5	-1.2	
M54A	Oil Creek Stat	82.20	36	P		P	00 22 06.3	-0.3	
	baz=327,SNR=9.7								
139A	Bunkhouse Ranc	82.21	51	P		P	00 22 06.9	+0.1	
	baz=320								
NCB	Newcomb	82.21	31	*e*P		P	00 22 05.9	-0.7	
	comp=Z,0.3nm,1.3s								
TUE	Stuetta	82.23	334	*e*P		P	00 22 07.1	+0.1	
	comp=Z,24nm,0.8s								
Y41A	Eaglette Beard	82.24	49	P		P	00 22 07.0	+0.1	
	baz=321,SNR=7.4								
GRG	Griva	82.27	323	P		P	00 22 06.5	-0.6	
GRG	Griva	82.27	323	P		P	00 22 06.5	-0.6	
GRG	Griva	82.27	323	P		P	00 22 06.5	-0.6	
HORT	Hortiatis	82.28	323	P		P	00 22 06.2	-0.9	
HORT	Hortiatis	82.28	323	P		P	00 22 06.2	-0.9	
Z40A	Long Farm, Mag	82.30	50	P		P	00 22 07.8	+0.5	
	baz=321,SNR=6.9								
PDG	Podgorica	82.31	326	P		P	00 22 06.6	-0.6	
PDG	Podgorica	82.31	326⇑	*i*P		P	00 22 06.5	-0.6	
TTG	Podgorica	82.31	326⇑	*i*P		P	00 22 06.6	-0.6	
TTG	Podgorica	82.31	326	P		P	00 22 06.6	-0.6	
TTG	Podgorica	82.31	326	P		P	00 22 06.6	-0.6	
PLG	Polygyros	82.31	322	P		P	00 22 06.8	-0.5	
PLG	Polygyros	82.31	322	P		P	00 22 06.8	-0.5	
PLG	Polygyros	82.31	322	P		P	00 22 06.8	-0.5	
238A	Jacksonville	82.33	52	P		P	00 22 08.0	+0.5	
	baz=320,SNR=6.8								
436A	Wall Ranch, Ga	82.33	53	P		P	00 22 07.5	+0.1	
	baz=319								
TCHB	Talchebab	82.34	309	*i* P		P	00 22 06.7	-0.9	
CEME	Cevo	82.34	326⇑	*i*P		P	00 22 06.1	-1.4	
832A	Faith Ranch, C	82.35	57	P		P	00 22 08.0	+0.3	
	baz=318,SNR=8.9								
733A	Divot King Ran	82.43	56	P		P	00 22 08.2	+0.2	
	baz=319								
535A	Dale	82.44	54	P		P	00 22 07.7	-0.4	
	baz=319								
634A	China Grove, S	82.48	55	P		P	00 22 08.6	+0.3	
	baz=319								
N54A	Moraine State	82.52	36	P		P	00 22 08.1	-0.3	
	baz=327,SNR=8.8								
DRME	Dracevica, Mon	82.55	326⇑	*i*P		P	00 22 08.0	-0.4	
BUM	Brajici-Budva	82.56	326⇑	*i*P		P	00 22 07.6	-1.0	
PAIG	Paliouri	82.58	322	P		P	00 22 08.0	-0.6	
PAIG	Paliouri	82.58	322	P		P	00 22 08.0	-0.6	
PAIG	Paliouri	82.58	322	P		P	00 22 08.0	-0.6	
HCY	Herceg Novi	82.59	327⇑	*i*P		P	00 22 07.4	-1.3	
Z41A	Richland Creek	82.62	49	P		P	00 22 08.8	-0.2	
	baz=321								
X43A	Marvell	82.65	47	P		P	00 22 08.9	-0.2	
	baz=322								
437A	Phantom Ranch,	82.65	53	P		P	00 22 09.4	+0.3	
	baz=320								
V45A	Humboldt	82.66	45	P		P	00 22 08.8	-0.3	
	baz=323								
833A	Chaparral WMA,	82.66	57	P		P	00 22 09.5	+0.2	
	baz=319								
239A	Gary	82.67	51	P		P	00 22 09.5	+0.3	
	baz=320,SNR=6.0								
140A	Cam and Jess,	82.68	50	P		P	00 22 09.7	+0.5	
	baz=321,SNR=5.6								
536A	Bastrop	82.70	54	P		P	00 22 09.5	+0.1	
	baz=319								
Y42A	Garnett, Star	82.71	48	P		P	00 22 09.6	+0.2	
	baz=321								
ULC	Ulcinj	82.71	326⇑	*i*P		P	00 22 08.5	-0.8	
338A	Crockett	82.71	52	P		P	00 22 09.9	+0.4	
	baz=320								
734A	La Parita Cree	82.76	56	P		P	00 22 10.3	+0.5	
	baz=319								
NATX	Nacogdoches	82.76	51	P		P	00 22 10.1	+0.4	
	baz=320,SNR=9.6								
NATX	Nacogdoches	82.76	51	*e*P		P	00 22 10.4	+0.7	
	comp=Z,97nm,0.9s

FYTO	Fytoko, Volos	83.33	322	P		P	00 22 10.6	-1.9	
OXF	Oxford	83.40	46	*e*P		P	00 22 12.7	-0.3	
OXF					pmax	pmax			
	comp=Z,72nm,1.1s								
OXF	Oxford	83.40	46	*e*P		P	00 22 12.7	-0.3	
	comp=Z,72nm,1.1s								
Y44A	Strider, Charl	83.43	47	P		P	00 22 13.5	+0.5	
	baz=322								
PENT	Pentalofos	83.44	324	P		P	00 22 11.7	-1.5	
439A	Center Grove,	83.44	52	P		P	00 22 13.6	+0.3	
	baz=320								
340A	Bronson	83.45	51	P		P	00 22 13.3	+0.1	
	baz=321								
538A	Harpers Horsep	83.47	53	P		P	00 22 14.3	+0.9	
	baz=320								
Z43A	Armstrong Fami	83.48	48	P		P	00 22 13.7	+0.4	
	baz=322								
X45A	UM Field Stati	83.48	46	P		P	00 22 12.9	-0.5	
	baz=322								
TRY	Troy	83.49	31	*e*P		P	00 22 12.8	-0.4	
	comp=Z,22nm,0.8s								
241A	Mo Tay, Goldon	83.51	50	P		P	00 22 13.8	+0.2	
	baz=321								
736A	Circle Diamond	83.54	55	P		P	00 22 15.2	+1.4	
	baz=319,SNR=8.6								
KPRO	Kipourio	83.54	323	P		P	00 22 11.9	-1.8	
ARG	Arkhangelos	83.57	317	P		P	00 22 13.8	0.0	
ARG	Arkhangelos	83.57	317	P		P	00 22 13.8	0.0	
ARG	Arkhangelos	83.57	317	P		P	00 22 13.8	0.0	
637A	Eagle Lake	83.59	54	P		P	00 22 15.2	+1.1	
	baz=320								
835A	Beeville	83.60	56	P		P	00 22 15.2	+1.1	
	baz=319								
LMN	Caledonia Moun	83.60	24	*e*P		P	00 22 14.0	+0.2	
	comp=Z,23nm,0.9s								
142A	Monroe	83.62	49	P		P	00 22 14.3	+0.2	
	baz=321								
SMIA	Simia	83.65	322	P		P	00 22 13.2	-1.0	
SSPA	Standing Stone	83.66	35	*e*P		P	00 22 13.9	-0.3	
	comp=Z,20nm,0.7s								
O56A	Blue Knob Stat	83.69	36	P		P	00 22 14.2	-0.3	
	baz=328,SNR=17								
KSPA	Keystone Colle	83.71	33	*e*P		P	00 22 14.2	-0.2	
	comp=Z,18nm,0.6s								
934A	Benavides	83.71	57	P		P	00 22 15.9	+1.2	
	baz=319								
EREA	Eretria	83.71	321	P		P	00 22 13.5	-1.1	
RSL	Roselend	83.75	336‖	*e*P		P	00 22 14.8	0.0	
143A	Socs Landing,	83.79	49	P		P	00 22 15.4	+0.5	
	baz=322								
Y45A	Yeager Farm, C	83.84	47	P		P	00 22 15.6	+0.3	
	baz=322								
Z44A	Pea Ridge, Bel	83.85	48	P		P	00 22 15.6	+0.4	
	baz=322								
LPL	La Plagne	83.87	336	*e*P		P	00 22 16.1	+0.6	
LPL					pmax	pmax			
	comp=Z,34nm,0.9s								
LPG	La Plagne	83.88	336	*e*P		P	00 22 16.3	+0.7	
LPG					pmax	pmax			
	comp=Z,41nm,0.9s								
ATAL	Atalanti	83.89	322	P		P	00 22 14.2	-1.2	
ATAL	Atalanti	83.89	322	P		P	00 22 14.2	-1.2	
242A	Grayson	83.89	50	P		P	00 22 16.0	+0.5	
	baz=321								
341A	Kurthwood	83.91	51	P		P	00 22 16.1	+0.5	
	baz=321								
AGG	Agios Georgios	83.91	322	*e*P		P	00 22 14.0	-1.6	
AGG					pmax	pmax			
	comp=Z,50nm,0.8s								
AGG	Agios Georgios	83.91	322	*e*P		P	00 22 14.0	-1.6	
	comp=Z,50nm,0.8s								
440A	Kirbyville	83.92	52	P		P	00 22 16.5	+0.8	
	baz=321								
LKR	Lokris	83.93	322	P		P	00 22 14.3	-1.3	
LKR	Lokris	83.93	322	P		P	00 22 14.3	-1.3	
NWAO	Narrogin (SRO)	83.94	208	P		P	00 22 16.0	+0.6	
	comp=Z,18nm,1.0s,baz=311,slow=4.8,SNR=5.3								
NWAO	Narrogin (SRO)	83.94	208	P		P	00 22 16.0	+0.6	
NWAO					pmax	pmax			
	comp=Z,17nm,0.9s								
NWAO	Narrogin (SRO)	83.94	208	*e*P		P	00 22 16.0	+0.6	
	comp=Z,24nm,1.0s								
VLC	Villacollemand	83.98	333	*e*P		P	00 22 16.2	+0.4	
	comp=Z,11nm,0.9s								
JAN	Janina	84.01	324	P		P	00 22 15.6	-0.4	
JAN	Janina	84.01	324	P		P	00 22 15.6	-0.4	
JAN	Janina	84.01	324	P		P	00 22 15.6	-0.4	
034A	Hebbronville	84.02	57	P		P	00 22 17.6	+1.4	
	baz=319,SNR=14								
QUIF	Quistinic	84.10	343	*e*P		P	00 22 15.5	-0.8	
QUIF					pmax	pmax			
	comp=Z,35nm,1.1s								
638A	Rosharon	84.11	53	P		P	00 22 17.7	+1.0	
	baz=320								
Z45A	Winona	84.16	47	P		P	00 22 17.4	+0.5	
	baz=322								
ATH	Athens Observa	84.18	321	P		P	00 22 15.1	-1.8	
ATH	Athens Observa	84.18	321	P		P	00 22 15.1	-1.8	
ATH	Athens Observa	84.18	321	P		P	00 22 15.1	-1.8	
Y46A	Houston	84.18	46	P		P	00 22 16.9	-0.1	
	baz=323,SNR=16								
VILL	Villia	84.20	321	P		P	00 22 13.6	-3.5	
EVR	Evrytania	84.22	323	P		P	00 22 15.1	-2.1	
EVR	Evrytania	84.22	323	P		P	00 22 15.1	-2.1	
N59A	State Game Lan	84.26	34	P		P	00 22 17.0	-0.3	
	baz=329,SNR=11								
SGD	Sagiada	84.30	324	P		P	00 22 16.8	-0.7	
PLDF	La Plantade	84.32	338	*e*P		P	00 22 18.0	+0.4	
342A	Flagon Creek P	84.33	50	P		P	00 22 18.2	+0.4	
	baz=321								
DSF	Desfina	84.34	322	P		P	00 22 15.9	-1.9	
DSF	Desfina	84.34	322	P		P	00 22 15.9	-1.9	
DSL	Palaion Diasel	84.34	323	P		P	00 22 17.1	-0.7	
DSL	Palaion Diasel	84.34	323	P		P	00 22 17.1	-0.7	
AGO	Saint Agoulin	84.38	338‖	*e*P		P	00 22 18.5	+0.7	
243A	Waterproof	84.39	49	P		P	00 22 18.8	+0.8	
	baz=322								
KEK	Kerkira	84.39	324	P		P	00 22 17.0	-1.0	
KEK	Kerkira	84.39	324	P		P	00 22 17.0	-1.0	
HRV	Adam Dziewonsk	84.44	30	*e*P		P	00 22 18.5	+0.4	
HRV					pmax	pmax			
	comp=Z,33nm,0.9s								
HRV	Adam Dziewonsk	84.44	30	*e*P		P	00 22 18.5	+0.4	
	comp=Z,33nm,0.9s								
ANX	Ano Chora	84.45	322	P		P	00 22 16.8	-1.6	
035A	Encino	84.45	57	P		P	00 22 19.6	+1.1	
	baz=319								
LTK	Loutraki	84.47	321	P		P	00 22 15.1	-3.3	
LTK	Loutraki	84.47	321	P		P	00 22 15.1	-3.3	
SERG	Sergoula	84.54	322	P		P	00 22 17.2	-1.5	
AQU	L'Aquila	84.56	330	*e*P		P	00 22 19.3	+0.5	
AQU					pmax	pmax			
	comp=Z,43nm,0.9s								
AQU	L'Aquila	84.56	330	*e*P		P	00 22 19.2	+0.5	
	comp=Z,43nm,0.9s								
ODNJ	Ogdensburg	84.56	33	*e*P		P	00 22 18.5	-0.3	
	comp=Z,11nm,0.9s								
SWET	Sewanee	84.56	44	*e*P		P	00 22 18.5	-0.5	
	comp=Z,11nm,0.8s								
KARP	Karpathos	84.57	317	*e*P		P	00 22 18.2	-0.8	
	comp=Z,32nm,0.7s								
MBDF	Montbardon	84.58	335	*e*P		P	00 22 18.0	-1.0	
MBDF					pmax	pmax			
	comp=Z,15nm,0.7s								
THAL	Thalero	84.59	321	P		P	00 22 17.1	-1.8	
PVO	Paravola	84.59	323	P		P	00 22 18.1	-0.9	
TZTN	Tazewell	84.61	41	*e*P		P	00 22 19.1	0.0	
	comp=Z,22nm,0.9s								
WES	Weston	84.63	30	*e*P		P	00 22 19.5	+0.4	
WES					pmax	pmax			
	comp=Z,53nm,0.8s								
WES	Weston	84.63	30	*e*P		P	00 22 19.4	+0.4	
	comp=Z,53nm,0.8s								
VBMS	Vicksburg	84.63	48	P		P	00 22 19.8	+0.6	
	baz=322								
145A	Houston Renfro	84.64	48	P		P	00 22 19.6	+0.3	
	baz=322								
Y47A	UCPARC, Winfie	84.67	46	P		P	00 22 18.9	-0.6	
	baz=323,SNR=11								
Z46A	Louisville	84.68	47	P		P	00 22 19.9	+0.3	
	baz=323								
244A	Avery, Jackson	84.68	49	P		P	00 22 20.2	+0.7	
	baz=322								
PYM	Petit Puy Mans	84.69	338‖	*e*P		P	00 22 20.2	+0.8	
SSB	Saint Sauveur	84.71	337‖	*e*P		P	00 22 19.8	+0.3	
SSB	Saint Sauveur	84.71	337	*e*P		P	00 22 19.9	+0.4	
SSB					pmax	pmax			
	comp=Z,20nm,0.8s								
SSB	Saint Sauveur	84.71	337	*e*P		P	00 22 19.9	+0.4	
	comp=Z,20nm,0.8s								
LAKA	Lakka	84.72	322	P		P	00 22 18.2	-1.5	
LAKA	Lakka	84.72	322	P		P	00 22 18.2	-1.5	
BCX	Boston College	84.72	30	*e*P		P	00 22 19.8	+0.3	
	comp=Z,65nm,0.8s								
PDO	Prodromos	84.76	323	P		P	00 22 19.2	-0.6	
DID	Didima	84.78	321	P		P	00 22 16.9	-3.1	
DID	Didima	84.78	321	P		P	00 22 16.9	-3.1	
343A	Vidalia	84.78	50	P		P	00 22 21.0	+1.0	
	baz=322								
442A	Mamou	84.78	51	P		P	00 22 21.0	+1.0	
	baz=321								
KLV	Kalavryta, Ach	84.81	322	P		P	00 22 18.8	-1.3	
KLV	Kalavryta, Ach	84.81	322	P		P	00 22 18.8	-1.3	
MVL	Millersville	84.82	35	*e*P		P	00 22 20.1	+0.1	
	comp=Z,16nm,0.8s								
035Z	Hargill	84.83	57	P		P	00 22 21.3	+0.9	
	baz=319								
ZAIG	Zacatecas	84.84	63	*e*P		P	00 22 20.6	-0.2	
	comp=Z,24nm,1.2s								
BRNJ	Basking Ridge	84.92	33	*e*P		P	00 22 20.8	+0.2	
	comp=Z,25nm,0.6s								
BRYW	Bryant College	84.96	30	*e*P		P	00 22 21.0	+0.2	
	comp=Z,52nm,0.8s								
CPCT	Cooper Cave	85.05	42	*e*P		P	00 22 21.1	-0.2	
	comp=Z,17nm,1.0s								
146A	Union	85.06	47	P		P	00 22 21.9	+0.5	
	baz=323,SNR=6.0								
VIVF	Saint-Julien-l	85.06	337	*e*P		P	00 22 21.0	-0.3	
VIVF					pmax	pmax			
	comp=Z,38nm,1.1s								
DRO	Drossia	85.07	322	P		P	00 22 20.8	-0.6	
RLS	Riolos of Patr	85.09	322	P		P	00 22 21.1	-0.4	
RLS	Riolos of Patr	85.09	322	P		P	00 22 21.1	-0.4	
245A	Little AP, Sta	85.10	48	P		P	00 22 22.2	+0.5	
	baz=322,SNR=6.9								
LBL	Lubilhac	85.10	338	*e*P		P	00 22 22.2	+0.7	
Z47A	Carrollton	85.12	46	P		P	00 22 21.5	-0.2	
	baz=323,SNR=12								
SDMD	Soldier's Deli	85.12	35	*e*P		P	00 22 21.8	+0.2	
	comp=Z,13nm,1.0s								
FRNF	Fournols	85.14	338‖	*e*P		P	00 22 22.3	+0.6	
OG26	St.-Nazaire-De	85.14	336‖	*e*P		P	00 22 22.5	+0.8	
LUCF	Luceram	85.17	334‖	*e*P		P	00 22 21.8	-0.1	
SBF	Sospel	85.17	334	*e*P		P	00 22 20.5	-1.4	
SBF					pmax	pmax			
	comp=Z,15nm,0.7s								
MVIF	Mont Vial	85.22	335‖	*e*P		P	00 22 21.6	-0.6	
TKL	Tuckaleechee C	85.23	42	*e*P		P	00 22 22.1	-0.2	
TKL					pmax	pmax			
	comp=Z,40nm,1.0s								
TKL	Tuckaleechee C	85.23	42	*e*P		P	00 22 22.1	-0.2	
	comp=Z,40nm,1.0s								
PSUB	Penn St. - Bra	85.23	34	*e*P		P	00 22 21.7	-0.4	
	comp=Z,16nm,0.7s								
Z48A	Northport	85.24	46	P		P	00 22 21.7	-0.6	
	baz=323,SNR=7.0								
VLX	Vlachokerasia	85.27	321	P		P	00 22 20.8	-1.7	
VLX	Vlachokerasia	85.27	321	P		P	00 22 20.8	-1.7	
REVF	Revere	85.30	334‖	*e*P		P	00 22 22.0	-0.5	
KFL	Anninata	85.33	323	P		P	00 22 21.9	-0.8	
VLS	Valsamata	85.36	323	P		P	00 22 21.7	-1.2	
VLS	Valsamata	85.36	323	P		P	00 22 21.7	-1.2	
VLS	Valsamata	85.36	323	P		P	00 22 21.7	-1.2	
AMT	Artemida-Makis	85.42	322	P		P	00 22 21.6	-1.6	
147A	Livingston	85.44	47	P		P	00 22 23.4	+0.1	
	baz=323,SNR=12								
BLA	Blacksburg	85.47	39	*e*P		P	00 22 23.4	-0.1	
BLA					pmax	pmax			
	comp=Z,43nm,0.9s								
BLA	Blacksburg	85.47	39	*e*P		P	00 22 23.4	-0.1	
	comp=Z,43nm,0.9s								
246A	Jackson Lee, B	85.52	48	P		P	00 22 24.4	+0.7	
	baz=323								
VLI	Veliai	85.56	321	P		P	00 22 21.2	-2.7	
VLI	Veliai	85.56	321	P		P	00 22 21.2	-2.7	
543A	St. Martinvill	85.58	51	P		P	00 22 24.8	+0.7	
	baz=322								
345A	Thompson Farm,	85.60	49	P		P	00 22 24.8	+0.7	
	baz=322								
ITM	Ithomi	85.62	321	P		P	00 22 22.8	-1.4	
ITM	Ithomi	85.62	321	P		P	00 22 22.8	-1.4	
FRF	La Foret Royal	85.68	335	*e*P		P	00 22 23.2	-1.1	
FRF					pmax	pmax			
	comp=Z,36nm,1.3s								
LAST	Lasithi	85.68	318	P		P	00 22 23.0	-1.6	
LAST	Lasithi	85.68	318	*e*P		P	00 22 23.7	-0.9	
	comp=Z,194nm,0.8s								
ZKS	Zakynthos	85.68	323	P		P	00 22 23.0	-1.5	
444A	Pine Grove	85.69	49	P		P	00 22 25.3	+0.8	
	baz=322								
CAF	Calviac	85.70	338	*e*P		P	00 22 24.7	+0.2	
CAF					pmax	pmax			
	comp=Z,58nm,0.9s								
CUC	Castrocucco	85.73	327	*e*P		P	00 22 23.0	-1.7	
	comp=Z,79nm,0.8s								
247A	Quitman	85.75	47	P		P	00 22 26.0	+1.1	
	baz=323								
LRAL	Lakeview Retre	85.79	46	*e*P		P	00 22 24.5	-0.5	
	comp=Z,8.2nm,0.8s								
346A	Big Creek Wild	85.84	48	P		P	00 22 26.0	+0.7	
	baz=323								
IDI	Anoyia	85.85	318	*e*P		P	00 22 24.0	-1.5	
	comp=Z,48nm,1.0s								
445A	Amite	85.89	49	P		P	00 22 26.4	+0.8	
	baz=322								
CBN	Corbin Frederi	85.93	36	*e*P		P	00 22 26.1	+0.5	
	comp=Z,38nm,0.8s								
PYL	PYLOS	85.94	321	P		P	00 22 23.4	-2.3	
PYL	PYLOS	85.94	321	P		P	00 22 23.4	-2.3	
TIP	Timpagrande	86.07	326	P		P	00 22 24.1	-2.3	
TIP	Timpagrande	86.07	326	*e*P		P	00 22 26.0	-0.4	
	comp=Z,60nm,1.2s								
SIVA	Sivas	86.11	318	P		P	00 22 26.1	-0.5	
SIVA	Sivas	86.11	318	P		P	00 22 26.1	-0.5	
IMMV	Iera Moni Meta	86.13	319	P		P	00 22 25.1	-1.6	
JSRW	J. Sargeant Re	86.15	37	*e*P		P	00 22 26.4	-0.3	
248A	Dixon Mills	86.17	47	P		P	00 22 27.3	+0.3	
	baz=323								
347A	Saraland	86.31	48	P		P	00 22 28.4	+0.7	
	baz=323,SNR=7.1								
348A	Jackson	86.63	47	P		P	00 22 30.0	+0.8	
	baz=323								
KMSC	Kings Mountain	86.78	40	P		P	00 22 29.5	-0.4	
	baz=326,SNR=12								
KMSC	Kings Mountain	86.78	40	*e*P		P	00 22 29.7	-0.2	
	comp=Z,32nm,0.9s								
448A	Bay Minette	87.03	47	P		P	00 22 31.9	+0.8	
	baz=323								
MTLF	Montolieu	87.14	338	*e*P		P	00 22 31.7	+0.2	
MTLF					pmax	pmax			
	comp=Z,18nm,1.0s								
GOGA	Godfrey	87.21	43	*e*P		P	00 22 32.1	+0.1	
GOGA					pmax	pmax			
	comp=Z,53nm,1.8s								
GOGA	Godfrey	87.21	43	*e*P		P	00 22 32.1	+0.1	
	comp=Z,53nm,1.8s								
TBI	Tubuai	87.41	127	*e*T		T	01 59 11.3		
	comp=Z,13nm,0.2s								
LRDF	Laroque-de-Fa	87.42	337‖	*e*P		P	00 22 34.3	+1.4	
JSC	Jenkinsville	87.53	41	*e*P		P	00 22 33.9	+0.4	
JSC	Jenkinsville	87.53	41	*e*P		P	00 22 33.9	+0.4	
CARF	Carcanieres	87.75	338‖	*e*P		P	00 22 35.4	+0.8	
SJAF	Saint Jean de	87.75	337‖	*e*P		P	00 22 35.4	+0.9	
FILF	Fillols	87.77	337‖	*e*P		P	00 22 35.7	+1.1	
EPF	Esparros	87.91	339	*e*P		P	00 22 34.2	-1.1	
EPF					pmax	pmax			
	comp=Z,6.0nm,0.8s								
VALF	Valcebollere	88.06	337‖	*e*P		P	00 22 37.5	+1.4	
VSL	Villasalto	88.49	331	*e*P		P	00 22 37.1	-0.9	
	comp=Z,12nm,1.0s								
TIGA	Tifton	88.77	44	P		P	00 22 39.7	+0.3	
	baz=326,SNR=8.1								
NHSC	New Hope	89.00	41	*e*P		P	00 22 41.3	+0.8	
	comp=Z,45nm,0.9s								
PGAV	Gavieira, Arco	90.82	345	*e*LR		LR	00 55 18.6		
	comp=Z,204nm,18.0s								
DAMY	Dhamar	90.85	292	*e*P		P	00 22 51.2	+1.4	
	comp=Z,22nm,1.1s								
POLO	Lamas de Olo	91.31	344	*e*P		P	00 22 49.4	-1.8	
	comp=Z,14nm,2.0s								
MVO	Moncorvo	91.36	344	*e*P		P	00 22 50.0	-1.5	
	comp=Z,10.0nm,1.4s								
MVO	Moncorvo	91.36	344	*e*LR		LR	00 56 03.9		
	comp=Z,324nm,20.0s								
PVRL	Vila Real	91.39	344	*e*P		P	00 22 50.2	-1.4	
	comp=Z,22nm,1.8s								
PTO	Porto	91.69	345	*e*P		P	00 22 51.7	-1.1	
	comp=Z,15nm,1.5s								
KEST	Kesra	91.88	330	P		P	00 22 53.7	-0.3	
	comp=Z,17nm,1.0s,baz=322,slow=2.8,SNR=22								
KEST					LR	LR	01 08 21.7		
	comp=Z,394nm,19.8s,baz=356,slow=38								
KEST	Kesra	91.88	330	*e*P		P	00 22 53.8	-0.2	
	comp=Z,22nm,1.0s								
KEST				*e*			01 08 21.7		
ES19	SONSECA Array	92.09	341	*e*P		P	00 22 53.6	-1.2	
ESDC	Sonseca Array	92.13	341	P		P	00 22 53.7	-1.4	
	comp=Z,1.0nm,0.6s,baz=10,slow=4.0,SNR=12								
ESDC					LR	LR	01 10 05.2		
	comp=Z,160nm,19.1s,baz=15,slow=39								
MTE	Manteigas	92.20	344	*e*P		P	00 22 54.1	-1.3	
	comp=Z,16nm,1.6s								
MTE	Manteigas	92.20	344	*e*SKS		S	00 33 28.7	-25	
MTE	Manteigas	92.20	344	*e*LR		LR	00 56 18.9		
	comp=Z,412nm,22.0s								
PCAS	Casmilo, Conde	92.72	344	*e*P		P	00 22 56.3	-1.4	
	comp=Z,9.8nm,1.3s								
PMRV	Marv??o	93.10	343	*e*LR		LR	00 57 01.7		
	comp=Z,312nm,20.0s								
PMTG	Montargil	93.62	344	*e*P		P	00 23 00.5	-1.3	
	comp=Z,16nm,1.7s								
PBAR	Barrancos	94.24	343	*e*P		P	00 23 02.5	-2.2	
	comp=Z,19nm,1.6s								
PBAR	Barrancos	94.24	343	*e*SKS			00 37 04.5		
PNCL	Nicolau / Gran	94.60	344	*e*P		P	00 23 05.4	-0.9	
	comp=Z,23nm,1.8s								
MESJ	Messejana	94.80	344	*e*P		P	00 23 06.3	-1.0	
	comp=Z,13nm,1.3s								
RKT	Rikitea	95.83	117	*e*LR		LR	00 54 12.0		
	comp=Z,479nm,31.0s								
TOA1	Torodi Ar. Sit	115.22	327	*e*PKiKP		PKiKP	00 28 26.7	-0.5	
TOA1				*e*SP		SP	00 39 07.0	+5.4	
TORD	Torodi Ar. Bea	115.22	327	PKP		PKPdf	00 28 26.7	-0.5	
	comp=Z,1.8nm,0.5s,baz=24,slow=1.9,SNR=44								
TORD					PKKPab	PKKPab	00 39 07.0	-3.0	
	comp=Z,0.5nm,0.5s,baz=216,slow=4.5,SNR=8.6								
VNDA	Vanda	123.07	177	P		PKPdf	00 21 37.9	-422	
	comp=Z,1.7nm,0.8s,baz=306,slow=6.6,SNR=10.0								
VNDA	Vanda	123.07	177	PKP		PKPdf	00 28 39.8	-0.5	
	comp=Z,2.7nm,0.7s,baz=323,slow=4.1,SNR=13								
VNDA	Vanda	123.07	177	*e*PKPdf		PKPdf	00 28 40.5	+0.2	
DBIC	Dimbokro	123.59	331	PKP		PKPdf	00 28 42.5	-0.9	
	comp=Z,9.3nm,0.7s,baz=7.6,slow=2.6,SNR=20								
TIC	Toumodi	123.67	331	*e*PKiKP		PKPdf	00 28 43.0	-0.5	
KIC	Kosan Boka	123.84	330	*e*PKiKP		PKPdf	00 28 43.1	-0.7	
	comp=Z,20nm,0.7s								
LIC	Lamto	124.07	331	*e*PKiKP		PKPdf	00 28 42.7	-1.5	
	comp=Z,20nm,1.1s								
PTGA	Pitinga	127.68	40	*e*PKPdf		PKPdf	00 28 51.4	+0.3	
MAW	Mawson	130.46	210	PKP		PKPdf	00 28 54.9	+0.2	
	comp=Z,3.9nm,0.6s,baz=94,slow=3.7,SNR=19								
MAW	Mawson	130.46	210	*e*PKiKP		PKPdf	00 28 55.4	+0.7	
MAW	Mawson	130.46	210	*e*PKPdf		PKPdf	00 28 55.4	+0.7	
LBTB	Lobatse	131.88	276	*e*PKiKP		PKPdf	00 29 00.3	+1.4	
LBTB	Lobatse	131.88	276	*e*PKPdf		PKPdf	00 29 00.3	+1.4	
BOSA	Boshof	134.34	272	PKP		PKPdf	00 29 03.6	+0.2	
	comp=Z,2.6nm,0.8s,baz=339,slow=2.5,SNR=5.6								
QSPA	South Pole Qui	135.37	180	*e*PKPpre		PKPpre	00 28 57.5		
LPAZ	La Paz	136.22	61	PKhKP		PKPpre	00 28 49.0		
	comp=Z,0.5nm,0.6s,baz=281,slow=5.2,SNR=5.8								
LPAZ				PKP		PKPdf	00 29 08.2	+0.3	
	comp=Z,5.0nm,0.9s,baz=200,slow=4.3,SNR=3.7								
LPAZ	La Paz	136.22	61	*e*PKiKP		PKPpre	00 28 59.7		
LPAZ	La Paz	136.22	61	*e*PKPpre		PKPpre	00 28 59.7		
PB01	IPOC Station P	138.90	67	*e*PKPdf		PKPdf	00 29 12.7	+0.6	
SYO	Syowa Base	139.16	211‖	*e*Pdiff		Pdif	00 26 28.0	+4.2	
ROC1	El Roble	145.57	83	*e*PKPdf		PKPdf	00 29 23.8	0.0	
BDFB	Brasilia	146.14	34	PKPbc		PKPab	00 29 26.8	+0.1	
	baz=258,slow=3.3								
BDFB	Brasilia	146.14	34	*e*PKPdf		PKPab	00 29 26.8	+0.1	
BDFB				*e*PKPdf		PKPbc	00 29 27.3	+1.2	
NVL	N'lazarevskaya	147.99	204	*e*PKP2		PKPbc	00 29 30.1	+0.6	
PLCA	Paso Flores	149.63	96	PKPbc		PKPbc	00 29 35.0	+0.3	
	comp=Z,14nm,0.6s,baz=313,slow=2.4,SNR=20								
CHRN	Cochrane	150.27	109	*e*PKPbc		PKPbc	00 29 36.6	+0.7	
CPUP	Villa Florida	150.36	59	PKP		PKPdf	00

WRA				PcP	PcP	00 19 44.9	-0.6
	3.9nm,0.8s,baz=334,slow=2.9,SNR=7.1						
WB2	Warramunga Arr	31.71	158	eP	P	00 16 52.8	-1.4
WRKA	Warakurna	34.93	170	P	P	00 17 21.8	-0.4
	baz=35,SNR=13						
AS31	Alice Springs	34.99	161	eP	P	00 17 21.9	-0.9
	5.5nm,0.7s						
AS31				ePcP	PcP	00 19 54.0	-0.6
ASAR	Alice Springs	34.99	161	P	P	00 17 22.1	-0.8
	14nm,0.7s,baz=342,slow=7.2,SNR=32						
ASAR				PcP	PcP	00 19 54.0	-0.6
	3.4nm,0.7s,baz=338,slow=2.6,SNR=6.3						
AS01	Alice Springs	35.01	161	eP	P	00 17 22.0	-1.0
MEEK	Meekatharra	36.15	185	P	P	00 17 32.5	-0.2
	baz=36,SNR=7.9						
MORW	Morawa	38.86	188	P	P	00 17 55.7	+0.2
	baz=39,SNR=4.6						
BLDU	Ballidu	40.29	187	P	P	00 18 07.0	-0.5
	baz=40						
KLR	Kul'dur	40.35	10	P	P	00 18 08.3	+0.6
	1.1nm,0.5s,baz=298,slow=5.2,SNR=2.6						
FORT	Forrest	40.53	172	P	P	00 18 08.9	-0.5
	baz=40,SNR=12						
FORT	Forrest	40.53	172	eP	P	00 18 09.3	-0.1
KMBL	Kambalda	40.71	180	P	P	00 18 10.6	-0.3
	baz=41,SNR=5.8						
KLBR	Kellerberrin	41.14	186	P	P	00 18 13.9	-0.5
	baz=41,SNR=9.7						
NWAO	Narrogin (SRO)	42.52	186	P	P	00 18 25.7	0.0
	23nm,0.8s,baz=21,slow=8.6,SNR=10						
NWAO	Narrogin (SRO)	42.52	186	P	P	00 18 26.1	+0.5
	baz=42,SNR=6.4						
NWAO				P	P	00 18 26.1	+0.5
	baz=42,SNR=6.4						
NWAO	Narrogin (SRO)	42.52	186	eP	P	00 18 25.7	0.0
	19nm,0.8s						
BBOO	Buckleboo	44.20	163	eP	P	00 18 33.3	-6.0
	44nm,1.3s						
RKGY	Rocky Gully	44.21	186	P	P	00 18 40.4	+1.1
	baz=44,SNR=9.1						
EIDS	Eidsvold	44.76	141	eP	P	00 18 42.4	-1.5
	21nm,1.3s						
STKA	Stephens Creek	45.24	156	P	P	00 18 46.4	-1.2
	9.6nm,0.7s,baz=328,slow=7.3,SNR=12						
STKA	Stephens Creek	45.24	156	P	P	00 18 47.0	-0.7
	baz=45,SNR=4.4						
STKA	Stephens Creek	45.24	156	eP	P	00 18 46.4	-1.2
	2.2nm,0.8s						
CMSA	Cobar Meteorol	46.71	152	P	P	00 18 58.8	-0.4
	baz=47,SNR=4.7						
ARMA	Armidale	48.85	146	P	P	00 19 15.3	-0.7
	baz=49,SNR=4.5						
ARMA	Armidale	48.85	146	eP	P	00 19 14.5	-1.4
	14nm,0.9s						
ARPS	Mount Arapiles	49.69	159	P	P	00 19 21.5	-0.6
	baz=50						
NRIK	Noril'sk	63.72	347	P	P	00 21 02.5	+1.2
	1.7nm,0.5s,baz=153,slow=7.7,SNR=2.5						
ARCES	ARCESS Array B	83.41	339	P	P	00 22 58.1	+1.2
	1.6nm,0.9s,baz=84,slow=4.6,SNR=2.4						
AKASG	Malin Array Be	84.49	320	P	P	00 23 03.9	+1.2
	1.8nm,0.7s,baz=63,slow=5.2,SNR=3.5						
AKBB	Malin Array Si	84.49	320	eP	P	00 23 04.0	+1.2
	9.0nm,0.8s						
VNDA	Vanda	89.79	172	P	P	00 23 26.9	-0.9
	3.6nm,0.9s,baz=298,slow=4.8,SNR=8.7						
VNDA	Vanda	89.79	172	eP	P	00 23 27.4	-0.4
LTX	Lajitas	121.35	47	ePKPdf	PKPdf	00 29 23.9	0.0
TXAR	Lajitas Array	121.35	47	PKP	PKPdf	00 29 23.9	0.0
	0.2nm,0.6s,baz=3.2,slow=4.9,SNR=3.0						
PLCA	Paso Flores	147.00	162	PKPbc	PKPbc	00 30 13.4	+0.5
	13nm,0.9s,baz=219,slow=4.4,SNR=4.3						

*IDC **12** 00:11:47.1±1.0,9.°34N×122.°83E,h0km,mb4.4/7, mb1 4.5/7,mb1mx4.1/41,mbtmp4.4/7,Error ellipse: s-maj=69.9km s-min=17.1km az=59.0*
*ISCJB **12** 00:11:51.2±0.7,9.°05N±0.°09×122.°40E±0.°08,h33km, mb4.4/7,Error ellipse: s-maj=13.9km s-min=9.6km az=143.0*
ISC 12 00:11:52.7±0.8,9.°3N±0.°1×122.°40E±0.°09,h35km,n12, σ3s50/14,mb4.5/7,1D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TBP	Tagbilaran	1.50	73	eP		Pn	Sn	00 12 18.2	+0.9
TBP				eS		Sn	Sn	00 12 42.0	+6.3
LLP	Lapu-Lapu	1.87	56	eP		Pn	Sn	00 12 21.1	-1.2
LLP				eS		Sn	Sn	00 12 47.6	+2.9
PLP	Palo	3.17	53	ePu		Pn	Sn	00 12 34.6	-5.6
PLP				eS		Sn	Sn	00 13 09.2	-7.6
CMAR	Chiang Mai Arr	24.52	294	P		P	P	00 17 10.3	+1.1
	1.9nm,0.4s,baz=116,slow=7.5,SNR=7.2								
WRA	Warramunga Arr	31.31	158	P		P	P	00 18 08.3	-1.6
	8.2nm,0.9s,baz=337,slow=9.8,SNR=6.6								
ASAR	Alice Springs	34.60	161	P		P	P	00 18 37.9	-0.8
	8.5nm,0.7s,baz=343,slow=6.9,SNR=9.8								
STKA	Stephens Creek	44.83	157	P		P	P	00 20 03.2	-0.3
	2.1nm,0.6s,baz=316,slow=9.7,SNR=2.2								
MKAR	Makanchi Array	50.59	325	P		P	P	00 20 50.2	+2.0
	5.0nm,0.8s,baz=132,slow=8.0,SNR=3.4								
KURBB	Kurchatov Arra	54.80	327	P		P	P	00 21 20.2	+1.1
	2.8nm,0.9s,baz=120,slow=8.5,SNR=2.9								
AKASG	Malin Array Be	84.92	320	P		P	P	00 24 25.9	+1.7
	5.1nm,0.8s,baz=72,slow=4.6,SNR=5.9								
TXAR	Lajitas Array	121.34	47	PKP		PKPdf	P	00 30 39.9	-3.2
	0.5nm,0.8s,baz=294,slow=1.2,SNR=4.2								
PLCA	Paso Flores	146.61	162	PKPbc		PKPbc	P	00 31 29.4	-1.7
	11nm,0.8s,baz=204,slow=2.7,SNR=4.1								

*IDC **12** 00:14:40.8±1.5,9.°64N×122.°44E,h0km,mb3.8/3, mb1 3.8/3,mb1mx3.5/41,mbtmp3.8/3,Error ellipse: s-maj=128.3km s-min=35.1km az=60.0*
*MAN **12** 00:14:42,9.°57N×122.°07E,h8km,mb4.7,ML3.6,MS3.5*
ISC 12 00:14:42.9±1.3,9.°6N±0.°1×122.°17E±0.°07,h10km,n10, σ1s16/13,mb4.0/3,1C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	Sibulan	1.07	102	iPu		Pg	Pn	00 14 58.1	-5.5
SNPH				i S		Sg	Sn	00 15 16.0	-1.5
TBP	Tagbilaran	1.67	85	eP		Pn	Sn	00 15 13.7	+1.4
TBP				eS		Sg	Sn	00 15 37.6	+0.9
LLP	Lapu-Lapu	1.92	67	eP		Pn	Sn	00 15 16.9	+1.2
LLP				i S		Sb	Sn	00 15 42.8	+0.7
RCP	Roxas	2.06	16	iPu		Pn	Sn	00 15 18.6	+0.9
PLP	Palo	3.19	60	ePu		Pn	Sn	00 15 32.9	-0.3
PLP				eS		Sn	Sn	00 16 09.8	-1.4
SONM	Songino Array	40.41	344	P		P	P	00 22 21.2	-0.2
	0.8nm,0.9s,baz=156,slow=7.6,SNR=3.1								
MKAR	Makanchi Array	50.21	325	P		P	P	00 23 39.1	0.0
	2.3nm,0.8s,baz=120,slow=7.2,SNR=4.7								
KURBB	Kurchatov Arra	54.42	327	P		P	P	00 24 10.0	-0.2
	1.3nm,0.9s,baz=133,slow=7.1,SNR=4.1								
TXAR	Lajitas Array	121.30	47	PKP		PKPdf	P	00 33 35.7	-1.5
	0.2nm,0.6s,baz=217,slow=2.3,SNR=2.4								
PLCA	Paso Flores	146.97	162	PKPbc		PKPdf	P	00 34 25.4	+1.1
	4.7nm,0.8s,baz=293,slow=4.7,SNR=6.0								

*IDC **12** 00:37:26.1±0.9,9.°67N×122.°32E,h0km,mb3.9/10, mb1 4.0/10,mb1mx3.8/32,mbtmp3.9/10,Error ellipse: s-maj=66.3km s-min=16.4km az=62.0*
*ISCJB **12** 00:37:27.2±0.5,9.°50N±0.°07×122.°02E±0.°04,h10km, mb3.9/10,Error ellipse: s-maj=9.4km s-min=4.9km az=5.5*
*MAN **12** 00:37:30,9.°53N×122.°05E,h32km,mb4.4,ML3.2,MS3.1*
ISC 12 00:37:28.3±0.7,9.°57N±0.°07×122.°11E±0.°04,h10km,n18, σ1s88/20,mb3.9/10,2C-1D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	Sibulan	1.13	101	iP		Pb	Sb	00 37 44.5	-5.5
SNPH				i S		Sb	Sb	00 38 00.1	-4.8
TBP	Tagbilaran	1.73	86	eP		Pn	Sn	00 37 59.9	+1.5
TBP				eS		Sn	Sn	00 38 21.7	+1.1
LLP	Lapu-Lapu	1.97	68	eP		Pn	Sn	00 38 03.1	+1.3
LLP				eS		Sn	Sn	00 38 29.0	+2.4
RCP	Roxas	2.07	17	iPu		Pn	Sn	00 38 05.0	+1.8
CGP	Cagayan de Oro	2.78	113	ePu		Pn	Sn	00 38 13.9	+1.0
CGP				eS		Sn	Sn	00 38 48.9	+2.3
CTBH	Cotabato--PC H	3.15	138	eP		Pn	Sn	00 38 19.5	+1.5
CTBH				i S		Sn	Sn	00 38 45.9	-10
PLP	Palo	3.23	60	ePu		Pn	Sn	00 38 20.1	+0.9
PLP				i S		Sn	Sn	00 38 54.8	-3.1
PPR	Puerto Princes	3.34	274	eP		Pn	Sn	00 38 21.5	+0.9
PPR				eS		Sn	Sn	00 38 59.3	-1.2
CMAR	Chiang Mai Arr	24.13	294	P		P	P	00 42 45.7	+1.0
	1.0nm,0.3s,baz=111,slow=6.2,SNR=6.2								
WRA	Warramunga Arr	31.70	158	P		P	P	00 43 51.7	-0.7
	0.6nm,0.5s,baz=339,slow=9.9,SNR=5.2								
ASAR	Alice Springs	34.99	161	P		P	P	00 44 21.4	+0.3
	2.3nm,0.6s,baz=341,slow=7.4,SNR=36								
SONM	Songino Array	40.38	344	P		P	P	00 45 06.4	-0.2
	0.7nm,0.7s,baz=159,slow=8.3,SNR=4.9								
STKA	Stephens Creek	45.23	156	P		P	P	00 45 44.3	-1.6
	1.3nm,0.6s,baz=350,slow=11,SNR=4.6								
MKAR	Makanchi Array	50.17	325	P		P	P	00 46 22.8	-1.4
	0.8nm,0.7s,baz=105,slow=8.9,SNR=7.2								
ZALV	Zalesovo Beam	53.34	333	P		P	P	00 46 47.9	+0.2
	0.7nm,0.5s,baz=139,slow=7.4,SNR=3.5								
BRTR	Keskin Array B	82.80	309	P		P	P	00 49 53.6	+0.4
	0.6nm,0.6s,baz=95,slow=4.1,SNR=5.0								
AKASG	Malin Array Be	84.50	320	P		P	P	00 50 00.1	-1.4
	0.5nm,0.2s,baz=71,slow=4.1,SNR=4.4								
FINES	FINESS Array B	84.55	331	P		P	P	00 50 00.8	-0.7
	0.7nm,0.8s,baz=70,slow=4.6,SNR=2.9								

JMA 12 00:38:16.6,37.°12N×140.°84E,h7km±1km,M3.5,4C-1D Broadband fault plane solution: P waves. NP1: ϕ_s29.00000°,δ47.00000°,λ-106.00000°. **NP2:** ϕ_s233.00000°,δ45.00000°,λ-73.00000°. **Principal axes:** T Plg1.0000°, Azm131.0000°; N Plg12.0000°, Azm41.0000°; P Plg78.0000°, Azm226.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.04	241	iPu		Pg	Sn	00 38 17.9	-0.2
ONAJ				i S		Sg	Sn	00 38 19.0	-0.2
JFK	Kawauchi	0.25	6	iPu		Pg	Sn	00 38 21.5	0.0
JHO	Hitachi	0.55	203	P		Pg	Sn	00 38 27.1	-0.2
JHO				S		Sg	Sn	00 38 34.7	+0.2
JFT	Otama	0.56	315	iPu		Pg	Sn	00 38 27.9	+0.4
JMM	Marumori	0.75	357	iPu		Pg	Sn	00 38 30.6	-0.4
JSB	Shiboa	0.75	259	iPu		Pb	Sn	00 38 31.7	-0.3
JSB				S		Sb	Sn	00 38 42.5	0.0
MAT	Matsushiro	2.19	256	P		Pn	Sn	00 38 54.7	+1.3
MAT				S		Sb	Sn	00 39 24.3	+0.4

*ISCJB **12** 00:39:37.6±0.6,9.°51N±0.°06×121.°93E±0.°05,h10km, mb3.8/8,MS3.4/2 Error ellipse: s-maj=9.1km s-min=6.2km az=25.1*
*IDC **12** 00:39:37.0±0.8,9.°47N×122.°05E,h0km,mb3.8/8, mb1 4.0/8,mb1mx3.8/33,mbtmp3.8/8,MS3.4/2,Ms1 3.4/2, ms1mx2.9/50,Error ellipse: s-maj=44.8km s-min=17.1km az=66.0*
*MAN **12** 00:39:38,9.°48N×121.°98E,h9km,mb4.7,ML3.6,MS3.5*
ISC 12 00:39:39.1±0.7,9.°59N±0.°06×122.°09E±0.°06,h10km,n16, σ2s24/21,mb3.9/8,1C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	Sibulan	1.16	102	iP		Pb	Sb	00 39 55.5	-5.8
SNPH				i S		Sb	Sb	00 40 12.6	-3.8
TBP	Tagbilaran	1.75	87	eP		Pn	Sn	00 40 11.0	+1.4
TBP				eS		Sn	Sn	00 40 35.7	+3.7
LLP	Lapu-Lapu	1.98	69	eP		Pn	Sn	00 40 13.8	+1.1
LLP				eS		Sn	Sn	00 40 41.5	+3.8
RCP	Roxas	2.06	18	iPu		Pn	Sn	00 40 15.8	+2.0
CGP	Cagayan de Oro	2.81	114	ePu		Pn	Sn	00 40 25.0	+0.9
CGP				eS		Sn	Sn	00 41 00.6	+2.5
CTBH	Cotabato--PC H	3.18	138	eP		Pn	Sn	00 40 29.6	+0.4
CTBH				i S		Sn	Sn	00 41 10.4	+3.2
PLP	Palo	3.24	61	ePu		Pn	Sn	00 40 30.2	+0.1
PLP				eS		Sn	Sn	00 41 04.8	-4.0
CMAR	Chiang Mai Arr	24.10	294	P		P	P	00 44 55.6	+0.4
	0.8nm,0.4s,baz=99,slow=8.8,SNR=5.2								
WRA	Warramunga Arr	31.73	158	P		P	P	00 46 01.9	-1.6
	3.1nm,0.9s,baz=337,slow=9.4,SNR=7.5								
WRA				PcP		PcP	P	00 48 54.5	-0.7
	0.9nm,0.7s,baz=341,slow=3.1,SNR=4.4								
WRA				LR		LR	P	01 01 15.3	
	comp=Z,51nm,20.7s,baz=35,slow=41								
ASAR	Alice Springs	35.02	161	P		P	P	00 46 31.2	-0.9
	4.4nm,0.6s,baz=344,slow=7.4,SNR=23								
ASAR				PcP		PcP	P	00 49 02.4	-2.0
	1.3nm,0.9s,baz=349,slow=1.9,SNR=5.2								
KLR	Kul'dur	40.33	10	P		P	P	00 47 17.9	+1.1
	0.4nm,0.4s,baz=214,slow=11,SNR=3.0								
SONM	Songino Array	40.36	344	P		P	P	00 47 17.3	+0.1
	0.5nm,0.6s,baz=152,slow=6.5,SNR=3.4								
MKAR	Makanchi Array	50.14	325	P		P	P	00 48 35.1	+0.3
	1.7nm,0.8s,baz=125,slow=8.8,SNR=8.5								
BRTR	Keskin Array B	82.77	309	P		P	P	00 52 03.2	-0.7
	0.2nm,0.5s,baz=62,slow=7.3,SNR=2.1								
EIL	Elat	82.86	299	LR		LR	P	01 32 27.8	
	comp=Z,29nm,20.5s,baz=235,slow=38								
FINES	FINESS Array B	84.52	331	P		P	P	00 52 11.4	-0.8
	0.7nm,0.6s,baz=90,slow=2.8,SNR=2.7								

*ISK **12** 00:39:40.4,40.°12N×29.°91E,h5km,MD2.5*
*CSEM **12** 00:39:41.9±0.2,40.°17N×29.°93E,h2km,MD2.5,Error ellipse: s-maj=3.7km s-min=3.4km az=38.0*
*DDA **12** 00:39:42.0,40.°16N×29.°99E,h7km,Md2.9*
ISC 12 00:39:42.0±1.1,40.°15N±0.°02×29.°94E±0.°02,h6km±10km, n39,σ0s73/59,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ADVT	Abdulvahap	0.32	331	ePG		Pg	Pg	00 39 48.4	+0.1
ADVT	Abdulvahap	0.32	331	ePg		Pg	Pg	00 39 48.4	+0.1
IZI	Iznik	0.40	298	ePG		Pg	Pg	00 39 49.2	-0.5
IZI	Iznik	0.40	298	ePg		Pg	Pg	00 39 49.3	-0.5
BORA	Eskisehir	0.48	124	iP		Pg	Pg	00 39 50.5	-0.7
BORA				i S		Sg	Pg	00 39 56.7	-0.7
BORA	Eskisehir	0.48	124	P		Pg	Pg	00 39 50.5	-0.7
BORA				S		Sg	Pg	00 39 56.7	-0.7
GULT	Gulveren	0.52	57	ePG		Pg	Pg	00 39 52.3	+0.3
GULT	Gulveren	0.52	57	ePg		Pg	Pg	00 39 52.3	+0.3
IGD	Bursa	0.58	282	iP		Pg	Pg	00 39 51.6	-1.5
IGD				i S		Sg	Pg	00 39 59.6	-0.9
HRT	Hereke	0.70	343	ePG		Pg	Pg	00 39 55.6	+0.2
HRT	Hereke	0.70	343	ePg		Pg	Pg	00 39 55.7	+0.2
TVSB	Tavsanli	0.79	208	ePG		Pg	Pg	00 39 56.0	-1.1
TVSB	Tavsanli	0.79	208	ePg		Pg	Pg	00 39 56.0	-1.1
MDNY	Mudanya-Bursa	0.84	286	ePG		Pg	Pg	00 39 58.2	+0.2
MDNY	Mudanya-Bursa	0.84	286	ePg		Pg	Pg	00 39 58.2	+0.2
BTAS	Taskesti	0.91	62	iP		Pg	Pg	00 39 59.0	-0.5
BTAS				i S		Sn	Pg	00 40 15.8	+0.9
BTAS	Taskesti	0.91	62	P		Pg	Pg	00 39 59.0	-0.5
ARMT	Armutlu	0.92	297	ePG		Pg	Pg	00 39 59.6	-0.1
ARMT				eSG		Sb	Pg	00 40 13.0	0.0
ARMT	Armutlu	0.92	297	ePg		Pg	Pg	00 39 59.6	-0.1
ARMT				eSg		Sb	Pg	00 40 13.0	0.0
ESKT	Eskisehir	0.94	132	ePG		Pg	Pg	00 40 00.1	+0.1
ESKT	Eskisehir	0.94	132	iP		Pb	Pg	00 40 00.6	-0.2
ESKT				i S		Sn	Pg	00 40 15.1	-0.6
ESKT	Eskisehir	0.94	132	ePg		Pg	Pg	00 40 00.1	+0.1
SEYT	Eskypehyr	0.94	132	P		Pb	Pg	00 40 00.6	-0.1
SEYT				S		Sn	Pg	00 40 15.1	-0.6
KAND	Kocaeli-Kandir	0.96	11	iP		Pg	Pg	00 40 00.4	0.0
KAND				i S		Sg	Pg	00 40 13.2	+0.2
KAND	Kocaeli-Kandir	0.96	11	P		Pg	Pg	00 40 00.4	0.0
KAND				S		Sg	Pg	00 40 13.2	+0.2
SAHE	Sakarya_HENDEK	0.99	44	iP		Pg	Pg	00 40 00.4	-0.6
SAHE				i S		Sb	Pg	00 40 14.3	-0.6
SAHE	Sakarya_HENDEK	0.99	44	P		Pg	Pg	00 40 00.5	-0.4
SAHE				S		Sb	Pg	00 40 14.3	-0.6
MDUB	Mudurnu	1.01	71	ePG		Pb	Pg	00 40 01.9	-0.1
MDUB	Mudurnu	1.01	71	ePg		Pb	Pg	00 40 01.9	-0.1
GDZ	Gediz	1.12	199	iP		Pb	Pg	00 40 04.0	+0.2
GDZ				i S		Sn	Pg	00 40 19.7	-0.3
GDZ	Gediz	1.12	199	P		Pb	Pg	00 40 04.0	+0.2
GDZ				S		Sn	Pg	00 40 19.7	-0.3
ISK	Istanbul-Kandi	1.14	324	ePN		Pg	Pg	00 40 03.1	-0.6
ISK	Istanbul-Kandi	1.14	324	ePn		Pg	Pg	00 40 03.1	-0.6
KCTX	Karacabey (Bur	1.22	276	ePN		Pg	Pg	00 40 04.4	-0.9
KCTX				eSN		Sn	Pg	00 40 22.5	+0.1
KCTX	Karacabey (Bur	1.22	276	ePn		Pg	Pg	00 40 04.4	-0.9
KCTX				eSn		Sn	Pg	00 40 22.5	+0.1
DEMI	Demirci	1.46	221	iP		Pg	Pg	00 40 09.8	0.0
DEMI				i S		Sg	Pg	00 40 30.7	+2.0
DEMI	Demirci	1.46	221	P		Pg	Pg	00 40 09.8	0.0
DEMI				S		Sg	Pg	00 40 30.7	+2.0
BOLV	Bolvadin	1.63	151	iP		Pb	Pg	00 40 12.6	+0.1
BOLV				i S		Sg	Pg	00 40 36.2	+1.9
BOLV	Bolvadin	1.63	151	P		Pb	Pg	00 40 12.6	+0.1
BOLV				S		Sg	Pg	00 40 36.2	+1.9

IDC 12 00:40:32.0±3.7,9.°43N×123.°26E,h0km,mb3.9/3, mb1 4.1/3,mb1mx3.5/33,mbtmp3.9/3,Error ellipse: s-maj=424.8km s-min=26.1km az=63.0,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	31.16	160	P		P	P	00 46 51.9	-1.0
	1.0nm,0.8s,baz=334,slow=9.3,SNR=2.6								
ASAR	Alice Springs	34.50	163	P		P	P	00 47 23.1	+1.0
	1.8nm,0.6s,baz=346,slow=6.9,SNR=5.3								
MKAR	Makanchi Array	50.94	325	P		P	P	00 49 35.2	-0.1
	1.0nm,0.8s,baz=126,slow=6.1,SNR=3.0								

*ISCJB **12** 00:43:49.9±0.4,9.°39N±0.°06×121.°98E±0.°04,h10km, mb4.1/20,Error ellipse: s-maj=8.3km s-min=5.8km az=6.5*
*IDC **12** 00:43:49.7±0.7,9.°51N×122.°18E,h0km,mb4.0/14, mb1 4.1/14,mb1mx3.9/34,mbtmp4.0/14,Error ellipse: s-maj=41.4km s-min=14.6km az=65.0*
*NEIC **12** 00:43:51.3±0.4,9.°55N×122.°26E,h10km,mb4.4/7,Error ellipse: s-maj=15.8km s-min=7.1km az=71.0*
*MAN **12** 00:43:51,9.°41N×122.°03E,h11km,mb4.5,ML3.4,MS3.3*
ISC 12 00:43:51.5±0.5,9.°46N±0.°06×122.°05E±0.°06,h10km,n38, σ0s85/39,mb4.0/20,2C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	Sibulan	1.17	96	iP		Pb	Pb	00 44 08.0	-5.9
TBP	Tagbilaran	1.80	83	eP		Pb	Sb	00 44 23.8	-0.8
TBP				eS		Sb	Sb	00 44 48.0	+0.8
LLP	Lapu-Lapu	2.07	66	eP		Pn	Sn	00 44 26.8	+0.5
LLP				eS		Sn	Sn	00 44 52.8	+0.7
RCP	Roxas	2.19	18	ePu		Pn	Sn	00 44 29.1	+1.0
CGP	Cagayan de Oro	2.79	111	ePu		Pn	Sn	00 44 36.1	-0.1
CTBH	Cotabato--PC H	3.11	136	eP		Pb	Sn	00 44 47.0	+0.2
CTBH				i S		Sb	Sn	00 45 26.3	+1.4
PLP	Palo	3.34	59	ePu		Pn	Sn	00 44 43.2	-0.6
MYLDM	Lahad Datu	5.52	220	ePn		Pn	Pn	00 45 17.8	+4.0
CM31	Chiang Mai Arr	24.12	294	eP		P	P	00 49 07.0	-0.8
CMAR	Chiang Mai Arr	24.12	294	P		P	P	00 49 08.9	+1.1
	1.4nm,0.7s,baz=114,slow=8.4,SNR=8.4								
WR1	Warramunga Arr	31.62	158	eP		P	P	00 50 14.4	-0.5
	17nm,1.4s								
WRA	Warramunga Arr	31.62	158	P		P	P	00 50 14.4	-0.5
	0.9nm,0.6s,baz=338,slow=9.6,SNR=4.5								
AS31	Alice Springs	34.90	161	eP		P	P	00 50 44.0	+0.5
	1.2nm,1.1s								
ASAR	Alice Springs	34.90	161	P		P	P	00 50 44.0	+0.5
	1.4nm,0.7s,baz=341,slow=7.3,SNR=8.6								
KLR	Kul'dur	40.46	10	P		P	P	00 51 29.9	-0.3
	0.3nm,0.3s,baz=252,slow=16,SNR=2.0								
SONA0	Songino Array	40.47	344	eP		P	P	00 51 30.4	-0.1
	2.2nm,1.0s								
SONM	Songino Array	40.47	344	P		P	P	00 51 30.4	-0.1
	1.2nm,0.8s,baz=169,slow=8.9,SNR=6.7								
SONA1	Songino Array	40.48	344	eP		P	P	00 51 30.7	+0.1
STKA	Stephens Creek	45.16	156	P		P	P	00 52 09.1	+0.5
	3.3nm,1.1s,baz=329,slow=12,SNR=2.4								
STKA	Stephens Creek	45.16	156	eP		P	P	00 52 09.1	+0.5
	3.6nm,1.5s								
MK01	Makanchi Array	50.21	325	eP		P	P	00 52 48.9	+1.2
MK31	Makanchi Array	50.23	325	eP		P	P	00 52 49.2	+1.4
MK32	Makanchi Array	50.23	325	eP		P	P	00 52 48.6	+0.8
MKAR	Makanchi Array	50.23	325	P		P	P	00 52 48.6	+0.8
	2.9nm,0.8s,baz=134,slow=8.6,SNR=14								
ZALV	Zalesovo Beam	53.41	334	P		P	P	00 53 10.0	-1.4
	0.4nm,0.3s,baz=131,slow=9.5,SNR=2.9								
ZAA1	Zalesovo Array	53.42	334	eP		P	P	00 53 10.0	-1.4
KURK	Kurch

WR1	**Warramunga Arr**	**31.64**	**158**	*e*P	**P**	**00 55 55.9**	**-0.1**
	29nm,1.8s							
WR1				*e*PcP	**PcP**	**00 58 47.7**	**-0.7**
WRA	**Warramunga Arr**	**31.64**	**158**	P	**P**	**00 55 55.9**	**-0.1**
	1.3nm,0.5s,baz=339,slow=9.7,SNR=8.3							
WRA				PcP	**PcP**	**00 58 47.7**	**-0.7**
	0.5nm,0.6s,baz=324,slow=3.3,SNR=4.4							
WB2	**Warramunga Arr**	**31.65**	**158**	*e*P	**P**	**00 55 55.2**	**-0.9**
AS31	**Alice Springs**	**34.94**	**161**	*e*P	**P**	**00 56 25.9**	**+1.1**
	2.2nm,0.6s							
AS31				*e*PcP	**PcP**	**00 58 57.2**	**-0.4**
ASAR	**Alice Springs**	**34.94**	**161**	P	**P**	**00 56 25.6**	**+0.9**
	5.1nm,0.6s,baz=341,slow=7.4,SNR=68							
ASAR				PcP	**PcP**	**00 58 57.2**	**-0.4**
	0.7nm,0.6s,baz=346,slow=3.0,SNR=4.6							
AS01	**Alice Springs**	**34.95**	**161**	*e*P	**P**	**00 56 25.2**	**+0.4**
USRK	**Ussuriysk Ar.**	**35.54**	**12**	P	**P**	**00 56 29.6**	**-0.1**
	3.4nm,0.8s,baz=222,slow=8.0,SNR=6.4							
SONA0	**Songino Array**	**40.43**	**344**	*e*P	**P**	**00 57 11.0**	**-0.1**
	1.8nm,0.8s							
SONM	**Songino Array**	**40.43**	**344**	P	**P**	**00 57 11.0**	**-0.1**
	1.2nm,0.6s,baz=166,slow=9.8,SNR=9.6							
SONA1	**Songino Array**	**40.44**	**344**	*e*P	**P**	**00 57 11.1**	**-0.1**
NWAO	**Narrogin (SRO)**	**42.51**	**186**	P	**P**	**00 57 29.3**	**+1.2**
	5.5nm,0.6s,baz=50,slow=8.1,SNR=7.0							
NWAO	**Narrogin (SRO)**	**42.51**	**186**	*e*P	**P**	**00 57 29.3**	**+1.2**
	113nm,1.9s							
STKA	**Stephens Creek**	**45.17**	**157**	P	**P**	**00 57 49.9**	**+0.3**
	4.2nm,0.8s,baz=350,slow=8.3,SNR=6.4							
STKA	**Stephens Creek**	**45.17**	**157**	*e*P	**P**	**00 57 49.9**	**+0.3**
	7.4nm,1.7s							
MK01	**Makanchi Array**	**50.23**	**325**	*e*P	**P**	**00 58 29.4**	**+0.6**
MK31	**Makanchi Array**	**50.25**	**325**	*e*P	**P**	**00 58 30.0**	**+1.0**
MK32	**Makanchi Array**	**50.25**	**325**	*e*P	**P**	**00 58 29.8**	**+0.9**
MKAR	**Makanchi Array**	**50.25**	**325**	P	**P**	**00 58 29.8**	**+0.9**
	1.5nm,0.7s,baz=131,slow=8.6,SNR=17							
ZALV	**Zalesovo Beam**	**53.41**	**333**	P	**P**	**00 58 51.3**	**-1.1**
	0.8nm,0.3s,baz=130,slow=5.2,SNR=6.3							
ZAA1	**Zalesovo Array**	**53.43**	**333**	*e*P	**P**	**00 58 51.3**	**-1.1**
KURK	**Kurchatov**	**54.46**	**327**	*e*P	**P**	**00 59 00.5**	**+0.4**
VOSK	**Vostochnaya**	**59.57**	**327**	*e*P	**P**	**00 59 35.9**	**-0.5**
BRVK	**Borovoye**	**60.10**	**327**	*e*P	**P**	**00 59 40.5**	**+0.5**
	3.3nm,0.7s							
ZRNK	**Zerenda**	**60.75**	**326**	*e*P	**P**	**00 59 44.7**	**+0.3**
	2.3nm,1.0s							
NRIK	**Noril'sk**	**63.77**	**347**	P	**P**	**01 00 04.0**	**-0.3**
	3.3nm,0.7s,baz=132,slow=7.1,SNR=4.4							
GEYT	**Alibeck**	**63.80**	**308**	P	**P**	**01 00 06.7**	**+1.5**
	1.8nm,0.7s,baz=142,slow=5.1,SNR=5.8							
ABKAR	**Akbulak array**	**64.84**	**320**	*e*P	**P**	**01 00 12.2**	**+0.4**
	13nm,0.6s							
BR101	**Keskin Array S**	**82.89**	**309**	*e*P	**P**	**01 01 57.9**	**-0.1**
BRTR	**Keskin Array B**	**82.89**	**309**	P	**P**	**01 01 57.9**	**-0.1**
	1.0nm,0.7s,baz=112,slow=5.9,SNR=6.7							
AKASG	**Malin Array Be**	**84.58**	**320**	P	**P**	**01 02 05.3**	**-0.9**
	1.5nm,0.5s,baz=66,slow=5.3,SNR=6.1							
AKBB	**Malin Array Si**	**84.58**	**320**	*e*P	**P**	**01 02 05.3**	**-0.9**
FIA0	**FINESS Array S**	**84.61**	**331**	*e*P	**P**	**01 02 05.5**	**-0.6**
FINES	**FINESS Array B**	**84.61**	**331**	P	**P**	**01 02 05.5**	**-0.6**
	1.6nm,0.8s,baz=46,slow=8.2,SNR=6.6							

NIED **12** *00:57:00,36.80N×141.20E,h5km,Mw3.5 Best double couple: M₀2.33000×10¹⁴ NP1:φ=179.00000°,δ46.00000°, λ-155.00000°. NP2:φ=71.00000°,δ73.00000°, λ-47.00000°.*

IDC **12** *00:57:31.9±3.8,36.88N×141.67E,h0km,mb3.4/4, mb1 3.5/5,mb1mx3.4/34,mbtmp3.5/5,ML2.9/1,Error ellipse: s-maj=109.6km s-min=24.8km az=71.0*

ISCJB **12** *00:57:35.1±1.2,36.73N±0.04×141.37E±0.08,h26km±6km, mb3.4/4,Error ellipse: s-maj=10.4km s-min=5.9km az=7.2*

JMA **12** *00:57:36.8±0.1,36.76N×141.25E,h41km±1km,M3.6*

ISC 12 00:57:35.5±1.7,36.75N±0.04×141.34E±0.08,h17km±9km, n14,σ0≥83/24,mb3.4/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.55**	**309**	P	**Pb**	**00 57 47.2**	**+0.4**
ONAJ				S	**Sg**	**00 57 54.5**	**+0.4**
JHO	**Hitachi**	**0.63**	**257**	P	**Pg**	**00 57 48.1**	**+0.1**
JHO				S	**Sg**	**00 57 56.4**	**-0.1**
JFK	**Kawauchi**	**0.72**	**329**	P	**Pg**	**00 57 49.7**	**+0.1**
JFK				S	**Sg**	**00 57 58.5**	**-0.7**
JYT	**Yasato**	**1.06**	**241**	P	**Pb**	**00 57 54.6**	**-0.8**
JYT				S	**Sb**	**00 58 07.6**	**-1.3**
JFT	**Otama**	**1.11**	**314**	P	**Pb**	**00 57 56.2**	**0.0**
JFT				S	**Sb**	**00 58 11.1**	**+0.8**
JMM	**Marumori**	**1.19**	**339**	P	**Pn**	**00 57 56.7**	**-0.7**
JMM				eS	**Sb**	**00 58 11.5**	**-1.3**
JFY	**Yanaizu**	**1.46**	**297**	P	**Pn**	**00 58 01.4**	**+0.3**
JFY				S	**Sn**	**00 58 19.5**	**-0.3**
JAG	**Ashikaga**	**1.55**	**258**	P	**Pn**	**00 58 01.8**	**-0.5**
JAG				S	**Sn**	**00 58 20.8**	**-1.2**
MAT	**Matsushiro**	**2.52**	**266**	P	**Pn**	**00 58 16.9**	**+1.2**
MAT				S	**Sn**	**00 58 47.3**	**+1.2**
JHJ	**Hachijo jima 2**	**3.84**	**200**	Pn	**Pn**	**00 58 35.0**	**+1.2**
	2.1nm,0.3s,baz=58,slow=19,SNR=3.8							
JHJ				Sn	**Sn**	**00 59 17.6**	**-1.0**
	8.3nm,0.3s,baz=0.0,slow=20,SNR=3.1							
SONM	**Songino Array**	**27.89**	**304**	P	**P**	**01 03 25.3**	**+0.8**
	0.2nm,0.4s,baz=106,slow=11,SNR=2.4							
MKAR	**Makanchi Array**	**44.22**	**302**	P	**P**	**01 05 43.4**	**-0.2**
	0.2nm,0.5s,baz=81,slow=8.9,SNR=2.6							
KURBB	**Kurchatov Arra**	**46.13**	**308**	P	**P**	**01 05 58.7**	**0.0**
	0.4nm,0.7s,baz=84,slow=7.9,SNR=7.8							
WRA	**Warramunga Arr**	**56.77**	**188**	P	**P**	**01 07 18.9**	**+0.3**
	0.5nm,0.6s,baz=6.3,slow=7.5,SNR=2.7							

ISCJB **12** *00:59:35.7±0.7,9.45N±0.07×122.10E±0.04,h10km, mb3.7/4,Error ellipse: s-maj=9.6km s-min=6.3km az=176.9*

MAN **12** *00:59:37,9.63N×121.97E,h14km,mb4.3,ML3.2,MS3.0*

MAN INTENSITY II - SIPALAY CITY NEGROS OCCIDENTAL.

IDC **12** *00:59:39.7±1.3,8.09N×120.01E,h0km,mb3.7/4, mb1 3.9/4,mb1mx3.5/39,mbtmp3.7/4,Error ellipse: s-maj=258.4km s-min=21.6km az=63.0*

ISC 12 00:59:37.0±0.9,9.46N±0.08×122.19E±0.05,h10km,n9, σ≥917/13,mb3.8/4,1C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.03**	**97**	*i* P	**Pb**	**00 59 54.9**	**-2.2**
SNPH				*i* S	**Sg**	**01 00 10.8**	**+0.4**
LLP	**Lapu-Lapu**	**1.94**	**64**	*e*P	**Pb**	**01 00 11.8**	**-0.7**
LLP				*e*S	**Sb**	**01 00 37.5**	**+0.7**
RCP	**Roxas**	**2.15**	**15**	↑*e*P	**Pn**	**01 00 12.4**	**-0.6**
RCP				*e*S	**Sn**	**01 00 38.1**	**-1.6**
PLP	**Palo**	**3.22**	**58**	↓*e*P	**Pn**	**01 00 28.5**	**+0.8**
PLP				*e*S	**Sn**	**01 01 03.1**	**-3.0**
PPR	**Puerto Princes**	**3.43**	**275**	↓*e*P	**Pn**	**01 00 30.6**	**+0.1**
PPR				*e*S	**Sn**	**01 01 07.5**	**-3.8**
WRA	**Warramunga Arr**	**31.57**	**158**	P	**P**	**01 05 59.9**	**-0.1**
	0.6nm,0.9s,baz=327,slow=10,SNR=3.3							
ASAR	**Alice Springs**	**34.86**	**161**	P	**P**	**01 06 29.8**	**+1.1**
	0.7nm,0.5s,baz=336,slow=6.8,SNR=7.2							
MKAR	**Makanchi Array**	**50.31**	**325**	P	**P**	**01 08 37.4**	**+3.5**
	0.6nm,0.7s,baz=123,slow=8.8,SNR=5.3							
ZALV	**Zalesovo Beam**	**53.47**	**333**	P	P	01 09 03.7	+6.3
	0.4nm,0.3s,baz=132,slow=6.0,SNR=3.2							

ISCJB **12** *01:02:26.1±0.8,55.95±0.1×26.9W±0.3,h63km,mb4.2/5, Error ellipse: s-maj=23.8km s-min=13.9km az=145.8*

IDC **12** *01:02:29.9±9.1,55.89S×27.08W,h78km±84km,mb3.8/6, mb1 4.0/6,mb1mx3.6/20,mbtmp4.1/6,Error ellipse: s-maj=33.7km s-min=18.9km az=55.0*

ISC 12 01:02:27.9±0.8,55.9S±0.1×27.1W±0.2,h63km,n17, σ0≥94/11,mb4.2/5,1D,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VNA1	**Neumayer--Stat**	**16.91**	**158**	P	**P**	**01 06 22.7**	**+1.6**
SNAA	**Sanae**	**18.85**	**156**	P	**P**	**01 06 42.0**	**-0.5**
PMSA	**Palmer Station**	**20.06**	**229**	P	**Pn**	**01 06 58.3**	**+0.5**
	3.0nm,0.8s,baz=47,slow=12,SNR=4.6						
SYO	**Syowa Base**	**31.66**	**141**	↓*e*P	**P**	**01 08 43.0**	**-1.5**
CPUP	**Villa Florida**	**36.77**	**311**	P	**P**	**01 09 28.6**	**-0.6**
	3.4nm,0.8s,baz=146,slow=8.8,SNR=9.3						
MAW	**Mawson**	**40.23**	**144**	P	**P**	**01 09 57.8**	**+0.1**
	1.7nm,0.5s,baz=215,slow=6.4,SNR=10						

VNDA	**Vanda**	**46.73**	**183**	P	**P**	**01 10 49.9**	**-0.1**
	1.2nm,0.5s,baz=189,slow=7.1,SNR=10.0							
H10S2	**ASCENSION HYDR**	**47.83**	**17**	T	T	02 03 45.5		
	baz=189,slow=75,SNR=84							
H10S3	**ASCENSION HYDR**	**47.83**	**17**	T	T	02 03 44.4		
	baz=189,slow=75,SNR=80							
H10S1	**ASCENSION HYDR**	**47.84**	**17**	T	T	02 03 45.5		
	baz=189,slow=75							
H10N1	**ASCENSION HYDR**	**48.95**	**17**	T	T	02 05 08.3		
	baz=200,slow=74							
H10N3	**ASCENSION HYDR**	**48.95**	**17**	T	T	02 05 08.8		
	baz=200,slow=74							
H10N2	**ASCENSION HYDR**	**48.96**	**17**	T	T	02 05 11.1		
	baz=200							
LPAZ	**La Paz**	**50.35**	**305**	P	**P**	**01 11 19.1**	**0.0**
	3.6nm,0.4s,baz=119,slow=5.1,SNR=32							
TORD	**Torodi Ar. Bea**	**72.88**	**29**	P	**P**	**01 13 50.9**	**+0.9**
	0.5nm,0.4s,baz=201,slow=6.3,SNR=18							
INK	**Inuvik**	**145.73**	**321**	PKPbc	**PKPdf**	**01 21 57.7**	**+0.3**
	0.8nm,0.4s,baz=62,slow=2.1,SNR=5.6							
ILAR	**Eielson Array**	**150.07**	**312**	PKPbc	**PKPbc**	**01 22 09.2**	**-0.5**
	0.5nm,0.5s,baz=130,slow=3.6,SNR=6.6							

KRNET **12** *01:04:55.0±0.1,39.77N×73.01E,h13km,mb3.6*

IDC **12** *01:04:56.4±2.2,39.95N×72.60E,h0km,mb3.8/3, mb1 3.7/5,mb1mx3.4/42,mbtmp3.7/5,ML3.2/2,Error ellipse: s-maj=50.2km s-min=15.4km az=140.0*

SOME **12** *01:04:57.4,39.97N×72.92E,h5km*

NNC **12** *01:04:59.6±7.1,40.31N×72.97E,h266km±101km,mb1.7, mpv3.1,Error ellipse: s-maj=125.4km s-min=37.1km az=175.0*

ISC 12 01:04:57.9±2.2,39.71N±0.06×72.86E±0.04,h14km±14km, n25,σ1≥52/46,mb3.8/3,20C-4D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DRK	**Karamyk**	**0.85**	**255**	↑*e*P	**Pb**	**01 05 14.4**	**-0.2**
	baz=253						
DRK				↑*e*S	**Sn**	**01 05 28.0**	**-0.1**
	baz=253						
BTK	**Batken**	**1.61**	**283**	↑*e*P	**Pb**	**01 05 27.4**	**0.0**
	baz=280						
BTK				↑*e*P	**Sg**	**01 05 51.0**	**+1.2**
	baz=280						
ARSB	**Arslanbob**	**1.62**	**3**	↑*e*P	**Pn**	**01 05 24.5**	**-1.7**
	baz=359						
ARSB				↑*e*S	**Sn**	**01 05 47.0**	**+0.1**
	baz=359						
ARK	**Arkit**	**2.20**	**342**	↑*e*P	**Pn**	**01 05 34.4**	**+0.3**
	baz=339						
ARK				↑*e*S	**Sb**	**01 06 03.2**	**-1.4**
	baz=339						
ARLS	**Aral**	**2.42**	**27**	↑*e*P	**Pn**	**01 05 36.5**	**-0.7**
	baz=25						
ARLS				↑*e*S	**Sn**	**01 06 07.8**	**+1.1**
	baz=25						
AML	**Almayashu**	**2.50**	**14**	↓*i*P	**Pn**	**01 05 38.6**	**+0.1**
	baz=12						
AML				↓*i*S	**Sn**	**01 06 10.5**	**+1.4**
	baz=12						
MNAS	**Manas**	**2.79**	**355**	↑*i*P	**Pn**	**01 05 42.6**	**+0.4**
	baz=352						
MNAS				↑*i*S	**Sn**	**01 06 17.1**	**+1.3**
	baz=352						
MNAS	**Manas**	**2.79**	**355**	↓P	**Pn**	**01 05 42.7**	**+0.4**
	13nm,0.4s						
MNAS				↑S	**Sb**	**01 06 20.5**	**-1.2**
	48nm,0.6s						
KZA	**Kyzart**	**2.98**	**37**	↑*i*P	**Pn**	**01 05 45.4**	**+0.3**
	baz=36						
KZA				↑*i*S	**Sn**	**01 06 22.2**	**+1.3**
	baz=36						
MRKS	**Merke**	**3.05**	**5**	*e*P	**Pb**	**01 05 49.8**	**-2.2**
	49nm,0.3s						
MRKS				*e*S	**Sb**	**01 06 27.6**	**-1.5**
	140nm,0.4s						
AAK	**Ala-Archa**	**3.18**	**22**	Pn	**Pn**	**01 05 47.9**	**+0.3**
	9.3nm,0.3s,baz=244,slow=15,SNR=28						
AAK				Sn	**Sn**	**01 06 28.5**	**+3.2**
	19nm,0.3s,baz=86,slow=18,SNR=12						
AAK	**Ala-Archa**	**3.18**	**22**	↑P	**Pn**	**01 05 48.9**	**+1.3**
	29nm,0.7s						
AAK				↑S	**Sb**	**01 06 30.8**	**-2.0**
	49nm,0.4s						
IUG	**Iuzhnay**	**3.25**	**320**	*e*P	**Pb**	**01 05 55.4**	**0.0**
	27nm,0.3s						
IUG				*e*S	**Sb**	**01 06 37.2**	**+2.4**
	68nm,0.3s						
TKM2	**Tokmak 2**	**3.81**	**32**	↑P	**Pn**	**01 05 57.0**	**+0.6**
	0.2nm,0.2s						
TKM2				↑S	**Sn**	**01 06 41.7**	**+0.5**
	21nm,0.8s						
KK31	**Karatay Array**	**3.83**	**333**	↓P	**Pn**	**01 05 57.1**	**+0.8**
	1.9nm,0.4s,baz=140,slow=13,SNR=8.6						
KK31				↑S	**Sn**	**01 06 44.5**	**+3.4**
	9.1nm,0.4s,baz=141,slow=31,SNR=3.9						
BRLS	**Borolday**	**3.90**	**323**	*e*P	**Pb**	**01 06 05.0**	**-1.4**
	6.7nm,0.3s						
BRLS				*e*S	**Sb**	**01 06 53.5**	**+0.1**
	39nm,0.4s						
KST	**Kastek**	**4.07**	**34**	*e*P	**Pb**	**01 06 07.0**	**-2.4**
	5.5nm,0.3s						
KST				*e*S	**Sb**	**01 06 56.5**	**-2.0**
	15nm,0.7s						
DGS	**Degeres**	**4.15**	**31**	*e*P	**Pb**	**01 06 10.4**	**-0.4**
	15nm,0.6s						
DGS				*e*S	**Sb**	**01 07 02.8**	**+1.8**
	22nm,0.5s						
TNSS	**Tian-Shan**	**4.53**	**41**	*e*P	**Pb**	**01 06 17.3**	**-0.2**
	9.9nm,0.5s						
TNSS				*e*S	**Sb**	**01 07 14.2**	**+2.2**
	9.6nm,0.5s						
MDOK	**Medeo**	**4.67**	**41**	*e*P	**Pb**	**01 06 18.6**	**-1.1**
	6.8nm,0.6s						
MDOK				*e*S	**Sb**	**01 07 16.5**	**+0.6**
	27nm,0.7s						
KTBS	**Karatobe**	**4.92**	**34**	*e*P	**Pb**	**01 06 24.4**	**+0.6**
KTBS				*e*S	**Sb**	**01 07 26.2**	**+3.4**
MKAR	**Makanchi Array**	**9.87**	**41**	Pn	**Pn**	**01 07 21.1**	**+1.8**
	0.1nm,0.3s,baz=221,slow=11,SNR=2.8						
FINES	**FINESS Array B**	**35.72**	**323**	P	**P**	**01 11 55.4**	**-0.3**
	1.3nm,0.9s,baz=97,slow=7.9,SNR=3.4						
ARCES	**ARCESS Array B**	**38.79**	**336**	P	**P**	**01 12 20.3**	**-1.3**
	3.4nm,0.9s,baz=111,slow=9.8,SNR=4.7						
TORD	**Torodi Ar. Bea**	**67.27**	**268**	P	**P**	**01 15 51.0**	**-1.3**
	0.2nm,0.5s,baz=44,slow=6.0,SNR=6.3						

ISCJB **12** *01:07:18.6±0.9,9.49N±0.09×122.20E±0.07,h10km, mb3.4/4,Error ellipse: s-maj=13.1km s-min=9.1km az=12.1*

IDC **12** *01:07:19.9±1.9,9.00N×121.13E,h0km,mb3.4/4, mb1 3.6/4,mb1mx3.3/55,mbtmp3.4/4,Error ellipse: s-maj=282.4km s-min=21.5km az=63.0*

MAN **12** *01:07:23,9.58N×122.36E,h58km,mb4.8,ML3.7,MS3.8*

ISC 12 01:07:20.5±1.2,9.5N±0.1×122.27E±0.08,h10km,n8, σ0≥97/9,mb3.4/4,1C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.97**	**101**	↑*i*P	Pg	01 07 36.4	-2.9
SNPH				*i* S	**Sg**	**01 07 52.1**	**+0.1**
TBP	**Tagbilaran**	**1.58**	**84**	*e*P	**Pn**	**01 07 49.0**	**+0.4**
RCP	**Roxas**	**2.07**	**13**	↓*e*P	**Pn**	**01 07 56.2**	**+0.8**
PLP	**Palo**	**3.12**	**58**	↓*e*P	**Pn**	**01 08 11.2**	**+1.4**
PLP				*e*S	**Sn**	**01 08 45.8**	**-1.4**
WRA	**Warramunga Arr**	**31.61**	**158**	P	**P**	**01 13 43.6**	**-0.2**
	0.3nm,0.5s,baz=333,slow=10,SNR=3.1						
ASAR	**Alice Springs**	**34.90**	**161**	P	**P**	**01 14 12.9**	**+0.3**
	0.5nm,0.5s,baz=338,slow=6.9,SNR=11						
MKAR	**Makanchi Array**	**50.29**	**325**	P	**P**	**01 16 17.2**	**-0.2**
	0.2nm,0.5s,baz=131,slow=7.9,SNR=2.6						
KURBB	**Kurchatov Arra**	**54.49**	**327**	P	**P**	**01 16 47.5**	**-0.9**
	0.1nm,0.3s,baz=126,slow=7.8,SNR=4.6						

IDC 12 01:07:56.7±1.6,9.52N×122.22E,h0km,mb3.6/5, mb1 3.6/5,mb1mx3.4/56,mbtmp3.6/5,Error ellipse: s-maj=192.1km s-min=24.3km az=67.0,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**34.91**	**161**	P	P	01 14 50.2	-0.1
	0.4nm,0.6s,baz=344,slow=7.7,SNR=3.3						
SONM	**Songino Array**	**40.46**	**344**	P	P	01 15 37.2	+0.1
	0.4nm,0.6s,baz=161,slow=9.4,SNR=3.6						
MKAR	**Makanchi Array**	**50.27**	**325**	P	P	01 16 55.0	+0.1
	0.3nm,0.5s,baz=144,slow=8.5,SNR=4.1						
ZALV	**Zalesovo Beam**	**53.43**	**333**	P	P	01 17 17.9	-0.4
	0.4nm,0.3s,baz=127,slow=7.6,SNR=2.6						
KURBB	**Kurchatov Arra**	**54.47**	**327**	P	P	01 17 25.9	-0.1
	0.6nm,0.8s,baz=130,slow=6.7,SNR=5.1						

IDC **12** *01:13:48.8±0.6,9.67N×122.04E,h0km,mb4.0/19, mb1 4.2/19,mb1mx4.0/62,mbtmp4.0/19,MS3.6/7, Ms1 3.7/7,ms1mx3.3/47,Error ellipse: s-maj=29.5km s-min=12.9km az=70.0*

ISCJB **12** *01:13:49.1±0.4,9.56N±0.06×122.02E±0.04,h10km, mb4.1/22,MS3.7/6,Error ellipse: s-maj=9.4km s-min=5.7km az=170.4*

NEIC **12** *01:13:50.3±0.3,9.67N×122.05E,h10km,mb4.5/2,Error ellipse: s-maj=12.5km s-min=8.1km az=71.0*

ISC 12 01:13:50.5±0.5,9.69N±0.07×122.07E±0.04,h10km,n46, σ1≥56/43,mb4.1/22,MS3.7/6,2D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TBP	**Tagbilaran**	**1.77**	**90**	*e*P	**Pg**	**01 14 25.4**	**+1.0**
LLP	**Lapu-Lapu**	**1.97**	**71**	*e*P	**Pb**	**01 14 25.7**	**-0.9**
LLP				*e*S	**Sb**	**01 14 51.7**	**+0.6**
PLP	**Palo**	**3.22**	**63**	↓*e*P	**Pn**	**01 14 41.5**	**+0.3**
PLP				*e*S	**Sn**	**01 15 16.1**	**-3.5**
PPR	**Puerto Princes**	**3.29**	**272**	↓*i*P	**Pn**	**01 14 41.8**	**-0.4**
PPR				*i* S	**Sn**	**01 15 18.4**	**-3.1**
DAV	**Davao City (W)**	**4.34**	**127**	*e*Pn	**Pb**	**01 15 07.8**	**+0.9**
TGY	**Tagaytay City**	**4.53**	**346**	LR	LR	01 16 55.3	
	comp=Z,348nm,21.2s,baz=25,slow=41						
KKM	**Kota Kinabalu**	**6.83**	**238**	*e*Pn	**Pn**	**01 15 30.1**	**-0.9**
	16nm,0.4s						
KKM				*e*S	**Sn**	**01 16 45.3**	**-3.7**
UBPT	**Khong Chiam**	**17.13**	**291**	P	**P**	**01 17 55.5**	**+3.6**
	43nm,0.7s,787nm						
SKNT	**Sakolnakorn**	**19.02**	**294**	P	**Pn**	**01 18 15.4**	**+1.9**
	37nm,1.0s						
CHBT	**CHBT**	**19.60**	**281**	P	**Pn**	**01 18 23.2**	**+2.7**
	41nm,1.3s						
NONG	**Nongkai**	**20.16**	**296**	P	Pn	01 18 28.5	+1.4
	8.5nm,1.4s						
CHAI	**Chaiyaphum**	**20.53**	**290**	P	Pn	01 18 32.2	+0.8
	5.2nm,1.2s						
PBKT	**Sadao Pong**	**21.65**	**291**	P	**P**	**01 18 45.0**	**+3.7**
	10nm,1.6s						
CMAR	**Chiang Mai Arr**	**24.04**	**294**	P	**P**	**01 19 06.3**	**+0.2**
	1.5nm,0.4s,baz=108,slow=7.0,SNR=16						
CMAR				LR	LR	01 28 12.0	
	comp=Z,143nm,19.7s,baz=112,slow=36						
CMMT	**Chiang Mai**	**24.15**	**295**	P	**P**	**01 19 08.7**	**+1.6**
CHTO	**Chiang Mai**	**24.16**	**295**	P	**P**	**01 19 08.7**	**+1.6**
	35nm,1.7s						
CHTO	**Chiang Mai**	**24.16**	**295**	*e*P	**P**	**01 19 06.7**	**-0.4**
	20nm,1.5s						
FITZ	**Fitzroy Crossi**	**27.83**	**173**	P	**P**	**01 19 39.9**	**-0.3**
	3.6nm,0.9s,baz=333,slow=6.8,SNR=3.8						
KSRS	**Korea Array**	**28.15**	**10**	LR	LR	01 29 55.1	
	comp=Z,64nm,21.4s,baz=198,slow=34						
WRA	**Warramunga Arr**	**31.82**	**158**	P	**P**	**01 20 14.5**	**-1.2**
	3.2nm,0.9s,baz=337,slow=9.3						
ASAR	**Alice Springs**	**35.11**	**161**	P	**P**	**01 20 44.5**	**+0.1**
	2.4nm,0.6s,baz=343,slow=7.5,SNR=25						
USRK	**Ussuriysk Ar.**	**35.45**	**12**	P	**P**	**01 20 47.8**	**+0.8**
	2.7nm,0.7s,baz=189,slow=6.5,SNR=14						
KLR	**Kul'dur**	**40.24**	**10**	P	**P**	**01 21 27.6**	**+0.2**
	1.7nm,0.6s,baz=247,slow=9.4,SNR=4.8						
SONM	**Songino Array**	**40.27**	**344**	P	**P**	**01 21 28.7**	**+0.8**
	1.1nm,0.8s,baz=155,slow=6.8,SNR=6.1						
STKA	**Stephens Creek**	**45.35**	**156**	P	**P**	**01 22 09.6**	**+0.5**
	2.5nm,0.9s,baz=298,slow=4.4,SNR=4.1						
MKAR	**Makanchi Array**	**50.06**	**325**	P	**P**	**01 22 46.5**	**+0.9**
	2.6nm,0.7s,baz=130,slow=9.3,SNR=9.0						
MKAR				LR	LR	01 45 13.0	
	comp=Z,138nm,18.1s,baz=140,slow=38						
PETK	**Petropavlovsk-**	**51.94**	**26**	LR	LR	01 45 38.7	
	comp=Z,44nm,19.8s,baz=185,slow=37						
ZALV	**Zalesovo Beam**	**53.22**	**333**	P	**P**	**01 23 07.0**	**-2.1**
	0.4nm,0.3s,baz=133,slow=8.1,SNR=2.4						
KURBB	**Kurchatov Arra**	**54.26**	**327**	P	**P**	**01 23 17.3**	**+0.6**
	3.3nm,0.9s,baz=132,slow=5.6,SNR=17						
KURK	**Kurchatov**	**54.27**	**327**	*i* P	**P**	**01 23 17.3**	**+0.6**
KURK				pmax	pmax		
	comp=Z,58nm,1.3s						
KURK	**Kurchatov**	**54.27**	**327**	*i* P	**P**	**01 23 17.3**	**+0.6**

PQL Pirkuli 0.62 325 ⇓P Pn 01 18 28.7 +1.3
SNR=43
PQL ⇑S Sn 01 18 42.0 +4.8
PQL Pirkuli 0.62 325 P Pn 01 18 28.7 +1.3
SNR=43
SAAT Saatly 0.64 229 ⇑P Pn 01 18 30.2 +2.7
SNR=14
SAAT Saatly 0.64 229 P Pn 01 18 30.2 +2.7
SNR=14
KDMR Kurdemir 0.67 278 ⇓P Pn 01 18 29.8 +1.9
SNR=16
KDMR ⇓S Sn 01 18 44.7 +6.4
KDMR Kurdemir 0.67 278 P Pn 01 18 29.8 +1.9
SNR=16
NDR Nardaran 0.77 67 ⇓P Pn 01 18 32.7 +3.4
SNR=148
NDR ⇑S Sn 01 18 47.7 +6.9
SIZA Siyzn 0.80 352 ⇓P Pn 01 18 32.9 +3.0
SNR=418
SIZA ⇑S Sn 01 18 47.9 +6.2
SIZA Siyzn 0.80 352 P Pn 01 18 32.9 +3.0
SNR=418
IML Ismayilli 0.84 308 ⇑P Pn 01 18 32.0 +1.7
SNR=47
IML ⇑S Sn 01 18 46.3 +3.8
IML Ismayilli 0.84 308 P Pn 01 18 32.0 +1.7
SNR=47
IML S Sn 01 18 46.3 +3.8
GALA Gala 0.85 81 ⇓P Pn 01 18 34.1 +3.7
SNR=49
ZRD Zardab 1.05 270 ⇓P Pn 01 18 36.1 +3.0
SNR=3.0
ZRD Zardab 1.05 270 P Pn 01 18 36.1 +3.0
SNR=3.0
XNQ Khinaliq 1.13 322 ⇓P Pn 01 18 36.9 +2.5
SNR=219
XNQ ⇓S Sn 01 18 55.9 +6.0
XNQ Khinaliq 1.13 322 P Pn 01 18 36.9 +2.5
SNR=219
XNQ S Sn 01 18 55.9 +6.0
QBL Gabala 1.14 306 ⇓P Pn 01 18 36.6 +2.2
SNR=212
QBL ⇓S Sn 01 18 54.0 +4.1
QBL Gabala 1.14 306 P Pn 01 18 36.6 +2.2
SNR=212
QBL S Sn 01 18 54.0 +4.1
QUBA Quba, Azerbaij 1.15 339 ⇓P Pn 01 18 38.7 +4.1
SNR=104
QUBA ⇓S Sn 01 18 57.1 +6.8
QUBA Quba, Azerbaij 1.15 339 P Pn 01 18 38.7 +4.1
SNR=104
GLBA Clilabad 1.16 206 ⇓P Pn 01 18 36.5 +1.9
SNR=95
GLBA ⇓S Sn 01 18 54.4 +4.2
GLBA Clilabad 1.16 206 P Pn 01 18 36.5 +1.9
SNR=95
QSAR Qusar 1.37 334 ⇓P Pb 01 18 41.7 +3.4
SNR=86
QSAR ⇓S Sn 01 19 02.4 +6.7
BRDA Brd 1.44 270 ⇓P Pb 01 18 42.1 +2.8
SNR=48
BRDA ⇑S Sn 01 19 02.6 +5.5
BRDA Brd 1.44 270 P Pb 01 18 42.1 +2.8
SNR=48
BRDA S Sn 01 19 02.6 +5.5
AKT Akhty 1.56 320 ⇑ *i* PN Pg 01 18 44.3 +1.5
e
AKT 01 19 07.9
AKT pmax pmax
comp=Z,281nm,0.6s
AKT smax smax
comp=N,501nm,0.9s
AKT smax smax
comp=N,505nm,0.5s
AKT smax smax
comp=E,415nm,0.5s
AKT Akhty 1.56 320 *i* Pn Pg 01 18 44.3 +1.5
comp=E,281nm,0.6s
AKT *e*Sg Sb 01 19 07.9 +6.6
comp=E,505nm,0.5s
MNGR Mingechevir, A 1.58 289 ⇑Pn Pg 01 18 43.9 +0.8
SNR=19
MNGR ⇑Sn Sg 01 19 08.2 +4.6
MNGR Mingechevir, A 1.58 289 Pn Pg 01 18 43.9 +0.8
SNR=19
LKRN Lenkeran, Azer 1.58 188 ⇓Pn Pb 01 18 41.5 -0.3
SNR=72
LKRN ⇓Sn Sg 01 19 02.9 -0.8
LKRN Lenkeran, Azer 1.58 188 Pn Pb 01 18 41.5 -0.3
SNR=72
LKRN Sn Sg 01 19 02.9 -0.8
SEKA Sheki 1.69 304 ⇑Pn Pg 01 18 45.3 +0.2
SNR=75
SEKA ⇓Sn Sg 01 19 10.0 +3.0
SEKA Sheki 1.69 304 Pn Pg 01 18 45.3 +0.2
SNR=75
SEKA Sn Sg 01 19 10.0 +3.0
GRMI Germi 1.72 212 *e*Pg Pb 01 18 43.8 -0.5
GRMI *e*Sg Sg 01 19 07.4 -0.8
GRMI AML AML 01 19 12.4
comp=E,647nm,0.6s
GRMI AML AML 01 19 15.2
comp=N,604nm,0.4s
GRMI Germi 1.72 212 *e*Pn Pb 01 18 43.8 -0.5
GRMI *e*Sg Sg 01 19 07.4 -0.8
LRK Lerik 1.73 199 ⇓Sn Sg 01 19 09.4 +1.1
ASTR Astara 1.73 187 ⇑Sn Sb 01 19 06.5 +0.5
ASTR Astara 1.73 187 Sn Sb 01 19 06.5 +0.5
DRN Derbent 1.83 343 ⇑ *i* PN Pg 01 18 47.7 -0.2
DRN Derbent 1.83 343 *i* Pn Pg 01 18 47.7 -0.2
GANJ Ganja 2.12 281 ⇓Pn Pb 01 18 50.0 -0.9
SNR=67
GANJ ⇑Sn Sg 01 19 19.0 -1.8
GANJ Ganja 2.12 281 Pn Pb 01 18 50.0 -0.9
SNR=67
GANJ Sn Sg 01 19 19.0 -1.8
URKR Urkarakh 2.17 331 *e*PN Pg 01 18 52.5 -1.8
URKR *e*S Sg 01 19 27.5 +5.1
URKR pmax pmax
comp=Z,433nm,0.4s
URKR Urkarakh 2.17 331 *e*Pn Pg 01 18 52.5 -1.8
comp=Z,433nm,0.4s
URKR *e*Sb Sg 01 19 27.5 +5.1
ZKTA Zakatala 2.29 307 Pn Pg 01 18 54.1 -2.5
SNR=56
ZKTA ⇑Sn Sg 01 19 26.9 +0.7
KMKR Kumukh 2.37 322 *e*PN Pg 01 18 56.5 -1.6
KMKR *e*S Sg 01 19 28.5 -0.3
KMKR Kumukh 2.37 322 *e*Pn Pg 01 18 56.5 -1.6
KMKR *e*Sn Sg 01 19 28.5 -0.3
IHRS Heris 2.51 219 *e*Pn Pb 01 18 55.5 -2.2
IHRS *e*AMB AMB 01 19 46.4
comp=Z,5μm,0.4s
IHRS Heris 2.51 219 *e*Pn Pb 01 18 55.5 -2.2
GDB GEDABAY 2.56 281 ⇓Pn Pb 01 18 56.4 -2.1
SNR=71
GDB ⇑Sn Sb 01 19 29.1 -0.8
GDB GEDABAY 2.56 281 Pn Pb 01 18 56.4 -2.1
SNR=71
GDB Sn Sb 01 19 29.1 -0.8
GNBR Gunib 2.63 324 ⇓ *i* PN Pb 01 18 59.9 +0.2
e
GNBR 01 19 35.1
GNBR pmax pmax
comp=Z,141nm,0.7s
GNBR smax smax
comp=E,176nm,0.8s
GNBR smax smax
comp=N,292nm,0.9s
GNBR smax smax
comp=E,196nm,0.9s
GNBR Gunib 2.63 324 *i* Pn Pb 01 18 59.9 +0.2
comp=E,141nm,0.7s
GNBR *e*Sn Sg 01 19 35.1 -2.1
comp=E,292nm,0.9s
ISRB Sarab 2.68 204 *e*Pn Pn 01 18 57.8 +2.0
ISRB *e*AMB AMB 01 19 13.0
comp=Z,2μm,0.2s
ISRB Sarab 2.68 204 *e*Pn Pn 01 18 57.8 +2.0
QZX Qazax, Azerbai 2.91 287 ⇑Pn Pb 01 19 02.1 -2.3
SNR=20
QZX ⇓Sn Sb 01 19 39.9 0.0
QZX Qazax, Azerbai 2.91 287 Pn Pb 01 19 02.1 -2.3
SNR=20
QZX Sn Sb 01 19 39.9 0.0
BUJR Buynaksk 2.93 331 *e*PN Pb 01 19 05.0 +0.2
BUJR *e*S Sg 01 19 43.0 -3.9
BUJR Buynaksk 2.93 331 *e*Pn Pb 01 19 05.0 +0.2
BUJR *e*Sn Sg 01 19 43.0 -3.9
NAX Nakhchivan 2.96 249 ⇓Pn Pb 01 19 03.0 -2.3
SNR=15
NAX ⇓Sn Sb 01 19 42.2 +0.8
NAX Nakhchivan 2.96 249 Pn Pb 01 19 03.0 -2.3
SNR=15
DGRG David-gareji 3.03 294 P Pb 01 19 04.0 -2.5
DGRG David-gareji 3.03 294 PN Pb 01 19 04.0 -2.5
DGRG David-gareji 3.03 294 Pn Pb 01 19 04.0 -2.5
IMRD Marand 3.03 240 *e*Pn Pb 01 19 03.4 -3.2
IMRD Marand 3.03 240 *e*Pn Pb 01 19 03.4 -3.2
ITBZ Tabriz 3.04 229 *e*Pn Pn 01 19 03.3 +2.6
ITBZ *e*AMB AMB 01 19 46.3
comp=Z,2μm,0.4s
ITBZ Tabriz 3.04 229 *e*Pn Pn 01 19 03.3 +2.6
IBST Bostanabad 3.08 214 *e*Pn Pn 01 19 03.5 +2.2
IBST *e*AMB AMB 01 19 35.4
comp=Z,1μm,0.2s
IBST Bostanabad 3.08 214 *e*Pn Pn 01 19 03.5 +2.2
GNI Garni 3.31 269 Pn Pb 01 19 08.3 -3.0
comp=Z,8.7nm,0.3s,baz=52,slow=19,SNR=40
GNI LR LR 01 20 54.5
comp=Z,284nm,19.2s,baz=76,slow=50
ISHB Shabestar 3.33 234 *e*AMB AMB 01 19 22.3
comp=Z,2μm,0.5s
ISHB *e*Pn Pn 01 19 07.2 +2.5
MAKU Maku 3.49 256 *e*Pn Pn 01 19 09.3 +2.4
MAKU Maku 3.49 256 *e*Pn Pn 01 19 09.3 +2.4
TBLG Delisi 3.57 295 P Pb 01 19 11.6 -4.2
TBLG Delisi 3.57 295 PN Pb 01 19 11.5 -4.2
TBLG Delisi 3.57 295 P Pn 01 19 11.1 +3.2
TBLG Delisi 3.57 295 Pn Pb 01 19 11.5 -4.2
GROC Groznyy 3.80 321 *e*PN Pb 01 19 16.1 -3.6
GROC *e* 01 20 03.3
GROC pmax pmax
comp=Z,8.0nm,0.4s
GROC smax smax
comp=N,31nm,0.7s
GROC smax smax
comp=N,47nm,1.0s
GROC smax smax
comp=E,32nm,0.5s
GROC Groznyy 3.80 321 *e*Pn Pb 01 19 16.1 -3.6
comp=E,8.0nm,0.4s
GROC *e*Sn Sb 01 20 03.3 -2.3
comp=E,47nm,1.0s
GUDG Gudauri 4.08 304 P Pn 01 19 19.0 +4.1
EAK Akyaka 4.17 277 *i* P Pb 01 19 25.1 -1.0
KMGR Komgaron 4.19 313 *e*PN Pb 01 19 21.5 -4.8
KMGR *e*S Sb 01 20 12.7 -4.0
KMGR Komgaron 4.19 313 *e*Pn Pb 01 19 21.5 -4.8
KMGR *e*Sn Sb 01 20 12.7 -4.0
DIGO Kars 4.34 274 *i* P Pb 01 19 30.0 +1.0
AKH Akhalkalaki 4.37 287 P Pb 01 19 25.4 -4.1
AKH Akhalkalaki 4.37 287 PN Pb 01 19 25.3 -4.1
AKH Akhalkalaki 4.37 287 Pn Pb 01 19 25.3 -4.1
LACR Lac 4.38 307 *e*PN Pb 01 19 24.0 -5.6
LACR *e*S Sb 01 20 17.0 -5.4
LACR Lac 4.38 307 *e*Pn Pb 01 19 24.0 -5.6
LACR *e*Sn Sb 01 20 17.0 -5.4
BTKR Batakoyurt 4.57 314 *e*PN Pn 01 19 25.5 +3.9
BTKR *e*S Sb 01 20 21.5 -6.3
BTKR Batakoyurt 4.57 314 *e*Pn Pn 01 19 25.5 +3.9
BTKR *e*Sn Sb 01 20 21.5 -6.3
THKV Tehran--Karaj 4.59 161 *e*Pn Pn 01 19 23.0 +1.0
THKV AML AML 01 20 20.4
comp=E,104nm,0.7s
THKV AML AML 01 20 23.7
comp=N,94nm,0.5s
THKV Tehran--Karaj 4.59 161 *e*Pn Pn 01 19 23.0 +1.0
CHTH Charan 4.66 159 *e*Pn Pn 01 19 23.9 +0.8
CHTH Charan 4.66 159 *e*Pn Pn 01 19 23.9 +0.8
ONI Oni 4.80 301 P Pn 01 19 28.5 +3.7
IAFJ Afjeh 4.89 154 *e*Pn Pn 01 19 27.1 +0.9
IAFJ *e*AMB AMB 01 20 27.5
comp=Z,2μm,0.2s
IAFJ Afjeh 4.89 154 *e*Pn Pn 01 19 27.1 +0.9
IRAZ Razeghan 4.92 172 *e*Pn Pn 01 19 27.1 +0.6
IRAZ *e*AMB AMB 01 20 32.2
comp=Z,554nm,0.3s
IRAZ Razeghan 4.92 172 *e*Pn Pn 01 19 27.1 +0.6
IALA Alasht 5.13 144 *e*Pn Pn 01 19 30.8 +1.3
IALA *e*AMB AMB 01 20 29.7
comp=Z,3μm,0.2s
IALA Alasht 5.13 144 *e*Pn Pn 01 19 30.8 +1.3
DAMV Damavand 5.18 153 AML AML 01 20 33.8
comp=E,79nm,0.6s
IDMV Damavand 5.25 152 *e*Pn Pn 01 19 32.9 +1.7
IDMV *e*AMB AMB 01 20 41.7
comp=Z,765nm,0.3s
IDMV Damavand 5.25 152 *e*Pn Pn 01 19 32.9 +1.7
SNGE Sanandaj 5.35 195 *e*Pn Pn 01 19 34.1 +1.6
SNGE Sanandaj 5.35 195 *e*Pn Pn 01 19 34.1 +1.6
IKIA Kiasar 5.46 137 *e*Pn Pn 01 19 34.8 +0.8
IKIA *e*AMB AMB 01 19 36.6
comp=Z,1μm,0.1s
IKIA Kiasar 5.46 137 *e*Pn Pn 01 19 34.8 +0.8
IFIR Firoozkooh 5.48 147 *e*Pn Pn 01 19 36.1 +1.8
IFIR *e*AMB AMB 01 19 38.3
comp=Z,1μm,0.1s
IFIR Firoozkooh 5.48 147 *e*Pn Pn 01 19 36.1 +1.8
DAGI Agillar 5.49 281 *i* P Pb 01 19 40.9 -7.5
NEY Neytrino 5.59 304 *i* P Pn 01 19 36.7 +1.0
NEY Neytrino 5.59 304 *i* P Pn 01 19 36.7 +1.0
KBZ Khabaz 5.74 309 Pn Pn 01 19 39.9 +2.4
comp=Z,0.2nm,0.3s,baz=165,slow=13,SNR=2.4
KVAR Kislovodsk Arr 5.99 310 Pn Pn 01 19 47.5 +6.5
baz=162,slow=7.1,SNR=2.8
KIV Kislovodsk 5.99 310 *e*P Pn 01 19 42.0 +0.9
KIV Kislovodsk 5.99 310 *e*P Pn 01 19 42.0 +0.9
IVIS Veis 6.01 198 *e*Pn Pn 01 19 42.9 +1.5
IVIS *e*AMB AMB 01 19 57.7
comp=Z,130nm,0.3s
IVIS Veis 6.01 198 *e*Pn Pn 01 19 42.9 +1.5
MRVT Maraveh tapeh 6.07 113 *e*Pn Pn 01 19 42.7 +0.4
MRVT Maraveh tapeh 6.07 113 *e*Pn Pn 01 19 42.7 +0.4
GOF Gofitskoye 6.51 319 *e*P Pb 01 20 01.8 -4.0
GOF Gofitskoye 6.51 319 *e*P Pb 01 20 01.8 -4.0
BJRD Bojnurd 7.00 109 *e*Pn Pn 01 19 55.8 +0.8
BJRD Bojnurd 7.00 109 *e*Pn Pn 01 19 55.8 +0.8
GEYT Alibeck 7.43 106 Pn Pn 01 20 00.7 -0.1
comp=Z,3.9nm,0.3s,baz=282,slow=16,SNR=49
GEYT Sn Sn 01 21 18.4 -6.6
comp=Z,0.3nm,0.3s,baz=266,slow=19,SNR=2.0
ISFR Sfrayin 7.70 112 *e*AMB AMB 01 20 07.7
comp=Z,887nm,0.1s
ISFR *e*Pn Pn 01 20 05.4 +0.6
IEMG Emamgholi 8.02 108 *e*AMB AMB 01 20 10.1
comp=Z,932nm,0.1s
IEMG *e*Pn Pn 01 20 09.0 -0.1
IKRD Kardeh 8.20 112 *e*Pn Pn 01 20 21.4 +10
IKRD *e*AMB AMB 01 20 24.9
comp=Z,356nm,0.1s
IAKL Akhelmad 8.45 113 *e*Pn Pn 01 20 15.3 +0.2
IAKL *e*AMB AMB 01 20 24.4
comp=Z,256nm,0.1s
IPAY Payeh 8.69 113 *e*Pn Pn 01 20 19.2 +0.8
IPAY *e*AMB AMB 01 20 24.9
comp=Z,216nm,0.1s
IPAY Payeh 8.69 113 *e*Pn Pn 01 20 19.2 +0.8
IMOG Moghan 9.10 114 *e*Pn Pn 01 20 25.0 +0.9
IMOG *e*AMB AMB 01 20 26.7
comp=Z,323nm,0.1s
IMOG Moghan 9.10 114 *e*Pn Pn 01 20 25.0 +0.9
IMYA Miami 9.53 111 *e*Pn Pn 01 20 29.9 +0.1
IMYA *e*AMB AMB 01 20 31.7
comp=Z,369nm,0.1s
IMYA Miami 9.53 111 *e*Pn Pn 01 20 29.9 +0.1
AKTK Aktyubinsk 11.94 29 P Pn 01 21 01.8 -0.7
comp=Z,80nm,21.2s
AKTO Aktyubinsk 11.94 29 Pn Pn 01 21 01.8 -0.8
comp=Z,0.5nm,0.3s,baz=206,slow=13,SNR=8.2
AKTO Sn Sn 01 23 08.3 -7.2
comp=Z,0.2nm,0.3s,baz=180,slow=20,SNR=3.1
AKTO LR LR 01 27 15.1
comp=Z,80nm,21.2s,baz=268,slow=46
OBN Obninsk 17.01 335 ⇓ *e*P P 01 22 11.4 -0.5
OBN *i* S S 01 25 29.8 +1.0
OBN pmax pmax
comp=Z,13nm,0.9s
OBN MLR MLR
comp=Z,67nm,18.0s
AKASG Malin Array Be 17.32 314 P P 01 22 15.6 +0.2
comp=Z,0.9nm,0.3s,baz=115,slow=12,SNR=2.6
ARU Arti 17.32 18 P Pn 01 22 11.2 -2.8
comp=Z,0.0nm,0.3s,baz=197,slow=5.5,SNR=7.6
ARU S Sn 01 25 10.5 -16
comp=Z,0.0nm,0.3s,baz=288,slow=19,SNR=2.8
ARU Arti 17.32 18 *d* P Pn 01 22 10.8 -3.2
ARU S Sn 01 25 19.8 -6.6
ARU pmax pmax
comp=Z,4.0nm,0.8s
ARU Arti 17.32 18 *i* P Pn 01 22 10.8 -3.2
comp=Z,4.0nm,0.8s
ARU S Sn 01 25 19.8 -6.6
KIEV Kiev 17.32 314 *i* P P 01 22 17.4 +1.9
KIEV pmax pmax
comp=Z,6.0nm,1.5s
KIEV Kiev 17.32 314 *i* P P 01 22 17.4 +1.9
comp=Z,6.0nm,1.5s
SVE Sverdlovsk 18.20 21 ⇓ *e*P P 01 22 27.3 +2.2
SVE *e*S Sn 01 25 38.2 -10
SVE pmax pmax
comp=Z,11nm,0.8s
SVE Sverdlovsk 18.20 21 *e*P P 01 22 27.3 +2.2
comp=Z,11nm,0.8s
AAK Ala-Archa 19.19 75 P P 01 22 36.4 +0.1
comp=Z,0.4nm,0.3s,baz=223,slow=10.0,SNR=5.5
AAK Ala-Archa 19.19 75 *i* P P 01 22 36.1 -0.2
AAK pmax pmax
comp=Z,10.0nm,0.9s
AAK Ala-Archa 19.19 75 *i* P P 01 22 36.1 -0.2
comp=Z,10.0nm,0.9s
FRU Bishkek 19.28 74 *e*P Pn 01 22 38.0 -0.1
FRU Bishkek 19.28 74 *e*P Pn 01 22 38.0 -0.1
BRVK Borovoye 19.29 41 *c* P P 01 22 37.5 +0.5
BRVK pmax pmax
comp=Z,17nm,0.7s
BRVK Borovoye 19.29 41 *i* P P 01 22 37.5 +0.5
comp=Z,17nm,0.7s
BVAR Borovoye Array 19.32 42 P P 01 22 38.0 +0.6
comp=Z,1.2nm,0.3s,baz=232,slow=11,SNR=45
BVAR Borovoye Array 19.32 42 P P 01 22 38.0 +0.6
BVAR pmax pmax
comp=Z,1.0nm,0.3s
BVAR Borovoye Array 19.32 42 P P 01 22 38.0 +0.6
comp=Z,1.0nm,0.3s
KSH Kashi 20.64 83 *e*P P 01 22 50.4 -1.7
CRVS Cervenica-Dubn 21.36 303 *e*P P 01 23 05.3 +5.7
CRVS Cervenica-Dubn 21.36 303 *e*P P 01 23 05.3 +5.7
CRVS Cervenica-Dubn 21.36 303 *e*P P 01 23 05.3 +5.7
KLMR Klimovskoe 21.43 347 *e*P P 01 22 57.6 -2.5
KLMR *e*S S 01 26 54.5 -2.9
KLMR pmax pmax
comp=Z,9.0nm,0.9s
MKAR Makanchi Array 24.83 64 P P 01 23 35.7 +1.1
comp=Z,4.8nm,0.7s,baz=266,slow=7.5,SNR=16
FINES FINESS Array B 25.41 334 P P 01 23 40.4 +0.7
comp=Z,3.3nm,0.8s,baz=134,slow=11,SNR=10
FINES FINESS Array B 25.41 334 *e*P P 01 23 41.6 +1.9
FINES pmax pmax
comp=Z,3.0nm,0.8s
FINES FINESS Array B 25.41 334 *e*P P 01 23 41.6 +1.9
comp=Z,3.0nm,0.8s
GERES GERESS Array B 26.41 301 P P 01 23 49.8 +0.8
comp=Z,0.2nm,0.3s,baz=95,slow=12,SNR=4.0
GERES GERESS Array B 26.41 301 *e*P P 01 23 55.2 +6.3
ZALV Zalesovo Beam 27.58 48 P P 01 23 59.7 +0.4
comp=Z,1.1nm,0.4s,baz=266,slow=11,SNR=3.8
ZALV LR LR 01 37 15.7
comp=Z,118nm,18.3s,baz=206,slow=42
HFS Hagfors 29.56 324 P P 01 24 17.1 +0.2
comp=Z,0.6nm,0.3s,baz=107,slow=10.0,SNR=15
NOA NORSAR Array B 31.06 325 P P 01 24 30.2 0.0
comp=Z,0.8nm,0.9s,baz=121,slow=8.6,SNR=3.3
NOA LR LR 01 38 32.2
comp=Z,50nm,18.1s,baz=65,slow=39
NOA NORSAR Array B 31.06 325 *e*P P 01 24 31.9 +1.7
NOA pmax pmax
comp=Z,1.0nm,0.8s
NOA NORSAR Array B 31.06 325 *e*P P 01 24 31.9 +1.7
comp=Z,1.0nm,0.8s
NRIK Noril'sk 35.45 22 LR LR 01 42 52.5
comp=Z,61nm,19.4s,baz=300,slow=42
EKA Eskdalemuir Ar 37.22 312 P P 01 25 23.4 -0.1
comp=Z,0.9nm,0.6s,baz=96,slow=8.5,SNR=5.1
ESDC Sonseca Array 40.12 287 P P 01 25 47.6 -0.5
comp=Z,0.6nm,0.5s,baz=63,slow=8.1,SNR=10
SONM Songino Array 41.06 60 P P 01 25 55.6 -0.3
comp=Z,0.4nm,0.5s,baz=278,slow=9.1,SNR=3.5
BOD Bodaibo 44.16 44 *d* P P 01 26 21.1 +0.3
BOD pmax pmax
comp=Z,6.0nm,1.0s
BOD Bodaibo 44.16 44 *i* P P 01 26 21.1 +0.3
comp=Z,6.0nm,1.0s
CMAR Chiang Mai Arr 47.89 102 P P 01 26 51.1 +0.4
comp=Z,2.0nm,0.7s,baz=303,slow=8.5,SNR=7.7
USRK Ussuriysk Ar. 58.99 56 P P 01 28 12.2 +0.3
comp=Z,1.0nm,0.4s,baz=280,slow=6.7,SNR=5.2
KSRS Korea Array 59.50 65 P P 01 28 15.8 +0.3
comp=Z,1.4nm,0.5s,baz=290,slow=7.0,SNR=6.4
KSRS Korea Array 59.50 65 P P 01 28 15.8 +0.3
KSRS pmax pmax
comp=Z,2.0nm,0.7s
KSRS Korea Array 59.50 65 P P 01 28 15.8 +0.3
comp=Z,2.0nm,0.7s
BOSA Boshof 72.03 202 P P 01 29 36.9 +0.6
comp=Z,2.0nm,0.9s,baz=25,slow=7.3,SNR=2.6
YKA Yellowknife Ar 76.73 352 P P 01 30 03.8 +0.6
comp=Z,0.9nm,0.6s,baz=10,slow=5.6,SNR=5.3

IDC **12** *01:19:52.5±1.4, 21°.99S×127°.90E, h0km, mb3.9/2, mb1 3.8/7, mb1mx3.6/34, mbtmp3.8/7, ML3.3/4, MS3.7/2, Ms1 3.7/2, ms1mx3.0/36, Error ellipse: s-maj=29.7km s-min=24.8km az=29.0*

ISC 12 01:19:55.3±1.2, 21°.7S±0°.1×128°.16E±0°.09, h10km, n9, σ1°99/9, Western Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**4.26**	**326**	Pn	**Pn**	**01 21 01.6**	**+1.3**
	0.5nm,0.3s,baz=154,slow=14,SNR=33						
FITZ				Sn	**Sn**	**01 21 48.0**	**-2.1**
	3.5nm,0.3s,baz=16,slow=15,SNR=8.3						
FITZ				Lg	Lg	01 22 07.7	
	10nm,0.3s,baz=150,slow=16,SNR=5.0						
ASAR	**Alice Springs**	**5.67**	**112**	Pn	**Pn**	**01 21 21.9**	**+2.4**
	0.7nm,0.3s,baz=288,slow=13,SNR=20						
ASAR				Sn	**Sn**	**01 22 24.6**	**-0.2**
	1.6nm,0.3s,baz=285,slow=24,SNR=5.1						
ASAR				Lg	Lg	01 22 50.9	
	6.6nm,0.3s,baz=298,slow=26,SNR=8.1						
WRA	**Warramunga Arr**	**6.02**	**75**	Pn	**Pn**	**01 21 25.6**	**+1.1**
	0.3nm,0.3s,baz=256,slow=13,SNR=7.2						
WRA				Sn	**Sn**	**01 22 33.2**	**-0.4**
	3.2nm,0.3s,baz=252,slow=20,SNR=6.5						
WRA				Lg	Lg	01 23 08.5	
	5.5nm,0.3s,baz=254,slow=28,SNR=6.6						
NWAO	**Narrogin (SRO)**	**14.83**	**219**	Pn	Pn	01 23 16.4	-8.8
	0.5nm,0.3s,baz=30,slow=20,SNR=6.8						
NWAO				Sn	Sn	01 25 45.0	-25
	2.6nm,0.3s,baz=38,slow=19,SNR=8.2						
NWAO				Lg	Lg	01 27 30.8	
	0.7nm,0.3s,baz=0.0,slow=19,SNR=3.9						
STKA	**Stephens Creek**	**15.71**	**133**	Pn	**Pn**	**01 23 33.6**	**-3.2**
	0.4nm,0.3s,baz=305,slow=11,SNR=8.4						
STKA				Sn	Sn	01 26 15.6	-15
	0.3nm,0.3s,baz=297,slow=8.7,SNR=2.5						
JHJ	**Hachijo jima 2**	**55.59**	**12**	LR	LR	01 53 56.2	
	comp=Z,65nm,18.2s,baz=257,slow=36						
SONM	**Songino Array**	**71.89**	**345**	LR	LR	02 05 05.1	
	comp=Z,44nm,18.7s,baz=56,slow=38						
MKAR	**Makanchi Array**	**79.73**	**330**	P	**P**	**01 32 03.4**	**+0.2**
	0.5nm,0.6s,baz=134,slow=8.3,SNR=5.9						
KURBB	**Kurchatov Arra**	**84.21**	**331**	P	**P**	**01 32 26.3**	**-0.4**
	0.9nm,0.7s,baz=140,slow=4.2,SNR=9.2						

NNC **12** *01:20:23.1±2.2, 44°.29N×81°.53E, h0km, mb2.7, mpv2.3, Error ellipse: s-maj=31.9km s-min=8.5km az=127.0*
SOME **12** *01:20:23.9, 44°.20N×81°.62E, h15km*

ISC 12 01:20:22.8±2.3, 44°.19N±0°.06×81°.63E±0°.08, h2km±17km, n10, σ0°876/18, 2C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**1.33**	**277**	*e*P	**Pg**	**01 20 48.2**	**-0.1**
	12nm,0.2s						

DJR				*e*S		**Sg**	**01 21 06.1**	**+0.6**
	23nm,0.2s							
SHLS	**Shalkode**	**1.64**	**231**	*e*P		**Pb**	**01 20 53.7**	**-0.2**
	6.2nm,0.1s							
SHLS				*e*S		**Sg**	**01 21 15.6**	**+0.2**
	32nm,0.2s							
PDGK	**Podgornoye**	**1.78**	**242**	⇑P		**Pn**	**01 20 54.8**	**+0.3**
	2.0nm,0.5s							
PDGK				⇓S		**Sb**	**01 21 18.7**	**-0.1**
	9.8nm,0.6s							
KAPS	**Kapalarasan**	**1.95**	**305**	*e*P		**Pb**	**01 20 58.5**	**-0.7**
	3.3nm,0.2s							
KAPS				*e*S		**Sb**	**01 21 23.3**	**-0.6**
	21nm,0.2s							
UZB	**Uzynbulak**	**2.16**	**242**	*e*P		**Pb**	**01 21 01.4**	**-1.4**
	3.6nm,0.1s							
UZB				*e*S		**Sb**	**01 21 28.8**	**-1.3**
	8.7nm,0.2s							
ZHN	**Zhinishke**	**2.53**	**247**	*e*P		**Pb**	**01 21 09.1**	**0.0**
	4.0nm,0.1s							
ZHN				*e*S		**Sb**	**01 21 41.8**	**+1.0**
	12nm,0.2s							
SATY	**Saty**	**2.60**	**245**	*e*P		**Pb**	**01 21 10.1**	**-0.1**
	3.9nm,0.1s							
SATY				*e*S		**Sb**	**01 21 43.3**	**+0.6**
	24nm,0.2s							
MAKZ	**Makanchi**	**2.63**	**5**	⇑Pg		**Pb**	**01 21 09.8**	**-0.8**
	0.9nm,0.5s							
MAKZ				⇓Lg		Lg	01 21 41.3	
	0.9nm,0.4s							
MK31	**Makanchi Array**	**2.64**	**10**	⇓Pg		**Pb**	**01 21 11.4**	**+0.5**
	0.8nm,0.6s,baz=188,slow=15,SNR=6.4							
MK31				⇓Lg		Lg	01 21 41.5	
	3.5nm,0.5s,baz=192,slow=29							
ARXS	**Arharly**	**2.73**	**272**	*e*P		**Pb**	**01 21 12.3**	**-0.1**
	2.7nm,0.4s							
ARXS				*e*S		**Sb**	**01 21 47.4**	**+0.9**
	9.6nm,0.4s							

ISCJB ***12*** *01:35:50.4±0.3,9.54N±0.04×122.04E±0.03,h10km, mb4.4/24,MS3.4/3,Error ellipse: s-maj=5.3km s-min=4.5km az=160.6*

IDC ***12*** *01:35:50.3±0.5,9.55N×122.07E,h0km,mb4.3/17, mb1 4.4/17,mb1mx4.2/36,mbtmp4.3/17,MS3.3/5, Ms1 3.3/5,ms1mx3.0/57,Error ellipse: s-maj=35.9km s-min=11.9km az=66.0*

NEIC ***12*** *01:35:51.6±0.4,9.60N×122.15E,h10km,mb4.7/6,Error ellipse: s-maj=11.7km s-min=5.7km az=68.0*

ISC 12 01:35:51.5±0.4,9.58N±0.05×122.10E±0.04,h10km,n64,
σ1§22/69,mb4.4/24,MS3.2/3,2C-3D,Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.14**	**102**	⇑*i*P	**Pb**	**01 36 09.1**	**-4.3**
SNPH				*i* S	**Sg**	**01 36 26.5**	**-1.8**
TBP	**Tagbilaran**	**1.74**	**86**	*e*P	**Pg**	**01 36 24.1**	**-0.7**
LLP	**Lapu-Lapu**	**1.98**	**68**	⇓*i*P	**Pb**	**01 36 26.9**	**-0.7**
LLP				*e*S	**Sg**	**01 36 53.4**	**-1.7**
RCP	**Roxas**	**2.07**	**18**	⇓*e*P	**Pn**	**01 36 27.2**	**+0.8**
CGP	**Cagayan de Oro**	**2.79**	**113**	⇑*e*P	**Pn**	**01 36 38.1**	**+1.8**
CGP				*i* S	**Sb**	**01 37 15.6**	**-0.2**
PLP	**Palo**	**3.24**	**61**	⇓*i*P	**Pn**	**01 36 44.2**	**+1.7**
PLP				*e*S	**Sn**	**01 37 20.9**	**-0.2**
PPR	**Puerto Princes**	**3.33**	**274**	*e*P	**Pn**	**01 36 44.0**	**+0.3**
PPR				*e*S	**Sn**	**01 37 17.8**	**-5.5**
TGY	**Tagaytay City**	**4.64**	**346**	LR	LR	01 38 40.6	
	comp=Z,216nm,19.4s,baz=78,slow=37						
KKM	**Kota Kinabalu**	**6.81**	**239**	*e*Pn	**Pn**	**01 37 32.2**	**+0.6**
	29nm,0.5s						
KKM				*e*S	**Sn**	**01 38 49.3**	**0.0**
YULB	**Yu-li**	**13.76**	**357**	*e*Pn	**P**	**01 39 13.4**	**-2.0**
KAPI	**Kappang**	**14.68**	**189**	LR	LR	01 44 54.7	
	comp=Z,198nm,21.2s,baz=9.8,slow=37						
JAGI	**Jajag, Banyuwa**	**19.60**	**204**	*e*P	**Pn**	**01 40 21.6**	**+0.2**
	38nm,1.1s						
MTN	**Manton Dam**	**24.01**	**158**	P	**P**	**01 41 07.2**	**+0.5**
	baz=24,SNR=3.7						
CMAR	**Chiang Mai Arr**	**24.12**	**294**	P	**P**	**01 41 07.4**	**-0.3**
	1.3nm,0.4s,baz=113,slow=7.8,SNR=9.4						
KDU	**Kakadu**	**24.40**	**155**	P	**P**	**01 41 11.3**	**+1.0**
	baz=24,SNR=3.3						
JNU	**Nakatsue**	**24.79**	**18**	LR	LR	01 51 55.7	
	comp=Z,55nm,19.5s,baz=127,slow=39						
KNRA	**Kununurra**	**25.94**	**165**	P	**P**	**01 41 24.2**	**0.0**
	baz=26						
FITZ	**Fitzroy Crossi**	**27.72**	**173**	P	**P**	**01 41 40.4**	**+0.1**
	4.1nm,1.0s,baz=353,slow=7.0,SNR=6.6						
FITZ	**Fitzroy Crossi**	**27.72**	**173**	P	**P**	**01 41 40.4**	**+0.1**
	baz=28,SNR=4.1						
WB0	**Warramunga Arr**	**31.57**	**157**	P	**P**	**01 42 14.0**	**-0.5**
	baz=32						
WRAB	**Tennant Creek**	**31.71**	**158**	*e*P	**P**	**01 42 15.1**	**-0.5**
	20nm,1.0s						
WRA	**Warramunga Arr**	**31.71**	**158**	P	**P**	**01 42 15.4**	**-0.2**
	6.4nm,0.8s,baz=332,slow=9.4,SNR=23						
WRA				PcP	**PcP**	**01 45 07.0**	**-0.5**
	2.5nm,0.8s,baz=348,slow=3.3,SNR=9.0						
WRKA	**Warakurna**	**34.93**	**170**	P	**P**	**01 42 44.5**	**+0.8**
	baz=35,SNR=22						
ASAR	**Alice Springs**	**35.00**	**161**	P	**P**	**01 42 44.9**	**+0.5**
	15nm,0.6s,baz=343,slow=7.4,SNR=142						
ASAR				PcP	**PcP**	**01 45 16.5**	**-0.2**
	3.1nm,0.8s,baz=346,slow=2.1,SNR=9.8						
USRK	**Ussuriysk Ar.**	**35.55**	**12**	P	**P**	**01 42 49.8**	**+1.0**
	3.1nm,0.8s,baz=181,slow=4.7,SNR=12						
MEEK	**Meekatharra**	**36.16**	**185**	P	**P**	**01 42 55.0**	**+0.8**
	baz=36,SNR=9.2						
MORW	**Morawa**	**38.86**	**188**	P	**P**	**01 43 18.2**	**+1.1**
	baz=39						
BLDU	**Ballidu**	**40.30**	**187**	P	**P**	**01 43 29.6**	**+0.6**
	baz=40						
SONM	**Songino Array**	**40.38**	**344**	P	**P**	**01 43 30.2**	**+0.5**
	1.9nm,0.7s,baz=160,slow=9.7,SNR=11						
FORT	**Forrest**	**40.53**	**172**	P	**P**	**01 43 31.8**	**+0.9**
	baz=41,SNR=15						
FORT	**Forrest**	**40.53**	**172**	*e*P	**P**	**01 43 30.6**	**-0.4**
	238nm,0.8s						
KMBL	**Kambalda**	**40.71**	**180**	P	**P**	**01 43 33.2**	**+0.7**
	baz=41,SNR=15						
KLBR	**Kellerberrin**	**41.15**	**186**	P	**P**	**01 43 36.8**	**+0.8**
	baz=41,SNR=8.2						
MUN	**Mundaring**	**41.70**	**188**	P	**P**	**01 43 41.1**	**+0.5**
	baz=42						
QLP	**Quilpie**	**41.88**	**150**	P	**P**	**01 43 41.8**	**-0.3**
	baz=42,SNR=5.3						
NWAO	**Narrogin (SRO)**	**42.52**	**186**	P	**P**	**01 43 48.6**	**+1.3**
	baz=43,SNR=6.2						
NWAO				P	**P**	**01 43 48.6**	**+1.3**
	baz=43,SNR=6.2						
BBOO	**Buckleboo**	**44.20**	**163**	P	**P**	**01 44 01.5**	**+0.6**
	baz=44,SNR=12						
BBOO	**Buckleboo**	**44.20**	**163**	*e*P	**P**	**01 44 01.4**	**+0.5**
	19nm,0.8s						
RKGY	**Rocky Gully**	**44.21**	**186**	P	**P**	**01 44 02.7**	**+1.8**
	baz=44,SNR=6.8						
EIDS	**Eidsvold**	**44.76**	**142**	P	**P**	**01 44 04.9**	**-0.5**
	baz=45,SNR=3.2						
EIDS	**Eidsvold**	**44.76**	**142**	*e*P	**P**	**01 44 05.2**	**-0.2**
STKA	**Stephens Creek**	**45.24**	**156**	P	**P**	**01 44 09.5**	**+0.3**
	3.4nm,0.5s,baz=340,slow=7.7,SNR=14						
STKA	**Stephens Creek**	**45.24**	**156**	P	**P**	**01 44 09.1**	**-0.1**
	baz=45,SNR=8.8						
HTT	**Hallett**	**45.67**	**160**	P	**P**	**01 44 13.7**	**+1.1**
	baz=46,SNR=5.3						
CMSA	**Cobar Meteorol**	**46.71**	**152**	P	**P**	**01 44 21.6**	**+0.8**
	baz=47,SNR=5.3						
ARMA	**Armidale**	**48.85**	**146**	P	**P**	**01 44 38.2**	**+0.7**
	baz=49,SNR=5.3						
ARPS	**Mount Arapiles**	**49.69**	**159**	P	**P**	**01 44 44.1**	**+0.4**
	baz=50						
MKAR	**Makanchi Array**	**50.16**	**325**	P	**P**	**01 44 48.5**	**+1.2**
	2.3nm,0.7s,baz=132,slow=8.9,SNR=27						
ZALV	**Zalesovo Beam**	**53.33**	**333**	P	**P**	**01 45 10.1**	**-0.7**
	1.2nm,0.5s,baz=140,slow=6.8,SNR=6.2						
KURK	**Kurchatov**	**54.37**	**327**	*e*P	**P**	**01 45 18.9**	**+0.5**
	93nm,1.1s						
KKAR	**Karatay Array**	**55.85**	**316**	*e*P	**P**	**01 45 30.5**	**+1.2**
	6.0nm,0.8s						
BVAR	**Borovoye Array**	**59.95**	**327**	P	**P**	**01 45 57.9**	**0.0**
	0.4nm,0.5s,baz=64,slow=10,SNR=4.1						
GEYT	**Alibeck**	**63.69**	**308**	P	**P**	**01 46 25.2**	**+1.7**
	1.4nm,0.6s,baz=116,slow=10,SNR=5.5						
ABKAR	**Akbulak array**	**64.75**	**320**	*e*P	**P**	**01 46 28.9**	**-1.2**
	5.1nm,0.8s						
AKTO	**Aktyubinsk**	**66.25**	**321**	P	**P**	**01 46 41.2**	**+1.4**
	3.1nm,0.8s,baz=98,slow=7.8,SNR=12						
BRTR	**Keskin Array B**	**82.78**	**309**	P	**P**	**01 48 16.6**	**+0.3**
	0.4nm,0.5s,baz=103,slow=6.5,SNR=4.5						
ARCES	**ARCESS Array B**	**83.40**	**339**	P	**P**	**01 48 19.1**	**+0.4**
	1.2nm,0.7s,baz=96,slow=7.4,SNR=5.4						
ARCES				LR	LR	02 29 37.2	
	comp=Z,38nm,18.5s,baz=83,slow=39						
AKASG	**Malin Array Be**	**84.49**	**320**	P	**P**	**01 48 23.7**	**-0.9**
	1.8nm,0.7s,baz=74,slow=4.0,SNR=6.3						
FINES	**FINESS Array B**	**84.54**	**331**	P	**P**	**01 48 24.3**	**-0.3**
	2.6nm,1.0s,baz=43,slow=5.0,SNR=13						
INK	**Inuvik**	**86.42**	**21**	*e*P	**P**	**01 48 33.8**	**-0.1**
	3.0nm,1.0s						
MLR	**Muntele Rosu**	**87.53**	**316**	LR	LR	02 31 34.6	
	comp=Z,8.6nm,19.4s,baz=190,slow=38						
VNDA	**Vanda**	**89.79**	**172**	P	**P**	**01 48 49.8**	**0.0**
	1.6nm,0.8s,baz=321,slow=6.0,SNR=8.9						
TXAR	**Lajitas Array**	**121.34**	**47**	PKP	**PKPdf**	**01 54 46.3**	**+0.4**
	0.7nm,0.8s,baz=204,slow=0.3,SNR=9.2						
PLCA	**Paso Flores**	**147.00**	**162**	PKPbc	**PKPab**	**01 55 36.2**	**-0.1**
	8.6nm,0.8s,baz=241,slow=4.6,SNR=14						

ISCJB ***12*** *01:44:24.4±0.4,9.50N±0.06×122.08E±0.03,h10km, mb4.1/16,Error ellipse: s-maj=8.8km s-min=4.8km az=173.0*

IDC ***12*** *01:44:24.5±0.6,9.58N×122.13E,h0km,mb4.1/14, mb1 4.1/14,mb1mx4.0/49,mbtmp4.1/14,Error ellipse: s-maj=38.0km s-min=14.0km az=64.0*

NEIC ***12*** *01:44:26.0±0.4,9.60N×122.14E,h10km,mb4.4/1,Error ellipse: s-maj=13.2km s-min=7.7km az=66.0*

NEIC Felt [II PIVS] at Sipalay.

MAN ***12*** *01:44:31,10.01N×122.22E,h59km,mb4.4,ML3.3,MS3.1*

MAN INTENSITY II - SIPALAY CITY NEGROS OCCIDENTAL.

ISC 12 01:44:25.7±0.5,9.54N±0.06×122.16E±0.04,h10km,n24,
σ1§30/31,mb4.2/16,1C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.08**	**100**	⇓*i*P	**Pb**	**01 44 43.3**	**-3.2**
SNPH				*i* S	**Sg**	**01 45 00.0**	**-0.5**
LLP	**Lapu-Lapu**	**1.94**	**66**	*e*P	**Pb**	**01 45 00.6**	**-0.6**
LLP				*e*S	**Sb**	**01 45 27.0**	**+1.6**
RCP	**Roxas**	**2.08**	**16**	⇑*e*P	**Pb**	**01 45 02.1**	**-1.6**
PLP	**Palo**	**3.21**	**60**	⇓*i*P	**Pn**	**01 45 17.3**	**+1.1**
PLP				*i* S	**Sn**	**01 45 51.9**	**-2.6**
PPR	**Puerto Princes**	**3.39**	**274**	*e*P	**Pn**	**01 45 19.5**	**+0.8**
PPR				*e*S	**Sn**	**01 45 55.5**	**-3.6**
KKM	**Kota Kinabalu**	**6.84**	**240**	*e*Pn	**Pn**	**01 46 06.7**	**+0.4**
KKM				*e*S	**Sn**	**01 47 24.3**	**-0.1**
CMAR	**Chiang Mai Arr**	**24.18**	**294**	P	**P**	**01 49 42.1**	**-0.5**
	1.3nm,0.3s,baz=118,slow=8.5,SNR=7.7						
WRA	**Warramunga Arr**	**31.66**	**158**	P	**P**	**01 50 50.0**	**+0.6**
	1.2nm,0.8s,baz=336,slow=10.0,SNR=3.5						
WRA				PcP	**PcP**	**01 53 41.3**	**-0.3**
	1.1nm,0.9s,baz=337,slow=2.9,SNR=3.9						
ASAR	**Alice Springs**	**34.95**	**161**	P	**P**	**01 51 19.1**	**+1.0**
	2.4nm,0.7s,baz=342,slow=7.4,SNR=19						
ASAR				PcP	**PcP**	**01 53 50.5**	**-0.2**
	0.9nm,0.7s,baz=348,slow=2.5,SNR=5.8						
USRK	**Ussuriysk Ar.**	**35.57**	**12**	P	**P**	**01 51 24.0**	**+0.8**
	2.2nm,0.8s,baz=192,slow=4.1,SNR=6.7						
SONM	**Songino Array**	**40.43**	**344**	P	**P**	**01 52 04.3**	**0.0**
	1.3nm,0.8s,baz=167,slow=9.0,SNR=8.9						
STKA	**Stephens Creek**	**45.19**	**156**	P	**P**	**01 52 43.9**	**+0.9**
	2.1nm,1.0s,baz=330,slow=3.7,SNR=3.4						
MKAR	**Makanchi Array**	**50.23**	**325**	P	**P**	**01 53 22.5**	**+0.5**
	3.5nm,0.9s,baz=123,slow=8.8,SNR=19						
ZALV	**Zalesovo Beam**	**53.39**	**333**	P	**P**	**01 53 44.8**	**-0.6**
	0.3nm,0.3s,baz=74,slow=5.4,SNR=3.7						
KURK	**Kurchatov**	**54.43**	**327**	*e*P	**P**	**01 53 53.5**	**+0.3**
	40nm,1.3s						
GEYT	**Alibeck**	**63.76**	**308**	P	**P**	**01 54 59.8**	**+1.6**
	2.1nm,0.7s,baz=113,slow=3.4,SNR=4.6						
NRIK	**Noril'sk**	**63.76**	**347**	P	**P**	**01 54 57.0**	**-0.6**
	2.5nm,0.5s,baz=160,slow=4.5,SNR=3.7						
ABKAR	**Akbulak array**	**64.81**	**320**	*e*P	**P**	**01 55 04.4**	**-0.3**
	2.5nm,0.8s						
AKTO	**Aktyubinsk**	**66.32**	**321**	P	**P**	**01 55 14.8**	**+0.3**
	2.1nm,0.8s,baz=105,slow=8.3,SNR=8.8						
BRTR	**Keskin Array B**	**82.85**	**309**	P	**P**	**01 56 51.4**	**+0.4**
	0.5nm,0.7s,baz=108,slow=4.1,SNR=4.5						
AKASG	**Malin Array Be**	**84.55**	**320**	P	**P**	**01 56 58.9**	**-0.3**
	1.3nm,0.6s,baz=74,slow=4.1,SNR=7.3						
FINES	**FINESS Array B**	**84.59**	**331**	P	**P**	**01 56 58.0**	**-1.2**
	1.4nm,0.8s,baz=39,slow=5.3,SNR=3.6						
TXAR	**Lajitas Array**	**121.32**	**47**	PKP	**PKPdf**	**02 03 20.5**	**+0.4**
	0.3nm,0.9s,baz=343,slow=0.9,SNR=2.6						
PLCA	**Paso Flores**	**146.95**	**162**	PKPbc	**PKPbc**	**02 04 09.7**	**+0.6**
	3.1nm,0.7s,baz=239,slow=7.2,SNR=4.6						

IDC 12 01:49:28.8±1.4,29.84S×176.34W,h0km,mb4.4/2,
mb1 4.6/2,mb1mx3.9/35,mbtmp4.4/2,MS3.7/1,Ms1 3.7/1,
ms1mx2.8/29,Error ellipse: s-maj=62.0km
s-min=40.7km az=177.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**44.58**	**266**	P	P	01 57 43.0	+0.1
	1.7nm,0.8s,baz=107,slow=7.6,SNR=15						
ASAR				LR	LR	02 16 29.0	
	comp=Z,82nm,18.8s,baz=92,slow=36						
WRA	**Warramunga Arr**	**45.52**	**271**	P	P	01 57 49.8	-0.6
	4.2nm,0.3s,baz=109,slow=7.6,SNR=0.9						
KURBB	**Kurchatov Arra**	**121.74**	**314**	PKP	PKPdf	02 08 23.5	-0.8
	0.2nm,0.3s,baz=119,slow=2.0,SNR=4.4						
FINES	**FINESS Array B**	**145.09**	**341**	PKPbc	PKPbc	02 09 06.4	-0.6
	1.5nm,0.6s,baz=62,slow=4.5,SNR=6.8						
AKASG	**Malin Array Be**	**151.70**	**325**	PKPbc	PKPbc	02 09 25.5	+0.6
	1.2nm,0.6s,baz=50,slow=3.0,SNR=5.8						
TORD	**Torodi Ar. Bea**	**163.29**	**173**	PKPab	PKPab	02 10 23.4	-1.0
	1.6nm,1.1s,baz=185,slow=4.0,SNR=5.0						

ISCJB ***12*** *01:56:09.9±1.0,9.46N±0.07×122.07E±0.07,h10km, mb3.6/3,Error ellipse: s-maj=9.9km s-min=9.6km az=137.9*

IDC ***12*** *01:56:10.9±2.2,9.30N×121.65E,h0km,mb3.6/3, mb1 3.8/3,mb1mx3.4/53,mbtmp3.6/3,Error ellipse: s-maj=253.7km s-min=25.5km az=62.0*

MAN ***12*** *01:56:12,9.64N×122.08E,h6km,mb4.6,ML3.4,MS3.3*

ISC 12 01:56:11.8±1.3,9.57N±0.08×122.14E±0.09,h10km,n7,
σ1§21/9,mb3.6/3,1C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.11**	**102**	⇓*i*P	Pb	01 56 28.8	-4.3
SNPH				*i* S	**Sb**	**01 56 46.0**	**-1.7**
LLP	**Lapu-Lapu**	**1.95**	**68**	*e*P	**Pn**	**01 56 46.4**	**+1.4**
LLP				*e*S	**Sb**	**01 57 12.3**	**+0.4**
RCP	**Roxas**	**2.06**	**17**	⇑*e*P	**Pn**	**01 56 47.1**	**+0.5**
RCP				*e*S	**Sb**	**01 57 13.7**	**-1.5**
PLP	**Palo**	**3.21**	**60**	⇓*e*P	**Pn**	**01 57 02.8**	**+0.3**
WRA	**Warramunga Arr**	**31.70**	**158**	P	**P**	**02 02 35.0**	**-0.9**
	0.7nm,0.8s,baz=333,slow=10,SNR=3.4						
ASAR	**Alice Springs**	**34.98**	**161**	P	**P**	**02 03 05.0**	**+0.5**
	0.9nm,0.6s,baz=343,slow=7.2,SNR=14						
MKAR	**Makanchi Array**	**50.19**	**325**	P	**P**	**02 05 08.0**	**+0.1**
	0.1nm,0.4s,baz=122,slow=7.5,SNR=3.1						

ISCJB ***12*** *02:03:42.6±0.4,9.54N±0.05×122.15E±0.04,h10km, mb4.1/20,MS3.1/1,Error ellipse: s-maj=7.1km s-min=5.6km az=31.2*

IDC ***12*** *02:03:42.5±0.5,9.67N×122.30E,h0km,mb4.1/18, mb1 4.2/18,mb1mx4.1/46,mbtmp4.1/18,MS2.9/2, Ms1 3.0/2,ms1mx2.6/48,Error ellipse: s-maj=31.8km s-min=12.3km az=68.0*

NEIC ***12*** *02:03:45.2±4.3,9.66N×122.31E,h18km±27km,mb4.2/2, Error ellipse: s-maj=12.9km s-min=7.3km az=53.0*

ISC 12 02:03:43.8±0.5,9.63N±0.05×122.22E±0.04,h10km,n34,
σ1§19/42,mb4.0/20,1C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.04**	**106**	*i* P	**Pg**	**02 04 01.5**	**-2.3**
SNPH				*i* S	**Sb**	**02 04 16.7**	**-0.9**
LLP	**Lapu-Lapu**	**1.85**	**68**	*e*P	**Pg**	**02 04 19.1**	**-0.2**
LLP				*e*S	**Sg**	**02 04 45.1**	**+1.9**
RCP	**Roxas**	**1.99**	**15**	⇓*e*P	**Pb**	**02 04 19.6**	**-0.5**
RCP				*e*S	**Sb**	**02 04 45.5**	**+0.6**
CGP	**Cagayan de Oro**	**2.70**	**115**	⇓*e*P	**Pb**	**02 04 31.1**	**-1.1**
CGP				*e*S	**Sb**	**02 05 05.6**	**+0.1**
PLP	**Palo**	**3.11**	**60**	⇑*i*P	**Pb**	**02 04 36.4**	**-2.8**
CTBH	**Cotabato--PC H**	**3.12**	**140**	*e*P	**Pn**	**02 04 34.4**	**+1.4**
CTBH				*i* S	**Sb**	**02 05 19.1**	**+1.6**
PPR	**Puerto Princes**	**3.45**	**273**	*e*P	**Pn**	**02 04 37.3**	**-0.2**
PPR	**Puerto Princes**	**3.45**	**273**	*e*P	**Sn**	**02 05 14.8**	**-3.7**
DAV	**Davao City (W)**	**4.18**	**127**	LR	LR	02 06 09.9	
	comp=Z,64nm,19.0s,baz=168,slow=36						
DAV	**Davao City (W)**	**4.18**	**127**	Pn	**Pn**	**02 04 47.4**	**-0.3**
KKM	**Kota Kinabalu**	**6.94**	**240**	*e*Pn	**Pn**	**02 05 27.0**	**+1.3**
	16nm,0.6s						
CMAR	**Chiang Mai Arr**	**24.21**	**294**	P	**P**	**02 09 01.7**	**+0.8**
	0.6nm,0.3s,baz=121,slow=8.8,SNR=2.7						
CMAR				LR	LR	02 17 25.3	
	comp=Z,61nm,21.0s,baz=146,slow=34						
WRAB	**Tennant Creek**	**31.71**	**158**	*e*P	**P**	**02 10 07.6**	**-0.3**
	5.3nm,0.7s						
WRA	**Warramunga Arr**	**31.71**	**158**	P	**P**	**02 10 07.8**	**-0.2**
	2.4nm,0.5s,baz=339,slow=9.3,SNR=28						
WRA				PcP	**PcP**	**02 12 59.8**	**+0.1**
	2.1nm,0.7s,baz=340,slow=2.9,SNR=12						
ASAR	**Alice Springs**	**35.00**	**161**	P	**P**	**02 10 37.9**	**+1.2**
	8.4nm,0.5s,baz=339,slow=7.1,SNR=105						
ASAR				PcP	**PcP**	**02 13 09.1**	**+0.1**
	2.4nm,0.7s,baz=342,slow=2.1,SNR=14						
USRK	**Ussuriysk Ar.**	**35.47**	**12**	P	**P**	**02 10 41.2**	**+0.8**
	4.6nm,0.8s,baz=196,slow=7.4,SNR=8.9						
KLR	**Kul'dur**	**40.27**	**10**	P	**P**	**02 11 21.5**	**+0.5**
	2.6nm,0.7s,baz=246,slow=4.5,SNR=7.2						
SONM	**Songino Array**	**40.36**	**344**	P	**P**	**02 11 22.5**	**+0.7**
	0.4nm,0.3s,baz=160,slow=9.4,SNR=4.3						
STKA	**Stephens Creek**	**45.24**	**157**	P	**P**	**02 12 02.0**	**+0.5**
	4.4nm,0.7s,baz=325,slow=9.4,SNR=8.3						
STKA				PcP	**PcP**	**02 13 41.5**	**0.0**
	1.8nm,0.6s,baz=340,slow=4.9,SNR=4.6						
MKAR	**Makanchi Array**	**50.19**	**325**	P	**P**	**02 12 41.1**	**+1.3**
	1.1nm,0.7s,baz=132,slow=8.6,SNR=11						
MKAR				PcP	**PcP**	**02 13 59.4**	**+0.4**
	0.5nm,0.5s,baz=121,slow=2.8,SNR=2.7						
ZALV	**Zalesovo Beam**	**53.34**	**333**	P	**P**	**02 13 03.0**	**-0.1**
	0.6nm,0.3s,baz=170,slow=11,SNR=3.3						
KURBB	**Kurchatov Arra**	**54.39**	**327**	P	**P**	**02 13 11.9**	**+1.0**
	1.3nm,0.9s,baz=132,slow=6.2,SNR=9.7						
KURK	**Kurchatov**	**54.40**	**327**	P	**P**	**02 13 11.9**	**+1.0**
BVAR	**Borovoye Array**	**59.97**	**327**	P	**P**	**02 13 50.7**	**+0.3**
	0.5nm,0.4s,baz=101,slow=7.5,SNR=3.6						
ABKAR	**Akbulak array**	**64.78**	**320**	*e*P	**P**	**02 14 23.2**	**+0.5**
	0.3nm,0.4s						
ILAR	**Eielson Array**	**81.75**	**26**	P	**P**	**02 16 00.9**	**-1.6**
	0.4nm,0.7s,baz=241,slow=5.6,SNR=4.7						
BRTR	**Keskin Array B**	**82.85**	**309**	P	**P**	**02 16 09.7**	**+0.7**
	0.6nm,0.8s,baz=115,slow=9.7,SNR=4.7						
ARCES	**ARCESS Array B**	**83.40**	**339**	P	**P**	**02 16 09.9**	**-1.1**
	3.0nm,1.0s,baz=61,slow=7.3,SNR=3.5						
SPITS	**Spitsbergen Ar**	**83.86**	**348**	P	**P**	**02 16 13.2**	**-0.1**
	4.5nm,0.9s,baz=94,slow=12,SNR=4.2						
AKASG	**Malin Array Be**	**84.53**	**320**	P	**P**	**02 16 16.8**	**-0.3**
	0.5nm,0.4s,baz=60,slow=5.6,SNR=4.3						
FINES	**FINESS Array B**	**84.55**	**331**	P	**P**	**02 16 15.8**	**-1.2**
	1.2nm,0.8s,baz=48,slow=2.8,SNR=4.0						
VNDA	**Vanda**	**89.82**	**172**	P	**P**	**02 16 42.3**	**+0.1**
	1.5nm,0.8s,baz=303,slow=6.4,SNR=10						
TXAR	**Lajitas Array**	**121.22**	**47**	PKP	**PKPdf**	**02 22 38.2**	**+0.3**
	0.5nm,0.8s,baz=225,slow=1.6,SNR=6.8						
PLCA	**Paso Flores**	**147.01**	**162**	PKPbc	**PKPbc**	**02 23 28.3**	**+1.1**
	9.5nm,0.8s,baz=305,slow=0.7,SNR=12						

IDC ***12*** *02:07:55.3±1.1,33.29S×179.00W,h0km,mb4.1/3, mb1 4.3/4,mb1mx4.0/22,mbtmp4.1/4,ML4.1/1,Error ellipse: s-maj=35.9km s-min=30.2km az=113.0*

ISCJB ***12*** *02:08:02.5±2.3,33.6S±0.1×179.4W±0.4,h48km,mb4.0/3, Error ellipse: s-maj=45.8km s-

STKA					LR	LR	02 37 26.8		
	comp=Z,122nm,18.6s,baz=30,slow=35								
FITZ	**Fitzroy Crossi**	**25.32**	**248**	P	**P**	**02 29 24.9**	**0.0**		
	7.5nm,0.8s,baz=72,slow=8.1,SNR=14								
ZALV	**Zalesovo Beam**	**84.05**	**327**	P	**P**	**02 36 27.9**	**-0.2**		
	0.6nm,0.3s,baz=86,slow=2.9,SNR=4.1								
ILAR	**Eielson Array**	**87.75**	**22**	P	**P**	**02 36 46.1**	**-0.1**		
	0.2nm,0.7s,baz=254,slow=6.5,SNR=2.5								
TORD	**Torodi Ar. Bea**	**149.14**	**279**	PKPbc	**PKPbc**	**02 43 47.8**	**+0.7**		
	1.5nm,1.1s,baz=62,slow=2.4,SNR=5.3								

MEX 12 02:27:31.5±1.1, 14.16N×92.31W, h7km±999km, MD3.8, Near coast of Chiapas

IDC 12 02:27:33.1±0.7, 9.50N×122.65E, h0km, mb4.0/12, mb1 4.1/12, mb1mx3.9/46, mbtmp4.0/12, MS3.1/8, Ms1 3.1/8, ms1mx2.9/37, Error ellipse: s-maj=41.2km s-min=14.1km az=64.0

ISC 12 02:27:34.7±0.6, 9.57N±0.05×122.63E±0.06, h10km, n25, σ1s84/24, mb4.0/12, MS3.1/6, 2C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.64**	**111**	*i* P	**Pn**	**02 27 49.7**	**-0.2**
SNPH				*i* S	**Sn**	**02 28 03.7**	**+3.5**
RCP	**Roxas**	**1.98**	**3**	*e*P	**Pb**	**02 28 11.1**	**+0.3**
CGP	**Cagayan de Oro**	**2.32**	**118**	⇑*i*P	**Pg**	**02 28 19.2**	**-0.1**
CGP				*i* S	**Sg**	**02 28 51.1**	**+1.7**
PLP	**Palo**	**2.80**	**55**	⇑*i*P	**Pg**	**02 28 25.9**	**-2.5**
PLP				*i* S	**Sg**	**02 29 02.8**	**-2.0**
CTBH	**Cotabato--PC H**	**2.83**	**146**	*e*P	**Pg**	**02 28 24.7**	**-4.4**
CTBH				*i* S	**Sg**	**02 29 07.2**	**+1.4**
DAV	**Davao City (W)**	**3.83**	**130**	LR	LR	02 29 57.1	
	comp=Z,130nm,21.2s,baz=336,slow=38						
KAPI	**Kappang**	**14.77**	**191**	LR	LR	02 36 10.5	
	comp=Z,101nm,19.8s,baz=18,slow=35						
GUMO	**Guam**	**22.14**	**78**	LR	LR	02 41 00.0	
	comp=Z,7.3nm,19.5s,baz=297,slow=36						
CMAR	**Chiang Mai Arr**	**24.59**	**294**	P	**P**	**02 32 57.6**	**+2.3**
	1.8nm,0.6s,baz=118,slow=8.2,SNR=8.7						
CMAR					LR	02 42 17.6	
	comp=Z,80nm,20.4s,baz=133,slow=36						
KSRS	**Korea Array**	**28.17**	**9**	LR	LR	02 45 13.6	
	comp=Z,35nm,19.0s,baz=194,slow=38						
MJAR	**Matsushiro Arr**	**30.34**	**25**	LR	LR	02 44 51.7	
	comp=Z,35nm,20.4s,baz=170,slow=34						
WRA	**Warramunga Arr**	**31.52**	**159**	P	**P**	**02 33 56.7**	**-0.5**
	1.5nm,0.6s,baz=341,slow=9.4,SNR=20						
WRA					PcP	**PcP**	**02 36 49.2**	**-1.0**
	1.1nm,0.8s,baz=338,slow=3.0,SNR=5.4						
ASAR	**Alice Springs**	**34.83**	**162**	P	**P**	**02 34 26.2**	**+0.2**
	3.7nm,0.6s,baz=340,slow=7.1,SNR=40						
ASAR					PcP	**PcP**	**02 36 58.5**	**-0.9**
	1.1nm,0.8s,baz=338,slow=2.0,SNR=6.0						
KLR	**Kul'dur**	**40.26**	**9**	P	**P**	**02 35 13.4**	**+1.7**
	0.9nm,0.7s,baz=270,slow=6.1,SNR=3.4						
SONM	**Songino Array**	**40.53**	**343**	P	**P**	**02 35 15.8**	**+1.6**
	0.5nm,0.7s,baz=179,slow=8.6,SNR=3.1						
STKA	**Stephens Creek**	**45.03**	**157**	P	**P**	**02 35 49.2**	**-1.6**
	3.5nm,0.8s,baz=308,slow=7.6,SNR=5.9						
MKAR	**Makanchi Array**	**50.46**	**325**	P	**P**	**02 36 33.1**	**+0.3**
	1.3nm,1.0s,baz=142,slow=7.3,SNR=7.1						
ZALV	**Zalesovo Beam**	**53.57**	**333**	LR	LR	03 02 22.6	
	comp=Z,27nm,18.1s,baz=60,slow=39						
KURBB	**Kurchatov Arra**	**54.65**	**327**	P	**P**	**02 37 02.4**	**-1.4**
	0.5nm,0.5s,baz=137,slow=6.7,SNR=5.2						
GEYT	**Alibeck**	**54.10**	**307**	P	**P**	**02 38 08.8**	**-0.6**
	0.5nm,0.3s,baz=190,slow=4.4,SNR=2.5						
BRTR	**Keskin Array B**	**83.19**	**309**	P	**P**	**02 40 04.0**	**+2.3**
	0.9nm,0.9s,baz=94,slow=4.3,SNR=3.1						
FINES	**FINESS Array B**	**84.79**	**331**	P	**P**	**02 40 08.8**	**-0.3**
	1.4nm,0.8s,baz=122,slow=2.1,SNR=2.9						
AKASG	**Malin Array Be**	**84.82**	**320**	P	**P**	**02 40 08.4**	**-1.1**
	0.3nm,0.3s,baz=59,slow=5.2,SNR=2.6						
NOA	**NORSAR Array B**	**91.77**	**333**	LR	LR	03 25 31.2	
	comp=Z,21nm,16.6s,baz=45,slow=38						
PLCA	**Paso Flores**	**146.84**	**162**	PKPbc	**PKPbc**	**02 47 16.8**	**-0.9**
	3.8nm,0.8s,baz=203,slow=3.7,SNR=6.0						

IDC 12 02:38:35.1±1.2, 26.27S×70.80E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.6/31, mbtmp3.7/6, Error ellipse: s-maj=35.8km s-min=28.9km az=52.0, Indian Ocean Triple Junction

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H08S1	**Diego Carcia H**	**18.59**	**5**	T	T	03 01 48.7	
	baz=181,slow=74						
H08S2	**Diego Garcia H**	**18.59**	**5**	T	T	03 01 48.7	
	baz=181,slow=74						
H08S3	**Diego Garcia H**	**18.61**	**5**	T	T	03 01 49.3	
	baz=181						
CMAR	**Chiang Mai Arr**	**52.20**	**35**	P	P	02 47 49.6	+1.7
	0.5nm,0.3s,baz=221,slow=8.3,SNR=3.7						
ASAR	**Alice Springs**	**56.77**	**102**	P	P	02 48 20.3	-1.0
	0.3nm,0.6s,baz=253,slow=6.6,SNR=4.0						
WRA	**Warramunga Arr**	**58.29**	**98**	P	P	02 48 31.5	-0.6
	0.7nm,0.9s,baz=252,slow=7.1,SNR=2.6						
VNDA	**Vanda**	**64.78**	**166**	P	P	02 49 16.1	+1.0
	0.8nm,0.8s,baz=266,slow=5.2,SNR=3.4						
MKAR	**Makanchi Array**	**73.46**	**8**	P	P	02 50 08.3	-0.9
	0.4nm,0.5s,baz=201,slow=7.4,SNR=3.2						
TORD	**Torodi Ar. Bea**	**77.73**	**291**	P	P	02 50 34.1	-0.2
	0.3nm,0.6s,baz=130,slow=6.0,SNR=4.2						

IDC 12 02:55:09.9±0.6, 13.50N×92.75E, h0km, mb3.9/17, mb1 4.1/19, mb1mx3.9/45, mbtmp4.0/19, ML3.9/2, MS3.2/5, Ms1 3.2/5, ms1mx2.9/43, Error ellipse: s-maj=22.2km s-min=14.0km az=54.0

NEIC 12 02:55:15.2±1.2, 13.48N×92.73E, h36km±12km, mb4.2/2, Error ellipse: s-maj=11.0km s-min=10.4km az=70.0

ISC 12 02:55:16.2±0.6, 13.83N±0.07×92.65E±0.06, h35km, n41, σ2s75/40, mb4.0/19, MS3.2/3, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PHET	**Kaeng Krachan**	**6.85**	**97**	P	**Pn**	**02 56 56.8**	**+2.6**
	26nm,0.5s						
CMAR	**Chiang Mai Arr**	**7.60**	**52**	Pn	**Pn**	**02 57 03.5**	**-1.0**
	0.7nm,0.3s,baz=241,slow=16,SNR=6.5						
CMAR					Sn	02 58 20.2	-9.2
	0.6nm,0.3s,baz=240,slow=17,SNR=2.5						
CMAR					LR	03 00 47.9	
	comp=Z,84nm,18.1s,baz=245,slow=44						
CHTO	**Chiang Mai**	**7.81**	**50**	*e*Pn	**Pn**	**02 57 11.1**	**+3.7**
	15nm,0.7s						
CHTO				*e*S	**Sn**	**02 58 28.0**	**-6.7**
PBKT	**Sadao Pong**	**8.48**	**70**	P	**Pn**	**02 57 18.7**	**+3.1**
SRAK	**Srakaew**	**9.12**	**88**	P	Pn	02 57 34.2	+8.9
VIS	**Vishakhapatnam**	**9.78**	**295**	*i* P	**Pn**	**02 57 35.7**	**+1.4**
VIS				*i* S	**Sn**	**02 59 18.2**	**-4.7**
VIS				*i* S	**Sn**	**02 59 18.2**	**-4.7**
PALK	**Pallekele**	**13.43**	**242**	Pn	**Pn**	**02 58 20.5**	**-3.9**
	0.5nm,0.3s,baz=111,slow=12,SNR=2.6						
PALK					Sn	Sn	03 00 38.0	-15
	7.1nm,0.3s,baz=115,slow=19,SNR=12						
PALK					LR	LR	03 03 16.3	
	comp=Z,93nm,19.5s,baz=116,slow=36						
PALK	**Pallekele**	**13.43**	**242**	*e*Pn	**Pn**	**02 58 21.9**	**-2.5**
PALK				*e*S	Sn	03 00 36.6	-16
HYB	**Hyderabad**	**14.04**	**287**	P	**Pn**	**02 58 34.0**	**+1.2**
HYB				*e*		03 01 02.5	
HYB				*e*S	**Sn**	**03 01 10.0**	**+2.5**
RAMN	**Ramite**	**14.23**	**337**	*e*P	**Pn**	**02 58 36.0**	**+0.5**
	51nm,0.4s						
PKIN	**Phulchoki**	**15.27**	**335**	*e*P	**Pn**	**02 58 49.7**	**+0.3**
	20nm,0.3s						
GUN	**Gumba**	**15.37**	**337**	*e*P	**Pn**	**02 58 47.8**	**-3.1**
	9.4nm,0.5s						
LSA	**Lhasa**	**15.86**	**355**	*e*Pn	**P**	**02 59 01.5**	**+0.8**
LSA				*e*S	**Sn**	**03 01 46.1**	**-6.1**
GKN	**Gorkha**	**15.96**	**333**	*e*P	**Pn**	**02 58 58.0**	**-0.3**
	39nm,0.3s						
KOLN	**Koldanda**	**16.24**	**330**	*e*P	**P**	**02 59 04.5**	**-0.2**
	18nm,0.3s						
PYUN	**Piuthan**	**16.81**	**329**	*e*P	**P**	**02 59 11.2**	**+0.2**
	9.9nm,0.4s						
TGY	**Tagaytay City**	**27.44**	**86**	LR	LR	03 11 46.3	
	comp=Z,92nm,21.7s,baz=168,slow=36						
H08S3	**Diego Garcia H**	**29.24**	**224**	T	T	03 30 59.4	
	baz=43,slow=76,SNR=23						
H08S2	**Diego Garcia H**	**29.25**	**224**	T	T	03 31 02.2	
	baz=43,slow=76,SNR=21						
H08S1	**Diego Garcia H**	**29.26**	**224**	T	T	03 31 01.6	
	baz=43,slow=76,SNR=24						
MKAR	**Makanchi Array**	**34.00**	**347**	P	**P**	**03 01 58.4**	**+1.8**
	1.2nm,0.7s,baz=153,slow=8.2,SNR=9.7						
SONM	**Songino Array**	**35.78**	**16**	P	**P**	**03 02 15.2**	**+3.1**
	0.2nm,0.3s,baz=199,slow=8.4,SNR=2.6						
KURBB	**Kurchatov Arra**	**38.45**	**346**	P	**P**	**03 02 36.1**	**+1.5**
	1.4nm,0.7s,baz=162,slow=7.7,SNR=13						
KURK	**Kurchatov**	**38.52**	**346**	P	**P**	**03 02 36.1**	**+1.0**
GEYT	**Alibeck**	**38.91**	**314**	P	**P**	**03 02 40.9**	**+2.2**
	3.4nm,0.8s,baz=143,slow=12,SNR=5.4						
KSRS	**Korea Array**	**39.20**	**47**	LR	LR	03 19 21.4	
	comp=Z,36nm,20.1s,baz=204,slow=37						
ZALV	**Zalesovo Beam**	**40.50**	**353**	P	**P**	**03 02 53.0**	**+1.4**
	0.9nm,0.3s,baz=190,slow=8.2,SNR=5.0						
ZALV					LR	LR	03 24 36.3	
	comp=Z,30nm,18.3s,baz=72,slow=43						
ABKAR	**Akbulak array**	**44.36**	**330**	*e*P	**P**	**03 03 24.6**	**+1.6**
	1.8nm,0.4s						
FITZ	**Fitzroy Crossi**	**45.44**	**133**	P	**P**	**03 03 28.0**	**-4.0**
	1.3nm,0.6s,baz=333,slow=6.8,SNR=8.7						
AKTO	**Aktyubinsk**	**46.08**	**330**	P	**P**	**03 03 37.8**	**+1.1**
	1.6nm,0.5s,baz=112,slow=9.1,SNR=8.7						
WRA	**Warramunga Arr**	**52.99**	**128**	P	**P**	**03 04 26.2**	**-3.6**
	1.4nm,0.5s,baz=304,slow=10.0,SNR=31						
WRAB	**Tennant Creek**	**52.99**	**128**	*e*P	**P**	**03 04 26.6**	**-3.3**
	1.1nm,0.4s						
ASAR	**Alice Springs**	**54.91**	**132**	P	**P**	**03 04 40.6**	**-3.2**
	1.0nm,0.4s,baz=308,slow=6.7,SNR=18						
BRTR	**Keskin Array B**	**57.53**	**308**	P	**P**	**03 05 02.7**	**+0.2**
	1.5nm,0.7s,baz=118,slow=7.7,SNR=12						
FINES	**FINESS Array B**	**66.81**	**331**	P	**P**	**03 06 04.5**	**+0.5**
	0.6nm,0.6s,baz=120,slow=5.6,SNR=3.7						
ARCES	**ARCESS Array B**	**69.21**	**340**	P	**P**	**03 06 19.3**	**+0.3**
	2.7nm,1.0s,baz=96,slow=8.3,SNR=3.2						
GERES	**GERESS Array B**	**72.47**	**317**	P	**P**	**03 06 40.1**	**+0.8**
	1.1nm,0.6s,baz=84,slow=6.0,SNR=15						
NOA	**NORSAR Array B**	**73.87**	**330**	P	**P**	**03 06 47.5**	**+0.2**
	0.8nm,0.7s,baz=90,slow=5.7,SNR=2.7						
BOSA	**Boshof**	**77.58**	**236**	P	**P**	**03 07 08.8**	**-0.3**
	1.6nm,0.7s,baz=84,slow=5.3,SNR=5.6						
TORD	**Torodi Ar. Bea**	**87.83**	**283**	P	**P**	**03 08 03.8**	**+1.2**
	0.3nm,0.9s,baz=97,slow=4.6,SNR=2.4						
ILAR	**Eielson Array**	**89.80**	**22**	P	**P**	**03 08 12.2**	**+1.2**
	0.2nm,0.8s,baz=308,slow=4.4,SNR=2.8						

ISCJB 12 03:02:55.7±0.7, 31.80N±0.03×115.16W±0.05, h25km±6km, Error ellipse: s-maj=6.7km s-min=5.7km az=4.5

ECX 12 03:02:56.3±0.7, 31.78N×115.17W, h12km, MD2.6, ML2.7

NEIC 12 03:02:56.5, 31.78N×115.19W, h12km, ML3.0(PAS), ML2.8(ECX), After ECX.

MEX 12 03:02:57.3±0.5, 31.82N×115.09W, h12km±7km, MD3.8

ISC 12 03:02:54.6±1.4, 31.75N±0.04×115.16W±0.03, h19km±4km, n18, σ1s22/29, 2C-2D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.65**	**357**	*e*P	**Pn**	**03 03 08.4**	**-0.4**
MBIG				*e*S	**Sg**	**03 03 15.0**	**-1.0**
CPBX	**Cerro Prieto**	**0.67**	**350**	*e*P	**Pg**	**03 03 07.8**	**-0.2**
CPBX				*e*S	**Sg**	**03 03 16.9**	**0.0**
CPBX	**Cerro Prieto**	**0.67**	**350**	*e*P	**Pb**	**03 03 07.5**	**-0.1**
CPBX				*e*S	**Sb**	**03 03 16.4**	**-0.3**
SPX	**San Pedro Mart**	**0.75**	**200**	*e*P	**Pn**	**03 03 10.5**	**+0.1**
SPX				⇑*e*		03 03 24.0	
SPX				IAML		03 03 24.0	
	comp=N,246nm,0.1s						
SPX	**San Pedro Mart**	**0.75**	**200**	*e*P	**Pn**	**03 03 10.8**	**+0.3**
SPX				*e*S	**Sn**	**03 03 21.5**	**0.0**
ZAX	**El Zacaton**	**0.98**	**256**	*e*P	**Pg**	**03 03 13.4**	**-0.2**
RMX	**La Rumorosa**	**1.15**	**318**	*e*P	**Pn**	**03 03 15.2**	**-0.6**
RMX				*e*S	**Sb**	**03 03 30.6**	**0.0**
RMX				⇓*e*		03 03 32.3	
RMX				IAML		03 03 32.3	
	comp=N,163nm,0.2s						
RMX				⇓*e*		03 03 32.5	
RMX				IAML		03 03 32.5	
	comp=E,190nm,0.1s						
IKP	**In-Ko-Pah, Jac**	**1.20**	**318**	*e*P	**Pb**	**03 03 17.0**	**+0.2**
ECNX	**Esteban Cantu**	**1.23**	**266**	*e*P	**Pb**	**03 03 17.5**	**+0.2**
PBX	**Punta Banda**	**1.33**	**270**	*e*P	**Pb**	**03 03 19.0**	**0.0**
CBX	**Cerro Bola**	**1.39**	**294**	*e*P	**Pn**	**03 03 19.3**	**+0.1**
CBX				*i* S	**Sn**	**03 03 36.1**	**-1.0**
CBX	**Cerro Bola**	**1.39**	**294**	*e*P	**Pn**	**03 03 19.4**	**+0.3**
CBX				*e*S	**Sb**	**03 03 38.4**	**+0.9**
CBX				IAML		03 03 42.4	
	comp=N,194nm,0.4s						
CBX				⇑*e*		03 03 42.4	
CBX	**Cerro Bola**	**1.39**	**294**	*e*P	**Pn**	**03 03 19.3**	**+0.1**
CBX				*i* S	**Sn**	**03 03 36.1**	**-1.0**
TJIG	**Tijuana**	**1.45**	**298**	*e*S	**Sb**	**03 03 38.9**	**-0.3**
214A	**Organ Pipe Nat**	**2.01**	**84**	*e*Pn	**Pn**	**03 03 24.3**	**-3.2**
214A				*e*S	**Sn**	**03 03 51.2**	**-1.0**
PFO	**Pinyon Flats O**	**2.15**	**330**	*e*Pn	**Pn**	**03 03 30.1**	**+0.6**
PFO				*e*S	**Sb**	**03 04 00.7**	**+1.3**
TUC	**Tucson**	**3.76**	**80**	*e*Pn	**Pn**	**03 03 54.6**	**+3.0**
TUC				*e*S	**Sb**	**03 04 45.4**	**-0.2**
WUAZ	**Wupatki**	**4.91**	**39**	Pn	**Pn**	**03 04 10.6**	**+3.1**

IDC 12 03:03:25.1±2.9, 10.56N×124.60E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.4/34, mbtmp3.5/3, MS3.4/1, Ms1 3.4/1, ms1mx2.5/32, 1C, Error ellipse: s-maj=249.4km s-min=26.3km az=64.0, Leyte

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RCP	**Roxas**	**2.08**	**299**	⇑*e*P	Pg	03 04 06.0	+1.0
WRA	**Warramunga Arr**	**31.79**	**162**	P	P	03 09 51.5	0.0
	0.6nm,0.9s,baz=342,slow=9.3,SNR=4.6						
ASAR	**Alice Springs**	**35.21**	**165**	P	P	03 10 21.2	-0.1
	0.5nm,0.6s,baz=345,slow=6.9,SNR=9.1						
MKAR	**Makanchi Array**	**50.81**	**323**	P	P	03 12 27.3	-0.1
	0.3nm,0.5s,baz=140,slow=8.1,SNR=3.4						
YAK	**Yakutsk**	**51.51**	**3**	LR	LR	03 34 43.6	
	comp=Z,39nm,18.5s,baz=130,slow=36						

GUC 12 03:24:05.6±0.4, 32.67S×71.56W, h8km±1km, ML2.3

SJA 12 03:24:06.3±1.4, 32.68S×71.52W, h30km, ML2.5, MW2.8

ISC 12 03:24:08.2±2.9, 32.75S±0.09×71.44W±0.2, h13km±13km, n11, σ0s77/20, 1C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**0.38**	**126**	*e*P	**Pb**	**03 24 17.3**	**+0.3**
ROC1				*e*S	**Sn**	**03 24 26.1**	**-1.0**
ROCH	**El Roble**	**0.38**	**125**	⇓*i*P	**Pb**	**03 24 17.3**	**+0.3**
ROCH				*i* S	**Sn**	**03 24 26.0**	**-1.0**
ROCH				IAML		03 24 28.3	
	comp=N,291nm,0.4s						
PEL	**Peldehue**	**0.70**	**124**	*i* P	**Pg**	**03 24 22.2**	**+0.3**
PEL				*i* S	**Sn**	**03 24 34.9**	**+0.2**
PEL				IAML		03 24 36.8	
	comp=E,176nm,0.3s						
RCDM	**Rinconada Maip**	**0.88**	**147**	⇑*i*P	**Pb**	**03 24 24.6**	**-0.8**
RCDM				*i* S	**Sn**	**03 24 39.1**	**+0.1**
CLCH	**Cerro Calan**	**0.96**	**132**	⇓*i*P	**Pb**	**03 24 26.0**	**-0.7**
CLCH				*i* S	**Sn**	**03 24 41.9**	**+0.9**
CLCH				IAML		03 24 46.0	
	comp=E,105nm,0.5s						
ANTU	**Antumapu**	**1.03**	**143**	*e*P	**Pb**	**03 24 27.1**	**-0.8**
ANTU				*e*S	**Sn**	**03 24 43.4**	**+0.6**
ANTU				IAML		03 24 46.8	
	comp=E,150nm,0.2s						
FCH	**Farellones**	**1.08**	**122**	*i* P	**Pb**	**03 24 27.8**	**-1.2**
FCH				*i* S	**Sn**	**03 24 45.1**	**+0.7**
FCH				IAML		03 24 46.7	
	comp=E,186nm,0.1s						
AUSP	**Uspallata**	**1.77**	**73**	*e*P	**Pn**	**03 24 38.7**	**-0.1**
AUSP				*e*S	**Sb**	**03 25 02.2**	**-0.6**
RTLS	**Leoncito**	**2.00**	**62**	*e*P	**Pn**	**03 24 42.5**	**+0.5**
ASAL	**Salagasta**	**2.15**	**86**	*e*P	**Pn**	**03 24 45.1**	**+1.3**
ASAL				*e*S	**Sb**	**03 25 13.4**	**-0.3**
AVFE	**Valle Fertil**	**3.94**	**59**	*e*P	**Pn**	**03 25 08.7**	**+0.3**
AVFE				IAML		03 26 07.2	
	comp=Z,6.0nm,0.3s						

IDC 12 03:28:20.2±1.3, 5.84S×130.68E, h0km, mb4.0/4, mb1 4.1/7, mb1mx3.8/43, mbtmp4.0/7, ML4.0/3, Error ellipse: s-maj=76.5km s-min=20.1km az=74.0

ISC 12 03:28:35.3±1.1, 6.63S±0.09×130.3E±0.2, h146km, n7, σ3s39/10, mb3.7/4, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.26**	**201**	Pn	**P**	**03 31 29.4**	**-2.0**
	0.7nm,0.3s,baz=20,slow=9.4,SNR=37						
FITZ					Sn	**Sn**	**03 33 41.2**	**+0.5**
	1.2nm,0.3s,baz=112,slow=19,SNR=6.9						
WRA	**Warramunga Arr**	**13.82**	**164**	Pn	**Pn**	**03 31 47.4**	**+2.2**
	0.6nm,0.3s,baz=347,slow=13,SNR=11						
WRA					Sn	**Sn**	**03 34 13.1**	**-5.1**
	baz=333,slow=23						
ASAR	**Alice Springs**	**17.30**	**169**	P	**Pn**	**03 32 33.0**	**+4.8**
	0.6nm,0.3s,baz=352,slow=10,SNR=25						
ASAR					S	**S**	**03 35 38.8**	**-1.5**
	0.3nm,0.3s,baz=352,slow=28,SNR=5.1						
STKA	**Stephens Creek**	**27.26**	**159**	P	**P**	**03 34 10.0**	**+4.0**
	0.5nm,0.3s,baz=329,slow=10,SNR=3.0						
SONM	**Songino Array**	**58.17**	**341**	P	**P**	**03 38 12.1**	**-1.9**
	0.3nm,0.5s,baz=138,slow=5.7,SNR=3.7						
MKAR	**Makanchi Array**	**68.05**	**327**	P	**P**	**03 39 19.2**	**+0.1**
	2.1nm,0.4s,baz=130,slow=8.0,SNR=27						
KURBB	**Kurchatov Arra**	**72.33**	**328**	P	**P**	**03 39 44.8**	**-0.2**
	0.9nm,0.6s,baz=125,slow=5.3,SNR=5.5						

NNC 12 03:32:01.3±3.9, 38.43N×71.29E, h0km, mb3.9, mpv3.5, Error ellipse: s-maj=38.3km s-min=25.7km az=143.0

IDC 12 03:32:05.1±5.3, 38.29N×71.99E, h67km±52km, mb3.4/3, mb1 3.5/9, mb1mx3.2/51, mbtmp3.7/9, ML3.2/6, MS2.8/1, Ms1 2.8/1, ms1mx2.1/36, Error ellipse: s-maj=58.5km s-min=36.9km az=119.0

ISC 12 03:31:59.5±2.0, 38.2N±0.2×71.5E±0.2, h10km, n13, σ1s95/17, mb3.6/3, 4C-2D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MNAS	**Manas**	**4.32**	**10**	⇑Pn	**Pn**	**03 33 05.9**	**+0.5**
	7.7nm,0.8s						
MNAS				⇑Lg	Lg	03 34 11.4	
	73nm,0.8s						
KK31	**Karatay Array**	**4.92**	**352**	Pn	**Pn**	**03 33 14.9**	**+1.4**
	2.1nm,0.4s,baz=168,slow=12,SNR=31						
KK31				⇓Pg	**Pb**	**03 33 25.0**	**-0.7**
	3.0nm,0.4s,baz=165,slow=13,SNR=11						
KK31				⇑Lg	Lg	03 34 32.5	
	18nm,0.6s,baz=172,slow=35						
AAK	**Ala-Archa**	**4.97**	**27**	P	**Pn**	**03 33 14.9**	**+0.7**
	1.1nm,0.3s,baz=208,slow=5.4,SNR=3.2						
AAK					S	**Sn**	**03 34 09.1**	**-2.7**
	0.9nm,0.3s,baz=41,slow=20,SNR=2.0						
AAK	**Ala-Archa**	**4.97**	**27**	Pn	**Pn**	**03 33 17.2**	**+3.0**
	11nm,0.6s						
AAK					Sn	**Sn**	**03 34 14.0**	**+2.2**
	12nm,0.7s						
AAK					Lg	Lg	03 34 37.8	
	17nm,0.7s						
TKM2	**Tokmak 2**	**5.64**	**33**	⇓Pn	**Pn**	**03 33 23.2**	**-0.2**
	3.4nm,0.7s						
TKM2				⇑Sn	**Sn**	**03 34 31.4**	**+3.0**
	12nm,0.7s						
MKAR	**Makanchi Array**	**11.69**	**40**	P	**Pn**	**03 34 45.5**	**-0.7**
	0.2nm,0.3s,baz=220,slow=12,SNR=26						
KURBB	**Kurchatov Arra**	**13.36**	**20**	P	**Pn**	**03 35 08.1**	**-1.0**
	0.0nm,0.3s,baz=214,slow=13,SNR=4.7						
BVAR	**Borovoye Array**	**14.81**	**357**	P	**Pn**	**03 35 28.8**	**-0.1**
	0.3nm,0.3s,baz=164,slow=12,SNR=4.1						
AKTO	**Aktyubinsk**	**15.51**	**326**	P	**P**	**03 35 40.8**	**-1.8**
	0.4nm,0.3s,baz=136,slow=12,SNR=15						
ZALV	**Zalesovo Beam**	**18.19**	**26**	P	**Pn**	**03 36 08.3**	**-3.6**
	0.2nm,0.3s,baz=232,slow=9.3,SNR=5.4						
ZALV					LR	LR	03 43 41.7	
	comp=Z,29nm,19.5s,baz=70,slow=39						
FINES	**FINESS Array B**	**36.28**	**325**	P	**P**	**03 39 03.6**	**+1.0**
	1.4nm,0.7s,baz=101,slow=10,SNR=4.3						
ARCES	**ARCESS Array B**	**39.70**	**337**	P	**P**	**03 39 31.4**	**-0.1**
	0.7nm,0.5s,baz=106,slow=7.7,SNR=9.1						
TORD	**Torodi Ar. Bea**	**66.15**	**268**	P	**P**	**03 42 48.3**	**+0.9**
	0.2nm,0.7s,baz=52,slow=5.9,SNR=3.6						

IDC 12 03:45:57.2±0.9, 9.54N×122.29E, h0km, mb3.9/9, mb1 4.0/9, mb1mx3.8/43, mbtmp3.9/9, MS3.1/7, Ms1 3.2/7, ms1mx2.9/50, Error ellipse: s-maj=80.0km s-min=15.3km az=67.0

**ISC 12 03:

NEIC ***12*** *04:00:16.1±0.4,20.85S×174.55W,h35km,mb4.5/6,Error ellipse: s-maj=18.1km s-min=11.4km az=123.0*

ISC 12 04:00:14.8±0.6,20.7S±0.1×174.5W±0.2,h27km,n40, σ1§50/33,mb4.3/18,MS3.9/6,1C,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.27**	**21**	Pn	**Pn**	**04 01 58.8**	**-0.6**
	8.5nm,0.3s,baz=179,slow=12,SNR=5.7						
AFI				Sn	Sn	04 03 15.5	-5.7
	1.7nm,0.3s,baz=80,slow=18,SNR=2.0						
AFI				LR	LR	04 04 48.2	
	comp=Z,303nm,20.0s,baz=198,slow=37						
AFI	**Afiamalu**	**7.27**	**21**	*e*Pn	**Pn**	**04 01 59.0**	**-0.4**
AFI				*e*S	**Sn**	**04 03 17.6**	**-3.6**
MSVF	**Nonsavu**	**7.66**	**292**	*e*Pn	Pn	04 02 15.4	+11
RAO	**Raoul Island**	**9.02**	**199**	LR	LR	04 05 07.7	
	comp=Z,285nm,19.8s,baz=344,slow=34						
RAR	**Rarotonga**	**13.76**	**95**	Pn	Pn	04 03 16.6	-12
	4.4nm,0.3s,baz=260,slow=7.2,SNR=20						
RAR				LR	LR	04 07 46.4	
	comp=Z,133nm,19.1s,baz=277,slow=33						
RAR	**Rarotonga**	**13.76**	**95**	*e*Pn	Pn	04 03 15.5	-13
DZM	**Mont Dzumac**	**17.80**	**262**	LR	LR	04 10 11.3	
	comp=Z,653nm,18.6s,baz=58,slow=34						
URZ	**Urewera**	**18.91**	**201**	LR	LR	04 11 03.1	
	comp=Z,296nm,18.4s,baz=4.0,slow=35						
PPT	**Papeete**	**23.74**	**87**	LR	LR	04 14 22.5	
	comp=Z,145nm,18.2s,baz=282,slow=36						
RPZ	**Rata Peaks**	**25.89**	**204**	LR	LR	04 15 26.5	
	comp=Z,363nm,18.5s,baz=38,slow=36						
STKA	**Stephens Creek**	**40.65**	**245**	P	**P**	**04 07 51.1**	**-1.7**
	3.7nm,1.1s,baz=63,slow=9.0,SNR=3.0						
ASAR	**Alice Springs**	**47.66**	**256**	P	**P**	**04 08 47.2**	**-2.0**
	5.2nm,0.9s,baz=88,slow=8.1,SNR=31						
ASAR				PcP	**PcP**	**04 10 18.8**	**+0.3**
	1.2nm,0.9s,baz=102,slow=5.0,SNR=4.0						
ASAR				LR	LR	04 28 11.2	
	comp=Z,131nm,19.5s,baz=82,slow=35						
WRAB	**Tennant Creek**	**47.81**	**262**	*e*P	**P**	**04 08 50.0**	**-0.3**
	1.7nm,0.8s						
WRA	**Warramunga Arr**	**47.82**	**261**	P	**P**	**04 08 48.4**	**-2.0**
	2.3nm,0.8s,baz=97,slow=7.6,SNR=4.9						
SBA	**Scott Base**	**57.87**	**185**	*e*P	**P**	**04 10 04.2**	**+0.5**
	6.6nm,1.0s						
VNDA	**Vanda**	**57.98**	**186**	P	**P**	**04 10 03.8**	**-0.8**
	1.1nm,0.8s,baz=8.7,slow=6.3,SNR=7.0						
CASY	**Casey**	**65.15**	**206**	*e*P	**P**	**04 10 51.8**	**-1.3**
	0.7nm,0.9s						
QSPA	**South Pole Qui**	**69.33**	**180**	*e*P	**P**	**04 11 19.4**	**-0.3**
	31nm,1.3s						
MJAR	**Matsushiro Arr**	**72.40**	**322**	P	**P**	**04 11 39.8**	**+1.2**
	3.3nm,0.9s,baz=164,slow=6.0,SNR=7.4						
MAJO	**Matsushiro**	**72.40**	**322**	*e*P	**P**	**04 11 40.5**	**+1.9**
USRK	**Ussuriysk Ar.**	**81.05**	**324**	LR	LR	04 44 42.5	
	comp=Z,26nm,19.6s,baz=128,slow=33						
HLID	**Hailey**	**84.40**	**39**	*e*P	**P**	**04 12 46.1**	**+1.2**
	3.5nm,0.9s						
TXAR	**Lajitas Array**	**84.44**	**56**	P	**P**	**04 12 46.4**	**+1.0**
	0.9nm,1.0s,baz=214,slow=8.8,SNR=8.5						
ANMO	**Albuquerque**	**85.02**	**50**	*e*P	**P**	**04 12 49.5**	**+1.2**
	4.6nm,1.1s						
PDAR	**Pinedale Array**	**86.92**	**42**	P	**P**	**04 12 58.1**	**+0.6**
	1.2nm,0.9s,baz=205,slow=3.1,SNR=8.2						
PDAR				LR	LR	04 47 54.3	
	comp=Z,57nm,18.6s,baz=251,slow=33						
ILAR	**Eielson Array**	**87.86**	**11**	P	**P**	**04 13 02.5**	**+1.3**
	1.9nm,1.1s,baz=219,slow=4.3,SNR=11						
ENH	**Enshi**	**88.91**	**303**	*e*P	**P**	**04 13 09.0**	**+1.8**
	23nm,1.3s						
CMAR	**Chiang Mai Arr**	**93.30**	**288**	P	**P**	**04 13 30.3**	**+2.6**
	1.6nm,0.3s,baz=117,slow=2.5,SNR=9.4						
INK	**Inuvik**	**93.68**	**14**	*e*P	**P**	**04 13 29.8**	**+1.5**
	4.6nm,1.2s						
YKA	**Yellowknife Ar**	**95.38**	**24**	P	**P**	**04 13 36.8**	**+0.6**
	0.9nm,0.9s,baz=243,slow=3.1,SNR=4.2						
LPAZ	**La Paz**	**98.92**	**111**	LR	LR	04 52 04.4	
	comp=Z,41nm,18.0s,baz=286,slow=32						
KURK	**Kurchatov**	**116.40**	**317**	PKP	**PKPdf**	**04 18 55.0**	**-0.8**
KURBB	**Kurchatov Arra**	**116.46**	**317**	PKP	**PKPdf**	**04 18 55.0**	**-0.9**
	0.3nm,0.7s,baz=70,slow=2.0,SNR=4.0						
AKASG	**Malin Array Be**	**144.75**	**334**	PKPbc	**PKPdf**	**04 19 48.5**	**-0.5**
	0.9nm,0.4s,baz=40,slow=4.3,SNR=15						
BRG	**Berggiesshubel**	**149.21**	**350**	*e*PKP	**PKPab**	**04 20 02.3**	**-2.8**
	3.0nm,1.1s						
BRTR	**Keskin Array B**	**149.40**	**314**	PKPbc	**PKPbc**	**04 20 01.9**	**+0.1**
	1.4nm,0.8s,baz=116,slow=2.9,SNR=7.8						
MLR	**Muntele Rosu**	**150.13**	**330**	PKPbc	**PKPbc**	**04 20 02.3**	**-1.0**
	0.3nm,0.4s,baz=335,slow=2.3,SNR=4.5						
KHC	**Kasperske Hory**	**150.95**	**349‖**	*e*PKP	**PKPbc**	**04 20 06.5**	**+1.5**
KHC				*ep*PKP	**pPKPab**	**04 20 20.0**	**-1.2**
GERES	**GERESS Array B**	**151.20**	**349**	PKPbc	**PKPbc**	**04 20 06.5**	**+0.9**
	1.0nm,0.8s,baz=48,slow=2.0,SNR=7.5						
TORD	**Torodi Ar. Bea**	**171.61**	**154**	PKPab	**PKPab**	**04 21 41.5**	**-1.4**
	0.5nm,0.9s,baz=240,slow=4.6,SNR=2.8						

MAN 12 04:01:49,9.49N×122.20E,h11km,mb4.1,ML2.9,MS2.6, 1D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.03**	**98**	*i* P	Pg	04 02 03.6	-5.3
SNPH				*i* S	Sg	04 02 19.4	-3.0
TBP	**Tagbilaran**	**1.65**	**83**	*e*P	Pb	04 02 19.1	-0.3
RCP	**Roxas**	**2.13**	**15‖**	*e*P	Pn	04 02 25.0	+0.5

MAN 12 04:05:35,9.30N×122.03E,h43km,mb4.3,ML3.2,MS3.0, 1C,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.19**	**88**	*i* P	Pn	04 05 51.6	-3.6
SNPH				*i* S	Sn	04 06 07.2	-3.1
TBP	**Tagbilaran**	**1.84**	**78**	*e*P	Pn	04 06 07.4	+3.2
RCP	**Roxas**	**2.35**	**17‖**	*e*P	Pn	04 06 13.0	+1.9

GUC ***12*** *04:10:48.1±0.6,33.32S×71.64W,h45km±11km,ML2.7*
SJA ***12*** *04:10:49.5±1.0,33.11S×71.71W,h12km±5km,ML2.7, MW3.2*

ISC 12 04:10:46.4±3.7,33.43S±0.09×71.7W±0.2,h13km±14km, n11,σ0§65/19,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**0.74**	**53**	*e*P	**Pg**	**04 11 01.3**	**+0.5**
ROC1				*e*S	**Sb**	**04 11 10.9**	**-0.5**
ROCH	**El Roble**	**0.74**	**52**	*i* P	**Pg**	**04 11 01.3**	**+0.4**
ROCH				*i* S	**Sb**	**04 11 11.3**	**-0.3**
ROCH				IAML		04 11 12.5	
	comp=N,446nm,0.5s						
RCDM	**Rinconada Maip**	**0.76**	**95**	*e*P	Pg	04 10 54.7	-6.5
RCDM				*e*S	Sg	04 11 04.5	-6.6
RCDM				IAML		04 11 06.6	
	comp=E,548nm,0.1s						
PEL	**Peldehue**	**0.91**	**72**	*i* P	**Pg**	**04 11 04.1**	**+0.1**
PEL				*i* S	**Sg**	**04 11 15.5**	**-0.3**
PEL				IAML		04 11 17.4	
	comp=N,363nm,0.2s						
ANTU	**Antumapu**	**0.91**	**99**	*i* P	**Pg**	**04 11 04.4**	**+0.3**
ANTU				*e*S	**Sg**	**04 11 15.2**	**-0.9**
ANTU				IAML		04 11 24.0	
	comp=N,326nm,0.4s						
CLCH	**Cerro Calan**	**0.98**	**88**	*i* P	**Pg**	**04 11 05.6**	**+0.2**
CLCH				*i* S	**Sg**	**04 11 18.4**	**+0.1**
CLCH				IAML		04 11 23.3	
	comp=E,405nm,0.4s						
FCH	**Farellones**	**1.20**	**86**	*i* P	**Pb**	**04 11 08.7**	**-0.4**
FCH				*e*S	**Sb**	**04 11 23.7**	**-0.9**
FCH				IAML		04 11 28.7	
	comp=E,514nm,0.4s						
AUSP	**Uspallata**	**2.30**	**59**	*e*P	**Pb**	**04 11 28.2**	**+0.3**
AUSP				*e*S	**Sb**	**04 11 56.3**	**0.0**
ARCO	**CERRO ARCO**	**2.41**	**77**	*e*P	**Pb**	**04 11 30.5**	**+0.8**
ARCO				*e*S	**Sb**	**04 12 00.3**	**+1.0**
ARCO				IAML		04 12 05.5	
	comp=Z,44nm,0.6s						
ASAL	**Salagasta**	**2.56**	**72**	*e*P	**Pb**	**04 11 32.4**	**+0.2**
ASAL				*e*S	**Sb**	**04 12 04.6**	**+0.9**
RTLS	**Leoncito**	**2.61**	**52**	*e*P	**Pb**	**04 11 32.3**	**-1.0**

ISCJB ***12*** *04:13:53.0±0.6,18.32S±0.04×177.94W±0.03, h492km±7km,mb4.8/183,Error ellipse: s-maj=6.2km s-min=4.1km az=161.7*
IDC ***12*** *04:13:54.1±0.8,18.34S×177.89W,h493km±8km,mb4.3/29, mb1 4.4/33,mb1mx4.4/37,mbtmp5.2/33,Error ellipse: s-maj=8.9km s-min=8.4km az=176.0*
BJI ***12*** *04:13:55.5,18.40S×178.00W,h514km,mb5.1/40, mB5.0/27*
NEIC ***12*** *04:13:56.4±0.1,18.38S×177.98W,mb4.7/112,Error ellipse: s-maj=5.4km s-min=3.8km az=147.0*
MOS ***12*** *04:13:56.8±1.3,18.26S×177.98W,h528km,mb5.0/29, Error ellipse: s-maj=9.0km s-min=7.8km az=109.6*

ISC 12 04:13:56.8±0.4,18.42S±0.04×177.93W±0.05, h529km±4km,h529km:pP-P,n676,σ1§16/757,mb4.8/183, 41C-66D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSVF	**Nonsavu**	**3.89**	**279**	*e i* P	**P**	**04 15 16.5**	**+0.1**
MSVF	**Nonsavu**	**3.89**	**279**	*e*P	**P**	**04 15 16.2**	**-0.2**
MSVF				*e*S	**S**	**04 16 24.1**	**+2.7**
AFI	**Afiamalu**	**7.42**	**54**	P	P	04 15 42.7	-5.5
	33nm,0.3s,baz=180,slow=4.0,SNR=24						
AFI				S	S	04 17 08.0	-11
	12nm,0.3s,baz=162,slow=20,SNR=4.4						
AFI	**Afiamalu**	**7.42**	**54**	*e*P	P	04 15 42.9	-5.3
AFI				*e*S	S	04 17 08.1	-11
AFI	**Afiamalu**	**7.42**	**54**	*e*P	P	04 15 42.9	-5.3
AFI				*e*S	S	04 17 08.1	-11
NIUE	**Niue**	**7.61**	**96**	P	**P**	**04 15 47.9**	**-2.0**
	baz=7.6,SNR=9.2						
FUNA	**Funafuti**	**10.22**	**344**	*e*P	**P**	**04 16 14.7**	**-2.2**
RAO	**Raoul Island**	**10.78**	**180**	P	**P**	**04 16 20.4**	**-2.0**
	131nm,0.3s,baz=15,slow=19,SNR=4.2						
RAO				S	**S**	**04 18 19.8**	**-2.5**
	342nm,0.3s,baz=271,slow=21,SNR=8.1						
RAO	**Raoul Island**	**10.78**	**180**	*e*P	**P**	**04 16 21.0**	**-1.5**
RAO				*e*S	**S**	**04 18 23.8**	**+1.4**
RAO	**Raoul Island**	**10.78**	**180**	*e*P	**P**	**04 16 21.0**	**-1.5**
RAO				*e*S	**S**	**04 18 23.8**	**+1.4**
DZM	**Mont Dzumac**	**15.11**	**253**	P	**P**	**04 17 06.1**	**-1.8**
	5.5nm,0.3s,baz=99,slow=3.1,SNR=24						
DZM	**Mont Dzumac**	**15.11**	**253**	*e*P	**P**	**04 17 04.8**	**-3.1**
	114nm,1.1s						
DZM	**Mont Dzumac**	**15.11**	**253**	*e*P	**P**	**04 17 04.3**	**-3.6**
	42nm,0.8s						
RAR	**Rarotonga**	**17.30**	**102**	P	**P**	**04 17 28.8**	**-0.6**
	6.9nm,0.3s,baz=256,slow=8.9,SNR=12						
RAR	**Rarotonga**	**17.30**	**102**	*e*P	**P**	**04 17 28.6**	**-0.8**
RAR				pmax	pmax		
	comp=Z,680nm,1.6s						
RAR	**Rarotonga**	**17.30**	**102**	*e*P	**P**	**04 17 28.6**	**-0.8**
	comp=Z,680nm,1.6s						
OUZ	**Omahuta**	**18.35**	**203**	*e*P	**P**	**04 17 38.8**	**+0.1**
	comp=Z,323nm,2.0s						
URZ	**Urewera**	**20.24**	**191**	P	**P**	**04 17 53.2**	**-2.7**
	comp=Z,18nm,0.3s,baz=275,slow=3.0,SNR=8.2						
URZ				S	**S**	**04 21 04.6**	**-5.3**
	comp=Z,22nm,0.9s,baz=54,slow=22,SNR=8.8						
URZ	**Urewera**	**20.24**	**191**	*e*P	**P**	**04 17 53.1**	**-2.8**
	comp=Z,275nm,1.9s						
URZ				*e*S	**S**	**04 21 09.7**	**-0.1**
TARA	**Tarawa**	**21.61**	**334**	*e*P	**P**	**04 18 05.8**	**-2.9**
	comp=Z,509nm,1.5s						
KHZ	**Kahutara**	**25.00**	**195**	*e*P	**P**	**04 18 36.6**	**-1.8**
RPZ	**Rata Peaks**	**26.88**	**198**	P	**P**	**04 18 55.3**	**+0.3**
	comp=Z,11nm,0.6s,baz=92,slow=18,SNR=3.7						
PAE	**Paea**	**26.95**	**93**	*e*P	**P**	**04 18 55.3**	**-0.7**
	comp=Z,43nm,1.1s						
PPT2	**Papeete2**	**26.96**	**93**	*e*P	**P**	**04 18 55.8**	**-0.4**
	comp=Z,164nm,1.2s						
PPT	**Papeete**	**26.97**	**93**	P	**P**	**04 18 56.0**	**-0.2**
	comp=Z,74nm,0.4s,baz=214,slow=3.6,SNR=21						
PPT	**Papeete**	**26.97**	**93**	P	**P**	**04 18 56.0**	**-0.2**
TBI	**Tubuai**	**27.02**	**105**	*e*P	**P**	**04 18 56.6**	**+0.1**
	comp=Z,241nm,0.9s						
TIAR	**Tiarei**	**27.18**	**93**	*e*P	**P**	**04 18 57.6**	**-0.5**
	comp=Z,31nm,0.8s						
TVO	**Taravao**	**27.25**	**93**	*e*P	**P**	**04 18 58.3**	**-0.4**
	comp=Z,23nm,0.7s						
MEH	**Mehetia**	**28.36**	**94**	*e*P	**P**	**04 19 07.6**	**-0.8**
	comp=Z,12nm,0.8s						
VAH	**Vaihoa**	**29.16**	**88**	*e*P	**P**	**04 19 14.4**	**-0.9**
	comp=Z,158nm,0.9s						
EIDS	**Eidsvold**	**29.53**	**251**	P	**P**	**04 19 18.3**	**-0.1**
	baz=30,SNR=8.6						
EIDS	**Eidsvold**	**29.53**	**251**	*e*P	**P**	**04 19 17.4**	**-1.1**
	comp=Z,20nm,0.6s						
ARMA	**Armidale**	**30.09**	**241**	P	**P**	**04 19 24.3**	**+1.0**
	baz=30,SNR=40						
ARMA	**Armidale**	**30.09**	**241**	*e*P	**P**	**04 19 24.0**	**+0.6**
	comp=Z,28nm,0.5s						
KWAJ	**Kwajalein Atol**	**30.58**	**331**	*e*P	**P**	**04 19 27.5**	**-0.1**
KWAJ				pmax	pmax		
	comp=Z,647nm,1.0s						
KWAJ	**Kwajalein Atol**	**30.58**	**331**	*e*P	**P**	**04 19 27.5**	**-0.1**
	comp=Z,647nm,1.0s						
RMQ	**Roma**	**31.75**	**249**	P	**P**	**04 19 38.3**	**+0.8**
	baz=32,SNR=13						
CNB	**Canberra Magne**	**33.49**	**233**	P	**P**	**04 19 53.4**	**+1.2**
	baz=34,SNR=7.9						
CTA	**Charters Tower**	**33.82**	**261**	P	**P**	**04 19 54.8**	**-0.4**
	comp=Z,54nm,0.7s,baz=89,slow=11,SNR=51						
CTA	**Charters Tower**	**33.82**	**261**	P	**P**	**04 19 55.1**	**-0.1**
	baz=34						
CTAO	**Charters Tower**	**33.82**	**261**	*e*P	**P**	**04 19 55.0**	**-0.1**
CTAO				pmax	pmax		
	comp=Z,54nm,0.8s						
CTAO	**Charters Tower**	**33.82**	**261**	*e*P	**P**	**04 19 55.0**	**-0.2**
	comp=Z,54nm,0.8s						
PMG	**Port Moresby**	**35.00**	**280**	P	**P**	**04 20 04.8**	**-0.3**
	comp=Z,70nm,0.9s,baz=86,slow=8.6,SNR=9.6						
PMG	**Port Moresby**	**35.00**	**280**	*d i*P	**P**	**04 20 05.5**	**+0.4**
PMG				pmax	pmax		
	comp=Z,415nm,1.0s						
PMG	**Port Moresby**	**35.00**	**280**	*e*P	**P**	**04 20 05.0**	**-0.1**
	comp=Z,99nm,1.0s						
CMSA	**Cobar Meteorol**	**35.30**	**241**	P	**P**	**04 20 08.0**	**+0.5**
	baz=35,SNR=57						
QLP	**Quilpie**	**35.79**	**250**	P	**P**	**04 20 11.5**	**0.0**
	baz=36,SNR=25						
MTSU	**Mount Surprise**	**35.81**	**264**	P	**P**	**04 20 11.5**	**-0.4**
	baz=36,SNR=18						
TOO	**Toolangi**	**37.21**	**232**	P	**P**	**04 20 24.2**	**+1.0**
	baz=37,SNR=14						
TOO	**Toolangi**	**37.21**	**232**	P	**P**	**04 20 24.7**	**+1.6**
TOO				pmax	pmax		
	comp=Z,59nm,2.7s						
COEN	**Coen**	**37.57**	**271**	P	**P**	**04 20 26.5**	**+0.1**
	baz=38,SNR=17						
COEN	**Coen**	**37.57**	**271**	*e*P	**P**	**04 20 26.0**	**-0.4**
	comp=Z,35nm,0.8s						
COEN				*e*PcP	**PcP**	**04 22 31.2**	**+0.7**
MANU	**Manus Island**	**37.71**	**292**	*e*P	**P**	**04 20 28.0**	**+0.4**
	comp=Z,107nm,0.9s						
TAOE	**Nuku Hiva Isla**	**37.85**	**81**	*e*P	**P**	**04 20 28.4**	**-0.3**
	comp=Z,63nm,0.7s						
STKA	**Stephens Creek**	**38.79**	**242**	P	**P**	**04 20 36.8**	**+0.7**
	comp=Z,38nm,0.8s,baz=93,slow=9.7,SNR=61						
STKA				PcP	**PcP**	**04 22 35.4**	**+1.3**
	comp=Z,6.1nm,0.6s,baz=102,slow=5.1,SNR=2.8						
STKA	**Stephens Creek**	**38.79**	**242**	P	**P**	**04 20 37.0**	**+0.9**
	baz=39,SNR=48						
STKA	**Stephens Creek**	**38.79**	**242**	*e*P	**P**	**04 20 36.9**	**+0.8**
STKA				*e*		04 22 34.9	
STKA	**Stephens Creek**	**38.79**	**242**	*e*P	**P**	**04 20 36.9**	**+0.8**
STKA				*e*PcP	**PcP**	**04 22 34.9**	**+0.8**
QIS	**Mount Isa**	**40.01**	**260**	P	**P**	**04 20 45.3**	**-0.8**
	baz=40,SNR=4.6						
RKT	**Rikitea**	**40.33**	**104**	*e*P	**P**	**04 20 48.6**	**+0.1**
	comp=Z,164nm,1.1s						
HTT	**Hallett**	**41.29**	**240**	P	**P**	**04 20 56.8**	**+0.6**
	baz=41,SNR=25						
JAY	**Jayapura**	**43.49**	**286**	P	**P**	**04 21 14.0**	**+0.3**
	comp=Z,96nm,1.0s,comp=Z,806nm						
BBOO	**Buckleboo**	**43.56**	**242**	P	**P**	**04 21 14.3**	**+0.4**
	baz=44,SNR=66						
BBOO	**Buckleboo**	**43.56**	**242**	*e*P	**P**	**04 21 14.0**	**0.0**
	comp=Z,59nm,0.9s						
GENI	**Genyem**	**43.95**	**286**	P	**P**	**04 21 17.8**	**+0.6**
	comp=Z,187nm,0.9s,comp=Z,3μm						
WRAB	**Tennant Creek**	**44.98**	**260**	*d i*P	**P**	**04 21 24.2**	**-0.9**
WRAB				pmax	pmax		
	comp=Z,94nm,1.1s						
WRAB	**Tennant Creek**	**44.98**	**260**	*e*P	**P**	**04 21 24.1**	**-1.0**
	comp=Z,37nm,1.0s						
WRAB				*e*PcP	**PcP**	**04 22 55.4**	**+0.3**
WRA	**Warramunga Arr**	**44.99**	**260**	P	**P**	**04 21 24.1**	**-1.1**
	comp=Z,22nm,0.9s,baz=94,slow=7.9,SNR=0.4						
WRA				PcP	**PcP**	**04 22 55.7**	**+0.5**
	comp=Z,10.0nm,0.5s,baz=93,slow=3.5,SNR=8.8						
WRA				ScP	**ScP**	**04 26 01.5**	**+4.3**
	comp=Z,1.2nm,0.9s,baz=89,slow=3.5,SNR=3.1						
WRA				S	**S**	**04 27 21.9**	**-3.4**
	comp=Z,5.1nm,1.1s,baz=100,slow=15,SNR=5.4						
AS01	**Alice Springs**	**45.05**	**255**	*e*P	**P**	**04 21 25.1**	**-0.5**
AS01				*e*PcP	**PcP**	**04 22 54.2**	**-1.1**
AS31	**Alice Springs**	**45.10**	**255**	*e*P	**P**	**04 21 25.5**	**-0.5**
	comp=Z,49nm,0.9s						
AS31				*e*PcP	**PcP**	**04 22 55.2**	**-0.3**
ASAR	**Alice Springs**	**45.10**	**255**	P	**P**	**04 21 25.9**	**0.0**
	comp=Z,130nm,0.7s,baz=86,slow=8.5,SNR=713						
ASAR				PcP	**PcP**	**04 22 56.0**	**+0.5**
	comp=Z,15nm,0.5s,baz=101,slow=4.0,SNR=12						
ASAR				ScP	**ScP**	**04 26 02.1**	**+4.4**
	comp=Z,1.1nm,0.7s,baz=108,slow=5.0,SNR=4.8						
ASAR				S	**S**	**04 27 25.5**	**-1.3**
	comp=Z,11nm,1.0s,baz=90,slow=16,SNR=35						
KDU	**Kakadu**	**48.01**	**269**	P	**P**	**04 21 47.5**	**-0.6**
	baz=48,SNR=8.0						
GUMO	**Guam**	**48.55**	**308**	P	**P**	**04 21 52.7**	**+0.7**
	comp=Z,140nm,0.5s,baz=193,slow=7.6,SNR=13						
GUMO	**Guam**	**48.55**	**308**	*e*P	**P**	**04 21 52.5**	**+0.4**
GUMO				pmax	pmax		
	comp=Z,160nm,0.6s						
GUMO	**Guam**	**48.55**	**308**	*e*P	**P**	**04 21 52.5**	**+0.4**
	comp=Z,160nm,0.6s						
MTN	**Manton Dam**	**49.25**	**269**	P	**P**	**04 21 56.4**	**-0.9**
	baz=49,SNR=15						
MTN	**Manton Dam**	**49.25**	**269**	*e*P	**P**	**04 21 56.6**	**-0.7**
	comp=Z,62nm,0.8s						
MTN				*e*S	**S**	**04 28 21.6**	**-2.7**
ANA2	**Anatahan**	**49.74**	**312**	*e*P	**P**	**04 22 00.8**	**0.0**
SARN	**Sarigan**	**49.94**	**312**	*e*P	**P**	**04 22 02.1**	**-0.2**
WRKA	**Warakurna**	**50.13**	**252**	P	**P**	**04 22 03.7**	**0.0**
	baz=50,SNR=310						
FORT	**Forrest**	**50.21**	**245**	*e*P	**P**	**04 22 03.7**	**-0.4**
	comp=Z,459nm,0.8s						
FORT				*e*PcP	**PcP**	**04 23 12.9**	**-0.9**
KNRA	**Kununurra**	**50.90**	**265**	P	**P**	**04 22 09.2**	**-0.1**
	baz=51						
FITZ	**Fitzroy Crossi**	**53.40**	**261**	P	**P**	**04 22 27.3**	**-0.1**
	comp=Z,9.4nm,0.5s,baz=56,slow=8.3,SNR=40						
PALU	**Palau**	**53.48**	**294**	P	**P**	**04 22 29.0**	**+1.1**
	baz=54,SNR=3.5						
SOEI	**Soe**	**56.53**	**270**	P	**P**	**04 22 50.9**	**+1.5**
	comp=Z,170nm,0.9s						
SOEI	**Soe**	**56.53**	**270**	*e*P	**P**	**04 22 50.5**	**+1.0**
	comp=Z,124nm,0.8s						
SANI	**Sanana**	**57.28**	**280**	P	**P**	**04 22 54.2**	**-0.2**
	comp=Z,98nm,0.9s,comp=Z,854nm						
MBWA	**Marble Bar**	**58.40**	**256**	*e*P	**P**	**04 23 01.6**	**-0.3**
	comp=Z,202nm,1.8s						
NWAO	**Narrogin (SRO)**	**59.38**	**242**	P	**P**	**04 23 08.4**	**+0.1**
	comp=Z,8.8nm,0.7s,baz=4.8,slow=12,SNR=7.3						
SBA	**Scott Base**	**59.94**	**184**	*e*P	**P**	**04 23 13.3**	**+2.0**
SBA				*e**PP	**pP**	**04 24 58.7**	**+2.3**
SBA				pmax	pmax		
	comp=Z,38nm,1.3s						
SBA	**Scott Base**	**59.94**	**184**	*e*P	**P**	**04 23 13.3**	**+2.0**
	comp=Z,38nm,1.3s						
SBA				*ep*P	**pP**	**04 24 58.7**	**+2.3**
VNDA	**Vanda**	**59.98**	**185**	P	**P**	**04 23 12.1**	**+0.6**
	comp=Z,6.0nm,0.6s,baz=356,slow=5.6,SNR=56						
VNDA	**Vanda**	**59.98**	**185**	P	**P**	**04 23 12.1**	**+0.6**
VNDA				*e**PP	**pP**	**04 24 56.6**	**-0.1**
VNDA	**Vanda**	**59.98**	**185**	P	**P**	**04 23 12.1**	**+0.6**
VNDA				*ep*P	**pP**	**04 24 56.6**	**-0.1**
KAPI	**Kappang**	**62.19**	**274**	P	**P**	**04 23 26.4**	**-0.7**
	comp=Z,5.4nm,0.4s,baz=179,slow=10,SNR=4.0						
PLAI	**Plampang**	**62.95**	**269**	P	**P**	**04 23 32.0**	**0.0**
	comp=Z,114nm,1.1s,comp=Z,874nm						
PCI	**Palu**	**63.44**	**278**	P	**P**	**04 23 37.1**	**+1.9**
	comp=Z,158nm,1.1s,comp=Z,1μm						
TWSI	**Taliwang, Sumb**	**63.82**	**269**	P	**P**	**04 23 37.6**	**0.0**
	comp=Z,108nm,1.0s,comp=Z,1μm						
JHJ2	**Mitsune**	**65.23**	**322**	*e*P	**P**	**04 23 45.9**	**-0.2**
	comp=Z,771nm,1.1s						
JHJ	**Hachijo jima 2**	**65.25**	**322**	P	**P**	**04 23 46.4**	**+0.1**
	comp=Z,273nm,0.4s,baz=79,slow=19,SNR=22						
CASY	**Casey**	**65.87**	**205**	*e*P	**P**	**04 23 49.5**	**-0.1**

MSHR Mys Shultsa 76.68 324*d* iP P 04 24 54.2 +1.0
TYV Tymovskoe 77.18 336 *e*P P 04 24 55.8 0.0
TYV pmax pmax
comp=Z,33nm,0.8s
USRK Ussuriysk Ar. 77.29 326 P P 04 24 57.9 +1.3
comp=Z,11nm,0.5s,baz=130,slow=3.0,SNR=54
CMB Columbia Colle 77.90 43 *e*P P 04 25 00.7 +0.6
CMB pmax pmax
comp=Z,3.0nm,0.8s
CMB Columbia Colle 77.90 43 *e*P P 04 25 00.7 +0.6
comp=Z,3.2nm,0.8s
WDC Whiskeytown Da 78.04 40 *e*P P 04 25 01.5 +0.8
WDC pmax pmax
comp=Z,4.0nm,0.8s
WDC Whiskeytown Da 78.04 40 *e*P P 04 25 01.4 +0.8
comp=Z,3.7nm,0.8s
AFDM Forest Hills D 78.05 42 *e*P P 04 25 01.2 +0.4
comp=Z,5.1nm,1.1s
OHAK Old Harbor 78.12 13 *e*P P 04 25 00.2 -0.5
comp=Z,20nm,0.6s
WAKR Walker 78.78 43 *e*P P 04 25 06.0 +1.1
comp=Z,22nm,1.6s
KDAK Kodiak Island 78.79 14 *e*P P 04 25 04.1 -0.1
KDAK pmax pmax
comp=Z,70nm,0.8s
KDAK Kodiak Island 78.79 14 *e*P P 04 25 04.1 -0.1
comp=Z,70nm,0.8s
MDJ Mudanjiang 78.87 325 *e*P P 04 25 06.6 +1.6
HUMO Hull Mountain 79.02 38 *e*P P 04 25 06.5 +0.6
comp=Z,21nm,1.0s
MYKOM Kota Tinggi 79.40 275 *e*P P 04 25 09.5 +0.9
comp=Z,37nm,1.2s
PAHR Pah Rah Range 79.49 42 *e*P P 04 25 09.3 +0.7
comp=Z,9.3nm,0.9s
NKL Nikolayevsk 79.73 336 *i*P P 04 25 09.0 -0.3
NKL pmax pmax
comp=Z,52nm,1.0s
TPNV Topopah Spring 80.04 46 *e*P P 04 25 10.4 -1.3
TPNV pmax pmax
comp=Z,11nm,1.4s
TPNV Topopah Spring 80.04 46 *e*P P 04 25 10.4 -1.3
comp=Z,11nm,1.4s
QIZ Qiongzhong 80.08 294 P P 04 25 11.9 -0.1
QIZ pP **pP** 04 27 03.9 -1.7
QIZ S **S** 04 34 35.0 +1.6
QIZ pmax pmax
comp=Z,110nm,7.7s
MOD Modoc Plateau 80.18 40 *e*P P 04 25 12.3 +0.1
comp=Z,5.7nm,0.7s
K05A Summer Lake 80.31 39 *e*P P 04 25 13.3 +0.4
comp=Z,42nm,1.6s
CN2 Changchun 80.70 322 ǁP P 04 25 14.9 +0.2
CN2 pmax pmax
comp=Z,100nm,1.1s
CN2 pmax pmax
comp=Z,300nm,4.0s
KLR Kul'dur 80.78 329*d i*P P 04 25 15.6 +0.6
E03A Lebam 81.11 35 *e*P P 04 25 16.6 -0.1
comp=Z,14nm,1.0s
R11A Troy Canyon, C 81.23 45 *e*P P 04 25 18.5 +0.7
comp=Z,7.7nm,1.4s
BMN Battle Mountai 81.27 42 *e*P P 04 25 18.5 +0.5
comp=Z,17nm,1.5s
WHN Wuhan 81.28 306 ⇑P P 04 25 19.3 +1.4
NLWA Neilton Lookou 81.48 34 *e*P P 04 25 19.0 +0.3
comp=Z,18nm,1.4s
WVOR Wild Horse Val 81.50 40 *e*P P 04 25 19.7 +0.7
comp=Z,11nm,0.5s
MA2 Magadan 81.81 345 *i*P P 04 25 19.1 -0.9
SPU Mount Spurr 82.00 12 *e*P P 04 25 19.9 -1.1
LCMT Little Creek M 82.14 47 *e*P P 04 25 23.4 +1.0
comp=Z,4.1nm,0.9s
LON Longmire 82.19 35 *e*P P 04 25 22.4 +0.1
LON pmax pmax
comp=Z,4.0nm,1.0s
LON Longmire 82.19 35 *e*P P 04 25 22.4 +0.1
comp=Z,3.7nm,1.0s
CCUT Cedar City 82.33 46 *e*P P 04 25 23.8 +0.3
comp=Z,8.6nm,0.8s
D05A Enumclaw 82.36 35 *e*P P 04 25 24.2 +1.1
319A Douglas 82.36 53 *e*P P 04 25 25.1 +1.5
comp=Z,7.2nm,0.8s
KNB Kanab 82.44 47 *e*P P 04 25 24.7 +0.7
KNB pmax pmax
comp=Z,14nm,0.9s
KNB Kanab 82.44 47 *e*P P 04 25 24.7 +0.7
comp=Z,14nm,0.9s
U15A North Rim 82.52 48 *e*P P 04 25 25.5 +1.0
comp=Z,20nm,1.5s
SUA Susitna One 82.53 13 *e*P P 04 25 22.6 -1.2
comp=Z,19nm,0.6s
UBPT Khong Chiam 82.53 289 P P 04 25 25.8 +1.2
comp=Z,28nm,1.4s
TT01 Tatalina 82.87 10 *e*P P 04 25 25.1 -0.2
G08A Pilot Rock 82.93 38 *e*P P 04 25 26.9 +0.7
comp=Z,25nm,1.6s
IPM Ipoh 82.94 277 *e*P P 04 25 27.6 +0.8
comp=Z,42nm,0.8s
PMR Palmer 82.99 13 *e*P P 04 25 24.5 -1.4
PMR pmax pmax
comp=Z,12nm,0.6s
PMR Palmer 82.99 13 *e*P P 04 25 24.5 -1.4
comp=Z,12nm,0.6s
PMSA Palmer Station 83.16 157 P P 04 25 27.8 +1.0
comp=Z,10nm,0.6s,baz=185,slow=1.7,SNR=12
PMSA Palmer Station 83.16 157 *e*P P 04 25 28.0 +1.1
comp=Z,52nm,1.5s
HAWA Hanford 83.24 36 *e*P P 04 25 27.5 -0.1
comp=Z,12nm,0.9s
HPIG 83.30 59 *e*P P 04 25 28.1 -0.4
comp=Z,3.2nm,0.6s
DIV Divide 83.37 15 *e*P P 04 25 27.4 -0.5
comp=Z,17nm,0.8s
MTPU Mount Pierson 83.38 46 *e*P P 04 25 29.7 +0.8
comp=Z,20nm,1.8s
BMRM Bremner River 83.52 16 *e*P P 04 25 28.4 -0.3
comp=Z,16nm,0.8s
MAW Mawson 83.54 200 P P 04 25 29.9 +1.2
comp=Z,4.7nm,0.5s,baz=128,slow=5.6,SNR=19
MAW Mawson 83.54 200 P P 04 25 30.1 +1.4
baz=84,SNR=13
MAW Mawson 83.54 200 *e*P P 04 25 29.0 +0.3
MAW Mawson 83.54 200 *e*P P 04 25 29.0 +0.3
comp=Z,2.1nm,1.1s
KULM Kulim 83.56 278 *e*P P 04 25 30.7 +0.8
comp=Z,30nm,1.0s
SCM Sheep Creek Mo 83.61 14 *e*P P 04 25 28.5 -0.6
SCM pmax pmax
comp=Z,23nm,0.6s
SCM Sheep Creek Mo 83.61 14 *e*P P 04 25 28.5 -0.6
comp=Z,23nm,0.6s
MSU Marysvale 83.62 46 *e*P P 04 25 31.1 +1.2
MSU Marysvale 83.62 46 *e*P P 04 25 31.1 +1.2
KLU Klutina 83.64 15 *e*P P 04 25 28.6 -0.7
comp=Z,17nm,1.3s
CRQM Cirque 83.73 16 *e*P P 04 25 28.7 -1.1
comp=Z,18nm,0.9s
MFID Camas Ranch 83.76 40 *e*P P 04 25 30.9 +0.5
comp=Z,7.0nm,1.2s
CAST Castle Rocks 84.04 11 *e*P P 04 25 28.9 -2.2
comp=Z,17nm,0.7s
BALM Baldy 84.17 17 *e*P P 04 25 31.5 -0.5
BALM pmax pmax
comp=Z,18nm,0.6s
BALM Baldy 84.17 17 *e*P P 04 25 31.5 -0.5
comp=Z,18nm,0.6s
SKLT Songkhla 84.20 279 P P 04 25 35.5 +2.5
comp=Z,47nm,1.5s
F10A Beach Ranch, E 84.32 38 *e*P P 04 25 32.1 -0.9
comp=Z,6.0nm,0.6s
SEY Seymchan 84.38 347*de*P P 04 25 32.1 -0.6
KTH Kantishna Hill 84.38 12 *e*P P 04 25 31.1 -1.8
comp=Z,9.8nm,0.8s
PSI Prapat 84.39 275 *e*P P 04 25 33.7 -0.4
PSI pmax pmax
comp=Z,46nm,1.0s
PSI Prapat 84.39 275 *e*P P 04 25 33.7 -0.4
comp=Z,46nm,1.0s
TRF Thorofare Moun 84.41 12 *e*P P 04 25 31.8 -1.3
comp=Z,25nm,0.6s
BJT Baijiatuan 84.46 315 *e*P P 04 25 33.9 +0.1
BJT Baijiatuan 84.46 315 *e*P P 04 25 33.9 +0.1
BJI Beijing 84.47 315 P P 04 25 34.6 +0.9
BJI pmax pmax
comp=Z,71nm,1.4s
BJI pmax pmax
comp=Z,290nm,4.0s

SKNT Sakolnakorn 84.47 290 P P 04 25 35.0 +0.7
comp=Z,67nm,1.0s
B08A Colville Reser 84.49 35 *e*P P 04 25 31.9 -1.8
comp=Z,5.0nm,0.9s
TMUT Trail Mountain 84.66 46 *e*P P 04 25 36.6 +1.5
comp=Z,3.4nm,0.6s
RND Reindeer 84.66 13 *e*P P 04 25 32.8 -1.5
RND pmax pmax
comp=Z,64nm,1.3s
RND Reindeer 84.66 13 *e*P P 04 25 32.8 -1.5
comp=Z,64nm,1.3s
DHY Denali Highway 84.69 13 *e*P P 04 25 33.6 -1.0
comp=Z,11nm,1.1s
HLID Hailey 84.71 41 *e*P P 04 25 35.9 +0.7
comp=Z,7.5nm,0.8s
MCK McKinley 84.94 13 *e*P P 04 25 34.8 -0.7
MCK pmax pmax
comp=Z,27nm,1.2s
MCK McKinley 84.94 13 *e*P P 04 25 34.8 -0.7
comp=Z,27nm,1.2s
ENH Enshi 84.94 304 *e*P P 04 25 37.4 +1.0
PAX Paxson 85.03 14 *e*P P 04 25 35.1 -1.0
PAX pmax pmax
comp=Z,19nm,1.0s
PAX Paxson 85.03 14 *e*P P 04 25 35.1 -1.0
comp=Z,19nm,1.0s
GSI Gunungsitoli 85.19 273 *e*P P 04 25 35.9 -2.0
GSI *e*pP **pP** 04 27 37.7 +4.4
KHON Khomkaen 85.28 289 P P 04 25 41.9 +3.6
comp=Z,13nm,1.1s,comp=Z,1μm
TRTT Trang 85.29 280 P P 04 25 40.6 +2.2
comp=Z,64nm,1.7s
HYT Haines Junctio 85.39 19 *e*P P 04 25 37.8 -0.1
comp=Z,10nm,1.0s
MENT Mentasta 85.42 15 *e*P P 04 25 37.5 -0.4
comp=Z,8.3nm,0.6s
MNTX Cornudas Mount 85.49 55 *e*P P 04 25 38.4 -0.6
MNTX *e*pP **pP** 04 27 38.5 +3.9
NONG Nongkai 85.61 291 P P 04 25 41.0 +1.2
comp=Z,24nm,1.3s
NEW Newport 85.65 36 P P 04 25 38.9 -0.5
comp=Z,1.8nm,0.7s,baz=320,slow=4.5,SNR=3.1
GYA Guiyang 85.69 300 *e*P P 04 25 40.2 0.0
GYA pP pP 04 27 36.8 +1.0
GYA sP sP 04 28 28.4 -1.1
GYA PP **PP** 04 29 11.0 +1.8
GYA S **S** 04 35 27.2 -1.6
GYA pmax pmax
comp=Z,10.0nm,1.0s
WRH Wood River Hil 85.77 12 *e*P P 04 25 38.4 -1.1
comp=Z,17nm,0.8s
WRH *e*pP **pP** 04 27 36.8 +1.7
USHA Ushuaia 85.82 147 P P 04 25 41.9 +1.8
baz=266,slow=5.2
TX31 Lajitas Ar. Si 85.88 57 *e*P P 04 25 41.7 +0.7
TX31 *e*pP **pP** 04 27 39.1 +2.5
TXAR Lajitas Array 85.88 57 P P 04 25 42.4 +1.4
comp=Z,4.6nm,0.7s,baz=222,slow=6.0,SNR=35
TXAR PKKPbc **PKKPbc** 04 43 39.5 +0.7
comp=Z,0.2nm,0.5s,baz=153,slow=2.8,SNR=7.7
CHAI Chaiyaphum 85.89 288 P P 04 25 43.7 +2.5
comp=Z,5.5nm,0.9s,comp=Z,157nm
DOT Dot Lake 85.94 14 *e*P P 04 25 40.0 -0.4
comp=Z,23nm,0.8s
CCB Clear Creek Bu 85.98 13 *e*P P 04 25 39.1 -1.3
comp=Z,29nm,1.2s
ANMO Albuquerque 86.05 51 *e*P P 04 25 43.4 +1.6
comp=Z,3.4nm,1.0s
DLBC Dease Lake 86.12 23 P P 04 25 41.0 -0.4
comp=Z,2.9nm,0.8s,baz=246,slow=5.4,SNR=5.5
DLBC Dease Lake 86.12 23 *e*P P 04 25 41.5 +0.1
comp=Z,8.0nm,1.0s
COLA College 86.17 12 *e*P P 04 25 40.4 -0.9
COLA pmax pmax
comp=Z,17nm,0.8s
COLA College 86.17 12 *e*P P 04 25 40.4 -0.9
comp=Z,17nm,0.8s
IL1 Eielson Array 86.28 13 *e*P P 04 25 40.4 -1.5
ILAR Eielson Array 86.28 13 P P 04 25 40.5 -1.4
comp=Z,4.0nm,0.4s,baz=220,slow=5.3,SNR=96
ILAR PP **PP** 04 29 11.7 -1.3
comp=Z,1.8nm,1.0s,baz=224,slow=7.0,SNR=4.8
ILB Eielson Array 86.28 13 *e*P P 04 25 40.8 -1.1
MCMT McKenzie Canyo 86.33 40 *e*P P 04 25 43.0 0.0
DLMT Dillon 86.75 40 *e*P P 04 25 45.7 +0.9
comp=Z,15nm,1.4s
TPAW Teton Pass 86.85 42 *e*P P 04 25 45.7 +0.2
comp=Z,1.7nm,0.7s
REDW Red Top Meadow 86.85 42 *e*P P 04 25 45.5 0.0
comp=Z,5.5nm,0.9s
XAN Xi'an 86.93 307 P P 04 25 46.9 +1.1
XAN pP pP 04 27 43.5 +1.6
XAN sP sP 04 28 31.4 -4.1
XAN pmax pmax
comp=Z,76nm,1.3s
XAN pmax pmax
comp=Z,85nm,5.4s
BILL Bilibino 86.98 354ǁ*e*P P 04 25 45.5 +0.3
BILL pmax pmax
comp=Z,18nm,1.4s
PHET Kaeng Krachan 87.02 285 P P 04 25 48.9 +2.4
comp=Z,20nm,0.9s
PBKT Sadao Pong 87.03 288 P P 04 25 48.4 +1.9
comp=Z,18nm,1.1s
HIA Hailar 87.05 324*d i*P P 04 25 46.5 +0.5
HIA pmax pmax
comp=Z,39nm,1.2s
HIA Hailar 87.05 324 *e*P P 04 25 47.1 +1.1
PDAR Pinedale Array 87.41 43 PKKPbc PKKPbc 04 43 33.9 -2.1
comp=Z,0.6nm,0.7s,baz=83,slow=6.1,SNR=4.2
DAWY Dawson 87.45 16 *e*P P 04 25 47.6 +0.1
comp=Z,11nm,1.1s
BOZ Bozeman (W) 87.48 40 *e*P P 04 25 48.1 -0.2
BOZ pmax pmax
comp=Z,5.0nm,1.0s
BOZ Bozeman (W) 87.48 40 *e*P P 04 25 48.1 -0.2
comp=Z,4.8nm,1.0s
EGAK Eagle 87.59 15 *e*P P 04 25 47.5 -0.6
comp=Z,6.4nm,0.8s
UTTA Uttaradit 87.81 289 P P 04 25 52.1 +1.9
comp=Z,3.7nm,1.0s,comp=Z,96nm
COLD Coldfoot 87.83 10 *e*P P 04 25 49.0 -0.2
comp=Z,8.9nm,1.0s
HHC Hu-ho-hao-te 87.96 314 *e*P P 04 25 51.6 +1.1
HHC pmax pmax
comp=Z,35nm,1.3s
HHC pmax pmax
comp=Z,78nm,5.7s
KMI Kunming 88.47 297 P P 04 25 55.3 +1.9
KMI pP pP 04 27 51.3 +1.4
KMI pmax pmax
comp=Z,27nm,1.3s
RLMT Red Lodge 88.69 41 P P 04 25 55.6 +1.6
baz=141,SNR=5.2
RLMT Red Lodge 88.69 41 *e*P P 04 25 55.8 +1.8
comp=Z,7.0nm,0.6s
CRAI Chiangrai 88.81 292 P P 04 25 56.5 +1.6
comp=Z,75nm,1.2s
UMPA Umpang Tak 88.82 287 P P 04 25 58.4 +3.5
comp=Z,7.6nm,1.1s,comp=Z,μm
LAMP Lampang 88.89 290 P P 04 25 57.1 +1.9
comp=Z,15nm,0.9s,comp=Z,117nm
CM01 Chiang Mai Arr 89.46 290 *e*P P 04 25 58.8 +1.0
CMAR Chiang Mai Arr 89.49 290 P P 04 25 59.6 +1.6
comp=Z,16nm,0.9s,baz=110,slow=2.8,SNR=56
CMMT Chiang Mai 89.60 290 P P 04 25 59.8 +1.3
comp=Z,26nm,1.1s
CHTO Chiang Mai 89.61 290 P P 04 25 59.9 +1.3
comp=Z,118nm,1.1s
CHTO Chiang Mai 89.61 290 *e*P P 04 25 59.5 +0.9
CHTO pmax pmax
comp=Z,15nm,0.8s
CHTO Chiang Mai 89.61 290 *e*P P 04 25 59.5 +0.9
comp=Z,15nm,0.8s
SNAA Sanae 90.08 178 P P 04 25 59.8 0.0
SNAA Sanae 90.08 178 *e*P P 04 25 59.8 0.0
SNAA pmax pmax
comp=Z,7.0nm,0.5s
SNAA Sanae 90.08 178 *e*P P 04 25 59.8 0.0
comp=Z,7.1nm,0.5s
YAK Yakutsk 90.22 338ǁ*e*P P 04 25 59.6 -0.7
YAK pmax pmax
comp=Z,50nm,1.8s
EDM Edmonton 90.33 33 *e*P P 04 26 00.9 -0.3
EDM pmax pmax
comp=Z,40nm,1.7s

EDM Edmonton 90.33 33 *e*P P 04 26 00.9 -0.3
comp=Z,40nm,1.7s
PLCA Paso Flores 90.65 134 P P 04 26 03.9 +0.8
comp=Z,3.6nm,0.6s,baz=269,slow=6.9,SNR=11
NVL N'lazarevskaya 90.79 183 *e*P P 04 26 03.3 +0.3
VNA1 Neumayer--Stat 90.87 177 P P 04 26 04.5 +1.1
LZH Lanzhou 91.57 308 ⇑P P 04 26 09.3 +1.9
LZH pP pP 04 28 04.3 -0.1
LZH sP sP 04 28 54.4 -3.3
LZH pmax pmax
comp=Z,53nm,1.0s
LZH pmax pmax
comp=Z,220nm,5.8s
INK Inuvik 92.26 15 P P 04 26 08.4 -1.2
comp=Z,7.3nm,0.8s,baz=210,slow=4.4,SNR=17
INK Inuvik 92.26 15 *e*P P 04 26 08.6 -1.0
INK pmax pmax
comp=Z,9.0nm,0.9s
INK Inuvik 92.26 15 *e*P P 04 26 08.6 -1.0
comp=Z,8.7nm,0.9s
SONA1 Songino Array 94.24 319 *e*P P 04 26 19.0 -0.4
SONA1 *e*PP **PP** 04 30 12.4 -3.2
SONM Songino Array 94.24 319 P P 04 26 19.1 -0.3
comp=Z,3.6nm,0.5s,baz=116,slow=3.5,SNR=30
SONM PP **PP** 04 30 13.8 -1.8
comp=Z,1.3nm,0.9s,baz=114,slow=7.6,SNR=6.0
SONM PKiKP **PKiKP** 04 30 58.5 -1.0
comp=Z,0.4nm,0.5s,baz=126,slow=2.0,SNR=3.5
BOD Bodaibo 94.33 330*d i*P P 04 26 18.2 -1.1
BOD pmax pmax
comp=Z,8.0nm,1.3s
YKA Yellowknife Ar 94.60 25 P P 04 26 19.6 -0.8
comp=Z,1.3nm,0.5s,baz=238,slow=4.6,SNR=13
YKA PKKPbc **PKKPdf** 04 43 16.0 -1.5
comp=Z,0.4nm,0.5s,baz=48,slow=2.2,SNR=6.6
GTA Gaotai 95.71 310 *e*P P 04 26 27.0 +0.8
GTA pP pP 04 28 21.7 -1.9
GTA sP sP 04 29 11.9 -4.8
GTA pmax pmax
comp=Z,10.0nm,1.4s
TIXI Tiksi 96.76 345⇑*i*P P 04 26 29.4 -0.6
TIXI pmax pmax
comp=Z,7.0nm,1.1s
ZAK Zakamensk 97.07 321 *e*P P 04 26 30.0 -2.0
ZAK pmax pmax
comp=Z,4.0nm,1.2s
TLY Talaya 97.31 322⇑*e*P Pdif 04 26 32.9 -0.1
TLY pmax pmax
comp=Z,6.0nm,1.3s
LPAZ La Paz 102.78 112 PKKPbc PKKPbc 04 42 55.3 +0.4
comp=Z,0.6nm,0.5s,baz=160,slow=5.1,SNR=3.9
CPUP Villa Florida 107.16 126 PKKP **PKKPdf** 04 42 52.5 +0.2
comp=Z,0.5nm,0.4s,baz=105,slow=6.6,SNR=3.1
ZALV Zalesovo Beam 108.92 322 PKiKP **PKiKP** 04 31 25.3 -0.4
comp=Z,3.5nm,0.5s,baz=102,slow=0.2,SNR=13
ZALV PP **PP** 04 32 07.8 +3.9
comp=Z,3.2nm,0.8s,baz=101,slow=6.3,SNR=7.5
MK01 Makanchi Array 109.81 314 *e*PKiKP **PKiKP** 04 31 26.9 -0.9
MK31 Makanchi Array 109.82 314 *e*PKiKP **PKiKP** 04 31 27.1 -0.6
MKAR Makanchi Array 109.82 314 Pdiff **Pdif** 04 27 30.9 +2.1
comp=Z,0.3nm,0.3s,baz=76,slow=6.1,SNR=4.0
MKAR PKiKP **PKiKP** 04 31 27.1 -0.6
comp=Z,4.3nm,0.5s,baz=160,slow=0.7,SNR=46
MKAR PP **PP** 04 32 08.8 -1.8
comp=Z,2.0nm,0.9s,baz=88,slow=6.7,SNR=5.9
KURK Kurchatov 112.51 318*c i*PKiKP **PKiKP** 04 31 32.2 -0.5
KURK Kurchatov 112.51 318 *e*PKiKP **PKiKP** 04 31 32.1 -0.5
KSH Kashi 113.75 306 *e*PKP **PKiKP** 04 31 34.3 -1.3
KSH *e*PP **PP** 04 32 45.6 +7.0
KSH PKS **PKSdf** 04 35 09.7 -2.7
KSH SKS **SKSdf** 04 37 55.3 -2.4
KSH SKKS **SKKSac** 04 38 42.0 -3.0
KSH SS **SS** 04 47 54.6 +7.3
KSH AMB AMB
comp=Z,42nm,5.2s
AAK Ala-Archa 115.06 309⇑*i*PKiKP **PKPdf** 04 31 38.1 0.0
BVAR Borovoye Array 117.53 321 PKP **PKPdf** 04 31 41.8 -0.5
comp=Z,7.9nm,0.3s,baz=118,slow=2.7,SNR=55
BVAR PP **PP** 04 33 07.1 +3.0
comp=Z,3.2nm,0.7s,baz=76,slow=6.3,SNR=6.0
BRVK Borovoye 117.59 321*c i*PKiKP **PKPdf** 04 31 42.3 -0.1
BRVK Borovoye 117.59 321 *e*PKPdf **PKPdf** 04 31 42.2 -0.2
KKAR Karatay Array 118.00 310 *e*PKiKP **PKPdf** 04 31 43.2 -0.3
KKAR *e* 04 33 04.0
KKAR Karatay Array 118.00 310 *e*PKPdf **PKPdf** 04 31 43.2 -0.3
KKAR *e*PP **PP** 04 33 04.0 -3.6
ZRNK Zerenda 118.37 321 *e*PKiKP **PKPdf** 04 31 43.2 -0.7
ZRNK Zerenda 118.37 321 *e*PKPdf **PKPdf** 04 31 43.2 -0.7
KBL Kabul 118.94 300 *e*PKiKP **PKPdf** 04 31 46.3 +0.5
KBL Kabul 118.94 300 *e*PKPdf **PKPdf** 04 31 46.3 +0.5
SPITS Spitsbergen Ar 119.80 357 PKP **PKPdf** 04 31 45.6 -0.4
comp=Z,9.8nm,0.8s,baz=75,slow=3.5,SNR=8.6
SVE Sverdlovsk 122.31 326 *e*PKiKP **PKPdf** 04 31 51.5 +0.2
SVE pmax pmax
comp=Z,23nm,0.9s
SOKR Solikamsk 123.32 330*c i*PKiKP **PKPdf** 04 31 50.9 -2.2
SOKR pmax pmax
comp=Z,37nm,0.9s
ARU Arti 123.53 326 PKP **PKPdf** 04 31 53.7 +0.1
comp=Z,16nm,0.5s,baz=63,slow=0.3,SNR=27
ARU PP **PP** 04 33 48.1 +3.8
comp=Z,7.9nm,0.2s,baz=80,slow=4.3,SNR=10
ARU Arti 123.53 326 *i*PKiKP **PKPdf** 04 31 53.8 +0.1
ARU 04 33 43.9
ARU 04 38 14.7
ARU Arti 123.53 326 *e*PKPdf **PKPdf** 04 31 53.0 -0.6
ARU PKP **PKPdf** 04 31 53.7 +0.1
ARU PP **PP** 04 33 48.1 +3.8
ABKAR Akbulak array 124.62 318 *e*PKPpre PKPpre 04 31 54.0
ABKAR *e*PKPdf **PKPdf** 04 31 55.9 -0.1
AKTO Aktyubinsk 125.55 319 PKP **PKPdf** 04 31 57.8 0.0
comp=Z,11nm,0.9s,baz=79,slow=2.0,SNR=23
AKTO PP **PP** 04 33 56.9 -1.0
comp=Z,0.8nm,0.4s,baz=52,slow=5.6,SNR=4.4
LVZ Lovozero 126.40 345ǁ*i*PKiKP **PKPdf** 04 31 59.4 +0.5
ARA0 ARCESS Array S 126.90 350 *e*PKPdf **PKPdf** 04 32 00.0 +0.2
ARCES ARCESS Array B 126.90 350 PKP **PKPdf** 04 31 59.6 -0.2
comp=Z,11nm,0.6s,baz=36,slow=1.0,SNR=43
GEYT Alibeck 127.71 304 PKP **PKPdf** 04 32 02.5 +0.2
comp=Z,9.0nm,0.6s,baz=270,slow=4.2,SNR=12
BOSA Boshof 128.15 206 PKP **PKPdf** 04 32 04.7 +1.1
comp=Z,4.2nm,0.6s,baz=156,slow=3.4,SNR=11
KLMR Klimovskoe 130.00 337 *e*PKiKP **PKPdf** 04 32 03.4 -2.5
KLMR pmax pmax
comp=Z,29nm,1.2s
FIA1 FINESS Array S 133.80 344 *e*PKPdf **PKPdf** 04 32 09.4 -3.6
FINES FINESS Array B 133.80 344 PKhKP PKPpre 04 31 59.3
comp=Z,0.9nm,0.4s,baz=106,slow=3.0,SNR=7.5
FINES PKP **PKPdf** 04 32 13.2 +0.1
comp=Z,7.7nm,0.5s,baz=53,slow=3.2,SNR=18
FINES SKPbc **SKPab** 04 34 55.2 -0.7
comp=Z,11nm,0.9s,baz=41,slow=2.6,SNR=10.0
VRH Novokhopyorsk 134.75 326 *e*PKiKP **PKPdf** 04 32 16.4 +1.3
VRH pmax pmax
comp=Z,30nm,0.6s
OBN Obninsk 134.96 333 PKP **PKPdf** 04 32 16.8 +1.4
comp=Z,21nm,0.4s,baz=357,slow=17,SNR=4.0
OBN SKPbc **SKPab** 04 34 59.2 -1.9
comp=Z,25nm,0.4s,baz=68,slow=2.2,SNR=5.6
OBN Obninsk 134.96 333 *e*PKiKP **PKPdf** 04 32 16.0 +0.6
OBN *e* 04 34 59.3
OBN PPP PPP 04 37 58.0
OBN pmax pmax
comp=Z,6.0nm,0.4s
VSR Storozhevoye 136.09 327 *e*PKiKP **PKPdf** 04 32 17.3 -0.3
VSR pmax pmax
comp=Z,30nm,1.3s
VSU Vasula 136.11 342*d i*PKiKP **PKPdf** 04 32 19.2 +1.8
NC303 NORSAR Array S 136.74 353 *e*PKPpre PKPpre 04 32 12.0
NB2 NORSAR Subarra 136.93 354 PKP PKPpre 04 32 10.9
comp=Z,3.2nm,0.6s,baz=14,slow=3.8
NOA NORSAR Array B 136.93 354 PKhKP PKPpre 04 32 08.8
comp=Z,3.0nm,0.7s,baz=22,slow=2.5,SNR=10.0
NOA PKP **PKPdf** 04 32 19.3 +0.4
comp=Z,2.5nm,0.5s,baz=14,slow=3.9,SNR=10.0
NCK Nalchik 137.11 315ǁ*i*PKiKP **PKPdf** 04 32 19.4 -0.4
ZEI Tsey 137.17 314 *i*PKiKP **PKPdf** 04 32 19.0 -1.2
GNI Garni 137.46 310 PKP **PKPdf** 04 32 20.4 -0.3
comp=Z,6.7nm,0.5s,baz=353,slow=1.9,SNR=5.7
GNI PP **PP** 04 35 11.8 -2.1
comp=Z,5.9nm,0.5s,baz=17,slow=14,SNR=3.7
GNI Garni 137.46 310 *i*PKiKP **PKPdf** 04 32 19.9 -0.8
KBZ Khabaz 137.49 315 PKP **PKPdf** 04 32 20.9 +0.4
comp=Z,4.1nm,0.9s,baz=133,slow=2.1,SNR=7.1
KBZ PP **PP** 04 35 11.3 -2.3

comp=Z,2.3nm,0.7s,baz=110,slow=5.6,SNR=3.9
HFS Hagfors 137.50 351 PKhKP PKPpre 04 32 10.1
comp=Z,4.3nm,0.4s,baz=64,slow=3.4,SNR=39
HFS PKP **PKPdf 04 32 19.9 0.0**
comp=Z,7.5nm,0.8s,baz=48,slow=2.2,SNR=5.8
KVAR Kislovodsk Arr 137.53 316 PKP **PKPdf 04 32 21.7 +1.0**
comp=Z,3.1nm,0.4s,baz=39,slow=6.0,SNR=3.0
KVAR PP **PP 04 35 11.0 -3.0**
comp=Z,3.0nm,0.5s,baz=73,slow=9.2,SNR=4.8
KIV Kislovodsk 137.54 316 *e*PKIKP **PKPdf 04 32 18.3 -2.4**
KIV pmax pmax
comp=Z,9.0nm,1.0s
LSZ Lusaka 137.78 219 *e*PKIKP **PKPdf 04 32 21.7 -0.3**
LSZ Lusaka 137.78 219 *e*PKPdf **PKPdf 04 32 21.7 -0.3**
KMBO Kilima Mbogo 140.33 244 PKhKP PKPpre 04 32 21.4
comp=Z,1.6nm,0.4s,baz=125,slow=5.3,SNR=7.1
KMBO PKP **PKiKP 04 32 29.7 +0.1**
comp=Z,3.7nm,0.8s,baz=33,slow=3.9,SNR=5.9
KMBO SKPbc **SKiKP 04 35 17.6 +2.0**
comp=Z,1.6nm,0.8s,baz=47,slow=4.8,SNR=3.9
SUW Suwalki 140.92 340 *e*PKP PKPpre 04 32 22.3
SUW Suwalki 140.92 340 *e*PKHKP PKPpre 04 32 22.3
AKASG Malin Array Be 141.22 332 PKhKP PKPpre 04 32 20.1
comp=Z,6.8nm,0.3s,baz=42,slow=4.2,SNR=42
AKASG PKP **PKiKP 04 32 29.4 -0.5**
comp=Z,6.3nm,0.4s,baz=42,slow=3.0,SNR=16
AKASG SKPbc **SKiKP 04 35 17.2 +1.3**
comp=Z,0.3nm,0.3s,baz=39,slow=3.0,SNR=5.9
AKASG PP **PP 04 35 31.0 -4.7**
comp=Z,4.0nm,0.9s,baz=42,slow=5.5,SNR=7.8
KIEV Kiev 141.24 332 *i* PKHKP PKPpre 04 32 21.7
KIEV *i* 04 32 30.0
KIEV Kiev 141.24 332 *e*PKPpre PKPpre 04 32 20.7
AK11 Malin Array Si 141.26 332 *e*PKPpre PKPpre 04 32 21.6
KBSD Kabsdagh 141.56 307 *i* P PKPpre 04 32 21.3
KBSD Kabsdagh 141.56 307 *e*P PKPpre 04 32 23.0
SFNV Sufian 142.07 306 *e*P PKPpre 04 32 25.8
SIM Simferopol' 142.43 322*d i*PKIKP **PKPdf 04 32 27.5 -1.8**
SIM pmax pmax
comp=Z,140nm,1.0s
EKA Eskdalemuir Ar 142.94 5 PKhKP PKPpre 04 32 26.4
comp=Z,1.4nm,0.4s,baz=325,slow=2.8,SNR=22
KSRV Kasrt alli 143.10 306 *i* P PKPab 04 32 27.2 -1.2
KSRV Kasrt alli 143.10 306 *e*P PKPbc 04 32 29.2 +0.3
GKP Gorka Klasztor 143.27 345 *e*PKP PKPbc 04 32 29.2 +0.3
GKP Gorka Klasztor 143.27 345 *e*PKIKP PKPbc 04 32 29.2 +0.4
SORM Soroca 143.46 330‖ *i* P PKPab 04 32 29.2 -0.2
SORM Soroca 143.46 330‖ PKIKP PKPab 04 32 29.2 -0.2
SLMH Al Salmeh 143.81 307 *i* P PKPbc 04 32 30.6 -0.5
SLMH Al Salmeh 143.81 307 *e*P **PKPdf 04 32 31.6 -0.5**
KIS Kishinev 144.03 328‖ *i*P PKPbc 04 32 31.0 -0.4
KIS XM 04 32 32.5
comp=Z,400nm,1.2s
KIS Kishinev 144.03 328‖ *i*PKIKP PKPbc 04 32 31.0 -0.4
KIS pmax pmax
comp=Z,360nm,1.2s
LVV L'vov 144.06 336‖ *i*PKIKP **PKPdf 04 32 31.9 -0.1**
LEOM Leova 144.67 328‖ *i*P **PKPab 04 32 34.1 +0.1**
LEOM Leova 144.67 328‖‖ PKIKP **PKPab 04 32 34.1 +0.1**
KWP Kalwaria Pacla 144.72 337 *e*PKP PKPbc 04 32 33.8 +0.2
KWP Kalwaria Pacla 144.72 337 *e*PKIKP PKPbc 04 32 33.8 +0.3
ROOS tl_alroos 144.96 304 *i* P **PKPdf 04 32 34.1 -0.1**
ROOS tl_alroos 144.96 304 *e*P PKPbc 04 32 35.2 +0.4
PRAR RASCA 145.01 331‖ *i*P **PKPbc 04 32 34.5 0.0**
OJC Ojcow 145.25 340 *e*PKP **PKPbc 04 32 34.7 -0.4**
OJC Ojcow 145.25 340 *e*PKIKP **PKPbc 04 32 34.7 -0.4**
OJC Ojcow 145.25 340 *e*PKPdf **PKPbc 04 32 34.7 -0.4**
TLCR 145.25 326‖ *i*P **PKPbc 04 32 35.7 +0.5**
TLCR 145.25 326‖‖ PKP2 **PKPbc 04 32 35.7 +0.5**
ZALF Zalf 145.28 302 *i* P **PKPdf 04 32 34.0 -0.8**
ZALF Zalf 145.28 302 *e*P **PKPbc 04 32 36.1 +0.3**
TESR Tescani 145.43 330‖ *i*P **PKPbc 04 32 36.2 +0.5**
STHS Stebnicka Huta 145.44 338 *e*PKP2 **PKPab 04 32 36.6 -0.3**
STHS Stebnicka Huta 145.44 338 *e*PKP **PKPab 04 32 36.6 -0.3**
KOLS Kolonicke sedl 145.45 336 *e*PKP2 **PKPab 04 32 36.6 -0.4**
KOLS Kolonicke sedl 145.45 336 *e*PKP **PKPab 04 32 36.6 -0.4**
BR131 Keskin Array S 145.47 315 *e*PKPdf **PKPdf 04 32 35.4 +0.4**
BRTR Keskin Array B 145.47 315 PKP **PKPdf 04 32 35.0 0.0**
comp=Z,38nm,0.8s,baz=147,slow=3.4,SNR=148
BRTR PKPbc **PKPbc 04 32 36.6 +0.3**
comp=Z,38nm,0.8s,baz=100,slow=1.2,SNR=152
BRTR SKPbc **SKiKP 04 35 28.1 +2.9**
comp=Z,2.1nm,0.9s,baz=146,slow=2.4,SNR=4.1
CFR Carcaliu 145.61 327‖ *i*P **PKPbc 04 32 36.8 +0.5**
CFR Carcaliu 145.61 327‖‖ PKP2 **PKPbc 04 32 36.8 +0.5**
MARH Ras Al Marh 145.64 304 *i* P **PKPbc 04 32 37.3 +0.2**
MARH Ras Al Marh 145.64 304 *e*P **PKPab 04 32 38.7 0.0**
CWF Charnwood Fore 145.65 4 *e*PKPdf **PKPdf 04 32 34.2 -0.4**
UZH Uzhgorod 145.69 336 *e*PKP2 **PKPbc 04 32 36.5 +0.1**
KSP Ksiaz 145.73 344 *e*PKP **PKPbc 04 32 37.2 +0.7**
KSP Ksiaz 145.73 344 *e*PKP2 **PKPbc 04 32 37.2 +0.7**
ODBI Odobesti 145.76 328‖ *i*P **PKPab 04 32 38.5 +0.2**
NIE Niedzica 145.77 339 *e*PKP **PKPbc 04 32 36.5 -0.2**
NIE Niedzica 145.77 339 *e*PKIKP **PKPbc 04 32 36.5 -0.2**
CRVS Cervenica-Dubn 145.78 337 *e*PKP2 **PKPab 04 32 37.6 -0.7**
CRVS Cervenica-Dubn 145.78 337 *e*PKP **PKPab 04 32 37.6 -0.7**
SALA Sala 145.82 301 *i* P **PKPdf 04 32 36.5 +0.7**
SALA Sala 145.82 301 *e*P **PKPbc 04 32 38.2 +0.6**
TOTH TOTAH 145.88 303 *i* P **PKPbc 04 32 37.8 +0.3**
TOTH TOTAH 145.88 303 *e*P **PKPbc 04 32 38.3 +0.8**
PLOR Plostina 145.90 329‖ *i*P **PKPbc 04 32 37.4 +0.2**
PLOR Plostina 145.90 329‖‖ PKP2 **PKPbc 04 32 37.4 +0.2**
TIRR Tirgusor 145.95 325‖ *i*P **PKPbc 04 32 37.7 +0.5**
TIRR Tirgusor 145.95 325 *e*PKIKP **PKPdf 04 32 35.7 +0.3**
TIRR *e* 04 32 38.0
TIRR Tirgusor 145.95 325 *e*PKPdf **PKPdf 04 32 35.6 +0.3**
TIRR *e*PKPbc **PKPbc 04 32 38.0 +0.8**
ANTO Ankara 145.96 315 *e*PKIKP **PKPdf 04 32 36.3 +0.6**
ANTO *e* 04 32 38.8
ANTO Ankara 145.96 315 *e*PKPdf **PKPdf 04 32 36.2 +0.6**
ANTO *e*PKPab **PKPab 04 32 38.8 -0.6**
BMR Baia Mare 145.97 334⇑ *i*P **PKPbc 04 32 38.0 +0.8**
BMR Baia Mare 145.97 334⇑⇑ PKP2 **PKPbc 04 32 38.0 +0.8**
BR231 Keskin MP Arra 145.99 315 *e*PKPdf **PKPdf 04 32 35.9 +0.1**
HARR Harsova 146.05 326‖ *i*P **PKPbc 04 32 38.3 +0.8**
HARR Harsova 146.05 326‖‖ PKP2 **PKPbc 04 32 38.3 +0.8**
CLL Collm 146.06 348 *e*PKPdf **PKPdf 04 32 36.0 +0.6**
CLL ⇑ *i*PKPbc **PKPbc 04 32 38.2 +0.9**
comp=Z,114nm,0.8s
CLL Collm 146.06 348⇑ *e*PKIKP **PKPdf 04 32 36.0 +0.6**
CLL *i* 04 32 38.2
CLL pmax pmax
comp=Z,114nm,0.8s
CLL Collm 146.06 348 *e*PKPdf **PKPdf 04 32 35.7 +0.3**
CLL *e*PKPbc **PKPbc 04 32 37.7 +0.3**
TLB Topalu 146.06 326‖ *i*P **PKPbc 04 32 38.1 +0.6**
TLB Topalu 146.06 326‖‖ PKP2 **PKPbc 04 32 38.1 +0.6**
ARCR ARCALIA 146.06 332‖ *i*P **PKPab 04 32 39.0 -0.5**
GRER 146.07 328‖ *i*P **PKPbc 04 32 38.3 +0.7**
OKC Ostrava-Krasne 146.10 341⇑ *e*PKP **PKPbc 04 32 38.1 +0.6**
OKC *e*PKPab **PKiKP 04 32 40.3 +0.3**
OKC Ostrava-Krasne 146.10 341 *e*PKP2 **PKPbc 04 32 38.1 +0.6**
UPC Upice 146.11 344⇑ *e*PKP **PKPbc 04 32 38.1 +0.6**
UPC *e*PKPab **PKiKP 04 32 40.9 +0.9**
UPC Upice 146.11 344 *e*PKP2 **PKPbc 04 32 38.1 +0.6**
DPC Dobruska-Polom 146.17 344 *e*PKPDF **PKPdf 04 32 36.4 +0.7**
DPC ⇑ *e*PKP **PKPbc 04 32 38.5 +0.7**
DPC *e*PKPab **PKiKP 04 32 41.3 +1.1**
DPC Dobruska-Polom 146.17 344 *e*PKIKP **PKPdf 04 32 36.4 +0.7**
DPC *e* 04 32 38.5
BRBR Barbar 146.25 303 *e*P **PKPbc 04 32 38.6 -0.1**
BRBR Barbar 146.25 303 *e*P **PKPab 04 32 40.0 -1.0**
BRG Berggiesshubel 146.27 346 *i* PKP **PKPdf 04 32 36.7 +0.9**
comp=Z,11nm,1.0s
BRG *i* 04 32 39.0
comp=Z,62nm,0.8s
BRG pPKP **pPKPdf 04 34 39.1 -1.4**
comp=Z,3.5nm,1.0s
BRG Berggiesshubel 146.27 346 *i* PKIKP **PKPdf 04 32 36.7 +0.9**
BRG *i* 04 32 39.0
BRG 04 34 39.1
BRG pmax pmax
comp=Z,11nm,1.0s
MANR Mangalia 146.27 324‖ *i*P **PKPbc 04 32 38.7 +0.5**
LANS Liptovska Anna 146.28 339 *e*PKP2 **PKPab 04 32 39.5 -0.8**
LANS Liptovska Anna 146.28 339 *e*PKP **PKPab 04 32 39.5 -0.8**
KRLC Kraliky 146.29 343⇑ *e*PKP **PKPbc 04 32 38.6 +0.5**
KRLC Kraliky 146.29 343 *e*PKP2 **PKPbc 04 32 38.6 +0.5**
WTSB Winterswijk 146.32 355 *e*P **PKPbc 04 32 38.3 +0.3**
comp=Z,112nm,1.1s
MORC Moravsky Berou 146.34 342‖ *i*P **PKPbc 04 32 37.2 -1.0**
MORC Moravsky Berou 146.34 342‖‖ PKIKP **PKPbc 04 32 37.2 -1.0**
MORC Moravsky Berou 146.34 342 *e*PKPdf **PKPbc 04 32 37.3 -1.0**
MORC *e*PKPbc **PKPab 04 32 39.0 -1.5**
PVCC Panska Ves 146.45 346⇑ *e*PKP **PKPbc 04 32 39.4 +0.9**
PVCC *e*PKPAB **PKPab 04 32 41.8 +0.9**
PVCC Panska Ves 146.45 346 *e*PKP2 **PKPbc 04 32 39.4 +0.9**
PVCC MLR MLR
comp=Z,1μm,14.9s
TCHB Talchebab 146.45 302 *i* P **PKPbc 04 32 39.1 0.0**
TCHB Talchebab 146.45 302 *e*P **PKPbc 04 32 39.7 +0.6**
ISR Istrita 146.47 328‖ *i*P **PKPbc 04 32 39.4 +0.6**
ISR Istrita 146.47 328‖‖ PKP2 **PKPbc 04 32 39.4 +0.6**
KECS Kecovo 146.49 338 *e*PKP2 **PKPbc 04 32 39.0 +0.4**
KECS Kecovo 146.49 338 *e*PKP **PKPbc 04 32 39.0 +0.4**
MLR Muntele Rosu 146.50 329 PKP **PKPdf 04 32 36.3 -0.2**
comp=Z,7.1nm,0.4s,baz=335,slow=6.2,SNR=101
MLR PKPbc **PKPbc 04 32 38.9 0.0**
comp=Z,7.1nm,0.4s,baz=15,slow=5.9,SNR=102
MLR Muntele Rosu 146.50 329‖ *i*P **PKPbc 04 32 39.1 +0.1**
PSN Preselentsi 146.58 325 *e*P **PKPbc 04 32 39.7 +0.7**
CJR Cluj-Napoca 146.68 333‖ *i*P **PKPbc 04 32 39.9 +0.6**
CJR Cluj-Napoca 146.68 333‖‖ PKP2 **PKPbc 04 32 39.9 +0.6**
SECR 146.77 328‖ *i*P **PKPbc 04 32 40.1 +0.6**
MMAI Mount Meron Ar 146.80 303 PKPbc **PKPbc 04 32 40.4 +0.3**
comp=Z,26nm,0.4s,baz=74,slow=6.2,SNR=56
PRU Pruhonice 146.96 345⇑ *e*PKP **PKPbc 04 32 40.3 +0.5**
PRU *e*PKPAB **PKPab 04 32 43.6 +0.7**
PRU Pruhonice 146.96 345 *e*PKP2 **PKPbc 04 32 40.3 +0.5**
GOPC GO Pecny, Ondr 146.96 345⇑ *e*PKP **PKPbc 04 32 40.3 +0.4**
GOPC *e*PKPAB **PKPab 04 32 43.7 +0.7**
GOPC GO Pecny, Ondr 146.96 345 *e*PKP2 **PKPbc 04 32 40.3 +0.4**
VOIR 146.98 330⇑ *i*P **PKPbc 04 32 40.8 +0.6**
VOIR 146.98 330⇑⇑ PKP2 **PKPbc 04 32 40.8 +0.6**
DRGR 147.00 334‖ *i*P **PKPbc 04 32 40.5 +0.3**
DRGR 147.00 334‖‖ PKP2 **PKPbc 04 32 40.5 +0.3**
VRAC Vranov 147.03 342 PKPbc **PKPbc 04 32 40.9 +0.8**
comp=Z,18nm,0.8s,baz=36,slow=2.3,SNR=26
VRAC Vranov 147.03 342⇑ *i*P **PKPbc 04 32 40.9 +0.8**
VYHS Vyhne 147.06 339 *e*PKP2 **PKPbc 04 32 41.5 +1.3**
VYHS Vyhne 147.06 339 *e*PKP **PKPbc 04 32 41.5 +1.3**
VYHS *e* 04 32 44.7
PSZ Piszkesteto 147.18 338‖ *i*P **PKPbc 04 32 37.2 -0.5**
PSZ Piszkesteto 147.18 338 *e*PKIKP **PKPdf 04 32 37.2 -0.3**
PSZ *e* 04 32 41.4
PSZ Piszkesteto 147.18 338‖ *e*SKKPdf **PKPdf 04 32 37.1 -0.3**
PSZ *e*PKPbc **PKPbc 04 32 41.4 +0.7**
PSZ Piszkesteto 147.18 338‖ *e*SKKPdf **PKPbc 04 32 40.9 +0.3**
NKC Novy Kostel 147.19 348 *e*PKPDF **PKPdf 04 32 38.2 +0.8**
NKC ⇑ *e*PKP **PKPbc 04 32 40.9 +0.4**
NKC Novy Kostel 147.19 348 *e*PKIKP **PKPdf 04 32 38.2 +0.8**
NKC *e* 04 32 40.9
ARR Arges 147.23 330‖ *i*P **PKPbc 04 32 42.4 +1.6**
PRD Provadia 147.33 325 *e*P **PKPbc 04 32 41.6 +0.6**
SMOL Smolenice 147.49 341 *e*PKP2 **PKPbc 04 32 43.0 +1.7**
SMOL Smolenice 147.49 341 *e*PKP **PKPbc 04 32 43.0 +1.7**
SMOL *e* 04 32 47.0
BEBN Eben Emael 147.57 356 PKPbc **PKPbc 04 32 42.2 +0.8**
LOT Lotru 147.57 331‖ *i*P **PKPbc 04 32 42.0 +0.2**
HGN Heimansgroeve 147.58 355 *e*P **PKPbc 04 32 41.5 +0.1**
comp=Z,42nm,1.1s
HUMR Humele 147.67 329‖ *i*P **PKPbc 04 32 41.7 -0.2**
MEM Membach 147.73 355 PKPbc **PKPbc 04 32 41.9 +0.1**
CSS Mathiatis 147.75 307 P **PKPbc 04 32 42.3 -0.1**
CSS Mathiatis 147.75 307 *e*PKPdf **PKPdf 04 32 37.8 -1.0**
CSS *e*PKPbc **PKPbc 04 32 42.3 -0.1**
SIRR Siria 147.86 334‖ *i*P **PKPbc 04 32 43.0 +0.7**
BUD Budapest 147.86 338 *e*SKKPdf **PKPbc 04 32 43.1 +0.8**
SNF Seneffe 147.94 357 PKPbc **PKPbc 04 32 43.2 +0.9**
BCLA Clavier 147.97 356 PKPbc **PKPbc 04 32 42.9 +0.5**
KHC Kasperske Hory 147.98 346 *e*PKPDF **PKPdf 04 32 39.4 +0.7**
KHC ⇑ *e*PKP **PKPbc 04 32 43.2 +0.6**
KHC *ex* x 04 34 55.7
KHC Kasperske Hory 147.98 346 *e*PKHKP **PKPdf 04 32 39.5 +0.7**
KHC Kasperske Hory 147.98 346 *e*PKPdf **PKPdf 04 32 39.5 +0.7**
KHC *e*PKPbc **PKPbc 04 32 43.2 +0.6**
GEC2 GERESS Array S 148.22 345 *e*PKHKP **PKPdf 04 32 39.8 +0.6**
GEC2 GERESS Array S 148.22 345 *e*PKPdf **PKPdf 04 32 39.8 +0.6**
GEC2 *e*PKPbc **PKPbc 04 32 43.8 +0.5**
GERES GERESS Array B 148.22 345 PKP **PKPdf 04 32 38.8 -0.4**
comp=Z,27nm,0.7s,baz=22,slow=1.4,SNR=115
GERES PKPbc **PKPbc 04 32 43.1 -0.2**
comp=Z,27nm,0.7s,baz=25,slow=3.2,SNR=155
GEA0 GERESS Array S 148.23 345 *e*PKPdf **PKPdf 04 32 39.0 -0.1**
GEA0 *e*PKPbc **PKPbc 04 32 43.8 +0.5**
JMB Yambol 148.26 324 *e*P **PKPbc 04 32 44.2 +0.8**
DOU Dourbes 148.33 357 PKPbc **PKPbc 04 32 43.6 +0.3**
BZS Buzias 148.39 333‖ *i*P **PKPbc 04 32 43.9 +0.2**
BZS Buzias 148.39 333‖‖ PKP2 **PKPbc 04 32 43.9 +0.2**
SRE Strehaia 148.43 331‖ *i*P **PKPbc 04 32 44.3 +0.8**
SRE Strehaia 148.43 331‖‖ PKP2 **PKPbc 04 32 44.6 +0.8**
CONA Conrad Observa 148.49 342 *i* PKiKP **PKiKP 04 32 44.5 -0.6**
comp=Z,99nm,1.3s,SNR=39
ISP Isparta 148.52 314 P **PKPbc 04 32 43.6 -0.8**
ISP Isparta 148.52 314‖ *i*P **PKPbc 04 32 44.2 -0.2**
ISP Isparta 148.52 314 *e*PKHKP **PKPbc 04 32 43.6 -0.8**
ISP Isparta 148.52 314 *e*PKPbc **PKPbc 04 32 43.6 -0.8**
EDRB Edirne 148.58 323 P **PKPbc 04 32 44.3 +0.1**
EDRB Edirne 148.58 323 P **PKPbc 04 32 44.3 +0.1**
WLF Walferdange 148.66 355 *e*PKHKP **PKPdf 04 32 40.9 +1.2**
WLF Walferdange 148.66 355 *e*PKPdf **PKPdf 04 32 40.9 +1.2**
WLF *e*PKPbc **PKiKP 04 32 45.4 +0.2**
MOA Molln 149.00 344 *i* PKiKP **PKPbc 04 32 45.4 +0.3**
comp=Z,37nm,1.4s,SNR=16
MDVR Moldovita 149.01 332‖ *i*P **PKPbc 04 32 45.5 +0.2**
MPEP Malo Peshtene 149.14 328 *e*P **PKPbc 04 32 46.0 +0.4**
LANF Langenberg 149.16 353 PKP **PKPbc 04 32 46.6 +1.1**
STU Stuttgart 149.18 351 *e*PKHKP **PKPdf 04 32 41.4 +0.8**
STU Stuttgart 149.18 351 *e*PKPdf **PKPdf 04 32 41.4 +0.8**
STU *e*PKPbc **PKiKP 04 32 46.4 0.0**
ARSA Arzberg 149.20 342 *i* PKPbc **PKPbc 04 32 45.6 -0.1**
comp=Z,17nm,0.9s,SNR=8.7
KULA Kula-Manisa 149.41 316 P **PKPbc 04 32 46.6 +0.1**
KULA Kula-Manisa 149.41 316 P **PKPbc 04 32 46.6 +0.1**
KDZ Kurdzhali 149.45 324 *e*P **PKPbc 04 32 46.7 +0.3**
PGB Panagyurishte 149.50 327 *e*P **PKPbc 04 32 46.7 +0.1**
BEHE Becsehely 149.51 340‖ *e*PP **PKPbc 04 32 46.2 -0.2**
PLD Plovdiv 149.53 326 *e*P **PKPbc 04 32 46.2 -0.3**
ALN Alexandroupoli 149.59 323 P **PKPbc 04 32 45.8 -0.9**
ALN Alexandroupoli 149.59 323 PKHKP **PKPbc 04 32 45.8 -0.9**
ALN Alexandroupoli 149.59 323 P **PKPbc 04 32 45.8 -0.9**
ENEZ Enez 149.63 322 P **PKPbc 04 32 46.4 -0.4**
BFO Black Forest 149.73 352 *e*PKHKP **PKPdf 04 32 42.1 +0.6**
BFO Black Forest 149.73 352 *e*PKPdf **PKPdf 04 32 42.1 +0.6**
BFO *e*PKPbc **PKPbc 04 32 47.0 +0.2**
WLS Welschbruch 149.78 353 PKP **PKPbc 04 32 47.9 +0.9**
RZN Rozhen 149.81 325 *e*P **PKPbc 04 32 47.7 +0.2**
SOKA Soboth 149.86 342 *i* PKPbc **PKPbc 04 32 47.0 -0.3**
comp=Z,56nm,1.1s,SNR=14
KBA Koelnbreinsper 149.95 345 *i* PKPbc **PKPbc 04 32 47.1 -0.6**
comp=Z,32nm,0.6s,SNR=23
VTS Vitosha 149.96 328 *e*P **PKPbc 04 32 47.9 +0.1**
ECH Echery 149.99 353 PKP **PKPbc 04 32 48.2 +0.7**
KSL Kastellorizon 150.00 312 P **PKPbc 04 32 47.8 0.0**
KSL Kastellorizon 150.00 312 P **PKPbc 04 32 47.8 0.0**
THEF They Montfort 150.10 355 PKP **PKPbc 04 32 48.7 +1.0**
WATA Walderalm 150.12 347 *i* PKiKP **PKPbc 04 32 47.8 -0.2**
comp=Z,30nm,0.5s,SNR=16
RETA Reutte 150.15 348 *i* PKiKP **PKiKP 04 32 48.3 -0.2**
comp=Z,37nm,1.2s,SNR=12
OBKA Obir 150.15 343 *i* PKPbc **PKPbc 04 32 47.7 -0.3**
comp=Z,18nm,0.8s,SNR=9.7
SMTH Samothraki Isl 150.17 322 P **PKPbc 04 32 47.6 -0.5**
SMTH Samothraki Isl 150.17 322 P **PKPbc 04 32 47.6 -0.5**
WTTA Wattenberg 150.18 347 *i* PKiKP **PKPbc 04 32 48.3 +0.1**
comp=Z,46nm,0.6s,SNR=18
MOTA Moosalm 150.22 348 *i* PKiKP **PKPbc 04 32 48.0 -0.2**
comp=Z,40nm,0.8s,SNR=14
MYKA Terra Mystica 150.29 344 *i* PKPbc **PKPbc 04 32 48.1 -0.2**
comp=Z,42nm,0.6s,SNR=17
DIVS Divibare 150.30 333 P **PKPbc 04 32 48.5 +0.1**
MOF Molkenrain 150.35 353 PKP **PKPbc 04 32 49.0 +0.6**
KAVA Kavala 150.40 324 P **PKPbc 04 32 48.5 -0.1**
KAVA Kavala 150.40 324 P **PKPbc 04 32 48.5 -0.1**
YER Yerkesik 150.40 314 P **PKPbc 04 32 49.1 +0.2**
YER Yerkesik 150.40 314 PKIKP **PKPbc 04 32 49.1 +0.2**
YER Yerkesik 150.40 314 P **PKPbc 04 32 49.1 +0.2**
MMB Musomiste 150.41 326 *e*P **PKPbc 04 32 48.6 -0.1**
LEGS Legarje 150.43 341 *i* PKPbc **PKPbc 04 32 48.4 -0.1**
ABTA Abfaltersbach 150.47 345 *i* PKPbc **PKPbc 04 32 48.3 -0.4**
comp=Z,86nm,0.6s
DAVA Damuels 150.50 349 *i* PKiKP **PKPbc 04 32 49.0 +0.1**
comp=Z,39nm,0.7s,SNR=23
NVR Nevrokopi 150.51 325 P **PKPbc 04 32 48.7 -0.2**
NVR Nevrokopi 150.51 325 P **PKPbc 04 32 48.7 -0.2**
KKB Krupnik 150.55 327 *e*P **PKPbc 04 32 49.0 0.0**
LJU Ljubljana 150.58 342 *e*PKPdf **PKPdf 04 32 42.5 -0.4**
LJU *i* PKPbc **PKiKP 04 32 49.6 +0.3**
FETA Feichten 150.60 348 *i* PKiKP **PKPbc 04 32 49.3 +0.1**
comp=Z,59nm,1.0s
CADS Cadrg 150.64 343 *e*PKPdf **PKPdf 04 32 42.6 -0.5**
CADS *i* PKPbc **PKPbc 04 32 48.9 -0.2**
OZLJ Ozalj 150.69 341 P **PKPbc 04 32 48.9 -0.2**
LIA Limnos Island 150.74 322 P **PKPbc 04 32 48.9 -0.5**
LIA Limnos Island 150.74 322 P **PKPbc 04 32 48.9 -0.5**
BOJS Bojanci 150.85 341 *i* PKPbc **PKPbc 04 32 50.5 +1.0**
LOMF Lomont 150.88 353 PKP **PKPbc 04 32 50.6 +0.9**
DAVOX Davos/Dischmat 150.99 349 PKP **PKPdf 04 32 44.2 +0.5**
comp=Z,5.7nm,0.7s,baz=248,slow=2.0,SNR=12
DAVOX PKPbc **PKPbc 04 32 50.1 +0.1**
comp=Z,59nm,0.6s,baz=257,slow=3.7,SNR=87
FUORN Ofenpass-Fuorn 151.07 348 *e*PKPdf **PKPdf 04 32 44.6 +0.7**
FUORN *e*PKPbc **PKiKP 04 32 50.6 -0.1**
TRI Trieste 151.11 343 *e*PKIKP **PKPdf 04 32 43.7 0.0**
TRI *e* 04 32 49.7
TRI Trieste 151.11 343 *e*PKPdf **PKPdf 04 32 43.7 0.0**
TRI *e*PKPbc **PKPbc 04 32 49.7 -0.4**
OUR Ouranopolis 151.14 324 P **PKPbc 04 32 49.4 -0.9**
OUR Ouranopolis 151.14 324 PKIKP **PKPbc 04 32 49.4 -0.9**
OUR Ouranopolis 151.14 324 P **PKPbc 04 32 49.4 -0.9**
KNT Kendrikon 151.16 326 P **PKPab 04 33 01.0 +0.4**
PLE Pljevlja 151.18 333⇑ *i*PKP **PKPbc 04 32 50.3 -0.2**
VAY Valandovo 151.21 327 *i* PKP **PKPbc 04 32 50.4 -0.1**
SKO Skopje 151.30 329 *i* PKP **PKPbc 04 32 51.3 +0.6**
IVA Berane 151.33 332⇑ *i*PKP **PKPbc 04 32 50.8 0.0**
TUE Stuetta 151.39 349 *e*PKPdf **PKPdf 04 32 44.3 0.0**
TUE *e*PKPbc **PKiKP 04 32 51.8 +0.5**
PLG Polygyros 151.41 324 P **PKPbc 04 32 50.5 -0.5**
PLG Polygyros 151.41 324 PKIKP **PKPbc 04 32 50.5 -0.5**
PLG Polygyros 151.41 324 P **PKPbc 04 32 50.5 -0.5**
UPM Unac-Piva 151.49 334⇑ *i*PKP **PKPbc 04 32 50.5 -0.8**
PVY Plav 151.52 332⇑ *i*PKP **PKPbc 04 32 50.9 -0.4**
UDBI Udbina 151.55 339 P **PKPbc 04 32 51.5 +0.2**
NKY Niksic 151.77 333⇑ *i*PKP **PKPbc 04 32 51.5 -0.3**
SENIN Lac Senin/Sane 151.80 352 *e*PKPdf **PKPdf 04 32 44.9 -0.1**
SENIN *e*PKPbc **PKPbc 04 32 52.0 +0.1**
NVLJ Novalja 151.81 340 P **PKPbc 04 32 51.5 -0.2**
NKME Niksic 151.82 333⇑ *i*PKP **PKPbc 04 32 51.2 -0.7**
BRY Bratogost 151.89 334⇑ *i*PKP **PKPbc 04 32 51.6 -0.5**
OG01 Vacheresse 151.91 353 PKP **PKPbc 04 32 53.1 +1.1**
PDG Podgorica 151.96 332‖ *i*P **PKPbc 04 32 52.0 -0.1**
TTG Podgorica 151.96 332⇑ *i*PKP **PKPbc 04 32 50.5 -1.6**
CEME Cevo 152.02 333⇑ *i*PKP **PKPbc 04 32 51.7 -0.6**
LIT Litokhoron 152.13 325 P **PKPbc 04 32 51.6 -1.0**
LIT Litokhoron 152.13 325 PKIKP **PKPbc 04 32 51.6 -1.0**
LIT Litokhoron 152.13 325 P **PKPbc 04 32 51.6 -1.0**
DRME Dracevica, Mon 152.19 332⇑ *i*PKP **PKPbc 04 32 52.7 +0.1**
BUM Brajici-Budva 152.23 333⇑ *i*PKP **PKPbc 04 32 52.2 -0.6**
XOR Xorichti 152.25 323 P **PKPbc 04 32 51.1 -1.8**
XOR Xorichti 152.25 323 P **PKPbc 04 32 51.1 -1.8**
OHR Ohrid 152.27 329 *i* PKP **PKPbc 04 32 53.2 +0.3**
HCY Herceg Novi 152.28 333⇑ *i*PKP **PKPbc 04 32 51.6 -1.2**
ULC Ulcinj 152.34 332⇑ *i*PKP **PKPbc 04 32 52.7 -0.3**
AGO Saint Agoulin 152.43 358 PKP **PKPbc 04 32 54.1 +1.0**
PLDF La Plantade 152.50 358 PKP **PKPbc 04 32 53.8 +0.5**
TIR Tirane 152.54 330‖ *i*P **PKPbc 04 32 53.7 +0.3**
TIR Tirane 152.54 330 *e*PKIKP **PKPbc 04 32 53.1 -0.3**
TIR Tirane 152.54 330 *e*PKPbc **PKPbc 04 32 53.1 -0.3**
PYM Petit Puy Mans 152.74 359 PKP **PKPbc 04 32 54.8 +1.0**
KPRO Kipourio 152.84 326 P **PKPbc 04 32 54.1 -0.1**
LKR Lokris 152.84 322 P **PKPbc 04 32 53.5 -0.7**
LKR Lokris 152.84 322 P **PKPbc 04 32 53.5 -0.7**
AGG Agios Georgios 152.97 324 P **PKPbc 04 32 53.5 -1.0**
AGG Agios Georgios 152.97 324 *e*PKIKP **PKPdf 04 32 45.2 -1.5**
AGG *e* 04 32 53.8
AGG Agios Georgios 152.97 324 *e*PKPdf **PKPdf 04 32 45.2 -1.5**
AGG *e*PKPbc **PKPbc 04 32 53.8 -0.7**
SSB Saint Sauveur 153.14 356 *e*PKIKP **PKPdf 04 32 46.1 -0.6**
SSB Saint Sauveur 153.14 356 *e*PKPdf **PKPdf 04 32 46.1 -0.6**
SSB *e*PKPbc **PKiKP 04 32 55.5 +0.7**
LBL Lubilhac 153.25 358 PKP **PKPbc 04 32 56.0 +1.1**
DSF Desfina 153.27 322 P **PKPbc 04 32 54.0 -0.6**
DSF Desfina 153.27 322 P **PKPbc 04 32 54.6 -0.6**
LTK Loutraki 153.27 321 P **PKPbc 04 32 54.0 -1.1**
LTK Loutraki 153.27 321 P **PKPbc 04 32 54.0 -1.1**
LAST Lasithi 153.37 313 *e*PKPdf **PKPdf 04 32 46.8 -0.6**
ANX Ano Chora 153.50 323 P **PKPbc 04 32 55.7 0.0**
SERG Sergoula 153.54 323 P **PKPbc 04 32 55.4 -0.3**
LAKA Lakka 153.71 323 P **PKPbc 04 32 56.8 +0.7**
LAKA Lakka 153.71 323 P **PKPbc 04 32 56.8 +0.7**
IDI Anoyia 153.71 314 PKPbc **PKPbc 04 32 57.2 +0.9**
comp=Z,11nm,0.4s,baz=327,slow=11,SNR=16
KLV Kalavryta, Ach 153.74 322 P **PKPbc 04 32 56.4 +0.2**
**KLV Kalavryta, Ach 153.74

SLA eS Sn 04 15 13.5 +0.8
HJA Humahuaca 1.57 63 *i* P Pn 04 14 49.2 +1.8
AZAP Zapla 1.73 100 *i* P Pn 04 14 50.2 +1.5
LVC Limon Verde 2.24 305 P Pn 04 14 56.0 +1.9
comp=Z,6µm,0.3s,baz=130,slow=6.4,SNR=1472
LVC S Sn 04 15 27.3 +1.3
comp=Z,4µm,0.3s,baz=37,slow=20,SNR=23
LVC Limon Verde 2.24 305 *i* P Pn 04 14 56.1 +2.0
LVC *i* S Sn 04 15 27.7 +1.7
LVC Limon Verde 2.24 305 *e*Pn Pn 04 14 56.0 +1.9
LVC eSn Sn 04 15 22.3 -3.7
ASTB Santa Barbara 2.27 91 *e*P Pn 04 14 55.2 +1.0
FSA Cafayete 2.34 158 *i* P Pn 04 14 56.5 +1.5
PB06 IPOC Station P 2.71 296⇑ *i*P Pn 04 15 00.8 +1.5
PB06 *i* S Sn 04 15 35.4 +0.3
PB06 IAML 04 15 37.0
comp=N,3µm,0.5s
MOCB Mochara 2.92 24⇓ *i*Pn Pn 04 15 03.4 +1.4
MOCB ⇑ *i*Sn Sn 04 15 41.9 +1.8
PB09 IPOC Station P 3.01 314 *i* P Pn 04 15 03.9 +1.2
PB09 *i* S Sn 04 15 40.7 -0.7
PB09 IAML 04 15 43.6
comp=E,6µm,0.5s
AHML Horco Molle 3.19 153 *i* P Pn 04 15 05.7 +1.0
AHML eS Sn 04 15 44.4 -0.8
PB10 IPOC Station P 3.34 276⇑ *i*P Pn 04 15 07.8 +1.3
PB10 eS Sn 04 15 47.0 -1.3
PB10 IAML 04 15 50.5
comp=E,3µm,0.3s
PB10 IPOC Station P 3.34 276 *e*Pn Pn 04 15 07.7 +1.3
PB10 eSn Sn 04 15 48.1 -0.2
PB04 IPOC Station P 3.36 298 *i* P Pn 04 15 07.9 +1.0
PB04 *i* S Sn 04 15 47.6 -1.3
PB04 IAML 04 15 50.1
comp=N,2µm,0.5s
PB04 IPOC Station P 3.36 298 *e*Pn Pn 04 15 07.6 +0.7
PB04 eSn Sn 04 15 48.5 -0.4
PB07 IPOC Station P 3.50 308 *i* P Pn 04 15 09.5 +0.9
PB07 *i* S Sn 04 15 50.5 -1.6
PB07 IAML 04 15 52.5
comp=E,2µm,0.3s
PB01 IPOC Station P 3.72 320 *i* P Pn 04 15 11.7 +0.4
PB01 *i* S Sn 04 15 55.3 -1.6
PB01 IAML 04 15 56.1
comp=N,816nm,0.6s
PB01 IPOC Station P 3.72 320 *e*Pn Pn 04 15 11.7 +0.4
PB01 *e*Sn Sn 04 15 55.7 -1.1
CYA Choya 4.61 167 *e*P Pn 04 15 23.7 +1.4
LCO Las Campanas 6.08 213 *e*Pn Pn 04 15 40.5 -1.0
LCO eSn Sn 04 16 38.6 -13
BBOJ La Paz, Jacaqu 7.02 350⇑ *i*Pn Pn 04 15 55.2 +1.1
BBOE La Paz, Chanca 7.15 352⇑ *i*Pn Pn 04 15 57.2 +1.4
BBOD La Paz, Gloria 7.42 348⇑ *i*Pn Pn 04 16 00.2 +0.8
LPAZ La Paz 7.69 351 P Pn 04 16 03.1 +0.3
comp=N,1.6nm,0.3s,baz=120,slow=5.4,SNR=54
LPAZ S Sn 04 17 27.4 -2.5
comp=N,0.6nm,0.3s,baz=66,slow=19,SNR=4.5
LPAZ La Paz 7.69 351⇑ *i*Pn Pn 04 16 03.0 +0.1
BBOB La Paz, Bander 7.83 352⇑ *i*Pn Pn 04 16 04.8 +0.1
BBOB ⇑ *i*Sn Sn 04 17 33.1 -0.1
comp=N,10nm,0.5s
CPUP Villa Florida 9.03 107 P Pn 04 16 18.4 -1.3
comp=N,0.9nm,0.3s,baz=285,slow=10,SNR=54
CPUP Villa Florida 9.03 107 *e*Pn Pn 04 16 18.7 -1.0
SIV San Ignacio 9.63 36 P Pn 04 16 25.5 -2.2
comp=N,3.7nm,0.3s,baz=228,slow=14,SNR=122
SIV San Ignacio 9.63 36⇑ *i*P Pn 04 16 25.4 -2.3
ROC1 El Roble 9.70 201 *e*Pn Pn 04 16 27.6 -1.0
TRQA Tornquist 14.71 164 *e*Pn Pn 04 17 31.0 -0.8
NNA Nana 15.15 320 P P 04 17 40.5 +2.3
comp=N,0.7nm,0.3s,baz=138,slow=10,SNR=4.1
SAML Samuel 15.32 14 *e*Pn Pn 04 17 38.2 -1.4
comp=N,9.9nm,1.0s
PLCA Paso Flores 17.03 189 P Pn 04 17 59.6 -0.3
comp=N,0.4nm,0.3s,baz=32,slow=9.5,SNR=10.0
PLCA Paso Flores 17.03 189 *e*P P 04 17 59.1 +0.5
comp=N,12nm,0.9s
PLCA *e*PcP PcP 04 22 32.9 -0.4
SPB Sao Paulo 17.86 93 *e*P P 04 18 07.3 -0.5
comp=N,29nm,0.9s
BDFB Brasilia 19.61 69 P P 04 18 27.6 +0.7
baz=258,slow=8.8
BDFB Brasilia 19.61 69 P P 04 18 27.6 +0.7
comp=N,197nm,0.7s
ATAH Atahualpa 20.00 325 P P 04 18 31.1 -0.3
comp=N,6.9nm,0.7s,baz=157,slow=13,SNR=3.1
PTGA Pitinga 24.03 17 P P 04 19 09.5 -0.9
comp=N,3.5nm,0.4s,baz=204,slow=15,SNR=13
PTGA Pitinga 24.03 17 *e*P P 04 19 10.1 -0.4
RUSC La Rusia 30.24 348 *e*P P 04 20 06.2 -0.2
comp=N,3.3nm,0.8s
RUSC *e*PcP PcP 04 23 00.3 -2.1
USHA Ushuaia 30.88 182 P P 04 20 11.5 +0.5
comp=N,16nm,0.7s,baz=355,slow=7.0,SNR=5.9
HELC Santa Helena 31.09 343 *e*P P 04 20 11.4 -2.3
comp=N,18nm,0.7s
RCBR Riachuelo 34.84 64 P P 04 20 45.3 -0.6
comp=N,16nm,0.9s,baz=207,slow=6.7,SNR=11
ZAIG Zacatecas 57.91 321 *e*P P 04 23 47.0 +1.6
comp=N,7.7nm,1.0s
NHSC New Hope 58.11 347 *e*P P 04 23 47.1 +0.9
comp=N,102nm,1.5s
347A Saraland 58.78 338 P P 04 23 51.2 +0.3
baz=157
248A Dixon Mills 59.15 339 P P 04 23 53.6 +0.2
baz=158
GOGA Godfrey 59.16 344 *e*P P 04 23 52.7 -0.7
comp=N,4.7nm,0.8s
034A Hebbronville 59.25 327 P P 04 23 54.9 +0.7
baz=146
JSC Jenkinsville 59.47 346 *e*P P 04 23 54.1 -1.5
934A Benavides 59.61 327 P P 04 23 58.4 +1.7
baz=146
LRAL Lakeview Retre 59.79 341 *e*P P 04 23 56.7 -1.1
comp=N,6.2nm,0.6s
245A Little AP, Sta 59.82 337 P P 04 23 58.5 +0.5
baz=156
835A Beeville 59.84 328 P P 04 23 58.6 +0.4
baz=147
147A Livingston 59.86 339 P P 04 23 58.1 -0.2
baz=157
933A Laredo 60.00 327 P P 04 24 00.1 +0.8
baz=146
736A Circle Diamond 60.05 329 P P 04 24 01.3 +1.7
baz=148
834A Tilden 60.06 328 P P 04 24 01.2 +1.5
baz=146
244A Avery, Jackson 60.11 337 P P 04 24 00.6 +0.7
baz=155
637A Eagle Lake 60.12 330 P P 04 24 01.8 +1.7
baz=149
342A Flagon Creek P 60.13 335 P P 04 24 01.4 +1.4
baz=153
Z47A Carrollton 60.28 340 P P 04 24 00.4 -0.6
baz=158,SNR=5.3
Z48A Northport 60.28 340 P P 04 24 00.8 -0.3
baz=158
KMSC Kings Mountain 60.31 346 P P 04 24 02.0 +0.7
baz=165
KMSC Kings Mountain 60.31 346 *e*P P 04 24 01.5 +0.2
comp=N,6.4nm,0.8s
341A Kurthwood 60.42 334 P P 04 24 03.8 +1.7
baz=152
636A Smothers Creek 60.49 330 P P 04 24 03.9 +1.3
baz=148
144A Alexander Plac 60.55 337 P P 04 24 03.7 +0.8
baz=155
833A Chaparral WMA, 60.64 327 P P 04 24 04.4 +0.7
baz=146,SNR=6.6
537A Green Hill Far 60.66 331 P P 04 24 04.7 +1.0
baz=149
734A La Parita Cree 60.66 328 P P 04 24 05.0 +1.3
baz=147
Y47A UCPARC, Winfie 60.86 340 P P 04 24 04.6 -0.4
baz=158,SNR=7.2
832A Faith Ranch, C 60.90 327 P P 04 24 06.1 +0.7
baz=145,SNR=5.8
733A Divot King Ran 60.92 327 P P 04 24 06.2 +0.7
baz=146
143A Socs Landing, 60.97 336 P P 04 24 07.1 +1.4
baz=154
Z44A Pea Ridge, Bel 61.14 338 P P 04 24 07.6 +0.7
baz=155
Y46A Houston 61.16 339 P P 04 24 06.6 -0.4
baz=157
535A Dale 61.19 330 P P 04 24 08.1 +0.8
baz=148
338A Crockett 61.32 332 P P 04 24 09.3 +1.2
baz=150
CPCT Cooper Cave 61.36 344 *e*P P 04 24 08.3 0.0
comp=N,4.1nm,0.9s
Y45A Yeager Farm, C 61.37 339 P P 04 24 09.4 +1.0
baz=156
TKL Tuckaleechee C 61.37 344 *e*P P 04 24 08.0 -0.4
comp=N,9.3nm,1.1s
NATX Nacogdoches 61.40 333 P P 04 24 10.0 +1.3
baz=151
141A Papa Simpson, 61.44 335 P P 04 24 09.6 +0.6
baz=153
436A Wall Ranch, Ga 61.46 331 P P 04 24 09.7 +0.6
baz=149
633A Saathoff Ranch 61.47 328 P P 04 24 10.0 +0.7
baz=146
SWET Sewanee 61.52 342 *e*P P 04 24 08.9 -0.6
comp=N,4.8nm,0.7s
534A Blanco 61.61 329 P P 04 24 10.2 0.0
baz=147
X45A UM Field Stati 61.83 339 P P 04 24 11.6 +0.1
baz=157
533A Kerrville 61.91 329 P P 04 24 12.5 +0.4
baz=147
OXF Oxford 61.92 339 *e*P P 04 24 11.5 -0.6
comp=N,18nm,1.0s
336A Riesel 62.01 331 P P 04 24 13.6 +0.9
baz=149
237A Washetta, Mont 62.09 332 P P 04 24 14.1 +0.8
baz=150
X44A Crenshaw 62.15 338 P P 04 24 13.8 +0.2
baz=156
434A Burnet 62.17 330 P P 04 24 14.4 +0.5
baz=147
335A Moody 62.18 331 P P 04 24 14.5 +0.6
baz=148
138A Matatall Enter 62.36 333 P P 04 24 16.1 +1.1
baz=151
X43A Marvell 62.42 338 P P 04 24 15.5 +0.1
baz=155
W45A Hickory Valley 62.44 340 P P 04 24 15.2 -0.3
baz=157
Y41A Eaglette Beard 62.47 336 P P 04 24 15.8 0.0
baz=153
WLAR White Oak Lake 62.48 335 *e*P P 04 24 16.2 +0.4
comp=N,25nm,0.9s
Z39A Irene McRaven, 62.50 334 P P 04 24 16.6 +0.6
baz=152
433A Art 62.51 329 P P 04 24 16.5 +0.4
baz=147,SNR=10
137A Heron Place, G 62.58 333 P P 04 24 17.5 +0.9
baz=150
JCT Junction City 62.62 328 P P 04 24 17.6 +0.7
baz=146,SNR=12
JCT Junction City 62.62 328 *e*P P 04 24 17.2 +0.3
comp=N,16nm,0.6s
WHTX Lake Whitney, 62.80 331 P P 04 24 18.7 +0.7
baz=148
WHTX Lake Whitney, 62.80 331 *e*P P 04 24 18.2 +0.2
comp=N,8.0nm,0.7s
136A Ennis 62.81 332 P P 04 24 19.0 +1.0
baz=149
HPIG 62.90 321 *e*P P 04 24 19.1 +0.1
comp=N,12nm,1.4s
V45A Humboldt 62.90 340 P P 04 24 18.1 -0.5
baz=157
WVT Waverly 62.92 341 *e*P P 04 24 17.9 -0.7
comp=N,21nm,0.7s
333A Richland Sprin 62.93 329 P P 04 24 19.1 +0.2
baz=147,SNR=14
Y39A Leesburg 63.08 335 P P 04 24 20.4 +0.6
baz=152
234A Clairette 63.11 330 P P 04 24 20.4 +0.3
baz=148,SNR=19
135A Vickery Place, 63.26 331 P P 04 24 21.5 +0.5
baz=149
MIAR Mount Ida 63.42 336 P P 04 24 22.5 +0.5
baz=153,SNR=5.6
MIAR Mount Ida 63.42 336 *e*P P 04 24 21.5 -0.5
comp=N,12nm,1.4s
Z36A Blue Ridge 63.45 333 P P 04 24 22.7 +0.4
baz=150,SNR=8.1
233A Rising Star 63.47 330 P P 04 24 22.6 +0.2
baz=147,SNR=7.4
W41B Gary Mavity, V 63.49 337 P P 04 24 22.4 -0.1
baz=154
134A White-Moore Ra 63.57 331 P P 04 24 23.5 +0.5
baz=148
X39A Fountain Ranch 63.59 335 P P 04 24 23.5 +0.4
baz=152,SNR=9.5
X301 Greenbrier Sit 63.60 337 *e*P P 04 24 23.5 +0.3
comp=N,6.8nm,1.1s
X201 Greenbrier Sit 63.64 337 *e*P P 04 24 23.6 +0.1
comp=N,5.0nm,0.9s
TXAR Lajitas Array 63.66 324 P P 04 24 24.6 +0.7
comp=N,2.0nm,0.7s,baz=151,slow=8.3,SNR=33
TX31 Lajitas Ar. Si 63.66 324 *e*P P 04 24 24.5 +0.7
Y37A Hugo 63.73 334 P P 04 24 25.0 +1.0
baz=151
W40A Ferguson Farm, 63.81 336 P P 04 24 24.8 +0.3
baz=153,SNR=5.2
Z35A Perchaven, San 63.85 332 P P 04 24 25.8 +0.9
baz=149
Y36A Durant 63.93 333 P P 04 24 26.8 +1.4
baz=150
133A Hamilton Ranch 63.98 330 P P 04 24 26.3 +0.6
baz=147
PARMO Parma 64.00 340 *e*P P 04 24 26.4 +0.7
V41A Mountainview 64.01 337 P P 04 24 25.1 -0.7
baz=154,SNR=6.9
X38A Whitesboro 64.01 335 P P 04 24 26.6 +0.7
baz=152,SNR=7.8
W39A Magazine 64.08 336 P P 04 24 26.7 +0.4
baz=153,SNR=6.5
X37A Clayton 64.16 334 P P 04 24 27.4 +0.6
baz=151,SNR=6.3
Z34A Collier Ranch, 64.17 331 P P 04 24 27.2 +0.2
baz=148
U42A Revenden 64.20 338 P P 04 24 26.8 -0.3
baz=155,SNR=5.4
W38A Poteau 64.24 335 P P 04 24 28.3 +0.9
baz=152,SNR=8.4
Y35A Marietta 64.25 332 P P 04 24 28.0 +0.6
baz=149
V40A Witts Springs 64.26 337 P P 04 24 27.5 0.0
baz=154
ABTX Abilene, Hawle 64.32 330 P P 04 24 28.3 +0.3
baz=147
PBMO Poplar Bluff 64.32 339 *e*P P 04 24 27.6 -0.2
comp=N,17nm,0.7s
U41A Viola 64.43 338 P P 04 24 28.0 -0.6
baz=155,SNR=7.0
WCI Wyandotte Cave 64.45 343 *e*P P 04 24 27.7 -0.9
comp=N,15nm,0.6s
Z33A Whitaker Ranch 64.48 331 P P 04 24 29.4 +0.5
baz=148,SNR=10
X36A Centrahoma 64.54 333 P P 04 24 29.3 0.0
baz=150
S45A Carrier Mills 64.57 341 P P 04 24 29.0 -0.5
baz=158
V39A Pettigrew 64.59 336 P P 04 24 30.3 +0.6
baz=153,SNR=11
Y34A Reagan Ranch, 64.60 332 P P 04 24 29.9 +0.2
baz=149
X35A Drake 64.65 333 P P 04 24 30.0 -0.1
baz=150,SNR=6.3
W37B Quinton 64.66 334 P P 04 24 30.4 +0.4
baz=151,SNR=7.2
U40A Yellville 64.77 337 P P 04 24 30.4 -0.3
baz=154,SNR=6.2
S44A Carbondale 64.79 341 P P 04 24 30.1 -0.7
baz=157
V38A Canehill 64.90 336 P P 04 24 31.7 +0.1
baz=152,SNR=11
S43A Fulton Ridge, 64.93 340 P P 04 24 31.2 -0.6
baz=157,SNR=7.7
W36A Wetumka 64.98 334 P P 04 24 32.0 -0.2
baz=150
T41A Mountain View 65.01 338 P P 04 24 32.0 -0.3
baz=155
U39A Green Forest 65.02 337 P P 04 24 32.3 -0.1
baz=153,SNR=9.8
HHAR Hobbs 65.10 336 *e*P P 04 24 33.2 +0.3
comp=N,9.9nm,0.9s
X34A Smith Ranch, M 65.18 332 P P 04 24 33.9 +0.4
baz=149
V37A Hulbert 65.20 335 P P 04 24 33.8 +0.3
baz=152,SNR=7.8
R44A Waltonville 65.25 341 P P 04 24 33.2 -0.6
baz=158
T40A Mansfield 65.36 338 P P 04 24 34.8 +0.2
baz=154
BLO Bloomington 65.39 343 *e*P P 04 24 33.4 -1.3
comp=N,15nm,0.4s
U38A Gravette 65.40 336 P P 04 24 34.9 0.0
baz=152
X33A Lawton 65.42 332 P P 04 24 34.8 -0.2
baz=148
V36A Jenks 65.43 334 P P 04 24 35.4 +0.4
baz=151,SNR=5.8
TUL1 Leonard 65.48 334 P P 04 24 35.7 +0.4
baz=151
TUL1 Leonard 65.48 334 *e*P P 04 24 35.0 -0.3
comp=N,9.4nm,1.0s
S41A Jillco Farms, 65.49 339 P P 04 24 35.2 -0.2
baz=155,SNR=32
T39A Clever 65.55 337 P P 04 24 36.0 +0.2
baz=153
U37A Salina 65.65 335 P P 04 24 36.4 0.0
baz=152,SNR=6.5
X32A Elmer 65.67 331 P P 04 24 37.6 +1.0
baz=148
W34A Bridge Creek, 65.70 333 P P 04 24 37.2 +0.4
baz=149
WMOK Wichita Mounta 65.71 332 P P 04 24 36.6 -0.3
baz=148
S40A Lebanon 65.76 338 P P 04 24 37.1 0.0
baz=154,SNR=10
V35A Meyer Ranch, C 65.77 334 P P 04 24 37.5 +0.3
baz=150
T38A Diamond 65.89 336 P P 04 24 38.3 +0.3
baz=152,SNR=13
W33A Caddo, Fort Co 65.93 332 P P 04 24 39.1 +0.9
baz=148,SNR=12
Q43A New Douglas 66.08 341 P P 04 24 38.8 -0.2
baz=157
V34A Guthrie 66.11 333 P P 04 24 39.2 -0.2
baz=149
V34A Guthrie 66.11 333 *e*P P 04 24 38.7 -0.7
comp=N,7.8nm,0.8s
S39A Bolivar 66.13 337 P P 04 24 39.6 +0.1
baz=154,SNR=21
T37A Cheneyville 18 66.20 336 P P 04 24 40.3 +0.3
baz=152,SNR=16
W32A Sentinel 66.24 331 P P 04 24 40.7 +0.5
baz=148,SNR=8.8
U35A Pawnee 66.25 334 P P 04 24 40.8 +0.5
baz=150,SNR=10
S38A Stockton 66.28 337 P P 04 24 40.5 0.0
baz=153,SNR=12
R40A Maddies Statio 66.30 338 P P 04 24 40.4 -0.1
baz=155,SNR=10
Q42A Golden Eagle 66.31 340 P P 04 24 39.9 -0.6
baz=156,SNR=5.3
V33A Lossen Ranch, 66.42 333 P P 04 24 41.5 +0.2
baz=149
MNTX Cornudas Mount 66.42 325 P P 04 24 41.9 +0.4
baz=142,SNR=13
MNTX Cornudas Mount 66.42 325 *e*P P 04 24 40.7 -0.8
comp=N,5.6nm,0.8s
T36A Boggs Farm, Ca 66.52 335 P P 04 24 42.4 +0.5
baz=151,SNR=5.6
R39A Chumby, Stover 66.59 338 P P 04 24 42.9 +0.6
baz=154,SNR=6.9
U34A Anderson Ranch 66.63 333 P P 04 24 43.1 +0.4
baz=150
U34A Anderson Ranch 66.63 333 *e*P P 04 24 42.0 -0.7
comp=N,20nm,1.2s
V32A Arapaho 66.66 332 P P 04 24 44.0 +1.1
baz=148
SFIN Lafayette 66.68 343 P P 04 24 41.7 -1.2
baz=160
SFIN Lafayette 66.68 343 *e*P P 04 24 42.0 -0.9
comp=N,5.8nm,0.7s
S37A Fort Scott 66.73 336 P P 04 24 43.3 0.0
baz=152,SNR=7.6
R38A Fenwick Farm, 66.78 337 P P 04 24 43.6 +0.1
baz=153,SNR=14
P42A Winchester 66.86 340 P P 04 24 43.2 -0.9
baz=157
U33A Lingo Farm, Me 66.87 333 P P 04 24 44.5 +0.3
baz=149
Q40A Laux Farm, Aux 66.88 339 P P 04 24 44.0 -0.2
baz=155
MSTX Muleshoe 66.91 328 P P 04 24 45.0 +0.4
baz=144,SNR=10
MSTX Muleshoe 66.91 328 *e*P P 04 24 45.1 +0.4
comp=N,16nm,0.8s
S36A Lake Cedric, C 66.99 336 P P 04 24 45.2 +0.3
baz=152,SNR=5.1
T34A McClaskey Farm 67.00 334 P P 04 24 45.6 +0.6
baz=150
AMTX Amarillo 67.14 329 P P 04 24 46.1 +0.1
baz=146
P41A Barry, Barry 67.17 340 P P 04 24 45.4 -0.6
baz=156,SNR=5.8
U32A Winter Ranch, 67.20 332 P P 04 24 46.2 -0.1
baz=148
Q39A Willow Grove F 67.22 338 P P 04 24 46.2 -0.2
baz=154,SNR=16
S35A Otter Creek Ra 67.23 335 P P 04 24 46.2 -0.3
baz=151
O42A Bath 67.34 341 P P 04 24 46.1 -1.0
baz=157
P40A Paris 67.35 339 P P 04 24 47.2 +0.1
baz=155,SNR=8.4
LIC Lamto 67.36 72 *e*P P 04 24 47.7 -0.1
Q38A Cooks Store, C 67.37 338 P P 04 24 47.3 +0.1
baz=154,SNR=9.8
HDIL Hopedale 67.45 342 P P 04 24 47.1 -0.6
baz=158
T33A Patterson Ranc 67.48 333 P P 04 24 48.7 +0.7
baz=149
R36A Gordon, Harris 67.48 336 P P 04 24 47.8 -0.2
baz=152
P39B Salisbury 67.55 339 P P 04 24 48.3 0.0
baz=154,SNR=7.3
TIC Toumodi 67.57 71 *e*P P 04 24 49.9 +0.8
Q37A Longview Farm, 67.58 337 P P 04 24 48.8 +0.2
baz=153
KIC Kosan Boka 67.67 72 *e*P P 04 24 49.4 -0.4
comp=N,14nm,0.5s
DBIC Dimbokro 67.72 72 P P 04 24 48.7 -1.4
comp=N,4.5nm,0.5s,baz=213,slow=6.5,SNR=20
R35A Emporia Munici 67.74 335 P P 04 24 50.4 +0.7
baz=151
S33A Kaszmaul Farm, 67.82 334 P P 04 24 50.8 +0.7
baz=149
O40A La Belle 67.83 340 P P 04 24 49.9 -0.2
baz=155,SNR=11
P38A Dawn 67.93 338 P P 04 24 50.7 0.0
baz=154,SNR=11
R34A Isabella, Hill 68.13 335 P P 04 24 52.6 +0.6
baz=150
Q35A Mercer Eighty, 68.15 336 P P 04 24 52.8 +0.6
baz=151
O39A Kirksville 68.17 339 P P 04 24 52.2 0.0
baz=155
P37A Lathrop 68.18 337 P P 04 24 51.9 -0.4
baz=153,SNR=7.1
319A Douglas 68.32 322 *e*P P 04 24 53.7 +0.2
comp=N,12nm,0.6s
O38A Galt 68.36 338 P P 04 24 53.4 0.0
baz=154,SNR=5.2
121A Cookes Peak, D 68.36 324 P P 04 24 55.9 +2.1
baz=140,SNR=5.0
P36A Good Intent, A 68.51 337 P P 04 24 53.9 -0.5
baz=152
Q34A Chapman 68.55 335 P P 04 24 54.4 -0.3
baz=150
N39A Derby Farms, D 68.72 339 P P 04 24 55.1 -0.5
baz=155,SNR=9.9
P35A Duane Minner, 68.73 336 P P 04 24 55.4 -0.4
baz=151
R32A Long Quarter, 68.81 334 P P 04 24 56.4 0.0
baz=149
N38A Joes South For 68.88 339 P P 04 24 56.3 -0.3
baz=154
O36A Bolckow 68.88 337 P P 04 24 56.6 -0.1
baz=152
Q33A Connelly Farm, 68.96 335 P P 04 24 57.5 +0.3
baz=150
BNM Barren Site 68.99 325 *e*P P 04 24 58.4 +0.6
P34A Walnut Farm, R 69.05 336 P P 04 24 58.1 +0.4
baz=151,SNR=5.4

LPM	Los Pinos Moun	69.12 326	eP	P	04 25 00.4	+1.9
M39A	Webster	69.16 340	P	P	04 24 57.8	-0.5
	baz=155					
N37A	Lee Faris, Mou	69.18 338	P	P	04 24 58.3	-0.2
	baz=153,SNR=5.6					
L41A	Preston	69.20 341	P	P	04 24 57.8	-0.7
	baz=157,SNR=7.8					
Q32A	Meitler Ranch,	69.24 334	P	P	04 25 00.1	+1.2
	baz=149					
L40A	Anamosa	69.40 341	P	P	04 24 59.9	+0.1
	baz=156,SNR=9.1					
M38A	Pleasantville	69.43 339	P	P	04 24 59.6	-0.4
	baz=154					
LAZ	Ladron	69.45 325	eP	P	04 25 01.5	+0.9
N36A	Muff Farm, Cla	69.49 338	P	P	04 25 00.7	+0.3
	baz=153					
ANMO	Albuquerque	69.52 326	P	P	04 25 02.7	+1.7
	baz=142					
ANMO	Albuquerque	69.52 326	eP	P	04 25 02.6	+1.7
	comp=N,6.6nm,0.9s					
O34A	Beatrice	69.55 336	P	P	04 25 01.2	+0.4
	baz=151					
CBKS	Cedar Bluff	69.57 333	P	P	04 25 01.8	+0.9
	baz=148					
K41A	Shullsburg	69.63 342	P	P	04 25 01.1	-0.1
	baz=157,SNR=8.0					
L39A	Vinton	69.69 340	P	P	04 25 01.2	-0.4
	baz=156,SNR=6.0					
M37A	Trindle Farm,	69.70 339	P	P	04 25 02.0	+0.3
	baz=154,SNR=8.9					
N35A	Tabor	69.77 337	P	P	04 25 02.1	0.0
	baz=152					
O33A	Hebron	69.79 335	P	P	04 25 02.4	+0.1
	baz=150					
P32A	Huiting Farm,	69.80 334	P	P	04 25 02.9	+0.6
	baz=149					
TUC	Tucson	69.86 321	P	P	04 25 04.8	+1.8
	baz=138					
TUC	Tucson	69.86 321	eP	P	04 25 04.9	+1.9
	comp=N,5.8nm,1.1s					
JFWS	Jewell Farm	69.90 342	eP	P	04 25 02.8	-0.1
	comp=N,21nm,0.6s					
K40A	Colesburg	69.96 341	P	P	04 25 02.9	-0.2
	baz=156					
M36A	Felix, Anita	70.00 338	P	P	04 25 03.9	+0.4
	baz=153					
N34A	Lincoln	70.05 337	P	P	04 25 03.7	-0.1
	baz=151,SNR=5.1					
K39A	Oelwein	70.19 341	P	P	04 25 04.3	-0.3
	baz=156,SNR=12					
J41A	Loganville	70.25 342	P	P	04 25 04.7	-0.2
	baz=158,SNR=8.8					
L37A	Phoenix Point,	70.25 339	P	P	04 25 04.7	-0.3
	baz=154					
T25A	Trinidad	70.25 329	P	P	04 25 06.7	+1.3
	baz=144,SNR=7.8					
T25A	Trinidad	70.25 329	eP	P	04 25 07.1	+1.7
	comp=N,5.9nm,0.7s					
K38A	Parkersburg	70.41 340	P	P	04 25 05.6	-0.3
	baz=155					
J40A	Soldiers Grove	70.48 342	P	P	04 25 06.1	-0.2
	baz=157,SNR=9.8					
L36A	Harm Buss Farm	70.53 338	P	P	04 25 06.9	+0.2
	baz=153,SNR=6.2					
M34A	Aspy Farms, Fr	70.67 337	P	P	04 25 07.9	+0.4
	baz=151					
J39A	Decorah	70.71 341	P	P	04 25 07.2	-0.5
	baz=156,SNR=8.5					
214A	Organ Pipe Nat	70.79 320	P	P	04 25 10.2	+1.7
	baz=136					
K37A	Belmond	70.79 339	P	P	04 25 07.8	-0.4
	baz=154,SNR=6.5					
L35A	Bielow Farm, R	70.84 338	P	P	04 25 08.7	+0.2
	baz=152					
J38A	Wedel Dairy, R	70.92 341	P	P	04 25 08.6	-0.4
	baz=155					
K36A	Gilmore City	70.94 339	P	P	04 25 09.3	+0.2
	baz=153					
M33A	Taylor Creek F	70.95 336	P	P	04 25 09.7	+0.5
	baz=151					
KSCO	Kaye Shedlock'	70.97 331	eP	P	04 25 05.5	-4.1
	comp=N,135nm,0.9s					
L34A	Svendsen Farm,	71.00 337	P	P	04 25 10.1	+0.5
	baz=152					
BGNE	Belgrade	71.16 336	P	P	04 25 11.2	+0.7
	baz=150,SNR=6.4					
BGNE	Belgrade	71.16 336	eP	P	04 25 11.1	+0.6
	comp=N,57nm,0.8s					
J37A	Redenius Farm,	71.25 340	P	P	04 25 10.6	-0.4
	baz=154,SNR=5.4					
SDCO	Great Sand Dun	71.26 329	P	P	04 25 13.3	+1.8
	baz=143,SNR=1.5					
SDCO	Great Sand Dun	71.26 329	eP	P	04 25 13.0	+1.5
	comp=N,4.0nm,0.7s					
K35A	Storm Lake	71.27 338	P	P	04 25 11.2	0.0
	baz=153					
J36A	Seneca 1, Swea	71.52 339	P	P	04 25 12.5	0.0
	baz=154,SNR=5.1					
I38A	Scanlan Farm,	71.53 341	P	P	04 25 12.7	0.0
	baz=156,SNR=6.3					
K33A	Hardington	71.78 337	P	P	04 25 14.7	+0.5
	baz=151					
X16A	Lo Mia Camp, P	71.79 322	eP	P	04 25 16.0	+1.4
	comp=N,6.4nm,1.1s					
I37A	Lemond, Waseca	71.84 340	P	P	04 25 14.6	+0.1
	baz=154,SNR=7.1					
S22A	4UR Ranch, Cre	71.90 328	P	P	04 25 17.0	+1.6
	baz=142,SNR=5.1					
S22A	4UR Ranch, Cre	71.90 328	eP	P	04 25 15.9	+0.5
	comp=N,7.9nm,1.4s					
J34A	George	72.02 338	P	P	04 25 16.2	+0.7
	baz=152					
I36A	Fitzsimmons Fa	72.03 340	P	P	04 25 15.7	+0.1
	baz=154					
Q24A	Divide	72.07 330	P	P	04 25 17.7	+1.3
	baz=144					
L31A	Butterfield Fa	72.08 336	P	P	04 25 16.5	+0.4
	baz=149					
I35A	Creekvuw Farm	72.20 339	P	P	04 25 16.7	+0.1
	baz=153,SNR=5.4					
H37A	Dierke Farm, C	72.20 341	P	P	04 25 16.6	0.0
	baz=155					
OGNE	Ogallala	72.31 333	eP	P	04 25 20.6	+3.1
	comp=N,34nm,0.6s					
MVCO	Mesa Verde	72.32 326	P	P	04 25 19.2	+1.4
	baz=140,SNR=6.0					
MVCO	Mesa Verde	72.32 326	eP	P	04 25 18.8	+1.0
	comp=N,6.5nm,0.9s					
J33A	Davis	72.39 337	P	P	04 25 18.1	+0.3
	baz=151					
H36A	Jessenland, He	72.51 340	P	P	04 25 18.9	+0.5
	baz=154,SNR=8.7					
WUAZ	Wupatki	72.56 323	P	P	04 25 21.5	+2.4
	baz=138,SNR=7.6					
WUAZ	Wupatki	72.56 323	eP	P	04 25 21.4	+2.2
	comp=N,7.3nm,0.8s					
ECSD	EROS Data Cent	72.64 338	P	P	04 25 19.4	+0.1
	baz=152,SNR=12					
ECSD	EROS Data Cent	72.64 338	eP	P	04 25 19.3	+0.1
	comp=N,8.9nm,0.9s					
SPMN	Marine on St.	72.75 341	P	P	04 25 19.6	-0.3
	baz=155					
SPMN	Marine on St.	72.75 341	eP	P	04 25 19.5	-0.3
	comp=N,16nm,1.2s					
J32A	Parkston	72.75 337	P	P	04 25 19.8	-0.1
	baz=150					
GLA	Glamis	72.76 319	P	P	04 25 21.4	+1.1
	baz=135					
H35A	Sunnyside Ranc	72.90 340	P	P	04 25 21.0	+0.2
	baz=153,SNR=9.5					
ISCO	Idaho Springs	72.95 330	P	P	04 25 22.6	+1.1
	baz=143					
ISCO	Idaho Springs	72.95 330	eP	P	04 25 22.7	+1.1
	comp=N,2.6nm,0.8s					
J31A	Geddes	73.01 336	P	P	04 25 22.5	+1.1
	baz=150					
G36A	St. Michael	73.05 341	P	P	04 25 22.1	+0.5
	baz=154					
Y12C	Blythe	73.07 320	P	P	04 25 24.1	+2.1
	baz=135					
H34A	Spellman Lake,	73.18 339	P	P	04 25 22.6	+0.2
	baz=152,SNR=5.7					
I32A	Karley and Nic	73.19 337	P	P	04 25 22.9	+0.4
	baz=151					
J30A	Dallas	73.32 336	P	P	04 25 24.3	+1.1
	baz=149					
PV10	Paradox Valley	73.49 327	eP	P	04 25 26.4	+1.7
H33A	Prehn Over Nor	73.52 338	P	P	04 25 24.9	+0.5
	baz=152,SNR=18					
F36A	Milaca	73.54 341	P	P	04 25 24.3	-0.1
	baz=155,SNR=8.7					
BC3	Big Chuckawall	73.56 319	P	P	04 25 26.8	+1.8
	baz=134					
SYO	Syowa Base	73.59 159‖	eP	P	04 25 24.0	-0.5
SYO	Syowa Base	73.59 159‖	ePcP	PcP	04 25 35.7	-3.7
H32A	Carlson Farm,	73.60 338	P	P	04 25 25.1	+0.2
	baz=151,SNR=6.8					
MONP2	Monument Peak	73.61 318	P	P	04 25 26.8	+1.4
	baz=134					
G34A	Benson	73.65 339	P	P	04 25 25.2	+0.1
	baz=153					
W13A	Hualapai Mount	73.66 321	eP	P	04 25 27.9	+2.2
	comp=N,2.6nm,0.8s					
IRM	Iron Mountain	73.73 320	P	P	04 25 27.9	+2.0
	baz=135					
F35A	Sowanville	73.86 340	P	P	04 25 26.5	+0.2
	baz=154					
G33A	Ortonville	73.87 339	P	P	04 25 26.4	+0.1
	baz=152,SNR=5.7					
H31A	Wolsey	73.94 337	P	P	04 25 27.5	+0.6
	baz=150					
N23A	Red Feather La	73.98 330	P	P	04 25 29.1	+1.6
	baz=143					
N23A	Red Feather La	73.98 330	eP	P	04 25 28.6	+1.1
	comp=N,3.7nm,0.6s					
E36A	McGregor	74.06 341	P	P	04 25 27.7	+0.2
	baz=155,SNR=8.5					
SUSD	Miller	74.08 337	P	P	04 25 28.0	+0.3
	baz=150					
BELC	Belle Mtn. Jos	74.12 319	P	P	04 25 30.2	+1.9
	baz=134					
TPFO	Pinon Flats	74.12 319	P	P	04 25 30.4	+2.1
	baz=134					
PFO	Pinyon Flats O	74.13 319	P	P	04 25 30.2	+1.9
	baz=134					
G32A	Webster	74.28 338	P	P	04 25 29.2	+0.4
	baz=151					
F33A	5 Mile Ranch,	74.39 339	P	P	04 25 29.8	+0.4
	baz=152					
D37A	Cotton	74.41 342	P	P	04 25 29.9	+0.5
	baz=156,SNR=5.4					
E35A	Pequot Lakes	74.44 341	P	P	04 25 29.8	+0.2
	baz=154					
O20A	White River Ci	74.45 328	P	P	04 25 31.9	+1.7
	baz=141,SNR=7.9					
O20A	White River Ci	74.45 328	eP	P	04 25 31.2	+1.0
	comp=N,8.1nm,0.8s					
GMRC	Granite Mounta	74.47 320	P	P	04 25 32.4	+2.1
	baz=134					
G31A	Conde	74.50 338	P	P	04 25 30.3	+0.3
	baz=150,SNR=5.1					
MURC	Murrieta	74.57 318	P	P	04 25 31.5	+0.7
	baz=133					
C38A	Sawbill Land.	74.61 343	P	P	04 25 30.6	0.0
	baz=157					
D36A	Goodland	74.63 342	P	P	04 25 31.2	+0.5
	baz=155					
VNDA	Vanda	74.78 190	P	P	04 25 32.8	+1.5
	comp=N,2.7nm,1.0s,baz=51,slow=3.6,SNR=3.1					
SRU	San Rafael Swe	74.80 326	eP	P	04 25 33.6	+1.4
	comp=N,6.6nm,0.7s					
D35A	Dever	74.80 341	P	P	04 25 32.3	+0.6
	baz=154					
C37A	Embarrass	74.86 343	P	P	04 25 32.0	0.0
	baz=156					
EYMN	Ely	74.87 343	P	P	04 25 32.4	+0.2
	baz=157					
F31A	Hecla	75.06 338	P	P	04 25 33.8	+0.5
	baz=150					
C36A	Pine Crest Far	75.07 342	P	P	04 25 33.6	+0.3
	baz=156					
G29A	Hoven	75.08 337	P	P	04 25 34.2	+0.8
	baz=149					
BFSC	Mount Baldy Ra	75.28 318	P	P	04 25 36.6	+1.6
	baz=133					
C35A	Jirik Farms, M	75.34 341	P	P	04 25 34.8	0.0
	baz=154,SNR=6.7					
SHPR	Sheep Range	75.39 322	eP	P	04 25 36.9	+1.4
	comp=N,5.9nm,1.2s					
GSC	Goldstone, Bar	75.50 320	P	P	04 25 37.6	+1.4
	baz=134					
E31A	Nome	75.55 338	P	P	04 25 36.5	+0.5
	baz=151					
C34A	RKJ Ranch, Bem	75.57 341	P	P	04 25 36.3	+0.2
	baz=154					
RSSD	Black Hills	75.77 333	P	P	04 25 39.1	+1.5
	baz=145					
RSSD	Black Hills	75.77 333	eP	P	04 25 38.1	+0.5
	comp=N,4.9nm,0.8s					
B35A	Bob, Littlefor	75.86 342	P	P	04 25 37.8	+0.1
	baz=155,SNR=9.4					
C33A	Trail	75.93 340	P	P	04 25 38.4	+0.3
	baz=153					
B34A	Aery, Baudette	76.24 341	P	P	04 25 40.2	+0.3
	baz=154					
TPNV	Topopah Spring	76.32 321	P	P	04 25 43.1	+2.3
	baz=134					
TPNV	Topopah Spring	76.32 321	eP	P	04 25 42.6	+1.8
	comp=N,11nm,1.4s					
FURC	Furnace Creek,	76.34 321	P	P	04 25 43.1	+2.4
	baz=134					
AGMN	Agassiz Nation	76.44 341	P	P	04 25 41.0	+0.1
	baz=153,SNR=5.0					
AGMN	Agassiz Nation	76.44 341	eP	P	04 25 40.0	-1.0
	comp=N,8.9nm,0.9s					
TOA0	Torodi Ar. Sit	76.49 69	eP	P	04 25 41.5	-0.6
TORD	Torodi Ar. Bea	76.49 69	P	P	04 25 41.4	-0.6
	comp=N,5.8nm,0.5s,baz=258,slow=5.8,SNR=109					
C31A	Landman Farms,	76.58 339	P	P	04 25 42.6	+0.8
	baz=151					
B32A	Ashes, Strandq	76.73 340	P	P	04 25 43.0	+0.4
	baz=152,SNR=17					
C30A	Mose, Pekin	76.74 339	P	P	04 25 43.8	+1.1
	baz=150					
DUG	Dugway, Tooele	76.78 326	P	P	04 25 45.1	+1.8
	baz=138					
DUG	Dugway, Tooele	76.78 326	eP	P	04 25 43.9	+0.6
	comp=N,3.2nm,0.9s					
A33A	Warroad	76.86 341	P	P	04 25 43.5	+0.2
	baz=153,SNR=6.3					
R11A	Troy Canyon, C	76.93 323	P	P	04 25 46.4	+2.1
	baz=135,SNR=5.5					
R11A	Troy Canyon, C	76.93 323	eP	P	04 25 45.5	+1.2
	comp=N,7.7nm,1.4s					
PKM	Mcpherson Peak	77.04 318	P	P	04 25 46.9	+2.0
	baz=132					
B31A	Greenbush Farm	77.10 340	P	P	04 25 44.9	+0.2
	baz=151					
BW06	Boulder Array	77.12 329	eP	P	04 25 46.0	+0.7
PD31	Pinedale Array	77.12 329	eP	P	04 25 45.4	+0.1
PDAR	Pinedale Array	77.12 329	P	P	04 25 46.1	+0.9
	comp=N,1.3nm,0.5s,baz=119,slow=7.3,SNR=15					
VES	Vestal, Richgr	77.23 319	P	P	04 25 47.6	+1.9
	baz=132					
MDND	Maddock	77.25 338	P	P	04 25 46.6	+1.1
	baz=150,SNR=7.4					
MDND	Maddock	77.25 338	eP	P	04 25 46.1	+0.5
	comp=N,45nm,0.8s					
B30A	Myrvik Farm, E	77.35 339	P	P	04 25 46.7	+0.6
	baz=151,SNR=6.0					
D26A	Manning	77.56 336	P	P	04 25 48.5	+1.1
	baz=147					
B29A	Wagenman Farm,	77.70 339	P	P	04 25 49.1	+1.1
	baz=150,SNR=6.8					
A30A	Hoffart Farm,	77.77 339	P	P	04 25 49.2	+0.8
	baz=151					
AHID	Auburn Hatcher	77.85 328	eP	P	04 25 50.1	+0.9
	comp=N,8.8nm,0.7s					
B28A	Dugan Ranch, T	78.03 338	P	P	04 25 50.5	+0.7
	baz=149					
A29A	Manning Farm,	78.05 339	P	P	04 25 50.6	+0.6
	baz=150,SNR=11					
ULM	Lac du Bonnet	78.18 341	P	P	04 25 50.6	0.0
	comp=N,7.8nm,0.6s,baz=158,slow=6.5,SNR=13					
ULM	Lac du Bonnet	78.18 341	eP	P	04 25 50.9	+0.3
LOHW	Long Hollow	78.26 329	eP	P	04 25 51.8	+0.3
	comp=N,4.9nm,0.6s					
SCHQ	Schefferville	78.44 0	P	P	04 25 51.7	-0.2
	comp=N,2.9nm,0.6s,baz=232,slow=6.1,SNR=4.6					
LAO	LASA Array	78.76 334	P	P	04 25 54.8	+0.9
	baz=144,SNR=5.8					
LAO	LASA Array	78.76 334	eP	P	04 25 55.0	+1.0
	comp=N,9.7nm,0.9s					
A26A	Wade Farm, Ken	78.99 337	P	P	04 25 56.3	+1.1
	baz=148					
A25A	Svangstu Ranch	79.41 337	P	P	04 25 59.0	+1.6
	baz=147					
DGMT	Dagmar	79.42 336	P	P	04 25 59.3	+1.8
	baz=146					
GCMT	Greycliff	79.51 331	eP	P	04 25 58.2	+0.1
PAHR	Pah Rah Range	80.00 322	eP	P	04 26 03.2	+2.2
	comp=N,9.3nm,0.9s					
HLID	Hailey	80.06 327	P	P	04 26 03.0	+1.8
	baz=137,SNR=8.4					
HLID	Hailey	80.06 327	eP	P	04 26 03.0	+1.8
	comp=N,7.5nm,0.8s					
MCMT	McKenzie Canyo	80.23 329	eP	P	04 26 04.1	+1.9
DLMT	Dillon	80.51 329	eP	P	04 26 04.8	+1.3
	comp=N,15nm,1.4s					
BOSA	Boshof	80.71 117	P	P	04 26 04.5	-0.6
	comp=N,1.0nm,0.3s,baz=253,slow=3.7,SNR=6.6					
LRM	Limekiln Ridge	80.79 330	eP	P	04 26 06.9	+1.7
MAW	Mawson	81.48 163	P	P	04 26 09.4	+1.2
	comp=N,2.3nm,0.4s,baz=176,slow=7.1,SNR=4.4					
O03D	Paynes Creek	81.78 321	P	P	04 26 11.2	+0.9
	baz=131					
MDT	Midelt	81.93 49	P	P	04 26 10.2	-1.1
	comp=N,1.7nm,0.8s,baz=275,slow=5.9,SNR=3.9					
M04C	Macdoel	82.78 322	P	P	04 26 16.8	+1.3
	baz=131					
K05A	Summer Lake	82.87 323	eP	P	04 26 17.6	+1.6
	comp=N,8.5nm,0.8s					
I05D	Terrebonne, OR	84.19 324	P	P	04 26 24.3	+1.8
	baz=132					
FCC	Fort Churchill	85.41 346	eP	P	04 26 28.6	+0.5
	comp=N,7.1nm,0.8s					
ESDC	Sonseca Array	86.31 44	P	P	04 26 33.7	+0.6
	comp=N,0.8nm,0.7s,baz=241,slow=5.0,SNR=4.1					
EDM	Edmonton	86.73 334	eP	P	04 26 33.6	-1.2
	comp=N,40nm,1.7s					
B05A	Bryant	87.18 327	P	P	04 26 37.4	+0.4
	baz=131					
YKA	Yellowknife Ar	94.08 340	P	P	04 27 08.9	+0.2
	comp=N,2.7nm,0.5s,baz=136,slow=4.7,SNR=27					
AS01	Alice Springs	128.53 205	ePKPdf	PKPdf	04 32 56.6	-1.0
ASAR	Alice Springs	128.54 205	PKP	PKPdf	04 32 57.6	0.0
	comp=N,2.5nm,0.7s,baz=136,slow=1.9,SNR=20					
UOSS	Minazif	128.56 76	ePKPdf	PKPdf	04 32 53.9	-3.5
WRA	Warramunga Arr	131.72 207	PKP	PKPdf	04 33 03.9	+0.2
	comp=N,2.2nm,0.5s,baz=159,slow=1.5,SNR=0.1					
PETK	Petropavlovsk-	135.59 323	PKP	PKPdf	04 33 11.0	+1.2
	comp=N,1.5nm,0.6s,baz=73,slow=2.8,SNR=3.2					
ZAA0	Zalesovo Array	143.30 28	ePKPdf	PKPbc	04 33 21.7	+0.2
ZALV	Zalesovo Beam	143.30 28	PKP	PKPbc	04 33 21.4	-0.1
	comp=N,3.2nm,0.5s,baz=302,slow=5.0,SNR=11					
KSH	Kashi	145.11 55	ePKP	PKPdf	04 33 27.7	+0.1
KSH			epPKP	pPKPdf	04 34 25.3	+7.2
KSH			PKS	PKSdf	04 37 01.3	-1.9
KSH			ePP	PP	04 37 02.7	+14
KSH	Kashi	145.11 55	SKKS	SKKSac	04 43 28.0	+6.5
MK31	Makanchi Array	146.43 39	ePKPdf	PKPdf	04 33 30.3	+0.8
MKAR	Makanchi Array	146.43 39	PKPbc	PKPdf	04 33 30.2	+0.7
	comp=N,5.8nm,0.6s,baz=320,slow=2.4,SNR=30					
MKAR	Makanchi Array	146.43 39	PKPbc	PKPdf	04 33 30.2	+0.7
MKAR			ePKPdf	PKPbc	04 33 30.6	-0.5
MK01	Makanchi Array	146.45 40	ePKPdf	PKPbc	04 33 30.7	-0.6
MJAR	Matsushiro Ar	154.99 306	PKPab	PKPab	04 34 08.6	+0.4
	comp=N,1.2nm,0.8s,baz=61,slow=3.0,SNR=4.1					
SONM	Songino Array	155.56 11	PKP	PKPdf	04 33 44.6	+1.0
	comp=N,0.7nm,0.9s,baz=252,slow=2.6,SNR=3.9					
SONM			PKPab	PKPab	04 34 10.5	+0.1
	comp=N,1.2nm,0.7s,baz=335,slow=4.6,SNR=7.1					

MAN 12 04:23:21.9±7.47N×122°.10E,h16km±mb4.3,ML3.2,MS3.0,
1C-3D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	Sibulan	1.13	96‖	iP	Pb	04 23 36.6	-5.6
SNPH				iS	Sb	04 23 43.3	-13
JAP	San Jose, Anti	1.28	353‖	iP	Pn	04 23 43.7	-0.5
LLP	Lapu-Lapu	2.02	65	eP	Pn	04 23 55.4	+0.9
LLP				eS	Sb	04 24 21.0	-1.5
RCP	Roxas	2.17	17‖	eP	Pn	04 23 57.4	+0.9
CGP	Cagayan de Oro	2.76	111‖	eP	Pn	04 24 05.8	+1.3
CGP				eS	Sb	04 24 43.1	-0.4

IDC ***12*** *04:32:07.5±2.2,3°.29S×139°.15E,h0km,mb3.5/2,*
mb1 3.9/3,mb1mx3.5/30,mbtmp3.6/3,ML3.7/1,Error
ellipse: s-maj=264.8km s-min=32.7km az=107.0
DJA ***12*** *04:32:13.4±1.9,3°.5±9°×14°.1E±°,h10km,M3.3/2,MLv3.3/2*
ISC 12 04:32:11.8±1.2,3°.65S±0°.08×140°.5E±0°.2,h35km±5,n5,
σ2°.59/7,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GENI	Genyem	1.09	344	P	Pn	04 32 30.2	-0.5
GENI				S	Sn	04 32 45.4	+0.8
JAY	Jayapura	1.15	12	P	Pn	04 32 32.0	+0.5
JAY				S	Sn	04 32 42.7	-3.3
WRA	Warramunga Arr	17.27	200	P	Pn	04 36 07.5	-2.9
	0.3nm,0.3s,baz=14,slow=13,SNR=9.8						
ASAR	Alice Springs	20.89	197	P	P	04 36 52.4	+1.1
	1.8nm,0.7s,baz=24,slow=9.5,SNR=21						
ILAR	Eielson Array	85.96	24	P	P	04 44 50.4	+2.2
	0.3nm,0.6s,baz=263,slow=4.5,SNR=4.1						

IDC ***12*** *04:33:44.5±1.4,33°.27S×178°.38W,h0km,mb4.7/3,*
mb1 4.8/4,mb1mx4.1/30,mbtmp4.6/4,ML3.9/1,Error
ellipse: s-maj=41.2km s-min=36.1km az=180.0
ISCJB ***12*** *04:33:48.1±5.4,33°.5S±0°.2×178°.3W±0°.8,h41km,mb4.6/3,*
Error ellipse: s-maj=97.4km s-min=14.8km az=14.9
ISC 12 04:33:50.7±1.6,33°.4S±0°.2×178°.5W±0°.3,h41km,n8,
σ0°.79/9,mb4.3/3,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	Urewera	6.03	215	Pn	Pn	04 35 16.9	-0.4
	3.0nm,0.3s,baz=17,slow=17,SNR=26						
URZ				Sn	Sn	04 36 25.2	+0.2
	4.3nm,0.3s,baz=103,slow=19,SNR=4.6						
CTA	Charters Tower	34.03	284	P	P	04 40 31.9	+0.9
	2.4nm,0.5s,baz=126,slow=8.3,SNR=5.6						
ASAR	Alice Springs	42.66	270	P	P	04 41 43.1	-0.3
	4.0nm,0.7s,baz=110,slow=7.3,SNR=25						
WRA	Warramunga Arr	43.92	276	P	P	04 41 52.9	-0.8
	42nm,0.9s,baz=117,slow=7.7,SNR=1.5						
FINES	FINESS Array B	147.82	338	PKPbc	PKPbc	04 53 29.4	-0.9
	1.4nm,0.5s,baz=47,slow=3.4,SNR=11						
AKASG	Malin Array Be	153.39	319	PKPbc	PKPbc	04 53 44.5	+0.5
	0.6nm,0.5s,baz=70,slow=1.0,SNR=4.3						
BRTR	Keskin Array B	153.56	293	PKPbc	PKPbc	04 53 44.6	-0.3
	0.3nm,0.4s,baz=98,slow=2.0,SNR=3.3						
TORD	Torodi Ar. Bea	159.82	180	PKPab	PKPab	04 54 25.5	+0.9
	0.8nm,1.0s,baz=181,slow=4.8,SNR=3.6						

IDC 12 04:35:15.0±3.0,10°.47S×150°.87E,h0km,mb3.2/1,
mb1 3.7/3,mb1mx3.4/29,mbtmp3.6/3,ML2.9/2,Error
ellipse: s-maj=64.4km s-min=51.5km az=135.0,Eastern
New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	Port Moresby	3.80	286	Pn	Pn	04 36 15.1	+0.2
	10.0nm,0.3s,baz=83,slow=8.1,SNR=7.3						
PMG				Sn	Sn	04 36 55.1	-5.3
	4.3nm,0.3s,baz=135,slow=19,SNR=3.2						
WRA	Warramunga Arr	18.51	237	P	P	04 39 32.4	-0.7
	0.2nm,0.3s,baz=61,slow=12,SNR=3.8						
ASAR	Alice Springs	20.83	229	P	P	04 39 58.8	+0.3
	1.2nm,1.0s,baz=52,slow=12,SNR=6.3						
TORD	Torodi Ar. Bea	149.72	278	PKPbc	PKPbc	04 55 07.4	-0.5

UGLR				*e*S	Sn	04 40 45.4	+2.2		
DALK	**Dalny**	**1.17**	**275**	*e*P	Pn	04 40 30.0	+1.4		
DALK				*e*S	Sn	04 40 43.7	+0.3		
SMAR	**Somma**	**1.18**	**286**	*e*P	Pn	04 40 30.4	+1.4		
SMAR				*e*S	Sn	04 40 45.2	+1.2		
AVH	**Avacha**	**1.22**	**286**	*i* P	Pn	04 40 31.4	+2.0		
AVH				*i* S	Sn	04 40 47.2	+2.5		
KRER	**Koryakskii**	**1.22**	**288**	*e*P	Pn	04 40 31.1	+1.5		
KRER				*e*S	Sn	04 40 46.4	+1.4		
KOK	**Koryaka**	**1.29**	**287**	*e*P	Pn	04 40 32.1	+1.8		
KOK				*e*S	Sn	04 40 47.3	+0.9		
KRX	**Arik**	**1.30**	**290**	*e*P	Pn	04 40 32.1	+1.6		
KRX				*e*S	Sn	04 40 47.8	+1.1		
KII	**Karymskiy**	**1.32**	**326**	*e*P	Pn	04 40 32.9	+2.1		
KII				*e*S	Sn	04 40 48.7	+1.5		
RUS	**Russkaya**	**1.42**	**250**	*e*P	Pn	04 40 33.7	+1.7		
RUS				*e*S	Sn	04 40 51.2	+1.7		
KRMR	**Karymshinskiy**	**1.56**	**267**	*i* P	Pn	04 40 35.6	+1.7		
KRMR				*e*S	Sn	04 40 54.0	+1.2		
MKZ	**Mys Kozlova**	**1.73**	**20**	*e*P	Pn	04 40 38.5	+2.2		
MKZ				*e*S	Sn	04 40 59.4	+2.3		
ASAK	**Asacha**	**1.79**	**253**	*i* P	Pn	04 40 39.9	+2.7		
ASAK				*i* S	Sn	04 41 01.4	+2.7		
GNL	**Ganaly**	**1.81**	**296**	*e*P	Pn	04 40 40.7	+3.2		
GNL				*e*S	Sn	04 41 02.0	+2.7		
KZV	**Kizimen**	**2.19**	**354**	*e*P	Pn	04 40 46.2	+3.5		
KZV				*e*S	Sn	04 41 11.9	+3.3		
PAU	**Pauzhetka**	**2.81**	**240**	*e*P	Pn	04 40 54.7	+3.6		
PAU				*e*S	Sn	04 41 27.3	+3.7		
KMNR	**Kamenistaya**	**2.83**	**355**	*e*P	Pn	04 40 55.7	+4.2		
BZMR	**Bezymyannaya**	**3.00**	**358**	*e*P	Pn	04 40 56.9	+3.0		
KIRR	**Kirishev**	**3.02**	**356**	*e*P	Pn	04 40 58.8	+4.6		
KPT	**Kopyto**	**3.04**	**355**	*e*P	Pn	04 40 56.7	+2.3		
ZLN	**Zelenaya**	**3.08**	**1**	*e*P	Pn	04 40 59.4	+4.5		
LGNR	**Loginova**	**3.15**	**360**	*e*P	Pn	04 41 01.0	+5.0		
KOZ	**Kozyrevsk**	**3.16**	**352**	*e*P	Pn	04 40 58.6	+2.7		
CIRR	**Tsirk**	**3.18**	**1**	*e*P	Pn	04 40 59.0	+2.7		
KRSR	**Krestovskiy**	**3.28**	**359**	*e*P	Pn	04 41 00.9	+3.2		
KLY	**Klyuchi**	**3.38**	**360**	*e*P	Pn	04 41 03.6	+4.7		
BDR	**Baidarnaya**	**3.65**	**5**	*e*P	Pn	04 41 06.9	+4.2		
SMKR	**Semkarok**	**3.67**	**7**	*e*P	Pn	04 41 08.3	+5.2		
SMKR				*e*S	Sn	04 41 50.7	+5.6		
SRKR	**Sorokina**	**3.73**	**4**	*e*P	Pn	04 41 08.6	+4.8		
SRKR				*e*S	Sn	04 41 51.2	+4.7		
BKI	**Bering**	**3.85**	**52**	P	Pn	04 41 07.6	+2.3		
BKI				*e*S	Sn	04 41 49.9	+0.7		

IDC ***12*** *04:46:14.7±0.5, 9.°58N×122.°13E, h0km, mb4.2/16, mb1 4.3/16, mb1mx4.1/40, mbtmp4.2/16, MS3.2/1, Ms1 3.2/1, ms1mx2.5/43, Error ellipse: s-maj=35.9km s-min=12.0km az=71.0*
ISCJB ***12*** *04:46:15.1±0.3, 9.°53N±0.°05×122.°02E±0.°04, h10km, mb4.3/22, Error ellipse: s-maj=6.6km s-min=5.2km az=177.3*
NEIC ***12*** *04:46:16.2±0.3, 9.°61N×122.°21E, h10km, mb4.3/4, Error ellipse: s-maj=13.8km s-min=6.3km az=69.0*
MAN ***12*** *04:46:17, 9.°55N×122.°07E, h21km, mb4.8, ML3.7, MS3.7*

ISC 12 04:46:16.3±0.5, 9.°57N±0.°05×122.°08E±0.°04, h10km, n38, σ1℔21/43, mb4.3/22, 2C-5D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.16**	**101**	⇓*i*P	Pb	04 46 32.9	-5.7
SNPH				*i* S	**Sb**	**04 46 49.3**	**-4.4**
JAP	**San Jose, Anti**	**1.18**	**354**	⇑*i*P	**Pb**	**04 46 38.5**	**-0.2**
TBP	**Tagbilaran**	**1.76**	**86**	*e*P	**Pn**	**04 46 48.2**	**+1.3**
LLP	**Lapu-Lapu**	**2.00**	**68**	⇑*i*P	**Pn**	**04 46 50.5**	**+0.3**
LLP				*e*S	**Sn**	**04 47 17.1**	**+1.8**
RCP	**Roxas**	**2.08**	**18**	⇓*e*P	**Pn**	**04 46 52.2**	**+0.9**
CGP	**Cagayan de Oro**	**2.81**	**113**	⇓*i*P	**Pn**	**04 47 02.8**	**+1.4**
CGP				*i* S	**Sb**	**04 47 41.1**	**0.0**
CTBH	**Cotabato--PC H**	**3.17**	**137**	*i* P	**Pn**	**04 47 07.9**	**+1.7**
CTBH				*i* S	**Sb**	**04 47 51.3**	**-0.2**
PLP	**Palo**	**3.26**	**61**	⇓*i*P	**Pn**	**04 47 07.9**	**+0.3**
PPR	**Puerto Princes**	**3.31**	**274**	⇓*i*P	**Pn**	**04 47 09.4**	**+1.2**
PPR				*i* S	**Sn**	**04 47 47.5**	**-0.1**
DAV	**Davao City (W)**	**4.26**	**125**	Lg	Lg	04 48 28.7	
	59nm,0.3s,baz=338,slow=18,SNR=2.1						
DAV	**Davao City (W)**	**4.26**	**125**	*e*Pn	Pb	04 47 27.1	-4.4
DAV				Lg	Lg	04 48 28.8	
KKM	**Kota Kinabalu**	**6.79**	**239**	*e*Pn	**Pn**	**04 47 57.7**	**+1.5**
	50nm,0.4s						
KKM				*e*S	**Sn**	**04 49 10.7**	**-2.9**
KAPI	**Kappang**	**14.67**	**189**	LR	LR	04 55 32.3	
	comp=Z,105nm,20.1s,baz=45,slow=38						
CMAR	**Chiang Mai Arr**	**24.10**	**294**	P	**P**	**04 51 33.4**	**+0.9**
	0.8nm,0.3s,baz=113,slow=6.9,SNR=7.4						
FITZ	**Fitzroy Crossi**	**27.72**	**173**	P	**P**	**04 52 05.4**	**+0.3**
	2.8nm,0.9s,baz=0.0,slow=8.1,SNR=2.5						
WRAB	**Tennant Creek**	**31.71**	**158**	*e*P	**P**	**04 52 39.4**	**-1.1**
	4.1nm,0.8s						
WRA	**Warramunga Arr**	**31.71**	**158**	P	**P**	**04 52 39.2**	**-1.3**
	1.7nm,0.8s,baz=339,slow=9.4,SNR=7.0						
WRA				PcP	**PcP**	**04 55 31.5**	**-0.8**
	1.2nm,0.6s,baz=336,slow=2.6,SNR=9.5						
ASAR	**Alice Springs**	**35.00**	**161**	P	**P**	**04 53 09.6**	**+0.4**
	4.7nm,0.6s,baz=340,slow=7.1,SNR=42						
ASAR				PcP	**PcP**	**04 55 40.8**	**-0.7**
	1.6nm,0.6s,baz=354,slow=2.7,SNR=9.8						
USRK	**Ussuriysk Ar.**	**35.56**	**12**	P	**P**	**04 53 13.9**	**+0.2**
	3.7nm,0.8s,baz=199,slow=7.1,SNR=9.7						
SONM	**Songino Array**	**40.38**	**344**	P	**P**	**04 53 54.5**	**0.0**
	1.7nm,0.7s,baz=164,slow=9.6,SNR=13						
FORT	**Forrest**	**40.53**	**172**	*e*P	**P**	**04 53 56.9**	**+1.2**
	43nm,0.5s						
NWAO	**Narrogin (SRO)**	**42.51**	**186**	P	**P**	**04 54 12.8**	**+0.7**
	5.1nm,0.6s,baz=252,slow=7.2,SNR=5.5						
TLY	**Talaya**	**44.62**	**344**	P	**P**	**04 54 29.7**	**+0.9**
	0.9nm,0.4s,baz=188,slow=9.1,SNR=3.3						
STKA	**Stephens Creek**	**45.24**	**156**	P	**P**	**04 54 34.1**	**0.0**
	3.0nm,0.7s,baz=360,slow=5.4,SNR=6.2						
STKA				PcP	**PcP**	**04 56 12.8**	**-1.2**
	1.4nm,0.6s,baz=22,slow=4.1,SNR=3.1						
MKAR	**Makanchi Array**	**50.16**	**325**	P	**P**	**04 55 12.9**	**+0.8**
	1.4nm,0.6s,baz=126,slow=7.8,SNR=15						
ZALV	**Zalesovo Beam**	**53.33**	**334**	P	**P**	**04 55 35.1**	**-0.5**
	0.8nm,0.3s,baz=122,slow=7.1,SNR=4.0						
KURK	**Kurchatov**	**54.37**	**327**	*e*P	**P**	**04 55 44.0**	**+0.7**
	46nm,0.9s						
KKAR	**Karatay Array**	**55.84**	**316**	*e*P	**P**	**04 55 55.1**	**+1.0**
	4.3nm,0.6s						
NRIK	**Noril'sk**	**63.72**	**347**	P	**P**	**04 56 47.5**	**-0.3**
	4.1nm,0.7s,baz=131,slow=8.8,SNR=3.4						
ABKAR	**Akbulak array**	**64.74**	**320**	*e*P	**P**	**04 56 55.0**	**+0.2**
	1.6nm,0.8s						
BRTR	**Keskin Array B**	**82.77**	**309**	P	**P**	**04 58 40.6**	**-0.5**
	1.0nm,0.7s,baz=116,slow=5.6,SNR=6.7						
ARCES	**ARCESS Array B**	**83.40**	**339**	P	**P**	**04 58 43.9**	**+0.3**
	2.3nm,0.8s,baz=59,slow=8.8,SNR=4.5						
AKASG	**Malin Array Be**	**84.48**	**320**	P	**P**	**04 58 48.6**	**-0.9**
	2.2nm,0.6s,baz=69,slow=5.4,SNR=9.1						
KIEV	**Kiev**	**84.49**	**320**	*e*P	**P**	**04 58 48.7**	**-0.8**
	1.4nm,0.8s						
FINES	**FINESS Array B**	**84.53**	**331**	P	**P**	**04 58 48.9**	**-0.6**
	1.5nm,0.8s,baz=44,slow=5.8,SNR=4.7						
TORD	**Torodi Ar. Bea**	**116.66**	**290**	PKP	**PKPdf**	**05 05 00.7**	**-1.2**
	0.3nm,0.8s,baz=83,slow=1.6,SNR=2.9						
TXAR	**Lajitas Array**	**121.36**	**47**	PKP	**PKPdf**	**05 05 10.5**	**-0.2**
	0.2nm,0.6s,baz=270,slow=0.7,SNR=3.2						
PLCA	**Paso Flores**	**147.00**	**162**	PKPbc	**PKPbc**	**05 05 60.0**	**+0.2**
	6.2nm,0.8s,baz=234,slow=5.5,SNR=6.9						

MEX 12 04:47:31.7±0.4, 16.°21N×98.°17W, h5km±4km, MD4.0, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.19**	**13**	*i* P	Pg	04 47 35.3	-0.2
PNIG				*i* S	Sg	04 47 37.9	-0.1
TLIG	**Tlapa**	**1.40**	**344**	*e*P	Pn	04 47 54.0	-4.1
TLIG				*i* S	Sb	04 48 12.8	-3.9
VHO	**Vista Hermosa**	**1.63**	**58**	*e*P	Pn	04 47 57.7	-3.6
VHO				*i* S	Sn	04 48 17.5	-5.3
HUIG	**Huatulco**	**2.03**	**102**	*e*P	Pn	04 48 02.7	-4.0
HUIG				*i* S	Sn	04 48 28.5	-4.0
MEIG	**Mezcala**	**2.20**	**321**	*e*P	Pn	04 48 06.3	-2.7
MEIG				*i* S	Sn	04 48 32.4	-4.3
YAIG	**Yautepec**	**2.77**	**342**	*i* P	Pn	04 48 14.4	-2.6
YAIG				*i* S	Sn	04 48 46.9	-4.2
ARIG	**Puente Sto Nin**	**2.93**	**315**	*e*P	Pn	04 48 15.7	-3.4
ARIG				*i* S	Sn	04 48 51.5	-3.2

IDC 12 04:51:45.8±5.7, 15.°86S×174.°15W, h87km±38km, mb3.3/4, mb1 3.7/5, mb1mx3.4/33, mbtmp3.7/5, Error ellipse: s-maj=235.6km s-min=20.9km az=154.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**3.00**	**50**	P	Pn	04 52 31.4	0.0
	48nm,0.3s,baz=158,slow=2.1,SNR=25						
AFI				S	Sn	04 53 04.6	-1.9
	39nm,0.3s,baz=192,slow=20,SNR=5.7						
WRA	**Warramunga Arr**	**49.03**	**257**	P	P	05 00 24.5	+0.1
	0.4nm,0.8s,baz=90,slow=8.3,SNR=3.8						
ASAR	**Alice Springs**	**49.28**	**252**	P	P	05 00 25.9	-0.3
	1.7nm,0.5s,baz=90,slow=8.2,SNR=21						
TXAR	**Lajitas Array**	**81.47**	**56**	P	P	05 03 54.0	+0.1
	0.1nm,0.6s,baz=218,slow=5.7,SNR=2.7						
PDAR	**Pinedale Array**	**83.09**	**42**	P	P	05 04 02.2	0.0
	0.7nm,0.8s,baz=222,slow=4.8,SNR=4.9						

MEX 12 05:00:22.9±0.3, 16.°25N×98.°21W, h9km±2km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.16**	**28**	*e*P	Pg	05 00 25.9	-0.4
PNIG				*i* S	Sg	05 00 28.6	-0.2
TLIG	**Tlapa**	**1.35**	**345**	*e*P	Pn	05 00 44.5	-3.6
TLIG				*i* S	Sb	05 01 00.9	-5.0
VHO	**Vista Hermosa**	**1.63**	**60**	*e*P	Pn	05 00 48.3	-3.7
VHO				*e*S	Sn	05 01 08.6	-4.7
HUIG	**Huatulco**	**2.07**	**103**	*i* P	Pn	05 00 54.2	-3.7
HUIG				*i* S	Sn	05 01 19.8	-4.1
MEIG	**Mezcala**	**2.15**	**321**	*i* P	Pn	05 00 56.3	-2.6
MEIG				*e*S	Sn	05 01 21.3	-4.5
YAIG	**Yautepec**	**2.72**	**343**	*i* P	Pn	05 01 05.0	-2.0
YAIG				*i* S	Sn	05 01 35.7	-4.5
ARIG	**Puente Sto Nin**	**2.87**	**315**	*i* P	Pn	05 01 06.5	-2.4
ARIG				*i* S	Sn	05 01 39.4	-4.3

IDC ***12*** *05:04:37.8±2.1, 9.°80N×122.°98E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/44, mbtmp3.5/4, Error ellipse: s-maj=245.4km s-min=21.0km az=64.0*

ISC 12 05:04:39.5±1.2, 9.°6N±0.°1×122.°4E±0.°1, h10km, n6, σ1℔70/7, mb3.5/4, 1C, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.87**	**109**	*i* P	**Pn**	**05 04 56.6**	**-1.3**
SNPH				*i* S	**Sn**	**05 05 12.8**	**+2.2**
RCP	**Roxas**	**1.95**	**10**	⇑*e*P	**Pg**	**05 05 16.3**	**-0.6**
WRA	**Warramunga Arr**	**31.65**	**158**	P	**P**	**05 11 01.6**	**-1.5**
	0.2nm,0.3s,baz=339,slow=9.8,SNR=3.0						
ASAR	**Alice Springs**	**34.95**	**161**	P	**P**	**05 11 32.3**	**+0.4**
	1.1nm,0.6s,baz=342,slow=7.6,SNR=13						
MKAR	**Makanchi Array**	**50.29**	**325**	P	**P**	**05 13 37.1**	**+0.8**
	0.2nm,0.4s,baz=120,slow=8.7,SNR=2.9						
KURBB	**Kurchatov Arra**	**54.49**	**327**	P	**P**	**05 14 08.6**	**+1.3**
	0.1nm,0.3s,baz=128,slow=6.0,SNR=2.2						

DJA 12 05:15:17.8±0.9, 8.°S±5.°×107.°E±.°, h28km±6km, M3.8/7, MLv3.8/7, Jawa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CISI	**Cisompet, Garu**	**0.78**	**42**	P	Pn	05 15 33.6	+0.6
CISI				S	Sb	05 15 42.9	-0.2
CNJI	**Cibinong**	**0.84**	**349**	P	Pb	05 15 35.1	+1.3
CNJI				S	Sn	05 15 45.2	0.0
CMJI	**Cimerak**	**1.20**	**73**	P	Pn	05 15 38.4	-0.3
CMJI				S	Sn	05 15 54.2	+0.1
SKJI	**Sukabumi**	**1.34**	**327**	P	Pb	05 15 42.3	0.0
SKJI				S	Sn	05 15 58.3	+0.7
LEM	**Lembang**	**1.34**	**14**	P	Pb	05 15 48.0	+5.5
CGJI	**Cibinong**	**2.19**	**314**	P	Pn	05 15 52.2	-0.2
CGJI				S	Sn	05 16 17.0	-1.6
UGM	**Wanagama**	**3.21**	**86**	P	Pn	05 16 05.1	-1.3
UGM				S	Sn	05 16 44.1	+0.3

IDC ***12*** *05:20:49.2±3.5, 1.°27N×122.°20E, h0km, mb3.8/3, mb1 4.0/4, mb1mx3.5/41, mbtmp3.8/4, ML4.1/1, Error ellipse: s-maj=137.5km s-min=59.6km az=71.0*
DJA ***12*** *05:20:55.2±0.5, 1.°N±3.°×12.°2E±.°, h10km, M4.3/7, mb4.7/1, MLv4.1/7*

ISC 12 05:20:53.7±2.2, 1.°2N±0.°1×121.°79E±0.°06, h30km±13km, n10, σ1℔64/16, mb3.8/3, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MRSI	**Marisa**	**0.69**	**168**	P	**Pn**	**05 21 07.9**	**+0.4**
MRSI				S	**Sn**	**05 21 19.1**	**+1.8**
GTOI	**Gorontalo**	**1.32**	**113**	P	**Pn**	**05 21 15.9**	**-0.3**
GTOI				S	**Sn**	**05 21 31.8**	**-1.0**
KMSI	**Cibinong**	**2.26**	**105**	P	**Pb**	**05 21 36.5**	**+2.6**
KMSI				S	**Sb**	**05 22 00.5**	**-1.0**
LUWI	**Luwuk**	**2.40**	**156**	P	**Pb**	**05 21 34.9**	**-1.3**
LUWI				S	**Sb**	**05 22 05.9**	**+0.5**
PCI	**Palu**	**2.84**	**224**	P	**Pb**	**05 21 42.7**	**-1.0**
PCI				S	**Sn**	**05 22 14.0**	**+3.8**
TTSI	**Tana Toraja**	**4.62**	**205**	P	**Pn**	**05 22 01.5**	**-0.1**
FITZ	**Fitzroy Crossi**	**19.51**	**169**	P	**P**	**05 25 18.9**	**+0.2**
	0.4nm,0.3s,baz=10,slow=10.0,SNR=13						
WRA	**Warramunga Arr**	**24.32**	**150**	P	**P**	**05 26 08.1**	**-0.8**
	1.2nm,0.4s,baz=327,slow=11,SNR=14						
ASAR	**Alice Springs**	**27.34**	**155**	P	**P**	**05 26 35.3**	**-1.0**
	0.8nm,0.5s,baz=339,slow=11,SNR=17						
ASAR				PcP	**PcP**	**05 29 54.6**	**-0.8**
	0.2nm,0.3s,baz=333,slow=2.1,SNR=4.0						
STKA	**Stephens Creek**	**37.84**	**152**	P	**P**	**05 28 07.5**	**-0.3**
	1.6nm,0.6s,baz=343,slow=14,SNR=3.9						

ISCJB ***12*** *05:24:54.8±0.4, 28.°70S±0.°03×67.°33W±0.°07, h130km, mb3.4/4, Error ellipse: s-maj=9.3km s-min=4.3km az=11.3*
SJA ***12*** *05:24:55.6±0.8, 28.°80S×67.°22W, h135km±4km, ML3.3, MW3.6*
IDC ***12*** *05:24:59.6±4.1, 28.°48S×67.°32W, h160km±30km, mb3.1/4, mb1 3.2/8, mb1mx3.2/27, mbtmp3.7/8, Error ellipse: s-maj=41.0km s-min=22.9km az=23.0*

ISC 12 05:24:55.2±0.7, 28.°72S±0.°04×67.°33W±0.°08, h130km, n23, σ1℔05/27, mb3.5/4, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CYA	**Choya**	**1.38**	**79**	*i* P	**Pn**	**05 25 23.0**	**+1.1**
CYA				*e*S	**Sn**	**05 25 42.2**	**-0.1**
CYA				IAML		05 25 43.3	
	comp=Z,237nm,0.6s						
AVFE	**Valle Fertil**	**1.93**	**183**	*i* P	**Pn**	**05 25 29.4**	**+0.9**
AVFE				IAML		05 25 29.9	
	comp=Z,184nm,0.2s						
AVFE				*e*S	**Sn**	**05 25 53.7**	**-0.2**
AMOG	**MOGNA**	**2.43**	**204**	*i* P	**Pn**	**05 25 35.8**	**+1.3**
ACHE	**Chepes**	**2.50**	**167**	*i* P	**Pn**	**05 25 36.5**	**+1.0**
ACHE				*e*S	**Sn**	**05 26 05.8**	**-0.8**
RTLL	**Cerro Villicun**	**2.78**	**201**	*i* P	**Pn**	**05 25 40.2**	**+1.1**
RTLL				*e*S	**Sn**	**05 26 12.9**	**+0.1**
FSA	**Cafayete**	**2.87**	**25**	*i* P	**Pn**	**05 25 42.2**	**+1.9**
SJA	**San Juan**	**2.99**	**201**	*i* P	**Pn**	**05 25 43.2**	**+1.4**
RTCV	**Cerro Valdivia**	**3.30**	**198**	*i* P	**Pn**	**05 25 46.7**	**+0.9**
RTLS	**Leoncito**	**3.50**	**209**	*i* P	**Pn**	**05 25 50.0**	**+1.3**
ACAN	**Cantantal**	**3.54**	**178**	*e*P	**Pn**	**05 25 49.3**	**+0.4**
AUSP	**Uspallata**	**3.91**	**206**	*i* P	**Pn**	**05 25 55.3**	**+1.2**
ASAL	**Salagasta**	**4.07**	**198**	*i* P	**Pn**	**05 25 56.8**	**+0.9**
LVC	**Limon Verde**	**6.25**	**346**	P	**Pn**	**05 26 27.2**	**+1.7**
	comp=Z,70nm,0.3s,baz=156,slow=9.9,SNR=28						
LVC				S	**Sn**	**05 27 34.7**	**-1.2**
	comp=Z,46nm,0.3s,baz=212,slow=22,SNR=5.7						
CPUP	**Villa Florida**	**9.20**	**77**	P	Pn	05 27 09.4	+4.6
	comp=Z,0.1nm,0.3s,baz=245,slow=16,SNR=3.3						
LPAZ	**La Paz**	**12.40**	**356**	P	**Pn**	**05 27 47.2**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=189,slow=9.5,SNR=5.9						
SIV	**San Ignacio**	**13.93**	**26**	P	**Pn**	**05 28 07.6**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=222,slow=10,SNR=6.8						
BDFB	**Brasilia**	**22.08**	**58**	P	**P**	**05 29 39.4**	**-0.6**
	comp=Z,0.8nm,0.3s,baz=258,slow=5.9						
PTGA	**Pitinga**	**28.71**	**15**	P	**P**	**05 30 39.8**	**-0.5**
	comp=Z,0.6nm,0.3s,baz=246,slow=12,SNR=3.4						
TXAR	**Lajitas Array**	**67.37**	**326**	P	**P**	**05 35 36.6**	**0.0**
	comp=Z,0.1nm,0.6s,baz=163,slow=6.6,SNR=2.6						

TORD	**Torodi Ar. Bea**	**78.57**	**68**	P	**P**	**05 36 43.1**	**+0.4**
	comp=Z,0.5nm,0.5s,baz=248,slow=5.5,SNR=4.6						
WRA	**Warramunga Arr**	**127.28**	**206**	PKP	**PKPdf**	**05 43 44.8**	**-0.2**
	comp=Z,0.4nm,0.4s,baz=154,slow=1.7,SNR=10						
ZALV	**Zalesovo Beam**	**147.64**	**31**	PKPbc	**PKPab**	**05 44 24.7**	**-1.7**
	comp=Z,0.9nm,0.4s,baz=318,slow=4.6,SNR=3.3						
MKAR	**Makanchi Array**	**150.23**	**44**	PKPbc	**PKPbc**	**05 44 31.2**	**+0.4**
	comp=Z,0.2nm,0.2s,baz=311,slow=1.9,SNR=3.6						

IDC 12 05:31:27.1±3.0, 9.°48N×122.°25E, h0km, mb3.6/2, mb1 3.7/2, mb1mx3.3/35, mbtmp3.6/2, Error ellipse: s-maj=379.5km s-min=25.9km az=63.0, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**31.57**	**158**	P	P	05 37 51.3	-0.3
	baz=336,slow=9.9,SNR=2.5						
ASAR	**Alice Springs**	**34.86**	**161**	P	P	05 38 20.5	+0.2
	0.7nm,0.7s,baz=343,slow=7.5,SNR=6.4						
MKAR	**Makanchi Array**	**50.32**	**325**	P	P	05 40 25.6	-0.1
	0.4nm,0.6s,baz=136,slow=7.3,SNR=3.2						

JMA 12 05:40:06.1±0.1, 38.°31N×141.°92E, h45km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.47**	**288**	P	Pn	05 40 16.7	0.0
JIO				S	Sn	05 40 24.0	-0.2
OFUJ	**Ofunato**	**0.79**	**346**	P	Pn	05 40 20.9	0.0
OFUJ				S	Sn	05 40 31.5	-0.2
JMK	**Ichinoseki**	**0.84**	**320**	P	Pn	05 40 21.9	+0.3
JMK				S	Sn	05 40 33.1	+0.2
JOU	**Okura**	**0.99**	**274**	P	Pn	05 40 23.8	+0.2
JOU				S	Sn	05 40 36.9	+0.5
JMM	**Marumori**	**0.99**	**244**	P	Pn	05 40 23.1	-0.5
JMM				S	Sn	05 40 35.5	-1.0
JFK	**Kawauchi**	**1.25**	**222**	P	Pn	05 40 26.6	-0.6
JFK				S	Sn	05 40 41.5	-1.4
JOM	**Ohasama**	**1.26**	**337**	P	Pn	05 40 27.8	+0.5
JYK	**Kaneyama**	**1.36**	**297**	P	Pn	05 40 28.7	0.0
JYS	**Shirataka**	**1.46**	**267**	P	Pn	05 40 30.5	+0.5
JYS				S	Sn	05 40 48.7	+0.7
JRG	**Rokugo**	**1.48**	**318**	P	Pn	05 40 31.3	+1.1
JRG				*e*S	Sn	05 40 50.3	+1.9
JFT	**Otama**	**1.48**	**238**	P	Pn	05 40 30.5	+0.2
JFT				*e*S	Sn	05 40 48.8	+0.3
JYA	**Atsumi**	**1.75**	**280**	P	Pn	05 40 34.9	+0.9
MAT	**Matsushiro**	**3.44**	**240**	P	Pn	05 41 00.2	+3.0
MAT				S	Sn	05 41 43.9	+7.1

IDC ***12*** *05:40:35.5±0.6, 9.°52N×122.°23E, h0km, mb3.9/16, mb1 4.0/16, mb1mx3.9/47, mbtmp3.9/16, MS3.2/4, Ms1 3.3/4, ms1mx2.8/51, Error ellipse: s-maj=32.6km s-min=13.6km az=67.0*
MAN ***12*** *05:40:38, 9.°43N×122.°03E, h74km, mb4.6, ML3.5, MS3.4*
ISCJB ***12*** *05:40:39.1±0.5, 9.°44N±0.°06×121.°98E±0.°04, h37km, mb3.9/16, MS3.2/3, Error ellipse: s-maj=8.8km s-min=5.3km az=5.3*

ISC 12 05:40:40.8±0.6, 9.°48N±0.°07×122.°03E±0.°04, h37km, n29, σ1℔47/32, mb4.0/16, MS3.1/3, 5C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.20**	**96**	⇓*i*P	Pn	05 40 54.8	-6.3
SNPH				*i* S	**Sn**	**05 41 10.8**	**-5.4**
JAP	**San Jose, Anti**	**1.27**	**357**	⇑*e*P	**Pn**	**05 41 00.9**	**-1.0**
TBP	**Tagbilaran**	**1.82**	**83**	*e*P	**Pn**	**05 41 10.3**	**+0.7**
LLP	**Lapu-Lapu**	**2.09**	**66**	⇑*e*P	**Pn**	**05 41 12.8**	**-0.

DNZL	**Cakiroluk**	**0.75**	**57**	P		**Pb**	**05 45 18.8**	**-0.6**
BODT	**Bodrum**	**0.79**	**254**	*e*PG		**Pg**	**05 45 17.8**	**-0.6**
BODT	**Bodrum**	**0.79**	**254**	*e*Pg		**Pg**	**05 45 17.8**	**-0.6**
GCAM	**G?zelcaml?**	**0.91**	**297**	*i* P		**Pn**	**05 45 24.2**	**+0.8**
GCAM				*i* S		**Sb**	**05 45 34.5**	**-0.1**
GCAM	**G?zelcaml?**	**0.91**	**297**	P		**Pn**	**05 45 24.2**	**+0.8**
GCAM				S		**Sb**	**05 45 34.5**	**-0.1**
KULA	**Kula-Manisa**	**1.27**	**15**	*e*PN		**Pg**	**05 45 27.4**	**-0.3**
KULA				*e*SN		**Sn**	**05 45 46.0**	**-0.2**
KULA	**Kula-Manisa**	**1.27**	**15**	*e*Pn		**Pg**	**05 45 27.4**	**-0.3**
KULA				*e*Sn		**Sn**	**05 45 46.0**	**-0.2**
AKAS	**Kas**	**1.51**	**134**	*i* P		**Pb**	**05 45 32.1**	**-0.3**
AKAS				*i* S		**Sn**	**05 45 55.9**	**+3.6**
AKAS	**Kas**	**1.51**	**134**	P		**Pb**	**05 45 32.1**	**-0.3**

OBM ***12*** *05:48:42.8±0.1, 49.°48N×89.°00E, h2km, Ml3.8/1, Error ellipse: s-maj=4.1km s-min=1.7km az=20.0*

ISCJB ***12*** *05:48:44.2±0.5, 49.°46N±0.°04×88.°75E±0.°05, h10km, mb4.3/3, Error ellipse: s-maj=5.6km s-min=4.9km az=159.1*

ASRS ***12*** *05:48:44.7±1.8, 49.°25N×88.°74E, h15km, Ms3.2/3*

MOS ***12*** *05:48:44.0±1.4, 49.°21N×88.°76E, h18km, mb4.4/4, Error ellipse: s-maj=12.5km s-min=9.7km az=102.2*

IDC ***12*** *05:48:45.5±1.9, 49.°38N×88.°74E, h0km, mb1 3.6/5, mb1mx3.4/44, mbtmp3.6/5, ML3.2/5, Error ellipse: s-maj=24.9km s-min=22.4km az=174.0*

NNC ***12*** *05:48:51.2±9.5, 48.°94N×88.°56E, h29km±50km, mb4.2, mpv3.8, Error ellipse: s-maj=67.5km s-min=34.0km az=53.0*

ISC 12 05:48:45.1±0.8**, 49°27N**±0.°04×**88°59E**±0.°04**, h10**km**, n35,** σ2**9**8**6**/47**, mb4.4/3,7C-9D, Tuva-Buryatia-Mongolia border region**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**1.22**	**329**	*i* PG		**Pn**	**05 49 08.3**	**-0.1**
AKAR				*e*			05 49 25.4	
ULG	**Ulaangom**	**2.02**	**72**	*e*Pn		Pg	05 49 23.5	+1.4
ULG	**Ulaangom**	**2.02**	**72**	*e*Pg		Pg	05 49 25.2	+3.1
ULG				*e*Sg		Sg	05 49 52.6	+4.3
	600nm,0.4s							
HBD	**Hovd**	**2.18**	**128**	*e*Pg		Pg	05 49 25.8	+0.8
HBD				*e*Sg		Sg	05 49 55.4	+2.2
UKR	**Ust'-Kan**	**2.97**	**306**	*i* Pg		**Pb**	**05 49 38.3**	**+0.2**
UKR				*i* Sg		**Sg**	**05 50 20.5**	**+0.1**
UKR	**Ust'-Kan**	**2.97**	**306**	*i* PN		**Pb**	**05 49 38.3**	**+0.2**
UKR				*i*			05 50 20.5	
TASR	**Tashtagol**	**3.52**	**353**	*i* Pg		**Pb**	**05 49 48.7**	**+1.2**
TASR				*e*Sg		**Sg**	**05 50 35.8**	**-2.3**
TASR	**Tashtagol**	**3.52**	**353**	*i* PN		**Pb**	**05 49 48.6**	**+1.2**
TASR				*e*			05 50 35.8	
CERR	**Cheremushki**	**4.00**	**25**	*e*Pg		**Pb**	**05 49 57.4**	**+1.7**
CERR				*e*Sg		**Sg**	**05 50 48.4**	**-5.2**
CERR	**Cheremushki**	**4.00**	**25**	*e*PN		**Pb**	**05 49 57.4**	**+1.7**
CERR				*e*			05 50 48.4	
ELT	**Eltsovka**	**4.26**	**341**	*e*Pn		**Pb**	**05 49 57.4**	**-2.6**
ELT				*e*Sn		**Sn**	**05 50 37.9**	**-1.8**
ELT				*e*Sg		**Sb**	**05 50 57.5**	**+6.1**
ELT	**Eltsovka**	**4.26**	**341**	*e*PN		**Pn**	**05 49 53.2**	**+3.3**
ELT				*e*			05 50 57.5	
ABNR	**Abakan**	**4.80**	**21**	*e*PN		**Pn**	**05 49 56.9**	**-0.4**
MK31	**Makanchi Array**	**4.90**	**242**	⇓Pn		**Pn**	**05 50 02.7**	**+3.8**
	1.6nm,0.3s,baz=65,slow=14,SNR=30							
MK31				⇓Pg		**Pg**	**05 50 18.0**	**-0.9**
	24nm,0.4s,baz=59,slow=15,SNR=28							
MK31				⇑Lg		Lg	05 51 20.4	
	50nm,0.6s,baz=68,slow=32,SNR=7.4							
MKAR	**Makanchi Array**	**4.90**	**242**	Pn		Pn	05 50 03.9	+5.0
	1.7nm,0.3s,baz=60,slow=14,SNR=21							
MKAR				Pg		**Pg**	**05 50 16.6**	**-2.4**
	12nm,0.3s,baz=67,slow=18,SNR=50							
MKAR				Sn		**Sn**	**05 50 49.9**	**-5.6**
	5.5nm,0.3s,baz=65,slow=24,SNR=5.7							
MKAR				Lg		Lg	05 51 21.4	
	11nm,0.3s,baz=65,slow=27,SNR=14							
MAKZ	**Makanchi**	**5.08**	**243**	⇓Pn		**Pn**	**05 50 05.2**	**+4.0**
	2.5nm,0.4s							
MAKZ				⇑Pg		**Pg**	**05 50 19.2**	**-3.0**
	20nm,0.6s							
MAKZ				⇑Lg		Lg	05 51 28.8	
	126nm,0.9s							
MK01	**Makanchi Array**	**5.24**	**243**	*e*Pn		Pn	05 50 04.0	+2.4
MK01	**Makanchi Array**	**5.24**	**243**	*e*Pg		Pb	05 50 17.2	+2.3
MK01				*e*Sg		Sb	05 51 23.7	+5.9
ZALV	**Zalesovo Beam**	**5.24**	**335**	Pn		**Pn**	**05 50 05.0**	**+1.6**
	2.3nm,0.3s,baz=156,slow=13,SNR=12							
ZALV				Lg		Lg	05 51 28.1	
	5.9nm,0.3s,baz=142,slow=27,SNR=9.2							
TSC	**Tosontsengel**	**6.05**	**92**	*e*Pn		Pn	05 50 18.2	+5.3
TSC	**Tosontsengel**	**6.05**	**92**	*e*Pg		Pb	05 50 30.6	+1.7
TSC				*e*Sg		Sg	05 51 50.9	-6.6
	88nm,0.8s							
NVS	**Novosibirsk**	**6.48**	**331**	*i* Pg		**Pg**	**05 50 46.2**	**-2.9**
NVS				*i* Sn		**Sn**	**05 51 38.2**	**+3.9**
NVS				*i* Sg		**Sg**	**05 52 08.3**	**-4.6**
NVS	**Novosibirsk**	**6.48**	**331**	*i* P*		**Pg**	**05 50 46.2**	**-2.9**
NVS				*i*			05 51 38.2	
KURK	**Kurchatov**	**6.59**	**286**	⇓Pn		**Pn**	**05 50 24.4**	**+2.4**
	2.7nm,0.4s							
KURK				⇑Sn		**Sn**	**05 51 41.4**	**+4.3**
	27nm,0.7s							
KURK				⇓Lg		Lg	05 52 22.8	
	75nm,0.9s							
KURK	**Kurchatov**	**6.59**	**286**	PN		**Pn**	**05 50 25.0**	**+3.0**
KURK				pmax		pmax		
	comp=Z,1.0nm,0.3s							
KURBB	**Kurchatov Arra**	**6.63**	**286**	Pn		**Pn**	**05 50 25.0**	**+2.5**
	comp=Z,0.5nm,0.3s,baz=96,slow=15,SNR=23							
KURBB				Sn		**Sn**	**05 51 37.3**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=92,slow=27,SNR=3.3							
KURBB				Lg		Lg	05 52 15.8	
	comp=Z,1.0nm,0.3s,baz=98,slow=34,SNR=10							
KURBB	**Kurchatov Arra**	**6.63**	**286**	⇑Pn		**Pn**	**05 50 24.8**	**+2.3**
	comp=Z,4.8nm,0.5s							
KURBB				⇑Sn		**Sn**	**05 51 42.7**	**+4.5**
	comp=Z,42nm,0.6s							
KURBB				⇑Lg		Lg	05 52 23.2	
	comp=Z,277nm,0.8s							
KRAR	**Krasnoyarsk**	**7.23**	**19**	*e*P		**Pn**	**05 50 31.2**	**+0.4**
HTG	**Hatgal**	**7.24**	**77**	*e*Sg		Sg	05 52 33.6	-2.0
	comp=Z,68nm,0.7s							
TTS	**Tsetserleg**	**8.44**	**98**	*e*Pg		Pg	05 51 20.9	-3.8
TTS				*e*Sg		Sg	05 53 09.2	-4.6
	comp=Z,26nm,0.6s							
PDGK	**Podgornoye**	**8.66**	**230**	⇓Pn		**Pn**	**05 50 54.0**	**+3.6**
	comp=Z,4.1nm,0.8s							
PDGK				⇓Lg		Lg	05 53 18.6	
	comp=Z,38nm,0.9s							
BLGM	**Bulgan**	**9.50**	**88**	*e*Sg			05 53 49.2	
TLY	**Talaya**	**9.89**	**70**	Sn		Sn	05 53 08.4	+10
	comp=Z,0.0nm,0.3s,baz=282,slow=18,SNR=2.5							
TLY	**Talaya**	**9.89**	**70**	*e*P		**Pn**	**05 51 06.4**	**-0.9**
AAK	**Ala-Archa**	**11.84**	**241**	Lg		Lg	05 55 02.2	
	comp=Z,0.3nm,0.3s,baz=145,slow=22,SNR=5.6							
AAK	**Ala-Archa**	**11.84**	**241**	*e*P		**Pn**	**05 51 34.1**	**+0.1**
SONM	**Songino Array**	**11.89**	**90**	Pn		**Pn**	**05 51 34.9**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=279,slow=13,SNR=3.1							
SONM				Pg			05 52 19.7	
	comp=Z,0.1nm,0.3s,baz=287,slow=16,SNR=4.5							
SONM				Lg		Lg	05 54 53.8	
	comp=Z,0.2nm,0.3s,baz=282,slow=32,SNR=4.7							
BVAR	**Borovoye Array**	**12.03**	**295**	Pn		**Pn**	**05 51 37.2**	**+0.8**
	comp=Z,0.6nm,0.3s,baz=103,slow=14,SNR=5.9							
BVAR				Sn		**Sn**	**05 53 44.6**	**-5.9**
	comp=Z,0.2nm,0.3s,baz=104,slow=24,SNR=2.3							
BRVK	**Borovoye**	**12.10**	**295**	*e*P		**Pn**	**05 51 39.5**	**+2.2**
ARU	**Arti**	**19.38**	**303**	*d* iP		**Pn**	**05 53 13.1**	**+1.2**
ARU				S		**S**	**05 56 53.5**	**+3.7**
ARU				pmax		pmax		
	comp=Z,9.0nm,2.5s							
HIA	**Hailar**	**20.26**	**78**	*e*P		Pn	05 53 20.1	-2.3
HIA				pmax		pmax		
	comp=Z,2.0nm,0.8s							
YAK	**Yakutsk**	**25.96**	**45**	*e*P		**P**	**05 54 17.3**	**0.0**
YAK				pmax		pmax		
	comp=Z,9.0nm,0.5s							
TIXI	**Tiksi**	**28.95**	**25**	*i* P		P	05 54 48.3	+4.2
TIXI				pmax		pmax		
	comp=Z,3.0nm,1.0s							
KIV	**Kislovodsk**	**31.59**	**278**	*i* P		**P**	**05 55 10.6**	**+2.8**
OBN	**Obninsk**	**31.78**	**301**	⇓eP		**P**	**05 55 07.8**	**-1.4**
OBN				*e*	PPP	PPP	05 55 14.8	
OBN				P	PPP	PPP	05 56 27.0	
OBN				S		**S**	**06 00 16.0**	**-3.0**
OBN				pmax		pmax		
	comp=Z,5.0nm,0.9s							

IDC 12 05:51:34.2±2.5**, 15°15S**×**176°11W, h341**km±46km**, mb3.3/3, mb1 3.4/4, mb1mx3.0/33, mbtmp4.0/4, Error ellipse: s-maj=128.9km s-min=20.8km az=143.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.37**	**74**	P		Pn	05 52 46.7	0.0
	5.8nm,0.3s,baz=248,slow=5.4,SNR=6.3							
STKA	**Stephens Creek**	**41.91**	**239**	P		P	05 58 52.3	-0.3
	1.1nm,0.6s,baz=90,slow=13,SNR=2.9							
WRA	**Warramunga Arr**	**47.36**	**257**	P		P	05 59 35.1	-0.3
	194nm,1.2s,baz=92,slow=7.6,SNR=14							
ASAR	**Alice Springs**	**47.71**	**252**	P		P	05 59 38.1	+0.1
	4.8nm,0.5s,baz=86,slow=8.0,SNR=76							
ILAR	**Eielson Array**	**82.72**	**12**	P		P	06 03 20.0	0.0
	0.2nm,0.7s,baz=210,slow=7.0,SNR=3.7							
BRTR	**Keskin Array B**	**144.28**	**319**	PKP		PKPbc	06 10 29.8	+0.1
	0.3nm,0.4s,baz=48,slow=2.1,SNR=2.8							

ISCJB ***12*** *06:03:40.5±0.8, 9.°29N±0.°07×122.°09E±0.°06, h10km, mb4.2/5, MS4.0/1, Error ellipse: s-maj=9.6km s-min=8.4km az=166.2*

IDC ***12*** *06:03:40.5±1.2, 9.°62N×122.°66E, h0km, mb3.7/4, mb1 3.8/4, mb1mx3.5/27, mbtmp3.7/4, MS4.0/1, Ms1 4.0/1, ms1mx2.7/52, Error ellipse: s-maj=161.5km s-min=20.4km az=68.0*

MAN ***12*** *06:03:42, 9.°38N×122.°08E, h11km, mb4.5, ML3.4, MS3.3*

ISC 12 06:03:42.2±1.1**, 9°44N**±0.°09×**122°16E**±0.°07**, h10**km**, n12,** σ2**9**8**5**/14**, mb3.8/5,2C-2D, Negros**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.07**	**95**	⇑*i*P		Pb	06 03 58.5	-4.4
SNPH				*i* S		**Sb**	**06 04 14.7**	**-2.2**
JAP	**San Jose, Anti**	**1.31**	**351**	⇑*e*P		**Sn**	**06 04 20.3**	**-3.9**
TBP	**Tagbilaran**	**1.70**	**82**	*e*P		**Pb**	**06 04 14.3**	**+0.7**
LLP	**Lapu-Lapu**	**1.98**	**64**	*e*P		**Pn**	**06 04 17.4**	**+1.5**
LLP				*e*S		**Sn**	**06 04 43.7**	**+3.0**
RCP	**Roxas**	**2.18**	**15**	⇓*e*P		**Pn**	**06 04 19.3**	**+0.7**
RCP				*e*S		**Sn**	**06 04 49.0**	**+3.3**
PLP	**Palo**	**3.26**	**58**	⇓*i*P		**Pn**	**06 04 34.9**	**+1.5**
PLP				*e*S		**Sn**	**06 05 05.8**	**-6.5**
WRA	**Warramunga Arr**	**31.57**	**158**	P		**P**	**06 10 04.8**	**-0.4**
	165nm,0.5s,baz=341,slow=9.4,SNR=1.1							
ASAR	**Alice Springs**	**34.85**	**161**	P		**P**	**06 10 33.9**	**0.0**
	0.8nm,0.6s,baz=345,slow=7.4,SNR=11							
CTA	**Charters Tower**	**37.73**	**141**	LR		LR	06 26 47.5	
	comp=Z,230nm,20.2s,baz=32,slow=37							
SONM	**Songino Array**	**40.52**	**344**	P		**P**	**06 11 22.5**	**+0.9**
	0.2nm,0.3s,baz=158,slow=8.9,SNR=2.9							
MKAR	**Makanchi Array**	**50.30**	**325**	P		**P**	**06 12 39.0**	**-0.2**
	0.5nm,0.7s,baz=132,slow=8.6,SNR=3.6							
FINES	**FINESS Array B**	**84.68**	**331**	P		**P**	**06 16 15.6**	**-0.6**
	1.0nm,0.7s,baz=90,slow=3.3,SNR=3.9							

IDC 12 06:09:13.1±1.4**, 3°46N**×**31°30W, h0**km**, mb3.6/4, mb1 3.9/4, mb1mx3.5/33, mbtmp3.6/4, Error ellipse: s-maj=48.2km s-min=32.4km az=155.0, Central Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
H10N3	**ASCENSION HYDR**	**20.17**	**124**	T		T	06 34 25.8	
	baz=302,slow=75,SNR=121							
H10N2	**ASCENSION HYDR**	**20.17**	**124**	T		T	06 34 26.2	
	baz=302,slow=75,SNR=164							
H10N1	**ASCENSION HYDR**	**20.19**	**124**	T		T	06 34 29.5	
	baz=302,slow=75,SNR=162							
H10S3	**ASCENSION HYDR**	**20.66**	**127**	T		T	06 35 14.3	
	baz=305,slow=75,SNR=110							
H10S1	**ASCENSION HYDR**	**20.67**	**127**	T		T	06 35 14.3	
	baz=305,slow=75,SNR=139							
H10S2	**ASCENSION HYDR**	**20.68**	**127**	T		T	06 35 14.3	
	baz=305,slow=75,SNR=79							
TORD	**Torodi Ar. Bea**	**34.00**	**72**	P		P	06 15 58.8	-0.1
	0.8nm,0.7s,baz=258,slow=8.8,SNR=4.7							
CPUP	**Villa Florida**	**38.87**	**219**	P		P	06 16 40.3	-0.1
	1.1nm,0.8s,baz=46,slow=8.7,SNR=3.1							
TXAR	**Lajitas Array**	**72.95**	**299**	P		P	06 20 44.7	-0.2
	0.2nm,0.7s,baz=102,slow=6.6,SNR=4.2							
YKA	**Yellowknife Ar**	**83.85**	**332**	P		P	06 21 44.7	+0.3
	0.4nm,0.8s,baz=90,slow=6.2,SNR=3.3							

ISCJB ***12*** *06:12:14.9±0.3, 56.°34S±0.°06×26.°94W±0.°09, h101km, mb4.7/24, Error ellipse: s-maj=9.7km s-min=6.2km az=30.7*

BJI ***12*** *06:12:15.5, 56.°30S×26.°90W, h98km, mB4.9/3*

NEIC ***12*** *06:12:17.2±1.2, 56.°36S×26.°87W, h106km±11km, mb4.9/17, Error ellipse: s-maj=8.3km s-min=6.3km az=219.0*

GCMT ***12*** *06:12:17.2±0.4, 56.°65S×27.°05W, h153km±4km, MW5.1/65, Moment Tensor Solution. s20,c20; s65,c86; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-1.47±.23; Mθθ5.66±.31; Mϕϕ-4.19±.27; Mrθ-2.74±.23; Mθϕ-2.38±.33; Mϕr1.65±.16; Best double couple: Mo6.18100×10^16 NP1:ϕs146.00000°, δ90.00000°, λ-28.00000°. NP2: ϕs236.00000°, δ62.00000°, λ-180.00000°. Principal axes: T 7.2720, Plg19.0000°, Azm195.0000°; N -2.1820, Plg62.0000°, Azm326.0000°; P -5.0900, Plg20.0000°, Azm97.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

IDC ***12*** *06:12:17.0±0.6, 56.°36S×26.°82W, h104km±4km, mb4.4/15, mb1 4.5/16, mb1mx4.3/25, mbtmp4.7/16, MS3.6/9, Ms1 3.6/9, ms1mx3.5/22 Error ellipse: s-maj=13.4km s-min=10.9km az=3.0*

ISC 12 06:12:16.5±0.3**, 56°37S**±0.°07×**26°93W**±0.°06**, h101**km**, n81,** σ1**2**0**/**101**, mb4.8/24,1D, South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**5.84**	**287**	*e*Pn		**Pn**	**06 13 40.9**	**+0.3**
HOPE				*e*Sn		**Sn**	**06 14 44.1**	**-2.0**
VNA1	**Neumayer--Stat**	**16.45**	**158**	P		**Pn**	**06 16 00.9**	**+0.1**
SNAA	**Sanae**	**18.39**	**156**	P		**P**	**06 16 22.7**	**-0.5**
SNAA	**Sanae**	**18.39**	**156**	*e*P		**P**	**06 16 22.4**	**-0.8**
	42nm,0.7s							
EFI	**East Falkland**	**18.79**	**271**	*e*P		**P**	**06 16 27.9**	**+0.3**
	124nm,1.4s							
PMSA	**Palmer Station**	**19.80**	**230**	P		**Pn**	**06 16 40.8**	**-0.2**
	2.2nm,0.3s,baz=58,slow=6.6,SNR=35							
PMSA				LR		LR	06 23 25.1	
	comp=Z,169nm,21.0s,baz=88,slow=34							
PMSA	**Palmer Station**	**19.80**	**230**	*e*P		**Pn**	**06 16 39.7**	**-1.2**
PMSA				*e*Pn		**P**	**06 16 40.5**	**+2.0**
USHA	**Ushuaia**	**23.25**	**256**	P		**P**	**06 17 16.4**	**+1.7**
	11nm,0.7s,baz=90,slow=12,SNR=3.8							
TRQA	**Tornquist**	**29.58**	**293**	*e*P		**P**	**06 18 11.2**	**-0.5**
	34nm,1.8s							
SYO	**Syowa Base**	**31.25**	**140**	⇓*e*P		**P**	**06 18 23.8**	**-2.1**
PLCA	**Paso Flores**	**32.20**	**280**	P		**P**	**06 18 34.5**	**-0.2**
	2.6nm,1.0s,baz=104,slow=4.2,SNR=2.3							
PLCA				PcP		**PcP**	**06 21 20.4**	**-0.6**
	2.4nm,0.7s,baz=188,slow=2.1,SNR=4.1							
PLCA				ScP		**ScP**	**06 24 52.7**	**-2.3**
	2.7nm,0.9s,baz=106,slow=6.5,SNR=4.1							
PLCA				LR		LR	06 32 07.4	
	comp=Z,90nm,18.1s,baz=156,slow=37							
QSPA	**South Pole Qui**	**33.88**	**180**	*e*P		**P**	**06 18 49.7**	**+0.5**
	214nm,1.6s							
CPUP	**Villa Florida**	**37.13**	**311**	P		**P**	**06 19 16.7**	**-0.5**
	1.5nm,0.5s,baz=151,slow=8.1,SNR=8.8							
CPUP				PcP		**PcP**	**06 21 35.5**	**+0.1**
	1.8nm,0.5s,baz=180,slow=0.8,SNR=7.6							
CPUP				ScP		**ScP**	**06 25 11.1**	**-1.7**
	4.1nm,1.0s,baz=75,slow=1.7,SNR=7.5							
CPUP				LR		LR	06 34 20.1	
	comp=Z,50nm,18.8s,baz=158,slow=36							
CPUP	**Villa Florida**	**37.13**	**311**	*e*P		**P**	**06 19 17.3**	**+0.1**
CPUP				PcP		**PcP**	**06 21 35.5**	**+0.1**
MAW	**Mawson**	**39.81**	**143**	P		**P**	**06 19 39.1**	**+0.1**
	8.9nm,0.7s,baz=227,slow=7.3,SNR=14							
MAW				LR		LR	06 33 47.8	
	comp=Z,64nm,20.0s,baz=242,slow=32							
MAW	**Mawson**	**39.81**	**143**	*e*P		**P**	**06 19 39.4**	**+0.3**
	9.1nm,1.5s							
SUR	**Sutherland**	**40.58**	**74**	P		**P**	**06 19 47.0**	**+0.8**
	0.5nm,0.8s,baz=204,slow=8.5,SNR=7.4							
BDFB	**Brasilia**	**43.71**	**330**	P		**P**	**06 20 13.8**	**+2.2**
	1.6nm,0.6s,baz=134,slow=3.8							
BDFB				LR		LR	06 37 00.6	
	comp=Z,58nm,20.8s,baz=349,slow=34							
LVC	**Limon Verde**	**45.59**	**300**	P		**P**	**06 20 27.5**	**+0.8**
	23nm,0.3s,baz=151,slow=4.9,SNR=6.8							
LVC				PcP		**PcP**	**06 22 04.4**	**+0.8**
	29nm,0.8s,baz=180,slow=3.4,SNR=2.8							
LVC	**Limon Verde**	**45.59**	**300**	*e*P		**P**	**06 20 27.6**	**+0.8**
	11nm,0.8s							
LVC				PcP		**PcP**	**06 22 04.4**	**+0.8**
SBA	**Scott Base**	**45.77**	**184**	*e*P		**P**	**06 20 28.3**	**+1.2**
	17nm,0.9s							
BOSA	**Boshof**	**45.91**	**75**	P		**P**	**06 20 28.6**	**-0.3**
	11nm,0.9s,baz=213,slow=6.3,SNR=14							
BOSA				LR		LR	06 36 44.6	
	comp=Z,278nm,18.2s,baz=229,slow=32							
BOSA	**Boshof**	**45.91**	**75**	*e*P		**P**	**06 20 28.6**	**-0.3**
	20nm,1.3s							
VNDA	**Vanda**	**46.26**	**183**	P		**P**	**06 20 31.6**	**+0.7**
	24nm,0.7s,baz=184,slow=6.3,SNR=66							
VNDA				ScP		**ScP**	**06 25 48.4**	**+0.1**
	1.5nm,0.6s,baz=203,slow=2.8,SNR=5.8							
PB01	**IPOC Station P**	**47.20**	**301**	*e*P		**P**	**06 20 39.6**	**+0.6**
	10nm,0.7s							
SIV	**San Ignacio**	**47.90**	**313**	ScP		**ScP**	**06 25 55.3**	**-0.8**
	4.8nm,0.9s,baz=135,slow=4.6,SNR=7.8							
H10S2	**ASCENSION HYDR**	**48.26**	**16**	T		T	07 13 33.4	
	baz=189,slow=74,SNR=20							
H10S3	**ASCENSION HYDR**	**48.27**	**16**	T		T	07 13 34.3	
	baz=189,slow=74,SNR=19							
H10S1	**ASCENSION HYDR**	**48.28**	**16**	T		T	07 13 33.6	
	baz=189,slow=74,SNR=22							
LBTB	**Lobatse**	**48.96**	**73**	P		**P**	**06 20 51.8**	**-0.8**
	15nm,0.7s,baz=228,slow=7.9,SNR=26							
LBTB	**Lobatse**	**48.96**	**73**	*e*P		**P**	**06 20 52.3**	**-0.3**
	18nm,0.8s							
H10N1	**ASCENSION HYDR**	**49.38**	**16**	T		T	07 14 57.9	
	baz=189,slow=75,SNR=28							
H10N3	**ASCENSION HYDR**	**49.38**	**16**	T		T	07 14 56.3	
	baz=189,slow=75,SNR=18							
H10N2	**ASCENSION HYDR**	**49.40**	**16**	T		T	07 14 57.9	
	baz=189,slow=75,SNR=46							
TSUM	**Tsumeb**	**49.71**	**60**	P		**P**	**06 20 58.4**	**0.0**
	14nm,0.9s,baz=199,slow=7.1,SNR=29							
TSUM	**Tsumeb**	**49.71**	**60**	*e*P		**P**	**06 20 58.5**	**+0.2**
	21nm,1.0s							
LPAZ	**La Paz**	**50.68**	**305**	P		**P**	**06 21 06.8**	**+0.5**
	9.1nm,0.5s,baz=127,slow=5.1,SNR=67							
LPAZ				LR		LR	06 45 21.3	
	comp=Z,32nm,18.0s,baz=159,slow=39							
LPAZ	**La Paz**	**50.68**	**305**	*e*P		**P**	**06 21 07.2**	**+0.9**
	9.8nm,0.8s							
CASY	**Casey**	**53.56**	**160**	*e*P		**P**	**06 21 26.5**	**+0.3**
	14nm,0.8s							
SAML	**Samuel**	**55.13**	**315**	*e*P		**P**	**06 21 37.5**	**-0.7**
	6.1nm,0.9s							
LSZ	**Lusaka**	**58.35**	**68**	*e*P		**P**	**06 22 01.3**	**+0.1**
	21nm,0.9s							
DBIC	**Dimbokro**	**65.40**	**24**	P		**P**	**06 22 48.2**	**+0.1**
	3.8nm,0.6s,baz=175,slow=5.4,SNR=9.5							
DBIC				pP		**pP**	**06 23 14.3**	**+1.1**
	2.9nm,0.6s,baz=172,slow=5.8,SNR=2.8							
DBIC				LR		LR	06 44 09.8	
	comp=Z,58nm,20.2s,baz=172,slow=29							
OTAV	**Otavalo**	**69.95**	**304**	*e*P		**P**	**06 23 18.2**	**+0.9**
OTAV	**Otavalo**	**69.95**	**304**	*e*P		**P**	**06 23 18.6**	**+1.2**
	41nm,1.6s							
CMBC	**Cumbal**	**70.28**	**304**	*e*P		**P**	**06 23 21.4**	**+2.0**
SJAC	**San Juan de Ar**	**70.63**	**309**	*e*P		**P**	**06 23 20.0**	**-1.1**
POPC	**Popayan, Colom**	**71.18**	**306**	*e*P		**P**	**06 23 25.5**	**+1.0**
PRAC	**Prado**	**71.43**	**309**	*e*P		**P**	**06 23 25.9**	**0.0**
PRAC	**Prado**	**71.43**	**309**	*e*P		**P**	**06 23 25.9**	**0.0**
CHIC	**Chingaza**	**71.76**	**310**	*e*P		P	06 23 23.3	-4.9
RUSC	**La Rusia**	**72.62**	**311**	*e*P		**P**	**06 23 31.2**	**-2.2**
NORC	**Norcasia**	**73.08**	**309**	*e*P		**P**	**06 23 34.0**	**-1.7**
**TORD

0.6nm,0.3s,baz=259,slow=2.3,SNR=3.1
INK Inuvik 146.14 320 PKPbc **PKPdf 06 31 42.5 +0.5**
12nm,0.7s,baz=58,slow=3.0,SNR=52
INK SKPbc **SKPbc 06 35 11.3 -1.2**
5.0nm,0.8s,baz=89,slow=4.1,SNR=8.3
HHC Hu-ho-hao-te 149.03 102 *e*PKPbc **PKPdf 06 31 48.5 +0.6**
ILAR Eielson Array 150.44 311 PKPbc **PKPbc 06 31 54.2 -0.4**
7.2nm,0.8s,baz=133,slow=0.6,SNR=52
ILAR SKPbc 06 35 21.6
0.7nm,0.9s,baz=142,slow=2.0,SNR=4.0
SONM Songino Array 150.60 87 PKPbc **PKPbc 06 31 55.3 -0.4**
3.8nm,0.6s,baz=225,slow=3.1,SNR=28
SONM pPKPbc **pPKPbc 06 32 22.4 -0.8**
1.5nm,0.6s,baz=235,slow=3.4,SNR=3.8
JNU Nakatsue 152.16 137 PKPbc **PKPbc 06 31 59.5 -0.2**
6.9nm,0.8s,baz=168,slow=2.7,SNR=5.1

ISCJB ***12*** *06:24:32.9±0.5, 22°.00S±0°.04×69°.87W±0°.06, h75km±3km, mb3.8/8, Error ellipse: s-maj=10.0km s-min=6.2km az=1.2*
IDC ***12*** *06:24:33.9±0.7, 21°.97S×69°.82W, h68km±5km, mb3.7/8, mb1 3.9/11, mb1mx3.7/27, mbtmp4.0/11, MS3.4/4, Ms1 3.5/4, ms1mx3.0/28, Error ellipse: s-maj=21.3km s-min=15.3km az=44.0*
GUC ***12*** *06:24:33.6±0.8, 22°.01S×69°.86W, h64km±5km, ML4.5*
ISC 12 06:24:33.6±0.6, 22°.00S±0°.04×69°.81W±0°.06, h65km±5km, n36,σ1°71/38, mb3.9/8, 2C-5D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB07	**IPOC Station P**	**0.28**	**345**	⇓*i*	P		**Pn**	**06 24 44.7**	**+0.3**
PB07				*i*	S		**Sn**	**06 24 52.5**	**+0.2**
PB07					IAML			06 24 52.7	
	comp=E,50μm,0.2s								
PB04	**IPOC Station P**	**0.46**	**223**	⇓*i*	P		**Pn**	**06 24 45.8**	**0.0**
PB04				*i*	S		**Sn**	**06 24 54.7**	**0.0**
PB04					IAML			06 24 55.3	
	comp=N,111μm,0.7s								
PB09	**IPOC Station P**	**0.56**	**69**	⇑*i*	P		**Pn**	**06 24 48.1**	**+1.2**
PB09				*i*	S		**Sn**	**06 24 58.3**	**+1.7**
PB09					IAML			06 24 59.1	
	comp=E,154μm,0.1s								
PB06	**IPOC Station P**	**0.74**	**163**	⇓*i*	P		**Pn**	**06 24 48.9**	**+0.1**
PB06				*i*	S		**Sn**	**06 25 00.5**	**+0.5**
PB06					IAML			06 25 01.0	
	comp=N,19μm,0.1s								
PB01	**IPOC Station P**	**1.00**	**18**	⇓*i*	P		**Pn**	**06 24 52.9**	**+0.9**
PB01				*i*	S		**Sn**	**06 25 06.8**	**+1.2**
PB01					IAML			06 25 07.1	
	comp=E,18μm,0.3s								
LVC	**Limon Verde**	**1.03**	**126**		P		**Pn**	**06 24 54.1**	**+1.4**
	comp=E,9μm,0.3s,baz=311,slow=9.2,SNR=5661								
LVC					S		**Sn**	**06 25 08.9**	**+2.2**
	comp=E,31μm,0.3s,baz=270,slow=20,SNR=84								
HMBC	**Humberstone**	**1.71**	**358**	⇓*i*	P		**Pn**	**06 25 01.9**	**+0.4**
HMBC					IAML			06 25 28.8	
	comp=N,3μm,0.6s								
LPAZ	**La Paz**	**5.90**	**16**		P		**Pn**	**06 26 01.9**	**+2.9**
	comp=N,1.1nm,0.3s,baz=191,slow=2.7,SNR=23								
LPAZ					S		**Sn**	**06 27 05.5**	**-0.1**
	baz=217,slow=20,SNR=1.7								
LPAZ					LR	LR		06 28 39.5	
	comp=N,134nm,20.8s,baz=198,slow=42								
SIV	**San Ignacio**	**10.20**	**56**		P		**Pn**	**06 26 57.0**	**-0.3**
	comp=N,3.4nm,0.3s,baz=252,slow=11,SNR=44								
SIV					S		**Sn**	**06 28 42.0**	**-8.1**
	baz=229,slow=19,SNR=2.0								
SIV					LR	LR		06 31 45.8	
	comp=N,89nm,20.3s,baz=70,slow=42								
CPUP	**Villa Florida**	**12.18**	**113**		P		**Pn**	**06 27 23.5**	**-0.8**
	comp=N,0.1nm,0.3s,baz=288,slow=15,SNR=4.0								
PLCA	**Paso Flores**	**18.69**	**182**		P		**P**	**06 28 47.0**	**+0.4**
	comp=N,0.2nm,0.3s,baz=27,slow=13,SNR=5.2								
BDFB	**Brasilia**	**21.57**	**77**		P		**P**	**06 29 20.2**	**+2.2**
	comp=N,1.1nm,0.5s,baz=163,slow=20								
PTGA	**Pitinga**	**23.21**	**26**		P		**P**	**06 29 34.8**	**-0.4**
	comp=N,1.2nm,0.4s,baz=185,slow=17,SNR=4.7								
TXAR	**Lajitas Array**	**60.57**	**326**		P		**P**	**06 34 37.3**	**-0.2**
	comp=N,0.2nm,0.8s,baz=151,slow=6.2,SNR=3.1								
TXAR					pP		**pP**	**06 34 55.2**	**+0.4**
	comp=N,0.4nm,0.8s,baz=153,slow=8.4,SNR=3.9								
DBIC	**Dimbokro**	**69.68**	**74**		P		**P**	**06 35 36.3**	**-0.6**
	comp=N,3.5nm,0.9s,baz=185,slow=5.2,SNR=4.2								
PDAR	**Pinedale Array**	**74.13**	**331**		P		**P**	**06 36 03.7**	**+0.5**
	comp=N,0.3nm,0.6s,baz=114,slow=4.5,SNR=3.2								
PDAR					pP		**pP**	**06 36 21.1**	**+0.1**
	comp=N,0.3nm,0.6s,baz=123,slow=4.4,SNR=2.8								
ULM	**Lac du Bonnet**	**75.55**	**343**		pP		pP	06 36 28.5	-0.1
	comp=N,1.9nm,0.7s,baz=61,slow=10,SNR=2.4								
SYO	**Syowa Base**	**76.33**	**160**	⇑*e*	P		**P**	**06 36 14.4**	**-0.8**
TORD	**Torodi Ar. Bea**	**78.31**	**71**		P		**P**	**06 36 26.7**	**-0.5**
	comp=N,2.3nm,0.4s,baz=253,slow=5.3,SNR=41								
TSUM	**Tsumeb**	**80.70**	**107**		LR		LR	07 08 55.9	
	comp=N,37nm,19.9s,baz=149,slow=33								
BOSA	**Boshof**	**83.95**	**118**		P		**P**	**06 36 57.2**	**0.0**
	comp=N,1.5nm,0.8s,baz=221,slow=6.9,SNR=3.5								
MAW	**Mawson**	**84.09**	**164**		P		**P**	**06 36 57.1**	**+0.2**
	comp=N,2.9nm,0.7s,baz=298,slow=12,SNR=4.4								
YKA	**Yellowknife Ar**	**91.38**	**341**		pP		pP	06 37 49.9	-0.2
	comp=N,1.0nm,0.9s,baz=136,slow=4.6,SNR=4.7								
URZ	**Urewera**	**93.25**	**227**		LR		LR	07 10 48.7	
	comp=N,102nm,19.9s,baz=12,slow=30								
H11S2	**WAKE ISLAND Hyl**	**27.11**	**277**		T		T	09 03 22.3	
	baz=105								
H11S1	**WAKE ISLAND Hyl**	**27.12**	**277**		T		T	09 03 21.2	
	baz=105								
H11S3	**WAKE ISLAND Hyl**	**27.13**	**277**		T		T	09 03 23.5	
	baz=105								
H11N3	**WAKE ISLAND Hyl**	**27.20**	**279**		T		T	09 03 27.5	
	baz=103								
H11N2	**WAKE ISLAND Hyl**	**27.22**	**279**		T		T	09 03 28.6	
	baz=103								
H11N1	**WAKE ISLAND Hyl**	**27.22**	**279**		T		T	09 03 29.6	
	baz=103								
ASAR	**Alice Springs**	**129.08**	**208**		PKP		**PKPdf**	**06 43 34.0**	**-1.0**
	comp=N,0.6nm,0.7s,baz=184,slow=3.8,SNR=5.1								
SEY	**Seymchan**	**130.22**	**336**		PKP		**PKPdf**	**06 43 36.9**	**+1.2**
	comp=N,1.7nm,0.7s,baz=51,slow=6.4,SNR=4.0								
SEY					pPKP		**pPKPdf**	**06 43 55.0**	**+0.3**
	comp=N,4.1nm,1.0s,baz=59,slow=2.4,SNR=4.0								
WRA	**Warramunga Arr**	**132.10**	**211**		PKP		**PKPdf**	**06 43 40.5**	**-0.2**
	comp=N,0.4nm,0.6s,baz=150,slow=1.9,SNR=7.3								
WRA					pPKP		**pPKPdf**	**06 43 59.8**	**+0.1**
	comp=N,0.3nm,0.6s,baz=155,slow=1.6,SNR=1.8								
KURBB	**Kurchatov Arra**	**142.21**	**33**		PKP		**PKPdf**	**06 43 59.2**	**+0.8**
	comp=N,0.3nm,0.3s,baz=284,slow=0.8,SNR=4.7								
ZALV	**Zalesovo Beam**	**142.76**	**25**		PKP		**PKPdf**	**06 43 59.8**	**+0.6**
	comp=N,1.1nm,0.3s,baz=346,slow=4.8,SNR=5.6								
MKAR	**Makanchi Array**	**146.53**	**36**		PKPbc		**PKPdf**	**06 44 06.5**	**+0.5**
	comp=N,1.9nm,0.7s,baz=318,slow=1.6,SNR=18								
MKAR					pPKPbc	pPKPbc		06 44 25.8	-0.5
	comp=N,2.3nm,0.8s,baz=343,slow=1.3,SNR=8.7								

ISCJB ***12*** *06:27:06.7±0.5, 40°.16N±0°.03×29°.95E±0°.03, h2km±6km, Error ellipse: s-maj=4.6km s-min=3.4km az=26.5*
CSEM ***12*** *06:27:06.9±0.1, 40°.17N×29°.95E, h2km, MD2.4, Error ellipse: s-maj=2.6km s-min=2.2km az=21.0*
ISK ***12*** *06:27:06.8, 40°.18N×29°.93E, h7km, MD2.4*
DDA ***12*** *06:27:06.6, 40°.12N×29°.98E, h7km, Md2.7*
ISC 12 06:27:06.5±0.9, 40°.16N±0°.02×29°.98E±0°.02, h8km±7km, n50,σ0°46/70, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CAVI	**Cavuskoy**	**0.11**	**291**		*e*PG		**Pg**	**06 27 09.0**	**0.0**
CAVI					*e*SG		**Sg**	**06 27 10.7**	**-0.2**
CAVI	**Cavuskoy**	**0.11**	**291**		*e*Pg		**Pg**	**06 27 09.0**	**0.0**
CAVI					*e*Sg		**Sg**	**06 27 10.7**	**-0.2**
GPA	**Golpazari**	**0.28**	**63**		*e*PG		**Pb**	**06 27 13.7**	**-0.2**
GPA	**Golpazari**	**0.28**	**63**		*e*Pg		**Pb**	**06 27 13.7**	**-0.2**
ADVT	**Abdulvahap**	**0.33**	**326**		*e*PG		**Pg**	**06 27 13.1**	**+0.1**
ADVT					*e*SG		**Sg**	**06 27 17.6**	**+0.3**
ADVT	**Abdulvahap**	**0.33**	**326**		*e*Pg		**Pg**	**06 27 13.1**	**+0.1**
ADVT					*e*Sg		**Sg**	**06 27 17.6**	**+0.3**
IZI	**Iznik**	**0.43**	**295**		*e*PG		**Pg**	**06 27 14.8**	**0.0**
IZI	**Iznik**	**0.43**	**295**		*e*Pg		**Pg**	**06 27 14.8**	**0.0**
BORA	**Eskisehir**	**0.46**	**127**		*i* P		**Pg**	**06 27 15.4**	**0.0**
BORA					*i* S		**Sg**	**06 27 21.8**	**+0.4**
BORA	**Eskisehir**	**0.46**	**127**		P		**Pg**	**06 27 15.4**	**0.0**
BORA					S		**Sg**	**06 27 21.8**	**+0.4**
GULT	**Gulveren**	**0.49**	**56**		*e*PG		**Pg**	**06 27 16.5**	**+0.5**
GULT	**Gulveren**	**0.49**	**56**		*e*Pg		**Pg**	**06 27 16.5**	**+0.5**
SPNC	**Sapanca-Adapaz**	**0.58**	**25**		*e*PG		**Pb**	**06 27 18.4**	**-0.5**
SPNC	**Sapanca-Adapaz**	**0.58**	**25**		*e*Pg		**Pb**	**06 27 18.4**	**-0.5**
GEMT	**Gemlik**	**0.66**	**295**		*e*PG		**Pg**	**06 27 19.3**	**0.0**
GEMT	**Gemlik**	**0.66**	**295**		*e*Pg		**Pg**	**06 27 19.3**	**0.0**
HRT	**Hereke**	**0.70**	**340**		*e*PG		**Pg**	**06 27 20.2**	**+0.2**
HRT	**Hereke**	**0.70**	**340**		*e*Pg		**Pg**	**06 27 20.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**0.86**	**284**		*e*PG		**Pg**	**06 27 23.1**	**0.0**
MDNY	**Mudanya-Bursa**	**0.86**	**284**		*e*Pg		**Pg**	**06 27 23.1**	**0.0**
BTAS	**Taskesti**	**0.88**	**62**		*i* P		**Pg**	**06 27 23.2**	**-0.2**
BTAS					*i* S		**Sn**	**06 27 37.9**	**-0.3**
BTAS	**Taskesti**	**0.88**	**62**		P		**Pg**	**06 27 23.2**	**-0.2**
BTAS					S		**Sn**	**06 27 37.9**	**-0.3**
ESKT	**Eskisehir**	**0.93**	**133**		*e*PG		**Pn**	**06 27 25.8**	**-0.1**
ESKT	**Eskisehir**	**0.93**	**133**		*i* P		**Pn**	**06 27 26.3**	**+0.4**
ESKT					*i* S		**Sn**	**06 27 38.4**	**-1.1**
ESKT	**Eskisehir**	**0.93**	**133**		*e*Pg		**Pn**	**06 27 25.8**	**-0.1**
SEYT	**Eskypehyr**	**0.93**	**133**		P		**Pn**	**06 27 26.3**	**+0.4**
SEYT					S		**Sn**	**06 27 38.4**	**-1.0**
ARMT	**Armutlu**	**0.95**	**296**		*e*PG		**Pg**	**06 27 24.5**	**-0.1**
ARMT	**Armutlu**	**0.95**	**296**		*e*Pg		**Pg**	**06 27 24.5**	**-0.1**
KAND	**Kocaeli-Kandir**	**0.95**	**10**		*i* P		**Pb**	**06 27 24.9**	**-0.2**
KAND					*i* S		**Sn**	**06 27 40.6**	**+0.8**
KAND	**Kocaeli-Kandir**	**0.95**	**10**		P		**Pb**	**06 27 24.9**	**-0.2**
KAND					S		**Sn**	**06 27 40.6**	**+0.8**
SAHE	**Sakarya_HENDEK**	**0.96**	**44**		*i* P		**Pg**	**06 27 24.4**	**-0.5**
SAHE					*i* S		**Sn**	**06 27 39.2**	**-1.0**
SAHE	**Sakarya_HENDEK**	**0.96**	**44**		P		**Pg**	**06 27 24.4**	**-0.5**
SAHE					S		**Sn**	**06 27 39.2**	**-1.0**
MDUB	**Mudurnu**	**0.98**	**71**		*e*PG		**Pn**	**06 27 26.6**	**-0.1**
MDUB	**Mudurnu**	**0.98**	**71**		*e*Pg		**Pn**	**06 27 26.6**	**-0.1**
GDZ	**Gediz**	**1.14**	**200**		*i* P		**Pg**	**06 27 27.9**	**-0.3**
GDZ					*i* S		**Sg**	**06 27 43.4**	**+0.3**
GDZ	**Gediz**	**1.14**	**200**		P		**Pg**	**06 27 28.0**	**-0.3**
GDZ					S		**Sg**	**06 27 43.4**	**+0.3**
ISK	**Istanbul-Kandi**	**1.14**	**322**		*e*PN		**Pg**	**06 27 28.4**	**0.0**
ISK	**Istanbul-Kandi**	**1.14**	**322**		*e*Pn		**Pg**	**06 27 28.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**275**		*e*PN		**Pg**	**06 27 30.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.25**	**275**		*e*Pn		**Pg**	**06 27 30.7**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.39**	**120**		*e*PN		**Pg**	**06 27 33.8**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.39**	**120**		*e*Pn		**Pg**	**06 27 33.8**	**+0.8**
DEMI	**Demirci**	**1.48**	**222**		*i* P		**Pb**	**06 27 34.4**	**+0.1**
DEMI					*i* S		**Sg**	**06 27 54.4**	**+0.2**
DEMI	**Demirci**	**1.48**	**222**		P		**Pb**	**06 27 34.4**	**+0.1**
DEMI					S		**Sg**	**06 27 54.4**	**+0.2**
BOLV	**Bolvadin**	**1.62**	**152**		*i* P		**Pb**	**06 27 37.2**	**+0.4**
BOLV					*i* S		**Sg**	**06 27 58.8**	**+0.1**
BOLV	**Bolvadin**	**1.62**	**152**		P		**Pb**	**06 27 37.2**	**+0.4**
BOLV					S		**Sg**	**06 27 58.8**	**+0.1**
MRMT	**Marmara Adasi**	**1.87**	**284**		*e*PN		**Pn**	**06 27 39.7**	**+0.8**
MRMT	**Marmara Adasi**	**1.87**	**284**		*e*Pn		**Pn**	**06 27 39.7**	**+0.8**
KULA	**Kula-Manisa**	**1.94**	**212**		*e*PN		**Pb**	**06 27 41.1**	**-1.0**
KULA	**Kula-Manisa**	**1.94**	**212**		*e*Pn		**Pb**	**06 27 41.1**	**-1.0**

GUC 12 06:31:36.9±0.5, 37°.43S×73°.43W, h25km±4km, ML3.6, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CCSP	**San Pedro de C**	**0.64**	**24**		*i* P		Pb	06 31 49.5	0.0
CCSP					*i* S		Sn	06 31 59.1	-0.6
CCSP					IAML			06 32 00.8	
	comp=N,8μm,0.2s								
CCHI	**Chillan**	**1.36**	**53**		*i* P		Pb	06 32 01.4	-0.3
CCHI					*i* S		Sb	06 32 20.2	+1.5
CCHI					IAML			06 32 28.4	
	comp=E,2μm,0.4s								
COCH	**Cobquecura**	**1.40**	**22**		*i* P		Pb	06 32 02.2	-0.1
COCH					*i* S		Sb	06 32 21.3	+1.6
COCH					IAML			06 32 23.3	
	comp=E,1μm,0.4s								
TALC	**Talca**	**2.49**	**36**		*e*P		Pn	06 32 17.4	+1.6
TALC					*i* S		Sb	06 32 49.8	-1.4

IDC 12 06:34:25.3±3.5, 9°.93N×123°.27E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.3/55, mbtmp3.3/3, Error ellipse: s-maj=371.5km s-min=28.9km az=63.0, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**31.62**	**160**		P		P	06 40 49.9	-0.3
	0.2nm,0.6s,baz=339,slow=9.5,SNR=3.6								
ASAR	**Alice Springs**	**34.97**	**163**		P		P	06 41 19.6	+0.2
	0.2nm,0.5s,baz=338,slow=7.2,SNR=4.2								
MKAR	**Makanchi Array**	**50.54**	**324**		P		P	06 43 25.4	-0.1
	0.3nm,0.7s,baz=120,slow=7.5,SNR=3.5								

NNC 12 06:37:41.9±2.4, 36°.93N×70°.87E, h0km, mb3.8, mpv3.4, 5C-3D, Error ellipse: s-maj=18.9km s-min=9.5km az=176.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.47**	**320**	⇑	P		Pn	06 38 23.6	0.0
	17nm,0.3s								
DZET				⇑	S		Sn	06 38 56.0	+1.4
	31nm,0.3s								
MNAS	**Manas**	**5.69**	**12**	⇓	P		Pn	06 39 08.9	+1.1
	0.7nm,0.3s								
MNAS				⇑	S		Sn	06 40 16.3	+2.3
	10nm,0.6s								
KK31	**Karatay Array**	**6.17**	**358**	⇑	P		Pn	06 39 13.7	-0.6
	2.0nm,0.6s,baz=177,slow=12,SNR=21								
KK31				⇓	S		Sn	06 40 24.9	-0.6
	2.2nm,0.5s,baz=178,slow=26,SNR=8.4								
TKM2	**Tokmak 2**	**7.00**	**30**	⇑	P		Pn	06 39 25.1	-0.7
	1.3nm,0.6s								
TKM2				⇓	S		Sn	06 40 47.6	+1.4
	2.3nm,0.8s								

MEX 12 06:38:03.2±0.5, 17°.29N×101°.20W, h11km±8km, MD4.1, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.40**	**322**		*e*P		Pg	06 38 10.7	-0.6
ZIIG					*e*S		Sg	06 38 17.0	+0.4
CAIG	**El Cayaco**	**0.93**	**105**		*e*P		Pg	06 38 17.6	-3.5
CAIG					*i* S		Sg	06 38 30.2	-2.9
ARIG	**Puente Sto Nin**	**1.28**	**39**		*e*P		Pn	06 38 23.4	-3.7
ARIG					*e*S		Sb	06 38 38.8	-5.1
MEIG	**Mezcala**	**1.64**	**67**		*e*P		Pn	06 38 29.3	-2.8
MEIG					*i* S		Sn	06 38 48.5	-4.8
EZ5V		**3.15**	**314**		*i* P		Pn	06 38 50.5	-2.6
EZ5V					*i* S		Sn	06 39 27.4	-3.6
R15V		**3.24**	**306**		*i* P		Pn	06 38 53.2	-0.9

IDC ***12*** *06:41:45.8±1.1, 40°.29N×49°.02E, h0km, mb3.9/8, mb1 3.9/15, mb1mx3.7/52, mbtmp3.8/15, ML3.6/6, MS2.9/3, Ms1 2.9/3, ms1mx2.4/61, Error ellipse: s-maj=23.8km s-min=10.8km az=5.0*
MOS ***12*** *06:41:46.5±2.1, 40°.31N×49°.23E, h7km, mb4.2/6, Error ellipse: s-maj=10.9km s-min=6.6km az=120.3*
AZER ***12*** *06:41:48.9±0.1, 40°.17N×48°.85E, h6km, Error ellipse: s-maj=0.4km s-min=0.3km az=333.0*
CSEM ***12*** *06:41:49.7±0.2, 40°.18N×49°.06E, h10km, ML3.7, Error ellipse: s-maj=5.1km s-min=3.8km az=60.0*
TEH ***12*** *06:41:51.2, 40°.10N×49°.07E, h10km, ML3.7*
ISC 12 06:41:49.6±1.1, 40°.23N±0°.02×49°.09E±0°.02, h14km±7km, n140,σ2°11/193, mb4.0/10, 33C-31D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ALIB	**Äli-Bayra**	**0.28**	**193**	⇓	P		**Pb**	**06 41 58.2**	**+1.7**
	SNR=354								
ALIB				⇓	S		**Sb**	**06 42 05.7**	**+4.7**
ALIB	**Äli-Bayra**	**0.28**	**193**		P		**Pb**	**06 41 58.2**	**+1.7**
	SNR=354								
ALIB					S		**Sb**	**06 42 05.7**	**+4.7**
GBS	**Qobustan**	**0.32**	**340**	⇑	P		**Pb**	**06 41 57.6**	**+0.3**
	SNR=496								
GBS				⇓	S		**Sb**	**06 42 06.1**	**+3.7**
GBS	**Qobustan**	**0.32**	**340**		P		**Pb**	**06 41 57.6**	**+0.3**
	SNR=496								
GBS					S		**Sb**	**06 42 06.1**	**+3.7**
GOBA	**Gobu**	**0.52**	**71**	⇑	P		**Pn**	**06 42 03.5**	**+0.8**
	SNR=40								
GOBA				⇓	S		Sb	06 42 17.2	+9.2
GOBA	**Gobu**	**0.52**	**71**		P		**Pn**	**06 42 03.5**	**+0.8**
	SNR=40								
GOBA					S		Sb	06 42 17.2	+9.2
ATGJ	**Altiaghaj**	**0.64**	**350**	⇓	P		**Pb**	**06 42 03.3**	**+0.6**
ATGJ				⇓	S		**Sn**	**06 42 15.5**	**+1.1**
ATGJ	**Altiaghaj**	**0.64**	**350**		P		**Pb**	**06 42 03.3**	**+0.6**
ATGJ					S		**Sn**	**06 42 15.5**	**+1.1**
PQL	**Pirkuli**	**0.67**	**326**	⇓	P		**Pb**	**06 42 03.3**	**+0.1**
	SNR=211								
PQL				⇓	S		**Sb**	**06 42 14.8**	**+2.3**
PQL	**Pirkuli**	**0.67**	**326**		P		**Pb**	**06 42 03.3**	**+0.1**
	SNR=211								
PQL					S		**Sb**	**06 42 14.8**	**+2.3**
KDMR	**Kurdemir**	**0.70**	**282**	⇑	P		**Pg**	**06 42 01.9**	**-1.4**
KDMR				⇑	S		**Sg**	**06 42 13.2**	**+0.6**
KDMR	**Kurdemir**	**0.70**	**282**		P		**Pg**	**06 42 02.0**	**-1.4**
KDMR					S		**Sg**	**06 42 13.2**	**+0.6**
NDR	**Nardaran**	**0.77**	**63**	⇑	P		**Pn**	**06 42 07.3**	**+1.2**
	SNR=11								
NDR				⇓	S		**Sn**	**06 42 22.2**	**+4.7**
NDR	**Nardaran**	**0.77**	**63**		P		**Pn**	**06 42 07.3**	**+1.2**
	SNR=11								
NDR					S		**Sn**	**06 42 22.2**	**+4.7**
GALA	**Gala**	**0.84**	**77**	⇑	P		**Pn**	**06 42 10.0**	**+3.0**
	SNR=6.2								
GALA				⇓	S		**Sn**	**06 42 25.1**	**+6.0**
GALA	**Gala**	**0.84**	**77**		P		**Pn**	**06 42 10.0**	**+3.0**
	SNR=6.2								
GALA					S		**Sn**	**06 42 25.1**	**+6.0**
SIZA	**Siyzn**	**0.85**	**350**	⇑	P		**Pb**	**06 42 07.3**	**+1.0**
	SNR=241								
SIZA				⇑	S		**Sn**	**06 42 22.4**	**+2.7**
SIZA	**Siyzn**	**0.85**	**350**		P		**Pb**	**06 42 07.3**	**+1.0**
	SNR=241								
SIZA					S		**Sn**	**06 42 22.4**	**+2.7**
IML	**Ismayilli**	**0.89**	**309**	⇓	P		**Pg**	**06 42 06.6**	**-0.3**
	SNR=26								
IML				⇑	S		**Sb**	**06 42 21.4**	**+2.8**
IML	**Ismayilli**	**0.89**	**309**		P		**Pg**	**06 42 06.6**	**-0.3**
	SNR=26								
IML					S		**Sb**	**06 42 21.4**	**+2.8**
ZRD	**Zardab**	**1.07**	**273**	⇑	P		**Pg**	**06 42 10.7**	**+0.4**
	SNR=24								
ZRD				⇓	S		**Sn**	**06 42 28.5**	**+3.5**
ZRD	**Zardab**	**1.07**	**273**		P		**Pg**	**06 42 10.7**	**+0.4**
	SNR=24								
ZRD					S		**Sn**	**06 42 28.5**	**+3.5**
GLBA	**Clilabad**	**1.12**	**209**	⇑	P		**Pb**	**06 42 11.4**	**+0.5**
	SNR=91								
GLBA				⇓	S		**Sn**	**06 42 29.5**	**+3.3**
GLBA	**Clilabad**	**1.12**	**209**		P		**Pb**	**06 42 11.4**	**+0.5**
	SNR=91								
GLBA					S		**Sn**	**06 42 29.5**	**+3.3**
XNQ	**Khinaliq**	**1.18**	**323**	⇑	P		**Pg**	**06 42 11.4**	**-1.1**
	SNR=247								
XNQ				⇓	S		**Sn**	**06 42 30.5**	**+2.5**
XNQ	**Khinaliq**	**1.18**	**323**		P		**Pg**	**06 42 11.4**	**-1.1**
	SNR=247								
XNQ					S		**Sn**	**06 42 30.5**	**+2.5**
QBL	**Gabala**	**1.19**	**307**	⇑	P		**Pg**	**06 42 11.4**	**-1.2**
	SNR=24								
QBL				⇓	S		**Sb**	**06 42 29.6**	**+2.3**
QBL	**Gabala**	**1.19**	**307**		P		**Pg**	**06 42 11.4**	**-1.2**
	SNR=24								
QBL					S		**Sb**	**06 42 29.6**	**+2.3**
QUBA	**Quba, Azerbaij**	**1.21**	**338**	⇓	P		**Pn**	**06 42 13.4**	**+1.2**
	SNR=32								
QUBA				⇑	S		**Sn**	**06 42 31.9**	**+3.5**
QUBA	**Quba, Azerbaij**	**1.21**	**338**		P		**Pn**	**06 42 13.4**	**+1.2**
	SNR=32								
QUBA					S		**Sn**	**06 42 31.9**	**+3.5**
QSAR

QZX	**Qazax, Azerbai**	**2.94**	**287**	Pn		**Pn**	**06 42 36.5**	**+0.5**
	SNR=14								
QZX				Sn		**Sn**	**06 43 14.0**	**+2.8**
NAX	**Nakhchivan**	**2.96**	**250**	⇑Pn		**Pn**	**06 42 36.7**	**+0.3**
NAX				⇓Sn		**Sn**	**06 43 14.6**	**+2.8**
NAX	**Nakhchivan**	**2.96**	**250**	Pn		**Pn**	**06 42 36.7**	**+0.3**
NAX				Sn		**Sn**	**06 43 14.6**	**+2.8**
IMRD	**Marand**	**3.03**	**241**	*e*Pn		**Pn**	**06 42 37.8**	**+0.5**
IMRD				*e*AMB	AMB		06 43 30.7	
	comp=Z,4μm,0.3s								
IMRD	**Marand**	**3.03**	**241**	*e*Pn		**Pn**	**06 42 37.8**	**+0.5**
IBST	**Bostanabad**	**3.05**	**215**	*e*Pn		**Pn**	**06 42 38.3**	**+0.6**
IBST				*e*AMB	AMB		06 42 50.1	
	comp=Z,1μm,0.2s								
IBST	**Bostanabad**	**3.05**	**215**	*e*Pn		**Pn**	**06 42 38.3**	**+0.6**
DGRG	**David-gareji**	**3.07**	**295**	P		Pg	06 42 55.2	+6.8
DGRG	**David-gareji**	**3.07**	**295**	PN		Pg	06 42 55.2	+6.8
DGRG	**David-gareji**	**3.07**	**295**	Pn		Pg	06 42 55.2	+6.8
ISHB	**Shabestar**	**3.32**	**235**	*e*Pn		**Pn**	**06 42 41.7**	**+0.3**
ISHB				*e*AMB	AMB		06 42 58.8	
	comp=Z,774nm,0.2s								
GNI	**Garni**	**3.33**	**270**	Pn		**Pn**	**06 42 42.4**	**+1.0**
	comp=Z,6.6nm,0.3s,baz=41,slow=9.3,SNR=6.6								
GNI				Lg		Lg	06 43 30.4		
	comp=Z,4.6nm,0.3s,baz=355,slow=20,SNR=4.0								
SEAG	**Tbilisi Sea**	**3.58**	**297**	P		**Pb**	**06 42 54.9**	**+2.1**
TBLG	**Delisi**	**3.62**	**296**	P		**Pg**	**06 42 57.8**	**-1.1**
TBLG	**Delisi**	**3.62**	**296**	PN		**Pg**	**06 42 57.8**	**-1.1**
TBLG	**Delisi**	**3.62**	**296**	Pn		**Pg**	**06 42 57.8**	**-1.1**
GROC	**Groznyy**	**3.86**	**321**	*e*PN		**Pn**	**06 42 48.1**	**-0.4**
GROC				*e*S		**Sn**	**06 43 35.2**	**+1.6**
GROC	**Groznyy**	**3.86**	**321**	*e*Pn		**Pn**	**06 42 48.1**	**-0.4**
GROC				*e*Sn		**Sn**	**06 43 35.2**	**+1.6**
GUDG	**Gudauri**	**4.12**	**304**	P		**Pn**	**06 42 55.2**	**+2.8**
KMGR	**Komgaron**	**4.24**	**313**	*e*PN		**Pn**	**06 42 51.2**	**-2.6**
KMGR				*e*S		**Sn**	**06 43 39.7**	**-3.4**
KMGR	**Komgaron**	**4.24**	**313**	*e*Pn		**Pn**	**06 42 51.2**	**-2.6**
KMGR				*e*Sn		**Sn**	**06 43 39.7**	**-3.4**
ONI	**Oni**	**4.85**	**301**	P		**Pn**	**06 43 03.2**	**+0.9**
ONI	**Oni**	**4.85**	**301**	PN		**Pn**	**06 43 03.1**	**+0.9**
ONI	**Oni**	**4.85**	**301**	Pn		**Pn**	**06 43 03.1**	**+0.9**
IALA	**Alasht**	**5.08**	**144**	*e*AMB	AMB		06 44 06.3	
	comp=E,3μm,0.1s								
IDMV	**Damavand**	**5.20**	**152**	*e*Pn		**Pn**	**06 43 07.5**	**+0.2**
IDMV				*e*AMB	AMB		06 44 16.4	
	comp=Z,393nm,0.2s								
IDMV	**Damavand**	**5.20**	**152**	*e*Pn		**Pn**	**06 43 07.5**	**+0.2**
IKIA	**Kiasar**	**5.41**	**137**	*e*AMB	AMB		06 43 12.4	
	comp=E,811nm,0.1s								
IKIA				*e*Pn		**Pn**	**06 43 09.9**	**-0.2**
IFIR	**Firoozkooh**	**5.42**	**147**	*e*Pn		**Pn**	**06 43 10.5**	**+0.2**
IFIR				*e*AMB	AMB		06 43 12.9	
	comp=Z,632nm,0.1s								
IFIR	**Firoozkooh**	**5.42**	**147**	*e*Pn		**Pn**	**06 43 10.5**	**+0.2**
IVRN	**Varamin**	**5.63**	**157**	*e*Pn		**Pn**	**06 43 11.9**	**-1.1**
IVRN				*e*AMB	AMB		06 44 27.7	
	comp=Z,195nm,0.1s								
IVRN	**Varamin**	**5.63**	**157**	*e*Pn		**Pn**	**06 43 11.9**	**-1.1**
KBZ	**Khabaz**	**5.79**	**309**	Pn		**Pn**	**06 43 14.8**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=153,slow=10,SNR=3.0								
KBZ				Sn		**Sn**	**06 44 21.6**	**+0.5**
	comp=Z,0.6nm,0.3s,baz=131,slow=18,SNR=2.6								
KBZ				Lg		Lg	06 44 53.5		
	comp=Z,0.4nm,0.3s,baz=72,slow=16,SNR=2.2								
KVAR	**Kislovodsk Arr**	**6.04**	**310**	Pn		**Pn**	**06 43 19.0**	**+0.4**
	baz=155,slow=14,SNR=2.6								
KIV	**Kislovodsk**	**6.04**	**310**	⇑*i*P		**Pn**	**06 43 19.4**	**+0.8**
KIV	**Kislovodsk**	**6.04**	**310**	*i* P		**Pn**	**06 43 19.4**	**+0.8**
IANJ	**Anjilo**	**6.10**	**140**	*e*Pn		**Pn**	**06 43 19.5**	**-0.1**
IANJ				*e*AMB	AMB		06 43 25.4	
	comp=Z,296nm,0.1s								
IANJ	**Anjilo**	**6.10**	**140**	*e*Pn		**Pn**	**06 43 19.5**	**-0.1**
GEYT	**Alibeck**	**7.39**	**105**	Pn		**Pn**	**06 43 35.0**	**-2.1**
	comp=Z,3.2nm,0.3s,baz=289,slow=18,SNR=14								
GEYT				Sn		**Sn**	**06 44 55.0**	**-5.8**
	comp=Z,2.7nm,0.3s,baz=300,slow=23,SNR=3.2								
GEYT				LR		LR	06 47 24.9		
	comp=Z,40nm,19.7s,baz=150,slow=46								
AB31	**Akbulak array**	**11.86**	**37**	⇓Pg		Pn	06 44 33.1	-5.2
	comp=Z,1.4nm,0.6s,baz=219,slow=12,SNR=7.6								
AB31				⇓Lg		Lg	06 46 33.1		
	comp=Z,1.2nm,0.8s,baz=217,slow=23,SNR=5.0								
AB31	**Akbulak array**	**11.86**	**37**	Pg		Pn	06 44 33.1	-5.2
	comp=Z,1.4nm,0.6s,SNR=7.6								
AB31				Lg		Lg	06 46 33.1		
	comp=Z,1.2nm,0.8s,SNR=5.0								
AKTO	**Aktyubinsk**	**11.97**	**29**	Pn		**Pn**	**06 44 36.3**	**-3.4**
	comp=Z,0.3nm,0.3s,baz=199,slow=10,SNR=5.4								
AKTO				Sn		Sn	06 46 42.2	-11	
	comp=Z,0.1nm,0.3s,baz=217,slow=20,SNR=3.6								
AKTO	**Aktyubinsk**	**11.97**	**29**	⇑Pg		**Pn**	**06 44 39.0**	**-0.8**
	comp=Z,2.1nm,0.6s								
AKTO				⇑Lg		Lg	06 46 43.6		
	comp=Z,4.0nm,1.2s								
AKTO	**Aktyubinsk**	**11.97**	**29**	Pg		**Pn**	**06 44 39.0**	**-0.8**
	comp=Z,2.1nm,0.6s								
OBN	**Obninsk**	**17.07**	**335**	⇓*e*P		**Pn**	**06 45 48.2**	**+0.6**
OBN				*e*S		**Sn**	**06 49 00.7**	**+3.7**
OBN				pmax		pmax			
	comp=Z,6.0nm,0.8s								
OBN				MLR		MLR			
	comp=Z,66nm,18.0s								
OBN	**Obninsk**	**17.07**	**335**	*e*P		**Pn**	**06 45 48.2**	**+0.6**
	comp=Z,6.0nm,0.8s								
OBN				*e*S		**Sn**	**06 49 00.7**	**+3.7**
	comp=Z,66nm,18.0s								
ARU	**Arti**	**17.36**	**18**	P		**Pn**	**06 45 45.7**	**-5.6**
	comp=Z,0.0nm,0.3s,baz=221,slow=6.0,SNR=5.3								
ARU	**Arti**	**17.36**	**18**	*c* *i*P		**Pn**	**06 45 45.7**	**-5.6**
ARU				S		Sn	06 48 54.6	-10	
ARU				pmax		pmax			
	comp=Z,3.0nm,0.7s								
AKASG	**Malin Array Be**	**17.37**	**314**	P		**Pn**	**06 45 48.3**	**-3.2**
	comp=Z,0.6nm,0.3s,baz=120,slow=11,SNR=4.5								
KIEV	**Kiev**	**17.38**	**314**	⇑*e*P		**Pn**	**06 45 53.0**	**+1.5**
KIEV				pmax		pmax			
	comp=Z,2.0nm,0.9s								
KIEV	**Kiev**	**17.38**	**314**	*e*P		**Pn**	**06 45 53.0**	**+1.5**
	comp=Z,2.0nm,0.9s								
RZN	**Rozhen**	**18.45**	**282**	*e*P		**Pn**	**06 46 08.6**	**+3.5**
APE	**Apeiranthos**	**18.66**	**268**	*e*P		**P**	**06 46 06.7**	**-0.4**
APE				pmax		pmax			
	comp=Z,47nm,1.3s								
APE	**Apeiranthos**	**18.66**	**268**	*e*P		**P**	**06 46 06.7**	**-0.4**
	comp=Z,47nm,1.3s								
AAK	**Ala-Archa**	**19.18**	**75**	P		**Pn**	**06 46 14.0**	**+0.1**
	comp=Z,0.6nm,0.3s,baz=202,slow=9.0,SNR=4.3								
AAK				LR		LR	06 55 38.1		
	comp=Z,41nm,18.9s,baz=231,slow=43								
AAK	**Ala-Archa**	**19.18**	**75**	⇑*i*P		**Pn**	**06 46 15.3**	**+1.4**
AAK				pmax		pmax			
	comp=Z,8.0nm,1.2s								
AAK	**Ala-Archa**	**19.18**	**75**	*i* P		**Pn**	**06 46 15.3**	**+1.4**
	comp=Z,8.0nm,1.2s								
MMB	**Musomiste**	**19.20**	**282**	*e*P		**P**	**06 46 12.3**	**-0.7**
FRU	**Bishkek**	**19.27**	**74**	*e*P		Pn	06 46 28.0	+13	
FRU	**Bishkek**	**19.27**	**74**	*e*P		Pn	06 46 28.0	+13	
BRVK	**Borovoye**	**19.30**	**41**	⇑*i*P		**P**	**06 46 12.6**	**-1.4**
BRVK				pmax		pmax			
	comp=Z,9.0nm,0.8s								
BVAR	**Borovoye Array**	**19.34**	**41**	P		**P**	**06 46 12.8**	**-1.7**
	comp=Z,0.8nm,0.3s,baz=234,slow=8.9,SNR=24								
KKB	**Krupnik**	**19.66**	**283**	*e*P		**P**	**06 46 17.8**	**-0.2**
KOLS	**Kolonicke sedl**	**20.90**	**303**	*e*P		**P**	**06 46 33.0**	**+1.6**
KOLS	**Kolonicke sedl**	**20.90**	**303**	*e*P		**P**	**06 46 33.0**	**+1.6**
KOLS	**Kolonicke sedl**	**20.90**	**303**	*e*P		**P**	**06 46 33.0**	**+1.6**
CRVS	**Cervenica-Dubn**	**21.41**	**303**	*e*P		**P**	**06 46 39.3**	**+2.4**
CRVS	**Cervenica-Dubn**	**21.41**	**303**	*e*P		**P**	**06 46 39.3**	**+2.4**
CRVS	**Cervenica-Dubn**	**21.41**	**303**	*e*P		**P**	**06 46 39.3**	**+2.4**
KLMR	**Klimovskoe**	**21.48**	**347**	*e*P		**P**	**06 46 32.1**	**-5.4**
KLMR				*e*S		S	06 50 25.1	-10	
KLMR				pmax		pmax			
	comp=Z,6.0nm,0.9s								
KURBB	**Kurchatov Arra**	**22.98**	**53**	P		**P**	**06 46 52.1**	**-1.5**
	comp=Z,0.4nm,0.4s,baz=264,slow=11,SNR=8.4								
KURK	**Kurchatov**	**23.06**	**53**	⇓*i*P		**P**	**06 46 58.1**	**+3.6**
KURK				pmax		pmax			
	comp=Z,20nm,1.0s								
KURK	**Kurchatov**	**23.06**	**53**	*i* P		**P**	**06 46 58.1**	**+3.6**
	comp=Z,20nm,1.0s								
MKAR	**Makanchi Array**	**24.83**	**64**	P		**P**	**06 47 10.3**	**-1.1**
	comp=Z,3.3nm,0.7s,baz=266,slow=7.7,SNR=30								
MKAR				LR		LR	06 59 06.7		
	comp=Z,52nm,19.4s,baz=256,slow=42								
FINES	**FINESS Array B**	**25.47**	**334**	P		**P**	**06 47 14.6**	**-2.3**
	comp=Z,1.6nm,0.6s,baz=134,slow=10,SNR=5.4								
FINES	**FINESS Array B**	**25.47**	**334**	P		**P**	**06 47 14.6**	**-2.3**
FINES				pmax		pmax			
	comp=Z,1.0nm,0.4s								
HFS	**Hagfors**	**29.62**	**324**	P		**P**	**06 47 52.3**	**-1.9**
	comp=Z,3.4nm,1.0s,baz=146,slow=14,SNR=2.8								
SONM	**Songino Array**	**41.06**	**60**	P		**P**	**06 49 31.2**	**-1.5**
	comp=Z,0.4nm,0.7s,baz=280,slow=8.6,SNR=2.9								
CMAR	**Chiang Mai Arr**	**47.86**	**102**	P		**P**	**06 50 26.1**	**-1.2**
	comp=Z,0.7nm,0.4s,baz=295,slow=7.5,SNR=5.6								
ILAR	**Eielson Array**	**74.58**	**7**	P		**P**	**06 53 25.1**	**-2.6**
	comp=Z,0.3nm,0.8s,baz=335,slow=6.2,SNR=3.6								
YKA	**Yellowknife Ar**	**76.78**	**352**	P		**P**	**06 53 38.3**	**-2.0**
	comp=Z,0.3nm,0.6s,baz=9.5,slow=5.7,SNR=5.3								

NNC 12 06:45:11.2±14.0, 37.72N×72.36E, h0km, mb4.0, mpv3.6, 1C-3D, Error ellipse: s-maj=121.5km s-min=47.2km az=151.0, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZET	**Dzherino**	**2.98**	**292**	P	Pn	06 45 59.4	-0.5
	20nm,0.4s						
DZET				S	Sn	06 46 36.7	+0.3
	77nm,0.3s						
MNAS	**Manas**	**4.76**	**1**	⇑P	Pn	06 46 25.7	+1.4
	5.8nm,0.5s						
MNAS				⇓S	Sn	06 47 22.6	+2.3
	9.7nm,0.6s						
AAK	**Ala-Archa**	**5.17**	**18**	⇓P	Pn	06 46 31.5	+1.5
	7.7nm,0.7s						
AAK				⇓S	Sn	06 47 33.4	+2.9
	3.7nm,0.7s						
KK31	**Karatay Array**	**5.56**	**346**	P	Pn	06 46 35.0	-0.1
	1.1nm,0.3s,baz=153,slow=9.9,SNR=30						
KK31				S	Sn	06 47 38.2	-1.5
	7.3nm,0.5s,baz=144,slow=27,SNR=22						

ISCJB ***12*** *06:45:20.0±0.8, 9.47N±0.06×121.98E±0.07, h10km, mb3.9/5, Error ellipse: s-maj=10.1km s-min=8.1km az=0.6*
IDC ***12*** *06:45:19.5±1.3, 9.94N×123.03E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.6/56, mbtmp3.8/5, Error ellipse: s-maj=180.1km s-min=19.2km az=63.0*
MAN ***12*** *06:45:22, 9.53N×122.13E, h10km, mb4.4, ML3.2, MS3.0*
ISC 12 06:45:21.5±0.9, 9.54N±0.07×122.13E±0.06, h10km, n12, σ1§29/17, mb3.9/5, 3C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.11**	**100**	*i* P	Pb	06 45 37.4	-5.4
SNPH				*i* S	**Sg**	**06 45 54.1**	**-3.2**
JAP	**San Jose, Anti**	**1.22**	**352**	⇓*e*P	**Pn**	**06 45 43.5**	**-1.2**
TBP	**Tagbilaran**	**1.71**	**85**	⇑*i*P	**Pb**	**06 45 53.4**	**+0.2**
LLP	**Lapu-Lapu**	**1.97**	**67**	*e*P	**Pn**	**06 45 56.2**	**+1.2**
LLP				*e*S	**Sb**	**06 46 21.7**	**-0.4**
RCP	**Roxas**	**2.10**	**17**	⇑*e*P	**Pn**	**06 45 57.3**	**+0.5**
RCP				*e*S	**Sn**	**06 46 25.0**	**+2.0**
CGP	**Cagayan de Oro**	**2.75**	**113**	⇑*e*P	**Pn**	**06 46 07.2**	**+1.4**
CGP				*i* S	**Sb**	**06 46 44.7**	**0.0**
WRA	**Warramunga Arr**	**31.66**	**158**	P	**P**	**06 51 44.3**	**-1.0**
	0.6nm,0.5s,baz=340,slow=9.4,SNR=13						
WRA				PcP	**PcP**	**06 54 36.5**	**-0.9**
	1.0nm,0.8s,baz=336,slow=2.9,SNR=7.5						
ASAR	**Alice Springs**	**34.95**	**161**	P	**P**	**06 52 14.6**	**+0.6**
	2.9nm,0.6s,baz=340,slow=7.2,SNR=42						
ASAR				PcP	**PcP**	**06 54 46.0**	**-0.5**
	0.8nm,0.7s,baz=350,slow=3.1,SNR=7.5						
STKA	**Stephens Creek**	**45.19**	**156**	P	**P**	**06 53 38.8**	**-0.1**
	1.7nm,0.7s,baz=351,slow=11,SNR=4.4						
MKAR	**Makanchi Array**	**50.21**	**325**	P	**P**	**06 54 18.4**	**+0.7**
	0.2nm,0.6s,baz=116,slow=6.1,SNR=2.8						
KURBB	**Kurchatov Arra**	**54.42**	**327**	P	**P**	**06 54 49.3**	**+0.5**
	0.3nm,0.2s,baz=129,slow=6.6,SNR=3.0						
PLCA	**Paso Flores**	**146.96**	**162**	PKPbc	**PKPbc**	**07 05 05.1**	**+0.2**
	2.7nm,0.7s,baz=270,slow=5.1,SNR=6.6						

NIED ***12*** *06:46:00, 38.00N×143.40E, h11km, Mw4.2 Best double couple: M0 2.54000×10^15 NP1:φ=160.00000°, δ=47.00000°, λ=-132.00000°. NP2:φ=33.00000°, δ=57.00000°, λ=-54.00000°.*
IDC ***12*** *06:46:53.2±0.6, 37.89N×143.45E, h0km, mb4.2/24, mb1 4.3/30, mb1mx4.2/65, mbtmp4.2/30, ML3.6/5, MS3.2/6, Ms1 3.2/6, ms1mx2.9/43, Error ellipse: s-maj=16.3km s-min=13.4km az=130.0*
ISCJB ***12*** *06:46:54.7±1.0, 37.96N±0.04×143.36E±0.03, h16km±7km, mb4.3/47, MS3.8/7, Error ellipse: s-maj=6.2km s-min=3.9km az=158.6*
JMA ***12*** *06:46:56.6±0.2, 38.00N×143.35E, h39km, M4.4*
JMA Felt I J1.
MOS ***12*** *06:46:58.5±0.9, 38.15N×143.25E, h37km, mb4.5/25, Error ellipse: s-maj=8.6km s-min=6.4km az=96.7*
NEIC ***12*** *06:46:59.2±0.3, 37.99N×143.34E, h35km, mb4.6/12, Error ellipse: s-maj=8.1km s-min=5.1km az=146.0*
NEIC Recorded [1 JMA] in Miyagi.
ISC 12 06:46:57.9±0.9, 37.94N±0.05×143.43E±0.05, h29km±6km, n122, σ1§77/140, mb4.4/47, MS3.8/7, 7C-4D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.72**	**288**	P	**Pn**	**06 47 24.0**	**-1.9**
JIO				S	**Sn**	**06 47 43.9**	**-2.9**
OFUJ	**Ofunato**	**1.79**	**310**	P	**Pn**	**06 47 24.9**	**-2.0**
OFUJ				S	**Sn**	**06 47 45.4**	**-3.3**
JMK	**Ichinoseki**	**2.01**	**301**	P	**Pn**	**06 47 28.4**	**-1.5**
JMK				S	**Sn**	**06 47 51.7**	**-2.3**
JMM	**Marumori**	**2.09**	**269**	P	**Pn**	**06 47 29.1**	**-1.8**
JMM				*e*S	**Sn**	**06 47 53.2**	**-2.7**
JFK	**Kawauchi**	**2.11**	**255**	P	**Pn**	**06 47 29.0**	**-2.2**
JFK				*e*S	**Sn**	**06 47 52.7**	**-3.8**
JOU	**Okura**	**2.22**	**282**	P	**Pn**	**06 47 31.8**	**-1.0**
JOM	**Ohasama**	**2.27**	**313**	P	**Pn**	**06 47 32.0**	**-1.4**
JOM				S	**Sn**	**06 47 58.1**	**-2.3**
JFT	**Otama**	**2.49**	**261**	P	**Pn**	**06 47 35.4**	**-1.1**
JFT				S	**Sn**	**06 48 03.9**	**-2.0**
JYK	**Kaneyama**	**2.60**	**293**	P	**Pn**	**06 47 37.2**	**-0.8**
JYK				*e*S	**Sn**	**06 48 07.0**	**-1.7**
JANG	**Nango**	**2.85**	**329**	P	**Pn**	**06 47 41.2**	**-0.3**
ERM	**Erimo**	**4.08**	**357**	*c*eP	**Pn**	**06 47 55.6**	**-2.7**
ERM				pmax	pmax		
	comp=Z,59nm,1.2s						
ERM	**Erimo**	**4.08**	**357**	*e*Pn	**Pn**	**06 47 56.3**	**-2.0**
MJAR	**Matsushiro Arr**	**4.39**	**253**	Pn	**Pn**	**06 48 02.3**	**-0.4**
	comp=Z,5.0nm,0.3s,baz=71,slow=12,SNR=21						
MJAR				Sn	**Sn**	**06 48 52.5**	**-0.3**
	comp=Z,4.9nm,0.3s,baz=86,slow=26,SNR=7.4						
MJAR				LR	LR	06 49 47.5	
	comp=Z,213nm,21.7s,baz=95,slow=40						
MAJO	**Matsushiro**	**4.39**	**253**	*d* *i*P	**Pn**	**06 48 03.2**	**+0.5**
MAJO	**Matsushiro**	**4.39**	**253**	*e*Pn	**Pn**	**06 48 03.6**	**+0.9**
MAT	**Matsushiro**	**4.39**	**253**	P	**Pn**	**06 48 03.3**	**+0.6**
MAT				S	**Sn**	**06 48 50.9**	**-2.0**
JHJ2	**Mitsune**	**5.64**	**213**	*e*Pn	**Pn**	**06 48 18.2**	**-1.7**
JHJ	**Hachijo jima 2**	**5.65**	**213**	Pn	**Pn**	**06 48 17.6**	**-2.3**
	comp=Z,20nm,0.3s,baz=328,slow=19,SNR=19						
JHJ				Sn	**Sn**	**06 49 16.4**	**-7.5**
	comp=Z,50nm,0.3s,baz=73,slow=20,SNR=10						
INU	**Inuyama**	**5.77**	**245**	Pn	**Pn**	**06 48 22.7**	**+1.2**
ASAJ	**Asahikawa**	**6.21**	**354**	*e*Pn	**Pn**	**06 48 25.2**	**-2.3**
YUK	**Yuzh-Kuril'sk**	**6.36**	**16**	*e*P	**Pn**	**06 48 30.0**	**+0.3**
KUR	**Kuril'sk**	**8.01**	**23**	⇑*e*P	**Pn**	**06 48 53.0**	**+0.7**
YSS	**Yuzh-Sakhalins**	**9.03**	**357**	*e*P	**Pn**	**06 49 06.7**	**+0.5**
YSS				pmax	pmax		
	comp=Z,20nm,0.5s						
YSS				MLR	MLR		
	comp=Z,200nm,16.0s						
MSHR	**Mys Shultsa**	**10.46**	**300**	*c*e*P*	**Pn**	**06 49 27.2**	**+1.3**
USRK	**Ussuriysk Ar.**	**10.66**	**310**	Pn	**Pn**	**06 49 30.5**	**+1.9**
	comp=Z,0.8nm,0.3s,baz=128,slow=12,SNR=8.3						
USRK				LR	LR	06 53 35.7	
	comp=Z,116nm,19.6s,baz=109,slow=38						
JNU	**Nakatsue**	**11.29**	**249**	Pn	**Pn**	**06 49 37.0**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=12,slow=9.3,SNR=2.8						
JNU				LR	LR	06 54 22.5	
	comp=Z,147nm,19.3s,baz=116,slow=40						
KSRS	**Korea Array**	**12.29**	**273**	Pn	**Pn**	**06 49 52.0**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=73,slow=14,SNR=4.5						
KSRS				LR	LR	06 53 46.7	
	comp=Z,78nm,20.4s,baz=112,slow=34						

KSAR	**Wonju Array Be**	**12.33**	**272**	P		**Pn**	**06 49 52.1**	**+0.6**
KSAR	**Wonju Array Be**	**12.33**	**272**	Pn		**Pn**	**06 49 52.0**	**+0.6**
KLR	**Kul'dur**	**14.09**	**327**	Pn		**Pn**	**06 50 12.7**	**-2.7**
	comp=Z,0.4nm,0.3s,baz=132,slow=13,SNR=10								
KLR				LR		LR	06 55 48.4		
	comp=Z,135nm,19.7s,baz=146,slow=38								
SKR	**Severo-Kuril's**	**15.62**	**31**	*e*P		**Pn**	**06 50 33.8**	**-2.0**
SKR				*e*S		**Sn**	**06 53 20.8**	**-7.0**
SKR				MLR		MLR			
	comp=Z,100nm,16.0s								
SKR				MLR		MLR			
	comp=Z,300nm,17.0s								
PETK	**Petropavlovsk-**	**18.11**	**29**	P		**P**	**06 51 07.5**	**+0.1**
	comp=Z,0.0nm,0.3s,baz=230,slow=15,SNR=4.6								
PET	**Petropavlovsk**	**18.42**	**30**	⇑*e*P		**Pn**	**06 51 11.5**	**+0.6**
PET				pmax		pmax			
	comp=Z,22nm,1.0s								
BJI	**Beijing**	**21.26**	**284**	P		**P**	**06 51 42.0**	**+0.3**
BJI				S		**S**	**06 55 34.8**	**-1.6**
BJI				pmax		pmax			
	comp=Z,8.0nm,0.8s								
BJI				pmax		pmax			
	comp=Z,77nm,3.8s								
BJI				LR		LR			
	comp=N,150nm,15.5s								
BJI				LR		LR			
	comp=E,170nm,13.5s								
BJI				LR		LR			
	comp=Z,75nm,15.2s								
BJT	**Baijiatuau**	**21.27**	**284**	*e*P		**P**	**06 51 42.3**	**+0.5**
BJT	**Baijiatuau**	**21.27**	**284**	*e*P		**P**	**06 51 42.3**	**+0.5**
HHC	**Hu-ho-hao-te**	**24.73**	**287**	*e*P		**P**	**06 52 17.0**	**+0.2**
HHC				S		**S**	**06 56 33.6**	**-3.5**
HHC				pmax		pmax			
	comp=Z,24nm,0.8s								
HHC				pmax		pmax			
	comp=Z,66nm,4.7s								
HHC				LR		LR			
	comp=N,170nm,14.8s								
HHC				LR		LR			
	comp=E,190nm,14.0s								
HHC				LR		LR			
	comp=Z,170nm,13.6s								
YAK	**Yakutsk**	**25.58**	**345**	P		**P**	**06 52 23.9**	**-0.1**
	comp=Z,30nm,0.4s,baz=121,slow=3.0,SNR=4.6								
YAK	**Yakutsk**	**25.58**	**345**	*e*P		**P**	**06 52 23.7**	**-0.4**
YAK				pmax		pmax			
	comp=Z,17nm,0.8s								
YAK				pmax		pmax			
	comp=N,9.0nm,1.3s								
YAK				pmax		pmax			
	comp=E,4.0nm,0.9s								
YAK	**Yakutsk**	**25.58**	**345**	*e*P		**P**	**06 52 24.0**	**-0.1**
	comp=E,31nm,0.7s								
SEY	**Seymchan**	**25.62**	**9**	P		**P**	**06 52 24.4**	**-0.1**
	comp=E,5.2nm,0.8s,baz=183,slow=7.0,SNR=12								
SEY	**Seymchan**	**25.62**	**9**	*c*e*P*		**P**	**06 52 26.2**	**+1.7**
H11N2	**WAKE ISLAND Hy**	**27.29**	**125**	T		T	07 21 32.0		
	baz=317,slow=75,SNR=48								
H11N1	**WAKE ISLAND Hy**	**27.30**	**125**	T		T	07 21 28.8		
	baz=317,slow=75,SNR=34								
H11N3	**WAKE ISLAND Hy**	**27.31**	**125**	T		T	07 21 37.3		
	baz=317,slow=75,SNR=30								
H11S1	**WAKE ISLAND Hy**	**28.06**	**127**	T		T	07 22 20.8		
	baz=319,slow=76,SNR=10								
H11S3	**WAKE ISLAND Hy**	**28.07**	**127**	T		T	07 22 20.1		
	baz=319,slow=76,SNR=12								
H11S2	**WAKE ISLAND Hy**	**28.08**	**127**	T		T	07 22 17.5		
	baz=319,slow=76,SNR=9.6								
**SONA

comp=Z,100nm,7.2s
ZRNK Zerenda 51.98 312 *e*P **P** 06 56 04.6 +0.4
ZRNK pmax pmax
comp=Z,5.0nm,0.9s
ZRNK Zerenda 51.98 312 *e*P **P** 06 56 04.6 +0.4
comp=Z,5.4nm,0.9s
HYT Haines Junctio 52.62 37 *e*P **P** 06 56 10.2 +1.2
INK Inuvik 52.85 28 P **P** 06 56 11.0 +0.6
comp=Z,1.6nm,0.7s,baz=295,slow=8.6,SNR=5.4
KKAR Karatay Array 54.06 300 *e*P **P** 06 56 19.9 +0.1
KKAR Karatay Array 54.06 300 *e*P **P** 06 56 19.9 +0.1
ARU Arti 56.75 319 P **P** 06 56 38.9 +0.1
comp=Z,2.0nm,0.4s,baz=112,slow=6.4,SNR=3.6
ARU Arti 56.75 319 *d i*P **P** 06 56 38.3 -0.5
ARU 06 58 42.7
ARU S **S** 07 04 29.7 +0.2
ARU SS **SS** 07 08 13.1 -3.9
ARU pmax pmax
comp=Z,6.0nm,1.2s
WRA Warramunga Arr 58.20 190 P **P** 06 56 48.2 -1.2
comp=Z,3.6nm,0.8s,baz=8,3,slow=7.1,SNR=24
AKTO Aktyubinsk 59.26 312 P **P** 06 56 56.1 -0.4
comp=Z,2.7nm,0.7s,baz=73,slow=12,SNR=7.6
ASAR Alice Springs 61.93 190 P **P** 06 57 14.4 -0.5
comp=Z,1.0nm,0.8s,baz=15,slow=5.9,SNR=7.4
YKA Yellowknife Ar 62.22 31 P **P** 06 57 16.4 0.0
comp=Z,0.8nm,0.7s,baz=304,slow=5.9,SNR=5.8
ARCES ARCESS Array B 63.71 340 P **P** 06 57 26.1 -0.2
comp=Z,6.2nm,1.0s,baz=60,slow=7.2,SNR=12
KLMR Klimovskoe 63.84 328 *e*P **P** 06 57 25.5 -1.8
KLMR pmax pmax
comp=Z,8.0nm,1.4s
GEYT Alibeck 64.80 299 P **P** 06 57 33.5 -0.4
comp=Z,1.2nm,0.3s,baz=73,slow=5.0,SNR=3.7
OBN Obninsk 68.33 324 *e*P **P** 06 57 58.2 +2.1
OBN *e**SP **sP** 06 58 09.7 +1.1
OBN *e* 06 58 23.0
OBN pmax pmax
comp=Z,36nm,1.7s
OBN MLR MLR
comp=Z,283nm,15.0s
FINES FINESS Array B 68.75 333 *e*P **P** 06 57 57.6 -1.1
K05A Summer Lake 69.13 52 *e*P **P** 06 58 03.7 +2.0
comp=Z,21nm,1.7s
WVOR Wild Horse Val 70.68 51 *e*P **P** 06 58 13.4 +2.3
WVOR pmax pmax
comp=Z,9.0nm,0.6s
WVOR Wild Horse Val 70.68 51 *e*P **P** 06 58 13.4 +2.3
comp=Z,9.0nm,0.6s
KIV Kislovodsk 71.52 312 *e*P **P** 06 58 16.9 +0.8
KIV pmax pmax
comp=Z,17nm,1.0s
KBZ Khabaz 71.52 311 P **P** 06 58 16.1 +0.1
comp=Z,3.0nm,0.7s,baz=68,slow=4.5,SNR=6.4
KBZ Khabaz 71.52 311 P **P** 06 58 16.1 +0.1
KBZ pmax pmax
comp=Z,3.0nm,0.7s
KBZ Khabaz 71.52 311 P **P** 06 58 16.1 +0.1
comp=Z,3.0nm,0.7s
FFC Flin Flon 72.07 34 *e*P **P** 06 58 19.7 +0.6
FFC pmax pmax
comp=Z,4.0nm,0.9s
FFC Flin Flon 72.07 34 *e*P **P** 06 58 19.7 +0.6
comp=Z,4.4nm,0.9s
HFS Hagfors 73.92 336 P **P** 06 58 29.9 0.0
comp=Z,1.7nm,0.6s,baz=48,slow=4.4,SNR=9.1
NB2 NORSAR Subarra 73.96 338 P **P** 06 58 30.1 -0.1
comp=Z,1.0nm,0.7s,baz=39,slow=5.9
NOA NORSAR Array B 73.96 338 P **P** 06 58 30.1 -0.1
comp=Z,1.8nm,0.8s,baz=40,slow=5.7,SNR=4.7
AKASG Malin Array Be 74.55 323 P **P** 06 58 32.7 -1.1
comp=Z,2.3nm,0.7s,baz=46,slow=5.7,SNR=7.4
KIEV Kiev 74.56 323 *e*P **P** 06 58 34.0 +0.2
KIEV pmax pmax
comp=Z,3.0nm,0.9s
R11A Troy Canyon, C 74.94 53 *e*P **P** 06 58 37.7 +1.2
comp=Z,7.1nm,1.8s
TPNV Topopah Spring 75.35 55 *e*P **P** 06 58 40.0 +1.1
TPNV pmax pmax
comp=Z,2.0nm,0.9s
TPNV Topopah Spring 75.35 55 *e*P **P** 06 58 40.0 +1.1
comp=Z,2.2nm,0.9s
PDAR Pinedale Array 75.89 47 P **P** 06 58 42.0 +0.1
comp=Z,0.7nm,0.6s,baz=270,slow=1.5,SNR=6.5
MTPU Mount Pierson 77.26 52 *e*P **P** 06 58 51.4 +1.5
comp=Z,1.9nm,0.8s
BRTR Keskin Array B 79.44 312 P **P** 06 59 01.7 0.0
comp=Z,0.4nm,0.4s,baz=90,slow=1.4,SNR=2.5
ANMO Albuquerque 82.78 51 *e*P **P** 06 59 21.5 +1.9
ANMO pmax pmax
comp=Z,4.0nm,1.4s
ANMO Albuquerque 82.78 51 *e*P **P** 06 59 21.5 +1.9
comp=Z,4.4nm,1.4s
SCHQ Schefferville 84.02 17 LR LR 07 39 40.6
comp=Z,30nm,19.4s,baz=30,slow=38
TXAR Lajitas Array 88.30 54 P **P** 06 59 47.4 +0.4
comp=Z,0.4nm,0.7s,baz=292,slow=2.1,SNR=7.6
TORD Torodi Ar. Bea 117.80 317 PKP **PKPdf** 07 05 41.1 -0.9
comp=Z,0.2nm,0.8s,baz=36,slow=2.4,SNR=3.1
LPAZ La Paz 144.85 61 PKP **PKPab** 07 06 32.1 -0.2
comp=Z,1.1nm,0.7s,baz=254,slow=1.9,SNR=5.5

IDC 12 06:48:00.7±1.4, 37.82N×143.37E, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.7/56, mbtmp4.0/4, Error ellipse: s-maj=45.9km s-min=29.9km az=88.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**5.52**	**213**	Sn	Sn		06 50 24.2	-4.2
	10nm,0.3s,baz=75,slow=20,SNR=1.8							
KURBB	**Kurchatov Arra**	**46.75**	**308**	P	P		06 56 31.6	+0.1
	3.8nm,0.6s,baz=84,slow=7.9,SNR=3.7							
ILAR	**Eielson Array**	**48.00**	**33**	P	P		06 56 41.0	-0.1
	1.2nm,0.8s,baz=269,slow=7.2,SNR=4.5							
WRA	**Warramunga Arr**	**58.07**	**190**	P	P		06 57 55.7	-0.1
	1.3nm,0.5s,baz=7.8,slow=7.2,SNR=3.1							
AKASG	**Malin Array Be**	**74.62**	**323**	P	P		06 59 41.4	-0.1
	0.1nm,0.3s,baz=44,slow=6.3,SNR=2.2							

CSEM ***12*** *06:52:50.6, 42.05N×13.23E, h9km, ML1.8/6*
ROM 12 06:52:50.6±0.1, 42.05N×13.23E, h9km±1km, Ml1.8/6, Error ellipse: s-maj=1.6km s-min=1.3km az=20.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PTQR	**Pietraquaria**	**0.13**	**100**	Pg	Pg		06 52 54.2	+0.6
PTQR				Sg	Sg		06 52 56.4	+0.7
PTQR	**Pietraquaria**	**0.13**	**100**	Pg	Pg		06 52 54.2	+0.6
PTQR				Sg	Sg		06 52 56.4	+0.7
CERT	**Cerreto**	**0.21**	**242**	Pg	Pg		06 52 55.5	+0.6
CERT				Sg	Sg		06 52 59.1	+1.3
	145nm,0.4s							
CERT	**Cerreto**	**0.21**	**242**	Pg	Pg		06 52 55.5	+0.6
CERT				Sg	Sg		06 52 59.1	+1.3
	145nm,0.4s							
FIAM	**Fiamignano**	**0.24**	**340**	Pg	Pg		06 52 56.2	+0.7
FIAM				Sg	Sg		06 53 00.4	+1.6
	127nm,0.6s							
FIAM	**Fiamignano**	**0.24**	**340**	Pg	Pg		06 52 56.2	+0.7
FIAM				Sg	Sg		06 53 00.4	+1.6
	127nm,0.6s							
GUAR	**Guarcino**	**0.26**	**166**	Pg	Pb		06 52 57.2	-0.3
	228nm,0.3s							
GUAR	**Guarcino**	**0.26**	**166**	Pg	Pb		06 52 57.2	-0.3
	228nm,0.3s							
VVLD	**Villa Vallelon**	**0.34**	**120**	Pg	Pg		06 52 57.9	+0.5
VVLD				Sg	Sb		06 53 03.4	-1.1
	72nm,0.3s							
VVLD	**Villa Vallelon**	**0.34**	**120**	Pg	Pg		06 52 57.9	+0.5
VVLD				Sg	Sb		06 53 03.4	-1.1
	72nm,0.3s							
FAGN	**Fagnano**	**0.34**	**50**	Pg	Pg		06 52 57.9	+0.4
	220nm,0.4s							
FAGN	**Fagnano**	**0.34**	**50**	Pg	Pg		06 52 57.9	+0.4
	220nm,0.4s							
POFI	**Posta Fibreno**	**0.49**	**132**	Pg	Pg		06 53 00.3	+0.2
POFI				Sg	Sb		06 53 07.9	-0.8
POFI	**Posta Fibreno**	**0.49**	**132**	Pg	Pg		06 53 00.3	+0.2
POFI				Sg	Sb		06 53 07.9	-0.8
INTR	**Introdacqua**	**0.51**	**94**	Pg	Pb		06 53 01.7	0.0
INTR	**Introdacqua**	**0.51**	**94**	Pg	Pb		06 53 01.7	0.0
RM32	**Poggio Cancell**	**0.53**	**5**	Pg	Pb		06 53 01.5	-0.6
	36nm,0.8s							
RM32	**Poggio Cancell**	**0.53**	**5**	Pg	Pb		06 53 01.5	-0.6
	36nm,0.8s							
LNSS	**Leonessa**	**0.57**	**346**	Pg	Pg		06 53 01.8	0.0
LNSS	**Leonessa**	**0.57**	**346**	Pg	Pg		06 53 01.8	0.0

STR ***12*** *06:53:19.4±0.5, 43.67N×12.20E, h10km, Ml4.0, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
CSEM ***12*** *06:53:22.8±0.1, 43.95N×11.86E, h2km, mb4.5/23, ML4.4/27, Error ellipse: s-maj=1.8km s-min=1.4km az=29.0*
PDG ***12*** *06:53:22.7±0.8, 43.99N×11.93E, h4km±1km, ML4.1/10, Error ellipse: s-maj=0.8km s-min=0.9km az=0.0*
IDC ***12*** *06:53:23.0±0.6, 44.02N×11.83E, h0km, mb4.1/18, mb1 4.1/29, mb1mx4.0/56, mbtmp4.0/29, ML3.7/10, MS3.3/16, Ms1 3.3/16, ms1mx3.2/49, Error ellipse: s-maj=11.8km s-min=10.8km az=136.0*
ISCJB ***12*** *06:53:22.3±0.2, 43.94N±0.01×11.86E±0.01, h9km±1km, mb4.3/43, MS3.4/8, Error ellipse: s-maj=2.0km s-min=1.3km az=21.8*
MOS ***12*** *06:53:22.8±1.1, 44.00N×11.86E, h12km, mb4.4/22, Error ellipse: s-maj=4.5km s-min=3.5km az=85.8*
ROM ***12*** *06:53:22.4±0.1, 43.93N×11.86E, h8km, Ml4.0/46, Error ellipse: s-maj=1.6km s-min=0.9km az=18.0*
NEIC ***12*** *06:53:22.0, 43.92N×11.86E, h8km, mb4.5/24, ML4.0(ROM), ML4.0(LDG), After ROM.*
NEIC Felt [V] at Santa Sofia. Felt in much of Emilia Romagna and Tuscany and in parts of Marche and Umbria.
BGR ***12*** *06:53:23.9±0.6, 43.92N×12.00E, h10km, ML4.4/21, Error ellipse: s-maj=11.1km s-min=10.0km az=176.0*
IASPEI ***12*** *06:53:23.1±1.0, 43.91N±0.02×11.85E±0.02, h7km±4km, mb4.4/43, MS3.4/8, Error ellipse: s-maj=3.4km s-min=2.9km az=22.9, GT5 selection from ISC bulletin GT5 identified by Bond˜jr and McLaughlin (2009) selection criteria Bond˜jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
GEN ***12*** *06:53:24.0, 43.99N×11.80E, h2km, ML3.9*
PRU ***12*** *06:53:24.3, 44.03N×12.09E, h0km, M4.5*
LDG ***12*** *06:53:24.0±0.2, 43.97N×11.98E, h10km, Md3.5/3, Ml4.0/12, Error ellipse: s-maj=4.8km s-min=3.8km az=10.0*
BNS ***12*** *06:53:26.3±0.5, 44.05N×11.70E, h5km, ML3.8*
ISC 12 06:53:23.4±0.7, 43.95N±0.02×11.86E±0.01, h4km±4km, n703, σ1♀52/876, mb4.4/43, MS3.4/8, 67C-12D, Central Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.04**	**189**	⇑ *i*Pg	**Pg**		**06 53 24.1**	**-0.5**
SFI				Sg	**Sg**		**06 53 25.3**	**-0.1**
	216µm,0.5s							
SFI	**Santa Sofia**	**0.04**	**189**	P	**Pg**		**06 53 24.0**	**-0.5**
SFI	**Santa Sofia**	**0.04**	**189**	⇑ *i*Pg	**Pg**		**06 53 24.1**	**-0.5**
SFI				Sg	**Sg**		**06 53 25.3**	**-0.1**
	216µm,0.5s							
ASQU	**Asqua**	**0.16**	**198**	⇑ *i*Pg	**Pg**		**06 53 26.1**	**-0.5**
ASQU				Sg	**Sg**		**06 53 29.2**	**+0.5**
	144µm,0.7s							
ASQU	**Asqua**	**0.16**	**198**	⇑ *i*Pg	**Pg**		**06 53 26.1**	**-0.5**
ASQU				Sg	**Sg**		**06 53 29.2**	**+0.5**
	144µm,0.7s							
T0502	**Localit˜ San**	**0.21**	**103**	⇑ *i*Pg	**Pg**		**06 53 27.0**	**-0.5**
T0502				Sg	**Sg**		**06 53 30.8**	**+0.6**
	7554µm,8.9s							
VMG	**Vicchio**	**0.23**	**273**	Pg	**Pg**		**06 53 27.8**	**0.0**
VMG	**Vicchio**	**0.23**	**273**	Pg	**Pg**		**06 53 27.8**	**0.0**
CPGN	**Carpegna, Ital**	**0.37**	**114**	⇑ *e*Pg	**Pg**		**06 53 30.6**	**+0.1**
CPGN				Sg	**Sg**		**06 53 36.5**	**+1.2**
	48µm,1.4s							
CPGN	**Carpegna, Ital**	**0.37**	**114**	⇑ *e*Pg	**Pg**		**06 53 30.6**	**+0.1**
CPGN				Sg	**Sg**		**06 53 36.5**	**+1.2**
	48µm,1.4s							
SEI	**Scarperia**	**0.38**	**286**	⇑ *e*Pg	**Pg**		**06 53 30.3**	**-0.4**
SEI	**Scarperia**	**0.38**	**286**	⇑ *e*Pg	**Pg**		**06 53 30.3**	**-0.4**
PARC	**Parchiule**	**0.41**	**137**	⇑ *e*Pg	**Pg**		**06 53 30.4**	**-0.9**
PARC				Sg	**Sg**		**06 53 36.9**	**+0.3**
	14µm,0.7s							
PARC	**Parchiule**	**0.41**	**137**	⇑ *e*Pg	**Pg**		**06 53 30.4**	**-0.9**
PARC				Sg	**Sg**		**06 53 36.9**	**+0.3**
	14µm,0.7s							
IMOL	**Imola, Italy**	**0.42**	**349**	⇑ *e*Pg	**Pb**		**06 53 32.2**	**-1.2**
	5µm,0.8s							
IMOL	**Imola, Italy**	**0.42**	**349**	⇑ *e*Pg	**Pb**		**06 53 32.2**	**-1.2**
	5µm,0.8s							
FIR	**Firenze**	**0.47**	**248**	Pg	**Pg**		**06 53 32.1**	**-0.4**
	21µm,0.8s							
FIR	**Firenze**	**0.47**	**248**	P	**Pg**		**06 53 32.0**	**-0.4**
FIR				S	**Sg**		**06 53 39.6**	**+1.1**
FIR	**Firenze**	**0.47**	**248**	P	**Pg**		**06 53 32.0**	**-0.4**
FIR				S	**Sg**		**06 53 39.6**	**+1.1**
BLLA	**Bellaria**	**0.48**	**66**	Pg	**Pg**		**06 53 32.9**	**+0.2**
	10272µm,20.0s							
MTRZ	**Monterenzio**	**0.51**	**327**	⇑ *e*Pg	**Pg**		**06 53 33.0**	**-0.3**
	17µm,0.9s							
MTRZ	**Monterenzio**	**0.51**	**327**	⇑ *e*Pg	**Pg**		**06 53 33.0**	**-0.3**
	17µm,0.9s							
BADI	**Badiali**	**0.52**	**147**	⇑ *e*Pg	**Pg**		**06 53 32.3**	**-1.1**
BADI				Sg	**Sg**		**06 53 40.5**	**+0.3**
	17µm,0.6s							
BADI	**Badiali**	**0.52**	**147**	⇑ *e*Pg	**Pg**		**06 53 32.3**	**-1.1**
BADI				Sg	**Sg**		**06 53 40.5**	**+0.3**
	17µm,0.6s							
ATMC	**Monte Cedrone**	**0.56**	**154**	⇑ *e*Pg	**Pg**		**06 53 32.9**	**-1.2**
ATMC				Sg	**Sg**		**06 53 41.5**	**+0.1**
	17µm,0.4s							
ATMC	**Monte Cedrone**	**0.56**	**154**	⇑ *e*Pg	**Pg**		**06 53 32.9**	**-1.2**
ATMC				Sg	**Sg**		**06 53 41.5**	**+0.1**
	17µm,0.4s							
PTF	**Prato**	**0.57**	**271**	Pg	**Pg**		**06 53 33.8**	**-0.5**
PTF	**Prato**	**0.57**	**271**	Pg	**Pg**		**06 53 33.8**	**-0.5**
FNVD	**Fontana Vidola**	**0.57**	**293**	Pg	**Pg**		**06 53 34.1**	**-0.3**
	11µm,0.7s							
FNVD	**Fontana Vidola**	**0.57**	**293**	Pg	**Pg**		**06 53 34.1**	**-0.3**
	11µm,0.7s							
CAFI	**Castiglion Fio**	**0.62**	**173**	⇑ *e*Pg	**Pg**		**06 53 34.3**	**-1.1**
CAFI				Sg	**Sg**		**06 53 43.8**	**+0.3**
	11µm,0.5s							
CAFI	**Castiglion Fio**	**0.62**	**173**	⇑ *e*Pg	**Pg**		**06 53 34.3**	**-1.1**
CAFI				Sg	**Sg**		**06 53 43.8**	**+0.3**
	11µm,0.5s							
CSNT	**Castellina Chi**	**0.63**	**221**	⇑ *e*Pg	**Pg**		**06 53 34.4**	**-1.1**
	7µm,0.6s							
CSNT	**Castellina Chi**	**0.63**	**221**	⇑ *e*Pg	**Pg**		**06 53 34.4**	**-1.1**
	7µm,0.6s							
ATPC	**Poggio Castell**	**0.64**	**137**	Pg	**Pg**		**06 53 34.5**	**-1.2**
ATPC				Sg	**Sg**		**06 53 44.8**	**+0.8**
	14µm,0.6s							
ATPC	**Poggio Castell**	**0.64**	**137**	Pg	**Pg**		**06 53 34.5**	**-1.2**
ATPC				Sg	**Sg**		**06 53 44.8**	**+0.8**
	14µm,0.6s							
CRMI	**Carmignano**	**0.66**	**256**	⇑ *e*Pg	**Pg**		**06 53 35.3**	**-0.8**
CRMI				Sg	**Sg**		**06 53 45.3**	**+0.6**
	14µm,1.4s							
CRMI	**Carmignano**	**0.66**	**256**	⇑ *e*Pg	**Pg**		**06 53 35.3**	**-0.8**
CRMI				Sg	**Sg**		**06 53 45.3**	**+0.6**
	14µm,1.4s							
ATVO	**AVT- Monte Val**	**0.69**	**145**	Pg	**Pg**		**06 53 35.5**	**-1.2**
ATVO				Sg	**Sb**		**06 53 46.9**	**-1.1**
	18µm,0.6s							
ATVO	**AVT- Monte Val**	**0.69**	**145**	Pg	**Pg**		**06 53 35.5**	**-1.2**
ATVO				Sg	**Sb**		**06 53 46.9**	**-1.1**
	18µm,0.6s							
PESA	**Pesaro**	**0.71**	**90**	Pg	**Pg**		**06 53 37.1**	**+0.1**
	14µm,0.8s							
PESA	**Pesaro**	**0.71**	**90**	Pg	**Pg**		**06 53 37.1**	**+0.1**
	14µm,0.8s							
FSSB	**Fossombrone**	**0.71**	**111**	Pg	**Pg**		**06 53 35.9**	**-1.2**
FSSB				Sg	**Sg**		**06 53 47.2**	**+0.8**
	8µm,0.5s							
FSSB	**Fossombrone**	**0.71**	**111**	Pg	**Pg**		**06 53 35.9**	**-1.2**
FSSB				Sg	**Sg**		**06 53 47.2**	**+0.8**
	8µm,0.5s							
MPAG	**Monte Paganucc**	**0.73**	**116**	Pg	**Pg**		**06 53 36.0**	**-1.4**
MPAG				Sg	**Sb**		**06 53 48.5**	**-0.5**
	8µm,1.1s							
MPAG	**Monte Paganucc**	**0.73**	**116**	Pg	**Pg**		**06 53 36.0**	**-1.4**
MPAG				Sg	**Sb**		**06 53 48.5**	**-0.5**
	8µm,1.1s							
ZCCA	**Zocca**	**0.75**	**303**	Pg	**Pb**		**06 53 38.4**	**-0.7**
	12µm,1.8s							
ZCCA	**Zocca**	**0.75**	**303**	Pg	**Pb**		**06 53 38.4**	**-0.7**
	12µm,1.8s							
FRON	**Frontone**	**0.76**	**124**	⇑ *e*Pg	**Pg**		**06 53 36.6**	**-1.4**
FRON				Sg	**Sb**		**06 53 49.2**	**-0.8**
FRON	**Frontone**	**0.76**	**124**	⇑ *e*Pg	**Pg**		**06 53 36.6**	**-1.4**
FRON				Sg	**Sb**		**06 53 49.2**	**-0.8**
POPM	**Popiglio**	**0.80**	**277**	P	**Pg**		**06 53 38.3**	**-0.4**
POPM				S	**Sg**		**06 53 47.6**	**-1.5**
ATTE	**AVT- Monte Tez**	**0.83**	**154**	⇑ *e*Pg	**Pg**		**06 53 37.8**	**-1.6**
	15µm,0.7s							
ATTE	**AVT- Monte Tez**	**0.83**	**154**	⇑ *e*Pg	**Pg**		**06 53 37.8**	**-1.6**
	15µm,0.7s							
MURB	**Monte Urbino**	**0.84**	**144**	Pg	**Pg**		**06 53 38.2**	**-1.3**
	16µm,0.5s							
MURB	**Monte Urbino**	**0.84**	**144**	Pg	**Pg**		**06 53 38.2**	**-1.3**
	16µm,0.5s							
SSFR	**Montelago di S**	**0.84**	**127**	Pg	**Pg**		**06 53 38.1**	**-1.5**
	6µm,0.7s							
SSFR	**Montelago di S**	**0.84**	**127**	Pg	**Pg**		**06 53 38.1**	**-1.5**
	6µm,0.7s							
FROS	**Frosini**	**0.90**	**215**	Pg	**Pg**		**06 53 39.6**	**-1.0**
	10µm,0.9s							
FROS	**Frosini**	**0.90**	**215**	Pg	**Pg**		**06 53 39.6**	**-1.0**
	10µm,0.9s							
BDI	**Bagni Di Lucca**	**0.92**	**278**	Pg	**Pg**		**06 53 40.8**	**-0.2**
	6µm,1.2s							
BDI	**Bagni Di Lucca**	**0.92**	**278**	Pg	**Pg**		**06 53 40.8**	**-0.2**
	6µm,1.2s							
ATCC	**AVT- Casa Cast**	**0.95**	**143**	Pg	**Pg**		**06 53 40.4**	**-1.3**
	11µm,0.5s							
ATCC	**AVT- Casa Cast**	**0.95**	**143**	Pg	**Pg**		**06 53 40.4**	**-1.3**
	11µm,0.5s							
MAIM	**Mastiano**	**0.99**	**268**	Pg	**Pg**		**06 53 41.3**	**-1.0**
	3µm,0.8s							
MAIM	**Mastiano**	**0.99**	**268**	Pg	**Pg**		**06 53 41.3**	**-1.0**
	3µm,0.8s							
MAIM	**Mastiano**	**0.99**	**268**	P	**Pg**		**06 53 41.9**	**-0.4**
MAIM				S	**Sg**		**06 53 53.6**	**-1.5**
SNTG	**Esanatoglia**	**1.05**	**131**	Pg	**Pg**		**06 53 41.8**	**-1.7**
	5µm,0.7s							
SNTG	**Esanatoglia**	**1.05**	**131**	Pg	**Pg**		**06 53 41.8**	**-1.7**
	5µm,0.7s							
MGAB	**Montegabbione**	**1.05**	**170**	Pg	**Pg**		**06 53 42.2**	**-1.4**
	17µm,1.0s							
MGAB	**Montegabbione**	**1.05**	**170**	Pg	**Pg**		**06 53 42.2**	**-1.4**
	17µm,1.0s							
SARO	**Sassorosso**	**1.07**	**283**	P	**Pg**		**06 53 43.5**	**-0.5**
SARO				S	**Sg**		**06 53 56.0**	**-2.0**
VLC	**Villacollemand**	**1.08**	**282**	Pg	**Pg**		**06 53 43.3**	**-0.8**
	2µm,1.0s							
VLC	**Villacollemand**	**1.08**	**282**	Pg	**Pg**		**06 53 43.3**	**-0.8**
	2µm,1.0s							
VLC				*e*Sg	**Sn**		**06 54 01.5**	**+0.8**
VLC	**Villacollemand**	**1.08**	**282**	*e*Pg	**Pg**		**06 53 43.8**	**-0.4**
VLC				*e*Sg	**Sn**		**06 54 01.5**	**+0.8**
TRIF	**Trifonti**	**1.08**	**220**	Pg	**Pg**		**06 53 43.0**	**-1.2**
	4µm,1.0s							
TRIF	**Trifonti**	**1.08**	**220**	Pg	**Pg**		**06 53 43.0**	**-1.2**
	4µm,1.0s							
SASS	**Sassa´´´´´**	**1.09**	**231**	Pg	**Pg**		**06 53 43.1**	**-1.3**
	2µm,0.9s							
SASS	**Sassa´´´´´**	**1.09**	**231**	Pg	**Pg**		**06 53 43.1**	**-1.3**
	2µm,0.9s							
ADRI	**Adria, Italy**	**1.09**	**6**	*e*Pg	**Pb**		**06 53 44.3**	**-0.6**
ADRI	**Adria, Italy**	**1.09**	**6**	*e*P	**Pb**		**06 53 44.3**	**-0.6**
SACS	**San Casciano d**	**1.10**	**178**	Pg	**Pg**		**06 53 43.0**	**-1.5**
	4µm,0.5s							
CING	**Cingoli**	**1.13**	**120**	Pg	**Pg**		**06 53 43.5**	**-1.5**
	3µm,0.6s							
CING	**Cingoli**	**1.13**	**120**	Pg	**Pg**		**06 53 43.5**	**-1.5**
	3µm,0.6s							
ARCI	**Arcidosso**	**1.13**	**194**	Pg	**Pg**		**06 53 43.4**	**-1.7**
	7µm,0.6s							
ARCI	**Arcidosso**	**1.13**	**194**	Pg	**Pg**		**06 53 43.4**	**-1.7**
	7µm,0.6s							
MCIV	**Monte Civitell**	**1.18**	**186**	Pg	**Pg**		**06 53 44.5**	**-1.5**
	2µm,0.8s							
MCIV	**Monte Civitell**	**1.18**	**186**	Pg	**Pg**		**06 53 44.5**	**-1.5**
	2µm,0.8s							
CESI	**CESI - Serrava**	**1.21**	**141**	Pg	**Pg**		**06 53 45.0**	**-1.7**
	1µm,0.8s							
CESI	**CESI - Serrava**	**1.21**	**141**	Pg	**Pg**		**06 53 45.0**	**-1.7**
	1µm,0.8s							
FDMO	**Fiordimonte**	**1.28**	**135**	Pg	**Pg**		**06 53 46.0**	**-1.9**
FDMO	**Fiordimonte**	**1.28**	**135**	Pg	**Pg**		**06 53 46.0**	**-1.9**
AOI	**Ancona**	**1.33**	**107**	Pg	**Pg**		**06 53 48.2**	**-0.6**
	4µm,1.1s							
AOI	**Ancona**	**1.33**	**107**	Pg	**Pg**		**06 53 48.2**	**-0.6**
	4µm,1.1s							
LATE	**Laterza**	**1.33**	**182**	Pg	**Pg**		**06 53 47.1**	**-1.9**
	4µm,0.7s							
LATE	**Laterza**	**1.33**	**182**	Pg	**Pg**		**06 53 47.1**	**-1.9**
	4µm,0.7s							
CASP	**Castiglione de**	**1.36**	**212**	Pg	**Pn**		**06 53 46.7**	**-2.5**
	3µm,1.3s							
CASP	**Castiglione de**	**1.36**	**212**	Pg	**Pn**		**06 53 46.7**	**-2.5**
	3µm,1.3s							
GRAM	**Graiana**	**1.40**	**293**	P	**Pb**		**06 53 49.8**	**-0.3**
CESX	**Cesi**	**1.44**	**158**	Pg	**Pn**		**06 53 48.9**	**-1.3**
	5µm,0.7s							
CESX	**Cesi**	**1.44**	**158**	Pg	**Pn**		**06 53 48.9**	**-1.3**
	5µm,0.7s							
NRCA	**Norcia**	**1.44**	**140**	Pg	**Pn**		**06 53 48.9**	**-1.5**
	892nm,0.5s							
NRCA	**Norcia**	**1.44**	**140**	Pg	**Pn**		**06 53 48.9**	**-1.5**
	892nm,0.5s							
CODM	**Codolo**	**1.51**	**288**	P	**Pn**		**06 53 50.3**	**-0.9**
GROG	**Isola di Gorgo**	**1.52**	**251**	Pg	**Pn**		**06 53 49.1**	**-2.2**
	1µm,0.9s							
MAON	**Monte Argentar**	**1.61**	**199**	Pg	**Pn**		**06 53 50.6**	**-2.0**
	987nm,0.8s							
MSSA	**Maissana**	**1.72**	**283**	Pg	**Pn**		**06 53 52.9**	**-1.3**
	3µm,1.4s							
MARN	**Marana (Italy)**	**1.75**	**345**	*e*Pn	**Pn**		**06 53 53.5**	**-1.1**
MARN				*

34nm,0.3s,SNR=1.0
PGF Pioggiola 2.51 237 *e*Pn **Pn 06 54 03.2 -1.9**
PGF *e*Sn **Sn 06 54 32.7 -3.5**
VINO Villanova 2.52 23 *e*Pn **Pn 06 54 03.3 -1.8**
VINO Villanova 2.52 23 *e*P **Pn 06 54 03.3 -1.8**
OZOL Ozolo 2.52 347 *e*Pn **Pn 06 54 03.9 -1.3**
OZOL Ozolo 2.52 347 *e*P **Pn 06 54 03.9 -1.3**
CEY Cerknica 2.56 45⇑ *i*Pn **Pn 06 54 03.6 -2.0**
DRE Drenchia 2.56 29 *e*Pn **Pn 06 54 04.2 -1.5**
DRE Drenchia 2.56 29 *e*P **Pn 06 54 04.2 -1.5**
ROBS Robic 2.58 26⇑ *i*Pn **Pn 06 54 04.3 -1.5**
ROBS *e*Sn **Sn 06 54 36.6 -1.0**
ROBS Robic 2.58 26⇑ *i*Pn **Pn 06 54 04.3 -1.5**
ROBS *i* Sn **Sn 06 54 36.6 -1.0**
FUSE Fusea 2.59 18 *e*Pn **Pn 06 54 04.3 -1.8**
FUSE Fusea 2.59 18 *e*P **Pn 06 54 04.3 -1.8**
CARE Lago del Cares 2.61 342 *e*Pn **Pn 06 54 05.5 -1.1**
CARE Lago del Cares 2.61 342 *e*P **Pn 06 54 05.5 -1.1**
ZOU Zoufplan 2.72 16 *e*Pn **Pn 06 54 06.5 -1.6**
RORO Rocca Rossa 2.74 275 P **Pn 06 54 06.1 -2.0**
LJU Ljubljana 2.82 41 *i* Pn **Pn 06 54 07.9 -1.4**
LJU *i* Sn **Sn 06 54 43.4 -0.3**
LJU Ljubljana 2.82 41 *i* Pn **Pn 06 54 07.9 -1.4**
LJU *i* Sn **Sn 06 54 43.4 -0.3**
ABTA Abfaltersbach 2.84 9 *e*Pn **Pn 06 54 09.0 -0.5**
73nm,0.6s,SNR=51
ABTA *e*Sn **Sn 06 54 44.4 +0.2**
393nm,0.8s
ABTA Abfaltersbach 2.84 9 Pn **Pn 06 54 09.0 -0.5**
73nm,0.6s,SNR=51
ABTA Sn **Sn 06 54 44.4 +0.2**
393nm,0.8s
ACOM Acomizza, Ital 2.85 24 *e*Pn **Pn 06 54 08.2 -1.6**
ACOM Acomizza, Ital 2.85 24 *e*P **Pn 06 54 08.2 -1.6**
IMI Imperia 2.86 271 P **Pn 06 54 07.9 -2.0**
UDBI Udbina 2.87 77 *i* Pn **Pn 06 54 11.3 +1.4**
UDBI Sn **Sn 06 54 45.2 +0.3**
UDBI Udbina 2.87 77 *i* Pn **Pn 06 54 11.3 +1.4**
UDBI Sn **Sn 06 54 45.2 +0.3**
FUORN Ofenpass-Fuorn 2.90 338 *e*Pn **Pn 06 54 11.6 +1.0**
FUORN Ofenpass-Fuorn 2.90 338 *e*Pn **Pn 06 54 11.6 +1.0**
MYKA Terra Mystica 2.96 25 *e*Pn **Pn 06 54 10.7 -0.5**
85nm,0.5s,SNR=18
MYKA *e*Sn **Sn 06 54 47.1 -0.1**
156nm,0.6s
MYKA Terra Mystica 2.96 25 Pn **Pn 06 54 10.7 -0.5**
85nm,0.5s,SNR=18
MYKA Sn **Sn 06 54 47.1 -0.1**
156nm,0.6s
MOZS Mozjanca 2.98 37⇑ *i*Pn **Pn 06 54 10.2 -1.2**
MOZS Mozjanca 2.98 37⇑ *i*Pn **Pn 06 54 10.2 -1.2**
NEGI Seborga 3.00 270 P **Pn 06 54 10.0 -1.8**
OZLJ Ozalj 3.06 56 *e*Pn **Pn 06 54 12.3 -0.2**
OZLJ Sn **Sn 06 54 47.0 -2.5**
OZLJ Ozalj 3.06 56 *e*Pn **Pn 06 54 12.3 -0.2**
OZLJ Sn **Sn 06 54 47.0 -2.5**
PDKS Podkum 3.07 45⇑ *i*Pn **Pn 06 54 11.4 -1.3**
PDKS *i* Sn **Sn 06 54 49.7 -0.2**
comp=Z,886nm,0.9s
PDKS Podkum 3.07 45⇑ *i*Pn **Pn 06 54 11.4 -1.3**
PDKS *i* Sn **Sn 06 54 49.7 -0.2**
comp=Z,886nm,0.9s
TUE Stuetta 3.08 326 *e*Pn **Pn 06 54 13.5 +0.4**
TUE Stuetta 3.08 326 *e*Pn **Pn 06 54 13.5 +0.4**
SAOF Saorge 3.11 272 P **Pn 06 54 12.1 -1.1**
SAOF Saorge 3.11 272 P **Pn 06 54 12.1 -1.1**
DAVOX Davos/Dischmat 3.16 334 Pn **Pn 06 54 15.0 +1.0**
comp=Z,14nm,0.3s,baz=161,slow=16,SNR=60
DAVOX Sn **Sn 06 54 54.5 +2.3**
comp=Z,11nm,0.3s,baz=151,slow=22,SNR=5.1
CRES Cresnjev 3.17 52⇑ *i*Pn **Pn 06 54 12.9 -1.2**
FETA Feichten 3.17 346 *i* Pn **Pn 06 54 15.1 +0.9**
comp=Z,173nm,0.8s,SNR=147
FETA *i* Sn **Sn 06 54 53.0 +0.4**
comp=Z,133nm,0.8s
FETA Feichten 3.17 346 Pn **Pn 06 54 15.1 +0.9**
comp=Z,173nm,0.8s,SNR=147
FETA Sn **Sn 06 54 53.0 +0.4**
comp=Z,133nm,0.8s
OBKA Obir 3.19 36 *i* Pn **Pn 06 54 13.5 -0.9**
comp=Z,273nm,0.7s,SNR=22
OBKA Obir 3.19 36 *e*Pn **Pn 06 54 13.2 -1.2**
OBKA Obir 3.19 36 Pn **Pn 06 54 13.2 -1.2**
SBF Sospel 3.20 270 *e*Pn **Pn 06 54 12.6 -1.9**
SNR=1.0
SBF Sospel 3.20 270 *e*P **Pn 06 54 12.6 -1.9**
SBF Sospel 3.20 270 *e*Pn **Pn 06 54 12.6 -1.9**
SNR=1.0
SBF Sospel 3.20 270 *e*Pn **Pn 06 54 12.6 -1.9**
ENR Entracque 3.21 276 P **Pn 06 54 13.5 -1.1**
LUCF Luceram 3.26 271 P **Pn 06 54 13.4 -1.9**
LUCF S **Sb 06 54 59.0 -2.9**
LUCF Luceram 3.26 271 P **Pn 06 54 13.4 -1.9**
LUCF S **Sb 06 54 59.0 -2.9**
KBA Koelnbreinsper 3.30 18 *i* Pn **Pn 06 54 15.6 -0.4**
comp=Z,68nm,0.5s,SNR=43
KBA Koelnbreinsper 3.30 18 P **Pn 06 54 15.6 -0.4**
KBA Koelnbreinsper 3.30 18 *e*Pn **Pn 06 54 15.5 -0.4**
KBA Koelnbreinsper 3.30 18 P **Pn 06 54 15.6 -0.4**
WTTA Wattenberg 3.32 357 *i* Pn **Pn 06 54 17.5 +1.2**
comp=Z,134nm,0.8s,SNR=13
WTTA Wattenberg 3.32 357 *e*Pn **Pn 06 54 16.7 +0.4**
WTTA *e*Sn **Sn 06 54 58.6 +2.4**
WTTA Wattenberg 3.32 357 Pn **Pn 06 54 16.7 +0.4**
WTTA Sn **Sn 06 54 58.6 +2.4**
TRAV Traversella 3.32 300 P **Pn 06 54 15.7 -0.5**
WATA Walderalm 3.39 357 *e*Pn **Pn 06 54 18.3 +1.1**
comp=Z,93nm,0.6s,SNR=24
WATA Walderalm 3.39 357 Pn **Pn 06 54 18.3 +1.1**
comp=Z,93nm,0.6s,SNR=24
MVIF Mont Vial 3.40 271 P **Pn 06 54 16.0 -1.3**
MVIF Mont Vial 3.40 271 P **Pn 06 54 16.0 -1.3**
BHB Bricherasio 3.41 287 P **Pn 06 54 17.2 -0.2**
MOTA Moosalm 3.44 351 *e*Pn **Pn 06 54 18.8 +1.0**
comp=Z,56nm,0.4s,SNR=66
MOTA Moosalm 3.44 351 Pn **Pn 06 54 18.8 +1.0**
comp=Z,56nm,0.4s,SNR=66
RSP Reno Superiore 3.49 292 P **Pn 06 54 18.1 -0.5**
SOKA Soboth 3.53 38 *i* Pn **Pn 06 54 18.2 -0.9**
comp=Z,13nm,0.3s,SNR=11
SOKA Soboth 3.53 38 Pn **Pn 06 54 18.2 -0.9**
comp=Z,13nm,0.3s,SNR=11
BISS Bistriski jare 3.55 39 *e*Pn **Pn 06 54 17.7 -1.6**
BISS Bistriski jare 3.55 39 *e*Pn **Pn 06 54 17.7 -1.6**
PLONS Plons/SG 3.56 332 *e*Pn **Pn 06 54 20.3 +0.9**
PLONS *e*Sn **Sn 06 55 05.4 +3.5**
PLONS Plons/SG 3.56 332 Pn **Pn 06 54 20.3 +0.9**
PLONS Sn **Sn 06 55 05.4 +3.5**
DAVA Damuels 3.62 338 *i* Pn **Pn 06 54 21.7 +1.4**
comp=Z,83nm,0.4s,SNR=49
DAVA *i* Sn **Sn 06 55 05.4 +2.0**
comp=Z,255nm,0.9s
DAVA Damuels 3.62 338 *e*Pn **Pn 06 54 21.6 +1.4**
DAVA *e*Sn **Sn 06 55 06.5 +3.1**
DAVA Damuels 3.62 338 Pn **Pn 06 54 21.6 +1.3**
DAVA Sn **Sn 06 55 05.4 +2.0**
comp=Z,255nm,0.9s
RETA Reutte 3.62 348 *i* Pn **Pn 06 54 21.4 +1.1**
comp=Z,34nm,0.4s,SNR=20
RETA *i* Sn **Sn 06 55 04.1 +0.6**
comp=Z,98nm,0.4s
RETA Reutte 3.62 348 Pn **Pn 06 54 21.4 +1.1**
comp=Z,34nm,0.4s,SNR=20
RETA Sn **Sn 06 55 04.1 +0.6**
comp=Z,98nm,0.4s
MBDF Montbardon 3.73 284 *e*Pn **Pn 06 54 20.5 -1.4**
SNR=1.0
MBDF Montbardon 3.73 284 *e*P **Pn 06 54 20.5 -1.4**
MBDF Montbardon 3.73 284 *e*Pn **Pn 06 54 20.5 -1.4**
SNR=1.0
MBDF Montbardon 3.73 284 *e*Pn **Pn 06 54 20.5 -1.4**
MS1 Monte Sant'Ang 3.75 125 *e*Pn **Pn 06 54 21.7 -0.3**
RRL Rocca Remolon 3.76 287 P **Pn 06 54 23.2 +0.9**
FRF La Foret Royal 3.79 266 *e*Pn **Pn 06 54 21.4 -1.2**
SNR=1.0
FRF *e*Sn **Sn 06 55 03.0 -4.7**
comp=Z,44nm,0.4s,SNR=1.0
FRF La Foret Royal 3.79 266 *e*P **Pn 06 54 21.4 -1.2**
FRF *e* 06 55 03.0
FRF La Foret Royal 3.79 266 *e*Pn **Pn 06 54 21.4 -1.2**
SNR=1.0
FRF *e*Sn **Sn 06 55 03.0 -4.7**
comp=Z,22nm,0.4s,SNR=1.0
FRF La Foret Royal 3.79 266 *e*Pn **Pn 06 54 21.4 -1.2**
FRF *e*Sn **Sn 06 55 03.0 -4.7**
RJOB Jochberg 3.84 9 *e*Pn **Pn 06 54 24.8 +1.4**
RJOB *e*Sn **Sn 06 55 10.2 +1.2**
RJOB Jochberg 3.84 9 Pn **Pn 06 54 24.8 +1.4**
RJOB Sn **Sn 06 55 10.2 +1.2**
LMR La Mourre 3.93 263 *e*Pn **Pn 06 54 22.3 -2.2**
SNR=1.0
LMR *e*Sn **Sn 06 55 05.8 -5.2**
comp=Z,6.8nm,0.2s,SNR=1.0
LMR La Mourre 3.93 263 *e*P **Pn 06 54 22.3 -2.2**
LMR *e* 06 55 05.8
LMR La Mourre 3.93 263 *e*Pn **Pn 06 54 22.3 -2.2**
SNR=1.0
LMR *e*Sn **Sn 06 55 05.8 -5.2**
comp=Z,3.4nm,0.2s,SNR=1.0
LMR La Mourre 3.93 263 *e*Pn **Pn 06 54 22.3 -2.2**
LMR *e*Sn **Sn 06 55 05.8 -5.2**
LPG La Plagne 3.95 295 *e*Pn **Pn 06 54 27.2 +2.1**
SNR=1.0
LPG La Plagne 3.95 295 *e*P **Pn 06 54 27.2 +2.1**
LPG La Plagne 3.95 295 *e*Pn **Pn 06 54 27.2 +2.1**
SNR=1.0
LPG La Plagne 3.95 295 *e*Pn **Pn 06 54 27.2 +2.1**
LPL La Plagne 3.97 295 *e*Pn **Pn 06 54 26.8 +1.5**
SNR=1.0
LPL La Plagne 3.97 295 *e*P **Pn 06 54 26.8 +1.5**
LPL La Plagne 3.97 295 *e*Pn **Pn 06 54 26.8 +1.5**
SNR=1.0
LPL La Plagne 3.97 295 *e*Pn **Pn 06 54 26.8 +1.5**
SENIN Lac Senin/Sane 4.03 308 *e*Pn **Pn 06 54 28.3 +2.3**
SENIN Lac Senin/Sane 4.03 308 *e*Pn **Pn 06 54 28.3 +2.3**
WILA Wila 4.04 330 *e*Pn **Pn 06 54 26.0 0.0**
WILA Wila 4.04 330 Pn **Pn 06 54 26.0 0.0**
RSL Roselend 4.11 297 P **Pn 06 54 27.7 +0.6**
RSL S **Sb 06 55 23.2 -2.6**
RSL Roselend 4.11 297 P **Pn 06 54 27.7 +0.6**
ARSA Arzberg 4.19 37 *e*Pn **Pn 06 54 26.7 -1.4**
comp=Z,41nm,0.6s,SNR=30
ARSA Arzberg 4.19 37 *e*Pn **Pn 06 54 26.6 -1.4**
ARSA Arzberg 4.19 37 Pn **Pn 06 54 26.6 -1.4**
FUR Furstenfeldbru 4.24 355 *e*Pn **Pn 06 54 28.8 +0.1**
FUR Furstenfeldbru 4.24 355 Pn **Pn 06 54 28.8 +0.1**
MOA Molln 4.25 22 *i* Pn **Pn 06 54 28.5 -0.4**
comp=Z,32nm,0.5s,SNR=43
MOA *e*Sn **Sn 06 55 16.3 -2.6**
comp=Z,247nm,0.9s
MOA Molln 4.25 22 *e*Pn **Pn 06 54 28.5 -0.4**
MOA *e*Sn **Sn 06 55 16.2 -2.6**
MOA Molln 4.25 22 Pn **Pn 06 54 28.5 -0.4**
MOA Sn **Sn 06 55 16.2 -2.6**
GDM Grand'Maison 4.29 289 P **Pn 06 54 29.1 -0.4**
GDM Grand'Maison 4.29 289 P **Pn 06 54 29.1 -0.4**
CDT Castel del Mon 4.34 130 *e*Pn **Pn 06 54 31.9 +1.7**
OG01 Vacheresse 4.37 305 P **Pn 06 54 30.8 +0.3**
OG01 S **Sb 06 55 29.1 -4.6**
OG01 Vacheresse 4.37 305 P **Pn 06 54 30.8 +0.3**
ORIF Oris-en-Rattie 4.39 285 *e*Pn **Pn 06 54 32.9 +2.0**
SNR=1.0
ORIF Oris-en-Rattie 4.39 285 *e*P **Pn 06 54 32.9 +2.0**
ORIF Oris-en-Rattie 4.39 285 *e*Pn **Pn 06 54 32.9 +2.0**
SNR=1.0
ORIF Oris-en-Rattie 4.39 285 *e*Pn **Pn 06 54 32.9 +2.0**
SULZ Cheisacher 4.44 325 *e*Pn **Pn 06 54 32.9 +1.4**
SULZ Cheisacher 4.44 325 Pn **Pn 06 54 32.9 +1.4**
BALST Balsthal 4.47 321 *e*Pn **Pn 06 54 32.7 +0.8**
BALST Balsthal 4.47 321 Pn **Pn 06 54 32.7 +0.8**
SLE Schleitheim 4.48 330 *e*Pn **Pn 06 54 32.5 +0.4**
SLE Schleitheim 4.48 330 Pn **Pn 06 54 32.5 +0.4**
SMRF Simiane la Rot 4.54 273 *e*Pn **Pn 06 54 32.8 0.0**
SNR=1.0
SMRF Simiane la Rot 4.54 273 *e*Pn **Pn 06 54 32.8 0.0**
SMRF Simiane la Rot 4.54 273 *e*Pn **Pn 06 54 32.8 0.0**
GRN Grenoble 4.55 289 P **Pn 06 54 32.8 -0.3**
GRN Grenoble 4.55 289 P **Pn 06 54 32.8 -0.3**
SPAK Spaningen-Ko 4.67 334 P **Pn 06 54 35.5 +0.8**
SG1 Sgolgore (BA) 4.73 129 *e*Pn **Pn 06 54 35.4 -0.1**
OG26 St.-Nazaire-De 4.75 280 P **Pn 06 54 35.8 0.0**
OG26 St.-Nazaire-De 4.75 280 P **Pn 06 54 35.8 0.0**
FELD Feldberg im Sc 4.76 327 P **Pn 06 54 35.7 -0.3**
VSL Villasalto 4.82 203 *e*Pn **Pn 06 54 37.2 +0.5**
VSL Villasalto 4.82 203 *e*Pn **Pn 06 54 37.2 +0.5**
CONA Conrad Observa 4.86 34 *e*Pn **Pn 06 54 36.2 -1.1**
comp=Z,32nm,0.6s,SNR=46
CONA *i* Sn **Sn 06 55 31.5 -2.6**
comp=Z,43nm,0.4s
CONA Conrad Observa 4.86 34 Pn **Pn 06 54 36.2 -1.1**
comp=Z,32nm,0.6s,SNR=46
CONA Sn **Sn 06 55 31.5 -2.6**
comp=Z,43nm,0.4s
CABF La Chapelle 4.86 305 *e*Pn **Pn 06 54 38.5 +1.1**
SNR=1.0
CABF *e*Sn **Sn 06 55 32.4 -1.8**
comp=Z,97nm,0.7s,SNR=1.0
CABF La Chapelle 4.86 305 *e*P **Pn 06 54 38.5 +1.1**
CABF *e* 06 55 32.4
CABF La Chapelle 4.86 305 *e*Pn **Pn 06 54 38.5 +1.1**
SNR=1.0
CABF *e*Sn **Sn 06 55 32.4 -1.8**
comp=Z,48nm,0.7s,SNR=1.0
CABF La Chapelle 4.86 305 *e*Pn **Pn 06 54 38.5 +1.1**
CABF *e*Sn **Sn 06 55 32.4 -1.8**
TREB Trebinje 4.89 102 *e*Pn **Pn 06 54 37.6 -0.1**
LOMF Lomont 4.90 316 P **Pn 06 54 37.9 0.0**
LOMF Lomont 4.90 316 P **Pn 06 54 37.9 0.0**
CUC Castrococco 4.93 142 *e*Pn **Pn 06 54 39.0 +0.7**
CUC Castrococco 4.93 142 *e*Pn **Pn 06 54 39.0 +0.7**
BRY Bratogost 4.98 100⇑ *i*Pn **Pn 06 54 39.4 +0.4**
BRY *e*Sn **Sn 06 55 37.6 +0.6**
BRY Bratogost 4.98 100⇑ *i*Pn **Pn 06 54 39.4 +0.4**
BRY *e*Sn **Sn 06 55 37.6 +0.6**
BFO Black Forest 5.02 332 *e*P **Pn 06 54 39.4 -0.1**
BFO Black Forest 5.02 332 *e*Pn **Pn 06 54 39.0 -0.4**
BFO *e*Sn **Sn 06 55 34.2 -3.7**
BFO Black Forest 5.02 332 *e*Pn **Pn 06 54 39.4 -0.1**
BFO *e*Sn **Sn 06 55 34.2 -3.7**
BFO Black Forest 5.02 332 *e*Pn **Pn 06 54 39.4 -0.1**
GEA0 GERESS Array S 5.05 14 *e*Pn **Pn 06 54 38.9 -1.1**
GEA0 GERESS Array S 5.05 14 *e*Pn **Pn 06 54 38.9 -1.1**
GEC2 GERESS Array S 5.06 14 *e*P **Pn 06 54 40.3 +0.2**
GEC2 GERESS Array S 5.06 14 *e*Pn **Pn 06 54 40.2 +0.2**
GEC2 *e*Sn **Sn 06 55 35.6 -3.4**
GEC2 GERESS Array S 5.06 14 *e*Pn **Pn 06 54 40.3 +0.2**
GEC2 *e*Sn **Sn 06 55 35.6 -3.4**
GEC2 GERESS Array S 5.06 14 *e*Pn **Pn 06 54 40.3 +0.2**
GERES GERESS Array B 5.06 14 Pn **Pn 06 54 38.4 -1.7**
comp=Z,4.0nm,0.3s,baz=185,slow=13,SNR=42
GERES Sn **Sn 06 55 36.7 -2.3**
comp=Z,11nm,0.3s,baz=187,slow=24,SNR=7.3
HCY Herceg Novi 5.08 105⇑ *i*Pn **Pn 06 54 41.1 +0.8**
HCY *e*Sn **Sn 06 55 39.1 -0.2**
HCY Herceg Novi 5.08 105⇑ *i*Pn **Pn 06 54 41.1 +0.8**
HCY *e*Sn **Sn 06 55 39.1 -0.2**
MOF Molkenrain 5.11 321 P **Pn 06 54 40.8 +0.1**
MOF Molkenrain 5.11 321 P **Pn 06 54 40.8 +0.1**
STU Stuttgart 5.16 340 *e*P **Pn 06 54 41.5 +0.1**
STU Stuttgart 5.16 340 *e*Pn **Pn 06 54 41.6 +0.2**
STU *e*Sn **Sn 06 55 37.3 -4.1**
STU Stuttgart 5.16 340 *e*Pn **Pn 06 54 41.5 +0.1**
STU Sn **Sn 06 55 37.3 -4.1**
STU Stuttgart 5.16 340 *e*Pn **Pn 06 54 41.5 +0.1**
UPM Unac-Piva 5.17 96⇓ *i*Pn **Pn 06 54 42.1 +0.4**
UPM *e*Sn **Sn 06 55 41.3 -0.7**
UPM Unac-Piva 5.17 96⇓ *i*Pn **Pn 06 54 42.1 +0.4**
UPM *e*Sn **Sn 06 55 41.3 -0.7**
HINF Hinteralfeld 5.21 320 *e*Pn **Pn 06 54 42.3 +0.2**
SNR=1.0
HINF *e*Sn **Sn 06 55 41.1 -1.5**
comp=Z,173nm,0.6s,SNR=1.0
HINF Hinteralfeld 5.21 320 *e*P **Pn 06 54 42.3 +0.2**
HINF *e* 06 55 41.1
HINF Hinteralfeld 5.21 320 *e*Pn **Pn 06 54 42.3 +0.2**
SNR=1.0
HINF *e*Sn **Sn 06 55 41.1 -1.5**
comp=Z,86nm,0.6s,SNR=1.0
HINF Hinteralfeld 5.21 320 *e*Pn **Pn 06 54 42.3 +0.2**
HINF *e*Sn **Sn 06 55 41.1 -1.5**
VIVF Saint-Julien-l 5.23 282 *e*Pn **Pn 06 54 43.3 +1.0**
SNR=1.0
VIVF Saint-Julien-l 5.23 282 *e*P **Pn 06 54 43.3 +1.0**
VIVF Saint-Julien-l 5.23 282 *e*Pn **Pn 06 54 43.3 +1.0**
SNR=1.0
VIVF Saint-Julien-l 5.23 282 *e*Pn **Pn 06 54 43.3 +1.0**
WET Wettzell 5.24 7 P **Pn 06 54 41.6 -0.9**
WET pmax pmax
comp=Z,60nm,0.8s
WET Wettzell 5.24 7 *e*Pn **Pn 06 54 41.2 -1.4**
WET *e*Sn **Sn 06 55 40.6 -2.8**
WET Wettzell 5.24 7 Pn **Pn 06 54 41.2 -1.4**
WET Wettzell 5.24 7 P **Pn 06 54 41.6 -0.9**
comp=Z,60nm,0.8s
WET Sn **Sn 06 55 40.6 -2.8**
TAR1 Taranto 5.28 128 *e*Pn **Pn 06 54 43.1 0.0**
NKME Niksic 5.31 100⇓ *i*Pn **Pn 06 54 43.6 +0.2**
NKME *e*Sn **Sn 06 55 44.6 -0.4**
NKME Niksic 5.31 100⇓ *i*Pn **Pn 06 54 43.6 +0.2**
NKME *e*Sn **Sn 06 55 44.6 -0.4**
KHC Kasperske Hory 5.32 12 *e*PN **Pn 06 54 41.6 -2.0**
KHC *e*SN **Sn 06 55 41.9 -3.3**
KHC AMS AMS 06 57 20.0
comp=Z,1μm,10.5s
KHC Kasperske Hory 5.32 12 *e*P **Pn 06 54 41.6 -2.0**
KHC *e* 06 55 41.9
KHC MLR MLR
comp=Z,1μm,10.5s
KHC Kasperske Hory 5.32 12 *e*P **Pn 06 54 41.6 -2.0**
comp=Z,1μm,10.5s
KHC Kasperske Hory 5.32 12 *e*Pn **Pn 06 54 42.2 -1.3**
KHC Sn **Sn 06 55 41.9 -3.3**
KHC Kasperske Hory 5.32 12 *e*Pn **Pn 06 54 42.2 -1.3**
NKY Niksic 5.32 100⇑ *i*Pn **Pn 06 54 44.5 +0.8**
NKY *e*Sn **Sn 06 55 45.6 +0.1**
NKY Niksic 5.32 100 P **Pn 06 54 44.3 +0.6**
NKY S **Sn 06 55 45.0 -0.5**
NKY Niksic 5.32 100 P **Pn 06 54 44.3 +0.6**
NKY S **Sn 06 55 45.0 -0.5**
CEME Cevo 5.34 103⇓ *i*Pn **Pn 06 54 43.8 -0.2**
CEME *e*Sn **Sn 06 55 46.0 0.0**
CEME Cevo 5.34 103⇓ *i*Pn **Pn 06 54 43.8 -0.2**
CEME *e*Sn **Sn 06 55 46.0 0.0**
ECH Echery 5.37 324 P **Pn 06 54 43.7 -0.6**
ECH Echery 5.37 324 *e*Pn **Pn 06 54 44.1 -0.2**
ECH *e*Sn **Sn 06 55 44.8 -1.8**
ECH Echery 5.37 324 P **Pn 06 54 43.7 -0.6**
ECH Echery 5.37 324 Pn **Pn 06 54 44.1 -0.2**
ECH Sn **Sn 06 55 44.8 -1.8**
SSB Saint Sauveur 5.39 287 *e*P **Pn 06 54 46.2 +1.6**
SSB Saint Sauveur 5.39 287 *e*Pn **Pn 06 54 46.2 +1.6**
SSB Saint Sauveur 5.39 287 *e*Pn **Pn 06 54 46.2 +1.6**
BUM Brajici-Budva 5.41 105⇑ *i*Pn **Pn 06 54 45.0 +0.2**
BUM *e*Sn **Sn 06 55 46.6 -0.9**
BUM Brajici-Budva 5.41 105⇑ *i*Pn **Pn 06 54 45.0 +0.2**
BUM *e*Sn **Sn 06 55 46.6 -0.9**
WLS Welschbruch 5.45 327 P **Pn 06 54 45.5 +0.1**
WLS Welschbruch 5.45 327 P **Pn 06 54 45.5 +0.1**
BBLS Lazići 5.46 88 *e*Pn **Pn 06 54 47.3 +1.8**
CDF Champ du Feu 5.48 326 *e*Pn **Pn 06 54 45.7 -0.1**
SNR=1.0
CDF *e*Sn **Sn 06 55 47.5 -1.8**
comp=Z,229nm,0.8s
CDF Champ du Feu 5.48 326 *e*P **Pn 06 54 45.7 -0.1**
CDF *e* 06 55 47.5
CDF Champ du Feu 5.48 326 *e*Pn **Pn 06 54 45.7 -0.1**
SNR=1.0
CDF *e*Sn **Sn 06 55 47.5 -1.8**
comp=Z,115nm,0.8s
CDF Champ du Feu 5.48 326 *e*Pn **Pn 06 54 45.7 -0.1**
CDF *e*Sn **Sn 06 55 47.5 -1.8**
PLE Pljevlja 5.50 94⇑ *i*Pn **Pn 06 54 46.4 +0.2**
PLE *e*Sn **Sn 06 55 49.5 -0.4**
PLE Pljevlja 5.50 94 P **Pn 06 54 46.4 +0.2**
PLE S **Sn 06 55 49.0 -0.9**
PLE Pljevlja 5.50 94⇑ *i*Pn **Pn 06 54 46.4 +0.2**
PLE S **Sn 06 55 49.0 -0.9**
TEKS Tekeris 5.54 81 *e*Pn **Pn 06 54 46.8 +0.1**
HAU Haudompre 5.58 319 *e*Pn **Pn 06 54 47.7 +0.5**
SNR=1.0
HAU *e*Sn **Sn 06 55 49.2 -2.6**
comp=Z,190nm,0.4s
HAU Haudompre 5.58 319 *e*P **Pn 06 54 47.7 +0.5**
HAU *e* 06 55 49.2
HAU Haudompre 5.58 319 *e*Pn **Pn 06 54 47.7 +0.5**
SNR=1.0
HAU *e*S **Sn 06 55 49.2 -2.6**
HAU Haudompre 5.58 319 *e*Pn **Pn 06 54 47.7 +0.5**
HAU *e*Sn **Sn 06 55 49.2 -2.6**
PDG Podgorica 5.62 103⇑ *i*P **Pn 06 54 48.8 +1.2**
PDG Podgorica 5.62 103⇑ *i*P **Pn 06 54 48.8 +1.2**
PDG *e*Sn **Sn 06 55 53.1 +0.5**
TTG Podgorica 5.62 103⇓ *i*Pn **Pn 06 54 48.8 +1.2**
TTG *e*Sn **Sn 06 55 53.1 +0.5**
DRME Dracevica, Mon 5.65 106⇓ *i*Pn **Pn 06 54 48.0 -0.1**
DRME *e*Sn **Sn 06 55 52.9 -0.5**
DRME Dracevica, Mon 5.65 106⇓ *i*Pn **Pn 06 54 48.0 -0.1**
DRME *e*Sn **Sn 06 55 52.9 -0.5**
LANF Langenberg 5.76 332 P **Pn 06 54 49.3 -0.3**
LANF Langenberg 5.76 332 P **Pn 06 54 49.3 -0.3**
GRFO Grafenberg 5.76 356 *e*P **Pn 06 54 49.9 +0.3**
GRFO Grafenberg 5.76 356 *e*Pn **Pn 06 54 49.8 +0.2**
GRFO Grafenberg 5.76 356 *e*Pn **Pn 06 54 49.9 +0.2**
GRA1 Grafenberg Arr 5.76 356 P **Pn 06 54 47.9 -1.7**
GRF Grafenberg Arr 5.76 356 *e*Pn **Pn 06 54 47.9 -1.7**
GRF *e*Sn **Sn 06 55 53.0 -3.2**
LASF Ste Croix 5.77 274 *e*Pn **Pn 06 54 49.4 -0.4**
LASF Ste Croix 5.77 274 *e*Pn **Pn 06 54 49.4 -0.4**
LASF Ste Croix 5.77 274 *e*Pn **Pn 06 54 49.4 -0.4**
ULC Ulcinj 5.77 108⇓ *i*Pn **Pn 06 54 50.0 +0.2**
ULC *e*Sn **Sn 06 55 54.5 -2.0**
ULC Ulcinj 5.77 108⇓ *i*Pn **Pn 06 54 50.0 +0.2**
ULC *e*Sn **Sn 06 55 54.5 -2.0**
ROTZ Rotzenmuhle 5.83 2 *e*Pn **Pn 06 54 51.3 +0.8**
ROTZ *e*Sn **Sn 06 55 53.2 -4.5**
ROTZ Rotzenmuhle 5.83 2 Pn **Pn 06 54 51.3 +0.8**
DIVS Divibare 5.87 86 *e*Pn **Pn 06 54 51.6 +0.4**
THEF They Montfort 5.91 318 P **Pn 06 54 51.8 +0.1**
THEF They Montfort 5.91 318 P **Pn 06 54 51.8 +0.1**
BEY Berane 5.95 98 *e*Pn **Pn 06 54 52.9 +0.6**
BEY *e*Sn **Sn 06 56 00.9 -0.1**
IVA Berane 5.95 98 *e*Pn **Pn 06 54 52.9 +0.6**
IVA *e*Sn **Sn 06 56 00.9 -0.1**
SMOL Smolenice 5.98 38 *e*P **Pn 06 54 52.2 -0.4**
SMOL Smolenice 5.98 38 *e*Pn **Pn 06 54 52.2 -0.4**
SMOL Smolenice 5.98 38 *e*PN **Pn 06 54 52.1 -0.5**
TIP Timpagrande 6.02 141 *e*Pn **Pn 06 54 53.4 +0.2**
TIP Timpagrande 6.02 141 *e*Pn **Pn 06 54 53.4 +0.2**
IVAS Ivanjica 6.02 91 *e*Pn **Pn 06 54 53.8 +0.6**
MANZ Manzenberg 6.04 2 *e*Pn **Pn 06 54 53.3 -0.2**
MANZ *e*Sn **Sn 06 55 58.2 -4.9**
MANZ Manzenberg 6.04 2 Pn **Pn 06 54 53.3 -0.2**
PVY Plav 6.07 100 *e*Pn **Pn 06 54 54.9 +0.9**
PVY *e*Sn **Sn 06 56 04.1 +0.2**
TRUS Trudelj 6.16 84 *e*Pn **Pn 06 54 56.3 +1.1**
PLDF La Plantade 6.18 292 P **Pn 06 54 54.4 -1.1**
PLDF La Plantade 6.18 292 P **Pn 06 54 54.4 -1.1**
SMF Signal de Mont 6.26 298 *e*Pn **Pn 06 54 57.6 +1.1**
SNR=1.0
SMF *e*Sn **Sn 06 56 08.7 +0.2**
comp=Z,51nm,0.6s
SMF Signal de Mont 6.26 298 *e*P **Pn 06 54 57.6 +1.1**
SMF *e* 06 56 08.7
SMF Signal de Mont 6.26 298 *e*Pn **Pn 06 54 57.6 +1.1**
SNR=1.0
SMF *e*Sn **Sn 06 56 08.7 +0.2**
comp=Z,26nm,0.6s
SMF Signal de Mont 6.26 298 *e*Pn **Pn 06 54 57.6 +1.1**
SMF *e*Sn **Sn 06 56 08.7 +0.2**
PAGF Fort de Pagny 6.27 319 *e*Pn **Pn 06 54 58.5 +1.9**
PAGF *e*Sn **Sn 06 56 06.7 -1.9**
comp=Z,36nm,0.6s
PAGF Fort de Pagny 6.27 319 *e*Pn **Pn 06 54 58.5 +1.9**
PAGF *e*Sn **Sn 06 56 06.7 -1.9**
comp=Z,18nm,0.6s
PAGF Fort de Pagny 6.27 319 *e*Pn **Pn 06 54 58.5 +1.9**
PAGF *e*Sn **Sn 06 56 06.7 -1.9**
VRAC Vranov 6.27 30 Pn **Pn 06 54 55.1 -1.5**
comp=Z,1.4nm,0.3s,baz=221,slow=13,SNR=12
VRAC Sn **Sn 06 56 01.3 -7.5**
comp=Z,1.6nm,0.3s,baz=250,slow=15,SNR=4.1
VRAC Vranov 6.27 30⇑ *i*P **Pn 06 54 54.4 -2.3**
VRAC Vranov 6.27 30⇑ *i*P **Pn 06 54 54.4 -2.3**
LBL Lubilhac 6.28 285 P **Pn 06 54 56.0 -0.8**
LBL Lubilhac 6.28 285 P **Pn 06 54 56.0 -0.8

GOPC AMS AMS 06 57 50.0
comp=Z,1µm,12.6s
GOPC GO Pecny, Ondr 6.29 18 *e*P **Pn 06 54 55.3 -1.7**
GOPC *e* 06 56 04.2
GOPC MLR MLR
comp=Z,1µm,12.6s
GOPC GO Pecny, Ondr 6.29 18 Pn **Pn 06 54 55.3 -1.7**
GOPC *e*S **Sn 06 56 04.2 -5.1**
NKC Novy Kostel 6.30 3 *e*PN **Pn 06 54 56.8 -0.2**
NKC *e*SN **Sn 06 56 06.0 -3.4**
NKC AMS AMS 06 57 40.0
comp=Z,800nm,14.3s
NKC Novy Kostel 6.30 3 *e*P **Pn 06 54 56.8 -0.2**
NKC *e* 06 56 06.0
NKC MLR MLR
comp=Z,800nm,14.3s
NKC Novy Kostel 6.30 3 Pn **Pn 06 54 56.8 -0.2**
NKC *e*S **Sn 06 56 06.0 -3.4**
PRU Pruhonice 6.32 16 *e*PN **Pn 06 54 55.4 -1.8**
PRU *e*SN **Sn 06 56 05.5 -4.2**
PRU AMS AMS 06 57 50.0
comp=Z,1µm,11.3s
PRU Pruhonice 6.32 16 *e*P **Pn 06 54 55.4 -1.8**
PRU *e* 06 56 05.5
PRU MLR MLR
comp=Z,1µm,11.3s
PRU Pruhonice 6.32 16 Pn **Pn 06 54 55.4 -1.8**
PRU *e*S **Sn 06 56 05.5 -4.2**
SFTF Sexfontaines 6.37 314 *e*Pn **Pn 06 54 59.0 +1.0**
baz=139
SFTF Sexfontaines 6.37 314 *e*Pn **Pn 06 54 59.0 +1.0**
SFTF Sexfontaines 6.37 314 *e*Pn **Pn 06 54 59.0 +1.0**
GRUS Gruza 6.40 87 *e*Pn **Pn 06 54 57.8 -0.6**
CLTB Caltabellotta 6.45 170 *e*Pn **Pn 06 55 02.3 +3.2**
CEL Celeste 6.45 150 *e*Pn **Pn 06 55 00.7 +1.6**
CEL Celeste 6.45 150 *e*Pn **Pn 06 55 00.7 +1.6**
TIR Tirane 6.45 111 *e*P **Pn 06 54 58.8 -0.3**
TIR Tirane 6.45 111 *e*Pn **Pn 06 54 58.8 -0.3**
TIR Tirane 6.45 111 *e*Pn **Pn 06 54 58.8 -0.3**
LOR Lormes 6.52 303 *e*Pn **Pn 06 55 00.1 +0.1**
baz=125,SNR=1.0
LOR *e*Sn **Sn 06 56 12.7 -2.1**
comp=Z,61nm,0.5s
LOR Lormes 6.52 303 *e*P **Pn 06 55 00.1 +0.1**
LOR *e* 06 56 12.7
LOR Lormes 6.52 303 *e*Pn **Pn 06 55 00.1 +0.1**
SNR=1.0
LOR *e*Sn **Sn 06 56 12.7 -2.1**
comp=Z,30nm,0.5s
LOR Lormes 6.52 303 *e*Pn **Pn 06 55 00.1 +0.1**
LOR *e*Sn **Sn 06 56 12.7 -2.1**
ABH Alteburg 6.63 335 P **Pn 06 55 02.0 +0.5**
AVF Avril sur Loir 6.63 298 *e*Pn **Pn 06 55 03.0 +1.5**
SNR=1.0
AVF Avril sur Loir 6.63 298 *e*P **Pn 06 55 03.0 +1.5**
AVF Avril sur Loir 6.63 298 *e*Pn **Pn 06 55 03.0 +1.5**
SNR=1.0
AVF Avril sur Loir 6.63 298 *e*Pn **Pn 06 55 03.0 +1.5**
VYHS Vyhne 6.64 44 *e*P **Pn 06 55 04.5 +2.8**
VYHS Vyhne 6.64 44 *e*P **Pn 06 55 04.5 +2.8**
VYHS *e*Sg **Sg 06 56 54.9 -1.6**
VYHS Vyhne 6.64 44 *e*PN **Pn 06 55 04.5 +2.8**
VYHS *e*PG **Pg 06 55 26.2 -4.3**
VYHS *e*SG **Sg 06 56 54.9 -1.6**
SSF Saint Saulge 6.64 301 *e*Pn **Pn 06 55 02.8 +1.1**
SNR=1.0
SSF *e*Sn **Sn 06 56 14.5 -3.3**
comp=Z,25nm,0.6s
SSF Saint Saulge 6.64 301 *e*P **Pn 06 55 02.8 +1.1**
SSF *e* 06 56 14.5
SSF Saint Saulge 6.64 301 *e*Pn **Pn 06 55 02.8 +1.1**
SNR=1.0
SSF *e*S **Sn 06 56 14.5 -3.3**
SSF Saint Saulge 6.64 301 *e*Pn **Pn 06 55 02.8 +1.1**
SSF *e*Sn **Sn 06 56 14.5 -3.3**
TNS Taunus Mts 6.69 341 *e*Pn **Pn 06 55 01.9 -0.5**
TNS *e*Sn **Sn 06 56 16.7 -2.5**
TNS Taunus Mts 6.69 341 Pn **Pn 06 55 01.9 -0.5**
MOX Moxa 6.70 359 P **Pn 06 55 01.0 -1.5**
MOX pmax pmax
comp=Z,28nm,0.8s
MOX Moxa 6.70 359 *e*Pn **Pn 06 55 00.6 -1.9**
MOX *e*Sn **Sn 06 56 15.3 -4.0**
MOX Moxa 6.70 359 Pn **Pn 06 55 00.6 -1.9**
MOX Moxa 6.70 359 P **Pn 06 55 01.0 -1.5**
comp=Z,28nm,0.8s
SELS Selova 6.77 93 j*i*Pn **Pn 06 55 03.6 +0.1**
PVCC Panska Ves 6.84 15 *e*SN **Sn 06 56 18.0 -4.5**
PVCC AMS AMS 06 58 00.0
comp=Z,1µm,14.9s
PSZ Piszkesteto 6.87 52 ⇑*i*P **Pn 06 55 05.1 +0.2**
PSZ Piszkesteto 6.87 52 ⇑P **Pn 06 55 05.1 +0.2**
PSZ Piszkesteto 6.87 52 ⇑*i*P **Pn 06 55 05.1 +0.2**
PSZ Piszkesteto 6.87 52 *e*Pn **Pn 06 55 06.8 +1.9**
PSZ Piszkesteto 6.87 52 *e*Pn **Pn 06 55 06.8 +1.9**
BGF Bois d'Agland 6.87 295 *e*Pn **Pn 06 55 05.4 +0.5**
SNR=1.0
BGF *e*Sn **Sn 06 56 21.3 -2.2**
comp=Z,56nm,0.6s
BGF Bois d'Agland 6.87 295 *e*P **Pn 06 55 05.4 +0.5**
BGF *e* 06 56 21.3
BGF Bois d'Agland 6.87 295 *e*Pn **Pn 06 55 05.4 +0.5**
SNR=1.0
BGF *e*Sn **Sn 06 56 21.3 -2.2**
comp=Z,28nm,0.6s
BGF Bois d'Agland 6.87 295 *e*Pn **Pn 06 55 05.4 +0.5**
BGF *e*Sn **Sn 06 56 21.3 -2.2**
WLF Walferdange 6.93 328 PN **Pn 06 55 08.9 +3.3**
WLF Walferdange 6.93 328 SN **Sn 06 56 23.4 -1.4**
comp=N,44nm,0.0s
WLF Walferdange 6.93 328 *e*P **Pn 06 55 06.5 +0.9**
WLF Walferdange 6.93 328 *e*Pn **Pn 06 55 06.5 +0.9**
WLF Sn **Sn 06 56 23.4 -1.4**
WLF Walferdange 6.93 328 Pn **Pn 06 55 06.5 +0.9**
BGG Burgeitz 6.98 335 *e*Pn **Pn 06 55 06.5 +0.2**
BGG Burgeitz 6.98 335 Pn **Pn 06 55 06.5 +0.2**
KRLC Kraliky 6.99 27 *e*PN **Pn 06 55 06.3 -0.2**
KRLC Kraliky 6.99 27 *e*P **Pn 06 55 06.3 -0.2**
KRLC Kraliky 6.99 27 Pn **Pn 06 55 06.3 -0.2**
MORC Moravsky Berou 7.01 32 ⇑*i*P **Pn 06 55 06.2 -0.6**
MORC Moravsky Berou 7.01 32 *e*P **Pn 06 55 07.0 +0.2**
MORC Moravsky Berou 7.01 32 ⇑*i*P **Pn 06 55 06.2 -0.6**
MORC Moravsky Berou 7.01 32 *e*Pn **Pn 06 55 07.0 +0.2**
MORC Moravsky Berou 7.01 32 *e*Pn **Pn 06 55 07.0 +0.2**
MTLF Montolieu 7.02 268 *e*Pn **Pn 06 55 05.9 -1.0**
SNR=1.0
MTLF Montolieu 7.02 268 *e*P **Pn 06 55 05.9 -1.0**
MTLF Montolieu 7.02 268 *e*Pn **Pn 06 55 05.9 -1.0**
SNR=1.0
MTLF Montolieu 7.02 268 *e*Pn **Pn 06 55 05.9 -1.0**
KOE Koeppel 7.06 338 *e*Pn **Pn 06 55 07.4 -0.1**
KOE Koeppel 7.06 338 Pn **Pn 06 55 07.4 -0.1**
BRG Berggiesshubel 7.07 11 Pn **Pn 06 55 06.8 -0.8**
BRG *i* 06 55 54.5
BRG Berggiesshubel 7.07 11 SN **Sn 06 56 26.3 -2.0**
BRG SG **Sg 06 57 12.4 +2.2**
comp=N,74nm,1.2s
comp=N,844nm,13.9s
comp=E,300nm,10.5s
comp=Z,1µm,11.1s
BRG Berggiesshubel 7.07 11 P **Pn 06 55 06.8 -0.8**
BRG 06 56 26.3
BRG smax smax
comp=N,74nm,1.2s
BRG MLR MLR
comp=N,844nm,13.9s
BRG MLR MLR
comp=E,300nm,10.5s
BRG MLR MLR
comp=Z,1µm,11.1s
BRG Berggiesshubel 7.07 11 P **Pn 06 55 06.8 -0.8**
BRG S **Sn 06 56 26.3 -2.0**
comp=Z,1µm,11.1s
CAF Calviac 7.08 281 *e*Pn **Pn 06 55 10.7 +3.0**
CAF Calviac 7.08 281 *e*P **Pn 06 55 10.7 +3.0**
CAF Calviac 7.08 281 *e*P **Pn 06 55 10.7 +3.0**
CAF Calviac 7.08 281 *e*Pn **Pn 06 55 10.7 +3.0**
DPC Dobruska-Polom 7.09 24 *e*PN **Pn 06 55 05.4 -2.5**
DPC AMS AMS 06 58 20.0
comp=Z,1µm,13.1s
DPC Dobruska-Polom 7.09 24 *e*P **Pn 06 55 05.4 -2.5**
DPC MLR MLR
comp=Z,1µm,13.1s
DPC Dobruska-Polom 7.09 24 *e*P **Pn 06 55 05.4 -2.5**
comp=Z,1µm,13.1s
MDVR Moldovita 7.11 80 ⇑*i*P **Pn 06 55 09.7 +1.5**
MDVR Moldovita 7.11 80 ⇑*i*P **Pn 06 55 09.7 +1.5**
BOVS Bovan 7.13 89 *e*Pn **Pn 06 55 09.4 +0.9**
UPC Upice 7.14 22 AMS AMS 06 58 30.0
comp=Z,1µm,11.6s
TCF Toulx Ste Croi 7.21 292 *e*Pn **Pn 06 55 09.0 -0.6**
SNR=1.0
TCF Toulx Ste Croi 7.21 292 *e*P **Pn 06 55 09.0 -0.6**
TCF Toulx Ste Croi 7.21 292 *e*Pn **Pn 06 55 09.0 -0.6**
SNR=1.0
TCF Toulx Ste Croi 7.21 292 *e*Pn **Pn 06 55 09.0 -0.6**
OKC Ostrava-Krasne 7.30 34 AMS AMS 06 58 20.0
comp=Z,500nm,10.5s
BARS Barje 7.34 95 ⇑*i*Pn **Pn 06 55 11.5 +0.1**
LANS Liptovska Anna 7.39 43 *e*P **Pn 06 55 12.5 +0.5**
LANS Liptovska Anna 7.39 43 *e*Pn **Pn 06 55 12.5 +0.5**
LANS Liptovska Anna 7.39 43 *e*PN **Pn 06 55 12.5 +0.5**
CLL Collm 7.40 6 *e*P **Pn 06 55 11.2 -0.9**
CLL Collm 7.40 6 *e*P **Pn 06 55 11.2 -0.9**
CLL Collm 7.40 6 *e*Pn **Pn 06 55 11.2 -0.9**
STB Steinbach 7.47 335 *e*Pn **Pn 06 55 12.3 -0.8**
STB Steinbach 7.47 335 Pn **Pn 06 55 12.3 -0.8**
KECS Kecovo 7.51 50 *e*P **Pn 06 55 14.1 +0.5**
KECS Kecovo 7.51 50 *e*Pn **Pn 06 55 14.1 +0.5**
KECS Kecovo 7.51 50 *e*PN **Pn 06 55 14.1 +0.5**
HOBG Hohbusch 7.67 338 *e*Pn **Pn 06 55 15.9 0.0**
HOBG Hohbusch 7.67 338 Pn **Pn 06 55 15.9 0.0**
KLL Kalltalsperre 7.69 333 *e*Pn **Pn 06 55 15.5 -0.5**
KLL Kalltalsperre 7.69 333 Pn **Pn 06 55 15.5 -0.5**
FNA Florina 7.72 111 P **Pn 06 55 20.6 +4.0**
FNA pmax pmax
comp=Z,22nm,0.7s
FNA Florina 7.72 111 P **Pn 06 55 20.6 +4.0**
comp=Z,22nm,0.7s
MEM Membach 7.76 331 PN **Pn 06 55 19.3 +2.3**
MEM Membach 7.76 331 Pn **Pn 06 55 19.3 +2.3**
GIVF Givet 7.81 325 *e*Pn **Pn 06 55 21.5 +3.8**
GIVF Givet 7.81 325 *e*P **Pn 06 55 21.5 +3.8**
GIVF Givet 7.81 325 *e*P **Pn 06 55 21.5 +3.8**
GIVF Givet 7.81 325 *e*Pn **Pn 06 55 21.5 +3.8**
BCLA Clavier 7.86 328 PN **Pn 06 55 19.5 +1.1**
BCLA Clavier 7.86 328 Pn **Pn 06 55 19.5 +1.1**
DOU Dourbes 7.90 324 PN **Pn 06 55 20.7 +1.7**
DOU SN **Sn 06 56 44.7 -3.9**
comp=E,19nm,0.0s
DOU Dourbes 7.90 324 Pn **Pn 06 55 20.6 +1.7**
DRGR 8.15 66 ⇑*i*P **Pn 06 55 24.5 +2.0**
DRGR 8.15 66 ⇑P **Pn 06 55 24.5 +2.0**
DRGR 8.15 66 ⇑*i*P **Pn 06 55 24.5 +2.0**
CRVS Cervenica-Dubn 8.28 50 *e*P **Pn 06 55 25.6 +1.4**
CRVS Cervenica-Dubn 8.28 50 *e*Pn **Pn 06 55 25.6 +1.4**
CRVS Cervenica-Dubn 8.28 50 *e*PN **Pn 06 55 25.6 +1.4**
OJC Ojcow 8.29 38 *e*P **Pn 06 55 24.4 +0.2**
OJC Ojcow 8.29 38 *e*Pn **Pn 06 55 24.4 +0.2**
OJC Ojcow 8.29 38 *e*Pn **Pn 06 55 24.4 +0.2**
SNF Seneffe 8.34 325 PN **Pn 06 55 24.4 -0.5**
SNF Seneffe 8.34 325 Pn **Pn 06 55 24.4 -0.5**
GRG Griva 8.35 107 P **Pn 06 55 27.0 +1.8**
GRG pmax pmax
comp=Z,14nm,0.8s
GRG Griva 8.35 107 P **Pn 06 55 27.0 +1.8**
comp=Z,14nm,0.8s
WDD Wied Dalam 8.36 165 *e*Pn **Pn 06 55 25.1 -0.1**
WDD Wied Dalam 8.36 165 *e*Pn **Pn 06 55 25.1 -0.1**
VTS Vitosha 8.39 95 ⇑*i*P **Pn 06 55 27.2 +1.3**
VTS Vitosha 8.39 95 *e*P **Pn 06 55 26.7 +0.8**
VTS Vitosha 8.39 95 *e*P **Pn 06 55 26.2 +0.3**
VTS Vitosha 8.39 95 *e*Pn **Pn 06 55 26.6 +0.7**
VTS Vitosha 8.39 95 *e*Pn **Pn 06 55 26.6 +0.7**
KEST Kesra 8.43 194 Pn **Pn 06 55 29.9 +3.5**
comp=Z,2.3nm,0.3s,baz=292,slow=3.8,SNR=20
KEST Sn **Sn 06 57 01.6 -0.4**
baz=17,slow=20,SNR=2.2
STHS Stebnicka Huta 8.46 46 *e*P **Pn 06 55 28.4 +1.8**
STHS Stebnicka Huta 8.46 46 *e*Pn **Pn 06 55 28.4 +1.8**
STHS Stebnicka Huta 8.46 46 *e*PN **Pn 06 55 28.4 +1.8**
KKB Krupnik 8.50 100 *e*P **Pn 06 55 27.7 +0.5**
UZH Uzhgorod 8.61 53 *e*P **Pn 06 55 28.1 -0.6**
UZH *e*S **Sn 06 57 04.5 -1.6**
UZH MLR MLR
comp=N,1µm,11.0s
UZH MLR MLR
comp=E,1µm,11.0s
UZH MLR MLR
comp=Z,300nm,11.0s
UZH Uzhgorod 8.61 53 *e*P **Pn 06 55 28.1 -0.6**
UZH *e*S **Sn 06 57 04.5 -1.6**
MPEP Malo Peshtene 8.64 90 *e*P **Pn 06 55 30.9 +1.8**
KOLS Kolonicke sedl 8.75 52 *e*P **Pn** 06 55 41.8 +11
KOLS Kolonicke sedl 8.75 52 *e*P **Pn** 06 55 41.8 +11
KOLS Kolonicke sedl 8.75 52 *e*PN **Pn** 06 55 41.8 +11
PGB Panagyurishte 9.09 95 *e*P **Pn 06 55 36.1 +0.7**
VOIR 9.52 76 ⇑*i*P **Pn 06 55 43.9 +2.7**
VOIR 9.52 76 ⇑P **Pn 06 55 43.9 +2.7**
VOIR 9.52 76 P **Pn 06 55 43.9 +2.7**
RZN Rozhen 9.72 99 *e*P **Pn 06 55 44.0 -0.1**
GRR Gorron 9.87 301 *e*Pn **Pn 06 55 46.4 +0.4**
SNR=1.0
GRR Gorron 9.87 301 *e*P **Pn 06 55 46.4 +0.4**
GRR Gorron 9.87 301 *e*Pn **Pn 06 55 46.4 +0.4**
SNR=1.0
GRR Gorron 9.87 301 *e*Pn **Pn 06 55 46.4 +0.4**
MLR Muntele Rosu 10.15 76 Pn **Pn 06 55 52.7 +2.8**
comp=Z,0.1nm,0.3s,baz=292,slow=18,SNR=2.9
MLR LR LR 07 01 07.6
comp=Z,37nm,18.3s,baz=248,slow=46
PLOR Plostina 10.67 75 ⇑*i*P **Pn 06 55 58.7 +1.8**
PLOR Plostina 10.67 75 ⇑P **Pn 06 55 58.7 +1.8**
PLOR Plostina 10.67 75 ⇑*i*P **Pn 06 55 58.7 +1.8**
ES19 SONSECA Array 12.49 256 *e*Pn **Pn 06 56 22.9 +1.0**
ES19 SONSECA Array 12.49 256 *e*Pn **Pn 06 56 22.9 +1.0**
ESDC Sonseca Array 12.55 256 Pn **Pn 06 56 23.9 +1.2**
comp=Z,0.3nm,0.3s,baz=63,slow=13,SNR=8.5
ESDC LR LR 07 01 20.7
comp=Z,111nm,19.3s,baz=25,slow=38
AKASG Malin Array Be 13.56 54 Pn **Pn 06 56 35.0 -1.3**
comp=Z,0.2nm,0.3s,baz=243,slow=12,SNR=3.6
AKASG LR LR 07 02 30.7
comp=Z,113nm,20.3s,baz=260,slow=40
MVO Moncorvo 14.20 265 *e*P **P 06 56 55.1 +2.3**
MVO *e*LR LR 07 01 57.6
MVO A A 07 02 44.7
comp=Z,121nm,20.0s
MTE Manteigas 14.81 263 *e*LR LR 07 02 27.1
comp=Z,104nm,16.0s
PGAV Gavieira, Arco 14.87 269 *e*LR LR 07 02 22.6
comp=Z,153nm,18.0s
EKA Eskdalemuir Ar 14.94 325 Pn **Pn 06 56 53.6 -1.6**
baz=131,slow=14,SNR=5.5
PMRV Marv??o 15.07 259 *e*P **P 06 57 05.3 +2.9**
comp=Z,16nm,1.9s
PMRV *e*LR LR 07 01 35.5
comp=Z,108nm,20.0s
PMTG Montargil 15.80 259 *e*P **P 06 57 10.2 -0.4**
comp=Z,19nm,1.5s
PMTG Montargil 15.80 259 *e*P **P 06 57 10.2 -0.4**
comp=Z,19nm,1.5s
HFS Hagfors 16.25 3 Pn **Pn 06 57 10.7 -1.6**
comp=Z,0.1nm,0.3s,baz=172,slow=12,SNR=1.9
HFS LR LR 07 04 19.2
comp=Z,168nm,18.8s,baz=182,slow=41
BRTR Keskin Array B 16.76 97 Pn **P 06 57 20.6 -0.7**
comp=Z,0.1nm,0.3s,baz=292,slow=9.2,SNR=4.3
BRTR LR LR 07 04 48.5
comp=Z,116nm,20.1s,baz=288,slow=41
MDT Midelt 17.00 235 P **P 06 57 26.2 +2.1**
comp=Z,0.1nm,0.3s,baz=34,slow=3.6,SNR=2.7
MDT LR LR 07 03 08.1
comp=Z,113nm,18.8s,baz=68,slow=34
NB2 NORSAR Subarra 17.12 359 P **P 06 57 25.4 +0.3**
comp=Z,7.3nm,1.1s,baz=178,slow=11
NB2 NORSAR Subarra 17.12 359 P **P 06 57 25.4 +0.3**
comp=Z,7.3nm,1.1s,SNR=6.2
NOA NORSAR Array B 17.12 359 P **P 06 57 24.1 -1.1**
comp=Z,0.2nm,0.3s,baz=181,slow=10,SNR=6.2
NOA LR LR 07 04 14.0
comp=Z,85nm,20.6s,baz=185,slow=38
OBN Obninsk 19.43 46 *e*P **P 06 57 50.2 -0.3**
comp=Z,19nm,0.5s
OBN Obninsk 19.43 46 *e*P **P 06 57 50.2 -0.3**
comp=Z,19nm,0.5s
FINES FINESS Array B 19.45 21 P **P 06 57 50.1 -0.5**
comp=Z,0.1nm,0.3s,baz=202,slow=10,SNR=3.8
FINES LR LR 07 06 19.4
comp=Z,239nm,21.4s,baz=211,slow=40
MMAI Mount Meron Ar 21.35 113 P **P 06 58 12.0 +0.4**
comp=Z,1.1nm,0.4s,baz=300,slow=12,SNR=2.6
MMAI Mount Meron Ar 21.35 113 P **P 06 58 12.0 +0.4**
TAM Tamanrasset 21.74 196 *e*P **P 06 58 17.1 +1.1**
TAM pmax pmax
comp=Z,7.0nm,0.9s
TAM Tamanrasset 21.74 196 *e*P **P 06 58 17.0 +1.1**
comp=Z,6.5nm,0.9s
TAM Tamanrasset 21.74 196 *e*P **P 06 58 17.1 +1.1**
comp=Z,6.5nm,0.9s
KIV Kislovodsk 22.14 79 *e*P **P 06 58 17.8 -2.2**
comp=Z,14nm,0.9s
KIV Kislovodsk 22.14 79 *e*P **P 06 58 17.8 -2.2**
comp=Z,14nm,0.9s
KVAR Kislovodsk Arr 22.14 79 LR LR 07 08 22.0
comp=Z,52nm,22.0s,baz=360,slow=41
KBZ Khabaz 22.33 80 LR LR 07 08 17.8
comp=Z,39nm,18.9s,baz=339,slow=40
ASF Jabal al Asfar 22.86 112 P **P 06 58 30.3 +2.5**
comp=Z,2.0nm,0.4s,baz=242,slow=4.0,SNR=5.4
ARCES ARCESS Array B 26.59 11 LR LR 07 09 59.8
comp=Z,79nm,20.6s,baz=228,slow=38
ARU Arti 31.76 50 P **P 06 59 48.2 -0.1**
comp=Z,1.9nm,0.3s,baz=286,slow=5.6,SNR=3.8
TOA0 Torodi Ar. Sit 31.91 199 *e*P **P 06 59 49.4 -0.6**
TOA0 Torodi Ar. Sit 31.91 199 *e*P **P 06 59 49.1 -0.8**
TOA0 *e*P **P 06 59 49.4 -0.6**
TORD Torodi Ar. Bea 31.91 199 P **P 06 59 49.0 -0.9**
comp=Z,10nm,0.7s,baz=11,slow=8.9,SNR=83
TORD PcP **PcP 07 02 38.3 -2.1**
comp=Z,1.0nm,0.6s,baz=349,slow=2.0,SNR=6.2
GEYT Alibeck 35.09 84 P **P 07 00 18.8 +1.1**
comp=Z,3.2nm,0.6s,baz=297,slow=6.5,SNR=4.4
ZRNK Zerenda 38.03 56 *e*P **P 07 00 42.3 -0.1**
ZRNK pmax pmax
comp=Z,5.0nm,1.3s
ZRNK Zerenda 38.03 56 *e*P **P 07 00 42.3 -0.1**
comp=Z,5.2nm,1.3s
ZRNK Zerenda 38.03 56 *e*P **P 07 00 42.3 -0.1**
comp=Z,5.2nm,1.3s
BVAR Borovoye Array 38.84 55 P **P 07 00 49.0 -0.3**
comp=Z,0.9nm,0.9s,baz=316,slow=6.0,SNR=5.3
BVAR Borovoye Array 38.84 55 P **P 07 00 49.0 -0.3**
BVAR pmax pmax
comp=Z,1.0nm,0.9s
BVAR Borovoye Array 38.84 55 P **P 07 00 49.0 -0.3**
DBIC Dimbokro 39.92 206 P **P 07 00 58.1 -0.4**
comp=Z,3.0nm,0.9s,baz=37,slow=12,SNR=3.2
KURBB Kurchatov Arra 44.33 57 P **P 07 01 34.5 +0.2**
comp=Z,1.1nm,0.7s,baz=307,slow=8.4,SNR=12
KURBB PcP **PcP 07 03 18.3 0.0**
comp=Z,0.2nm,0.3s,baz=301,slow=4.3,SNR=3.5
KURK Kurchatov 44.36 57 *e*P **P 07 01 34.9 +0.5**
KURK 07 03 18.3
KURK pmax pmax
comp=Z,21nm,1.8s
KURK Kurchatov 44.36 57 *e*P **P 07 01 34.9 +0.5**
comp=Z,21nm,1.8s
KURK Kurchatov 44.36 57 *e*P **P 07 01 34.9 +0.5**
comp=Z,21nm,1.8s
KURK PcP **PcP 07 03 18.3 0.0**
AAK Ala-Archa 44.62 69 P **P 07 01 38.5 +1.5**
comp=Z,1.4nm,0.3s,baz=276,slow=10,SNR=3.0
NRIK Noril'sk 44.77 29 LR LR 07 23 25.2
comp=Z,72nm,18.4s,baz=355,slow=41
ZALV Zalesovo Beam 46.93 51 P **P 07 01 55.9 +1.2**
comp=Z,0.8nm,0.5s,baz=282,slow=9.0,SNR=4.0
ZALV LR LR 07 23 09.2
comp=Z,64nm,18.9s,baz=250,slow=38
KSH Kashi 46.98 72 P **P 07 01 56.9 +1.3**
KSH *e*PcP **PcP 07 03 30.3 +2.4**
KSH *e*PP **PP 07 03 46.8 +1.0**
KSH S **S 07 08 47.5 -0.1**
KSH Kashi 46.98 72 SS SS 07 12 06.6 -7.4
KSH pmax pmax
comp=Z,56nm,5.7s
KSH LR LR
comp=N,110nm,6.9s
KSH LR LR
comp=E,100nm,8.0s
KSH LR LR
comp=Z,120nm,6.4s
MK31 Makanchi Array 48.03 61 *e*P **P 07 02 03.8 +0.3**
MK31 Makanchi Array 48.03 61 *e*P **P 07 02 03.8 +0.3**
MK31 Makanchi Array 48.03 61 *e*P **P 07 02 03.8 +0.3**
MKAR Makanchi Array 48.03 61 P **P 07 02 02.8 -0.7**
comp=Z,4.0nm,0.7s,baz=290,slow=6.0,SNR=40
MKAR PcP **PcP 07 03 31.5 +0.1**
comp=Z,1.1nm,1.0s,baz=293,slow=2.8,SNR=2.2
MKAR Makanchi Array 48.03 61 *e*P **P 07 02 03.8 +0.3**
MKAR Makanchi Array 48.03 61 *e*P **P 07 02 03.8 +0.3**
MKAR PcP **PcP 07 03 31.5 +0.1**
MK01 Makanchi Array 48.05 61 *e*P **P 07 02 03.7 +0.1**
MK01 Makanchi Array 48.05 61 *e*P **P 07 02 03.7 +0.1**
TLY Talaya 58.19 47 LR LR 07 30 16.5
comp=Z,87nm,19.8s,baz=304,slow=38
SONA1 Songino Array 61.80 50 *e*P **P 07 03 44.1 +0.8**
SONA1 Songino Array 61.80 50 *e*P **P 07 03 44.1 +0.8**
SONM Songino Array 61.80 50 P **P 07 03 44.3 +1.0**
comp=Z,2.9nm,1.0s,baz=286,slow=8.6,SNR=14
YKW3 Yellowknife Ar 65.54 336 *e*P **P 07 04 08.8 +1.3**
comp=Z,7.0nm,1.0s
YKW3 Yellowknife Ar 65.54 336 *e*P **P 07 04 08.8 +1.3**
comp=Z,7.0nm,1.0s
YKA Yellowknife Ar 65.59 336 P **P 07 04 08.6 +0.8**
comp=Z,5.6nm,0.9s,baz=44,slow=6.6,SNR=26
YKA LR LR 07 35 31.8
comp=Z,6.4nm,19.6s,baz=0.0,slow=39
ULM Lac du Bonnet 67.11 318 P **P 07 04 17.8 0.0**
comp=Z,2.2nm,0.6s,baz=81,slow=11,SNR=2.9
HHC Hu-ho-hao-te 69.01 53 *e*P **P 07 04 29.7 -0.3**
HHC pmax pmax
comp=Z,12nm,1.0s
HHC pmax pmax
comp=Z,97nm,8.2s
DAWY Dawson 69.96 347 *e*P **P 07 04 35.8 +0.4**
comp=Z,3.2nm,0.8s
DAWY Dawson 69.96 347 *e*P **P 07 04 35.9 +0.4**
comp=Z,3.2nm,0.8s
ILAR Eielson Array 70.34 351 P **P 07 04 38.6 +0.9**
comp=Z,0.9nm,0.8s,baz=11,slow=6.5,SNR=8.9
ECSD EROS Data Cent 71.91 314 *e*P **P 07 04 47.2 -0.4**
comp=Z,3.3nm,1.1s
ECSD EROS Data Cent 71.91 314 *e*P **P 07 04 47.2 -0.4**
comp=Z,3.3nm,1.1s
KMI Kunming 73.62 71 P **P 07 04 58.9 +0.6**
KMI pmax pmax
comp=Z,8.0nm,0.6s
LAO LASA Array 74.48 321 *e*P **P 07 05 02.7 -0.1**
comp=Z,5.1nm,0.9s
LAO LASA Array 74.48 321 *e*P **P 07 05 02.7 -0.1**
comp=Z,5.1nm,0.9s
RSSD Black Hills 75.37 318 *e*P **P 07 05 09.8 +1.6**
RSSD pmax pmax
comp=Z,2.0nm,0.6s
RSSD Black Hills 75.37 318 *e*P **P 07 05 09.8 +1.6**
comp=Z,2.1nm,0.6s
RSSD Black Hills 75.37 318 *e*P **P 07 05 09.8 +1.6**
comp=Z,2.1nm,0.6s
CMAR Chiang Mai Arr 75.38 78 P **P 07 05 07.7 -0.7**
comp=Z,0.9nm,0.3s,baz=305,slow=7.5,SNR=5.0
HHAR Hobbs 75.61 307 *e*P **P 07 05 09.9 +0.5**
comp=Z,3.5nm,0.8s
HHAR Hobbs 75.61 307 *e*P **P 07 05 09.9 +0.5**
comp=Z,3.5nm,0.8s
WALA Waterton Lakes 75.92 327 *e*P **P 07 05 11.5 +0.3**
comp=Z,28nm,2.0s
WALA Waterton Lakes 75.92 327 *e*P **P 07 05 11.5 +0.3**
comp=Z,28nm,2.0s
PETK Petropavlovsk- 78.96 20 LR LR 07 45 06.8
comp=Z,62nm,18.3s,baz=193,slow=39
PDAR Pinedale Array 79.01 320 P **P 07 05 28.1 -0.6**
comp=Z,0.5nm,0.6s,baz=46,slow=6.4,SNR=5.7
ISCO Idaho Springs 79.38 316 *e*P **P 07 05 31.4 +0.5**
ISCO pmax pmax
comp=Z,12nm,1.7s
ISCO Idaho Springs 79.38 316 *e*P **P 07 05 31.4 +0.5**
comp=Z,12nm,1.7s
ISCO Idaho Springs 79.38 316 *e*P **P 07 05 31.4 +0.5**
comp=Z,12nm,1.7s
WMOK Wichita Mounta 79.48 308 *e*P **P 07 05 31.1 0.0**
WMOK pmax pmax
comp=Z,4.0nm,0.8s
WMOK Wichita Mounta 79.48 308 *e*P **P 07 05 31.1 0.0**

	comp=Z,3.7nm,0.8s						
WMOK	**Wichita Mounta**	**79.48**	**308**	*e*P	**P**	07 05 31.1	**0.0**
	comp=Z,3.7nm,0.8s						
O20A	**White River Ci**	**80.42**	**318**	*e*P	**P**	07 05 37.2	**+0.8**
	comp=Z,24nm,1.8s						
O20A	**White River Ci**	**80.42**	**318**	*e*P	**P**	07 05 37.2	**+0.8**
	comp=Z,24nm,1.8s						
HLID	**Hailey**	**80.54**	**324**	*e*P	**P**	07 05 37.5	**+0.6**
	comp=Z,6.3nm,1.6s						
HLID	**Hailey**	**80.54**	**324**	*e*P	**P**	07 05 37.5	**+0.6**
	comp=Z,6.3nm,1.6s						
BMO	**Blue Mountains**	**80.70**	**326**	*e*P	**P**	07 05 38.3	**+0.7**
BMO	**Blue Mountains**	**80.70**	**326**	*e*P	**P**	07 05 38.3	**+0.7**
T25A	**Trinidad**	**80.77**	**313**	*e*P	**P**	07 05 38.3	**0.0**
	comp=Z,2.6nm,0.8s						
T25A	**Trinidad**	**80.77**	**313**	*e*P	**P**	07 05 38.3	**0.0**
	comp=Z,2.6nm,0.8s						
SDCO	**Great Sand Dun**	**80.88**	**315**	*e*P	**P**	07 05 39.3	**+0.3**
	comp=Z,8.4nm,1.8s						
SDCO	**Great Sand Dun**	**80.88**	**315**	*e*P	**P**	07 05 39.3	**+0.3**
	comp=Z,8.4nm,1.8s						
ANMO	**Albuquerque**	**83.52**	**313**	*e*P	**P**	07 05 52.7	**0.0**
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.4s						
ANMO	**Albuquerque**	**83.52**	**313**	*e*P	**P**	07 05 52.7	**0.0**
	comp=Z,3.2nm,1.4s						
ANMO	**Albuquerque**	**83.52**	**313**	*e*P	**P**	07 05 52.7	**0.0**
	comp=Z,3.2nm,1.4s						
MTPU	**Mount Pierson**	**83.96**	**319**	*e*P	**P**	07 05 54.7	**-0.5**
	comp=Z,7.4nm,1.6s						
MTPU	**Mount Pierson**	**83.96**	**319**	*e*P	**P**	07 05 54.7	**-0.5**
	comp=Z,7.4nm,1.6s						
CCUT	**Cedar City**	**84.91**	**319**	*e*P	**P**	07 06 00.4	**+0.6**
	comp=Z,6.9nm,1.8s						
CCUT	**Cedar City**	**84.91**	**319**	*e*P	**P**	07 06 00.4	**+0.6**
	comp=Z,6.9nm,1.8s						
R11A	**Troy Canyon, C**	**85.29**	**321**	*e*P	**P**	07 06 02.3	**+0.6**
	comp=Z,2.5nm,1.2s						
R11A	**Troy Canyon, C**	**85.29**	**321**	*e*P	**P**	07 06 02.3	**+0.6**
	comp=Z,2.5nm,1.2s						
U15A	**North Rim**	**85.30**	**318**	*e*P	**P**	07 06 02.8	**+1.0**
	comp=Z,2.0nm,0.8s						
U15A	**North Rim**	**85.30**	**318**	*e*P	**P**	07 06 02.8	**+1.0**
	comp=Z,2.0nm,0.8s						
SAML	**Samuel**	**85.56**	**253**	*e*P	**P**	07 06 02.3	**-0.7**
	comp=Z,15nm,1.9s						
SAML	**Samuel**	**85.56**	**253**	*e*P	**P**	07 06 02.3	**-0.7**
	comp=Z,15nm,1.9s						
TX31	**Lajitas Ar. Si**	**86.25**	**308**	*e*P	**P**	07 06 06.0	**-0.5**
TX31	**Lajitas Ar. Si**	**86.25**	**308**	*e*P	**P**	07 06 06.0	**-0.5**
TX31				*e*P	**P**	07 06 06.6	**+0.1**
TXAR	**Lajitas Array**	**86.25**	**308**	P	**P**	07 06 06.9	**+0.5**
	comp=Z,1.8nm,0.9s,baz=58,slow=4.8,SNR=18						
ASAR	**Alice Springs**	**128.86**	**86**	PKP	**PKPdf**	07 12 33.3	**+1.0**
	comp=Z,0.9nm,1.1s,baz=315,slow=1.6,SNR=3.0						

*ISCJB **12** 06:56:15.8±0.4, 43.˚93N±0.˚03×11.˚85E±0.˚03, h10km±4km, Error ellipse: s-maj=5.5km s-min=3.3km az=24.0*
*ROM **12** 06:56:15.5±0.1, 43.˚94N×11.˚87E, h8km, Ml3.2/22, Error ellipse: s-maj=1.8km s-min=1.1km az=21.0*
*CSEM **12** 06:56:16.1±0.1, 43.˚94N×11.˚87E, h2km, ML3.6/6, Error ellipse: s-maj=2.7km s-min=1.6km az=27.0*

ISC 12 06:56:16.0±0.9, 43.˚93N±0.˚03×11.˚86E±0.˚02, h6km±5km, n52, σ0s60/71, 2C, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.03**	**204**	Pg	**Pg**	06 56 17.2	**-0.1**
SFI				Sg	**Sg**	06 56 18.3	**+0.1**
SFI	**Santa Sofia**	**0.03**	**204**	Pg	**Pg**	06 56 17.2	**-0.1**
SFI				Sg	**Sg**	06 56 18.3	**+0.1**
ASQU	**Asqua**	**0.14**	**202**	*i*Pg	**Pg**	06 56 19.3	**+0.3**
ASQU				Sg	**Sg**	06 56 22.3	**+1.3**
	5μm,0.7s						
ASQU	**Asqua**	**0.14**	**202**	*i*Pg	**Pg**	06 56 19.3	**+0.3**
ASQU				Sg	**Sg**	06 56 22.3	**+1.3**
	5μm,0.7s						
T0502	**Localit˙ San**	**0.20**	**98**	Pg	**Pg**	06 56 20.2	**+0.2**
T0502				Sg	**Sg**	06 56 24.2	**+1.5**
	244μm,8.9s						
VMG	**Vicchio**	**0.23**	**278**	Pg	**Pg**	06 56 21.0	**+0.4**
VMG	**Vicchio**	**0.23**	**278**	Pg	**Pg**	06 56 21.0	**+0.4**
CPGN	**Carpegna, Ital**	**0.36**	**111**	Pg	**Pb**	06 56 24.0	**-0.9**
	4μm,1.4s						
CPGN	**Carpegna, Ital**	**0.36**	**111**	Pg	**Pb**	06 56 24.0	**-0.9**
	4μm,1.4s						
SEI	**Scarperia**	**0.39**	**289**	Pg	**Pg**	06 56 23.4	**-0.1**
SEI				Sg	**Sb**	06 56 30.0	**-1.5**
SEI	**Scarperia**	**0.39**	**289**	Pg	**Pg**	06 56 23.4	**-0.1**
SEI				Sg	**Sb**	06 56 30.0	**-1.5**
PARC	**Parchiule**	**0.39**	**136**	Pg	**Pg**	06 56 23.7	**+0.1**
PARC				Sg	**Sb**	06 56 30.4	**-1.3**
	2μm,0.7s						
PARC	**Parchiule**	**0.39**	**136**	Pg	**Pg**	06 56 23.7	**+0.1**
PARC				Sg	**Sb**	06 56 30.4	**-1.3**
	2μm,0.7s						
BADI	**Badiali**	**0.50**	**146**	Pg	**Pg**	06 56 25.6	**-0.1**
BADI				Sg	**Sb**	06 56 33.9	**-1.0**
	930nm,0.6s						
BADI	**Badiali**	**0.50**	**146**	Pg	**Pg**	06 56 25.6	**-0.1**
BADI				Sg	**Sb**	06 56 33.9	**-1.0**
	930nm,0.6s						
MTRZ	**Monterenzio**	**0.53**	**328**	Pg	**Pg**	06 56 26.7	**+0.4**
	3μm,0.9s						
MTRZ	**Monterenzio**	**0.53**	**328**	Pg	**Pg**	06 56 26.7	**+0.4**
	3μm,0.9s						
ATMC	**Monte Cedrone**	**0.54**	**153**	Pg	**Pg**	06 56 26.4	**0.0**
ATMC				Sg	**Sb**	06 56 35.5	**-0.4**
	792nm,0.4s						
ATMC	**Monte Cedrone**	**0.54**	**153**	Pg	**Pg**	06 56 26.4	**0.0**
ATMC				Sg	**Sb**	06 56 35.5	**-0.4**
	792nm,0.4s						
PTF	**Prato**	**0.57**	**273**	Pg	**Pg**	06 56 26.9	**-0.2**
PTF	**Prato**	**0.57**	**273**	Pg	**Pg**	06 56 26.9	**-0.2**
FNVD	**Fontana Vidola**	**0.58**	**294**	Pg	**Pg**	06 56 27.4	**+0.1**
	2μm,0.7s						
FNVD	**Fontana Vidola**	**0.58**	**294**	Pg	**Pg**	06 56 27.4	**+0.1**
	2μm,0.7s						
CAFI	**Castiglion Fio**	**0.60**	**173**	Pg	**Pg**	06 56 27.7	**0.0**
CAFI				Sg	**Sb**	06 56 37.1	**-0.7**
	2μm,0.5s						
CAFI	**Castiglion Fio**	**0.60**	**173**	Pg	**Pg**	06 56 27.7	**0.0**
CAFI				Sg	**Sb**	06 56 37.1	**-0.7**
	2μm,0.5s						
CSNT	**Castellina Chi**	**0.62**	**222**	Pg	**Pg**	06 56 28.0	**+0.1**
	2μm,0.6s						
CSNT	**Castellina Chi**	**0.62**	**222**	Pg	**Pg**	06 56 28.0	**+0.1**
	2μm,0.6s						
ATPC	**Poggio Castell**	**0.62**	**136**	Pg	**Pg**	06 56 27.9	**-0.1**
	2μm,0.6s						
ATPC	**Poggio Castell**	**0.62**	**136**	Pg	**Pg**	06 56 27.9	**-0.1**
	2μm,0.6s						
CRMI	**Carmignano**	**0.66**	**258**	Pg	**Pg**	06 56 28.6	**-0.1**
CRMI				Sg	**Sb**	06 56 38.5	**-0.9**
	5μm,1.4s						
CRMI	**Carmignano**	**0.66**	**258**	Pg	**Pg**	06 56 28.6	**-0.1**
CRMI				Sg	**Sb**	06 56 38.5	**-0.9**
	5μm,1.4s						
ATVO	**AVT- Monte Val**	**0.68**	**144**	Pg	**Pg**	06 56 28.8	**-0.2**
	2μm,0.6s						
ATVO	**AVT- Monte Val**	**0.68**	**144**	Pg	**Pg**	06 56 28.8	**-0.2**
	2μm,0.6s						
FSSB	**Fossombrone**	**0.70**	**109**	Pg	**Pg**	06 56 29.2	**-0.4**
	1μm,0.5s						
FSSB	**Fossombrone**	**0.70**	**109**	Pg	**Pg**	06 56 29.2	**-0.4**
	1μm,0.5s						
MPAG	**Monte Paganucc**	**0.72**	**114**	Pg	**Pg**	06 56 29.8	**0.0**
	2μm,1.1s						
MPAG	**Monte Paganucc**	**0.72**	**114**	Pg	**Pg**	06 56 29.8	**0.0**
	2μm,1.1s						
ATTE	**AVT- Monte Tez**	**0.81**	**154**	Pg	**Pg**	06 56 31.4	**-0.3**
	1μm,0.7s						
ATTE	**AVT- Monte Tez**	**0.81**	**154**	Pg	**Pg**	06 56 31.4	**-0.3**
	1μm,0.7s						
FROS	**Frosini**	**0.88**	**216**	Pg	**Pg**	06 56 33.3	**+0.3**
	962nm,0.9s						
FROS	**Frosini**	**0.88**	**216**	Pg	**Pg**	06 56 33.3	**+0.3**
	962nm,0.9s						
MAIM	**Mastiano**	**0.99**	**270**	Pg	**Pg**	06 56 35.0	**0.0**
	825nm,0.8s						
MAIM	**Mastiano**	**0.99**	**270**	Pg	**Pg**	06 56 35.0	**0.0**
	825nm,0.8s						
MGAB	**Montegabbione**	**1.03**	**170**	Pg	**Pg**	06 56 35.8	**0.0**
	1μm,1.0s						
MGAB	**Montegabbione**	**1.03**	**170**	Pg	**Pg**	06 56 35.8	**0.0**
	1μm,1.0s						
TRIF	**Trifonti**	**1.07**	**221**	Pg	**Pg**	06 56 36.8	**+0.2**
	722nm,1.0s						
TRIF	**Trifonti**	**1.07**	**221**	Pg	**Pg**	06 56 36.8	**+0.2**
	722nm,1.0s						
SACS	**San Casciano d**	**1.08**	**178**	Pg	**Pg**	06 56 36.9	**+0.1**
	409nm,0.5s						
ARCI	**Arcidosso**	**1.11**	**195**	Pg	**Pg**	06 56 37.5	**+0.1**
	235nm,0.6s						
ARCI	**Arcidosso**	**1.11**	**195**	Pg	**Pg**	06 56 37.5	**+0.1**
	235nm,0.6s						
NVLJ	**Novalja**	**2.25**	**73**	*e*Pn	**Pn**	06 56 54.4	**+0.6**
NVLJ				Sn	**Sn**	06 57 22.7	**+0.8**
NVLJ	**Novalja**	**2.25**	**73**	*e*Pn	**Pn**	06 56 54.4	**+0.6**
NVLJ				Sn	**Sn**	06 57 22.7	**+0.8**

*DDA **12** 06:58:52.7, 36.˚74N×27.˚41E, h8km, Md3.0*
*ISK **12** 06:58:54.7, 36.˚84N×27.˚46E, h13km, ML2.9*
*ATH **12** 06:58:54.5, 36.˚83N×27.˚44E, h29km, ML3.1/4, Error ellipse: s-maj=1.6km s-min=0.9km az=229.0*
*CSEM **12** 06:58:55.2±0.1, 36.˚85N×27.˚44E, h12km, ML2.9, Error ellipse: s-maj=2.7km s-min=2.5km az=126.0*
*THE **12** 06:58:55.0, 36.˚83N×27.˚50E, h3km±1km, ML3.3/4, Error ellipse: s-maj=1.2km s-min=0.4km az=302.0*
*ISCJB **12** 06:58:55.2±0.4, 36.˚84N±0.˚02×27.˚43E±0.˚03, h13km±3km, Error ellipse: s-maj=3.8km s-min=3.2km az=10.4*

ISC 12 06:58:54.8±0.9, 36.˚83N±0.˚02×27.˚46E±0.˚02, h13km±7km, n86, σ1s00/121, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.24**	**358**	*i*P	**Pg**	06 59 00.0	**0.0**
BDRM				*i*S	**Sg**	06 59 04.0	**+0.5**
BDRM	**Kayabasi**	**0.24**	**358**	P	**Pg**	06 59 00.0	**0.0**
BDRM				S	**Sg**	06 59 04.0	**+0.5**
BODT	**Bodrum**	**0.26**	**334**	PG	**Pb**	06 59 00.7	**-0.7**
BODT				*e*SG	**Sg**	06 59 04.6	**+0.4**
BODT	**Bodrum**	**0.26**	**334**	P	**Pb**	06 59 00.7	**-0.7**
BODT				S	**Sb**	06 59 04.9	**-1.0**
BODT	**Bodrum**	**0.26**	**334**	P	**Pb**	06 59 00.7	**-0.7**
BODT				*e*Sg	**Sg**	06 59 04.6	**+0.4**
NIS1	**Nisyros Isl.**	**0.32**	**225**	*e*PG	**Pb**	06 59 01.9	**-0.4**
NIS1				*e*SG	**Sb**	06 59 06.7	**-0.6**
NIS1	**Nisyros Isl.**	**0.32**	**225**	P	**Pb**	06 59 02.2	**-0.1**
NIS1				S	**Sb**	06 59 07.7	**+0.4**
NIS1	**Nisyros Isl.**	**0.32**	**225**	*e*Pg	**Pb**	06 59 01.9	**-0.4**
NIS1	**Nisyros Isl.**	**0.32**	**225**	P	**Pb**	06 59 02.2	**-0.1**
NIS1				*e*Sg	**Sb**	06 59 06.7	**-0.6**
NIS1				S	**Sb**	06 59 07.7	**+0.4**
NIS1	**Nisyros Isl.**	**0.32**	**225**	P	**Pb**	06 59 02.5	**+0.2**
NIS1				S	**Sb**	06 59 08.0	**+0.7**
NIS1				AML	AML	06 59 10.6	
	comp=E,15100μm,0.2s						
NIS1				AML	AML	06 59 11.2	
	comp=N,12373μm,0.3s						
NISR	**Nisiros**	**0.34**	**231**	P	**Pb**	06 59 02.6	**-0.1**
NISR				S	**Sb**	06 59 08.2	**+0.3**
NISR	**Nisiros**	**0.34**	**231**	P	**Pb**	06 59 02.5	**-0.1**
NISR				S	**Sb**	06 59 08.1	**+0.1**
NISR	**Nisiros**	**0.34**	**231**	P	**Pb**	06 59 02.5	**-0.1**
NISR				S	**Sb**	06 59 08.1	**+0.1**
NISR				AML	AML	06 59 09.7	
	comp=E,6105μm,0.2s						
NISR				AML	AML	06 59 09.9	
	comp=N,3287μm,0.2s						
MLSB	**Milas**	**0.53**	**28**	*e*PG	**Pg**	06 59 05.3	**-0.1**
MLSB	**Milas**	**0.53**	**28**	*e*Pg	**Pg**	06 59 05.3	**-0.1**
YER	**Yerkesik**	**0.73**	**65**	*e*PG	**Pg**	06 59 09.1	**+0.1**
YER	**Yerkesik**	**0.73**	**65**	P	**Pg**	06 59 08.5	**-0.5**
YER				S	**Sb**	06 59 19.3	**0.0**
YER	**Yerkesik**	**0.73**	**65**	P	**Pg**	06 59 08.5	**-0.5**
YER	**Yerkesik**	**0.73**	**65**	*e*Pg	**Pg**	06 59 09.1	**+0.1**
YER				S	**Sb**	06 59 19.3	**0.0**
ARG	**Arkhangelos**	**0.81**	**138**	P	**Pg**	06 59 10.0	**-0.6**
ARG				S	**Sb**	06 59 22.5	**+0.9**
ARG	**Arkhangelos**	**0.81**	**138**	P	**Pg**	06 59 10.0	**-0.6**
ARG				S	**Sb**	06 59 22.4	**+0.9**
GCAM	**G?zelcaml?**	**0.89**	**349**	*i*P	**Pb**	06 59 12.2	**+0.1**
GCAM				*i*S	**Sn**	06 59 25.7	**0.0**
GCAM	**G?zelcaml?**	**0.89**	**349**	P	**Pb**	06 59 12.2	**+0.1**
GCAM				S	**Sn**	06 59 25.7	**0.0**
TURN	**Turunc**	**0.92**	**87**	*i*P	Pg	06 59 06.4	**-6.2**
TURN				*i*S	**Sg**	06 59 16.0	**-8.6**
DALY	**Dalyan (Mu˙la**	**0.96**	**90**	*e*PG	**Pb**	06 59 13.6	**+0.3**
DALY	**Dalyan (Mu˙la**	**0.96**	**90**	*e*Pg	**Pb**	06 59 13.6	**+0.3**
SMG	**Samos**	**1.01**	**331**	P	**Pg**	06 59 14.2	**-0.1**
SMG				S	**Sn**	06 59 29.0	**+0.3**
SMG	**Samos**	**1.01**	**331**	P	**Pg**	06 59 14.2	**-0.1**
SMG				S	**Sb**	06 59 27.2	**-0.2**
SMG	**Samos**	**1.01**	**331**	P	**Pn**	06 59 14.4	**-0.2**
SMG				S	**Sb**	06 59 27.2	**-0.2**
SMG				AML	AML	06 59 33.0	
	comp=E,2571μm,0.3s						
SMG				AML	AML	06 59 35.1	
	comp=N,2418μm,0.6s						
AYDB	**Zeytinkoy-Aydi**	**1.17**	**17**	*e*PN	**Pb**	06 59 16.4	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.17**	**17**	*e*Pn	**Pb**	06 59 16.4	**-0.5**
KARP	**Karpathos**	**1.30**	**191**	*e*PN	**Pb**	06 59 19.2	**+0.2**
KARP	**Karpathos**	**1.30**	**191**	P	**Pn**	06 59 18.9	**+0.3**
KARP				S	**Sg**	06 59 36.8	**+0.1**
KARP	**Karpathos**	**1.30**	**191**	*e*Pn	**Pb**	06 59 19.2	**+0.2**
KARP				S	**Sg**	06 59 36.8	**+0.1**
KARP	**Karpathos**	**1.30**	**191**	P	**Pb**	06 59 19.1	**+0.1**
DGB	**˙zmir**	**1.31**	**340**	*i*P	**Pn**	06 59 18.1	**-0.6**
DGB				*i*S	**Sb**	06 59 34.8	**-1.0**
DNZL	**Cakiroluk**	**1.53**	**55**	*i*P	**Pg**	06 59 23.1	**-0.1**
DNZL				*i*S	**Sg**	06 59 44.9	**+0.6**
DNZL	**Cakiroluk**	**1.53**	**55**	P	**Pg**	06 59 23.1	**-0.1**
DNZL				S	**Sg**	06 59 44.9	**+0.6**
APE	**Apeiranthos**	**1.56**	**280**	*e*PN	**Pn**	06 59 22.0	**-0.3**
APE	**Apeiranthos**	**1.56**	**280**	P	**Pn**	06 59 22.2	**-0.1**
APE				S	**Sn**	06 59 42.4	**0.0**
APE	**Apeiranthos**	**1.56**	**280**	P	**Pn**	06 59 22.2	**-0.1**
APE				S	**Sn**	06 59 42.4	**0.0**
APE				AML	AML	06 59 49.9	
	comp=N,448μm,0.4s						
APE				AML	AML	06 59 52.8	
	comp=E,230μm,0.4s						
DENT	**Denizli**	**1.56**	**53**	*e*PN	**Pn**	06 59 22.9	**+0.6**
DENT	**Denizli**	**1.56**	**53**	*e*Pn	**Pn**	06 59 22.9	**+0.6**
IZM	**Izmir**	**1.58**	**354**	*e*PN	**Pn**	06 59 22.7	**+0.2**
IZM	**Izmir**	**1.58**	**354**	*e*Pn	**Pn**	06 59 22.7	**+0.2**
ZEY	**˙zmir**	**1.60**	**332**	*i*P	**Pn**	06 59 22.4	**-0.4**
ZEY				*i*S	**Sg**	06 59 48.3	**+1.9**
GLHS	**Glhisar (BURDU**	**1.67**	**78**	*e*PN	**Pn**	06 59 24.5	**+0.7**
GLHS	**Glhisar (BURDU**	**1.67**	**78**	*e*Pn	**Pn**	06 59 24.5	**+0.7**
URLA	**Izmir**	**1.68**	**336**	*i*P	**Pn**	06 59 23.8	**0.0**
URLA				*i*S	**Sg**	06 59 51.1	**+2.2**
URLA	**Izmir**	**1.68**	**336**	P	**Pn**	06 59 23.8	**0.0**
GOLH	**Golhisar**	**1.73**	**76**	*i*P	**Pb**	06 59 27.1	**+0.6**
GOLH				*i*S	**Sg**	06 59 51.3	**+0.7**
GOLH	**Golhisar**	**1.73**	**76**	P	**Pb**	06 59 27.1	**+0.6**
GOLH				S	**Sg**	06 59 51.3	**+0.7**
THR5	**Thira Island,**	**1.75**	**257**	*e*PN	**Pb**	06 59 26.1	**-0.5**
THR5	**Thira Island,**	**1.75**	**257**	*e*Pn	**Pb**	06 59 26.1	**-0.5**
AKAS	**Kas**	**1.83**	**108**	*i*P	**Pb**	06 59 28.0	**-0.2**
AKAS				*i*S	**Sg**	06 59 55.3	**+1.6**
AKAS	**Kas**	**1.83**	**108**	P	**Pb**	06 59 28.0	**-0.2**
KSL	**Kastellorizon**	**1.84**	**111**	P	**Pb**	06 59 27.8	**-0.5**
KSL	**Kastellorizon**	**1.84**	**111**	P	**Pb**	06 59 27.8	**-0.5**
MANT	**Manisa**	**1.88**	**27**	*i*P	**Pn**	06 59 27.1	**+0.3**
MANT				*i*S	**Sg**	06 59 55.1	**-0.2**
MANT	**Manisa**	**1.88**	**27**	P	**Pn**	06 59 27.1	**+0.3**
CHOS	**Chios island**	**1.92**	**325**	*e*PN	**Pn**	06 59 27.2	**0.0**
CHOS	**Chios island**	**1.92**	**325**	P	**Pn**	06 59 26.8	**-0.3**
CHOS	**Chios island**	**1.92**	**325**	*e*Pn	**Pn**	06 59 27.2	**0.0**
CHOS	**Chios island**	**1.92**	**325**	P	**Pn**	06 59 26.8	**-0.3**
KULA	**Kula-Manisa**	**1.94**	**29**	*e*PN	**Pn**	06 59 28.3	**+0.8**
KULA	**Kula-Manisa**	**1.94**	**29**	P	**Pn**	06 59 27.3	**-0.2**
KULA	**Kula-Manisa**	**1.94**	**29**	P	**Pn**	06 59 27.3	**-0.2**
KULA	**Kula-Manisa**	**1.94**	**29**	*e*Pn	**Pn**	06 59 28.3	**+0.8**
ELL	**Elmali**	**1.97**	**92**	*e*PN	**Pn**	06 59 28.8	**+0.9**
ELL	**Elmali**	**1.97**	**92**	*e*Pn	**Pn**	06 59 28.8	**+0.9**
ZKR	**Zakros**	**1.98**	**211**	P	**Pn**	06 59 28.0	**0.0**
ZKR	**Zakros**	**1.98**	**211**	P	**Pn**	06 59 28.0	**0.0**
AKS	**Akhisar**	**2.07**	**8**	*e*PN	**Pn**	06 59 30.2	**+1.0**
AKS	**Akhisar**	**2.07**	**8**	*e*Pn	**Pn**	06 59 30.2	**+1.0**
DKL	**Dikili**	**2.28**	**349**	*e*PN	**Pn**	06 59 33.3	**+1.2**
DKL	**Dikili**	**2.28**	**349**	*e*Pn	**Pn**	06 59 33.3	**+1.2**
LAST	**Lasithi**	**2.31**	**225**	P	**Pn**	06 59 31.2	**-1.4**
IDI	**Anoyia**	**2.58**	**234**	P	**Pn**	06 59 37.3	**+1.0**
IDI	**Anoyia**	**2.58**	**234**	P	**Pn**	06 59 37.3	**+1.0**
PRK	**Paraskevi**	**2.59**	**339**	P	**Pn**	06 59 36.6	**+0.2**
PRK	**Paraskevi**	**2.59**	**339**	P	**Pn**	06 59 36.6	**+0.2**
SIGR	**SIGRI**	**2.70**	**333**	P	**Pn**	06 59 37.9	**+0.1**
SIGR	**SIGRI**	**2.70**	**333**	P	**Pn**	06 59 37.9	**+0.1**
LIA	**Limnos Island**	**3.55**	**330**	P	**Pn**	06 59 49.7	**+0.2**
SMTH	**Samothraki Isl**	**3.94**	**338**	P	**Pn**	06 59 53.9	**-1.0**
SMTH	**Samothraki Isl**	**3.94**	**338**	P	**Pn**	06 59 53.9	**-1.0**

*ISCJB **12** 06:59:30.0±0.3, 29.˚60S±0.˚08×176.˚44W±0.˚06, h24km, mb4.8/29, MS3.7/6, Error ellipse: s-maj=11.5km s-min=7.0km az=167.6*
*NEIC **12** 06:59:29.1±0.3, 29.˚47S×176.˚22W, h10km, mb5.0/15, Error ellipse: s-maj=11.2km s-min=7.3km az=138.0*
*IDC **12** 06:59:34.9±3.0, 29.˚45S×176.˚42W, h49km±25km, mb4.2/12, mb1 4.4/12, mb1mx4.3/25, mbtmp4.5/12, MS3.7/9, Ms1 3.6/9, ms1mx3.4/30, Error ellipse: s-maj=23.6km s-min=18.1km az=95.0*

ISC 12 06:59:31.2±0.4, 29.˚77S±0.˚07×176.˚43W±0.˚07, h24km, n102, σ1s31/97, mb4.8/29, MS3.8/6, 2D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.40**	**291**	P	**Pb**	06 59 57.5	**+0.9**
	308nm,0.3s,baz=117,slow=9.5,SNR=10						
RAO				S	**Sn**	07 00 11.1	**-1.8**
	395nm,0.3s,baz=68,slow=20,SNR=7.9						
RAO				LR	LR	07 00 43.6	
	comp=Z,1μm,21.5s,baz=128,slow=52						
RAO	**Raoul Island**	**1.40**	**291**	P	**Pb**	06 59 57.5	**+0.9**
RAO				*e*Pn	**Pn**	06 59 57.7	**+2.5**
RAO				S	**Sn**	07 00 11.1	**-1.8**
URZ	**Urewera**	**10.02**	**211**	P	**Pn**	07 01 50.4	**-3.2**
	2.5nm,0.3s,baz=350,slow=19,SNR=10						
URZ				S	**Sn**	07 03 41.9	**-3.2**
	7.0nm,0.3s,baz=360,slow=23,SNR=14						
URZ	**Urewera**	**10.02**	**211**	P	**Pn**	07 01 50.4	**-3.2**
URZ				Pn	Pn	07 01 53.5	0.0
OUZ	**Omahuta**	**10.02**	**235**	Pn	Pn	07 01 59.9	**+6.3**
KHZ	**Kahutara**	**14.98**	**210**	*e*Pn	**P**	07 03 06.7	**+0.1**
	327nm,0.8s						
AFI	**Afianalu**	**16.36**	**16**	LR	LR	07 08 19.1	
	comp=Z,110nm,21.4s,baz=219,slow=33						
RPZ	**Rata Peaks**	**17.13**	**212**	P	**Pn**	07 03 24.4	**-4.5**
	1.2nm,0.3s,baz=15,slow=3.0,SNR=4.3						
RPZ				S	Sn	07 06 24.2	-14
	0.7nm,0.3s,baz=65,slow=14,SNR=3.5						
DZM	**Mont Dzumac**	**17.20**	**292**	LR	LR	07 09 20.2	
	comp=Z,565nm,18.2s,baz=59,slow=34						
DZM	**Mont Dzumac**	**17.20**	**292**	*e*LR	LR	07 06 45.5	
	988nm,26.8s						
RAR	**Rarotonga**	**17.27**	**64**	P	Pn	07 03 19.8	-11
	0.9nm,0.3s,baz=230,slow=17,SNR=2.7						
RAR				LR	LR	07 08 52.9	
	comp=Z,87nm,20.6s,baz=288,slow=33						
TBI	**Tubuai**	**24.92**	**82**	*e*LR	LR	07 10 08.7	
	450nm,29.8s						
PPT2	**Papeete2**	**27.34**	**70**	*e*LQ	LQ	07 10 04.4	
	244nm,25.2s						
PPT2				*e*LR	LR	07 11 11.6	
	334nm,27.5s						
PPT	**Papeete**	**27.36**	**70**	LR	LR	07 14 16.6	
	comp=Z,54nm,20.6s,baz=250,slow=32						
STKA	**Stephens Creek**	**35.95**	**256**	P	**P**	07 06 31.6	**+1.6**
	15nm,0.8s,baz=94,slow=9.9,SNR=17					

	5.3nm,0.8s,baz=137,slow=3.1,SNR=10								
TUC	**Tucson**	**87.66**	**51**	P		**P**	**07 12 18.1**	**+0.3**	
	baz=232								
TUC	**Tucson**	**87.66**	**51**	*e*P		**P**	**07 12 16.8**	**-1.1**	
	6.3nm,0.8s								
I03D	**Drain, OR**	**87.78**	**35**	P		**P**	**07 12 18.1**	**+0.1**	
	baz=224								
I04A	**Tendick Farm,**	**88.33**	**36**	P		**P**	**07 12 20.2**	**-0.5**	
	baz=225								
BMN	**Battle Mountai**	**88.82**	**41**	*e*P		**P**	**07 12 22.5**	**-0.7**	
	2.6nm,0.9s								
WUAZ	**Wupatki**	**89.23**	**48**	P		**P**	**07 12 25.4**	**+0.1**	
	baz=232								
WUAZ	**Wupatki**	**89.23**	**48**	*e*P		**P**	**07 12 24.8**	**-0.5**	
	6.7nm,1.0s								
NLWA	**Neilton Lookou**	**90.19**	**33**	*e*P		**P**	**07 12 28.0**	**-1.3**	
	8.2nm,1.0s								
TXAR	**Lajitas Array**	**90.91**	**57**	P		**P**	**07 12 32.2**	**-0.9**	
	1.0nm,0.8s,baz=210,slow=6.9,SNR=11								
MNTX	**Cornudas Mount**	**91.01**	**54**	P		**P**	**07 12 32.2**	**-1.4**	
	baz=235								
KLR	**Kul'dur**	**91.19**	**329**	P		**P**	**07 12 34.0**	**+0.1**	
	1.4nm,0.7s,baz=143,slow=3.9,SNR=6.9								
MFID	**Camas Ranch**	**91.56**	**39**	*e*P		**P**	**07 12 35.1**	**-0.8**	
	5.7nm,1.2s								
B05A	**Bryant**	**91.65**	**33**	P		**P**	**07 12 36.0**	**0.0**	
	baz=225								
ANMO	**Albuquerque**	**92.12**	**51**	P		**P**	**07 12 38.4**	**-0.5**	
	baz=235								
ENH	**Enshi**	**92.38**	**304**	*e*P		**P**	**07 12 41.3**	**+1.4**	
	16nm,0.9s								
HLID	**Hailey**	**92.45**	**40**	P		**P**	**07 12 40.0**	**0.0**	
	baz=230								
HLID	**Hailey**	**92.45**	**40**	*e*P		**P**	**07 12 38.6**	**-1.5**	
	4.2nm,1.1s								
PV01	**Paradox Valley**	**92.60**	**47**	*e*P		**P**	**07 12 40.1**	**-1.0**	
S22A	**4UR Ranch, Cre**	**93.49**	**48**	P		**P**	**07 12 45.1**	**-0.1**	
	baz=235								
O20A	**White River Ci**	**93.98**	**46**	P		**P**	**07 12 46.5**	**-0.9**	
	baz=234								
SNOW	**Snow King Moun**	**94.46**	**42**	*e*P		**P**	**07 12 48.5**	**-0.9**	
	5.5nm,1.1s								
CMAR	**Chiang Mai Arr**	**94.48**	**289**	P		**P**	**07 12 51.8**	**+1.9**	
	1.0nm,0.3s,baz=129,slow=3.3,SNR=7.6								
DLMT	**Dillon**	**94.59**	**39**	*e*P		**P**	**07 12 48.7**	**-1.2**	
	4.4nm,1.1s								
BW06	**Boulder Array**	**94.75**	**43**	P		**P**	**07 12 49.0**	**-1.8**	
	baz=233								
PDAR	**Pinedale Array**	**94.75**	**43**	P		**P**	**07 12 49.2**	**-1.5**	
	0.6nm,0.7s,baz=168,slow=1.4,SNR=6.9								
BOZ	**Bozeman (W)**	**95.30**	**40**	P		**P**	**07 12 52.6**	**-0.5**	
	baz=232								
ILAR	**Eielson Array**	**97.02**	**12**	P		**P**	**07 12 59.3**	**-1.0**	
	1.3nm,1.0s,baz=221,slow=5.5,SNR=12								
MKAR	**Makanchi Array**	**118.41**	**310**	PKP		**PKPdf**	**07 18 15.6**	**-0.8**	
	1.7nm,0.9s,baz=72,slow=4.0,SNR=11								
ZALV	**Zalesovo Beam**	**118.47**	**318**	PKP		**PKPdf**	**07 18 15.4**	**-0.9**	
	0.9nm,0.7s,baz=198,slow=4.4,SNR=3.8								
MATP	**Matopo**	**124.62**	**209**	PKP		**PKPdf**	**07 18 29.9**	**+0.4**	
	3.4nm,0.8s,baz=118,slow=5.1,SNR=6.0								
KKAR	**Karatay Array**	**125.86**	**304**	*e*PKPdf		**PKPdf**	**07 18 30.8**	**0.0**	
ABKAR	**Akbulak array**	**133.53**	**311**	*e*PKPdf		**PKPdf**	**07 18 45.1**	**0.0**	
GNI	**Garni**	**144.98**	**298**	PKP		**PKPdf**	**07 19 07.2**	**+0.6**	
	3.4nm,0.3s,baz=167,slow=0.3,SNR=5								
FINES	**FINESS Array B**	**145.00**	**341**	PKP		**PKPbc**	**07 19 04.4**	**-0.7**	
	14nm,0.8s,baz=63,slow=4.7,SNR=30								
OBN	**Obninsk**	**145.41**	**327**	PKPbc		**PKPbc**	**07 19 06.0**	**-0.5**	
	35nm,0.4s,baz=221,slow=0.4,SNR=9.0								
KBZ	**Khabaz**	**145.88**	**305**	PKPbc		**PKPab**	**07 19 08.8**	**0.0**	
	4.9nm,0.7s,baz=117,slow=2.5,SNR=9.2								
NB2	**NORSAR Subarra**	**148.31**	**353**	PKP		**PKPdf**	**07 19 12.5**	**+1.1**	
	comp=Z,7.6nm,0.9s,baz=12,slow=2.9								
HFS	**Hagfors**	**148.88**	**350**	PKPbc		**PKPbc**	**07 19 14.6**	**-1.6**	
	comp=Z,7.1nm,0.7s,baz=40,slow=3.4,SNR=10								
ASF	**Jabal al Asfar**	**151.39**	**283**	PKPbc		**PKPbc**	**07 19 24.2**	**+0.9**	
	comp=Z,4.6nm,0.7s,baz=91,slow=3.7,SNR=6.5								
AKASG	**Malin Array Be**	**151.60**	**325**	PKPbc		**PKPbc**	**07 19 22.8**	**-0.2**	
	comp=Z,7.1nm,0.7s,baz=47,slow=2.7,SNR=17								
MMAI	**Mount Meron Ar**	**152.69**	**285**	PKPbc		**PKPbc**	**07 19 27.1**	**+0.9**	
	comp=Z,1.7nm,0.6s,baz=95,slow=5.9,SNR=4.9								
TORD	**Torodi Ar. Bea**	**163.37**	**174**	PKPab		**PKPab**	**07 20 23.6**	**+0.5**	
	comp=Z,9.5nm,0.7s,baz=185,slow=4.3,SNR=45								
ESDC	**Sonseca Array**	**168.34**	**30**	PKPab		**PKPab**	**07 20 43.2**	**-1.5**	
	comp=Z,0.2nm,0.3s,baz=328,slow=1.3,SNR=3.9								

ISCJB ***12*** *07:00:36.0±0.5, 36.83N±0.02×27.49E±0.03, h6km±4km, Error ellipse: s-maj=4.6km s-min=3.6km az=179.4*
ATH ***12*** *07:00:35.4, 36.82N×27.44E, h29km±1km, ML2.7/3, Error ellipse: s-maj=2.5km s-min=0.9km az=206.0*
ISK ***12*** *07:00:35.8, 36.85N×27.51E, h9km, ML2.6*
DDA ***12*** *07:00:35.1, 36.81N×27.46E, h7km, Md2.7*
CSEM ***12*** *07:00:36.3±0.2, 36.84N×27.48E, h10km, MD2.7, Error ellipse: s-maj=4.2km s-min=3.8km az=95.0*

ISC 12 07:00:35.8±0.8, 36.85N±0.02×27.49E±0.02, h17km±6km, n55, σ1ş18/77, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.22**	**351**	*i* P			**Pg**	**07 00 40.8**	**-0.2**
BDRM				*i* S			**Sg**	**07 00 44.8**	**+0.3**
BDRM	**Kayabasi**	**0.22**	**351**	P			**Pg**	**07 00 40.8**	**-0.2**
BDRM				S			**Sg**	**07 00 44.8**	**+0.3**
BODT	**Bodrum**	**0.26**	**327**	*e*PG			**Pg**	**07 00 41.5**	**-0.1**
BODT				*e*SG			**Sg**	**07 00 45.8**	**+0.3**
BODT	**Bodrum**	**0.26**	**327**	*e*Pg			**Pg**	**07 00 41.5**	**-0.1**
BODT				*e*Sg			**Sg**	**07 00 45.8**	**+0.3**
NIS1	**Nisyros Isl.**	**0.35**	**226**	*e*PG			**Pb**	**07 00 43.5**	**0.0**
NIS1				*e*SG			**Sb**	**07 00 49.1**	**+0.4**
NIS1	**Nisyros Isl.**	**0.35**	**226**	P			**Pg**	**07 00 43.1**	**+0.1**
NIS1	**Nisyros Isl.**	**0.35**	**226**	*e*Pg			**Pb**	**07 00 43.5**	**0.0**
NIS1				S			**Sb**	**07 00 48.7**	**0.0**
NIS1				*e*Sg			**Sb**	**07 00 49.1**	**+0.4**
NIS1	**Nisyros Isl.**	**0.35**	**226**	P			**Pg**	**07 00 43.1**	**+0.1**
NIS1				S			**Sb**	**07 00 48.7**	**0.0**
NIS1				AML		AML	07 00 51.3		
	comp=E,5588μm,0.2s								
NIS1				AML		AML	07 00 51.9		
	comp=N,4582μm,0.4s								
NISR	**Nisiros**	**0.37**	**231**	P			**Pg**	**07 00 43.6**	**+0.1**
NISR				S			**Sg**	**07 00 48.3**	**-0.3**
NISR	**Nisiros**	**0.37**	**231**	P			**Pg**	**07 00 43.6**	**+0.1**
NISR				S			**Sg**	**07 00 48.3**	**-0.3**
NISR				AML		AML	07 00 50.7		
	comp=N,1987μm,0.2s								
NISR				AML		AML	07 00 51.1		
	comp=E,4134μm,0.2s								
MLSB	**Milas**	**0.51**	**27**	*e*PG			**Pg**	**07 00 46.1**	**+0.2**
MLSB				*e*SG			**Sg**	**07 00 53.5**	**+0.8**
MLSB	**Milas**	**0.51**	**27**	*e*Pg			**Pg**	**07 00 46.1**	**+0.2**
MLSB				*e*Sg			**Sg**	**07 00 53.5**	**+0.8**
YER	**Yerkesik**	**0.70**	**65**	*e*PG			**Pg**	**07 00 49.6**	**+0.1**
YER	**Yerkesik**	**0.70**	**65**	*e*Pg			**Pg**	**07 00 49.6**	**+0.1**
ARG	**Arkhangelos**	**0.81**	**140**	P			**Pb**	**07 00 51.3**	**-0.1**
ARG				S			**Sg**	**07 01 03.1**	**+0.8**
GCAM	**G?zelcaml?**	**0.88**	**347**	*i* P			**Pb**	**07 00 52.6**	**+0.1**
GCAM				*i* S			**Sn**	**07 01 06.6**	**+0.9**
GCAM	**G?zelcaml?**	**0.88**	**347**	P			**Pb**	**07 00 52.6**	**+0.1**
GCAM				S			**Sn**	**07 01 06.6**	**+0.9**
TURN	**Turunc**	**0.90**	**88**	*i* P			Pb	07 00 47.2	-5.6
TURN				*i* S			**Sb**	**07 00 56.7**	**-7.8**
DALY	**Dalyan (Mu¨la**	**0.94**	**91**	*e*PG			**Pb**	**07 00 53.4**	**-0.1**
DALY	**Dalyan (Mu¨la**	**0.94**	**91**	*e*Pg			**Pb**	**07 00 53.4**	**-0.1**
SMG	**Samos**	**1.01**	**329**	P			**Pb**	**07 00 54.7**	**0.0**
SMG				S			**Sn**	**07 01 09.7**	**+0.8**
SMG	**Samos**	**1.01**	**329**	P			**Pb**	**07 00 54.7**	**0.0**
SMG				S			**Sn**	**07 01 09.7**	**+0.8**
SMG				AML		AML	07 01 13.3		
	comp=N,742μm,0.4s								
SMG				AML		AML	07 01 15.8		
	comp=E,973μm,0.4s								
AYDB	**Zeytinkoy-Aydi**	**1.15**	**16**	*e*PN			**Pg**	**07 00 58.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.15**	**16**	*e*Pn			**Pg**	**07 00 58.1**	**+0.1**
DGB	**¨zmir**	**1.30**	**338**	*i* P			**Pn**	**07 00 58.9**	**-0.1**
KARP	**Karpathos**	**1.32**	**192**	*e*PN			**Pg**	**07 01 00.9**	**-0.4**
KARP	**Karpathos**	**1.32**	**192**	P			**Pn**	**07 00 59.9**	**+0.4**
KARP	**Karpathos**	**1.32**	**192**	*e*Pn			**Pg**	**07 01 00.9**	**-0.4**
KARP	**Karpathos**	**1.32**	**192**	P			**Pn**	**07 00 59.9**	**+0.4**
DNZL	**Cakiroluk**	**1.50**	**55**	*i* P			**Pb**	**07 01 04.4**	**+1.1**
DNZL				*i* S			**Sg**	**07 01 26.9**	**+2.5**
DNZL	**Cakiroluk**	**1.50**	**55**	P			**Pb**	**07 01 04.4**	**+1.1**
IZM	**Izmir**	**1.56**	**353**	*e*PN			**Pb**	**07 01 04.3**	**+0.1**
IZM	**Izmir**	**1.56**	**353**	*e*Pn			**Pb**	**07 01 04.3**	**+0.1**
APE	**Apeiranthos**	**1.58**	**279**	*e*PN			**Pg**	**07 01 06.0**	**-0.2**
APE	**Apeiranthos**	**1.58**	**279**	P			**Pn**	**07 01 03.1**	**0.0**
APE	**Apeiranthos**	**1.58**	**279**	*e*Pn			**Pg**	**07 01 06.0**	**-0.2**
APE				S			**Sn**	**07 01 22.1**	**-1.1**
APE	**Apeiranthos**	**1.58**	**279**	P			**Pn**	**07 01 03.1**	**0.0**
APE				S			**Sn**	**07 01 22.1**	**-1.1**
URLA	**Izmir**	**1.67**	**335**	*i* P			**Pg**	**07 01 07.7**	**-0.2**
URLA				*i* S			**Sg**	**07 01 30.7**	**+1.1**
URLA	**Izmir**	**1.67**	**335**	P			**Pg**	**07 01 07.7**	**-0.2**
AKAS	**Kas**	**1.81**	**109**	*i* P			**Pg**	**07 01 10.1**	**-0.5**
AKAS				*i* S			**Sg**	**07 01 37.3**	**+3.1**
AKAS	**Kas**	**1.81**	**109**	P			**Pg**	**07 01 10.1**	**-0.5**
KSL	**Kastellorizon**	**1.83**	**112**	P			**Pb**	**07 01 07.9**	**-0.8**
MANT	**Manisa**	**1.85**	**27**	*i* P			**Pg**	**07 01 11.0**	**-0.4**
KULA	**Kula-Manisa**	**1.91**	**29**	*e*PN			**Pb**	**07 01 09.5**	**-0.7**
KULA	**Kula-Manisa**	**1.91**	**29**	*e*Pn			**Pb**	**07 01 09.5**	**-0.7**
CHOS	**Chios island**	**1.91**	**324**	P			**Pn**	**07 01 09.0**	**+1.4**
CHOS	**Chios island**	**1.91**	**324**	P			**Pn**	**07 01 09.0**	**+1.4**
ELL	**Elmali**	**1.95**	**92**	*e*PN			**Pn**	**07 01 09.7**	**+1.6**
ELL	**Elmali**	**1.95**	**92**	*e*Pn			**Pn**	**07 01 09.7**	**+1.6**
AKS	**Akhisar**	**2.05**	**7**	*e*PN			**Pb**	**07 01 11.5**	**-1.0**
AKS	**Akhisar**	**2.05**	**7**	*e*Pn			**Pb**	**07 01 11.5**	**-1.0**
SIGR	**SIGRI**	**2.69**	**332**	P			**Pn**	**07 01 18.5**	**+0.3**
SIGR	**SIGRI**	**2.69**	**332**	P			**Pn**	**07 01 18.5**	**+0.3**
SMTH	**Samothraki Isl**	**3.93**	**338**	P			**Pn**	**07 01 35.4**	**+0.1**
SMTH	**Samothraki Isl**	**3.93**	**338**	P			**Pn**	**07 01 35.4**	**+0.1**

ISCJB ***12*** *07:15:08.0±0.2, 43.95N±0.01×11.88E±0.01, h9km±1km, mb4.4/39, MS3.5/12, Error ellipse: s-maj=2.0km s-min=1.3km az=20.9*
IASPEI ***12*** *07:15:08.9±0.9, 43.91N±0.02×11.85E±0.02, h7km±4km, mb4.5/39, MS3.4/12, Error ellipse: s-maj=3.3km s-min=2.3km az=25.8, GT5 selection from ISC bulletin GT5 identified by Bond¨ir and McLaughlin (2009) selection criteria Bond¨ir and McLaughlin, 'A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
CSEM ***12*** *07:15:08.6±0.1, 43.95N×11.86E, h2km, mb4.6/26, ML4.3/25, Error ellipse: s-maj=1.7km s-min=1.4km az=25.0*
NEIC ***12*** *07:15:08.0, 43.92N×11.85E, h7km, mb4.6/16, ML4.0(LDG), ML3.9(ROM), After ROM.*
NEIC Felt [V] at Santa Sofia. Felt in much of Emilia Romagna and Tuscany and in parts of Marche and Umbria. Also felt at Milan and Rome.
GEN ***12*** *07:15:08.3, 43.95N×11.93E, h2km, ML4.1*
PRU ***12*** *07:15:08.1, 44.01N×11.82E, h0km, MA4.6*
ROM ***12*** *07:15:08.3±0.1, 43.93N×11.86E, h8km, Ml4.0/49, Error ellipse: s-maj=1.3km s-min=0.9km az=24.0*
PDG ***12*** *07:15:08.8±0.7, 43.93N×11.88E, h14km±1km, ML4.1/12, Error ellipse: s-maj=0.8km s-min=0.9km az=0.0*
LDG ***12*** *07:15:09.3±0.1, 43.97N×11.96E, h10km, Md3.4/3, Ml4.0/17, Error ellipse: s-maj=3.7km s-min=2.9km az=16.0*
IDC ***12*** *07:15:09.1±0.7, 44.03N×11.99E, h0km, mb4.3/13, mb1 4.2/22, mb1mx4.0/57, mbtmp4.1/22, ML3.8/9, MS3.4/14, Ms1 3.4/14, ms1mx3.2/50, Error ellipse: s-maj=14.9km s-min=10.5km az=118.0*
MOS ***12*** *07:15:09.2±1.0, 44.03N×11.85E, h16km, mb4.6/21, Error ellipse: s-maj=4.7km s-min=3.6km az=77.0*
STR ***12*** *07:15:09.0±0.4, 43.94N×11.93E, h10km, Ml4.0, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
BGR ***12*** *07:15:10.2±0.7, 43.95N×11.95E, h10km, ML4.4/18, Error ellipse: s-maj=12.2km s-min=7.8km az=5.0*

ISC 12 07:15:09.4±0.7, 43.92N±0.01×11.85E±0.01, h6km±3km, n698, σ1ş73/888, mb4.5/39, MS3.4/12, 64C-25D, Central Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.01**	**175**	*i* Pg			**Pg**	**07 15 10.0**	**-0.6**
SFI							**Sg**	**07 15 11.1**	**-0.3**
	3650μm,7.9s								
SFI	**Santa Sofia**	**0.01**	**175**	*i* Pg			**Pg**	**07 15 10.0**	**-0.6**
SFI							**Sg**	**07 15 11.1**	**-0.3**
	3650μm,7.9s								
ASQU	**Asqua**	**0.13**	**198**	*i* Pg			**Pg**	**07 15 12.0**	**-0.1**
ASQU							**Sg**	**07 15 15.1**	**+1.1**
	127μm,0.6s								
ASQU	**Asqua**	**0.13**	**198**	*i* Pg			**Pg**	**07 15 12.0**	**-0.1**
ASQU							**Sg**	**07 15 15.1**	**+1.1**
	127μm,0.6s								
T0502	**Localit¨ San**	**0.21**	**95**	*e*Pg			**Pg**	**07 15 13.1**	**-0.5**
T0502							**Sg**	**07 15 17.0**	**+0.6**
	4475μm,8.9s								
VMG	**Vicchio**	**0.22**	**281**	Pg			**Pg**	**07 15 13.7**	**-0.1**
VMG	**Vicchio**	**0.22**	**281**	Pg			**Pg**	**07 15 13.7**	**-0.1**
CPGN	**Carpegna, Ital**	**0.36**	**109**	Pg			**Pg**	**07 15 16.6**	**+0.1**
CPGN							**Sg**	**07 15 21.3**	**0.0**
	69μm,2.3s								
CPGN	**Carpegna, Ital**	**0.36**	**109**	Pg			**Pg**	**07 15 16.6**	**+0.1**
CPGN							**Sg**	**07 15 21.3**	**0.0**
	69μm,2.3s								
SEI	**Scarperia**	**0.38**	**291**	*i* Pg			**Pg**	**07 15 16.2**	**-0.6**
SEI	**Scarperia**	**0.38**	**291**	*i* Pg			**Pg**	**07 15 16.2**	**-0.6**
PARC	**Parchiule**	**0.39**	**133**	*e*Pg			**Pg**	**07 15 16.4**	**-0.6**
PARC							**Sg**	**07 15 23.2**	**+1.0**
	15μm,1.1s								
PARC	**Parchiule**	**0.39**	**133**	*e*Pg			**Pg**	**07 15 16.4**	**-0.6**
PARC							**Sg**	**07 15 23.2**	**+1.0**
	15μm,1.1s								
IMOL	**Imola, Italy**	**0.45**	**350**	*e*Pg			**Pg**	**07 15 18.0**	**0.0**
IMOL							**Sg**	**07 15 23.6**	**-0.3**
	4μm,0.5s								
IMOL	**Imola, Italy**	**0.45**	**350**	*e*Pg			**Pg**	**07 15 18.0**	**0.0**
IMOL							**Sg**	**07 15 23.6**	**-0.3**
	4μm,0.5s								
FIR	**Firenze**	**0.45**	**251**	Pg			**Pg**	**07 15 18.0**	**-0.2**
	36μm,0.4s								
FIR	**Firenze**	**0.45**	**251**	P			**Pg**	**07 15 17.9**	**-0.2**
FIR	**Firenze**	**0.45**	**251**	P			**Pg**	**07 15 17.9**	**-0.2**
BADI	**Badiali**	**0.50**	**145**	Pg			**Pg**	**07 15 18.4**	**-0.7**
BADI							**Sg**	**07 15 26.2**	**+0.6**
	10μm,0.8s								
BADI	**Badiali**	**0.50**	**145**	Pg			**Pg**	**07 15 18.4**	**-0.7**
BADI							**Sg**	**07 15 26.2**	**+0.6**
	10μm,0.8s								
BLLA	**Bellaria**	**0.50**	**63**	Pg			**Pg**	**07 15 19.0**	**-0.1**
	4680μm,17.0s								
BLLA	**Bellaria**	**0.50**	**63**	Pg			**Pg**	**07 15 19.0**	**-0.1**
	4680μm,17.0s								
MTRZ	**Monterenzio**	**0.53**	**329**	*e*Pg			**Pg**	**07 15 18.9**	**-0.8**
	22μm,0.7s								
MTRZ	**Monterenzio**	**0.53**	**329**	*e*Pg			**Pg**	**07 15 18.9**	**-0.8**
	22μm,0.7s								
ATMC	**Monte Cedrone**	**0.54**	**152**	Pg			**Pg**	**07 15 19.1**	**-0.6**
ATMC							**Sg**	**07 15 28.1**	**-1.1**
	11μm,0.4s								
ATMC	**Monte Cedrone**	**0.54**	**152**	Pg			**Pg**	**07 15 19.1**	**-0.6**
ATMC							**Sg**	**07 15 28.1**	**-1.1**
	11μm,0.4s								
PTF	**Prato**	**0.56**	**274**	Pg			**Pg**	**07 15 19.5**	**-0.7**
PTF	**Prato**	**0.56**	**274**	Pg			**Pg**	**07 15 19.5**	**-0.7**
FNVD	**Fontana Vidola**	**0.58**	**296**	*e*Pg			**Pg**	**07 15 19.6**	**-0.9**
FNVD							**Sg**	**07 15 29.4**	**-1.1**
	16μm,0.6s								
FNVD	**Fontana Vidola**	**0.58**	**296**	*e*Pg			**Pg**	**07 15 19.6**	**-0.9**
FNVD							**Sg**	**07 15 29.4**	**-1.1**
	16μm,0.6s								
CAFI	**Castiglion Fio**	**0.60**	**171**	Pg			**Pg**	**07 15 20.3**	**-0.6**
	9μm,0.7s								
CAFI	**Castiglion Fio**	**0.60**	**171**	Pg			**Pg**	**07 15 20.3**	**-0.6**
	9μm,0.7s								
CSNT	**Castellina Chi**	**0.60**	**222**	*e*Pg			**Pg**	**07 15 20.3**	**-0.7**
CSNT							**Sg**	**07 15 29.8**	**+1.0**
	10μm,0.7s								
CSNT	**Castellina Chi**	**0.60**	**222**	*e*Pg			**Pg**	**07 15 20.3**	**-0.7**
CSNT							**Sg**	**07 15 29.8**	**+1.0**
	10μm,0.7s								
ATPC	**Poggio Castell**	**0.62**	**134**	Pg			**Pg**	**07 15 20.6**	**-0.8**
ATPC							**Sb**	**07 15 31.0**	**-0.8**
	8μm,0.7s								
ATPC	**Poggio Castell**	**0.62**	**134**	Pg			**Pg**	**07 15 20.6**	**-0.8**
ATPC							**Sb**	**07 15 31.0**	**-0.8**
	8μm,0.7s								
CRMI	**Carmignano**	**0.65**	**259**	Pg			**Pg**	**07 15 21.2**	**-0.6**
CRMI							**Sg**	**07 15 31.0**	**+0.8**
	11μm,0.8s								
CRMI	**Carmignano**	**0.65**	**259**	Pg			**Pg**	**07 15 21.2**	**-0.6**
CRMI							**Sg**	**07 15 31.0**	**+0.8**
	11μm,0.8s								
ATVO	**AVT- Monte Val**	**0.67**	**143**	Pg			**Pg**	**07 15 21.4**	**-1.0**
	11μm,0.7s								
ATVO	**AVT- Monte Val**	**0.67**	**143**	Pg			**Pg**	**07 15 21.4**	**-1.0**
	11μm,0.7s								
FSSB	**Fossombrone**	**0.71**	**108**	Pg			**Pg**	**07 15 22.0**	**-1.1**
	6μm,0.7s								
FSSB	**Fossombrone**	**0.71**	**108**	Pg			**Pg**	**07 15 22.0**	**-1.1**
	6μm,0.7s								
PESA	**Pesaro**	**0.72**	**88**	Pg			**Pg**	**07 15 22.4**	**-0.8**
	7μm,0.8s								
PESA	**Pesaro**	**0.72**	**88**	Pg			**Pg**	**07 15 22.4**	**-0.8**
	7μm,0.8s								
MPAG	**Monte Paganucc**	**0.72**	**113**	Pg			**Pg**	**07 15 22.1**	**-1.2**
	4μm,0.9s								
MPAG	**Monte Paganucc**	**0.72**	**113**	Pg			**Pg**	**07 15 22.1**	**-1.2**
	4μm,0.9s								
FRON	**Frontone**	**0.75**	**122**	Pg			**Pg**	**07 15 22.6**	**-1.3**
	3μm,0.8s								
FRON	**Frontone**	**0.75**	**122**	Pg			**Pg**	**07 15 22.6**	**-1.3**
	3μm,0.8s								
ZCCA	**Zocca**	**0.76**	**305**	Pg			**Pg**	**07 15 24.2**	**+0.2**
ZCCA	**Zocca**	**0.76**	**305**	Pg			**Pg**	**07 15 24.2**	**+0.2**
POPM	**Popiglio**	**0.80**	**279**	P			**Pg**	**07 15 23.9**	**-0.8**
POPM				S			**Sg**	**07 15 35.0**	**0.0**
ATTE	**AVT- Monte Tez**	**0.81**	**153**	*e*Pg			**Pg**	**07 15 23.7**	**-1.3**
	6μm,0.6s								
ATTE	**AVT- Monte Tez**	**0.81**	**153**	*e*Pg			**Pg**	**07 15 23.7**	**-1.3**
	6μm,0.6s								
MURB	**Monte Urbino**	**0.82**	**143**	Pg			**Pg**	**07 15 24.3**	**-0.9**
	9μm,0.5s								
MURB	**Monte Urbino**	**0.82**	**143**	Pg			**Pg**	**07 15 24.3**	**-0.9**
	9μm,0.5s								
FROS	**Frosini**	**0.87**	**215**	*e*Pg			**Pg**	**07 15 25.5**	**-0.6**
	8μm,0.8s								
FROS	**Frosini**	**0.87**	**215**	*e*Pg			**Pg**	**07 15 25.5**	**-0.6**
	8μm,0.8s								
BDI	**Bagni Di Lucca**	**0.91**	**279**	Pg			**Pg**	**07 15 25.8**	**-1.1**
	4μm,0.6s								
BDI	**Bagni Di Lucca**	**0.91**	**279**	Pg			**Pg**	**07 15 25.8**	**-1.1**
	4μm,0.6s								
ATCC	**AVT- Casa Cast**	**0.93**	**142**	Pg			**Pg**	**07 15 26.5**	**-0.8**
	8μm,0.7s								
ATCC	**AVT- Casa Cast**	**0.93**	**142**	Pg			**Pg**	**07 15 26.5**	**-0.8**
	8μm,0.7s								
MAIM	**Mastiano**	**0.98**	**270**	*e*Pg			**Pg**	**07 15 26.8**	**-1.4**
	6μm,1.0s								
MAIM	**Mastiano**	**0.98**	**270**	*e*Pg			**Pg**	**07 15 26.8**	**-1.4**
	6μm,1.0s								
MAIM	**Mastiano**	**0.98**	**270**	P			**Pg**	**07 15 27.8**	**-0.4**
MAIM				S			**Sg**	**07 15 40.8**	**-0.1**
MGAB	**Montegabbione**	**1.02**	**169**	*e*Pg			**Pg**	**07 15 28.1**	**-1.0**
	7μm,0.5s								
MGAB	**Montegabbione**	**1.02**	**169**	*e*Pg			**Pg**	**07 15 28.1**	**-1.0**
	7μm,0.5s								
SNTG	**Esanatoglia**	**1.04**	**129**	*e*Pg			**Pg**	**07 15 27.8**	**-1.5**
	3μm,0.7s								
SNTG	**Esanatoglia**	**1.04**	**129**	*e*Pg			**Pg**	**07 15 27.8**	**-1.5**
	3μm,0.7s								
TRIF	**Trifonti**	**1.06**

NVLJ Sn **Sn** 07 16 15.3 -0.3
NVLJ Novalja 2.27 72 *e*Pn **Pn** 07 15 46.6 -0.8
NVLJ Sn **Sn** 07 16 15.3 -0.3
AGOR Agordo 2.37 3 *e*Pn **Pn** 07 15 47.8 -1.0
SABO M.te Sabotino 2.41 31 *e*Pn **Pn** 07 15 47.4 -2.1
SABO M.te Sabotino 2.41 31 *e*P **Pn** 07 15 47.3 -2.1
CIMO Cimolais 2.43 10 *e*Pn **Pn** 07 15 47.2 -2.5
CIMO Cimolais 2.43 10 *e*P **Pn** 07 15 47.2 -2.5
PCP Piancastagn 2.45 286 P **Pn** 07 15 48.9 -1.1
PGF Pioggiola 2.49 238 *e*Pn **Pn** 07 15 48.9 -1.7
SNR=1.0
PGF *e*Sn **Sn** 07 16 16.7 -4.7
92nm,0.4s
PGF Pioggiola 2.49 238 *e*P **Pn** 07 15 48.9 -1.7
PGF *e* 07 16 16.7
PGF Pioggiola 2.49 238 *e*Pn **Pn** 07 15 48.9 -1.7
SNR=1.0
PGF *e*S **Sn** 07 16 16.7 -4.7
PGF Pioggiola 2.49 238 *e*Pn **Pn** 07 15 48.9 -1.7
PGF *e*Sn **Sn** 07 16 16.7 -4.7
OZOL Ozolo 2.55 348 *e*Pn **Pn** 07 15 50.8 -0.6
OZOL Ozolo 2.55 348 *e*P **Pn** 07 15 50.8 -0.6
VINO Villanova 2.55 23 *e*Pn **Pn** 07 15 48.9 -2.4
VINO Villanova 2.55 23 *e*P **Pn** 07 15 48.9 -2.4
CEY Cerknica 2.58 44⇑ *i*Pn **Pn** 07 15 49.5 -2.3
DRE Drenchia 2.59 29 *e*Pn **Pn** 07 15 49.9 -2.0
DRE Drenchia 2.59 29 *e*P **Pn** 07 15 49.9 -2.0
ROBS Robic 2.61 26⇑ *i*Pn **Pn** 07 15 50.1 -2.0
ROBS *i*Sn **Sn** 07 16 22.6 -1.5
ROBS Robic 2.61 26 Pn **Pn** 07 15 50.1 -2.0
ROBS *i*Sn **Sn** 07 16 22.6 -1.5
FUSE Fusea 2.62 18 *e*Pn **Pn** 07 15 50.1 -2.2
FUSE Fusea 2.62 18 *e*P **Pn** 07 15 50.2 -2.2
CARE Lago del Cares 2.63 342 *e*Pn **Pn** 07 15 52.0 -0.8
CARE Lago del Cares 2.63 342 *e*P **Pn** 07 15 52.0 -0.8
RORO Rocca Rossa 2.73 275 P **Pn** 07 15 52.2 -1.6
ZOU Zoufplan 2.75 16 *e*Pn **Pn** 07 15 52.4 -2.0
LJU Ljubljana 2.85 41 *i*Pn **Pn** 07 15 54.1 -1.4
LJU *i*Sn **Sn** 07 16 29.7 -0.4
LJU Ljubljana 2.85 41⇑ *i*Pn **Pn** 07 15 54.0 -1.4
LJU *i*Sn **Sn** 07 16 29.7 -0.4
IMI Imperia 2.86 271 P **Pn** 07 15 53.7 -1.9
ABTA Abfaltersbach 2.87 9 *e*Pn **Pn** 07 15 54.9 -0.9
76nm,0.6s,SNR=47
ABTA Sn **Sn** 07 16 30.9 +0.3
380nm,0.7s
ABTA Abfaltersbach 2.87 9 Pn **Pn** 07 15 54.9 -0.9
76nm,0.6s,SNR=47
ABTA Sn **Sn** 07 16 30.9 +0.3
380nm,0.7s
ACOM Acomizza, Ital 2.88 24 *e*Pn **Pn** 07 15 54.5 -1.6
ACOM Acomizza, Ital 2.88 24 *e*P **Pn** 07 15 54.5 -1.6
UDBI Udbina 2.88 76 *e*Pn **Pn** 07 15 56.9 +0.9
UDBI Sn **Sn** 07 16 32.7 +1.8
UDBI Udbina 2.88 76 *e*Pn **Pn** 07 15 56.8 +0.9
UDBI Sn **Sn** 07 16 32.7 +1.8
FUORN Ofenpass-Fuorn 2.92 338 *e*Pn **Pn** 07 15 57.2 +0.5
FUORN Ofenpass-Fuorn 2.92 338 *e*Pn **Pn** 07 15 57.2 +0.5
MYKA Terra Mystica 2.99 24 *e*Pn **Pn** 07 15 56.2 -1.3
16nm,0.3s,SNR=21
MYKA *e*Sn **Sn** 07 16 33.5 -0.2
259nm,0.9s
MYKA Terra Mystica 2.99 24 Pn **Pn** 07 15 56.2 -1.3
16nm,0.3s,SNR=21
MYKA Sn **Sn** 07 16 33.5 -0.2
259nm,0.9s
NEGI Seborga 3.00 270 P **Pn** 07 15 56.0 -1.5
MOZS Mozjanca 3.00 37⇑ *i*Pn **Pn** 07 15 56.1 -1.5
MOZS Mozjanca 3.00 37⇑ *i*Pn **Pn** 07 15 56.1 -1.5
OZLJ Ozalj 3.09 55 *e*Pn **Pn** 07 15 58.2 -0.5
OZLJ Sn **Sn** 07 16 34.6 -1.3
OZLJ Ozalj 3.09 55 *e*Pn **Pn** 07 15 58.1 -0.5
OZLJ Sn **Sn** 07 16 34.6 -1.3
PDKS Podkum 3.10 45⇑ *i*Pn **Pn** 07 15 57.4 -1.5
PDKS *i*Sn **Sn** 07 16 33.5 -2.7
comp=Z,385nm,0.7s
PDKS Podkum 3.10 45⇑ *i*Pn **Pn** 07 15 57.4 -1.5
PDKS *i*Sn **Sn** 07 16 33.5 -2.7
comp=Z,385nm,0.7s
TUE Stuetta 3.10 326 *e*Pn **Pn** 07 15 58.9 -0.2
TUE Stuetta 3.10 326 *e*Pn **Pn** 07 15 58.9 -0.2
DAVOX Davos/Dischmat 3.18 335 Pn **Pn** 07 16 01.4 +1.2
comp=Z,9.3nm,0.3s,baz=175,slow=19,SNR=50
DAVOX Sn **Sn** 07 16 39.5 +1.0
comp=Z,18nm,0.3s,baz=271,slow=21,SNR=8.5
SBF Sospel 3.19 271 *e*Pn **Pn** 07 15 58.7 -1.5
SNR=1.0
SBF *e*Sn **Sn** 07 16 34.6 -3.9
comp=Z,128nm,0.5s,SNR=1.0
SBF Sospel 3.19 271 *e*P **Pn** 07 15 58.7 -1.5
SBF *e* 07 16 34.6
SBF Sospel 3.19 271 *e*Pn **Pn** 07 15 58.7 -1.5
SNR=1.0
SBF *e*Sn **Sn** 07 16 34.6 -3.9
comp=Z,64nm,0.5s,SNR=1.0
SBF Sospel 3.19 271 *e*Pn **Pn** 07 15 58.7 -1.5
SBF *e*Sn **Sn** 07 16 34.6 -3.9
CRES Cresnjev 3.20 52⇑ *i*Pn **Pn** 07 15 58.9 -1.3
FETA Feichten 3.20 346 *i*Pn **Pn** 07 16 01.0 +0.6
comp=Z,145nm,0.6s,SNR=149
FETA *e*Sn **Sn** 07 16 39.3 +0.4
comp=Z,217nm,0.8s
FETA Feichten 3.20 346 Pn **Pn** 07 16 01.0 +0.6
comp=Z,145nm,0.6s,SNR=149
FETA Sn **Sn** 07 16 39.3 +0.4
comp=Z,217nm,0.8s
ENR Entracque 3.20 277 P **Pn** 07 15 59.2 -1.2
OBKA Obir 3.22 35 *i*Pn **Pn** 07 15 59.3 -1.3
comp=Z,138nm,0.5s,SNR=26
OBKA Obir 3.22 35 *e*Pn **Pn** 07 15 59.0 -1.6
OBKA Obir 3.22 35 Pn **Pn** 07 15 59.0 -1.6
REVF Revere 3.25 268 P **Pn** 07 16 00.0 -0.9
REVF S **Sb** 07 16 43.7 -3.5
REVF Revere 3.25 268 P **Pn** 07 16 00.0 -0.9
REVF S **Sb** 07 16 43.7 -3.5
LUCF Luceram 3.25 271 P **Pn** 07 16 00.0 -1.1
LUCF S **Sn** 07 16 43.3 +3.2
LUCF Luceram 3.25 271 P **Pn** 07 16 00.0 -1.1
LUCF S **Sn** 07 16 43.3 +3.2
TRAV Traversella 3.33 300 P **Pn** 07 16 00.8 -1.3
TRAV S **Sn** 07 16 37.0 -5.0
KBA Koelnbreinsper 3.33 18 *i*Pn **Pn** 07 16 01.4 -0.8
comp=Z,46nm,0.4s,SNR=52
KBA Koelnbreinsper 3.33 18 *e*Pn **Pn** 07 16 01.4 -0.8
KBA Koelnbreinsper 3.33 18 Pn **Pn** 07 16 01.4 -0.8
WTTA Wattenberg 3.35 358 *i*Pn **Pn** 07 16 03.0 +0.6
comp=Z,15nm,0.3s,SNR=10.0
WTTA Sg **Sg** 07 16 56.2 -0.8
comp=Z,1μm,1.2s
WTTA Wattenberg 3.35 358 *e*Pn **Pn** 07 16 03.1 +0.6
WTTA Wattenberg 3.35 358 Pn **Pn** 07 16 03.1 +0.6
WTTA Sg **Sg** 07 16 56.2 -0.8
comp=Z,1μm,1.2s
MVIF Mont Vial 3.39 271 P **Pn** 07 16 03.0 0.0
MVIF S **Sn** 07 16 46.9 +3.3
MVIF Mont Vial 3.39 271 P **Pn** 07 16 03.0 0.0
MVIF S **Sn** 07 16 46.9 +3.3
BHB Bricherasio 3.41 287 P **Pn** 07 16 02.3 -0.9
WATA Walderalm 3.42 357 *i*Pn **Pn** 07 16 04.2 +0.8
comp=Z,58nm,0.4s,SNR=30
WATA Walderalm 3.42 357 Pn **Pn** 07 16 04.2 +0.8
comp=Z,58nm,0.4s,SNR=30
MOTA Moosalm 3.46 352 *i*Pn **Pn** 07 16 04.7 +0.6
comp=Z,142nm,0.6s,SNR=98
MOTA *e*Sn **Sn** 07 16 44.1 -1.3
comp=Z,129nm,0.6s
MOTA Moosalm 3.46 352 Pn **Pn** 07 16 04.7 +0.6
comp=Z,142nm,0.6s,SNR=98
MOTA Sn **Sn** 07 16 44.1 -1.3
comp=Z,129nm,0.6s
RSP Reno Superiore 3.50 292 P **Pn** 07 16 03.5 -1.0
SOKA Soboth 3.56 38 *i*Pn **Pn** 07 16 03.8 -1.4
comp=Z,12nm,0.3s,SNR=11
SOKA Soboth 3.56 38 Pn **Pn** 07 16 03.8 -1.4
comp=Z,12nm,0.3s,SNR=11
PLONS Plons/SG 3.58 332 *e*Pn **Pn** 07 16 06.8 +1.3
PLONS Plons/SG 3.58 332 Pn **Pn** 07 16 06.8 +1.3
BISS Bistriski jare 3.58 39 *i*Pn **Pn** 07 16 04.0 -1.5
BISS Bistriski jare 3.58 39 *i*Pn **Pn** 07 16 04.0 -1.5
DAVA Damuels 3.64 338 *i*Pn **Pn** 07 16 07.5 +1.1
comp=Z,34nm,0.4s,SNR=65
DAVA *e*Sn **Sn** 07 16 51.2 +1.5
comp=Z,429nm,1.0s
DAVA Damuels 3.64 338 *e*Pn **Pn** 07 16 07.5 +1.1
DAVA *e*Sn **Sn** 07 16 51.8 +2.0
DAVA Damuels 3.64 338 Pn **Pn** 07 16 07.5 +1.1
DAVA Sn **Sn** 07 16 51.2 +1.5
comp=Z,429nm,1.0s
RETA Reutte 3.65 348 *i*Pn **Pn** 07 16 07.0 +0.5
comp=Z,41nm,0.4s,SNR=36
RETA *e*Sn **Sn** 07 16 48.9 -1.0
comp=Z,136nm,0.6s
RETA Reutte 3.65 348 Pn **Pn** 07 16 07.0 +0.5
comp=Z,41nm,0.4s,SNR=36
RETA Sn **Sn** 07 16 48.9 -1.0
comp=Z,136nm,0.6s
MBDF Montbardon 3.73 284 *e*Pn **Pn** 07 16 08.1 +0.4
SNR=1.0
MBDF Montbardon 3.73 284 *e*P **Pn** 07 16 08.1 +0.4
MBDF Montbardon 3.73 284 *e*Pn **Pn** 07 16 08.1 +0.4
SNR=1.0
MBDF Montbardon 3.73 284 *e*Pn **Pn** 07 16 08.1 +0.4
MS1 Monte Sant'Ang 3.74 125 *e*Pn **Pn** 07 16 08.3 +0.6
RRL Rocca Remolon 3.76 287 P **Pn** 07 16 09.0 +0.9
RRL S **Sn** 07 16 51.3 -1.5
FRF La Foret Royal 3.78 266 *e*Pn **Pn** 07 16 06.8 -1.5
SNR=1.0
FRF *e*Sn **Sn** 07 16 50.1 -3.0
comp=Z,127nm,0.6s
FRF La Foret Royal 3.78 266 *e*P **Pn** 07 16 06.8 -1.5
FRF *e* 07 16 50.1
FRF La Foret Royal 3.78 266 *e*Pn **Pn** 07 16 06.8 -1.5
SNR=1.0
FRF *e*Sn **Sn** 07 16 50.1 -3.0
comp=Z,64nm,0.6s
FRF La Foret Royal 3.78 266 *e*Pn **Pn** 07 16 06.8 -1.5
FRF *e*Sn **Sn** 07 16 50.1 -3.0
RJOB Jochberg 3.88 10 *e*Pn **Pn** 07 16 09.1 -0.5
RJOB *e*Sn **Sn** 07 16 55.9 +0.5
RJOB Jochberg 3.88 10 Pn **Pn** 07 16 09.1 -0.5
RJOB Sn **Sn** 07 16 55.9 +0.5
LMR La Mourre 3.92 263 *e*Pn **Pn** 07 16 08.4 -1.7
SNR=1.0
LMR *e*Sn **Sn** 07 16 52.0 -4.4
comp=Z,24nm,0.3s,SNR=1.0
LMR La Mourre 3.92 263 *e*P **Pn** 07 16 08.4 -1.7
LMR *e* 07 16 52.0
LMR La Mourre 3.92 263 *e*Pn **Pn** 07 16 08.4 -1.7
SNR=1.0
LMR *e*Sn **Sn** 07 16 52.0 -4.4
comp=Z,12nm,0.3s,SNR=1.0
LMR La Mourre 3.92 263 *e*Pn **Pn** 07 16 08.4 -1.7
LMR *e*Sn **Sn** 07 16 52.0 -4.4
BLY Banja Luka 3.92 76 *e*Pn **Pn** 07 16 11.9 +1.8
LPG La Plagne 3.96 295 *e*Pn **Pn** 07 16 10.7 -0.3
SNR=1.0
LPG La Plagne 3.96 295 *e*P **Pn** 07 16 10.7 -0.3
LPG La Plagne 3.96 295 *e*Pn **Pn** 07 16 10.7 -0.3
SNR=1.0
LPG La Plagne 3.96 295 *e*Pn **Pn** 07 16 10.7 -0.3
LPL La Plagne 3.98 295 *e*Pn **Pn** 07 16 13.1 +1.9
SNR=1.0
LPL La Plagne 3.98 295 *e*P **Pn** 07 16 13.1 +1.9
LPL La Plagne 3.98 295 *e*Pn **Pn** 07 16 13.1 +1.9
SNR=1.0
LPL La Plagne 3.98 295 *e*Pn **Pn** 07 16 13.1 +1.9
SENIN Lac Senin/Sane 4.04 309 *e*Pn **Pn** 07 16 13.2 +1.2
SENIN Lac Senin/Sane 4.04 309 *e*Pn **Pn** 07 16 13.2 +1.2
WILA Wila 4.06 331 *e*Pn **Pn** 07 16 12.9 +0.8
WILA *e*Sn **Sn** 07 17 00.6 +0.7
WILA Wila 4.06 331 Pn **Pn** 07 16 12.9 +0.8
WILA Sn **Sn** 07 17 00.6 +0.7
RSL Roselend 4.11 297 P **Pn** 07 16 12.8 -0.2
RSL Roselend 4.11 297 P **Pn** 07 16 12.8 -0.2
ARSA Arzberg 4.21 36 *i*Pn **Pn** 07 16 12.6 -1.7
comp=Z,30nm,0.5s,SNR=29
ARSA Arzberg 4.21 36 *e*Pn **Pn** 07 16 12.5 -1.7
ARSA Arzberg 4.21 36 Pn **Pn** 07 16 12.5 -1.7
FUR Furstenfeldbru 4.26 355 *e*Pn **Pn** 07 16 14.8 -0.1
FUR Furstenfeldbru 4.26 355 Pn **Pn** 07 16 14.8 -0.1
MOA Molln 4.28 22 *i*Pn **Pn** 07 16 14.5 -0.7
comp=Z,24nm,0.3s,SNR=47
MOA *e*Sn **Sn** 07 17 01.4 -3.9
comp=Z,166nm,0.7s
MOA Molln 4.28 22 *e*Pn **Pn** 07 16 14.4 -0.7
MOA *e*Sn **Sn** 07 17 02.1 -3.2
MOA Molln 4.28 22 Pn **Pn** 07 16 14.4 -0.7
MOA Sn **Sn** 07 17 02.1 -3.2
GDM Grand'Maison 4.29 289 P **Pn** 07 16 15.4 0.0
GDM Grand'Maison 4.29 289 P **Pn** 07 16 15.4 0.0
BEHE Becsehely 4.32 52 *e*Pn **Pn** 07 16 14.2 -1.4
CDT Castel del Mon 4.33 129 *e*Pn **Pn** 07 16 17.9 +2.1
OG01 Vacheresse 4.38 305 P **Pn** 07 16 15.2 -1.3
OG01 S **Sn** 07 17 10.9 +3.1
OG01 Vacheresse 4.38 305 P **Pn** 07 16 15.2 -1.3
OG01 S **Sn** 07 17 10.9 +3.1
ORIF Oris-en-Rattie 4.39 285 *e*Pn **Pn** 07 16 18.7 +2.0
SNR=1.0
ORIF Oris-en-Rattie 4.39 285 *e*P **Pn** 07 16 18.7 +2.0
ORIF Oris-en-Rattie 4.39 285 *e*Pn **Pn** 07 16 18.7 +2.0
SNR=1.0
ORIF Oris-en-Rattie 4.39 285 *e*Pn **Pn** 07 16 18.7 +2.0
SULZ Cheisacher 4.46 325 *e*Pn **Pn** 07 16 18.2 +0.7
SULZ Cheisacher 4.46 325 Pn **Pn** 07 16 18.2 +0.7
BALST Balsthal 4.49 321 *e*Pn **Pn** 07 16 18.7 +0.7
BALST *e*Sn **Sn** 07 17 08.1 -2.5
BALST Balsthal 4.49 321 Pn **Pn** 07 16 18.7 +0.7
BALST Sn **Sn** 07 17 08.1 -2.5
SLE Schleitheim 4.50 330 *e*Pn **Pn** 07 16 18.1 -0.1
SLE *e*Sn **Sn** 07 17 08.4 -2.5
SLE Schleitheim 4.50 330 Pn **Pn** 07 16 18.1 -0.1
SLE Sn **Sn** 07 17 08.4 -2.5
SMRF Simiane la Rot 4.53 273 *e*Pn **Pn** 07 16 18.7 +0.2
SNR=1.0
SMRF Simiane la Rot 4.53 273 *e*Pn **Pn** 07 16 18.7 +0.2
SNR=1.0
SMRF Simiane la Rot 4.53 273 *e*Pn **Pn** 07 16 18.7 +0.2
GRN Grenoble 4.55 289 P **Pn** 07 16 18.9 0.0
GRN Grenoble 4.55 289 P **Pn** 07 16 18.9 0.0
SG1 Sgolgore (BA) 4.72 129 *e*Pn **Pn** 07 16 21.9 +0.7
OG26 St.-Nazaire-De 4.75 280 P **Pn** 07 16 21.5 -0.1
OG26 St.-Nazaire-De 4.75 280 P **Pn** 07 16 21.5 -0.1
FELD Feldberg im Sc 4.78 327 P **Pn** 07 16 21.6 -0.5
VSL Villasalto 4.79 204 *e*Pn **Pn** 07 16 22.9 +0.8
VSL Villasalto 4.79 204 *e*Pn **Pn** 07 16 22.9 +0.8
CABF La Chapelle 4.88 306 *e*Pn **Pn** 07 16 24.1 +0.8
SNR=1.0
CABF *e*Sn **Sn** 07 17 19.0 -1.1
comp=Z,127nm,0.8s,SNR=1.0
CABF La Chapelle 4.88 306 *e*P **Pn** 07 16 24.1 +0.8
CABF *e* 07 17 19.0
CABF La Chapelle 4.88 306 *e*Pn **Pn** 07 16 24.1 +0.8
SNR=1.0
CABF *e*Sn **Sn** 07 17 19.0 -1.1
comp=Z,64nm,0.8s,SNR=1.0
CABF La Chapelle 4.88 306 *e*Pn **Pn** 07 16 24.1 +0.8
CABF *e*Sn **Sn** 07 17 19.0 -1.1
CONA Conrad Observa 4.89 34 *i*Pn **Pn** 07 16 22.1 -1.5
comp=Z,25nm,0.4s,SNR=38
CONA *e*Sn **Sn** 07 17 16.5 -4.0
comp=Z,40nm,0.5s
CONA Conrad Observa 4.89 34 Pn **Pn** 07 16 22.1 -1.5
comp=Z,25nm,0.4s,SNR=38
CONA Sn **Sn** 07 17 16.5 -4.0
comp=Z,40nm,0.5s
TREB Trebinje 4.90 102 *e*Pn **Pn** 07 16 19.6 -4.0
CUC Castrocucco 4.91 142 *e*Pn **Pn** 07 16 24.7 +0.9
CUC Castrocucco 4.91 142 *e*Pn **Pn** 07 16 24.7 +0.9
LOMF Lomont 4.92 316 P **Pn** 07 16 23.6 -0.3
LOMF Lomont 4.92 316 P **Pn** 07 16 23.6 -0.3
BRY Bratogost 4.98 99⇑ *i*Pn **Pn** 07 16 24.8 -0.1
BRY *e*Sn **Sn** 07 17 21.4 -1.4
BRY Bratogost 4.98 99⇑ *i*Pn **Pn** 07 16 24.8 -0.1
BRY *e*Sn **Sn** 07 17 21.4 -1.4
BFO Black Forest 5.04 332 *ce*P **Pn** 07 16 25.0 -0.6
BFO Black Forest 5.04 332 *e*Pn **Pn** 07 16 25.1 -0.4
BFO *e*Sn **Sn** 07 17 19.8 -4.3
BFO Black Forest 5.04 332 *e*P **Pn** 07 16 25.0 -0.6
BFO Sn **Sn** 07 17 19.8 -4.3
BFO Black Forest 5.04 332 *e*Pn **Pn** 07 16 25.2 -0.3
HCY Herceg Novi 5.08 105⇓ *i*Pn **Pn** 07 16 25.9 -0.2
HCY *e*Sn **Sn** 07 17 23.5 -1.5
HCY Herceg Novi 5.08 105⇓ *i*Pn **Pn** 07 16 25.9 -0.2
HCY *e*Sn **Sn** 07 17 23.5 -1.5
GEA0 GERESS Array S 5.08 14 *e*Pn **Pn** 07 16 24.0 -2.2
GEA0 GERESS Array S 5.08 14 *e*Pn **Pn** 07 16 23.9 -2.2
GEC2 GERESS Array S 5.09 14 *e*P **Pn** 07 16 25.1 -1.2
GEC2 GERESS Array S 5.09 14 *e*Pn **Pn** 07 16 24.7 -1.6
GEC2 *e*Sn **Sn** 07 17 21.6 -3.8
GEC2 GERESS Array S 5.09 14 *e*Pn **Pn** 07 16 25.1 -1.2
GEC2 Sn **Sn** 07 17 21.6 -3.8
GEC2 GERESS Array S 5.09 14 *e*Pn **Pn** 07 16 25.1 -1.2
GERES GERESS Array B 5.09 14 Pn **Pn** 07 16 24.4 -1.9
comp=Z,3.5nm,0.3s,baz=194,slow=14,SNR=37
GERES Sn **Sn** 07 17 21.2 -4.3
comp=Z,3.9nm,0.3s,baz=195,slow=21,SNR=4.2
MOF Molkenrain 5.13 322 P **Pn** 07 16 26.2 -0.6
MOF Molkenrain 5.13 322 P **Pn** 07 16 26.2 -0.6
UPM Unac-Piva 5.18 96 *e*Pn **Pn** 07 16 27.9 +0.3
UPM *e*Sn **Sn** 07 17 25.5 -2.3
UPM Unac-Piva 5.18 96 *e*Pn **Pn** 07 16 27.9 +0.3
UPM *e*Sn **Sn** 07 17 25.5 -2.3
STU Stuttgart 5.19 340 *e*P **Pn** 07 16 26.6 -1.0
STU Stuttgart 5.19 340 *e*Pn **Pn** 07 16 27.0 -0.6
STU *e*Sn **Sn** 07 17 23.2 -4.5
STU Stuttgart 5.19 340 *e*P **Pn** 07 16 26.6 -1.0
STU Stuttgart 5.19 340 Pn **Pn** 07 16 27.0 -0.6
STU Sn **Sn** 07 17 23.2 -4.5
STU Stuttgart 5.19 340 *e*Pn **Pn** 07 16 26.6 -1.0
VIVF Saint-Julien-l 5.22 283 *e*Pn **Pn** 07 16 29.6 +1.5
SNR=1.0
VIVF Saint-Julien-l 5.22 283 *e*P **Pn** 07 16 29.6 +1.5
VIVF Saint-Julien-l 5.22 283 *e*Pn **Pn** 07 16 29.6 +1.5
SNR=1.0
VIVF Saint-Julien-l 5.22 283 *e*Pn **Pn** 07 16 29.6 +1.5
HINF Hinteralfeld 5.23 320 *e*Pn **Pn** 07 16 28.5 +0.3
SNR=1.0
HINF *e*Sn **Sn** 07 17 26.9 -1.9
comp=Z,18nm,0.2s
HINF Hinteralfeld 5.23 320 *e*P **Pn** 07 16 28.5 +0.3
HINF *e* 07 17 26.9
HINF Hinteralfeld 5.23 320 *e*Pn **Pn** 07 16 28.5 +0.3
SNR=1.0
HINF *e*Sn **Sn** 07 17 26.9 -1.9
comp=Z,8.8nm,0.2s
HINF Hinteralfeld 5.23 320 *e*Pn **Pn** 07 16 28.5 +0.3
HINF *e*Sn **Sn** 07 17 26.9 -1.9
TAR1 Taranto 5.27 128 *e*Pn **Pn** 07 16 29.3 +0.6
WET Wettzell 5.28 7 P **Pn** 07 16 27.3 -1.5
WET pmax pmax
comp=Z,37nm,0.7s
WET Wettzell 5.28 7 *e*Pn **Pn** 07 16 26.9 -1.8
WET *e*Sn **Sn** 07 17 25.7 -4.2
WET Wettzell 5.28 7 Pn **Pn** 07 16 27.0 -1.8
WET Wettzell 5.28 7 P **Pn** 07 16 27.3 -1.5
comp=Z,37nm,0.7s
WET Sn **Sn** 07 17 25.7 -4.2
NKME Niksic 5.31 100⇑ *i*Pn **Pn** 07 16 29.1 -0.2
NKME *e*Sn **Sn** 07 17 29.4 -1.4
NKME Niksic 5.31 100⇑ *i*Pn **Pn** 07 16 29.1 -0.2
NKME *e*Sn **Sn** 07 17 29.4 -1.4
NKY Niksic 5.33 100⇓ *i*Pn **Pn** 07 16 30.3 +0.7
NKY *e*Sn **Sn** 07 17 29.6 -1.7
NKY Niksic 5.33 100⇓ *i*Pn **Pn** 07 16 30.3 +0.7
NKY *e*Sn **Sn** 07 17 29.6 -1.7
CEME Cevo 5.35 102⇓ *i*Pn **Pn** 07 16 29.4 -0.4
CEME *e*Sn **Sn** 07 17 30.1 -1.6
CEME Cevo 5.35 102⇓ *i*Pn **Pn** 07 16 29.4 -0.4
CEME *e*Sn **Sn** 07 17 30.1 -1.6
KHC Kasperske Hory 5.35 12 *e*PN **Pn** 07 16 27.7 -2.1
KHC *e*Sn **Sn** 07 17 27.4 -4.3
KHC AMS AMS 07 19 00.0
comp=Z,1μm,10.3s
KHC Kasperske Hory 5.35 12 *e*P **Pn** 07 16 27.7 -2.1
KHC *e* 07 17 27.4
KHC MLR MLR
comp=Z,1μm,10.3s
KHC Kasperske Hory 5.35 12 *e*P **Pn** 07 16 27.7 -2.1
comp=Z,1μm,10.3s
KHC Kasperske Hory 5.35 12 *e*Pn **Pn** 07 16 28.2 -1.6
KHC Sn **Sn** 07 17 27.4 -4.3
KHC Kasperske Hory 5.35 12 *e*Pn **Pn** 07 16 28.2 -1.6
SSB Saint Sauveur 5.39 287 P **Pn** 07 16 29.7 -0.7
SSB Saint Sauveur 5.39 287 *e*P **Pn** 07 16 30.2 -0.2
SSB Saint Sauveur 5.39 287 P **Pn** 07 16 29.7 -0.7
SSB Saint Sauveur 5.39 287 *e*Pn **Pn** 07 16 30.2 -0.2
SSB Saint Sauveur 5.39 287 *e*Pn **Pn** 07 16 30.2 -0.2
ECH Echery 5.39 324 P **Pn** 07 16 29.6 -0.8
ECH Echery 5.39 324 *e*Pn **Pn** 07 16 29.9 -0.5
ECH *e*Sn **Sn** 07 17 30.3 -2.5
ECH Echery 5.39 324 P **Pn** 07 16 29.6 -0.8
ECH Echery 5.39 324 Pn **Pn** 07 16 29.9 -0.5
ECH Sn **Sn** 07 17 30.3 -2.5
BUM Brajici-Budva 5.41 105 *e*Pn **Pn** 07 16 30.5 -0.1
BUM *e*Sn **Sn** 07 17 31.5 -1.7
BUM Brajici-Budva 5.41 105 *e*Pn **Pn** 07 16 30.5 -0.1
BUM *e*Sn **Sn** 07 17 31.5 -1.7
BBLS Lazići 5.46 88 *e*Pn **Pn** 07 16 32.8 +1.4
WLS Welschbruch 5.47 327 P **Pn** 07 16 30.7 -0.8
WLS Welschbruch 5.47 327 P **Pn** 07 16 30.7 -0.8
CDF Champ du Feu 5.50 326 *e*Pn **Pn** 07 16 31.5 -0.4
SNR=1.0
CDF *e*Sn **Sn** 07 17 32.4 -3.1
comp=Z,304nm,0.7s
CDF Champ du Feu 5.50 326 *e*P **Pn** 07 16 31.5 -0.4
CDF *e* 07 17 32.4
CDF Champ du Feu 5.50 326 *e*Pn **Pn** 07 16 31.5 -0.4
SNR=1.0
CDF *e*S **Sn** 07 17 32.4 -3.1
CDF Champ du Feu 5.50 326 *e*Pn **Pn** 07 16 31.5 -0.4
CDF *e*Sn **Sn** 07 17 32.4 -3.1
PLE Pljevlja 5.51 94 P **Pn** 07 16 32.2 +0.1
PLE S **Sn** 07 17 34.0 -1.8
PLE Pljevlja 5.51 94 P **Pn** 07 16 32.2 +0.1
PLE S **Sn** 07 17 34.0 -1.8
TEKS Tekeris 5.56 81 *e*Pn **Pn** 07 16 31.9 -0.7
HAU Haudompre 5.60 319 *e*Pn **Pn** 07 16 33.0 -0.3
SNR=1.0
HAU *e*Sn **Sn** 07 17 34.6 -3.3
comp=Z,35nm,0.2s
HAU Haudompre 5.60 319 *e*P **Pn** 07 16 33.0 -0.3
HAU *e* 07 17 34.6
HAU Haudompre 5.60 319 *e*Pn **Pn** 07 16 33.0 -0.3
SNR=1.0
HAU *e*S **Sn** 07 17 34.6 -3.3
HAU Haudompre 5.60 319 *e*Pn **Pn** 07 16 33.0 -0.3
HAU *e*Sn **Sn** 07 17 34.6 -3.3
PDG Podgorica 5.62 103⇑ *i*P **Pn** 07 16 35.9 +2.4
PDG Podgorica 5.62 103⇓ *i*Pn **Pn** 07 16 32.9 -0.6
PDG *e*Sn **Sn** 07 17 37.1 -1.2
TTG Podgorica 5.62 103⇓ *i*Pn **Pn** 07 16 32.9 -0.6
TTG *e*Sn **Sn** 07 17 37.1 -1.2
DRME Dracevica, Mon 5.65 105 *e*Pn **Pn** 07 16 33.4 -0.5
DRME *e*Sn **Sn** 07 17 37.1 -2.0
DRME Dracevica, Mon 5.65 105 *e*Pn **Pn** 07 16 33.4 -0.5
DRME *e*Sn **Sn** 07 17 37.1 -2.0
LASF Ste Croix 5.76 274 *e*Pn **Pn** 07 16 33.5 -2.0
SNR=1.0
LASF Ste Croix 5.76 274 *e*Pn **Pn** 07 16 33.5 -2.0
SNR=1.0
LASF Ste Croix 5.76 274 *e*Pn **Pn** 07 16 33.5 -2.0
ULC Ulcinj 5.77 107⇓ *i*Pn **Pn** 07 16 35.1 -0.5
ULC *e*Sn **Sn** 07 17 40.3 -1.8
ULC Ulcinj 5.77 107⇓ *i*Pn **Pn** 07 16 35.1 -0.5
ULC *e*Sn **Sn** 07 17 40.3 -1.8
LANF Langenberg 5.78 333 P **Pn** 07 16 34.7 -1.0
LANF Langenberg 5.78 333 P **Pn** 07 16 39.2 +3.5
LANF Langenberg 5.78 333 P **Pn** 07 16 34.7 -1.0
GRFO Grafenberg 5.79 356 *e*P **Pn** 07 16 33.5 -2.3
GRFO Grafenberg 5.79 356 *e*Pn **Pn** 07 16 33.5 -2.3
GRFO Grafenberg 5.79 356 *e*Pn **Pn** 07 16 33.5 -2.3
FRGS Fruska Gora 5.83 75 *e*Pn **Pn** 07 16 36.2 -0.1
DIVS Divibare 5.88 85 *i*Pn **Pn** 07 16 38.1 +1.0
THEF They Montfort 5.93 319 P **Pn** 07 16 37.3 -0.5
THEF They Montfort 5.93 319 P **Pn** 07 16 37.3 -0.5
BEY Berane 5.96 97⇓ *i*Pn **Pn** 07 16 38.8 +0.6
BEY *e*Sn **Sn** 07 17 45.4 -1.4
IVA Berane 5.96 97⇓ *i*Pn **Pn** 07 16 38.8 +0.6
IVA *e*Sn **Sn** 07 17 45.4 -1.4
KTD Kalmit 5.99 336 P **Pn** 07 16 37.5 -1.1
TIP Timpagrande 6.00 140 *e*Pn **Pn** 07 16 39.3 +0.5
TIP Timpagrande 6.00 140 *e*Pn **Pn** 07 16 39.3 +0.5
SMOL Smolenice 6.01 38 *e*P **Pn** 07 16 36.7 -2.1
SMOL Smolenice 6.01 38 *e*Pn **Pn** 07 16 36.7 -2.1
SMOL Smolenice 6.01 38 *e*PN **Pn** 07 16 36.7 -2.1
IVAS Ivanjica 6.03 90 *e*Pn **Pn** 07 16 39.8 +0.6
TOD Tromm 6.06 341 P **Pn** 07 16 41.8 +2.3

TOD Tromm 6.06 341 P Pn 07 16 37.8 -1.7
PVY Plav 6.07 100⇑*i*Pn Pn 07 16 40.0 +0.2
PVY eSn Sn 07 17 47.5 -2.2
PLDF La Plantade 6.19 292 P Pn 07 16 41.6 +0.3
PLDF La Plantade 6.19 292 P Pn 07 16 41.6 +0.3
SMF Signal de Mont 6.27 299 *e*Pn Pn 07 16 42.3 -0.1
SNR=1.0
SMF eSn Sn 07 17 49.2 -5.2
comp=Z,39nm,0.6s,SNR=1.0
SMF Signal de Mont 6.27 299 *e*P Pn 07 16 42.3 -0.1
SMF e 07 17 49.2
SMF Signal de Mont 6.27 299 *e*Pn Pn 07 16 42.3 -0.1
SNR=1.0
SMF eS Sn 07 17 49.2 -5.2
SMF Signal de Mont 6.27 299 *e*Pn Pn 07 16 42.3 -0.1
SMF eSn Sn 07 17 49.2 -5.2
LBL Lubilhac 6.28 285 P Pn 07 16 42.4 -0.2
LBL Lubilhac 6.28 285 P Pn 07 16 42.4 -0.2
PAGF Fort de Pagny 6.29 320 *e*Pn Pn 07 16 42.6 0.0
baz=139
PAGF eSn Sn 07 17 51.9 -2.8
comp=Z,39nm,0.7s
PAGF Fort de Pagny 6.29 320 *e*Pn Pn 07 16 42.6 0.0
PAGF Fort de Pagny 6.29 320 *e*Pn Pn 07 16 42.6 0.0
PAGF eSn Sn 07 17 51.9 -2.8
VRAC Vranov 6.30 30 Pn Pn 07 16 41.1 -1.8
comp=Z,0.9nm,0.3s,baz=215,slow=12,SNR=8.1
VRAC Sn Sn 07 17 51.1 -4.1
comp=Z,1.3nm,0.3s,baz=204,slow=13,SNR=3.9
VRAC Vranov 6.30 30⇑*i*P Pn 07 16 41.3 -1.6
GOPC GO Pecny, Ondr 6.33 18 *e*PN Pn 07 16 41.2 -2.0
GOPC eSN Sn 07 17 49.6 -6.1
GOPC AMS AMS 07 19 30.0
comp=Z,1μm,12.2s
GOPC GO Pecny, Ondr 6.33 18 *e*P Pn 07 16 41.2 -2.0
GOPC e 07 17 49.6
GOPC MLR MLR
comp=Z,1μm,12.2s
GOPC GO Pecny, Ondr 6.33 18 Pn Pn 07 16 41.2 -2.0
GOPC eS Sn 07 17 49.6 -6.1
NKC Novy Kostel 6.33 4 *e*PN Pn 07 16 42.3 -1.0
NKC eSN Sn 07 17 51.6 -4.2
NKC Novy Kostel 6.33 4 *e*P Pn 07 16 42.3 -1.0
NKC e 07 17 51.6
NKC Novy Kostel 6.33 4 Pn Pn 07 16 42.3 -1.0
NKC eS Sn 07 17 51.6 -4.2
PRU Pruhonice 6.34 16 *e*PN Pn 07 16 41.7 -1.7
PRU eSN Sn 07 17 51.3 -4.9
PRU AMS AMS 07 19 30.0
comp=Z,900nm,14.6s
PRU Pruhonice 6.34 16 *e*P Pn 07 16 41.7 -1.7
PRU e 07 17 51.3
PRU MLR MLR
comp=Z,900nm,14.6s
PRU Pruhonice 6.34 16 Pn Pn 07 16 41.7 -1.7
PRU eS Sn 07 17 51.3 -4.9
SFTF Sexfontaines 6.39 315 *e*Pn Pn 07 16 44.7 +0.7
baz=134
SFTF eSn Sn 07 17 54.7 -2.5
comp=Z,23nm,0.4s
SFTF Sexfontaines 6.39 315 *e*Pn Pn 07 16 44.7 +0.7
SFTF eSn Sn 07 17 54.7 -2.5
comp=Z,12nm,0.4s
SFTF Sexfontaines 6.39 315 *e*Pn Pn 07 16 44.7 +0.7
SFTF eSn Sn 07 17 54.7 -2.5
CLTB Caltabellotta 6.42 170 *e*Pn Pn 07 16 47.1 +2.6
CLTB Caltabellotta 6.42 170 *e*Pn Pn 07 16 47.1 +2.6
CEL Celeste 6.43 150 *e*Pn Pn 07 16 45.6 +1.0
CEL Celeste 6.43 150 *e*Pn Pn 07 16 45.6 +1.0
TIR Tirane 6.45 111 *e*P Pn 07 16 46.1 +1.2
TIR Tirane 6.45 111 *e*Pn Pn 07 16 46.1 +1.2
TIR Tirane 6.45 111 *e*Pn Pn 07 16 46.1 +1.2
LOR Lormes 6.53 304 *e*Pn Pn 07 16 46.1 +0.1
baz=124,SNR=1.0
LOR eSn Sn 07 17 57.4 -3.3
comp=Z,76nm,0.6s
LOR Lormes 6.53 304 *e*P Pn 07 16 46.1 +0.1
LOR e 07 17 57.4
LOR Lormes 6.53 304 *e*Pn Pn 07 16 46.1 +0.1
SNR=1.0
LOR eS Sn 07 17 57.4 -3.3
LOR Lormes 6.53 304 *e*Pn Pn 07 16 46.1 +0.1
LOR eSn Sn 07 17 57.4 -3.3
AVF Avril sur Loir 6.64 299 *e*Pn Pn 07 16 46.0 -1.4
SNR=1.0
AVF Avril sur Loir 6.64 299 *e*P Pn 07 16 46.0 -1.4
AVF Avril sur Loir 6.64 299 *e*Pn Pn 07 16 46.0 -1.4
SNR=1.0
AVF Avril sur Loir 6.64 299 *e*Pn Pn 07 16 46.0 -1.4
RUP Ruppelstein 6.65 332 P Pn 07 16 46.7 -1.0
SSF Saint Saulge 6.65 301 *e*Pn Pn 07 16 47.2 -0.4
SNR=1.0
SSF eSn Sn 07 18 02.5 -1.2
comp=Z,52nm,0.6s
SSF Saint Saulge 6.65 301 *e*P Pn 07 16 47.2 -0.4
SSF e 07 18 02.5
SSF Saint Saulge 6.65 301 *e*Pn Pn 07 16 47.2 -0.4
SNR=1.0
SSF eSn Sn 07 18 02.5 -1.2
comp=Z,26nm,0.6s
SSF Saint Saulge 6.65 301 *e*Pn Pn 07 16 47.2 -0.4
SSF eSn Sn 07 18 02.5 -1.2
VYHS Vyhne 6.67 44 *e*P Pn 07 16 46.2 -1.7
VYHS e 07 18 01.1
VYHS Vyhne 6.67 44 *e*Pn Pn 07 16 46.2 -1.7
VYHS eSn Sn 07 18 01.1 -3.0
VYHS Vyhne 6.67 44 *e*PN Pn 07 16 46.2 -1.7
VYHS eSN Sn 07 18 01.1 -3.0
VYHS eSG Sg 07 19 03.6 +20
SELS Selova 6.77 93 *e*Pn Pn 07 16 49.2 -0.2
LRDF Laroque-de-Fa 6.85 265 P Pn 07 16 49.8 -0.6
LRDF Laroque-de-Fa 6.85 265 P Pn 07 16 49.8 -0.6
PVCC Panska Ves 6.87 15 AMS AMS 07 19 50.0
comp=Z,900nm,14.9s
BGF Bois d'Agland 6.88 296 *e*Pn Pn 07 16 50.6 -0.2
SNR=1.0
BGF eSn Sn 07 18 07.3 -2.0
comp=Z,38nm,0.5s
BGF eSg Sg 07 18 50.4 +0.2
comp=Z,25nm,0.6s,SNR=1.0
BGF Bois d'Agland 6.88 296 *e*P Pn 07 16 50.6 -0.2
BGF e 07 18 07.3
BGF Bois d'Agland 6.88 296 *e*Pn Pn 07 16 50.6 -0.2
SNR=1.0
BGF eSn Sn 07 18 07.3 -2.0
comp=Z,19nm,0.5s
BGF eSg Sg 07 18 50.4 +0.2
comp=Z,12nm,0.6s,SNR=1.0
BGF Bois d'Agland 6.88 296 *e*Pn Pn 07 16 50.6 -0.2
BGF eSn Sn 07 18 07.3 -2.0
BGF eSg Sg 07 18 50.4 +0.2
PSZ Piszkesteto 6.89 52⇑*i*P Pn 07 16 53.0 +2.0
PSZ Piszkesteto 6.89 52 *e*P Pn 07 16 51.6 +0.6
PSZ Piszkesteto 6.89 52 *e*Pn Pn 07 16 51.6 +0.6
PSZ Piszkesteto 6.89 52 *e*Pn Pn 07 16 51.6 +0.6
WLF Walferdange 6.95 328 *e*P Pn 07 16 51.9 +0.2
WLF e 07 18 06.3
WLF Walferdange 6.95 328 *e*Pn Pn 07 16 51.9 +0.2
WLF eS Sn 07 18 06.3 -4.7
WLF Walferdange 6.95 328 *e*Pn Pn 07 16 51.9 +0.2
WLF eSn Sn 07 18 06.2 -4.7
MTLF Montolieu 7.01 269 *e*Pn Pn 07 16 51.7 -0.9
SNR=1.0
MTLF Montolieu 7.01 269 *e*P Pn 07 16 51.7 -0.9
MTLF Montolieu 7.01 269 *e*Pn Pn 07 16 51.7 -0.9
SNR=1.0
MTLF Montolieu 7.01 269 *e*Pn Pn 07 16 51.7 -0.9
KRLC Kraliky 7.02 27 *e*PN Pn 07 16 51.2 -1.6
KRLC Kraliky 7.02 27 *e*P Pn 07 16 51.2 -1.6
KRLC Kraliky 7.02 27 Pn Pn 07 16 51.2 -1.6
MORC Moravsky Berou 7.04 32⇑*i*P Pn 07 16 51.9 -1.1
MORC Moravsky Berou 7.04 32 *e*P Pn 07 16 52.4 -0.6
MORC Moravsky Berou 7.04 32⇑*i*Pn Pn 07 16 51.9 -1.1
MORC Moravsky Berou 7.04 32 *e*Pn Pn 07 16 52.4 -0.6
MORC Moravsky Berou 7.04 32 *e*Pn Pn 07 16 52.4 -0.6
BRG Berggiesshubel 7.10 11 PN Pn 07 16 51.7 -2.1
BRG PG Pg 07 17 27.8 +2.4
BRG SN Sn 07 18 09.4 -5.4
BRG SG Sg 07 19 07.7 +10
comp=Z,68nm,1.1s
comp=N,346nm,10.6s
comp=E,289nm,11.2s
comp=Z,477nm,10.5s
BRG Berggiesshubel 7.10 11 P Pn 07 16 51.7 -2.1
BRG 07 18 09.4
BRG smax smax
comp=N,68nm,1.1s
BRG MLR MLR
comp=N,346nm,10.6s
BRG MLR MLR
BRG MLR MLR
comp=E,289nm,11.2s
BRG MLR MLR
comp=Z,477nm,10.5s
BRG Berggiesshubel 7.10 11 P Pn 07 16 51.7 -2.1
BRG S Sn 07 18 09.4 -5.4
comp=Z,477nm,10.5s
DPC Dobruska-Polom 7.12 24 *e*PN Pn 07 16 51.2 -2.9
DPC AMS AMS 07 20 00.0
comp=Z,1μm,13.3s
DPC Dobruska-Polom 7.12 24 *e*P Pn 07 16 51.2 -2.9
DPC MLR MLR
comp=Z,1μm,13.3s
DPC Dobruska-Polom 7.12 24 Pn Pn 07 16 51.2 -2.9
MDVR Moldovita 7.13 80⇑*i*P Pn 07 16 53.7 -0.5
MDVR Moldovita 7.13 80⇑*i*P Pn 07 16 53.7 -0.5
BZS Buzias 7.16 73⇑*i*P Pn 07 16 56.8 +2.2
BZS Buzias 7.16 73⇑P Pn 07 16 56.8 +2.2
BZS Buzias 7.16 73 P Pn 07 16 56.8 +2.2
UPC Upice 7.17 22 AMS AMS 07 20 00.0
comp=Z,1μm,13.2s
TCF Toulx Ste Croi 7.22 293 *e*Pn Pn 07 16 55.6 +0.1
SNR=1.0
TCF eSn Sn 07 18 15.3 -2.4
comp=Z,12nm,0.4s,SNR=1.0
TCF Toulx Ste Croi 7.22 293 *e*P Pn 07 16 55.6 +0.1
TCF e 07 18 15.3
TCF Toulx Ste Croi 7.22 293 *e*Pn Pn 07 16 55.6 +0.1
SNR=1.0
TCF eS Sn 07 18 15.3 -2.4
TCF Toulx Ste Croi 7.22 293 *e*Pn Pn 07 16 55.6 +0.1
TCF eSn Sn 07 18 15.3 -2.4
OKC Ostrava-Krasne 7.33 34 *e*PN Pn 07 16 54.6 -2.3
OKC eSN Sn 07 18 15.4 -4.9
OKC AMS AMS 07 20 40.0
comp=Z,500nm,8.1s
OKC Ostrava-Krasne 7.33 34 *e*P Pn 07 16 54.6 -2.3
OKC e 07 18 15.4
OKC MLR MLR
comp=Z,500nm,8.0s
OKC Ostrava-Krasne 7.33 34 Pn Pn 07 16 54.6 -2.3
OKC eS Sn 07 18 15.4 -4.9
BARS Barje 7.35 95 *e*Pn Pn 07 16 57.1 -0.1
LANS Liptovska Anna 7.41 42 *e*P Pn 07 16 58.5 +0.4
LANS Liptovska Anna 7.41 42 *e*Pn Pn 07 16 58.5 +0.4
LANS Liptovska Anna 7.41 42 *e*PN Pn 07 16 58.5 +0.4
CLL Collm 7.43 6 *e*Pn Pn 07 16 57.0 -1.4
CLL Collm 7.43 6 *e*Pn Pn 07 16 57.0 -1.4
CLL *e*Pg Pg 07 17 34.0 +2.3
CLL *e*Pg Pg 07 17 34.0 +2.3
CLL eSn Sn 07 18 13.0 -10
CLL eSn Sn 07 18 13.0 -10
CLL *e* 07 18 25.0
CLL *e* 07 18 25.0
CLL *i*Sg Sg 07 19 12.1 +4.2
CLL *i*Sg Sg 07 19 13.1 +5.2
CLL Lm MLR 07 20 00.0
comp=Z,400nm,18.5s
CLL Lm MLR 07 20 00.0
comp=Z,400nm,18.5s
CLL Collm 7.43 6 *e*P Pn 07 16 57.0 -1.4
CLL *e* 07 18 13.0
CLL MLR MLR
comp=Z,400nm,18.5s
CLL Collm 7.43 6 *e*Pn Pn 07 16 56.3 -2.0
CLL Collm 7.43 6 *e*P Pn 07 16 57.0 -1.4
CLL eS Sn 07 18 13.0 -10
comp=Z,400nm,18.5s
CLL Collm 7.43 6 *e*Pn Pn 07 16 56.4 -2.0
KECS Kecovo 7.53 50 *e*P Pn 07 16 59.8 +0.1
KECS Kecovo 7.53 50 *e*Pn Pn 07 16 59.8 +0.1
KECS Kecovo 7.53 50 *e*PN Pn 07 16 59.8 +0.1
MEM Membach 7.78 331 PN Pn 07 17 02.4 -0.8
MEM Membach 7.78 331 Pn Pn 07 17 02.3 -0.8
BCLA Clavier 7.88 328 PN Pn 07 17 06.8 +2.3
BCLA SN Sn 07 18 28.2 -5.7
comp=N,23nm,0.0s
DOU Dourbes 7.92 324 PN Pn 07 17 06.2 +1.2
DOU SN Sn 07 18 30.3 -4.5
comp=E,27nm,0.0s
DOU Dourbes 7.92 324 Pn Pn 07 17 06.2 +1.2
DRGR 8.17 66⇑*i*P Pn 07 17 10.4 +1.8
DRGR 8.17 66⇑P Pn 07 17 10.4 +1.8
DRGR 8.17 66⇑*i*P Pn 07 17 10.4 +1.8
CRVS Cervenica-Dubn 8.30 50 *e*P Pn 07 17 11.5 +1.2
CRVS Cervenica-Dubn 8.30 50 *e*Pn Pn 07 17 11.5 +1.2
CRVS Cervenica-Dubn 8.30 50 *e*PN Pn 07 17 11.5 +1.2
CRVS Cervenica-Dubn 8.30 50 *e*SG Sg 07 19 55.0 +19
GRG Griva 8.35 107 P Pn 07 17 13.8 +2.8
GRG pmax pmax
comp=Z,13nm,0.9s
GRG Griva 8.35 107 P Pn 07 17 13.8 +2.8
comp=Z,13nm,0.9s
SNF Seneffe 8.36 325 PN Pn 07 17 12.3 +1.2
SNF Seneffe 8.36 325 Pn Pn 07 17 12.2 +1.2
KEST Kesra 8.40 194 Pn Pn 07 17 16.6 +4.8
comp=Z,0.5nm,0.3s,baz=310,slow=6.1,SNR=20
VTS Vitosha 8.40 95⇑*i*P Pn 07 17 11.6 -0.2
VTS Vitosha 8.40 95⇑P Pn 07 17 11.6 -0.2
VTS Vitosha 8.40 95⇑*i*P Pn 07 17 11.6 -0.2
VTS Vitosha 8.40 95 *e*Pn Pn 07 17 13.6 +1.8
VTS Vitosha 8.40 95 *e*Pn Pn 07 17 13.6 +1.8
STHS Stebnicka Huta 8.48 46 *e*P Pn 07 17 12.4 -0.4
STHS Stebnicka Huta 8.48 46 *e*Pn Pn 07 17 12.4 -0.4
STHS Stebnicka Huta 8.48 46 *e*PN Pn 07 17 12.4 -0.4
UZH Uzhgorod 8.63 53 *e*P Pn 07 17 14.5 -0.3
UZH *e*S Sn 07 18 50.7 -1.7
UZH MLR MLR
comp=N,2μm,11.0s
UZH MLR MLR
comp=E,1μm,11.0s
UZH Uzhgorod 8.63 53 *e*P Pn 07 17 14.5 -0.3
UZH *e*S Sn 07 18 50.7 -1.7
ETSF Etsaut 9.09 268 *e*Pn Pn 07 17 24.3 +3.1
ETSF Etsaut 9.09 268 *e*P Pn 07 17 24.3 +3.1
ETSF Etsaut 9.09 268 *e*P Pn 07 17 24.3 +3.1
ETSF Etsaut 9.09 268 *e*Pn Pn 07 17 24.3 +3.1
VOIR 9.53 76⇓*i*P Pn 07 17 28.8 +1.6
VOIR 9.53 76⇓P Pn 07 17 28.8 +1.6
VOIR 9.53 76⇓*i*P Pn 07 17 28.8 +1.6
MLR Muntele Rosu 10.16 76 Pn Pn 07 17 40.2 +4.3
comp=E,0.0nm,0.3s,baz=254,slow=6.4,SNR=4.7
MLR Muntele Rosu 10.16 76⇓*i*P Pn 07 17 41.4 +5.5
MLR Muntele Rosu 10.16 76 *e*P Pn 07 17 37.2 +1.3
MLR Muntele Rosu 10.16 76 *e*Pn Pn 07 17 37.2 +1.3
MLR Muntele Rosu 10.16 76 *e*Pn Pn 07 17 37.2 +1.3
LVV L'vov 10.21 50 *e*P Pn 07 17 39.4 +2.9
LVV MLR MLR
comp=Z,300nm,14.0s
LVV L'vov 10.21 50 *e*P Pn 07 17 39.4 +2.9
comp=Z,300nm,14.0s
KLNR Kaliningrad 12.00 24 *e*P Pn 07 17 56.7 -4.1
KLNR Kaliningrad 12.00 24 *e*Pn Pn 07 17 56.7 -4.1
CWF Charnwood Fore 12.41 320 *e*Pn Pn 07 18 06.8 +0.4
CWF Charnwood Fore 12.41 320 *e*Pn Pn 07 18 06.8 +0.4
ESDC Sonseca Array 12.53 256 Pn Pn 07 18 08.7 +0.4
comp=Z,0.2nm,0.3s,baz=64,slow=13,SNR=7.2
KIEV Kiev 13.57 54 *e*P Pn 07 18 22.0 -0.4
KIEV pmax pmax
comp=Z,1.0nm,1.0s
KIEV Kiev 13.57 54 *e*P Pn 07 18 22.0 -0.4
comp=Z,1.0nm,1.0s
EKA Eskdalemuir Ar 14.96 325 Pn Pn 07 18 41.5 +0.2
baz=130,slow=14,SNR=6.3
EKA Sn Sn 07 21 25.6 -1.5
baz=133,slow=24,SNR=3.7
KONO Kongsberg 15.81 356 *e*P Pn 07 18 48.2 -4.2
KONO pmax pmax
comp=Z,98nm,1.2s
HFS Hagfors 16.28 3 Pn P 07 19 02.3 +0.8
comp=Z,0.1nm,0.3s,baz=169,slow=10,SNR=3.7
HFS LR LR 07 25 55.1
comp=Z,134nm,19.6s,baz=208,slow=40
BR131 Keskin Array S 16.77 97 *e*Pn P 07 19 06.3 -0.9
BR131 Keskin Array S 16.77 97 *e*Pn P 07 19 06.3 -0.9
BRTR Keskin Array B 16.77 97 Pn Pn 07 19 05.1 +0.2
comp=Z,0.2nm,0.3s,baz=336,slow=6.6,SNR=3.2
BRTR LR LR 07 26 44.9
comp=Z,107nm,18.6s,baz=287,slow=42
NAO01 NORSAR Array S 16.96 358 *e*Pn Pn 07 19 06.4 -0.7
NAO01 NORSAR Array S 16.96 358 *e*Pn Pn 07 19 06.5 -0.7
MDT Midelt 16.98 235 P P 07 19 08.6 -1.0
comp=Z,0.1nm,0.3s,baz=111,slow=14,SNR=2.1
MDT LR LR 07 25 50.0
comp=Z,62nm,18.1s,baz=48,slow=37
NOA NORSAR Array B 17.15 359 P Pn 07 19 10.3 +0.7
comp=Z,0.3nm,0.3s,baz=178,slow=11,SNR=10.0
NOA LR LR 07 25 59.2
comp=Z,77nm,20.3s,baz=185,slow=38
NC405 NORSAR Array S 17.22 360 *e*Pn Pn 07 19 09.6 -0.8
NC405 NORSAR Array S 17.22 360 *e*Pn Pn 07 19 09.6 -0.8
VSU Vasula 17.23 27 *e*P Pn 07 19 09.1 -1.4
VSU pmax pmax
comp=Z,31nm,1.0s
VSU Vasula 17.23 27 *e*P Pn 07 19 09.1 -1.4
comp=Z,31nm,1.0s
NC303 NORSAR Array S 17.34 359 *e*Pn Pn 07 19 11.7 -0.1
NC303 NORSAR Array S 17.34 359 *e*Pn Pn 07 19 11.7 -0.1
ANN Anapa 18.30 78 *e*P Pn 07 19 18.3 -5.5
ANN pmax pmax
comp=Z,23nm,1.2s
ANN Anapa 18.30 78 *e*P Pn 07 19 18.3 -5.5
comp=Z,23nm,1.2s
OBN Obninsk 19.46 46 LR LR 07 27 46.7
comp=Z,161nm,19.9s,baz=269,slow=39
FINES FINESS Array B 19.48 21 P Pn 07 19 37.5 -0.5
comp=Z,0.2nm,0.3s,baz=208,slow=14,SNR=3.9
TAM Tamanrasset 21.71 196 *e*P P 07 20 01.6 +0.3
TAM pmax pmax
comp=Z,17nm,1.5s
TAM Tamanrasset 21.71 196 *e*P P 07 20 01.6 +0.3
comp=Z,17nm,1.5s
TAM Tamanrasset 21.71 196 *e*P P 07 20 01.6 +0.3
comp=Z,17nm,1.5s
KIV Kislovodsk 22.15 79 *e*P P 07 20 07.5 +1.6
KIV pmax pmax
comp=Z,12nm,1.1s
KIV MLR MLR
comp=Z,28nm,14.0s
KIV Kislovodsk 22.15 79 *e*P P 07 20 07.5 +1.6
comp=Z,28nm,14.0s
KLMR Klimovskoe 23.65 35 *e*P P 07 20 19.2 -2.0
KLMR *e* 07 20 46.0
KLMR pmax pmax
comp=Z,20nm,1.4s
KLMR Klimovskoe 23.65 35 *e*P P 07 20 19.2 -2.0
comp=Z,20nm,1.4s
GNI Garni 24.63 87 LR LR 07 33 03.1
comp=Z,46nm,18.4s,baz=276,slow=44
ARCES ARCESS Array B 26.62 11 LR LR 07 31 44.8
comp=Z,60nm,20.7s,baz=258,slow=38
AKTO Aktyubinsk 31.63 62 LR LR 07 35 22.6
comp=Z,53nm,19.6s,baz=279,slow=38
ARU Arti 31.79 50 P P 07 21 33.3 -1.1
comp=Z,5.3nm,0.2s,baz=289,slow=11
ARU Arti 31.79 50*d*⇓*i*P P 07 21 33.2 -1.1
ARU 07 22 32.9
ARU 07 24 21.5
ARU S S 07 26 43.8 -0.8
ARU SS SnSn 07 28 26.6 -4.7
ARU pmax pmax
comp=Z,9.0nm,1.7s
ARU Arti 31.79 50 P P 07 21 33.3 -1.1
ARU S S 07 26 43.8 -0.8
TOA0 Torodi Ar. Sit 31.88 199 *e*P P 07 21 35.5 +0.1
comp=Z,9.2nm,0.8s
TOA0 Torodi Ar. Sit 31.88 199 *e*P P 07 21 35.5 +0.1
comp=Z,9.2nm,0.8s
TORD Torodi Ar. Bea 31.88 199 P P 07 21 35.4 -0.1
comp=Z,7.3nm,0.7s,baz=11,slow=8.8,SNR=38
TORD PcP PcP 07 24 24.8 -1.3
comp=Z,0.6nm,0.6s,baz=357,slow=1.9,SNR=5.5
TORD LR LR 07 34 51.3
comp=Z,93nm,19.6s,baz=290,slow=37
ZRNK Zerenda 38.05 56 *e*P P 07 22 28.4 0.0
ZRNK pmax pmax
comp=Z,3.0nm,1.1s
ZRNK Zerenda 38.05 56 *e*P P 07 22 28.4 0.0
comp=Z,3.2nm,1.1s
ZRNK Zerenda 38.05 56 *e*P P 07 22 28.4 0.0
comp=Z,3.2nm,1.1s
BRVK Borovoye 38.79 55*ce*P P 07 22 33.3 -1.3
BRVK pmax pmax
comp=Z,4.0nm,0.6s
BRVK Borovoye 38.79 55 *e*P P 07 22 33.3 -1.3
comp=Z,4.0nm,0.6s
DBIC Dimbokro 39.89 206 LR LR 07 40 16.4
comp=Z,121nm,18.8s,baz=25,slow=38
KKAR Karatay Array 41.77 70 *e*P P 07 23 00.6 +1.2
KKAR Karatay Array 41.77 70 *e*P P 07 23 00.6 +1.2
KKAR Karatay Array 41.77 70 *e*P P 07 23 00.6 +1.2
KURBB Kurchatov Arra 44.35 57 P P 07 23 20.0 -0.2
comp=Z,1.2nm,0.7s,baz=295,slow=8.3,SNR=6.2
KURK Kurchatov 44.38 57*ce*P P 07 23 20.2 -0.2
KURK pmax pmax
comp=Z,10.0nm,0.9s
KURK Kurchatov 44.38 57 *e*P P 07 23 20.2 -0.2
comp=Z,10.0nm,0.9s
KURK Kurchatov 44.38 57 *e*P P 07 23 21.6 +1.2
comp=Z,3.0nm,0.8s
AAK Ala-Archa 44.64 69 LR LR 07 42 59.4
comp=Z,40nm,19.3s,baz=44,slow=38
AAK Ala-Archa 44.64 69 *e*P P 07 23 21.9 -0.9
AAK pmax pmax
comp=Z,6.0nm,1.1s
AAK Ala-Archa 44.64 69 *e*P P 07 23 21.9 -0.9
comp=Z,6.0nm,1.1s
ZAA0 Zalesovo Array 46.95 51 *e*P P 07 23 40.5 -0.2
ZAA0 Zalesovo Array 46.95 51 *e*P P 07 23 40.5 -0.2
ZALV Zalesovo Beam 46.95 51 P P 07 23 39.2 -1.4
comp=Z,0.5nm,0.3s,baz=287,slow=6.0,SNR=4.2
ZALV LR LR 07 44 56.7
comp=Z,62nm,20.3s,baz=250,slow=38
KSH Kashi 47.00 72 *e*P P 07 23 43.1 +1.6
KSH *e*PP PP 07 25 31.7 0.0
KSH PcS PcS 07 29 10.2 +1.4
KSH S S 07 30 33.7 +0.3
KSH ScS ScS 07 33 36.5 -0.1
KSH pmax pmax
comp=Z,49nm,3.4s
KSH LR LR
comp=N,100nm,9.2s
KSH LR LR
comp=E,94nm,5.3s
KSH LR LR
comp=Z,110nm,5.3s
MAKZ Makanchi 47.85 61 *e*P P 07 23 48.5 +0.6
MAKZ Makanchi 47.85 61 *e*P P 07 23 48.5 +0.6
MAKZ Makanchi 47.85 61 *e*P P 07 23 48.5 +0.6
MK31 Makanchi Array 48.05 61 *e*P P 07 23 49.9 +0.5
MK31 Makanchi Array 48.05 61 *e*P P 07 23 49.9 +0.5
MK31 Makanchi Array 48.05 61 *e*P P 07 23 50.0 +0.5
MKAR Makanchi Array 48.05 61 P P 07 23 49.2 -0.2
comp=Z,4.6nm,0.6s,baz=289,slow=5.7,SNR=47
MKAR Makanchi Array 48.05 61 *e*P P 07 23 50.0 +0.6
MK01 Makanchi Array 48.07 61 *e*P P 07 23 49.9 +0.3
MK01 Makanchi Array 48.07 61 *e*P P 07 23 49.9 +0.3
WMQ Urumqi 52.78 62 *e*P P 07 24 26.8 +1.5
WMQ pP sP 07 24 31.3 +3.4
WMQ pmax pmax
comp=Z,8.0nm,0.5s
WMQ pmax pmax
comp=Z,49nm,4.5s
TLY Talaya 58.21 47 P P 07 25 05.2 +1.0
comp=Z,1.2nm,0.3s,baz=264,slow=4.1,SNR=6.3
TLY Talaya 58.21 47⇑*e*P P 07 25 03.4 -0.8
TLY pmax pmax
comp=Z,5.0nm,1.0s
TLY Talaya 58.21 47 *e*P P 07 25 03.4 -0.8
comp=Z,5.0nm,1.0s
SONA1 Songino Array 61.82 50 *e*P P 07 25 29.6 +0.4
SONA1 Songino Array 61.82 50 *e*P P 07 25 29.6 +0.4
SONM Songino Array 61.83 50 P P 07 25 29.8 +0.6
comp=Z,1.7nm,0.8s,baz=286,slow=7.8,SNR=14
YAK Yakutsk 63.22 28 *e*P P 07 25 39.0 +1.0
YAK pmax pmax
comp=Z,15nm,0.5s
YAK Yakutsk 63.22 28 *e*P P 07 25 39.0 +1.0
comp=Z,15nm,0.5s
YAK Yakutsk 63.22 28 *e*P P 07 25 39.1 +1.0
comp=Z,25nm,0.5s
YKA Yellowknife Ar 65.61 336 P P 07 25 54.4 +0.7
comp=Z,5.1nm,0.9s,baz=44,slow=6.6,SNR=29

YKA				LR	LR	07 57 36.5		
	comp=Z,8.3nm,19.4s,baz=180,slow=39							
BILL	**Bilibino**	**66.72**	**10**	*e*P	**P**	**07 26 00.9**	**+0.2**	
BILL				pmax	pmax			
	comp=Z,4.0nm,0.9s							
BILL	**Bilibino**	**66.72**	**10**	*e*P	**P**	**07 26 00.9**	**+0.2**	
	comp=Z,4.0nm,0.9s							
FFC	**Flin Flon**	**66.81**	**325⇑**	*e*P	**P**	**07 26 05.7**	**+4.1**	
ULM	**Lac du Bonnet**	**67.12**	**318**	P	**P**	**07 26 05.3**	**+1.7**	
	comp=Z,3.7nm,1.0s,baz=59,slow=9.7,SNR=3.7							
SEY	**Seymchan**	**68.93**	**18**	*e*P	**P**	**07 26 16.0**	**+1.2**	
SEY	**Seymchan**	**68.93**	**18**	*e*P	**P**	**07 26 16.0**	**+1.2**	
HHC	**Hu-ho-hao-te**	**69.03**	**53**	*e*P	**P**	**07 26 13.7**	**-2.2**	
HHC				pmax	pmax			
	comp=Z,14nm,1.0s							
HHC				pmax	pmax			
	comp=Z,46nm,5.9s							
PALK	**Pallekele**	**69.79**	**100**	LR	LR	07 59 25.0		
	comp=Z,247nm,19.4s,baz=206,slow=38							
DAWY	**Dawson**	**69.98**	**347**	*e*P	**P**	**07 26 21.4**	**0.0**	
	comp=Z,4.1nm,1.1s							
DAWY	**Dawson**	**69.98**	**347**	*e*P	**P**	**07 26 21.4**	**0.0**	
	comp=Z,4.1nm,1.1s							
IL1	**Eielson Array**	**70.37**	**350**	*e*P	**P**	**07 26 23.6**	**0.0**	
IL1	**Eielson Array**	**70.37**	**350**	*e*P	**P**	**07 26 23.6**	**0.0**	
ILAR	**Eielson Array**	**70.37**	**350**	P	**P**	**07 26 24.2**	**+0.6**	
	comp=Z,1.0nm,0.8s,baz=6.5,slow=6.5,SNR=14							
ECSD	**EROS Data Cent**	**71.92**	**314**	*e*P	**P**	**07 26 33.0**	**-0.4**	
	comp=Z,3.0nm,0.8s							
ECSD	**EROS Data Cent**	**71.92**	**314**	*e*P	**P**	**07 26 33.0**	**-0.4**	
	comp=Z,3.0nm,0.8s							
DHY	**Denali Highway**	**72.07**	**350**	*e*P	**P**	**07 26 34.7**	**+0.6**	
	comp=Z,18nm,1.4s							
DHY	**Denali Highway**	**72.07**	**350**	*e*P	**P**	**07 26 34.7**	**+0.6**	
	comp=Z,18nm,1.4s							
EDM	**Edmonton**	**72.43**	**329**	*e*P	**P**	**07 26 36.1**	**-0.2**	
EDM				pmax	pmax			
	comp=Z,7.0nm,1.0s							
EDM	**Edmonton**	**72.43**	**329**	*e*P	**P**	**07 26 36.1**	**-0.2**	
	comp=Z,7.4nm,1.0s							
EDM	**Edmonton**	**72.43**	**329**	*e*P	**P**	**07 26 36.1**	**-0.2**	
	comp=Z,7.4nm,1.0s							
KLR	**Kul'dur**	**73.39**	**36**	*e*P	**P**	**07 26 41.9**	**-0.1**	
KLR	**Kul'dur**	**73.39**	**36**	*e*P	**P**	**07 26 41.9**	**-0.1**	
LAO	**LASA Array**	**74.50**	**321**	*e*P	**P**	**07 26 49.2**	**+0.5**	
	comp=Z,8.6nm,0.3s							
LAO	**LASA Array**	**74.50**	**321**	*e*P	**P**	**07 26 49.1**	**+0.5**	
	comp=Z,8.6nm,0.3s							
KSU1	**Kansas State U**	**75.16**	**310**	*e*P	**P**	**07 26 52.8**	**+0.3**	
	comp=Z,8.2nm,0.6s							
KSU1	**Kansas State U**	**75.16**	**310**	*e*P	**P**	**07 26 52.8**	**+0.3**	
	comp=Z,8.2nm,0.6s							
CMAR	**Chiang Mai Arr**	**75.39**	**78**	P	**P**	**07 26 55.4**	**+1.2**	
	comp=Z,1.2nm,0.3s,baz=311,slow=6.4,SNR=3.4							
CM01	**Chiang Mai Arr**	**75.42**	**78**	*e*P	**P**	**07 26 55.4**	**+1.1**	
CM01	**Chiang Mai Arr**	**75.42**	**78**	*e*P	**P**	**07 26 55.4**	**+1.1**	
WALA	**Waterton Lakes**	**75.94**	**327**	*e*P	**P**	**07 26 57.3**	**+0.3**	
	comp=Z,20nm,1.7s							
WALA	**Waterton Lakes**	**75.94**	**327**	*e*P	**P**	**07 26 57.3**	**+0.3**	
	comp=Z,20nm,1.7s							
MIAR	**Mount Ida**	**76.61**	**305**	*e*P	**P**	**07 27 01.0**	**+0.1**	
MIAR				pmax	pmax			
	comp=Z,9.0nm,1.2s							
MIAR	**Mount Ida**	**76.61**	**305**	*e*P	**P**	**07 27 01.0**	**+0.1**	
	comp=Z,8.7nm,1.2s							
MIAR	**Mount Ida**	**76.61**	**305**	*e*P	**P**	**07 27 01.0**	**+0.1**	
	comp=Z,8.7nm,1.2s							
BW06	**Boulder Array**	**79.03**	**320**	*e*P	**P**	**07 27 14.9**	**+0.4**	
BW06	**Boulder Array**	**79.03**	**320**	*e*P	**P**	**07 27 14.9**	**+0.4**	
PD31	**Pinedale Array**	**79.03**	**320**	*e*P	**P**	**07 27 15.2**	**+0.7**	
PD31	**Pinedale Array**	**79.03**	**320**	*e*P	**P**	**07 27 15.2**	**+0.7**	
PDAR	**Pinedale Array**	**79.03**	**320**	P	**P**	**07 27 14.1**	**-0.4**	
	comp=Z,0.6nm,0.7s,baz=62,slow=6.9,SNR=6.0							
WMOK	**Wichita Mounta**	**79.49**	**308**	*e*P	**P**	**07 27 17.1**	**+0.2**	
WMOK				pmax	pmax			
	comp=Z,3.0nm,0.8s							
WMOK	**Wichita Mounta**	**79.49**	**308**	*e*P	**P**	**07 27 17.1**	**+0.2**	
	comp=Z,3.0nm,0.8s							
WMOK	**Wichita Mounta**	**79.49**	**308**	*e*P	**P**	**07 27 17.1**	**+0.2**	
	comp=Z,3.0nm,0.8s							
YSS	**Yuzh-Sakhalins**	**79.67**	**32⇑**	*e*P	**P**	**07 27 17.6**	**0.0**	
YSS				pmax	pmax			
	comp=Z,9.0nm,1.2s							
YSS	**Yuzh-Sakhalins**	**79.67**	**32**	*e*P	**P**	**07 27 17.6**	**0.0**	
	comp=Z,9.0nm,1.2s							
O20A	**White River Ci**	**80.44**	**318**	*e*P	**P**	**07 27 22.7**	**+0.5**	
	comp=Z,4.2nm,0.7s							
O20A	**White River Ci**	**80.44**	**318**	*e*P	**P**	**07 27 22.7**	**+0.5**	
	comp=Z,4.2nm,0.7s							
BDFB	**Brasilia**	**80.54**	**238**	LR	LR	08 00 35.1		
	comp=Z,51nm,19.6s,baz=352,slow=34							
BMO	**Blue Mountains**	**80.72**	**326**	*e*P	**P**	**07 27 24.2**	**+0.7**	
	comp=Z,12nm,1.4s							
BMO	**Blue Mountains**	**80.72**	**326**	*e*P	**P**	**07 27 24.2**	**+0.7**	
	comp=Z,12nm,1.4s							
SDCO	**Great Sand Dun**	**80.90**	**315**	*e*P	**P**	**07 27 25.0**	**+0.2**	
	comp=Z,8.5nm,1.9s							
SDCO	**Great Sand Dun**	**80.90**	**315**	*e*P	**P**	**07 27 25.0**	**+0.2**	
	comp=Z,8.5nm,1.9s							
PV01	**Paradox Valley**	**82.15**	**317**	*e*P	**P**	**07 27 31.6**	**+0.3**	
PV01	**Paradox Valley**	**82.15**	**317**	*e*P	**P**	**07 27 31.6**	**+0.3**	
QIZ	**Qiongzhong**	**82.59**	**71**	P	**P**	**07 27 34.2**	**+0.6**	
QIZ	**Qiongzhong**	**82.59**	**71**	S	**S**	**07 37 52.8**	**+1.4**	
QIZ				LR	LR			
	comp=N,190nm,11.1s							
QIZ				LR	LR			
	comp=E,120nm,14.2s							
QIZ				LR	LR			
	comp=Z,190nm,15.0s							
ANMO	**Albuquerque**	**83.53**	**313**	*c*e	**P**	**07 27 38.3**	**-0.2**	
ANMO				pmax	pmax			
	comp=Z,1.0nm,0.8s							
ANMO	**Albuquerque**	**83.53**	**313**	*e*P	**P**	**07 27 38.3**	**-0.2**	
	comp=Z,1.0nm,0.8s							
TX31	**Lajitas Ar. Si**	**86.27**	**308**	*e*P	**P**	**07 27 52.8**	**+0.6**	
TX31	**Lajitas Ar. Si**	**86.27**	**308**	*e*P	**P**	**07 27 52.8**	**+0.6**	
TXAR	**Lajitas Array**	**86.27**	**308**	P	**P**	**07 27 53.6**	**+1.4**	
	comp=Z,1.7nm,0.9s,baz=59,slow=5.7,SNR=20							
AS01	**Alice Springs**	**128.91**	**86**	*e*PKIKP	**PKPdf**	**07 34 19.2**	**+1.1**	
AS01	**Alice Springs**	**128.91**	**86**	*e*PKPdf	**PKPdf**	**07 34 19.2**	**+1.1**	

ISK ***12*** *07:15:47.9, 37.°16N×28.°36E, h2km, ML2.1*
ISCJB ***12*** *07:15:48.5±0.4, 37.°18N±0.°03×28.°33E±0.°03, h0km, Error ellipse: s-maj=3.9km s-min=3.7km az=37.9*
CSEM ***12*** *07:15:48.7±0.2, 37.°18N×28.°33E, h1km, ML2.1, Error ellipse: s-maj=4.4km s-min=3.8km az=167.0, Suspected Mining explosion.*
DDA ***12*** *07:15:49.3, 37.°23N×28.°27E, h7km, Md2.7, Suspected Mining explosion.*

ISC 12 07:15:48.3±0.8, 37°20N±0.°02×28°27E±0.°03, h0km, n25, σ0§65/38, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.06**	**170**			PG	**Pg**	**07 15 49.7**	**+0.2**
YER						*e*SG	**Sg**	**07 15 50.7**	**+0.5**
YER	**Yerkesik**	**0.06**	**170**			*i* Pg	**Pg**	**07 15 49.7**	**+0.2**
YER						*e*Sg	**Sg**	**07 15 50.7**	**+0.5**
MLSB	**Milas**	**0.41**	**284**			*e*PG	**Pb**	**07 15 58.4**	**0.0**
MLSB	**Milas**	**0.41**	**284**			*e*Pg	**Pb**	**07 15 58.4**	**0.0**
TURN	**Turunc**	**0.42**	**140**			*i* P	**Pg**	**07 15 55.4**	**-0.9**
TURN						*i* S	**Sg**	**07 16 01.4**	**-0.3**
DALY	**Dalyan (Mu¨la**	**0.49**	**141**			*e*PG	**Pg**	**07 15 56.9**	**-0.7**
DALY						*e*SG	**Sg**	**07 16 03.5**	**-0.4**
DALY	**Dalyan (Mu¨la**	**0.49**	**141**			*e*Pg	**Pg**	**07 15 56.9**	**-0.7**
DALY						*e*Sg	**Sg**	**07 16 03.5**	**-0.4**
BDRM	**Kayabasi**	**0.67**	**259**			*i* P	**Pb**	**07 16 02.5**	**-0.4**
BDRM						*i* S	**Sb**	**07 16 12.6**	**-0.2**
BDRM	**Kayabasi**	**0.67**	**259**			P	**Pb**	**07 16 02.5**	**-0.4**
BDRM						S	**Sb**	**07 16 12.6**	**-0.2**
BODT	**Bodrum**	**0.78**	**260**			*e*PG	**Pb**	**07 16 05.1**	**+0.4**
BODT	**Bodrum**	**0.78**	**260**			*e*Pg	**Pb**	**07 16 05.1**	**+0.4**
DNZL	**Cakiroluk**	**0.79**	**51**			*i* P	**Pg**	**07 16 03.5**	**0.0**
DNZL						*i* S	**Sg**	**07 16 14.3**	**+0.6**
DNZL	**Cakiroluk**	**0.79**	**51**			P	**Pg**	**07 16 03.5**	**0.0**
DNZL						S	**Sg**	**07 16 14.3**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**0.81**	**338**			*e*PG	**Pb**	**07 16 05.4**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.81**	**338**			*e*Pg	**Pb**	**07 16 05.4**	**+0.1**
GOLH	**Golhisar**	**1.03**	**87**			*i* P	**Pb**	**07 16 08.7**	**-0.4**
GOLH						*i* S	**Sn**	**07 16 25.2**	**-0.1**
GOLH	**Golhisar**	**1.03**	**87**			P	**Pb**	**07 16 08.7**	**-0.4**
NIS1	**Nisyros Isl.**	**1.06**	**236**			*e*PN	**Pn**	**07 16 09.9**	**-0.5**
NIS1	**Nisyros Isl.**	**1.06**	**236**			*e*Pn	**Pn**	**07 16 09.9**	**-0.5**
MANT	**Manisa**	**1.31**	**10**			*i* P	**Pg**	**07 16 12.7**	**-0.8**
MANT						*i* S	**Sb**	**07 16 31.5**	**0.0**
MANT	**Manisa**	**1.31**	**10**			P	**Pg**	**07 16 12.7**	**-0.8**
MANT						S	**Sb**	**07 16 31.5**	**0.0**
KULA	**Kula-Manisa**	**1.35**	**13**			*e*PN	**Pb**	**07 16 14.9**	**+0.3**
KULA	**Kula-Manisa**	**1.35**	**13**			*e*Pn	**Pb**	**07 16 14.9**	**+0.3**
AKAS	**Kas**	**1.44**	**131**			*i* P	**Pg**	**07 16 15.6**	**-0.3**
AKAS						*i* S	**Sn**	**07 16 38.3**	**+2.9**
AKAS	**Kas**	**1.44**	**131**			P	**Pg**	**07 16 15.6**	**-0.3**

NIED ***12*** *07:23:00, 37.°00N×142.°40E, h17km, Mw3.8 Best double couple: M○5.53000×10^14 NP1:φs83.00000°, δ30.00000°, λ-25.00000°. NP2:φs196.00000°, δ78.00000°, λ-118.00000°.*
ISCJB ***12*** *07:23:08.4±0.6, 37.°05N±0.°04×142.°47E±0.°06, h9km, mb4.0/11, Error ellipse: s-maj=7.2km s-min=4.6km az=32.9*
JMA ***12*** *07:23:08.4±0.2, 37.°02N×142.°42E, h15km, M4.1*
NEIC ***12*** *07:23:12.3±2.6, 37.°01N×142.°49E, h24km±18km, mb4.6/3, Error ellipse: s-maj=13.7km s-min=7.9km az=124.0*
IDC ***12*** *07:23:14.1±4.9, 37.°00N×142.°41E, h33km±38km, mb3.7/8, mb1 3.9/13, mb1mx3.6/64, mbtmp3.9/13, ML3.8/4, MS3.0/3, Ms1 3.0/3, ms1mx2.6/55, Error ellipse: s-maj=23.5km s-min=20.1km az=105.0*

ISC 12 07:23:10.4±0.8, 37°05N±0.°06×142°43E±0.°08, h9km, n41, σ1§69/42, mb3.9/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.28**	**285**			P	**Pn**	**07 23 31.8**	**-2.7**
ONAJ	**Iwakimizuishiy**	**1.30**	**273**			P	**Pn**	**07 23 31.9**	**-2.9**
JMM	**Marumori**	**1.54**	**303**			P	**Pn**	**07 23 35.6**	**-2.4**
JHO	**Hitachi**	**1.56**	**254**			P	**Pn**	**07 23 35.6**	**-2.6**
JHO						*e*S	**Sn**	**07 23 54.9**	**-3.6**
JIO	**Ouri**	**1.65**	**329**			P	**Pn**	**07 23 37.1**	**-2.3**
JIO						S	**Sn**	**07 23 58.3**	**-2.4**
JOU	**Okura**	**1.92**	**314**			P	**Pn**	**07 23 42.1**	**-1.2**
JMK	**Ichinoseki**	**2.13**	**334**			P	**Pn**	**07 23 45.0**	**-1.1**
JMK						*e*S	**Sn**	**07 24 11.8**	**-0.8**
JAG	**Ashikaga**	**2.47**	**256**			P	**Pn**	**07 23 49.4**	**-1.4**
JYK	**Kaneyama**	**2.48**	**319**			P	**Pn**	**07 23 50.2**	**-0.8**
JOM	**Ohasama**	**2.58**	**340**			P	**Pn**	**07 23 51.9**	**-0.4**
JRY	**Ryogami san**	**3.02**	**251**			P	**Pn**	**07 23 57.6**	**-0.8**
MJAR	**Matsushiro Arr**	**3.42**	**263**			Pn	**Pn**	**07 24 04.7**	**+0.7**
	15nm,0.3s,baz=91,slow=16,SNR=53								
MJAR						Sn	**Sn**	**07 24 46.6**	**+1.9**
	8.9nm,0.3s,baz=104,slow=18,SNR=6.6								
MJAR						LR	LR	07 25 36.4	
	comp=Z,152nm,19.9s,baz=105,slow=42								
MAJO	**Matsushiro**	**3.43**	**263**			*e*Pn	**Pn**	**07 24 04.7**	**+0.7**
MAJO						*e*Sn	**Sn**	**07 24 45.8**	**+1.1**
MAT	**Matsushiro**	**3.43**	**263**			P	**Pn**	**07 24 04.9**	**+0.9**
MAT						S	**Sn**	**07 24 46.0**	**+1.3**
JHJ2	**Mitsune**	**4.47**	**209**			*e*Pn	**Pn**	**07 24 17.7**	**-0.6**
JHJ	**Hachijo jima 2**	**4.48**	**210**			Pn	**Pn**	**07 24 18.3**	**-0.1**
	21nm,0.3s,baz=336,slow=22,SNR=11								
JHJ						LR	LR	07 26 05.1	
	comp=Z,113nm,19.5s,baz=74,slow=39								
ERM	**Erimo**	**4.99**	**6**			*e*Pn	**Pn**	**07 24 25.3**	**-0.2**
ERM						*e*Sn	**Sn**	**07 25 23.1**	**-0.2**
ASAJ	**Asahikawa**	**7.06**	**1**			Pn	**Pn**	**07 24 54.6**	**+0.7**
	1.3nm,0.3s,baz=226,slow=8.6,SNR=6.0								
JNU	**Nakatsue**	**10.24**	**251**			Pn	**Pn**	**07 25 39.4**	**+1.8**
	0.6nm,0.3s,baz=59,slow=11,SNR=7.3								
USRK	**Ussuriysk Ar.**	**10.67**	**315**			Pn	**Pn**	**07 25 47.5**	**+4.1**
	0.5nm,0.3s,baz=128,slow=14,SNR=15								
KSRS	**Korea Array**	**11.57**	**276**			Pn	**Pn**	**07 25 58.8**	**+3.1**
	baz=91,slow=13,SNR=6.0								
KSRS						LR	LR	07 30 38.8	
	comp=Z,182nm,18.6s,baz=100,slow=38								
KSAR	**Wonju Array Be**	**11.60**	**276**			Pn	**Pn**	**07 25 58.8**	**+2.7**
KLR	**Kul'dur**	**14.44**	**331**			Pn	**P**	**07 26 40.7**	**-1.0**
	0.1nm,0.3s,baz=137,slow=8.8,SNR=3.7								
H11N2	**WAKE ISLAND Hy**	**27.46**	**122**			T	T	07 58 57.8	
	baz=310,slow=75,SNR=5.2								
H11N1	**WAKE ISLAND Hy**	**27.47**	**122**			T	T	07 58 59.3	
	baz=310,slow=75,SNR=7.4								
H11N3	**WAKE ISLAND Hy**	**27.48**	**122**			T	T	07 59 01.2	
	baz=310,slow=75,SNR=60								
ENH	**Enshi**	**28.14**	**266**			*e*P	**P**	**07 29 02.4**	**-0.5**
	9.9nm,0.5s								
H11S1	**WAKE ISLAND Hy**	**28.19**	**124**			T	T	07 59 48.5	
	baz=312,slow=75,SNR=142								
H11S3	**WAKE ISLAND Hy**	**28.19**	**124**			T	T	07 59 48.5	
	baz=312,slow=75,SNR=137								
H11S2	**WAKE ISLAND Hy**	**28.21**	**124**			T	T	07 59 46.6	
	baz=312,slow=75,SNR=38								
SONM	**Songino Array**	**28.45**	**304**			P	**P**	**07 29 05.7**	**0.0**
	1.9nm,0.9s,baz=94,slow=8.9,SNR=9.9								
CMAR	**Chiang Mai Arr**	**42.29**	**256**			P	**P**	**07 31 05.3**	**+0.9**
	1.1nm,0.4s,baz=75,slow=14,SNR=4.4								
ZALV	**Zalesovo Beam**	**42.51**	**312**			P	**P**	**07 31 06.1**	**+0.3**
	1.3nm,0.6s,baz=97,slow=8.1,SNR=5.8								
MKAR	**Makanchi Array**	**44.80**	**302**			P	**P**	**07 31 24.2**	**-0.3**
	1.1nm,0.6s,baz=88,slow=10.0,SNR=15								
KURK	**Kurchatov**	**46.56**	**308**			*e*P	**P**	**07 31 37.5**	**-0.7**
	3.6nm,0.7s								
KURBB	**Kurchatov Arra**	**46.63**	**308**			P	**P**	**07 31 38.4**	**-0.4**
	2.4nm,0.5s,baz=83,slow=8.0,SNR=21								
ILAR	**Eielson Array**	**49.05**	**32**			P	**P**	**07 31 58.0**	**+0.6**
	0.5nm,0.7s,baz=254,slow=5.8,SNR=9.6								
WRA	**Warramunga Arr**	**57.19**	**189**			P	**P**	**07 32 56.5**	**-1.3**
	0.6nm,0.7s,baz=7.2,slow=7.0,SNR=7.3								
ABKAR	**Akbulak array**	**58.55**	**310**			*e*P	**P**	**07 33 06.5**	**-0.6**
	6.1nm,1.1s								
TXAR	**Lajitas Array**	**89.47**	**53**			P	**P**	**07 36 08.6**	**+0.4**
	0.5nm,0.9s,baz=335,slow=1.8,SNR=4.4								
LPAZ	**La Paz**	**145.98**	**61**			PKPbc	**PKPdf**	**07 42 51.7**	**+0.7**
	0.5nm,0.6s,baz=194,slow=4.4,SNR=3.0								

ISCJB ***12*** *07:25:24.7±0.7, 52.°8N±0.°1×34.°8W±0.°1, h14km, mb3.8/15, MS3.4/14, Error ellipse: s-maj=19.9km s-min=9.6km az=8.7*
IDC ***12*** *07:25:24.0±1.0, 52.°72N×34.°79W, h0km, mb3.7/13, mb1 4.0/15, mb1mx3.8/51, mbtmp3.8/15, ML2.7/1, MS3.4/15, Ms1 3.4/15, ms1mx3.1/57, Error ellipse: s-maj=32.1km s-min=14.7km az=17.0*

ISC 12 07:25:26.4±0.7, 52°8N±0.°2×34°79W±0.°08, h14km, n32, σ1§14/22, mb3.9/15, MS3.3/14, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**13.83**	**25**			LR	LR	07 32 22.3	
	comp=Z,120nm,22.0s,baz=187,slow=30								
EKA	**Eskdalemuir Ar**	**18.66**	**70**			P	**Pn**	**07 29 43.3**	**-0.6**
	baz=275,slow=9.7,SNR=13								
SCHQ	**Schefferville**	**18.94**	**289**			P	**Pn**	**07 29 46.7**	**-0.7**
	0.2nm,0.3s,baz=83,slow=8.2,SNR=4.7								
FRB	**Frobisher Bay**	**20.58**	**315**			P	**P**	**07 30 04.2**	**-0.3**
	2.3nm,0.6s,baz=118,slow=11,SNR=3.2								
ESDC	**Sonseca Array**	**24.82**	**110**			LR	LR	07 38 54.0	
	comp=Z,53nm,18.1s,baz=300,slow=33								
NOA	**NORSAR Array B**	**25.93**	**53**			LR	LR	07 39 57.2	
	comp=Z,53nm,18.3s,baz=260,slow=34								
HFS	**Hagfors**	**27.22**	**55**			LR	LR	07 40 08.3	
	comp=Z,95nm,20.1s,baz=306,slow=32								
DAVOX	**Davos/Dischmat**	**29.08**	**84**			LR	LR	07 42 02.4	
	comp=Z,61nm,18.8s,baz=272,slow=34								
BRG	**Berggiesshubel**	**29.72**	**74**			*e*(P)	**P**	**07 31 31.5**	**-0.3**
	2.8nm,0.7s								
SADO	**Sadowa**	**29.89**	**272**			LR	LR	07 42 27.7	
	comp=Z,102nm,20.3s,baz=32,slow=34								
GERES	**GERESS Array B**	**30.42**	**78**			P	**P**	**07 31 38.2**	**+0.1**
	0.3nm,0.3s,baz=294,slow=7.2,SNR=6.9								
GERES						LR	LR	07 42 26.2	
	comp=Z,49nm,18.5s,baz=309,slow=34								
ARCES	**ARCESS Array B**	**31.84**	**35**			LR	LR	07 41 32.0	
	comp=Z,29nm,18.3s,baz=268,slow=30								
VRAC	**Vranov**	**31.93**	**75**			LR	LR	07 43 43.8	
	comp=Z,66nm,20.3s,baz=350,slow=34								
FINES	**FINESS Array B**	**32.98**	**50**			LR	LR	07 43 39.8	
	comp=Z,97nm,21.7s,baz=294,slow=33								
KEST	**Kesra**	**35.26**	**101**			P	**P**	**07 32 21.0**	**+0.5**
	1.6nm,0.6s,baz=72,slow=8.7,SNR=2.9								
KEST						LR	LR	07 44 17.0	
	comp=Z,51nm,21.8s,baz=333,slow=32								
AKASG	**Malin Array Be**	**38.52**	**67**			P	**P**	**07 32 47.9**	**-0.1**
	0.2nm,0.3s,baz=312,slow=7.6,SNR=4.5								
YKA	**Yellowknife Ar**	**41.10**	**316**			P	**P**	**07 33 11.1**	**+1.9**
	0.7nm,0.9s,baz=76,slow=7.7,SNR=5.1								
YKA						PcP	**PcP**	**07 35 07.6**	**-0.8**
	0.9nm,0.8s,baz=62,slow=3.6,SNR=5.0								
H05N1	**Guadeloupe/Mar**	**41.86**	**220**			T	T	08 17 47.7	
	SNR=5.6								
BRTR	**Keskin Array B**	**47.32**	**77**			P	**P**	**07 34 00.1**	**+0.6**
	1.3nm,0.9s,baz=316,slow=6.8,SNR=5.8								
TORD	**Torodi Ar. Bea**	**49.07**	**130**			P	**P**	**07 34 12.4**	**-0.7**
	0.7nm,1.0s,baz=311,slow=6.8,SNR=3.3								
PDAR	**Pinedale Array**	**49.08**	**290**			P	**P**	**07 34 12.8**	**-0.3**
	0.8nm,0.6s,baz=52,slow=7.9,SNR=7.9								
PDAR						LR	LR	07 52 53.2	
	comp=Z,61nm,20.9s,baz=314,slow=34								
ARU	**Arti**	**50.14**	**46**			LR	LR	07 54 24.5	
	comp=Z,61nm,19.6s,baz=348,slow=35								
ILAR	**Eielson Array**	**51.69**	**330**			P	**P**	**07 34 33.2**	**+0.9**
	0.5nm,1.0s,baz=45,slow=7.1,SNR=4.9								
ILAR						PcP	**PcP**	**07 35 45.0**	**-0.6**
	1.3nm,1.0s,baz=19,slow=2.2,SNR=8.0								
AKTO	**Aktyubinsk**	**53.72**	**52**			LR	LR	07 56 09.2	
	comp=Z,71nm,20.2s,baz=330,slow=34								
TXAR	**Lajitas Array**	**54.66**	**273**			P	**P**	**07 34 52.1**	**-2.7**
	0.4nm,0.9s,baz=73,slow=4.2,SNR=4.6								
TXAR						LR	LR	07 57 31.5	
	comp=Z,45nm,19.3s,baz=0.0,slow=35								
TIXI	**Tiksi**	**55.32**	**6**			P	**P**	**07 34 59.6**	**+0.8**
	1.9nm,0.3s,baz=17,slow=6.4,SNR=4.0								
ROSC	**El Rosal**	**57.77**	**229**			P	**P**	**07 35 20.0**	**+2.6**
	14nm,0.8s,baz=154,slow=6.7,SNR=13								
KURBB	**Kurchatov Arra**	**62.66**	**41**			P	**P**	**07 35 49.8**	**-0.3**
	0.4nm,0.6s,baz=322,slow=7.7,SNR=5.7								
MKAR	**Makanchi Array**	**67.21**	**42**			P	**P**	**07 36 19.6**	**-0.2**
	0.5nm,0.6s,baz=336,slow=5.6,SNR=8.1								
SONM	**Songino Array**	**74.44**	**26**			P	**P**	**07 37 04.0**	**+0.1**
	1.4nm,1.0s,baz=315,slow=4.7,SNR=6.7								
WRA	**Warramunga Arr**	**146.14**	**19**			PKPbc	**PKPbc**	**07 45 04.8**	**-1.2**
	3.5nm,1.0s,baz=337,slow=3.3,SNR=8.3								
ASAR	**Alice Springs**	**149.67**	**21**			PKPbc	**PKPbc**	**07 45 14.6**	**-0.8**
	1.8nm,0.9s,baz=358,slow=2.4,SNR=7.8								

IDC ***12*** *07:33:50.8±4.2, 9.°83N×122.°91E, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.5/51, mbtmp3.9/3, MS2.8/1, Ms1 2.8/1, ms1mx2.5/37, Error ellipse: s-maj=200.9km s-min=79.0km az=70.0*
ISCJB ***12*** *07:33:51.8±1.4, 9.°4N±0.°1×122.°3E±0.°2, h10km, mb3.9/3, Error ellipse: s-maj=24.1km s-min=16.0km az=0.1*

ISC 12 07:33:53.6±1.3, 9°5N±0.°1×122°5E±0.°2, h10km, n7, σ0§98/6, mb3.8/3, 1C, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.78**	**102**			*i* P	**Pg**	**07 34 08.8**	**+0.1**
RCP	**Roxas**	**2.06**	**8⇑**			*e*P	**Pn**	**07 34 28.3**	**-0.1**
TGY	**Tag

ZHN				*e*S	**Sb**	**07 42 35.6**	**+1.6**
	134nm,0.2s						
SATY	**Saty**	**3.25**	**281**	*e*P	**Pb**	**07 41 51.6**	**-2.8**
	29nm,0.3s						
SATY				*e*S	**Sb**	**07 42 31.4**	**-2.7**
	110nm,0.4s						
KURS	**Kuram**	**3.51**	**288**	*e*P	**Pb**	**07 41 56.1**	**-2.7**
	1.4nm,0.4s						
KURS				*e*S	**Sb**	**07 42 38.9**	**-2.5**
	7.9nm,0.6s						
KAPS	**Kapalarasan**	**3.72**	**320**	*e*P	**Pg**	**07 42 04.8**	**-2.9**
	17nm,0.2s						
KAPS				*e*S	**Sg**	**07 42 53.9**	**-2.0**
	18nm,0.3s						
ARXS	**Arharly**	**3.98**	**297**	*e*P	**Pb**	**07 42 08.1**	**+1.2**
	8.9nm,0.4s						
ARXS				*e*S	**Sb**	**07 42 59.4**	**+4.3**
	20nm,0.5s						
MK31	**Makanchi Array**	**4.31**	**356**	⇑Pn	**Pb**	**07 42 14.7**	**+2.3**
	1.4nm,0.5s,baz=190,slow=13,SNR=75						
MK31				⇑Pg	Pg	07 42 28.9	+10
	8.1nm,0.8s,baz=180,slow=14,SNR=11						
MK31				⇑Lg	Lg	07 43 30.4	
	4.6nm,0.5s,baz=183,slow=29,SNR=4.4						
MAKZ	**Makanchi**	**4.35**	**353**	⇑Pn	**Pb**	**07 42 15.2**	**+2.2**
	2.7nm,0.4s						
MAKZ				⇑Sn	**Sg**	**07 43 12.7**	**-3.4**
	2.4nm,0.3s						
MAKZ				⇓Lg	Lg	07 43 29.7	
	11nm,0.8s						
IZV	**Izvestkoviy**	**4.55**	**279**	*e*P	**Pb**	**07 42 15.8**	**-0.9**
	9.4nm,0.4s						
IZV				*e*S	**Sb**	**07 43 12.5**	**+0.9**
	39nm,0.6s						
DGS	**Degeres**	**5.19**	**281**	*e*P	**Pb**	**07 42 28.6**	**+1.2**
	6.3nm,0.5s						
DGS				*e*S	**Sb**	**07 43 34.6**	**+4.8**
	13nm,0.4s						

IDC 12 07:54:04.6±2.8, 9°15N×121°71E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.3/58, mbtmp3.5/3, Error ellipse: s-maj=360.8km s-min=26.5km az=62.0, Sulu Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**31.47**	**157**	P	P	08 00 27.4	-0.8
	0.4nm,0.6s,baz=337,slow=9.3,SNR=6.1						
ASAR	**Alice Springs**	**34.73**	**160**	P	P	08 00 57.2	+0.6
	0.3nm,0.5s,baz=333,slow=6.7,SNR=11						
MKAR	**Makanchi Array**	**50.29**	**325**	P	P	08 03 02.9	-0.1
	0.6nm,0.8s,baz=128,slow=9.3,SNR=6.0						

GUC 12 07:56:31.6±0.7, 38°56S×73°47W, h31km±3km, ML4.1, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSCH	**Puerto Saavedr**	**0.25**	**167**	⇓*i*P	Pn	07 56 39.1	-0.1
PSCH				*i* S	Sn	07 56 43.9	-0.2
PSCH				IAML		07 56 45.2	
	comp=N,255μm,0.3s						
VLCH	**Valdivia**	**1.26**	**172**	*e*P	Pb	07 56 54.2	-0.5
VLCH				*i* S	Sb	07 57 11.8	+1.2
CCHI	**Chillan**	**2.24**	**30**	*e*P	Pb	07 57 09.2	-2.1
CCHI				IAML		07 57 49.5	
	comp=N,1μm,0.8s						
PLCA	**Paso Flores**	**3.13**	**135**	*e*P	Pn	07 57 21.9	+3.0

IDC 12 07:57:14.3±0.5, 9°53N×122°20E, h0km, mb4.2/23, mb1 4.3/23, mb1mx4.2/54, mbtmp4.2/23, MS3.5/11, Ms1 3.6/11, ms1mx3.2/41, Error ellipse: s-maj=29.1km s-min=11.2km az=67.0
ISCJB 12 07:57:14.6±0.2, 9°52N±0°03×122°13E±0°03, h10km, mb4.5/48, MS3.7/15, Error ellipse: s-maj=4.1km s-min=3.7km az=8.6
NEIC 12 07:57:15.7±0.3, 9°64N×122°31E, h10km, mb4.8/18, Error ellipse: s-maj=9.6km s-min=5.5km az=73.0
MOS 12 07:57:17.5±1.1, 9°62N×122°28E, h33km, mb4.8/13, Error ellipse: s-maj=20.9km s-min=8.5km az=122.1
KLM 12 07:57:17.9, 9°84N×122°17E, h100km, mb4.8
BJI 12 07:57:18.3, 9°60N×122°30E, h35km, mb4.5/24, mB4.8/20, Ms4.2/16, Ms7 4.1/17

ISC 12 07:57:15.6±0.3, 9°61N±0°04×122°24E±0°03, h10km, n113, σ1°93/133, mb4.5/48, MS3.7/15, 7C-7D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.01**	**105**	⇓*i*P	**Pg**	**07 57 32.2**	**-3.0**
SNPH				*i* S	Sn	07 57 49.0	-1.3
JAP	**San Jose, Anti**	**1.17**	**346**	⇓*i*P	**Pn**	**07 57 38.9**	**+0.8**
TBP	**Tagbilaran**	**1.60**	**87**	⇓*i*P	**Pg**	**07 57 47.9**	**+1.5**
LLP	**Lapu-Lapu**	**1.84**	**67**	⇑*e*P	**Pg**	**07 57 50.6**	**-0.4**
LLP				*e*S	**Sg**	**07 58 16.1**	**+1.4**
RCP	**Roxas**	**2.00**	**14**	⇓*e*P	**Pg**	**07 57 52.3**	**-1.7**
RCP				*e*S	**Sg**	**07 58 19.0**	**-1.0**
CGP	**Cagayan de Oro**	**2.68**	**115**	⇑*e*P	**Pb**	**07 58 01.1**	**-2.7**
CGP				*e*S	**Sb**	**07 58 37.4**	**+0.7**
CTBH	**Cotabato--PC H**	**3.09**	**140**	*e*P	**Pb**	**07 58 07.5**	**-3.2**
CTBH				*i* S	**Sb**	**07 58 47.4**	**-1.2**
PLP	**Palo**	**3.10**	**60**	⇓*e*P	**Pb**	**07 58 08.0**	**-3.0**
PLP				*e*S	**Sn**	**07 58 43.0**	**+1.0**
PPR	**Puerto Princes**	**3.47**	**273**	⇑*i*P	**Pn**	**07 58 09.4**	**-0.3**
PPR				*i* S	**Sn**	**07 58 47.1**	**-3.7**
MYLDM	**Lahad Datu**	**5.76**	**220**	*e*Pn	**Pn**	**07 58 43.2**	**+2.0**
KDM	**Kudat**	**5.98**	**244**	⇑P	**Pn**	**07 58 44.1**	**-0.2**
TSM	**Tawau**	**6.83**	**220**	⇑P	**Pn**	**07 58 57.0**	**+1.0**
KKM	**Kota Kinabalu**	**6.94**	**240**	*e*Pn	**Pn**	**07 58 57.6**	**0.0**
KKM				*e*Sn	**Sn**	**08 00 15.0**	**-1.8**
BTM	**Bintulu**	**11.10**	**236**	⇓P	**Pn**	**07 59 54.9**	**+0.3**
SBUM	**Sibu**	**12.24**	**235**	⇑P	**Pn**	**08 00 11.0**	**+0.9**
SBUM	**Sibu**	**12.24**	**235**	*e*Pn	**Pn**	**08 00 11.8**	**+1.6**
KAPI	**Kappang**	**14.74**	**190**	LR	LR	08 06 14.7	
	comp=Z,140nm,21.1s,baz=2.3,slow=37						
QIZ	**Qiongzhong**	**15.22**	**309**	P	**Pn**	**08 00 51.9**	**+1.1**
QIZ				S	**Sn**	**08 03 40.6**	**+1.0**
QIZ				LR	LR		
	comp=N,310nm,13.8s						
QIZ				LR	LR		
	comp=E,350nm,15.4s						
QIZ				LR	LR		
	comp=Z,500nm,14.6s						
UGM	**Wanagama**	**20.96**	**214**	*e*P	**P**	**08 02 02.8**	**+3.8**
	173nm,1.3s						
GYA	**Guiyang**	**22.32**	**321**	P	**P**	**08 02 15.4**	**+1.6**
GYA				pP	sP	08 02 23.6	+5.7
GYA				PP	**PnPn**	**08 02 43.0**	**+6.5**
GYA				S	**S**	**08 06 14.8**	**-4.7**
GYA				sS	Sn	08 06 29.2	-2.2
GYA				SS	**SnSn**	**08 06 55.5**	**+8.3**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,4.8s						
GYA				LR	LR		
	comp=N,510nm,14.8s						
GYA				LR	LR		
	comp=E,490nm,15.0s						
GYA				LR	LR		
	comp=Z,500nm,15.2s						
MNAI	**Manna**	**23.70**	**235**	*e*P	**P**	**08 02 29.6**	**+1.7**
	636nm,1.5s						
MTN	**Manton Dam**	**23.99**	**158**	*e*P	**P**	**08 02 30.2**	**-0.5**
	41nm,1.5s						
KMI	**Kunming**	**24.12**	**312**	P	**P**	**08 02 34.6**	**+2.5**
KMI				sP	sP	08 02 45.0	+8.6
KMI				S	**S**	**08 06 51.4**	**+1.2**
KMI				SS	**SnSn**	**08 07 35.9**	**+4.5**
KMI				pmax	pmax		
	comp=Z,9.0nm,0.5s						
KMI				LR	LR		
	comp=N,120nm,12.5s						
KMI				LR	LR		
	comp=E,180nm,12.9s						
KMI				LR	LR		
	comp=Z,180nm,13.3s						
PSI	**Prapat**	**24.14**	**255**	*e*P	**P**	**08 02 32.8**	**+0.6**
PSI				pmax	pmax		
	comp=Z,66nm,1.8s						
PSI	**Prapat**	**24.14**	**255**	*e*P	**P**	**08 02 32.8**	**+0.6**
	comp=Z,66nm,1.8s						
CM01	**Chiang Mai Arr**	**24.20**	**294**	*e*P	**P**	**08 02 31.3**	**-1.3**
CMAR	**Chiang Mai Arr**	**24.23**	**294**	P	**P**	**08 02 31.4**	**-1.5**
	comp=Z,2.1nm,0.3s,baz=130,slow=8.8,SNR=8.1						
CMAR				LR	LR	08 11 30.1	
	comp=Z,136nm,19.4s,baz=140,slow=35						
JNU	**Nakatsue**	**24.72**	**18**	LR	LR	08 11 55.0	
	comp=Z,78nm,21.0s,baz=300,slow=36						
CD2	**Chengdu**	**27.30**	**324**	*e*P	**P**	**08 03 00.5**	**-0.1**
CD2				pP	sP	08 03 09.6	+4.7
CD2				sP	pP	08 03 13.8	+10
CD2				S	**S**	**08 07 39.1**	**-1.2**
CD2				sS	sS	08 07 54.9	+10
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.0s						
FITZ	**Fitzroy Crossi**	**27.74**	**173**	P	**P**	**08 03 03.1**	**-1.5**
	comp=Z,4.3nm,0.8s,baz=89,slow=10,SNR=3.8						
KSRS	**Korea Array**	**28.19**	**10**	LR	LR	08 16 12.1	
	comp=Z,67nm,18.4s,baz=206,slow=40						
WRAB	**Tennant Creek**	**31.68**	**158**	*e*P	**P**	**08 03 39.4**	**-0.2**
WRAB				pmax	pmax		
	comp=Z,12nm,1.0s						
WRAB	**Tennant Creek**	**31.68**	**158**	*e*P	**P**	**08 03 39.6**	**+0.1**
	comp=Z,16nm,1.2s						
WRA	**Warramunga Arr**	**31.69**	**158**	P	**P**	**08 03 39.1**	**-0.5**
	comp=Z,4.2nm,1.1s,baz=335,slow=9.7,SNR=21						
WRA				PcP	**PcP**	**08 06 31.0**	**-0.5**
	comp=Z,2.8nm,0.8s,baz=338,slow=3.1,SNR=13						
WB2	**Warramunga Arr**	**31.69**	**158**	*e*P	**P**	**08 03 39.2**	**-0.4**
	comp=Z,9.8nm,1.0s						
HHC	**Hu-ho-hao-te**	**32.52**	**345**	*e*P	**P**	**08 03 49.4**	**+2.6**
HHC				S	**S**	**08 09 01.7**	**-0.4**
HHC				pmax	pmax		
	comp=Z,10.0nm,0.7s						
HHC				pmax	pmax		
	comp=Z,61nm,4.1s						
HHC				LR	LR		
	comp=Z,190nm,17.3s						
HHC				LR	LR		
	comp=Z,130nm,16.0s						
HHC				LR	LR		
	comp=Z,110nm,17.3s						
AS31	**Alice Springs**	**34.98**	**161**	*e*P	**P**	**08 04 08.8**	**+0.5**
	comp=Z,2.3nm,0.7s						
ASAR	**Alice Springs**	**34.98**	**161**	P	**P**	**08 04 08.8**	**+0.5**
	comp=Z,5.9nm,0.7s,baz=344,slow=7.5,SNR=76						
ASAR				PcP	**PcP**	**08 06 40.5**	**-0.2**
	comp=Z,2.2nm,0.8s,baz=332,slow=1.9,SNR=12						
AS01	**Alice Springs**	**34.99**	**161**	*e*P	**P**	**08 04 08.8**	**+0.3**
USRK	**Ussuriysk Ar.**	**35.48**	**12**	P	**P**	**08 04 14.1**	**+1.7**
	comp=Z,3.7nm,0.8s,baz=204,slow=11,SNR=10						
KLR	**Kul'dur**	**40.29**	**10**	P	**P**	**08 04 53.2**	**+0.3**
	comp=Z,1.1nm,0.7s,baz=243,slow=4.8,SNR=4.2						
KLR	**Kul'dur**	**40.29**	**10**	*e*P	**P**	**08 04 51.8**	**-1.1**
SONM	**Songino Array**	**40.38**	**344**	P	**P**	**08 04 54.6**	**+0.7**
	comp=Z,1.8nm,0.9s,baz=178,slow=9.4,SNR=11						
SONM				LR	LR	08 23 42.0	
	comp=Z,94nm,18.5s,baz=141,slow=39						
FORT	**Forrest**	**40.54**	**172**	*e*P	**P**	**08 04 55.5**	**+0.3**
	comp=Z,178nm,0.8s						
NWAO	**Narrogin (SRO)**	**42.57**	**186**	*e*P	**P**	**08 05 12.7**	**+0.9**
NWAO				pmax	pmax		
	comp=Z,124nm,1.8s						
NWAO	**Narrogin (SRO)**	**42.57**	**186**	*e*P	**P**	**08 05 12.7**	**+0.9**
	comp=Z,124nm,1.8s						
BBOO	**Buckleboo**	**44.19**	**163**	*e*P	**P**	**08 05 25.1**	**+0.1**
	comp=Z,38nm,1.3s						
TLY	**Talaya**	**44.63**	**344**	LR	LR	08 26 19.7	
	comp=Z,53nm,18.7s,baz=139,slow=39						
STKA	**Stephens Creek**	**45.22**	**157**	P	**P**	**08 05 32.9**	**-0.2**
	comp=Z,4.2nm,0.7s,baz=330,slow=6.6,SNR=10						
STKA				PcP	**PcP**	**08 07 12.6**	**-0.7**
	comp=Z,2.4nm,0.7s,baz=339,slow=3.6,SNR=4.7						
STKA	**Stephens Creek**	**45.22**	**157**	*e*P	**P**	**08 05 33.8**	**+0.7**
STKA						08 07 12.6	
STKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
STKA	**Stephens Creek**	**45.22**	**157**	*e*P	**P**	**08 05 33.8**	**+0.7**
	comp=Z,1.4nm,0.8s						
STKA				PcP	**PcP**	**08 07 12.6**	**-0.7**
WMQ	**Urumqi**	**45.38**	**325**	P	**P**	**08 05 34.1**	**-0.4**
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,73nm,4.2s						
WMQ				LR	LR		
	comp=Z,170nm,12.3s						
WMQ				LR	LR		
	comp=Z,120nm,10.0s						
WMQ				LR	LR		
	comp=Z,220nm,18.4s						
MK01	**Makanchi Array**	**50.20**	**325**	*e*P	**P**	**08 06 12.6**	**+0.9**
MK31	**Makanchi Array**	**50.22**	**325**	*e*P	**P**	**08 06 12.5**	**+0.7**
MK31	**Makanchi Array**	**50.22**	**325**	*e*P	**P**	**08 06 12.5**	**+0.7**
MKAR	**Makanchi Array**	**50.22**	**325**	P	**P**	**08 06 12.9**	**+1.1**
	comp=Z,2.6nm,1.0s,baz=122,slow=8.7,SNR=13						
MKAR	**Makanchi Array**	**50.22**	**325**	*e*P	**P**	**08 06 12.6**	**+0.8**
MKAR	**Makanchi Array**	**50.22**	**325**	*e*P	**P**	**08 06 12.6**	**+0.8**
MAKZ	**Makanchi**	**50.40**	**325**	*e*P	**P**	**08 06 14.5**	**+1.2**
MAKZ				pmax	pmax		
	comp=Z,7.0nm,1.3s						
MAKZ	**Makanchi**	**50.40**	**325**	*e*P	**P**	**08 06 14.5**	**+1.2**
	comp=Z,7.4nm,1.3s						
KSH	**Kashi**	**50.77**	**314**	*e*P	**P**	**08 06 19.6**	**+3.3**
KSH				*ep*P	sP	08 06 29.5	+8.8
KSH				PcS	**PcS**	**08 11 31.9**	**+1.1**
KSH				S	**S**	**08 13 32.9**	**+0.7**
KSH				ScS	**ScS**	**08 16 04.2**	**-3.5**
KSH				SS	**SS**	**08 17 05.3**	**-1.5**
KSH				pmax	pmax		
	comp=Z,76nm,6.0s						
KSH				LR	LR		
	comp=Z,410nm,12.9s						
KSH				LR	LR		
	comp=Z,260nm,11.9s						
KSH				LR	LR		
	comp=Z,130nm,8.2s						
FRU	**Bishkek**	**53.04**	**317**	*e*P	P	08 06 43.0	+10
AAK	**Ala-Archa**	**53.04**	**317**	P	**P**	**08 06 34.8**	**+1.6**
	comp=Z,1.6nm,0.3s,baz=104,slow=6.9,SNR=3.8						
AAK				LR	LR	08 30 41.2	
	comp=Z,55nm,21.4s,baz=56,slow=38						
AAK	**Ala-Archa**	**53.04**	**317**	*i* P	**P**	**08 06 32.6**	**-0.6**
AAK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
ZALV	**Zalesovo Beam**	**53.37**	**333**	P	**P**	**08 06 35.5**	**+0.3**
	comp=Z,0.8nm,0.6s,baz=127,slow=9.2,SNR=3.3						
ZALV				LR	LR	08 29 20.3	
	comp=Z,34nm,18.4s,baz=70,slow=36						
KURBB	**Kurchatov Arra**	**54.42**	**327**	P	**P**	**08 06 43.8**	**+0.9**
	comp=Z,2.1nm,0.8s,baz=131,slow=6.6,SNR=15						
KURK	**Kurchatov**	**54.42**	**327**	*e*P	**P**	**08 06 44.2**	**+1.2**
KURK				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KURK	**Kurchatov**	**54.42**	**327**	*e*P	**P**	**08 06 44.2**	**+1.2**
	comp=Z,8.1nm,1.1s						
KKAR	**Karatay Array**	**55.93**	**316**	*e*P	**P**	**08 06 54.2**	**+0.1**
KKAR	**Karatay Array**	**55.93**	**316**	*e*P	**P**	**08 06 54.2**	**+0.1**
BVAR	**Borovoye Array**	**59.99**	**327**	P	**P**	**08 07 23.1**	**+0.7**
	comp=Z,0.7nm,0.8s,baz=101,slow=7.7,SNR=4.5						
BRVK	**Borovoye**	**60.07**	**327**	*e*P	**P**	**08 07 23.3**	**+0.5**
BRVK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
BRVK	**Borovoye**	**60.07**	**327**	*e*P	**P**	**08 07 23.2**	**+0.3**
	comp=Z,3.4nm,0.8s						
ZRNK	**Zerenda**	**60.72**	**326**	*e*P	**P**	**08 07 26.6**	**-0.7**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ZRNK	**Zerenda**	**60.72**	**326**	*e*P	**P**	**08 07 26.6**	**-0.7**
	comp=Z,2.8nm,0.9s						
NRIK	**Noril'sk**	**63.72**	**347**	P	**P**	**08 07 47.5**	**+0.4**
	comp=Z,1.3nm,0.5s,baz=131,slow=10,SNR=4.2						
GEYT	**Alibeck**	**63.78**	**308**	P	**P**	**08 07 50.0**	**+1.9**
	comp=Z,2.1nm,0.3s,baz=106,slow=4.7,SNR=3.5						
ABKAR	**Akbulak array**	**64.81**	**320**	*e*P	**P**	**08 07 55.4**	**+0.8**
AKTO	**Aktyubinsk**	**66.31**	**321**	P	**P**	**08 08 04.1**	**-0.3**
	comp=Z,1.3nm,0.6s,baz=113,slow=7.9,SNR=3.6						
AKTO				LR	LR	08 38 34.2	
	comp=Z,47nm,18.7s,slow=37						
ARU	**Arti**	**67.62**	**327**	LR	LR	08 39 49.0	
	comp=Z,56nm,18.7s,baz=148,slow=38						
ARU	**Arti**	**67.62**	**327**	*d* P	**P**	**08 08 11.6**	**-0.9**
ARU						08 10 37.3	
ARU				S	**S**	**08 17 08.2**	**-1.3**
ARU				SS	**SS**	**08 21 23.8**	**-6.3**
ARU				pmax	pmax		
	comp=Z,11nm,2.5s						
KIV	**Kislovodsk**	**75.89**	**313**	*e*P	**P**	**08 09 03.4**	**+0.7**
KIV				pmax	pmax		
	comp=Z,6.0nm,0.9s						
CASY	**Casey**	**76.17**	**185**	*e*P	**P**	**08 09 03.8**	**+0.2**
	comp=Z,11nm,0.7s						
KLMR	**Klimovskoe**	**78.13**	**330**	*e*P	**P**	**08 09 11.0**	**-3.8**
KLMR				*e*		08 09 20.8	
KLMR				pmax	pmax		
	comp=Z,5.0nm,1.1s						
OBN	**Obninsk**	**79.72**	**324**	LR	LR	08 44 34.8	
	comp=Z,30nm,18.8s,baz=94,slow=36						
OBN	**Obninsk**	**79.72**	**324**	⇑*e*P	**P**	**08 09 23.7**	**+0.1**
OBN				*i* S	**S**	**08 19 17.8**	**-8.4**
OBN				pmax	pmax		
	comp=Z,7.0nm,0.8s						
OBN				MLR	MLR		
	comp=Z,27nm,18.0s						
ASF	**Jabal al Asfar**	**81.04**	**301**	P	**P**	**08 09 33.6**	**+2.2**
	comp=Z,0.9nm,0.4s,baz=42,slow=7.3,SNR=3.0						
BRTR	**Keskin Array B**	**82.87**	**309**	P	**P**	**08 09 40.6**	**-0.4**
	comp=Z,1.3nm,0.8s,baz=108,slow=7.9,SNR=6.3						
BR231	**Keskin MP Arra**	**83.52**	**309**	*e*P	**P**	**08 09 41.4**	**-2.8**
AKASG	**Malin Array Be**	**84.55**	**320**	P	**P**	**08 09 48.7**	**-0.4**
	comp=Z,2.6nm,0.8s,baz=70,slow=5.1,SNR=6.3						
KIEV	**Kiev**	**84.56**	**320**	*e*P	**P**	**08 09 48.5**	**-0.7**
KIEV				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KIEV	**Kiev**	**84.56**	**320**	*e*P	**P**	**08 09 46.8**	**-2.3**
	comp=Z,6.5nm,1.0s						
FINES	**FINESS Array B**	**84.58**	**331**	P	**P**	**08 09 48.9**	**0.0**
	comp=Z,1.7nm,0.8s,baz=142,slow=4.8,SNR=2.8						
FINES	**FINESS Array B**	**84.58**	**331**	P	**P**	**08 09 49.0**	**0.0**
AK11	**Malin Array Si**	**84.59**	**320**	*e*P	**P**	**08 09 48.8**	**-0.5**
INK	**Inuvik**	**86.34**	**21**	P	**P**	**08 09 58.0**	**+0.4**
	comp=Z,2.6nm,0.9s,baz=288,slow=7.3,SNR=5.1						
MLR	**Muntele Rosu**	**87.61**	**316**	P	**P**	**08 10 04.8**	**+0.3**
	comp=Z,0.3nm,0.4s,baz=282,slow=2.1,SNR=4.0						
KARP	**Karpathos**	**88.58**	**306**	*e*P	**P**	**08 10 07.8**	**-1.5**
	comp=Z,20nm,1.0s						
VNDA	**Vanda**	**89.81**	**172**	P	**P**	**08 10 13.8**	**-0.2**
	comp=Z,1.7nm,0.9s,baz=302,slow=7.2,SNR=9.1						
VNDA	**Vanda**	**89.81**	**172**	*e*P	**P**	**08 10 13.4**	**-0.5**
VNDA				pmax	pmax		
	comp=Z,10.0nm,1.7s						
VNDA	**Vanda**	**89.81**	**172**	*e*P	**P**	**08 10 13.4**	**-0.5**
	comp=Z,9.9nm,1.7s						
CRVS	**Cervenica-Dubn**	**89.83**	**320**	*e*P	**P**	**08 10 16.0**	**+1.2**
CRVS	**Cervenica-Dubn**	**89.83**	**320**	*e*P	**P**	**08 10 16.0**	**+1.2**
STHS	**Stebnicka Huta**	**89.84**	**320**	*e*P	**P**	**08 10 16.1**	**+1.2**
STHS	**Stebnicka Huta**	**89.84**	**320**	*e*P	**P**	**08 10 16.1**	**+1.2**
VYHS	**Vyhne**	**91.62**	**320**	*e*P	**P**	**08 10 23.2**	**+0.1**
VYHS	**Vyhne**	**91.62**	**320**	*e*P	**P**	**08 10 23.2**	**+0.1**
TORD	**Torodi Ar. Bea**	**116.79**	**290**	PKP	**PKPdf**	**08 16 01.8**	**+0.4**
	comp=Z,0.3nm,0.8s,baz=122,slow=1.9,SNR=2.5						
TXAR	**Lajitas Array**	**121.22**	**47**	PKP	**PKPdf**	**08 16 10.0**	**+0.2**
	comp=Z,0.3nm,0.8s,baz=338,slow=0.7,SNR=4.3						
TXAR	**Lajitas Array**	**121.22**	**47**	PKIKP	**PKPdf**	**08 16 10.0**	**+0.2**
PLCA	**Paso Flores**	**146.99**	**162**	PKPbc	**PKPbc**	**08 16 59.5**	**+0.5**
	comp=Z,8.4nm,0.8s,baz=225,slow=5.2,SNR=15						
PLCA	**Paso Flores**	**146.99**	**162**	*e*PKP2	**PKPbc**	**08 16 59.7**	**+0.7**
PLCA	**Paso Flores**	**146.99**	**162**	*e*PKPbc	**PKPbc**	**08 16 59.7**	**+0.7**

IDC 12 07:59:24.2±1.0, 30°31N×83°72E, h0km, mb3.8/8, mb1 4.1/9, mb1mx3.6/62, mbtmp3.9/9, ML4.8/1, MS3.3/1, Ms1 3.4/1, ms1mx2.6/35, Error ellipse: s-maj=30.7km s-min=21.7km az=41.0
ISCJB 12 07:59:26.5±0.9, 30°4N±0°1×83°55E±0°06, h18km, mb3.8/9, MS3.3/1, Error ellipse: s-maj=17.5km s-min=6.6km az=16.4
BJI 12 07:59:30.0, 30°67N×83°89E, h6km, mb3.9/4
NEIC 12 07:59:31.2±2.4, 30°34N×83°73E, h48km±23km, mb4.2/3, Error ellipse: s-maj=27.4km s-min=12.7km az=223.0

ISC 12 07:59:28.0±0.6, 30°36N±0°09×83°61E±0°05, h18km, n22, σ1°46/24, mb3.9/9, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTH	**Pithoragarh**	**3.05**	**256**	*e*P	**Pb**	**08 00 22.8**	**+0.8**
PTH				*e*S	**Sg**	**08 01 05.9**	**-0.3**
LSA	**Lhasa**	**6.57**	**94**	*e*Pn	**Pn**	**08 01 05.6**	**+1.4**
	24nm,0.8s						
LSA				*e*Sn	**Sn**	**08 02 22.3**	**+3.3**
WMQ	**Urumqi**	**13.82**	**12**	*e*P	**Pn**	**08 02 42.7**	**-0.4**
GTA	**Gaotai**	**16.05**	**51**	*e*P	**P**	**08 03 17.3**	**+1.0**
GTA				pP	pP	08 03 21.4	0.0
GTA				sP	sP	08 03 24.6	+0.9
GTA				pmax	pmax		
	comp=Z,6.0nm,1.2s						
MKAR	**Makanchi Array**	**16.44**	**357**	Pn	**P**	**08 03 19.6**	**-0.8**
	0.2nm,0.3s,baz=178,slow=11,SNR=13						
KKAR	**Karatay Array**	**16.46**	**324**	*e*P	**Pn**	**08 03 17.8**	**-0.3**
	1.1nm,0.5s						
CD2	**Chengdu**	**17.35**	**83**	*e*P	**P**	**08 03 30.2**	**-0.5**
CD2				pP	pP	08 03 34.5	-1.3
CD2				sP	sP	08 03 35.9	-2.2
CD2				S	**Sn**	**08 06 41.1**	**-1.0**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CMAR	**Chiang Mai Arr**	**18.29**	**127**	P	**Pn**	**08 03 38.5**	**-2.4**
	1.1nm,0.3s,baz=306,slow=11,SNR=6.9						
KURBB	**Kurchatov Arra**	**20.60**	**351**	P	**P**	**08 04 04.5**	**-1.5**
	4.6nm,0.8s,baz=172,slow=10,SNR=46						
KURK	**Kurchatov**	**20.68**	**351**	*e*P	**P**	**08 04 05.9**	**-1.0**
	37nm,1.1s						
GEYT	**Alibeck**	**22.36**	**297**	P	**P**	**08

AOS AML AML 08 00 25.4
AOS AML AML 08 00 25.6
SKIA Skiathos 0.46 238 P **Pg** **08 00 24.6 -0.1**
SKIA S **Sb** **08 00 31.8 -0.7**
SKIA Skiathos 0.46 238 P **Pg** **08 00 24.6 -0.1**
SKIA S **Sb** **08 00 31.8 -0.7**
SKIA Skiathos 0.46 238 P **Pg** **08 00 24.6 -0.1**
SKIA S **Sb** **08 00 32.0 -0.6**
SKIA AML AML 08 00 32.6
SKIA AML AML 08 00 33.3
comp=N,98755µm,0.6s
PAIG Paliouri 0.56 337 P **Pb** **08 00 27.3 -0.2**
PAIG S **Sb** **08 00 35.2 -0.3**
PAIG Paliouri 0.56 337 P **Pb** **08 00 27.7 +0.2**
PAIG S **Sb** **08 00 35.2 -0.3**
PAIG Paliouri 0.56 337 P **Pb** **08 00 27.3 -0.2**
PAIG S **Sb** **08 00 35.2 -0.3**
PAIG Paliouri 0.56 337 P **Pb** **08 00 27.7 +0.2**
PAIG S **Sb** **08 00 35.7 +0.2**
NEO Neokhori 0.59 260 P **Pg** **08 00 26.9 -0.2**
NEO S **Sb** **08 00 35.7 -0.5**
NEO Neokhori 0.59 260 P **Pg** **08 00 27.0 -0.2**
NEO S **Sb** **08 00 35.5 -0.7**
NEO Neokhori 0.59 260 P **Pg** **08 00 26.9 -0.2**
NEO S **Sb** **08 00 35.7 -0.5**
NEO Neokhori 0.59 260 P **Pg** **08 00 27.0 -0.2**
NEO S **Sb** **08 00 35.5 -0.7**
NEO AML AML 08 00 37.0
comp=N,43658µm,0.6s
NEO AML AML 08 00 37.7
comp=E,30519µm,0.2s
XOR Xorichti 0.60 266 P **Pg** **08 00 27.1 -0.3**
XOR S **Sb** **08 00 36.3 -0.4**
XOR Xorichti 0.60 266 P **Pg** **08 00 27.5 +0.1**
XOR S **Sb** **08 00 37.7 +1.0**
XOR Xorichti 0.60 266 P **Pg** **08 00 27.1 -0.3**
XOR S **Sb** **08 00 36.3 -0.4**
XOR Xorichti 0.60 266 P **Pg** **08 00 27.5 +0.1**
XOR S **Sb** **08 00 37.7 +1.0**
XOR AML AML 08 00 37.8
comp=E,22384µm,0.4s
XOR AML AML 08 00 38.7
comp=N,26413µm,0.2s
SMIA Simia 0.79 228 P **Pg** **08 00 30.8 -0.2**
SMIA S **Sb** **08 00 42.7 +0.6**
FYTO Fytoko, Volos 0.80 270 P **Pg** **08 00 30.9 -0.2**
FYTO S **Sb** **08 00 42.3 +0.1**
FYTO Fytoko, Volos 0.80 270 P **Pg** **08 00 30.9 -0.2**
FYTO S **Sb** **08 00 42.3 +0.1**
FYTO Fytoko, Volos 0.80 270 P **Pg** **08 00 30.9 -0.2**
FYTO S **Sb** **08 00 42.3 +0.1**
OUR Ouranopolis 0.92 1 *e*PG **Pg** **08 00 33.5 0.0**
OUR *e*SG **Sn** **08 00 47.0 -0.7**
OUR Ouranopolis 0.92 1 P **Pg** **08 00 33.6 0.0**
OUR S **Sn** **08 00 46.9 -0.7**
OUR Ouranopolis 0.92 1 *e*Pg **Pg** **08 00 33.5 0.0**
OUR Ouranopolis 0.92 1 P **Pn** **08 00 34.1 -0.4**
OUR *e*Sg **Sn** **08 00 47.0 -0.7**
OUR Ouranopolis 0.92 1 P **Pg** **08 00 33.6 0.0**
OUR S **Sn** **08 00 46.9 -0.7**
OUR Ouranopolis 0.92 1 P **Pn** **08 00 34.1 -0.4**
OUR S **Sn** **08 00 47.2 -0.5**
OUR AML AML 08 00 48.8
comp=E,18226µm,0.4s
OUR AML AML 08 00 49.7
comp=N,13170µm,0.3s
EREA Eretria 0.99 182 P **Pb** **08 00 33.8 -0.9**
EREA S **Sg** **08 00 47.8 +0.2**
EREA Eretria 0.99 182 P **Pb** **08 00 34.2 -0.5**
EREA S **Sb** **08 00 46.8 -0.9**
EREA Eretria 0.99 182 P **Pb** **08 00 34.2 -0.5**
EREA S **Sb** **08 00 46.8 -0.9**
EREA AML AML 08 00 49.4
comp=N,29956µm,0.6s
EREA AML AML 08 00 49.8
comp=E,27422µm,0.4s
ATAL Atalanti 1.03 226 P **Pb** **08 00 34.9 -0.5**
ATAL S **Sg** **08 00 49.0 +0.2**
ATAL Atalanti 1.03 226 P **Pb** **08 00 34.9 -0.5**
ATAL S **Sg** **08 00 49.1 +0.2**
ATAL Atalanti 1.03 226 P **Pb** **08 00 34.9 -0.5**
ATAL S **Sg** **08 00 49.0 +0.2**
ATAL Atalanti 1.03 226 P **Pb** **08 00 35.0 -0.5**
ATAL S **Sg** **08 00 49.1 +0.2**
ATAL AML AML 08 00 51.7
comp=E,6168µm,0.6s
ATAL AML AML 08 00 52.5
comp=N,8362µm,0.7s
PLG Polygyros 1.04 337 P **Pb** **08 00 35.0 -0.7**
PLG S **Sn** **08 00 50.0 -0.8**
PLG Polygyros 1.04 337 P **Pb** **08 00 35.0 -0.7**
PLG S **Sg** **08 00 49.6 +0.2**
PLG Polygyros 1.04 337 P **Pb** **08 00 35.0 -0.7**
PLG S **Sn** **08 00 50.0 -0.8**
PLG Polygyros 1.04 337 P **Pb** **08 00 34.8 -0.9**
PLG S **Sg** **08 00 49.6 +0.2**
LIA Limnos Island 1.06 62 P **Pb** **08 00 35.2 -0.7**
LIA S **Sn** **08 00 50.2 -0.7**
LIA Limnos Island 1.06 62 P **Pn** **08 00 35.7 -0.6**
LIA S **Sn** **08 00 50.2 -0.7**
LIA Limnos Island 1.06 62 P **Pb** **08 00 35.2 -0.7**
LIA S **Sn** **08 00 50.2 -0.7**
LKR Lokris 1.07 225 P **Pb** **08 00 35.5 -0.6**
LKR S **Sn** **08 00 51.0 -0.3**
LKR Lokris 1.07 225 P **Pb** **08 00 35.5 -0.6**
LKR S **Sg** **08 00 50.1 -0.1**
LKR Lokris 1.07 225 P **Pb** **08 00 35.5 -0.6**
LKR S **Sn** **08 00 51.0 -0.3**
LKR Lokris 1.07 225 P **Pb** **08 00 35.5 -0.6**
LKR S **Sg** **08 00 50.1 -0.1**
LKR AML AML 08 00 52.4
comp=N,8672µm,0.4s
LKR AML AML 08 00 52.7
comp=E,6485µm,0.3s
VIL2 Platees 1.31 205 P **Pb** **08 00 39.8 -0.6**
VIL2 S **Sg** **08 00 57.2 -0.8**
VIL2 AML AML 08 01 01.2
comp=N,12011µm,0.4s
VIL2 AML AML 08 01 03.8
comp=E,11591µm,0.5s
AGG Agios Georgios 1.33 254 *e*PN **Pn** **08 00 39.1 -1.0**
AGG Agios Georgios 1.33 254 P **Pn** **08 00 39.3 -0.8**
AGG Agios Georgios 1.33 254 P **Pn** **08 00 39.3 -0.8**
AGG Agios Georgios 1.33 254 P **Pn** **08 00 39.3 -0.8**
AGG Agios Georgios 1.33 254 P **Pn** **08 00 39.1 -1.0**
AGG AML AML 08 01 02.4
comp=N,9842µm,0.7s
AGG AML AML 08 01 03.6
comp=E,11692µm,0.6s
LIT Litokhoron 1.33 302 P **Pn** **08 00 40.0 -0.2**
LIT S **Sb** **08 00 57.4 -0.3**
LIT Litokhoron 1.33 302 P **Pn** **08 00 40.0 -0.2**
LIT S **Sb** **08 00 57.4 -0.3**
LIT Litokhoron 1.33 302 P **Pn** **08 00 40.0 -0.2**
LIT S **Sb** **08 00 57.4 -0.3**
LIT Litokhoron 1.33 302 P **Pn** **08 00 39.2 -0.9**
VILL Villia 1.34 203 P **Pn** **08 00 39.7 -0.6**
VILL S **Sn** **08 00 57.5 -0.6**
VILL Villia 1.34 203 P **Pn** **08 00 39.8 -0.6**
VILL S **Sb** **08 00 57.2 -0.8**
PTL Penteli 1.36 184 P **Pn** **08 00 39.7 -0.8**
PTL Penteli 1.36 184 P **Pn** **08 00 39.8 -0.8**
PTL S **Sn** **08 00 57.5 -1.0**
PTL Penteli 1.36 184 P **Pn** **08 00 39.7 -0.8**
PTL Penteli 1.36 184 P **Pn** **08 00 39.8 -0.8**
PTL S **Sn** **08 00 57.5 -1.0**
PTL AML AML 08 01 02.2
comp=N,6253µm,0.5s
PTL AML AML 08 01 03.6
comp=E,7724µm,0.5s
HORT Hortiatis 1.36 331 *e*PN **Pn** **08 00 40.1 -0.5**
HORT Hortiatis 1.36 331 P **Pn** **08 00 40.2 -0.4**
HORT S **Sn** **08 00 57.8 -0.9**
HORT Hortiatis 1.36 331 *e*Pn **Pn** **08 00 40.1 -0.5**
HORT Hortiatis 1.36 331 P **Pn** **08 00 40.5 -0.1**
HORT S **Sn** **08 00 57.8 -0.9**
HORT Hortiatis 1.36 331 P **Pn** **08 00 40.2 -0.4**
HORT S **Sn** **08 00 57.8 -0.9**
HORT Hortiatis 1.36 331 P **Pn** **08 00 40.5 -0.1**
PROD Prodromos 1.42 216 P **Pn** **08 00 40.1 -1.2**
PROD Prodromos 1.42 216 P **Pn** **08 00 40.1 -1.2**
PROD AML AML 08 01 09.2
comp=E,4063µm,0.4s
PROD AML AML 08 01 09.4
comp=N,6012µm,0.5s
THE Thessaloniki 1.45 328 P **Pn** **08 00 41.6 0.0**
THE Thessaloniki 1.45 328 P **Pn** **08 00 41.6 0.0**
THE Thessaloniki 1.45 328 P **Pn** **08 00 41.6 0.0**
THE Thessaloniki 1.45 328 P **Pn** **08 00 41.2 -0.5**
ATH Athens Observa 1.45 188 P **Pn** **08 00 41.0 -0.7**
ATH Athens Observa 1.45 188 P **Pn** **08 00 41.2 -0.5**
ATH Athens Observa 1.45 188 P **Pn** **08 00 41.0 -0.7**
ATHU Athens Univers 1.45 186 P **Pn** **08 00 40.9 -0.8**
ATHU Athens Univers 1.45 186 P **Pn** **08 00 40.8 -0.9**
ATHU S **Sb** **08 01 00.6 -0.3**
ATHU Athens Univers 1.45 186 P **Pn** **08 00 40.9 -0.8**
ATHU Athens Univers 1.45 186 P **Pn** **08 00 40.8 -0.9**
ATHU S **Sb** **08 01 00.6 -0.3**
ATHU AML AML 08 01 02.1
comp=N,3386µm,0.4s
ATHU AML AML 08 01 02.2
comp=E,2247µm,0.4s
SIGR SIGRI 1.48 97 *e*PN **Pb** **08 00 42.2 -0.8**
SIGR SIGRI 1.48 97 P **Pn** **08 00 41.5 -0.6**
SIGR S **Sb** **08 01 01.7 0.0**
SIGR SIGRI 1.48 97 P **Pn** **08 00 41.9 -0.2**
SIGR SIGRI 1.48 97 *e*Pn **Pb** **08 00 42.2 -0.8**
SIGR S **Sn** **08 01 00.6 -0.7**
SIGR SIGRI 1.48 97 P **Pn** **08 00 41.5 -0.6**
SIGR SIGRI 1.48 97 P **Pn** **08 00 41.9 -0.2**
SIGR S **Sn** **08 01 00.6 -0.7**
SIGR AML AML 08 01 06.0
comp=E,7374µm,0.6s
SIGR AML AML 08 01 06.7
comp=N,9087µm,0.6s
SOH Sokhos 1.49 342 P **Pn** **08 00 42.0 -0.3**
SOH Sokhos 1.49 342 P **Pn** **08 00 42.0 -0.3**
SOH Sokhos 1.49 342 P **Pn** **08 00 42.0 -0.3**
SOH Sokhos 1.49 342 P **Pn** **08 00 41.9 -0.3**
DSF Desfina 1.50 229 P **Pn** **08 00 41.3 -1.2**
DSF Desfina 1.50 229 P **Pn** **08 00 41.3 -1.2**
DSF Desfina 1.50 229 P **Pn** **08 00 41.3 -1.2**
DSF Desfina 1.50 229 P **Pn** **08 00 41.1 -1.4**
DSF AML AML 08 01 08.4
comp=N,3500µm,0.7s
DSF AML AML 08 01 11.2
comp=E,4535µm,0.4s
THL Klokotos Trika 1.52 276 P **Pn** **08 00 42.2 -0.5**
THL Klokotos Trika 1.52 276 P **Pn** **08 00 42.2 -0.5**
VLY Voula,Athens 1.56 185 P **Pn** **08 00 42.5 -0.7**
VLY Voula,Athens 1.56 185 P **Pn** **08 00 42.6 -0.7**
VLY S **Sn** **08 01 02.5 -0.9**
VLY Voula,Athens 1.56 185 P **Pn** **08 00 42.5 -0.7**
VLY Voula,Athens 1.56 185 P **Pn** **08 00 42.6 -0.7**
VLY S **Sn** **08 01 02.5 -0.9**
VLY AML AML 08 01 06.7
comp=E,10222µm,0.4s
VLY AML AML 08 01 08.3
comp=N,16354µm,0.5s
LTK Loutraki 1.59 210 P **Pn** **08 00 43.0 -0.7**
LTK S **Sb** **08 01 04.2 -0.9**
LTK Loutraki 1.59 210 P **Pn** **08 00 43.0 -0.7**
LTK Loutraki 1.59 210 P **Pn** **08 00 43.0 -0.7**
LTK Loutraki 1.59 210 P **Pn** **08 00 43.3 -0.3**
LTK AML AML 08 01 14.4
comp=N,5678µm,0.5s
LTK AML AML 08 01 16.0
comp=E,6256µm,0.8s
SMTH Samothraki Isl 1.60 48 P **Pn** **08 00 42.2 -1.6**
SMTH S **Sb** **08 01 04.4 -1.0**
SMTH Samothraki Isl 1.60 48 P **Pn** **08 00 41.7 -2.1**
SMTH S **Sb** **08 01 04.4 -1.0**
SMTH Samothraki Isl 1.60 48 P **Pn** **08 00 42.2 -1.6**
SMTH Samothraki Isl 1.60 48 P **Pn** **08 00 41.7 -2.1**
SMTH AML AML 08 01 11.7
comp=E,2417µm,0.3s
SMTH AML AML 08 01 11.7
comp=N,2144µm,0.3s
KAVA Kavala 1.64 15 P **Pn** **08 00 43.2 -1.1**
KAVA S **Sb** **08 01 05.5 -1.0**
KAVA Kavala 1.64 15 P **Pn** **08 00 43.2 -1.1**
KAVA S **Sb** **08 01 05.5 -1.0**
KAVA Kavala 1.64 15 P **Pn** **08 00 43.2 -1.1**
KAVA Kavala 1.64 15 P **Pn** **08 00 42.3 -2.0**
BOZC Bozcaada 1.67 74 *i* P **Pn** **08 00 44.0 -0.7**
BOZC *i* S **Sb** **08 01 07.0 -0.3**
GADA Gvkgeada 1.68 62 *e*PN **Pn** **08 00 45.1 +0.3**
GADA Gvkgeada 1.68 62 P **Pn** **08 00 43.8 -1.1**
GADA Gvkgeada 1.68 62 P **Pn** **08 00 43.8 -1.1**
GADA Gvkgeada 1.68 62 P **Pn** **08 00 43.8 -1.1**
THAL Thalero 1.71 217 P **Pn** **08 00 45.0 -0.3**
THAL Thalero 1.71 217 P **Pn** **08 00 44.7 -0.6**
THAL Thalero 1.71 217 P **Pn** **08 00 44.7 -0.6**
SRS Serrai 1.73 351 P **Pn** **08 00 44.9 -0.7**
SRS Serrai 1.73 351 P **Pn** **08 00 44.9 -0.7**
SRS Serrai 1.73 351 P **Pn** **08 00 44.9 -0.7**
SRS Serrai 1.73 351 P **Pn** **08 00 44.7 -0.9**
EVR Evrytania 1.75 254 P **Pb** **08 00 46.5 -1.3**
EVR Evrytania 1.75 254 P **Pb** **08 00 46.5 -1.3**
EVR AML AML 08 01 22.4
comp=N,1073µm,0.7s
KALE Kalithea 1.75 235 P **Pn** **08 00 45.3 -0.6**
KALE Kalithea 1.75 235 P **Pn** **08 00 45.3 -0.6**
KALE Kalithea 1.75 235 P **Pn** **08 00 45.3 -0.6**
KALE Kalithea 1.75 235 P **Pn** **08 00 45.1 -0.8**
KALE AML AML 08 01 17.3
comp=E,1736µm,0.5s
KALE AML AML 08 01 20.9
comp=N,1781µm,0.7s
ANX Ano Chora 1.79 244 P **Pn** **08 00 46.4 -0.1**
ANX Ano Chora 1.79 244 P **Pn** **08 00 46.4 -0.1**
PRK Paraskevi 1.79 94 P **Pn** **08 00 46.2 -0.2**
PRK Paraskevi 1.79 94 P **Pn** **08 00 46.3 -0.2**
PRK Paraskevi 1.79 94 P **Pn** **08 00 46.2 -0.2**
PRK Paraskevi 1.79 94 P **Pn** **08 00 46.3 -0.2**
PRK AML AML 08 01 24.8
comp=N,6548µm,0.7s
PRK AML AML 08 01 26.0
comp=E,3898µm,1.0s
SERG Sergoula 1.79 237 P **Pn** **08 00 45.7 -0.8**
TRIZ Trizonia 1.81 235 P **Pn** **08 00 46.0 -0.7**
EZN Ezine 1.87 76 *e*PN **Pn** **08 00 47.9 +0.5**
EZN Ezine 1.87 76 *e*Pn **Pn** **08 00 47.9 +0.5**
KZN Kozani 1.92 299 P **Pn** **08 00 48.1 -0.1**
KZN Kozani 1.92 299 P **Pn** **08 00 48.1 -0.1**
KZN Kozani 1.92 299 P **Pn** **08 00 48.1 -0.1**
CHOS Chios island 1.92 121 *e*PN **Pn** **08 00 48.3 +0.1**
CHOS Chios island 1.92 121 P **Pn** **08 00 48.2 -0.1**
CHOS S **Sn** **08 01 12.0 -0.4**
CHOS Chios island 1.92 121 P **Pn** **08 00 48.2 -0.1**
CHOS Chios island 1.92 121 P **Pn** **08 00 48.2 -0.1**
CHOS S **Sn** **08 01 12.0 -0.4**
CHOS Chios island 1.92 121 P **Pn** **08 00 48.6 +0.3**
CHOS AML AML 08 01 19.5
comp=N,5255µm,0.5s
CHOS AML AML 08 01 20.0
comp=E,7460µm,0.4s
KNT Kendrikon 1.93 335 P **Pn** **08 00 48.5 +0.1**
KNT Kendrikon 1.93 335 P **Pn** **08 00 48.5 +0.1**
KNT Kendrikon 1.93 335 P **Pn** **08 00 48.5 +0.1**
KNT Kendrikon 1.93 335 P **Pn** **08 00 48.8 +0.4**
NVR Nevrokopi 1.94 358 P **Pn** **08 00 48.1 -0.4**
NVR Nevrokopi 1.94 358 P **Pn** **08 00 48.1 -0.4**
NVR Nevrokopi 1.94 358 P **Pn** **08 00 48.1 -0.4**
LAKA Lakka 1.94 234 P **Pn** **08 00 48.1 -0.5**
LAKA Lakka 1.94 234 P **Pn** **08 00 48.1 -0.5**
LAKA Lakka 1.94 234 P **Pn** **08 00 48.1 -0.5**
LAKA Lakka 1.94 234 P **Pn** **08 00 48.1 -0.5**
GRG Griva 1.96 323 *e*PN **Pn** **08 00 48.6 -0.1**
GRG Griva 1.96 323 P **Pn** **08 00 48.7 -0.1**
GRG Griva 1.96 323 P **Pn** **08 00 48.7 -0.1**
GRG Griva 1.96 323 P **Pn** **08 00 48.7 -0.1**
GRG Griva 1.96 323 P **Pn** **08 00 49.0 +0.3**
KLV Kalavryta, Ach 1.97 227 P **Pn** **08 00 48.5 -0.4**
KLV Kalavryta, Ach 1.97 227 P **Pn** **08 00 48.5 -0.4**
KLV Kalavryta, Ach 1.97 227 P **Pn** **08 00 48.5 -0.4**
KLV Kalavryta, Ach 1.97 227 P **Pn** **08 00 48.7 -0.3**
DID Didima 1.98 197 P **Pn** **08 00 48.4 -0.7**
DID Didima 1.98 197 P **Pn** **08 00 48.4 -0.7**
DID Didima 1.98 197 P **Pn** **08 00 48.4 -0.7**
DID Didima 1.98 197 P **Pn** **08 00 48.3 -0.8**
DID AML AML 08 01 20.9
comp=N,4603µm,0.4s
DID AML AML 08 01 21.8
comp=E,4371µm,0.5s
PVO Paravola 2.06 248 P **Pn** **08 00 50.7 +0.6**
PVO Paravola 2.06 248 P **Pn** **08 00 50.7 +0.6**
KPRO Kipourio 2.08 286 P **Pn** **08 00 50.3 -0.2**
KPRO Kipourio 2.08 286 P **Pn** **08 00 50.3 -0.2**
AYVA Ayvalik 2.11 92 *i* P **Pn** **08 00 50.6 -0.2**
AYVA *i* S **Sg** **08 01 24.9 +1.4**
AYVA Ayvalik 2.11 92 P **Pn** **08 00 50.6 -0.2**
KRND KRANIDI 2.12 198 P **Pn** **08 00 50.2 -0.8**
KRND KRANIDI 2.12 198 P **Pn** **08 00 50.2 -0.8**
KRND KRANIDI 2.12 198 P **Pn** **08 00 50.1 -0.8**
KRND AML AML 08 01 30.6
comp=N,3022µm,0.6s
KRND AML AML 08 01 31.2
comp=E,4170µm,0.6s
ENEZ Enez 2.14 51 *e*PN **Pn** **08 00 52.1 +1.0**
ENEZ Enez 2.14 51 P **Pn** **08 00 50.1 -1.0**
ENEZ Enez 2.14 51 P **Pn** **08 00 50.1 -1.0**
ENEZ Enez 2.14 51 *e*Pn **Pn** **08 00 52.1 +1.0**
GELI Tayfur-Gelibol 2.17 62 *e*PN **Pn** **08 00 51.9 +0.4**
ALN Alexandroupoli 2.18 46 *e*PN **Pn** **08 00 52.3 +0.6**
ALN Alexandroupoli 2.18 46 P **Pn** **08 00 50.4 -1.3**
ALN Alexandroupoli 2.18 46 P **Pn** **08 00 50.4 -1.3**
ALN Alexandroupoli 2.18 46 *e*Pn **Pn** **08 00 52.3 +0.6**
ALN Alexandroupoli 2.18 46 P **Pn** **08 00 50.4 -1.3**
ALN Alexandroupoli 2.18 46 P **Pn** **08 00 49.5 -2.2**
ALN AML AML 08 01 32.9
comp=N,1156µm,0.9s
ALN AML AML 08 01 34.9
comp=E,755µm,0.6s
VAY Valandovo 2.19 331 *e*Pn **Pn** **08 00 51.6 -0.3**
VAY *e*Sn **Sg** **08 01 27.5 +1.5**
VAY Valandovo 2.19 331 *e*Pn **Pn** **08 00 51.6 -0.3**
DSL Palaion Diasel 2.25 264 P **Pn** **08 00 53.5 +0.8**
DSL Palaion Diasel 2.25 264 P **Pn** **08 00 53.5 +0.8**
DRO Drossia 2.29 231 P **Pn** **08 00 53.2 -0.1**
DRO Drossia 2.29 231 P **Pn** **08 00 53.2 -0.1**
DRO Drossia 2.29 231 P **Pn** **08 00 53.3 -0.1**
ZEY ˙zmir 2.30 120 *i* P **Pg** **08 00 50.9 -0.4**
ZEY *i* S **Sg** **08 01 28.6 -0.9**
URLA Izmir 2.30 116 *i* P **Pn** **08 00 53.5 0.0**
URLA *i* S **Sg** **08 01 28.4 -1.2**
URLA Izmir 2.30 116 P **Pn** **08 00 53.5 0.0**
DKL Dikili 2.30 97 *e*PN **Pn** **08 00 54.1 +0.6**
DKL Dikili 2.30 97 *e*Pn **Pn** **08 00 54.1 +0.6**
PDO Prodromos 2.32 250 P **Pn** **08 00 54.5 +0.8**
PDO Prodromos 2.32 250 P **Pn** **08 00 54.5 +0.8**
PENT Pentalofos 2.32 291 P **Pn** **08 00 53.6 -0.1**
PENT Pentalofos 2.32 291 P **Pn** **08 00 53.6 -0.1**
ERIK Erikli-Kesan 2.32 56 *e*PN **Pn** **08 00 54.5 +0.9**
ERIK Erikli-Kesan 2.32 56 *e*Pn **Pn** **08 00 54.6 +0.9**
LPK Lapseki 2.35 65 *e*PN **Pn** **08 00 53.8 -0.3**
AXS Araxos 2.36 240 P **Pn** **08 00 55.6 +1.4**
AXS Araxos 2.36 240 P **Pn** **08 00 55.6 +1.4**
RLS Riolos of Patr 2.38 236 P **Pn** **08 00 55.1 +0.6**
VLX Vlachokerasia 2.39 212 P **Pn** **08 00 54.8 +0.1**
VLX Vlachokerasia 2.39 212 P **Pn** **08 00 54.8 +0.1**
VLX AML AML 08 01 39.0
comp=E,1728µm,0.8s
VLX AML AML 08 01 45.5
comp=N,1217µm,0.5s
FNA Florina 2.42 305 *e*PN **Pn** **08 00 54.7 -0.4**
FNA Florina 2.42 305 *e*Pn **Pn** **08 00 54.7 -0.4**
FNA Florina 2.42 305 P **Pn** **08 00 56.0 +0.9**
FNA Florina 2.42 305 P **Pn** **08 00 56.0 +0.9**
JAN Janina 2.42 277 P **Pn** **08 00 55.6 +0.4**
NEST Nestorio 2.46 295 P **Pn** **08 00 55.9 +0.2**
NEST Nestorio 2.46 295 P **Pn** **08 00 55.9 +0.2**
KESN Edirne-Kesan 2.51 55 *i* P **Pn** **08 00 57.2 +0.5**
KESN *i* S **Sg** **08 01 34.8 -1.7**
KESN Edirne-Kesan 2.51 55 P **Pn** **08 00 57.2 +0.5**
APE Apeiranthos 2.64 152 *e*PN **Pn** **08 00 57.8 -0.3**
APE Apeiranthos 2.64 152 P **Pn** **08 00 57.6 -0.5**
APE Apeiranthos 2.64 152 ⇑ *i* P **Pn** **08 00 57.5 -0.5**
APE Apeiranthos 2.64 152 *e*Pn **Pn** **08 00 57.8 -0.3**
APE Apeiranthos 2.64 152 P **Pn** **08 00 57.6 -0.5**
APE Apeiranthos 2.64 152 P **Pn** **08 00 57.6 -0.5**
DGB ˙zmir 2.65 120 *i* P **Pn** **08 00 58.4 +0.2**
DGB *i* S **Sg** **08 01 42.2 +1.4**
LKD2 Lefkada island 2.65 258 P **Pb** **08 01 00.4 -2.7**
MHLO Agia Marina, M 2.74 173 P **Pn** **08 00 58.9 -0.5**
MHLO Agia Marina, M 2.74 173 P **Pn** **08 00 58.9 -0.5**
KRBG Karabiga-Canak 2.74 68 *e*PN **Pn** **08 01 00.3 +0.9**
ITM Ithomi 2.75 216 P **Pn** **08 01 01.5 +1.9**
ITM Ithomi 2.75 216 P **Pn** **08 01 01.5 +1.9**
IZM Izmir 2.76 110 *e*PN **Pn** **08 01 00.4 +0.6**
IZM Izmir 2.76 110 *e*Pn **Pn** **08 01 00.4 +0.6**
RKY Sarkoy-Tekirda 2.77 62 *e*PN **Pn** **08 01 00.8 +0.8**
RKY Sarkoy-Tekirda 2.77 62 *e*Pn **Pn** **08 01 00.8 +0.8**
SART Tekirdag 2.78 62 *i* P **Pn** **08 00 59.7 -0.3**
SART *i* S **Sg** **08 01 43.7 -1.1**
SART Tekirdag 2.78 62 P **Pn** **08 00 59.7 -0.3**
KFL Anninata 2.81 243 P **Pn** **08 01 02.1 +1.7**
KFL Anninata 2.81 243 P **Pn** **08 01 02.1 +1.7**
VLI Veliai 2.81 197 P **Pn** **08 00 59.8 -0.6**
VLI Veliai 2.81 197 P **Pn** **08 00 59.8 -0.6**
VLI Veliai 2.81 197 P **Pn** **08 00 59.8 -0.6**
VLI Veliai 2.81 197 P **Pn** **08 00 59.9 -0.5**
SMG Samos 2.82 126 P **Pn** **08 01 00.6 +0.1**
SMG Samos 2.82 126 P **Pn** **08 01 00.6 +0.1**
BALY Balya 2.84 82 *i* P **Pn** **08 01 01.5 +0.6**
BALY Balya 2.84 82 P **Pn** **08 01 01.5 +0.6**
VLS Valsamata 2.91 246 P **Pn** **08 01 03.5 +1.6**
GONE Gonen-Balikesi 2.94 76 *e*PN **Pn** **08 01 03.1 +1.0**
OHR Ohrid 2.96 306 *e*Pn Pg 08 01 17.2 +4.8
MRMT Marmara Adasi 3.03 66 *e*PN **Pn** **08 01 04.4 +0.9**
MRMT Marmara Adasi 3.03 66 *e*Pn **Pn** **08 01 04.4 +0.9**
BALB Balikesir 3.03 84 *e*PN **Pn** **08 01 04.8 +1.3**
BALB Balikesir 3.03 84 *e*Pn **Pn** **08 01 04.8 +1.3**
AKS Akhisar 3.04 99 *e*PN **Pn** **08 01 04.8 +1.3**
AKS Akhisar 3.04 99 *e*Pn **Pn** **08 01 04.8 +1.3**
PYL PYLOS 3.06 216 P **Pn** **08 01 05.3 +1.4**
PYL PYLOS 3.06 216 P **Pn** **08 01 05.3 +1.4**
EDC Edincik 3.14 71 *e*PN **Pn** **08 01 06.1 +1.1**
CMBO Columbo, Santo 3.15 158 P **Pn** **08 01 04.5 -0.5**
CMBO Columbo, Santo 3.15 158 P **Pn** **08 01 04.5 -0.5**
TKR Tekirdag 3.15 59 *e*PN **Pn** **08 01 06.2 +1.1**
TKR Tekirdag 3.15 59 *e*Pn **Pn** **08 01 06.3 +1.1**
SKO Skopje 3.20 324 *e*Pn **Pn** **08 01 02.9 -2.9**
SKO Skopje 3.20 324 *e*Pn **Pn** **08 01 02.9 -2.9**
KYTH Kithira 3.22 193 P **Pn** **08 01 05.8 -0.3**
KYTH Kithira 3.22 193 P **Pn** **08 01 05.8 -0.3**
EDRB Edirne 3.22 40 *e*PN **Pn** **08 01 07.2 +1.1**
EDRB Edirne 3.22 40 *e*Pn **Pn** **08 01 07.2 +1.1**
VTS Vitosha 3.23 350 ⇑ *i* P **Pn** **08 01 06.9 +0.5**
VTS Vitosha 3.23 350 ⇑ *i* P **Pn** **08 01 06.9 +0.5**
AYDB Zeytinkoy-Aydi 3.40 114 *e*PN **Pn** **08 01 09.7 +1.1**
AYDB Zeytinkoy-Aydi 3.40 114 *e*Pn **Pn** **08 01 09.7 +1.1**
KCTX Karacabey (Bur 3.48 74 *e*PN **Pn** **08 01 10.8 +1.1**
BODT Bodrum 3.52 131 *e*PN **Pn** **08 01 10.6 +0.4**
BODT Bodrum 3.52 131 *e*Pn **Pn** **08 01 10.6 +0.4**
ANKY Antikythira Is 3.58 189 P **Pn** **08 01 09.8 -1.1**
ANKY Antikythira Is 3.58 189 P **Pn** **08 01 09.8 -1.1**
DEMI Demirci 3.70 94 *i* P **Pn** **08 01 13.9 +1.1**
DEMI Demirci 3.70 94 P **Pn** **08 01 13.9 +1.1**
KULA Kula-Manisa 3.76 102 *e*PN **Pn** **08 01 15.1 +1.5**
KULA Kula-Manisa 3.76 102 *e*Pn **Pn** **08 01 15.1 +1.5**
BARS Barje 3.77 335 ⇑ *i* Pn **Pn** **08 01 14.0 +0.3**
MDNY Mudanya-Bursa 3.90 74 *e*PN **Pn** **08 01 16.9 +1.6**
CTKS Kestanelik-??a 3.92 61 *e*PN **Pn** **08 01 17.2 +1.6**
CTKS Kestanelik-??a 3.92 61 *e*Pn **Pn** **08 01 17.2 +1.6**
ARMT Armutlu 3.93 71 *e*PN **Pn** **08 01 17.5 +1.6**
ARMT Armutlu 3.93 71 *e*Pn **Pn** **08 01 17.5 +1.6**
IMMV Iera Moni Meta 3.94 180 P **Pn** **08 01 15.6 -0.4**
IMMV Iera Moni Meta 3.94 180 P **Pn** **08 01 15.6 -0.4**
BGKT Bogazkoy 4.08 63 *e*PN **Pn** **08 01 19.6 +1.8**
BGKT Bogazkoy 4.08 63 *e*Pn **Pn** **08 01 19.6 +1.8**
YER Yerkesik 4.08 122 *e*PN **Pn** **08 01 19.3 +1.3**
YER Yerkesik 4.08 122 *e*Pn **Pn** **08 01 19.3 +1.3**
IDI Anoyia 4.18 170 Pn **Pn** **08 01 19.0 -0.3**
comp=N,16nm,0.3s,baz=348,slow=11,SNR=53
IDI Anoyia 4.18 170 P **Pn** **08 01 18.8 -0.5**
IDI Anoyia 4.18 170 P **Pn** **08 01 18.6 -0.7**
IDI Anoyia 4.18 170 *e*Pn **Pn** **08 01 18.7 -0.5**
IDI Anoyia 4.18 170 P **Pn** **08 01 18.6 -0.7**
TVSB Tavsanli 4.25 88 *e*PN **Pn** **08 01 21.9 +1.6**
TVSB Tavsanli 4.25 88 *e*Pn **Pn** **08 01 22.0 +1.6**
IZI Iznik 4.33 76 *e*PN **Pn** **08 01 23.3 +1.9**
LAST Lasithi 4.41 164 P **Pn** **08 01 22.0 -0.5**

LAST	Lasithi	4.41	164	P		Pn	08 01 22.0	-0.5
ADVT	Abdulvahap	4.55	75	*e*PN		Pn	08 01 26.2	+1.9
ADVT	Abdulvahap	4.55	75	*e*Pn		Pn	08 01 26.2	+1.9
BOVS	Bovan	4.55	339	*e*Pn		Pn	08 01 23.5	-0.8
HRT	Hereke	4.59	70	*e*PN		Pn	08 01 27.1	+2.2
HRT	Hereke	4.59	70	*e*Pn		Pn	08 01 27.1	+2.2
SILT	Sile	4.67	66	*e*PN		Pn	08 01 28.0	+2.0
SILT	Sile	4.67	66	*e*Pn		Pn	08 01 28.0	+2.0
PDG	Podgorica	4.68	312	⇑*i*P		Pn	08 01 28.4	+2.4
PDG	Podgorica	4.68	312	⇑*i*P		Pn	08 01 28.4	+2.4
IVAS	Ivanjica	5.05	327	*e*Pn		Pn	08 01 30.2	-1.1
GRUS	Gruza	5.10	332	⇑*i*Pn		Pn	08 01 31.9	+0.1
GULT	Gulveren	5.13	76	*e*PN		Pn	08 01 34.6	+2.2
GULT	Gulveren	5.13	76	*e*Pn		Pn	08 01 34.6	+2.2
TRUS	Trudelj	5.50	332	*e*Pn		Pn	08 01 37.2	-0.2
DIVS	Divibare	5.55	329	⇑*i*Pn		Pn	08 01 38.3	+0.2
TIP	Timpagrande	5.60	270	*e*Pn		Pn	08 01 39.4	+0.6
	comp=N,10.0nm,0.5s							
TIP	Timpagrande	5.60	270	*e*Pn		Pn	08 01 39.4	+0.6
	comp=N,10.0nm,0.5s							
BBLS	Lazići	5.61	324	⇑*i*Pn		Pn	08 01 39.8	+0.8
MDVR	Moldovita	5.62	343	⇑*i*P		Pn	08 01 38.1	-1.0
MDVR	Moldovita	5.62	343	⇑*i*P		Pn	08 01 38.1	-1.0
ARR	Arges	5.97	4	⇑*i*P		Pn	08 01 44.1	+0.1
ARR	Arges	5.97	4	⇑*i*P		Pn	08 01 44.1	+0.1
TLB	Topalu	6.00	29	⇑*i*P		Pn	08 01 45.1	+0.9
TLB	Topalu	6.00	29	⇑*i*P		Pn	08 01 45.1	+0.9
TIRR	Tirgusor	6.04	32	⇑*i*P		Pn	08 01 45.1	+0.4
TIRR	Tirgusor	6.04	32	⇑*i*P		Pn	08 01 45.1	+0.4
LOT	Lotru	6.04	359	⇑*i*P		Pn	08 01 44.5	-0.4
LOT	Lotru	6.04	359	⇑*i*P		Pn	08 01 44.5	-0.4
VOIR		6.08	7	⇑*i*P		Pn	08 01 45.5	+0.1
VOIR		6.08	7	⇑*i*P		Pn	08 01 45.5	+0.1
MLR	Muntele Rosu	6.25	13	Pn		Pn	08 01 48.7	+0.9
	comp=N,0.4nm,0.3s,baz=298,slow=7.1,SNR=8.2							
MLR				Sn		Sn	08 02 59.0	-0.2
	comp=N,0.2nm,0.3s,baz=158,slow=15,SNR=3.4							
MLR	Muntele Rosu	6.25	13	⇑*i*P		Pn	08 01 49.2	+1.4
MLR	Muntele Rosu	6.25	13	⇑*i*P		Pn	08 01 49.2	+1.4
CUC	Castrocucco	6.32	278	*e*Pn		Pn	08 01 50.4	+1.8
	comp=N,11nm,0.4s							
CUC	Castrocucco	6.32	278	*e*Pn		Pn	08 01 50.4	+1.8
	comp=N,11nm,0.4s							
BZS	Buzias	6.44	345	⇑*i*P		Pg	08 02 14.9	-4.1
DOPR	Dopca	6.64	9	⇑*i*P		Pn	08 01 54.2	+1.2
DOPR	Dopca	6.64	9	⇑*i*P		Pn	08 01 54.2	+1.2
PLOR	Plostina	6.73	16	⇑*i*P		Pn	08 01 57.4	+3.0
TESR	Tescani	7.37	15	⇑*i*P		Pn	08 02 05.1	+2.1
TESR	Tescani	7.37	15	⇑*i*P		Pn	08 02 05.1	+2.1
BRTR	Keskin Array B	7.48	85	Pn		Pn	08 02 05.8	+1.2
	comp=N,0.6nm,0.3s,baz=263,slow=13,SNR=10							
WDD	Wied Dalam	8.29	248	*e*Pn		Pn	08 02 14.9	-0.7
	comp=N,100nm,0.8s							
WDD	Wied Dalam	8.29	248	*e*Pn		Pn	08 02 14.9	-0.7
	comp=N,100nm,0.8s							
EIL	Elat	13.27	134	Pn		Pn	08 03 24.6	+0.8
	comp=N,0.7nm,0.3s,baz=349,slow=10,SNR=4.2							
KVAR	Kislovodsk Arr	14.71	66	LR		LR	08 10 29.0	
	comp=N,21nm,19.2s,baz=39,slow=42							
NOA	NORSAR Array B	23.06	344	P		P	08 05 20.2	-0.5
	comp=N,0.9nm,0.6s,baz=149,slow=9.4,SNR=3.1							
EKA	Eskdalemuir Ar	24.09	320	P		P	08 05 30.2	-0.6
	comp=N,0.9nm,0.6s,baz=116,slow=11,SNR=4.2							
TORD	Torodi Ar. Bea	32.73	223	P		P	08 06 47.8	-0.5
	comp=N,0.6nm,0.6s,baz=35,slow=8.5,SNR=5.4							
TORD				LR		LR	08 22 22.7	
	comp=N,24nm,18.9s,baz=265,slow=41							
MKAR	Makanchi Array	42.36	60	P		P	08 08 09.6	0.0
	comp=N,0.2nm,0.4s,baz=276,slow=7.1,SNR=4.1							
ZALV	Zalesovo Beam	42.85	49	P		P	08 08 15.8	+2.3
	comp=N,0.9nm,0.5s,baz=276,slow=5.7,SNR=2.3							
SONM	Songino Array	57.58	52	P		P	08 10 07.9	+2.5
	comp=N,0.4nm,0.8s,baz=302,slow=6.6,SNR=2.8							

JMA 12 08:04:57.7±0.3, 36°25N×143°98E, h48km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	2.69	289	*e*S	Sn	08 06 11.3	+1.3
JHO	Hitachi	2.77	278	P	Pn	08 05 41.1	+1.5
BSO1	Boso 1	2.92	238	P	Pn	08 05 42.4	+1.2
BSO1				S	Sn	08 06 17.3	+2.5
JFT	Otama	3.18	295	P	Pn	08 05 47.4	+2.1
JFT				S	Sn	08 06 24.4	+2.4
JMK	Ichinoseki	3.48	322	P	Pn	08 05 50.6	+1.4
JAG	Ashikaga	3.66	274	P	Pn	08 05 53.6	+1.8
JAG				S	Sn	08 06 34.0	+0.3
JOD2	Odawara 2	4.10	258	P	Pn	08 06 00.0	+2.2
JOD2				S	Sn	08 06 46.2	+1.7
JRY	Ryogami san	4.12	268	P	Pn	08 05 59.9	+1.8
JRY				*e*S	Sn	08 06 46.2	+1.2
MAT	Matsushiro	4.67	275	P	Pn	08 06 07.3	+1.7
MAT				*e*S	Sn	08 06 57.6	-0.9

ISCJB 12 08:08:33.9±1.2, 10°.2N±0°.1×124°.0E±0°.1, h17km, mb3.8/4, MS2.8/1, Error ellipse: s-maj=22.8km s-min=11.8km az=42.1
IDC 12 08:08:34.3±2.3, 9°.91N×123°.36E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.5/40, mbtmp3.7/4, MS3.0/1, Ms1 3.0/1, ms1mx2.5/37, Error ellipse: s-maj=231.8km s-min=24.6km az=63.0
ISC 12 08:08:36.2±1.4, 10°.1N±0°.1×123°.8E±0°.2, h17km, n7, σ1§40/6, mb3.7/4, 1C, Cebu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	Sibulan	0.92	213	*i* P	Pn	08 08 52.8	-1.6
SNPH				*i* S	Sn	08 09 09.0	+1.7
RCP	Roxas	1.74	325	⇑*e*P	Pg	08 09 14.8	+5.1
GUMO	Guam	20.95	78	LR	LR	08 20 47.2	
	comp=Z,39nm,19.6s,baz=281,slow=34						
WRA	Warramunga Arr	31.64	161	P	P	08 14 58.5	-0.1
	0.9nm,0.8s,baz=338,slow=9.1,SNR=8.4						
ASAR	Alice Springs	35.02	164	P	P	08 15 27.9	-0.2
	0.7nm,0.7s,baz=348,slow=7.4,SNR=12						
STKA	Stephens Creek	45.12	158	P	P	08 16 52.4	+0.6
	2.0nm,0.8s,baz=329,slow=9.5,SNR=3.4						
MKAR	Makanchi Array	50.67	324	P	P	08 17 35.0	+0.4
	0.8nm,1.0s,baz=111,slow=7.9,SNR=3.4						

DDA 12 08:15:16.9, 36°.80N×27°.48E, h7km, Md2.5
ISK 12 08:15:17.5, 37°.00N×27°.49E, h26km, MD2.3
CSEM 12 08:15:18.8±0.4, 36°.91N×27°.55E, h5km, MD2.3, Error ellipse: s-maj=9.0km s-min=7.2km az=179.0
ISC 12 08:15:18.0±1.1, 36°.89N±0°.05×27°.57E±0°.03, h13km±7km, n16, σ1§76/26, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BDRM	Kayabasi	0.20	331	*i* P	Pg	08 15 22.3	-0.2
BDRM				*i* S	Sg	08 15 26.4	+0.8
BDRM	Kayabasi	0.20	331	P	Pg	08 15 22.3	-0.2
BDRM				S	Sg	08 15 26.4	+0.8
BODT	Bodrum	0.27	310	*e*PG	Pg	08 15 22.1	-1.5
BODT				*e*SG	Sg	08 15 27.3	-0.1
BODT	Bodrum	0.27	310	*e*Pg	Pg	08 15 22.1	-1.5
BODT				*e*Sg	Sg	08 15 27.3	-0.1
NIS1	Nisyros Isl.	0.42	228	*e*PG	Pb	08 15 28.0	+0.6
NIS1	Nisyros Isl.	0.42	228	*e*Pg	Pb	08 15 28.0	+0.6
MLSB	Milas	0.44	22	*e*PG	Pg	08 15 26.4	-0.3
MLSB				*e*SG	Sg	08 15 32.7	+0.1
MLSB	Milas	0.44	22	*e*Pg	Pg	08 15 26.4	-0.3
MLSB				*e*Sg	Sg	08 15 32.7	+0.1
YER	Yerkesik	0.62	67	*e*PG	Pg	08 15 31.0	+0.9
YER				*e*SG	Sb	08 15 40.9	+1.4
YER	Yerkesik	0.62	67	*e*Pg	Pg	08 15 31.0	+0.9
YER				*e*Sg	Sb	08 15 40.9	+1.4
TURN	Turunc	0.83	91	*i* P	Pg	08 15 28.6	-5.5
TURN				*i* S	Sg	08 15 38.1	-6.9
GCAM	G?zelcaml?	0.85	342	*i* P	Pn	08 15 36.0	+0.3
GCAM				*i* S	Sn	08 15 47.6	-0.5
GCAM	G?zelcaml?	0.85	342	P	Pn	08 15 36.0	+0.3
GCAM				S	Sn	08 15 47.6	-0.5
DALY	Dalyan (Mu˘la	0.87	94	*e*PG	Pg	08 15 35.4	+0.5
DALY	Dalyan (Mu˘la	0.87	94	*e*Pg	Pg	08 15 35.4	+0.5
AYDB	Zeytinkoy-Aydi	1.09	14	*e*PG	Pg	08 15 36.4	-2.6

IDC 12 08:20:13.1±3.2, 28°.22S×136°.19E, h0km, mb1 3.1/3, mb1mx3.0/24, mbtmp2.8/3, ML2.6/3, Error ellipse: s-maj=63.4km s-min=22.5km az=55.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	Alice Springs	4.98	335	Pn	Pn	08 21 29.9	+0.7
	0.1nm,0.3s,baz=158,slow=12,SNR=6.7						
ASAR				Sn	Sn	08 22 26.4	-1.2
	0.2nm,0.3s,baz=155,slow=22,SNR=5.5						
ASAR				Lg	Lg	08 22 52.1	
	0.1nm,0.3s,baz=157,slow=25,SNR=4.2						
STKA	Stephens Creek	5.93	129	Pn	Pn	08 21 42.2	-0.1
	0.1nm,0.3s,baz=311,slow=20,SNR=2.4						
WRA	Warramunga Arr	8.42	348	Pn	Pn	08 22 16.1	-0.3
	0.1nm,0.3s,baz=170,slow=13,SNR=17						
WRA				Sn	Sn	08 23 49.7	-2.5
	0.0nm,0.3s,baz=170,slow=24,SNR=3.7						

ISCJB 12 08:20:39.5±0.4, 40°.08N±0°.03×28°.07E±0°.04, h12km±4km, Error ellipse: s-maj=5.3km s-min=3.9km az=37.3
DDA 12 08:20:39.8, 40°.03N×28°.11E, h7km, Md2.6
CSEM 12 08:20:39.7±0.1, 40°.08N×28°.07E, h15km, ML2.1, Error ellipse: s-maj=1.7km s-min=1.6km az=173.0
ISK 12 08:20:39.1, 40°.06N×28°.08E, h16km, ML2.1
ISC 12 08:20:39.6±0.8, 40°.06N±0°.02×28°.08E±0°.02, h16km±7km, n41, σ0§22/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GONE	Gonen-Balikesi	0.30	268	*e*PG	Pg	08 20 45.8	-0.2
GONE				*e*SG	Sg	08 20 50.6	+0.3
GONE	Gonen-Balikesi	0.30	268	*e*Pg	Pg	08 20 45.8	-0.2
GONE				*e*Sg	Sg	08 20 50.6	+0.3
KCTX	Karacabey (Bur	0.30	46	*e*PG	Pg	08 20 45.9	-0.1
KCTX				*e*SG	Sg	08 20 50.3	-0.1
KCTX	Karacabey (Bur	0.30	46	*e*Pg	Pg	08 20 45.9	-0.1
KCTX				*e*Sg	Sg	08 20 50.3	-0.1
EDC	Edincik	0.33	331	*e*PG	Pg	08 20 46.4	-0.1
EDC				*e*SG	Sg	08 20 51.7	+0.4
EDC	Edincik	0.33	331	*e*Pg	Pg	08 20 46.4	-0.1
EDC				*e*Sg	Sg	08 20 51.7	+0.4
BALB	Balikesir	0.44	200	*e*PG	Pg	08 20 48.3	-0.2
BALB				*e*SG	Sb	08 20 55.1	-0.4
BALB	Balikesir	0.44	200	*e*Pg	Pg	08 20 48.3	-0.2
BALB				*e*Sg	Sb	08 20 55.1	-0.4
BALY	Balya	0.47	228	*i* P	Pg	08 20 42.1	-7.0
BALY				*i* S	Sg	08 20 56.0	+0.5
BALY	Balya	0.47	228	S	Sg	08 20 56.0	+0.5
MRMT	Marmara Adasi	0.66	326	*e*PG	Pg	08 20 52.5	0.0
MRMT	Marmara Adasi	0.66	326	*e*Pg	Pg	08 20 52.5	0.0
KRBG	Karabiga-Canak	0.68	300	*e*PG	Pg	08 20 52.9	-0.1
KRBG	Karabiga-Canak	0.68	300	*e*Pg	Pg	08 20 52.9	-0.1
MDNY	Mudanya-Bursa	0.69	63	*e*PG	Pg	08 20 53.0	-0.2
MDNY	Mudanya-Bursa	0.69	63	*e*Pg	Pg	08 20 53.0	-0.2
ARMT	Armutlu	0.79	50	*e*PG	Pg	08 20 54.8	-0.2
ARMT	Armutlu	0.79	50	*e*Pg	Pg	08 20 54.8	-0.2
IGD	Bursa	0.89	76	*i* P	Pb	08 20 56.4	-0.3
IGD				*i* S	Sb	08 21 08.4	+0.1
RKY	Sarkoy-Tekirda	0.93	313	*e*PG	Pb	08 20 57.4	0.0
RKY	Sarkoy-Tekirda	0.93	313	*e*Pg	Pb	08 20 57.4	0.0
GEMT	Gemlik	0.93	66	*e*PG	Pb	08 20 57.5	0.0
GEMT	Gemlik	0.93	66	*e*Pg	Pb	08 20 57.5	0.0
LPK	Lapseki	1.05	288	*e*PG	Pn	08 20 59.8	0.0
LPK	Lapseki	1.05	288	*e*Pg	Pn	08 20 59.8	0.0
IZI	Iznik	1.11	75	*e*PN	Pn	08 21 00.4	-0.1
IZI	Iznik	1.11	75	*e*Pn	Pn	08 21 00.4	-0.1
DEMI	Demirci	1.13	154	*i* P	Pg	08 21 01.6	+0.2
DEMI				*i* S	Sn	08 21 16.4	+0.3
DEMI	Demirci	1.13	154	P	Pg	08 21 01.6	+0.2
DEMI				S	Sn	08 21 16.4	+0.3
CTKS	Kestanelik-??a	1.22	15	*e*PN	Pn	08 21 02.0	-0.1
CTKS	Kestanelik-??a	1.22	15	*e*Pn	Pn	08 21 02.0	-0.1
TVSB	Tavsanli	1.23	119	*e*PN	Pn	08 21 02.1	-0.2
TVSB	Tavsanli	1.23	119	*e*Pn	Pn	08 21 02.1	-0.2
ISK	Istanbul-Kandi	1.25	36	*e*PN	Pn	08 21 02.6	+0.1
ISK	Istanbul-Kandi	1.25	36	*e*Pn	Pn	08 21 02.6	+0.1
ERIK	Erikli-Kesan	1.34	298	*e*PN	Pn	08 21 03.4	-0.3
ERIK	Erikli-Kesan	1.34	298	*e*Pn	Pn	08 21 03.4	-0.3
KLYT	Kilyos	1.40	31	*e*PN	Pn	08 21 04.6	0.0
KLYT	Kilyos	1.40	31	*e*Pn	Pn	08 21 04.6	0.0
MANT	Manisa	1.61	166	*i* P	Pb	08 21 09.0	-0.1
MANT				*i* S	Sb	08 21 29.2	-0.1
MANT	Manisa	1.61	166	P	Pb	08 21 09.0	-0.1
MANT				S	Sb	08 21 29.2	-0.1

IDC 12 08:31:39.6±2.5, 54°.40N×87°.10E, h0km, mb1 3.2/3, mb1mx3.0/38, mbtmp3.2/3, ML2.8/3, Error ellipse: s-maj=22.5km s-min=16.6km az=69.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	ZALESOVO INFRA	1.42	252	*i*		08 40 00.0	
	baz=66,slow=315,SNR=4.5						
ZALV	Zalesovo Beam	1.42	252	Pg	Pn	08 32 04.3	-2.3
	1.4nm,0.3s,baz=68,slow=16,SNR=17						
ZALV				Lg	Lg	08 32 25.5	
	0.9nm,0.3s,baz=73,slow=30,SNR=6.6						
ZALV				Rg	Rg	08 32 38.2	
	3.8nm,0.6s,baz=79,slow=39,SNR=5.4						
KURBB	Kurchatov Arra	6.46	238	Pn	Pn	08 33 16.6	+0.8
	0.2nm,0.3s,baz=54,slow=14,SNR=32						
KURBB				Sn	Sn	08 34 28.1	-2.0
	0.0nm,0.3s,baz=49,slow=20,SNR=3.5						
KURBB				Lg	Lg	08 35 05.3	
	0.0nm,0.3s,baz=48,slow=30,SNR=7.4						
MKAR	Makanchi Array	8.21	204	Pn	Pn	08 33 40.7	+0.9
	0.1nm,0.3s,baz=23,slow=11,SNR=3.7						
MKAR				Lg	Lg	08 36 00.2	
	baz=26,slow=30,SNR=2.5						
BVAR	Borovoye Array	10.00	269	Pn	Pn	08 34 03.8	-0.6
	0.1nm,0.3s,baz=74,slow=18,SNR=3.9						

IDC 12 08:34:05.4±2.8, 10°.41S×161°.39E, h74km±22km, mb3.3/4, mb1 3.7/5, mb1mx3.4/25, mbtmp3.8/5, Error ellipse: s-maj=29.3km s-min=21.0km az=67.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HNR	Honiara	1.72	304	P	Pn	08 34 33.3	-0.1
	65nm,0.3s,baz=118,slow=6.0,SNR=8.0						
HNR				S	Sn	08 34 54.8	+0.2
	67nm,0.3s,baz=87,slow=12,SNR=4.4						
HNR	Honiara	1.72	304	*e*P	Pn	08 34 31.0	-2.4
DZM	Mont Dzumac	12.57	158	P	Pn	08 37 01.4	-0.1
	1.5nm,0.3s,baz=301,slow=18,SNR=16						
WRA	Warramunga Arr	27.74	247	P	P	08 39 47.3	+0.1
	0.8nm,0.5s,baz=76,slow=9.0,SNR=13						
ASAR	Alice Springs	29.33	240	P	P	08 40 00.9	-0.4
	0.5nm,0.8s,baz=61,slow=9.5,SNR=4.2						
SONM	Songino Array	75.66	325	P	P	08 45 43.0	+0.3
	0.6nm,0.6s,baz=137,slow=5.9,SNR=5.8						
ILAR	Eielson Array	84.31	20	P	P	08 46 28.7	-0.2
	0.2nm,0.5s,baz=226,slow=5.6,SNR=3.4						

ISCJB 12 08:43:33.8±0.5, 39°.55N±0°.04×40°.19E±0°.03, h4km±6km, Error ellipse: s-maj=6.2km s-min=4.1km az=10.0
ISK 12 08:43:33.6, 39°.54N×40°.15E, h8km, ML2.5
DDA 12 08:43:34.0, 39°.58N×40°.19E, h7km, Md2.6
CSEM 12 08:43:34.0±0.1, 39°.54N×40°.18E, h5km, ML2.5, Error ellipse: s-maj=3.8km s-min=3.1km az=169.0
ISC 12 08:43:34.3±1.0, 39°.54N±0°.03×40°.17E±0°.02, h9km±11km, n34, σ0§61/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YEDI	Yedisu-Bingol	0.31	109	*e*PG	Pg	08 43 40.2	-0.4
YEDI				*e*SG	Sg	08 43 45.5	+0.8
YEDI	Yedisu-Bingol	0.31	109	*e*Pg	Pg	08 43 40.2	-0.4
YEDI				*e*Sg	Sg	08 43 45.5	+0.8
ERZN	Erzincan	0.35	278	*e*PG	Pg	08 43 40.6	-0.6
ERZN				*e*SG	Sg	08 43 45.8	0.0
EUZM	Uzumlu	0.40	295	*i* P	Pg	08 43 41.7	-0.5
EUZM				*i* S	Sg	08 43 48.1	+0.6
EUZM	Uzumlu	0.40	295	P	Pg	08 43 41.7	-0.5
EUZM				S	Sg	08 43 48.1	+0.6
KOPT	Kop Dagi	0.54	28	*i* P	Pg	08 43 44.2	-0.7
KOPT	Kop Dagi	0.54	28	P	Pg	08 43 44.2	-0.7
TNCL	Tunceli-Merkez	0.64	229	*i* P	Pb	08 43 47.3	-0.5
TNCL				*i* S	Sb	08 43 57.3	+0.4
TNCL	Tunceli-Merkez	0.64	229	P	Pb	08 43 47.3	-0.5
TNCL				S	Sb	08 43 57.3	+0.4
BNGB	Bing¨l	0.68	144	*e*PG	Pg	08 43 47.2	-0.2
BINT	Bingol	0.71	159	*e*Pg	Pg	08 43 47.2	-0.8
PTK	Pertek	0.88	223	*e*PG	Pg	08 43 50.8	-0.6
PTK	Pertek	0.88	223	*e*Pg	Pg	08 43 50.8	-0.6
KELT	Kelkit	0.93	311	*i* P	Pg	08 43 51.7	-0.5
KELT	Kelkit	0.93	311	P	Pg	08 43 51.7	-0.5
EZM	Erzurum	0.99	68	*e*PG	Pg	08 43 52.4	-1.1
ERZM	Erzurum	0.99	68	*i* P	Pg	08 43 52.6	-0.9
ERZM	Erzurum	0.99	68	P	Pg	08 43 52.6	-0.9
KEMA	Kemaliye	1.32	259	*i* P	Pb	08 43 59.4	0.0
KEMA	Kemaliye	1.32	259	P	Pb	08 43 59.4	0.0
SVRC	Sivrice-ELAZID	1.34	210	*e*PN	Pn	08 43 58.9	-0.4
SVRC	Sivrice-ELAZID	1.34	210	*e*Pn	Pn	08 43 58.9	-0.4
ELZG	Elazig	1.39	222	*i* P	Pn	08 43 59.9	-0.1
ELZG	Elazig	1.39	222	P	Pn	08 43 59.9	-0.1
KTUT	Trabzon	1.48	348	*e*PN	Pn	08 44 01.1	0.0
KTUT	Trabzon	1.48	348	*e*Pn	Pn	08 44 01.1	0.0
SUSE	Susehri	1.65	294	*i* P	Pb	08 44 04.7	-0.3
SUSE				*i* S	Sg	08 44 28.8	+1.3
SUSE	Susehri	1.65	294	P	Pb	08 44 04.7	-0.3
SUSE				S	Sg	08 44 28.8	+1.3
ESPY	Espiye-Giresun	1.76	322	*e*PN	Pn	08 44 05.2	+0.1
ESPY	Espiye-Giresun	1.76	322	*e*Pn	Pn	08 44 05.2	+0.1
MAZI	Mazidag	2.09	174	*e*PN	Pn	08 44 09.8	+0.2
MAZI	Mazidag	2.09	174	*e*Pn	Pn	08 44 09.8	+0.2
AGRB	Hanur-Agry	2.19	88	*e*PN	Pn	08 44 11.5	+0.5
AGRB	Hanur-Agry	2.19	88	*e*Pn	Pn	08 44 11.5	+0.5

CSEM 12 08:48:27.8, 37°.52N×28°.28E, h19km, ML2.2
ISK 12 08:48:27.8, 37°.52N×28°.28E, h19km, ML2.2, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YER	Yerkesik	0.39	180	*e*PG	Pb	08 48 36.2	+0.1
YER	Yerkesik	0.39	180	*e*Pg	Pb	08 48 36.3	+0.1
MLSB	Milas	0.46	241	*e*PG	Pb	08 48 37.7	+0.3
MLSB				*e*SG	Sb	08 48 44.8	+0.9
MLSB	Milas	0.46	241	*e*Pg	Pb	08 48 37.7	+0.3
MLSB				*e*Sg	Sb	08 48 44.8	+0.9
AYDB	Zeytinkoy-Aydi	0.53	324	*e*PG	Pg	08 48 38.8	+0.3
AYDB	Zeytinkoy-Aydi	0.53	324	*e*Pg	Pg	08 48 38.8	+0.3
DALY	Dalyan (Mu˘la	0.76	157	*e*PG	Pn	08 48 43.2	-0.3
DALY				*e*SG	Sn	08 48 54.3	-0.1
DALY	Dalyan (Mu˘la	0.76	157	*e*Pg	Pn	08 48 43.2	-0.3
DALY				*e*Sg	Sn	08 48 54.3	-0.1
BODT	Bodrum	0.90	240	*e*PG	Pn	08 48 45.7	+0.2
BODT	Bodrum	0.90	240	*e*Pg	Pn	08 48 45.7	+0.2

IDC 12 08:56:13.5±0.4, 9°.59N×122°.20E, h0km, mb5.0/31, mb1 5.0/32, mb1mx5.0/41, mbtmp5.0/32, ML5.3/1, MS4.6/28, Ms1 4.6/28, ms1mx4.4/53, Error ellipse: s-maj=18.4km s-min=8.6km az=71.0
GCMT 12 08:56:15.4±0.1, 9°.71N×122°.11E, h18km±1km, MW5.4/115, Moment Tensor Solution. s86,c115; s115,c207; Duration: 1§2 Moment tensor: Scale 10^17Nm; Mrr0.13±.02; Mθθ0.19±.01; Mϕϕ-0.32±.02; Mrθ-0.49±.05; Mθϕ-0.65±.01; Mϕr-1.23±.10; Best double couple: M=1.42600×10^17 NP1:ϕ194.00000°, δ83.00000°, λ73.00000°. NP2:ϕ83.00000°, δ19.00000°, λ158.00000°. Principal axes: T 1.1570, Plg49.0000°, Azm85.0000°; N 0.5380, Plg17.0000°, Azm196.0000°; P -1.6950, Plg36.0000°, Azm299.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
NEIC 12 08:56:15.4±0.2, 9°.70N×122°.30E, h10km, mb5.3/52 Error ellipse: s-maj=5.4km s-min=3.7km az=86.0
NEIC Felt [IV PIVS] at Sipalay; [III PIVS] at Cawayan, Himamaylan, Jinoba-an and Sibulan; [II PIVS] at Bacolod, Candoni and Valencia. Felt [IV] at Dumaguete. Felt [III PIVS] Anini-y and Iloilo; [II PIVS] at San Jose, Panay. Felt [III PIVS] at Cebu City, Cebu. Felt [II PIVS] at Jordan, Guimaras Island and at Dipolog, Mindanao. Felt widely in the western Visayan Islands.
*MAN 12 08:56:15

NLAI Namlea 13.78 159 P P 08 59 36.8 -3.6
152nm,1.1s,1µm
SSLB Suanglung 14.03 355 *e*Pn **Pn** 08 59 35.7 -0.1
STKI Sintang 14.38 229 P **P** 08 59 48.3 +1.2
KSM Kuching 14.41 236 *e*Pn **Pn** 08 59 42.5 +1.4
KAPI Kappang 14.86 190 Pn **P** 08 59 50.4 -2.1
0.4nm,0.3s,baz=13,slow=9.5,SNR=9.0
KAPI Kappang 14.86 190 *e*Pn **Pn** 08 59 48.6 +1.5
YHNB Yeheng 14.87 357 *e*Pn **Pn** 08 59 46.8 -0.5
BBKI Banjar Baru 15.03 210 P **P** 08 59 54.4 0.0
QIZ Qiongzhong 15.13 309 P **Pn** 08 59 51.9 +1.2
QIZ S **Sn** 09 02 45.2 +8.0
QIZ LR LR
comp=N,11µm,14.9s
QIZ LR LR
comp=Z,10µm,13.6s
QZH Quanzhou 15.51 348⇓ *i*P Pn 08 59 47.0 -8.7
QZH S **Sn** 09 02 40.3 -6.2
QZH pmax pmax
comp=Z,540nm,1.2s
QZH pmax pmax
comp=Z,3µm,3.0s
QZH LR LR
comp=N,9µm,17.2s
QZH LR LR
comp=E,2µm,12.6s
QZH LR LR
comp=Z,8µm,16.0s
GZH Guangzhou 15.76 328 P **P** 09 00 02.6 +0.1
GZH PP **sP** 09 00 17.3 +1.7
GZH pmax pmax
comp=Z,950nm,5.8s
FAKI Fak Fak 16.06 141 P **P** 09 00 07.3 +1.5
comp=Z,191nm,1.5s,comp=Z,4µm
FAKI Fak Fak 16.06 141 *e*Pn **Pn** 09 00 02.5 -0.2
comp=Z,409nm,1.5s
UBPT Khong Chiam 17.25 290 P **P** 09 00 20.7 +1.6
JOW Kunigami 17.94 18 *e*P **P** 09 00 27.5 +0.9
comp=Z,63nm,1.0s
MMRI Maumere 18.25 180 P **Pn** 09 00 32.5 +2.4
comp=Z,244nm,1.3s,comp=Z,5µm
MMRI Maumere 18.25 180 *e*P **Pn** 09 00 31.1 +1.0
comp=Z,479nm,1.4s
PLAI Plampang 18.97 194 P **Pn** 09 00 44.7 +5.9
SRBI Singaraja 19.03 202 P Pn 09 00 47.9 +8.3
TWSI Taliwang, Sumb 19.11 196 P **Pn** 09 00 47.0 +6.5
SKNT Sakolnakorn 19.14 294 P **Pn** 09 00 40.8 -0.1
comp=Z,287nm,0.8s,comp=Z,5µm
KTGM Kuala Trenggan 19.42 258 ⇑P **Pn** 09 00 44.0 -0.3
SOEI Soe 19.47 174 P **Pn** 09 00 46.4 +1.4
comp=Z,236nm,1.5s,comp=Z,3µm
SOEI Soe 19.47 174 *e*P **Pn** 09 00 45.0 0.0
comp=Z,937nm,1.9s
CHBT CHBT 19.74 281 P **Pn** 09 00 47.4 -0.6
comp=Z,284nm,0.9s
SAUI Saumlaki 19.79 153 *e*P **P** 09 00 45.8 -1.2
comp=Z,679nm,1.2s
JAGI Jajag, Banyuwa 19.79 204 *e*P **Pn** 09 00 47.8 -0.9
comp=Z,177nm,1.2s
BATI Baumata 19.86 176 P **Pn** 09 00 56.0 +6.5
MYKOM Kota Tinggi 19.90 248 ⇓P **P** 09 00 48.6 +0.5
MYKOM Kota Tinggi 19.90 248 *e*P **P** 09 00 48.3 +0.1
comp=Z,93nm,1.2s
PPBI Pangkal Pinang 19.91 234 P **Pn** 09 00 49.8 -0.3
comp=Z,71nm,1.4s,comp=Z,6µm
GMJI Gumukmas 19.91 206 P Pn 09 00 57.6 +7.5
NGJI Ngawi 20.09 213 P Pn 09 00 53.8 +1.6
comp=Z,237nm,1.0s
NONG Nongkai 20.27 296 P **P** 09 00 52.5 +0.3
comp=Z,232nm,1.6s,comp=Z,3µm
PWJI Pagerwojo 20.47 211 P Pn 09 00 56.0 -0.6
comp=Z,144nm,1.7s,comp=Z,3µm
WOJI Wonogiri, Jawa 20.77 213 P Pn 09 00 59.1 -1.0
comp=Z,419nm,1.1s,comp=Z,5µm
UGM Wanagama 21.05 214 P P 09 01 13.2 +13
UGM Wanagama 21.05 214 *e*P **P** 09 01 01.1 +0.4
comp=Z,287nm,1.1s
SSE Sheshan 21.27 358 P **P** 09 01 03.8 +0.9
SSE sP **sP** 09 01 21.8 +5.6
SSE S **S** 09 04 59.4 +1.9
SSE pmax pmax
comp=Z,130nm,1.1s
SSE pmax pmax
comp=Z,380nm,9.0s
SSE LR LR
comp=Z,3µm,19.7s
SSE LR LR
comp=Z,2µm,19.7s
SSE LR LR
comp=Z,2µm,20.3s
SKLT Songkhla 21.52 265 P **P** 09 01 07.0 +1.3
comp=Z,80nm,1.1s,comp=Z,2µm
IPM Ipoh 21.66 258 *e*P **P** 09 01 07.2 -0.1
comp=Z,56nm,0.7s
GENI Genyem 21.67 124 P **P** 09 01 11.8 +4.5
comp=Z,223nm,1.1s,comp=Z,4µm
PBKT Sadao Pong 21.77 290 P **P** 09 01 08.7 +0.4
comp=Z,78nm,0.8s,comp=Z,1µm
KULM Kulim 21.83 260 *e*P **P** 09 01 08.8 -0.2
comp=Z,81nm,1.2s
GYA Guiyang 22.21 321⇑ *i*P **P** 09 01 14.5 +1.3
GYA pP sP 09 01 27.8 +1.3
GYA sP pP 09 01 34.0 +12
GYA PP **PnPn** **09 01 45.2 +8.9**
GYA S **S** **09 05 11.8 -4.2**
GYA sS sS 09 05 33.0 +2.2
GYA SS **SnSn** **09 05 53.4 +8.9**
GYA pmax pmax
comp=Z,70nm,1.0s
GYA pmax pmax
comp=Z,750nm,5.9s
GYA LR LR
comp=Z,4µm,15.5s
GYA LR LR
comp=Z,4µm,15.8s
GYA LR LR
comp=Z,4µm,16.8s
SURA Surathani 22.29 270 P **P** 09 01 15.6 +1.6
comp=Z,59nm,1.7s,comp=Z,3µm
TRTT Trang 22.34 267 P **P** 09 01 15.9 +1.3
comp=Z,60nm,2.5s,comp=Z,2µm
PHET Kaeng Krachan 22.37 280 P **P** 09 01 16.8 +1.9
comp=Z,25nm,0.9s,comp=Z,356nm
CISI Cisompet, Garu 22.38 220 *e*P **P** 09 01 15.1 0.0
comp=Z,202nm,1.1s
NJ2 Nanjing 22.42 352 *e*P **P** 09 01 15.8 +0.6
NJ2 pP **sP** **09 01 28.5 0.0**
NJ2 S **S** **09 05 19.5 0.0**
NJ2 pmax pmax
comp=Z,90nm,0.9s
NJ2 pmax pmax
comp=Z,800nm,3.5s
NJ2 LR LR
comp=Z,3µm,16.3s
NJ2 LR LR
comp=Z,3µm,17.1s
NJ2 LR LR
comp=Z,3µm,21.1s
UTTA Uttaradit 22.48 293 P **P** 09 01 16.6 +0.6
comp=Z,13nm,1.0s
GUMO Guam 22.50 78 P **P** 09 01 17.1 +0.8
comp=Z,259nm,0.9s,baz=230,slow=6.5,SNR=10
GUMO LR LR 09 10 33.5
comp=Z,1µm,19.6s,baz=250,slow=38
GUMO Guam 22.50 78 *e*P **P** 09 01 17.0 +0.8
comp=Z,403nm,1.0s
KLSI 22.57 231 P **P** 09 01 16.4 -0.5
comp=Z,874nm,1.2s,comp=Z,28µm
KLI Kotabumi 22.58 231 P **P** 09 01 16.2 -0.8
KLI pmax pmax
comp=Z,127nm,0.4s
SRDT SRDT 23.05 284 P **P** 09 01 23.2 +1.3
comp=Z,361nm,1.5s,comp=Z,6µm
BKNI Bangkinang 23.06 247 *e*P **P** 09 01 21.8 -0.3
comp=Z,123nm,0.8s
CGJI Cibinong 23.13 226 P **P** 09 01 23.6 +0.8
comp=Z,187nm,1.2s,comp=Z,4µm
SDSI Sungai Dareh 23.26 244 P **P** 09 01 27.7 +3.6
comp=Z,43nm,1.1s,comp=Z,34µm
KASI Kota Agung 23.27 230 P **P** 09 01 26.3 +2.1
comp=Z,91nm,0.9s,comp=Z,3µm
LWLI Liwa 23.29 232 P **P** 09 01 26.5 +2.0
comp=Z,247nm,0.9s
LAMP Lampang 23.56 294 P **P** 09 01 27.9 +0.9
comp=Z,11nm,1.0s,comp=Z,152nm
ENH Enshi 23.64 332 *e*P **P** 09 01 27.4 -0.2
comp=Z,104nm,1.3s
UMPA Umpang Tak 23.64 288 P **P** 09 01 29.1 +1.3
comp=Z,14nm,1.2s
KSI Kapahiang 23.65 237 P **P** 09 01 29.9 +1.9
comp=Z,238nm,0.8s,comp=Z,10µm
KSI Kapahiang 23.65 237 P **P** 09 01 28.4 +0.4
KSI pmax pmax
comp=Z,239nm,0.8s
ANA2 Anatahan 23.79 72 *e*P **P** 09 01 28.9 -0.4
KMI Kunming 24.02 312 P **P** 09 01 32.3 +0.7
KMI pP pP 09 01 41.1 -0.1
KMI sP sP 09 01 47.9 +2.5
KMI S **S** **09 05 50.8 +4.0**
KMI pmax pmax
comp=Z,43nm,2.0s
KMI pmax pmax
comp=Z,740nm,4.1s
KMI LR LR
comp=Z,2µm,13.3s
KMI LR LR
comp=Z,3µm,17.1s
KMI LR LR
comp=Z,5µm,17.1s
MTN Manton Dam 24.12 158 *e*P **P** 09 01 31.5 -0.7
comp=Z,371nm,1.8s
CM01 Chiang Mai Arr 24.14 294 *e*P **P** 09 01 31.1 -1.3
CM31 Chiang Mai Arr 24.16 294 *e*P **P** 09 01 32.4 -0.2
CMAR Chiang Mai Arr 24.16 294 P **P** 09 01 32.3 -0.4
comp=Z,15nm,0.9s,baz=121,slow=8.2,SNR=50
CMAR LR LR 09 11 02.4
comp=Z,1µm,18.0s,baz=98,slow=37
MNSI Mandailing Nat 24.21 250 P **P** 09 01 33.0 -0.1
comp=Z,64nm,0.9s,comp=Z,4µm
CMMT Chiang Mai 24.27 294 P **P** 09 01 32.8 -0.9
comp=Z,46nm,2.1s,comp=Z,1µm
CHTO Chiang Mai 24.27 294 P **P** 09 01 32.9 -0.8
comp=Z,440nm,1.4s,comp=Z,6µm
CHTO Chiang Mai 24.27 294 *e*P **P** 09 01 32.8 -0.9
CHTO pmax pmax
comp=Z,60nm,1.2s
CHTO Chiang Mai 24.27 294 P **P** 09 01 33.1 -0.6
SNR=18
CHTO Chiang Mai 24.27 294 *e*P **P** 09 01 32.8 -0.9
comp=Z,60nm,1.2s
TSI Tuntungan 24.29 257 P **P** 09 01 37.0 +3.1
comp=Z,266nm,1.0s
KDU Kakadu 24.49 155 P **P** 09 01 34.4 -1.2
baz=24,SNR=7.7
JNU Nakatsue 24.60 18 P **P** 09 01 36.5 -0.1
comp=Z,24nm,0.9s,baz=141,slow=5.3,SNR=9.7
JNU Nakatsue 24.60 18 *e*P **P** 09 01 35.8 -0.7
comp=Z,52nm,1.1s
MHMT Maesarieng 25.00 292 P **P** 09 01 40.4 +0.1
comp=Z,60nm,1.0s
KCSI Kotacane, Aceh 25.05 257 P **P** 09 01 39.7 -1.1
comp=Z,102nm,1.1s,comp=Z,4µm
GSI Gunungsitoli 25.90 253 P **P** 09 01 48.0 -0.5
comp=Z,171nm,1.0s
GSI Gunungsitoli 25.90 253 *e*P **P** 09 01 47.0 -1.6
comp=Z,224nm,1.2s
KNRA Kunungurra 26.07 166 P **P** 09 01 49.0 -0.9
baz=26
TIA Tai'an 26.76 351 ⇓P **P** 09 01 55.9 -0.1
TIA S **S** 09 06 31.5 +1.8
TIA pmax pmax
comp=Z,20nm,1.3s
TIA LR LR
comp=Z,2µm,19.0s
TIA LR LR
comp=Z,2µm,17.0s
TIA LR LR
comp=Z,2µm,20.0s
XAN Xi'an 27.10 335 P **P** 09 01 58.5 -0.6
XAN pP pP 09 02 09.4 +0.5
XAN PP **PnPn** **09 02 43.4 +0.5**
XAN PcP **PcP** **09 05 21.5 +1.9**
XAN S **S** **09 06 28.6 -6.6**
XAN pmax pmax
comp=Z,140nm,8.9s
XAN LR LR
comp=Z,3µm,16.3s
XAN LR LR
comp=Z,3µm,15.2s
XAN LR LR
comp=Z,4µm,15.8s
CD2 Chengdu 27.18 323⇓ *i*P **P** 09 01 59.8 -0.2
CD2 pP sP 09 02 13.1 -0.7
CD2 sP pP 09 02 19.5 +10
CD2 S **S** **09 06 36.4 -0.3**
CD2 sS sS 09 06 59.5 +6.7
CD2 pmax pmax
comp=Z,160nm,0.9s
CD2 pmax pmax
comp=Z,500nm,5.0s
CD2 LR LR
comp=Z,3µm,14.1s
CD2 LR LR
comp=Z,3µm,11.7s
CD2 LR LR
comp=Z,4µm,14.9s
FITZ Fitzroy Crossi 27.87 173 P **P** 09 02 03.9 -2.2
comp=Z,13nm,0.8s,baz=13,slow=7.2,SNR=12
FITZ Fitzroy Crossi 27.87 173 P **P** 09 02 05.0 -1.0
baz=28,SNR=10
FITZ Fitzroy Crossi 27.87 173 *e*P **P** 09 02 05.0 -1.0
comp=Z,46nm,1.2s
KS15 Wonju Array Si 28.05 10 *e*P **P** 09 02 08.9 +1.3
KSAR Wonju Array Be 28.05 10 P **P** 09 02 08.2 +0.6
KSAR Wonju Array Be 28.05 10 P **P** 09 02 08.2 +0.6
KSRS Korea Array 28.07 10 P **P** 09 02 08.2 +0.5
comp=Z,7.5nm,0.8s,baz=185,slow=1.0,SNR=11
JHJ Hachijo˙jima 2 28.35 32 LR LR 09 11 51.3
comp=Z,2µm,21.4s,baz=240,slow=33
DGPR DIGLIPUR 28.90 280 *e*P **P** 09 02 18.1 +2.8
DL2 Dalian 29.05 359 P **P** 09 02 19.7 +3.3
DL2 S **S** 09 07 07.1 +1.4
DL2 pmax pmax
comp=Z,60nm,0.9s
DL2 LR LR
comp=Z,1µm,18.2s
DL2 LR LR
comp=Z,3µm,14.7s
DL2 LR LR
comp=Z,2µm,16.1s
TIY Taiyuan 29.22 344 *e*P **P** 09 02 15.7 -2.4
TIY S **S** 09 07 04.4 -4.2
TIY pmax pmax
comp=Z,140nm,4.1s
TIY LR LR
comp=Z,1µm,12.6s
TIY LR LR
comp=Z,2µm,12.5s
TIY LR LR
comp=Z,2µm,16.2s
MJAR Matsushiro Arr 30.37 26 LR LR 09 13 20.4
comp=Z,1µm,20.8s,baz=210,slow=34
BJT Baijiatuau 30.63 351 *e*P **P** 09 02 31.2 +0.7
BJT pmax pmax
comp=Z,35nm,1.0s
BJT Baijiatuau 30.63 351 *e*P **P** 09 02 31.2 +0.7
comp=Z,34nm,1.0s
BJI Beijing 30.66 351 P **P** 09 02 30.4 -0.2
BJI S **S** 09 07 32.3 +1.5
BJI SS **SS** 09 09 46.1 +3.5
BJI pmax pmax
comp=Z,32nm,1.8s
BJI pmax pmax
comp=Z,270nm,3.6s
BJI Beijing 30.66 351 P **P** 09 02 30.8 +0.2
BJI S **S** 09 07 32.7 +1.9
BJI pmax pmax
comp=Z,32nm,1.7s
BJI pmax pmax
comp=Z,250nm,3.5s
BJI LR LR
comp=Z,1µm,19.4s
BJI LR LR
comp=Z,2µm,19.4s
LZH Lanzhou 31.10 330 ⇑P **P** 09 02 36.1 +1.3
LZH pP pP 09 02 45.4 +0.8
LZH sP sP 09 02 51.3 +2.6
LZH S **S** **09 07 38.2 -0.1**
LZH sS sS 09 07 56.0 +1.6
LZH pmax pmax
comp=Z,58nm,1.1s
LZH pmax pmax
comp=Z,370nm,4.3s
LZH LR LR
comp=Z,5µm,14.7s
LZH LR LR
comp=Z,3µm,14.0s
LZH LR LR
comp=Z,5µm,15.6s
WRAB Tennant Creek 31.81 158 *i*P **P** 09 02 39.0 -2.0
WRAB pmax pmax
comp=Z,67nm,1.1s
WRAB Tennant Creek 31.81 158 *e*P **P** 09 02 38.7 -2.3
comp=Z,166nm,2.0s
WRA Warramunga Arr 31.81 158 P **P** 09 02 38.0 -3.1
comp=Z,16nm,0.9s,baz=339,slow=9.5,SNR=51
WRA PcP **PcP** 09 05 30.1 -1.7
comp=Z,14nm,1.0s,baz=333,slow=3.0,SNR=12
WRA LR LR 09 18 50.8
comp=Z,964nm,19.0s,baz=350,slow=43
WB2 Warramunga Arr 31.82 158 *e*P **P** 09 02 39.1 -2.0
SNY Shenyang 31.99 2 ⇓P **P** 09 02 42.5 +0.2
SNY pmax pmax
comp=Z,39nm,1.1s
SNY pmax pmax
comp=Z,110nm,3.7s
SNY LR LR
comp=Z,1µm,17.8s
SNY LR LR
comp=Z,2µm,17.8s
SNY LR LR
comp=Z,2µm,17.1s
HHC Hu-ho-hao-te 32.39 345 *e*P **P** 09 02 46.6 +0.5
HHC PP **PnPn** 09 03 55.2 +1.7
HHC S **S** 09 07 59.7 +1.4
HHC SS **SnSn** 09 09 59.2 +6.6
HHC pmax pmax
comp=Z,27nm,1.4s
HHC pmax pmax
comp=Z,130nm,4.1s
HHC LR LR
comp=Z,2µm,16.1s
HHC LR LR
comp=Z,2µm,16.7s
HHC LR LR
comp=Z,2µm,16.4s
SHL Shillong 32.80 303 *e*P **P** 09 02 48.3 -1.7
SHL IAmb IAmb 09 02 53.6
comp=Z,104nm,2.0s
MSHR Mys Shultsa 33.64 12 *e*P **P** 09 02 57.1 +0.3
CN2 Changchun 34.05 4 *e*P **P** 09 02 59.9 -0.5
CN2 pmax pmax
comp=Z,20nm,0.9s
CN2 pmax pmax
comp=Z,100nm,4.0s
CN2 LR LR
comp=Z,1µm,15.0s
CN2 LR LR
comp=Z,1µm,15.0s
CN2 LR LR
comp=Z,1µm,16.0s
VLA Vladivostok 34.31 13 *e*P **P** 09 03 03.4 +0.8
VLA pmax pmax
comp=Z,56nm,0.8s
QIS Mount Isa 34.62 150 P **P** 09 03 03.2 -2.4
baz=35,SNR=9.1
WRKA Warakurna 35.07 170 P **P** 09 03 08.0 -1.4
baz=35,SNR=52
AS31 Alice Springs 35.11 161 *e*P **P** 09 03 08.3 -1.4
comp=Z,12nm,0.7s
ASAR Alice Springs 35.11 161 P **P** 09 03 08.2 -1.6
comp=Z,17nm,0.7s,baz=338,slow=7.1,SNR=259
ASAR PcP **PcP** 09 05 39.6 -1.4
comp=Z,12nm,0.9s,baz=343,slow=1.8,SNR=12
ASAR S **S** 09 08 42.4 +1.9
comp=Z,5.8nm,1.1s,baz=351,slow=23,SNR=7.1
ASAR ScP **ScP** 09 09 26.8 +2.4
comp=Z,1.5nm,0.9s,baz=344,slow=3.0,SNR=5.0
ASAR LR LR 09 19 30.9
comp=Z,554nm,18.6s,baz=352,slow=40
AS01 Alice Springs 35.12 161 *e*P **P** 09 03 08.4 -1.5
LSA Lhasa 35.17 309 *e*P **P** 09 03 11.4 +0.6
LSA pmax pmax
comp=Z,16nm,0.8s
LSA Lhasa 35.17 309 *e*P **P** 09 03 11.4 +0.6
comp=Z,16nm,0.8s
MDJ Mudanjiang 35.33 9 P **P** 09 03 12.4 +1.0
MDJ pP sP 09 03 25.4 +0.1
MDJ sP pP 09 03 31.5 +10
MDJ PP **PP** **09 04 34.9 +2.9**
MDJ PcP **PcP** **09 05 41.6 +0.3**
MDJ S **S** **09 08 45.3 +1.9**
MDJ sS sS 09 09 05.4 +5.7
MDJ ScP **ScP** **09 09 21.8 -2.9**
MDJ PcS **PcS** **09 09 27.6 -0.6**
MDJ pmax pmax
comp=Z,85nm,1.2s
MDJ pmax pmax
comp=Z,100nm,3.6s
MDJ LR LR
comp=Z,1µm,16.4s
MDJ LR LR
comp=Z,680nm,14.9s
MDJ LR LR
comp=Z,1µm,14.9s
USRK Ussuriysk Ar. 35.37 12 P **P** 09 03 12.6 +0.9
comp=Z,28nm,0.8s,baz=200,slow=6.8,SNR=5.3
USRK LR LR 09 17 48.2
comp=Z,910nm,20.6s,baz=183,slow=36
GTA Gaotai 35.68 330 *e*P **P** 09 03 15.2 +0.5
GTA pP sP 09 03 30.8 +2.2
GTA sP pP 09 03 37.9 +13
GTA S **S** **09 08 50.7 +1.5**
GTA SS **SnSn** **09 11 15.3 +2.9**
GTA pmax pmax
comp=Z,24nm,1.4s
GTA pmax pmax
comp=Z,260nm,6.2s
GTA LR LR
comp=Z,3µm,15.4s
GTA LR LR
comp=Z,3µm,15.7s
GTA LR LR
comp=Z,4µm,15.9s
MEEK Meekatharra 36.33 185 P **P** 09 03 18.5 -1.6
baz=36
BWNR Bhubaneshwar 36.62 291 *e*P **P** 09 03 22.6 -0.2
BOK Bokaro 37.36 297 *e*P **P** 09 03 30.1 +1.0
BOK IAmb IAmb 09 03 34.5
comp=Z,26nm,0.3s
RAMN Ramite 37.72 302 *e*P **P** 09 03 32.3 -0.1
comp=Z,61nm,0.7s
CTA Charters Tower 37.92 141 LR LR 09 20 53.5
comp=Z,905nm,19.8s,baz=306,slow=39
VIS Vishakhapatnam 38.54 286 *e*P **P** 09 03 37.7 -1.4
GUN Gumba 38.65 303 *e*P **P** 09 03 40.1 -0.2
PKIN Phulchoki 38.94 302 *e*P **P** 09 03 42.6 0.0
MORW Morawa 39.04 189 P **P** 09 03 42.5 -0.5
baz=39,SNR=11
KKN Kakani 39.11 302 *e*P **P** 09 03 43.6 -0.4
comp=Z,15nm,0.2s
DMN Daman 39.19 302 *e*P **P** 09 03 44.3 -0.5
comp=Z,90nm,1.1s
HIA Hailar 39.46 357 *d i*P **P** 09 03 46.5 +0.1
HIA pmax pmax
comp=Z,39nm,1.1s
HIA Hailar 39.46 357 *e*P **P** 09 03 47.7 +1.3
comp=Z,76nm,1.2s
KLR Kul'dur 40.16 10 P **P** 09 03 52.8 +0.6
comp=Z,28nm,0.9s,baz=168,slow=4.0,SNR=4.9
KLR Kul'dur 40.16 10 P **P** 09 03 52.8 +0.6
KLR pmax pmax
comp=Z,29nm,0.9s
SONM Songino Array 40.26 343 P **P** 09 03 53.2 0.0
comp=Z,24nm,1.1s,baz=162,slow=7.0,SNR=94
SONM LR LR 09 23 45.9
comp=Z,1µm,18.6s,baz=154,slow=41
SONA1 Songino Array 40.27 343 *e*P **P** 09 03 53.1 -0.1
BLDU Ballidu 40.47 187 P **P** 09 03 53.9 -1.0
baz=40,SNR=5.4
KOLN Koldanda 40.51 302 *e*P **P** 09 03 55.1 -0.5
comp=Z,80nm,0.7s
FORT Forrest 40.67 172 P **P** 09 03 55.9 -0.6
baz=41,SNR=11
FORT Forrest 40.67 172 *e*P **P** 09 03 56.0 -0.6
comp=Z,1µm,1.3s
KMBL Kambalda 40.87 180 P **P** 09 03 57.4 -0.8
baz=41,SNR=17

YSS Yuzh-Sakhalins 40.99 21 *e*P P 09 04 02.2 +3.2
YSS pmax pmax
comp=Z,50nm,1.0s
YSS MLR MLR
comp=Z,500nm,19.0s
YSS MLR MLR
comp=N,600nm,17.0s
PYUN Piuthan 41.12 302 *e*P P 09 04 00.6 -0.1
comp=N,177nm,1.1s
MDRS Chennai 41.25 279 *e*P P 09 04 02.9 +1.3
KLBR Kellerberrin 41.31 186 P P 09 04 00.3 -1.6
baz=41,SNR=11
MUN Mundaring 41.88 188 P P 09 04 06.3 -0.1
baz=42
QLP Quilpie 41.96 150 P P 09 04 05.0 -2.2
baz=42,SNR=7.6
NWAO Narrogin (SRO) 42.69 186 P P 09 04 12.0 -1.1
baz=43,SNR=8.3
NWAO P P 09 04 12.0 -1.1
baz=43,SNR=8.3
NWAO Narrogin (SRO) 42.69 186 *e*P P 09 04 12.9 -0.2
NWAO pmax pmax
comp=Z,137nm,1.4s
NWAO Narrogin (SRO) 42.69 186 *e*P P 09 04 12.9 -0.2
comp=Z,137nm,1.4s
NGP Nagpur 43.00 291 *e*P P 09 04 16.2 +0.4
NGP IAmb IAmb 09 04 27.7
comp=Z,19nm,0.8s
HYB Hyderabad 43.05 285 *i* P P 09 04 16.0 -0.3
HYB Hyderabad 43.05 285 *e*P P 09 04 16.3 -0.1
ZAK Zakamensk 43.45 342 *e*P P 09 04 18.4 -0.8
ZAK pmax pmax
comp=Z,13nm,1.4s
BBOO Buckleboo 44.32 163 P P 09 04 24.7 -1.5
baz=44,SNR=15
BBOO Buckleboo 44.32 163 *e*P P 09 04 24.9 -1.3
comp=Z,89nm,1.1s
RKGY Rocky Gully 44.38 186 P P 09 04 27.9 +1.2
baz=44,SNR=9.0
TLY Talaya 44.50 344 P P 09 04 28.5 +1.0
comp=Z,14nm,0.8s,baz=184,slow=7.0,SNR=28
TLY Talaya 44.50 344*d i*P P 09 04 27.9 +0.4
TLY *e*S **S** 09 11 01.5 +1.0
TLY *e*SS **SS** 09 14 21.1 +0.3
TLY *e*SSS SSS 09 15 08.5
TLY pmax pmax
comp=Z,26nm,0.9s
TLY MLR MLR
comp=Z,920nm,18.0s
TLY Talaya 44.50 344 *e*P P 09 04 28.2 +0.7
comp=Z,35nm,0.9s
EIDS Eidsvold 44.81 142 P P 09 04 28.0 -2.3
baz=45,SNR=4.6
EIDS Eidsvold 44.81 142 *e*P P 09 04 27.6 -2.6
comp=Z,33nm,1.0s
BHPL Bhopal 44.82 293 *e*P P 09 04 29.3 -1.2
BHPL IAmb IAmb 09 04 32.0
comp=Z,90nm,0.2s
IRK Irkutsk 44.84 344 *e*P P 09 04 29.2 -0.9
IRK pmax pmax
comp=Z,68nm,1.7s
WMQ Urumqi 45.27 325⇓*i*P P 09 04 35.5 +1.7
WMQ pP sP 09 04 46.2 -1.7
WMQ sP pP 09 04 52.3 +8.4
WMQ PP **PP** **09 06 21.4 +1.4**
WMQ S **S** **09 11 14.3 +2.3**
WMQ ScS **ScS** **09 14 27.3 -0.9**
WMQ pmax pmax
comp=Z,34nm,1.4s
WMQ pmax pmax
comp=Z,380nm,3.9s
WMQ LR LR
comp=Z,3μm,15.4s
WMQ LR LR
comp=Z,2μm,13.7s
WMQ LR LR
comp=Z,3μm,17.2s
MOY Mondy 45.27 341 *e*P P 09 04 34.3 +0.6
MOY pmax pmax
comp=Z,48nm,1.6s
STKA Stephens Creek 45.34 157 P P 09 04 32.8 -1.6
comp=Z,19nm,0.9s,baz=326,slow=8.0,SNR=24
STKA PP **PcP** **09 06 14.5 +0.9**
comp=Z,8.0nm,0.8s,baz=344,slow=7.1,SNR=3.3
STKA LR LR 09 25 51.6
comp=Z,235nm,18.4s,baz=338,slow=39
STKA Stephens Creek 45.34 157 P P 09 04 32.9 -1.4
baz=45,SNR=15
STKA Stephens Creek 45.34 157 *e*P P 09 04 33.0 -1.4
comp=Z,5.4nm,0.9s
STKA PP **PcP** **09 06 14.5 +0.9**
HTT Hallett 45.78 160 P P 09 04 36.8 -1.0
baz=46,SNR=15
CMSA Cobar Meteorol 46.79 152 P P 09 04 44.8 -1.0
baz=47,SNR=18
SMLA Simla 46.87 304 *e*P P 09 04 46.1 -0.4
GOA Goa 47.50 282 *e*P P 09 04 51.6 +0.1
GOA IAmb IAmb 09 04 56.2
comp=Z,23nm,0.7s
DHRM DHARAMSHALA 47.91 305 *e*P P 09 04 54.9 0.0
DHRM IAmb IAmb 09 04 55.6
comp=Z,77nm,0.9s
BOD Bodaibo 48.39 354 *e*P P 09 04 57.1 -0.7
BOD pmax pmax
comp=Z,40nm,1.2s
ARMA Armidale 48.91 146 P P 09 05 01.9 -0.6
baz=49,SNR=6.0
ARMA Armidale 48.91 146 *e*P P 09 05 01.6 -0.9
comp=Z,29nm,1.1s
SKR Severo-Kuril's 49.45 28 *e*P P 09 05 04.6 -1.4
SKR *e*S **S** **09 12 12.2 +1.2**
SKR *e*SS **ScS** **09 14 56.2 +1.0**
SKR pmax pmax
comp=Z,200nm,4.7s
SKR pmax pmax
comp=Z,100nm,7.0s
SKR MLR MLR
comp=Z,600nm,18.0s
SKR MLR MLR
comp=Z,400nm,17.0s
ARPS Mount Arapiles 49.80 159 P P 09 05 09.9 +1.0
baz=50,SNR=4.8
MK01 Makanchi Array 50.08 325 *e*P P 09 05 11.3 +0.2
MK31 Makanchi Array 50.10 325 *e*P P 09 05 11.9 +0.7
MK31 Makanchi Array 50.10 325 *e*P P 09 05 11.9 +0.7
MKAR Makanchi Array 50.10 325 P P 09 05 11.8 +0.6
comp=Z,25nm,0.8s,baz=123,slow=8.8,SNR=115
MKAR PKPPKP P'P'df 09 35 56.1 -8.7
comp=Z,0.1nm,0.2s,baz=297,slow=3.3,SNR=4.1
MAKZ Makanchi 50.29 325 *i* P P 09 05 11.8 -0.8
MAKZ pmax pmax
comp=Z,61nm,1.4s
MAKZ Makanchi 50.29 325 *e*P P 09 05 13.2 +0.6
comp=Z,129nm,1.5s
KSH Kashi 50.67 314 P P 09 05 18.0 +2.3
KSH *ep*P sP 09 05 31.9 +2.0
KSH *es*P pP 09 05 37.4 +11
KSH S **S** **09 12 27.8 -0.9**
KSH sS sS 09 12 48.8 +3.3
KSH ScS **ScS** **09 15 02.1 -2.3**
KSH pmax pmax
comp=Z,85nm,1.4s
KSH pmax pmax
comp=Z,440nm,2.9s
KSH LR LR
comp=Z,630nm,15.0s
KSH LR LR
comp=Z,1μm,13.4s
KSH LR LR
comp=Z,2μm,15.1s
CAN Canberra 51.47 152 *e*P P 09 05 21.1 -0.5
CAN pmax pmax
comp=Z,67nm,1.3s
CAN Canberra 51.47 152 *e*P P 09 05 21.1 -0.5
comp=Z,67nm,1.3s
KRAR Krasnoyarsk 51.57 339 *e*P P 09 05 22.5 +0.5
AAA Alma-Ata 51.58 319 *e*P P 09 05 24.0 +1.6
AAA *e*S **S** **09 12 45.0 +3.9**
AAA pmax pmax
comp=Z,500nm,2.9s
AAA smax smax
comp=E,500nm,6.2s
AAA MLR MLR
comp=Z,1μm,14.0s
CNB Canberra Magne 51.63 152 P P 09 05 22.0 -0.8
baz=52,SNR=4.7

PETK Petropavlovsk- 51.83 26 P P 09 05 21.0 -3.0
comp=Z,2.3nm,0.5s,baz=208,slow=14,SNR=3.7
PETK LR LR 09 28 14.3
comp=Z,651nm,20.3s,baz=219,slow=37
PETK Petropavlovsk- 51.83 26 P P 09 05 21.0 -3.0
PETK pmax pmax
comp=Z,3.0nm,0.5s
PETK MLR MLR
comp=Z,651nm,20.3s
BHJ Bhuj 51.90 292 *e*P P 09 05 22.7 -2.4
PET Petropavlovsk 52.19 27 *e*P P 09 05 26.1 -0.6
PET *e*S **S** **09 12 48.2 -0.8**
PET pmax pmax
comp=Z,200nm,10.7s
PET pmax pmax
comp=Z,200nm,13.7s
FRU Bishkek 52.93 317⇓*i*P P 09 05 33.0 +0.5
FRU *e* 09 13 04.0
FRU pmax pmax
comp=Z,100nm,2.0s
AAK Ala-Archa 52.94 317 *i* P P 09 05 33.5 +0.8
AAK pmax pmax
comp=Z,48nm,1.3s
AAK Ala-Archa 52.94 317 P P 09 05 34.0 +1.4
SNR=32
AAK Ala-Archa 52.94 317 *e*P P 09 05 33.1 +0.5
comp=Z,175nm,1.8s
ZALV Zalesovo Beam 53.24 333 P P 09 05 34.0 -0.4
comp=Z,10nm,0.8s,baz=115,slow=5.7,SNR=26
ZALV LR LR 09 29 08.1
comp=Z,559nm,20.4s,baz=72,slow=37
DZM Mont Dzumac 53.66 127 *e*LR LR 09 21 12.1
comp=Z,1μm,34.8s
MNAS Manas 54.23 316 *i* P P 09 05 42.3 +0.2
MNAS pmax pmax
comp=Z,65nm,0.9s
KURBB Kurchatov Arra 54.30 327 P P 09 05 42.6 +0.3
comp=Z,15nm,0.8s,baz=132,slow=6.7,SNR=110
KURBB PKP2bc 09 36 06.4
comp=Z,0.4nm,0.4s,baz=295,slow=3.1,SNR=4.7
KURK Kurchatov 54.30 327*ce*P P 09 05 42.5 +0.2
KURK Kurchatov 54.30 327 *e*P P 09 05 42.7 +0.4
comp=Z,146nm,1.4s
KURK ⇑*e* 09 36 06.4
KBL Kabul 54.37 306 *e*P P 09 05 43.8 +0.5
KBL pmax pmax
comp=Z,37nm,0.9s
KBL Kabul 54.37 306 *e*P P 09 05 43.8 +0.5
comp=Z,37nm,0.9s
NVS Novosibirsk 54.53 333⇓*i*P P 09 05 44.2 +0.4
NVS pmax pmax
comp=N,37nm,1.9s
NVS pmax pmax
comp=Z,72nm,1.9s
NVS pmax pmax
comp=E,33nm,1.6s
KK31 Karatay Array 55.82 316 *i* P P 09 05 53.4 -0.1
KK31 pmax pmax
comp=Z,32nm,0.8s
KKAR Karatay Array 55.82 316 *e*P P 09 05 53.8 +0.3
KKAR Karatay Array 55.82 316 *e*P P 09 05 53.8 +0.3
OTUK Ortayu 56.66 322 P P 09 06 00.2 +0.8
OTUK pmax pmax
comp=Z,33nm,1.3s
SEY Seymchan 57.36 16 *e*P P 09 06 04.8 +0.8
BVA0 Borovoye Array 59.88 327 P P 09 06 20.6 -1.1
BVA0 pmax pmax
comp=Z,34nm,1.4s
BVAR Borovoye Array 59.88 327 P P 09 06 22.3 +0.6
comp=Z,12nm,0.9s,baz=111,slow=8.1,SNR=41
BRVK Borovoye 59.95 327*de*P P 09 06 22.3 +0.1
BRVK pmax pmax
comp=Z,69nm,1.0s
BRVK Borovoye 59.95 327 *e*P P 09 06 22.3 +0.1
comp=Z,53nm,1.2s
ZRNK Zerenda 60.60 326 *e*P P 09 06 26.4 -0.2
ZRNK Zerenda 60.60 326 *e*P P 09 06 26.4 -0.2
NRIK Noril'sk 63.59 347 P P 09 06 46.3 -0.1
comp=Z,27nm,0.9s,baz=134,slow=6.2,SNR=30
GEYT Alibeck 63.69 307 P P 09 06 48.8 +1.1
comp=Z,14nm,0.7s,baz=107,slow=2.0,SNR=32
GEYT LR LR 09 37 20.1
comp=Z,763nm,19.5s,baz=120,slow=39
ARQ Araqi 63.96 291 P P 09 06 48.7 -1.0
SNR=6.3
BANOM Banah 64.20 294 P P 09 06 51.0 -0.3
HATD Hatta, Dubai 64.33 293 P P 09 06 51.6 -0.5
ASHO Ashiyiah 64.39 293 P P 09 06 51.9 -0.7
AB31 Akbulak array 64.70 320 *i* P P 09 06 53.6 -0.5
AB31 pmax pmax
comp=Z,15nm,0.9s
ABKAR Akbulak array 64.70 320 *e*P P 09 06 53.4 -0.7
FAQ Al Faqa, Dubai 64.82 293 P P 09 06 54.5 -0.8
BILL Bilibino 65.03 17⇓*i*P P 09 06 55.7 -0.1
BILL *e* 09 07 29.5
BILL pmax pmax
comp=Z,43nm,1.1s
BILL MLR MLR
comp=Z,701nm,18.0s
AKTO Aktyubinsk 66.20 321 *i* P P 09 07 02.9 -0.9
AKTO pmax pmax
comp=Z,30nm,1.1s
SVE Sverdlovsk 66.53 328 *e*P P 09 07 05.8 +0.1
SVE *e*S **S** **09 15 52.9 -1.3**
SVE pmax pmax
comp=Z,62nm,1.5s
SVE MLR MLR
comp=Z,766nm,17.0s
ARU Arti 67.50 327 LR LR 09 38 33.3
comp=Z,656nm,19.6s,baz=92,slow=38
ARU Arti 67.50 327*d i*P P 09 07 11.1 -0.8
ARU *e*PP **pP** **09 07 24.0 +1.6**
ARU 09 07 43.5
ARU 09 09 46.1
ARU S **S** **09 16 05.3 -0.6**
ARU SS **SS** **09 20 23.4 -3.1**
ARU pmax pmax
comp=Z,35nm,1.7s
ARU Arti 67.50 327 *e*P P 09 07 11.1 -0.8
SOKR Solikamsk 69.32 330*d i*P P 09 07 20.7 -2.5
SOKR S **S** **09 16 24.8 -2.5**
SOKR pmax pmax
comp=Z,18nm,1.3s
SOKR MLR MLR
comp=Z,1μm,15.0s
GNI Garni 74.23 309*ce*P P 09 07 55.6 +2.2
GNI pmax pmax
comp=Z,422nm,1.7s
GNI Garni 74.23 309 *e*P P 09 07 55.2 +1.8
comp=Z,879nm,1.5s
GUDG Gudauri 74.46 311 P P 09 07 55.9 +1.1
ZEI Tsey 74.89 312 *e*P P 09 07 56.0 -1.2
ZEI pmax pmax
comp=Z,105nm,1.1s
NCK Nalchik 75.12 312*ce*P P 09 07 59.0 +0.7
NCK pmax pmax
comp=Z,16nm,1.0s
ONI Oni 75.22 311 P P 09 07 59.9 +1.0
ONI Oni 75.22 311 P P 09 07 59.9 +1.0
GOF Gofitskoye 75.54 314*ie*P P 09 08 00.8 +0.2
GOF pmax pmax
comp=Z,67nm,1.5s
KBZ Khabaz 75.63 313 P P 09 08 00.7 -0.5
comp=Z,21nm,1.2s,baz=83,slow=5.6,SNR=29
NEY Neytrino 75.76 312*ce*P P 09 08 03.5 +1.3
NEY pmax pmax
comp=Z,8.0nm,1.4s
KIV Kislovodsk 75.79 313 *i* P P 09 08 02.9 +0.7
SNR=14
KIV Kislovodsk 75.79 313 *e*P P 09 08 02.3 +0.1
KIV *e*S **S** **09 17 41.7 -0.4**
KIV pmax pmax
comp=Z,41nm,1.0s
KIV MLR MLR
comp=Z,598nm,18.0s
KIV Kislovodsk 75.79 313 P P 09 08 02.8 +0.7
SNR=12
KIV Kislovodsk 75.79 313 *e*P P 09 08 03.2 +1.0
CASY Casey 76.30 185 *e*P P 09 08 03.5 -0.8
VRH Novokhopyorsk 76.53 320 *e*P P 09 08 05.2 -0.9
VRH pmax pmax
comp=Z,70nm,1.2s
SOC Sochi 77.94 313 *e*P P 09 08 13.7 -0.5
SOC *e* 09 11 07.2
SOC *e*S **S** **09 18 06.4 +1.0**

SOC pmax pmax
comp=Z,30nm,1.0s
KLMR Klimovskoe 78.01 330 *e*P P 09 08 09.4 -4.8
KLMR pmax pmax
comp=Z,29nm,1.3s
VSR Storozhevoye 78.14 320 *e*P P **09 08 13.6 -1.5**
VSR pmax pmax
comp=Z,50nm,1.2s
MOS Moscow 78.98 325 *e*P P **09 08 17.3 -2.4**
MOS *e* 09 08 36.2
MOS *e*S **S** **09 18 12.9 -3.1**
MOS pmax pmax
comp=Z,84nm,1.1s
MOS pmax pmax
comp=Z,300nm,2.4s
MOS MLR MLR
comp=Z,600nm,20.0s
ANN Anapa 79.53 314 *e*P P **09 08 22.5 -0.4**
ANN *e* 09 11 20.0
ANN *e*S **S** **09 18 22.6 +0.4**
ANN pmax pmax
comp=Z,56nm,1.0s
ANN MLR MLR
comp=Z,397nm,17.0s
OBN Obninsk 79.60 324*d i*P P **09 08 22.4 -0.6**
OBN *e* 09 08 32.1
OBN *PP **sP** **09 08 38.0 +0.4**
OBN *e*S **S** **09 18 21.6 -1.0**
OBN pmax pmax
comp=Z,71nm,1.4s
OBN MLR MLR
comp=Z,466nm,17.0s
COLD Coldfoot 80.15 23 *e*P P **09 08 25.9 +0.1**
comp=Z,11nm,0.9s
TRF Thorofare Moun 80.24 27 *e*P P **09 08 24.4 -2.2**
APA Apatity 80.62 337⇓*i*P P **09 08 33.0 +4.7**
APA *i* 09 11 33.0
APA *i* PPP PPP 09 13 24.5
APA *i* S S 09 18 45.0 +12
APA pmax pmax
comp=Z,8.0nm,0.8s
APA MLR MLR
comp=Z,2μm,15.0s
MCK McKinley 80.83 27 *e*P P **09 08 27.9 -1.7**
comp=Z,37nm,1.3s
PMR Palmer 80.87 29 *e*P P **09 08 28.2 -1.5**
comp=Z,13nm,0.8s
COLA College 81.23 26 *e*P P **09 08 30.4 -1.1**
comp=Z,16nm,0.7s
ILAR Eielson Array 81.65 26 PKKPbc PKKPbc 09 27 08.0 -0.6
comp=Z,0.3nm,0.8s,baz=129,slow=1.8,SNR=4.4
ILAR LR LR 09 43 46.6
comp=Z,239nm,21.4s,baz=282,slow=35
SIM Simferopol' 81.87 314*d i*P P **09 08 36.4 +1.0**
SIM *e*S **S** **09 18 46.1 -0.7**
SIM pmax pmax
comp=Z,108nm,1.1s
SIM MLR MLR
comp=E,190nm,15.9s
RAR Rarotonga 82.49 113 LR LR 09 42 39.7
comp=E,160nm,21.6s,baz=234,slow=34
BRTR Keskin Array B 82.78 309 P P **09 08 40.2 -0.3**
comp=E,7.5nm,0.9s,baz=112,slow=5.5,SNR=40
BMRM Bremner River 83.11 29 *e*P P **09 08 41.1 -0.6**
comp=E,20nm,0.9s
ARCES ARCESS Array B 83.30 339 P P **09 08 41.7 -0.7**
comp=E,12nm,0.8s,baz=75,slow=5.1,SNR=15
ARCES LR LR 09 51 30.6
comp=E,647nm,18.3s,baz=68,slow=40
ANTO Ankara 83.41 309 *e*P P **09 08 44.1 +0.4**
ANTO pmax pmax
comp=Z,126nm,1.1s
ANTO Ankara 83.41 309 P P **09 08 43.8 +0.1**
SNR=9.3
ANTO Ankara 83.41 309 *e*P P **09 08 44.1 +0.4**
comp=Z,126nm,1.1s
CSS Mathiatis 83.60 304 *e*P P **09 08 44.9 +0.2**
comp=Z,9.5nm,0.9s
SPITS Spitsbergen Ar 83.75 348 LR LR 09 51 01.7
comp=Z,791nm,19.8s,baz=70,slow=39
EGAK Eagle 84.08 25 *e*P P **09 08 46.1 -0.4**
AKASG Malin Array Be 84.44 320 P P **09 08 47.6 -0.9**
comp=Z,12nm,0.8s,baz=70,slow=5.0,SNR=56
AKASG LR LR 09 50 02.5
comp=Z,456nm,18.8s,baz=80,slow=38
KIEV Kiev 84.45 320*ce*P P **09 08 47.5 -1.1**
KIEV pmax pmax
comp=Z,31nm,1.1s
KIEV Kiev 84.45 320 *e*P P **09 08 47.6 -1.0**
comp=Z,34nm,1.1s
FINES FINESS Array B 84.45 331 P P **09 08 47.9 -0.5**
comp=Z,9.8nm,0.9s,baz=94,slow=8.8,SNR=11
VSU Vasula 84.64 328*d i*P P **09 08 48.8 -0.6**
VSU pmax pmax
comp=Z,119nm,1.1s
MICGM Minsk 84.67 324⇑*e*P P **09 08 49.0 -0.6**
MICGM PM 09 08 50.0
comp=Z,0.2nm,1.0s
MNK Minsk 84.67 324⇑*e*P P **09 08 49.0 -0.6**
MNK pmax pmax
comp=Z,210nm,1.0s
DAWY Dawson 84.97 26 *e*P P **09 08 50.3 -0.7**
comp=Z,38nm,1.4s
NACGM Naroch 85.23 325 *e* P **09 08 51.0 -1.4**
NACGM *e*LQ LQ 09 44 20.0
NACGM *e*LR LR 09 48 20.0
KMBO Kilima Mbogo 85.23 268 P P **09 08 53.8 +0.1**
comp=Z,6.5nm,0.9s,baz=58,slow=8.2,SNR=8.3
KMBO LR LR 09 47 40.0
comp=Z,544nm,18.0s,baz=98,slow=36
KMBO Kilima Mbogo 85.23 268 *e*P P **09 08 53.7 +0.1**
comp=Z,19nm,1.3s
KIS Kishinev 85.27 317 *e*P P **09 08 51.0 -1.8**
KIS *i* S S **09 19 17.0 -4.0**
KIS Kishinev 85.27 317 *e*PS 09 20 16.0
KIS LRM MLR 09 52 34.0
comp=Z,600nm,18.0s
KIS Kishinev 85.27 317 *e*P P **09 08 51.0 -1.8**
KIS *e* 09 09 05.0
KIS *i* S S **09 19 17.0 -4.0**
KIS *e*PS **PnS** **09 20 16.0 -3.7**
SORM Soroca 85.40 318⇓*i*P P **09 08 53.5 +0.1**
SORM Soroca 85.40 318⇓*e*P P **09 08 53.5 +0.1**
ISP Isparta 85.44 307⇑*i*P P **09 08 54.1 0.0**
ISP Isparta 85.44 307*ce*P P **09 08 53.2 -0.9**
ISP pmax pmax
comp=Z,39nm,1.0s
TLCR 85.56 315⇑*i*P P **09 08 55.4 +1.1**
TLCR 85.56 315⇑*e*P P **09 08 55.4 +1.1**
TIRR Tirgusor 85.96 314⇑*i*P P **09 08 56.3 0.0**
TIRR Tirgusor 85.96 314 *e*P P **09 08 55.8 -0.5**
TIRR pmax pmax
comp=Z,36nm,1.2s
TIRR Tirgusor 85.96 314 *e*P P **09 08 55.8 -0.5**
comp=Z,36nm,1.2s
CFR Carcaliu 86.04 315⇑*i*P P **09 08 56.8 +0.1**
CFR Carcaliu 86.04 315⇑*e*P P **09 08 56.8 +0.1**
TLB Topalu 86.20 314⇑*i*P P **09 08 57.7 +0.2**
TLB Topalu 86.20 314⇑*e*P P **09 08 57.7 +0.2**
INK Inuvik 86.23 21 P P **09 08 57.0 -0.2**
comp=Z,16nm,1.0s,baz=285,slow=6.0,SNR=26
INK Inuvik 86.23 21 *e*P P **09 08 56.6 -0.6**
INK pmax pmax
comp=Z,29nm,1.1s
INK Inuvik 86.23 21 *e*P P **09 08 56.5 -0.6**
comp=Z,29nm,1.1s
PSN Preselentsi 86.26 314 *e*P P **09 08 57.6 -0.2**
HARR Harsova 86.26 315⇑*i*P P **09 08 57.0 -0.8**
HARR Harsova 86.26 315⇑*e*P P **09 08 57.0 -0.8**
GRER 86.81 315⇑*i*P P **09 09 03.2 +2.7**
TESR Tescani 86.82 316⇑*i*P P **09 09 00.8 +0.2**
PRD Provadia 86.90 313 *e*P P **09 09 00.6 -0.4**
PLOR Plostina 86.95 316⇑*i*P P **09 09 01.5 +0.3**
PLOR Plostina 86.95 316⇑*e*P P **09 09 01.6 +0.3**
PRAR RASCA 86.95 317⇑*i*P P **09 09 01.9 +0.8**
ISR Istrita 87.16 315⇑*i*P P **09 09 04.3 +2.0**
ISR Istrita 87.16 315⇑*e*P P **09 09 04.4 +2.1**
SUW Suwalki 87.47 324 *e*P P **09 09 03.1 -0.4**
SUW Suwalki 87.47 324 *e*P P **09 09 03.1 -0.4**
MLR Muntele Rosu 87.50 316 LR LR 09 51 08.5
comp=Z,144nm,21.0s,baz=66,slow=38
MLR Muntele Rosu 87.50 316⇑*i*P P **09 09 04.0 0.0**
MLR Muntele Rosu 87.50 316⇑*e*P P **09 09 04.0 0.0**
MAW Mawson 87.86 199 P P **09 09 04.4 -0.5**
comp=Z,13nm,1.3s,baz=35,slow=9.1,SNR=5.9

MAW LR LR 09 44 54.0
comp=Z,117nm,20.7s,baz=60,slow=33
LVV L'vov 87.88 320 *e*P **P 09 09 04.9 -0.6**
VOIR 88.13 316 ⇑*i*P **P 09 09 08.5 +1.6**
VOIR 88.13 316 ⇑P **P 09 09 08.5 +1.6**
KWP Kalwaria Pacla 88.76 320 *e*P **P 09 09 10.2 +0.5**
KWP Kalwaria Pacla 88.76 320 *e*P **P 09 09 10.2 +0.5**
LOT Lotru 89.01 316 ⇑*i*P **P 09 09 11.4 +0.3**
KLNR Kaliningrad 89.01 325 *e*P **P 09 09 11.6 +0.9**
KOLS Kolonicke sedl 89.20 319 *e*P **P 09 09 12.8 +1.0**
KOLS pmax pmax
comp=Z,10.0nm,1.3s
KOLS Kolonicke sedl 89.20 319 *e*P **P 09 09 12.8 +1.0**
UZH Uzhgorod 89.26 319 ⇓*i*P **P 09 09 12.5 +0.4**
UZH *e* 09 09 24.9
UZH *e*S **S 09 19 56.7 -2.6**
UZH MLR MLR
comp=N,1μm,18.0s
UZH MLR MLR
comp=E,500nm,18.0s
DRGR 89.42 317 ⇑*i*P **P 09 09 13.0 0.0**
DRGR 89.42 317 ⇑P **P 09 09 13.0 0.0**
MPEP Malo Peshtene 89.49 314 *e*P **P 09 09 11.1 -2.2**
CRVS Cervenica-Dubn 89.72 320 *e*P **P 09 09 14.3 0.0**
CRVS Cervenica-Dubn 89.72 320 *e*P **P 09 09 14.3 0.0**
STHS Stebnicka Huta 89.73 320 *e*P **P 09 09 15.5 +1.2**
STHS pmax pmax
comp=Z,8.0nm,1.2s
STHS Stebnicka Huta 89.73 320 *e*P **P 09 09 15.5 +1.2**
MMB Musomiste 89.89 312 *e*P **P 09 09 13.2 -2.1**
VNDA Vanda 89.93 172 P **P 09 09 13.4 -1.1**
comp=Z,9.8nm,0.9s,baz=305,slow=5.3,SNR=39
VNDA LR LR 09 49 21.4
comp=Z,221nm,21.0s,baz=331,slow=36
VTS Vitosha 90.04 313 *e*P P 09 09 07.5 -8.6
SIRR Siria 90.25 317 ⇑*i*P **P 09 09 16.8 0.0**
KKB Krupnik 90.30 312 *e*P **P 09 09 15.7 -1.4**
NIE Niedzica 90.33 320 *e*P **P 09 09 17.4 +0.3**
NIE Niedzica 90.33 320 *e*P **P 09 09 17.5 +0.3**
OJC Ojcow 90.43 321 *e*P **P 09 09 17.2 -0.3**
OJC Ojcow 90.43 321 *e*P **P 09 09 17.2 -0.3**
KECS Kecovo 90.46 319 *e*P **P 09 09 17.7 0.0**
KECS pmax pmax
comp=Z,6.0nm,1.1s
KECS Kecovo 90.46 319 *e*P **P 09 09 17.7 0.0**
DLBC Dease Lake 90.87 30 P **P 09 09 19.5 0.0**
comp=Z,0.6nm,0.4s,baz=334,slow=6.1,SNR=2.8
LANS Liptovska Anna 90.93 320 *e*P **P 09 09 21.4 +1.5**
LANS Liptovska Anna 90.93 320 *e*P **P 09 09 21.4 +1.5**
PPT2 Papeete2 91.20 108 *e*S **S 09 20 17.3 -1.1**
comp=Z,248nm,24.5s
PPT2 Papeete2 91.20 108 *e*LR LR 09 38 43.8
comp=Z,1μm,23.8s,baz=296
NB2 NORSAR Subarra 91.44 333 P **P 09 09 21.1 -1.0**
comp=Z,14nm,1.2s,baz=69,slow=4.6
NB2 NORSAR Subarra 91.44 333 P **P 09 09 21.1 -1.0**
baz=69,slow=4.6
NOA NORSAR Array B 91.44 333 P **P 09 09 22.4 +0.3**
comp=Z,1.8nm,0.8s,baz=69,slow=4.7,SNR=4.8
NOA LR LR 09 53 12.8
comp=Z,483nm,20.9s,baz=40,slow=37
VYHS Vyhne 91.51 320 *e*P **P 09 09 22.5 -0.1**
VYHS pmax pmax
comp=Z,5.0nm,1.3s
VYHS Vyhne 91.51 320 *e*P **P 09 09 22.5 -0.1**
OKC Ostrava-Krasne 91.56 321 *e*PP PP 09 13 03.7 +2.9
OKC *e*S **S 09 20 20.5 +0.1**
OKC AMS AMS 09 57 20.0
comp=Z,500nm,14.8s
TBI Tubuai 92.27 113 *e*LR LR 09 39 12.0
comp=Z,921nm,24.8s,baz=296
KRLC Kraliky 92.33 322 *e*P **P 09 09 26.5 +0.1**
KRLC Kraliky 92.33 322 *e*P **P 09 09 26.5 +0.1**
KSP Ksiaz 92.38 322 *e*P **P 09 09 26.4 -0.2**
KSP Ksiaz 92.38 322 *e*P **P 09 09 26.4 -0.2**
DPC Dobruska-Polom 92.52 322 *e*P **P 09 09 27.9 +0.6**
DPC AMS AMS 09 57 20.0
comp=Z,400nm,18.8s
DPC Dobruska-Polom 92.52 322 *e*P **P 09 09 27.9 +0.6**
DPC MLR MLR
comp=Z,400nm,18.8s
UPC Upice 92.66 322 *e*P **P 09 09 28.4 +0.5**
UPC *e*SKS **SKSac 09 20 00.9 +1.8**
UPC *e*S **S 09 20 30.4 +0.1**
UPC AMS AMS 09 55 30.0
comp=Z,400nm,15.3s
UPC Upice 92.66 322 *e*P **P 09 09 28.4 +0.5**
UPC *e* 09 20 00.9
UPC *e*S **S 09 20 30.4 +0.1**
UPC MLR MLR
comp=Z,400nm,15.3s
VRAC Vranov 92.68 321 ⇑*i*P **P 09 09 24.6 -3.4**
VRAC Vranov 92.68 321 ⇑P **P 09 09 24.6 -3.4**
RES Resolute Bay 92.69 9 LR LR 09 53 36.3
comp=Z,170nm,19.6s,baz=299,slow=37
PVCC Panska Ves 93.52 322 AMS AMS 09 57 10.0
comp=Z,500nm,16.3s
GOPC GO Pecny, Ondr 93.60 322 *e*P **P 09 09 32.5 +0.3**
GOPC *e*S **S 09 20 39.5 +0.8**
GOPC AMS AMS 09 56 50.0
comp=Z,400nm,16.7s
GOPC GO Pecny, Ondr 93.60 322 *e*P **P 09 09 32.5 +0.3**
GOPC *e*S **S 09 20 39.5 +0.8**
GOPC MLR MLR
comp=Z,400nm,16.7s
PRU Pruhonice 93.72 322 *e*P **P 09 09 33.2 +0.4**
PRU *e*SKS **SKSac 09 20 05.1 +0.1**
PRU *e*S **ScS 09 20 40.8 -0.4**
PRU AMS AMS 09 59 50.0
comp=Z,400nm,16.3s
PRU Pruhonice 93.72 322 *e*P **P 09 09 33.2 +0.4**
PRU *e* 09 20 05.1
PRU *e*S **ScS 09 20 40.8 -0.4**
PRU MLR MLR
comp=Z,400nm,16.3s
BRG Berggiesshubel 93.78 323 *e*P **P 09 09 32.9 -0.1**
comp=Z,20nm,1.1s
BRG Berggiesshubel 93.78 323 *e*P **P 09 09 32.9 -0.1**
BRG pmax pmax
comp=Z,21nm,1.1s
BRG Berggiesshubel 93.78 323 PS PS 09 21 52.0 -6.0
BRG Berggiesshubel 93.78 323 PP PP 09 13 17.0 -1.2
BRG SKS **SKSac 09 20 06.0 +0.7**
BRG S **ScS 09 20 41.0 -0.6**
BRG PS **PS 09 21 52.0 -6.0**
BRG SS **SS 09 26 56.0 -2.4**
CLL Collm 94.18 324 *e*P **P 09 09 34.0 -0.8**
comp=Z,14nm,1.1s
CLL *e*PP **PP 09 13 20.0 -1.3**
CLL *e*SKSac **SKSac 09 20 10.0 +2.6**
CLL *e*S **S 09 20 44.0 +0.4**
CLL *e*PS **PS 09 22 00.0 -2.4**
CLL *e*SS **SS 09 26 54.0 -10**
CLL *e*SSSS 09 33 18.0
CLL Lm MLR 09 57 00.0
comp=Z,700nm,18.0s
CLL Collm 94.18 324 *e*P **P 09 09 34.0 -0.8**
CLL *e* 09 20 10.0
CLL *e*S **S 09 20 44.0 +0.4**
CLL pmax pmax
comp=Z,14nm,1.1s
CLL MLR MLR
comp=Z,700nm,18.0s
PERS Pernice 94.47 319 *e*P **P 09 09 36.3 -0.1**
PERS *e*PP **PP 09 13 26.9 +3.0**
CRES Cresnjev 94.52 318 *e*P **P 09 09 36.2 -0.4**
CRES *e*PP **PP 09 13 25.7 +1.5**
KHC Kasperske Hory 94.61 321 *e*P **P 09 09 37.0 +0.1**
KHC *e*SKS **SKSac 09 20 10.6 +0.7**
KHC *e*S **S 09 20 45.2 -2.4**
KHC AMS AMS 09 57 50.0
comp=Z,500nm,19.3s
KHC Kasperske Hory 94.61 321 *e*P **P 09 09 37.0 +0.1**
KHC *e* 09 20 10.6
KHC *e*S **S 09 20 45.2 -2.4**
KHC MLR MLR
comp=Z,500nm,19.3s
GERES GERESS Array B 94.63 321 P **P 09 09 36.6 -0.5**
comp=Z,1.7nm,0.7s,baz=64,slow=6.1,SNR=18
GERES LR LR 09 55 21.7
comp=Z,346nm,19.6s,baz=64,slow=38
NKC Novy Kostel 94.90 323 *e*P **P 09 09 38.4 +0.2**
NKC AMS AMS 09 56 50.0
NKC Novy Kostel 94.90 323 *e*P **P 09 09 38.4 +0.2**
TIP Timpagrande 95.66 311 *e*P **P 09 09 41.1 -0.8**
comp=Z,12nm,1.4s
YKA Yellowknife Ar 95.83 23 P **P 09 09 41.3 -0.8**
comp=Z,3.1nm,0.9s,baz=302,slow=4.4,SNR=16
YKA PKKPbc **PKKPbc 09 26 34.0 +0.5**
comp=Z,0.4nm,0.7s,baz=148,slow=2.3,SNR=4.4
YKA LR LR 09 56 57.9
comp=Z,16nm,19.2s,baz=0.0,slow=38
SYO Syowa Base 96.38 201 ∥*e*X **P 09 09 42.0 -2.4**
SUMG Summit 96.89 354 *e*P **P 09 09 46.4 -0.9**
SUMG pmax pmax
comp=Z,13nm,1.0s
SUMG Summit 96.89 354 *e*P **P 09 09 46.4 -0.9**
comp=Z,13nm,1.0s
DAVOX Davos/Dischmat 97.79 320 LR LR 09 57 56.5
comp=Z,393nm,19.2s,baz=83,slow=38
TAOE Nuku Hiva Isla 98.92 97 *e*PS PS 09 22 55.2 -0.7
comp=Z,167nm,26.0s
TAOE Nuku Hiva Isla 98.92 97 *e*LR LR 09 42 04.4
comp=Z,1μm,24.4s,baz=284
RKT Rikitea 105.47 111 *e*LR LR 09 45 20.3
comp=Z,594nm,26.2s
A25A Svangstu Ranch 109.31 30 P **PKiKP 09 14 45.9 -0.3**
baz=312
SNAA Sanae 109.79 196 PKiKP **PKiKP 09 14 52.7 +6.2**
A27A Ledoux Ranch, 110.20 29 P **PKiKP 09 14 47.7 -0.1**
baz=314
B28A Dugan Ranch, T 110.97 29 P **PKiKP 09 14 48.9 -0.4**
baz=314
A29A Manning Farm, 111.16 28 P **PKiKP 09 14 49.1 -0.6**
baz=316
O20A White River Ci 111.91 40 P **PKiKP 09 14 50.9 -0.7**
baz=305
RSSD Black Hills 111.98 34 P **PKiKP 09 14 51.0 -0.7**
baz=310
C30A Mose, Pekin 112.39 28 P **PKiKP 09 14 51.5 -0.6**
baz=316
C31A Landman Farms, 112.67 28 P **PKiKP 09 14 51.4 -1.1**
baz=317
B32A Ashes, Strandq 112.77 27 P **PKiKP 09 14 51.4 -1.4**
baz=318
E31A Nome 113.49 29 P **PKiKP 09 14 53.4 -0.8**
baz=316
B34A Aery, Baudette 113.53 26 P **PKiKP 09 14 53.5 -0.7**
baz=320
D34A Park Rapids 114.35 27 P PKPdf 09 14 54.9 -0.9
baz=319
E33A Westby DABS, E 114.42 28 P PKPdf 09 14 54.8 -1.2
baz=318
F33A 5 Mile Ranch, 114.78 29 P PKPdf 09 14 55.7 -0.9
baz=318
E34A Wadena 114.80 28 P PKPdf 09 14 55.6 -1.1
baz=319
C36A Pine Crest Far 114.86 25 P PKPdf 09 14 55.5 -1.3
baz=321
SDCO Great Sand Dun 115.04 40 P **PKPdf 09 14 56.0 -1.8**
baz=306
E35A Pequot Lakes 115.11 27 P **PKPdf 09 14 56.1 -1.2**
baz=320
C37A Embarrass 115.16 25 P **PKPdf 09 14 56.5 -0.9**
baz=322
OGNE Ogallala 115.16 36 P **PKPdf 09 14 56.2 -1.4**
baz=311
D36A Goodland 115.18 26 P **PKPdf 09 14 56.8 -0.6**
baz=321
G33A Ortonville 115.18 29 P **PKPdf 09 14 56.4 -1.1**
baz=317
EYMN Ely 115.27 24 P **PKPdf 09 14 56.5 -1.0**
baz=323
D37A Cotton 115.51 25 P **PKPdf 09 14 57.4 -0.6**
baz=322
F35A Swanville 115.56 28 P **PKPdf 09 14 57.8 -0.4**
baz=319
E36A McGregor 115.65 26 P **PKPdf 09 14 57.8 -0.5**
baz=321
I33A Coleman 115.84 30 P **PKPdf 09 14 58.5 -0.3**
baz=316
H34A Spellman Lake, 115.89 29 P **PKPdf 09 14 58.7 -0.1**
baz=318
ANMO Albuquerque 116.03 43 P **PKPdf 09 15 00.0 +0.4**
baz=305
ANMO Albuquerque 116.03 43*c* *i*PKIKP **PKPdf 09 14 59.0 -0.7**
ANMO pmax pmax
comp=Z,5.0nm,1.0s
F36A Milaca 116.03 27 P **PKPdf 09 14 58.5 -0.5**
baz=320
T25A Trinidad 116.10 40 P **PKPdf 09 14 59.6 -0.2**
baz=307
ECSD EROS Data Cent 116.16 30 P **PKPdf 09 14 58.9 -0.5**
baz=316
H35A Sunnyside Ranc 116.31 29 P **PKPdf 09 14 59.5 -0.2**
baz=319
G36A St. Michael 116.41 28 P **PKPdf 09 14 59.4 -0.4**
baz=320
TORD Torodi Ar. Bea 116.73 290 PKP **PKPdf 09 14 59.1 -2.1**
comp=Z,1.3nm,1.0s,baz=9.8,slow=2.2,SNR=5.6
H36A Jessenland, He 116.83 28 P **PKPdf 09 14 59.8 -0.8**
baz=319
SPMN Marine on St. 116.85 27 P **PKPdf 09 14 59.7 -1.0**
baz=321
I35A Creekview Farm 116.87 29 P **PKPdf 09 15 00.4 -0.3**
baz=318
I37A Lemond, Waseca 117.50 28 P **PKPdf 09 15 01.6 -0.3**
baz=320
J36A Seneca 1, Swea 117.58 29 P **PKPdf 09 15 01.2 -0.9**
baz=319
L35A Bielow Farm, R 117.88 31 P **PKPdf 09 15 02.2 -0.5**
baz=317
J37A Redenius Farm, 117.97 29 P **PKPdf 09 15 02.2 -0.6**
baz=319
I38A Seanlan Farm, 117.98 28 P **PKPdf 09 15 01.9 -1.0**
baz=321
P32A Huiting Farm, 118.00 35 P **PKPdf 09 15 02.2 -0.9**
baz=313
K36A Gilmore City 118.04 30 P **PKPdf 09 15 02.1 -0.9**
baz=318
O33A Hebron 118.25 34 P **PKPdf 09 15 01.9 -1.7**
baz=314
N34A Lincoln 118.30 33 P **PKPdf 09 15 02.5 -1.1**
baz=316
L36A Harm Buss Farm 118.33 30 P **PKPdf 09 15 02.3 -1.3**
baz=318
MNTX Cornudas Mount 118.60 46 P **PKPdf 09 15 03.6 -0.9**
baz=304
O34A Beatrice 118.66 33 P **PKPdf 09 15 02.6 -1.7**
baz=315
R32A Long Quarter, 118.75 36 P **PKPdf 09 15 02.8 -1.7**
baz=313
J39A Decorah 118.81 28 P **PKPdf 09 15 03.2 -1.3**
baz=321,SNR=6.2
K38A Parkersburg 118.84 29 P **PKPdf 09 15 03.2 -1.3**
baz=320
Q33A Connelly Farm, 118.86 35 P **PKPdf 09 15 03.6 -1.2**
baz=314
P34A Walnut Farm, R 119.04 34 P **PKPdf 09 15 03.8 -1.3**
baz=315
L38A Oak Wood Farm, 119.14 29 P **PKPdf 09 15 04.2 -0.9**
baz=320
M37A Trindle Farm, 119.15 31 P **PKPdf 09 15 04.3 -1.0**
baz=318
K39A Oelwein 119.22 28 P **PKPdf 09 15 03.7 -1.6**
baz=321
R33A Olander Ranch, 119.25 36 P **PKPdf 09 15 05.0 -0.5**
baz=313
Q34A Chapman 119.41 34 P **PKPdf 09 15 05.7 -0.1**
baz=314
T32A Hudler Ranch, 119.46 37 P **PKPdf 09 15 05.6 -0.4**
baz=312
J41A Loganville 119.55 27 P **PKPdf 09 15 04.8 -1.1**
baz=323
K40A Colesburg 119.57 28 P **PKPdf 09 15 04.9 -1.1**
baz=322,SNR=8.2
M38A Pleasantville 119.57 30 P **PKPdf 09 15 04.9 -1.1**
baz=319
L39A Vinton 119.61 29 P **PKPdf 09 15 05.0 -1.1**
baz=320,SNR=5.3
R34A Isabella, Hill 119.67 35 P **PKPdf 09 15 05.7 -0.6**
baz=314
S33A Kaszmaul Farm, 119.72 36 P **PKPdf 09 15 05.7 -0.8**
baz=313
T33A Patterson Ranc 119.93 37 P **PKPdf 09 15 06.0 -0.8**
baz=312
U32A Winter Ranch, 119.94 38 P **PKPdf 09 15 06.5 -0.4**
baz=312
Q35A Mercer Eighty, 119.96 34 P **PKPdf 09 15 05.9 -0.9**
baz=315
K41A Shullsburg 120.02 27 P **PKPdf 09 15 06.0 -0.8**
baz=322,SNR=5.3
O37A Wolven Farm, M 120.02 32 P **PKPdf 09 15 05.8 -1.1**
baz=318
M39A Webster 120.02 29 P **PKPdf 09 15 05.9 -1.0**
baz=320
L40A Anamosa 120.02 28 P **PKPdf 09 15 05.8 -1.1**
baz=321,SNR=8.2
S34A Willow Spring 120.16 36 P **PKPdf 09 15 06.5 -0.8**
baz=314
N39A Derby Farms, D 120.32 30 P **PKPdf 09 15 06.8 -0.7**
baz=320,SNR=6.8
P37A Lathrop 120.34 32 P **PKPdf 09 15 06.5 -1.0**
baz=317
V32A Arapaho 120.35 38 P **PKPdf 09 15 07.4 -0.3**
baz=311
T34A McClaskey Farm 120.59 36 P **PKPdf 09 15 07.0 -1.1**
baz=313
W32A Sentinel 120.61 39 P **PKPdf 09 15 08.1 -0.2**
baz=311
S35A Otter Creek Ra 120.63 35 P **PKPdf 09 15 07.8 -0.4**
baz=314
R36A Gordon, Harris 120.63 34 P **PKPdf 09 15 07.5 -0.6**
baz=316
P38A Dawn 120.74 32 P **PKPdf 09 15 07.4 -0.9**
baz=316,SNR=6.9
O39A Kirksville 120.77 31 P **PKPdf 09 15 07.9 -0.5**
baz=319
R37A Teagarden Farm 121.01 34 P **PKPdf 09 15 07.7 -1.2**
baz=316,SNR=5.0
S36A Lake Cedric, C 121.01 35 P **PKPdf 09 15 08.4 -0.5**
baz=315
X32A Elmer 121.05 40 P **PKPdf 09 15 08.3 -0.7**
baz=310
T35A Sooner Cattle 121.05 36 P **PKPdf 09 15 08.7 -0.3**
baz=314
TXAR Lajitas Array 121.15 47 PKP **PKPdf 09 15 09.2 -0.3**
comp=Z,2.5nm,0.9s,baz=276,slow=2.4,SNR=8.5
TXAR PKKPbc **PKKPbc 09 25 11.5 -0.7**
comp=Z,0.8nm,1.1s,baz=123,slow=4.6,SNR=4.7
TXAR Lajitas Array 121.15 47 PKIKP **PKPdf 09 15 09.2 -0.3**
TXAR pmax pmax
comp=Z,2.0nm,0.9s
WMOK Wichita Mounta 121.16 39 P **PKPdf 09 15 08.8 -0.5**
baz=311
Q38A Cooks Store, C 121.19 32 P **PKPdf 09 15 08.1 -1.0**
baz=318
V34A Guthrie 121.20 37 P **PKPdf 09 15 08.8 -0.6**
baz=313
O40A La Belle 121.21 30 P **PKPdf 09 15 08.2 -1.0**
baz=320
P39B Salisbury 121.24 31 P **PKPdf 09 15 08.7 -0.6**
baz=319
S37A Fort Scott 121.41 34 P **PKPdf 09 15 08.4 -1.2**
baz=316,SNR=6.4
Q39A Willow Grove F 121.46 32 P **PKPdf 09 15 08.8 -0.9**
baz=318,SNR=8.3
X33A Lawton 121.46 39 P **PKPdf 09 15 09.0 -0.9**
baz=311
P40A Paris 121.57 31 P **PKPdf 09 15 08.3 -1.6**
baz=319,SNR=5.2
R38A Fenwick Farm, 121.60 33 P **PKPdf 09 15 08.4 -1.6**
baz=317,SNR=5.9
V35A Meyer Ranch, C 121.65 37 P **PKPdf 09 15 09.2 -1.0**
baz=313
O41A Passleys Farm, 121.70 29 P **PKPdf 09 15 08.8 -1.3**
baz=321,SNR=5.5
Y33A Hilltop Ranch, 121.73 40 P **PKPdf 09 15 09.9 -0.5**
baz=311
T37A Cheneyville 18 121.81 35 P **PKPdf 09 15 09.8 -0.7**
baz=316,SNR=6.3
X34A Smith Ranch, M 121.83 39 P **PKPdf 09 15 10.5 -0.1**
baz=312
U36A Ololoah 121.86 36 P **PKPdf 09 15 09.6 -1.0**
baz=314
Q40A Laux Farm, Aux 121.96 31 P **PKPdf 09 15 09.5 -1.2**
baz=319,SNR=5.7
ABTX Abilene, Hawle 121.96 42 P **PKPdf 09 15 09.8 -1.1**
baz=309
R39A Chumby, Stover 121.97 32 P **PKPdf 09 15 09.5 -1.2**
baz=318,SNR=9.7
S38A Stockton 122.00 34 P **PKPdf 09 15 09.6 -1.2**
baz=317,SNR=8.6
W35A Tecumseh 122.05 38 P **PKPdf 09 15 09.8 -1.1**
baz=313
HDIL Hopedale 122.11 28 P **PKPdf 09 15 09.7 -1.2**
baz=323
V36A Jenks 122.17 36 P **PKPdf 09 15 10.5 -0.7**
baz=314
TUL1 Leonard 122.17 36 P **PKPdf 09 15 10.9 -0.3**
baz=314
U37A Salina 122.21 35 P **PKPdf 09 15 10.5 -0.7**
baz=315,SNR=5.8
T38A Diamond 122.22 34 P **PKPdf 09 15 10.3 -1.0**
baz=316,SNR=9.2
S39A Bolivar 122.28 33 P **PKPdf 09 15 10.5 -0.8**
baz=317,SNR=26
Y34A Reagan Ranch, 122.31 39 P **PKPdf 09 15 11.0 -0.5**
baz=312
P42A Winchester 122.37 30 P **PKPdf 09 15 10.5 -0.9**
baz=321,SNR=7.0
R40A Maddies Statio 122.39 32 P **PKPdf 09 15 10.9 -0.7**
baz=319,SNR=14
W36A Wetumka 122.44 37 P **PKPdf 09 15 11.4 -0.3**
baz=314
133A Hamilton Ranch 122.44 41 P **PKPdf 09 15 10.9 -0.9**
baz=310
X35A Drake 122.50 38 P **PKPdf 09 15 11.5 -0.3**
baz=312
V37A Hulbert 122.56 36 P **PKPdf 09 15 11.1 -0.8**
baz=315,SNR=9.9
U38A Gravette 122.60 35 P **PKPdf 09 15 11.0 -1.0**
baz=316,SNR=11
T39A Clever 122.73 34 P **PKPdf 09 15 11.5 -0.7**
baz=317,SNR=15
X36A Centrahoma 122.76 38 P **PKPdf 09 15 11.9 -0.5**
baz=313
S40A Lebanon 122.78 33 P **PKPdf 09 15 11.3 -1.0**
baz=318,SNR=9.6
Q42A Golden Eagle 122.80 30 P **PKPdf 09 15 11.8 -0.5**
baz=321
233A Rising Star 122.83 42 P **PKPdf 09 15 11.5 -1.1**
baz=310
W37B Quinton 122.91 37 P **PKPdf 09 15 12.0 -0.6**
baz=314,SNR=7.8
V38A Canehill 123.00 35 P **PKPdf 09 15 11.6 -1.2**
baz=316,SNR=6.5
134A White-Moore Ra 123.01 41 P **PKPdf 09 15 12.5 -0.4**
baz=311
Z35A Perchaven, San 123.03 39 P **PKPdf 09 15 12.3 -0.6**
baz=312
T40A Mansfield 123.11 33 P **PKPdf 09 15 11.8 -1.1**
baz=318,SNR=5.6
U39A Green Forest 123.14 34 P **PKPdf 09 15 11.6 -1.4**
baz=317,SNR=12
Q43A New Douglas 123.18 30 P **PKPdf 09 15 12.6 -0.4**
baz=322
JCT Junction City 123.19 44 P **PKPdf 09 15 12.9 -0.5**
baz=308,SNR=8.1
S41A Jillco Farms, 123.19 32 P **PKPdf 09 15 12.5 -0.6**
baz=319,SNR=14
333A Richland Sprin 123.21 42 P **PKPdf 09 15 13.0 -0.3**
baz=309,SNR=8.0
SFIN Lafayette 123.24 27 P **PKPdf 09 15 12.4 -0.6**
baz=325
Y36A Durant 123.25 38 P **PKPdf 09 15 12.7 -0.6**
baz=313,SNR=7.2
X37A Clayton 123.33 37 P **PKPdf 09 15 13.0 -0.5**
baz=314,SNR=5.3
234A Clairette 123.34 41 P **PKPdf 09 15 13.3 -0.3**
baz=310,SNR=11
135A Vickery Place, 123.45 40 P **PKPdf 09 15 12.8 -0.9**
baz=311
V39A Pettigrew 123.45 35 P **PKPdf 09 15 13.0 -0.7**
baz=316,SNR=9.3
W38A Poteau 123.50 36 P **PKPdf 09 15 13.0 -0.7**
baz=315,SNR=7.1
433A Art 123.50 43 P **PKPdf 09 15 13.0 -0.9**
baz=309,SNR=6.1
U40A Yellville 123.51 34 P **PKPdf 09 15 12.6 -1.2**
baz=317,SNR=20
Q44A Meyer Farm, Va 123.54 29 P **PKPdf 09 15 13.3 -0.4**
baz=322
Z36A Blue Ridge 123.59 39 P **PKPdf 09 15 13.7 -0.2**
baz=312
T41A Mountain View 123.59 32 P **PKPdf 09 15 13.0 -0.9**
baz=319,SNR=11
X38A Whitesboro 123.59 37 P **PKPdf 09 15 13.3 -0.6**
baz=315,SNR=7.4

Y37A	**Hugo** baz=314	**123.60**	**38**	P	**PKPdf**	09 15 12.8	-1.2
334A	**Lometa** baz=310,SNR=8.2	**123.70**	**42**	P	**PKPdf**	09 15 13.3	-1.0
WHTX	**Lake Whitney,** baz=311,SNR=5.6	**123.79**	**41**	P	**PKPdf**	09 15 13.7	-0.7
W39A	**Magazine** baz=316	**123.83**	**35**	P	**PKPdf**	09 15 13.5	-0.9
V40A	**Witts Springs** baz=317,SNR=19	**123.93**	**34**	P	**PKPdf**	09 15 13.7	-0.9
533A	**Kerrville** baz=308,SNR=6.6	**123.96**	**44**	P	**PKPdf**	09 15 14.5	-0.3
434A	**Burnet** baz=310	**124.01**	**42**	P	**PKPdf**	09 15 14.4	-0.5
U41A	**Viola** baz=318	**124.03**	**33**	P	**PKPdf**	09 15 14.5	-0.2
136A	**Ennis** baz=312	**124.06**	**40**	P	**PKPdf**	09 15 15.0	+0.2
S43A	**Fulton Ridge,** baz=321	**124.06**	**31**	P	**PKPdf**	09 15 13.8	-1.0
X39A	**Fountain Ranch** baz=315,SNR=18	**124.12**	**36**	P	**PKPdf**	09 15 14.9	-0.1
Y38A	**Idabel** baz=314	**124.17**	**37**	P	**PKPdf**	09 15 14.7	-0.4
W40A	**Ferguson Farm,** baz=316	**124.24**	**35**	P	**PKPdf**	09 15 14.9	-0.2
633A	**Saathoff Ranch** baz=308	**124.24**	**44**	P	**PKPdf**	09 15 15.2	-0.2
335A	**Moody** baz=310	**124.27**	**41**	P	**PKPdf**	09 15 15.2	-0.1
V41A	**Mountainview** baz=318	**124.31**	**34**	P	**PKPdf**	09 15 14.3	-1.1
534A	**Blanco** baz=309,SNR=6.6	**124.37**	**43**	P	**PKPdf**	09 15 15.2	-0.3
S44A	**Carbondale** baz=322	**124.38**	**30**	P	**PKPdf**	09 15 14.9	-0.4
U42A	**Revenden** baz=319	**124.39**	**33**	P	**PKPdf**	09 15 14.8	-0.6
832A	**Faith Ranch, C** baz=307,SNR=6.9	**124.39**	**46**	P	**PKPdf**	09 15 15.5	-0.2
MIAR	**Mount Ida** baz=316,SNR=12	**124.41**	**36**	P	**PKPdf**	09 15 15.4	-0.1
435B	**Jarrell** baz=310	**124.48**	**42**	P	**PKPdf**	09 15 15.7	0.0
Y39A	**Locksesburg** baz=315	**124.54**	**37**	P	**PKPdf**	09 15 15.3	-0.5
336A	**Riesel** baz=311	**124.58**	**41**	P	**PKPdf**	09 15 16.2	+0.3
733A	**Divot King Ran** baz=308	**124.61**	**45**	P	**PKPdf**	09 15 17.0	+0.9
W41B	**Gary Mavity, V** baz=317	**124.71**	**34**	P	**PKPdf**	09 15 15.4	-0.6
V42A	**Cord** baz=318	**124.71**	**33**	P	**PKPdf**	09 15 14.9	-1.2
S45A	**Carrier Mills** baz=322	**124.72**	**30**	P	**PKPdf**	09 15 15.7	-0.3
833A	**Chaparral WMA,** baz=307,SNR=6.9	**124.78**	**45**	P	**PKPdf**	09 15 16.9	+0.5
DBIC	**Dimbokro** comp=Z,2.8nm,0.8s,baz=7.1,slow=8.1,SNR=2.7	**124.82**	**285**	PKP	**PKPdf**	09 15 16.0	-0.8
237A	**Washetta, Mont** baz=312	**124.83**	**40**	P	**PKPdf**	09 15 17.1	+0.7
138A	**Matatall Enter** baz=313	**124.83**	**39**	P	**PKPdf**	09 15 16.9	+0.6
634A	**China Grove, S** baz=309	**124.86**	**44**	P	**PKPdf**	09 15 17.4	+0.9
X40A	**Basin Creek Fa** baz=316	**124.88**	**35**	P	**PKPdf**	09 15 17.0	+0.6
Y40A	**Okolona** baz=316	**124.96**	**36**	P	**PKPdf**	09 15 16.7	+0.2
535A	**Dale** baz=310	**124.97**	**43**	P	**PKPdf**	09 15 16.5	-0.2
734A	**La Parita Cree** baz=308	**125.04**	**44**	P	**PKPdf**	09 15 16.8	0.0
M54A	**Oil Creek Stat** baz=333	**125.18**	**20**	P	**PKPdf**	09 15 16.5	-0.3
337A	**Centerville** baz=312	**125.24**	**40**	P	**PKPdf**	09 15 18.3	+1.1
635A	**Leesville** baz=309	**125.24**	**43**	P	**PKPdf**	09 15 18.0	+0.8
238A	**Jacksonville** baz=313	**125.26**	**39**	P	**PKPdf**	09 15 18.3	+1.1
536A	**Bastrop** baz=310	**125.28**	**42**	P	**PKPdf**	09 15 18.2	+0.9
933A	**Laredo** baz=307	**125.29**	**46**	P	**PKPdf**	09 15 18.3	+0.9
437A	**Phantom Ranch,** baz=311	**125.40**	**41**	P	**PKPdf**	09 15 18.6	+1.1
Z40A	**Long Farm, Mag** baz=315	**125.43**	**37**	P	**PKPdf**	09 15 18.0	+0.6
Y41A	**Eaglette Beard** baz=316	**125.44**	**36**	P	**PKPdf**	09 15 17.7	+0.2
N54A	**Moraine State** baz=333	**125.55**	**21**	P	**PKPdf**	09 15 17.2	-0.3
735A	**Kenedy** baz=309	**125.55**	**44**	P	**PKPdf**	09 15 18.2	+0.4
636A	**Smothers Creek** baz=310	**125.67**	**43**	P	**PKPdf**	09 15 19.0	+0.9
Z41A	**Richland Creek** baz=316	**125.78**	**36**	P	**PKPdf**	09 15 18.4	+0.3
934A	**Benavides** baz=308	**125.83**	**46**	P	**PKPdf**	09 15 19.8	+1.4
835A	**Beeville** baz=309	**125.89**	**44**	P	**PKPdf**	09 15 20.1	+1.6
736A	**Circle Diamond** baz=310	**125.99**	**43**	P	**PKPdf**	09 15 20.3	+1.6
034A	**Hebbronville** baz=307	**126.04**	**46**	P	**PKPdf**	09 15 19.4	+0.6
W45A	**Hickory Valley** baz=320	**126.38**	**32**	P	**PKPdf**	09 15 18.9	-0.4
340A	**Bronson** baz=314	**126.42**	**39**	P	**PKPdf**	09 15 19.0	-0.4
O56A	**Blue Knob Stat** baz=334	**126.66**	**20**	P	**PKPdf**	09 15 19.5	-0.3
Y44A	**Strider, Charl** baz=319	**126.73**	**34**	P	**PKPdf**	09 15 19.7	-0.3
X45A	**UM Field Stati** baz=320	**126.83**	**33**	P	**PKPdf**	09 15 19.4	-0.7
341A	**Kurthwood** baz=314	**126.92**	**38**	P	**PKPdf**	09 15 20.8	+0.4
N59A	**State Game Lan** baz=338	**126.93**	**17**	P	**PKPdf**	09 15 20.4	+0.2
Z44A	**Pea Ridge, Bel** baz=318	**127.12**	**35**	P	**PKPdf**	09 15 21.1	+0.4
Y45A	**Yeager Farm, C** baz=319	**127.17**	**33**	P	**PKPdf**	09 15 21.1	+0.3
342A	**Flagon Creek P** baz=315	**127.40**	**38**	P	**PKPdf**	09 15 21.8	+0.5
Z45A	**Winona** baz=319	**127.46**	**34**	P	**PKPdf**	09 15 20.7	-0.7
Y46A	**Houston** baz=320	**127.53**	**33**	P	**PKPdf**	09 15 20.6	-0.8
244A	**Avery, Jackson** baz=317	**127.89**	**36**	P	**PKPdf**	09 15 21.8	-0.5
Y47A	**UCPARC, Winfie** baz=321	**128.04**	**32**	P	**PKPdf**	09 15 21.5	-1.0
Z47A	**Carrollton** baz=321	**128.47**	**33**	P	**PKPdf**	09 15 22.8	-0.5
Z48A	**Northport** baz=321	**128.60**	**32**	P	**PKPdf**	09 15 23.1	-0.5
147A	**Livingston** baz=320	**128.77**	**33**	P	**PKPdf**	09 15 24.1	+0.2
247A	**Quitman** baz=320	**129.05**	**34**	P	**PKPdf**	09 15 25.0	+0.6
248A	**Dixon Mills** baz=320	**129.50**	**33**	P	**PKPdf**	09 15 25.6	+0.3
347A	**Saraland** baz=319	**129.58**	**35**	P	**PKPdf**	09 15 25.9	+0.5
KMSC	**Kings Mountain** baz=329	**130.11**	**25**	P	**PKPdf**	09 15 26.4	+0.1
USHA	**Ushuaia** comp=Z,44nm,0.9s,baz=210,slow=3.5,SNR=6.6	**134.23**	**171**	PKP	**PKPdf**	09 15 32.8	-0.7
PLCA	**Paso Flores** comp=Z,52nm,0.9s,baz=218,slow=4.0,SNR=54	**147.12**	**162**	PKPbc	**PKPdf**	09 15 57.9	+0.7
CPUP	**Villa Florida** comp=Z,2.2nm,0.8s,baz=159,slow=3.2,SNR=5.5	**163.49**	**181**	PKP	**PKPdf**	09 16 18.8	-0.6
CPUP				PKPab	**PKPab**	09 17 08.2	-2.2
LPAZ	**La Paz** comp=Z,5.2nm,1.0s,baz=196,slow=3.5,SNR=5.2 comp=Z,11nm,1.0s,baz=5.7,slow=2.3,SNR=26	**168.00**	**124**	PKP	**PKPdf**	09 16 23.7	-0.4

*ISCJB **12** 08:58:59.7±0.5,50°.08N±0°.03×18°.38E±0°.03, h0km, Error ellipse: s-maj=4.8km s-min=2.5km az=10.9*
*WAR **12** 08:59:00.3, 50°.06N×18°.41E, h1km, Mw2.3*
*IPEC **12** 08:59:00.5±0.2, 50°.07N×18°.45E, h0km±2km, ML1.7/3, Error ellipse: s-maj=2.0km s-min=1.1km az=160.0*

*CSEM **12** 08:59:00.5±0.2, 50°.09N×18°.39E, h1km, ML2.6/9, Error ellipse: s-maj=4.5km s-min=2.4km az=11.0*
*PRU **12** 08:59:01.9, 50°.04N×18°.35E, h0km*
ISC 12 08:59:00.7±0.8,**50°.08N**±0°.03×**18°.40E**±0°.02,**h0**km,**n32,**
σ0°.88/54, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.13**	**271**		*e*Sg	**Sg**	**08 59 07.6**	**+2.6**
OKC	**Ostrava-Krasne**	**0.29**	**214**		*e*PG	**Pg**	**08 59 07.0**	**+0.7**
OKC	comp=Z,32nm,0.3s				*e*SG	**Sg**	**08 59 11.4**	**+1.3**
OKC	**Ostrava-Krasne**	**0.29**	**214**		Pg	**Pg**	**08 59 07.0**	**+0.7**
OKC	32nm,0.3s				Sg	**Sg**	**08 59 11.4**	**+1.3**
MORC	**Moravsky Berou**	**0.63**	**242**		*e*Pg	**Pg**	**08 59 13.0**	**+0.2**
MORC	18nm,0.3s,baz=63				*e*Sg	**Sg**	**08 59 20.9**	**-0.1**
OJC	**Ojcow**	**0.91**	**81**		*e*Pg	**Pg**	**08 59 17.5**	**-0.6**
OJC					*e*Sg	**Sg**	**08 59 30.4**	**+0.5**
OJC	**Ojcow**	**0.91**	**81**		*e*Pg	**Pg**	**08 59 17.5**	**-0.6**
OJC					*e*Sg	**Sg**	**08 59 30.4**	**+0.5**
OJC	**Ojcow**	**0.91**	**81**		*e*Pg	**Pg**	**08 59 17.5**	**-0.6**
OJC					*e*Sg	**Sg**	**08 59 30.4**	**+0.5**
KRLC	**Kraliky**	**1.04**	**270**		*e*PG	**Pg**	**08 59 20.3**	**-0.4**
KRLC					*e*SG	**Sg**	**08 59 34.4**	**+0.2**
KRLC	**Kraliky**	**1.04**	**270**		Pg	**Pg**	**08 59 20.3**	**-0.4**
KRLC					Sg	**Sg**	**08 59 34.4**	**+0.2**
LANS	**Liptovska Anna**	**1.16**	**143**		*e*Pg	**Pg**	**08 59 22.8**	**-0.1**
LANS					*e*Sg	**Sb**	**08 59 39.5**	**+0.2**
LANS	**Liptovska Anna**	**1.16**	**143**		*e*PG	**Pg**	**08 59 22.8**	**-0.1**
LANS					*e*SG	**Sb**	**08 59 39.5**	**+0.2**
DPC	**Dobruska-Polom**	**1.36**	**282**		*e*PG	**Pg**	**08 59 26.5**	**-0.3**
DPC	comp=Z,11nm,0.4s				*e*SG	**Sb**	**08 59 44.9**	**-0.2**
DPC	**Dobruska-Polom**	**1.36**	**282**		Pg	**Pg**	**08 59 26.5**	**-0.3**
DPC	11nm,0.4s				Sg	**Sb**	**08 59 44.9**	**-0.2**
NIE	**Niedzica**	**1.40**	**118**		*e*Pg	**Pg**	**08 59 27.5**	**0.0**
NIE					*e*Sg	**Sn**	**08 59 47.2**	**+0.5**
NIE	**Niedzica**	**1.40**	**118**		*e*Pg	**Pg**	**08 59 27.5**	**0.0**
NIE					*e*Sg	**Sn**	**08 59 47.2**	**+0.5**
NIE	**Niedzica**	**1.40**	**118**		*e*Pg	**Pg**	**08 59 27.5**	**0.0**
NIE					*e*Sg	**Sn**	**08 59 47.2**	**+0.5**
VRAC	**Vranov**	**1.41**	**237**		*e*Pg	**Pn**	**08 59 26.8**	**-0.8**
VRAC	9.7nm,0.2s,baz=57				*e*Sg	**Sg**	**08 59 45.4**	**-0.4**
KSP	**Ksiaz**	**1.55**	**300**		*e*Pg	**Pg**	**08 59 30.7**	**+0.3**
KSP					*e*Sg	**Sg**	**08 59 50.9**	**+0.5**
KSP	**Ksiaz**	**1.55**	**300**		*e*Pg	**Pg**	**08 59 30.7**	**+0.3**
KSP					*e*Sg	**Sg**	**08 59 50.9**	**+0.5**
KSP	**Ksiaz**	**1.55**	**300**		*e*Pg	**Pg**	**08 59 30.7**	**+0.3**
KSP					*e*Sg	**Sg**	**08 59 50.9**	**+0.5**
UPC	**Upice** comp=Z,6.9nm,0.3s	**1.59**	**286**		*e*SG	**Sg**	**08 59 52.3**	**+0.5**
UPC	**Upice** 6.9nm,0.3s	**1.59**	**286**		Sg	**Sg**	**08 59 52.3**	**+0.5**
VYHS	**Vyhne**	**1.61**	**170**		*e*Pg	**Pb**	**08 59 31.4**	**0.0**
VYHS	**Vyhne**	**1.61**	**170**		*e*PG	**Pb**	**08 59 31.4**	**0.0**
VYHS					*e*SN	**Sn**	**08 59 49.1**	**-2.8**
VYHS					*e*LG	Lg	08 59 52.3	
KRUC	**Moravsky** baz=52	**1.66**	**233**		*e*Pn	**Pn**	**08 59 30.9**	**-0.1**
KRUC	7.5nm,0.3s,baz=52				*e*Sg	**Sn**	**08 59 53.0**	**0.0**
STHS	**Stebnicka Huta**	**1.96**	**109**		*e*PN	**Pg**	**08 59 38.0**	**-0.2**
STHS					*e*SG	**Sg**	**09 00 04.9**	**+1.3**
STHS					*e*LG	Lg	09 00 09.3	
GOPC	**GO Pecny, Ondr** comp=Z,3.1nm,0.3s	**2.34**	**267**		*e*SG	**Sb**	**09 00 13.6**	**+0.4**
GOPC	**GO Pecny, Ondr** 3.1nm,0.3s	**2.34**	**267**		Sg	**Sb**	**09 00 13.6**	**+0.4**
PRU	**Pruhonice** comp=Z,2.8nm,0.2s	**2.49**	**269**		*e*SG	**Sb**	**09 00 18.8**	**+1.3**
PRU	**Pruhonice** 2.8nm,0.2s	**2.49**	**269**		Sg	**Sb**	**09 00 18.8**	**+1.3**
KHC	**Kasperske Hory** comp=Z,2.4nm,0.3s	**3.28**	**255**		*e*SG	**Sg**	**09 00 43.9**	**-2.1**
KHC	**Kasperske Hory** 2.4nm,0.3s	**3.28**	**255**		Sg	**Sg**	**09 00 43.9**	**-2.1**

*NIED **12** 08:59:00, 38°.80N×142°.10E, h59km, Mw4.8 Best double couple: M0 2.07000×10^16 NP1:φs 101.00000°, δ21.00000°, λ148.00000°. NP2:φs 221.00000°, δ79.00000°, λ72.00000°.*
*BJI **12** 08:59:57.3, 38°.80N×141°.90E, h58km, mb4.9/51, mB5.2/31, Ms4.8/28, Ms7 4.6/27*
*MOS **12** 08:59:57.7±1.1, 38°.94N×142°.00E, h56km, mb5.2/90, Error ellipse: s-maj=7.5km s-min=4.9km az=95.9*
*IDC **12** 08:59:58.1±2.5, 38°.77N×141°.94E, h46km±24km, mb4.5/34, mb1 4.6/36, mb1mx4.6/47, mbtmp4.8/36, ML4.3/2, MS4.0/10, Ms1 4.0/10, ms1mx3.6/52, Error ellipse: s-maj=13.1km s-min=10.2km az=83.0*
*JMA **12** 08:59:58.9, 38°.76N×142°.06E, h57km±1km, M4.8*
JMA Felt IV J1.
*ISCJB **12** 08:59:59.4±0.3, 38°.81N±0°.02×141°.89E±0°.03, h67km±2km, mb4.7/199, Error ellipse: s-maj=4.4km s-min=3.2km az=136.4*
*NEIC **12** 09:00:00.4±0.4, 38°.81N×141°.88E, h63km±3km, mb4.7/129, Error ellipse: s-maj=3.5km s-min=2.8km az=145.0*
NEIC Felt at Ichinoseki. Recorded [4 JMA] in Iwate and Miyagi.
*GCMT **12** 09:00:00.4±0.4, 38°.84N×142°.07E, h35km±3km, MW5.0/65, Moment Tensor Solution. s19,c22; s65,c89; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr0.90±.25; Mθθ-0.97±.15; Mφφ0.07±.16; Mrθ-2.98±.36; Mθφ-0.25±.11; Mφr-3.24±.40; Best double couple: M0 4.50400×10^16 NP1:φs 224.00000°, δ85.00000°, λ83.00000°. NP2: φs 98.00000°, δ9.00000°, λ144.00000°. Principal axes: T 4.6180, Plg50.0000°, Azm126.0000°; N -0.2290, Plg7.0000°, Azm224.0000°; P -4.3890, Plg40.0000°, Azm320.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 12 08:59:58.9±0.4,**38°.82N**±0°.03×**141°.97E**±0°.04,**h54**km±3km,
h54km:**pP-P,n440,**σ1**34**/481,**mb4.9**/199,**MS4.7**/11,
8C-20D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.35**	**317**		P	**Pn**	**09 00 10.2**	**+1.3**
OFUJ					*e*S	**Sn**	**09 00 18.2**	**+2.2**
JMK	**Ichinoseki**	**0.60**	**283**		P	**Pn**	**09 00 13.0**	**+1.4**
JMK					*e*S	**Sn**	**09 00 23.0**	**+2.2**
JIO	**Ouri**	**0.61**	**233**		P	**Pn**	**09 00 12.2**	**+0.5**
JIO					*e*S	**Sn**	**09 00 21.4**	**+0.4**
JOM	**Ohasama**	**0.84**	**321**		P	**Pn**	**09 00 16.1**	**+1.5**
JOM					*e*S	**Sn**	**09 00 28.7**	**+2.6**
JOU	**Okura**	**1.12**	**246**		P	**Pn**	**09 00 19.1**	**+0.7**
JOU					*e*S	**Sn**	**09 00 34.2**	**+1.3**
JRG	**Rokugo**	**1.19**	**299**		P	**Pn**	**09 00 20.5**	**+1.2**
JRG					*e*S	**Sn**	**09 00 37.5**	**+3.1**
JYK	**Kaneyama**	**1.26**	**275**		P	**Pn**	**09 00 21.6**	**+1.3**
JYK					*e*S	**Sn**	**09 00 38.3**	**+2.1**
JMM	**Marumori**	**1.33**	**225**		P	**Pn**	**09 00 21.1**	**-0.1**
JMM					*e*S	**Sn**	**09 00 38.2**	**+0.4**
JANG	**Nango**	**1.59**	**347**		P	**Pn**	**09 00 25.4**	**+0.7**
JANG					*e*S	**Sn**	**09 00 46.1**	**+2.0**
JYS	**Shirataka**	**1.61**	**249**		P	**Pn**	**09 00 26.2**	**+1.2**
JYS					*e*S	**Sn**	**09 00 47.4**	**+2.7**
JFK	**Kawauchi**	**1.69**	**211**		P	**Pn**	**09 00 26.0**	**-0.1**
JFK					*e*S	**Sn**	**09 00 45.9**	**-0.8**
ERM	**Erimo**	**3.31**	**15**	*c*	*i*P	**Pn**	**09 00 48.2**	**0.0**
ERM	comp=Z,339nm,1.0s				pmax	pmax		
ERM	**Erimo**	**3.31**	**15**		*e*Pn	**Pn**	**09 00 48.0**	**-0.2**
ERM					*e*Sn	**Sn**	**09 01 27.3**	**+1.0**
MJAR	**Matsushiro Arr** comp=Z,18nm,0.3s,baz=38,slow=13,SNR=60	**3.75**	**234**		P	**Pn**	**09 00 57.0**	**+2.6**
MJAR	comp=Z,795nm,21.1s,baz=50,slow=44				LR	LR	09 02 38.6	
MJAR	**Matsushiro Arr**	**3.75**	**234**		P	**Pn**	**09 00 57.0**	**+2.6**
MJAR	comp=Z,18nm,0.3s				pmax	pmax		
MJAR	comp=Z,795nm,21.2s				MLR	MLR		
MAJO	**Matsushiro**	**3.76**	**234**	*d*	*i*P	**Pn**	**09 00 57.1**	**+2.8**
MAJO	**Matsushiro**	**3.76**	**234**		*e*Pn	**Pn**	**09 00 56.1**	**+1.7**
MAJO					*e*Sn	**Sn**	**09 01 38.8**	**+1.5**
MAT	**Matsushiro**	**3.76**	**234**		P	**Pn**	**09 00 56.7**	**+2.4**
MAT					S	**Sn**	**09 01 42.2**	**+4.9**
INU	**Inuyama**	**5.26**	**230**		*e*Pn	**Pn**	**09 01 17.1**	**+2.1**
ASAJ	**Asahikawa**	**5.31**	**5**		*e*Pn	**Pn**	**09 01 16.1**	**+0.5**
ASAJ					*e*Sn	**Sn**	**09 02 14.5**	**-0.9**
JHJ2	**Mitsune**	**5.96**	**198**		*e*Pn	**Pn**	**09 01 23.1**	**-1.4**
JHJ2					*e*Sn	**Sn**	**09 02 27.0**	**-4.4**
JHJ	**Hachijo jima 2** comp=Z,52nm,0.3s,baz=93,slow=22,SNR=22	**5.96**	**198**		P	**Pn**	**09 01 23.2**	**-1.3**
JHJ	comp=Z,262nm,0.3s,baz=237,slow=19,SNR=11				S	**Sn**	**09 02 26.7**	**-4.8**
JHJ	comp=Z,567nm,19.1s,baz=328,slow=34				LR	LR	09 03 19.7	
YUK	**Yuzh-Kuril'sk**	**5.97**	**28**	*i*	P	**Pn**	**09 01 23.0**	**-1.6**
KUR	**Kuril'sk**	**7.76**	**32**	*i*	P	**Pn**	**09 01 47.9**	**-1.2**
YSS	**Yuzh-Sakhalins**	**8.15**	**4**	*k*	*e*P	**Pn**	**09 01 54.0**	**-0.4**
YSS					*e*S	**Sn**	**09 03 24.7**	**-0.3**
YSS	comp=Z,260nm,0.7s				pmax	pmax		
YSS	**Yuzh-Sakhalins**	**8.15**	**4**		*e*Pn	**Pn**	**09 01 54.7**	**+0.3**
YSS					*e*Sn	**Sn**	**09 03 19.0**	**-6.0**
VLA	**Vladivostok**	**8.75**	**303**		*e*P	**Pn**	**09 02 03.3**	**+0.6**
MSHR	**Mys Shultsa**	**9.03**	**298**	⇓	*i*P	**Pn**	**09 02 08.1**	**+1.6**
USRK	**Ussuriysk Ar.** comp=Z,5.9nm,0.3s,baz=115,slow=12,SNR=90	**9.21**	**309**		P	**Pn**	**09 02 11.4**	**+2.4**
USRK	comp=Z,1μm,19.7s,baz=68,slow=37				LR	LR	09 05 40.3	
JNU	**Nakatsue** comp=Z,1.2nm,0.3s,baz=43,slow=5.6,SNR=5.2	**10.63**	**241**		P	**Pn**	**09 02 30.9**	**+2.3**
JNU					*e*Sn	**Sn**	**09 04 24.4**	**-1.8**
HABR	**Khabarovsk**	**10.87**	**335**		P	**Pn**	**09 02 29.7**	**-1.9**
HABR					*e*S	**Sn**	**09 04 29.2**	**-2.4**
HABR	comp=N,17nm,0.9s				pmax	pmax		
HABR	comp=E,15nm,0.9s				pmax	pmax		
HABR	comp=Z,60nm,0.9s				pmax	pmax		
HABR	comp=Z,594nm,14.0s				MLR	MLR		
MDJ	**Mudanjiang**	**10.91**	**306**		P	**Pn**	**09 02 34.3**	**+2.1**
MDJ	comp=Z,61nm,1.2s				pmax	pmax		
MDJ	comp=Z,260nm,5.7s				pmax	pmax		
MDJ	comp=Z,430nm,22.5s				LR	LR		
MDJ	comp=Z,690nm,22.9s				LR	LR		
MDJ	comp=Z,1μm,19.4s				LR	LR		
MDJ	**Mudanjiang**	**10.91**	**306**	*e*	Pn	**Pn**	**09 02 34.6**	**+2.4**
KSRS	**Korea Array** comp=Z,1.6nm,0.3s,baz=80,slow=14,SNR=21	**11.15**	**267**		P	**Pn**	**09 02 38.5**	**+3.0**
KSRS	comp=Z,589nm,21.7s,baz=180,slow=36				LR	LR	09 06 37.9	
KS15	**Wonju Array Si**	**11.18**	**267**	*e*	Pn	**Pn**	**09 02 36.2**	**+0.2**
KSAR	**Wonju Array Be**	**11.18**	**267**		P	**Pn**	**09 02 38.6**	**+2.6**
KSAR	**Wonju Array Be**	**11.18**	**267**		P	**Pn**	**09 02 38.5**	**+2.6**
TYV	**Tymovskoe**	**12.05**	**2**	*e*	P	**Pn**	**09 02 47.0**	**-0.7**
TYV	comp=Z,106nm,1.0s				pmax	pmax		
KLR	**Kul'dur** comp=Z,0.7nm,0.3s,baz=130,slow=13,SNR=92	**12.73**	**328**		P	**Pn**	**09 02 57.0**	**+0.1**
KLR	comp=Z,1μm,18.8s,baz=168,slow=37				LR	LR	09 07 53.6	
NKL	**Nikolayevsk**	**14.36**	**357**	*e*	P	**Pn**	**09 03 16.7**	**-2.3**
NKL	comp=N,60nm,1.3s				pmax	pmax		
NKL	comp=Z,90nm,1.3s				pmax	pmax		
SKR	**Severo-Kuril's**	**15.51**	**36**	*e*	P	**Pn**	**09 03 31.0**	**-2.9**
SKR	comp=Z,52nm,0.9s				pmax	pmax		
DL2	**Dalian**	**15.85**	**277**		P	**Pn**	**09 03 39.5**	**+1.1**
DL2	comp=Z,120nm,1.1s				pmax	pmax		
JOW	**Kunigami** comp=Z,27nm,1.1s	**16.57**	**228**	*e*	Pn	**Pn**	**09 03 48.1**	**+0.5**
PEA0	**Petropavlovsk-**	**17.93**	**32**	*e*	P	**P**	**09 04 01.5**	**-2.7**
PETK	**Petropavlovsk-** comp=Z,0.4nm,0.3s,baz=207,slow=12,SNR=7.2	**17.93**	**32**		P	**P**	**09 04 01.1**	**-3.0**
PETK	comp=Z,224nm,18.0s,baz=227,slow=39				LR	LR	09 11 40.5	
PEA1	**Petropavlovsk-**	**17.93**	**32**	*e*	P	**P**	**09 04 01.1**	**-3.1**
PET	**Petropavlovsk**	**18.27**	**34**	*i*	P	**P**	**09 04 07.8**	**-0.1**
PET	comp=Z,41nm,2.1s				pmax	pmax		
HIA	**Hailar**	**19.02**	**310**	*e*	P	**P**	**09 04 14.7**	**-1.5**
HIA	comp=Z,41nm,0.8s				pmax	pmax		
HIA	**Hailar** comp=Z,41nm,0.8s	**19.02**	**310**	*e*	P	**P**	**09 04 14.7**	**-1.5**
TIA	**Tai'an**	**19.87**	**270**	⇑	P	**P**	**09 04 24.8**	**-0.7**
TIA	comp=Z,40nm,1.0s				pmax	pmax		
BJI	**Beijing**	**19.95**	**282**		P	**P**	**09 04 26.6**	**+0.3**
BJI					S	**S**	**09 08 06.2**	**-1.5**
BJI	comp=Z,15nm,0.8s				pmax	pmax		
BJI	comp=Z,250nm,3.7s				pmax	pmax		
BJI	comp=Z,2μm,16.3s				LR	LR		
BJI	comp=Z,1μm,20.5s				LR	LR		
BJT	**Baijiatuan**	**19.95**	**282**	*e*	P	**P**	**09 04 25.5**	**-0.9**
BJT	comp=Z,39nm,1.0s				pmax	pmax		
BJT	**Baijiatuan** comp=Z,39nm,1.0s	**19.95**	**282**	*e*	P	**P**	**09 04 25.5**	**-0.9**
CLNS	**Chul'man**	**21.25**	**334**	*e*	P	**P**	**09 04 39.1**	**-1.2**
CLNS				*e*	*e*PP	**pP**	**09 04 49.5**	**-3.1**
CLNS				*e*			09 14 28.1	
CLNS					*e*SSS	SSS	09 16 15.8	
CLNS	comp=N,76nm,1.1s				pmax	pmax		
CLNS	comp=Z,91nm,0.9s				pmax	pmax		
CLNS	comp=E,44nm,0.9s				pmax	pmax		
CLNS	**Chul'man**	**21.25**	**334**	*e*	P	**P**	**09 04 39.1**	**-1.2**
CLNS	comp=N,76nm,1.1s				pmax	pmax		
CLNS	comp=Z,91nm,0.9s				pmax	pmax		
CLNS	comp=E,44nm,0.9s				pmax	pmax		
MA2	**Magadan** comp=E,38nm,0.8s,baz=192,slow=10,SNR=19	**21.52**	**12**		P	**P**	**09 04 43.4**	**+0.4**
MA2	comp=E,201nm,20.9s,baz=201,slow=35				LR	LR	09 12 41.1	
ANA2	**Anatahan**	**22.64**	**171**	*e*	P	**P**	**09 04 55.5**	**+0.1**
SSLB	**Suanglung** comp=E,11nm,0.7s	**23.31**	**236**	*e*	P	**P**	**09 04 59.4**	**-2.8**
YULB	**Yu-li** comp=E,14nm,0.9s	**23.37**	**235**	*e*	P	**P**	**09 05 03.1**	**+0.3**
HHC	**Hu-ho-hao-te**	**23.39**	**285**	*e*	P	**P**	**09 05 01.2**	**-1.7**
HHC	comp=E,30nm,1.2s				pmax	pmax		
HHC	comp=E,130nm,5.6s				pmax	pmax		
TPUB	**Ta-pu** comp=E,34nm,1.1s	**23.87**	**236**	*e*	P	**P**	**09 05 06.2**	**-1.2**
YAK	**Yakutsk** comp=E,129nm,0.6s,baz=138,slow=1.7,SNR=31	**24.43**	**346**		P	**P**	**09 05 11.2**	**-1.0**
YAK	comp=E,369nm,18.1s,baz=163,slow=37				LR	LR	09 15 13.5	
YAK	**Yakutsk**

comp=Z,332nm,1.5s
GUMO Guam 25.26 173 *e*P P 09 05 20.7 +0.6
comp=Z,332nm,1.5s
BOD Bodaibo 26.28 325 *e*P P 09 05 24.6 -4.4
BOD pmax pmax
comp=Z,93nm,1.5s
XAN Xi'an 26.93 270 P P 09 05 35.6 +0.5
XAN pmax pmax
comp=Z,24nm,0.7s
XAN pmax pmax
comp=Z,130nm,9.8s
SONA1 Songino Array 27.20 301 *e*P P 09 05 38.3 +0.8
SONA0 Songino Array 27.20 301 *e*P P 09 05 38.2 +0.7
comp=Z,42nm,1.6s
SONM Songino Array 27.20 301 P P 09 05 38.2 +0.7
comp=Z,10.0nm,0.9s,baz=98,slow=7.4,SNR=10
ENH Enshi 27.97 262 *e*P P 09 05 44.1 -0.3
comp=Z,39nm,0.9s
H11N2 WAKE ISLAND Hy 28.74 124 T T 09 36 19.4
baz=317,slow=75,SNR=2258
H11N1 WAKE ISLAND Hy 28.75 124 T T 09 36 21.6
baz=317,slow=75,SNR=3488
H11N3 WAKE ISLAND Hy 28.75 124 T T 09 36 21.0
baz=317,slow=75,SNR=1977
H11S1 WAKE ISLAND Hy 29.51 126 T T 09 37 08.8
baz=318,slow=76,SNR=722
H11S3 WAKE ISLAND Hy 29.51 126 T T 09 37 08.9
baz=318,slow=76,SNR=1160
H11S2 WAKE ISLAND Hy 29.53 126 T T 09 37 10.8
baz=318,slow=76,SNR=1002
TLY Talaya 29.53 308 P P 09 05 58.9 +0.9
comp=Z,14nm,0.6s,baz=132,slow=4.6,SNR=7.6
TLY Talaya 29.53 308 *e*P P 09 05 59.0 +0.9
TLY pmax pmax
comp=Z,42nm,0.9s
ZAK Zakamensk 29.55 306 *e*P P 09 05 57.4 -0.9
ZAK pmax pmax
comp=Z,38nm,1.2s
LZH Lanzhou 30.25 277 *e*P P 09 06 05.2 +0.4
LZH pP sP 09 06 22.2 -2.6
LZH sP pP 09 06 30.3 +12
LZH pmax pmax
comp=Z,24nm,1.0s
CD2 Chengdu 32.15 268 *e*P P 09 06 21.2 -0.2
CD2 pP pP 09 06 37.5 +2.3
CD2 sP sP 09 06 45.7 +4.2
CD2 S S **09 11 28.8 -1.5**
CD2 sS sS 09 11 57.3 +3.7
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
BILL Bilibino 32.19 17⇑ *i*P P 09 06 21.7 +0.4
BILL *e**PP **pP** 09 06 36.0 +1.0
BILL *e* 09 07 30.6
BILL pmax pmax
comp=Z,18nm,0.9s
GTA Gaotai 32.50 285 *e*P P 09 06 24.8 +0.3
GTA pP pP 09 06 37.9 -0.3
GTA sP sP 09 06 48.0 +3.4
GTA S S **09 11 30.2 -5.6**
GTA sS sS 09 11 56.5 -2.5
GTA SS **SnSn** **09 13 27.0 -6.3**
GTA pmax pmax
comp=Z,19nm,1.1s
GTA pmax pmax
comp=Z,160nm,8.3s
GTA LR LR
comp=Z,3μm,15.4s
GTA LR LR
comp=Z,3μm,14.7s
GTA LR LR
comp=Z,4μm,15.2s
TIXI Tiksi 33.57 353 P P 09 06 32.8 -0.5
comp=Z,14nm,0.7s,baz=145,slow=6.7,SNR=16
TIXI Tiksi 33.57 353*d i*P P 09 06 32.7 -0.6
TIXI pmax pmax
comp=Z,28nm,1.0s
TIXI Tiksi 33.57 353*d i*P P 09 06 32.7 -0.6
TIXI pmax pmax
comp=Z,28nm,1.0s
TIXI Tiksi 33.57 353 *e*P P 09 06 32.4 -0.9
comp=Z,27nm,0.9s
TIXI Tiksi 33.57 353 *e*P P 09 06 33.0 -0.2
comp=Z,27nm,0.9s
KMI Kunming 35.70 259 P P 09 06 52.4 0.0
KMI pP pP 09 07 06.2 -0.1
KMI sP sP 09 07 13.2 +0.6
KMI pmax pmax
comp=Z,23nm,1.1s
WMQ Urumqi 40.46 295 P P 09 07 33.3 +1.2
WMQ pP sP 09 07 50.5 -2.0
WMQ sP pP 09 07 57.6 +11
WMQ pmax pmax
comp=Z,56nm,1.1s
WMQ pmax pmax
comp=Z,180nm,3.7s
ZAA0 Zalesovo Array 41.06 311 *e*P P 09 07 37.3 +0.5
ZAA1 Zalesovo Array 41.06 311 *e*P P 09 07 37.2 +0.4
ZALV Zalesovo Beam 41.06 311 P P 09 07 37.2 +0.4
comp=Z,26nm,0.6s,baz=84,slow=7.7,SNR=22
NRIK Noril'sk 41.84 334 P P 09 07 42.9 -0.1
comp=Z,16nm,0.8s,baz=125,slow=9.2,SNR=5.4
NVS Novosibirsk 41.95 312⇓ *i*P P 09 07 44.9 +0.8
NVS *i* 09 07 58.4
NVS pmax pmax
comp=Z,46nm,1.3s
NVS pmax pmax
comp=N,16nm,1.8s
NVS pmax pmax
comp=E,48nm,1.6s
CHTO Chiang Mai 42.18 254 *e*P P 09 07 47.1 +0.7
CHTO pmax pmax
comp=Z,12nm,1.1s
CHTO Chiang Mai 42.18 254 *e*P P 09 07 47.1 +0.7
comp=Z,12nm,1.1s
CMAR Chiang Mai Arr 42.40 254 P P 09 07 48.4 +0.2
comp=Z,0.7nm,0.3s,baz=50,slow=7.4,SNR=4.5
LSA Lhasa 42.51 274 *e*P P 09 07 50.9 +1.3
LSA pmax pmax
comp=Z,46nm,1.5s
LSA Lhasa 42.51 274 *e*P P 09 07 50.9 +1.3
comp=Z,46nm,1.5s
MK31 Makanchi Array 43.57 301 *e*P P 09 07 57.8 +0.4
MK31 Makanchi Array 43.57 301 *e*P P 09 07 57.8 +0.4
MK32 Makanchi Array 43.57 301 *e*P P 09 07 57.7 +0.3
MKAR Makanchi Array 43.57 301 P P 09 07 57.7 +0.4
comp=Z,13nm,0.6s,baz=80,slow=10,SNR=16
MKAR Makanchi Array 43.57 301 *e*P P 09 07 57.8 +0.4
comp=Z,182nm,0.7s
MAKZ Makanchi 43.77 301 *e*P P 09 07 59.4 +0.4
MAKZ pmax pmax
comp=Z,28nm,0.9s
MAKZ Makanchi 43.77 301 *e*P P 09 07 59.4 +0.4
comp=Z,28nm,0.9s
KURK Kurchatov 45.20 307*d i*P P 09 08 10.3 0.0
KURK *i* *PP **pP** 09 08 24.6 +0.1
KURK Kurchatov 45.20 307 *e*P P 09 08 11.0 +0.7
KURBB Kurchatov Arra 45.27 307 P P 09 08 11.0 +0.1
comp=Z,85nm,0.8s,baz=83,slow=8.3,SNR=80
SPU Mount Spurr 45.55 38 *e*P P 09 08 15.1 +2.0
KTH Kantishna Hill 46.02 35 *e*P P 09 08 18.1 +1.4
comp=Z,16nm,1.0s
TRF Thorofare Moun 46.31 35 *e*P P 09 08 21.1 +2.0
comp=Z,18nm,1.0s
RC01 Rabbit Creek A 46.68 38 *e*P P 09 08 22.3 +0.5
comp=Z,18nm,1.0s
RND Reindeer 46.96 35 *e*P P 09 08 25.1 +1.0
RND Reindeer 46.96 35 *e*P P 09 08 25.1 +1.0
comp=Z,18nm,1.1s
SML Sawmill 47.30 37 *e*P P 09 08 27.7 +1.0
comp=Z,30nm,0.9s
RAMN Ramite 47.34 273 *e*P P 09 08 27.6 -0.1
comp=Z,78nm,0.8s
CCB Clear Creek Bu 47.37 33 *e*P P 09 08 28.7 +1.7
comp=Z,32nm,1.8s
GUN Gumba 47.44 274 *e*P P 09 08 28.9 +0.3
comp=Z,49nm,0.6s
HDA Harding Lake 47.75 34 *e*P P 09 08 30.7 +0.6
comp=Z,8.9nm,0.9s
IL1 Eielson Array 47.75 33 *e*P P 09 08 30.8 +0.7
ILAR Eielson Array 47.75 33 P P 09 08 31.0 +0.8
comp=Z,2.6nm,0.7s,baz=270,slow=6.4,SNR=35
ILB Eielson Array 47.75 33 *e*P P 09 08 30.9 +0.8
KKN Kakani 47.97 275 *e*P P 09 08 32.3 -0.2
comp=Z,51nm,0.6s
PKIN Phulchoki 47.98 274 *e*P P 09 08 32.7 0.0
comp=Z,19nm,0.6s
DMN Daman 48.19 274 *e*P P 09 08 34.2 -0.1
comp=Z,14nm,0.5s
GKN Gorkha 48.37 275 *e*P P 09 08 35.5 0.0
comp=Z,82nm,0.9s
KLU Klutina 48.48 38 *e*P P 09 08 37.4 +1.6
comp=Z,19nm,0.9s
DIV Divide 48.59 38 *e*P P 09 08 38.2 +1.5
comp=Z,16nm,0.9s
DOT Dot Lake 49.08 35 *e*P P 09 08 40.0 -0.4
comp=Z,63nm,1.4s
DOT Dot Lake 49.08 35 *e*P P 09 08 39.6 -0.8
comp=Z,107nm,1.8s
KOLN Koldanda 49.28 275 *e*P P 09 08 42.9 +0.3
comp=Z,33nm,0.6s
PYUN Piuthan 49.60 276 *e*P P 09 08 45.3 +0.2
comp=Z,168nm,0.9s
BVAR Borovoye Array 49.71 311 P P 09 08 45.4 +0.1
comp=Z,15nm,0.6s,baz=70,slow=8.0,SNR=19
BRVK Borovoye 49.77 311*d i*P P 09 08 46.0 +0.3
BRVK *i* *PP **pP** 09 09 00.5 +0.4
BRVK pmax pmax
comp=Z,51nm,0.7s
BRVK Borovoye 49.77 311 *e*P P 09 08 46.3 +0.6
comp=Z,25nm,0.9s
CRQM Cirque 49.92 38 *e*P P 09 08 47.8 +0.8
comp=Z,28nm,1.0s
AAK Ala-Archa 50.05 297⇓ *i*P P 09 08 48.4 +0.2
AAK *i* *PP **pP** 09 09 02.9 +0.3
AAK pmax pmax
comp=Z,14nm,0.9s
KSH Kashi 50.10 293 P P 09 08 53.1 +4.5
KSH *e*pP sP 09 09 08.7 -0.6
KSH *e*PP **PP** **09 10 49.1 +5.2**
KSH PcS **PcS** **09 14 06.9 +2.2**
KSH S **S** **09 15 57.5 +1.3**
KSH ScS **ScS** **09 18 35.2 +0.1**
KSH pmax pmax
comp=Z,9.0nm,0.7s
KSH pmax pmax
comp=Z,210nm,6.9s
KSH LR LR
comp=Z,320nm,11.5s
KSH LR LR
comp=Z,320nm,9.5s
KSH LR LR
comp=Z,390nm,11.8s
MNAS Manas 51.48 298 P P 09 09 00.2 +1.2
MNAS pmax pmax
comp=Z,27nm,0.9s
KKAR Karatay Array 52.63 299 *e*P P 09 09 07.6 +0.3
KKAR Karatay Array 52.63 299 *e*P P 09 09 07.6 +0.3
comp=Z,147nm,0.8s
SVE Sverdlovsk 54.11 318⇑ *e*P P 09 09 18.4 +0.4
SVE pmax pmax
comp=Z,67nm,0.9s
ARU Arti 55.32 318*d i*P P 09 09 26.8 +0.1
ARU *e**PP **pP** **09 09 40.8 -0.5**
ARU 09 10 21.6
ARU *e* 09 11 26.7
ARU PPP PPP 09 12 45.2
ARU S **S** **09 17 09.1 +2.5**
ARU SS **SS** **09 20 50.4 -0.6**
ARU pmax pmax
comp=Z,57nm,0.9s
ARU MLR MLR
comp=Z,672nm,20.0s
ARU Arti 55.32 318 *e*P P 09 09 26.8 +0.1
comp=Z,44nm,0.8s
ABKAR Akbulak array 57.14 309 *e*P P 09 09 39.4 -0.3
KBL Kabul 57.20 290 *e*P P 09 09 40.6 -0.2
KBL pmax pmax
comp=Z,17nm,0.9s
KBL Kabul 57.20 290 *e*P P 09 09 40.6 -0.2
comp=Z,17nm,0.9s
FITZ Fitzroy Crossi 58.66 198 P P 09 09 49.6 -1.0
comp=Z,3.0nm,0.7s,baz=354,slow=8.7,SNR=11
FITZ Fitzroy Crossi 58.66 198 *e*P P 09 09 50.0 -0.7
comp=Z,56nm,1.7s
WRAB Tennant Creek 58.88 188*d i*P P 09 09 51.6 -0.6
WRAB pmax pmax
comp=Z,26nm,0.8s
WRAB Tennant Creek 58.88 188 *e*P P 09 09 51.1 -1.1
comp=Z,19nm,0.9s
WR1 Warramunga Arr 58.89 188 *e*P P 09 09 51.0 -1.3
WRA Warramunga Arr 58.89 188 P P 09 09 51.0 -1.3
comp=Z,13nm,0.4s,baz=7.0,slow=7.2,SNR=228
WRA Warramunga Arr 58.89 188 P P 09 09 51.0 -1.3
WRA pmax pmax
comp=Z,13nm,0.4s
YKA Yellowknife Ar 62.04 31 P P 09 10 13.1 -0.2
comp=Z,3.7nm,1.1s,baz=300,slow=5.4,SNR=5.6
YKB5 Yellowknife Ar 62.04 31 *e*P P 09 10 13.1 -0.2
ARCES ARCESS Array B 62.48 339 P P 09 10 15.2 -0.9
comp=Z,6.0nm,0.9s,baz=61,slow=7.5,SNR=4.3
KLMR Klimovskoe 62.49 327 *e*P P 09 10 14.2 -2.1
KLMR *e* 09 12 31.8
KLMR pmax pmax
comp=Z,25nm,1.2s
AS01 Alice Springs 62.61 188 *e*P P 09 10 16.7 -0.8
AS31 Alice Springs 62.62 188 *e*P P 09 10 16.9 -0.7
comp=Z,2.5nm,0.8s
ASAR Alice Springs 62.62 188 P P 09 10 16.8 -0.8
comp=Z,6.4nm,0.6s,baz=359,slow=5.2,SNR=52
GEYT Alibeck 63.37 298 P P 09 10 22.4 -0.2
comp=Z,12nm,0.9s,baz=25,slow=3.9,SNR=5.8
SGF Sodankyl 63.48 337 P P 09 10 26.1 +3.3
SGF pmax pmax
comp=Z,31nm,1.1s
DAG Danmarks Havn 64.03 355⇓ *i*P P 09 10 26.2 -0.1
comp=Z,12nm,0.7s
comp=Z,410nm,18.0s
DAG Danmarks Havn 64.03 355⇓ *i*P P 09 10 26.2 -0.1
DAG pmax pmax
comp=Z,8.0nm,0.7s
DAG MLR MLR
comp=Z,430nm,18.0s
JOF Joensuu 64.60 332 P P 09 10 31.4 +1.2
JOF pmax pmax
comp=Z,16nm,1.5s
DZM Mont Dzumac 64.77 155 LR LR 09 38 07.5
comp=Z,333nm,18.8s,baz=197,slow=35
DZM Mont Dzumac 64.77 155 *e*P P 09 10 32.3 +0.4
comp=Z,36nm,1.0s
NLWA Neilton Lookou 65.19 48 *e*P P 09 10 34.8 +0.4
comp=Z,15nm,1.0s
VRH Novokhopyorsk 66.56 318 *e*P P 09 10 41.6 -1.4
VRH pmax pmax
comp=Z,10.0nm,0.6s
SUF Sumiainen 66.59 333 P P 09 10 43.4 +0.4
SUF pmax pmax
comp=Z,35nm,0.8s
OBN Obninsk 66.93 323*d i*P P 09 10 45.3 0.0
OBN *e**PP **pP** **09 10 59.9 -0.4**
OBN *e**SP **sP** **09 11 08.5 +2.1**
OBN *e* 09 11 16.2
OBN pmax pmax
comp=Z,55nm,2.5s
OBN MLR MLR
comp=Z,234nm,19.0s
FIA1 FINESS Array S 67.44 332 *e*P P 09 10 48.5 +0.1
comp=Z,34nm,0.8s
FIA0 FINESS Array S 67.44 332 *e*P P 09 10 48.5 +0.1
FIA0 FINESS Array S 67.44 332 *e*P P 09 10 48.5 +0.1
FINES FINESS Array B 67.44 332 P P 09 10 48.5 +0.1
comp=Z,24nm,0.7s,baz=54,slow=7.5,SNR=25
EDM Edmonton 67.67 39 *e*P P 09 10 50.2 +0.1
EDM pmax pmax
comp=Z,29nm,1.7s
EDM Edmonton 67.67 39 *e*P P 09 10 50.2 +0.1
comp=Z,29nm,1.7s
VSR Storozhevoye 67.88 319 *e*P P 09 10 49.6 -1.8
VSR pmax pmax
comp=Z,10.0nm,0.9s
NEW Newport 68.54 45 P P 09 10 55.9 +0.2
comp=Z,2.9nm,1.0s,baz=295,slow=5.4,SNR=3.3
SUMG Summit 68.90 0 *i*P P 09 10 58.6 +0.7
comp=Z,20nm,0.9s
SUMG Summit 68.90 0 *e*P P 09 10 58.7 +0.8
SUMG pmax pmax
comp=Z,18nm,0.8s
SUMG Summit 68.90 0 *e*P P 09 10 58.7 +0.8
comp=Z,18nm,0.8s
YBH Yreka Blue Hor 68.91 53 *e*P P 09 10 59.8 +1.7
YBH pmax pmax
comp=Z,11nm,1.0s
YBH Yreka Blue Hor 68.91 53 *e*P P 09 10 59.8 +1.7
comp=Z,11nm,1.0s
VSU Vasula 69.14 329⇑ *i*P P 09 10 59.8 +0.7
VSU pmax pmax
comp=Z,77nm,0.9s
GOF Gofitskoye 69.24 312⇑ *e*P P 09 11 00.5 +0.5
GOF pmax pmax
comp=Z,41nm,0.7s
K05A Summer Lake 69.48 51 *e*P P 09 11 03.3 +1.6
comp=Z,22nm,1.1s
WDC Whiskeytown Da 69.65 54 *e*P P 09 11 03.9 +1.2
WDC pmax pmax
comp=Z,7.0nm,1.0s
WDC Whiskeytown Da 69.65 54 *e*P P 09 11 03.9 +1.2
comp=Z,7.2nm,1.0s
WALA Waterton Lakes 69.82 43 *e*P P 09 11 04.6 +0.9
comp=Z,11nm,1.4s
KIV Kislovodsk 70.07 311 *e*P P 09 11 06.3 +1.0
KIV pmax pmax
comp=Z,56nm,0.9s
KIV Kislovodsk 70.07 311 *e*P P 09 11 05.7 +0.4
comp=Z,54nm,0.9s
KBZ Khabaz 70.08 310 P P 09 11 06.0 +0.9
comp=Z,20nm,0.9s,baz=68,slow=4.2,SNR=17
STKA Stephens Creek 70.34 180 P P 09 11 06.7 0.0
comp=Z,4.0nm,1.0s,baz=5.4,slow=5.4,SNR=4.3
STKA Stephens Creek 70.34 180 *e*P P 09 11 06.4 -0.3
comp=Z,4nm,1.9s
BMO Blue Mountains 70.40 48 *e*P P 09 11 07.2 0.0
comp=Z,7.8nm,1.4s
NEY Neytrino 70.46 310⇑ *e*P P 09 11 09.1 +1.4
NEY pmax pmax
comp=Z,2.0nm,0.8s
SWMT Swartz Lake 70.69 44 *e*P P 09 11 10.4 +1.4
WVOR Wild Horse Val 71.01 51 *e*P P 09 11 12.2 +1.1
WVOR pmax pmax
comp=Z,13nm,1.4s
WVOR Wild Horse Val 71.01 51 *e*P P 09 11 12.2 +1.1
comp=Z,13nm,1.4s
SLMT Seeley Lake 71.13 44 *e*P P 09 11 12.6 +0.9
UOSS Minazif 71.69 288 *e*P P 09 11 15.0 -0.2
comp=Z,14nm,0.9s
FFC Flin Flon 71.97 33 *e*P P 09 11 17.3 +0.9
FFC pmax pmax
comp=Z,8.0nm,1.0s
FFC Flin Flon 71.97 33 *e*P P 09 11 17.3 +0.9
comp=Z,8.2nm,1.0s
MFID Camas Ranch 72.10 48 *e*P P 09 11 18.8 +1.2
comp=Z,10nm,1.4s
PAHR Pah Rah Range 72.14 53 *e*P P 09 11 19.1 +1.2
comp=Z,10nm,1.0s
PNTR Pine Nut 72.36 54 *e*P P 09 11 20.7 +1.3
comp=Z,6.4nm,1.0s
CMB Columbia Colle 72.48 55 *e*P P 09 11 21.2 +1.3
CMB pmax pmax
comp=Z,8.0nm,1.1s
CMB Columbia Colle 72.48 55 *e*P P 09 11 21.2 +1.3
comp=Z,8.1nm,1.1s
NC405 NORSAR Array S 72.50 337 *e*P P 09 11 19.5 -0.1
LRM Limekiln Ridge 72.56 45 *e*P P 09 11 21.3 +0.8
YERR Yerington 72.65 54 *e*P P 09 11 22.1 +1.0
comp=Z,14nm,1.1s
NC204 NORSAR Array S 72.66 338 *e*P P 09 11 20.6 +0.1
NB2 NORSAR Subarra 72.71 337 P P 09 11 20.4 -0.4
comp=Z,20nm,1.0s,baz=39,slow=6.2
NB2 NORSAR Subarra 72.71 337 P P 09 11 20.4 -0.4
baz=39,slow=6.2
NB2 NORSAR Subarra 72.71 337 P P 09 11 20.3 -0.5
NB200 NORSAR Array S 72.71 337 *e*P P 09 11 20.8 -0.1
NOA NORSAR Array B 72.71 337 P P 09 11 20.8 -0.1
comp=Z,12nm,0.9s,baz=38,slow=5.8,SNR=22
DLMT Dillon 72.77 45 *e*P P 09 11 22.9 +1.4
comp=Z,7.7nm,1.0s
NBO02 NORSAR Array S 72.81 337 *e*P P 09 11 20.9 -0.5
HLID Hailey 72.84 48 *e*P P 09 11 23.4 +1.4
comp=Z,4.5nm,1.0s
NBO00 NORSAR Array S 72.85 337 *e*P P 09 11 20.9 -0.7
BMN Battle Mountai 73.05 52 *e*P P 09 11 24.9 +1.6
BMN pmax pmax
comp=Z,17nm,1.4s
BMN Battle Mountai 73.05 52 *e*P P 09 11 24.9 +1.6
comp=Z,17nm,1.4s
BOZ Bozeman (W) 73.12 45 *e*P P 09 11 24.7 +1.0
BOZ pmax pmax
comp=Z,5.0nm,1.0s
BOZ Bozeman (W) 73.12 45 *e*P P 09 11 24.7 +1.0
comp=Z,5.3nm,1.0s
AKASG Malin Array Be 73.16 322 P P 09 11 23.2 -0.3
comp=Z,13nm,0.7s,baz=44,slow=6.2,SNR=20
AKBB Malin Array Si 73.16 322 *e*P P 09 11 23.2 -0.3
AKBB Malin Array Si 73.16 322 *e*P P 09 11 23.2 -0.3
KIEV Kiev 73.17 322*d i*P P 09 11 23.2 -0.4
KIEV pmax pmax
comp=Z,25nm,0.9s
KIEV Kiev 73.17 322 *e*P P 09 11 23.2 -0.4
comp=Z,23nm,0.9s
AK11 Malin Array Si 73.20 322 *e*P P 09 11 23.7 -0.1
TVH1 TV Hill, Hawth 73.26 54 *e*P P 09 11 26.4 +1.5
comp=Z,10nm,1.2s
TVH3 East Aurora ar 73.29 54 *e*P P 09 11 26.4 +1.6
comp=Z,9.9nm,1.2s
TVH2 Borealis Mine 73.31 54 *e*P P 09 11 26.5 +1.4
comp=Z,6.3nm,1.2s
GCMT Greycliff 74.10 44 *e*P P 09 11 30.9 +1.4
SIM Simferopol' 74.36 315*c i*P P 09 11 30.9 +0.2
SIM pmax pmax
comp=Z,62nm,0.9s
H17A Grant Village 74.49 45 *e*P P 09 11 31.3 -0.6
comp=Z,13nm,1.1s
IMW Indian Meadow 74.61 46 *e*P P 09 11 34.1 +1.6
comp=Z,6.3nm,0.9s
MOOW Moose Ponds 74.81 46 *e*P P 09 11 34.8 +1.2
comp=Z,9.3nm,1.3s
TPAW Teton Pass 74.86 46 *e*P P 09 11 35.8 +1.8
comp=Z,5.9nm,1.0s
SNOW Snow King Moun 74.98 46 *e*P P 09 11 36.6 +1.9
comp=Z,4.9nm,0.9s
REDW Red Top Meadow 74.99 46 *e*P P 09 11 36.3 +1.6
comp=Z,9.3nm,1.1s
DAC Darwin (Calif) 75.31 55 *e*P P 09 11 37.6 +0.9
DAC pmax pmax
comp=Z,8.0nm,1.4s
DAC Darwin (Calif) 75.31 55 *e*P P 09 11 37.6 +0.9
comp=Z,8.2nm,1.4s
R11A Troy Canyon, C 75.32 53 *e*P P 09 11 37.5 +0.9
comp=Z,12nm,1.3s
LAO LASA Array 75.34 41 *e*P P 09 11 37.9 +1.4
comp=Z,12nm,1.1s
HWUT Hardware Ranch 75.70 48 *e*P P 09 11 40.2 +1.5
comp=Z,11nm,1.1s
TPNV Topopah Spring 75.76 54 *e*P P 09 11 40.3 +1.1
TPNV pmax pmax
comp=Z,10.0nm,1.1s
TPNV Topopah Spring 75.76 54 *e*P P 09 11 40.3 +1.1
comp=Z,10nm,1.1s
DUG Dugway, Tooele 75.86 50 *e*P P 09 11 41.3 +1.7
DUG pmax pmax
comp=Z,9.0nm,1.0s
DUG Dugway, Tooele 75.86 50 *e*P P 09 11 41.3 +1.7
comp=Z,9.1nm,1.0s
BSD Bornholm Skovb 76.08 332⇓ *i*P P 09 11 40.0 -0.4
comp=Z,40nm,1.0s
comp=Z,690nm,17.0s
BSD Bornholm Skovb 76.08 332⇓ *i*P P 09 11 40.0 -0.4
BSD pmax pmax
comp=Z,40nm,1.0s
BSD MLR MLR
comp=Z,690nm,17.0s
TCUT Toone Canyon 76.10 48 *e*P P 09 11 42.6 +1.5
comp=Z,11nm,0.7s
BW06 Boulder Array 76.10 46 *e*P P 09 11 41.8 +0.7
comp=Z,4.5nm,0.8s
PD31 Pinedale Array 76.10 46 *e*P P 09 11 41.8 +0.7
PDAR Pinedale Array 76.10 46 P P 09 11 41.8 +0.7
comp=Z,3.0nm,0.7s,baz=274,slow=2.6,SNR=28
JLU Jordanelle 76.40 49 *e*P P 09 11 44.3 +1.4
comp=Z,9.4nm,1.4s
MPU Maple Canyon 76.67 49 *e*P P 09 11 45.2 +0.9
comp=Z,7.2nm,0.8s
SHPR Sheep Range 76.72 54 *e*P P 09 11 46.1 +1.4
comp=Z,13nm,1.4s
KWP Kalwaria Pacla 76.94 324 *e*P P 09 11 46.3 +0.9
KWP Kalwaria Pacla 76.94 324 *e*P P 09 11 46.3 +0.9
BUR08 Bucovina Ar. S 77.17 322 *e*P P 09 11 47.5 +0.6
CCUT Cedar City 77.19 52 *e*P P 09 11 47.7 +0.4
comp=Z,10nm,1.3s

MSU	Marysvale	77.30	51	eP		P	09 11 49.1	+1.2
MSU	Marysvale	77.30	51	eP		P	09 11 49.1	+1.2
SZCU	Shurtz Canyon	77.33	52	eP		P	09 11 49.0	+0.9
	comp=Z,4.9nm,0.8s							
RAO	Raoul Island	77.38	145	P		P	09 11 47.3	-0.5
	comp=Z,295nm,0.6s,baz=82,slow=22,SNR=2.0							
TMUT	Trail Mountain	77.38	50	eP		P	09 11 49.5	+1.1
	comp=Z,12nm,1.5s							
P17A	Butcher Ranch,	77.55	49	eP		P	09 11 50.7	+1.5
	comp=Z,111nm,0.8s							
MTPU	Mount Pierson	77.60	51	eP		P	09 11 51.3	+1.5
	comp=Z,6.0nm,0.9s							
LCMT	Little Creek M	77.60	52	eP		P	09 11 50.5	+1.0
	comp=Z,7.2nm,1.0s							
KOLS	Kolonicke sedl	77.64	324	eP		P	09 11 50.0	+0.7
KOLS					pmax	pmax		
	comp=Z,8.0nm,1.1s							
KOLS	Kolonicke sedl	77.64	324	eP		P	09 11 50.0	+0.7
PFO	Pinyon Flats O	77.68	57	P		P	09 11 50.0	0.0
	comp=Z,2.5nm,0.8s,baz=344,slow=5.7,SNR=3.5							
PFO	Pinyon Flats O	77.68	57	eP		P	09 11 50.0	0.0
	comp=Z,11nm,1.4s							
TIRR	Tirgusor	77.75	318	eP		P	09 11 50.4	+0.4
TIRR					pmax	pmax		
	comp=Z,8.0nm,0.9s							
TIRR	Tirgusor	77.75	318	eP		P	09 11 50.4	+0.4
	comp=Z,7.7nm,0.9s							
STHS	Stebnicka Huta	77.75	325	eP		P	09 11 51.0	+1.0
STHS					pmax	pmax		
	comp=Z,8.0nm,0.9s							
STHS	Stebnicka Huta	77.75	325	eP		P	09 11 51.0	+1.0
ULM	Lac du Bonnet	77.77	34	P		P	09 11 50.3	+0.3
	comp=Z,3.2nm,0.8s,baz=6.3,slow=9.2,SNR=2.9							
OJC	Ojcow	77.80	326	eP		P	09 11 51.1	+0.8
OJC	Ojcow	77.80	326	eP		P	09 11 51.0	+0.8
OJC					pmax	pmax		
	comp=Z,25nm,0.9s							
OJC	Ojcow	77.80	326	eP		P	09 11 51.0	+0.8
	comp=Z,25nm,0.9s							
UZH	Uzhgorod	77.84	324	eP		P	09 11 54.7	+4.3
UZH				*i*			09 12 07.5	
UZH				*e*			09 12 19.9	
K22A	Casper	77.86	45	eP		P	09 11 51.8	+0.9
	comp=Z,9.6nm,1.1s							
SRU	San Rafael Swe	77.91	49	eP		P	09 11 52.4	+1.2
SRU					pmax	pmax		
	comp=Z,10.0nm,0.7s							
SRU	San Rafael Swe	77.91	49	eP		P	09 11 52.4	+1.2
	comp=Z,10nm,0.7s							
BR101	Keskin Array S	78.00	312	eP		P	09 11 51.6	0.0
BR131	Keskin Array S	78.00	312	eP		P	09 11 51.5	-0.2
BRTR	Keskin Array B	78.00	312	P		P	09 11 51.6	0.0
	comp=Z,1.8nm,0.4s,baz=105,slow=3.5,SNR=9.3							
BRTR					PP	PP	09 14 51.1	+3.3
	comp=Z,1.3nm,0.8s,baz=65,slow=5.9,SNR=4.6							
BRTR	Keskin Array B	78.00	312	P		P	09 11 51.7	0.0
BRTR							09 14 51.1	
BRTR					pmax	pmax		
	comp=Z,3.0nm,0.7s							
BRTR					pmax	pmax		
	comp=Z,1.0nm,0.8s							
CRVS	Cervenica-Dubn	78.03	324	eP		P	09 11 52.2	+0.7
CRVS	Cervenica-Dubn	78.03	324	eP		P	09 11 52.2	+0.7
MMU	Miners Mountai	78.04	50	eP		P	09 11 53.4	+1.3
NIE	Niedzica	78.17	325	eP		P	09 11 53.3	+1.0
NIE	Niedzica	78.17	325	eP		P	09 11 53.3	+1.0
RSSD	Black Hills	78.20	42	eP		P	09 11 53.2	+0.3
RSSD					pmax	pmax		
	comp=Z,5.0nm,0.9s							
RSSD	Black Hills	78.20	42	eP		P	09 11 53.1	+0.3
	comp=Z,5.2nm,0.9s							
MLR	Muntele Rosu	78.31	320	eP		P	09 11 53.9	+0.7
MLR					pmax	pmax		
	comp=Z,20nm,1.3s							
MLR	Muntele Rosu	78.31	320	eP		P	09 11 53.9	+0.7
	comp=Z,20nm,1.3s							
ANTO	Ankara	78.40	312	eP		P	09 11 54.4	+0.6
ANTO					pmax	pmax		
	comp=Z,39nm,0.8s							
ANTO	Ankara	78.40	312	eP		P	09 11 54.4	+0.6
	comp=Z,39nm,0.8s							
W13A	Hualapai Mount	78.41	54	eP		P	09 11 55.1	+1.0
	comp=Z,3.7nm,1.1s							
BR231	Keskin MP Arra	78.42	312	eP		P	09 11 52.2	-1.8
U15A	North Rim	78.56	52	eP		P	09 11 56.5	+1.5
	comp=Z,21nm,1.5s							
O20A	White River Ci	78.57	47	eP		P	09 11 55.8	+0.9
	comp=Z,6.2nm,0.9s							
LANS	Liptovska Anna	78.74	326	eP		P	09 11 56.8	+1.4
LANS	Liptovska Anna	78.74	326	eP		P	09 11 56.8	+1.4
KECS	Kecovo	78.78	325	eP		P	09 11 56.4	+0.8
KECS					pmax	pmax		
	comp=Z,3.0nm,0.8s							
KECS	Kecovo	78.78	325	eP		P	09 11 56.4	+0.8
OKC	Ostrava-Krasne	78.80	327	eP		P	09 11 56.6	+0.9
OKC	Ostrava-Krasne	78.80	327	eP		P	09 11 56.6	+0.9
KSP	Ksiaz	78.81	328	eP		P	09 11 56.6	+0.8
KSP	Ksiaz	78.81	328	eP		P	09 11 56.6	+0.8
Y12C	Blythe	78.86	56	eP		P	09 11 57.5	+1.2
	comp=Z,7.1nm,0.8s							
GLA	Glamis	79.10	56	eP		P	09 11 57.6	-0.1
GLA					pmax	pmax		
	comp=Z,8.0nm,1.0s							
GLA	Glamis	79.10	56	eP		P	09 11 57.6	-0.1
	comp=Z,7.5nm,1.0s							
MORC	Moravsky Berou	79.10	327	eP		P	09 11 58.1	+0.7
MORC					pmax	pmax		
	comp=Z,59nm,0.9s							
MORC	Moravsky Berou	79.10	327	eP		P	09 11 58.1	+0.7
	comp=Z,58nm,0.9s							
PV09	Paradox Valley	79.13	49	eP		P	09 11 59.5	+1.3
DPC	Dobruska-Polom	79.18	328	eP		P	09 11 58.8	+1.0
DPC	Dobruska-Polom	79.18	328	eP		P	09 11 58.8	+1.0
KRLC	Kraliky	79.20	328	eP		P	09 11 58.7	+0.7
KRLC	Kraliky	79.20	328	eP		P	09 11 58.7	+0.7
PV10	Paradox Valley	79.27	49	eP		P	09 12 00.4	+1.6
PHWY	Pilot Hill	79.36	45	eP		P	09 11 59.8	+0.5
	comp=Z,6.3nm,1.3s							
N23A	Red Feather La	79.36	46	eP		P	09 12 00.8	+1.4
	comp=Z,12nm,1.2s							
PV05	Paradox Valley	79.43	49	eP		P	09 12 01.2	+1.5
PSZ	Piszkesteto	79.46	325	eP		P	09 12 00.6	+1.2
PSZ					pmax	pmax		
	comp=Z,17nm,1.0s							
PSZ	Piszkesteto	79.46	325	eP		P	09 12 00.6	+1.2
	comp=Z,17nm,1.0s							
VYHS	Vyhne	79.50	325	eP		P	09 12 00.2	+0.6
VYHS					pmax	pmax		
	comp=Z,6.0nm,1.2s							
VYHS	Vyhne	79.50	325	eP		P	09 12 00.2	+0.6
VYHS					ePP	PP	09 14 57.3	-2.6
PV01	Paradox Valley	79.70	49	eP		P	09 12 02.2	+1.0
Y14A	Wickenburg	79.71	55	eP		P	09 12 02.0	+1.0
	comp=Z,32nm,1.0s							
WUAZ	Wupatki	79.72	53	eP		P	09 12 02.2	+1.0
	comp=Z,8.1nm,1.0s							
BRG	Berggiesshubel	79.74	330	eP		P	09 12 01.2	+0.4
	comp=Z,13nm,0.9s							
	comp=N,279nm,17.2s							
	comp=E,438nm,16.8s							
	comp=Z,649nm,14.8s							
BRG	Berggiesshubel	79.74	330	eP		P	09 12 01.2	+0.4
BRG					pmax	pmax		
	comp=Z,13nm,0.9s							
BRG					MLR	MLR		
	comp=N,279nm,17.2s							
BRG					MLR	MLR		
	comp=E,438nm,16.8s							
BRG					MLR	MLR		
	comp=Z,649nm,14.8s							
CLL	Collm	79.77	330	⇓ *i*	P	P	09 12 01.0	+0.1
	comp=Z,26nm,0.9s							
CLL				*i*	pP	pP	09 12 15.7	-0.6
CLL	Collm	79.77	330	⇓ *i*	P	P	09 12 01.0	+0.1
CLL				*i*	*PP	pP	09 12 15.7	-0.6
CLL					pmax	pmax		
	comp=Z,26nm,0.9s							
CLL	Collm	79.77	330	eP		P	09 12 01.0	+0.1
	comp=Z,22nm,0.8s							
GOPC	GO Pecny, Ondr	80.15	328	eP		P	09 12 04.0	+0.9
GOPC	GO Pecny, Ondr	80.15	328	eP		P	09 12 04.0	+0.9
PRU	Pruhonice	80.19	329	eP		P	09 12 04.2	+1.0
PRU	Pruhonice	80.19	329	eP		P	09 12 04.2	+1.0
ISCO	Idaho Springs	80.29	46	eP		P	09 12 05.6	+1.2
ISCO					pmax	pmax		
	comp=Z,4.0nm,1.0s							
ISCO	Idaho Springs	80.29	46	eP		P	09 12 05.6	+1.2
	comp=Z,4.1nm,1.0s							
MVCO	Mesa Verde	80.36	50	eP		P	09 12 06.0	+1.2
	comp=Z,5.0nm,0.9s							
X16A	Lo Mia Camp, P	80.39	53	eP		P	09 12 06.1	+1.2
	comp=Z,6.5nm,1.0s							
MOX	Moxa	80.83	331	P		P	09 12 07.7	+1.0
MOX					pmax	pmax		
	comp=Z,13nm,1.0s							
NKC	Novy Kostel	80.83	330	eP		P	09 12 07.7	+1.0
NKC	Novy Kostel	80.83	330	eP		P	09 12 07.7	+1.0
S22A	4UR Ranch, Cre	80.98	48	eP		P	09 12 09.2	+1.0
	comp=Z,8.8nm,1.2s							
CONA	Conrad Observa	81.23	327	*i* P		P	09 12 09.8	+0.8
	SNR=8.9							
X18A	Snowflake	81.25	53	eP		P	09 12 10.8	+1.3
	comp=Z,8.3nm,1.3s							
KHC	Kasperske Hory	81.25	329	eP		P	09 12 09.5	+0.5
KHC				ep	P	pP	09 12 25.5	+1.1
KHC	Kasperske Hory	81.25	329	eP		P	09 12 08.5	-0.5
KHC					pmax	pmax		
	comp=Z,6.0nm,0.8s							
KHC	Kasperske Hory	81.25	329	eP		P	09 12 08.5	-0.5
	comp=Z,6.0nm,0.8s							
GEC2	GERESS Array S	81.42	328	eP		P	09 12 10.5	+0.5
GEC2					pmax	pmax		
	comp=Z,6.0nm,0.8s							
GEC2	GERESS Array S	81.42	328	eP		P	09 12 10.5	+0.5
	comp=Z,5.7nm,0.8s							
GERES	GERESS Array B	81.42	328	P		P	09 12 10.2	+0.1
	comp=Z,4.3nm,0.7s,baz=37,slow=5.5,SNR=17							
GEA0	GERESS Array S	81.43	328	eP		P	09 12 09.9	-0.1
GRFO	Grafenberg	81.74	330	eP		P	09 12 12.6	+1.0
GRFO					pmax	pmax		
	comp=Z,21nm,0.8s							
GRFO	Grafenberg	81.74	330	eP		P	09 12 12.6	+1.0
	comp=Z,21nm,0.8s							
VTS	Vitosha	81.75	319	eP		P	09 12 11.8	-0.2
VTS					pmax	pmax		
	comp=Z,19nm,0.8s							
VTS	Vitosha	81.75	319	eP		P	09 12 11.8	-0.2
	comp=Z,19nm,0.8s							
SDCO	Great Sand Dun	81.76	48	eP		P	09 12 13.3	+1.1
	comp=Z,3.5nm,1.1s							
ARSA	Arzberg	81.90	326	*i* P		P	09 12 13.0	+0.5
TUC	Tucson	82.18	55	eP		P	09 12 15.3	+1.0
TUC					pmax	pmax		
	comp=Z,4.0nm,1.0s							
TUC	Tucson	82.18	55	eP		P	09 12 15.3	+1.0
	comp=Z,3.8nm,1.0s							
ECSD	EROS Data Cent	82.24	39	eP		P	09 12 14.5	+0.2
	comp=Z,8.8nm,1.1s							
PERS	Pernice	82.55	326	*i* P		P	09 12 16.0	+0.1
SOKA	Soboth	82.56	326	*i* P		P	09 12 16.2	+0.2
	SNR=14							
T25A	Trinidad	82.80	48	eP		P	09 12 18.7	+1.1
	comp=Z,7.1nm,0.9s							
T25A				ep	P	pP	09 12 35.5	+2.5
OBKA	Obir	82.90	326	*i* P		P	09 12 17.5	-0.2
KBA	Koelnbreinsper	82.96	327	*i* P		P	09 12 18.1	-0.1
	SNR=8.4							
KBA	Koelnbreinsper	82.96	327	P		P	09 12 19.5	+1.3
CRES	Cresnjev	83.03	326	*i* P		P	09 12 18.1	-0.3
PDKS	Podkum	83.05	326	*i* P		P	09 12 18.1	-0.3
LAZ	Ladron	83.06	51	eP		P	09 12 20.5	+1.5
ANMO	Albuquerque	83.10	50	eP		P	09 12 20.5	+1.3
ANMO					pmax	pmax		
	comp=Z,7.0nm,1.1s							
ANMO	Albuquerque	83.10	50	eP		P	09 12 20.5	+1.3
	comp=Z,6.5nm,1.1s							
MYKA	Terra Mystica	83.19	327	*i* P		P	09 12 18.8	-0.5
SCHQ	Schefferville	83.50	16	P		P	09 12 20.4	-0.2
	comp=Z,3.0nm,0.6s,baz=324,slow=3.6,SNR=4.0							
SCHQ	Schefferville	83.50	16	eP		P	09 12 20.4	-0.2
	comp=Z,67nm,2.0s							
ABTA	Abfaltersbach	83.57	328	*i* P		P	09 12 20.4	-0.8
	SNR=5.0							
JAVS	Javornik	83.59	326	*i* P		P	09 12 20.4	-0.9
MOTA	Moosalm	83.67	329	*i* P		P	09 12 22.1	+0.2
	SNR=6.1							
RETA	Reutte	83.70	329	*i* P		P	09 12 22.1	+0.3
	SNR=9.5							
319A	Douglas	83.76	55	eP		P	09 12 23.1	+0.6
	comp=Z,10.0nm,0.9s							
BFO	Black Forest	83.96	331	eP		P	09 12 23.5	+0.4
BFO					pmax	pmax		
	comp=Z,15nm,0.9s							
BFO	Black Forest	83.96	331	eP		P	09 12 23.5	+0.4
	comp=Z,15nm,0.9s							
FETA	Feichten	84.09	329	*i* P		P	09 12 24.0	+0.1
	SNR=7.1							
HCY	Herceg Novi	84.21	322	P		P	09 12 24.5	+0.1
DAVA	Damuels	84.21	329	*i* P		P	09 12 24.6	0.0
	SNR=9.0							
CDF	Champ du Feu	84.29	332	P		P	09 12 24.5	-0.3
DSB	Dublin	84.30	342	eP		P	09 12 25.1	+0.5
	comp=Z,15nm,0.9s							
FUORN	Ofenpass-Fuorn	84.60	329	eP		P	09 12 27.1	+0.4
	comp=Z,31nm,0.8s							
HINF	Hinteralfeld	84.94	331	eP		P	09 12 27.3	-0.8
HINF					pmax	pmax		
	comp=Z,6.0nm,0.9s							
TUE	Stuetta	85.09	329	eP		P	09 12 29.1	+0.1
	comp=Z,12nm,0.9s							
AMTX	Amarillo	85.96	48	eP		P	09 12 34.5	+1.0
	comp=Z,5.6nm,0.9s							
MNTX	Cornudas Mount	85.98	52	eP		P	09 12 34.2	+0.7
	comp=Z,4.7nm,1.1s							
SENIN	Lac Senin/Sane	85.98	330	eP		P	09 12 33.6	+0.1
	comp=Z,8.4nm,0.8s							
CABF	La Chapelle	86.23	331	eP		P	09 12 34.0	-0.6
CABF					pmax	pmax		
	comp=Z,9.0nm,0.9s							
FLN	La Foliniere	86.66	336	eP		P	09 12 36.0	-0.5
FLN					pmax	pmax		
	comp=Z,16nm,1.0s							
LPL	La Plagne	86.91	330	eP		P	09 12 37.7	-0.4
LPL					pmax	pmax		
	comp=Z,12nm,0.9s							
LPG	La Plagne	86.91	330	eP		P	09 12 37.8	-0.4
LPG					pmax	pmax		
	comp=Z,11nm,0.8s							
AVF	Avril sur Loir	87.08	333	eP		P	09 12 38.3	-0.3
AVF					pmax	pmax		
	comp=Z,26nm,1.0s							
GRR	Gorron	87.11	336	eP		P	09 12 38.5	-0.2
GRR					pmax	pmax		
	comp=Z,25nm,1.0s							
WMOK	Wichita Mounta	87.72	46	eP		P	09 12 42.4	+0.5
WMOK					pmax	pmax		
	comp=Z,7.0nm,1.2s							
WMOK	Wichita Mounta	87.72	46	eP		P	09 12 42.4	+0.5
	comp=Z,7.3nm,1.2s							
VIVF	Saint-Julien-l	88.25	331	eP		P	09 12 44.0	-0.3
VIVF					pmax	pmax		
	comp=Z,3.0nm,0.3s							
LTX	Lajitas	88.68	53	eP		P	09 12 47.2	+0.5
LTX	Lajitas	88.68	53	eP		P	09 12 47.2	+0.5
TX31	Lajitas Ar. Si	88.68	53	eP		P	09 12 47.2	+0.5
TXAR	Lajitas Array	88.68	53	P		P	09 12 47.2	+0.5
	comp=Z,1.7nm,0.7s,baz=295,slow=3.5,SNR=31							
CAF	Calviac	89.15	333	eP		P	09 12 48.7	+0.2
CAF					pmax	pmax		
	comp=Z,9.0nm,0.9s							
LFF	La Frestale	89.60	334	eP		P	09 12 51.3	+0.7
LFF					pmax	pmax		
	comp=Z,15nm,1.0s							
MIAR	Mount Ida	90.71	43	eP		P	09 12 56.7	+0.8
MIAR					pmax	pmax		
	comp=Z,18nm,1.1s							
MIAR	Mount Ida	90.71	43	eP		P	09 12 56.7	+0.8
	comp=Z,18nm,1.1s							
WHAR	Wooly Hollow	90.81	42	eP		P	09 12 56.2	-0.2
	comp=Z,5.8nm,0.9s							
KEST	Kesra	93.86	323	P		P	09 13 10.8	+0.2
	comp=Z,1.5nm,0.7s,baz=44,slow=6.4,SNR=4.0							
KEST					LR	LR	10 00 49.2	
	comp=Z,160nm,18.4s,baz=320,slow=39							
KEST	Kesra	93.86	323	eP		P	09 13 10.8	+0.2
	comp=Z,22nm,1.6s							
ES19	SONSECA Array	95.83	334	eP		P	09 13 19.2	-0.3
ESDC	Sonseca Array	95.88	334	P		P	09 13 19.7	0.0
	comp=Z,0.3nm,0.3s,baz=6.9,slow=3.1,SNR=2.6							
TOA1	Torodi Ar. Sit	116.37	316	ePKPdf		PKPdf	09 18 38.9	+1.9
TORD	Torodi Ar. Bea	116.37	316	PKP		PKPdf	09 18 38.9	+1.9
	comp=Z,0.2nm,0.4s,baz=9.5,slow=1.8,SNR=2.3							
LPAZ	La Paz	145.39	58	PKPbc		PKPdf	09 19 31.9	0.0
	comp=Z,9.2nm,1.1s,baz=352,slow=4.9,SNR=14							
LPAZ	La Paz	145.39	58	ePKPbc		PKPbc	09 19 31.2	-0.6
PB11	IPOC Station P	146.75	64	ePKPbc		PKPab	09 19 36.0	-0.6
USHA	Ushuaia	154.03	138	PKPab		PKPab	09 20 06.7	+1.3
	comp=Z,37nm,1.1s,baz=221,slow=7.7,SNR=3.8							
PLCA	Paso Flores	155.00	105	PKP		PKPdf	09 19 45.1	-0.4
	comp=Z,1.9nm,0.8s,baz=276,slow=9.1,SNR=2.8							
PLCA				PKPab		PKPab	09 20 11.8	+1.6
	comp=Z,2.7nm,0.8s,baz=278,slow=4.3,SNR=3.2							

NEIC ***12*** *09:14:45.8±0.8,32.°17S×179.°85W,h334km±7km,mb4.6/6, Error ellipse: s-maj=16.1km s-min=9.9km az=114.0*
IDC ***12*** *09:14:45.4±0.9,32.°18S×179.°96W,h322km±8km,mb4.0/5, mb1 4.2/8,mb1mx3.6/35,mbtmp4.8/8,Error ellipse: s-maj=21.4km s-min=11.3km az=126.0*

ISC 12 09:14:45.2±0.4,32.°09S±0.°03×179.°87E±0.°06,h300km,n88, σ2s04/88,mb4.4/10,1C,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	3.41	34	P	Pn	09 15 46.6	+1.5
	97nm,0.3s,baz=72,slow=15,SNR=7.5						
RAO				S	S	09 16 36.4	+3.3
	456nm,0.3s,baz=112,slow=23,SNR=8.1						
RAO	Raoul Island	3.41	34	ePn	Pn	09 15 47.4	+2.2
RAO				*e*S	S	09 16 35.7	+2.6
MXZ	Matakaoa Point	5.61	193	PN	Pn	09 16 14.5	+4.8
MXZ				SN	S	09 17 19.6	+1.8
HAZ	Te Kaha	5.91	196	PN	Pn	09 16 16.6	+3.4
HAZ				SN	S	09 17 25.6	+1.3
PKGZ	Pakihiroa	5.97	194	PN	Pn	09 16 17.7	+3.6
OUZ	Omahuta	6.09	237	ePn	Pn	09 16 21.3	+5.7
	91nm,1.1s						
OUZ				*e*S	S	09 17 31.6	+3.2
PUZ	Puketiti	6.11	192	PN	Pn	09 16 16.5	+0.7
RUGZ	Raukumara Rang	6.13	196	PN	Pn	09 16 21.6	+5.5
RUGZ				SN	S	09 17 29.3	-0.1
TWGZ	Tauwhareparae	6.27	194	PN	Pn	09 16 22.0	+4.4
MWZ	Matawai	6.52	196	PN	Pn	09 16 22.0	+1.3
MWZ				SN	S	09 17 38.8	+1.0
CNGZ	Carnagh Statio	6.52	192	PN	Pn	09 16 22.3	+1.6
TKGZ	Te Karaka	6.55	194	PN	Pn	09 16 24.4	+3.4
TKGZ				SN	S	09 17 37.7	-0.5
URZ	Urewera	6.56	199	P	Pn	09 16 21.6	+0.5
	11nm,0.3s,baz=33,slow=2.7,SNR=36						
URZ				S	S	09 17 38.9	+0.4
	28nm,0.3s,baz=69,slow=18,SNR=18						
URZ	Urewera	6.56	199	ePn	Pn	09 16 21.5	+0.5
URZ				*e*S	S	09 17 36.9	-1.6
URZ	Urewera	6.56	199	PN	Pn	09 16 21.4	+0.4
URZ				SN	S	09 17 38.2	-0.3
RAGZ	Rawiri	6.70	197	PN	Pn	09 16 23.4	+0.5
RIGZ	Rimuhau	6.82	194	PN	Pn	09 16 27.6	+3.3
RIGZ				SN	S	09 17 44.3	-0.2
SNGZ	Shannon Statio	6.99	196	PN	Pn	09 16 26.9	+0.6
PRRZ	Plateau Road	7.00	203	PN	Pn	09 16 31.2	+4.7
PRGZ	Paritu Road	7.01	193	PN	Pn	09 16 29.5	+2.9
KNZ	Kokohu	7.14	194	PN	Pn	09 16 28.0	-0.2
MHGZ	Mahia Peninsul	7.23	192	PN	Pn	09 16 32.3	+3.1
MRHZ	Matea Rd	7.29	202	PN	Pn	09 16 30.3	+0.2
WHHZ	Waihua	7.29	196	PN	Pn	09 16 33.9	+3.9
NMHZ	Naumai	7.42	199	PN	Pn	09 16 33.8	+2.1
ARHZ	Arapaunui	7.53	197	PN	Pn	09 16 34.4	+1.5
BKZ	Black Stump Fm	7.58	200	PN	Pn	09 16 35.5	+1.9
MCHZ	McNeill Hill	7.78	198	PN	Pn	09 16 39.4	+3.5
CKHZ	Cape Kidnapper	7.88	196	PN	Pn	09 16 41.1	+3.9
MOVZ	Moawhango	8.03	203	PN	Pn	09 16 41.3	+2.2
KAHZ	Kahuranaki	8.06	197	PN	Pn	09 16 42.2	+2.8
PXZ	Pawanui	8.29	196	PN	Pn	09 16 42.9	+0.7
TSZ	Takapari Road	8.56	201	PN	Pn	09 16 47.4	+1.9
PRHZ	Porangahau	8.57	197	PN	Pn	09 16 47.7	+2.0
WAZ	Wanganui	8.61	206	PN	Pn	09 16 48.5	+2.3
DVHZ	Dannevirke	8.72	199	PN	Pn	09 16 49.4	+1.9
ANWZ	Angora Road	8.79	197	PN	P	09 16 50.8	-2.6
POWZ	Post Office Ro	8.92	201	PN	Pn	09 16 51.8	+1.8
BFZ	Birch Farm	9.06	198	PN	P	09 16 54.1	-2.2
MRZ	Mangatainoka R	9.22	201	PN	Pn	09 16 54.2	+0.5
CPWZ	Castlepoint	9.28	198	PN	P	09 16 56.9	-1.9
HOWZ	Holdsworth Sta	9.46	201	PN	Pn	09 16 57.1	+0.5
OGWZ	Otaki Gorge	9.49	202	PN	Pn	09 16 57.4	+0.4
TMWZ	Te Maipa	9.55	198	PN	Pn	09 16 58.0	+0.3
KIW	Kapiti Island	9.62	203	PN	Pn	09 16 59.3	+0.7
KIW				SN	S	09 18 41.9	-5.4
MTW	Mount Morrison	9.71	200	PN	Pn	09 16 59.9	+0.3
CAW	Cannon Point	9.79	202	PN	Pn	09 17 00.3	-0.3
TRWZ	Traveller	9.88	199	PN	Pn	09 17 03.0	+1.3
DUWZ	D'Urville Isla	9.92	207	PN	Pn	09 17 02.4	+0.1
MSWZ	Moikau Station	10.02	200	PN	Pn	09 17 03.2	-0.2
BHW	Baring Head	10.13	202	PN	Pn	09 17 04.2	-0.5
BHW				SN	S	09 18 52.8	-5.9
TCW	Tory Channel	10.15	205	PN	Pn	09 17 03.5	-1.6
PLWZ	Palliser	10.16	200	PN	Pn	09 17 04.7	-0.5
TUWZ	Tuamarina	10.46	205

MAN 12 09:15:58, 9°44N×122°14E, h11km, mb4.4, ML3.2, MS3.0, 2D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.08**	**95**	*i* P	Pb	09 16 14.1	-4.7
SNPH				*i* S	Sb	09 16 29.8	-3.2
TBP	**Tagbilaran**	**1.71**	**82**	*e*P	Pb	09 16 29.3	-0.2
RCP	**Roxas**	**2.19**	**16**	*e*P	Pn	09 16 35.5	+1.2
PLP	**Palo**	**3.27**	**58**	*e*P	Pn	09 16 49.7	+0.4
PLP				*e*S	Sn	09 17 24.9	-3.4

DDA **12** *09:15:59.5, 40°.59N×28°.88E, h7km, Md2.7*
IASPEI **12** *09:16:00.3±0.9, 40°.59N±0°.02×28°.90E±0°.02, h6km±5km, Error ellipse: s-maj=3.6km s-min=2.9km az=161.4, GT5 selection from ISC bulletin GT5 identified by Bondˇjr and McLaughlin (2009) selection criteria Bondˇjr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
ISK **12** *09:16:00.0, 40°.59N×28°.90E, h5km, ML2.4*
CSEM **12** *09:16:00.5±0.1, 40°.59N×28°.89E, h5km, ML2.4, Error ellipse: s-maj=2.3km s-min=1.9km az=162.0*
ISC 12 09:16:00.4±0.8, 40°.58N±0°.02×28°.90E±0°.02, h5km±5km, n69, σ0s50/87, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARMT	**Armutlu**	**0.03**	**238**	PG	**Pg**	**09 16 01.5**	**-0.1**
ARMT				*e*SG	**Sg**	**09 16 02.5**	**+0.1**
ARMT	**Armutlu**	**0.03**	**238**	*i* Pg	**Pg**	**09 16 01.5**	**-0.1**
ARMT				*e*Sg	**Sg**	**09 16 02.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**0.21**	**183**	*e*PG	**Pg**	**09 16 05.1**	**+0.5**
MDNY				*e*SG	**Sg**	**09 16 08.7**	**+1.3**
MDNY	**Mudanya-Bursa**	**0.21**	**183**	*e*Pg	**Pg**	**09 16 05.1**	**+0.5**
MDNY				*e*Sg	**Sg**	**09 16 08.7**	**+1.3**
GEMT	**Gemlik**	**0.27**	**124**	*e*PG	**Pg**	**09 16 05.8**	**+0.2**
GEMT	**Gemlik**	**0.27**	**124**	*e*Pg	**Pg**	**09 16 05.8**	**+0.2**
IGD	**Bursa**	**0.39**	**144**	*i* P	**Pg**	**09 16 07.2**	**-0.9**
ISK	**Istanbul-Kandi**	**0.50**	**14**	*e*PG	**Pg**	**09 16 10.1**	**+0.1**
ISK	**Istanbul-Kandi**	**0.50**	**14**	*e*Pg	**Pg**	**09 16 10.1**	**+0.1**
IZI	**Iznik**	**0.50**	**119**	*e*PG	**Pg**	**09 16 10.1**	**0.0**
IZI	**Iznik**	**0.50**	**119**	*e*Pg	**Pg**	**09 16 10.1**	**0.0**
KCTX	**Karacabey (Bur**	**0.52**	**233**	*e*PG	**Pg**	**09 16 10.5**	**0.0**
KCTX	**Karacabey (Bur**	**0.52**	**233**	*e*Pg	**Pg**	**09 16 10.5**	**0.0**
BGKT	**Bogazkoy**	**0.60**	**351**	*e*PG	**Pg**	**09 16 12.1**	**0.0**
BGKT	**Bogazkoy**	**0.60**	**351**	*e*Pg	**Pg**	**09 16 12.1**	**0.0**
HRT	**Hereke**	**0.63**	**68**	*e*PG	**Pg**	**09 16 12.2**	**-0.4**
HRT	**Hereke**	**0.63**	**68**	*e*Pg	**Pg**	**09 16 12.2**	**-0.4**
ADVT	**Abdulvahap**	**0.66**	**103**	*e*PG	**Pg**	**09 16 13.2**	**+0.1**
ADVT	**Abdulvahap**	**0.66**	**103**	*e*Pg	**Pg**	**09 16 13.2**	**+0.1**
KLYT	**Kilyos**	**0.68**	**9**	*e*PG	**Pg**	**09 16 13.5**	**+0.1**
KLYT	**Kilyos**	**0.68**	**9**	*e*Pg	**Pg**	**09 16 13.5**	**+0.1**
CTKS	**Kestanelik-??a**	**0.72**	**336**	*e*PG	**Pg**	**09 16 14.2**	**0.0**
CTKS	**Kestanelik-??a**	**0.72**	**336**	*e*Pg	**Pg**	**09 16 14.2**	**0.0**
SILT	**Sile**	**0.80**	**45**	*e*PG	**Pb**	**09 16 16.5**	**-0.3**
SILT	**Sile**	**0.80**	**45**	*e*Pg	**Pb**	**09 16 16.5**	**-0.3**
CAVI	**Cavuskoy**	**0.81**	**118**	*e*PG	**Pb**	**09 16 16.3**	**-0.8**
CAVI	**Cavuskoy**	**0.81**	**118**	*e*Pg	**Pb**	**09 16 16.3**	**-0.8**
EDC	**Edincik**	**0.82**	**254**	*e*PG	**Pg**	**09 16 15.6**	**-0.6**
EDC	**Edincik**	**0.82**	**254**	*e*Pg	**Pg**	**09 16 15.6**	**-0.6**
MRMT	**Marmara Adasi**	**0.99**	**272**	*e*PG	**Pb**	**09 16 19.6**	**-0.5**
MRMT	**Marmara Adasi**	**0.99**	**272**	*e*Pg	**Pb**	**09 16 19.7**	**-0.5**
GONE	**Gonen-Balikesi**	**1.07**	**240**	*e*PG	**Pb**	**09 16 21.1**	**-0.3**
GONE	**Gonen-Balikesi**	**1.07**	**240**	*e*Pg	**Pb**	**09 16 21.1**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.08**	**84**	*e*PG	**Pb**	**09 16 21.2**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.08**	**84**	*e*Pg	**Pb**	**09 16 21.2**	**-0.3**
KAND	**Kocaeli-Kandir**	**1.11**	**62**	*i* P	**Pb**	**09 16 21.8**	**-0.2**
KAND				*i* S	**Sb**	**09 16 36.7**	**0.0**
KAND	**Kocaeli-Kandir**	**1.11**	**62**	P	**Pb**	**09 16 21.8**	**-0.2**
KAND				S	**Sb**	**09 16 36.7**	**0.0**
GPA	**Golpazari**	**1.12**	**105**	*e*PN	**Pb**	**09 16 22.1**	**-0.1**
GPA	**Golpazari**	**1.12**	**105**	*e*Pn	**Pb**	**09 16 22.1**	**-0.1**
TVSB	**Tavsanli**	**1.21**	**159**	*e*PN	**Pb**	**09 16 23.6**	**-0.2**
TVSB	**Tavsanli**	**1.21**	**159**	*e*Pn	**Pb**	**09 16 23.7**	**-0.2**
BALB	**Balikesir**	**1.22**	**220**	*e*PN	**Pn**	**09 16 24.0**	**-0.2**
BALB	**Balikesir**	**1.22**	**220**	*e*Pn	**Pn**	**09 16 24.0**	**-0.2**
KRBG	**Karabiga-Canak**	**1.24**	**262**	*e*PN	**Pn**	**09 16 24.1**	**-0.2**
KRBG	**Karabiga-Canak**	**1.24**	**262**	*e*Pn	**Pn**	**09 16 24.1**	**-0.2**
GULT	**Gulveren**	**1.24**	**96**	*e*PN	**Pn**	**09 16 24.3**	**-0.2**
GULT	**Gulveren**	**1.24**	**96**	*e*Pn	**Pn**	**09 16 24.3**	**-0.2**
BALY	**Balya**	**1.29**	**230**	*i* P	**Pg**	**09 16 24.5**	**-0.7**
BALY				*i* S	**Sg**	**09 16 41.5**	**-0.4**
BALY	**Balya**	**1.29**	**230**	P	**Pg**	**09 16 24.5**	**-0.7**
BALY				S	**Sg**	**09 16 41.5**	**-0.4**
RKY	**Sarkoy-Tekirda**	**1.31**	**275**	*e*PN	**Pb**	**09 16 25.5**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.31**	**275**	*e*Pn	**Pb**	**09 16 25.5**	**-0.1**
BORA	**Eskisehir**	**1.38**	**120**	*i* P	**Pn**	**09 16 25.4**	**-1.0**
BORA				*i* S	**Sn**	**09 16 45.8**	**+0.7**
BORA	**Eskisehir**	**1.38**	**120**	P	**Pn**	**09 16 25.4**	**-1.0**
BORA				S	**Sn**	**09 16 45.8**	**+0.7**
SAHE	**Sakarya_HENDEK**	**1.51**	**79**	*i* P	**Pb**	**09 16 28.2**	**-0.7**
SAHE				*i* S	**Sg**	**09 16 49.5**	**+0.6**
SAHE	**Sakarya_HENDEK**	**1.51**	**79**	P	**Pb**	**09 16 28.2**	**-0.7**
SAHE				S	**Sg**	**09 16 49.5**	**+0.6**
DEMI	**Demirci**	**1.54**	**185**	*i* P	**Pg**	**09 16 30.2**	**+0.2**
DEMI				*i* S	**Sg**	**09 16 50.2**	**+0.1**
DEMI	**Demirci**	**1.54**	**185**	P	**Pg**	**09 16 30.2**	**+0.2**
DEMI				S	**Sg**	**09 16 50.2**	**+0.1**
GDZ	**Gediz**	**1.56**	**163**	*i* P	**Pg**	**09 16 30.3**	**0.0**
GDZ				*i* S	**Sg**	**09 16 50.8**	**+0.3**
GDZ	**Gediz**	**1.56**	**163**	P	**Pg**	**09 16 30.3**	**0.0**
GDZ				S	**Sg**	**09 16 50.8**	**+0.3**
GELI	**Tayfur-Gelibol**	**1.86**	**265**	*e*PN	**Pn**	**09 16 33.4**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.86**	**265**	*e*Pn	**Pn**	**09 16 33.4**	**+0.5**
KULA	**Kula-Manisa**	**2.08**	**185**	*e*PN	**Pn**	**09 16 36.6**	**+0.7**
KULA	**Kula-Manisa**	**2.08**	**185**	*e*Pn	**Pn**	**09 16 36.6**	**+0.7**
MANT	**Manisa**	**2.11**	**187**	*i* P	**Pg**	**09 16 40.3**	**-0.5**
MANT				*i* S	**Sg**	**09 17 07.0**	**-1.1**
MANT	**Manisa**	**2.11**	**187**	P	**Pg**	**09 16 40.3**	**-0.5**
MANT				S	**Sg**	**09 17 07.0**	**-1.1**
DKL	**Dikili**	**2.15**	**226**	*e*PN	**Pn**	**09 16 37.6**	**+0.7**
DKL	**Dikili**	**2.15**	**226**	*e*Pn	**Pn**	**09 16 37.6**	**+0.7**
ALN	**Alexandroupoli**	**2.19**	**279**	*e*PN	**Pn**	**09 16 38.0**	**+0.6**
ALN	**Alexandroupoli**	**2.19**	**279**	*e*Pn	**Pn**	**09 16 38.0**	**+0.6**

IDC **12** *09:22:52.6±1.7, 37°.90N×144°.47E, h0km, mb3.7/4, mb1 3.9/6, mb1mx3.6/46, mbtmp3.8/6, ML3.8/2, MS3.4/1, Ms1 3.4/1, ms1mx2.8/66, Error ellipse: s-maj=45.4km s-min=26.7km az=81.0*
ISCJB **12** *09:22:54.0±0.8, 38°.15N±0°.05×144°.46E±0°.07, h33km, mb3.7/4, Error ellipse: s-maj=7.6km s-min=6.5km az=169.7*
JMA **12** *09:22:55.9±0.2, 38°.12N×144°.29E, h39km, M3.8*
ISC 12 09:22:57.3±1.3, 38°.14N±0°.06×144°.30E±0°.10, h35km, n24, σ2s46/33, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.26**	**295**	P	**Pn**	**09 23 32.1**	**-0.1**
JIO	**Ouri**	**2.34**	**279**	P	**Pn**	**09 23 33.1**	**-0.2**
JIO				*e*S	**Sn**	**09 24 00.6**	**-0.2**
MIYJ	**Miyakonagasawa**	**2.41**	**307**	P	**Pn**	**09 23 33.9**	**-0.3**
MIYJ				*e*S	**Sn**	**09 24 02.3**	**-0.1**
JMK	**Ichinoseki**	**2.55**	**289**	P	**Pn**	**09 23 36.3**	**+0.2**
JOM	**Ohasama**	**2.70**	**300**	P	**Pn**	**09 23 38.9**	**+0.7**
JOM				*e*S	**Sn**	**09 24 11.0**	**+1.4**
JANG	**Nango**	**3.10**	**317**	P	**Pn**	**09 23 43.8**	**+0.1**
JANG				*e*S	**Sn**	**09 24 19.2**	**-0.4**
JYK	**Kaneyama**	**3.19**	**285**	P	**Pn**	**09 23 45.8**	**+0.9**
JYK				*e*S	**Sn**	**09 24 23.6**	**+2.0**
JFT	**Otama**	**3.20**	**260**	P	**Pn**	**09 23 45.9**	**+0.8**
JFT				*e*S	**Sn**	**09 24 22.3**	**+0.3**
JOT	**Ohata**	**4.09**	**323**	*e*S	**Sn**	**09 24 43.3**	**-0.6**
JKB	**Kayabe**	**4.50**	**327**	P	**Pn**	**09 24 04.2**	**+1.3**
JCH	**Churui**	**4.52**	**351**	*e*S	**Sn**	**09 24 51.3**	**-3.3**
JRY	**Ryogami san**	**4.81**	**245**	P	**Pn**	**09 24 06.5**	**-0.7**
JRY				*e*S	**Sn**	**09 24 58.4**	**-3.3**
JOD2	**Odawara 2**	**5.08**	**237**	*e*S	**Sn**	**09 25 05.0**	**-3.4**
MJAR	**Matsushiro Arr**	**5.11**	**254**	Pn	**Pn**	**09 24 12.5**	**+1.2**
MJAR	1.8nm,0.3s,baz=78,slow=15,SNR=16			Sn	Sn	09 24 59.4	-10
	7.6nm,0.3s,baz=245,slow=22,SNR=25						
MAT	**Matsushiro**	**5.11**	**254**	P	**Pn**	**09 24 12.4**	**+1.0**
NEM2	**Nemuro 2**	**5.33**	**11**	P	**Pn**	**09 24 10.8**	**-3.5**
NEM2				*e*S	**Sn**	**09 25 08.0**	**-6.4**
JOSM	**Okushiri--Mats**	**5.40**	**318**	P	**Pn**	**09 24 16.3**	**+1.0**
JTKR	**Abashiri--Toko**	**5.83**	**357**	P	**Pn**	**09 24 20.2**	**-0.9**
JTKR				*e*S	**Sn**	**09 25 23.7**	**-3.0**
JHJ	**Hachijo jima 2**	**6.22**	**218**	Pn	**Pn**	**09 24 24.3**	**-2.2**
	11nm,0.3s,baz=324,slow=23,SNR=8.3						
JHJ				Sn	**Sn**	**09 25 29.1**	**-7.3**
	13nm,0.3s,baz=106,slow=23,SNR=4.9						
KSRS	**Korea Array**	**12.97**	**272**	LR	LR	09 31 08.3	
	comp=Z,160nm,18.2s,baz=190,slow=38						
MKAR	**Makanchi Array**	**45.48**	**302**	P	**P**	**09 31 13.9**	**+0.9**
	0.2nm,0.2s,baz=80,slow=8.7,SNR=4.4						
WRA	**Warramunga Arr**	**58.53**	**191**	P	**P**	**09 32 48.9**	**-1.3**
	1.0nm,0.6s,baz=12,slow=7.1,SNR=14						
ASAR	**Alice Springs**	**62.25**	**191**	P	**P**	**09 33 15.2**	**-0.5**
	0.3nm,0.7s,baz=8.0,slow=8.6,SNR=4.7						
NOA	**NORSAR Array B**	**74.03**	**338**	P	**P**	**09 34 32.4**	**+3.3**
	0.3nm,0.4s,baz=38,slow=4.5,SNR=3.5						

IDC **12** *09:37:54.0±3.0, 9°.40N×122°.31E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.3/62, mbtmp3.3/3, Error ellipse: s-maj=351.9km s-min=28.1km az=63.0*
ISCJB **12** *09:37:56.2±1.0, 9°.33N±0°.09×122°.19E±0°.08, h29km, mb3.3/3, Error ellipse: s-maj=13.5km s-min=10.0km az=150.7*
MAN **12** *09:37:58, 9°.45N×122°.22E, h38km, mb4.7, ML3.6, MS3.6*
ISC 12 09:37:58.0±1.3, 9°.28N±0°.10×122°.26E±0°.08, h29km, n8, σ2s07/11, mb3.4/3, 2C, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.97**	**86**	*i* P	**Pn**	**09 38 11.3**	**-4.4**
SNPH				*i* S	**Sb**	**09 38 28.1**	**-0.7**
TBP	**Tagbilaran**	**1.63**	**75**	*e*P	**Pb**	**09 38 29.8**	**+2.3**
LLP	**Lapu-Lapu**	**1.97**	**58**	*e*P	**Pn**	**09 38 30.1**	**+0.6**
LLP				*e*S	**Sb**	**09 38 56.6**	**-0.9**
RCP	**Roxas**	**2.31**	**12**	*e*P	**Pn**	**09 38 31.9**	**-2.4**
PLP	**Palo**	**3.27**	**55**	*i* P	**Pn**	**09 38 47.5**	**+0.2**
PLP				*i* S	**Sn**	**09 39 24.9**	**-0.3**
WRA	**Warramunga Arr**	**31.38**	**158**	P	**P**	**09 44 17.1**	**+0.5**
	0.6nm,1.0s,baz=336,slow=9.6,SNR=7.0						
ASAR	**Alice Springs**	**34.67**	**161**	P	**P**	**09 44 46.7**	**+1.4**
	0.2nm,0.5s,baz=339,slow=7.4,SNR=8.9						
MKAR	**Makanchi Array**	**50.49**	**325**	P	**P**	**09 46 53.2**	**-0.3**
	0.1nm,0.4s,baz=142,slow=7.3,SNR=3.9						

NIED **12** *09:39:00, 37°.60N×141°.80E, h17km, Mw4.1 Best double couple: M0 1.54000×10^15 NP1:φs246.00000°, δ35.00000°, λ171.00000°. NP2:φs344.00000°, δ85.00000°, λ55.00000°.*
ISCJB **12** *09:39:06.7±0.9, 37°.58N±0°.03×141°.91E±0°.05, h22km±5km, mb4.1/27, Error ellipse: s-maj=6.6km s-min=4.1km az=23.0*
JMA **12** *09:39:08.6±0.1, 37°.61N×141°.81E, h26km±2km, M4.4*
JMA Felt II J1.
IDC **12** *09:39:10.5±5.9, 37°.59N×141°.76E, h32km±43km, mb3.8/19, mb1 4.0/22, mb1mx3.8/65, mbtmp4.0/22, ML3.2/2, MS3.4/1, Ms1 3.4/1, ms1mx2.6/52, Error ellipse: s-maj=20.6km s-min=13.4km az=75.0*
NEIC **12** *09:39:11.2±0.8, 37°.58N×141°.85E, h41km±7km, mb4.2/6, Error ellipse: s-maj=9.7km s-min=6.3km az=116.0*
NEIC Recorded [2 JMA] in Fukushima and Miyagi.
ISC 12 09:39:06.7±1.6, 37°.60N±0°.04×141°.88E±0°.05, h9km±9km, n58, σ1s44/66, mb4.2/27, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.84**	**254**	P	**Pb**	**09 39 23.3**	**-0.1**
JFK				*e*S	**Sg**	**09 39 33.1**	**-0.6**
JMM	**Marumori**	**0.91**	**287**	P	**Pb**	**09 39 24.3**	**-0.2**
JMM				*e*S	**Sg**	**09 39 35.0**	**-0.8**
JIO	**Ouri**	**0.95**	**334**	P	**Pb**	**09 39 25.4**	**+0.1**
JIO				*e*S	**Sg**	**09 39 36.3**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.00**	**240**	P	**Pg**	**09 39 25.6**	**-0.2**
ONAJ				*e*S	**Sg**	**09 39 37.1**	**-1.7**
JOU	**Okura**	**1.23**	**309**	P	**Pg**	**09 39 30.3**	**0.0**
JOU				*e*S	**Sb**	**09 39 44.9**	**-1.2**
JFT	**Otama**	**1.23**	**267**	P	**Pb**	**09 39 30.0**	**-0.1**
JFT				*e*S	**Sb**	**09 39 44.7**	**-1.4**
JMK	**Ichinoseki**	**1.45**	**339**	*e*S	**Sn**	**09 39 50.1**	**-2.0**
JYS	**Shirataka**	**1.57**	**294**	P	**Pb**	**09 39 35.2**	**-0.6**
JYS				*e*S	**Sn**	**09 39 54.5**	**-0.6**
JFY	**Yanaizu**	**1.74**	**264**	P	**Pn**	**09 39 37.2**	**+0.1**
JFY				*e*S	**Sn**	**09 39 58.7**	**-0.7**
JYK	**Kaneyama**	**1.78**	**318**	P	**Pn**	**09 39 37.7**	**+0.1**
MJAR	**Matsushiro Arr**	**3.12**	**251**	Pn	**Pn**	**09 39 57.1**	**+1.0**
	30nm,0.3s,baz=82,slow=16,SNR=116						
MJAR				Sn	**Sn**	**09 40 35.7**	**+2.2**
	23nm,0.3s,baz=79,slow=28,SNR=7.2						
MAJO	**Matsushiro**	**3.12**	**251**	*e*Pn	**Pn**	**09 39 57.4**	**+1.3**
MAJO				*e*Sn	**Sn**	**09 40 30.9**	**-2.7**
MAT	**Matsushiro**	**3.12**	**251**	P	**Pn**	**09 39 57.1**	**+1.0**
MAT				S	**Sn**	**09 40 34.5**	**+1.0**
ERM	**Erimo**	**4.52**	**12**	*e*Pn	**Pn**	**09 40 16.8**	**+1.6**
ERM				*e*Sn	**Sn**	**09 41 04.5**	**-3.3**
JHJ2	**Mitsune**	**4.79**	**201**	*e*Pn	**Pn**	**09 40 19.1**	**+0.2**
JHJ2				*e*Sn	**Sn**	**09 41 12.5**	**-2.0**
JHJ	**Hachijo jima 2**	**4.79**	**202**	Pn	**Pn**	**09 40 19.4**	**+0.4**
	107nm,0.3s,baz=293,slow=13,SNR=36						
JHJ				Sn	**Sn**	**09 41 12.5**	**-2.1**
	28nm,0.3s,baz=312,slow=23,SNR=4.0						
ASAJ	**Asahikawa**	**6.53**	**5**	*e*Pn	**Pn**	**09 40 43.4**	**+0.5**
	7.0nm,0.7s						
ASAJ				*e*Sn	**Sn**	**09 41 58.1**	**+0.7**
YSS	**Yuzh-Sakhalins**	**9.37**	**4**	*e*Pn	**Pn**	**09 41 23.4**	**+1.7**
	16nm,0.8s						
USRK	**Ussuriysk Ar.**	**9.97**	**314**	Pn	**Pn**	**09 41 30.9**	**+0.8**
	0.2nm,0.3s,baz=118,slow=15,SNR=4.2						
JNU	**Nakatsue**	**10.04**	**247**	Pn	**Pn**	**09 41 33.9**	**+2.9**
	0.5nm,0.3s,baz=220,slow=1.6,SNR=7.2						
KSRS	**Korea Array**	**11.09**	**274**	Pn	**Pn**	**09 41 49.6**	**+4.2**
	0.4nm,0.3s,baz=81,slow=13,SNR=3.4						
KSRS				LR	LR	09 45 32.5	
	comp=Z,193nm,18.6s,baz=74,slow=35						
KSAR	**Wonju Array Be**	**11.12**	**273**	Pn	**Pn**	**09 41 49.6**	**+3.8**
KLR	**Kul'dur**	**13.74**	**331**	Pn	**Pn**	**09 42 25.5**	**+3.9**
	0.1nm,0.3s,baz=126,slow=8.7,SNR=2.2						
ENH	**Enshi**	**27.76**	**264**	*e*P	**P**	**09 44 54.8**	**-0.9**
	15nm,0.6s						
SONM	**Songino Array**	**27.79**	**303**	P	**P**	**09 44 55.5**	**-0.4**
	1.2nm,0.6s,baz=97,slow=9.3,SNR=11						
H11N2	**WAKE ISLAND Hy**	**28.12**	**122**	T	T	10 14 31.8	
	baz=318						
H11N1	**WAKE ISLAND Hy**	**28.13**	**122**	T	T	10 14 33.1	
	baz=318						
H11N3	**WAKE ISLAND Hy**	**28.14**	**122**	T	T	10 14 33.3	
	baz=318						
H11S1	**WAKE ISLAND Hy**	**28.86**	**124**	T	T	10 15 30.3	
	baz=315						
H11S3	**WAKE ISLAND Hy**	**28.86**	**124**	T	T	10 15 31.2	
	baz=315						
H11S2	**WAKE ISLAND Hy**	**28.88**	**124**	T	T	10 15 32.2	
	baz=315						
ZALV	**Zalesovo Beam**	**41.81**	**312**	P	**P**	**09 46 56.7**	**+0.3**
	0.8nm,0.3s,baz=79,slow=8.0,SNR=3.6						
NRIK	**Noril'sk**	**42.91**	**335**	P	**P**	**09 47 02.8**	**-2.4**
	3.1nm,0.5s,baz=114,slow=2.0,SNR=3.5						
MKAR	**Makanchi Array**	**44.14**	**302**	P	**P**	**09 47 14.8**	**-0.6**
	1.2nm,0.6s,baz=90,slow=9.7,SNR=8.8						
KURK	**Kurchatov**	**45.88**	**308**	*e*P	**P**	**09 47 29.0**	**-0.2**
	112nm,0.8s						
KURBB	**Kurchatov Arra**	**45.95**	**308**	P	**P**	**09 47 29.5**	**-0.2**
	2.7nm,0.5s,baz=81,slow=7.9,SNR=19						
ILAR	**Eielson Array**	**48.82**	**33**	P	**P**	**09 47 52.3**	**+0.5**
	0.7nm,0.8s,baz=267,slow=6.6,SNR=7.9						
BVAR	**Borovoye Array**	**50.47**	**312**	P	**P**	**09 48 04.1**	**-0.5**
	0.5nm,0.5s,baz=90,slow=7.4,SNR=4.9						
KKAR	**Karatay Array**	**53.17**	**300**	*e*P	**P**	**09 48 23.6**	**-1.3**
	1.6nm,0.5s						
ARU	**Arti**	**56.19**	**318**	P	**P**	**09 48 46.5**	**0.0**
	2.3nm,0.3s,baz=78,slow=5.4,SNR=4.2						
WRAB	**Tennant Creek**	**57.66**	**188**	*e*P	**P**	**09 48 56.7**	**-0.6**
	1.9nm,0.6s						
WRA	**Warramunga Arr**	**57.67**	**188**	P	**P**	**09 48 57.2**	**-0.2**
	2.1nm,0.6s,baz=6.4,slow=7.4,SNR=29						
ABKAR	**Akbulak array**	**57.86**	**310**	*e*P	**P**	**09 48 58.1**	**-0.4**
	0.9nm,0.4s						
AKTO	**Aktyubinsk**	**58.58**	**312**	P	**P**	**09 49 03.1**	**-0.4**
	1.7nm,0.7s,baz=60,slow=10,SNR=5.1						
ASAR	**Alice Springs**	**61.40**	**188**	P	**P**	**09 49 23.2**	**+0.1**
	2.2nm,0.8s,baz=9.7,slow=5.6,SNR=21						
YKA	**Yellowknife Ar**	**63.13**	**30**	P	**P**	**09 49 34.2**	**-0.1**
	0.4nm,0.6s,baz=299,slow=6.0,SNR=3.1						
FINES	**FINESS Array B**	**68.49**	**332**	P	**P**	**09 50 08.7**	**-0.1**
	3.0nm,0.8s,baz=18,slow=8.0,SNR=5.3						
STKA	**Stephens Creek**	**69.12**	**180**	P	**P**	**09 50 13.3**	**+0.3**
	0.8nm,0.4s,baz=348,slow=7.9,SNR=5.9						
KBZ	**Khabaz**	**70.82**	**311**	P	**P**	**09 50 24.1**	**+0.6**
	1.7nm,0.7s,baz=30,slow=1.2,SNR=2.9						
HLID	**Hailey**	**73.71**	**47**	*e*P	**P**	**09 50 43.0**	**+1.9**
	0.9nm,0.7s						
NB2	**NORSAR Subarra**	**73.81**	**337**	P	P	09 50 50.4	+9.3
	comp=Z,1.5nm,0.5s,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**73.81**	**337**	P	**P**	**09 50 41.3**	**+0.2**
	comp=Z,1.0nm,0.7s,baz=39,slow=5.8,SNR=3.4						
AKASG	**Malin Array Be**	**74.08**	**322**	P	**P**	**09 50 42.6**	**-0.2**
	comp=Z,0.7nm,0.4s,baz=46,slow=6.1,SNR=4.9						
DUG	**Dugway, Tooele**	**76.70**	**49**	*e*P	**P**	**09 50 58.4**	**0.0**
	comp=Z,1.0nm,0.6s						
PDAR	**Pinedale Array**	**77.00**	**46**	P	**P**	**09 51 01.3**	**+1.2**
	comp=Z,0.5nm,0.6s,baz=255,slow=2.9,SNR=5.8						
BRTR	**Keskin Array B**	**78.76**	**312**	P	**P**	**09 51 10.0**	**+0.2**
	comp=Z,0.5nm,0.5s,baz=85,slow=4.9,SNR=2.4						
TXAR	**Lajitas Array**	**89.48**	**53**	P	**P**	**09 52 05.3**	**+0.9**
	comp=Z,0.2nm,0.5s,baz=300,slow=2.4,SNR=6.5						
LPAZ	**La Paz**	**146.08**	**59**	PKPbc	**PKPab**	**09 58 48.9**	**+0.1**
	comp=Z,1.0nm,0.5s,baz=312,slow=3.9,SNR=6.7						

NIED **12** *09:40:00, 37°.60N×142°.00E, h11km, Mw4.3 Best double couple: M0 3.09000×10^15 NP1:φs105.00000°, δ36.00000°, λ-89.00000°. NP2:φs284.00000°, δ54.00000°, λ-91.00000°.*
ISCJB **12** *09:40:40.6±0.9, 37°.56N±0°.03×142°.07E±0°.04, h17km±5km, mb4.5/69, MS4.0/5, Error ellipse: s-maj=6.0km s-min=3.9km az=23.8*
JMA **12** *09:40:41.3±0.1, 37°.62N×142°.05E, h25km±3km, M4.5*
JMA Felt II J1.
MOS **12** *09:40:43.3±1.2, 37°.58N×142°.01E, h37km, mb4.6/37, Error ellipse: s-maj=8.7km s-min=5.6km az=103.0*
IDC **12** *09:40:44.5±3.9, 37°.56N×141°.98E, h33km±29km, mb4.2/34, mb1 4.3/38, mb1mx4.2/66, mbtmp4.4/38, ML4.3/3, MS3.4/4, Ms1 3.5/4, ms1mx3.0/49, Error ellipse: s-maj=13.9km s-min=9.5km az=92.0*
NEIC **12** *09:40:45.2±0.6, 37°.58N×142°.00E, h38km±5km, mb4.6/15, Error ellipse: s-maj=6.8km s-min=4.5km az=116.0*
ISC 12 09:40:43.2±0.9, 37°.60N±0°.04×141°.97E±0°.05, h25km±5km, n147, σ1s48/150, mb4.5/69, MS3.8/5, 3C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.90**	**255**	P	**Pn**	**09 40 58.8**	**-1.5**
JFK				*e*S	**Sb**	**09 41 11.5**	**-0.3**
JMM	**Marumori**	**0.97**	**286**	P	**Pn**	**09 40 59.9**	**-1.3**
JMM				*e*S	**Sb**	**09 41 12.8**	**-0.9**
JIO	**Ouri**	**0.98**	**330**	P	**Pn**	**09 40 59.4**	**-2.0**
JIO				*e*S	**Sb**	**09 41 12.3**	**-1.7**
ONAJ	**Iwakimizuishiy**	**1.06**	**242**	P	**

KMI pP pP 09 47 45.1 -0.5
KMI sP sP 09 47 49.0 +0.4
KMI pmax pmax
comp=Z,14nm,1.0s
ZALV Zalesovo Beam 41.86 312 P **P 09 48 31.2 +0.3**
comp=Z,3.6nm,0.7s,baz=89,slow=7.1,SNR=8.5
ZALV PcP **PcP 09 50 26.1 -0.3**
comp=Z,1.3nm,0.4s,baz=108,slow=3.3,SNR=3.5
CMAR Chiang Mai Arr 42.07 255 P **P 09 48 34.0 +0.9**
comp=Z,2.7nm,0.6s,baz=19,slow=5.7,SNR=7.1
CMAR LR LR 10 07 44.4
comp=Z,52nm,18.7s,baz=140,slow=38
NVS Novosibirsk 42.77 313 *eP* **P 09 48 38.2 -0.2**
NRIK Noril'sk 42.94 335 P **P 09 48 41.9 +2.3**
comp=Z,1.6nm,0.3s,baz=132,slow=7.8,SNR=3.0
MKAR Makanchi Array 44.20 302 P **P 09 48 50.3 +0.2**
comp=Z,1.5nm,0.5s,baz=83,slow=9.9,SNR=8.4
KURK Kurchatov 45.93 308 *ceP* **P 09 49 04.2 +0.5**
KURK pmax pmax
comp=Z,19nm,0.6s
KURK Kurchatov 45.93 308 *eP* **P 09 49 03.6 -0.1**
comp=Z,64nm,0.6s
KURBB Kurchatov Arra 46.00 308 P **P 09 49 04.5 +0.2**
comp=Z,6.2nm,0.7s,baz=81,slow=7.9,SNR=12
PDGK Podgornoye 46.91 298 P **P 09 49 12.2 +0.8**
PDGK pmax pmax
comp=Z,12nm,0.9s
RAMN Ramite 47.41 274 *eP* **P 09 49 16.1 +0.2**
comp=Z,40nm,0.7s
GUN Gumba 47.54 275 *eP* **P 09 49 18.0 +0.9**
comp=Z,60nm,0.9s
KKN Kakani 48.07 276 *eP* **P 09 49 21.4 +0.4**
comp=Z,35nm,0.8s
GKN Gorkha 48.48 276 *eP* **P 09 49 24.5 +0.4**
comp=Z,77nm,0.8s
ILAR Eielson Array 48.78 33 P **P 09 49 25.6 -0.1**
comp=Z,2.3nm,0.8s,baz=266,slow=6.1,SNR=7.7
KOLN Koldanda 49.41 276 *eP* **P 09 49 31.5 +0.2**
comp=Z,17nm,0.8s
PYUN Piuthan 49.74 277 *eP* **P 09 49 34.3 +0.5**
comp=Z,79nm,0.9s
OTUK Ortayu 50.45 306 P **P 09 49 39.2 +0.5**
OTUK pmax pmax
comp=Z,8.0nm,1.1s
FRU Bishkek 50.46 298 *eP* P 09 49 46.0 +7.1
BVAR Borovoye Array 50.52 312 P **P 09 49 39.1 0.0**
comp=Z,1.1nm,0.5s,baz=77,slow=7.8,SNR=4.5
BVAR PcP **PcP 09 50 57.3 +0.5**
comp=Z,2.3nm,0.7s,baz=64,slow=3.4,SNR=4.5
BRVK Borovoye 50.58 312 *iP* **P 09 49 40.4 +0.9**
BRVK pmax pmax
comp=Z,4.0nm,1.0s
BRVK Borovoye 50.58 312 *eP* **P 09 49 40.1 +0.6**
comp=Z,9.3nm,0.7s
KSH Kashi 50.58 294 *eP* P 09 49 44.8 +4.9
KSH *epP* sP 09 50 09.8 +19
KSH *eScP* **ScP 09 54 43.3 -8.6**
KSH S S 09 57 01.2 +8.2
KSH ScS **ScS 09 59 23.6 -5.8**
KSH pmax pmax
comp=Z,4.0nm,0.4s
KSH pmax pmax
comp=Z,40nm,4.5s
KSH LR LR
comp=N,120nm,6.3s
KSH LR LR
comp=E,120nm,10.7s
KSH LR LR
comp=Z,120nm,12.0s
AAK Ala-Archa 50.61 298 P **P 09 49 40.7 +0.5**
comp=Z,1.6nm,0.3s,baz=107,slow=12,SNR=2.8
AAK Ala-Archa 50.61 298 *iP* **P 09 49 39.5 -0.7**
AAK pmax pmax
comp=Z,5.0nm,0.9s
AAK Ala-Archa 50.61 298 *eP* P 09 49 48.8 +8.6
MNAS Manas 52.05 299 P **P 09 49 52.0 +1.1**
MNAS pmax pmax
comp=Z,16nm,1.0s
KKAR Karatay Array 53.23 300 *eP* **P 09 50 00.0 +0.5**
KKAR pmax pmax
comp=Z,2.0nm,0.5s
KKAR Karatay Array 53.23 300 *eP* **P 09 50 00.0 +0.5**
comp=Z,2.2nm,0.5s
INK Inuvik 53.68 27 P **P 09 50 02.8 +0.5**
comp=Z,1.5nm,0.7s,baz=317,slow=3.9,SNR=2.6
SVE Sverdlovsk 55.02 318 *eP* **P 09 50 13.1 +0.8**
SVE pmax pmax
comp=Z,24nm,0.8s
ARU Arti 56.23 318 P **P 09 50 20.9 -0.1**
comp=Z,3.7nm,0.4s,baz=100,slow=6.3,SNR=6.5
ARU Arti 56.23 318 *diP* **P 09 50 21.0 0.0**
ARU 09 52 25.3
ARU S **S 09 58 10.6 +1.7**
ARU SS **SS 10 01 52.8 -2.3**
ARU pmax pmax
comp=Z,9.0nm,1.0s
ARU Arti 56.23 318 *eP* **P 09 50 21.0 0.0**
FITZ Fitzroy Crossi 57.50 198 P **P 09 50 30.9 +0.6**
comp=Z,3.0nm,0.6s,baz=15,slow=5.5,SNR=7.5
FITZ Fitzroy Crossi 57.50 198 *eP* **P 09 50 30.8 +0.5**
comp=Z,3.6nm,0.8s
CTA Charters Tower 57.52 175 P **P 09 50 30.6 +0.2**
comp=Z,2.3nm,0.6s,baz=31,slow=10,SNR=4.0
KBL Kabul 57.63 291 P **P 09 50 30.9 -0.6**
KBL pmax pmax
comp=Z,15nm,1.1s
WRAB Tennant Creek 57.68 188 *ceP* **P 09 50 31.6 0.0**
WRAB Tennant Creek 57.68 188 *eP* **P 09 50 31.3 -0.2**
comp=Z,17nm,0.8s
WRA Warramunga Arr 57.69 189 P **P 09 50 31.2 -0.4**
comp=Z,18nm,0.7s,baz=6,slow=7.2,SNR=43
ABKAR Akbulak array 57.91 310 *eP* **P 09 50 32.6 -0.4**
comp=Z,6.4nm,0.6s
AKTO Aktyubinsk 58.63 312 P **P 09 50 37.2 -0.7**
comp=Z,2.3nm,0.9s,baz=72,slow=13,SNR=4.8
ASAR Alice Springs 61.41 188 P **P 09 50 57.4 0.0**
comp=Z,12nm,0.7s,baz=11,slow=6.4,SNR=61
MBWA Marble Bar 62.09 204 *eP* **P 09 51 02.3 +0.5**
YKA Yellowknife Ar 63.09 30 P **P 09 51 08.1 0.0**
comp=Z,1.1nm,0.7s,baz=302,slow=6.7,SNR=5.9
KLMR Klimovskoe 63.51 328 *eP* P 09 51 14.5 +3.6
KLMR pmax pmax
comp=Z,9.0nm,1.3s
ARCES ARCESS Array B 63.62 339 P **P 09 51 13.4 +1.9**
comp=Z,1.7nm,0.7s,baz=51,slow=7.2,SNR=2.9
GEYT Alibeck 63.95 299 P **P 09 51 14.7 +0.5**
comp=Z,1.2nm,0.3s,baz=339,slow=7.7,SNR=2.3
OBN Obninsk 67.91 323⇓ *eP* **P 09 51 40.2 +0.9**
OBN *e* 09 52 05.1
OBN *eS* **S 10 00 35.7 -0.5**
OBN pmax pmax
comp=Z,6.0nm,1.0s
OBN MLR MLR
comp=Z,44nm,15.0s
FINES FINESS Array B 68.52 332 P **P 09 51 42.7 -0.3**
comp=Z,1.9nm,0.6s,baz=38,slow=9.6,SNR=5.9
STKA Stephens Creek 69.12 180 P **P 09 51 46.8 -0.3**
comp=Z,2.8nm,0.7s,baz=21,slow=6.7,SNR=5.4
FORT Forrest 69.26 193 *eP* **P 09 51 48.5 +0.5**
comp=Z,251nm,0.6s
SUMG Summit 70.12 0 *eP* **P 09 51 53.9 +0.6**
SUMG Summit 70.12 0 *eP* **P 09 51 53.9 +0.6**
NCK Nalchik 70.58 310 *eP* **P 09 51 57.7 +1.5**
KBZ Khabaz 70.87 311 P **P 09 51 58.4 +0.5**
comp=Z,2.1nm,0.6s,baz=71,slow=4.8,SNR=3.9
KIV Kislovodsk 70.87 311 *eP* **P 09 52 00.1 +2.1**
KIV pmax pmax
comp=Z,23nm,1.1s
NEY Neytrino 71.24 310 *eP* **P 09 52 01.4 +1.0**
NEY pmax pmax
comp=Z,1.0nm,0.8s
MFID Camas Ranch 72.92 48 *eP* **P 09 52 11.0 +0.6**
comp=Z,1.6nm,1.1s
FFC Flin Flon 72.99 33 *eP* **P 09 52 10.1 -0.3**
FFC pmax pmax
comp=Z,2.0nm,0.4s
FFC Flin Flon 72.99 33 *eP* **P 09 52 10.1 -0.3**
comp=Z,1.7nm,0.4s
HLID Hailey 73.66 47 *eP* **P 09 52 11.8 -3.0**
comp=Z,0.7nm,0.7s
HFS Hagfors 73.75 336 P **P 09 52 14.8 0.0**
comp=Z,3.0nm,0.7s,baz=25,slow=3.9,SNR=7.4
NB2 NORSAR Subarra 73.83 337 P **P 09 52 14.6 -0.7**
comp=Z,4.5nm,1.0s,baz=39,slow=5.9
NOA NORSAR Array B 73.83 337 P **P 09 52 14.9 -0.4**
comp=Z,0.7nm,0.6s,baz=30,slow=8.1,SNR=4.3

AKASG Malin Array Be 74.12 322 P **P 09 52 16.8 -0.3**
comp=Z,1.5nm,0.4s,baz=46,slow=6.0,SNR=8.0
KIEV Kiev 74.13 322 *eP* **P 09 52 17.0 -0.2**
KIEV pmax pmax
comp=Z,3.0nm,1.0s
DUG Dugway, Tooele 76.65 49 *eP* **P 09 52 32.9 +0.8**
DUG pmax pmax
comp=Z,2.0nm,0.6s
DUG Dugway, Tooele 76.65 49 *eP* **P 09 52 32.9 +0.8**
comp=Z,1.8nm,0.6s
PDAR Pinedale Array 76.95 46 P **P 09 52 34.1 +0.2**
comp=Z,1.4nm,0.6s,baz=283,slow=1.9,SNR=12
STHS Stebnicka Huta 78.75 325 *eP* P 09 52 47.5 +4.1
STHS pmax pmax
comp=Z,4.0nm,1.0s
STHS Stebnicka Huta 78.75 325 *eP* P 09 52 47.5 +4.1
BRTR Keskin Array B 78.81 312 P **P 09 52 44.5 +0.4**
comp=Z,0.5nm,0.4s,baz=88,slow=6.6,SNR=3.6
CRVS Cervenica-Dubn 79.02 325 *eP* **P 09 52 46.9 +2.0**
CRVS Cervenica-Dubn 79.02 325 *eP* **P 09 52 46.9 +2.0**
DPC Dobruska-Polom 80.21 328 *eP* **P 09 52 52.7 +1.3**
DPC *e*PCP **pP 09 52 58.5 -0.9**
DPC Dobruska-Polom 80.21 328 *eP* **P 09 52 52.7 +1.3**
WUAZ Wupatki 80.46 52 *eP* **P 09 52 54.0 +0.8**
comp=Z,4.9nm,1.0s
PV01 Paradox Valley 80.50 49 *eP* **P 09 52 54.1 +0.7**
comp=Z,242nm,1.0s
VRAC Vranov 80.88 327 P **P 09 52 55.7 +0.7**
comp=Z,3.9nm,0.5s,baz=79,slow=4.9,SNR=4.4
URZ Urewera 82.15 153 LR LR 10 26 19.9
comp=Z,2μm,21.3s,baz=32,slow=33
KHC Kasperske Hory 82.29 329 *eP* **P 09 53 03.0 +0.5**
KHC *e*PCP **pP 09 53 09.4 -1.1**
KHC Kasperske Hory 82.29 329 *eP* **P 09 53 03.0 +0.5**
KHC *e* 09 53 09.4
GERES GERESS Array B 82.46 328 P **P 09 53 03.2 -0.2**
comp=Z,0.4nm,0.3s,baz=38,slow=6.8,SNR=6.2
ANMO Albuquerque 83.88 50 *ceP* **P 09 53 11.0 -0.2**
ANMO pmax pmax
comp=Z,7.0nm,1.7s
ANMO Albuquerque 83.88 50 *eP* **P 09 53 12.0 +0.8**
comp=Z,3.8nm,1.1s
STU Stuttgart 84.33 331 *eP* **P 09 53 15.3 +2.4**
STU Stuttgart 84.33 331 *eP* **P 09 53 15.3 +2.4**
comp=Z,54nm,0.6s
121A Cookes Peak, D 84.66 53 *eP* **P 09 53 15.9 +0.8**
comp=Z,3.3nm,0.8s
SCHQ Schefferville 84.67 16 P **P 09 53 14.9 +0.4**
comp=Z,1.0nm,0.3s,baz=0.0,slow=4.0,SNR=2.9
BFO Black Forest 85.02 331 *iP* P 09 53 21.2 +4.7
AMTX Amarillo 86.78 48 *eP* **P 09 53 26.3 +0.8**
comp=Z,3.6nm,0.5s
TXAR Lajitas Array 89.42 53 P **P 09 53 38.6 +0.4**
comp=Z,1.4nm,0.5s,baz=305,slow=3.1,SNR=22
MIAR Mount Ida 91.60 43 *eP* **P 09 53 48.0 -0.1**
MIAR pmax pmax
comp=Z,5.0nm,0.9s
MIAR Mount Ida 91.60 43 *eP* **P 09 53 48.0 -0.1**
comp=Z,4.8nm,0.9s
BOSA Boshof 127.11 260 PKP **PKPdf 09 59 44.9 -0.6**
comp=Z,1.4nm,0.8s,baz=71,slow=5.1,SNR=3.2
LPAZ La Paz 146.02 60 PKPbc **PKPab 10 00 21.8 -0.8**
comp=Z,7.5nm,0.8s,baz=351,slow=2.6,SNR=15

NEIC ***12*** *09:48:42.5, 15.58N×93.91W, h16km, mb4.2/2, MD4.2(MEX), After MEX.*

MEX 12 09:48:42.4±0.4, 15.58N×93.91W, h16km±6km, MD4.2, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGIG		**1.41**	**32**	*eP*	Pn	09 49 03.9	-3.6
TGIG				*eS*	Sn	09 49 20.8	-5.0
TGIG		**1.41**	**32**	*eP*	Pn	09 49 03.9	-3.6
TGIG				*eS*	Sn	09 49 20.8	-5.0
CCIG	**Comitan**	**1.84**	**68**	*eP*	Pn	09 49 10.0	-3.5
CCIG				*iS*	Sn	09 49 32.1	-4.5
CCIG	**Comitan**	**1.84**	**68**	*eP*	Pn	09 49 10.0	-3.5
CCIG				*iS*	Sn	09 49 31.9	-4.7
HUIG	**Huatulco**	**2.12**	**275**	*eP*	Pn	09 49 14.1	-3.1
HUIG				*iS*	Sn	09 49 38.7	-4.5
HUIG	**Huatulco**	**2.12**	**275**	*eP*	Pn	09 49 14.1	-3.1
HUIG				*iS*	Sn	09 49 38.7	-4.5
TIGA	**Tifton**	**18.39**	**29**	*eP*	Pn	09 52 57.0	+0.3
	13nm,0.4s						
WMOK	**Wichita Mounta**	**19.57**	**348**	*eP*	P	09 53 07.7	-2.0
	1.0nm,0.8s						
V34A	**Guthrie**	**20.43**	**352**	*eP*	Pn	09 53 20.5	-0.6
	2.1nm,0.3s						

IDC 12 10:00:48.5±7.5, 17.56S×168.63E, h48km±73km, mb3.6/3, mb1 3.8/4, mb1mx3.5/24, mbtmp3.9/4, ML3.8/1, MS3.5/1, Ms1 3.5/1, ms1mx2.9/34, Error ellipse: s-maj=71.3km s-min=54.7km az=135.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.93**	**204**	P	Pn	10 02 00.3	+0.1
	3.7nm,0.3s,baz=142,slow=15,SNR=11						
DZM				S	Sn	10 02 56.4	+0.3
	0.9nm,0.3s,baz=139,slow=23,SNR=1.8						
DZM				LR	LR	10 03 10.7	
	comp=Z,441nm,18.1s,baz=26,slow=29						
WRA	**Warramunga Arr**	**32.52**	**260**	P	P	10 07 14.9	-0.3
	0.9nm,1.1s,baz=81,slow=5.8,SNR=2.8						
ASAR	**Alice Springs**	**33.00**	**253**	P	P	10 07 19.6	+0.2
	0.8nm,0.5s,baz=81,slow=9.1,SNR=8.2						
H11S2	**WAKE ISLAND Hy**	**35.88**	**357**	T	T	10 45 27.9	
	baz=181,slow=76,SNR=7.5						
H11S3	**WAKE ISLAND Hy**	**35.88**	**357**	T	T	10 45 33.4	
	baz=181,slow=76,SNR=4.5						
H11S1	**WAKE ISLAND Hy**	**35.90**	**357**	T	T	10 45 30.6	
	baz=181,slow=76,SNR=4.0						
H11N1	**WAKE ISLAND Hy**	**37.08**	**357**	T	T	10 47 05.9	
	baz=186						
H11N3	**WAKE ISLAND Hy**	**37.09**	**357**	T	T	10 47 04.4	
	baz=186						
H11N2	**WAKE ISLAND Hy**	**37.10**	**357**	T	T	10 47 01.4	
	baz=186						
SONM	**Songino Array**	**85.54**	**323**	P	P	10 13 21.7	0.0
	1.4nm,0.9s,baz=116,slow=6.8,SNR=5.2						
TORD	**Torodi Ar. Bea**	**166.65**	**253**	PKP	PKPdf	10 20 49.0	-0.7
	0.9nm,1.1s,baz=188,slow=3.0,SNR=3.7						

MEX 12 10:06:42.2±0.4, 14.73N×92.76W, h79km±17km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.66**	**21**	*eP*	Pn	10 07 08.8	-1.0
CCIG				*iS*	Sn	10 07 28.1	-2.5
TGIG		**2.07**	**350**	*eP*	Pn	10 07 13.6	-1.5
TGIG				*eS*	Sn	10 07 38.7	-1.4

NNC 12 10:08:01.2±1.1, 49.07N×78.34E, h0km, mb3.8, mpv3.4, 20C-9D, Error ellipse: s-maj=9.2km s-min=7.0km az=98.0, Suspected Mining explosion., Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KURBB	**Kurchatov Arra**	**1.56**	**4**	P	Pn	10 08 29.8	-0.5
	16nm,0.3s						
KURBB				S	Sg	10 08 51.6	+0.2
	183nm,0.3s						
KURK	**Kurchatov**	**1.66**	**6**	⇓P	Pn	10 08 31.0	-0.6
	52nm,0.7s						
KURK				⇑S	Sn	10 08 53.7	+0.1
	102nm,0.4s						
MAKZ	**Makanchi**	**3.33**	**131**	⇑Pg	Pb	10 09 01.4	+0.3
	11nm,0.6s						
MAKZ				⇑Lg	Lg	10 09 47.8	
	23nm,0.4s						
MK31	**Makanchi Array**	**3.50**	**129**	⇑Pg	Pb	10 09 05.2	+1.2
	6.2nm,0.4s,baz=310,slow=11,SNR=73						
MK31				⇑Lg	Lg	10 09 53.6	
	17nm,0.4s,baz=318,slow=25,SNR=12						
OTUK	**Ortayu**	**4.06**	**261**	⇓Pn	Pn	10 09 04.5	-0.2
	1.1nm,0.4s						
OTUK				⇑Pg	Pg	10 09 17.5	-1.6
	4.8nm,0.5s						
OTUK				⇓Lg	Lg	10 10 09.5	
	2.9nm,0.3s						
VOSK	**Vostochnaya**	**5.92**	**311**	⇓Pn	Pn	10 09 28.8	-1.4
	0.5nm,0.3s						
VOSK				⇑Pg	Pg	10 09 51.7	-3.0
	3.3nm,0.5s						
VOSK				⇑Sn	Sn	10 10 42.2	+3.5
	8.7nm,0.7s						
VOSK				⇑Lg	Lg	10 11 07.7	
	9.7nm,0.6s						
BVA0	**Borovoye Array**	**6.39**	**311**	Pn	Pn	10 09 35.6	-1.0
	0.9nm,0.3s,baz=126,slow=14,SNR=8.3						
BVA0				⇑Pg	Pb	10 09 56.4	+3.2
	2.2nm,0.5s,baz=128,slow=16,SNR=5.4						
BVA0				⇑Sn	Sn	10 10 48.8	-1.4
	2.7nm,0.5s,baz=121,slow=22,SNR=6.0						
BVA0				⇓Lg	Lg	10 11 24.4	
	9.2nm,0.5s,baz=115,slow=27,SNR=3.6						
BRVK	**Borovoye**	**6.46**	**311**	⇓Pn	Pn	10 09 35.6	-1.9
	1.5nm,0.6s						
BRVK				⇑Sn	Sn	10 10 49.6	-2.3
	5.7nm,0.5s						
BRVK				⇑Lg	Lg	10 11 28.3	
	19nm,1.0s						
CHKZ	**Chkalovo**	**6.68**	**317**	⇑Pn	Pn	10 09 41.0	+0.4
	1.9nm,0.3s						
CHKZ				⇓Sn	Sn	10 11 00.6	+3.3
	4.9nm,0.7s						
CHKZ				⇑Lg	Lg	10 11 35.1	
	10nm,0.7s						
ZRNK	**Zerenda**	**7.06**	**307**	⇓Pn	Pn	10 09 44.2	-1.5
	1.6nm,0.5s						
ZRNK				⇓Sn	Sn	10 11 08.7	+2.0
	5.1nm,0.5s						
ZRNK				⇑Lg	Lg	10 11 47.0	
	8.4nm,0.8s						
MNAS	**Manas**	**7.74**	**214**	⇑Pg	Pb	10 10 22.4	+6.1
	1.4nm,0.6s						
MNAS				⇑Lg	Lg	10 10 53.2	
	3.0nm,0.6s						
KK31	**Karatay Array**	**8.07**	**225**	⇑P	Pn	10 09 55.7	-3.9
	0.3nm,0.3s,baz=290,slow=11,SNR=19						
KK31				⇑S		10 10 07.1	
	7.2nm,0.5s,baz=287,slow=32,SNR=105						

ISCJB ***12*** *10:09:44.0±0.1, 15.56S±0.04×173.27W±0.03, h10km, mb4.9/192, MS4.9/42, Error ellipse: s-maj=6.8km s-min=3.2km az=152.6*

IDC ***12*** *10:09:44.6±0.5, 15.44S×173.32W, h0km, mb4.8/25, mb1 4.9/25, mb1mx4.8/37, mbtmp4.8/25, MS4.7/23, Ms1 4.7/23, ms1mx4.6/31, Error ellipse: s-maj=18.0km s-min=12.8km az=119.0*

GCMT ***12*** *10:09:45.8±0.1, 15.31S×172.91W, h30km, MW5.4/118, Moment Tensor Solution. s98,c158; s118,c209; Duration: 1s2 Moment tensor: Scale 10^17Nm; Mrr1.16±.03; Mθθ0.22±.02; Mϕϕ-1.38±.02; Mrθ0.70±.03; Mθϕ-0.21±.01; Mϕr0.54±.03; Best double couple: Mo1.57700×10^17 NP1:ϕs31.00000°, δ63.00000°, λ116.00000°. NP2:ϕs164.00000°, δ37.00000°, λ50.00000°. Principal axes: T 1.5870, Plg63.0000°, Azm343.0000°; N -0.0240, Plg23.0000°, Azm199.0000°; P -1.5670, Plg14.0000°, Azm102.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***12*** *10:09:45.8±0.1, 15.49S×173.21W, h10km, mb5.0/155 Error ellipse: s-maj=7.3km s-min=3.6km az=147.0*

NEIC Felt [II] at Apia, Samoa.

BJI ***12*** *10:09:47.5, 15.17S×173.61W, h14km, mb5.0/26, mB5.5/27, Ms5.2/24, Ms7 5.0/22*

MOS ***12*** *10:09:48.6±1.2, 15.39S×173.29W, h33km, mb5.2/53, MS4.9/17, Error ellipse: s-maj=9.6km s-min=7.2km az=62.7*

ISC 12 10:09:46.7±1.1, 15.55S±0.06×173.13W±0.05, h16km±6km, n742, σ1$10/717, mb5.0/192, MS4.9/43, 44C-14D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**2.09**	**39**	Pn	Pn	10 10 15.5	-5.6
	432nm,0.3s,baz=196,slow=2.7,SNR=343						
AFI				Sn	Sn	10 10 35.3	-12
	3μm,0.3s,baz=232,slow=14,SNR=34						
AFI				LR	LR	10 11 07.4	
	comp=Z,8μm,21.2s,baz=231,slow=39						
AFI	**Afiamalu**	**2.09**	**39**	*ePn*	Pn	10 10 15.4	-5.8
AFI				*eSn*	Sn	10 10 34.6	-12
NIUE	**Niue**	**4.65**	**139**	P	**Pn**	**10 10 55.1**	**-1.2**
	baz=4.7						
MSVF	**Nonsavu**	**8.73**	**254**	*eP*	**Pn**	**10 11 55.0**	**+2.6**
MSVF	**Nonsavu**	**8.73**	**254**	*ePn*	**Pn**	**10 11 55.0**	**+2.6**
RAR	**Rarotonga**	**13.87**	**116**	Pn	**Pn**	**10 13 00.1**	**-2.6**
	9.9nm,0.3s,baz=250,slow=7.8,SNR=29						
RAR				Sn	Sn	10 15 27.0	-9.5
	2.9nm,0.3s,baz=138,slow=22,SNR=2.9						
RAR				LR	LR	10 17 17.1	
	comp=Z,4μm,18.8s,baz=312,slow=32						
RAR	**Rarotonga**	**13.87**	**116**	*ePn*	**Pn**	**10 13 00.2**	**-2.4**
DZM	**Mont Dzumac**	**20.38**	**248**	P	Pn	10 14 24.3	-0.8
	13nm,0.6s,baz=71,slow=20,SNR=6.7						
DZM				LR	LR	10 20 39.6	
	comp=Z,5μm,21.8s,baz=90,slow=32						
DZM	**Mont Dzumac**	**20.38**	**248**	*eP*	**P**	**10 14 23.2**	**+0.2**
	148nm,1.4s						
DZM				*eS*	**S**	**10 18 04.0**	**-7.0**
	818nm,22.4s						
DZM				*eLQ*	LQ	10 18 28.2	
	8μm,27.2s						
DZM				*eLR*	LR	10 19 23.4	
	9μm,26.1s						
DZM	**Mont Dzumac**	**20.38**	**248**	*eP*	**P**	**10 14 22.4**	**-0.6**
	47nm,0.9s						
TARA	**Tarawa**	**21.73**	**319**	*eP*	**P**	**10 14 38.0**	**+0.6**
	108nm,1.0s						
PAE	**Paea**	**22.66**	**99**	*eP*	**P**	**10 14 42.3**	**-5.2**
	24nm,1.3s						
PAE	**Paea**	**22.66**	**99**	*eT*	T	10 37 56.0	
	9.2nm,0.3s						
PPT	**Papeete**	**22.67**	**98**	LR	LR	10 21 08.2	
	comp=Z,2μm,21.3s,baz=240,slow=30						
PPT2	**Papeete2**	**22.67**	**98**	*eP*	**P**	**10 14 42.6**	**-5.0**
	72nm,1.2s						
PPT2				*eS*	S	10 18 39.3	-16
	1μm,26.5s						
PPT2				*eLQ*	LQ	10 18 59.0	
	2μm,30.8s						
PPT2				*eLR*	LR	10 20 16.0	
	6μm,25.0s,baz=265						
PPT2	**Papeete2**	**22.67**	**98**	*eT*	T	10 37 56.9	
	12nm,0.3s						
TIAR	**Tiarei**	**22.89**	**98**	*eT*	T	10 38 12.3	
	6.2nm,0.3s						
TVO	**Taravao**	**22.98**	**99**	*eT*	T	10 38 19.9	
	4.0nm,0.3s						
TBI	**Tubuai**	**23.61**	**113**	*eS*	S	10 18 56.3	-15
	1μm,27.2s						
TBI				*eLQ*	LQ	10 19 38.4	
	2μm,34.5s						
TBI				*eLR*	LR	10 20 34.0	
	7μm,27.0s,baz=286						
TBI	**Tubuai**	**23.61**	**113**	*eT*	T	10 39 10.9	
	30nm,0.3s						
URZ	**Urewera**	**24.20**	**199**	P	**P**	**10 15 04.0**	**+1.5**
	20nm,0.7s,baz=265,slow=6.0,SNR=9.9						
VAH	**Vaihoa**	**24.59**	**93**	*eP*	**P**	**10 15 00.7**	**-5.5**
	87nm,1.2s						
RPZ	**Rata Peaks**	**31.14**	**202**	P	**P**	**10 16 05.4**	**+0.8**
	17nm,0.7s,baz=34,slow=3.6,SNR=4.8						
RPZ				LR	LR	10 29 03.8	
	comp=Z,3μm,18.7s,baz=34,slow=37						
TAOE	**Nuku Hiva Isla**	**32.89**	**82**	*eS*	S	10 21 24.0	-14
	448nm,26.6s						
TAOE				*eLR*	LR	10 24 53.5	
	3μm,26.1s,baz=257						
TAOE	**Nuku Hiva Isla**	**32.89**	**82**	*eT*	T	10 50 29.3	
	118nm,0.2s						
EIDS	**Eidsvold**	**34.83**	**248**	P	**P**	**10 16 34.9**	**-2.1**
	baz=35,SNR=3.2						
EIDS	**Eidsvold**	**34.83**	**248**	*eP*	**P**	**10 16 36.1**	**-1.0**
	10nm,0.9s						
ARMA	**Armidale**	**35.49**	**239**	P	**P**	**10 16 41.4**	**-1.4**
	baz=36,SNR=8.3						
ARMA	**Armidale**	**35.49**	**239**	*eP*	**P**	**10 16 42.0**	**-0.8**
	12nm,0.8s						
RKT	**Rikitea**	**36.70**	**108**	*eS*	S	10 22 23.9	-12
	519nm,28.0s						

RKT eLR LR 10 26 48.9
4µm,25.8s,baz=281
RKT Rikitea 36.70 108 *e*T T 10 55 35.0
18nm,0.3s
RMQ Roma 37.07 247 P **P** **10 16 55.1 -1.3**
baz=37,SNR=8.2
CTA Charters Tower 38.86 257 P **P** **10 17 09.6 -2.0**
3.8nm,0.4s,baz=88,slow=12,SNR=6.9
CTA LR LR 10 30 49.8
comp=Z,2µm,22.0s,baz=78,slow=33
CTAO Charters Tower 38.86 257 *e*P **P** **10 17 09.2 -2.3**
CTAO Charters Tower 38.86 257 *e*P **P** **10 17 09.2 -2.3**
CNB Canberra Magne 38.86 233 P **P** **10 17 10.5 -0.9**
baz=39,SNR=12
CAN Canberra 39.14 233 P **P** **10 17 13.2 -0.6**
baz=39
PMG Port Moresby 39.20 274 P **P** **10 17 12.1 -2.3**
27nm,1.0s,baz=273,slow=16,SNR=2.3
PMG LR LR 10 31 34.0
comp=Z,620nm,18.3s,baz=171,slow=34
PMG Port Moresby 39.20 274 ⇓*i*P **P** **10 17 13.2 -1.2**
PMG pmax pmax
comp=Z,111nm,1.1s
H11S2 WAKE ISLAND Hy 39.23 329 T T 10 58 34.8
baz=149,slow=76,SNR=19
H11S3 WAKE ISLAND Hy 39.24 329 T T 10 58 46.3
baz=149,slow=76,SNR=22
H11S1 WAKE ISLAND Hy 39.24 329 T T 10 58 35.0
baz=149,slow=76,SNR=32
KIP Kipapa 39.63 22*c i*P **P** **10 17 20.4 +2.7**
H11N3 WAKE ISLAND Hy 40.17 330 T T 11 00 02.1
baz=150,slow=76
H11N1 WAKE ISLAND Hy 40.17 330 T T 10 59 54.5
baz=150,slow=76
H11N2 WAKE ISLAND Hy 40.19 330 T T 10 59 50.5
baz=150,slow=76
CMSA Cobar Meteorol 40.70 240 P **P** **10 17 25.0 -1.6**
baz=41,SNR=20
MTSU Mount Surprise 40.74 260 P **P** **10 17 25.7 -1.5**
baz=41,SNR=22
QLP Quilpie 41.10 247 P **P** **10 17 28.6 -1.4**
baz=41,SNR=15
COEN Coen 42.23 266 P **P** **10 17 39.4 -0.1**
baz=42,SNR=13
COEN Coen 42.23 266 *e*P **P** **10 17 39.1 -0.3**
comp=Z,45nm,0.9s
TOO Toolangi 42.57 231 P **P** **10 17 41.1 -0.8**
baz=43,SNR=3.9
STKA Stephens Creek 44.19 240 P **P** **10 17 53.9 -1.2**
comp=Z,28nm,0.9s,baz=87,slow=9.4,SNR=35
STKA Stephens Creek 44.19 240 P **P** **10 17 54.1 -0.9**
baz=44,SNR=23
STKA Stephens Creek 44.19 240 *e*P **P** **10 17 53.9 -1.2**
comp=Z,5.8nm,0.8s
QIS Mount Isa 45.09 256 P **P** **10 18 00.1 -2.4**
baz=45,SNR=5.2
HTT Hallett 46.69 239 P **P** **10 18 13.7 -1.2**
baz=47,SNR=9.1
BBOO Buckleboo 48.96 240 P **P** **10 18 31.0 -1.5**
baz=49,SNR=20
BBOO Buckleboo 48.96 240 *e*P **P** **10 18 31.0 -1.5**
comp=Z,22nm,0.8s
WB2 Warramunga Arr 50.05 257 *e*P **P** **10 18 39.0 -2.1**
WRAB Tennant Creek 50.05 257*ce*P **P** **10 18 39.3 -1.7**
WRAB pmax pmax
comp=Z,35nm,0.8s
WRAB Tennant Creek 50.05 257 *e*P **P** **10 18 39.0 -2.0**
comp=Z,14nm,0.7s
WR1 Warramunga Arr 50.06 257 *e*P **P** **10 18 38.5 -2.5**
WR1 *e*PcP **PcP** **10 20 00.7 -0.1**
WRA Warramunga Arr 50.06 257 P **P** **10 18 38.5 -2.6**
comp=Z,13nm,0.6s,baz=92,slow=6.8,SNR=263
WRA PcP **PcP** **10 20 00.7 -0.1**
comp=Z,7.1nm,0.8s,baz=86,slow=3.8,SNR=7.0
AS01 Alice Springs 50.27 252 *e*P **P** **10 18 40.5 -2.1**
AS01 Alice Springs 50.27 252 *e*ScP **ScP** **10 24 01.9 +4.9**
AS31 Alice Springs 50.31 252 *e*P **P** **10 18 41.4 -1.6**
comp=Z,11nm,0.8s
AS31 Alice Springs 50.31 252 *e*ScP **ScP** **10 24 02.6 +5.4**
ASAR Alice Springs 50.31 252 P **P** **10 18 41.0 -1.9**
comp=Z,62nm,1.0s,baz=87,slow=7.8,SNR=263
ASAR PcP **PcP** **10 20 01.7 0.0**
comp=Z,4.1nm,0.8s,baz=96,slow=4.7,SNR=4.4
ASAR LR LR 10 38 31.8
comp=Z,2µm,20.7s,baz=96,slow=34
GUMO Guam 50.63 303 LR LR 10 36 43.0
comp=Z,572nm,21.0s,baz=136,slow=32
MTN Manton Dam 53.98 265 *e*P **P** **10 19 08.9 -1.4**
comp=Z,20nm,0.9s
WRKA Warakurna 55.39 250 P **P** **10 19 18.8 -1.7**
baz=56,SNR=36
FORT Forrest 55.58 243 P **P** **10 19 19.9 -1.9**
baz=56,SNR=18
FORT Forrest 55.58 243 *e*P **P** **10 19 20.0 -1.7**
comp=Z,328nm,0.8s
KNRA Kununurra 55.80 261 P **P** **10 19 23.5 0.0**
baz=56
FITZ Fitzroy Crossi 58.43 258 P **P** **10 19 42.0 -0.1**
comp=Z,2.2nm,0.6s,baz=101,slow=8.0,SNR=6.0
FITZ Fitzroy Crossi 58.43 258 P **P** **10 19 41.5 -0.6**
baz=58,SNR=6.2
FITZ Fitzroy Crossi 58.43 258 *e*P **P** **10 19 42.0 -0.1**
comp=Z,29nm,1.6s
KMBL Kambalda 60.88 243 P **P** **10 19 57.1 -1.8**
baz=61,SNR=5.1
SOEI Soe 61.18 267 *e*P **P** **10 20 01.6 +0.3**
comp=Z,68nm,1.0s
SBA Scott Base 63.12 185 *e*P **P** **10 20 16.4 +3.3**
SBA pmax pmax
comp=Z,86nm,1.9s
SBA Scott Base 63.12 185 *e*P **P** **10 20 16.4 +3.3**
comp=Z,86nm,1.9s
VNDA Vanda 63.25 186 P **P** **10 20 16.3 +2.4**
comp=Z,2.4nm,0.8s,baz=9.3,slow=5.9,SNR=12
VNDA LR LR 10 41 36.9
comp=Z,211nm,21.1s,baz=20,slow=30
VNDA Vanda 63.25 186 *e*P **P** **10 20 16.5 +2.6**
comp=Z,7.6nm,1.0s
MEEK Meekatharra 64.00 248 P **P** **10 20 18.3 -1.5**
baz=64
KLBR Kellerberrin 64.40 242 P **P** **10 20 21.1 -1.2**
baz=64,SNR=16
NWAO Narrogin (SRO) 64.77 241 P **P** **10 20 24.0 -0.7**
comp=Z,9.3nm,0.8s,baz=245,slow=5.5,SNR=2.8
NWAO Narrogin (SRO) 64.77 241 P **P** **10 20 24.1 -0.6**
baz=65,SNR=5.3
NWAO P **P** **10 20 24.1 -0.6**
baz=65,SNR=5.3
NWAO Narrogin (SRO) 64.77 241 P **P** **10 20 24.0 -0.7**
NWAO pmax pmax
comp=Z,9.0nm,0.8s
RKGY Rocky Gully 64.91 239 P **P** **10 20 25.2 -0.4**
baz=65
BLDU Balliduu 65.35 243 P **P** **10 20 27.4 -1.1**
baz=66,SNR=9.7
MORW Morawa 66.05 245 P **P** **10 20 32.3 -0.8**
baz=66,SNR=5.2
GIRL Giralia 68.42 251 P **P** **10 20 48.1 -0.1**
baz=68,SNR=3.3
MJAR Matsushiro Arr 69.22 320 P **P** **10 20 52.0 -0.9**
comp=Z,4.3nm,0.9s,baz=156,slow=5.9,SNR=13
MJAR LR LR 10 45 39.0
comp=Z,907nm,21.7s,baz=135,slow=31
MJAR Matsushiro Arr 69.22 320 P **P** **10 20 52.0 -0.9**
MJAR pmax pmax
comp=Z,4.0nm,0.9s
MAJO Matsushiro 69.22 320 *e*P **P** **10 20 52.0 -0.8**
MAJO pmax pmax
comp=Z,40nm,0.6s
MAJO Matsushiro 69.22 320 *e*P **P** **10 20 52.0 -0.8**
comp=Z,40nm,0.6s
MAT Matsushiro 69.22 320 P **P** **10 20 51.4 -1.5**
KUR Kuril'sk 70.08 332 ⇑*i*P **P** **10 20 58.8 +0.9**
CASY Casey 70.38 205 *e*P **P** **10 20 59.8 +0.3**
comp=Z,7.7nm,0.8s
SKR Severo-Kuril's 71.25 340 ⇑*i*P **P** **10 21 05.7 +0.8**
ASAJ Asahikawa 71.80 328 P **P** **10 21 09.3 +0.9**
comp=Z,26nm,0.8s,baz=219,slow=7.5,SNR=38
ASAJ Asahikawa 71.80 328 *e*P **P** **10 21 09.1 +0.7**
comp=Z,27nm,0.8s
KMRM Mail Ridge 72.02 38 *e*P **P** **10 21 11.5 +1.6**
comp=Z,29nm,1.0s
JNU Nakatsue 72.09 313 P **P** **10 21 10.6 +0.1**
comp=Z,11nm,0.8s,baz=109,slow=5.1,SNR=7.5
JNU LR LR 10 47 29.4
comp=Z,405nm,20.8s,baz=118,slow=32
JNU Nakatsue 72.09 313 *e*P **P** **10 21 10.7 +0.2**
comp=Z,16nm,1.0s
VES Vestal, Richgr 72.27 44 P **P** **10 21 11.6 +0.1**
baz=235
BFSC Mount Baldy Ra 72.34 46 P **P** **10 21 12.2 +0.1**
baz=236
KHMM Horse Mountain 72.42 37 *e*P **P** **10 21 11.8 -0.7**
comp=Z,10nm,0.9s
EDW2 Edwards Air Fo 72.47 45 P **P** **10 21 13.1 +0.4**
baz=236
MONP2 Monument Peak 72.48 48 P **P** **10 21 13.7 +0.7**
baz=238
PET Petropavlovsk 72.50 343 *e*P **P** **10 21 12.0 -0.3**
PET *e* 10 23 59.8
PET *e*S **S** **10 30 34.3 -1.5**
PET *e*PS **PnS** **10 31 04.7 -2.7**
PET *e*PPS PPS 10 31 18.9
PET *e*SS **SS** **10 35 13.4 -1.8**
PET pmax pmax
comp=Z,300nm,17.5s
PET pmax pmax
comp=Z,300nm,17.6s
PET MLR MLR
comp=Z,500nm,21.0s
PET MLR MLR
comp=Z,500nm,17.0s
IKP In-Ko-Pah, Jac 72.57 48 P **P** **10 21 14.2 +0.8**
baz=238
ISA Isabella, Lake 72.58 44 P **P** **10 21 13.7 +0.4**
baz=237
TPFO Pinon Flats 72.83 47 P **P** **10 21 15.2 +0.2**
baz=237
PEA0 Petropavlovsk- 72.85 342 *e*P **P** **10 21 14.2 -0.3**
PEA0B Petropavlovsk- 72.85 342 *e*P **P** **10 21 13.9 -0.6**
comp=Z,88nm,1.6s
PETK Petropavlovsk- 72.85 342 P **P** **10 21 14.2 -0.3**
comp=Z,24nm,0.8s,baz=122,slow=8.4,SNR=32
PETK LR LR 10 48 49.8
comp=Z,293nm,20.5s,baz=161,slow=32
PEA1 Petropavlovsk- 72.86 342 *e*P **P** **10 21 14.2 -0.3**
BBRC Big Bear Solar 72.86 46 P **P** **10 21 15.5 +0.2**
baz=237
AFDM Forest Hills D 72.89 40 *e*P **P** **10 21 15.1 0.0**
comp=Z,9.8nm,1.3s
WDC Whiskeytown Da 72.94 38 *e*P **P** **10 21 14.6 -0.7**
WDC pmax pmax
comp=Z,24nm,1.6s
WDC Whiskeytown Da 72.94 38 *e*P **P** **10 21 14.6 -0.7**
comp=Z,24nm,1.6s
SWSC Sam W. Stewart 72.95 48 P **P** **10 21 15.8 +0.3**
baz=236
N02D Trinity Center 73.09 38 P **P** **10 21 17.3 +1.0**
baz=231,SNR=5.0
RRX Edison Barstow 73.15 46 P **P** **10 21 16.7 0.0**
baz=237
O03D Paynes Creek 73.20 39 P **P** **10 21 17.0 0.0**
baz=232
M02C Callahan 73.27 37 P **P** **10 21 18.2 +0.9**
baz=231,SNR=8.4
L02D Cave Junction, 73.32 36 P **P** **10 21 18.3 +0.7**
baz=230
BELC Belle Mtn. Jos 73.37 47 P **P** **10 21 18.1 0.0**
baz=238
MPMC Manual Prospec 73.46 44 P **P** **10 21 19.0 +0.2**
baz=236
GSC Goldstone, Bar 73.51 45 P **P** **10 21 19.1 +0.1**
baz=237
GSC Goldstone, Bar 73.51 45 *e*P **P** **10 21 19.0 +0.1**
GSC pmax pmax
comp=Z,12nm,1.1s
GSC Goldstone, Bar 73.51 45 *e*P **P** **10 21 19.0 +0.1**
comp=Z,12nm,1.1s
YBH Yreka Blue Hor 73.56 37 *e*P **P** **10 21 19.9 +0.8**
YBH pmax pmax
comp=Z,17nm,0.9s
YBH Yreka Blue Hor 73.56 37 *e*P **P** **10 21 19.9 +0.8**
comp=Z,17nm,0.9s
BC3 Big Chuckawall 73.57 47 P **P** **10 21 19.7 +0.4**
baz=238
HEC Hector,Ludlow 73.58 46 P **P** **10 21 19.7 +0.4**
baz=237
WAKR Walker 73.59 41 *e*P **P** **10 21 19.2 -0.2**
comp=Z,9.5nm,1.0s
GLA Glamis 73.70 48 P **P** **10 21 20.6 +0.5**
baz=239
YSS Yuzh-Sakhalins 73.74 330*ce*P **P** **10 21 20.0 +0.1**
YSS *e*S **SKiKP** **10 30 49.0 -0.1**
YSS *e*PS **PnS** **10 31 21.0 -2.9**
YSS pmax pmax
comp=Z,50nm,0.9s
YSS MLR MLR
comp=Z,300nm,18.0s
YSS Yuzh-Sakhalins 73.74 330 *e*P **P** **10 21 19.6 -0.3**
comp=Z,48nm,0.9s
PNTR Pine Nut 73.83 41 *e*P **P** **10 21 22.0 +1.2**
comp=Z,9.2nm,0.8s
TVH3 East Aurora ar 73.89 42 *e*P **P** **10 21 21.7 +0.4**
comp=Z,6.9nm,1.1s
TVH2 Borealis Mine 73.95 42 *e*P **P** **10 21 20.9 -0.7**
comp=Z,4.4nm,1.0s
HUMO Hull Mountain 73.98 36 *e*P **P** **10 21 22.1 +0.7**
comp=Z,25nm,1.5s
YERR Yerington 73.99 41 *e*P **P** **10 21 21.8 0.0**
comp=Z,10nm,1.1s
GMRC Granite Mounta 74.02 46 P **P** **10 21 22.0 0.0**
baz=238
IRM Iron Mountain 74.05 47 P **P** **10 21 22.4 +0.3**
baz=238
GRAC Grapevine Rang 74.07 43 P **P** **10 21 22.4 +0.3**
baz=236
M04C Macdoel 74.10 37 P **P** **10 21 22.8 +0.5**
baz=231,SNR=10
TUQ Turquoise Moun 74.19 46 P **P** **10 21 23.4 +0.5**
baz=237
SHOC Shoshone, Teco 74.20 45 P **P** **10 21 23.3 +0.4**
baz=237
Y12C Blythe 74.28 48 P **P** **10 21 23.8 +0.5**
baz=239
Y12C Blythe 74.28 48 *e*P **P** **10 21 22.9 -0.4**
comp=Z,111nm,1.0s
113A Mohawk Valley, 74.32 49 *e*P **P** **10 21 23.8 +0.2**
comp=Z,14nm,1.4s
PAHR Pah Rah Range 74.33 40 *e*P **P** **10 21 23.9 +0.2**
comp=Z,7.9nm,1.0s
I03D Drain, OR 74.46 35 P **P** **10 21 24.7 +0.6**
baz=230
QSPA South Pole Qui 74.49 180 *e*P **P** **10 21 26.2 +1.9**
comp=Z,48nm,1.3s
214A Organ Pipe Nat 74.61 50 P **P** **10 21 26.0 +0.6**
baz=240
K04D Chiloquin, OR 74.68 37 P **P** **10 21 26.0 +0.3**
baz=231
NEE2 Needles Airpor 74.74 47 P **P** **10 21 26.0 0.0**
baz=238
TPNV Topopah Spring 74.79 44 P **P** **10 21 26.3 -0.2**
baz=237
TPNV Topopah Spring 74.79 44 *e*P **P** **10 21 26.2 -0.2**
TPNV pmax pmax
comp=Z,9.0nm,0.9s
TPNV Topopah Spring 74.79 44 *e*P **P** **10 21 26.2 -0.2**
comp=Z,8.8nm,0.9s
KDAK Kodiak Island 75.02 11*ce*P **P** **10 21 27.7 +0.7**
I04A Tendick Farm, 75.04 35 P **P** **10 21 27.7 +0.1**
baz=231,SNR=5.5
MOD Modoc Plateau 75.08 38 *e*P **P** **10 21 28.2 +0.2**
comp=Z,12nm,0.9s
K05A Summer Lake 75.24 37 *e*P **P** **10 21 29.6 +0.7**
comp=Z,22nm,1.0s
SHPR Sheep Range 75.28 45 *e*P **P** **10 21 30.3 +1.0**
comp=Z,10nm,1.1s
J05D Fort Rock, OR 75.39 36 P **P** **10 21 30.2 +0.4**
baz=232
W13A Hualapai Mount 75.43 47 *e*P **P** **10 21 31.2 +0.9**
comp=Z,7.8nm,1.0s
Y14A Wickenburg 75.46 48 *e*P **P** **10 21 30.8 +0.5**
comp=Z,45nm,0.9s
G03D McMinnville, O 75.48 34 P **P** **10 21 30.6 +0.6**
baz=230
I05D Terrebonne, OR 75.98 36 P **P** **10 21 33.4 +0.4**
baz=231,SNR=9.2
R11A Troy Canyon, C 75.99 43 P **P** **10 21 33.5 +0.1**
baz=237
R11A Troy Canyon, C 75.99 43 *e*P **P** **10 21 33.5 +0.1**
comp=Z,7.2nm,1.3s
BMN Battle Mountai 76.10 41 *e*P **P** **10 21 34.0 +0.1**
BMN pmax pmax
comp=Z,29nm,1.6s
BMN Battle Mountai 76.10 41 *e*P **P** **10 21 34.0 +0.1**
comp=Z,29nm,1.6s
F04D Rainier, OR 76.18 33 P **P** **10 21 34.2 +0.2**
baz=230
E03A Lebam 76.19 33 *e*P **P** **10 21 34.6 +0.6**
comp=Z,22nm,1.0s
TUC Tucson 76.29 51 P **P** **10 21 35.2 +0.2**
baz=242
TUC Tucson 76.29 51 *e*P **P** **10 21 35.9 +0.8**
TUC pmax pmax
comp=Z,10.0nm,0.9s
TUC Tucson 76.29 51 *e*P **P** **10 21 35.9 +0.8**
comp=Z,9.8nm,0.9s
WVOR Wild Horse Val 76.39 38 *e*P **P** **10 21 35.9 +0.4**
WVOR pmax pmax
comp=Z,12nm,0.9s
WVOR Wild Horse Val 76.39 38 *e*P **P** **10 21 35.9 +0.4**
comp=Z,12nm,0.9s
KSRS Korea Array 76.45 315 P **P** **10 21 38.0 +2.3**
comp=Z,3.0nm,0.8s,baz=130,slow=5.8,SNR=3.5
KSRS Korea Array 76.45 315 P **P** **10 21 38.0 +2.3**
KSRS pmax pmax
comp=Z,3.0nm,0.8s
KS15 Wonju Array Si 76.47 315 *e*P **P** **10 21 37.6 +1.8**
G05D Wamic, OR 76.56 35 P **P** **10 21 36.6 +0.4**
baz=231
NLWA Neilton Lookou 76.59 32 *e*P **P** **10 21 37.2 +0.9**
comp=Z,13nm,1.2s
TYV Tymovskoe 76.60 333 *e*P **P** **10 21 36.8 +0.5**
TYV pmax pmax
comp=Z,40nm,1.0s
TYV MLR MLR
comp=E,1µm,18.0s
TYV MLR MLR
comp=Z,600nm,18.0s
TDL Tradedollar La 76.78 34 *e*P **P** **10 21 38.3 +0.8**
X16A Lo Mia Camp, P 76.82 48 *e*P **P** **10 21 39.0 +0.8**
comp=Z,14nm,1.0s
LCMT Little Creek M 76.86 45 *e*P **P** **10 21 38.9 +0.6**
comp=Z,20nm,1.6s
319A Douglas 76.98 52 *e*P **P** **10 21 38.6 -0.4**
comp=Z,14nm,0.9s
CCUT Cedar City 77.06 45 *e*P **P** **10 21 39.7 +0.2**
comp=Z,10nm,1.2s
MSHR Mys Shultsa 77.21 321*c i*P **P** **10 21 40.4 +0.5**
U15A North Rim 77.22 46 *e*P **P** **10 21 40.5 0.0**
comp=Z,13nm,1.0s
LON Longmire 77.25 33 *e*P **P** **10 21 39.3 -0.8**
LON pmax pmax
comp=Z,23nm,1.7s
LON Longmire 77.25 33 *e*P **P** **10 21 39.3 -0.8**
comp=Z,22nm,1.7s
SZCU Shurtz Canyon 77.27 45 *e*P **P** **10 21 41.6 +1.0**
comp=Z,28nm,1.4s
WUAZ Wupatki 77.41 47 P **P** **10 21 42.2 +0.7**
baz=240
WUAZ Wupatki 77.41 47 *e*P **P** **10 21 41.3 -0.1**
comp=Z,9.9nm,0.9s
D05A Enumclaw 77.43 33 *e*P **P** **10 21 42.0 +1.0**
comp=Z,58nm,1.3s
KSM Kuching 77.46 275 *e*P **P** **10 21 41.8 -0.2**
comp=Z,15nm,1.0s
RSO Redoubt South 77.51 10 *e*P **P** **10 21 40.9 -0.5**
ELK Elko 77.53 41 *e*P **P** **10 21 41.2 -0.8**
ELK pmax pmax
comp=Z,10.0nm,1.3s
ELK Elko 77.53 41 *e*P **P** **10 21 41.2 -0.8**
comp=Z,9.9nm,1.3s
USRK Ussuriysk Ar. 77.66 323 P **P** **10 21 43.9 +1.5**
comp=Z,9.0nm,1.0s,baz=98,slow=4.7,SNR=17
USRK LR LR 10 49 40.3
comp=Z,1µm,21.6s,baz=124,slow=31
PKCU Pink Cliffs 77.72 45 *e*P **P** **10 21 43.9 +0.6**
comp=Z,30nm,1.2s
HPIG 77.89 57 *e*P **P** **10 21 44.5 +0.2**
comp=Z,9.4nm,1.2s
G08A Pilot Rock 77.91 36 *e*P **P** **10 21 43.3 -0.6**
comp=Z,18nm,1.0s
A04D Lummi Island 78.05 31 P **P** **10 21 44.7 +0.3**
baz=229
B05A Bryant 78.07 32 P **P** **10 21 44.8 +0.2**
baz=230
MTPU Mount Pierson 78.11 45 *e*P **P** **10 21 47.0 +1.5**
comp=Z,12nm,1.0s
HAWA Hanford 78.25 35 *e*P **P** **10 21 46.3 +0.7**
comp=Z,24nm,1.3s
SPU Mount Spurr 78.31 10 *e*P **P** **10 21 45.6 -0.1**
MSU Marysvale 78.35 44 *e*P **P** **10 21 47.7 +1.0**
MSU Marysvale 78.35 44 *e*P **P** **10 21 47.7 +1.0**
W18A Petrified Fore 78.39 48 P **P** **10 21 47.1 +0.2**
baz=242
BMO Blue Mountains 78.59 37 *e*P **P** **10 21 47.5 -0.1**
comp=Z,14nm,1.0s
HABR Khabarovsk 78.60 328*de*P **P** **10 21 46.0 -1.5**
HABR *e* 10 21 55.0
HABR *e*PPP PPP 10 26 31.0
HABR *e*S **S** **10 31 42.6 -1.0**
HABR *e**SS sS 10 31 48.4 -4.1
HABR *e* 10 32 06.7
HABR *e*SS **SS** **10 36 47.1 -0.9**
HABR pmax pmax
comp=N,7.0nm,1.2s
HABR pmax pmax
comp=E,3.0nm,0.4s
HABR pmax pmax
comp=Z,20nm,1.2s
HABR MLR MLR
comp=Z,358nm,21.0s
121A Cookes Peak, D 78.64 52 P **P** **10 21 48.2 -0.1**
baz=243
MFID Camas Ranch 78.64 39 *e*P **P** **10 21 48.2 +0.2**
comp=Z,12nm,1.0s
DUG Dugway, Tooele 78.80 43 P **P** **10 21 49.3 +0.4**
baz=239
DUG Dugway, Tooele 78.80 43 *e*P **P** **10 21 49.1 +0.1**
DUG pmax pmax
comp=Z,15nm,1.1s
DUG Dugway, Tooele 78.80 43 *e*P **P** **10 21 49.1 +0.1**
comp=Z,15nm,1.1s
ZAIG Zacatecas 78.84 63 *e*P **P** **10 21 51.8 +2.0**
comp=Z,5.7nm,1.0s
D08A Wollman Farm, 78.99 34 *e*P **P** **10 21 49.6 -0.1**
comp=Z,18nm,0.9s
E09A Wood Farm, Sta 79.09 35 *e*P **P** **10 21 50.1 -0.1**
comp=Z,13nm,1.1s
NKL Nikolayevsk 79.09 334 *e*P **P** **10 21 50.0 0.0**
PMR Palmer 79.22 11 *e*P **P** **10 21 49.7 -0.9**
PMR pmax pmax
comp=Z,26nm,1.1s
PMR Palmer 79.22 11 *e*P **P** **10 21 49.7 -0.9**
comp=Z,26nm,1.1s
F10A Beach Ranch, E 79.29 36 *e*P **P** **10 21 51.2 -0.3**
comp=Z,19nm,0.9s
MDJ Mudanjiang 79.30 322 P **P** **10 21 52.7 +1.3**
MDJ pP pP 10 21 56.5 -0.3
MDJ PcP **PcP** **10 22 00.1 +0.5**
MDJ PP **PP** **10 24 52.3 +0.7**
MDJ S **S** **10 31 54.2 +2.9**
MDJ pmax pmax
comp=Z,14nm,1.1s
MDJ pmax pmax
comp=Z,170nm,5.5s
MDJ LR LR
comp=Z,500nm,22.9s
MDJ LR LR
comp=Z,670nm,22.3s
MDJ LR LR
comp=Z,1µm,21.1s
TT01 Tatalina 79.34 8 *e*P **P** **10 21 51.6 +0.4**
TMUT Trail Mountain 79.40 44 *e*P **P** **10 21 53.5 +1.0**
comp=Z,24nm,1.1s
DIV Divide 79.48 13 *e*P **P** **10 21 51.5 -0.6**
comp=Z,36nm,1.1s
B08A Colville Reser 79.56 33 *e*P **P** **10 21 52.2 -0.6**
comp=Z,14nm,1.0s
HLID Hailey 79.58 39 P **P** **10 21 53.8 +0.5**
baz=237,SNR=38
HLID Hailey 79.58 39 *e*P **P** **10 21 53.8 +0.5**
comp=Z,21nm,1.1s
BMRM Bremner River 79.60 14 *e*P **P** **10 21 52.2 -0.6**
comp=Z,51nm,1.2s
HVU Hansel Valley 79.65 41 *e*P **P** **10 21 53.7 +0.1**
HVU pmax pmax
comp=Z,17nm,1.1s
HVU Hansel Valley 79.65 41 *e*P **P** **10 21 53.7 +0.1**
comp=Z,17nm,1.1s
LLLB Lillooet 79.69 30 *e*P **P** **10 21 53.6 +0.1**
comp=Z,13nm,1.0s
CTU Camp Tracy 79.75 43 *e*P **P** **10 21 53.9 -0.3**

comp=Z,11nm,1.2s
CRQM Cirque 79.76 14 *e*P P 10 21 53.8 0.0
comp=Z,43nm,1.3s
SRU San Rafael Swe 79.77 45 *e*P P 10 21 54.8 +0.4
SRU pmax pmax
comp=Z,23nm,1.2s
SRU San Rafael Swe 79.77 45 *e*P P 10 21 54.8 +0.4
comp=Z,23nm,1.2s
KLU Klutina 79.78 13 *e*P P 10 21 54.1 +0.3
comp=Z,18nm,1.2s
C09A Chrisman Ranch 79.79 34 *e*P P 10 21 53.9 -0.2
comp=Z,14nm,1.0s
SCM Sheep Creek Mo 79.79 12 *e*P P 10 21 52.9 -1.0
SCM pmax pmax
comp=Z,21nm,0.8s
SCM Sheep Creek Mo 79.79 12 *e*P P 10 21 52.9 -1.0
comp=Z,21nm,0.8s
P17A Butcher Ranch, 79.80 44 *e*P P 10 21 53.8 -0.7
comp=Z,21nm,1.2s
JLU Jordanelle 79.90 43 *e*P P 10 21 54.3 -0.8
comp=Z,15nm,1.3s
LAZ Ladron 79.96 50 *e*P P 10 21 56.2 +0.7
DCM Dugout Coal Mi 80.02 44 *e*P P 10 21 56.1 +0.3
MNTX Cornudas Mount 80.11 53 P P 10 21 56.5 +0.4
baz=245
MNTX Cornudas Mount 80.11 53 *e*P P 10 21 56.7 +0.5
comp=Z,40nm,2.0s
TCUT Toone Canyon 80.19 42 *e*P P 10 21 56.3 -0.4
comp=Z,80nm,1.4s
BALM Baldy 80.19 15 *e*P P 10 21 55.5 -0.6
BALM pmax pmax
comp=Z,42nm,1.4s
BALM Baldy 80.19 15 *e*P P 10 21 55.5 -0.6
comp=Z,42nm,1.4s
BNM Barren Site 80.22 51 *e*P P 10 21 57.9 +0.9
PV05 Paradox Valley 80.25 46 *e*P P 10 21 58.6 +1.5
MVCO Mesa Verde 80.26 47 P P 10 21 57.7 +0.6
baz=242
MVCO Mesa Verde 80.26 47 *e*P P 10 21 57.6 +0.5
comp=Z,9.5nm,1.1s
LPM Los Pinos Moun 80.29 50 *e*P P 10 21 57.8 +0.5
HWUT Hardware Ranch 80.33 42 *e*P P 10 21 57.4 0.0
comp=Z,20nm,1.6s
MA2 Magadan 80.39 342 P P 10 21 56.4 -0.6
comp=Z,10nm,0.8s,baz=152,slow=10,SNR=3.6
MA2 Magadan 80.39 342 *e*P P 10 21 57.4 +0.4
CAST Castle Rocks 80.40 9 *e*P P 10 21 55.7 -1.3
comp=Z,13nm,1.1s
PV09 Paradox Valley 80.42 46 *e*P P 10 21 58.8 +0.8
PV10 Paradox Valley 80.43 46 *e*P P 10 21 58.4 +0.3
TX31 Lajitas Ar. Si 80.48 56 *e*P P 10 21 58.3 0.0
LTX Lajitas 80.48 56 *e*P P 10 21 59.0 +0.7
LTX Lajitas 80.48 56 *e*P P 10 21 59.0 +0.7
TXAR Lajitas Array 80.48 56 P P 10 21 59.0 +0.7
comp=Z,3.4nm,0.9s,baz=213,slow=8.2,SNR=33
TXAR LR LR 10 52 20.2
comp=Z,344nm,18.2s,baz=0.0,slow=32
PV01 Paradox Valley 80.64 46 *e*P P 10 21 59.6 +0.4
NEW Newport 80.69 34 P P 10 21 58.5 -0.5
baz=234
NEW Newport 80.69 34 *e*P P 10 21 58.9 0.0
NEW pmax pmax
comp=Z,6.0nm,0.9s
NEW Newport 80.69 34 *e*P P 10 21 58.9 0.0
comp=Z,5.8nm,0.9s
ANMO Albuquerque 80.70 50 P P 10 22 00.1 +0.6
baz=244
ANMO Albuquerque 80.70 50⇑ *i*P P 10 22 00.4 +0.9
ANMO pmax pmax
comp=Z,15nm,1.7s
ANMO Albuquerque 80.70 50 *e*P P 10 22 00.2 +0.6
comp=Z,9.9nm,1.0s
KTH Kantishna Hill 80.72 10 *e*P P 10 21 58.2 -0.5
comp=Z,29nm,1.2s
TRF Thorofare Moun 80.73 10 *e*P P 10 21 57.9 -1.1
comp=Z,30nm,1.2s
KLR Kul'dur 80.78 327 P P 10 21 59.5 +0.1
comp=Z,5.0nm,0.9s,baz=73,slow=3.0,SNR=14
SKAG Skagway 80.80 18 *e*P P 10 21 59.6 +0.4
comp=Z,24nm,1.2s
DHY Denali Highway 80.91 12 *e*P P 10 21 59.9 -0.1
comp=Z,24nm,1.4s
RND Reindeer 80.94 11 *e*P P 10 22 00.0 +0.1
RND pmax pmax
comp=Z,53nm,1.4s
RND Reindeer 80.94 11 *e*P P 10 22 00.0 +0.1
comp=Z,52nm,1.4s
MCMT McKenzie Canyo 81.21 39 *e*P P 10 22 02.3 +0.2
MCK McKinley 81.22 11 *e*P P 10 22 00.4 -1.0
MCK pmax pmax
comp=Z,42nm,1.0s
MCK McKinley 81.22 11 *e*P P 10 22 00.4 -1.0
comp=Z,42nm,1.0s
HYT Haines Junctio 81.28 17 *e*P P 10 22 02.2 +0.3
comp=Z,30nm,1.3s
CN2 Changchun 81.37 320 *e*P P 10 22 02.5 -0.1
CN2 *e*S S 10 32 14.0 +1.0
CN2 pmax pmax
comp=Z,10.0nm,0.8s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,300nm,24.0s
CN2 LR LR
comp=Z,400nm,24.0s
CN2 LR LR
comp=Z,400nm,24.0s
SNY Shenyang 81.56 318 ⇓P P 10 22 05.0 +1.4
SNY pmax pmax
comp=Z,15nm,1.6s
SNY pmax pmax
comp=Z,280nm,11.8s
SNY LR LR
comp=Z,260nm,19.2s
SNY LR LR
comp=Z,280nm,19.8s
SNY LR LR
comp=Z,520nm,26.3s
DLMT Dillon 81.65 38 *e*P P 10 22 04.7 +0.4
comp=Z,15nm,1.0s
MSO Missoula 81.65 37 P P 10 22 03.6 -0.6
baz=237,SNR=18
MSO Missoula 81.65 37 *e*P P 10 22 03.8 -0.4
comp=Z,52nm,1.7s
REDW Red Top Meadow 81.68 41 *e*P P 10 22 04.7 +0.1
comp=Z,21nm,1.2s
S22A 4UR Ranch, Cre 81.68 47 P P 10 22 05.1 +0.3
baz=243
S22A 4UR Ranch, Cre 81.68 47 *e*P P 10 22 05.7 +0.9
comp=Z,15nm,0.9s
TPAW Teton Pass 81.68 41 *e*P P 10 22 05.0 +0.4
comp=Z,12nm,0.9s
BSMT Bassoo Peak 81.73 35 *e*P P 10 22 04.5 -0.2
SNOW Snow King Moun 81.79 41 *e*P P 10 22 05.5 +0.4
comp=Z,23nm,1.2s
O20A White River Ci 81.81 45 P P 10 22 05.5 +0.2
baz=242,SNR=5.5
O20A White River Ci 81.81 45 *e*P P 10 22 05.9 +0.6
comp=Z,13nm,1.1s
IMW Indian Meadow 81.90 40 *e*P P 10 22 06.6 +0.8
comp=Z,16nm,1.1s
MOOW Moose Ponds 81.94 40 *e*P P 10 22 05.7 -0.3
comp=Z,22nm,1.4s
LOHW Long Hollow 81.96 41 *e*P P 10 22 06.3 +0.2
comp=Z,16nm,1.3s
LRM Limekiln Ridge 81.98 38 *e*P P 10 22 06.0 -0.1
WRH Wood River Hil 82.05 11 *e*P P 10 22 05.0 -0.7
comp=Z,48nm,1.0s
QLMT Earthquake Lak 82.07 39 *e*P P 10 22 07.5 +0.9
CHMT Chamberlain Mo 82.09 37 *e*P P 10 22 06.2 -0.5
DOT Dot Lake 82.10 13 *e*P P 10 22 05.5 -0.5
comp=Z,64nm,1.1s
SLMT Seeley Lake 82.13 36 *e*P P 10 22 05.7 -1.0
FLWY Flagg Ranch 82.14 40 *e*P P 10 22 07.8 +0.9
comp=Z,28nm,1.1s
YPP Pitchstone Pla 82.17 40 *e*P P 10 22 07.9 +0.7
comp=Z,19nm,1.4s
YHB Horse Butte 82.17 39 *e*P P 10 22 06.5 -0.6
comp=Z,24nm,0.9s
HDA Harding Lake 82.20 11 *e*P P 10 22 05.9 -0.6
comp=Z,18nm,1.0s
BW06 Boulder Array 82.20 42 P P 10 22 07.0 -0.3
baz=241,SNR=9.9
BW06 Boulder Array 82.20 42 *e*P P 10 22 07.1 -0.3
PD31 Pinedale Array 82.21 42 *e*P P 10 22 07.0 -0.4
PDAR Pinedale Array 82.21 42 P P 10 22 06.9 -0.4
comp=Z,4.5nm,0.9s,baz=208,slow=2.9,SNR=23

SMCO Snowmass 82.23 46 *e*P P 10 22 08.0 +0.2
comp=Z,16nm,1.0s
YFT Old Faithful 82.24 40 *e*P P 10 22 08.5 +1.0
comp=Z,22nm,1.4s
CCB Clear Creek Bu 82.26 11 *e*P P 10 22 05.9 -0.9
comp=Z,24nm,0.9s
YMR Madison River 82.27 40 *e*P P 10 22 08.8 +1.2
comp=Z,42nm,1.4s
BOZ Bozeman (W) 82.37 38 P P 10 22 08.3 +0.2
baz=239,SNR=18
BOZ Bozeman (W) 82.37 38 *e*P P 10 22 08.2 +0.2
BOZ pmax pmax
comp=Z,14nm,1.0s
BOZ Bozeman (W) 82.37 38 *e*P P 10 22 08.2 +0.2
comp=Z,14nm,1.0s
H17A Grant Village 82.38 40 *e*P P 10 22 09.7 +1.5
comp=Z,15nm,1.1s
COLA College 82.46 11 *e*P P 10 22 07.0 -0.8
COLA pmax pmax
comp=Z,26nm,0.9s
COLA College 82.46 11 *e*P P 10 22 07.0 -0.8
comp=Z,26nm,0.9s
IL1 Eielson Array 82.54 11 *e*P P 10 22 06.5 -1.8
ILAR Eielson Array 82.54 11 P P 10 22 07.2 -1.1
comp=Z,2.0nm,0.7s,baz=219,slow=6.1,SNR=27
ILAR LR LR 10 56 08.7
comp=Z,240nm,18.5s,baz=216,slow=34
ILB Eielson Array 82.54 11 *e*P P 10 22 06.9 -1.4
LKWY Lake 82.57 40 *e*P P 10 22 10.5 +1.3
LKWY pmax pmax
comp=Z,24nm,1.1s
LKWY Lake 82.57 40 *e*P P 10 22 10.5 +1.3
comp=Z,24nm,1.1s
SDCO Great Sand Dun 82.62 48 P P 10 22 10.0 +0.3
baz=244,SNR=14
SDCO Great Sand Dun 82.62 48 *e*P P 10 22 10.2 +0.4
comp=Z,7.8nm,0.9s
SEY Seymchan 82.73 345 P P 10 22 08.9 -0.4
comp=Z,12nm,0.9s,baz=150,slow=4.6,SNR=6.0
HRY Holter Researc 82.81 37 *e*P P 10 22 10.8 +0.6
WALA Waterton Lakes 82.89 35 *e*P P 10 22 11.4 +0.8
comp=Z,13nm,1.0s
MSTX Muleshoe 83.05 52 P P 10 22 11.9 +0.1
baz=246,SNR=5.3
MSTX Muleshoe 83.05 52 *e*P P 10 22 11.7 -0.1
comp=Z,19nm,1.1s
832A Faith Ranch, C 83.07 58 P P 10 22 11.8 0.0
baz=248
T25A Trinidad 83.14 49 P P 10 22 12.3 -0.1
baz=245,SNR=9.3
T25A Trinidad 83.14 49 *e*P P 10 22 12.8 +0.5
comp=Z,11nm,0.9s
933A Laredo 83.40 59 P P 10 22 13.5 -0.1
baz=249
Q24A Divide 83.41 47 P P 10 22 14.1 +0.3
baz=244,SNR=6.3
Q24A Divide 83.41 47 *e*P P 10 22 13.7 -0.1
comp=Z,20nm,1.1s
ISCO Idaho Springs 83.45 46 P P 10 22 14.2 +0.3
baz=244,SNR=6.1
ISCO Idaho Springs 83.45 46 *e*P P 10 22 14.4 +0.4
ISCO pmax pmax
comp=Z,41nm,1.9s
ISCO Idaho Springs 83.45 46 *e*P P 10 22 14.4 +0.4
comp=Z,41nm,1.9s
DAWY Dawson 83.50 14 *e*P P 10 22 13.3 -0.1
comp=Z,17nm,1.0s
RLMT Red Lodge 83.55 40 P P 10 22 14.7 +0.5
baz=241,SNR=7.6
RLMT Red Lodge 83.55 40 *e*P P 10 22 15.2 +1.0
comp=Z,18nm,1.0s
833A Chaparral WMA, 83.56 58 P P 10 22 14.5 +0.1
baz=249
GCMT Greycliff 83.63 39 *e*P P 10 22 14.9 +0.3
034A Hebbronville 83.69 60 P P 10 22 15.4 +0.3
baz=249
EGAK Eagle 83.71 13 *e*P P 10 22 14.0 -0.3
comp=Z,19nm,1.3s
N23A Red Feather La 83.71 45 P P 10 22 15.6 +0.3
baz=243,SNR=14
N23A Red Feather La 83.71 45 *e*P P 10 22 15.6 +0.3
comp=Z,19nm,0.9s
733A Divot King Ran 83.78 58 P P 10 22 15.5 0.0
baz=249
JCT Junction City 84.02 56 P P 10 22 17.0 +0.2
baz=248
JCT Junction City 84.02 56 *e*P P 10 22 17.8 +1.1
JCT pmax pmax
comp=Z,7.0nm,0.9s
JCT Junction City 84.02 56 *e*P P 10 22 17.8 +1.1
comp=Z,6.8nm,0.9s
K22A Casper 84.12 43 P P 10 22 17.4 +0.2
baz=243
K22A Casper 84.12 43 *e*P P 10 22 17.7 +0.5
comp=Z,18nm,1.0s
035A Encino 84.13 60 P P 10 22 17.4 +0.1
baz=249
633A Saathoff Ranch 84.15 57 P P 10 22 17.9 +0.5
baz=249
834A Tilden 84.18 59 P P 10 22 18.3 +0.7
baz=249
PHWY Pilot Hill 84.22 44 *e*P P 10 22 17.7 -0.2
comp=Z,9.6nm,0.8s
AMTX Amarillo 84.24 52 P P 10 22 18.1 +0.2
baz=247
AMTX Amarillo 84.24 52 *e*P P 10 22 18.2 +0.3
comp=Z,24nm,0.9s
COLD Coldfoot 84.25 9 *e*P P 10 22 18.7 +1.7
comp=Z,26nm,1.3s
533A Kerrville 84.48 57 P P 10 22 18.9 -0.2
baz=249
433A Art 84.69 56 P P 10 22 19.8 -0.4
baz=249,SNR=10
BILL Bilibino 84.69 352⇑ *e*P P 10 22 20.5 +1.2
BILL pmax pmax
comp=Z,8.0nm,1.1s
BILL MLR MLR
comp=Z,218nm,18.0s
534A Blanco 84.92 57 P P 10 22 21.0 -0.4
baz=249,SNR=7.3
ABTX Abilene, Hawle 84.94 54 P P 10 22 21.4 0.0
baz=248,SNR=13
ABTX Abilene, Hawle 84.94 54 *e*P P 10 22 21.5 +0.1
comp=Z,27nm,0.9s
333A Richland Sprin 84.98 56 P P 10 22 21.3 -0.3
baz=249,SNR=8.3
233A Rising Star 85.30 55 P P 10 22 23.0 -0.2
baz=249,SNR=7.4
434A Burnet 85.37 56 P P 10 22 23.4 -0.2
baz=249,SNR=9.9
EDM Edmonton 85.48 31 *e*P P 10 22 22.8 -0.8
EDM pmax pmax
comp=Z,25nm,1.1s
EDM Edmonton 85.48 31 *e*P P 10 22 22.8 -0.8
comp=Z,25nm,1.1s
133A Hamilton Ranch 85.50 55 P P 10 22 24.1 0.0
baz=248,SNR=5.6
334A Lometa 85.58 56 P P 10 22 24.6 0.0
baz=249,SNR=13
BJI Beijing 85.76 313 P P 10 22 26.4 +1.2
BJI S S 10 32 59.4 +1.9
BJI pmax pmax
comp=Z,11nm,0.9s
BJI pmax pmax
comp=Z,350nm,4.4s
BJI LR LR
comp=Z,160nm,27.9s
Z33A Whitaker Ranch 85.87 54 P P 10 22 26.0 0.0
baz=248,SNR=12
X32A Elmer 85.89 53 P P 10 22 26.0 0.0
baz=248,SNR=14
234A Clairette 85.90 55 P P 10 22 26.2 0.0
baz=249,SNR=8.5
134A White-Moore Ra 86.15 55 P P 10 22 27.5 +0.2
baz=249,SNR=5.9
LAO LASA Array 86.16 39 P P 10 22 27.7 +0.6
baz=243,SNR=7.0
LAO LASA Array 86.16 39 *e*P P 10 22 28.2 +1.0
comp=Z,43nm,1.4s
W32A Sentinel 86.18 52 P P 10 22 27.6 +0.1
baz=248,SNR=13
335A Moody 86.21 56 P P 10 22 27.6 0.0
baz=249
Y33A Hilltop Ranch, 86.24 53 P P 10 22 27.9 +0.1
baz=249
WMOK Wichita Mounta 86.39 53 P P 10 22 28.4 -0.1
baz=248
WMOK Wichita Mounta 86.39 53 *e*P P 10 22 28.3 -0.2
WMOK pmax pmax
comp=Z,15nm,1.5s
WMOK Wichita Mounta 86.39 53 *e*P P 10 22 28.3 -0.2
comp=Z,15nm,1.5s
RSSD Black Hills 86.40 42 P P 10 22 29.8 +1.2
baz=244
RSSD Black Hills 86.40 42 *e*P P 10 22 28.5 -0.1
RSSD pmax pmax
comp=Z,9.0nm,0.9s
RSSD Black Hills 86.40 42 *e*P P 10 22 28.5 -0.1
comp=Z,9.3nm,0.9s
WHTX Lake Whitney, 86.44 56 P P 10 22 29.0 +0.2
baz=249
WHTX Lake Whitney, 86.44 56 *e*P P 10 22 28.9 +0.2
comp=Z,13nm,0.9s
637A Eagle Lake 86.46 58 P P 10 22 29.1 +0.2
baz=250
436A Wall Ranch, Ga 86.54 57 P P 10 22 29.6 +0.3
baz=250,SNR=5.5
V32A Arapaho 86.55 52 P P 10 22 29.8 +0.5
baz=248
Z34A Collier Ranch, 86.56 54 P P 10 22 30.0 +0.6
baz=249
135A Vickery Place, 86.67 55 P P 10 22 30.2 +0.2
baz=249
336A Riesel 86.71 56 P P 10 22 30.4 +0.2
baz=250
W33A Caddo, Fort Co 86.78 52 P P 10 22 30.9 +0.5
baz=249
U32A Winter Ranch, 86.83 51 P P 10 22 31.2 +0.5
baz=248
H25A Fruitdale 86.90 42 P P 10 22 31.4 +0.5
baz=245
Y34A Reagan Ranch, 86.90 54 P P 10 22 31.4 +0.4
baz=249
Z35A Perchaven, San 87.07 54 P P 10 22 32.3 +0.5
baz=249
136A Ennis 87.34 55 P P 10 22 33.4 +0.2
baz=250
Y35A Marietta 87.44 54 P P 10 22 34.6 +1.0
baz=250
337A Centerville 87.46 57 P P 10 22 34.8 +1.0
baz=250
HIA Hailar 87.47 323⇑ *i*P P 10 22 34.6 +1.1
HIA pmax pmax
comp=Z,10.0nm,1.0s
438A Sam Houston St 87.60 57 P P 10 22 35.2 +0.8
baz=250
T33A Patterson Ranc 87.65 51 P P 10 22 35.2 +0.6
baz=249
X35A Drake 87.66 53 P P 10 22 35.6 +1.0
baz=250
Z36A Blue Ridge 87.69 55 P P 10 22 35.7 +0.8
baz=250
MAW Mawson 87.73 199 P P 10 22 35.2 +0.7
comp=Z,6.3nm,0.8s,baz=131,slow=6.8,SNR=10
MAW Mawson 87.73 199 *e*P P 10 22 35.1 +0.7
MAW pmax pmax
comp=Z,4.0nm,1.3s
MAW Mawson 87.73 199 *e*P P 10 22 35.0 +0.7
comp=Z,4.1nm,1.3s
237A Washetta, Mont 87.75 56 P P 10 22 35.7 +0.6
baz=250
R32A Long Quarter, 87.80 49 P P 10 22 35.8 +0.5
baz=248
W35A Tecumseh 88.00 53 P P 10 22 37.0 +0.7
baz=250
O31A Woolen Ranch, 88.00 47 P P 10 22 36.5 +0.3
baz=248
S33A Kaszmaul Farm, 88.02 50 P P 10 22 37.0 +0.6
baz=249
Y36A Durant 88.02 54 P P 10 22 37.2 +0.8
baz=250
Q32A Meitler Ranch, 88.12 49 P P 10 22 37.4 +0.6
baz=248
DGMT Dagmar 88.19 38 P P 10 22 37.9 +1.0
baz=244
X36A Centrahoma 88.20 53 P P 10 22 38.6 +1.3
baz=250
R33A Olander Ranch, 88.29 50 P P 10 22 38.6 +1.0
baz=249
Z37A Pogue Cattle C 88.30 55 P P 10 22 38.4 +0.7
baz=250
238A Jacksonville 88.31 56 P P 10 22 38.7 +0.9
baz=251
P32A Huiting Farm, 88.32 48 P P 10 22 38.9 +1.2
baz=248
GYA Guiyang 88.34 298 *e*P P 10 22 38.9 +0.6
GYA pmax pmax
comp=Z,10.0nm,1.0s
INK Inuvik 88.35 14 *e*P P 10 22 36.1 -1.0
INK pmax pmax
comp=Z,11nm,1.2s
INK Inuvik 88.35 14 *e*P P 10 22 36.1 -1.0
comp=Z,11nm,1.2s
T34A McClaskey Farm 88.42 51 P P 10 22 38.6 +0.4
baz=249
Y37A Hugo 88.57 54 P P 10 22 39.3 +0.3
baz=250
Q33A Connelly Farm, 88.65 49 P P 10 22 40.3 +1.0
baz=249
S34A Willow Spring 88.72 50 P P 10 22 41.0 +1.4
baz=249
K30A Basset 88.76 45 P P 10 22 40.8 +1.1
baz=248
R34A Isabella, Hill 88.83 50 P P 10 22 41.5 +1.4
baz=249
239A Gary 88.83 56 P P 10 22 41.5 +1.3
baz=251
T35A Sooner Cattle 88.89 51 P P 10 22 41.2 +0.7
baz=250
N32A Stulken Farm, 88.96 47 P P 10 22 42.0 +1.3
baz=248
J30A Dallas 89.08 44 P P 10 22 42.0 +0.7
baz=248
W37B Quinton 89.11 53 P P 10 22 42.2 +0.7
baz=250
PLCA Paso Flores 89.22 132 LR LR 10 53 55.1
comp=Z,753nm,20.8s,baz=324,slow=30
Q34A Chapman 89.27 49 P P 10 22 43.2 +1.0
baz=249
S35A Otter Creek Ra 89.30 51 P P 10 22 43.8 +1.5
baz=250
HHC Hu-ho-hao-te 89.32 313 *e*P P 10 22 43.0 +0.5
HHC pmax pmax
comp=Z,9.0nm,0.9s
HHC pmax pmax
comp=Z,190nm,6.5s
YAK Yakutsk 89.35 337 *i*P P 10 22 40.4 -1.6
YAK pmax pmax
comp=Z,9.0nm,1.0s
T36A Boggs Farm, Ca 89.41 51 P P 10 22 43.8 +0.9
baz=250
X38A Whitesboro 89.42 54 P P 10 22 42.9 -0.1
baz=251,SNR=6.2
P34A Walnut Farm, R 89.57 49 P P 10 22 43.9 +0.3
baz=250
V37A Hulbert 89.58 53 P P 10 22 43.8 +0.1
baz=251
R35A Emporia Munici 89.61 50 P P 10 22 44.5 +0.7
baz=250
U37A Salina 89.77 52 P P 10 22 44.8 +0.2
baz=251
W38A Poteau 89.79 54 P P 10 22 45.4 +0.7
baz=251
S36A Lake Cedric, C 89.85 51 P P 10 22 45.4 +0.5
baz=250
V38A Canehill 90.13 53 P P 10 22 46.5 +0.2
baz=251
YKA Yellowknife Ar 90.13 23 P P 10 22 45.3 -0.3
comp=Z,2.7nm,0.9s,baz=232,slow=4.2,SNR=17
YKA LR LR 10 57 20.5
comp=Z,50nm,19.8s,baz=180,slow=32
YKB5 Yellowknife Ar 90.13 23 *e*P P 10 22 44.6 -1.0
T37A Cheneyville 18 90.16 51 P P 10 22 46.5 +0.1
baz=251
N34A Lincoln 90.26 48 P P 10 22 47.3 +0.5
baz=250
MIAR Mount Ida 90.35 54 P P 10 22 47.8 +0.4
baz=251
Q36A Arnold C. Orve 90.37 50 P P 10 22 47.7 +0.4
baz=250
W39A Magazine 90.40 54 P P 10 22 47.6 +0.1
baz=251
M34A Aspy Farms, Fr 90.43 47 P P 10 22 48.1 +0.5
baz=250
S37A Fort Scott 90.44 51 P P 10 22 47.9 +0.2
baz=251

T38A Diamond 90.60 52 P P 10 22 48.5 +0.1
baz=251
R37A Teagarden Farm 90.62 50 P P 10 22 49.1 +0.6
baz=251
V39A Pettigrew 90.71 53 P P 10 22 49.2 +0.1
baz=251
A28A Rude Farm, Bot 90.74 39 P P 10 22 49.2 +0.3
baz=247
P36A Good Intent, A 90.77 49 P P 10 22 49.1 -0.1
baz=250,SNR=5.6
H32A Carlson Farm, 90.90 44 P P 10 22 49.9 +0.2
baz=249
Y41A Eaglette Beard 90.90 55 P P 10 22 50.8 +0.9
baz=252
U39A Green Forest 91.01 53 P P 10 22 50.7 +0.3
baz=252
S38A Stockton 91.08 51 P P 10 22 51.1 +0.5
baz=251
X41A Kaden, Bauxite 91.17 55 P P 10 22 51.7 +0.5
baz=252
ECSD EROS Data Cent 91.18 45 P P 10 22 51.2 +0.2
baz=250
R38A Fenwick Farm, 91.26 51 P P 10 22 51.4 -0.1
baz=251
KMI Kunming 91.32 296 P P 10 22 50.8 -1.6
KMI sP pP 10 22 59.2 +1.4
KMI SKS **SKSac** 10 33 22.2 -2.5
KMI S **S** 10 33 49.2 -2.1
KMI pmax pmax
comp=Z,8.0nm,0.8s
KMI pmax pmax
comp=Z,110nm,5.1s
KMI LR LR
comp=Z,130nm,20.7s
KMI LR LR
comp=Z,310nm,24.5s
KMI LR LR
comp=Z,330nm,22.0s
V40A Witts Springs 91.33 53 P P 10 22 51.8 -0.1
baz=252
A29A Manning Farm, 91.37 39 P P 10 22 51.8 +0.1
baz=248
P37A Lathrop 91.39 49 P P 10 22 51.2 -0.8
baz=251,SNR=6.7
H33A Prehn Over Nor 91.43 44 P P 10 22 52.1 -0.1
baz=250
U40A Yellville 91.48 53 P P 10 22 53.1 +0.5
baz=252
X301 Greenbrier Sit 91.49 54 *e*P P 10 22 54.7 +2.1
comp=Z,12nm,1.3s
X201 Greenbrier Sit 91.53 54 *e*P P 10 22 53.2 +0.3
comp=Z,5.0nm,0.9s
S39A Bolivar 91.54 51 P P 10 22 53.3 +0.4
baz=252
W41B Gary Mavity, V 91.59 54 P P 10 22 54.2 +1.2
baz=252
WHAR Wooly Hollow 91.59 54 *e*P P 10 22 54.3 +1.2
comp=Z,7.5nm,1.1s
344A Westbrook Farm 91.69 58 P P 10 22 55.0 +1.4
baz=253
Q38A Cooks Store, C 91.72 50 P P 10 22 53.5 -0.1
baz=252
R39A Chumby, Stover 91.95 51 P P 10 22 54.7 0.0
baz=252
CD2 Chengdu 92.11 301 *e*P P 10 22 55.0 -0.7
CD2 pP pP 10 22 59.5 -1.6
CD2 PP **PP** 10 26 34.5 -1.4
CD2 SKS **SKSac** 10 33 27.3 -1.3
CD2 S **S** 10 33 56.9 -0.9
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.8s
S40A Lebanon 92.13 52 P P 10 22 55.7 +0.2
baz=252
U41A Viola 92.20 53 P P 10 22 57.1 +1.3
baz=252
V42A Cord 92.44 54 P P 10 22 57.2 +0.2
baz=253
SYO Syowa Base 92.50 191‖ *e*P P 10 22 55.0 -1.7
SYO Syowa Base 92.50 191‖ *ep*P P 10 23 00.8 +4.1
SYO Syowa Base 92.50 191‖ *e*P P 10 23 05.8 +9.1
R40A Maddies Statio 92.52 51 P P 10 22 57.3 -0.1
baz=252
P39B Salisbury 92.53 50 P P 10 22 57.3 0.0
baz=252
T41A Mountain View 92.53 52 P P 10 22 57.8 +0.4
baz=253
S41A Jillco Farms, 92.70 52 P P 10 22 58.0 -0.2
baz=253
U42A Revenden 92.72 53 P P 10 22 58.3 0.0
baz=253
M38A Pleasantville 92.80 48 P P 10 22 59.3 +0.8
baz=252
B32A Ashes, Strandq 92.85 40 P P 10 22 58.7 +0.2
baz=250
Q40A Laux Farm, Aux 92.88 50 P P 10 22 59.3 +0.3
baz=252
CM01 Chiang Mai Arr 92.88 288 *e*P P 10 22 59.7 +0.3
CM31 Chiang Mai Arr 92.91 288 *e*P P 10 23 00.1 +0.6
CMAR Chiang Mai Arr 92.91 288 P P 10 23 00.1 +0.6
comp=Z,1.9nm,0.7s,baz=86,slow=2.9,SNR=5.1
K37A Belmond 92.91 46 P P 10 22 59.1 0.0
baz=252
A32A Rocking H Ranc 93.06 40 P P 10 22 59.6 0.0
baz=250
N39A Derby Farms, D 93.14 49 P P 10 22 59.8 -0.3
baz=252
J37A Redenius Farm, 93.14 46 P P 10 22 59.6 -0.5
baz=252
AGMN Agassiz Nation 93.24 41 P P 10 23 00.3 -0.1
baz=250
F35A Swanville 93.27 43 P P 10 23 00.2 -0.4
baz=251
O40A La Belle 93.36 49 P P 10 23 01.1 0.0
baz=253
VNA1 Neumayer--Stat 93.38 175 P P 10 23 02.6 +1.9
LZH Lanzhou 93.52 306 *e*P P 10 23 03.2 +1.0
LZH pP pP 10 23 08.0 +0.3
LZH sP sP 10 23 11.8 +2.2
LZH pmax pmax
comp=Z,13nm,1.0s
P41A Barry, Barry 93.83 50 P P 10 23 02.8 -0.6
baz=253
L39A Vinton 93.87 47 P P 10 23 02.9 -0.5
baz=253
ULM Lac du Bonnet 93.89 39 P P 10 22 59.6 -3.7
comp=Z,1.5nm,0.6s,baz=263,slow=1.6,SNR=2.2
ULM LR LR 11 01 45.6
comp=Z,476nm,18.2s,baz=280,slow=33
Y46A Houston 93.89 56 P P 10 23 03.7 -0.1
baz=254
J38A Wedel Dairy, R 93.89 46 P P 10 23 03.5 0.0
baz=252
S43A Fulton Ridge, 93.97 52 P P 10 23 03.3 -0.7
baz=254
B34A Aery, Baudette 94.06 41 P P 10 23 03.8 -0.4
baz=251
O41A Passleys Farm, 94.09 50 P P 10 23 03.9 -0.6
baz=253
K39A Oelwein 94.12 47 P P 10 23 04.1 -0.5
baz=253
I38A Scanlan Farm, 94.21 46 P P 10 23 04.6 -0.4
baz=253
C35A Jirik Farms, M 94.24 42 P P 10 23 04.6 -0.4
baz=252
SPMN Marine on St. 94.25 44 P P 10 23 04.7 -0.5
baz=252
P42A Winchester 94.33 50 P P 10 23 04.9 -0.7
baz=254
L40A Anamosa 94.41 48 P P 10 23 04.9 -1.0
baz=253
J39A Decorah 94.44 46 P P 10 23 05.0 -1.0
baz=253
D36A Goodland 94.60 42 P P 10 23 06.1 -0.6
baz=252
B35A Bob, Littlefor 94.61 41 P P 10 23 05.8 -0.9
baz=252
S44A Carbondale 94.63 52 P P 10 23 06.2 -0.9
baz=254
C36A Pine Crest Far 94.99 42 P P 10 23 08.0 -0.5
baz=252
J40A Soldiers Grove 95.13 47 P P 10 23 08.0 -1.2
baz=254
SONA1 Songino Array 95.13 318 *e*P P 10 23 09.5 +0.2
SONA0 Songino Array 95.13 318 *e*P P 10 23 09.0 -0.3
comp=Z,4.3nm,1.3s

SONM Songino Array 95.13 318 P P 10 23 09.0 -0.3
comp=Z,0.6nm,0.8s,baz=147,slow=3.0,SNR=5.0
SONM LR LR 11 00 56.5
comp=Z,348nm,21.7s,baz=138,slow=32
SONM Songino Array 95.13 318 P P 10 23 09.0 -0.3
SONM pmax pmax
comp=Z,1.0nm,0.8s
K41A Shullsburg 95.21 47 P P 10 23 08.9 -0.7
baz=254
JFWS Jewell Farm 95.34 47 *e*P P 10 23 09.4 -0.8
JFWS pmax pmax
comp=Z,8.0nm,0.8s
JFWS Jewell Farm 95.34 47 *e*P P 10 23 09.4 -0.8
comp=Z,8.1nm,0.8s
COWI Conover 96.96 44 *e*P P 10 23 17.4 -0.1
comp=Z,15nm,1.3s
TLY Talaya 97.91 321 LR LR 11 04 25.3
comp=Z,537nm,19.9s,baz=138,slow=34
LPAZ La Paz 99.52 110 LR LR 10 58 56.9
comp=Z,303nm,21.4s,baz=271,slow=30
ROSC El Rosal 99.76 88 LR LR 10 59 10.9
comp=Z,255nm,21.1s,baz=269,slow=30
WMQ Urumqi 107.16 312 Pdif **Pdif** 10 24 00.0 -3.1
WMQ AMB AMB
comp=Z,110nm,6.0s
WMQ LR LR
comp=Z,190nm,23.0s
WMQ LR LR
comp=Z,160nm,27.4s
WMQ LR LR
comp=Z,200nm,25.3s
NRIK Noril'sk 107.72 338 PKiKP **PKiKP** 10 28 13.0 +0.5
comp=Z,2.4nm,0.6s,baz=188,slow=2.1,SNR=3.3
ZAA1 Zalesovo Array 109.50 322 *e*PKiKP **PKiKP** 10 28 17.1 +0.9
ZALV Zalesovo Beam 109.50 322 PKiKP **PKiKP** 10 28 17.1 +0.9
comp=Z,0.6nm,0.4s,baz=90,slow=1.6,SNR=2.1
MK32 Makanchi Array 111.12 315 *e*PKiKP **PKiKP** 10 28 18.6 -1.0
MKAR Makanchi Array 111.12 315 PKiKP **PKiKP** 10 28 18.6 -1.0
comp=Z,1.0nm,0.8s,baz=70,slow=2.9,SNR=4.8
KURK Kurchatov 113.42 319 ⇑*i*PKiKP **PKiKP** 10 28 23.3 -0.5
KURK pmax pmax
comp=Z,22nm,2.5s
KSH Kashi 115.77 307 *e*PKP **PKPdf** 10 28 29.6 +0.8
KSH *e*PP **PP** 10 29 32.8 +0.6
KSH SKKS 10 36 25.4
KSH AMB AMB
comp=Z,130nm,7.7s
KSH LR LR
comp=Z,100nm,9.6s
KSH LR LR
comp=Z,74nm,5.5s
KSH LR LR
comp=Z,130nm,5.7s
VOSK Vostochnaya 117.87 322 *e*PKiKP **PKPdf** 10 28 31.6 -0.7
VOSK Vostochnaya 117.87 322 *e*PKPdf **PKPdf** 10 28 31.6 -0.7
BRVK Borovoye 118.22 322 ⇓*i*PKiKP **PKPdf** 10 28 32.8 -0.1
BRVK pmax pmax
comp=Z,8.0nm,1.2s
ZRNK Zerenda 118.99 322 *e*PKiKP **PKPdf** 10 28 33.8 -0.6
ZRNK Zerenda 118.99 322 *e*PKPdf **PKPdf** 10 28 33.8 -0.6
ARU Arti 123.60 328 *i* PKiKP **PKPdf** 10 28 43.6 +0.4
ARU 10 30 22.7
ARU 10 35 55.2
ARU MLR MLR
comp=Z,573nm,24.0s
ARCES ARCESS Array B 124.79 352 PKP **PKPdf** 10 28 44.6 -0.5
comp=Z,2.8nm,0.8s,baz=101,slow=1.2,SNR=6.9
ABKAR Akbulak array 125.50 320 *e*PKPdf **PKPdf** 10 28 46.7 -0.3
KLMR Klimovskoe 129.02 340 *e*PKiKP **PKPdf** 10 28 50.4 -3.0
KLMR *e* 10 30 57.2
KLMR pmax pmax
comp=Z,9.0nm,1.3s
FIA0 FINESS Array S 132.15 348 *e*PKiKP **PKPdf** 10 28 59.4 +0.1
FIA0 FINESS Array S 132.15 348 *e*PKPdf **PKPdf** 10 28 59.4 +0.1
FINES FINESS Array B 132.15 348 PKP **PKPdf** 10 28 59.4 +0.1
comp=Z,2.3nm,0.8s,baz=40,slow=3.2,SNR=3.6
OBN Obninsk 134.35 337‖ *e*PKiKP **PKPdf** 10 29 03.0 -0.6
OBN SS SS 10 49 25.0 +0.9
OBN pmax pmax
comp=Z,5.0nm,0.4s
OBN MLR MLR
comp=Z,351nm,20.0s
KBZ Khabaz 138.47 320 PKhKP PKPpre 10 29 07.5
comp=Z,0.7nm,0.5s,baz=163,slow=3.2,SNR=3.8
KIV Kislovodsk 138.48 320 *i* PKiKP **PKPdf** 10 29 12.0 +0.2
KIV pmax pmax
comp=Z,6.0nm,1.0s
KIV MLR MLR
comp=Z,408nm,22.0s
AKASG Malin Array Be 140.58 338 PKhKP PKPpre 10 29 09.3
comp=Z,3.6nm,0.8s,baz=33,slow=3.1,SNR=4.1
AKASG PKP **PKPdf** 10 29 15.0 -0.3
comp=Z,3.8nm,0.8s,baz=31,slow=2.2,SNR=8.4
KIEV Kiev 140.59 338 ⇓*i*PKiKP **PKPdf** 10 29 15.0 -0.3
AK11 Malin Array Si 140.62 338 *e*PKPdf **PKPdf** 10 29 15.2 -0.1
KWP Kalwaria Pacla 143.64 343 *e*PKP PKPab 10 29 17.5 0.0
KWP Kalwaria Pacla 143.64 343 *e*PKiKP PKPab 10 29 17.5 +0.1
OJC Ojcow 143.87 346 *e*PKP PKPab 10 29 18.7 +0.5
OJC Ojcow 143.87 346 *e*PKiKP PKPab 10 29 18.7 +0.5
TSUM Tsumeb 143.89 197 *e*PKPdf PKPbc 10 29 20.9 +1.0
CLL Collm 143.99 353 *e*PKPdf PKPab 10 29 19.0 +0.3
CLL 0.0nm,0.8s
CLL *i* 10 29 21.8
comp=Z,7.0nm,0.9s
CLL *e*PP **PP** 10 32 34.0 -0.3
CLL LmH 11 33 00.0
comp=N,200nm,21.5s
CLL LmH 11 33 00.0
comp=E,100nm,21.4s
CLL LmV 11 46 00.0
comp=Z,200nm,18.5s
CLL Collm 143.99 353 *e*PKiKP PKPab 10 29 19.0 +0.3
CLL pmax pmax
comp=Z,5.0nm,0.8s
CLL MLR MLR
comp=Z,200nm,18.5s
STHS Stebnicka Huta 144.25 344 *e*PKiKP PKPbc 10 29 20.6 +0.5
STHS Stebnicka Huta 144.25 344 *e*PKP PKPbc 10 29 20.6 +0.5
BRG Berggiesshubel 144.31 352 *e*(P) **PKPdf** 10 29 29.2 +7.3
comp=Z,4.1nm,0.8s
BRG Berggiesshubel 144.31 352 *e*PKiKP **PKPdf** 10 29 29.2 +7.3
BRG pmax pmax
comp=Z,4.0nm,0.8s
UPC Upice 144.36 350 *e*PKP **PKPab** 10 29 20.0 -0.1
UPC AMS AMS 11 31 30.0
comp=Z,600nm,21.6s
UPC Upice 144.36 350 *e*PKiKP **PKPab** 10 29 20.0 -0.1
UPC MLR MLR
comp=Z,600nm,21.6s
KOLS Kolonicke sedl 144.40 342 *e*PKiKP PKPbc 10 29 21.0 +0.4
KOLS Kolonicke sedl 144.40 342 *e*PKP PKPbc 10 29 21.0 +0.4
DPC Dobruska-Polom 144.46 350 *e*PKP **PKPab** 10 29 20.6 +0.1
DPC *ep*PKP **pPKPdf** 10 29 29.4 +1.5
DPC AMS AMS 11 31 30.0
comp=Z,500nm,23.5s
DPC Dobruska-Polom 144.46 350 *e*PKiKP **PKPab** 10 29 20.6 +0.1
DPC *e* 10 29 29.4
DPC MLR MLR
comp=Z,500nm,23.5s
NIE Niedzica 144.49 345 *e*PKP PKPbc 10 29 21.4 +0.5
NIE Niedzica 144.49 345 *e*PKiKP PKPbc 10 29 21.4 +0.5
PVCC Panska Ves 144.56 352 *e*PKP **PKPab** 10 29 20.7 -0.1
PVCC AMS AMS 11 31 40.0
comp=Z,500nm,19.8s
PVCC Panska Ves 144.56 352 *e*PKiKP **PKPab** 10 29 20.7 -0.1
PVCC MLR MLR
comp=Z,500nm,19.8s
BUR08 Bucovina Ar. S 144.58 338 *e*PKPdf PKPbc 10 29 21.5 +0.2
OKC Ostrava-Krasne 144.59 347 *e*PKP **PKPab** 10 29 20.9 0.0
OKC AMS AMS 11 28 20.0
OKC Ostrava-Krasne 144.59 347 *e*PKiKP **PKPab** 10 29 20.9 0.0
BURAR Bucovina Array 144.60 338 ⇑*i*P PKPbc 10 29 21.9 +0.5
BURAR Bucovina Array 144.60 338 ⇑PKiKP PKPbc 10 29 21.9 +0.5
CRVS Cervenica-Dubn 144.66 343 *e*PKiKP **PKPab** 10 29 21.1 -0.1
CRVS Cervenica-Dubn 144.66 343 *e*PKP **PKPab** 10 29 21.1 -0.1
UZH Uzhgorod 144.66 342 ⇑*i*PKiKP **PKPab** 10 29 21.3 +0.1
UZH *e* 10 29 30.3
MORC Moravsky Berou 144.78 348 ⇑*i*P PKPbc 10 29 22.6 +0.8
MORC Moravsky Berou 144.78 348 *e*PKiKP PKPbc 10 29 22.2 +0.4
MORC Moravsky Berou 144.78 348 *e*PKPdf PKPbc 10 29 22.1 +0.4
LANS Liptovska Anna 144.94 346 *e*PKiKP PKPbc 10 29 22.8 +0.5
LANS Liptovska Anna 144.94 346 *e*PKP PKPbc 10 29 22.8 +0.5
TESR Tescani 144.99 336 ⇑*i*P **PKPab** 10 29 21.6 -0.9
MEM Membach 145.03 1 PKP **PKPbc** 10 29 22.7 +0.2
SNF Seneffe 145.07 3 PKP **PKPab** 10 29 22.9 +0.3

PRU Pruhonice 145.09 351 *e*PKP **PKPbc** 10 29 22.9 +0.2
PRU *ex* x 10 29 35.1
PRU AMS AMS 11 32 20.0
comp=Z,600nm,21.0s
PRU Pruhonice 145.09 351 *e*PKiKP **PKPbc** 10 29 22.9 +0.2
PRU *e* 10 29 35.1
PRU MLR MLR
comp=Z,600nm,21.0s
NKC Novy Kostel 145.11 354 *e*PKP **PKPbc** 10 29 22.9 +0.1
NKC AMS AMS 11 34 30.0
comp=Z,300nm,19.2s
NKC Novy Kostel 145.11 354 *e*PKiKP **PKPbc** 10 29 22.9 +0.1
NKC MLR MLR
comp=Z,300nm,19.2s
GOPC GO Pecny, Ondr 145.13 351 *e*PKP **PKPbc** 10 29 23.1 +0.2
GOPC AMS AMS 11 32 30.0
comp=Z,500nm,20.7s
GOPC GO Pecny, Ondr 145.13 351 *e*PKiKP **PKPbc** 10 29 23.1 +0.2
GOPC MLR MLR
comp=Z,500nm,21.0s
BMR Baia Mare 145.14 340 ⇑*i*P **PKPdf** 10 29 23.6 +0.1
BMR Baia Mare 145.14 340 ⇑PKiKP **PKPdf** 10 29 23.6 +0.1
BCLA Clavier 145.20 2 PKP **PKPab** 10 29 23.6 +0.4
KECS Kecovo 145.30 344 *e*PKiKP **PKPbc** 10 29 23.5 0.0
KECS Kecovo 145.30 344 *e*PKP **PKPbc** 10 29 23.5 0.0
VRAC Vranov 145.41 349 ⇑*i*P **PKPbc** 10 29 23.8 0.0
VRAC Vranov 145.41 349 ⇑PKiKP **PKPbc** 10 29 23.8 0.0
CFR Carcaliu 145.45 333 ⇓*i*P **PKPbc** 10 29 24.1 +0.1
CFR Carcaliu 145.45 333 ⇓PKiKP **PKPbc** 10 29 24.1 +0.1
DOU Dourbes 145.50 3 PKP **PKPbc** 10 29 23.9 -0.1
PLOR Plostina 145.53 335 ⇑*i*P **PKPdf** 10 29 24.0 -0.3
PLOR Plostina 145.53 335 ⇑PKiKP **PKPdf** 10 29 24.0 -0.3
KMBO Kilima Mbogo 145.70 244 PKPbc **PKPab** 10 29 26.8 +0.4
comp=Z,11nm,0.8s,baz=53,slow=2.5,SNR=14
VYHS Vyhne 145.71 346 *e*PKP2 **PKPdf** 10 29 24.6 +0.1
VYHS Vyhne 145.71 346 *e*PKP **PKPdf** 10 29 24.6 +0.1
GRFO Grafenberg 145.77 355 *e*PKP2 **PKPab** 10 29 25.4 +0.1
GRFO Grafenberg 145.77 355 *e*PKPdf **PKPab** 10 29 25.4 +0.1
TIRR Tirgusor 145.89 332 ⇑*i*P **PKPdf** 10 29 24.6 -0.2
TIRR Tirgusor 145.89 332 ⇑PKP2 **PKPdf** 10 29 24.6 -0.2
TIRR Tirgusor 145.89 332 *e*PKPdf **PKPdf** 10 29 25.4 +0.5
HARR Harsova 145.93 333 ⇓*i*P **PKPbc** 10 29 26.0 +0.5
HARR Harsova 145.93 333 ⇓PKP2 **PKPbc** 10 29 26.0 +0.5
DOPR Dopca 145.93 337 ⇑*i*P **PKPab** 10 29 26.3 +0.2
TLB Topalu 145.96 333 ⇑*i*P **PKPbc** 10 29 26.1 +0.5
TLB Topalu 145.96 333 ⇑PKP2 **PKPbc** 10 29 26.1 +0.5
WLF Walferdange 145.97 1 PKP **PKPab** 10 29 26.1 +0.1
WLF Walferdange 145.97 1 *e*PKP2 **PKPab** 10 29 26.2 +0.2
WLF Walferdange 145.97 1 *e*PKPdf **PKPab** 10 29 26.2 +0.2
PSZ Piszkesteto 145.98 344‖ *e*PKPdf **PKPab** 10 29 26.3 +0.1
KHC Kasperske Hory 146.06 352 *e*PKP **PKPbc** 10 29 26.0 +0.1
KHC AMS AMS 11 32 50.0
comp=Z,500nm,23.9s
KHC Kasperske Hory 146.06 352 *e*PKP2 **PKPbc** 10 29 26.0 +0.1
KHC MLR MLR
comp=Z,500nm,23.9s
KHC Kasperske Hory 146.06 352 *e*PKPdf **PKPbc** 10 29 26.0 +0.1
MLR Muntele Rosu 146.11 336 ⇑*i*P **PKPdf** 10 29 25.8 +0.4
MLR Muntele Rosu 146.11 336 ⇑PKP2 **PKPdf** 10 29 25.8 +0.4
MLR Muntele Rosu 146.11 336 *e*PKPdf **PKPbc** 10 29 26.4 +0.1
DRGR 146.17 340 ⇑*i*P **PKPdf** 10 29 26.0 +0.6
DRGR 146.17 340 ⇑PKP2 **PKPdf** 10 29 26.0 +0.6
ISR Istrita 146.18 335 ⇑*i*P **PKPbc** 10 29 26.7 +0.3
ISR Istrita 146.18 335 ⇑PKP2 **PKPbc** 10 29 26.7 +0.3
GEC2 GERESS Array S 146.33 352 *e*PKP2 **PKPdf** 10 29 26.5 +0.8
GEC2 GERESS Array S 146.33 352 *e*PKPdf **PKPdf** 10 29 26.4 +0.8
GERES GERESS Array B 146.33 352 PKPbc **PKPdf** 10 29 26.4 +0.8
comp=Z,3.8nm,0.8s,baz=29,slow=3.0,SNR=20
GEA0 GERESS Array S 146.34 352 *e*PKPdf **PKPdf** 10 29 26.4 +0.8
BR101 Keskin Array S 146.44 321 *e*PKP **PKPbc** 10 29 27.3 -0.2
BR131 Keskin Array S 146.44 321 *e*PKPdf **PKPdf** 10 29 26.6 +0.4
BRTR Keskin Array B 146.44 321 PKPbc **PKPbc** 10 29 27.3 -0.2
comp=Z,23nm,1.0s,baz=117,slow=2.0,SNR=48
SECR 146.44 335 ⇑*i*P **PKPbc** 10 29 27.0 -0.1
VOIR 146.51 337 ⇑*i*P **PKPbc** 10 29 27.5 +0.1
VOIR 146.51 337 ⇑PKP2 **PKPbc** 10 29 27.5 +0.1
PSN Preselentsi 146.59 331 *e*P **PKPbc** 10 29 27.8 +0.2
LANF Langenberg 146.65 359 PKP **PKPbc** 10 29 27.3 -0.3
ARR Arges 146.72 337 ⇑*i*P **PKPab** 10 29 29.0 -0.2
CONA Conrad Observa 146.87 349 *i* PKPab **PKPbc** 10 29 28.5 +0.1
comp=Z,22nm,1.6s,SNR=8.8
BR231 Keskin MP Arra 146.88 322 *e*PKPdf **PKPdf** 10 29 28.1 +1.2
SIRR Siria 146.97 341 ⇑*i*P **PKPbc** 10 29 29.3 +0.7
MOA Molln 147.22 351 *i* pPKPdf **PKPbc** 10 29 29.3 0.0
comp=Z,16nm,1.1s
BFO Black Forest 147.29 358 *c i*PKP2 **PKPbc** 10 29 29.9 +0.4
PRD Provadia 147.33 332 *e*P **PKPbc** 10 29 29.8 +0.1
THEF They Montfort 147.41 1 PKP **PKPbc** 10 29 30.1 +0.3
ECH Echery 147.43 360 PKP **PKPbc** 10 29 30.1 +0.3
BZS Buzias 147.56 341 ⇑*i*P **PKPbc** 10 29 30.7 +0.4
BZS Buzias 147.56 341 ⇑PKP2 **PKPbc** 10 29 30.7 +0.4
ARSA Arzberg 147.59 349 *ep*PKPdf **PKPbc** 10 29 29.9 -0.4
comp=Z,7.7nm,1.0s
MOF Molkenrain 147.79 360 PKP **PKPbc** 10 29 30.6 -0.3
SZH Strazhica 147.93 333 *e*P **PKPbc** 10 29 30.3 -1.0
RETA Reutte 147.99 355 *ep*PKPdf **PKPbc** 10 29 30.9 -0.6
comp=Z,16nm,1.6s,SNR=5.4
MOTA Moosalm 148.10 355 *ep*PKPdf **PKPbc** 10 29 31.1 -0.8
comp=Z,5.2nm,0.7s
KBA Koelnbreinsper 148.11 352 *i* pPKPdf **PKPbc** 10 29 31.0 -0.9
comp=Z,9.3nm,1.0s
WTTA Wattenberg 148.13 354 *ep*PKPdf **PKPbc** 10 29 31.6 -0.4
comp=Z,6.4nm,0.7s
SOKA Soboth 148.23 349 *i* pPKPdf **PKPbc** 10 29 31.3 -0.8
comp=Z,17nm,1.1s,SNR=5.5
PERS Pernice 148.25 349 *e*PKPdf **PKPbc** 10 29 31.2 -1.0
DAVA Damuels 148.26 356 *es*PKPdf **PKPbc** 10 29 32.0 -0.3
comp=Z,14nm,0.8s,SNR=6.4
MDVR Moldovita 148.27 340 ⇑*i*P **PKPbc** 10 29 30.9 -1.4
FETA Feichten 148.46 355 *es*PKPdf **PKPbc** 10 29 32.2 -0.6
comp=Z,8.7nm,1.0s
MYKA Terra Mystica 148.50 351 *i* PKPbc **PKPbc** 10 29 31.8 -1.0
comp=Z,10nm,1.2s
ABTA Abfaltersbach 148.54 353 *e*PKPbc **PKPbc** 10 29 32.0 -0.9
comp=Z,13nm,0.8s
MPEP Malo Peshtene 148.76 336 *e*P **PKPbc** 10 29 33.6 +0.1
CADS Cadrg 148.88 351 *e*PKPdf **PKPbc** 10 29 32.1 -1.6
FUORN Ofenpass-Fuorn 148.90 355 *e*PKPdf **PKPbc** 10 29 34.0 -0.1
GBAS Gorenja Brezov 149.05 350 *i* PKPdf **PKPbc** 10 29 33.4 -0.8
TUE Stuetta 149.10 357 *e*PKPbc **PKPbc** 10 29 34.4 -0.1
SENIN Lac Senin/Sane 149.28 359 *e*PKPbc **PKPbc** 10 29 34.9 -0.1
VTS Vitosha 149.62 336 *e*PKP2 **PKPbc** 10 29 35.9 0.0
VTS Vitosha 149.62 336 *e*P **PKPbc** 10 29 35.4 -0.5
VTS Vitosha 149.62 336 *e*PKPbc **PKPbc** 10 29 35.9 0.0
RZN Rozhen 149.74 333 *e*P **PKPbc** 10 29 35.2 -1.0
MMB Musomiste 150.24 334 *e*P **PKPbc** 10 29 36.1 -1.2
SSB Saint Sauveur 150.30 3 *e*PKiKP **PKPbc** 10 29 38.8 +1.5
SSB Saint Sauveur 150.30 3 *e*PKPbc **PKPbc** 10 29 38.8 +1.5
PGAV Gavieira, Arco 150.62 23 *e*PKPdf **PKPbc** 10 29 40.4 +2.1
PGAV Gavieira, Arco 150.62 23 *e*LR LR 11 27 16.2
comp=Z,328nm,20.0s
PDG Podgorica 151.17 341 ⇑*i*P **PKPbc** 10 29 39.0 -0.4
POLO Lamas de Olo 151.31 23 *e*PKPdf **PKPbc** 10 29 39.9 0.0
MVO Moncorvo 151.78 23 *e*PKPdf **PKPbc** 10 29 41.2 +0.3
MVO Moncorvo 151.78 23 *e*LR LR 11 26 16.4
comp=Z,181nm,22.0s
MTE Manteigas 152.24 24 *e*PKPdf **PKPbc** 10 29 42.0 0.0
MTE Manteigas 152.24 24 *e*LR LR 11 27 26.3
comp=Z,268nm,20.0s
PCBR Castelo Branco 152.75 25 *e*PKPdf **PKPbc** 10 29 42.9 -0.1
PMTG Montargil 153.08 27 *e*PKPdf **PKPbc** 10 29 43.1 -0.7
PMRV Marv??o 153.13 25 *e*PKPdf **PKPbc** 10 29 43.9 -0.1
PMRV Marv??o 153.13 25 *e*LR LR 11 28 06.4
comp=Z,294nm,18.0s
ESDC Sonseca Array 154.17 19 PKPbc **PKPbc** 10 29 46.4 +0.1
comp=Z,0.2nm,0.3s,baz=339,slow=3.7,SNR=4.6
KEST Kesra 159.78 354 PKPab **PKPab** 10 30 24.9 +0.9
comp=Z,6.0nm,1.0s,baz=285,slow=6.8,SNR=4.3
DBIC Dimbokro 165.51 126 PKPab **PKPab** 10 30 52.4 +2.6
comp=Z,4.3nm,1.1s,baz=298,slow=4.8,SNR=3.0
TOA0 Torodi Ar. Sit 174.45 115 *e*PKPdf **PKPdf** 10 29 54.7 -1.9
TOA1 Torodi Ar. Sit 174.45 115 *e*PKPdf **PKPdf** 10 29 55.2 -1.5
TOA1 *e*PKPab **PKPab** 10 31 30.6 +1.2
TORD Torodi Ar. Bea 174.45 115 PKP **PKPdf** 10 29 55.2 -1.5
comp=Z,1.0nm,0.9s,baz=162,slow=1.2,SNR=5.9
TORD PKPab **PKPab** 10 31 30.6 +1.2
comp=Z,1.2nm,0.9s,baz=255,slow=3.5,SNR=2.8

*ISCJB **12** 10:17:08.7±0.7,9.37N±0.08×122.17E±0.07,h10km, mb3.9/6, Error ellipse: s-maj=12.0km s-min=9.2km az=152.6*

IDC ***12*** *10:17:08.7±1.0, 9°53.N×122°30.E, h0km, mb3.9/6, mb1 4.1/6, mb1mx3.8/50, mbtmp3.9/6, Error ellipse: s-maj=69.9km s-min=17.6km az=60.0*

MAN ***12*** *10:17:10, 9°55.N×122°14.E, h5km, mb4.7, ML3.6, MS3.5*

ISC 12 10:17:10.2±0.8, 9°56.N±0.08×122°18.E±0.07, h10km, n12, σ1°06/14, mb4.0/6, 1C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.06**	**101**	*i* P	Pb	10 17 25.4	-5.3
SNPH				*i* S	Sg	10 17 34.6	-10
TBP	**Tagbilaran**	**1.67**	**85**	*e*P	**Pb**	**10 17 41.1**	**+0.2**
LLP	**Lapu-Lapu**	**1.92**	**67**	*e*P	**Pb**	**10 17 44.6**	**-0.6**
LLP				*e*S	**Sb**	**10 18 09.8**	**+0.5**
RCP	**Roxas**	**2.07**	**16**	*e*P	**Pb**	**10 17 46.6**	**-1.1**
PLP	**Palo**	**3.18**	**60**	*i*P	**Pn**	**10 18 02.0**	**+1.6**
PLP				*i* S	**Sn**	**10 18 36.8**	**-1.6**
CMAR	**Chiang Mai Arr**	**24.19**	**294**	P	**P**	**10 22 28.1**	**+0.9**
	1.6nm,0.9s,baz=128,slow=8.3,SNR=8.2						
WRA	**Warramunga Arr**	**31.66**	**158**	P	**P**	**10 23 32.6**	**-1.4**
	1.4nm,0.7s,baz=334,slow=10,SNR=7.9						
ASAR	**Alice Springs**	**34.95**	**161**	P	**P**	**10 24 02.4**	**-0.3**
	3.1nm,0.6s,baz=341,slow=7.4,SNR=38						
ASAR				PcP	**PcP**	**10 26 34.1**	**-1.1**
	0.6nm,0.6s,baz=356,slow=2.8,SNR=5.0						
SONM	**Songino Array**	**40.42**	**344**	P	**P**	**10 24 48.8**	**+0.1**
	0.7nm,0.7s,baz=165,slow=12,SNR=4.1						
STKA	**Stephens Creek**	**45.20**	**157**	P	**P**	**10 25 27.1**	**-0.4**
	1.9nm,0.7s,baz=332,slow=15,SNR=2.4						
MKAR	**Makanchi Array**	**50.22**	**325**	P	**P**	**10 26 07.4**	**+1.0**
	1.7nm,0.9s,baz=123,slow=9.0,SNR=10						
PLCA	**Paso Flores**	**146.96**	**162**	PKPbc	**PKPbc**	**10 36 53.6**	**+0.1**
	1.7nm,0.6s,baz=52,slow=2.9,SNR=5.3						

IDC ***12*** *10:17:26.9±1.5, 17°.63S×168°.92E, h0km, mb4.4/9, mb1 4.5/10, mb1mx4.1/35, mbtmp4.4/10, ML4.3/1, MS4.0/2, Ms1 4.1/2, ms1mx3.6/29, Error ellipse: s-maj=44.5km s-min=18.8km az=118.0*

NEIC ***12*** *10:17:28.6±0.8, 17°.64S×168°.93E, h10km, mb4.6/1, Error ellipse: s-maj=24.1km s-min=13.6km az=115.0*

ISCJB ***12*** *10:17:30.5±1.1, 17°.59S±0°.08×168°.8E±0°.2, h33km, mb4.5/11, MS4.0/2, Error ellipse: s-maj=27.6km s-min=9.3km az=16.4*

ISC 12 10:17:32.7±0.9, 17°.59S±0°.09×168°.9E±0°.2, h35km, n36, σ1°13/30, mb4.4/11, 1C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**5.00**	**207**	Pn	**Pn**	**10 18 45.1**	**-0.1**
	10nm,0.3s,baz=114,slow=17,SNR=35						
DZM				Sn	**Sn**	**10 19 43.7**	**+1.8**
	3.6nm,0.3s,baz=336,slow=22,SNR=3.6						
DZM	**Mont Dzumac**	**5.00**	**207**	*e*Pn	**Pn**	**10 18 42.6**	**-2.6**
DZM				*e*Sn	**Sn**	**10 19 42.1**	**+0.2**
STKA	**Stephens Creek**	**28.45**	**235**	P	**P**	**10 23 23.7**	**-0.6**
	6.6nm,0.9s,baz=74,slow=11,SNR=3.7						
RAR	**Rarotonga**	**29.79**	**102**	LR	LR	10 32 48.6	
	comp=Z,178nm,20.7s,baz=267,slow=31						
WRA	**Warramunga Arr**	**32.73**	**260**	P	**P**	**10 24 01.6**	**-0.7**
	3.4nm,1.1s,baz=92,slow=9.8,SNR=5.6						
BBOO	**Buckleboo**	**33.15**	**237**	*e*P	**P**	**10 24 05.8**	**0.0**
	7.9nm,1.1s						
ASAR	**Alice Springs**	**33.20**	**254**	P	**P**	**10 24 05.7**	**-0.7**
	4.8nm,0.5s,baz=79,slow=8.8,SNR=34						
H11S2	**WAKE ISLAND Hy**	**35.92**	**357**	T	T	11 02 17.2	
	baz=180						
H11S3	**WAKE ISLAND Hy**	**35.92**	**357**	T	T	11 02 15.9	
	baz=180						
H11S1	**WAKE ISLAND Hy**	**35.94**	**357**	T	T	11 02 17.3	
	baz=180						
H11N1	**WAKE ISLAND Hy**	**37.12**	**357**	T	T	11 03 46.7	
	baz=170						
H11N3	**WAKE ISLAND Hy**	**37.13**	**357**	T	T	11 03 48.6	
	baz=170						
H11N2	**WAKE ISLAND Hy**	**37.14**	**357**	T	T	11 03 50.0	
	baz=170						
GUMO	**Guam**	**38.99**	**321**	P	**P**	**10 24 56.7**	**+0.8**
	78nm,0.9s,baz=225,slow=1.6,SNR=3.7						
FITZ	**Fitzroy Crossi**	**41.06**	**262**	P	**P**	**10 25 12.7**	**-0.4**
	8.1nm,1.0s,baz=115,slow=9.3,SNR=6.5						
FITZ	**Fitzroy Crossi**	**41.06**	**262**	*e*P	**P**	**10 25 15.2**	**+2.0**
MBWA	**Marble Bar**	**46.33**	**257**	*e*P	**P**	**10 25 56.3**	**+0.8**
NWAO	**Narrogin (SRO)**	**48.65**	**241**	P	**P**	**10 26 12.5**	**-1.0**
	13nm,0.7s,baz=120,slow=7.6,SNR=6.2						
MJAR	**Matsushiro Arr**	**61.13**	**332**	P	**P**	**10 27 43.0**	**-0.5**
	2.2nm,0.9s,baz=167,slow=6.1,SNR=6.5						
USRK	**Ussuriysk Ar.**	**70.11**	**333**	P	**P**	**10 28 42.8**	**+1.5**
	0.8nm,0.5s,baz=91,slow=7.6,SNR=4.8						
QSPA	**South Pole Qui**	**72.45**	**180**	*e*P	**P**	**10 28 56.4**	**+1.0**
SONM	**Songino Array**	**85.69**	**323**	P	**P**	**10 30 07.1**	**-0.9**
	3.6nm,1.0s,baz=160,slow=9.0,SNR=9.0						
SYO	**Syowa Base**	**86.40**	**196**	*e*PcP	**PcP**	**10 30 15.0**	**+1.5**
ILAR	**Eielson Array**	**88.78**	**17**	P	**P**	**10 30 20.4**	**-1.9**
	0.4nm,0.6s,baz=247,slow=4.5,SNR=5.7						
TXAR	**Lajitas Array**	**96.31**	**61**	LR	LR	11 08 24.0	
	comp=Z,125nm,19.2s,baz=0.0,slow=32						
BRTR	**Keskin Array B**	**135.50**	**309**	PKP	**PKPdf**	**10 36 50.8**	**+1.3**
	0.7nm,0.7s,baz=151,slow=2.8,SNR=3.6						
GERES	**GERESS Array B**	**142.87**	**333**	PKP	**PKPdf**	**10 37 03.9**	**+1.3**
	0.3nm,0.2s,baz=15,slow=4.3,SNR=6.5						
KBA	**Koelnbreinsper**	**144.34**	**331**	*e*PKPdf	**PKPdf**	**10 37 05.0**	**-0.4**
	6.2nm,1.2s						
ABTA	**Abfaltersbach**	**144.97**	**331**	*i* PKPdf	**PKPab**	**10 37 05.4**	**-0.2**
	5.6nm,0.9s						
MOTA	**Moosalm**	**145.14**	**333**	*i* pPKPbc	**PKPdf**	**10 37 07.7**	**+1.0**
	8.3nm,0.9s						
RETA	**Reutte**	**145.18**	**334**	*i* pPKPbc	**PKPdf**	**10 37 07.2**	**+0.5**
	14nm,1.6s						
FETA	**Feichten**	**145.55**	**333**	*i* pPKPbc	**PKPab**	**10 37 08.4**	**+0.6**
	12nm,1.2s						
DAVA	**Damuels**	**145.70**	**334**	*i* pPKPdf	**PKPab**	**10 37 08.8**	**+0.4**
	11nm,0.9s						
DAVOX	**Davos/Dischmat**	**146.10**	**334**	PKPbc	**PKPab**	**10 37 10.0**	**0.0**
	4.9nm,0.7s,baz=134,slow=5.0,SNR=4.8						
DAVOX	**Davos/Dischmat**	**146.10**	**334**	PKPbc	**PKPab**	**10 37 10.0**	**0.0**
TORD	**Torodi Ar. Bea**	**166.85**	**252**	PKP	**PKPdf**	**10 37 34.5**	**-1.0**
	1.8nm,1.1s,baz=327,slow=0.8,SNR=4.2						

NIED ***12*** *10:22:00, 38°.00N×142°.30E, h32km, Mw3.9 Best double couple: M0 8.96000×10^14 NP1:φ=190.00000°, δ=33.00000°, λ=-100.00000°. NP2:φ=22.00000°, δ=57.00000°, λ=-84.00000°.*

ISCJB ***12*** *10:22:05.2±0.8, 38°.01N±0°.04×142°.37E±0°.07, h36km±7km, mb4.0/17, MS4.3/1, Error ellipse: s-maj=9.5km s-min=4.5km az=27.7*

JMA ***12*** *10:22:06.1±0.1, 38°.03N×142°.27E, h40km±2km, M4.0*

JMA Felt I J1.

NEIC ***12*** *10:22:07.7±0.9, 38°.02N×142°.40E, h42km±8km, mb4.3/3, Error ellipse: s-maj=12.9km s-min=6.7km az=120.0*

NEIC Recorded [1 JMA] in Miyagi.

IDC ***12*** *10:22:08.3±1.8, 38°.00N×142°.35E, h49km±15km, mb3.8/15, mb1 4.0/21, mb1mx3.9/50, mbtmp4.1/21, ML3.5/6, MS3.6/2, Ms1 3.6/2, ms1mx2.9/54, Error ellipse: s-maj=19.2km s-min=12.6km az=113.0*

ISC 12 10:22:06.2±2.7, 37°.98N±0°.05×142°.32E±0°.07, h31km±18km, n50, σ1°50/62, mb4.1/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.90**	**302**	P	**Pn**	**10 22 21.9**	**-0.7**
JIO				*e*S	**Sb**	**10 22 32.6**	**-2.3**
OFUJ	**Ofunato**	**1.21**	**335**	P	**Pn**	**10 22 25.8**	**-1.1**
OFUJ				*e*S	**Sn**	**10 22 40.2**	**-2.1**
JMM	**Marumori**	**1.21**	**265**	P	**Pn**	**10 22 26.3**	**-0.6**
JMM				*e*S	**Sn**	**10 22 41.8**	**-0.5**
JMK	**Ichinoseki**	**1.30**	**319**	P	**Pn**	**10 22 27.6**	**-0.5**
JFK	**Kawauchi**	**1.30**	**242**	P	**Pn**	**10 22 27.4**	**-0.8**
JFK				*e*S	**Sn**	**10 22 43.0**	**-1.5**
JOU	**Okura**	**1.36**	**287**	P	**Pn**	**10 22 28.9**	**-0.1**
JOU				*e*S	**Sn**	**10 22 45.5**	**-0.5**
JFT	**Otama**	**1.64**	**254**	P	**Pn**	**10 22 33.3**	**+0.5**
JFT				*e*S	**Sn**	**10 22 52.8**	**0.0**
JOM	**Ohasama**	**1.69**	**332**	P	**Pn**	**10 22 33.2**	**-0.4**
JYS	**Shirataka**	**1.79**	**278**	P	**Pn**	**10 22 35.0**	**0.0**
JYK	**Kaneyama**	**1.80**	**302**	P	**Pn**	**10 22 35.0**	**-0.1**
JRG	**Rokugo**	**1.93**	**318**	P	**Pn**	**10 22 37.0**	**+0.1**
JYA	**Atsumi**	**2.14**	**287**	P	**Pn**	**10 22 39.9**	**+0.2**
JANG	**Nango**	**2.47**	**346**	P	**Pn**	**10 22 43.8**	**-0.5**
MJAR	**Matsushiro Arr**	**3.58**	**248**	P	**Pn**	**10 23 01.8**	**+2.3**
	3.5nm,0.3s,baz=58,slow=9.8,SNR=35						
MAJO	**Matsushiro**	**3.58**	**248**	*e*Pn	**Pn**	**10 23 01.7**	**+2.1**
MAT	**Matsushiro**	**3.58**	**248**	P	**Pn**	**10 23 01.6**	**+2.0**
MAT				S	**Sn**	**10 23 44.1**	**+3.3**
ERM	**Erimo**	**4.08**	**9**	*e*Pn	**Pn**	**10 23 05.9**	**-0.5**
ERM				*e*Sn	**Sn**	**10 23 52.8**	**-0.2**
JHJ2	**Mitsune**	**5.27**	**204**	*e*Pn	**Pn**	**10 23 22.8**	**+0.1**
JHJ2				*e*Sn	**Sn**	**10 24 19.6**	**-2.7**
JHJ	**Hachijo jima 2**	**5.27**	**204**	P	**Pn**	**10 23 23.0**	**+0.2**
	11nm,0.3s,baz=348,slow=16,SNR=31						
JHJ				S	**Sn**	**10 24 20.0**	**-2.5**
	48nm,0.3s,baz=96,slow=23,SNR=8.8						
JHJ				LR	LR	10 25 37.0	
	comp=Z,133nm,18.3s,baz=58,slow=40						
ASAJ	**Asahikawa**	**6.13**	**2**	P	**Pn**	**10 23 34.5**	**-0.1**
	2.1nm,0.3s,baz=208,slow=13,SNR=31						
ASAJ				S	**Sn**	**10 24 44.8**	**+1.2**
ASAJ	**Asahikawa**	**6.13**	**2**	*e*Pn	**Pn**	**10 23 34.3**	**-0.2**
	2.5nm,0.3s						
ASAJ				*e*Sn	**Sn**	**10 24 44.1**	**+0.5**
YSS	**Yuzh-Sakhalins**	**8.97**	**2**	*e*Pn	**Pn**	**10 24 14.6**	**+1.1**
YSS				*e*Sn	**Sn**	**10 25 56.7**	**+3.2**
USRK	**Ussuriysk Ar.**	**9.96**	**312**	P	**Pn**	**10 24 30.6**	**+3.5**
	1.0nm,0.3s,baz=123,slow=14,SNR=22						
JNU	**Nakatsue**	**10.50**	**246**	P	**Pn**	**10 24 37.7**	**+3.1**
	0.3nm,0.3s,baz=54,slow=11,SNR=3.5						
KSRS	**Korea Array**	**11.42**	**272**	P	**Pn**	**10 24 51.0**	**+3.9**
	0.3nm,0.3s,baz=84,slow=13,SNR=4.8						
KSAR	**Wonju Array Be**	**11.45**	**272**	P	**Pn**	**10 24 51.0**	**+3.5**
KLR	**Kul'dur**	**13.59**	**329**	P	**P**	**10 25 23.6**	**-1.6**
	0.3nm,0.3s,baz=112,slow=8.2,SNR=3.9						
MA2	**Magadan**	**22.28**	**11**	P	**P**	**10 27 02.0**	**+1.5**
	3.9nm,0.6s,baz=209,slow=12,SNR=4.0						
SEY	**Seymchan**	**25.73**	**11**	P	**P**	**10 27 34.2**	**+0.8**
	5.9nm,0.8s,baz=205,slow=7.3,SNR=9.5						
SONM	**Songino Array**	**27.87**	**302**	P	**P**	**10 27 53.0**	**-0.1**
	1.6nm,0.5s,baz=115,slow=9.7,SNR=10.0						
H11N2	**WAKE ISLAND Hy**	**28.04**	**124**	T	T	10 57 11.9	
	baz=318						
H11N1	**WAKE ISLAND Hy**	**28.05**	**124**	T	T	10 57 14.5	
	baz=318						
H11N3	**WAKE ISLAND Hy**	**28.06**	**124**	T	T	10 57 17.8	
	baz=318						
ZALV	**Zalesovo Beam**	**41.82**	**312**	P	**P**	**10 29 52.7**	**0.0**
	2.8nm,0.4s,baz=87,slow=7.5,SNR=9.7						
ZALV				PcP	**PcP**	**10 31 48.4**	**+0.1**
	1.0nm,0.4s,baz=84,slow=5.9,SNR=3.0						
MKAR	**Makanchi Array**	**44.23**	**301**	P	**P**	**10 30 12.2**	**-0.3**
	1.7nm,0.7s,baz=83,slow=9.2,SNR=11						
ILAR	**Eielson Array**	**48.31**	**33**	P	**P**	**10 30 44.4**	**+0.2**
	1.1nm,0.8s,baz=267,slow=6.3,SNR=12						
ABKAR	**Akbulak array**	**57.88**	**310**	*e*P	**P**	**10 31 53.9**	**-1.0**
	1.4nm,0.6s						
WRA	**Warramunga Arr**	**58.10**	**189**	P	**P**	**10 31 56.4**	**-0.2**
	1.5nm,0.6s,baz=6.4,slow=6.9,SNR=16						
YKA	**Yellowknife Ar**	**62.63**	**31**	P	**P**	**10 32 26.1**	**-1.0**
	0.7nm,0.8s,baz=298,slow=5.7,SNR=4.1						
ARCES	**ARCESS Array B**	**63.37**	**339**	P	**P**	**10 32 31.6**	**-0.4**
	1.1nm,0.7s,baz=61,slow=9.9,SNR=4.9						
FINES	**FINESS Array B**	**68.31**	**332**	P	**P**	**10 33 03.2**	**-0.7**
	2.4nm,0.7s,baz=49,slow=8.6,SNR=6.1						
KBZ	**Khabaz**	**70.83**	**311**	P	**P**	**10 33 20.7**	**+1.0**
	1.8nm,0.7s,baz=40,slow=7.9,SNR=3.2						
FFC	**Flin Flon**	**72.52**	**33**	*e*P	**P**	**10 33 30.3**	**+0.6**
	1.4nm,0.6s						
AKASG	**Malin Array Be**	**73.99**	**323**	P	**P**	**10 33 38.1**	**-0.3**
	0.8nm,0.5s,baz=52,slow=4.8,SNR=3.8						
PDAR	**Pinedale Array**	**76.49**	**46**	P	**P**	**10 33 52.9**	**-0.4**
	0.4nm,0.5s,baz=48,slow=2.2,SNR=5.2						
GERES	**GERESS Array B**	**82.28**	**329**	P	**P**	**10 34 24.2**	**-0.3**
	0.4nm,0.4s,baz=41,slow=9.1,SNR=2.6						
URZ	**Urewera**	**82.36**	**153**	LR	LR	11 12 27.4	
	comp=Z,129nm,18.4s,baz=358,slow=37						
TXAR	**Lajitas Array**	**88.97**	**53**	P	**P**	**10 34 58.7**	**+0.6**
	0.3nm,0.7s,baz=286,slow=2.6,SNR=5.8						
LPAZ	**La Paz**	**145.59**	**59**	PKPbc	**PKPbc**	**10 41 42.8**	**+0.2**
	2.1nm,0.8s,baz=21,slow=11,SNR=7.6						
LCO	**Las Campanas**	**151.17**	**82**	*e*PKPdf	**PKPdf**	**10 41 50.3**	**-0.5**
LCO				*e*PKPbc	**PKPbc**	**10 41 56.1**	**-0.6**
LCO				*e*PKPab	**PKPab**	**10 42 03.0**	**-1.6**

NEIC ***12*** *10:25:49.4±0.6, 17°.48S×168°.55E, h10km, mb4.4/2, Error ellipse: s-maj=18.7km s-min=14.7km az=157.0*

IDC ***12*** *10:25:49.0±1.2, 17°.39S×168°.27E, h0km, mb4.3/7, mb1 4.5/8, mb1mx4.2/30, mbtmp4.3/8, ML4.2/1, Error ellipse: s-maj=39.9km s-min=20.8km az=112.0*

ISCJB ***12*** *10:25:58.3±1.0, 17°.65S±0°.08×168°.4E±0°.2, h93km, mb4.2/10, Error ellipse: s-maj=26.7km s-min=10.6km az=13.8*

ISC 12 10:26:00.4±0.9, 17°.6S±0°.1×168°.3E±0°.2, h93km, n25, σ1°57/18, mb4.2/10, 1C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.76**	**201**	Pn	Pn	10 27 03.5	-6.4
	9.9nm,0.3s,baz=112,slow=16,SNR=22						
DZM				Sn	**Sn**	**10 28 02.8**	**-1.1**
	3.7nm,0.3s,baz=311,slow=23,SNR=4.4						
MSVF	**Nonsavu**	**9.29**	**92**	*e*Pn	Pn	10 28 00.2	-11
CTA	**Charters Tower**	**21.01**	**260**	P	**P**	**10 30 38.4**	**+1.8**
	4.3nm,0.7s,baz=54,slow=14,SNR=2.4						
WRA	**Warramunga Arr**	**32.21**	**260**	P	**P**	**10 32 17.8**	**-2.2**
	0.7nm,0.8s,baz=101,slow=6.9,SNR=4.8						
ASAR	**Alice Springs**	**32.70**	**254**	P	**P**	**10 32 24.3**	**+0.1**
	4.6nm,0.5s,baz=78,slow=8.9,SNR=23						
H11S2	**WAKE ISLAND Hy**	**35.92**	**357**	T	T	11 10 38.5	
	baz=181,slow=76,SNR=7.5						
H11S3	**WAKE ISLAND Hy**	**35.92**	**357**	T	T	11 10 34.0	
	baz=181,slow=76,SNR=6.7						
H11S1	**WAKE ISLAND Hy**	**35.94**	**357**	T	T	11 10 36.3	
	baz=181,slow=76,SNR=6.3						
H11N1	**WAKE ISLAND Hy**	**37.13**	**358**	T	T	11 12 05.9	
	baz=175,slow=76,SNR=13						
H11N3	**WAKE ISLAND Hy**	**37.13**	**358**	T	T	11 12 06.1	
	baz=175,slow=76,SNR=6.6						
H11N2	**WAKE ISLAND Hy**	**37.15**	**358**	T	T	11 12 05.0	
	baz=175,slow=76,SNR=10						
FITZ	**Fitzroy Crossi**	**40.55**	**263**	P	**P**	**10 33 31.3**	**+0.4**
	12nm,1.1s,baz=121,slow=13,SNR=2.3						
FITZ	**Fitzroy Crossi**	**40.55**	**263**	*e*P	**P**	**10 33 31.0**	**+0.1**
	0.8nm,0.6s						
MJAR	**Matsushiro Arr**	**60.92**	**332**	P	**P**	**10 36 01.6**	**-2.0**
	2.2nm,0.9s,baz=162,slow=7.7,SNR=6.6						
USRK	**Ussuriysk Ar.**	**69.90**	**333**	P	**P**	**10 37 03.4**	**+2.1**
	1.1nm,0.6s,baz=61,slow=16,SNR=6.0						
PETK	**Petropavlovsk-**	**71.03**	**353**	P	**P**	**10 37 07.1**	**-0.9**
	3.1nm,0.8s,baz=176,slow=5.6,SNR=3.1						
QSPA	**South Pole Qui**	**72.42**	**180**	*e*P	**P**	**10 37 16.6**	**+0.1**
	24nm,1.1s						
MAW	**Mawson**	**79.59**	**202**	P	**P**	**10 37 59.7**	**+2.7**
	2.9nm,0.8s,baz=53,slow=9.3,SNR=4.9						
SONM	**Songino Array**	**85.40**	**323**	P	**P**	**10 38 27.2**	**-0.3**
	4.0nm,0.9s,baz=148,slow=6.2,SNR=9.5						
SYO	**Syowa Base**	**86.23**	**196**	*e*P	**P**	**10 38 29.6**	**-1.6**
ARCES	**ARCESS Array B**	**123.29**	**345**	PKP	**PKPdf**	**10 44 48.4**	**+2.6**
	2.7nm,0.9s,baz=64,slow=2.8,SNR=3.6						
BRTR	**Keskin Array B**	**135.12**	**309**	PKP	**PKPdf**	**10 45 09.9**	**+0.5**
	0.5nm,0.5s,baz=107,slow=1.5,SNR=2.9						
GERES	**GERESS Array B**	**142.66**	**332**	PKP	**PKPdf**	**10 45 22.0**	**-0.8**
	0.2nm,0.3s,baz=28,slow=4.4,SNR=3.1						
DAVOX	**Davos/Dischmat**	**145.90**	**333**	PKPbc	**PKPbc**	**10 45 29.2**	**-0.2**
	6.3nm,0.9s,baz=141,slow=2.8,SNR=12						
TORD	**Torodi Ar. Bea**	**166.35**	**253**	PKP	**PKPdf**	**10 45 54.7**	**-1.0**
	1.4nm,1.0s,baz=15,slow=1.2,SNR=5.1						

IDC ***12*** *10:26:38.9±1.1, 9°.63S×149°.16E, h0km, mb4.1/9, mb1 4.3/10, mb1mx4.1/30, mbtmp4.1/10, ML3.2/1, MS4.2/2, Ms1 4.2/2, ms1mx3.5/41, Error ellipse: s-maj=29.2km s-min=19.4km az=120.0*

ISCJB ***12*** *10:26:41.0±0.6, 9°.58S±0°.07×149°.11E±0°.08, h22km, mb4.1/9, MS4.2/2, Error ellipse: s-maj=11.7km s-min=10.1km az=29.7*

NEIC ***12*** *10:26:45.1±0.8, 9°.58S×148°.97E, h35km, mb4.0/2, Error ellipse: s-maj=18.6km s-min=10.7km az=103.0*

ISC 12 10:26:43.2±0.8, 9°.53S±0°.10×149°.03E±0°.08, h22km, n23, σ1°00/23, mb4.3/9, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**1.85**	**274**	Pn	**Pn**	**10 27 13.2**	**-0.4**
	146nm,0.3s,baz=79,slow=6.0,SNR=318						
PMG				Sn	**Sb**	**10 27 39.3**	**+0.2**
	48nm,0.3s,baz=310,slow=20,SNR=9.6						
PMG	**Port Moresby**	**1.85**	**274**	*e*Pn	**Pn**	**10 27 13.0**	**-0.6**
PMG				*e*Sn	**Sn**	**10 27 36.7**	**+0.3**
CTA	**Charters Tower**	**10.84**	**194**	Pn	**Pn**	**10 29 18.9**	**+1.8**
	0.2nm,0.3s,baz=20,slow=17,SNR=2.9						
WRAB	**Tennant Creek**	**17.55**	**232**	*e*P	**Pn**	**10 30 45.5**	**-1.1**
	4.8nm,1.1s						
WRA	**Warramunga Arr**	**17.57**	**232**	P	**Pn**	**10 30 45.8**	**-1.0**
	0.1nm,0.3s,baz=53,slow=12,SNR=9.0						
ASAR	**Alice Springs**	**20.17**	**224**	P	**P**	**10 31 17.1**	**+0.8**
	3.7nm,0.9s,baz=58,slow=10,SNR=22						
STKA	**Stephens Creek**	**23.28**	**196**	P	**P**	**10 31 46.8**	**-2.7**
	9.3nm,1.0s,baz=19,slow=10,SNR=7.5						
FITZ	**Fitzroy Crossi**	**24.24**	**247**	P	**P**	**10 31 57.9**	**-0.8**
	6.5nm,0.7s,baz=72,slow=8.0,SNR=18						
FITZ	**Fitzroy Crossi**	**24.24**	**247**	*e*P	**P**	**10 31 58.3**	**-0.5**
	5.0nm,0.7s						
KAPI	**Kappang**	**29.38**	**277**	LR	LR	10 46 56.2	
	comp=Z,374nm,21.8s,baz=111,slow=41						
KSRS	**Korea Array**	**50.75**	**338**	P	**P**	**10 35 41.3**	**-0.2**
	6.2nm,1.1s,baz=159,slow=7.6,SNR=6.1						
KSAR	**Wonju Array Be**	**50.76**	**338**	P	**P**	**10 35 41.3**	**-0.3**
CMAR	**Chiang Mai Arr**	**56.71**	**299**	P	**P**	**10 36 26.7**	**+1.1**
	1.0nm,0.3s,baz=122,slow=4.8,SNR=10						
CHTO	**Chiang Mai**	**56.86**	**300**	*e*P	**P**	**10 36 27.9**	**+1.3**
SONM	**Songino Array**	**68.45**	**331**	P	**P**	**10 37 44.4**	**+0.8**
	1.8nm,1.1s,baz=134,slow=6.4,SNR=7.9						
QSPA	**South Pole Qui**	**80.46**	**180**	*e*P	**P**	**10 38 53.7**	**+0.5**
	2.1nm,0.4s						
MKAR	**Makanchi Array**	**81.48**	**320**	P	**P**	**10 38 58.7**	**-0.2**
	0.3nm,0.3s,baz=104,slow=7.6,SNR=3.7						
ZALV	**Zalesovo Beam**	**83.05**	**328**	P	**P**	**10 39 06.6**	**-0.2**
	0.3nm,0.3s,baz=108,slow=4.7,SNR=2.0						
KURK	**Kurchatov**	**85.22**	**323**	P	**P**	**10 39 18.0**	**0.0**
KURBB	**Kurchatov Arra**	**85.25**	**323**	P	**P**	**10 39 18.0**	**-0.1**
	baz=116,slow=4.3						
ILAR	**Eielson Array**	**87.93**	**23**	P	**P**	**10 39 30.0**	**-0.9**
	1.6nm,0.8s,baz=256,slow=4.4,SNR=9.0						
WSAR	**Wadi Sarin**	**94.07**	**293**	LR	LR	11 28 35.4	
	comp=Z,124nm,19.5s,slow=39						
TORD	**Torodi Ar. Bea**	**147.79**	**280**	PKPbc	**PKPbc**	**10 46 27.6**	**+0.1**
	3.2nm,0.9s,baz=93,slow=3.0,SNR=12						

IDC 12 10:29:55.1±6.2, 30°.06S×176°.50W, h36km±41km, mb3.5/3, mb1 3.9/4, mb1mx3.5/31, mbtmp3.9/4, ML3.7/1, Error ellipse: s-maj=47.0km s-min=28.2km az=94.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.47**	**303**	Pn	Pn	10 30 19.7	+0.7
	146nm,0.3s,baz=289,slow=23,SNR=3.2						
RAO				Sn	Sn	10 30 37.9	+0.9
	151nm,0.3s,baz=119,slow=23,SNR=2.6						
URZ	**Urewera**	**9.74**	**211**	Pn	Pn	10 32 11.7	-0.8
	0.7nm,0.3s,baz=53,slow=5.0,SNR=2.6						
URZ				Sn	Sn	10 34 00.6	+0.1
	1.3nm,0.3s,baz=199,slow=20,SNR=10						
STKA	**Stephens Creek**	**35.82**	**256**	P	P	10 36 52.3	+1.2
	1.5nm,0.8s,baz=96,slow=10,SNR=3.0						
ASAR	**Alice Springs**	**44.42**	**266**	P	P	10 38 02.1	-0.5
	0.4nm,0.7s,baz=104,slow=6.9,SNR=4.6						
WRA	**Warramunga Arr**	**45.38**	**271**	P	P	10 38 08.8	-

IZI	**Iznik**	**1.25**	**14**	*e*PN	**Pb**	**10 37 09.3**	**-0.1**
IZI	**Iznik**	**1.25**	**14**	*e*Pn	**Pb**	**10 37 09.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*Pn	**Pg**	**10 37 09.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*Pn	**Pg**	**10 37 09.2**	**-0.4**
BALY	**Balya**	**1.27**	**299**	*i* P	**Pg**	**10 37 09.8**	**-0.1**
BALY				*i* S	**Sb**	**10 37 27.0**	**+0.6**
BALY	**Balya**	**1.27**	**299**	P	**Pg**	**10 37 09.8**	**-0.1**
BALY				S	**Sb**	**10 37 27.0**	**+0.6**
GEMT	**Gemlik**	**1.31**	**4**	*e*PN	**Pg**	**10 37 10.6**	**0.0**
GEMT	**Gemlik**	**1.31**	**4**	*e*Pn	**Pg**	**10 37 10.6**	**0.0**
BORA	**Eskisehir**	**1.31**	**55**	*i* P	**Pn**	**10 37 09.7**	**-0.6**
BORA				*i* S	**Sn**	**10 37 28.1**	**0.0**
BORA	**Eskisehir**	**1.31**	**55**	P	**Pn**	**10 37 09.7**	**-0.6**
BORA				S	**Sn**	**10 37 28.1**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**22**	*e*PN	**Pg**	**10 37 12.0**	**-0.4**
ADVT	**Abdulvahap**	**1.41**	**22**	*e*Pn	**Pg**	**10 37 12.0**	**-0.4**
GONE	**Gonen-Balikesi**	**1.41**	**311**	*e*PN	**Pg**	**10 37 11.9**	**+0.4**
GONE	**Gonen-Balikesi**	**1.41**	**311**	*e*Pn	**Pn**	**10 37 11.9**	**+0.4**
DNZL	**Cakiroluk**	**1.43**	**181**	*i* P	**Pg**	**10 37 12.8**	**-0.1**
DNZL	**Cakiroluk**	**1.43**	**181**	P	**Pg**	**10 37 12.8**	**-0.1**
ESKT	**Eskisehir**	**1.44**	**74**	*i* P	**Pg**	**10 37 13.2**	**+0.1**
SEYT	**Eskypehyr**	**1.44**	**74**	P	**Pg**	**10 37 13.2**	**+0.1**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pg**	**10 37 12.9**	**-0.3**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pg**	**10 37 12.9**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**218**	*e*PN	**Pg**	**10 37 14.1**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**218**	*e*Pn	**Pg**	**10 37 14.1**	**0.0**
GPA	**Golpazari**	**1.51**	**39**	*e*PN	**Pb**	**10 37 13.6**	**-0.2**
GPA	**Golpazari**	**1.51**	**39**	*e*Pn	**Pb**	**10 37 13.6**	**-0.2**
EDC	**Edincik**	**1.53**	**323**	*e*PN	**Pg**	**10 37 14.5**	**-0.3**
EDC	**Edincik**	**1.53**	**323**	*e*Pn	**Pg**	**10 37 14.5**	**-0.3**
GULT	**Gulveren**	**1.72**	**40**	*e*PN	**Pn**	**10 37 16.3**	**+0.5**
GULT	**Gulveren**	**1.72**	**40**	*e*Pn	**Pn**	**10 37 16.3**	**+0.5**
HRT	**Hereke**	**1.76**	**15**	*e*PN	**Pn**	**10 37 17.1**	**+0.7**
HRT	**Hereke**	**1.76**	**15**	*e*Pn	**Pn**	**10 37 17.1**	**+0.7**
MRMT	**Marmara Adasi**	**1.86**	**323**	*e*PN	**Pb**	**10 37 19.2**	**-0.6**
MRMT	**Marmara Adasi**	**1.86**	**323**	*e*Pn	**Pb**	**10 37 19.2**	**-0.6**
KRBG	**Karabiga-Canak**	**1.86**	**313**	*e*PN	**Pb**	**10 37 19.2**	**-0.4**
KRBG	**Karabiga-Canak**	**1.86**	**313**	*e*Pn	**Pb**	**10 37 19.3**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.94**	**80**	*e*PN	**Pn**	**10 37 19.5**	**+0.6**
SVRH	**Sivrihisar-ESK**	**1.94**	**80**	*e*Pn	**Pn**	**10 37 19.5**	**+0.7**
ISK	**Istanbul-Kandi**	**1.94**	**360**	*e*PN	**Pn**	**10 37 19.8**	**+1.0**
ISK	**Istanbul-Kandi**	**1.94**	**360**	*e*Pn	**Pn**	**10 37 19.8**	**+1.0**
SILT	**Sile**	**2.07**	**12**	*e*PN	**Pn**	**10 37 21.6**	**+0.9**
SILT	**Sile**	**2.07**	**12**	*e*Pn	**Pn**	**10 37 21.6**	**+1.0**
YER	**Yerkesik**	**2.08**	**197**	*e*PN	**Pb**	**10 37 23.1**	**-0.5**
YER	**Yerkesik**	**2.08**	**197**	*e*Pn	**Pb**	**10 37 23.1**	**-0.5**
MDUB	**Mudurnu**	**2.12**	**50**	*e*PN	**Pn**	**10 37 22.4**	**+0.9**
MDUB	**Mudurnu**	**2.12**	**50**	*e*Pn	**Pn**	**10 37 22.4**	**+1.0**
KLYT	**Kilyos**	**2.12**	**360**	*e*PN	**Pb**	**10 37 22.8**	**-1.4**
KLYT	**Kilyos**	**2.12**	**360**	*e*Pn	**Pb**	**10 37 22.8**	**-1.4**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*PN	**Pb**	**10 37 23.2**	**-1.1**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*Pn	**Pb**	**10 37 23.3**	**-1.1**
SART	**Tekirdag**	**2.13**	**318**	*i* P	**Pg**	**10 37 25.6**	**-0.7**
SART	**Tekirdag**	**2.13**	**318**	P	**Pg**	**10 37 25.6**	**-0.7**
KAND	**Kocaeli-Kandir**	**2.15**	**23**	*i* P	**Pb**	**10 37 24.5**	**-0.2**
KAND	**Kocaeli-Kandir**	**2.15**	**23**	P	**Pb**	**10 37 24.5**	**-0.2**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*PN	**Pn**	**10 37 22.9**	**+1.2**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*Pn	**Pn**	**10 37 22.9**	**+1.2**
LPK	**Lapseki**	**2.17**	**306**	*e*PN	**Pb**	**10 37 23.9**	**-1.1**
LPK	**Lapseki**	**2.17**	**306**	*e*Pn	**Pb**	**10 37 23.9**	**-1.1**
SAHE	**Sakarya_HENDEK**	**2.21**	**38**	*i* P	**Pb**	**10 37 25.9**	**+0.3**
SAHE	**Sakarya_HENDEK**	**2.21**	**38**	P	**Pb**	**10 37 25.9**	**+0.3**
GELI	**Tayfur-Gelibol**	**2.37**	**303**	*e*PN	**Pb**	**10 37 26.7**	**-1.6**
GELI	**Tayfur-Gelibol**	**2.37**	**303**	*e*Pn	**Pb**	**10 37 26.7**	**-1.6**
ERIK	**Erikli-Kesan**	**2.50**	**309**	*e*PN	**Pn**	**10 37 28.5**	**+2.1**
ERIK	**Erikli-Kesan**	**2.50**	**309**	*e*Pn	**Pn**	**10 37 28.5**	**+2.1**

IDC 12 10:38:42.5±9.1, 5°82S×151°19E, h57km±65km, mb3.8/3, mb1 4.0/4, mb1mx3.4/38, mbtmp4.0/4, ML1.8/1, MS3.8/1, Ms1 3.8/1, ms1mx3.1/37, Error ellipse: s-maj=92.7km s-min=56.8km az=126.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.36**	**228**	P	Pn	10 40 00.8	+1.0
	2.1nm,0.3s,baz=62,slow=15,SNR=5.7						
PMG				S	Sn	10 41 01.0	+0.8
	1.5nm,0.3s,baz=150,slow=5.1,SNR=1.3						
WRA	**Warramunga Arr**	**21.58**	**228**	P	P	10 43 27.0	-0.6
	1.9nm,0.5s,baz=53,slow=11,SNR=27						
ASAR	**Alice Springs**	**24.33**	**221**	P	P	10 43 55.4	+0.3
	2.8nm,0.7s,baz=58,slow=8.9,SNR=32						
FITZ	**Fitzroy Crossi**	**27.77**	**242**	P	P	10 44 25.8	-0.4
	2.7nm,0.6s,baz=58,slow=4.8,SNR=7.9						
MJAR	**Matsushiro Arr**	**43.86**	**345**	LR	LR	11 03 54.3	
	comp=Z,113nm,18.8s,baz=30,slow=34						
TORD	**Torodi Ar. Bea**	**149.07**	**286**	PKPbc	PKPbc	10 58 25.1	-0.3
	0.6nm,0.5s,baz=39,slow=3.0,SNR=5.7						

NIED ***12*** *10:58:00,38.°10N×144.°30E,h5km,Mw4.0 Best double couple: M₀9.52000×10¹⁴ NP1:φ₅358.00000°, δ29.00000°, λ-84.00000°. NP2:φ₅171.00000°, δ61.00000°, λ-93.00000°.*

JMA ***12*** *10:58:14.6±0.2,38.°12N×144.°30E,h41km,M4.4*

ISCJB ***12*** *10:58:15.4±0.6,38.°06N±0.°04×144.°26E±0.°05,h33km, mb3.7/11, MS3.8/1, Error ellipse: s-maj=6.1km s-min=5.5km az=169.2*

IDC ***12*** *10:58:18.8±3.0,37.°88N×144.°30E,h50km±27km, mb3.4/11, mb1 3.6/15, mb1mx3.5/48, mbtmp3.7/15, ML3.5/4, MS3.8/1, Ms1 3.8/1, ms1mx2.8/42, Error ellipse: s-maj=22.5km s-min=14.5km az=99.0*

ISC 12 10:58:17.4±0.8, 38°08N±0.°05×144°30E±0.°08, h35km, n33, σ2§12/42, mb3.7/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.29**	**297**	P	**Pn**	**10 58 51.1**	**-1.6**
OFUJ				*e*S	**Sn**	**10 59 18.3**	**-1.3**
JIO	**Ouri**	**2.35**	**280**	P	**Pn**	**10 58 52.1**	**-1.4**
JIO				*e*S	**Sn**	**10 59 19.7**	**-1.4**
MIYJ	**Miyakonagasawa**	**2.45**	**308**	P	**Pn**	**10 58 52.8**	**-2.0**
MIYJ				*e*S	**Sn**	**10 59 21.0**	**-2.5**
JMK	**Ichinoseki**	**2.57**	**291**	P	**Pn**	**10 58 55.3**	**-1.1**
JMK				*e*S	**Sn**	**10 59 25.5**	**-1.0**
JOM	**Ohasama**	**2.73**	**302**	P	**Pn**	**10 58 58.0**	**-0.7**
JOM				*e*S	**Sn**	**10 59 30.3**	**-0.2**
JANG	**Nango**	**3.15**	**318**	P	**Pn**	**10 59 03.1**	**-1.4**
JFT	**Otama**	**3.19**	**261**	P	**Pn**	**10 59 04.6**	**-0.4**
JFT				*e*S	**Sn**	**10 59 41.5**	**-0.3**
JYK	**Kaneyama**	**3.20**	**286**	P	**Pn**	**10 59 04.5**	**-0.7**
JYK				*e*S	**Sn**	**10 59 42.3**	**+0.2**
JCH	**Churui**	**4.59**	**351**	P	**Pn**	**10 59 21.0**	**-3.2**
JCH				*e*S	**Sn**	**11 00 11.3**	**-4.9**
JRY	**Ryogami san**	**4.78**	**246**	P	**Pn**	**10 59 25.6**	**-1.3**
JRY				*e*S	**Sn**	**11 00 17.5**	**-3.6**
JOD2	**Odawara 2**	**5.04**	**238**	P	**Pn**	**10 59 29.0**	**-1.5**
JOD2				*e*S	**Sn**	**11 00 23.2**	**-4.4**
MJAR	**Matsushiro Arr**	**5.09**	**254**	P	**Pn**	**10 59 31.6**	**+0.4**
	3.8nm,0.3s,baz=83,slow=15,SNR=30						
MAT	**Matsushiro**	**5.09**	**254**	P	**Pn**	**10 59 31.8**	**+0.6**
MAT				*e*S	**Sn**	**11 00 26.7**	**-2.1**
NEM2	**Nemuro 2**	**5.39**	**11**	*e*S	Sn	11 00 27.0	-9.1
JTKR	**Abashiri--Toko**	**5.89**	**357**	*e*S	**Sn**	**11 00 42.4**	**-6.0**
JHJ	**Hachijo jima 2**	**6.17**	**218**	P	**Pn**	**10 59 46.1**	**+0.3**
	14nm,0.3s,baz=271,slow=22,SNR=16						
JHJ				S	**Sn**	**11 00 51.5**	**-3.6**
	24nm,0.3s,baz=75,slow=21,SNR=4.9						
ASAJ	**Asahikawa**	**6.17**	**349**	P	**Pn**	**10 59 44.5**	**-1.3**
ASAJ				S	**Sn**	**11 00 55.7**	**+0.5**
	1.3nm,0.3s,baz=295,slow=26,SNR=3.7						
KSRS	**Korea Array**	**12.98**	**272**	P	**Pn**	**11 01 21.5**	**+2.3**
	0.1nm,0.3s,baz=76,slow=14,SNR=2.7						
KLR	**Kul'dur**	**14.36**	**325**	P	**Pn**	**11 01 39.7**	**+1.8**
	0.1nm,0.3s,baz=111,slow=14,SNR=3.2						
SEY	**Seymchan**	**25.37**	**9**	P	**P**	**11 03 42.3**	**+1.4**
	1.2nm,0.6s,baz=242,slow=10,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**26.82**	**127**	T	T	11 31 27.5	
	baz=316,slow=74,SNR=6.2						
H11N1	**WAKE ISLAND Hy**	**26.83**	**127**	T	T	11 31 34.4	
	baz=316,slow=74,SNR=4.8						
H11N3	**WAKE ISLAND Hy**	**26.84**	**127**	T	T	11 31 39.1	
	baz=316,slow=74,SNR=5.0						
SONM	**Songino Array**	**29.15**	**302**	P	**P**	**11 04 16.1**	**+1.0**
	0.4nm,0.7s,baz=100,slow=7.5,SNR=2.4						
MKAR	**Makanchi Array**	**45.52**	**302**	P	**P**	**11 06 33.7**	**+0.4**
	0.2nm,0.3s,baz=90,slow=8.5,SNR=5.8						
KURBB	**Kurchatov Arra**	**47.18**	**308**	P	**P**	**11 06 46.4**	**+0.1**
	0.9nm,0.6s,baz=82,slow=7.8,SNR=9.0						
ILAR	**Eielson Array**	**47.38**	**33**	P	**P**	**11 06 50.0**	**+2.3**
	0.4nm,0.8s,baz=265,slow=6.7,SNR=4.7						
BVAR	**Borovoye Array**	**51.57**	**312**	P	**P**	**11 07 20.9**	**+1.1**
	1.0nm,0.7s,baz=64,slow=13,SNR=5.4						
INK	**Inuvik**	**52.41**	**28**	P	**P**	**11 07 26.6**	**+0.9**
	0.8nm,0.6s,baz=243,slow=4.5,SNR=3.5						
INK				LR	LR	11 34 10.9	
	comp=Z,83nm,18.2s,baz=262,slow=41						
WRA	**Warramunga Arr**	**58.47**	**191**	P	**P**	**11 08 08.2**	**-1.6**
	1.8nm,0.6s,baz=12,slow=7.2,SNR=25						
ASAR	**Alice Springs**	**62.19**	**191**	P	**P**	**11 08 33.9**	**-1.4**
	0.7nm,0.7s,baz=4.0,slow=7.8,SNR=9.5						
PDAR	**Pinedale Array**	**75.29**	**47**	P	**P**	**11 09 56.5**	**-0.6**
	0.3nm,0.5s,baz=298,slow=1.9,SNR=3.3						
BRTR	**Keskin Array B**	**79.85**	**313**	P	**P**	**11 10 23.1**	**+0.6**
	0.4nm,0.4s,baz=30,slow=8.0,SNR=2.5						

IDC ***12*** *11:00:09.2±1.9,22.°14N×123.°20E,h0km,mb3.6/6, mb1 3.7/6, mb1mx3.4/42, mbtmp3.6/6, Error ellipse: s-maj=152.0km s-min=18.5km az=65.0*

ISCJB ***12*** *11:00:10.3±1.2,21.°48N±0.°05×121.°06E±0.°05,h16km±7km, mb3.4/6, Error ellipse: s-maj=10.0km s-min=7.6km az=37.6*

TAP ***12*** *11:00:12.2,21.°61N×121.°02E,h27km,ML3.9,C*

ISC 12 11:00:12.2±1.9, 21°67N±0.°07×121°12E±0.°05, h14km±10km, n53, σ1§47/63, mb3.5/6, 1C-1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TSEB	**Hengchuen, Pin**	**0.30**	**319**	*i* P	**Pb**	**11 00 20.2**	**+0.7**
	baz=325						
TSEB				*i* S	**Sn**	**11 00 26.3**	**-2.2**
	baz=325						
HEN	**Hengchun**	**0.48**	**314**	⇑*i* P	**Pb**	**11 00 22.4**	**-0.1**
	baz=331						
HEN				S	**Sb**	**11 00 29.7**	**+0.2**
	baz=331						
LAY	**Lan-yu**	**0.55**	**48**	P	**Pn**	**11 00 25.0**	**-0.6**
	baz=50						
LAY				*i* S	**Sn**	**11 00 35.0**	**+0.4**
	baz=50						
TAW	**Tawu**	**0.71**	**344**	*e*P	**Pb**	**11 00 25.9**	**-0.6**
	baz=3.0						
TAW				*i* S	**Sn**	**11 00 37.8**	**-0.8**
	baz=3.0						
EAST	**Anshuo**	**0.75**	**341**	⇓*e*P	**Pb**	**11 00 26.5**	**-0.6**
	baz=358						
EAST				S	**Sn**	**11 00 39.8**	**+0.1**
	baz=358						
SCZT	**Fangliau**	**0.84**	**327**	*i* P	**Pn**	**11 00 28.9**	**-0.7**
	baz=325						
SCZT				S	**Sn**	**11 00 40.9**	**-0.8**
	baz=325						
ECL	**Taimali**	**0.94**	**351**	*e*P	**Pb**	**11 00 28.6**	**-1.6**
	baz=9.0						
TWP	**Hsiaoliuchiu**	**0.97**	**314**	*e*P	**Pb**	**11 00 30.1**	**-0.7**
	baz=321						
TWP				*e*S	**Sg**	**11 00 44.1**	**+0.4**
	baz=321						
TTN	**Taitung**	**1.08**	**2**	*e*P	**Pg**	**11 00 33.5**	**+0.4**
	baz=7.0						
TWG	**Pinlang**	**1.15**	**358**	*e*P	**Pn**	**11 00 30.6**	**-3.3**
	baz=3.0						
SSD	**Sandimen**	**1.16**	**337**	P	**Pb**	**11 00 33.7**	**-0.4**
	baz=343						
SSD				*e*S	**Sn**	**11 00 49.7**	**0.0**
	baz=343						
SGLT	**Jiouru**	**1.20**	**331**	*e*P	**Pb**	**11 00 34.3**	**-0.5**
	baz=337						
SGLT				*e*S	**Sg**	**11 00 51.3**	**+0.2**
	baz=337						
TWM1	**Shoushan**	**1.32**	**331**	*e*P	**Pg**	**11 00 37.3**	**-0.3**
	baz=337						
CHKT	**Chengkung**	**1.44**	**9**	*e*P	**Pn**	**11 00 36.0**	**-1.9**
	baz=13						
CHKT				*e*S	**Sn**	**11 00 55.5**	**-1.1**
	baz=13						
SGST	**Jiashian**	**1.49**	**341**	*e*P	**Pb**	**11 00 39.8**	**+0.1**
	baz=331						
SGST				*e*S	**Sg**	**11 01 00.4**	**+0.1**
	baz=331						
ELDTW	**Lidau**	**1.52**	**357**	*e*P	**Pn**	**11 00 39.0**	**-0.1**
STYT	**Tauyuan**	**1.52**	**348**	*e*P	**Pn**	**11 00 39.3**	**+0.2**
	baz=352						
CHN3	**Shinhua**	**1.56**	**334**	*e*P	**Pb**	**11 00 41.1**	**+0.2**
	baz=324						
CHN1	**Nanshi**	**1.60**	**340**	*e*P	**Pn**	**11 00 39.3**	**-0.9**
	baz=328						
WTP	**Ta-pu**	**1.64**	**344**	*e*P	**Pb**	**11 00 41.1**	**-1.2**
	baz=348						
TWF1	**Yuli**	**1.68**	**6**	*e*P	**Pn**	**11 00 40.5**	**-0.7**
	baz=9.0						
TWK	**Hsinying**	**1.69**	**340**	*e*P	**Pn**	**11 00 41.9**	**+0.5**
	baz=328						
CHN4	**Tsaushan**	**1.74**	**344**	*e*P	**Pn**	**11 00 42.9**	**-1.1**
	baz=333						
YUS	**Yu-Shan**	**1.82**	**355**	*e*P	**Pb**	**11 00 44.4**	**-1.1**
	baz=346						
EHY	**Hungye**	**1.84**	**6**	*e*P	**Pn**	**11 00 43.8**	**+0.4**
	baz=9.0						
ALS	**Alishan**	**1.85**	**351**	*e*P	**Pb**	**11 00 45.9**	**-0.2**
	baz=355						
CHY	**Chiayi**	**1.93**	**341**	*e*P	**Pn**	**11 00 44.0**	**-0.6**
	baz=330						
CHN5	**Tsauling**	**1.96**	**348**	*e*P	**Pn**	**11 00 45.8**	**+0.6**
	baz=352						
WGK	**Gukeng**	**2.07**	**346**	*e*P	**Pn**	**11 00 46.9**	**+0.3**
	baz=349						
WDT	**Danda**	**2.08**	**0**	*e*P	**Pn**	**11 00 48.4**	**-1.5**
	baz=12						
WSF	**Szhu**	**2.13**	**337**	*e*P	**Pn**	**11 00 48.5**	**+1.2**
	baz=327						
ESL	**Shilin**	**2.15**	**8**	*e*P	**Pn**	**11 00 47.7**	**-0.1**
	baz=10.0						
SMLT	**Sun Moon Lake**	**2.21**	**355**	*e*P	**Pn**	**11 00 49.7**	**+1.1**
	baz=10.0						
WNT	**Mingjian**	**2.23**	**350**	*e*P	**Pb**	**11 00 50.7**	**-1.7**
	baz=353						
TYC	**Yuchr**	**2.24**	**354**	*e*P	**Pb**	**11 00 50.5**	**-1.9**
	baz=344						
PNG	**Penghu**	**2.38**	**323**	*e*P	**Pn**	**11 00 48.3**	**-2.4**
	baz=326						
PNG				*e*S	**Sn**	**11 01 14.4**	**-5.2**
	baz=326						
TWD	**Chiawan**	**2.44**	**10**	*e*P	**Pn**	**11 00 52.8**	**+1.2**
	baz=13						
WHF	**Hehuan Shan**	**2.47**	**3**	*e*P	**Pn**	**11 00 53.4**	**+1.0**
	baz=13						
TWT	**Tachien**	**2.57**	**1**	*e*P	**Pn**	**11 00 55.4**	**+1.8**
	baz=4.0						
TWQ1	**Liyutan**	**2.69**	**353**	*e*P	**Pn**	**11 00 56.0**	**+1.0**
	baz=344						
NSY	**Sanyi**	**2.75**	**353**	*e*P	**Pn**	**11 00 57.5**	**+1.6**
	baz=344						
NNS	**Nan Shan**	**2.77**	**5**	*e*P	**Pb**	**11 00 59.0**	**-2.6**
	baz=16						
NSTT	**Nanjuang**	**2.95**	**358**	*e*P	**Pn**	**11 01 00.5**	**+1.8**
	baz=1.0						
ENTT	**Nioudou**	**2.99**	**8**	*e*P	**Pn**	**11 00 59.4**	**+0.3**
	baz=16						
NSK	**Sanguang**	**3.00**	**4**	*e*P	**Pn**	**11 01 00.4**	**+1.0**
	baz=353						
TWC	**Suao**	**3.00**	**13**	*e*P	**Pn**	**11 00 58.3**	**-1.1**
	baz=8.0						
NWF	**Wu-fen Shan**	**3.44**	**10**	*e*P	**Pn**	**11 01 08.2**	**+2.7**
	baz=12						
SONM	**Songino Array**	**28.67**	**339**	P	**P**	**11 06 10.2**	**+1.5**
	0.8nm,0.9s,baz=154,slow=9.3,SNR=4.5						
MKAR	**Makanchi Array**	**40.12**	**318**	P	P	11 07 55.1	+7.6
	0.4nm,0.6s,baz=108,slow=10,SNR=2.6						
ZALV	**Zalesovo Beam**	**42.33**	**329**	P	**P**	**11 08 09.0**	**+3.5**
	0.4nm,0.3s,baz=133,slow=12,SNR=3.2						
WRA	**Warramunga Arr**	**43.33**	**162**	P	**P**	**11 08 12.2**	**-1.8**
	0.6nm,0.6s,baz=344,slow=8.8,SNR=8.9						
KURBB	**Kurchatov Arra**	**44.01**	**322**	P	P	11 08 25.4	+6.2
	0.3nm,0.5s,baz=117,slow=7.7,SNR=2.6						
ASAR	**Alice Springs**	**46.75**	**164**	P	**P**	**11 08 39.9**	**-1.3**
	0.1nm,0.3s,baz=352,slow=7.3,SNR=7.3						

IDC ***12*** *11:14:47.1±1.9,9.°67N×122.°28E,h0km,mb3.7/6, mb1 3.8/6, mb1mx3.5/65, mbtmp3.7/6, MS2.9/1, Ms1 2.9/1, ms1mx2.6/47, Error ellipse: s-maj=69.2km s-min=40.6km az=62.0*

MAN ***12*** *11:14:48,9.°49N×122.°09E,h9km,mb4.6,ML3.5,MS3.4*

ISCJB ***12*** *11:14:50.4±0.7,9.°50N±0.°08×122.°23E±0.°05,h37km, mb3.8/9, Error ellipse: s-maj=11.0km s-min=7.5km az=8.6*

ISC 12 11:14:51.9±0.9, 9°52N±0.°09×122°18E±0.°07, h37km, n17, σ1§60/17, mb3.8/9, 2C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.06**	**99**	*i* P	Pn	11 15 04.0	-6.2
SNPH				*i* S	**Sn**	**11 15 20.1**	**-3.7**
JAP	**San Jose, Anti**	**1.24**	**350**	⇑*e*P	**Pn**	**11 15 11.6**	**-1.1**
TBP	**Tagbilaran**	**1.67**	**84**	*e*P	**Pn**	**11 15 19.7**	**+1.1**
LLP	**Lapu-Lapu**	**1.93**	**66**	⇑*e*P	**Pn**	**11 15 22.3**	**+0.1**
LLP				*e*S	**Sn**	**11 15 48.4**	**+3.1**
RCP	**Roxas**	**2.10**	**15**	⇓*e*P	**Pn**	**11 15 25.0**	**+0.4**
PLP	**Palo**	**3.21**	**59**	⇓*i* P	**Pn**	**11 15 39.8**	**0.0**
PLP				*e*S	**Sn**	**11 16 14.3**	**-2.4**
DAV	**Davao City (W)**	**4.16**	**126**	LR	LR	11 17 10.5	
	comp=Z,145nm,18.1s,baz=349,slow=34						
CMAR	**Chiang Mai Arr**	**24.21**	**294**	P	**P**	**11 20 06.2**	**+0.9**
	0.8nm,0.5s,baz=111,slow=7.8,SNR=5.4						
WRA	**Warramunga Arr**	**31.63**	**158**	P	**P**	**11 21 11.3**	**-0.4**
	0.5nm,0.5s,baz=333,slow=11,SNR=11						
ASAR	**Alice Springs**	**34.92**	**161**	P	**P**	**11 21 41.0**	**+0.7**
	1.9nm,0.7s,baz=340,slow=7.1,SNR=34						
SONM	**Songino Array**	**40.45**	**344**	P	**P**	**11 22 26.9**	**-0.1**
	0.7nm,0.9s,baz=172,slow=9.7,SNR=5.3						
STKA	**Stephens Creek**	**45.16**	**156**	P	P	11 23 09.6	+4.5
	1.7nm,0.8s,baz=316,slow=11,SNR=4.6						
MKAR	**Makanchi Array**	**50.25**	**325**	P	**P**	**11 23 45.2**	**+0.7**
	0.5nm,0.5s,baz=128,slow=7.9,SNR=5.5						
ZALV	**Zalesovo Beam**	**53.42**	**333**	P	**P**	**11 24 07.0**	**-0.9**
	0.5nm,0.4s,baz=124,slow=8.9,SNR=3.8						
KURBB	**Kurchatov Arra**	**54.46**	**327**	P	**P**	**11 24 16.7**	**+1.1**
	0.7nm,0.5s,baz=119,slow=9.0,SNR=5.6						
AKASG	**Malin Array Be**	**84.58**	**320**	P	**P**	**11 27 21.3**	**-0.1**
	0.3nm,0.3s,baz=70,slow=4.3,SNR=5.6						
PLCA	**Paso Flores**	**146.93**	**162**	PKPbc	**PKPab**	**11 34 32.0**	**-0.3**
	1.1nm,0.6s,baz=248,slow=7.3,SNR=3.6						

NIED ***12*** *11:17:00,23.°50N×121.°50E,h20km,Mw4.8 Best double couple: M₀1.53000×10¹⁶ NP1:φ₅138.00000°, δ56.00000°, λ42.00000°. NP2:φ₅21.00000°, δ56.00000°, λ137.00000°.*

BKK ***12*** *11:17:04.3±1.0,24.°N±12.°×12.°3E±.°, h10km,M4.6/18, mB5.1/7, mb4.8/18, Mw(mB)4.5/7*

BJI ***12*** *11:17:06.7,23.°55N×121.°52E,h8km,mb4.7/68, mB4.7/49, ML5.1/9, Ms4.6/74, Ms7 4.6/68*

JMA ***12*** *11:17:09.6±0.1,23.°50N×121.°55E,h32km±3km,M4.7*

ISCJB ***12*** *11:17:10.6±0.2,23.°48N±0.°01×121.°61E±0.°01,h46km±1km, mb5.0/190, MS4.3/34, Error ellipse: s-maj=2.6km s-min=1.8km az=152.8*

TAP ***12*** *11:17:11.0,23.°51N×121.°52E,h31km,ML5.3,B*

MOS ***12*** *11:17:11.2±0.9,23.°50N×121.°62E,h55km,mb5.2/94, MS4.2/19, Error ellipse: s-maj=7.7km s-min=4.2km az=115.8*

NEIC ***12*** *11:17:11.0±0.8,23.°43N×121.°52E,h35km±5km,mb5.1/93, ML5.4(TAP), Error ellipse: s-maj=4.6km s-min=3.9km az=111.0*

NEIC Felt [III] at Taichung and Taipei. Also felt at Hsinchu, Luzhou, Nantou and Sanxia. Recorded [4 TAP] in Hualien; [3 TAP] in Changhua, Nantou and Taitung; [2 TAP] in Chiayi, Miaoli, Taoyuan, Yilan and Yunlin; [1 TAP] in Hsinchu.

GCMT ***12*** *11:17:11.0±0.6,23.°40N×121.°51E,h34km,MW5.0/56, Moment Tensor Solution. s30,c35; s56,c71; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr3.83±.23; Mθθ-0.44±.13; Mφφ-3.39±.14; Mrθ-0.02±.16; Mφθ-0.11±.09; Mφr-0.44±.14; Best double couple: M₀3.63900×10¹⁶ NP1:φ₅182.00000°, δ48.00000°, λ90.00000°. NP2: φ₅2.00000°, δ42.00000°, λ90.00000°. Principal ax

TCU eS **Sb** **11 17 44.6 +0.2**
baz=308
CHY **Chiayi** **1.06 270**⇑*iP* **Pb** **11 17 30.4 -0.6**
baz=270
ECL **Taimali** **1.06 213**⇑*eP* **Pn** **11 17 27.7 -1.9**
baz=197
TWQ1 **Liyutan** **1.12 319**⇑*iP* **Pb** **11 17 31.9 -0.2**
baz=319
TWQ1 eS **Sb** **11 17 46.1 -0.3**
baz=319
TWC **Suao** **1.14 12**⇓*eP* **Pn** **11 17 30.8 +0.2**
baz=5.0
ENTT **Nioudou** **1.14 359** ⇓P **Pn** **11 17 30.6 -0.1**
baz=3.0
SSD **Sandimen** **1.15 230**⇑*eP* **Pn** **11 17 30.4 -0.3**
baz=225
SSD eS **Sb** **11 17 46.7 -0.5**
baz=225
YHNB **Yeheng** **1.18 351** *e*Pn **Pn** **11 17 31.2 -0.2**
YHNB eSn **Sn** **11 17 45.0 -1.3**
NSY **Sanyi** **1.18 321**⇑*iP* **Pb** **11 17 32.9 -0.2**
baz=320
NSY *i* S **Sb** **11 17 48.7 +0.6**
baz=320
NSK **Sanguang** **1.19 350**⇑*iP* **Pn** **11 17 31.6 +0.2**
baz=5.0
CHN3 **Shinhua** **1.19 250**⇑*iP* **Pb** **11 17 33.5 +0.3**
baz=262
CHN3 eS **Sb** **11 17 50.1 +1.7**
baz=262
TWE **Neicheng** **1.22 4** ⇑P **Pn** **11 17 31.6 -0.2**
baz=8.0
WTCT **Ta-ch'eng** **1.25 287**⇑*iP* **Pb** **11 17 33.0 -1.1**
baz=287
WTCT eS **Sb** **11 17 49.2 -0.7**
baz=287
NSTT **Nanjuang** **1.25 335**⇑*iP* **Pb** **11 17 33.4 -0.7**
baz=347
NSTT eS **Sn** **11 17 47.9 +0.1**
baz=347
WSF **Szhu** **1.25 277** P **Pb** **11 17 32.8 -1.5**
baz=276
WSF eS **Sb** **11 17 48.6 -1.5**
baz=276
TWM1 **Shoushan** **1.26 238**⇑*iP* **Pb** **11 17 34.5 +0.2**
baz=237
SGLT **Jiouru** **1.26 233** *eP* **Pb** **11 17 34.3 -0.1**
baz=230
CHN8 **Yiju** **1.27 264**⇑*iP* **Pb** **11 17 33.1 -1.3**
baz=263
CHN8 S **Sb** **11 17 49.7 -0.8**
baz=263
ILA **Ilan** **1.27 7** *eP* **Pb** **11 17 33.5 -1.0**
baz=359
TAW **Tawu** **1.30 209** ⇑P **Pn** **11 17 31.5 -1.3**
baz=194
EAST **Anshuo** **1.30 212**⇑*iP* **Pn** **11 17 31.7 -1.2**
baz=197
SCLT **Jiali** **1.31 256**⇑*iP* **Pb** **11 17 34.1 -1.1**
baz=255
SCLT eS **Sb** **11 17 51.1 -0.7**
baz=255
TAI1 **Yung-k'ang** **1.32 250**⇑*iP* **Pb** **11 17 34.9 -0.5**
baz=250
EGS **1.38 13** ⇑P **Pn** **11 17 35.0 +1.0**
baz=30
EGS eS **Sb** **11 17 55.6 +1.9**
baz=30
HSN **Hsinchu** **1.42 337**⇓*eP* **Pb** **11 17 36.0 -0.9**
baz=323
SCZT **Fangliau** **1.43 219** *eP* **Pb** **11 17 36.6 -0.6**
baz=201
SCZT eS **Sb** **11 17 54.8 -0.2**
baz=201
LAY **Lan-yu** **1.45 181** *eP* **Pn** **11 17 33.9 -1.1**
baz=168
TATO **Taipei** **1.48 357** *e*Pn **Pn** **11 17 35.7 +0.4**
TATO eSn **Sn** **11 17 53.7 +0.3**
KAU **Kaohsiung** **1.49 232** *eP* **Pb** **11 17 38.1 -0.1**
baz=231
NCU **National Centr** **1.51 346** *eP* **Pb** **11 17 37.4 -1.1**
baz=344
NCU eS **Sb** **11 17 56.9 -0.5**
baz=344
TAP1 **Taipei** **1.54 358**⇑*eP* **Pn** **11 17 36.7 +0.6**
baz=9.0
TAP1 eS **Sn** **11 17 55.2 +0.3**
baz=9.0
TAP **Taipei** **1.54 357** *eP* **Pb** **11 17 37.8 -1.2**
baz=360
TWB1 **Santiao Chiao** **1.55 14** ⇑P **Pb** **11 17 37.8 -1.5**
baz=3.0
JYNG **Yonagunijimaku** **1.57 52** P **Pn** **11 17 37.3 +0.8**
JYNG eS **Sn** **11 17 57.2 +1.5**
NWF **Wu-fen Shan** **1.58 7**⇓*eP* **Pn** **11 17 37.4 +0.7**
baz=10.0
TWP **Hsiaoliuchiu** **1.60 225** *eP* **Pb** **11 17 39.4 -0.7**
baz=221
TWS1 **Kuangyinshan** **1.60 355**⇓*eP* **Pn** **11 17 37.8 +0.8**
baz=16
YOJ **Yonaguni jima** **1.62 53** P **Pn** **11 17 38.0 +0.7**
YOJ eS **Sn** **11 17 58.5 +1.5**
YOJ **Yonaguni jima** **1.62 53**⇓*iP* **Pn** **11 17 38.2 +0.9**
baz=59
YOJ eS **Sn** **11 17 57.8 +0.8**
baz=59
YOJ **Yonaguni jima** **1.62 53** *eP* **Pn** **11 17 38.0 +0.7**
YOJ *e* 11 17 57.5
YOJ **Yonaguni jima** **1.62 53** *e*Pn **Pn** **11 17 38.0 +0.7**
YOJ eSn **Sn** **11 17 57.5 +0.5**
HEN **Hengchun** **1.68 208**⇓*eP* **Pb** **11 17 40.0 -1.4**
baz=191
TSEB **Hengchuen, Pin** **1.71 202** *eP* **Pn** **11 17 38.7 +0.3**
baz=189
TWY **Chenhua** **1.77 1** ⇑P **Pn** **11 17 39.9 +0.6**
baz=3.0
WDGT **Dungji** **1.78 263**⇑*iP* **Pn** **11 17 39.5 +0.1**
baz=262
WDGT eS **Sn** **11 17 59.8 -1.1**
baz=262
PNG **Penghu** **1.86 273**⇑*iP* **Pn** **11 17 40.8 +0.3**
baz=272
PNG eS **Sn** **11 18 02.3 -0.6**
baz=272
HATJ **Hateruma jima** **2.11 74** P **Pn** **11 17 44.6 +0.6**
HATJ eS **Sn** **11 18 10.5 +1.4**
IRIF **Iriomote-Funau** **2.14 67** P **Pn** **11 17 45.1 +0.8**
IRIF eS **Sn** **11 18 11.1 +1.4**
PCYT **Pengchaiyu** **2.17 12**⇓*eP* **Pn** **11 17 45.8 +0.9**
baz=1.0
JKRS **Kuro-shima** **2.34 71** P **Pn** **11 17 48.0 +0.8**
JKRS eS **Sn** **11 18 16.3 +1.5**
JIJ **Ishigaki jima** **2.50 69** P **Pn** **11 17 49.6 +0.3**
JIJ eS **Sn** **11 18 18.6 0.0**
JISG **Ishigakijimahi** **2.72 66** P **Pn** **11 17 52.6 +0.2**
JISG eS **Sn** **11 18 24.3 +0.2**
KNM **Kinmen** **3.02 288**⇑*iP* **Pn** **11 17 57.9 +1.4**
baz=287
JTJ **Tarama** **3.07 68** P **Pn** **11 17 57.7 +0.5**
JTJ eS **Sn** **11 18 33.9 +1.1**
QZH **Quanzhou** **3.09 298**⇓*iP*n Pn 11 17 48.1 -9.3
QZH Sn Sn 11 18 22.5 -11
QZH smax smax
comp=N,10μm,1.0s
QZH smax smax
comp=E,7μm,0.8s
QZH LR LR
comp=N,9μm,4.2s
QZH LR LR
comp=E,15μm,9.4s
QZH LR LR
comp=Z,21μm,11.2s
JIRB **Irabujima** **3.54 67** P **Pn** **11 18 03.9 +0.3**
JIRB eS **Sn** **11 18 45.5 +1.2**
JMJ **Miyako jima 2** **3.64 68** P **Pn** **11 18 05.6 +0.7**
JMJ eS **Sn** **11 18 48.9 +2.2**
JMJ **Miyako jima 2** **3.64 68** *eP* **Pn** **11 18 05.7 +0.7**
baz=72
JIKM **Ikemajima** **3.64 66** P **Pn** **11 18 05.4 +0.4**
JIKM eS **Sn** **11 18 46.9 +0.2**
JOGS **Gusukube** **3.71 69** P **Pn** **11 18 06.8 +0.7**
JOGS eS **Sn** **11 18 49.7 +1.0**
PIP **Pasuquin** **5.22 190**⇑*iP* **Pn** **11 18 28.0 +1.2**
JKE **Kume jima 2** **5.50 58** P **Pn** **11 18 30.3 -0.3**
JKE eS **Sn** **11 19 32.0 -0.7**
JAGN **Aguni-jima** **5.99 58** P **Pn** **11 18 37.3 0.0**
JAGN eS **Sn** **11 19 45.3 +0.6**
JJT2 **Tamagusuku 2** **6.19 64** P **Pn** **11 18 39.8 -0.3**
JJT2 eS **Sn** **11 19 51.1 +1.4**
JNTH **Nagotoyohara** **6.57 61** P **Pn** **11 18 44.5 -0.8**
JNTH eS **Sn** **11 19 57.3 -1.8**
JIH **Iheya** **6.77 57** P **Pn** **11 18 46.7 -1.3**
JIH eS **Sn** **11 20 05.7 +1.7**
JOW **Kunigami** **6.91 60** P **Pn** **11 18 48.5 -1.5**
JOW eS **Sn** **11 20 07.0 -0.6**
JOW **Kunigami** **6.91 60**⇓*eP* **Pn** **11 18 48.6 -1.4**
baz=74
JOW **Kunigami** **6.91 60** *e*Pn **Pn** **11 18 48.7 -1.4**
JOW eSn **Sn** **11 20 07.7 +0.2**
JOKE **Okinoerabujima** **7.40 57** P **Pn** **11 18 54.8 -1.9**
MCO **Taipa Grande** **7.53 261** P **Pn** **11 19 00.0 +1.5**
GZH **Guangzhou** **7.58 269** P **Pn** **11 18 55.0 -4.2**
GZH pmax pmax
comp=Z,140nm,0.6s
JTK **Tokunoshima** **7.90 56** P **Pn** **11 19 01.3 -2.3**
JTK eS **Sn** **11 20 28.0 -3.9**
JAMN **Amaminishikomi** **8.31 54** P **Pn** **11 19 06.7 -2.5**
JAMN eS **Sn** **11 20 40.3 -1.6**
JAM **Amami Oshima** **8.72 54** P **Pn** **11 19 12.1 -2.7**
JAM eS **Sn** **11 20 47.4 -4.6**
JTAJ **Takarajima** **8.86 49** P **Pn** **11 19 15.6 -1.1**
NJ2 **Nanjing** **8.86 345** *eP* **Pn** **11 19 16.0 -0.7**
NJ2 S **Sn** **11 20 50.0 -5.3**
NJ2 pmax pmax
comp=Z,60nm,0.6s
NJ2 smax smax
comp=Z,320nm,0.8s
NJ2 smax smax
comp=Z,300nm,1.0s
NJ2 LR LR
comp=Z,2μm,13.0s
NJ2 LR LR
comp=Z,1μm,9.5s
NJ2 LR LR
comp=Z,3μm,14.1s
JZK **Kikaishima** **8.95 56** P **Pn** **11 19 15.9 -2.0**
JMZ **Minamidaito 2** **9.07 73** P **Pn** **11 19 15.5 -4.1**
JMZ eS Sn 11 20 50.6 -10
WHN **Wuhan** **9.53 319** ⇓P **Pn** **11 19 25.8 -0.1**
WHN S **Sn** **11 21 06.3 -5.5**
WHN LR LR
comp=Z,7μm,7.2s
WHN LR LR
comp=Z,6μm,5.7s
WHN LR LR
comp=Z,7μm,14.8s
QIZ **Qiongzhong** **11.81 250** P **Pn** **11 19 57.1 -0.1**
QIZ S **Sn** **11 22 09.8 +1.9**
QIZ LR LR
comp=Z,1μm,17.1s
QIZ LR LR
comp=Z,1μm,17.9s
QIZ LR LR
comp=Z,2μm,16.5s
QIZ **Qiongzhong** **11.81 250** *e*Pn **Pn** **11 19 58.0 +0.8**
QIZ eSn **Sn** **11 22 03.9 -4.0**
JNU **Nakatsue** **12.60 38** P **Pn** **11 20 09.1 +1.1**
comp=Z,1.5nm,0.3s,baz=185,slow=8.8,SNR=11
JNU LR LR 11 25 31.8
comp=Z,543nm,20.0s,baz=255,slow=40
JNU **Nakatsue** **12.60 38** *e*Pn **Pn** **11 20 10.6 +2.6**
ENH **Enshi** **12.72 305** *e*Pn **Pn** **11 20 11.5 +1.9**
TIA **Tai'an** **13.25 344** *eP* **P** **11 20 21.9 -4.2**
TIA S **Sn** **11 22 44.0 +1.2**
TIA LR LR
comp=Z,1μm,14.0s
TIA LR LR
comp=Z,660nm,10.0s
TIA LR LR
comp=Z,2μm,13.0s
GYA **Guiyang** **13.85 285**⇑*iP* **Pn** **11 20 25.5 +0.4**
GYA pP P 11 20 32.6 -0.4
GYA PP **PnPn** **11 20 38.4 +5.3**
GYA S **Sn** **11 22 50.9 -6.9**
GYA pmax pmax
comp=Z,50nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.0s
GYA LR LR
comp=Z,480nm,14.5s
GYA LR LR
comp=Z,520nm,15.8s
GYA LR LR
comp=Z,470nm,14.8s
KS15 **Wonju Array Si** **14.92 20** *e*Pn **P** **11 20 43.0 -1.7**
KSRS **Korea Array** **14.94 20** P **Pn** **11 20 41.9 +2.1**
comp=Z,2.6nm,0.3s,baz=198,slow=12,SNR=32
KSRS LR LR 11 27 18.9
comp=Z,688nm,19.5s,baz=203,slow=41
KS01 **Wonju Array Si** **14.95 20** *e*Pn **P** **11 20 43.1 -2.0**
XAN **Xi'an** **15.27 316** P **Pn** **11 20 43.7 -0.5**
XAN pP P 11 20 49.5 +0.8
XAN S **Sn** **11 23 30.7 -1.5**
XAN pmax pmax
comp=Z,11nm,0.9s
XAN pmax pmax
comp=Z,100nm,9.0s
XAN LR LR
comp=Z,860nm,15.9s
XAN LR LR
comp=Z,2μm,15.2s
XAN LR LR
comp=Z,3μm,15.1s
DL2 **Dalian** **15.36 0** P **P** **11 20 50.7 +1.1**
DL2 S **S** **11 23 47.4 -2.4**
DL2 pmax pmax
comp=Z,72nm,1.0s
DL2 pmax pmax
comp=Z,120nm,3.9s
DL2 LR LR
comp=N,1μm,15.3s
DL2 LR LR
comp=Z,1μm,14.5s
TIY **Taiyuan** **16.20 333** *eP* **P** **11 21 00.5 +1.5**
TIY pmax pmax
comp=Z,46nm,0.5s
TIY pmax pmax
comp=Z,290nm,6.0s
TIY LR LR
comp=Z,1μm,10.3s
TIY LR LR
comp=Z,780nm,7.0s
TIY LR LR
comp=Z,1μm,13.9s
BJT **Baijiatuau** **17.10 346** *eP* **P** **11 21 08.5 -0.4**
BJT pmax pmax
comp=Z,22nm,0.7s
BJT **Baijiatuau** **17.10 346** *e*Pn **P** **11 21 08.5 -0.4**
comp=Z,22nm,0.7s
BJI **Beijing** **17.12 346** P **P** **11 21 08.2 -0.8**
BJI S **Sn** **11 24 19.2 +2.3**
BJI pmax pmax
comp=Z,10.0nm,1.0s
BJI pmax pmax
comp=Z,320nm,5.6s
BJI LR LR
comp=Z,980nm,15.1s
BJI LR LR
comp=Z,620nm,20.6s
UBPT **Khong Chiam** **17.25 245** P P 11 21 18.1 +7.5
comp=Z,31nm,1.5s,comp=Z,687nm
KMI **Kunming** **17.25 279** P **P** **11 21 13.2 +2.3**
KMI pP pP 11 21 17.6 -2.3
KMI sP sP 11 21 20.5 -3.7
KMI PP **PnPn** **11 21 23.2 +3.3**
KMI S **Sn** **11 24 23.5 +2.7**
KMI SS **SnSn** **11 24 39.4 +5.2**
KMI pmax pmax
comp=Z,12nm,1.0s
KMI pmax pmax
comp=Z,95nm,4.2s
KMI LR LR
comp=Z,770nm,13.8s
KMI LR LR
comp=Z,2μm,14.5s
KMI LR LR
comp=Z,3μm,15.1s
CD2 **Chengdu** **17.48 299** P **P** **11 21 13.0 -0.2**
CD2 pP pP 11 21 21.1 -1.0
CD2 sP sP 11 21 24.7 -1.7
CD2 S **Sn** **11 24 27.3 +1.4**
CD2 pmax pmax
comp=Z,50nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.2s
CD2 LR LR
comp=Z,2μm,10.3s
CD2 LR LR
comp=Z,3μm,10.5s
CD2 LR LR
comp=Z,4μm,11.3s
SKNT **Sakolnakorn** **17.74 252** P P 11 21 23.4 +7.3
comp=Z,19nm,1.8s
INU **Inuyama** **17.87 45** *e*Pn **P** **11 21 18.4 +1.0**
comp=Z,23nm,0.8s
NONG **Nongkai** **18.06 256** P P 11 21 28.8 +9.2
comp=Z,30nm,1.7s
KKM **Kota Kinabalu** **18.10 197** *e*Pn **Pn** **11 21 18.5 -1.6**
comp=Z,37nm,1.0s
SNY **Shenyang** **18.36 5** ⇓P **Pn** **11 21 24.1 +1.2**
SNY S **S** **11 24 53.7 +3.0**
SNY pmax pmax
comp=Z,150nm,2.5s
SNY pmax pmax
comp=Z,150nm,4.7s
SNY LR LR
comp=Z,700nm,20.6s
SNY LR LR
comp=Z,990nm,13.2s
SNY LR LR
comp=Z,1μm,13.5s
MYLDM **Lahad Datu** **18.45 190** *eP* **P** **11 21 18.8 -5.2**
comp=Z,76nm,1.0s
JHJ **Hachijo jima 2** **18.65 55** P **P** **11 21 26.1 0.0**
comp=Z,18nm,0.3s,baz=210,slow=7.1,SNR=15
JHJ LR LR 11 28 35.5
comp=Z,239nm,18.1s,baz=296,slow=37
JHJ2 **Mitsune** **18.67 55** *eP* **Pn** **11 21 29.2 +2.4**
comp=Z,253nm,0.9s
HHC **Hu-ho-hao-te** **19.24 336** *eP* **Pn** **11 21 34.7 +0.9**
HHC pmax pmax
comp=Z,27nm,1.2s
HHC pmax pmax
comp=Z,110nm,7.4s
HHC LR LR
comp=Z,760nm,18.6s
HHC LR LR
comp=Z,420nm,18.5s
HHC LR LR
comp=Z,800nm,18.5s
MJAR **Matsushiro Arr** **19.36 44** P **P** **11 21 32.0 -1.9**
comp=Z,1.7nm,0.3s,baz=240,slow=11,SNR=15
MJAR LR LR 11 30 04.5
comp=Z,105nm,18.8s,baz=235,slow=40
MJAR **Matsushiro Arr** **19.36 44** P **P** **11 21 32.0 -1.9**
MJAR pmax pmax
comp=Z,2.0nm,0.3s
MJAR MLR MLR
comp=Z,105nm,18.8s
LZH **Lanzhou** **19.82 313** *eP* **Pn** **11 21 43.7 +3.0**
LZH pP pP 11 21 47.9 -0.1
LZH sP sP 11 21 50.4 -1.9
LZH PP **PnPn** **11 22 02.5 +7.5**
LZH S **Sn** **11 25 23.4 +0.8**
LZH SS **SnSn** **11 25 43.0 +5.9**
LZH pmax pmax
comp=Z,28nm,0.8s
LZH pmax pmax
comp=Z,150nm,4.1s
LZH LR LR
comp=Z,1μm,12.4s
LZH LR LR
comp=Z,2μm,15.0s
LZH LR LR
comp=Z,2μm,15.4s
CHAI **Chaiyaphum** **19.92 251** P **Pn** **11 21 45.6 +3.7**
comp=Z,7.3nm,1.1s
CRAI **Chiangrai** **19.95 265** P **Pn** **11 21 45.1 +2.9**
comp=Z,92nm,1.0s,comp=Z,4μm
CN2 **Changchun** **20.50 8** *eP* **P** **11 21 46.7 +0.5**
CN2 pmax pmax
comp=Z,20nm,0.8s
CN2 pmax pmax
comp=Z,100nm,4.0s
CN2 LR LR
comp=Z,700nm,15.0s
CN2 LR LR
comp=Z,400nm,15.0s
CN2 LR LR
comp=Z,700nm,16.0s
PBKT **Sadao Pong** **20.54 254** P Pn 11 21 51.4 +2.3
comp=Z,38nm,1.2s
MSHR **Mys Shultsa** **20.63 20***ceP* Pn 11 21 49.4 -0.5
SRAK **Srakaew** **20.75 246** P Pn 11 21 50.4 -1.1
comp=Z,72nm,0.9s,comp=Z,805nm
LAMP **Lampang** **21.07 261** P **P** **11 21 57.7 +5.2**
comp=Z,92nm,0.9s,comp=Z,81nm
CMMT **Chiang Mai** **21.61 262** P **P** **11 22 03.2 +4.9**
comp=Z,37nm,1.0s
CHTO **Chiang Mai** **21.61 262** P **P** **11 22 03.3 +5.0**
comp=Z,165nm,1.1s
CHTO **Chiang Mai** **21.61 262** *eP* **P** **11 21 55.6 -2.7**
CHTO pmax pmax
comp=Z,26nm,0.8s
CHTO **Chiang Mai** **21.61 262** *eP* **P** **11 21 55.6 -2.7**
comp=Z,26nm,0.8s
CM01 **Chiang Mai Arr** **21.71 261** *eP* **P** **11 22 02.1 +2.7**
CMAR **Chiang Mai Arr** **21.71 261** P **P** **11 22 01.6 +2.2**
comp=Z,7.5nm,0.9s,baz=62,slow=8.3,SNR=24
CMAR PcP **PcP** **11 25 60.0 +0.2**
comp=Z,2.7nm,0.4s,baz=58,slow=1.0,SNR=12
CMAR LR LR 11 31 14.3
comp=Z,818nm,19.0s,baz=71,slow=39
MDJ **Mudanjiang** **22.07 15** P **P** **11 22 02.5 -0.5**
MDJ pP pP 11 22 08.3 -3.7
MDJ sP sP 11 22 10.9 -5.4
MDJ PcP **PcP** **11 26 00.4 +0.5**
MDJ sS Sn 11 26 14.6 -1.5
MDJ ScP **ScP** **11 29 36.5 +1.7**
MDJ PcS **PcS** **11 29 38.5 +0.1**
MDJ ScS **ScS** **11 33 21.0 +1.6**
MDJ pmax pmax
comp=Z,22nm,1.0s
MDJ pmax pmax
comp=Z,110nm,6.4s
MDJ LR LR
comp=Z,500nm,15.9s
MDJ LR LR
comp=Z,840nm,12.9s
MDJ LR LR
comp=Z,770nm,13.3s
MDJ **Mudanjiang** **22.07 15** *eP* **P** **11 22 02.8 -0.2**
comp=Z,26nm,1.0s
USRK **Ussuriysk Ar.** **22.35 20** P **P** **11 22 05.5 -0.5**
comp=Z,6.6nm,0.6s,baz=204,slow=8.8,SNR=18
UMPA **Umpang Tak** **22.55 255** P P 11 22 15.7 +7.3
comp=Z,13nm,1.2s,comp=Z,792nm
SBUM **Sibu** **22.80 205** *eP* **P** **11 22 10.7 -0.4**
comp=Z,65nm,0.9s
MRSI **Marisa** **22.88 179** P **P** **11 22 15.0 +3.1**
comp=Z,49nm,0.9s,comp=Z,3μm
GUMO **Guam** **24.14 110** P **P** **11 22 24.0 -0.1**
comp=Z,57nm,0.7s,baz=101,slow=10,SNR=3.5
GUMO LR LR 11 29 49.3
comp=Z,221nm,21.0s,baz=296,slow=31
GTA **Gaotai** **24.33 316** *eP* **P** **11 22 26.5 +0.7**
GTA pP pP 11 22 33.6 -2.0
GTA sP sP 11 22 37.0 -2.7
GTA S **S** **11 26 43.3 +0.3**
GTA pmax pmax
comp=Z,23nm,1.2s
GTA pmax pmax
comp=Z,230nm,8.6s
GTA LR LR
comp=Z,670nm,14.7s
GTA LR LR
comp=Z,1μm,15.0s
GTA LR LR
comp=Z,2μm,15.0s
LUWI **Luwuk** **24.42 177** P **P** **11 22 28.8 +2.2**
comp=Z,126nm,1.0s,comp=Z,4μm
LUWI **Luwuk** **24.42 177** *eP* **P** **11 22 21.7 -4.9**
comp=Z,184nm,1.2s
KSM **Kuching** **24.47 208** *eP* **P** **11 22 26.9 -0.3**
comp=Z,84nm,1.1s
LBMI **Labuha** **24.67 166** P **P** **11 22 27.9 -1.0**
STKI **Sintang** **25.27 204** P **P** **11 22 36.2 +1.8**
comp=Z,39nm,0.9s

HIA **Hailar** 25.76 357 *e*P **P** 11 22 37.1 -1.5
HIA pmax pmax
comp=Z,14nm,1.0s
ERM **Erimo** 25.77 39 *e*P **P** 11 22 36.8 -1.9
ERM pmax pmax
comp=Z,12nm,0.6s
ERM **Erimo** 25.77 39 *e*P **P** 11 22 37.0 -1.7
comp=Z,15nm,0.6s
ASAJ **Asahikawa** 26.84 35 *e*P **P** 11 22 47.6 -0.7
comp=Z,10.0nm,0.5s
KLR **Kul'dur** 26.91 15 P **P** 11 22 47.9 -1.0
comp=Z,6.2nm,0.5s,baz=214,slow=9.3,SNR=17
KLR PcP **PcP** 11 26 09.1 -1.3
comp=Z,1.8nm,0.7s,baz=209,slow=5.8,SNR=3.8
KLR LR LR 11 34 36.5
comp=Z,441nm,18.7s,baz=198,slow=39
HABR **Khabarovsk** 27.12 20 *e*P **P** 11 22 48.7 -2.1
HABR *e**SP **pP** 11 23 02.3 +1.8
HABR *e*PPP PPP 11 23 41.2
HABR 11 26 09.0
HABR *e*S **S** 11 27 25.6 -1.2
HABR *e*SS **SnSn** 11 28 35.5 +0.1
HABR *e* 11 33 37.2
HABR pmax pmax
comp=E,7.0nm,1.5s
HABR pmax pmax
comp=N,5.0nm,1.5s
HABR pmax pmax
comp=Z,12nm,1.5s
SONA0 **Songino Array** 27.14 337 *e*P **P** 11 22 50.4 -0.8
comp=Z,13nm,0.8s
SONA0 *e*PcP **PcP** 11 26 09.9 -1.2
SONM **Songino Array** 27.14 337 P **P** 11 22 50.4 -0.8
comp=Z,7.8nm,0.8s,baz=154,slow=9.7,SNR=51
SONM PcP **PcP** 11 26 09.9 -1.2
comp=Z,0.5nm,0.5s,baz=175,slow=2.5,SNR=4.1
SONM LR LR 11 35 01.8
comp=Z,1μm,18.1s,baz=150,slow=39
SONA1 **Songino Array** 27.15 337 *e*P **P** 11 22 50.5 -0.8
LSA **Lhasa** 27.85 289 P **P** 11 23 01.9 +3.7
LSA S **S** 11 27 31.7 -8.0
LSA LR LR
comp=Z,250nm,20.5s
LSA LR LR
comp=Z,1μm,18.4s
LSA LR LR
comp=Z,2μm,18.4s
KAPI **Kappang** 28.39 184 P **P** 11 23 01.7 -0.7
comp=Z,6.9nm,0.7s,baz=265,slow=3.8,SNR=3.6
KAPI LR LR 11 34 46.1
comp=Z,189nm,19.9s,baz=28,slow=37
KAPI **Kappang** 28.39 184 *e*P **P** 11 23 01.7 -0.7
comp=Z,30nm,1.1s
YSS **Yuzh-Sakhalins** 28.93 31‖ *e*P **P** 11 23 10.0 +3.1
YSS pmax pmax
comp=Z,30nm,0.7s
YSS MLR MLR
comp=Z,300nm,14.0s
ZAK **Zakamensk** 30.39 337 *e*P P 11 23 14.4 -5.6
ZAK pmax pmax
comp=Z,3.0nm,1.0s
KUR **Kuril'sk** 30.44 38 *e*P **P** 11 23 22.2 +1.8
TLY **Talaya** 31.35 338 P **P** 11 23 27.6 -0.8
comp=Z,4.3nm,0.6s,baz=266,slow=4.7,SNR=6.5
TLY LR LR 11 37 28.9
comp=Z,575nm,18.7s,baz=142,slow=39
TLY **Talaya** 31.35 338 *e*P **P** 11 23 27.8 -0.6
TLY *e*S **S** 11 28 27.2 -6.0
TLY pmax pmax
comp=Z,8.0nm,1.0s
TLY MLR MLR
comp=Z,528nm,18.0s
TLY **Talaya** 31.35 338 *e*P **P** 11 23 27.8 -0.6
RAMN **Ramite** 31.77 284 *e*P **P** 11 23 33.9 +1.3
comp=Z,15nm,0.6s
GUN **Gumba** 32.40 285 *e*P **P** 11 23 39.5 +1.3
comp=Z,40nm,0.7s
KKN **Kakani** 32.93 285 *e*P **P** 11 23 43.6 +0.9
comp=Z,28nm,0.9s
DMN **Daman** 33.09 285 *e*P **P** 11 23 45.0 +0.8
comp=Z,18nm,0.7s
GKN **Gorkha** 33.49 286 *e*P **P** 11 23 48.9 +1.3
comp=Z,16nm,0.5s
WMQ **Urumqi** 34.39 314 P **P** 11 23 56.5 +1.4
WMQ pP sP 11 24 07.2 -1.9
WMQ S **S** 11 29 22.9 +2.1
WMQ pmax pmax
comp=Z,13nm,0.6s
WMQ pmax pmax
comp=Z,95nm,5.3s
WMQ LR LR
comp=Z,740nm,14.2s
WMQ LR LR
comp=Z,950nm,13.6s
WMQ LR LR
comp=Z,850nm,14.4s
KOLN **Koldanda** 34.42 285 *e*P **P** 11 23 56.5 +0.8
comp=Z,19nm,0.7s
YAK **Yakutsk** 38.91 6 P **P** 11 24 32.5 -0.7
comp=Z,19nm,0.4s,baz=147,slow=2.7,SNR=5.8
YAK LR LR 11 41 11.9
comp=Z,192nm,20.4s,baz=195,slow=37
YAK **Yakutsk** 38.91 6 *e*P **P** 11 24 31.3 -1.9
YAK pmax pmax
comp=N,13nm,1.0s
YAK pmax pmax
comp=E,4.0nm,1.1s
YAK pmax pmax
comp=Z,30nm,1.1s
YAK MLR MLR
comp=Z,300nm,17.0s
YAK **Yakutsk** 38.91 6 *e*P **P** 11 24 32.0 -1.2
comp=Z,26nm,0.6s
MK01 **Makanchi Array** 39.07 316 *e*P **P** 11 24 35.0 +0.1
MK31 **Makanchi Array** 39.08 316 *e*P **P** 11 24 35.4 +0.4
MK31 **Makanchi Array** 39.08 316 *e*P **P** 11 24 35.4 +0.4
MK32 **Makanchi Array** 39.08 316 *e*P **P** 11 24 35.3 +0.4
MK32 *e*PcP **PcP** 11 26 42.9 -1.4
MKAR **Makanchi Array** 39.08 316 P **P** 11 24 35.3 +0.4
comp=Z,38nm,0.7s,baz=110,slow=10,SNR=157
MKAR PcP **PcP** 11 26 42.9 -1.4
comp=Z,3.4nm,0.8s,baz=91,slow=5.8,SNR=4.6
MKAR LR LR 11 42 02.9
comp=Z,489nm,19.3s,baz=104,slow=38
MKAR **Makanchi Array** 39.08 316 *e*P **P** 11 24 35.4 +0.4
comp=Z,299nm,0.8s
MAKZ **Makanchi** 39.29 316 *i* P **P** 11 24 36.2 -0.5
MAKZ pmax pmax
comp=Z,45nm,0.8s
MAKZ **Makanchi** 39.29 316 *e*P **P** 11 24 37.1 +0.4
comp=Z,46nm,0.8s
PDGK **Podgornoye** 39.81 310 P **P** 11 24 41.7 +0.7
PDGK pmax pmax
comp=Z,41nm,1.0s
PEA0 **Petropavlovsk-** 40.23 33 *e*P **P** 11 24 44.8 +0.4
PETK **Petropavlovsk-** 40.23 33 P **P** 11 24 45.0 +0.6
comp=Z,6.2nm,0.8s,baz=197,slow=4.6,SNR=6.7
PETK LR LR 11 41 39.3
comp=Z,200nm,19.4s,baz=227,slow=36
PETK **Petropavlovsk-** 40.23 33 P **P** 11 24 45.0 +0.6
PETK pmax pmax
comp=Z,6.0nm,0.9s
PETK MLR MLR
comp=Z,200nm,19.4s
PEA1 **Petropavlovsk-** 40.24 33 *e*P **P** 11 24 45.0 +0.5
PET **Petropavlovsk** 40.68 34 *e*P **P** 11 24 48.6 +0.6
PET *e*S **S** 11 30 55.9 +0.2
PET MLR MLR
comp=Z,300nm,21.0s
PET MLR MLR
comp=Z,300nm,19.0s
PET **Petropavlovsk** 40.68 34 *e*P **P** 11 24 48.7 +0.7
comp=Z,26nm,0.9s
ZAA0 **Zalesovo Array** 41.02 327 *e*P **P** 11 24 50.0 -0.9
ZALV **Zalesovo Beam** 41.02 327 P **P** 11 24 49.8 -1.0
comp=Z,15nm,0.6s,baz=116,slow=7.4,SNR=46
ZALV PcP **PcP** 11 26 48.6 -1.7
comp=Z,1.4nm,0.5s,baz=141,slow=4.8,SNR=2.9
ZALV LR LR 11 43 05.3
comp=Z,392nm,20.0s,baz=66,slow=38
ZAA1 **Zalesovo Array** 41.02 327 *e*P **P** 11 24 49.8 -1.0
ZAA1 *e*PcP **PcP** 11 26 48.6 -1.7
MA2 **Magadan** 41.48 22 P **P** 11 24 54.6 0.0
comp=Z,22nm,1.0s,baz=182,slow=10,SNR=4.7
MA2 LR LR 11 43 02.6
comp=Z,168nm,19.2s,baz=218,slow=37

FITZ **Fitzroy Crossi** 41.53 174 P **P** 11 24 53.3 -2.1
comp=Z,5.3nm,0.7s,baz=0.1,slow=8.9,SNR=13
FITZ **Fitzroy Crossi** 41.53 174 *e*P **P** 11 24 53.3 -2.1
comp=Z,25nm,1.4s
KSH **Kashi** 41.58 304 P **P** 11 24 59.5 +3.6
KSH *e*pP pP 11 25 06.9 +1.0
KSH *e*sP sP 11 25 09.9 0.0
KSH *e*PP **PnPn** 11 26 40.2 +3.1
KSH PcS **PcS** 11 30 46.7 +2.5
KSH S **S** 11 31 14.8 +5.0
KSH pmax pmax
comp=Z,21nm,1.4s
KSH pmax pmax
comp=Z,51nm,3.0s
KSH LR LR
comp=Z,810nm,17.0s
KSH LR LR
comp=Z,690nm,14.4s
KSH LR LR
comp=Z,1μm,17.4s
H11N1 **WAKE ISLAND Hy** 42.17 86 T T 12 10 11.8
baz=283,slow=74,SNR=205
H11N2 **WAKE ISLAND Hy** 42.17 86 T T 12 10 08.8
baz=283,slow=74,SNR=385
H11N3 **WAKE ISLAND Hy** 42.18 86 T T 12 10 13.1
baz=283,slow=74,SNR=356
H11S3 **WAKE ISLAND Hy** 42.28 88 T T 12 10 14.8
baz=285,slow=75,SNR=571
NVS **Novosibirsk** 42.28 328 *e*P **P** 11 25 00.8 -0.3
NVS pmax pmax
comp=Z,20nm,1.4s
NVS pmax pmax
comp=N,14nm,1.5s
H11S1 **WAKE ISLAND Hy** 42.28 88 T T 12 10 17.8
baz=285,slow=75,SNR=326
H11S2 **WAKE ISLAND Hy** 42.29 88 T T 12 10 18.3
baz=285,slow=75,SNR=266
COEN **Coen** 42.80 148 *e*P **P** 11 25 06.2 +0.4
comp=N,35nm,1.1s
KURK **Kurchatov** 42.85 320 P **P** 11 25 05.8 -0.1
KURK pmax pmax
comp=Z,13nm,0.6s
KURK **Kurchatov** 42.85 320 *e*P **P** 11 25 05.6 -0.3
comp=Z,26nm,1.0s
KURBB **Kurchatov Arra** 42.87 320 P **P** 11 25 05.8 -0.2
comp=Z,13nm,0.6s,baz=113,slow=9.1,SNR=64
FRU **Bishkek** 43.16 308⇑ *i* P **P** 11 25 09.0 +0.4
AAK **Ala-Archa** 43.21 308 P **P** 11 25 10.2 +1.0
comp=Z,11nm,0.8s,baz=96,slow=6.3,SNR=11
AAK **Ala-Archa** 43.21 308 *e*P **P** 11 25 09.1 0.0
AAK pmax pmax
comp=Z,24nm,0.9s
SEY **Seymchan** 44.50 20 P **P** 11 25 19.1 +0.2
comp=Z,5.1nm,0.7s,baz=211,slow=6.2,SNR=12
MNAS **Manas** 44.63 307 P **P** 11 25 21.7 +1.2
MNAS pmax pmax
comp=Z,28nm,1.0s
WRAB **Tennant Creek** 44.93 163 *i* P **P** 11 25 21.7 -1.1
WRAB pmax pmax
comp=Z,46nm,0.9s
WRAB **Tennant Creek** 44.93 163 *e*P **P** 11 25 21.2 -1.6
comp=Z,19nm,0.8s
WR1 **Warramunga Arr** 44.93 163 *e*P **P** 11 25 21.2 -1.7
WR1 *e*PcP **PcP** 11 27 03.6 -0.3
WRA **Warramunga Arr** 44.93 163 P **P** 11 25 21.2 -1.7
comp=Z,19nm,0.7s,baz=345,slow=8.8,SNR=90
WRA PcP **PcP** 11 27 03.6 -0.3
comp=Z,6.3nm,1.0s,baz=340,slow=3.7,SNR=5.4
WB2 **Warramunga Arr** 44.94 163 *e*P **P** 11 25 21.3 -1.6
OTUK **Ortayu** 45.93 315 P **P** 11 25 31.1 +0.5
OTUK pmax pmax
comp=Z,37nm,1.1s
KK31 **Karatay Array** 46.18 308 *i* P **P** 11 25 32.3 -0.3
KK31 pmax pmax
comp=Z,9.0nm,0.7s
KKAR **Karatay Array** 46.18 308 *e*P **P** 11 25 32.9 +0.3
KKAR pmax pmax
comp=Z,120nm,0.9s
KKAR **Karatay Array** 46.18 308 *e*P **P** 11 25 32.9 +0.3
comp=Z,120nm,0.9s
KBL **Kabul** 46.79 296 *e*P **P** 11 25 39.0 +1.2
KBL pmax pmax
comp=Z,26nm,1.0s
KBL **Kabul** 46.79 296 *e*P **P** 11 25 39.0 +1.2
comp=Z,26nm,1.0s
DZET **Dzherino** 47.03 302 P **P** 11 25 39.7 +0.2
DZET pmax pmax
comp=Z,23nm,1.0s
VOSK **Vostochnaya** 48.00 321 *e*P **P** 11 25 46.3 -0.4
VOSK pmax pmax
comp=Z,14nm,0.8s
VOSK **Vostochnaya** 48.00 321 *e*P **P** 11 25 46.3 -0.4
comp=Z,14nm,0.8s
TIXI **Tiksi** 48.36 3 P **P** 11 25 47.4 -1.7
comp=Z,13nm,0.6s,baz=166,slow=5.4,SNR=23
TIXI LR LR 11 48 54.5
comp=Z,318nm,18.2s,baz=230,slow=39
TIXI **Tiksi** 48.36 3 *ce*P **P** 11 25 47.7 -1.4
TIXI pmax pmax
comp=Z,31nm,1.2s
TIXI **Tiksi** 48.36 3 *e*P **P** 11 25 49.5 +0.4
AS31 **Alice Springs** 48.38 165 *e*P **P** 11 25 49.3 -0.6
comp=Z,3.8nm,0.9s
ASAR **Alice Springs** 48.38 165 P **P** 11 25 48.8 -1.2
comp=Z,8.7nm,0.8s,baz=344,slow=6.6,SNR=54
ASAR PcP **PcP** 11 27 15.3 -0.8
comp=Z,5.8nm,0.9s,baz=342,slow=3.9,SNR=5.8
ASAR ScP **ScP** 11 31 04.5 -3.8
comp=Z,0.8nm,0.8s,baz=4.2,slow=4.2,SNR=4.5
AS01 **Alice Springs** 48.40 165 *e*P **P** 11 25 48.7 -1.3
BVA0 **Borovoye Array** 48.43 321 *i* P **P** 11 25 49.0 -1.0
BVA0 pmax pmax
comp=Z,12nm,0.8s
BVAR **Borovoye Array** 48.43 321 P **P** 11 25 49.8 -0.2
comp=Z,11nm,0.7s,baz=99,slow=9.2,SNR=49
BVAR PcP **PcP** 11 27 14.7 -1.2
comp=Z,4.6nm,0.7s,baz=108,slow=4.8,SNR=5.1
CHKZ **Chkalovo** 48.50 322 *i* P **P** 11 25 49.5 -0.9
CHKZ pmax pmax
comp=Z,33nm,0.7s
BRVK **Borovoye** 48.51 321 *ce*P **P** 11 25 50.6 +0.1
BRVK pmax pmax
comp=Z,65nm,0.8s
BRVK **Borovoye** 48.51 321 *e*P **P** 11 25 50.6 +0.1
comp=Z,25nm,0.9s
ZRNK **Zerenda** 49.22 321 *e*P **P** 11 25 55.8 -0.2
ZRNK pmax pmax
comp=Z,27nm,0.9s
ZRNK **Zerenda** 49.22 321 *e*P **P** 11 25 55.8 -0.2
comp=Z,27nm,0.9s
CTA **Charters Tower** 49.55 149 P **P** 11 25 59.2 +0.3
comp=Z,5.4nm,0.6s,baz=334,slow=9.5,SNR=8.6
NRIK **Noril'sk** 50.16 345 P **P** 11 26 02.8 -0.1
comp=Z,3.1nm,0.7s,baz=127,slow=8.9,SNR=3.3
NRIK LR LR 11 48 37.6
comp=Z,143nm,21.3s,baz=144,slow=38
BILL **Bilibino** 52.21 20‖ *e*P **P** 11 26 18.1 -0.2
BILL *e**PP **sP** 11 26 31.0 -1.5
BILL *e**SP **pP** 11 26 35.4 +6.9
BILL pmax pmax
comp=Z,20nm,1.0s
BILL MLR MLR
comp=Z,361nm,18.0s
AB31 **Akbulak array** 54.18 315 *i* P **P** 11 26 32.7 -0.4
AB31 pmax pmax
comp=Z,23nm,0.8s
ABKAR **Akbulak array** 54.18 315 *e*P **P** 11 26 33.3 +0.2
comp=Z,191nm,0.8s
FORT **Forrest** 54.32 173 *e*P **P** 11 26 33.6 -0.6
comp=Z,370nm,0.7s
SVE **Sverdlovsk** 54.81 324‖ *e*P **P** 11 26 37.4 -0.1
SVE pmax pmax
comp=Z,33nm,0.9s
GEYT **Alibeck** 55.46 301 P **P** 11 26 43.7 +1.0
comp=Z,12nm,0.8s,baz=48,slow=2.2,SNR=15
GEYT LR LR 11 54 53.6
comp=Z,563nm,18.1s,baz=95,slow=41
AKTO **Aktyubinsk** 55.52 316 P **P** 11 26 42.6 -0.2
comp=Z,13nm,0.8s,baz=84,slow=7.1,SNR=31
AKTO **Aktyubinsk** 55.52 316 *i* P **P** 11 26 42.1 -0.7
AKTO pmax pmax
comp=Z,13nm,0.8s
ARU **Arti** 55.87 323 P **P** 11 26 44.0 -1.2
comp=Z,9.1nm,0.3s,baz=110,slow=1.9,SNR=29
ARU **Arti** 55.87 323 *d* *i*P **P** 11 26 44.4 -0.8
ARU 11 28 49.3

ARU S **S** 11 34 31.9 +1.6
ARU SS **SS** 11 38 11.1 -4.9
ARU pmax pmax
comp=Z,30nm,1.0s
ARU MLR MLR
comp=Z,209nm,16.0s
ARU **Arti** 55.87 323 *e*P **P** 11 26 44.8 -0.4
comp=Z,25nm,0.9s
NWAO **Narrogin (SRO)** 56.26 184 P **P** 11 26 47.2 -1.0
comp=Z,12nm,1.0s,baz=239,slow=7.4,SNR=7.0
BBOO **Buckleboo** 57.67 166 *e*P **P** 11 26 57.5 -0.6
comp=Z,43nm,0.8s
STKA **Stephens Creek** 58.30 160 P **P** 11 27 02.0 -0.5
comp=Z,24nm,0.7s,baz=337,slow=7.3,SNR=74
STKA LR LR 11 58 13.8
comp=Z,59nm,18.1s,baz=32,slow=42
STKA **Stephens Creek** 58.30 160 *e*P **P** 11 27 02.0 -0.5
comp=Z,6.2nm,0.7s
DZM **Mont Dzumac** 62.90 133 P **P** 11 27 34.2 -0.1
comp=Z,4.9nm,0.6s,baz=346,slow=8.3,SNR=3.1
DZM **Mont Dzumac** 62.90 133 *e*P **P** 11 27 34.2 -0.1
comp=Z,114nm,2.0s
TOO **Toolangi** 64.78 159 P **P** 11 27 46.5 +0.3
TOO pmax pmax
comp=Z,35nm,1.0s
ZEI **Tsey** 65.64 308 *e*P **P** 11 27 50.9 -1.3
ZEI pmax pmax
comp=Z,42nm,0.6s
VRH **Novokhopyorsk** 65.81 317 *e*P **P** 11 27 51.7 -1.1
VRH pmax pmax
comp=Z,40nm,0.7s
GOF **Gofitskoye** 65.86 310⇑ *e*P **P** 11 27 53.1 -0.2
TT01 **Tatalina** 65.92 30 *e*P **P** 11 27 54.0 +0.7
KLMR **Klimovskoe** 65.94 328 *e*P **P** 11 27 50.5 -3.0
KLMR *e* 11 28 21.2
KLMR pmax pmax
comp=Z,27nm,1.5s
KBZ **Khabaz** 66.19 309 P **P** 11 27 55.6 +0.2
comp=Z,7.8nm,0.9s,baz=94,slow=5.9,SNR=12
KBZ LR LR 12 01 08.7
comp=Z,266nm,18.0s,baz=22,slow=40
SVW2 **Sparrevohn** 66.29 32 *e*P **P** 11 27 55.3 -0.5
comp=Z,25nm,1.1s
KIV **Kislovodsk** 66.30 309 *e*P **P** 11 27 56.3 0.0
KIV pmax pmax
comp=Z,20nm,1.0s
KIV **Kislovodsk** 66.30 309 *e*P **P** 11 27 56.0 -0.3
comp=Z,40nm,1.3s
NEY **Neytrino** 66.40 309 *e*P **P** 11 27 58.3 +1.2
NEY pmax pmax
comp=Z,1.0nm,0.8s
VSR **Storozhevoye** 67.39 318 *e*P **P** 11 28 01.5 -1.5
VSR pmax pmax
comp=Z,30nm,1.1s
MOS **Moscow** 67.57 323 *e*P **P** 11 28 01.1 -2.9
MOS pmax pmax
comp=Z,52nm,1.1s
CAST **Castle Rocks** 67.64 29 *e*P **P** 11 28 05.1 +0.7
comp=Z,32nm,0.9s
PPLA **Purkeypile** 67.66 30 *e*P P 11 27 59.5 -5.1
comp=Z,70nm,1.5s
RSO **Redoubt South** 67.75 32 *e*P **P** 11 28 05.9 +0.6
APA **Apatity** 67.83 336⇑ *i*P P 11 27 56.7 -8.8
APA *i* 11 28 11.0
APA pmax pmax
comp=Z,6.0nm,1.1s
APA MLR MLR
comp=Z,400nm,16.0s
COLD **Coldfoot** 67.90 25 *e*P **P** 11 28 06.7 +0.8
comp=Z,38nm,1.4s
SPU **Mount Spurr** 67.98 31 *e*P **P** 11 28 07.6 +1.1
KTH **Kantishna Hill** 68.14 29 *e*P **P** 11 28 08.2 +0.7
comp=Z,17nm,0.8s
KDAK **Kodiak Island** 68.25 35 *e*P **P** 11 28 08.9 +0.6
KDAK **Kodiak Island** 68.25 35 *e*P **P** 11 28 08.9 +0.6
comp=Z,160nm,0.9s
OBN **Obninsk** 68.26 322 P **P** 11 28 07.7 -0.6
comp=Z,23nm,0.4s,baz=121,slow=21,SNR=5.0
OBN **Obninsk** 68.26 322‖ *e*P **P** 11 28 07.6 -0.7
OBN *e**SP **sP** 11 28 22.2 -0.6
OBN *e* 11 28 33.1
OBN pmax pmax
comp=Z,47nm,1.7s
OBN MLR MLR
comp=Z,226nm,19.0s
TRF **Thorofare Moun** 68.43 29 *e*P **P** 11 28 10.2 +0.6
comp=Z,12nm,0.8s
SUA **Susitna One** 68.56 31 *e*P **P** 11 28 11.0 +0.8
comp=Z,45nm,1.0s
MSVF **Nonsavu** 68.70 121 *e*P **P** 11 28 10.3 -1.4
MSVF pmax pmax
comp=Z,55nm,1.2s
BRLK **Bradley Lake** 68.78 33 *e*P **P** 11 28 12.0 +0.4
comp=Z,51nm,1.1s
MCK **McKinley** 68.98 28 *e*P **P** 11 28 12.7 0.0
MCK pmax pmax
comp=Z,23nm,1.0s
MCK **McKinley** 68.98 28 *e*P **P** 11 28 12.7 0.0
comp=Z,23nm,1.0s
RND **Reindeer** 69.08 29 *e*P **P** 11 28 13.0 -0.4
RND pmax pmax
comp=Z,54nm,0.8s
RND **Reindeer** 69.08 29 *e*P **P** 11 28 13.0 -0.4
comp=Z,54nm,0.8s
WRH **Wood River Hil** 69.21 28 *e*P **P** 11 28 15.1 +1.0
comp=Z,18nm,1.0s
COLA **College** 69.23 27 *e*P **P** 11 28 15.6 +1.4
COLA pmax pmax
comp=Z,13nm,0.8s
COLA **College** 69.23 27 *e*P **P** 11 28 15.6 +1.4
comp=Z,13nm,0.8s
PMR **Palmer** 69.29 31 *e*P **P** 11 28 14.6 0.0
PMR pmax pmax
comp=Z,16nm,0.9s
PMR **Palmer** 69.29 31 *e*P **P** 11 28 14.6 0.0
comp=Z,16nm,0.9s
CCB **Clear Creek Bu** 69.29 27 *e*P **P** 11 28 15.0 +0.4
comp=Z,16nm,1.4s
SML **Sawmill** 69.62 30 *e*P **P** 11 28 17.0 +0.2
SML pmax pmax
comp=Z,23nm,0.9s
SML **Sawmill** 69.62 30 *e*P **P** 11 28 17.0 +0.2
comp=Z,23nm,0.9s
ILAR **Eielson Array** 69.66 27 P **P** 11 28 15.5 -1.4
comp=Z,3.1nm,0.6s,baz=271,slow=4.6,SNR=36
ILB **Eielson Array** 69.66 27 *e*P **P** 11 28 15.8 -1.1
HDA **Harding Lake** 69.70 28 *e*P **P** 11 28 17.3 +0.1
comp=Z,29nm,1.2s
DHY **Denali Highway** 69.80 29 *e*P **P** 11 28 18.2 +0.3
comp=Z,13nm,1.1s
ANN **Anapa** 69.82 311 *e*P **P** 11 28 16.9 -1.3
ANN pmax pmax
comp=Z,35nm,0.9s
SCM **Sheep Creek Mo** 70.08 30 *e*P **P** 11 28 19.9 +0.2
SCM pmax pmax
comp=Z,47nm,1.1s
SCM **Sheep Creek Mo** 70.08 30 *e*P **P** 11 28 19.9 +0.2
comp=Z,47nm,1.1s
ARCES **ARCESS Array B** 70.31 338 P **P** 11 28 19.6 -1.2
comp=Z,1.3nm,0.5s,baz=61,slow=8.5,SNR=9.4
KLU **Klutina** 70.81 30 *e*P **P** 11 28 24.4 +0.3
comp=Z,14nm,0.7s
DIV **Divide** 70.97 31 *e*P **P** 11 28 25.4 +0.3
comp=Z,28nm,1.1s
DOT **Dot Lake** 71.12 28 *e*P **P** 11 28 25.5 -0.3
comp=Z,36nm,1.0s
EYAK **Cordova Ski Ar** 71.12 31 *e*P **P** 11 28 26.7 +0.8
comp=Z,25nm,1.1s
MENT **Mentasta** 71.45 29 *e*P **P** 11 28 28.6 +0.7
comp=Z,26nm,1.0s
BMRM **Bremner River** 71.56 31 *e*P **P** 11 28 29.4 +0.7
comp=Z,18nm,0.9s
RAGM **Ragged Mountai** 71.68 31 *e*P **P** 11 28 30.9 +1.6
comp=Z,48nm,1.4s
EGAK **Eagle** 72.03 27 *e*P **P** 11 28 31.2 -0.1
comp=Z,20nm,1.1s
SIM **Simferopol'** 72.06 312 *e*P **P** 11 28 31.9 0.0
SIM pmax pmax
comp=Z,58nm,1.0s
FIA1 **FINESS Array S** 72.22 330 *e*P **P** 11 28 31.3 -1.1
FIA0 **FINESS Array S** 72.22 330 *e*P **P** 11 28 31.5 -1.0
FIA0 **FINESS Array S** 72.22 330 *e*P **P** 11 28 31.4 -1.0
FINES **FINESS Array B** 72.22 330 P **P** 11 28 31.4 -1.0
comp=Z,4.8nm,0.5s,baz=54,slow=5.4,SNR=28
FINES LR LR 12 03 12.6
comp=Z,289nm,19.0s,baz=82,slow=38

CRQM	**Cirque**		72.31	31	*e*P		P	11 28 34.6	+1.3
	comp=Z,20nm,0.8s								
VSU	**Vasula**		72.75	327	*c*eP		P	11 28 35.2	-0.5
VSU					pmax	pmax			
	comp=Z,114nm,1.7s								
DAWY	**Dawson**		72.98	27	*e*P		P	11 28 37.3	+0.3
	comp=Z,15nm,0.8s								
AKASG	**Malin Array Be**		73.62	319	P		P	11 28 39.7	-1.3
	comp=Z,8.7nm,0.9s,baz=60,slow=5.8,SNR=13								
AKASG	**Malin Array Be**		73.62	319	P		P	11 28 39.7	-1.3
AKASG					pmax	pmax			
	comp=Z,1.0nm,0.4s								
AKBB	**Malin Array Si**		73.62	319	*e*P		P	11 28 39.7	-1.3
AKBB	**Malin Array Si**		73.62	319	*e*P		P	11 28 39.7	-1.3
KIEV	**Kiev**		73.64	319	*e*P		P	11 28 39.5	-1.5
KIEV					pmax	pmax			
	comp=Z,10.0nm,1.1s								
INK	**Inuvik**		73.72	22	P		P	11 28 40.5	-0.8
	comp=Z,11nm,0.9s,baz=288,slow=6.3,SNR=16								
INK	**Inuvik**		73.72	22	*e*P		P	11 28 40.4	-0.8
	comp=Z,13nm,0.9s								
NACGM	**Naroch**		73.78	323	*e*		P	11 28 41.0	-0.8
BR101	**Keskin Array S**		73.87	307	*e*P		P	11 28 42.1	-0.7
BR131	**Keskin Array S**		73.87	307	*e*P		P	11 28 43.0	+0.1
BRTR	**Keskin Array B**		73.87	307	P		P	11 28 42.1	-0.7
	comp=Z,6.8nm,0.8s,baz=101,slow=6.4,SNR=31								
HYT	**Haines Junctio**		74.91	30	*e*P		P	11 28 49.5	+1.1
	comp=Z,15nm,1.1s								
SORM	**Soroca**		74.95	316	⇑*i*P		P	11 28 46.3	-2.4
CFR	**Carcaliu**		76.04	313	⇑*i*P		P	11 28 54.9	-0.2
SUW	**Suwalki**		76.06	323	*e*P		P	11 28 54.0	-1.0
SUW	**Suwalki**		76.06	323	*e*P		P	11 28 54.0	-1.0
TIRR	**Tirgusor**		76.09	313	⇑*i*P		P	11 28 54.8	-0.6
TIRR	**Tirgusor**		76.09	313	*e*P		P	11 28 54.8	-0.6
TIRR					pmax	pmax			
	comp=Z,10.0nm,0.9s								
TIRR	**Tirgusor**		76.09	313	*e*P		P	11 28 54.8	-0.6
	comp=Z,10nm,0.9s								
TLB	**Topalu**		76.30	313	⇑*i*P		P	11 28 56.0	-0.5
HARR	**Harsova**		76.34	313	⇓*i*P		P	11 28 57.0	+0.2
SKAG	**Skagway**		76.43	31	*e*P		P	11 28 57.3	+0.3
	comp=Z,15nm,0.8s								
TESR	**Tescani**		76.57	315	⇓*i*P		P	11 28 57.7	-0.4
PLOR	**Plostina**		76.80	314	⇓*i*P		P	11 28 59.5	+0.1
PLOR	**Plostina**		76.80	314	P		P	11 28 59.5	+0.1
BURAR	**Bucovina Array**		77.11	316	⇑*i*P		P	11 29 00.5	-0.7
BURAR	**Bucovina Array**		77.11	316	P		P	11 29 00.5	-0.7
BUR08	**Bucovina Ar. S**		77.11	316	*e*P		P	11 29 00.9	-0.4
ISR	**Istrita**		77.12	314	⇑*i*P		P	11 29 01.7	+0.4
MLR	**Muntele Rosu**		77.39	314	⇓*i*P		P	11 29 02.8	-0.1
MLR	**Muntele Rosu**		77.39	314	*e*P		P	11 29 02.7	-0.1
MLR					pmax	pmax			
	comp=Z,13nm,0.8s								
MLR	**Muntele Rosu**		77.39	314	*e*P		P	11 29 02.7	-0.1
	comp=Z,13nm,0.8s								
DOPR	**Dopca**		77.58	315	⇑*i*P		P	11 29 04.4	+0.6
VOIR			78.00	314	⇑*i*P		P	11 29 05.8	-0.4
VOIR			78.00	314	P		P	11 29 05.0	-1.2
VOIR					pmax	pmax			
	comp=Z,5.0nm,0.7s								
ARR	**Arges**		78.29	314	⇑*i*P		P	11 29 08.1	+0.3
HFS	**Hagfors**		78.34	331	P		P	11 29 06.0	-1.7
	comp=Z,8.5nm,0.7s,baz=107,slow=5.1,SNR=17								
HFS	**Hagfors**		78.34	331	P		P	11 29 06.0	-1.7
HFS					pmax	pmax			
	comp=Z,9.0nm,0.7s								
HUMR	**Humele**		78.37	313	⇑*i*P		P	11 29 07.8	-0.4
KOLS	**Kolonicke sedl**		78.46	318	*e*P		P	11 29 08.2	-0.4
KOLS					pmax	pmax			
	comp=Z,5.0nm,1.3s								
KOLS	**Kolonicke sedl**		78.46	318	*e*P		P	11 29 08.2	-0.4
UZH	**Uzhgorod**		78.56	318	⇑*i*P		P	11 29 08.5	-0.6
UZH					*e*			11 29 14.3	
UZH					*i*			11 29 24.7	
NC405	**NORSAR Array S**		78.75	332	*e*P		P	11 29 08.6	-1.4
LOT	**Lotru**		78.83	315	⇓*i*P		P	11 29 10.8	-0.1
NC303	**NORSAR Array S**		78.84	332	*e*P		P	11 29 09.5	-1.0
STHS	**Stebnicka Huta**		78.89	319	*e*P		P	11 29 10.5	-0.5
STHS					pmax	pmax			
	comp=Z,3.0nm,0.8s								
STHS	**Stebnicka Huta**		78.89	319	*e*P		P	11 29 10.5	-0.5
CRVS	**Cervenica-Dubn**		78.96	319	*e*P		P	11 29 12.1	+0.7
CRVS	**Cervenica-Dubn**		78.96	319	*e*P		P	11 29 12.1	+0.7
NB2	**NORSAR Subarra**		79.00	332	P		P	11 29 09.7	-1.7
	comp=Z,12nm,0.8s,baz=60,slow=5.6								
NB2	**NORSAR Subarra**		79.00	332	P		P	11 29 09.3	-2.1
NB2					pmax	pmax			
	comp=Z,10.0nm,0.9s								
NB200	**NORSAR Array S**		79.00	332	*e*P		P	11 29 09.5	-1.9
NOA	**NORSAR Array B**		79.00	332	P		P	11 29 09.5	-1.9
	comp=Z,8.2nm,0.7s,baz=58,slow=5.7,SNR=27								
NOA					LR		LR	12 07 32.6	
	comp=Z,276nm,20.6s,baz=40,slow=38								
DRGR			79.00	316	⇓*i*P		P	11 29 11.7	0.0
NC204	**NORSAR Array S**		79.08	333	*e*P		P	11 29 10.3	-1.5
DLBC	**Dease Lake**		79.35	31	P		P	11 29 14.1	+0.7
	comp=Z,4.3nm,0.5s,baz=302,slow=4.9,SNR=12								
DLBC	**Dease Lake**		79.35	31	*e*P		P	11 29 14.9	+1.5
	comp=Z,20nm,1.5s								
OJC	**Ojcow**		79.43	320	*e*P		P	11 29 13.5	-0.4
OJC	**Ojcow**		79.43	320	*e*P		P	11 29 13.3	-0.6
OJC					pmax	pmax			
	comp=Z,21nm,0.8s								
OJC	**Ojcow**		79.43	320	*e*P		P	11 29 13.3	-0.6
	comp=Z,21nm,0.8s								
NIE	**Niedzica**		79.46	319	*e*P		P	11 29 14.1	0.0
NIE	**Niedzica**		79.46	319	*e*P		P	11 29 14.1	0.0
MPEP	**Malo Peshtene**		79.64	313	*e*P		P	11 29 14.8	-0.4
PGB	**Panagyurishte**		79.66	312	*e*P		P	11 29 14.8	-0.5
KECS	**Kecovo**		79.72	318	*e*P		P	11 29 15.7	+0.2
KECS					pmax	pmax			
	comp=Z,4.0nm,0.7s								
KECS	**Kecovo**		79.72	318	*e*P		P	11 29 15.7	+0.2
SIRR	**Siria**		79.87	316	⇓*i*P		P	11 29 15.9	-0.5
VTS	**Vitosha**		80.29	312	⇑*i*P		P	11 29 18.7	-0.2
VTS	**Vitosha**		80.29	312	*e*P		P	11 29 18.9	0.0
VTS					pmax	pmax			
	comp=Z,28nm,0.9s								
VTS	**Vitosha**		80.29	312	*e*P		P	11 29 18.3	-0.6
VTS	**Vitosha**		80.29	312	*e*P		P	11 29 18.9	0.0
	comp=Z,28nm,0.9s								
PSZ	**Piszkesteto**		80.31	318	⇓*i*P		P	11 29 18.1	-0.7
PSZ	**Piszkesteto**		80.31	318	*e*P		P	11 29 18.6	-0.2
PSZ					pmax	pmax			
	comp=Z,8.0nm,0.9s								
PSZ	**Piszkesteto**		80.31	318	*e*P		P	11 29 18.6	-0.2
	comp=Z,7.9nm,0.9s								
MDVR	**Moldovita**		80.43	315	⇑*i*P		P	11 29 18.9	-0.6
URZ	**Urewera**		80.53	139	P		P	11 29 19.2	-0.6
	comp=Z,11nm,0.8s,baz=172,slow=9.1,SNR=3.5								
SRS	**Serrai**		80.60	311	P		P	11 29 19.4	-1.0
SRS					pmax	pmax			
	comp=Z,14nm,0.9s								
VYHS	**Vyhne**		80.72	319	*e*P		P	11 29 20.7	-0.2
VYHS					pmax	pmax			
	comp=Z,13nm,1.1s								
VYHS	**Vyhne**		80.72	319	*e*P		P	11 29 20.7	-0.2
RPZ	**Rata Peaks**		80.82	146	P		P	11 29 19.6	-1.7
	comp=Z,24nm,0.9s,baz=347,slow=4.9,SNR=3.6								
MORC	**Moravsky Berou**		80.94	320	⇓*i*P		P	11 29 22.0	-0.1
MORC	**Moravsky Berou**		80.94	320	*e*P		P	11 29 22.0	-0.1
MORC					pmax	pmax			
	comp=Z,39nm,1.1s								
MORC	**Moravsky Berou**		80.94	320	*e*P		P	11 29 22.0	-0.1
	comp=Z,39nm,1.1s								
KSP	**Ksiaz**		81.19	322	*e*P		P	11 29 23.1	-0.3
KSP	**Ksiaz**		81.19	322	*e*P		P	11 29 23.1	-0.3
DPC	**Dobruska-Polom**		81.39	321	*e*P		P	11 29 24.4	-0.1
DPC					*e*PCP		PcP	11 29 31.0	+0.5
DPC	**Dobruska-Polom**		81.39	321	*e*P		P	11 29 24.4	-0.1
GRG	**Griva**		81.49	311	P		P	11 29 23.9	-1.3
GRG					pmax	pmax			
	comp=Z,29nm,1.2s								
UPC	**Upice**		81.50	322	*e*P		P	11 29 24.6	-0.4
UPC	**Upice**		81.50	322	*e*P		P	11 29 24.6	-0.4
VRAC	**Vranov**		81.70	320	P		P	11 29 25.7	-0.4
	comp=Z,7.4nm,0.7s,baz=77,slow=5.5,SNR=13								
VRAC	**Vranov**		81.70	320	⇑*i*P		P	11 29 26.3	+0.2
LIT	**Litokhoron**		81.77	310	P		P	11 29 25.5	-1.2
LIT					pmax	pmax			
	comp=Z,13nm,0.8s								
FNA	**Florina**		82.27	311	P		P	11 29 27.7	-1.6
FNA					pmax	pmax			
	comp=Z,16nm,0.9s								
GOPC	**GO Pecny, Ondr**		82.47	321	*e*P		P	11 29 29.7	-0.5
GOPC	**GO Pecny, Ondr**		82.47	321	*e*P		P	11 29 29.7	-0.5
BRG	**Berggiesshubel**		82.50	322	*e*P		P	11 29 29.6	-0.6
	comp=Z,6.3nm,1.0s								
BRG	**Berggiesshubel**		82.50	322	*e*P		P	11 29 29.6	-0.6
BRG					pmax	pmax			
	comp=Z,6.0nm,1.0s								
PRU	**Pruhonice**		82.58	322	*e*P		P	11 29 30.3	-0.4
PRU	**Pruhonice**		82.58	322	*e*P		P	11 29 30.3	-0.4
CONA	**Conrad Observa**		82.75	319	*i*P		P	11 29 31.4	-0.3
	comp=Z,20nm,1.9s,SNR=10								
CLL	**Collm**		82.82	323	⇑*i*P		P	11 29 31.1	-0.8
	comp=Z,19nm,1.1s								
CLL					*e*PP		PP	11 32 40.0	-1.8
CLL					Lm		MLR	12 10 00.0	
	comp=N,100nm,19.5s								
CLL					Lm		MLR	12 10 00.0	
	comp=E,200nm,21.3s								
CLL					Lm		MLR	12 10 00.0	
	comp=Z,200nm,20.5s								
CLL	**Collm**		82.82	323	⇑*i*P		P	11 29 31.1	-0.8
CLL					pmax	pmax			
	comp=Z,19nm,1.1s								
CLL					MLR		MLR		
	comp=Z,200nm,20.5s								
CLL	**Collm**		82.82	323	*e*P		P	11 29 30.5	-1.3
	comp=Z,17nm,1.0s								
YKA	**Yellowknife Ar**		83.46	23	P		P	11 29 33.7	-1.3
	comp=Z,6.8nm,0.6s,baz=311,slow=5.0,SNR=36								
KHC	**Kasperske Hory**		83.54	321	*e*P		P	11 29 35.1	-0.6
KHC	**Kasperske Hory**		83.54	321	*e*P		P	11 29 35.1	-0.6
KHC	**Kasperske Hory**		83.54	321	*e*P		P	11 29 35.1	-0.6
	comp=Z,7.3nm,1.3s								
GEC2	**GERESS Array S**		83.60	321	*e*P		P	11 29 35.5	-0.6
GEC2					pmax	pmax			
	comp=Z,16nm,1.0s								
GEC2	**GERESS Array S**		83.60	321	*e*P		P	11 29 35.5	-0.6
	comp=Z,16nm,1.0s								
GERES	**GERESS Array B**		83.60	321	P		P	11 29 35.2	-0.9
	comp=Z,7.1nm,0.8s,baz=57,slow=4.9,SNR=44								
GEA0	**GERESS Array S**		83.61	321	*e*P		P	11 29 35.2	-0.9
NKC	**Novy Kostel**		83.65	322	P		P	11 29 35.1	-1.1
NKC					pmax	pmax			
	comp=Z,5.0nm,1.4s								
MOA	**Molln**		83.74	320	*i*P		P	11 29 36.4	-0.4
	comp=Z,8.1nm,0.8s,SNR=7.8								
PERS	**Pernice**		83.80	318	*i*P		P	11 29 36.2	-0.9
SOKA	**Soboth**		83.83	318	*i*P		P	11 29 36.6	-0.7
	comp=Z,8.2nm,0.9s,SNR=7.7								
MOX	**Moxa**		83.91	323	P		P	11 29 36.4	-1.1
MOX					pmax	pmax			
	comp=Z,12nm,1.1s								
ABPO	**Ambohimpanom**		83.92	246	*e*P		P	11 29 39.0	+0.7
ABPO					pmax	pmax			
	comp=Z,28nm,0.9s								
ABPO	**Ambohimpanom**		83.92	246	*e*P		P	11 29 39.0	+0.7
	comp=Z,28nm,0.9s								
WET	**Wettzell**		83.93	321	P		P	11 29 36.8	-0.9
WET					pmax	pmax			
	comp=Z,12nm,1.3s								
OBKA	**Obir**		84.20	318	*i*P		P	11 29 38.2	-1.0
	comp=Z,10nm,0.9s								
BOJS	**Bojanci**		84.24	317	*i*P		P	11 29 38.8	-0.5
LJU	**Ljubljana**		84.44	318	*e*P		P	11 29 39.4	-0.9
CRNS	**Crni Vrh**		84.58	318	⇑*i*P		P	11 29 39.9	-1.2
KBA	**Koelnbreinsper**		84.66	319	*i*P		P	11 29 40.3	-1.4
	comp=Z,5.7nm,0.7s								
KBA	**Koelnbreinsper**		84.66	319	P		P	11 29 41.2	-0.4
KBA					pmax	pmax			
	comp=Z,7.0nm,1.1s								
KMBO	**Kilima Mbogo**		85.24	267	P		P	11 29 46.0	+0.8
	comp=Z,7.0nm,0.9s,baz=53,slow=7.5,SNR=12								
KMBO	**Kilima Mbogo**		85.24	267	*e*P		P	11 29 46.3	+1.1
	comp=Z,12nm,1.0s								
WTTA	**Wattenberg**		85.58	320	*i*P		P	11 29 45.0	-1.3
	comp=Z,12nm,1.0s								
BUG	**Bochum--Univer**		85.83	325	P		P	11 29 46.1	-1.0
BUG					pmax	pmax			
	comp=Z,27nm,1.1s								
TIP	**Timpagrande**		86.17	311	*e*P		P	11 29 48.8	-0.4
	comp=Z,24nm,1.4s								
FUORN	**Ofenpass-Fuorn**		86.72	320	*e*P		P	11 29 51.4	-0.6
	comp=Z,16nm,1.1s								
DAVOX	**Davos/Dischmat**		86.86	320	P		P	11 29 51.9	-0.7
	comp=Z,2.7nm,0.5s,baz=203,slow=1.7,SNR=6.9								
AQU	**L'Aquila**		86.92	315	P		P	11 29 52.6	-0.2
AQU					pmax	pmax			
	comp=Z,38nm,1.0s								
CEL	**Celeste**		87.19	311	*e*P		P	11 29 54.6	+0.4
	comp=Z,21nm,1.0s								
LLLB	**Lillooet**		87.47	35	*e*P		P	11 29 56.5	+1.3
	comp=Z,12nm,1.1s								
CDF	**Champ du Feu**		87.48	323	*e*P		P	11 29 54.1	-1.3
CDF					pmax	pmax			
	comp=Z,12nm,1.1s								
HINF	**Hinteralfeld**		88.05	322	*e*P		P	11 29 57.3	-0.8
HINF					pmax	pmax			
	comp=Z,7.0nm,1.0s								
RAR	**Rarotonga**		88.51	114	LR		LR	11 59 53.2	
	comp=Z,193nm,21.7s,baz=125,slow=29								
E03A	**Lebam**		88.82	39	*e*P		P	11 30 03.5	+1.8
	comp=Z,20nm,1.1s								
D05A	**Emmclaw**		89.36	38	*e*P		P	11 30 05.3	+1.1
	comp=Z,12nm,0.8s								
LPG	**La Plagne**		89.39	320	*e*P		P	11 30 03.4	-1.4
LPG					pmax	pmax			
	comp=Z,6.0nm,0.6s								
LPL	**La Plagne**		89.39	320	*e*P		P	11 30 03.3	-1.4
LPL					pmax	pmax			
	comp=Z,5.0nm,0.6s								
SAOF	**Saorge**		89.74	319	*e*P		P	11 30 04.3	-1.8
CASY	**Casey**		89.89	184	*e*P		P	11 30 05.2	-0.7
	comp=Z,15nm,1.0s								
COR	**Corvallis**		90.06	40	*e*P		P	11 30 05.7	-1.8
COR					pmax	pmax			
	comp=Z,40nm,1.5s								
COR	**Corvallis**		90.06	40	*e*P		P	11 30 05.7	-1.8
	comp=Z,40nm,1.5s								
B08A	**Colville Reser**		90.13	36	*e*P		P	11 30 08.0	+0.1
	comp=Z,11nm,1.3s								
SSF	**Saint Saulge**		90.35	323	*e*P		P	11 30 08.1	-0.7
SSF					pmax	pmax			
	comp=Z,13nm,1.1s								
AVF	**Avril sur Loir**		90.59	323	*e*P		P	11 30 08.2	-1.8
AVF					pmax	pmax			
	comp=Z,21nm,1.1s								
TCF	**Toulx Ste Croi**		91.53	323	*e*P		P	11 30 13.0	-1.4
TCF					pmax	pmax			
	comp=Z,17nm,1.2s								
YBH	**Yreka Blue Hor**		92.02	42	*e*P		P	11 30 18.4	+1.6
YBH					pmax	pmax			
	comp=Z,17nm,1.6s								
YBH	**Yreka Blue Hor**		92.02	42	*e*P		P	11 30 18.4	+1.6
	comp=Z,17nm,1.6s								
CAF	**Calviac**		92.42	322	*e*P		P	11 30 18.6	0.0
CAF					pmax	pmax			
	comp=Z,14nm,1.1s								
WALA	**Waterton Lakes**		92.49	33	*e*P		P	11 30 20.4	+1.5
	comp=Z,7.4nm,1.1s								
RJF	**Les Rejaudoux**		92.50	322	*e*P		P	11 30 18.0	-0.9
RJF					pmax	pmax			
	comp=Z,28nm,1.0s								
K05A	**Summer Lake**		92.56	41	*e*P		P	11 30 21.3	+1.9
	comp=Z,8.5nm,0.9s								
KEST	**Kesra**		92.99	311	P		P	11 30 20.9	-0.5
	comp=Z,3.3nm,0.8s,baz=32,slow=6.8,SNR=4.1								
KEST	**Kesra**		92.99	311	*e*P		P	11 30 20.7	-0.7
	comp=Z,12nm,1.4s								
BMO	**Blue Mountains**		93.37	38	*e*P		P	11 30 25.5	+2.5
	comp=Z,5.4nm,1.4s								
FFC	**Flin Flon**		93.61	24	*e*P		P	11 30 25.2	+1.4
FFC					pmax	pmax			
	comp=Z,6.0nm,1.0s								
FFC	**Flin Flon**		93.61	24	*e*P		P	11 30 25.2	+1.4
	comp=Z,5.8nm,1.0s								
HLID	**Hailey**		95.80	37	*e*P		P	11 30 37.0	+2.7
	comp=Z,2.2nm,0.8s								
PPT	**Papeete**		95.81	107	LR		LR	12 03 38.7	
	comp=Z,66nm,20.8s,baz=306,slow=29								
PDAR	**Pinedale Array**		98.97	35	PP		PP	11 34 50.0	-0.1
	comp=Z,0.4nm,0.6s,baz=310,slow=5.3,SNR=4.0								
ULM	**Lac du Bonnet**		99.43	23	LR		LR	12 19 36.5	
	comp=Z,94nm,18.1s,baz=290,slow=38								
VNDA	**Vanda**		103.57	172	PP		PP	11 35 23.2	-1.3
	comp=Z,0.7nm,0.8s,baz=284,slow=6.1,SNR=3.6								
TORD	**Torodi Ar. Bea**		110.86	295	PKiKP		PKiKP	11 35 39.6	-1.9
	comp=Z,0.4nm,0.8s,baz=360,slow=2.3,SNR=3.6								
TXAR	**Lajitas Array**		111.79	42	PP		PP	11 36 23.4	-1.5
	comp=Z,0.5nm,0.9s,baz=306,slow=4.3,SNR=3.9								
SHEL	**Horse Pasture**		130.08	269	*i* PKIKP		**PKPdf**	**11 36 17.1**	**-1.1**
SDV	**Santo Domingo**		145.67	22	*e*PKPdf		**PKPdf**	**11 36 46.1**	**-1.0**
RUSC	**La Rusia**		147.47	28	*e*PKPdf		**PKPbc**	**11 36 51.8**	**-1.3**
BDFB	**Brasilia**		167.47	307	PKPab		**PKPab**	**11 38 20.8**	**+0.7**
	baz=74,slow=17								
LPAZ	**La Paz**		168.39	54	PKP		**PKPdf**	**11 37 15.9**	**+0.1**
	comp=Z,1.3nm,0.7s,baz=48,slow=4.6,SNR=3.9								
LPAZ					PKPab		**PKPab**	**11 38 23.9**	**-0.9**
	comp=Z,2.1nm,1.0s,baz=25,slow=6.7,SNR=2.6								
CPUP	**Villa Florida**		177.01	199	PKPab	PKPab		11 39 01.8	0.0
	comp=Z,1.6nm,0.8s,baz=152,slow=6.4,SNR=3.4								

JMA 12 11:17:29.3±0.2, 38°11N×144°29E, h42km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**2.27**	**296**	P		Pn	11 18 05.7	+1.4
OFUJ				*e*S		Sn	11 18 33.1	+2.0
JIO	**Ouri**	**2.34**	**279**	P		Pn	11 18 06.9	+1.7
JIO				*e*S		Sn	11 18 34.1	+1.4
MIYJ	**Miyakonagasawa**	**2.42**	**308**	P		Pn	11 18 07.4	+1.0
MIYJ				*e*S		Sn	11 18 35.5	+0.7
JMK	**Ichinoseki**	**2.55**	**290**	P		Pn	11 18 09.9	+1.8
JMK				*e*S		Sn	11 18 40.0	+2.1
JOM	**Ohasama**	**2.71**	**301**	P		Pn	11 18 12.4	+2.1
JOM				*e*S		Sn	11 18 44.4	+2.5
JANG	**Nango**	**3.12**	**317**	P		Pn	11 18 17.3	+1.3
JFT	**Otama**	**3.19**	**261**	P		Pn	11 18 19.4	+2.5
JFT				*e*S		Sn	11 18 55.9	+2.3
JYK	**Kaneyama**	**3.19**	**286**	P		Pn	11 18 19.4	+2.5
JYK				*e*S		Sn	11 18 56.6	+3.0
JOT	**Ohata**	**4.11**	**324**	P		Pn	11 18 32.1	+2.5
JKB	**Kayabe**	**4.53**	**327**	P		Pn	11 18 37.6	+2.3
JKB				*e*S		Sn	11 19 28.1	+1.5
JCH	**Churui**	**4.55**	**351**	P		Pn	11 18 35.6	0.0
JCH				*e*S		Sn	11 19 24.8	-2.5
JRY	**Ryogami san**	**4.79**	**246**	P		Pn	11 18 40.2	+1.3
JRY				*e*S		Sn	11 19 31.9	-1.3
NEM2	**Nemuro 2**	**5.36**	**11**	P		Pn	11 18 44.3	-2.4
NEM2				*e*S		Sn	11 19 41.4	-5.8
JTKR	**Abashiri--Toko**	**5.86**	**357**	P		Pn	11 18 52.8	-0.8
JTKR				*e*S		Sn	11 19 56.7	-2.7

IDC 12 11:19:31.4±2.9, 54°50N×87°06E, h0km, mb1 3.1/2, mb1mx2.9/62, mbtmp3.1/2, ML2.8/2, Error ellipse: s-maj=23.6km s-min=17.9km az=58.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.43**	**248**	*i*			11 28 00.7	
	baz=65,slow=312,SNR=6.3							
ZALV	**Zalesovo Beam**	**1.43**	**248**	Pg		Pn	11 19 56.8	-1.6
	1.9nm,0.3s,baz=63,slow=16,SNR=13							
ZALV				Lg		Lg	11 20 15.9	
	1.4nm,0.3s,baz=64,slow=25,SNR=3.6							
ZALV				Rg		Rg	11 20 22.8	
	3.6nm,0.3s,baz=65,slow=19,SNR=4.9							
KURBB	**Kurchatov Arra**	**6.49**	**237**	Pn		Pn	11 21 09.6	+1.6
	0.1nm,0.3s,baz=54,slow=14,SNR=10							
KURBB				Sn		Sn	11 22 22.3	-0.3
	0.1nm,0.3s,baz=97,slow=3.8,SNR=4.1							
KURBB				Lg		Lg	11 22 57.2	
	0.0nm,0.3s,baz=45,slow=30,SNR=3.5							
MKAR	**Makanchi Array**	**8.29**	**203**	Pn		Pn	11 21 32.9	+0.2
	0.3nm,0.3s,baz=28,slow=14,SNR=6.2							
MKAR				Sn		Sn	11 23 06.1	-0.8

s-min=23.4km az=140.0

ISC 12 11:25:38.2±1.6, 15°1'S±0'3×173°7'W±0'3, h30km, n26, σ1°00/11, mb4.3/8, MS3.8/10, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**2.20**	**56**	Pn	Pn	11 26 04.1	-8.7
	62nm,0.3s,baz=223,slow=3.7,SNR=101						
AFI				Sn	Sn	11 26 23.9	-15
	467nm,0.3s,baz=113,slow=23,SNR=24						
AFI				LR	LR	11 27 02.2	
	comp=Z,556nm,19.3s,baz=222,slow=41						
RAR	**Rarotonga**	**14.51**	**117**	LR	LR	11 33 03.1	
	comp=Z,293nm,19.1s,baz=299,slow=31						
RAO	**Raoul Island**	**14.58**	**195**	LR	LR	11 33 34.8	
	comp=Z,255nm,19.3s,baz=356,slow=33						
DZM	**Mont Dzumac**	**20.07**	**247**	LR	LR	11 36 56.1	
	comp=Z,512nm,18.4s,baz=352,slow=34						
DZM	**Mont Dzumac**	**20.07**	**247**	*e*LR	LR	11 35 27.4	
	423nm,23.5s						
PPT	**Papeete**	**23.23**	**99**	LR	LR	11 36 20.0	
	comp=Z,134nm,21.5s,baz=294,slow=28						
PPT2	**Papeete2**	**23.23**	**99**	*e*LQ	LQ	11 34 56.2	
	359nm,27.8s						
PPT2				*e*LR	LR	11 35 50.2	
	386nm,24.5s						
TBI	**Tubuai**	**24.23**	**113**	*e*LR	LR	11 36 22.9	
	392nm,26.8s						
HNR	**Honiara**	**26.39**	**279**	LR	LR	11 40 53.3	
	comp=Z,238nm,18.5s,baz=341,slow=35						
TAOE	**Nuku Hiva Isla**	**33.34**	**83**	*e*LR	LR	11 40 26.4	
	248nm,26.0s						
STKA	**Stephens Creek**	**43.95**	**240**	P	**P**	**11 33 43.1**	**+0.4**
	3.6nm,0.8s,baz=91,slow=4.1,SNR=5.1						
WRA	**Warramunga Arr**	**49.66**	**257**	P	**P**	**11 34 27.6**	**-0.1**
	1.4nm,0.6s,baz=91,slow=6.8,SNR=54						
ASAR	**Alice Springs**	**49.95**	**252**	P	**P**	**11 34 30.4**	**+0.5**
	3.1nm,0.5s,baz=87,slow=7.9,SNR=68						
ASAR				LR	LR	11 54 10.9	
	comp=Z,182nm,20.2s,baz=84,slow=34						
GUMO	**Guam**	**49.98**	**303**	P	**P**	**11 34 28.8**	**-1.2**
	40nm,0.7s,baz=211,slow=17,SNR=2.5						
FITZ	**Fitzroy Crossi**	**58.02**	**258**	LR	LR	11 58 46.5	
	comp=Z,158nm,20.0s,baz=92,slow=34						
JHJ	**Hachijo jima 2**	**65.41**	**318**	LR	LR	11 58 44.0	
	comp=Z,38nm,21.5s,baz=116,slow=30						
MJAR	**Matsushiro Arr**	**68.58**	**320**	LR	LR	12 01 04.5	
	comp=Z,61nm,21.9s,baz=75,slow=31						
JNU	**Nakatsue**	**71.44**	**313**	LR	LR	12 02 56.6	
	comp=Z,40nm,21.0s,baz=121,slow=31						
PETK	**Petropavlovsk-**	**72.31**	**342**	P	**P**	**11 37 02.5**	**+1.8**
	4.5nm,0.8s,baz=134,slow=11,SNR=4.7						
USRK	**Ussuriysk Ar.**	**77.03**	**323**	LR	LR	12 05 07.6	
	comp=Z,95nm,21.6s,baz=120,slow=31						
PDAR	**Pinedale Array**	**82.24**	**42**	P	**P**	**11 37 56.0**	**-1.1**
	0.8nm,0.9s,baz=212,slow=4.7,SNR=4.3						
ILAR	**Eielson Array**	**82.24**	**11**	P	**P**	**11 37 56.5**	**+0.3**
	0.3nm,0.6s,baz=228,slow=6.9,SNR=6.2						
CMAR	**Chiang Mai Arr**	**92.30**	**288**	P	**P**	**11 38 45.3**	**-0.9**
	0.7nm,0.3s,baz=318,slow=1.9,SNR=4.3						
CMAR				LR	LR	12 19 58.3	
	comp=Z,28nm,18.2s,baz=172,slow=35						
KHC	**Kasperske Hory**	**145.59**	**352**	*e*P	**PKPab**	**11 45 15.1**	**+1.0**
KHC				*ex*	x	11 45 25.5	
BRTR	**Keskin Array B**	**145.80**	**321**	PKPbc	**PKPab**	**11 45 15.3**	**0.0**
	3.9nm,0.9s,baz=126,slow=2.2,SNR=15						
GERES	**GERESS Array B**	**145.85**	**351**	PKPbc	**PKPab**	**11 45 15.2**	**0.0**
	0.3nm,0.2s,baz=33,slow=5.1,SNR=4.8						

*NEIC **12** 11:29:19.0±0.2, 9°.61N×122°.27E, h10km, mb4.7/23, Error ellipse: s-maj=7.0km s-min=4.8km az=102.0*
*MAN **12** 11:29:19, 9°.43N×122°.08E, h51km, mb4.7, ML3.6, MS3.6*
*MOS **12** 11:29:22.8±1.1, 9°.64N×122°.30E, h52km, mb4.8/32, Error ellipse: s-maj=13.8km s-min=6.9km az=113.8*
*ISCJB **12** 11:29:22.5±0.6, 9°.59N±0'.03×122°.33E±0'.04, h51km±5km, mb4.5/64, MS3.8/7, Error ellipse: s-maj=6.3km s-min=4.8km az=158.0*
*BJI **12** 11:29:23.7, 9°.60N×122°.30E, h53km, mb4.7/27, mB4.9/23, Ms4.4/13, Ms7 4.2/8*
*IDC **12** 11:29:25.2±2.5, 9°.58N×122°.23E, h57km±22km, mb4.0/33, mb1 4.1/33, mb1mx4.0/50, mbtmp4.3/33, ML4.8/1, MS3.8/5, Ms1 3.8/5, ms1mx3.3/47, Error ellipse: s-maj=19.0km s-min=9.6km az=72.0*
*KLM **12** 11:29:28.7, 9°.60N×122°.03E, h53km, mb4.9, MS5.5*
*DJA **12** 11:29:30.7±1.6, 10°N±7'×12°2E±°, h33km±14km, M4.9/12, mb4.9/12, mB5.6/6, MLv4.8/2, Mw(mB)5.1/6*

ISC 12 11:29:24.4±0.8, 9.61N±0'.04×122°.33E±0'.05, h51km±7km, n163, σ1°43/175, mb4.6/64, MS3.9/7, 6C-5D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.93**	**106**	*i* P	Pn	11 29 35.4	-5.9
SNPH				*i* S	**Sn**	**11 29 50.7**	**-3.0**
JAP	**San Jose, Anti**	**1.19**	**342**	⇑*i*P	**Pn**	**11 29 41.0**	**-3.7**
TBP	**Tagbilaran**	**1.51**	**87**	*e*P	**Pn**	**11 29 51.1**	**+2.0**
RCP	**Roxas**	**1.98**	**12**	⇓*e*P	**Pn**	**11 29 54.8**	**-0.7**
PLP	**Palo**	**3.03**	**59**	⇓*e*P	**Pn**	**11 30 10.6**	**+0.7**
CTBH	**Cotabato--PC H**	**3.04**	**141**	*e*P	**Pn**	**11 30 09.8**	**-0.2**
CTBH				*i* S	**Sn**	**11 30 39.3**	**-5.8**
PPR	**Puerto Princes**	**3.55**	**273**	⇑*i*P	Pn	11 30 10.7	-6.3
PPR				*i* S	Sn	11 30 48.9	-9.0
DAV	**Davao City (W)**	**4.09**	**128**	P	Pn	11 30 33.2	+8.8
	37nm,0.3s,baz=121,slow=20,SNR=2.9						
DAV				LR	LR	11 32 36.2	
	comp=Z,1μm,18.8s,baz=294,slow=46						
TGY	**Tagaytay City**	**4.67**	**343**	P	**Pn**	**11 30 34.8**	**+2.3**
	42nm,0.3s,baz=218,slow=14,SNR=3.2						
TGY				S	**Sn**	**11 31 27.6**	**+2.2**
	49nm,0.3s,baz=52,slow=23,SNR=3.0						
MYLDM	**Lahad Datu**	**5.81**	**221**	*e*Pn	**Pn**	**11 30 46.2**	**-1.8**
KKM	**Kota Kinabalu**	**7.02**	**240**	*e*Pn	Pn	11 31 00.6	-4.2
LUWI	**Luwuk**	**10.59**	**178**	P	**Pn**	**11 31 57.3**	**+3.7**
	108nm,0.8s,2μm						
LUWI	**Luwuk**	**10.59**	**178**	*e*Pn	**Pn**	**11 31 56.0**	**+2.4**
SANI	**Sanana**	**12.14**	**162**	P	**P**	**11 32 21.6**	**-4.4**
	40nm,1.0s						
SBUM	**Sibu**	**12.31**	**235**	⇑P	**Pn**	**11 32 15.1**	**-2.0**
SBUM	**Sibu**	**12.31**	**235**	*e*Pn	**Pn**	**11 32 14.0**	**-3.1**
KSM	**Kuching**	**14.43**	**237**	⇓P	**P**	**11 32 52.3**	**+0.8**
KSM	**Kuching**	**14.43**	**237**	*e*Pn	**Pn**	**11 32 46.8**	**+0.9**
QIZ	**Qiongzhong**	**15.29**	**309**	P	**Pn**	**11 32 56.8**	**-0.3**
QIZ				S	**Sn**	**11 35 46.1**	**+0.7**
QIZ				LR	LR		
	comp=N,290nm,14.4s						
QIZ				LR	LR		
	comp=E,430nm,17.3s						
UBPT	**Khong Chiam**	**17.40**	**291**	P	**P**	**11 33 25.4**	**+1.0**
	70nm,0.9s,725nm						
PLAI	**Plampang**	**18.87**	**194**	P	Pn	11 33 51.3	+10
SKNT	**Sakolnakorn**	**19.29**	**294**	P	**P**	**11 33 46.1**	**+0.9**
	29nm,1.1s						
JAGI	**Jajag, Banyuwa**	**19.72**	**205**	P	**Pn**	**11 33 58.9**	**+7.2**
PPBI	**Pangkal Pinang**	**19.92**	**235**	P	**Pn**	**11 33 54.5**	**+0.3**
	21nm,0.4s,13μm						
MYKOM	**Kota Tinggi**	**19.95**	**248**	⇑P	**P**	**11 33 53.0**	**+0.6**
MYKOM	**Kota Tinggi**	**19.95**	**248**	*e*P	**P**	**11 33 52.6**	**+0.1**
	62nm,1.5s						
NGJI	**Ngawi**	**20.04**	**213**	P	Pn	11 33 57.1	+1.6
	124nm,0.9s						
KGM	**Kluang**	**20.35**	**249**	⇓P	**P**	**11 33 57.3**	**+0.5**
NONG	**Nongkai**	**20.42**	**296**	P	Pn	11 34 00.4	+0.4
	60nm,1.0s						
WOJI	**Wonogiri, Jawa**	**20.72**	**214**	P	**P**	**11 34 02.5**	**+1.7**
	162nm,1.0s						
CHAI	**Chaiyaphum**	**20.79**	**290**	P	**P**	**11 34 01.1**	**-0.5**
	8.3nm,0.8s,112nm						
IPM	**Ipoh**	**21.74**	**258**	⇑P	**P**	**11 34 12.5**	**+0.7**
IPM	**Ipoh**	**21.74**	**258**	*e*P	**P**	**11 34 11.7**	**-0.1**
	25nm,0.7s						
GYA	**Guiyang**	**22.38**	**321**	*e*P	**P**	**11 34 18.9**	**+0.3**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CRAI	**Chiangrai**	**23.67**	**299**	P	**P**	**11 34 30.7**	**-0.8**
KMI	**Kunming**	**24.19**	**312**	P	**P**	**11 34 41.3**	**+4.8**
KMI				pP	pP	11 34 50.3	+0.8
KMI				sP	sP	11 34 56.9	+1.4
KMI				S	**S**	**11 38 47.6**	**-3.9**
KMI				pmax	pmax		
	comp=Z,8.0nm,1.3s						
KMI				pmax	pmax		
	comp=Z,150nm,4.7s						
KMI				LR	LR		
	comp=N,350nm,17.9s						
KMI				LR	LR		
	comp=E,230nm,21.8s						
PSI	**Prapat**	**24.22**	**255**	*e*P	**P**	**11 34 35.6**	**-1.1**
PSI				pmax	pmax		
	comp=Z,39nm,1.1s						
PSI	**Prapat**	**24.22**	**255**	*e*P	**P**	**11 34 35.6**	**-1.1**
	comp=Z,39nm,1.1s						
MNSI	**Mandailing Nat**	**24.27**	**250**	P	**P**	**11 34 38.1**	**+1.0**
CM01	**Chiang Mai Arr**	**24.28**	**294**	*e*P	**P**	**11 34 35.3**	**-1.9**
CM31	**Chiang Mai Arr**	**24.31**	**294**	*e*P	**P**	**11 34 35.3**	**-2.1**
CMAR	**Chiang Mai Arr**	**24.31**	**294**	P	**P**	**11 34 35.8**	**-1.6**
	comp=Z,3.7nm,0.8s,baz=127,slow=8.8,SNR=19						
JNU	**Nakatsue**	**24.69**	**17**	P	**P**	**11 34 42.0**	**+1.2**
	comp=Z,3.9nm,0.8s,baz=225,slow=8.6,SNR=2.0						
JNU				LR	LR	11 45 12.8	
	comp=Z,103nm,19.6s,baz=297,slow=38						
JNU	**Nakatsue**	**24.69**	**17**	*e*P	**P**	**11 34 42.3**	**+1.6**
	comp=Z,21nm,1.3s						
GSI	**Gunungsitoli**	**25.97**	**253**	*e*P	**P**	**11 34 50.8**	**-1.7**
	comp=Z,41nm,0.6s						
CD2	**Chengdu**	**27.35**	**323**	*e*P	**P**	**11 35 04.5**	**-0.3**
CD2				pP	pP	11 35 17.9	0.0
CD2				sP	sP	11 35 24.5	+0.6
CD2				S	**S**	**11 39 41.6**	**+0.3**
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.2s						
FITZ	**Fitzroy Crossi**	**27.73**	**173**	P	**P**	**11 35 07.5**	**-0.7**
	comp=Z,2.6nm,0.8s,baz=14,slow=7.3,SNR=5.3						
FITZ	**Fitzroy Crossi**	**27.73**	**173**	*e*P	**P**	**11 35 07.5**	**-0.7**
	comp=Z,15nm,1.3s						
KS15	**Wonju Array Si**	**28.16**	**9**	*e*P	**P**	**11 35 12.8**	**+0.9**
KSRS	**Korea Array**	**28.18**	**9**	P	**P**	**11 35 12.8**	**+0.7**
	comp=Z,0.8nm,0.6s,baz=188,slow=7.6,SNR=3.0						
KSRS				LR	LR	11 46 46.0	
	comp=Z,72nm,19.2s,baz=182,slow=37						
WRAB	**Tennant Creek**	**31.65**	**158**	*i* P	**P**	**11 35 43.3**	**+0.3**
WRAB				pmax	pmax		
	comp=Z,13nm,1.1s						
WR1	**Warramunga Arr**	**31.66**	**158**	*e*P	**P**	**11 35 42.6**	**-0.5**
	comp=Z,15nm,1.1s						
WR1				*e*PcP	**PcP**	**11 38 34.2**	**0.0**
WRA	**Warramunga Arr**	**31.66**	**158**	P	**P**	**11 35 42.6**	**-0.5**
	comp=Z,1.3nm,0.6s,baz=333,slow=10,SNR=14						
WRA				PcP	**PcP**	**11 38 34.2**	**0.0**
	comp=Z,3.1nm,0.7s,baz=342,slow=3.0,SNR=14						
HHC	**Hu-ho-hao-te**	**32.54**	**345**	*e*P	**P**	**11 35 51.9**	**+1.2**
HHC				pmax	pmax		
	comp=Z,22nm,1.0s						
HHC				pmax	pmax		
	comp=Z,100nm,8.6s						
AS31	**Alice Springs**	**34.95**	**161**	*e*P	**P**	**11 36 12.0**	**+0.2**
	comp=Z,2.4nm,0.6s						
AS31				*e*PcP	**PcP**	**11 38 43.5**	**-0.1**
ASAR	**Alice Springs**	**34.95**	**161**	P	**P**	**11 36 11.9**	**+0.2**
	comp=Z,5.5nm,0.6s,baz=342,slow=7.5,SNR=41						
ASAR				PcP	**PcP**	**11 38 43.5**	**-0.1**
	comp=Z,3.1nm,0.6s,baz=341,slow=2.7,SNR=16						
AS01	**Alice Springs**	**34.97**	**161**	*e*P	**P**	**11 36 11.6**	**-0.3**
USRK	**Ussuriysk Ar.**	**35.47**	**12**	P	**P**	**11 36 16.6**	**+0.7**
	comp=Z,4.3nm,0.7s,baz=202,slow=8.1,SNR=10						
RAMN	**Ramite**	**37.88**	**302**	*e*P	**P**	**11 36 35.2**	**-1.8**
	comp=Z,13nm,0.6s						
ASAJ	**Asahikawa**	**38.61**	**24**	P	**P**	**11 36 42.2**	**-0.5**
	comp=Z,2.2nm,0.7s,baz=204,slow=6.3,SNR=4.5						
ASAJ	**Asahikawa**	**38.61**	**24**	*e*P	**P**	**11 36 41.8**	**-0.9**
	comp=Z,9.2nm,0.9s						
GUN	**Gumba**	**38.81**	**303**	*e*P	**P**	**11 36 42.3**	**-2.7**
	comp=Z,25nm,0.5s						
KKN	**Kakani**	**39.27**	**303**	*e*P	**P**	**11 36 46.7**	**-1.9**
	comp=Z,10.0nm,0.5s						
KLR	**Kul'dur**	**40.27**	**10**	P	**P**	**11 36 56.6**	**+0.3**
	comp=Z,1.5nm,0.6s,baz=168,slow=2.9,SNR=7.9						
KLR				PcP	**PcP**	**11 38 59.5**	**+0.2**
	comp=Z,1.3nm,0.6s,baz=193,slow=2.9,SNR=3.9						
KLR	**Kul'dur**	**40.27**	**10**	*e*P	**P**	**11 36 55.4**	**-1.0**
SONA0	**Songino Array**	**40.41**	**343**	*e*P	**P**	**11 36 57.7**	**0.0**
	comp=Z,14nm,1.6s						
SONM	**Songino Array**	**40.41**	**343**	P	**P**	**11 36 57.7**	**0.0**
	comp=Z,2.5nm,0.7s,baz=165,slow=9.9,SNR=20						
SONM				LR	LR	11 54 47.6	
	comp=Z,104nm,18.1s,baz=169,slow=38						
KOLN	**Koldanda**	**40.66**	**302**	*e*P	**P**	**11 36 59.2**	**-1.0**
	comp=Z,17nm,0.6s						
PALK	**Pallekele**	**41.23**	**270**	*i* P	**P**	**11 37 06.1**	**+1.3**
PYUN	**Piuthan**	**41.28**	**302**	*e*P	**P**	**11 37 04.7**	**-0.6**
	comp=Z,20nm,0.7s						
NWAO	**Narrogin (SRO)**	**42.58**	**186**	*e*P	**P**	**11 37 15.8**	**+0.4**
NWAO				pmax	pmax		
	comp=Z,21nm,0.8s						
NWAO	**Narrogin (SRO)**	**42.58**	**186**	*e*P	**P**	**11 37 15.8**	**+0.4**
	comp=Z,21nm,0.8s						
TLY	**Talaya**	**44.65**	**344**	P	**P**	**11 37 31.9**	**0.0**
	comp=Z,1.7nm,0.5s,baz=145,slow=7.1,SNR=4.5						
TLY	**Talaya**	**44.65**	**344**	*e*P	P	11 37 26.6	-5.4
TLY				pmax	pmax		
	comp=Z,3.0nm,0.4s						
STKA	**Stephens Creek**	**45.18**	**157**	P	**P**	**11 37 36.6**	**+0.2**
	comp=Z,3.8nm,0.7s,baz=330,slow=7.5,SNR=10						
STKA				PcP	**PcP**	**11 39 16.2**	**+0.2**
	comp=Z,2.8nm,0.6s,baz=341,slow=4.0,SNR=4.5						
STKA	**Stephens Creek**	**45.18**	**157**	*e*P	**P**	**11 37 36.6**	**+0.2**
STKA				pmax	pmax		
	comp=Z,8.0nm,1.8s						
STKA	**Stephens Creek**	**45.18**	**157**	*e*P	**P**	**11 37 36.6**	**+0.2**
	comp=Z,8.2nm,1.8s						
WMQ	**Urumqi**	**45.43**	**325**	*e*P	**P**	**11 37 39.7**	**+1.3**
WMQ				pP	pP	11 37 55.1	+3.1
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,110nm,6.2s						
WMQ				LR	LR		
	comp=Z,250nm,20.0s						
WMQ				LR	LR		
	comp=Z,330nm,24.3s						
WMQ				LR	LR		
	comp=Z,230nm,19.3s						
BOD	**Bodaibo**	**48.52**	**354**	*e*P	**P**	**11 38 02.4**	**+0.3**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.4s						
MK01	**Makanchi Array**	**50.25**	**325**	*e*P	**P**	**11 38 15.6**	**+0.1**
MK32	**Makanchi Array**	**50.27**	**325**	*e*P	**P**	**11 38 16.0**	**+0.3**
MK32				*e*PcP	**PcP**	**11 39 34.2**	**+0.2**
MKAR	**Makanchi Array**	**50.27**	**325**	P	**P**	**11 38 16.0**	**+0.3**
	comp=Z,1.9nm,0.6s,baz=123,slow=8.4,SNR=22						
MKAR				PcP	**PcP**	**11 39 34.2**	**+0.2**
	comp=Z,1.0nm,0.7s,baz=103,slow=4.6,SNR=2.6						
MAKZ	**Makanchi**	**50.45**	**325**	*e*P	**P**	**11 38 17.3**	**+0.2**
MAKZ				pmax	pmax		
	comp=Z,16nm,1.6s						
MAKZ	**Makanchi**	**50.45**	**325**	*e*P	**P**	**11 38 17.3**	**+0.2**
	comp=Z,16nm,1.6s						
KSH	**Kashi**	**50.83**	**314**	P	**P**	**11 38 22.4**	**+2.2**
KSH				*e*pP	pP	11 38 37.6	+3.6
KSH				PcS	**PcS**	**11 43 34.5**	**+0.5**
KSH				S	**S**	**11 45 33.4**	**+0.5**
KSH				pmax	pmax		
	comp=Z,110nm,3.8s						
KSH				LR	LR		
	comp=Z,120nm,6.5s						
KSH				LR	LR		
	comp=Z,81nm,6.2s						
KSH				LR	LR		
	comp=Z,120nm,7.8s						
AAK	**Ala-Archa**	**53.10**	**317**	P	**P**	**11 38 36.8**	**-0.3**
	comp=Z,5.3nm,0.7s,baz=137,slow=5.7,SNR=7.4						
AAK				LR	LR	12 03 14.7	
	comp=Z,340nm,21.8s,baz=248,slow=38						
AAK	**Ala-Archa**	**53.10**	**317**	*e*P	**P**	**11 38 35.3**	**-1.8**
AAK				pmax	pmax		
	comp=Z,9.0nm,0.9s						
AAK	**Ala-Archa**	**53.10**	**317**	*e*P	**P**	**11 38 37.1**	**0.0**
ZAA0	**Zalesovo Array**	**53.40**	**333**	*e*P	**P**	**11 38 38.1**	**-0.8**
ZALV	**Zalesovo Beam**	**53.40**	**333**	P	**P**	**11 38 38.2**	**-0.7**
	comp=Z,2.4nm,0.7s,baz=135,slow=6.0,SNR=9.7						
ZALV				PcP	**PcP**	**11 39 44.8**	**-0.8**
	comp=Z,0.7nm,0.5s,baz=153,slow=3.2,SNR=2.4						
ZAA1	**Zalesovo Array**	**53.41**	**333**	*e*P	**P**	**11 38 38.2**	**-0.7**
ZAA1				*e*PcP	**PcP**	**11 39 44.8**	**-0.8**
MA2	**Magadan**	**54.26**	**17**	P	**P**	**11 38 45.8**	**+0.8**
	comp=Z,4.2nm,0.7s,baz=213,slow=17,SNR=3.0						
KURBB	**Kurchatov Arra**	**54.46**	**327**	P	**P**	**11 38 47.0**	**+0.4**
	comp=Z,4.5nm,0.5s,baz=119,slow=9.3,SNR=44						
KURK	**Kurchatov**	**54.47**	**327**	*e*P	**P**	**11 38 46.4**	**-0.3**
KURK				pmax	pmax		
	comp=Z,25nm,1.0s						
KURK	**Kurchatov**	**54.47**	**327**	*e*P	**P**	**11 38 46.8**	**+0.1**
	comp=Z,11nm,0.9s						
NVS	**Novosibirsk**	**54.69**	**333**	*e*P	**P**	**11 38 47.3**	**-0.9**
KKAR	**Karatay Array**	**55.99**	**316**	*e*P	**P**	**11 38 58.5**	**+0.7**
KKAR	**Karatay Array**	**55.99**	**316**	*e*P	**P**	**11 38 58.5**	**+0.7**
	comp=Z,96nm,0.6s						
SEY	**Seymchan**	**57.45**	**16**	P	**P**	**11 39 08.9**	**+1.1**
	comp=Z,1.4nm,0.6s,baz=234,slow=14,SNR=5.7						
VOSK	**Vostochnaya**	**59.59**	**327**	*e*P	**P**	**11 39 22.6**	**-0.3**
VOSK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
VOSK	**Vostochnaya**	**59.59**	**327**	*e*P	**P**	**11 39 22.6**	**-0.3**
	comp=Z,3.4nm,0.8s						
BVAR	**Borovoye Array**	**60.04**	**327**	P	**P**	**11 39 26.1**	**+0.1**
	comp=Z,1.0nm,0.5s,baz=116,slow=7.0,SNR=7.6						
BRVK	**Borovoye**	**60.11**	**327**	*e*P	**P**	**11 39 25.6**	**-0.9**
BRVK				pmax	pmax		
	comp=Z,7.0nm,0.8s						
BRVK	**Borovoye**	**60.11**	**327**	*e*P	**P**	**11 39 26.6**	**+0.2**
	comp=Z,4.6nm,0.8s						
ZRNK	**Zerenda**	**60.76**	**326**	*e*P	**P**	**11 39 30.7**	**-0.2**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ZRNK	**Zerenda**	**60.76**	**326**	*e*P	**P**	**11 39 30.7**	**-0.2**
	comp=Z,2.9nm,0.6s						
TIXI	**Tiksi**	**62.12**	**2**	P	**P**	**11 39 38.9**	**-0.8**
	comp=Z,1.9nm,0.3s,baz=182,slow=4.0,SNR=6.3						
NRIK	**Noril'sk**	**63.73**	**347**	P	**P**	**11 39 49.9**	**-0.6**
	comp=Z,4.9nm,0.6s,baz=136,slow=4.8,SNR=4.2						
GEYT	**Alibeck**	**63.85**	**308**	P	**P**	**11 39 52.5**	**+0.6**
	comp=Z,4.2nm,0.6s,baz=134,slow=6.4,SNR=5.7						
ABKAR	**Akbulak array**	**64.86**	**320**	*e*P	**P**	**11 39 58.3**	**0.0**
	comp=Z,42nm,1.0s						
BILL	**Bilibino**	**65.12**	**17**	*e*P	**P**	**11 39 58.9**	**-0.7**
BILL				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ARU	**Arti**	**67.66**	**327**	*c i*P	**P**	**11 40 14.6**	**-1.4**
ARU						11 40 39.2	
ARU						11 42 41.0	
ARU				S	**S**	**11 49 10.7**	**+1.2**
ARU				SS	**SS**	**11 53 26.7**	**-4.3**
ARU				pmax	pmax		
	comp=Z,14nm,2.5s						
KBZ	**Khabaz**	**75.80**	**313**	P	**P**	**11 41 05.6**	**+0.5**
	comp=Z,3.5nm,1.0s,baz=137,slow=4.4,SNR=5.5						
KIV	**Kislovodsk**	**75.95**	**313**	*e*P	**P**	**11 41 06.0**	**-0.2**
KIV				pmax	pmax		
	comp=Z,9.0nm,1.0s						
CASY	**Casey**	**76.18**	**185**	*e*P	**P**	**11 41 06.8**	**+0.1**
	comp=Z,7.7nm,0.8s						
KLMR	**Klimovskoe**	**78.17**	**330**	*e*P	**P**	**11 41 15.5**	**-2.6**
KLMR				pmax	pmax		
	comp=Z,6.0nm,0.8s						
VSR	**Storozhevoye**	**78.30**	**320**	*e*P	**P**	**11 41 17.6**	**-1.5**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.1s						
OBN	**Obninsk**	**79.77**	**324**	⇓*e*P	**P**	**11 41 26.8**	**-0.2**
OBN				S	**SKSac**	**11 51 40.0**	**+0.4**
OBN				pmax	pmax		
	comp=Z,41nm,2.2s						
OBN				MLR	MLR		
	comp=Z,52nm,18.0s						
BR101	**Keskin Array S**	**82.94**	**309**	*e*P	**P**	**11 41 44.2**	**-0.2**
BR131	**Keskin Array S**	**82.94**	**309**	*e*P	**P**	**11 41 44.5**	**+0.2**
BRTR	**Keskin Array B**	**82.94**	**309**	P	**P**	**11 41 44.2**	**-0.2**
	comp=Z,2.2nm,0.7s,baz=102,slow=5.6,SNR=12						
ARCES	**ARCESS Array B**	**83.45**	**339**	P	**P**	**11 41 46.1**	**-0.1**
	comp=Z,1.0nm,0.4s,baz=90,slow=7.3,SNR=9.9						
BR231	**Keskin MP Arra**	**83.58**	**309**	*e*P	**P**	**11 41 44.6**	**-3.1**
AKASG	**Malin Array Be**	**84.61**	**320**	P	**P**	**11 41 51.7**	**-0.7**
	comp=Z,3.5nm,0.6s,baz=65,slow=5.0,SNR=20						
AKASG	**Malin Array Be**	**84.61**	**320**	P	**P**	**11 41 51.7**	**-0.7**
AKASG				pmax	pmax		
	comp=Z,7.0nm,0.7s						
AKBB	**Malin Array Si**	**84.61**	**320**	*e*P	**P**	**11 41 51.7**	**-0.7**
AKBB	**Malin Array Si**	**84.61**	**320**	*e*P	**P**	**11 41 51.7**	**-0.7**
FIA0	**FINESS Array S**	**84.61**	**331**	*e*P	**P**	**11 41 51.8**	**-0.4**
FIA0	**FINESS Array S**	**84.61**	**331**	*e*P	**P**	**11 41 51.8**	**-0.4**
FINES	**FINESS Array B**	**84.61**	**331**	P	**P**	**11 41 51.8**	**-0.4**
	comp=Z,1.7nm,0.6s,baz=46,slow=5.5,SNR=8.4						
KIEV	**Kiev**	**84.62**	**320**	*e*P	**P**	**11

JOU	**Okura**	**1.52 313**	P	**Pg**	**11 40 02.1**	**-0.2**
JOU			S	**Sb**	**11 40 21.5**	**-0.2**
MJAR	**Matsushiro Arr**	**3.21 257**	Pn	**Pn**	**11 40 27.0**	**+2.6**
	0.8nm,0.3s,baz=349,slow=14,SNR=4.2					
MAT	**Matsushiro**	**3.21 257**	P	**Pb**	**11 40 28.1**	**-2.6**
MAT			S	**Sb**	**11 41 07.3**	**-2.9**
JHJ	**Hachijo jima 2**	**4.61 205**	Pn	**Pn**	**11 40 43.8**	**+0.1**
	7.2nm,0.3s,baz=138,slow=23,SNR=13					
JHJ			Sn	**Sn**	**11 41 37.9**	**+0.2**
	3.8nm,0.3s,baz=90,slow=21,SNR=2.0					
SONM	**Songino Array**	**28.07 303**	P	**P**	**11 45 27.7**	**+2.0**
	0.3nm,0.7s,baz=99,slow=8.9,SNR=2.4					
ZALV	**Zalesovo Beam**	**42.11 312**	P	**P**	**11 47 25.4**	**-0.8**
	0.2nm,0.3s,baz=87,slow=7.7,SNR=2.6					
MKAR	**Makanchi Array**	**44.42 302**	P	**P**	**11 47 45.1**	**+0.1**
	0.2nm,0.3s,baz=83,slow=9.9,SNR=4.1					
KURBB	**Kurchatov Arra**	**46.24 308**	P	**P**	**11 48 00.5**	**+1.2**
	0.7nm,0.5s,baz=82,slow=7.8,SNR=7.5					
WRA	**Warramunga Arr**	**57.44 189**	P	**P**	**11 49 22.7**	**-0.4**
	0.2nm,0.7s,baz=12,slow=7.2,SNR=3.8					

IDC 12 11:44:34.5±6.1, 29°63S×175°92W, h42km±38km, mb3.6/3, mb1 3.9/4, mb1mx3.5/29, mbtmp3.9/4, ML3.7/1, Error ellipse: s-maj=53.1km s-min=23.0km az=52.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.78 282**		P	Pn	11 45 02.1	-0.6
	113nm,0.3s,baz=164,slow=20,SNR=3.5						
RAO				S	Sn	11 45 24.4	+0.2
	184nm,0.3s,baz=114,slow=23,SNR=3.3						
URZ	**Urewera**	**10.37 212**		P	Pn	11 47 01.4	+0.9
	0.6nm,0.3s,baz=297,slow=7.9,SNR=2.7						
URZ				S	Sn	11 48 55.1	-0.3
	0.5nm,0.3s,baz=195,slow=19,SNR=3.3						
STKA	**Stephens Creek**	**36.41 255**		P	P	11 51 34.0	-1.1
	0.9nm,0.5s,baz=111,slow=14,SNR=3.4						
ASAR	**Alice Springs**	**44.96 265**		P	P	11 52 45.5	-0.2
	0.6nm,0.6s,baz=96,slow=6.7,SNR=21						
WRA	**Warramunga Arr**	**45.88 270**		P	P	11 52 53.7	+0.6
	1.0nm,0.6s,baz=111,slow=7.3,SNR=19						

MAN 12 11:49:50, 9°51N×122°04E, h1km, mb4.2, ML3.0, MS2.8
IDC 12 11:49:50.3±1.0, 9°90N×123°28E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.5/42, mbtmp3.7/4, Error ellipse: s-maj=150.1km s-min=20.7km az=68.0

ISC 12 11:49:51.9±0.9, 9°49N±0°07×122°19E±0°07, h10km, n11, σ2s 06/16, mb3.7/4, 2C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.04**	**98**	*i* P	**Pb**	**11 50 08.2**	**-3.9**
TBP	**Tagbilaran**	**1.66**	**83**	*e*P	**Pb**	**11 50 23.8**	**+1.1**
LLP	**Lapu-Lapu**	**1.94**	**65**	*e*P	**Pb**	**11 50 27.0**	**-0.4**
LLP				*i* S	**Sb**	**11 50 53.8**	**+2.2**
RCP	**Roxas**	**2.13**	**15**	*e*P	**Pb**	**11 50 29.0**	**-1.7**
CGP	**Cagayan de Oro**	**2.68**	**112**	*e*P	**Pn**	**11 50 37.7**	**+2.5**
CGP				*e*S	**Sb**	**11 51 13.7**	**+0.7**
PLP	**Palo**	**3.21**	**59**	*e*P	**Pn**	**11 50 44.3**	**+1.8**
PLP				*e*S	**Sn**	**11 51 16.9**	**-3.9**
WRA	**Warramunga Arr**	**31.60 158**		P	**P**	**11 56 14.8**	**-0.3**
	1.0nm,0.7s,baz=340,slow=9.4,SNR=8.1						
WRA				PcP	**PcP**	**11 59 06.3**	**-1.3**
	0.9nm,0.7s,baz=339,slow=2.9,SNR=7.7						
ASAR	**Alice Springs**	**34.89 161**		P	**P**	**11 56 44.4**	**+0.6**
	1.5nm,0.7s,baz=344,slow=7.2,SNR=24						
ASAR				PcP	**PcP**	**11 59 16.5**	**-0.3**
	0.7nm,0.7s,baz=347,slow=2.2,SNR=6.7						
SONM	**Songino Array**	**40.48 344**		P	**P**	**11 57 30.7**	**-0.4**
	0.1nm,0.4s,baz=164,slow=5.7,SNR=3.4						
MKAR	**Makanchi Array**	**50.28 325**		P	**P**	**11 58 50.2**	**+1.5**
	0.5nm,0.7s,baz=133,slow=8.1,SNR=4.2						
PLCA	**Paso Flores**	**146.90 162**		PKPbc	**PKPab**	**12 09 35.4**	**-1.0**
	4.6nm,0.9s,baz=215,slow=6.1,SNR=6.4						

ISCJB 12 11:49:59.3±1.3, 36°89N±0°04×141°49E±0°07, h8km±7km, mb3.6/2, MS2.9/1, Error ellipse: s-maj=9.1km s-min=6.6km az=167.5
IDC 12 11:49:59.5±2.4, 36°96N×141°46E, h0km, mb3.6/2, mb1 3.6/4, mb1mx3.4/43, mbtmp3.5/4, ML3.2/2, MS2.7/2, Ms1 2.7/2, ms1mx2.4/45, Error ellipse: s-maj=40.7km s-min=27.4km az=67.0
JMA 12 11:50:00.7±0.1, 36°90N×141°45E, h30km±1km, M3.5
NIED 12 11:50:00, 36°90N×141°50E, h5km, Mw3.5 Best double couple: M₀2.30000×10¹⁴ NP1:φs42.00000°, δ45.00000°, λ-96.00000°. NP2:φs230.00000°, δ46.00000°, λ-84.00000°.

ISC 12 11:50:03.6±1.9, 36°95N±0°05×141°25E±0°10, h26km±12km, n19, σ1s 31/22, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.40 293**		P	**Pb**	**11 50 11.5**	**-0.7**
ONAJ				*e*S	**Sb**	**11 50 19.2**	**+1.1**
JFK	**Kawauchi**	**0.52 324**		P	**Pb**	**11 50 13.2**	**-1.0**
JFK				S	**Sb**	**11 50 21.9**	**+0.6**
JHO	**Hitachi**	**0.65 239**		P	**Pn**	**11 50 15.1**	**-1.9**
JHO				*e*S	**Sb**	**11 50 25.4**	**+0.5**
JFT	**Otama**	**0.93 308**		P	**Pb**	**11 50 20.7**	**-0.3**
JFT				S	**Sb**	**11 50 34.7**	**+1.7**
JMM	**Marumori**	**0.99 338**		P	**Pn**	**11 50 20.4**	**-1.3**
JMM				S	**Sb**	**11 50 35.2**	**+0.6**
JSB	**Shiboa**	**1.07 271**		P	**Pb**	**11 50 23.2**	**-0.3**
JSB				*e*S	**Sb**	**11 50 39.4**	**+2.4**
JYT	**Yasato**	**1.12 230**		P	**Pn**	**11 50 21.9**	**-1.6**
JYT				*e*S	**Sn**	**11 50 36.3**	**-1.7**
MJAR	**Matsushiro Arr**	**2.48 261**		Pn	**Pn**	**11 50 43.2**	**+1.0**
	2.4nm,0.3s,baz=88,slow=14,SNR=12						
MJAR				Sn	**Sb**	**11 51 16.0**	**-1.6**
	3.0nm,0.3s,baz=78,slow=19,SNR=6.6						
MJAR				LR	LR	11 51 55.5	
	comp=Z,83nm,19.1s,baz=210,slow=44						
MAT	**Matsushiro**	**2.48 261**		P	**Pn**	**11 50 42.5**	**+0.2**
MAT				*e*S	**Sb**	**11 51 17.4**	**-0.2**
JHJ	**Hachijo jima 2**	**4.01 198**		Pn	**Pn**	**11 51 03.6**	**+0.3**
	7.4nm,0.3s,baz=343,slow=22,SNR=15						
JHJ				Sn	**Sn**	**11 51 51.2**	**+1.9**
	6.7nm,0.3s,baz=266,slow=23,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.21 120**		T	T	12 25 14.4	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**28.22 120**		T	T	12 25 15.6	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**28.23 120**		T	T	12 25 16.5	
	baz=313						
H11S1	**WAKE ISLAND Hy**	**28.92 123**		T	T	12 26 08.6	
	baz=316						
H11S3	**WAKE ISLAND Hy**	**28.92 123**		T	T	12 26 08.5	
	baz=316						
H11S2	**WAKE ISLAND Hy**	**28.94 123**		T	T	12 26 09.3	
	baz=316						
MKAR	**Makanchi Array**	**44.05 302**		P	**P**	**11 58 10.0**	**+0.9**
	0.2nm,0.2s,baz=80,slow=8.8,SNR=2.5						
WRA	**Warramunga Arr**	**56.96 188**		P	**P**	**11 59 46.6**	**0.0**
	1.1nm,1.1s,baz=6.1,slow=7.3,SNR=5.5						
YKA	**Yellowknife Ar**	**63.95 30**		LR	LR	12 30 37.0	
	comp=Z,8.3nm,20.0s,baz=0.0,slow=38						

ISCJB 12 11:51:40.7±1.1, 9°27N±0°10×122°16E±0°10, h10km, mb3.6/3, Error ellipse: s-maj=16.2km s-min=11.4km az=44.7
IDC 12 11:51:40.1±1.9, 9°99N×123°56E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.4/45, mbtmp3.6/3, Error ellipse: s-maj=226.4km s-min=25.9km az=64.0
MAN 12 11:51:41, 9°48N×122°07E, h3km, mb4.3, ML3.1, MS2.9

ISC 12 11:51:41.9±1.1, 9°40N±0°09×122°23E±0°09, h10km, n8, σ1s 91/10, mb3.5/3, 2D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.00**	**93**	*i* P	**Pb**	**11 51 58.4**	**-3.0**
LLP	**Lapu-Lapu**	**1.94**	**62**	*e*P	**Pb**	**11 52 16.9**	**-0.6**
LLP				*e*S	**Sb**	**11 52 43.4**	**+1.6**
RCP	**Roxas**	**2.21**	**13**	*e*P	**Pb**	**11 52 19.0**	**-3.0**
PLP	**Palo**	**3.23**	**57**	*i* P	**Pn**	**11 52 33.4**	**+0.7**
WRA	**Warramunga Arr**	**31.50 158**		P	**P**	**11 58 04.2**	**0.0**
	0.4nm,0.7s,baz=338,slow=9.2,SNR=3.6						
ASAR	**Alice Springs**	**34.79 161**		P	**P**	**11 58 34.0**	**+1.1**
	1.0nm,0.7s,baz=347,slow=7.4,SNR=8.0						
ASAR				PcP	**PcP**	**12 01 06.3**	**-0.2**
	0.8nm,0.9s,baz=350,slow=2.3,SNR=5.6						
MKAR	**Makanchi Array**	**50.38 325**		P	**P**	**12 00 41.0**	**+1.6**
	0.4nm,0.7s,baz=114,slow=5.4,SNR=2.7						
PLCA	**Paso Flores**	**146.80 162**		PKPbc	**PKPab**	**12 11 25.2**	**-0.8**
	1.8nm,0.7s,baz=228,slow=3.6,SNR=3.6						

IDC 12 11:58:55.0±1.7, 26°07N×128°61E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.4/48, mbtmp3.5/4, ML3.0/1, MS3.5/2, Ms1 3.5/2, ms1mx2.8/32, Error ellipse: s-maj=66.2km s-min=25.7km az=74.0
ISCJB 12 11:58:56.0±0.9, 26°11N±0°04×128°75E±0°04, h25km±7km, mb3.4/3, MS3.9/1, Error ellipse: s-maj=7.0km s-min=5.8km az=155.7
JMA 12 11:58:56.6±0.3, 26°12N×128°73E, h32km±4km, M3.0

ISC 12 11:58:55.6±2.4, 26°11N±0°05×128°71E±0°04, h12km±15km, n18, σ0s 98/27, mb3.5/3, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNTH	**Nagotoyohara**	**0.74**	**304**	P	**Pb**	**11 59 10.4**	**0.0**
JNTH				*e*S	**Sb**	**11 59 20.6**	**+0.1**
JOW	**Kunigami**	**0.82**	**332**	P	**Pb**	**11 59 11.9**	**+0.1**
JOW				S	**Sg**	**11 59 22.2**	**-0.1**
JJT2	**Tamagusuku 2**	**0.87**	**273**	P	**Pn**	**11 59 13.0**	**-0.6**
JJT2				*e*S	**Sn**	**11 59 25.1**	**-1.0**
JIH	**Iheya**	**1.14**	**324**	P	**Pb**	**11 59 16.8**	**-0.4**
JIH				*e*S	**Sb**	**11 59 31.7**	**-0.3**
JOKE	**Okinoerabujima**	**1.26**	**354**	P	**Pn**	**11 59 18.5**	**-0.5**
JOKE				*e*S	**Sb**	**11 59 34.4**	**-1.0**
JAGN	**Aguni-jima**	**1.40**	**290**	P	**Pn**	**11 59 20.8**	**-0.1**
JAGN				*e*S	**Sb**	**11 59 39.5**	**0.0**
JTK	**Tokunoshima**	**1.69**	**7**	P	**Pn**	**11 59 24.4**	**-0.5**
JTK				*e*S	**Sn**	**11 59 44.6**	**-1.8**
JKE	**Kume jima 2**	**1.74**	**278**	P	**Pn**	**11 59 24.9**	**-0.7**
JKE				*e*S	**Sn**	**11 59 46.5**	**-1.2**
JAMN	**Amaminishikomi**	**2.17**	**11**	P	**Pn**	**11 59 31.2**	**-0.3**
JAMN				*e*S	**Sn**	**11 59 58.1**	**-0.2**
JMZ	**Minamidaito 2**	**2.28**	**97**	P	**Pn**	**11 59 32.4**	**-0.6**
JMZ				*e*S	**Sn**	**11 59 59.0**	**-1.9**
JAM	**Amami Oshima**	**2.43**	**19**	P	**Pn**	**11 59 34.4**	**-0.7**
JAM				*e*S	**Sn**	**12 00 03.5**	**-1.2**
JZK	**Kikaishima**	**2.47**	**27**	*e*S	**Sn**	**12 00 05.9**	**+0.2**
JNU	**Nakatsue**	**7.24**	**15**	Pn	**Pn**	**12 00 42.6**	**+1.4**
	0.3nm,0.3s,baz=228,slow=17,SNR=2.5						
GUMO	**Guam**	**19.62 126**		LR	LR	12 10 34.2	
	comp=Z,51nm,18.0s,baz=266,slow=36						
SONM	**Songino Array**	**27.89 327**		P	**P**	**12 04 47.5**	**+2.1**
	0.6nm,0.7s,baz=131,slow=9.4,SNR=5.6						
PMG	**Port Moresby**	**39.59 151**		LR	LR	12 22 37.8	
	comp=Z,170nm,19.5s,baz=8.5,slow=36						
MKAR	**Makanchi Array**	**41.94 312**		P	**P**	**12 06 46.0**	**-0.1**
	0.4nm,0.6s,baz=98,slow=8.8,SNR=4.2						
WRA	**Warramunga Arr**	**46.10 173**		P	**P**	**12 07 20.7**	**+1.1**
	0.5nm,0.9s,baz=354,slow=8.4,SNR=2.8						

TAP 12 12:02:46.5, 24°25N×121°72E, h13km±1km, ML2.1, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.18**	**5**	*e*P	Pb	12 02 51.5	-0.2
	baz=7.0						
ENA				*e*S	Sb	12 02 54.5	-0.6
	baz=7.0						
TWD	**Chiawan**	**0.20**	**215**	P	Pg	12 02 51.4	+0.3
	baz=214						
TWD				*i* S	Sg	12 02 54.5	+0.4
	baz=214						
HWA	**Hwalien**	**0.29**	**202**	*e*P	Pg	12 02 52.2	-0.3
	baz=200						
NNS	**Nan Shan**	**0.37**	**301**	P	Pg	12 02 54.5	+0.4
	baz=302						
NNS				S	Sg	12 02 59.6	+0.4
	baz=302						
TWC	**Suao**	**0.38**	**18**	P	Pg	12 02 54.6	+0.4
	baz=11						
TWC				S	Sg	12 02 59.4	0.0
	baz=11						
ENTT	**Nioudou**	**0.42**	**340**	*i* P	Pg	12 02 55.2	+0.4
	baz=340						
ENTT				S	Sg	12 03 01.1	+0.5
	baz=340						
WHF	**Hehuan Shan**	**0.43**	**257**	P	Pg	12 02 55.5	+0.3
	baz=257						
WHF				*e*S	Sg	12 03 01.4	+0.3
	baz=257						
TWE	**Neicheng**	**0.48**	**354**	*e*P	Pg	12 02 55.2	-0.7
	baz=355						
TWT	**Tachien**	**0.50**	**271**	*e*P	Pb	12 02 56.8	-0.4
	baz=271						
TWT				*e*S	Sb	12 03 03.9	-0.5
	baz=271						
ESL	**Shilin**	**0.51**	**212**	*e*P	Pg	12 02 56.5	0.0
	baz=212						
ESL				*e*S	Sg	12 03 02.8	-0.4
	baz=212						
ESL	**Shilin**	**0.51**	**212**	*e*P	Pg	12 02 56.5	0.0
	baz=348						
ESL				*e*S	Sg	12 03 02.6	-0.6
	baz=348						
NSK	**Sanguang**	**0.54**	**322**	P	Pg	12 02 57.5	+0.3
	baz=322						
NSK				S	Sg	12 03 04.8	+0.4
	baz=322						

TAP 12 12:02:49.2, 23°51N×121°51E, h24km±1km, ML1.6, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHY	**Hungye**	**0.17**	**269**	*e*P	Pb	12 02 54.6	+0.1
	baz=268						
EHY				*e*S	Sb	12 02 58.9	+0.9
	baz=268						
TWF1	**Yuli**	**0.25**	**231**	*i* P	Pb	12 02 55.8	+0.4
	baz=229						
TWF1				*e*S	Sb	12 03 00.3	+0.6
	baz=229						
CHKT	**Chengkung**	**0.43**	**198**	*e*P	Pb	12 02 58.6	+0.4
	baz=196						
CHKT				*e*S	Sn	12 03 06.1	-0.8
	baz=196						
YUS	**Yu-Shan**	**0.51**	**268**	*e*P	Pb	12 02 60.0	+0.1
	baz=267						
YUS				*e*S	Sb	12 03 08.0	+0.9
	baz=267						

IDC 12 12:06:03.4±7.7, 61°15N×150°28W, h44km±85km, mb3.3/1, mb1 3.4/4, mb1mx3.2/42, mbtmp3.3/4, ML3.1/3, MS3.8/1, Ms1 3.7/1, ms1mx2.6/27, Error ellipse: s-maj=67.3km s-min=41.9km az=65.0
ISCJB 12 12:06:05.5±0.3, 61°34N±0°02×150°55W±0°05, h72km±4km, mb3.6/1, Error ellipse: s-maj=4.6km s-min=3.2km az=143.6
NEIC 12 12:06:07.3, 61°33N×150°59W, h54km, ML3.1(AEIC), After AEIC.

ISC 12 12:06:06.5±1.0, 61°33N±0°03×150°57W±0°03, h62km±7km, n74, σ0s 58/81, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SUA	**Susitna One**	**0.16**	**329**	P	**Pn**	**12 06 15.7**	**-0.5**
SUA				S	**Sn**	**12 06 22.8**	**-0.3**
FIB	**Fire Island**	**0.25**	**130**	P	**Pn**	**12 06 16.9**	**+0.6**
VOGL	**Vogel Lake**	**0.34**	**169**	P	**Pn**	**12 06 17.9**	**+0.9**
RC01	**Rabbit Creek A**	**0.47**	**120**	P	**Pn**	**12 06 18.0**	**-0.2**
RC01				S	**Sn**	**12 06 27.6**	**+0.7**
STLK	**Strandline Lak**	**0.63**	**286**	P	**Pn**	**12 06 19.8**	**-0.3**
SPU	**Mount Spurr**	**0.73**	**259**	P	**Pn**	**12 06 20.8**	**-0.4**
PMR	**Palmer**	**0.74**	**68**	P	**Pn**	**12 06 21.1**	**-0.2**
PMR				S	**Sn**	**12 06 32.5**	**+0.4**
SPCR	**Spurr Chakacha**	**0.80**	**262**	P	**Pn**	**12 06 21.6**	**-0.5**
SPCR				S	**Sn**	**12 06 33.1**	**-0.5**
SLKM	**Skilak Lake**	**0.84**	**168**	P	**Pn**	**12 06 22.4**	**-0.2**
CKL	**Chakachamna La**	**0.86**	**262**	P	**Pn**	**12 06 22.5**	**-0.5**
GHO	**Glory Hole Cre**	**0.91**	**60**	P	**Pn**	**12 06 23.3**	**-0.1**
GHO				S	**Sn**	**12 06 36.9**	**+0.9**
SPWE	**Spurr West**	**0.96**	**268**	P	**Pn**	**12 06 23.9**	**-0.3**
KNK	**Knik Glacier**	**1.02**	**84**	P	**Pn**	**12 06 25.1**	**+0.3**
KNK				S	**Sn**	**12 06 39.2**	**+0.7**
BGRM	**Barrier Glacie**	**1.07 238**		P	**Pn**	**12 06 24.8**	**-0.7**
SML	**Sawmill**	**1.17 65**		P	**Pn**	**12 06 26.8**	**-0.1**
RDJH	**Redoubt Jeurge**	**1.32 237**		P	**Pn**	**12 06 28.9**	**+0.1**
NCT	**North Crescent**	**1.39 237**		P	**Pn**	**12 06 29.9**	**+0.2**
RDWB	**Redoubt West**	**1.39 234**		P	**Pn**	**12 06 30.0**	**+0.1**
BRLK	**Bradley Lake**	**1.58 186**		P	**Pn**	**12 06 32.5**	**+0.3**
SCM	**Sheep Creek Mo**	**1.63 70**		P	**Pn**	**12 06 33.0**	**0.0**
HUR	**Hurricane**	**1.71 14**		P	**Pn**	**12 06 34.5**	**+0.4**
ILIM	**Iliamna**	**1.72 224**		P	**Pn**	**12 06 34.5**	**+0.3**
PPLA	**Purkeypile**	**1.75 335**		P	**Pn**	**12 06 34.7**	**0.0**
HOM	**Homer**	**1.76 198**		P	**Pn**	**12 06 35.3**	**+0.7**
INE	**Iliamna NE**	**1.77 225**		P	**Pn**	**12 06 35.3**	**+0.4**
IVE	**Iliamna Volcan**	**1.78 224**		P	**Pn**	**12 06 35.5**	**+0.4**
CNPM	**China Poot**	**1.84 191**		P	**Pn**	**12 06 35.8**	**0.0**
ILS	**Iliamna Low So**	**1.84 223**		P	**Pn**	**12 06 36.6**	**+0.7**
VLZ	**Valdez**	**2.06 94**		P	**Pn**	**12 06 38.3**	**-0.4**
OPT	**Oil Point**	**2.13 219**		P	**Pn**	**12 06 40.5**	**+0.7**
TRF	**Thorofare Moun**	**2.13 3**		P	**Pn**	**12 06 40.3**	**+0.4**
HIN	**Hinchinbrook I**	**2.20 113**		P	**Pn**	**12 06 40.2**	**-0.5**
CAST	**Castle Rocks**	**2.21 342**		P	**Pn**	**12 06 41.2**	**+0.3**
RND	**Reindeer**	**2.23 20**		P	**Pn**	**12 06 41.2**	**+0.1**
KTH	**Kantishna Hill**	**2.24 356**		P	**Pn**	**12 06 42.2**	**+0.9**
KLU	**Klutina**	**2.24 84**		P	**Pn**	**12 06 40.8**	**-0.5**
DHY	**Denali Highway**	**2.31 39**		P	**Pn**	**12 06 42.2**	**0.0**
DIV	**Divide**	**2.33 93**		P	**Pn**	**12 06 42.0**	**-0.4**
AUL	**Augustine Lava**	**2.42 217**		P	**Pn**	**12 06 44.5**	**+0.9**
SVW2	**Sparrevohn**	**2.44 267**		P	**Pn**	**12 06 43.6**	**-0.2**
EYAK	**Cordova Ski Ar**	**2.48 106**		P	**Pn**	**12 06 43.7**	**-0.7**
MCK	**McKinley**	**2.53 17**		P	**Pn**	**12 06 45.9**	**+0.7**
PS11	**TAPS Pump St11**	**2.54 71**		P	**Pn**	**12 06 46.1**	**+0.8**
CHUM	**Lake Minchumin**	**2.69 343**		P	**Pn**	**12 06 47.9**	**+0.6**
CDD	**Cape Douglas**	**2.85 214**		P	**Pn**	**12 06 49.9**	**+0.3**
PAX	**Paxson**	**2.91 53**		P	**Pn**	**12 06 51.1**	**+0.8**
BMRM	**Bremner River**	**2.92 94**		P	**Pn**	**12 06 50.4**	**0.0**
FOPK	**Fourpeaked Vol**	**2.96 211**		P	**Pn**	**12 06 51.9**	**+0.8**
TT01	**Tatalina**	**3.01 304**		P	**Pn**	**12 06 51.4**	**-0.3**
TTA	**Tatalina**	**3.02 305**		P	**Pn**	**12 06 52.1**	**+0.2**
KAPH	**Katmai Pasha**	**3.33 216**		P	**Pn**	**12 06 56.7**	**+0.6**
WRH	**Wood River Hil**	**3.35 19**		P	**Pn**	**12 06 56.6**	**+0.3**
CCB	**Clear Creek Bu**	**3.56 20**		P	**Pn**	**12 06 59.5**	**+0.4**
KDAK	**Kodiak Island**	**3.70 197**		P	**Pn**	**12 07 01.2**	**+0.2**
COLA	**College**	**3.77 18**		P	**Pn**	**12 07 02.2**	**+0.3**
DOT	**Dot Lake**	**3.81 50**		P	**Pn**	**12 07 03.1**	**+0.4**
ILAR	**Eielson Array**	**3.84 24**		P	**Pn**	**12 07 02.6**	**-0.4**
	1.4nm,0.3s,baz=210,slow=14,SNR=71						
ILAR				S	**Sn**	**12 07 45.8**	**-1.0**
	1.8nm,0.3s,baz=201,slow=16,SNR=6.1						
ILB	**Eielson Array**	**3.84 24**		P	**Pn**	**12 07 02.6**	**-0.4**
IL1	**Eielson Array**	**3.84 24**		P	**Pn**	**12 07 03.9**	**+0.8**
PTPK	**Patty Peak**	**3.92 89**		P	**Pn**	**12 07 04.3**	**+0.1**
BALM	**Baldy**	**3.99 91**		P	**Pn**	**12 07 05.5**	**+0.3**
KIAG	**Kiagna River**	**4.00 92**		P	**Pn**	**12 07 05.0**	**-0.4**
BARK	**Barkley Ridge**	**4.06 100**		P	**Pn**	**12 07 05.4**	**-0.6**
BARN	**Barnard Glacie**	**4.32 90**		P	**Pn**	**12 07 09.8**	**+0.1**
BCA3	**Beaver Creek A**	**4.47 63**		P	**Pn**	**12 07 12.1**	**+0.4**
IM3	**Indian Mountai**	**4.88 345**		P	**Pn**	**12 07 17.6**	**+0.4**
EGAK	**Eagle**	**5.50 47**		*e*Pn	**Pn**	**12 07 26.0**	**+0.3**
	7.5nm,0.6s						
DAWY	**Dawson**	**5.83 57**		P	**Pn**	**12 07 30.5**	**+0.3**
COLD	**Coldfoot**	**5.93 1**		*e*Pn	**Pn**	**12 07 33.4**	**+1.9**
	3.6nm,0.7s						
COLD				*e*Sn	**Sn**	**12 08 39.2**	**+1.3**
BM3	**Burnt Mountain**	**6.64 20**		P	**Pn**	**12 07 41.5**	**+0.2**
INK	**Inuvik**	**10.05 39**		P	**Pn**	**12 08 26.6**	**-1.2**
	0.1nm,0.3s,baz=232,slow=12,SNR=2.8						
YKA	**Yellowknife Ar**	**16.84 70**		P	**Pn**	**12 09 56.6**	**-1.1**
	0.1nm,0.3s,baz=279,slow=9.7,SNR=10.0						
TXAR	**Lajitas Array**	**44.38 114**		LR	LR	12 32 23.7	
	comp=Z,93nm,18.2s,baz=0.0,slow=36						
SONM	**Songino Array**	**54.97 307**		P	**P**	**12 15 30.9**	**0.0**
	0.3nm,0.5s,baz=52,slow=7.5,SNR=4.3						

TAP 12 12:08:41.6, 24°24N×121°72E, h24km±1km, ML2.9, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWD	**Chiawan**	**0.20**	**215**	*e*P	Pb	12 08 47.7	+0.5
	baz=213						
TWD				*e*S	Sb	12 08 50.8	-0.1
	baz=213						
NNS	**Nan Shan**	**0.37**	**302**	*e*P	Pb	12 08 50.8	+0.9
	baz=301						
NNS				*e*S	Sb	12 08 55.9	+0.5
	baz=301						
TWC	**Suao**	**0.38**	**18**	*e*P	Pb	12 08 50.8	+0.9
	baz=19						
TWC				*e*S	Sb	12 08 55.9	+0.4
	baz=19						
ENTT	**Nioudou**	**0.42**	**340**	*e*P	Pn	12 08 51.7	-0.6
	baz=341						
ENTT				*e*S	Sb	12 08 57.3	+0.8
	baz=341						
WHF	**Hehuan Shan**	**0.43**	**257**	*e*P	Pn	12 08 51.9	-0.9
	baz=256						
TWE	**Neicheng**	**0.48**	**354**	*e*P	Pn	12 08 52.5	-0.6
	baz=355						
TWT	**Tachien**	**0.50**	**271**

TWT	**Tachien**	**0.50**	**270**	*e*P		Pb	12 09 00.4	0.0
	baz=269							
TWT				*e*S		Sb	12 09 08.5	+1.0
	baz=269							
TWT	**Tachien**	**0.50**	**270**	*e*S		Pb	12 09 00.7	+0.4
	baz=270							
ESL	**Shilin**	**0.51**	**211**	*e*P		Pb	12 09 00.5	+0.1
	baz=210							
ESL				*e*S		Sb	12 09 07.7	+0.1
	baz=210							
NSK	**Sanguang**	**0.54**	**322**	*e*P		Pb	12 09 01.0	0.0
	baz=322							
NSK				*e*S		Sb	12 09 08.7	+0.2
	baz=322							
NSK	**Sanguang**	**0.54**	**322**	*e*S		Pb	12 09 01.0	+0.1
	baz=322							
EGS		**0.62**	**18**	*e*S		Sb	12 09 12.0	+1.3
	baz=18							
NSTT	**Nanjuang**	**0.76**	**300**	*e*P		Pn	12 09 05.7	-0.2
	baz=299							
NSTT				*e*S		Sg	12 09 15.1	+0.3
	baz=299							
TWB1	**Santiao Chiao**	**0.79**	**18**	*e*S		Sg	12 09 16.2	+0.4
	baz=18							
NWF	**Wu-fen Shan**	**0.82**	**4**	*e*P		Pn	12 09 09.0	+2.3
	baz=3.0							
NWF				*e*S		Sn	12 09 17.6	-0.9
	baz=3.0							
NWF	**Wu-fen Shan**	**0.82**	**4**	*e*S		Pn	12 09 09.4	+2.7
	baz=3.0							
EHY	**Hungye**	**0.83**	**206**	*e*P		Pn	12 09 06.6	-0.3
	baz=205							
EHY				*e*S		Sn	12 09 17.9	-0.8
	baz=205							
EHY	**Hungye**	**0.83**	**206**	*e*S		Pn	12 09 06.6	-0.2
	baz=206							
SMLT	**Sun Moon Lake**	**0.84**	**244**	*e*P		Pn	12 09 06.9	-0.1
	baz=243							
SMLT				*e*S		Sg	12 09 18.1	+0.7
	baz=243							
TYC	**Yuchr**	**0.87**	**247**	*e*P		Pg	12 09 06.8	+0.1
	baz=246							
TYC				*e*S		Sn	12 09 19.3	-0.3
	baz=246							
TWQ1	**Liyuan**	**0.87**	**276**	*e*P		Pn	12 09 07.3	-0.1
	baz=276							
TWQ1				*e*S		Sn	12 09 19.4	-0.4
	baz=276							
NSY	**Sanyi**	**0.89**	**281**	*e*S		Sn	12 09 23.1	+2.8
	baz=280							
TCU	**Taichung**	**0.96**	**264**	*e*S		Sn	12 09 22.6	+0.6
	baz=263							
TWF1	**Yuli**	**0.98**	**204**	*e*P		Pn	12 09 09.2	+0.3
	baz=203							
TWF1				*e*S		Sb	12 09 21.1	0.0
	baz=203							
YUS	**Yu-Shan**	**1.04**	**223**	*e*P		Pn	12 09 10.7	+0.6
	baz=222							
YUS				*e*S		Sn	12 09 24.7	+0.2
	baz=222							
ALS	**Alishan**	**1.12**	**229**	*e*S		Sg	12 09 28.3	+2.0
	baz=228							
CHN5	**Tsauling**	**1.16**	**236**	*e*P		Pg	12 09 15.9	+3.6
	baz=235							
CHKT	**Chengkung**	**1.20**	**196**	*e*S		Sg	12 09 28.9	+0.3
	baz=195							
ELDTW	**Lidau**	**1.24**	**212**	*e*P		Pg	12 09 14.3	+0.4
	baz=211							
ELDTW				*e*S		Sg	12 09 29.9	-0.3
	baz=211							
CHN4	**Tsaushan**	**1.37**	**229**	*e*P		Pg	12 09 17.2	+0.9
	baz=229							
CHN4				*e*S		Sg	12 09 36.1	+1.9
	baz=229							
STYT	**Tauyuan**	**1.40**	**219**	*e*P		Pg	12 09 18.3	+1.4
	baz=218							
STYT				*e*S		Sg	12 09 36.3	+1.1
	baz=218							
WTP	**Ta-pu**	**1.43**	**226**	*e*P		Pg	12 09 18.3	+0.9
	baz=225							
TWK	**Hsinying**	**1.50**	**229**	*e*S		Sn	12 09 35.6	+0.3
	baz=228							
CHN1	**Nanshi**	**1.53**	**226**	*e*S		Sg	12 09 40.6	+1.4
	baz=225							
TWG	**Pinlang**	**1.55**	**203**	*e*S		Sg	12 09 39.6	-0.2
	baz=202							
SGST	**Jiashian**	**1.57**	**222**	*e*S		Sg	12 09 40.2	-0.3
	baz=221							

ISCJB ***12*** *12:10:27.9±1.3, 36°.94N±0°.05×141°.52E±0°.06, h7km±7km, mb3.4/3, Error ellipse: s-maj=8.9km s-min=7.9km az=151.1*
IDC ***12*** *12:10:28.5±1.4, 36°.86N×141°.51E, h0km, mb3.5/3, mb1 3.6/6, mb1mx3.4/43, mbtmp3.4/6, ML3.0/3, Error ellipse: s-maj=31.7km s-min=22.7km az=104.0*
JMA ***12*** *12:10:29.2±0.1, 36°.91N×141°.45E, h30km±1km, M3.4*
ISC 12 12:10:31.8±1.4**, 36°.95N**±0°.05×**141°.34E**±0°.07**, h19km**±3km, n19**, σ1$ **40**/20**, mb3.6**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.46**	**290**	P	**Pg**	**12 10 40.0**	**-1.2**
ONAJ				S	**Sg**	**12 10 47.7**	**+0.2**
JFK	**Kawauchi**	**0.56**	**319**	P	**Pb**	**12 10 41.6**	**-1.4**
JFK				S	**Sb**	**12 10 50.3**	**-0.3**
JHO	**Hitachi**	**0.70**	**242**	P	**Pb**	**12 10 43.3**	**-2.1**
JHO				S	**Sb**	**12 10 54.2**	**-0.5**
JFT	**Otama**	**0.98**	**306**	P	**Pb**	**12 10 49.2**	**-1.0**
JFT				S	**Sb**	**12 11 03.2**	**+0.4**
JMM	**Marumori**	**1.02**	**335**	P	**Pb**	**12 10 48.6**	**-2.2**
JFY	**Yanaizu**	**1.38**	**290**	P	**Pn**	**12 10 54.9**	**-1.2**
JFY				S	**Sb**	**12 11 14.7**	**+0.3**
MJAR	**Matsushiro Arr**	**2.55**	**262**	Pn	**Pn**	**12 11 13.0**	**+0.9**
	2.7nm,0.3s,baz=90,slow=14,SNR=16						
MAT	**Matsushiro**	**2.55**	**262**	P	**Pn**	**12 11 14.4**	**+2.3**
MAT				*e*S	**Sb**	**12 11 46.9**	**-1.0**
JHJ	**Hachijo jima 2**	**4.03**	**199**	Pn	**Pn**	**12 11 32.0**	**-0.4**
	9.3nm,0.3s,baz=346,slow=22,SNR=11						
JHJ				Sn	**Sn**	**12 12 20.9**	**+1.8**
	4.3nm,0.3s,baz=48,slow=17,SNR=1.6						
USRK	**Ussuriysk Ar.**	**10.15**	**318**	Pn	**Pn**	**12 12 58.2**	**+1.8**
	0.3nm,0.3s,baz=133,slow=14,SNR=1.6						
SONM	**Songino Array**	**27.78**	**304**	P	**P**	**12 16 20.0**	**+0.4**
	0.2nm,0.4s,baz=92,slow=16,SNR=2.0						
H11N2	**WAKE ISLAND Hy**	**28.15**	**121**	T	T	12 45 42.2	
	baz=313,slow=75,SNR=516						
H11N1	**WAKE ISLAND Hy**	**28.16**	**121**	T	T	12 45 45.2	
	baz=313,slow=75,SNR=472						
H11N3	**WAKE ISLAND Hy**	**28.17**	**121**	T	T	12 45 46.0	
	baz=313,slow=75,SNR=385						
H11S1	**WAKE ISLAND Hy**	**28.86**	**123**	T	T	12 46 34.6	
	baz=315,slow=76,SNR=125						
H11S3	**WAKE ISLAND Hy**	**28.86**	**123**	T	T	12 46 33.9	
	baz=315,slow=76,SNR=124						
H11S2	**WAKE ISLAND Hy**	**28.88**	**123**	T	T	12 46 38.7	
	baz=315,slow=76,SNR=59						
ILAR	**Eielson Array**	**49.60**	**32**	P	**P**	**12 19 21.4**	**0.0**
	0.5nm,0.8s,baz=282,slow=6.4,SNR=6.7						
WRA	**Warramunga Arr**	**56.97**	**188**	P	**P**	**12 20 14.6**	**-1.4**
	0.5nm,0.8s,baz=3.9,slow=7.1,SNR=5.2						

ISCJB ***12*** *12:18:12.9±2.8, 28°.74S±0°.05×71°.7W±0°.2, h23km±17km, Error ellipse: s-maj=23.1km s-min=7.7km az=3.8*
GUC ***12*** *12:18:12.2±0.6, 28°.83S×71°.66W, h50km±8km, ML3.0*
SJA ***12*** *12:18:17.0±0.6, 29°.14S×71°.48W, h19km±17km, ML2.8, MW3.2*
ISC 12 12:18:08.9±4.0**, 28°.78S**±0°.05×**71°.8W**±0°.1**, h5**km±21km**, n10**, σ1$ **94**/15**, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCO	**Las Campanas**	**0.99**	**104**	*e*P	**Pn**	**12 18 31.0**	**+1.2**
LCO				*e*S	**Sg**	**12 18 41.3**	**+0.3**
LCO	**Las Campanas**	**0.99**	**104**	*i* P	**Pb**	**12 18 29.1**	**+0.3**
LCO				*i* S	**Sg**	**12 18 41.7**	**+0.7**
LCO				IAML		12 18 42.8	
	comp=E,820nm,0.1s						
TLL	**Tololo Astrono**	**1.64**	**148**	*i* P	**Pb**	**12 18 38.6**	**-1.1**
TLL				*i* S	**Sn**	**12 18 58.9**	**-1.3**
TLL				IAML		12 19 01.0	
	comp=N,297nm,0.5s						
CPCH	**Copiapo**	**1.91**	**43**	*i* P	**Pn**	**12 18 42.9**	**+0.8**
CPCH				*i* S	**Sn**	**12 19 06.2**	**-0.2**
CDCH	**Caldera**	**1.91**	**27**	*i* P	**Pn**	**12 18 43.2**	**+1.1**
CDCH				*i* S	**Sn**	**12 19 06.0**	**-0.5**
AROD	**Rodeo**	**2.46**	**125**	*e*P	**Pb**	**12 18 53.0**	**-0.8**
AROD				IAML		12 19 23.8	
ACDV	**Cuesta del Vie**	**2.72**	**121**	*e*P	**Pb**	**12 18 56.5**	**-1.7**
ACCO	**Cerro Coronel**	**2.99**	**128**	*e*P	**Pb**	**12 19 01.0**	**-1.9**
ACCO				IAML		12 19 51.4	
	comp=Z,45nm,0.3s						
AMOG	**MOGNA**	**3.59**	**128**	*e*P	**Pb**	**12 19 09.0**	**-4.0**
RTLS	**Leoncito**	**3.71**	**145**	*e*P	**Pn**	**12 19 10.5**	**+3.3**

IDC ***12*** *12:18:15.5±1.0, 35°.40N×142°.57E, h0km, mb3.7/6, mb1 3.9/8, mb1mx3.6/41, mbtmp3.6/8, ML3.5/2, Error ellipse: s-maj=26.6km s-min=22.2km az=102.0*
JMA ***12*** *12:18:17.8±0.2, 35°.56N×142°.47E, h62km, M3.4*
ISCJB ***12*** *12:18:19.6±0.8, 35°.51N±0°.05×142°.35E±0°.06, h56km, mb3.6/6, Error ellipse: s-maj=7.3km s-min=6.7km az=174.7*
ISC 12 12:18:22.4±0.9**, 35°.50N**±0°.05×**142°.32E**±0°.08**, h56**km**, n19**, σ2$ **11**/26**, mb3.6**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.21**	**280**	P	**Pn**	**12 18 40.6**	**-2.5**
CHOJ				S	**Sn**	**12 18 57.4**	**-1.1**
BSO1	**Boso 1**	**1.39**	**233**	P	**Pn**	**12 18 42.6**	**-2.4**
BSO1				S	**Sn**	**12 19 02.7**	**+0.7**
BSO3	**Boso 3**	**1.64**	**245**	P	**Pn**	**12 18 47.0**	**-1.7**
JAG	**Ashikaga**	**2.50**	**292**	P	**Pn**	**12 18 58.0**	**-2.7**
JFT	**Otama**	**2.57**	**322**	P	**Pn**	**12 18 59.2**	**-2.4**
JFT				S	**Sn**	**12 19 28.8**	**-2.9**
JOD2	**Odawara 2**	**2.65**	**266**	P	**Pn**	**12 19 00.6**	**-2.2**
JOD2				S	**Sn**	**12 19 32.8**	**-0.9**
JRY	**Ryogami san**	**2.83**	**281**	P	**Pn**	**12 19 03.6**	**-1.6**
JYN	**Shimob**	**3.08**	**271**	P	**Pn**	**12 19 07.0**	**-1.7**
JHJ	**Hachijo jima 2**	**3.17**	**222**	Pn	**Pn**	**12 19 07.3**	**-2.5**
	13nm,0.3s,baz=270,slow=24,SNR=12						
JHJ				Sn	**Sn**	**12 19 43.2**	**-3.2**
	96nm,0.3s,baz=329,slow=23,SNR=17						
MJAR	**Matsushiro Arr**	**3.49**	**288**	Pn	**Pn**	**12 19 12.6**	**-1.6**
	3.7nm,0.3s,baz=42,slow=23,SNR=30						
MJAR				Sn	**Sn**	**12 19 55.8**	**+1.5**
	2.0nm,0.3s,baz=157,slow=16,SNR=6.6						
MAT	**Matsushiro**	**3.49**	**288**	P	**Pn**	**12 19 12.9**	**-1.4**
MAT				S	**Sn**	**12 19 55.2**	**+0.8**
JYK	**Kaneyama**	**3.75**	**336**	P	**Pn**	**12 19 14.7**	**-3.1**
JSD	**Sado**	**4.13**	**309**	P	**Pn**	**12 19 20.3**	**-2.6**
SONM	**Songino Array**	**29.26**	**306**	P	**P**	**12 24 20.4**	**+1.1**
	0.6nm,0.6s,baz=106,slow=9.2,SNR=1.6						
MKAR	**Makanchi Array**	**45.56**	**304**	P	**P**	**12 26 40.1**	**+3.4**
	0.4nm,0.5s,baz=87,slow=7.4,SNR=4.4						
ILAR	**Eielson Array**	**50.40**	**32**	P	**P**	**12 27 13.8**	**+0.1**
	0.6nm,0.6s,baz=264,slow=5.6,SNR=9.4						
WRA	**Warramunga Arr**	**55.66**	**189**	P	**P**	**12 27 52.7**	**-0.2**
	0.6nm,0.5s,baz=7.1,slow=7.6,SNR=16						
ASAR	**Alice Springs**	**59.38**	**189**	P	**P**	**12 28 19.3**	**+0.3**
	0.4nm,0.7s,baz=0.0,slow=7.4,SNR=2.1						
TXAR	**Lajitas Array**	**90.47**	**53**	P	**P**	**12 31 18.9**	**+0.5**
	0.2nm,0.8s,baz=291,slow=2.5,SNR=5.0						

ISCJB ***12*** *12:31:47.3±0.5, 9°.40N±0°.07×122°.08E±0°.04, h10km, mb3.9/9, MS3.3/4, Error ellipse: s-maj=10.0km s-min=5.4km az=178.8*
MAN ***12*** *12:31:47, 9°.53N×122°.05E, h5km, mb4.6, ML3.5, MS3.5*
IDC ***12*** *12:31:51.3±1.0, 9°.49N×122°.13E, h26km±7km, mb3.8/9, mb1 4.0/9, mb1mx3.7/39, mbtmp4.0/9, MS3.3/5, Ms1 3.4/5, ms1mx2.9/48, Error ellipse: s-maj=45.5km s-min=15.8km az=63.0*
ISC 12 12:31:48.7±0.6**, 9°.51N**±0°.07×**122°.14E**±0°.05**, h10**km**, n21**, σ1$ **95**/24**, mb4.0**/9**, MS3.3**/4**, 3C-4D, Negros**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.10**	**99**	*i* P	Pb	12 32 04.5	-5.5
SNPH				*i* S	**Sb**	**12 32 21.1**	**-3.3**
JAP	**San Jose, Anti**	**1.24**	**351**	*i* P	Pn	12 32 02.2	-10
TBP	**Tagbilaran**	**1.71**	**84**	*i* P	**Pb**	**12 32 20.1**	**-0.2**
LLP	**Lapu-Lapu**	**1.97**	**66**	*e*P	**Pn**	**12 32 22.5**	**+0.2**
LLP				*e*S	**Sb**	**12 32 49.5**	**+0.1**
RCP	**Roxas**	**2.12**	**16**	*e*P	**Pb**	**12 32 24.7**	**-2.6**
CGP	**Cagayan de Oro**	**2.74**	**112**	*e*P	**Pn**	**12 32 34.6**	**+1.8**
CGP				*i* S	**Sb**	**12 33 11.7**	**+0.2**
PPR	**Puerto Princes**	**3.37**	**275**	*i* P	**Pn**	**12 32 41.0**	**-0.5**
PPR				*i* S	**Sn**	**12 33 20.7**	**-0.8**
TGY	**Tagaytay City**	**4.71**	**346**	LR	LR	12 34 56.5	
	comp=Z,155nm,19.6s,baz=181,slow=39						
CMAR	**Chiang Mai Arr**	**24.17**	**294**	P	**P**	**12 37 05.6**	**+0.1**
	0.7nm,0.3s,baz=130,slow=9.5,SNR=5.4						
CMAR				pP	**sP**	**12 37 14.1**	**+4.3**
	1.1nm,0.7s,baz=125,slow=9.5,SNR=1.8						
CMAR				LR	LR	12 45 41.1	
	comp=Z,51nm,21.3s,baz=176,slow=34						
KSRS	**Korea Array**	**28.30**	**10**	LR	LR	12 50 01.9	
	comp=Z,36nm,20.3s,baz=305,slow=38						
PMG	**Port Moresby**	**31.21**	**126**	LR	LR	12 52 00.6	
	comp=Z,133nm,18.9s,baz=104,slow=39						
WRA	**Warramunga Arr**	**31.64**	**158**	P	**P**	**12 38 11.5**	**-0.8**
	0.9nm,0.4s,baz=340,slow=9.3,SNR=20						
WRA				PcP	**PcP**	**12 41 03.4**	**-1.1**
	1.6nm,0.8s,baz=337,slow=2.9,SNR=12						
ASAR	**Alice Springs**	**34.93**	**161**	P	**P**	**12 38 41.1**	**+0.1**
	5.6nm,0.6s,baz=342,slow=7.5,SNR=115						
ASAR				PcP	**PcP**	**12 41 12.8**	**-0.9**
	1.8nm,0.8s,baz=341,slow=2.3,SNR=11						
SONM	**Songino Array**	**40.45**	**344**	P	**P**	**12 39 27.2**	**-0.3**
	0.3nm,0.5s,baz=163,slow=5.9,SNR=3.7						
SONM				pP	**sP**	**12 39 35.9**	**+4.0**
	0.7nm,0.6s,baz=160,slow=9.7,SNR=5.9						
SONM				LR	LR	12 58 31.1	
	comp=Z,91nm,18.1s,baz=42,slow=40						
NWAO	**Narrogin (SRO)**	**42.46**	**186**	P	**P**	**12 39 43.0**	**-1.0**
	4.4nm,0.8s,baz=256,slow=9.5,SNR=5.9						
STKA	**Stephens Creek**	**45.17**	**156**	P	**P**	**12 40 05.4**	**-0.5**
	3.9nm,0.7s,baz=331,slow=7.6,SNR=11						
MKAR	**Makanchi Array**	**50.23**	**325**	P	**P**	**12 40 45.3**	**+0.2**
	0.7nm,0.9s,baz=133,slow=8.6,SNR=4.7						
MKAR				pP	**sP**	**12 40 53.5**	**+4.1**
	1.2nm,0.8s,baz=126,slow=8.0,SNR=7.2						
BRTR	**Keskin Array B**	**82.85**	**309**	pP	pP	12 44 22.4	+5.2
	1.0nm,0.9s,baz=103,slow=5.3,SNR=3.3						
AKASG	**Malin Array Be**	**84.56**	**320**	P	**P**	**12 44 21.0**	**-1.2**
	0.2nm,0.3s,baz=64,slow=4.2,SNR=5.1						
VNDA	**Vanda**	**89.73**	**172**	P	**P**	**12 44 46.4**	**-0.2**
	0.9nm,0.7s,baz=308,slow=5.1,SNR=4.4						
PLCA	**Paso Flores**	**146.94**	**162**	PKPbc	**PKPab**	**12 51 32.0**	**-1.4**
	4.5nm,0.7s,baz=190,slow=1.3,SNR=8.5						

NIED ***12*** *12:40:00, 36°.90N×141°.50E, h5km, Mw3.5 Best double couple: M0 1.98000×10^14 NP1:φs 201.00000°, δ42.00000°, λ-104.00000°. NP2:φs 39.00000°, δ50.00000°, λ-78.00000°.*
IDC ***12*** *12:40:29.6±1.3, 36°.63N×141°.48E, h0km, mb3.5/6, mb1 3.7/7, mb1mx3.5/45, mbtmp3.4/7, ML3.1/1, MS2.3/1, Ms1 2.3/1, ms1mx2.1/38, Error ellipse: s-maj=34.4km s-min=27.7km az=168.0*
ISCJB ***12*** *12:40:31.7±1.3, 36°.89N±0°.04×141°.47E±0°.08, h19km±8km, mb3.4/6, Error ellipse: s-maj=10.6km s-min=5.8km az=7.9*
JMA ***12*** *12:40:31.9±0.1, 36°.91N×141°.47E, h30km±1km, M3.7*
ISC 12 12:40:31.8±1.7**, 36°.92N**±0°.04×**141°.46E**±0°.07**, h12**km±9km**, n23**, σ0$ **98**/28**, mb3.5**/6**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.56**	**289**	P	**Pg**	**12 40 42.9**	**+0.1**
ONAJ				*e*S	**Sg**	**12 40 50.6**	**+0.4**
JFK	**Kawauchi**	**0.65**	**314**	P	**Pg**	**12 40 44.5**	**+0.1**
JFK				S	**Sg**	**12 40 53.6**	**+0.6**
JHO	**Hitachi**	**0.78**	**247**	P	**Pg**	**12 40 46.5**	**-0.4**
JHO				S	**Sg**	**12 40 56.9**	**-0.2**
JFT	**Otama**	**1.08**	**304**	P	**Pb**	**12 40 52.1**	**-0.3**
JFT				S	**Sb**	**12 41 06.0**	**-0.4**
JMM	**Marumori**	**1.08**	**331**	P	**Pb**	**12 40 51.5**	**-1.0**
JMM				*e*S	**Sb**	**12 41 05.8**	**-0.8**
JFY	**Yanaizu**	**1.48**	**290**	P	**Pn**	**12 40 58.3**	**0.0**
JFY				S	**Sn**	**12 41 17.1**	**-0.5**
JIO	**Ouri**	**1.54**	**357**	P	**Pn**	**12 40 58.3**	**-0.7**
JIO				S	**Sn**	**12 41 17.8**	**-1.1**
JOU	**Okura**	**1.58**	**337**	P	**Pn**	**12 40 59.6**	**0.0**
JOU				S	**Sn**	**12 41 19.9**	**0.0**
MJAR	**Matsushiro Arr**	**2.64**	**263**	Pn	**Pn**	**12 41 14.7**	**+0.5**
	3.2nm,0.3s,baz=85,slow=15,SNR=13						
MJAR				Sn	**Sb**	**12 41 51.4**	**+0.1**
	6.7nm,0.3s,baz=81,slow=32,SNR=8.6						
MJAR				LR	LR	12 42 27.8	
	comp=Z,64nm,20.3s,baz=85,slow=45						
MAT	**Matsushiro**	**2.64**	**263**	P	**Pn**	**12 41 14.8**	**+0.6**
MAT				S	**Sb**	**12 41 51.1**	**-0.3**
JHJ	**Hachijo jima 2**	**4.03**	**200**	Pn	**Pn**	**12 41 34.4**	**+1.0**
	5.6nm,0.3s,baz=320,slow=21,SNR=9.2						
JHJ				Sn	**Sn**	**12 42 18.9**	**-1.6**
	5.2nm,0.3s,baz=73,slow=19,SNR=2.4						
SONM	**Songino Array**	**27.88**	**304**	P	**P**	**12 46 22.7**	**+1.2**
	0.2nm,0.6s,baz=119,slow=10,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**28.06**	**121**	T	T	13 15 46.2	
	baz=313,slow=75,SNR=157						
H11N1	**WAKE ISLAND Hy**	**28.07**	**121**	T	T	13 15 47.6	
	baz=313,slow=75,SNR=178						
H11N3	**WAKE ISLAND Hy**	**28.08**	**121**	T	T	13 15 51.0	
	baz=313,slow=75,SNR=164						
H11S1	**WAKE ISLAND Hy**	**28.77**	**123**	T	T	13 16 40.0	
	baz=315,slow=76,SNR=49						
H11S3	**WAKE ISLAND Hy**	**28.77**	**123**	T	T	13 16 40.2	
	baz=315,slow=76,SNR=65						
H11S2	**WAKE ISLAND Hy**	**28.78**	**123**	T	T	13 16 41.5	
	baz=315,slow=76,SNR=39						
MKAR	**Makanchi Array**	**44.21**	**302**	P	**P**	**12 48 41.1**	**+0.4**
	0.1nm,0.4s,baz=87,slow=9.4,SNR=3.5						
ILAR	**Eielson Array**	**49.57**	**32**	P	**P**	**12 49 23.9**	**+1.6**
	0.5nm,0.9s,baz=261,slow=6.6,SNR=5.7						
WRA	**Warramunga Arr**	**56.95**	**188**	P	**P**	**12 50 14.2**	**-2.8**
	0.6nm,0.9s,baz=4.8,slow=7.5,SNR=2.7						
AKASG	**Malin Array Be**	**74.41**	**322**	P	**P**	**12 52 09.7**	**+0.2**
	0.4nm,0.3s,baz=46,slow=6.6,SNR=1.9						
TXAR	**Lajitas Array**	**90.16**	**52**	P	**P**	**12 53 33.7**	**+1.4**
	0.2nm,0.7s,baz=298,slow=3.8,SNR=3.1						

IDC 12 12:43:56.1±3.0**, 5°.58S**×**151°.94E, h0**km**, mb3.8**/4**, mb1 4.0**/5**, mb1mx3.7**/37**, mbtmp3.9**/5**, ML2.0**/1**, Error ellipse: s-maj=95.3km s-min=29.1km az=115.0, New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.07**	**231**	Pn	Pn	12 45 29.2	+1.9
	2.2nm,0.3s,baz=40,slow=6.7,SNR=6.8						
PMG				Sn	Sn	12 46 33.7	-3.8
	6.5nm,0.3s,baz=336,slow=22,SNR=9.4						
WRA	**Warramunga Arr**	**22.29**	**229**	P	P	12 48 55.0	-0.2
	1.0nm,0.4s,baz=53,slow=9.8,SNR=22						
ASAR	**Alice Springs**	**25.00**	**222**	P	P	12 49 22.0	+0.1
	0.7nm,0.4s,baz=57,slow=8.9,SNR=32						
FITZ	**Fitzroy Crossi**	**28.54**	**242**	P	P	12 49 52.9	-0.9
	2.4nm,0.3s,baz=57,slow=9.4,SNR=22						
SONM	**Songino Array**	**66.53**	**328**	P	P	12 54 48.3	+0.2
	0.3nm,0.5s,baz=138,slow=7.9,SNR=2.5						
TORD	**Torodi Ar. Bea**	**149.72**	**287**	PKPbc	PKPbc	13 03 48.9	-0.2
	1.5nm,0.6s,baz=77,slow=2.4,SNR=9.4						

JMA ***12*** *12:58:05.0±0.7, 45°.89N×151°.85E, h30km, M4.0*
ISCJB ***12*** *12:58:06.2±1.2, 45°.4N±0°.1×151°.7E±0°.1, h30km, Error ellipse: s-maj=22.3km s-min=8.2km az=146.4*
SKHL ***12*** *12:58:09.4±0.2, 45°.75N×151°.64E, h43km±3km, mb4.5/3*
ISC 12 12:58:05.0±1.9**, 45°.4N**±0°.1×**152°.0E**±0°.1**, h30**km**, n19**, σ2$ **36**/25**, East of Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**2.95**	**269**	*i* P	**Pn**	**12 58 49.7**	**0.0**
KUR				AMB	AMB	12 58 51.9	
	30nm,0.7s						
KUR				*i* S	**Sn**	**12 59 20.1**	**-3.9**
KUR				A	A	12 59 23.0	
	120nm,0.5s						
KUR				A	A	12 59 23.0	
	40nm,0.5s						
YUK	**Yuzh-Kuril'sk**	**4.60**	**256**	*i* P	**Pn**	**12 59 15.9**	**+3.5**
YUK				AMB	AMB	12 59 17.9	
	20nm,0.4s						
YUK				AMB	AMB	12 59 17.9	
	30nm,0.4s						
YUK				AMB	AMB	12 59 17.9	
	70nm,0.4s						
YUK				*i* S	**Sn**	**13 00 05.6**	**+0.9**
YUK				A	A	13 00 14.1	
	160nm,0.6s						
YUK				A	A	13 00 14.1	
	90nm,0.6s						
NEM2	**Nemuro 2**	**4.93**	**248**	P	**Pn**	**12 59 17.7**	**+0.7**
NEM2				*e*S	**Sn**	**13 00 11.5**	**-1.5**
JRA	**Rausu**	**5.13**	**256**	P	**Pn**	**12 59 22.2**	**+2.5**
JNK	**Nakash**	**5.53**	**254**	P	**Pn**	**12 59 27.3**	**+2.1**
JAK	**Akkeshi**	**5.78**	**249**	P	**Pn**	**12 59 29.4**	**+0.8**
JAK				*e*S	**Sn**	**13 00 32.3**	**-1.6**
JTKR	**Abashiri--Toko**	**5.96**	**259**	P	**Pn**	**12 59 33.4**	**+2.3**
SKR	**Severo-Kuril's**	**5.99**	**26**	*e*P	**Pn**	**12 59 34.0**	**+2.5**
SKR				AMB	AMB	12 59 36.0	
	80nm,0.8s						
SKR				*e*S	**Sn**	**13 00 35.8**	**-3.2**
SKR				A	A	13 00 38.8

TWGZ				AML	AML	13 01 22.6	
TWGZ				AML	AML	13 01 28.8	
URZ	**Urewera**	**1.86**	**197**	PN	Pn	13 00 57.8	+0.1
URZ				AML	AML	13 01 21.7	
MWZ	**Matawai**	**1.87**	**186**	PN	Pn	13 00 58.3	+0.4
MWZ				AML	AML	13 01 31.1	
TKGZ	**Te Karaka**	**1.96**	**179**	PN	Pn	13 00 58.7	-0.2
TKGZ				AML	AML	13 01 24.2	
TKGZ				AML	AML	13 01 24.3	
CNGZ	**Carnagh Statio**	**2.03**	**171**	⇓PN	Pn	13 00 59.8	0.0
RIGZ	**Rimuhau**	**2.23**	**181**	PN	Pn	13 01 01.5	-0.8
RIGZ				AML	AML	13 01 29.3	
RIGZ				AML	AML	13 01 30.2	
SNGZ	**Shannon Statio**	**2.33**	**189**	PN	Pn	13 01 03.2	-0.3
SNGZ				AML	AML	13 01 33.9	
SNGZ				AML	AML	13 01 34.4	

*ISCJB **12** 13:10:49.6±2.3,29.˝73S±0.˝09×176.˚6W±0.˚1, h31km, mb3.8/2, MS3.7/1, Error ellipse: s-maj=25.6km s-min=10.9km az=161.8*

*IDC **12** 13:10:53.6±5.7,29.˚66S×176.˚83W, h37km±37km, mb3.6/2, mb1 4.0/3, mb1mx3.6/27, mbtmp4.0/3, ML3.3/1, MS3.7/1, Ms1 3.7/1, ms1mx2.9/17, Error ellipse: s-maj=48.6km s-min=31.9km az=72.0*

ISC 12 13:10:52.6±1.6, 29.˚6S±0.˚1×176.˚8W±0.˚1, h31km, n7, σ0s50/8, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.06**	**290**	Pn	**Pn**	**13 11 11.4**	**+0.1**
	300nm,0.3s,baz=78,slow=20,SNR=10						
RAO				Sn	**Sb**	13 11 26.1	+0.2
	1μm,0.3s,baz=21,slow=20,SNR=11						
URZ	**Urewera**	**10.00**	**209**	Pn	**Pn**	**13 13 13.9**	**-0.2**
	0.3nm,0.3s,baz=337,slow=17,SNR=1.5						
URZ				Sn	**Sn**	13 15 05.6	+0.4
	0.7nm,0.3s,baz=39,slow=23,SNR=5.8						
ASAR	**Alice Springs**	**44.22**	**266**	P	**P**	**13 18 58.9**	**-0.3**
	0.7nm,0.5s,baz=102,slow=6.6,SNR=19						
WRA	**Warramunga Arr**	**45.14**	**271**	P	**P**	**13 19 05.8**	**-0.7**
	1.1nm,0.6s,baz=110,slow=8.1,SNR=26						
FITZ	**Fitzroy Crossi**	**53.43**	**269**	LR	LR	13 41 12.8	
	comp=Z,71nm,19.0s,baz=126,slow=34						
FINES	**FINESS Array B**	**144.76**	**341**	PKP	**PKPab**	**13 30 24.9**	**+0.4**
	1.7nm,0.7s,baz=48,slow=2.1,SNR=3.9						
AKASG	**Malin Array Be**	**151.30**	**325**	PKPbc	**PKPbc**	**13 30 43.1**	**+0.4**
	1.1nm,0.6s,baz=46,slow=2.8,SNR=4.1						

*MAN **12** 13:17:09, 9.˚49N×122.˚00E, h2km, mb5.0, ML3.9, MS4.0*

*ISCJB **12** 13:17:10.3±1.0, 9.˚46N±0.˚04×122.˚08E±0.˚03, h17km±7km, mb4.3/29, MS3.5/8, Error ellipse: s-maj=6.0km s-min=5.2km az=15.7*

*NEIC **12** 13:17:12.0±1.8, 9.˚56N×122.˚17E, h20km±13km, mb4.8/8, Error ellipse: s-maj=7.0km s-min=4.5km az=62.0*

*IDC **12** 13:17:12.8±0.9, 9.˚61N×122.˚26E, h24km±5km, mb4.0/16, mb1 4.1/16, mb1mx3.9/46, mbtmp4.1/16, ML5.3/1, MS3.1/4, Ms1 3.2/4, ms1mx2.9/46, Error ellipse: s-maj=27.9km s-min=11.8km az=64.0*

*BJI **12** 13:17:12.5, 9.˚58N×122.˚26E, h31km, mb4.4/25, mB4.7/21, Ms4.2/14, Ms7 4.1/6*

ISC 12 13:17:11.1±0.6, 9.˚46N±0.˚04×122.˚19E±0.˚04, h17km±3km, n60, σ1s86/79, mb4.3/29, MS3.6/8, 5C-3D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.03**	**96**	*i* P	**Pb**	**13 17 27.4**	**-3.3**
SNPH				*i* S	**Sg**	13 17 44.2	-0.5
JAP	**San Jose, Anti**	**1.31**	**349**	⇓*i*P	**Pn**	**13 17 33.1**	**-1.5**
TBP	**Tagbilaran**	**1.66**	**82**	⇑*e*P	**Pg**	**13 17 42.6**	**-0.5**
LLP	**Lapu-Lapu**	**1.94**	**64**	⇑*e*P	**Pb**	**13 17 45.6**	**-0.6**
LLP				*e*S	**Sg**	13 18 12.7	-1.1
RCP	**Roxas**	**2.16**	**14**	⇑*e*P	**Pn**	**13 17 47.0**	**+0.5**
RCP				*e*S	**Sb**	13 18 15.6	-0.8
KALP	**Kalibo**	**2.21**	**4**	*e*P	Pg	13 18 03.9	+10
CGP	**Cagayan de Oro**	**2.66**	**112**	⇑*e*P	**Pb**	**13 17 57.0**	**-1.4**
CGP				*i* S	**Sb**	**13 18 32.7**	**+1.9**
CTBH	**Cotabato--PC H**	**3.01**	**137**	⇓*i*P	**Pb**	**13 18 01.7**	**-2.6**
CTBH				*i* S	**Sn**	**13 18 29.9**	**-3.9**
PLP	**Palo**	**3.23**	**58**	⇑*i*P	**Pn**	**13 18 03.5**	**+2.4**
PLP				*e*S	**Sn**	**13 18 38.9**	**-0.3**
PPR	**Puerto Princes**	**3.43**	**276**	⇓*e*P	**Pn**	**13 18 02.1**	**-1.8**
PPR				*e*S	**Sn**	**13 18 41.5**	**-2.7**
DAV	**Davao City (W)**	**4.10**	**125**	Pg	**Pg**	**13 18 29.5**	**-0.3**
	45nm,0.3s,baz=142,slow=9.3,SNR=3.8						
DAV	**Davao City (W)**	**4.10**	**125**	*e*Pn	**Pn**	**13 18 14.9**	**+1.7**
DAV				Pg	**Pg**	**13 18 29.5**	**-0.3**
TGY	**Tagaytay City**	**4.78**	**345**	Pn	**Pn**	**13 18 21.2**	**-1.3**
	134nm,0.3s,baz=312,slow=8.2,SNR=3.9						
MYLDM	**Lahad Datu**	**5.61**	**221**	*e*Pn	**Pn**	**13 18 36.2**	**+2.4**
KKM	**Kota Kinabalu**	**6.83**	**241**	*e*Pn	**Pn**	**13 18 50.7**	**0.0**
SBUM	**Sibu**	**12.11**	**236**	*e*Pn	**Pn**	**13 20 04.1**	**+1.0**
QIZ	**Qiongzhong**	**15.28**	**310**	P	**Pn**	**13 20 46.7**	**+0.4**
QIZ				S	**Sn**	**13 23 35.3**	**-0.1**
GYA	**Guiyang**	**22.41**	**321**	P	**P**	**13 22 10.8**	**+1.5**
GYA				pP	sP	13 22 19.2	+3.0
GYA				PP	**PnPn**	**13 22 38.8**	**+6.4**
GYA				S	**S**	**13 26 10.0**	**-5.1**
GYA				sS	sS	13 26 24.4	+1.5
GYA				SS	**SnSn**	**13 26 51.6**	**+7.9**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GYA				pmax	pmax		
	comp=Z,90nm,4.8s						
GYA				LR	LR		
	comp=N,480nm,14.9s						
GYA				LR	LR		
	comp=E,520nm,15.2s						
GYA				LR	LR		
	comp=Z,470nm,15.0s						
GUMO	**Guam**	**22.59**	**77**	LR	LR	13 30 56.6	
	comp=Z,30nm,18.2s,baz=254,slow=37						
PSI	**Prapat**	**24.05**	**256**	*e*P	**P**	**13 22 25.7**	**-0.2**
	36nm,1.3s						
KMI	**Kunming**	**24.19**	**313**	P	**P**	**13 22 28.0**	**+0.8**
KMI				pmax	pmax		
	comp=Z,5.0nm,1.1s						
KMI				LR	LR		
	comp=N,170nm,13.7s						
KMI				LR	LR		
	comp=E,120nm,14.4s						
CM01	**Chiang Mai Arr**	**24.22**	**294**	*e*P	**P**	**13 22 26.9**	**-0.5**
CMAR	**Chiang Mai Arr**	**24.25**	**294**	P	**P**	**13 22 27.3**	**-0.3**
	2.5nm,0.9s,baz=107,slow=7.0,SNR=13						
CMAR				LR	LR	13 31 51.8	
	comp=Z,46nm,18.3s,baz=120,slow=36						
CHTO	**Chiang Mai**	**24.36**	**295**	*e*P	**P**	**13 22 28.3**	**-0.3**
	17nm,1.8s						
JNU	**Nakatsue**	**24.88**	**18**	LR	LR	13 33 34.0	
	comp=Z,37nm,18.8s,baz=158,slow=40						
GSI	**Gunungsitoli**	**25.79**	**253**	*e*P	**P**	**13 22 41.5**	**-0.1**
	216nm,2.0s						
CD2	**Chengdu**	**27.39**	**324**	P	**P**	**13 22 55.8**	**-0.2**
CD2				pP	sP	13 23 05.2	+2.1
CD2				sP	pP	13 23 09.5	+8.5
CD2				S	**S**	**13 27 34.7**	**-0.9**
CD2				sS	sS	13 27 50.9	+6.9
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.0s						
CD2				LR	LR		
	comp=N,130nm,12.4s						
CD2				LR	LR		
	comp=E,180nm,12.9s						
MJAR	**Matsushiro Arr**	**30.63**	**26**	PcP	**PcP**	**13 26 23.6**	**+0.8**
	0.5nm,0.6s,baz=115,slow=23,SNR=3.5						
WRA	**Warramunga Arr**	**31.57**	**158**	P	**P**	**13 23 33.8**	**+0.8**
	2.6nm,0.7s,baz=339,slow=9.4,SNR=29						
WRA				PcP	**PcP**	**13 26 26.1**	**+0.6**
	1.2nm,0.7s,baz=342,slow=3.0,SNR=7.0						
WRA				pPcP		13 26 34.3	
	1.6nm,0.8s,baz=337,slow=2.7,SNR=7.5						
WB2	**Warramunga Arr**	**31.57**	**158**	*e*P	**P**	**13 23 33.5**	**+0.5**
	36nm,1.9s						
HHC	**Hu-ho-hao-te**	**32.66**	**345**	*e*P	**P**	**13 23 44.5**	**+2.0**
HHC				pmax	pmax		
	comp=Z,14nm,1.0s						
HHC				pmax	pmax		
	comp=Z,56nm,7.4s						
AS31	**Alice Springs**	**34.85**	**161**	*e*P	**P**	**13 24 03.3**	**+1.6**
	1.8nm,0.6s						
ASAR	**Alice Springs**	**34.85**	**161**	P	**P**	**13 24 03.4**	**+1.7**
	4.1nm,0.6s,baz=343,slow=6.8,SNR=95						
ASAR				PcP	**PcP**	**13 26 35.6**	**+0.9**
	0.7nm,0.6s,baz=345,slow=2.7,SNR=7.4						
ASAR				pPcP		13 26 43.8	
	1.8nm,0.8s,baz=339,slow=2.6,SNR=7.7						
AS01	**Alice Springs**	**34.87**	**161**	*e*P	**P**	**13 24 03.1**	**+1.3**
USRK	**Ussuriysk Ar.**	**35.65**	**12**	P	**P**	**13 24 07.5**	**-0.7**
	2.5nm,0.8s,baz=185,slow=4.8,SNR=5.8						
KLR	**Kul'dur**	**40.45**	**10**	P	**P**	**13 24 48.5**	**-0.2**
	1.5nm,0.8s,baz=197,slow=5.5,SNR=4.9						
SONM	**Songino Array**	**40.52**	**344**	P	**P**	**13 24 48.9**	**-0.5**
	1.4nm,0.8s,baz=159,slow=8.3,SNR=12						
SONM				LR	LR	13 43 35.3	
	comp=Z,50nm,18.7s,baz=124,slow=39						
SONA1	**Songino Array**	**40.53**	**344**	*e*P	**P**	**13 24 49.4**	**-0.2**
STKA	**Stephens Creek**	**45.09**	**156**	P	**P**	**13 25 28.1**	**+1.5**
	2.9nm,0.7s,baz=325,slow=6.3,SNR=6.0						
STKA				PcP	**PcP**	**13 27 07.7**	**+0.5**
	2.3nm,0.8s,baz=315,slow=8.6,SNR=3.1						
WMQ	**Urumqi**	**45.48**	**325**	*e*P	**P**	**13 25 30.6**	**+0.9**
WMQ				pP	sP	13 25 39.1	+2.2
WMQ				pmax	pmax		
	comp=Z,11nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,130nm,5.2s						
WMQ				LR	LR		
	comp=N,150nm,16.2s						
WMQ				LR	LR		
	comp=E,150nm,20.1s						
WMQ				LR	LR		
	comp=Z,140nm,14.4s						
MK01	**Makanchi Array**	**50.30**	**325**	*e*P	**P**	**13 26 06.8**	**-0.1**
MK31	**Makanchi Array**	**50.31**	**325**	*e*P	**P**	**13 26 07.5**	**+0.5**
MKAR	**Makanchi Array**	**50.31**	**325**	P	**P**	**13 26 07.5**	**+0.5**
	4.1nm,0.8s,baz=132,slow=8.6,SNR=35						
MAKZ	**Makanchi**	**50.50**	**325**	*e*P	**P**	**13 26 09.0**	**+0.5**
	10nm,1.3s						
KSH	**Kashi**	**50.84**	**314**	P	**P**	**13 26 14.0**	**+2.7**
KSH				*e*pP	sP	13 26 23.9	+5.3
KSH				PcS	**PcS**	**13 31 26.1**	**+0.6**
KSH				S	**S**	**13 33 27.1**	**+0.1**
KSH				ScS	**ScS**	**13 35 57.8**	**-4.0**
KSH				pmax	pmax		
	comp=Z,47nm,5.1s						
KSH				LR	LR		
	comp=N,180nm,7.9s						
KSH				LR	LR		
	comp=E,92nm,8.6s						
KSH				LR	LR		
	comp=Z,96nm,9.6s						
ZALV	**Zalesovo Beam**	**53.48**	**333**	P	**P**	**13 26 30.0**	**-0.5**
	0.4nm,0.2s,baz=131,slow=5.7,SNR=4.1						
ZALV				pP	**sP**	**13 26 38.3**	**+0.5**
	0.9nm,0.5s,baz=118,slow=4.6,SNR=3.1						
KURK	**Kurchatov**	**54.52**	**327**	*e*P	**P**	**13 26 38.3**	**+0.2**
	18nm,1.4s						
KKAR	**Karatay Array**	**56.00**	**316**	*e*P	**P**	**13 26 49.4**	**+0.4**
ZRNK	**Zerenda**	**60.82**	**326**	*e*P	**P**	**13 27 21.9**	**-0.6**
	11nm,1.7s						
GEYT	**Alibeck**	**63.84**	**308**	P	**P**	**13 27 44.1**	**+1.1**
	2.2nm,0.2s,baz=132,slow=2.1,SNR=3.8						
ABKAR	**Akbulak array**	**64.90**	**320**	*e*P	**P**	**13 27 49.5**	**-0.2**
AKTO	**Aktyubinsk**	**66.40**	**321**	P	**P**	**13 27 59.4**	**0.0**
	2.3nm,0.7s,baz=87,slow=6.4,SNR=7.6						
ILAR	**Eielson Array**	**81.91**	**26**	P	**P**	**13 29 27.9**	**-1.7**
	0.3nm,0.7s,baz=260,slow=5.2,SNR=3.7						
ILAR				pP	**sP**	**13 29 36.4**	**-0.7**
	0.4nm,0.8s,baz=258,slow=5.0,SNR=4.2						
AKASG	**Malin Array Be**	**84.64**	**320**	P	**P**	**13 29 43.0**	**-1.0**
	0.6nm,0.3s,baz=68,slow=6.2,SNR=8.1						
FINES	**FINESS Array B**	**84.69**	**331**	P	**P**	**13 29 43.5**	**-0.4**
	3.0nm,0.8s,baz=54,slow=9.7,SNR=4.6						
BUR08	**Bucovina Ar. S**	**87.77**	**318**	*e*P	**P**	**13 29 59.2**	**-0.4**
VNDA	**Vanda**	**89.66**	**172**	P	**P**	**13 30 08.9**	**+1.3**
	0.4nm,0.5s,baz=296,slow=8.3,SNR=2.9						
YKA	**Yellowknife Ar**	**96.10**	**23**	P	**P**	**13 30 36.4**	**-1.3**
	0.4nm,0.7s,baz=299,slow=4.8,SNR=3.1						
YKA				pP	**sP**	**13 30 45.2**	**-0.1**
	0.6nm,0.8s,baz=304,slow=5.1,SNR=3.8						
TXAR	**Lajitas Array**	**121.36**	**47**	PKP	**PKPdf**	**13 36 04.9**	**+0.5**
	0.4nm,0.7s,baz=193,slow=1.1,SNR=5.9						
PLCA	**Paso Flores**	**146.86**	**162**	PKPbc	**PKPab**	**13 36 53.8**	**-0.5**
	3.5nm,0.7s,baz=254,slow=7.4,SNR=6.3						

*SIGU **12** 13:17:23.6±0.2, 49.˚82N±0.˚02×18.˚51E±0.˚01, h2km, mb3.0/10*

*ISCJB **12** 13:17:24.6±0.3, 49.˚85N±0.˚03×18.˚40E±0.˚02, h0km, Error ellipse: s-maj=3.8km s-min=2.1km az=10.7*

*IDC **12** 13:17:25.2±1.3, 49.˚60N×18.˚63E, h0km, mb1 3.2/3, mb1mx3.0/42, mbtmp3.0/3, ML2.5/3, Error ellipse: s-maj=34.7km s-min=10.4km az=159.0*

*CSEM **12** 13:17:25.5±0.2, 49.˚90N×18.˚46E, h2km, ML3.3/9, Error ellipse: s-maj=6.0km s-min=3.2km az=10.0, Mining induced.*

*IPEC **12** 13:17:25.3±0.2, 49.˚84N×18.˚53E, h1km, ML3.3/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0, Mining induced.*

ISC 12 13:17:25.9±0.7, 49.˚88N±0.˚02×18.˚46E±0.˚01, h0km, n76, σ1s51/125, 10C-8D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.20**	**257**	⇓*i*PG	**Pg**	**13 17 30.7**	**+0.9**
OKC				*e*SG	**Sg**	**13 17 34.7**	**+2.3**
	comp=Z,2μm,0.9s						
OKC	**Ostrava-Krasne**	**0.20**	**257**	Pg	**Pg**	**13 17 30.7**	**+0.9**
OKC				Sg	**Sg**	**13 17 34.7**	**+2.3**
	2μm,0.9s						
RAC	**Raciborz**	**0.26**	**320**	*e*Pg	**Pg**	**13 17 32.4**	**+1.5**
RAC				*e*Sg	**Sg**	**13 17 37.0**	**+2.7**
MORC	**Moravsky Berou**	**0.60**	**260**	⇑*i*P	**Pg**	**13 17 37.9**	**+0.5**
MORC				S	**Sg**	**13 17 46.3**	**+1.1**
MORC	**Moravsky Berou**	**0.60**	**260**	*e*Pg	**Pg**	**13 17 37.4**	**0.0**
MORC	**Moravsky Berou**	**0.60**	**260**	⇑*i*P	**Pg**	**13 17 37.9**	**+0.5**
MORC				*e*Sg	**Sg**	**13 17 45.8**	**+0.6**
	471nm,1.1s						
MORC				S	**Sg**	**13 17 46.3**	**+1.1**
OJC	**Ojcow**	**0.93**	**68**	*e*Pg	**Pg**	**13 17 42.9**	**-0.8**
OJC				*e*Sg	**Sg**	**13 17 55.8**	**+0.1**
OJC	**Ojcow**	**0.93**	**68**	*e*Pg	**Pg**	**13 17 42.9**	**-0.8**
OJC				*e*Sg	**Sg**	**13 17 55.8**	**+0.1**
LANS	**Liptovska Anna**	**0.99**	**138**	*e*PG	**Pg**	**13 17 44.5**	**-0.3**
LANS				*e*SG	**Sb**	**13 18 00.4**	**+1.0**
KRLC	**Kraliky**	**1.10**	**281**	*e*PG	**Pg**	**13 17 46.1**	**-0.8**
KRLC				*e*SG	**Sg**	**13 18 01.2**	**+0.1**
KRLC	**Kraliky**	**1.10**	**281**	Pg	**Pg**	**13 17 46.1**	**-0.8**
KRLC				Sg	**Sg**	**13 18 01.2**	**+0.1**
NIE	**Niedzica**	**1.29**	**111**	*e*Pg	**Pg**	**13 17 49.5**	**-1.0**
NIE				*e*Sg	**Sn**	**13 18 08.6**	**-0.4**
VRAC	**Vranov**	**1.34**	**245**	Pg	**Pg**	**13 17 50.3**	**-1.3**
	11nm,0.3s,baz=74,slow=16,SNR=152						
VRAC				Lg	Lg	13 18 09.0	
	8.6nm,0.3s,baz=63,slow=11,SNR=3.7						
VRAC	**Vranov**	**1.34**	**245**	⇑*i*P	**Pg**	**13 17 51.2**	**-0.4**
VRAC	**Vranov**	**1.34**	**245**	*e*Pg	**Pg**	**13 17 50.9**	**-0.7**
VRAC	**Vranov**	**1.34**	**245**	⇑*i*P	**Pg**	**13 17 51.2**	**-0.4**
VRAC				*e*Sg	**Sg**	**13 18 08.0**	**-0.9**
	449nm,1.5s						
VRAC				S	**Sb**	**13 18 09.8**	**+0.2**
VYHS	**Vyhne**	**1.41**	**170**	*e*Pg	**Pn**	**13 17 51.5**	**-1.4**
VYHS				*e*Sn	**Sg**	**13 18 10.1**	**-1.1**
VYHS	**Vyhne**	**1.41**	**170**	*e*PG	**Pn**	**13 17 51.5**	**-1.4**
VYHS				*e*SN	**Sg**	**13 18 10.1**	**-1.1**
VYHS				Lg	Lg	13 18 25.9	
DPC	**Dobruska-Polom**	**1.45**	**290**	*e*PG	**Pn**	**13 17 52.7**	**-0.7**
DPC				*e*SG	**Sb**	**13 18 12.7**	**-0.1**
	comp=Z,86nm,0.7s						
DPC				AMS	AMS	13 18 30.0	
	comp=Z,400nm,4.0s						
DPC	**Dobruska-Polom**	**1.45**	**290**	Pg	**Pn**	**13 17 52.7**	**-0.7**
DPC				Sg	**Sb**	**13 18 12.7**	**-0.1**
	86nm,0.7s						
KRUC	**Moravsky**	**1.57**	**239**	*e*Pg	**Pn**	**13 17 54.3**	**-0.8**
KRUC				*e*Sg	**Sn**	**13 18 15.5**	**-0.7**
	355nm,1.5s						
UPC	**Upice**	**1.69**	**293**	⇓*e*PG	**Pn**	**13 17 55.7**	**-1.0**
UPC				AMS	AMS	13 18 40.0	
	comp=Z,400nm,4.3s						
UPC	**Upice**	**1.69**	**293**	Pg	**Pn**	**13 17 55.7**	**-1.0**
STHS	**Stebnicka Huta**	**1.87**	**103**	*e*Pn	**Pn**	**13 17 58.4**	**-0.8**
STHS	**Stebnicka Huta**	**1.87**	**103**	*e*PN	**Pn**	**13 17 58.4**	**-0.8**
STHS				*e*LG	Lg	13 18 34.5	
KECS	**Kecovo**	**1.93**	**136**	*e*Pn	**Pn**	**13 17 58.8**	**-1.2**
KECS	**Kecovo**	**1.93**	**136**	*e*PN	**Pn**	**13 17 58.8**	**-1.2**
KECS				*e*LG	Lg	13 18 29.5	
PSZ	**Piszkesteto**	**2.18**	**154**	⇓*i*P	**Pn**	**13 18 04.0**	**+0.5**
PSZ	**Piszkesteto**	**2.18**	**154**	⇓*i*P	**Pn**	**13 18 04.0**	**+0.5**
PSZ				S	**Sn**	**13 18 31.3**	**0.0**
PSZ	**Piszkesteto**	**2.18**	**154**	*ex*	**Pb**	**13 18 07.0**	**+0.7**
GOPC	**GO Pecny, Ondr**	**2.37**	**272**	*e*PG	**Pb**	**13 18 09.1**	**-0.4**
GOPC				*e*SG	**Sb**	**13 18 39.7**	**+0.4**
PRU	**Pruhonice**	**2.53**	**274**	⇓*e*PG	**Pb**	**13 18 12.4**	**+0.2**
PRU				*e*SG	**Sg**	**13 18 45.6**	**-1.5**
PRU				AMS	AMS	13 19 10.0	
	comp=Z,200nm,3.5s						
PVCC	**Panska Ves**	**2.58**	**286**	⇓*e*PG	**Pb**	**13 18 13.7**	**+0.7**
PVCC	**Panska Ves**	**2.58**	**286**	Pg	**Pb**	**13 18 13.7**	**+0.7**
CONA	**Conrad Observa**	**2.60**	**222**	Pn	**Pn**	**13 18 08.0**	**-1.3**
	0.8nm,0.1s						
CONA				Sn	**Sn**	**13 18 42.4**	**+0.9**
	24nm,0.4s						
CONA	**Conrad Observa**	**2.60**	**222**	Pn	**Pn**	**13 18 08.0**	**-1.3**
	0.8nm,0.1s						
CONA				Sn	**Sn**	**13 18 42.4**	**+0.9**
	24nm,0.4s						
KWP	**Kalwaria Pacla**	**2.77**	**94**	*e*Pn	**Pg**	**13 18 19.1**	**+0.2**
KWP				*e*Sn	**Sg**	**13 19 02.5**	**+7.7**
UZH	**Uzhgorod**	**2.81**	**115**	*i* Pn	**Pb**	**13 18 17.7**	**+0.8**
UZH				Pmn		13 18 19.3	
UZH				*i* Sn	**Sg**	**13 18 57.1**	**+1.0**
UZH				Smn		13 19 00.7	
ONO	**Onokovtsy**	**2.82**	**114**	*i* Pn	**Pb**	**13 18 17.5**	**+0.5**
ONO				*e*Sn	**Sg**	**13 18 57.3**	**+1.0**
STZU	**Stuzhytsa**	**2.85**	**106**	*i* Pn	**Pb**	**13 18 18.7**	**+1.0**
STZU				Pmn		13 18 21.7	
STZU				*i* Sn	**Sg**	**13 18 58.7**	**+1.2**
STZU				Smn		13 19 59.7	
MUKU	**Mukachevo**	**3.12**	**116**	*i* Pn	**Pg**	**13 18 23.9**	**-1.8**
MUKU				Pmn		13 18 28.1	
MUKU				*i* Sn	**Sg**	**13 19 06.7**	**+0.5**
MUKU				Smn		13 19 10.3	
BERU	**Beregovo**	**3.21**	**119**	*i* Pn	**Pb**	**13 18 24.6**	**+0.8**
BERU				*i* Sn	**Sg**	**13 19 08.8**	**-0.3**
SHIU	**Shidnytsya**	**3.26**	**100**	*i* Pn	**Pb**	**13 18 25.8**	**+1.1**
SHIU				Pmn		13 18 37.6	
SHIU				*i* Sn	**Sg**	**13 19 13.4**	**+2.8**
SHIU				Smn		13 19 28.9	
KHC	**Kasperske Hory**	**3.27**	**259**	*e*PN	**Pn**	**13 18 18.3**	**-0.1**
KHC				*e*PG	**Pb**	**13 18 26.5**	**+1.8**
KHC				*e*SG	**Sg**	**13 19 08.2**	**-2.6**
KHC	comp=Z,68nm,0.9s			AMS	AMS	13 19 30.0	
	comp=Z,200nm,5.4s						
KHC	**Kasperske Hory**	**3.27**	**259**	Pn	**Pn**	**13 18 18.3**	**-0.1**
ARSA	**Arzberg**	**3.28**	**218**	*e*Pn	**Pn**	**13 18 18.1**	**-0.4**
	0.7nm,0.1s						
ARSA				Sg	**Sg**	**13 19 10.1**	**-1.0**
	4.7nm,0.4s						
ARSA	**Arzberg**	**3.28**	**218**	Pn	**Pn**	**13 18 18.1**	**-0.4**
	0.7nm,0.1s						
ARSA				Sg	**Sg**	**13 19 10.1**	**-1.0**
	4.7nm,0.4s						
GERES	**GERESS Array B**	**3.28**	**253**	Pn	**Pn**	**13 18 17.7**	**-0.8**
	0.3nm,0.3s,baz=58,slow=5.0,SNR=5.5						
GERES				Pg	**Pb**	**13 18 26.6**	**+1.7**
	1.5nm,0.3s,baz=71,slow=16,SNR=35						
GERES				Lg	Lg	13 19 07.8	
	3.8nm,0.3s,baz=64,slow=26,SNR=9.8						
BRIU	**Brid**	**3.37**	**116**	*i* Pn	**Pb**	**13 18 27.2**	**+0.7**
BRIU				Pmn		13 18 38.6	
BRIU				*e*Sn	**Sg**	**13 19 15.6**	**+1.4**
BRIU				Smn		13 19 26.6	
MOA	**Molln**	**3.43**	**235**	*e*Pn	**Pn**	**13 18 20.3**	**-0.3**
	0.2nm,0.1s						
MOA				Sg	**Sg**	**13 19 20.5**	**+4.3**
	22nm,0.6s						
MOA	**Molln**	**3.43**	**235**	Pn	**Pn**	**13 18 20.3**	**-0.3**
	0.2nm,0.1s						
MOA				Sg	**Sg**	**13 19 20.5**	**+4.3**
	22nm,0.6s						
TRSU	**Trosnyk**	**3.46**	**119**	*e*Pn	**Pb**	**13 18 29.4**	**+1.4**
TRSU				Pmn		13 18 33.6	
KORU	**Korolevo**	**3.53**	**118**	*i* Pn	**Pb**	**13 18 31.0**	**+1.8**
KORU				Pmn		13 18 37.0	
KORU				*e*Sn	**Sg**	**13 19 20.3**	**+1.1**
KORU				Smn		13 19 42.8	
MEZ	**Mezhgor'ye**	**3.59**	**111**	*i* Pn	**Pg**	**13 18 32.2**	**-2.4**
MEZ				Pmn		13 18 44.2	
MEZ				*e*Sn	**Sg**	**13 19 23.0**	**+1.9**
MEZ				Smn		13 19 24.8	
LVV	**L'vov**	**3.61**	**89**	*e*Pn	**Pg**	**13 18 33.7**	**-1.3**
MORS	**Morshin**	**3.62**	**100**	*i* Pn	**Pg**	**13 18 33.7**	**-1.6**
MORS				*e*Sn	**Sg**	**13 19 24.3**	**+2.1**
CLL	**Collm**	**

ZKS	**Zakynthos**	**0.78**	**97**	P	**Pb**	**13 28 05.7**	**+0.3**
ZKS				AML	AML	13 28 18.1	
	comp=E,836μm,1.1s						
ZKS				S	**Sn**	**13 28 18.6**	**-0.2**
ZKS				AML	AML	13 28 20.3	
	comp=N,960μm,0.4s						
KFL	**Anninata**	**0.84**	**67**	P	**Pg**	**13 28 05.7**	**0.0**
KFL				S	**Sg**	**13 28 15.9**	**-0.6**
KFL	**Anninata**	**0.84**	**67**	P	**Pg**	**13 28 05.7**	**0.0**
KFL				S	**Sg**	**13 28 15.9**	**-0.6**
KFL	**Anninata**	**0.84**	**67**	P	**Pg**	**13 28 05.5**	**-0.1**
KFL				S	**Sn**	**13 28 20.0**	**-0.2**
LKD2	**Lefkada island**	**1.20**	**34**	P	**Pb**	**13 28 12.3**	**-0.2**
LKD2				S	**Sn**	**13 28 28.8**	**-0.3**
LKD2	**Lefkada island**	**1.20**	**34**	P	**Pb**	**13 28 12.3**	**-0.2**
LKD2				S	**Sn**	**13 28 28.8**	**-0.3**
LKD2	**Lefkada island**	**1.20**	**34**	P	**Pb**	**13 28 11.4**	**-1.1**
LKD2				S	**Sn**	**13 28 28.8**	**-0.3**
LKD2				AML	AML	13 28 33.8	
	comp=N,131μm,0.3s						
LKD2				AML	AML	13 28 36.0	
	comp=E,143μm,0.3s						
PDO	**Prodromos**	**1.35**	**53**	P	**Pn**	**13 28 14.3**	**-0.4**
PDO				S	**Sb**	**13 28 32.2**	**-0.3**
PDO	**Prodromos**	**1.35**	**53**	P	**Pn**	**13 28 14.3**	**-0.4**
PDO				S	**Sb**	**13 28 32.2**	**-0.3**
PDO	**Prodromos**	**1.35**	**53**	P	**Pg**	**13 28 16.0**	**+0.5**
PDO				S	**Sg**	**13 28 35.1**	**+2.1**
PDO				AML	AML	13 28 37.4	
	comp=E,294μm,0.5s						
PDO				AML	AML	13 28 38.3	
	comp=N,280μm,0.6s						
AMT	**Artemida-Makis**	**1.53**	**99**	P	**Pb**	**13 28 18.6**	**+0.4**
AMT	**Artemida-Makis**	**1.53**	**99**	P	**Pb**	**13 28 18.6**	**+0.4**
PVO	**Paravola**	**1.58**	**58**	P	**Pn**	**13 28 17.3**	**-0.6**
PVO				S	**Sn**	**13 28 38.1**	**-0.5**
PVO	**Paravola**	**1.58**	**58**	P	**Pn**	**13 28 17.3**	**-0.6**
PVO				S	**Sn**	**13 28 38.1**	**-0.5**
PVO	**Paravola**	**1.58**	**58**	P	**Pg**	**13 28 19.4**	**+0.4**
PVO				S	**Sg**	**13 28 42.4**	**+2.0**
PVO				AML	AML	13 28 43.6	
	comp=N,150μm,0.6s						
PVO				AML	AML	13 28 44.1	
	comp=E,171μm,0.4s						
KLV	**Kalavryta, Ach**	**1.87**	**82**	P	**Pn**	**13 28 21.8**	**-0.1**
KLV				S	**Sg**	**13 28 49.4**	**-0.3**
KLV	**Kalavryta, Ach**	**1.87**	**82**	P	**Pn**	**13 28 21.8**	**-0.1**
KLV				S	**Sg**	**13 28 49.4**	**-0.3**
KLV				AML	AML	13 28 58.2	
	comp=E,42μm,0.7s						
KLV				AML	AML	13 29 06.6	
	comp=N,41μm,0.6s						
THL	**Klokotos Trika**	**2.47**	**44**	P	**Pn**	**13 28 32.3**	**+2.2**

*ISCJB **12** 13:35:31.1±1.5,34˚.24N±0˚.04×25˚.12E±0˚.03,h13km±10km, mb3.6/6,Error ellipse: s-maj=6.6km s-min=4.4km az=24.5*
*IDC **12** 13:35:31.0±1.1,34˚.46N×25˚.09E,h0km, mb3.7/6, mb1 3.8/10,mb1mx3.6/45,mbtmp3.7/10,ML3.4/4,Error ellipse: s-maj=18.6km s-min=17.9km az=30.0*
*ATH **12** 13:35:32.0,34˚.32N×25˚.07E,h6km±3km,ML3.2/8,Error ellipse: s-maj=3.7km s-min=1.7km az=22.0*
*THE **12** 13:35:32.9,34˚.39N×25˚.07E,h5km±1km,ML3.4/6,Error ellipse: s-maj=1.2km s-min=0.5km az=61.0*
*CSEM **12** 13:35:33.8±0.8,34˚.40N×25˚.09E,h2km,ML3.4, Error ellipse: s-maj=14.2km s-min=7.4km az=179.0*
ISC 12 13:35:30.8±1.7,34˚.27N±0˚.06×25˚.10E±0˚.03,h4km±10km, n50,σ1°35/79,mb3.6/6,Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIVA	**Sivas**	**0.78**	**342**	P	**Pg**	**13 35 45.7**	**-0.1**
SIVA				S	**Sg**	**13 35 55.7**	**-0.3**
SIVA	**Sivas**	**0.78**	**342**	P	**Pg**	**13 35 45.8**	**-0.1**
SIVA				S	**Sb**	**13 35 57.2**	**-0.8**
SIVA	**Sivas**	**0.78**	**342**	P	**Pg**	**13 35 45.8**	**0.0**
SIVA				S	**Sb**	**13 35 57.2**	**-0.8**
SIVA				AML	AML	13 35 58.7	
	comp=E,9008μm,0.3s						
SIVA				AML	AML	13 36 05.4	
	comp=N,10613μm,0.7s						
TMBK	**Timbaki Herakl**	**0.84**	**341**	P	**Pg**	**13 35 47.2**	**+0.2**
TMBK				S	**Sg**	**13 35 57.9**	**-0.1**
TMBK	**Timbaki Herakl**	**0.84**	**341**	P	**Pg**	**13 35 47.2**	**+0.2**
TMBK				S	**Sg**	**13 35 57.9**	**-0.1**
LAST	**Lasithi**	**0.94**	**19**	P	**Pg**	**13 35 49.0**	**+0.1**
LAST				S	**Sg**	**13 36 01.7**	**+0.6**
LAST	**Lasithi**	**0.94**	**19**	P	**Pg**	**13 35 48.8**	**-0.1**
LAST				S	**Sg**	**13 36 01.7**	**+0.6**
LAST	**Lasithi**	**0.94**	**19**	P	**Pg**	**13 35 48.8**	**-0.1**
GVD	**Gavdhos**	**1.01**	**304**	P	**Pb**	**13 35 50.5**	**-0.6**
GVD				S	**Sb**	**13 36 04.2**	**-0.3**
GVD	**Gavdhos**	**1.01**	**304**	P	**Pb**	**13 35 50.6**	**-0.3**
GVD				S	**Sb**	**13 36 04.2**	**-0.3**
GVD	**Gavdhos**	**1.01**	**304**	P	**Pb**	**13 35 50.6**	**-0.3**
GVD				AML	AML	13 36 06.9	
	comp=N,5611μm,0.5s						
GVD				AML	AML	13 36 07.8	
	comp=E,6777μm,0.5s						
IDI	**Anoyia**	**1.03**	**350**	Pn	**Pg**	**13 35 49.9**	**-0.7**
	comp=E,28nm,0.3s,baz=176,slow=12,SNR=135						
IDI				Sn	**Sg**	**13 36 02.9**	**-1.0**
	comp=E,98nm,0.3s,baz=270,slow=20,SNR=29						
IDI	**Anoyia**	**1.03**	**350**	P	**Pg**	**13 35 49.9**	**-0.7**
IDI				S	**Sg**	**13 36 03.3**	**-0.6**
IDI	**Anoyia**	**1.03**	**350**	P	**Pg**	**13 35 50.4**	**-0.2**
IDI				S	**Sg**	**13 36 04.1**	**+0.2**
IDI	**Anoyia**	**1.03**	**350**	P	**Pg**	**13 35 50.4**	**-0.2**
IDI				S	**Sg**	**13 36 04.1**	**+0.2**
IDI				AML	AML	13 36 06.9	
	comp=E,1874μm,0.3s						
IDI				AML	AML	13 36 08.8	
	comp=N,1599μm,0.5s						
IACM	**Heraklion**	**1.03**	**359**	P	**Pb**	**13 35 51.2**	**0.0**
IACM	**Heraklion**	**1.03**	**359**	P	**Pb**	**13 35 51.2**	**0.0**
NPS	**Neapolis**	**1.07**	**23**	P	**Pg**	**13 35 51.1**	**-0.3**
NPS				S	**Sg**	**13 36 05.5**	**+0.1**
NPS	**Neapolis**	**1.07**	**23**	P	**Pg**	**13 35 50.8**	**-0.6**
NPS				S	**Sg**	**13 36 05.5**	**+0.1**
NPS	**Neapolis**	**1.07**	**23**	P	**Pg**	**13 35 50.8**	**-0.6**
NPS				AML	AML	13 36 13.9	
	comp=E,2578μm,0.4s						
NPS				AML	AML	13 36 16.3	
	comp=N,1937μm,0.5s						
ZKR	**Zakros**	**1.25**	**47**	P	**Pg**	**13 35 54.7**	**0.0**
ZKR				S	**Sb**	**13 36 11.8**	**+0.4**
ZKR	**Zakros**	**1.25**	**47**	P	**Pg**	**13 35 54.9**	**+0.2**
ZKR				S	**Sb**	**13 36 11.8**	**+0.4**
ZKR	**Zakros**	**1.25**	**47**	P	**Pg**	**13 35 54.9**	**+0.2**
ZKR				AML	AML	13 36 15.3	
	comp=N,3495μm,0.6s						
ZKR				AML	AML	13 36 15.7	
	comp=E,4038μm,0.4s						
VAM	**Vamos**	**1.35**	**327**	P	**Pn**	**13 35 55.6**	**-0.9**
VAM				S	**Sg**	**13 36 13.1**	**-1.2**
VAM	**Vamos**	**1.35**	**327**	P	**Pn**	**13 35 56.1**	**-0.4**
VAM				S	**Sn**	**13 36 14.8**	**-0.2**
IMMV	**Iera Moni Meta**	**1.50**	**323**	P	**Pn**	**13 35 57.4**	**-1.2**
IMMV	**Iera Moni Meta**	**1.50**	**323**	P	**Pn**	**13 35 58.6**	**0.0**
IMMV				S	**Sg**	**13 36 18.8**	**-0.3**
IMMV	**Iera Moni Meta**	**1.50**	**323**	P	**Pn**	**13 35 58.6**	**0.0**
IMMV				S	**Sg**	**13 36 18.8**	**-0.3**
IMMV				AML	AML	13 36 37.9	
	comp=N,955μm,0.7s						
IMMV				AML	AML	13 36 43.0	
	comp=E,1344μm,1.2s						
KARP	**Karpathos**	**2.12**	**53**	P	**Pg**	**13 36 11.6**	**+0.1**
KARP	**Karpathos**	**2.12**	**53**	P	**Pg**	**13 36 11.6**	**+0.1**
THR5	**Thira Island,**	**2.15**	**5**	P	**Pb**	**13 36 09.9**	**-0.4**
THR5	**Thira Island,**	**2.15**	**5**	P	**Pb**	**13 36 09.9**	**-0.4**
ANKY	**Antikythira Is**	**2.17**	**318**	P	**Pb**	**13 36 11.3**	**+0.6**
ANKY				S	**Sn**	**13 36 36.1**	**+1.0**
ANKY	**Antikythira Is**	**2.17**	**318**	P	**Pb**	**13 36 11.3**	**+0.6**
ANKY				S	**Sn**	**13 36 36.1**	**+1.0**
ANKY				AML	AML	13 36 58.3	
	comp=N,461μm,1.1s						
ANKY				AML	AML	13 37 01.4	
	comp=E,472μm,1.3s						
VLI	**Veliai**	**3.01**	**325**	P	**Pb**	**13 36 22.9**	**-2.2**
VLI	**Veliai**	**3.01**	**325**	P	**Pb**	**13 36 22.9**	**-2.2**
VLI				AML	AML	13 37 09.6	
	comp=N,202μm,0.7s						
VLI				AML	AML	13 37 16.9	
	comp=E,166μm,1.2s						
AKAS	**Kas**	**4.17**	**61**	*i* P	**Pn**	**13 36 37.5**	**+2.1**
AKAS				*i* S	**Sn**	**13 37 19.6**	**-5.1**
GOLH	**Golhisar**	**4.68**	**50**	*i* P	**Pn**	**13 36 44.7**	**+2.3**
GOLH				*i* S	**Sn**	**13 37 36.5**	**-0.7**
KORT	**Korkueli**	**5.07**	**56**	*i* P	**Pn**	**13 36 51.4**	**+3.6**
KORT				*i* S	**Sn**	**13 37 50.1**	**+3.2**
GAZI	**Gazipasa**	**6.22**	**70**	*i* P	**Pn**	**13 37 03.6**	**+0.2**
GAZI				*i* S	**Sn**	**13 38 10.2**	**-4.8**
MMAI	**Mount Meron Ar**	**8.68**	**95**	Pn	**Pn**	**13 37 37.9**	**+0.6**
	comp=E,1.3nm,0.3s,baz=290,slow=9.1,SNR=3.1						
MMAI				Sn	**Sn**	**13 39 13.8**	**-2.0**
	comp=E,1.5nm,0.3s,baz=264,slow=27,SNR=2.7						
BRTR	**Keskin Array B**	**8.73**	**49**	Pn	**Pn**	**13 37 40.3**	**+2.3**
	comp=E,0.1nm,0.3s,baz=235,slow=9.8,SNR=2.7						
EIL	**Elat**	**9.54**	**116**	Pn	**Pn**	**13 37 49.7**	**+0.7**
	comp=E,1.0nm,0.3s,baz=288,slow=7.5,SNR=5.7						
EIL				Sn	**Sn**	**13 39 32.9**	**-3.8**
	comp=E,0.5nm,0.3s,baz=45,slow=14,SNR=2.8						
KBZ	**Khabaz**	**16.72**	**50**	Pn	**P**	**13 39 27.2**	**-1.0**
	comp=E,0.1nm,0.3s,baz=270,slow=6.1,SNR=3.3						
ESDC	**Sonseca Array**	**23.78**	**292**	P	**P**	**13 40 46.4**	**+1.8**
	comp=E,0.7nm,0.6s,baz=88,slow=9.0,SNR=5.5						
TORD	**Torodi Ar. Bea**	**29.89**	**231**	P	**P**	**13 41 40.5**	**+0.8**
	comp=E,1.2nm,0.6s,baz=35,slow=8.5,SNR=10						
KURBB	**Kurchatov Arra**	**41.72**	**50**	P	**P**	**13 43 20.2**	**-0.6**
	comp=E,0.9nm,0.7s,baz=279,slow=8.7,SNR=7.8						
MKAR	**Makanchi Array**	**44.31**	**56**	P	**P**	**13 43 42.4**	**+0.5**
	comp=E,0.5nm,0.7s,baz=267,slow=12,SNR=4.3						
ZALV	**Zalesovo Beam**	**45.66**	**46**	P	**P**	**13 43 52.0**	**-0.4**
	comp=E,1.3nm,0.4s,baz=265,slow=8.8,SNR=6.4						
SONM	**Songino Array**	**60.09**	**50**	P	**P**	**13 45 39.9**	**+0.7**
	comp=E,0.2nm,0.4s,baz=269,slow=7.1,SNR=3.4						

*ROM **12** 13:36:21.3±0.1,43˚.94N×11˚.85E,h8km,Ml2.3/17,Error ellipse: s-maj=1.9km s-min=0.9km az=19.0*
*ISCJB **12** 13:36:22.1±0.3,43˚.90N±0˚.03×11˚.83E±0˚.03,h5km±4km, Error ellipse: s-maj=5.3km s-min=3.1km az=21.6*
*CSEM **12** 13:36:22.2±0.1,43˚.92N×11˚.84E,h2km,ML2.3,Error ellipse: s-maj=3.9km s-min=2.0km az=27.0*
ISC 12 13:36:22.3±0.9,43˚.93N±0˚.03×11˚.85E±0˚.02,h3km±6km, n51,σ1°14/65,2C,Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFI	**Santa Sofia**	**0.03**	**177**	*i* Pg	**Pg**	**13 36 23.0**	**0.0**
SFI				Sg	**Sg**	**13 36 24.1**	**+0.6**
	51nm,1.0s						
SFI	**Santa Sofia**	**0.03**	**177**	*i* Pg	**Pg**	**13 36 23.0**	**0.0**
SFI				Sg	**Sg**	**13 36 24.1**	**+0.6**
	51nm,1.0s						
ASQU	**Asqua**	**0.14**	**196**	Pg	**Pg**	**13 36 25.1**	**0.0**
ASQU				Sg	**Sg**	**13 36 28.1**	**+1.1**
	1μm,0.2s						
ASQU	**Asqua**	**0.14**	**196**	Pg	**Pg**	**13 36 25.1**	**0.0**
ASQU				Sg	**Sg**	**13 36 28.1**	**+1.1**
	1μm,0.2s						
T0502	**Localit` San**	**0.21**	**99**	Pg	**Pg**	**13 36 26.2**	**-0.2**
T0502				Sg	**Sg**	**13 36 30.4**	**+1.2**
	30μm,6.7s						
VMG	**Vicchio**	**0.22**	**277**	Pg	**Pg**	**13 36 26.5**	**0.0**
VMG				Sg	**Sg**	**13 36 30.5**	**+1.1**
VMG	**Vicchio**	**0.22**	**277**	Pg	**Pg**	**13 36 26.5**	**0.0**
VMG				Sg	**Sg**	**13 36 30.5**	**+1.1**
CPGN	**Carpegna, Ital**	**0.37**	**111**	Pg	**Pb**	**13 36 29.9**	**-1.7**
	269nm,0.7s						
CPGN	**Carpegna, Ital**	**0.37**	**111**	Pg	**Pb**	**13 36 29.9**	**-1.7**
	269nm,0.7s						
SEI	**Scarperia**	**0.37**	**289**	Pg	**Pg**	**13 36 28.9**	**-0.6**
SEI				Sg	**Sb**	**13 36 35.5**	**-2.4**
SEI	**Scarperia**	**0.37**	**289**	Pg	**Pg**	**13 36 28.9**	**-0.6**
SEI				Sg	**Sb**	**13 36 35.5**	**-2.4**
PARC	**Parchiule**	**0.40**	**135**	Pg	**Pg**	**13 36 29.6**	**-0.4**
PARC				Sg	**Sb**	**13 36 36.7**	**-2.0**
	169nm,0.3s						
PARC	**Parchiule**	**0.40**	**135**	Pg	**Pg**	**13 36 29.6**	**-0.4**
PARC				Sg	**Sb**	**13 36 36.7**	**-2.0**
	169nm,0.3s						
IMOL	**Imola, Italy**	**0.43**	**350**	Pg	**Pb**	**13 36 31.1**	**-1.5**
IMOL	**Imola, Italy**	**0.43**	**350**	Pg	**Pb**	**13 36 31.1**	**-1.5**
BADI	**Badiali**	**0.51**	**146**	Pg	**Pg**	**13 36 31.6**	**-0.5**
BADI	**Badiali**	**0.51**	**146**	Pg	**Pg**	**13 36 31.6**	**-0.5**
ATMC	**Monte Cedrone**	**0.55**	**152**	Pg	**Pg**	**13 36 32.4**	**-0.4**
	272nm,0.4s						
ATMC	**Monte Cedrone**	**0.55**	**152**	Pg	**Pg**	**13 36 32.4**	**-0.4**
	272nm,0.4s						
PTF	**Prato**	**0.56**	**273**	Pg	**Pg**	**13 36 32.6**	**-0.4**
PTF				Sg	**Sb**	**13 36 41.3**	**-1.9**
PTF	**Prato**	**0.56**	**273**	Pg	**Pg**	**13 36 32.6**	**-0.4**
PTF				Sg	**Sb**	**13 36 41.3**	**-1.9**
FNVD	**Fontana Vidola**	**0.57**	**294**	Pg	**Pg**	**13 36 32.8**	**-0.4**
	217nm,0.4s						
FNVD	**Fontana Vidola**	**0.57**	**294**	Pg	**Pg**	**13 36 32.8**	**-0.4**
	217nm,0.4s						
CAFI	**Castiglion Fio**	**0.61**	**172**	Pg	**Pg**	**13 36 33.7**	**-0.3**
	165nm,0.6s						
CAFI	**Castiglion Fio**	**0.61**	**172**	Pg	**Pg**	**13 36 33.7**	**-0.3**
	165nm,0.6s						
CSNT	**Castellina Chi**	**0.61**	**221**	Pg	**Pg**	**13 36 34.1**	**+0.1**
	162nm,0.7s						
CSNT	**Castellina Chi**	**0.61**	**221**	Pg	**Pg**	**13 36 34.1**	**+0.1**
	162nm,0.7s						
ATPC	**Poggio Castell**	**0.63**	**135**	Pg	**Pg**	**13 36 33.8**	**-0.6**
	155nm,0.5s						
ATPC	**Poggio Castell**	**0.63**	**135**	Pg	**Pg**	**13 36 33.8**	**-0.6**
	155nm,0.5s						
CRMI	**Carmignano**	**0.65**	**258**	Pg	**Pg**	**13 36 34.2**	**-0.5**
	237nm,0.5s						
CRMI	**Carmignano**	**0.65**	**258**	Pg	**Pg**	**13 36 34.2**	**-0.5**
	237nm,0.5s						
ATVO	**AVT- Monte Val**	**0.69**	**143**	Pg	**Pg**	**13 36 34.9**	**-0.5**
	189nm,0.4s						
ATVO	**AVT- Monte Val**	**0.69**	**143**	Pg	**Pg**	**13 36 34.9**	**-0.5**
	189nm,0.4s						
FSSB	**Fossombrone**	**0.72**	**109**	Pg	**Pg**	**13 36 35.4**	**-0.6**
FSSB	**Fossombrone**	**0.72**	**109**	Pg	**Pg**	**13 36 35.4**	**-0.6**
MPAG	**Monte Paganucc**	**0.73**	**114**	Pg	**Pg**	**13 36 36.0**	**-0.3**
	73nm,0.7s						
MPAG	**Monte Paganucc**	**0.73**	**114**	Pg	**Pg**	**13 36 36.0**	**-0.3**
	73nm,0.7s						
FRON	**Frontone**	**0.76**	**123**	Pg	**Pg**	**13 36 36.1**	**-0.8**
	154nm,1.2s						
FRON	**Frontone**	**0.76**	**123**	Pg	**Pg**	**13 36 36.1**	**-0.8**
	154nm,1.2s						
POPM	**Popiglio**	**0.79**	**278**	P	**Pb**	**13 36 38.0**	**-0.8**
MAIM	**Mastiano**	**0.98**	**269**	Pg	**Pg**	**13 36 40.5**	**-0.5**
	152nm,1.1s						
MAIM	**Mastiano**	**0.98**	**269**	Pg	**Pg**	**13 36 40.5**	**-0.5**
	152nm,1.1s						
MGAB	**Montegabbione**	**1.04**	**169**	Pg	**Pb**	**13 36 42.1**	**-0.9**
	137nm,0.5s						
MGAB	**Montegabbione**	**1.04**	**169**	Pg	**Pb**	**13 36 42.1**	**-0.9**
	137nm,0.5s						
SARO	**Sassorosso**	**1.07**	**284**	P	**Pg**	**13 36 41.9**	**-0.9**
SACS	**San Casciano d**	**1.08**	**177**	Pg	**Pb**	**13 36 42.8**	**-1.0**
	67nm,0.5s						
ARCI	**Arcidosso**	**1.11**	**194**	Pg	**Pg**	**13 36 42.9**	**-0.7**
	57nm,0.8s						
ARCI	**Arcidosso**	**1.11**	**194**	Pg	**Pg**	**13 36 42.9**	**-0.7**
	57nm,0.8s						
UDBI	**Udbina**	**2.88**	**77**	*e*Pn	**Pn**	**13 37 11.0**	**+1.8**
UDBI				Sn	**Sb**	**13 37 48.5**	**-1.5**
UDBI	**Udbina**	**2.88**	**77**	*e*Pn	**Pn**	**13 37 10.9**	**+1.8**
KHC	**Kasperske Hory**	**5.33**	**12**	*e*SN	**Sn**	**13 38 48.7**	**+3.9**

*CSEM **12** 13:36:28.8,43˚.93N×11˚.88E,h8km,ML2.4/7*
ROM 12 13:36:28.8±0.1,43˚.93N×11˚.88E,h8km±1km,Ml2.4/7, Error ellipse: s-maj=2.3km s-min=1.2km az=13.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFI	**Santa Sofia**	**0.03**	**225**	Pg	**Pg**	**13 36 30.1**	**-0.2**
SFI				Sg	**Sg**	**13 36 31.3**	**-0.1**
	51nm,1.0s						
SFI	**Santa Sofia**	**0.03**	**225**	Pg	**Pg**	**13 36 30.1**	**-0.2**
SFI				Sg	**Sg**	**13 36 31.3**	**-0.1**
	51nm,1.0s						
ASQU	**Asqua**	**0.14**	**206**	Pg	**Pg**	**13 36 32.2**	**+0.3**
ASQU				Sg	**Sg**	**13 36 35.1**	**+1.1**
	1μm,0.2s						
ASQU	**Asqua**	**0.14**	**206**	Pg	**Pg**	**13 36 32.2**	**+0.3**
ASQU				Sg	**Sg**	**13 36 35.1**	**+1.1**
	1μm,0.2s						
T0502	**Localit` San**	**0.19**	**97**	Pg	**Pg**	**13 36 33.3**	**+0.6**
T0502				Sg	**Sg**	**13 36 36.8**	**+1.5**
	30μm,6.7s						
VMG	**Vicchio**	**0.24**	**279**	Pg	**Pg**	**13 36 35.3**	**+1.7**
VMG				Sg	**Sg**	**13 36 38.8**	**+1.9**
VMG	**Vicchio**	**0.24**	**279**	Pg	**Pg**	**13 36 35.3**	**+1.7**
VMG				Sg	**Sg**	**13 36 38.8**	**+1.9**
PARC	**Parchiule**	**0.38**	**136**	Pg	**Pb**	**13 36 37.3**	**-0.6**
PARC				Sg	**Sb**	**13 36 43.2**	**-0.7**
	169nm,0.3s						
PARC	**Parchiule**	**0.38**	**136**	Pg	**Pb**	**13 36 37.3**	**-0.6**
PARC				Sg	**Sb**	**13 36 43.2**	**-0.7**
	169nm,0.3s						
SEI	**Scarperia**	**0.40**	**289**	Pg	**Pb**	**13 36 37.4**	**-0.7**
SEI				Sg	**Sg**	**13 36 42.8**	**+1.0**
SEI	**Scarperia**	**0.40**	**289**	Pg	**Pb**	**13 36 37.4**	**-0.7**
SEI				Sg	**Sg**	**13 36 42.8**	**+1.0**
ATMC	**Monte Cedrone**	**0.53**	**154**	Pg	**Pb**	**13 36 39.9**	**-0.5**
	272nm,0.4s						
ATMC	**Monte Cedrone**	**0.53**	**154**	Pg	**Pb**	**13 36 39.9**	**-0.5**
	272nm,0.4s						
CAFI	**Castiglion Fio**	**0.60**	**174**	Pg	**Pb**	**13 36 41.0**	**-0.6**
	165nm,0.6s						
CAFI	**Castiglion Fio**	**0.60**	**174**	Pg	**Pb**	**13 36 41.0**	**-0.6**
	165nm,0.6s						
ATVO	**AVT- Monte Val**	**0.67**	**144**	Pg	**Pg**	**13 36 42.0**	**+0.4**
	189nm,0.4s						
ATVO	**AVT- Monte Val**	**0.67**	**144**	Pg	**Pg**	**13 36 42.0**	**+0.4**
	189nm,0.4s						
CRMI	**Carmignano**	**0.67**	**259**	Pg	**Pg**	**13 36 41.7**	**0.0**
	237nm,0.5s						
CRMI	**Carmignano**	**0.67**	**259**	Pg	**Pg**	**13 36 41.7**	**0.0**
	237nm,0.5s						

BUC 12 13:36:56.1±0.6,45˚.08N×28˚.25E,h5km±11km,MD2.4/2, 12C-4D,Error ellipse: s-maj=6.7km s-min=5.1km az=330.0,Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CFR	**Carcaliu**	**0.13**	**321**	↑*i* P	Pg	**13 36 58.8**	**+0.1**
CFR				S	Sg	**13 37 01.6**	**+1.2**
CFR	**Carcaliu**	**0.13**	**321**	↑*i* P	Pg	**13 36 58.8**	**+0.1**
CFR				*i* S	Sg	**13 37 01.6**	**+1.2**
TLCR		**0.42**	**75**	↑*i* P	Pg	**13 37 04.8**	**+0.7**
TLCR		**0.42**	**75**	S	Sb	**13 37 11.7**	**-0.9**
TLCR		**0.42**	**75**	↑*i* P	Pg	**13 37 04.8**	**+0.7**
TLCR				*i* S	Sb	**13 37 11.7**	**-0.9**
HARR	**Harsova**	**0.45**	**210**	↑*i* P	Pg	**13 37 05.3**	**+0.6**
HARR	**Harsova**	**0.45**	**210**	↑*i* P	Pg	**13 37 05.3**	**+0.6**
TLB	**Topalu**	**0.52**	**197**	↓*i* P	Pg	**13 37 06.4**	**+0.4**
TLB	**Topalu**	**0.52**	**197**	↓*i* P	Pg	**13 37 06.4**	**+0.4**
TLB				*i* S	Sg	**13 37 13.7**	**+1.0**
TIRR	**Tirgusor**	**0.63**	**169**	↑*i* P	Pg	**13 37 08.5**	**+0.3**
TIRR	**Tirgusor**	**0.63**	**169**	↑*i* P	Pg	**13 37 08.5**	**+0.3**
TIRR				*i* S	Sb	**13 37 17.7**	**-1.1**
ISR	**Istrita**	**1.21**	**272**	↓*i* P	Pb	**13 37 19.4**	**-0.1**
ISR	**Istrita**	**1.21**	**272**	↓*i* P	Pb	**13 37 19.4**	**-0.1**
ISR				*i* S	Sn	**13 37 37.3**	**+0.8**
PLOR	**Plostina**	**1.36**	**305**	↑*i* P	Pg	**13 37 22.4**	**+0.2**
PLOR	**Plostina**	**1.36**	**305**	↑*i* P	Pg	**13 37 22.4**	**+0.2**
PLOR				*i* S	Sn	**13 37 41.0**	**+0.7**
MLR	**Muntele Rosu**	**1.68**	**285**	↑*i* P	Pb	**13 37 27.8**	**+0.3**
MLR	**Muntele Rosu**	**1.68**	**285**	↑*i* P	Pb	**13 37 27.8**	**+0.3**
MLR				*i* S	Sg	**13 37 50.0**	**+0.1**
MILM	**Milestii Mici**	**1.88**	**12**	S	Sn	**13 37 52.3**	**-0.7**
MILM	**Milestii Mici**	**1.88**	**12**	*i* S	Sn	**13 37 52.3**	**-0.7**

*CSEM **12** 13:37:18.4,43˚.95N×11˚.85E,h8km,ML1.7/1*
ROM 12 13:37:18.4±0.1,43˚.95N×11˚.85E,h8km±1km,Ml1.7/1,2C, Error ellipse: s-maj=2.1km s-min=1.0km az=18.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFI	**Santa Sofia**	**0.04**	**183**	*i* Pg	Pg	**13 37 20.2**	**+0.1**
SFI				Sg	Sg	**13 37 21.4**	**+0.1**
SFI	**Santa Sofia**	**0.04**	**183**	*i* Pg	Pg	**13 37 20.2**	**+0.1**
SFI				Sg	Sg	**13 37 21.4**	**+0.1**
ASQU	**Asqua**	**0.15**	**197**	Pg	Pg	**13 37 22.3**	**+0.6**
ASQU				Sg	Sg	**13 37 25.1**	**+1.1**
	183nm,0.2s						
ASQU	**Asqua**	**0.15**	**197**	Pg	Pg	**13 37 22.3**	**+0.6**
ASQU				Sg	Sg	**13 37 25.1**	**+1.1**
	183nm,0.2

NDR Nardaran 0.81 66 P Pn 13 40 32.6 +2.7
NDR S Sn 13 40 48.5 +6.9
SIZA Siyzn 0.82 354 ⇑P Pn 13 40 32.4 +2.2
SNR=667
SIZA ⇓S Sn 13 40 47.0 +4.8
SIZA Siyzn 0.82 354 P Pn 13 40 32.4 +2.2
SNR=667
SIZA S Sn 13 40 47.0 +4.8
IML Ismayilli 0.83 310 ⇑P Pn 13 40 31.3 +1.0
IML ⇑S Sn 13 40 45.8 +3.4
IML Ismayilli 0.83 310 P Pn 13 40 31.3 +1.0
IML S Sn 13 40 45.8 +3.4
GALA Gala 0.88 80 ⇑P Pn 13 40 34.0 +3.1
GALA ⇓S Sn 13 40 50.4 +6.9
GALA Gala 0.88 80 P Pn 13 40 34.0 +3.1
GALA S Sn 13 40 50.4 +6.9
ZRD Zardab 1.02 272 ⇑P Pn 13 40 35.1 +2.3
ZRD ⇓S Sn 13 40 52.9 +6.0
ZRD Zardab 1.02 272 P Pn 13 40 35.1 +2.3
ZRD S Sn 13 40 52.9 +6.0
GLBA Clilabad 1.12 206 ⇑P Pn 13 40 36.0 +1.8
GLBA ⇑S Sn 13 40 54.3 +5.0
GLBA Clilabad 1.12 206 P Pn 13 40 36.0 +1.8
GLBA S Sn 13 40 54.3 +5.0
QBL Gabala 1.13 308 ⇑P Pn 13 40 36.0 +1.6
QBL ⇓S Sn 13 40 56.1 +6.3
QBL Gabala 1.13 308 P Pn 13 40 36.0 +1.6
QBL S Sn 13 40 56.1 +6.3
XNQ Khinaliq 1.13 324 ⇓P Pn 13 40 36.6 +2.0
XNQ ⇑S Sn 13 40 55.9 +5.9
XNQ Khinaliq 1.13 324 P Pn 13 40 36.6 +2.0
XNQ S Sn 13 40 55.9 +5.9
QUBA Quba, Azerbaij 1.17 340 ⇑P Pn 13 40 38.0 +3.1
QUBA ⇑S Sn 13 40 56.9 +6.3
QUBA Quba, Azerbaij 1.17 340 P Pn 13 40 38.0 +3.1
QUBA S Sn 13 40 56.9 +6.3
QSAR Qusar 1.38 336 ⇓P Pg 13 40 40.8 +1.2
QSAR ⇑S Sg 13 41 02.1 +4.5
BRDA Brd 1.41 271 ⇑P Pg 13 40 41.6 +1.5
BRDA Brd 1.41 271 P Pg 13 40 41.6 +1.5
LKRN Lenkeran, Azer 1.55 187 ⇓Pg Pn 13 40 40.6 +0.5
LKRN ⇓Sg Sb 13 41 02.2 +1.3
LKRN Lenkeran, Azer 1.55 187 PN Pn 13 40 41.4 +1.3
LKRN S Sb 13 41 02.3 +1.3
LKRN Lenkeran, Azer 1.55 187 Pg Pn 13 40 40.6 +0.5
LKRN Lenkeran, Azer 1.55 187 Pn Pn 13 40 41.4 +1.3
LKRN Sg Sb 13 41 02.3 +1.3
MNGR Mingechevir, A 1.56 290 ⇑Pn Pg 13 40 43.3 +0.2
MNGR ⇓Sn Sg 13 41 06.7 +3.3
MNGR Mingechevir, A 1.56 290 PN Pg 13 40 43.3 +0.2
MNGR S Sg 13 41 07.1 +3.7
MNGR Mingechevir, A 1.56 290 Pn Pg 13 40 43.3 +0.2
MNGR Sn Sg 13 41 06.7 +3.3
MNGR Sg Sg 13 41 07.1 +3.7
AKT Akhty 1.57 322 ⇑*i*PG Pg 13 40 43.4 +0.2
AKT *e* 13 41 08.4
AKT pmax pmax
comp=Z,1μm,0.6s
AKT smax smax
comp=E,2μm,0.9s
AKT smax smax
comp=N,2μm,0.6s
AKT smax smax
comp=N,2μm,0.5s
AKT Akhty 1.57 322 *i* Pg Pg 13 40 43.4 +0.2
comp=N,1μm,0.6s
AKT *e*Sg Sg 13 41 08.4 +4.9
comp=N,2μm,0.5s
SEKA Sheki 1.68 305 ⇓Pn Pg 13 40 44.3 -1.0
SEKA ⇑Sn Sg 13 41 09.8 +2.7
SEKA Sheki 1.68 305 PN Pg 13 40 44.8 -0.5
SEKA S Sg 13 41 10.5 +3.4
SEKA Sheki 1.68 305 Pn Pg 13 40 44.3 -1.0
SEKA Sn Sg 13 41 09.8 +2.7
SEKA Sg Sg 13 41 10.5 +3.4
LRK Lerik 1.69 198 ⇓Pg Pn 13 40 43.6 +1.3
LRK ⇓Sg Sg 13 41 07.2 -0.4
LRK Lerik 1.69 198 Pg Pn 13 40 43.6 +1.3
LRK Sg Sg 13 41 07.2 -0.4
ASTR Astara 1.70 186 ⇓Pg Pn 13 40 42.7 +0.5
ASTR ⇓Sg Sb 13 41 05.8 +0.6
ASTR Astara 1.70 186 Pg Pn 13 40 42.7 +0.5
ASTR Sg Sb 13 41 05.8 +0.6
DRN Derbent 1.85 344 ⇑*i*PN Pb 13 40 47.0 +0.5
DRN *e* 13 41 12.1
DRN Derbent 1.85 344 *i* Pn Pb 13 40 47.0 +0.5
DRN *e*Sg Sg 13 41 12.1 -0.4
GANJ Ganja 2.09 282 ⇓Pg Sb 13 40 49.1 -1.6
GANJ ⇑Sg Sb 13 41 16.6 0.0
GANJ Ganja 2.09 282 PN Pb 13 40 49.5 -1.2
GANJ S Sg 13 41 18.2 -2.2
GANJ Ganja 2.09 282 Pg Pb 13 40 49.1 -1.6
GANJ Ganja 2.09 282 Pn Pb 13 40 49.5 -1.2
GANJ Sg Sb 13 41 16.6 0.0
GANJ Sn Sg 13 41 18.2 -2.2
ZKTA Zakatala 2.28 308 ⇑Pn Pb 13 40 53.1 -0.9
ZKTA ⇓Sn Sg 13 41 26.2 -0.2
IHRS Heris 2.47 219 *e*Pn Pb 13 40 55.4 -1.8
IHRS *e*AMB AMB 13 41 40.0
comp=Z,18μm,0.3s
IHRS Heris 2.47 219 *e*Pn Pb 13 40 55.4 -1.8
GDB GEDABAY 2.53 282 ⇓Pn Sb 13 40 55.4 +1.5
GDB ⇑Sn Sb 13 41 30.6 +1.3
GDB GEDABAY 2.53 282 Pn Sb 13 40 55.3 +1.5
GDB Sn Sb 13 41 30.6 +1.3
GNBR Gunib 2.63 325 *e*PN Pb 13 40 59.4 -0.6
GNBR *e* 13 41 35.3
GNBR pmax pmax
comp=Z,334nm,0.6s
GNBR smax smax
comp=E,678nm,0.8s
GNBR smax smax
comp=E,647nm,0.8s
GNBR smax smax
comp=N,596nm,0.8s
GNBR Gunib 2.63 325 *e*Pn Pb 13 40 59.4 -0.6
comp=N,334nm,0.6s
GNBR *e*Sb Sg 13 41 35.3 -2.4
comp=N,596nm,0.8s
ISRB Sarab 2.65 204 *e*Pn Pn 13 40 57.9 +2.5
ISRB *e*AMB AMB 13 41 10.2
comp=Z,9μm,0.2s
ISRB Sarab 2.65 204 *e*Pn Pn 13 40 57.9 +2.5
QZX Qazax, Azerbai 2.89 287 ⇑Pn Pn 13 41 01.3 +2.7
QZX ⇓Sn Sb 13 41 40.2 +0.8
QZX Qazax, Azerbai 2.89 287 Pn Pn 13 41 01.3 +2.7
QZX Sn Sb 13 41 40.2 +0.8
NAX Nakhchivan 2.92 249 ⇑Pn Pb 13 41 02.9 -2.0
NAX ⇓Sn Sb 13 41 41.6 +1.0
NAX Nakhchivan 2.92 249 PN Pb 13 41 02.7 -2.2
NAX S Sb 13 41 41.5 +1.0
NAX Nakhchivan 2.92 249 Pn Pb 13 41 02.7 -2.2
NAX Sn Sb 13 41 41.5 +1.0
IMRD Marand 2.99 240 *e*Pn Pb 13 41 03.2 -2.9
IMRD *e*AMB AMB 13 41 55.7
comp=Z,23μm,0.4s
IMRD Marand 2.99 240 *e*Pn Pb 13 41 03.2 -2.9
ITBZ Tabriz 3.01 229 *e*Pn Pb 13 41 03.5 -2.9
ITBZ *e*AMB AMB 13 41 52.6
comp=Z,4μm,0.3s
ITBZ Tabriz 3.01 229 *e*Pn Pb 13 41 03.5 -2.9
IBST Bostanabad 3.04 214 *e*AMB AMB 13 41 15.8
comp=Z,6μm,0.3s
IBST *e*Pn Pn 13 41 03.3 +2.5
IBST *e*Sg Sg 13 41 49.3 -1.5
GNI Garni 3.28 270 Pn Pn 13 41 07.3 +3.2
comp=Z,27nm,0.3s,baz=292,slow=1.6,SNR=24
GNI Pg Pg 13 41 17.2 +1.4
comp=Z,23nm,0.3s,baz=137,slow=3.9,SNR=60
GNI LR LR 13 42 45.2
comp=Z,713nm,21.6s,baz=48,slow=47
GNI Garni 3.28 270 *e*Pn Pb 13 41 07.6 -3.4
GNI Pg Pg 13 41 17.2 +1.4
ISHB Shabestar 3.29 234 *e*Sg Sg 13 41 59.5 +0.7
ISHB *e*Pn Pn 13 41 06.9 +2.6
ISHB *e*AMB AMB 13 42 13.5
comp=Z,5μm,0.3s
MAKU Maku 3.46 256 *e*Pn Pb 13 41 11.0 -3.1
MAKU Maku 3.46 256 *e*Pn Pb 13 41 11.0 -3.1
TBLG Delisi 3.56 296 P Pn 13 41 10.2 +2.4
TBLG Delisi 3.56 296 PN Pn 13 41 10.1 +2.4
TBLG Delisi 3.56 296 Pn Pn 13 41 10.1 +2.4
ZNJK Zanjan 3.59 184 *e*Pn Pn 13 41 07.0 -1.4
ZNJK *e*Sg Sn 13 41 50.2 -0.5
ZNJK Zanjan 3.59 184 *e*Pn Pn 13 41 07.0 -1.4
ZNJK *e*Sg Sn 13 41 50.2 -0.5
DUS Dusheti 3.74 301 P Pn 13 41 14.3 +4.0
DUS Dusheti 3.74 301 PN Pn 13 41 14.3 +4.0
DUS Dusheti 3.74 301 Pn Pn 13 41 14.3 +4.0
GUDG Gudauri 4.07 304 P Pn 13 41 18.6 +3.6
EAK Akyaka 4.15 278 *i* P Pg 13 41 29.9 -2.6
BGD Bogdanovka 4.24 286 P Pn 13 41 21.1 +3.9
DIGO Kars 4.32 274 *i* P Pg 13 41 35.1 -0.6
AKH Akhalkalaki 4.35 287 P Pn 13 41 22.1 +3.4
AKH Akhalkalaki 4.35 287 PN Pn 13 41 22.1 +3.4
AKH Akhalkalaki 4.35 287 Pn Pn 13 41 22.1 +3.4
LACR Lac 4.38 307 *e*PN Pn 13 41 22.5 +3.4
LACR *e*S Sb 13 42 16.0 -6.3
LACR Lac 4.38 307 *e*Pn Pn 13 41 22.5 +3.4
LACR *e*Sn Sb 13 42 16.0 -6.3
THKV Tehran--Karaj 4.57 161 *e*Pn Pn 13 41 22.1 +0.2
THKV AML AML 13 42 19.4
comp=N,236nm,0.3s
THKV AML AML 13 42 20.1
comp=E,351nm,1.1s
THKV Tehran--Karaj 4.57 161 *e*Pn Pn 13 41 22.1 +0.2
CHTH Charan 4.65 158 *e*Pn Pn 13 41 23.3 +0.4
CHTH Charan 4.65 158 *e*Pn Pn 13 41 23.3 +0.4
IMHD Mahdasht 4.74 164 *e*Pn Pn 13 41 25.5 +1.4
IMHD *e*AMB AMB 13 41 28.0
comp=Z,2μm,0.1s
IMHD Mahdasht 4.74 164 *e*Pn Pn 13 41 25.5 +1.4
IPRN Peran 4.78 146 *e*Pn Pn 13 41 25.2 +0.5
ONI Oni 4.79 301 P Pn 13 41 28.0 +3.3
ONI Oni 4.79 301 PN Pn 13 41 28.0 +3.3
ONI Oni 4.79 301 Pn Pn 13 41 28.0 +3.3
IAFJ Afjeh 4.88 153 *e*Pn Pn 13 41 27.2 +1.0
IAFJ *e*AMB AMB 13 42 28.3
comp=Z,6μm,0.2s
IAFJ Afjeh 4.88 153 *e*Pn Pn 13 41 27.2 +1.0
IRAZ Razeghan 4.89 171 *e*Pn Pn 13 41 27.2 +0.9
IRAZ *e*AMB AMB 13 42 31.8
comp=Z,2μm,0.2s
IRAZ Razeghan 4.89 171 *e*Pn Pn 13 41 27.2 +0.9
IALA Alasht 5.12 143 *e*Pn Pn 13 41 30.2 +0.7
IALA *e*AMB AMB 13 42 33.0
comp=Z,6μm,0.2s
IALA Alasht 5.12 143 *e*Pn Pn 13 41 30.2 +0.7
DAMV Damavand 5.17 152 *e*Pn Pn 13 41 31.7 +1.6
DAMV AML AML 13 42 31.1
comp=E,206nm,0.6s
DAMV Damavand 5.17 152 *e*Pn Pn 13 41 31.1 +0.9
NCK Nalchik 5.18 310 ⇑*i*PN Pn 13 41 33.7 +3.6
NCK Nalchik 5.18 310 *i* Pn Pn 13 41 33.7 +3.6
IDMV Damavand 5.24 152 *e*Pn Pn 13 41 32.9 +1.7
IDMV *e*AMB AMB 13 42 40.5
comp=Z,3μm,0.3s
IDMV Damavand 5.24 152 *e*Pn Pn 13 41 32.9 +1.7
IGLO Ghaloghah 5.32 133 *e*Pn Pn 13 41 33.4 +1.2
IGLO *e*AMB AMB 13 42 41.5
comp=Z,5μm,0.4s
IKIA Kiasar 5.46 136 *e*Pn Pn 13 41 35.3 +1.2
IKIA *e*AMB AMB 13 42 40.8
comp=Z,2μm,0.1s
IKIA Kiasar 5.46 136 *e*Pn Pn 13 41 35.3 +1.2
DAGI Agillar 5.46 281 *i* P Pg 13 42 01.6 +3.9
ARTV Artvin 5.47 282 *i* P Pg 13 41 59.9 +2.2
ARTV *i* S Pg 13 42 01.3 +3.6
IFIR Firoozkooh 5.47 146 *e*Pn Pn 13 41 36.1 +1.8
IFIR *e*AMB AMB 13 41 40.7
comp=Z,3μm,0.1s
IFIR Firoozkooh 5.47 146 *e*Pn Pn 13 41 36.1 +1.8
DDEM Demirkent 5.57 279 *i* P Pb 13 41 49.4 -0.7
DDEM *i* S Pg 13 42 04.9 +5.2
ISHM Shahmirzad 5.58 141 *e*Pn Pn 13 41 36.8 +1.1
ISHM *e*AMB AMB 13 42 41.7
comp=Z,7μm,0.2s
NEY Neytrino 5.58 304 ⇑*i*P Pn 13 41 40.4 +4.8
NEY Neytrino 5.58 304 *i* P Pn 13 41 40.4 +4.8
IVRN Varamin 5.67 157 *e*Pn Pn 13 41 38.6 +1.7
IVRN *e*AMB AMB 13 42 53.2
comp=Z,1μm,0.3s
IVRN Varamin 5.67 157 *e*Pn Pn 13 41 38.6 +1.7
DBOC Borcka 5.68 283 *i* P Pn 13 41 42.9 +5.9
DBOC *i* S Pg 13 42 03.6 +1.8
KBZ Khabaz 5.73 309 Pn Pn 13 41 40.0 +2.5
comp=Z,0.6nm,0.3s,baz=91,slow=3.2,SNR=12
ILAS Lasjerd 5.78 146 *e*Pn Pn 13 41 40.2 +1.7
ILAS *e*AMB AMB 13 42 47.5
comp=E,2μm,0.3s
ILAS Lasjerd 5.78 146 *e*Pn Pn 13 41 40.2 +1.7
KVAR Kislovodsk Arr 5.98 310 Pn Pn 13 41 43.1 +2.0
baz=155,slow=1.6,SNR=8.5
KIV Kislovodsk 5.99 310 *i* P Pn 13 41 42.9 +1.7
KIV pmax pmax
comp=Z,24nm,1.0s
KIV Kislovodsk 5.99 310 *e*Pn Pn 13 41 42.5 +1.3
KIV Kislovodsk 5.99 310 *i* P Pn 13 41 42.9 +1.7
comp=Z,24nm,1.0s
KIV Kislovodsk 5.99 310 *e*Pn Pn 13 41 42.5 +1.3
IANJ Anjilo 6.15 139 *e*Pn Pn 13 41 45.3 +1.7
IANJ *e*AMB AMB 13 43 04.1
comp=Z,2μm,0.4s
IANJ Anjilo 6.15 139 *e*Pn Pn 13 41 45.3 +1.7
IGHG Ghaleghazi 6.23 199 *e*Pn Pn 13 41 45.9 +1.3
IGHG *e*AMB AMB 13 42 24.9
comp=Z,1μm,0.4s
IGHG Ghaleghazi 6.23 199 *e*Pn Pn 13 41 45.9 +1.3
GOF Gofitskoye 6.51 319 ⇑*e*P Pn 13 41 49.4 +1.1
GOF *e*S Sb 13 43 14.0 -10
GOF pmax pmax
comp=Z,31nm,0.7s
GOF smax smax
comp=N,95nm,0.7s
GOF smax smax
comp=E,168nm,1.3s
GOF Gofitskoye 6.51 319 *e*P Pn 13 41 49.4 +1.1
comp=E,31nm,0.7s
GOF *e*S Sb 13 43 14.0 -10
comp=E,95nm,0.7s
IKLH Kolahrood 7.22 163 *e*Pn Pn 13 41 59.5 +1.2
IKLH *e*AMB AMB 13 42 12.9
comp=Z,332nm,0.2s
IKLH Kolahrood 7.22 163 *e*Pn Pn 13 41 59.5 +1.2
GEYT Alibeck 7.45 105 Pn Pn 13 42 00.6 -0.6
comp=Z,6.3nm,0.3s,baz=291,slow=17,SNR=10.0
GEYT Sn Sn 13 43 23.2 -2.2
comp=Z,3.7nm,0.3s,baz=275,slow=23,SNR=2.9
SOC Sochi 7.69 299 *e*P Pn 13 42 04.7 +0.2
SOC *e* 13 43 32.2
SOC pmax pmax
comp=Z,9.0nm,0.4s
SOC MLR MLR
comp=Z,246nm,12.0s
SOC Sochi 7.69 299 *e*P Pn 13 42 04.7 +0.2
comp=Z,9.0nm,0.4s
SOC *e*S Sn 13 43 32.2 +0.9
comp=Z,246nm,12.0s
IZEF Zefreh 7.81 159 *e*Pn Pn 13 42 08.4 +2.0
IZEF *e*AMB AMB 13 44 02.4
comp=Z,116nm,0.3s
IZEF Zefreh 7.81 159 *e*Pn Pn 13 42 08.4 +2.0
BRTR Keskin Array B 11.81 272 Pn Pn 13 43 05.7 +4.6
comp=Z,0.1nm,0.3s,baz=61,slow=12,SNR=5.1
BRTR LR LR 13 48 33.0
comp=Z,232nm,18.1s,baz=76,slow=42
AB31 Akbulak array 11.88 37 *e*P Pn 13 43 00.5 -1.2
AB31 13 45 09.0
AB31 pmax pmax
comp=Z,2.0nm,0.5s
AB31 smax smax
comp=N,10.0nm,1.0s
AB31 Akbulak array 11.88 37 *e*P Pn 13 43 00.5 -1.2
comp=N,2.0nm,0.5s
AB31 S Sn 13 45 09.0 -4.9
comp=N,10.0nm,1.0s
ABKAR Akbulak array 11.88 37 *e*Pn Pn 13 42 60.0 -1.8
AKTK Aktyubinsk 11.98 29 P Pn 13 43 01.7 -1.4
comp=N,1.0nm,0.3s
AKTK S Sn 13 45 08.1 -8.3
comp=N,420nm,19.9s
AKTO Aktyubinsk 11.98 29 Pn Pn 13 43 01.7 -1.4
comp=N,1.0nm,0.3s,baz=213,slow=13,SNR=13
AKTO Sn Sn 13 45 08.1 -8.3
comp=N,0.6nm,0.3s,baz=0.0,slow=20,SNR=5.8
AKTO LR LR 13 49 15.5
comp=N,420nm,19.9s,baz=216,slow=46
VRH Novokhopyorsk 12.07 338 *e*P Pn 13 43 03.8 -0.6
VRH pmax pmax
comp=Z,20nm,0.8s
VRH Novokhopyorsk 12.07 338 *e*P Pn 13 43 03.8 -0.6
comp=Z,20nm,0.8s
BR231 Keskin MP Arra 12.46 273 *e*Pn Pn 13 43 06.5 -3.4
VSR Storozhevoye 12.93 331 *e*P Pn 13 43 15.7 -0.4
VSR pmax pmax
comp=Z,20nm,1.4s
VSR MLR MLR
comp=Z,450nm,15.0s
VSR Storozhevoye 12.93 331 *e*P Pn 13 43 15.7 -0.4
comp=Z,450nm,15.0s
TIRR Tirgusor 15.79 292 *e*P Pn 13 43 52.9 -1.9
TIRR pmax pmax
comp=Z,5.0nm,0.9s
TIRR Tirgusor 15.79 292 *e*P Pn 13 43 52.9 -1.9
comp=Z,5.0nm,0.9s
TIRR Tirgusor 15.79 292 *e*Pn Pn 13 43 52.9 -1.9
comp=Z,5.3nm,0.9s
TLB Topalu 16.07 292 ⇓*i*P P 13 44 02.8 +1.1
TLB Topalu 16.07 292 ⇓P P 13 44 02.8 +1.1
TLB Topalu 16.07 292 ⇓*i*P P 13 44 02.8 +1.1
KIS Kishinev 16.08 301 *e* P 13 44 09.0 +7.2
CFR Carcaliu 16.10 295 P P 13 44 02.8 +0.8
CFR pmax pmax
comp=Z,11nm,1.2s
CFR Carcaliu 16.10 295 P P 13 44 02.8 +0.8
comp=Z,11nm,1.2s
KK31 Karatay Array 16.30 73 *i* P Pn 13 44 00.5 -0.9
KK31 pmax pmax
comp=Z,4.0nm,0.6s
KK31 Karatay Array 16.30 73 *i* P Pn 13 44 00.5 -0.9
comp=Z,4.0nm,0.6s
KKAR Karatay Array 16.30 73 *e*P Pn 13 43 57.7 -3.7
KKAR Karatay Array 16.30 73 *e*P Pn 13 43 57.7 -3.7
KKAR Karatay Array 16.30 73 *e*Pn Pn 13 43 57.7 -3.7
PRD Provadia 16.40 287 *e*P P 13 44 11.7 +6.4
KBL Kabul 16.89 103 *e*P Pn 13 44 06.0 -3.1
KBL pmax pmax
comp=Z,17nm,1.1s
KBL Kabul 16.89 103 *e*P Pn 13 44 06.0 -3.1
comp=Z,17nm,1.1s
KBL Kabul 16.89 103 *e*Pn Pn 13 44 06.0 -3.1
comp=Z,17nm,1.1s
OBN Obninsk 17.02 335 Pn Pn 13 44 10.2 -0.1
comp=Z,12nm,0.3s,baz=177,slow=4.7,SNR=18
OBN Sn Sn 13 47 09.4 -10
comp=Z,5.6nm,0.3s,baz=208,slow=17,SNR=2.2
OBN LR LR 13 51 41.2
comp=Z,221nm,18.4s,baz=179,slow=41
OBN Obninsk 17.02 335*c* *i*P Pn 13 44 11.6 +1.2
OBN *e*S Sn 13 47 24.3 +5.1
OBN pmax pmax
comp=Z,102nm,1.2s
OBN MLR MLR
comp=Z,341nm,18.0s
OBN Obninsk 17.02 335 *e*Pn Pn 13 44 08.4 -2.0
comp=Z,111nm,1.3s
OBN Sn Sn 13 47 09.4 -10
MOS Moscow 17.23 338 *e*P Pn 13 44 13.9 +1.0
MOS *e*S Sn 13 47 26.3 +2.2
MOS pmax pmax
comp=Z,185nm,1.0s
MOS pmax pmax
comp=Z,200nm,1.0s
MOS Moscow 17.23 338 *e*P Pn 13 44 13.9 +1.0
comp=Z,200nm,1.0s
MOS *e*S Sn 13 47 26.3 +2.2
PLOR Plostina 17.26 296 ⇓*i*P Pn 13 44 14.2 +0.8
PLOR Plostina 17.26 296 ⇓P Pn 13 44 14.2 +0.8
PLOR Plostina 17.26 296 ⇓*i*P Pn 13 44 14.2 +0.8
AKASG Malin Array Be 17.32 314 Pn Pn 13 44 12.7 -1.4
comp=Z,1.6nm,0.3s,baz=116,slow=13,SNR=22
AKASG LR LR 13 52 28.3
comp=Z,104nm,19.5s,baz=120,slow=43
KIEV Kiev 17.32 314 *e*P Pn 13 44 11.7 -2.4
KIEV pmax pmax
comp=Z,21nm,1.3s
KIEV Kiev 17.32 314 *e*Pn Pn 13 44 11.7 -2.4
comp=Z,21nm,1.3s
ARU Arti 17.36 18 Pn Pn 13 44 10.2 -4.3
comp=Z,0.0nm,0.3s,baz=226,slow=4.8,SNR=10
ARU Sn Sn 13 47 09.6 -18
comp=Z,0.0nm,0.3s,baz=107,slow=19,SNR=2.4
ARU Arti 17.36 18*d* *i*P Pn 13 44 10.3 -4.2
ARU S Sn 13 47 19.2 -8.0
ARU pmax pmax
comp=Z,9.0nm,0.8s
ARU Arti 17.36 18 *e*Pn Pn 13 44 09.9 -4.6
comp=Z,29nm,1.2s
ARU Sn Sn 13 47 09.7 -18
TESR Tescani 17.39 298 ⇑*i*P Pn 13 44 13.7 -1.4
MLR Muntele Rosu 17.68 295 ⇑*i*P P 13 44 21.0 +1.3
MLR Muntele Rosu 17.68 295 ⇑P P 13 44 21.0 +1.3
MLR Muntele Rosu 17.68 295 ⇑*i*P P 13 44 21.0 +1.3
MNAS Manas 17.76 75 P Pn 13 44 19.3 -0.5
MNAS pmax pmax
comp=Z,7.0nm,1.1s
MNAS Manas 17.76 75 P Pn 13 44 19.3 -0.5
comp=Z,7.0nm,1.1s
KARP Karpathos 17.87 262 *e*Pn Pn 13 44 19.1 -1.9
comp=Z,21nm,0.9s
DOPR Dopca 18.14 296 ⇓*i*P P 13 44 25.2 +0.6
DOPR Dopca 18.14 296 ⇓*i*P P 13 44 25.2 +0.6
SVE Sverdlovsk 18.24 21 *e*P Pn 13 44 24.1 -1.3
SVE *e*S Sn 13 47 36.7 -12
SVE pmax pmax
comp=Z,20nm,0.8s
RZN Rozhen 18.40 282 *e*P P 13 44 29.7 +2.1
OTUK Ortayu 18.47 57 P P 13 44 26.9 -1.3
OTUK pmax pmax
comp=Z,19nm,1.0s
OTUK Ortayu 18.47 57 P P 13 44 26.9 -1.3
comp=Z,19nm,1.0s
ARR Arges 18.58 294 ⇑*i*P Pn 13 44 32.7 +3.0
ARR Arges 18.58 294 ⇑*i*P Pn 13 44 32.7 +3.0
BURAR Bucovina Array 18.61 301 ⇑*i*P P 13 44 27.6 -2.2
BURAR Bucovina Array 18.61 301 ⇑P P 13 44 27.6 -2.2
ZRNK Zerenda 18.62 40 *e*P P 13 44 27.1 -2.7
ZRNK pmax pmax
comp=Z,11nm,0.9s
ZRNK Zerenda 18.62 40 *e*P P 13 44 27.1 -2.7
comp=Z,11nm,0.9s
BUR08 Bucovina Ar. S 18.63 301 *e*P P 13 44 28.9 -1.2
BUR08 Bucovina Ar. S 18.63 301 *e*P P 13 44 28.9 -1.2
WSAR Wadi Sarin 18.81 152 Pn Pn 13 44 33.8 +1.2
comp=Z,0.4nm,0.3s,baz=327,slow=11,SNR=4.4
MPEP Malo Peshtene 19.08 288 *e*P Pn 13 44 36.0 +0.3
AAK Ala-Archa 19.23 75 P P 13 44 36.9 +0.2
comp=Z,0.7nm,0.3s,baz=228,slow=10,SNR=8.5
AAK LR LR 13 54 04.2
comp=Z,320nm,18.6s,baz=274,slow=43
AAK Ala-Archa 19.23 75 *e*P P 13 44 36.5 -0.2
comp=Z,9.8nm,0.9s
AAK Ala-Archa 19.23 75 *e*P P 13 44 36.5 -0.2
comp=Z,9.8nm,0.9s
SRS Serrai 19.29 281 P Pn 13 44 42.4 +4.1
SRS pmax pmax
comp=Z,16nm,1.1s
SRS Serrai 19.29 281 P Pn 13 44 42.4 +4.1
comp=Z,16nm,1.1s
FRU Bishkek 19.31 74 *e*P P 13 44 36.0 -1.5
FRU pmax pmax
comp=Z,40nm,2.0s
FRU Bishkek 19.31 74 *e*P P 13 44 36.0 -1.5
comp=Z,40nm,2.0s
BRVK Borovoye 19.32 41*c* *i*P P 13 44 37.1 -0.4
BRVK pmax pmax
comp=Z,43nm,1.0s
BRVK Borovoye 19.32 41 *e*P P 13 44 37.6 +0.1
comp=Z,14nm,0.8s
BVA0 Borovoye Array 19.36 42 *i* P P 13 44 37.5 -0.4
BVA0 pmax pmax
comp=Z,13nm,0.8s
BVAR Borovoye Array 19.36 42 Pn P 13 44 37.1 -0.8
comp=Z,1.9nm,0.3s,baz=227,slow=9.9,SNR=45
BVAR Sn Sn 13 48 02.6 -13
comp=Z,0.2nm,0.3s,baz=243,slow=38,SNR=3.2
SOH Sokhos 19.50 280 P Pn 13 44 43.2 +2.4
SOH pmax pmax
comp=Z,13nm,1.4s
SOH Sokhos 19.50 280 P Pn 13 44 43.2 +2.4
comp=Z,13nm,1.4s

IDI	**Anoyia**	**19.68**	**263**	Pn	**P**	**13 44 41.9**	**+0.3**
	comp=Z,1.1nm,0.3s,baz=14,slow=6.8,SNR=6.5						
SOKR	**Solikamsk**	**19.97**	**12**	⇓*i*P	**P**	**13 44 43.6**	**-0.9**
SOKR				pmax	pmax		
	comp=Z,16nm,0.9s						
SOKR				MLR	MLR		
	comp=Z,552nm,17.0s						
DRGR		**20.11**	**298**	⇑*i*P	Pn	13 44 48.0	-0.1
DRGR		**20.11**	**298**	⇑P	Pn	13 44 48.0	-0.1
DRGR		**20.11**	**298**	⇑*i*P	Pn	13 44 48.0	-0.1
BARS	**Barje**	**20.49**	**286**	*e*P	**P**	**13 44 51.0**	**+0.6**
BOVS	**Bovan**	**20.56**	**288**	*e*P	**P**	**13 44 52.1**	**+1.1**
AGG	**Agios Georgios**	**20.57**	**275**	*e*P	**P**	**13 44 51.6**	**+0.4**
AGG				pmax	pmax		
	comp=Z,115nm,1.2s						
AGG	**Agios Georgios**	**20.57**	**275**	*e*P	**P**	**13 44 51.6**	**+0.4**
	comp=Z,115nm,1.2s						
AGG	**Agios Georgios**	**20.57**	**275**	*e*P	**P**	**13 44 51.6**	**+0.4**
	comp=Z,115nm,1.2s						
KSH	**Kashi**	**20.67**	**83**	P	**P**	**13 44 50.7**	**-1.8**
KSH				*e*pP	Pn	13 44 54.0	-0.8
KSH				*e*PP	**PnPn**	**13 45 10.7**	**+0.4**
KSH				S	S	13 48 33.6	-9.4
KSH				SS	**SnSn**	**13 49 03.4**	**+1.0**
KSH				pmax	pmax		
	comp=Z,8.0nm,0.7s						
KSH				pmax	pmax		
	comp=Z,63nm,3.7s						
KSH				LR	LR		
	comp=N,200nm,9.0s						
KSH				LR	LR		
	comp=E,120nm,9.6s						
KSH				LR	LR		
	comp=Z,160nm,11.2s						
UZH	**Uzhgorod**	**20.76**	**303**	*e*P	Pn	13 44 56.9	+1.4
UZH				*e*		13 45 03.5	
UZH	**Uzhgorod**	**20.76**	**303**	*e*P	Pn	13 44 56.9	+1.4
KWP	**Kalwaria Pacla**	**20.76**	**306**	*e*P	**P**	**13 44 52.5**	**-0.7**
KWP	**Kalwaria Pacla**	**20.76**	**306**	*e*P	**P**	**13 44 52.5**	**-0.7**
KOLS	**Kolonicke sedl**	**20.84**	**303**	*e*P	Pn	13 44 59.0	+2.4
KOLS				pmax	pmax		
	comp=Z,10.0nm,1.3s						
KOLS	**Kolonicke sedl**	**20.84**	**303**	*e*P	Pn	13 44 59.0	+2.4
	comp=Z,10.0nm,1.3s						
KOLS	**Kolonicke sedl**	**20.84**	**303**	*e*P	Pn	13 44 59.0	+2.4
SELS	**Selova**	**20.99**	**287**	*e*P	**P**	**13 44 55.8**	**0.0**
FNA	**Florina**	**20.99**	**280**	P	Pn	13 44 59.5	+1.1
FNA				pmax	pmax		
	comp=Z,13nm,1.0s						
FNA	**Florina**	**20.99**	**280**	P	Pn	13 44 59.5	+1.1
	comp=Z,13nm,1.0s						
GRUS	**Gruza**	**21.28**	**289**	*e*P	**P**	**13 44 59.3**	**+0.5**
CRVS	**Cervenica-Dubn**	**21.36**	**303**	*e*P	**P**	**13 44 59.2**	**-0.4**
CRVS				pmax	pmax		
	comp=Z,21nm,1.3s						
CRVS	**Cervenica-Dubn**	**21.36**	**303**	*e*P	**P**	**13 44 59.2**	**-0.4**
	comp=Z,21nm,1.3s						
CRVS	**Cervenica-Dubn**	**21.36**	**303**	*e*P	**P**	**13 44 59.2**	**-0.4**
KLMR	**Klimovskoe**	**21.45**	**347**	*e*P	**P**	**13 44 57.4**	**-3.0**
KLMR				*e*S	**S**	**13 48 49.1**	**-8.6**
KLMR				pmax	pmax		
	comp=Z,41nm,1.1s						
IVAS	**Ivanjica**	**21.69**	**288**	*e*P	**P**	**13 45 03.8**	**+0.5**
DIVS	**Divibare**	**21.80**	**290**	*e*P	**P**	**13 45 05.7**	**+1.2**
KECS	**Kecovo**	**21.89**	**302**	*e*P	**P**	**13 45 05.0**	**-0.4**
KECS				pmax	pmax		
	comp=Z,6.0nm,1.1s						
KECS	**Kecovo**	**21.89**	**302**	*e*P	**P**	**13 45 05.0**	**-0.4**
	comp=Z,6.2nm,1.1s						
KECS	**Kecovo**	**21.89**	**302**	*e*P	**P**	**13 45 05.0**	**-0.4**
TEKS	**Tekeris**	**22.13**	**291**	*e*P	**P**	**13 45 09.0**	**+1.0**
SUW	**Suwalki**	**22.16**	**317**	P	**P**	**13 45 08.8**	**+0.6**
PSZ	**Piszkesteto**	**22.18**	**300**	*e*P	**P**	**13 45 07.6**	**-1.0**
PSZ				pmax	pmax		
	comp=Z,35nm,1.6s						
PSZ	**Piszkesteto**	**22.18**	**300**	*e*P	**P**	**13 45 07.6**	**-1.0**
	comp=Z,35nm,1.6s						
NIE	**Niedzica**	**22.22**	**304**	P	**P**	**13 45 12.3**	**+3.4**
NIE				pmax	pmax		
	comp=Z,6.0nm,1.2s						
BBLS	**Lazići**	**22.22**	**289**	*e*P	**P**	**13 45 10.3**	**+1.2**
OJC	**Ojcow**	**22.73**	**306**	*e*P	**P**	**13 45 15.3**	**+1.0**
OJC	**Ojcow**	**22.73**	**306**	*e*P	**P**	**13 45 12.2**	**-2.1**
OJC				pmax	pmax		
	comp=Z,13nm,1.0s						
OJC	**Ojcow**	**22.73**	**306**	*e*P	**P**	**13 45 15.3**	**+1.0**
OJC	**Ojcow**	**22.73**	**306**	*e*P	**P**	**13 45 12.2**	**-2.1**
	comp=Z,13nm,1.0s						
PDGK	**Podgornoye**	**22.86**	**72**	P	**P**	**13 45 17.1**	**+1.4**
PDGK				pmax	pmax		
	comp=Z,6.0nm,0.8s						
PDGK	**Podgornoye**	**22.86**	**72**	P	**P**	**13 45 17.1**	**+1.4**
	comp=Z,6.0nm,0.8s						
VYHS	**Vyhne**	**22.98**	**301**	*e*P	**P**	**13 45 17.7**	**+0.8**
VYHS				pmax	pmax		
	comp=Z,7.0nm,1.4s						
VYHS	**Vyhne**	**22.98**	**301**	*e*P	**P**	**13 45 17.7**	**+0.8**
	comp=Z,7.3nm,1.4s						
VYHS	**Vyhne**	**22.98**	**301**	*e*P	**P**	**13 45 17.7**	**+0.8**
KURBB	**Kurchatov Arra**	**23.01**	**53**	P	**P**	**13 45 16.8**	**-0.5**
	comp=Z,3.4nm,0.8s,baz=260,slow=11,SNR=24						
KURK	**Kurchatov**	**23.09**	**53**	*c*e*i*P	**P**	**13 45 18.4**	**+0.4**
KURK				pmax	pmax		
	comp=Z,44nm,1.2s						
KURK	**Kurchatov**	**23.09**	**53**	*e*P	**P**	**13 45 17.9**	**-0.1**
	comp=Z,15nm,0.8s						
VSU	**Vasula**	**23.10**	**329**	⇓*i*P	**P**	**13 45 17.8**	**-0.3**
VSU				pmax	pmax		
	comp=Z,69nm,1.2s						
MORC	**Moravsky Berou**	**24.05**	**304**	*e*P	**P**	**13 45 24.2**	**-3.3**
MORC				pmax	pmax		
	comp=Z,54nm,1.6s						
MORC	**Moravsky Berou**	**24.05**	**304**	*e*P	**P**	**13 45 24.2**	**-3.3**
	comp=Z,54nm,1.6s						
VRAC	**Vranov**	**24.57**	**302**	LR	LR	13 56 54.0	
	comp=Z,148nm,20.9s,baz=75,slow=41						
MAKZ	**Makanchi**	**24.65**	**64**	*e*P	**P**	**13 45 32.6**	**-0.4**
MAKZ				pmax	pmax		
	comp=Z,9.0nm,0.8s						
MAKZ	**Makanchi**	**24.65**	**64**	*e*P	**P**	**13 45 32.6**	**-0.4**
	comp=Z,8.9nm,0.8s						
TIP	**Timpagrande**	**24.77**	**278**	*e*P	**P**	**13 45 34.1**	**-0.1**
	comp=Z,23nm,1.3s						
TIP	**Timpagrande**	**24.77**	**278**	*e*P	**P**	**13 45 34.1**	**-0.1**
	comp=Z,23nm,1.3s						
MK31	**Makanchi Array**	**24.86**	**64**	*i* P	**P**	**13 45 35.2**	**+0.2**
MK31				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MK31	**Makanchi Array**	**24.86**	**64**	*e*P	**P**	**13 45 34.4**	**-0.6**
MK31	**Makanchi Array**	**24.86**	**64**	*e*P	**P**	**13 45 34.4**	**-0.6**
MKAR	**Makanchi Array**	**24.86**	**64**	P	**P**	**13 45 35.5**	**+0.5**
	comp=Z,11nm,0.8s,baz=265,slow=7.3,SNR=51						
MKAR				LR	LR	13 57 42.2	
	comp=Z,409nm,18.6s,baz=254,slow=42						
MKAR	**Makanchi Array**	**24.86**	**64**	*e*P	**P**	**13 45 34.7**	**-0.2**
MKAR	**Makanchi Array**	**24.86**	**64**	*e*P	**P**	**13 45 34.7**	**-0.2**
MK01	**Makanchi Array**	**24.87**	**64**	*e*P	**P**	**13 45 34.5**	**-0.5**
DPC	**Dobruska-Polom**	**24.93**	**305**	*e*P	**P**	**13 45 36.5**	**+1.0**
DPC	**Dobruska-Polom**	**24.93**	**305**	*e*P	**P**	**13 45 36.5**	**+1.0**
DPC	**Dobruska-Polom**	**24.93**	**305**	P	**P**	**13 45 36.5**	**+1.0**
GROS	**Grobnik**	**25.02**	**295**	*i* P	**P**	**13 45 36.7**	**+0.3**
GROS	**Grobnik**	**25.02**	**295**	*i* P	**P**	**13 45 36.7**	**+0.3**
KSP	**Ksiaz**	**25.05**	**306**	*e*P	**P**	**13 45 37.6**	**+1.1**
KSP	**Ksiaz**	**25.05**	**306**	*e*P	**P**	**13 45 37.6**	**+1.1**
KSP	**Ksiaz**	**25.05**	**306**	*e*P	**P**	**13 45 37.6**	**+1.1**
UPC	**Upice**	**25.15**	**305**	AMS	AMS	13 57 00.0	
	comp=Z,200nm,16.7s						
PERS	**Pernice**	**25.29**	**296**	*i* P	**P**	**13 45 39.3**	**+0.5**
PERS	**Pernice**	**25.29**	**296**	*i* P	**P**	**13 45 39.3**	**+0.5**
CUC	**Castrocucco**	**25.31**	**280**	*e*P	**P**	**13 45 39.5**	**+0.4**
	comp=Z,9.4nm,1.1s						
CUC	**Castrocucco**	**25.31**	**280**	*e*P	**P**	**13 45 39.5**	**+0.4**
	comp=Z,9.4nm,1.1s						
FIA1	**FINESS Array S**	**25.43**	**334**	*e*P	**P**	**13 45 39.4**	**-0.4**
FINES	**FINESS Array B**	**25.43**	**334**	P	**P**	**13 45 39.0**	**-0.8**
	comp=Z,3.6nm,0.5s,baz=134,slow=8.2,SNR=25						
FINES				LR	LR	13 56 44.8	
	comp=Z,167nm,20.4s,baz=110,slow=39						
FINES	**FINESS Array B**	**25.43**	**334**	P	**P**	**13 45 39.0**	**-0.8**
FINES				pmax	pmax		
	comp=Z,4.0nm,0.5s						
FINES				MLR	MLR		
	comp=Z,167nm,20.4s						
VNDS	**Vrh nad Dolski**	**25.56**	**295**	*i* P	**P**	**13 45 41.9**	**+0.6**
VNDS	**Vrh nad Dolski**	**25.56**	**295**	*i* P	**P**	**13 45 41.9**	**+0.6**
CEL	**Celeste**	**25.65**	**276**	*e*P	**P**	**13 45 38.8**	**-3.3**
	comp=Z,16nm,1.0s						
GOPC	**GO Pecny, Ondr**	**25.83**	**303**	AMS	AMS	13 58 30.0	
PRU	**Pruhonice**	**25.99**	**304**	AMS	AMS	13 59 20.0	
PVCC	**Panska Ves**	**26.06**	**305**	AMS	AMS	13 57 50.0	
	comp=Z,100nm,16.5s						
GEA0	**GERESS Array S**	**26.39**	**301**	*e*P	**P**	**13 45 47.9**	**-0.9**
GEC2	**GERESS Array S**	**26.40**	**301**	*e*P	**P**	**13 45 48.5**	**-0.4**
GEC2				pmax	pmax		
	comp=Z,8.0nm,1.0s						
GEC2	**GERESS Array S**	**26.40**	**301**	*e*P	**P**	**13 45 48.5**	**-0.4**
	comp=Z,7.8nm,1.0s						
GEC2	**GERESS Array S**	**26.40**	**301**	*e*P	**P**	**13 45 48.5**	**-0.4**
	comp=Z,7.8nm,1.0s						
GERES	**GERESS Array B**	**26.40**	**301**	P	**P**	**13 45 50.1**	**+1.2**
	comp=Z,0.8nm,0.4s,baz=68,slow=11,SNR=14						
KHC	**Kasperske Hory**	**26.51**	**301**	*e*P	**P**	**13 45 51.5**	**+1.7**
KHC				AMS	AMS	13 58 40.0	
	comp=Z,100nm,12.8s						
KHC	**Kasperske Hory**	**26.51**	**301**	*e*P	**P**	**13 45 51.5**	**+1.7**
KHC				MLR	MLR		
	comp=Z,100nm,12.8s						
KHC	**Kasperske Hory**	**26.51**	**301**	*e*P	**P**	**13 45 51.5**	**+1.7**
	comp=Z,100nm,12.8s						
KHC	**Kasperske Hory**	**26.51**	**301**	*e*P	**P**	**13 45 48.2**	**-1.6**
	comp=Z,3.0nm,1.3s						
BRG	**Berggiesshubel**	**26.52**	**305**	*e*P	**P**	**13 45 52.8**	**+3.0**
	comp=Z,11nm,1.4s						
BRG	**Berggiesshubel**	**26.52**	**305**	*e*P	**P**	**13 45 52.8**	**+3.0**
BRG				pmax	pmax		
	comp=Z,11nm,1.4s						
BRG	**Berggiesshubel**	**26.52**	**305**	*e*P	**P**	**13 45 52.8**	**+3.0**
	comp=Z,11nm,1.4s						
NVS	**Novosibirsk**	**26.99**	**46**	*e*P	**P**	**13 45 54.3**	**+0.3**
CLL	**Collm**	**27.17**	**306**	*e*P	**P**	**13 45 58.0**	**+2.3**
	comp=Z,5.0nm,1.0s						
CLL				*e*		13 46 20.0	
CLL				*e*		13 51 06.0	
CLL				LV		13 56 00.0	
	comp=Z,100nm,21.7s						
CLL	**Collm**	**27.17**	**306**	*e*P	**P**	**13 45 58.0**	**+2.3**
CLL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
CLL	**Collm**	**27.17**	**306**	*e*P	**P**	**13 45 58.0**	**+2.3**
	comp=Z,5.0nm,1.0s						
ZAA0	**Zalesovo Array**	**27.62**	**48**	*e*P	**P**	**13 45 58.2**	**-1.5**
ZALV	**Zalesovo Beam**	**27.62**	**48**	P	**P**	**13 45 58.9**	**-0.8**
	comp=Z,1.4nm,0.4s,baz=266,slow=11,SNR=7.3						
ZALV				LR	LR	13 59 08.3	
	comp=Z,331nm,20.6s,baz=250,slow=41						
WMQ	**Urumqi**	**28.77**	**70**	*e*P	**P**	**13 46 09.6**	**-0.5**
WMQ				pP	pP	13 46 13.9	-0.8
WMQ				S	S	13 50 49.6	-10
WMQ				SS	**SnSn**	**13 52 26.8**	**+6.6**
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,110nm,4.5s						
WMQ				LR	LR		
	comp=N,180nm,6.6s						
WMQ				LR	LR		
	comp=E,100nm,8.0s						
WMQ				LR	LR		
	comp=Z,330nm,18.2s						
DAVOX	**Davos/Dischmat**	**28.89**	**296**	LR	LR	13 59 51.5	
	comp=Z,85nm,19.2s,baz=82,slow=41						
ATD	**Arta Tunnel**	**29.13**	**193**	LR	LR	13 59 54.5	
	comp=Z,82nm,18.7s,baz=32,slow=41						
HFS	**Hagfors**	**29.57**	**324**	P	**P**	**13 46 16.6**	**-0.4**
	comp=Z,2.3nm,0.3s,baz=111,slow=9.3,SNR=21						
HFS				LR	LR	13 59 55.3	
	comp=Z,70nm,18.2s,baz=108,slow=40						
NB2	**NORSAR Subarra**	**31.07**	**325**	P	**P**	**13 46 29.6**	**-0.6**
	comp=Z,8.6nm,1.2s,baz=115,slow=8.6						
NOA	**NORSAR Array B**	**31.07**	**325**	P	**P**	**13 46 29.7**	**-0.6**
	comp=Z,1.5nm,0.9s,baz=111,slow=8.6,SNR=4.0						
NOA				LR	LR	14 00 08.2	
	comp=Z,208nm,18.3s,baz=110,slow=38						
ARCES	**ARCESS Array B**	**31.86**	**345**	P	**P**	**13 46 36.9**	**-0.2**
	comp=Z,0.8nm,0.5s,baz=144,slow=9.0,SNR=5.5						
ARCES				LR	LR	14 01 11.5	
	comp=Z,205nm,18.6s,baz=130,slow=40						
NRIK	**Noril'sk**	**35.49**	**22**	P	**P**	**13 47 09.7**	**+1.1**
	comp=Z,2.3nm,0.5s,baz=217,slow=6.1,SNR=3.6						
NRIK				LR	LR	14 05 24.8	
	comp=Z,191nm,20.0s,baz=171,slow=43						
EKA	**Eskdalemuir Ar**	**37.21**	**312**	P	**P**	**13 47 23.2**	**-0.3**
	comp=Z,0.4nm,0.3s,baz=96,slow=8.9,SNR=4.7						
GTA	**Gaotai**	**38.58**	**74**	*e*P	**P**	**13 47 36.6**	**+1.2**
GTA				pP	sP	13 47 41.8	-0.1
GTA				sP	pP	13 47 45.0	+5.0
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ZAK	**Zakamensk**	**38.68**	**56**	*e*P	P	13 47 29.8	-6.3
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TLY	**Talaya**	**38.78**	**54**	*i* P	**P**	**13 47 38.9**	**+2.0**
TLY				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TLY	**Talaya**	**38.78**	**54**	*i* P	**P**	**13 47 38.9**	**+2.0**
	comp=Z,3.0nm,1.0s						
ESDC	**Sonseca Array**	**40.10**	**287**	P	**P**	**13 47 47.5**	**-0.5**
	comp=Z,1.4nm,0.6s,baz=65,slow=8.3,SNR=13						
SPITS	**Spitsbergen Ar**	**40.30**	**350**	P	**P**	**13 47 49.6**	**+0.5**
	comp=Z,1.5nm,0.4s,baz=148,slow=11,SNR=12						
SONM	**Songino Array**	**41.09**	**60**	P	**P**	**13 47 55.2**	**-1.1**
	comp=Z,0.5nm,0.5s,baz=270,slow=7.2,SNR=4.5						
SONM				LR	LR	14 07 38.7	
	comp=Z,315nm,18.9s,baz=293,slow=40						
KMBO	**Kilima Mbogo**	**42.56**	**198**	LR	LR	14 07 37.0	
	comp=Z,92nm,18.5s,baz=82,slow=39						
BOD	**Bodaibo**	**44.20**	**44**	*e*P	**P**	**13 48 20.5**	**-0.6**
BOD				pmax	pmax		
	comp=Z,10.0nm,1.0s						
HHC	**Hu-ho-hao-te**	**46.60**	**68**	*e*P	**P**	**13 48 38.8**	**-1.8**
HHC				pmax	pmax		
	comp=Z,14nm,0.7s						
HHC				pmax	pmax		
	comp=Z,67nm,7.4s						
CMAR	**Chiang Mai Arr**	**47.92**	**102**	P	**P**	**13 48 50.5**	**-0.4**
	comp=Z,1.6nm,0.6s,baz=300,slow=8.0,SNR=11						
TIXI	**Tiksi**	**49.21**	**24**	⇓*i*P	**P**	**13 49 01.0**	**+0.8**
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.1s						
TOA0	**Torodi Ar. Sit**	**49.40**	**251**	*e*P	**P**	**13 49 00.7**	**-1.7**
TORD	**Torodi Ar. Bea**	**49.40**	**251**	P	**P**	**13 49 01.2**	**-1.1**
	comp=Z,2.3nm,1.1s,baz=42,slow=9.7,SNR=8.2						
KLR	**Kul'dur**	**56.66**	**51**	⇓*i*P	**P**	**13 49 56.3**	**+0.8**
KLR	**Kul'dur**	**56.66**	**51**	*i* P	**P**	**13 49 56.3**	**+0.8**
USRK	**Ussuriysk Ar.**	**59.03**	**56**	P	**P**	**13 50 11.2**	**-1.0**
	comp=Z,1.5nm,0.6s,baz=274,slow=6.3,SNR=4.5						
KSAR	**Wonju Array Be**	**59.52**	**65**	P	**P**	**13 50 15.9**	**+0.2**
KSAR	**Wonju Array Be**	**59.52**	**65**	P	**P**	**13 50 15.9**	**+0.2**
KSAR	**Wonju Array Be**	**59.52**	**65**	P	**P**	**13 50 15.9**	**+0.2**
KSRS	**Korea Array**	**59.54**	**65**	P	**P**	**13 50 15.9**	**+0.1**
	comp=Z,2.3nm,0.6s,baz=294,slow=6.9,SNR=7.7						
KSRS				LR	LR	14 19 32.8	
	comp=Z,122nm,18.7s,baz=315,slow=40						
SEY	**Seymchan**	**60.56**	**31**	*c*e*i*P	**P**	**13 50 24.0**	**+1.6**
SEY	**Seymchan**	**60.56**	**31**	*e*P	**P**	**13 50 24.0**	**+1.6**
MJAR	**Matsushiro Arr**	**67.03**	**61**	P	**P**	**13 51 04.7**	**-0.8**
	comp=Z,0.7nm,0.5s,baz=297,slow=6.7,SNR=3.6						
MJAR				LR	LR	14 23 31.8	
	comp=Z,121nm,18.3s,baz=305,slow=39						
PETK	**Petropavlovsk-**	**68.55**	**38**	LR	LR	14 25 06.7	
	comp=Z,121nm,18.2s,baz=235,slow=39						
ILAR	**Eielson Array**	**74.57**	**7**	P	**P**	**13 51 50.3**	**-0.5**
	comp=Z,0.5nm,0.9s,baz=353,slow=6.4,SNR=5.2						
DOT	**Dot Lake**	**75.92**	**6**	*e*P	**P**	**13 51 59.0**	**+0.4**
	comp=Z,20nm,1.3s						
YKA	**Yellowknife Ar**	**76.75**	**352**	P	**P**	**13 52 03.0**	**-0.4**
	comp=Z,1.0nm,0.6s,baz=8.7,slow=6.5,SNR=16						
YKA				LR	LR	14 28 42.7	
	comp=Z,7.0nm,19.4s,baz=180,slow=38						
YKA	**Yellowknife Ar**	**76.75**	**352**	P	**P**	**13 52 03.0**	**-0.4**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
YKA				MLR	MLR		
	comp=Z,7.0nm,19.4s						
PDAR	**Pinedale Array**	**95.11**	**344**	LR	LR	14 40 13.8	
	comp=Z,56nm,18.6s,baz=334,slow=38						
WRA	**Warramunga Arr**	**99.18**	**108**	P	**Pdif**	**13 53 53.5**	**-0.7**
	comp=Z,0.3nm,0.7s,baz=321,slow=4.0,SNR=4.6						
WRA	**Warramunga Arr**	**99.18**	**108**	P	**Pdif**	**13 53 53.5**	**-0.7**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.8s						

IDC 12 13:41:14.7±2.4, 30.12S×139.76E, h0km, mb1 3.0/3, mb1mx2.9/22, mbtmp2.7/3, ML2.3/3, Error ellipse: s-maj=96.7km s-min=16.7km az=51.0, South Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op		h m s	ISC
STKA	**Stephens Creek**	**2.36**	**138**	Pn	Pn	13 41 55.7	+1.0
	0.5nm,0.3s,baz=319,slow=14,SNR=11						
STKA				Sn	Sn	13 42 24.6	+0.3
	0.5nm,0.3s,baz=342,slow=12,SNR=3.7						
STKA				Lg	Lg	13 42 28.9	
	1.7nm,0.3s,baz=255,slow=6.9,SNR=13						
ASAR	**Alice Springs**	**8.28**	**320**	Pn	Pn	13 43 16.5	+0.3
	0.0nm,0.3s,baz=144,slow=13,SNR=2.6						
WRA	**Warramunga Arr**	**11.26**	**333**	Pn	Pn	13 43 55.9	-1.0
	0.0nm,0.3s,baz=159,slow=12,SNR=1.3						

*IDC **12** 13:47:31.6±2.5, 40.43N×48.98E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/33, mbtmp3.5/4, ML1.7/1, Error ellipse: s-maj=66.9km s-min=22.3km az=164.0*
*CSEM **12** 13:47:35.2, 40.25N×48.99E, h1km*
*AZER **12** 13:47:35.2±0.6, 40.25N×48.99E, h11km, Error ellipse: s-maj=1.0km s-min=0.7km az=256.0*
*ISCJB **12** 13:47:37.2±0.6, 40.21N±0.02×49.03E±0.04, h12km±4km, mb3.4/3, Error ellipse: s-maj=5.0km s-min=3.8km az=169.5*

ISC 12 13:47:35.8±1.1, 40.25N±0.02×48.99E±0.02, h16km±7km, n54, σ1°61/87, mb3.5/3, 26C-17D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op		h m s	ISC
ALIB	**Äli-Bayra**	**0.29**	**178**	⇑P	Pb	**13 47 43.5**	**+1.0**
	SNR=51						
ALIB	**Äli-Bayra**	**0.29**	**178**	P	Pb	**13 47 43.5**	**+1.0**
	SNR=51						
GBS	**Qobustan**	**0.29**	**352**	⇑P	Pb	**13 47 43.1**	**+0.4**
	SNR=105						
GBS				⇓S	Sb	**13 47 50.4**	**+3.1**
GBS	**Qobustan**	**0.29**	**352**	P	Pb	**13 47 43.1**	**+0.4**
	SNR=105						
GBS				S	Sb	**13 47 50.4**	**+3.1**
SAAT	**Saatly**	**0.58**	**229**	⇑S	Sn	**13 47 59.8**	**+1.2**
SAAT	**Saatly**	**0.58**	**229**	S	Sn	**13 47 59.8**	**+1.2**
GOBA	**Gobu**	**0.59**	**74**	⇑P	Pn	**13 47 49.3**	**-0.1**
	SNR=4.6						
GOBA	**Gobu**	**0.59**	**74**	P	Pn	**13 47 49.3**	**-0.1**
	SNR=4.6						
ATGJ	**Altiaghaj**	**0.62**	**356**	⇑P	Pb	**13 47 48.6**	**+0.3**
	SNR=83						
ATGJ				⇓S	Sn	**13 48 00.8**	**+1.2**
ATGJ	**Altiaghaj**	**0.62**	**356**	P	Pb	**13 47 48.6**	**+0.3**
	SNR=83						
ATGJ				S	Sn	**13 48 00.8**	**+1.2**
PQL	**Pirkuli**	**0.62**	**331**	⇓P	Pb	**13 47 48.8**	**+0.4**
	SNR=19						
PQL				⇑S	Sn	**13 48 00.3**	**+0.5**
PQL	**Pirkuli**	**0.62**	**331**	P	Pb	**13 47 48.8**	**+0.4**
	SNR=19						
PQL				S	Sn	**13 48 00.3**	**+0.5**
KDMR	**Kurdemir**	**0.63**	**282**	⇓P	Pn	**13 47 50.4**	**+0.4**
	SNR=9.4						
KDMR				⇑S	Sn	**13 48 00.7**	**+0.9**
KDMR	**Kurdemir**	**0.63**	**282**	P	Pn	**13 47 50.4**	**+0.4**
	SNR=9.4						
KDMR				S	Sn	**13 48 00.7**	**+0.9**
IML	**Ismayilli**	**0.83**	**312**	⇓P	Pn	**13 47 52.2**	**-0.6**
	SNR=30						
IML				⇑S	Sn	**13 48 06.4**	**+1.7**
IML	**Ismayilli**	**0.83**	**312**	P	Pn	**13 47 52.2**	**-0.6**
	SNR=30						
IML				S	Sn	**13 48 06.4**	**+1.7**
NDR	**Nardaran**	**0.83**	**66**	⇓P	Pn	**13 47 53.0**	**+0.2**
	SNR=35						
NDR				⇓S	Sn	**13 48 06.8**	**+2.2**
NDR	**Nardaran**	**0.83**	**66**	P	Pn	**13 47 53.0**	**+0.2**
	SNR=35						
NDR				S	Sn	**13 48 06.8**	**+2.2**
SIZA	**Siyzn**	**0.83**	**355**	⇑P	Pn	**13 47 53.3**	**+0.4**
	SNR=88						
SIZA	**Siyzn**	**0.83**	**355**	P	Pn	**13 47 53.3**	**+0.4**
	SNR=88						
GALA	**Gala**	**0.90**	**79**	⇓S	Sn	**13 48 09.0**	**+2.5**
GALA	**Gala**	**0.90**	**79**	S	Sn	**13 48 09.0**	**+2.5**
ZRD	**Zardab**	**1.00**	**272**	⇑P	Pn	**13 47 56.3**	**+1.1**
	SNR=25						
ZRD				⇑S	Sn	**13 48 12.6**	**+3.7**
ZRD	**Zardab**	**1.00**	**272**	P	Pn	**13 47 56.3**	**+1.1**
	SNR=25						
ZRD				S	Sn	**13 48 12.6**	**+3.7**
GLBA	**Clilabad**	**1.10**	**205**	⇑P	Pn	**13 47 56.7**	**+0.2**
	SNR=7.0						
GLBA				⇓S	Sn	**13 48 14.6**	**+3.1**
GLBA	**Clilabad**	**1.10**	**205**	P	Pn	**13 47 56.7**	**+0.2**
	SNR=7.0						
GLBA				S	Sn	**13 48 14.6**	**+3.1**
QBL	**Gabala**	**1.12**	**309**	⇑P	Pg	**13 47 56.7**	**-0.8**
	SNR=18						
QBL				⇓S	Sn	**13 48 14.4**	**+2.3**
QBL	**Gabala**	**1.12**	**309**	P	Pg	**13 47 56.7**	**-0.8**

0.4nm,0.6s,baz=265,slow=6.1,SNR=4.5
FINES FINESS Array B 25.43 334 P **P 13 52 59.5 -2.9**
0.8nm,0.4s,baz=143,slow=10.0,SNR=5.5
YKA Yellowknife Ar 76.76 352 P **P 13 59 22.7 -3.2**
0.2nm,0.5s,baz=9.6,slow=5.2,SNR=4.1

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*ISCJB **12** 14:13:12.2±1.1, 9.5N±0.1×122.15E±0.07, h10km, mb3.4/3, Error ellipse: s-maj=14.8km s-min=10.3km az=169.3*
*IDC **12** 14:13:12.7±2.7, 9.57N×122.19E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.3/55, mbtmp3.5/3, MS2.6/1, Ms1 2.6/1, ms1mx2.4/40, Error ellipse: s-maj=299.3km s-min=27.9km az=63.0*
*MAN **12** 14:13:13, 9.49N×122.03E, h97km, mb4.7, ML3.6, MS3.5*
ISC 12 14:13:14.2±1.4, 9.5N±0.1×122.24E±0.09, h10km, n7, σ1s69/8, mb3.5/3, 2D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.99**	**96**	*i*	P	**Pg**		**14 13 30.4**	**-2.8**
SNPH				*i*	S	**Sb**		**14 13 47.6**	**+0.9**
TBP	**Tagbilaran**	**1.62**	**81**	⇓*i*	P	**Pg**		**14 13 45.9**	**+0.7**
PLP	**Palo**	**3.19**	**58**	⇓*e*	P	**Pn**		**14 14 04.7**	**+0.2**
PLP				*e*	S	**Sn**		**14 14 42.5**	**0.0**
TGY	**Tagaytay City**	**4.79**	**345**	LR		LR		14 16 35.0	
	comp=Z,65nm,20.7s,baz=56,slow=43								
WRA	**Warramunga Arr**	**31.55**	**158**	P		**P**		**14 19 38.9**	**+2.0**
	0.3nm,0.3s,baz=338,slow=9.7,SNR=1.7								
ASAR	**Alice Springs**	**34.84**	**161**	P		**P**		**14 20 06.0**	**+0.4**
	0.4nm,0.6s,baz=343,slow=7.1,SNR=6.3								
MKAR	**Makanchi Array**	**50.34**	**325**	P		**P**		**14 22 10.4**	**-0.9**
	0.2nm,0.3s,baz=138,slow=7.6,SNR=5.2								

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*ISCJB **12** 14:16:46.5±0.4, 9.58N±0.05×121.95E±0.04, h10km, mb4.0/9, Error ellipse: s-maj=7.1km s-min=5.5km az=175.8*
*MAN **12** 14:16:46, 9.59N×121.93E, h10km, mb4.7, ML3.6, MS3.5*
*IDC **12** 14:16:46.4±0.9, 9.62N×122.20E, h0km, mb3.9/7, mb1 4.0/7, mb1mx3.6/61, mbtmp3.9/7, Error ellipse: s-maj=65.8km s-min=16.6km az=71.0*
*NEIC **12** 14:16:47.6±0.5, 9.64N×122.24E, h10km, mb4.6/2, Error ellipse: s-maj=16.9km s-min=9.0km az=66.0*
ISC 12 14:16:47.0±0.6, 9.58N±0.06×121.99E±0.04, h10km, n21, σ2s24/24, mb4.0/9, 1C-6D, Sulu Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**1.16**	**358**	⇓*i*	P	**Pn**		**14 17 08.2**	**-1.2**
SNPH	**Sibulan**	**1.26**	**101**	⇓*i*	P	Pn		14 17 04.8	-5.9
SNPH				*i*	S	**Sb**		**14 17 21.9**	**-5.3**
TBP	**Tagbilaran**	**1.85**	**86**	⇓*i*	P	**Pb**		**14 17 20.2**	**-0.9**
LLP	**Lapu-Lapu**	**2.08**	**69**	*e*	P	**Pn**		**14 17 22.1**	**0.0**
LLP				*e*	S	**Sb**		**14 17 49.9**	**-1.1**
RCP	**Roxas**	**2.11**	**21**	⇓*e*	P	**Pn**		**14 17 22.4**	**0.0**
CGP	**Cagayan de Oro**	**2.90**	**112**	⇑*i*	P	**Pn**		**14 17 34.6**	**+1.3**
CGP				*i*	S	**Sn**		**14 18 10.3**	**+2.1**
PPR	**Puerto Princes**	**3.22**	**274**	⇓*i*	P	**Pb**		**14 17 40.0**	**-4.2**
PPR				*i*	S	Sg		14 18 47.3	+17
CTBH	**Cotabato--PC H**	**3.24**	**136**	*e*	P	**Pn**		**14 17 39.7**	**+1.7**
CTBH				*i*	S	**Sn**		**14 18 10.8**	**-5.8**
PLP	**Palo**	**3.34**	**62**	⇓*e*	P	**Pn**		**14 17 40.2**	**+0.8**
KKM	**Kota Kinabalu**	**6.71**	**239**	*e*	Pn	Pn		14 18 29.8	+4.0
KKM				*e*	Sn	**Sn**		**14 19 44.3**	**+1.8**
WRAB	**Tennant Creek**	**31.75**	**157**	*e*	P	**P**		**14 23 11.4**	**-0.2**
WRA	**Warramunga Arr**	**31.76**	**158**	P		**P**		**14 23 11.5**	**-0.2**
	1.0nm,0.6s,baz=337,slow=9.4,SNR=10								
ASAR	**Alice Springs**	**35.04**	**161**	P		**P**		**14 23 41.5**	**+1.3**
	1.8nm,0.6s,baz=339,slow=7.0,SNR=34								
USRK	**Ussuriysk Ar.**	**35.57**	**12**	P		**P**		**14 23 44.6**	**0.0**
	1.9nm,0.7s,baz=205,slow=6.4,SNR=3.9								
SONM	**Songino Array**	**40.34**	**344**	P		**P**		**14 24 26.1**	**+1.2**
	0.6nm,0.6s,baz=156,slow=8.5,SNR=6.4								
STKA	**Stephens Creek**	**45.29**	**156**	P		**P**		**14 25 05.1**	**0.0**
	1.4nm,0.7s,baz=329,slow=12,SNR=4.1								
MKAR	**Makanchi Array**	**50.10**	**325**	P		**P**		**14 25 43.7**	**+1.4**
	0.8nm,0.6s,baz=126,slow=9.1,SNR=12								
KURBB	**Kurchatov Arra**	**54.31**	**327**	P		**P**		**14 26 14.8**	**+1.3**
	0.6nm,0.5s,baz=119,slow=9.4,SNR=3.3								
KURK	**Kurchatov**	**54.31**	**327**	*e*	P	**P**		**14 26 14.0**	**+0.4**
	12nm,0.6s								
KKAR	**Karatay Array**	**55.77**	**316**	*e*	P	**P**		**14 26 25.8**	**+1.5**
	0.8nm,0.4s								
ABKAR	**Akbulak array**	**64.67**	**320**	*e*	P	**P**		**14 27 26.3**	**+1.2**

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*NEIC **12** 14:20:09.9±1.1, 28.86S×176.84W, h10km, mb4.5/2, Error ellipse: s-maj=35.9km s-min=18.3km az=160.0*
*ISCJB **12** 14:20:10.1±1.4, 28.7S±0.2×176.7W±0.2, h36km, mb4.1/4, MS3.5/1, Error ellipse: s-maj=34.4km s-min=15.8km az=153.1*
*IDC **12** 14:20:10.5±2.7, 28.54S×177.24W, h0km, mb3.9/2, mb1 4.2/2, mb1mx3.7/33, mbtmp3.9/2, MS3.5/1, Ms1 3.5/1, ms1mx2.9/27, Error ellipse: s-maj=70.2km s-min=24.1km az=118.0*
ISC 12 14:20:13.8±1.3, 28.9S±0.3×176.8W±0.1, h36km, n11, σ1s27/11, mb4.2/4, 1D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.02**	**248**	Pn		**Pn**		**14 20 30.9**	**-0.6**
	311nm,0.3s,baz=8.0,slow=20,SNR=9.2								
RAO				Sn		**Sn**		**14 20 45.8**	**+1.3**
	807nm,0.3s,baz=251,slow=24,SNR=9.3								
RAO	**Raoul Island**	**1.02**	**248**	*e*Pg		**Pn**		**14 20 30.4**	**-1.1**
RAO				Sn		**Sn**		**14 20 45.8**	**+1.3**
STKA	**Stephens Creek**	**35.83**	**255**	LR		LR		14 40 21.3	
	comp=Z,77nm,18.7s,baz=30,slow=34								
ASAR	**Alice Springs**	**44.23**	**265**	P		**P**		**14 28 18.2**	**-1.6**
	1.3nm,0.8s,baz=100,slow=7.1,SNR=14								
WRAB	**Tennant Creek**	**45.07**	**270**	*e*	P	**P**		**14 28 25.8**	**-0.7**
	7.8nm,1.3s								
WRA	**Warramunga Arr**	**45.08**	**270**	P		**P**		**14 28 25.9**	**-0.7**
	1.5nm,0.7s,baz=110,slow=6.2,SNR=25								
SBA	**Scott Base**	**49.63**	**185**	*e*	P	P		14 29 08.6	+7.4
	5.9nm,1.3s								
QSPA	**South Pole Qui**	**61.23**	**180**	*e*	P	**P**		**14 30 24.6**	**-0.3**
SYO	**Syowa Base**	**78.82**	**193**	⇓*e*	PcP	**PcP**		**14 32 21.9**	**+0.7**
FINES	**FINESS Array B**	**144.04**	**341**	PKP		**PKPdf**		**14 39 45.0**	**+0.2**
	2.9nm,0.8s,baz=56,slow=2.5,SNR=8.8								
AKASG	**Malin Array Be**	**150.66**	**325**	PKPbc		**PKPbc**		**14 40 03.6**	**+2.0**
	1.6nm,0.7s,baz=46,slow=2.3,SNR=4.3								

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*IDC **12** 14:21:19.9±1.6, 29.51S×176.77W, h0km, mb4.2/4, mb1 4.3/5, mb1mx3.9/35, mbtmp4.2/5, ML3.5/1, MS3.2/1, Ms1 3.2/1, ms1mx2.7/32, Error ellipse: s-maj=45.2km s-min=27.6km az=7.0*
*ISCJB **12** 14:21:23.4±2.1, 29.83S±0.08×176.9W±0.2, h31km, mb4.1/4, Error ellipse: s-maj=26.2km s-min=9.5km az=165.9*
ISC 12 14:21:24.9±1.4, 29.7S±0.1×176.9W±0.1, h31km, n16, σ0s93/11, mb4.2/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.00**	**294**	Pn		**Pn**		**14 21 42.5**	**-0.4**
	272nm,0.3s,baz=80,slow=17,SNR=2.8								
RAO				Sn		**Sb**		**14 21 56.6**	**-0.1**
	761nm,0.3s,baz=275,slow=23,SNR=3.6								
RAO				LR		LR		14 22 07.5	
	comp=Z,870nm,18.6s,baz=207,slow=46								
URZ	**Urewera**	**9.91**	**209**	Pn		**Pn**		**14 23 45.4**	**+0.2**
	0.4nm,0.3s,baz=194,slow=19,SNR=3.0								
URZ				Sn		**Sn**		**14 25 34.4**	**-1.0**
	1.0nm,0.3s,baz=223,slow=19,SNR=4.4								
RAR	**Rarotonga**	**17.57**	**65**	LR		LR		14 32 44.4	
	comp=Z,68nm,18.9s,baz=278,slow=39								
CTA	**Charters Tower**	**34.66**	**277**	P		**P**		**14 28 12.1**	**+0.2**
	3.1nm,0.7s,baz=82,slow=7.1,SNR=3.5								
STKA	**Stephens Creek**	**35.60**	**256**	P		**P**		**14 28 21.9**	**+2.0**
	2.5nm,0.6s,baz=110,slow=10,SNR=4.8								
ASAR	**Alice Springs**	**44.13**	**266**	P		**P**		**14 29 30.5**	**-0.3**
	1.1nm,0.5s,baz=106,slow=8.0,SNR=7.5								
WRA	**Warramunga Arr**	**45.06**	**271**	P		**P**		**14 29 37.4**	**-0.8**
	2.1nm,0.7s,baz=111,slow=6.2,SNR=10								
H10S3	**ASCENSION HYDR**	**137.95**	**153**	T		T		17 15 03.3	
	baz=204								
H10S2	**ASCENSION HYDR**	**137.95**	**153**	T		T		17 15 00.8	
	baz=204								
H10S1	**ASCENSION HYDR**	**137.97**	**153**	T		T		17 15 07.1	
	baz=204								
H10N3	**ASCENSION HYDR**	**139.03**	**153**	T		T		17 16 22.0	
	baz=207								
H10N1	**ASCENSION HYDR**	**139.03**	**153**	T		T		17 16 22.3	
	baz=207								
H10N2	**ASCENSION HYDR**	**139.04**	**153**	T		T		17 16 24.5	
	baz=207								
FINES	**FINESS Array B**	**144.79**	**341**	PKP		**PKPab**		**14 40 56.2**	**-0.8**
	2.3nm,0.5s,baz=68,slow=3.7,SNR=9.2								
KBZ	**Khabaz**	**145.51**	**305**	PKPbc		**PKPdf**		**14 40 59.6**	**-0.2**
	2.9nm,1.0s,baz=104,slow=5.0,SNR=4.3								
AKASG	**Malin Array Be**	**151.30**	**324**	PKPbc		**PKPbc**		**14 41 14.9**	**-0.1**
	1.5nm,0.6s,baz=48,slow=2.7,SNR=4.7								

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*IDC **12** 14:22:00.8±1.2, 25.52N×142.65E, h0km, mb3.8/11, mb1 3.9/11, mb1mx3.7/57, mbtmp3.8/11, Error ellipse: s-maj=36.0km s-min=26.6km az=83.0*
*ISCJB **12** 14:22:04.4±0.8, 25.5N±0.1×142.6E±0.2, h38km, mb3.8/12, Error ellipse: s-maj=28.6km s-min=15.9km az=172.8*
*NEIC **12** 14:22:06.0±0.6, 25.49N×142.64E, h35km, mb4.0/1, Error ellipse: s-maj=22.9km s-min=12.7km az=84.0*
ISC 12 14:22:06.4±1.0, 25.5N±0.2×142.6E±0.2, h38km, n14, σ0s69/14, mb3.9/12, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KLR	**Kul'dur**	**25.17**	**343**	P		**P**		**14 27 28.0**	**0.0**
	2.5nm,0.8s,baz=158,slow=11,SNR=10								
SONM	**Songino Array**	**36.15**	**318**	P		**P**		**14 29 03.9**	**-1.3**
	0.2nm,0.5s,baz=126,slow=6.1,SNR=2.3								
WRAB	**Tennant Creek**	**45.87**	**191**	*e*	P	**P**		**14 30 24.8**	**-0.4**
	1.2nm,0.6s								
WRA	**Warramunga Arr**	**45.88**	**191**	P		**P**		**14 30 25.1**	**-0.1**
	0.5nm,0.3s,baz=8.4,slow=8.7,SNR=5.8								
MKAR	**Makanchi Array**	**51.81**	**311**	P		**P**		**14 31 10.7**	**+0.2**
	0.2nm,0.3s,baz=88,slow=8.0,SNR=1.3								
KURK	**Kurchatov**	**54.39**	**315**	P		**P**		**14 31 29.8**	**+0.3**
KURBB	**Kurchatov Arra**	**54.45**	**315**	P		**P**		**14 31 29.8**	**-0.1**
	1.1nm,0.5s,baz=93,slow=8.0,SNR=9.5								
ILAR	**Eielson Array**	**58.92**	**28**	P		**P**		**14 32 00.9**	**-0.5**
	0.2nm,0.6s,baz=263,slow=5.2,SNR=4.2								
BVAR	**Borovoye Array**	**59.49**	**318**	P		**P**		**14 32 05.1**	**-0.4**
	1.1nm,0.5s,baz=95,slow=7.6,SNR=10								
ARU	**Arti**	**65.93**	**323**	P		**P**		**14 32 48.3**	**0.0**
	1.6nm,0.2s,baz=53,slow=9.8,SNR=3.5								
YKA	**Yellowknife Ar**	**73.35**	**28**	P		**P**		**14 33 34.0**	**0.0**
	0.4nm,0.7s,baz=294,slow=5.9,SNR=3.8								
YKA	**Yellowknife Ar**	**73.35**	**28**	P		**P**		**14 33 34.0**	**0.0**
FINES	**FINESS Array B**	**79.55**	**334**	P		**P**		**14 34 09.4**	**+0.3**
	2.5nm,0.9s,baz=79,slow=7.2,SNR=3.7								
AKASG	**Malin Array Be**	**84.14**	**324**	P		**P**		**14 34 35.1**	**+1.7**
	0.3nm,0.4s,baz=50,slow=6.5,SNR=1.9								

IDC 12 14:22:46.3±2.5, 28.53S×177.31W, h0km, mb3.8/2, mb1 4.1/2, mb1mx3.7/34, mbtmp3.8/2, Error ellipse: s-maj=75.0km s-min=24.5km az=118.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.89**	**216**	Pn		Pn		14 23 05.7	-0.4
	baz=308,slow=19,SNR=0.6								
RAO				Sn		Sn		14 23 21.5	+1.7
	607nm,0.3s,baz=108,slow=20,SNR=1.8								
ASAR	**Alice Springs**	**43.84**	**265**	P		P		14 30 54.2	-0.3
	1.1nm,0.9s,baz=104,slow=7.8,SNR=3.3								
WRA	**Warramunga Arr**	**44.66**	**270**	P		P		14 31 00.9	-0.2
	1.3nm,0.8s,baz=110,slow=7.6,SNR=2.9								
FINES	**FINESS Array B**	**143.59**	**341**	PKP		PKPbc		14 42 20.1	+0.4
	1.8nm,0.7s,baz=239,slow=0.8,SNR=3.2								
AKASG	**Malin Array Be**	**150.15**	**325**	PKPbc		PKPbc		14 42 39.0	+0.2
	0.6nm,0.4s,baz=73,slow=3.4,SNR=10								

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*ISCJB **12** 14:31:05.7±0.6, 39.26N±0.06×140.1E±0.1, h171km±4km, mb3.1/2, Error ellipse: s-maj=15.7km s-min=6.3km az=30.5*
*IDC **12** 14:31:05.9±1.3, 39.05N×140.93E, h150km±17km, mb2.9/2, mb1 3.0/4, mb1mx2.8/50, mbtmp3.6/4, MS3.1/1, Ms1 3.1/1, ms1mx2.3/14, Error ellipse: s-maj=73.2km s-min=12.2km az=104.0*
*JMA **12** 14:31:07.4±0.1, 39.26N×140.09E, h163km±1km, M3.0*
ISC 12 14:31:06.4±1.1, 39.21N±0.06×140.14E±0.08, h171km±7km, n19, σ1s21/29, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JYW	**Yuwa**	**0.33**	**9**	P		**Pn**		**14 31 29.8**	**+0.3**
JYW				S		**Sn**		**14 31 47.0**	**-0.3**
JYK	**Kaneyama**	**0.34**	**150**	P		**Pn**		**14 31 29.7**	**+0.1**
JYK				S		**Sn**		**14 31 46.8**	**-0.5**
JRG	**Rokugo**	**0.42**	**64**	P		**Pn**		**14 31 30.1**	**+0.3**
JRG				S		**Sn**		**14 31 47.6**	**-0.2**
JTB	**Tobi-shima**	**0.46**	**268**	P		**Pn**		**14 31 29.8**	**-0.1**
JTB				S		**Sn**		**14 31 46.5**	**-1.4**
JYA	**Atsumi**	**0.70**	**209**	P		**Pn**		**14 31 31.5**	**+0.3**
JYA				S		**Sn**		**14 31 49.6**	**-0.6**
JMK	**Ichinoseki**	**0.88**	**107**	P		**Pn**		**14 31 32.7**	**+0.5**
JOM	**Ohasama**	**0.93**	**73**	P		**Pn**		**14 31 33.2**	**+0.6**
JOM				S		**Sn**		**14 31 52.7**	**-0.1**
JOU	**Okura**	**0.94**	**154**	P		**Pn**		**14 31 33.6**	**+0.8**
JAH	**Hinai**	**1.05**	**21**	P		**Pn**		**14 31 33.9**	**+0.4**
JAH				S		**Sn**		**14 31 53.7**	**-0.8**
JNS	**Sasagawa**	**1.54**	**205**	P		**Pn**		**14 31 38.5**	**+0.6**
JANG	**Nango**	**1.57**	**42**	P		**Pn**		**14 31 38.5**	**+0.3**
JANG				S		**Sn**		**14 32 02.1**	**-0.8**
JSD	**Sado**	**1.88**	**232**	P		**Pn**		**14 31 41.9**	**+0.4**
JSD				S		**Sn**		**14 32 07.6**	**-1.1**
JOT	**Ohata**	**2.27**	**17**	P		**Pn**		**14 31 46.2**	**+0.4**
MJAR	**Matsushiro Arr**	**3.07**	**210**	P		**Pn**		**14 31 57.5**	**+1.9**
	0.3nm,0.3s,baz=30,slow=12,SNR=5.3								
ASAJ	**Asahikawa**	**5.23**	**20**	P		**Pn**		**14 32 23.2**	**+0.1**
ASAJ				S		**Sn**		**14 33 21.1**	**-2.3**
	0.4nm,0.3s,baz=135,slow=26,SNR=2.9								
JHJ	**Hachijo jima 2**	**6.09**	**183**	P		**Pn**		**14 32 33.5**	**-0.9**
	1.5nm,0.3s,baz=81,slow=19,SNR=4.0								
JHJ				S		**Sn**		**14 33 39.5**	**-4.1**
	3.2nm,0.3s,baz=108,slow=20,SNR=5.5								
TIXI	**Tiksi**	**33.01**	**353**	LR		LR		14 53 00.1	
	comp=Z,30nm,19.3s,baz=164,slow=40								
WRA	**Warramunga Arr**	**59.09**	**186**	P		**P**		**14 40 49.8**	**+1.1**
	0.2nm,0.5s,baz=5.4,slow=7.2,SNR=8.1								
ASAR	**Alice Springs**	**62.82**	**186**	P		**P**		**14 41 14.9**	**+1.1**
	0.2nm,0.8s,baz=0.2,slow=6.4,SNR=4.9								

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*IDC **12** 14:37:06.7±2.5, 37.04N×141.64E, h0km, mb3.5/3, mb1 3.6/5, mb1mx3.3/55, mbtmp3.5/5, ML3.5/2, Error ellipse: s-maj=57.6km s-min=25.7km az=71.0*
*ISCJB **12** 14:37:13.1±0.9, 36.87N±0.04×141.23E±0.09, h49km±7km, mb3.8/4, Error ellipse: s-maj=12.3km s-min=6.8km az=8.6*
*JMA **12** 14:37:14.9±0.1, 36.89N×141.07E, h49km±1km, M3.2*
ISC 12 14:37:13.4±1.6, 36.89N±0.04×141.20E±0.08, h31km±11km, n20, σ0s97/23, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.38**	**303**	P		**Pn**		**14 37 23.8**	**+1.0**
ONAJ				S		**Sn**		**14 37 30.2**	**+1.1**
JFK	**Kawauchi**	**0.54**	**332**	P		**Pn**		**14 37 25.8**	**+0.9**
JFK				S		**Sn**		**14 37 33.6**	**+0.7**
JHO	**Hitachi**	**0.58**	**241**	P		**Pn**		**14 37 25.8**	**+0.4**
JHO				S		**Sb**		**14 37 33.2**	**+0.1**
JFT	**Otama**	**0.93**	**313**	P		**Pb**		**14 37 31.5**	**+0.5**
JFT				S		**Sn**		**14 37 43.0**	**+0.5**
JMM	**Marumori**	**1.02**	**342**	P		**Pb**		**14 37 32.3**	**-0.3**
JMM				S		**Sn**		**14 37 44.9**	**+0.1**
JSB	**Shiboa**	**1.02**	**275**	P		**Pn**		**14 37 32.1**	**+0.5**
JSB				S		**Sn**		**14 37 44.6**	**-0.3**
JFY	**Yanaizu**	**1.30**	**294**	P		**Pn**		**14 37 35.9**	**+0.6**
MJAR	**Matsushiro Arr**	**2.42**	**263**	Pn		**Pn**		**14 37 52.0**	**+1.1**
	4.3nm,0.3s,baz=86,slow=15,SNR=34								
MJAR				Sn		**Sb**		**14 38 23.5**	**-2.3**
	4.3nm,0.3s,baz=98,slow=28,SNR=11								
MAT	**Matsushiro**	**2.43**	**263**	P		**Pn**		**14 37 52.3**	**+1.4**
MAT				*e*S		**Sn**		**14 38 20.6**	**+1.1**
JHJ	**Hachijo jima 2**	**3.94**	**198**	Pn		**Pn**		**14 38 12.9**	**+1.2**
	15nm,0.3s,baz=326,slow=21,SNR=33								
JHJ				Sn		**Sn**		**14 38 57.2**	**+0.4**
	24nm,0.3s,baz=80,slow=23,SNR=6.9								
SONM	**Songino Array**	**27.72**	**304**	P		**P**		**14 42 59.2**	**+0.2**
	0.5nm,0.6s,baz=100,slow=8.0,SNR=6.3								
H11N2	**WAKE ISLAND Hy**	**28.23**	**120**	T		T		15 12 36.1	
	baz=313,slow=75,SNR=17								
H11N1	**WAKE ISLAND Hy**	**28.23**	**120**	T		T		15 12 36.7	
	baz=313,slow=75,SNR=17								
H11N3	**WAKE ISLAND Hy**	**28.24**	**120**	T		T		15 12 41.4	
	baz=313,slow=75,SNR=14								
H11S1	**WAKE ISLAND Hy**	**28.93**	**122**	T		T		15 13 34.1	
	baz=315,slow=75,SNR=9.2								
H11S3	**WAKE ISLAND Hy**	**28.93**	**122**	T		T		15 13 37.6	
	baz=315,slow=75,SNR=7.8								
H11S2	**WAKE ISLAND Hy**	**28.95**	**122**	T		T		15 13 43.9	
	baz=315,slow=75,SNR=6.3								
MKAR	**Makanchi Array**	**44.05**	**302**	P		**P**		**14 45 17.6**	**-0.5**
	0.2nm,0.2s,baz=94,slow=11,SNR=3.5								
KURBB	**Kurchatov Arra**	**45.95**	**308**	P		**P**		**14 45 32.5**	**-0.7**
	3.8nm,0.2s,baz=83,slow=8.1,SNR=3.7								
WRA	**Warramunga Arr**	**56.90**	**188**	P		**P**		**14 46 54.5**	**-0.8**
	0.4nm,0.6s,baz=5.7,slow=7.4,SNR=5.6								

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*IDC **12** 14:46:07.1±0.7, 34.42N×73.21E, h0km, mb4.1/17, mb1 4.2/23, mb1mx4.0/62, mbtmp4.2/23, ML4.1/6, MS3.3/6, Ms1 3.3/6, ms1mx2.9/43, Error ellipse: s-maj=17.8km s-min=14.0km az=64.0*
*ISCJB **12** 14:46:08.8±0.3, 34.55N±0.02×73.26E±0.04, h21km, mb4.2/23, MS3.3/5, Error ellipse: s-maj=5.7km s-min=2.6km az=151.0*
*NDI **12** 14:46:11.2±2.1, 34.37N×73.02E, h10km, ML4.2, mb4.2(NEIC)*
*BJI **12** 14:46:12.6, 34.57N×73.30E, h42km, mb4.5/14, mB4.5/9, ML3.9/2, Ms3.5/5, Ms7 3.3/4*
*MOS **12** 14:46:13.1±1.2, 34.63N×73.32E, h53km, mb4.4/15, Error ellipse: s-maj=12.8km s-min=5.6km az=91.8*
*NEIC **12** 14:46:14.1±1.3, 34.62N×73.32E, h46km±11km, mb4.2/5, Error ellipse: s-maj=11.2km s-min=9.9km az=182.0*
*NNC **12** 14:46:23.0±4.1, 35.02N×73.14E, h203km±38km, mb3.4, mpv4.4, Error ellipse: s-maj=37.2km s-min=29.5km az=65.0*
ISC 12 14:46:10.4±0.5, 34.49N±0.04×73.10E±0.04, h21km, n93, σ1s86/114, mb4.2/23, MS3.1/5, 8C-3D, Pakistan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SRNI	**Srinagar**	**1.50**	**104**	*e*	P	**Pb**		**14 46 39.0**	**+1.5**
SRNI				*e*	S	**Sb**		**14 47 00.0**	**+3.9**
THN	**Thein Dam**	**3.00**	**132**	*e*	P	**Pn**		**14 46 56.0**	**-0.6**
THN				*ex*		**Sb**		**14 47 39.0**	**-0.2**
KBL	**Kabul**	**3.35**	**272**	*e*	P	**Pb**		**14 47 07.8**	**-1.4**
KBL	**Kabul**	**3.35**	**272**	*e*Pn		**Pb**		**14 47 07.8**	**-1.4**
DHRM	**DHARAMSHALA**	**3.49**	**129**	*e*	P	**Pn**		**14 47 07.1**	**+3.5**
DHRM				*e*	S	**Sn**		**14 47 44.6**	**+0.2**
DHRM					IAML			14 47 57.4	
	comp=N,2μm,0.3s								
DHRM					IAML			14 47 57.9	
	comp=E,1μm,0.5s								
JWA	**Jwalamukhi**	**3.77**	**133**	*e*	P	**Pn**		**14 47 09.0**	**+1.8**
JWA				*e*	S	**Sn**		**14 47 53.0**	**+2.1**
BHK	**Bhakra**	**4.14**	**137**	*e*	P	**Pn**		**14 47 15.0**	**+2.6**
BHK				*e*	S	**Sn**		**14 48 00.0**	**-0.2**
SDNR	**Sundarnagar**	**4.41**	**131**	*e*	P	**Pn**		**14 47 18.0**	**+1.9**
SDNR				*e*	S	**Sn**		**14 48 06.0**	**-0.9**
SMLA	**Simla**	**4.79**	**133**	*e*	P	**Pn**		**14 47 23.8**	**+2.5**
SMLA				*e*	S	**Sn**		**14 48 15.7**	**-0.5**
SMLA					IAML			14 48 19.9	
	comp=N,307nm,0.4s								
SMLA					IAML			14 48 20.9	
	comp=E,476nm,0.6s								
KKR	**Kurukshetra**	**5.50**	**144**	*e*	P	**Pn**		**14 47 31.6**	**+0.5**
KKR				*e*	S	**Sn**		**14 48 31.8**	**-2.0**
KSH	**Kashi**	**5.52**	**24**	P		**Pn**		**14 47 30.2**	**-1.3**
KSH				S		Sn		14 48 14.8	-20
KSH					smax	smax			
	comp=E,200nm,0.3s								
KSH					smax	smax			
	comp=E,190nm,0.3s								
NDI	**New Delhi**	**6.77**	**148**	*e*	P	Pn		14 47 38.2	-10
NDI				*e*	S	Sn		14 48 50.2	-15
AYAN	**Aya Nagar**	**6.90**	**149**	*e*	P	**Pn**		**14 47 50.9**	**+0.6**
AYAN				*e*	S	**Sn**		**14 49 04.8**	**-0.5**
KUDL	**Kundal**	**6.96**	**154**	*e*	P	**Pn**		**14

	comp=Z,4.0nm,0.6s								
OTUK					smax		smax		
	comp=N,2.0nm,0.4s								
RAMN	**Ramite**	**13.82**	**119**	*e*P		**Pn**		**14 49 22.1**	**-3.2**
	comp=N,43nm,0.5s								
MAKZ	**Makanchi**	**14.02**	**26**	*e*P		**Pn**		**14 49 25.7**	**-2.0**
MAKZ	**Makanchi**	**14.02**	**26**	*e*Pn		**Pn**		**14 49 25.7**	**-2.0**
MK01	**Makanchi Array**	**14.10**	**27**	*e*Pn		**Pn**		**14 49 27.2**	**-1.7**
MKAR	**Makanchi Array**	**14.12**	**27**	Pn		**Pn**		**14 49 28.7**	**-0.5**
	comp=N,0.3nm,0.3s,baz=185,slow=13,SNR=11								
MKAR					Sn		**Sn**	**14 52 01.1**	**-4.0**
	baz=183,slow=16,SNR=2.2								
WMQ	**Urumqi**	**14.65**	**46**	*e*P		**Pn**		**14 49 36.9**	**+0.5**
WMQ				pP		P		14 49 45.9	+3.4
WMQ				pmax	pmax				
	comp=N,6.0nm,0.5s								
WMQ				pmax	pmax				
	comp=N,73nm,4.1s								
WMQ				LR	LR				
	comp=N,130nm,16.7s								
WMQ				LR	LR				
	comp=N,200nm,21.6s								
WMQ				LR	LR				
	comp=N,170nm,17.8s								
KURBB	**Kurchatov Arra**	**16.61**	**12**	Pn		**Pn**		**14 50 00.8**	**-1.0**
	comp=N,0.3nm,0.3s,baz=205,slow=10,SNR=7.4								
KURK	**Kurchatov**	**16.71**	**12**	*e*P		**Pn**		**14 50 00.5**	**-2.6**
KURK				pmax	pmax				
	comp=Z,3.0nm,0.8s								
KURK	**Kurchatov**	**16.71**	**12**	*e*Pn		**Pn**		**14 50 00.5**	**-2.6**
	comp=Z,3.0nm,0.8s								
AB31	**Akbulak array**	**17.67**	**331**	P		**Pn**		**14 50 13.8**	**-1.3**
	comp=Z,1.2nm,0.4s,baz=138,slow=12,SNR=52								
AB31				⇓S		Sn		14 53 17.2	-14
	comp=Z,1.8nm,0.5s,baz=153,slow=23,SNR=7.0								
AB31	**Akbulak array**	**17.67**	**331**	P		**Pn**		**14 50 13.8**	**-1.3**
AB31				pmax	pmax				
	comp=Z,1.0nm,0.4s								
ABKAR	**Akbulak array**	**17.67**	**331**	*e*Pn		**Pn**		**14 50 14.3**	**-0.8**
BVAR	**Borovoye Array**	**18.63**	**355**	P		**Pn**		**14 50 27.6**	**+0.8**
	comp=Z,1.2nm,0.3s,baz=161,slow=11,SNR=19								
ZRNK	**Zerenda**	**18.69**	**352**	*e*P		**P**		**14 50 27.1**	**0.0**
ZRNK				pmax	pmax				
	comp=Z,8.0nm,0.6s								
ZRNK	**Zerenda**	**18.69**	**352**	*e*P		**P**		**14 50 27.1**	**0.0**
	comp=Z,7.9nm,0.6s								
AKTO	**Aktyubinsk**	**19.38**	**330**	P		**Pn**		**14 50 36.2**	**+0.4**
	comp=Z,3.2nm,0.3s,baz=134,slow=10,SNR=52								
AKTO				S		**Sn**		**14 54 07.8**	**-4.7**
	comp=Z,0.2nm,0.3s,baz=18,slow=20,SNR=5.4								
ZALV	**Zalesovo Beam**	**21.14**	**19**	P		**P**		**14 50 52.9**	**-0.9**
	comp=Z,7.6nm,0.3s,baz=216,slow=11,SNR=36								
NVS	**Novosibirsk**	**21.55**	**16**	*e*P		**P**		**14 50 56.7**	**-1.4**
GTA	**Gaotai**	**21.87**	**69**	*e*P		**P**		**14 51 01.3**	**-0.6**
GTA				pmax	pmax				
	comp=Z,4.0nm,0.8s								
ARU	**Arti**	**24.10**	**340**	P		**P**		**14 51 25.4**	**+1.1**
	comp=Z,2.5nm,0.4s,baz=99,slow=2.7,SNR=6.2								
ARU				LR		LR		15 01 53.4	
	comp=Z,60nm,19.1s,baz=245,slow=39								
ARU	**Arti**	**24.10**	**340**	P		**P**		**14 51 25.2**	**+0.9**
ARU	**Arti**	**24.10**	**340**	*e*P		**P**		**14 51 24.5**	**+0.3**
	comp=Z,14nm,1.4s								
KBZ	**Khabaz**	**25.07**	**301**	LR		LR		15 04 35.0	
	comp=Z,25nm,18.9s,baz=218,slow=44								
CD2	**Chengdu**	**26.00**	**89**	*e*P		**P**		**14 51 41.0**	**-0.9**
KMI	**Kunming**	**27.28**	**102**	P		**P**		**14 51 52.5**	**-1.2**
KMI				pmax	pmax				
	comp=Z,4.0nm,0.8s								
CHTO	**Chiang Mai**	**27.77**	**118**	*e*P		**P**		**14 51 59.7**	**+1.8**
CHTO				pmax	pmax				
	comp=Z,4.0nm,0.7s								
CHTO	**Chiang Mai**	**27.77**	**118**	*e*P		**P**		**14 51 59.6**	**+1.8**
	comp=Z,4.1nm,0.7s								
TLY	**Talaya**	**27.87**	**43**	LR		LR		15 04 35.2	
	comp=Z,53nm,20.0s,baz=242,slow=40								
CMAR	**Chiang Mai Arr**	**27.99**	**118**	P		**P**		**14 51 58.0**	**-1.9**
	comp=Z,0.8nm,0.8s,baz=300,slow=7.2,SNR=4.0								
CMAR	**Chiang Mai Arr**	**27.99**	**118**	P		**P**		**14 51 58.0**	**-1.9**
CMAR				pmax	pmax				
	comp=Z,1.0nm,0.9s								
SONM	**Songino Array**	**28.15**	**52**	P		**P**		**14 52 01.5**	**+0.3**
	comp=Z,1.2nm,0.7s,baz=252,slow=9.4,SNR=9.9								
SONM				LR		LR		15 04 41.0	
	comp=Z,83nm,18.1s,baz=248,slow=40								
SONA1	**Songino Array**	**28.16**	**52**	*e*P		**P**		**14 52 01.3**	**0.0**
HHC	**Hu-ho-hao-te**	**30.92**	**67**	*e*P		**P**		**14 52 25.4**	**-0.4**
HHC				pmax	pmax				
	comp=Z,16nm,1.0s								
HHC				pmax	pmax				
	comp=Z,61nm,6.5s								
MLR	**Muntele Rosu**	**37.27**	**302**	P		**P**		**14 53 23.6**	**+2.8**
MLR				pmax	pmax				
	comp=Z,6.0nm,1.5s								
JOF	**Joensuu**	**38.46**	**331**	P		**P**		**14 53 30.7**	**+0.3**
JOF				pmax	pmax				
	comp=Z,13nm,0.7s								
FINES	**FINESS Array B**	**40.10**	**327**	P		**P**		**14 53 44.0**	**-0.2**
	comp=Z,3.8nm,1.0s,baz=126,slow=9.7,SNR=4.1								
FINES	**FINESS Array B**	**40.10**	**327**	P		**P**		**14 53 44.0**	**-0.2**
FINES				pmax	pmax				
	comp=Z,2.0nm,0.8s								
ARCES	**ARCESS Array B**	**43.65**	**338**	P		**P**		**14 54 14.0**	**+0.9**
	comp=Z,1.7nm,0.5s,baz=114,slow=7.8,SNR=20								
ARCES	**ARCESS Array B**	**43.65**	**338**	P		**P**		**14 54 14.0**	**+0.9**
ARCES				pmax	pmax				
	comp=Z,2.0nm,0.5s								
YAK	**Yakutsk**	**44.64**	**34**	*e*P		**P**		**14 54 19.5**	**-1.6**
YAK				pmax	pmax				
	comp=Z,10.0nm,0.6s								
YAK	**Yakutsk**	**44.64**	**34**	*e*P		**P**		**14 54 19.5**	**-1.6**
	comp=Z,9.7nm,0.6s								
HFS	**Hagfors**	**45.70**	**323**	P		**P**		**14 54 30.0**	**+0.5**
	comp=Z,2.0nm,0.5s,baz=94,slow=12,SNR=11								
HFS	**Hagfors**	**45.70**	**323**	P		**P**		**14 54 30.0**	**+0.5**
HFS				pmax	pmax				
	comp=Z,2.0nm,0.5s								
NB2	**NORSAR Subarra**	**47.01**	**324**	P		**P**		**14 54 39.8**	**-0.1**
	comp=Z,0.8nm,0.5s,baz=98,slow=7.9								
NOA	**NORSAR Array B**	**47.01**	**324**	P		**P**		**14 54 40.1**	**+0.3**
	comp=Z,0.7nm,0.5s,baz=98,slow=7.6,SNR=3.7								
TIXI	**Tiksi**	**47.02**	**21**	P		**P**		**14 54 39.9**	**+0.2**
	comp=Z,1.7nm,0.4s,baz=284,slow=5.0,SNR=5.4								
SPITS	**Spitsbergen Ar**	**49.84**	**347**	P		**P**		**14 55 02.4**	**+1.0**
	comp=Z,0.7nm,0.4s,baz=123,slow=10,SNR=12								
PETK	**Petropavlovsk-**	**60.23**	**44**	LR		LR		15 26 13.5	
	comp=Z,215nm,20.4s,baz=150,slow=40								
TORD	**Torodi Ar. Bea**	**67.42**	**271**	P		**P**		**14 57 05.2**	**+0.5**
	comp=Z,1.5nm,0.5s,baz=45,slow=5.4,SNR=16								
INK	**Inuvik**	**75.60**	**10**	P		**P**		**14 57 53.7**	**+0.5**
	comp=Z,1.5nm,0.5s,baz=341,slow=4.0,SNR=6.5								
ILAR	**Eielson Array**	**76.23**	**16**	P		**P**		**14 57 56.5**	**-0.4**
	comp=Z,0.3nm,0.5s,baz=287,slow=4.4,SNR=5.4								
BOSA	**Boshof**	**77.36**	**222**	P		**P**		**14 58 04.2**	**+0.4**
	comp=Z,2.6nm,0.6s,baz=31,slow=8.5,SNR=7.9								
WRA	**Warramunga Arr**	**79.47**	**123**	P		**P**		**14 58 15.6**	**+0.1**
	comp=Z,1.9nm,0.5s,baz=323,slow=5.0,SNR=29								
ASAR	**Alice Springs**	**81.69**	**126**	P		**P**		**14 58 27.4**	**-0.1**
	comp=Z,1.5nm,0.6s,baz=308,slow=5.1,SNR=16								
YKA	**Yellowknife Ar**	**83.16**	**4**	P		**P**		**14 58 34.1**	**-0.4**
	comp=Z,0.8nm,0.4s,baz=348,slow=5.4,SNR=12								

*IDC **12** 14:49:41.9±1.8, 17.°60S×168.°48E, h0km, mb4.3/9, mb1 4.4/10, mb1mx4.1/35, mbtmp4.3/10, ML4.3/1, MS4.0/15, Ms1 4.0/15, ms1mx3.7/33, Error ellipse: s-maj=53.1km s-min=18.2km az=117.0*

*ISCJB **12** 14:49:42.5±0.3, 17.°75S±0.°05×168.°88E±0.°06, h33km, mb4.7/40, MS4.0/15, Error ellipse: s-maj=9.2km s-min=6.1km az=32.6*

*MOS **12** 14:49:43.8±1.7, 17.°71S×168.°81E, h33km, mb5.0/15, Error ellipse: s-maj=12.7km s-min=9.5km az=7.8*

*BJI **12** 14:49:46.2, 17.°44S×169.°08E, h48km, mb4.7/26, mB4.9/20, Ms4.7/7, Ms7 4.4/8*

*NEIC **12** 14:49:47.4±1.5, 17.°94S×168.°90E, h66km±14km, mb4.9/15, Error ellipse: s-maj=14.0km s-min=8.4km az=157.0*

ISC 12 14:49:44.9±0.4, **17.°71S**±0.°06×**168.°87E**±0.°07, **h35**km, **n126,** σ1**s79**/121, **mb4.7**/40, **MS4.0**/15, **1C, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.91**	**207**	Pn		**Pn**	**14 50 56.7**	**+0.4**
	13nm,0.3s,baz=208,slow=21,SNR=25							
DZM				Sn		**Sn**	**14 51 53.2**	**+1.3**
	5.8nm,0.3s,baz=304,slow=23,SNR=7.4							
DZM	**Mont Dzumac**	**4.91**	**207**	*e*Pn		**Pn**	**14 50 56.1**	**-0.2**
DZM				Sn		**Sn**	**14 51 53.2**	**+1.3**
MSVF	**Nonsavu**	**8.75**	**92**	*e*P		**Pn**	**14 51 51.5**	**+2.4**
MSVF	**Nonsavu**	**8.75**	**92**	*e*Pn		**Pn**	**14 51 51.1**	**+2.0**
HNR	**Honiara**	**11.95**	**312**	LR		LR	14 56 15.7	
	comp=Z,610nm,18.1s,baz=92,slow=34							
LHI	**Lord Howe Isla**	**16.38**	**211**	*e*Pn		**Pn**	**14 53 30.1**	**-2.0**
	132nm,1.1s							
AFI	**Afiamalu**	**19.00**	**81**	LR		LR	14 59 26.0	
	comp=Z,383nm,21.8s,baz=280,slow=30							
CTA	**Charters Tower**	**21.52**	**260**	P		**P**	**14 54 31.9**	**+0.8**
	7.3nm,0.9s,baz=89,slow=14,SNR=3.7							
CTAO	**Charters Tower**	**21.52**	**260**	*e*P		**P**	**14 54 30.7**	**-0.4**
CTAO				pmax	pmax			
	comp=Z,20nm,1.0s							
CTAO	**Charters Tower**	**21.52**	**260**	*e*P		**P**	**14 54 30.7**	**-0.4**
	comp=Z,20nm,1.0s							
URZ	**Urewera**	**21.71**	**162**	LR		LR	15 01 20.2	
	comp=Z,545nm,20.5s,baz=342,slow=32							
PMG	**Port Moresby**	**22.64**	**289**	LR		LR	15 02 19.2	
	comp=Z,123nm,18.1s,baz=103,slow=34							
PMG	**Port Moresby**	**22.64**	**289**	*e*P		**P**	**14 54 44.8**	**+1.7**
PMG				pmax	pmax			
	comp=Z,233nm,1.6s							
RPZ	**Rata Peaks**	**25.99**	**176**	LR		LR	15 05 21.3	
	comp=Z,1μm,18.4s,baz=356,slow=36							
WKZ	**Wanaka**	**27.04**	**180**	*e*P		**P**	**14 55 21.1**	**-2.7**
	comp=Z,319nm,1.6s							
WHZ	**Wether Hill Ro**	**28.12**	**181**	*e*P		**P**	**14 55 30.7**	**-2.8**
	comp=Z,249nm,1.9s							
STKA	**Stephens Creek**	**28.40**	**235**	P		**P**	**14 55 37.0**	**+0.9**
	comp=Z,6.6nm,0.9s,baz=74,slow=15,SNR=9.2							
STKA				LR		LR	15 06 22.1	
	comp=Z,470nm,20.3s,baz=53,slow=36							
RAR	**Rarotonga**	**29.75**	**102**	*e*P		**P**	**14 55 47.2**	**-1.0**
RAR				pmax	pmax			
	comp=Z,99nm,1.5s							
RAR	**Rarotonga**	**29.75**	**102**	*e*P		**P**	**14 55 47.2**	**-1.0**
	comp=Z,99nm,1.5s							
WRAB	**Tennant Creek**	**32.72**	**261**	*e*P		**P**	**14 56 15.9**	**+1.5**
WRAB				pmax	pmax			
	comp=Z,8.0nm,1.1s							
WRAB	**Tennant Creek**	**32.72**	**261**	*e*P		**P**	**14 56 12.6**	**-1.8**
WRA	**Warramunga Arr**	**32.73**	**261**	P		**P**	**14 56 12.5**	**-2.0**
	comp=Z,3.4nm,1.0s,baz=91,slow=9.1,SNR=11							
WRA				LR		LR	15 08 50.2	
	comp=Z,161nm,18.8s,baz=150,slow=36							
AS01	**Alice Springs**	**33.14**	**254**	*e*P		**P**	**14 56 17.1**	**-1.0**
AS31	**Alice Springs**	**33.19**	**254**	*e*P		**P**	**14 56 16.9**	**-1.7**
	comp=Z,3.0nm,0.8s							
ASAR	**Alice Springs**	**33.19**	**254**	P		**P**	**14 56 17.1**	**-1.5**
	comp=Z,5.6nm,0.7s,baz=79,slow=9.0,SNR=64							
ASAR				LR		LR	15 09 04.4	
	comp=Z,284nm,20.3s,baz=89,slow=35							
GUMO	**Guam**	**39.09**	**321**	LR		LR	15 11 49.1	
	comp=Z,113nm,19.7s,baz=120,slow=34							
FORT	**Forrest**	**39.21**	**243**	*e*P		**P**	**14 57 10.1**	**+0.2**
	comp=Z,265nm,0.8s							
PPT	**Papeete**	**39.54**	**96**	LR		LR	15 12 28.1	
	comp=Z,72nm,18.2s,baz=298,slow=34							
FITZ	**Fitzroy Crossi**	**41.07**	**263**	P		**P**	**14 57 24.7**	**-0.8**
	baz=120,slow=6.3							
FITZ				LR		LR	15 14 00.9	
	comp=Z,192nm,18.1s,baz=94,slow=36							
NWAO	**Narrogin (SRO)**	**48.62**	**242**	*e*P		**P**	**14 58 24.2**	**-1.2**
	comp=Z,27nm,0.9s							
PCI	**Palu**	**50.98**	**284**	P		**P**	**14 58 45.7**	**+2.1**
PCI				pmax	pmax			
	comp=Z,21nm,1.3s							
VNDA	**Vanda**	**59.94**	**182**	LR		LR	15 21 21.6	
	comp=Z,197nm,21.8s,baz=8.5,slow=32							
SBA	**Scott Base**	**60.19**	**181**	P		**P**	**14 59 50.5**	**+1.7**
SBA				pmax	pmax			
	comp=Z,7.0nm,1.3s							
KSM	**Kuching**	**60.70**	**282**	*e*P		**P**	**14 59 52.6**	**-0.8**
	comp=Z,18nm,1.3s							
MJAR	**Matsushiro Arr**	**61.24**	**332**	P		**P**	**14 59 57.2**	**+0.7**
	comp=Z,4.0nm,1.1s,baz=161,slow=9.2,SNR=11							
MAJO	**Matsushiro**	**61.24**	**332**	*e*P		**P**	**14 59 57.9**	**+1.4**
MAJO				pmax	pmax			
	comp=Z,8.0nm,1.1s							
MAJO	**Matsushiro**	**61.24**	**332**	*e*P		**P**	**14 59 57.9**	**+1.4**
	comp=Z,8.4nm,1.1s							
MAT	**Matsushiro**	**61.24**	**332**	P		**P**	**14 59 56.9**	**+0.4**
MSHR	**Mys Shultsa**	**69.32**	**331**	*i* P		**P**	**15 00 47.9**	**-0.8**
USRK	**Ussuriysk Ar.**	**70.22**	**333**	P		**P**	**15 00 55.0**	**+0.7**
	comp=Z,1.0nm,0.9s,baz=158,slow=4.7,SNR=9.8							
PEA0	**Petropavlovsk-**	**71.18**	**353**	*e*P		**P**	**15 00 59.9**	**+0.1**
PETK	**Petropavlovsk-**	**71.18**	**353**	P		**P**	**15 01 00.7**	**+0.8**
	comp=Z,2.8nm,0.9s,baz=150,slow=6.3,SNR=2.7							
HABR	**Khabarovsk**	**72.46**	**337**	*e*P		**P**	**15 01 05.7**	**-1.9**
HABR				*e*			15 01 23.6	
HABR				*e**SP		**PcP**	**15 01 26.0**	**+0.8**
HABR				*e*S		**S**	**15 10 25.5**	**-3.6**
HABR				*e*			15 11 07.1	
HABR				*e*SS		**SS**	**15 15 05.7**	**-3.0**
HABR				*e*SSS		SSS	15 18 25.4	
HABR				pmax	pmax			
	comp=N,16nm,1.5s							
HABR				pmax	pmax			
	comp=Z,8.0nm,1.5s							
HABR				pmax	pmax			
	comp=E,4.0nm,0.8s							
HABR				MLR	MLR			
	comp=Z,53nm,18.0s							
KLR	**Kul'dur**	**74.34**	**336**	P		**P**	**15 01 20.3**	**+1.6**
	comp=Z,1.8nm,1.0s,baz=138,slow=7.4,SNR=10.0							
KLR	**Kul'dur**	**74.34**	**336**	*i* P		**P**	**15 01 18.0**	**-0.7**
GYA	**Guiyang**	**74.66**	**305**	*e*P		**P**	**15 01 22.2**	**+0.9**
GYA				pP		sP	15 01 40.4	+4.2
GYA				PP		**PP**	**15 04 12.8**	**+4.1**
GYA				S		**S**	**15 10 53.0**	**-2.2**
GYA				SKS		**SKSac**	**15 11 20.9**	**-6.6**
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
GYA				pmax	pmax			
	comp=Z,120nm,5.8s							
KMI	**Kunming**	**77.17**	**302**	P		**P**	**15 01 39.6**	**+3.8**
KMI				pP		sP	15 01 54.5	+3.7
KMI				pmax	pmax			
	comp=Z,7.0nm,1.4s							
CMAR	**Chiang Mai Arr**	**77.56**	**294**	P		**P**	**15 01 38.4**	**+0.6**
	comp=Z,0.5nm,0.8s,baz=106,slow=5.7,SNR=3.0							
HHC	**Hu-ho-hao-te**	**78.83**	**319**	*e*P		**P**	**15 01 47.8**	**+3.3**
HHC				pmax	pmax			
	comp=Z,30nm,1.3s							
HHC				pmax	pmax			
	comp=Z,120nm,7.4s							
CD2	**Chengdu**	**79.03**	**307**	*e*P		**P**	**15 01 46.5**	**+0.8**
CD2				pP		sP	15 02 01.4	+0.7
CD2				sP		pP	15 02 07.4	+11
CD2				S		**S**	**15 11 42.7**	**+0.1**
CD2				SKS		**SKSac**	**15 11 56.9**	**-2.2**
CD2				sS		ScS	15 12 08.2	+2.5
CD2				SS		**SS**	**15 16 50.6**	**+1.4**
CD2				pmax	pmax			
	comp=Z,10.0nm,0.5s							
CD2				pmax	pmax			
	comp=Z,120nm,5.4s							
MAW	**Mawson**	**79.72**	**202**	LR		LR	15 33 23.7	
	comp=Z,192nm,19.9s,baz=60,slow=33							
SEY	**Seymchan**	**81.41**	**352**	*i* P		**P**	**15 01 58.2**	**+0.5**
RSO	**Redoubt South**	**83.82**	**18**	*e*P		**P**	**15 02 11.2**	**+0.7**
BILL	**Bilibino**	**85.52**	**359**	*e*P		**P**	**15 02 17.8**	**-0.9**
BILL				pmax	pmax			
	comp=Z,4.0nm,1.2s							
SONM	**Songino Array**	**85.79**	**323**	P		**P**	**15 02 21.0**	**+0.3**
	comp=Z,6.0nm,1.0s,baz=136,slow=4.5,SNR=33							
SONA1	**Songino Array**	**85.79**	**323**	*e*P		**P**	**15 02 18.7**	**-2.0**
GTA	**Gaotai**	**85.82**	**313**	*e*P		**P**	**15 02 22.8**	**+1.7**
GTA				pmax	pmax			
	comp=Z,7.0nm,1.5s							
CAST	**Castle Rocks**	**86.39**	**16**	*e*P		**P**	**15 02 21.2**	**-2.0**
	comp=Z,6.7nm,1.1s							
YBH	**Yreka Blue Hor**	**86.45**	**44**	*e*P		**P**	**15 02 23.5**	**-0.6**
YBH				pmax	pmax			
	comp=Z,34nm,2.0s							
YBH	**Yreka Blue Hor**	**86.45**	**44**	*e*P		**P**	**15 02 23.5**	**-0.6**
	comp=Z,34nm,2.0s							
HUMO	**Hull Mountain**	**86.69**	**43**	*e*P		**P**	**15 02 24.9**	**-0.2**
	comp=Z,4.9nm,1.1s							
BOD	**Bodaibo**	**87.81**	**334**	*e*P		**P**	**15 02 30.2**	**+0.1**
BOD				pmax	pmax			
	comp=Z,9.0nm,1.4s							
PAHR	**Pah Rah Range**	**87.82**	**47**	*e*P		**P**	**15 02 29.7**	**-1.2**
	comp=Z,9.2nm,1.2s							
ZAK	**Zakamensk**	**88.85**	**324**	*e*P		**P**	**15 02 35.8**	**+0.4**
ZAK				pmax	pmax			
	comp=Z,4.0nm,1.4s							
ILAR	**Eielson Array**	**88.88**	**17**	P		**P**	**15 02 31.9**	**-3.2**
	comp=Z,1.1nm,0.8s,baz=228,slow=5.3,SNR=12							
IL1	**Eielson Array**	**88.88**	**17**	*e*P		**P**	**15 02 33.1**	**-2.0**
TPNV	**Topopah Spring**	**88.95**	**51**	*e*P		**P**	**15 02 37.4**	**+1.1**
TPNV				pmax	pmax			
	comp=Z,12nm,1.5s							
TPNV	**Topopah Spring**	**88.95**	**51**	*e*P		**P**	**15 02 37.4**	**+1.1**
	comp=Z,12nm,1.5s							
WVOR	**Wild Horse Val**	**89.48**	**45**	P		**P**	**15 02 42.0**	**+3.4**
WVOR				pmax	pmax			
	comp=Z,7.0nm,1.0s							
SNAA	**Sanae**	**90.67**	**183**	*e*P		**P**	**15 02 43.0**	**-0.7**
SNAA				pmax	pmax			
	comp=Z,10.0nm,1.4s							
SNAA	**Sanae**	**90.67**	**183**	*e*P		**P**	**15 02 43.0**	**-0.7**
	comp=Z,9.9nm,1.4s							
TIXI	**Tiksi**	**93.18**	**348**	*e*P		**P**	**15 02 53.5**	**-1.4**
TIXI				pmax	pmax			
	comp=Z,1.0nm,1.1s							
ANMO	**Albuquerque**	**95.72**	**55**	*e*P		**P**	**15 03 05.5**	**-2.2**
ANMO				pmax	pmax			
	comp=Z,1.0nm,0.9s							
WMQ	**Urumqi**	**95.89**	**314**	*e*P		P	15 03 15.8	+7.7
WMQ				pP		sP	15 03 30.1	+6.8
WMQ				pmax	pmax			
	comp=Z,24nm,0.5s							
WMQ				pmax	pmax			
	comp=Z,93nm,4.9s							
WMQ				LR	LR			
	comp=N,160nm,24.4s							
WMQ				LR	LR			
	comp=E,200nm,28.7s							
WMQ				LR	LR			
	comp=Z,210nm,26.3s							
TXAR	**Lajitas Array**	**96.34**	**61**	LR		LR	15 40 34.3	
	comp=Z,74nm,18.6s,baz=0.0,slow=32							
KRAR	**Krasnoyarsk**	**96.92**	**327**	*e*P		**P**	**15 03 10.3**	**-2.0**
YKA	**Yellowknife Ar**	**99.47**	**27**	LR		LR	15 42 16.1	
	comp=Z,16nm,19.8s,baz=180,slow=32							
MKAR	**Makanchi Array**	**100.40**	**316**	P		**Pdif**	**15 03 30.6**	**+2.4**
	comp=Z,0.1nm,0.3s,baz=85,slow=7.7,SNR=3.2							
ZALV	**Zalesovo Beam**	**100.69**	**323**	P		**Pdif**	**15 03 31.5**	**+2.2**
	comp=Z,0.3nm,0.3s,baz=87,slow=8.8,SNR=4.0							
KLMR	**Klimovskoe**	**124.02**	**333**	*e*PKIKP		**PKPdf**	**15 08 39.8**	**+0.7**
KLMR				pmax	pmax			
	comp=Z,19nm,1.5s							
KIV	**Kislovodsk**	**127.99**	**312**	*e*PKIKP		**PKPdf**	**15 08 48.3**	**+0.9**
KIV				pmax	pmax			
	comp=Z,6.0nm,1.1s							
OBN	**Obninsk**	**128.02**	**327**	⇑*i*PKIKP		**PKPdf**	**15 08 50.1**	**+3.2**
OBN				pmax	pmax			
	comp=Z,7.0nm,0.5s							
NEY	**Neytrino**	**128.11**	**311**	*e*PKIKP		**PKPdf**	**15 08 47.5**	**-0.2**
VSU	**Vasula**	**130.75**	**335**	*e*PKIKP		**PKPdf**	**15 08 52.6**	**+0.6**
AKASG	**Malin Array Be**	**134.04**	**325**	PKP		**PKPdf**	**15 09 00.7**	**+2.3**
	comp=Z,0.2nm,0.3s,baz=60,slow=2.0,SNR=3.9							
KIEV	**Kiev**	**134.06**	**325**	*e*PKIKP		**PKPdf**	**15 08 57.6**	**-0.9**
BRTR	**Keskin Array B**	**135.59**	**309**	PKP		**PKPdf**	**15 09 01.7**	**-0.2**
	comp=Z,1.0nm,0.8s,baz=57,slow=5.3,SNR=3.3							
BR231	**Keskin MP Arra**	**136.19**	**310**	*e*PKPdf		**PKPdf**	**15 09 00.2**	**-2.7**
KOLS	**Kolonicke sedl**	**138.76**	**327**	*e*PKIKP		**PKPdf**	**15 09 06.6**	**-0.7**
KOLS	**Kolonicke sedl**	**138.76**	**327**	*e*PKP		**PKPdf**	**15 09 06.6**	**-0.7**
UPC	**Upice**	**140.74**	**333**	AMS		AMS	16 05 30.0	
VYHS	**Vyhne**	**140.81**	**328**	*e*PKIKP		**PKPdf**	**15 09 13.2**	**+2.1**
VYHS	**Vyhne**	**140.81**	**328**	*e*PKP		**PKPdf**	**15 09 13.2**	**+2.1**
BRG	**Berggiesshubel**	**141.34**	**335**	*e*PKP		**PKPdf**	**15 09 15.8**	**+3.9**
	comp=Z,9.8nm,1.7s							
BRG	**Berggiesshubel**	**141.34**	**335**	*e*PKIKP		**PKPdf**	**15 09 15.8**	**+3.9**
BRG				pmax	pmax			
	comp=Z,10.0nm,1.7s							
GOPC	**GO Peony, Ondr**	**141.71**	**333**	AMS	

ASAR	**Alice Springs**	**34.91**	**161**	P		**P**	**15 04 25.8**	**+1.8**
	1.4nm,0.6s,baz=343,slow=7.5,SNR=28								
ASAR				PcP		**PcP**	**15 06 57.5**	**+1.1**
	0.6nm,0.7s,baz=339,slow=2.6,SNR=5.0								
SONM	**Songino Array**	**40.46**	**344**	P		**P**	**15 05 11.7**	**+1.0**
	0.4nm,0.5s,baz=166,slow=10.0,SNR=3.8								
MKAR	**Makanchi Array**	**50.27**	**325**	P		**P**	**15 06 30.0**	**+1.6**
	0.6nm,0.7s,baz=116,slow=9.8,SNR=3.6								
PLCA	**Paso Flores**	**146.92**	**162**	PKPbc		**PKPab**	**15 17 16.4**	**+0.3**
	4.2nm,1.1s,baz=216,slow=8.7,SNR=5.8								

GUC 12 15:19:40.1±0.4, 33.98S×72.47W, h37km±2km, ML3.7, 4C, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RCDM	**Rinconada Maip**	**1.47**	**71**	*e*P		Pn	15 20 05.1	+1.1
RCDM				*e*S		Sn	15 20 24.4	+2.5
RCDM				IAML			15 20 33.0	
	comp=E,1μm,0.6s							
ROCH	**El Roble**	**1.58**	**51**	*e*P		Pn	15 20 07.7	+1.9
ROCH				*e*S		Sn	15 20 28.8	+3.9
ROCH				IAML			15 20 38.4	
	comp=E,1μm,0.8s							
ANTU	**Antumapu**	**1.58**	**76**	*e*P		Pn	15 20 07.5	+1.9
ANTU				*e*S		Sn	15 20 28.1	+3.3
ANTU				IAML			15 20 31.7	
	comp=N,2μm,0.1s							
PEL	**Peldehue**	**1.70**	**61**	*e*P		Pn	15 20 09.4	+2.1
PEL				*e*S		Sn	15 20 31.3	+3.4
PEL				IAML			15 20 39.3	
	comp=N,1μm,2.0s							
CLCH	**Cerro Calan**	**1.71**	**71**	*e*P		Pn	15 20 09.3	+1.9
CLCH				*e*S		Sn	15 20 31.8	+3.8
CLCH				IAML			15 20 35.4	
	comp=E,2μm,0.4s							
FCH	**Farellones**	**1.93**	**71**	*e*P		Pn	15 20 12.9	+2.3
FCH				*e*S		Sn	15 20 37.8	+4.0
FCH				IAML			15 20 43.8	
	comp=E,1μm,0.7s							

IDC ***12*** *15:25:40.3±35.0, 37.91N×144.02E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.3/40, mbtmp3.4/3, ML3.3/1, Error ellipse: s-maj=752.5km s-min=53.8km az=15.0*

ISCJB ***12*** *15:25:47.9±1.1, 37.38N±0.05×143.51E±0.07, h33km, mb3.5/2, Error ellipse: s-maj=8.6km s-min=7.0km az=173.8*

JMA ***12*** *15:25:49.3±0.3, 37.39N×143.36E, h31km, M3.3*

ISC 12 15:25:49.6±1.7, 37.38N±0.07×143.5E±0.1, h35km, n15, σ1.9 33/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.01**	**303**	P		**Pn**	**15 26 20.9**	**-0.1**
JIO				*e*S		**Sn**	**15 26 44.1**	**-0.8**
JFK	**Kawauchi**	**2.09**	**270**	S		**Sn**	**15 26 45.8**	**-1.2**
ONAJ	**Iwakimizuishiy**	**2.17**	**263**	S		**Sn**	**15 26 47.6**	**-1.5**
JMM	**Marumori**	**2.20**	**284**	*e*S		**Sn**	**15 26 48.8**	**-0.9**
JMK	**Ichinoseki**	**2.38**	**312**	S		**Sn**	**15 26 54.3**	**+0.1**
JFT	**Otama**	**2.52**	**274**	P		**Pn**	**15 26 29.0**	**+0.9**
JFT				S		**Sn**	**15 26 57.5**	**-0.1**
JOM	**Ohasama**	**2.71**	**321**	S		**Sn**	**15 27 02.0**	**-0.3**
JYK	**Kaneyama**	**2.91**	**303**	P		**Pn**	**15 26 34.0**	**+0.5**
JANG	**Nango**	**3.37**	**333**	S		**Sn**	**15 27 17.4**	**-1.0**
JAG	**Ashikaga**	**3.38**	**255**	P		**Pn**	**15 26 40.1**	**+0.2**
JAG				S		**Sn**	**15 27 16.9**	**-1.9**
JRY	**Ryogami san**	**3.94**	**251**	P		**Pn**	**15 26 47.6**	**0.0**
JRY				S		**Sn**	**15 27 29.6**	**-3.0**
MJAR	**Matsushiro Arr**	**4.32**	**260**	Pn		**Pn**	**15 26 54.2**	**+1.3**
	1.2nm,0.3s,baz=88,slow=15,SNR=8.4							
MJAR				Sn		**Sn**	**15 27 43.6**	**+1.6**
	0.5nm,0.3s,baz=155,slow=21,SNR=4.7							
MAT	**Matsushiro**	**4.32**	**260**	P		**Pn**	**15 26 54.6**	**+1.8**
MAT				S		**Sn**	**15 27 44.1**	**+2.1**
WRA	**Warramunga Arr**	**57.66**	**190**	P		**P**	**15 35 36.3**	**-0.2**
	0.4nm,0.8s,baz=7.8,slow=7.1,SNR=7.2							
ASAR	**Alice Springs**	**61.39**	**190**	P		**P**	**15 36 02.2**	**0.0**
	0.4nm,1.0s,baz=1.5,slow=6.6,SNR=5.8							

IDC ***12*** *15:27:40.7±1.8, 33.56S×71.94W, h0km, mb3.6/3, mb1 3.8/5, mb1mx3.7/28, mbtmp3.6/5, ML3.7/2, MS3.4/3, Ms1 3.4/3, ms1mx3.0/28, Error ellipse: s-maj=54.5km s-min=31.1km az=88.0*

ISCJB ***12*** *15:27:42.6±1.3, 33.55S±0.06×72.13W±0.07, h26km±10km, mb3.6/2, Error ellipse: s-maj=12.3km s-min=7.5km az=42.9*

GUC ***12*** *15:27:44.4±0.4, 33.52S×72.13W, h15km±4km, ML3.8*

ISC 12 15:27:42.4±2.0, 33.55S±0.08×72.03W±0.09, h9km±13km, n12, σ0.8 47/15, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.84**	**178**	*e*P		**Pg**	**15 27 58.5**	**-0.1**
CHPI				*e*S		**Sg**	**15 28 09.7**	**+0.1**
CHPI				IAML			15 28 11.6	
	comp=N,7μm,0.4s							
ROCH	**El Roble**	**1.03**	**57**	*e*P		**Pb**	**15 28 02.6**	**+0.1**
ROCH				*e*S		**Sb**	**15 28 16.3**	**+0.1**
PEL	**Peldehue**	**1.20**	**71**	*e*P		**Pg**	**15 28 05.1**	**-0.3**
PEL				*e*S		**Sg**	**15 28 20.8**	**-0.2**
PEL				IAML			15 28 25.3	
	comp=N,3μm,1.3s							
CLCH	**Cerro Calan**	**1.26**	**84**	*e*P		**Pn**	**15 28 06.2**	**0.0**
CLCH				*e*S		**Sb**	**15 28 22.8**	**+0.1**
CLCH				IAML			15 28 33.0	
	comp=N,3μm,0.6s							
FCH	**Farellones**	**1.47**	**82**	*e*P		**Pn**	**15 28 10.0**	**+0.7**
FCH				*e*S		**Sb**	**15 28 29.5**	**+0.5**
PLCA	**Paso Flores**	**7.27**	**171**	Pn		**Pn**	**15 29 28.9**	**+0.1**
	comp=N,0.3nm,0.3s,baz=348,slow=11,SNR=8.3							
PLCA				Lg		Lg	15 31 23.7	
	comp=N,0.2nm,0.3s,baz=103,slow=24,SNR=2.4							
PLCA				LR		LR	15 32 20.2	
	comp=N,123nm,18.1s,baz=326,slow=39							
LVC	**Limon Verde**	**11.24**	**15**	LR		LR	15 35 10.6	
	comp=N,594nm,20.1s,baz=202,slow=40							
CPUP	**Villa Florida**	**14.63**	**64**	LR		LR	15 37 11.5	
	comp=N,131nm,19.7s,baz=243,slow=39							
LPAZ	**La Paz**	**17.54**	**13**	P		**Pn**	**15 31 48.2**	**+0.5**
	comp=N,0.1nm,0.3s,baz=196,slow=6.2,SNR=5.9							
SIV	**San Ignacio**	**20.09**	**32**	P		**P**	**15 32 16.4**	**+0.1**
	comp=N,1.8nm,0.7s,baz=225,slow=14,SNR=4.9							
TXAR	**Lajitas Array**	**69.34**	**331**	P		**P**	**15 38 50.5**	**+0.2**
	comp=N,0.1nm,0.3s,baz=161,slow=9.5,SNR=3.5							
TORD	**Torodi Ar. Bea**	**84.05**	**70**	P		**P**	**15 40 12.6**	**-1.1**
	comp=N,0.9nm,0.7s,baz=236,slow=4.1,SNR=6.8							

ROM 12 15:32:42.7±0.4, 43.96N×11.89E, h6km±3km, Md1.5/2, Ml0.6/1, Error ellipse: s-maj=3.9km s-min=2.2km az=35.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFI	**Santa Sofia**	**0.06**	**210**	Pg	Pg	15 32 44.8	+0.5
SFI				Sg	Sg	15 32 45.7	+0.3
	343nm,0.2s						
ASQU	**Asqua**	**0.17**	**204**	Pg	Pg	15 32 46.8	+0.6
ASQU				Sg	Sg	15 32 49.8	+1.2
	13nm,0.4s						
VMG	**Vicchio**	**0.25**	**271**	Pg	Pg	15 32 48.1	+0.5
VMG				Sg	Sg	15 32 52.7	+1.8

ROM 12 15:33:24.5±0.1, 43.94N×11.86E, h5km±1km, Md1.8/4, Ml1.5/2, Error ellipse: s-maj=1.5km s-min=0.8km az=1.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFI	**Santa Sofia**	**0.04**	**189**	Pg	Pg	15 33 25.9	+0.2
SFI				Sg	Sg	15 33 26.9	+0.3
ASQU	**Asqua**	**0.15**	**198**	Pg	Pg	15 33 28.0	+0.4
ASQU				Sg	Sg	15 33 30.9	+1.2
	72nm,0.4s						
T0502	**Localit˜ San**	**0.21**	**102**	Pg	Pg	15 33 29.2	+0.6
T0502				Sg	Sg	15 33 32.9	+1.6
	142μm,27.0s						
VMG	**Vicchio**	**0.23**	**275**	Pg	Pg	15 33 29.6	+0.7
VMG				Sg	Sg	15 33 33.7	+1.8

IDC 12 15:34:43.2±14.0, 17.61S×167.85E, h0km, mb4.0/3, mb1 4.2/4, mb1mx3.8/34, mbtmp4.0/4, ML3.6/1, MS3.5/7, Ms1 3.5/7, ms1mx3.2/30, Error ellipse: s-maj=237.3km s-min=41.7km az=76.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.63**	**196**	Pn	Pn	15 35 53.9	-0.7
	2.9nm,0.3s,baz=215,slow=12,SNR=12						
DZM				Sn	Sn	15 36 50.3	+1.1
	2.0nm,0.3s,baz=310,slow=23,SNR=6.2						
DZM				LR	LR	15 37 16.5	
	comp=Z,324nm,20.4s,baz=20,slow=33						
RPZ	**Rata Peaks**	**26.16**	**175**	LR	LR	15 50 27.8	
	comp=Z,212nm,18.4s,baz=288,slow=36						
STKA	**Stephens Creek**	**27.66**	**234**	P	P	15 40 33.9	+1.0
	2.6nm,0.9s,baz=55,slow=12,SNR=1.9						
STKA				LR	LR	15 51 51.3	
	comp=Z,74nm,18.2s,baz=32,slow=37						
WRA	**Warramunga Arr**	**31.79**	**260**	P	P	15 41 09.2	-0.4
	0.6nm,0.7s,baz=92,slow=9.0,SNR=5.7						
ASAR	**Alice Springs**	**32.28**	**253**	P	P	15 41 13.6	-0.4
	2.0nm,0.6s,baz=80,slow=8.8,SNR=35						
ASAR				LR	LR	15 53 51.7	
	comp=Z,111nm,18.1s,baz=82,slow=36						
VNDA	**Vanda**	**60.01**	**182**	LR	LR	16 06 05.4	
	comp=Z,38nm,21.7s,baz=8.0,slow=31						
MJAR	**Matsushiro Arr**	**60.71**	**333**	LR	LR	16 12 32.4	
	comp=Z,17nm,18.6s,baz=20,slow=37						
ILAR	**Eielson Array**	**89.08**	**18**	LR	LR	16 29 20.0	
	comp=Z,41nm,18.2s,baz=231,slow=37						

NIED ***12*** *15:37:00, 38.30N×142.00E, h50km, Mw4.9 Best double couple: M☉2.64000×10^16 NP1:ϕs351.00000°, δ32.00000°, λ69.00000°. NP2:ϕs195.00000°, δ61.00000°, λ103.00000°.*

MOS ***12*** *15:37:21.6±0.8, 38.36N×142.00E, h45km, mb5.4/139, MS4.2/27, Error ellipse: s-maj=6.0km s-min=4.1km az=99.8*

BJI ***12*** *15:37:22.0, 38.33N×142.00E, h56km, mb5.3/76, mB4.9/53, Ms4.4/77, Ms7 4.3/74*

IDC ***12*** *15:37:23.6±0.4, 38.33N×141.98E, h46km±3km, mb4.8/36, mb1 4.9/42, mb1mx4.8/51, mbtmp5.1/42, MS4.2/27, Ms1 4.1/27, ms1mx3.9/48, Error ellipse: s-maj=10.0km s-min=8.1km az=85.0*

JMA ***12*** *15:37:23.2, 38.33N×142.01E, h47km±1km, M5.1*

JMA Felt IV J1.

NEIC ***12*** *15:37:23.7±0.1, 38.32N×141.95E, mb5.2/242, Error ellipse: s-maj=2.8km s-min=1.8km az=143.0*

NEIC Recorded [4 JMA] in Miyagi.

GCMT ***12*** *15:37:23.7±0.4, 38.42N×142.05E, h44km±1km, MW4.9/58, Moment Tensor Solution. s28,c33; s58,c86; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr2.11±.18; Mθθ0.26±.11; Mϕϕ-2.38±.11; Mrθ-0.96±.10; Mθϕ0.13±.09; Mϕr-1.73±.11; Best double couple: M☉3.00400×10^16 NP1:ϕs197.00000°, δ66.00000°, λ108.00000°. NP2: ϕs338.00000°, δ30.00000°, λ54.00000°. Principal axes: T 3.0270, Plg64.0000°, Azm138.0000°; N -0.0530, Plg17.0000°, Azm10.0000°; P -2.9810, Plg19.0000°, Azm274.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISCJB ***12*** *15:37:23.2±0.3, 38.33N±0.02×141.94E±0.02, h55km±2km, mb5.2/366, MS4.3/51 Error ellipse: s-maj=3.2km s-min=2.2km az=149.4*

ISC 12 15:37:23.6±0.3, 38.34N±0.03×142.05E±0.03, h49km±2km, h49km:pP-P, n1144, σ1.9 16/1216, mb5.2/373, MS4.4/54, 61C-35D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.56**	**282**	ǁP		**Pn**	**15 37 34.7**	**-0.8**
JIO				*e*S		**Sn**	**15 37 42.8**	**-1.3**
OFUJ	**Ofunato**	**0.80**	**338**	⇑P		**Pn**	**15 37 38.1**	**-0.6**
OFUJ				*e*S		**Sn**	**15 37 48.9**	**-0.7**
JMK	**Ichinoseki**	**0.89**	**314**	⇑P		**Pn**	**15 37 39.5**	**-0.4**
JMK				*e*S		**Sn**	**15 37 51.2**	**-0.6**
JOU	**Okura**	**1.09**	**272**	ǁP		**Pn**	**15 37 41.9**	**-0.6**
JOU				*e*S		**Sn**	**15 37 55.8**	**-0.7**
JMM	**Marumori**	**1.09**	**245**	ǁP		**Pn**	**15 37 41.4**	**-1.2**
JMM				*e*S		**Sn**	**15 37 55.7**	**-0.9**
MIYJ	**Miyakonagasawa**	**1.25**	**352**	⇑P		**Pn**	**15 37 44.3**	**-0.4**
JOM	**Ohasama**	**1.28**	**333**	⇑P		**Pn**	**15 37 45.1**	**0.0**
JOM				*e*S		**Sn**	**15 38 01.4**	**+0.3**
JFK	**Kawauchi**	**1.34**	**224**	ǁP		**Pn**	**15 37 45.0**	**-1.0**
JFK				*e*S		**Sn**	**15 38 00.8**	**-1.9**
JYK	**Kaneyama**	**1.44**	**294**	ǁP		**Pn**	**15 37 47.1**	**-0.2**
JYK				*e*S		**Sn**	**15 38 05.2**	**+0.1**
JRG	**Rokugo**	**1.53**	**314**	ǁP		**Pn**	**15 37 48.5**	**0.0**
JYS	**Shirataka**	**1.56**	**266**	ǁP		**Pn**	**15 37 48.6**	**-0.4**
JYS				*e*S		**Sn**	**15 38 07.8**	**-0.3**
JFT	**Otama**	**1.58**	**239**	ǁP		**Pn**	**15 37 48.9**	**-0.3**
JFT				*e*S		**Sn**	**15 38 08.5**	**0.0**
JYA	**Atsumi**	**1.85**	**279**	ǁP		**Pn**	**15 37 52.8**	**-0.1**
JYW	**Yuwa**	**1.87**	**311**	ǁP		**Pn**	**15 37 53.8**	**+0.6**
JFY	**Yanaizu**	**2.07**	**244**	ǁP		**Pn**	**15 37 56.0**	**0.0**
JHK	**Hiroka**	**2.63**	**247**	ǁP		**Pn**	**15 38 03.7**	**+0.1**
JIZZ	**Izumozaki**	**2.76**	**254**	ǁP		**Pn**	**15 38 06.0**	**+0.7**
JSD	**Sado**	**3.00**	**265**	ǁP		**Pn**	**15 38 07.9**	**-0.7**
MJAR	**Matsushiro Arr**	**3.54**	**241**	P		**Pn**	**15 38 16.8**	**+0.7**
	32nm,0.3s,baz=55,slow=11,SNR=206							
MJAR				S		**Sn**	**15 39 02.1**	**+5.4**
	43nm,0.3s,baz=74,slow=12,SNR=6.2							
MJAR				LR	LR	15 39 56.9	
	comp=Z,4μm,19.9s,baz=55,slow=44							
MAJO	**Matsushiro**	**3.54**	**241**	*d* iP		**Pn**	**15 38 17.2**	**+1.0**
MAJO	**Matsushiro**	**3.54**	**241**	*e*Pn		**Pn**	**15 38 17.1**	**+1.0**
BSO3	**Boso 3**	**3.74**	**200**	ǁP		**Pn**	**15 38 18.2**	**-0.3**
ERM	**Erimo**	**3.77**	**13**	*ce*P		**Pn**	**15 38 19.0**	**-0.2**
ERM				pmax	pmax			
	comp=Z,106nm,1.0s							
ERM	**Erimo**	**3.77**	**13**	*e*Pn		**Pn**	**15 38 18.8**	**-0.4**
JOD2	**Odawara 2**	**3.88**	**219**	P		**Pn**	**15 38 21.3**	**+0.6**
JIZS	**Izushimoda**	**4.42**	**216**	P		**Pn**	**15 38 27.8**	**-0.4**
JAO	**Obara**	**4.91**	**233**	ǁP		**Pn**	**15 38 36.8**	**+1.8**
INU	**Inuyama**	**5.01**	**235**	*e*Pn		**Pn**	**15 38 38.0**	**+1.6**
JAR	**Ashorobuto**	**5.13**	**14**	P		**Pn**	**15 38 36.4**	**-1.4**
JHJ2	**Mitsune**	**5.52**	**200**	*e*Pn		**Pn**	**15 38 40.9**	**-2.4**
JHJ	**Hachijo jima 2**	**5.52**	**200**	P		**Pn**	**15 38 42.1**	**-1.2**
	comp=Z,96nm,0.3s,baz=152,slow=18,SNR=72							
JHJ				S		**Sn**	**15 39 40.7**	**-4.7**
	comp=Z,386nm,0.3s,baz=45,slow=23,SNR=12							
NEM2	**Nemuro 2**	**5.75**	**28**	P		**Pn**	**15 38 44.7**	**-1.7**
ASAJ	**Asahikawa**	**5.79**	**4**	*e*Pn		**Pn**	**15 38 46.7**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**6.38**	**26**	*i* P		**Pn**	**15 38 53.4**	**-1.6**
KUR	**Kuril'sk**	**8.15**	**30**	*e*P		**Pn**	**15 39 18.6**	**-0.6**
YSS	**Yuzh-Sakhalins**	**8.63**	**3**	ǁ*e*P		**Pn**	**15 39 25.2**	**-0.6**
YSS				*e*S		**Sn**	**15 40 59.1**	**-2.5**
YSS				pmax	pmax			
	comp=Z,100nm,0.8s							
YSS				smax	smax			
	comp=E,70nm,1.2s							
YSS				MLR	MLR			
	comp=Z,600nm,13.0s							
YSS				MLR	MLR			
	comp=N,500nm,15.0s							
YSS	**Yuzh-Sakhalins**	**8.63**	**3**	*e*Pn		**Pn**	**15 39 24.6**	**-1.2**
VLA	**Vladivostok**	**9.07**	**305**	*e*P		**Pn**	**15 39 32.9**	**+1.1**
MSHR	**Mys Shultsa**	**9.32**	**300**	*de*P		**Pn**	**15 39 35.6**	**+0.4**
USRK	**Ussuriysk Ar.**	**9.57**	**311**	P		**Pn**	**15 39 39.7**	**+1.1**
	comp=N,12nm,0.3s,baz=129,slow=12,SNR=93							
USRK				LR	LR	15 43 12.8		
	comp=N,2μm,18.8s,baz=120,slow=37							
JNU	**Nakatsue**	**10.46**	**244**	P		**Pn**	**15 39 52.1**	**+1.1**
	comp=N,3.1nm,0.3s,baz=54,slow=6.0,SNR=33							
JNU				LR	LR	15 44 18.0		
	comp=N,2μm,19.9s,baz=53,slow=40							
JNU	**Nakatsue**	**10.46**	**244**	*e*Pn		**Pn**	**15 39 51.4**	**+0.5**
KSRS	**Korea Array**	**11.20**	**270**	P		**Pn**	**15 40 03.1**	**+2.2**
	comp=N,3.3nm,0.3s,baz=80,slow=14,SNR=56							
KSRS				S		**Sn**	**15 42 06.9**	**+2.3**
	comp=N,0.5nm,0.3s,baz=75,slow=24,SNR=4.7							
KSRS				LR	LR	15 44 13.0		
	comp=N,1μm,18.2s,baz=86,slow=37							
KS01	**Wonju Array Si**	**11.22**	**270**	*e*Pn		**Pn**	**15 40 03.0**	**+1.8**
KS15	**Wonju Array Si**	**11.23**	**270**	*e*Pn		**Pn**	**15 40 03.3**	**+1.9**
KSAR	**Wonju Array Be**	**11.23**	**270**	P		**Pn**	**15 40 03.1**	**+1.7**
KSAR				S		**Sn**	**15 42 06.9**	**+1.5**
KSAR	**Wonju Array Be**	**11.23**	**270**	P		**Pn**	**15 40 03.1**	**+1.7**
KSAR				S		**Sn**	**15 42 06.9**	**+1.5**

MDJ	**Mudanjiang**	**11.25**	**308**	P		**Pn**	**15 40 04.6**	**+3.0**
MDJ				S		**Sn**	**15 42 05.5**	**-0.3**
MDJ				PcP		**PcP**	**15 45 54.5**	**+0.8**
MDJ				ScP		**ScP**	**15 49 22.8**	**+0.7**
MDJ				PcS		**PcS**	**15 49 28.4**	**+1.0**
MDJ				ScS		**ScS**	**15 52 59.1**	**+1.7**
MDJ				pmax	pmax			
	comp=N,100nm,1.1s							
MDJ				pmax	pmax			
	comp=N,180nm,4.8s							
MDJ				LR	LR			
	comp=N,780nm,17.7s							
MDJ				LR	LR			
	comp=N,740nm,22.0s							
MDJ				LR	LR			
	comp=N,2μm,21.5s							
MDJ	**Mudanjiang**	**11.25**	**308**	*e*Pn		**Pn**	**15 40 03.6**	**+2.0**
HABR	**Khabarovsk**	**11.33**	**336**	*e*P		**Pn**	**15 39 59.7**	**-3.0**
HABR				*e*S		**Sn**	**15 42 05.5**	**-2.3**
HABR				pmax	pmax			
	comp=N,13nm,1.4s							
HABR				pmax	pmax			
	comp=E,18nm,1.4s							
HABR				pmax	pmax			
	comp=Z,34nm,1.4s							
HABR				MLR	MLR			
	comp=Z,630nm,15.0s							
INCN	**Inchon**	**12.21**	**271**	*e*Pn		**Pn**	**15 40 17.9**	**+3.2**
TYV	**Tymovskoe**	**12.53**	**2**	*e*P		**Pn**	**15 40 17.2**	**-1.9**
TYV				pmax	pmax			
	comp=Z,20nm,0.8s							
KLR	**Kul'dur**	**13.17**	**329**	P		**Pn**	**15 40 28.3**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=147,slow=14,SNR=6.6							
KLR				LR	LR	15 45 39.9		
	comp=Z,1μm,18.2s,baz=140,slow=38							
CN2	**Changchun**	**13.65**	**299**	*e*P		**Pn**	**15 40 35.9**	**+1.4**
CN2				pmax	pmax			
	comp=Z,20nm,1.0s							
CN2				pmax	pmax			
	comp=Z,200nm,7.0s							
CN2				LR	LR			
	comp=Z,600nm,15.0s							
CN2				LR	LR			
	comp=Z,800nm,15.0s							
CN2				LR	LR			
	comp=Z,800nm,18.0s							
SNY	**Shenyang**	**14.56**	**290**	⇑P		**Pn**	**15 40 46.6**	**0.0**
SNY				S		**Sn**	**15 43 33.2**	**+6.6**
SNY				pmax	pmax			
	comp=Z,18nm,1.8s							
SNY				pmax	pmax			
	comp=Z,250nm,12.0s							
SNY				LR	LR			
	comp=Z,520nm,12.3s							
SNY				LR	LR			
	comp=Z,2μm,20.2s							
SNY				LR	LR			
	comp=Z,3μm,20.1s							
NKL	**Nikolayevsk**	**14.85**	**357**	*e*P		**Pn**	**15 40 47.0**	**-3.3**
NKL				*e*			15 43 39.0	
NKL				pmax	pmax			
	comp=Z,40nm,1.1s							
NKL				MLR	MLR			
	comp=E,300nm,16.0s							
NKL				MLR	MLR			
	comp=Z,350nm,16.0s							
SKR	**Severo-Kuril's**	**15.87**	**34**	*e*P		**P**	**15 41 07.8**	**+1.3**
SKR				pmax	pmax			
	comp=Z,115nm,0.8s							
SKR				MLR	MLR			
	comp=Z,200nm,15.0s							
DL2	**Dalian**	**15.97**	**278**	P		**Pn**	**15 41 04.5**	**-0.4**
DL2				*e*S		**Sn**	**15 43 58.2**	**-2.7**
DL2				pmax	pmax			
	comp=Z,220nm,1.2s							
DL2				LR	LR			
	comp=Z,460nm,13.3s							
DL2				LR	LR			
	comp=Z,920nm,16.7s							
DL2				LR	LR			
	comp=Z,1μm,20.0s							
JOW	**Kunigami**	**16.30**	**229**	*e*Pn		**Pn**	**15 41 06.4**	**-2.7**
	comp=Z,36nm,0.7s							
PEA0	**Petropavlovsk-**	**18.31**	**31**	*e*P		**P**	**15 41 31.3**	**-2.2**
PEA0B	**Petropavlovsk-**	**18.31**	**31**	*e*P		**P**	**15 41 32.5**	**-1.0**
	comp=Z,55nm,1.1s							
PETK	**Petropavlovsk-**	**18.31**	**31**	P		**P**	**15 41 32.4**	**-1.1**
	comp=Z,0.5nm,0.3s,baz=200,slow=12,SNR=18							
PETK				PcP		**PcP**	**15 46 03.7**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=11,slow=2.4,SNR=3.8							
PETK				LR		LR	15 49 44.1	
	comp=Z,272nm,18.3s,baz=214,slow=40							
SSE	**Sheshan**	**18.59**	**253**	P		**Pn**	**15 41 37.0**	**-0.3**
SSE				S		**Sn**	**15 45 03.6**	**-0.6**
SSE				pmax	pmax			
	comp=Z,250nm,0.9s							
SSE				pmax	pmax			
	comp=Z,220nm,8.6s							
SSE				LR	LR			
	comp=Z,220nm,13.9s							
SSE				LR	LR			
	comp=Z,450nm,13.9s							
SSE				LR	LR			
	comp=Z,720nm,15.8s							
PET	**Petropavlovsk**	**18.65**	**33**	ǁ*i*P		**Pn**	**15 41 38.4**	**+0.5**
PET				*e*S		**Sn**	**15 44 58.3**	**-7.1**
PET				pmax	pmax			
	comp=Z,63nm,1.0s							
PET				pmax	pmax			
	comp=Z,100nm,9.8s							
PET				MLR	MLR			
	comp=Z,500nm,20.0s							
PET				MLR	MLR			
	comp=Z,300nm,20.0s							
PET	**Petropavlovsk**	**18.65**	**33**	*e*P		**Pn**	**15 41 37.6**	**-0.3**
	comp=Z,54nm,1.0s							
HIA	**Hailar**	**19.38**	**311**	*e*P		**P**	**15 41 44.6**	**-0.7**
HIA				pmax	pmax			
	comp=Z,10.0nm,1.1s							
HIA	**Hail

CLNS pmax pmax
comp=Z,16nm,1.1s
CLNS pmax pmax
comp=N,12nm,1.3s
CLNS MLR MLR
comp=Z,725nm,16.0s
CLNS MLR MLR
comp=E,225nm,15.0s
CLNS MLR MLR
comp=N,544nm,16.0s
MA2 Magadan 21.98 12 P **P 15 42 13.6 +0.5**
comp=N,118nm,0.8s,baz=197,slow=9.4,SNR=69
ANA2 Anatahan 22.15 171 *e*P **P 15 42 11.1 -4.2**
YHNB Yeheng 22.21 238 *e*P **P 15 42 15.2 -0.8**
comp=N,35nm,0.7s
NACB Ninganchiao 22.40 237 *e*P **P 15 42 17.2 -0.8**
comp=N,28nm,0.6s
SSLB Suanglung 23.09 237 *e*P **P 15 42 23.4 -1.8**
comp=N,27nm,0.7s
YULB Yu-li 23.14 236 *e*P **P 15 42 23.1 -2.6**
comp=N,26nm,0.7s
TIY Taiyuan 23.30 278 *e*P **P 15 42 28.1 +0.9**
TIY S S 15 46 23.4 -13
TIY pmax pmax
comp=N,180nm,0.6s
TIY pmax pmax
comp=N,110nm,4.0s
TIY LR LR
comp=N,240nm,14.5s
TIY LR LR
comp=N,480nm,16.8s
TIY LR LR
comp=N,630nm,18.0s
HHC Hu-ho-hao-te 23.57 286 *e*P **P 15 42 28.7 -1.1**
HHC PP **PnPn 15 43 04.0 +5.7**
HHC S **S 15 46 34.7 -5.7**
HHC pmax pmax
comp=N,64nm,0.9s
HHC pmax pmax
comp=N,130nm,4.5s
HHC LR LR
comp=N,290nm,14.4s
HHC LR LR
comp=N,730nm,18.4s
HHC LR LR
comp=N,780nm,18.7s
TPUB Ta-pu 23.64 237 *e*P **P 15 42 26.9 -3.6**
comp=N,47nm,0.6s
QZH Quanzhou 23.94 243⇑ *i*P P 15 42 24.6 -8.6
QZH S S 15 46 31.6 -15
QZH pmax pmax
comp=Z,100nm,0.8s
QZH LR LR
comp=Z,1μm,19.3s
WHN Wuhan 24.07 260 ⇓P **P 15 42 34.6 +0.3**
WHN S **S 15 46 44.7 -3.6**
WHN LR LR
comp=Z,480nm,11.5s
WHN LR LR
comp=Z,960nm,12.0s
WHN LR LR
comp=Z,2μm,19.4s
CIT Chita 24.11 314 *e*P **P 15 42 35.2 +0.6**
CIT *e* 15 42 41.6
CIT *e* 15 42 50.7
CIT *e* 15 43 11.0
CIT *e* 15 46 49.0
CIT pmax pmax
comp=Z,131nm,1.6s
GUMO Guam 24.77 173 P **P 15 42 40.3 -0.5**
comp=Z,104nm,0.9s,baz=24,slow=13,SNR=4.3
GUMO LR LR 15 57 45.9
comp=Z,39nm,18.6s,baz=355,slow=49
GUMO Guam 24.77 173 *e*P **P 15 42 40.5 -0.3**
YAK Yakutsk 24.92 346 P **P 15 42 41.0 -0.7**
comp=Z,27nm,0.3s,baz=13,slow=0.8,SNR=19
YAK LR LR 15 52 51.5
comp=Z,342nm,18.6s,baz=124,slow=37
YAK Yakutsk 24.92 346 *e*P **P 15 42 40.8 -1.0**
YAK *e*PP **sP 15 43 02.3 +2.1**
YAK *e* 15 43 20.1
YAK *e*S **S 15 46 59.4 -2.0**
YAK pmax pmax
comp=Z,55nm,1.1s
YAK pmax pmax
comp=E,14nm,1.3s
YAK pmax pmax
comp=N,38nm,1.3s
YAK pmax pmax
comp=Z,24nm,0.6s
YAK pmax pmax
comp=N,17nm,0.6s
YAK smax smax
comp=N,264nm,2.7s
YAK smax smax
comp=E,247nm,2.5s
YAK Yakutsk 24.92 346 *e*P **P 15 42 40.7 -1.0**
comp=E,70nm,0.6s
SEY Seymchan 25.42 11 P **P 15 42 47.6 +1.3**
comp=E,50nm,0.8s,baz=200,slow=6.5,SNR=106
BOD Bodaibo 26.71 326*c i*P **P 15 42 57.6 -0.5**
BOD pmax pmax
comp=Z,28nm,1.0s
XAN Xi'an 26.99 271 P **P 15 43 00.0 -0.9**
XAN pP pP 15 43 14.9 +1.4
XAN PP **PnPn 15 43 46.0 +0.9**
XAN PcP **PcP 15 46 21.2 -0.2**
XAN S **S 15 47 29.3 -5.6**
XAN SS **SnSn 15 48 43.8 -0.4**
XAN pmax pmax
comp=Z,75nm,0.8s
XAN pmax pmax
comp=Z,59nm,8.6s
XAN LR LR
comp=Z,210nm,19.3s
XAN LR LR
comp=Z,380nm,18.1s
XAN LR LR
comp=Z,470nm,17.8s
SONA1 Songino Array 27.50 302 *e*P **P 15 43 04.2 -1.2**
SONM Songino Array 27.50 302 P **P 15 43 05.1 -0.3**
comp=Z,5.9nm,0.5s,baz=106,slow=9.1,SNR=38
SONM PcP **PcP 15 46 22.7 +0.2**
comp=Z,3.9nm,0.6s,baz=120,slow=2.4,SNR=5.9
SONM LR LR 15 54 38.0
comp=Z,487nm,18.2s,baz=94,slow=38
ENH Enshi 27.96 263 *e*P **P 15 43 08.8 -0.8**
comp=Z,282nm,0.6s
H11N2 WAKE ISLAND Hy 28.42 124 T T 16 13 42.5
baz=317,slow=75,SNR=2024
H11N1 WAKE ISLAND Hy 28.43 124 T T 16 13 49.5
baz=317,slow=75,SNR=2698
H11N3 WAKE ISLAND Hy 28.43 124 T T 16 13 43.9
baz=317,slow=75,SNR=2283
GZH Guangzhou 28.83 246 P **P 15 43 17.5 +0.2**
GZH S **S 15 47 58.2 -5.7**
GZH LR LR
comp=Z,1μm,14.7s
H11S1 WAKE ISLAND Hy 29.18 126 T T 16 14 27.5
baz=318,slow=76,SNR=717
H11S3 WAKE ISLAND Hy 29.18 126 T T 16 14 27.0
baz=318,slow=76,SNR=952
H11S2 WAKE ISLAND Hy 29.19 126 T T 16 14 28.1
baz=318,slow=76,SNR=734
IRK Irkutsk 29.62 310 *e*P **P 15 43 24.2 +0.2**
IRK pmax pmax
comp=Z,25nm,1.7s
TLY Talaya 29.88 309 P **P 15 43 26.6 +0.2**
comp=Z,7.8nm,0.7s,baz=134,slow=1.3,SNR=12
TLY PcP **PcP 15 46 28.8 +0.5**
comp=Z,4.2nm,0.6s,baz=190,slow=6.0,SNR=4.9
TLY LR LR 15 56 07.7
comp=Z,628nm,18.4s,baz=104,slow=38
TLY Talaya 29.88 309 *e*P **P 15 43 26.9 +0.5**
TLY pmax pmax
comp=Z,11nm,0.8s
TLY MLR MLR
comp=Z,466nm,17.0s
TLY Talaya 29.88 309 *e*P **P 15 43 26.5 +0.1**
comp=Z,13nm,0.9s
TLY PcP **PcP 15 46 28.8 +0.5**
ZAK Zakamensk 29.88 306 *e*P **P 15 43 26.3 -0.2**
ZAK pmax pmax
comp=Z,19nm,0.9s
LZH Lanzhou 30.37 278 *e*P **P 15 43 32.0 +1.0**
LZH pP pP 15 43 44.7 +1.0
LZH sP sP 15 43 52.8 +3.2
LZH PP **PnPn 15 44 32.3 +1.6**
LZH *e*S **S 15 48 26.7 -1.5**
LZH sS sS 15 48 44.5 -5.1
LZH SS **SnSn 15 50 07.0 +0.5**
LZH pmax pmax
comp=Z,48nm,1.0s
LZH pmax pmax
comp=Z,130nm,5.4s
LZH LR LR
comp=Z,460nm,11.6s
LZH LR LR
comp=Z,740nm,12.7s
LZH LR LR
comp=Z,970nm,13.4s
MOY Mondy 31.50 308 *e*P **P 15 43 41.9 +1.1**
MOY pmax pmax
comp=Z,14nm,1.5s
GYA Guiyang 31.95 259⇑ *i*P **P 15 43 43.9 -1.1**
GYA pP pP 15 44 00.6 +2.9
GYA PP **PnPn 15 44 53.2 +1.9**
GYA PcP **PcP 15 46 36.0 +1.7**
GYA S **S 15 48 45.5 -7.5**
GYA sS sS 15 49 16.8 +2.3
GYA ScP **ScP 15 50 13.2 -0.4**
GYA SS **SnSn 15 50 44.9 -0.3**
GYA pmax pmax
comp=Z,40nm,0.7s
GYA pmax pmax
comp=Z,120nm,4.7s
GYA LR LR
comp=Z,660nm,15.5s
GYA LR LR
comp=Z,550nm,18.3s
GYA LR LR
comp=Z,520nm,19.6s
CD2 Chengdu 32.19 268 P **P 15 43 46.7 -0.3**
CD2 pP pP 15 44 00.1 +0.3
CD2 sP sP 15 44 06.5 +0.9
CD2 S **S 15 48 56.0 -0.6**
CD2 sS sS 15 49 19.2 +1.1
CD2 pmax pmax
comp=Z,190nm,0.6s
CD2 pmax pmax
comp=Z,220nm,5.4s
CD2 LR LR
comp=Z,270nm,10.5s
CD2 LR LR
comp=Z,530nm,15.9s
CD2 LR LR
comp=Z,560nm,19.3s
BILL Bilibino 32.64 17*de*P **P 15 43 51.1 +0.7**
BILL *i* 15 44 03.6
BILL *e* 15 45 01.9
BILL *e* 15 46 36.3
BILL pmax pmax
comp=Z,21nm,1.0s
BILL MLR MLR
comp=Z,162nm,20.0s
BILL Bilibino 32.64 17 *e*P **P 15 43 50.2 -0.2**
comp=Z,31nm,1.0s
GTA Gaotai 32.68 285 *e*P **P 15 43 51.1 -0.2**
GTA pP pP 15 44 05.8 +1.7
GTA sP sP 15 44 12.5 +2.6
GTA PcP **PcP 15 46 37.0 +0.9**
GTA S **S 15 49 04.4 +0.2**
GTA sS sS 15 49 30.1 +4.4
GTA pmax pmax
comp=Z,110nm,6.4s
GTA LR LR
comp=Z,340nm,18.5s
GTA LR LR
comp=Z,750nm,19.7s
GTA LR LR
comp=Z,920nm,20.0s
SNPH Sibulan 33.46 215 *i*P P 15 44 05.8 +7.7
QIZ Qiongzhong 33.93 245 P **P 15 44 02.4 +0.2**
QIZ pP **pP 15 44 15.4 +0.4**
QIZ sP **sP 15 44 21.6 +0.8**
QIZ PP **PP 15 45 19.6 -0.1**
QIZ S **S 15 49 24.3 +0.7**
QIZ LR LR
comp=Z,310nm,17.8s
QIZ LR LR
comp=Z,250nm,15.9s
QIZ LR LR
comp=Z,260nm,15.4s
QIZ Qiongzhong 33.93 245 *e*P **P 15 44 02.9 +0.8**
comp=Z,83nm,1.8s
TIXI Tiksi 34.06 353 P **P 15 44 02.2 -0.6**
comp=Z,9.6nm,0.8s,baz=142,slow=7.1,SNR=17
TIXI Tiksi 34.06 353*ce*P **P 15 44 02.4 -0.3**
TIXI pmax pmax
comp=Z,18nm,1.2s
TIXI Tiksi 34.06 353 *e*P **P 15 44 01.6 -1.1**
comp=Z,10nm,0.8s
KMI Kunming 35.67 260 P **P 15 44 17.5 +0.1**
KMI pP pP 15 44 27.8 -2.5
KMI PP **PnPn 15 45 34.3 -3.7**
KMI S **S 15 49 47.7 -3.0**
KMI SS **SnSn 15 52 08.6 -6.9**
KMI pmax pmax
comp=Z,51nm,0.8s
KMI pmax pmax
comp=Z,140nm,4.7s
KMI LR LR
comp=Z,420nm,17.4s
KMI LR LR
comp=Z,330nm,18.3s
KMI LR LR
comp=Z,550nm,16.3s
KRAR Krasnoyarsk 36.89 315 *e*P **P 15 44 28.3 +1.2**
MYLDM Lahad Datu 39.34 219 ⇓P **P 15 44 48.5 +0.3**
MYLDM Lahad Datu 39.34 219 *e*P **P 15 44 48.5 +0.3**
comp=Z,50nm,0.9s
NONG Nongkai 39.41 250 P **P 15 44 50.6 +1.8**
comp=Z,83nm,0.8s
SKNT Sakolnakorn 39.49 248 P **P 15 44 51.0 +1.5**
comp=Z,22nm,0.7s
UBPT Khong Chiam 39.53 245 P **P 15 44 54.6 +4.8**
comp=Z,27nm,1.2s
SDKM Sandakan 39.60 221 ⇓P **P 15 44 50.8 +0.4**
TSM Tawau 40.41 219 ⇑P **P 15 44 57.6 +0.4**
WMQ Urumqi 40.72 296 P **P 15 45 00.6 +1.1**
WMQ pP pP 15 45 14.8 +2.3
WMQ PP **PP 15 46 34.4 +0.6**
WMQ S **S 15 51 06.7 +0.3**
WMQ sS sS 15 51 24.3 -3.9
WMQ ScS **ScS 15 54 59.7 -0.6**
WMQ pmax pmax
comp=Z,53nm,0.8s
WMQ pmax pmax
comp=Z,170nm,3.5s
WMQ LR LR
comp=Z,530nm,19.0s
WMQ LR LR
comp=Z,460nm,14.6s
WMQ LR LR
comp=Z,760nm,22.4s
GENI Genyem 40.76 183 P **P 15 45 01.2 +1.2**
LBMI Labuha 41.03 202 P **P 15 45 02.9 +0.7**
KMSI Cibinong 41.08 208 P **P 15 45 03.2 +0.6**
LOEI Loei 41.15 251 P **P 15 45 00.8 -2.5**
comp=Z,51nm,1.5s
CMAI Chiengmai2 41.37 256 P **P 15 45 06.3 +1.1**
comp=Z,495nm,0.7s
ZAA0 Zalesovo Array 41.42 311 *e*P **P 15 45 04.7 -0.3**
ZALV Zalesovo Beam 41.42 311 P **P 15 45 05.1 +0.1**
comp=Z,54nm,0.8s,baz=87,slow=8.4,SNR=53
ZALV PcP **PcP 15 47 01.8 -0.4**
comp=Z,10nm,0.5s,baz=92,slow=3.2,SNR=6.2
ZALV LR LR 16 03 03.2
comp=Z,466nm,18.2s,baz=68,slow=37
UTTA Uttaradit 41.54 252 P **P 15 45 07.9 +1.5**
comp=Z,7.9nm,0.6s,comp=Z,86nm
CHAI Chaiyaphum 41.64 249 P **P 15 45 08.5 +1.3**
comp=Z,9.1nm,0.6s,comp=Z,96nm
LAMP Lampang 41.76 254 P **P 15 45 11.0 +2.8**
comp=Z,13nm,1.0s,comp=Z,102nm
PBKT Sadao Pong 41.96 250 P **P 15 45 10.6 +0.8**
comp=Z,21nm,0.7s
MRSI Marisa 41.96 211 P **P 15 45 10.8 +1.0**
FAKI Fak Fak 42.04 195 *e*P **P 15 45 10.0 -0.5**
comp=Z,103nm,1.1s
CMMT Chiang Mai 42.10 255 P **P 15 45 11.8 +0.7**
comp=Z,63nm,0.7s,comp=Z,489nm
CHTO Chiang Mai 42.11 255 P **P 15 45 11.9 +0.8**
comp=Z,264nm,0.8s,comp=Z,2μm
CHTO Chiang Mai 42.11 255 *e*P **P 15 45 10.8 -0.3**
CHTO pmax pmax
comp=Z,40nm,0.6s
CHTO Chiang Mai 42.11 255 *e*P **P 15 45 10.8 -0.3**
comp=Z,40nm,0.6s
NRIK Noril'sk 42.30 335 P **P 15 45 11.9 -0.2**
comp=Z,2.5nm,0.3s,baz=109,slow=10.0,SNR=8.2
NRIK LR LR 16 03 46.0
comp=Z,602nm,18.8s,baz=111,slow=37
NVS Novosibirsk 42.32 313 *e*P **P 15 45 12.3 0.0**
NVS *e*S **S 15 51 24.2 -5.4**
NVS pmax pmax
comp=Z,40nm,1.1s
NVS pmax pmax
comp=E,25nm,1.3s
NVS smax smax
comp=E,22nm,1.5s
CM31 Chiang Mai Arr 42.32 254 *e*P **P 15 45 14.9 +2.1**
CMAR Chiang Mai Arr 42.32 254 P **P 15 45 12.6 -0.3**
comp=E,2.9nm,0.6s,baz=44,slow=8.0,SNR=30
CMAR PcP **PcP 15 47 06.3 +0.5**
comp=E,5.0nm,0.8s,baz=6.9,slow=1.5,SNR=8.3
CMAR ScP **ScP 15 50 52.0 -0.2**
comp=E,1.1nm,1.1s,baz=353,slow=6.9,SNR=4.4
CMAR LR LR 16 04 12.8
comp=E,96nm,18.7s,baz=69,slow=38
CM01 Chiang Mai Arr 42.33 254 *e*P **P 15 45 12.5 -0.4**
LSA Lhasa 42.60 274 *e*P **P 15 45 16.3 +0.7**
LSA pmax pmax
comp=Z,38nm,0.6s
LSA Lhasa 42.60 274 *e*P **P 15 45 16.3 +0.7**
comp=Z,38nm,0.6s
SRAK Srakaew 42.84 247 P **P 15 45 18.5 +1.5**
comp=Z,103nm,0.7s,comp=Z,887nm
SANI Sanana 42.84 204 P **P 15 45 16.8 -0.1**
UMPA Umpang Tak 43.76 252 P **P 15 45 27.6 +3.1**
comp=Z,8.6nm,0.7s,comp=Z,232nm
MK01 Makanchi Array 43.86 301 *e*P **P 15 45 24.6 -0.4**
MK31 Makanchi Array 43.87 301 *i*P **P 15 45 25.1 +0.1**
MK31 pmax pmax
comp=Z,21nm,0.5s
MK31 Makanchi Array 43.87 301 *e*P **P 15 45 24.6 -0.4**
MKAR Makanchi Array 43.87 301 P **P 15 45 24.9 -0.2**
comp=Z,22nm,0.5s,baz=84,slow=9.7,SNR=133
MKAR LR LR 16 04 17.3
comp=Z,212nm,18.8s,baz=62,slow=37
MKAR Makanchi Array 43.87 301 *e*P **P 15 45 24.7 -0.3**
TT01 Tatalina 44.06 36 *e*P **P 15 45 27.5 +1.2**
TTA Tatalina 44.07 35 *e*P **P 15 45 27.7 +1.2**
TTA pmax pmax
comp=Z,10.0nm,1.0s
TTA Tatalina 44.07 35 *e*P **P 15 45 27.7 +1.2**
comp=Z,10nm,1.0s
MAKZ Makanchi 44.07 301 *i*P **P 15 45 26.3 -0.4**
MAKZ pmax pmax
comp=Z,26nm,0.6s
MAKZ Makanchi 44.07 301 *e*P **P 15 45 26.3 -0.4**
comp=Z,32nm,0.6s
PCI Palu 44.09 213 P **P 15 45 27.4 +0.4**
SVW2 Sparrevohn 44.19 38 *e*P **P 15 45 28.6 +1.2**
comp=Z,37nm,1.0s
SBUM Sibu 44.94 225 ⇓P **P 15 45 34.2 +0.4**
SBUM Sibu 44.94 225 *e*P **P 15 45 33.5 -0.3**
comp=Z,12nm,1.1s
PHET Kaeng Krachan 45.31 248 P P 15 45 44.3 +7.5
comp=Z,14nm,0.8s
KURK Kurchatov 45.54 307 P **P 15 45 38.6 +0.4**
KURK pmax pmax
comp=Z,55nm,0.4s
KURK Kurchatov 45.54 307 P **P 15 45 38.6 +0.4**
RSO Redoubt Sub 45.57 39 *e*P **P 15 45 39.5 +0.9**
KURBB Kurchatov Arra 45.61 307 P **P 15 45 38.6 -0.1**
comp=Z,53nm,0.4s,baz=82,slow=8.3,SNR=222
KDAK Kodiak Island 45.80 43 *e*P **P 15 45 40.5 +0.3**
KDAK pmax pmax
comp=Z,115nm,0.7s
KDAK Kodiak Island 45.80 43 *e*P **P 15 45 40.5 +0.3**
comp=Z,114nm,0.7s
PPLA Purkeypile 45.82 36 *e*P **P 15 45 42.3 +1.8**
comp=Z,42nm,1.2s
CAST Castle Rocks 45.87 35 *e*P **P 15 45 42.4 +1.6**
comp=Z,18nm,0.9s
SPU Mount Spurr 45.90 38 *e*P **P 15 45 42.0 +1.0**
KTH Kantishna Hill 46.39 35 *e*P **P 15 45 46.5 +1.6**
comp=Z,40nm,1.0s
SUA Susitna One 46.52 38 *e*P **P 15 45 46.0 +0.1**
comp=Z,28nm,0.9s
PDGK Podgornoye 46.62 297 P **P 15 45 46.8 0.0**
PDGK pmax pmax
comp=Z,31nm,0.6s
TRF Thorofare Moun 46.68 35 *e*P **P 15 45 47.9 +0.7**
comp=Z,20nm,0.8s
COLD Coldfoot 46.77 30 *e*P **P 15 45 48.8 +1.0**
comp=Z,12nm,1.0s
KSM Kuching 46.81 226⇑P **P 15 45 49.1 +0.5**
KSM Kuching 46.81 226 *e*P **P 15 45 48.1 -0.5**
comp=Z,20nm,1.0s
SPSI Sidrap Palu 46.88 211 P **P 15 45 49.6 +0.5**
comp=Z,32nm,1.2s
RC01 Rabbit Creek A 47.02 38 *e*P **P 15 45 50.5 +0.7**
comp=Z,20nm,0.8s
MCK McKinley 47.27 34 *e*P **P 15 45 52.5 +0.8**
MCK pmax pmax
comp=Z,22nm,0.8s
MCK McKinley 47.27 34 *e*P **P 15 45 52.5 +0.8**
comp=Z,22nm,0.8s
PMR Palmer 47.28 37 *e*P **P 15 45 52.2 +0.5**
PMR pmax pmax
comp=Z,24nm,0.8s
PMR Palmer 47.28 37 *e*P **P 15 45 52.2 +0.5**
comp=Z,24nm,0.8s
RND Reindeer 47.32 35 *e*P **P 15 45 52.4 +0.2**
RND pmax pmax
comp=Z,28nm,0.8s
RND Reindeer 47.32 35 *e*P **P 15 45 52.4 +0.2**
comp=Z,28nm,0.8s
STKI Sintang 47.33 224 P **P 15 45 53.7 +1.1**
RAMN Ramite 47.42 273 *e*P **P 15 45 53.8 +0.2**
comp=Z,162nm,0.7s
GUN Gumba 47.54 275 *e*P **P 15 45 55.0 +0.4**
comp=Z,216nm,0.6s
WRH Wood River Hil 47.62 33 *e*P **P 15 45 54.9 +0.5**
comp=Z,31nm,0.8s
SML Sawmill 47.65 37 *e*P **P 15 45 55.3 +0.6**
SML pmax pmax
comp=Z,37nm,0.7s
SML Sawmill 47.65 37 *e*P **P 15 45 55.2 +0.6**
comp=Z,38nm,0.7s
CCB Clear Creek Bu 47.74 33 *e*P **P 15 45 56.0 +0.7**
comp=Z,9.8nm,0.8s
KAPI Kappang 47.84 211 *e*P **P 15 45 56.8 +0.3**
comp=Z,90nm,1.2s
DHY Denali Highway 48.01 35 *e*P **P 15 45 58.2 +0.6**
comp=Z,16nm,0.7s
KKN Kakani 48.06 275 *e*P **P 15 45 58.9 +0.4**
comp=Z,239nm,0.7s
PKIN Phulchoki 48.07 275 *e*P **P 15 45 59.2 +0.5**
comp=Z,76nm,0.5s
HDA Harding Lake 48.12 33 *e*P **P 15 45 58.4 +0.1**
comp=Z,26nm,0.8s
SCM Sheep Creek Mo 48.12 37 *e*P **P 15 45 59.3 +0.9**
SCM pmax pmax
comp=Z,35nm,0.8s
SCM Sheep Creek Mo 48.12 37 *e*P **P 15 45 59.3 +0.9**
comp=Z,35nm,0.8s
ILAR Eielson Array 48.13 33 P **P 15 45 58.8 +0.5**
comp=Z,22nm,0.7s,baz=269,slow=6.4,SNR=232
ILAR pP **pP 15 46 12.1 +0.5**
comp=Z,16nm,0.7s,baz=267,slow=6.3,SNR=15
ILAR LR LR 16 07 45.7
comp=Z,72nm,20.7s,baz=266,slow=38
ILB Eielson Array 48.13 33 *e*P **P 15 45 58.6 +0.3**
IL1 Eielson Array 48.13 33 *e*P **P 15 45 58.5 +0.2**
DMN Daman 48.28 275 *e*P **P 15 46 00.5 +0.2**
comp=Z,66nm,0.5s
GKN Gorkha 48.47 276 *e*P **P 15 46 01.7 +0.1**
comp=Z,164nm,0.5s
BBKI Banjar Baru 48.62 217 P P 15 46 02.0 -0.6
KRAB Krabi 48.82 243 P P 15 46 09.8 +5.6
comp=Z,50nm,0.6s,comp=Z,533nm
KLU Klutina 48.83 37 *e*P **P 15 46 04.8 +1.0**
comp=Z,26nm,0.7s
PAX Paxson 48.88 35 *e*P **P 15 46 05.1 +0.9**
PAX pmax pmax

comp=Z,21nm,0.8s
PAX Paxson 48.88 35 *e*P **P 15 46 05.1 +0.9**
comp=Z,21nm,0.8s
DIV Divide 48.94 38 *e*P **P 15 46 05.9 +1.2**
comp=Z,35nm,0.8s
EYAK Cordova Ski Ar 49.02 39 *e*P **P 15 46 06.7 +1.5**
comp=Z,35nm,1.1s
KOLN Koldanda 49.39 276 *e*P **P 15 46 09.0 +0.3**
comp=Z,79nm,0.5s
DOT Dot Lake 49.45 34 *e*P **P 15 46 08.8 +0.4**
comp=Z,37nm,0.8s
BMRM Bremner River 49.52 38 *e*P **P 15 46 10.3 +1.3**
comp=Z,32nm,1.0s
MENT Mentasta 49.68 35 *e*P **P 15 46 11.3 +1.1**
comp=Z,22nm,0.8s
PYUN Piuthan 49.71 277 *e*P **P 15 46 11.6 +0.5**
comp=Z,408nm,0.9s
CHKZ Chkalovo 49.80 312 *i* P **P 15 46 10.3 -0.9**
CHKZ pmax pmax
comp=Z,21nm,0.6s
BVA0 Borovoye Array 50.08 312 P **P 15 46 12.8 -0.5**
BVA0 pmax pmax
comp=Z,20nm,0.7s
BVAR Borovoye Array 50.08 312 P **PcP 15 47 32.5 +0.1**
comp=Z,7.3nm,0.6s,baz=77,slow=9.3,SNR=23
BVAR PcP **PcP**
comp=Z,17nm,0.7s,baz=85,slow=2.6,SNR=9.0
BVAR LR LR 16 08 22.9
comp=Z,301nm,18.9s,baz=80,slow=37
BRVK Borovoye 50.13 312*ce*P **P 15 46 13.8 +0.1**
BRVK pmax pmax
comp=Z,18nm,0.6s
BRVK Borovoye 50.13 312 *e*P **P 15 46 13.5 -0.2**
comp=Z,22nm,0.8s
FRU Bishkek 50.17 298 *e*P **P 15 46 15.0 +0.7**
IPM Ipoh 50.25 238 *e*P **P 15 46 14.5 -0.6**
comp=Z,27nm,0.8s
MMRI Maumere 50.25 206 P **P 15 46 15.3 +0.3**
MMRI Maumere 50.25 206 *e*P **P 15 46 14.7 -0.3**
comp=Z,117nm,1.4s
CRQM Cirque 50.26 38 *e*P **P 15 46 16.3 +1.4**
comp=Z,30nm,0.8s
AAK Ala-Archa 50.32 298 *e*P **P 15 46 17.3 +1.7**
AAK pmax pmax
comp=Z,24nm,0.8s
AAK Ala-Archa 50.32 298 *e*P **P 15 46 16.8 +1.3**
comp=Z,16nm,0.6s
KSH Kashi 50.34 293 P P 15 46 20.7 +5.0
KSH *ep*P sP 15 46 36.0 +1.2
KSH *es*P pP 15 46 43.0 +14
KSH PcS **PcS** **15 51 33.0 +1.9**
KSH S **S** **15 53 30.7 +5.5**
KSH ScS **ScS** **15 56 02.7 +0.1**
KSH SS **SS** **15 57 02.1 +3.1**
KSH pmax pmax
comp=Z,9.0nm,0.8s
KSH LR LR
comp=Z,150nm,5.0s
KSH LR LR
comp=Z,160nm,8.4s
KSH LR LR
comp=Z,290nm,12.9s
MYKOM Kota Tinggi 50.44 233 *e*P **P 15 46 16.6 +0.1**
comp=Z,15nm,0.9s
EGAK Eagle 50.57 33 *e*P **P 15 46 17.3 +0.4**
comp=Z,42nm,1.7s
BALM Baldy 50.60 38 *e*P **P 15 46 18.0 +0.7**
BALM pmax pmax
comp=Z,17nm,0.8s
BALM Baldy 50.60 38 *e*P **P 15 46 18.0 +0.7**
comp=Z,17nm,0.8s
SOEI Soe 50.64 203 P P 15 46 26.5 +8.4
SOEI Soe 50.64 203 *e*P **P 15 46 17.1 -0.9**
comp=Z,71nm,0.9s
ZRNK Zerenda 50.91 312 *e*P **P 15 46 19.3 -0.3**
ZRNK pmax pmax
comp=Z,34nm,0.8s
ZRNK Zerenda 50.91 312 *e*P **P 15 46 19.3 -0.3**
comp=Z,34nm,0.8s
DAWY Dawson 51.44 33 *e*P **P 15 46 24.4 +1.0**
comp=Z,8.3nm,0.9s
MNAS Manas 51.76 298 *i* P **P 15 46 26.6 +0.3**
MNAS pmax pmax
comp=Z,43nm,0.6s
MTN Manton Dam 51.93 194 *e*P **P 15 46 27.1 -0.4**
comp=Z,114nm,1.1s
COEN Coen 52.03 179 *e*P **P 15 46 28.9 +0.7**
comp=Z,78nm,0.8s
TWSI Taliwang, Sumb 52.38 212 P **P 15 46 30.3 -0.6**
PSI Prapat 52.89 239 *e*P **P 15 46 34.6 -0.3**
PSI pmax pmax
comp=Z,18nm,0.9s
PSI Prapat 52.89 239 *e*P **P 15 46 34.6 -0.3**
comp=Z,18nm,0.9s
KK31 Karatay Array 52.91 299 *i* P **P 15 46 34.3 -0.4**
KK31 pmax pmax
comp=Z,6.0nm,0.5s
KKAR Karatay Array 52.91 299 *e*P **P 15 46 34.4 -0.3**
KKAR Karatay Array 52.91 299 *e*P **P 15 46 34.4 -0.3**
HYT Haines Junctio 52.96 37 *e*P **P 15 46 37.0 +2.1**
INK Inuvik 53.00 28 P **P 15 46 35.6 +0.7**
comp=Z,22nm,0.9s,baz=284,slow=7.2,SNR=32
INK Inuvik 53.00 28 *e*P **P 15 46 35.9 +1.0**
INK pmax pmax
comp=Z,26nm,0.9s
INK Inuvik 53.00 28 *e*P **P 15 46 35.9 +1.0**
comp=Z,26nm,0.9s
BKNI Bangkinang 53.35 235 P **P 15 46 41.2 +3.0**
comp=Z,98nm,0.5s
NDI New Delhi 53.93 280 *e*P **P 15 46 40.0 -2.3**
MNSI Mandailing Nat 53.94 237 P P 15 46 52.8 +10
PWJI Pagerwojo 54.04 218 P **P 15 46 41.9 -1.3**
SDSI Sungai Dareh 54.06 234 P **P 15 46 44.0 +0.6**
comp=Z,56nm,0.9s,comp=Z,44µm
SKAG Skagway 54.36 39 *e*P **P 15 46 46.8 +1.8**
comp=Z,15nm,1.0s
SVE Sverdlovsk 54.51 318⇑ *i*P **P 15 46 46.8 +0.7**
SVE pmax pmax
comp=Z,62nm,0.9s
SVE MLR MLR
comp=Z,557nm,17.0s
UGM Wanagama 54.58 219 *e*P **P 15 46 45.7 -1.4**
comp=Z,710nm,1.7s
GSI Gunungsitoli 54.90 239 P **P 15 46 50.3 +0.8**
comp=Z,111nm,1.1s
GSI Gunungsitoli 54.90 239 *e*P **P 15 46 48.2 -1.2**
comp=Z,146nm,1.2s
LHSI Lahat 55.04 229 P **P 15 46 51.0 +0.5**
comp=Z,96nm,1.1s
SOKR Solikamsk 55.60 322*d i*P **P 15 46 53.0 -0.9**
SOKR pmax pmax
comp=Z,21nm,1.5s
SOKR MLR MLR
comp=Z,185nm,16.0s
ARU Arti 55.72 318 P **P 15 46 54.9 0.0**
comp=Z,16nm,0.7s,baz=71,slow=3.4,SNR=30
ARU LR LR 16 12 41.7
comp=Z,436nm,20.7s,baz=76,slow=38
ARU Arti 55.72 318*c i*P **P 15 46 54.7 -0.2**
ARU 15 47 54.4
ARU 15 48 58.7
ARU S **S** **15 54 40.8 +3.2**
ARU SS **SS** **15 58 19.9 -3.0**
ARU SSS SSS 16 00 34.2
ARU pmax pmax
comp=Z,35nm,1.2s
ARU MLR MLR
comp=Z,539nm,18.0s
ARU Arti 55.72 318 *e*P **P 15 46 54.5 -0.3**
comp=Z,43nm,1.0s
KASI Kota Agung 55.84 227 P **P 15 46 56.9 +0.8**
comp=Z,35nm,1.7s
DLBC Dease Lake 57.30 39 *e*P **P 15 47 08.5 +2.3**
comp=Z,25nm,1.0s
KBL Kabul 57.42 290 *e*P **P 15 47 06.9 -0.7**
KBL pmax pmax
comp=Z,27nm,0.6s
KBL Kabul 57.42 290 *e*P **P 15 47 06.9 -0.7**
comp=Z,27nm,0.6s
AB31 Akbulak array 57.49 310 *i* P **P 15 47 06.8 -0.7**
AB31 pmax pmax
comp=Z,20nm,0.6s
ABKAR Akbulak array 57.49 310 *e*P **P 15 47 06.8 -0.8**
AKTO Aktyubinsk 58.18 312 P **P 15 47 12.5 +0.1**
comp=Z,9.5nm,0.6s,baz=62,slow=8.7,SNR=22
AKTO LR LR 16 13 29.8
comp=Z,211nm,18.0s,baz=59,slow=37
AKTO Aktyubinsk 58.18 312 P **P 15 47 12.5 +0.1**
AKTO pmax pmax
comp=Z,16nm,0.8s
AKTO MLR MLR
comp=Z,211nm,18.0s
FITZ Fitzroy Crossi 58.21 198 *e*P **P 15 47 12.8 -0.1**
comp=Z,56nm,1.4s
CTA Charters Tower 58.25 175 P **P 15 47 13.0 -0.1**
comp=Z,10nm,0.6s,baz=352,slow=7.8,SNR=20
CTA Charters Tower 58.25 175 P **P 15 47 13.0 -0.1**
CTA pmax pmax
comp=Z,11nm,0.6s
CTAO Charters Tower 58.25 175 *e*P **P 15 47 12.9 -0.1**
CTAO pmax pmax
comp=Z,43nm,1.4s
CTAO Charters Tower 58.25 175 *e*P **P 15 47 12.9 -0.1**
comp=Z,43nm,1.4s
WRAB Tennant Creek 58.41 189*ce*P **P 15 47 13.8 -0.4**
WRAB Tennant Creek 58.41 189 *e*P **P 15 47 13.5 -0.7**
comp=Z,90nm,0.9s
WB2 Warramunga Arr 58.42 189 *e*P **P 15 47 13.5 -0.7**
comp=Z,87nm,0.8s
WRA Warramunga Arr 58.42 189 P **P 15 47 13.8 -0.4**
comp=Z,75nm,0.5s,baz=6.2,slow=7.1,SNR=270
WRA pP **pP** **15 47 27.6 -0.3**
comp=Z,30nm,0.7s,baz=5.2,slow=7.2,SNR=9.7
HYB Hyderabad 58.74 269 *i* P **P 15 47 18.5 +1.7**
SPA0 Spitsbergen Ar 59.35 349 *e*P **P 15 47 19.9 -0.2**
SPITS Spitsbergen Ar 59.35 349 P **P 15 47 20.2 +0.1**
comp=Z,7.2nm,0.9s,baz=78,slow=7.8,SNR=7.8
KBS Kingsbay 59.46 350 *e*P **P 15 47 21.8 +1.0**
KBS IAmb IAmb 15 47 22.2
comp=Z,25nm,0.8s
KBS Kingsbay 59.46 350 *e*P **P 15 47 21.0 +0.2**
KBS pmax pmax
comp=Z,23nm,0.8s
KBS Kingsbay 59.46 350 *e*P **P 15 47 21.0 +0.2**
comp=Z,23nm,0.8s
HSPB Hornsund (broa 60.28 348 *e*P **P 15 47 26.8 +0.3**
HSPB *e* 15 49 19.8
LVZ Lovozero 61.13 336*ce*P **P 15 47 32.9 +0.5**
LVZ pmax pmax
comp=Z,74nm,2.5s
APA Apatity 61.71 336⇓ *i*P **P 15 47 35.7 -0.6**
APA pmax pmax
comp=Z,23nm,0.8s
APA MLR MLR
comp=Z,500nm,18.0s
AS01 Alice Springs 62.14 188 *e*P **P 15 47 39.2 -0.4**
AS31 Alice Springs 62.14 188 *e*P **P 15 47 39.4 -0.4**
comp=Z,15nm,0.8s
ASAR Alice Springs 62.15 188 P **P 15 47 39.6 -0.1**
comp=Z,46nm,0.7s,baz=9.5,slow=5.4,SNR=611
YKA Yellowknife Ar 62.43 31 P **P 15 47 41.6 +0.5**
comp=Z,11nm,0.8s,baz=302,slow=6.7,SNR=118
YKA pP **pP** **15 47 55.4 +0.5**
comp=Z,5.8nm,0.8s,baz=302,slow=6.7,SNR=9.6
MBWA Marble Bar 62.78 203 *e*P **P 15 47 43.2 -0.7**
comp=Z,33nm,1.1s
KLMR Klimovskoe 62.93 328 *e*P **P 15 47 43.3 -1.2**
KLMR *e* 15 50 01.6
KLMR pmax pmax
comp=Z,22nm,1.2s
ARA0 ARCESS Array S 62.96 339 *e*P **P 15 47 44.6 0.0**
ARCES ARCESS Array B 62.96 339 P **P 15 47 44.8 +0.2**
comp=Z,12nm,0.9s,baz=46,slow=8.7,SNR=23
ARCES LR LR 16 21 18.3
comp=Z,71nm,19.3s,baz=48,slow=42
GEYT Alibeck 63.65 299 P **P 15 47 49.8 +0.1**
comp=Z,9.0nm,0.8s,baz=37,slow=5.6,SNR=23
GEYT LR LR 16 17 26.0
comp=Z,265nm,18.9s,baz=165,slow=38
EIDS Eidsvold 63.93 171 *e*P **P 15 47 52.1 +0.6**
comp=Z,26nm,0.6s
DZM Mont Dzumac 64.31 155 P **P 15 47 54.5 +0.4**
comp=Z,35nm,0.8s,baz=13,slow=5.4,SNR=8.2
DZM Mont Dzumac 64.31 155 *e*P **P 15 47 54.8 +0.7**
comp=Z,100nm,1.3s
DAG Danmarks Havn 64.52 355⇑ *i*P **P 15 47 54.7 -0.1**
comp=Z,32nm,0.9s
DAG Danmarks Havn 64.52 355⇑ *i*P **P 15 47 54.7 -0.1**
DAG pmax pmax
comp=Z,27nm,0.9s
TRO Tromso 64.65 341 *e*P **P 15 47 55.6 -0.1**
TRO IAmb IAmb 15 47 56.5
comp=Z,32nm,0.8s
TRO *e* 15 50 21.5
LLLB Lillooet 64.97 44 *e*P **P 15 47 59.1 +1.0**
comp=Z,34nm,1.1s
PGC Sidney 65.08 47 *e*P **P 15 48 00.0 +1.2**
comp=Z,31nm,0.8s
NLWA Neilton Lookou 65.47 48 *e*P **P 15 48 03.5 +2.1**
comp=Z,59nm,0.9s
B05A Bryant 66.05 47 P **P 15 48 06.8 +1.7**
baz=301
MOS Moscow 66.51 323 *e*P **P 15 48 07.6 -0.3**
MOS *e* 15 48 36.7
MOS pmax pmax
comp=Z,49nm,1.1s
KULLO Kullorsuaq 66.64 6⇑ *i*P **P 15 48 08.3 -0.1**
comp=Z,19nm,0.7s
KULLO Kullorsuaq 66.64 6⇑ *i*P **P 15 48 08.3 -0.1**
KULLO pmax pmax
comp=Z,19nm,0.7s
F04D Rainier, OR 66.65 49 P **P 15 48 10.9 +1.9**
baz=302
STEI Steigen 66.81 341 *e*P **P 15 48 10.0 +0.4**
STEI *ep*P **pP** **15 48 22.7 -0.8**
C06D Leavenworth 66.92 47 P **P 15 48 12.3 +1.6**
baz=302
G03D McMinnville, O 66.95 50 P **P 15 48 12.7 +1.8**
baz=302
VRH Novokhopyorsk 66.95 318 *e*P **P 15 48 10.6 -0.2**
VRH pmax pmax
comp=Z,40nm,0.8s
LON Longmire 67.01 48 *e*P **P 15 48 12.8 +1.4**
LON pmax pmax
comp=Z,10.0nm,1.2s
LON Longmire 67.01 48 *e*P **P 15 48 12.8 +1.4**
comp=Z,10.0nm,1.2s
LOF Lofoten 67.09 341 *e*P **P 15 48 12.0 +0.6**
COR Corvallis 67.26 51 *e*P **P 15 48 14.3 +1.4**
COR pmax pmax
comp=Z,69nm,1.3s
COR Corvallis 67.26 51 *e*P **P 15 48 14.3 +1.4**
comp=Z,69nm,1.3s
OBN Obninsk 67.36 323*ce*P **P 15 48 13.4 +0.1**
OBN *e**PP **pP** **15 48 25.3 -1.9**
OBN *SP **sP** **15 48 29.0 -3.7**
OBN *e* 15 48 35.2
OBN *eS **S** **15 57 11.5 +6.6**
OBN SS **SS** **16 01 27.0 +2.4**
OBN pmax pmax
comp=Z,31nm,1.2s
OBN MLR MLR
comp=Z,187nm,16.0s
B08A Colville Reser 67.57 46 *e*P **P 15 48 15.8 +0.9**
comp=Z,43nm,1.4s
I03D Drain, OR 67.70 51 P **P 15 48 18.0 +2.3**
baz=302
FIA1 FINESS Array S 67.90 332 *e*P **P 15 48 16.2 -0.4**
FINES FINESS Array B 67.90 332 P **P 15 48 16.6 0.0**
comp=Z,39nm,0.8s,baz=33,slow=10,SNR=73
FINES LR LR 16 20 34.6
comp=Z,146nm,18.8s,baz=44,slow=38
EDM Edmonton 68.02 39 *e*P **P 15 48 18.4 +0.8**
EDM pmax pmax
comp=Z,33nm,0.9s
EDM Edmonton 68.02 39 *e*P **P 15 48 18.4 +0.8**
comp=Z,33nm,0.9s
G05D Wamic, OR 68.10 49 P **P 15 48 20.1 +1.9**
baz=303
I04A Tendick Farm, 68.22 51 P **P 15 48 20.5 +1.5**
baz=303,SNR=15
VSR Storozhevoye 68.28 319 *e*P **P 15 48 18.9 -0.3**
VSR pmax pmax
comp=Z,40nm,0.8s
L02D Cave Junction, 68.36 53 P **P 15 48 21.8 +1.9**
baz=303,SNR=6.1
C09A Chrisman Ranch 68.47 46 *e*P **P 15 48 21.4 +1.0**
comp=Z,24nm,0.8s
D08A Wollman Farm, 68.51 47 *e*P **P 15 48 21.5 +0.8**
comp=Z,18nm,0.7s
G06A Carlson Farm, 68.51 49 *e*P **P 15 48 22.0 +1.1**
comp=Z,21nm,1.1s
HUMO Hull Mountain 68.53 52 *e*P **P 15 48 22.2 +1.3**
comp=Z,22nm,1.6s
I05D Terrebonne, OR 68.58 50 P **P 15 48 22.7 +1.4**
baz=303,SNR=5.1
JCC Jacoby Creek, 68.82 54 *e*P **P 15 48 24.3 +1.6**
comp=Z,48nm,1.4s
NEW Newport 68.85 45 P **P 15 48 24.2 +1.3**
baz=304
NEW Newport 68.85 45 *e*P **P 15 48 23.8 +0.9**
NEW pmax pmax
comp=Z,25nm,0.9s
NEW Newport 68.85 45 *e*P **P 15 48 23.8 +0.9**
comp=Z,25nm,0.9s
KHMM Horse Mountain 68.98 54 *e*P **P 15 48 25.9 +2.0**
comp=Z,42nm,1.3s
ARMA Armidale 68.98 171 *e*P **P 15 48 25.1 +1.4**
comp=Z,34nm,1.1s
YBH Yreka Blue Hor 69.16 53 *e*P **P 15 48 26.6 +1.6**
YBH pmax pmax
comp=Z,26nm,1.0s
YBH Yreka Blue Hor 69.16 53 *e*P **P 15 48 26.6 +1.6**
comp=Z,26nm,1.0s
J05D Fort Rock, OR 69.22 51 P **P 15 48 27.4 +2.0**
baz=304
M02C Callahan 69.25 53 P **P 15 48 27.5 +1.9**
baz=303,SNR=12
SUMG Summit 69.39 0⇑ *i*P **P 15 48 27.1 +0.9**
SUMG pmax pmax
comp=Z,51nm,0.9s
SUMG Summit 69.39 0⇑ *i*P **P 15 48 27.1 +0.9**
SUMG pmax pmax
comp=Z,51nm,0.9s
SUMG Summit 69.39 0 *e*P **P 15 48 26.8 +0.6**
comp=Z,52nm,0.9s
N02D Trinity Center 69.57 54 P **P 15 48 29.2 +1.6**
baz=303,SNR=10
VSU Vasula 69.59 330*ce*P **P 15 48 26.9 -0.3**
VSU pmax pmax
comp=Z,49nm,0.6s
GOF Gofitskoye 69.60 312⇑ *e*P **P 15 48 28.1 +0.6**
GOF *e*S **S** **15 57 31.2 -0.8**
GOF pmax pmax
comp=Z,70nm,1.0s
M04C Macdoel 69.67 52 P **P 15 48 30.0 +1.8**
baz=304
K05A Summer Lake 69.74 51 *e*P **P 15 48 30.3 +1.6**
comp=Z,46nm,0.9s
STKA Stephens Creek 69.85 180 P **P 15 48 29.1 +0.1**
comp=Z,14nm,0.7s,baz=0.3,slow=6.6,SNR=48
STKA LR LR 16 20 55.1
comp=Z,104nm,18.5s,baz=26,slow=37
STKA Stephens Creek 69.85 180 *e*P **P 15 48 29.0 +0.1**
comp=Z,8.4nm,1.3s
WDC Whiskeytown Da 69.89 54 *e*P **P 15 48 30.5 +1.1**
WDC pmax pmax
comp=Z,19nm,1.1s
WDC Whiskeytown Da 69.89 54 *e*P **P 15 48 30.5 +1.1**
comp=Z,19nm,1.1s
FORT Forrest 69.99 193 *e*P **P 15 48 29.7 -0.1**
comp=Z,765nm,0.8s
F10A Beach Ranch, E 70.08 47 *e*P **P 15 48 31.3 +0.7**
comp=Z,5.5nm,0.8s
WALA Waterton Lakes 70.14 43 *e*P **P 15 48 32.0 +1.0**
comp=Z,22nm,0.8s
NCK Nalchik 70.15 310 *e*P **P 15 48 31.5 +0.5**
NCK pmax pmax
comp=Z,15nm,1.1s
ZEI Tsey 70.36 309 *e*P **P 15 48 31.2 -1.3**
ZEI pmax pmax
comp=Z,35nm,0.4s
BSMT Bassoo Peak 70.37 44 *e*P **P 15 48 33.2 +0.7**
KIV Kislovodsk 70.44 311 *i* P **P 15 48 33.4 +0.6**
SNR=9.8
KIV Kislovodsk 70.44 311 *e*P **P 15 48 33.3 +0.5**
KIV pmax pmax
comp=Z,76nm,1.0s
KIV MLR MLR
comp=Z,139nm,18.0s
KIV Kislovodsk 70.44 311 *e*P **P 15 48 33.5 +0.7**
comp=Z,71nm,1.0s
KBZ Khabaz 70.44 311 P **P 15 48 32.8 +0.1**
comp=Z,23nm,0.9s,baz=49,slow=4.5,SNR=35
KBZ LR LR 16 24 24.3
comp=Z,171nm,18.0s,baz=52,slow=40
BLMT Blacktail Moun 70.51 44 *e*P **P 15 48 34.4 +1.0**
O03D Paynes Creek 70.52 54 P **P 15 48 34.2 +0.9**
baz=304,SNR=7.0
MOD Modoc Plateau 70.56 52 *e*P **P 15 48 34.8 +1.1**
comp=Z,13nm,0.8s
BMO Blue Mountains 70.68 48 *e*P **P 15 48 35.1 +0.9**
comp=Z,15nm,1.1s
JTMT Jette 70.71 44 *e*P **P 15 48 35.6 +1.1**
YBMT Yellow Bay 70.79 44 *e*P **P 15 48 35.7 +0.8**
NEY Neytrino 70.81 310 *e*P **P 15 48 35.9 +0.7**
NEY pmax pmax
comp=Z,2.0nm,0.8s
SCO Scoresbysund 70.87 354 *i* P **P 15 48 35.6 +0.8**
comp=Z,13nm,0.8s
SCO Scoresbysund 70.87 354 *i* P **P 15 48 35.6 +0.8**
SCO pmax pmax
comp=Z,13nm,0.8s
BBOO Buckleboo 71.00 185 *e*P **P 15 48 36.1 +0.2**
comp=Z,49nm,0.9s
SWMT Swartz Lake 71.00 44 *e*P **P 15 48 37.1 +0.9**
ORV Oroville 71.13 54 *e*P **P 15 48 37.4 +0.4**
ORV pmax pmax
comp=Z,24nm,1.3s
ORV Oroville 71.13 54 *e*P **P 15 48 37.4 +0.4**
comp=Z,24nm,1.3s
BANOM Banah 71.27 289 P **P 15 48 38.4 +0.3**
WVOR Wild Horse Val 71.28 50 *e*P **P 15 48 38.5 +0.5**
WVOR pmax pmax
comp=Z,22nm,1.3s
WVOR Wild Horse Val 71.28 50 *e*P **P 15 48 38.5 +0.5**
comp=Z,22nm,1.3s
AKH Akhalkalaki 71.39 308⇓ *i*P **P 15 48 40.0 +1.2**
MSO Missoula 71.44 45 P **P 15 48 39.8 +0.9**
baz=306
MSO Missoula 71.44 45 *e*P **P 15 48 39.2 +0.3**
comp=Z,18nm,1.1s
SLMT Seeley Lake 71.44 44 *e*P **P 15 48 39.6 +0.7**
CHMT Chamberlain Mo 71.77 44 *e*P **P 15 48 40.8 -0.1**
AFDM Forest Hills D 71.81 55 *e*P **P 15 48 41.9 +0.7**
comp=Z,16nm,1.2s
UOSS Minazif 71.89 288 *e*P **P 15 48 41.2 -0.6**
comp=Z,22nm,0.9s
NACGM Naroch 71.92 327 *e* P **P 15 48 40.0 -1.4**
NACGM *e*LR LR 16 22 04.0
HATD Hatta, Dubai 72.01 288 *i* P **P 15 48 43.0 +0.5**
SNR=8.0
ASHO Ashiyah 72.15 288 *i* P **P 15 48 43.3 0.0**
SNR=6.9
ILULI Ilulissat 72.33 5⇑ *i*P **P 15 48 43.6 0.0**
comp=Z,34nm,0.9s
ILULI Ilulissat 72.33 5⇑ *i*P **P 15 48 43.6 0.0**
ILULI pmax pmax
comp=Z,34nm,0.9s
FFC Flin Flon 72.34 33 *e*P **P 15 48 44.3 +0.3**
FFC pmax pmax
comp=Z,32nm,0.8s
FFC Flin Flon 72.34 33 *e*P **P 15 48 44.3 +0.3**
comp=Z,32nm,0.8s
MFID Camas Ranch 72.38 48 *e*P **P 15 48 45.4 +0.8**
comp=Z,12nm,0.8s
PAHR Pah Rah Range 72.38 53 *e*P **P 15 48 45.4 +0.7**
comp=Z,22nm,1.0s
SOC Sochi 72.40 312 *e*P **P 15 48 43.3 -1.2**
SOC *e* 15 51 23.2
SOC *e*PPP PPP 15 53 11.5
SOC *e*S **S** **15 58 03.4 -1.1**
SOC *e*SS **SS** **16 02 42.5 -0.2**
SOC pmax pmax
comp=Z,29nm,0.9s
SOC MLR MLR
comp=Z,239nm,17.0s
FCC Fort Churchill 72.61 27 *e*P **P 15 48 45.5 +0.1**
FCC pmax pmax
comp=Z,32nm,1.0s
FCC Fort Churchill 72.61 27 *e*P **P 15 48 45.5 +0.1**
comp=Z,32nm,1.0s
HRY Holter Researc 72.67 44 *e*P **P 15 48 47.0 +0.8**
CMB Columbia Colle 72.71 55 *e*P **P 15 48 47.5 +1.0**
CMB pmax pmax
comp=Z,26nm,1.2s
CMB Columbia Colle 72.71 55 *e*P **P 15 48 47.5 +1.0**
comp=Z,26nm,1.2s
LRM Limekiln Ridge 72.87 45 *e*P **P 15 48 48.4 +0.8**

NC405 NORSAR Array S 72.97 337 *eP* **P 15 48 47.7 +0.1**
NC303 NORSAR Array S 72.99 337 *eP* **P 15 48 47.5 -0.1**
ANN Anapa 72.99 314 *eP* **P 15 48 47.7 -0.3**
ANN *eS* **S** 15 58 09.0 -2.1
ANN pmax pmax
comp=Z,35nm,1.3s
ANN MLR MLR
comp=Z,237nm,21.0s
MOL Molde 73.01 340 *eP* **P 15 48 48.4 +0.6**
WAKR Walker 73.05 54 *eP* **P 15 48 49.2 +0.5**
comp=Z,11nm,1.0s
DLMT Dillon 73.07 45 *eP* **P 15 48 49.4 +0.8**
comp=Z,39nm,1.2s
HLID Hailey 73.12 48 P **P 15 48 50.4 +1.4**
baz=307
HLID Hailey 73.12 48 *eP* **P 15 48 50.0 +1.0**
comp=Z,12nm,1.0s
NC204 NORSAR Array S 73.13 338 *eP* **P 15 48 48.3 -0.3**
NB2 NORSAR Subarra 73.18 337 P **P 15 48 48.7 -0.2**
comp=Z,45nm,0.8s,baz=41,slow=6.2
NB2 NORSAR Subarra 73.18 337 P **P 15 48 48.7 -0.2**
baz=41,slow=6.2
NB2 NORSAR Subarra 73.18 337 P **P 15 48 48.6 -0.3**
NB2 pmax pmax
comp=Z,38nm,0.9s
NOA NORSAR Array B 73.18 337 P **P 15 48 49.1 +0.2**
comp=Z,36nm,0.8s,baz=39,slow=5.8,SNR=84
NOA pP **pP** 15 49 01.8 -1.1
comp=Z,5.7nm,0.8s,baz=34,slow=4.8,SNR=7.3
NOA LR LR 16 23 37.3
comp=Z,244nm,21.7s,baz=40,slow=38
MCMT McKenzie Canyo 73.25 46 *eP* **P 15 48 50.0 +0.2**
NBO02 NORSAR Array S 73.28 338 *eP* **P 15 48 49.5 0.0**
BMN Battle Mountai 73.31 52 *eP* **P 15 48 51.3 +1.1**
BMN pmax pmax
comp=Z,33nm,1.3s
BMN Battle Mountai 73.31 52 *eP* **P 15 48 51.3 +1.1**
comp=Z,33nm,1.3s
NBO00 NORSAR Array S 73.32 338 *eP* **P 15 48 49.7 0.0**
NC602 NORSAR Array S 73.32 337 *eP* **P 15 48 49.3 -0.4**
BOZ Bozeman (W) 73.43 45 P **P 15 48 52.2 +1.4**
baz=308
BOZ Bozeman (W) 73.43 45 *eP* **P 15 48 52.0 +1.2**
BOZ pmax pmax
comp=Z,46nm,1.4s
BOZ Bozeman (W) 73.43 45 *eP* **P 15 48 52.0 +1.2**
comp=Z,46nm,1.4s
NAO01 NORSAR Array S 73.43 337 *eP* **P 15 48 50.1 -0.2**
AKASG Malin Array Be 73.58 322 P **P 15 48 51.1 -0.2**
comp=Z,32nm,0.8s,baz=45,slow=6.3,SNR=81
AKASG LR LR 16 23 59.7
comp=Z,291nm,18.6s,baz=55,slow=38
AKBB Malin Array Si 73.58 322 *eP* **P 15 48 50.7 -0.6**
AKBB Malin Array Si 73.58 322 *eP* **P 15 48 50.7 -0.6**
KIEV Kiev 73.59 322 *c iP* **P 15 48 50.8 -0.6**
KIEV pmax pmax
comp=Z,38nm,0.9s
KIEV Kiev 73.59 322 *eP* **P 15 48 50.7 -0.6**
comp=Z,32nm,0.8s
AK11 Malin Array Si 73.62 322 *eP* **P 15 48 50.7 -0.8**
MLAC Mammoth, Mammo 73.94 55 P **P 15 48 55.9 +1.8**
baz=306
QLMT Earthquake Lak 74.05 45 *eP* **P 15 48 55.6 +1.1**
OSL Oslo 74.20 337 *eP* **P 15 48 55.4 +0.6**
OSL IAmb IAmb 15 48 55.7
comp=Z,47nm,0.8s
YHB Horse Butte 74.23 45 *eP* **P 15 48 56.9 +1.3**
comp=Z,21nm,0.9s
ELK Elko 74.33 50 *eP* **P 15 48 57.5 +1.3**
ELK pmax pmax
comp=Z,6.0nm,0.9s
ELK Elko 74.33 50 *eP* **P 15 48 57.5 +1.3**
comp=Z,6.3nm,0.9s
GCMT Greycliff 74.42 44 *eP* **P 15 48 57.6 +1.1**
HYA Hoyanger 74.53 339 *eP* **P 15 48 57.2 +0.5**
HYA IAmb IAmb 15 48 57.9
comp=Z,43nm,1.0s
SFJD Kangerlussuaq 74.55 5 *i P* **P 15 48 56.6 -0.1**
comp=Z,19nm,0.8s
SFJD Kangerlussuaq 74.55 5 *i P* **P 15 48 56.6 -0.1**
SFJD pmax pmax
comp=Z,19nm,0.8s
YFT Old Faithful 74.61 45 *eP* **P 15 48 59.2 +1.3**
comp=Z,14nm,0.8s
TIN Tinemaha, Big 74.67 55 P **P 15 48 60.0 +1.8**
baz=307
YPP Pitchstone Pla 74.75 45 *eP* **P 15 49 00.6 +1.9**
comp=Z,9.5nm,0.8s
SIM Simferopol' 74.75 316 *d iP* **P 15 48 58.6 +0.3**
SIM *i* 15 49 11.0
SIM pmax pmax
comp=Z,80nm,0.7s
SIM MLR MLR
comp=N,300nm,28.3s
KONO Kongsberg 74.78 337 *eP* **P 15 48 58.5 +0.4**
KONO IAmb IAmb 15 48 58.8
comp=Z,26nm,1.0s
KONO Kongsberg 74.78 337 *eP* **P 15 48 59.1 +1.0**
KONO pmax pmax
comp=Z,113nm,1.2s
KONO Kongsberg 74.78 337 *eP* **P 15 48 58.0 -0.1**
comp=Z,25nm,1.0s
VES Vestal, Richgr 74.84 56 P **P 15 48 59.6 +0.7**
baz=306
KLNR Kaliningrad 74.87 329 *i P* **P 15 48 59.1 +0.4**
KLNR pmax pmax
comp=Z,65nm,1.0s
IMW Indian Meadow 74.90 46 *eP* **P 15 49 01.3 +1.7**
comp=Z,23nm,0.8s
PKM Mcpherson Peak 74.92 57 P **P 15 49 01.3 +1.6**
baz=306
FLWY Flagg Ranch 74.92 45 *eP* **P 15 49 01.3 +1.8**
comp=Z,36nm,1.4s
RLMT Red Lodge 75.06 44 P **P 15 49 01.8 +1.5**
baz=310
RLMT Red Lodge 75.06 44 *eP* **P 15 49 01.5 +1.2**
comp=Z,95nm,2.0s
MOOW Moose Ponds 75.11 46 *eP* **P 15 49 02.2 +1.5**
comp=Z,14nm,0.9s
CWC Cottonwood Cre 75.13 55 P **P 15 49 02.2 +1.4**
baz=307
TPAW Teton Pass 75.15 46 *eP* **P 15 49 02.7 +1.7**
comp=Z,16nm,0.7s
HVU Hansel Valley 75.17 48 *eP* **P 15 49 02.5 +1.5**
HVU pmax pmax
comp=Z,16nm,0.8s
HVU Hansel Valley 75.17 48 *eP* **P 15 49 02.5 +1.5**
comp=Z,16nm,0.8s
GRAC Grapevine Rang 75.26 54 P **P 15 49 03.2 +1.8**
baz=307
LOHW Long Hollow 75.27 46 *eP* **P 15 49 03.0 +1.3**
comp=Z,7.7nm,0.8s
SNOW Snow King Moun 75.28 46 *eP* **P 15 49 03.4 +1.7**
comp=Z,17nm,0.8s
REDW Red Top Meadow 75.29 46 *eP* **P 15 49 03.1 +1.4**
comp=Z,18nm,0.9s
ISA Isabella, Lake 75.34 56 P **P 15 49 01.9 0.0**
baz=307
ISA Isabella, Lake 75.34 56 *eP* **P 15 49 02.0 0.0**
ISA pmax pmax
comp=Z,10.0nm,0.9s
ISA Isabella, Lake 75.34 56 *eP* **P 15 49 02.0 0.0**
comp=Z,9.8nm,0.9s
ODD1 Odda 75.44 339 *eP* **P 15 49 02.6 +0.6**
ODD1 IAmb IAmb 15 49 03.4
comp=Z,30nm,0.9s
DGMT Dagmar 75.51 39 P **P 15 49 03.6 +1.0**
baz=312
DGMT Dagmar 75.51 39 *eP* **P 15 49 03.0 +0.4**
comp=Z,66nm,1.1s
AHID Auburn Hatcher 75.52 47 *eP* **P 15 49 03.8 +0.8**
comp=Z,15nm,0.6s
BGU Big Grassy Mou 75.55 49 *eP* **P 15 49 04.2 +1.1**
comp=Z,16nm,1.2s
DAC Darwin (Calif) 75.55 55 *eP* **P 15 49 03.9 +0.6**
DAC pmax pmax
comp=Z,13nm,0.9s
DAC Darwin (Calif) 75.55 55 *eP* **P 15 49 03.9 +0.6**
comp=Z,13nm,0.9s
R11A Troy Canyon, C 75.57 52 P **P 15 49 04.9 +1.6**
baz=308
R11A Troy Canyon, C 75.57 52 *eP* **P 15 49 04.3 +0.9**
comp=Z,30nm,1.3s
LAO LASA Array 75.67 41 P **P 15 49 05.2 +1.6**
baz=311
LAO LASA Array 75.67 41 *eP* **P 15 49 04.9 +1.3**
comp=Z,48nm,0.9s

SORM Soroca 75.70 321 *⇑iP* **P 15 49 03.3 -0.4**
A25A Svangstu Ranch 75.73 38 P **P 15 49 05.1 +1.2**
baz=313
MPMC Manual Prospec 75.75 55 P **P 15 49 05.7 +1.3**
baz=307
OSI Osito Audit: C 75.80 57 P **P 15 49 06.4 +1.8**
baz=307
OSI Osito Audit: C 75.80 57 *eP* **P 15 49 06.0 +1.4**
comp=Z,21nm,0.8s
BLS5 Blasjo 75.90 338 *eP* **P 15 49 04.8 +0.2**
BLS5 IAmb IAmb 15 49 06.5
comp=Z,58nm,1.2s
FURC Furnace Creek, 75.90 55 P **P 15 49 06.7 +1.7**
baz=307
LRMC Laurel Mtn Rad 75.97 56 P **P 15 49 06.9 +1.3**
baz=307
HWUT Hardware Ranch 75.98 48 *eP* **P 15 49 06.8 +1.2**
comp=Z,36nm,1.1s
TPNV Topopah Spring 76.00 54 P **P 15 49 07.1 +1.3**
baz=308
TPNV Topopah Spring 76.00 54 *eP* **P 15 49 06.8 +1.0**
TPNV pmax pmax
comp=Z,19nm,0.8s
TPNV Topopah Spring 76.00 54 *eP* **P 15 49 06.8 +1.0**
comp=Z,19nm,0.8s
RSUT Red Spur Mount 76.05 48 *eP* **P 15 49 07.9 +1.7**
EDW2 Edwards Air Fo 76.12 57 P **P 15 49 07.8 +1.4**
baz=307
DUG Dugway, Tooele 76.13 50 P **P 15 49 08.3 +1.8**
baz=309
DUG Dugway, Tooele 76.13 50 *eP* **P 15 49 07.8 +1.3**
DUG pmax pmax
comp=Z,41nm,1.3s
DUG Dugway, Tooele 76.13 50 *eP* **P 15 49 07.8 +1.3**
comp=Z,41nm,1.3s
B25A Knox Farm, Ray 76.15 39 P **P 15 49 07.9 +1.5**
baz=313
A26A Wade Farm, Ken 76.27 38 P **P 15 49 08.1 +1.2**
baz=313
DECC Green Verdugo 76.28 57 P **P 15 49 08.4 +1.1**
baz=307
TCUT Toone Canyon 76.38 48 *eP* **P 15 49 09.4 +1.3**
comp=Z,188nm,1.9s
BW06 Boulder Array 76.40 46 P **P 15 49 09.0 +0.9**
baz=310
BW06 Boulder Array 76.40 46 *eP* **P 15 49 08.7 +0.6**
PD31 Pinedale Array 76.40 46 *eP* **P 15 49 08.6 +0.5**
PDAR Pinedale Array 76.40 46 P **P 15 49 08.8 +0.8**
comp=Z,15nm,0.6s,baz=267,slow=1.7,SNR=192
PDAR pP **pP** 15 49 21.8 -0.4
comp=Z,3.4nm,0.6s,baz=260,slow=3.1,SNR=4.6
CTU Camp Tracy 76.45 49 *eP* **P 15 49 09.3 +1.0**
comp=Z,71nm,1.3s
MWC Mount Wilson 76.48 57 *eP* **P 15 49 09.3 +0.7**
MWC pmax pmax
comp=Z,14nm,0.9s
MWC Mount Wilson 76.48 57 *eP* **P 15 49 09.3 +0.7**
comp=Z,14nm,0.9s
C25A Freed Ranch, W 76.49 39 P **P 15 49 09.4 +1.1**
baz=313
B26A Jensen Ranch, 76.54 38 P **P 15 49 09.8 +1.3**
baz=313
BSD Bornholm Skovb 76.54 332 *⇑iP* **P 15 49 08.1 -0.2**
comp=Z,41nm,0.9s
BSD Bornholm Skovb 76.54 332 *⇑iP* **P 15 49 08.1 -0.2**
BSD pmax pmax
comp=Z,41nm,0.9s
SNART Snartemo 76.57 337 *eP* **P 15 49 09.2 +0.8**
SNART IAmb IAmb 15 49 09.6
comp=Z,22nm,0.9s
SHOC Shoshone, Teco 76.62 55 P **P 15 49 10.6 +1.4**
baz=308
LVV L'vov 76.62 324 *eP* **P 15 49 07.8 -1.1**
GSC Goldstone, Bar 76.64 56 P **P 15 49 10.5 +1.0**
baz=308
GSC Goldstone, Bar 76.64 56 *eP* **P 15 49 10.1 +0.7**
GSC pmax pmax
comp=Z,20nm,1.1s
GSC Goldstone, Bar 76.64 56 *eP* **P 15 49 10.1 +0.7**
comp=Z,20nm,1.1s
JLU Jordanelle 76.68 49 *eP* **P 15 49 10.7 +0.9**
comp=Z,21nm,1.2s
BFSC Mount Baldy Ra 76.73 57 P **P 15 49 11.1 +1.2**
baz=308
RRX Edison Barstow 76.78 56 P **P 15 49 11.4 +1.3**
baz=308
SHPR Sheep Range 76.96 54 *eP* **P 15 49 12.4 +1.1**
comp=Z,16nm,0.9s
COP Copenhagen 76.99 333 *i P* **P 15 49 10.7 -0.1**
comp=Z,31nm,0.9s
COP Copenhagen 76.99 333 *i P* **P 15 49 10.7 -0.1**
COP pmax pmax
comp=Z,31nm,0.9s
A28A Rude Farm, Bot 77.11 37 P **P 15 49 12.7 +1.0**
baz=315
TUQ Turquoise Moun 77.13 55 P **P 15 49 13.6 +1.4**
baz=308
BBRC Big Bear Solar 77.20 56 P **P 15 49 13.7 +1.0**
baz=308
HEC Hector,Ludlow 77.24 56 P **P 15 49 13.9 +1.1**
baz=308
D26A Manning 77.36 39 P **P 15 49 14.2 +1.0**
baz=314
B28A Dugan Ranch, T 77.39 37 P **P 15 49 14.2 +1.0**
baz=315
MURC Murrieta 77.42 57 P **P 15 49 14.8 +1.0**
baz=308
CCUT Cedar City 77.44 52 *eP* **P 15 49 14.3 +0.3**
comp=Z,45nm,1.6s
TLCR 77.45 318 *⇑iP* **P 15 49 13.6 0.0**
MUD Monsted U'grnd 77.48 335 *⇑iP* **P 15 49 13.9 +0.4**
comp=Z,26nm,1.0s
MUD Monsted U'grnd 77.48 335 *⇑eP* **P 15 49 13.9 +0.4**
MUD pmax pmax
comp=Z,26nm,1.0s
A29A Manning Farm, 77.58 36 P **P 15 49 15.3 +1.0**
baz=315
BUR08 Bucovina Ar. S 77.59 322 *eP* **P 15 49 14.6 +0.1**
BURAR Bucovina Array 77.60 322 *⇑iP* **P 15 49 14.8 +0.2**
BURAR Bucovina Array 77.60 322 P **P 15 49 14.7 +0.2**
TMUT Trail Mountain 77.65 50 *eP* **P 15 49 16.2 +0.9**
comp=Z,47nm,1.6s
TESR Tescani 77.66 320 *⇑iP* **P 15 49 14.9 +0.1**
GMRC Granite Mounta 77.70 55 P **P 15 49 16.7 +1.3**
baz=308
CFR Carcaliu 77.81 319 *⇑iP* **P 15 49 15.9 +0.3**
CFR Carcaliu 77.81 319 P **P 15 49 15.8 +0.2**
P17A Butcher Ranch, 77.82 49 *eP* **P 15 49 17.3 +1.2**
comp=Z,30nm,0.8s
B29A Wagenman Farm, 77.85 37 P **P 15 49 16.7 +0.9**
baz=315
LCMT Little Creek M 77.85 52 *eP* **P 15 49 17.5 +1.2**
comp=Z,18nm,1.0s
MTPU Mount Pierson 77.86 51 *eP* **P 15 49 18.3 +1.8**
comp=Z,17nm,0.8s
LDFC Landfair 77.88 55 *eP* **P 15 49 17.3 +1.0**
comp=Z,36nm,1.1s
PFO Pinyon Flats O 77.90 57 P **P 15 49 17.3 +0.8**
baz=308
PFO Pinyon Flats O 77.90 57 *eP* **P 15 49 17.1 +0.6**
PFO pmax pmax
comp=Z,17nm,1.1s
PFO Pinyon Flats O 77.90 57 *eP* **P 15 49 17.1 +0.6**
comp=Z,17nm,1.1s
TPFO Pinon Flats 77.91 57 P **P 15 49 17.5 +0.9**
baz=308
109C Camp Elliot, M 77.92 58 P **P 15 49 17.3 +0.9**
baz=306
A30A Hoffart Farm, 78.00 36 P **P 15 49 17.4 +0.7**
baz=316
KOLS Kolonicke sedl 78.06 324 *eP* **P 15 49 17.3 +0.3**
KOLS pmax pmax
comp=Z,11nm,1.1s
KOLS Kolonicke sedl 78.06 324 *eP* **P 15 49 17.3 +0.3**
PLOR Plostina 78.11 320 *⇑iP* **P 15 49 18.2 +0.9**
PLOR Plostina 78.11 320 P **P 15 49 18.1 +0.8**
ULM Lac du Bonnet 78.14 34 P **P 15 49 17.6 +0.2**
comp=Z,12nm,0.8s,baz=312,slow=6.6,SNR=13
ULM LR LR 16 26 12.9
comp=Z,31nm,18.7s,baz=323,slow=38
ULM Lac du Bonnet 78.14 34 *eP* **P 15 49 17.1 -0.2**
comp=Z,19nm,0.9s
TIRR Tirgusor 78.15 318 *⇑iP* **P 15 49 17.8 +0.3**
TIRR Tirgusor 78.15 318 *eP* **P 15 49 17.2 -0.3**
TIRR pmax pmax
comp=Z,13nm,0.9s
TIRR Tirgusor 78.15 318 *eP* **P 15 49 17.2 -0.3**
comp=Z,13nm,0.9s
K22A Casper 78.17 45 P **P 15 49 18.5 +0.6**
baz=312
K22A Casper 78.17 45 *eP* **P 15 49 18.8 +0.8**
MDND Maddock 78.17 37 P **P 15 49 18.6 +1.0**
baz=315
SRU San Rafael Swe 78.18 49 *eP* **P 15 49 19.1 +1.0**
SRU pmax pmax
comp=Z,31nm,0.7s
SRU San Rafael Swe 78.18 49 *eP* **P 15 49 19.1 +1.0**
comp=Z,31nm,0.7s
STHS Stebnicka Huta 78.18 325 *eP* **P 15 49 18.1 +0.4**
STHS pmax pmax
comp=Z,14nm,1.2s
STHS Stebnicka Huta 78.18 325 *eP* **P 15 49 18.1 +0.4**
OJC Ojcow 78.24 326 *eP* **P 15 49 18.4 +0.5**
OJC Ojcow 78.24 326 *eP* **P 15 49 18.2 +0.3**
OJC pmax pmax
comp=Z,50nm,1.1s
OJC Ojcow 78.24 326 *eP* **P 15 49 18.2 +0.3**
comp=Z,50nm,1.1s
HARR Harsova 78.24 318 *⇓iP* **P 15 49 17.6 -0.4**
TLB Topalu 78.26 318 *⇑iP* **P 15 49 18.3 +0.2**
UZH Uzhgorod 78.27 324 *⇓iP* **P 15 49 18.9 +0.8**
UZH *e* 15 49 28.9
UZH *e* 15 49 32.9
UZH *e* 15 49 40.7
BAR Barrett 78.33 58 *eP* **P 15 49 19.3 +0.5**
comp=Z,71nm,2.0s
B30A Myrvik Farm, E 78.34 36 P **P 15 49 19.2 +0.6**
baz=316
BR131 Keskin Array S 78.36 312 *eP* **P 15 49 18.4 -0.6**
BRTR Keskin Array B 78.36 312 P **P 15 49 18.9 -0.1**
comp=Z,2.8nm,0.5s,baz=85,slow=4.1,SNR=23
BRTR pP **pP** 15 49 32.3 -0.9
comp=Z,4.5nm,0.5s,baz=90,slow=3.6,SNR=10
BRTR LR LR 16 28 41.4
comp=Z,49nm,20.0s,baz=46,slow=39
MONP2 Monument Peak 78.37 57 P **P 15 49 20.1 +0.9**
baz=308
H25A Fruitdale 78.42 42 P **P 15 49 19.6 +0.5**
baz=313
IRM Iron Mountain 78.42 56 P **P 15 49 20.5 +1.2**
baz=309
CRVS Cervenica-Dubn 78.46 325 *eP* **P 15 49 19.7 +0.5**
CRVS Cervenica-Dubn 78.46 325 *eP* **P 15 49 19.7 +0.5**
RSSD Black Hills 78.53 42 P **P 15 49 20.5 +0.6**
baz=313
RSSD Black Hills 78.53 42 *eP* **P 15 49 20.2 +0.3**
RSSD pmax pmax
comp=Z,73nm,1.9s
RSSD Black Hills 78.53 42 *eP* **P 15 49 20.2 +0.3**
comp=Z,73nm,1.9s
BC3 Big Chuckawall 78.54 56 P **P 15 49 21.0 +1.0**
baz=309
NIE Niedzica 78.61 325 *eP* **P 15 49 21.0 +1.0**
NIE Niedzica 78.61 325 *eP* **P 15 49 21.0 +1.0**
W13A Hualapai Mount 78.65 54 *eP* **P 15 49 21.5 +0.7**
comp=Z,8.5nm,0.9s
DOPR Dopca 78.66 321 *⇑iP* **P 15 49 21.5 +1.1**
ISR Istrita 78.67 319 *⇓iP* **P 15 49 21.5 +1.0**
B31A Greenbush Farm 78.67 36 P **P 15 49 20.8 +0.4**
baz=316
MLR Muntele Rosu 78.72 320 *⇑iP* **P 15 49 20.8 0.0**
MLR Muntele Rosu 78.72 320 *eP* **P 15 49 20.5 -0.3**
MLR pmax pmax
comp=Z,16nm,1.2s
MLR Muntele Rosu 78.72 320 *eP* **P 15 49 20.5 -0.3**
comp=Z,16nm,1.2s
IKP In-Ko-Pah, Jac 78.73 57 P **P 15 49 22.0 +1.0**
baz=308
SWSC Sam W. Stewart 78.75 57 P **P 15 49 21.6 +0.6**
baz=309
ANTO Ankara 78.77 312 *eP* **P 15 49 19.9 -1.2**
ANTO pmax pmax
comp=Z,44nm,0.9s
ANTO Ankara 78.77 312 *eP* **P 15 49 19.9 -1.2**
comp=Z,44nm,0.9s
BR231 Keskin MP Arra 78.79 312 *eP* **P 15 49 19.6 -1.7**
C30A Mose, Pekin 78.81 37 P **P 15 49 21.6 +0.5**
baz=316
U15A North Rim 78.81 52 *eP* **P 15 49 23.2 +1.5**
comp=Z,16nm,0.8s
A32A Rocking H Ranc 78.84 35 P **P 15 49 21.3 0.0**
baz=317
O20A White River Ci 78.86 47 P **P 15 49 22.5 +0.8**
baz=311
O20A White River Ci 78.86 47 *eP* **P 15 49 22.4 +0.6**
comp=Z,18nm,0.9s
CJR Cluj-Napoca 79.02 322 *⇑iP* **P 15 49 23.4 +1.0**
Y12C Blythe 79.08 56 P **P 15 49 24.1 +1.2**
baz=309
Y12C Blythe 79.08 56 *eP* **P 15 49 23.6 +0.8**
comp=Z,22nm,0.8s
C31A Landman Farms, 79.09 36 P **P 15 49 23.1 +0.4**
baz=316
LANS Liptovska Anna 79.17 326 *eP* **P 15 49 24.4 +1.3**
LANS Liptovska Anna 79.17 326 *eP* **P 15 49 24.4 +1.3**
B32A Ashes, Strandq 79.20 35 P **P 15 49 23.4 +0.2**
baz=317
VOIR 79.20 320 *⇑iP* **P 15 49 23.9 +0.5**
VOIR 79.20 320 P **P 15 49 23.9 +0.5**
KECS Kecovo 79.21 325 P **P 15 49 24.9 +1.6**
OKC Ostrava-Krasne 79.24 327 *eP* **P 15 49 23.9 +0.5**
OKC AMS AMS 16 27 10.0
comp=Z,200nm,19.1s
OKC Ostrava-Krasne 79.24 327 *eP* **P 15 49 23.9 +0.5**
OKC MLR MLR
comp=Z,200nm,19.1s
KSP Ksiaz 79.26 328 *eP* **P 15 49 24.1 +0.6**
KSP Ksiaz 79.26 328 *eP* **P 15 49 24.1 +0.6**
GLA Glamis 79.32 56 P **P 15 49 25.5 +1.3**
baz=309
GLA Glamis 79.32 56 *eP* **P 15 49 25.2 +0.9**
GLA pmax pmax
comp=Z,19nm,0.8s
GLA Glamis 79.32 56 *eP* **P 15 49 25.1 +0.9**
comp=Z,19nm,0.8s
A33A Warroad 79.32 34 P **P 15 49 23.8 -0.1**
baz=318
DRGR 79.39 322 *⇑iP* **P 15 49 24.6 +0.2**
PV09 Paradox Valley 79.41 49 *eP* **P 15 49 25.9 +1.0**
ARR Arges 79.46 320 *⇑iP* **P 15 49 25.4 +0.6**
F29A Eureka 79.49 39 P **P 15 49 25.4 +0.5**
baz=315
PV10 Paradox Valley 79.54 49 *eP* **P 15 49 27.1 +1.4**
MORC Moravsky Berou 79.54 327 *⇑iP* **P 15 49 25.6 +0.5**
MORC Moravsky Berou 79.54 327 *eP* **P 15 49 25.4 +0.3**
MORC pmax pmax
comp=Z,98nm,1.0s
MORC Moravsky Berou 79.54 327 *eP* **P 15 49 25.4 +0.3**
comp=Z,98nm,1.0s
AGMN Agassiz Nation 79.58 35 P **P 15 49 25.2 -0.1**
baz=318
AGMN Agassiz Nation 79.58 35 *eP* **P 15 49 25.3 -0.1**
comp=Z,18nm,1.0s
PV04 Paradox Valley 79.61 49 P **P 15 49 25.7 -0.2**
DPC Dobruska-Polom 79.62 328 *eP* **P 15 49 26.5 +0.9**
DPC *epP* **pP** 15 49 40.2 +0.5
DPC Dobruska-Polom 79.62 328 *eP* **P 15 49 26.5 +0.9**
DPC *e* 15 49 40.2
UPC Upice 79.63 328 *eP* **P 15 49 26.2 +0.7**
UPC AMS AMS 16 27 40.0
comp=Z,200nm,18.1s
UPC Upice 79.63 328 *eP* **P 15 49 26.2 +0.7**
UPC MLR MLR
comp=Z,200nm,18.1s
D31A Mcclaflin, Tow 79.63 37 P **P 15 49 26.1 +0.5**
baz=316
KRLC Kraliky 79.64 328 *eP* **P 15 49 26.3 +0.6**
KRLC *epP* **pP** 15 49 39.0 -0.8
KRLC Kraliky 79.64 328 *eP* **P 15 49 26.3 +0.6**
KRLC *e* 15 49 39.0
PHWY Pilot Hill 79.66 45 *eP* **P 15 49 26.7 +0.4**
comp=Z,36nm,1.7s
N23A Red Feather La 79.66 46 P **P 15 49 27.6 +1.3**
baz=312
N23A Red Feather La 79.66 46 *eP* **P 15 49 27.3 +1.0**
comp=Z,36nm,1.1s
PV05 Paradox Valley 79.70 49 *eP* **P 15 49 27.7 +1.2**
LOT Lotru 79.84 321 *⇓iP* **P 15 49 27.4 +0.5**
F30A Leola 79.88 38 P **P 15 49 27.3 +0.3**
baz=316
PSZ Piszkesteto 79.89 325 *⇑iP* **P 15 49 27.8 +0.7**
PSZ Piszkesteto 79.89 325 *eP* **P 15 49 27.4 +0.3**

PSZ pmax pmax
comp=Z,31nm,1.0s
PSZ **Piszkesteto** **79.89 325** *e*P **P** **15 49 27.4 +0.3**
comp=Z,31nm,1.0s
D32A **Dogwood Acres,** **79.90 36** P **P** **15 49 27.2 +0.1**
baz=317
E31A **Nome** **79.91 37** P **P** **15 49 27.5 +0.3**
baz=316
VYHS **Vyhne** **79.94 326** *e*P **P** **15 49 28.0 +0.7**
VYHS pmax pmax
comp=Z,9.0nm,1.1s
VYHS **Vyhne** **79.94 326** *e*P **P** **15 49 28.0 +0.7**
Y14A **Wickenburg** **79.94 55** *e*P **P** **15 49 28.6 +0.9**
comp=Z,94nm,0.9s
WUAZ **Wupatki** **79.97 53** P **P** **15 49 29.3 +1.5**
baz=310
WUAZ **Wupatki** **79.97 53** *e*P **P** **15 49 29.0 +1.2**
comp=Z,28nm,1.0s
PV01 **Paradox Valley** **79.98 49** *e*P **P** **15 49 28.7 +0.7**
B34A **Aery, Baudette** **79.99 34** P **P** **15 49 27.3 -0.2**
baz=318
C33A **Trail** **80.02 35** P **P** **15 49 27.7 0.0**
baz=318
BRG **Berggiesshubel** **80.19 330** *e*P **P** **15 49 28.8 +0.3**
comp=Z,22nm,1.1s
BRG *i* 15 49 40.2
comp=Z,5.9nm,0.8s
comp=N,278nm,22.2s
comp=E,165nm,18.2s
comp=Z,294nm,16.8s
BRG **Berggiesshubel** **80.19 330** *e*P **P** **15 49 28.8 +0.3**
BRG *i* 15 49 40.2
BRG pmax pmax
comp=Z,22nm,1.1s
BRG MLR MLR
comp=N,278nm,22.2s
BRG MLR MLR
comp=E,165nm,18.2s
BRG MLR MLR
comp=Z,294nm,16.8s
PVCC **Panska Ves** **80.20 329** *e*P **P** **15 49 29.7 +1.1**
PVCC *e*pP **pP** **15 49 43.1 +0.3**
PVCC AMS AMS 16 27 40.0
comp=Z,300nm,18.1s
PVCC **Panska Ves** **80.20 329** *e*P **P** **15 49 29.7 +1.1**
PVCC *e* 15 49 43.1
PVCC MLR MLR
comp=Z,300nm,18.1s
CLL **Collm** **80.22 330**⇑ *i*P **P** **15 49 28.6 -0.1**
comp=Z,40nm,1.0s
CLL *i* sP **pP** **15 49 42.3 -0.6**
CLL *e*PP **PP** **15 52 31.0 +0.1**
CLL LmV 16 08 00.0
comp=Z,100nm,19.9s
CLL **Collm** **80.22 330**⇑ *i*P **P** **15 49 28.6 -0.1**
CLL *i* *SP **pP** **15 49 42.3 -0.6**
CLL pmax pmax
comp=Z,40nm,1.0s
CLL **Collm** **80.22 330** *e*P **P** **15 49 28.3 -0.4**
comp=Z,30nm,0.8s
SMCO **Snowmass** **80.22 47** *e*P **P** **15 49 30.2 +0.7**
comp=Z,38nm,1.6s
F31A **Hecla** **80.24 38** P **P** **15 49 29.1 +0.1**
baz=316
SIRR **Siria** **80.27 323**⇓ *i*P **P** **15 49 29.6 +0.5**
VRAC **Vranov** **80.30 327**⇑ *i*P **P** **15 49 30.1 +0.9**
VRAC **Vranov** **80.30 327** P P 15 49 20.0 -9.2
B35A **Bob, Littlefor** **80.49 34** P **P** **15 49 30.2 0.0**
baz=319
C34A **RKJ Ranch, Bem** **80.49 35** P **P** **15 49 30.0 -0.3**
baz=318
ISCO **Idaho Springs** **80.59 46** P **P** **15 49 32.6 +1.3**
baz=313
ISCO **Idaho Springs** **80.59 46** *e*P **P** **15 49 32.3 +1.0**
ISCO pmax pmax
comp=Z,56nm,1.9s
ISCO **Idaho Springs** **80.59 46** *e*P **P** **15 49 32.3 +1.0**
comp=Z,56nm,1.9s
GOPC **GO Pecny, Ondr** **80.59 329** *e*P **P** **15 49 31.8 +1.0**
GOPC AMS AMS 16 27 20.0
GOPC **GO Pecny, Ondr** **80.59 329** *e*P **P** **15 49 31.8 +1.0**
MVCO **Mesa Verde** **80.63 50** P **P** **15 49 32.8 +1.3**
baz=311
MVCO **Mesa Verde** **80.63 50** *e*P **P** **15 49 32.2 +0.7**
comp=Z,22nm,1.1s
X16A **Lo Mia Camp, P** **80.63 53** *e*P **P** **15 49 32.8 +1.3**
comp=Z,22nm,0.9s
PRU **Pruhonice** **80.63 329** *e*P **P** **15 49 31.5 +0.6**
PRU AMS AMS 16 27 50.0
comp=Z,200nm,21.3s
PRU **Pruhonice** **80.63 329** *e*P **P** **15 49 31.5 +0.6**
PRU MLR MLR
comp=Z,200nm,21.3s
G31A **Conde** **80.72 38** P **P** **15 49 32.0 +0.5**
baz=316
BZS **Buzias** **80.77 322**⇑ *i*P **P** **15 49 31.8 +0.1**
F32A **Veblen** **80.77 37** P **P** **15 49 32.0 +0.2**
baz=317
E33A **Westby DABS, E** **80.84 36** P **P** **15 49 32.3 +0.2**
baz=316
C35A **Jirik Farms, M** **80.87 35** P **P** **15 49 32.1 -0.2**
baz=319
KPL **Plockton** **80.88 343** *e*P **P** **15 49 32.5 +0.5**
SUSD **Miller** **80.91 39** P **P** **15 49 33.0 +0.4**
baz=316
G32A **Webster** **81.04 38** P **P** **15 49 33.5 +0.3**
baz=317
H31A **Wolsey** **81.12 39** P **P** **15 49 33.9 +0.2**
baz=316
F33A **5 Mile Ranch,** **81.19 37** P **P** **15 49 34.3 +0.3**
baz=318
E34A **Wadena** **81.22 36** P **P** **15 49 34.3 +0.1**
baz=318
W18A **Petrified Fore** **81.25 52** P **P** **15 49 36.1 +1.3**
baz=311
W18A **Petrified Fore** **81.25 52** *e*P **P** **15 49 36.0 +1.3**
S22A **4UR Ranch, Cre** **81.27 48** P **P** **15 49 36.4 +1.5**
baz=312
S22A **4UR Ranch, Cre** **81.27 48** *e*P **P** **15 49 36.3 +1.4**
comp=Z,20nm,1.1s
NKC **Novy Kostel** **81.28 330** AMS AMS 16 30 00.0
comp=Z,200nm,17.9s
D35A **Remer** **81.31 35** P **P** **15 49 34.3 -0.3**
baz=319
MDVR **Moldovita** **81.33 322**⇑ *i*P **P** **15 49 34.6 -0.2**
214A **Organ Pipe Nat** **81.33 56** P **P** **15 49 36.1 +1.1**
baz=310
214A **Organ Pipe Nat** **81.33 56** *e*P **P** **15 49 35.7 +0.6**
comp=Z,99nm,1.4s
C36A **Pine Crest Far** **81.33 34** P **P** **15 49 34.7 0.0**
baz=320
Q24A **Divide** **81.42 47** P **P** **15 49 36.7 +0.9**
baz=313
Q24A **Divide** **81.42 47** *e*P **P** **15 49 36.4 +0.6**
comp=Z,8.7nm,0.8s
I31A **Royce, Wessing** **81.42 39** P **P** **15 49 35.6 +0.3**
baz=316
J30A **Dallas** **81.44 40** P **P** **15 49 35.9 +0.4**
baz=316
E35A **Pequot Lakes** **81.54 36** P **P** **15 49 35.8 0.0**
baz=319
G33A **Ortonville** **81.60 38** P **P** **15 49 36.6 +0.5**
baz=318
H32A **Carlson Farm,** **81.62 39** P **P** **15 49 36.0 -0.3**
baz=317
D36A **Goodland** **81.63 34** P **P** **15 49 35.8 -0.5**
baz=319
C37A **Embarrass** **81.64 34** P **P** **15 49 36.2 -0.2**
baz=320
CSS **Mathiatis** **81.66 308** *e*P **P** **15 49 36.5 -0.2**
comp=Z,4.1nm,0.8s
CONA **Conrad Observa** **81.67 327** *i* P **P** **15 49 37.5 +0.9**
comp=Z,2.6nm,0.4s,SNR=16
KHC **Kasperske Hory** **81.70 329** *e*P **P** **15 49 36.9 +0.2**
KHC AMS AMS 16 28 10.0
comp=Z,300nm,22.0s
KHC **Kasperske Hory** **81.70 329** *e*P **P** **15 49 36.8 +0.1**
KHC pmax pmax
comp=Z,11nm,1.0s
KHC **Kasperske Hory** **81.70 329** *e*P **P** **15 49 36.8 +0.1**
comp=Z,11nm,1.0s
EYMN **Ely** **81.77 33** P **P** **15 49 37.1 0.0**
baz=320
EYMN **Ely** **81.77 33** *e*P **P** **15 49 36.7 -0.3**
comp=Z,35nm,1.3s
OGNE **Ogallala** **81.79 44** P **P** **15 49 37.9 +0.5**
baz=315

H33A **Prehn Over Nor** **81.83 38** P **P** **15 49 37.9 +0.5**
baz=317
K30A **Basset** **81.84 41** P **P** **15 49 38.2 +0.6**
baz=316
J31A **Geddes** **81.85 40** P **P** **15 49 37.8 +0.3**
baz=316
GEC2 **GERESS Array S** **81.87 328** *e*P **P** **15 49 37.4 -0.3**
GEC2 pmax pmax
comp=Z,18nm,1.1s
GEC2 **GERESS Array S** **81.87 328** *e*P **P** **15 49 37.4 -0.3**
comp=Z,18nm,1.1s
GERES **GERESS Array B** **81.87 328** P **P** **15 49 37.7 +0.1**
comp=Z,5.7nm,0.7s,baz=38,slow=5.0,SNR=50
GERES pP **pP** **15 49 51.4 -0.5**
comp=Z,3.1nm,0.7s,baz=40,slow=5.2,SNR=5.8
GEA0 **GERESS Array S** **81.88 328** *e*P **P** **15 49 37.3 -0.3**
G34A **Benson** **81.94 37** P **P** **15 49 38.4 +0.4**
baz=318
I32A **Karley and Nic** **81.95 39** P **P** **15 49 38.1 0.0**
baz=317
D37A **Cotton** **81.97 34** P **P** **15 49 37.8 -0.3**
baz=320
SDCO **Great Sand Dun** **82.04 48** P **P** **15 49 40.4 +1.3**
baz=313
SDCO **Great Sand Dun** **82.04 48** *e*P **P** **15 49 39.9 +0.9**
comp=Z,13nm,1.2s
C38A **Sawbill Land.** **82.05 33** P **P** **15 49 38.5 0.0**
baz=321
E36A **McGregor** **82.09 35** P **P** **15 49 38.9 +0.1**
baz=319
GRFO **Grafenberg** **82.19 330** *e*P **P** **15 49 39.3 +0.1**
GRFO pmax pmax
comp=Z,32nm,0.9s
GRFO **Grafenberg** **82.19 330** *e*P **P** **15 49 39.2 +0.1**
comp=Z,32nm,0.9s
J32A **Parkston** **82.24 40** P **P** **15 49 39.7 +0.1**
baz=317
I33A **Coleman** **82.27 39** P **P** **15 49 40.1 +0.3**
baz=317
H34A **Spellman Lake,** **82.30 38** P **P** **15 49 40.3 +0.5**
baz=318
K31A **O'Neill** **82.32 41** P **P** **15 49 40.4 +0.3**
baz=316
ARSA **Arzberg** **82.34 326** *i* P **P** **15 49 40.5 +0.5**
comp=Z,3.5nm,0.5s,SNR=8.0
MOA **Molln** **82.41 328** *i* P **P** **15 49 40.9 +0.5**
comp=Z,18nm,1.2s,SNR=8.9
TUC **Tucson** **82.42 55** P **P** **15 49 42.1 +1.3**
baz=311
TUC **Tucson** **82.42 55** *e*P **P** **15 49 41.6 +0.8**
TUC pmax pmax
comp=Z,7.0nm,0.8s
TUC **Tucson** **82.42 55** *e*P **P** **15 49 41.5 +0.8**
comp=Z,7.2nm,0.8s
F36A **Milaca** **82.46 36** P **P** **15 49 40.1 -0.6**
baz=319
ECSD **EROS Data Cent** **82.59 39** P **P** **15 49 41.7 +0.3**
baz=318
ECSD **EROS Data Cent** **82.59 39** *e*P **P** **15 49 41.4 0.0**
comp=Z,17nm,0.7s
L31A **Butterfield Fa** **82.60 41** P **P** **15 49 42.0 +0.5**
baz=316
J33A **Davis** **82.72 39** P **P** **15 49 42.2 +0.1**
baz=317
I34A **Hadley** **82.73 38** P **P** **15 49 42.5 +0.3**
baz=318
H35A **Sunnyside Ranc** **82.73 37** P **P** **15 49 42.7 +0.6**
baz=319
KSCO **Kaye Shedlock'** **82.81 45** P **P** **15 49 43.4 +0.5**
baz=314
KSCO **Kaye Shedlock'** **82.81 45** *e*P **P** **15 49 42.9 +0.1**
G36A **St. Michael** **82.83 36** P **P** **15 49 42.7 0.0**
baz=319
PERS **Pernice** **82.99 326** *i* P **P** **15 49 43.7 +0.2**
SOKA **Soboth** **82.99 326** *i* P **P** **15 49 43.8 +0.2**
comp=Z,28nm,0.9s,SNR=33
T25A **Trinidad** **83.09 48** P **P** **15 49 45.7 +1.3**
baz=314
T25A **Trinidad** **83.09 48** *e*P **P** **15 49 45.3 +0.9**
comp=Z,15nm,0.8s
M31A **Lambtecht Ranc** **83.13 42** P **P** **15 49 44.4 +0.1**
baz=316
L32A **Elgin** **83.15 41** P **P** **15 49 44.8 +0.4**
baz=317
K33A **Hardington** **83.22 40** P **P** **15 49 45.0 +0.2**
baz=317
J34A **George** **83.24 39** P **P** **15 49 44.8 0.0**
baz=318
H36A **Jessenland, He** **83.25 37** P **P** **15 49 45.5 +0.8**
baz=319
SPMN **Marine on St.** **83.28 36** P **P** **15 49 45.1 +0.2**
baz=320
SPMN **Marine on St.** **83.28 36** *e*P **P** **15 49 44.6 -0.3**
comp=Z,13nm,0.8s
I35A **Creekview Farm** **83.29 38** P **P** **15 49 45.2 +0.2**
baz=318
LAZ **Ladron** **83.32 51** *e*P **P** **15 49 46.5 +0.9**
BEBN **Eben Emael** **83.33 334** P **P** **15 49 45.4 +0.4**
comp=Z,7.1nm,1.0s
OBKA **Obir** **83.33 327** *i* P **P** **15 49 45.3 -0.1**
comp=Z,11nm,0.8s,SNR=8.2
ANMO **Albuquerque** **83.37 50** P **P** **15 49 47.3 +1.5**
baz=313
ANMO **Albuquerque** **83.37 50** *e*P **P** **15 49 47.2 +1.4**
ANMO pmax pmax
comp=Z,24nm,1.2s
ANMO **Albuquerque** **83.37 50** *e*P **P** **15 49 47.1 +1.2**
comp=Z,24nm,1.1s
MEM **Membach** **83.37 334** P **P** **15 49 45.2 -0.1**
comp=Z,12nm,1.0s
KBA **Koelnbreinsper** **83.40 328** *i* P **P** **15 49 46.1 +0.3**
comp=Z,15nm,0.7s,SNR=13
KBA **Koelnbreinsper** **83.40 328** P **P** **15 49 46.0 +0.3**
L33A **Hoskins** **83.41 40** P **P** **15 49 45.6 -0.1**
baz=317
BGNE **Belgrade** **83.51 41** P **P** **15 49 46.2 0.0**
baz=317
BGNE **Belgrade** **83.51 41** *e*P **P** **15 49 46.3 0.0**
comp=Z,56nm,0.8s
J35A **Milford** **83.55 38** P **P** **15 49 46.6 +0.2**
baz=318
K34A **Le Mars** **83.61 39** P **P** **15 49 47.0 +0.3**
baz=318
I36A **Fitzsimmons Fa** **83.63 37** P **P** **15 49 47.0 +0.3**
baz=319
MYKA **Terra Mystica** **83.63 327** *i* P **P** **15 49 46.4 -0.4**
comp=Z,10nm,0.5s,SNR=9.9
LPM **Los Pinos Moun** **83.69 51** *e*P **P** **15 49 48.8 +1.3**
H37A **Dierke Farm, C** **83.72 36** P **P** **15 49 47.5 +0.3**
baz=320
BCLA **Clavier** **83.78 334** P **P** **15 49 47.2 -0.1**
BNM **Barren Site** **83.80 51** *e*P **P** **15 49 49.1 +0.9**
BOJS **Bojanci** **83.81 325**⇑ *i*P **P** **15 49 47.2 -0.4**
CWF **Charnwood Fore** **83.87 339** *e*P **P** **15 49 48.1 +0.3**
comp=Z,17nm,0.9s
M33A **Taylor Creek F** **83.88 40** P **P** **15 49 48.2 +0.1**
baz=317
CADS **Cadrg** **83.91 327** *i* P **P** **15 49 46.9 -1.3**
I37A **Lemond, Waseca** **83.92 37** P **P** **15 49 49.0 +0.7**
baz=320
WATA **Walderalm** **83.94 329** *i* P **P** **15 49 48.7 +0.3**
comp=Z,5.8nm,0.5s
SCHQ **Schefferville** **83.95 16** P **P** **15 49 48.5 +0.3**
comp=Z,16nm,0.8s,baz=355,slow=6.0,SNR=10
SCHQ LR LR 16 29 56.9
comp=Z,82nm,19.7s,baz=296,slow=38
SCHQ **Schefferville** **83.95 16** *e*P **P** **15 49 48.5 +0.3**
comp=Z,18nm,0.8s
WTTA **Wattenberg** **83.97 329** *i* P **P** **15 49 49.0 +0.4**
comp=Z,10.0nm,0.9s
319A **Douglas** **83.99 55** *e*P **P** **15 49 49.6 +0.6**
comp=Z,40nm,0.9s
J36A **Sesa 1, Swea** **83.99 38** P **P** **15 49 48.9 +0.3**
baz=319
L34A **Svendsen Farm,** **84.01 40** P **P** **15 49 48.9 +0.2**
baz=318
K35A **Storm Lake** **84.01 39** P **P** **15 49 49.0 +0.2**
baz=318
ABTA **Abfaltersbach** **84.02 328** *i* P **P** **15 49 48.3 -0.5**
comp=Z,11nm,0.8s,SNR=8.1
JAVS **Javornik** **84.03 326** *i* P **P** **15 49 47.9 -1.0**
SNF **Seneffe** **84.05 334** P **P** **15 49 48.8 0.0**
LANF **Langenberg** **84.08 332**⇑ *e*P **P** **15 49 48.8 -0.2**
WLF **Walferdange** **84.11 333** P **P** **15 49 50.7 +1.6**
comp=Z,13nm,1.7s
MOTA **Moosalm** **84.12 329** *i* P **P** **15 49 49.7 +0.3**
comp=Z,10nm,0.7s,SNR=5.8

RETA **Reutte** **84.14 329** *i* P **P** **15 49 49.8 +0.4**
comp=Z,32nm,1.1s,SNR=16
121A **Cookes Peak, D** **84.17 53** P **P** **15 49 51.4 +1.4**
baz=312
121A **Cookes Peak, D** **84.17 53** *e*P **P** **15 49 51.3 +1.3**
comp=Z,31nm,1.0s
COWI **Conover** **84.22 33** *e*P **P** **15 49 48.0 -1.7**
comp=Z,10nm,0.6s
PDG **Podgorica** **84.27 321**⇓ *i*P **P** **15 49 50.1 +0.1**
DOU **Dourbes** **84.30 334** P **P** **15 49 50.1 +0.1**
L35A **Bielow Farm, R** **84.31 39** P **P** **15 49 50.4 +0.1**
baz=318
J37A **Redenius Farm,** **84.38 37** P **P** **15 49 50.8 +0.2**
baz=320
I38A **Scanlan Farm,** **84.40 36** P **P** **15 49 50.7 0.0**
baz=320
BFO **Black Forest** **84.41 331** *e*P **P** **15 49 50.3 -0.4**
BFO pmax pmax
comp=Z,28nm,0.9s
BFO **Black Forest** **84.41 331** *e*P **P** **15 49 50.3 -0.4**
comp=Z,28nm,0.9s
K36A **Gilmore City** **84.46 38** P **P** **15 49 51.1 +0.1**
baz=319
BAIF **Baives** **84.46 334** *e*P **P** **15 49 50.5 -0.3**
BAIF pmax pmax
comp=Z,20nm,1.2s
FETA **Feichten** **84.53 329** *i* P **P** **15 49 51.6 +0.1**
comp=Z,13nm,0.7s,SNR=9.6
CBKS **Cedar Bluff** **84.54 44** P **P** **15 49 51.3 -0.3**
baz=316
P32A **Huiting Farm,** **84.57 43** P **P** **15 49 51.5 -0.2**
baz=317
DAVA **Damuels** **84.66 330** *i* PcP **P** **15 49 52.3 +0.2**
comp=Z,43nm,1.1s,SNR=12
WLS **Welschbruch** **84.71 332** *e*P **P** **15 49 51.6 -0.6**
M35A **Neola** **84.72 40** P **P** **15 49 52.7 +0.3**
baz=318
CDF **Champ du Feu** **84.74 332** *e*P **P** **15 49 52.1 -0.3**
CDF pmax pmax
comp=Z,24nm,1.0s
K37A **Belmond** **84.75 38** P **P** **15 49 52.6 +0.1**
baz=319
L36A **Harm Buss Farm** **84.76 39** P **P** **15 49 52.8 +0.2**
baz=319
DSB **Dublin** **84.77 342** *e*P **P** **15 49 51.2 -1.1**
comp=Z,16nm,0.9s
N34A **Lincoln** **84.78 41** P **P** **15 49 52.3 -0.4**
baz=318
O33A **Hebron** **84.78 42** P **P** **15 49 52.7 0.0**
baz=317
PPT2 **Papeete2** **84.79 117** *e*LR LR 16 16 35.3
comp=Z,389nm,25.8s
PPT2 **Papeete2** **84.79 117** *e*T T 17 23 51.7
comp=Z,13nm,0.3s
J38A **Wedel Dairy, R** **84.89 37** P **P** **15 49 53.1 0.0**
baz=320
TIAR **Tiarei** **84.93 117** *e*T T 17 24 01.3
comp=Z,3.9nm,0.2s
ECH **Echery** **84.95 332**⇑ *e*P **P** **15 49 53.5 +0.1**
FUORN **Ofenpass-Fuorn** **85.05 329** *e*P **P** **15 49 54.1 -0.1**
comp=Z,42nm,0.7s
Q32A **Meitler Ranch,** **85.05 43** P **P** **15 49 54.1 0.0**
baz=317
O34A **Beatrice** **85.16 41** P **P** **15 49 54.4 -0.2**
baz=318
M36A **Felix, Anita** **85.17 39** P **P** **15 49 55.0 +0.4**
baz=319
L37A **Phoenix Point,** **85.18 38** P **P** **15 49 54.9 +0.2**
baz=319
P33A **Williams Farm,** **85.19 42** P **P** **15 49 54.3 -0.4**
baz=317
N35A **Tabor** **85.20 40** P **P** **15 49 55.1 +0.3**
baz=318
J39A **Decorah** **85.23 36** P **P** **15 49 54.6 -0.3**
baz=321
MOF **Molkenrain** **85.26 331**⇑ *e*P **P** **15 49 54.9 -0.2**
THEF **They Montfort** **85.37 332**⇑ *e*P **P** **15 49 55.1 -0.4**
HINF **Hinteralfeld** **85.39 332** *e*P **P** **15 49 54.9 -0.8**
HINF pmax pmax
comp=Z,9.0nm,0.9s
Q33A **Connelly Farm,** **85.43 43** P **P** **15 49 55.7 -0.2**
baz=317
O35A **Humboldt** **85.50 41** P **P** **15 49 56.1 -0.2**
baz=318
TUE **Stuetta** **85.53 329** *e*P **P** **15 49 56.5 -0.1**
comp=Z,15nm,0.9s
L38A **Oak Wood Farm,** **85.56 38** P **P** **15 49 56.4 -0.1**
baz=320
P34A **Walnut Farm, R** **85.56 42** P **P** **15 49 56.5 -0.1**
baz=318
N36A **Muff Farm, Cla** **85.57 40** P **P** **15 49 57.3 +0.6**
baz=319
M37A **Trindle Farm,** **85.58 39** P **P** **15 49 57.1 +0.5**
baz=319
J40A **Soldiers Grove** **85.63 36** P **P** **15 49 56.7 -0.2**
baz=321
K39A **Oelwein** **85.63 37** P **P** **15 49 56.6 -0.3**
baz=321
S32A **Newby Ranch, P** **85.78 44** P **P** **15 49 58.1 +0.3**
baz=317
LOMF **Lomont** **85.79 331**⇑ *e*P **P** **15 49 56.6 -1.1**
R33A **Olander Ranch,** **85.86 43** P **P** **15 49 58.3 +0.1**
baz=317
Q34A **Chapman** **85.96 42** P **P** **15 49 59.2 +0.6**
baz=318
J41A **Loganville** **85.98 35** P **P** **15 49 58.6 0.0**
baz=322
K40A **Colesburg** **85.99 36** P **P** **15 49 58.7 +0.1**
baz=321
M38A **Pleasantville** **85.99 38** P **P** **15 49 59.3 +0.6**
baz=320
N37A **Lee Faris, Mou** **85.99 39** P **P** **15 49 59.4 +0.7**
baz=319
P35A **Duane Minner,** **85.99 41** P **P** **15 49 58.7 0.0**
baz=318
TAOE **Nuku Hiva Isla** **86.00 104** *e*LR LR 16 17 01.7
comp=Z,266nm,24.0s
KSU1 **Kansas State U** **86.00 42** P **P** **15 49 58.8 0.0**
baz=318
KSU1 **Kansas State U** **86.00 42** *e*P **P** **15 49 58.5 -0.3**
comp=Z,30nm,0.7s
L39A **Vinton** **86.03 37** P **P** **15 49 59.1 +0.2**
baz=320
MEH **Mehetia** **86.04 116** *e*T T 17 25 26.0
comp=Z,53nm,0.3s
T32A **Huddler Ranch,** **86.16 44** P **P** **15 50 00.1 +0.4**
baz=317
LAST **Lasithi** **86.22 313** *e*P **P** **15 49 59.1 -0.9**
comp=Z,39nm,0.9s
MNTX **Cornudas Mount** **86.23 52** P **P** **15 50 01.1 +1.0**
baz=314
MNTX **Cornudas Mount** **86.23 52** *e*P **P** **15 50 00.6 +0.5**
comp=Z,9.1nm,0.8s
AMTX **Amarillo** **86.25 48** P **P** **15 50 01.2 +1.1**
baz=315
AMTX **Amarillo** **86.25 48** *e*P **P** **15 50 00.9 +0.7**
comp=Z,35nm,1.0s
MSTX **Muleshoe** **86.25 49** P **P** **15 50 00.7 +0.5**
baz=315
MSTX **Muleshoe** **86.25 49** *e*P **P** **15 50 01.0 +0.8**
comp=Z,14nm,0.8s
R34A **Isabella, Hill** **86.26 43** P **P** **15 50 00.3 +0.2**
baz=318
P36A **Good Intent, A** **86.34 41** P **P** **15 50 00.9 +0.4**
baz=319
S33A **Kaszmaul Farm,** **86.37 44** P **P** **15 50 01.2 +0.6**
baz=317
SENIN **Lac Senin/Sane** **86.43 330** *e*P **P** **15 50 00.9 -0.2**
comp=Z,7.8nm,0.7s
M39A **Webster** **86.44 38** P **P** **15 50 01.2 +0.3**
baz=320
L40A **Anamosa** **86.44 37** P **P** **15 50 00.8 -0.1**
baz=321
K41A **Shullsburg** **86.44 36** P **P** **15 50 01.0 +0.1**
baz=322
N38A **Joes South For** **86.45 39** P **P** **15 50 01.4 +0.4**
baz=320
O37A **Wolven Farm, M** **86.47 40** P **P** **15 50 01.8 +0.7**
baz=319
Q35A **Mercer Eighty,** **86.48 42** P **P** **15 50 01.3 +0.1**
baz=318
CABF **La Chapelle** **86.69 331** *e*P **P** **15 50 01.6 -0.5**
CABF pmax pmax
comp=Z,6.0nm,0.8s
U32A **Winter Ranch,** **86.70 45** P **P** **15 50 02.9 +0.5**
baz=317
Q36A **Arnold C. Orve** **86.71 41** P **P** **15 50 02.4 +0.2**
baz=318

N39A	Derby Farms, D	86.74	38	P		P	15 50 02.8	+0.4	
	baz=320								
S34A	Willow Spring	86.77	43	P		P	15 50 02.8	+0.2	
	baz=318								
L41A	Preston	86.77	36	P		P	15 50 02.5	0.0	
	baz=322								
R35A	Emporia Munici	86.80	42	P		P	15 50 03.5	+0.8	
	baz=318								
P37A	Lathrop	86.81	40	P		P	15 50 03.0	+0.3	
	baz=319								
O38A	Galt	86.84	39	P		P	15 50 03.2	+0.3	
	baz=320								
FLN	La Foliniere	87.12	336	eP		P	15 50 03.6	-0.5	
FLN				pmax		pmax			
	comp=Z,38nm,1.3s								
U33A	Lingo Farm, Me	87.15	44	P		P	15 50 05.0	+0.5	
	baz=317								
V32A	Arapaho	87.15	45	P		P	15 50 05.6	+1.1	
	baz=317								
LDF	La Druitiere	87.16	336	eP		P	15 50 04.2	-0.1	
LDF				pmax		pmax			
	comp=Z,10.0nm,0.8s								
R36A	Gordon, Harris	87.16	42	P		P	15 50 04.8	+0.3	
	baz=318								
P38A	Dawn	87.19	40	P		P	15 50 05.1	+0.5	
	baz=320								
O39A	Kirksville	87.20	39	P		P	15 50 04.9	+0.3	
	baz=320								
S35A	Otter Creek Ra	87.21	43	P		P	15 50 05.4	+0.7	
	baz=318								
T34A	McClaskey Farm	87.23	44	P		P	15 50 05.4	+0.6	
	baz=318								
LPL	La Plagne	87.36	330	eP		P	15 50 05.6	0.0	
LPL				pmax		pmax			
	comp=Z,19nm,0.9s								
U34A	Anderson Ranch	87.47	44	P		P	15 50 06.7	+0.7	
	baz=317								
U34A	Anderson Ranch	87.47	44	eP		P	15 50 06.7	+0.7	
	comp=Z,58nm,1.4s								
W32A	Sentinel	87.47	46	P		P	15 50 07.0	+1.0	
	baz=316								
V33A	Lossen Ranch,	87.50	45	P		P	15 50 06.3	+0.2	
	baz=317								
R37A	Teagarden Farm	87.52	41	P		P	15 50 06.2	0.0	
	baz=319								
S36A	Lake Cedric, C	87.56	42	P		P	15 50 06.8	+0.4	
	baz=318								
O40A	La Belle	87.63	38	P		P	15 50 07.0	+0.3	
	baz=321								
Q38A	Cooks Store, C	87.65	40	P		P	15 50 06.8	0.0	
	baz=320								
T35A	Sooner Cattle	87.67	43	P		P	15 50 07.4	+0.5	
	baz=318								
P39B	Salisbury	87.68	39	P		P	15 50 06.9	-0.1	
	baz=320								
W33A	Caddo, Fort Co	87.89	46	P		P	15 50 09.4	+1.4	
	baz=317								
T36A	Boggs Farm, Ca	87.90	43	P		P	15 50 08.8	+0.7	
	baz=318								
Q39A	Willow Grove F	87.91	40	P		P	15 50 08.4	+0.4	
	baz=320								
V34A	Guthrie	87.92	45	P		P	15 50 08.5	+0.3	
	baz=317								
V34A	Guthrie	87.92	45	eP		P	15 50 08.9	+0.7	
	comp=Z,36nm,1.1s								
S37A	Fort Scott	87.93	42	P		P	15 50 08.5	+0.3	
	baz=319								
U35A	Pawnee	87.95	44	P		P	15 50 09.0	+0.6	
	baz=318								
X32A	Elmer	87.95	47	P		P	15 50 09.0	+0.6	
	baz=316								
TIP	Timpagrande	87.96	321	eP		P	15 50 08.1	-0.3	
	comp=Z,26nm,1.5s								
P40A	Paris	88.00	39	P		P	15 50 09.1	+0.6	
	baz=321								
WMOK	Wichita Mounta	88.01	46	P		P	15 50 09.2	+0.5	
	baz=317								
WMOK	Wichita Mounta	88.01	46	eP		P	15 50 08.9	+0.3	
WMOK				pmax		pmax			
	comp=Z,16nm,1.0s								
WMOK	Wichita Mounta	88.01	46	eP		P	15 50 08.9	+0.3	
	comp=Z,16nm,1.0s								
R38A	Fenwick Farm,	88.09	41	P		P	15 50 08.3	-0.6	
	baz=320								
O41A	Passleys Farm,	88.11	38	P		P	15 50 09.5	+0.5	
	baz=321								
ORIF	Oris-en-Rattie	88.19	331	eP		P	15 50 09.3	-0.1	
ORIF				pmax		pmax			
	comp=Z,4.0nm,0.7s								
W34A	Bridge Creek,	88.22	45	P		P	15 50 10.8	+1.2	
	baz=317								
X33A	Lawton	88.31	46	P		P	15 50 10.5	+0.4	
	baz=317								
V35A	Meyer Ranch, C	88.34	44	P		P	15 50 10.7	+0.5	
	baz=318								
T37A	Cheneyville 18	88.36	42	P		P	15 50 10.5	+0.2	
	baz=319								
P41A	Barry, Barry	88.37	38	P		P	15 50 10.8	+0.6	
	baz=321								
Q40A	Laux Farm, Aux	88.40	39	P		P	15 50 10.7	+0.4	
	baz=321								
R39A	Chumby, Stover	88.44	40	P		P	15 50 10.8	+0.2	
	baz=320								
U36A	Oologah	88.48	43	P		P	15 50 11.5	+0.7	
	baz=318								
S38A	Stockton	88.51	41	P		P	15 50 10.7	-0.2	
	baz=320								
HDIL	Hopedale	88.52	37	P		P	15 50 11.5	+0.5	
	baz=322								
HDIL	Hopedale	88.52	37	eP		P	15 50 11.9	+1.0	
Y33A	Hilltop Ranch,	88.63	46	P		P	15 50 12.0	+0.5	
	baz=317								
X34A	Smith Ranch, M	88.65	46	P		P	15 50 12.5	+0.9	
	baz=317								
VIVF	Saint-Julien-l	88.70	331	eP		P	15 50 11.6	-0.1	
VIVF				pmax		pmax			
	comp=Z,5.0nm,0.7s								
T38A	Diamond	88.76	42	P		P	15 50 12.3	+0.2	
	baz=319								
TBI	Tubuai	88.77	121	eT		T	17 28 46.5		
	comp=Z,67nm,0.3s								
S39A	Bolivar	88.77	41	P		P	15 50 12.1	0.0	
	baz=320								
W35A	Tecumseh	88.78	45	P		P	15 50 12.7	+0.5	
	baz=318								
P42A	Winchester	88.79	38	P		P	15 50 12.6	+0.5	
	baz=322								
U37A	Salina	88.80	43	P		P	15 50 12.8	+0.6	
	baz=319								
TUL1	Leonard	88.81	43	P		P	15 50 13.0	+0.6	
	baz=318								
TUL1	Leonard	88.81	43	eP		P	15 50 12.8	+0.4	
	comp=Z,74nm,1.8s								
V36A	Jenks	88.81	44	P		P	15 50 12.9	+0.5	
	baz=318								
R40A	Maddies Statio	88.84	40	P		P	15 50 12.8	+0.4	
	baz=320								
TX31	Lajitas Ar. Si	88.93	53	eP		P	15 50 13.8	+0.6	
TXAR	Lajitas Array	88.93	53	P		P	15 50 14.0	+0.8	
	comp=Z,10nm,0.6s,baz=299,slow=3.3,SNR=155								
TXAR				pP		pP	15 50 28.3	+0.7	
	comp=Z,4.3nm,0.7s,baz=292,slow=2.5,SNR=8.1								
ABTX	Abilene, Hawle	89.04	48	P		P	15 50 14.1	+0.5	
	baz=316								
ABTX	Abilene, Hawle	89.04	48	eP		P	15 50 13.1	-0.5	
	comp=Z,28nm,1.0s								
Z33A	Whitaker Ranch	89.07	47	P		P	15 50 14.0	+0.3	
	baz=317								
CEL	Celeste	89.10	321	eP		P	15 50 12.8	-1.0	
	comp=Z,19nm,0.9s								
W36A	Wetumka	89.14	44	P		P	15 50 14.4	+0.5	
	baz=318								
Y34A	Reagan Ranch,	89.16	46	P		P	15 50 14.6	+0.6	
	baz=317								
U38A	Gravette	89.16	42	P		P	15 50 14.3	+0.3	
	baz=319								
V37A	Hulbert	89.18	43	P		P	15 50 14.6	+0.5	
	baz=319								
Q42A	Golden Eagle	89.22	38	P		P	15 50 14.8	+0.5	
	baz=322								
T39A	Clever	89.25	41	P		P	15 50 14.3	-0.1	
	baz=320								
S40A	Lebanon	89.26	40	P		P	15 50 14.4	-0.1	
	baz=320								
X35A	Drake	89.28	45	P		P	15 50 14.9	+0.3	
	baz=318								
133A	Hamilton Ranch	89.48	48	P		P	15 50 16.2	+0.6	
	baz=317								
X36A	Centrahoma	89.49	45	P		P	15 50 16.2	+0.6	
	baz=318								
Z34A	Collier Ranch,	89.50	46	P		P	15 50 16.0	+0.3	
	baz=317								
HHAR	Hobbs	89.51	42	eP		P	15 50 15.8	+0.1	
	comp=Z,14nm,1.0s								
W37B	Quinton	89.58	44	P		P	15 50 16.8	+0.8	
	baz=320								
V38A	Canehill	89.58	43	P		P	15 50 16.5	+0.5	
	baz=319								
T40A	Mansfield	89.59	41	P		P	15 50 16.2	+0.2	
	baz=320								
Q43A	New Douglas	89.60	38	P		P	15 50 16.5	+0.5	
	baz=322								
Y35A	Marietta	89.60	46	P		P	15 50 16.6	+0.5	
	baz=318								
CAF	Calviac	89.61	333	eP		P	15 50 16.1	+0.1	
CAF				pmax		pmax			
	comp=Z,5.0nm,0.8s								
TRQ	Mont Tremblant	89.64	24	eP		P	15 50 16.1	0.0	
S41A	Jillco Farms,	89.65	40	P		P	15 50 16.5	+0.2	
	baz=321								
SFIN	Lafayette	89.68	35	P		P	15 50 16.7	+0.4	
	baz=324								
SFIN	Lafayette	89.68	35	eP		P	15 50 16.7	+0.4	
	comp=Z,24nm,0.8s								
U39A	Green Forest	89.68	42	P		P	15 50 16.6	+0.2	
	baz=320								
LMQ	La Malbaie	89.75	21	eP		P	15 50 16.5	0.0	
	comp=Z,27nm,1.0s								
PLVO	Plevna	89.83	27	eP		P	15 50 16.9	0.0	
	comp=Z,18nm,0.8s								
Z35A	Perchaven, San	89.90	46	P		P	15 50 18.0	+0.5	
	baz=318								
233A	Rising Star	89.92	48	P		P	15 50 18.6	+0.9	
	baz=317								
Q44A	Meyer Farm, Va	89.96	37	P		P	15 50 18.1	+0.4	
	baz=322								
134A	White-Moore Ra	89.99	47	P		P	15 50 18.7	+0.7	
	baz=317								
V39A	Pettigrew	90.00	42	P		P	15 50 18.1	0.0	
	baz=320								
X37A	Clayton	90.02	44	P		P	15 50 18.6	+0.6	
	baz=319								
U40A	Yellville	90.03	41	P		P	15 50 18.4	+0.3	
	baz=320								
Y36A	Durant	90.03	45	P		P	15 50 18.5	+0.4	
	baz=318								
T41A	Mountain View	90.06	40	P		P	15 50 18.2	0.0	
	baz=321								
LFF	La Frestale	90.06	334	eP		P	15 50 15.9	-2.1	
LFF				pmax		pmax			
	comp=Z,10.0nm,0.5s								
W38A	Poteau	90.12	43	P		P	15 50 18.8	+0.3	
	baz=319								
X38A	Whitesboro	90.25	44	P		P	15 50 19.8	+0.6	
	baz=319								
Y37A	Hugo	90.34	45	P		P	15 50 19.8	+0.3	
	baz=318								
333A	Richland Sprin	90.37	48	P		P	15 50 20.4	+0.6	
	baz=317								
234A	Clairette	90.37	47	P		P	15 50 20.5	+0.7	
	baz=317								
135A	Vickery Place,	90.38	47	P		P	15 50 20.4	+0.6	
	baz=318								
Z36A	Blue Ridge	90.41	46	P		P	15 50 20.2	+0.3	
	baz=318								
W39A	Magazine	90.42	43	P		P	15 50 20.2	+0.3	
	baz=320								
R44A	Waltonville	90.45	38	P		P	15 50 20.2	+0.3	
	baz=322								
V40A	Witts Springs	90.46	42	P		P	15 50 20.0	-0.2	
	baz=320								
JCT	Junction City	90.49	50	P		P	15 50 20.7	+0.2	
	baz=316								
JCT	Junction City	90.49	50	eP		P	15 50 20.6	+0.2	
JCT				pmax		pmax			
	comp=Z,20nm,0.7s								
JCT	Junction City	90.49	50	eP		P	15 50 20.6	+0.2	
	comp=Z,20nm,0.7s								
S43A	Fulton Ridge,	90.49	39	P		P	15 50 20.4	+0.2	
	baz=322								
U41A	Viola	90.52	41	P		P	15 50 20.4	0.0	
	baz=321								
OLIL	Olney	90.53	37	eP		P	15 50 20.2	-0.1	
	comp=Z,32nm,0.9s								
433A	Art	90.72	49	P		P	15 50 21.4	0.0	
	baz=317								
X39A	Fountain Ranch	90.76	43	P		P	15 50 22.2	+0.7	
	baz=319								
WHTX	Lake Whitney,	90.77	47	P		P	15 50 22.2	+0.6	
	baz=318								
WHTX	Lake Whitney,	90.77	47	eP		P	15 50 22.2	+0.6	
	comp=Z,37nm,0.9s								
334A	Lometa	90.80	48	P		P	15 50 22.3	+0.5	
	baz=317								
S44A	Carbondale	90.80	38	P		P	15 50 21.8	+0.2	
	baz=322								
SIUC	Southern Illin	90.80	38	eP		P	15 50 22.5	+0.9	
	comp=Z,42nm,1.0s								
W40A	Ferguson Farm,	90.80	42	P		P	15 50 22.0	+0.3	
	baz=320								
V41A	Mountainview	90.83	41	P		P	15 50 21.8	0.0	
	baz=320								
U42A	Revenden	90.86	40	P		P	15 50 21.9	0.0	
	baz=321								
Z37A	Pogue Cattle C	90.92	45	P		P	15 50 22.7	+0.5	
	baz=318								
PBMO	Poplar Bluff	90.94	40	eP		P	15 50 22.5	+0.2	
	comp=Z,30nm,1.0s								
136A	Ennis	90.94	46	P		P	15 50 22.7	+0.3	
	baz=318								
MIAR	Mount Ida	91.02	43	P		P	15 50 23.4	+0.7	
	baz=320								
MIAR	Mount Ida	91.02	43	eP		P	15 50 23.3	+0.6	
MIAR				pmax		pmax			
	comp=Z,23nm,0.9s								
MIAR	Mount Ida	91.02	43	eP		P	15 50 23.2	+0.6	
	comp=Z,22nm,0.9s								
X201	Greenbrier Sit	91.10	42	eP		P	15 50 23.1	+0.1	
	comp=Z,19nm,0.8s								
X301	Greenbrier Sit	91.12	42	eP		P	15 50 22.8	-0.3	
	comp=Z,14nm,1.0s								
WHAR	Wooly Hollow	91.14	42	eP		P	15 50 23.3	+0.1	
	comp=Z,28nm,0.8s								
S45A	Carrier Mills	91.14	38	P		P	15 50 23.8	+0.6	
	baz=323								
434A	Burnet	91.16	48	P		P	15 50 23.7	+0.2	
	baz=317								
Y39A	Locksburg	91.20	44	P		P	15 50 24.2	+0.6	
	baz=319								
V42A	Cord	91.20	41	P		P	15 50 23.4	-0.1	
	baz=321								
Z38A	Mt. Pleasant	91.23	45	P		P	15 50 24.0	+0.3	
	baz=319								
W41B	Gary Mavity, V	91.25	42	P		P	15 50 23.9	+0.1	
	baz=320								
335A	Moody	91.31	48	P		P	15 50 24.8	+0.7	
	baz=318								
X40A	Basin Creek Fa	91.46	43	P		P	15 50 25.4	+0.6	
	baz=320								
MMNY	Mt. Morris Dam	91.52	28	eP		P	15 50 25.1	+0.2	
336A	Riesel	91.57	47	P		P	15 50 25.7	+0.4	
	baz=318								
Y40A	Okolona	91.59	43	P		P	15 50 25.7	+0.4	
	baz=320								
633A	Saathoff Ranch	91.60	50	P		P	15 50 26.1	+0.6	
	baz=317								
534A	Francisco	91.61	49	P		P	15 50 25.9	+0.4	
	baz=317								
ACSO	Alum Creek Sta	91.61	33	eP		P	15 50 26.3	+1.0	
	comp=Z,20nm,1.0s								
Z39A	Irene McRaven,	91.68	44	P		P	15 50 26.6	+0.8	
	baz=319								
NCB	Newcomb	91.74	25	eP		P	15 50 26.3	+0.4	
	comp=Z,0.2nm,0.8s								
M54A	Oil Creek Stat	91.90	30	P		P	15 50 27.9	+1.2	
	baz=329								
832A	Faith Ranch, C	91.96	51	P		P	15 50 28.2	+1.1	
	baz=316								
139A	Bunkhouse Ranc	91.99	45	P		P	15 50 27.3	+0.1	
	baz=319								
436A	Wall Ranch, Ga	92.05	47	P		P	15 50 28.6	+1.1	
	baz=318								
N54A	Moraine State	92.23	30	P		P	15 50 29.0	+0.8	
	baz=328								
833A	Chaparral WMA,	92.29	51	P		P	15 50 29.6	+0.9	
	baz=316								
ACCN	Adirondack Com	92.45	25	eP		P	15 50 28.8	-0.4	
	comp=Z,28nm,1.4s								
V45A	Humboldt	92.48	39	P		P	15 50 30.5	+1.1	
	baz=322								
Y42A	Garnett, Star	92.52	42	P		P	15 50 30.6	+0.9	
	baz=321								
WVT	Waverly	92.73	38	eP		P	15 50 30.8	+0.2	
WVT				pmax		pmax			
	comp=Z,8.0nm,0.8s								
WVT	Waverly	92.73	38	eP		P	15 50 30.8	+0.2	
	comp=Z,7.8nm,0.8s								
636A	Smothers Creek	92.85	49	P		P	15 50 32.5	+1.3	
	baz=318								
933A	Laredo	92.87	51	P		P	15 50 32.8	+1.4	
	baz=316								
034A	Hebbronville	93.63	51	P		P	15 50 36.7	+1.8	
	baz=317								
035A	Encino	94.08	51	P		P	15 50 39.2	+2.3	
	baz=317								
ZAIG	Zacatecas	94.22	57	eP		P	15 50 38.3	+0.3	
	comp=Z,12nm,1.0s								
SWET	Sewanee	94.38	38	eP		P	15 50 38.0	-0.3	
	comp=Z,4.2nm,0.9s								
CPCT	Cooper Cave	94.86	37	eP		P	15 50 40.1	-0.3	
	comp=Z,10nm,1.1s								
TKL	Tuckaleechee C	95.04	36	P		P	15 50 41.5	+0.3	
	comp=Z,8.4nm,0.6s,baz=274,slow=4.0,SNR=10								
TKL	Tuckaleechee C	95.04	36	eP		P	15 50 41.2	0.0	
	comp=Z,45nm,1.4s								
ES19	SONSECA Array	96.30	334	eP		P	15 50 46.5	-0.4	
KMSC	Kings Mountain	96.57	35	P		P	15 50 48.3	+0.1	
	baz=327								
JSC	Jenkinsville	97.33	35	eP		P	15 50 51.3	-0.3	
JSC	Jenkinsville	97.33	35	eP		P	15 50 51.3	-0.3	
VNDA	Vanda	116.23	175	PKP		PKPdf	15 55 59.7	-0.4	
	comp=Z,1.1nm,0.7s,baz=335,slow=3.7,SNR=6.4								
TOA0	Torodi Ar. Sit	116.76	316	ePKPdf		PKPdf	15 56 01.8	-1.3	
TORD	Torodi Ar. Bea	116.76	316	PKP		PKPdf	15 56 02.2	-0.8	
	comp=Z,1.1nm,0.8s,baz=38,slow=1.4,SNR=8.6								
LBTB	Lobatse	125.28	264	ePKIKP		PKPdf	15 56 18.9	-0.3	
LBTB	Lobatse	125.28	264	ePKPdf		PKPdf	15 56 18.9	-0.3	
DBIC	Dimbokro	125.67	318	PKP		PKPdf	15 56 19.8	-0.4	
	comp=Z,3.8nm,0.6s,baz=63,slow=3.3,SNR=5.9								
TIC	Toumodi	125.78	318	eP		PKPdf	15 56 19.8	-0.6	
KIC	Kosan Boka	125.87	318	eP		PKPdf	15 56 20.1	-0.5	
	comp=Z,30nm,1.3s								
LIC	Lamto	126.14	318	eP		PKPdf	15 56 21.9	+0.8	
TSUM	Tsumeb	128.50	275	ePKPdf		PKPdf	15 56 25.5	0.0	
SNAA	Sanae	142.14	197	PKP		PKPpre	15 56 43.7		
SNAA	Sanae	142.14	197	ePKHKP		PKPpre	15 56 43.3		
SNAA	Sanae	142.14	197	ePKPpre		PKPpre	15 56 43.3		
SAML	Samuel	142.97	44	ePKPpre		PKPpre	15 56 48.0		
VNA1	Neumayer--Stat	144.10	196	PKP		PKPbc	15 56 50.8	0.0	
LPAZ	La Paz	145.59	59	PKPbc		PKPab	15 56 58.0	-0.1	
	comp=Z,45nm,0.8s,baz=344,slow=3.2,SNR=113								
LPAZ	La Paz	145.59	59	ePKPdf		PKPbc	15 56 57.9	+0.1	
PB11	IPOC Station P	146.90	65	ePKPbc		PKPbc	15 57 01.7	+0.6	
RCBR	Riachuelo	147.59	356	PKPbc		PKPbc	15 57 03.2	+0.2	
	comp=Z,16nm,0.8s,baz=343,slow=4.3,SNR=5.1								
PB01	IPOC Station P	147.85	67	ePKPbc		PKPbc	15 57 03.8	+0.2	
PB04	IPOC Station P	148.16	69	ePKPbc		PKPbc	15 57 05.2	+0.7	
LVC	Limon Verde	149.24	68	PKPbc		PKPbc	15 57 08.2	+0.7	
	comp=Z,65nm,0.7s,baz=276,slow=3.4,SNR=18								
LVC	Limon Verde	149.24	68	ePKPbc		PKPbc	15 57 08.0	+0.5	
PMSA	Palmer Station	149.40	158	PKPbc		PKPbc	15 57 06.2	+0.1	
	comp=Z,5.7nm,0.6s,baz=206,slow=3.6,SNR=5.3								
SIV	San Ignacio	149.85	49	PKPbc		PKPbc	15 57 09.1	+0.4	
	comp=Z,23nm,0.8s,baz=294,slow=2.1,SNR=32								
SIV				PKPab		PKPab	15 57 14.1	-0.2	
	comp=Z,29nm,0.8s,baz=285,slow=3.7,SNR=22								
LCO	Las Campanas	151.33	81	ePKPbc		PKPbc	15 57 12.8	+0.6	
HJA	Humahuaca	152.14	65	iP		PKPdf	15 57 07.6	-0.1	
ROC1	El Roble	152.70	89	iP		PKPbc	15 57 15.0	0.0	
ROC1	El Roble	152.70	89	ePKPbc		PKPbc	15 57 15.1	-0.1	
-AZAP	Zapla	153.01	66	iP		PKPdf	15 57 07.6	-1.2	
RTLS	Leoncito	153.61	85	iP		PKPdf	15 57 09.0	-0.6	
USHA	Ushuaia	153.63	139	PKPbc		PKPbc	15 57 16.9	+0.8	
	comp=Z,30nm,1.1s,baz=274,slow=1.1,SNR=5.4								
AUSP	Uspallata	153.71	86	iP		PKPdf	15 57 07.3	-2.3	
AMOG	MOGNA	153.90	83	iP		PKPdf	15 57 09.5	-0.1	
RTLL	Cerro Villicun	154.07	84	iP		PKPdf	15 57 02.7	-7.1	
ASAL	Salagasta	154.28	87	iP		PKPdf	15 57 07.3	-2.8	
ARCO	CERRO ARCO	154.29	87	iP		PKPbc	15 57 14.7	-3.9	
PLCA	Paso Flores	154.82	106	PKPbc		PKPbc	15 57 19.9	+0.6	
	comp=Z,9.8nm,1.0s,baz=329,slow=3.5,SNR=7.2								
CYA	Choya	154.82	75	iP		PKPbc	15 57 16.9	-2.8	
MRA	San Martin	156.65	84	iP		PKPdf	15 57 16.6	+3.2	
TCA	Tanti	157.09	80	iP		PKPdf	15 57 25.0	+11	
CPUP	Villa Florida	159.76	59	PKPab		PKPab	15 57 56.4	+0.1	
	comp=Z,4.6nm,0.9s,baz=332,slow=4.2,SNR=7.5								
CPUP	Villa Florida	159.76	59	ePKPab		PKPab	15 57 56.1	-0.2	
TRQA	Tornquist	161.12	97	ePKPab		PKPab	15 58 02.4	+0.4	

SJA 12 15:46:53.5±0.7, 28°98S×67°48W, h126km±5km, ML3.9, MW4.0, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VCA	Vinchina	0.68	291	iP		Pn 15 47 14.0	+0.5
VCA				iS		Sn 15 47 29.1	+0.5
VCA				IAML		15 47 31.9	
	comp=Z,2μm,0.5s						
AGUA	GUANDACOL	1.02	240	iP		Pn 15 47 17.3	+1.0
AGUA				iS		Sn 15 47 34.3	+0.7
AVFE	Valle Fertil	1.67	179	iP		Pn 15 47 24.5	+1.1
ACDV	Cuesta del Vie	1.86	230	iP		Pn 15 47 27.1	+1.4
ACCO	Cerro Coronel	2.11	220	iP		Pn 15 47 30.1	+1.1
ACCO				IAML		15 47 30.4	
	comp=Z,475nm,0.3s						
AMOG	MOGNA	2.14	204	iP		Pn 15 47 30.0	+0.9
ACHE	Chepes	2.28	162	eP		Pn 15 47 32.4	+1.5
ACHE				iS		Sn 15 48 00.2	+0.6
RTLL	Cerro Villicun	2.49	200	iP		Pn 15 47 34.6	+1.1
RTLL				iS		Sn 15 48 05.2	+1.0
RTCV	Cerro Valdivia	3.01	197	iP		Pn 15 47 41.2	+1.0
RTLS	Leoncito	3.22	209	eP		Pn 15 47 44.3	+1.2
AUSP	Uspallata	3.62	206	iP		Pn 15 47 49.7	+1.2
ARCO	CERRO ARCO	4.04	198	iP		Pn 15 47 54.8	+1.

SAHE S **Sb** **15 47 36.5 -0.3**
SILT Sile 1.04 346 *e*PG **Pg** **15 47 24.0 -0.5**
SILT Sile 1.04 346 *e*Pg **Pg** **15 47 24.0 -0.5**
GDZ Gediz 1.12 200 *i* P **Pg** **15 47 25.2 -0.8**
GDZ *i* S **Sb** **15 47 41.2 +0.3**
GDZ Gediz 1.12 200 P **Pg** **15 47 25.2 -0.8**
GDZ S **Sb** **15 47 41.2 +0.3**
KCTX Karacabey (Bur 1.24 276 *e*PN **Pb** **15 47 27.2 -0.9**
KCTX Karacabey (Bur 1.24 276 *e*Pn **Pb** **15 47 27.3 -0.9**
SVRH Sivrihisar-ESK 1.38 120 *e*PN **Pn** **15 47 30.1 -0.1**
SVRH Sivrihisar-ESK 1.38 120 *e*Pn **Pn** **15 47 30.1 -0.1**
DEMI Demirci 1.47 222 *i* P **Pb** **15 47 32.2 +0.2**
DEMI *i* S **Sg** **15 47 52.6 +1.0**
DEMI Demirci 1.47 222 P **Pb** **15 47 32.2 +0.2**
DEMI S **Sg** **15 47 52.6 +1.0**

ISCJB ***12*** *15:48:53.4±0.9, 5°.67N±0°.03×73°.00W±0°.03, h7km±5km, Error ellipse: s-maj=6.5km s-min=3.7km az=38.7*
IDC ***12*** *15:48:53.4±7.9, 6°.25N×75°.06W, h0km, Error ellipse: s-maj=416.5km s-min=17.2km az=56.0*
RSNC ***12*** *15:48:54.9±0.9, 5°.70N×73°.09W, h0km±3km, ML3.4*
FUNV ***12*** *15:48:55.9, 5°.43N×72°.99W, h20km, MW3.4*
ISC 12 15:48:53.9±1.3, **5°.65N**±0°.04×**73°.05W**±0°.04, **h7**km±9km, **n27,** σ0**972**/37, **1C, Colombia**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RUSC	**La Rusia**	**0.24**	**351**	⇑*i*P		**Pg**	**15 48 58.9**	**0.0**
RUSC				*e*S		**Sg**	**15 49 02.8**	**+0.6**
BARC	**Barichara**	**0.94**	**352**	*e*P		**Pg**	**15 49 11.2**	**-0.9**
BARC				*e*S		**Sg**	**15 49 24.9**	**+0.5**
BARC				*i*			15 49 27.9	
	comp=Z,593nm,0.3s							
CHIC	**Chingaza**	**1.22**	**214**	*e*S		**Sn**	**15 49 35.2**	**+0.3**
ROSC	**El Rosal**	**1.50**	**238**	Pg		**Pb**	**15 49 22.4**	**0.0**
	comp=Z,35nm,0.3s,baz=171,slow=19,SNR=27							
ROSC				Lg		Lg	15 49 43.6	
	comp=Z,89nm,0.3s,baz=44,slow=20,SNR=8.3							
ROSC	**El Rosal**	**1.50**	**238**	*e*P		**Pn**	**15 49 21.6**	**-0.1**
ROSC				*e*S		**Sg**	**15 49 43.1**	**+0.8**
ROSC				*i*			15 49 47.2	
	comp=Z,384nm,0.4s							
BRRC	**Barranca, Sant**	**1.59**	**335**	*e*P		**Pn**	**15 49 21.4**	**-1.2**
BRRC				*i*			15 49 24.5	
	comp=Z,252nm,0.1s							
BRRC				*e*S		**Sn**	**15 49 42.7**	**-0.7**
VILC	**Villavicencio,**	**1.66**	**203**	*e*S		**Sg**	**15 49 47.1**	**-0.2**
VILC				*i*			15 49 51.8	
	comp=Z,675nm,0.7s							
PAMC	**Pamplona, Colo**	**1.71**	**12**	*e*P		**Pn**	**15 49 25.1**	**+0.5**
NORC	**Norcasia**	**1.82**	**267**	*e*P		**Pn**	**15 49 25.2**	**-0.5**
NORC				*e*S		**Sn**	**15 49 49.2**	**+0.1**
CAPV	**Capacho**	**2.32**	**18**	*e*P		**Pb**	**15 49 36.0**	**-0.2**
CAPV				*e*S		**Sb**	**15 50 03.9**	**-1.3**
TOLC	**Tolima**	**2.50**	**245**	*e*P		**Pn**	**15 49 35.6**	**+0.2**
HELC	**Santa Helena**	**2.53**	**282**	*e*P		**Pn**	**15 49 35.7**	**0.0**
HELC				*e*S		**Sn**	**15 50 07.7**	**+0.7**
HELC				*i*			15 50 09.3	
	comp=Z,144nm,0.3s							
OCAC	**Ocana**	**2.58**	**354**	*e*P		**Pn**	**15 49 37.2**	**+0.9**
PRAC	**Prado**	**2.66**	**224**	*e*P		**Pn**	**15 49 37.7**	**+0.5**
PRAC				*i*			15 50 20.4	
	comp=Z,892nm,0.2s							
SOCV	**Socops**	**3.40**	**40**	*e*P		**Pn**	**15 49 48.1**	**+0.6**
SOCV				*e*S		**Sn**	**15 50 28.0**	**-0.2**
DBBC	**Dabeiba**	**3.42**	**294**	*e*P		**Pn**	**15 49 48.0**	**+0.1**
VIGV	**El Vigia**	**3.58**	**28**	*e*P		**Pn**	**15 49 51.1**	**+1.2**
VIGV				*e*S		**Sn**	**15 50 32.9**	**+0.3**
ELOV	**Elorza**	**3.79**	**69**	*e*P		**Pn**	**15 49 52.0**	**-0.8**
VIRV	**Villa del Rosa**	**4.86**	**7**	*e*P		**Pn**	**15 50 09.4**	**+1.8**
VIRV				*e*S		**Sn**	**15 51 03.8**	**-0.4**
SANV	**Sanarito**	**5.17**	**42**	*e*P		**Pn**	**15 50 13.3**	**+1.4**
CURV	**Curarigua**	**5.30**	**35**	*e*P		**Pn**	**15 50 14.2**	**+0.5**
BAUV	**El Baul**	**5.95**	**56**	*e*P		**Pn**	**15 50 22.3**	**-0.2**
MAPV	**Macapo**	**6.16**	**47**	*e*P		**Pn**	**15 50 25.5**	**+0.1**
MONV	**Montecano**	**6.96**	**26**	*e*P		**Pn**	**15 50 36.2**	**-0.2**
TURV	**Turiamo**	**7.02**	**47**	*e*P		**Pn**	**15 50 37.3**	**0.0**
ASAR	**Alice Springs**	**148.48**	**233**	PKPbc		**PKPdf**	**16 08 38.7**	**-0.1**
	comp=Z,0.3nm,0.8s,baz=117,slow=3.3,SNR=3.7							
WRA	**Warramunga Arr**	**149.82**	**239**	PKPbc		**PKPdf**	**16 08 42.2**	**+1.1**
	comp=Z,0.2nm,0.4s,baz=108,slow=2.8,SNR=6.5							

IDC ***12*** *15:57:02.4±0.6, 41°.95N×82°.30E, h0km, mb4.2/19, mb1 4.3/26, mb1mx4.1/56, mbtmp4.2/26, ML3.8/7, MS3.7/3, Ms1 3.7/3, ms1mx3.0/36, Error ellipse: s-maj=12.5km s-min=10.7km az=65.0*
SOME ***12*** *15:57:02.6, 41°.52N×81°.87E, h10km, MS3.8*
NEIC ***12*** *15:57:04.0±0.3, 41°.93N×82°.26E, h10km, mb4.5/7, Error ellipse: s-maj=7.9km s-min=5.4km az=220.0*
MOS ***12*** *15:57:04.2±1.3, 42°.08N×82°.37E, h14km, mb4.7/16, Error ellipse: s-maj=8.6km s-min=5.3km az=104.5*
NNC ***12*** *15:57:06.3, 41°.87N×82°.43E, h0km, mb5.0, mpv4.7, Error ellipse: s-maj=8.9km s-min=5.1km az=140.0*
BJI ***12*** *15:57:06.3, 41°.98N×82°.28E, h10km, mb4.1/9, mB4.4/7, ML4.3/11, Ms4.0/4, Ms7 3.8/3*
ISC 12 15:57:04.3±0.4, **41°.82N**±0°.04×**82°.15E**±0°.03, **h14**km, **n138,** σ2**919**/156, **mb4.4**/45, **MS3.7**/3, **20C-10D, Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**2.14**	**309**	*e*P		**Pb**	**15 57 43.5**	**+0.4**
	887nm,0.3s							
SHLS				*e*S		**Sg**	**15 58 12.9**	**-0.3**
	5μm,0.4s							
PDGK	**Podgornoye**	**2.48**	**308**	⇑Pn		**Pb**	**15 57 48.2**	**-0.4**
	427nm,0.6s							
PDGK				⇑Sn		**Sg**	**15 58 21.6**	**-2.3**
	5μm,0.8s							
PDGK	**Podgornoye**	**2.48**	**308**	PN		**Pb**	**15 57 48.2**	**-0.4**
PDGK				S		**Sg**	**15 58 21.6**	**-2.3**
PDGK				pmax	pmax			
	comp=Z,427nm,0.6s							
PDGK				smax	smax			
	comp=N,5μm,0.8s							
UZB	**Uzynbulak**	**2.67**	**301**	*e*P		**Pb**	**15 57 50.5**	**-1.4**
	comp=N,165nm,0.3s							
UZB				*e*S		**Sb**	**15 58 24.9**	**+0.4**
	comp=N,1μm,0.4s							
SATY	**Saty**	**3.04**	**295**	*e*P		**Pb**	**15 57 56.3**	**-1.9**
	comp=N,236nm,0.3s							
SATY				*e*S		**Sb**	**15 58 35.3**	**+0.2**
	comp=N,2μm,0.6s							
DJR	**Jarkent**	**3.05**	**326**	*e*P		**Pg**	**15 58 00.8**	**-1.9**
	comp=N,266nm,0.4s							
DJR				*e*S		**Sg**	**15 58 42.6**	**+0.4**
	comp=N,476nm,0.5s							
ZHN	**Zhinishke**	**3.06**	**297**	*e*P		**Pb**	**15 57 58.5**	**-0.1**
	comp=N,159nm,0.3s							
ZHN				*e*S		**Sb**	**15 58 38.8**	**+3.0**
	comp=N,611nm,0.6s							
KURS	**Kuram**	**3.38**	**301**	*e*P		**Pb**	**15 58 04.9**	**+0.9**
	comp=N,26nm,0.6s							
KURS				*e*S		**Sg**	**15 58 49.5**	**-3.2**
	comp=N,162nm,0.7s							
ARXS	**Arharly**	**3.97**	**308**	*e*P		**Pb**	**15 58 16.3**	**+2.2**
	comp=N,204nm,0.6s							
ARXS				*e*S		**Sg**	**15 59 09.2**	**-2.5**
	comp=N,476nm,0.7s							
KAPS	**Kapalarasan**	**4.01**	**331**	*e*P		**Pg**	**15 58 18.6**	**-2.5**
	comp=N,223nm,0.5s							
KAPS				*e*S		**Sg**	**15 59 13.1**	**0.0**
	comp=N,292nm,0.3s							
KNDC	**Almaty**	**4.08**	**292**	⇑Pn		**Pn**	**15 58 10.6**	**+4.3**
	comp=N,386nm,0.7s							
KNDC				⇓Lg		Lg	15 59 22.7	
	comp=N,970nm,0.8s							
AAA	**Alma-Ata**	**4.11**	**292**	*e*PN		**Pb**	**15 58 18.7**	**+2.3**
AAA				*e*S		**Sb**	**15 59 10.9**	**+5.0**
AAA				pmax	pmax			
	comp=Z,555nm,0.7s							
AAA				smax	smax			
	comp=N,756nm,0.5s							
AAA	**Alma-Ata**	**4.11**	**292**	*e*P		**Pb**	**15 58 14.9**	**-1.5**
	comp=N,219nm,0.3s							
AAA				*e*S		**Sb**	**15 59 07.0**	**+1.1**
	comp=N,749nm,0.7s							
IZV	**Izvestkoviy**	**4.28**	**288**	*e*P		**Pb**	**15 58 17.8**	**-1.5**
	comp=N,246nm,0.8s							
IZV				*e*S		**Sb**	**15 59 11.9**	**+1.1**
	comp=N,772nm,0.7s							
WMQ	**Urumqi**	**4.54**	**62**	*e*Pg		**Pb**	**15 58 23.0**	**-0.8**
WMQ				Sg		**Sb**	**15 59 18.3**	**-0.1**
WMQ				smax	smax			
	comp=N,410nm,0.7s							
WMQ				smax	smax			
	comp=N,610nm,0.9s							
KUU	**Kurty**	**4.75**	**298**	*e*P		**Pb**	**15 58 27.4**	**+0.1**
	comp=N,132nm,0.5s							
KUU				*e*S		**Sb**	**15 59 28.7**	**+4.5**
	comp=N,722nm,0.8s							
DGS	**Degeres**	**4.92**	**289**	*e*P		**Pb**	**15 58 31.0**	**+0.7**
	comp=N,92nm,0.6s							
DGS				*e*S		**Sb**	**15 59 34.5**	**+5.1**
	comp=N,316nm,0.8s							
MK31	**Makanchi Array**	**4.97**	**1**	⇓Pn		**Pn**	**15 58 19.8**	**+1.3**
	comp=N,86nm,0.8s,baz=183,slow=14,SNR=320							
MK31				⇓Sn		**Sn**	**15 59 18.6**	**+2.7**
	comp=N,17nm,0.3s							
MK31				⇑Lg		Lg	15 59 38.5	
MK31	**Makanchi Array**	**4.97**	**1**	PN		**Pn**	**15 58 19.8**	**+1.3**
MK31				pmax	pmax			
	comp=Z,86nm,0.8s							
MKAR	**Makanchi Array**	**4.97**	**1**	Pn		**Pn**	**15 58 19.1**	**+0.6**
	comp=Z,14nm,0.3s,baz=188,slow=13,SNR=208							
MKAR				Sn		**Sn**	**15 59 13.7**	**-2.1**
	comp=Z,13nm,0.3s,baz=177,slow=17,SNR=5.2							
MKAR				Lg		Lg	15 59 36.6	
	comp=Z,32nm,0.3s,baz=177,slow=28,SNR=6.5							
TKM2	**Tokmak 2**	**4.98**	**285**	⇑Pn		**Pn**	**15 58 22.7**	**+3.9**
	comp=Z,177nm,1.1s							
TKM2				⇑Lg		Lg	15 59 45.6	
	comp=Z,400nm,0.8s							
TKM2	**Tokmak 2**	**4.98**	**285**	PN		**Pn**	**15 58 22.7**	**+3.9**
TKM2				pmax	pmax			
	comp=Z,177nm,1.2s							
MAKZ	**Makanchi**	**4.99**	**359**	⇑Pn		**Pn**	**15 58 19.8**	**+1.1**
	comp=Z,101nm,0.8s							
MAKZ				⇑Sn		**Sn**	**15 59 18.6**	**+2.4**
	comp=Z,72nm,0.5s							
MAKZ				⇑Lg		Lg	15 59 40.2	
MAKZ	**Makanchi**	**4.99**	**359**	PN		**Pn**	**15 58 19.8**	**+1.1**
MAKZ				S		**Sn**	**15 59 18.6**	**+2.4**
MAKZ				pmax	pmax			
	comp=Z,101nm,0.8s							
MAKZ				smax	smax			
	comp=N,72nm,0.5s							
KSH	**Kashi**	**5.23**	**246**	*e*Pn		**Pb**	**15 58 33.6**	**-2.0**
KSH				Sn		**Sb**	**15 59 33.6**	**-4.7**
KSH				smax	smax			
	comp=N,350nm,1.0s							
KSH				smax	smax			
	comp=N,580nm,1.3s							
FRU	**Bishkek**	**5.68**	**283**	*e*PN		**Pn**	**15 58 33.0**	**+4.8**
FRU				*i*			15 58 53.0	
FRU				*i*			16 00 03.0	
AAK	**Ala-Archa**	**5.74**	**281**	Pn		**Pn**	**15 58 32.7**	**+3.4**
	comp=N,3.0nm,0.3s,baz=96,slow=11,SNR=7.4							
AAK				Lg		Lg	16 00 08.9	
	comp=N,7.9nm,0.3s,baz=157,slow=23,SNR=7.4							
AAK	**Ala-Archa**	**5.74**	**281**	Pn		**Pn**	**15 58 33.5**	**+4.2**
	comp=N,5.1nm,0.7s							
AAK				Lg		Lg	16 00 13.2	
	comp=N,278nm,0.9s							
AAK	**Ala-Archa**	**5.74**	**281**	*e*PN		**Pn**	**15 58 31.3**	**+2.1**
AAK				pmax	pmax			
	comp=Z,37nm,0.6s							
AAK	**Ala-Archa**	**5.74**	**281**	*e*Pn		**Pn**	**15 58 31.3**	**+2.1**
	comp=Z,37nm,0.6s							
AAK				Lg		Lg	16 00 08.9	
MNAS	**Manas**	**7.20**	**279**	⇑Lg		Lg	16 00 56.5	
	comp=Z,129nm,1.2s							
MNAS	**Manas**	**7.20**	**279**	P		Pn	15 58 54.4	+5.2
MNAS				pmax	pmax			
	comp=Z,18nm,1.1s							
KK31	**Karatay Array**	**8.70**	**282**	⇑Pg		Pg	15 59 43.9	-6.9
	comp=Z,14nm,0.9s,baz=89,slow=16,SNR=7.2							
KK31				⇓Lg		Lg	16 01 46.1	
	comp=Z,28nm,0.7s,baz=98,slow=30,SNR=4.1							
KKAR	**Karatay Array**	**8.70**	**282**	*e*P		**Pn**	**15 59 09.6**	**-0.1**
KKAR				pmax	pmax			
	comp=Z,12nm,0.7s							
KKAR	**Karatay Array**	**8.70**	**282**	*e*Pn		**Pn**	**15 59 09.6**	**-0.1**
	comp=Z,12nm,0.7s							
KURBB	**Kurchatov Arra**	**9.15**	**345**	Pn		**Pn**	**15 59 15.3**	**-0.6**
	comp=Z,0.6nm,0.3s,baz=158,slow=12,SNR=19							
KURBB				Sn		**Sn**	**16 00 56.3**	**-2.2**
	comp=Z,1.1nm,0.3s,baz=157,slow=24,SNR=4.7							
KURBB				Lg		Lg	16 01 52.3	
	comp=Z,0.9nm,0.3s,baz=158,slow=33,SNR=5.0							
KURK	**Kurchatov**	**9.22**	**346**	P		**Pn**	**15 59 15.3**	**-1.5**
KURK							16 00 56.3	
KURK				pmax	pmax			
	comp=Z,1.0nm,0.3s							
KURK				smax	smax			
	comp=N,1.0nm,0.3s							
KURK	**Kurchatov**	**9.22**	**346**	*e*Pn		**Pn**	**15 59 14.8**	**-2.0**
KURK				Sn		**Sn**	**16 00 56.4**	**-4.0**
KURK				Lg		Lg	16 01 52.3	
UKR	**Ust'-Kan**	**9.30**	**10**	*e*P		**Pn**	**15 59 17.7**	**-0.2**
UKR				*e*			16 01 02.1	
OTUK	**Ortayu**	**9.46**	**316**	⇓Lg		Lg	16 02 09.4	
	comp=N,101nm,0.9s							
OTUK	**Ortayu**	**9.46**	**316**	P		**Pn**	**15 59 23.0**	**+3.0**
OTUK				pmax	pmax			
	comp=Z,10.0nm,0.7s							
THN	**Thein Dam**	**10.68**	**211**	*e*P		**Pn**	**15 59 34.9**	**-1.9**
THN				*e*S		**Sn**	**16 01 35.6**	**-0.6**
ELT	**Eltsovka**	**11.77**	**12**	*e*P		**Pn**	**15 59 50.3**	**-1.4**
ELT				*e*			16 02 01.5	
ZALV	**Zalesovo Beam**	**12.27**	**7**	Pn		**Pn**	**15 59 56.4**	**-1.9**
	comp=Z,1.0nm,0.3s,baz=189,slow=13,SNR=20							
ZALV				Sn		**Sn**	**16 02 13.1**	**-1.6**
	comp=Z,0.9nm,0.3s,baz=179,slow=25,SNR=5.2							
ZALV				Lg		Lg	16 03 27.5	
	baz=192,slow=26,SNR=3.6							
NVS	**Novosibirsk**	**13.05**	**3**	*e*P		**Pn**	**16 00 06.1**	**-3.0**
NVS				*e*			16 02 24.6	
GTA	**Gaotai**	**13.63**	**94**	*e*P		Pn	16 00 11.4	-5.9
GTA				pP		P	16 00 16.3	-10
GTA				sP			16 00 19.5	
GTA				S		S	16 03 32.6	+21
GTA				sS		Sn	16 03 40.4	+52
GTA				SS		**SbSb**	**16 03 57.5**	**+12**
GTA				pmax	pmax			
	comp=Z,5.0nm,0.8s							
GTA				pmax	pmax			
	comp=Z,310nm,5.9s							
GTA				LR	LR			
	comp=N,290nm,8.8s							
GTA				LR	LR			
	comp=E,420nm,9.0s							
GTA				LR	LR			
	comp=Z,490nm,8.8s							
NDI	**New Delhi**	**13.71**	**199**	*e*P		Pn	16 00 14.0	-4.2
BVAR	**Borovoye Array**	**13.73**	**329**	Pn		**Pn**	**16 00 18.0**	**-0.3**
	comp=Z,0.7nm,0.3s,baz=128,slow=12,SNR=12							
BVAR				Sn		**Sn**	**16 02 45.8**	**-4.7**
	comp=Z,0.2nm,0.3s,baz=132,slow=22,SNR=2.9							
BVAR				Lg		Lg	16 04 22.5	
	comp=Z,0.5nm,0.3s,baz=130,slow=28,SNR=4.5							
BRVK	**Borovoye**	**13.79**	**329**	*c*eP		**Pn**	**16 00 20.5**	**+1.3**
BRVK				pmax	pmax			
	comp=Z,21nm,1.2s							
BRVK	**Borovoye**	**13.79**	**329**	*e*Pn		**Pn**	**16 00 19.9**	**+0.7**
	comp=Z,73nm,0.8s							
GKN	**Gorkha**	**13.93**	**171**	*e*P		**P**	**16 00 28.6**	**-1.0**
	comp=Z,20nm,0.3s							
KOLN	**Koldanda**	**14.07**	**175**	*e*P		**P**	**16 00 30.0**	**-1.1**
	comp=Z,39nm,0.8s							
LSA	**Lhasa**	**14.12**	**146**	P		**Pn**	**16 00 23.5**	**-0.8**
LSA	**Lhasa**	**14.12**	**146**	Pn		**Pn**	**16 00 23.5**	**-0.8**
KKN	**Kakani**	**14.23**	**169**	*e*P		**P**	**16 00 31.0**	**-1.9**
	comp=Z,10nm,0.6s							
PKIN	**Phulchoki**	**14.46**	**168**	*e*P		**P**	**16 00 33.4**	**-2.1**
RAMN	**Ramite**	**15.28**	**165**	*e*P		**Pn**	**16 00 41.5**	**+1.7**
	comp=Z,13nm,0.8s							
MOY	**Mondy**	**16.20**	**46**	*e*P		**P**	**16 00 55.2**	**+0.7**
ZAK	**Zakamensk**	**16.93**	**52**	*e*P		**Pn**	**16 00 57.6**	**-3.1**
ZAK				pmax	pmax			
	comp=Z,7.0nm,1.4s							
ABKAR	**Akbulak array**	**17.20**	**303**	*e*Pn		**Pn**	**16 01 03.1**	**-0.9**
	comp=Z,4.7nm,0.7s							
TLY	**Talaya**	**17.66**	**49**	LR		LR	16 08 07.9	
	comp=Z,72nm,20.8s,baz=124,slow=38							
SONM	**Songino Array**	**18.18**	**62**	P		**Pn**	**16 01 14.4**	**-1.9**
	comp=Z,0.2nm,0.3s,baz=252,slow=12,SNR=16							
SONM				Lg		Lg	16 06 38.4	
	comp=Z,0.0nm,0.3s,baz=263,slow=22,SNR=3.7							
SONM				LR		LR	16 08 51.3	
	comp=Z,20nm,21.5s,baz=206,slow=39							
SONM	**Songino Array**	**18.18**	**62**	*e*P		**Pn**	**16 01 15.5**	**-0.8**
AKTO	**Aktyubinsk**	**18.75**	**306**	P		**P**	**16 01 22.8**	**+0.2**
	comp=Z,0.4nm,0.3s,baz=100,slow=9.9,SNR=10							
AKTO				Lg		Lg	16 06 58.1	
	comp=Z,0.1nm,0.3s,baz=245,slow=19,SNR=4.8							
GEYT	**Alibeck**	**18.83**	**266**	P		**Pn**	**16 01 25.3**	**+1.1**
	comp=Z,0.3nm,0.3s,baz=88,slow=7.6,SNR=9.9							
SVE	**Sverdlovsk**	**20.41**	**325**	⇑*e*P		**P**	**16 01 41.3**	**+0.6**
SVE				pmax	pmax			
	comp=Z,25nm,1.2s							
CD2	**Chengdu**	**20.47**	**115**	*e*P		Pn	16 01 44.4	+0.6
CD2				S		Sn	16 05 34.6	+0.3
CD2				sS		sS	16 05 38.1	+1.4
CD2				pmax	pmax			
	comp=Z,10.0nm,0.5s							
CD2				pmax	pmax			
	comp=Z,120nm,5.0s							
ARU	**Arti**	**21.11**	**322**	P		**P**	**16 01 48.5**	**+0.2**
	comp=Z,26nm,0.6s,baz=112,slow=9.1,SNR=61							
ARU				Lg		Lg	16 08 11.4	
	comp=Z,1.1nm,0.3s,baz=114,slow=20,SNR=5.4							
ARU	**Arti**	**21.11**	**322**	*c*P		**P**	**16 01 48.3**	**+0.1**
ARU							16 02 05.8	
ARU				S		**S**	**16 05 43.0**	**+0.5**
ARU				SS		**SnSn**	**16 06 00.1**	**-3.8**
ARU				pmax	pmax			
	comp=Z,48nm,1.0s							
ARU	**Arti**	**21.11**	**322**	*e*P		**P**	**16 01 48.0**	**-0.2**
	comp=Z,36nm,0.7s							
ARU				Lg		Lg	16 08 11.4	
SOKR	**Solikamsk**	**23.72**	**327**	⇑*i*P		**P**	**16 02 18.5**	**+3.0**
SOKR				pmax	pmax			
	comp=Z,10.0nm,0.8s							
SOKR				MLR	MLR			
	comp=Z,183nm,16.0s							
ENH	**Enshi**	**24.82**	**109**	P		**P**	**16 02 28.2**	**+2.2**
	comp=Z,3.0nm,0.5s							
BOD	**Bodaibo**	**25.72**	**41**	*e*P		**P**	**16 02 32.2**	**-1.7**
BOD				pmax	pmax			
	comp=Z,8.0nm,1.1s							
CMAR	**Chiang Mai Arr**	**27.34**	**143**	P		**P**	**16 02 49.8**	**+0.9**
	comp=Z,0.2nm,0.5s,baz=320,slow=9.6,SNR=2.5							
NRIK	**Noril'sk**	**27.73**	**4**	P		**P**	**16 02 51.2**	**-0.7**
	comp=Z,1.5nm,0.4s,baz=177,slow=9.9,SNR=4.1							
KLMR	**Klimovskoe**	**31.95**	**321**	*e*P		**P**	**16 03 27.9**	**-1.4**
KLMR				*e*			16 06 19.1	
KLMR				pmax	pmax			
	comp=Z,11nm,1.2s							
YAK	**Yakutsk**	**34.53**	**38**	*e*P		**P**	**16 03 50.4**	**-1.4**
YAK				pmax	pmax			
	comp=Z,10.0nm,1.0s							
YAK				pmax	pmax			
	comp=E,9.0nm,1.4s							
KLR	**Kul'dur**	**34.99**	**61**	*d*i P		**P**	**16 03 55.8**	**-0.2**
BRTR	**Keskin Array B**	**36.41**	**283**	P		**P**	**16 04 09.5**	**+1.0**
	comp=E,1.3nm,0.6s,baz=96,slow=7.6,SNR=9.3							
BRTR	**Keskin Array B**	**36.41**	**283**	*e*P		**P**	**16 04 10.8**	**+2.3**
BRTR				pmax	pmax			
	comp=Z,1.0nm,0.6s							
AKASG	**Malin Array Be**	**36.94**	**302**	P		**P**	**16 04 12.8**	**+0.2**
	comp=Z,2.2nm,0.8s,baz=68,slow=8.6,SNR=5.3							
AKASG	**Malin Array Be**	**36.94**	**302**	*e*P		**P**	**16 04 13.3**	**+0.7**
AKASG				pmax	pmax			
	comp=Z,2.0nm,0.8s							
TIXI	**Tiksi**	**37.59**	**22**	P		**P**	**16 04 16.3**	**-1.5**
	comp=Z,2.3nm,0.4s,baz=290,slow=5.1,SNR=7.7							
TIXI	**Tiksi**	**37.59**	**22**	⇑*i*P		**P**	**16 04 16.8**	**-1.0**
TIXI				pmax	pmax			
	comp=Z,3.0nm,0.7s							
KIS	**Kishinev**	**37.83**	**296**	*e*		P	16 04 28.0	+7.8
KIS				*e*L		L	16 16 14.0	
KIS				LRM		MLR	16 25 44.0	
	comp=Z,500nm,18.0s							
VSU	**Vasula**	**37.99**	**315**	⇓*i*P		**P**	**16 04 22.8**	**+1.4**
VSU				pmax	pmax			
	comp=Z,55nm,1.7s							
FINES	**FINESS Array B**	**38.46**	**320**	P		**P**	**16 04 26.0**	**+0.7**
	comp=Z,1.3nm,0.5s,baz=114,slow=11,SNR=6.5							
FINES	**FINESS Array B**	**38.46**	**320**	*e*P		**P**	**16 04 25.7**	**+0.4**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.5s							
ARCES	**ARCESS Array B**	**39.97**	**333**	P		**P**	**16 04 37.6**	**-0.2**
	comp=Z,4.2nm,0.7s,baz=92,slow=8.4,SNR=18							
ARCES	**ARCESS Array B**	**39.97**	**333**	*e*P		**P**	**16 04 38.7**	**+0.8**
ARCES				pmax	pmax			
	comp=Z,3.0nm,0.6s							
NIE	**Niedzica**	**42.83**	**302**	P		**P**	**16 05 04.9**	**+3.3**
NIE				pmax	pmax			
	comp=Z,2.0nm,1.1s							
MAJO	**Matsushiro**	**43.12**	**78**	⇑*e*P		**P**	**16 05 05.3**	**+1.2**
MAJO				pmax	pmax			
	comp=Z,10.0nm,0.8s							
VYHS	**Vyhne**	**44.00**	**301**	*e*P		**P**	**16 05 13.4**	**+2.3**
VYHS	**Vyhne**	**44.00**	**301**	*e*P		**P**	**16 05 13.3**	**+2.2**
MORC	**Moravsky Berou**	**44.47**	**303**	P		**P**	**16 05 17.3**	**+2.

comp=Z,2.2nm,0.9s,baz=314,slow=5.2,SNR=16

ILAR	**Eielson Array**	**67.03**	**21**	*e*P		**P**	**16 07 55.7**	**-0.7**
ILAR				pmax	pmax				

comp=Z,2.0nm,0.9s

TORD	**Torodi Ar. Bea**	**74.28**	**274**	P		P	**16 08 41.9**	**+0.5**

comp=Z,3.8nm,0.7s,baz=44,slow=4.9,SNR=34

YKA	**Yellowknife Ar**	**75.16**	**8**	P		**P**	**16 08 44.6**	**-1.0**

comp=Z,1.8nm,0.7s,baz=343,slow=5.5,SNR=22

YKA	**Yellowknife Ar**	**75.16**	**8**	*e*P		**P**	**16 08 44.8**	**-0.9**
YKA				pmax	pmax				

comp=Z,2.0nm,0.7s

WRAB	**Tennant Creek**	**78.12 131**		*e*P		**P**	**16 09 07.5**	**+4.6**
WRAB				pmax	pmax				

comp=Z,19nm,1.2s

WRAB	**Tennant Creek**	**78.12 131**		*e*P		**P**	**16 09 03.5**	**+0.6**

comp=Z,11nm,1.3s

WRA	**Warramunga Arr**	**78.12 131**		P		**P**	**16 09 03.8**	**+0.9**

comp=Z,2.3nm,0.9s,baz=329,slow=5.4,SNR=12

WRA	**Warramunga Arr**	**78.12 131**		*e*P		**P**	**16 09 04.4**	**+1.5**
WRA				pmax	pmax				

comp=Z,2.0nm,0.7s

SCHQ	**Schefferville**	**80.14 342**		P		**P**	**16 09 13.6**	**0.0**

comp=Z,2.7nm,0.8s,baz=54,slow=10,SNR=3.2

ASAR	**Alice Springs**	**80.85 133**		P		**P**	**16 09 18.3**	**+0.6**

comp=Z,1.1nm,0.7s,baz=326,slow=5.7,SNR=14

ASAR	**Alice Springs**	**80.85 133**		*e*P		**P**	**16 09 21.7**	**+4.0**
ASAR				pmax	pmax				

comp=Z,1.0nm,0.7s

DBIC	**Dimbokro**	**83.37 273**		P		**P**	**16 09 32.1**	**+0.9**

comp=Z,2.4nm,0.6s,baz=24,slow=10,SNR=3.5

FFC	**Flin Flon**	**83.76**	**2**	*e*P		**P**	**16 09 31.7**	**-0.9**
FFC				pmax	pmax				

comp=Z,1.0nm,0.6s

FFC	**Flin Flon**	**83.76**	**2**	*e*P		**P**	**16 09 31.7**	**-0.9**

comp=Z,1.1nm,0.6s

ISCJB **12** *16:09:53.4±1.2,6.0°S±0.0°,2×149.6°E±0.0°,3,h58km,mb3.7/3, MS2.8/1, Error ellipse: s-maj=53.4km s-min=12.9km az=33.3*

IDC **12** *16:09:54.8±7.1,6.04°S×149.67°E,h60km±53km,mb3.8/4, mb1 4.0/5,mb1mx3.4/33,mbtmp4.1/5,ML2.2/1,MS3.0/1, Ms1 3.0/1,ms1mx2.6/35, Error ellipse: s-maj=59.9km s-min=45.4km az=119.0*

NEIC **12** *16:09:55.1±2.5,6.03°S×149.62°E,h61km±19km,mb4.3/1, Error ellipse: s-maj=42.4km s-min=20.6km az=124.0*

ISC 12 16:09:54.8±1.5,6.0°S±0.3°×149.6°E±0.4°,h58km,n12, σ0°49/13,mb3.8/3,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.17**	**216**	P	**Pn**	**16 10 56.0**	**0.0**

11nm,0.3s,baz=38,slow=13,SNR=36

PMG				S		**Sn**	**16 11 44.0**	**+0.5**

14nm,0.3s,baz=317,slow=20,SNR=6.7

PMG	**Port Moresby**	**4.17**	**216**	*e*Pn		**Pn**	**16 10 55.9**	**-0.1**
PMG				*e*Sn		**Sn**	**16 11 43.8**	**+0.2**
COEN	**Coen**	**10.14**	**218**	P		**Pn**	**16 12 17.5**	**-0.3**
GUMO	**Guam**	**20.02**	**346**	LR	LR		16 21 16.0	

comp=Z,44nm,18.9s,baz=262,slow=34

WRAB	**Tennant Creek**	**20.30**	**226**	*e*P		**P**	**16 14 26.3**	**+0.2**

12nm,0.8s

WRA	**Warramunga Arr**	**20.32**	**226**	P		**P**	**16 14 26.5**	**+0.2**

8.4nm,0.6s,baz=51,slow=11,SNR=83

ASAR	**Alice Springs**	**23.18**	**219**	P		**P**	**16 14 56.1**	**-0.6**

0.7nm,0.4s,baz=53,slow=9.0,SNR=46

FITZ	**Fitzroy Crossi**	**26.32**	**241**	P		**P**	**16 15 25.8**	**+0.5**

4.1nm,0.8s,baz=67,slow=8.3,SNR=19

FITZ	**Fitzroy Crossi**	**26.32**	**241**	*e*P		**P**	**16 15 25.6**	**+0.3**
STKA	**Stephens Creek**	**26.82**	**195**	P		**P**	**16 15 29.7**	**0.0**

2.1nm,0.7s,baz=25,slow=14,SNR=3.4

COLA	**College**	**84.14**	**22**	*e*P		**P**	**16 22 19.8**	**+0.6**
TORD	**Torodi Ar. Bea**	**147.61**	**285**	PKPbc		**PKPbc**	**16 29 32.9**	**-1.0**

0.5nm,0.6s,baz=61,slow=2.0,SNR=4.6

IDC **12** *16:16:39.3±0.9,9.66N×122.26E,h0km,mb3.7/8, mb1 3.8/8,mb1mx3.7/35,mbtmp3.7/8,MS3.1/4,Ms1 3.1/4, ms1mx2.8/50,Error ellipse: s-maj=70.7km s-min=16.7km az=60.0*

ISCJB **12** *16:16:40.6±0.5,9.56N±0.06°,122.06E±0.04°,h10km, mb3.6/9,MS3.4/1,Error ellipse: s-maj=9.2km s-min=5.2km az=9.6*

MAN **12** *16:16:42,9.59N×122.08E,h21km,mb4.8,ML3.7,MS3.7*

ISC 12 16:16:41.5±0.6,9.63N±0.06°×122.12E±0.04°,h10km,n21, σ1°78/24,mb3.7/9,2C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.14**	**104**	*i* P	Pb	16 16 58.2	-5.1
SNPH				*i* S	**Sb**	**16 17 14.2**	**-4.1**
TBP	**Tagbilaran**	**1.72**	**88**	*e*P	**Pn**	**16 17 12.8**	**+1.2**
LLP	**Lapu-Lapu**	**1.95**	**69**	*e*P	**Pn**	**16 17 15.1**	**+0.5**
LLP				*e*S	**Sn**	**16 17 41.7**	**+2.6**
RCP	**Roxas**	**2.02**	**18**	*e*P	**Pn**	**16 17 16.4**	**+0.9**
CGP	**Cagayan de Oro**	**2.80**	**114**	*e*P	**Pn**	**16 17 27.5**	**+1.1**
CGP				*i* S	**Sn**	**16 18 01.5**	**+1.3**
CTBH	**Cotabato--PC H**	**3.19**	**138**	*e*P	**Pn**	**16 17 32.7**	**+1.0**
CTBH				*i* S	**Sn**	**16 18 13.7**	**+3.9**
PLP	**Palo**	**3.20**	**61**	*e*P	**Pn**	**16 17 32.2**	**+0.3**
PPR	**Puerto Princes**	**3.34**	**273**	*e*P	**Pn**	**16 17 35.0**	**+1.2**
PPR				*e*S	**Sn**	**16 18 13.5**	**0.0**
DAV	**Davao City (W)**	**4.27**	**126**	LR	LR	16 19 50.7	

comp=Z,396nm,19.1s,baz=345,slow=46

TGY	**Tagaytay City**	**4.59**	**346**	LR	LR	16 19 41.4		

comp=Z,89nm,19.8s,baz=159,slow=40

KAPI	**Kappang**	**14.74**	**189**	LR	LR	16 26 17.9		

comp=Z,48nm,21.8s,baz=30,slow=39

CMAR	**Chiang Mai Arr**	**24.11**	**294**	P		**P**	**16 21 57.9**	**+0.3**

0.6nm,0.8s,baz=131,slow=9.7,SNR=5.4

WRA	**Warramunga Arr**	**31.76**	**158**	P		**P**	**16 23 05.0**	**-1.1**

0.5nm,0.5s,baz=344,slow=9.1,SNR=9.2

WRA				PcP		**PcP**	**16 25 56.5**	**-1.0**

0.5nm,0.9s,baz=332,slow=2.8,SNR=4.5

ASAR	**Alice Springs**	**35.04**	**161**	P		**P**	**16 23 34.2**	**-0.5**

1.7nm,0.6s,baz=337,slow=6.8,SNR=50

ASAR				PcP		**PcP**	**16 26 05.5**	**-1.3**

0.3nm,0.7s,baz=338,slow=2.3,SNR=4.2

SONM	**Songino Array**	**40.33**	**344**	P		**P**	**16 24 18.8**	**-0.5**

0.3nm,0.6s,baz=159,slow=10.0,SNR=3.7

TLY	**Talaya**	**44.57**	**344**	LR	LR	16 45 28.5		

comp=Z,40nm,18.6s,baz=116,slow=39

STKA	**Stephens Creek**	**45.29**	**156**	P		**P**	**16 24 58.9**	**-0.7**

1.6nm,0.8s,baz=340,slow=9.6,SNR=4.5

MKAR	**Makanchi Array**	**50.13**	**325**	P		**P**	**16 25 37.3**	**+0.3**

0.9nm,0.8s,baz=124,slow=8.3,SNR=7.8

MKAR				PcP		**PcP**	**16 26 55.3**	**-1.1**

0.3nm,0.7s,baz=123,slow=4.8,SNR=2.0

ZALV	**Zalesovo Beam**	**53.29**	**333**	P		**P**	**16 26 04.0**	**+3.6**

0.1nm,0.3s,baz=116,slow=3.4,SNR=2.0

BRTR	**Keskin Array B**	**82.76**	**309**	P		**P**	**16 29 06.6**	**+0.4**

0.3nm,0.5s,baz=103,slow=4.6,SNR=2.6

AKASG	**Malin Array Be**	**84.45**	**320**	P		**P**	**16 29 13.6**	**-0.8**

0.2nm,0.3s,baz=69,slow=4.5,SNR=4.3

NIED **12** *16:20:00,38.30N×142.00E,h41km,Mw3.6 Best double couple: M0 3.04000×10^14 NP1:φs316.00000°,δ26.00000°, λ43.00000°. NP2:φs185.00000°,δ73.00000°,λ109.00000°.*

ISCJB **12** *16:20:44.5±0.8,38.25N±0.04°×142.19E±0.07°,h30km, mb3.5/4,MS3.8/1,Error ellipse: s-maj=8.0km s-min=6.2km az=15.0*

IDC **12** *16:20:47.6±3.1,38.31N×142.32E,h52km±25km,mb3.3/4, mb1 3.5/8,mb1mx3.2/39,mbtmp3.6/8,ML3.0/3,MS3.3/2, Ms1 3.3/2,ms1mx2.7/23, Error ellipse: s-maj=44.7km s-min=18.8km az=80.0*

JMA **12** *16:20:47.6±0.1,38.34N×141.99E,h46km±1km,M3.7*

ISC 12 16:20:46.3±1.0,38.25N±0.04°×142.00E±0.06°,h30km,n26, σ1°71/25,mb3.6/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.55**	**292**	P	**Pn**	**16 20 58.9**	**+0.8**
JIO				*e*S	**Sn**	**16 21 06.7**	**+0.4**
OFUJ	**Ofunato**	**0.87**	**343**	P	**Pb**	**16 21 02.3**	**-0.6**
OFUJ				*e*S	**Sn**	**16 21 12.7**	**-1.5**
JMK	**Ichinoseki**	**0.93**	**319**	P	**Pb**	**16 21 03.6**	**-0.3**
JMM	**Marumori**	**1.02**	**248**	P	**Pb**	**16 21 05.7**	**+0.2**
JMM				*e*S	**Sb**	**16 21 19.1**	**+0.5**
JOU	**Okura**	**1.05**	**277**	P	**Pb**	**16 21 06.0**	**0.0**
JOU				*e*S	**Sn**	**16 21 19.7**	**+0.9**
JOM	**Ohasama**	**1.34**	**336**	P	**Pb**	**16 21 09.3**	**-1.6**
JYK	**Kaneyama**	**1.45**	**298**	P	**Pn**	**16 21 11.2**	**+0.7**
JFT	**Otama**	**1.50**	**241**	*e*S	**Sn**	**16 21 31.5**	**+1.7**
JYS	**Shirataka**	**1.52**	**270**	P	**Pb**	**16 21 12.7**	**-1.2**
JRG	**Rokugo**	**1.56**	**318**	P	**Pn**	**16 21 12.6**	**+0.5**
MJAR	**Matsushiro Arr**	**3.46**	**242**	P	**Pb**	**16 21 43.0**	**-4.0**

1.2nm,0.3s,baz=62,slow=10,SNR=9.4

MAT	**Matsushiro**	**3.46**	**242**	P		**Pn**	**16 21 41.9**	**+3.7**
MAT				*e*S		**Sb**	**16 22 26.0**	**-2.7**
JHJ	**Hachijo jima 2**	**5.43**	**200**	P		**Pn**	**16 22 06.7**	**+1.5**

7.5nm,0.3s,baz=72,slow=20,SNR=14

JHJ				S		**Sn**	**16 23 04.9**	**-1.7**

2.9nm,0.3s,baz=66,slow=19,SNR=4.6

ASAJ	**Asahikawa**	**5.88**	**4**	P		**Pn**	**16 22 11.4**	**0.0**

baz=90,slow=20

USRK	**Ussuriysk Ar.**	**9.60**	**311**	P		**Pn**	**16 23 05.5**	**+3.1**

0.2nm,0.3s,baz=118,slow=13,SNR=4.4

USRK				LR		LR	16 26 23.8		

comp=Z,71nm,20.7s,baz=62,slow=34

H11N2	**WAKE ISLAND Hy**	**28.40**	**124**	T		T	16 56 46.3		

baz=320,SNR=41

H11N1	**WAKE ISLAND Hy**	**28.41**	**124**	T		T	16 57 01.1		

baz=320,slow=74

H11N3	**WAKE ISLAND Hy**	**28.42**	**124**	T		T	16 57 05.9		

baz=320,slow=74

H11S1	**WAKE ISLAND Hy**	**29.16**	**126**	T		T	16 57 55.1		

baz=318,slow=76,SNR=5.8

H11S3	**WAKE ISLAND Hy**	**29.16**	**126**	T		T	16 57 57.3		

baz=318,slow=76,SNR=6.3

H11S2	**WAKE ISLAND Hy**	**29.18**	**126**	T		T	16 57 56.4		

baz=318,slow=76,SNR=7.7

ZALV	**Zalesovo Beam**	**41.45**	**311**	P		**P**	**16 28 29.6**	**-0.5**

0.5nm,0.4s,baz=90,slow=8.6,SNR=2.9

MKAR	**Makanchi Array**	**43.88**	**301**	P		**P**	**16 28 50.4**	**+0.5**

0.3nm,0.7s,baz=87,slow=7.7,SNR=3.6

PMG	**Port Moresby**	**47.65**	**173**	LR	LR		16 47 52.8		

comp=Z,102nm,20.5s,baz=52,slow=34

WRA	**Warramunga Arr**	**58.33**	**188**	P		**P**	**16 30 37.9**	**-0.7**

0.5nm,0.4s,baz=5.6,slow=7.1,SNR=19

ASAR	**Alice Springs**	**62.05**	**188**	P		**P**	**16 31 03.7**	**-0.4**

0.4nm,0.7s,baz=1.1,slow=4.8,SNR=8.3

MAN 12 16:30:13,9.44N×122.13E,h103km,mb4.3,ML3.2,MS3.0, 2C-1D,Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LLP	**Lapu-Lapu**	**2.00**	**64**	*e*P	Pn	16 30 46.2	+0.5
LLP				*e*S	Sn	16 31 11.2	+0.4
RCP	**Roxas**	**2.19**	**16**	*e*P	Pn	16 30 48.9	+0.8
PLP	**Palo**	**3.28**	**58**	*i*P	Pn	16 31 04.1	+1.5

BJI **12** *16:30:46.9,15.40S×176.20W,h10km,mb4.7/16, mB5.2/13,Ms5.0/9,Ms7 4.6/10*

IDC **12** *16:30:47.7±0.8,15.33S×176.13W,h0km,mb4.2/11, mb1 4.5/11,mb1mx4.3/31,mbtmp4.2/11,MS4.0/22, Ms1 4.0/22,ms1mx3.9/37,Error ellipse: s-maj=32.5km s-min=18.8km az=135.0*

NEIC **12** *16:30:48.9±0.3,15.44S×176.14W,h10km,mb4.8/20, Error ellipse: s-maj=13.4km s-min=7.3km az=135.0*

ISCJB **12** *16:30:50.0±0.3,15.49S±0.10°×176.12W±0.09,h26km, mb4.6/33,MS4.0/23,Error ellipse: s-maj=16.5km s-min=8.5km az=141.3*

ISC 12 16:30:51.5±0.5,15.45S±0.1°×176.1W±0.1°,h26km,n78, σ1°50/56,mb4.7/33,MS4.0/23,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.39**	**71**	Pn	Pn	16 31 48.6	-8.0

7.0nm,0.3s,baz=258,slow=4.6,SNR=11

AFI				Sn		Sn	16 32 33.6	-13	

6.7nm,0.3s,baz=53,slow=22,SNR=3.1

AFI				LR		LR	16 33 23.1		

comp=Z,964nm,20.2s,baz=258,slow=35

AFI	**Afiamalu**	**4.39**	**71**	*e*Pn		Pn	16 31 48.0	-8.6	
AFI				Sn		Sn	16 32 33.6	-13	
MSVF	**Nonsavu**	**6.12**	**246**	*e*Pn		**Pn**	**16 32 22.7**	**+2.2**	
RAR	**Rarotonga**	**16.52**	**113**	LR		LR	16 39 17.6		

comp=Z,787nm,21.4s,baz=306,slow=31

DZM	**Mont Dzumac**	**17.86**	**245**	*e*LR		LR	16 39 09.2		

970nm,25.8s

PAE	**Paea**	**25.49**	**99**	*e*T		T	17 02 16.4		

2.9nm,0.3s

PPT	**Papeete**	**25.49**	**99**	LR		LR	16 44 03.8		

comp=Z,181nm,18.8s,baz=271,slow=31

PPT2	**Papeete2**	**25.49**	**99**	*e*LQ		LQ	16 41 19.0		

2μm,25.5s

PPT2				*e*LR		LR	16 42 25.7		

740nm,27.0s,baz=253

TIAR	**Tiarei**	**25.71**	**99**	*e*T		T	17 02 33.0		

2.3nm,0.3s

TVO	**Taravao**	**25.80**	**99**	*e*T		T	17 02 42.7		

1.7nm,0.3s

BFZ	**Birch Farm**	**26.11**	**193**	*e*P		**P**	**16 36 20.6**	**-2.7**	

61nm,1.0s

BFZ				*e*S		**S**	**16 40 56.6**	**+3.4**	
TBI	**Tubuai**	**26.29**	**112**	*e*LQ		LQ	16 41 43.0		

1μm,28.5s

TBI				*e*LR		LR	16 42 55.6		

1μm,27.8s,baz=288

TBI	**Tubuai**	**26.29**	**112**	*e*T		T	17 03 17.8		

13nm,0.3s

TAOE	**Nuku Hiva Isla**	**35.67**	**84**	*e*LR		LR	16 47 16.8		

228nm,22.6s

H11N3	**WAKE ISLAND Hy**	**38.67**	**334**	T		T	17 19 19.2		

baz=152,slow=76,SNR=35

H11N1	**WAKE ISLAND Hy**	**38.67**	**334**	T		T	17 19 17.9		

baz=152,slow=76,SNR=107

H11N2	**WAKE ISLAND Hy**	**38.69**	**334**	T		T	17 19 20.5		

baz=152,slow=76,SNR=46

RKT	**Rikitea**	**39.45**	**108**	*e*T		T	17 19 44.0		

2.5nm,0.3s

STKA	**Stephens Creek**	**41.84**	**239**	P		**P**	**16 38 39.1**	**-0.4**	

6.4nm,1.0s,baz=82,slow=10,SNR=4.5

STKA	**Stephens Creek**	**41.84**	**239**	*e*P		**P**	**16 38 38.7**	**-0.8**	

4.9nm,1.5s

JAY	**Jayapura**	**44.47**	**282**	LR		LR	16 55 19.0		

comp=Z,8.5nm,21.7s,baz=172,slow=33

WRA	**Warramunga Arr**	**47.35**	**257**	P		**P**	**16 39 23.1**	**-0.7**	

4.2nm,1.0s,baz=90,slow=6.6,SNR=16

WRA				LR		LR	16 57 20.2		

comp=Z,207nm,19.9s,baz=85,slow=34

AS01	**Alice Springs**	**47.64**	**252**	*e*P		**P**	**16 39 25.1**	**-0.8**	
AS31	**Alice Springs**	**47.68**	**252**	*e*P		**P**	**16 39 25.7**	**-0.6**	

2.4nm,0.7s

ASAR	**Alice Springs**	**47.68**	**252**	P		**P**	**16 39 25.4**	**-0.8**	

7.6nm,1.0s,baz=90,slow=8.1,SNR=30

GUMO	**Guam**	**48.17**	**306**	LR		LR	16 56 41.3		

comp=Z,117nm,20.3s,baz=165,slow=32

DAV	**Davao City (W)**	**61.96**	**287**	LR		LR	17 06 52.0		

comp=Z,105nm,18.2s,baz=288,slow=35

SBA	**Scott Base**	**63.10**	**184**	*e*P		**P**	**16 41 17.3**	**+1.0**	

35nm,1.5s

VNDA	**Vanda**	**63.17**	**185**	P		**P**	**16 41 17.4**	**+0.5**	

5.8nm,1.1s,baz=12,slow=7.4,SNR=18

VNDA				LR		LR	17 04 20.1		

comp=Z,64nm,21.3s,baz=14,slow=32

VNDA	**Vanda**	**63.17**	**185**	*e*P		**P**	**16 41 17.0**	**+0.2**	

14nm,1.3s

MJAR	**Matsushiro Arr**	**67.28**	**321**	LR		LR	17 05 18.3		

comp=Z,65nm,21.9s,baz=135,slow=31

CASY	**Casey**	**69.38**	**204**	*e*P		**P**	**16 41 54.4**	**-2.4**	

0.9nm,1.2s

JNU	**Nakatsue**	**69.92**	**314**	LR		LR	17 11 06.8		

comp=Z,75nm,18.4s,baz=120,slow=35

PETK	**Petropavlovsk-**	**71.84**	**344**	P		**P**	**16 42 12.1**	**+0.3**	

3.4nm,0.7s,baz=124,slow=6.6,SNR=5.9

PETK				LR		LR	17 07 30.1		

comp=Z,91nm,20.6s,baz=152,slow=31

KSRS	**Korea Array**	**74.35**	**317**	LR		LR	17 12 20.2		

comp=Z,74nm,18.8s,baz=140,slow=34

USRK	**Ussuriysk Ar.**	**75.83**	**324**	LR		LR	17 09 59.0		

comp=Z,188nm,21.7s,baz=122,slow=31

K05A	**Summer Lake**	**76.81**	**38**	*e*P		**P**	**16 42 40.6**	**-0.7**	

7.4nm,1.1s

TUC	**Tucson**	**78.36**	**52**	*e*P		**P**	**16 42 51.3**	**+1.2**	

20nm,1.8s

X16A	**Lo Mia Camp, P**	**78.83**	**50**	*e*P		**P**	**16 42 53.7**	**+1.0**	

6.8nm,1.1s

KLR	**Kul'dur**	**79.11**	**328**	LR		LR	17 12 28.5		

comp=Z,142nm,21.6s,baz=134,slow=32

U15A	**North Rim**	**79.15**	**47**	*e*P		**P**	**16 42 55.9**	**+1.3**	

4.9nm,1.0s

QIZ	**Qiongzhong**	**80.51**	**293**	P		**P**	**16 43 01.5**	**-0.4**	
QIZ				S		**S**	**16 53 08.5**	**+1.0**	
QIZ				LR		LR			

comp=Z,180nm,23.3s

HLID	**Hailey**	**81.24**	**40**	*e*P		**P**	**16 43 05.8**	**+0.2**	

59nm,0.3s

MNTX	**Cornudas Mount**	**82.27**	**54**	*e*P		**P**	**16 43 12.3**	**+1.2**	

15nm,1.8s

BNM	**Barren Site**	**82.30**	**52**	*e*P		**P**	**16 43 11.2**	**-0.2**	
WRH	**Wood River Hil**	**82.41**	**12**	*e*P		**P**	**16 43 12.3**	**+1.4**	

8.0nm,1.1s

DOT	**Dot Lake**	**82.55**	**14**	*e*P		**P**	**16 43 11.5**	**-0.3**	

30nm,1.4s

CCB	**Clear Creek Bu**	**82.63**	**12**	*e*P		**P**	**16 43 11.4**	**-0.7**	

4.2nm,0.9s

TX31	**Lajitas Ar. Si**	**82.73**	**57**	*e*P		**P**	**16 43 14.6**	**+1.0**	
TXAR	**Lajitas Array**	**82.73**	**57**	P		**P**	**16 43 14.9**	**+1.3**	

1.8nm,0.9s,baz=255,slow=5.8,SNR=13

TXAR				LR		LR	17 14 48.9		

comp=Z,92nm,18.0s,baz=0.0,slow=32

ANMO	**Albuquerque**	**82.75**	**51**	*e*P		**P**	**16 43 14.1**	**+0.4**	

6.0nm,1.1s

IL1	**Eielson Array**	**82.92**	**12**	*e*P		**P**	**16

BSO3				*e*S		**Sn**	**16 55 28.9**	**+1.7**
JOD2	**Odawara 2**	**3.66**	**311**	P		**Pn**	**16 55 13.1**	**-1.2**
JYN	**Shimob**	**4.16**	**310**	*e*S		**Sn**	**16 56 07.8**	**-0.8**
JRY	**Ryogami san**	**4.28**	**318**	*e*S		**Sn**	**16 56 11.2**	**-0.4**
JAG	**Ashikaga**	**4.30**	**326**	P		**Pn**	**16 55 23.2**	**+0.1**
JFT	**Otama**	**4.92**	**340**	P		**Pn**	**16 55 31.5**	**-0.1**
JFT				S		**Sn**	**16 56 23.4**	**-4.0**
JIE	**Ise**	**5.03**	**289**	P		**Pn**	**16 55 33.0**	**0.0**
MJAR	**Matsushiro Arr**	**5.05**	**317**	Pn		**Pn**	**16 55 32.8**	**-0.5**
	2.8nm,0.3s,baz=136,slow=11,SNR=12							
MJAR				Sn		**Sn**	**16 56 30.1**	**-0.3**
	3.1nm,0.3s,baz=241,slow=32,SNR=8.4							
MAJO	**Matsushiro**	**5.05**	**317**	Pn		**Pn**	**16 55 34.1**	**+0.8**
	11nm,0.4s							
MAT	**Matsushiro**	**5.05**	**317**	P		**Pn**	**16 55 34.0**	**+0.7**
MAT				S		**Sn**	**16 56 29.8**	**-0.7**
JWZ	**Kozaga**	**5.70**	**278**	P		**Pn**	**16 55 42.8**	**+0.6**
ERM	**Erimo**	**9.11**	**3**	*e*Pn		**Pn**	**16 56 28.1**	**-1.0**
ASAJ	**Asahikawa**	**11.20**	**0**	Pn		**Pn**	**16 56 56.0**	**-1.6**
	baz=225,slow=14							
ASAJ				Sn		Sn	16 58 53.4	-8.1
	0.3nm,0.3s,baz=324,slow=19,SNR=3.0							
SONM	**Songino Array**	**30.95**	**310**	P		**P**	**17 00 35.0**	**+1.1**
	0.5nm,0.6s,baz=112,slow=8.8,SNR=5.4							
ZALV	**Zalesovo Beam**	**45.40**	**315**	P		**P**	**17 02 33.6**	**-1.5**
	0.4nm,0.3s,baz=98,slow=9.2,SNR=2.8							
CHGN	**Chignik**	**46.41**	**41**	*e*P		**P**	**17 02 43.1**	**+0.1**
MKAR	**Makanchi Array**	**47.14**	**306**	P		**P**	**17 02 49.1**	**+0.2**
	1.0nm,0.6s,baz=88,slow=9.7,SNR=15							
KURK	**Kurchatov**	**49.23**	**311**	*e*P		**P**	**17 03 05.2**	**+0.3**
	30nm,0.7s							
KURBB	**Kurchatov Arra**	**49.29**	**311**	P		**P**	**17 03 05.8**	**+0.3**
	3.5nm,0.7s,baz=84,slow=7.1,SNR=34							
ILAR	**Eielson Array**	**52.56**	**31**	P		**P**	**17 03 29.9**	**+0.1**
	0.4nm,0.6s,baz=259,slow=6.7,SNR=6.1							
WRAB	**Tennant Creek**	**53.11**	**190**	*e*P		**P**	**17 03 33.0**	**-1.4**
	7.4nm,1.3s							
WRA	**Warramunga Arr**	**53.12**	**190**	P		**P**	**17 03 33.3**	**-1.1**
	1.4nm,0.6s,baz=7.8,slow=7.6,SNR=18							
BVAR	**Borovoye Array**	**54.04**	**315**	P		**P**	**17 03 41.2**	**+0.3**
	0.8nm,0.6s,baz=72,slow=9.5,SNR=6.6							
ASAR	**Alice Springs**	**56.84**	**189**	P		**P**	**17 04 00.2**	**-1.1**
	0.5nm,0.8s,baz=14,slow=13,SNR=5.3							
ARU	**Arti**	**60.06**	**320**	P		**P**	**17 04 23.7**	**+0.3**
	1.7nm,0.3s,baz=107,slow=11,SNR=3.8							
ABKAR	**Akbulak array**	**61.31**	**312**	*e*P		**P**	**17 04 32.1**	**+0.1**
	1.3nm,0.5s							
YKA	**Yellowknife Ar**	**66.95**	**29**	P		**P**	**17 05 09.2**	**+0.4**
	0.6nm,0.6s,baz=293,slow=6.4,SNR=7.4							
FINES	**FINESS Array B**	**72.88**	**333**	P		**P**	**17 05 45.9**	**+0.7**
	2.0nm,0.8s,baz=64,slow=6.3,SNR=4.2							
KBZ	**Khabaz**	**74.28**	**312**	P		**P**	**17 05 54.9**	**+1.1**
	1.3nm,0.5s,baz=43,slow=8.8,SNR=3.9							
BRTR	**Keskin Array B**	**82.26**	**313**	P		**P**	**17 06 38.5**	**+0.2**
	0.7nm,0.7s,baz=57,slow=5.3,SNR=3.5							
TXAR	**Lajitas Array**	**91.93**	**53**	P		**P**	**17 07 26.1**	**+0.6**
	0.4nm,0.6s,baz=316,slow=3.8,SNR=7.3							

IDC 12 17:00:41.1±3.4, 20°.90N×146°.79E, h0km, mb3.6/7, mb1 3.7/7, mb1mx3.5/49, mbtmp3.6/7, Error ellipse: s-maj=137.1km s-min=22.7km az=80.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SONM	**Songino Array**	**42.12**	**319**	P		17 08 35.5	+0.3
	0.2nm,0.5s,baz=128,slow=7.5,SNR=2.4						
WRA	**Warramunga Arr**	**42.38**	**198**	P		17 08 35.5	-1.9
	0.3nm,0.6s,baz=18,slow=8.8,SNR=3.5						
ASAR	**Alice Springs**	**46.04**	**197**	P		17 09 07.9	+1.2
	0.2nm,0.7s,baz=19,slow=8.8,SNR=2.9						
MKAR	**Makanchi Array**	**57.71**	**313**	P		17 10 34.1	+0.4
	0.3nm,0.6s,baz=99,slow=8.2,SNR=4.0						
KURBB	**Kurchatov Arra**	**60.40**	**317**	P		17 10 51.5	-0.8
	0.3nm,0.5s,baz=93,slow=7.6,SNR=5.5						
BVAR	**Borovoye Array**	**65.46**	**320**	P		17 11 25.8	-0.1
	1.1nm,0.5s,baz=96,slow=7.7,SNR=7.4						
FINES	**FINESS Array B**	**85.33**	**336**	P		17 13 19.6	-0.2
	4.5nm,1.0s,baz=75,slow=7.4,SNR=3.8						

MAN 12 17:04:52, 9°.62N×122°.46E, h54km, mb4.8, ML3.7, MS3.7, 2C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.82**	**110**	*i* P		17 05 01.9	-5.6
SNPH				*i* S		Sn 17 05 17.8	-1.0
TBP	**Tagbilaran**	**1.39**	**87**	*e*P		Pn 17 05 17.4	+2.4
RCP	**Roxas**	**1.95**	**8**	*e*P		Pn 17 05 24.4	+1.7
PLP	**Palo**	**2.92**	**58**	*i*P		Pn 17 05 37.9	+1.9
PLP				*e*S		Sn 17 06 12.1	+2.3

*IDC **12** 17:15:56.4±0.7, 29°.81S×176°.20W, h0km, mb4.2/7, mb1 4.5/7, mb1mx4.2/32, mbtmp4.2/7, MS3.6/9, Ms1 3.6/9, ms1mx3.4/29, Error ellipse: s-maj=24.8km s-min=19.8km az=20.0*
*NEIC **12** 17:15:58.0±0.5, 30°.14S×176°.39W, h10km, mb4.8/23, Error ellipse: s-maj=13.7km s-min=7.6km az=122.0*
*ISCJB **12** 17:15:59.5±0.4, 30°.28S±0°.04×176°.41W±0°.06, h24km, mb4.6/19, MS3.8/8, Error ellipse: s-maj=8.0km s-min=6.0km az=19.3*
*BJI **12** 17:16:04.8, 30°.10S×176°.70W, h44km, mb4.9/10, mB5.3/12, Ms5.1/6, Ms7 4.7/7*
ISC 12 17:16:00.9±0.5, 30°.16S±0°.06×176°.48W±0°.07, h24km, n79, σ2°.38/71, mb4.7/19, MS3.7/8, 1D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.54**	**305**	Pn	**Pb**	**17 16 27.6**	**-1.2**
	93nm,0.3s,baz=303,slow=19,SNR=6.7						
RAO				Sn	**Sb**	**17 16 50.1**	**+2.2**
	679nm,0.3s,baz=44,slow=21,SNR=9.1						
URZ	**Urewera**	**9.67**	**212**	Pn	**Pn**	**17 18 14.2**	**-4.2**
	0.4nm,0.3s,baz=118,slow=14,SNR=3.1						
URZ				Sn	**Sn**	**17 20 08.2**	**+1.9**
	2.9nm,0.3s,baz=245,slow=23,SNR=7.2						
OUZ	**Omahuta**	**9.77**	**236**	*e*Pn	**Pn**	**17 18 21.9**	**+2.1**
BKZ	**Black Stump Fm**	**10.69**	**211**	*e*Pn	**Pn**	**17 18 32.4**	**-0.1**
SNZO	**South Karori**	**13.23**	**210**	*e*Pn	**Pn**	**17 19 07.3**	**+0.2**
THZ	**Tophouse**	**14.41**	**214**	*e*Pn	**Pn**	**17 19 23.2**	**-0.2**
KHZ	**Kahutara**	**14.63**	**211**	*e*Pn	**Pn**	**17 19 22.9**	**-3.4**
LTZ	**Lake Taylor**	**15.50**	**213**	*e*Pn	**Pn**	**17 19 36.9**	**-0.9**
	252nm,1.9s						
MQZ	**McQueen's Vall**	**16.06**	**210**	*e*Pn	**Pn**	**17 19 42.7**	**-2.3**
	341nm,1.9s						
AFI	**Afiamalu**	**16.74**	**16**	LR	LR	17 28 24.7	
	comp=Z,124nm,19.0s,baz=149,slow=46						
AFI	**Afiamalu**	**16.74**	**16**	*e*Pn	**Pn**	**17 19 51.1**	**-2.9**
	49nm,1.0s						
RPZ	**Rata Peaks**	**16.78**	**213**	P	**Pn**	**17 19 52.0**	**-2.3**
	1.2nm,0.3s,baz=43,slow=18,SNR=5.0						
RPZ				S	**Sn**	**17 22 52.1**	**-7.8**
	0.3nm,0.3s,baz=12,slow=19,SNR=3.3						
RPZ	**Rata Peaks**	**16.78**	**213**	*e*Pn	**Pn**	**17 19 51.4**	**-2.9**
	161nm,1.5s						
RPZ				*e*Sn	**Sn**	**17 22 52.1**	**-7.8**
DZM	**Mont Dzumac**	**17.31**	**294**	LR	LR	17 25 25.0	
	comp=Z,443nm,21.5s,baz=98,slow=33						
DZM	**Mont Dzumac**	**17.31**	**294**	*e*LR	LR	17 24 09.1	
	628nm,25.6s						
RAR	**Rarotonga**	**17.47**	**63**	*e*Pn	**P**	**17 20 03.0**	**-1.0**
	26nm,1.0s						
LBZ	**Lake Benmore**	**17.70**	**213**	*e*Pn	**Pn**	**17 20 04.9**	**-0.8**
	255nm,2.0s						
ODZ	**Otahua Downs**	**17.99**	**211**	*e*P	**P**	**17 20 09.0**	**-0.6**
	214nm,1.6s						
WKZ	**Wanaka**	**18.59**	**214**	*e*P	**Pn**	**17 20 17.2**	**+0.7**
	320nm,1.9s						
MLZ	**Mavora Lakes**	**19.41**	**214**	*e*P	**P**	**17 20 22.6**	**-2.7**
	116nm,1.6s						
WHZ	**Wether Hill Ro**	**19.88**	**213**	*e*P	**P**	**17 20 30.5**	**+0.2**
	132nm,1.6s						
DCZ	**Deep Cove**	**19.96**	**216**	*e*P	Pn	17 20 32.5	-0.5
	279nm,2.0s						
TBI	**Tubuai**	**25.02**	**81**	*e*LR	LR	17 27 09.8	
	372nm,28.5s						
ARMA	**Armidale**	**27.50**	**261**	*e*P	**P**	**17 21 49.9**	**+4.3**
	54nm,1.9s						
PPT2	**Papeete2**	**27.52**	**69**	*e*LR	LR	17 28 16.9	
	258nm,26.2s						
PPT	**Papeete**	**27.53**	**69**	LR	LR	17 28 44.7	
	comp=Z,103nm,20.2s,baz=240,slow=28						
PPT	**Papeete**	**27.53**	**69**	*e*P	**P**	**17 21 46.7**	**+0.9**
EIDS	**Eidsvold**	**29.04**	**271**	*e*P	**P**	**17 22 01.3**	**+2.0**
	12nm,1.0s						
HNR	**Honiara**	**30.16**	**308**	LR	LR	17 33 03.1	
	comp=Z,130nm,18.4s,baz=141,slow=34						
STKA	**Stephens Creek**	**35.82**	**256**	P	**P**	**17 23 00.5**	**+2.0**
	4.9nm,0.9s,baz=80,slow=7.9,SNR=7.4						
STKA				LR	LR	17 35 24.8	
	comp=Z,96nm,21.3s,baz=28,slow=32						
STKA	**Stephens Creek**	**35.82**	**256**	*e*P	**P**	**17 23 00.7**	**+2.2**
	2.5nm,1.1s						
TAOE	**Nuku Hiva Isla**	**40.00**	**66**	*e*LR	LR	17 34 06.2	
	139nm,23.8s						
BBOO	**Buckleboo**	**40.30**	**254**	*e*P	**P**	**17 23 37.5**	**+1.1**
	60nm,1.5s						
AS01	**Alice Springs**	**44.40**	**266**	*e*P	**P**	**17 24 10.2**	**+0.3**
AS31	**Alice Springs**	**44.44**	**266**	*e*P	**P**	**17 24 10.1**	**-0.1**
ASAR	**Alice Springs**	**44.44**	**266**	P	**P**	**17 24 10.6**	**+0.4**
	5.3nm,0.8s,baz=107,slow=7.5,SNR=52						
ASAR				LR	LR	17 42 08.0	
	comp=Z,135nm,18.5s,baz=91,slow=35						
WB2	**Warramunga Arr**	**45.40**	**271**	*e*P	**P**	**17 24 17.1**	**-0.7**
	10nm,0.9s						
WRAB	**Tennant Creek**	**45.40**	**271**	*e*P	**P**	**17 24 17.4**	**-0.5**
	16nm,1.2s						
WR1	**Warramunga Arr**	**45.41**	**271**	*e*P	**P**	**17 24 17.5**	**-0.4**
	10nm,0.9s						
WRA	**Warramunga Arr**	**45.41**	**271**	P	**P**	**17 24 17.5**	**-0.4**
	6.9nm,0.8s,baz=110,slow=7.6,SNR=37						
SBA	**Scott Base**	**48.38**	**185**	*e*P	P	17 24 45.3	+5.0
	5.2nm,1.1s						
VNDA	**Vanda**	**48.48**	**186**	P	**P**	**17 24 43.5**	**+2.5**
	1.4nm,0.9s,baz=345,slow=7.7,SNR=6.8						
VNDA	**Vanda**	**48.48**	**186**	*e*P	P	17 24 45.0	+4.0
	9.9nm,1.8s						
UWE	**Uwekahuna**	**53.34**	**25**	*e*P	**P**	**17 25 21.1**	**+2.7**
	160nm,0.7s						
CASY	**Casey**	**55.97**	**208**	*e*P	**P**	**17 25 39.3**	**+2.4**
	8.9nm,0.8s						
QSPA	**South Pole Qui**	**59.95**	**180**	*e*P	**P**	**17 26 07.0**	**+2.0**
MAW	**Mawson**	**73.00**	**200**	P	**P**	**17 27 30.4**	**+2.3**
	3.9nm,0.6s,baz=145,slow=7.4,SNR=6.1						
MAW	**Mawson**	**73.00**	**200**	*e*P	**P**	**17 27 30.9**	**+2.8**
	1.2nm,0.6s						
SBUM	**Sibu**	**75.16**	**282**	*e*P	**P**	**17 27 41.0**	**-0.6**
	4.7nm,1.1s						
SYO	**Syowa Base**	**77.64**	**193**	*e*pP	**P**	**17 27 55.0**	**+0.2**
SNAA	**Sanae**	**78.36**	**178**	P	**P**	**17 27 59.7**	**+0.9**
MJAR	**Matsushiro Arr**	**78.80**	**324**	P	**P**	**17 28 00.1**	**-1.6**
	1.9nm,0.9s,baz=161,slow=5.0,SNR=7.3						
VNA1	**Neumayer--Stat**	**79.13**	**176**	P	**P**	**17 28 04.0**	**+1.0**
PLCA	**Paso Flores**	**81.70**	**132**	LR	LR	17 59 34.2	
	comp=Z,28nm,19.3s,baz=316,slow=32						
LTX	**Lajitas**	**91.15**	**57**	*e*P	**P**	**17 29 02.0**	**-2.0**
TXAR	**Lajitas Array**	**91.15**	**57**	P	**P**	**17 29 02.0**	**-2.0**
	0.3nm,0.9s,baz=218,slow=6.9,SNR=3.1						
KLR	**Kul'dur**	**91.50**	**329**	LR	LR	18 06 37.7	
	comp=Z,25nm,18.8s,slow=33						
KMI	**Kunming**	**94.89**	**296**	P	**P**	**17 29 23.7**	**+2.2**
KMI				pmax	pmax		
	comp=Z,5.0nm,0.9s						
HHC	**Hu-ho-hao-te**	**97.02**	**313**	*e*P	Pdif	17 29 33.9	+3.1
HHC				pmax	pmax		
	comp=Z,7.0nm,0.9s						
HHC				pmax	pmax		
	comp=Z,73nm,9.9s						
LPAZ	**La Paz**	**97.03**	**113**	LR	LR	18 07 24.6	
	comp=Z,27nm,18.0s,baz=282,slow=32						
WMQ	**Urumqi**	**114.11**	**308**	*e*PKP	PKPdf	17 34 38.7	+0.7
WMQ				LR	LR		
	comp=N,150nm,25.0s						
WMQ				LR	LR		
	comp=E,120nm,25.0s						
WMQ				LR	LR		
	comp=Z,110nm,21.8s						
MK32	**Makanchi Array**	**118.63**	**310**	*e*PKPdf	**PKPdf**	**17 34 44.9**	**-1.7**
MKAR	**Makanchi Array**	**118.63**	**310**	PKP	**PKPdf**	**17 34 44.9**	**-1.7**
	1.2nm,0.8s,baz=117,slow=0.3,SNR=10						
ZALV	**Zalesovo Beam**	**118.73**	**318**	PKP	**PKPdf**	**17 34 44.9**	**-1.5**
	0.3nm,0.3s,baz=148,slow=3.3,SNR=3.6						
ZAA1	**Zalesovo Array**	**118.73**	**318**	*e*PKPdf	**PKPdf**	**17 34 44.9**	**-1.5**
KSH	**Kashi**	**121.25**	**300**	*e*PKP	**PKPdf**	**17 34 52.0**	**0.0**
KSH				*e*PP	**PP**	**17 36 26.6**	**+3.4**
KSH				PKS	**PKSdf**	**17 38 27.9**	**-0.8**
KSH				SKS	**SKSdf**	**17 41 59.0**	**-3.6**
KSH				SKKS	**SKKSac**	**17 43 15.1**	**-5.8**
KSH				AMB	AMB		
	comp=Z,30nm,4.1s						
KSH				LR	LR		
	comp=N,66nm,8.0s						
KSH				LR	LR		
	comp=E,97nm,4.3s						
KSH				LR	LR		
	comp=Z,89nm,7.8s						
GEYT	**Alibeck**	**134.65**	**295**	PKP	**PKPdf**	**17 35 18.6**	**+1.1**
	1.7nm,0.7s,baz=264,slow=3.0,SNR=4.7						
FIA0	**FINESS Array S**	**145.35**	**341**	*e*PKPbc	**PKPbc**	**17 35 34.1**	**-1.7**
FINES	**FINESS Array B**	**145.35**	**341**	PKPbc	**PKPbc**	**17 35 34.1**	**-1.7**
	4.3nm,0.8s,baz=14,slow=2.0,SNR=14						
KBZ	**Khabaz**	**146.06**	**305**	PKPbc	**PKPab**	**17 35 38.9**	**-0.3**
	3.4nm,0.9s,baz=4.7,slow=0.6,SNR=5.4						
NB2	**NORSAR Subarra**	**148.69**	**353**	PKP	**PKPbc**	**17 35 43.3**	**-2.1**
	comp=Z,4.9nm,1.0s,baz=11,slow=4.4						
NB200	**NORSAR Array S**	**148.69**	**353**	*e*PKPbc	**PKPbc**	**17 35 43.3**	**-2.1**
NOA	**NORSAR Array B**	**148.69**	**353**	PKPbc	**PKPbc**	**17 35 43.3**	**-2.1**
	comp=Z,2.1nm,0.8s,baz=13,slow=4.4,SNR=4.8						
AKASG	**Malin Array Be**	**151.89**	**324**	PKPbc	**PKPbc**	**17 35 52.2**	**-1.1**
	comp=Z,4.9nm,0.8s,baz=46,slow=2.8,SNR=19						
BR101	**Keskin Array B**	**153.64**	**299**	*e*PKPbc	**PKPbc**	**17 35 57.1**	**-0.7**
BRTR	**Keskin Array B**	**153.64**	**299**	PKPbc	**PKPbc**	**17 35 57.1**	**-0.7**
	comp=Z,1.2nm,0.9s,baz=132,slow=1.8,SNR=6.1						
KECS	**Kecovo**	**157.57**	**329**	*e*PKP	**PKPab**	**17 36 27.6**	**+0.8**
TORD	**Torodi Ar. Bea**	**162.99**	**174**	PKPab	**PKPab**	**17 36 51.6**	**+0.5**
	comp=Z,3.6nm,0.7s,baz=188,slow=4.3,SNR=22						
TOA1	**Torodi Ar. Sit**	**163.00**	**174**	*e*PKPab	**PKPab**	**17 36 51.6**	**+0.5**

*ISCJB **12** 17:26:31.5±0.8, 9°.36N±0°.08×122°.14E±0°.06, h10km, mb3.4/5, MS2.8/2, Error ellipse: s-maj=11.8km s-min=7.9km az=178.5*
*MAN **12** 17:26:31, 9°.46N×122°.13E, h6km, mb5.0, ML3.9, MS4.0*
*IDC **12** 17:26:31.2±1.2, 9°.44N×122°.22E, h0km, mb3.4/5, mb1 3.7/5, mb1mx3.4/33, mbtmp3.4/5, MS2.9/4, Ms1 2.9/4, ms1mx2.6/27, Error ellipse: s-maj=65.4km s-min=19.2km az=62.0*
ISC 12 17:26:31.9±0.8, 9°.45N±0°.07×122°.22E±0°.05, h10km, n15, σ1°.71/15, mb3.3/5, 3C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.01**	**96**	*i*P	Pb	17 26 47.0	-4.6
SNPH				*i* S	**Sg**	**17 27 03.2**	**-1.4**
TBP	**Tagbilaran**	**1.64**	**81**	*i*P	**Pg**	**17 27 03.7**	**+0.2**
LLP	**Lapu-Lapu**	**1.93**	**63**	*e*P	**Pb**	**17 27 06.4**	**-0.8**
LLP				*e*S	**Sb**	**17 27 33.0**	**+1.6**
RCP	**Roxas**	**2.17**	**14**	*e*P	**Pb**	**17 27 09.5**	**-1.7**
CGP	**Cagayan de Oro**	**2.64**	**112**	*e*P	**Pb**	**17 27 17.9**	**-1.5**
CGP				*i* S	**Sb**	**17 27 51.6**	**-0.2**
PLP	**Palo**	**3.21**	**58**	*e*P	**Pn**	**17 27 23.9**	**+1.4**
PLP				*e*S	**Sn**	**17 27 58.1**	**-2.8**
PPR	**Puerto Princes**	**3.45**	**276**	*i*P	**Sn**	**17 28 03.5**	**-3.3**
DAV	**Davao City (W)**	**4.08**	**125**	LR	LR	17 28 56.1	
	comp=Z,63nm,21.3s,baz=280,slow=36						
KAPI	**Kappang**	**14.57**	**190**	LR	LR	17 35 39.1	
	comp=Z,92nm,19.4s,baz=322,slow=38						
CMAR	**Chiang Mai Arr**	**24.27**	**294**	P	**P**	**17 31 50.7**	**+1.1**
	0.3nm,0.5s,baz=108,slow=8.6,SNR=3.6						
CMAR				LR	LR	17 40 57.2	
	comp=Z,30nm,18.3s,baz=180,slow=36						
KSRS	**Korea Array**	**28.36**	**10**	LR	LR	17 44 03.3	
	comp=Z,21nm,18.8s,baz=155,slow=37						
WRA	**Warramunga Arr**	**31.55**	**158**	P	**P**	**17 32 55.0**	**+0.3**
	0.6nm,0.8s,baz=332,slow=10,SNR=8.3						
ASAR	**Alice Springs**	**34.84**	**161**	P	**P**	**17 33 24.5**	**+1.1**
	1.1nm,0.6s,baz=342,slow=7.2,SNR=32						
SONM	**Songino Array**	**40.53**	**344**	P	**P**	**17 34 11.4**	**0.0**
	0.3nm,0.7s,baz=156,slow=7.4,SNR=3.5						
MKAR	**Makanchi Array**	**50.33**	**325**	P	**P**	**17 35 30.4**	**+1.4**
	0.3nm,0.8s,baz=131,slow=7.6,SNR=2.4						

IDC 12 17:29:02.4±6.8, 30°.56S×175°.90W, h0km, mb3.3/2, mb1 3.5/2, mb1mx3.4/24, mbtmp3.3/2, Error ellipse: s-maj=284.6km s-min=60.3km az=155.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**44.91**	**266**	P	P	17 37 19.2	+0.1
	0.2nm,0.5s,baz=102,slow=7.8,SNR=4.8						
WRA	**Warramunga Arr**	**45.91**	**271**	P	P	17 37 26.4	-0.7
	0.3nm,0.6s,baz=113,slow=6.2,SNR=6.5						
FINES	**FINESS Array B**	**145.90**	**341**	PKPbc	PKPdf	17 48 42.6	+0.2
	1.4nm,0.7s,baz=66,slow=4.8,SNR=4.5						

IDC 12 17:40:26.5±8.2, 5°.95N×92°.03E, h0km, mb3.4/4, mb1 3.6/4, mb1mx3.3/28, mbtmp3.4/4, Error ellipse: s-maj=382.5km s-min=26.1km az=59.0, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H08S3	**Diego Garcia H**	**23.71**	**236**	T	T	18 11 29.0	
	baz=56,slow=75,SNR=89						
H08S2	**Diego Garcia H**	**23.71**	**236**	T	T	18 11 27.9	
	baz=56,slow=75,SNR=69						
H08S1	**Diego Garcia H**	**23.73**	**236**	T	T	18 11 26.6	
	baz=56,slow=75,SNR=78						
MKAR	**Makanchi Array**	**41.55**	**350**	P	P	17 48 15.6	-0.3
	0.1nm,0.4s,baz=164,slow=7.8,SNR=3.9						
ZALV	**Zalesovo Beam**	**48.22**	**354**	P	P	17 49 08.7	-0.1
	0.3nm,0.3s,baz=169,slow=8.7,SNR=3.7						
WRA	**Warramunga Arr**	**48.91**	**123**	P	P	17 49 15.5	+0.7
	0.7nm,1.1s,baz=301,slow=9.6,SNR=3.6						
ASAR	**Alice Springs**	**50.35**	**127**	P	P	17 49 25.1	-0.7
	0.2nm,0.5s,baz=301,slow=8.1,SNR=6.5						

*ISCJB **12** 17:41:44.5±2.6, 9°.49N±0°.04×73°.36W±0°.05, h14km±18km, Error ellipse: s-maj=8.5km s-min=6.3km az=23.8*
*FUNV **12** 17:41:44.8, 9°.83N×73°.80W, h34km, MW2.6*
*RSNC **12** 17:41:46.1±0.9, 9°.42N×73°.47W, h0km±9km, ML2.2*
ISC 12 17:41:45.4±2.7, 9°.48N±0°.05×73°.38W±0°.05, h20km±13km, n11, σ1°.15/16, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OCAC	**Ocana**	**1.23**	**177**	*e*P	**Pn**	**17 42 06.6**	**-1.1**
OCAC				*e*S	**Sb**	**17 42 23.8**	**+0.1**
VIRV	**Villa del Rosa**	**1.40**	**43**	*e*P	**Pn**	**17 42 08.7**	**-1.2**
VIRV				*e*S	**Sn**	**17 42 27.2**	**-0.5**
SJCC	**San Jacinto, C**	**1.83**	**283**	*e*S	**Sb**	**17 42 40.0**	**-0.7**
SJCC				*i*		17 42 47.6	
	comp=Z,16nm,0.9s						
GRMC	**Gramalote, San**	**1.84**	**162**	*e*P	**Pn**	**17 42 14.7**	**-1.3**
GRMC				*e*S	**Sn**	**17 42 38.5**	**-0.3**
GRMC				*i*		17 42 43.6	
	comp=Z,81nm,0.4s						
CBRI	**Barrientos, No**	**1.84**	**162**	*e*P	**Pb**	**17 42 18.2**	**-0.4**
CBRI				*i*		17 42 52.8	
	comp=Z,40nm,0.7s						
VIGV	**El Vigia**	**2.08**	**108**	*e*P	**Pb**	**17 42 23.4**	**+0.8**
VIGV				*e*S	**Sg**	**17 42 52.5**	**-0.2**
MOTC	**Monteria, Cord**	**2.37**	**253**	*e*P	**Pn**	**17 42 23.8**	**+0.7**
MOTC				*e*S	**Sn**	**17 42 52.7**	**+1.0**
MOTC				*i*		17 43 01.1	
	comp=Z,4.5nm,0.5s						
BARC	**Barichara**	**2.87**	**176**	*e*P	**Pn**	**17 42 31.3**	**+0.9**
DABV	**Dabajuro**	**3.06**	**62**	*e*P	**Pn**	**17 42 33.4**	**+0.7**
CURV	**Curarigua**	**3.41**	**81**	*e*P	**Pn**	**17 42 40.0**	**+2.4**
MONV	**Montecano**	**4.15**	**53**	*e*P	**Pn**	**17 42 46.7**	**-1.1**

IDC 12 17:45:51.9±2.5, 30°.14S×139°.66E, h0km, mb1 2.9/3, mb1mx2.9/22, mbtmp2.6/3, ML2.3/3, Error ellipse: s-maj=88.7km s-min=22.5km az=51.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**2.40**	**137**	Pn	Pn	17 46 32.6	+0.1
	0.4nm,0.3s,baz=314,slow=16,SNR=11						
STKA				Sn	Sn	17 47 03.3	+0.7
	1.3nm,0.3s,baz=148,slow=19,SNR=8.9						
ASAR	**Alice Springs**	**8.24**	**320**	Pn	Pn	17 47 53.2	+0.3

n22,σ2$10/43,11C-13D,Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**0.96**	**337**	*eP*	**Pb**	**17 58 21.1**	**-1.2**
	33nm,0.1s						
SHLS				*eS*	**Sb**	**17 58 31.8**	**-3.2**
	40nm,0.1s						
PDGK	**Podgornoye**	**1.25**	**328**	⇑*iP*	**Pn**	**17 58 25.8**	**-0.9**
	baz=325						
PDGK				⇑*iS*	**Sn**	**17 58 40.5**	**-3.0**
	baz=325						
PDGK	**Podgornoye**	**1.25**	**328**	⇓P	**Pn**	**17 58 25.6**	**-1.1**
	5.4nm,0.3s						
PDGK				⇑S	**Sg**	**17 58 46.8**	**+3.1**
	29nm,0.5s						
UZB	**Uzynbulak**	**1.34**	**311**	*eP*	**Pn**	**17 58 27.5**	**-0.6**
	12nm,0.1s						
UZB				*eS*	**Sn**	**17 58 43.3**	**-2.7**
	37nm,0.1s						
PRZ	**Przheval'sk**	**1.50**	**279**	⇓*eP*	**Pg**	**17 58 32.5**	**+0.4**
	baz=270						
PRZ				⇓*eS*	**Sg**	**17 58 52.3**	**+0.8**
	baz=270						
SATY	**Saty**	**1.67**	**299**	*eP*	**Pb**	**17 58 34.5**	**+0.3**
	54nm,0.2s						
SATY				*eS*	**Sn**	**17 58 54.8**	**+0.8**
	57nm,0.2s						
ZHN	**Zhinishke**	**1.70**	**302**	*eP*	**Pb**	**17 58 34.6**	**-0.1**
	52nm,0.2s						
ZHN				*eS*	**Sn**	**17 58 55.4**	**+0.5**
	25nm,0.2s						
KURS	**Kuram**	**2.04**	**307**	*eP*	**Pb**	**17 58 40.2**	**-0.2**
	4.0nm,0.6s						
KURS				*eS*	**Sn**	**17 59 04.8**	**+1.6**
	7.8nm,0.5s						
ANVS	**Anan'yevo**	**2.08**	**285**	⇓*eP*	**Pb**	**17 58 41.6**	**+0.3**
	baz=279						
ANVS				⇓*eS*	**Sb**	**17 59 09.0**	**+1.8**
	baz=279						
DJR	**Jarkent**	**2.11**	**348**	*eP*	**Pb**	**17 58 40.5**	**-1.1**
	7.9nm,0.3s						
DJR				*eS*	**Sn**	**17 59 05.3**	**+0.4**
	72nm,0.3s						
KDJ	**Kajisay**	**2.39**	**268**	⇑*eP*	**Pb**	**17 58 47.1**	**+0.5**
	baz=262						
KDJ				⇑*eS*	**Sb**	**17 59 18.1**	**+1.9**
	baz=262						
ARXS	**Arharly**	**2.70**	**317**	*eP*	**Pb**	**17 58 52.5**	**+0.7**
	4.8nm,0.3s						
ARXS				*eS*	**Sb**	**17 59 26.1**	**+1.2**
	24nm,0.5s						
IZV	**Izvestkoviy**	**2.89**	**287**	*eP*	**Pb**	**17 58 56.3**	**+1.3**
	7.5nm,0.4s						
IZV				*eS*	**Sb**	**17 59 33.0**	**+2.5**
	30nm,0.6s						
ULHL	**Ulahol**	**3.08**	**271**	⇓*iP*	**Pb**	**17 58 57.4**	**-1.0**
	baz=266						
ULHL				⇓*iS*	**Sb**	**17 59 33.7**	**-2.4**
	baz=266						
KAPS	**Kapalarasan**	**3.10**	**346**	*eP*	**Pb**	**17 58 58.2**	**-0.4**
	1.6nm,0.3s						
KAPS				*eS*	**Sb**	**17 59 35.6**	**-0.9**
	13nm,0.4s						
BOOM	**Boomskoye usch**	**3.31**	**275**	⇑*eP*	**Pb**	**17 58 59.2**	**-3.0**
	baz=271						
BOOM				⇑*eS*	**Sb**	**17 59 39.4**	**-3.1**
	baz=271						
DGS	**Degeres**	**3.54**	**287**	*eP*	**Pb**	**17 59 08.9**	**+2.8**
	2.4nm,0.3s						
DGS				*eS*	**Sg**	**17 59 54.1**	**-3.0**
	14nm,0.8s						
TKM2	**Tokmak 2**	**3.60**	**282**	⇓*iP*	**Pb**	**17 59 03.6**	**-3.6**
	baz=279						
TKM2				⇓*iS*	**Sn**	**17 59 44.6**	**+2.7**
	baz=279						
TKM2	**Tokmak 2**	**3.60**	**282**	⇑Pg	**Pb**	**17 59 04.5**	**-2.7**
	0.7nm,0.3s						
TKM2				⇓Lg	Lg	17 59 57.3	
	4.4nm,0.5s						
KZA	**Kyzart**	**3.83**	**269**	⇑*iP*	**Pb**	**17 59 07.6**	**-3.6**
	baz=265						
KZA				⇑*iS*	**Sn**	**17 59 52.2**	**+4.4**
	baz=265						
MAKZ	**Makanchi**	**4.67**	**13**	⇓Pn	**Pn**	**17 59 14.4**	**+0.5**
	0.8nm,0.6s						
MAKZ				⇓Sn	**Sn**	**18 00 09.9**	**+1.8**
	1.1nm,0.8s						
MK31	**Makanchi Array**	**4.72**	**16**	⇓Pn	**Pn**	**17 59 14.9**	**+0.4**
	0.2nm,0.3s,baz=203,slow=14,SNR=25						
MK31				⇑Sn	**Sn**	**18 00 11.1**	**+1.9**
	0.5nm,0.4s,baz=201,slow=20,SNR=5.4						

NIED ***12*** *17:59:00,37˚.90N×143˚.20E,h8km,Mw3.5 Best double couple: M₀2.23000×10¹⁴ NP1:φ=41.00000°,δ63.00000°, λ-2.00000°. NP2:φ=132.00000°,δ88.00000°, λ-153.00000°.*

IDC ***12*** *17:59:03.6±1.8,37˚.62N×143˚.46E,h0km,mb3.4/5, mb1 3.5/7,mb1mx3.4/53,mbtmp3.4/7,ML3.4/2,Error ellipse: s-maj=41.5km s-min=21.8km az=67.0*

ISCJB ***12*** *17:59:04.9±0.8,37˚.84N±0˚.04×143˚.22E±0˚.06,h19km, mb3.3/5,Error ellipse: s-maj=7.1km s-min=5.7km az=162.1*

JMA ***12*** *17:59:05.7±0.2,37˚.92N×143˚.23E,h31km,M3.6*

ISC 12 17:59:05.8±1.2,37˚.86N±0˚.04×143˚.32E±0˚.08,h19km,n29, σ2$08/36,mb3.4/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.66**	**292**	P	**Pn**	**17 59 32.4**	**-1.5**
JIO				*eS*	**Sn**	**17 59 50.6**	**-4.1**
JMK	**Ichinoseki**	**1.98**	**304**	P	**Pn**	**17 59 37.5**	**-0.7**
JMK				*eS*	**Sn**	**17 59 59.6**	**-2.8**
JMM	**Marumori**	**2.00**	**271**	P	**Pn**	**17 59 37.5**	**-1.0**
JMM				S	**Sn**	**18 00 01.6**	**-1.4**
JFK	**Kawauchi**	**2.00**	**256**	*eS*	**Sn**	**18 00 00.9**	**-2.3**
ONAJ	**Iwakimizuishiy**	**2.14**	**250**	*eS*	**Sn**	**18 00 04.2**	**-2.5**
JOU	**Okura**	**2.15**	**284**	P	**Pn**	**17 59 40.1**	**-0.6**
JOU				*eS*	**Sn**	**18 00 05.6**	**-1.3**
JOM	**Ohasama**	**2.26**	**316**	P	**Pn**	**17 59 41.6**	**-0.5**
JOM				S	**Sn**	**18 00 07.2**	**-2.3**
JFT	**Otama**	**2.39**	**263**	P	**Pn**	**17 59 44.0**	**+0.1**
JFT				*eS*	**Sn**	**18 00 12.2**	**-0.5**
JYK	**Kaneyama**	**2.55**	**295**	P	**Pn**	**17 59 45.8**	**-0.4**
JYK				*eS*	**Sn**	**18 00 13.8**	**-2.9**
JAW	**Awa shima**	**3.26**	**282**	*eS*	**Sn**	**18 00 33.8**	**-0.4**
JAG	**Ashikaga**	**3.41**	**246**	P	**Pn**	**17 59 57.6**	**-0.3**
JAG				S	**Sn**	**18 00 36.9**	**-0.8**
BSO1	**Boso 1**	**3.72**	**211**	P	**Pn**	**18 00 01.1**	**-0.5**
BSO1				*eS*	**Sn**	**18 00 44.2**	**-0.4**
JOT	**Ohata**	**3.93**	**334**	*eS*	**Sn**	**18 00 46.9**	**-3.7**
JSD	**Sado**	**4.00**	**274**	P	**Pn**	**18 00 06.3**	**+0.2**
JSD				*eS*	**Sn**	**18 00 50.4**	**-2.0**
MJAR	**Matsushiro Arr**	**4.29**	**254**	Pn	**Pn**	**18 00 11.2**	**+1.2**
	1.1nm,0.3s,baz=68,slow=9.6,SNR=6.4						
MJAR				Sn	**Sn**	**18 01 02.1**	**+2.6**
	0.5nm,0.3s,baz=56,slow=27,SNR=3.1						
MAT	**Matsushiro**	**4.29**	**254**	P	**Pn**	**18 00 11.5**	**+1.5**
MAT				*eS*	**Sn**	**18 00 58.6**	**-0.9**
MAT	**Matsushiro**	**4.29**	**254**	S	**Sb**	**18 01 10.3**	**-1.6**
JHJ	**Hachijo jima 2**	**5.54**	**212**	Pn	**Pn**	**18 00 24.7**	**-2.5**
	8.0nm,0.3s,baz=328,slow=19,SNR=27						
JHJ				Sn	**Sn**	**18 01 25.2**	**-5.1**
	21nm,0.3s,baz=92,slow=23,SNR=9.0						
H11N2	**WAKE ISLAND Hy**	**27.32**	**125**	T	T	18 33 43.8	
	baz=328						
H11N1	**WAKE ISLAND Hy**	**27.33**	**125**	T	T	18 33 35.4	
	baz=328						
H11N3	**WAKE ISLAND Hy**	**27.34**	**125**	T	T	18 33 31.2	
	baz=328						
H11S1	**WAKE ISLAND Hy**	**28.09**	**127**	T	T	18 34 43.3	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**28.09**	**127**	T	T	18 34 43.9	
	baz=314						
H11S2	**WAKE ISLAND Hy**	**28.10**	**127**	T	T	18 34 49.6	
	baz=314						
SONM	**Songino Array**	**28.61**	**302**	P	**P**	**18 05 03.0**	**+2.2**
	0.2nm,0.5s,baz=101,slow=8.7,SNR=2.6						
ZALV	**Zalesovo Beam**	**42.49**	**312**	P	**P**	**18 07 01.9**	**+2.5**
	0.4nm,0.2s,baz=74,slow=11,SNR=2.5						
MKAR	**Makanchi Array**	**44.97**	**302**	P	**P**	**18 07 22.5**	**+2.9**
	0.2nm,0.5s,baz=91,slow=9.9,SNR=2.3						
WRA	**Warramunga Arr**	**58.11**	**190**	P	**P**	**18 08 57.3**	**-0.8**
	0.4nm,0.9s,baz=10,slow=7.3,SNR=4.8						
ASAR	**Alice Springs**	**61.84**	**190**	P	**P**	**18 09 23.1**	**-0.5**
	0.3nm,1.0s,baz=2.1,slow=7.7,SNR=2.6						

ISCJB ***12*** *18:08:18.2±0.3,9.˚47N±0.˚04×122.˚22E±0.˚04,h10km, mb4.5/24,MS3.0/3,Error ellipse: s-maj=5.6km s-min=5.0km az=16.8*

IDC ***12*** *18:08:18.9±0.9,9.˚53N×122.˚21E,h0km,mb3.8/9, mb1 4.0/9,mb1mx3.8/38,mbtmp3.8/9,MS3.1/3,Ms1 3.2/3, ms1mx2.8/37,Error ellipse: s-maj=48.1km s-min=16.6km az=65.0*

NEIC ***12*** *18:08:19.9±0.3,9.˚60N×122.˚37E,h10km,mb4.7/12,Error ellipse: s-maj=7.6km s-min=5.4km az=72.0*

MAN ***12*** *18:08:22,9.˚58N×122.˚33E,h15km,mb5.0,ML3.9,MS4.0*

ISC 12 18:08:19.9±0.5,9.˚61N±0.˚04×122.˚30E±0.˚04,h10km,n55, σ1$46/56,mb4.4/24,MS2.9/3,6C-3D,Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.96**	**106**	⇑*iP*	Pg	18 08 34.9	-3.6
SNPH				*iS*	**Sg**	**18 08 49.7**	**-1.2**
JAP	**San Jose, Anti**	**1.19**	**343**	⇑*iP*	**Pn**	**18 08 43.1**	**+0.5**
TBP	**Tagbilaran**	**1.54**	**87**	⇓*eP*	**Pb**	**18 08 50.4**	**+1.8**
LLP	**Lapu-Lapu**	**1.78**	**67**	⇑*eP*	**Pn**	**18 08 52.7**	**+1.8**
LLP				*iS*	**Sg**	**18 09 18.3**	**+0.9**
RCP	**Roxas**	**1.99**	**13**	⇑*eP*	**Pn**	**18 08 56.1**	**+2.5**
RCP				*eS*	**Sb**	**18 09 22.6**	**+1.5**
CGP	**Cagayan de Oro**	**2.62**	**116**	⇑*eP*	**Pn**	**18 09 05.1**	**+2.7**
CGP				*iS*	**Sb**	**18 09 40.3**	**+0.8**
CTBH	**Cotabato--PC H**	**3.05**	**141**	*eP*	**Pn**	**18 09 10.7**	**+2.3**
CTBH				*iS*	**Sb**	**18 09 52.6**	**+0.8**
PLP	**Palo**	**3.05**	**59**	⇓*iP*	**Pn**	**18 09 10.5**	**+2.2**
PLP				*eS*	**Sn**	**18 09 38.5**	**-6.5**
MYLDM	**Lahad Datu**	**5.79**	**221**	*ePn*	**Pn**	**18 09 48.5**	**+2.5**
KKM	**Kota Kinabalu**	**6.99**	**240**	*ePn*	**Pn**	**18 10 03.0**	**+0.4**
KKM				*eSn*	Sn	18 11 12.0	-10
SBUM	**Sibu**	**12.29**	**235**	*ePn*	**Pn**	**18 11 14.9**	**-0.2**
IPM	**Ipoh**	**21.72**	**258**	*eP*	**P**	**18 13 12.7**	**+1.1**
	61nm,1.9s						
GUMO	**Guam**	**22.45**	**78**	LR	LR	18 21 55.3	
	comp=Z,44nm,21.3s,baz=281,slow=36						
CM01	**Chiang Mai Arr**	**24.26**	**294**	*eP*	**P**	**18 13 37.6**	**+0.1**
CMAR	**Chiang Mai Arr**	**24.29**	**294**	P	**P**	**18 13 37.9**	**+0.1**
	1.7nm,1.0s,baz=117,slow=8.0,SNR=6.8						
CMAR				LR	LR	18 22 56.4	
	comp=Z,33nm,19.4s,baz=145,slow=36						
CHTO	**Chiang Mai**	**24.40**	**295**	*eP*	**P**	**18 13 38.8**	**0.0**
	7.4nm,1.4s						
KS15	**Wonju Array Si**	**28.17**	**9**	*eP*	**P**	**18 14 14.4**	**+1.9**
KSAR	**Wonju Array Be**	**28.17**	**9**	P	**P**	**18 14 14.1**	**+1.5**
KSRS	**Korea Array**	**28.18**	**9**	P	**P**	**18 14 14.1**	**+1.4**
	2.1nm,0.8s,baz=191,slow=8.6,SNR=2.9						
MJAR	**Matsushiro Arr**	**30.45**	**26**	LR	LR	18 25 05.3	
	comp=Z,57nm,21.6s,baz=150,slow=33						
WR1	**Warramunga Arr**	**31.67**	**158**	*eP*	**P**	**18 14 43.1**	**-0.7**
	18nm,1.6s						
WRA	**Warramunga Arr**	**31.67**	**158**	P	**P**	**18 14 43.1**	**-0.7**
	0.7nm,0.6s,baz=332,slow=10,SNR=3.8						
AS31	**Alice Springs**	**34.96**	**161**	*eP*	**P**	**18 15 12.2**	**-0.3**
	0.8nm,0.7s						
ASAR	**Alice Springs**	**34.96**	**161**	P	**P**	**18 15 12.8**	**+0.3**
	0.9nm,0.5s,baz=337,slow=6.8,SNR=32						
AS01	**Alice Springs**	**34.98**	**161**	*eP*	**P**	**18 15 13.4**	**+0.8**
SONA0	**Songino Array**	**40.40**	**343**	*eP*	**P**	**18 15 58.9**	**+0.5**
	7.0nm,1.9s						
SONM	**Songino Array**	**40.40**	**343**	P	**P**	**18 15 58.9**	**+0.5**
	0.4nm,0.5s,baz=162,slow=9.5,SNR=3.7						
SONA1	**Songino Array**	**40.43**	**343**	*eP*	**P**	**18 15 58.3**	**-0.2**
STKA	**Stephens Creek**	**45.19**	**157**	P	**P**	**18 16 37.9**	**+0.6**
	2.6nm,1.0s,baz=340,slow=10,SNR=4.8						
STKA	**Stephens Creek**	**45.19**	**157**	*eP*	**P**	**18 16 37.0**	**-0.3**
	6.5nm,2.0s						
MK01	**Makanchi Array**	**50.23**	**325**	*eP*	**P**	**18 17 16.1**	**-0.2**
MK31	**Makanchi Array**	**50.25**	**325**	*eP*	**P**	**18 17 16.6**	**+0.2**
MK32	**Makanchi Array**	**50.25**	**325**	*eP*	**P**	**18 17 17.6**	**+1.1**
MKAR	**Makanchi Array**	**50.25**	**325**	P	**P**	**18 17 17.6**	**+1.1**
	1.8nm,0.9s,baz=131,slow=8.3,SNR=16						
MKAR	**Makanchi Array**	**50.25**	**325**	*eP*	**P**	**18 17 16.2**	**-0.2**
	15nm,0.9s						
ZAA0	**Zalesovo Array**	**53.39**	**333**	*eP*	**P**	**18 17 39.0**	**-0.7**
ZALV	**Zalesovo Beam**	**53.39**	**333**	P	**P**	**18 17 39.7**	**0.0**
	0.4nm,0.4s,baz=142,slow=7.3,SNR=3.0						
ZAA1	**Zalesovo Array**	**53.40**	**333**	*eP*	**P**	**18 17 39.7**	**0.0**
LHI	**Lord Howe Isla**	**53.95**	**141**	*eP*	**P**	**18 17 42.1**	**-2.0**
	290nm,1.4s						
KURK	**Kurchatov**	**54.45**	**327**	*eP*	**P**	**18 17 48.5**	**+1.0**
KBL	**Kabul**	**54.51**	**306**	*eP*	**P**	**18 17 49.5**	**+1.0**
	3.4nm,0.5s						
KKAR	**Karatay Array**	**55.97**	**316**	*eP*	**P**	**18 17 59.6**	**+0.9**
	12nm,0.9s						
FUNA	**Funafuti**	**59.45**	**106**	*eP*	**P**	**18 18 22.9**	**-0.6**
	211nm,1.1s						
ZRNK	**Zerenda**	**60.75**	**326**	*eP*	**P**	**18 18 30.7**	**-1.1**
	3.4nm,1.4s						
TIXI	**Tiksi**	**62.12**	**2**	*eP*	**P**	**18 18 40.9**	**+0.2**
	11nm,2.0s						
ABKAR	**Akbulak array**	**64.85**	**320**	*eP*	**P**	**18 18 58.8**	**-0.5**
	11nm,1.2s						
WKZ	**Wanaka**	**68.61**	**146**	*eP*	**P**	**18 19 22.3**	**-1.0**
	222nm,1.5s						
GNI	**Garni**	**74.38**	**309**	*eP*	**P**	**18 19 58.0**	**-0.5**
	26nm,1.8s						
POHA	**Pohakuloa**	**79.49**	**72**	*eP*	**P**	**18 20 26.9**	**-0.9**
	327nm,1.6s						
BR101	**Keskin Array S**	**82.92**	**309**	*eP*	**P**	**18 20 45.5**	**0.0**
BRTR	**Keskin Array B**	**82.92**	**309**	P	**P**	**18 20 45.5**	**0.0**
	0.6nm,0.5s,baz=141,slow=6.1,SNR=4.1						
BR231	**Keskin MP Arra**	**83.56**	**309**	*eP*	P	18 20 45.8	-3.0
KIEV	**Kiev**	**84.68**	**320**	*eP*	**P**	**18 20 52.6**	**-1.0**
SYO	**Syowa Base**	**96.29**	**201**	⇑*eP*	**P**	**18 21 47.2**	**-1.1**
SYO	**Syowa Base**	**96.29**	**201**	⇓*epP*	pP	18 21 53.4	+1.8

IDC 12 18:17:36.7±8.5,1.˚54S×149.˚60E,h0km,mb3.6/3, mb1 3.9/3,mb1mx3.4/28,mbtmp3.6/3,Error ellipse: s-maj=194.8km s-min=40.3km az=85.0,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.61**	**218**	P	P	18 22 49.6	+0.1
	0.5nm,0.3s,baz=42,slow=10,SNR=12						
H11S3	**WAKE ISLAND Hy**	**26.06**	**39**	T	T	18 48 51.3	
	baz=222,slow=74,SNR=32						
H11S2	**WAKE ISLAND Hy**	**26.06**	**39**	T	T	18 48 54.7	
	baz=222,slow=74,SNR=22						
H11S1	**WAKE ISLAND Hy**	**26.07**	**39**	T	T	18 48 58.0	
	baz=222,slow=74,SNR=25						
ASAR	**Alice Springs**	**26.74**	**213**	P	P	18 23 18.1	-0.2
	0.6nm,0.7s,baz=40,slow=7.1,SNR=13						
CMAR	**Chiang Mai Arr**	**53.62**	**294**	P	P	18 27 00.3	0.0
	0.7nm,0.7s,baz=101,slow=5.2,SNR=4.5						

ISCJB ***12*** *18:31:41.6±0.8,28.˚9S×0.˚2×61.˚9E×0.˚2,h10km,mb4.1/7, MS3.5/3,Error ellipse: s-maj=27.9km s-min=14.0km az=40.6*

IDC ***12*** *18:31:42.2±2.6,28.˚90S×61.˚86E,h0km,mb3.7/4, mb1 3.9/5,mb1mx3.5/35,mbtmp3.7/5,ML3.8/1,MS3.5/3, Ms1 3.5/3,ms1mx3.0/40,Error ellipse: s-maj=101.7km s-min=28.7km az=40.0*

NEIC ***12*** *18:31:43.3±0.6,28.˚87S×61.˚84E,h10km,mb5.0/3,Error ellipse: s-maj=22.8km s-min=11.3km az=221.0*

ISC 12 18:31:43.3±1.0,28.˚8S±0.˚2×61.˚8E±0.˚2,h10km,n24, σ0$88/15,mb4.1/7,MS3.4/3,Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OPO	**Ambohidratompo**	**16.85**	**304**	Pn	**Pn**	**18 35 40.3**	**+0.8**
	0.3nm,0.3s,baz=107,slow=16,SNR=3.9						
H08S1	**Diego Carcia H**	**23.34**	**27**	T	T	19 00 58.0	
	baz=204,slow=76,SNR=9.2						
H08S2	**Diego Garcia H**	**23.35**	**28**	T	T	19 00 55.6	
	baz=204,slow=76,SNR=5.2						
H08S3	**Diego Garcia H**	**23.36**	**27**	T	T	19 01 00.5	
	baz=204,slow=76,SNR=5.8						
H08N3	**Diego Garcia H**	**23.98**	**23**	T	T	19 02 01.3	
	baz=198						
H08N1	**Diego Carcia H**	**24.00**	**23**	T	T	19 02 03.6	
	baz=198						
H08N2	**Diego Garcia H**	**24.01**	**23**	T	T	19 02 03.7	
	baz=198						
KMBO	**Kilima Mbogo**	**36.19**	**315**	LR	LR	18 50 43.5	

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
	comp=Z,63nm,18.8s,baz=94,slow=32						
QSPA	**South Pole Qui**	**61.32**	**180**	*eP*	**P**	**18 41 59.0**	**+0.1**
ASAR	**Alice Springs**	**63.94**	**104**	P	**P**	**18 42 17.3**	**+0.3**
	0.9nm,0.8s,baz=241,slow=6.2,SNR=14						
AS31	**Alice Springs**	**63.95**	**104**	*eP*	**P**	**18 42 16.8**	**-0.2**
	2.6nm,1.5s						
AS01	**Alice Springs**	**63.98**	**104**	*eP*	**P**	**18 42 15.9**	**-1.3**
WR1	**Warramunga Arr**	**65.74**	**100**	*eP*	**P**	**18 42 29.1**	**+0.5**
	34nm,1.9s						
WRA	**Warramunga Arr**	**65.74**	**100**	P	**P**	**18 42 29.1**	**+0.5**
	0.5nm,0.5s,baz=248,slow=5.7,SNR=9.6						
TORD	**Torodi Ar. Bea**	**71.52**	**297**	LR	LR	19 12 30.1	
	comp=Z,57nm,21.0s,baz=0.0,slow=34						
BR231	**Keskin MP Arra**	**73.48**	**337**	*eP*	**P**	**18 43 14.2**	**-1.8**
KBZ	**Khabaz**	**74.27**	**346**	LR	LR	19 13 59.0	
	comp=Z,23nm,21.9s,baz=357,slow=34						
MK32	**Makanchi Array**	**77.51**	**14**	*eP*	**P**	**18 43 40.0**	**+1.1**
MKAR	**Makanchi Array**	**77.51**	**14**	P	**P**	**18 43 40.0**	**+1.1**
	0.1nm,0.5s,baz=180,slow=4.2,SNR=2.0						
ABKAR	**Akbulak array**	**77.75**	**359**	*eP*	**P**	**18 43 40.1**	**0.0**
	33nm,1.9s						
ZAA0	**Zalesovo Array**	**84.81**	**13**	*eP*	**P**	**18 44 17.6**	**+0.2**
ZALV	**Zalesovo Beam**	**84.81**	**13**	P	**P**	**18 44 18.1**	**+0.6**
	0.6nm,0.5s,baz=193,slow=6.1,SNR=5.9						
ZAA1	**Zalesovo Array**	**84.81**	**13**	*eP*	**P**	**18 44 18.1**	**+0.6**
YKA	**Yellowknife Ar**	**146.26**	**357**	PKPbc	**PKPbc**	**18 51 23.4**	**+0.1**
	0.9nm,0.8s,baz=349,slow=4.1,SNR=6.0						

MAN 12 18:34:56,8.˚24N×123.˚33E,h98km,mb4.5,ML3.4,MS3.3, 1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.10**	**355**	*iP*	Pn	18 35 13.3	-4.1
SNPH				*iS*	Sn	18 35 29.2	-4.3
LLP	**Lapu-Lapu**	**2.15**	**17**	*eP*	Pn	18 35 32.0	+1.4
LLP				*eS*	Sn	18 35 57.8	+0.9
PLP	**Palo**	**3.33**	**29**	⇓*eP*	Pn	18 35 48.2	+2.1
PLP				*eS*	Sn	18 36 18.3	-6.5

DDA ***12*** *18:36:47.8,40.˚73N×30.˚34E,h4km,Ml3.1*

ISK ***12*** *18:36:47.5,40.˚73N×30.˚37E,h6km,MD2.7,ML2.6*

IASPEI ***12*** *18:36:48.1±0.9,40.˚73N±0.˚02×30.˚36E±0.˚02,h10km±7km, Error ellipse: s-maj=3.4km s-min=2.7km az=21.0,GT5 selection from ISC bulletin GT5 identified by Bond˚jr and McLaughlin (2009) selection criteria Bond˚jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*

CSEM ***12*** *18:36:48.0±0.1,40.˚74N×30.˚35E,h5km,MD2.7,Error ellipse: s-maj=3.0km s-min=2.2km az=16.0*

ISC 12 18:36:48.3±0.9,40.˚72N±0.˚02×30.˚35E±0.˚02,h8km±6km, n59,σ0$59/86,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPNC	**Sapanca-Adapaz**	**0.05**	**223**	*ePG*	**Pg**	**18 36 49.8**	**-0.1**
SPNC	**Sapanca-Adapaz**	**0.05**	**223**	*ePg*	**Pg**	**18 36 49.8**	**-0.1**
GULT	**Gulveren**	**0.31**	**156**	*ePG*	**Pg**	**18 36 54.3**	**-0.2**
GULT				*eSG*	**Sg**	**18 36 59.3**	**+0.7**
GULT	**Gulveren**	**0.31**	**156**	*ePg*	**Pg**	**18 36 54.3**	**-0.2**
GULT				*eSg*	**Sg**	**18 36 59.3**	**+0.7**
KAND	**Kocaeli-Kandir**	**0.39**	**342**	*iP*	**Pg**	**18 36 56.1**	**+0.2**
KAND				*iS*	**Sg**	**18 37 01.6**	**+0.5**
KAND	**Kocaeli-Kandir**	**0.39**	**342**	P	**Pg**	**18 36 56.1**	**+0.2**
KAND				S	**Sg**	**18 37 01.6**	**+0.5**
SAHE	**Sakarya_HENDEK**	**0.40**	**71**	*iP*	**Pg**	**18 36 55.8**	**-0.4**
SAHE				*iS*	**Sg**	**18 37 01.6**	**+0.1**
SAHE	**Sakarya_HENDEK**	**0.40**	**71**	P	**Pg**	**18 36 55.8**	**-0.4**
SAHE				S	**Sg**	**18 37 01.6**	**+0.1**
GPA	**Golpazari**	**0.43**	**184**	*ePG*	**Pg**	**18 36 56.7**	**+0.1**
GPA	**Golpazari**	**0.43**	**184**	*ePg*	**Pg**	**18 36 56.7**	**+0.1**
BTAS	**Taskesti**	**0.52**	**107**	*iP*	**Pg**	**18 36 58.1**	**-0.2**
BTAS				*iS*	**Sg**	**18 37 04.7**	**-0.3**
BTAS	**Taskesti**	**0.52**	**107**	P	**Pg**	**18 36 58.1**	**-0.2**
BTAS				S	**Sg**	**18 37 04.7**	**-0.3**
HRT	**Hereke**	**0.53**	**281**	*ePG*	**Pg**	**18 36 58.3**	**-0.2**
HRT				*eSG*	**Sg**	**18 37 06.0**	**+0.6**
HRT	**Hereke**	**0.53**	**281**	*ePg*	**Pg**	**18 36 58.3**	**-0.2**
HRT				*eSg*	**Sg**	**18 37 06.0**	**+0.6**
ADVT	**Abdulvahap**	**0.55**	**239**	*ePG*	**Pg**	**18 36 58.6**	**-0.2**
ADVT				*eSG*	**Sb**	**18 37 07.2**	**-0.9**
ADVT	**Abdulvahap**	**0.55**	**239**	*ePg*	**Pg**	**18 36 58.6**	**-0.2**
ADVT				*eSg*	**Sb**	**18 37 07.2**	**-0.9**
CAVI	**Cavuskoy**	**0.65**	**217**	*ePG*	**Pg**	**18 37 00.6**	**-0.1**
CAVI	**Cavuskoy**	**0.65**	**217**	*

s-min=22.0km az=16.0
*ISCJB **12** 18:51:32.6±0.6, 35°.64N±0°.07×75°.0E±0°.1, h28km, mb3.5/7, Error ellipse: s-maj=15.1km s-min=7.2km az=143.5*

ISC 12 18:51:34.9±0.7, 35°.61N±0°.06×74°.8E±0°.1, h28km, n22, σ2.06/21, mb3.5/7, 3C-4D, Northwestern Kashmir

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THN	**Thein Dam**	**3.25**	**167**	*eP*	**Pb**	**18 52 31.0**	**-1.0**
THN				*eS*	**Sb**	**18 53 12.0**	**+0.9**
AAK	**Ala-Archa**	**7.02**	**358**	LR	LR	18 56 11.4	
	comp=Z,51nm,20.1s,baz=190,slow=40						
AAK	**Ala-Archa**	**7.02**	**358**	⇑P	Pn	18 53 22.7	+6.8
	2.5nm,0.8s						
AAK				⇑S	Sn	18 54 47.7	+13
	2.5nm,0.7s						
MNAS	**Manas**	**7.10**	**346**	⇑P	**Pn**	**18 53 16.0**	**-1.1**
	1.1nm,0.5s						
MNAS				⇓S	**Sn**	**18 54 42.8**	**+5.9**
	4.9nm,1.1s						
TKM2	**Tokmak 2**	**7.33**	**4**	⇓P	Pn	18 53 26.3	+6.1
	1.9nm,0.7s						
TKM2				⇓S	Sb	18 55 00.5	-7.8
	3.4nm,1.0s						
KK31	**Karatay Array**	**8.19**	**337**	P	**Pn**	**18 53 29.6**	**-2.3**
	2.0nm,0.6s,baz=149,slow=11,SNR=23						
KK31				⇓S	**Sn**	**18 55 00.4**	**-3.1**
	2.9nm,0.6s,baz=146,slow=21,SNR=6.8						
PYUN	**Piuthan**	**10.21**	**135**	*eP*	**Pn**	**18 54 01.2**	**+1.4**
GKN	**Gorkha**	**11.27**	**130**	*eP*	**Pn**	**18 54 14.7**	**+0.4**
KKN	**Kakani**	**11.83**	**128**	*eP*	**Pn**	**18 54 20.9**	**-1.1**
DMN	**Daman**	**11.84**	**129**	*eP*	**Pn**	**18 54 21.0**	**-1.2**
	23nm,0.7s						
PKIN	**Phulchoki**	**12.05**	**129**	*eP*	**Pn**	**18 54 22.8**	**-2.2**
MKAR	**Makanchi Array**	**12.50**	**24**	Pn	**Pn**	**18 54 29.2**	**-1.7**
	0.0nm,0.3s,baz=199,slow=15,SNR=2.9						
RAMN	**Ramite**	**13.26**	**127**	*eP*	Pn	18 54 35.2	-6.3
KURBB	**Kurchatov Arra**	**15.24**	**9**	Pn	**Pn**	**18 55 07.4**	**-0.7**
	0.1nm,0.3s,baz=198,slow=11,SNR=4.9						
ZALV	**Zalesovo Beam**	**19.62**	**18**	P	**P**	**18 55 59.8**	**-1.2**
	0.2nm,0.3s,baz=216,slow=9.8,SNR=8.4						
SONM	**Songino Array**	**26.35**	**53**	P	**P**	**18 57 09.1**	**+0.5**
	0.4nm,0.7s,baz=255,slow=11,SNR=5.9						
CMAR	**Chiang Mai Arr**	**27.33**	**122**	P	**P**	**18 57 19.8**	**+2.3**
	0.7nm,0.7s,baz=307,slow=11,SNR=6.2						
BRTR	**Keskin Array B**	**32.65**	**290**	P	**P**	**18 58 05.5**	**+0.9**
	0.2nm,0.4s,baz=101,slow=7.5,SNR=2.4						
AKASG	**Malin Array Be**	**35.91**	**309**	P	**P**	**18 58 33.9**	**+1.4**
	0.2nm,0.3s,baz=108,slow=9.3,SNR=2.8						
FINES	**FINESS Array B**	**39.95**	**326**	P	**P**	**18 59 06.7**	**+0.3**
	2.2nm,0.8s,baz=119,slow=11,SNR=3.8						
NOA	**NORSAR Array B**	**46.95**	**323**	P	**P**	**19 00 02.7**	**-0.2**
	0.6nm,0.6s,baz=94,slow=7.6,SNR=3.4						
TORD	**Torodi Ar. Bea**	**68.81**	**271**	P	**P**	**19 02 35.9**	**-1.0**
	0.4nm,0.8s,baz=68,slow=4.9,SNR=2.6						

IDC 12 18:51:35.7±4.0, 1°.39N×97°.44E, h0km, mb3.4/5, mb1 3.5/5, mb1mx3.3/45, mbtmp3.4/5, MS3.6/1, Ms1 3.6/1, ms1mx2.8/24, Error ellipse: s-maj=161.8km s-min=30.1km az=55.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H08S2	**Diego Garcia H**	**26.45**	**250**	T	T	19 24 03.2	
	baz=71,slow=76,SNR=191						
H08S3	**Diego Garcia H**	**26.45**	**250**	T	T	19 24 09.2	
	baz=71,slow=76,SNR=233						
H08S1	**Diego Garcia H**	**26.47**	**250**	T	T	19 24 06.6	
	baz=71,slow=76,SNR=268						
H01W3	**Cape Leeuwin H**	**39.33**	**158**	T	T	19 40 48.9	
	baz=338						
H01W2	**Cape Leeuwin H**	**39.34**	**158**	T	T	19 40 45.2	
	baz=338						
H01W1	**Cape Leeuwin H**	**39.34**	**158**	T	T	19 40 46.7	
	baz=338						
WRA	**Warramunga Arr**	**41.93**	**122**	P	P	18 59 28.3	-0.2
	0.4nm,0.9s,baz=303,slow=9.0,SNR=3.6						
KSRS	**Korea Array**	**45.56**	**34**	LR	LR	19 19 28.5	
	comp=Z,68nm,18.1s,baz=176,slow=37						
SONM	**Songino Array**	**46.91**	**8**	P	P	19 00 08.7	+0.6
	0.2nm,0.7s,baz=184,slow=8.5,SNR=2.3						
MKAR	**Makanchi Array**	**47.12**	**346**	P	P	19 00 09.7	+0.1
	0.2nm,0.5s,baz=158,slow=9.0,SNR=4.2						
KURBB	**Kurchatov Arra**	**51.61**	**345**	P	P	19 00 43.1	-0.7
	0.1nm,0.3s,baz=163,slow=6.0,SNR=4.7						
ZALV	**Zalesovo Beam**	**53.41**	**351**	P	P	19 00 57.0	-0.1
	0.7nm,0.4s,baz=176,slow=8.7,SNR=3.6						

*MOS **12** 18:57:04.5±1.1, 1°.58N×128°.22E, h40km, mb4.9/25, Error ellipse: s-maj=12.9km s-min=6.4km az=114.4*
*ISCJB **12** 18:57:06.9±0.2, 1°.59N±0°.02×128°.44E±0°.02, h61km, mb4.8/108, Error ellipse: s-maj=3.3km s-min=2.8km az=157.5*
*IDC **12** 18:57:09.6±1.3, 1°.51N×128°.40E, h72km±12km, mb4.2/23, mb1 4.3/27, mb1mx4.2/42, mbtmp4.5/27, MS3.2/5, Ms1 3.2/5, ms1mx2.9/38, Error ellipse: s-maj=15.0km s-min=8.2km az=65.0*
*DJA **12** 18:57:10.8±0.3, 2°.N±3°×12°.8E±°, h66km±4km, M4.9/31, mb5.1/31, mB5.3/12, MLv5.0/9, Mw(mB)4.7/12*
*NEIC **12** 18:57:10.3±0.6, 1°.56N×128°.36E, h82km±6km, mb4.9/52, Error ellipse: s-maj=4.9km s-min=3.5km az=63.0*
*BJI **12** 18:57:10.7, 1°.60N×128°.40E, h85km, mb4.8/43, mB4.8/37, Ms4.5/17, Ms7 4.4/17*
*KLM **12** 18:57:11.4, 1°.59N×128°.28E, h69km, mb5.0, MS6.1*

ISC 12 18:57:08.4±0.3, 1°.57N±0°.04×128°.44E±0°.04, h61km, n243, σ1.96/263, mb4.8/108, 12C-5D, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LBMI	**Labuha**	**2.39**	**203**	P	**Pn**	**18 57 44.7**	**-0.5**
LBMI				S	**Sn**	**18 58 16.4**	**+3.0**
SGSI	**Sangihe**	**3.59**	**306**	P	**Pn**	**18 58 02.3**	**+0.7**
SGSI				S	**Sn**	**18 58 43.8**	**+1.0**
SIJI	**Sorong**	**3.72**	**131**	P	**Pn**	**18 58 05.3**	**+1.8**
	14nm,0.3s,baz=270,slow=24,SNR=38						
SIJI				S	**Sn**	**18 58 46.6**	**+0.5**
	16nm,0.3s,baz=271,slow=23,SNR=16						
SANI	**Sanana**	**4.36**	**214**	P	**Pn**	**18 58 11.1**	**-1.0**
KMSI	**Cibinong**	**4.57**	**258**	P	**Pn**	**18 58 16.0**	**+1.0**
KMSI				S	**Sn**	**18 59 06.8**	**-0.1**
MSAI	**Masohi**	**4.91**	**174**	P	**Pn**	**18 58 22.5**	**+2.7**
NLAI	**Namlea**	**4.96**	**196**	P	**Pn**	**18 58 21.2**	**+0.7**
FAKI	**Fak Fak**	**5.87**	**140**	P	**Pn**	**18 58 34.9**	**+2.1**
FAKI				S	**Sn**	**18 59 36.5**	**-2.3**
FAKI	**Fak Fak**	**5.87**	**140**	*ePn*	**Pn**	**18 58 34.2**	**+1.3**
FAKI				*eSn*	**Sn**	**18 59 34.4**	**-4.4**
DAV	**Davao City (W)**	**6.16**	**332**	P	**Pn**	**18 58 40.6**	**+3.7**
	29nm,0.3s,baz=60,slow=7.8,SNR=3.5						
DAV				S	Sn	18 59 58.0	+12
	47nm,0.3s,baz=32,slow=24,SNR=2.7						
DAV				LR	LR	19 00 31.0	
	comp=Z,158nm,20.2s,baz=148,slow=32						
DAV	**Davao City (W)**	**6.16**	**332**	*ePn*	**Pn**	**18 58 37.9**	**+1.0**
DAV				*eSn*	Sn	18 59 58.0	+12
DAV				*e*		19 00 31.0	
DMPH	**Davao City--Mi**	**6.21**	**332**	⇑*eP*	Pn	18 58 47.4	+10
DMPH				*eS*	Sn	18 59 56.0	+8.9
BNDI	**Bandanaira**	**6.23**	**166**	S	**Sn**	**18 59 50.6**	**+2.9**
LUWI	**Luwuk**	**6.24**	**245**	P	**Pn**	**18 58 39.8**	**+1.9**
LUWI	**Luwuk**	**6.24**	**245**	*ePn*	**Pn**	**18 58 38.3**	**+0.4**
LUWI				*eSn*	**Sn**	**18 59 50.2**	**+2.4**
MRSI	**Marisa**	**6.59**	**261**	P	**Pn**	**18 58 43.4**	**+0.6**
CTBH	**Cotabato--PC H**	**7.00**	**323**	⇑*eP*	**Pn**	**18 58 50.0**	**+1.6**
KDI	**Kendari**	**8.00**	**227**	P	**Pn**	**18 59 02.2**	**+0.1**
PCI	**Palu**	**8.95**	**254**	P	**Pn**	**18 59 16.5**	**+1.4**
TTSI	**Tana Toraja**	**9.76**	**242**	P	**Pn**	**18 59 25.5**	**-0.7**
	103nm,0.6s,1μm						
SAUI	**Saumlaki**	**9.91**	**163**	P	**Pn**	**18 59 27.8**	**-0.4**
SAUI	**Saumlaki**	**9.91**	**163**	*ePn*	**Pn**	**18 59 29.0**	**+0.7**
SPSI	**Sidrap Palu**	**10.27**	**238**	P	**Pn**	**18 59 34.4**	**+1.3**
MYLDM	**Lahad Datu**	**10.55**	**290**	*ePn*	**Pn**	**18 59 39.4**	**+2.4**
KAPI	**Kappang**	**10.87**	**233**	P	**Pn**	**18 59 41.7**	**+0.4**
	8.1nm,0.3s,baz=85,slow=6.8,SNR=18						
KAPI				S	**Sn**	**19 01 37.0**	**-4.5**
	0.6nm,0.3s,baz=312,slow=23,SNR=5.2						
KAPI	**Kappang**	**10.87**	**233**	*ePn*	**Pn**	**18 59 42.9**	**+1.5**
KAPI				S	**Sn**	**19 01 37.0**	**-4.5**
SDKM	**Sandakan**	**11.93**	**290**	⇓P	**Pn**	**18 59 57.6**	**+1.7**
SOEI	**Soe**	**12.00**	**200**	*ePn*	**Pn**	**18 59 59.6**	**+2.7**
GENI	**Genyem**	**12.43**	**109**	P	**P**	**19 00 08.7**	**-3.9**
JAY	**Jayapura**	**12.92**	**108**	LR	LR	19 04 44.1	
	comp=Z,6.3nm,21.3s,baz=186,slow=35						
KKM	**Kota Kinabalu**	**12.98**	**290**	⇓P	**Pn**	**19 00 12.1**	**+1.8**
KKM	**Kota Kinabalu**	**12.98**	**290**	*ePn*	**Pn**	**19 00 11.4**	**+1.1**
BBKI	**Banjar Baru**	**14.48**	**250**	P	**Pn**	**19 00 28.7**	**-1.6**
TGY	**Tagaytay City**	**14.49**	**330**	P	**Pn**	**19 00 32.4**	**+2.0**
	baz=180,slow=11,SNR=2.6						
TGY				LR	LR	19 06 54.0	
	comp=Z,77nm,20.6s,baz=124,slow=40						
MTN	**Manton Dam**	**14.57**	**170**	*ePn*	**Pn**	**19 00 30.6**	**-0.8**
PLAI	**Planpang**	**14.82**	**226**	P	**P**	**19 00 40.2**	**+1.0**
TWSI	**Taliwang, Sumb**	**15.42**	**228**	P	**P**	**19 00 46.8**	**+1.1**
BTM	**Bintulu**	**15.43**	**276**	⇑P	**Pn**	**19 00 41.7**	**-0.8**
SBUM	**Sibu**	**16.23**	**273**	⇑P	**Pn**	**19 00 52.5**	**-0.3**
SBUM	**Sibu**	**16.23**	**273**	*ePn*	**Pn**	**19 00 50.7**	**-2.1**
	315nm,2.0s						
STKI	**Sintang**	**17.03**	**265**	P	**Pn**	**19 01 02.5**	**-0.1**
JAGI	**Jajag, Banyuwa**	**17.39**	**235**	P	**P**	**19 01 08.7**	**+1.1**
JAGI	**Jajag, Banyuwa**	**17.39**	**235**	*ePn*	**Pn**	**19 01 07.3**	**+0.2**
	43nm,0.9s						
BLJI	**Banyuglugur**	**17.46**	**238**	P	**P**	**19 01 13.9**	**+5.5**
GMJI	**Gumukmas**	**17.87**	**237**	P	**Pn**	**19 01 16.1**	**+3.2**
KSM	**Kuching**	**18.13**	**270**	⇑P	**P**	**19 01 15.5**	**-0.3**
KSM	**Kuching**	**18.13**	**270**	*eP*	**P**	**19 01 14.5**	**-1.3**
	73nm,0.6s						
NGJI	**Ngawi**	**19.13**	**242**	P	**Pn**	**19 01 34.2**	**+6.1**
PWJI	**Pagerwojo**	**19.13**	**240**	P	**Pn**	**19 01 27.8**	**-0.4**
MANU	**Manus Island**	**19.26**	**101**	*eP*	**Pn**	**19 01 31.5**	**+1.7**
	87nm,1.4s						
FITZ	**Fitzroy Crossi**	**19.75**	**188**	P	**P**	**19 01 33.0**	**-0.4**
	0.3nm,0.3s,baz=24,slow=8.0,SNR=12						
FITZ	**Fitzroy Crossi**	**19.75**	**188**	*eP*	**Pn**	**19 01 35.5**	**+0.2**
	11nm,1.0s						
GUMO	**Guam**	**20.17**	**53**	P	**P**	**19 01 39.0**	**+0.9**
	34nm,0.5s,baz=170,slow=18,SNR=3.7						
GUMO				LR	LR	19 08 38.8	
	comp=Z,112nm,19.4s,baz=278,slow=34						
GUMO	**Guam**	**20.17**	**53**	*eP*	**P**	**19 01 39.0**	**+0.9**
UGM	**Wanagama**	**20.20**	**242**	*eP*	**P**	**19 01 38.9**	**+0.4**
	548nm,1.8s						
COEN	**Coen**	**21.24**	**137**	*eP*	**P**	**19 01 50.9**	**+1.3**
	21nm,0.8s						
PMG	**Port Moresby**	**21.60**	**121**	*eP*	**P**	**19 01 57.0**	**+3.5**
PMG				pmax	pmax		
	comp=Z,66nm,0.9s						
WRAB	**Tennant Creek**	**22.14**	**165**	*ceP*	**P**	**19 01 59.2**	**-0.1**
WRAB				pmax	pmax		
	comp=Z,39nm,1.8s						
WRAB	**Tennant Creek**	**22.14**	**165**	*eP*	**P**	**19 01 60.0**	**+0.7**
	comp=Z,33nm,1.0s						
WR1	**Warramunga Arr**	**22.15**	**165**	*eP*	**P**	**19 01 59.2**	**-0.1**
	comp=Z,33nm,0.8s						
WR1				*e*ScP	**ScP**	**19 09 25.3**	**-1.7**
WRA	**Warramunga Arr**	**22.15**	**165**	P	**P**	**19 01 59.2**	**-0.1**
	comp=Z,5.2nm,0.6s,baz=345,slow=10,SNR=40						
WRA				ScP	**ScP**	**19 09 25.3**	**-1.7**
	comp=Z,1.4nm,0.7s,baz=336,slow=2.9,SNR=5.9						
WB2	**Warramunga Arr**	**22.15**	**165**	*eP*	**P**	**19 01 59.0**	**-0.4**
	comp=Z,29nm,0.8s						
ANA2	**Anatahan**	**22.47**	**48**	*eP*	**P**	**19 02 02.3**	**-0.5**
CISI	**Cisompet, Garu**	**22.49**	**246**	P	**P**	**19 02 04.4**	**+1.3**
	comp=Z,73nm,0.8s						
CISI	**Cisompet, Garu**	**22.49**	**246**	*eP*	**P**	**19 02 00.6**	**-2.5**
	comp=Z,54nm,0.7s						
PPBI	**Pangkal Pinang**	**22.61**	**261**	P	**P**	**19 02 03.0**	**-1.3**
	comp=Z,40nm,0.8s,comp=Z,781nm						
SARN	**Sarigan**	**22.74**	**48**	*eP*	**P**	**19 02 06.7**	**+1.0**
YULB	**Yu-li**	**22.77**	**343**	*eP*	**P**	**19 02 04.2**	**-1.7**
	comp=Z,13nm,0.9s						
TPUB	**Ta-pu**	**22.89**	**341**	*eP*	**P**	**19 02 06.5**	**-0.7**
	comp=Z,65nm,1.3s						
CBJI	**Citeko**	**22.97**	**250**	P	**P**	**19 02 07.3**	**-0.8**
	comp=Z,192nm,0.8s						
DBJI	**Dramaga**	**23.11**	**249**	P	**P**	**19 02 10.3**	**+0.8**
	comp=Z,69nm,1.1s						
SSLB	**Suanglung**	**23.24**	**342**	*eP*	**P**	**19 02 10.4**	**-0.3**
	comp=Z,18nm,0.8s						
NACB	**Ninganchiao**	**23.43**	**344**	*eP*	**P**	**19 02 12.7**	**+0.3**
	comp=Z,19nm,0.9s						
TPRI	**Tanjung Pinang**	**23.92**	**269**	P	**P**	**19 02 18.2**	**+1.2**
	comp=Z,32nm,0.6s,comp=Z,2μm						
YHNB	**Yeheng**	**23.95**	**344**	*eP*	**P**	**19 02 18.1**	**+0.8**
	comp=Z,136nm,1.9s						
CGJI	**Cibinong**	**24.12**	**250**	P	**P**	**19 02 18.3**	**-0.5**
	comp=Z,155nm,0.9s,comp=Z,2μm						
MBWA	**Marble Bar**	**24.15**	**200**	*eP*	**P**	**19 02 19.4**	**+0.5**
	comp=Z,49nm,1.4s						
BLSI	**Bandar Lampung**	**24.17**	**253**	P	**P**	**19 02 20.1**	**+0.8**
	comp=Z,130nm,1.0s						
RABL	**Rabaul**	**24.39**	**104**	*eP*	**P**	**19 02 21.6**	**+0.3**
	comp=Z,127nm,0.6s						
MYKOM	**Kota Tinggi**	**24.58**	**271**	⇓P	**P**	**19 02 23.3**	**+0.3**
MYKOM	**Kota Tinggi**	**24.58**	**271**	*eP*	**P**	**19 02 22.9**	**-0.2**
	comp=Z,64nm,0.8s						
KASI	**Kota Agung**	**24.93**	**253**	P	**P**	**19 02 27.1**	**+0.9**
	comp=Z,116nm,1.0s						
JMBI	**JAMBI**	**25.00**	**263**	P	**P**	**19 02 30.2**	**+3.4**
	comp=Z,241nm,0.4s						
KGM	**Kluang**	**25.11**	**271**	⇓P	**P**	**19 02 28.6**	**+0.7**
JOW	**Kunigami**	**25.11**	**360**	*eP*	**P**	**19 02 26.9**	**-0.8**
	comp=Z,70nm,1.7s						
QIZ	**Qiongzhong**	**25.16**	**315**	P	**P**	**19 02 28.9**	**+0.7**
QIZ				pP	**pP**	**19 02 43.3**	**+0.2**
QIZ				S	**S**	**19 06 50.5**	**+1.3**
QIZ				sS	**sS**	**19 07 15.7**	**+1.2**
QIZ	**Qiongzhong**	**25.16**	**315**	*eP*	**P**	**19 02 28.5**	**+0.3**
	comp=Z,19nm,0.9s						
LWLI	**Liwa**	**25.22**	**255**	P	**P**	**19 02 29.2**	**+0.2**
	comp=Z,93nm,0.7s						
LHSI	**Lahat**	**25.48**	**258**	P	**P**	**19 02 37.0**	**+5.9**
AS31	**Alice Springs**	**25.64**	**168**	*eP*	**P**	**19 02 32.3**	**-0.3**
	comp=Z,5.7nm,0.8s						
AS31				*e*ScP	**ScP**	**19 09 34.6**	**-1.9**
ASAR	**Alice Springs**	**25.64**	**168**	P	**P**	**19 02 33.0**	**+0.4**
	comp=Z,2.4nm,0.5s,baz=348,slow=8.1,SNR=48						
ASAR				PcP	**PcP**	**19 06 01.8**	**-0.4**
	comp=Z,0.8nm,0.5s,baz=350,slow=2.3,SNR=4.6						
ASAR				ScP	**ScP**	**19 09 34.6**	**-1.9**
	comp=Z,0.7nm,0.7s,baz=334,slow=2.2,SNR=4.4						
XMIS	**Christmas Isla**	**25.64**	**242**	*eP*	**P**	**19 02 31.5**	**-1.2**
	comp=Z,94nm,1.0s						
AS01	**Alice Springs**	**25.65**	**168**	*eP*	**P**	**19 02 32.9**	**+0.2**
KSI	**Kapahiang**	**26.35**	**259**	P	**P**	**19 02 41.4**	**+2.2**
	comp=Z,75nm,1.1s						
UBPT	**Khong Chiam**	**26.44**	**302**	P	**P**	**19 02 41.6**	**+1.7**
	comp=Z,73nm,0.9s						
BKNI	**Bangkinang**	**27.43**	**268**	*eP*	**P**	**19 02 47.9**	**-0.9**
	comp=Z,46nm,0.5s						
IPM	**Ipoh**	**27.53**	**277**	*eP*	**P**	**19 02 49.1**	**-0.6**
	comp=Z,18nm,0.8s						
CTA	**Charters Tower**	**27.72**	**142**	P	**P**	**19 02 51.4**	**0.0**
	comp=Z,5.4nm,1.0s,baz=345,slow=16,SNR=2.4						
CHBT	**CHBT**	**28.15**	**294**	P	**P**	**19 02 59.7**	**+4.5**
	comp=Z,46nm,0.8s						
SKNT	**Sakolnakorn**	**28.52**	**304**	P	**P**	**19 03 02.1**	**+3.7**
	comp=Z,43nm,0.9s						
SRAK	**Srakaew**	**28.88**	**297**	P	**P**	**19 02 59.9**	**-1.8**
	comp=Z,78nm,0.8s,comp=Z,668nm						
PSI	**Prapat**	**29.52**	**273**	*eP*	**P**	**19 03 06.6**	**-1.0**
PSI				pmax	pmax		
	comp=Z,34nm,0.8s						
PSI	**Prapat**	**29.52**	**273**	*eP*	**P**	**19 03 06.5**	**-1.0**
	comp=Z,34nm,0.8s						
CHAI	**Chaiyaphum**	**29.71**	**300**	P	**P**	**19 03 09.2**	**+0.2**
	comp=Z,13nm,0.8s,comp=Z,122nm						
PATS	**Pohnpei**	**30.23**	**79**	*eP*	**P**	**19 03 14.3**	**+0.6**
	comp=Z,118nm,1.4s						
GSI	**Gunungsitoli**	**30.86**	**270**	P	**P**	**19 03 18.3**	**-0.9**
	comp=Z,96nm,1.1s						
GSI	**Gunungsitoli**	**30.86**	**270**	*eP*	**P**	**19 03 17.6**	**-1.6**
	comp=Z,64nm,0.7s						
PBKT	**Sadao Pong**	**30.88**	**300**	P	P	19 03 25.0	+5.7
	comp=Z,19nm,0.7s						
LOEI	**Loei**	**31.05**	**302**	P	**P**	**19 03 18.6**	**-2.3**
	comp=Z,22nm,1.3s,comp=Z,4μm						
JNU	**Nakatsue**	**31.47**	**4**	*eP*	**P**	**19 03 24.8**	**+0.4**
	comp=Z,8.9nm,0.8s						
UTTA	**Uttaradit**	**31.76**	**302**	P	**P**	**19 03 28.4**	**+1.3**
	comp=Z,3.3nm,0.9s						
FORT	**Forrest**	**32.17**	**181**	*eP*	**P**	**19 03 30.5**	**-0.1**
	comp=Z,227nm,0.7s						
GYA	**Guiyang**	**32.41**	**322**	P	P	**19 03 33.8**	**+1.0**
GYA				pP	pP	19 03 50.5	+2.6
GYA				PP	**PP**	**19 04 44.4**	**-2.7**
GYA				PcP	**PcP**	**19 06 20.0**	**+0.7**
GYA				S	**S**	**19 08 42.8**	**-0.4**
GYA				sS	sS	19 09 12.5	+3.6
GYA					SS	**SnSn**	**19 10 43.0**	**+1.7**
GYA					pmax	pmax		
	comp=Z,20nm,1.0s						
GYA					pmax	pmax		
	comp=Z,120nm,5.3s						
GYA					LR	LR		
	comp=Z,460nm,18.5s						
GYA					LR	LR		
	comp=Z,510nm,18.3s						
GYA					LR	LR		
	comp=Z,480nm,19.6s						
SUKH	**Sukhothai**	**32.43**	**301**	P	**P**	**19 03 35.1**	**+2.2**
	comp=Z,4.2nm,0.8s						
CM01	**Chiang Mai Arr**	**33.41**	**302**	*eP*	**P**	**19 03 40.5**	**-1.1**
CM01				*e*ScP	**ScP**	**19 09 59.2**	**-2.3**
CM31	**Chiang Mai Arr**	**33.44**	**302**	*eP*	**P**	**19 03 38.5**	**-3.3**
CMAR	**Chiang Mai Arr**	**33.44**	**302**	P	**P**	**19 03 42.4**	**+0.5**
	comp=Z,2.7nm,0.8s,baz=117,slow=7.0,SNR=19						
CMAR				LR	LR	19 19 22.4	
	comp=Z,23nm,18.6s,baz=125,slow=40						
CMMT	**Chiang Mai**	**33.60**	**303**	P	**P**	**19 03 45.1**	**+1.9**
	comp=Z,9.9nm,0.7s						
CHTO	**Chiang Mai**	**33.60**	**303**	P	**P**	**19 03 45.2**	**+1.9**
	comp=Z,45nm,0.8s						
CHTO	**Chiang Mai**	**33.60**	**303**	*eP*	**P**	**19 03 42.6**	**-0.6**
CHTO				pmax	pmax		
	comp=Z,6.0nm,0.7s						
CHTO	**Chiang Mai**	**33.60**	**303**	*eP*	**P**	**19 03 42.6**	**-0.6**
	comp=Z,5.5nm,0.7s						
ENH	**Enshi**	**33.74**	**330**	*eP*	**P**	**19 03 44.8**	**+0.5**
	comp=Z,12nm,0.8s						
CMAI	**Chiengmai2**	**34.04**	**304**	P	**P**	**19 03 50.2**	**+3.0**
	comp=Z,105nm,0.9s						
KMI	**Kunming**	**34.10**	**315**	P	**P**	**19 03 49.4**	**+1.6**
KMI				pP	sP	19 04 07.4	-2.7
KMI				pmax	pmax		
	comp=Z,20nm,1.1s						
EIDS	**Eidsvold**	**34.61**	**142**	*eP*	**P**	**19 03 50.6**	**-1.2**
	comp=Z,16nm,0.9s						
BBOO	**Buckleboo**	**34.95**	**169**	*eP*	**P**	**19 03 55.6**	**+0.9**
	comp=Z,82nm,1.9s						
STKA	**Stephens Creek**	**35.53**	**161**	P	**P**	**19 03 59.8**	**+0.1**
	comp=Z,4.4nm,0.4s,baz=345,slow=7.9,SNR=31						
STKA	**Stephens Creek**	**35.53**	**161**	*eP*	**P**	**19 03 59.7**	**0.0**
STKA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
STKA	**Stephens Creek**	**35.53**	**161**	*eP*	**P**	**19 03 59.7**	**0.0**
	comp=Z,3.0nm,0.9s						
KSAR	**Wonju Array Be**	**35.70**	**359**	P	**P**	**19 04 01.7**	**+0.7**
KSAR	**Wonju Array Be**	**35.70**	**359**	P	**P**	**19 04 01.7**	**+0.7**
KSRS	**Korea Array**	**35.71**	**359**	P	**P**	**19 04 01.7**	**+0.6**
	comp=Z,3.7nm,0.7s,baz=176,slow=9.8,SNR=12						
MJAR	**Matsushiro Arr**	**35.95**	**13**	P	**P**	**19 04 02.5**	**-0.7**
	comp=Z,4.5nm,0.7s,baz=184,slow=9.6,SNR=26						
MJAR				LR	LR	19 17 06.0	
	comp=Z,41nm,20.8s,baz=210,slow=33						
MAJO	**Matsushiro**	**35.95**	**13**	*eP*	**P**	**19 04 02.3**	**-0.9**
MAJO				pmax	pmax		
	comp=Z,11nm,0.7s						
MAJO	**Matsushiro**	**35.95**	**13**	*eP*	**P**	**19 04 02.3**	**-0.9**
	comp=Z,11nm,0.7s						
MAT	**Matsushiro**	**35.95**	**13**	P	**P**	**19 04 03.0**	**-0.3**
XAN	**Xi'an**	**37.10**	**333**	P	**P**	**19 04 13.5**	**+0.4**
XAN				pmax	pmax		
	comp=Z,11nm,0.7s						
XAN				pmax	pmax		
	comp=Z,29nm,3.8s						
CD2	**Chengdu**	**37.38**	**324**	*eP*	**P**	**19 04 15.7**	**+0.1**
CD2				pP	pP	19 04 32.5	+1.6
CD2				S	**S**	**19 09 59.9**	**+0.4**
CD2				sS	sS	19 10 29.2	+3.8
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,180nm,5.0s						
ARMA	**Armidale**	**38.74**	**147**	*eP*	**P**	**19 04

WMQ pmax pmax
comp=Z,14nm,1.2s
WMQ pmax pmax
comp=Z,140nm,5.6s
WMQ LR LR
comp=Z,150nm,21.0s
WMQ LR LR
comp=Z,100nm,24.1s
WMQ LR LR
comp=Z,130nm,20.2s
PEA0 Petropavlovsk- 56.80 21 *e*P **P** 19 06 47.4 +1.0
PETK Petropavlovsk- 56.80 21 P **P** 19 06 47.7 +1.3
comp=Z,2.9nm,0.6s,baz=183,slow=3.8,SNR=14
PEA1 Petropavlovsk- 56.81 21 *e*P **P** 19 06 47.7 +1.3
RPZ Rata Peaks 59.02 145 P **P** 19 07 02.4 +0.3
comp=Z,17nm,1.0s,baz=225,slow=20,SNR=2.2
URZ Urewera 59.81 137 LR LR 19 33 18.3
comp=Z,265nm,19.2s,baz=354,slow=36
MK01 Makanchi Array 60.27 325 *e*P **P** 19 07 10.2 -0.5
MK31 Makanchi Array 60.29 325*ce*P **P** 19 07 10.6 -0.2
MK31 pmax pmax
comp=Z,4.0nm,0.4s
MK31 Makanchi Array 60.29 325 *e*P **P** 19 07 10.4 -0.4
MK32 Makanchi Array 60.29 325 *e*P **P** 19 07 11.0 +0.2
MKAR Makanchi Array 60.29 325 P **P** 19 07 11.0 +0.2
comp=Z,8.0nm,0.4s,baz=119,slow=8.5,SNR=159
MKAR Makanchi Array 60.29 325 *e*P **P** 19 07 10.4 -0.4
MKAR Makanchi Array 60.29 325 *e*P **P** 19 07 10.4 -0.4
comp=Z,114nm,0.4s
YAK Yakutsk 60.32 1 *e*P **P** 19 07 11.1 +0.5
YAK pmax pmax
comp=Z,18nm,0.9s
YAK Yakutsk 60.32 1 *e*P **P** 19 07 10.9 +0.3
comp=Z,25nm,0.7s
MAKZ Makanchi 60.48 325 *e*P **P** 19 07 11.1 -0.9
MAKZ pmax pmax
comp=Z,13nm,0.9s
MAKZ Makanchi 60.48 325 *e*P **P** 19 07 11.1 -0.9
comp=Z,13nm,0.9s
KSH Kashi 60.77 315 P **P** 19 07 15.2 +0.9
KSH *ep*P pP 19 07 33.9 +3.3
KSH PcS **PcS** 19 12 00.1 -0.4
KSH S **S** 19 15 24.7 -2.5
KSH ScS SKKSac 19 16 54.8 -5.4
KSH pmax pmax
comp=Z,64nm,4.0s
KSH LR LR
comp=Z,82nm,9.1s
KSH LR LR
comp=Z,90nm,5.8s
KSH LR LR
comp=Z,91nm,6.7s
AAK Ala-Archa 63.09 318 *e*P **P** 19 07 29.6 -0.3
AAK pmax pmax
comp=Z,7.0nm,1.0s
ZAA0 Zalesovo Array 63.27 333 *e*P **P** 19 07 28.9 -1.7
ZALV Zalesovo Beam 63.27 333 P **P** 19 07 29.6 -1.0
comp=Z,1.6nm,0.4s,baz=116,slow=6.8,SNR=12
ZAA1 Zalesovo Array 63.28 333 *e*P **P** 19 07 29.6 -1.0
SEY Seymchan 63.76 12*ce*P **P** 19 07 35.1 +1.4
MNAS Manas 64.37 317 *i* P **P** 19 07 37.6 -0.7
MNAS pmax pmax
comp=Z,7.0nm,0.9s
KURBB Kurchatov Arra 64.47 327 P **P** 19 07 38.4 -0.2
comp=Z,12nm,0.5s,baz=129,slow=6.0,SNR=132
KURK Kurchatov 64.47 327 *e*P **P** 19 07 38.2 -0.4
KURK Kurchatov 64.47 327 *e*P **P** 19 07 38.2 -0.4
NVS Novosibirsk 64.56 333 *e*P **P** 19 07 36.5 -2.5
KK31 Karatay Array 65.97 317*ce*P **P** 19 07 47.9 -0.6
KK31 pmax pmax
comp=Z,4.0nm,0.6s
KKAR Karatay Array 65.97 317 *e*P **P** 19 07 47.2 -1.3
KKAR pmax pmax
comp=Z,49nm,0.6s
KKAR Karatay Array 65.97 317 *e*P **P** 19 07 47.2 -1.3
comp=Z,49nm,0.6s
OTUK Ortayu 66.86 323 P **P** 19 07 53.0 -1.1
OTUK pmax pmax
comp=Z,8.0nm,0.7s
TIXI Tiksi 69.97 0*ce*P **P** 19 08 13.6 +0.6
TIXI pmax pmax
comp=Z,4.0nm,0.6s
TIXI Tiksi 69.97 0 *e*P **P** 19 08 12.0 -1.0
comp=Z,5.5nm,0.7s
BVA0 Borovoye Array 70.05 327 *i* P **P** 19 08 12.6 -1.3
BVA0 pmax pmax
comp=Z,14nm,1.1s
BRVK Borovoye 70.12 327*ce*P **P** 19 08 14.1 -0.2
BRVK pmax pmax
comp=Z,26nm,1.2s
BRVK Borovoye 70.12 327 *e*P **P** 19 08 14.0 -0.3
comp=Z,11nm,0.8s
CHKZ Chkalovo 70.21 328 *i* P **P** 19 08 13.1 -1.7
CHKZ pmax pmax
comp=Z,6.0nm,0.9s
ZRNK Zerenda 70.78 327 *e*P **P** 19 08 17.3 -1.0
ZRNK pmax pmax
comp=Z,13nm,0.6s
ZRNK Zerenda 70.78 327 *e*P **P** 19 08 17.2 -1.0
comp=Z,13nm,0.6s
BILL Bilibino 71.20 14 *e*P **P** 19 08 21.7 +1.1
BILL pmax pmax
comp=Z,5.0nm,1.3s
GEYT Alibeck 73.57 309 P **P** 19 08 35.0 -0.4
comp=Z,2.9nm,0.6s,baz=155,slow=4.6,SNR=9.0
AB31 Akbulak array 74.89 321*ce*P **P** 19 08 40.8 -1.9
AB31 pmax pmax
comp=Z,3.0nm,0.7s
ABKAR Akbulak array 74.89 321 *e*P **P** 19 08 41.2 -1.6
comp=Z,35nm,0.6s
AKTO Aktyubinsk 76.40 322 *i* P **P** 19 08 48.8 -2.6
AKTO pmax pmax
comp=Z,8.0nm,1.1s
SVE Sverdlovsk 76.68 328 *e*P **P** 19 08 54.0 +1.2
ARU Arti 77.66 328*d i*P **P** 19 08 57.0 -1.3
ARU *PP **pP** 19 09 14.3 -0.9
ARU 19 11 50.8
ARU S **S** 19 18 43.8 -1.6
ARU SS **SS** 19 23 41.4 -4.8
ARU pmax pmax
comp=Z,12nm,2.5s
ARU Arti 77.66 328 *e*P **P** 19 08 56.5 -1.8
comp=Z,6.0nm,0.9s
VNDA Vanda 81.09 173 P **P** 19 09 16.4 -0.1
comp=Z,2.4nm,0.6s,baz=320,slow=6.5,SNR=30
VNDA Vanda 81.09 173 *e*P **P** 19 09 16.1 -0.5
VNDA pmax pmax
comp=Z,5.0nm,0.9s
VNDA Vanda 81.09 173 *e*P **P** 19 09 16.1 -0.5
comp=Z,4.7nm,0.9s
SBA Scott Base 81.98 172 *e*P **P** 19 09 21.7 +0.4
SBA pmax pmax
comp=Z,5.0nm,0.9s
SBA Scott Base 81.98 172 *e*P **P** 19 09 21.7 +0.4
comp=Z,4.9nm,0.9s
KDAK Kodiak Island 82.80 32 *i* P **P** 19 09 27.6 +1.7
KTH Kantishna Hill 84.42 26 *e*P **P** 19 09 31.9 -2.3
comp=Z,7.9nm,0.8s
KIV Kislovodsk 85.85 314 *e*P **P** 19 09 39.6 -2.2
KIV pmax pmax
comp=Z,4.0nm,1.0s
ILAR Eielson Array 86.31 25 P **P** 19 09 44.8 +1.3
comp=Z,0.7nm,0.4s,baz=249,slow=4.9,SNR=13
KLMR Klimovskoe 88.11 331 *e*P **P** 19 09 49.2 -3.0
KLMR pmax pmax
comp=Z,9.0nm,1.4s
OBN Obninsk 89.80 325 *i* P **P** 19 10 00.4 +0.1
OBN pmax pmax
comp=Z,3.0nm,0.9s
QSPA South Pole Qui 91.49 180 *e*P **P** 19 10 07.3 -0.8
BR101 Keskin Array S 92.70 310 *e*P **P** 19 10 12.3 -2.0
BRTR Keskin Array B 92.70 310 P **P** 19 10 12.3 -2.0
comp=Z,0.9nm,0.8s,baz=119,slow=4.4,SNR=5.9
ARCES ARCESS Array B 93.05 340 P **P** 19 10 14.8 -0.3
comp=Z,2.7nm,0.8s,baz=64,slow=5.5,SNR=10
BR231 Keskin MP Arra 93.36 310 *e*P **P** 19 10 12.8 -4.6
FIA0 FINESS Array S 94.53 332 *e*P **P** 19 10 22.0 -0.1
FIA0 FINESS Array S 94.53 332 *e*P **P** 19 10 21.9 -0.1
FINES FINESS Array B 94.53 332 P **P** 19 10 22.0 -0.1
comp=Z,1.4nm,0.7s,baz=67,slow=5.0,SNR=5.8
FINES FINESS Array B 94.53 332 P **P** 19 10 22.0 -0.1
TORD Torodi Ar. Bea 125.20 287 PKP **PKPdf** 19 16 02.2 -1.0
comp=Z,1.0nm,0.6s,baz=16,slow=1.9,SNR=7.5
TOA1 Torodi Ar. Sit 125.20 287 *e*PKPdf **PKPdf** 19 16 02.2 -1.0

IDC 12 19:00:23.5±16.0, 18°.11S×178°.29W, h505km±149km, mb3.6/4, mb1 3.9/4, mb1mx3.2/31, mbtmp4.5/4, 2C-1D, Error ellipse: s-maj=147.5km s-min=61.6km az=127.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**33.53**	**261**	P	P	19 06 20.7	-0.2
	3.4nm,0.6s,baz=96,slow=13,SNR=5.0						
WRA	**Warramunga Arr**	**44.71**	**260**	P	P	19 07 50.7	-0.7
	2.7nm,0.5s,baz=92,slow=7.4,SNR=21						
WRA				PcP	PcP	19 09 22.6	-0.6
	0.6nm,0.4s,baz=91,slow=3.5,SNR=5.1						
ASAR	**Alice Springs**	**44.85**	**254**	P	P	19 07 52.9	+0.4
	33nm,0.6s,baz=89,slow=7.9,SNR=274						
ASAR				PcP	PcP	19 09 23.3	-0.4
	1.1nm,0.4s,baz=105,slow=3.9,SNR=5.8						
CMAR	**Chiang Mai Arr**	**89.06**	**290**	P	P	19 12 25.1	+0.1
	0.7nm,0.8s,baz=119,slow=3.3,SNR=4.7						
ARCES	**ARCESS Array B**	**126.53**	**350**	PKP	PKPdf	19 18 27.7	-0.6
	6.0nm,1.2s,baz=90,slow=0.2,SNR=3.6						
BURAR	**Bucovina Array**	**144.85**	**332** *i*	P	PKPbc	19 19 03.3	+0.1
BRTR	**Keskin Array B**	**145.01**	**315**	PKPbc	PKPdf	19 19 03.1	-0.2
	1.0nm,0.5s,baz=128,slow=2.2,SNR=9.1						
MLR	**Muntele Rosu**	**146.07**	**329** *i*	P	PKPdf	19 19 02.8	-2.1
DRGR		**146.57**	**333** *i*	P	PKPbc	19 19 07.6	-0.5
GERES	**GERESS Array B**	**147.84**	**345**	PKPbc	PKPbc	19 19 10.9	-0.5
	1.1nm,0.5s,baz=22,slow=2.9,SNR=15						
DAVOX	**Davos/Dischmat**	**150.63**	**349**	PKPbc	PKPbc	19 19 18.1	-0.3
	3.4nm,0.6s,baz=297,slow=6.8,SNR=8.5						

JMA 12 19:00:53.8±0.1, 36°.56N×137°.71E, h1km±2km, M0.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTT	**Ttatey**	**0.31**	**279**	S	Sg	19 01 05.2	+1.5
JNG	**Nsakai**	**0.35**	**116**	P	Pg	19 01 01.0	+0.5
JNG				S	Sg	19 01 05.9	+0.9
MAT	**Matsushiro**	**0.40**	**92**	P	Pg	19 01 01.9	+0.4
MAT				S	Sg	19 01 07.2	+0.5
MAT	**Matsushiro**	**0.40**	**92**	P	Pg	19 01 02.1	+0.6
MAT				S	Sg	19 01 07.2	+0.5
JGN	**Niukaw**	**0.46**	**224**	P	Pg	19 01 03.0	+0.3
JGN				S	Sg	19 01 09.2	+0.5

ISCJB ***12*** *19:06:16.7±1.5, 36°.69N±0°.08×140°.7E±0°.2, h8km±8km, mb3.2/3, Error ellipse: s-maj=25.0km s-min=5.8km az=31.3*
JMA ***12*** *19:06:17.2, 36°.70N×140°.62E, h8km±1km, M2.1*
IDC ***12*** *19:06:21.1±7.8, 36°.77N×140°.64E, h83km±67km, mb3.1/3, mb1 3.1/3, mb1mx2.9/44, mbtmp3.4/3, Error ellipse: s-maj=123.9km s-min=63.6km az=0.0*

ISC 12 19:06:14.2±1.5, 36°.62N±0°.08×140°.8E±0°.1, h18km±5km, n10, σ1s56/14, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.19**	**268**	P	**Pb**	**19 06 19.5**	**+0.9**
JHO				S	**Sb**	**19 06 21.1**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.48**	**359**	P	**Pb**	**19 06 25.6**	**+1.4**
ONAJ				S	**Sb**	**19 06 31.4**	**+0.4**
JYT	**Yasato**	**0.63**	**232**	P	**Pb**	**19 06 28.2**	**+1.7**
JFK	**Kawauchi**	**0.75**	**4**	P	**Pn**	**19 06 30.4**	**+0.5**
JFT	**Otama**	**0.97**	**337**	P	**Pg**	**19 06 33.5**	**+0.3**
JFT				*e*S	**Sb**	**19 06 44.5**	**-0.6**
JAG	**Ashikaga**	**1.11**	**260**	P	**Pb**	**19 06 35.1**	**+0.3**
MJAR	**Matsushiro Arr**	**2.09**	**269**	P	**Pb**	**19 06 52.3**	**+0.8**
	0.4nm,0.3s,baz=83,slow=10,SNR=4.2						
MJAR				S	**Sn**	**19 07 16.5**	**+2.6**
	0.8nm,0.3s,baz=110,slow=7.6,SNR=6.3						
SONM	**Songino Array**	**27.62**	**305**	P	**P**	**19 11 59.4**	**-1.1**
	0.3nm,0.5s,baz=97,slow=9.2,SNR=2.5						
ZALV	**Zalesovo Beam**	**41.84**	**313**	P	**P**	**19 14 00.4**	**-2.3**
	0.3nm,0.4s,baz=86,slow=8.8,SNR=2.3						
MKAR	**Makanchi Array**	**43.93**	**302**	P	**P**	**19 14 18.0**	**-1.9**
	0.4nm,0.7s,baz=83,slow=9.8,SNR=4.7						

CSEM ***12*** *19:17:53.4±0.4, 36°.35N×27°.91E, h10km, MD2.7, Error ellipse: s-maj=9.7km s-min=8.9km az=10.0*
ATH ***12*** *19:17:55.9, 35°.61N×28°.21E, h10km±48km, ML2.0/1, Error ellipse: s-maj=49.0km s-min=1.6km az=337.0*
DDA ***12*** *19:17:55.9, 36°.61N×28°.16E, h7km, Md2.7*

ISC 12 19:17:55.6±1.6, 36°.63N±0°.05×28°.12E±0°.04, h2km±14km, n12, σ2s08/18, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARG	**Arkhangelos**	**0.41**	**179**	P	**Pn**	**19 18 06.8**	**-1.7**
ARG				S	**Sb**	**19 18 17.1**	**+4.9**
TURN	**Turunc**	**0.46**	**57** *i*	P	**Pn**	**19 18 08.1**	**-1.1**
TURN				*i* S	**Sb**	**19 18 18.8**	**+5.0**
BDRM	**Kayabasi**	**0.70**	**309** *i*	P	**Pg**	**19 18 09.7**	**+0.7**
BDRM				*i* S	**Sb**	**19 18 20.9**	**+0.3**
BDRM	**Kayabasi**	**0.70**	**309**	P	**Pg**	**19 18 09.7**	**+0.7**
BDRM				S	**Sb**	**19 18 20.9**	**+0.3**
AKAS	**Kas**	**1.26**	**108** *i*	P	**Pg**	**19 18 19.0**	**-0.8**
AKAS				*i* S	**Sn**	**19 18 37.2**	**-0.8**
AKAS	**Kas**	**1.26**	**108**	P	**Pg**	**19 18 19.0**	**-0.8**
AKAS				S	**Sn**	**19 18 37.2**	**-0.8**
KSL	**Kastellorizon**	**1.27**	**111**	P	**Pn**	**19 18 19.0**	**-1.4**
KSL				S	**Sn**	**19 18 37.8**	**-0.3**
KSL	**Kastellorizon**	**1.27**	**111**	P	**Pn**	**19 18 19.1**	**-1.4**
KSL				S	**Sn**	**19 18 37.8**	**-0.3**
KSL				AML	AML	19 18 38.1	
	comp=N,78μm,0.3s						
KSL				AML	AML	19 18 38.6	
	comp=E,158μm,0.4s						
DNZL	**Cakiroluk**	**1.29**	**35** *i*	P	**Pb**	**19 18 20.6**	**-0.2**
DNZL	**Cakiroluk**	**1.29**	**35**	P	**Pb**	**19 18 20.6**	**-0.2**
KARP	**Karpathos**	**1.33**	**216**	P	Pn	19 18 12.1	-9.1
KARP				S	Sb	19 18 26.9	-12
KARP	**Karpathos**	**1.33**	**216**	P	Pn	19 18 12.1	-9.2
KARP				S	Sb	19 18 26.9	-12

ISCJB ***12*** *19:20:57.4±0.2, 43°.92N±0°.01×11°.85E±0°.01, h13km±1km, mb3.8/6, MS3.1/6, Error ellipse: s-maj=2.2km s-min=1.5km az=7.0*
NEIC ***12*** *19:20:57.0, 43°.93N×11°.86E, h8km, ML3.6(ROM), After ROM.*
NEIC Felt [V] at Santa Sofia. Felt in Emilia-Romagna and Tuscany.
ROM ***12*** *19:20:57.7±0.1, 43°.93N×11°.85E, h8km, Ml3.5/41, Error ellipse: s-maj=1.3km s-min=0.8km az=25.0*
GEN ***12*** *19:20:57.3, 43°.92N×11°.94E, h2km, ML3.7*
IDC ***12*** *19:20:58.2±0.9, 44°.00N×12°.10E, h0km, mb3.8/6, mb1 3.9/14, mb1mx3.7/52, mbtmp3.7/14, ML3.7/8, MS3.0/13, Ms1 3.0/13, ms1mx2.8/59, Error ellipse: s-maj=19.1km s-min=12.9km az=113.0*
BGR ***12*** *19:20:58.8±0.6, 43°.90N×11°.97E, h10km, ML4.0/17, Error ellipse: s-maj=12.2km s-min=7.8km az=0.0*
CSEM ***12*** *19:20:58.1±0.1, 43°.91N×11°.85E, h10km, ML3.9/36, Error ellipse: s-maj=1.9km s-min=1.6km az=28.0*
LDG ***12*** *19:20:58.8±0.1, 43°.97N×11°.98E, h10km, Md3.1/3, Ml3.7/23, Error ellipse: s-maj=3.4km s-min=2.6km az=38.0*
PRU ***12*** *19:20:59.9, 43°.95N×12°.03E, h10km*
STR ***12*** *19:21:06.6±0.2, 44°.42N×11°.46E, h10km, Ml3.8, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 12 19:20:58.3±0.7, 43°.92N±0°.02×11°.85E±0°.01, h7km±4km, n430, σ1s59/586, mb4.0/6, MS3.1/6, 36C-8D, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFI	**Santa Sofia**	**0.01**	**184** *i*	P*g*	**Pg**	**19 20 59.3**	**-0.3**
SFI				Sg	**Sg**	**19 21 00.4**	**-0.2**
	112μm,0.5s						
SFI	**Santa Sofia**	**0.01**	**184** *i*	P*g*	**Pg**	**19 20 59.3**	**-0.3**
SFI				Sg	**Sg**	**19 21 00.4**	**-0.2**
	112μm,0.5s						
ASQU	**Asqua**	**0.13**	**200** *i*	P*g*	**Pg**	**19 21 01.3**	**+0.2**
ASQU				Sg	**Sg**	**19 21 04.5**	**+1.6**
	36μm,0.3s						
ASQU	**Asqua**	**0.13**	**200** *i*	P*g*	**Pg**	**19 21 01.3**	**+0.2**
ASQU				Sg	**Sg**	**19 21 04.5**	**+1.6**
	36μm,0.3s						
T0502	**Localit` San**	**0.21**	**94** *i*	*e*P*g*	**Pg**	**19 21 02.3**	**-0.2**
T0502				Sg	**Sg**	**19 21 06.5**	**+1.2**
	10μm,0.6s						
VMG	**Vicchio**	**0.22**	**282**	Pg	**Pg**	**19 21 03.0**	**+0.2**
VMG	**Vicchio**	**0.22**	**282**	Pg	**Pg**	**19 21 03.0**	**+0.2**
CPGN	**Carpegna, Ital**	**0.36**	**108**	Pg	**Pg**	**19 21 05.8**	**+0.4**
CPGN				Sg	**Sg**	**19 21 10.7**	**+0.6**
	6μm,1.1s						
CPGN	**Carpegna, Ital**	**0.36**	**108**	Pg	**Pg**	**19 21 05.8**	**+0.4**
CPGN				Sg	**Sg**	**19 21 10.7**	**+0.6**
	6μm,1.1s						
SEI	**Scarperia**	**0.38**	**292** *i*	P*g*	**Pg**	**19 21 05.5**	**-0.2**
SEI	**Scarperia**	**0.38**	**292** *i*	P*g*	**Pg**	**19 21 05.5**	**-0.2**
PARC	**Parchiule**	**0.39**	**133**	Pg	**Pg**	**19 21 05.8**	**-0.1**
PARC				Sg	**Sb**	**19 21 12.8**	**-0.9**
	3μm,0.6s						
PARC	**Parchiule**	**0.39**	**133**	Pg	**Pg**	**19 21 05.8**	**-0.1**
PARC				Sg	**Sb**	**19 21 12.8**	**-0.9**
	3μm,0.6s						
IMOL	**Imola, Italy**	**0.45**	**350**	Pg	**Pg**	**19 21 07.4**	**+0.4**
IMOL				Sg	**Sg**	**19 21 13.9**	**+1.0**
	2μm,0.6s						
IMOL	**Imola, Italy**	**0.45**	**350**	Pg	**Pg**	**19 21 07.4**	**+0.4**
IMOL				Sg	**Sg**	**19 21 13.9**	**+1.0**
	2μm,0.6s						
FIR	**Firenze**	**0.45**	**252**	Pg	**Pg**	**19 21 07.4**	**+0.4**
FIR	**Firenze**	**0.45**	**252**	Pg	**Pg**	**19 21 07.4**	**+0.4**
BADI	**Badiali**	**0.50**	**145**	Pg	**Pg**	**19 21 07.7**	**-0.2**
BADI				Sg	**Sb**	**19 21 16.5**	**-0.3**
	4μm,0.9s						
BADI	**Badiali**	**0.50**	**145**	Pg	**Pg**	**19 21 07.7**	**-0.2**
BADI				Sg	**Sb**	**19 21 16.5**	**-0.3**
	4μm,0.9s						
BLLA	**Bellaria**	**0.50**	**63**	Pg	**Pg**	**19 21 08.2**	**+0.2**
	2073μm,16.0s						
BLLA	**Bellaria**	**0.50**	**63**	Pg	**Pg**	**19 21 08.2**	**+0.2**
	2073μm,16.0s						
ATMC	**Monte Cedrone**	**0.53**	**152**	Pg	**Pg**	**19 21 08.6**	**0.0**
ATMC				Sg	**Sb**	**19 21 17.1**	**-0.7**
	4μm,0.5s						
ATMC	**Monte Cedrone**	**0.53**	**152**	Pg	**Pg**	**19 21 08.6**	**0.0**
ATMC				Sg	**Sb**	**19 21 17.1**	**-0.7**
	4μm,0.5s						
MTRZ	**Monterenzio**	**0.54**	**329**	Pg	**Pg**	**19 21 08.3**	**-0.4**
	12μm,0.6s						
MTRZ	**Monterenzio**	**0.54**	**329**	Pg	**Pg**	**19 21 08.3**	**-0.4**
	12μm,0.6s						
PTF	**Prato**	**0.56**	**275** *e*P*g*		**Pg**	**19 21 08.6**	**-0.6**
PTF	**Prato**	**0.56**	**275**	Pg	**Pg**	**19 21 08.9**	**-0.3**
PTF				Sg	**Sg**	**19 21 16.6**	**+0.1**
PTF	**Prato**	**0.56**	**275** *e*P*g*		**Pg**	**19 21 08.6**	**-0.6**
PTF				Sg	**Sg**	**19 21 16.6**	**+0.1**
FNVD	**Fontana Vidola**	**0.58**	**296**	Pg	**Pg**	**19 21 09.0**	**-0.5**
FNVD				Sg	**Sb**	**19 21 18.7**	**-0.6**
	8μm,0.6s						
FNVD	**Fontana Vidola**	**0.58**	**296**	Pg	**Pg**	**19 21 09.0**	**-0.5**
FNVD				Sg	**Sg**	**19 21 18.7**	**-0.6**
	8μm,0.6s						
CAFI	**Castiglion Fio**	**0.59**	**172**	Pg	**Pg**	**19 21 09.6**	**-0.1**
	3μm,0.6s						
CAFI	**Castiglion Fio**	**0.59**	**172**	Pg	**Pg**	**19 21 09.6**	**-0.1**
	3μm,0.6s						
CSNT	**Castellina Chi**	**0.60**	**223**	Pg	**Pg**	**19 21 10.0**	**+0.1**
	4μm,0.7s						
CSNT	**Castellina Chi**	**0.60**	**223**	Pg	**Pg**	**19 21 10.0**	**+0.1**
	4μm,0.7s						
ATPC	**Poggio Castell**	**0.62**	**134**	Pg	**Pg**	**19 21 09.8**	**-0.4**
ATPC				Sg	**Sb**	**19 21 20.5**	**+0.1**
ATPC	**Poggio Castell**	**0.62**	**134**	Pg	**Pg**	**19 21 09.8**	**-0.4**
ATPC				Sg	**Sb**	**19 21 20.5**	**+0.1**
CRMI	**Carmignano**	**0.65**	**259**	Pg	**Pg**	**19 21 10.5**	**-0.3**
CRMI				Sg	**Sg**	**19 21 20.1**	**+0.9**
	4μm,0.6s						
CRMI	**Carmignano**	**0.65**	**259**	Pg	**Pg**	**19 21 10.5**	**-0.3**
CRMI				Sg	**Sg**	**19 21 20.1**	**+0.9**
	4μm,0.6s						
ATVO	**AVT- Monte Val**	**0.67**	**143**	Pg	**Pg**	**19 21 10.8**	**-0.4**
	2μm,0.6s						
ATVO	**AVT- Monte Val**	**0.67**	**143**	Pg	**Pg**	**19 21 10.8**	**-0.4**
	2μm,0.6s						
FSSB	**Fossombrone**	**0.71**	**108**	Pg	**Pg**	**19 21 11.3**	**-0.6**
	4μm,0.6s						
FSSB	**Fossombrone**	**0.71**	**108**	Pg	**Pg**	**19 21 11.3**	**-0.6**
	4μm,0.6s						
PESA	**Pesaro**	**0.72**	**88**	Pg	**Pg**	**19 21 11.9**	**-0.2**
	4μm,0.6s						
PESA	**Pesaro**	**0.72**	**88**	Pg	**Pg**	**19 21 11.9**	**-0.2**
	4μm,0.6s						
MPAG	**Monte Paganucc**	**0.72**	**113**	Pg	**Pg**	**19 21 11.7**	**-0.4**
	817nm,0.4s						
MPAG	**Monte Paganucc**	**0.72**	**113**	Pg	**Pg**	**19 21 11.7**	**-0.4**
	817nm,0.4s						
FRON	**Frontone**	**0.75**	**122**	Pg	**Pg**	**19 21 12.2**	**-0.5**
	1μm,0.5s						
FRON	**Frontone**	**0.75**	**122**	Pg	**Pg**	**19 21 12.2**	**-0.5**
	1μm,0.5s						
POPM	**Popiglio**	**0.80**	**280**	P	**Pg**	**19 21 13.5**	**-0.1**
POPM				S	**Sb**	**19 21 25.2**	**-0.3**
ATTE	**AVT- Monte Tez**	**0.81**	**153**	Pg	**Pg**	**19 21 13.4**	**-0.4**
	2μm,0.5s						
ATTE	**AVT- Monte Tez**	**0.81**	**153**	Pg	**Pg**	**19 21 13.4**	**-0.4**
	2μm,0.5s						
MURB	**Monte Urbino**	**0.82**	**143**	Pg	**Pg**	**19 21 13.7**	**-0.3**
	3μm,0.4s						
MURB	**Monte Urbino**	**0.82**	**143**	Pg	**Pg**	**19 21 13.7**	**-0.3**
	3μm,0.4s						
SSFR	**Montelago di S**	**0.83**	**125**	Pg	**Pg**	**19 21 13.6**	**-0.6**
	1μm,0.3s						
SSFR	**Montelago di S**	**0.83**	**125**	Pg	**Pg**	**19 21 13.6**	**-0.6**
	1μm,0.3s						
ARVD	**Arcevia**	**0.90**	**117**	Pg	**Pg**	**19 21 14.7**	**-0.8**
	968nm,0.9s						
ARVD	**Arcevia**	**0.90**	**117**	Pg	**Pg**	**19 21 14.7**	**-0.8**
	968nm,0.9s						
BDI	**Bagni Di Lucca**	**0.92**	**280**	Pg	**Pg**	**19 21 15.0**	**-0.9**
	2μm,0.6s						
BDI	**Bagni Di Lucca**	**0.92**	**280**	Pg	**Pg**	**19 21 15.0**	**-0.9**
	2μm,0.6s						
ATCC	**AVT- Casa Cast**	**0.93**	**141**	Pg	**Pg**	**19 21 15.8**	**-0.3**
	2μm,0.5s						
ATCC	**AVT- Casa Cast**	**0.93**	**141**	Pg	**Pg**	**19 21 15.8**	**-0.3**
	2μm,0.5s						
MAIM	**Mastiano**	**0.98**	**270**	Pg	**Pg**	**19 21 16.6**	**-0.5**
	2μm,0.6s						
MAIM	**Mastiano**	**0.98**	**270**	Pg	**Pg**	**19 21 16.6**	**-0.5**
	2μm,0.6s						
MAIM				S	**Sg**	**19 21 30.0**	**+0.2**
MGAB	**Montegabbione**	**1.02**	**169**	Pg	**Pg**	**19 21 17.7**	**-0.2**
	2μm,0.5s						
MGAB	**Montegabbione**	**1.02**	**169**	Pg	**Pg**	**19 21 17.7**	**-0.2**
	2μm,0.5s						
SNTG	**Esanatoglia**	**1.03**	**129**	Pg	**Pg**	**19 21 17.5**	**-0.6**
	893nm,0.6s						
SNTG	**Esanatoglia**	**1.03**	**129**	Pg	**Pg**	**19 21 17.5**	**-0.6**
	893nm,0.6s						
TRIF	**Trifonti**	**1.05**	**221**	Pg	**Pg**	**19 21 18.4**	**-0.1**
	964nm,1.0s						
TRIF	**Trifonti**	**1.05**	**221**	Pg	**Pg**	**19 21 18.4**	**-0.1**
	964nm,1.0s						
SACS	**San Casciano d**	**1.07**	**178**	Pg	**Pg**	**19 21 18.5**	**-0.3**
	2μm,0.9s						
SASS	**Sassa`**	**1.07**	**232**	Pg	**Pg**	**19 21 18.0**	**-0.8**
	971nm,0.9s						
SASS	**Sassa`**	**1.07**	**232**	Pg	**Pg**	**19 21 18.0**	**-0.8**
	971nm,0.9s						
SARO	**Sassorosso**	**1.08**	**285**	P	**Pg**	**19 21 17.6**	**-1.4**
SARO				S	**Sg**	**19 21 33.2**	**+0.2**
VLC	**Villacollemand**	**1.08**	**284**	Pg	**Pg**	**19 21 17.9**	**-1.2**
	1μm,1.0s						
VLC	**

665nm,0.8s
FDMO Fiordimonte 1.26 134 Pg Pg 19 21 21.3 -1.1
665nm,0.8s
LATE Laterza 1.30 181 Pg Pn 19 21 22.3 -0.6
2µm,1.4s
LATE Laterza 1.30 181 Pg Pn 19 21 22.3 -0.6
2µm,1.4s
AOI Ancona 1.32 105 Pg Pg 19 21 23.8 +0.1
671nm,0.7s
AOI Ancona 1.32 105 Pg Pg 19 21 23.8 +0.1
671nm,0.7s
CASP Castiglione de 1.33 213 Pg Pn 19 21 21.8 -1.5
579nm,1.2s
CASP Castiglione de 1.33 213 Pg Pn 19 21 21.8 -1.5
579nm,1.2s
GRAM Graiana 1.41 295 P Pn 19 21 24.6 +0.2
GRAM S Sb 19 21 41.3 -1.7
TEOL Teolo 1.45 355⇑ ePg Pn 19 21 24.0 -0.9
TEOL eSg Sb 19 21 44.0 -0.3
TEOL Teolo 1.45 355 ePg Pn 19 21 24.0 -0.9
TEOL eSg Sb 19 21 44.0 -0.3
GROG Isola di Gorgo 1.50 252 Pg Pn 19 21 24.2 -1.4
498nm,0.8s
GROG Isola di Gorgo 1.50 252 Pg Pn 19 21 24.2 -1.4
498nm,0.8s
CODM Codolo 1.51 289 P Pn 19 21 25.6 -0.2
CODM S Sn 19 21 44.2 -1.6
LNSS Leonessa 1.57 146 Pg Pn 19 21 25.7 -1.0
802nm,0.7s
LNSS Leonessa 1.57 146 Pg Pn 19 21 25.7 -1.0
802nm,0.7s
MAON Monte Argentar 1.58 200 Pg Pn 19 21 25.8 -0.8
243nm,0.9s
MAON Monte Argentar 1.58 200 Pg Pn 19 21 25.8 -0.8
243nm,0.9s
MTLO Montello 1.91 5 ePn Pn 19 21 30.3 -0.9
MTLO Montello 1.91 5 ePn Pn 19 21 30.3 -0.9
AQU L'Aquila 1.93 143 ePn Pb 19 21 32.9 -0.9
AQU L'Aquila 1.93 143 ePn Pb 19 21 32.9 -0.9
CGRP Cima Grappa 1.96 359⇑ ePn Pn 19 21 31.1 -1.1
CGRP eSn Sn 19 21 56.2 -1.0
CGRP Cima Grappa 1.96 359 ePn Pn 19 21 31.1 -1.1
CGRP eSn Sn 19 21 56.2 -1.0
DDS Dosso del Somm 2.02 347⇑ ePn Pn 19 21 32.0 -0.9
DDS Dosso del Somm 2.02 347 eP Pn 19 21 32.0 -0.9
VARN Col Varnada, M 2.09 5⇑ ePn Pn 19 21 32.3 -1.4
VARN eSn Sn 19 21 59.2 -0.8
VARN Col Varnada, M 2.09 5 ePn Pn 19 21 32.3 -1.4
VARN eSn Sn 19 21 59.2 -0.8
CAE Caneva 2.13 11⇑ ePn Pn 19 21 32.9 -1.5
CAE Caneva 2.13 11 ePn Pn 19 21 32.8 -1.5
POLC Polcenigo 2.16 12⇑ ePn Pn 19 21 33.6 -1.1
POLC Polcenigo 2.16 12 ePn Pn 19 21 33.6 -1.1
PANI Panarotta 2.17 350⇓ ePn Pn 19 21 34.4 -0.5
PANI eSn Sn 19 22 00.8 -1.3
PANI Panarotta 2.17 350 ePn Pn 19 21 34.4 -0.5
PANI eSn Sn 19 22 00.8 -1.3
TLI Talmassons 2.19 24 ePn Pn 19 21 34.2 -0.9
TLI Talmassons 2.19 24 ePn Pn 19 21 34.2 -0.9
RNI Roncone 2.24 338⇓ ePn Pn 19 21 35.6 -0.4
RNI Roncone 2.24 338 ePn Pn 19 21 35.6 -0.4
TRI Trieste 2.25 37 ePn Pn 19 21 34.0 -1.9
TRI Trieste 2.25 37 ePn Pn 19 21 34.0 -1.9
NVLJ Novalja 2.27 72 ePn Pn 19 21 36.0 -0.1
NVLJ Sn Sn 19 22 03.5 -0.8
NVLJ Novalja 2.27 72 ePn Pn 19 21 36.0 -0.1
NVLJ Sn Sn 19 22 03.4 -0.8
MLNI Malnisio 2.30 13⇑ ePn Pn 19 21 35.3 -1.4
MLNI Malnisio 2.30 13 eP Pn 19 21 35.3 -1.4
CSO Casso 2.38 8⇑ ePn Pn 19 21 36.3 -1.5
CSO Casso 2.38 8 ePn Pn 19 21 36.3 -1.5
SABO M.te Sabotino 2.41 30⇑ ePn Pn 19 21 36.9 -1.2
SABO M.te Sabotino 2.41 30 ePn Pn 19 21 36.9 -1.2
CIMO Cimolais 2.43 10⇑ ePn Pn 19 21 36.8 -1.6
CIMO Cimolais 2.43 10 ePn Pn 19 21 36.8 -1.6
PCP Piancastagn 2.46 286 P Pn 19 21 37.4 -1.4
MPRI Monte Prat 2.46 19⇑ ePn Pn 19 21 37.9 -1.0
MPRI Monte Prat 2.46 19 ePn Pn 19 21 37.9 -1.0
BUA Buia 2.47 21⇑ ePn Pn 19 21 38.1 -0.9
BUA Buia 2.47 21 ePn Pn 19 21 38.1 -0.9
PGF Pioggiola 2.49 238 ePn Pn 19 21 38.6 -0.7
78nm,0.5s,SNR=1.0
PGF eSn Sn 19 22 07.3 -2.7
77nm,0.6s,SNR=1.0
PGF Pioggiola 2.49 238 ePn Pn 19 21 38.6 -0.7
39nm,0.5s,SNR=1.0
PGF eSn Sn 19 22 07.3 -2.7
38nm,0.6s,SNR=1.0
BAD Bernadia 2.52 23⇑ ePn Pn 19 21 38.3 -1.4
BAD Bernadia 2.52 23 ePn Pn 19 21 38.3 -1.4
VINO Villanova 2.55 23⇑ ePn Pn 19 21 38.7 -1.4
VINO Villanova 2.55 23 ePn Pn 19 21 38.7 -1.4
OZOL Ozolo 2.55 348⇑ ePn Pn 19 21 40.3 +0.1
OZOL Ozolo 2.55 348 eP Pn 19 21 40.3 +0.1
CEY Cerknica 2.59 44⇑ iPn Pn 19 21 38.9 -1.7
DRE Drenchia 2.59 29⇓ ePn Pn 19 21 39.5 -1.2
DRE Drenchia 2.59 29 ePn Pn 19 21 39.5 -1.2
ROBS Robic 2.61 26 iPn Pn 19 21 39.5 -1.3
ROBS iSn Sn 19 22 11.8 -0.9
comp=Z,142nm,0.2s
ROBS Robic 2.61 26 iPn Pn 19 21 39.5 -1.3
ROBS iSn Sn 19 22 11.9 -0.9
comp=Z,142nm,0.2s
AFL Alpe Faloria 2.62 5⇑ ePn Pn 19 21 40.9 -0.4
AFL Alpe Faloria 2.62 5 ePn Pn 19 21 40.9 -0.4
FUSE Fusea 2.63 18 ePn Pn 19 21 39.7 -1.5
FUSE Fusea 2.63 18 ePn Pn 19 21 39.7 -1.5
CARE Lago del Cares 2.64 342⇑ ePn Pn 19 21 41.7 +0.2
CARE eSn Sn 19 22 13.2 -0.7
CARE Lago del Cares 2.64 342 ePn Pn 19 21 41.7 +0.2
CARE eSn Sn 19 22 13.2 -0.7
CSMI Casera Mimoias 2.66 12⇑ ePn Pn 19 21 40.7 -1.0
CSMI Casera Mimoias 2.66 12 ePn Pn 19 21 40.7 -1.0
RORO Rocca Rossa 2.73 275 P Pn 19 21 40.7 -1.9
ZOU Zoufplan 2.76 16⇑ ePn Pn 19 21 41.8 -1.3
ZOU Zoufplan 2.76 16⇑ ePn Pn 19 21 42.0 -1.1
ZOU Zoufplan 2.76 16 ePn Pn 19 21 41.8 -1.3
PLRO Paularo 2.79 19 ePn Pn 19 21 42.7 -0.8
PLRO Paularo 2.79 19 ePn Pn 19 21 42.7 -0.8
LSR Lussari 2.82 24 ePn Pn 19 21 43.0 -1.0
LSR Lussari 2.82 24 ePn Pn 19 21 43.0 -1.0
LJU Ljubljana 2.85 41 iPn Pn 19 21 43.5 -0.7
LJU iSn Sn 19 22 19.2 +0.4
comp=Z,79nm,0.2s
LJU Ljubljana 2.85 41 iPn Pn 19 21 43.5 -0.7
LJU iSn Sn 19 22 19.2 +0.4
comp=Z,79nm,0.2s
IMI Imperia 2.86 271 P Pn 19 21 43.1 -1.2
ABTA Abfaltersbach 2.87 9 ePn Pn 19 21 44.3 -0.2
comp=Z,49nm,0.4s,SNR=45
ABTA iSn Sn 19 22 19.6 +0.2
comp=Z,155nm,0.5s
ABTA Abfaltersbach 2.87 9 Pn Pn 19 21 44.3 -0.2
comp=Z,49nm,0.4s,SNR=45
ABTA Sn Sn 19 22 19.6 +0.2
comp=Z,155nm,0.5s
UDBI Udbina 2.88 76 ePn Pn 19 21 46.2 +1.6
UDBI Sn Sn 19 22 19.2 -0.4
UDBI Udbina 2.88 76 ePn Pn 19 21 46.2 +1.6
UDBI Sn Sn 19 22 19.2 -0.4
MYKA Terra Mystica 3.00 24 ePn Pn 19 21 45.6 -0.6
comp=Z,60nm,0.5s,SNR=15
MYKA iSn Sn 19 22 22.9 +0.5
comp=Z,54nm,0.4s
MYKA Terra Mystica 3.00 24 Pn Pn 19 21 45.6 -0.6
comp=Z,60nm,0.5s,SNR=15
MYKA Sn Sn 19 22 22.9 +0.5
comp=Z,54nm,0.4s
NEGI Seborga 3.00 270 P Pn 19 21 44.5 -1.7
MOZS Mozjanca 3.01 37 ePn Pn 19 21 45.5 -0.8
MOZS iSn Sn 19 22 22.9 +0.3
MOZS Mozjanca 3.01 37 ePn Pn 19 21 45.5 -0.8
MOZS iSn Sn 19 22 22.9 +0.3
OZLJ Ozalj 3.09 55 ePn Pn 19 21 46.9 -0.6
OZLJ Sn Sn 19 22 19.8 -4.8
OZLJ Ozalj 3.09 55 ePn Pn 19 21 46.8 -0.6
OZLJ Sn Sn 19 22 19.7 -4.8
PDKS Podkum 3.10 45 iPn Pn 19 21 46.8 -0.8
PDKS iSn Sn 19 22 24.4 -0.5
comp=Z,114nm,0.5s
PDKS Podkum 3.10 45 iPn Pn 19 21 46.8 -0.8
PDKS iSn Sn 19 22 24.4 -0.5
comp=Z,114nm,0.5s
TUE Stuetta 3.11 326 ePn Pn 19 21 48.0 +0.1
TUE Stuetta 3.11 326 ePn Pn 19 21 48.0 +0.1
DAVOX Davos/Dischmat 3.18 335 Pn Pn 19 21 49.9 +1.0
comp=Z,16nm,0.3s,baz=145,slow=12,SNR=68
DAVOX Sn Sn 19 22 29.6 +2.4
comp=Z,14nm,0.3s,baz=6.2,slow=19,SNR=9.5
SBF Sospel 3.19 271 ePn Pn 19 21 48.4 -0.5
SNR=1.0
SBF Sospel 3.19 271 ePn Pn 19 21 48.4 -0.5
SNR=1.0
CRES Cresnjev 3.20 52⇑ iPn Pn 19 21 48.2 -0.8
FETA Feichten 3.20 346 iPn Pn 19 21 50.4 +1.2
comp=Z,41nm,0.5s,SNR=77
FETA iSn Sn 19 22 28.9 +1.2
comp=Z,113nm,0.8s
FETA Feichten 3.20 346 Pn Pn 19 21 50.4 +1.2
comp=Z,41nm,0.5s,SNR=77
FETA Sn Sn 19 22 28.9 +1.2
comp=Z,113nm,0.8s
ENR Entracque 3.21 277 P Pn 19 21 48.7 -0.4
OBKA Obir 3.22 35 iPn Pn 19 21 48.4 -0.9
comp=Z,11nm,0.3s,SNR=20
OBKA iSn Sn 19 22 28.0 0.0
comp=Z,207nm,1.0s
OBKA Obir 3.22 35 ePn Pn 19 21 48.2 -1.1
OBKA eSn Sn 19 22 25.2 -2.8
OBKA Obir 3.22 35 Pn Pn 19 21 48.2 -1.1
OBKA Sn Sn 19 22 25.2 -2.8
KBA Koelnbreinsper 3.33 18 iPn Pn 19 21 50.7 -0.2
comp=Z,22nm,0.3s,SNR=34
KBA iSn Sn 19 22 32.5 +1.6
comp=Z,33nm,0.3s
KBA Koelnbreinsper 3.33 18 ePn Pn 19 21 50.7 -0.2
KBA eSn Sn 19 22 30.2 -0.7
KBA Koelnbreinsper 3.33 18 Pn Pn 19 21 50.7 -0.2
KBA Sn Sn 19 22 30.2 -0.7
WTTA Wattenberg 3.35 358 iPn Pn 19 21 52.4 +1.2
comp=Z,5.7nm,0.2s
WTTA iSn Sn 19 22 33.5 +2.1
comp=Z,45nm,0.3s
WTTA Wattenberg 3.35 358 ePN Pn 19 21 52.5 +1.2
WTTA eSN Sn 19 22 32.8 +1.5
WTTA Wattenberg 3.35 358 ePn Pn 19 21 52.6 +1.4
WTTA eSn Sn 19 22 34.1 +2.7
WTTA Wattenberg 3.35 358 Pn Pn 19 21 52.6 +1.4
WTTA Sn Sn 19 22 33.5 +2.1
comp=Z,45nm,0.3s
BHB Bricherasio 3.42 287 P Pn 19 21 51.8 -0.1
WATA Walderalm 3.43 357 iPn Pn 19 21 53.8 +1.6
comp=Z,3.3nm,0.1s,SNR=17
WATA iSn Sn 19 22 34.7 +1.6
comp=Z,27nm,0.4s
WATA Walderalm 3.43 357 Pn Pn 19 21 53.8 +1.6
comp=Z,3.3nm,0.1s,SNR=17
WATA Sn Sn 19 22 34.7 +1.6
comp=Z,27nm,0.4s
MOTA Moosalm 3.47 352 iPn Pn 19 21 53.9 +1.1
comp=Z,16nm,0.3s,SNR=57
MOTA iSn Sn 19 22 33.6 -0.6
comp=Z,39nm,0.5s
MOTA Moosalm 3.47 352 Pn Pn 19 21 53.9 +1.1
comp=Z,16nm,0.3s,SNR=57
MOTA Sn Sn 19 22 33.6 -0.6
comp=Z,39nm,0.5s
SOKA Soboth 3.56 38 iPn Pn 19 21 53.3 -0.7
comp=Z,9.3nm,0.4s,SNR=12
SOKA iSn Sn 19 22 35.9 -0.4
comp=Z,15nm,0.3s
SOKA Soboth 3.56 38 Pn Pn 19 21 53.3 -0.7
comp=Z,9.3nm,0.4s,SNR=12
SOKA Sn Sn 19 22 35.9 -0.4
comp=Z,15nm,0.3s
PLONS Plons/SG 3.58 332 ePn Pn 19 21 56.0 +1.7
PLONS eSn Sn 19 22 38.7 +1.8
PLONS Plons/SG 3.58 332 Pn Pn 19 21 56.0 +1.7
PLONS Sn Sn 19 22 38.7 +1.8
DAVA Damuels 3.64 338 iPn Pn 19 21 57.0 +1.7
comp=Z,23nm,0.3s,SNR=43
DAVA iSn Sn 19 22 41.1 +2.6
comp=Z,101nm,0.6s
DAVA Damuels 3.64 338 ePn Pn 19 21 56.9 +1.7
DAVA eSn Sn 19 22 40.6 +2.1
DAVA Damuels 3.64 338 Pn Pn 19 21 56.9 +1.7
DAVA Sn Sn 19 22 40.6 +2.1
RETA Reutte 3.65 348 iPn Pn 19 21 56.6 +1.3
comp=Z,11nm,0.2s,SNR=23
RETA iSn Sn 19 22 40.3 +1.7
comp=Z,140nm,0.6s
RETA Reutte 3.65 348 Pn Pn 19 21 56.6 +1.3
comp=Z,11nm,0.2s,SNR=23
RETA Sn Sn 19 22 40.3 +1.7
comp=Z,140nm,0.6s
OBER Oberstdorf 3.66 343 ePn Pn 19 21 56.7 +1.4
OBER eSn Sn 19 22 40.9 +2.1
OBER Oberstdorf 3.66 343 Pn Pn 19 21 56.7 +1.4
OBER Sn Sn 19 22 40.9 +2.1
MBDF Montbardon 3.73 284 ePn Pn 19 21 55.9 -0.5
SNR=1.0
MBDF eSn Sn 19 22 39.3 -1.4
comp=Z,26nm,0.5s,SNR=1.0
MBDF Montbardon 3.73 284 ePn Pn 19 21 55.9 -0.5
SNR=1.0
MBDF eSn Sn 19 22 39.3 -1.4
comp=Z,13nm,0.5s,SNR=1.0
RRL Rocca Remolon 3.76 287 P Pn 19 21 57.7 +0.8
FRF La Foret Royal 3.79 266 ePn Pn 19 21 56.7 -0.3
SNR=1.0
FRF La Foret Royal 3.79 266 ePn Pn 19 21 56.7 -0.3
SNR=1.0
RJOB Jochberg 3.88 10 ePn Pn 19 21 58.8 +0.4
RJOB eSn Sn 19 22 45.5 +1.3
RJOB Jochberg 3.88 10 Pn Pn 19 21 58.8 +0.4
RJOB Sn Sn 19 22 45.5 +1.3
BLY Banja Luka 3.92 76 ePn Pn 19 21 58.8 0.0
LMR La Mourre 3.92 263 ePn Pn 19 21 57.9 -0.9
comp=Z,10nm,0.2s,SNR=1.0
LMR eSn Sn 19 22 43.1 -2.0
comp=Z,17nm,0.4s,SNR=1.0
LMR La Mourre 3.92 263 ePn Pn 19 21 57.9 -0.9
comp=Z,5.2nm,0.2s,SNR=1.0
LMR eSn Sn 19 22 43.1 -2.0
comp=Z,8.4nm,0.4s,SNR=1.0
LPG La Plagne 3.96 295 ePn Pn 19 22 00.3 +0.6
comp=Z,12nm,0.3s,SNR=1.0
LPG eSn Sn 19 22 47.6 +1.0
comp=Z,48nm,0.6s,SNR=1.0
LPG La Plagne 3.96 295 ePn Pn 19 22 00.3 +0.6
comp=Z,6.2nm,0.3s,SNR=1.0
LPG eSn Sn 19 22 47.6 +1.0
comp=Z,24nm,0.6s,SNR=1.0
LPL La Plagne 3.98 295 ePn Pn 19 22 00.6 +0.7
comp=Z,55nm,0.5s,SNR=1.0
LPL eSn Sn 19 22 45.9 -1.0
comp=Z,58nm,0.5s,SNR=1.0
LPL La Plagne 3.98 295 Pn Pn 19 22 00.6 +0.7
comp=Z,28nm,0.5s,SNR=1.0
LPL eSn Sn 19 22 45.9 -1.0
comp=Z,29nm,0.5s,SNR=1.0
WILA Wila 4.06 331 ePn Pn 19 22 02.3 +1.4
WILA eSn Sn 19 22 48.8 +0.1
WILA Wila 4.06 331 Pn Pn 19 22 02.3 +1.4
WILA Sn Sn 19 22 48.8 +0.1
RSL Roselend 4.12 297 P Pn 19 22 03.4 +1.7
RSL S Sn 19 22 49.4 -0.8
RSL Roselend 4.12 297 P Pn 19 22 03.4 +1.7
RSL S Sn 19 22 49.4 -0.8
ARSA Arzberg 4.22 36 ePn Pn 19 22 02.1 -0.9
comp=Z,6.4nm,0.2s,SNR=15
ARSA iSn Sn 19 22 52.5 +0.1
comp=Z,18nm,0.5s
ARSA Arzberg 4.22 36 ePn Pn 19 22 02.0 -0.9
ARSA Arzberg 4.22 36 Pn Pn 19 22 02.0 -0.9
ARSA Sn Sn 19 22 52.5 +0.1
comp=Z,18nm,0.5s
FUR Furstenfeldbru 4.27 355 ePn Pn 19 22 04.0 +0.3
FUR eSn Sn 19 22 54.3 +0.6
FUR Furstenfeldbru 4.27 355 Pn Pn 19 22 04.0 +0.3
FUR Sn Sn 19 22 54.3 +0.6
MOA Molln 4.28 22 iPn Pn 19 22 03.9 +0.1
comp=Z,11nm,0.3s,SNR=27
MOA iSn Sn 19 22 53.3 -0.7
comp=Z,72nm,0.6s
MOA Molln 4.28 22 ePn Pn 19 22 03.9 +0.1
MOA eSn Sn 19 22 51.5 -2.6
MOA Molln 4.28 22 Pn Pn 19 22 03.9 +0.1
MOA Sn Sn 19 22 51.5 -2.6
BEHE Becsehely 4.32 52 ePn Pn 19 22 01.5 -2.8
BEHE Becsehely 4.32 52 ex Pn 19 22 10.7 +6.4
OG01 Vacheresse 4.38 305 P Pn 19 22 05.6 +0.3
OG01 S Sn 19 22 55.2 -1.4
OG01 Vacheresse 4.38 305 P Pn 19 22 05.6 +0.3
OG01 S Sn 19 22 55.2 -1.4
ORIF Oris-en-Rattie 4.39 285 ePn Pn 19 22 06.7 +1.3
SNR=1.0
ORIF Oris-en-Rattie 4.39 285 ePn Pn 19 22 06.7 +1.3
SNR=1.0
SULZ Cheisacher 4.46 325 ePn Pn 19 22 07.6 +1.3
SULZ eSn Sn 19 22 56.4 -2.0
SULZ Cheisacher 4.46 325 Pn Pn 19 22 07.6 +1.3
SULZ Sn Sn 19 22 56.4 -2.0
BALST Balsthal 4.49 321 ePn Pn 19 22 08.0 +1.1
BALST eSn Sn 19 22 59.1 -0.2
BALST Balsthal 4.49 321 Pn Pn 19 22 07.9 +1.1
BALST Sn Sn 19 22 59.1 -0.2
SLE Schleitheim 4.51 330 ePn Pn 19 22 07.5 +0.6
SLE Schleitheim 4.51 330 Pn Pn 19 22 07.5 +0.6
SMRF Simiane la Rot 4.53 273 ePn Pn 19 22 07.7 +0.4
SNR=1.0
SMRF Simiane la Rot 4.53 273 ePn Pn 19 22 07.7 +0.4
SNR=1.0
GRN Grenoble 4.56 289 P Pn 19 22 10.1 +2.4
GRN Grenoble 4.56 289 P Pn 19 22 10.1 +2.4
SPAK Spaichingen-Ko 4.70 334 P Pn 19 22 09.2 -0.4
OG26 St.-Nazaire-De 4.75 280 P Pn 19 22 13.2 +2.9
FELD Feldberg im Sc 4.78 327 P Pn 19 22 10.5 -0.4
FELD S Sn 19 23 03.6 -3.0
VSL Villasalto 4.79 204 ePn Pn 19 22 11.2 +0.4
VSL Villasalto 4.79 204 ePn Pn 19 22 11.2 +0.4
CABF La Chapelle 4.88 306 ePn Pn 19 22 13.7 +1.6
SNR=1.0
CABF eSn Sn 19 23 09.5 +0.7
comp=Z,14nm,0.3s,SNR=1.0
CABF La Chapelle 4.88 306 ePn Pn 19 22 13.7 +1.6
SNR=1.0
CABF eSn Sn 19 23 09.5 +0.7
comp=Z,6.8nm,0.3s,SNR=1.0
CONA Conrad Observa 4.89 33 ePn Pn 19 22 11.4 -0.9
comp=Z,4.9nm,0.2s,SNR=15
CONA iSn Sn 19 23 08.3 -0.9
comp=Z,32nm,0.5s
CONA Conrad Observa 4.89 33 Pn Pn 19 22 11.4 -0.9
comp=Z,4.9nm,0.2s,SNR=15
CONA Sn Sn 19 23 08.3 -0.9
comp=Z,32nm,0.5s
TREB Trebinje 4.89 102 ePn Pn 19 22 11.9 -0.3
CUC Castrocucco 4.91 142 ePn Pn 19 22 09.8 -2.7
CUC Castrocucco 4.91 142 ePn Pn 19 22 09.8 -2.7
LOMF Lomont 4.92 316 P Pn 19 22 13.3 +0.6
LOMF Lomont 4.92 316 P Pn 19 22 13.3 +0.6
BRY Bratogost 4.98 99 ePn Pn 19 22 14.9 +1.4
BFO Black Forest 5.05 332 ePn Pn 19 22 14.7 +0.3
BFO eSn Sn 19 23 09.1 -3.8
BFO Black Forest 5.05 332 ePn Pn 19 22 14.3 -0.1
comp=Z,55nm,0.8s
BFO eSn Sn 19 23 08.8 -4.1
BFO Black Forest 5.05 332 ePn Pn 19 22 14.3 -0.1
comp=Z,55nm,0.8s
BFO eSn Sn 19 23 08.8 -4.1
GEC2 GERESS Array S 5.09 14 ePn Pn 19 22 13.6 -1.5
GEC2 eSn Sn 19 23 10.5 -3.7
GEC2 GERESS Array S 5.09 14 Pn Pn 19 22 13.6 -1.5
GEC2 Sn Sn 19 23 10.5 -3.7
GERES GERESS Array B 5.09 14 Pn Pn 19 22 13.8 -1.3
comp=Z,2.9nm,0.3s,baz=194,slow=14,SNR=50
GERES Sn Sn 19 23 08.8 -5.4
comp=Z,2.5nm,0.3s,baz=192,slow=27,SNR=4.3
GERES LR LR 19 24 10.1
comp=Z,51nm,21.7s,baz=236,slow=39
MOF Molkenrain 5.13 322 P Pn 19 22 15.6 0.0
MOF Molkenrain 5.13 322 P Pn 19 22 15.6 0.0
UPM Unac-Piva 5.18 95 ePn Pn 19 22 19.0 +2.7
STU Stuttgart 5.19 340 eSn Sn 19 23 12.5 -3.9
STU Stuttgart 5.19 340 Sn Sn 19 23 12.5 -3.9
STU Stuttgart 5.19 340 ePn Pn 19 22 10.8 -5.5
comp=Z,43nm,0.7s
VIVF Saint-Julien-l 5.23 283 ePn Pn 19 22 18.7 +1.8
SNR=1.0
VIVF Saint-Julien-l 5.23 283 ePn Pn 19 22 18.7 +1.8
SNR=1.0
HINF Hinteralfeld 5.23 320 ePn Pn 19 22 17.0 +0.1
SNR=1.0
HINF eSn Sn 19 23 15.7 -1.8
comp=Z,188nm,0.6s
HINF Hinteralfeld 5.23 320 ePn Pn 19 22 17.0 +0.1
SNR=1.0
HINF eSn Sn 19 23 15.7 -1.8
comp=Z,94nm,0.6s
WET Wettzell 5.28 7 ePn Pn 19 22 15.8 -1.7
WET eSn Sn 19 23 14.7 -3.9
WET Wettzell 5.28 7 Pn Pn 19 22 15.8 -1.7
WET Sn Sn 19 23 14.7 -3.9
KHC Kasperske Hory 5.35 12 ePN Pn 19 22 17.3 -1.3
KHC ex x 19 22 27.6
KHC eSN Sn 19 23 17.0 -3.4
KHC AMS AMS 19 24 50.0
comp=Z,400nm,10.8s
KHC Kasperske Hory 5.35 12 ePn Pn 19 22 16.8 -1.7
comp=Z,7.1nm,0.7s
KHC Sn Sn 19 23 17.0 -3.4
KHC Kasperske Hory 5.35 12 ePn Pn 19 22 16.8 -1.7
comp=Z,7.1nm,0.7s
SSB Saint Sauveur 5.39 287 ePn Pn 19 22 20.0 +0.8
comp=Z,5.4nm,0.4s
SSB Saint Sauveur 5.39 287 ePn Pn 19 22 20.0 +0.8
comp=Z,5.4nm,0.4s
ECH Echery 5.40 324 P Pn 19 22 19.6 +0.4
ECH S Sn 19 23 19.5 -2.0
ECH Echery 5.40 324 ePn Pn 19 22 19.7 +0.4
ECH eSn Sn 19 23 18.5 -3.1
ECH Echery 5.40 324 P Pn 19 22 19.6 +0.4
ECH Sn Sn 19 23 18.5 -3.1
ECH S Sn 19 23 19.5 -2.0
BBLS Lazići 5.46 88 ePn Pn 19 22 21.1 +1.0
WLS Welschbruch 5.47 327 P Pn 19 22 20.1 -0.2
WLS S Sn 19 23 21.7 -1.8
WLS Welschbruch 5.47 327 P Pn 19 22 20.1 -0.2
WLS S Sn 19 23 21.7 -1.8
CDF Champ du Feu 5.50 326 ePn Pn 19 22 20.7 0.0
SNR=1.0
CDF eSn Sn 19 23 21.7 -2.6
comp=Z,167nm,0.7s
CDF Champ du Feu 5.50 326 ePn Pn 19 22 20.7 0.0
SNR=1.0
CDF eSn Sn 19 23 21.7 -2.6
comp=Z,84nm,0.7s
TEKS Tekeris 5.55 81 ePn Pn 19 22 21.3 -0.1
HAU Haudompre 5.61 319 ePn Pn 19 22 22.3 +0.3
SNR=1.0
HAU eSn Sn 19 23 24.8 -1.9
comp=Z,130nm,0.5s
HAU Haudompre 5.61 319 ePn Pn 19 22 22.3 +0.3
SNR=1.0
HAU eSn Sn 19 23 24.8 -1.9
comp=Z,65nm,0.5s
PDG Podgorica 5.62 103⇑ iP Pn 19 22 24.5 +2.4
PDG Podgorica 5.62 103 S Sn 19 23 28.6 +1.7
DRME Dracevica, Mon 5.65 105 ePn Pn 19 22 23.0 +0.4
LASF Ste Croix 5.77 274 ePn Pn 19 22 22.0 -2.3
SNR=1.0
LASF Ste Croix 5.77 274 ePn Pn 19 22 22.0 -2.3
SNR=1.0
LANF Langenberg 5.78 333 P Pn 19 22 24.1 -0.4
LANF Langenberg 5.78 333 P Pn 19 22 24.1 -0.4
THEF They Montfort 5.93 319 P Pn 19 22 27.0 +0.5
THEF S Sn 19 23 32.3 -2.4
THEF They Montfort 5.93 319 P Pn 19 22 27.0 +0.5
THEF S Sn 19 23 32.3 -2.4
KTD Kalmit 6.00 336 P Pn 19 22 27.2 -0.2
TIP Timpagrande 6.00 140 ePn Pn 19 22 33.6 +6.2
SMOL Smolenice 6.01 38 ePn Pn 19 22 26.3 -1.3
SMOL Smolenice 6.01 38 ePN Pn 19 22 26.3 -1.3
SMOL eSN Sn 19 23 31.9 -4.7
IVAS Ivanjica 6.03 90 ePn Pn 19 22 29.3 +1.5
TOD Tromm 6.06 341 P Pn 19 22 28.2 -0.1
TRUS Trudelj 6.17 84 ePn Pn 19 22 31.2 +1.4
SMF Signal de Mont 6.27 299 ePn Pn 19 22 31.6 +0.4
SNR=1.0
SMF eSn Sn 19 23 40.5 -2.6
comp=Z,18nm,0.3s

SMF	**Signal de Mont**	**6.27**	**299**	*e*Pn		**Pn**	**19 22 31.6**	**+0.4**
	SNR=1.0							
SMF				*e*Sn		**Sn**	**19 23 40.5**	**-2.6**
	comp=Z,9.0nm,0.3s							
LBL	**Lubilhac**	**6.28**	**285**	P		**Pn**	**19 22 33.6**	**+2.2**
PAGF	**Fort de Pagny**	**6.29**	**320**	*e*Sn		**Sn**	**19 23 38.7**	**-4.7**
	comp=Z,17nm,0.5s							
VRAC	**Vranov**	**6.31**	**30**	Pn		**Pn**	**19 22 30.0**	**-1.6**
	comp=Z,1.0nm,0.3s,baz=227,slow=14,SNR=5.1							
VRAC				Sn		**Sn**	**19 23 40.2**	**-3.7**
	comp=Z,1.4nm,0.3s,baz=284,slow=8.7,SNR=8.5							
VRAC	**Vranov**	**6.31**	**30**	⇑*i*P		**Pn**	**19 22 31.2**	**-0.4**
VRAC	**Vranov**	**6.31**	**30**	S		**Sn**	**19 23 40.0**	**-3.9**
VRAC	**Vranov**	**6.31**	**30**	*e*Pn		**Pn**	**19 22 29.8**	**-1.8**
VRAC	**Vranov**	**6.31**	**30**	⇑*i*P		**Pn**	**19 22 31.2**	**-0.4**
GOPC	**GO Pecny, Ondr**	**6.33**	**18**	*e*PN		**Pn**	**19 22 30.9**	**-1.1**
GOPC				*e*PG		**Pg**	**19 22 57.9**	**-1.5**
GOPC				*e*SN		**Sn**	**19 23 39.2**	**-5.3**
GOPC				*ex*		x	19 23 52.0	
GOPC				AMS		AMS	19 25 30.0	
	comp=Z,500nm,8.8s							
GOPC	**GO Pecny, Ondr**	**6.33**	**18**	Pn		**Pn**	**19 22 30.9**	**-1.1**
NKC	**Novy Kostel**	**6.33**	**3**	*e*PN		**Pn**	**19 22 31.0**	**-1.0**
NKC				*e*SN		**Sn**	**19 23 40.4**	**-4.2**
NKC	**Novy Kostel**	**6.33**	**3**	Pn		**Pn**	**19 22 31.0**	**-1.0**
PRU	**Pruhonice**	**6.35**	**16**	*e*PN		**Pn**	**19 22 31.1**	**-1.1**
PRU				*e*PG		**Pg**	**19 22 59.5**	**-0.3**
PRU				*e*SN		**Sn**	**19 23 40.9**	**-4.0**
PRU				AMS		AMS	19 25 30.0	
PRU	**Pruhonice**	**6.35**	**16**	Pn		**Pn**	**19 22 31.1**	**-1.1**
SFTF	**Sexfontaines**	**6.39**	**315**	*e*Pn		**Pn**	**19 22 33.5**	**+0.7**
	baz=133							
SFTF				*e*Sn		**Sn**	**19 23 43.9**	**-2.0**
	comp=Z,10nm,0.3s							
SFTF	**Sexfontaines**	**6.39**	**315**	*e*Pn		**Pn**	**19 22 33.5**	**+0.7**
SFTF				*e*Sn		**Sn**	**19 23 43.9**	**-2.0**
	comp=Z,5.2nm,0.3s							
TIR	**Tirane**	**6.45**	**111**	S		**Sn**	**19 23 48.1**	**+0.8**
LOR	**Lormes**	**6.53**	**304**	*e*Pn		**Pn**	**19 22 35.0**	**+0.3**
	baz=122,SNR=1.0							
LOR				*e*Sn		**Sn**	**19 23 47.4**	**-2.0**
	comp=Z,67nm,0.5s,SNR=1.0							
LOR	**Lormes**	**6.53**	**304**	*e*Pn		**Pn**	**19 22 35.0**	**+0.3**
	SNR=1.0							
LOR				*e*Sn		**Sn**	**19 23 47.4**	**-2.0**
	comp=Z,34nm,0.5s,SNR=1.0							
MEZF	**Maizieres J'vi**	**6.58**	**317**	*e*Pn		**Pn**	**19 22 36.6**	**+1.3**
	baz=133,SNR=1.0							
MEZF	**Maizieres J'vi**	**6.58**	**317**	*e*Pn		**Pn**	**19 22 36.6**	**+1.3**
	SNR=1.0							
AVF	**Avril sur Loir**	**6.64**	**299**	*e*Pn		**Pn**	**19 22 35.2**	**-1.0**
	SNR=1.0							
AVF				*e*Sn		**Sn**	**19 23 47.7**	**-4.4**
	comp=Z,12nm,0.5s,SNR=1.0							
AVF	**Avril sur Loir**	**6.64**	**299**	*e*Pn		**Pn**	**19 22 35.2**	**-1.0**
	SNR=1.0							
SSF	**Saint Saulge**	**6.65**	**301**	*e*Pn		**Pn**	**19 22 36.6**	**+0.2**
	SNR=1.0							
SSF				*e*Sn		**Sn**	**19 23 49.8**	**-2.6**
	comp=Z,25nm,0.5s							
SSF	**Saint Saulge**	**6.65**	**301**	*e*Pn		**Pn**	**19 22 36.6**	**+0.2**
	SNR=1.0							
SSF				*e*Sn		**Sn**	**19 23 49.8**	**-2.6**
	comp=Z,13nm,0.5s							
VYHS	**Vyhne**	**6.67**	**44**	*e*Pn		**Pn**	**19 22 37.6**	**+1.0**
VYHS	**Vyhne**	**6.67**	**44**	*e*PN		**Pn**	**19 22 37.6**	**+1.0**
VYHS				*e*SN		**Sn**	**19 23 46.6**	**-6.2**
SELS	**Selova**	**6.77**	**93**	*e*Pn		**Pn**	**19 22 39.0**	**+0.9**
PVCC	**Panska Ves**	**6.87**	**15**	AMS		AMS	19 25 40.0	
	comp=Z,400nm,14.0s							
BGF	**Bois d'Agland**	**6.88**	**296**	*e*Pn		**Pn**	**19 22 40.6**	**+1.1**
	SNR=1.0							
BGF				*e*Sn		**Sn**	**19 23 53.8**	**-4.3**
	comp=Z,14nm,0.4s,SNR=1.0							
BGF	**Bois d'Agland**	**6.88**	**296**	*e*Pn		**Pn**	**19 22 40.6**	**+1.1**
	SNR=1.0							
PSZ	**Piszkesteto**	**6.89**	**52**	⇓*i*P		**Pn**	**19 22 39.7**	**0.0**
PSZ	**Piszkesteto**	**6.89**	**52**	S		**Sn**	**19 23 54.4**	**-4.0**
PSZ	**Piszkesteto**	**6.89**	**52**	*e*Pn		**Pn**	**19 22 39.5**	**-0.3**
PSZ	**Piszkesteto**	**6.89**	**52**	*e*Pn		**Pn**	**19 22 39.5**	**-0.3**
PSZ	**Piszkesteto**	**6.89**	**52**	*ex*		**Pn**	**19 22 42.1**	**+2.4**
PSZ				*ex*		x	19 23 54.2	
WLF	**Walferdange**	**6.95**	**328**	*e*Pn		**Pn**	**19 22 40.7**	**+0.2**
	comp=Z,13nm,0.8s							
WLF	**Walferdange**	**6.95**	**328**	*e*Pn		**Pn**	**19 22 40.7**	**+0.2**
	comp=Z,13nm,0.8s							
MTLF	**Montolieu**	**7.01**	**269**	*e*Pn		**Pn**	**19 22 40.6**	**-0.7**
	SNR=1.0							
MTLF	**Montolieu**	**7.01**	**269**	*e*Pn		**Pn**	**19 22 40.6**	**-0.7**
	SNR=1.0							
KRLC	**Kraliky**	**7.02**	**27**	*e*PN		**Pn**	**19 22 40.8**	**-0.7**
KRLC				*e*SN		**Sn**	**19 23 57.3**	**-4.3**
KRLC	**Kraliky**	**7.02**	**27**	Pn		**Pn**	**19 22 40.8**	**-0.7**
MORC	**Moravsky Berou**	**7.04**	**32**	⇓*i*P		**Pn**	**19 22 41.2**	**-0.6**
MORC	**Moravsky Berou**	**7.04**	**32**	S		**Sn**	**19 23 57.0**	**-5.1**
MORC	**Moravsky Berou**	**7.04**	**32**	⇓*i*P		**Pn**	**19 22 41.2**	**-0.6**
MORC				*e*Sn		**Sn**	**19 23 58.7**	**-3.4**
CAF	**Calviac**	**7.08**	**282**	*e*Pn		**Pn**	**19 22 42.7**	**+0.4**
	SNR=1.0							
CAF	**Calviac**	**7.08**	**282**	*e*Pn		**Pn**	**19 22 42.7**	**+0.4**
	SNR=1.0							
BRG	**Berggiesshubel**	**7.11**	**11**	PN		**Pn**	**19 22 41.5**	**-1.0**
BRG				*i*			19 23 12.8	
BRG				*i*			19 24 00.8	
BRG	**Berggiesshubel**	**7.11**	**11**	SG		**Sg**	**19 24 49.2**	**+3.0**
	comp=Z,32nm,1.1s							
	comp=N,188nm,10.8s							
	comp=E,188nm,5.4s							
	comp=Z,186nm,8.5s							
DPC	**Dobruska-Polom**	**7.12**	**24**	*e*PN		**Pn**	**19 22 40.8**	**-2.1**
DPC				*e*SN		**Sn**	**19 23 58.1**	**-5.9**
DPC				AMS		AMS	19 26 00.0	
	comp=Z,400nm,12.8s							
DPC	**Dobruska-Polom**	**7.12**	**24**	Pn		**Pn**	**19 22 40.8**	**-2.1**
MDVR	**Moldovita**	**7.13**	**80**	⇑*i*P		**Pn**	**19 22 43.2**	**+0.3**
MDVR	**Moldovita**	**7.13**	**80**	⇑*i*P		**Pn**	**19 22 43.2**	**+0.3**
BOVS	**Bovan**	**7.14**	**89**	*e*Pn		**Pn**	**19 22 43.3**	**+0.2**
BZS	**Buzias**	**7.16**	**73**	⇓*i*P		**Pn**	**19 22 43.2**	**-0.1**
BZS	**Buzias**	**7.16**	**73**	⇓*i*P		**Pn**	**19 22 43.2**	**-0.1**
UPC	**Upice**	**7.18**	**22**	*e*PN		**Pn**	**19 22 42.7**	**-0.9**
UPC				*e*SN		**Sn**	**19 24 00.4**	**-4.9**
UPC				AMS		AMS	19 26 00.0	
	comp=Z,500nm,13.9s							
UPC	**Upice**	**7.18**	**22**	Pn		**Pn**	**19 22 42.7**	**-0.9**
TCF	**Toulx Ste Croi**	**7.22**	**293**	*e*Pn		**Pn**	**19 22 44.4**	**+0.2**
	SNR=1.0							
TCF				*e*Sn		**Sn**	**19 24 04.6**	**-1.8**
	comp=Z,7.9nm,0.4s,SNR=1.0							
TCF	**Toulx Ste Croi**	**7.22**	**293**	*e*Pn		**Pn**	**19 22 44.4**	**+0.2**
	SNR=1.0							
TCF				*e*Sn		**Sn**	**19 24 04.6**	**-1.8**
	comp=Z,4.0nm,0.4s,SNR=1.0							
OKC	**Ostrava-Krasne**	**7.33**	**34**	*e*PN		**Pn**	**19 22 44.9**	**-0.7**
OKC				*e*SN		**Sn**	**19 24 05.0**	**-4.0**
OKC				AMS		AMS	19 26 30.0	
	comp=Z,200nm,9.5s							
OKC	**Ostrava-Krasne**	**7.33**	**34**	Pn		**Pn**	**19 22 44.9**	**-0.7**
BARS	**Barje**	**7.35**	**95**	*e*Pn		**Pn**	**19 22 47.2**	**+1.3**
LANS	**Liptovska Anna**	**7.42**	**42**	*e*Pn		**Pn**	**19 22 45.8**	**-1.1**
LANS	**Liptovska Anna**	**7.42**	**42**	*e*PN		**Pn**	**19 22 45.8**	**-1.1**
CLL	**Collm**	**7.44**	**6**	*e*Pn		**Pn**	**19 22 46.0**	**-1.1**
CLL				*e*Pg		**Pg**	**19 23 23.0**	**+2.4**
CLL				*e*Sn		Sn	19 24 02.0	-10
CLL				*e*			19 24 14.0	
CLL				*e*Sg		**Sg**	**19 25 00.0**	**+3.1**
RJF	**Les Rejaudoux**	**7.50**	**284**	*e*Sg		**Sg**	**19 24 52.1**	**-6.9**
	comp=Z,2.2nm,0.2s							
BCLA	**Clavier**	**7.88**	**328**	SN		**Sn**	**19 24 17.3**	**-5.4**
	comp=E,12nm,0.0s							
DOU	**Dourbes**	**7.92**	**324**	SN		**Sn**	**19 24 20.6**	**-2.9**
	comp=E,14nm,0.0s							
DOU	**Dourbes**	**7.92**	**324**	Sn		**Sn**	**19 24 20.6**	**-2.9**
DRGR		**8.17**	**66**	⇑*i*P		**Pn**	**19 22 57.8**	**+0.5**
DRGR		**8.17**	**66**	S		**Sn**	**19 24 25.3**	**-4.6**
DRGR		**8.17**	**66**	⇑*i*P		**Pn**	**19 22 57.8**	**+0.5**
KEST	**Kesra**	**8.40**	**194**	Pn		Pn	19 23 06.8	+6.4
	comp=E,0.9nm,0.3s,baz=310,slow=9.6,SNR=6.9							
STHS	**Stebnicka Huta**	**8.48**	**46**	*e*PN		**Pn**	**19 23 03.6**	**+2.1**
MFF	**Saint Martin d**	**8.88**	**292**	*e*Pn		**Pn**	**19 23 05.7**	**-1.2**
	SNR=1.0							
MFF	**Saint Martin d**	**8.88**	**292**	*e*Pn		**Pn**	**19 23 05.7**	**-1.2**
	SNR=1.0							
ETSF	**Etsaut**	**9.09**	**268**	*e*Pn		**Pn**	**19 23 08.6**	**-1.3**
ETSF	**Etsaut**	**9.09**	**268**	*e*Pn		**Pn**	**19 23 08.6**	**-1.3**
FLN	**La Foliniere**	**9.80**	**304**	*e*Pn		**Pn**	**19 23 18.9**	**-0.7**
FLN	**La Foliniere**	**9.80**	**304**	*e*Pn		**Pn**	**19 23 18.9**	**-0.7**
GRR	**Gorron**	**9.88**	**301**	*e*Pn		**Pn**	**19 23 20.2**	**-0.5**
	SNR=1.0							
GRR	**Gorron**	**9.88**	**301**	*e*Pn		**Pn**	**19 23 20.2**	**-0.5**
	SNR=1.0							
MLR	**Muntele Rosu**	**10.16**	**76**	LR		LR	19 27 25.1	
	comp=E,20nm,20.6s,baz=254,slow=39							
ESDC	**Sonseca Array**	**12.54**	**256**	Pn		**Pn**	**19 23 59.2**	**+2.1**
	comp=E,0.2nm,0.3s,baz=48,slow=14,SNR=4.3							
AKASG	**Malin Array Be**	**13.59**	**54**	Pn		**Pn**	**19 24 10.2**	**-1.0**
	comp=E,0.4nm,0.3s,baz=245,slow=11,SNR=3.2							
EKA	**Eskdalemuir Ar**	**14.96**	**325**	Pn		**Pn**	**19 24 29.6**	**-0.5**
	baz=138,slow=14,SNR=4.5							
HFS	**Hagfors**	**16.28**	**3**	Pn		**P**	**19 24 49.6**	**-0.7**
	comp=E,0.1nm,0.3s,baz=173,slow=17,SNR=2.6							
HFS				LR		LR	19 31 12.0	
	comp=E,45nm,21.6s,baz=195,slow=38							
BRTR	**Keskin Array B**	**16.76**	**97**	LR		LR	19 32 54.3	
	comp=E,36nm,18.6s,baz=281,slow=43							
MDT	**Midelt**	**16.98**	**235**	LR		LR	19 30 54.6	
	comp=E,51nm,19.2s,baz=28,slow=35							
NOA	**NORSAR Array B**	**17.16**	**359**	P		**P**	**19 25 00.0**	**0.0**
	comp=E,0.1nm,0.3s,baz=178,slow=11,SNR=3.3							
NOA				LR		LR	19 31 48.9	
	comp=E,32nm,21.1s,baz=165,slow=38							
FINES	**FINESS Array B**	**19.48**	**21**	P		**Pn**	**19 25 26.0**	**-0.6**
	comp=E,0.1nm,0.3s,baz=197,slow=10.0,SNR=4.6							
FINES				LR		LR	19 33 54.7	
	comp=E,78nm,20.8s,baz=206,slow=40							
MMAI	**Mount Meron Ar**	**21.34**	**113**	P		**P**	**19 25 45.1**	**-0.9**
	comp=E,0.4nm,0.4s,baz=262,slow=39,SNR=4.0							
KVAR	**Kislovodsk Arr**	**22.16**	**79**	LR		LR	19 35 35.0	
	comp=E,17nm,21.9s,baz=342,slow=40							
ARCES	**ARCESS Array B**	**26.62**	**11**	LR		LR	19 38 15.0	
	comp=E,38nm,18.5s,baz=122,slow=39							
ARU	**Arti**	**31.79**	**50**	P		**P**	**19 27 21.9**	**-1.1**
ARU	**Arti**	**31.79**	**50**	P		**P**	**19 27 21.9**	**-1.1**
TORD	**Torodi Ar. Bea**	**31.88**	**199**	P		**P**	**19 27 24.6**	**+0.5**
	comp=E,2.9nm,0.6s,baz=11,slow=8.9,SNR=22							
TORD				LR		LR	19 41 03.0	
	comp=E,48nm,18.2s,baz=110,slow=38							
SPITS	**Spitsbergen Ar**	**34.42**	**2**	LR		LR	19 44 34.3	
	comp=E,30nm,18.4s,baz=290,slow=41							
BVAR	**Borovoye Array**	**38.86**	**55**	LR		LR	19 45 59.8	
	comp=E,45nm,20.7s,baz=86,slow=39							
DBIC	**Dimbokro**	**39.89**	**206**	LR		LR	19 45 45.3	
	comp=E,56nm,18.5s,baz=348,slow=37							
MKAR	**Makanchi Array**	**48.05**	**61**	P		**P**	**19 29 38.5**	**+0.4**
	comp=E,1.0nm,0.6s,baz=284,slow=7.0,SNR=13							
SONM	**Songino Array**	**61.83**	**50**	P		**P**	**19 31 18.7**	**+0.9**
	comp=E,0.9nm,1.0s,baz=284,slow=7.5,SNR=6.3							
YKA	**Yellowknife Ar**	**65.62**	**336**	P		**P**	**19 31 44.3**	**+1.9**
	comp=E,1.8nm,0.9s,baz=41,slow=6.4,SNR=10.0							
ILAR	**Eielson Array**	**70.38**	**351**	P		**P**	**19 32 14.5**	**+2.2**
	comp=E,0.5nm,0.9s,baz=6.3,slow=9.1,SNR=4.5							

JMA 12 19:31:29.1, 36.90N×140.52E, h8km±1km, M1.2, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.29**	**172**	P		P	Pg	19 31 34.8	-0.1
JHO				*e*S		Sg		19 31 38.9	+0.2
ONAJ	**Iwakimizuishiy**	**0.30**	**48**	*e*S		Sg		19 31 39.7	+0.6
JFT	**Otama**	**0.63**	**347**	P		Pg		19 31 41.6	+0.2
JFT				*e*S		Sg		19 31 50.1	+0.4
JFY	**Yanaizu**	**0.82**	**308**	S		Sg		19 31 55.8	+0.1
JAG	**Ashikaga**	**0.98**	**241**	*e*S		Sg		19 32 00.2	-0.5
JMM	**Marumori**	**0.99**	**13**	P		Pg		19 31 47.9	-0.2
JMM				*e*S		Sg		19 32 00.5	-0.5

NIED ***12*** *19:32:00, 37.90N×143.40E, h11km, Mw4.8 Best double couple: M0 1.53000×10^16 NP1:φs=321.00000°, δ67.00000°, λ178.00000°. NP2:φs=52.00000°, δ89.00000°, λ23.00000°.*
IDC ***12*** *19:32:07.0±0.5, 37.83N×143.37E, h0km, mb4.3/41, mb1 4.4/48, mb1mx4.4/67, mbtmp4.4/48, ML3.7/7, MS4.0/22, Ms1 4.0/22, ms1mx3.8/42, Error ellipse: s-maj=13.5km s-min=10.8km az=112.0*
ISCJB ***12*** *19:32:09.6±0.8, 37.87N±0.02×143.21E±0.02, h23km±5km, mb4.7/134, MS4.3/36, Error ellipse: s-maj=4.2km s-min=3.0km az=150.7*
JMA ***12*** *19:32:09.7±0.2, 37.93N×143.38E, h46km, M4.9*
JMA Felt I J1.
NEIC ***12*** *19:32:13.0±0.2, 37.89N×143.19E, h35km, mb4.9/69, Error ellipse: s-maj=5.6km s-min=3.3km az=147.0*
NEIC Recorded [1 JMA] in Miyagi.
MOS ***12*** *19:32:12.1±0.9, 38.10N×143.18E, h33km, mb4.9/60, Error ellipse: s-maj=7.0km s-min=4.5km az=109.1*
BJI ***12*** *19:32:12.8, 38.02N×142.86E, h28km, mb4.8/68, mB4.9/51, Ms4.5/69, Ms7 4.3/60*
ISC 12 19:32:11.6±0.6, 37.88N±0.04×143.23E±0.04, h29km±3km, h28km:pP-P, n325, σ1s61/371, mb4.8/144, MS4.4/37, 10C-11D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.59**	**292**	P		P	**Pn**	**19 32 37.5**	**-0.3**
OFUJ	**Ofunato**	**1.71**	**315**	P		P	**Pn**	**19 32 38.6**	**-0.9**
OFUJ				S		S	**Sn**	**19 32 59.6**	**-0.8**
JMK	**Ichinoseki**	**1.91**	**305**	P		P	**Pn**	**19 32 41.9**	**-0.2**
JMK				*e*S		S	**Sn**	**19 33 05.8**	**+0.6**
JMM	**Marumori**	**1.93**	**270**	P		P	**Pn**	**19 32 42.3**	**-0.1**
JMM				*e*S		S	**Sn**	**19 33 06.2**	**+0.5**
JOM	**Ohasama**	**2.19**	**317**	P		P	**Pn**	**19 32 45.9**	**-0.3**
JOM				S		S	**Sn**	**19 33 12.4**	**0.0**
JFT	**Otama**	**2.32**	**262**	P		P	**Pn**	**19 32 48.7**	**+0.8**
JYK	**Kaneyama**	**2.48**	**296**	P		P	**Pn**	**19 32 50.6**	**+0.5**
JANG	**Nango**	**2.82**	**332**	P		P	**Pn**	**19 32 53.8**	**-1.0**
JANG				*e*S		S	**Sn**	**19 33 25.9**	**-1.9**
JNS	**Sasagawa**	**3.10**	**270**	P		P	**Pn**	**19 32 59.6**	**+1.1**
JAW	**Awa shima**	**3.19**	**282**	P		P	**Pn**	**19 33 00.9**	**+1.1**
JAG	**Ashikaga**	**3.35**	**245**	P		P	**Pn**	**19 33 02.0**	**0.0**
JAG				*e*S		S	**Sn**	**19 33 42.7**	**+1.9**
BSO1	**Boso 1**	**3.70**	**210**	P		P	**Pn**	**19 33 05.3**	**-1.0**
BSO1				S		S	**Sn**	**19 33 48.7**	**+0.1**
JOT	**Ohata**	**3.88**	**335**	P		P	**Pn**	**19 33 09.3**	**0.0**
JOT				*e*S		S	**Sn**	**19 33 53.5**	**-0.4**
JSD	**Sado**	**3.93**	**274**	P		P	**Pn**	**19 33 10.3**	**+0.3**
JRY	**Ryogami san**	**3.93**	**243**	P		P	**Pn**	**19 33 10.1**	**0.0**
JRY				S		S	**Sn**	**19 33 56.1**	**+0.8**
ERM	**Erimo**	**4.13**	**359**	*d*iP		P	**Pn**	**19 33 10.9**	**-1.8**
ERM	**Erimo**	**4.13**	**359**	*e*Pn		P	**Pn**	**19 33 10.5**	**-2.2**
MJAR	**Matsushiro Arr**	**4.22**	**253**	Pn		P	**Pn**	**19 33 15.3**	**+1.2**
	15nm,0.3s,baz=85,slow=15,SNR=13.3								
MJAR				Sn		S	**Sn**	**19 34 05.7**	**+3.3**
	8.9nm,0.3s,baz=112,slow=15,SNR=5.2								
MJAR				LR		LR		19 35 25.2	
	comp=Z,2μm,18.3s,baz=90,slow=46								
MAJO	**Matsushiro**	**4.22**	**253**	*d*iP		P	**Pn**	**19 33 16.7**	**+2.6**
MAJO	**Matsushiro**	**4.22**	**253**	*e*Pn		P	**Pn**	**19 33 16.5**	**+2.4**
MAT	**Matsushiro**	**4.22**	**253**	P		P	**Pn**	**19 33 16.1**	**+2.0**
MAT				*e*S		S	**Sn**	**19 34 06.1**	**+3.7**
JHJ2	**Mitsune**	**5.51**	**211**	*e*Pn		P	**Pn**	**19 33 29.5**	**-2.3**
JHJ2				*e*Sn		S	**Sn**	**19 34 29.0**	**-5.2**
JHJ	**Hachijo jima 2**	**5.52**	**212**	Pn		P	**Pn**	**19 33 29.6**	**-2.2**
	42nm,0.3s,baz=334,slow=14,SNR=2.17								
JHJ				Sn		S	**Sn**	**19 34 28.8**	**-5.5**
	336nm,0.3s,baz=73,slow=24,SNR=18								
JHJ				LR		LR		19 35 17.9	
	comp=Z,504nm,21.7s,baz=84,slow=34								
INU	**Inuyama**	**5.60**	**245**	*e*Pn		P	**Pn**	**19 33 33.3**	**+0.4**
ASAJ	**Asahikawa**	**6.25**	**356**	Pn		P	**Pn**	**19 33 40.8**	**-1.0**
	baz=203,slow=7.3								
ASAJ	**Asahikawa**	**6.25**	**356**	*e*Pn		P	**Pn**	**19 33 40.4**	**-1.4**
YUK	**Yuzh-Kuril'sk**	**6.46**	**17**	⇓*i*P		P	**Pn**	**19 33 42.5**	**-2.2**
KUR	**Kuril'sk**	**8.13**	**24**	⇑*i*P		P	**Pn**	**19 34 06.0**	**-1.6**
YSS	**Yuzh-Sakhalins**	**9.07**	**358**	⇑*e*P		P	**Pn**	**19 34 19.4**	**-1.1**
YSS				*e*S		S	**Sn**	**19 35 59.5**	**-2.2**
YSS				pmax	pmax				
	comp=Z,20nm,1.0s								
YSS				smax	smax				
	comp=N,90nm,1.5s								
YSS				MLR	MLR				
	comp=Z,1μm,13.0s								
YSS				MLR	MLR				
	comp=N,2μm,16.0s								
YSS	**Yuzh-Sakhalins**	**9.07**	**358**	*e*Pn		P	**Pn**	**19 34 19.5**	**-1.1**
MSHR	**Mys Shultsa**	**10.35**	**301**	⇑*i*P		P	**Pn**	**19 34 39.9**	**+1.8**
USRK	**Ussuriysk Ar.**	**10.57**	**310**	Pn		P	**Pn**	**19 34 41.8**	**+0.7**
	comp=N,0.9nm,0.3s,baz=120,slow=14,SNR=19								
USRK				LR		LR		19 38 42.1	
	comp=N,613nm,20.8s,baz=116,slow=37								
JNU	**Nakatsue**	**11.13**	**248**	Pn		P	**Pn**	**19 34 49.4**	**+0.7**
	comp=N,0.3nm,0.3s,baz=67,slow=7.7,SNR=5.9								
JNU				LR		LR		19 39 33.9	
	comp=N,1μm,19.3s,baz=63,slow=40								
KSRS	**Korea Array**	**12.14**	**273**	Pn		P	**Pn**	**19 35 05.0**	**+2.5**
	comp=N,0.8nm,0.3s,baz=88,slow=13,SNR=28								
KSRS				LR		LR		19 39 48.2	
	comp=N,804nm,18.8s,baz=80,slow=38								
HABR	**Khabarovsk**	**12.14**	**333**	*e*P		P	**Pn**	**19 34 58.9**	**-3.7**
HABR				*e*S		S	**Sn**	**19 37 09.5**	**-7.4**
HABR				pmax	pmax				
	comp=N,7.0nm,0.9s								
HABR				pmax	pmax				
	comp=E,7.0nm,0.8s								
HABR				pmax	pmax				
	comp=Z,19nm,1.6s								
HABR				MLR	MLR				
	comp=Z,636nm,13.0s								
KS01	**Wonju Array Si**	**12.16**	**273**	*e*Pn		P	**Pn**	**19 35 04.1**	**+1.2**
KS15	**Wonju Array Si**	**12.17**	**273**	*e*Pn		P	**Pn**	**19 35 04.6**	**+1.6**
KSAR	**Wonju Array Be**	**12.17**	**273**	P		P	**Pn**	**19 35 05.0**	**+2.0**
KSAR	**Wonju Array Be**	**12.17**	**273**	Pn		P	**Pn**	**19 35 05.0**	**+2.0**
MDJ	**Mudanjiang**	**12.26**	**308**	P		P	**Pn**	**19 35 05.3**	**+1.1**
MDJ				S		S	**Sn**	**19 37 20.0**	**+0.1**
MDJ				PcP		PcP	**PcP**	**19 40 46.4**	**+0.9**
MDJ				ScP		ScP	**ScP**	**19 44 15.3**	**-1.0**
MDJ				PcS		PcS	**PcS**	**19 44 20.4**	**+0.9**
MDJ				ScS		ScS	**ScS**	**19 47 52.3**	**+0.1**
MDJ				pmax	pmax				
	comp=Z,13nm,0.9s								
MDJ				pmax	pmax				
	comp=Z,170nm,8.7s								
MDJ				LR	LR				
	comp=Z,1μm,17.7s								
MDJ				LR	LR				
	comp=Z,840nm,16.4s								
MDJ				LR	LR				
	comp=Z,830nm,13.6s								
MDJ	**Mudanjiang**	**12.26**	**308**	*e*Pn		P	**Pn**	**19 35 05.5**	**+1.3**
TYV	**Tymovskoe**	**12.99**	**358**	*e*P		P	**Pn**	**19 35 09.8**	**-4.3**
TYV				*e*				19 37 34.0	
TYV				pmax	pmax				
	comp=E,18nm,1.0s								
TYV				pmax	pmax				
	comp=Z,40nm,1.2s								
TYV				MLR	MLR				
	comp=N,2μm,16.0s								
TYV				MLR	MLR				
	comp=Z,2μm,18.0s								
INCN	**Inchon**	**13.15**	**273**	*e*Pn		P	**Pn**	**19 35 16.5**	**+0.1**
KLR	**Kul'dur**	**14.05**	**328**	Pn		P	**Pn**	**19 35 27.3**	**-1.3**
	comp=Z,0.5nm,0.3s,baz=134,slow=13,SNR=18								
KLR				LR		LR		19 40 56.4	
	comp=Z,735nm,19.7s,baz=143,slow=37								
CN2	**Changchun**	**14.69**	**299**	*e*P		P	**Pn**	**19 35 36.8**	**-0.5**
C

MA2 MLR MLR
comp=Z,244nm,18.5s
GUMO Guam 24.24 176 LR LR 19 45 52.8
comp=Z,256nm,19.6s,baz=346,slow=34
HHC Hu-ho-hao-te 24.59 287 *e*P **P** **19 37 28.6 -0.7**
HHC S **S** **19 41 39.2 -9.4**
HHC pmax pmax
comp=Z,27nm,1.1s
HHC pmax pmax
comp=Z,120nm,4.6s
HHC LR LR
comp=Z,1μm,15.5s
HHC LR LR
comp=Z,620nm,15.5s
HHC LR LR
comp=Z,670nm,14.4s
CIT Chita 25.10 314 *e*P **P** **19 37 33.4 -0.3**
CIT *e* 19 37 45.9
CIT *e* 19 38 10.7
CIT *e* 19 38 27.5
CIT pmax pmax
comp=Z,158nm,1.7s
YAK Yakutsk 25.59 345 P **P** **19 37 38.2 +0.2**
comp=Z,15nm,0.5s,baz=38,slow=0.7,SNR=12
YAK LR LR 19 48 25.9
comp=Z,462nm,19.1s,baz=158,slow=38
YAK Yakutsk 25.59 345 *e*P **P** **19 37 37.8 -0.1**
YAK *e**PP **pP** **19 37 47.3 +1.0**
YAK *e* 19 38 13.2
YAK *e*S **S** **19 42 05.0 +1.2**
YAK *e**SS **sS** **19 42 17.1 -0.6**
YAK *e*SS SS 19 43 26.2
YAK pmax pmax
comp=Z,22nm,0.9s
YAK pmax pmax
comp=N,16nm,1.4s
YAK pmax pmax
comp=E,7.0nm,1.3s
YAK pmax pmax
comp=N,31nm,1.1s
YAK pmax pmax
comp=Z,22nm,0.9s
YAK pmax pmax
comp=E,21nm,1.3s
YAK smax smax
comp=E,95nm,1.5s
YAK smax smax
comp=N,164nm,2.1s
YAK MLR MLR
comp=E,400nm,17.0s
YAK MLR MLR
comp=N,369nm,16.0s
YAK MLR MLR
comp=Z,505nm,17.0s
YAK Yakutsk 25.59 345 *e*P **P** **19 37 38.4 +0.5**
comp=Z,80nm,1.2s
YAK *e*S **S** **19 42 02.5 -1.4**
SEY Seymchan 25.70 10 P **P** **19 37 39.9 +0.9**
comp=Z,7.2nm,0.9s,baz=158,slow=11,SNR=11
BTO Baotou 25.78 286 *e*P **P** **19 37 40.1 +0.1**
H11N2 WAKE ISLAND Hy 27.39 125 T T 20 06 38.1
baz=317,slow=75,SNR=48
H11N1 WAKE ISLAND Hy 27.40 125 T T 20 06 42.2
baz=317,slow=75,SNR=59
H11N3 WAKE ISLAND Hy 27.41 125 T T 20 06 41.8
baz=317,slow=75,SNR=40
BOD Bodaibo 27.61 326 *e*P **P** **19 37 54.9 -1.4**
BOD pmax pmax
comp=Z,33nm,1.5s
XAN Xi'an 27.94 273 P **P** **19 38 00.0 +0.5**
XAN pP pP 19 38 09.4 +1.5
XAN PP **PnPn** **19 38 51.5 +4.7**
XAN PcP **PcP** **19 41 12.2 -2.2**
XAN S **S** **19 42 43.7 +2.1**
XAN pmax pmax
comp=Z,12nm,1.4s
XAN pmax pmax
comp=Z,95nm,9.7s
XAN LR LR
comp=Z,450nm,15.7s
XAN LR LR
comp=Z,340nm,18.1s
XAN LR LR
comp=Z,430nm,13.6s
H11S1 WAKE ISLAND Hy 28.16 127 T T 20 07 36.1
baz=319,slow=76,SNR=20
H11S3 WAKE ISLAND Hy 28.16 127 T T 20 07 43.8
baz=319,slow=76,SNR=18
H11S2 WAKE ISLAND Hy 28.17 127 T T 20 07 36.0
baz=319,slow=76,SNR=31
SONA1 Songino Array 28.53 302 *e*P **P** **19 38 06.4 +1.6**
SONA0 Songino Array 28.53 302 *e*P **P** **19 38 06.1 +1.4**
comp=Z,25nm,1.3s
SONM Songino Array 28.53 302 P **P** **19 38 06.1 +1.4**
comp=Z,8.6nm,0.9s,baz=99,slow=6.5,SNR=39
SONM LR LR 19 49 37.3
comp=Z,255nm,20.4s,baz=104,slow=37
ENH Enshi 28.84 265 *e*P **P** **19 38 07.9 +0.4**
comp=Z,41nm,0.8s
IRK Irkutsk 30.62 311 *e*P **P** **19 38 24.6 +1.5**
IRK pmax pmax
comp=Z,34nm,2.1s
TLY Talaya 30.89 309 *e*P **P** **19 38 27.5 +2.1**
TLY *e*S S 19 43 17.0 -11
TLY pmax pmax
comp=Z,25nm,1.1s
TLY MLR MLR
comp=Z,416nm,14.0s
TLY Talaya 30.89 309 *e*P **P** **19 38 26.5 +1.1**
comp=Z,18nm,1.0s
ZAK Zakamensk 30.90 307 *e*P **P** **19 38 25.7 +0.1**
ZAK pmax pmax
comp=Z,13nm,1.4s
LZH Lanzhou 31.35 279 *e*P **P** **19 38 32.1 +2.2**
LZH pP sP 19 38 42.4 +0.6
LZH sP pP 19 38 48.7 +10
LZH PP **PnPn** **19 39 34.0 +1.3**
LZH *e*S **S** **19 43 35.1 -0.3**
LZH pmax pmax
comp=Z,28nm,1.0s
LZH pmax pmax
comp=Z,160nm,4.3s
LZH LR LR
comp=Z,520nm,12.0s
LZH LR LR
comp=Z,770nm,13.9s
LZH LR LR
comp=Z,870nm,14.9s
MOY Mondy 32.51 309 *e*P **P** **19 38 40.9 +1.1**
MOY pmax pmax
comp=Z,14nm,2.0s
GYA Guiyang 32.78 260 pmax pmax 19 38 42.3
GYA pP pP 19 38 52.8 +1.9
GYA PP **PnPn** **19 39 52.0 +0.8**
GYA S **S** **19 43 55.5 -2.3**
GYA sS sS 19 44 13.2 +1.5
GYA pmax pmax
comp=Z,20nm,0.8s
GYA LR LR
comp=Z,460nm,17.0s
GYA LR LR
comp=Z,510nm,17.3s
GYA LR LR
comp=Z,480nm,17.6s
CD2 Chengdu 33.12 270 P **P** **19 38 44.0 -1.2**
CD2 pP pP 19 38 54.9 +1.2
CD2 PP **PP** **19 39 59.0 -1.3**
CD2 S **S** **19 44 00.2 -2.5**
CD2 sS sS 19 44 18.9 +2.2
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.2s
CD2 LR LR
comp=Z,740nm,17.1s
CD2 LR LR
comp=Z,690nm,15.3s
CD2 LR LR
comp=Z,770nm,15.3s
GTA Gaotai 33.70 286 *e*P **P** **19 38 52.0 +1.6**
GTA S **S** **19 44 11.0 -0.8**
GTA sS sS 19 44 27.2 +1.4
GTA pmax pmax
comp=Z,37nm,1.4s
GTA pmax pmax
comp=Z,160nm,5.9s

GTA LR LR
comp=Z,800nm,16.4s
GTA LR LR
comp=Z,500nm,17.8s
GTA LR LR
comp=Z,660nm,17.8s
QIZ Qiongzhong 34.59 246 P **P** **19 38 58.2 +0.1**
QIZ S **S** **19 44 25.8 +0.2**
QIZ LR LR
comp=Z,430nm,23.8s
QIZ LR LR
comp=Z,300nm,24.3s
QIZ LR LR
comp=Z,420nm,14.8s
QIZ Qiongzhong 34.59 246 *e*P **P** **19 38 57.2 -0.9**
comp=Z,55nm,1.8s
DAV Davao City (W) 34.60 212 *e*P **P** **19 38 57.4 -0.7**
comp=Z,247nm,0.4s
TIXI Tiksi 34.64 352 P **P** **19 38 57.3 -0.6**
comp=Z,1.3nm,0.4s,baz=78,slow=3.5,SNR=5.9
TIXI LR LR 19 53 21.7
comp=Z,228nm,19.9s,baz=152,slow=37
KMI Kunming 36.51 262 P **P** **19 39 15.3 +0.5**
KMI pP sP 19 39 25.8 -1.0
KMI S **S** **19 44 54.5 -1.0**
KMI sS sS 19 45 12.2 +2.7
KMI SS **SnSn** **19 47 21.3 -4.1**
KMI pmax pmax
comp=Z,13nm,1.2s
KMI pmax pmax
comp=Z,62nm,3.1s
KMI LR LR
comp=Z,420nm,14.1s
KMI LR LR
comp=Z,250nm,16.3s
KMI LR LR
comp=Z,440nm,17.2s
KRAR Krasnoyarsk 37.87 315 ⫝̸ *i*P **P** **19 39 26.9 +1.3**
KRAR *i* *PP **pP** **19 39 32.8 -1.4**
SDPT Sand Point 41.18 46 *e*P **P** **19 39 54.7 +1.5**
comp=Z,82nm,1.3s
WMQ Urumqi 41.75 296 P **P** **19 40 00.4 +2.2**
WMQ sP sP 19 40 13.0 +2.7
WMQ sS sS 19 46 32.0 +4.2
WMQ pmax pmax
comp=Z,15nm,0.9s
WMQ pmax pmax
comp=Z,210nm,4.0s
WMQ LR LR
comp=Z,330nm,14.8s
WMQ LR LR
comp=Z,250nm,14.9s
WMQ LR LR
comp=Z,360nm,21.4s
ZAA0 Zalesovo Array 42.42 312 *e*P **P** **19 40 03.5 +0.1**
ZAA0 *e*PcP **PcP** **19 41 55.4 -0.7**
ZAA0 *e*PcP **PcP** **19 41 56.6 +0.5**
ZAA1 Zalesovo Array 42.42 312 *e*P **P** **19 40 04.3 +0.9**
ZAA1 *e*PcP **PcP** **19 41 56.7 +0.6**
ZALV Zalesovo Beam 42.42 312 P **P** **19 40 04.3 +0.9**
comp=Z,4.4nm,0.4s,baz=86,slow=7.2,SNR=25
ZALV PcP **PcP** **19 41 56.7 +0.6**
comp=Z,1.7nm,0.4s,baz=94,slow=3.1,SNR=4.2
CHTO Chiang Mai 42.90 256 *e*P **P** **19 40 08.1 +0.4**
CHTO pmax pmax
comp=Z,6.0nm,0.8s
CHTO Chiang Mai 42.90 256 *e*P **P** **19 40 08.1 +0.4**
comp=Z,5.7nm,0.8s
CM31 Chiang Mai Arr 43.10 256 *e*P **P** **19 40 08.6 -0.8**
CMAR Chiang Mai Arr 43.10 256 P **P** **19 40 10.6 +1.2**
comp=Z,1.9nm,0.8s,baz=46,slow=6.2,SNR=15
CMAR LR LR 19 59 21.3
comp=Z,111nm,19.0s,baz=28,slow=38
NRIK Noril'sk 43.11 335 P **P** **19 40 08.9 0.0**
comp=Z,2.0nm,0.5s,baz=117,slow=14,SNR=3.6
NRIK LR LR 19 59 18.0
comp=Z,740nm,18.9s,baz=110,slow=38
CM01 Chiang Mai Arr 43.11 256 *e*P **P** **19 40 09.3 -0.2**
NVS Novosibirsk 43.31 313 *e*P **P** **19 40 11.5 +0.9**
NVS *e*S **S** **19 46 35.8 -0.2**
NVS pmax pmax
comp=E,9.0nm,0.7s
NVS pmax pmax
comp=Z,10.0nm,0.7s
NVS smax smax
comp=N,6.0nm,1.7s
NVS smax smax
comp=E,11nm,2.0s
LSA Lhasa 43.57 275 *e*P **P** **19 40 14.1 +0.5**
LSA pmax pmax
comp=Z,9.0nm,0.8s
LSA Lhasa 43.57 275 *e*P **P** **19 40 14.1 +0.5**
comp=Z,9.1nm,0.8s
SVW2 Sparrevohn 43.97 38 *e*P **P** **19 40 18.6 +2.7**
comp=Z,20nm,1.0s
MK01 Makanchi Array 44.90 302 *e*P **P** **19 40 23.2 -0.3**
MK31 Makanchi Array 44.90 302 *i* P **P** **19 40 23.8 +0.3**
MK31 pmax pmax
comp=Z,11nm,0.7s
MK31 Makanchi Array 44.90 302 *e*P **P** **19 40 23.9 +0.4**
MK32 Makanchi Array 44.90 302 *e*P **P** **19 40 24.3 +0.8**
MKAR Makanchi Array 44.90 302 P **P** **19 40 24.3 +0.8**
comp=Z,8.2nm,0.8s,baz=86,slow=9.0,SNR=36
MKAR LR LR 20 00 05.8
comp=Z,148nm,19.1s,baz=78,slow=37
MKAR Makanchi Array 44.90 302 *e*P **P** **19 40 24.2 +0.7**
comp=Z,83nm,0.8s
MAKZ Makanchi 45.10 302 *i* P **P** **19 40 25.4 +0.2**
MAKZ pmax pmax
comp=Z,16nm,0.9s
MAKZ Makanchi 45.10 302 *e*P **P** **19 40 25.0 -0.2**
comp=Z,28nm,1.4s
KDAK Kodiak Island 45.50 43 *e*P **P** **19 40 28.9 +0.8**
KDAK Kodiak Island 45.50 43 *e*P **P** **19 40 28.9 +0.8**
comp=Z,178nm,1.2s
PPLA Purkeypile 45.65 35 *e*P **P** **19 40 31.1 +1.7**
comp=Z,27nm,1.4s
SPU Mount Spurr 45.68 38 *e*P **P** **19 40 30.9 +1.3**
KTH Kantishna Hill 46.24 34 *e*P **P** **19 40 36.2 +2.3**
comp=Z,26nm,1.1s
SUA Susitna One 46.31 37 *e*P **P** **19 40 36.9 +2.3**
comp=Z,16nm,1.0s
TRF Thorofare Moun 46.52 35 *e*P **P** **19 40 37.0 +0.7**
comp=Z,11nm,1.0s
KURK Kurchatov 46.55 308 P **P** **19 40 37.7 +1.2**
KURK pmax pmax
comp=Z,21nm,0.7s
KURK Kurchatov 46.55 308 *e*P **P** **19 40 37.1 +0.7**
KURBB Kurchatov Arra 46.62 308 P **P** **19 40 37.7 +0.6**
comp=Z,20nm,0.7s,baz=82,slow=8.1,SNR=136
RC01 Rabbit Creek A 46.81 38 *e*P **P** **19 40 38.6 +0.3**
comp=Z,18nm,1.0s
PMR Palmer 47.08 37 *e*P **P** **19 40 41.7 +1.2**
PMR pmax pmax
comp=Z,23nm,1.2s
PMR Palmer 47.08 37 *e*P **P** **19 40 41.7 +1.2**
comp=Z,23nm,1.2s
MCK McKinley 47.12 34 *e*P **P** **19 40 41.3 +0.5**
MCK pmax pmax
comp=Z,10.0nm,0.9s
MCK McKinley 47.12 34 *e*P **P** **19 40 41.3 +0.5**
comp=Z,10nm,0.9s
RND Reindeer 47.16 35 *e*P **P** **19 40 41.9 +0.7**
RND pmax pmax
comp=Z,23nm,1.2s
RND Reindeer 47.16 35 *e*P **P** **19 40 41.9 +0.7**
comp=Z,23nm,1.2s
KSM Kuching 47.18 228 *e*P **P** **19 40 42.0 +0.1**
comp=Z,9.7nm,0.8s
WRH Wood River Hil 47.49 33 *e*P **P** **19 40 45.3 +1.7**
comp=Z,6.0nm,0.8s
CCB Clear Creek Bu 47.61 33 *e*P **P** **19 40 47.8 +3.2**
comp=Z,8.8nm,1.2s
DHY Denali Highway 47.84 35 *e*P **P** **19 40 47.7 +1.1**
comp=Z,31nm,1.8s
SCM Sheep Creek Mo 47.93 37 *e*P **P** **19 40 48.6 +1.4**
SCM pmax pmax
comp=Z,22nm,1.0s
SCM Sheep Creek Mo 47.93 37 *e*P **P** **19 40 48.6 +1.4**
comp=Z,22nm,1.0s
IL1 Eielson Array 48.01 33 *e*P **P** **19 40 47.7 +0.1**
ILAR Eielson Array 48.01 33 P **P** **19 40 47.6 0.0**
comp=Z,2.8nm,0.8s,baz=266,slow=6.2,SNR=17
ILAR LR LR 20 00 30.3
comp=Z,62nm,20.4s,baz=244,slow=36
ILB Eielson Array 48.01 33 *e*P **P** **19 40 47.7 0.0**

RAMN Ramite 48.38 274 *e*P **P** **19 40 52.6 +1.3**
comp=Z,72nm,1.0s
GUN Gumba 48.51 276 *e*P **P** **19 40 53.7 +1.3**
comp=Z,26nm,0.4s
KLU Klutina 48.62 37 *e*P **P** **19 40 53.4 +0.8**
comp=Z,25nm,1.2s
DIV Divide 48.73 38 *e*P **P** **19 40 54.3 +1.0**
comp=Z,32nm,1.0s
EYAK Cordova Ski Ar 48.80 38 *e*P **P** **19 40 54.9 +1.1**
comp=Z,27nm,1.2s
KKN Kakani 49.03 276 *e*P **P** **19 40 57.5 +1.2**
comp=Z,72nm,1.1s
PKIN Phulchoki 49.04 276 *e*P **P** **19 40 57.7 +1.3**
comp=Z,20nm,0.7s
DOT Dot Lake 49.30 34 *e*P **P** **19 40 59.0 +1.4**
comp=Z,13nm,0.8s
BMRM Bremner River 49.31 38 *e*P **P** **19 40 59.0 +1.3**
comp=Z,26nm,1.1s
RAGM Ragged Mountai 49.34 39 *e*P **P** **19 41 01.0 +3.0**
comp=Z,46nm,1.4s
GKN Gorkha 49.44 277 *e*P **P** **19 41 00.4 +1.0**
comp=Z,122nm,1.1s
MENT Mentasta 49.52 35 *e*P **P** **19 41 00.7 +1.4**
comp=Z,9.4nm,0.9s
CRQM Cirque 50.05 38 *e*P **P** **19 41 02.2 -1.3**
comp=Z,35nm,1.0s
KOLN Koldanda 50.36 277 *e*P **P** **19 41 07.5 +1.1**
comp=Z,12nm,0.4s
BALM Baldy 50.39 37 *e*P **P** **19 41 07.3 +1.2**
BALM pmax pmax
comp=Z,10.0nm,1.0s
BALM Baldy 50.39 37 *e*P **P** **19 41 07.3 +1.2**
comp=Z,9.7nm,1.0s
PYUN Piuthan 50.69 278 *e*P **P** **19 41 10.1 +1.2**
comp=Z,140nm,1.2s
CHKZ Chkalovo 50.79 313 *i* P **P** **19 41 09.2 +0.2**
CHKZ pmax pmax
comp=Z,13nm,1.4s
VOSK Vostochnaya 50.80 312 *e*P **P** **19 41 09.0 -0.1**
VOSK pmax pmax
comp=Z,13nm,1.1s
VOSK Vostochnaya 50.80 312 *e*P **P** **19 41 09.0 -0.1**
comp=Z,13nm,1.1s
BVA0 Borovoye Array 51.07 312 *i* P **P** **19 41 11.4 +0.2**
BVA0 pmax pmax
comp=Z,5.0nm,0.8s
BVAR Borovoye Array 51.07 312 P **P** **19 41 12.0 +0.8**
comp=Z,3.5nm,0.6s,baz=74,slow=8.3,SNR=28
BVAR Borovoye Array 51.07 312 P **P** **19 41 12.0 +0.8**
BVAR pmax pmax
comp=Z,4.0nm,0.6s
OTUK Ortayu 51.10 306 P **P** **19 41 11.3 -0.2**
OTUK pmax pmax
comp=Z,14nm,1.3s
BRVK Borovoye 51.13 312 *d i* P **P** **19 41 12.9 +1.3**
BRVK pmax pmax
comp=Z,12nm,0.6s
BRVK Borovoye 51.13 312 *e* P **P** **19 41 12.8 +1.2**
comp=Z,6.3nm,0.8s
FRU Bishkek 51.21 299 *e*P **P** **19 41 14.0 +1.6**
FRU *e* 19 41 28.0
AAK Ala-Archa 51.36 298 P **P** **19 41 13.9 +0.2**
comp=Z,2.6nm,0.4s,baz=64,slow=5.0,SNR=8.7
AAK Ala-Archa 51.36 298 *d i* P **P** **19 41 15.2 +1.5**
AAK pmax pmax
comp=Z,14nm,1.0s
AAK Ala-Archa 51.36 298 *e*P **P** **19 41 13.6 0.0**
comp=Z,8.1nm,1.0s
KSH Kashi 51.38 294 *e*P P 19 41 19.1 +5.3
KSH *ep*P sP 19 41 30.3 +4.3
KSH *es*P pP 19 41 36.1 +14
KSH *e*PcP **PcP** **19 42 31.3 +3.1**
KSH PcS **PcS** **19 46 28.5 +2.4**
KSH S **S** **19 48 36.1 +4.5**
KSH ScS **ScS** **19 51 02.5 +0.2**
KSH pmax pmax
comp=Z,81nm,3.6s
KSH LR LR
comp=Z,200nm,11.4s
KSH LR LR
comp=Z,300nm,17.1s
KSH LR LR
comp=Z,360nm,16.0s
ZRNK Zerenda 51.90 312 *e*P **P** **19 41 17.5 +0.1**
ZRNK pmax pmax
comp=Z,12nm,1.0s
ZRNK Zerenda 51.90 312 *e*P **P** **19 41 17.5 +0.1**
comp=Z,12nm,1.0s
HYT Haines Junctio 52.76 37 *e*P **P** **19 41 27.9 +4.1**
MNAS Manas 52.79 299 *i* P **P** **19 41 25.4 +1.1**
MNAS pmax pmax
comp=Z,27nm,1.0s
INK Inuvik 52.97 28 P **P** **19 41 24.7 -0.3**
comp=Z,1.5nm,0.5s,baz=293,slow=3.2,SNR=3.9
INK Inuvik 52.97 28 *e*P **P** **19 41 26.1 +1.1**
INK pmax pmax
comp=Z,7.0nm,1.1s
INK Inuvik 52.97 28 *e*P **P** **19 41 26.1 +1.1**
comp=Z,6.9nm,1.1s
KK31 Karatay Array 53.95 300 *i* P **P** **19 41 33.1 +0.5**
KK31 pmax pmax
comp=Z,11nm,0.9s
KKAR Karatay Array 53.95 300 *e*P **P** **19 41 32.8 +0.1**
KKAR Karatay Array 53.95 300 *e*P **P** **19 41 32.8 +0.1**
comp=Z,83nm,1.0s
SVE Sverdlovsk 55.47 319 ⫝̸ *e*P **P** **19 41 44.6 +1.2**
SVE pmax pmax
comp=Z,18nm,1.2s
SVE MLR MLR
comp=Z,518nm,16.0s
ARU Arti 56.68 319 P **P** **19 41 52.9 +0.8**
comp=Z,3.0nm,0.6s,baz=65,slow=4.8,SNR=13
ARU Arti 56.68 319 *c i* P **P** **19 41 52.7 +0.6**
ARU 19 42 47.2
ARU 19 43 58.7
ARU PPP PPP 19 45 17.3
ARU S **S** **19 49 42.6 +0.2**
ARU 19 51 35.5
ARU SS **SS** **19 53 21.9 -7.9**
ARU Arti 56.68 319 *e*P **P** **19 41 52.6 +0.6**
comp=Z,11nm,1.0s
DLBC Dease Lake 57.07 39 *e*P **P** **19 41 58.6 +3.8**
comp=Z,8.2nm,1.1s
FITZ Fitzroy Crossi 58.09 200 P **P** **19 42 02.9 +0.6**
comp=Z,5.1nm,1.1s,baz=54,slow=13,SNR=5.2
FITZ Fitzroy Crossi 58.09 200 *e*P **P** **19 42 03.3 +1.0**
comp=Z,24nm,1.5s
WRAB Tennant Creek 58.11 190 ⫝̸ *i*P **P** **19 42 02.3 -0.2**
WRAB pmax pmax
comp=Z,54nm,1.2s
WR1 Warramunga Arr 58.12 190 *e*P **P** **19 42 01.9 -0.6**
comp=Z,13nm,0.8s
WRA Warramunga Arr 58.12 190 P **P** **19 42 01.9 -0.6**
comp=Z,12nm,0.7s,baz=8.7,slow=7.2,SNR=97
WRA Warramunga Arr 58.12 190 P **P** **19 42 02.0 -0.6**
WRA pmax pmax
comp=Z,12nm,0.7s
KBL Kabul 58.46 291 *e*P **P** **19 42 04.1 -1.1**
KBL pmax pmax
comp=Z,22nm,1.1s
KBL Kabul 58.46 291 *e*P **P** **19 42 04.1 -1.1**
comp=Z,22nm,1.1s
AB31 Akbulak array 58.50 310 *i* P **P** **19 42 05.4 +0.4**
AB31 pmax pmax
comp=Z,2.0nm,0.4s
ABKAR Akbulak array 58.50 310 *e*P **P** **19 42 05.0 0.0**
comp=Z,65nm,0.4s
AKTO Aktyubinsk 59.18 312 P **P** **19 42 10.4 +0.7**
comp=Z,5.2nm,0.8s,baz=73,slow=10,SNR=16
AKTO Aktyubinsk 59.18 312 P **P** **19 42 10.1 +0.4**
AKTO pmax pmax
comp=Z,7.0nm,0.8s
SPITS Spitsbergen Ar 59.97 349 P **P** **19 42 15.0 +0.2**
comp=Z,1.3nm,0.5s,baz=99,slow=8.6,SNR=5.1
SPITS Spitsbergen Ar 59.97 349 P **P** **19 42 15.0 +0.2**
SPITS pmax pmax
comp=Z,1.0nm,0.4s
AS01 Alice Springs 61.84 190 *e*P **P** **19 42 27.9 -0.2**
AS31 Alice Springs 61.84 190 *e*P **P** **19 42 28.0 -0.1**
comp=Z,4.3nm,1.5s
ASAR Alice Springs 61.84 190 P **P** **19 42 27.9 -0.2**
comp=Z,2.9nm,0.8s,baz=4.6,slow=6.9,SNR=23
ASAR LR LR 20 14 55.0
comp=Z,56nm,18.0s,baz=53,slow=42
YKA Yellowknife Ar 62.35 31 P **P** **19 42 31.1 +0.1**
comp=Z,0.6nm,0.7s,baz=303,slow=6.9,SNR=3.7

ARCES	**ARCESS Array B**	**63.71**	**340**	P		**P**	**19 42 40.2**	**+0.2**	
	comp=Z,1.3nm,0.5s,baz=52,slow=7.5,SNR=14								
GEYT	**Alibeck**	**64.68**	**299**	P		**P**	**19 42 47.6**	**+0.6**	
	comp=Z,8.3nm,1.0s,baz=358,slow=4.5,SNR=15								
GEYT				LR		LR	20 14 29.0		
	comp=Z,132nm,19.2s,baz=100,slow=39								
DAG	**Danmarks Havn**	**65.05**	**355**	P		**P**	**19 42 52.1**	**+3.5**	
DAG				pmax		pmax			
	comp=Z,8.0nm,1.1s								
EDM	**Edmonton**	**67.78**	**39**	*e*P		**P**	**19 43 07.4**	**+0.8**	
EDM				pmax		pmax			
	comp=Z,8.0nm,1.0s								
EDM	**Edmonton**	**67.78**	**39**	*e*P		**P**	**19 43 07.4**	**+0.8**	
	comp=Z,7.6nm,1.0s								
OBN	**Obninsk**	**68.28**	**324**	P		**P**	**19 43 09.0**	**-0.5**	
	comp=Z,4.0nm,0.4s,baz=160,slow=23,SNR=3.5								
OBN	**Obninsk**	**68.28**	**324**	*d* P		**P**	**19 43 10.4**	**+0.9**	
OBN				*e**SP		**sP**	**19 43 21.9**	**0.0**	
OBN				*e*			19 43 32.8		
OBN				*e*S		**PnS**	**19 52 35.3**	**+1.7**	
OBN				pmax		pmax			
	comp=Z,16nm,1.2s								
OBN	**Obninsk**	**68.28**	**324**	*e*P		**P**	**19 43 09.0**	**-0.5**	
	comp=Z,7.8nm,0.7s								
NEW	**Newport**	**68.51**	**45**	P		**P**	**19 43 12.1**	**+0.9**	
	comp=Z,2.0nm,0.7s,baz=227,slow=19,SNR=2.5								
FIA0	**FINESS Array S**	**68.73**	**333**	*e*P		**P**	**19 43 12.6**	**+0.3**	
FIA0	**FINESS Array S**	**68.73**	**333**	*e*P		**P**	**19 43 12.6**	**+0.3**	
FINES	**FINESS Array B**	**68.73**	**333**	P		**P**	**19 43 12.6**	**+0.3**	
	comp=Z,3.0nm,0.7s,baz=46,slow=11,SNR=10								
FINES				LR		LR	20 15 45.5		
	comp=Z,216nm,18.4s,baz=52,slow=38								
VSR	**Storozhevoye**	**69.24**	**319**	*e*P		**P**	**19 43 16.1**	**+0.5**	
VSR				pmax		pmax			
	comp=Z,10.0nm,1.3s								
K05A	**Summer Lake**	**69.29**	**52**	*e*P		**P**	**19 43 17.9**	**+1.6**	
	comp=Z,7.3nm,1.0s								
STKA	**Stephens Creek**	**69.42**	**181**	P		**P**	**19 43 14.9**	**-1.8**	
	comp=Z,2.7nm,0.8s,baz=351,slow=7.8,SNR=4.4								
STKA				LR		LR	20 14 41.7		
	comp=Z,60nm,19.7s,baz=25,slow=37								
STKA	**Stephens Creek**	**69.42**	**181**	*e*P		**P**	**19 43 17.7**	**+0.9**	
STKA				pmax		pmax			
	comp=Z,6.0nm,1.7s								
STKA	**Stephens Creek**	**69.42**	**181**	*e*P		**P**	**19 43 17.7**	**+0.9**	
	comp=Z,5.7nm,1.7s								
SUMG	**Summit**	**69.83**	**1**	*e*P		**P**	**19 43 19.0**	**-0.4**	
SUMG				pmax		pmax			
	comp=Z,13nm,0.8s								
SUMG	**Summit**	**69.83**	**1**	*e*P		**P**	**19 43 19.0**	**-0.4**	
	comp=Z,12nm,0.8s								
GOF	**Gofitskoye**	**70.60**	**312**⇑	*e*P		**P**	**19 43 26.0**	**+1.9**	
GOF				pmax		pmax			
	comp=Z,19nm,1.0s								
KVAR	**Kislovodsk Arr**	**71.43**	**311**	P		**P**	**19 43 30.0**	**+0.7**	
	comp=Z,42nm,1.2s,baz=161,slow=1.8,SNR=4.9								
KIV	**Kislovodsk**	**71.44**	**311**	*e*P		**P**	**19 43 31.1**	**+1.8**	
KIV				pmax		pmax			
	comp=Z,37nm,1.1s								
KIV	**Kislovodsk**	**71.44**	**311**	*e*P		**P**	**19 43 29.2**	**-0.1**	
	comp=Z,39nm,1.1s								
KBZ	**Khabaz**	**71.44**	**311**	P		**P**	**19 43 28.6**	**-0.6**	
	comp=Z,7.7nm,0.9s,baz=72,slow=4.7,SNR=13								
NEY	**Neytrino**	**71.82**	**311**⇑	*e*P		**P**	**19 43 34.6**	**+2.9**	
FFC	**Flin Flon**	**72.21**	**34**	*e*P		**P**	**19 43 34.4**	**+0.8**	
FFC				pmax		pmax			
	comp=Z,14nm,1.4s								
FFC	**Flin Flon**	**72.21**	**34**	*e*P		**P**	**19 43 34.4**	**+0.8**	
	comp=Z,14nm,1.4s								
GNI	**Garni**	**72.35**	**307**	*e*P		**P**	**19 43 37.6**	**+2.6**	
GNI				pmax		pmax			
	comp=Z,23nm,1.3s								
GNI	**Garni**	**72.35**	**307**	*e*P		**P**	**19 43 37.5**	**+2.6**	
	comp=Z,23nm,1.3s								
HFS	**Hagfors**	**73.90**	**336**	P		**P**	**19 43 44.5**	**+1.0**	
	comp=Z,1.5nm,0.4s,baz=46,slow=4.7,SNR=12								
NB2	**NORSAR Subarra**	**73.95**	**338**	P		**P**	**19 43 44.5**	**+0.6**	
	comp=Z,5.0nm,0.9s,baz=39,slow=6.2								
NB200	**NORSAR Array S**	**73.95**	**338**	*e*P		**P**	**19 43 44.5**	**+0.6**	
NOA	**NORSAR Array B**	**73.95**	**338**	P		**P**	**19 43 44.5**	**+0.6**	
	comp=Z,0.2nm,0.3s,baz=337,slow=14,SNR=5.0								
NOA				LR		LR	20 21 26.3		
	comp=Z,241nm,18.2s,baz=265,slow=40								
ANN	**Anapa**	**73.97**	**315**	*e*P		**P**	**19 43 45.3**	**+1.1**	
ANN				*e*S		**S**	**19 53 13.0**	**-1.5**	
ANN				pmax		pmax			
	comp=Z,19nm,1.0s								
AKASG	**Malin Array Be**	**74.50**	**323**	P		**P**	**19 43 47.5**	**+0.3**	
	comp=Z,0.5nm,0.3s,baz=46,slow=6.1,SNR=12								
AKASG				LR		LR	20 19 37.8		
	comp=Z,158nm,18.6s,baz=0.0,slow=38								
AKBB	**Malin Array Si**	**74.50**	**323**	*e*P		**P**	**19 43 47.5**	**+0.3**	
AKBB	**Malin Array Si**	**74.50**	**323**	*e*P		**P**	**19 43 47.5**	**+0.3**	
KIEV	**Kiev**	**74.51**	**323**⇓	*i*P		**P**	**19 43 47.7**	**+0.4**	
KIEV				pmax		pmax			
	comp=Z,9.0nm,1.3s								
KIEV	**Kiev**	**74.51**	**323**	*e*P		**P**	**19 43 47.2**	**0.0**	
	comp=Z,8.2nm,1.2s								
R11A	**Troy Canyon, C**	**75.10**	**53**	*e*P		**P**	**19 43 51.3**	**+0.1**	
	comp=Z,1.7nm,0.8s								
SIM	**Simferopol'**	**75.73**	**316**	*e*P		**P**	**19 43 56.0**	**+1.6**	
SIM				pmax		pmax			
	comp=Z,27nm,0.9s								
SIM				MLR		MLR			
	comp=E,150nm,19.2s								
BW06	**Boulder Array**	**76.04**	**46**	*e*P		**P**	**19 43 56.4**	**-0.2**	
PD31	**Pinedale Array**	**76.04**	**46**	*e*P		**P**	**19 43 56.1**	**-0.4**	
PDAR	**Pinedale Array**	**76.04**	**46**	P		**P**	**19 43 56.7**	**+0.2**	
	comp=E,0.8nm,0.6s,baz=281,slow=1.5,SNR=7.3								
ULM	**Lac du Bonnet**	**78.00**	**34**	P		**P**	**19 44 06.5**	**-0.6**	
	comp=E,1.5nm,0.4s,baz=166,slow=4.2,SNR=2.3								
KWP	**Kalwaria Pacla**	**78.27**	**325**	*e*P		**P**	**19 44 11.0**	**+2.4**	
KWP	**Kalwaria Pacla**	**78.27**	**325**	*e*P		**P**	**19 44 11.0**	**+2.4**	
BUR08	**Bucovina Ar. S**	**78.52**	**322**	*e*P		**P**	**19 44 11.0**	**+0.8**	
PV10	**Paradox Valley**	**79.13**	**50**	*e*P		**P**	**19 44 15.4**	**+1.5**	
OJC	**Ojcow**	**79.13**	**327**	*e*P		**P**	**19 44 14.8**	**+1.5**	
OJC	**Ojcow**	**79.13**	**327**	*e*P		**P**	**19 44 14.1**	**+0.8**	
OJC				pmax		pmax			
	comp=Z,8.0nm,1.0s								
OJC	**Ojcow**	**79.13**	**327**	*e*P		**P**	**19 44 14.1**	**+0.8**	
	comp=Z,7.7nm,1.0s								
BR101	**Keskin Array S**	**79.36**	**312**	*e*P		**P**	**19 44 16.1**	**+1.2**	
BRTR	**Keskin Array B**	**79.36**	**312**	P		**P**	**19 44 16.1**	**+1.2**	
	comp=Z,1.6nm,0.9s,baz=96,slow=3.7,SNR=11								
NIE	**Niedzica**	**79.50**	**326**	*e*P		**P**	**19 44 12.5**	**-2.9**	
NIE	**Niedzica**	**79.50**	**326**	*e*P		**P**	**19 44 12.5**	**-2.9**	
MLR	**Muntele Rosu**	**79.66**	**321**	P		**P**	**19 44 16.6**	**+0.2**	
	comp=Z,0.2nm,0.4s,baz=307,slow=14,SNR=3.5								
MLR	**Muntele Rosu**	**79.66**	**321**	*e*P		**P**	**19 44 16.1**	**-0.4**	
MLR				pmax		pmax			
	comp=Z,5.0nm,1.1s								
MLR	**Muntele Rosu**	**79.66**	**321**	*e*P		**P**	**19 44 16.1**	**-0.4**	
	comp=Z,5.1nm,1.1s								
BR231	**Keskin MP Arra**	**79.79**	**313**	*e*P		**P**	**19 44 16.4**	**-0.9**	
KSP	**Ksiaz**	**80.13**	**329**	*e*P		**P**	**19 44 20.4**	**+1.6**	
KSP	**Ksiaz**	**80.13**	**329**	*e*P		**P**	**19 44 20.4**	**+1.6**	
MORC	**Moravsky Berou**	**80.43**	**328**	*e*P		**P**	**19 44 20.9**	**+0.5**	
MORC				pmax		pmax			
	comp=Z,19nm,0.9s								
MORC	**Moravsky Berou**	**80.43**	**328**	*e*P		**P**	**19 44 20.9**	**+0.5**	
	comp=Z,19nm,0.9s								
DPC	**Dobruska-Polom**	**80.50**	**329**	*e*P		**P**	**19 44 22.2**	**+1.4**	
DPC				*e*pP		**sP**	**19 44 32.8**	**-0.5**	
DPC				AMS		AMS	20 22 50.0		
	comp=Z,200nm,16.5s								
DPC	**Dobruska-Polom**	**80.50**	**329**	*e*P		**P**	**19 44 22.2**	**+1.4**	
DPC				*e*			19 44 32.8		
DPC				MLR		MLR			
	comp=Z,200nm,16.5s								
UPC	**Upice**	**80.50**	**329**	AMS		AMS	20 25 10.0		
VYHS	**Vyhne**	**80.84**	**326**	*e*P		**P**	**19 44 23.2**	**+0.6**	
VYHS	**Vyhne**	**80.84**	**326**	*e*P		**P**	**19 44 23.2**	**+0.6**	
BRG	**Berggiesshubel**	**81.05**	**330**	*e*P		**P**	**19 44 24.4**	**+0.7**	
	comp=Z,7.8nm,1.2s								
BRG	**Berggiesshubel**	**81.05**	**330**	*e*P		**P**	**19 44 24.4**	**+0.7**	
BRG				pmax		pmax			
	comp=Z,8.0nm,1.2s								
CLL	**Collm**	**81.07**	**331**⇑	*i*P		**P**	**19 44 24.3**	**+0.5**	
	comp=Z,8.0nm,1.2s								
CLL				*i*			19 44 35.3		
	comp=Z,10.0nm,1.3s								
CLL				LmH			20 19 00.0		
	comp=N,400nm,18.9s								
CLL				LmH			20 19 00.0		
	comp=E,500nm,19.3s								
CLL	**Collm**	**81.07**	**331**⇑	*i*P		**P**	**19 44 24.3**	**+0.5**	
CLL				*i*			19 44 35.3		
CLL				pmax		pmax			
	comp=Z,8.0nm,1.2s								
CLL	**Collm**	**81.07**	**331**	*e*P		**P**	**19 44 23.7**	**-0.1**	
	comp=Z,6.3nm,1.0s								
PVCC	**Panska Ves**	**81.07**	**330**	AMS		AMS	20 23 30.0		
	comp=Z,300nm,15.9s								
VRAC	**Vranov**	**81.18**	**328**	P		**P**	**19 44 24.8**	**+0.3**	
	comp=Z,1.0nm,0.2s,baz=69,slow=6.5,SNR=5.1								
GOPC	**GO Pecny, Ondr**	**81.46**	**329**	AMS		AMS	20 23 40.0		
	comp=Z,300nm,14.2s								
PRU	**Pruhonice**	**81.50**	**329**	*e*P		**P**	**19 44 27.4**	**+1.3**	
PRU				*e*pP		**sP**	**19 44 38.1**	**-0.5**	
PRU				AMS		AMS	20 23 10.0		
	comp=Z,300nm,18.6s								
PRU	**Pruhonice**	**81.50**	**329**	*e*P		**P**	**19 44 27.4**	**+1.3**	
PRU				*e*			19 44 38.1		
PRU				MLR		MLR			
	comp=Z,300nm,18.6s								
NKC	**Novy Kostel**	**82.14**	**331**	AMS		AMS	20 27 30.0		
	comp=Z,300nm,15.4s								
CONA	**Conrad Observa**	**82.56**	**327**	*i* P		**P**	**19 44 31.6**	**-0.2**	
	comp=Z,6.9nm,1.9s								
KHC	**Kasperske Hory**	**82.56**	**329**	*e*P		**P**	**19 44 32.7**	**+1.0**	
KHC				AMS		AMS	20 23 50.0		
	comp=Z,300nm,22.5s								
KHC	**Kasperske Hory**	**82.56**	**329**	*e*P		**P**	**19 44 31.6**	**-0.2**	
KHC				pmax		pmax			
	comp=Z,2.0nm,1.2s								
KHC	**Kasperske Hory**	**82.56**	**329**	*e*P		**P**	**19 44 31.6**	**-0.2**	
	comp=Z,1.9nm,1.2s								
GERES	**GERESS Array B**	**82.74**	**329**	P		**P**	**19 44 32.9**	**+0.1**	
	comp=Z,0.5nm,0.5s,baz=20,slow=4.3,SNR=5.6								
EKA	**Eskdalemuir Ar**	**82.80**	**341**	P		**P**	**19 44 32.9**	**+0.2**	
	comp=Z,0.3nm,0.4s,baz=40,slow=5.6,SNR=3.0								
EKA	**Eskdalemuir Ar**	**82.80**	**341**	*e*P		**P**	**19 44 33.0**	**+0.2**	
ANMO	**Albuquerque**	**82.94**	**51**⇓	*i*P		**P**	**19 44 36.2**	**+2.0**	
ANMO				pmax		pmax			
	comp=Z,3.0nm,1.7s								
ARSA	**Arzberg**	**83.23**	**327**	*i* PcP		**P**	**19 44 36.5**	**+1.3**	
	comp=Z,2.2nm,0.8s								
MOA	**Molln**	**83.29**	**328**	*i* P		**P**	**19 44 34.4**	**-1.1**	
	comp=Z,6.8nm,1.8s								
PPT2	**Papeete2**	**83.75**	**118**	*e*LR		LR	20 10 22.9		
	comp=Z,174nm,24.2s								
SOKA	**Soboth**	**83.88**	**327**	*i* PcP		**P**	**19 44 39.8**	**+1.1**	
	comp=Z,8.5nm,1.3s								
OBKA	**Obir**	**84.22**	**327**	*i* P		**P**	**19 44 40.0**	**-0.4**	
	comp=Z,2.3nm,1.0s								
KBA	**Koelnbreinsper**	**84.28**	**328**	*i* PcP		**P**	**19 44 41.4**	**+0.5**	
	comp=Z,3.9nm,1.4s								
MYKA	**Terra Mystica**	**84.52**	**328**	*i* PcP		**P**	**19 44 42.9**	**+1.0**	
	comp=Z,4.0nm,0.8s								
WTTA	**Wattenberg**	**84.84**	**329**	*i* PcP		**P**	**19 44 44.1**	**+0.5**	
	comp=Z,3.9nm,0.9s								
ABTA	**Abfaltersbach**	**84.89**	**328**	*i* PcP		**P**	**19 44 44.3**	**+0.6**	
	comp=Z,2.5nm,1.0s								
MOTA	**Moosalm**	**84.99**	**330**	*i* PcP		**P**	**19 44 45.7**	**+1.4**	
	comp=Z,5.5nm,1.0s								
RETA	**Reutte**	**85.01**	**330**	*i* PcP		**P**	**19 44 46.1**	**+1.8**	
	comp=Z,14nm,1.4s								
BFO	**Black Forest**	**85.26**	**332**	*i* P		**P**	**19 44 47.1**	**+1.6**	
BFO	**Black Forest**	**85.26**	**332**	*e*P		**P**	**19 44 45.9**	**+0.4**	
	comp=Z,7.6nm,1.1s								
FETA	**Feichten**	**85.40**	**330**	*i* PcP		**P**	**19 44 48.3**	**+1.9**	
	comp=Z,5.4nm,1.3s								
DAVA	**Damuels**	**85.52**	**330**	*i* PcP		**P**	**19 44 47.6**	**+0.6**	
	comp=Z,6.7nm,1.1s								
FUORN	**Ofenpass-Fuorn**	**85.91**	**330**	*e*P		**P**	**19 44 49.7**	**+0.6**	
	comp=Z,9.5nm,0.9s								
DAVOX	**Davos/Dischmat**	**85.93**	**330**	P		**P**	**19 44 49.2**	**+0.1**	
	comp=Z,1.9nm,0.8s,baz=326,slow=20,SNR=4.3								
TUE	**Stuetta**	**86.40**	**330**	*e*P		**P**	**19 44 51.5**	**+0.1**	
	comp=Z,3.1nm,0.8s								
IDI	**Anoyia**	**87.46**	**314**	P		**P**	**19 44 56.0**	**-0.6**	
	comp=Z,2.4nm,0.5s,baz=354,slow=18,SNR=4.1								
TBI	**Tubuai**	**87.73**	**122**	*e*T		T	21 21 46.9		
	comp=Z,6.3nm,0.3s								
LTX	**Lajitas**	**88.46**	**53**	*e*P		**P**	**19 45 00.2**	**-1.3**	
LTX	**Lajitas**	**88.46**	**53**	*e*P		**P**	**19 45 00.2**	**-1.3**	
TXAR	**Lajitas Array**	**88.46**	**53**	P		**P**	**19 45 00.2**	**-1.3**	
	comp=Z,0.8nm,0.7s,baz=338,slow=5.4,SNR=3.6								
LPAZ	**La Paz**	**145.02**	**61**	PKP		**PKPdf**	**19 51 47.8**	**+0.4**	
	comp=Z,0.9nm,0.7s,baz=269,slow=2.5,SNR=4.0								

JMA 12 19:34:05.6±0.1, 38°.31N×141°.86E, h46km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.43**	**290**	P		Pn	19 34 15.8	+0.1
JIO				S		Sn	19 34 22.8	-0.1
OFUJ	**Ofunato**	**0.78**	**349**	P		Pn	19 34 20.3	0.0
OFUJ				S		Sn	19 34 30.6	-0.4
JMK	**Ichinoseki**	**0.81**	**322**	P		Pn	19 34 21.0	+0.3
JMK				S		Sn	19 34 31.7	0.0
JOU	**Okura**	**0.94**	**274**	P		Pn	19 34 22.9	+0.4
JOU				S		Sn	19 34 35.3	+0.5
JMM	**Marumori**	**0.95**	**243**	P		Pn	19 34 22.1	-0.5
JMM				S		Sn	19 34 34.9	-0.1
JFK	**Kawauchi**	**1.22**	**220**	P		Pn	19 34 26.1	-0.2
JFK				S		Sn	19 34 40.8	-0.9
JOM	**Ohasama**	**1.24**	**339**	P		Pn	19 34 27.4	+0.8
JYK	**Kaneyama**	**1.32**	**298**	P		Pn	19 34 28.1	+0.5
JYS	**Shirataka**	**1.42**	**267**	P		Pn	19 34 29.4	+0.5

JMA 12 19:36:35.3±0.2, 38°.99N×143°.23E, h3km±3km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**1.22**	**275**	P		Pg	19 36 58.1	-0.6
MIYJ	**Miyakonagasawa**	**1.24**	**299**	P		Pg	19 36 58.7	-0.4
JTH	**Tanohata**	**1.42**	**312**	P		Pn	19 37 02.0	0.0
JIO	**Ouri**	**1.57**	**251**	P		Pn	19 37 04.1	+0.1
JMK	**Ichinoseki**	**1.57**	**269**	P		Pn	19 37 04.2	+0.2
JOM	**Ohasama**	**1.58**	**288**	P		Pn	19 37 04.4	+0.2
JOM				S		Sn	19 37 25.1	-0.1
JANG	**Nango**	**1.91**	**317**	P		Pn	19 37 09.7	+0.9
JRG	**Rokugo**	**2.06**	**282**	P		Pn	19 37 11.8	+1.0
JOU	**Okura**	**2.10**	**254**	P		Pn	19 37 12.5	+1.1
JOU				S		Sb	19 37 40.5	-0.1
JMM	**Marumori**	**2.22**	**240**	P		Pn	19 37 13.0	0.0
JAH	**Hinai**	**2.33**	**302**	S		Sb	19 37 47.2	0.0

ROM 12 19:58:50.9±0.2, 43°.94N×11°.86E, h5km±2km, Md1.8/4, Ml1.7/1, Error ellipse: s-maj=1.9km s-min=1.0km az=5.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SFI	**Santa Sofia**	**0.04**	**193**	Pg		Pg	19 58 52.3	+0.2
SFI				Sg		Sg	19 58 53.3	+0.3
ASQU	**Asqua**	**0.15**	**199**	Pg		Pg	19 58 54.4	+0.4
ASQU				Sg		Sg	19 58 57.3	+1.2
T0502	**Localit˜ San**	**0.20**	**102**	Pg		Pg	19 58 55.4	+0.5
T0502				Sg		Sg	19 58 59.4	+1.7
	281µm,40.0s							
VMG	**Vicchio**	**0.23**	**275**	Pg		Pg	19 58 56.0	+0.6
VMG				Sg		Sg	19 59 00.2	+1.8

NIED ***12*** *20:06:00,39˚.00N×141˚.90E,h50km,Mw3.8 Best double couple: M₀5.18000×10¹⁴ NP1:φs178.00000°,δ25.00000°, λ62.00000°. NP2:φs28.00000°,δ68.00000°,λ103.00000°.*

ISCJB ***12*** *20:06:31.9±0.7,38˚.96N±0˚.04×141˚.98E±0˚.09,h58km±5km, mb3.7/7, Error ellipse: s-maj=12.7km s-min=5.4km az=15.3*

JMA ***12*** *20:06:33.3,38˚.99N×141˚.94E,h52km±1km,M3.8*

JMA Felt II J1.

IDC ***12*** *20:06:33.6±2.4,38˚.98N×142˚.07E,h60km±22km,mb3.4/7, mb1 3.6/11,mb1mx3.4/43,mbtmp3.7/11,ML3.1/4,MS2.9/1, Ms1 2.9/1,ms1mx2.3/35,Error ellipse: s-maj=29.1km s-min=17.8km az=89.0*

ISC 12 20:06:32.3±1.2, 38°.93N±0˚.04×142°.04E±0˚.09, h50km±9km, n30, σ1°.00/32, mb3.8/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**0.33**	**298**	P		**Pn**	**20 06 42.2**	**+0.5**
JMK	**Ichinoseki**	**0.64**	**272**	P		**Pn**	**20 06 45.4**	**+0.1**
JMK				S		Sn	20 06 54.0	-0.7
MIYJ	**Miyakonagasawa**	**0.67**	**345**	P		**Pn**	**20 06 45.7**	**0.0**
MIYJ				S		Sn	20 06 54.4	-1.0
JIO	**Ouri**	**0.72**	**229**	P		**Pn**	**20 06 46.9**	**+0.6**
JIO				S		Sn	20 06 56.3	-0.2
JOM	**Ohasama**	**0.80**	**313**	P		**Pn**	**20 06 47.2**	**-0.1**
JOM				S		Sn	20 06 57.3	-1.0
JTH	**Tanohata**	**1.02**	**352**	P		**Pn**	**20 06 50.3**	**0.0**
JTH				*e*S		Sn	20 07 03.3	-0.2
JRG	**Rokugo**	**1.19**	**294**	P		**Pn**	**20 06 52.3**	**-0.3**
JRG				*e*S		Sn	20 07 06.6	-1.1
JOU	**Okura**	**1.22**	**243**	P		**Pn**	**20 06 53.2**	**+0.2**
JYK	**Kaneyama**	**1.31**	**270**	P		**Pn**	**20 06 54.3**	**0.0**
JMM	**Marumori**	**1.45**	**223**	P		**Pn**	**20 06 56.4**	**+0.3**
JMM				*e*S		Sn	20 07 13.4	-0.5
JANG	**Nango**	**1.50**	**344**	P		**Pn**	**20 06 56.6**	**-0.2**
JANG				*e*S		Sn	20 07 14.7	-0.5
MJAR	**Matsushiro Arr**	**3.86**	**233**	P		**Pn**	**20 07 31.8**	**+2.6**
	2.2nm,0.3s,baz=37,slow=12,SNR=23							
ASAJ	**Asahikawa**	**5.20**	**4**	P		**Pn**	**20 07 48.9**	**+1.4**
	0.8nm,0.3s,baz=211,slow=12,SNR=9.8							
JHJ	**Hachijo jima 2**	**6.08**	**198**	P		**Pn**	**20 08 01.2**	**+1.6**
	1.8nm,0.3s,baz=342,slow=19,SNR=6.8							
JHJ				S		**Sn**	**20 09 04.5**	**-3.3**
	10nm,0.3s,baz=73,slow=19,SNR=6.0							
USRK	**Ussuriysk Ar.**	**9.19**	**308**	P		**Pn**	**20 08 41.9**	**-0.3**
	0.4nm,0.3s,baz=125,slow=14,SNR=15							
KSRS	**Korea Array**	**11.21**	**267**	P		Pn	20 09 14.6	+4.8
	0.2nm,0.3s,baz=74,slow=14,SNR=2.8							
KLR	**Kul'dur**	**12.67**	**328**	LR		LR	20 14 00.4	
	comp=Z,47nm,18.4s,baz=147,slow=35							
SONM	**Songino Array**	**27.19**	**301**	P		**P**	**20 12 11.4**	**+0.2**
	0.4nm,0.6s,baz=86,slow=8.5,SNR=3.7							
H11N2	**WAKE ISLAND Hy**	**28.75**	**125**	T		T	20 42 50.8	
	baz=317,slow=75,SNR=100							
H11N1	**WAKE ISLAND Hy**	**28.76**	**125**	T		T	20 42 51.5	
	baz=317,slow=75,SNR=156							
H11N3	**WAKE ISLAND Hy**	**28.77**	**125**	T		T	20 42 52.3	
	baz=317,slow=75,SNR=112							
H11S1	**WAKE ISLAND Hy**	**29.53**	**127**	T		T	20 43 50.2	
	baz=319,slow=76,SNR=53							
H11S3	**WAKE ISLAND Hy**	**29.53**	**127**	T		T	20 43 50.7	
	baz=319,slow=76,SNR=84							
H11S2	**WAKE ISLAND Hy**	**29.54**	**127**	T		T	20 43 50.7	
	baz=319,slow=76,SNR=61							
ZALV	**Zalesovo Beam**	**41.03**	**311**	P		**P**	**20 14 10.5**	**+0.1**
	1.9nm,0.6s,baz=92,slow=8.5,SNR=9.2							
MKAR	**Makanchi Array**	**43.56**	**301**	P		**P**	**20 14 31.2**	**+0.1**
	2.6nm,0.8s,baz=85,slow=9.3,SNR=29							
ILAR	**Eielson Array**	**47.63**	**33**	P		**P**	**20 15 02.4**	**-0.7**
	0.2nm,0.5s,baz=282,slow=4.5,SNR=3.7							
WRA	**Warramunga Arr**	**59.00**	**188**	P		**P**	**20 16 27.4**	**+0.5**
	0.9nm,1.1s,baz=6.8,slow=7.0,SNR=11							
FINES	**FINESS Array B**	**67.37**	**332**	P		**P**	**20 17 21.9**	**0.0**
	1.7nm,0.8s,baz=34,slow=10,SNR=4.4							
GERES	**GERESS Array B**	**81.36**	**328**	P		**P**	**20 18 43.9**	**+0.3**
	0.2nm,0.4s,baz=23,slow=5.3,SNR=2.8							

ISCJB ***12*** *20:11:01.8±0.2, 10˚.78N±0˚.02×85˚.12W±0˚.01, h22km±1km, mb5.0/81, MS5.1/200, Error ellipse: s-maj=3.3km s-min=1.7km az=37.9*

NEIC ***12*** *20:11:01.3±0.2, 10˚.65N×85˚.20W, h10km, mb5.4/2, MS5.1/154, Error ellipse: s-maj=5.4km s-min=3.3km az=211.0*

NEIC Felt [IV] at Liberia and Tilaran; [III] at Bagaces and Sabanilla; [II] at Escazu, Fortuna, San Ramon and Santiago. Felt in much of northwestern Costa Rica and in the Valle Central. Also felt at Managua, Nicaragua.

CASC ***

LCY Lacayo 4.08 310 eP Pn 20 12 05.0 +0.6
PACA Pacayal 4.13 310 eP Pn 20 12 06.7 +1.6
SNVI San Vicente 4.62 308 eP Pn 20 12 12.1 +0.3
SNVI eS Sn 20 13 09.4 +4.3
LFRS El Faro 4.80 306 eP Pn 20 12 14.7 +0.5
LFRS eS Sn 20 13 12.4 +2.9
LBRS Las Brisas 4.85 308 eP Pn 20 12 15.8 +0.8
LFU La Fuente 4.91 307 eP Pn 20 12 16.3 +0.5
SNET Serv Nac Est T 4.97 306 AML AML 20 14 37.7
comp=Z,233nm,0.3s
BOQS Boqueron 5.03 306 eP Pn 20 12 18.1 +0.5
BOQS eS Sn 20 13 18.0 +2.5
PNMC Penonome 5.22 116 eP Pn 20 12 20.4 +0.4
ZANG Zanguenga, Cho 5.46 109 eP Pn 20 12 22.9 -0.4
AZU Azuero 5.61 122 eP Pn 20 12 29.5 +4.1
UPD2 Meteti 7.32 107 i P Pn 20 12 50.2 +1.3
CCIG Comitan 8.76 309 ePn Pn 20 13 11.7 +2.9
MOTC Monteria, Cord 9.50 101 eP Pn 20 13 17.6 -1.1
DBBC Dabeiba 9.54 112 eP Pn 20 13 20.9 +1.5
MTDJ Mount Denham 10.39 44 ePn Pn 20 13 34.6 +3.5
MTDJ Mount Denham 10.39 44 eP Pn 20 13 30.6 -0.5
HELC Santa Helena 10.50 115 ePn Pn 20 13 34.2 +1.4
GUYC Guyana, Colomb 11.08 119 eP Pn 20 13 43.1 +2.2
NORC Norcasia 11.37 116 eP Pn 20 13 45.6 +1.1
CMIG Matias Romero 11.38 304 P Pn 20 13 46.8 +2.2
comp=Z,9.8nm,0.3s,baz=130,slow=9.2,SNR=51
POPC Popayan, Colom 11.70 134 eP Pn 20 13 50.9 +1.8
BRRC Barranca, Sant 11.82 107 eP Pn 20 13 53.0 +2.4
CMBC Cumbal 12.16 143 eP Pn 20 13 56.7 +1.0
ROSC El Rosal 12.19 118 P Pn 20 14 00.0 +4.0
comp=Z,0.6nm,0.3s,baz=321,slow=17,SNR=6.8
ROSC El Rosal 12.19 118 eP Pn 20 13 57.5 +1.5
ROSC El Rosal 12.19 118 ePn Pn 20 13 59.5 +3.5
PRAC Prado 12.32 124 ePn Pn 20 13 59.9 +2.4
OTAV Otavalo 12.39 147 ePn Pn 20 14 02.3 +3.5
OTAV Otavalo 12.39 147 eP Pn 20 14 03.7 +5.0
BARC Barichara 12.49 109 eP Pn 20 14 01.6 +1.7
GRMC Gramalote, San 12.50 103 eP Pn 20 13 59.3 -0.7
CBRI Barrientos, No 12.51 103 eP Pn 20 14 01.0 +0.9
PAYG Puerto Ayora 12.51 205 ePn Pn 20 14 04.0 +4.0
PAYG Puerto Ayora 12.51 205 eP Pn 20 14 03.3 +3.2
CHIC Chingaza 12.81 118 eP Pn 20 14 07.0 +2.5
RUSC La Rusia 12.83 111 eP Pn 20 14 07.8 +2.9
RUSC La Rusia 12.83 111 ePn Pn 20 14 07.2 +2.3
GTBY Guantanamo Bay 13.22 45 ePn Pn 20 14 10.7 +1.0
GTBY Guantanamo Bay 13.22 45 eP Pn 20 14 09.8 +0.1
SDV Santo Domingo 14.37 96 P Pn 20 14 23.2 -2.4
comp=Z,2.9nm,0.3s,baz=284,slow=11,SNR=10
SDV S Sn 20 17 03.8 -1.0
comp=Z,30nm,0.3s,baz=6.5,slow=9.9,SNR=6.1
SDV LR LR 20 21 43.4
comp=Z,5μm,18.5s,baz=284,slow=44
SDV Santo Domingo 14.37 96 ePn Pn 20 14 25.0 -0.6
SDV S Sn 20 17 03.8 -1.0
SDV Santo Domingo 14.37 96 eP Pn 20 14 29.0 +3.4
TLIG Tlapa 14.69 299 ePn Pn 20 14 32.3 +2.3
SDDR Presa de Saban 15.62 57 ePn P 20 14 44.9 -1.3
SDDR Presa de Saban 15.62 57 eP Pn 20 14 43.4 +1.2
UNM Universidad Na 16.03 304 P P 20 14 52.7 +1.7
UNM pmax pmax
comp=Z,190nm,0.8s
UNM Universidad Na 16.03 304 ePn P 20 14 52.7 +1.7
GRTK Grand Turk 17.11 50 ePn P 20 15 03.1 +0.4
GRTK Grand Turk 17.11 50 eP P 20 15 02.3 -0.5
DWPF Disney Wildern 17.57 11 ePn P 20 15 08.7 +1.0
MOIG Morelia 17.86 302 eP P 20 15 13.3 +2.0
MPR Mayaguez 18.87 65 eP Pn 20 15 26.4 +3.6
AGP Aguadilla 18.93 64 eP Pn 20 15 23.8 +0.2
ATAH Atahualpa 19.02 159 P Pn 20 15 28.6 +3.6
comp=Z,0.8nm,0.3s,baz=344,slow=9.2,SNR=8.9
ATAH LR LR 20 21 59.0
comp=Z,11μm,20.5s,baz=332,slow=34
646A Port Sulphur 19.21 347 P Pn 20 15 30.2 +3.3
baz=166
645A Chauvin 19.27 345 P Pn 20 15 30.5 +3.0
baz=164
645A S S 20 19 11.6 +7.5
baz=164
CELP Cerrillos 19.32 66 eP Pn 20 15 28.9 +0.6
SJG San Juan 19.72 66 P Pn 20 15 32.9 0.0
comp=Z,2.3nm,0.3s,baz=252,slow=9.7,SNR=17
SJG San Juan 19.72 66 eP P 20 15 32.1 +0.6
SJG San Juan 19.72 66 eP P 20 15 32.1 +0.6
545A Edgard 19.80 346 P Pn 20 15 35.5 +1.6
baz=164
546A Slidell 19.82 348 P Pn 20 15 35.7 +1.6
baz=167
035Z Hargill 19.83 324 P Pn 20 15 34.0 -0.2
baz=140
HUMP Col San Antoni 20.00 66 eP Pn 20 15 36.8 +0.5
CBYP Canovanas 20.03 66 eP Pn 20 15 36.1 -0.7
544A White Castle 20.04 344 P Pn 20 15 38.1 +1.5
baz=163
PCRV Puerto La Cruz 20.12 90 P Pn 20 15 37.9 +0.1
comp=Z,50nm,0.8s,baz=242,slow=4.6,SNR=14
447A Lucedale 20.18 351 P Pn 20 15 40.2 +1.9
baz=170
448A Bay Minette 20.20 353 P Pn 20 15 40.3 +1.7
baz=172
543A St. Martinvill 20.20 343 P Pn 20 15 39.9 +1.2
baz=161
035A Encino 20.21 324 P Pn 20 15 38.1 -0.6
baz=141,SNR=12
446A Poplarville 20.29 349 P Pn 20 15 41.1 +1.4
baz=168
BRAL Brewton 20.36 355 eP Pn 20 15 41.1 +0.7
BRAL LR LR
comp=Z,3μm,22.0s
445A Amite 20.43 347 P Pn 20 15 42.2 +0.9
baz=165
542A Morse 20.45 341 P Pn 20 15 42.4 +0.9
baz=159
738A Farr-Stevens R 20.50 333 P Pn 20 15 41.9 -0.1
baz=149
444A Pine Grove 20.51 346 P Pn 20 15 43.3 +1.1
baz=164
ZAIG Zacatecas 20.51 308 eP P 20 15 41.5 +1.1
KVTX Kingsville 20.56 326 eP Pn 20 15 41.9 -1.0
KVTX LR LR
comp=Z,4μm,19.0s
TIGA Tifton 20.59 4 P Pn 20 15 44.9 +1.8
baz=184,SNR=6.5
TIGA Tifton 20.59 4 eP Pn 20 15 43.8 +0.6
541A Lake Charles 20.60 340 P Pn 20 15 43.6 +0.4
baz=157
034A Hebbronville 20.64 324 P Pn 20 15 42.8 -1.0
baz=140
348A Jackson 20.68 353 P Pn 20 15 44.7 +0.4
baz=172
347A Saraland 20.76 352 P Pn 20 15 45.4 +0.4
baz=171,SNR=10
737A Port Lavaca 20.80 331 P Pn 20 15 44.6 -1.0
baz=147
443A Delano Plantat 20.82 344 P Pn 20 15 45.4 -0.4
baz=162
CDVI St. Croix 20.86 68 eP Pn 20 15 45.7 -0.8
STVI Saint Thomas 20.87 67 eP Pn 20 15 45.5 -1.1
346A Big Creek Wild 20.89 349 P Pn 20 15 46.7 0.0
baz=168
638A Rosharon 20.91 334 P Pn 20 15 45.9 -1.0
baz=151
345A Thompson Farm, 20.92 348 P Pn 20 15 47.0 0.0
baz=166
934A Benavides 20.95 325 P P 20 15 45.7 +0.8
baz=141,SNR=15
442A Mamou 20.96 342 P Pn 20 15 47.2 -0.3
baz=160
540A Vidor 21.02 338 P P 20 15 46.5 +1.0
baz=155
835A Beeville 21.11 327 P P 20 15 47.8 +1.2
baz=143
539A Cross D Ranch, 21.21 336 P P 20 15 49.9 +2.4
baz=153
344A Westbrook Farm 21.21 347 P P 20 15 50.6 +3.0
baz=165,SNR=10.0
441A DeRidder 21.24 340 P P 20 15 50.1 +2.3
baz=158
736A Circle Diamond 21.26 330 P P 20 15 49.7 +1.5
baz=146
343A Vidalia 21.27 344 P P 20 15 50.0 +1.8
baz=162
637A Eagle Lake 21.32 332 P P 20 15 50.2 +1.4
baz=149
248A Dixon Mills 21.34 354 P P 20 15 51.8 +2.9
baz=173,SNR=9.7

834A Tilden 21.38 326 P P 20 15 50.0 +0.6
baz=142,SNR=11
933A Laredo 21.40 323 P P 20 15 49.7 0.0
baz=139
247A Quitman 21.41 352 P P 20 15 51.9 +2.3
baz=171,SNR=16
246A Jackson Lee, B 21.45 351 P P 20 15 51.9 +1.8
baz=169
440A Kirbyville 21.50 339 P P 20 15 51.6 +1.0
baz=156
ABVI Anegada Island 21.55 66 eP P 20 15 54.0 +2.7
342A Flagon Creek P 21.55 343 P P 20 15 53.4 +2.2
baz=161
735A Kenedy 21.56 328 P P 20 15 51.9 +0.6
baz=144
245A Little AP, Sta 21.60 349 P P 20 15 54.5 +2.8
baz=167
538A Harpers Horsep 21.62 335 P P 20 15 54.6 +2.6
baz=152
636A Smothers Creek 21.69 331 P P 20 15 54.2 +1.4
baz=147,SNR=18
341A Kurthwood 21.77 341 P P 20 15 54.8 +1.3
baz=158
244A Avery, Jackson 21.77 347 P P 20 15 56.0 +2.4
baz=165,SNR=7.2
243A Waterproof 21.80 345 P P 20 15 55.6 +1.7
baz=163
439A Center Grove, 21.84 337 P P 20 15 56.0 +1.7
baz=154
537A Green Hill Far 21.86 333 P P 20 15 55.8 +1.3
baz=149
VBMS Vicksburg 21.90 348 P P 20 15 57.1 +2.2
baz=166,SNR=5.1
VBMS Vicksburg 21.90 348 eP P 20 15 57.2 +2.2
734A La Parita Cree 21.94 327 P P 20 15 55.4 -0.1
baz=143
635A Leesville 21.97 329 P P 20 15 55.7 0.0
baz=145
147A Livingston 21.97 353 P P 20 15 58.7 +3.0
baz=172,SNR=40
833A Chaparral WMA, 22.00 324 P P 20 15 55.9 -0.2
baz=140
146A Union 22.05 351 P P 20 15 58.8 +2.2
baz=170,SNR=5.8
438A Sam Houston St 22.08 336 P P 20 15 58.3 +1.4
baz=152
340A Bronson 22.08 340 P P 20 15 58.8 +1.8
baz=157
242A Grayson 22.15 344 P P 20 15 59.0 +1.4
baz=162
145A Houston Renfro 22.16 349 P P 20 15 59.7 +2.0
baz=168,SNR=9.4
536A Bastrop 22.19 332 P P 20 15 58.6 +0.5
baz=148,SNR=6.7
LRAL Lakeview Retre 22.21 356 eP P 20 16 02.3 +4.0
SABA Saba 22.23 70 eP P 20 16 00.9 +2.2
339A Huntington 22.24 338 P P 20 16 00.6 +1.9
baz=155
733A Divot King Ran 22.25 325 P P 20 15 58.8 0.0
baz=141
634A China Grove, S 22.26 328 P P 20 15 58.9 0.0
baz=144
144A Alexander Plac 22.28 348 P P 20 16 01.3 +2.2
baz=166
832A Faith Ranch, C 22.31 323 P P 20 15 58.6 -0.8
baz=139,SNR=20
241A Mo Tay, Goldon 22.33 342 P P 20 16 01.2 +1.6
baz=160
535A Dale 22.40 331 P P 20 16 00.0 -0.3
baz=146
437A Phantom Ranch, 22.42 334 P P 20 16 01.6 +1.0
baz=151
SEUS St. Eustatius 22.43 70 eP P 20 16 02.1 +1.3
RGRS Roger Stewart 22.47 11 eP P 20 16 05.1 +4.1
Z47A Carrollton 22.47 353 P P 20 16 03.9 +2.8
baz=172,SNR=18
SMRT St. Maarten 22.49 69 eP P 20 16 01.8 +0.3
338A Crockett 22.55 337 P P 20 16 03.4 +1.5
baz=153,SNR=7.8
142A Monroe 22.56 345 P P 20 16 03.1 +1.1
baz=162
GOGA Godfrey 22.56 4 eP P 20 16 04.8 +2.7
GOGA MLR MLR
comp=Z,5μm,20.0s
GOGA Godfrey 22.56 4 eP P 20 16 04.8 +2.7
GOGA LR LR
comp=Z,5μm,20.0s
CSU Charleston Sou 22.57 11 eP P 20 16 04.0 +1.9
143A Socs Landing, 22.57 346 P P 20 16 03.2 +1.1
baz=164
Z46A Louisville 22.57 352 P P 20 16 05.0 +2.8
baz=170,SNR=7.0
Z48A Northport 22.59 355 P P 20 16 04.8 +2.4
baz=174,SNR=35
240A Hunter Patters 22.61 341 P P 20 16 03.8 +1.2
baz=158
436A Wall Ranch, Ga 22.66 333 P P 20 16 03.6 +0.5
baz=149
NHSC New Hope 22.66 11 eP P 20 16 06.1 +3.0
NHSC LR LR
comp=Z,6μm,21.0s
NATX Nacogdoches 22.67 338 P P 20 16 03.7 +0.5
baz=155
NATX Nacogdoches 22.67 338 eP P 20 16 05.2 +2.1
NATX LR LR
comp=Z,2μm,21.0s
337A Centerville 22.74 335 P P 20 16 05.2 +1.2
baz=152
633A Saathoff Ranch 22.76 327 P P 20 16 03.5 -0.7
baz=142
239A Gary 22.83 339 P P 20 16 05.3 +0.4
baz=156
534A Blanco 22.84 329 P P 20 16 04.4 -0.8
baz=144,SNR=13
Z45A Winona 22.87 350 P P 20 16 07.5 +2.2
baz=168,SNR=18
141A Papa Simpson, 22.87 343 P P 20 16 06.0 +0.7
baz=160
Z44A Pea Ridge, Bel 22.91 348 P P 20 16 07.8 +2.1
baz=167,SNR=21
GRGR Grenville 23.00 84 eP P 20 16 09.0 +2.1
GRGR LR LR
comp=Z,2μm,20.0s
Z43A Armstrong Fami 23.02 347 P P 20 16 08.0 +1.2
baz=165,SNR=11
435B Jarrell 23.03 332 P P 20 16 06.7 -0.3
baz=147
238A Jacksonville 23.05 338 P P 20 16 08.2 +1.0
baz=154,SNR=7.6
140A Cam and Jess, 23.11 342 P P 20 16 08.3 +0.6
baz=159
Y47A UCPARC, Winfie 23.14 354 P P 20 16 10.0 +1.9
baz=173,SNR=36
533A Cerrville 23.17 328 P P 20 16 07.9 -0.6
baz=143
336A Riesel 23.21 334 P P 20 16 09.2 +0.4
baz=150,SNR=12
Y46A Houston 23.24 352 P P 20 16 11.2 +2.1
baz=171,SNR=17
Z42A Norrel Spur, H 23.25 345 P P 20 16 10.0 +0.8
baz=163
GDHS Morne Mazeau, 23.31 74 eP P 20 16 11.2 +1.2
237A Washetta, Mont 23.32 336 P P 20 16 10.6 +0.7
baz=153
Y45A Yeager Farm, C 23.32 351 P P 20 16 12.1 +2.1
baz=169,SNR=17
335A Moody 23.38 333 P P 20 16 10.7 +0.2
baz=148,SNR=10
434A Burnet 23.38 330 P P 20 16 10.0 -0.6
baz=146
SVB Belmont 23.44 82 eP P 20 16 12.9 +1.6
Z41A Richland Creek 23.46 344 P P 20 16 12.0 +0.8
baz=161,SNR=15
Y44A Strider, Charl 23.53 349 P P 20 16 13.3 +1.3
baz=168,SNR=11
ANWB Willy Bob 23.58 71 eP P 20 16 12.8 +0.1
ANWB LR LR
comp=Z,2μm,20.0s
Y43A Makayla and Ka 23.63 348 P P 20 16 14.5 +1.6
baz=166
Z40A Long Farm, Mag 23.63 342 P P 20 16 13.5 +0.5
baz=160
138A Matatall Enter 23.63 339 P P 20 16 14.4 +1.4
baz=155,SNR=16
JSC Jenkinsville 23.64 8 eP P 20 16 15.6 +2.5
JSC Jenkinsville 23.64 8 eP P 20 16 15.6 +2.5
FDF Fort de France 23.67 78 eP P 20 16 15.1 +1.5

FDF MLR MLR
comp=Z,2μm,19.0s
FDF Fort de France 23.67 78 eP P 20 16 15.1 +1.5
FDF LR LR
comp=Z,2μm,19.0s
433A Art 23.74 329 P P 20 16 13.8 -0.3
baz=144,SNR=12
Y42A Garnett, Star 23.74 346 P P 20 16 15.2 +1.1
baz=164,SNR=7.3
334A Lometa 23.80 331 P P 20 16 14.4 -0.2
baz=147
CCAR Cane Creek 23.82 346 eP P 20 16 15.9 +1.1
137A Heron Place, G 23.82 337 P P 20 16 15.9 +1.0
baz=154,SNR=16
X45A UM Field Stati 23.85 351 P P 20 16 15.4 +0.3
baz=170,SNR=24
Z39A Irene McRaven, 23.86 341 P P 20 16 15.8 +0.7
baz=158
JCT Junction City 23.89 327 P P 20 16 15.2 -0.5
baz=142
JCT Junction City 23.89 327 eP P 20 16 15.1 -0.5
JCT MLR MLR
comp=Z,1μm,20.0s
JCT Junction City 23.89 327 eP P 20 16 15.1 -0.5
JCT LR LR
comp=Z,1μm,20.0s
OXF Oxford 23.94 351 eP P 20 16 16.5 +0.6
OXF Oxford 23.94 351 eP P 20 16 16.5 +0.6
WLAR White Oak Lake 23.95 343 eP P 20 16 17.0 +1.1
WHTX Lake Whitney, 23.99 333 P P 20 16 17.0 +0.5
baz=149,SNR=17
WHTX Lake Whitney, 23.99 333 eP P 20 16 17.8 +1.3
Y41A Eaglette Beard 23.99 344 P P 20 16 17.3 +0.9
baz=162,SNR=7.2
136A Ennis 24.02 336 P P 20 16 17.0 +0.3
baz=152,SNR=13
X44A Crenshaw 24.05 350 P P 20 16 17.6 +0.7
baz=168
NNA Nana 24.07 160 LR LR 20 25 00.3
comp=Z,3μm,19.1s,baz=320,slow=34
NNA Nana 24.07 160 P P 20 16 20.4 +3.1
NNA pmax pmax
comp=Z,157nm,2.0s
NNA Nana 24.07 160 PFAKE 20 16 30.0 +13
NNA LR LR
comp=Z,2μm,20.0s
Z38A Mt. Pleasant 24.13 339 P P 20 16 18.1 +0.4
baz=156
333A Richland Sprin 24.15 330 P P 20 16 17.2 -0.8
baz=145,SNR=15
X43A Marvell 24.20 348 P P 20 16 18.5 +0.1
baz=166
Y40A Okolona 24.30 343 P P 20 16 19.2 0.0
baz=160,SNR=11
234A Clairette 24.31 332 P P 20 16 18.8 -0.7
baz=148
Z37A Pogue Cattle C 24.31 338 P P 20 16 19.7 +0.3
baz=154,SNR=5.8
SWET Sewanee 24.32 358 eP P 20 16 21.6 +2.0
135A Vickery Place, 24.46 334 P P 20 16 20.4 -0.4
baz=150
Y39A Lockesburg 24.47 342 P P 20 16 20.9 +0.1
baz=158,SNR=9.1
KMSC Kings Mountain 24.48 7 P P 20 16 22.2 +1.3
baz=189,SNR=9.0
KMSC Kings Mountain 24.48 7 eP P 20 16 24.0 +3.1
W45A Hickory Valley 24.54 352 P P 20 16 22.1 +0.6
baz=170,SNR=31
X41A Kaden, Bauxite 24.55 345 P P 20 16 21.9 +0.4
baz=162
CPCT Cooper Cave 24.55 1 eP P 20 16 23.8 +2.2
W44A Shelby Farms P 24.62 351 P P 20 16 22.5 +0.4
baz=169
MET Memphis--Engin 24.62 350 eP P 20 16 24.2 +2.0
X40A Basin Creek Fa 24.62 345 P P 20 16 22.2 0.0
baz=162,SNR=18
Y38A Idabel 24.66 341 P P 20 16 22.9 +0.4
baz=157
233A Rising Star 24.68 331 P P 20 16 22.6 -0.2
baz=146
Z36A Blue Ridge 24.68 337 P P 20 16 22.7 -0.1
baz=153
134A White-Moore Ra 24.76 333 P P 20 16 23.4 -0.1
baz=148,SNR=13
UALR University of 24.77 346 eP P 20 16 24.2 +0.6
TKL Tuckaleechee C 24.78 3 P P 20 16 26.4 +2.7
comp=Z,18nm,0.8s,baz=186,slow=12,SNR=5.2
TKL LR LR 20 25 42.0
comp=Z,5μm,21.5s,baz=187,slow=35
TKL Tuckaleechee C 24.78 3 eP P 20 16 27.1 +3.5
TKL Tuckaleechee C 24.78 3 eP P 20 16 27.1 +3.5
MIAR Mount Ida 24.88 343 P P 20 16 24.6 0.0
baz=160,SNR=54
MIAR Mount Ida 24.88 343 eP P 20 16 24.8 +0.2
MIAR MLR MLR
comp=Z,3μm,20.0s
MIAR Mount Ida 24.88 343 eP P 20 16 24.8 +0.2
MIAR LR LR
comp=Z,3μm,20.0s
X39A Fountain Ranch 25.01 342 P P 20 16 26.1 +0.4
baz=159,SNR=30
Y37A Hugo 25.01 339 P P 20 16 26.0 +0.2
baz=155
Z35A Perchaven, San 25.06 335 P P 20 16 26.0 -0.2
baz=151,SNR=8.1
BBGH Gun Hill 25.08 82 PFAKE 20 16 40.0 +13
BBGH LR LR
comp=Z,3μm,20.0s
V45A Humboldt 25.08 353 P P 20 16 26.3 -0.1
baz=171
W41B Gary Mavity, V 25.13 346 P P 20 16 27.3 +0.6
baz=164,SNR=82
HBAR Harrisburg 25.16 349 eP P 20 16 28.4 +1.3
133A Hamilton Ranch 25.17 332 P P 20 16 27.5 +0.2
baz=147,SNR=16
HPIG 25.17 312 eP P 20 16 28.2 +0.6
Y36A Durant 25.18 338 P P 20 16 27.6 +0.4
baz=154
CNNC Cliffs of the 25.20 14 eP P 20 16 30.9 +3.5
CNNC LR LR
comp=Z,6μm,22.0s
X301 Greenbrier Sit 25.23 346 eP P 20 16 27.8 +0.1
WHAR Wooly Hollow 25.25 346 eP P 20 16 28.1 +0.3
X201 Greenbrier Sit 25.27 346 eP P 20 16 28.3 +0.2
HALT Halls 25.30 352 eP P 20 16 28.4 +0.1
V44A Blytheville 25.30 351 P P 20 16 28.8 +0.4
baz=169
LTX Lajitas 25.32 319 eP P 20 16 30.2 +1.4
LTX Lajitas 25.32 319 eP P 20 16 30.1 +1.4
LTX e 20 28 14.8
TXAR Lajitas Array 25.32 319 P P 20 16 30.1 +1.4
comp=Z,70nm,0.7s,baz=139,slow=9.8,SNR=107
TXAR LR LR 20 28 14.8
comp=Z,2μm,20.7s,baz=0.0,slow=41
TX31 Lajitas Ar. Si 25.32 319 eP P 20 16 28.6 -0.1
WVT Waverly 25.35 355 eP P 20 16 29.5 +0.8
WVT Waverly 25.35 355 eP P 20 16 29.5 +0.8
W40A Ferguson Farm, 25.35 345 P P 20 16 29.8 +1.0
baz=162,SNR=24
Z34A Collier Ranch, 25.37 334 P P 20 16 28.9 -0.1
baz=150,SNR=6.4
X38A Whitesboro 25.38 341 P P 20 16 29.4 +0.4
baz=157,SNR=55
GNAR Gosnell 25.46 351 eP P 20 16 31.0 +1.3
Y35A Marietta 25.48 336 P P 20 16 30.4 +0.5
baz=152,SNR=27
X37A Clayton 25.48 340 P P 20 16 30.4 +0.4
baz=156,SNR=27
ABTX Abilene, Hawle 25.53 331 P P 20 16 30.9 +0.3
baz=145,SNR=8.4
ABTX Abilene, Hawle 25.53 331 eP P 20 16 31.8 +1.3
V42A Cord 25.55 348 P P 20 16 30.5 -0.1
baz=166,SNR=50
W39A Magazine 25.55 343 P P 20 16 30.8 +0.2
baz=160,SNR=60
GLAT Glass 25.65 352 eP P 20 16 32.5 +1.0
W38A Poteau 25.65 342 P P 20 16 32.1 +0.6
baz=158,SNR=13
UTMT University of 25.66 353 eP P 20 16 33.1 +1.5
Z33A Whitaker Ranch 25.67 333 P P 20 16 31.9 +0.1
baz=148,SNR=24
TZTN Tazewell 25.68 3 eP P 20 16 33.8 +2.0
V41A Mountainview 25.70 347 P P 20 16 32.4 +0.5
baz=164,SNR=76
X36A Centrahoma 25.81 338 P P 20 16 33.0 +0.1
baz=154,SNR=20

Y34A	Reagan Ranch,	25.81	335	P	P	20 16 32.6	-0.4
	baz=151,SNR=16						
V40A	Witts Springs	25.87	345	P	P	20 16 33.7	+0.1
	baz=163,SNR=12						
X35A	Drake	25.89	337	P	P	20 16 33.3	-0.4
	baz=153,SNR=6.1						
W37B	Quinton	26.00	340	P	P	20 16 34.8	+0.1
	baz=156,SNR=22						
U42A	Revenden	26.05	349	P	P	20 16 35.5	+0.4
	baz=166,SNR=59						
PARMO	Parma	26.10	351	*e*P	P	20 16 36.7	+1.1
V39A	Pettigrew	26.12	344	P	P	20 16 36.1	+0.3
	baz=161,SNR=46						
U41A	Viola	26.18	347	P	P	20 16 36.0	-0.4
	baz=165,SNR=20						
Y33A	Hilltop Ranch,	26.22	334	P	P	20 16 36.3	-0.5
	baz=149						
W36A	Wetumka	26.27	339	P	P	20 16 36.6	-0.5
	baz=155,SNR=6.7						
PBMO	Poplar Bluff	26.32	350	*e*P	P	20 16 38.1	+0.6
V38A	Canehill	26.35	343	P	P	20 16 37.5	-0.4
	baz=159,SNR=8.8						
X34A	Smith Ranch, M	26.40	336	P	P	20 16 38.6	+0.3
	baz=151,SNR=7.6						
U40A	Yellville	26.40	346	P	P	20 16 38.7	+0.4
	baz=163,SNR=34						
W35A	Tecumseh	26.52	338	P	P	20 16 38.7	-0.7
	baz=154,SNR=9.2						
U39A	Green Forest	26.59	345	P	P	20 16 39.9	-0.1
	baz=162,SNR=21						
V37A	Hulbert	26.59	342	P	P	20 16 39.5	-0.5
	baz=158,SNR=18						
HHAR	Hobbs	26.61	344	*e*P	P	20 16 40.2	-0.1
X33A	Lawton	26.62	335	P	P	20 16 39.9	-0.5
	baz=150						
BLA	Blacksburg	26.64	8	*e*P	P	20 16 43.2	+2.7
BLA				MLR	MLR		
	comp=Z,8µm,19.0s						
BLA	Blacksburg	26.64	8	*e*P	P	20 16 43.2	+2.7
BLA				*e*ScP	ScP	20 23 34.5	-9.3
BLA				LR	LR		
	comp=Z,8µm,19.0s						
VWCC	Virginia Weste	26.74	9	*e*P	P	20 16 43.8	+2.5
V36A	Jenks	26.76	340	P	P	20 16 40.7	-0.9
	baz=156,SNR=9.1						
T41A	Mountain View	26.82	348	P	P	20 16 42.1	0.0
	baz=166,SNR=61						
TUL1	Leonard	26.82	340	P	P	20 16 41.5	-0.6
	baz=156,SNR=11						
TUL1	Leonard	26.82	340	*e*P	P	20 16 41.5	-0.6
X32A	Elmer	26.86	333	P	P	20 16 41.8	-0.7
	baz=148,SNR=13						
U38A	Gravette	26.88	343	P	P	20 16 42.2	-0.5
	baz=160,SNR=16						
WMOK	Wichita Mounta	26.91	334	P	P	20 16 41.9	-1.1
	baz=149,SNR=27						
WMOK	Wichita Mounta	26.91	334	*e*P	P	20 16 42.9	-0.1
WMOK				MLR	MLR		
	comp=Z,2µm,22.0s						
WMOK	Wichita Mounta	26.91	334	*e*P	P	20 16 42.9	-0.1
WMOK				LR	LR		
	comp=Z,2µm,22.0s						
SLBS	Sierra La Lagu	26.92	302	*e*P	P	20 16 42.9	-0.4
W34A	Bridge Creek,	26.93	337	P	P	20 16 42.4	-0.7
	baz=152						
W34A	Bridge Creek,	26.93	337	*e*P	P	20 16 42.8	-0.3
S45A	Carrier Mills	26.95	354	P	P	20 16 43.7	+0.4
	baz=173						
S43A	Fulton Ridge,	27.04	351	P	P	20 16 44.6	+0.5
	baz=169						
S44A	Carbondale	27.05	353	P	P	20 16 44.9	+0.8
	baz=171,SNR=15						
V35A	Meyer Ranch, C	27.05	339	P	P	20 16 42.8	-1.4
	baz=154						
SIUC	Southern Illin	27.06	353	*e*P	P	20 16 45.2	+1.0
U37A	Salina	27.07	342	P	P	20 16 43.9	-0.4
	baz=158,SNR=10						
T40A	Mansfield	27.09	347	P	P	20 16 44.5	0.0
	baz=164,SNR=18						
W33A	Caddo, Fort Co	27.14	335	P	P	20 16 44.3	-0.7
	baz=150						
USIN	University of	27.16	356	*e*P	P	20 16 46.6	+1.5
T39A	Clever	27.17	345	P	P	20 16 44.8	-0.4
	baz=162,SNR=11						
U36A	Oologah	27.25	341	P	P	20 16 45.2	-0.8
	baz=157						
WCI	Wyandotte Cave	27.34	358	*e*P	P	20 16 48.3	+1.5
WCI	Wyandotte Cave	27.34	358	*e*P	P	20 16 48.3	+1.5
S41A	Jillco Farms,	27.34	348	P	P	20 16 46.4	-0.4
	baz=166,SNR=32						
V34A	Guthrie	27.36	338	P	P	20 16 45.7	-1.3
	baz=153						
V34A	Guthrie	27.36	338	*e*P	P	20 16 46.4	-0.6
T38A	Diamond	27.42	344	P	P	20 16 46.8	-0.6
	baz=160,SNR=12						
W32A	Sentinel	27.44	334	P	P	20 16 46.8	-0.9
	baz=149,SNR=10.0						
PTGA	Pitinga	27.48	113	P	P	20 16 49.9	+1.6
	comp=Z,7.4nm,0.8s,baz=302,slow=8.5,SNR=17						
PTGA				LR	LR	20 28 32.0	
	comp=Z,3µm,18.9s,baz=294,slow=38						
PTGA	Pitinga	27.48	113	*e*P	P	20 16 49.4	+1.1
PTGA				*e*		20 28 32.0	
PTGA				LR	LR		
	comp=Z,33µm,21.0s						
S40A	Lebanon	27.51	347	P	P	20 16 48.4	+0.1
	baz=164,SNR=29						
CLNB	Carlsbad	27.52	324	*e*P	P	20 16 49.3	+0.8
URVA	University of	27.52	13	*e*P	P	20 16 48.5	+0.2
U35A	Pawnee	27.56	339	P	P	20 16 47.8	-0.9
	baz=155						
R44A	Waltonville	27.57	353	P	P	20 16 49.7	+0.9
	baz=172,SNR=22						
V33A	Lossen Ranch,	27.65	336	P	P	20 16 48.7	-0.8
	baz=151						
T37A	Cheneyville 18	27.67	343	P	P	20 16 49.7	0.0
	baz=159,SNR=47						
S39A	Bolivar	27.79	346	P	P	20 16 50.4	-0.4
	baz=163,SNR=27						
V32A	Arapaho	27.86	335	P	P	20 16 50.5	-1.0
	baz=150,SNR=6.5						
S38A	Stockton	27.88	345	P	P	20 16 51.2	-0.4
	baz=161						
U34A	Anderson Ranch	27.90	338	P	P	20 16 50.4	-1.4
	baz=153						
U34A	Anderson Ranch	27.90	338	*e*P	P	20 16 51.5	-0.3
T36A	Boggs Farm, Ca	27.91	341	P	P	20 16 51.2	-0.6
	baz=157,SNR=9.4						
OLIL	Olney	27.95	355	*e*P	P	20 16 53.1	+0.8
T35A	Sooner Cattle	27.98	340	P	P	20 16 51.6	-0.9
	baz=156,SNR=16						
MNTX	Cornudas Mount	28.02	321	P	P	20 16 51.8	-1.1
	baz=134,SNR=23						
MNTX	Cornudas Mount	28.02	321	*e*P	P	20 16 52.7	-0.2
MNTX				LR	LR		
	comp=Z,1µm,20.0s						
U33A	Lingo Farm, Me	28.12	337	P	P	20 16 51.7	-2.1
	baz=152						
R40A	Maddies Statio	28.13	348	P	P	20 16 53.7	-0.1
	baz=165,SNR=12						
CBN	Corbin Frederi	28.16	13	*e*P	P	20 16 56.1	+2.1
CBN				LR	LR		
	comp=Z,4µm,20.0s						
MSTX	Muleshoe	28.18	328	P	P	20 16 53.4	-1.1
	baz=141						
MSTX	Muleshoe	28.18	328	*e*P	P	20 16 54.4	-0.1
Q44A	Meyer Farm, Va	28.21	354	P	P	20 16 55.0	+0.5
	baz=172,SNR=17						
S37A	Fort Scott	28.24	344	P	P	20 16 54.4	-0.4
	baz=160,SNR=34						
BLO	Bloomington	28.29	358	*e*P	P	20 16 56.8	+1.6
BLO	Bloomington	28.29	358	*e*P	P	20 16 56.8	+1.6
T34A	McClaskey Farm	28.30	339	P	P	20 16 55.0	-0.4
	baz=154						
Q43A	New Douglas	28.33	352	P	P	20 16 56.1	+0.5
	baz=171,SNR=11						
AMTX	Amarillo	28.35	330	P	P	20 16 54.7	-1.3
	baz=144						
AMTX	Amarillo	28.35	330	*e*P	P	20 16 55.8	-0.2
R38A	Fenwick Farm,	28.40	345	P	P	20 16 55.7	-0.5
	baz=162,SNR=11						
U32A	Winter Ranch,	28.42	336	P	P	20 16 55.6	-0.9
	baz=150						
Q42A	Golden Eagle	28.42	351	P	P	20 16 56.8	+0.4
	baz=169,SNR=5.2						
S36A	Lake Cedric, C	28.43	342	P	P	20 16 56.5	0.0
	baz=158,SNR=12						
BBSR	BB Station	28.54	38	*e*P	P	20 17 01.3	+3.7
BBSR				LR	LR		
	comp=Z,2µm,20.0s						
S35A	Otter Creek Ra	28.61	341	P	P	20 16 57.6	-0.5
	baz=157,SNR=23						
T33A	Patterson Ranc	28.74	338	P	P	20 16 58.2	-1.1
	baz=152						
R37A	Teagarden Farm	28.76	344	P	P	20 16 59.0	-0.4
	baz=160,SNR=9.5						
Q40A	Laux Farm, Aux	28.77	349	P	P	20 16 59.0	-0.5
	baz=166,SNR=9.7						
S34A	Willow Spring	28.89	340	P	P	20 17 00.1	-0.6
	baz=155						
R36A	Gordon, Harris	28.96	343	P	P	20 17 00.1	-1.1
	baz=159,SNR=13						
Q39A	Willow Grove F	29.00	347	P	P	20 17 01.3	-0.2
	baz=164,SNR=11						
P42A	Winchester	29.05	352	P	P	20 17 02.3	+0.3
	baz=170,SNR=8.9						
Q38A	Cooks Store, C	29.07	346	P	P	20 17 01.8	-0.4
	baz=163,SNR=21						
T32A	Huddler Ranch,	29.08	337	P	P	20 17 01.4	-1.0
	baz=151						
S33A	Kaszmaul Farm,	29.10	339	P	P	20 17 01.6	-1.0
	baz=153						
MCWV	Mont Chateau	29.12	8	*e*P	P	20 17 05.6	+3.0
R35A	Emporia Munici	29.16	342	P	P	20 17 02.1	-0.9
	baz=157						
Q37A	Longview Farm,	29.19	345	P	P	20 17 02.5	-0.8
	baz=161						
P41A	Barry, Barry	29.25	351	P	P	20 17 04.0	+0.3
	baz=168,SNR=11						
P40A	Paris	29.28	349	P	P	20 17 03.8	-0.2
	baz=166,SNR=28						
SAML	Samuel	29.32	131	*e*P	P	20 17 03.8	-0.8
SAML				LR	LR		
	comp=Z,3µm,19.0s						
ACSO	Alum Creek Sta	29.38	3	*e*P	P	20 17 07.1	+2.2
ACSO				LR	LR		
	comp=Z,5µm,20.0s						
P39B	Salisbury	29.38	348	P	P	20 17 04.4	-0.5
	baz=165						
SDMD	Soldier's Deli	29.43	13	*e*P	P	20 17 08.6	+3.3
R34A	Isabella, Hill	29.48	340	P	P	20 17 05.4	-0.4
	baz=155,SNR=19						
SFIN	Lafayette	29.52	357	P	P	20 17 06.4	+0.3
	baz=176,SNR=40						
SFIN	Lafayette	29.52	357	*e*P	P	20 17 06.3	+0.2
Q36A	Arnold C. Orve	29.54	343	P	P	20 17 05.6	-0.8
	baz=159						
S32A	Newby Ranch, P	29.54	337	P	P	20 17 04.8	-1.6
	baz=152						
Q35A	Mercer Eighty,	29.61	343	P	P	20 17 06.5	-0.5
	baz=158,SNR=9.5						
O42A	Bath	29.62	352	P	P	20 17 06.4	-0.6
	baz=170						
O41A	Passleys Farm,	29.65	351	P	P	20 17 06.7	-0.6
	baz=169,SNR=12						
P38A	Dawn	29.68	347	P	P	20 17 07.6	0.0
	baz=163,SNR=24						
O40A	La Belle	29.82	350	P	P	20 17 08.6	-0.2
	baz=167,SNR=12						
P37A	Lathrop	29.84	346	P	P	20 17 08.3	-0.6
	baz=162						
HDIL	Hopedale	29.88	354	P	P	20 17 09.7	+0.4
	baz=172,SNR=21						
HDIL	Hopedale	29.88	354	*e*P	P	20 17 10.1	+0.8
HDIL				LR	LR		
	comp=Z,2µm,20.0s						
O56A	Blue Knob Stat	29.92	10	P	P	20 17 12.4	+2.6
	baz=193,SNR=12						
Q34A	Chapman	29.94	341	P	P	20 17 09.1	-0.8
	baz=156						
KSU1	Kansas State U	30.00	342	P	P	20 17 09.9	-0.5
	baz=157						
KSU1	Kansas State U	30.00	342	*e*P	P	20 17 10.5	0.0
KSU1				LR	LR		
	comp=Z,2µm,21.0s						
O39A	Kirksville	30.08	349	P	P	20 17 11.1	0.0
	baz=165,SNR=8.2						
121A	Cookes Peak, D	30.09	319	P	P	20 17 12.2	+0.8
	baz=131						
P36A	Good Intent, A	30.09	344	P	P	20 17 10.8	-0.4
	baz=160,SNR=12						
R32A	Long Quarter,	30.09	338	P	P	20 17 11.2	-0.1
	baz=153						
MVL	Millersville	30.10	13	*e*P	P	20 17 13.4	+2.1
O38A	Galt	30.14	347	P	P	20 17 11.4	-0.2
	baz=164						
HSIG		30.21	311	*e*P	P	20 17 14.4	+2.0
P35A	Duane Minner,	30.23	343	P	P	20 17 12.0	-0.4
	baz=158,SNR=11						
PSUB	Penn St. - Bra	30.25	15	*e*P	P	20 17 15.0	+2.4
Q33A	Connelly Farm,	30.30	340	P	P	20 17 12.3	-0.8
	baz=155,SNR=26						
O37A	Wolven Farm, M	30.34	346	P	P	20 17 13.4	0.0
	baz=162						
SRIG	Santa Rosalia	30.37	307	*e*P	P	20 17 14.6	+0.8
N54A	Moraine State	30.38	8	P	P	20 17 13.8	0.0
	baz=190						
SSPA	Standing Stone	30.40	11	*e*P	P	20 17 16.2	+2.3
BNM	Barren Site	30.47	323	*e*P	P	20 17 15.6	+0.6
P34A	Walnut Farm, R	30.48	342	P	P	20 17 14.6	-0.1
	baz=157						
O36A	Bolckow	30.50	345	P	P	20 17 14.6	-0.3
	baz=161						
Q32A	Meitler Ranch,	30.55	339	P	P	20 17 14.8	-0.5
	baz=154						
LPM	Los Pinos Moun	30.59	323	*e*P	P	20 17 16.8	+0.9
Y22D	IRIS PASSCAL I	30.59	323	P	P	20 17 16.0	+0.1
	baz=134						
Y22D	IRIS PASSCAL I	30.59	323	*e*P	P	20 17 17.6	+1.7
P33A	Williams Farm,	30.65	341	P	P	20 17 16.2	-0.1
	baz=155						
N39A	Derby Farms, D	30.67	349	P	P	20 17 16.7	+0.4
	baz=166,SNR=42						
LENM	Lemitar	30.69	323	*e*P	P	20 17 16.8	0.0
N38A	Joes South For	30.73	348	P	P	20 17 16.9	0.0
	baz=164						
CBKS	Cedar Bluff	30.82	337	P	P	20 17 17.1	-0.6
	baz=151						
CBKS	Cedar Bluff	30.82	337	*e*P	P	20 17 17.5	-0.2
CBKS				MLR	MLR		
	comp=Z,4µm,22.0s						
CBKS	Cedar Bluff	30.82	337	*e*P	P	20 17 17.5	-0.2
CBKS				LR	LR		
	comp=Z,4µm,22.0s						
O35A	Humboldt	30.88	344	P	P	20 17 17.8	-0.4
	baz=159						
LUPA	Lehigh Univers	30.91	14	*e*P	P	20 17 21.7	+3.3
N37A	Lee Faris, Mou	30.91	346	P	P	20 17 18.5	0.0
	baz=163						
ANMO	Albuquerque	30.93	324	P	P	20 17 19.2	+0.2
	baz=136						
ANMO	Albuquerque	30.93	324	*d i*P	P	20 17 20.4	+1.4
ANMO				pmax	pmax		
	comp=Z,13nm,1.2s						
ANMO	Albuquerque	30.93	324	*e*P	P	20 17 18.6	-0.4
ANMO				LR	LR		
	comp=Z,2µm,21.0s						
LAZ	Ladron	30.95	323	*e*P	P	20 17 20.6	+1.4
M54A	Oil Creek Stat	30.96	8	P	P	20 17 20.4	+1.5
	baz=190,SNR=6.7						
O34A	Beatrice	31.03	343	P	P	20 17 18.8	-0.7
	baz=158,SNR=6.0						
ALLY	Alegheny Colle	31.04	7	*e*P	P	20 17 21.2	+1.6
N59A	State Game Lan	31.11	14	P	P	20 17 22.2	+2.0
	baz=198,SNR=33						
P32A	Huiting Farm,	31.12	340	P	P	20 17 19.9	-0.5
	baz=154,SNR=9.2						
BRNJ	Basking Ridge	31.19	16	*e*P	P	20 17 23.2	+2.4
M39A	Webster	31.20	350	P	P	20 17 20.8	-0.1
	baz=167,SNR=32						
O33A	Hebron	31.20	341	P	P	20 17 21.0	-0.1
	baz=156						
M38A	Pleasantville	31.33	348	P	P	20 17 21.6	-0.5
	baz=165,SNR=13						
N35A	Tabor	31.36	345	P	P	20 17 22.4	0.0
	baz=160						
AAM	Ann Arbor	31.41	2	*e*P	P	20 17 23.9	+1.1
AAM				MLR	MLR		
	comp=Z,5µm,20.0s						
AAM	Ann Arbor	31.41	2	*e*P	P	20 17 23.9	+1.1
AAM				LR	LR		
	comp=Z,5µm,20.0s						
CPNY	Central Park	31.45	16	*e*P	P	20 17 25.0	+1.8
T25A	Trinidad	31.48	330	P	P	20 17 23.8	0.0
	baz=142						
T25A	Trinidad	31.48	330	*e*P	P	20 17 24.4	+0.6
M37A	Trindle Farm,	31.50	347	P	P	20 17 23.5	-0.1
	baz=163						
L41A	Preston	31.52	352	P	P	20 17 23.4	-0.4
	baz=170,SNR=67						
ERPA	Erie	31.52	7	*e*P	P	20 17 25.3	+1.5
ODNJ	Ogdensburg	31.55	15	*e*P	P	20 17 26.7	+2.6
N34A	Lincoln	31.58	343	P	P	20 17 24.2	-0.2
	baz=158						
O32A	Brockman Farm,	31.59	341	P	P	20 17 24.0	-0.5
	baz=155						
L40A	Anamosa	31.61	351	P	P	20 17 24.5	-0.1
	baz=169,SNR=48						
PAL	Palisades	31.67	16	*e*P	P	20 17 27.4	+2.3
PAL	Palisades	31.67	16	*e*P	P	20 17 27.4	+2.3
LPAZ	La Paz	31.71	148	P	P	20 17 28.6	+2.1
	comp=Z,5.0nm,0.9s,baz=333,slow=8.7,SNR=14						
LPAZ				LR	LR	20 32 05.5	
	comp=Z,2µm,18.3s,baz=312,slow=40						
LPAZ	La Paz	31.71	148	*e*P	P	20 17 28.2	+1.8
LPAZ	La Paz	31.71	148	*e*P	P	20 17 28.2	+1.8
LPAZ				*e*		20 32 05.5	
M36A	Felix, Anita	31.71	346	P	P	20 17 24.8	-0.8
	baz=162						
KSPA	Keystone Colle	31.72	13	*e*P	P	20 17 29.1	+3.5
L39A	Vinton	31.79	350	P	P	20 17 26.1	-0.1
	baz=167,SNR=28						
SCIA	State Center	31.80	348	*e*P	P	20 17 26.3	0.0
SCIA				LR	LR		
	comp=Z,2µm,21.0s						
O31A	Woolen Ranch,	31.85	339	P	P	20 17 26.6	-0.1
	baz=153						
TUC	Tucson	31.93	316	P	P	20 17 27.2	-0.5
	baz=127						
TUC	Tucson	31.93	316	*e*P	P	20 17 28.5	+0.8
TUC				MLR	MLR		
	comp=Z,4µm,20.0s						
TUC	Tucson	31.93	316	*e*P	P	20 17 28.4	+0.8
TUC				LR	LR		
	comp=Z,4µm,20.0s						
M35A	Neola	31.95	345	P	P	20 17 27.0	-0.5
	baz=160						
L38A	Oak Wood Farm,	31.98	349	P	P	20 17 27.6	-0.3
	baz=166,SNR=56						
K41A	Shullsburg	32.02	353	P	P	20 17 28.2	0.0
	baz=170,SNR=38						
N32A	Stulken Farm,	32.05	341	P	P	20 17 28.3	-0.2
	baz=155						
L37A	Phoenix Point,	32.12	348	P	P	20 17 28.6	-0.5
	baz=164,SNR=20						
KSCO	Kaye Shedlock'	32.16	334	P	P	20 17 29.0	-0.7
	baz=146						
M34A	Aspy Farms, Fr	32.22	344	P	P	20 17 29.5	-0.4
	baz=159						
K40A	Colesburg	32.22	352	P	P	20 17 29.4	-0.5
	baz=169,SNR=55						
YLE	Yale	32.23	17	*e*P	P	20 17 31.1	+1.0
BINY	Binghamton	32.28	13	*e*P	P	20 17 33.5	+2.9
BINY				LR	LR		
	comp=Z,5µm,19.0s						
L36A	Harm Buss Farm	32.30	347	P	P	20 17 30.4	-0.3
	baz=162,SNR=7.4						
JFWS	Jewell Farm	32.31	353	*e*P	P	20 17 31.1	+0.3
JFWS				MLR	MLR		
	comp=Z,2µm,20.0s						
JFWS	Jewell Farm	32.31	353	*e*P	P	20 17 31.1	+0.3
JFWS				LR	LR		
	comp=Z,2µm,20.0s						
N31A	Bailey Ranch,	32.32	340	P	P	20 17 29.9	-1.0
	baz=154						
K39A	Oelwein	32.34	351	P	P	20 17 30.2	-0.8
	baz=168,SNR=28						
MMNY	Mt. Morris Dam	32.43	10	*e*P	P	20 17 34.1	+2.3
K38A	Parkersburg	32.44	349	P	P	20 17 31.2	-0.7
	baz=166,SNR=27						
M33A	Taylor Creek F	32.45	343	P	P	20 17 31.1	-1.0
	baz=158						
BUF	Buffalo	32.47	9	*e*P	P	20 17 34.6	+2.5
SDCO	Great Sand Dun	32.50	329	P	P	20 17 33.1	+0.3
	baz=141,SNR=23						
SDCO	Great Sand Dun	32.50	329	*e*P	P	20 17 32.8	-0.1
SDCO				LR	LR		
	comp=Z,1µm,20.0s						
L35A	Bielow Farm, R	32.52	345	P	P	20 17 32.0	-0.6
	baz=161						
BGNE	Belgrade	32.59	342	P	P	20 17 32.6	-0.6
	baz=156						
BGNE	Belgrade	32.59	342	*e*P	P	20 17 33.6	+0.3
L34A	Svendsen Farm,	32.59	344	P	P	20 17 32.4	-0.8
	baz=159						
K37A	Belmond	32.72	348	P	P	20 17 33.9	-0.4
	baz=164,SNR=50						
J41A	Loganville	32.73	353	P	P	20 17 34.8	+0.3
	baz=171,SNR=27						
M31A	Lambtecht Ranc	32.80	341	P	P	20 17 34.9	-0.2
	baz=154						
J40A	Soldiers Grove	32.85	352	P	P	20 17 35.1	-0.4
	baz=170,SNR=29						
J39A	Decorah	32.93	351	P	P	20 17 35.6	-0.5
	baz=168,SNR=27						
W18A	Petrified Fore	33.01	321	P	P	20 17 37.2	+0.1
	baz=132						
W18A	Petrified Fore	33.01	321	*e*P	P	20 17 38.9	+1.7
K35A	Storm Lake	33.02	346	P	P	20 17 36.4	-0.6
	baz=162						
L33A	Hoskins	33.02	343	P	P	20 17 36.6	-0.5
	baz=158						
J38A	Wedel Dairy, R	33.04	350	P	P	20 17 36.3	-0.8
	baz=167,SNR=24						
L32A	Elgin	33.09	342	P	P	20 17 37.4	-0.3
	baz=156						
214A	Organ Pipe Nat	33.14	314	P	P	20 17 37.9	-0.3
	baz=124,SNR=7.4						
S22A	4UR Ranch, Cre	33.19	328	P	P	20 17 39.0	+0.2
	baz=139,SNR=7.4						
S22A	4UR Ranch, Cre	33.19	328	*e*P	P	20 17 38.8	-0.1
K34A	Le Mars	33.19	345	P	P	20 17 38.2	-0.3
	baz=160						
J37A	Redenius Farm,	33.22	349	P	P	20 17 38.8	+0.1
	baz=165,SNR=28						
Q24A	Divide	33.28	331	P	P	20 17 39.9	+0.2
	baz=142						
Q24A	Divide	33.28	331	*e*P	P	20 17 39.3	-0.4
QUA2	Belchertown	33.29	17	*e*P	P	20 17 41.5	+2.2
TRY	Troy	33.34	15	*e*P	P	20 17 42.4	+2.6
K33A	Hardington	33.36	344	P	P	20 17 39.6	-0.4
	baz=159						
J36A	Seneca 1, Swea	33.40	348	P	P	20 17 39.9	-0.3
	baz=164,SNR=39						
L31A	Butterfield Fa	33.50	341	P	P	20 17 41.1	-0.2
	baz=155						
OGNE	Ogallala	33.55	336	P	P	20 17 41.0	-0.7
	baz=149,SNR=11						
OGNE	Ogallala	33.55	336	*e*P	P	20 17 43.6	+1.9
OGNE				LR	LR		
	comp=Z,3µm,22.0s						
J35A	Milford	33.62	347	P	P	20 17 41.5	-0.7
	baz=162						
X16A	Lo Mia Camp, P	33.64	319	*e*P	P	20 17 43.9	+1.2
K32A	Verdigre	33.68	343	P	P	20 17 42.2	-0.5
	baz=157						
BCX	Boston College	33.70	19	*e*P	P	20 17 46.8	+3.9
MVCO	Mesa Verde	33.71	325	P	P	20 17 42.9	-0.4
	baz=136						
MVCO	Mesa Verde	33.71	325	*e*P	P	20 17 43.1	-0.2
MVCO				LR	LR		
	comp=Z,1µm,21.0s						
I38A	Scanlan Farm,	33.71	351	P	P	20 17 42.4	-0.6
	baz=167,SNR=11						
J34A	George	33.72	346	P	P	20 17 42.2	-0.9
	baz=161						
I37A	Lemond, Waseca	33.87	349	P	P	20 17 43.6	-0.8
	baz=165,SNR=44						
K31A	O'Neill	33.88	342	P	P	20 17 44.0	-0.5
	baz=156						
GLMI	Grayling	33.91	1	PFAKE		20 18 00.0	+15
GLMI				LR	LR		
	comp=Z,2µm,21.0s						
PB11	IPOC Station P	33.95	153	*e*P	P	20 17 47.5	+2.0
I36A	Fitzsimmons Fa	33.99	348	P	P	20 17 44.7	-0.7
	baz=164,SNR=16						
J33A	Davis	34.01	344	P	P	20 17 44.6	-1.0
	baz=159						
I35A	Creekview Farm	34.04	347	P	P	20 17 45.6	-0.2
	baz=163,SNR=28						
ISCO	Idaho Springs	34.16	331	P	P	20 17 47.1	-0.2

baz=142
ISCO **Idaho Springs** 34.16 331 eP P 20 17 46.8 -0.5
ISCO MLR MLR
comp=Z,2µm,21.0s
ISCO **Idaho Springs** 34.16 331 eP P 20 17 46.8 -0.5
ISCO LR LR
comp=Z,2µm,21.0s
K30A **Basset** 34.20 341 P P 20 17 47.1 -0.2
baz=154,SNR=5.0
SADO **Sadowa** 34.24 8 eP P 20 17 48.8 +1.2
113A **Mohawk Valley,** 34.26 314 eP P 20 17 48.7 +0.8
WUAZ **Wupatki** 34.28 320 P P 20 17 48.7 +0.4
baz=130,SNR=24
WUAZ **Wupatki** 34.28 320 eP P 20 17 49.7 +1.4
WUAZ LR LR
comp=Z,2µm,19.0s
J32A **Parkston** 34.30 343 P P 20 17 47.2 -0.9
baz=158
ECSD **EROS Data Cent** 34.31 345 P P 20 17 47.2 -1.0
baz=160,SNR=28
ECSD **EROS Data Cent** 34.31 345 eP P 20 17 47.5 -0.7
ECSD LR LR
comp=Z,2µm,20.0s
H37A **Dierke Farm, C** 34.34 350 P P 20 17 47.9 -0.5
baz=166
SMCO **Snowmass** 34.34 329 eP P 20 17 49.5 +0.5
Y14A **Wickenburg** 34.39 316 eP P 20 17 49.5 +0.4
I34A **Hadley** 34.41 346 P P 20 17 48.6 -0.5
baz=161,SNR=10
J31A **Geddes** 34.48 342 P P 20 17 48.9 -0.8
baz=156
H36A **Jessenland, He** 34.52 349 P P 20 17 49.5 -0.4
baz=165,SNR=10.0
HNH **Hanover** 34.62 16 eP P 20 17 53.9 +3.1
I33A **Coleman** 34.65 345 P P 20 17 49.9 -1.2
baz=160
PV05 **Paradox Valley** 34.66 326 eP P 20 17 50.7 -0.8
J30A **Dallas** 34.75 341 P P 20 17 51.1 -0.9
baz=155
I32A **Karley and Nic** 34.80 344 P P 20 17 51.0 -1.5
baz=158,SNR=6.3
H35A **Sunnyside Ranc** 34.81 348 P P 20 17 52.2 -0.3
baz=163,SNR=52
PLVO **Plevna** 34.81 10 eP P 20 17 53.4 +0.9
PV10 **Paradox Valley** 34.84 326 eP P 20 17 54.1 +1.0
LONY **Lake Ozonia** 34.90 13 PFAKE 20 18 10.0 +17
LONY LR LR
comp=Z,6µm,20.0s
SPMN **Marine on St.** 34.94 350 P P 20 17 52.8 -0.8
baz=167,SNR=12
SPMN **Marine on St.** 34.94 350 eP P 20 17 52.7 -1.0
H34A **Spellman Lake,** 34.99 347 P P 20 17 53.5 -0.6
baz=162,SNR=21
I31A **Royce, Wessing** 35.10 343 P P 20 17 53.4 -1.6
baz=157
G36A **St. Michael** 35.12 349 P P 20 17 54.7 -0.4
baz=165
PB01 **IPOC Station P** 35.16 154 eP P 20 17 57.7 +1.9
GLA **Glamis** 35.16 314 P P 20 17 55.9 +0.2
baz=122,SNR=20
GLA **Glamis** 35.16 314 eP P 20 17 56.7 +0.9
GLA **Glamis** 35.16 314 eP P 20 17 56.7 +0.9
N23A **Red Feather La** 35.18 332 P P 20 17 56.3 +0.3
baz=143
N23A **Red Feather La** 35.18 332 eP P 20 17 56.2 +0.1
H33A **Prehn Over Nor** 35.23 346 P P 20 17 55.2 -1.0
baz=160,SNR=7.6
H32A **Carlson Farm,** 35.24 345 P P 20 17 55.5 -0.7
baz=159,SNR=14
G35A **Watkins** 35.24 348 P P 20 17 55.4 -0.8
baz=164
PHWY **Pilot Hill** 35.28 333 eP P 20 17 57.6 +0.6
Y12C **Blythe** 35.33 315 eP P 20 17 58.8 +1.7
comp=Z,65nm,0.6s
COWI **Conover** 35.35 355 eP P 20 17 57.4 +0.2
COWI LR LR
comp=Z,2µm,20.0s
U15A **North Rim** 35.44 321 eP P 20 17 59.1 +0.7
H31A **Wolsey** 35.50 343 P P 20 17 57.6 -0.9
baz=157
G34A **Benson** 35.50 347 P P 20 17 57.6 -0.8
baz=162,SNR=16
SUSD **Miller** 35.60 343 P P 20 17 57.9 -1.4
baz=156
G33A **Ortonville** 35.64 346 P P 20 17 58.9 -0.7
baz=161
W13A **Hualapai Mount** 35.66 317 eP P 20 18 00.2 0.0
F36A **Milaca** 35.68 350 P P 20 17 59.1 -0.9
baz=166,SNR=62
O20A **White River Ci** 35.70 329 P P 20 18 00.8 +0.3
baz=139
O20A **White River Ci** 35.70 329 eP P 20 18 00.9 +0.3
SWSC **Sam W. Stewart** 35.81 313 P P 20 18 02.2 +0.9
baz=121,SNR=8.0
F35A **Swanville** 35.87 349 P P 20 18 00.9 -0.7
baz=164
IKP **In-Ko-Pah, Jac** 35.88 312 P P 20 18 02.3 +0.3
baz=120
BC3 **Big Chuckawall** 35.93 314 P P 20 18 02.7 +0.3
baz=122
F34A **Alexandria** 35.95 348 P P 20 18 01.9 -0.3
baz=163
G32A **Webster** 35.95 345 P P 20 18 01.6 -0.8
baz=159,SNR=11
NEE2 **Needles Airpor** 35.96 316 P P 20 18 02.8 +0.2
baz=125
PB04 **IPOC Station P** 36.03 156 eP P 20 18 06.1 +2.6
PKCU **Pink Cliffs** 36.10 322 eP P 20 18 05.7 +1.6
G31A **Conde** 36.11 344 P P 20 18 02.9 -0.7
baz=158
KNB **Kanab** 36.14 321 eP P 20 18 05.0 +0.7
KNB **Kanab** 36.14 321 eP P 20 18 05.0 +0.7
SRU **San Rafael Swe** 36.18 326 eP P 20 18 03.8 -0.8
SRU **San Rafael Swe** 36.18 326 eP P 20 18 03.8 -0.8
WVL **Waterville** 36.18 19 eP P 20 18 05.6 +1.3
E37A **Wrenshall** 36.19 351 P P 20 18 03.7 -0.6
baz=168
F33A **5 Mile Ranch,** 36.22 347 P P 20 18 03.6 -1.0
baz=161,SNR=6.2
E36A **McGregor** 36.27 350 P P 20 18 04.1 -1.0
baz=166,SNR=20
BAR **Barrett** 36.31 312 eP P 20 18 06.2 +0.7
LCMT **Little Creek M** 36.40 320 eP P 20 18 07.7 +1.3
MTPU **Mount Pierson** 36.41 323 eP P 20 18 07.5 +0.8
TRQ **Mont Tremblant** 36.43 12 eP P 20 18 08.1 +1.6
F32A **Veblen** 36.44 346 P P 20 18 05.1 -1.4
baz=160
E35A **Pequot Lakes** 36.51 349 P P 20 18 06.4 -0.7
baz=165,SNR=5.0
P17A **Butcher Ranch,** 36.55 326 eP P 20 18 07.6 -0.1
E34A **Wadena** 36.62 348 P P 20 18 07.6 -0.4
baz=163
PFO **Pinyon Flats O** 36.62 313 PFAKE 20 18 20.0 +12
PFO LR LR
comp=Z,2µm,19.0s
SZCU **Shurtz Canyon** 36.67 321 eP P 20 18 09.3 +0.5
GMRC **Granite Mounta** 36.68 316 P P 20 18 07.9 -1.0
baz=124
TMUT **Trail Mountain** 36.69 325 eP P 20 18 09.1 0.0
F31A **Hecla** 36.71 345 P P 20 18 07.8 -1.0
baz=158
MSU **Marysvale** 36.72 323 eP P 20 18 09.7 +0.5
MSU **Marysvale** 36.72 323 eP P 20 18 09.7 +0.5
109C **Camp Elliot, M** 36.73 312 P P 20 18 07.5 -1.6
baz=120
D37A **Coton** 36.77 352 P P 20 18 08.6 -0.7
baz=168,SNR=23
E33A **Westby DABS, E** 36.78 347 P P 20 18 08.3 -1.1
baz=162
LVC **Limon Verde** 36.79 155 eP P 20 18 12.0 +1.9
LVC LR LR
comp=Z,2µm,20.0s
CCUT **Cedar City** 36.81 321 eP P 20 18 10.5 +0.5
K22A **Casper** 36.84 333 P P 20 18 09.5 -0.6
baz=143
K22A **Casper** 36.84 333 eP P 20 18 10.6 +0.5
F30A **Leola** 36.90 344 P P 20 18 09.4 -1.1
baz=157
D36A **Goodland** 36.90 351 P P 20 18 09.3 -1.1
baz=167,SNR=19
PKME **Peaks-Kenny Pk** 36.93 19 eP P 20 18 12.3 +1.7
PKME LR LR
comp=Z,4µm,20.0s
D35A **Remer** 36.96 350 P P 20 18 10.0 -0.9
baz=165
RSSD **Black Hills** 37.03 337 P P 20 18 11.8 0.0
baz=148
RSSD **Black Hills** 37.03 337 eP P 20 18 13.0 +1.2
RSSD **Black Hills** 37.03 337 eP P 20 18 13.0 +1.2
E32A **Braaten, Kindr** 37.10 346 P P 20 18 11.2 -0.9
baz=160
F29A **Eureka** 37.12 343 P P 20 18 10.8 -1.6
baz=156
C38A **Sawbill Land.** 37.17 353 P P 20 18 11.6 -1.1
baz=170,SNR=16
E31A **Nome** 37.27 345 P P 20 18 12.6 -0.9
baz=159,SNR=6.4
C37A **Embarrass** 37.30 352 P P 20 18 13.3 -0.5
baz=169,SNR=17
D33A **AnnSam, Waubun** 37.35 348 P P 20 18 13.6 -0.6
baz=163,SNR=10.0
C36A **Pine Crest Far** 37.42 351 P P 20 18 13.8 -1.0
baz=168,SNR=18
MPU **Maple Canyon** 37.42 326 eP P 20 18 15.2 +0.1
EYMN **Ely** 37.42 353 P P 20 18 13.8 -1.0
baz=170,SNR=17
EYMN **Ely** 37.42 353 eP P 20 18 13.8 -1.0
EYMN LR LR
comp=Z,2µm,19.0s
C35A **Jirik Farms, M** 37.54 350 P P 20 18 15.0 -0.9
baz=166,SNR=18
D32A **Dogwood Acres,** 37.60 347 P P 20 18 15.5 -0.9
baz=161
GGN **Sat George** 37.62 21 eP P 20 18 15.2 -1.2
C34A **RKJ Ranch, Bem** 37.66 349 P P 20 18 16.1 -0.8
baz=164
D31A **Mcclaflin, Tow** 37.69 346 P P 20 18 16.3 -0.8
baz=160
JLU **Jordanelle** 37.73 326 eP P 20 18 17.4 -0.4
VLDQ **Val d'Or** 37.75 8 eP P 20 18 18.6 +1.1
SCI2 **San Clemente I** 37.84 311 P P 20 18 17.9 -0.6
baz=118
C33A **Trail** 37.93 348 P P 20 18 18.3 -0.8
baz=163
CIS **Catalina Islan** 37.94 312 P P 20 18 19.9 +0.5
baz=119,SNR=6.2
TCUT **Toone Canyon** 38.07 327 eP P 20 18 20.4 -0.3
B35A **Bob, Littlefor** 38.14 351 P P 20 18 20.1 -0.8
baz=166,SNR=13
C32A **Crookston** 38.15 348 P P 20 18 20.3 -0.6
baz=162
DUG **Dugway, Tooele** 38.20 325 eP P 20 18 21.5 -0.2
DUG MLR MLR
comp=Z,2µm,19.0s
DUG **Dugway, Tooele** 38.20 325 eP P 20 18 21.5 -0.2
DUG LR LR
comp=Z,2µm,19.0s
BW06 **Boulder Array** 38.33 331 P P 20 18 21.8 -1.1
baz=139,SNR=7.6
BW06 **Boulder Array** 38.33 331 eP P 20 18 21.0 -1.9
BW06 LR LR
comp=Z,2µm,20.0s
PD31 **Pinedale Array** 38.33 331 eP P 20 18 22.2 -0.7
PDAR **Pinedale Array** 38.33 331 P P 20 18 23.1 +0.3
comp=Z,5.3nm,0.9s,baz=127,slow=6.1,SNR=19
B33A **Robert and Kas** 38.38 349 P P 20 18 22.5 -0.4
baz=163
C31A **Landman Farms,** 38.39 346 P P 20 18 21.9 -1.0
baz=160,SNR=7.1
B34A **Aery, Baudette** 38.42 350 P P 20 18 22.1 -1.1
baz=165,SNR=40
FURC **Furnace Creek,** 38.42 317 P P 20 18 25.0 +1.6
baz=124
AGMN **Agassiz Nation** 38.46 348 P P 20 18 22.4 -1.2
baz=163,SNR=40
AGMN **Agassiz Nation** 38.46 348 eP P 20 18 22.6 -1.0
AGMN LR LR
comp=Z,2µm,20.0s
C30A **Mose, Pekin** 38.48 345 P P 20 18 23.1 -0.7
baz=159
HWUT **Hardware Ranch** 38.50 328 eP P 20 18 23.4 -0.9
HWUT LR LR
comp=Z,2µm,20.0s
R11A **Troy Canyon, C** 38.68 320 P P 20 18 25.6 -0.2
baz=127,SNR=21
R11A **Troy Canyon, C** 38.68 320 eP P 20 18 26.4 +0.5
SNCC **San Nicolas Is** 38.69 311 P P 20 18 24.1 -1.6
baz=118
B32A **Ashes, Strandq** 38.69 348 P P 20 18 26.3 +0.8
baz=162,SNR=32
BLG **Laguna Peak, P** 38.75 312 P P 20 18 25.8 -0.5
baz=119
BGU **Big Grassy Mou** 38.82 326 eP P 20 18 27.0 +0.1
HJA **Humahuaca** 38.90 150 i P P 20 18 29.0 +1.0
MDND **Maddock** 38.90 344 P P 20 18 27.2 -0.1
baz=157
MDND **Maddock** 38.90 344 eP P 20 18 28.1 +0.8
B31A **Greenbush Farm** 38.96 347 P P 20 18 27.0 -0.8
baz=160
A33A **Warroad** 38.98 349 P P 20 18 27.0 -0.9
baz=164,SNR=37
D26A **Manning** 38.99 341 P P 20 18 27.4 -0.7
baz=152
LMN **Caledonia Moun** 38.99 23 eP P 20 18 29.4 +1.4
GRAC **Grapevine Rang** 39.05 317 P P 20 18 29.3 +0.5
baz=124
ARVC **Arvin** 39.08 314 P P 20 18 29.5 +0.6
baz=120
AHID **Auburn Hatcher** 39.09 329 eP P 20 18 29.7 +0.5
AHID LR LR
comp=Z,2µm,21.0s
ISA **Isabella, Lake** 39.10 315 P P 20 18 29.8 +0.7
baz=121,SNR=5.1
ISA **Isabella, Lake** 39.10 315 eP P 20 18 29.9 +0.7
ISA **Isabella, Lake** 39.10 315 eP P 20 18 29.9 +0.7
SCZ2 **Santa Cruz Isl** 39.11 312 P P 20 18 29.3 0.0
baz=118
B30A **Myrvik Farm, E** 39.14 346 P P 20 18 28.2 -1.1
baz=159,SNR=6.4
A32A **Rocking H Ranc** 39.18 348 P P 20 18 29.0 -0.6
baz=162,SNR=5.2
CWC **Cottonwood Cre** 39.23 316 P P 20 18 30.6 +0.2
baz=122
A31A **Linda, St. Vin** 39.34 347 P P 20 18 30.4 -0.6
baz=161
SBC **Santa Barbara** 39.38 312 P P 20 18 31.0 -0.5
baz=119
B29A **Wagenman Farm,** 39.41 345 P P 20 18 31.3 -0.2
baz=158,SNR=8.8
REDW **Red Top Meadow** 39.41 330 eP P 20 18 31.3 -0.6
LOHW **Long Hollow** 39.47 331 eP P 20 18 33.2 +0.8
TPAW **Teton Pass** 39.55 330 eP P 20 18 33.3 +0.2
A30A **Hoffart Farm,** 39.59 346 P P 20 18 32.2 -0.9
baz=160
VES **Vestal, Richgr** 39.62 315 P P 20 18 34.0 +0.6
baz=121
MOOW **Moose Ponds** 39.64 331 eP P 20 18 34.0 +0.1
B28A **Dugan Ranch, T** 39.66 344 P P 20 18 33.6 0.0
baz=156
TIN **Tinemaha, Big** 39.66 317 P P 20 18 34.2 +0.2
baz=123
PKM **Mcpherson Peak** 39.67 313 P P 20 18 34.0 -0.1
baz=119,SNR=5.2
A29A **Manning Farm,** 39.80 345 P P 20 18 33.9 -0.9
baz=158,SNR=6.3
C25A **Freed Ranch, W** 39.85 341 P P 20 18 35.2 -0.1
baz=152
FLWY **Flagg Ranch** 39.87 331 eP P 20 18 35.8 +0.1
AZAP **Zapla** 39.92 151 i P P 20 18 36.7 +0.3
ELK **Elko** 39.96 324 eP P 20 18 36.6 0.0
ELK **Elko** 39.96 324 eP P 20 18 36.5 0.0
RCTC **Rector, Farmer** 39.97 315 P P 20 18 37.0 +0.7
baz=121
RLMT **Red Lodge** 40.01 333 P P 20 18 37.5 +0.7
baz=142
RLMT **Red Lodge** 40.01 333 eP P 20 18 36.3 -0.5
RLMT LR LR
comp=Z,2µm,22.0s
LAO **LASA Array** 40.02 337 PFAKE 20 18 50.0 +13
LAO LR LR
comp=Z,2µm,19.0s
A28A **Rude Farm, Bot** 40.05 344 P P 20 18 36.8 -0.2
baz=157
LKWY **Lake** 40.09 332 PFAKE 20 18 50.0 +12
LKWY LR LR
comp=Z,2µm,21.0s
B26A **Jensen Ranch,** 40.12 342 P P 20 18 37.6 +0.1
baz=154
SLA **San Lorenzo** 40.14 152 i P P 20 18 38.2 +0.1
B25A **Knox Farm, Ray** 40.32 341 P P 20 18 39.3 +0.2
baz=152
ULM **Lac du Bonnet** 40.34 349 P P 20 18 38.5 -0.7
comp=Z,30nm,0.9s,baz=167,slow=6.9,SNR=20
ULM LR LR 20 37 14.5
comp=Z,2µm,19.6s,baz=170,slow=39
ULM **Lac du Bonnet** 40.34 349 eP P 20 18 37.7 -1.5
ULM **Lac du Bonnet** 40.34 349 eP P 20 18 37.7 -1.5
PAGB **Antelope Grade** 40.38 314 eP P 20 18 41.0 +1.1
YHH **Holmes Hill** 40.47 332 eP P 20 18 42.4 +1.7
A26A **Wade Farm, Ken** 40.53 343 P P 20 18 40.6 -0.3
baz=154
YHB **Horse Butte** 40.61 331 eP P 20 18 42.8 +1.0
GCMT **Greycliff** 40.70 333 eP P 20 18 42.2 -0.3
TVH3 **East Aurora ar** 40.77 318 eP P 20 18 44.8 +1.5
QLMT **Earthquake Lak** 40.78 331 eP P 20 18 44.3 +1.1
TVH1 **TV Hill, Hawth** 40.78 318 eP P 20 18 43.6 0.0
DGMT **Dagmar** 40.82 341 P P 20 18 43.2 -0.1
baz=151
DGMT **Dagmar** 40.82 341 eP P 20 18 46.2 +2.9
DGMT LR LR
comp=Z,2µm,22.0s
BMN **Battle Mountai** 40.95 322 eP P 20 18 45.1 +0.5
BMN **Battle Mountai** 40.95 322 eP P 20 18 45.1 +0.5
PMPB **Monarch Peak** 41.01 314 eP P 20 18 45.5 +0.4
FSA **Cafayete** 41.12 153 i P P 20 18 46.2 0.0
WAKR **Walker** 41.25 318 eP P 20 18 48.0 +0.7
HLID **Hailey** 41.37 327 P P 20 18 47.9 -0.2
baz=134
HLID **Hailey** 41.37 327 eP P 20 18 46.8 -1.3
HLID LR LR
comp=Z,2µm,21.0s
YERR **Yerington** 41.39 319 eP P 20 18 49.0 +0.7
MCMT **McKenzie Canyo** 41.46 330 eP P 20 18 49.8 +0.9
BOZ **Bozeman (W)** 41.48 332 P P 20 18 48.6 -0.2
baz=139,SNR=11
BOZ **Bozeman (W)** 41.48 332 eP P 20 18 48.7 -0.2
BOZ MLR MLR
comp=Z,2µm,22.0s
BOZ **Bozeman (W)** 41.48 332 eP P 20 18 48.7 -0.2
BOZ LR LR
comp=Z,2µm,22.0s
CMB **Columbia Colle** 41.64 317 eP P 20 18 50.8 +0.6
CMB **Columbia Colle** 41.64 317 eP P 20 18 50.8 +0.6
PNTR **Pine Nut** 41.68 318 eP P 20 18 52.8 +2.1
DLMT **Dillon** 41.73 331 eP P 20 18 51.0 +0.1
SAO **San Andreas Ge** 41.73 314 eP P 20 18 51.1 +0.2
SAO **San Andreas Ge** 41.73 314 eP P 20 18 51.1 +0.2
PAHR **Pah Rah Range** 41.88 319 eP P 20 18 53.5 +1.3
LCO **Las Campanas** 41.94 161 eP P 20 18 54.1 +1.2
LCO LR LR
comp=Z,1µm,21.0s
AHML **Horco Molle** 41.99 153 i P P 20 18 55.2 +2.0
LRM **Limekiln Ridge** 41.99 331 eP P 20 18 53.6 +0.3
MFID **Camas Ranch** 42.03 326 eP P 20 18 52.9 -0.6
EGMT **Eagleton** 42.50 336 PFAKE 20 19 10.0 +13
EGMT LR LR
comp=Z,23µm,19.0s
AFDM **Forest Hills D** 42.50 317 eP P 20 18 57.2 0.0
VCA **Vinchina** 42.55 158 i P P 20 18 56.2 -1.6
WVOR **Wild Horse Val** 43.01 323 eP P 20 19 00.8 -0.6
WVOR MLR MLR
comp=Z,1µm,19.0s
WVOR **Wild Horse Val** 43.01 323 eP P 20 19 00.8 -0.6
WVOR LR LR
comp=Z,1µm,19.0s
AGUA **GUANDACOL** 43.13 159 i P P 20 19 02.6 +0.3
ORV **Oroville** 43.17 318 eP P 20 19 03.1 +0.5
ORV **Oroville** 43.17 318 eP P 20 19 03.1 +0.5
CHMT **Chamberlain Mo** 43.17 332 eP P 20 19 02.8 0.0
CYA **Choya** 43.23 155 i P P 20 19 04.9 +1.7
AROD **Rodeo** 43.41 160 i P P 20 19 05.9 +1.0
MSO **Missoula** 43.44 331 P P 20 19 04.4 -0.3
baz=137
MSO **Missoula** 43.44 331 eP P 20 19 05.4 +0.7
SLMT **Seeley Lake** 43.53 332 eP P 20 19 05.4 -0.1
MOD **Modoc Plateau** 43.69 321 eP P 20 19 06.2 -0.7
O03D **Paynes Creek** 43.76 319 P P 20 19 07.2 -0.2
baz=122
BMO **Blue Mountains** 43.78 327 eP P 20 19 06.5 -1.1
BMO LR LR
comp=Z,2µm,19.0s
ACCO **Cerro Coronel** 43.93 160 i P P 20 19 09.9 +0.7
WDC **Whiskeytown Da** 44.39 319 eP P 20 19 10.6 -1.7
WDC **Whiskeytown Da** 44.39 319 eP P 20 19 10.6 -1.7
RPN **Rapa Nui** 44.43 212 PFAKE 20 19 20.0 +7.2
RPN LR LR
comp=Z,1µm,22.0s
AMOG **MOGNA** 44.45 159 i P P 20 19 14.4 +1.4
F10A **Beach Ranch, E** 44.48 328 eP P 20 19 11.2 -1.9
K05A **Summer Lake** 44.52 322 eP P 20 19 12.7 -0.9
M04C **Macdoel** 44.58 320 P P 20 19 13.8 -0.3
baz=123
DRLN **Deer Lake** 44.67 26 eP P 20 19 15.9 +1.4
N02D **Trinity Center** 44.70 319 P P 20 19 14.6 -0.4
baz=122
RTLL **Cerro Villicun** 44.81 160 i P P 20 19 17.4 +1.5
RTLS **Leoncito** 44.97 161 i P P 20 19 17.6 +0.2
KMRM **Mail Ridge** 44.97 317 eP P 20 19 17.8 +0.6
M02C **Callahan** 45.01 319 P P 20 19 17.1 -0.4
baz=122
WALA **Waterton Lakes** 45.06 333 eP P 20 19 17.2 -0.5
BDFB **Brasilia** 45.14 125 P P 20 19 20.5 +1.7
comp=Z,22nm,0.8s,baz=258,slow=5.6
BDFB **Brasilia** 45.14 125 eP P 20 19 20.0 +1.2
BDFB **Brasilia** 45.14 125 eP P 20 19 20.0 +1.2
ACHE **Chepes** 45.31 158 i P P 20 19 19.4 -0.5
KHMM **Horse Mountain** 45.31 318 eP P 20 19 20.9 +1.0
AUSP **Uspallata** 45.33 161 i P P 20 19 21.9 +1.6
JCC **Jacoby Creek,** 45.48 318 eP P 20 19 22.1 +1.1
ROC1 **El Roble** 45.55 163 eP P 20 19 21.1 -0.8
CPUP **Villa Florida** 45.72 144 i P P 20 19 22.6 -0.4
CPUP **Villa Florida** 45.72 144 P P 20 19 23.3 +0.3
comp=Z,18nm,0.9s,baz=328,slow=8.9,SNR=18
CPUP LR LR 20 40 51.0
comp=Z,903nm,18.3s,baz=314,slow=39
CPUP **Villa Florida** 45.72 144 eP P 20 19 23.0 0.0
I05D **Terrebonne, OR** 45.72 324 P P 20 19 22.7 -0.3
baz=126
HUMO **Hull Mountain** 45.72 321 eP P 20 19 23.2 +0.2
FFC **Flin Flon** 45.82 346 eP P 20 19 24.2 +0.7
FFC MLR MLR
comp=Z,1µm,19.0s
FFC **Flin Flon** 45.82 346 eP P 20 19 24.1 +0.7
FFC LR LR
comp=Z,1µm,19.0s
ASAL **Salagasta** 45.85 161 i P P 20 19 25.4 +1.3
G06A **Carlson Farm,** 45.85 325 eP P 20 19 24.8 +0.8
HAWA **Hanford** 45.96 327 PFAKE 20 19 40.0 +15
HAWA LR LR
comp=Z,961nm,19.0s
NEW **Newport** 45.98 330 P P 20 19 25.9 +1.0
comp=Z,3.9nm,0.4s,baz=117,slow=10,SNR=3.4
NEW **Newport** 45.98 330 eP P 20 19 24.3 -0.6
NEW MLR MLR
comp=Z,2µm,20.0s
NEW **Newport** 45.98 330 eP P 20 19 24.3 -0.6
NEW LR LR
comp=Z,2µm,20.0s
I04A **Tendick Farm,** 46.04 322 P P 20 19 24.5 -1.0
baz=124,SNR=8.9
ARCO **CERRO ARCO** 46.05 161 i P P 20 19 26.9 +1.1
D08A **Wollman Farm,** 46.07 328 eP P 20 19 25.6 -0.1
ACAN **Cantantal** 46.12 159 i P P 20 19 26.9 +0.7
G05D **Wamic, OR** 46.24 325 P P 20 19 26.6 -0.5
baz=127
SCHQ **Schefferville** 46.24 15 P P 20 19 26.0 -0.9
comp=Z,65nm,0.8s,baz=188,slow=5.6,SNR=21
SCHQ LR LR 20 39 33.7
comp=Z,6µm,18.7s,baz=208,slow=37
SCHQ **Schefferville** 46.24 15 eP P 20 19 27.1 +0.3
SCHQ e 20 39 33.7
TCA **Tanti** 46.27 156 i P P 20 19 26.9 -0.6
I03D **Drain, OR** 46.55 322 P P 20 19 28.4 -1.1
baz=123
COR **Corvallis** 47.02 323 P P 20 19 36.3 +3.2
COR pmax pmax
comp=Z,235nm,1.8s
B08A **Colville Reser** 47.13 329 eP P 20 19 34.2 +0.2
LON **Longmire** 47.42 326 eP P 20 19 35.7 -0.6
LON **Longmire** 47.42 326 eP P 20 19 35.7 -0.6
EDM **Edmonton** 48.01 337 eP P 20 19 40.0 -0.7
EDM **Edmonton** 48.01 337 eP P 20 19 40.0 -0.7
FCC **Fort Churchill** 48.35 354 eP P 20 19 42.8 -0.3
FCC **Fort Churchill** 48.35 354 eP P 20 19 42.8 -0.3
NLWA **Neilton Lookou** 48.94 326 eP P 20 19 47.9 -0.1
NLWA LR LR

comp=Z,1µm,19.0s
LLLB Lillooet 49.85 330 *e*P **P 20 19 56.1 +1.1**
LLLB *e*S **S 20 27 04.7 +0.6**
SPB Sao Paulo 50.24 133 *e*P **P 20 19 57.6 -0.5**
SPB LR LR
comp=Z,2µm,19.0s
RCBR Riachuelo 51.67 106 PFAKE 20 20 20.0 +11
RCBR LR LR
comp=Z,1µm,20.0s
PLCA Paso Flores 53.00 166 P **P 20 20 18.5 -0.1**
comp=Z,21nm,0.9s,baz=6.0,slow=8.9,SNR=18
PLCA LR LR 20 38 34.9
comp=Z,799nm,19.8s,baz=17,slow=31
PLCA Paso Flores 53.00 166 *e*P **P 20 20 20.2 +1.6**
PLCA Paso Flores 53.00 166 *e*P **P 20 20 19.5 +0.9**
PLCA *e* 20 38 34.9
TRQA Tornquist 53.19 157 *e*P **P 20 20 20.4 +0.4**
TRQA LR LR
comp=Z,1µm,22.0s
YKA Yellowknife Ar 55.82 344 P **P 20 20 38.1 -0.6**
comp=Z,7.8nm,0.7s,baz=141,slow=7.1,SNR=27
YKA LR LR 20 46 24.3
comp=Z,116nm,19.6s,baz=180,slow=38
TAOE Nuku Hiva Isla 58.15 252 *e*S **S 20 29 02.3 +4.9**
comp=Z,574nm,24.3s
TAOE *e*LR LR 20 38 12.2
comp=Z,942nm,23.6s
WRAK Wrangell Islan 58.32 331 PFAKE 20 21 10.0 +14
WRAK LR LR
comp=Z,2µm,20.0s
DLBC Dease Lake 58.40 334 *e*P **P 20 20 56.3 -0.8**
RKT Rikitea 59.32 235 *e*S **S 20 29 16.4 +4.3**
comp=Z,985nm,27.2s
RKT *e*LQ LQ 20 36 11.9
comp=Z,2µm,31.0s
RKT *e*LR LR 20 38 40.9
comp=Z,850nm,28.5s,baz=57
RKT Rikitea 59.32 235 *e*T T 21 24 16.5
comp=Z,3.0nm,0.3s
CMLA Cha da Macela 59.47 52 PFAKE 20 21 20.0 +15
CMLA LR LR
comp=Z,2µm,20.0s
SACV Santiago Islan 59.92 79 PFAKE 20 21 20.0 +12
SACV LR LR
comp=Z,364nm,19.0s
SFJD Kangerlussuaq 60.70 15 *i*P **P 20 21 11.6 -1.1**
comp=Z,67nm,1.0s
SFJD Kangerlussuaq 60.70 15 *i*P **P 20 21 11.6 -1.1**
SFJD pmax pmax
comp=Z,67nm,1.0s
SFJD Kangerlussuaq 60.70 15 *e*P **P 20 21 11.0 -1.7**
SFJD LR LR
comp=Z,5µm,20.0s
INK Inuvik 65.47 342 *e*P **P 20 21 43.7 -0.7**
INK Inuvik 65.47 342 *e*P **P 20 21 43.7 -0.7**
PMOZ Porto Moniz, M 65.69 59 *e*LR LR 20 44 16.9
comp=Z,1µm,20.0s
KULLO Kullorsuaq 65.69 8⇓ *i*P **P 20 21 45.8 +0.1**
comp=Z,38nm,1.3s
KULLO Kullorsuaq 65.69 8⇓ *i*P **P 20 21 45.8 +0.1**
KULLO pmax pmax
comp=Z,38nm,1.3s
EGAK Eagle 66.23 337 *e*P P 20 21 54.2 +4.8
comp=Z,20nm,1.6s
EGAK LR LR
comp=Z,1µm,21.0s
EFI East Falkland 66.46 162 PFAKE 20 22 00.0 +9.1
EFI LR LR
comp=Z,1µm,20.0s
USHA Ushuaia 66.87 170 LR LR 20 45 36.9
comp=Z,5µm,20.1s,baz=357,slow=31
DOT Dot Lake 66.89 335 *e*P **P 20 21 52.7 -1.0**
SUMG Summit 67.62 14⇑ *i*P **P 20 21 58.3 -0.3**
comp=Z,42nm,0.9s
SUMG Summit 67.62 14⇑ *i*P **P 20 21 58.3 -0.3**
SUMG pmax pmax
comp=Z,42nm,0.9s
SUMG Summit 67.62 14 *e*P **P 20 21 57.8 -0.9**
POHA Pohakuloa 68.14 287 PFAKE 20 22 10.0 +7.3
POHA LR LR
comp=Z,876nm,20.0s
IL1 Eielson Array 68.46 336 *e*P **P 20 22 01.6 -2.0**
ILAR Eielson Array 68.46 336 P **P 20 22 03.1 -0.4**
comp=Z,3.2nm,0.7s,baz=120,slow=4.2,SNR=17
ILB Eielson Array 68.46 336 *e*P **P 20 22 02.1 -1.5**
CCB Clear Creek Bu 68.79 336 *e*P **P 20 22 04.5 -1.0**
RND Reindeer 68.80 334 *e*P **P 20 22 04.6 -1.2**
RND Reindeer 68.80 334 *e*P **P 20 22 04.6 -1.2**
COLA College 68.89 336 PFAKE 20 22 20.0 +14
COLA LR LR
comp=Z,1µm,20.0s
MCK McKinley 68.94 335 *e*P **P 20 22 05.6 -1.0**
MCK McKinley 68.94 335 *e*P **P 20 22 05.6 -1.0**
KDAK Kodiak Island 68.99 328 PFAKE 20 22 20.0 +13
KDAK LR LR
comp=Z,451nm,21.0s
BORG Borgarnes 69.24 24 PFAKE 20 22 20.0 +12
BORG LR LR
comp=Z,2µm,20.0s
TRF Thorofare Moun 69.43 334 *e*P **P 20 22 08.6 -1.2**
PPT Papeete 69.64 247 LR LR 20 46 32.4
comp=Z,458nm,18.1s,baz=50,slow=30
PPT2 Papeete2 69.65 247 *e*S **S 20 31 24.2 +4.1**
comp=Z,476nm,24.8s
PPT2 *e*LQ LQ 20 40 31.2
comp=Z,1µm,27.5s
PPT2 *e*LR LR 20 43 26.2
comp=Z,976nm,24.2s,baz=46
KTH Kantishna Hill 69.73 334 *e*P **P 20 22 11.4 -0.1**
PPLA Purkeypile 70.09 333 *e*P **P 20 22 13.0 -0.9**
COLD Coldfoot 70.59 338 *e*P **P 20 22 15.6 -1.0**
SCO Scoresbysund 71.07 18⇑ *i*P **P 20 22 18.3 -1.2**
comp=Z,9.4nm,0.8s
comp=Z,4µm,19.0s
SCO Scoresbysund 71.07 18⇑ *e*P **P 20 22 18.3 -1.2**
SCO pmax pmax
comp=Z,9.0nm,0.8s
SCO MLR MLR
comp=Z,4µm,19.0s
TBI Tubuai 71.50 241 *e*S **S 20 31 45.9 +4.6**
comp=Z,495nm,26.0s
TBI Tubuai 71.50 241 *e*LR LR 20 44 20.8
comp=Z,1µm,26.0s,baz=75
VAL Valentia 72.23 39 *e*P **P 20 22 23.3 -3.5**
VAL Valentia 72.23 39⇓ *i*S **S 20 31 50.9 +2.1**
VAL Valentia 72.23 39⇓ *i*SS SS 20 36 42.7 +16
MORF Marmelete 72.78 54 *e*P **P 20 22 34.1 +3.6**
comp=Z,74nm,1.4s
ASCN Ascension 72.80 102 PFAKE 20 22 40.0 +9.1
ASCN LR LR
comp=Z,660nm,20.0s
PCAS Casmilo, Conde 72.89 51 *e*P **P 20 22 34.6 +3.6**
comp=Z,51nm,1.6s
PGAV Gavieira, Arco 73.08 49 *e*P **P 20 22 34.8 +2.6**
comp=Z,63nm,1.9s
PGAV Gavieira, Arco 73.08 49 *e*LR LR 20 43 58.5
comp=Z,986nm,18.0s
PMTG Montargil 73.10 52 *e*P **P 20 22 34.8 +2.5**
comp=Z,25nm,1.2s
PCVE Castro Verde 73.27 54 *e*P **P 20 22 36.5 +3.2**
comp=Z,38nm,1.8s
EVO Evora 73.27 53 *e*P **P 20 22 36.5 +3.2**
comp=Z,39nm,1.8s
PBDV Barranco-do-Ve 73.36 54 *e*P **P 20 22 38.0 +4.1**
comp=Z,59nm,1.8s
POLO Lamas de Olo 73.43 50 *e*P **P 20 22 31.3 -3.0**
comp=Z,17nm,1.6s
PESTR Estremoz 73.60 53 *e*P **P 20 22 36.5 +1.2**
comp=Z,29nm,1.6s
MTE Manteigas 73.62 51 *e*P **P 20 22 38.3 +2.9**
comp=Z,37nm,1.4s
MTE Manteigas 73.62 51 *e*LR LR 20 44 14.5
comp=Z,2µm,22.0s
MTE Manteigas 73.62 51 PFAKE 20 22 50.0 +15
MTE LR LR
comp=Z,2µm,20.0s
PMRV Marv??o 73.75 52 *e*LR LR 20 45 34.8
comp=Z,2µm,20.0s
MVO Moncorvo 74.01 50 *e*P **P 20 22 41.1 +3.4**
comp=Z,37nm,1.5s
MVO Moncorvo 74.01 50 *e*LR LR 20 43 48.2
comp=Z,641nm,18.0s
PBAR Barrancos 74.05 53 *e*P **P 20 22 40.8 +2.9**
comp=Z,84nm,1.6s
PBRG Braganca 74.22 50 *e*P **P 20 22 42.5 +3.6**
comp=Z,38nm,2.1s

DAG Danmarks Havn 74.25 13 *i*P **P 20 22 37.3 -1.0**
comp=Z,7.8nm,0.7s
comp=Z,3µm,19.0s
DAG Danmarks Havn 74.25 13 *i*P **P 20 22 37.3 -1.0**
DAG pmax pmax
comp=Z,5.0nm,0.7s
DAG MLR MLR
comp=Z,3µm,19.0s
RTC Rabat Centre 74.33 58 PFAKE 20 22 50.0 +10
RTC LR LR
comp=Z,8µm,20.0s
JMIC Jan Mayen 75.49 19 LR LR 20 56 03.5
comp=Z,1µm,20.3s,baz=259,slow=36
PAB San Pablo 76.10 52 *e*P **P 20 22 47.3 -2.5**
PAB MLR MLR
comp=Z,2µm,20.0s
PAB San Pablo 76.10 52 *e*P **P 20 22 47.3 -2.5**
PAB LR LR
comp=Z,2µm,20.0s
GUD Guadarrama 76.20 51 P **P 20 22 51.0 +0.6**
GUD pmax pmax
comp=Z,20nm,1.4s
ESDC Sonseca Array 76.39 52 P **P 20 22 51.6 +0.2**
comp=Z,10.0nm,0.9s,baz=284,slow=5.3,SNR=19
ESDC LR LR 20 51 12.1
comp=Z,2µm,21.0s,baz=265,slow=32
ESLA Sonseca Array 76.39 52 *e*P **P 20 22 50.4 -1.0**
ES19 SONSECA Array 76.44 52 *e*P **P 20 22 51.0 -0.7**
ESK Eskdalemuir 76.59 36 *e*P **P 20 22 51.2 -0.9**
ESK MLR MLR
comp=Z,886nm,19.0s
ESK Eskdalemuir 76.59 36 *e*P **P 20 22 51.2 -0.9**
ESK LR LR
comp=Z,886nm,19.0s
HOPE Hope Point 76.69 153 PFAKE 20 23 00.0 +7.5
HOPE LR LR
comp=Z,721nm,20.0s
PMSA Palmer Station 77.00 171 PFAKE 20 23 00.0 +5.9
PMSA LR LR
comp=Z,588nm,21.0s
GRR Gorron 78.20 43 *e*P **P 20 23 01.4 +0.1**
GRR pmax pmax
comp=Z,25nm,0.8s
FLN La Foliniere 78.43 42 *e*P **P 20 23 04.5 +2.0**
FLN pmax pmax
comp=Z,33nm,1.0s
LDF La Druitiere 78.67 42 *e*P **P 20 23 04.0 +0.1**
LDF pmax pmax
comp=Z,33nm,1.0s
TIC Toumodi 79.06 85 *e*P **P 20 23 05.8 -0.9**
LIC Lamto 79.13 86 *e*P **P 20 23 07.3 +0.2**
comp=Z,47nm,1.3s
DBIC Dimbokro 79.22 85 P **P 20 23 08.0 +0.4**
comp=Z,6.2nm,0.8s,baz=295,slow=7.2,SNR=7.2
DBIC LR LR 20 57 45.5
comp=Z,222nm,19.5s,baz=268,slow=35
DBIC Dimbokro 79.22 85 *e*P **P 20 23 05.7 -1.9**
DBIC Dimbokro 79.22 85 *e*P **P 20 23 05.7 -1.9**
KIC Kosan Boka 79.38 86 *e*P **P 20 23 08.7 +0.2**
comp=Z,65nm,1.1s
EPF Esparros 79.40 48 *e*P **P 20 23 08.4 +0.3**
EPF pmax pmax
comp=Z,38nm,1.6s
RAR Rarotonga 79.91 246 LR LR 20 50 55.2
comp=Z,283nm,18.3s,baz=329,slow=30
RAR Rarotonga 79.91 246 *e*P **P 20 23 09.3 -1.8**
RAR Rarotonga 79.91 246 *e*P **P 20 23 09.2 -1.8**
CAF Calviac 80.47 46 *e*P **P 20 23 13.7 -0.1**
CAF pmax pmax
comp=Z,31nm,1.7s
KBS Kingsbay 80.83 11 *e*P **P 20 23 15.6 +0.5**
KBS MLR MLR
comp=Z,3µm,19.0s
KBS Kingsbay 80.83 11 *e*P **P 20 23 15.6 +0.5**
KBS LR LR
comp=Z,3µm,19.0s
AGO Saint Agoulin 81.10 45 *e*P **P 20 23 18.1 +1.0**
AVF Avril sur Loir 81.17 44 *e*P **P 20 23 18.7 +1.3**
AVF pmax pmax
comp=Z,16nm,1.6s
LBL Lubilhac 81.27 46 *e*P **P 20 23 18.2 +0.1**
PLDF La Plantade 81.44 45 *e*P **P 20 23 18.4 -0.7**
SPITS Spitsbergen Ar 81.85 12 LR LR 21 00 21.0
comp=Z,3µm,20.4s,baz=275,slow=36
HSPB Hornsund (broa 81.94 13 *e*P **P 20 23 22.9 +2.0**
SSB Saint Sauveur 82.17 45 PFAKE 20 23 30.0 +7.1
SSB LR LR
comp=Z,971nm,20.0s
VIVF Saint-Julien-l 82.32 46 *e*P **P 20 23 25.0 +1.4**
VIVF pmax pmax
comp=Z,53nm,1.8s
WLF Walferdange 82.67 41 PFAKE 20 23 40.0 +15
WLF LR LR
comp=Z,2µm,19.0s
THEF They Montfort 82.76 42 *e*P **P 20 23 25.3 -0.5**
SHEL Horse Pasture 82.88 108 PFAKE 20 23 40.0 +13
SHEL LR LR
comp=Z,408nm,19.0s
CABF La Chapelle 83.06 44 *e*P **P 20 23 30.8 +3.3**
CABF pmax pmax
comp=Z,64nm,2.0s
KONO Kongsberg 83.14 31⇑ *e*P **P 20 23 28.2 +0.7**
KONO pmax pmax
comp=Z,51nm,1.1s
KONO Kongsberg 83.14 31 PFAKE 20 23 40.0 +13
KONO LR LR
comp=Z,1µm,20.0s
ORIF Oris-en-Rattie 83.16 46 *e*P **P 20 23 29.1 +1.0**
ORIF pmax pmax
comp=Z,37nm,1.9s
NC204 NORSAR Array S 83.42 29 *e*P **P 20 23 28.3 -0.7**
LOMF Lomont 83.45 43 *e*P **P 20 23 28.8 -0.7**
NBO00 NORSAR Array S 83.47 29 *e*P **P 20 23 28.3 -0.9**
NBO02 NORSAR Array S 83.51 29 *e*P **P 20 23 25.5 -3.9**
ECH Echery 83.54 42 *e*P **P 20 23 29.6 -0.3**
NAO01 NORSAR Array S 83.56 29 *e*P **P 20 23 29.4 -0.2**
MOF Molkenrain 83.58 43 *e*P **P 20 23 28.6 -1.6**
WLS Welschbruch 83.64 42 *e*P **P 20 23 30.2 -0.2**
LPL La Plagne 83.66 45 *e*P **P 20 23 30.9 +0.1**
LPL pmax pmax
comp=Z,35nm,2.1s
NB200 NORSAR Array S 83.68 29 *e*P **P 20 23 30.8 +0.4**
NB200 *e* 20 55 40.8
NOA NORSAR Array B 83.68 29 P **P 20 23 30.8 +0.4**
comp=Z,5.3nm,0.8s,baz=282,slow=5.2,SNR=13
NOA LR LR 20 55 40.8
comp=Z,690nm,21.6s,baz=275,slow=32
BNI Bardonecchia 83.70 45 PFAKE 20 23 40.0 +9.1
BNI LR LR
comp=Z,2µm,22.0s
LANF Langenberg 83.84 41 *e*P **P 20 23 30.1 -1.3**
NC405 NORSAR Array S 83.91 29 *e*P **P 20 23 30.4 -1.1**
SENIN Lac Senin/Sane 83.92 44 *e*P **P 20 23 31.1 -1.1**
BFO Black Forest 84.29 42 *e*P **P 20 23 31.5 -2.2**
BFO MLR MLR
comp=Z,1µm,20.0s
BFO Black Forest 84.29 42 *e*P **P 20 23 31.4 -2.2**
BFO LR LR
comp=Z,1µm,20.0s
SBF Sospel 84.42 47 *e*P **P 20 23 36.4 +1.9**
SBF pmax pmax
comp=Z,17nm,1.0s
TOA1 Torodi Ar. Sit 84.50 78 *e*P **P 20 23 34.3 -1.1**
TOA1 *e* 20 58 36.9
TOA0 Torodi Ar. Sit 84.50 78 *e*P **P 20 23 33.6 -1.8**
TORD Torodi Ar. Bea 84.50 78 P **P 20 23 34.3 -1.1**
comp=Z,2.3nm,0.6s,baz=287,slow=5.7,SNR=21
TORD LR LR 20 58 36.9
comp=Z,641nm,20.2s,baz=280,slow=34
HFS Hagfors 85.07 30 LR LR 20 58 41.3
comp=Z,832nm,20.6s,baz=279,slow=34
TUE Stuetta 85.30 44 *e*P **P 20 23 37.6 -1.5**
TUE LR LR
comp=Z,1µm,21.0s
DAVA Damuels 85.51 43 *i*P **P 20 23 40.7 +0.6**
comp=Z,12nm,0.9s
DAVOX Davos/Dischmat 85.60 43 LR LR 20 57 30.2
comp=Z,831nm,20.5s,baz=272,slow=32
FUORN Ofenpass-Fuorn 85.89 43 *e*P **P 20 23 40.8 -1.3**
RETA Reutte 86.06 43 *i*P **P 20 23 42.6 0.0**
comp=Z,13nm,1.3s
FETA Feichten 86.13 43 *i*P **P 20 23 43.1 -0.1**
comp=Z,16nm,1.4s
MOTA Moosalm 86.31 43 *i*P **P 20 23 44.0 -0.1**
comp=Z,7.1nm,0.9s

VLC Villacollemand 86.46 46 PFAKE 20 24 00.0 +15
VLC LR LR
comp=Z,302nm,22.0s
NKC Novy Kostel 86.57 40 *e*P **P 20 23 44.6 -0.4**
NKC *e*PS **PnS 20 35 21.4 +1.0**
NKC AMS AMS 21 04 00.0
comp=Z,1µm,19.6s
NKC Novy Kostel 86.57 40 *e*P **P 20 23 44.6 -0.4**
NKC *e*SP SP 20 35 21.4
NKC MLR MLR
comp=Z,1µm,19.6s
VSL Villasalto 86.64 51 *e*P **P 20 23 44.6 -1.0**
VSL LR LR
comp=Z,1µm,21.0s
CLL Collm 86.67 38 *e*P **P 20 23 45.0 -0.5**
CLL *e* 20 23 51.0
CLL *e*S **S 20 34 18.0 -4.0**
CLL *e*PS **PnS 20 35 23.0 +1.5**
CLL *e*SS **SS 20 40 00.0 -2.8**
CLL LmV 20 59 00.0
comp=Z,900nm,20.9s
CLL Collm 86.67 38 *e*P **P 20 23 43.9 -1.6**
CLL Collm 86.67 38 *e*P **P 20 23 43.9 -1.6**
WTTA Wattenberg 86.68 43 *i*P **P 20 23 42.9 -2.9**
comp=Z,8.0nm,1.1s
BILL Bilibino 86.89 339⇑ *e*P **P 20 23 45.8 -0.4**
BILL *e**PP sP 20 24 03.4 +9.3
BILL pmax pmax
comp=Z,6.0nm,1.1s
BILL Bilibino 86.89 339 PFAKE 20 24 00.0 +14
BILL LR LR
comp=Z,734nm,22.0s
MIDW Midway 86.96 298 PFAKE 20 24 00.0 +13
MIDW LR LR
comp=Z,474nm,19.0s
ARA0 ARCESS Array S 86.98 19 *e*P **P 20 23 46.2 -0.4**
ARCES ARCESS Array B 86.98 19 P **P 20 23 46.1 -0.5**
comp=Z,5.1nm,0.8s,baz=289,slow=3.7,SNR=11
ARCES PP **PP 20 27 10.8 +1.3**
comp=Z,5.0nm,1.0s,baz=352,slow=5.0,SNR=4.9
WET Wettzell 87.08 41 *e*P **P 20 23 45.8 -1.8**
WET pmax pmax
comp=Z,15nm,2.0s
KEST Kesra 87.34 54 P **P 20 23 48.1 -1.1**
comp=Z,9.2nm,1.0s,baz=235,slow=9.8,SNR=9.6
KEST LR LR 20 59 30.6
comp=Z,407nm,20.0s,baz=224,slow=33
KEST Kesra 87.34 54 *e*P **P 20 23 47.7 -1.5**
BRG Berggiesshubel 87.35 39 *e*P **P 20 23 46.7 -2.1**
comp=Z,51nm,2.5s
BRG Berggiesshubel 87.35 39 *e*P **P 20 23 46.7 -2.1**
BRG pmax pmax
comp=Z,51nm,2.5s
BRG Berggiesshubel 87.35 39 PS **PnS 20 35 23.0 -6.7**
BRG SS SS 20 40 00.0 -13
ABTA Abfaltersbach 87.38 43 *i*P **P 20 23 48.5 -0.6**
comp=Z,8.3nm,0.8s
KHC Kasperske Hory 87.53 41 *e*P **P 20 23 49.4 -0.4**
KHC *ex* x 20 24 13.4
KHC *e*S **S 20 34 31.7 +1.2**
KHC *e*PS **PnS 20 35 31.2 -0.9**
KHC AMS AMS 20 59 10.0
comp=Z,2µm,19.7s
KHC Kasperske Hory 87.53 41 *e*P **P 20 23 49.4 -0.4**
KHC *e*S **S 20 34 31.7 +1.2**
KHC *e*SP **PnS 20 35 31.2 -0.9**
KHC MLR MLR
comp=Z,2µm,19.7s
KHC Kasperske Hory 87.53 41 *e*P **P 20 23 48.5 -1.3**
GEC2 GERESS Array S 87.68 41 *e*P **P 20 23 48.9 -1.7**
GEC2 GERESS Array S 87.68 41 *e*P **P 20 23 48.9 -1.7**
GERES GERESS Array B 87.68 41 P **P 20 23 49.4 -1.2**
comp=Z,1.2nm,0.7s,baz=295,slow=3.8,SNR=9.9
GERES LR LR 20 59 38.8
comp=Z,1µm,19.7s,baz=272,slow=33
GEA0 GERESS Array S 87.68 41 *e*P **P 20 23 48.8 -1.8**
PVCC Panska Ves 87.82 39 AMS AMS 21 05 50.0
comp=Z,1µm,17.7s
KBA Koelnbreinsper 87.86 43 *i*P **P 20 23 51.6 +0.1**
comp=Z,18nm,1.6s
KBA Koelnbreinsper 87.86 43 *e*P **P 20 23 49.4 -2.2**
KBA pmax pmax
comp=Z,8.0nm,1.6s
PRU Pruhonice 87.94 40 *e*S **S 20 34 36.0 +1.8**
PRU *e*PS 20 35 36.3
PRU *e*SS **SS 20 40 27.5 +6.2**
PRU AMS AMS 20 59 30.0
comp=Z,1µm,20.7s
GOPC GO Pecny, Ondr 88.11 40 *e*S **S 20 34 36.9 +1.0**
GOPC *e*PS PS 20 35 36.7 -3.8
GOPC *e*SS **SS 20 40 30.9 +7.0**
GOPC AMS AMS 21 00 20.0
comp=Z,1µm,19.6s
MYKA Terra Mystica 88.16 43 *i*P **P 20 23 52.0 -0.9**
comp=Z,10nm,1.5s
MOA Molln 88.28 42 *i*P **P 20 23 53.8 +0.5**
comp=Z,5.0nm,1.1s
CADS Cadrg 88.32 43 *e*P **P 20 23 52.4 -1.2**
UPC Upice 88.72 39 AMS AMS 21 06 20.0
comp=Z,1µm,16.5s
OBKA Obir 88.80 43 *i*PcP **P 20 23 56.5 +0.5**
comp=Z,5.3nm,1.1s
LJU Ljubljana 88.90 43 *e*P **P 20 23 55.2 -1.1**
DPC Dobruska-Polom 88.95 39 *e*P **P 20 23 56.4 -0.1**
DPC *e*PS **PnS 20 35 48.9 0.0**
DPC AMS AMS 21 06 20.0
comp=Z,900nm,20.0s
DPC Dobruska-Polom 88.95 39 *e*P **P 20 23 56.4 -0.1**
DPC *e*SP SP 20 35 48.9 +1.7
DPC MLR MLR
comp=Z,900nm,20.0s
AQU L'Aquila 89.00 47 PFAKE 20 24 10.0 +13
AQU LR LR
comp=Z,724nm,19.0s
SOKA Soboth 89.08 43 *i*P **P 20 23 56.9 -0.3**
comp=Z,8.0nm,1.6s
ARSA Arzberg 89.26 42 *i*P **P 20 23 57.9 -0.1**
comp=Z,2.8nm,1.0s
CONA Conrad Observa 89.30 41 *i*P **P 20 23 58.5 +0.3**
comp=Z,9.1nm,1.4s
VRAC Vranov 89.40 40 PP PP 20 27 31.9 +2.5
comp=Z,3.0nm,0.6s,baz=194,slow=11,SNR=5.1
VRAC LR LR 21 01 05.1
comp=Z,1µm,19.6s,baz=278,slow=34
CLTB Caltabellotta 89.99 52 PFAKE 20 24 10.0 +8.3
CLTB LR LR
comp=Z,521nm,19.0s
OKC Ostrava-Krasne 90.22 39 *e*S **S 20 34 57.2 +1.6**
OKC AMS AMS 21 08 00.0
comp=Z,800nm,16.8s
FIA0 FINESS Array S 90.42 27 *e*P **P 20 24 02.3 -0.7**
FIA0 FINESS Array S 90.42 27 *e*P **P 20 24 02.3 -0.7**
FIA0 *e* 21 00 08.7
FINES FINESS Array B 90.42 27 P **P 20 24 02.3 -0.7**
comp=Z,5.4nm,0.9s,baz=302,slow=4.3,SNR=6.5
FINES LR LR 21 00 08.7
comp=Z,1µm,22.0s,baz=284,slow=33
APA Apatity 90.46 20⇓ *i*P P 20 24 08.8 +5.7
APA *i* 20 27 34.0
APA *i*S **S 20 35 00.0 +2.8**
APA *i*PS **PS 20 36 08.0 +2.1**
APA pmax pmax
comp=Z,5.0nm,0.8s
LVZ Lovozero 90.70 19 PFAKE 20 24 20.0 +16
LVZ LR LR
comp=Z,1µm,19.0s
VYHS Vyhne 91.05 40 *e*P **P 20 24 04.9 -1.4**
VYHS pmax pmax
comp=Z,8.0nm,2.1s
VYHS Vyhne 91.05 40 *e*P **P 20 24 04.9 -1.4**
CUC Castrocucco 91.36 49 PFAKE 20 24 20.0 +12
CUC LR LR
comp=Z,591nm,20.0s
WDD Wied Dalam 91.42 53 PFAKE 20 24 20.0 +12
WDD LR LR
comp=Z,483nm,19.0s
CEL Celeste 91.87 51 PFAKE 20 24 20.0 +10
CEL LR LR
comp=Z,909nm,22.0s
PSZ Piszkesteto 91.90 41 PFAKE 20 24 20.0 +10
PSZ LR LR
comp=Z,742nm,20.0s
TIP Timpagrande 92.28 50 PFAKE 20 24 20.0 +7.8
TIP LR LR
comp=Z,1µm,22.0s

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
CRVS	**Cervenica-Dubn**	**92.57**	**39**	*e*P	**P**	**20 24 16.6**	**+3.3**
CRVS	**Cervenica-Dubn**	**92.57**	**39**	*e*P	**P**	**20 24 16.6**	**+3.3**
BZS	**Buzias**	**93.77**	**42**⇑	*i*P	**P**	**20 24 18.0**	**-0.9**
TIR	**Tirane**	**93.92**	**47**	PFAKE		20 24 30.0	+10
TIR				LR	LR		
	comp=Z,707nm,21.0s						
DRGR		**94.08**	**41**⇑	*i*P	**P**	**20 24 20.1**	**-0.3**
MDVR	**Moldovita**	**94.11**	**43**⇑	*i*P	**P**	**20 24 23.9**	**+3.4**
TIXI	**Tiksi**	**94.69**	**350**	LR	LR	21 10 07.6	
	comp=Z,850nm,20.1s,baz=58,slow=37						
TIXI	**Tiksi**	**94.69**	**350**⇓	*i*P	**P**	**20 24 24.5**	**+2.0**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TIXI	**Tiksi**	**94.69**	**350**	*e*P	**P**	**20 24 23.4**	**+0.8**
TIXI				LR	LR		
	comp=Z,854nm,21.0s						
GRG	**Griva**	**95.86**	**47**	*e*P	**P**	**20 24 28.8**	**+0.2**
GRG				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KLMR	**Klimovskoe**	**96.37**	**24**	*e*P	**P**	**20 24 28.0**	**-2.4**
KLMR				*e*		20 28 19.5	
KLMR				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KIEV	**Kiev**	**96.52**	**36**	*i* P	**P**	**20 24 30.8**	**-0.5**
KIEV				pmax	pmax		
	comp=Z,1.0nm,1.0s						
KIEV	**Kiev**	**96.52**	**36**	PFAKE		20 24 40.0	+8.7
KIEV				LR	LR		
	comp=Z,2µm,19.0s						
AKASG	**Malin Array Be**	**96.53**	**36**	P	**P**	**20 24 29.5**	**-1.9**
	comp=Z,0.5nm,0.4s,baz=305,slow=3.3,SNR=4.2						
AKASG				LR	LR	21 08 17.3	
	comp=Z,1µm,18.4s,baz=315,slow=36						
AKBB	**Malin Array Si**	**96.53**	**36**	*e*P	**P**	**20 24 29.5**	**-1.9**
AKBB	**Malin Array Si**	**96.53**	**36**	*e*P	**P**	**20 24 29.5**	**-1.9**
AKBB				*e*		21 08 17.2	
PET	**Petropavlovsk**	**96.56**	**327**⇑	*i*P	**P**	**20 24 32.4**	**+1.0**
PET				pmax	pmax		
	comp=Z,4.0nm,0.3s						
PET	**Petropavlovsk**	**96.56**	**327**	PFAKE		20 24 40.0	+8.6
PET				LR	LR		
	comp=Z,936nm,20.0s						
MLR	**Muntele Rosu**	**96.65**	**41**	P	**P**	**20 24 31.2**	**-1.0**
	comp=Z,0.3nm,0.7s,baz=338,slow=16,SNR=4.1						
MLR	**Muntele Rosu**	**96.65**	**41**⇑	*i*P	**P**	**20 24 33.1**	**+0.9**
MLR	**Muntele Rosu**	**96.65**	**41**	*e*P	**P**	**20 24 30.6**	**-1.6**
MLR	**Muntele Rosu**	**96.65**	**41**	*e*P	**P**	**20 24 30.6**	**-1.6**
MA2	**Magadan**	**96.92**	**335**	PFAKE		20 24 40.0	+7.0
MA2				LR	LR		
	comp=Z,2µm,21.0s						
PETK	**Petropavlovsk-**	**97.03**	**327**	LR	LR	21 11 08.3	
	comp=Z,223nm,19.6s,baz=68,slow=37						
FUNA	**Funafuti**	**97.13**	**263**	PFAKE		20 24 50.0	+15
FUNA				LR	LR		
	comp=Z,15µm,20.0s						
RAO	**Raoul Island**	**97.63**	**242**	LR	LR	20 57 46.1	
	comp=Z,364nm,20.8s,baz=243,slow=29						
OBN	**Obninsk**	**98.28**	**30**	LR	LR	21 06 07.5	
	comp=Z,710nm,21.6s,baz=286,slow=34						
IDI	**Anoyia**	**99.65**	**51**	LR	LR	21 06 58.8	
	comp=Z,140nm,20.1s,baz=296,slow=34						
SANT	**Santorini**	**99.70**	**50**	PFAKE		20 25 00.0	+14
SANT				LR	LR		
	comp=Z,600nm,21.0s						
NRIK	**Noril'sk**	**99.90**	**3**	LR	LR	21 11 48.2	
	comp=Z,2µm,20.1s,baz=358,slow=36						
QSPA	**South Pole Qui**	**100.77**	**180**	PFAKE		20 25 00.0	+10
QSPA				LR	LR		
	comp=Z,910nm,20.0s						
TARA	**Tarawa**	**101.52**	**274**	PFAKE		20 25 10.0	+16
TARA				LR	LR		
	comp=Z,65nm,19.0s						
YAK	**Yakutsk**	**102.50**	**344**	PFAKE		20 25 10.0	+12
YAK				LR	LR		
	comp=Z,2µm,21.0s						
ISP	**Isparta**	**102.87**	**47**	PFAKE		20 25 10.0	+10
ISP				LR	LR		
	comp=Z,606nm,19.0s						
ANTO	**Ankara**	**103.58**	**44**	PFAKE		20 25 20.0	+17
ANTO				LR	LR		
	comp=Z,612nm,20.0s						
BR101	**Keskin Array S**	**104.23**	**44**	*e*PP	PP	20 29 24.6	+0.6
BRTR	**Keskin Array B**	**104.23**	**44**	PP	PP	20 29 24.6	+0.6
	comp=Z,1.0nm,1.0s,baz=288,slow=5.1,SNR=4.2						
SBA	**Scott Base**	**104.28**	**192**	PFAKE		20 25 20.0	+15
SBA				LR	LR		
	comp=Z,901nm,21.0s						
TSUM	**Tsumeb**	**105.34**	**107**	PFAKE		20 29 40.0	
TSUM				LR	LR		
	comp=Z,420nm,21.0s						
CSS	**Mathiatis**	**106.14**	**49**	PFAKE		20 29 40.0	
CSS				LR	LR		
	comp=Z,124nm,21.0s						
ARU	**Arti**	**106.56**	**20**	PP	PP	20 29 37.5	-2.7
	comp=Z,0.5nm,0.3s,baz=308,slow=4.6,SNR=6.3						
ARU	**Arti**	**106.56**	**20**	PP	PP	20 29 37.5	-2.7
ARU				LR	LR		
	comp=Z,1µm,22.0s						
KIV	**Kislovodsk**	**107.82**	**37**	PFAKE		20 29 40.0	
KIV				LR	LR		
	comp=Z,712nm,22.0s						
YSS	**Yuzh-Sakhalins**	**108.43**	**328**	PFAKE		20 29 40.0	
YSS				LR	LR		
	comp=Z,378nm,20.0s						
SUR	**Sutherland**	**109.08**	**121**	PFAKE		20 29 40.0	
SUR				LR	LR		
	comp=Z,771nm,19.0s						
AKTO	**Aktyubinsk**	**111.07**	**24**	PP	PP	20 30 06.6	-6.6
	comp=Z,0.5nm,0.5s,baz=322,slow=12,SNR=4.6						
AKTO				PKKP	**PKKPab**	**20 40 41.2**	**-2.7**
	comp=Z,1.2nm,0.8s,baz=140,slow=4.5,SNR=3.7						
GNI	**Garni**	**111.28**	**39**	PFAKE		20 29 50.0	
GNI				LR	LR		
	comp=Z,776nm,21.0s						
ERM	**Erimo**	**111.32**	**323**	PFAKE		20 29 50.0	
ERM				LR	LR		
	comp=Z,862nm,21.0s						
BRVK	**Borovoye**	**113.00**	**16**	PFAKE		20 29 50.0	
BRVK				LR	LR		
	comp=Z,760nm,20.0s						
BVAR	**Borovoye Array**	**113.06**	**16**	PP	PP	20 30 21.3	-6.0
	comp=Z,2.8nm,0.8s,baz=339,slow=3.8,SNR=12						
ZAA1	**Zalesovo Array**	**114.94**	**7**	*e*PP	**PP**	**20 30 33.7**	**-6.7**
ZAA1				*e*SP	SP	20 40 29.5	+12
ZALV	**Zalesovo Beam**	**114.94**	**7**	PP	**PP**	**20 30 33.7**	**-6.7**
	comp=Z,0.9nm,0.6s,baz=14,slow=6.6,SNR=4.5						
ZALV				PKKP	**PKKPab**	**20 40 29.5**	**+2.7**
	comp=Z,0.2nm,0.4s,baz=140,slow=1.2,SNR=3.6						
LSZ	**Lusaka**	**115.05**	**102**	PFAKE		20 30 00.0	+16
LSZ				LR	LR		
	comp=Z,699nm,20.0s						
MBAR	**Mbarara**	**115.46**	**86**	PFAKE		20 30 00.0	+15
MBAR				LR	LR		
	comp=Z,278nm,19.0s						
HNR	**Honiara**	**116.07**	**265**	PFAKE		20 30 00.0	+14
HNR				LR	LR		
	comp=Z,1µm,19.0s						
HIA	**Hailar**	**116.33**	**342**	PFAKE		20 30 00.0	+15
HIA				LR	LR		
	comp=Z,986nm,21.0s						
MDJ	**Mudanjiang**	**116.54**	**333**	PKP	**PKPdf**	**20 29 45.3**	**-0.7**
MDJ				sPKP		20 30 10.1	
MDJ				PKS	**PKSdf**	**20 33 22.3**	**-0.3**
MDJ				SKS	**SKSdf**	**20 36 52.3**	**-5.2**
MDJ				AMB	AMB		
	comp=Z,39nm,6.6s						
MDJ				LR	LR		
	comp=Z,450nm,15.5s						
MDJ				LR	LR		
	comp=Z,890nm,21.3s						
MDJ				LR	LR		
	comp=Z,730nm,21.3s						
MDJ	**Mudanjiang**	**116.54**	**333**	PFAKE		20 30 00.0	+14
MDJ				LR	LR		
	comp=Z,735nm,20.0s						
KURK	**Kurchatov**	**117.12**	**12**	PFAKE		20 30 00.0	+13
KURK				LR	LR		
	comp=Z,2µm,20.0s						
TLY	**Talaya**	**117.33**	**354**	PFAKE		20 30 00.0	+13
TLY				LR	LR		
	comp=Z,818nm,20.0s						
MAJO	**Matsushiro**	**117.75**	**321**	PFAKE		20 30 00.0	+11
MAJO				LR	LR		
	comp=Z,692nm,22.0s						
SONA0	**Songino Array**	**120.75**	**351**	*e*PKPdf	**PKPdf**	**20 29 53.5**	**-0.6**
SONA0				*e*PP	**PP**	**20 31 15.3**	**-5.6**
SONA0				*e*PKKPbc	**PKKPbc**	**20 39 57.7**	**-2.4**
SONM	**Songino Array**	**120.75**	**351**	PKP	**PKPdf**	**20 29 53.5**	**-0.6**
	comp=Z,0.3nm,0.6s,baz=3.6,slow=1.6,SNR=4.0						
SONM				PP	**PP**	**20 31 15.3**	**-5.6**
	comp=Z,1.0nm,1.0s,baz=20,slow=2.5,SNR=5.3						
SONM				PKKPbc	**PKKPbc**	**20 39 57.7**	**-2.4**
	comp=Z,1.1nm,0.9s,baz=190,slow=3.7,SNR=5.3						
MAKZ	**Makanchi**	**121.50**	**10**	*e*PP	PP	20 31 16.6	-9.4
MK32	**Makanchi Array**	**121.57**	**10**	*e*PKPdf	**PKPdf**	**20 29 55.1**	**-0.5**
MK32				*e*PP	PP	20 31 18.3	-8.2
MKAR	**Makanchi Array**	**121.57**	**10**	PKP	**PKPdf**	**20 29 55.1**	**-0.5**
	comp=Z,0.2nm,0.6s,baz=3.3,slow=5.1,SNR=4.3						
MKAR				PP	PP	20 31 18.3	-8.2
	comp=Z,0.5nm,0.7s,baz=24,slow=4.1,SNR=4.4						
KMBO	**Kilima Mbogo**	**121.95**	**85**	PFAKE		20 30 10.0	+12
KMBO				LR	LR		
	comp=Z,511nm,20.0s						
KS01	**Wonju Array Si**	**122.89**	**329**	*e*PKPdf	**PKPdf**	**20 29 57.0**	**-1.4**
KS01				*e*PP	**PP**	**20 31 32.4**	**-3.4**
KSRS	**Korea Array**	**122.89**	**329**	PKP	**PKPdf**	**20 30 00.2**	**+1.9**
	comp=Z,3.7nm,0.9s,baz=340,slow=1.3,SNR=5.9						
KSAR	**Wonju Array Be**	**122.92**	**329**	PKIKP	**PKPdf**	**20 30 00.2**	**+1.8**
KSAR	**Wonju Array Be**	**122.92**	**329**	PKP	**PKPdf**	**20 30 00.2**	**+1.8**
INCN	**Inchon**	**123.51**	**330**	PFAKE		20 30 10.0	+10
INCN				LR	LR		
	comp=Z,523nm,19.0s						
CASY	**Casey**	**123.57**	**188**	PFAKE		20 30 10.0	+11
CASY				LR	LR		
	comp=Z,381nm,21.0s						
AAK	**Ala-Archa**	**123.64**	**18**	PFAKE		20 30 10.0	+10
AAK				LR	LR		
	comp=Z,1µm,21.0s						
GUMO	**Guam**	**124.84**	**295**	PFAKE		20 30 10.0	+7.4
GUMO				LR	LR		
	comp=Z,1µm,19.0s						
WMQ	**Urumqi**	**125.25**	**6**	*e*PKP	**PKPdf**	**20 30 02.4**	**-0.4**
WMQ				PP	PP	20 31 59.5	+8.2
WMQ				SKS	**SKSdf**	**20 37 05.0**	**-9.2**
WMQ				SKKS	**SKKSac**	**20 38 43.0**	**-7.4**
WMQ				AMB	AMB		
	comp=Z,120nm,4.2s						
WMQ				LR	LR		
	comp=Z,1µm,20.1s						
WMQ				LR	LR		
	comp=Z,730nm,19.3s						
WMQ				LR	LR		
	comp=Z,2µm,25.2s						
CAN	**Canberra**	**125.34**	**234**	PFAKE		20 30 10.0	+6.9
CAN				LR	LR		
	comp=Z,1µm,19.0s						
BJT	**Baijiatuau**	**125.74**	**340**	PFAKE		20 30 20.0	+16
BJT				LR	LR		
	comp=Z,1µm,20.0s						
HHC	**Hu-ho-hao-te**	**126.36**	**344**	*e*PKP	**PKPdf**	**20 30 07.5**	**+2.4**
HHC				PP	PP	20 32 07.5	+8.7
HHC				SS	SS	20 49 03.8	+2.5
HHC				AMB	AMB		
	comp=Z,46nm,8.3s						
HHC				LR	LR		
	comp=Z,540nm,20.6s						
HHC				LR	LR		
	comp=Z,730nm,21.8s						
HHC				LR	LR		
	comp=Z,480nm,16.0s						
KSH	**Kashi**	**126.94**	**18**	*e*PKP	**PKPdf**	**20 30 06.7**	**+0.4**
KSH				PKS	**PKSdf**	**20 33 41.9**	**-1.1**
KSH				SKS	**SKSdf**	**20 37 13.6**	**-4.1**
KSH				SKKS	SKKSac	20 38 49.6	-12
KSH				LR	LR		
	comp=Z,410nm,11.5s						
KSH				LR	LR		
	comp=Z,450nm,12.6s						
KSH				LR	LR		
	comp=Z,720nm,13.8s						
PMG	**Port Moresby**	**128.59**	**267**	PFAKE		20 30 20.0	+10
PMG				LR	LR		
	comp=Z,2µm,20.0s						
CTAO	**Charters Tower**	**129.82**	**253**	PFAKE		20 30 20.0	+7.9
CTAO				LR	LR		
	comp=Z,3µm,19.0s						
STKA	**Stephens Creek**	**132.16**	**237**	PKP	**PKPdf**	**20 30 16.7**	**+0.5**
	comp=Z,2.5nm,1.1s,baz=112,slow=11,SNR=2.9						
ABPO	**Ambohimpanom**	**133.32**	**106**	PFAKE		20 30 30.0	+11
ABPO				LR	LR		
	comp=Z,208nm,19.0s						
TATO	**Taipei**	**136.00**	**324**	PFAKE		20 30 40.0	+16
TATO				LR	LR		
	comp=Z,677nm,21.0s						
YHNB	**Yeheng**	**136.30**	**324**	PFAKE		20 30 40.0	+16
YHNB				LR	LR		
	comp=Z,607nm,19.0s						
ENH	**Enshi**	**136.83**	**341**	PFAKE		20 30 40.0	+15
ENH				LR	LR		
	comp=Z,895nm,20.0s						
CD2	**Chengdu**	**137.68**	**349**	PKP	**PKPdf**	**20 30 24.4**	**-2.2**
CD2				sPKP		20 30 49.6	
CD2				SKS	**SKSdf**	**20 37 29.4**	**-7.6**
CD2				SKKS	**SKKSac**	**20 39 58.7**	**-8.4**
CD2				AMB	AMB		
	comp=Z,320nm,6.4s						
CD2				LR	LR		
	comp=Z,1µm,18.9s						
CD2				LR	LR		
	comp=Z,1µm,18.9s						
CD2				LR	LR		
	comp=Z,1µm,21.4s						
LSA	**Lhasa**	**139.58**	**5**	PFAKE		20 30 40.0	+9.3
LSA				LR	LR		
	comp=Z,764nm,20.0s						
AS01	**Alice Springs**	**140.71**	**246**	*e*PKPpre	PKPpre	20 30 25.1	
AS31	**Alice Springs**	**140.75**	**246**	*e*PKPpre	PKPpre	20 30 22.5	
AS31				*e*PKPdf	**PKPdf**	**20 30 30.1**	**-2.3**
ASAR	**Alice Springs**	**140.76**	**246**	PKhKP	PKPpre	20 30 26.8	
	comp=Z,1.8nm,0.8s,baz=116,slow=3.5,SNR=15						
WB2	**Warramunga Arr**	**140.98**	**252**	*e*PKPdf	**PKPdf**	**20 30 28.3**	**-4.5**
WRAB	**Tennant Creek**	**140.99**	**252**	PFAKE		20 30 40.0	+7.2
WRAB				LR	LR		
	comp=Z,3µm,20.0s						
WR1	**Warramunga Arr**	**140.99**	**252**	*e*PKPpre	PKPpre	20 30 26.9	
WRA	**Warramunga Arr**	**140.99**	**252**	PKhKP	PKPpre	20 30 26.9	
	comp=Z,2.5nm,0.5s,baz=94,slow=3.0,SNR=17						
WRA	**Warramunga Arr**	**140.99**	**252**	PKHKP	PKPpre	20 30 27.0	
GYA	**Guiyang**	**141.25**	**343**	PKP	**PKPdf**	**20 30 32.0**	**-1.4**
GYA				sPKP		20 30 56.2	
GYA				PP	**PP**	**20 33 37.6**	**+3.9**
GYA				PKS	**PKSdf**	**20 34 05.4**	**-4.1**
GYA				SKKS		20 40 20.0	
GYA				AMB	AMB		
	comp=Z,180nm,8.2s						
GYA				LR	LR		
	comp=Z,160nm,21.0s						
GYA				LR	LR		
	comp=Z,120nm,22.3s						
GYA				LR	LR		
	comp=Z,140nm,22.6s						
FORT	**Forrest**	**143.39**	**232**	*e*PKPdf	PKPbc	20 30 35.5	+1.5
KMI	**Kunming**	**143.50**	**348**	PKP	**PKPdf**	**20 30 37.4**	**-0.1**
KMI				pPKP	pPKPdf	20 30 52.1	+8.6
KMI				sPKP		20 31 00.0	
KMI				PP	**PP**	**20 33 50.8**	**+3.4**
KMI				SKKS		20 40 34.3	
KMI				AMB	AMB		
	comp=Z,140nm,7.8s						
KMI				LR	LR		
	comp=Z,430nm,26.2s						
KMI				LR	LR		
	comp=Z,740nm,16.0s						
KMI				LR	LR		
	comp=Z,820nm,27.6s						
MTN	**Manton Dam**	**144.51**	**263**	*e*PKPdf	**PKPab**	**20 30 37.5**	**0.0**
DAV	**Davao City (W)**	**144.69**	**299**	PFAKE		20 30 50.0	+10
DAV				LR	LR		
	comp=Z,423nm,19.0s						
QIZ	**Qiongzhong**	**146.91**	**333**	PKPbc	**PKPdf**	**20 30 42.0**	**-1.2**
QIZ				PP	**PP**	**20 34 08.5**	**+0.7**
QIZ				SS	SS	20 53 04.3	-2.4
QIZ				LR	LR		
	comp=Z,870nm,9.5s						
QIZ				LR	LR		
	comp=Z,760nm,9.3s						
QIZ				LR	LR		
	comp=Z,590nm,14.0s						
QIZ	**Qiongzhong**	**146.91**	**333**	*e*PKPdf	**PKPdf**	**20 30 43.0**	**-0.2**
QIZ				LR	LR		
	comp=Z,669nm,22.0s						
HYB	**Hyderabad**	**147.64**	**30**	*i* PKP	**PKPbc**	**20 30 48.0**	**+0.8**
FITZ	**Fitzroy Crossi**	**149.40**	**253**	*e*PKPdf	**PKPdf**	**20 30 47.6**	**+0.3**
FITZ				*e*PKPbc	**PKPbc**	**20 30 52.3**	**+0.6**
NWAO	**Narrogin (SRO)**	**149.89**	**220**	*e*PKP2	**PKPbc**	**20 30 52.3**	**-0.2**
NWAO				MLR	MLR		
	comp=Z,1µm,21.0s						
NWAO	**Narrogin (SRO)**	**149.89**	**220**	*e*PKPbc	**PKPbc**	**20 30 52.3**	**-0.2**
NWAO				LR	LR		
	comp=Z,1µm,21.0s						
CHTO	**Chiang Mai**	**150.31**	**352**	*e*PKIKP	**PKPdf**	**20 30 51.3**	**+2.5**
CHTO				MLR	MLR		
	comp=Z,864nm,21.0s						
CHTO	**Chiang Mai**	**150.31**	**352**	*e*PKPbc	**PKPdf**	**20 30 51.3**	**+2.5**
CHTO				LR	LR		
	comp=Z,864nm,21.0s						
CM31	**Chiang Mai Arr**	**150.66**	**352**	*e*PKPbc	**PKPbc**	**20 30 52.8**	**-2.0**
CMAR	**Chiang Mai Arr**	**150.66**	**352**	PKP	**PKPdf**	**20 30 49.5**	**+0.2**
	comp=Z,1.0nm,0.9s,baz=5.7,slow=0.9,SNR=3.8						
CMAR				PKPbc	**PKPbc**	**20 30 54.1**	**-0.7**
	comp=Z,2.0nm,0.9s,baz=322,slow=2.2,SNR=14						
CM01	**Chiang Mai Arr**	**150.70**	**352**	*e*PKPdf	**PKPdf**	**20 30 47.2**	**-2.2**
CM01				*e*PKPbc	**PKPbc**	**20 30 54.7**	**-0.2**
MYLDM	**Lahad Datu**	**151.66**	**303**	*e*PKPdf	**PKPdf**	**20 30 47.5**	**-3.4**
MYLDM				*e*PKPbc	**PKPbc**	**20 30 54.4**	**-2.8**
KKM	**Kota Kinabalu**	**152.99**	**307**	PFAKE		20 31 00.0	-0.4
KKM				LR	LR		
	comp=Z,683nm,20.0s						
MBWA	**Marble Bar**	**154.05**	**244**	PFAKE		20 31 00.0	-2.3
MBWA				LR	LR		
	comp=Z,785nm,19.0s						
KAPI	**Kappang**	**154.75**	**281**	PFAKE		20 31 10.0	+6.0
KAPI				LR	LR		
	comp=Z,332nm,20.0s						
KSM	**Kuching**	**160.43**	**308**	PFAKE		20 31 10.0	+7.5
KSM				LR	LR		
	comp=Z,568nm,22.0s						
KULM	**Kulim**	**163.03**	**340**	PFAKE		20 31 20.0	+15
KULM				LR	LR		
	comp=Z,957nm,19.0s						

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*ISCJB **12** 20:17:53.3±0.1, 10°.84N±0°.02×85°.14W±0°.02, h10^{km}, mb5.0/217, MS5.4/6, Error ellipse: s-maj=3.6km s-min=1.8km az=42.6*

*NEIC **12** 20:17:54.6±0.2, 10°.74N×85°.20W, h10^{km}, mb5.1/196, Error ellipse: s-maj=5.9km s-min=3.6km az=31.0*

NEIC Felt at Tilaran and Upala.

*GCMT **12** 20:17:54.7±0.3, 10°.91N×85°.14W, h17^{km}±1^{km}, MW5.3/97, Moment Tensor Solution. s37,c43; s97,c155; Duration: 1^{s}0 Moment tensor: Scale 10^{17}Nm; M_{rr}0.61±.04; $M_{\theta\theta}$-0.70±.03; $M_{\phi\phi}$0.09±.03; $M_{r\theta}$-0.56±.08; $M_{\theta\phi}$0.49±.02; $M_{\phi r}$0.03±.09; Best double couple: $M_0$0.97500×10^{17} NP1:ϕ_s277.00000°, δ65.00000°, λ68.00000°. NP2: ϕ_s140.00000°, δ33.00000°, λ128.00000°. Principal axes: T 0.8500, Plg64.0000°, Azm151.0000°; N 0.2500, Plg19.0000°, Azm287.0000°; P -1.1000, Plg17.0000°, Azm23.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*CASC **12** 20:17:55.3±2.3, 10°.80N×85°.14W, h10^{km}, MD5.0, ML4.0, mb5.1(NEIC)*

*MOS **12** 20:17:56.6±1.2, 10°.90N×85°.03W, h33^{km}, mb5.2/49, Error ellipse: s-maj=10.2km s-min=5.1km az=111.4*

*IDC **12** 20:18:02.5±2.8, 10°.86N×85°.13W, h78^{km}±27^{km}, mb4.4/23, mb1 4.5/26, mb1mx4.4/40, mbtmp4.7/26, Error ellipse: s-maj=18.9km s-min=9.7km az=54.0*

*BJI **12** 20:18:03.9, 10°.90N×85°.10W, h86^{km}, mB5.1/8, Ms5.7/9, Ms7 5.3/9*

ISC 12 20:17:54.5±0.3**, 10°.80N**±0°.04×**85°.14W**±0°.04**, h10^{km}, n873,** σ1^s**30**/840**, mb5.0**/218**, MS5.3**/6**, 2C-3D, Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ARE1	**Arenal 1**	**0.53**	**129**⇑	*e*P	**Pg**	**20 18 05.9**	**+1.1**
ARE1				*e*S	**Sb**	**20 18 14.6**	**+0.9**
VCR	**Vista de Mar**	**0.82**	**216**⇓	*i*P	**Pg**	**20 18 10.3**	**-0.1**
JCR	**Jicaral**	**0.94**	**178**⇓	*i*P	**Pg**	**20 18 11.7**	**-0.9**
JCR				*e*S	**Sn**	**20 18 27.7**	**+0.3**
CGA2	**Cerro Gallo 2**	**1.02**	**139**⇓	*i*P	**Pg**	**20 18 11.8**	**-2.3**
CGA2				*e*S	**Sg**	**20 18 27.2**	**-0.2**
HDC	**Heredia**	**1.28**	**128**	*e*Pn	**Pn**	**20 18 18.4**	**-0.1**
HDC	**Heredia**	**1.28**	**128**	*e*P	**Pn**	**20 18 17.1**	**-1.4**
MASN	**Masaya**	**1.55**	**320**	*e*P	**Pn**	**20 18 22.1**	**0.0**
URSC	**Urasca**	**1.64**	**125**⇑	*e*P	**Pn**	**20 18 23.7**	**+0.1**
MGAN	**Managua**	**1.73**	**321**	*e*P	**Pn**	**20 18 24.8**	**+0.2**
TISN	**Laguna Tiscapa**	**1.74**	**320**	*e*P	**Pn**	**20 18 25.2**	**+0.4**
XAVN	**Gruta Xavier**	**1.78**	**319**	*e*P	**Pn**	**20 18 25.6**	**+0.3**
COPN	**Copaltepe**	**1.98**	**314**	*e*P	**Pn**	**20 18 28.1**	**0.0**
MOMN	**Momotombo**	**2.11**	**320**	*e*P	**Pn**	**20 18 30.7**	**+0.7**
CNGN	**Cerro Negro**	**2.28**	**318**	*e*P	**Pn**	**20 18 32.7**	**+0.4**
CNGN				*e*S	**Sg**	**20 19 11.4**	**+3.5**
CNGN				AML	AML	20 19 24.2	
	comp=N,1µm,0.5s						
BRU2	**Volcan**	**3.13**	**129**	*e*P	**Pn**	**20 18 47.6**	**+3.6**
TBS2		**3.15**	**129**	*e*P	**Pn**	**20 18 46.9**	**+2.5**
CNCH	**Conchagua**	**3.61**	**313**	*e*P	**Pn**	**20 18 51.3**	**+0.6**
BLLM	**Bellamira**	**4.01**	**311**	*e*P	**Pn**	**20 18 57.4**	**+1.3**
LCY	**Lacayo**	**4.04**	**311**	*e*P	**Pn**	**20 18 57.9**	**+1.3**
PACA	**Pacayal**	**4.09**	**311**	*e*P	**Pn**	**20 18 58.6**	**+1.3**
LFRS	**El Faro**	**4.75**	**307**	*e*P	**Pn**	**20 19 06.9**	**+0.5**
LFRS				*e*S	**Sn**	**20 20 01.3**	**-0.3**
LBRS	**Las Brisas**	**4.81**	**308**	*e*P	**Pn**	**20 19 07.6**	**+0.6**
LFU	**La Fuente**	**4.87**	**307**	*e*P	**Pn**	**20 19 08.6**	**+0.7**
BOQS	**Boqueron**	**4.99**	**306**	*e*P	**Pn**	**20 19 12.0**	**+2.3**
ZANG	**Zanguenga, Cho**	**5.51**	**109**	*e*P	**Pn**	**20 19 17.3**	**+0.7**
CCIG	**Comitan**	**8.72**	**309**	*e*Pn	**Pn**	**20 20 04.8**	**+3.9**
MOTC	**Monteria, Cord**	**9.55**	**101**	*e*P	**Pn**	**20 20 13.3**	**+1.1**
DBBC	**Dabeiba**	**9.59**	**112**	*e*P	**Pn**	**20 20 14.4**	**+1.7**
SJCC	**San Jacinto, C**	**9.84**	**94**	*e*P	**Pn**	**20 20 16.1**	**-0.1**
MTDJ	**Mount Denham**	**10.43**	**44**	*e*Pn	Pn	20 20 29.7	+5.4
HELC	**Santa Helena**	**10.55**	**115**	*e*P	**Pn**	**20 20 28.0**	**+1.8**
HELC	**Santa Helena**	**10.55**	**115**	*e*Pn	**Pn**	**20 20 27.7**	**+1.6**
GUYC	**Guyana, Colomb**	**11.12**	**119**	*e*P	**Pn**	**20 20 37.0**	**+2.9**
CMIG	**Matias Romero**	**11.34**	**305**	P	**Pn**	**20 20 39.1**	**+2.4**
	comp=N,3.6nm,0.3s,baz=151,slow=10.0,SNR=43						
NORC	**Norcasia**	**11.41**	**116**	*e*P	Pn	20 20 42.7	+4.9
OCAC	**Ocana**	**11.93**	**101**	*e*P	**Pn**	**20 20 47.2**	**+2.3**
ROSC	**El Rosal**	**12.24**	**118**	*e*Pn	Pn	20 20 55.0	+5.6
PRAC	**Prado**	**12.36**	**124**	*e*Pn	Pn	20 20 57.6	+6.8
OTAV	**Otavalo**	**12.42**	**147**	*e*Pn	**Pn**	**20 20 56.5**	**+4.7**
PAYG	**Puerto Ayora**	**12.49**	**205**	*e*Pn	Pn	20 20 59.4	+6.9
BARC	**Barichara**	**12.53**	**108**	*e*P	**Pn**	**20 20 55.7**	**+2.5**
GRMC	**Gramalote, San**	**12.55**	**103**	*e*P	**Pn**	**20 20 56.3**	**+2.8**
CBRI	**Barrientos, No**	**12.56**	**103**	*e*P	**Pn**	**20 20 55.1**	**+1.6**
CHIC	**Chingaza**	**12.85**	**118**	*e*P	**Pn**	**20 21 02.5**	**+4.7**
RUSC	**La Rusia**	**12.88**	**111**	*e*P	Pn	20 21 03.1	+4.8
RUSC	**La Rusia**	**12.88**	**111**	*e*Pn	**Pn**	**20 21 02.2**	**+4.0**
GTBY	**Guantanamo Bay**	**13.26**	**46**	*e*Pn	**P**	**20 21 15.3**	**+2.5**
SDV	**Santo Domingo**	**14.42**	**96**	*e*Pn	**Pn**	**20 21 21.8**	**+2.8**
TLIG	**Tlapa**	**14.65**	**299**	*e*Pn	**Pn**	**20 21 24.7**	**+2.6**
SDDR	**Presa de Saban**	**15.66**	**57**	*e*Pn	**P**	**20 21 38.5**	**-1.1**
	comp=N,87nm,1.0s						
UNM	**Universidad Na**	**15.98**	**304**	*e*P	**P**	**20 21 43.5**	**+0.1**
UNM				pmax	pmax		
	comp=Z,675nm,1.7s						
UNM	**Universidad Na**	**15.98**	**304**	*e*Pn	**P**	**20 21 43.5**	**+0.1**
	comp=Z,674nm,1.7s						
SDD	**Santo Domingo**	**16.58**	**61**	*e*Pn	**Pn**	**20 21 48.5**	**+1.3**
	comp=Z,516nm,1.5s						
GRTK	**Grand Turk**	**17.15**	**50**	*e*Pn	**P**	**20 21 60.0**	**+4.0**
	comp=Z,230nm,1.3s						
DWPF	**Disney Wildern**	**17.57**	**11**	*e*Pn	**P**	**20 22 02.0**	**+1.4**
	comp=Z,248nm,1.8s						
MOIG	**Morelia**	**17.81**	**302**	*e*Pn	**P**	**20 22 06.0**	**+2.4**
	comp=Z,185nm,1.2s						
MPR	**Mayaguez**	**18.91**	**65**	*e*P	**Pn**	**20 22 16.6**	**+0.5**
	comp=Z,78nm,1.1s						
AGP	**Aguadilla**	**18.98**	**64**	*e*P	**Pn**	**20 22 20.2**	**+3.2**
	comp=Z,741nm,1.6s						
ATAH	**Atahualpa**	**19.04**	**159**	P	**Pn**	**20 22 20.0**	**+2.0**
	comp=Z,0.6nm,0.3s,baz=27,slow=9.1,SNR=6.2						
646A	**Port Sulphur**	**19.20**	**348**	P	**P**	**20 22 19.4**	**+0.9**
	baz=166						
645A	**Chauvin**	**19.25**	**345**	P	**Pn**	**20 22 20.7**	**+0.5**
	baz=164						
CELP	**Cerrillos**	**19.36**	**66**	*e*P	**Pn**	**20 22 23.1**	**+1.5**
SJG	**San Juan**	**19.76**	**66**	P	**P**	**20 22 26.3**	**+1.5**
	comp=Z,4.1nm,0.3s,baz=256,slow=10,SNR=11						
SJG	**San Juan**	**19.76**	**66**	*e*P	**Pn**	**20 22 26.5**	**+0.2**
SJG				pmax	pmax		

	comp=Z,158nm,1.3s								
SJG	San Juan	19.76	66	eP		Pn	20 22 26.5	+0.2	
	comp=Z,158nm,1.3s								
545A	Edgard	19.79	346	P		Pn	20 22 26.6	+0.1	
	baz=164								
035Z	Hargill	19.80	324	P		P	20 22 26.2	+1.0	
	baz=140								
546A	Slidell	19.81	348	P		P	20 22 26.1	+0.9	
	baz=167								
544A	White Castle	20.02	345	P		P	20 22 28.6	+1.1	
	baz=163								
HUMP	Col San Antoni	20.04	66	eP		Pn	20 22 29.7	0.0	
	comp=Z,79nm,1.1s								
CBYP	Canovanas	20.08	66	eP		P	20 22 29.9	+1.6	
	comp=Z,188nm,1.4s								
936A	North Padre Is	20.12	327	P		P	20 22 29.8	+1.2	
	baz=143								
447A	Lucedale	20.17	351	P		Pn	20 22 32.1	+1.1	
	baz=170								
PCRV	Puerto La Cruz	20.17	90	P		Pn	20 22 31.5	+0.2	
	comp=Z,95nm,1.0s,baz=292,slow=7.5,SNR=20								
035A	Encino	20.18	325	P		Pn	20 22 31.7	+0.5	
	baz=141								
543A	St. Martinvill	20.19	343	P		P	20 22 31.0	+1.6	
	baz=161								
448A	Bay Minette	20.20	353	P		Pn	20 22 33.0	+1.7	
	baz=172								
446A	Poplarville	20.28	349	P		Pn	20 22 33.5	+1.1	
	baz=168								
BRAL	Brewton	20.35	355	eP		Pn	20 22 34.2	+1.0	
	comp=Z,247nm,1.0s								
445A	Amite	20.42	347	P		Pn	20 22 34.6	+0.6	
	baz=165								
542A	Morse	20.43	341	P		Pn	20 22 34.4	+0.2	
	baz=159								
ZAIG	Zacatecas	20.47	308	eP		Pn	20 22 35.1	+0.1	
	comp=Z,78nm,1.3s								
738A	Farr-Stevens R	20.47	333	P		Pn	20 22 34.8	+0.2	
	baz=149								
444A	Pine Grove	20.50	346	P		Pn	20 22 35.2	+0.3	
	baz=164								
KVTX	Kingsville	20.53	326	eP		P	20 22 34.9	+1.8	
	comp=Z,272nm,1.5s								
541A	Lake Charles	20.58	340	P		Pn	20 22 35.8	-0.1	
	baz=157								
TIGA	Tifton	20.59	4	P		Pn	20 22 36.6	+0.5	
	baz=184,SNR=13								
TIGA	Tifton	20.59	4	eP		Pn	20 22 36.4	+0.4	
	comp=Z,511nm,1.4s								
034A	Hebbronville	20.61	324	P		Pn	20 22 36.4	+0.1	
	baz=140,SNR=14								
348A	Jackson	20.68	353	P		Pn	20 22 37.9	+0.9	
	baz=172								
347A	Saraland	20.75	352	P		Pn	20 22 38.5	+0.7	
	baz=171								
737A	Port Lavaca	20.77	331	P		Pn	20 22 38.4	+0.3	
	baz=147								
443A	Delano Plantat	20.81	344	P		Pn	20 22 39.0	+0.5	
	baz=162								
346A	Big Creek Wild	20.88	350	P		Pn	20 22 40.0	+0.6	
	baz=168								
638A	Rosharon	20.88	334	P		P	20 22 38.9	+2.0	
	baz=151								
CDVI	St. Croix	20.91	68	eP		P	20 22 38.3	+1.0	
	comp=Z,222nm,1.4s								
345A	Thompson Farm,	20.91	348	P		Pn	20 22 40.5	+0.8	
	baz=167								
STVI	Saint Thomas	20.92	67	eP		P	20 22 38.1	+0.7	
	comp=Z,116nm,1.3s								
934A	Benavides	20.92	325	P		P	20 22 39.3	+1.9	
	baz=141								
442A	Mamou	20.95	342	P		Pn	20 22 40.5	+0.4	
	baz=160								
540A	Vidor	21.00	338	P		Pn	20 22 41.4	+0.7	
	baz=155								
835A	Beeville	21.08	327	P		P	20 22 41.0	+1.9	
	baz=143								
539A	Cross D Ranch,	21.19	336	P		P	20 22 43.3	+3.1	
	baz=153								
344A	Westbrook Farm	21.20	347	P		P	20 22 42.9	+2.6	
	baz=165,SNR=15								
441A	DeRidder	21.22	341	P		P	20 22 43.3	+2.8	
	baz=158								
736A	Circle Diamond	21.24	330	P		P	20 22 43.3	+2.6	
	baz=146								
343A	Vidalia	21.25	345	P		P	20 22 43.5	+2.6	
	baz=162								
637A	Eagle Lake	21.29	332	P		P	20 22 43.9	+2.6	
	baz=149								
248A	Dixon Mills	21.33	354	P		P	20 22 45.1	+3.3	
	baz=173								
834A	Tilden	21.35	326	P		P	20 22 43.7	+1.8	
	baz=142								
933A	Laredo	21.37	324	P		P	20 22 44.0	+1.8	
	baz=139,SNR=10								
247A	Quitman	21.40	352	P		P	20 22 43.7	+1.2	
	baz=171,SNR=13								
246A	Jackson Lee, B	21.44	351	P		P	20 22 44.3	+1.5	
	baz=169								
440A	Kirbyville	21.48	339	P		P	20 22 45.0	+1.7	
	baz=156								
735A	Kenedy	21.53	328	P		P	20 22 44.9	+1.1	
	baz=144								
342A	Flagon Creek P	21.54	343	P		P	20 22 45.5	+1.6	
	baz=161								
245A	Little AP, Sta	21.59	349	P		P	20 22 46.2	+1.7	
	baz=167								
ABVI	Anegada Island	21.59	66	eP		P	20 22 46.1	+1.4	
	comp=Z,316nm,1.1s								
538A	Harpers Horsep	21.60	335	P		P	20 22 46.1	+1.5	
	baz=152								
636A	Smothers Creek	21.67	331	P		P	20 22 47.1	+1.7	
	baz=147,SNR=15								
341A	Kurthwood	21.75	341	P		P	20 22 47.5	+1.3	
	baz=158								
244A	Avery, Jackson	21.76	347	P		P	20 22 48.5	+2.2	
	baz=165								
243A	Waterproof	21.79	345	P		P	20 22 48.8	+2.2	
	baz=163,SNR=5.7								
439A	Center Grove,	21.82	337	P		P	20 22 48.7	+1.8	
	baz=154,SNR=7.8								
537A	Green Hill Far	21.83	333	P		P	20 22 48.9	+1.8	
	baz=149,SNR=16								
VBMS	Vicksburg	21.89	348	P		P	20 22 48.8	+1.1	
	baz=166								
VBMS	Vicksburg	21.89	348	eP		P	20 22 49.8	+2.0	
	comp=Z,534nm,1.4s								
734A	La Parita Cree	21.91	327	P		P	20 22 48.3	+0.3	
	baz=143								
635A	Leesville	21.94	329	P		P	20 22 48.2	-0.1	
	baz=145								
147A	Livingston	21.96	353	P		P	20 22 50.8	+2.3	
	baz=172,SNR=19								
833A	Chaparral WMA,	21.97	325	P		P	20 22 48.6	0.0	
	baz=140								
146A	Union	22.04	351	P		P	20 22 50.9	+1.6	
	baz=170								
438A	Sam Houston St	22.06	336	P		P	20 22 50.7	+1.2	
	baz=152								
340A	Bronson	22.06	340	P		P	20 22 51.1	+1.5	
	baz=157								
242A	Grayson	22.13	344	P		P	20 22 51.8	+1.4	
	baz=162								
145A	Houston Renfro	22.15	349	P		P	20 22 52.6	+2.1	
	baz=168,SNR=6.6								
536A	Bastrop	22.17	332	P		P	20 22 51.3	+0.5	
	baz=148								
LRAL	Lakeview Retre	22.20	356	eP		P	20 22 54.6	+3.6	
	comp=Z,96nm,0.9s								
733A	Divot King Ran	22.22	325	P		P	20 22 50.9	-0.4	
	baz=141,SNR=5.8								
339A	Huntington	22.22	338	P		P	20 22 51.8	+0.5	
	baz=155								
144A	Alexander Plac	22.27	348	P		P	20 22 52.8	+1.0	
	baz=166								
SABA	Saba	22.27	70	eP		P	20 22 56.7	+4.7	
	comp=Z,155nm,1.1s								
832A	Faith Ranch, C	22.28	323	P		P	20 22 51.1	-0.8	
	baz=139,SNR=8.8								
241A	Mo Tay, Goldon	22.32	342	P		P	20 22 53.3	+1.0	
	baz=160								
535A	Dale	22.37	331	P		P	20 22 53.4	+0.5	
	baz=146								
437A	Phantom Ranch,	22.40	334	P		P	20 22 53.9	+0.7	
	baz=151								
Z47A	Carrollton	22.46	354	P		P	20 22 55.9	+2.0	
	baz=173,SNR=9.4								
RGRS	Roger Stewart	22.47	11	eP		P	20 22 54.8	+0.9	
	comp=Z,655nm,0.4s								
SEUS	St. Eustatius	22.48	70	eP		P	20 22 55.3	+1.1	
	comp=Z,242nm,1.2s								
338A	Crockett	22.53	337	P		P	20 22 55.4	+0.8	
	baz=153,SNR=11								
SMRT	St. Maarten	22.54	69	eP		P	20 22 55.9	+1.1	
	comp=Z,301nm,1.6s								
142A	Monroe	22.54	345	P		P	20 22 55.6	+0.9	
	baz=162								
143A	Socs Landing,	22.55	346	P		P	20 22 55.7	+0.9	
	baz=164								
GOGA	Godfrey	22.56	4	eP		P	20 22 56.8	+1.9	
GOGA					pmax	pmax			
	comp=Z,184nm,1.3s								
GOGA	Godfrey	22.56	4	eP		P	20 22 56.8	+1.9	
	comp=Z,184nm,1.3s								
Z46A	Louisville	22.57	352	P		P	20 22 57.0	+2.0	
	baz=170								
CSU	Charleston Sou	22.57	11	eP		P	20 22 57.9	+2.9	
Z48A	Northport	22.59	355	P		P	20 22 57.3	+2.1	
	baz=174,SNR=38								
240A	Hunter Patters	22.59	341	P		P	20 22 57.1	+1.8	
	baz=158								
436A	Wall Ranch, Ga	22.63	333	P		P	20 22 56.2	+0.5	
	baz=149								
NATX	Nacogdoches	22.65	339	P		P	20 22 56.4	+0.6	
	baz=155								
NATX	Nacogdoches	22.65	339	eP		P	20 22 57.1	+1.2	
	comp=Z,139nm,1.4s								
NHSC	New Hope	22.67	11	eP		P	20 22 57.5	+1.5	
	comp=Z,125nm,1.0s								
337A	Centerville	22.72	336	P		P	20 22 57.5	+0.9	
	baz=152								
633A	Saathoff Ranch	22.73	327	P		P	20 22 56.3	-0.5	
	baz=142,SNR=5.6								
239A	Gary	22.81	339	P		P	20 22 58.8	+1.2	
	baz=156								
534A	Blco	22.82	329	P		P	20 22 58.0	+0.3	
	baz=144,SNR=8.7								
141A	Papa Simpson,	22.86	343	P		P	20 22 59.1	+1.1	
	baz=160								
Z45A	Winona	22.86	350	P		P	20 23 00.0	+2.0	
	baz=169,SNR=6.9								
Z44A	Pea Ridge, Bel	22.90	349	P		P	20 22 59.9	+1.4	
	baz=167								
435B	Jarrell	23.00	332	P		P	20 23 00.1	+0.5	
	baz=147,SNR=11								
Z43A	Armstrong Fami	23.00	347	P		P	20 23 00.6	+1.0	
	baz=165								
238A	Jacksonville	23.03	338	P		P	20 23 00.6	+0.7	
	baz=154								
GRGR	Grenville	23.05	84	eP		P	20 23 02.3	+2.0	
	comp=Z,300nm,1.3s								
140A	Cam and Jess,	23.09	342	P		P	20 23 01.1	+0.7	
	baz=159								
Y47A	DEPARC, Winfie	23.13	354	P		P	20 23 02.5	+1.6	
	baz=173,SNR=17								
533A	Kerrville	23.14	328	P		P	20 23 00.7	-0.3	
	baz=143								
336A	Riesel	23.18	334	P		P	20 23 01.7	+0.2	
	baz=150								
Z42A	Norrel Spur, H	23.23	345	P		P	20 23 02.6	+0.7	
	baz=163								
Y46A	Houston	23.23	352	P		P	20 23 03.3	+1.4	
	baz=171								
237A	Washetta, Mont	23.29	337	P		P	20 23 03.3	+0.8	
	baz=153								
Y45A	Yeager Farm, C	23.32	351	P		P	20 23 04.0	+1.2	
	baz=169,SNR=9.8								
335A	Moody	23.35	333	P		P	20 23 02.8	-0.3	
	baz=148,SNR=7.7								
434A	Burnet	23.36	330	P		P	20 23 03.0	-0.3	
	baz=146,SNR=6.2								
GDHS	Morne Mazeau,	23.36	74	eP		P	20 23 05.7	+2.3	
	comp=Z,139nm,1.0s								
Z41A	Richland Creek	23.44	344	P		P	20 23 04.6	+0.6	
	baz=161,SNR=10.0								
SVB	Belmont	23.49	82	eP		P	20 23 05.8	+1.0	
	comp=Z,507nm,1.7s								
Y44A	Strider, Charl	23.52	349	P		P	20 23 05.9	+1.1	
	baz=168,SNR=6.5								
236A	Katherine and	23.58	335	P		P	20 23 06.7	+1.3	
	baz=151								
Z40A	Long Farm, Mag	23.61	343	P		P	20 23 06.3	+0.6	
	baz=160								
138A	Matatall Enter	23.61	339	P		P	20 23 06.3	+0.6	
	baz=155,SNR=10.0								
Y43A	Makayla and Ka	23.61	348	P		P	20 23 06.2	+0.5	
	baz=166								
ANWB	Willy Bob	23.63	71	eP		P	20 23 05.9	-0.2	
	comp=Z,96nm,0.9s								
JSC	Jenkinsville	23.65	8	eP		P	20 23 08.4	+2.4	
JSC					pmax	pmax			
	comp=Z,37nm,0.9s								
JSC	Jenkinsville	23.65	8	eP		P	20 23 08.4	+2.4	
	comp=Z,37nm,0.9s								
433A	Art	23.71	329	P		P	20 23 06.6	-0.2	
	baz=144,SNR=12								
Y42A	Garnett, Star	23.73	346	P		P	20 23 07.1	+0.3	
	baz=164								
334A	Lometa	23.77	331	P		P	20 23 07.3	0.0	
	baz=147,SNR=7.0								
137A	Heron Place, G	23.80	337	P		P	20 23 08.2	+0.7	
	baz=154,SNR=7.6								
CCAR	Cane Creek	23.80	346	eP		P	20 23 09.4	+1.9	
	comp=Z,610nm,1.5s								
Z39A	Irene McRaven,	23.84	341	P		P	20 23 08.1	+0.2	
	baz=158								
X45A	UM Field Stati	23.84	351	P		P	20 23 08.6	+0.8	
	baz=170,SNR=8.6								
JCT	Junction City	23.86	327	P		P	20 23 08.0	-0.3	
	baz=142								
JCT	Junction City	23.86	327	eP		P	20 23 07.0	-1.3	
JCT					pmax	pmax			
	comp=Z,43nm,1.0s								
JCT	Junction City	23.86	327	eP		P	20 23 07.0	-1.3	
	comp=Z,43nm,1.0s								
OXF	Oxford	23.93	351	eP		P	20 23 09.8	+1.1	
OXF					pmax	pmax			
	comp=Z,373nm,1.2s								
OXF	Oxford	23.93	351	eP		P	20 23 09.8	+1.1	
	comp=Z,373nm,1.2s								
WLAR	White Oak Lake	23.93	343	eP		P	20 23 10.3	+1.6	
	comp=Z,198nm,1.2s								
WHTX	Lake Whitney,	23.97	333	P		P	20 23 09.2	+0.1	
	baz=149,SNR=18								
WHTX	Lake Whitney,	23.97	333	eP		P	20 23 09.8	+0.6	
	comp=Z,167nm,1.2s								
Y41A	Eaglette Beard	23.98	345	P		P	20 23 09.6	+0.4	
	baz=162								
136A	Ennis	24.00	336	P		P	20 23 10.1	+0.7	
	baz=152,SNR=8.7								
X44A	Crenshaw	24.04	350	P		P	20 23 11.3	+1.6	
	baz=168								
NNA	Nana	24.09	160	eP		P	20 23 11.7	+1.3	
NNA					pmax	pmax			
	comp=Z,51nm,1.3s								
NNA	Nana	24.09	160	eP		P	20 23 11.7	+1.3	
	comp=Z,51nm,1.3s								
Z38A	Mt. Pleasant	24.11	339	P		P	20 23 10.9	+0.4	
	baz=156								
333A	Richland Sprin	24.12	330	P		P	20 23 10.2	-0.4	
	baz=145,SNR=19								
X43A	Marvell	24.19	348	P		P	20 23 11.8	+0.7	
	baz=166								
Y40A	Okolona	24.28	343	P		P	20 23 12.4	+0.4	
	baz=160								
234A	Clairette	24.28	332	P		P	20 23 12.5	+0.4	
	baz=148,SNR=10								
Z37A	Pogue Cattle C	24.29	338	P		P	20 23 12.6	+0.5	
	baz=154								
SWET	Sewanee	24.32	358	eP		P	20 23 14.0	+1.5	
	comp=Z,17nm,1.0s								
135A	Vickery Place,	24.43	334	P		P	20 23 14.0	+0.5	
	baz=150								
Y39A	Lockesburg	24.45	342	P		P	20 23 14.0	+0.4	
	baz=158								
KMSC	Kings Mountain	24.48	8	P		P	20 23 15.6	+1.7	
	baz=189,SNR=5.6								
KMSC	Kings Mountain	24.48	8	eP		P	20 23 15.2	+1.3	
	comp=Z,56nm,1.0s								
W45A	Hickory Valley	24.53	352	P		P	20 23 15.2	+0.9	
	baz=170,SNR=28								
X41A	Kaden, Bauxite	24.53	345	P		P	20 23 15.0	+0.6	
	baz=162								
CPCT	Cooper Cave	24.55	1	eP		P	20 23 15.8	+1.3	
	comp=Z,75nm,1.2s								
W44A	Shelby Farms P	24.61	351	P		P	20 23 15.0	0.0	
	baz=169								
X40A	Basin Creek Fa	24.61	345	P		P	20 23 15.5	+0.5	
	baz=162,SNR=6.2								
Y38A	Idabel	24.64	341	P		P	20 23 15.6	+0.2	
	baz=157								
233A	Rising Star	24.65	331	P		P	20 23 15.3	-0.2	
	baz=146								
Z36A	Blue Ridge	24.66	337	P		P	20 23 15.7	+0.2	
	baz=153								
134A	White-Moore Ra	24.74	333	P		P	20 23 16.6	+0.4	
	baz=148,SNR=9.4								
UALR	University of	24.76	346	eP		P	20 23 16.8	+0.4	
	comp=Z,153nm,1.3s								
TKL	Tuckaleechee C	24.78	3	P		P	20 23 17.8	+1.2	
	comp=Z,104nm,1.1s,baz=174,slow=10,SNR=13								
TKL	Tuckaleechee C	24.78	3	eP		P	20 23 18.6	+2.0	
TKL					pmax	pmax			
	comp=Z,117nm,1.1s								
TKL	Tuckaleechee C	24.78	3	eP		P	20 23 18.6	+2.0	
	comp=Z,117nm,1.1s								
MIAR	Mount Ida	24.87	343	P		P	20 23 17.4	0.0	
	baz=160,SNR=18								
X39A	Fountain Ranch	24.99	342	P		P	20 23 18.9	+0.4	
	baz=159,SNR=11								
Y37A	Hugo	24.99	339	P		P	20 23 18.7	+0.3	
	baz=155								
Z35A	Perchaven, San	25.04	335	P		P	20 23 19.0	+0.1	
	baz=151								
V45A	Humboldt	25.07	353	P		P	20 23 19.4	+0.2	
	baz=171								
W41B	Gary Mavity, V	25.12	346	P		P	20 23 19.5	0.0	
	baz=164,SNR=28								
BBGH	Gun Hill	25.13	82	eP		P	20 23 20.8	+0.9	
	comp=Z,645nm,1.2s								
HPIG		25.14	313	eP		P	20 23 20.1	0.0	
	comp=Z,26nm,1.1s								
133A	Hamilton Ranch	25.15	332	P		P	20 23 20.8	+0.9	
	baz=147,SNR=12								
HBAR	Harrisburg	25.15	349	eP		P	20 23 21.9	+1.9	
Y36A	Durant	25.16	338	P		P	20 23 20.0	0.0	
	baz=154								
CNNC	Cliffs of the	25.21	14	eP		P	20 23 23.6	+3.1	
	comp=Z,77nm,1.0s								
X301	Greenbrier Sit	25.21	346	eP		P	20 23 20.5	+0.1	
	comp=Z,102nm,1.2s								
WHAR	Wooly Hollow	25.24	346	eP		P	20 23 20.5	-0.2	
	comp=Z,129nm,1.2s								
X201	Greenbrier Sit	25.26	346	eP		P	20 23 21.4	+0.6	
	comp=Z,135nm,1.2s								
LTX	Lajitas	25.29	319	eP		P	20 23 22.1	+0.7	
LTX				e			20 26 52.0		
LTX	Lajitas	25.29	319	eP		P	20 23 22.1	+0.7	
LTX				eP	cP	PcP	20 26 52.0	-2.6	
TXAR	Lajitas Array	25.29	319	P		P	20 23 22.1	+0.7	
	comp=Z,25nm,0.8s,baz=139,slow=8.1,SNR=63								
TXAR					PcP	PcP	20 26 52.0	-2.6	
	comp=Z,1.6nm,0.9s,baz=146,slow=5.0,SNR=3.6								
TX31	Lajitas Ar. Si	25.29	319	eP		P	20 23 21.4	0.0	
HALT	Halls	25.29	352	eP		P	20 23 21.5	+0.3	
V44A	Blytheville	25.29	351	P		P	20 23 21.3	+0.1	
	baz=169								
W40A	Ferguson Farm,	25.34	345	P		P	20 23 21.9	+0.3	
	baz=162,SNR=15								
WVT	Waverly	25.34	355	eP		P	20 23 22.0	+0.4	
WVT					pmax	pmax			
	comp=Z,129nm,1.6s								
WVT	Waverly	25.34	355	eP		P	20 23 22.0	+0.4	
	comp=Z,129nm,1.6s								
Z34A	Collier Ranch,	25.35	334	P		P	20 23 21.4	-0.3	
	baz=150								
X38A	Whitesboro	25.36	341	P		P	20 23 22.3	+0.5	
	baz=158,SNR=19								
GNAR	Gosnell	25.45	351	eP		P	20 23 22.6	+0.1	
Y35A	Marietta	25.45	336	P		P	20 23 22.8	+0.1	
	baz=152,SNR=7.5								
X37A	Clayton	25.46	340	P		P	20 23 23.3	+0.5	
	baz=156,SNR=9.5								
ABTX	Abilene, Hawle	25.50	331	P		P	20 23 23.8	+0.6	
	baz=145								
ABTX	Abilene, Hawle	25.50	331	eP		P	20 23 24.6	+1.4	
	comp=Z,42nm,1.0s								
W39A	Magazine	25.53	343	P		P	20 23 23.8	+0.4	
	baz=160,SNR=24								
V42A	Cord	25.54	348	P		P	20 23 23.9	+0.5	
	baz=166,SNR=19								
W38A	Poteau	25.63	342	P		P	20 23 24.9	+0.7	
	baz=158,SNR=13								
GLAT	Glass	25.64	352	eP		P	20 23 24.9	+0.6	
Z33A	Whitaker Ranch	25.65	333	P		P	20 23 24.0	-0.5	
	baz=148,SNR=8.6								
UTMT	University of	25.66	353	eP		P	20 23 25.9	+1.5	
	comp=Z,173nm,0.9s								
TZTN	Tazewell	25.68	3	eP		P	20 23 26.7	+2.0	
	comp=Z,134nm,1.3s								
V41A	Mountainview	25.68	347	P		P	20 23 24.8	0.0	
	baz=164,SNR=20								
X36A	Centrahoma	25.79	338	P		P	20 23 25.8	+0.1	
	baz=154,SNR=6.4								
Y34A	Reagan Ranch,	25.79	335	P		P	20 23 27.1	+1.3	
	baz=151,SNR=9.5								
V40A	Witts Springs	25.86	346	P		P	20 23 26.2	-0.1	
	baz=163,SNR=9.9								
X35A	Drake	25.87	337	P		P	20 23 25.9	-0.5	
	baz=153								
W37B	Quinton	25.98	340	P		P	20 23 27.5	0.0	
	baz=157,SNR=7.2								
U42A	Revenden	26.04	349	P		P	20 23 28.1	+0.2	
	baz=166,SNR=19								
PARMO	Parma	26.09	352	eP		P	20 23 29.8	+1.4	
V39A	Pettigrew	26.10	344	P		P	20 23 28.4	-0.2	
	baz=161,SNR=11								
U41A	Viola	26.17	348	P		P	20 23 28.9	-0.2	
	baz=165,SNR=7.3								
Y33A	Hilltop Ranch,	26.20	334	P		P	20 23 29.0	-0.4	
	baz=149								
W36A	Wetumka	26.25	339	P		P	20 23 29.6	-0.4	
	baz=155								
PBMO	Poplar Bluff	26.31	350	eP		P	20 23 31.1	+0.7	
	comp=Z,101nm,1.4s								
V38A	Canehill	26.34	343	P		P	20 23 30.3	-0.4	
	baz=159,SNR=5.7								
X34A	Smith Ranch, M	26.38	336	P		P	20 23 30.9	-0.2	
	baz=151								
U40A	Yellville	26.39	346	P		P	20 23 31.1	-0.1	
	baz=163,SNR=21								
W35A	Tecumseh	26.50	338	P		P	20 23 31.8	-0.4	
	baz=154								
U39A	Green Forest	26.57	345	P		P	20 23 32.8	0.0	
	baz=162,SNR=9.9								
V37A	Hulbert	26.57	342	P		P	20 23 32.2	-0.6	
	baz=158,SNR=7.2								
HHAR	Hobbs	26.60	344	eP		P	20 23 32.6	-0.4	
	comp=Z,47nm,1.4s								
X33A	Lawton	26.60	335	P		P	20 23 32.7	-0.4	
	baz=150								
BLA	Blacksburg	26.64	8	eP		P	20 23 33.4	-0.1	
BLA		

baz=169
V35A **Meyer Ranch, C** 27.03 339 P P 20 23 36.9 0.0
baz=154
S44A **Carbondale** 27.04 353 P P 20 23 37.5 +0.6
baz=171,SNR=13
U37A **Salina** 27.05 342 P P 20 23 37.0 -0.1
baz=158,SNR=6.4
SIUC **Southern Illin** 27.05 353 eP P 20 23 37.9 +0.8
comp=Z,106nm,1.1s
T40A **Mansfield** 27.07 347 P P 20 23 37.2 -0.1
baz=164
W33A **Caddo, Fort Co** 27.11 336 P P 20 23 37.5 -0.2
baz=150
USIN **University of** 27.15 356 eP P 20 23 38.1 +0.1
comp=Z,136nm,1.3s
T39A **Clever** 27.15 345 P P 20 23 38.1 0.0
baz=162,SNR=7.0
U36A **Oologah** 27.23 341 P P 20 23 38.1 -0.6
baz=157
S41A **Jillco Farms,** 27.33 349 P P 20 23 39.7 0.0
baz=166,SNR=13
V34A **Guthrie** 27.34 338 P P 20 23 39.0 -0.7
baz=153
V34A **Guthrie** 27.34 338 eP P 20 23 39.0 -0.7
comp=Z,43nm,1.0s
T38A **Diamond** 27.40 344 P P 20 23 39.8 -0.5
baz=160,SNR=8.4
W32A **Sentinel** 27.41 334 P P 20 23 40.3 -0.1
baz=149
CLNB **Carlsbad** 27.48 324 eP P 20 23 40.8 -0.4
S40A **Lebanon** 27.50 347 P P 20 23 41.2 0.0
baz=164,SNR=6.5
URVA **University of** 27.52 13 eP P 20 23 40.3 -1.0
PTGA **Pitinga** 27.53 113 P P 20 23 42.5 +0.9
comp=Z,10nm,1.0s,baz=302,slow=8.2,SNR=9.3
PTGA **Pitinga** 27.53 113 eP P 20 23 42.0 +0.4
comp=Z,26nm,1.3s
U35A **Pawnee** 27.54 339 P P 20 23 41.0 -0.5
baz=155
R44A **Waltonville** 27.56 353 P P 20 23 42.3 +0.6
baz=172,SNR=11
JSRW **J. Sargeant Re** 27.57 13 eP P 20 23 42.6 +0.9
V33A **Lossen Ranch,** 27.62 337 P P 20 23 41.7 -0.6
baz=151
T37A **Cheneyville 18** 27.66 343 P P 20 23 42.4 -0.1
baz=159,SNR=15
GDL2 **Guadalupe Moun** 27.72 323 eP P 20 23 43.5 +0.1
S39A **Bolivar** 27.77 346 P P 20 23 43.4 -0.2
baz=163
V32A **Arapaho** 27.84 335 P P 20 23 43.8 -0.5
baz=150
S38A **Stockton** 27.86 345 P P 20 23 44.0 -0.3
baz=162
U34A **Anderson Ranch** 27.88 338 P P 20 23 44.4 -0.2
baz=153
U34A **Anderson Ranch** 27.88 338 eP P 20 23 44.7 +0.1
comp=Z,31nm,1.3s
T36A **Boggs Farm, Ca** 27.89 341 P P 20 23 44.2 -0.4
baz=157
OLIL **Olney** 27.95 355 eP P 20 23 45.8 +0.7
comp=Z,141nm,1.3s
T35A **Sooner Cattle** 27.96 340 P P 20 23 44.6 -0.6
baz=156
MNTX **Cornudas Mount** 27.98 321 P P 20 23 44.4 -1.2
baz=134,SNR=5.6
MNTX **Cornudas Mount** 27.98 321 eP P 20 23 44.9 -0.7
comp=Z,23nm,1.3s
CPRX **Cap Rock** 28.04 325 eP P 20 23 40.7 -5.5
U33A **Lingo Farm, Me** 28.09 337 P P 20 23 45.4 -1.1
baz=152
R40A **Maddies Statio** 28.11 348 P P 20 23 46.3 -0.3
baz=165,SNR=7.1
MSTX **Muleshoe** 28.15 328 P P 20 23 46.5 -0.7
baz=141
MSTX **Muleshoe** 28.15 328 eP P 20 23 46.4 -0.8
comp=Z,33nm,1.4s
CBN **Corbin Frederi** 28.17 13 eP P 20 23 48.0 +0.9
comp=Z,131nm,1.5s
Q44A **Meyer Farm, Va** 28.20 354 P P 20 23 47.8 +0.5
baz=172,SNR=10
S37A **Fort Scott** 28.23 344 P P 20 23 47.4 -0.2
baz=160,SNR=14
T34A **McClaskey Farm** 28.29 339 P P 20 23 47.5 -0.7
baz=155
BLO **Bloomington** 28.29 358 eP P 20 23 48.8 +0.7
BLO pmax pmax
comp=Z,73nm,1.1s
BLO **Bloomington** 28.29 358 eP P 20 23 48.8 +0.7
comp=Z,73nm,1.1s
Q43A **New Douglas** 28.32 352 P P 20 23 48.4 0.0
baz=171
AMTX **Amarillo** 28.33 330 P P 20 23 48.0 -0.6
baz=144
AMTX **Amarillo** 28.33 330 eP P 20 23 48.4 -0.3
comp=Z,48nm,1.4s
R38A **Fenwick Farm,** 28.39 345 P P 20 23 48.6 -0.5
baz=162
S36A **Lake Cedric, C** 28.41 342 P P 20 23 48.8 -0.5
baz=158
BBSR **BB Station** 28.57 38 eP P 20 23 50.5 -0.3
comp=Z,44nm,1.1s
S35A **Otter Creek Ra** 28.60 341 P P 20 23 51.3 +0.4
baz=157,SNR=6.2
T33A **Patterson Ranc** 28.72 338 P P 20 23 51.9 -0.2
baz=153
R37A **Teagarden Farm** 28.75 344 P P 20 23 51.6 -0.6
baz=160
Q40A **Laux Farm, Aux** 28.76 349 P P 20 23 52.0 -0.3
baz=166
S34A **Willow Spring** 28.87 340 P P 20 23 52.9 -0.5
baz=155
R36A **Gordon, Harris** 28.94 343 P P 20 23 53.6 -0.4
baz=159
Q39A **Willow Grove F** 28.99 347 P P 20 23 54.1 -0.3
baz=164
P42A **Winchester** 29.04 352 P P 20 23 54.9 +0.1
baz=170,SNR=6.5
Q38A **Cooks Store, C** 29.05 346 P P 20 23 54.8 -0.2
baz=163,SNR=7.2
MCWV **Mont Chateau** 29.13 8 eP P 20 23 57.5 +1.8
comp=Z,65nm,1.3s
R35A **Emporia Munici** 29.15 342 P P 20 23 55.7 -0.1
baz=157
Q37A **Longview Farm,** 29.18 345 P P 20 23 55.7 -0.3
baz=161
P41A **Barry, Barry** 29.24 351 P P 20 23 56.3 -0.3
baz=168,SNR=7.1
P40A **Paris** 29.27 349 P P 20 23 56.7 -0.2
baz=166,SNR=8.6
SAML **Samuel** 29.36 131 eP P 20 23 57.4 -0.5
comp=Z,24nm,1.3s
P39B **Salisbury** 29.37 348 P P 20 23 57.3 -0.4
baz=165
ACSO **Alum Creek Sta** 29.38 3 eP P 20 23 59.3 +1.5
comp=Z,168nm,1.1s
SDMD **Soldier's Deli** 29.44 13 eP P 20 23 58.6 +0.2
comp=Z,21nm,1.2s
R34A **Isabella, Hill** 29.46 340 P P 20 23 58.2 -0.4
baz=155
SFIN **Lafayette** 29.52 357 P P 20 23 59.5 +0.5
baz=176,SNR=12
SFIN **Lafayette** 29.52 357 eP P 20 23 58.8 -0.3
comp=Z,72nm,0.9s
S32A **Newby Ranch, P** 29.52 337 P P 20 23 58.4 -0.8
baz=152
Q36A **Arnold C. Orve** 29.52 344 P P 20 23 58.8 -0.4
baz=159
Q35A **Mercer Eighty,** 29.59 343 P P 20 23 59.4 -0.4
baz=158
O42A **Bath** 29.61 352 P P 20 23 59.9 +0.1
baz=170
O41A **Passleys Farm,** 29.64 351 P P 20 23 59.8 -0.4
baz=169,SNR=6.7
P38A **Dawn** 29.67 347 P P 20 24 00.1 -0.3
baz=163,SNR=6.4
R33A **Olander Ranch,** 29.71 339 P P 20 24 00.3 -0.5
baz=154
O40A **La Belle** 29.81 350 P P 20 24 01.5 -0.2
baz=167,SNR=6.5
P37A **Lathrop** 29.82 346 P P 20 24 01.5 -0.3
baz=162
HDIL **Hopedale** 29.87 354 P P 20 24 02.1 0.0
baz=172,SNR=6.9
HDIL **Hopedale** 29.87 354 eP P 20 24 02.4 +0.3
comp=Z,201nm,1.3s
O56A **Blue Knob Stat** 29.93 10 P P 20 24 02.5 -0.2
baz=193
Q34A **Chapman** 29.93 341 P P 20 24 02.1 -0.6
baz=156
KSU1 **Kansas State U** 29.99 342 P P 20 24 02.8 -0.5
baz=157
KSU1 **Kansas State U** 29.99 342 eP P 20 24 03.2 0.0
comp=Z,37nm,1.3s
121A **Cookes Peak, D** 30.05 319 P P 20 24 04.5 +0.3
baz=131
O39A **Kirksville** 30.07 349 P P 20 24 04.1 +0.2
baz=166
P36A **Good Intent, A** 30.07 344 P P 20 24 03.4 -0.6
baz=160,SNR=5.1
MVL **Millersville** 30.11 14 eP P 20 24 05.0 +0.7
comp=Z,31nm,1.2s
HSIG 30.18 311 eP P 20 24 04.7 -0.4
comp=Z,9.4nm,1.1s
P35A **Duane Minner,** 30.21 343 P P 20 24 05.0 -0.3
baz=158
PSUB **Penn St. - Bra** 30.26 15 eP P 20 24 08.3 +2.7
comp=Z,15nm,1.0s
Q33A **Connelly Farm,** 30.29 340 P P 20 24 05.4 -0.5
baz=155
319A **Douglas** 30.31 316 eP P 20 24 07.3 +0.9
comp=Z,38nm,1.2s
O37A **Wolven Farm, M** 30.32 346 P P 20 24 05.6 -0.6
baz=162
N54A **Moraine State** 30.39 8 P P 20 24 07.4 +0.6
baz=190
SSPA **Standing Stone** 30.41 11 eP P 20 24 08.6 +1.7
comp=Z,117nm,1.5s
BNM **Barren Site** 30.44 323 eP P 20 24 08.2 +0.6
P34A **Walnut Farm, R** 30.46 342 P P 20 24 07.1 -0.4
baz=157
O36A **Bolckow** 30.49 345 P P 20 24 07.2 -0.5
baz=161
Q32A **Meitler Ranch,** 30.53 339 P P 20 24 07.6 -0.4
baz=154
LPM **Los Pinos Moun** 30.55 323 eP P 20 24 07.0 -1.6
Y22D **IRIS PASSCAL I** 30.56 323 P P 20 24 07.9 -0.7
baz=134
Y22D **IRIS PASSCAL I** 30.56 323 eP P 20 24 08.1 -0.5
comp=Z,38nm,0.8s
P33A **Williams Farm,** 30.64 341 P P 20 24 09.3 +0.3
baz=155
N39A **Derby Farms, D** 30.66 349 P P 20 24 08.9 -0.3
baz=166,SNR=18
N38A **Joes South For** 30.72 348 P P 20 24 09.8 0.0
baz=164
CBKS **Cedar Bluff** 30.80 337 eP P 20 24 09.3 -1.2
CBKS pmax pmax
comp=Z,31nm,1.3s
CBKS **Cedar Bluff** 30.80 337 eP P 20 24 09.3 -1.2
comp=Z,31nm,1.3s
O35A **Humboldt** 30.86 344 P P 20 24 10.6 -0.4
baz=159
N37A **Lee Faris, Mou** 30.90 347 P P 20 24 11.1 -0.2
baz=163
ANMO **Albuquerque** 30.91 324 P P 20 24 11.5 -0.1
baz=136
ANMO **Albuquerque** 30.91 324 eP P 20 24 12.0 +0.3
ANMO pmax pmax
comp=Z,13nm,1.5s
ANMO **Albuquerque** 30.91 324 eP P 20 24 11.0 -0.7
comp=Z,21nm,1.6s
LUPA **Lehigh Univers** 30.92 15 eP P 20 24 09.8 -1.7
comp=Z,38nm,1.2s
LAZ **Ladron** 30.92 323 eP P 20 24 07.3 -4.5
M54A **Oil Creek Stat** 30.97 8 P P 20 24 11.6 -0.3
baz=190
O34A **Beatrice** 31.01 343 P P 20 24 11.3 -1.0
baz=158
ALLY **Alegheny Colle** 31.05 7 eP P 20 24 13.1 +0.5
comp=Z,94nm,1.2s
P32A **Huiting Farm,** 31.11 340 P P 20 24 13.1 -0.1
baz=154
N59A **State Game Lan** 31.12 14 P P 20 24 13.8 +0.5
baz=198
N36A **Muff Farm, Cla** 31.13 345 P P 20 24 13.1 -0.2
baz=161
O33A **Hebron** 31.18 341 P P 20 24 13.7 -0.2
baz=156
M39A **Webster** 31.18 350 P P 20 24 13.7 -0.1
baz=167,SNR=9.5
BRNJ **Basking Ridge** 31.20 16 eP P 20 24 16.7 +2.8
comp=Z,31nm,1.0s
M38A **Pleasantville** 31.32 348 P P 20 24 15.0 +0.1
baz=165,SNR=10
N35A **Tabor** 31.35 345 P P 20 24 15.0 -0.2
baz=160
AAM **Ann Arbor** 31.41 2 eP P 20 24 16.7 +0.9
AAM pmax pmax
comp=Z,63nm,1.3s
AAM **Ann Arbor** 31.41 2 eP P 20 24 16.7 +0.9
comp=Z,63nm,1.3s
CPNY **Central Park** 31.47 16 eP P 20 24 16.9 +0.7
comp=Z,54nm,1.4s
M37A **Trindle Farm,** 31.48 347 P P 20 24 16.2 -0.2
baz=163
L41A **Preston** 31.51 352 P P 20 24 16.4 -0.3
baz=170,SNR=18
ERPA **Erie** 31.53 7 eP P 20 24 18.0 +1.2
comp=Z,199nm,1.3s
N34A **Lincoln** 31.56 343 P P 20 24 16.5 -0.6
baz=158
ODNJ **Ogdensburg** 31.57 15 eP P 20 24 20.1 +2.9
comp=Z,12nm,1.0s
O32A **Brockman Farm,** 31.57 341 P P 20 24 17.1 -0.2
baz=155
L40A **Anamosa** 31.60 351 P P 20 24 17.4 -0.1
baz=169,SNR=21
PAL **Palisades** 31.68 16 eP P 20 24 20.0 +1.9
PAL pmax pmax
comp=Z,37nm,1.1s
PAL **Palisades** 31.68 16 eP P 20 24 20.0 +1.9
comp=Z,37nm,1.1s
M36A **Felix, Anita** 31.70 346 P P 20 24 18.2 -0.1
baz=162
KSPA **Keystone Colle** 31.73 13 eP P 20 24 21.1 +2.5
comp=Z,72nm,1.2s
LPAZ **La Paz** 31.74 148 P P 20 24 20.9 +1.3
comp=Z,6.8nm,1.0s,baz=340,slow=12,SNR=11
LPAZ **La Paz** 31.74 148 eP P 20 24 20.9 +1.3
LPAZ pmax pmax
comp=Z,12nm,1.1s
LPAZ **La Paz** 31.74 148 eP P 20 24 20.9 +1.3
comp=Z,12nm,1.1s
L39A **Vinton** 31.78 350 P P 20 24 18.7 -0.3
baz=167,SNR=9.1
SCIA **State Center** 31.79 349 eP P 20 24 19.7 +0.5
comp=Z,141nm,1.2s
O31A **Woolen Ranch,** 31.83 339 P P 20 24 19.2 -0.3
baz=153
TUC **Tucson** 31.89 316 P P 20 24 20.6 +0.3
baz=127
TUC **Tucson** 31.89 316 eP P 20 24 20.3 0.0
TUC pmax pmax
comp=Z,17nm,1.4s
TUC **Tucson** 31.89 316 eP P 20 24 20.3 0.0
comp=Z,17nm,1.4s
M35A **Neola** 31.93 345 P P 20 24 19.8 -0.6
baz=160
L38A **Oak Wood Farm,** 31.97 349 P P 20 24 20.6 -0.1
baz=166,SNR=16
K41A **Shullsburg** 32.01 353 P P 20 24 20.7 -0.3
baz=170,SNR=16
N32A **Stulken Farm,** 32.03 341 P P 20 24 21.0 -0.3
baz=155
L37A **Phoenix Point,** 32.11 348 P P 20 24 21.7 -0.2
baz=164,SNR=10
M34A **Aspy Farms, Fr** 32.20 344 P P 20 24 22.6 -0.1
baz=159
K40A **Colesburg** 32.21 352 P P 20 24 22.6 -0.2
baz=169,SNR=28
L36A **Harm Buss Farm** 32.28 347 P P 20 24 23.2 -0.2
baz=162
BINY **Binghamton** 32.29 13 eP P 20 24 26.4 +2.8
comp=Z,72nm,1.1s
N31A **Bailey Ranch,** 32.30 340 P P 20 24 23.2 -0.5
baz=154
JFWS **Jewell Farm** 32.31 353 eP P 20 24 23.9 +0.2
JFWS **Jewell Farm** 32.31 353 eP P 20 24 23.9 +0.2
K39A **Oelwein** 32.33 351 P P 20 24 23.4 -0.5
baz=168,SNR=18
K38A **Parkersburg** 32.42 349 P P 20 24 24.2 -0.5
baz=166,SNR=13
MMNY **Mt. Morris Dam** 32.44 10 eP P 20 24 26.7 +1.9
M33A **Taylor Creek F** 32.44 343 P P 20 24 24.6 -0.3
baz=158
SDCO **Great Sand Dun** 32.47 329 P P 20 24 25.4 -0.2
baz=141,SNR=7.3
SDCO **Great Sand Dun** 32.47 329 eP P 20 24 26.3 +0.8
comp=Z,8.2nm,1.0s
L35A **Bielow Farm, R** 32.50 346 P P 20 24 24.9 -0.5
baz=161
BGNE **Belgrade** 32.57 342 P P 20 24 25.5 -0.6
baz=156
L34A **Svendsen Farm,** 32.58 344 P P 20 24 25.0 -1.0
baz=159
K37A **Belmond** 32.70 348 P P 20 24 26.8 -0.4
baz=164,SNR=38
X18A **Snowflake** 32.72 320 eP P 20 24 28.9 +1.2
comp=Z,20nm,1.1s
J41A **Loganville** 32.73 353 P P 20 24 27.2 -0.1
baz=171,SNR=11
M31A **Lambtecht Ranc** 32.78 341 P P 20 24 27.2 -0.6
baz=154
J40A **Soldiers Grove** 32.84 352 P P 20 24 27.7 -0.6
baz=170,SNR=17
J39A **Decorah** 32.92 351 P P 20 24 28.3 -0.7
baz=168,SNR=9.1
W18A **Petrified Fore** 32.97 321 P P 20 24 30.0 +0.1
baz=132,SNR=6.4
W18A **Petrified Fore** 32.97 321 eP P 20 24 30.8 +0.9
comp=Z,38nm,1.1s
K35A **Storm Lake** 33.00 346 P P 20 24 29.1 -0.7
baz=162
L33A **Hoskins** 33.01 343 P P 20 24 29.0 -0.8
baz=158
J38A **Wedel Dairy, R** 33.02 350 P P 20 24 29.2 -0.7
baz=167,SNR=11
L32A **Elgin** 33.07 342 P P 20 24 29.8 -0.6
baz=156
214A **Organ Pipe Nat** 33.10 314 P P 20 24 31.1 +0.3
baz=124,SNR=9.5
S22A **4UR Ranch, Cre** 33.16 328 P P 20 24 31.1 -0.5
baz=139
S22A **4UR Ranch, Cre** 33.16 328 eP P 20 24 30.8 -0.7
comp=Z,24nm,1.8s
J37A **Redenius Farm,** 33.21 349 P P 20 24 31.3 -0.3
baz=165,SNR=15
K33A **Hardington** 33.34 344 P P 20 24 32.3 -0.4
baz=159
TRY **Troy** 33.35 15 eP P 20 24 34.7 +1.9
comp=Z,99nm,1.2s
J36A **Seneca 1, Swea** 33.39 348 P P 20 24 32.8 -0.3
baz=164,SNR=50
L31A **Butterfield Fa** 33.48 341 P P 20 24 33.9 -0.1
baz=155
OGNE **Ogallala** 33.52 337 P P 20 24 35.8 +1.4
baz=149
OGNE **Ogallala** 33.52 337 eP P 20 24 36.7 +2.3
comp=Z,67nm,1.3s
X16A **Lo Mia Camp, P** 33.61 319 eP P 20 24 36.6 +1.2
comp=Z,12nm,0.9s
J35A **Milford** 33.61 347 P P 20 24 34.5 -0.5
baz=162
K32A **Verdigre** 33.66 343 P P 20 24 34.8 -0.7
baz=157
MVCO **Mesa Verde** 33.68 325 eP P 20 24 36.0 0.0
comp=Z,12nm,1.1s
I38A **Scanlan Farm,** 33.70 351 P P 20 24 35.2 -0.6
baz=167
J34A **George** 33.71 346 P P 20 24 35.1 -0.8
baz=161
I37A **Lemond, Waseca** 33.86 349 P P 20 24 36.5 -0.8
baz=165,SNR=12
ACCN **Adirondack Com** 33.96 15 eP P 20 24 40.2 +2.1
comp=Z,76nm,1.4s
PB11 **IPOC Station P** 33.98 153 eP P 20 24 40.3 +1.6
comp=Z,30nm,0.9s
I36A **Fitzsimmons Fa** 33.98 349 P P 20 24 37.8 -0.5
baz=164,SNR=6.5
J33A **Davis** 33.99 344 P P 20 24 37.6 -0.8
baz=159
I35A **Creekview Farm** 34.03 347 P P 20 24 38.1 -0.5
baz=163,SNR=14
ISCO **Idaho Springs** 34.13 331 P P 20 24 39.0 -1.0
baz=142
K30A **Basset** 34.18 341 P P 20 24 39.7 -0.4
baz=154
113A **Mohawk Valley,** 34.23 314 eP P 20 24 41.5 +1.0
comp=Z,18nm,1.1s
SADO **Sadowa** 34.24 8 eP P 20 24 41.1 +0.6
comp=Z,84nm,0.9s
WUAZ **Wupatki** 34.25 320 P P 20 24 41.4 +0.5
baz=130,SNR=7.9
WUAZ **Wupatki** 34.25 320 eP P 20 24 41.6 +0.7
comp=Z,34nm,1.3s
J32A **Parkston** 34.28 343 P P 20 24 40.3 -0.6
baz=158
ECSD **EROS Data Cent** 34.29 345 P P 20 24 39.6 -1.4
baz=160,SNR=10.0
ECSD **EROS Data Cent** 34.29 345 eP P 20 24 40.7 -0.3
comp=Z,34nm,1.3s
SMCO **Snowmass** 34.31 329 eP P 20 24 42.0 +0.3
comp=Z,17nm,1.4s
H37A **Dierke Farm, C** 34.33 350 P P 20 24 40.7 -0.5
baz=166
Y14A **Wickenburg** 34.36 316 eP P 20 24 42.3 +0.6
comp=Z,80nm,1.4s
I34A **Hadley** 34.40 346 P P 20 24 41.3 -0.6
baz=161
J31A **Geddes** 34.47 342 P P 20 24 41.7 -0.9
baz=156
H36A **Jessenland, He** 34.50 349 P P 20 24 42.8 0.0
baz=165
I33A **Coleman** 34.63 345 P P 20 24 43.5 -0.5
baz=160
J30A **Dallas** 34.73 341 P P 20 24 44.3 -0.5
baz=155
I32A **Karley and Nic** 34.79 344 P P 20 24 44.2 -1.1
baz=159
H35A **Sunnyside Ranc** 34.80 348 P P 20 24 44.8 -0.6
baz=163,SNR=13
PV10 **Paradox Valley** 34.81 326 eP P 20 24 46.5 +0.7
PLVO **Plevna** 34.82 10 eP P 20 24 46.5 +1.0
comp=Z,78nm,1.2s
LONY **Lake Ozonia** 34.91 13 eP P 20 24 47.8 +1.4
comp=Z,107nm,1.2s
SPMN **Marine on St.** 34.93 351 P P 20 24 45.8 -0.7
baz=167,SNR=9.9
SPMN **Marine on St.** 34.93 351 eP P 20 24 45.6 -0.9
comp=Z,88nm,1.1s
H34A **Spellman Lake,** 34.97 347 P P 20 24 46.2 -0.7
baz=162,SNR=12
I31A **Royce, Wessing** 35.08 343 P P 20 24 47.1 -0.7
baz=157
G36A **St. Michael** 35.10 349 P P 20 24 47.6 -0.4
baz=165
GLA **Glamis** 35.13 314 P P 20 24 49.1 +0.7
baz=122,SNR=9.0
GLA **Glamis** 35.13 314 eP P 20 24 48.8 +0.4
GLA pmax pmax
comp=Z,46nm,1.3s
GLA **Glamis** 35.13 314 eP P 20 24 48.8 +0.4
comp=Z,46nm,1.3s
PB01 **IPOC Station P** 35.18 154 eP P 20 24 50.7 +1.7
comp=Z,42nm,1.2s
H33A **Prehn Over Nor** 35.21 346 P P 20 24 48.0 -1.0
baz=160
H32A **Carlson Farm,** 35.22 345 P P 20 24 48.2 -0.9
baz=159
G35A **Watkins** 35.23 349 P P 20 24 48.2 -0.8
baz=164
Y12C **Blythe** 35.29 315 P P 20 24 50.2 +0.4
baz=124,SNR=6.2
Y12C **Blythe** 35.29 315 eP P 20 24 51.1 +1.3
comp=Z,36nm,1.3s
FRNY **Flat Rock** 35.34 14 eP P 20 24 51.9 +1.9
comp=Z,112nm,1.7s
COWI **Conover** 35.35 355 eP P 20 24 50.1 0.0
U15A **North Rim** 35.40 321 eP P 20 24 51.7 +0.7
comp=Z,26nm,1.3s
H31A **Wolsey** 35.48 343 P P 20 24 49.8 -1.5
baz=157
G34A **Benson** 35.49 347 P P 20 24 50.6 -0.7
baz=162
SUSD **Miller** 35.58 343 P P 20 24 51.0 -1.1
baz=156
W13A **Hualapai Mount** 35.62 317 eP P 20 24 53.4 +0.5
comp=Z,31nm,1.4s
G33A **Ortonville** 35.62 346 P P 20 24 51.9 -0.6
baz=161
F36A **Milaca** 35.67 350 P P 20 24 51.9 -0.9
baz=166,SNR=22
SWSC **Sam W. Stewart** 35.77 313 P P 20 24 53.1 -0.8
baz=121,SNR=5.7

IKP In-Ko-Pah, Jac 35.84 312 P P 20 24 54.2 -0.4
baz=120
F35A Swanville 35.86 349 P P 20 24 53.9 -0.6
baz=164
BC3 Big Chuckawall 35.89 314 P P 20 24 55.3 +0.2
baz=122,SNR=12
F34A Alexandria 35.94 348 P P 20 24 54.3 -0.8
baz=163
G32A Webster 35.94 345 P P 20 24 54.4 -0.8
baz=159
IRM Iron Mountain 35.95 315 P P 20 24 55.9 +0.5
baz=123,SNR=7.8
G31A Conde 36.10 344 P P 20 24 55.1 -1.4
baz=158
KNB Kanab 36.10 321 eP P 20 24 58.0 +1.1
KNB pmax pmax
comp=Z,25nm,1.3s
KNB Kanab 36.10 321 eP P 20 24 58.0 +1.1
comp=Z,25nm,1.3s
SRU San Rafael Swe 36.15 326 eP P 20 24 58.0 +0.7
SRU pmax pmax
comp=Z,11nm,1.0s
SRU San Rafael Swe 36.15 326 eP P 20 24 58.0 +0.7
comp=Z,11nm,1.0s
E37A Wrenshall 36.18 352 P P 20 24 56.5 -0.7
baz=168
F33A 5 Mile Ranch, 36.20 347 P P 20 24 56.0 -1.3
baz=161,SNR=8.1
E36A McGregor 36.27 351 P P 20 24 57.3 -0.6
baz=167,SNR=7.2
LCMT Little Creek M 36.36 321 eP P 20 25 00.5 +1.4
comp=Z,11nm,1.3s
MTPU Mount Pierson 36.38 323 eP P 20 25 00.4 +0.9
comp=Z,40nm,1.9s
F32A Veblen 36.42 346 P P 20 24 58.1 -1.2
baz=160
TRQ Mont Tremblant 36.44 12 eP P 20 25 01.0 +1.5
BELC Belle Mtn. Jos 36.46 314 P P 20 24 58.6 -1.3
baz=122,SNR=16
E35A Pequot Lakes 36.50 349 P P 20 24 59.2 -0.7
baz=165
TPFO Pinon Flats 36.58 313 P P 20 25 00.2 -0.7
baz=121,SNR=8.9
PFO Pinyon Flats O 36.58 313 P P 20 25 01.8 +0.8
comp=Z,18nm,1.0s,baz=90,slow=4.4,SNR=12
PFO Pinyon Flats O 36.58 313 P P 20 25 00.3 -0.7
baz=121,SNR=9.5
PFO Pinyon Flats O 36.58 313 eP P 20 25 01.6 +0.6
PFO pmax pmax
comp=Z,22nm,1.0s
PFO Pinyon Flats O 36.58 313 eP P 20 25 01.6 +0.6
comp=Z,22nm,1.0s
E34A Wadena 36.60 348 P P 20 25 00.1 -0.7
baz=163
SZCU Shurtz Canyon 36.63 321 eP P 20 25 02.5 +1.0
comp=Z,17nm,1.3s
GMRC Granite Mounta 36.65 316 P P 20 25 01.5 0.0
baz=124,SNR=8.1
109C Camp Elliot, M 36.69 312 P P 20 25 02.3 +0.6
baz=120
D37A Cotton 36.76 352 P P 20 25 01.5 -0.7
baz=168,SNR=9.9
E33A Westby DABS, E 36.77 347 P P 20 25 01.4 -0.9
baz=162
CCUT Cedar City 36.77 321 eP P 20 25 02.7 0.0
comp=Z,14nm,1.2s
LVC Limon Verde 36.81 154 eP P 20 25 05.8 +2.6
comp=Z,44nm,1.3s
K22A Casper 36.81 333 P P 20 25 01.6 -1.2
baz=144
F30A Leola 36.88 344 P P 20 25 02.3 -0.9
baz=157
D36A Goodland 36.89 351 P P 20 25 02.0 -1.2
baz=167,SNR=7.0
PKME Peaks-Kenny Pk 36.94 19 eP P 20 25 05.5 +1.8
comp=Z,79nm,1.3s
D35A Remer 36.95 350 P P 20 25 03.9 +0.1
baz=165
RSSD Black Hills 37.01 337 P P 20 25 04.5 0.0
baz=148
RSSD Black Hills 37.01 337 eP P 20 25 05.3 +0.7
RSSD pmax pmax
comp=Z,43nm,1.9s
RSSD Black Hills 37.01 337 eP P 20 25 05.3 +0.7
comp=Z,43nm,1.9s
E32A Braaten, Kindr 37.09 346 P P 20 25 05.8 +0.9
baz=160
MURC Murrieta 37.11 313 P P 20 25 05.2 -0.1
baz=120,SNR=7.0
HEC Hector,Ludlow 37.14 315 P P 20 25 05.8 +0.1
baz=123
C38A Sawbill Land. 37.16 353 P P 20 25 04.2 -1.4
baz=170
TUQ Turquoise Moun 37.19 316 P P 20 25 06.3 +0.2
baz=124
E31A Nome 37.25 345 P P 20 25 06.0 -0.4
baz=159
SHPR Sheep Range 37.28 318 eP P 20 25 08.9 +2.0
C37A Embarrass 37.29 352 P P 20 25 05.4 -1.2
baz=169,SNR=7.8
D33A AnnSam, Waubun 37.34 348 P P 20 25 06.2 -0.9
baz=163
C36A Pine Crest Far 37.41 351 P P 20 25 06.4 -1.2
baz=168,SNR=7.7
EYMN Ely 37.41 353 P P 20 25 06.6 -1.1
baz=170,SNR=5.9
EYMN Ely 37.41 353 eP P 20 25 06.8 -0.9
C35A Jirik Farms, M 37.53 350 P P 20 25 07.3 -1.4
baz=166,SNR=11
D32A Dogwood Acres, 37.59 347 P P 20 25 08.2 -1.0
baz=161
RRX Edison Barstow 37.62 315 P P 20 25 07.6 -2.1
baz=122
D31A Mcclaflin, Tow 37.67 346 P P 20 25 08.7 -1.1
baz=160
SHOC Shoshone, Teco 37.68 317 P P 20 25 10.4 +0.2
baz=124
GSC Goldstone, Bar 37.72 315 P P 20 25 11.0 +0.5
baz=123
GSC Goldstone, Bar 37.72 315 eP P 20 25 11.3 +0.7
GSC pmax pmax
comp=Z,30nm,1.3s
GSC Goldstone, Bar 37.72 315 eP P 20 25 11.3 +0.7
comp=Z,30nm,1.3s
VLDQ Val d'Or 37.75 8 eP P 20 25 11.4 +0.9
comp=Z,69nm,1.1s
BFSC Mount Baldy Ra 37.76 313 P P 20 25 11.9 +0.9
baz=121
SCI2 San Clemente I 37.80 311 P P 20 25 11.6 +0.5
baz=118
CIS Catalina Islan 37.90 312 P P 20 25 12.9 +0.8
baz=119
C33A Trail 37.92 348 P P 20 25 11.3 -0.6
baz=163
MWC Mount Wilson 38.04 313 eP P 20 25 14.3 +0.9
MWC pmax pmax
comp=Z,32nm,1.3s
MWC Mount Wilson 38.04 313 eP P 20 25 14.3 +0.9
comp=Z,32nm,1.3s
B35A Bob, Littlefor 38.13 351 P P 20 25 12.8 -1.0
baz=166
DUG Dugway, Tooele 38.17 325 P P 20 25 14.6 +0.2
baz=133
DUG Dugway, Tooele 38.17 325 eP P 20 25 14.4 0.0
DUG pmax pmax
comp=Z,6.0nm,1.1s
DUG Dugway, Tooele 38.17 325 eP P 20 25 14.4 0.0
comp=Z,6.4nm,1.1s
TPNV Topopah Spring 38.25 318 P P 20 25 16.2 +1.0
baz=125,SNR=14
TPNV Topopah Spring 38.25 318 eP P 20 25 16.3 +1.2
TPNV pmax pmax
comp=Z,20nm,1.1s
TPNV Topopah Spring 38.25 318 eP P 20 25 16.3 +1.2
comp=Z,20nm,1.1s
BW06 Boulder Array 38.31 331 P P 20 25 15.6 0.0
baz=139,SNR=5.8
BW06 Boulder Array 38.31 331 eP P 20 25 15.1 -0.5
comp=Z,16nm,1.2s
PD31 Pinedale Array 38.31 331 eP P 20 25 15.0 -0.6
PDAR Pinedale Array 38.31 331 P P 20 25 16.1 +0.4
comp=Z,5.1nm,1.0s,baz=108,slow=8.0,SNR=12
EDW2 Edwards Air Fo 38.33 314 P P 20 25 16.0 +0.3
baz=121,SNR=9.1
B33A Robert and Kas 38.37 349 P P 20 25 15.5 -0.3
baz=163
C31A Landman Farms, 38.37 346 P P 20 25 16.0 +0.2
baz=160,SNR=6.3
FURC Furnace Creek, 38.39 317 P P 20 25 16.6 +0.5
baz=124,SNR=11
B34A Aery, Baudette 38.41 350 P P 20 25 15.6 -0.5
baz=165,SNR=16
LRMC Laurel Mtn Rad 38.42 315 P P 20 25 17.0 +0.5
baz=122
AGMN Agassiz Nation 38.45 348 P P 20 25 15.7 -0.8
baz=163,SNR=16
AGMN Agassiz Nation 38.45 348 eP P 20 25 16.1 -0.3
C30A Mose, Pekin 38.47 345 P P 20 25 17.5 +0.9
baz=159
HWUT Hardware Ranch 38.47 328 eP P 20 25 16.1 -0.8
comp=Z,10.0nm,1.0s
MPMC Manual Prospec 38.59 316 P P 20 25 18.4 +0.3
baz=123,SNR=38
R11A Troy Canyon, C 38.65 320 P P 20 25 18.9 +0.4
baz=127
R11A Troy Canyon, C 38.65 320 eP P 20 25 19.6 +1.1
comp=Z,14nm,1.3s
B32A Ashes, Strandq 38.68 348 P P 20 25 17.3 -1.0
baz=162,SNR=19
LMQ La Malbaie 38.71 16 eP P 20 25 19.7 +1.1
comp=Z,102nm,1.4s
DAC Darwin (Calif) 38.78 316 eP P 20 25 19.7 +0.1
DAC pmax pmax
comp=Z,15nm,1.1s
DAC Darwin (Calif) 38.78 316 eP P 20 25 19.7 +0.1
comp=Z,15nm,1.1s
BGU Big Grassy Mou 38.79 326 eP P 20 25 19.5 -0.1
comp=Z,15nm,1.4s
B31A Greenbush Farm 38.95 347 P P 20 25 20.2 -0.4
baz=160
D26A Manning 38.97 341 P P 20 25 20.5 -0.4
baz=152
A33A Warroad 38.97 349 P P 20 25 20.2 -0.7
baz=164,SNR=14
LMN Caledonia Moun 39.01 23 eP P 20 25 23.5 +2.3
comp=Z,42nm,1.3s
ARVC Arvin 39.04 314 P P 20 25 21.9 +0.2
baz=120
ISA Isabella, Lake 39.06 315 eP P 20 25 22.6 +0.7
ISA pmax pmax
comp=Z,22nm,1.3s
ISA Isabella, Lake 39.06 315 eP P 20 25 22.6 +0.7
comp=Z,22nm,1.3s
SCZ2 Santa Cruz Isl 39.07 312 P P 20 25 21.4 -0.6
baz=118
B30A Myrvik Farm, E 39.13 346 P P 20 25 21.6 -0.6
baz=159
A32A Rocking H Ranc 39.17 348 P P 20 25 21.5 -0.9
baz=162
REDW Red Top Meadow 39.38 330 eP P 20 25 24.4 -0.2
comp=Z,22nm,1.1s
B29A Wagenman Farm, 39.39 345 P P 20 25 24.1 -0.2
baz=158,SNR=16
SNOW Snow King Moun 39.41 330 eP P 20 25 25.6 +0.7
comp=Z,19nm,0.9s
TPAW Teton Pass 39.52 330 eP P 20 25 27.2 +1.3
comp=Z,21nm,1.3s
VES Vestal, Richgr 39.58 315 P P 20 25 26.0 -0.1
baz=121,SNR=10
A30A Hoffart Farm, 39.58 346 P P 20 25 26.1 +0.2
baz=160
PKM Mcpherson Peak 39.63 313 P P 20 25 27.3 +0.6
baz=119,SNR=5.4
A29A Manning Farm, 39.79 345 P P 20 25 27.4 -0.2
baz=158,SNR=6.8
RCTC Rector, Farmer 39.93 315 P P 20 25 28.7 -0.2
baz=121
ELK Elko 39.93 324 eP P 20 25 29.2 0.0
ELK pmax pmax
comp=Z,11nm,1.4s
ELK Elko 39.93 324 eP P 20 25 29.2 0.0
comp=Z,12nm,1.4s
SMMC Simmler 39.96 313 P P 20 25 29.8 +0.4
baz=119
RLMT Red Lodge 39.98 333 P P 20 25 29.2 -0.4
baz=142
RLMT Red Lodge 39.98 333 eP P 20 25 28.8 -0.8
comp=Z,20nm,1.4s
A28A Rude Farm, Bot 40.04 344 P P 20 25 29.1 -0.7
baz=157
B26A Jensen Ranch, 40.11 342 P P 20 25 30.3 -0.1
baz=154
ULM Lac du Bonnet 40.32 349 P P 20 25 30.8 -1.3
comp=Z,28nm,1.1s,baz=168,slow=7.0,SNR=14
ULM Lac du Bonnet 40.32 349 eP P 20 25 30.5 -1.5
ULM pmax pmax
comp=Z,47nm,1.1s
ULM Lac du Bonnet 40.32 349 eP P 20 25 30.5 -1.5
comp=Z,47nm,1.1s
PAGB Antelope Grade 40.35 314 eP P 20 25 33.6 +1.0
comp=Z,52nm,1.0s
GCMT Greycliff 40.68 334 eP P 20 25 35.0 -0.3
TVH3 East Aurora ar 40.73 318 eP P 20 25 36.5 +0.6
comp=Z,26nm,1.4s
TVH1 TV Hill, Hawth 40.75 318 eP P 20 25 36.7 +0.5
comp=Z,27nm,1.3s
BMN Battle Mountai 40.92 322 eP P 20 25 37.6 +0.3
BMN pmax pmax
comp=Z,27nm,1.3s
BMN Battle Mountai 40.92 322 eP P 20 25 37.6 +0.3
comp=Z,27nm,1.3s
PMPB Monarch Peak 40.97 314 eP P 20 25 39.0 +1.3
comp=Z,47nm,1.3s
WAKR Walker 41.22 318 eP P 20 25 40.5 +0.7
comp=Z,44nm,1.2s
HLID Hailey 41.34 327 P P 20 25 40.0 -0.8
baz=134
HLID Hailey 41.34 327 eP P 20 25 39.3 -1.5
comp=Z,7.5nm,1.4s
YERR Yerington 41.35 319 eP P 20 25 41.6 +0.7
comp=Z,40nm,1.4s
MCMT McKenzie Canyo 41.43 330 eP P 20 25 41.2 -0.4
BOZ Bozeman (W) 41.45 332 P P 20 25 41.4 -0.3
baz=139
CMB Columbia Colle 41.60 317 eP P 20 25 43.7 +0.8
CMB pmax pmax
comp=Z,18nm,1.3s
CMB Columbia Colle 41.60 317 eP P 20 25 43.7 +0.8
comp=Z,18nm,1.3s
PNTR Pine Nut 41.64 318 eP P 20 25 45.3 +1.9
DLMT Dillon 41.70 331 eP P 20 25 43.9 +0.2
comp=Z,13nm,1.1s
PAHR Pah Rah Range 41.84 319 eP P 20 25 46.1 +1.1
LCO Las Campanas 41.96 161 eP P 20 25 47.4 +1.3
comp=Z,76nm,1.6s
LRM Limekiln Ridge 41.97 331 eP P 20 25 45.8 -0.1
MFID Camas Ranch 42.00 326 eP P 20 25 45.2 -0.9
comp=Z,7.1nm,1.1s
WVOR Wild Horse Val 42.97 323 eP P 20 25 53.7 -0.4
WVOR pmax pmax
comp=Z,24nm,1.1s
WVOR Wild Horse Val 42.97 323 eP P 20 25 53.7 -0.4
comp=Z,24nm,1.1s
ORV Oroville 43.14 318 eP P 20 25 56.1 +0.8
ORV pmax pmax
comp=Z,31nm,1.3s
ORV Oroville 43.14 318 eP P 20 25 56.1 +0.8
comp=Z,31nm,1.3s
CHMT Chamberlain Mo 43.15 332 eP P 20 25 56.6 +1.1
MSO Missoula 43.41 331 P P 20 25 57.0 -0.5
baz=137
MSO Missoula 43.41 331 eP P 20 25 57.8 +0.2
comp=Z,11nm,1.2s
O03D Paynes Creek 43.72 319 P P 20 25 59.2 -0.9
baz=122
BMO Blue Mountains 43.75 327 eP P 20 25 58.4 -1.9
comp=Z,7.2nm,1.4s
F10A Beach Ranch, E 44.45 328 eP P 20 26 04.3 -1.5
comp=Z,7.7nm,1.0s
M04C Macdoel 44.55 320 P P 20 26 05.4 -1.3
baz=123
DRLN Deer Lake 44.69 26 eP P 20 26 09.0 +1.4
comp=Z,210nm,1.8s
KMRM Mail Ridge 44.94 317 eP P 20 26 10.3 +0.5
comp=Z,44nm,1.3s
M02C Callahan 44.98 319 P P 20 26 08.7 -1.4
baz=122
BDFB Brasilia 45.18 125 P P 20 26 12.4 +0.4
comp=Z,18nm,0.9s,baz=258,slow=4.9
BDFB Brasilia 45.18 125 eP P 20 26 13.6 +1.6
BDFB pmax pmax
comp=Z,64nm,1.1s
BDFB Brasilia 45.18 125 eP P 20 26 13.6 +1.6
comp=Z,64nm,1.1s
KHMM Horse Mountain 45.28 318 eP P 20 26 12.7 +0.1
comp=Z,12nm,0.9s
JCC Jacoby Creek, 45.45 318 eP P 20 26 14.3 +0.6
comp=Z,43nm,1.3s
CPUP Villa Florida 45.75 144 P P 20 26 16.2 0.0
comp=Z,7.2nm,0.8s,baz=338,slow=9.8,SNR=14
CPUP Villa Florida 45.75 144 eP P 20 26 15.7 -0.6
CPUP Villa Florida 45.75 144 eP P 20 26 15.7 -0.6
FFC Flin Flon 45.81 346 eP P 20 26 17.1 +0.7
FFC pmax pmax
comp=Z,26nm,1.6s
FFC Flin Flon 45.81 346 eP P 20 26 17.1 +0.7
comp=Z,26nm,1.6s
L02D Cave Junction, 45.86 320 P P 20 26 16.3 -0.7
baz=122
I04A Tendick Farm, 46.01 322 P P 20 26 17.1 -1.1
baz=124
G05D Wamic, OR 46.21 325 P P 20 26 19.5 -0.3
baz=127
SCHQ Schefferville 46.25 15 P P 20 26 20.3 +0.4
comp=Z,52nm,1.0s,baz=197,slow=6.6,SNR=13
SCHQ Schefferville 46.25 15 eP P 20 26 19.8 -0.1
comp=Z,56nm,1.0s
G03D McMinnville, O 47.31 324 P P 20 26 28.2 -0.2
baz=124
EDM Edmonton 47.99 338 eP P 20 26 32.0 -1.5
EDM pmax pmax
comp=Z,22nm,1.3s
EDM Edmonton 47.99 338 eP P 20 26 32.0 -1.5
comp=Z,22nm,1.3s
FCC Fort Churchill 48.35 354 eP P 20 26 34.8 -1.3
FCC pmax pmax
comp=Z,23nm,1.2s
FCC Fort Churchill 48.35 354 eP P 20 26 34.8 -1.3
comp=Z,22nm,1.2s
NLWA Neilton Lookou 48.91 326 eP P 20 26 40.5 -0.2
comp=Z,28nm,1.5s
PLCA Paso Flores 53.01 166 P P 20 27 11.7 0.0
comp=Z,19nm,1.0s,baz=118,slow=8.4,SNR=15
PLCA Paso Flores 53.01 166 eP P 20 27 13.2 +1.5
PLCA Paso Flores 53.01 166 eP P 20 27 12.6 +1.0
comp=Z,42nm,1.1s
TRQA Tornquist 53.21 157 eP P 20 27 13.4 +0.3
comp=Z,112nm,1.9s
YKA Yellowknife Ar 55.81 344 P P 20 27 30.2 -1.4
comp=Z,1.5nm,0.5s,baz=137,slow=7.7,SNR=13
TAOE Nuku Hiva Isla 58.11 252 eLR LR 20 44 49.0
comp=Z,787nm,25.7s
DLBC Dease Lake 58.37 334 eP P 20 27 49.6 -0.4
comp=Z,23nm,1.6s
CHRN Cochrane 58.86 170 eP P 20 27 56.2 +2.9
comp=Z,17nm,1.1s
RKT Rikitea 59.28 235 eT T 21 31 15.5
comp=Z,1.8nm,0.3s
SFJD Kangerlussuaq 60.71 15 iP P 20 28 04.6 -1.2
comp=Z,46nm,1.1s
SFJD Kangerlussuaq 60.71 15 iP P 20 28 04.6 -1.2
SFJD pmax pmax
comp=Z,46nm,1.1s
SFJD Kangerlussuaq 60.71 15 eP P 20 28 04.2 -1.6
comp=Z,43nm,1.0s
INK Inuvik 65.46 342 eP P 20 28 36.4 -0.9
INK pmax pmax
comp=Z,22nm,1.4s
INK Inuvik 65.46 342 eP P 20 28 36.4 -0.9
comp=Z,22nm,1.4s
DOT Dot Lake 66.87 335 eP P 20 28 45.5 -1.1
comp=Z,30nm,1.4s
SUMG Summit 67.64 14 iP P 20 28 50.7 -1.0
comp=Z,48nm,1.3s
SUMG Summit 67.64 14 iP P 20 28 50.7 -1.0
SUMG pmax pmax
comp=Z,48nm,1.3s
SUMG Summit 67.64 14 eP P 20 28 50.5 -1.2
comp=Z,41nm,1.2s
HDA Harding Lake 68.33 336 eP P 20 28 54.4 -1.4
comp=Z,18nm,1.4s
IL1 Eielson Array 68.44 336 eP P 20 28 54.4 -2.0
ILAR Eielson Array 68.44 336 P P 20 28 54.8 -1.6
comp=Z,2.5nm,0.9s,baz=119,slow=4.1,SNR=14
ILB Eielson Array 68.44 336 eP P 20 28 55.1 -1.3
RND Reindeer 68.78 334 eP P 20 28 57.6 -1.0
RND pmax pmax
comp=Z,25nm,1.2s
RND Reindeer 68.78 334 eP P 20 28 57.6 -1.0
comp=Z,25nm,1.2s
MCK McKinley 68.92 335 eP P 20 28 57.8 -1.7
MCK pmax pmax
comp=Z,25nm,1.5s
MCK McKinley 68.92 335 eP P 20 28 57.8 -1.7
comp=Z,25nm,1.5s
PPT2 Papeete2 69.61 247 eLR LR 20 50 13.7
comp=Z,810nm,27.2s
SCO Scoresbysund 71.08 18 iP P 20 29 11.7 -0.9
comp=Z,20nm,1.3s
SCO Scoresbysund 71.08 18 eP P 20 29 11.7 -0.9
SCO pmax pmax
comp=Z,20nm,1.3s
TBI Tubuai 71.46 241 eLR LR 20 51 22.0
comp=Z,592nm,26.8s
PMRV Marv??o 73.79 52 eP P 20 29 29.9 +0.5
comp=Z,21nm,1.3s
MVO Moncorvo 74.05 50 eP P 20 29 30.4 -0.5
comp=Z,23nm,1.5s
PBAR Barrancos 74.08 53 eP P 20 29 33.2 +2.1
comp=Z,59nm,1.3s
DAG Danmarks Havn 74.25 13 iP P 20 29 29.5 -1.8
comp=Z,6.7nm,0.8s
DAG Danmarks Havn 74.25 13 iP P 20 29 29.5 -1.8
DAG pmax pmax
comp=Z,5.0nm,0.8s
ESDC Sonseca Array 76.43 52 P P 20 29 44.1 -0.6
comp=Z,8.0nm,0.9s,baz=286,slow=5.0,SNR=20
ESLA Sonseca Array 76.43 52 eP P 20 29 42.6 -2.0
comp=Z,12nm,1.0s
ES19 SONSECA Array 76.48 52 eP P 20 29 42.2 -2.7
EKA Eskdalemuir Ar 76.64 36 P P 20 29 43.6 -1.8
comp=Z,5.7nm,0.8s,baz=275,slow=4.9,SNR=9.6
TIC Toumodi 79.11 85 ePKP2 P 20 29 58.9 -1.1
LIC Lamto 79.17 86 ePKP2 P 20 29 59.3 -1.1
comp=Z,34nm,1.2s
DBIC Dimbokro 79.27 85 P P 20 30 00.2 -0.6
comp=Z,8.1nm,1.0s,baz=292,slow=6.7,SNR=4.9
DBIC Dimbokro 79.27 85 eP P 20 29 59.6 -1.3
DBIC pmax pmax
comp=Z,11nm,1.1s
DBIC Dimbokro 79.27 85 eP P 20 29 59.5 -1.3
comp=Z,11nm,1.1s
KIC Kosan Boka 79.43 85 ePKP2 P 20 30 00.2 -1.6
comp=Z,25nm,1.1s
KBS Kingsbay 80.84 11 iP P 20 30 10.3 +2.2
HSPB Hornsund (broa 81.95 13 eP P 20 30 20.4 +6.4
HSPB MLR MLR
comp=Z,4μm,28.3s
WLF Walferdange 82.70 41 P P 20 30 15.0 -3.5
NBO02 NORSAR Array S 83.53 29 eP P 20 30 21.4 -1.2
NB2 NORSAR Subarra 83.70 29 P P 20 30 22.2 -1.3
comp=Z,38nm,2.0s,baz=280,slow=5.1
NB2 NORSAR Subarra 83.70 29 P P 20 30 22.2 -1.3
baz=280,slow=5.1
NB200 NORSAR Array S 83.70 29 eP P 20 30 22.6 -0.9
NOA NORSAR Array B 83.70 29 P P 20 30 22.6 -0.9
comp=Z,3.6nm,0.9s,baz=277,slow=5.0,SNR=4.6
TOA1 Torodi Ar. St 84.55 78 eP P 20 30 26.9 -1.8
comp=Z,27nm,1.9s
TOA0 Torodi Ar. Sit 84.55 78 eP P 20 30 26.5 -2.2
TORD Torodi Ar. Bea 84.55 78 P P 20 30 26.9 -1.8
comp=Z,1.5nm,0.9s,baz=275,slow=4.8,SNR=6.1
DAVA Damuels 85.54 43 iP P 20 30 32.9 -0.3
comp=Z,11nm,1.1s
DAVOX Davos/Dischmat 85.64 43 P P 20 30 32.2 -1.5
comp=Z,2.2nm,0.8s,baz=270,slow=6.4,SNR=3.8
FUORN Ofenpass-Fuorn 85.92 43 eP P 20 30 34.1 -1.2
comp=Z,8.7nm,1.2s
RETA Reutte 86.09 43 iP P 20 30 35.5 -0.3
comp=Z,9.8nm,1.2s
FETA Feichten 86.16 43 iP P 20 30 34.4 -1.9
comp=Z,4.3nm,0.9s
MOTA Moosalm 86.34 43 iP P 20 30 36.8 -0.4
comp=Z,4.3nm,1.0s
NKC Novy Kostel 86.60 40 eP P 20 30 37.4 -0.8
NKC Novy Kostel 86.60 40 eP P 20 30 37.4 -0.8
CLL Collm 86.70 38 eP P 20 30 37.0 -1.7
comp=Z,10.0nm,1.4s
CLL e 20 30 48.0
CLL Collm 86.70 38 eP P 20 30 37.0 -1.7
CLL e 20 30 48.0
CLL pmax pmax
comp=Z,10.0nm,1.4s

BILL	**Bilibino**	**86.87**	**339**	*i* P		**P**		**20 30 38.3**	**-0.9**
BILL				pmax		pmax			
	comp=Z,3.0nm,0.9s								
ARCES	**ARCESS Array B**	**87.00**	**19**	P		**P**		**20 30 38.5**	**-1.2**
	comp=Z,3.2nm,1.0s,baz=248,slow=6.4,SNR=4.8								
WET	**Wettzell**	**87.11**	**41**	P		**P**		**20 30 39.2**	**-1.6**
WET				pmax		pmax			
	comp=Z,9.0nm,1.3s								
BRG	**Berggiesshubel**	**87.38**	**39**	*e*P		**P**		**20 30 41.7**	**-0.3**
	comp=Z,2.9nm,1.1s								
	comp=N,539nm,18.9s								
	comp=E,780nm,17.9s								
	comp=Z,1μm,18.8s								
BRG	**Berggiesshubel**	**87.38**	**39**	*e*P		**P**		**20 30 41.7**	**-0.3**
BRG				pmax		pmax			
	comp=Z,3.0nm,1.1s								
BRG				MLR		MLR			
	comp=N,539nm,18.9s								
BRG				MLR		MLR			
	comp=E,780nm,17.9s								
BRG				MLR		MLR			
	comp=Z,1μm,18.8s								
KEST	**Kesra**	**87.38**	**54**	P		**P**		**20 30 41.1**	**-1.4**
	comp=Z,6.1nm,1.0s,baz=224,slow=2.7,SNR=5.8								
KEST	**Kesra**	**87.38**	**54**	*e*P		**P**		**20 30 41.5**	**-0.9**
	comp=Z,12nm,1.2s								
ABTA	**Abfaltersbach**	**87.41**	**43**	*i* P		**P**		**20 30 41.3**	**-1.0**
	comp=Z,9.0nm,1.2s								
KHC	**Kasperske Hory**	**87.56**	**41**	*e*P		**P**		**20 30 42.1**	**-0.9**
KHC	**Kasperske Hory**	**87.56**	**41**	*e*P		**P**		**20 30 42.1**	**-0.9**
GEC2	**GERESS Array S**	**87.71**	**41**	*e*P		**P**		**20 30 41.6**	**-2.2**
GEC2				pmax		pmax			
	comp=Z,6.0nm,1.2s								
GEC2	**GERESS Array S**	**87.71**	**41**	*e*P		**P**		**20 30 41.6**	**-2.2**
	comp=Z,6.3nm,1.2s								
GERES	**GERESS Array B**	**87.71**	**41**	P		**P**		**20 30 42.1**	**-1.7**
	comp=Z,0.6nm,0.7s,baz=286,slow=2.4,SNR=5.8								
GEA0	**GERESS Array S**	**87.71**	**41**	*e*P		**P**		**20 30 41.9**	**-1.9**
KBA	**Koelnbreinsper**	**87.89**	**43**	*i* P		**P**		**20 30 44.0**	**-0.8**
	comp=Z,11nm,1.5s								
KBA	**Koelnbreinsper**	**87.89**	**43**	P		**P**		**20 30 43.7**	**-1.1**
KBA				pmax		pmax			
	comp=Z,6.0nm,1.2s								
MYKA	**Terra Mystica**	**88.20**	**43**	*i* P		**P**		**20 30 45.2**	**-0.9**
	comp=Z,4.3nm,0.9s								
MOA	**Molln**	**88.31**	**42**	*i* P		**P**		**20 30 44.1**	**-2.4**
	comp=Z,6.0nm,1.7s								
OBKA	**Obir**	**88.83**	**43**	*i* P		**P**		**20 30 47.9**	**-1.2**
	comp=Z,3.2nm,1.2s								
DPC	**Dobruska-Polom**	**88.98**	**39**	*e*P		**P**		**20 30 47.4**	**-2.3**
DPC	**Dobruska-Polom**	**88.98**	**39**	*e*P		**P**		**20 30 47.4**	**-2.3**
SOKA	**Soboth**	**89.11**	**43**	*i* P		**P**		**20 30 49.2**	**-1.2**
	comp=Z,5.5nm,1.6s								
ARSA	**Arzberg**	**89.29**	**42**	*i* PcP		**P**		**20 30 52.9**	**+1.7**
	comp=Z,1.6nm,0.8s								
CONA	**Conrad Observa**	**89.33**	**41**	*i* P		**P**		**20 30 50.1**	**-1.3**
	comp=Z,5.0nm,1.7s								
VYHS	**Vyhne**	**91.08**	**40**	*e*P		**P**		**20 31 00.1**	**+0.6**
VYHS	**Vyhne**	**91.08**	**40**	*e*P		**P**		**20 31 00.1**	**+0.6**
TIXI	**Tiksi**	**94.67**	**350**	*e*P		**P**		**20 31 14.1**	**-1.4**
TIXI				pmax		pmax			
	comp=Z,2.0nm,1.1s								
KLMR	**Klimovskoe**	**96.39**	**24**	*e*P		**P**		**20 31 20.0**	**-3.5**
KLMR				*e*				20 35 12.7	
KLMR				pmax		pmax			
	comp=Z,10.0nm,1.2s								
SNAA	**Sanae**	**97.75**	**162**	*i* P		Pdif		20 31 31.7	+2.2
OBN	**Obninsk**	**98.30**	**30**	*e*P		**P**		**20 31 32.2**	**-0.1**
OBN				pmax		pmax			
	comp=Z,3.0nm,0.7s								
AKTO	**Aktyubinsk**	**111.09**	**24**	PP		PP		20 37 06.2	-0.1
	comp=Z,0.6nm,0.4s,baz=324,slow=8.3,SNR=4.5								
BVAR	**Borovoye Array**	**113.07**	**16**	PP		PP		20 37 13.7	-6.6
	comp=Z,1.1nm,0.9s,baz=339,slow=3.8,SNR=6.2								
ZAA1	**Zalesovo Array**	**114.94**	**7**	*e*PP		**PP**		**20 37 30.8**	**-2.6**
ZALV	**Zalesovo Beam**	**114.95**	**7**	PP		**PP**		**20 37 30.8**	**-2.7**
	comp=Z,1.3nm,0.7s,baz=355,slow=7.4,SNR=7.2								
SONA0	**Songino Array**	**120.74**	**351**	*e*PP		PP		20 38 07.6	-6.2
SONM	**Songino Array**	**120.74**	**351**	PP		PP		20 38 07.6	-6.2
	comp=Z,0.4nm,0.7s,baz=350,slow=3.5,SNR=4.0								
MK32	**Makanchi Array**	**121.58**	**10**	*e*PP		PP		20 38 07.8	-12
MKAR	**Makanchi Array**	**121.58**	**10**	PP		PP		20 38 07.8	-12
	comp=Z,0.6nm,0.9s,baz=307,slow=3.1,SNR=3.7								
WMQ	**Urumqi**	**125.26**	**6**	*e*PKP		**PKPdf**		**20 36 53.5**	**-2.4**
HHC	**Hu-ho-hao-te**	**126.35**	**344**	*e*PKP		**PKPdf**		**20 37 00.1**	**+2.0**
HHC				PP		**PP**		**20 38 58.6**	**+6.8**
HHC				AMB		AMB			
	comp=Z,73nm,8.2s								
HHC				LR		LR			
	comp=Z,390nm,14.8s								
HHC				LR		LR			
	comp=Z,690nm,17.2s								
HHC				LR		LR			
	comp=Z,630nm,24.7s								
KSH	**Kashi**	**126.95**	**18**	*e*PKP		**PKPdf**		**20 37 00.5**	**+1.1**
KSH				PKS		**PKSdf**		**20 40 35.8**	**-0.3**
KSH				SKKS				20 45 44.8	
KSH				AMB		AMB			
	comp=Z,140nm,4.6s								
KSH				LR		LR			
	comp=Z,400nm,11.0s								
KSH				LR		LR			
	comp=Z,210nm,9.3s								
KSH				LR		LR			
	comp=Z,540nm,14.6s								
LZH	**Lanzhou**	**132.61**	**350**	*e*PKP		**PKPdf**		**20 37 09.4**	**-0.9**
LZH				sPKP				20 37 46.0	
CD2	**Chengdu**	**137.66**	**349**	PKP		**PKPdf**		**20 37 17.6**	**-2.1**
CD2				SKS		**SKSdf**		**20 44 23.0**	**-8.0**
CD2				SKKS		**SKKSac**		**20 46 51.8**	**-9.2**
CD2				SS		**SS**		**20 58 08.0**	**-4.6**
CD2				AMB		AMB			
	comp=Z,120nm,6.2s								
AS01	**Alice Springs**	**140.67**	**246**	*e*PKPpre		PKPpre		20 37 18.8	
ASAR	**Alice Springs**	**140.71**	**246**	PKhKP		PKPpre		20 37 18.2	
	comp=Z,2.0nm,1.0s,baz=137,slow=2.0,SNR=7.9								
WR1	**Warramunga Arr**	**140.95**	**252**	*e*PKPpre		PKPpre		20 37 19.5	
WRA	**Warramunga Arr**	**140.95**	**252**	PKhKP		PKPpre		20 37 19.5	
	comp=Z,4.9nm,1.1s,baz=94,slow=2.8,SNR=10								
GYA	**Guiyang**	**141.23**	**343**	*e*PKP		**PKPdf**		**20 37 25.0**	**-1.4**
GYA				PP		**PP**		**20 40 30.2**	**+3.5**
GYA				AMB		AMB			
	comp=Z,120nm,7.9s								
KMI	**Kunming**	**143.48**	**348**	PKP		PKPbc		20 37 28.1	+0.4
KMI				LR		LR			
	comp=Z,590nm,19.0s								
KMI				LR		LR			
	comp=Z,540nm,19.7s								
KMI				LR		LR			
	comp=Z,640nm,19.0s								
MTN	**Manton Dam**	**144.46**	**263**	*e*PKPdf		**PKPab**		**20 37 31.0**	**+0.6**
QIZ	**Qiongzhong**	**146.89**	**333**	PKPbc		**PKPdf**		**20 37 35.8**	**-0.5**
QIZ				PP		**PP**		**20 41 02.2**	**+1.5**
QIZ				SS		SS		20 59 59.7	-0.5
QIZ				LR		LR			
	comp=Z,370nm,12.4s								
QIZ				LR		LR			
	comp=Z,430nm,15.1s								
QIZ				LR		LR			
	comp=Z,660nm,30.3s								
FITZ	**Fitzroy Crossi**	**149.36**	**253**	*e*PKPdf		**PKPdf**		**20 37 39.5**	**-0.8**
FITZ				*e*PKPbc		**PKPbc**		**20 37 44.6**	**-0.1**
CHTO	**Chiang Mai**	**150.31**	**352**	*e*PKIKP		PKPpre		20 37 36.7	
CHTO				*e*				20 37 45.0	
CHTO	**Chiang Mai**	**150.31**	**352**	*e*PKPdf		PKPpre		20 37 36.7	
CHTO				*e*PKPbc		**PKPdf**		**20 37 45.0**	**+3.1**
CM31	**Chiang Mai Arr**	**150.66**	**352**	*e*PKPbc		**PKPdf**		**20 37 45.8**	**+3.4**
CMAR	**Chiang Mai Arr**	**150.66**	**352**	PKP		**PKPdf**		**20 37 41.3**	**-1.1**
	comp=Z,3.2nm,1.3s,baz=11,slow=0.9,SNR=2.9								
CMAR				PKPbc		**PKPbc**		**20 37 46.9**	**-0.9**
	comp=Z,4.0nm,1.1s,baz=324,slow=2.3,SNR=12								
CMAR				PKPab		**PKPab**		**20 37 53.1**	**-1.4**
	comp=Z,1.4nm,0.8s,baz=348,slow=4.0,SNR=5.0								

CSEM ***12*** *20:21:32.5, 43.94N×11.86E, h7km, MD2.1/17*
ROM 12 20:21:32.5±0.1, 43.94N×11.86E, h7km, Md2.1/17, MI1.6/10, Error ellipse: s-maj=1.4km s-min=0.8km az=19.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.03**	**197**	Pg	Pg	20 21 34.1	+0.1
SFI				Sg	Sg	20 21 35.1	+0.1
	923nm,0.2s						
SFI	**Santa Sofia**	**0.03**	**197**	Pg	Pg	20 21 34.1	+0.1
SFI				Sg	Sg	20 21 35.1	+0.1
	923nm,0.2s						
ASQU	**Asqua**	**0.15**	**200**	Pg	Pg	20 21 36.1	+0.5
ASQU				Sg	Sg	20 21 38.9	+1.1
	327nm,0.4s						
ASQU	**Asqua**	**0.15**	**200**	Pg	Pg	20 21 36.1	+0.5
ASQU				Sg	Sg	20 21 38.9	+1.1
	327nm,0.4s						
T0502	**Localit˜ San**	**0.20**	**100**	Pg	Pg	20 21 37.2	+0.6
T0502				Sg	Sg	20 21 41.0	+1.6
	130nm,0.6s						
VMG	**Vicchio**	**0.23**	**277**	Pg	Pg	20 21 37.8	+0.7
VMG				Sg	Sg	20 21 42.1	+1.9
VMG	**Vicchio**	**0.23**	**277**	Pg	Pg	20 21 37.8	+0.7
VMG				Sg	Sg	20 21 42.1	+1.9
CPGN	**Carpegna, Ital**	**0.36**	**112**	Pg	Pb	20 21 40.9	-0.4
	66μm,24.0s						
CPGN	**Carpegna, Ital**	**0.36**	**112**	Pg	Pb	20 21 40.9	-0.4
	66μm,24.0s						
SEI	**Scarperia**	**0.38**	**288**	Pg	Pg	20 21 40.4	+0.4
SEI				Sg	Sb	20 21 46.7	-1.1
SEI	**Scarperia**	**0.38**	**288**	Pg	Pg	20 21 40.4	+0.4
SEI				Sg	Sb	20 21 46.7	-1.1
PARC	**Parchiule**	**0.40**	**136**	Pg	Pg	20 21 41.0	+0.8
PARC				Sg	Sb	20 21 47.5	-0.7
	22nm,0.3s						
PARC	**Parchiule**	**0.40**	**136**	Pg	Pg	20 21 41.0	+0.8
PARC				Sg	Sb	20 21 47.5	-0.7
	22nm,0.3s						
IMOL	**Imola, Italy**	**0.43**	**349**	Pg	Pb	20 21 42.5	+0.1
IMOL	**Imola, Italy**	**0.43**	**349**	Pg	Pb	20 21 42.5	+0.1
BADI	**Badiali**	**0.51**	**147**	Pg	Pg	20 21 42.7	+0.4
BADI	**Badiali**	**0.51**	**147**	Pg	Pg	20 21 42.7	+0.4
ATMC	**Monte Cedrone**	**0.55**	**154**	Pg	Pg	20 21 43.6	+0.6
	43nm,0.4s						
ATMC	**Monte Cedrone**	**0.55**	**154**	Pg	Pg	20 21 43.6	+0.6
	43nm,0.4s						
PTF	**Prato**	**0.57**	**273**	Pg	Pb	20 21 44.7	-0.1
PTF				Sg	Sb	20 21 53.0	-0.2
PTF	**Prato**	**0.57**	**273**	Pg	Pb	20 21 44.7	-0.1
PTF				Sg	Sb	20 21 53.0	-0.2
FNVD	**Fontana Vidola**	**0.58**	**294**	Pg	Pg	20 21 44.3	+0.6
FNVD	**Fontana Vidola**	**0.58**	**294**	Pg	Pg	20 21 44.3	+0.6
CAFI	**Castiglion Fio**	**0.61**	**173**	Pg	Pb	20 21 44.9	-0.6
CAFI				Sg	Sb	20 21 54.2	-0.1
CAFI	**Castiglion Fio**	**0.61**	**173**	Pg	Pb	20 21 44.9	-0.6
CAFI				Sg	Sb	20 21 54.2	-0.1
CSNT	**Castellina Chi**	**0.62**	**222**	Pg	Pb	20 21 45.8	+0.1
CSNT				Sg	Sb	20 21 54.0	-0.6
	15nm,0.4s						
CSNT	**Castellina Chi**	**0.62**	**222**	Pg	Pb	20 21 45.8	+0.1
CSNT				Sg	Sb	20 21 54.0	-0.6
	15nm,0.4s						
ATPC	**Poggio Castell**	**0.63**	**136**	Pg	Pg	20 21 45.1	+0.5
ATPC				Sg	Sb	20 21 54.7	-0.1
	19nm,0.4s						
ATPC	**Poggio Castell**	**0.63**	**136**	Pg	Pg	20 21 45.1	+0.5
ATPC				Sg	Sb	20 21 54.7	-0.1
	19nm,0.4s						
CRMI	**Carmignano**	**0.66**	**258**	Pg	Pg	20 21 45.7	+0.5
CRMI				Sg	Sb	20 21 55.1	-0.6
	17nm,0.5s						
CRMI	**Carmignano**	**0.66**	**258**	Pg	Pg	20 21 45.7	+0.5
CRMI				Sg	Sb	20 21 55.1	-0.6
	17nm,0.5s						
ATVO	**AVT- Monte Val**	**0.68**	**144**	Pg	Pg	20 21 45.7	+0.1
	20nm,0.6s						
ATVO	**AVT- Monte Val**	**0.68**	**144**	Pg	Pg	20 21 45.7	+0.1
	20nm,0.6s						
MPAG	**Monte Paganucc**	**0.72**	**115**	Pg	Pg	20 21 46.6	+0.2
MPAG	**Monte Paganucc**	**0.72**	**115**	Pg	Pg	20 21 46.6	+0.2
ATTE	**AVT- Monte Tez**	**0.82**	**154**	Pg	Pg	20 21 48.5	+0.2
	18nm,0.7s						
ATTE	**AVT- Monte Tez**	**0.82**	**154**	Pg	Pg	20 21 48.5	+0.2
	18nm,0.7s						
MGAB	**Montegabbione**	**1.04**	**170**	Pg	Pb	20 21 53.1	+0.3
MGAB	**Montegabbione**	**1.04**	**170**	Pg	Pb	20 21 53.1	+0.3

ISCJB ***12*** *20:26:40.5±0.5, 39.06N±0.04×29.03E±0.04, h5km±7km, Error ellipse: s-maj=7.2km s-min=4.1km az=151.1*
DDA ***12*** *20:26:40.4, 39.09N×29.03E, h7km, Md2.6*
ISK ***12*** *20:26:40.3, 39.08N×29.03E, h6km, MD2.6*
CSEM ***12*** *20:26:40.6±0.1, 39.07N×29.03E, h5km, MD2.6, Error ellipse: s-maj=3.4km s-min=2.6km az=145.0*
ISC 12 20:26:40.8±0.9, 39.06N±0.03×29.03E±0.02, h10km±9km, n28, σ0°56/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**267**	*i* P	**Pg**	**20 26 45.9**	**+0.1**
DEMI				*i* S	**Sg**	**20 26 49.5**	**+0.3**
DEMI	**Demirci**	**0.24**	**267**	P	**Pg**	**20 26 45.9**	**+0.1**
DEMI				S	**Sg**	**20 26 49.5**	**+0.3**
GEDZ	**Gediz**	**0.30**	**92**	*e*PG	**Pg**	**20 26 46.8**	**0.0**
GEDZ	**Gediz**	**0.30**	**92**	*e*Pg	**Pg**	**20 26 46.8**	**0.0**
GDZ	**Gediz**	**0.35**	**84**	*i* P	**Pg**	**20 26 47.6**	**-0.2**
GDZ				*i* S	**Sg**	**20 26 52.8**	**+0.2**
GDZ	**Gediz**	**0.35**	**84**	P	**Pg**	**20 26 47.7**	**-0.2**
GDZ				S	**Sg**	**20 26 52.8**	**+0.2**
TVSB	**Tavsanli**	**0.52**	**40**	*e*PG	**Pg**	**20 26 49.9**	**-1.0**
TVSB				*e*SG	**Sg**	**20 26 57.9**	**+0.1**
TVSB	**Tavsanli**	**0.52**	**40**	*e*Pg	**Pg**	**20 26 49.9**	**-1.0**
TVSB				*e*Sg	**Sg**	**20 26 57.9**	**+0.1**
KULA	**Kula-Manisa**	**0.61**	**208**	*e*PG	**Pb**	**20 26 53.5**	**-0.1**
KULA				*e*SG	**Sg**	**20 27 01.6**	**+1.0**
KULA	**Kula-Manisa**	**0.61**	**208**	*e*Pg	**Pb**	**20 26 53.5**	**-0.1**
KULA				*e*Sg	**Sg**	**20 27 01.7**	**+1.0**
MANT	**Manisa**	**0.67**	**213**	*i* P	**Pg**	**20 26 52.9**	**-1.0**
MANT				*i* S	**Sg**	**20 27 02.3**	**-0.4**
MANT	**Manisa**	**0.67**	**213**	P	**Pg**	**20 26 52.9**	**-1.0**
MANT				S	**Sg**	**20 27 02.3**	**-0.4**
BALB	**Balikesir**	**1.07**	**304**	*e*PG	**Pn**	**20 27 01.4**	**-0.4**
BALB	**Balikesir**	**1.07**	**304**	*e*Pg	**Pn**	**20 27 01.4**	**-0.4**
BALY	**Balya**	**1.29**	**303**	*i* P	**Pn**	**20 27 04.5**	**-0.4**
BALY	**Balya**	**1.29**	**303**	P	**Pn**	**20 27 04.5**	**-0.4**
KCTX	**Karacabey (Bur**	**1.32**	**337**	*e*PN	**Pg**	**20 27 05.7**	**-0.4**
KCTX				*e*SN	**Sn**	**20 27 24.0**	**+1.1**
KCTX	**Karacabey (Bur**	**1.32**	**337**	*e*Pn	**Pg**	**20 27 05.7**	**-0.4**
KCTX				*e*Sn	**Sn**	**20 27 24.0**	**+1.1**
MDNY	**Mudanya-Bursa**	**1.32**	**355**	*e*PN	**Pg**	**20 27 05.3**	**-0.8**
MDNY	**Mudanya-Bursa**	**1.32**	**355**	*e*Pn	**Pg**	**20 27 05.3**	**-0.8**
IZI	**Iznik**	**1.32**	**15**	*e*PN	**Pg**	**20 27 05.9**	**-0.4**
IZI	**Iznik**	**1.32**	**15**	*e*Pn	**Pg**	**20 27 05.9**	**-0.4**
GONE	**Gonen-Balikesi**	**1.44**	**314**	*e*PN	**Pn**	**20 27 06.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**314**	*e*Pn	**Pn**	**20 27 06.9**	**0.0**
ESKT	**Eskisehir**	**1.49**	**71**	*e*PN	**Pb**	**20 27 08.5**	**-0.1**
ESKT	**Eskisehir**	**1.49**	**71**	*e*Pn	**Pb**	**20 27 08.5**	**-0.1**
GULT	**Gulveren**	**1.79**	**39**	*e*PN	**Pn**	**20 27 11.9**	**+0.1**
GULT	**Gulveren**	**1.79**	**39**	*e*Pn	**Pn**	**20 27 11.9**	**+0.1**

IDC ***12*** *20:33:01.1±1.0, 29.87S×176.13W, h0km, mb3.8/4, mb1 4.1/4, mb1mx3.8/28, mbtmp3.8/4, MS4.6/3, Ms1 4.6/3, ms1mx3.7/30, Error ellipse: s-maj=44.5km s-min=22.3km az=8.0*
NEIC ***12*** *20:33:02.1±0.5, 29.99S×176.11W, h10km, mb4.9/11, Error ellipse: s-maj=14.5km s-min=8.3km az=123.0*
ISCJB ***12*** *20:33:03.4±0.5, 30.12S±0.06×176.06W±0.07, h33km, mb4.8/12, MS4.7/3, Error ellipse: s-maj=9.0km s-min=7.6km az=31.8*
ISC 12 20:33:05.6±0.6, 30.08S±0.07×176.07W±0.08, h35km, n41, σ1°91/40, mb4.7/12, MS4.7/3, 1D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.80**	**297**	Pn	**Pn**	**20 33 33.5**	**-0.6**
	52nm,0.3s,baz=131,slow=19,SNR=3.5						
RAO				Sn	**Sn**	**20 33 55.6**	**-0.2**
	195nm,0.3s,baz=99,slow=21,SNR=4.1						
URZ	**Urewera**	**9.92**	**213**	*e*Pn	**Pn**	**20 35 27.2**	**+1.6**
URZ				*e*Sn	**Sn**	**20 37 10.8**	**-4.9**
OUZ	**Omahuta**	**10.10**	**237**	*e*Pn	**Pn**	**20 35 31.9**	**+3.7**
BKZ	**Black Stump Fm**	**10.94**	**212**	*e*Pn	**Pn**	**20 35 39.5**	**-0.1**
THZ	**Tophouse**	**14.67**	**214**	*e*Pn	**Pn**	**20 36 29.0**	**-1.6**
KHZ	**Kahutara**	**14.88**	**211**	*e*Pn	**Pn**	**20 36 31.8**	**-1.5**
	60nm,1.0s						
LTZ	**Lake Taylor**	**15.75**	**213**	*e*Pn	**Pn**	**20 36 42.4**	**-2.4**
	126nm,1.6s						
OXZ	**Oxford**	**16.28**	**212**	*e*Pn	**P**	**20 36 53.4**	**-0.7**
	160nm,1.8s						
RPZ	**Rata Peaks**	**17.04**	**213**	*e*Pn	**Pn**	**20 36 58.8**	**-2.2**
	105nm,1.4s						
RAR	**Rarotonga**	**17.13**	**63**	*e*Pn	**Pn**	**20 37 00.9**	**-1.4**
	252nm,1.9s						
STKA	**Stephens Creek**	**36.17**	**256**	P	**P**	**20 40 06.2**	**+1.4**
	1.4nm,0.8s,baz=107,slow=17,SNR=2.8						
STKA	**Stephens Creek**	**36.17**	**256**	*e*P	**P**	**20 40 06.3**	**+1.4**
	7.1nm,1.9s						
XMAS	**Kiritimati**	**36.56**	**32**	*e*P	**P**	**20 40 08.9**	**+0.7**
	66nm,0.9s						
AS01	**Alice Springs**	**44.75**	**266**	*e*P	**P**	**20 41 18.4**	**+2.5**
ASAR	**Alice Springs**	**44.79**	**266**	P	**P**	**20 41 15.5**	**-0.7**
	0.8nm,0.8s,baz=105,slow=6.7,SNR=9.5						
WB2	**Warramunga Arr**	**45.75**	**271**	*e*P	**P**	**20 41 23.3**	**-0.5**
WRAB	**Tennant Creek**	**45.75**	**271**	*e*P	**P**	**20 41 23.8**	**0.0**
	12nm,1.1s						
WR1	**Warramunga Arr**	**45.76**	**271**	*e*P	**P**	**20 41 22.9**	**-1.0**
	38nm,1.9s						
WRA	**Warramunga Arr**	**45.76**	**271**	P	**P**	**20 41 22.9**	**-1.0**
	1.7nm,0.7s,baz=110,slow=7.7,SNR=17						
JOHN	**Johnston Islan**	**46.96**	**9**	*e*P	**P**	**20 41 31.8**	**-1.3**
	135nm,0.8s						
CASY	**Casey**	**56.20**	**208**	*e*P	**P**	**20 42 43.5**	**+1.8**
	16nm,1.9s						
GUMO	**Guam**	**57.45**	**313**	LR	LR	21 04 44.9	
	comp=Z,440nm,20.1s,baz=3.5,slow=33						
MIDW	**Midway**	**57.98**	**359**	*e*P	**P**	**20 42 51.7**	**-2.9**
	256nm,1.6s						
QSPA	**South Pole Qui**	**60.03**	**180**	*e*P	**P**	**20 43 13.1**	**+4.4**
MYLDM	**Lahad Datu**	**71.68**	**287**	*e*P	**P**	**20 44 24.5**	**+0.2**
	9.3nm,1.0s						
MAW	**Mawson**	**73.19**	**200**	LR	LR	21 14 38.3	
	comp=Z,439nm,21.9s,baz=234,slow=34						
CISI	**Cisompet, Garu**	**74.25**	**270**	*e*P	**P**	**20 44 38.6**	**-1.0**
	76nm,1.4s						
SYO	**Syowa Base**	**77.80**	**192**	*e*X	**P**	**20 44 56.0**	**-2.8**
KS15	**Wonju Array Si**	**85.21**	**319**	*e*P	**P**	**20 45 38.5**	**+0.2**
KS01	**Wonju Array Si**	**85.23**	**319**	*e*P	**P**	**20 45 37.6**	**-0.8**
USRK	**Ussuriysk Ar.**	**87.83**	**325**	LR	LR	21 19 59.9	
	comp=Z,370nm,21.8s,baz=25,slow=32						
LTX	**Lajitas**	**90.82**	**56**	*e*P	**P**	**20 46 06.5**	**+1.0**
TXAR	**Lajitas Array**	**90.82**	**56**	P	**P**	**20 46 06.5**	**+1.0**
	0.2nm,0.7s,baz=246,slow=5.8,SNR=3.5						
BVAR	**Borovoye Array**	**127.34**	**316**	PKP	**PKPdf**		**20 52 06.7**	**+0.6**
	0.6nm,0.7s,baz=79,slow=7.6,SNR=4.2						
FIA0	**FINESS Array S**	**145.39**	**341**	*e*PKPbc	**PKPbc**	**20 52 38.2**	**-0.8**
FINES	**FINESS Array B**	**145.39**	**341**	PKPbc	**PKPbc**	**20 52 38.2**	**-0.8**
	1.0nm,0.5s,baz=64,slow=4.4,SNR=9.7						
AKASG	**Malin Array Be**	**152.03**	**325**	PKPbc	**PKPbc**	**20 52 56.1**	**-0.5**
	1.2nm,0.6s,baz=49,slow=2.8,SNR=4.6						
AKBB	**Malin Array Si**	**152.03**	**325**	*e*PKPbc	**PKPbc**	**20 52 56.1**	**-0.5**
MMAI	**Mount Meron Ar**	**153.07**	**284**	PKPbc	**PKPbc**	**20 53 02.1**	**+2.3**
	0.4nm,0.5s,baz=53,slow=3.2,SNR=3.7						
TORD	**Torodi Ar. Bea**	**163.03**	**173**	PKPab	**PKPab**	**20 53 56.7**	**+2.4**
	2.9nm,0.7s,baz=188,slow=4.5,SNR=18						
TOA1	**Torodi Ar. Sit**	**163.03**	**173**	*e*PKPab	**PKPab**	**20 53 56.7**	**+2.3**

NEIC ***12*** *20:38:03.9, 15.88N×95.67W, h60km, mb4.0/7, MD4.3(MEX), After MEX.*
MEX 12 20:38:04.4±0.5, 15.92N×95.70W, h59km±8km, MD4.3, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.42**	**250**	*e*P	Pn	20 38 13.9	-1.6
HUIG				*e*S	Sn	20 38 21.8	-1.8
HUIG	**Huatulco**	**0.42**	**250**	*e*Pn	Pn	20 38 21.8	+6.3
PANG	**Puerto Angel**	**0.79**	**252**	*e*P	Pn	20 38 18.3	-1.4
PANG				*i* S	Sn	20 38 29.4	-1.5
OXBJ	**Oaxaca**	**1.51**	**319**	*e*P	Pn	20 38 28.4	-1.0
VHO	**Vista Hermosa**	**1.52**	**319**	*e*P	Pn	20 38 28.2	-1.3
VHO				*i* S	Sn	20 38 46.0	-2.

PDA 12 20:46:11.9±0.5, 39.43N×29.85W, h15km, MD3.5, ML2.2, Error ellipse: s-maj=13.8km s-min=4.9km az=46.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H07N1	**FLORES T-PHASE**	**1.01**	**285**	*eP*	Pb	20 46 23.6	-7.5
PCED	**Cedros**	**1.21**	**132**	*eP*	Pn	20 46 30.0	-4.2
PCED				*eS*	Sb	20 46 43.1	-6.7
PCED				A	A	20 46 45.5	
	22nm,0.3s						
PCED	**Cedros**	**1.21**	**132**	*eP*	Pn	20 46 30.0	-4.2
PCED				*eS*	Sb	20 46 43.1	-6.7
CALA	**Caldeira**	**1.24**	**133**	*eS*	Sb	20 46 44.2	-6.6
CALA	**Caldeira**	**1.24**	**133**	*eS*	Sb	20 46 44.2	-6.6
HOR	**Horta**	**1.31**	**133**	*eP*	Pg	20 46 46.3	+9.1
PCAN	**Candelaria**	**1.44**	**132**	*eP*	Pn	20 46 33.1	-4.4
PCAN				*eS*	Sn	20 46 49.3	-6.8
PCAN				A	A	20 46 51.0	
	19nm,0.2s						
PCAN	**Candelaria**	**1.44**	**132**	*eP*	Pn	20 46 33.1	-4.4
PCAN				*eS*	Sn	20 46 49.3	-6.8
ROSA	**Rosais**	**1.44**	**119**	*eS*	Sn	20 46 49.0	-7.2
ROSA				A	A	20 46 49.7	
	4.5nm,0.1s						
ROSA	**Rosais**	**1.44**	**119**	*eS*	Sn	20 46 49.0	-7.2
PICO	**Pico**	**1.45**	**129**	*eP*	Pn	20 46 33.2	-4.5
PICO				*eS*	Sn	20 46 49.5	-7.0
PICO				A	A	20 46 51.0	
	38nm,0.3s						
PICO	**Pico**	**1.45**	**129**	*eP*	Pn	20 46 33.2	-4.5
PICO				*eS*	Sn	20 46 49.5	-7.0

NIED **12** *20:47:00, 37.30N×141.30E, h5km, Mw4.9 Best double couple: M₀2.39000×10¹⁶ NP1:φ₁86.00000°, δ42.00000°, λ-94.00000°. NP2:φ₂271.00000°, δ49.00000°, λ-87.00000°.*

BJI **12** *20:47:06.0, 37.09N×141.40E, h14km, mb4.6/63, mB4.9/58, Ms4.9/71, Ms7 4.5/67*

IDC **12** *20:47:08.2±0.5, 37.32N×141.18E, h0km, mb4.6/39, mb1 4.7/43, mb1mx4.6/73, mbtmp4.6/43, ML3.7/4, MS4.3/12, Ms1 4.3/12, ms1mx3.9/71, Error ellipse: s-maj=13.3km s-min=10.8km az=114.0*

JMA **12** *20:47:09.7±0.1, 37.29N×141.17E, h14km±1km, M5.3*
JMA Felt IV J1.

ISCJB **12** *20:47:10.1±0.4, 37.29N±0.02×141.16E±0.02, h19km±2km, mb4.9/174, MS4.7/29, Error ellipse: s-maj=3.8km s-min=2.6km az=136.5*

MOS **12** *20:47:11.7±1.0, 37.30N×141.15E, h33km, mb5.0/71, MS4.6/19, Error ellipse: s-maj=7.2km s-min=4.6km az=100.1*

GCMT **12** *20:47:13.8±0.4, 37.37N×141.13E, h12km, MW5.1/63, Moment Tensor Solution. s17,c19; s63,c86; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-4.56±.17; Mθθ4.60±.17; Mφφ-0.04±.13; Mrθ-0.61±.48; Mθφ0.70±.14; Mφr0.83±.72; Best double couple: M₀4.74700×10¹⁶ NP1:φ₁93.00000°, δ49.00000°, λ-75.00000°. NP2: φ₂251.00000°, δ43.00000°, λ-106.00000°. Principal axes: T 4.7290, Plg3.0000°, Azm172.0000°; N 0.0350, Plg11.0000°, Azm263.0000°; P -4.7660, Plg78.0000°, Azm67.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC **12** *20:47:13.8±1.1, 37.35N×141.02E, h32km±8km, mb5.0/107 Error ellipse: s-maj=4.1km s-min=2.6km az=138.0*

NEIC Recorded [4 JMA] in Fukushima.

ISC 12 20:47:12.8±0.5, 37.30N±0.03×141.12E±0.03, h26km±2km, h25km:pP-P, n458, σ1°53/496, mb4.9/174, MS4.7/30, 24C-26D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.20**	**288**	⇓P	**Pb**	**20 47 15.0**	**-3.6**
JFK				*eS*	**Sb**	**20 47 19.3**	**-3.3**
ONAJ	**Iwakimizuishiy**	**0.33**	**232**	⇓P	**Pb**	**20 47 16.7**	**-3.6**
ONAJ				*eS*	**Sb**	**20 47 22.3**	**-3.1**
JMM	**Marumori**	**0.62**	**335**	⇓P	**Pb**	**20 47 22.0**	**-3.0**
JMM				*eS*	**Sb**	**20 47 31.3**	**-2.0**
JFT	**Otama**	**0.66**	**289**	⇓P	**Pb**	**20 47 23.4**	**-2.3**
JFT				*eS*	**Sb**	**20 47 34.0**	**-0.5**
JHO	**Hitachi**	**0.82**	**213**	⇓P	**Pb**	**20 47 24.8**	**-3.6**
JHO				*eS*	**Sb**	**20 47 36.9**	**-2.2**
JSB	**Shiboa**	**1.02**	**251**	⇓P	**Pn**	**20 47 30.0**	**-1.4**
JOU	**Okura**	**1.12**	**341**	⇓P	**Pn**	**20 47 31.0**	**-1.8**
JFY	**Yanaizu**	**1.13**	**276**	⇓P	**Pn**	**20 47 31.8**	**-1.2**
JFY				*eS*	**Sn**	**20 47 47.4**	**-0.3**
JIO	**Ouri**	**1.16**	**9**	⇓P	**Pn**	**20 47 30.7**	**-2.7**
JIO				*eS*	**Sn**	**20 47 46.7**	**-1.7**
JYA	**Atsumi**	**1.70**	**320**	⇓P	**Pn**	**20 47 40.7**	**-0.1**
JRG	**Rokugo**	**2.12**	**350**	⇓P	**Pn**	**20 47 46.5**	**-0.1**
MJAR	**Matsushiro Arr**	**2.45**	**253**	Pn	**Pn**	**20 47 51.9**	**+0.7**
	25nm,0.3s,baz=81,slow=16,SNR=358						
MJAR				LR	LR	20 49 11.3	
	comp=Z,5μm,18.4s,baz=80,slow=50						
MAJO	**Matsushiro**	**2.46**	**253**	*d* iP	**Pn**	**20 47 51.4**	**+0.2**
MAJO	**Matsushiro**	**2.46**	**253**	*e*Pn	**Pn**	**20 47 51.8**	**+0.6**
MAT	**Matsushiro**	**2.46**	**253**	P	**Pn**	**20 47 51.9**	**+0.7**
MAT				S	**Sn**	**20 48 21.3**	**+0.9**
MAT	**Matsushiro**	**2.46**	**253**	P	**Pn**	**20 47 51.7**	**+0.5**
JNG	**Nsakai**	**2.58**	**251**	⇓P	**Pn**	**20 47 53.5**	**+0.5**
JAO	**Obara**	**3.72**	**238**	⇑P	**Pn**	**20 48 10.1**	**+1.4**
INU	**Inuyama**	**3.84**	**241**	*e*Pn	**Pn**	**20 48 11.5**	**+1.2**
JHJ	**Hachijo jima 2**	**4.32**	**195**	Pn	**Pn**	**20 48 16.6**	**-0.2**
	24nm,0.3s,baz=270,slow=22,SNR=16						
JHJ				Sn	**Sn**	**20 49 05.7**	**-0.6**
	32nm,0.3s,baz=69,slow=14,SNR=2.8						
JHJ				LR	LR	20 50 08.9	
	comp=Z,5μm,20.9s,baz=28,slow=42						
JHJ2	**Mitsune**	**4.32**	**195**	*e*Pn	**Pn**	**20 48 15.7**	**-1.1**
ERM	**Erimo**	**4.96**	**18**	*c e*P	**Pn**	**20 48 25.7**	**+0.1**
ERM				pmax	pmax		
	comp=Z,70nm,1.2s						
ERM	**Erimo**	**4.96**	**18**	*e*Pn	**Pn**	**20 48 24.4**	**-1.1**
ASAJ	**Asahikawa**	**6.90**	**9**	*e*Pn	**Pn**	**20 48 50.5**	**-1.6**
YUK	**Yuzh-Kuril'sk**	**7.63**	**27**	*i* P	**Pn**	**20 49 00.5**	**-1.7**
VLA	**Vladivostok**	**9.14**	**312**	*d* iP	**Pn**	**20 49 25.3**	**+2.4**
MSHR	**Mys Shultsa**	**9.29**	**308**	*d* iP	**Pn**	**20 49 28.3**	**+3.4**
JNU	**Nakatsue**	**9.36**	**247**	Pn	**Pn**	**20 49 26.4**	**+0.4**
	comp=Z,0.5nm,0.3s,baz=20,slow=4.3,SNR=9.5						
JNU				LR	LR	20 53 22.9	
	comp=Z,3μm,19.8s,baz=70,slow=40						
JNU	**Nakatsue**	**9.36**	**247**	*e*Pn	**Pn**	**20 49 26.3**	**+0.3**
KUR	**Kuril'sk**	**9.41**	**31**	⇑*e*P	**Pn**	**20 49 24.2**	**-2.4**
YSS	**Yuzh-Sakhalins**	**9.72**	**7**	⇑*e*P	**Pn**	**20 49 32.1**	**+1.3**
YSS				*e*S	**Sn**	**20 51 21.0**	**+1.9**
YSS				pmax	pmax		
	comp=Z,20nm,0.6s						
YSS				MLR	MLR		
	comp=Z,4μm,12.0s						
YSS				MLR	MLR		
	comp=N,4μm,13.0s						
YSS	**Yuzh-Sakhalins**	**9.72**	**7**	*e*Pn	**Pn**	**20 49 31.3**	**+0.4**
USRK	**Ussuriysk Ar.**	**9.76**	**318**	Pn	Pn	20 49 36.9	+5.4
	comp=N,0.6nm,0.3s,baz=139,slow=14,SNR=54						
USRK				LR	LR	20 53 01.4	
	comp=N,2μm,21.1s,baz=123,slow=36						
KSRS	**Korea Array**	**10.51**	**275**	Pn	Pn	20 49 46.8	+5.1
	comp=N,0.5nm,0.3s,baz=91,slow=13,SNR=34						
KSRS				LR	LR	20 53 15.0	
	comp=N,511nm,20.3s,baz=84,slow=35						
KS01	**Wonju Array Si**	**10.53**	**275**	*e*Pn	Pn	20 49 47.0	+5.0
KS15	**Wonju Array Si**	**10.54**	**275**	*e*Pn	**Pn**	**20 49 46.2**	**+4.1**
KSAR	**Wonju Array Be**	**10.54**	**275**	P	Pn	20 49 46.8	+4.7
KSAR	**Wonju Array Be**	**10.54**	**275**	Pn	Pn	20 49 46.8	+4.7
MDJ	**Mudanjiang**	**11.36**	**314**	P	**Pn**	**20 49 57.2**	**+3.8**
MDJ				S	Sn	20 52 08.6	+9.2
MDJ				PcP	**PcP**	**20 55 46.7**	**+0.6**
MDJ				ScP	**ScP**	**20 59 19.7**	**+2.7**
MDJ				PcS	**PcS**	**20 59 21.3**	**+1.4**
MDJ				ScS	**ScS**	**21 02 54.1**	**+1.8**
MDJ				pmax	pmax		
	comp=N,35nm,1.1s						
MDJ				pmax	pmax		
	comp=N,550nm,6.1s						
MDJ				LR	LR		
	comp=N,1μm,12.4s						
MDJ				LR	LR		
	comp=N,2μm,11.7s						
MDJ				LR	LR		
	comp=N,2μm,13.2s						
MDJ	**Mudanjiang**	**11.36**	**314**	*e*Pn	**Pn**	**20 49 57.9**	**+4.5**
INCN	**Inchon**	**11.53**	**275**	*e*Pn	**Pn**	**20 49 60.0**	**+4.3**
HABR	**Khabarovsk**	**12.01**	**340**	*e*P	**Pn**	**20 50 01.5**	**-0.7**
HABR				*e*S	**Sn**	**20 52 15.2**	**0.0**
HABR				pmax	pmax		
	comp=Z,10.0nm,0.6s						
HABR				MLR	MLR		
	comp=Z,2μm,13.0s						
CN2	**Changchun**	**13.56**	**303**	*e*P	**P**	**20 50 28.2**	**-4.0**
CN2				*e*S	**S**	**20 53 08.9**	**-7.0**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.2s						
CN2				pmax	pmax		
	comp=Z,500nm,8.0s						
CN2				LR	LR		
	comp=Z,3μm,13.0s						
CN2				LR	LR		
	comp=Z,2μm,13.0s						
CN2				LR	LR		
	comp=Z,1μm,12.0s						
TYV	**Tymovskoe**	**13.60**	**4**	*e*P	**Pn**	**20 50 21.2**	**-2.7**
TYV				pmax	pmax		
	comp=E,13nm,0.8s						
TYV				pmax	pmax		
	comp=Z,40nm,1.0s						
TYV				MLR	MLR		
	comp=N,5μm,15.0s						
TYV				MLR	MLR		
	comp=Z,6μm,15.0s						
KLR	**Kul'dur**	**13.72**	**333**	Pn	**Pn**	**20 50 27.8**	**+2.2**
	comp=Z,0.3nm,0.3s,baz=140,slow=15,SNR=11						
KLR				LR	LR	20 55 37.4	
	comp=Z,1μm,19.9s,baz=146,slow=37						
SNY	**Shenyang**	**14.26**	**294**	⇑P	**Pn**	**20 50 34.6**	**+1.6**
SNY				S	S	20 53 20.6	-10
SNY				pmax	pmax		
	comp=Z,18nm,2.5s						
SNY				pmax	pmax		
	comp=Z,470nm,7.8s						
SNY				LR	LR		
	comp=Z,6μm,13.9s						
SNY				LR	LR		
	comp=Z,780nm,14.7s						
SNY				LR	LR		
	comp=Z,2μm,17.5s						
JOW	**Kunigami**	**15.07**	**230**	*e*Pn	**Pn**	**20 50 45.5**	**+1.5**
	comp=Z,30nm,1.1s						
DL2	**Dalian**	**15.43**	**282**	P	**Pn**	**20 50 49.7**	**+1.1**
DL2				S	**Sn**	**20 53 43.3**	**+4.6**
DL2				pmax	pmax		
	comp=Z,23nm,0.9s						
DL2				pmax	pmax		
	comp=Z,520nm,6.8s						
DL2				LR	LR		
	comp=Z,1μm,10.5s						
DL2				LR	LR		
	comp=Z,2μm,12.1s						
DL2				LR	LR		
	comp=Z,930nm,10.6s						
NKL	**Nikolayevsk**	**15.85**	**359**	*e*P	**P**	**20 50 56.0**	**-1.5**
NKL				pmax	pmax		
	comp=Z,40nm,1.1s						
NKL				MLR	MLR		
	comp=N,2μm,15.0s						
NKL				MLR	MLR		
	comp=E,2μm,15.0s						
NKL				MLR	MLR		
	comp=Z,4μm,13.0s						
SKR	**Severo-Kuril's**	**17.14**	**34**	*e*P	**Pn**	**20 51 07.8**	**-2.5**
SKR				pmax	pmax		
	comp=Z,72nm,1.3s						
SKR				pmax	pmax		
	comp=Z,300nm,3.6s						
SKR				MLR	MLR		
	comp=Z,700nm,15.0s						
SSE	**Sheshan**	**17.60**	**255**	P	**Pn**	**20 51 15.0**	**-1.2**
SSE				S	**Sn**	**20 54 32.8**	**+1.3**
SSE				pmax	pmax		
	comp=Z,28nm,1.0s						
SSE				pmax	pmax		
	comp=Z,240nm,8.1s						
SSE				LR	LR		
	comp=Z,780nm,14.3s						
SSE				LR	LR		
	comp=Z,1μm,14.2s						
SSE				LR	LR		
	comp=Z,1μm,14.2s						
NJ2	**Nanjing**	**19.03**	**261**	*e*P	**P**	**20 51 31.6**	**-1.2**
NJ2				S	**Sn**	**20 55 05.6**	**-0.5**
NJ2				LR	LR		
	comp=Z,1μm,10.9s						
NJ2				LR	LR		
	comp=Z,1μm,10.6s						
NJ2				LR	LR		
	comp=Z,1μm,14.6s						
TIA	**Tai'an**	**19.25**	**274**	*e*P	**P**	**20 51 34.6**	**-0.6**
TIA				PP	**PnPn**	**20 51 55.1**	**+5.8**
TIA				S	**S**	**20 55 12.9**	**+1.2**
TIA				pmax	pmax		
	comp=Z,20nm,1.4s						
TIA				LR	LR		
	comp=Z,1μm,14.0s						
TIA				LR	LR		
	comp=Z,740nm,13.0s						
TIA				LR	LR		
	comp=Z,1μm,12.0s						
HIA	**Hailar**	**19.55**	**314**	*i* P	**P**	**20 51 36.3**	**-2.1**
HIA				pmax	pmax		
	comp=Z,6.0nm,1.2s						
HIA	**Hailar**	**19.55**	**314**	*e*P	**P**	**20 51 36.6**	**-1.8**
	comp=Z,8.1nm,0.8s						
PEA0	**Petropavlovsk-**	**19.57**	**31**	*e*P	**P**	**20 51 38.3**	**-0.3**
PEA0B	**Petropavlovsk-**	**19.57**	**31**	*e*P	**P**	**20 51 38.3**	**-0.3**
	comp=E,41nm,1.1s						
PETK	**Petropavlovsk-**	**19.57**	**31**	P	**P**	**20 51 38.4**	**-0.2**
	comp=Z,0.6nm,0.3s,baz=198,slow=9.3,SNR=8.0						
PETK				LR	LR	21 00 08.5	
	comp=Z,740nm,18.9s,baz=130,slow=40						
PEA1	**Petropavlovsk-**	**19.58**	**31**	*e*P	**P**	**20 51 38.4**	**-0.2**
BJI	**Beijing**	**19.65**	**286**	P	**P**	**20 51 38.2**	**-1.3**
BJI				S	**S**	**20 55 17.9**	**-1.9**
BJI				pmax	pmax		
	comp=Z,25nm,2.1s						
BJI				pmax	pmax		
	comp=Z,150nm,3.6s						
BJI				LR	LR		
	comp=Z,1μm,10.9s						
BJI				LR	LR		
	comp=Z,650nm,11.6s						
BJT	**Baijiatuau**	**19.66**	**286**	*e*P	**P**	**20 51 38.9**	**-0.7**
BJT				pmax	pmax		
	comp=Z,93nm,1.7s						
BJT	**Baijiatuau**	**19.66**	**286**	*e*P	**P**	**20 51 38.9**	**-0.7**
	comp=Z,93nm,1.7s						
PET	**Petropavlovsk**	**19.91**	**32**	*c e*P	**P**	**20 51 42.9**	**+0.7**
PET				*e*S	**S**	**20 55 21.4**	**-3.5**
PET				pmax	pmax		
	comp=Z,600nm,5.4s						
PET				pmax	pmax		
	comp=Z,400nm,12.7s						
PET				pmax	pmax		
	comp=Z,55nm,1.1s						
PET				MLR	MLR		
	comp=Z,1μm,18.0s						
PET	**Petropavlovsk**	**19.91**	**32**	*e*P	**P**	**20 51 42.0**	**-0.3**
	comp=Z,78nm,1.2s						
YHNB	**Yeheng**	**21.05**	**239**	*e*P	**P**	**20 51 53.3**	**-1.6**
	comp=Z,120nm,1.7s						
SSLB	**Suanglung**	**21.92**	**238**	*e*P	**P**	**20 52 02.7**	**-1.5**
	comp=Z,45nm,1.7s						
YULB	**Yu-li**	**21.96**	**236**	*e*P	**P**	**20 52 01.8**	**-2.9**
	comp=Z,58nm,1.7s						
CLNS	**Chul'man**	**22.34**	**336**	*e*P	**P**	**20 52 09.1**	**+0.6**
CLNS				*e**PP	**sP**	**20 52 19.4**	**+0.6**
CLNS				*e*		20 52 31.6	
CLNS				*e*		20 56 02.9	
CLNS				*e*S	**S**	**20 56 10.6**	**-1.9**
CLNS				*e*SS	**SnSn**	**20 56 47.8**	**+6.8**
CLNS				*e*		21 03 16.0	
CLNS				pmax	pmax		
	comp=Z,12nm,1.1s						
CLNS				pmax	pmax		
	comp=N,15nm,1.5s						
CLNS				pmax	pmax		
	comp=N,16nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,10.0nm,1.1s						
CLNS				pmax	pmax		
	comp=E,6.0nm,1.0s						
CLNS				smax	smax		
	comp=E,308nm,10.5s						
CLNS				smax	smax		
	comp=N,257nm,12.1s						
CLNS				MLR	MLR		
	comp=Z,2μm,15.0s						
CLNS				MLR	MLR		
	comp=N,2μm,14.0s						
CLNS				MLR	MLR		
	comp=E,970nm,14.0s						
TPUB	**Ta-pu**	**22.47**	**237**	*e*P	**P**	**20 52 09.8**	**-0.3**
	comp=E,32nm,1.2s						
QZH	**Quanzhou**	**22.82**	**244**	P	P	20 52 05.7	-8.1
QZH				S	**S**	**20 56 10.8**	**-11**
QZH				LR	LR		
	comp=N,3μm,16.4s						
QZH				LR	LR		
	comp=E,1μm,12.6s						
QZH				LR	LR		
	comp=Z,2μm,14.3s						
MA2	**Magadan**	**23.14**	**13**	P	**P**	**20 52 15.4**	**-1.3**
	comp=Z,32nm,0.7s,baz=203,slow=8.1,SNR=20						
HHC	**Hu-ho-hao-te**	**23.16**	**288**	*e*P	**P**	**20 52 16.3**	**-1.1**
HHC				S	**S**	**20 56 21.9**	**-5.5**
HHC				pmax	pmax		
	comp=Z,6.0nm,1.0s						
HHC				pmax	pmax		
	comp=Z,68nm,9.9s						
HHC				LR	LR		
	comp=Z,2μm,12.3s						
HHC				LR	LR		
	comp=Z,710nm,12.1s						
HHC				LR	LR		
	comp=Z,600nm,12.6s						
CIT	**Chita**	**24.32**	**316**	*e*P	**P**	**20 52 31.4**	**+3.2**
CIT				*e*		20 53 02.7	
YAK	**Yakutsk**	**25.75**	**348**	P	**P**	**20 52 39.8**	**-1.2**
	comp=Z,25nm,0.6s,baz=201,slow=0.4,SNR=11						
YAK	**Yakutsk**	**25.75**	**348**	*e*P	**P**	**20 52 37.3**	**-3.7**
YAK				*e**PP	*PP	20 53 25.4	
YAK				*e*		20 53 26.8	
YAK				*e*S	**S**	**20 57 08.5**	**+0.2**
YAK				pmax	pmax		
	comp=Z,41nm,0.9s						
YAK				pmax	pmax		
	comp=N,23nm,1.1s						
YAK				pmax	pmax		
	comp=E,11nm,1.1s						
YAK				smax	smax		
	comp=E,139nm,2.2s						
YAK				smax	smax		
	comp=N,245nm,1.8s						
YAK				MLR	MLR		
	comp=E,779nm,19.0s						
YAK				MLR	MLR		
	comp=Z,2μm,19.0s						
YAK				MLR	MLR		
	comp=N,1μm,18.0s						
YAK	**Yakutsk**	**25.75**	**348**	*e*P	**P**	**20 52 39.8**	**-1.2**
	comp=N,68nm,1.0s						
XAN	**Xi'an**	**26.29**	**273**	P	**P**	**20 52 44.8**	**-1.5**
XAN				sP	pP	20 52 51.8	-2.0
XAN				PP	**PnPn**	**20 53 25.1**	**-0.6**
XAN				S	**S**	**20 57 12.1**	**-5.4**
XAN				pmax	pmax		
	comp=N,130nm,7.0s						
XAN				LR	LR		
	comp=N,750nm,13.8s						
XAN				LR	LR		
	comp=N,490nm,12.1s						
XAN				LR	LR		
	comp=N,870nm,14.2s						
SEY	**Seymchan**	**26.57**	**12**	P	**P**	**20 52 47.4**	**-1.1**
	comp=N,28nm,1.0s,baz=189,slow=7.8,SNR=27						
ENH	**Enshi**	**27.12**	**264**	*e*P	**P**	**20 52 52.1**	**-1.7**
	comp=N,16nm,0.7s						
BOD	**Bodaibo**	**27.18**	**328**	*e*P	**P**	**20 52 52.1**	**-1.8**
BOD				pmax	pmax		
	comp=Z,18nm,1.8s						
SONA1	**Songino Array**	**27.44**	**304**	*e*P	**P**	**20 52 55.4**	**-1.2**
SONA0	**Songino Array**	**27.44**	**304**	*e*P	**P**	**20 52 55.8**	**-0.7**
	comp=Z,11nm,1.0s						
SONA0				*e*PcP	**PcP**	**20 56 13.1**	**-1.5**
SONM	**Songino Array**	**27.44**	**304**	P	**P**	**20 52 55.8**	**-0.7**
	comp=Z,4.9nm,0.8s,baz=107,slow=7.2,SNR=29						
SONM				PcP	**PcP**	**20 56 13.1**	**-1.5**
	comp=Z,0.9nm,0.8s,baz=129,slow=2.0,SNR=2.5						
SMY	**Shemya**	**27.64**	**46**	*e*P	**P**	**20 52 57.8**	**-0.3**
SMY				pmax	pmax		
	comp=Z,41nm,1.0s						
SMY	**Shemya**	**27.64**	**46**	*e*P	**P**	**20 52 57.8**	**-0.3**
	comp=Z,41nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**28.49**	**121**	T	T	21 22 44.7	
	baz=314,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.50**	**121**	T	T	21 22 45.9	
	baz=314,slow=75						
H11N3	**WAKE ISLAND Hy**	**28.51**	**121**	T	T	21 22 46.4	
	baz=314,slow=75						
H11S1	**WAKE ISLAND Hy**	**29.20**	**123**	T	T	21 23 37.2	
	baz=315,slow=75,SNR=5770						
H11S3	**WAKE ISLAND Hy**	**29.20**	**123**	T	T	21 23 38.1	
	baz=315,slow=75,SNR=6368						
H11S2	**WAKE ISLAND Hy**	**29.22**	**123**	T	T	21 23 38.6	
	baz=315,slow=75,SNR=2036						
LZH	**Lanzhou**	**29.79**	**279**	*e*P	**P**	**20 53 19.7**	**+2.1**
LZH				pP	pP	20 53 25.0	-0.3
LZH				sP	sP	20 53 29.0	+0.6
LZH				*e*S	**S**	**20 58 16.1**	**+3.3**
LZH				pmax	pmax		
	comp=Z,24nm,1.0s						
LZH				pmax	pmax		
	comp=Z,130nm,4.3s						
LZH				LR	LR		
	comp=Z,640nm,11.3s						
LZH				LR	LR		
	comp=Z,800nm,11.9s						
LZH				LR	LR		
	comp=Z,1μm,12.2s						
ZAK	**Zakamensk**	**29.92**	**308**	*e*P	**P**	**20 53 17.7**	**-0.8**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.1s						
TLY	**Talaya**	**29.98**	**311**	*e*P	**P**	**20 53 20.1**	**+1.2**
TLY				pmax	pmax		
	comp=Z,12nm,0.8s						
TLY				MLR	MLR		
	comp=Z,1μm,17.0s						
TLY	**Talaya**	**29.98**	**311**	*e*P	**P**	**20 53 19.4**	**+0.5**
	comp=Z,12nm,0.7s						
GYA	**Guiyang**	**31.04**	**260**	P	**P**	**20 53 30.8**	**+2.1**
GYA				PP	**PnPn**	**20 54 31.2**	**+1.1**
GYA				PcP	**PcP**	**20 56 25.6**	**+1.5**
GYA				S	**S**	**20 58 33.0**	**+0.7**
GYA				ScP	**ScP**	**21 00 07.8**	**+2.6**
GYA				SS	**SnSn**	**21 00 18.2**	**+4.2**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.0s						
GYA				LR	LR		
	comp=Z,530nm,15.8s						
GYA				LR	LR		
	comp=Z,480nm,16.2s						
GYA				LR	LR		
	comp=Z,510nm,16.0s						
CD2	**Chengdu**	**31.44**	**269**	*e*P	**P**	**20 53 31.5**	**-0.6**
CD2				pP	pP	20 53 34.6	-5.1
CD2				sP	sP	20 53 35.9	-7.0
CD2				S	**S**	**20 58 39.2**	**+0.7**
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.2s						
CD2				LR	LR		
	comp=Z,1μm,12.1s						
CD2				LR	LR		
	comp=Z,680nm,11.9s						
CD2				LR	LR		
	comp=Z,910nm,12.1s						
GTA	**Gaotai**	**32.26**	**287**	*e*P	**P**	**20 53 38.8**	**-0.5**
GTA				pP	pP	20 53 43.0	-4.0
GTA				sP	sP	20 53 46.6	-3.5
GTA				S	**S**	**20 58 49.2**	**-2.1**

GTA pmax pmax
comp=Z,3.0nm,0.7s
GTA pmax pmax
comp=Z,98nm,5.2s
GTA LR LR
comp=Z,1μm,15.7s
GTA LR LR
comp=Z,450nm,11.6s
GTA LR LR
comp=Z,490nm,11.6s
QIZ Qiongzhong 32.83 245 P **P** **20 53 44.0 -0.3**
QIZ S **S** **20 59 01.7 +1.6**
QIZ LR LR
comp=Z,380nm,16.0s
QIZ LR LR
comp=Z,440nm,14.4s
QIZ LR LR
comp=Z,550nm,13.8s
BILL Bilibino 33.84 17⇑ *eP* **P** **20 53 53.0 +0.4**
BILL *e* 20 54 12.0
BILL pmax pmax
comp=Z,7.0nm,1.5s
BILL MLR MLR
comp=Z,855nm,15.0s
BILL Bilibino 33.84 17 *eP* **P** **20 53 53.5 +0.9**
comp=Z,67nm,1.9s
KMI Kunming 34.77 261 P **P** **20 54 00.4 -1.0**
KMI sP pP 20 54 10.7 +1.6
KMI PP **PP** **20 55 22.7 +2.3**
KMI S **S** **20 59 31.7 +1.1**
KMI SS **SnSn** **21 01 42.5 -2.3**
KMI pmax pmax
comp=Z,9.0nm,1.5s
KMI pmax pmax
comp=Z,110nm,5.6s
KMI LR LR
comp=Z,310nm,13.1s
KMI LR LR
comp=Z,830nm,13.3s
KMI LR LR
comp=Z,740nm,16.0s
TIXI Tiksi 34.99 353 P **P** **20 54 01.9 -0.6**
comp=Z,2.1nm,0.7s,baz=149,slow=6.5,SNR=6.0
TIXI Tiksi 34.99 353 *ce*P **P** **20 54 02.6 +0.1**
TIXI pmax pmax
comp=Z,8.0nm,1.7s
TIXI Tiksi 34.99 353 *eP* **P** **20 54 00.8 -1.8**
comp=Z,31nm,1.6s
KRAR Krasnoyarsk 37.10 316 *i* P **P** **20 54 20.9 +0.1**
MYLDM Lahad Datu 38.08 218 *eP* **P** **20 54 30.4 +1.0**
comp=Z,35nm,1.2s
SKNT Sakolnakorn 38.43 248 P **P** **20 54 36.4 +4.0**
comp=Z,23nm,2.0s
SKNT Sakolnakorn 38.43 248 P **P** **20 54 36.4 +4.0**
comp=Z,23nm,2.0s
UBPT Khong Chiam 38.43 245 P **P** **20 54 35.6 +3.2**
comp=Z,21nm,1.3s
UBPT Khong Chiam 38.43 245 P **P** **20 54 35.6 +3.2**
comp=Z,21nm,1.3s
LOEI Loei 40.13 252 P **P** **20 54 46.3 -0.3**
LOEI Loei 40.13 252 P **P** **20 54 46.3 -0.3**
CMAI Chiengmai2 40.41 257 P P 20 54 59.0 +10
comp=Z,850nm,0.8s,comp=Z,115μm
CMAI Chiengmai2 40.41 257 P P 20 54 59.0 +10
comp=Z,850nm,0.8s,comp=Z,115μm
WMQ Urumqi 40.51 297 P **P** **20 54 51.2 +1.6**
WMQ pP pP 20 54 54.6 -2.7
WMQ *e*S **S** **21 00 55.1 -1.9**
WMQ pmax pmax
comp=Z,20nm,1.7s
WMQ pmax pmax
comp=Z,230nm,4.6s
WMQ LR LR
comp=Z,2μm,15.0s
WMQ LR LR
comp=Z,770nm,15.0s
WMQ LR LR
comp=Z,860nm,18.4s
CM31 Chiang Mai Arr 41.34 255 *e*PcP **PcP** **20 56 55.0 +0.3**
CMAR Chiang Mai Arr 41.34 255 P **P** **20 54 57.1 +0.5**
comp=Z,1.1nm,0.8s,baz=58,slow=5.9,SNR=6.1
CMAR PcP **PcP** **20 56 55.0 +0.3**
comp=Z,1.0nm,0.8s,baz=38,slow=1.8,SNR=4.0
CM01 Chiang Mai Arr 41.35 255 *eP* **P** **20 54 56.8 +0.1**
ZAA0 Zalesovo Array 41.56 312 *eP* **P** **20 54 57.1 -0.9**
ZAA1 Zalesovo Array 41.56 312 *eP* **P** **20 54 57.5 -0.5**
ZAA1 *e*PcP **PcP** **20 56 54.9 0.0**
ZALV Zalesovo Beam 41.56 312 P **P** **20 54 57.5 -0.5**
comp=Z,12nm,0.7s,baz=94,slow=6.7,SNR=46
ZALV PcP **PcP** **20 56 54.9 0.0**
comp=Z,2.6nm,0.8s,baz=123,slow=2.4,SNR=2.8
SRAK Srakaew 41.75 247 P P 20 55 06.4 +6.4
comp=Z,74nm,1.0s
SRAK Srakaew 41.75 247 P P 20 55 06.4 +6.4
comp=Z,74nm,1.0s
LSA Lhasa 41.95 275 *eP* **P** **20 55 02.5 +0.4**
LSA pmax pmax
comp=Z,10.0nm,1.0s
LSA Lhasa 41.95 275 *eP* **P** **20 55 02.5 +0.4**
comp=Z,10nm,1.0s
NVS Novosibirsk 42.48 313 *eP* **P** **20 55 04.6 -0.9**
NVS pmax pmax
comp=E,15nm,1.2s
NVS pmax pmax
comp=Z,29nm,1.2s
PCI Palu 42.83 212 P **P** **20 55 11.4 +2.7**
PCI pmax pmax
comp=Z,49nm,1.4s
NRIK Noril'sk 42.92 335 P **P** **20 55 09.1 +0.2**
comp=Z,3.5nm,0.6s,baz=115,slow=9.3,SNR=5.2
SBUM Sibu 43.69 224 *eP* **P** **20 55 15.8 +0.1**
comp=Z,30nm,1.3s
MK01 Makanchi Array 43.77 302 *eP* **P** **20 55 15.4 -0.7**
MK31 Makanchi Array 43.78 302 *eP* **P** **20 55 15.5 -0.7**
MK31 Makanchi Array 43.78 302 *eP* **P** **20 55 15.5 -0.7**
MK32 Makanchi Array 43.78 302 *eP* **P** **20 55 15.7 -0.5**
MKAR Makanchi Array 43.78 302 P **P** **20 55 15.7 -0.5**
comp=Z,11nm,0.8s,baz=89,slow=9.8,SNR=50
MKAR Makanchi Array 43.78 302 *eP* **P** **20 55 15.5 -0.7**
MAKZ Makanchi 43.99 302 *eP* **P** **20 55 17.0 -0.8**
MAKZ pmax pmax
comp=Z,23nm,1.1s
MAKZ Makanchi 43.99 302 *eP* **P** **20 55 17.0 -0.8**
comp=Z,22nm,1.1s
TT01 Tatalina 45.33 35 *eP* **P** **20 55 29.0 +0.8**
TTA Tatalina 45.33 35 *eP* **P** **20 55 29.2 +0.8**
TTA pmax pmax
comp=Z,25nm,1.5s
TTA Tatalina 45.33 35 *eP* **P** **20 55 29.2 +0.8**
comp=Z,25nm,1.5s
SVW2 Sparrevohn 45.45 38 *eP* **P** **20 55 30.2 +0.9**
comp=Z,81nm,2.0s
KSM Kuching 45.57 226 *eP* **P** **20 55 30.7 0.0**
comp=Z,42nm,1.3s
KURK Kurchatov 45.58 308 P **P** **20 55 30.3 -0.1**
KURK pmax pmax
comp=Z,19nm,0.7s
KURK Kurchatov 45.58 308 *eP* **P** **20 55 29.5 -0.9**
KURBB Kurchatov Arra 45.65 308 P **P** **20 55 30.3 -0.7**
comp=Z,19nm,0.7s,baz=83,slow=8.0,SNR=97
PDGK Podgornoye 46.44 298 P **P** **20 55 37.4 +0.1**
PDGK pmax pmax
comp=Z,28nm,1.2s
KAPI Kappang 46.58 210 *eP* **P** **20 55 40.8 +2.2**
comp=Z,80nm,1.3s
OHAK Old Harbor 46.72 43 *eP* **P** **20 55 39.6 +0.4**
comp=Z,60nm,1.4s
GUN Gumba 46.90 275 *eP* **P** **20 55 41.6 +0.1**
KDAK Kodiak Island 47.05 42 *eP* **P** **20 55 41.8 -0.1**
KDAK Kodiak Island 47.05 42 *eP* **P** **20 55 41.8 -0.1**
comp=Z,507nm,1.9s
PPLA Purkeypile 47.08 35 *eP* **P** **20 55 43.4 +1.1**
comp=Z,49nm,1.4s
CAST Castle Rocks 47.13 34 *eP* **P** **20 55 43.6 +1.1**
comp=Z,17nm,1.3s
SPU Mount Spurr 47.16 37 *eP* **P** **20 55 43.5 +0.7**
KKN Kakani 47.42 275 *eP* **P** **20 55 45.4 -0.1**
comp=Z,25nm,0.8s
PKIN Phulchoki 47.43 275 *eP* **P** **20 55 45.0 -0.6**
comp=Z,15nm,0.9s
CNPM China Poot 47.64 40 *eP* **P** **20 55 48.0 +1.5**
comp=Z,78nm,1.4s
DMN Daman 47.64 275 *eP* **P** **20 55 46.9 -0.3**
KTH Kantishna Hill 47.66 34 *eP* **P** **20 55 47.7 +1.1**
comp=Z,82nm,1.8s
SUA Susitna One 47.78 37 *eP* **P** **20 55 49.0 +1.3**
comp=Z,17nm,0.8s
GKN Gorkha 47.84 276 *eP* **P** **20 55 48.5 -0.1**
comp=Z,39nm,0.9s
JOHN Johnston Islan 47.90 102 *eP* **P** **20 55 51.1 +2.1**
comp=Z,177nm,0.8s
TRF Thorofare Moun 47.94 34 *eP* **P** **20 55 50.0 +1.1**
comp=Z,11nm,0.9s
COLD Coldfoot 48.03 29 *eP* **P** **20 55 50.4 +1.0**
comp=Z,11nm,1.2s
RC01 Rabbit Creek A 48.29 37 *eP* **P** **20 55 51.7 +0.3**
comp=Z,16nm,0.9s
MCK McKinley 48.54 34 *eP* **P** **20 55 53.7 +0.3**
MCK pmax pmax
comp=Z,12nm,0.9s
MCK McKinley 48.54 34 *eP* **P** **20 55 53.7 +0.3**
comp=Z,12nm,0.9s
PMR Palmer 48.55 37 *eP* **P** **20 55 53.5 +0.1**
PMR pmax pmax
comp=Z,13nm,0.8s
PMR Palmer 48.55 37 *eP* **P** **20 55 53.5 +0.1**
comp=Z,12nm,0.8s
RND Reindeer 48.59 34 *eP* **P** **20 55 53.7 -0.1**
RND pmax pmax
comp=Z,18nm,1.0s
RND Reindeer 48.59 34 *eP* **P** **20 55 53.7 -0.1**
comp=Z,18nm,1.0s
KOLN Kolganda 48.77 276 *eP* **P** **20 55 55.9 +0.1**
comp=Z,8.8nm,0.6s
WRH Wood River Hil 48.89 33 *eP* **P** **20 55 56.2 +0.3**
comp=Z,9.4nm,0.9s
SML Sawmill 48.91 36 *eP* **P** **20 55 55.3 -1.0**
SML pmax pmax
comp=Z,18nm,0.9s
SML Sawmill 48.91 36 *eP* **P** **20 55 55.3 -1.0**
comp=Z,18nm,0.9s
COLA College 48.98 32 *eP* **P** **20 55 57.8 +1.2**
COLA pmax pmax
comp=Z,46nm,0.3s
COLA College 48.98 32 *eP* **P** **20 55 57.8 +1.2**
comp=Z,46nm,0.3s
CCB Clear Creek Bu 49.00 33 *eP* **P** **20 55 56.9 0.0**
comp=Z,12nm,1.3s
MMRI Maumere 49.00 205 *eP* **P** **20 55 56.8 -0.6**
comp=Z,37nm,1.2s
IPM Ipoh 49.08 238 *eP* **P** **20 55 56.9 -1.2**
comp=Z,32nm,1.4s
PYUN Piuthan 49.10 277 *eP* **P** **20 55 58.6 +0.2**
MYKOM Kota Tinggi 49.23 233 *eP* **P** **20 55 58.2 -1.0**
comp=Z,11nm,1.0s
DHY Denali Highway 49.27 35 *eP* **P** **20 55 59.1 -0.1**
comp=Z,11nm,1.1s
HDA Harding Lake 49.38 33 *eP* **P** **20 55 59.7 -0.1**
comp=Z,19nm,1.0s
SCM Sheep Creek Mo 49.39 36 *eP* **P** **20 56 00.2 +0.2**
SCM pmax pmax
comp=Z,18nm,0.9s
SCM Sheep Creek Mo 49.39 36 *eP* **P** **20 56 00.1 +0.2**
comp=Z,18nm,0.9s
IL1 Eielson Array 49.39 32 *eP* **P** **20 55 59.8 0.0**
ILAR Eielson Array 49.39 32 P **P** **20 55 59.8 -0.1**
comp=Z,8.1nm,0.8s,baz=270,slow=6.1,SNR=78
ILB Eielson Array 49.39 32 *eP* **P** **20 55 59.6 -0.3**
SOEI Soe 49.41 202 *eP* **P** **20 56 00.3 -0.3**
comp=Z,38nm,1.0s
HNR Honiara 49.73 155 LR LR 21 13 36.3
comp=Z,286nm,20.6s,baz=355,slow=32
FYU Fort Yukon 49.99 30 *eP* **P** **20 56 05.4 +1.1**
comp=Z,96nm,1.7s
OTUK Ortayu 50.08 306 P **P** **20 56 05.7 +0.3**
OTUK pmax pmax
comp=Z,11nm,1.0s
KSH Kashi 50.08 294 P **P** **20 56 09.7 +4.1**
KSH *ep*P pP 20 56 14.1 +0.6
KSH PcS **PcS** **21 01 23.2 +1.0**
KSH S **S** **21 03 20.8 +5.3**
KSH ScS **ScS** **21 05 57.7 +2.4**
KSH pmax pmax
comp=Z,180nm,3.6s
KSH LR LR
comp=Z,580nm,12.1s
KSH LR LR
comp=Z,450nm,12.6s
KSH LR LR
comp=Z,2μm,21.8s
KLU Klutina 50.09 37 *eP* **P** **20 56 05.4 +0.1**
comp=Z,19nm,1.0s
PAX Paxson 50.15 35 *eP* **P** **20 56 05.8 +0.1**
PAX pmax pmax
comp=Z,8.0nm,0.8s
PAX Paxson 50.15 35 *eP* **P** **20 56 05.8 +0.1**
comp=Z,8.2nm,0.8s
AAK Ala-Archa 50.15 298 P **P** **20 56 06.4 +0.2**
comp=Z,2.2nm,0.3s,baz=82,slow=9.3,SNR=8.8
AAK Ala-Archa 50.15 298 *i* P **P** **20 56 06.0 -0.2**
AAK pmax pmax
comp=Z,5.0nm,0.9s
AAK Ala-Archa 50.15 298 *eP* **P** **20 56 04.7 -1.5**
comp=Z,20nm,1.5s
DIV Divide 50.20 37 *eP* **P** **20 56 06.2 +0.1**
comp=Z,27nm,1.1s
BVAR Borovoye Array 50.22 312 P **P** **20 56 06.0 -0.3**
comp=Z,4.9nm,0.9s,baz=76,slow=6.3,SNR=15
BVAR Borovoye Array 50.22 312 P **P** **20 56 06.0 -0.3**
BVAR pmax pmax
comp=Z,5.0nm,0.9s
BRVK Borovoye 50.27 312 *ce*P **P** **20 56 06.1 -0.6**
BRVK pmax pmax
comp=Z,55nm,1.7s
BRVK Borovoye 50.27 312 *eP* **P** **20 56 06.7 -0.1**
comp=Z,43nm,1.8s
EYAK Cordova Ski Ar 50.28 38 *eP* **P** **20 56 06.5 -0.2**
comp=Z,20nm,1.0s
DOT Dot Lake 50.71 34 *eP* **P** **20 56 09.4 -0.5**
comp=Z,22nm,1.0s
MTN Manton Dam 50.76 193 *eP* **P** **20 56 10.4 -0.2**
comp=Z,34nm,1.2s
BMRM Bremner River 50.79 37 *eP* **P** **20 56 11.3 +0.8**
comp=Z,36nm,1.1s
RAGM Ragged Mountai 50.83 38 *eP* **P** **20 56 10.2 -0.7**
comp=Z,23nm,1.1s
MENT Mentasta 50.95 35 *eP* **P** **20 56 12.7 +0.9**
comp=Z,18nm,1.0s
ZRNK Zerenda 51.05 312 *eP* **P** **20 56 12.3 -0.3**
ZRNK pmax pmax
comp=Z,17nm,0.9s
ZRNK Zerenda 51.05 312 *eP* **P** **20 56 12.3 -0.3**
comp=Z,17nm,0.9s
CRQM Cirque 51.53 37 *eP* **P** **20 56 18.1 +1.8**
comp=Z,23nm,1.0s
MNAS Manas 51.60 298 P **P** **20 56 18.1 +1.1**
MNAS pmax pmax
comp=Z,12nm,1.0s
EGAK Eagle 51.84 32 *eP* **P** **20 56 18.2 0.0**
comp=Z,6.9nm,0.8s
BALM Baldy 51.86 37 *eP* **P** **20 56 18.9 +0.2**
BALM pmax pmax
comp=Z,10.0nm,1.0s
BALM Baldy 51.86 37 *eP* **P** **20 56 18.9 +0.2**
comp=Z,9.9nm,1.0s
KKAR Karatay Array 52.79 300 *eP* **P** **20 56 25.6 -0.1**
KKAR Karatay Array 52.79 300 *eP* **P** **20 56 25.6 -0.1**
HYT Haines Junctio 54.22 37 *eP* **P** **20 56 38.2 +2.1**
comp=Z,17nm,1.0s
INK Inuvik 54.25 27 P **P** **20 56 35.5 -0.5**
comp=Z,7.5nm,0.9s,baz=297,slow=4.7,SNR=12
INK Inuvik 54.25 27 *eP* **P** **20 56 36.3 +0.3**
INK pmax pmax
comp=Z,11nm,0.9s
INK Inuvik 54.25 27 *eP* **P** **20 56 36.3 +0.3**
comp=Z,11nm,0.9s
SVE Sverdlovsk 54.79 318 *eP* **P** **20 56 39.4 -0.7**
SVE pmax pmax
comp=Z,22nm,1.1s
SOKR Solikamsk 55.97 322 *c i*P **P** **20 56 48.0 -0.5**
SOKR pmax pmax
comp=Z,14nm,1.0s
ARU Arti 56.00 318 P **P** **20 56 47.7 -1.1**
comp=Z,3.7nm,0.5s,baz=86,slow=3.8,SNR=16
ARU Arti 56.00 318 *d i*P **P** **20 56 47.7 -1.1**
ARU 20 57 46.2
ARU 20 58 51.5
ARU S **S** **21 04 35.4 +0.1**
ARU 21 06 26.9
ARU SS **SS** **21 08 21.6 +0.7**
ARU pmax pmax
comp=Z,19nm,1.0s
ARU Arti 56.00 318 *eP* **P** **20 56 48.0 -0.8**
comp=Z,21nm,1.1s
KBL Kabul 57.10 291 *eP* **P** **20 56 56.5 -0.8**
KBL pmax pmax
comp=Z,12nm,1.0s
KBL Kabul 57.10 291 *eP* **P** **20 56 56.5 -0.8**
comp=Z,12nm,1.0s
WRAB Tennant Creek 57.29 188 *ce*P **P** **20 56 56.9 -1.4**
WRAB pmax pmax
comp=Z,32nm,1.1s
WB2 Warramunga Arr 57.30 188 *eP* **P** **20 56 57.9 -0.4**
comp=Z,20nm,1.2s
WR1 Warramunga Arr 57.30 188 *eP* **P** **20 56 56.9 -1.5**
comp=Z,9.9nm,0.8s
WRA Warramunga Arr 57.30 188 P **P** **20 56 56.9 -1.5**
comp=Z,8.1nm,0.9s,baz=4.8,slow=7.2,SNR=22
ABKAR Akbulak array 57.59 310 *eP* **P** **20 56 59.1 -1.1**
AKTO Aktyubinsk 58.32 312 P **P** **20 57 04.4 -0.9**
comp=Z,1.6nm,0.5s,baz=74,slow=8.8,SNR=8.5
DLBC Dease Lake 58.56 38 P **P** **20 57 05.4 -1.5**
comp=Z,3.7nm,0.9s,baz=330,slow=4.6,SNR=4.9
DLBC Dease Lake 58.56 38 *eP* **P** **20 57 08.6 +1.7**
comp=Z,8.0nm,0.9s
AS01 Alice Springs 61.02 188 *eP* **P** **20 57 23.7 -0.4**
AS31 Alice Springs 61.02 188 *eP* **P** **20 57 24.3 +0.1**
comp=Z,1.4nm,0.7s
ASAR Alice Springs 61.02 188 P **P** **20 57 23.8 -0.3**
comp=Z,5.1nm,1.0s,baz=8.8,slow=5.4,SNR=21
KLMR Klimovskoe 63.40 328 *eP* **P** **20 57 38.2 -1.5**
KLMR *e*PPP PPP 21 01 27.3
KLMR pmax pmax
comp=Z,19nm,1.4s
GEYT Alibeck 63.50 299 P **P** **20 57 40.6 -0.2**
comp=Z,1.1nm,1.1s,baz=356,slow=2.1,SNR=12
ARCES ARCESS Array B 63.66 339 P **P** **20 57 41.1 -0.2**
comp=Z,5.5nm,0.9s,baz=64,slow=8.5,SNR=11
ARCES LR LR 21 30 32.4
comp=Z,254nm,18.2s,baz=349,slow=41
YKA Yellowknife Ar 63.69 30 P **P** **20 57 41.4 -0.2**
comp=Z,2.0nm,0.7s,baz=302,slow=6.7,SNR=8.7
YKB5 Yellowknife Ar 63.69 30 *eP* **P** **20 57 41.4 -0.2**
DZM Mont Dzumac 63.70 154 LR LR 21 23 44.2
comp=Z,629nm,19.6s,baz=252,slow=34
DAG Danmarks Havn 65.48 355 *i* P **P** **20 57 52.0 -1.0**
comp=Z,6.6nm,0.8s
DAG Danmarks Havn 65.48 355 *i* P **P** **20 57 52.0 -1.0**
DAG pmax pmax
comp=Z,5.0nm,0.8s
NLWA Neilton Lookou 66.70 47 *eP* **P** **20 58 02.5 +1.1**
comp=Z,13nm,1.0s
MOS Moscow 66.89 323 *eP* **P** **20 58 00.6 -1.8**
VRH Novokhopyorsk 67.22 318 *eP* **P** **20 58 02.8 -1.8**
VRH pmax pmax
comp=Z,20nm,0.7s
OBN Obninsk 67.74 323⇑ *i*P **P** **20 58 07.9 +0.2**
OBN *PP **pP** **20 58 17.0 +1.1**
OBN *e*SP **sP** **20 58 24.0 +5.1**
OBN *e* 21 00 37.0
OBN S S 21 07 22.0 +18
OBN pmax pmax
comp=Z,50nm,2.5s
OBN MLR MLR
comp=Z,306nm,16.0s
FIA0 FINESS Array S 68.47 332 *eP* **P** **20 58 11.5 -0.7**
FIA0 FINESS Array S 68.47 332 *eP* **P** **20 58 11.5 -0.7**
FINES FINESS Array B 68.47 332 P **P** **20 58 11.5 -0.7**
comp=Z,14nm,0.8s,baz=46,slow=8.2,SNR=22
VSR Storozhevoye 68.57 319 *eP* **P** **20 58 12.5 -0.6**
VSR pmax pmax
comp=Z,10.0nm,0.7s
FORT Forrest 68.82 192 *eP* **P** **20 58 15.0 +0.3**
comp=Z,242nm,0.9s
STKA Stephens Creek 68.83 180 P **P** **20 58 14.7 0.0**
comp=Z,8.4nm,0.9s,baz=336,slow=7.0,SNR=11
STKA Stephens Creek 68.83 180 *eP* **P** **20 58 15.4 +0.7**
STKA pmax pmax
comp=Z,2.0nm,0.9s
STKA Stephens Creek 68.83 180 *eP* **P** **20 58 15.4 +0.7**
comp=Z,1.9nm,0.9s
I03D Drain, OR 68.92 51 P **P** **20 58 16.2 +0.8**
baz=302
EDM Edmonton 69.28 38 *eP* **P** **20 58 17.3 -0.2**
EDM pmax pmax
comp=Z,14nm,1.0s
EDM Edmonton 69.28 38 *eP* **P** **20 58 17.3 -0.2**
comp=Z,14nm,1.0s
I04A Tendick Farm, 69.44 50 P **P** **20 58 19.4 +0.7**
baz=302
L02D Cave Junction, 69.57 52 P **P** **20 58 20.5 +1.0**
baz=302
GOF Gofitskoye 69.74 312⇑ *eP* **P** **20 58 20.5 +0.1**
GOF pmax pmax
comp=Z,37nm,1.2s
NEW Newport 70.10 44 P **P** **20 58 21.3 -1.4**
comp=Z,4.5nm,0.8s,baz=304,slow=5.9,SNR=5.8
NEW Newport 70.10 44 P **P** **20 58 23.4 +0.7**
baz=304
NEW Newport 70.10 44 *eP* **P** **20 58 22.9 +0.2**
NEW pmax pmax
comp=Z,6.0nm,0.8s
NEW Newport 70.10 44 *eP* **P** **20 58 22.9 +0.2**
comp=Z,5.7nm,0.8s
VSU Vasula 70.10 329 *ce*P **P** **20 58 23.7 +1.3**
VSU pmax pmax
comp=Z,43nm,1.2s
KHMM Horse Mountain 70.18 53 *eP* **P** **20 58 25.0 +1.6**
comp=Z,14nm,1.1s
NCK Nalchik 70.25 310 *eP* **P** **20 58 23.7 +0.1**
NCK pmax pmax
comp=Z,5.0nm,0.8s
GUDG Gudauri 70.26 309 P **P** **20 58 24.5 +0.5**
SUMG Summit 70.41 360 *i* P **P** **20 58 26.8 +2.2**
comp=Z,16nm,1.1s
SUMG Summit 70.41 360 *i* P **P** **20 58 26.8 +2.2**
SUMG pmax pmax
comp=Z,16nm,1.1s
SUMG Summit 70.41 360 *eP* **P** **20 58 25.3 +0.7**
comp=Z,48nm,1.7s
ZEI Tsey 70.45 309 *eP* **P** **20 58 23.8 -1.3**
M02C Callahan 70.46 53 P **P** **20 58 26.2 +1.2**
baz=303
KVAR Kislovodsk Arr 70.55 311 P **P** **20 58 24.4 -1.1**
comp=Z,43nm,1.2s,baz=2.1,slow=2.0,SNR=13
KBZ Khabaz 70.55 310 P **P** **20 58 25.1 -0.3**
comp=Z,8.1nm,0.9s,baz=76,slow=3.6,SNR=14
KIV Kislovodsk 70.55 311 *eP* **P** **20 58 26.4 +0.8**
KIV pmax pmax
comp=Z,42nm,1.1s
KIV Kislovodsk 70.55 311 *eP* **P** **20 58 25.6 0.0**
comp=Z,78nm,1.4s
ONI Oni 70.83 309 P **P** **20 58 28.1 +0.8**
ONI Oni 70.83 309 P **P** **20 58 28.0 +0.8**
M04C Macdoel 70.88 52 P **P** **20 58 28.8 +1.1**
baz=303
NEY Neytrino 70.92 310 *i* P **P** **20 58 29.0 +1.1**
K05A Summer Lake 70.95 51 *eP* **P** **20 58 29.4 +1.2**
comp=Z,22nm,1.0s
WDC Whiskeytown Da 71.10 53 *eP* **P** **20 58 29.6 +0.8**
WDC pmax pmax
comp=Z,11nm,1.3s
WDC Whiskeytown Da 71.10 53 *eP* **P** **20 58 29.6 +0.8**
comp=Z,11nm,1.3s
WALA Waterton Lakes 71.39 42 *eP* **P** **20 58 31.2 +0.6**
comp=Z,11nm,1.5s
BGD Bogdanovka 71.47 308 P **P** **20 58 32.2 +0.9**
UOSS Minazif 71.50 288 *eP* **P** **20 58 31.4 -0.1**
comp=Z,19nm,1.1s
CHVG Ch'k'valeri 71.60 310 P **P** **20 58 31.6 -0.3**
O03D Paynes Creek 71.72 53 P **P** **20 58 32.9 +0.2**
baz=304
BMO Blue Mountains 71.92 47 *eP* **P** **20 58 33.7 -0.1**
comp=Z,5.4nm,0.8s
JTMT Jette 71.96 43 *eP* **P** **20 58 34.5 +0.4**
MICGM Minsk 72.14 326 *e* **P** **20 58 36.0 +1.2**
MNK Minsk 72.14 326 *eP* **P** **20 58 36.0 +1.2**
CHMT Chamberlain Mo 73.02 44 *eP* **P** **20 58 40.8 +0.3**
PAHR Pah Rah Range 73.59 52 *eP* **P** **20 58 45.5 +1.6**
comp=Z,15nm,1.3s
FFC Flin Flon 73.60 33 *eP* **P** **20 58 43.6 +0.1**
FFC pmax pmax
comp=Z,14nm,1.3s
FFC Flin Flon 73.60 33 *eP* **P** **20 58 43.6 +0.1**
comp=Z,14nm,1.3s
MFID Camas Ranch 73.62 48 *eP* **P** **20 58 44.6 +0.6**
comp=Z,24nm,1.6s
HFS Hagfors 73.75 336 P **P** **20 58 43.3 -1.0**
comp=Z,2.3nm,0.5s,baz=57,slow=5.5,SNR=9.2

HFS	**Hagfors**	**73.75**	**336**	P	**P**	**20 58 43.3**	**-1.0**
HFS				pmax	pmax		
	comp=Z,7.0nm,0.9s						
NC204	**NORSAR Array S**	**73.80**	**337**	*e*P	**P**	**20 58 44.3**	**-0.3**
NB2	**NORSAR Subarra**	**73.85**	**337**	P	**P**	**20 58 44.1**	**-0.8**
	comp=Z,13nm,1.0s,baz=41,slow=6.2						
NB2	**NORSAR Subarra**	**73.85**	**337**	P	**P**	**20 58 45.0**	**+0.1**
NB2				pmax	pmax		
	comp=Z,11nm,1.0s						
NB200	**NORSAR Array S**	**73.85**	**337**	*e*P	**P**	**20 58 44.4**	**-0.5**
NOA	**NORSAR Array B**	**73.85**	**337**	P	**P**	**20 58 44.4**	**-0.5**
	comp=Z,6.5nm,0.8s,baz=38,slow=5.8,SNR=13						
CMB	**Columbia Colle**	**73.90**	**54**	*e*P	**P**	**20 58 45.8**	**+0.2**
CMB				pmax	pmax		
	comp=Z,14nm,1.3s						
CMB	**Columbia Colle**	**73.90**	**54**	*e*P	**P**	**20 58 45.8**	**+0.2**
	comp=Z,14nm,1.3s						
AKASG	**Malin Array Be**	**73.94**	**322**	P	**P**	**20 58 44.5**	**-1.1**
	comp=Z,3.0nm,0.5s,baz=47,slow=6.5,SNR=21						
AKBB	**Malin Array Si**	**73.94**	**322**	*e*P	**P**	**20 58 44.5**	**-1.1**
AKBB	**Malin Array Si**	**73.94**	**322**	*e*P	**P**	**20 58 44.5**	**-1.1**
NBO02	**NORSAR Array S**	**73.95**	**337**	*e*P	**P**	**20 58 45.1**	**-0.4**
KIEV	**Kiev**	**73.95**	**322**	*i* P	**P**	**20 58 45.0**	**-0.6**
KIEV				pmax	pmax		
	comp=Z,15nm,1.3s						
KIEV	**Kiev**	**73.95**	**322**	*e*P	**P**	**20 58 44.5**	**-1.1**
	comp=Z,12nm,1.0s						
AK11	**Malin Array Si**	**73.98**	**322**	*e*P	**P**	**20 58 45.1**	**-0.7**
NBO00	**NORSAR Array S**	**73.99**	**337**	*e*P	**P**	**20 58 45.2**	**-0.5**
YERR	**Yerington**	**74.09**	**53**	*e*P	**P**	**20 58 47.7**	**+0.8**
	comp=Z,17nm,1.0s						
LRM	**Limekiln Ridge**	**74.12**	**44**	*e*P	**P**	**20 58 47.4**	**+0.4**
DLMT	**Dillon**	**74.31**	**45**	*e*P	**P**	**20 58 48.5**	**+0.5**
	comp=Z,8.5nm,0.8s						
HLID	**Hailey**	**74.36**	**47**	*e*P	**P**	**20 58 48.6**	**+0.3**
	comp=Z,8.2nm,1.2s						
SUW	**Suwalki**	**74.53**	**327**	*e*P	**P**	**20 58 48.7**	**-0.2**
SUW	**Suwalki**	**74.53**	**327**	*e*P	**P**	**20 58 48.7**	**-0.2**
BOZ	**Bozeman (W)**	**74.68**	**44**	P	**P**	**20 58 50.8**	**+0.6**
	baz=308						
BOZ	**Bozeman (W)**	**74.68**	**44**	*e*P	**P**	**20 58 51.0**	**+0.8**
BOZ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
BOZ	**Bozeman (W)**	**74.68**	**44**	*e*P	**P**	**20 58 51.0**	**+0.8**
	comp=Z,7.6nm,0.8s						
SIM	**Simferopol'**	**74.97**	**315**	*e*P	**P**	**20 58 51.8**	**+0.1**
SIM				pmax	pmax		
	comp=Z,62nm,1.0s						
SIM				MLR	MLR		
	comp=N,280nm,19.1s						
PAGB	**Antelope Grade**	**75.31**	**56**	*e*P	**P**	**20 58 54.2**	**+0.3**
	comp=N,25nm,1.1s						
YHB	**Horse Butte**	**75.47**	**45**	*e*P	**P**	**20 58 55.1**	**+0.2**
	comp=N,7.4nm,0.8s						
SORM	**Soroca**	**76.03**	**320**	⇑*i*P	**P**	**20 58 54.4**	**-3.3**
SORM	**Soroca**	**76.03**	**320**	⇑P	**P**	**20 58 54.4**	**-3.3**
H17A	**Grant Village**	**76.04**	**45**	P	**P**	**20 59 00.2**	**+2.1**
	baz=309						
IMW	**Indian Meadow**	**76.15**	**45**	*e*P	**P**	**20 58 59.2**	**+0.4**
	comp=N,7.6nm,0.9s						
TPAW	**Teton Pass**	**76.40**	**45**	*e*P	**P**	**20 58 58.6**	**-1.6**
	comp=N,11nm,0.9s						
LVV	**L'vov**	**77.02**	**324**	*e*P	**P**	**20 59 02.5**	**-0.8**
PD31	**Pinedale Array**	**77.64**	**45**	*e*P	**P**	**20 59 05.6**	**-1.6**
PDAR	**Pinedale Array**	**77.64**	**45**	P	**P**	**20 59 05.7**	**-1.5**
	comp=N,1.5nm,0.6s,baz=240,slow=2.2,SNR=6.9						
KWP	**Kalwaria Pacla**	**77.77**	**324**	*e*P	**P**	**20 59 08.7**	**+1.2**
KWP	**Kalwaria Pacla**	**77.77**	**324**	*e*P	**P**	**20 59 08.7**	**+1.2**
BUR08	**Bucovina Ar. S**	**77.94**	**322**	*e*P	**P**	**20 59 07.8**	**-0.8**
BURAR	**Bucovina Array**	**77.95**	**322**	⇓*i*P	**P**	**20 59 08.6**	**0.0**
BURAR	**Bucovina Array**	**77.95**	**322**	⇓P	**P**	**20 59 08.6**	**0.0**
TESR	**Tescani**	**77.98**	**320**	⇑*i*P	**P**	**20 59 08.4**	**-0.3**
CFR	**Carcaliu**	**78.09**	**318**	⇑*i*P	**P**	**20 59 09.4**	**+0.1**
CFR	**Carcaliu**	**78.09**	**318**	⇑P	**P**	**20 59 09.4**	**+0.1**
KOLS	**Kolonicke sedl**	**78.47**	**324**	*e*P	**P**	**20 59 11.9**	**+0.6**
KOLS				pmax	pmax		
	comp=Z,8.0nm,1.4s						
KOLS	**Kolonicke sedl**	**78.47**	**324**	*e*P	**P**	**20 59 11.9**	**+0.6**
BR101	**Keskin Array S**	**78.50**	**311**	*e*P	**P**	**20 59 11.4**	**-0.5**
BR131	**Keskin Array S**	**78.50**	**311**	*e*P	**P**	**20 59 12.3**	**+0.5**
BRTR	**Keskin Array B**	**78.50**	**311**	P	**P**	**20 59 11.4**	**-0.5**
	comp=Z,3.0nm,1.0s,baz=90,slow=3.7,SNR=13						
TLB	**Topalu**	**78.53**	**318**	⇑*i*P	**P**	**20 59 11.7**	**0.0**
TLB	**Topalu**	**78.53**	**318**	⇑P	**P**	**20 59 11.7**	**0.0**
STHS	**Stebnicka Huta**	**78.60**	**325**	*e*P	**P**	**20 59 13.1**	**+1.0**
STHS				pmax	pmax		
	comp=Z,11nm,1.3s						
STHS	**Stebnicka Huta**	**78.60**	**325**	*e*P	**P**	**20 59 13.1**	**+1.0**
STHS				*e*		21 00 37.6	
UZH	**Uzhgorod**	**78.67**	**324**	*e*P	**P**	**20 59 09.7**	**-2.7**
OJC	**Ojcow**	**78.68**	**326**	*e*P	**P**	**20 59 13.4**	**+0.9**
OJC	**Ojcow**	**78.68**	**326**	*e*P	**P**	**20 59 12.9**	**+0.4**
OJC				pmax	pmax		
	comp=Z,60nm,0.6s						
OJC	**Ojcow**	**78.68**	**326**	*e*P	**P**	**20 59 12.9**	**+0.4**
	comp=Z,60nm,0.6s						
CRVS	**Cervenica-Dubn**	**78.87**	**324**	*e*P	**P**	**20 59 14.1**	**+0.5**
CRVS	**Cervenica-Dubn**	**78.87**	**324**	*e*P	**P**	**20 59 14.1**	**+0.5**
BR231	**Keskin MP Arra**	**78.94**	**312**	*e*P	**P**	**20 59 12.6**	**-1.6**
DOPR	**Dopca**	**78.99**	**320**	⇓*i*P	**P**	**20 59 15.5**	**+1.2**
MLR	**Muntele Rosu**	**79.03**	**320**	LR	LR	21 36 06.3	
	comp=Z,77nm,18.3s,baz=43,slow=37						
MLR	**Muntele Rosu**	**79.03**	**320**	⇓*i*P	**P**	**20 59 15.8**	**+1.2**
MLR	**Muntele Rosu**	**79.03**	**320**	*e*P	**P**	**20 59 14.5**	**-0.2**
MLR				pmax	pmax		
	comp=Z,9.0nm,1.6s						
MLR	**Muntele Rosu**	**79.03**	**320**	*e*P	**P**	**20 59 14.5**	**-0.2**
	comp=Z,8.7nm,1.6s						
NIE	**Niedzica**	**79.03**	**325**	*e*P	**P**	**20 59 15.6**	**+1.1**
NIE	**Niedzica**	**79.03**	**325**	*e*P	**P**	**20 59 15.6**	**+1.1**
VOIR		**79.53**	**320**	⇑*i*P	**P**	**20 59 18.0**	**+0.7**
VOIR		**79.53**	**320**	⇑P	**P**	**20 59 18.0**	**+0.7**
LANS	**Liptovska Anna**	**79.61**	**325**	*e*P	**P**	**20 59 18.8**	**+1.2**
LANS	**Liptovska Anna**	**79.61**	**325**	*e*P	**P**	**20 59 18.8**	**+1.2**
LANS				*e*		21 00 27.9	
KECS	**Kecovo**	**79.62**	**324**	*e*P	**P**	**20 59 17.9**	**+0.3**
KECS				pmax	pmax		
	comp=Z,3.0nm,1.0s						
KECS	**Kecovo**	**79.62**	**324**	*e*P	**P**	**20 59 17.9**	**+0.3**
KECS				*e*		21 00 40.0	
OKC	**Ostrava-Krasne**	**79.69**	**326**	*e*P	**P**	**20 59 18.8**	**+0.8**
OKC				*e*pP	**sP**	**20 59 29.2**	**-0.1**
OKC				AMS	AMS	21 37 50.0	
	comp=Z,500nm,19.1s						
OKC	**Ostrava-Krasne**	**79.69**	**326**	*e*P	**P**	**20 59 18.8**	**+0.8**
OKC				*e*		20 59 29.2	
OKC				MLR	MLR		
	comp=Z,500nm,19.1s						
DRGR		**79.76**	**322**	⇓*i*P	**P**	**20 59 18.5**	**0.0**
DRGR		**79.76**	**322**	⇓P	**P**	**20 59 18.5**	**0.0**
ARR	**Arges**	**79.78**	**320**	⇑*i*P	**P**	**20 59 19.5**	**+0.8**
MORC	**Moravsky Berou**	**80.00**	**327**	*e*P	**P**	**20 59 19.8**	**0.0**
MORC	**Moravsky Berou**	**80.00**	**327**	*e*P	**P**	**20 59 19.8**	**0.0**
	comp=Z,181nm,0.7s						
DPC	**Dobruska-Polom**	**80.10**	**328**	*e*P	**P**	**20 59 21.4**	**+1.1**
DPC				AMS	AMS	21 42 10.0	
	comp=Z,400nm,14.7s						
DPC	**Dobruska-Polom**	**80.10**	**328**	*e*P	**P**	**20 59 21.4**	**+1.1**
DPC				MLR	MLR		
	comp=Z,400nm,14.7s						
UPC	**Upice**	**80.12**	**328**	*e*P	**P**	**20 59 21.2**	**+0.9**
UPC				AMS	AMS	21 37 10.0	
	comp=Z,500nm,19.3s						
UPC	**Upice**	**80.12**	**328**	*e*P	**P**	**20 59 21.2**	**+0.9**
UPC				MLR	MLR		
	comp=Z,500nm,19.3s						
PSZ	**Piszkesteto**	**80.30**	**324**	⇓*i*P	**P**	**20 59 22.5**	**+1.1**
PSZ	**Piszkesteto**	**80.30**	**324**	*e*P	**P**	**20 59 21.7**	**+0.2**
PSZ				pmax	pmax		
	comp=Z,36nm,1.4s						
PSZ	**Piszkesteto**	**80.30**	**324**	*e*P	**P**	**20 59 21.7**	**+0.2**
	comp=Z,36nm,1.4s						
VYHS	**Vyhne**	**80.37**	**325**	*e*P	**P**	**20 59 22.6**	**+0.9**
VYHS				pmax	pmax		
	comp=Z,17nm,2.0s						
VYHS	**Vyhne**	**80.37**	**325**	*e*P	**P**	**20 59 22.6**	**+0.9**
VYHS				*e*		21 00 31.3	
PV09	**Paradox Valley**	**80.64**	**48**	*e*P	**P**	**20 59 23.1**	**-0.6**
BRG	**Berggiesshubel**	**80.70**	**329**	*e*P	**P**	**20 59 23.9**	**+0.5**
	comp=Z,12nm,1.3s						
BRG	**Berggiesshubel**	**80.70**	**329**	*e*P	**P**	**20 59 23.9**	**+0.5**
BRG				pmax	pmax		
	comp=Z,12nm,1.3s						
PVCC	**Panska Ves**	**80.71**	**329**	*e*P	**P**	**20 59 24.4**	**+0.9**
PVCC				AMS	AMS	21 42 30.0	
	comp=Z,600nm,16.6s						
PVCC	**Panska Ves**	**80.71**	**329**	*e*P	**P**	**20 59 24.4**	**+0.9**
PVCC				MLR	MLR		
	comp=Z,600nm,16.6s						
CLL	**Collm**	**80.75**	**330**	*e*P	**P**	**20 59 24.0**	**+0.4**
	comp=Z,12nm,1.0s						
CLL				*e*		20 59 36.0	
CLL	**Collm**	**80.75**	**330**	*e*P	**P**	**20 59 24.0**	**+0.4**
CLL				pmax	pmax		
	comp=Z,12nm,1.0s						
CLL	**Collm**	**80.75**	**330**	*e*P	**P**	**20 59 23.4**	**-0.2**
	comp=Z,74nm,0.5s						
VRAC	**Vranov**	**80.77**	**327**	P	**P**	**20 59 24.0**	**+0.1**
	comp=Z,3.9nm,0.8s,baz=27,slow=4.5,SNR=9.0						
VRAC	**Vranov**	**80.77**	**327**	P	**P**	**20 59 24.0**	**+0.1**
VRAC				pmax	pmax		
	comp=Z,4.0nm,0.8s						
PV10	**Paradox Valley**	**80.77**	**49**	*e*P	**P**	**20 59 24.6**	**+0.3**
N23A	**Red Feather La**	**80.91**	**45**	*e*P	**P**	**20 59 26.0**	**+0.9**
	comp=Z,13nm,0.7s						
PV05	**Paradox Valley**	**80.93**	**49**	*e*P	**P**	**20 59 25.9**	**+0.7**
GOPC	**GO Pecny, Ondr**	**81.08**	**328**	AMS	AMS	21 38 00.0	
	comp=Z,700nm,19.5s						
BZS	**Buzias**	**81.13**	**322**	⇓*i*P	**P**	**20 59 25.9**	**+0.1**
BZS	**Buzias**	**81.13**	**322**	⇓P	**P**	**20 59 25.9**	**+0.1**
PRU	**Pruhonice**	**81.13**	**328**	*e*P	**P**	**20 59 26.5**	**+0.8**
PRU				AMS	AMS	21 38 30.0	
	comp=Z,700nm,16.5s						
PRU	**Pruhonice**	**81.13**	**328**	*e*P	**P**	**20 59 26.5**	**+0.8**
PRU				MLR	MLR		
	comp=Z,700nm,16.5s						
PV01	**Paradox Valley**	**81.21**	**48**	*e*P	**P**	**20 59 27.5**	**+0.8**
MMAI	**Mount Meron Ar**	**81.62**	**305**	P	**P**	**20 59 27.6**	**-1.2**
	comp=Z,3.6nm,0.8s,baz=44,slow=4.9,SNR=6.8						
MDVR	**Moldovita**	**81.67**	**321**	⇓*i*P	**P**	**20 59 28.8**	**0.0**
NKC	**Novy Kostel**	**81.80**	**330**	*e*P	**P**	**20 59 29.8**	**+0.5**
NKC				*e*pP	**sP**	**20 59 41.5**	**+0.9**
NKC				AMS	AMS	21 39 00.0	
	comp=Z,700nm,16.4s						
NKC	**Novy Kostel**	**81.80**	**330**	*e*P	**P**	**20 59 29.8**	**+0.5**
NKC				*e*		20 59 41.5	
NKC				MLR	MLR		
	comp=Z,700nm,16.4s						
KHC	**Kasperske Hory**	**82.19**	**328**	*e*P	**P**	**20 59 32.0**	**+0.6**
KHC				*e*pP	**sP**	**20 59 43.1**	**+0.4**
KHC				AMS	AMS	21 39 40.0	
	comp=Z,700nm,19.5s						
KHC	**Kasperske Hory**	**82.19**	**328**	*e*P	**P**	**20 59 30.8**	**-0.6**
KHC				pmax	pmax		
	comp=Z,18nm,0.5s						
KHC	**Kasperske Hory**	**82.19**	**328**	*e*P	**P**	**20 59 30.8**	**-0.6**
	comp=Z,18nm,0.5s						
GEC2	**GERESS Array S**	**82.36**	**328**	*e*P	**P**	**20 59 32.0**	**-0.4**
GEC2				pmax	pmax		
	comp=Z,43nm,0.8s						
GEC2	**GERESS Array S**	**82.36**	**328**	*e*P	**P**	**20 59 31.9**	**-0.4**
	comp=Z,43nm,0.8s						
GERES	**GERESS Array B**	**82.36**	**328**	P	**P**	**20 59 32.5**	**+0.1**
	comp=Z,0.9nm,0.4s,baz=49,slow=6.1,SNR=14						
GEA0	**GERESS Array S**	**82.36**	**328**	*e*P	**P**	**20 59 30.1**	**-2.3**
VTS	**Vitosha**	**82.46**	**319**	*e*P	**P**	**20 59 32.8**	**-0.3**
VTS				pmax	pmax		
	comp=Z,6.0nm,1.1s						
VTS	**Vitosha**	**82.46**	**319**	*e*P	**P**	**20 59 32.8**	**-0.3**
	comp=Z,6.3nm,1.1s						
EKA	**Eskdalemuir Ar**	**82.80**	**340**	P	**P**	**20 59 35.0**	**+0.6**
	comp=Z,4.4nm,0.9s,baz=38,slow=5.5,SNR=7.4						
EKA	**Eskdalemuir Ar**	**82.80**	**340**	P	**P**	**20 59 35.0**	**+0.6**
EKA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
EIL	**Elat**	**84.03**	**303**	P	**P**	**20 59 41.1**	**-0.1**
	comp=Z,7.5nm,1.0s,baz=0.3,slow=7.6,SNR=4.5						
ANMO	**Albuquerque**	**84.59**	**50**	*e*P	**P**	**20 59 44.1**	**-0.1**
ANMO				pmax	pmax		
	comp=Z,11nm,1.2s						
ANMO	**Albuquerque**	**84.59**	**50**	*e*P	**P**	**20 59 44.8**	**+0.5**
	comp=Z,8.0nm,1.0s						
BFO	**Black Forest**	**84.95**	**331**	*e*P	**P**	**20 59 45.4**	**-0.2**
BFO				pmax	pmax		
	comp=Z,33nm,0.9s						
BFO	**Black Forest**	**84.95**	**331**	*e*P	**P**	**20 59 45.4**	**-0.2**
	comp=Z,33nm,0.9s						
121A	**Cookes Peak, D**	**85.38**	**52**	P	**P**	**20 59 48.8**	**+0.5**
	baz=312						
ECH	**Echery**	**85.50**	**331**	*e*P	**P**	**20 59 48.5**	**+0.2**
THEF	**They Montfort**	**85.94**	**332**	*e*P	**P**	**20 59 50.5**	**0.0**
O34A	**Beatrice**	**86.42**	**41**	P	**P**	**20 59 52.2**	**-0.8**
	baz=318						
IDI	**Anoyia**	**86.63**	**313**	P	**P**	**20 59 53.4**	**-0.8**
	comp=Z,7.5nm,0.8s,baz=29,slow=11,SNR=4.2						
Q39A	**Willow Grove F**	**89.17**	**39**	P	**P**	**21 00 06.0**	**-0.2**
	baz=320						
LTX	**Lajitas**	**90.14**	**52**	*e*P	**P**	**21 00 09.9**	**-1.1**
LTX	**Lajitas**	**90.14**	**52**	*e*P	**P**	**21 00 09.9**	**-1.1**
TX31	**Lajitas Ar. Si**	**90.14**	**52**	*e*P	**P**	**21 00 11.3**	**+0.2**
TXAR	**Lajitas Array**	**90.14**	**52**	P	**P**	**21 00 09.9**	**-1.1**
	comp=Z,2.6nm,0.9s,baz=280,slow=2.3,SNR=5.7						
SADO	**Sadowa**	**90.57**	**27**	LR	LR	21 46 45.2	
	comp=Z,134nm,18.2s,baz=94,slow=40						
U39A	**Green Forest**	**90.94**	**41**	P	**P**	**21 00 13.8**	**-0.7**
	baz=320						
234A	**Clairette**	**91.61**	**47**	P	**P**	**21 00 18.0**	**+0.3**
	baz=317						
KEST	**Kesra**	**94.67**	**322**	*e*P	**P**	**21 00 32.1**	**+0.4**
	comp=Z,11nm,1.2s						
CPCT	**Cooper Cave**	**96.13**	**36**	*e*P	**P**	**21 00 39.4**	**+1.0**
	comp=Z,7.7nm,0.8s						
SAML	**Samuel**	**144.22**	**44**	*e*PKPdf	PKPbc	21 06 46.0	+1.0
LPAZ	**La Paz**	**146.76**	**59**	PKPbc	**PKPbc**	**21 06 53.5**	**-0.1**
	comp=Z,2.0nm,0.5s,baz=2.1,slow=3.0,SNR=12						
LPAZ	**La Paz**	**146.76**	**59**	*e*PKPdf	**PKPbc**	**21 06 53.1**	**-0.5**
PB11	**IPOC Station P**	**148.00**	**65**	*e*PKPbc	**PKPbc**	**21 06 57.0**	**+0.5**
PB01	**IPOC Station P**	**148.93**	**67**	*e*PKPbc	**PKPbc**	**21 07 00.7**	**+2.0**
LVC	**Limon Verde**	**150.30**	**69**	*e*PKPbc	**PKPbc**	**21 07 03.6**	**+1.2**
LCO	**Las Campanas**	**152.21**	**82**	*e*PKPdf	**PKPdf**	**21 07 01.7**	**+1.8**
LCO				*e*PKPbc	**PKiKP**	**21 07 07.5**	**+0.6**

SOME **12** *20:47:48.2,50.37N×87.12E,h25km*
NNC **12** *20:47:54.5±5.5,49.62N×88.04E,h0km,mb3.9,mpv3.6, Error ellipse: s-maj=41.9km s-min=37.5km az=147.0*
ISC 12 20:47:53.1±4.5**,49.9N**±0.1×**88.4E**±0.3**,h35**km**,n5,**
σ1$70/10,**4C-4D,Tuva-Buryatia-Mongolia border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ZSN	**Zaisan**	**3.63**	**228**	*e*P		**Pn**	**Pn**	**20 48 48.2**	**+1.5**
	9.8nm,0.3s								
ZSN				*e*S		**Sn**	**Sn**	**20 49 31.1**	**+2.8**
	66nm,0.7s								
MK31	**Makanchi Array**	**5.14**	**235**	Pn		**Pn**	**Pn**	**20 49 08.2**	**+0.7**
	7.0nm,0.8s,baz=45,slow=13,SNR=111								
MK31				⇓Sn		**Sn**	**Sn**	**20 50 05.7**	**+0.2**
	3.6nm,0.5s,baz=47,slow=23,SNR=6.5								
MK31				⇓Lg		Lg	Lg	20 50 23.9	
	23nm,0.9s,baz=55,slow=29,SNR=7.3								
SEM	**Semipalatinsk**	**5.25**	**278**	*e*P		**Pn**	**Pn**	**20 49 09.2**	**+0.2**
	4.3nm,0.5s								
SEM				*e*S		**Sn**	**Sn**	**20 50 07.9**	**-0.4**
	16nm,0.4s								
MAKZ	**Makanchi**	**5.29**	**236**	⇑Pn		**Pn**	**Pn**	**20 49 10.0**	**+0.3**
	3.9nm,0.5s								
MAKZ				⇓Sn		**Sn**	**Sn**	**20 50 08.8**	**-0.6**
	5.3nm,0.5s								
MAKZ				⇑Lg		Lg	Lg	20 50 29.4	
	17nm,0.8s								
PDGK	**Podgornoye**	**9.01**	**226**	⇓Pn		**Pn**	**Pn**	**20 49 58.8**	**-1.7**
	1.9nm,0.6s								
PDGK				⇑Sn		**Sn**	**Sn**	**20 51 38.1**	**-2.5**
	4.0nm,0.6s								
PDGK				⇑Lg		Lg	Lg	20 52 31.7	
	4.9nm,0.8s								

IASPEI **12** *20:50:28.9±0.8,43.92N±0.02×11.86E±0.02,h9km±4km, Error ellipse: s-maj=3.2km s-min=2.1km az=24.2,GT5 selection from ISC bulletin GT5 identified by Bond˙jr and McLaughlin (2009) selection criteria Bond˙jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
ROM **12** *20:50:28.8±0.1,43.92N×11.87E,h7km±1km,Md3.2/23, Ml2.9/41,Error ellipse: s-maj=1.7km s-min=1.0km az=17.0*
GEN **12** *20:50:28.6,43.97N×11.93E,h1km,ML3.2*
LDG **12** *20:50:29.4±0.2,43.91N×12.03E,h10km,Md3.0/3, Ml3.3/15,Error ellipse: s-maj=4.5km s-min=4.0km az=178.0*
BGR **12** *20:50:29.9±0.7,43.89N×11.92E,h10km,ML3.4/6,Error ellipse: s-maj=13.3km s-min=7.8km az=11.0*
CSEM **12** *20:50:29.2±0.1,43.91N×11.88E,h10km,ML3.4/32,Error ellipse: s-maj=1.9km s-min=1.7km az=48.0*
ISCJB **12** *20:50:29.3±0.2,43.93N±0.02×11.84E±0.02,h21km±2km, Error ellipse: s-maj=2.6km s-min=1.9km az=3.6*
PRU **12** *20:50:30.1,43.82N×12.08E,h19km*
STR **12** *20:50:36.5±0.5,44.36N×11.55E,h10km,Ml3.4,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 12 20:50:29.0±0.8**,43.91N**±0.02×**11.86E**±0.01**,h10**km±4km**,**
n278,σ1$**34/**404**,5C-3D,Central Italy**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.01**	**223**			Pg	**Pg**	**20 50 30.5**	**-0.3**
SFI						Sg	**Sg**	**20 50 31.6**	**-0.5**
	42μm,0.2s								
SFI	**Santa Sofia**	**0.01**	**223**			Pg	**Pg**	**20 50 30.5**	**-0.3**
SFI						Sg	**Sg**	**20 50 31.6**	**-0.5**
	42μm,0.2s								
ASQU	**Asqua**	**0.13**	**203**			Pg	**Pg**	**20 50 32.4**	**+0.4**
ASQU						Sg	**Sg**	**20 50 35.4**	**+1.2**
	21μm,0.2s								
ASQU	**Asqua**	**0.13**	**203**			Pg	**Pg**	**20 50 32.4**	**+0.4**
ASQU						Sg	**Sg**	**20 50 35.4**	**+1.2**
	21μm,0.2s								
T0502	**Localit˙San**	**0.20**	**93**			Pg	**Pg**	**20 50 33.2**	**-0.1**
T0502						Sg	**Sg**	**20 50 37.1**	**+0.9**
	173μm,7.5s								
VMG	**Vicchio**	**0.23**	**282**			Pg	**Pg**	**20 50 34.1**	**+0.3**
VMG	**Vicchio**	**0.23**	**282**			Pg	**Pg**	**20 50 34.1**	**+0.3**
CPGN	**Carpegna, Ital**	**0.35**	**108**			Pg	**Pb**	**20 50 36.8**	**-0.6**
CPGN						Sg	**Sb**	**20 50 41.9**	**-1.2**
	210μm,11.0s								
CPGN	**Carpegna, Ital**	**0.35**	**108**			Pg	**Pb**	**20 50 36.8**	**-0.6**
CPGN						Sg	**Sb**	**20 50 41.9**	**-1.2**
	210μm,11.0s								
PARC	**Parchiule**	**0.38**	**134**			Pg	**Pg**	**20 50 36.6**	**+0.1**
PARC						Sg	**Sb**	**20 50 43.2**	**-0.6**
	908nm,0.8s								
PARC	**Parchiule**	**0.38**	**134**			Pg	**Pg**	**20 50 36.6**	**+0.1**
PARC						Sg	**Sb**	**20 50 43.2**	**-0.6**
	908nm,0.8s								
SEI	**Scarperia**	**0.39**	**292**			Pg	**Pg**	**20 50 36.6**	**-0.1**
SEI	**Scarperia**	**0.39**	**292**			Pg	**Pg**	**20 50 36.6**	**-0.1**
IMOL	**Imola, Italy**	**0.45**	**350**			Pg	**Pb**	**20 50 38.6**	**-0.5**
	9μm,3.9s								
IMOL	**Imola, Italy**	**0.45**	**350**			Pg	**Pb**	**20 50 38.6**	**-0.5**
	9μm,3.9s								
FIR	**Firenze**	**0.46**	**253**			Pg	**Pg**	**20 50 38.5**	**+0.6**
	7μm,0.5s								
FIR	**Firenze**	**0.46**	**253**			Pg	**Pg**	**20 50 38.5**	**+0.6**
	7μm,0.5s								
BADI	**Badiali**	**0.49**	**145**			Pg	**Pg**	**20 50 38.7**	**+0.2**
BADI						Sg	**Sb**	**20 50 46.9**	**0.0**
	903nm,0.6s								
BADI	**Badiali**	**0.49**	**145**			Pg	**Pg**	**20 50 38.7**	**+0.2**
BADI						Sg	**Sb**	**20 50 46.9**	**0.0**
	903nm,0.6s								
BLLA	**Bellaria**	**0.50**	**62**			Pg	**Pb**	**20 50 39.1**	**-0.7**
BLLA	**Bellaria**	**0.50**	**62**			Pg	**Pb**	**20 50 39.1**	**-0.7**
ATMC	**Monte Cedrone**	**0.53**	**152**			Pg	**Pg**	**20 50 39.2**	**0.0**
ATMC						Sg	**Sb**	**20 50 48.9**	**+1.0**
	1μm,0.8s								
ATMC	**Monte Cedrone**	**0.53**	**152**			Pg	**Pg**	**20 50 39.2**	**0.0**
MTRZ	**Monterenzio**	**0.54**	**329**			Pg	**Pg**	**20 50 39.3**	**-0.3**
	3μm,0.4s								
MTRZ	**Monterenzio**	**0.54**	**329**			Pg	**Pg**	**20 50 39.3**	**-0.3**
	3μm,0.4s								
PTF	**Prato**	**0.57**	**275**			Pg	**Pg**	**20 50 40.1**	**0.0**
PTF						Sg	**Sb**	**20 50 48.9**	**-0.3**
PTF	**Prato

SNTG	Esanatoglia	1.03	129		Pg		Pb	20 50 48.8	0.0	
	287nm,0.8s									
TRIF	Trifonti	1.06	221		Pg		Pn	20 50 50.0	+0.1	
	214nm,0.5s									
TRIF	Trifonti	1.06	221		Pg		Pn	20 50 50.0	+0.1	
	214nm,0.5s									
SACS	San Casciano d	1.06	178		Pg		Pg	20 50 49.5	+0.1	
	278nm,0.5s									
SASS	Sassa	1.07	233		Pg		Pg	20 50 49.3	-0.3	
	213nm,0.8s									
SASS	Sassa	1.07	233		Pg		Pg	20 50 49.3	-0.3	
	213nm,0.8s									
SARO	Sassorosso	1.08	285		P		Pg	20 50 49.7	-0.1	
VLC	Villacollemand	1.09	284		Pg		Pg	20 50 49.4	-0.5	
	210nm,0.8s									
VLC	Villacollemand	1.09	284		Pg		Pg	20 50 49.4	-0.5	
	210nm,0.8s									
ARCI	Arcidosso	1.10	195		Pg		Pg	20 50 49.9	-0.1	
	678nm,1.1s									
ARCI	Arcidosso	1.10	195		Pg		Pg	20 50 49.9	-0.1	
	678nm,1.1s									
CING	Cingoli	1.11	118		Pg		Pb	20 50 50.2	-0.1	
	368nm,1.1s									
CING	Cingoli	1.11	118		Pg		Pb	20 50 50.2	-0.1	
	368nm,1.1s									
MCIV	Monte Civitell	1.14	187		Pg		Pg	20 50 50.9	0.0	
	329nm,1.6s									
MCIV	Monte Civitell	1.14	187		Pg		Pg	20 50 50.9	0.0	
	329nm,1.6s									
ERBM	Eremo	1.16	296		Pg		Pn	20 50 52.3	+1.0	
	603nm,1.3s									
ERBM	Eremo	1.16	296		Pg		Pn	20 50 52.3	+1.0	
	603nm,1.3s									
CESI	CESI - Serrava	1.19	140		Pg		Pg	20 50 50.9	-0.8	
	79nm,0.7s									
CESI	CESI - Serrava	1.19	140		Pg		Pg	20 50 50.9	-0.8	
	79nm,0.7s									
FDMO	Fiordimonte	1.25	134		Pg		Pn	20 50 52.2	-0.3	
	180nm,0.8s									
FDMO	Fiordimonte	1.25	134		Pg		Pn	20 50 52.2	-0.3	
	180nm,0.8s									
LATE	Laterza	1.30	182		Pg		Pn	20 50 53.6	+0.4	
	509nm,1.4s									
LATE	Laterza	1.30	182		Pg		Pn	20 50 53.6	+0.4	
	509nm,1.4s									
AOI	Ancona	1.32	105		Pg		Pg	20 50 55.0	+0.8	
	345nm,1.3s									
AOI	Ancona	1.32	105		Pg		Pg	20 50 55.0	+0.8	
	345nm,1.3s									
CASP	Castiglione de	1.33	213		Pg		Pn	20 50 52.9	-0.7	
	105nm,0.6s									
CASP	Castiglione de	1.33	213		Pg		Pn	20 50 52.9	-0.7	
	105nm,0.6s									
GRAM	Graiana	1.41	295		P		Pg	20 50 55.8	-0.3	
TEOL	Teolo	1.45	355⇑		ePg		Pn	20 50 54.9	-0.4	
TEOL					eSg		Sg	20 51 15.2	-0.5	
TEOL	Teolo	1.45	355		ePg		Pn	20 50 54.9	-0.4	
TEOL					eSg		Sg	20 51 15.2	-0.5	
BALD	Monte Baldo	1.92	338		ePn		Pn	20 51 01.9	+0.1	
BALD	Monte Baldo	1.92	338		ePn		Pn	20 51 01.9	+0.1	
CGRP	Cima Grappa	1.97	359⇓		ePn		Pn	20 51 01.9	-0.6	
CGRP	Cima Grappa	1.97	359		ePn		Pn	20 51 01.9	-0.6	
DDS	Dosso del Somm	2.02	347		ePn		Pn	20 51 03.0	-0.3	
DDS	Dosso del Somm	2.02	347		ePn		Pn	20 51 03.0	-0.3	
PANI	Panarotta	2.17	350		ePn		Pn	20 51 05.3	0.0	
PANI	Panarotta	2.17	350		ePn		Pn	20 51 05.3	0.0	
RNI	Roncone	2.25	337		ePn		Pn	20 51 06.5	+0.1	
RNI	Roncone	2.25	337		ePn		Pn	20 51 06.5	+0.1	
MLNI	MaInisio	2.30	13⇓		ePn		Pn	20 51 06.5	-0.5	
MLNI	MaInisio	2.30	13		ePn		Pn	20 51 06.5	-0.5	
SABO	M.te Sabotino	2.41	30⇑		ePn		Pn	20 51 07.9	-0.5	
SABO	M.te Sabotino	2.41	30		ePn		Pn	20 51 07.9	-0.5	
CIMO	Cimolais	2.43	10		ePn		Pn	20 51 08.0	-0.8	
CIMO	Cimolais	2.43	10		ePn		Pn	20 51 08.0	-0.8	
PCP	Piancastagn	2.46	286		P		Pn	20 51 08.2	-1.0	
PCP					S		Sn	20 51 36.5	-2.8	
MPRI	Monte Prat	2.46	19		ePn		Pn	20 51 08.8	-0.4	
MPRI	Monte Prat	2.46	19		ePn		Pn	20 51 08.8	-0.4	
COLI	Coloredo	2.47	25⇑		ePn		Pn	20 51 08.6	-0.7	
COLI	Coloredo	2.47	25		ePn		Pn	20 51 08.6	-0.7	
BUA	Buia	2.47	21		ePn		Pn	20 51 09.1	-0.2	
BUA	Buia	2.47	21		ePn		Pn	20 51 09.1	-0.2	
PGF	Pioggiola	2.49	238		ePn		Pn	20 51 09.4	-0.3	
	SNR=1.0									
PGF					eSn		Sn	20 51 38.9	-1.3	
	12nm,0.3s,SNR=1.0									
PGF	Pioggiola	2.49	238		ePn		Pn	20 51 09.4	-0.3	
	SNR=1.0									
PGF					eSn		Sn	20 51 38.9	-1.3	
	6.0nm,0.3s,SNR=1.0									
BAD	Bernadia	2.52	22⇑		ePn		Pn	20 51 09.3	-0.7	
BAD	Bernadia	2.52	22		ePn		Pn	20 51 09.3	-0.7	
VINO	Villanova	2.55	23⇑		ePn		Pn	20 51 09.6	-0.8	
VINO	Villanova	2.55	23		ePn		Pn	20 51 09.6	-0.8	
OZOL	Ozolo	2.56	347		ePn		Pn	20 51 11.2	+0.7	
OZOL	Ozolo	2.56	347		ePn		Pn	20 51 11.2	+0.7	
DRE	Drenchia	2.59	29		ePn		Pn	20 51 10.5	-0.5	
DRE	Drenchia	2.59	29		ePn		Pn	20 51 10.5	-0.5	
ROBS	Robic	2.61	26		iPn		Pn	20 51 10.9	-0.3	
ROBS					iSn		Sn	20 51 42.0	-0.8	
	comp=Z,26nm,0.1s									
ROBS	Robic	2.61	26		Pn		Pn	20 51 10.9	-0.3	
ROBS					iSn		Sn	20 51 42.0	-0.8	
	comp=Z,26nm,0.1s									
CARE	Lago del Cares	2.64	342		ePn		Pn	20 51 12.6	+0.7	
CARE	Lago del Cares	2.64	342		ePn		Pn	20 51 12.6	+0.7	
ZOU	Zoufplan	2.76	16		ePn		Pn	20 51 13.1	-0.3	
LSR	Lussari	2.82	24		ePn		Pn	20 51 13.9	-0.3	
LSR	Lussari	2.82	24		ePn		Pn	20 51 13.9	-0.3	
IMI	Imperia	2.87	271		P		Pn	20 51 14.3	-0.4	
IMI					S		Sn	20 51 45.3	-4.0	
ABTA	Abfaltersbach	2.87	9		ePn		Pn	20 51 15.3	+0.5	
	comp=Z,26nm,0.6s,SNR=13									
ABTA					iSn		Sn	20 51 51.0	+1.5	
	comp=Z,20nm,0.5s									
ABTA	Abfaltersbach	2.87	9		Pn		Pn	20 51 15.3	+0.5	
	comp=Z,26nm,0.6s,SNR=13									
ABTA					Sn		Sn	20 51 51.0	+1.5	
	comp=Z,20nm,0.5s									
UDBI	Udbina	2.88	76		ePn		Pn	20 51 16.3	+1.4	
UDBI					Sn		Sn	20 51 50.3	+0.8	
UDBI	Udbina	2.88	76		ePn		Pn	20 51 16.2	+1.3	
UDBI					Sn		Sn	20 51 50.3	+0.8	
ACOM	Acomizza, Ital	2.88	23⇓		ePn		Pn	20 51 14.9	-0.2	
ACOM	Acomizza, Ital	2.88	23		ePn		Pn	20 51 14.9	-0.2	
MYKA	Terra Mystica	3.00	24		iPn		Pn	20 51 16.8	+0.3	
	comp=Z,1.9nm,0.3s									
MYKA					iSn		Sn	20 51 53.3	+0.8	
	comp=Z,15nm,0.4s									
MYKA	Terra Mystica	3.00	24		Pn		Pn	20 51 16.8	+0.3	
	comp=Z,1.9nm,0.3s									
MYKA					Sn		Sn	20 51 53.3	+0.8	
	comp=Z,15nm,0.4s									
MOZS	Mozjanca	3.00	37		iPn		Pn	20 51 16.4	-0.2	
MOZS					iSn		Sn	20 51 53.4	+0.7	
MOZS	Mozjanca	3.00	37		iPn		Pn	20 51 16.4	-0.2	
MOZS					iSn		Sn	20 51 53.4	+0.7	
OZLJ	Ozalj	3.08	55		ePn		Pn	20 51 18.0	+0.4	
OZLJ					Sn		Sn	20 51 52.4	-2.2	
OZLJ	Ozalj	3.08	55		ePn		Pn	20 51 18.0	+0.4	
OZLJ					Sn		Sn	20 51 52.3	-2.2	
PDKS	Podkum	3.10	45		iPn		Pn	20 51 17.7	-0.2	
PDKS					iSn		Sn	20 51 55.8	+0.8	
PDKS	Podkum	3.10	45		iPn		Pn	20 51 17.7	-0.2	
PDKS					iSn		Sn	20 51 55.8	+0.8	
SBF	Sospel	3.20	271		ePn		Pn	20 51 18.9	-0.4	
	SNR=1.0									
SBF					eSn		Sn	20 51 56.6	-0.9	
	comp=Z,23nm,0.5s,SNR=1.0									
SBF	Sospel	3.20	271		ePn		Pn	20 51 18.9	-0.4	
	SNR=1.0									
SBF					eSn		Sn	20 51 56.6	-0.9	
	comp=Z,12nm,0.5s,SNR=1.0									
FETA	Feichten	3.21	346		iPn		Pn	20 51 21.5	+2.0	
	comp=Z,13nm,0.4s,SNR=26									
FETA					iSn		Sn	20 51 58.4	+0.5	
	comp=Z,22nm,0.9s									
FETA	Feichten	3.21	346		Pn		Pn	20 51 21.5	+2.0	
	comp=Z,13nm,0.4s,SNR=26									
FETA					Sn		Sn	20 51 58.4	+0.5	
	comp=Z,22nm,0.9s									
ENR	Entracque	3.21	277		P		Pn	20 51 19.5	0.0	
OBKA	Obir	3.22	35		iPn		Pn	20 51 19.8	+0.1	
	comp=Z,2.7nm,0.3s									
OBKA					iSn		Sn	20 51 58.6	+0.5	
	comp=Z,19nm,0.5s									
OBKA	Obir	3.22	35		ePn		Pn	20 51 19.7	+0.1	
OBKA	Obir	3.22	35		Pn		Pn	20 51 19.7	+0.1	
OBKA					Sn		Sn	20 51 58.6	+0.5	
	comp=Z,19nm,0.5s									
KBA	Koelnbreinsper	3.33	18		iPn		Pn	20 51 21.8	+0.5	
	comp=Z,3.2nm,0.3s									
KBA					iSn		Sn	20 52 01.9	+0.9	
	comp=Z,18nm,0.7s									
KBA	Koelnbreinsper	3.33	18		ePn		Pn	20 51 21.7	+0.4	
KBA	Koelnbreinsper	3.33	18		Pn		Pn	20 51 21.7	+0.4	
KBA					Sn		Sn	20 52 01.9	+0.9	
	comp=Z,18nm,0.7s									
WTTA	Wattenberg	3.35	357		iPn		Pn	20 51 23.0	+1.5	
	comp=Z,4.6nm,0.3s									
WTTA					iSn		Sn	20 52 01.3	-0.3	
	comp=Z,21nm,0.5s									
WTTA	Wattenberg	3.35	357		ePN		Pn	20 51 23.2	+1.6	
WTTA					eSN		Sn	20 52 04.5	+2.9	
WTTA	Wattenberg	3.35	357		ePn		Pn	20 51 23.9	+2.3	
WTTA					eSn		Sn	20 52 04.4	+2.9	
WTTA	Wattenberg	3.35	357		Pn		Pn	20 51 23.9	+2.3	
WTTA					Sn		Sn	20 52 01.3	-0.3	
	comp=Z,21nm,0.5s									
WATA	Walderalm	3.43	357		iPn		Pn	20 51 24.7	+2.1	
	comp=Z,7.5nm,0.2s,SNR=15									
WATA					iSn		Sn	20 52 01.8	-1.5	
	comp=Z,14nm,0.4s									
WATA	Walderalm	3.43	357		Pn		Pn	20 51 24.7	+2.1	
	comp=Z,7.5nm,0.2s,SNR=15									
WATA					Sn		Sn	20 52 01.8	-1.5	
	comp=Z,14nm,0.4s									
MOTA	Moosalm	3.47	352		iPn		Pn	20 51 25.4	+2.2	
	comp=Z,5.7nm,0.4s,SNR=16									
MOTA					iSn		Sn	20 52 05.9	+1.5	
	comp=Z,22nm,0.5s									
MOTA	Moosalm	3.47	352		Pn		Pn	20 51 25.4	+2.2	
	comp=Z,5.7nm,0.4s,SNR=16									
MOTA					Sn		Sn	20 52 05.9	+1.5	
	comp=Z,22nm,0.5s									
SOKA	Soboth	3.56	38		iPn		Pn	20 51 24.5	+0.2	
	comp=Z,1.1nm,0.2s									
SOKA					iSn		Sn	20 52 05.8	-0.6	
	comp=Z,4.8nm,0.5s									
SOKA	Soboth	3.56	38		Pn		Pn	20 51 24.5	+0.2	
	comp=Z,1.1nm,0.2s									
SOKA					Sn		Sn	20 52 05.8	-0.6	
	comp=Z,4.8nm,0.5s									
BISS	Bistriski jare	3.58	39		iPn		Pn	20 51 28.2	+3.7	
BISS	Bistriski jare	3.58	39		iPn		Pn	20 51 28.2	+3.7	
PLONS	Plons/SG	3.59	332		ePn		Pn	20 51 27.3	+2.6	
PLONS					eSn		Sn	20 52 09.6	+2.5	
PLONS	Plons/SG	3.59	332		Pn		Pn	20 51 27.3	+2.6	
PLONS					Sn		Sn	20 52 09.6	+2.5	
DAVA	Damuels	3.65	338		iPn		Pn	20 51 26.8	+1.2	
	comp=Z,8.7nm,0.3s,SNR=11									
DAVA					iSn		Sn	20 52 07.8	-0.9	
	comp=Z,76nm,0.6s									
DAVA	Damuels	3.65	338		ePn		Pn	20 51 28.1	+2.5	
DAVA					eSn		Sn	20 52 12.2	+3.5	
DAVA	Damuels	3.65	338		Pn		Pn	20 51 28.1	+2.5	
DAVA					Sn		Sn	20 52 07.8	-0.9	
	comp=Z,76nm,0.6s									
RETA	Reutte	3.66	348		iPn		Pn	20 51 27.7	+2.1	
	comp=Z,2.8nm,0.2s									
RETA					iSn		Sn	20 52 10.9	+2.1	
	comp=Z,30nm,0.5s									
RETA	Reutte	3.66	348		Pn		Pn	20 51 27.7	+2.1	
	comp=Z,2.8nm,0.2s									
RETA					Sn		Sn	20 52 10.9	+2.1	
	comp=Z,30nm,0.5s									
OBER	Oberstdorf	3.66	343		ePn		Pn	20 51 27.7	+2.0	
OBER					eSn		Sn	20 52 11.6	+2.6	
OBER	Oberstdorf	3.66	343		Pn		Pn	20 51 27.7	+2.0	
OBER					Sn		Sn	20 52 11.6	+2.6	
MBDF	Montbardon	3.74	284		ePn		Pn	20 51 26.6	-0.2	
	SNR=1.0									
MBDF	Montbardon	3.74	284		ePn		Pn	20 51 26.6	-0.2	
	SNR=1.0									
RRL	Rocca Remolon	3.77	287		P		Pn	20 51 30.2	+2.9	
FRF	La Foret Royal	3.79	266		ePn		Pn	20 51 27.3	-0.1	
	SNR=1.0									
FRF					eSn		Sn	20 52 09.1	-3.0	
	comp=Z,11nm,0.4s,SNR=1.0									
FRF	La Foret Royal	3.79	266		ePn		Pn	20 51 27.3	-0.1	
	SNR=1.0									
FRF					eSn		Sn	20 52 09.1	-3.0	
	comp=Z,5.3nm,0.4s,SNR=1.0									
LMR	La Mourre	3.93	263		ePn		Pn	20 51 28.4	-0.8	
	SNR=1.0									
LMR					eSn		Sn	20 52 11.8	-3.5	
	comp=Z,3.3nm,0.2s									
LMR	La Mourre	3.93	263		ePn		Pn	20 51 28.4	-0.8	
	SNR=1.0									
LMR					eSn		Sn	20 52 11.8	-3.5	
	comp=Z,1.6nm,0.2s									
LPG	La Plagne	3.97	295		ePn		Pn	20 51 30.9	+0.8	
	SNR=1.0									
LPG	La Plagne	3.97	295		ePn		Pn	20 51 30.9	+0.8	
	SNR=1.0									
LPL	La Plagne	3.99	295		ePn		Pn	20 51 33.8	+3.5	
LPL	La Plagne	3.99	295		ePn		Pn	20 51 33.8	+3.5	
WILA	Wila	4.07	330		ePn		Pn	20 51 33.0	+1.7	
WILA					eSn		Sn	20 52 19.5	+0.6	
WILA	Wila	4.07	330		Pn		Pn	20 51 33.0	+1.7	
WILA					Sn		Sn	20 52 19.5	+0.6	
ARSA	Arzberg	4.21	36		iPn		Pn	20 51 33.0	-0.3	
	comp=Z,3.4nm,0.3s									
ARSA					iSn		Sn	20 52 21.4	-1.1	
	comp=Z,3.2nm,0.5s									
ARSA	Arzberg	4.21	36		ePn		Pn	20 51 33.1	-0.1	
ARSA	Arzberg	4.21	36		Pn		Pn	20 51 33.1	-0.1	
ARSA					Sn		Sn	20 52 21.4	-1.1	
	comp=Z,3.2nm,0.5s									
MOA	Molln	4.28	22		iPn		Pn	20 51 34.9	+0.7	
	comp=Z,1.4nm,0.1s									
MOA					iSn		Sn	20 52 23.5	-0.6	
	comp=Z,12nm,0.4s									
MOA	Molln	4.28	22		ePn		Pn	20 51 34.9	+0.7	
MOA					eSn		Sn	20 52 23.7	-0.4	
MOA	Molln	4.28	22		Pn		Pn	20 51 34.9	+0.7	
MOA					Sn		Sn	20 52 23.7	-0.4	
OG01	Vacheresse	4.39	305		P		Pn	20 51 37.5	+1.8	
OG01	Vacheresse	4.39	305		P		Pn	20 51 37.5	+1.8	
ORIF	Oris-en-Rattie	4.40	285		ePn		Pn	20 51 37.4	+1.6	
	SNR=1.0									
ORIF					eSn		Sn	20 52 26.1	-1.0	
	comp=Z,10.0nm,0.6s									
ORIF	Oris-en-Rattie	4.40	285		ePn		Pn	20 51 37.4	+1.6	
	SNR=1.0									
ORIF					eSn		Sn	20 52 26.1	-1.0	
	comp=Z,5.0nm,0.6s									
BALST	Balsthal	4.50	321		ePn		Pn	20 51 38.6	+1.4	
BALST					eSn		Sn	20 52 28.2	-1.4	
BALST	Balsthal	4.50	321		Pn		Pn	20 51 38.6	+1.4	
BALST					Sn		Sn	20 52 28.2	-1.4	
SLE	Schleitheim	4.51	330		ePn		Pn	20 51 38.5	+1.1	
SLE					eSn		Sn	20 52 28.1	-1.8	
SLE	Schleitheim	4.51	330		Pn		Pn	20 51 38.5	+1.1	
SLE					Sn		Sn	20 52 28.1	-1.8	
SMRF	Simiane la Rot	4.54	273		ePn		Pn	20 51 38.5	+0.8	
	SNR=1.0									
SMRF	Simiane la Rot	4.54	273		ePn		Pn	20 51 38.5	+0.8	
	SNR=1.0									
SPAK	Spaichingen-Ko	4.71	334		P		Pn	20 51 39.7	-0.3	
SPAK					S		Sn	20 52 33.5	-1.2	
FELD	Feldberg im Sc	4.79	327		P		Pn	20 51 41.9	+0.6	
FELD					S		Sn	20 52 35.7	-1.1	
CABF	La Chapelle	4.88	306		ePn		Pn	20 51 44.4	+1.9	
	SNR=1.0									
CABF					eSn		Sn	20 52 40.5	+1.4	
	comp=Z,3.7nm,0.4s									
CABF	La Chapelle	4.88	306		ePn		Pn	20 51 44.4	+1.9	
	SNR=1.0									
CABF					eSn		Sn	20 52 40.5	+1.4	
	comp=Z,1.9nm,0.4s									
CONA	Conrad Observa	4.89	33		iPn		Pn	20 51 42.5	-0.1	
	comp=Z,2.3nm,0.3s									
CONA					iSn		Sn	20 52 39.4	+0.1	
	comp=Z,7.1nm,0.5s									
CONA	Conrad Observa	4.89	33		Pn		Pn	20 51 42.5	-0.1	
	comp=Z,2.3nm,0.3s									
CONA					Sn		Sn	20 52 39.4	+0.1	
	comp=Z,7.1nm,0.5s									
LOMF	Lomont	4.92	316		P		Pn	20 51 44.2	+1.1	
LOMF					S		Sn	20 52 40.0	-0.1	
LOMF	Lomont	4.92	316		P		Pn	20 51 44.2	+1.1	
LOMF					S		Sn	20 52 40.0	-0.1	
BFO	Black Forest	5.05	332		ePn		Pn	20 51 45.6	+0.8	
BFO					eSn		Sn	20 52 40.4	-2.8	
BFO	Black Forest	5.05	332		Pn		Pn	20 51 45.6	+0.8	
BFO					Sn		Sn	20 52 40.4	-2.8	
GEC2	GERESS Array S	5.10	14		ePn		Pn	20 51 45.4	0.0	
GEC2					eSn		Sn	20 52 42.3	-2.0	
GEC2	GERESS Array S	5.10	14		Pn		Pn	20 51 45.4	0.0	
GEC2					Sn		Sn	20 52 42.3	-2.0	
MOF	Molkenrain	5.14	322		P		Pn	20 51 46.5	+0.5	
MOF					S		Sn	20 52 45.0	-0.3	
MOF	Molkenrain	5.14	322		P		Pn	20 51 46.5	+0.5	
MOF					S		Sn	20 52 45.0	-0.3	
VIVF	Saint-Julien-l	5.24	283		ePn		Pn	20 51 49.4	+2.1	
	SNR=1.0									
VIVF	Saint-Julien-l	5.24	283		ePn		Pn	20 51 49.4	+2.1	
	SNR=1.0									
HINF	Hinteralfeld	5.24	320		ePn		Pn	20 51 48.0	+0.7	
	SNR=1.0									
HINF					eSn		Sn	20 52 46.7	-1.1	
	comp=Z,17nm,0.3s,SNR=1.0									
HINF	Hinteralfeld	5.24	320		ePn		Pn	20 51 48.0	+0.7	
	SNR=1.0									
HINF					eSn		Sn	20 52 46.7	-1.1	
	comp=Z,8.5nm,0.3s,SNR=1.0									
WET	Wettzell	5.28	7		ePn		Pn	20 51 47.9	0.0	
WET					eSn		Sn	20 52 46.7	-2.1	
WET	Wettzell	5.28	7		Pn		Pn	20 51 47.9	0.0	
WET					Sn		Sn	20 52 46.7	-2.1	
KHC	Kasperske Hory	5.35	12		ePN		Pn	20 51 48.4	-0.5	
KHC					eSN		Sn	20 52 48.3	-2.3	
KHC					ex		x	20 53 05.6		
KHC	Kasperske Hory	5.35	12		Pn		Pn	20 51 48.4	-0.5	
KHC					Sn		Sn	20 52 48.3	-2.3	
ECH	Echery	5.40	324		P		Pn	20 51 50.4	+0.8	
ECH	Echery	5.40	324		ePn		Pn	20 51 50.6	+1.0	
ECH					eSn		Sn	20 52 50.0	-1.8	
ECH	Echery	5.40	324		P		Pn	20 51 50.4	+0.8	
ECH					Sn		Sn	20 52 50.0	-1.8	
WLS	Welschbruch	5.48	327		P		Pn	20 51 51.2	+0.5	
WLS					S		Sn	20 52 53.1	-0.6	
WLS	Welschbruch	5.48	327		P		Pn	20 51 51.2	+0.5	
WLS					S		Sn	20 52 53.1	-0.6	
CDF	Champ du Feu	5.51	326		ePn		Pn	20 51 51.6	+0.5	
	SNR=1.0									
CDF					eSn		Sn	20 52 53.1	-1.4	
	comp=Z,12nm,0.4s									
CDF	Champ du Feu	5.51	326		ePn		Pn	20 51 51.6	+0.5	
	SNR=1.0									
CDF					eSn		Sn	20 52 53.1	-1.4	
	comp=Z,5.8nm,0.4s									
HAU	Haudompre	5.61	319		ePn		Pn	20 51 53.0	+0.6	
HAU					eSn		Sn	20 52 54.9	-2.0	
	comp=Z,34nm,0.4s,SNR=1.0									
HAU	Haudompre	5.61	319		ePn		Pn	20 51 53.0	+0.6	
HAU					eSn		Sn	20 52 54.9	-2.0	
	comp=Z,17nm,0.4s,SNR=1.0									
LASF	Ste Croix	5.77	274		ePn		Pn	20 51 57.0	+2.3	
	SNR=1.0									
LASF	Ste Croix	5.77	274		ePn		Pn	20 51 57.0	+2.3	
	SNR=1.0									
THEF	They Montfort	5.94	319		P		Pn	20 51 58.4	+1.5	
THEF	They Montfort	5.94	319		P		Pn	20 51 58.4	+1.5	
PLDF	La Plantade	6.20	292		P		Pn	20 52 03.7	+3.2	
SMF	Signal de Mont	6.28	299		ePn		Pn	20 52 01.0	-0.6	
	SNR=1.0									
SMF					eSn		Sn	20 53 12.9	-0.5	
	comp=Z,14nm,0.5s									
SMF	Signal de Mont	6.28	299		ePn		Pn	20 52 01.0	-0.6	
	SNR=1.0									
SMF					eSn		Sn	20 53 12.9	-0.5	
	comp=Z,7.2nm,0.5s									

VCR	Vista de Mar	0.86	217	‖ *i*P	Pn	20 51 39.0	-3.4	246A	Jackson Lee, B	21.42	351
JCR	Jicaral	0.96	181	‖ *e*P	Pn	20 51 40.1	-3.6		baz=169		
JCR				*e*S	Sn	20 51 56.1	-0.2	440A	Kirbyville	21.47	339
CGA2	Cerro Gallo 2	1.01	142	‖ *i*P	Pn	20 51 40.0	-4.6		baz=156		
URSC	Urasca	1.63	127	‖ *i*P	Pn	20 51 52.3	-0.7	342A	Flagon Creek P	21.52	343
CNGN	Cerro Negro	2.29	317	*e*P	Pn	20 52 01.1	-0.9		baz=161		
ESTN	Estel	2.58	331	*e*P	Pn	20 52 04.7	-1.4	ABVI	Anegada Island	21.55	66
BRU2	Volcan	3.11	130	*e*P	Pn	20 52 14.6	+1.2		164nm,1.1s		
TBS2		3.14	130	*e*P	Pn	20 52 14.9	+1.1	245A	Little AP, Sta	21.57	349
CNCH	Conchagua	3.62	313	*e*P	Pn	20 52 19.2	-1.1		baz=167		
BLLM	Bellamira	4.03	311	*e*P	Pn	20 52 24.5	-1.4	538A	Harpers Horsep	21.59	335
LCY	Lacayo	4.05	310	*e*P	Pn	20 52 23.8	-2.6		baz=152		
PACA	Pacayal	4.11	310	*e*P	Pn	20 52 25.7	-1.4	636A	Smothers Creek	21.66	331
LFRS	El Faro	4.77	306	*e*P	Pn	20 52 34.3	-1.9		baz=147,SNR=11		
LFRS				*e*S	Sn	20 53 29.8	-0.5	244A	Avery, Jackson	21.74	347
LBRS	Las Brisas	4.82	307	*e*P	Pn	20 52 34.3	-2.5		baz=165		
BOQS	Boqueron	5.01	306	*e*P	Pn	20 52 38.5	-1.1	243A	Waterproof	21.77	345
ZANG	Zanguenga, Cho	5.48	109	*e*P	Pn	20 52 45.7	-0.2		baz=163		
CCIG	Comitan	8.73	309	*e*Pn	Pn	20 53 31.8	+1.1	439A	Center Grove,	21.81	337
MOTC	Monteria, Cord	9.52	101	*e*P	Pn	20 53 41.0	-0.3		baz=154		
DBBC	Dabeiba	9.56	113	*e*P	Pn	20 53 43.3	+1.3	537A	Green Hill Far	21.82	333
SJCC	San Jacinto, C	9.81	94	*e*P	Pn	20 53 42.1	-3.2		baz=149		
TEIG	Tepich	9.84	342	Pn	Pn	20 53 45.1	-0.6	VBMS	Vicksburg	21.88	348
	0.4nm,0.3s,baz=90,slow=20,SNR=3.8								baz=166		
TEIG				LR	LR	20 56 55.1		VBMS	Vicksburg	21.88	348
	comp=Z,504nm,19.9s,baz=92,slow=34								612nm,1.6s		
TEIG	Tepich	9.84	342	*e*Pn	Pn	20 53 47.6	+1.9	734A	La Parita Cree	21.91	327
MTDJ	Mount Denham	10.38	44	*e*Pn	Pn	20 53 57.2	+3.9		baz=142		
HELC	Santa Helena	10.52	115	*e*P	Pn	20 53 55.7	+0.3	635A	Leesville	21.94	329
HELC	Santa Helena	10.52	115	*e*Pn	Pn	20 53 56.0	+0.6		baz=145		
GUYC	Guyana, Colomb	11.11	119	*e*P	Pn	20 54 04.2	+0.7	147A	Livingston	21.95	353
CMIG	Matias Romero	11.36	304	Pn	Pn	20 54 06.4	-0.1		baz=172,SNR=14		
	2.9nm,0.3s,baz=117,slow=9.3,SNR=20							833A	Chaparral WMA,	21.97	324
CMIG				LR	LR	20 58 41.0			baz=140		
	comp=Z,7µm,21.1s,baz=118,slow=39							146A	Union	22.02	351
NORC	Norcasia	11.39	116	*e*P	Pn	20 54 09.3	+2.2		baz=170		
BRRC	Barranca, Sant	11.84	107	*e*P	Pn	20 54 13.8	+0.7	438A	Sam Houston St	22.05	336
OCAC	Ocana	11.90	101	*e*P	Pn	20 54 10.4	-3.7		baz=152		
ROSC	El Rosal	12.22	118	Pn	Pn	20 54 20.8	+2.1	340A	Bronson	22.05	340
	0.4nm,0.3s,baz=323,slow=13,SNR=7.1								baz=157		
ROSC				LR	LR	20 58 55.9		242A	Grayson	22.12	344
	comp=Z,3µm,20.6s,baz=324,slow=37								baz=162		
ROSC	El Rosal	12.22	118	*e*Pn	Pn	20 54 19.6	+0.9	145A	Houston Renfro	22.13	349
PRAC	Prado	12.35	124	*e*Pn	Pn	20 54 22.0	+1.9		baz=168		
OTAV	Otavalo	12.42	147	*e*Pn	Pn	20 54 21.0	-0.4	536A	Bastrop	22.16	332
BARC	Barichara	12.51	109	*e*P	Pn	20 54 23.4	+1.0		baz=148		
PAYG	Puerto Ayora	12.53	205	*e*Pn	Pn	20 54 24.2	+1.7	LRAL	Lakeview Retre	22.18	356
CBRI	Barrientos, No	12.53	103	*e*P	Pn	20 54 21.2	-1.6		142nm,1.4s		
CHIC	Chingaza	12.83	118	*e*P	Pn	20 54 29.7	+2.6	339A	Huntington	22.21	338
RUSC	La Rusia	12.86	111	*e*P	Pn	20 54 30.2	+2.7		baz=155		
RUSC	La Rusia	12.86	111	*e*Pn	Pn	20 54 28.4	+0.9	733A	Divot King Ran	22.22	325
GTBY	Guantanamo Bay	13.22	46	*e*Pn	Pn	20 54 34.3	+2.4		baz=141		
SJAC	San Juan de Ar	13.36	123	*e*P	Pn	20 54 34.8	+0.7	634A	China Grove, S	22.23	328
SDV	Santo Domingo	14.38	96	Pn	Pn	20 54 50.1	+2.0		baz=144		
	12nm,0.3s,baz=275,slow=12,SNR=4.4							144A	Alexander Plac	22.25	348
SDV				Sn	Sn	20 57 22.6	-4.0		baz=166		
	1.9nm,0.3s,baz=329,slow=12,SNR=2.6							241A	Mo Tay, Goldon	22.30	342
SDV				LR	LR	21 02 04.2			baz=160		
	comp=Z,2µm,19.1s,baz=298,slow=44							535A	Dale	22.37	331
SDV	Santo Domingo	14.38	96	*e*Pn	Pn	20 54 49.8	+1.7		baz=146		
SDV				Sn	Sn	20 57 22.6	-4.0	437A	Phantom Ranch,	22.39	334
TLIG	Tlapa	14.67	299	*e*Pn	Pn	20 54 52.1	+0.2		baz=151		
SDDR	Presa de Saban	15.62	57	*e*Pn	Pn	20 55 05.9	+1.6	SEUS	St. Eustatius	22.44	70
	49nm,1.0s								217nm,1.2s		
BANI	BANI	16.12	60	*e*Pn	Pn	20 55 12.0	+1.1	Z47A	Carrollton	22.44	353
GRTK	Grand Turk	17.10	50	*e*Pn	Pn	20 55 20.2	-2.9		baz=173,SNR=12		
	484nm,1.8s							RGRS	Roger Stewart	22.44	11
DWPF	Disney Wildern	17.54	11	*e*Pn	P	20 55 30.4	+1.1		428nm,0.4s		
	217nm,1.8s							SMRT	St. Maarten	22.50	69
MOIG	Morelia	17.83	302	*e*Pn	P	20 55 34.0	+1.1		218nm,1.7s		
	174nm,1.4s							338A	Crockett	22.52	337
MPR	Mayaguez	18.87	65	*e*P	P	20 55 40.9	-3.2		baz=153,SNR=5.2		
	194nm,1.9s							142A	Monroe	22.53	345
AGP	Aguadilla	18.94	64	*e*P	P	20 55 43.5	-1.3		baz=162		
	318nm,1.4s							GOGA	Godfrey	22.54	4
ATAH	Atahualpa	19.05	159	P	Pn	20 55 48.8	+1.5	GOGA			
	0.3nm,0.3s,baz=34,slow=21,SNR=3.6								comp=Z,86nm,1.1s		
ATAH				LR	LR	21 02 21.0		GOGA	Godfrey	22.54	4
	comp=Z,3µm,19.0s,baz=329,slow=34								comp=Z,86nm,1.1s		
646A	Port Sulphur	19.18	347	P	Pn	20 55 50.0	+1.6	143A	Socs Landing,	22.54	346
	baz=166								baz=164		
645A	Chauvin	19.24	345	P	Pn	20 55 49.7	+0.5	CSU	Charleston Sou	22.54	11
	baz=164							Z46A	Louisville	22.55	352
CELP	Cerrillos	19.32	66	*e*P	P	20 55 48.8	-0.2		baz=170		
SJG	San Juan	19.72	66	P	P	20 55 53.3	0.0	Z48A	Northport	22.56	355
	2.2nm,0.3s,baz=259,slow=8.6,SNR=9.8								baz=174,SNR=38		
HUMP	Col San Antoni	20.00	66	*e*P	P	20 55 56.4	0.0	240A	Hunter Patters	22.58	341
	90nm,1.3s								baz=158		
544A	White Castle	20.01	344	P	Pn	20 55 57.7	-0.6	436A	Wall Ranch, Ga	22.63	333
	baz=163								baz=149		
CBYP	Canovanas	20.04	66	*e*P	P	20 55 57.6	+0.7	NATX	Nacogdoches	22.64	338
	221nm,1.8s								baz=155		
PCRV	Puerto La Cruz	20.14	90	P	Pn	20 55 59.7	-0.3	NATX	Nacogdoches	22.64	338
	15nm,0.7s,baz=288,slow=5.8,SNR=11								comp=Z,97nm,1.3s		
PCRV				LR	LR	21 04 51.5		NHSC	New Hope	22.64	11
	comp=Z,520nm,19.5s,baz=272,slow=40								comp=Z,99nm,1.1s		
447A	Lucedale	20.15	351	P	Pn	20 55 59.7	-0.3	337A	Centerville	22.71	335
	baz=170								baz=152		
448A	Bay Minette	20.18	353	P	Pn	20 55 59.7	-0.5	633A	Saathoff Ranch	22.73	327
	baz=172								baz=142		
446A	Poplarville	20.26	349	P	Pn	20 56 01.0	-0.3	239A	Gary	22.80	339
	baz=168								baz=156		
BRAL	Brewton	20.33	355	*e*P	Pn	20 56 01.7	-0.4	534A	Blanco	22.81	329
445A	Amite	20.40	347	P	Pn	20 56 02.6	-0.3		baz=144,SNR=11		
	baz=165							Z45A	Winona	22.84	350
738A	Farr-Stevens R	20.47	333	P	Pn	20 56 03.1	-0.6		baz=169		
	baz=149							141A	Papa Simpson,	22.84	343
444A	Pine Grove	20.48	346	P	Pn	20 56 03.1	-0.7		baz=160		
	baz=164							Z44A	Pea Ridge, Bel	22.88	348
ZAIG	Zacatecas	20.48	308	*e*P	P	20 56 02.0	0.0		baz=167		
	33nm,1.3s							Z43A	Armstrong Fami	22.99	347
KVTX	Kingsville	20.53	326	*e*P	P	20 56 02.4	+0.3		baz=165		
	50nm,0.8s							435B	Jarrell	23.00	332
TIGA	Tifton	20.57	4	P	Pn	20 56 04.1	-0.8		baz=147		
	baz=184							GRGR	Grenville	23.02	84
TIGA	Tifton	20.57	4	*e*P	Pn	20 56 04.9	+0.1		comp=Z,291nm,1.3s		
	147nm,1.0s							238A	Jacksonville	23.02	338
541A	Lake Charles	20.57	340	P	P	20 56 03.0	+0.5		baz=154		
	baz=157							140A	Cam and Jess,	23.08	342
034A	Hebbronville	20.61	324	P	Pn	20 56 04.5	-0.9		baz=159		
	baz=139,SNR=5.5							Y47A	UCPARC, Winfie	23.11	354
348A	Jackson	20.66	353	P	Pn	20 56 05.3	-0.5		baz=173,SNR=18		
	baz=172							533A	Kerrville	23.14	328
347A	Saraland	20.73	352	P	Pn	20 56 06.6	-0.1		baz=143		
	baz=171,SNR=6.4							336A	Riesel	23.18	334
737A	Port Lavaca	20.77	331	P	Pn	20 56 06.5	-0.8		baz=150		
	baz=147							Y46A	Houston	23.21	352
443A	Delano Plantat	20.79	344	P	Pn	20 56 06.4	-1.0		baz=171,SNR=8.3		
	baz=162							Z42A	Norrel Spur, H	23.22	345
346A	Big Creek Wild	20.86	349	P	Pn	20 56 07.4	-0.9		baz=163		
	baz=168							237A	Washetta, Mont	23.29	336
CDVI	St. Croix	20.87	68	*e*P	P	20 56 06.5	+0.7		baz=153		
	90nm,1.0s							Y45A	Yeager Farm, C	23.30	351
STVI	Saint Thomas	20.87	67	*e*P	P	20 56 06.5	+0.6		baz=169		
	64nm,1.1s							GDHS	Morne Mazeau,	23.32	74
638A	Rosharon	20.88	334	P	Pn	20 56 07.3	-1.2		comp=Z,111nm,1.0s		
	baz=151							335A	Mody	23.35	333
345A	Thompson Farm,	20.89	348	P	Pn	20 56 07.7	-0.9		baz=148		
	baz=167							434A	Burnet	23.35	330
934A	Benavides	20.93	325	P	P	20 56 07.4	+1.0		baz=146,SNR=8.1		
	baz=141,SNR=6.3							Z41A	Richland Creek	23.43	344
442A	Mamou	20.93	342	P	Pn	20 56 08.3	-0.8		baz=161,SNR=5.6		
	baz=160							Y44A	Strider, Charl	23.51	349
540A	Vidor	20.99	338	P	Pn	20 56 08.7	-1.0		baz=168,SNR=15		
	baz=155							ANWB	Willy Bob	23.59	71
835A	Beeville	21.08	327	P	P	20 56 09.5	+1.5		comp=Z,55nm,0.8s		
	baz=143							Y43A	Makayla and Ka	23.60	348
539A	Cross D Ranch,	21.18	336	P	P	20 56 10.9	+1.8		baz=166		
	baz=153							Z40A	Long Farm, Mag	23.60	342
344A	Westbrook Farm	21.18	347	P	P	20 56 11.3	+2.2		baz=160		
	baz=165							138A	Matatall Enter	23.60	339
441A	DeRidder	21.21	340	P	P	20 56 11.2	+1.9		baz=155,SNR=6.3		
	baz=158							JSC	Jenkinsville	23.62	8
736A	Circle Diamond	21.23	330	P	P	20 56 11.6	+1.9	JSC			
	baz=146,SNR=6.6								comp=Z,209nm,1.9s		
343A	Vidalia	21.24	344	P	P	20 56 11.2	+1.5	JSC	Jenkinsville	23.62	8
	baz=162								comp=Z,209nm,1.9s		
637A	Eagle Lake	21.29	332	P	P	20 56 11.7	+1.5	433A	Art	23.71	329
	baz=148								baz=144,SNR=22		
248A	Dixon Mills	21.31	354	P	P	20 56 12.7	+2.2	Y42A	Garnett, Star	23.71	346
	baz=173,SNR=8.7								baz=164		
834A	Tilden	21.35	326	P	P	20 56 11.5	+0.6	334A	Lometa	23.77	331
	baz=141								baz=147,SNR=13		
933A	Laredo	21.37	323	P	P	20 56 11.8	+0.6	CCAR	Cane Creek	23.79	346
	baz=139								comp=Z,340nm,1.4s		
247A	Quitman	21.38	352	P	P	20 56 13.2	+2.1	137A	Heron Place, G	23.79	337
									baz=154		

	baz=171,SNR=16						
246A	Jackson Lee, B	21.42	351	P	P	20 56 13.4	+1.8
	baz=169						
440A	Kirbyville	21.47	339	P	P	20 56 13.0	+0.9
	baz=156						
342A	Flagon Creek P	21.52	343	P	P	20 56 13.3	+0.6
	baz=161						
ABVI	Anegada Island	21.55	66	*e*P	P	20 56 13.7	+0.6
	164nm,1.1s						
245A	Little AP, Sta	21.57	349	P	P	20 56 14.0	+0.8
	baz=167						
538A	Harpers Horsep	21.59	335	P	P	20 56 14.0	+0.5
	baz=152						
636A	Smothers Creek	21.66	331	P	P	20 56 15.3	+1.1
	baz=147,SNR=11						
244A	Avery, Jackson	21.74	347	P	P	20 56 15.8	+0.8
	baz=165						
243A	Waterproof	21.77	345	P	P	20 56 15.9	+0.5
	baz=163						
439A	Center Grove,	21.81	337	P	P	20 56 16.3	+0.5
	baz=154						
537A	Green Hill Far	21.82	333	P	P	20 56 16.6	+0.6
	baz=149						
VBMS	Vicksburg	21.88	348	P	P	20 56 17.0	+0.5
	baz=166						
VBMS	Vicksburg	21.88	348	*e*P	P	20 56 17.4	+0.9
	612nm,1.6s						
734A	La Parita Cree	21.91	327	P	P	20 56 16.3	-0.6
	baz=142						
635A	Leesville	21.94	329	P	P	20 56 16.5	-0.7
	baz=145						
147A	Livingston	21.95	353	P	P	20 56 19.1	+1.8
	baz=172,SNR=14						
833A	Chaparral WMA,	21.97	324	P	P	20 56 16.9	-0.7
	baz=140						
146A	Union	22.02	351	P	P	20 56 18.7	+0.7
	baz=170						
438A	Sam Houston St	22.05	336	P	P	20 56 18.7	+0.3
	baz=152						
340A	Bronson	22.05	340	P	P	20 56 18.8	+0.4
	baz=157						
242A	Grayson	22.12	344	P	P	20 56 19.1	0.0
	baz=162						
145A	Houston Renfro	22.13	349	P	P	20 56 19.8	+0.5
	baz=168						
536A	Bastrop	22.16	332	P	P	20 56 19.0	-0.7
	baz=148						
LRAL	Lakeview Retre	22.18	356	*e*P	P	20 56 20.4	+0.6
	142nm,1.4s						
339A	Huntington	22.21	338	P	P	20 56 20.1	0.0
	baz=155						
733A	Divot King Ran	22.22	325	P	P	20 56 19.1	-1.2
	baz=141						
634A	China Grove, S	22.23	328	P	P	20 56 19.7	-0.7
	baz=144						
144A	Alexander Plac	22.25	348	P	P	20 56 19.7	-0.9
	baz=166						
241A	Mo Tay, Goldon	22.30	342	P	P	20 56 19.4	-1.7
	baz=160						
535A	Dale	22.37	331	P	P	20 56 20.4	-1.5
	baz=146						
437A	Phantom Ranch,	22.39	334	P	P	20 56 21.5	-0.6
	baz=151						
SEUS	St. Eustatius	22.44	70	*e*P	P	20 56 22.8	0.0
	217nm,1.2s						
Z47A	Carrollton	22.44	353	P	P	20 56 24.3	+1.7
	baz=173,SNR=12						
RGRS	Roger Stewart	22.44	11	*e*P	P	20 56 24.8	+2.2
	428nm,0.4s						
SMRT	St. Maarten	22.50	69	*e*P	P	20 56 25.4	+2.0
	218nm,1.7s						
338A	Crockett	22.52	337	P	P	20 56 24.5	+1.0
	baz=153,SNR=5.2						
142A	Monroe	22.53	345	P	P	20 56 24.7	+1.2
	baz=162						
GOGA	Godfrey	22.54	4	*e*P	P	20 56 24.5	+0.9
GOGA				pmax	pmax		
	comp=Z,86nm,1.1s						
GOGA	Godfrey	22.54	4	*e*P	P	20 56 24.5	+0.9
	comp=Z,86nm,1.1s						
143A	Socs Landing,	22.54	346	P	P	20 56 24.0	+0.3
	baz=164						
CSU	Charleston Sou	22.54	11	*e*P	P	20 56 25.1	+1.4
Z46A	Louisville	22.55	352	P	P	20 56 25.6	+1.9
	baz=170						
Z48A	Northport	22.56	355	P	P	20 56 25.5	+1.6
	baz=174,SNR=38						
240A	Hunter Patters	22.58	341	P	P	20 56 23.7	-0.4
	baz=158						
436A	Wall Ranch, Ga	22.63	333	P	P	20 56 24.6	-0.1
	baz=149						
NATX	Nacogdoches	22.64	338	P	P	20 56 24.4	-0.3
	baz=155						
NATX	Nacogdoches	22.64	338	*e*P	P	20 56 25.3	+0.6
	comp=Z,97nm,1.3s						
NHSC	New Hope	22.64	11	*e*P	P	20 56 26.1	+1.4
	comp=Z,99nm,1.1s						
337A	Centerville	22.71	335	P	P	20 56 25.4	-0.1
	baz=152						
633A	Saathoff Ranch	22.73	327	P	P	20 56 24.3	-1.5
	baz=142						
239A	Gary	22.80	339	P	P	20 56 26.2	-0.3
	baz=156						
534A	Blanco	22.81	329	P	P	20 56 26.1	-0.6
	baz=144,SNR=11						
Z45A	Winona	22.84	350	P	P	20 56 27.9	+1.2
	baz=169						
141A	Papa Simpson,	22.84	343	P	P	20 56 28.0	+1.2
	baz=160						
Z44A	Pea Ridge, Bel	22.88	348	P	P	20 56 28.0	+0.8
	baz=167						
Z43A	Armstrong Fami	22.99	347	P	P	20 56 28.9	+0.5
	baz=165						
435B	Jarrell	23.00	332	P	P	20 56 28.6	+0.1
	baz=147						
GRGR	Grenville	23.02	84	*e*P	P	20 56 30.7	+1.8
	comp=Z,291nm,1.3s						
238A	Jacksonville	23.02	338	P	P	20 56 29.5	+0.7
	baz=154						
140A	Cam and Jess,	23.08	342	P	P	20 56 30.5	+1.2
	baz=159						
Y47A	UCPARC, Winfie	23.11	354	P	P	20 56 30.9	+1.3
	baz=173,SNR=18						
533A	Kerrville	23.14	328	P	P	20 56 28.6	-1.4
	baz=143						
336A	Riesel	23.18	334	P	P	20 56 29.8	-0.5
	baz=150						
Y46A	Houston	23.21	352	P	P	20 56 32.1	+1.5
	baz=171,SNR=8.3						
Z42A	Norrel Spur, H	23.22	345	P	P	20 56 30.8	+0.1
	baz=163						
237A	Washetta, Mont	23.29	336	P	P	20 56 31.3	0.0
	baz=153						
Y45A	Yeager Farm, C	23.30	351	P	P	20 56 32.6	+1.1
	baz=169						
GDHS	Morne Mazeau,	23.32	74	*e*P	P	20 56 33.1	+1.2
	comp=Z,111nm,1.0s						
335A	Mody	23.35	333	P	P	20 56 31.4	-0.6
	baz=148						
434A	Burnet	23.35	330	P	P	20 56 31.5	-0.5
	baz=146,SNR=8.1						
Z41A	Richland Creek	23.43	344	P	P	20 56 33.2	+0.5
	baz=161,SNR=5.6						
Y44A	Strider, Charl	23.51	349	P	P	20 56 34.9	+1.5
	baz=168,SNR=15						
ANWB	Willy Bob	23.59	71	*e*P	P	20 56 32.2	-2.2
	comp=Z,55nm,0.8s						
Y43A	Makayla and Ka	23.60	348	P	P	20 56 34.9	+0.5
	baz=166						
Z40A	Long Farm, Mag	23.60	342	P	P	20 56 34.6	+0.2
	baz=160						
138A	Matatall Enter	23.60	339	P	P	20 56 35.2	+0.7
	baz=155,SNR=6.3						
JSC	Jenkinsville	23.62	8	*e*P	P	20 56 36.4	+1.9
JSC				pmax	pmax		
	comp=Z,209nm,1.9s						
JSC	Jenkinsville	23.62	8	*e*P	P	20 56 36.4	+1.9
	comp=Z,209nm,1.9s						
433A	Art	23.71	329	P	P	20 56 35.1	-0.4
	baz=144,SNR=22						
Y42A	Garnett, Star	23.71	346	P	P	20 56 35.4	0.0
	baz=164						
334A	Lometa	23.77	331	P	P	20 56 35.8	-0.2
	baz=147,SNR=13						
CCAR	Cane Creek	23.79	346	*e*P	P	20 56 36.6	+0.4
	comp=Z,340nm,1.4s						
137A	Heron Place, G	23.79	337	P	P	20 56 36.0	-0.2
	baz=154						

X45A	UM Field Stati	23.82	351	P	P	20 56 37.3	+0.9
	baz=170,SNR=5.5						
Z39A	Irene McRaven,	23.83	341	P	P	20 56 36.1	-0.4
	baz=158						
JCT	Junction City	23.86	327	P	P	20 56 36.6	-0.4
	baz=142,SNR=5.4						
JCT	Junction City	23.86	327	*e*P	P	20 56 36.2	-0.8
JCT				pmax	pmax		
	comp=Z,92nm,1.7s						
JCT	Junction City	23.86	327	*e*P	P	20 56 36.2	-0.8
	comp=Z,92nm,1.7s						
OXF	Oxford	23.91	351	*e*P	P	20 56 38.2	+0.9
OXF				pmax	pmax		
	comp=Z,193nm,1.0s						
OXF	Oxford	23.91	351	*e*P	P	20 56 38.2	+0.9
	comp=Z,193nm,1.0s						
WLAR	White Oak Lake	23.92	343	*e*P	P	20 56 37.8	+0.4
	comp=Z,102nm,1.0s						
WHTX	Lake Whitney,	23.96	333	P	P	20 56 38.4	+0.5
	baz=149,SNR=10.0						
WHTX	Lake Whitney,	23.96	333	*e*P	P	20 56 38.4	+0.5
	comp=Z,250nm,1.8s						
Y41A	Eaglette Beard	23.96	344	P	P	20 56 37.7	-0.1
	baz=162						
136A	Ennis	23.99	336	P	P	20 56 38.5	+0.5
	baz=152,SNR=6.3						
X44A	Crenshaw	24.02	350	P	P	20 56 38.7	+0.4
	baz=168						
NNA	Nana	24.10	160	LR	LR	21 05 29.3	
	comp=Z,921nm,18.3s,baz=325,slow=35						
Z38A	Mt. Pleasant	24.10	339	P	P	20 56 38.8	-0.3
	baz=156						
333A	Richland Sprin	24.12	330	P	P	20 56 38.7	-0.6
	baz=145,SNR=25						
X43A	Marvell	24.17	348	P	P	20 56 40.0	+0.3
	baz=166						
Y40A	Okolona	24.27	343	P	P	20 56 40.8	+0.2
	baz=160						
234A	Clairette	24.28	332	P	P	20 56 40.7	0.0
	baz=148						
Z37A	Pogue Cattle C	24.28	338	P	P	20 56 40.7	0.0
	baz=154						
SWET	Sewanee	24.30	358	*e*P	P	20 56 41.7	+0.8
	comp=Z,30nm,1.4s						
135A	Vickery Place,	24.43	334	P	P	20 56 41.9	-0.2
	baz=150						
Y39A	Lockesburg	24.44	342	P	P	20 56 42.2	+0.1
	baz=158						
KMSC	Kings Mountain	24.45	7	P	P	20 56 42.7	+0.4
	baz=189						
KMSC	Kings Mountain	24.45	7	*e*P	P	20 56 44.1	+1.8
	comp=Z,34nm,1.0s						
W45A	Hickory Valley	24.51	352	P	P	20 56 44.1	+1.3
	baz=170,SNR=16						
X41A	Kaden, Bauxite	24.52	345	P	P	20 56 43.0	+0.1
	baz=162

baz=163,SNR=7.3
X35A **Drake** 25.86 337 P P 20 56 54.2 -0.9
baz=153,SNR=7.3
W37B **Quinton** 25.97 340 P P 20 56 55.0 -1.0
baz=156,SNR=9.6
U42A **Revenden** 26.02 349 P P 20 56 55.7 -0.8
baz=166,SNR=24
PARMO **Parma** 26.07 351 eP P 20 56 57.7 +0.7
V39A **Pettigrew** 26.09 344 P P 20 56 56.4 -0.8
baz=161,SNR=14
U41A **Viola** 26.15 347 P P 20 56 57.0 -0.7
baz=165,SNR=11
Y33A **Hilltop Ranch,** 26.19 334 P P 20 56 56.3 -1.8
baz=149
W36A **Wetumka** 26.24 339 P P 20 56 57.0 -1.6
baz=155
PBMO **Poplar Bluff** 26.29 350 eP P 20 56 58.7 -0.2
comp=Z,58nm,1.4s
V38A **Canehill** 26.32 343 P P 20 56 58.1 -1.1
baz=159,SNR=8.0
X34A **Smith Ranch, M** 26.37 336 P P 20 56 58.8 -0.9
baz=151
U40A **Yellville** 26.38 346 P P 20 56 59.1 -0.6
baz=163,SNR=19
W35A **Tecumseh** 26.49 338 P P 20 56 59.6 -1.2
baz=154
U39A **Green Forest** 26.56 345 P P 20 57 00.9 -0.5
baz=162,SNR=13
V37A **Hulbert** 26.56 342 P P 20 57 00.4 -1.0
baz=158,SNR=7.7
HHAR **Hobbs** 26.58 344 eP P 20 57 01.2 -0.5
comp=Z,15nm,1.0s
X33A **Lawton** 26.59 335 P P 20 57 00.3 -1.4
baz=150
BLA **Blacksburg** 26.61 8 eP P 20 57 04.4 +2.5
BLA pmax pmax
comp=Z,39nm,0.9s
BLA **Blacksburg** 26.61 8 eP P 20 57 04.4 +2.5
comp=Z,39nm,0.9s
VWCC **Virginia Weste** 26.71 9 eP P 20 57 05.0 +2.3
V36A **Jenks** 26.73 340 P P 20 57 01.8 -1.2
baz=156
T41A **Mountain View** 26.79 348 P P 20 57 02.8 -0.7
baz=166,SNR=26
TUL1 **Leonard** 26.80 340 P P 20 57 02.4 -1.2
baz=156
TUL1 **Leonard** 26.80 340 eP P 20 57 02.5 -1.0
comp=Z,29nm,1.1s
X32A **Elmer** 26.83 333 P P 20 57 03.2 -0.7
baz=148
U38A **Gravette** 26.86 343 P P 20 57 03.4 -0.6
baz=160,SNR=9.3
WMOK **Wichita Mounta** 26.88 334 P P 20 57 03.3 -1.1
baz=149,SNR=10
WMOK **Wichita Mounta** 26.88 334 eP P 20 57 05.8 +1.5
WMOK pmax pmax
comp=Z,39nm,1.4s
WMOK **Wichita Mounta** 26.88 334 eP P 20 57 05.8 +1.5
comp=Z,39nm,1.4s
SLBS **Sierra La Lagu** 26.90 302 eP P 20 57 03.1 -1.5
comp=Z,60nm,1.5s
W34A **Bridge Creek,** 26.90 337 P P 20 57 03.3 -1.3
baz=152
W34A **Bridge Creek,** 26.90 337 eP P 20 57 04.2 -0.3
comp=Z,40nm,0.8s
S45A **Carrier Mills** 26.93 354 P P 20 57 03.2 -1.4
baz=173
S43A **Fulton Ridge,** 27.01 351 P P 20 57 04.3 -1.1
baz=169
S44A **Carbondale** 27.02 353 P P 20 57 05.2 -0.3
baz=171,SNR=7.7
V35A **Meyer Ranch, C** 27.02 339 P P 20 57 04.2 -1.3
baz=154
SIUC **Southern Illin** 27.04 353 eP P 20 57 05.7 +0.1
comp=Z,87nm,1.4s
U37A **Salina** 27.04 342 P P 20 57 04.6 -1.1
baz=158,SNR=5.8
T40A **Mansfield** 27.06 347 P P 20 57 05.5 -0.3
baz=164
W33A **Caddo, Fort Co** 27.11 335 P P 20 57 05.5 -0.9
baz=150
USIN **University of** 27.13 356 eP P 20 57 06.7 +0.2
comp=Z,62nm,1.1s
T39A **Clever** 27.14 345 P P 20 57 05.6 -1.0
baz=162,SNR=7.1
U36A **Oologah** 27.22 341 P P 20 57 06.4 -0.9
baz=157
S41A **Jillco Farms,** 27.32 348 P P 20 57 07.6 -0.5
baz=166,SNR=14
WCI **Wyandotte Cave** 27.32 358 eP P 20 57 07.0 -1.2
WCI pmax pmax
comp=Z,84nm,1.1s
WCI **Wyandotte Cave** 27.32 358 eP P 20 57 07.0 -1.2
comp=Z,84nm,1.1s
V34A **Guthrie** 27.33 338 P P 20 57 07.5 -0.8
baz=153
V34A **Guthrie** 27.33 338 eP P 20 57 08.0 -0.3
comp=Z,32nm,0.4s
T38A **Diamond** 27.39 344 P P 20 57 08.1 -0.7
baz=160
W32A **Sentinel** 27.41 334 P P 20 57 08.5 -0.6
baz=149
S40A **Lebanon** 27.48 347 P P 20 57 09.1 -0.5
baz=164,SNR=10
URVA **University of** 27.49 13 eP P 20 57 10.8 +1.1
PTGA **Pitinga** 27.50 113 P P 20 57 11.4 +1.3
comp=Z,9.6nm,0.8s,baz=307,slow=9.2,SNR=11
PTGA LR LR 21 08 54.9
comp=Z,3µm,18.9s,baz=294,slow=38
PTGA **Pitinga** 27.50 113 eP P 20 57 11.1 +1.0
comp=Z,18nm,1.0s
U35A **Pawnee** 27.53 339 P P 20 57 09.4 -0.7
baz=155
JSRW **J. Sargeant Re** 27.54 12 eP P 20 57 10.3 +0.2
R44A **Waltonville** 27.54 353 P P 20 57 10.2 +0.1
baz=172,SNR=10
V33A **Lossen Ranch,** 27.62 336 P P 20 57 09.7 -1.2
baz=151
T37A **Cheneyville 18** 27.64 343 P P 20 57 10.5 -0.6
baz=159,SNR=18
S39A **Bolivar** 27.76 346 P P 20 57 11.3 -0.8
baz=163
S38A **Stockton** 27.85 345 P P 20 57 11.4 -1.6
baz=161
U34A **Anderson Ranch** 27.88 338 P P 20 57 11.9 -1.3
baz=153
U34A **Anderson Ranch** 27.88 338 eP P 20 57 12.1 -1.1
comp=Z,13nm,0.9s
T36A **Boggs Farm, Ca** 27.88 341 P P 20 57 11.6 -1.6
baz=157
OLIL **Olney** 27.93 355 eP P 20 57 13.6 0.0
comp=Z,148nm,1.4s
T35A **Sooner Cattle** 27.95 340 P P 20 57 12.3 -1.5
baz=156,SNR=5.1
MNTX **Cornudas Mount** 27.99 321 P P 20 57 13.7 -0.6
baz=134,SNR=8.4
MNTX **Cornudas Mount** 27.99 321 eP P 20 57 15.2 +1.0
comp=Z,30nm,1.8s
U33A **Lingo Farm, Me** 28.09 337 P P 20 57 13.5 -1.6
baz=152
R40A **Maddies Statio** 28.10 348 P P 20 57 14.2 -1.0
baz=165,SNR=6.3
CBN **Corbin Frederi** 28.14 13 eP P 20 57 17.3 +1.8
comp=Z,61nm,1.3s
MSTX **Muleshoe** 28.15 328 eP P 20 57 17.4 +1.6
comp=Z,27nm,1.1s
Q44A **Meyer Farm, Va** 28.18 354 P P 20 57 15.5 -0.4
baz=172,SNR=8.7
S37A **Fort Scott** 28.21 344 P P 20 57 15.1 -1.1
baz=160,SNR=11
BLO **Bloomington** 28.26 358 eP P 20 57 16.7 +0.1
BLO pmax pmax
comp=Z,28nm,0.8s
BLO **Bloomington** 28.26 358 eP P 20 57 16.6 +0.1
comp=Z,28nm,0.8s
T34A **McClaskey Farm** 28.27 339 P P 20 57 15.6 -1.2
baz=154
Q43A **New Douglas** 28.30 352 P P 20 57 15.8 -1.2
baz=171
AMTX **Amarillo** 28.32 330 eP P 20 57 18.7 +1.4
comp=Z,29nm,1.2s
R38A **Fenwick Farm,** 28.37 345 P P 20 57 16.4 -1.2
baz=162,SNR=5.2
U32A **Winter Ranch,** 28.39 336 P P 20 57 16.2 -1.6
baz=150
Q42A **Golden Eagle** 28.39 351 P P 20 57 16.8 -0.9
baz=169
S36A **Lake Cedric, C** 28.40 342 P P 20 57 16.8 -1.1
baz=158,SNR=5.4
BBSR **BB Station** 28.53 38 eP P 20 57 21.7 +2.6
comp=Z,52nm,1.1s
S35A **Otter Creek Ra** 28.59 341 P P 20 57 18.9 -0.6
baz=157,SNR=5.7
R37A **Teagarden Farm** 28.73 344 P P 20 57 19.5 -1.3
baz=160
Q40A **Laux Farm, Aux** 28.74 349 P P 20 57 19.8 -1.1
baz=166
S34A **Willow Spring** 28.86 340 P P 20 57 20.8 -1.1
baz=155
R36A **Gordon, Harris** 28.93 343 P P 20 57 21.5 -1.1
baz=159
Q39A **Willow Grove F** 28.97 347 P P 20 57 21.6 -1.4
baz=164
P42A **Winchester** 29.02 352 P P 20 57 22.2 -1.2
baz=170
Q38A **Cooks Store, C** 29.04 346 P P 20 57 22.1 -1.4
baz=163,SNR=8.0
S33A **Kaszmaul Farm,** 29.07 339 P P 20 57 21.9 -1.9
baz=153
MCWV **Mont Chateau** 29.10 8 eP P 20 57 25.8 +1.8
comp=Z,17nm,0.8s
Q37A **Longview Farm,** 29.16 345 P P 20 57 23.7 -0.9
baz=161
P41A **Barry, Barry** 29.22 351 P P 20 57 24.3 -0.8
baz=166
P40A **Paris** 29.25 349 P P 20 57 24.4 -1.0
baz=166,SNR=9.5
SAML **Samuel** 29.35 131 eP P 20 57 25.7 -0.8
comp=Z,8.3nm,0.9s
P39B **Salisbury** 29.35 348 P P 20 57 25.3 -1.0
baz=165
ACSO **Alum Creek Sta** 29.35 3 eP P 20 57 27.4 +1.1
comp=Z,82nm,1.0s
SDMD **Soldier's Deli** 29.41 13 eP P 20 57 27.5 +0.7
comp=Z,26nm,1.5s
R34A **Isabella, Hill** 29.45 340 P P 20 57 26.6 -0.6
baz=155,SNR=8.2
SFIN **Lafayette** 29.49 357 P P 20 57 27.2 -0.4
baz=176,SNR=14
SFIN **Lafayette** 29.49 357 eP P 20 57 27.6 +0.1
comp=Z,64nm,0.9s
Q36A **Arnold C. Orve** 29.51 343 P P 20 57 26.9 -0.8
baz=159
S32A **Newby Ranch, P** 29.51 337 P P 20 57 26.8 -1.0
baz=152
Q35A **Mercer Eighty,** 29.58 343 P P 20 57 27.4 -1.0
baz=158
O42A **Bath** 29.59 352 P P 20 57 27.7 -0.7
baz=170
O41A **Passleys Farm,** 29.62 351 P P 20 57 27.9 -0.8
baz=169
P38A **Dawn** 29.65 347 P P 20 57 28.2 -0.7
baz=163,SNR=10
R33A **Olander Ranch,** 29.71 339 P P 20 57 28.4 -1.0
baz=154
O40A **La Belle** 29.80 350 P P 20 57 29.8 -0.4
baz=167,SNR=7.4
P37A **Lathrop** 29.81 346 P P 20 57 29.3 -1.0
baz=162
HDIL **Hopedale** 29.85 354 P P 20 57 30.4 -0.3
baz=172,SNR=11
HDIL **Hopedale** 29.85 354 eP P 20 57 30.5 -0.2
comp=Z,93nm,1.0s
O56A **Blue Knob Stat** 29.90 10 P P 20 57 29.2 -2.0
baz=193,SNR=8.9
Q34A **Chapman** 29.91 341 P P 20 57 29.2 -2.1
baz=156
KSU1 **Kansas State U** 29.98 342 P P 20 57 29.1 -2.7
baz=157
KSU1 **Kansas State U** 29.98 342 eP P 20 57 31.3 -0.5
comp=Z,20nm,1.1s
O39A **Kirksville** 30.05 349 P P 20 57 30.7 -1.7
baz=166
121A **Cookes Peak, D** 30.06 319 P P 20 57 30.2 -2.7
baz=131
P36A **Good Intent, A** 30.06 344 P P 20 57 31.0 -1.5
baz=160
R32A **Long Quarter,** 30.07 338 P P 20 57 30.9 -1.8
baz=153
MVL **Millersville** 30.08 13 eP P 20 57 35.0 +2.2
comp=Z,22nm,1.2s
P35A **Duane Minner,** 30.20 343 P P 20 57 32.2 -1.6
baz=158
PSUB **Penn St. - Bra** 30.23 15 eP P 20 57 36.0 +2.0
comp=Z,15nm,1.1s
Q33A **Connelly Farm,** 30.27 340 P P 20 57 33.4 -1.1
baz=155,SNR=6.1
O37A **Wolven Farm, M** 30.31 346 P P 20 57 33.4 -1.4
baz=162
N54A **Moraine State** 30.36 8 P P 20 57 33.9 -1.3
baz=190
SSPA **Standing Stone** 30.38 11 eP P 20 57 37.3 +1.9
comp=Z,54nm,1.3s
BNM **Barren Site** 30.44 323 eP P 20 57 35.7 -0.6
P34A **Walnut Farm, R** 30.45 342 P P 20 57 34.5 -1.6
baz=157
Q32A **Meitler Ranch,** 30.52 339 P P 20 57 35.5 -1.2
baz=154
P33A **Williams Farm,** 30.62 341 P P 20 57 36.2 -1.4
baz=155
N39A **Derby Farms, D** 30.64 349 P P 20 57 36.9 -0.8
baz=166,SNR=12
N38A **Joes South For** 30.71 348 P P 20 57 37.3 -1.0
baz=164
CBKS **Cedar Bluff** 30.79 337 P P 20 57 37.6 -1.5
baz=151
CBKS **Cedar Bluff** 30.79 337 eP P 20 57 38.6 -0.5
CBKS pmax pmax
comp=Z,32nm,1.2s
CBKS **Cedar Bluff** 30.79 337 eP P 20 57 38.6 -0.5
comp=Z,32nm,1.2s
O35A **Humboldt** 30.85 344 P P 20 57 38.3 -1.3
baz=159
LUPA **Lehigh Univers** 30.88 15 eP P 20 57 41.9 +2.1
comp=Z,63nm,1.5s
N37A **Lee Faris, Mou** 30.89 346 P P 20 57 38.9 -1.0
baz=163
ANMO **Albuquerque** 30.91 324⇑ iP P 20 57 40.0 -0.3
ANMO pmax pmax
comp=Z,5.0nm,1.2s
ANMO **Albuquerque** 30.91 324 eP P 20 57 40.1 -0.3
comp=Z,6.8nm,1.3s
LAZ **Ladron** 30.92 323 eP P 20 57 38.0 -2.5
M54A **Oil Creek Stat** 30.94 8 P P 20 57 39.7 -0.6
baz=190
O34A **Beatrice** 31.00 343 P P 20 57 39.9 -1.0
baz=158
ALLY **Alegheny Colle** 31.02 7 eP P 20 57 42.7 +1.7
comp=Z,66nm,1.2s
N59A **State Game Lan** 31.09 14 P P 20 57 40.7 -1.0
baz=198,SNR=8.6
P32A **Huiting Farm,** 31.09 340 P P 20 57 40.5 -1.3
baz=154
N36A **Muff Farm, Cla** 31.12 345 P P 20 57 40.9 -1.0
baz=161
M39A **Webster** 31.17 350 P P 20 57 42.0 -0.3
baz=167,SNR=7.7
BRNJ **Basking Ridge** 31.17 16 eP P 20 57 45.2 +2.9
comp=Z,25nm,0.9s
O33A **Hebron** 31.17 341 P P 20 57 41.2 -1.2
baz=156
M38A **Pleasantville** 31.30 348 P P 20 57 43.1 -0.3
baz=165
N35A **Tabor** 31.34 345 P P 20 57 42.9 -0.9
baz=160
AAM **Ann Arbor** 31.39 2 eP P 20 57 44.0 -0.2
AAM pmax pmax
comp=Z,223nm,1.8s
AAM **Ann Arbor** 31.39 2 eP P 20 57 44.0 -0.2
comp=Z,223nm,1.8s
CPNY **Central Park** 31.43 16 eP P 20 57 43.7 -1.0
comp=Z,28nm,1.1s
T25A **Trinidad** 31.45 330 P P 20 57 44.2 -1.0
baz=142
T25A **Trinidad** 31.45 330 eP P 20 57 45.8 +0.6
comp=Z,35nm,1.6s
M37A **Trindle Farm,** 31.47 347 P P 20 57 44.1 -0.9
baz=163
L41A **Preston** 31.49 352 P P 20 57 44.5 -0.7
baz=170,SNR=30
ERPA **Erie** 31.50 7 eP P 20 57 47.2 +2.0
comp=Z,113nm,1.3s
N34A **Lincoln** 31.55 343 P P 20 57 44.9 -0.8
baz=158
O32A **Brockman Farm,** 31.56 341 P P 20 57 45.1 -0.8
baz=155
L40A **Anamosa** 31.58 351 P P 20 57 45.4 -0.5
baz=169,SNR=12
M36A **Felix, Anita** 31.69 346 P P 20 57 46.3 -0.7
baz=162
KSPA **Keystone Colle** 31.70 13 eP P 20 57 49.8 +2.8
comp=Z,28nm,0.9s
LPAZ **La Paz** 31.74 148 P P 20 57 50.1 +1.9
comp=Z,3.0nm,0.8s,baz=336,slow=10,SNR=13
LPAZ LR LR 21 11 50.1
comp=Z,979nm,18.1s,baz=303,slow=39
LPAZ **La Paz** 31.74 148 eP P 20 57 49.6 +1.3
LPAZ pmax pmax
comp=Z,6.0nm,1.0s
LPAZ **La Paz** 31.74 148 eP P 20 57 49.6 +1.3
comp=Z,5.7nm,1.0s
L39A **Vinton** 31.76 350 P P 20 57 46.7 -0.8
baz=167,SNR=10
O31A **Woolen Ranch,** 31.82 339 P P 20 57 47.8 -0.3
baz=153
TUC **Tucson** 31.90 316 P P 20 57 48.6 -0.5
baz=127
M35A **Neola** 31.92 345 P P 20 57 48.1 -0.8
baz=160
L38A **Oak Wood Farm,** 31.95 349 P P 20 57 48.5 -0.7
baz=166,SNR=19
K41A **Shullsburg** 31.99 353 P P 20 57 48.6 -0.9
baz=170,SNR=18
N32A **Stulken Farm,** 32.02 341 P P 20 57 49.4 -0.5
baz=155
L37A **Phoenix Point,** 32.09 348 P P 20 57 49.7 -0.7
baz=164
M34A **Aspy Farms, Fr** 32.19 344 P P 20 57 50.5 -0.8
baz=159
K40A **Colesburg** 32.19 352 P P 20 57 50.7 -0.7
baz=169,SNR=25
BINY **Binghamton** 32.26 13 eP P 20 57 54.0 +2.0
comp=Z,48nm,1.0s
L36A **Harm Buss Farm** 32.27 347 P P 20 57 51.0 -1.0
baz=162
JFWS **Jewell Farm** 32.29 353 eP P 20 57 51.5 -0.6
JFWS pmax pmax
comp=Z,60nm,1.0s
JFWS **Jewell Farm** 32.29 353 eP P 20 57 51.5 -0.6
comp=Z,60nm,1.0s
N31A **Bailey Ranch,** 32.29 340 P P 20 57 50.8 -1.4
baz=154
K39A **Oelwein** 32.31 351 P P 20 57 51.4 -0.9
baz=168,SNR=19
K38A **Parkersburg** 32.41 349 P P 20 57 52.2 -1.0
baz=166,SNR=13
MMNY **Mt. Morris Dam** 32.41 10 eP P 20 57 54.0 +0.8
M33A **Taylor Creek F** 32.43 343 P P 20 57 52.1 -1.3
baz=158
SDCO **Great Sand Dun** 32.47 329 P P 20 57 52.7 -1.5
baz=141
SDCO **Great Sand Dun** 32.47 329 eP P 20 57 54.8 +0.6
comp=Z,5.4nm,0.9s
L35A **Bielow Farm, R** 32.49 345 P P 20 57 52.6 -1.3
baz=161
BGNE **Belgrade** 32.56 342 P P 20 57 52.9 -1.8
baz=156
K37A **Belmond** 32.69 348 P P 20 57 54.8 -0.9
baz=164,SNR=34
J41A **Loganville** 32.70 353 P P 20 57 54.9 -0.9
baz=171,SNR=9.8
M31A **Lambtecht Ranc** 32.77 341 P P 20 57 55.1 -1.3
baz=154
J40A **Soldiers Grove** 32.82 352 P P 20 57 55.5 -1.3
baz=170,SNR=15
J39A **Decorah** 32.90 351 P P 20 57 56.3 -1.2
baz=168,SNR=8.0
W18A **Petrified Fore** 32.98 321 eP P 20 57 59.1 +0.6
comp=Z,49nm,1.5s
K35A **Storm Lake** 32.99 346 P P 20 57 57.4 -0.9
baz=162
J38A **Wedel Dairy, R** 33.01 350 P P 20 57 57.5 -1.0
baz=167,SNR=7.7
S22A **4UR Ranch, Cre** 33.16 328 eP P 20 58 00.7 +0.5
comp=Z,395nm,0.4s
J37A **Redenius Farm,** 33.19 349 P P 20 57 59.5 -0.6
baz=165,SNR=14
TRY **Troy** 33.32 15 eP P 20 58 02.6 +1.4
comp=Z,233nm,1.9s
J36A **Seneca 1, Swea** 33.37 348 P P 20 58 00.7 -0.9
baz=164,SNR=19
L31A **Butterfield Fa** 33.47 341 P P 20 58 01.5 -1.0
baz=155
X16A **Lo Mia Camp, P** 33.61 319 eP P 20 58 04.3 +0.2
comp=Z,6.7nm,1.0s
MVCO **Mesa Verde** 33.68 325 eP P 20 58 05.5 +0.8
I38A **Scanlan Farm,** 33.69 351 P P 20 58 03.3 -1.1
baz=167
J34A **George** 33.69 346 P P 20 58 03.0 -1.4
baz=161
I37A **Lemond, Waseca** 33.85 349 P P 20 58 04.9 -0.9
baz=165,SNR=16
K31A **O'Neill** 33.85 342 P P 20 58 04.8 -1.0
baz=156
ACCN **Adirondack Com** 33.93 15 eP P 20 58 08.0 +1.5
comp=Z,28nm,1.1s
I36A **Fitzsimmons Fa** 33.97 348 P P 20 58 05.7 -1.1
baz=164,SNR=6.3
PB11 **IPOC Station P** 33.98 153 eP P 20 58 07.0 -0.4
comp=Z,46nm,1.2s
I35A **Creekview Farm** 34.01 347 P P 20 58 06.2 -1.0
baz=163,SNR=5.8
ISCO **Idaho Springs** 34.13 331 P P 20 58 07.3 -1.4
baz=142
ISCO **Idaho Springs** 34.13 331 P P 20 58 07.7 -0.9
ISCO pmax pmax
comp=Z,6.0nm,2.0s
K30A **Basset** 34.17 341 P P 20 58 07.9 -0.7
baz=154
SADO **Sadowa** 34.22 8 P P 20 58 09.0 0.0
comp=Z,80nm,1.1s,baz=212,slow=8.7,SNR=24
SADO **Sadowa** 34.22 8 eP P 20 58 09.0 0.0
comp=Z,79nm,1.0s
WUAZ **Wupatki** 34.26 320 P P 20 58 08.5 -1.1
baz=130
WUAZ **Wupatki** 34.26 320 eP P 20 58 09.7 +0.1
comp=Z,29nm,1.4s
ECSD **EROS Data Cent** 34.28 345 P P 20 58 08.5 -1.1
baz=160,SNR=10
ECSD **EROS Data Cent** 34.28 345 eP P 20 58 08.2 -1.3
comp=Z,59nm,1.9s
H37A **Dierke Farm, C** 34.31 350 P P 20 58 08.9 -0.8
baz=166
NCB **Newcomb** 34.35 14 eP P 20 58 11.4 +1.2
comp=Z,0.9nm,1.8s
I34A **Hadley** 34.38 346 P P 20 58 09.3 -1.2
baz=161
H36A **Jessenland, He** 34.49 349 P P 20 58 10.4 -0.9
baz=165,SNR=6.6
I33A **Coleman** 34.62 345 P P 20 58 11.3 -1.2
baz=160
J30A **Dallas** 34.72 341 P P 20 58 12.3 -1.0
baz=155
I32A **Karley and Nic** 34.77 344 P P 20 58 12.7 -1.1
baz=159
H35A **Sunnyside Ranc** 34.78 348 P P 20 58 13.0 -0.9
baz=163,SNR=10
PLVO **Plevna** 34.79 10 eP P 20 58 14.2 +0.3
comp=Z,53nm,1.1s
PV10 **Paradox Valley** 34.81 326 eP P 20 58 14.0 -0.5
LONY **Lake Ozonia** 34.88 13 eP P 20 58 15.5 +0.8
comp=Z,53nm,1.0s
SPMN **Marine on St.** 34.92 350 P P 20 58 13.9 -1.1
baz=167
SPMN **Marine on St.** 34.92 350 eP P 20 58 13.8 -1.1
comp=Z,53nm,0.9s
H34A **Spellman Lake,** 34.96 347 P P 20 58 14.6 -0.8
baz=162,SNR=8.6
G36A **St. Michael** 35.09 349 P P 20 58 15.4 -1.1
baz=165
GLA **Glamis** 35.14 314 P P 20 58 15.9 -1.3
baz=122,SNR=5.5
GLA **Glamis** 35.14 314 eP P 20 58 14.8 -2.4
GLA pmax pmax
comp=Z,34nm,1.5s
GLA **Glamis** 35.14 314 eP P 20 58 14.8 -2.4
comp=Z,34nm,1.5s
PB01 **IPOC Station P** 35.19 154 eP P 20 58 16.9 -0.8
comp=Z,37nm,1.3s
H33A **Prehn Over Nor** 35.20 346 P P 20 58 16.4 -1.1
baz=160
H32A **Carlson Farm,** 35.21 345 P P 20 58 16.6 -1.0
baz=159
G35A **Watkins** 35.21 348 P P 20 58 16.9 -0.6

baz=164
PHWY Pilot Hill 35.25 333 *e*P P 20 58 18.2 -0.1
comp=Z,22nm,1.8s
Y12C Blythe 35.30 315 *e*P P 20 58 18.6 +0.1
comp=Z,19nm,1.3s
FRNY Flat Rock 35.31 14 *e*P P 20 58 18.6 +0.2
comp=Z,68nm,1.8s
COWI Conover 35.33 355 *e*P P 20 58 18.0 -0.6
comp=Z,23nm,0.9s
U15A North Rim 35.41 321 *e*P P 20 58 19.3 -0.4
comp=Z,23nm,1.4s
G34A Benson 35.47 347 P P 20 58 18.5 -1.3
baz=162
G33A Ortonville 35.61 346 P P 20 58 20.2 -0.8
baz=161
W13A Hualapai Mount 35.63 317 *e*P P 20 58 21.3 -0.2
comp=Z,28nm,1.6s
F36A Milaca 35.66 350 P P 20 58 20.1 -1.2
baz=166,SNR=22
BC3 Big Chuckawall 35.90 314 P P 20 58 22.2 -1.6
baz=122,SNR=6.3
F34A Alexandria 35.92 348 P P 20 58 22.6 -1.0
baz=163
G32A Webster 35.93 345 P P 20 58 22.7 -1.0
baz=159
IRM Iron Mountain 35.96 315 P P 20 58 23.0 -1.1
baz=123
KNB Kanab 36.11 321 *e*P P 20 58 26.2 +0.6
KNB pmax pmax
comp=Z,36nm,1.5s
KNB Kanab 36.11 321 *e*P P 20 58 26.2 +0.6
comp=Z,36nm,1.5s
SRU San Rafael Swe 36.15 326 *e*P P 20 58 25.5 -0.4
SRU pmax pmax
comp=Z,11nm,0.8s
SRU San Rafael Swe 36.15 326 *e*P P 20 58 25.5 -0.4
comp=Z,11nm,0.8s
WVL Waterville 36.16 19 *e*P P 20 58 28.4 +2.7
comp=Z,191nm,1.7s
F33A 5 Mile Ranch, 36.19 347 P P 20 58 24.5 -1.4
baz=161,SNR=6.4
MONP2 Monument Peak 36.20 312 P P 20 58 24.0 -2.5
baz=120
E36A McGregor 36.25 350 P P 20 58 25.2 -1.2
baz=166,SNR=7.1
LCMT Little Creek M 36.37 320 *e*P P 20 58 28.3 +0.5
comp=Z,6.6nm,1.0s
MTPU Mount Pierson 36.38 323 *e*P P 20 58 28.1 0.0
comp=Z,14nm,1.3s
TRQ Mont Tremblant 36.41 12 *e*P P 20 58 28.6 +0.8
F32A Veblen 36.41 346 P P 20 58 26.5 -1.3
baz=160
BELC Belle Mtn. Jos 36.47 314 P P 20 58 26.9 -1.8
baz=122,SNR=6.2
E35A Pequot Lakes 36.48 349 P P 20 58 27.3 -1.1
baz=165
TPFO Pinon Flats 36.59 313 P P 20 58 27.9 -1.8
baz=121,SNR=5.4
E34A Wadena 36.59 348 P P 20 58 28.4 -0.9
baz=163
PFO Pinyon Flats O 36.59 313 P P 20 58 30.4 +0.6
comp=Z,8.7nm,1.0s,baz=120,slow=9.6,SNR=6.5
PFO Pinyon Flats O 36.59 313 P P 20 58 27.8 -1.9
baz=121
PFO Pinyon Flats O 36.59 313 *e*P P 20 58 29.4 -0.3
PFO pmax pmax
comp=Z,10.0nm,1.0s
PFO Pinyon Flats O 36.59 313 *e*P P 20 58 29.4 -0.3
comp=Z,9.9nm,1.0s
SZCU Shurtz Canyon 36.64 321 *e*P P 20 58 30.3 +0.2
comp=Z,24nm,1.5s
GMRC Granite Mounta 36.65 315 P P 20 58 29.1 -1.1
baz=123
D37A Cotton 36.74 352 P P 20 58 29.7 -1.0
baz=168,SNR=11
E33A Westby DABS, E 36.75 347 P P 20 58 29.6 -1.2
baz=162
CCUT Cedar City 36.78 321 *e*P P 20 58 31.3 -0.1
comp=Z,20nm,1.7s
LVC Limon Verde 36.82 155 *e*P P 20 58 34.9 +2.9
comp=Z,55nm,1.5s
D36A Goodland 36.87 351 P P 20 58 30.4 -1.4
baz=167,SNR=8.1
PKME Peaks-Kenny Pk 36.91 19 *e*P P 20 58 34.3 +2.3
comp=Z,28nm,1.0s
D35A Remer 36.93 350 P P 20 58 30.8 -1.4
baz=165
F29A Eureka 37.09 343 P P 20 58 32.3 -1.4
baz=156
MURC Murrieta 37.12 313 P P 20 58 32.9 -1.2
baz=120
C38A Sawbill Land. 37.14 353 P P 20 58 32.6 -1.5
baz=170
HEC Hector,Ludlow 37.15 315 P P 20 58 33.7 -0.7
baz=123
E31A Nome 37.24 345 P P 20 58 33.5 -1.3
baz=159
C37A Embarrass 37.27 352 P P 20 58 33.5 -1.6
baz=169,SNR=6.5
D33A AnnSam, Waubun 37.33 348 P P 20 58 34.6 -1.0
baz=163,SNR=6.1
C36A Pine Crest Far 37.39 351 P P 20 58 35.5 -0.6
baz=168,SNR=5.5
EYMN Ely 37.40 353 *e*P P 20 58 34.8 -1.3
baz=170,SNR=8.2
EYMN Ely 37.40 353 *e*P P 20 58 34.7 -1.5
comp=Z,13nm,1.1s
C35A Jirik Farms, M 37.52 350 P P 20 58 36.1 -1.1
baz=166,SNR=7.8
VLDQ Val d'Or 37.73 8 *e*P P 20 58 39.0 +0.1
comp=Z,59nm,1.0s
MWC Mount Wilson 38.05 313 *e*P P 20 58 41.8 -0.3
MWC pmax pmax
comp=Z,27nm,1.4s
MWC Mount Wilson 38.05 313 *e*P P 20 58 41.8 -0.3
comp=Z,27nm,1.4s
B35A Bob, Littlefor 38.11 351 P P 20 58 40.5 -1.7
baz=166,SNR=7.1
TPNV Topopah Spring 38.26 318 *e*P P 20 58 44.8 +0.9
TPNV pmax pmax
comp=Z,17nm,1.3s
TPNV Topopah Spring 38.26 318 *e*P P 20 58 44.8 +0.9
comp=Z,17nm,1.3s
PD31 Pinedale Array 38.30 331 *e*P P 20 58 43.2 -1.0
PDAR Pinedale Array 38.30 331 P P 20 58 44.1 -0.1
comp=Z,2.2nm,0.9s,baz=133,slow=6.5,SNR=9.8
BW06 Boulder Array 38.30 331 *e*P P 20 58 43.1 -1.1
comp=Z,5.8nm,1.0s
EDW2 Edwards Air Fo 38.33 314 P P 20 58 42.7 -1.7
baz=121
B33A Robert and Kas 38.36 349 P P 20 58 43.1 -1.1
baz=163
C31A Landman Farms, 38.36 346 P P 20 58 43.1 -1.2
baz=160
B34A Aery, Baudette 38.39 350 P P 20 58 43.4 -1.1
baz=165,SNR=17
LRMC Laurel Mtn Rad 38.42 315 P P 20 58 43.8 -1.4
baz=122,SNR=5.5
AGMN Agassiz Nation 38.43 348 P P 20 58 43.8 -1.1
baz=163,SNR=19
AGMN Agassiz Nation 38.43 348 *e*P P 20 58 44.6 -0.3
HWUT Hardware Ranch 38.47 328 *e*P P 20 58 45.3 -0.3
comp=Z,12nm,1.0s
MPMC Manual Prospec 38.60 316 P P 20 58 45.8 -0.9
baz=123,SNR=12
R11A Troy Canyon, C 38.65 320 *e*P P 20 58 47.0 -0.2
comp=Z,8.6nm,1.2s
SNCC San Nicolas Is 38.66 311 P P 20 58 45.2 -1.8
baz=117
B32A Ashes, Strandq 38.66 348 P P 20 58 46.2 -0.7
baz=162,SNR=14
DAC Darwin (Calif) 38.79 316 *e*P P 20 58 48.5 +0.2
DAC pmax pmax
comp=Z,8.0nm,1.1s
DAC Darwin (Calif) 38.79 316 *e*P P 20 58 48.5 +0.2
comp=Z,8.0nm,1.1s
MDND Maddock 38.88 344 *e*P P 20 58 49.7 +1.0
comp=Z,184nm,0.4s
B31A Greenbush Farm 38.93 347 P P 20 58 48.4 -0.7
baz=160
A33A Warroad 38.96 349 P P 20 58 48.8 -0.5
baz=164,SNR=14
LMN Caledonia Moun 38.98 23 *e*P P 20 58 50.9 +1.4
comp=Z,44nm,1.0s
AHID Auburn Hatcher 39.06 329 *e*P P 20 58 49.5 -1.1
comp=Z,7.6nm,1.0s
B30A Myrvik Farm, E 39.12 346 P P 20 58 49.8 -0.8
baz=159,SNR=6.1

A32A Rocking H Ranc 39.15 348 P P 20 58 50.0 -0.9
baz=162
REDW Red Top Meadow 39.38 330 *e*P P 20 58 52.6 -0.6
comp=Z,17nm,1.1s
B29A Wagenman Farm, 39.38 345 P P 20 58 51.5 -1.4
baz=158,SNR=9.0
B28A Dugan Ranch, T 39.63 344 P P 20 58 52.9 -2.0
baz=156
A29A Manning Farm, 39.77 345 P P 20 58 54.7 -1.5
baz=158,SNR=5.7
IMW Indian Meadow 39.82 331 *e*P P 20 58 56.0 -0.9
comp=Z,7.6nm,0.9s
RLMT Red Lodge 39.98 333 *e*P P 20 58 57.6 -0.5
comp=Z,12nm,1.1s
H17A Grant Village 40.02 331 *e*P P 20 59 00.8 +2.2
comp=Z,14nm,0.9s
YPP Pitchstone Pla 40.03 331 *e*P P 20 59 00.1 +1.4
comp=Z,29nm,2.0s
ULM Lac du Bonnet 40.31 349 P P 20 59 00.1 -0.4
comp=Z,25nm,1.0s,baz=165,slow=8.6,SNR=16
ULM LR LR 21 17 33.9
comp=Z,566nm,19.9s,baz=168,slow=39
ULM Lac du Bonnet 40.31 349 *e*P P 20 58 59.3 -1.2
ULM pmax pmax
comp=Z,31nm,1.1s
ULM Lac du Bonnet 40.31 349 *e*P P 20 58 59.3 -1.2
comp=Z,31nm,1.1s
TVH3 East Aurora ar 40.74 318 *e*P P 20 59 03.6 -0.9
comp=Z,16nm,1.3s
DGMT Dagmar 40.80 341 *e*P P 20 59 09.8 +5.2
BMN Battle Mountai 40.92 322 *e*P P 20 59 06.2 +0.3
BMN pmax pmax
comp=Z,69nm,1.9s
BMN Battle Mountai 40.92 322 *e*P P 20 59 06.2 +0.3
comp=Z,69nm,1.9s
WAKR Walker 41.22 318 *e*P P 20 59 09.3 +0.8
comp=Z,25nm,1.2s
YERR Yerington 41.36 319 *e*P P 20 59 09.4 -0.2
comp=Z,17nm,1.0s
MCMT McKenzie Canyo 41.43 330 *e*P P 20 59 10.8 +0.7
VCA Vinchina 42.58 158 *i*P P 20 59 22.4 +2.8
ORV Oroville 43.14 318 *e*P P 20 59 24.9 +1.0
ORV pmax pmax
comp=Z,23nm,1.4s
ORV Oroville 43.14 318 *e*P P 20 59 24.9 +1.0
comp=Z,23nm,1.4s
CYA Choya 43.26 155 *i*P P 20 59 26.4 +1.4
AROD Rodeo 43.44 160 *i*P P 20 59 29.9 +3.2
ACCO Cerro Coronel 43.96 160 *i*P P 20 59 33.3 +2.4
AMOG MOGNA 44.48 159 *i*P P 20 59 37.5 +2.8
DRLN Deer Lake 44.66 26 *e*P P 20 59 37.4 +1.6
comp=Z,244nm,1.8s
RTLL Cerro Villicun 44.84 160 *i*P P 20 59 39.9 +2.3
KMRM Mail Ridge 44.94 317 *e*P P 20 59 39.0 +0.6
comp=Z,30nm,1.4s
BDFB Brasilia 45.16 125 P P 20 59 41.9 +1.4
comp=Z,10.0nm,0.7s,baz=258,slow=19
BDFB LR LR 21 19 10.0
comp=Z,2µm,19.0s,baz=258,slow=37
ACHE Chepes 45.34 158 *i*P P 20 59 42.6 +0.9
AUSP Uspallata 45.36 161 *i*P P 20 59 43.0 +0.9
CPUP Villa Florida 45.75 144 P P 20 59 45.6 +0.8
comp=Z,7.8nm,1.0s,baz=329,slow=8.4,SNR=12
CPUP LR LR 21 18 16.1
comp=Z,390nm,18.3s,baz=314,slow=35
CPUP Villa Florida 45.75 144 *e*P P 20 59 45.3 +0.5
CPUP Villa Florida 45.75 144 *e*P P 20 59 45.3 +0.5
ASAL Salagasta 45.88 161 *i*P P 20 59 46.0 +0.2
D08A Wollman Farm, 46.04 328 *e*P P 20 59 47.9 +1.0
comp=Z,4.9nm,0.9s
SCHQ Schefferville 46.22 15 P P 20 59 47.4 -0.8
comp=Z,15nm,0.6s,baz=211,slow=6.1,SNR=8.6
SCHQ LR LR 21 19 53.2
comp=Z,2µm,18.7s,baz=220,slow=37
SCHQ Schefferville 46.22 15 *e*P P 20 59 48.3 +0.1
comp=Z,93nm,1.5s
TCA Tanti 46.30 156 *i*P P 20 59 42.6 -6.6
MRA San Martin 46.82 157 *i*P P 20 59 51.0 -2.3
EDM Edmonton 47.98 337 *e*P P 21 00 02.3 +0.3
EDM pmax pmax
comp=Z,14nm,1.0s
EDM Edmonton 47.98 337 *e*P P 21 00 02.3 +0.3
comp=Z,14nm,1.0s
FCC Fort Churchill 48.33 354 *e*P P 21 00 04.2 -0.3
FCC pmax pmax
comp=Z,15nm,1.0s
FCC Fort Churchill 48.33 354 *e*P P 21 00 04.2 -0.3
comp=Z,15nm,1.0s
PLCA Paso Flores 53.03 166 P P 21 00 40.9 +0.6
comp=Z,9.4nm,0.8s,baz=2.9,slow=10,SNR=12
PLCA LR LR 21 18 55.6
comp=Z,307nm,20.2s,baz=3.5,slow=31
PLCA Paso Flores 53.03 166 *e*P P 21 00 42.1 +1.8
PLCA pmax pmax
comp=Z,24nm,1.1s
PLCA Paso Flores 53.03 166 *e*P P 21 00 42.0 +1.8
comp=Z,24nm,1.1s
YKA Yellowknife Ar 55.79 344 P P 21 00 59.7 -0.3
comp=Z,2.1nm,0.7s,baz=137,slow=7.5,SNR=14
YKB5 Yellowknife Ar 55.79 344 *e*P P 21 00 59.7 -0.3
INK Inuvik 65.45 342 P P 21 02 05.1 -0.6
comp=Z,2.1nm,0.8s,baz=189,slow=2.4,SNR=4.0
INK Inuvik 65.45 342 *e*P P 21 02 04.2 -1.5
INK pmax pmax
comp=Z,10.0nm,1.1s
INK Inuvik 65.45 342 *e*P P 21 02 04.2 -1.5
comp=Z,9.7nm,1.1s
USHA Ushuaia 66.89 170 LR LR 21 25 57.7
comp=Z,2µm,21.6s,baz=1.0,slow=31
IL1 Eielson Array 68.43 336 *e*P P 21 02 22.6 -2.2
ILAR Eielson Array 68.43 336 P P 21 02 23.4 -1.3
comp=Z,1.0nm,0.8s,baz=113,slow=4.2,SNR=10
ILAR LR LR 21 37 53.6
comp=Z,389nm,19.4s,baz=112,slow=41
ILB Eielson Array 68.43 336 *e*P P 21 02 23.4 -1.3
RND Reindeer 68.77 334 *e*P P 21 02 25.6 -1.4
RND pmax pmax
comp=Z,14nm,1.0s
RND Reindeer 68.77 334 *e*P P 21 02 25.6 -1.4
comp=Z,14nm,1.0s
PVIS Viseu 73.35 51 *e*P P 21 02 52.2 -3.0
comp=Z,37nm,1.3s
POLO Lamas de Olo 73.43 50 *e*P P 21 02 56.4 +0.7
comp=Z,11nm,1.6s
MTE Manteigas 73.62 51 *e*LR LR 21 26 20.1
comp=Z,562nm,22.0s
PCBR Castelo Branco 73.67 52 *e*P P 21 02 58.2 +1.2
PMRV Marv??o 73.74 52 *e*LR LR 21 26 30.6
comp=Z,596nm,20.0s
MVO Moncorvo 74.00 50 *e*P P 21 03 00.7 +1.7
comp=Z,32nm,1.8s
PBAR Barrancos 74.04 53 *e*P P 21 03 00.0 +0.8
comp=Z,60nm,1.6s
PBRG Braganca 74.22 50 *e*P P 21 03 02.2 +2.0
comp=Z,27nm,1.6s
DAG Danmarks Havn 74.22 13 P P 21 02 59.5 0.0
JMIC Jan Mayen 75.47 19 LR LR 21 36 23.6
comp=Z,333nm,20.1s,baz=256,slow=36
MDT Midelt 76.27 59 P P 21 03 13.2 +0.8
comp=Z,4.0nm,0.9s,baz=306,slow=3.5,SNR=4.3
MDT LR LR 21 33 29.7
comp=Z,792nm,19.2s,baz=288,slow=33
ESDC Sonseca Array 76.39 52 P P 21 03 13.3 +0.5
comp=Z,6.2nm,0.8s,baz=281,slow=5.4,SNR=22
ESDC LR LR 21 31 42.2
comp=Z,564nm,21.0s,baz=245,slow=32
ESLA Sonseca Array 76.39 52 *e*P P 21 03 13.9 +1.1
comp=Z,8.9nm,0.9s
ES19 SONSECA Array 76.43 52 *e*P P 21 03 12.4 -0.6
ESK Eskdalemuir 76.58 36 P P 21 03 13.2 -0.2
ESK pmax pmax
comp=Z,21nm,1.1s
ESK Eskdalemuir 76.58 36 *e*P P 21 03 12.2 -1.2
comp=Z,21nm,1.1s
EKA Eskdalemuir Ar 76.60 36 P P 21 03 12.9 -0.6
comp=Z,15nm,1.1s,baz=272,slow=5.3,SNR=14
EKA LR LR 21 32 12.6
comp=Z,216nm,20.3s,baz=275,slow=32
PMSA Palmer Station 77.03 171 LR LR 21 32 04.7
comp=Z,153nm,18.7s,baz=344,slow=32
TIC Toumodi 79.08 85 *e*P P 21 03 29.4 +1.2
TIC Toumodi 79.08 85 *e*P P 21 03 27.9 -0.3
LIC Lamto 79.14 86 *e*P P 21 03 28.8 +0.3
LIC Lamto 79.14 86 *e*P P 21 03 29.7 +1.2
comp=Z,25nm,1.4s
DBIC Dimbokro 79.23 85 P P 21 03 29.4 +0.5
comp=Z,5.7nm,1.0s,baz=270,slow=5.5,SNR=5.5

KIC Kosan Boka 79.40 86 *e*P P 21 03 31.2 +1.3
comp=Z,23nm,1.1s
KIC Kosan Boka 79.40 86 *e*P P 21 03 31.2 +1.3
comp=Z,23nm,1.1s
NB2 NORSAR Subarra 83.67 29 P P 21 03 46.3 -5.3
comp=Z,6.7nm,1.2s,baz=278,slow=5.9
NB200 NORSAR Array S 83.67 29 *e*P P 21 03 52.8 +1.1
NOA NORSAR Array B 83.67 29 P P 21 03 52.8 +1.1
comp=Z,2.7nm,0.9s,baz=282,slow=5.3,SNR=4.9
TOA1 Torodi Ar. Sit 84.51 78 *e*P P 21 03 57.5 +0.8
comp=Z,6.3nm,1.2s
TOA0 Torodi Ar. Sit 84.51 78 *e*P P 21 03 56.7 -0.1
TORD Torodi Ar. Bea 84.51 78 P P 21 03 57.5 +0.8
comp=Z,1.2nm,0.7s,baz=254,slow=4.2,SNR=7.1
HFS Hagfors 85.05 30 LR LR 21 41 13.2
comp=Z,380nm,18.4s,baz=342,slow=35
CLL Collm 86.66 38 *e*(pP) pP 21 04 17.0 -0.9
comp=Z,14nm,1.1s
CLL LmV 21 46 00.0
comp=Z,300nm,18.8s
ARCES ARCESS Array B 86.96 19 P P 21 04 07.2 -0.7
comp=Z,2.4nm,0.8s,baz=329,slow=3.2,SNR=3.8
KEST Kesra 87.34 54 P P 21 04 12.4 +1.9
comp=Z,3.6nm,0.8s,baz=306,slow=10,SNR=3.6
KEST LR LR 21 40 48.6
comp=Z,159nm,19.0s,baz=228,slow=34
GEA0 GERESS Array S 87.67 41 *e*P P 21 04 09.6 -2.3
TIXI Tiksi 94.66 350⇓ *i*P P 21 04 44.2 +0.5
TIXI pmax pmax
comp=Z,4.0nm,2.0s
KLMR Klimovskoe 96.35 24 *e*P P 21 04 47.7 -4.0
KLMR pmax pmax
comp=Z,8.0nm,1.1s
KIEV Kiev 96.51 36 P P 21 04 54.1 +1.5
KIEV pmax pmax
comp=Z,2.0nm,0.6s
OBN Obninsk 98.26 30⇑ *e*P P 21 05 00.1 -0.3
OBN *e* 21 05 10.5
OBN pmax pmax
comp=Z,4.0nm,0.9s
NRIK Noril'sk 99.87 3 LR LR 21 51 56.8
comp=Z,596nm,20.4s,baz=3.5,slow=36
BVAR Borovoye Array 113.04 16 PP PP 21 10 43.9 -4.6
comp=Z,1.0nm,0.8s,baz=327,slow=7.6,SNR=6.1
ZAA1 Zalesovo Array 114.92 7 *e*PP PP 21 10 58.0 -3.6
ZALV Zalesovo Beam 114.92 7 PP PP 21 10 58.0 -3.7
comp=Z,0.3nm,0.3s,baz=328,slow=5.3,SNR=6.4
HHC Hu-ho-hao-te 126.33 344 *e*PKP PKPdf 21 10 25.9 -0.4
KSH Kashi 126.92 18 *e*PKP PKPdf 21 10 26.3 -1.2
KSH PKS PKSdf 21 14 01.7 -2.5
KSH AMB AMB
comp=Z,41nm,4.4s
KSH LR LR
comp=Z,110nm,8.4s
KSH LR LR
comp=Z,110nm,7.2s
KSH LR LR
comp=Z,280nm,18.3s
CD2 Chengdu 137.65 349 PKP PKPdf 21 10 45.5 -2.3
CD2 sPKP 21 11 09.7
CD2 SKS SKSdf 21 17 50.8 -5.5
CD2 SKKS SKKSac 21 20 19.6 -6.8
CD2 AMB AMB
comp=Z,120nm,5.8s
GYA Guiyang 141.22 343 *e*PKP PKPdf 21 10 52.0 -2.6
GYA sPKP 21 11 16.2
GYA PP PP 21 13 56.6 +1.6
GYA AMB AMB
comp=Z,120nm,7.8s
KMI Kunming 143.47 348 PKP PKPbc 21 10 55.7 -0.2
KMI LR LR
comp=Z,180nm,22.4s
KMI LR LR
comp=Z,280nm,17.6s
KMI LR LR
comp=Z,330nm,26.4s
QIZ Qiongzhong 146.88 333 PKPbc PKPdf 21 11 03.2 -1.2
QIZ PP PP 21 14 29.1 0.0
QIZ SS SS 21 33 28.5 +2.4
CM31 Chiang Mai Arr 150.64 352 *e*PKPdf PKPdf 21 11 10.8 +0.2
CM31 *e*PKPbc PKPbc 21 11 16.4 +0.4
CMAR Chiang Mai Arr 150.64 352 PKP PKPdf 21 11 10.8 +0.2
comp=Z,0.6nm,0.8s,baz=337,slow=2.6,SNR=3.9
CMAR PKPbc PKPbc 21 11 16.4 +0.4
comp=Z,1.1nm,0.8s,baz=310,slow=2.3,SNR=7.6
CM01 Chiang Mai Arr 150.67 352 *e*PKPdf PKPdf 21 11 10.3 -0.3

IDC ***12*** *20:51:57.5±1.1,30.07S×176.25W,h0km,mb4.0/2, mb1 4.3/2,mb1mx3.8/32,mbtmp4.0/2,Error ellipse: s-maj=50.0km s-min=25.0km az=24.0*
NEIC ***12*** *20:51:58.5±0.7,30.23S×176.29W,h10km,mb5.0/8,Error ellipse: s-maj=17.0km s-min=10.2km az=107.0*
ISCJB ***12*** *20:52:06.1±1.8,30.48S±0.05×177.7W±0.3,h10km, mb4.5/5,Error ellipse: s-maj=37.7km s-min=7.1km az=4.8*

ISC 12 20:52:00.8±1.1,30.20S±0.10×176.3W±0.1,h24km,n27, σ1§42/30,mb4.7/6,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.67**	**304**	Pn	**Pb**	**20 52 29.2**	**-1.7**
	33nm,0.3s,baz=108,slow=20,SNR=3.3						
RAO				Sn	**Sb**	**20 52 51.5**	**0.0**
	524nm,0.3s,baz=52,slow=20,SNR=7.5						
RAO	**Raoul Island**	**1.67**	**304**	*e*Pn	**Pn**	**20 52 29.0**	**+0.4**
RAO				*e*Sn	**Sn**	**20 52 46.4**	**-2.9**
MXZ	**Matakaoa Point**	**8.59**	**210**	*e*Pn	**Pn**	**20 54 02.0**	**-1.6**
URZ	**Urewera**	**9.70**	**212**	*e*Pn	**Pn**	**20 54 17.2**	**-1.5**
URZ				*e*Sn	Sn	20 55 57.6	-9.3
OUZ	**Omahuta**	**9.85**	**237**	*e*Pn	**Pn**	**20 54 23.3**	**+2.4**
KHZ	**Kahutara**	**14.66**	**211**	*e*Pn	**Pn**	**20 55 23.8**	**-2.8**
LTZ	**Lake Taylor**	**15.52**	**213**	*e*Pn	**Pn**	**20 55 37.4**	**-0.8**
	249nm,1.9s						
OXZ	**Oxford**	**16.05**	**212**	*e*Pn	**Pn**	**20 55 43.9**	**-1.0**
	161nm,1.8s						
ODZ	**Otahua Downs**	**18.02**	**211**	*e*Pn	**Pn**	**20 56 08.8**	**-0.7**
	206nm,2.0s						
PYZ	**Puysegur Point**	**20.72**	**215**	*e*P	**P**	**20 56 39.1**	**-0.3**
	490nm,1.5s						
LHI	**Lord Howe Isla**	**21.15**	**260**	*e*P	**P**	**20 56 41.9**	**-2.3**
	143nm,1.1s						
TAU	**Tasmania Unive**	**31.59**	**236**	*e*P	**P**	**20 58 24.3**	**+2.8**
	174nm,1.5s						
ASAR	**Alice Springs**	**44.56**	**266**	P	**P**	**21 00 11.5**	**+0.4**
	1.4nm,0.8s,baz=108,slow=7.4,SNR=12						
ASAR				PcP	**PP**	**21 01 56.8**	**+1.6**
	0.2nm,0.6s,baz=116,slow=4.2,SNR=2.9						
WB2	**Warramunga Arr**	**45.52**	**271**	*e*P	**P**	**21 00 18.5**	**-0.2**
	12nm,1.3s						
WR1	**Warramunga Arr**	**45.53**	**271**	*e*P	**P**	**21 00 18.6**	**-0.2**
	14nm,1.4s						
WRA	**Warramunga Arr**	**45.53**	**271**	P	**P**	**21 00 18.6**	**-0.2**
	1.8nm,0.6s,baz=110,slow=7.7,SNR=14						
MK32	**Makanchi Array**	**118.75**	**310**	*e*PKPdf	**PKPdf**	**21 10 45.9**	**-0.9**
MKAR	**Makanchi Array**	**118.75**	**310**	PKP	**PKPdf**	**21 10 45.9**	**-0.9**
	0.5nm,0.7s,baz=98,slow=0.9,SNR=4.6						
KURK	**Kurchatov**	**121.95**	**314**	*e*PKPdf	**PKPdf**	**21 10 52.6**	**0.0**
KURBB	**Kurchatov Arra**	**121.99**	**314**	PKP	**PKPdf**	**21 10 52.6**	**-0.1**
	0.9nm,0.9s,baz=100,slow=2.4,SNR=6.2						
BVAR	**Borovoye Array**	**127.27**	**316**	PKP	**PKPdf**	**21 11 03.4**	**+0.6**
	0.7nm,0.6s,baz=44,slow=4.4,SNR=3.9						
FIA0	**FINESS Array S**	**145.44**	**341**	*e*PKPdf	**PKPab**	**21 11 35.7**	**-0.6**
FINES	**FINESS Array B**	**145.44**	**341**	PKPbc	**PKPab**	**21 11 35.7**	**-0.6**
	2.2nm,0.5s,baz=46,slow=4.0,SNR=9.9						
AKASG	**Malin Array Be**	**152.00**	**324**	PKPbc	**PKPbc**	**21 11 53.5**	**-0.1**
	0.2nm,0.3s,baz=53,slow=3.1,SNR=4.7						
AKBB	**Malin Array Si**	**152.00**	**324**	*e*PKPbc	**PKPbc**	**21 11 53.5**	**-0.1**
TORD	**Torodi Ar. Bea**	**162.93**	**173**	PKPab	**PKPab**	**21 12 52.2**	**+1.4**
	2.4nm,0.8s,baz=190,slow=3.9,SNR=12						
TOA1	**Torodi Ar. Sit**	**162.94**	**173**	*e*PKPab	**PKPab**	**21 12 52.2**	**+1.4**

JMA 12 20:55:57.9±0.4,38.04N×143.14E,h27km,M2.9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.47**	**287**	P	Pn	20 56 23.3	+0.7
OFUJ	**Ofunato**	**1.55**	**312**	P	Pn	20 56 24.0	+0.3
OFUJ				S	Sn	20 56 43.4	+0.4
JMK	**Ichinoseki**	**1.76**	**302**	P	Pn	20 56 27.4	+0.8
JMM	**Marumori**	**1.86**	**265**	P	Pn	20 56 28.8	+0.8
JFK	**Kawauchi**	**1.92**	**250**	P	Pn	20 56 29.3	+0.5
JFK				S	Sn	20 56 52.0	-0.1
JOU	**Okura**	**1.98**	**280**	P	Pn	20 56 31.1	+1.5

JOM	**Ohasama**	**2.03 315**	S	Sn	20 56 56.1	+1.2
JFT	**Otama**	**2.28 258**	P	Pn	20 56 35.8	+2.0
JYK	**Kaneyama**	**2.35 293**	P	Pn	20 56 36.4	+1.7
JRG	**Rokugo**	**2.38 305**	P	Pn	20 56 36.7	+1.5
JRG			S	Sb	20 57 07.2	-1.9

NIED ***12*** *20:56:00, 37.°30N×142.°50E, h5km, Mw4.4 Best double couple: M₀4.02000×10¹⁵ NP1:φs25.00000°, δ35.00000°, λ-98.00000°. NP2:φs215.00000°, δ55.00000°, λ-85.00000°.*

ISCJB ***12*** *20:56:32.3±1.1, 37.°26N±0.°03×142.°58E±0.°03, h0km±6km, mb4.7/92, MS4.4/2, Error ellipse: s-maj=4.5km s-min=3.8km az=160.4*

JMA ***12*** *20:56:33.2±0.3, 37.°30N×142.°53E, h8km, M4.6*

IDC ***12*** *20:56:34.1±0.5, 37.°30N×142.°51E, h0km, mb4.3/30, mb1 4.4/38, mb1mx4.2/73, mbtmp4.3/38, ML3.6/8, MS3.6/3, Ms1 3.6/3, ms1mx3.2/59, Error ellipse: s-maj=14.6km s-min=11.6km az=102.0*

BJI ***12*** *20:56:35.9, 37.°37N×142.°31E, h18km, mb4.6/42, mB4.8/24, Ms4.8/16, Ms7 4.6/16*

NEIC ***12*** *20:56:36.0±2.0, 37.°34N×142.°46E, h13km±12km, mb4.7/49, Error ellipse: s-maj=5.5km s-min=3.8km az=130.0*

MOS ***12*** *20:56:37.2±1.1, 37.°35N×142.°53E, h33km, mb4.7/42, Error ellipse: s-maj=9.1km s-min=6.9km az=100.1*

ISC 12 20:56:37.8±0.7, 37.°30N±0.°04×142.°59E±0.°05, h26km±4km, n233, σ1$30/249, mb4.6/92, 19C-7D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.37**	**273**	P			**Pn**	**20 56 57.8**	**-3.5**
JIO	**Ouri**	**1.51**	**320**	P			**Pn**	**20 57 00.4**	**-2.8**
JIO				S			**Sn**	**20 57 20.6**	**-1.4**
JMM	**Marumori**	**1.53**	**292**	P			**Pn**	**20 57 00.1**	**-3.4**
JFT	**Otama**	**1.81**	**277**	P			**Pn**	**20 57 05.0**	**-2.3**
JFT				S			**Sn**	**20 57 29.4**	**0.0**
JOU	**Okura**	**1.86**	**305**	P			**Pn**	**20 57 05.7**	**-2.3**
JOU				S			**Sn**	**20 57 30.6**	**0.0**
JMK	**Ichinoseki**	**1.97**	**327**	P			**Pn**	**20 57 08.4**	**-1.1**
JYS	**Shirataka**	**2.20**	**295**	P			**Pn**	**20 57 10.7**	**-2.0**
JYS				S			**Sn**	**20 57 40.1**	**+1.0**
JFY	**Yanaizu**	**2.30**	**273**	P			**Pn**	**20 57 12.2**	**-1.9**
JYK	**Kaneyama**	**2.38**	**313**	P			**Pn**	**20 57 13.8**	**-1.4**
JYK				S			**Sn**	**20 57 44.9**	**+1.3**
JOM	**Ohasama**	**2.39**	**335**	P			**Pn**	**20 57 14.8**	**-0.6**
JRG	**Rokugo**	**2.59**	**324**	P			**Pn**	**20 57 16.9**	**-1.2**
JAG	**Ashikaga**	**2.66**	**252**	P			**Pn**	**20 57 18.0**	**-1.1**
MJAR	**Matsushiro Arr**	**3.59**	**259**	Pn			**Pn**	**20 57 32.0**	**+0.2**
	8.4nm,0.3s,baz=71,slow=9.5,SNR=45								
MJAR				LR			LR	20 58 59.0	
	comp=Z,602nm,18.6s,baz=135,slow=41								
MAJO	**Matsushiro**	**3.59**	**259**	*i* P			**Pn**	**20 57 32.6**	**+0.7**
MAJO	**Matsushiro**	**3.59**	**259**	*e*Pn			**Pn**	**20 57 31.1**	**-0.8**
MAT	**Matsushiro**	**3.59**	**259**	P			**Pn**	**20 57 32.5**	**+0.6**
MAT				*e*S			**Sn**	**20 58 15.5**	**+2.1**
ERM	**Erimo**	**4.72**	**5**	*i* P			**Pn**	**20 57 47.5**	**+0.1**
ERM	**Erimo**	**4.72**	**5**	*e*Pn			**Pn**	**20 57 43.0**	**-4.4**
JHJ2	**Mitsune**	**4.76**	**209**	*e*Pn			**Pn**	**20 57 46.0**	**-1.8**
JHJ	**Hachijo jima 2**	**4.76**	**210**	Pn			**Pn**	**20 57 46.4**	**-1.5**
	34nm,0.3s,baz=70,slow=23,SNR=28								
JHJ				Sn			**Sn**	**20 58 39.6**	**-2.7**
	42nm,0.3s,baz=80,slow=22,SNR=5.7								
INU	**Inuyama**	**4.90**	**248**	*e*Pn			**Pn**	**20 57 50.2**	**+0.3**
ASAJ	**Asahikawa**	**6.81**	**0**	Pn			**Pn**	**20 58 14.3**	**-1.7**
	2.1nm,0.3s,baz=225,slow=13,SNR=11								
ASAJ				Sn			**Sn**	**20 59 29.4**	**-3.2**
	baz=158,slow=19								
ASAJ	**Asahikawa**	**6.81**	**0**	*e*Pn			**Pn**	**20 58 13.7**	**-2.3**
ASAJ				Sn			**Sn**	**20 59 29.4**	**-3.2**
KUR	**Kuril'sk**	**8.86**	**25**	*i* P			**Pn**	**20 58 46.3**	**+2.2**
YSS	**Yuzh-Sakhalins**	**9.64**	**1**	*e*P			**Pn**	**20 58 58.5**	**+3.6**
YSS				pmax	pmax				
	comp=Z,20nm,1.1s								
YSS	**Yuzh-Sakhalins**	**9.64**	**1**	*e*Pn			**Pn**	**20 58 53.0**	**-1.9**
CBIJ	**Chichi jima**	**10.18**	**182**	*e*Pn			**Pn**	**20 59 03.6**	**+1.3**
MSHR	**Mys Shultsa**	**10.23**	**305**	*ce*P			**Pn**	**20 59 03.0**	**0.0**
JNU	**Nakatsue**	**10.45**	**250**	Pn			**Pn**	**20 59 06.5**	**+0.5**
	comp=Z,0.4nm,0.3s,baz=63,slow=2.3,SNR=5.6								
JNU	**Nakatsue**	**10.45**	**250**	*e*Pn			**Pn**	**20 59 04.3**	**-1.7**
USRK	**Ussuriysk Ar.**	**10.58**	**314**	Pn			**Pn**	**20 59 08.1**	**+0.3**
	comp=Z,0.7nm,0.3s,baz=117,slow=14,SNR=14								
USRK				LR			LR	21 02 35.4	
	comp=Z,424nm,20.1s,baz=357,slow=34								
KSRS	**Korea Array**	**11.67**	**275**	Pn			**Pn**	**20 59 23.5**	**+0.9**
	comp=Z,0.5nm,0.3s,baz=87,slow=14,SNR=7.5								
KSRS				LR			LR	21 02 53.9	
	comp=Z,347nm,19.8s,baz=56,slow=33								
KS01	**Wonju Array Si**	**11.69**	**275**	*e*Pn			**Pn**	**20 59 18.8**	**-4.1**
KS15	**Wonju Array Si**	**11.70**	**275**	*e*Pn			**Pn**	**20 59 20.7**	**-2.4**
KSAR	**Wonju Array Be**	**11.70**	**275**	P			**Pn**	**20 59 23.5**	**+0.4**
KSAR	**Wonju Array Be**	**11.70**	**275**	Pn			**Pn**	**20 59 23.5**	**+0.4**
KLR	**Kul'dur**	**14.28**	**330**	Pn			**Pn**	**20 59 55.8**	**-2.4**
	comp=Z,0.3nm,0.3s,baz=122,slow=13,SNR=3.6								
KLR	**Kul'dur**	**14.28**	**330**	*i* P			**Pn**	**20 59 59.6**	**+1.4**
PEA0	**Petropavlovsk-**	**18.99**	**29**	*e*P			**Pn**	**21 00 59.0**	**+0.9**
PETK	**Petropavlovsk-**	**18.99**	**29**	P			**Pn**	**21 00 59.1**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=217,slow=8.9,SNR=3.5								
PEA1	**Petropavlovsk-**	**18.99**	**29**	*e*P			**Pn**	**21 00 59.1**	**+1.0**
PET	**Petropavlovsk**	**19.30**	**30**	*e*P			**P**	**21 01 00.7**	**0.0**
PET				pmax	pmax				
	comp=Z,34nm,1.5s								
PET	**Petropavlovsk**	**19.30**	**30**	*e*P			**P**	**21 01 00.7**	**0.0**
	comp=Z,34nm,1.5s								
NACB	**Ninganchiao**	**22.23**	**240**	*e*P			**P**	**21 01 31.2**	**-1.4**
	comp=Z,15nm,0.9s								
MA2	**Magadan**	**22.90**	**11**	P			**P**	**21 01 40.6**	**+1.2**
	comp=Z,3.7nm,0.4s,baz=198,slow=5.4,SNR=5.0								
SSLB	**Suanglung**	**22.92**	**240**	*e*P			**P**	**21 01 36.7**	**-3.3**
	comp=Z,48nm,1.7s								
YULB	**Yu-li**	**22.95**	**239**	*e*P			**P**	**21 01 36.7**	**-3.5**
	comp=Z,42nm,1.8s								
TPUB	**Ta-pu**	**23.47**	**240**	*e*P			**P**	**21 01 43.7**	**-1.7**
	comp=Z,91nm,2.0s								
HHC	**Hu-ho-hao-te**	**24.28**	**288**	*e*P			**P**	**21 01 52.6**	**-0.5**
HHC				pmax	pmax				
	comp=Z,5.0nm,0.7s								
HHC				pmax	pmax				
	comp=Z,520nm,8.6s								
CIT	**Chita**	**25.14**	**315**	*e*P			**P**	**21 01 59.7**	**-1.0**
CIT				*e*				21 02 09.2	
CIT				*e*				21 02 17.7	
CIT				pmax	pmax				
	comp=Z,67nm,1.2s								
YAK	**Yakutsk**	**26.02**	**346**	P			**P**	**21 02 08.4**	**-0.1**
	comp=Z,12nm,0.4s,baz=89,slow=2.7,SNR=5.4								
YAK	**Yakutsk**	**26.02**	**346**	*e*P			**P**	**21 02 08.8**	**+0.3**
YAK				pmax	pmax				
	comp=Z,21nm,0.7s								
YAK	**Yakutsk**	**26.02**	**346**	*e*P			**P**	**21 02 06.8**	**-1.7**
	comp=Z,21nm,0.7s								
SEY	**Seymchan**	**26.35**	**10**	P			**P**	**21 02 12.0**	**+0.6**
	comp=Z,5.3nm,0.6s,baz=199,slow=7.4,SNR=11								
SMY	**Shemya**	**26.82**	**45**	*e*P			**P**	**21 02 15.4**	**-0.3**
SMY	**Shemya**	**26.82**	**45**	*e*P			**P**	**21 02 15.4**	**-0.3**
XAN	**Xi'an**	**27.46**	**273**	P			**P**	**21 02 21.1**	**-0.7**
XAN				pP			pP	21 02 29.0	-0.5
XAN				pmax	pmax				
	comp=Z,8.0nm,0.7s								
XAN				pmax	pmax				
	comp=Z,170nm,12.0s								
H11N2	**WAKE ISLAND Hy**	**27.49**	**123**	T			T	21 31 08.9	
	baz=315,slow=75,SNR=360								
H11N1	**WAKE ISLAND Hy**	**27.50**	**123**	T			T	21 31 09.7	
	baz=315,slow=75,SNR=310								
H11N3	**WAKE ISLAND Hy**	**27.51**	**123**	T			T	21 31 08.7	
	baz=315,slow=75,SNR=295								
BOD	**Bodaibo**	**27.81**	**327**	*e*P			**P**	**21 02 22.7**	**-1.9**
BOD				pmax	pmax				
	comp=Z,11nm,1.7s								
H11S1	**WAKE ISLAND Hy**	**28.23**	**125**	T			T	21 32 03.7	
	baz=317,slow=76,SNR=554								
H11S3	**WAKE ISLAND Hy**	**28.23**	**125**	T			T	21 32 05.0	
	baz=317,slow=76,SNR=467								
H11S2	**WAKE ISLAND Hy**	**28.25**	**125**	T			T	21 32 04.7	
	baz=317,slow=76,SNR=523								
ENH	**Enshi**	**28.29**	**265**	*e*P			**P**	**21 02 28.1**	**-1.2**
	comp=Z,18nm,0.8s								
SONA1	**Songino Array**	**28.41**	**303**	*e*P			**P**	**21 02 29.7**	**-0.6**
SONA0	**Songino Array**	**28.42**	**303**	*e*P			**P**	**21 02 30.5**	**+0.2**
	comp=Z,9.9nm,0.8s								
SONM	**Songino Array**	**28.42**	**303**	P			**P**	**21 02 30.5**	**+0.2**
	comp=Z,7.6nm,0.7s,baz=100,slow=9.0,SNR=38								
ZAK	**Zakamensk**	**30.84**	**308**	*e*P			**P**	**21 02 50.2**	**-1.5**
ZAK				pmax	pmax				
	comp=Z,54nm,1.4s								
LZH	**Lanzhou**	**30.95**	**280**	*e*P			P	21 02 48.3	-4.6
LZH				pP			pP	21 02 56.7	-3.9
LZH				sP			sP	21 03 01.1	-2.7
LZH				pmax	pmax				
	comp=Z,18nm,1.0s								
CD2	**Chengdu**	**32.61**	**270**	P			**P**	**21 03 06.3**	**-1.1**
CD2				pP			pP	21 03 13.9	-1.2
CD2				sP			sP	21 03 17.2	-1.1
CD2				S			**S**	**21 08 20.2**	**-1.5**
CD2				sS			sS	21 08 33.2	-1.2
CD2				pmax	pmax				
	comp=Z,10.0nm,0.5s								
CD2				pmax	pmax				
	comp=Z,120nm,5.2s								
GTA	**Gaotai**	**33.38**	**287**	*e*P			**P**	**21 03 14.2**	**0.0**
GTA				pP			pP	21 03 18.8	-3.1
GTA				sP			sP	21 03 21.6	-3.5
GTA				pmax	pmax				
	comp=Z,4.0nm,1.1s								
BILL	**Bilibino**	**33.51**	**16**	*e*P			**P**	**21 03 15.6**	**+0.8**
BILL				*e**PP			**sP**	**21 03 24.9**	**-0.8**
BILL				*e*				21 04 27.8	
BILL				pmax	pmax				
	comp=Z,8.0nm,1.2s								
QIZ	**Qiongzhong**	**33.90**	**247**	P			**P**	**21 03 19.1**	**+0.4**
QIZ				S			**S**	**21 08 43.1**	**+1.4**
QIZ				LR	LR				
	comp=Z,870nm,9.8s								
QIZ				LR	LR				
	comp=Z,760nm,9.2s								
QIZ				LR	LR				
	comp=Z,590nm,15.1s								
KMI	**Kunming**	**35.93**	**262**	P			**P**	**21 03 36.0**	**-0.4**
KMI				pP			pP	21 03 44.8	+0.6
KMI				sP			sP	21 03 47.7	+0.3
KMI				pmax	pmax				
	comp=Z,7.0nm,1.1s								
MYLDM	**Lahad Datu**	**38.82**	**220**	*e*P			**P**	**21 04 00.7**	**0.0**
	comp=Z,17nm,1.3s								
WMQ	**Urumqi**	**41.55**	**297**	P			**P**	**21 04 24.8**	**+1.6**
WMQ				pP			pP	21 04 31.7	+0.6
WMQ				pmax	pmax				
	comp=Z,16nm,0.7s								
WMQ				pmax	pmax				
	comp=Z,130nm,6.2s								
ZAA0	**Zalesovo Array**	**42.43**	**312**	*e*P			**P**	**21 04 29.6**	**-0.6**
ZAA1	**Zalesovo Array**	**42.43**	**312**	*e*P			**P**	**21 04 30.0**	**-0.1**
ZAA1				*e*PcP			**PcP**	**21 06 22.7**	**0.0**
ZALV	**Zalesovo Beam**	**42.43**	**312**	P			**P**	**21 04 30.0**	**-0.1**
	comp=Z,6.3nm,0.7s,baz=94,slow=7.2,SNR=24								
ZALV				PcP			**PcP**	**21 06 22.7**	**0.0**
	comp=Z,0.9nm,0.6s,baz=104,slow=4.6,SNR=3.1								
CMAR	**Chiang Mai Arr**	**42.47**	**256**	P			**P**	**21 04 31.1**	**+0.2**
	comp=Z,0.4nm,0.5s,baz=50,slow=7.1,SNR=4.3								
CMAR				PcP			**PcP**	**21 06 23.3**	**-0.3**
	comp=Z,0.7nm,0.8s,baz=20,slow=2.9,SNR=5.0								
CMAR	**Chiang Mai Arr**	**42.47**	**256**	P			**P**	**21 04 31.1**	**+0.2**
CMAR								21 06 23.3	
CMAR				pmax	pmax				
	comp=Z,1.0nm,0.8s								
CMAR				pmax	pmax				
	comp=Z,1.0nm,0.8s								
CM01	**Chiang Mai Arr**	**42.48**	**256**	*e*P			**P**	**21 04 31.5**	**+0.5**
LSA	**Lhasa**	**43.12**	**276**	*e*P			**P**	**21 04 37.0**	**+0.4**
LSA				pmax	pmax				
	comp=Z,5.0nm,0.9s								
LSA	**Lhasa**	**43.12**	**276**	*e*P			**P**	**21 04 37.0**	**+0.4**
	comp=Z,5.0nm,0.9s								
NVS	**Novosibirsk**	**43.33**	**314**	*e*P			**P**	**21 04 37.0**	**-0.4**
NVS				*e*				21 06 25.6	
MK01	**Makanchi Array**	**44.77**	**302**	*e*P			**P**	**21 04 48.4**	**-0.8**
MK31	**Makanchi Array**	**44.77**	**302**	*e*P			**P**	**21 04 48.4**	**-0.8**
MK31	**Makanchi Array**	**44.77**	**302**	*e*P			**P**	**21 04 48.4**	**-0.8**
MK32	**Makanchi Array**	**44.77**	**302**	*e*P			**P**	**21 04 49.0**	**-0.1**
MKAR	**Makanchi Array**	**44.77**	**302**	P			**P**	**21 04 49.0**	**-0.1**
	comp=Z,3.2nm,0.8s,baz=87,slow=9.7,SNR=26								
MKAR	**Makanchi Array**	**44.77**	**302**	*e*P			**P**	**21 04 48.6**	**-0.5**
	comp=Z,66nm,1.3s								
MAKZ	**Makanchi**	**44.98**	**302**	*e*P			**P**	**21 04 50.6**	**-0.2**
MAKZ				pmax	pmax				
	comp=Z,9.0nm,1.2s								
MAKZ	**Makanchi**	**44.98**	**302**	*e*P			**P**	**21 04 50.6**	**-0.2**
	comp=Z,9.3nm,1.2s								
KSM	**Kuching**	**46.42**	**227**	*e*P			**P**	**21 05 02.9**	**+0.5**
	comp=Z,13nm,1.3s								
KURK	**Kurchatov**	**46.50**	**308**	P			**P**	**21 05 02.8**	**+0.1**
KURK				pmax	pmax				
	comp=Z,9.0nm,0.6s								
KURK	**Kurchatov**	**46.50**	**308**	*e*P			**P**	**21 05 02.2**	**-0.6**
KURBB	**Kurchatov Arra**	**46.58**	**308**	P			**P**	**21 05 02.8**	**-0.5**
	comp=Z,8.9nm,0.6s,baz=81,slow=8.0,SNR=54								
KTH	**Kantishna Hill**	**47.00**	**34**	*e*P			**P**	**21 05 07.4**	**+0.8**
	comp=Z,38nm,1.8s								
GUN	**Gumba**	**48.06**	**276**	*e*P			**P**	**21 05 16.5**	**+0.9**
	comp=Z,20nm,0.4s								
KKN	**Kakani**	**48.59**	**276**	*e*P			**P**	**21 05 19.6**	**+0.1**
	comp=Z,14nm,0.5s								
PKIN	**Phulchoki**	**48.59**	**276**	*e*P			**P**	**21 05 21.1**	**+1.5**
	comp=Z,5.8nm,0.5s								
IL1	**Eielson Array**	**48.76**	**33**	*e*P			**P**	**21 05 20.8**	**+0.7**
ILAR	**Eielson Array**	**48.76**	**33**	P			**P**	**21 05 20.6**	**+0.4**
	comp=Z,1.6nm,0.8s,baz=264,slow=6.6,SNR=13								
ILB	**Eielson Array**	**48.76**	**33**	*e*P			**P**	**21 05 20.5**	**+0.4**
GKN	**Gorkha**	**49.01**	**277**	*e*P			**P**	**21 05 22.4**	**-0.2**
	comp=Z,22nm,0.8s								
KLU	**Klutina**	**49.39**	**37**	*e*P			**P**	**21 05 25.9**	**+0.9**
	comp=Z,7.5nm,1.2s								
DIV	**Divide**	**49.49**	**37**	*e*P			**P**	**21 05 25.6**	**-0.2**
	comp=Z,26nm,1.6s								
KOLN	**Koldanda**	**49.93**	**277**	*e*P			**P**	**21 05 30.9**	**+1.1**
	comp=Z,6.6nm,0.5s								
DOT	**Dot Lake**	**50.06**	**34**	*e*P			**P**	**21 05 29.6**	**-0.4**
	comp=Z,40nm,1.8s								
PYUN	**Piuthan**	**50.26**	**278**	*e*P			**P**	**21 05 32.4**	**+0.1**
MENT	**Mentasta**	**50.28**	**35**	*e*P			**P**	**21 05 32.1**	**+0.4**
	comp=Z,3.8nm,0.6s								
CRQM	**Cirque**	**50.81**	**38**	*e*P			**P**	**21 05 34.1**	**-1.9**
	comp=Z,24nm,1.6s								
BVAR	**Borovoye Array**	**51.08**	**312**	P			**P**	**21 05 37.5**	**-0.4**
	comp=Z,1.3nm,0.5s,baz=68,slow=8.2,SNR=11								
BRVK	**Borovoye**	**51.14**	**312**	*ce*P			**P**	**21 05 38.8**	**+0.5**
BRVK				pmax	pmax				
	comp=Z,22nm,2.5s								
BRVK	**Borovoye**	**51.14**	**312**	*e*P			**P**	**21 05 35.5**	**-2.8**
	comp=Z,4.4nm,1.1s								
KSH	**Kashi**	**51.15**	**294**	*e*P			**P**	**21 05 42.8**	**+4.1**
KSH				*ep*P			sP	21 05 50.6	+0.7
KSH				PcS			**PcS**	**21 10 54.0**	**+2.2**
KSH				S			**S**	**21 12 59.4**	**+4.1**
KSH				ScS			**ScS**	**21 15 28.9**	**+1.2**
KSH				pmax	pmax				
	comp=Z,66nm,4.5s								
KSH				LR	LR				
	comp=Z,190nm,5.8s								
KSH				LR	LR				
	comp=Z,270nm,8.4s								
KSH				LR	LR				
	comp=Z,210nm,7.7s								
BALM	**Baldy**	**51.16**	**37**	*e*P			**P**	**21 05 37.5**	**-0.9**
BALM				pmax	pmax				
	comp=Z,5.0nm,1.1s								
BALM	**Baldy**	**51.16**	**37**	*e*P			**P**	**21 05 37.5**	**-0.9**
	comp=Z,5.0nm,1.1s								
AAK	**Ala-Archa**	**51.19**	**299**	*e*P			**P**	**21 05 37.9**	**-1.1**
AAK				pmax	pmax				
	comp=Z,4.0nm,0.9s								
AAK	**Ala-Archa**	**51.19**	**299**	*e*P			**P**	**21 05 38.9**	**-0.1**
	comp=Z,19nm,1.9s								
ZRNK	**Zerenda**	**51.92**	**312**	*e*P			**P**	**21 05 43.8**	**-0.3**
ZRNK				pmax	pmax				
	comp=Z,5.0nm,1.0s								
ZRNK	**Zerenda**	**51.92**	**312**	*e*P			**P**	**21 05 43.8**	**-0.3**
	comp=Z,5.2nm,1.0s								
HYT	**Haines Junctio**	**53.52**	**37**	*e*P			**P**	**21 05 56.0**	**0.0**
	comp=Z,8.2nm,1.1s								
INK	**Inuvik**	**53.72**	**27**	P			**P**	**21 05 58.0**	**+0.9**
	comp=Z,2.0nm,0.8s,baz=337,slow=7.3,SNR=3.5								
INK	**Inuvik**	**53.72**	**27**	*e*P			**P**	**21 05 57.4**	**+0.2**
INK				pmax	pmax				
	comp=Z,5.0nm,1.0s								
INK	**Inuvik**	**53.72**	**27**	*e*P			**P**	**21 05 57.4**	**+0.2**
	comp=Z,4.6nm,1.0s								
KKAR	**Karatay Array**	**53.80**	**300**	*e*P			**P**	**21 05 57.9**	**-0.3**
KKAR				pmax	pmax				
	comp=Z,29nm,0.7s								
KKAR	**Karatay Array**	**53.80**	**300**	*e*P			**P**	**21 05 57.9**	**-0.3**
	comp=Z,29nm,0.7s								
GSI	**Gunungsitoli**	**54.74**	**240**	*e*P			**P**	**21 06 05.5**	**+0.1**
	comp=Z,134nm,1.7s								
SVE	**Sverdlovsk**	**55.56**	**319**	⇓*i*P			**P**	**21 06 11.3**	**+0.6**
SVE				pmax	pmax				
	comp=Z,12nm,1.1s								
ARU	**Arti**	**56.78**	**319**	P			**P**	**21 06 19.3**	**-0.1**
	comp=Z,4.7nm,0.6s,baz=77,slow=3.1,SNR=5.9								
ARU	**Arti**	**56.78**	**319**	*d*⇓*i*P			**P**	**21 06 18.9**	**-0.5**
ARU								21 08 25.3	
ARU				S			**S**	**21 14 12.7**	**+2.1**
ARU				SS			**SS**	**21 17 57.0**	**-1.1**
ARU				pmax	pmax				
	comp=Z,12nm,1.2s								
ARU	**Arti**	**56.78**	**319**	*e*P			**P**	**21 06 18.3**	**-1.1**
	comp=Z,23nm,1.5s								
FITZ	**Fitzroy Crossi**	**57.38**	**199**	P			**P**	**21 06 24.6**	**+0.6**
	comp=Z,2.0nm,0.7s,baz=0.5,slow=6.1,SNR=6.5								
FITZ	**Fitzroy Crossi**	**57.38**	**199**	*e*P			**P**	**21 06 24.5**	**+0.6**
	comp=Z,29nm,1.7s								
WRAB	**Tennant Creek**	**57.46**	**189**	*ce*P			**P**	**21 06 24.8**	**+0.3**
WRAB				pmax	pmax				
	comp=Z,36nm,1.2s								
WRAB	**Tennant Creek**	**57.46**	**189**	*e*P			**P**	**21 06 25.7**	**+1.2**
	comp=Z,9.8nm,0.8s								
WB2	**Warramunga Arr**	**57.47**	**189**	*e*P			**P**	**21 06 24.6**	**0.0**
	comp=Z,16nm,1.1s								
WR1	**Warramunga Arr**	**57.47**	**189**	*e*P			**P**	**21 06 24.5**	**-0.1**
	comp=Z,13nm,1.1s								
WRA	**Warramunga Arr**	**57.47**	**189**	P			**P**	**21 06 24.5**	**-0.1**
	comp=Z,7.9nm,1.0s,baz=8.1,slow=7.3,SNR=27								
DLBC	**Dease Lake**	**57.83**	**38**	*e*P			**P**	**21 06 25.5**	**-1.4**
	comp=Z,22nm,1.9s								
KBL	**Kabul**	**58.19**	**291**	*e*P			**P**	**21 06 29.0**	**-1.0**
KBL				pmax	pmax				
	comp=Z,7.0nm,1.1s								
KBL	**Kabul**	**58.19**	**291**	*e*P			**P**	**21 06 29.0**	**-1.0**
	comp=Z,7.4nm,1.1s								
ABKAR	**Akbulak array**	**58.48**	**310**	*e*P			**P**	**21 06 29.9**	**-1.5**
	comp=Z,18nm,0.6s								
AKTO	**Aktyubinsk**	**59.19**	**312**	P			**P**	**21 06 36.3**	**-0.1**
	comp=Z,2.2nm,0.7s,baz=70,slow=14,SNR=4.1								
AS01	**Alice Springs**	**61.19**	**189**	*e*P			**P**	**21 06 50.3**	**0.0**
AS31	**Alice Springs**	**61.19**	**189**	*e*P			**P**	**21 06 50.9**	**+0.6**
	comp=Z,1.4nm,0.8s								
ASAR	**Alice Springs**	**61.19**	**189**	P			**P**	**21 06 50.8**	**+0.4**
	comp=Z,4.5nm,0.8s,baz=9.6,slow=5.9,SNR=28								
KLMR	**Klimovskoe**	**64.03**	**328**	*e*P			**P**	**21 07 09.4**	**+0.6**
KLMR				pmax	pmax				
	comp=Z,10.0nm,1.2s								
GEYT	**Alibeck**	**64.52**	**299**	P			**P**	**21 07 12.2**	**-0.3**
	comp=Z,2.4nm,0.7s,baz=29,slow=3.4,SNR=6.8								
OBN	**Obninsk**	**68.44**	**324**	⇑*e*P			**P**	**21 07 38.4**	**+1.2**
OBN				*e**PP			**pP**	**21 07 45.3**	**-0.1**
OBN				*e**SP			**sP**	**21 07 51.1**	**+2.6**
OBN				*e*				21 08 00.3	
OBN				pmax	pmax				
	comp=Z,20nm,1.6s								
OBN				MLR	MLR				
	comp=Z,203nm,16.0s								
STKA	**Stephens Creek**	**68.83**	**181**	P			**P**	**21 07 38.8**	**-1.0**
	comp=Z,2.7nm,1.0s,baz=340,slow=11,SNR=3.4								
STKA	**Stephens Creek**	**68.83**	**181**	*e*P			**P**	**21 07 39.3**	**-0.5**
STKA				pmax	pmax				
	comp=Z,8.0nm,1.8s								
STKA	**Stephens Creek**	**68.83**	**181**	*e*P	

	comp=Z,4.0nm,1.6s						
VYHS	**Vyhne**	**81.03 326**	*e*P	**P**	**21 08 51.2 +0.9**
CLL	**Collm**	**81.33 331** ⇑	*i*P	**P**	**21 08 52.2 +0.4**
	comp=Z,11nm,1.6s				
CLL			*e*		21 08 59.0	
CLL	**Collm**	**81.33 331** ⇑	*i*P	**P**	**21 08 52.2 +0.4**
CLL			*e*		21 08 59.0	
CLL			pmax	pmax		
	comp=Z,11nm,1.6s				
VRAC	**Vranov**	**81.40 328**	P	**P**	**21 08 52.6 +0.3**
	comp=Z,2.2nm,0.7s,baz=32,slow=4.4,SNR=3.7				
VRAC	**Vranov**	**81.40 328** ‖	*i*P	**P**	**21 08 53.5 +1.3**
MDVR	**Moldovita**	**82.40 322** ⇑	*i*P	**P**	**21 08 58.1 +0.5**
KHC	**Kasperske Hory**	**82.80 329**	*e*P	**P**	**21 09 00.4 +0.8**
KHC			*ep*P	**PcP**	**21 09 03.1 -1.4**
KHC	**Kasperske Hory**	**82.80 329**	*e*P	**P**	**21 09 00.4 +0.8**
GERES	**GERESS Array B**	**82.97 329**	P	**P**	**21 09 00.3 -0.3**
	comp=Z,0.6nm,0.5s,baz=31,slow=6.2,SNR=7.8				
EKA	**Eskdalemuir Ar**	**83.19 341**	P	**P**	**21 09 02.3 +0.9**
	comp=Z,0.7nm,0.6s,baz=0.0,slow=3.3,SNR=4.6				
ANMO	**Albuquerque**	**83.69 51**	*ce*P	**P**	**21 09 05.4 +0.7**
ANMO			pmax	pmax		
	comp=Z,2.0nm,1.1s				
BFO	**Black Forest**	**85.52 331**	*i* P	**P**	**21 09 14.6 +1.1**
IDI	**Anoyia**	**87.49 314**	P	**P**	**21 09 22.8 -0.6**
	comp=Z,21nm,1.2s,baz=63,slow=11,SNR=2.3				
IDI	**Anoyia**	**87.49 314**	*e*P	**P**	**21 09 21.7 -1.7**
	comp=Z,90nm,1.6s				
LTX	**Lajitas**	**89.21 53**	*e*P	**P**	**21 09 32.8 +1.1**
LTX	**Lajitas**	**89.21 53**	*e*P	**P**	**21 09 32.8 +1.1**
TXAR	**Lajitas Array**	**89.21 53**	P	**P**	**21 09 32.8 +1.1**
	comp=Z,0.5nm,0.5s,baz=305,slow=3.4,SNR=13				
LPAZ	**La Paz**	**145.75 61**	PKPbc	**PKPbc**	**21 16 15.9 +0.2**
	comp=Z,1.2nm,0.5s,baz=327,slow=4.2,SNR=9.5				

ROM ***12*** *20:58:03.9±0.1, 43.93N×11.87E, h7km±1km, Md2.9/33, Ml2.5/33, Error ellipse: s-maj=1.7km s-min=0.9km az=25.0*
GEN ***12*** *20:58:03.7, 43.93N×11.95E, h6km, ML2.4*
ISCJB ***12*** *20:58:04.4±0.2, 43.94N±0.02×11.87E±0.02, h17km±3km, Error ellipse: s-maj=3.0km s-min=2.1km az=16.3*
CSEM ***12*** *20:58:04.2±0.1, 43.92N×11.87E, h10km, ML2.8/21, Error ellipse: s-maj=1.9km s-min=1.7km az=46.0*
LDG ***12*** *20:58:04.5±0.2, 43.95N×11.98E, h10km, Md2.6/2, Ml2.8/5, Error ellipse: s-maj=4.8km s-min=4.5km az=99.0*

ISC 12 20:58:04.1±0.8, 43.92N±0.02×11.85E±0.01, h10km±4km, n157, σ0.87/227, 4C, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.02**	**198**	⇑ *i*	Pg	**Pg**	**20 58 05.6**	**-0.4**
SFI					Sg	**Sg**	**20 58 06.9**	**-0.4**
SFI	**Santa Sofia**	**0.02**	**198**	⇑ *i*	Pg	**Pg**	**20 58 05.6**	**-0.4**
SFI					Sg	**Sg**	**20 58 06.9**	**-0.4**
ASQU	**Asqua**	**0.13**	**201**	⇑ *i*	Pg	**Pg**	**20 58 07.6**	**+0.3**
ASQU					Sg	**Sg**	**20 58 10.6**	**+1.1**
	10μm,0.2s							
ASQU	**Asqua**	**0.13**	**201**	⇑ *i*	Pg	**Pg**	**20 58 07.6**	**+0.3**
ASQU					Sg	**Sg**	**20 58 10.6**	**+1.1**
	10μm,0.2s							
T0502	**Localit˜ San**	**0.21**	**95**		Pg	**Pg**	**20 58 08.3**	**-0.2**
T0502					Sg	**Sg**	**20 58 12.0**	**+0.6**
	949nm,0.4s							
VMG	**Vicchio**	**0.23**	**281**		Pg	**Pg**	**20 58 09.4**	**+0.5**
VMG					Sg	**Sg**	**20 58 13.3**	**+1.2**
VMG	**Vicchio**	**0.23**	**281**		Pg	**Pg**	**20 58 09.4**	**+0.5**
VMG					Sg	**Sg**	**20 58 13.3**	**+1.2**
CPGN	**Carpegna, Ital**	**0.36**	**109**		Pg	**Pg**	**20 58 11.8**	**+0.5**
CPGN					Sg	**Sb**	**20 58 18.8**	**+0.4**
	45μm,10.0s							
CPGN	**Carpegna, Ital**	**0.36**	**109**		Pg	**Pg**	**20 58 11.8**	**+0.5**
SEI	**Scarperia**	**0.38**	**291**		Pg	**Pg**	**20 58 11.7**	**0.0**
SEI					Sg	**Sb**	**20 58 18.4**	**-0.6**
SEI	**Scarperia**	**0.38**	**291**		Pg	**Pg**	**20 58 11.7**	**0.0**
SEI					Sg	**Sb**	**20 58 18.4**	**-0.6**
PARC	**Parchiule**	**0.39**	**134**		Pg	**Pg**	**20 58 11.8**	**0.0**
PARC					Sg	**Sb**	**20 58 18.4**	**-0.8**
	284nm,0.5s							
PARC	**Parchiule**	**0.39**	**134**		Pg	**Pg**	**20 58 11.8**	**0.0**
PARC					Sg	**Sb**	**20 58 18.4**	**-0.8**
	284nm,0.5s							
IMOL	**Imola, Italy**	**0.45**	**350**		Pg	**Pb**	**20 58 13.6**	**-0.5**
	80nm,0.4s							
IMOL	**Imola, Italy**	**0.45**	**350**		Pg	**Pb**	**20 58 13.6**	**-0.5**
	80nm,0.4s							
FIR	**Firenze**	**0.46**	**252**		Pg	**Pb**	**20 58 13.7**	**-0.6**
	1μm,0.5s							
FIR	**Firenze**	**0.46**	**252**		Pg	**Pb**	**20 58 13.7**	**-0.6**
	1μm,0.5s							
BADI	**Badiali**	**0.50**	**145**		Pg	**Pg**	**20 58 13.8**	**-0.1**
BADI					Sg	**Sb**	**20 58 22.0**	**-0.3**
	280nm,0.3s							
BADI	**Badiali**	**0.50**	**145**		Pg	**Pg**	**20 58 13.8**	**-0.1**
BADI					Sg	**Sb**	**20 58 22.0**	**-0.3**
	280nm,0.3s							
ATMC	**Monte Cedrone**	**0.53**	**152**		Pg	**Pg**	**20 58 14.7**	**+0.2**
ATMC					Sg	**Sb**	**20 58 22.8**	**-0.5**
	496nm,0.3s							
ATMC	**Monte Cedrone**	**0.53**	**152**		Pg	**Pg**	**20 58 14.7**	**+0.2**
ATMC					Sg	**Sb**	**20 58 22.8**	**-0.5**
	496nm,0.3s							
MTRZ	**Monterenzio**	**0.54**	**329**		Pg	**Pg**	**20 58 15.1**	**+0.5**
	617nm,0.4s							
MTRZ	**Monterenzio**	**0.54**	**329**		Pg	**Pg**	**20 58 15.1**	**+0.5**
	617nm,0.4s							
PTF	**Prato**	**0.57**	**274**		Pg	**Pg**	**20 58 14.9**	**-0.3**
PTF					Sg	**Sb**	**20 58 24.2**	**-0.1**
PTF	**Prato**	**0.57**	**274**		Pg	**Pg**	**20 58 14.9**	**-0.3**
PTF					Sg	**Sb**	**20 58 24.2**	**-0.1**
FNVD	**Fontana Vidola**	**0.58**	**295**		Pg	**Pg**	**20 58 15.6**	**+0.1**
FNVD					Sg	**Sb**	**20 58 25.0**	**+0.2**
	302nm,0.8s							
FNVD	**Fontana Vidola**	**0.58**	**295**		Pg	**Pg**	**20 58 15.6**	**+0.1**
FNVD					Sg	**Sb**	**20 58 25.0**	**+0.2**
	302nm,0.8s							
CAFI	**Castiglion Fio**	**0.60**	**172**		Pg	**Pg**	**20 58 15.8**	**+0.1**
CAFI					Sg	**Sb**	**20 58 25.6**	**+0.5**
	183nm,0.2s							
CAFI	**Castiglion Fio**	**0.60**	**172**		Pg	**Pg**	**20 58 15.8**	**+0.1**
CAFI					Sg	**Sb**	**20 58 25.6**	**+0.5**
	183nm,0.2s							
CSNT	**Castellina Chi**	**0.61**	**223**		Pg	**Pg**	**20 58 16.3**	**+0.4**
CSNT					Sg	**Sb**	**20 58 26.1**	**+0.7**
	164nm,0.5s							
CSNT	**Castellina Chi**	**0.61**	**223**		Pg	**Pg**	**20 58 16.3**	**+0.4**
CSNT					Sg	**Sb**	**20 58 26.1**	**+0.7**
	164nm,0.5s							
ATPC	**Poggio Castell**	**0.62**	**135**		Pg	**Pg**	**20 58 15.9**	**-0.3**
ATPC					Sg	**Sb**	**20 58 25.8**	**0.0**
	245nm,0.3s							
ATPC	**Poggio Castell**	**0.62**	**135**		Pg	**Pg**	**20 58 15.9**	**-0.3**
ATPC					Sg	**Sb**	**20 58 25.8**	**0.0**
	245nm,0.3s							
CRMI	**Carmignano**	**0.65**	**259**		Pg	**Pg**	**20 58 16.9**	**+0.1**
	140nm,0.4s							
CRMI	**Carmignano**	**0.65**	**259**		Pg	**Pg**	**20 58 16.9**	**+0.1**
	140nm,0.4s							
ATVO	**AVT- Monte Val**	**0.67**	**143**		Pg	**Pg**	**20 58 16.8**	**-0.3**
	322nm,0.7s							
ATVO	**AVT- Monte Val**	**0.67**	**143**		Pg	**Pg**	**20 58 16.8**	**-0.3**
	322nm,0.7s							
FSSB	**Fossombrone**	**0.71**	**108**		Pg	**Pg**	**20 58 17.3**	**-0.5**
	231nm,0.4s							
FSSB	**Fossombrone**	**0.71**	**108**		Pg	**Pg**	**20 58 17.3**	**-0.5**
	231nm,0.4s							
MPAG	**Monte Paganucc**	**0.72**	**114**		Pg	**Pg**	**20 58 17.9**	**-0.1**
	131nm,1.0s							
MPAG	**Monte Paganucc**	**0.72**	**114**		Pg	**Pg**	**20 58 17.9**	**-0.1**
	131nm,1.0s							
FRON	**Frontone**	**0.75**	**122**		Pg	**Pg**	**20 58 18.2**	**-0.4**
	105nm,0.7s							
FRON	**Frontone**	**0.75**	**122**		Pg	**Pg**	**20 58 18.2**	**-0.4**
	105nm,0.7s							
POPM	**Popiglio**	**0.80**	**279**		P	**Pg**	**20 58 19.8**	**+0.2**
POPM					S	**Sb**	**20 58 30.7**	**-0.4**
ATTE	**AVT- Monte Tez**	**0.81**	**153**		Pg	**Pg**	**20 58 19.6**	**-0.1**
	213nm,0.4s							
ATTE	**AVT- Monte Tez**	**0.81**	**153**		Pg	**Pg**	**20 58 19.6**	**-0.1**
	213nm,0.4s							
MURB	**Monte Urbino**	**0.82**	**143**		Pg	**Pg**	**20 58 19.6**	**-0.3**
	486nm,0.3s							
MURB	**Monte Urbino**	**0.82**	**143**		Pg	**Pg**	**20 58 19.6**	**-0.3**
	486nm,0.3s							
SSFR	**Montelago di S**	**0.83**	**125**		Pg	**Pg**	**20 58 19.5**	**-0.6**
SSFR					Sg	**Sb**	**20 58 32.7**	**+0.8**
SSFR	**Montelago di S**	**0.83**	**125**		Pg	**Pg**	**20 58 19.5**	**-0.6**
SSFR					Sg	**Sb**	**20 58 32.7**	**+0.8**
FROS	**Frosini**	**0.87**	**216**		Pg	**Pb**	**20 58 21.8**	**+0.4**
	140nm,0.4s							
FROS	**Frosini**	**0.87**	**216**		Pg	**Pb**	**20 58 21.8**	**+0.4**
	140nm,0.4s							
ARVD	**Arcevia**	**0.89**	**118**		Pg	**Pb**	**20 58 21.4**	**0.0**
	53nm,0.4s							
ARVD	**Arcevia**	**0.89**	**118**		Pg	**Pg**	**20 58 21.4**	**0.0**
	53nm,0.4s							
BDI	**Bagni Di Lucca**	**0.92**	**279**		Pg	**Pb**	**20 58 22.6**	**+0.4**
	68nm,0.4s							
BDI	**Bagni Di Lucca**	**0.92**	**279**		Pg	**Pb**	**20 58 22.6**	**+0.4**
	68nm,0.4s							
ATCC	**AVT- Casa Cast**	**0.93**	**142**		Pg	**Pg**	**20 58 22.2**	**+0.1**
	178nm,0.5s							
ATCC	**AVT- Casa Cast**	**0.93**	**142**		Pg	**Pg**	**20 58 22.2**	**+0.1**
	178nm,0.5s							
MAIM	**Mastiano**	**0.98**	**270**		Pg	**Pb**	**20 58 23.3**	**0.0**
	63nm,0.6s							
MAIM	**Mastiano**	**0.98**	**270**		Pg	**Pb**	**20 58 23.3**	**0.0**
	63nm,0.6s							
MAIM					S	**Sb**	**20 58 37.0**	**+0.7**
MGAB	**Montegabbione**	**1.02**	**169**		Pg	**Pg**	**20 58 23.9**	**+0.1**
	196nm,0.4s							
MGAB	**Montegabbione**	**1.02**	**169**		Pg	**Pg**	**20 58 23.9**	**+0.1**
	196nm,0.4s							
SNTG	**Esanatoglia**	**1.03**	**130**		Pg	**Pn**	**20 58 24.6**	**-0.1**
	71nm,0.5s							
SNTG	**Esanatoglia**	**1.03**	**130**		Pg	**Pn**	**20 58 24.6**	**-0.1**
	71nm,0.5s							
TRIF	**Trifonti**	**1.06**	**221**		Pg	**Pb**	**20 58 24.8**	**+0.2**
	60nm,0.7s							
TRIF	**Trifonti**	**1.06**	**221**		Pg	**Pb**	**20 58 24.8**	**+0.2**
	60nm,0.7s							
SACS	**San Casciano d**	**1.07**	**178**		Pg	**Pg**	**20 58 24.5**	**-0.2**
	78nm,0.6s							
SASS	**Sassa**	**1.07**	**232**		Pg	**Pg**	**20 58 24.3**	**-0.5**
	33nm,0.6s							
SASS	**Sassa**	**1.07**	**232**		Pg	**Pg**	**20 58 24.3**	**-0.5**
	33nm,0.6s							
SARO	**Sassorosso**	**1.08**	**285**		P	**Pg**	**20 58 24.8**	**-0.1**
SARO					S	**Sn**	**20 58 39.9**	**-0.6**
ARCI	**Arcidosso**	**1.10**	**195**		Pg	**Pg**	**20 58 25.3**	**0.0**
	178nm,1.0s							
ARCI	**Arcidosso**	**1.10**	**195**		Pg	**Pg**	**20 58 25.3**	**0.0**
	178nm,1.0s							
FDMO	**Fiordimonte**	**1.26**	**134**		Pg	**Pn**	**20 58 27.4**	**-0.4**
	38nm,0.5s							
FDMO	**Fiordimonte**	**1.26**	**134**		Pg	**Pn**	**20 58 27.4**	**-0.4**
	38nm,0.5s							
CASP	**Castiglione de**	**1.34**	**213**		Pg	**Pn**	**20 58 28.0**	**-0.9**
	26nm,0.6s							
CASP	**Castiglione de**	**1.34**	**213**		Pg	**Pn**	**20 58 28.0**	**-0.9**
	26nm,0.6s							
GRAM	**Graiana**	**1.41**	**295**		P	**Pn**	**20 58 29.8**	**-0.1**
GRAM					S	**Sn**	**20 58 48.5**	**0.0**
CODM	**Codolo**	**1.52**	**289**		P	**Pn**	**20 58 31.5**	**+0.1**
CGRP	**Cima Grappa**	**1.96**	**359**	*e*Pn		**Pn**	**20 58 37.0**	**-0.6**
CGRP				*e*Sn		**Sn**	**20 59 02.2**	**-0.1**
CGRP	**Cima Grappa**	**1.96**	**359**	*e*Pn		**Pn**	**20 58 37.0**	**-0.6**
CGRP				*e*Sn		**Sn**	**20 59 02.2**	**-0.1**
DDS	**Dosso del Somm**	**2.02**	**347**	*e*Pn		**Pn**	**20 58 37.8**	**-0.6**
DDS	**Dosso del Somm**	**2.02**	**347**	*e*Pn		**Pn**	**20 58 37.8**	**-0.6**
VARN	**Col Varnada, M**	**2.08**	**5**	*e*Pn		**Pn**	**20 58 38.7**	**-0.4**
VARN	**Col Varnada, M**	**2.08**	**5**	*e*Pn		**Pn**	**20 58 38.7**	**-0.4**
PANI	**Panarotta**	**2.16**	**350**	*e*Pn		**Pn**	**20 58 40.1**	**-0.3**
PANI	**Panarotta**	**2.16**	**350**	*e*Pn		**Pn**	**20 58 40.1**	**-0.3**
TRI	**Trieste**	**2.25**	**37**	*e*Pn		**Pn**	**20 58 40.0**	**-1.3**
TRI	**Trieste**	**2.25**	**37**	*e*Pn		**Pn**	**20 58 40.0**	**-1.3**
SABO	**M.te Sabotino**	**2.40**	**30**	*e*Pn		**Pn**	**20 58 42.9**	**-0.6**
SABO	**M.te Sabotino**	**2.40**	**30**	*e*Pn		**Pn**	**20 58 42.9**	**-0.6**
CIMO	**Cimolais**	**2.43**	**10**	*e*Pn		**Pn**	**20 58 42.8**	**-1.0**
CIMO	**Cimolais**	**2.43**	**10**	*e*Pn		**Pn**	**20 58 42.8**	**-1.0**
PCP	**Piancastagn**	**2.46**	**286**	P		**Pn**	**20 58 43.2**	**-1.1**
PGF	**Pioggiola**	**2.50**	**238**	*e*Pn		**Pn**	**20 58 44.6**	**-0.3**
PGF				*e*Sn		**Sn**	**20 59 14.8**	**-0.6**
	4.0nm,0.3s							
PGF	**Pioggiola**	**2.50**	**238**	*e*Pn		**Pn**	**20 58 44.6**	**-0.3**
PGF				*e*Sn		**Sn**	**20 59 14.8**	**-0.6**
	2.0nm,0.3s							
VINO	**Villanova**	**2.55**	**23**	*e*Pn		**Pn**	**20 58 44.7**	**-0.8**
VINO	**Villanova**	**2.55**	**23**	*e*Pn		**Pn**	**20 58 44.7**	**-0.8**
OZOL	**Ozolo**	**2.55**	**347**	*e*Pn		**Pn**	**20 58 46.5**	**+0.9**
OZOL	**Ozolo**	**2.55**	**347**	*e*Pn		**Pn**	**20 58 46.5**	**+0.9**
DRE	**Drenchia**	**2.59**	**29**	*e*Pn		**Pn**	**20 58 44.8**	**-1.3**
DRE	**Drenchia**	**2.59**	**29**	*e*Pn		**Pn**	**20 58 44.8**	**-1.3**
ROBS	**Robic**	**2.60**	**26**	*i* Pn		**Pn**	**20 58 46.0**	**-0.2**
ROBS				*i* Sn		**Sn**	**20 59 18.6**	**+0.7**
ROBS	**Robic**	**2.60**	**26**	*i* Pn		**Pn**	**20 58 46.0**	**-0.2**
ROBS				*i* Sn		**Sn**	**20 59 18.6**	**+0.7**
CARE	**Lago del Cares**	**2.64**	**342**	*e*Pn		**Pn**	**20 58 47.7**	**+0.7**
CARE	**Lago del Cares**	**2.64**	**342**	*e*Pn		**Pn**	**20 58 47.7**	**+0.7**
ZOU	**Zoufplan**	**2.75**	**16**	*e*Pn		**Pn**	**20 58 48.2**	**-0.3**
ABTA	**Abfaltersbach**	**2.87**	**9**	*i* Pn		**Pn**	**20 58 50.4**	**+0.5**
	1.6nm,0.3s							
ABTA				*i* Sn		**Sn**	**20 59 23.2**	**-1.3**
	6.4nm,0.5s							
ABTA	**Abfaltersbach**	**2.87**	**9**	Pn		**Pn**	**20 58 50.4**	**+0.5**
	1.6nm,0.3s							
ABTA				Sn		**Sn**	**20 59 23.2**	**-1.3**
	6.4nm,0.5s							
UDBI	**Udbina**	**2.88**	**76**	*e*Pn		**Pn**	**20 58 51.0**	**+0.9**
UDBI				Sn		**Sn**	**20 59 25.7**	**+1.0**
UDBI	**Udbina**	**2.88**	**76**	*e*Pn		**Pn**	**20 58 51.0**	**+0.9**
UDBI				Sn		**Sn**	**20 59 25.7**	**+1.0**
ACOM	**Acomizza, Ital**	**2.88**	**23**	*e*Pn		**Pn**	**20 58 49.8**	**-0.4**
ACOM	**Acomizza, Ital**	**2.88**	**23**	*e*Pn		**Pn**	**20 58 49.8**	**-0.4**
MYKA	**Terra Mystica**	**2.99**	**24**	*i* Pn		**Pn**	**20 58 51.3**	**-0.3**
	2.1nm,0.4s							
MYKA				*i* Sn		**Sn**	**20 59 28.6**	**+1.1**
	4.3nm,0.4s							
MYKA	**Terra Mystica**	**2.99**	**24**	Pn		**Pn**	**20 58 51.3**	**-0.3**
	2.1nm,0.4s							
MYKA				Sn		**Sn**	**20 59 28.6**	**+1.1**
	4.3nm,0.4s							
OZLJ	**Ozalj**	**3.08**	**55**	*i* Pn		**Pn**	**20 58 53.8**	**+1.0**
OZLJ				Sn		**Sn**	**20 59 29.5**	**-0.1**
OZLJ	**Ozalj**	**3.08**	**55**	*i* Pn		**Pn**	**20 58 53.8**	**+1.0**
OZLJ				Sn		**Sn**	**20 59 29.5**	**-0.1**
PDKS	**Podkum**	**3.09**	**45**	*i* Pn		**Pn**	**20 58 52.9**	**-0.1**
PDKS				*i* Sn		**Sn**	**20 59 31.2**	**+1.2**
PDKS	**Podkum**	**3.09**	**45**	*i* Pn		**Pn**	**20 58 52.9**	**-0.1**
PDKS				*i* Sn		**Sn**	**20 59 31.2**	**+1.2**
SBF	**Sospel**	**3.19**	**271**	*e*Pn		**Pn**	**20 58 54.7**	**+0.3**
SBF				*e*Sn		**Sn**	**20 59 31.2**	**-1.4**
	3.9nm,0.3s							
SBF	**Sospel**	**3.19**	**271**	*e*Pn		**Pn**	**20 58 54.7**	**+0.3**
SBF				*e*Sn		**Sn**	**20 59 31.2**	**-1.4**
	2.0nm,0.3s							
FETA	**Feichten**	**3.20**	**346**	*i* Pn		**Pn**	**20 58 57.0**	**+2.4**
	4.1nm,0.4s							
FETA				*i* Sn		**Sn**	**20 59 32.3**	**-0.6**
	5.3nm,0.5s							
FETA	**Feichten**	**3.20**	**346**	Pn		**Pn**	**20 58 57.0**	**+2.4**
	4.1nm,0.4s							
FETA				Sn		**Sn**	**20 59 32.3**	**-0.6**
	5.3nm,0.5s							
OBKA	**Obir**	**3.21**	**35**	*i* Pn		**Pn**	**20 58 55.3**	**+0.6**
	1.6nm,0.4s							
OBKA				*i* Sn		**Pg**	**20 59 04.1**	**-1.6**
	5.0nm,0.4s							
OBKA	**Obir**	**3.21**	**35**	Pn		**Pn**	**20 58 55.3**	**+0.6**
	1.6nm,0.4s							
KBA	**Koelnbreinsper**	**3.33**	**18**	*i* Pn		**Pn**	**20 58 56.9**	**+0.5**
	0.9nm,0.2s							
KBA	**Koelnbreinsper**	**3.33**	**18**	Pn		**Pn**	**20 58 56.9**	**+0.5**
	0.9nm,0.2s							
WTTA	**Wattenberg**	**3.35**	**357**	*i* Pn		**Pn**	**20 58 56.5**	**-0.2**
	1.2nm,0.2s							
WTTA				*i* Sn		**Sn**	**20 59 39.6**	**+3.1**
	3.5nm,0.3s							
WTTA	**Wattenberg**	**3.35**	**357**	Pn		**Pn**	**20 58 56.5**	**-0.2**
	1.2nm,0.2s							
WTTA				Sn		**Sn**	**20 59 39.6**	**+3.1**
	3.5nm,0.3s							
WATA	**Walderalm**	**3.42**	**357**	*i* Pn		**Pn**	**20 58 58.1**	**+0.5**
	1.8nm,0.2s							
WATA				*i* Sn		**Sn**	**20 59 36.8**	**-1.5**
	4.7nm,0.2s							
WATA	**Walderalm**	**3.42**	**357**	Pn		**Pn**	**20 58 58.1**	**+0.5**
	1.8nm,0.2s							
WATA				Sn		**Sn**	**20 59 36.8**	**-1.5**
	4.7nm,0.2s							
MOTA	**Moosalm**	**3.47**	**352**	*i* Pn		**Pn**	**20 59 00.6**	**+2.4**
MOTA				*i* Sn		**Sn**	**20 59 39.7**	**+0.3**
	1.1nm,0.3s							
MOTA	**Moosalm**	**3.47**	**352**	Pn		**Pn**	**20 59 00.6**	**+2.4**
MOTA				Sn		**Sn**	**20 59 39.7**	**+0.3**
	1.1nm,0.3s							
SOKA	**Soboth**	**3.56**	**38**	*i* Pn		**Pn**	**20 58 59.5**	**+0.1**
SOKA				*i* Sn		**Sn**	**20 59 40.9**	**-0.6**
	1.0nm,0.3s							
SOKA	**Soboth**	**3.56**	**38**	Pn		**Pn**	**20 58 59.5**	**+0.1**
SOKA				Sn		**Sn**	**20 59 40.9**	**-0.6**
	1.0nm,0.3s							
DAVA	**Damuels**	**3.64**	**338**	*i* Pn		**Pn**	**20 59 03.2**	**+2.5**
	3.4nm,0.3s							
DAVA				*i* Sn		**Sn**	**20 59 42.6**	**-1.1**
	14nm,0.6s							
DAVA	**Damuels**	**3.64**	**338**	Pn		**Pn**	**20 59 03.2**	**+2.5**
	3.4nm,0.3s							
DAVA				Sn		**Sn**	**20 59 42.6**	**-1.1**
	14nm,0.6s							
RETA	**Reutte**	**3.65**	**348**	*i* Sn		**Sn**	**20 59 42.7**	**-1.1**
	2.6nm,0.2s							
RETA	**Reutte**	**3.65**	**348**	Sn		**Sn**	**20 59 42.7**	**-1.1**
	2.6nm,0.2s							
FRF	**La Foret Royal**	**3.79**	**266**	*e*Pn		**Pn**	**20 59 02.6**	**0.0**
FRF	**La Foret Royal**	**3.79**	**266**	*e*Pn		**Pn**	**20 59 02.6**	**0.0**
LMR	**La Mourre**	**3.92**	**263**	*e*Pn		**Pn**	**20 59 04.1**	**-0.3**
LMR				*e*Sn		**Sn**	**20 59 49.5**	**-1.0**
	1.2nm,0.3s							
LMR	**La Mourre**	**3.92**	**263**	*e*Pn		**Pn**	**20 59 04.1**	**-0.3**
LMR				*e*Sn		**Sn**	**20 59 49.5**	**-1.0**
	0.6nm,0.3s							
ARSA	**Arzberg**	**4.21**	**36**	*i* Pn		**Pn**	**20 59 08.1**	**-0.3**
	1.5nm,0.3s							
ARSA	**Arzberg**	**4.21**	**36**	Pn		**Pn**	**20 59 08.1**	**-0.3**
	1.5nm,0.3s							
MOA	**Molln**	**4.28**	**22**	*i* Pn		**Pn**	**20 59 10.0**	**+0.7**
	0.5nm,0.1s							
MOA				*e*Sn		**Sn**	**20 59 58.8**	**-0.4**
	0.7nm,0.2s							
MOA	**Molln**	**4.28**	**22**	Pn		**Pn**	**20 59 10.0**	**+0.7**
	0.5nm,0.1s							
MOA				Sn		**Sn**	**20 59 58.8**	**-0.4**
	0.7nm,0.2s							
CABF	**La Chapelle**	**4.88**	**305**	*e*Pn		**Pn**	**20 59 19.9**	**+2.3**
CABF	**La Chapelle**	**4.88**	**305**	*e*Pn		**Pn**	**20 59 19.9**	**+2.3**
CONA	**Conrad Observa**	**4.89**	**33**	*i* Pn		**Pn**	**20 59 18.1**	**+0.4**
	0.7nm,0.3s							
CONA				*i* Sn		**Sn**	**21 00 14.9**	**+0.6**
	0.9nm,0.4s							
CONA	**Conrad Observa**	**4.89**	**33**	Pn		**Pn**	**20 59 18.1**	**+0.4**
	0.7nm,0.3s							
CONA				Sn		**Sn**	**21 00 14.9**	**+0.6**
	0.9nm,0.4s							
CDF	**Champ du Feu**	**5.50**	**326**	*e*Pn		**Pn**	**20 59 26.3**	**+0.1**
CDF				*e*Sn		**Sn**	**21 00 26.2**	**-3.3**
	2.5nm,0.3s							
CDF	**Champ du Feu**	**5.50**	**326**	*e*Pn		**Pn**	**20 59 26.3**	**+0.1**
HAU	**Haudompre**	**5.61**	**319**	*e*Sn		**Sn**	**21 00 29.0**	**-2.9**
	7.2nm,0.3s							
FGSL	**Fruska Gora**	**5.82**	**75**	*e*P		**Pn**	**20 59 32.2**	**+1.7**
TRUS	**Trudelj**	**6.17**	**84**	*e*P		**Pn**	**20 59 33.7**	**-1.5**
MTLF	**Montolieu**	**7.02**	**269**	*e*Pn		**Pn**	**20 59 47.1**	**+0.2**
MTLF	**Montolieu**	**7.02**	**269**	*e*Pn		**Pn**	**20 59 47.1**	**+0.2**

comp=Z,444nm,0.5s
UPC Upice 1.01 187 Pg **Pb** **20 59 55.7 0.0**
UPC Sg **Sg** **21 00 08.6 +0.8**
444nm,0.5s
DPC Dobruska-Polom 1.16 176 *e*PG **Pb** **20 59 58.3 -0.1**
DPC *e*SG **Sg** **21 00 12.8 +0.1**
comp=Z,98nm,0.3s
DPC Dobruska-Polom 1.16 176 *e*Pg **Pb** **20 59 58.5 +0.1**
DPC *e*Sg **Sg** **21 00 13.5 +0.8**
DPC Dobruska-Polom 1.16 176 Pg **Pb** **20 59 58.3 -0.1**
DPC Sg **Sg** **21 00 12.8 +0.1**
98nm,0.3s
PVCC Panska Ves 1.42 227 *e*PG **Pb** **21 00 04.2 +1.4**
PVCC *e*SG **Sn** **21 00 22.6 +0.7**
comp=Z,696nm,0.4s
PVCC Panska Ves 1.42 227 Pg **Pb** **21 00 04.2 +1.4**
PVCC Sg **Sn** **21 00 22.6 +0.7**
696nm,0.4s
KRLC Kraliky 1.48 165 *e*PG **Pb** **21 00 04.1 +0.3**
KRLC *e*SG **Sg** **21 00 23.1 +0.1**
KRLC Kraliky 1.48 165 Pg **Pb** **21 00 04.1 +0.3**
KRLC Sg **Sg** **21 00 23.1 +0.1**
BRG Berggiesshubel 1.56 247 *e*Pg **Pg** **21 00 06.8 +1.6**
BRG *e*Sg **Sg** **21 00 27.3 +2.0**
BRG Berggiesshubel 1.56 247 Pg **Pg** **21 00 06.8 +1.6**
BRG Sg **Sg** **21 00 27.3 +2.0**
BRG Berggiesshubel 1.56 247 PG **Pg** **21 00 06.7 +1.6**
BRG SG **Sg** **21 00 26.9 +1.6**
156nm,0.8s
GOPC GO Pecny, Ondr 1.83 210 *e*PG **Pg** **21 00 10.8 +0.3**
GOPC *e*SG **Sg** **21 00 34.1 -0.1**
comp=Z,88nm,0.4s
GOPC GO Pecny, Ondr 1.83 210 Pg **Pg** **21 00 10.8 +0.3**
GOPC Sg **Sg** **21 00 34.1 -0.1**
88nm,0.4s
PRU Pruhonice 1.85 215 *e*PN **Pn** **21 00 09.2 +0.8**
PRU *e*PG **Pg** **21 00 10.9 +0.1**
PRU *e*SG **Sb** **21 00 34.5 +0.7**
comp=Z,108nm,0.4s
PRU Pruhonice 1.85 215 Pn **Pn** **21 00 09.2 +0.8**
FBE Freiberg 1.89 253 *e*Pn **Pn** **21 00 09.7 +0.9**
FBE *e*Sg **Sg** **21 00 37.0 +1.1**
FBE Freiberg 1.89 253 Pn **Pn** **21 00 09.7 +0.9**
FBE Sg **Sg** **21 00 37.0 +1.1**
MORC Moravsky Berou 1.93 153 *e*Pn **Pn** **21 00 09.6 0.0**
MORC *e*Sg **Sg** **21 00 37.6 +0.1**
MORC Moravsky Berou 1.93 153 *e*Pn **Pn** **21 00 10.0 +0.5**
MORC Sg **Sg** **21 00 37.3 -0.2**
CLL Collm 2.01 265 *e*Pn **Pb** **21 00 15.0 -0.8**
CLL *e*Pg **Pg** **21 00 15.0 +1.1**
CLL *e*SG **Sg** **21 00 42.0 +2.0**
comp=Z,68nm,0.6s
CLL Collm 2.01 265 *e*Pn **Pn** **21 00 11.7 +1.1**
CLL *e*Pg **Pg** **21 00 15.1 +1.1**
CLL *e*Sg **Sg** **21 00 42.3 +2.3**
CLL Collm 2.01 265 Pn **Pn** **21 00 11.7 +1.1**
OKC Ostrava-Krasne 2.08 143 *e*PN **Pn** **21 00 12.2 +0.7**
OKC *e*PG **Pg** **21 00 15.9 +0.6**
OKC *e*SG **Sb** **21 00 41.1 +0.7**
comp=Z,67nm,0.6s
OKC Ostrava-Krasne 2.08 143 *e*Pg **Pg** **21 00 16.1 +0.8**
OKC *e*Sg **Sb** **21 00 41.3 +0.9**
OKC Ostrava-Krasne 2.08 143 Pn **Pn** **21 00 12.2 +0.7**
VRAC Vranov 2.22 173 Pn **Pb** **21 00 15.1 -1.2**
comp=Z,7.0nm,0.3s,baz=345,slow=14,SNR=25
VRAC Lg Lg 21 00 45.5
comp=Z,7.0nm,0.3s,baz=59,slow=20,SNR=3.3
VRAC Vranov 2.22 173 *e*Pn **Pn** **21 00 14.2 +0.8**
VRAC *e*Sg **Sg** **21 00 45.8 -0.8**
OJC Ojcow 2.62 118 *e*Pn **Pn** **21 00 18.4 -0.5**
OJC *e*Pg **Pg** **21 00 27.0 +1.4**
OJC *e*Sg **Sg** **21 01 01.7 +2.2**
OJC Ojcow 2.62 118 *e*Pg **Pg** **21 00 27.0 +1.4**
OJC *e*Sg **Sg** **21 01 01.8 +2.2**
OJC Ojcow 2.62 118 *e*Pn **Pn** **21 00 18.4 -0.5**
OJC *e*Pg **Pg** **21 00 27.0 +1.4**
OJC *e*Sg **Sg** **21 01 01.7 +2.2**
WERD Werda 2.68 248 *e*Pg **Pg** **21 00 27.7 +1.0**
WERD *e*Sg **Sg** **21 01 01.6 +0.1**
WERD Werda 2.68 248 Pg **Pg** **21 00 27.7 +1.0**
WERD Sg **Sg** **21 01 01.6 +0.1**
NKC Novy Kostel 2.70 243 *e*PN **Pn** **21 00 21.7 +1.7**
NKC *e*PG **Pg** **21 00 27.9 +0.8**
NKC *e*SG **Sg** **21 01 02.6 +0.6**
comp=Z,109nm,0.3s
NKC Novy Kostel 2.70 243 Pn **Pn** **21 00 21.7 +1.7**
KHC Kasperske Hory 2.92 216 *e*PN **Pn** **21 00 24.0 +1.0**
KHC *e*PG **Pg** **21 00 30.5 -0.7**
KHC *e*SN **Sn** **21 00 57.5 -1.2**
KHC *e*SG **Sg** **21 01 07.0 -2.0**
comp=Z,37nm,0.4s
KHC Kasperske Hory 2.92 216 Pn **Pn** **21 00 24.0 +1.0**
MANZ Manzenberg 3.01 241 *e*Pn **Pn** **21 00 26.0 +1.6**
MANZ *e*Sg **Sg** **21 01 12.7 +0.6**
MANZ Manzenberg 3.01 241 Pn **Pn** **21 00 26.0 +1.6**
MANZ Sg **Sg** **21 01 12.7 +0.6**
MOX Moxa 3.02 255 *e*Pn **Pn** **21 00 25.9 +1.5**
MOX *e*Pg **Pg** **21 00 34.3 +1.1**
MOX *e*Sg **Sg** **21 01 12.8 +0.5**
MOX Moxa 3.02 255 Pn **Pn** **21 00 25.9 +1.5**
ROTZ Rotzenmuhle 3.08 237 *e*Pn **Pn** **21 00 26.9 +1.6**
ROTZ *e*Sg **Sg** **21 01 14.8 +0.4**
ROTZ Rotzenmuhle 3.08 237 Pn **Pn** **21 00 26.9 +1.6**
ROTZ Sg **Sg** **21 01 14.8 +0.4**
SMOL Smolenice 3.10 165 *e*Pg **Pg** **21 00 35.8 +1.0**
SMOL Smolenice 3.10 165 *e*PG **Pg** **21 00 35.8 +1.0**
SMOL *e*SG **Sg** **21 01 17.0 +2.0**
GEC2 GERESS Array S 3.11 212 *e*Pn **Pn** **21 00 27.8 +2.0**
GEC2 *e*Pg **Pg** **21 00 34.0 -1.0**
GEC2 *e*Sg **Sg** **21 01 13.2 -2.1**
GEC2 GERESS Array S 3.11 212 Pn **Pn** **21 00 27.8 +2.0**
GERES GERESS Array B 3.11 212 Pn **Pn** **21 00 26.7 +0.9**
comp=Z,1.3nm,0.3s,baz=29,slow=14,SNR=16
GERES Pg **Pb** **21 00 33.0 +1.4**
comp=Z,11nm,0.3s,baz=31,slow=17,SNR=60
GERES Lg Lg 21 01 13.2
comp=Z,16nm,0.3s,baz=29,slow=28,SNR=15
LANS Liptovska Anna 3.16 137 *e*Pg **Pg** **21 00 38.0 +2.2**
LANS Liptovska Anna 3.16 137 *e*PG **Pg** **21 00 38.0 +2.2**
LANS *e*SG **Sg** **21 01 16.6 -0.1**
WET Wettzell 3.18 223 *e*Pn **Pn** **21 00 28.3 +1.6**
WET *e*Sg **Sg** **21 01 16.0 -1.6**
WET Wettzell 3.18 223 Pn **Pn** **21 00 28.3 +1.6**
WET Sg **Sg** **21 01 16.0 -1.6**
NIE Niedzica 3.35 127 *e*P **Pg** **21 00 39.9 +0.3**
NIE *e*S **Sg** **21 01 24.0 +1.0**
NIE Niedzica 3.35 127 *e*P **Pg** **21 00 39.9 +0.3**
NIE *e*S **Sg** **21 01 24.0 +1.0**
VYHS Vyhne 3.46 150 *e*Pg **Pg** **21 00 43.7 +2.0**
VYHS *e*Sg **Sg** **21 01 27.6 +1.0**
VYHS Vyhne 3.46 150 *e*PG **Pg** **21 00 43.7 +2.0**
VYHS *e*SG **Sg** **21 01 27.6 +1.0**
VYHS *e*LG **Lg** 21 01 41.9
CONA Conrad Observa 3.59 184 *e*Pn **Pn** **21 00 33.6 +1.3**
comp=Z,1.0nm,0.2s
CONA Sg **Sg** **21 01 31.1 +0.4**
comp=Z,32nm,0.4s
CONA Conrad Observa 3.59 184 Pn **Pn** **21 00 33.6 +1.3**
comp=Z,1.0nm,0.2s
CONA Sg **Sg** **21 01 31.1 +0.4**
comp=Z,32nm,0.4s
BSD Bornholm Skovb 3.69 348⇑ *i*P **Pn** **21 00 34.9 +1.3**
BSD *i* S **Sn** **21 01 16.7 -1.1**
BSD Bornholm Skovb 3.69 348⇑ *i*P **Pn** **21 00 35.0 +1.3**
SNR=49
BSD *i* S **Sn** **21 01 16.8 -1.1**
SNR=49
STHS Stebnicka Huta 3.84 121 *e*Pg **Pg** **21 00 51.5 +2.5**
STHS Stebnicka Huta 3.84 121 *e*PG **Pg** **21 00 51.5 +2.5**
STHS *e*SG **Sg** **21 01 42.8 +4.0**
STHS *e*LG **Lg** 21 01 53.1
MOA Molln 3.87 200 *e*Pn **Pn** **21 00 37.3 +1.1**
comp=Z,2.7nm,0.2s
MOA *i* Sg **Sg** **21 01 39.8 +0.1**
MOA Molln 3.87 200 Pn **Pn** **21 00 37.3 +1.1**
comp=Z,2.7nm,0.2s
MOA Sg **Sg** **21 01 39.8 +0.1**
KECS Kecovo 4.10 136 *e*Pg **Pg** **21 00 55.7 +1.8**
KECS *e*Sg **Sg** **21 01 48.7 +1.9**
KECS Kecovo 4.10 136 *e*PG **Pg** **21 00 55.7 +1.8**
KECS *e*SG **Sg** **21 01 48.9 +1.9**
KECS *e*LG **Lg** 21 01 57.8

CRVS Cervenica-Dubn 4.27 126 *e*Pg **Pg** **21 00 58.1 +0.9**
CRVS Cervenica-Dubn 4.27 126 *e*PG **Pg** **21 00 58.1 +0.9**
ARSA Arzberg 4.29 186 *e*Pn **Pn** **21 00 44.6 +2.8**
comp=Z,1.5nm,0.4s
ARSA Sg **Sg** **21 01 53.5 +0.5**
comp=Z,7.0nm,0.4s
ARSA Arzberg 4.29 186 Pn **Pn** **21 00 44.6 +2.8**
comp=Z,1.5nm,0.4s
ARSA Sg **Sg** **21 01 53.5 +0.5**
comp=Z,7.0nm,0.4s
LUNU Lund 4.44 339 P **Pn** **21 00 44.6 +0.7**
LUNU S **Sn** **21 01 36.1 -0.2**
LUNU Lund 4.44 339 P **Pn** **21 00 44.6 +0.7**
LUNU S **Sn** **21 01 36.1 -0.2**
KOLS Kolonicke sedl 4.67 121 *e*Pg **Pg** **21 01 08.7 +3.8**
KOLS Kolonicke sedl 4.67 121 *e*PG **Pg** **21 01 08.7 +3.8**
KOLS *e*LG **Lg** 21 02 22.3
BLEU Blekinge 4.81 357 P **Pn** **21 00 50.7 +1.8**
BLEU S **Sn** **21 01 43.5 -1.8**
BLEU Blekinge 4.81 357 P **Pn** **21 00 50.7 +1.8**
BLEU S **Sn** **21 01 43.5 -1.8**
KBA Koelnbreinsper 4.81 204 *e*Pn **Pn** **21 00 50.9 +1.7**
comp=Z,2.2nm,0.3s
KBA Sg **Sb** **21 02 00.2 +1.1**
comp=Z,7.9nm,0.5s
KBA Koelnbreinsper 4.81 204 Pn **Pn** **21 00 50.9 +1.7**
comp=Z,2.2nm,0.3s
SOKA Soboth 4.90 189 *e*Pn **Pn** **21 00 52.9 +2.6**
comp=Z,0.1nm,0.1s
SOKA Soboth 4.90 189 Pn **Pn** **21 00 52.9 +2.6**
comp=Z,0.1nm,0.1s
DEL Delary 5.16 345 P **Pn** **21 00 55.0 +1.3**
DEL Delary 5.16 345 P **Pn** **21 00 55.0 +1.3**
MYKA Terra Mystica 5.17 200 *i* Pg **Pg** **21 01 14.9 +0.6**
MYKA Terra Mystica 5.17 200 Pg **Pg** **21 01 14.9 +0.6**
WTTA Wattenberg 5.19 217 *e*Pn **Pn** **21 00 57.0 +2.6**
comp=Z,0.8nm,0.1s
WTTA *i* Sg **Sg** **21 02 24.6 +2.6**
WTTA Wattenberg 5.19 217 Pn **Pn** **21 00 57.0 +2.6**
comp=Z,0.8nm,0.1s
WTTA Sg **Sg** **21 02 24.6 +2.6**
ABTA Abfaltersbach 5.34 208 *i* Pg **Pg** **21 01 18.4 +0.7**
ABTA Abfaltersbach 5.34 208 Pg **Pg** **21 01 18.4 +0.7**
VXJU Vaexsjoe 5.47 353 P **Pn** **21 00 59.8 +1.7**
VXJU Vaexsjoe 5.47 353 P **Pn** **21 00 59.8 +1.7**
OSKU Oskarshamn 5.70 359 P **Pn** **21 01 03.1 +1.9**
OSKU Oskarshamn 5.70 359 P **Pn** **21 01 03.1 +1.9**
BYXU Byxelkrok 5.81 4 P **Pn** **21 01 04.7 +2.0**
BYXU Byxelkrok 5.81 4 P **Pn** **21 01 04.7 +2.0**
GNOU Gnosjoe 5.96 347 P **Pn** **21 01 06.4 +1.6**
GNOU Gnosjoe 5.96 347 P **Pn** **21 01 06.4 +1.6**
EKSU Eksjoe 6.10 355 P **Pn** **21 01 08.5 +1.8**
EKSU Eksjoe 6.10 355 P **Pn** **21 01 08.5 +1.8**
VSTU Vaestervik 6.17 2 P **Pn** **21 01 09.6 +2.0**
VSTU Vaestervik 6.17 2 P **Pn** **21 01 09.6 +2.0**
DAVOX Davos/Dischmat 6.29 224 Pn **Pn** **21 01 10.6 +1.1**
comp=Z,0.2nm,0.3s,baz=83,slow=18,SNR=2.0
DAVOX Lg Lg 21 02 53.7
comp=Z,0.8nm,0.3s,baz=78,slow=19,SNR=3.2
DRGR 6.37 135⇑ *i*P **Pn** **21 01 08.7 -1.7**
DRGR S **Sn** **21 02 16.5 -7.3**
AKASG Malin Array Be 8.24 91 Pn **Pn** **21 01 36.7 +0.7**
comp=Z,0.6nm,0.3s,baz=286,slow=12,SNR=3.1
HFS Hagfors 8.76 352 Pn **Pn** **21 01 43.9 +0.8**
comp=Z,0.2nm,0.3s,baz=167,slow=16,SNR=8.1
NOA NORSAR Array B 9.94 346 Pn **Pn** **21 01 59.2 -0.2**
comp=Z,0.2nm,0.3s,baz=165,slow=12,SNR=4.1
FINES FINESS Array B 11.34 25 Pn **Pn** **21 02 18.2 -0.2**
comp=Z,0.2nm,0.3s,baz=209,slow=11,SNR=7.2
EKA Eskdalemuir Ar 12.16 296 Pn **Pn** **21 02 28.9 -0.8**
baz=100,slow=14,SNR=2.5
ARCES ARCESS Array B 18.61 10 Pn **P** **21 03 52.0 -1.9**
comp=Z,0.2nm,0.3s,baz=200,slow=12,SNR=6.2

BJI **12** *21:06:07.7, 6˚.43S×130˚.84E, h127km, mb5.8/81, mB5.5/55*
MOS **12** *21:06:12.2±1.0, 5˚.97S×130˚.50E, h130km, mb5.7/59, MS4.3/9, Error ellipse: s-maj=7.2km s-min=4.8km az=109.4*
GCMT **12** *21:06:13.6±0.1, 6˚.03S×130˚.55E, h149km±1km, MW5.6/131, Moment Tensor Solution. s112,c168; s131,c300; Duration: 185 Moment tensor: Scale 10^17 Nm; Mrr0.78±.04; Mθθ-0.81±.04; Mϕϕ0.02±.04; Mrθ-0.30±.03; Mθϕ1.46±.04; Mϕr2.59±.03; Best double couple: M0 3.09000×10^17 NP1:ϕs346.00000°, δ82.00000°, λ119.00000°. NP2:ϕs91.00000°, δ30.00000°, λ16.00000°. Principal axes: T 3.1640, Plg45.0000°, Azm286.0000°; N -0.1490, Plg29.0000°, Azm162.0000°; P -3.0160, Plg31.0000°, Azm53.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
NEIC **12** *21:06:13.0±0.0, 6˚.03S×130˚.65E, h126km, Moment Tensor Solution. s9 Moment tensor: Scale 10^17Nm; Mrr0.70; Mθθ-0.90; Mϕϕ0.20; Mrθ-0.40; Mθϕ0.50; Mϕr3.00; Best double couple: M0 3.00000×10^17 NP1:ϕs346.00000°, δ85.00000°, λ103.00000°. NP2:ϕs93.00000°, δ14.00000°, λ18.00000°. Principal axes: T 3.4000, Plg47.0000°, Azm270.0000°; N -0.6000, Plg13.0000°, Azm165.0000°; P -2.8000, Plg39.0000°, Azm63.0000°;*
ISCJB **12** *21:06:13.1±0.3, 6˚.11S±0˚.02×130˚.47E±0˚.02, h144km±2km, mb5.7/229 Error ellipse: s-maj=3.2km s-min=2.7km az=146.9*
NEIC **12** *21:06:13.6±0.5, 6˚.06S×130˚.49E, h131km±4km, mb5.7/122, MW5.6, Error ellipse: s-maj=4.0km s-min=3.3km az=49.0*
NEIC Felt [II] at Darwin, Australia. Also felt at Humpty Doo-McMinns Lagoon.
DJA **12** *21:06:14.7±0.2, 6˚.5S±2˚×13˚1E±˚, h145km±2km, M5.9/87, mb6.0/87, mB6.2/79, MLv6.5/8, Mw(mB)5.9/79*
IDC **12** *21:06:15.6±0.9, 6˚.04S×130˚.54E, h147km±7km, mb5.3/44, mb1 5.2/48, mb1mx5.2/49, mbtmp5.7/48, MS4.4/9, Ms1 4.4/9, ms1mx4.0/31, Error ellipse: s-maj=10.1km s-min=6.6km az=67.0*
ISC 12 21:06:13.0±0.2, 6˚.03S±0˚.02×130˚.50E±0˚.03, h132km±1km, h132km:pP-P, n770, σ1̂94/948, mb5.8/240, 52C-19D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**1.61**	**338**	P		**Pn**	**21 06 46.4**	**+3.9**
BNDI				S		**Sn**	**21 07 11.2**	**+6.2**
SAUI	**Saumlaki**	**2.10**	**158**	P		**Pn**	**21 06 50.3**	**+2.0**
SAUI				S		**Sn**	**21 07 15.2**	**-0.2**
SAUI	**Saumlaki**	**2.10**	**158**	*e*Pn		**Pn**	**21 06 50.1**	**+1.7**
SAUI				*e*Sn		**Sn**	**21 07 12.5**	**-2.9**
MSAI	**Masohi**	**3.09**	**330**	P		**Pn**	**21 07 04.2**	**+3.3**
MSAI				S		**Sn**	**21 07 40.4**	**+2.5**
FAKI	**Fak Fak**	**3.55**	**30**	P		**Pn**	**21 07 07.9**	**+1.0**
FAKI	**Fak Fak**	**3.55**	**30**	*e*Pn		**Pn**	**21 07 07.7**	**+0.8**
FAKI				*e*Sn		**Sn**	**21 07 41.7**	**-6.9**
NLAI	**Namlea**	**4.38**	**309**	P		**Pn**	**21 07 22.3**	**+4.5**
SIJI	**Sorong**	**5.18**	**9**	P		**Pn**	**21 07 29.9**	**+1.2**
	15nm,0.3s,baz=90,slow=24,SNR=65							
SIJI				S		**Sn**	**21 08 24.4**	**-3.1**
	43nm,0.3s,baz=270,slow=24,SNR=45							
SANI	**Sanana**	**5.99**	**311**	P		**Pn**	**21 07 42.1**	**+2.7**
LBMI	**Labuha**	**6.13**	**331**	P		**Pn**	**21 07 44.1**	**+2.7**
LBMI				S		**Sn**	**21 08 49.2**	**-1.2**
MTN	**Manton Dam**	**6.80**	**175**	P		**Pn**	**21 07 49.7**	**-0.7**
	baz=6.8,SNR=1000							
MTN	**Manton Dam**	**6.80**	**175**	*e*Pn		**Pn**	**21 07 49.6**	**-0.8**
MTN				*e*Sn		**Sn**	**21 09 01.9**	**-4.7**
KDU	**Kakadu**	**6.90**	**164**	P		**Pn**	**21 07 50.6**	**-1.1**
	baz=6.8,SNR=1000							
SOEI	**Soe**	**7.20**	**239**	P		**Pn**	**21 07 58.0**	**+2.2**
SOEI	**Soe**	**7.20**	**239**	*e*Pn		**Pn**	**21 07 57.0**	**+1.2**
SOEI				*e*Sn		**Sn**	**21 09 15.5**	**-0.8**
KDI	**Kendari**	**8.11**	**284**	P		Pn	21 08 13.8	+5.7
MMRI	**Maumere**	**8.59**	**252**	P		**Pn**	**21 08 17.1**	**+2.6**
MMRI	**Maumere**	**8.59**	**252**	*e*Pn		**Pn**	**21 08 16.9**	**+2.4**
LUWI	**Luwuk**	**9.16**	**302**	P		**Pn**	**21 08 25.5**	**+3.3**
	1μm,0.8s,18μm							
LUWI	**Luwuk**	**9.16**	**302**	*e*Pn		**Pn**	**21 08 25.4**	**+3.2**
KMSI	**Cibinong**	**9.24**	**315**	P		**Pn**	**21 08 24.9**	**+1.7**
KNRA	**Kununurra**	**9.74**	**190**	P		**Pn**	**21 08 27.9**	**-2.0**
	baz=9.7							
GTOI	**Gorontalo**	**9.98**	**311**	P		**Pn**	**21 08 37.8**	**+4.6**
GENI	**Genyem**	**10.23**	**71**	P		**Pn**	**21 08 37.7**	**+1.2**
BASI	**Baing, Sumba**	**10.67**	**246**	P		**Pn**	**21 08 43.9**	**+1.6**

MRSI Marisa 10.71 307 P **Pn** **21 08 46.0 +3.1**
WSI Waingapu 10.73 250 P **Pn** **21 08 43.7 +0.5**
KAPI Kappang 10.74 275 P **Pn** **21 08 47.0 +3.7**
1.9nm,0.3s,baz=98,slow=3.3,SNR=26
KAPI Kappang 10.74 275 *e*Pn **Pn** **21 08 46.2 +2.9**
JAY Jayapura 10.76 72 P **Pn** **21 08 42.1 -1.5**
0.9nm,0.3s,baz=272,slow=23,SNR=27
JAY S **Sn** **21 10 38.1 -4.3**
0.5nm,0.3s,baz=270,slow=20,SNR=4.7
JAY Jayapura 10.76 72 P **Pn** **21 08 44.3 +0.7**
SGSI Sangihe 10.85 333 P **Pn** **21 08 46.1 +1.3**
SPSI Sidrap Palu 10.88 280 P Pn 21 08 50.1 +4.9
TTSI Tana Toraja 11.05 285 P **P** **21 08 52.3 -4.3**
859nm,0.9s,10μm
PCI Palu 11.79 295 P **P** **21 09 02.4 -2.5**
FITZ Fitzroy Crossi 12.90 201 P **Pn** **21 09 08.8 -2.8**
52nm,0.3s,baz=28,slow=11,SNR=350
FITZ S Sn 21 11 22.3 -12
96nm,0.3s,baz=21,slow=13,SNR=16
FITZ Fitzroy Crossi 12.90 201 P **Pn** **21 09 08.2 -3.5**
baz=13,SNR=1000
FITZ Fitzroy Crossi 12.90 201 *e*Pn **Pn** **21 09 08.1 -3.6**
FITZ *e*Sn Sn 21 11 20.9 -13
PLAI Plampang 12.92 257 P **Pn** **21 09 10.6 -1.3**
TWSI Taliwang, Sumb 13.77 258 P **Pn** **21 09 22.2 -0.6**
539nm,0.8s,5μm
PALU Palau 13.86 17 P **P** **21 09 26.0 -1.9**
baz=14,SNR=99
DAV Davao City (W) 13.91 339 P **Pn** **21 09 26.4 +1.8**
72nm,0.3s,baz=238,slow=9.5,SNR=14
DAV S **S** **21 12 11.5 +0.9**
188nm,0.3s,baz=252,slow=20,SNR=3.2
DAV Davao City (W) 13.91 339⇑ *e*P **Pn** **21 09 25.5 +0.9**
DAV Davao City (W) 13.91 339⇑ S **S** **21 12 11.5 +0.9**
DAV Davao City (W) 13.91 339 P **P** **21 09 29.4 +0.9**
SNR=37
DAV Davao City (W) 13.91 339 *e*Pn **P** **21 09 27.1 -1.3**
DAV *e*S **S** **21 12 11.5 +0.9**
DMPH Davao City--Mi 13.94 339⇑ *e*P P 21 09 35.8 +6.9
KCP Kidapawan 14.03 337⇓ *e*P **Pn** **21 09 26.8 +0.5**
WRAB Tennant Creek 14.32 165 *ce*P **Pn** **21 09 26.6 -3.2**
WRAB pmax pmax
comp=Z,957nm,1.0s
WRAB Tennant Creek 14.32 165 *e*Pn **Pn** **21 09 26.3 -3.6**
WR1 Warramunga Arr 14.33 165 *e*Pn **Pn** **21 09 27.4 -2.5**
WR1 *e*Sn Sn 21 11 55.0 -13
WRA Warramunga Arr 14.33 165 P **Pn** **21 09 27.4 -2.5**
comp=Z,12nm,0.3s,baz=350,slow=13,SNR=165
WRA S Sn 21 11 55.0 -13
comp=Z,62nm,0.3s,baz=347,slow=22,SNR=8.0
WRA LR LR 21 16 24.5
comp=Z,1μm,18.9s,baz=345,slow=43
WRA P3KPbc 21 44 49.6
comp=Z,0.1nm,0.3s,baz=108,slow=6.2,SNR=4.7
WB2 Warramunga Arr 14.33 165 *e*Pn **Pn** **21 09 25.9 -4.1**
CTBH Cotabato--PC H 14.56 335 *e*P **Pn** **21 09 32.1 -0.8**
COEN Coen 14.76 123 P **Pn** **21 09 32.5 -2.8**
baz=15,SNR=332
COEN Coen 14.76 123 *e*Pn **Pn** **21 09 34.6 -0.7**
COEN *e*Sn Sn 21 12 07.3 -12
DNP Denpasar 15.39 259 P **P** **21 09 44.8 -0.1**
comp=Z,2μm,0.8s,comp=Z,15μm
CGP Cagayan de Oro 15.51 338⇓ *e*P **P** **21 09 45.9 -0.3**
BBKI Banjar Baru 15.81 279 P **P** **21 09 52.3 +2.7**
comp=Z,3μm,0.8s,comp=Z,45μm
ABJI Asem Bagus 16.24 263 P **P** **21 09 54.8 +0.4**
comp=Z,1μm,1.8s,comp=Z,12μm
MTKI Muara Teweh, K 16.37 287 P **P** **21 09 57.3 +1.5**
comp=Z,2μm,1.0s,comp=Z,26μm
JAGI Jajag, Banyuwa 16.39 261 P **Pn** **21 09 53.7 -2.0**
comp=Z,949nm,0.8s,comp=Z,8μm
JAGI Jajag, Banyuwa 16.39 261 *e*Pn **Pn** **21 09 53.9 -1.8**
comp=Z,631nm,0.6s
JAGI *e*Sn **Sn** **21 12 48.5 -10**
PMG Port Moresby 16.85 103 P **Pn** **21 10 02.6 +1.5**
comp=Z,17nm,0.3s,baz=295,slow=7.9,SNR=141
PMG S Sn 21 12 55.5 -14
comp=Z,5.4nm,0.3s,baz=266,slow=13,SNR=3.0
PMG Port Moresby 16.85 103 *e*P **Pn** **21 10 01.5 +0.3**
comp=Z,2μm,0.9s
BLJI Banyuglugur 16.87 263 P **P** **21 10 01.3 0.0**
comp=Z,4μm,0.8s,comp=Z,28μm
SNPH Sibulan 16.90 335⇑ *e*P **P** **21 09 58.9 -2.8**
QIS Mount Isa 16.93 149 P **P** **21 10 00.6 -1.4**
baz=17,SNR=79
GMJI Gumukmas 17.07 261 P **P** **21 10 01.8 -1.7**
comp=Z,933nm,1.0s,comp=Z,9μm
MANU Manus Island 17.28 77 *e*P **Pn** **21 10 08.2 +1.8**
comp=Z,755nm,0.9s
LLP Lapu-Lapu 17.49 338 *e*P **Pn** **21 10 10.9 +2.0**
LLP *e*S **Sn** **21 13 28.9 +4.3**
BWJI Bawean 17.75 270 P **P** **21 10 11.5 +0.5**
comp=Z,738nm,1.7s,comp=Z,9μm
AS31 Alice Springs 17.84 170 *e*P **P** **21 10 11.9 0.0**
comp=Z,155nm,0.6s
ASAR Alice Springs 17.84 170 P **Pn** **21 10 13.5 +0.4**
comp=Z,18nm,0.3s,baz=345,slow=8.8,SNR=504
ASAR S S 21 13 17.4 -13
comp=Z,18nm,0.3s,baz=325,slow=14,SNR=5.6
ASAR LR LR 21 16 33.2
comp=Z,2μm,22.0s,baz=346,slow=35
ASAR P3KP 21 45 26.6
comp=Z,0.0nm,0.3s,baz=305,slow=1.6,SNR=5.7
ASAR P4KP 21 53 54.1
comp=Z,0.1nm,0.3s,baz=348,slow=4.4,SNR=8.7
ASAR Alice Springs 17.84 170 P **Pn** **21 10 13.5 +0.4**
ASAR S S 21 13 17.5 -13
ASAR pmax pmax
comp=Z,18nm,0.3s
ASAR smax smax
comp=N,18nm,0.3s
ASAR MLR MLR
comp=Z,2μm,22.0s
AS01 Alice Springs 17.85 170 *e*P **Pn** **21 10 12.8 -0.4**
PLP Palo 17.94 342⇓ *e*P **Pn** **21 10 16.4 +2.1**
MTSU Mount Surprise 18.07 133 P **Pn** **21 10 15.8 -0.1**
baz=18,SNR=117
MBWA Marble Bar 18.31 214 P **P** **21 10 18.0 -0.6**
SNR=16
MBWA Marble Bar 18.31 214 *e*P **P** **21 10 16.4 -0.7**
comp=Z,465nm,0.6s
TBJI Tambak Boyo 18.55 267 P **Pn** **21 10 22.2 +0.7**
comp=Z,3μm,1.5s,comp=Z,28μm
KKM Kota Kinabalu 18.63 310 *e*P **Pn** **21 10 22.9 +0.3**
comp=Z,3μm,1.1s
PWJI Pagerwojo 18.66 263 P **P** **21 10 20.3 -0.6**
comp=Z,827nm,0.8s,comp=Z,5μm
NGJI Ngawi 18.95 265 P **Pn** **21 10 27.0 +0.7**
comp=Z,1μm,1.3s,comp=Z,9μm
WRKA Warakurna 19.02 186 P **P** **21 10 25.8 +1.0**
baz=19,SNR=1000
PBKI Pangkalan Bun 19.06 279 P **Pn** **21 10 27.1 -0.4**
comp=Z,5μm,1.1s,comp=Z,40μm
RCP Roxas 19.10 336⇓ *e*P **Pn** **21 10 28.2 +0.2**
WOJI Wonogiri, Jawa 19.51 264 P **P** **21 10 29.6 -0.6**
comp=Z,636nm,1.0s,comp=Z,7μm
PPR Puerto Princes 19.59 323 *e*P **Pn** **21 10 34.2 +0.5**
UGM Wanagama 19.91 263 P **P** **21 10 36.0 +1.4**
comp=Z,841nm,1.0s,comp=Z,8μm
UGM Wanagama 19.91 263 *e*P **P** **21 10 34.2 -0.4**
comp=Z,987nm,1.1s
STKI Sintang 19.93 287 P **P** **21 10 35.6 +0.9**
comp=Z,898nm,1.3s,comp=Z,12μm
SBUM Sibu 20.10 294 *e*P **P** **21 10 38.0 +1.4**
comp=Z,1μm,1.2s
CTA Charters Tower 20.73 134 P **P** **21 10 44.6 +1.4**
comp=Z,143nm,0.8s,baz=313,slow=12,SNR=78
CTA S **S** **21 14 28.4 +0.7**
comp=Z,64nm,0.9s,baz=25,slow=19,SNR=2.5
CTAO Charters Tower 20.73 134 *e*P **P** **21 10 44.5 +1.2**
CTAO pmax pmax
comp=Z,281nm,0.9s
CTAO Charters Tower 20.73 134 *e*P **P** **21 10 44.5 +1.2**
comp=Z,281nm,0.9s
GQP Guinayangan 21.36 338⇑ *e*P **P** **21 10 51.4 +1.4**
KSM Kuching 21.49 290 *e*P **P** **21 10 51.2 -0.3**
comp=Z,722nm,1.1s
PGP Puerto Galera 21.59 334 *e*P **P** **21 10 57.0 +4.5**
RABL Rabaul 21.66 86 *e*P **P** **21 10 53.2 -0.1**
comp=Z,760nm,0.8s
LQP Lukban 21.89 336⇑ *e*P **P** **21 10 58.4 +2.5**
CMJI Cimerak 21.96 264 P **P** **21 10 54.7 -1.7**
comp=Z,4μm,1.0s,comp=Z,30μm
JCJI Jatiwangi 22.10 268 P **P** **21 10 57.5 -0.4**
comp=Z,3μm,1.8s,comp=Z,44μm
TGY Tagaytay City 22.14 335 P **P** **21 11 00.5 +2.3**

comp=Z,5µm,0.7s,baz=203,slow=3.0,SNR=91
TGY Tagaytay City 22.14 335 ⇑*i*P **P 21 11 01.3 +3.0**
CISI Cisompet, Garu 22.57 265 P **P 21 11 01.4 -1.3**
comp=Z,5µm,0.9s,comp=Z,46µm
CISI Cisompet, Garu 22.57 265 *e*P **P 21 11 01.6 -1.1**
comp=Z,5µm,1.0s
GIRL Giralia 22.79 222 P **P 21 11 05.7 +1.2**
baz=23,SNR=63
CNJI Cibinong 23.24 266 P **P 21 11 07.7 -1.2**
comp=Z,11µm,1.1s,comp=Z,88µm
PCPH Palayan 23.39 337 ||*e*P **P 21 11 11.2 +1.2**
MEEK Meekatharra 23.42 208 P **P 21 11 10.5 +0.1**
baz=23,SNR=158
CBJI Citeko 23.51 268 P **P 21 11 10.1 -1.2**
comp=Z,7µm,0.9s,comp=Z,66µm
DBJI Dramaga 23.61 267 P **P 21 11 12.6 +0.3**
comp=Z,1µm,1.3s,comp=Z,13µm
SKJI Sukabumi 23.81 266 P **P 21 11 14.3 +0.3**
comp=Z,2µm,1.0s,comp=Z,19µm
GUMO Guam 24.16 36 P **P 21 11 17.8 +0.7**
comp=Z,899nm,0.8s,baz=190,slow=4.4,SNR=46
GUMO Guam 24.16 36 *e*P **P 21 11 18.0 +0.9**
SBJI Serang 24.23 268 P **P 21 11 18.8 +0.9**
comp=Z,583nm,2.0s,comp=Z,9µm
QLP Quilpie 24.28 149 P **P 21 11 18.7 +0.6**
baz=24,SNR=29
PPBI Pangkal Pinang 24.60 278 P **P 21 11 21.8 +0.6**
comp=Z,462nm,0.9s,comp=Z,5µm
CGJI Cibinong 24.66 267 P **P 21 11 21.6 -0.2**
comp=Z,1µm,0.9s,comp=Z,13µm
FORT Forrest 24.73 185 P **P 21 11 22.4 +0.3**
baz=25,SNR=81
FORT Forrest 24.73 185 *e*P **P 21 11 22.5 +0.3**
comp=Z,4µm,0.8s
XMIS Christmas Isla 24.98 258 *e*P **P 21 11 24.4 -0.3**
comp=Z,457nm,0.9s
BLSI Bandar Lampung 25.14 270 P **P 21 11 27.1 +1.0**
comp=Z,148nm,0.4s
KASI Kota Agung 25.87 270 P **P 21 11 32.2 -0.6**
comp=Z,651nm,1.4s,comp=Z,5µm
LWLI Liwa 26.33 271 P **P 21 11 38.5 +1.4**
comp=Z,409nm,0.7s,comp=Z,6µm
KMBL Kambalda 26.47 197 P **P 21 11 38.5 +0.5**
baz=26,SNR=244
MORW Morawa 26.68 209 P **P 21 11 40.0 +0.1**
baz=27,SNR=57
RMQ Roma 26.78 141 P **P 21 11 41.1 +0.3**
baz=27,SNR=12
TPRI Tanjung Pinang 26.83 284 P **P 21 11 42.7 +1.3**
comp=Z,251nm,0.9s,comp=Z,11µm
ANA2 Anatahan 26.84 34 *e*P **P 21 11 42.4 +1.0**
LHSI Lahat 26.96 273 P **P 21 11 44.0 +1.5**
comp=Z,503nm,1.0s,comp=Z,7µm
JMBI JAMBI 27.14 278 P **P 21 11 48.1 +3.9**
comp=Z,631nm,0.9s,comp=Z,12µm
BBOO Buckleboo 27.15 170 P **P 21 11 44.0 0.0**
baz=27,SNR=44
BBOO Buckleboo 27.15 170 *e*P **P 21 11 43.1 -0.9**
comp=Z,182nm,0.8s
EIDS Eidsvold 27.53 137 P **P 21 11 47.3 -0.2**
baz=28,SNR=5.0
EIDS Eidsvold 27.53 137 *e*P **P 21 11 47.2 -0.3**
comp=Z,165nm,0.9s
BLDU Ballidu 27.68 206 P **P 21 11 49.0 +0.3**
baz=28,SNR=64
MYKOM Kota Tinggi 27.72 285 *e*P **P 21 11 49.0 -0.3**
comp=Z,263nm,1.1s
STKA Stephens Creek 27.73 159 P **P 21 11 49.7 +0.5**
comp=Z,22nm,0.3s,baz=338,slow=8.0,SNR=294
STKA P3KPbc 21 44 15.8
comp=Z,2.3nm,0.8s,baz=196,slow=9.6,SNR=3.4
STKA Stephens Creek 27.73 159 P **P 21 11 49.7 +0.5**
baz=28,SNR=242
STKA Stephens Creek 27.73 159 *e*P **P 21 11 49.7 +0.5**
comp=Z,45nm,0.9s
KSI Kapahiang 27.90 274 P **P 21 11 51.6 +0.6**
comp=Z,226nm,0.8s
KLBR Kellerberrin 28.09 204 P **P 21 11 53.0 +0.6**
baz=28,SNR=90
HTT Hallett 28.37 165 P **P 21 11 55.6 +0.7**
baz=28,SNR=38
MUN Mundaring 29.07 206 P **P 21 12 01.5 +0.4**
baz=29
CMSA Cobar Meteorol 29.09 153 P **P 21 12 02.0 +0.7**
baz=29,SNR=21
HNR Honiara 29.37 98 P **P 21 12 03.6 -0.3**
comp=Z,335nm,0.7s,baz=185,slow=3.2,SNR=8.0
HNR Honiara 29.37 98 *e*P **P 21 12 03.0 -1.0**
HNR Honiara 29.37 98 *e*P **P 21 12 03.0 -1.0**
comp=Z,395nm,0.8s
SDSI Sungai Dareh 29.44 279 P **P 21 12 04.4 -0.2**
comp=Z,270nm,1.0s,comp=Z,34µm
NWAO Narrogin (SRO) 29.48 203 P **P 21 12 05.1 +0.5**
comp=Z,86nm,0.7s,baz=77,slow=15,SNR=45
NWAO Narrogin (SRO) 29.48 203 P **P 21 12 05.3 +0.6**
baz=30,SNR=42
NWAO P **P 21 12 05.3 +0.6**
baz=30,SNR=42
NWAO Narrogin (SRO) 29.48 203 *e*P **P 21 12 05.3 +0.6**
NWAO pmax pmax
comp=Z,231nm,1.1s
NWAO Narrogin (SRO) 29.48 203 P **P 21 12 05.2 +0.5**
SNR=6.2
NWAO Narrogin (SRO) 29.48 203 *e*P **P 21 12 05.3 +0.6**
comp=Z,231nm,1.1s
BKNI Bangkinang 30.08 281 P **P 21 12 10.4 +0.2**
comp=Z,407nm,1.1s,comp=Z,4µm
BKNI Bangkinang 30.08 281 *e*P **P 21 12 10.5 +0.2**
comp=Z,473nm,1.1s
PATS Pohnpei 30.56 66 P **P 21 12 15.4 +1.0**
baz=31,SNR=49
PATS Pohnpei 30.56 66 *e*P **P 21 12 14.8 +0.3**
comp=Z,692nm,0.9s
YULB Yu-li 30.59 343 *e*P **P 21 12 12.6 -2.0**
comp=Z,21nm,1.0s
TPUB Ta-pu 30.70 342 *e*P **P 21 12 14.9 -0.7**
comp=Z,40nm,0.8s
SSLB Suanglung 31.06 343 *e*P **P 21 12 16.8 -2.0**
comp=Z,64nm,1.0s
RKGY Rocky Gully 31.07 202 P **P 21 12 20.5 +1.9**
baz=31,SNR=34
YOJ Yonaguni jima 31.17 347 *e*P **P 21 12 19.8 +0.2**
YOJ pmax pmax
comp=Z,275nm,1.1s
YOJ Yonaguni jima 31.17 347 *e*P **P 21 12 19.8 +0.2**
comp=Z,275nm,1.1s
IPM Ipoh 31.23 289 *e*P **P 21 12 20.1 -0.2**
comp=Z,112nm,0.7s
NACB Ninganchiao 31.25 344 *e*P **P 21 12 19.6 -0.7**
comp=Z,202nm,1.8s
ARMA Armidale 31.36 143 P **P 21 12 22.2 +0.7**
baz=31,SNR=14
ARMA Armidale 31.36 143 *e*P **P 21 12 22.7 +1.3**
comp=Z,48nm,0.9s
MNSI Mandailing Nat 31.60 281 P **P 21 12 22.6 -1.0**
comp=Z,320nm,0.8s,comp=Z,3µm
YHNB Yeheng 31.78 344 *e*P **P 21 12 25.1 +0.1**
comp=Z,120nm,1.3s
KULM Kulim 31.85 290 *e*P **P 21 12 25.4 -0.3**
comp=Z,158nm,0.7s
TATO Taipei 32.04 344 *e*P **P 21 12 26.3 -0.9**
comp=Z,215nm,1.6s
QIZ Qiongzhong 32.16 321 P **P 21 12 29.9 +1.5**
QIZ pP **pP 21 12 56.4 -0.6**
QIZ sP **sP 21 13 10.7 -1.4**
QIZ S **S 21 17 34.6 +3.0**
QIZ sS **sS 21 18 21.7 +0.1**
QIZ pmax pmax
comp=Z,150nm,1.3s
QIZ Qiongzhong 32.16 321 *e*P **P 21 12 29.5 +1.1**
comp=Z,263nm,1.3s
ARPS Mount Arapiles 32.31 163 P **P 21 12 30.6 +1.1**
baz=32,SNR=59
SKLT Songkhla 32.57 293 P **P 21 12 32.4 +0.4**
comp=Z,111nm,1.1s,comp=Z,2µm
UBPT Khong Chiam 32.61 311 P **P 21 12 33.1 +0.7**
comp=Z,553nm,1.3s,comp=Z,6µm
YNG Young 32.65 152 P **P 21 12 33.5 +1.0**
baz=33,SNR=13
PSI Prapat 32.73 285 *e*P **P 21 12 32.3 -1.3**
PSI pmax pmax
comp=Z,622nm,1.0s
PSI Prapat 32.73 285 *e*P **P 21 12 32.3 -1.3**
comp=Z,622nm,1.0s
JOW Kunigami 32.74 356 *e*P **P 21 12 35.6 +2.2**
comp=Z,72nm,0.7s
MGCD Mangrove Creek 33.15 147 P **P 21 12 37.3 +0.4**
baz=33,SNR=6.8

TSI Tuntungan 33.26 286 P **P 21 12 37.6 -0.5**
comp=Z,281nm,1.0s,comp=Z,3µm
GZH Guangzhou 33.45 330 P **P 21 12 43.1 +3.6**
GZH S **S 21 17 53.1 +1.7**
GZH pmax pmax
comp=Z,230nm,0.9s
CHBT CHBT 33.64 304 P **P 21 12 42.1 +0.8**
comp=Z,283nm,1.5s,comp=Z,5µm
GSI Gunungsitoli 33.67 281 P **P 21 12 39.8 -1.9**
comp=Z,870nm,0.9s,comp=Z,8µm
GSI Gunungsitoli 33.67 281 *e*P **P 21 12 39.8 -1.9**
comp=Z,541nm,0.7s
TRTT Trang 33.67 294 P **P 21 12 42.0 +0.3**
comp=Z,165nm,1.1s,comp=Z,2µm
CAN Canberra 33.77 152 P **P 21 12 43.8 +1.5**
baz=34
CAN Canberra 33.77 152 *e*P **P 21 12 43.4 +1.1**
CAN pmax pmax
comp=Z,126nm,1.0s
CAN Canberra 33.77 152 *e*P **P 21 12 43.4 +1.1**
comp=Z,126nm,1.0s
COCO West Island 33.77 257 *c e*P **P 21 12 46.2 +3.7**
SURA Surathani 34.27 296 P **P 21 12 47.5 +0.7**
comp=Z,301nm,1.6s,comp=Z,20µm
KRAB Krabi 34.27 294 P **P 21 12 47.4 +0.5**
comp=Z,145nm,0.8s,comp=Z,1µm
TPTI 34.53 285 P **P 21 12 48.5 -0.6**
comp=Z,167nm,1.1s,comp=Z,2µm
SRAK Srakaew 34.55 305 P **P 21 12 45.5 -3.7**
comp=Z,307nm,1.1s,comp=Z,2µm
PKDT Phuket 34.93 293 P **P 21 12 53.4 +0.9**
comp=Z,146nm,1.2s
SURT Suratani 34.93 295 P **P 21 12 53.3 +0.8**
comp=Z,48nm,1.2s,comp=Z,835nm
LHMI Lhok Sumawe 35.31 288 P **P 21 12 55.7 -0.1**
comp=Z,1µm,0.9s,comp=Z,10µm
LHMI Lhok Sumawe 35.31 288 *e*P **P 21 12 55.5 -0.3**
comp=Z,734nm,0.8s
MLSI Meulaboh, Aceh 35.55 286 P **P 21 12 56.2 -1.6**
comp=Z,1µm,0.8s,comp=Z,13µm
PHET Kaeng Krachan 35.98 302 P **P 21 13 02.3 +0.8**
comp=Z,123nm,0.9s,comp=Z,916nm
SRDT SRDT 37.13 303 P **P 21 13 12.5 +1.3**
comp=Z,1µm,1.0s,comp=Z,16µm
UTTA Uttaradit 37.84 309 P **P 21 13 18.1 +0.9**
comp=Z,187nm,0.9s,comp=Z,1µm
SSE Sheshan 37.97 347 P **P 21 13 19.4 +1.3**
SSE pmax pmax
comp=Z,100nm,1.1s
SSE pmax pmax
comp=Z,230nm,8.5s
SSE LR LR
comp=Z,420nm,18.3s
SSE LR LR
comp=Z,320nm,18.3s
SSE LR LR
comp=Z,590nm,21.7s
DZM Mont Dzumac 38.20 118 P **P 21 13 19.9 -0.5**
comp=Z,72nm,0.9s,baz=307,slow=9.4,SNR=16
DZM Mont Dzumac 38.20 118 *e*P **P 21 13 19.6 -0.8**
comp=Z,236nm,1.2s
DZM Mont Dzumac 38.20 118 *e*P **P 21 13 19.5 -0.8**
comp=Z,114nm,1.1s
UMPA Umpang Tak 38.32 306 P **P 21 13 21.6 +0.4**
comp=Z,118nm,1.1s,comp=Z,954nm
SUKH Sukhothai 38.41 308 P **P 21 13 23.2 +1.3**
comp=Z,190nm,1.0s,comp=Z,1µm
JNU Nakatsue 38.94 1 P **P 21 13 27.2 +1.1**
comp=Z,22nm,0.5s,baz=266,slow=1.9,SNR=28
JNU S **S 21 19 12.9 -2.0**
comp=Z,15nm,1.0s,baz=163,slow=19,SNR=8.0
JNU Nakatsue 38.94 1 *e*P **P 21 13 27.2 +1.1**
comp=Z,238nm,1.3s
LAMP Lampang 39.01 309 P **P 21 13 28.2 +1.3**
comp=Z,102nm,1.1s,comp=Z,838nm
NJ2 Nanjing 39.46 344 ⇑P **P 21 13 32.1 +1.6**
NJ2 sP **sP 21 14 12.6 -2.2**
NJ2 ScP **ScP 21 19 11.3 -1.1**
NJ2 S **S 21 19 21.7 -1.0**
NJ2 ScS **ScS 21 23 24.5 -0.4**
NJ2 pmax pmax
comp=Z,120nm,0.7s
NJ2 LR LR
comp=Z,480nm,17.3s
NJ2 LR LR
comp=Z,320nm,14.6s
NJ2 LR LR
comp=Z,580nm,17.3s
CM01 Chiang Mai Arr 39.47 309 *e*P **P 21 13 32.5 +1.7**
CRAI Chiangrai 39.47 312 P **P 21 13 31.6 +0.8**
comp=Z,898nm,1.0s,comp=Z,63µm
CM31 Chiang Mai Arr 39.50 309 *e*P **P 21 13 32.7 +1.6**
CM31 *e*PcP **PcP 21 15 37.9 +1.6**
CM31 *e*ScP **ScP 21 19 13.2 +0.3**
CMAR Chiang Mai Arr 39.50 309 P **P 21 13 32.2 +1.2**
comp=Z,112nm,0.8s,baz=139,slow=7.4,SNR=578
CMAR PcP **PcP 21 15 37.9 +1.6**
comp=Z,28nm,0.9s,baz=167,slow=2.6,SNR=6.8
CMAR ScP **ScP 21 19 12.2 -0.7**
comp=Z,9.3nm,0.9s,baz=153,slow=3.0,SNR=6.0
WHN Wuhan 39.52 338 ⇑P **P 21 13 33.0 +2.0**
WHN S **S 21 19 21.3 -2.3**
WHN pmax pmax
comp=Z,810nm,1.0s
WHN LR LR
comp=Z,2µm,18.0s
WHN LR LR
comp=Z,590nm,14.1s
WHN LR LR
comp=Z,1µm,20.4s
CMMT Chiang Mai 39.70 309 P **P 21 13 33.6 +0.9**
comp=Z,459nm,1.2s,comp=Z,5µm
CHTO Chiang Mai 39.71 309 P **P 21 13 33.7 +0.9**
comp=Z,2µm,1.2s,comp=Z,24µm
CHTO Chiang Mai 39.71 309 *e*P **P 21 13 34.0 +1.3**
CHTO pmax pmax
comp=Z,723nm,1.3s
CHTO Chiang Mai 39.71 309 P **P 21 13 34.1 +1.3**
SNR=140
CHTO Chiang Mai 39.71 309 *e*P **P 21 13 34.0 +1.3**
comp=Z,722nm,1.3s
GYA Guiyang 39.71 325 P **P 21 13 35.0 +2.2**
GYA pP pP 21 14 03.8 +1.6
GYA sP sP 21 14 19.0 +1.9
GYA PP **PnPn 21 15 12.6 +1.3**
GYA PcP **PcP 21 15 39.4 +2.4**
GYA ScP **ScP 21 19 14.5 +0.8**
GYA S **S 21 19 30.2 +3.3**
GYA sS sS 21 20 20.8 +2.9
GYA pmax pmax
comp=Z,80nm,1.0s
GYA pmax pmax
comp=Z,150nm,6.9s
GYA LR LR
comp=Z,830nm,17.8s
GYA LR LR
comp=Z,780nm,18.2s
GYA LR LR
comp=Z,710nm,18.0s
KWAJ Kwajalein Atol 39.83 69 *e*P **P 21 13 35.7 +1.9**
KWAJ pmax pmax
comp=Z,484nm,1.0s
KWAJ Kwajalein Atol 39.83 69 *e*P **P 21 13 35.7 +1.9**
comp=Z,484nm,1.0s
CMAI Chiengmai2 40.28 311 P **P 21 13 38.4 +0.7**
comp=Z,3µm,0.9s,comp=Z,65µm
KMI Kunming 41.08 320 P **P 21 13 46.1 +1.8**
KMI pP pP 21 14 18.7 +4.9
KMI sP sP 21 14 31.8 +3.1
KMI PP **PnPn 21 15 28.6 +1.2**
KMI ScP **ScP 21 19 19.6 +0.3**
KMI PcS **PcS 21 19 34.5 +1.4**
KMI S **S 21 19 46.2 -1.4**
KMI sS sS 21 20 41.1 +2.3
KMI ScS **ScS 21 23 35.2 -0.3**
KMI pmax pmax
comp=Z,190nm,1.4s
KMI pmax pmax
comp=Z,790nm,6.4s
ENH Enshi 41.34 332 *e*P **P 21 13 46.8 +0.8**
comp=Z,168nm,0.6s
PBA Port Blair 41.46 295 *e*P P 21 13 47.1 -0.1
INU Inuyama 41.61 8 *e*P **P 21 13 49.3 +1.2**
comp=Z,30nm,0.7s
DGPR DIGLIPUR 41.91 297 *e*P **P 21 13 50.0 -0.8**
DGPR lAmb lAmb 21 13 53.8

comp=Z,281nm,2.0s
MJAR Matsushiro Arr 42.96 9 P **P 21 13 58.6 -0.5**
comp=Z,20nm,0.7s,baz=188,slow=9.6,SNR=82
MJAR ScP **ScP 21 19 25.0 -1.3**
comp=Z,5.3nm,1.1s,baz=190,slow=5.4,SNR=4.7
MAJO Matsushiro 42.96 9 *d i*P **P 21 13 58.8 -0.2**
MAJO pmax pmax
comp=Z,322nm,0.9s
MAJO Matsushiro 42.96 9 *e*P **P 21 13 59.1 +0.1**
comp=Z,85nm,0.8s
MAT Matsushiro 42.96 9 P **P 21 13 58.8 -0.2**
MAT S **S 21 20 10.2 -4.2**
TARA Tarawa 42.99 82 *e*P **P 21 14 00.2 +0.6**
comp=Z,521nm,1.4s
KS15 Wonju Array Si 43.31 357 *e*P **P 21 14 03.9 +2.1**
KS15 *e*ScP **ScP 21 19 26.7 -0.9**
KSAR Wonju Array Be 43.31 357 P **P 21 14 03.5 +1.7**
KSAR Wonju Array Be 43.31 357 P **P 21 14 03.5 +1.7**
KSRS Korea Array 43.32 357 P **P 21 14 03.5 +1.6**
comp=Z,13nm,0.5s,baz=173,slow=9.0,SNR=56
KSRS ScP **ScP 21 19 26.7 -0.9**
comp=Z,7.4nm,1.0s,baz=162,slow=4.8,SNR=4.6
KS01 Wonju Array Si 43.35 357 *e*P **P 21 14 02.9 +0.8**
INCN Inchon 43.44 356 *e*P **P 21 14 02.4 -0.5**
comp=Z,56nm,0.7s
TIA Tai'an 43.85 344 ⇑P **P 21 14 06.8 +0.6**
TIA S **S 21 20 24.2 -3.2**
TIA sS **sS 21 21 18.8 -0.3**
TIA ScS **ScS 21 23 50.7 -1.0**
TIA pmax pmax
comp=Z,80nm,1.0s
TIA LR LR
comp=Z,450nm,16.0s
TIA LR LR
comp=Z,310nm,14.0s
TIA LR LR
comp=Z,500nm,19.0s
CD2 Chengdu 44.76 327 P **P 21 14 14.2 +0.6**
CD2 pP pP 21 14 43.0 -0.5
CD2 sP sP 21 14 57.6 -0.7
CD2 PcS **PcS 21 19 47.4 0.0**
CD2 S **S 21 20 43.1 +2.3**
CD2 sS sS 21 21 33.6 +0.9
CD2 pmax pmax
comp=Z,230nm,0.7s
CD2 pmax pmax
comp=Z,320nm,5.6s
CD2 LR LR
comp=Z,1µm,18.9s
CD2 LR LR
comp=Z,1µm,19.9s
CD2 LR LR
comp=Z,1µm,21.4s
XAN Xi'an 44.78 334 P **P 21 14 14.1 +0.4**
XAN pP pP 21 14 41.7 -1.9
XAN S **S 21 20 36.7 -4.3**
XAN pmax pmax
comp=Z,270nm,1.3s
XAN pmax pmax
comp=Z,360nm,11.1s
XAN LR LR
comp=Z,180nm,27.0s
XAN LR LR
comp=Z,600nm,22.2s
XAN LR LR
comp=Z,690nm,17.6s
DL2 Dalian 45.46 350 ⇑P **P 21 14 20.2 +1.4**
DL2 S **S 21 20 48.6 -1.8**
DL2 ScS **ScS 21 23 58.4 -3.3**
DL2 pmax pmax
comp=Z,75nm,1.2s
DL2 pmax pmax
comp=Z,240nm,4.1s
TIY Taiyuan 46.66 340 *e*P **P 21 14 29.3 +0.9**
TIY S **S 21 21 04.1 -3.8**
TIY ScS **ScS 21 24 08.0 -1.9**
TIY pmax pmax
comp=Z,150nm,0.9s
TIY LR LR
comp=Z,680nm,15.7s
TIY LR LR
comp=Z,510nm,19.7s
TIY LR LR
comp=Z,1µm,21.4s
BJT Baijiatuau 47.69 345 *e*P **P 21 14 37.2 +1.0**
BJT pmax pmax
comp=Z,161nm,0.7s
BJT Baijiatuau 47.69 345 *e*P **P 21 14 37.2 +1.0**
comp=Z,161nm,0.7s
BJI Beijing 47.70 345 P **P 21 14 37.5 +1.1**
BJI S **S 21 21 23.6 +1.2**
BJI pmax pmax
comp=Z,230nm,0.8s
BJI pmax pmax
comp=Z,780nm,3.5s
BJI LR LR
comp=Z,670nm,26.7s
BJI LR LR
comp=Z,550nm,22.7s
MSVF Nonsavu 47.83 108 *e*P **P 21 14 38.5 +0.6**
MSVF pmax pmax
comp=Z,73nm,1.0s
MSVF Nonsavu 47.83 108 *e*P **P 21 14 39.0 +1.2**
comp=Z,73nm,1.0s
MSVF *ep*P **pP 21 15 06.8 -1.4**
SNY Shenyang 48.04 353 ⇑P **P 21 14 39.8 +0.9**
SNY pP **pP 21 15 09.3 +0.1**
SNY sP **sP 21 15 22.4 -1.6**
SNY S **S 21 21 25.4 -1.7**
SNY pmax pmax
comp=Z,51nm,0.6s
SNY pmax pmax
comp=Z,370nm,12.0s
MSHR Mys Shultsa 48.38 1 *c e*P **P 21 14 42.8 +1.3**
LZH Lanzhou 48.79 331 ⇑P **P 21 14 46.7 +1.7**
LZH pP pP 21 15 15.9 +0.5
LZH sP sP 21 15 30.5 +0.4
LZH PP **PP 21 16 44.0 +4.4**
LZH ScP **ScP 21 19 50.5 -0.2**
LZH S **S 21 21 36.3 -2.0**
LZH sS sS 21 22 31.0 +0.2
LZH ScS **ScS 21 24 23.4 -0.9**
LZH SS **SS 21 25 13.7 +3.0**
LZH pmax pmax
comp=Z,460nm,1.1s
LZH LR LR
comp=Z,500nm,14.3s
LZH LR LR
comp=Z,680nm,15.9s
LZH LR LR
comp=Z,890nm,17.2s
SHL Shillong 48.92 312 *e*P **P 21 14 46.5 +0.3**
SHL lAmb lAmb 21 14 48.0
comp=Z,276nm,1.3s
SHL *e*S **S 21 21 42.0 +1.6**
OUZ Omahuta 49.12 132 *e*P **P 21 14 49.7 +2.3**
comp=Z,92nm,1.1s
ERM Erimo 49.19 12 *e*P **P 21 14 47.5 -0.2**
ERM pmax pmax
comp=Z,30nm,1.2s
HHC Hu-ho-hao-te 49.78 341 *e*P **P 21 14 54.0 +1.6**
HHC pP pP 21 15 19.2 -3.7
HHC PP **PP 21 16 50.0 +1.6**
HHC S **S 21 21 51.8 -0.1**
HHC pmax pmax
comp=Z,120nm,1.1s
HHC pmax pmax
comp=Z,330nm,8.6s
CN2 Changchun 49.81 355 *e*P **P 21 14 52.8 +0.4**
CN2 pmax pmax
comp=Z,50nm,0.6s
USRK Ussuriysk Ar. 50.01 1 P **P 21 14 55.1 +1.2**
comp=Z,15nm,0.5s,baz=179,slow=7.0,SNR=64
USRK S **S 21 21 52.9 -1.7**
comp=Z,1.7nm,0.9s,baz=200,slow=17,SNR=3.0
BTO Baotou 50.08 340 *e*P **P 21 14 55.0 +0.4**
MDJ Mudanjiang 50.42 359 P **P 21 14 58.4 +1.5**
MDJ pP pP 21 15 25.3 -2.2
MDJ sP sP 21 15 38.6 -3.6
MDJ PcP **PcP 21 16 16.7 +3.3**
MDJ PP **PP 21 16 52.3 -1.7**
MDJ ScP **ScP 21 19 58.7 +1.4**
MDJ PcS **PcS 21 20 11.9 +1.2**
MDJ S **S 21 22 00.1 -0.2**
MDJ ScS **ScS 21 24 30.3 -4.3**

MDJ pmax pmax
comp=Z,33nm,0.8s
MDJ pmax pmax
comp=Z,250nm,10.4s
MDJ Mudanjiang 50.42 359 *e*P **P 21 14 58.5 +1.5**
comp=Z,33nm,0.7s
DCZ Deep Cove 50.54 147 *e*P **P 21 14 59.3 +1.4**
comp=Z,258nm,1.7s
ASAJ Asahikawa 51.09 11 P **P 21 15 03.3 +1.2**
comp=Z,22nm,0.7s,baz=220,slow=7.0
ASAJ Asahikawa 51.09 11 *e*P **P 21 15 03.3 +1.2**
comp=Z,32nm,0.8s
BWNR Bhubaneshwar 51.12 302 *e*P **P 21 15 03.4 +0.8**
PALK Pallekele 51.41 284 P **P 21 15 04.7 -0.3**
comp=Z,64nm,0.8s,baz=115,slow=7.2,SNR=9.3
PALK PcP **PcP 21 16 19.7 +1.9**
comp=Z,38nm,0.8s,baz=116,slow=4.5,SNR=3.0
PALK Pallekele 51.41 284 *i* P **P 21 15 04.9 -0.1**
SNR=8.4
PALK Pallekele 51.41 284 *e*P **P 21 15 05.2 +0.2**
PALK *e* 21 16 19.7
PALK pmax pmax
comp=Z,148nm,1.2s
PALK Pallekele 51.41 284 *e*P **P 21 15 05.2 +0.2**
comp=Z,148nm,1.2s
PALK *e*PcP **PcP 21 16 19.7 +1.9**
RPZ Rata Peaks 51.70 143 P **P 21 15 07.4 +0.7**
comp=Z,20nm,0.8s,baz=99,slow=0.6,SNR=4.6
YUK Yuzh-Kuril'sk 51.73 14 *e*P **P 21 15 07.9 +1.2**
LSA Lhasa 51.85 315 *e*P **P 21 15 10.1 +1.6**
LSA pmax pmax
comp=Z,125nm,0.8s
LSA Lhasa 51.85 315 *e*P **P 21 15 10.1 +1.6**
comp=Z,125nm,0.8s
CHLP Challavanipeta 51.87 299 *e*P **P 21 15 07.8 -0.5**
CHLP IAmb IAmb 21 15 10.6
comp=Z,680nm,1.1s
VIS Vishakhapatnam 52.20 298 *e*P **P 21 15 11.6 +0.8**
BOK Bokaro 52.65 306 *e*P **P 21 15 14.7 +0.7**
BKZ Black Stump Fm 52.93 136 *e*P **P 21 15 16.3 +0.4**
comp=Z,64nm,0.8s
URZ Urewera 52.98 134 P **P 21 15 15.1 -1.0**
comp=Z,22nm,0.9s,baz=236,slow=8.7,SNR=5.7
URZ LR LR 21 37 26.1
comp=Z,745nm,21.3s,baz=354,slow=35
KUR Kuril'sk 53.35 15⇑ *e*P **P 21 15 18.7 0.0**
GTA Gaotai 53.37 330 ⇑P **P 21 15 20.8 +1.7**
GTA pP pP 21 15 50.3 +0.3
GTA sP sP 21 16 04.3 -0.3
GTA PcP **PcP 21 16 26.2 +1.4**
GTA ScP **ScP 21 20 09.8 -0.6**
GTA S **S 21 22 38.3 -2.8**
GTA ScS **ScS 21 24 54.3 -1.4**
GTA pmax pmax
comp=Z,250nm,1.2s
GTA pmax pmax
comp=Z,940nm,8.1s
GTA LR LR
comp=Z,640nm,19.5s
GTA LR LR
comp=Z,520nm,20.0s
GTA LR LR
comp=Z,1μm,19.0s
MDRS Chennai 53.40 291 *e*P **P 21 15 20.1 +0.6**
MDRS *ex* x 21 35 29.8
PVM Polavaram 53.53 296 *e*P **P 21 15 19.8 -0.7**
PVM IAmb IAmb 21 15 22.5
comp=Z,942nm,1.2s
RAMN Ramite 53.65 310 *e*P **P 21 15 21.8 +0.2**
YSS Yuzh-Sakhalins 53.86 10⇑ *e*P **P 21 15 23.7 +1.4**
YSS MLR MLR
comp=Z,300nm,17.0s
SKHT Srikalahasti 54.10 292 *e*P **P 21 15 24.0 -0.7**
SKHT IAmb IAmb 21 15 26.2
comp=Z,452nm,0.9s
HABR Khabarovsk 54.42 4 *e*P **P 21 15 25.3 -1.1**
HABR *e**PP **pP 21 15 55.8 -1.5**
HABR *e**SP **sP 21 16 10.4 -1.5**
HABR *e* 21 16 27.0
HABR *e* 21 17 28.8
HABR *e*S **S 21 22 54.3 -0.3**
HABR *e**SS **sS 21 23 47.2 -0.8**
HABR pmax pmax
comp=E,13nm,1.1s
HABR pmax pmax
comp=Z,43nm,1.2s
HABR pmax pmax
comp=N,26nm,1.1s
HABR MLR MLR
comp=Z,153nm,22.0s
ADKI Addanki 54.54 294 *e*P **P 21 15 27.5 -0.3**
ADKI IAmb IAmb 21 15 29.7
comp=Z,527nm,1.1s
GUN Gumba 54.70 310 *e*P **P 21 15 30.0 +0.8**
comp=Z,420nm,0.5s
PKIN Phulchoki 54.89 310 *e*P **P 21 15 31.0 +0.4**
comp=Z,417nm,1.1s
KLR Kul'dur 55.04 1*c* *i*P **P 21 15 31.9 +1.1**
KKN Kakani 55.09 310 *e*P **P 21 15 32.6 +0.7**
comp=Z,364nm,0.8s
DMN Daman 55.13 310 *e*P **P 21 15 33.1 +0.8**
comp=Z,89nm,0.5s
TRD Trivandrum 55.30 285 *e*P **P 21 15 33.3 -0.1**
RCLA Racherla 55.33 293 *e*P **P 21 15 32.3 -1.3**
RCLA IAmb IAmb 21 15 34.6
comp=Z,292nm,1.1s
NJS Nagarjunasagar 55.37 295 *e*P **P 21 15 32.7 -1.1**
NJS IAmb IAmb 21 15 35.1
comp=Z,243nm,1.0s
SRLM Srisailam 55.60 294 *e*P **P 21 15 34.3 -1.2**
SRLM IAmb IAmb 21 15 36.6
comp=Z,458nm,1.3s
GKN Gorkha 55.69 310 *e*P **P 21 15 37.0 +0.9**
comp=Z,879nm,0.8s
HIA Hailar 55.86 352 *e*P **P 21 15 37.8 +1.0**
HIA pmax pmax
comp=Z,17nm,0.9s
RPR Rampur 56.18 297 *e*P **P 21 15 38.7 -0.9**
RPR IAmb IAmb 21 15 40.4
comp=Z,231nm,0.9s
HYB Hyderabad 56.34 295⇑ *i*P **P 21 15 41.0 +0.2**
comp=Z,92nm,0.8s
HYB *e*pP **pP 21 16 12.0 +0.1**
HYB *e*sP **sP 21 16 23.5 -3.0**
HYB *e*PcP **PcP 21 16 35.0 -1.6**
HYB *e*ScP **ScP 21 20 24.0 +0.2**
HYB *e*S **S 21 23 18.0 -3.3**
HYB Hyderabad 56.34 295 *e*P **P 21 15 40.6 -0.2**
HYBB Hyderabad (bro 56.34 295 *e*P **P 21 15 40.1 -0.7**
HYBB IAmb IAmb 21 15 41.2
comp=Z,193nm,0.9s
KOLN Koldanda 56.37 309 *e*P **P 21 15 42.1 +1.1**
comp=Z,564nm,0.9s
PYUN Piuthan 57.00 309 *e*P **P 21 15 46.5 +1.0**
comp=Z,2μm,1.1s
SRSP Sriramsagar 57.05 297 *e*P **P 21 15 44.4 -1.3**
SRSP IAmb IAmb 21 15 46.1
comp=Z,196nm,0.8s
NGP Nagpur 57.24 300 *e*P **P 21 15 47.2 +0.2**
AFI Afiamalu 57.27 103 LR LR 21 40 09.2
comp=Z,298nm,20.0s,baz=282,slow=36
AFI Afiamalu 57.27 103 P **P 21 15 48.3 +0.8**
TYV Tymovskoe 57.63 9 *e*P **P 21 15 47.0 -2.1**
TYV *e*S **S 21 23 29.0 -8.0**
TYV pmax pmax
comp=Z,18nm,0.5s
TYV smax smax
comp=E,2μm,12.0s
DGAR Diego Garcia 57.63 265 *e*P **P 21 15 51.0 +1.1**
DGAR pmax pmax
comp=Z,887nm,0.9s
DGAR Diego Garcia 57.63 265 *e*P **P 21 15 51.0 +1.1**
comp=Z,886nm,0.9s
SONA0 Songino Array 57.69 341 *e*P **P 21 15 51.6 +1.8**
comp=Z,162nm,1.3s
SONM Songino Array 57.69 341 P **P 21 15 51.6 +1.8**
comp=Z,43nm,0.6s,baz=161,slow=6.9,SNR=286
SONM S **S 21 23 38.5 +0.3**
comp=Z,1.9nm,1.2s,baz=29,slow=19,SNR=3.4
SONM PKP2bc 21 45 38.8
comp=Z,1.3nm,1.1s,baz=276,slow=2.3,SNR=4.6
SONM P4KPbc 21 52 56.9
comp=Z,0.7nm,0.9s,baz=171,slow=4.8,SNR=4.4
SONA1 Songino Array 57.69 341 *e*P **P 21 15 50.7 +0.8**
KLRI Killari 58.31 295 *e*P **P 21 15 53.4 -1.3**
KLRI IAmb IAmb 21 15 54.6
comp=Z,194nm,0.6s
BHPL Bhopal 59.42 301 *e*P **P 21 16 02.2 0.0**
CIT Chita 59.61 348 *e*P **P 21 16 04.8 +1.8**
CIT *e* 21 16 49.3
CIT *e* 21 24 03.5
CIT pmax pmax
comp=Z,93nm,2.0s
GOA Goa 60.06 292 *e*P **P 21 16 06.7 +0.1**
SKR Severo-Kuril's 60.66 18 *e*P **P 21 16 09.6 -0.4**
ZAK Zakamensk 60.92 340 *e*P **P 21 16 12.8 +0.8**
ZAK pmax pmax
comp=Z,54nm,2.0s
POO Poona 60.93 295 *e*P **P 21 16 12.5 -0.1**
CASY Casey 61.73 189 *e*P **P 21 16 17.2 +0.2**
comp=Z,95nm,1.1s
DDI Dehra Dun 61.85 309 *e*P **P 21 16 19.0 +0.4**
TLY Talaya 61.91 341 P **P 21 16 20.6 +2.0**
comp=Z,16nm,0.5s,baz=171,slow=5.2,SNR=49
TLY S **S 21 24 33.5 +1.4**
comp=Z,1.1nm,0.5s,baz=135,slow=5.7,SNR=1.8
TLY Talaya 61.91 341*c* *i*P **P 21 16 20.3 +1.8**
TLY *e*S **S 21 24 33.0 +1.0**
TLY pmax pmax
comp=Z,58nm,1.1s
TLY Talaya 61.91 341 *e*P **P 21 16 20.6 +2.0**
comp=Z,92nm,1.4s
IRK Irkutsk 62.20 342 *e*P **P 21 16 21.0 +0.6**
IRK pmax pmax
comp=Z,217nm,2.2s
MOY Mondy 62.78 340 *e*P **P 21 16 26.4 +2.0**
MOY pmax pmax
comp=Z,300nm,1.7s
CLNS Chul'man 62.82 357 *e*P **P 21 16 26.0 +1.5**
CLNS pmax pmax
comp=E,7.0nm,1.0s
CLNS pmax pmax
comp=Z,23nm,1.3s
CLNS pmax pmax
comp=N,10.0nm,1.0s
WMQ Urumqi 62.86 326⇑ *i*P **P 21 16 26.9 +1.9**
WMQ pP pP 21 16 55.9 -0.9
WMQ PcP **PcP 21 17 02.8 +0.6**
WMQ PP **PP 21 18 51.3 +6.3**
WMQ S **S 21 24 43.0 -1.3**
WMQ ScS **SKSac 21 26 00.9 -4.3**
WMQ pmax pmax
comp=N,200nm,0.9s
WMQ pmax pmax
comp=N,780nm,3.5s
SMLA Simla 62.89 309 *e*P **P 21 16 26.7 +1.3**
SDNR Sundarnagar 63.21 310 *e*P **P 21 16 27.0 -0.6**
PEA0 Petropavlovsk- 63.25 18 *e*P **P 21 16 28.8 +1.4**
PEA0B Petropavlovsk- 63.25 18 *e*P **P 21 16 29.0 +1.7**
comp=N,128nm,0.8s
PETK Petropavlovsk- 63.25 18 P **P 21 16 28.8 +1.4**
comp=N,110nm,0.7s,baz=181,slow=4.4,SNR=185
PEA1 Petropavlovsk- 63.26 18 *e*P **P 21 16 28.8 +1.4**
PET Petropavlovsk 63.48 19⇓ *i*P **P 21 16 30.2 +1.4**
PET *e**PP **pP 21 17 00.9 +0.3**
PET *e**SP **sP 21 17 15.1 +0.1**
PET *e*S **S 21 24 52.0 +0.6**
PET *e*SP **SPn 21 25 09.7 +2.7**
PET pmax pmax
comp=Z,141nm,0.8s
PET MLR MLR
comp=Z,400nm,17.0s
PET Petropavlovsk 63.48 19 *e*P **P 21 16 29.7 +0.9**
comp=Z,105nm,0.9s
BHK Bhakra 63.60 309 *e*P **P 21 16 31.8 +1.7**
THN Thein Dam 64.57 310 *e*P **P 21 16 33.0 -3.4**
THN *e*S **S 21 25 03.4 -2.3**
BOD Bodaibo 65.03 350*d* *i*P **P 21 16 39.5 +0.7**
BOD pmax pmax
comp=Z,84nm,1.6s
MA2 Magadan 67.36 11 P **P 21 16 55.2 +1.5**
comp=Z,32nm,0.7s,baz=172,slow=5.3,SNR=21
KSH Kashi 67.64 317⇑ *i*P **P 21 16 58.3 +2.2**
KSH *e*pP pP 21 17 29.1 +0.8
KSH *e*sP sP 21 17 43.0 +0.4
KSH PcS 21 21 27.4
KSH S **S 21 25 42.9 -0.1**
KSH ScS **SKiKP 21 26 41.2 +0.6**
KSH pmax pmax
comp=Z,160nm,1.0s
KSH pmax pmax
comp=Z,730nm,2.6s
KSH LR LR
comp=Z,120nm,5.4s
KSH LR LR
comp=Z,170nm,7.1s
KSH LR LR
comp=Z,310nm,19.6s
MK01 Makanchi Array 67.67 326 *e*P **P 21 16 56.3 +0.3**
MK31 Makanchi Array 67.69 326 *e*P **P 21 16 57.8 +1.7**
MK31 *e*S **S 21 25 44.0 +1.0**
MK31 Makanchi Array 67.69 326 *e*P **P 21 16 57.8 +1.7**
MK31 *e*S **S 21 25 44.0 +1.0**
MK32 Makanchi Array 67.69 326 *e*P **P 21 16 57.8 +1.7**
MKAR Makanchi Array 67.69 326 P **P 21 16 57.8 +1.7**
comp=Z,316nm,0.4s,baz=113,slow=8.4,SNR=4709
MKAR S **S 21 25 41.5 -1.6**
comp=Z,3.3nm,0.9s,baz=134,slow=12,SNR=5.3
MKAR P4KPbc 21 53 41.4
comp=Z,0.8nm,0.8s,baz=100,slow=6.7,SNR=5.4
MKAR Makanchi Array 67.69 326 *e*P **P 21 16 57.8 +1.7**
comp=Z,4μm,0.9s
YAK Yakutsk 67.86 360 P **P 21 16 57.6 +0.9**
comp=Z,82nm,0.4s,baz=359,slow=0.9,SNR=20
YAK S **S 21 25 43.0 -1.3**
comp=Z,7.8nm,0.4s,baz=15,slow=24,SNR=14
YAK Yakutsk 67.86 360*c* *i*P **P 21 16 57.6 +0.9**
YAK *e* 21 17 18.7
YAK *e**PP **pP 21 17 30.6 +1.6**
YAK *e* 21 19 27.0
YAK *e*PPP PPP 21 21 09.4
YAK *e*S **S 21 25 42.2 -2.1**
YAK *e**SS *SS 21 26 08.9
YAK *e* 21 26 38.3
YAK pmax pmax
comp=Z,35nm,0.6s
YAK pmax pmax
comp=N,21nm,1.1s
YAK pmax pmax
comp=E,8.0nm,1.0s
YAK pmax pmax
comp=Z,14nm,0.8s
YAK smax smax
comp=N,298nm,1.8s
YAK smax smax
comp=E,654nm,2.8s
YAK Yakutsk 67.86 360 *e*P **P 21 16 57.8 +1.1**
comp=E,141nm,0.8s
MAKZ Makanchi 67.87 326 *e*P **P 21 16 58.8 +1.6**
MAKZ pmax pmax
comp=Z,867nm,1.2s
MAKZ Makanchi 67.87 326 *e*P **P 21 16 58.8 +1.6**
comp=Z,867nm,1.2s
RAR Rarotonga 68.96 110 *e*P **P 21 17 05.6 +1.1**
RAR pmax pmax
comp=Z,119nm,1.3s
RAR Rarotonga 68.96 110 *e*P **P 21 17 05.6 +1.1**
comp=Z,119nm,1.3s
KRAR Krasnoyarsk 69.14 338*c* *i*P **P 21 17 05.9 +1.1**
SMY Shemya 69.19 27 *e*P **P 21 17 06.8 +1.6**
SMY pmax pmax
comp=Z,201nm,0.9s
SMY Shemya 69.19 27 *e*P **P 21 17 06.8 +1.6**
comp=Z,201nm,0.9s
AAK Ala-Archa 70.13 319 P **P 21 17 13.4 +1.9**
comp=Z,186nm,0.9s,baz=110,slow=5.2,SNR=312
AAK S **S 21 26 13.4 +1.2**
comp=Z,3.5nm,0.8s,baz=242,slow=22,SNR=9.4
AAK Ala-Archa 70.13 319*c* *i*P **P 21 17 13.3 +1.9**
AAK pmax pmax
comp=Z,551nm,1.0s
AAK Ala-Archa 70.13 319 P **P 21 17 13.5 +2.0**
SNR=194
AAK Ala-Archa 70.13 319 *e*P **P 21 17 13.5 +2.0**
FRU Bishkek 70.14 320⇑ *i*P **P 21 17 13.0 +1.6**
FRU *i**SP **pP 21 17 40.0 -3.8**
FRU *e*S **S 21 26 13.0 +0.9**
FRU pmax pmax
comp=Z,300nm,1.9s
KBL Kabul 70.52 310 *e*P **P 21 17 15.2 +1.1**
KBL pmax pmax
comp=Z,302nm,1.1s
KBL Kabul 70.52 310 *e*P **P 21 17 15.2 +1.1**
comp=Z,302nm,1.1s
SEY Seymchan 70.77 10 P **P 21 17 16.6 +1.9**
comp=Z,77nm,0.7s,baz=196,slow=4.9,SNR=174
SEY S **S 21 26 19.2 +0.8**
comp=Z,0.6nm,0.3s,baz=239,slow=19,SNR=10
ZAA0 Zalesovo Array 70.94 333 *e*P **P 21 17 16.0 +0.2**
ZALV Zalesovo Beam 70.94 333 P **P 21 17 16.2 +0.4**
comp=Z,129nm,0.9s,baz=114,slow=4.2,SNR=419
ZALV S **S 21 26 18.0 -2.8**
comp=Z,14nm,1.2s,baz=155,slow=8.2,SNR=10
ZALV PKPPKP **P'P'df 21 45 15.5 +4.5**
comp=Z,0.5nm,0.5s,baz=289,slow=4.5,SNR=4.0
ZAA1 Zalesovo Array 70.94 333 *e*P **P 21 17 16.2 +0.4**
KURBB Kurchatov Arra 71.95 328 P **P 21 17 23.1 +1.1**
comp=Z,110nm,0.5s,baz=127,slow=4.8,SNR=1408
KURBB S **S 21 26 29.4 -3.1**
comp=Z,6.0nm,1.1s,baz=135,slow=12,SNR=12
KURK Kurchatov 71.95 328 P **P 21 17 23.2 +1.1**
KURK S **S 21 26 29.4 -3.2**
KURK pmax pmax
comp=Z,111nm,0.5s
KURK smax smax
comp=N,6.0nm,1.1s
KURK Kurchatov 71.95 328 *e*P **P 21 17 23.1 +1.1**
NVS Novosibirsk 72.22 334⇑ *i*P **P 21 17 24.2 +0.7**
NVS *i* 21 18 06.5
NVS *e*S **S 21 26 33.4 -2.1**
NVS pmax pmax
comp=Z,237nm,1.6s
NVS pmax pmax
comp=N,120nm,1.5s
NVS pmax pmax
comp=E,130nm,1.5s
NVS smax smax
comp=N,60nm,1.9s
NVS smax smax
comp=E,82nm,1.9s
XMAS Kiritimati 72.39 86 *e*P **P 21 17 27.9 +2.5**
comp=E,204nm,1.0s
KKAR Karatay Array 72.94 318 *e*P **P 21 17 29.5 +1.3**
KKAR pmax pmax
comp=Z,1μm,0.9s
KKAR Karatay Array 72.94 318 *e*P **P 21 17 29.5 +1.3**
comp=Z,1μm,0.9s
VNDA Vanda 73.35 173 P **P 21 17 30.5 +0.6**
comp=Z,24nm,0.8s,baz=323,slow=6.0,SNR=105
VNDA S **S 21 26 44.9 -2.8**
comp=Z,1.6nm,1.0s,baz=43,slow=18,SNR=3.7
VNDA Vanda 73.35 173 *e*P **P 21 17 30.5 +0.6**
comp=Z,29nm,0.9s
RER Riviere de l'E 73.65 250 *e*P **P 21 17 34.5 +1.7**
comp=Z,361nm,0.9s
SBA Scott Base 74.23 173 *e*P **P 21 17 36.7 +1.7**
SBA pmax pmax
comp=Z,26nm,0.9s
SBA Scott Base 74.23 173 *e*P **P 21 17 36.7 +1.7**
comp=Z,26nm,0.9s
KIP Kipapa 75.15 66*ce*P **P 21 17 42.7 +1.4**
KIP pmax pmax
comp=Z,2μm,1.3s
KIP Kipapa 75.15 66 *e*P **P 21 17 43.8 +2.5**
comp=Z,232nm,1.2s
WSAR Wadi Sarin 75.89 296 P **P 21 17 47.0 +1.4**
comp=Z,63nm,0.6s,baz=150,slow=5.8,SNR=55
MAW Mawson 76.03 201 P **P 21 17 46.4 +1.0**
comp=Z,89nm,0.9s,baz=74,slow=6.2,SNR=100
MAW LR LR 21 47 49.4
comp=Z,398nm,20.9s,baz=56,slow=33
MAW Mawson 76.03 201 P **P 21 17 46.5 +1.0**
baz=76,SNR=82
MAW Mawson 76.03 201 *e*P **P 21 17 46.4 +1.0**
comp=Z,48nm,1.4s
JMDO Jabal Madar 76.17 295 P **P 21 17 48.2 +0.9**
SNR=15
SMDO Samad 76.37 295 P **P 21 17 49.4 +1.0**
SNR=20
BIDO Bidbid 76.40 296 P **P 21 17 49.9 +1.5**
SNR=55
HPAH Hawaii Prepara 76.98 68 *e*P **P 21 17 54.0 +2.1**
comp=Z,188nm,1.0s
MLOA Mauna Loa Obse 77.00 68 *e*P **P 21 17 54.5 +2.2**
POHA Pohakuloa 77.08 68 *e*P **P 21 17 54.8 +2.2**
comp=Z,177nm,1.0s
HOQ Hoqain 77.15 296 P **P 21 17 53.9 +1.2**
SNR=34
BVAR Borovoye Array 77.51 328 P **P 21 17 54.9 +0.8**
comp=Z,49nm,0.4s,baz=123,slow=5.5,SNR=600
BVAR S **S 21 27 31.5 -2.8**
comp=Z,1.8nm,1.0s,baz=107,slow=9.5,SNR=4.5
TIXI Tiksi 77.53 359 P **P 21 17 53.8 +0.1**
comp=Z,31nm,0.3s,baz=172,slow=4.9,SNR=136
TIXI S **S 21 27 30.2 -3.6**
comp=Z,9.9nm,1.2s,baz=250,slow=24,SNR=28
TIXI Tiksi 77.53 359*ce*P **P 21 17 54.5 +0.8**
TIXI pmax pmax
comp=Z,11nm,0.8s
TIXI Tiksi 77.53 359 *e*P **P 21 17 53.2 -0.5**
comp=Z,32nm,0.8s
BRVK Borovoye 77.58 328*ce*P **P 21 17 55.3 +0.9**
BRVK pmax pmax
comp=Z,395nm,1.0s
BRVK Borovoye 77.58 328 *e*P **P 21 17 55.4 +1.0**
comp=Z,209nm,1.0s
NIKH Nikolski High 77.78 33 *e*P **P 21 17 56.5 +1.0**
comp=Z,96nm,0.9s
ARQ Araqi 77.80 295 P **P 21 17 57.3 +0.9**
SNR=18
BILL Bilibino 78.06 13⇓ *e*P **P 21 17 57.9 +1.1**
BILL *e* 21 18 06.7
BILL *e**PP **pP 21 18 31.1 +1.3**
ZRNK Zerenda 78.22 327 *e*P **P 21 17 58.7 +0.7**
ZRNK pmax pmax
comp=Z,245nm,1.1s
ZRNK Zerenda 78.22 327 *e*P **P 21 17 58.7 +0.7**
comp=Z,245nm,1.1s
UOSS Minazif 78.42 297 *e*P **P 21 18 00.2 +0.5**
comp=Z,115nm,0.9s
UOSS *e*S **S 21 27 44.4 -0.8**
HATD Hatta, Dubai 78.46 297 *i* P **P 21 18 01.2 +1.2**
SNR=37
HATD Hatta, Dubai 78.46 297 P **P 21 18 01.0 +1.1**
SNR=19
ASHO Ashiyiah 78.50 297 *i* P **P 21 18 01.3 +1.1**
SNR=79
ASHO Ashiyiah 78.50 297 P **P 21 18 01.1 +1.0**
SNR=19
BANOM Banah 78.55 298 *i* P **P 21 18 01.5 +1.1**
SNR=68
BANOM Banah 78.55 298 P **P 21 18 02.0 +1.5**
SNR=30
PPT2 Papeete2 78.62 107 *e*P **P 21 18 01.2 +0.2**
comp=Z,82nm,1.0s
PPT2 *e*pP **sP 21 18 44.5 -3.6**
comp=Z,110nm,1.1s
PPT Papeete 78.62 107 P **P 21 18 02.1 +1.2**
comp=Z,87nm,0.9s,baz=288,slow=6.1,SNR=4.9
PPT LR LR 21 48 52.7
comp=Z,93nm,20.3s,baz=284,slow=32
RBK Rabkut 78.83 289 P **P 21 18 02.7 +0.6**
SNR=8.8
NAZ Nazwa, Dubai 78.92 297 *i* P **P 21 18 03.3 +0.9**
SNR=25
NAZ Nazwa, Dubai 78.92 297 P **P 21 18 03.2 +0.8**
SNR=28
FAQ Al Faqa, Dubai 78.93 297 *i* P **P 21 18 03.5 +1.0**
SNR=115
FAQ Al Faqa, Dubai 78.93 297 P **P 21 18 03.2 +0.8**
SNR=32
UNV Unalaska Valle 79.43 32 *e*P **P 21 18 05.6 +1.1**
comp=Z,79nm,0.8s
GEYT Alibeck 79.97 310 P **P 21 18 09.2 +1.3**
comp=Z,90nm,0.8s,baz=132,slow=2.2,SNR=228
GEYT LR LR 22 01 12.4
comp=Z,199nm,19.1s,baz=310,slow=41
VAH Vaihoa 80.62 104 *e*P **P 21 18 12.0 +0.2**
comp=Z,51nm,1.0s
VAH *e*pP **sP 21 18 55.0 -4.0**
comp=Z,114nm,1.3s
NRIK Noril'sk 80.74 346 P **P 21 18 12.5 +1.2**
comp=Z,123nm,1.1s,baz=128,slow=6.0,SNR=64
NRIK S **S 21 28 05.5 -2.4**
comp=Z,2.8nm,0.7s,baz=159,slow=14,SNR=18
ABPO Ambohimpanom 81.72 252 *e*P **P 21 18 18.5 +0.7**
ABPO pmax pmax

comp=Z,127nm,1.4s
ABPO Ambohimpanom 81.72 252 *e*P **P 21 18 18.5 +0.7**
comp=Z,127nm,1.4s
ABKAR Akbulak array 82.06 321 *e*P **P 21 18 19.0 +0.4**
comp=Z,952nm,1.3s
SDPT Sand Point 83.24 32 *e*P **P 21 18 25.2 +0.6**
comp=Z,287nm,0.7s
AKTO Aktyubinsk 83.61 322 P **P 21 18 27.4 +0.8**
comp=Z,33nm,0.5s,baz=104,slow=6.2,SNR=122
AKTO S **S 21 28 33.5 -4.5**
comp=Z,2.3nm,0.8s,baz=198,slow=20,SNR=20
QSPA South Pole Qui 83.94 180 *e*P **P 21 18 28.1 -0.1**
SVE Sverdlovsk 84.20 329*d iP* **P 21 18 30.0 +0.6**
SVE *e*S **S 21 28 35.3 -8.2**
SVE pmax pmax
comp=Z,312nm,1.4s
CHGN Chignik 84.66 32 *e*P **P 21 18 32.1 +0.4**
SYO Syowa Base 84.74 201⇓*iP* **P 21 18 31.2 -0.8**
SYO Syowa Base 84.74 201⇑*iPcP* **PcP 21 18 35.4 +0.2**
SYO Syowa Base 84.74 201⇓*iX* pP 21 19 03.8 -1.7
ARU Arti 85.15 328 P **P 21 18 34.4 +0.2**
comp=Z,42nm,0.4s,baz=100,slow=4.1,SNR=150
ARU PP **PP 21 21 52.5 -1.0**
comp=Z,7.6nm,0.9s,baz=114,slow=5.8,SNR=3.6
ARU S **S 21 28 47.2 -5.7**
comp=Z,1.2nm,0.7s,baz=90,slow=20,SNR=8.7
ARU Arti 85.15 328*c iP* **P 21 18 33.9 -0.3**
ARU *PP **pP 21 19 06.9 -0.8**
ARU *e* 21 21 53.2
ARU S **S 21 28 45.7 -7.2**
ARU *SS **sS 21 29 43.4 -7.4**
ARU SS **SS 21 34 25.3 -4.5**
ARU SSS SSS 21 38 05.5
ARU pmax pmax
comp=Z,219nm,1.7s
ARU Arti 85.15 328 *e*P **P 21 18 33.9 -0.3**
comp=Z,156nm,1.1s
SOKR Solikamsk 87.01 331*c iP* **P 21 18 40.7 -2.6**
SOKR pmax pmax
comp=Z,101nm,1.5s
SVW2 Sparrevohn 87.56 28 *e*P **P 21 18 47.1 +1.2**
comp=Z,29nm,0.8s
OHAK Old Harbor 87.63 32 *e*P **P 21 18 47.1 +0.8**
comp=Z,106nm,0.8s
DAMY Dhamar 87.75 285 *e*P **P 21 18 50.5 +2.3**
comp=Z,230nm,1.0s
TT01 Tatalina 87.89 26 *e*P **P 21 18 48.3 +0.9**
TTA Tatalina 87.91 26 *e*P **P 21 18 47.5 -0.1**
TTA pmax pmax
comp=Z,42nm,0.9s
TTA Tatalina 87.91 26 *e*P **P 21 18 47.5 -0.1**
comp=Z,42nm,0.9s
KDAK Kodiak Island 88.14 31*ce*P **P 21 18 49.9 +1.2**
KDAK Kodiak Island 88.14 31 *e*P **P 21 18 49.9 +1.2**
comp=Z,508nm,1.3s
ATD Arta Tunnel 88.90 282 P **P 21 18 55.6 +2.3**
comp=Z,89nm,0.8s,baz=56,slow=0.9,SNR=40
SPU Mount Spurr 89.23 28 *e*P **P 21 18 55.4 +1.5**
PPLA Purkeypile 89.58 27 *e*P **P 21 18 56.3 +0.7**
comp=Z,88nm,1.6s
CAST Castle Rocks 89.75 26 *e*P **P 21 18 56.6 +0.3**
comp=Z,11nm,0.8s
SUA Susitna One 89.91 28 *e*P **P 21 18 57.4 +0.3**
comp=Z,48nm,0.8s
KTH Kantishna Hill 90.29 26 *e*P **P 21 18 58.9 +0.1**
comp=Z,17nm,0.9s
DGRG David-gareji 90.30 311 P **P 21 19 01.2 +1.8**
DGRG David-gareji 90.30 311 P **P 21 19 01.1 +1.8**
RC01 Rabbit Creek A 90.30 29 *e*P **P 21 18 58.9 +0.1**
comp=Z,33nm,0.7s
TRF Thorofare Moun 90.55 26 *e*P **P 21 19 00.5 +0.4**
comp=Z,14nm,1.1s
GNI Garni 90.61 310 P **P 21 19 02.0 +1.0**
comp=Z,23nm,0.9s,baz=165,slow=4.5,SNR=9.4
GNI Garni 90.61 310 *i* P **P 21 19 01.9 +0.9**
SNR=5.7
GNI Garni 90.61 310*ce*P **P 21 19 02.7 +1.7**
GNI pmax pmax
comp=Z,176nm,1.2s
GNI Garni 90.61 310 P **P 21 19 02.3 +1.4**
SNR=6.3
GNI Garni 90.61 310 *e*P **P 21 19 02.6 +1.7**
PMR Palmer 90.69 28 *e*P **P 21 19 00.6 +0.1**
PMR pmax pmax
comp=Z,19nm,0.9s
PMR Palmer 90.69 28 *e*P **P 21 19 00.6 +0.1**
comp=Z,19nm,0.9s
TBLG Delisi 90.81 312 P **P 21 19 02.5 +0.8**
TBLG Delisi 90.81 312 P **P 21 19 02.4 +0.8**
GUDG Gudauri 91.09 312 P **P 21 19 04.6 +1.4**
RND Reindeer 91.17 26 *e*P **P 21 19 02.2 -0.7**
RND pmax pmax
comp=Z,47nm,0.8s
RND Reindeer 91.17 26 *e*P **P 21 19 02.2 -0.7**
comp=Z,47nm,0.8s
MCK McKinley 91.20 26 *e*P **P 21 19 02.9 -0.1**
MCK pmax pmax
comp=Z,25nm,0.8s
MCK McKinley 91.20 26 *e*P **P 21 19 02.9 -0.1**
comp=Z,25nm,0.8s
COLD Coldfoot 91.39 22 *e*P **P 21 19 04.5 +0.8**
comp=Z,34nm,0.9s
ZEI Tsey 91.56 313 *e*P **P 21 19 04.3 -1.0**
ZEI pmax pmax
comp=Z,116nm,0.9s
SCM Sheep Creek Mo 91.58 28 *e*P **P 21 19 05.5 +0.7**
SCM pmax pmax
comp=Z,41nm,1.1s
SCM Sheep Creek Mo 91.58 28 *e*P **P 21 19 05.5 +0.7**
comp=Z,41nm,1.1s
BGD Bogdanovka 91.60 311 P **P 21 19 07.2 +1.6**
AKH Akhalkalaki 91.70 311 P **P 21 19 07.4 +1.4**
AKH Akhalkalaki 91.70 311 P **P 21 19 07.4 +1.4**
WRH Wood River Hil 91.70 25 *e*P **P 21 19 04.5 -0.7**
comp=Z,35nm,0.9s
DHY Denali Highway 91.77 27 *e*P **P 21 19 06.3 +0.6**
comp=Z,21nm,0.8s
CCB Clear Creek Bu 91.85 25 *e*P **P 21 19 05.1 -0.8**
comp=Z,43nm,0.8s
NCK Nalchik 91.86 313 *e*P **P 21 19 07.2 +0.7**
NCK pmax pmax
comp=Z,29nm,1.0s
ONI Oni 91.86 312 P **P 21 19 07.6 +1.1**
ONI Oni 91.86 312 P **P 21 19 07.6 +1.1**
HDA Harding Lake 92.18 26 *e*P **P 21 19 06.8 -0.6**
comp=Z,30nm,0.8s
KLU Klutina 92.19 28 *e*P **P 21 19 07.4 -0.2**
comp=Z,15nm,0.8s
DIV Divide 92.21 29 *e*P **P 21 19 08.7 +1.0**
comp=Z,36nm,0.8s
ILAR Eielson Array 92.26 25 P **P 21 19 07.0 -0.9**
comp=Z,19nm,0.8s,baz=274,slow=4.3,SNR=150
ILAR PP **PP 21 22 45.7 -4.2**
comp=Z,6.1nm,1.2s,baz=262,slow=6.1,SNR=3.9
ILAR PKKPbc **PKKPdf 21 36 22.6 +0.1**
comp=Z,1.3nm,0.9s,baz=65,slow=1.3,SNR=8.4
ILAR LR LR 21 59 03.1
comp=Z,101nm,19.0s,baz=294,slow=34
ILB Eielson Array 92.26 25 *e*P **P 21 19 06.8 -1.0**
ILB *e*PP **PP 21 22 45.8 -4.2**
KBZ Khabaz 92.39 314 P **P 21 19 09.2 +0.4**
comp=Z,11nm,0.8s,baz=80,slow=2.0,SNR=17
GOF Gofitskoye 92.42 315⇑*iP* **P 21 19 09.0 0.0**
GOF *e*S **SKSac 21 29 28.2 -2.0**
GOF pmax pmax
comp=Z,85nm,1.5s
NEY Neytrino 92.47 313 *i* P **P 21 19 10.4 +0.9**
NEY pmax pmax
comp=Z,5.0nm,1.1s
KVAR Kislovodsk Arr 92.56 314 P **P 21 19 10.5 +0.7**
comp=Z,9.3nm,0.8s,baz=84,slow=8.7,SNR=6.8
KIV Kislovodsk 92.56 314 *e*P **P 21 19 10.0 +0.2**
KIV pmax pmax
comp=Z,16nm,1.0s
KIV Kislovodsk 92.56 314 *e*P **P 21 19 10.5 +0.7**
comp=Z,22nm,1.1s
PAX Paxson 92.61 27 *e*P **P 21 19 09.5 -0.1**
PAX pmax pmax
comp=Z,16nm,0.9s
PAX Paxson 92.61 27 *e*P **P 21 19 09.5 -0.1**
comp=Z,16nm,0.9s
BMRM Bremner River 92.75 29 *e*P **P 21 19 10.9 +0.7**
comp=Z,24nm,0.9s
KMBO Kilima Mbogo 93.11 269 P **P 21 19 14.3 +1.1**
comp=Z,30nm,1.0s,baz=66,slow=6.2,SNR=41
KMBO PP **PP 21 22 57.9 -0.4**
comp=Z,6.4nm,1.1s,baz=64,slow=12,SNR=3.0
KMBO LR LR 21 56 13.2
comp=Z,219nm,21.4s,baz=80,slow=32
KMBO Kilima Mbogo 93.11 269 P **P 21 19 14.3 +1.1**
SNR=8.7
KMBO Kilima Mbogo 93.11 269 *e*P **P 21 19 14.3 +1.1**
comp=Z,67nm,1.3s
KMBO *e*PP **PP 21 23 02.3 +4.0**
DOT Dot Lake 93.33 26 *e*P **P 21 19 13.0 +0.2**
comp=Z,46nm,0.7s
MENT Mentasta 93.40 27 *e*P **P 21 19 13.9 +0.8**
comp=Z,10nm,0.7s
NVL N'lazarevskaya 93.42 197 *e*P **P 21 19 14.2 +1.1**
CRQM Cirque 93.43 29 *e*P **P 21 19 14.5 +1.0**
comp=Z,22nm,0.9s
BALM Baldy 93.85 29 *e*P **P 21 19 16.3 +1.0**
BALM pmax pmax
comp=Z,18nm,0.9s
BALM Baldy 93.85 29 *e*P **P 21 19 16.3 +1.0**
comp=Z,18nm,0.9s
VRH Novokhopyorsk 93.88 321 *e*P **P 21 19 14.7 -0.8**
VRH pmax pmax
comp=Z,100nm,1.0s
EGAK Eagle 94.70 25 *e*P **P 21 19 19.2 +0.2**
comp=Z,34nm,0.9s
PCA Pinnacle 94.80 30 *e*P **P 21 19 23.2 +3.5**
comp=Z,41nm,1.2s
DAWY Dawson 95.42 26 *e*P **P 21 19 23.1 +0.7**
comp=Z,49nm,0.9s
VSR Storozhevoye 95.49 321 *e*P **P 21 19 21.7 -1.2**
VSR pmax pmax
comp=Z,30nm,0.9s
KLMR Klimovskoe 95.70 331 *e*P **P 21 19 20.9 -2.7**
KLMR *e*S **SKSac 21 29 44.2 -3.0**
KLMR pmax pmax
comp=Z,110nm,1.4s
HYT Haines Junctio 96.20 30 *e*P **P 21 19 27.1 +1.0**
comp=Z,8.8nm,0.9s
MOS Moscow 96.56 325 *e*P **P 21 19 25.0 -2.6**
MOS *e* 21 23 27.0
MOS *e*S **SKSac 21 29 49.4 -2.5**
MOS pmax pmax
comp=Z,200nm,2.6s
MOS pmax pmax
comp=Z,61nm,1.0s
SNAA Sanae 96.72 193 P **P 21 19 28.5 +0.3**
SNAA Sanae 96.72 193 *e*P **P 21 19 28.9 +0.7**
SNAA pmax pmax
comp=Z,32nm,1.1s
SNAA Sanae 96.72 193 *e*P **P 21 19 28.9 +0.7**
comp=Z,32nm,1.1s
OBN Obninsk 97.15 325 P **P 21 19 29.4 -0.9**
comp=Z,34nm,0.7s,baz=275,slow=2.5,SNR=20
OBN Obninsk 97.15 325*c iP* **P 21 19 29.0 -1.3**
OBN *PP **pP 21 20 00.0 -4.3**
OBN *e*SP **sP 21 20 21.0 +2.9**
OBN *e*SS SS 21 37 24.7 +2.3
OBN SSS SSS 21 41 07.0
OBN pmax pmax
comp=Z,95nm,1.3s
OBN Obninsk 97.15 325 *e*P **P 21 19 29.2 -1.1**
comp=Z,90nm,1.2s
LVZ Lovozero 97.75 338*ce*P **P 21 19 32.4 -0.4**
LVZ pmax pmax
comp=Z,52nm,1.7s
LVZ Lovozero 97.75 338 *e*P **P 21 19 32.1 -0.7**
comp=Z,51nm,1.1s
INK Inuvik 97.78 22 P **P 21 19 32.8 0.0**
comp=Z,18nm,1.1s,baz=276,slow=5.1,SNR=14
INK PKKPbc **PKKPbc 21 36 07.3 -3.2**
comp=Z,3.5nm,0.6s,baz=76,slow=4.0,SNR=6.5
INK Inuvik 97.78 22 *e*P **P 21 19 32.9 0.0**
comp=Z,29nm,1.1s
APA Apatity 98.25 337⇓*iP* **P 21 19 33.8 -1.2**
APA *i* 21 23 33.0
APA *i* S **S 21 30 48.0 -3.0**
APA pmax pmax
comp=Z,11nm,1.0s
APA MLR MLR
comp=Z,500nm,18.0s
SIM Simferopol' 98.74 314*d iP* **P 21 19 37.4 -0.3**
SIM pmax pmax
comp=Z,58nm,0.8s
BR101 Keskin Array S 99.09 309 *e*P **Pdif 21 19 39.0 -0.6**
BR101 *e*PP **PP 21 23 41.9 -1.7**
BR131 Keskin Array S 99.09 309 *e*P **Pdif 21 19 39.3 -0.3**
BRTR Keskin Array B 99.09 309 P **Pdif 21 19 39.0 -0.6**
comp=Z,9.6nm,0.9s,baz=120,slow=4.9,SNR=48
BRTR PP **PP 21 23 41.9 -1.7**
comp=Z,11nm,1.2s,baz=111,slow=6.8,SNR=6.6
CSS Mathiatis 99.29 304 *e*Pdif **Pdif 21 19 40.4 -0.1**
comp=Z,3.8nm,0.9s
BR231 Keskin MP Arra 99.76 309 *e*Pdif **Pdif 21 19 39.6 -3.0**
LSZ Lusaka 100.21 253 *e*P **Pdif 21 19 45.3 +0.2**
LSZ Lusaka 100.21 253 P **Pdif 21 19 45.2 +0.1**
SNR=5.7
LSZ Lusaka 100.21 253 *e*Pdif **Pdif 21 19 45.3 +0.1**
BOSA Boshof 100.38 240 P **Pdif 21 19 45.8 +0.2**
comp=Z,18nm,1.1s,baz=102,slow=5.4,SNR=17
SPITS Spitsbergen Ar 100.71 349 P **Pdif 21 19 45.5 -0.3**
comp=Z,5.1nm,0.7s,baz=106,slow=8.7,SNR=13
ARA0 ARCESS Array S 100.84 340 *e*Pdif **Pdif 21 19 46.2 -0.4**
ARCES ARCESS Array B 100.84 340 P **Pdif 21 19 46.1 -0.5**
comp=Z,16nm,0.9s,baz=76,slow=5.1,SNR=28
ARCES PP **PP 21 23 56.1 +0.3**
comp=Z,4.0nm,0.9s,baz=78,slow=13,SNR=3.9
ARCES PKiKP **PKiKP 21 24 11.0 -0.5**
comp=Z,0.3nm,0.3s,baz=112,slow=2.8,SNR=7.0
LBTB Lobatse 100.85 243 *e*P **Pdif 21 19 48.0 +0.3**
LBTB Lobatse 100.85 243 *e*Pdif **Pdif 21 19 48.0 +0.3**
AKASG Malin Array Be 101.78 320 P **Pdif 21 19 50.2 -0.9**
comp=Z,3.3nm,0.6s,baz=75,slow=4.2,SNR=14
AKASG PP **PP 21 23 56.7 -6.7**
comp=Z,2.8nm,0.7s,baz=74,slow=8.4,SNR=4.7
AKBB Malin Array Si 101.78 320 *e*P **Pdif 21 19 50.2 -0.9**
AKBB Malin Array Si 101.78 320 *e*Pdif **Pdif 21 19 50.2 -0.9**
AKBB *e*PP **PP 21 23 56.7 -6.7**
KIEV Kiev 101.79 320 *i* P **Pdif 21 19 49.7 -1.4**
KIEV pmax pmax
comp=Z,12nm,1.7s
AK11 Malin Array Si 101.82 320 *e*Pdif **Pdif 21 19 50.2 -1.1**
FIA1 FINESS Array S 102.15 332 *e*Pdif **Pdif 21 19 51.6 -0.9**
FIA0 FINESS Array S 102.15 332 *e*P **Pdif 21 19 51.7 -0.8**
FIA0 *e* 21 24 05.3
FIA0 FINESS Array S 102.15 332 *e*Pdif **Pdif 21 19 51.7 -0.8**
FIA0 *e*PP **PP 21 24 05.3 -0.5**
FINES FINESS Array B 102.15 332 P **Pdif 21 19 51.7 -0.8**
comp=Z,8.1nm,0.7s,baz=84,slow=5.9,SNR=16
FINES PP **PP 21 24 05.3 -0.5**
comp=Z,13nm,1.0s,baz=99,slow=10.0,SNR=6.9
KIS Kishinev 102.35 317 *e*PP PP 21 24 03.0 -4.8
SORM Soroca 102.57 318⇓*iP* **Pdif 21 19 54.1 -0.6**
SORM Soroca 102.57 318⇓P **Pdif 21 19 54.1 -0.6**
CFR Carcaliu 102.96 315⇑*iP* **PP 21 24 12.5 +0.1**
PSN Preselentsi 103.04 313 *i* P **PP 21 24 13.0 -0.1**
TLB Topalu 103.08 314⇓*iP* **Pdif 21 19 57.6 +0.6**
TLB Topalu 103.08 314⇓P **Pdif 21 19 57.6 +0.6**
TESR Tescani 103.88 316⇑*iP* **Pdif 21 20 00.6 0.0**
PLOR Plostina 103.94 316⇑*iP* **PKiKP 21 24 10.1 -7.8**
MLR Muntele Rosu 104.47 315 PP PP 21 24 21.1 -2.7
comp=Z,2.3nm,0.9s,baz=76,slow=8.3,SNR=2.2
MLR Muntele Rosu 104.47 315⇑*iP* PKPpre 21 24 07.0
MLR Muntele Rosu 104.47 315 *e*P **Pdif 21 20 03.8 +0.4**
MLR *e* 21 24 21.1
MLR Muntele Rosu 104.47 315 *e*Pdif **Pdif 21 20 03.8 +0.4**
MLR *e*PP **PKiKP 21 24 21.1 +2.2**
SZH Strazhica 104.71 313 *i* P **PP 21 24 26.2 +0.7**
BURAR Bucovina Array 104.72 318⇑*iP* **Pdif 21 20 04.9 +0.5**
BURAR Bucovina Array 104.72 318⇑P **Pdif 21 20 04.9 +0.5**
BUR08 Bucovina Ar. S 104.73 318 *e*Pdif **Pdif 21 20 05.0 +0.5**
SUW Suwalki 105.01 324 *e*P **Pdif 21 20 05.4 +0.1**
SUW Suwalki 105.01 324 *e*P **Pdif 21 20 05.4 +0.1**
LVV L'vov 105.19 320 *e*P **Pdif 21 20 05.1 -1.2**
KWP Kalwaria Pacla 106.07 320 *e*P **Pdif 21 20 11.0 +0.7**
KWP Kalwaria Pacla 106.07 320 *e*P **Pdif 21 20 11.0 +0.7**
KOLS Kolonicke sedl 106.47 319 *i* P **Pdif 21 20 12.5 +0.4**
KOLS *e* 21 24 41.9
KOLS Kolonicke sedl 106.47 319 *e*PDIFF **Pdif 21 20 12.5 +0.4**
KOLS *e*PP **PP 21 24 41.9 +3.6**
DRGR 106.53 317⇑*iP* **Pdif 21 20 13.4 +0.9**
DRGR 106.53 317⇑P **Pdif 21 20 13.4 +0.9**
YKA Yellowknife Ar 106.67 26 Pdiff **Pdif 21 20 13.3 +0.8**
comp=Z,1.1nm,0.7s,baz=289,slow=4.8,SNR=4.3
YKA PKiKP **PKiKP 21 24 22.8 +0.5**
comp=Z,0.9nm,0.6s,baz=298,slow=1.9,SNR=4.3
YKA PKKPbc **PKKPbc 21 35 41.5 -2.8**
comp=Z,2.6nm,0.7s,baz=108,slow=3.1,SNR=9.8
YKA PKKP **PKKPdf 21 35 54.7 -1.2**
comp=Z,3.4nm,0.8s,baz=100,slow=4.9,SNR=11
YKB5 Yellowknife Ar 106.67 26 *e*Pdif **Pdif 21 20 13.3 +0.8**
YKB5 *e*PKiKP **PKiKP 21 24 22.8 +0.5**
YKB5 *e*PKKPbc **PKKPbc 21 35 41.5 -2.8**
YKB5 *e*PKKPdf **PKKPdf 21 35 54.7 -1.2**
VTS Vitosha 106.78 313 *i* P **PP 21 24 35.7 -5.2**
CRVS Cervenica-Dubn 107.00 319 *i* P **Pdif 21 20 15.0 +0.6**
CRVS *e* 21 24 48.5
CRVS Cervenica-Dubn 107.00 319 *e*PDIFF **Pdif 21 20 15.0 +0.6**
CRVS *e*PP **PP 21 24 48.5 +6.3**
STHS Stebnicka Huta 107.05 320 *i* P **Pdif 21 20 16.3 +1.6**
STHS *e* 21 24 39.3
STHS Stebnicka Huta 107.05 320 *e*PDIFF **Pdif 21 20 16.2 +1.6**
STHS *e*PP **PP 21 24 39.3 -3.2**
BZS Buzias 107.47 316⇑*iP* **Pdif 21 20 16.6 +0.1**
BZS Buzias 107.47 316⇑P **Pdif 21 20 16.6 +0.1**
MDVR Moldovita 107.54 315⇓*iP* **Pdif 21 20 17.6 +0.7**
NIE Niedzica 107.65 320 *e*P **Pdif 21 20 18.7 +1.4**
NIE Niedzica 107.65 320 *e*P **Pdif 21 20 18.7 +1.4**
KECS Kecovo 107.72 319 *i* P **Pdif 21 20 17.8 +0.2**
KECS *e* 21 24 50.1
KECS Kecovo 107.72 319 *e*PDIFF **Pdif 21 20 17.8 +0.2**
KECS *e*PP **PP 21 24 50.1 +2.7**
LANS Liptovska Anna 108.24 320 *i* P **Pdif 21 20 20.6 +0.6**
LANS Liptovska Anna 108.24 320 *e*PDIFF **Pdif 21 20 20.6 +0.6**
HFS Hagfors 108.35 332 Pdiff **Pdif 21 20 19.3 -0.8**
comp=Z,2.4nm,0.4s,baz=96,slow=4.5,SNR=12
HFS PKiKP **PKiKP 21 24 25.6 +0.1**
comp=Z,2.1nm,0.8s,baz=67,slow=1.5,SNR=4.2
VYHS Vyhne 108.79 319 *i* P **Pdif 21 20 22.5 +0.1**
VYHS *e* 21 24 54.0
VYHS Vyhne 108.79 319 *e*PDIFF **Pdif 21 20 22.5 +0.1**
VYHS *e*PP **PP 21 24 54.0 -1.2**
VYHS *e*S **Sdif 21 32 08.6 -11**
NB2 NORSAR Subarra109.14 333 P **Pdif 21 20 22.7 -1.0**
comp=Z,7.0nm,0.9s,baz=67,slow=4.8
NB2 NORSAR Subarra109.14 333 PKP PKiKP 21 24 37.0 +10
comp=Z,4.3nm,0.7s,baz=9.3,slow=2.8
NB2 NORSAR Subarra109.14 333 P **Pdif 21 20 22.1 -1.6**
NB2 pmax pmax
comp=Z,14nm,1.4s
NB200 NORSAR Array S 109.14 333 *e*Pdif **Pdif 21 20 23.1 -0.5**
NOA NORSAR Array B 109.14 333 Pdiff **Pdif 21 20 23.1 -0.5**
comp=Z,4.4nm,0.8s,baz=68,slow=4.7,SNR=8.2
KRLC Kraliky 109.72 321 *e*PKP **PKiKP 21 24 29.5 +1.0**
KRLC *e*PP **PP 21 25 02.9 +1.0**
KSP Ksiaz 109.83 322 *e*P **Pdif 21 20 28.0 +1.1**
KSP Ksiaz 109.83 322 *e*P **Pdif 21 20 28.0 +1.1**
DPC Dobruska-Polom 109.94 322 *e*PP PP 21 25 02.6 -0.8
DPC *e*SKP 21 27 51.2
CONA Conrad Observa 110.86 319 *i* PKiKP **PKiKP 21 24 30.0 -0.8**
comp=Z,2.3nm,0.7s
PRU Pruhonice 111.14 322 *e*PP PP 21 25 06.9 -5.1
BRG Berggiesshubel 111.25 323 *e*P **Pdif 21 20 33.6 +0.4**
comp=Z,6.8nm,1.4s
BRG *e*PDIFF PKiKP 21 24 10.9 -20
comp=Z,4.2nm,1.1s
BRG *e* 21 24 44.4
comp=Z,6.4nm,1.3s
BRG *e* 21 25 02.8
comp=Z,4.9nm,1.0s
BRG Berggiesshubel 111.25 323 *e*P **Pdif 21 20 33.6 +0.4**
BRG pmax pmax
comp=Z,7.0nm,1.4s
ARSA Arzberg 111.25 319 *i* PKiKP **PKiKP 21 24 33.3 +1.8**
comp=Z,6.0nm,1.4s
GOLS Golise 111.49 317 *i* PKiKP **PKiKP 21 24 32.4 +0.4**
PERS Pernice 111.67 318 *i* PKiKP **PKiKP 21 24 32.1 -0.2**
CLL Collm 111.68 323 *e*Pdif **Pdif 21 20 36.0 +0.9**
CLL *e*PKiKP **PKiKP 21 24 32.0 -0.1**
CLL *e* 21 24 56.0
CLL *e*PP **PP 21 25 11.0 -4.8**
comp=Z,22nm,1.5s
CLL *e*PKKPdf **PKKPdf 21 35 44.0 -2.3**
CLL Collm 111.68 323 *e*P **Pdif 21 20 36.0 +0.9**
CLL *e* 21 24 32.0
CLL pmax pmax
comp=Z,22nm,1.5s
SOKA Soboth 111.72 318 *i* PKiKP **PKiKP 21 24 32.7 +0.3**
comp=Z,7.2nm,0.9s
BOJS Bojanci 111.87 317 *i* PKiKP **PKiKP 21 24 33.0 +0.4**
BOJS *i* 21 24 44.0
BOJS *e*PP **PP 21 25 20.5 +3.1**
MOA Molln 111.91 319 *i* PKiKP **PKiKP 21 24 31.8 -0.9**
comp=Z,2.6nm,0.6s
KHC Kasperske Hory 111.99 321 *e*PKP **PKiKP 21 24 33.0 +0.2**
KHC *ex* x 21 24 44.1
KHC *e*PP **PP 21 25 18.2 +0.1**
KHC *e*SKP 21 27 54.8
KHC Kasperske Hory 111.99 321 *e*PKiKP **PKiKP 21 24 33.0 +0.2**
KHC *e* 21 25 18.2
GERES GERESS Array B 111.99 321 Pdiff **Pdif 21 20 37.1 +0.3**
comp=Z,0.4nm,0.6s,baz=88,slow=3.1,SNR=4.9
GERES PKiKP **PKiKP 21 24 33.1 +0.2**
comp=Z,2.8nm,0.5s,baz=66,slow=1.8,SNR=32
GERES PP PP 21 25 10.4 -7.8
comp=Z,2.0nm,0.8s,baz=94,slow=5.6,SNR=5.2
GERES SKP 21 27 54.3
comp=Z,1.1nm,0.5s,baz=78,slow=2.4,SNR=6.7
OBKA Obir 112.09 318 *i* PKiKP **PKiKP 21 24 33.2 +0.1**
comp=Z,6.6nm,1.4s
LJU Ljubljana 112.22 317 *i* PKiKP **PKiKP 21 24 33.7 +0.4**
LJU *e*PP **PP 21 25 22.7 +2.8**
MYKA Terra Mystica 112.66 318 *i* PKiKP **PKiKP 21 24 32.7 -1.5**
comp=Z,4.5nm,1.0s
KBA Koelnbreinsper 112.73 319 *i* PKiKP **PKiKP 21 24 33.8 -0.6**
comp=Z,3.2nm,0.7s
ABTA Abfaltersbach 113.37 319 *i* PKiKP **PKiKP 21 24 35.2 -0.4**
comp=Z,16nm,1.3s,SNR=9.6
WTTA Wattenberg 113.79 319 *i* PKiKP **PKiKP 21 24 36.8 +0.3**
comp=Z,14nm,0.5s,SNR=7.3
WATA Walderalm 113.80 319 *i* PKPdf **PKiKP 21 24 36.4 0.0**
comp=Z,6.3nm,0.5s,SNR=7.4
MOTA Moosalm 114.11 320 *i* PKiKP **PKiKP 21 24 37.2 +0.2**
comp=Z,5.7nm,0.5s,SNR=9.3
RETA Reutte 114.28 320 *i* PKPdf PKPdf 21 24 37.2 -0.1
comp=Z,1.8nm,0.4s
FETA Feichten 114.45 319 *i* PKiKP **PKiKP 21 24 37.9 +0.2**
comp=Z,12nm,1.0s,SNR=5.7
DAVA Damuels 114.91 320 *i* PKiKP PKPdf 21 24 38.9 +0.3
comp=Z,11nm,0.5s,SNR=8.6
DAVOX Davos/Dischmat 115.08 319 PKP **PKPdf 21 24 39.1 +0.1**
comp=Z,7.7nm,0.5s,baz=338,slow=5.4,SNR=20
TUE Stuetta 115.53 319 *e*PKPdf **PKPdf 21 24 40.0 +0.1**
BW06 Boulder Array 115.86 45 *e*PKPdf **PKPdf 21 24 41.7 +1.1**
PD31 Pinedale Array 115.86 45 *e*PKPdf **PKPdf 21 24 39.8 -0.9**
PD31 *e*PKKPbc **PKKPbc 21 35 12.6 -1.3**
PD31 *e*PKKSdf **SKKPbc 21 38 43.5 -4.7**
PDAR Pinedale Array 115.86 45 PKP **PKPdf 21 24 39.8 -0.9**
comp=Z,0.7nm,0.7s,baz=278,slow=1.4,SNR=4.4
PDAR PKKPbc **PKKPbc 21 35 12.4 -1.4**
comp=Z,4.6nm,0.9s,baz=107,slow=4.4,SNR=20
PDAR SKKPbc SKKPbc 21 38 43.5 -4.7
comp=Z,1.5nm,0.9s,baz=90,slow=3.0,SNR=4.1
BCLA Clavier 116.54 324 PKP **PKPdf 21 24 41.7 +0.3**
SENIN Lac Senin/Sane 116.89 319 *e*PKPdf **PKPdf 21 24 42.9 +0.3**
SNF Seneffe 117.09 325 PKP **PKPdf 21 24 42.9 +0.5**
EKA Eskdalemuir Ar 118.55 332 PKP **PKPdf 21 24 44.9 -0.2**
baz=27,slow=2.7
EKA PP **PP 21 25 59.5 -4.2**
comp=Z,5.2nm,1.0s,baz=59,slow=8.3,SNR=4.6
EKA SKP 21 28 07.0
comp=Z,3.1nm,0.8s,baz=58,slow=5.0,SNR=3.6
EKA PKKPbc **PKKPbc 21 35 03.6 -0.8**
comp=Z,0.6nm,0.7s,baz=250,slow=2.5,SNR=3.5
KEST Kesra 118.64 308 PKP **PKPdf 21 24 46.4 +0.4**
comp=Z,13nm,1.0s,baz=91,slow=2.9,SNR=9.1
KEST PP **PP 21 25 59.9 -5.5**
comp=Z,14nm,0.9s,baz=13,slow=4.7,SNR=7.5
KEST PKKPbc **PKKPab 21 35 05.0 -0.4**
comp=Z,1.6nm,0.7s,baz=263,slow=3.6,SNR=5.6
KEST Kesra 118.64 308 *e*PKPdf **PKPdf 21 24 47.2 +1.2**
KEST *e*PP **PP 21 25 59.9 -5.5**
KEST *e*PKKPbc **PKKPab 21 35 05.0 -0.4**
SSB Saint Sauveur 119.09 319 *e*PKiKP **PKPdf 21 24 47.0 +0.5**
SSB Saint Sauveur 119.09 319 *e*PKPdf **PKPdf 21 24 47.0 +0.5**
RSSD Black Hills 119.21 42 P **PKPdf 21 24 46.3 -0.8**
baz=292
RSSD Black Hills 119.21 42 *e*PKiKP **PKPdf 21 24 48.1 +1.0**
RSSD Black Hills 119.21 42 *e*PKPdf **PKPdf 21 24 48.1 +1.0**

SDCO	Great Sand Dun	120.30	50	P		PKPdf	21 24 50.0	+0.5
	baz=287							
SDCO	Great Sand Dun	120.30	50	*e*PKPdf		PKPdf	21 24 51.4	+2.0
ANMO	Albuquerque	120.33	53	*c i*PKIKP		PKPdf	21 24 50.4	+0.9
ANMO				pmax		pmax		
	comp=Z,5.0nm,1.2s							
ANMO	Albuquerque	120.33	53	*e*PKPdf		PKPdf	21 24 51.4	+2.0
ULM	Lac du Bonnet	121.37	33	PKP		PKPdf	21 24 51.3	+0.6
	comp=Z,2.7nm,0.5s,baz=24,slow=1.8,SNR=4.1							
ULM				PKKPbc		PKKPab	21 34 51.5	-1.5
	comp=Z,12nm,1.0s,baz=149,slow=3.5,SNR=9.6							
C31A	Landman Farms,	121.58	36	P		PKPdf	21 24 51.1	-0.1
	baz=300							
MNTX	Cornudas Mount	122.01	56	P		PKPdf	21 24 53.2	+0.7
	baz=284							
MNTX	Cornudas Mount	122.01	56	*e*PKPdf		PKPdf	21 24 53.8	+1.3
HPIG		122.78	62	*e*PKPdf		PKPdf	21 24 54.6	+0.2
B34A	Aery, Baudette	122.99	34	P		PKPdf	21 24 53.5	-0.4
	baz=303							
B35A	Bob, Littlefor	123.58	34	P		PKPdf	21 24 54.8	-0.3
	baz=304							
TX31	Lajitas Ar. Si	124.00	59	*e*PKPdf		PKPdf	21 24 57.6	+1.1
LTX	Lajitas	124.00	59	*e*PKIKP		PKPdf	21 24 57.6	+1.0
LTX	Lajitas	124.00	59	*e*PKPdf		PKPdf	21 24 57.6	+1.0
LTX				*e*			21 27 56.4	
LTX				*e*PKKPbc		PKKPbc	21 34 43.2	+0.1
TXAR	Lajitas Array	124.00	59	PKP		PKPdf	21 24 57.6	+1.0
	comp=Z,2.0nm,0.9s,baz=318,slow=1.7,SNR=7.7							
TXAR				SKPbc		SKPbc	21 27 56.4	
	comp=Z,6.6nm,1.2s,baz=270,slow=3.8,SNR=5.2							
TXAR				PKKPbc		PKKPbc	21 34 43.2	+0.1
	comp=Z,2.7nm,1.0s,baz=121,slow=6.0,SNR=12							
ECSD	EROS Data Cent	124.23	40	P		PKPdf	21 24 56.8	+0.3
	baz=298							
ECSD	EROS Data Cent	124.23	40	*e*PKPdf		PKPdf	21 24 57.5	+1.0
E36A	McGregor	124.86	36	P		PKPdf	21 24 58.1	+0.6
	baz=303							
EYMN	Ely	125.04	33	P		PKPdf	21 24 58.7	+0.8
	baz=306							
GUD	Guadarrama	126.84	317	PKIKP		PKPdf	21 25 02.2	+0.5
JCT	Junction City	126.95	56	*e*PKIKP		PKPdf	21 25 03.7	+1.6
JCT	Junction City	126.95	56	*e*PKPdf		PKPdf	21 25 03.7	+1.6
ES19	SONSECA Array	127.10	316	*e*PKPdf		PKPdf	21 25 03.0	+0.9
ESDC	Sonseca Array	127.15	316	PKP		PKPdf	21 25 03.1	+0.9
	comp=Z,1.0nm,0.6s,baz=13,slow=2.5,SNR=13							
ESDC				PP		PP	21 27 00.4	-2.0
	comp=Z,4.0nm,0.8s,baz=63,slow=6.9,SNR=9.0							
333A	Richland Sprin	127.37	55	P		PKPdf	21 25 03.0	+0.1
	baz=288							
433A	Art	127.45	56	P		PKPdf	21 25 04.3	+1.2
	baz=288							
PAB	San Pablo	127.48	316	*e*PKIKP		PKPdf	21 25 04.6	+1.7
PAB	San Pablo	127.48	316	*e*PKPdf		PKPdf	21 25 04.6	+1.7
434A	Burnet	128.11	55	P		PKPdf	21 25 04.6	+0.4
	baz=288							
S37A	Fort Scott	128.16	46	P		PKPdf	21 25 04.4	+0.3
	baz=296							
P38A	Dawn	128.21	43	P		PKPdf	21 25 04.6	+0.4
	baz=298							
MVO	Moncorvo	128.48	319	*e*PKPdf		PKPdf	21 25 05.2	+0.5
PGAV	Gavieira, Arco	128.85	321	*e*PKPdf		PKPdf	21 25 07.0	+1.5
Q39A	Willow Grove F	128.86	43	P		PKPdf	21 25 05.4	0.0
	baz=299							
POLO	Lamas de Olo	128.87	320	*e*PKPdf		PKPdf	21 25 07.0	+1.5
PVRL	Vila Real	128.87	320	*e*PKPdf		PKPdf	21 25 07.3	+1.9
MTE	Manteigas	129.21	319	*e*PKPdf		PKPdf	21 25 07.9	+1.8
MTE				*i* P		SKPab	21 28 14.4	-0.2
S39A	Bolivar	129.25	45	P		PKPdf	21 25 07.0	+0.8
	baz=297							
PVIS	Viseu	129.27	319	*e*PKPdf		PKPdf	21 25 07.8	+1.6
PVIS				*i* P		SKPab	21 28 14.6	-0.3
X38A	Whitesboro	129.45	49	P		PKPdf	21 25 08.0	+1.3
	baz=294							
PCBR	Castelo Branco	129.45	318	*e*PKPdf		PKPdf	21 25 08.4	+1.9
PCBR				*i* P		SKPab	21 28 15.4	-0.2
PMRV	Marv??o	129.60	318	*e*PKPdf		PKPdf	21 25 08.3	+1.5
PMRV				*i* P		SKPab	21 28 15.4	-0.9
PLCA	Paso Flores	129.61	159	PKP		PKPdf	21 25 08.2	+1.3
	comp=Z,4.0nm,1.0s,baz=222,slow=3.7,SNR=3.4							
PLCA				SKPbc		SKPab	21 28 14.5	-1.9
	comp=Z,20nm,1.2s,baz=232,slow=4.8,SNR=4.7							
PLCA	Paso Flores	129.61	159	*e*PKPdf		PKPdf	21 25 08.2	+1.3
PLCA				*e*			21 28 16.7	
PBAR	Barrancos	129.97	316	*i* P		SKPab	21 28 17.1	-0.8
PCAS	Casmilo, Conde	130.01	319	*i* P		SKPab	21 28 17.4	-0.7
PESTR	Estremoz	130.01	317	*i* P		SKPab	21 28 17.0	-1.1
PTOM	Tomar	130.18	318	*i* P		SKPab	21 28 18.1	-0.7
PMTG	Montargil	130.34	318	*i* P		SKPab	21 28 17.8	-1.7
MIAR	Mount Ida	130.44	49	*e*PKPpre		PKPpre	21 25 04.1	
EVO	Evora	130.47	317	*i* P		SKPab	21 28 19.0	-1.0
MDT	Midelt	130.51	309	PKP		PKPdf	21 25 10.3	+1.3
	comp=Z,6.6nm,1.0s,baz=121,slow=10,SNR=7.9							
MDT				SKPbc		SKPbc	21 28 18.4	-2.2
	comp=Z,13nm,1.1s,baz=55,slow=4.5,SNR=8.6							
PBEJ	Beja	130.62	316	*i* P		SKPbc	21 28 19.7	-0.9
PCVE	Castro Verde	130.93	316	*i* P		SKPbc	21 28 20.8	-0.9
MESJ	Messejana	130.95	316	*e*PKPdf		PKPdf	21 25 11.0	+1.6
MESJ				*i* P		SKPbc	21 28 21.2	-0.6
PNCL	Nicolau / Gran	131.03	317	*i* P		SKPbc	21 28 21.5	-0.6
PBDV	Barranco-do-Ve	131.04	315	*i* P		SKPbc	21 28 21.6	-0.6
PTEO	Sao Teotonio	131.45	316	*i* P		SKPbc	21 28 23.2	-0.4
MORF	Marmelete	131.51	316	*i* P		SKPbc	21 28 22.8	-1.1
SADO	Sadowa	133.55	29	PKP		PKPdf	21 25 14.1	-0.1
	comp=Z,1.9nm,0.4s,baz=67,slow=7.7,SNR=3.2							
SADO				SKPbc		SKPbc	21 28 28.5	-2.2
	comp=Z,13nm,0.9s,baz=332,slow=5.2,SNR=7.2							
SADO	Sadowa	133.55	29	*e*PKPdf		PKPdf	21 25 14.0	-0.1
SADO				*e*SKPbc		SKPbc	21 28 29.9	-0.7
CMIG	Matias Romero	134.31	72	SKPbc		SKPbc	21 28 33.7	-0.3
	comp=Z,11nm,0.9s,baz=234,slow=5.4,SNR=10							
KIC	Kosan Boka	135.51	273	*e*P		PKPpre	21 25 09.7	
	comp=Z,99nm,1.2s							
KIC	Kosan Boka	135.51	273	*e*P		PP	21 27 55.1	-2.3
	comp=Z,213nm,1.7s							
DBIC	Dimbokro	135.63	273	PKhKP		PKPpre	21 25 04.0	
	comp=Z,4.4nm,0.6s,baz=77,slow=2.7,SNR=7.6							
DBIC				PKP		PKiKP	21 25 19.7	-0.8
	comp=Z,13nm,0.7s,baz=32,slow=1.6,SNR=8.4							
DBIC				SKPbc		SKPbc	21 28 35.6	-2.7
	comp=Z,19nm,0.8s,baz=96,slow=4.2,SNR=9.1							
DBIC	Dimbokro	135.63	273	PKPpre		PKPpre	21 25 04.0	
DBIC				*e*PKPpre		PKPpre	21 25 07.0	
DBIC				*e*PKPdf		PKiKP	21 25 19.7	-0.8
DBIC				*e*SKPbc		SKPbc	21 28 36.5	-1.8
LIC	Lamto	135.79	273	*e*P		PKPpre	21 25 09.4	
LIC	Lamto	135.79	273	*e*P		PP	21 27 57.1	-2.0
	comp=Z,81nm,1.9s							
TIC	Toumodi	135.80	273	*e*P		PKPpre	21 25 07.3	
TIC	Toumodi	135.80	273	*e*P		PP	21 27 56.6	-2.6
ROC1	El Roble	136.16	154	*i* P		SKPdf	21 28 27.6	-15
ROC1				*i* P			21 28 27.8	
ASAL	Salagasta	137.42	156	*i* P		SKPdf	21 28 36.7	-8.1
AUSP	Uspallata	137.50	155	*i* P		SKPdf	21 28 37.6	-7.6
RTLS	Leoncito	137.91	155	*i* P		SKPdf	21 28 38.6	-7.4
SUCO	SUCO	138.21	161	*i* P		SKPdf	21 28 38.4	-7.7
MRA	San Martin	138.77	159	*i* P		SKPdf	21 28 39.4	-7.9
AMOG	MOGNA	139.00	155	*i* P		SKPdf	21 28 39.7	-7.9
AVFE	Valle Fertil	139.67	156	*i* P		SKPdf	21 28 41.6	-7.2
PMAR	Madeira	139.68	315	*i* P		SKPdf	21 28 49.2	+0.4
TCA	Tanti	140.14	160	*i* P		SKPdf	21 28 42.4	-7.3
AGUA	GUANDACOL	140.25	154	*i* P		SKPdf	21 28 43.0	-6.9
PB04	IPOC Station P	145.31	145	*e*PKPdf		PKPab	21 25 38.2	+1.6
LVC	Limon Verde	145.78	147	PKPbc		PKPab	21 25 39.8	+1.2
	comp=Z,84nm,0.4s,baz=232,slow=2.1,SNR=32							
LVC				SKPbc		SKPbc	21 29 04.8	-0.5
	comp=Z,16nm,0.7s,baz=288,slow=3.2,SNR=2.6							
LVC	Limon Verde	145.78	147	*e*PKPdf		PKPab	21 25 39.8	+1.2
LVC				*e*PKPdf		PKiKP	21 25 40.0	-1.5
LVC				*e*SKPdf		SKPbc	21 29 04.8	-0.5
CPUP	Villa Florida	146.95	167	PKPbc		PKPbc	21 25 40.8	-0.1
	comp=Z,25nm,1.0s,baz=200,slow=1.9,SNR=39							
CPUP				SKPbc		PP	21 29 05.7	+1.2
	comp=Z,12nm,0.9s,baz=311,slow=0.4,SNR=3.1							
CPUP	Villa Florida	146.95	167	*e*PKPdf		PKPbc	21 25 40.0	-0.9
CPUP				*e*PP		PP	21 29 05.7	+1.2
NNA	Nana	147.45	123	PKPbc		PKPab	21 25 44.4	-0.5
	baz=270,slow=5.1							
NNA	Nana	147.45	123	*c i*PKP2		PKPab	21 25 45.6	+0.7
NNA	Nana	147.45	123	*e*PKPbc		PKPab	21 25 44.8	-0.1
SPB	Sao Paulo	150.49	184	*e*PKPbc		PKPbc	21 25 50.9	+0.9
OTAV	Otavalo	150.54	100	*e*P		PKPdf	21 25 47.8	+2.3
OTAV	Otavalo	150.54	100	*e*PKPbc		PKPbc	21 25 52.3	+1.3
LPAZ	La Paz	151.16	140	PKPbc		PKPbc	21 25 54.2	+1.6
	comp=Z,11nm,0.3s,baz=265,slow=0.7,SNR=11							
LPAZ	La Paz	151.16	140	*e*PKIKP		PKPdf	21 25 48.1	+1.5
LPAZ	La Paz	151.16	140	*e*PKPdf		PKPdf	21 25 48.1	+1.5
LPAZ				*e*PKPbc		PKPbc	21 25 54.2	+1.6
SACV	Santiago Islan	153.06	291	*e*PKPab		PKPab	21 26 08.1	+0.1
DBBC	Dabeiba	153.45	86	*e*P		PKPbc	21 25 58.9	+1.8
HELC	Santa Helena	154.12	88	*e*P		PKPbc	21 26 00.2	+1.3
GUYC	Guyana, Colomb	154.22	90	*e*P		PKPbc	21 26 00.2	+1.0
PRAC	Prado	154.60	94	*e*P		PKPbc	21 25 58.5	-1.0
PRAC	Prado	154.60	94	*e*PKPbc		PKPbc	21 26 00.2	+0.6
SDDR	Presa de Saban	155.18	57	*e*PKPab		PKPab	21 26 18.0	+1.1
ROSC	El Rosal	155.27	92	PKPbc		PKPdf	21 26 01.9	+10
	comp=Z,6.9nm,0.5s,baz=284,slow=16,SNR=2.8							
ROSC				PKPab		PKPab	21 26 20.1	+2.1
	comp=Z,28nm,0.7s,baz=184,slow=15,SNR=12							
ROSC	El Rosal	155.27	92	*e*PKPbc		PKPdf	21 26 01.9	+10
ROSC				*e*PKPab		PKPab	21 26 21.1	+3.1
SIV	San Ignacio	155.31	153	PKPbc		PKPbc	21 26 05.3	
	comp=Z,1.8nm,0.6s,baz=147,slow=4.0,SNR=4.2							
SIV				PKPab		PKPab	21 26 18.8	+1.5
	comp=Z,6.7nm,0.8s,baz=233,slow=5.9,SNR=9.7							
CHIC	Chingaza	155.84	92	*e*P		PKPdf	21 26 02.5	+9.4
BARC	Barichara	156.46	87	*e*P		PKPdf	21 26 05.9	+12
RUSC	La Rusia	156.55	89	*e*P		PKPdf	21 26 04.2	+10
RUSC	La Rusia	156.55	89	*e*PKPdf		PKPdf	21 25 57.1	+3.0
GRMC	Gramalote, San	156.81	85	*e*P		PKPdf	21 26 07.7	+14
CBRI	Barrientos, No	156.81	85	*e*P		PKPdf	21 26 04.6	+11
BDFB	Brasília	158.42	184	PKPab		PKPab	21 26 32.2	+1.4
	baz=78,slow=3.8							
SJG	San Juan	159.79	52	*e*PKP2		PKPab	21 26 37.9	+1.1
SJG	San Juan	159.79	52	*e*PKPab		PKPab	21 26 37.9	+1.1
SAML	Samuel	159.82	137	*e*PKPdf		PKPdf	21 25 59.2	+1.8
SAML				*e*PKPab		PKPab	21 26 37.5	+0.6
RCBR	Riachuelo	162.03	229	*e*PKPbc		PKPab	21 26 48.4	+1.7
PTGA	Pitinga	167.58	122	*e*PKPdf		PKPdf	21 26 05.1	+0.5

GEN **12** *21:13:44.6, 43.˙97N×11.˙98E, h2km, ML2.6*
ISCJB **12** *21:13:45.5±0.2, 43.˙90N±0.˙02×11.˙86E±0.˙02, h13km±2km, Error ellipse: s-maj=3.0km s-min=2.1km az=1.9*
ROM **12** *21:13:45.4±0.1, 43.˙94N×11.˙86E, h7km, Md3.0/37, Ml2.6/35, Error ellipse: s-maj=1.5km s-min=0.9km az=23.0*
CSEM **12** *21:13:46.0±0.1, 43.˙90N×11.˙85E, h10km, ML3.0/28, Error ellipse: s-maj=2.1km s-min=1.7km az=50.0*
LDG **12** *21:13:46.5±1.3, 43.˙78N×11.˙93E, h2km, Md2.9/3, Ml3.0/8, Error ellipse: s-maj=26.8km s-min=10.4km az=88.0*
PRU **12** *21:13:47.2, 43.˙85N×12.˚10E, h12km*

ISC 12 21:13:45.9±0.8, 43.˙90N±0.˙02×11.˙86E±0.˙01, h9km±4km, n171,σ1s10/236, 5C, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.01	300	*i*Pg	Pg		21 13 47.0	-0.6
SFI					Sg	Sg	21 13 47.9	-0.8
SFI	Santa Sofia	0.01	300	*i*Pg	Pg		21 13 47.0	-0.6
ASQU	Asqua	0.12	206	*i*Pg	Pg		21 13 49.0	+0.4
ASQU					Sg	Sg	21 13 51.9	+1.3
ASQU	Asqua	0.12	206	*i*Pg	Pg		21 13 49.0	+0.4
ASQU					Sg	Sg	21 13 51.9	+1.3
T0502	Localit` San	0.20	90	*i*Pg	Pg		21 13 50.1	0.0
T0502					Sg	Sg	21 13 53.9	+1.0
	197µm,8.4s							
VMG	Vicchio	0.24	285	Pg	Pg		21 13 50.6	-0.1
VMG	Vicchio	0.24	285	Pg	Pg		21 13 50.6	-0.1
CPGN	Carpegna, Ital	0.35	106	Pg	Pg		21 13 53.6	-0.8
	242µm,17.0s							
CPGN	Carpegna, Ital	0.35	106	Pg	Pb		21 13 53.6	-0.8
	242µm,17.0s							
PARC	Parchiule	0.37	132	Pg	Pg		21 13 53.4	+0.2
PARC				Sg	Sb		21 14 00.3	-0.3
	483nm,0.6s							
PARC	Parchiule	0.37	132	Pg	Pg		21 13 53.4	+0.2
PARC				Sg	Sb		21 14 00.3	-0.3
	483nm,0.6s							
SEI	Scarperia	0.39	293	Pg	Pg		21 13 53.2	-0.5
SEI	Scarperia	0.39	293	Pg	Pg		21 13 53.2	-0.5
FIR	Firenze	0.46	254	Pg	Pg		21 13 55.0	+0.3
	1µm,0.4s							
FIR	Firenze	0.46	254	Pg	Pg		21 13 55.0	+0.3
	1µm,0.4s							
IMOL	Imola, Italy	0.47	350	Pg	Pg		21 13 55.2	+0.2
	208nm,0.8s							
IMOL	Imola, Italy	0.47	350	Pg	Pg		21 13 55.2	+0.2
	208nm,0.8s							
BADI	Badiali	0.48	144	Pg	Pg		21 13 55.5	+0.3
BADI				Sg	Sb		21 14 03.7	0.0
	328nm,0.2s							
BADI	Badiali	0.48	144	Pg	Pg		21 13 55.5	+0.3
BADI				Sg	Sb		21 14 03.7	0.0
	328nm,0.2s							
ATMC	Monte Cedrone	0.51	152	Pg	Pg		21 13 56.3	+0.4
ATMC				Sg	Sb		21 14 04.9	+0.2
	794nm,0.4s							
ATMC	Monte Cedrone	0.51	152	Pg	Pg		21 13 56.3	+0.4
ATMC				Sg	Sb		21 14 04.9	+0.2
	794nm,0.4s							
MTRZ	Monterenzio	0.55	329	Pg	Pg		21 13 56.5	-0.2
	822nm,0.4s							
MTRZ	Monterenzio	0.55	329	Pg	Pg		21 13 56.5	-0.2
	822nm,0.4s							
PTF	Prato	0.57	276	Pg	Pg		21 13 56.4	-0.6
PTF				Sg	Sb		21 14 06.1	-0.3
PTF	Prato	0.57	276	Pg	Pg		21 13 56.4	-0.6
PTF				Sg	Sb		21 14 06.1	-0.3
CAFI	Castiglion Fio	0.58	172	Pg	Pg		21 13 57.5	+0.5
CAFI				Sg	Sb		21 14 07.1	+0.6
	257nm,0.4s							
CAFI	Castiglion Fio	0.58	172	Pg	Pg		21 13 57.5	+0.5
CAFI				Sg	Sb		21 14 07.1	+0.6
	257nm,0.4s							
CSNT	Castellina Chi	0.59	224	Pg	Pg		21 13 57.8	+0.4
CSNT				Sg	Sb		21 14 07.6	+0.6
	279nm,0.4s							
CSNT	Castellina Chi	0.59	224	Pg	Pg		21 13 57.8	+0.4
CSNT				Sg	Sb		21 14 07.6	+0.6
	279nm,0.4s							
FNVD	Fontana Vidola	0.59	297	Pg	Pg		21 13 57.0	-0.4
	752nm,0.8s							
FNVD	Fontana Vidola	0.59	297	Pg	Pg		21 13 57.0	-0.4
	752nm,0.8s							
ATPC	Poggio Castell	0.60	134	Pg	Pg		21 13 57.7	+0.1
ATPC				Sg	Sb		21 14 07.5	+0.2
	343nm,0.3s							
ATPC	Poggio Castell	0.60	134	Pg	Pg		21 13 57.7	+0.1
ATPC				Sg	Sb		21 14 07.5	+0.2
	343nm,0.3s							
CRMI	Carmignano	0.65	261	Pg	Pg		21 13 58.4	-0.1
CRMI				Sg	Sg		21 14 07.9	+0.9
	275nm,0.4s							
CRMI	Carmignano	0.65	261	Pg	Pg		21 13 58.4	-0.1
CRMI				Sg	Sg		21 14 07.9	+0.9
	275nm,0.4s							
ATVO	AVT- Monte Val	0.65	142	Pg	Pg		21 13 58.6	+0.1
ATVO				Sg	Sb		21 14 09.9	+1.2
	368nm,0.4s							
ATVO	AVT- Monte Val	0.65	142	Pg	Pg		21 13 58.6	+0.1
FSSB	Fossombrone	0.70	107	Pg	Pg		21 13 59.1	-0.2
	388nm,0.5s							
FSSB	Fossombrone	0.70	107	Pg	Pg		21 13 59.1	-0.2
	388nm,0.5s							
MPAG	Monte Paganucc	0.71	112	Pg	Pg		21 13 59.4	-0.1
	181nm,0.9s							
MPAG	Monte Paganucc	0.71	112	Pg	Pg		21 13 59.4	-0.1
	181nm,0.9s							
FRON	Frontone	0.74	121	Pg	Pg		21 14 00.1	0.0
	174nm,0.7s							
FRON	Frontone	0.74	121	Pg	Pg		21 14 00.1	0.0
	174nm,0.7s							
ATTE	AVT- Monte Tez	0.79	153	Pg	Pg		21 14 01.3	+0.2
	269nm,0.4s							
ATTE	AVT- Monte Tez	0.79	153	Pg	Pg		21 14 01.3	+0.2
	269nm,0.4s							
MURB	Monte Urbino	0.80	143	Pg	Pb		21 14 01.8	-0.2
	589nm,0.3s							
MURB	Monte Urbino	0.80	143	Pg	Pb		21 14 01.8	-0.2
	589nm,0.3s							
POPM	Popiglio	0.81	281	P	Pg		21 14 00.9	-0.6
POPM				S	Sg		21 14 12.2	+0.2
SSFR	Montelago di S	0.81	124	Pg	Pg		21 14 01.3	-0.3
SSFR	Montelago di S	0.81	124	Pg	Pg		21 14 01.3	-0.3
FROS	Frosini	0.86	217	Pg	Pb		21 14 03.1	+0.1
	200nm,0.5s							
FROS	Frosini	0.86	217	Pg	Pb		21 14 03.1	+0.1
	200nm,0.5s							

ARVD	Arcevia	0.88	117	Pg		Pg	21 14 02.4	-0.5
	91nm,0.4s							
ARVD	Arcevia	0.88	117	Pg		Pg	21 14 02.4	-0.5
	91nm,0.4s							
ATCC	AVT- Casa Cast	0.91	141	Pg		Pb	21 14 04.0	+0.1
	274nm,0.5s							
ATCC	AVT- Casa Cast	0.91	141	Pg		Pb	21 14 04.0	+0.1
	274nm,0.5s							
BDI	Bagni Di Lucca	0.93	281	Pg		Pg	21 14 03.8	+0.1
	191nm,0.9s							
BDI	Bagni Di Lucca	0.93	281	Pg		Pg	21 14 03.8	+0.1
	191nm,0.9s							
MAIM	Mastiano	0.99	271	Pg		Pg	21 14 04.6	-0.3
	152nm,0.6s							
MAIM	Mastiano	0.99	271	P		Pg	21 14 04.6	-0.3
MAIM				S		Sg	21 14 18.1	+0.4
MGAB	Montegabbione	1.00	169	Pg		Pb	21 14 05.6	+0.1
	279nm,0.4s							
MGAB	Montegabbione	1.00	169	Pg		Pb	21 14 05.6	+0.1
	279nm,0.4s							
SNTG	Esanatoglia	1.02	129	Pg		Pg	21 14 05.1	-0.3
	161nm,0.9s							
SNTG	Esanatoglia	1.02	129	Pg		Pg	21 14 05.1	-0.3
	161nm,0.9s							
SACS	San Casciano d	1.05	178	Pg		Pb	21 14 06.3	0.0
	131nm,0.5s							
SASS	Sassa	1.06	233	Pg		Pg	21 14 05.9	-0.4
	54nm,0.5s							
SASS	Sassa	1.06	233	Pg		Pg	21 14 05.9	-0.4
	54nm,0.5s							
ARCI	Arcidosso	1.08	195	Pg		Pg	21 14 06.7	0.0
	155nm,0.6s							
ARCI	Arcidosso	1.08	195	Pg		Pg	21 14 06.7	0.0
	155nm,0.6s							
SARO	Sassorosso	1.09	286	P		Pg	21 14 06.5	-0.3
SARO				S		Sg	21 14 20.8	-0.2
CING	Cingoli	1.10	118	Pg		Pn	21 14 07.5	-0.1
	103nm,0.5s							
CING	Cingoli	1.10	118	Pg		Pn	21 14 07.5	-0.1
	103nm,0.5s							
CESI	CESI - Serrava	1.18	139	Pg		Pb	21 14 08.2	-0.2
	20nm,0.8s							
CESI	CESI - Serrava	1.18	139	Pg		Pb	21 14 08.2	-0.2
	20nm,0.8s							
FDMO	Fiordimonte	1.24	134	Pg		Pn	21 14 09.2	-0.3
	69nm,0.5s							
FDMO	Fiordimonte	1.24	134	Pg		Pn	21 14 09.2	-0.3
	69nm,0.5s							
LATE	Laterza	1.29	182	Pg		Pb	21 14 10.3	0.0
	77nm,0.5s							
LATE	Laterza	1.29	182	Pg		Pb	21 14 10.3	0.0
	77nm,0.5s							
CASP	Castiglione de	1.32	214	Pg		Pn	21 14 09.6	-1.0
	29nm,0.3s							
CASP	Castiglione de	1.32	214	Pg		Pn	21 14 09.6	-1.0
	29nm,0.3s							
GRAM	Graiana	1.42	295	P		Pn	21 14 12.0	0.0
GRAM				S		Sn	21 14 30.0	-0.8
LNSS	Leonessa	1.56	146	Pg		Pg	21 14 15.3	-0.5
	76nm,0.5s							
LNSS	Leonessa	1.56	146	Pg		Pg	21 14 15.3	-0.5
	76nm,0.5s							
MARN	Marana (Italy)	1.80	345	*e*Pg		Pn	21 14 16.4	-0.7
MARN				*e*Sg		Sn	21 14 39.1	-1.0
MARN	Marana (Italy)	1.80	345	*e*Pg		Pn	21 14 16.4	-0.7
MARN				*e*Sg		Sn	21 14 39.1	-1.0
CGRP	Cima Grappa	1.98	359	*e*Pg		Pn

	comp=Z,7.1nm,0.5s							
MOTA	**Moosalm**	**3.49**	**352**		Pn	**Pn**	**21 14 42.0**	**+1.5**
	comp=Z,3.4nm,0.3s							
MOTA					Sn	**Sn**	**21 15 24.2**	**+2.3**
	comp=Z,7.1nm,0.5s							
SOKA	**Soboth**	**3.57**	**38**	*i*	Pn	**Pn**	**21 14 41.4**	**-0.1**
SOKA				*i*	Sn	**Sn**	**21 15 24.8**	**+1.0**
	comp=Z,1.4nm,0.3s							
SOKA	**Soboth**	**3.57**	**38**		Pn	**Pn**	**21 14 41.4**	**-0.1**
SOKA					Sn	**Sn**	**21 15 24.8**	**+1.0**
	comp=Z,1.4nm,0.3s							
DAVA	**Damuels**	**3.66**	**338**	*i*	Pn	**Pn**	**21 14 44.2**	**+1.3**
	comp=Z,1.9nm,0.2s							
DAVA				*e*	Sn	**Sn**	**21 15 28.9**	**+2.7**
	comp=Z,7.0nm,0.3s							
DAVA	**Damuels**	**3.66**	**338**		Pn	**Pn**	**21 14 44.2**	**+1.3**
	comp=Z,1.9nm,0.2s							
DAVA					Sn	**Sn**	**21 15 28.9**	**+2.7**
	comp=Z,7.0nm,0.3s							
RETA	**Reutte**	**3.67**	**348**	*e*	Pn	**Pn**	**21 14 44.8**	**+1.9**
	comp=Z,0.6nm,0.1s							
RETA				*e*	Sn	**Sn**	**21 15 28.8**	**+2.5**
	comp=Z,3.1nm,0.3s							
RETA	**Reutte**	**3.67**	**348**		Pn	**Pn**	**21 14 44.8**	**+1.9**
	comp=Z,0.6nm,0.1s							
RETA					Sn	**Sn**	**21 15 28.8**	**+2.5**
	comp=Z,3.1nm,0.3s							
MBDF	**Montbardon**	**3.74**	**285**	*e*	Pn	**Pn**	**21 14 45.2**	**+1.2**
MBDF	**Montbardon**	**3.74**	**285**	*e*	Pn	**Pn**	**21 14 45.2**	**+1.2**
FRF	**La Foret Royal**	**3.79**	**267**	*e*	Pn	**Pn**	**21 14 44.2**	**-0.3**
FRF	**La Foret Royal**	**3.79**	**267**	*e*	Pn	**Pn**	**21 14 44.2**	**-0.3**
LMR	**La Mourre**	**3.93**	**264**	*e*	Pn	**Pn**	**21 14 45.5**	**-0.8**
LMR				*e*	Sn	**Sn**	**21 15 31.1**	**-1.4**
	comp=Z,2.7nm,0.4s							
LMR	**La Mourre**	**3.93**	**264**	*e*	Pn	**Pn**	**21 14 45.5**	**-0.8**
LMR				*e*	Sn	**Sn**	**21 15 31.1**	**-1.4**
	comp=Z,1.4nm,0.4s							
LPL	**La Plagne**	**4.00**	**296**	*e*	Pn	**Pn**	**21 14 49.2**	**+1.7**
LPL	**La Plagne**	**4.00**	**296**	*e*	Pn	**Pn**	**21 14 49.2**	**+1.7**
ARSA	**Arzberg**	**4.22**	**36**	*e*	Pn	**Pn**	**21 14 50.1**	**-0.4**
	comp=Z,0.7nm,0.2s							
ARSA	**Arzberg**	**4.22**	**36**		Pn	**Pn**	**21 14 50.1**	**-0.4**
	comp=Z,0.7nm,0.2s							
MOA	**Molln**	**4.29**	**22**	*e*	Pn	**Pn**	**21 14 52.0**	**+0.6**
	comp=Z,0.8nm,0.2s							
MOA				*e*	Sn	**Sn**	**21 15 41.0**	**-0.6**
	comp=Z,6.6nm,0.5s							
MOA	**Molln**	**4.29**	**22**		Pn	**Pn**	**21 14 52.0**	**+0.6**
	comp=Z,0.8nm,0.2s							
MOA					Sn	**Sn**	**21 15 41.0**	**-0.6**
	comp=Z,6.6nm,0.5s							
ORIF	**Oris-en-Rattie**	**4.40**	**285**	*e*	Pn	**Pn**	**21 14 56.1**	**+3.1**
ORIF	**Oris-en-Rattie**	**4.40**	**285**	*e*	Pn	**Pn**	**21 14 56.1**	**+3.1**
CONA	**Conrad Observa**	**4.90**	**33**	*i*	Pn	**Pn**	**21 15 00.0**	**+0.2**
	comp=Z,0.6nm,0.2s							
CONA				*i*	Sn	**Sn**	**21 15 56.3**	**-0.4**
	comp=Z,0.5nm,0.2s							
CONA	**Conrad Observa**	**4.90**	**33**		Pn	**Pn**	**21 15 00.0**	**+0.2**
	comp=Z,0.6nm,0.2s							
CONA					Sn	**Sn**	**21 15 56.3**	**-0.4**
	comp=Z,0.5nm,0.2s							
HINF	**Hinteralfeld**	**5.25**	**320**	*e*	Sn	**Sn**	**21 16 04.5**	**-0.7**
	comp=Z,10nm,0.5s							
HINF	**Hinteralfeld**	**5.25**	**320**	*e*	Sn	**Sn**	**21 16 04.5**	**-0.7**
	comp=Z,5.2nm,0.5s							
KHC	**Kasperske Hory**	**5.37**	**12**	*e*	PN	**Pn**	**21 15 06.5**	**+0.3**
KHC				*e*	SN	**Sn**	**21 16 05.6**	**-2.5**
KHC	**Kasperske Hory**	**5.37**	**12**		Pn	**Pn**	**21 15 06.5**	**+0.3**
KHC					Sn	**Sn**	**21 16 05.6**	**-2.5**
CDF	**Champ du Feu**	**5.52**	**326**	*e*	Sn	**Sn**	**21 16 10.1**	**-1.9**
	comp=Z,5.4nm,0.4s							
CDF	**Champ du Feu**	**5.52**	**326**	*e*	Sn	**Sn**	**21 16 10.1**	**-1.9**
	comp=Z,2.7nm,0.4s							
HAU	**Haudompre**	**5.62**	**319**	*e*	Sn	**Sn**	**21 16 12.9**	**-1.5**
	comp=Z,8.1nm,0.4s							
HAU	**Haudompre**	**5.62**	**319**	*e*	Sn	**Sn**	**21 16 12.9**	**-1.5**
	comp=Z,4.1nm,0.4s							
SMF	**Signal de Mont**	**6.29**	**299**	*e*	Sn	**Sn**	**21 16 29.5**	**-1.2**
	comp=Z,1.3nm,0.2s							
SMF	**Signal de Mont**	**6.29**	**299**	*e*	Sn	**Sn**	**21 16 29.5**	**-1.2**
	comp=Z,0.6nm,0.2s							
LOR	**Lormes**	**6.55**	**304**	*e*	Sn	**Sn**	**21 16 38.0**	**+0.9**
LOR	**Lormes**	**6.55**	**304**	*e*	Sn	**Sn**	**21 16 38.0**	**+0.9**
BGF	**Bois d'Agland**	**6.90**	**296**	*e*	Sn	**Sn**	**21 16 47.5**	**+1.8**
	comp=Z,5.3nm,0.3s							
BGF	**Bois d'Agland**	**6.90**	**296**	*e*	Sn	**Sn**	**21 16 47.5**	**+1.8**
	comp=Z,2.7nm,0.3s							
MTLF	**Montolieu**	**7.02**	**269**	*e*	Pn	**Pn**	**21 15 28.8**	**-0.1**
MTLF	**Montolieu**	**7.02**	**269**	*e*	Pn	**Pn**	**21 15 28.8**	**-0.1**
DPC	**Dobruska-Polom**	**7.13**	**24**	*e*	SN	**Sn**	**21 16 46.3**	**-5.3**

*ISCJB **12** 21:14:36.9±0.4, 36°.14N±0°.03×23°.23E±0°.04, h91km±5km, Error ellipse: s-maj=6.3km s-min=3.2km az=143.0*
*ATH **12** 21:14:38.4, 36°.23N×23°.32E, h71km±3km, ML3.4/7, Error ellipse: s-maj=3.7km s-min=1.1km az=238.0*
*CSEM **12** 21:14:38.3±0.2, 36°.16N×23°.24E, h77km±3km, ML3.5, Error ellipse: s-maj=5.3km s-min=2.8km az=51.0*
*THE **12** 21:14:39.7, 36°.23N×23°.30E, h65km±1km, ML3.5/5, Error ellipse: s-maj=1.4km s-min=0.4km az=222.0*
*HLW **12** 21:14:41.1, 36°.00N×23°.92E, h33km±19km, Md4.8, Ml4.4*

ISC 12 21:14:36.5±1.0, 36°.15N±0°.03×23°.21E±0°.04, h88km±7km, n130, σ1§90/166, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
KYTH	**Kithira**	**0.18**	**311**	P	**Pn**		**21 14 49.9**	**+0.7**
KYTH				S	**Sn**		**21 14 57.3**	**-1.3**
KYTH	**Kithira**	**0.18**	**311**	P	**Pn**		**21 14 50.2**	**+1.1**
KYTH				S	**Sn**		**21 14 57.0**	**-1.6**
KYTH	**Kithira**	**0.18**	**311**	P	**Pn**		**21 14 50.2**	**+1.1**
ANKY	**Antikythira Is**	**0.29**	**166**	P	**Pn**		**21 14 50.9**	**+1.3**
ANKY				S	**Sn**		**21 14 58.9**	**-0.4**
ANKY	**Antikythira Is**	**0.29**	**166**	P	**Pn**		**21 14 51.3**	**+1.7**
ANKY				S	**Sn**		**21 14 58.4**	**-0.8**
ANKY	**Antikythira Is**	**0.29**	**166**	P	**Pn**		**21 14 51.3**	**+1.7**
ANKY				S	**Sn**		**21 14 58.4**	**-0.8**
ANKY				AML	AML		21 14 59.3	
	comp=N,5522μm,0.5s							
ANKY				AML	AML		21 15 00.2	
	comp=E,5000μm,0.3s							
VLI	**Veliai**	**0.61**	**339**	P	**Pn**		**21 14 52.6**	**+0.6**
VLI				S	**Sn**		**21 15 01.9**	**-1.6**
VLI	**Veliai**	**0.61**	**339**	P	**Pn**		**21 14 52.5**	**+0.6**
VLI				S	**Sn**		**21 15 01.4**	**-2.1**
VLI	**Veliai**	**0.61**	**339**	P	**Pn**		**21 14 52.5**	**+0.6**
VLI				S	**Sn**		**21 15 01.4**	**-2.1**
VLI				AML	AML		21 15 02.3	
	comp=N,8283μm,0.5s							
VLI				AML	AML		21 15 02.6	
	comp=E,6034μm,0.4s							
IMMV	**Iera Moni Meta**	**0.93**	**137**	P	**Pn**		**21 14 57.1**	**+1.9**
IMMV				S	**Sn**		**21 15 10.3**	**+1.2**
IMMV	**Iera Moni Meta**	**0.93**	**137**	P	**Pn**		**21 14 57.1**	**+1.9**
IMMV				S	**Sn**		**21 15 09.8**	**+0.7**
IMMV	**Iera Moni Meta**	**0.93**	**137**	P	**Pn**		**21 14 57.3**	**+2.2**
IMMV				S	**Sn**		**21 15 09.8**	**+0.7**
IMMV				AML	AML		21 15 11.1	
	comp=E,2558μm,0.3s							
IMMV				AML	AML		21 15 12.2	
	comp=N,2782μm,0.4s							
VAM	**Vamos**	**1.09**	**132**	P	**Pn**		**21 14 58.9**	**+1.9**
VAM				S	**Sn**		**21 15 14.0**	**+1.5**
VAM	**Vamos**	**1.09**	**132**	P	**Pn**		**21 14 58.9**	**+1.9**
VAM				S	**Sn**		**21 15 13.8**	**+1.3**
MHLO	**Agia Marina, M**	**1.10**	**60**	P	**Pn**		**21 14 57.9**	**+0.7**
MHLO				S	**Sn**		**21 15 11.4**	**-1.3**
MHLO	**Agia Marina, M**	**1.10**	**60**	P	**Pn**		**21 14 58.2**	**+1.1**
MHLO				S	**Sn**		**21 15 11.0**	**-1.7**
MHLO	**Agia Marina, M**	**1.10**	**60**	P	**Pn**		**21 14 58.2**	**+1.1**
MHLO				S	**Sn**		**21 15 11.0**	**-1.7**
MHLO				AML	AML		21 15 13.0	
	comp=N,16239μm,0.6s							
MHLO				AML	AML		21 15 14.8	
	comp=E,11370μm,0.3s							
KRND	**KRANIDI**	**1.24**	**358**	P	**Pn**		**21 15 00.0**	**+1.3**
KRND				S	**Sn**		**21 15 15.4**	**-0.2**
KRND	**KRANIDI**	**1.24**	**358**	P	**Pn**		**21 15 00.1**	**+1.3**
KRND				S	**Sn**		**21 15 16.2**	**+0.6**
KRND	**KRANIDI**	**1.24**	**358**	P	**Pn**		**21 15 00.1**	**+1.3**
KRND				S	**Sn**		**21 15 16.2**	**+0.6**
KRND				AML	AML		21 15 16.7	
	comp=N,4285μm,0.2s							
KRND				AML	AML		21 15 17.0	
	comp=E,3290μm,0.3s							
DID	**Didima**	**1.36**	**1**	P	**Pn**		**21 15 01.4**	**+1.1**
DID	**Didima**	**1.36**	**1**	P	**Pn**		**21 15 01.2**	**+0.9**
DID				S	**Sn**		**21 15 18.2**	**-0.2**
DID	**Didima**	**1.36**	**1**	P	**Pn**		**21 15 01.2**	**+0.9**
DID				S	**Sn**		**21 15 18.2**	**-0.2**
DID				AML	AML		21 15 19.2	
	comp=E,3885μm,0.3s							
DID				AML	AML		21 15 19.4	
	comp=N,2875μm,0.3s							
VLX	**Vlachokerasia**	**1.39**	**331**	P	**Pn**		**21 15 02.7**	**+1.8**
VLX				S	**Sn**		**21 15 20.3**	**+1.0**
VLX	**Vlachokerasia**	**1.39**	**331**	P	**Pn**		**21 15 02.7**	**+1.8**
VLX				S	**Sn**		**21 15 20.3**	**+1.0**
VLX	**Vlachokerasia**	**1.39**	**331**	P	**Pn**		**21 15 03.5**	**+2.7**
VLX				S	**Sn**		**21 15 20.7**	**+1.5**
VLX				AML	AML		21 15 23.3	
	comp=E,861μm,0.2s							
VLX				AML	AML		21 15 27.4	
	comp=N,809μm,0.5s							
PYL	**PYLOS**	**1.40**	**303**	P	**Pn**		**21 15 02.9**	**+2.1**
PYL	**PYLOS**	**1.40**	**303**	P	**Pn**		**21 15 02.9**	**+2.1**
PYL	**PYLOS**	**1.40**	**303**	P	**Pn**		**21 15 02.2**	**+1.3**
ITM	**Ithomi**	**1.46**	**315**	P	**Pn**		**21 15 04.0**	**+2.4**
ITM	**Ithomi**	**1.46**	**315**	P	**Pn**		**21 15 04.6**	**+3.0**
ITM	**Ithomi**	**1.46**	**315**	P	**Pn**		**21 15 04.6**	**+3.0**
IDI	**Anoyia**	**1.61**	**122**	P	**Pn**		**21 15 04.6**	**+1.0**
IDI	**Anoyia**	**1.61**	**122**	P	**Pn**		**21 15 04.6**	**+1.0**
IDI	**Anoyia**	**1.61**	**122**	P	**Pn**		**21 15 03.6**	**0.0**
SIVA	**Sivas**	**1.72**	**130**	P	**Pn**		**21 15 07.6**	**+2.7**
SIVA				S	**Sn**		**21 15 28.9**	**+2.4**
SIVA	**Sivas**	**1.72**	**130**	P	**Pn**		**21 15 07.6**	**+2.7**
SIVA				S	**Sn**		**21 15 28.9**	**+2.4**
SIVA	**Sivas**	**1.72**	**130**	P	**Pn**		**21 15 09.0**	**+4.1**
THR5	**Thira Island,**	**1.75**	**80**	P	**Pn**		**21 15 06.8**	**+1.6**
THR5	**Thira Island,**	**1.75**	**80**	P	**Pn**		**21 15 06.8**	**+1.6**
VLY	**Voula,Athens**	**1.77**	**15**	P	**Pn**		**21 15 06.3**	**+0.8**
VLY	**Voula,Athens**	**1.77**	**15**	P	**Pn**		**21 15 06.3**	**+0.8**
THR6	**Thira Island,**	**1.78**	**83**	P	**Pn**		**21 15 07.4**	**+1.8**
THR6	**Thira Island,**	**1.78**	**83**	P	**Pn**		**21 15 07.4**	**+1.8**
THR3	**Thira Island,**	**1.79**	**81**	P	**Pn**		**21 15 07.3**	**+1.6**
THR3	**Thira Island,**	**1.79**	**81**	P	**Pn**		**21 15 07.3**	**+1.6**
THT1	**Athinios (Pele**	**1.81**	**82**	P	**Pn**		**21 15 07.4**	**+1.4**
THT1	**Athinios (Pele**	**1.81**	**82**	P	**Pn**		**21 15 07.4**	**+1.4**
SANT	**Santorini**	**1.83**	**82**	P	**Pn**		**21 15 07.9**	**+1.6**
SANT	**Santorini**	**1.83**	**82**	P	**Pn**		**21 15 07.9**	**+1.6**
SANT	**Santorini**	**1.83**	**82**	P	**Pn**		**21 15 08.3**	**+2.0**
AMT	**Artemida-Makis**	**1.84**	**319**	P	**Pn**		**21 15 08.8**	**+2.3**
AMT				S	**Sn**		**21 15 31.2**	**+1.9**
AMT	**Artemida-Makis**	**1.84**	**319**	P	**Pn**		**21 15 08.8**	**+2.3**
AMT				S	**Sn**		**21 15 31.2**	**+1.9**
ATH	**Athens Observa**	**1.87**	**12**	P	**Pn**		**21 15 07.9**	**+1.1**
ATH	**Athens Observa**	**1.87**	**12**	P	**Pn**		**21 15 07.7**	**+0.9**
ATH				S	**Sn**		**21 15 28.1**	**-1.8**
ATHU	**Athens Univers**	**1.87**	**14**	P	**Pn**		**21 15 07.6**	**+0.7**
ATHU	**Athens Univers**	**1.87**	**14**	P	**Pn**		**21 15 07.6**	**+0.7**
LTK	**Loutraki**	**1.88**	**354**	P	**Pn**		**21 15 08.7**	**+1.6**
LTK	**Loutraki**	**1.88**	**354**	P	**Pn**		**21 15 08.7**	**+1.6**
THAL	**Thalero**	**1.94**	**347**	P	**Pn**		**21 15 09.6**	**+1.9**
THAL	**Thalero**	**1.94**	**347**	P	**Pn**		**21 15 09.6**	**+1.9**
PTL	**Penteli**	**1.97**	**15**	P	**Pn**		**21 15 09.3**	**+1.1**
PTL	**Penteli**	**1.97**	**15**	P	**Pn**		**21 15 09.3**	**+1.1**
VILL	**Villia**	**2.02**	**2**	P	**Pn**		**21 15 10.2**	**+1.4**
VILL				S	**Sn**		**21 15 33.1**	**-0.4**
VILL	**Villia**	**2.02**	**2**	P	**Pn**		**21 15 10.2**	**+1.4**
VILL				S	**Sn**		**21 15 33.1**	**-0.4**
KLV	**Kalavryta, Ach**	**2.08**	**336**	P	**Pn**		**21 15 11.9**	**+2.3**
KLV	**Kalavryta, Ach**	**2.08**	**336**	P	**Pn**		**21 15 11.9**	**+2.3**
APE	**Apeiranthos**	**2.08**	**63**	P	**Pn**		**21 15 11.3**	**+1.6**
APE				S	**Sn**		**21 15 35.0**	**0.0**
APE	**Apeiranthos**	**2.08**	**63**	P	**Pn**		**21 15 11.3**	**+1.6**
APE				S	**Sn**		**21 15 35.0**	**0.0**
LAST	**Lasithi**	**2.09**	**117**	P	**Pn**		**21 15 12.0**	**+2.2**
LAST	**Lasithi**	**2.09**	**117**	P	**Pn**		**21 15 12.0**	**+2.2**
LAST	**Lasithi**	**2.09**	**117**	P	**Pn**		**21 15 11.3**	**+1.4**
NPS	**Neapolis**	**2.14**	**114**	P	**Pn**		**21 15 12.4**	**+1.9**
NPS	**Neapolis**	**2.14**	**114**	P	**Pn**		**21 15 12.4**	**+1.9**
NPS	**Neapolis**	**2.14**	**114**	P	**Pn**		**21 15 11.1**	**+0.7**
LAKA	**Lakka**	**2.31**	**335**	P	**Pn**		**21 15 15.1**	**+2.4**
LAKA	**Lakka**	**2.31**	**335**	P	**Pn**		**21 15 15.1**	**+2.4**
DSF	**Desfina**	**2.33**	**347**	P	**Pn**		**21 15 15.1**	**+2.2**
DSF	**Desfina**	**2.33**	**347**	P	**Pn**		**21 15 15.1**	**+2.2**
EREA	**Eretria**	**2.34**	**14**	P	**Pn**		**21 15 14.8**	**+1.7**
EREA	**Eretria**	**2.34**	**14**	P	**Pn**		**21 15 14.8**	**+1.7**
RLS	**Riolos of Patr**	**2.37**	**324**	S	**Sn**		**21 15 43.9**	**+2.2**
RLS	**Riolos of Patr**	**2.37**	**324**	S	**Sn**		**21 15 43.9**	**+2.2**
KALE	**Kalithea**	**2.40**	**339**	P	**Pn**		**21 15 16.2**	**+2.3**
KALE	**Kalithea**	**2.40**	**339**	P	**Pn**		**21 15 16.2**	**+2.3**
SERG	**Sergoula**	**2.44**	**338**	P	**Pn**		**21 15 16.8**	**+2.3**
SERG	**Sergoula**	**2.44**	**338**	P	**Pn**		**21 15 16.8**	**+2.3**
ZKS	**Zakynthos**	**2.49**	**309**	P	**Pn**		**21 15 16.4**	**+1.4**
ZKS	**Zakynthos**	**2.49**	**309**	P	**Pn**		**21 15 16.4**	**+1.4**
LKR	**Lokris**	**2.51**	**356**	P	**Pn**		**21 15 16.9**	**+1.6**
LKR	**Lokris**	**2.51**	**356**	P	**Pn**		**21 15 16.9**	**+1.6**
ATAL	**Atalanti**	**2.55**	**357**	P	**Pn**		**21 15 17.4**	**+1.6**
ATAL	**Atalanti**	**2.55**	**357**	P	**Pn**		**21 15 17.4**	**+1.6**
ANX	**Ano Chora**	**2.65**	**338**	P	**Pn**		**21 15 19.6**	**+2.3**
ANX	**Ano Chora**	**2.65**	**338**	P	**Pn**		**21 15 19.6**	**+2.3**
SMIA	**Simia**	**2.73**	**360**	P	**Pn**		**21 15 20.1**	**+1.8**
SMIA	**Simia**	**2.73**	**360**	P	**Pn**		**21 15 20.1**	**+1.8**
VLS	**Valsamata**	**2.92**	**315**	P	**Pn**		**21 15 22.7**	**+1.9**
VLS	**Valsamata**	**2.92**	**315**	P	**Pn**		**21 15 22.7**	**+1.9**
SKIA	**Skiathos**	**3.02**	**4**	P	**Pn**		**21 15 24.2**	**+2.0**
SKIA	**Skiathos**	**3.02**	**4**	P	**Pn**		**21 15 24.2**	**+2.0**
AOS	**Alonnisos**	**3.06**	**10**	P	**Pn**		**21 15 24.2**	**+1.4**
AOS	**Alonnisos**	**3.06**	**10**	P	**Pn**		**21 15 24.2**	**+1.4**
XOR	**Xorichti**	**3.21**	**360**	P	**Pn**		**21 15 26.8**	**+2.0**
XOR	**Xorichti**	**3.21**	**360**	P	**Pn**		**21 15 26.8**	**+2.0**
DSL	**Palaion Diasel**	**3.42**	**331**	P	**Pn**		**21 15 30.6**	**+2.9**
DSL	**Palaion Diasel**	**3.42**	**331**	P	**Pn**		**21 15 30.6**	**+2.9**
IGT	**Igoumenitsa**	**4.08**	**327**	P	**Pn**		**21 15 38.4**	**+1.9**
IGT	**Igoumenitsa**	**4.08**	**327**	P	**Pn**		**21 15 38.4**	**+1.9**
SGD	**Sagiada**	**4.19**	**327**	P	**Pn**		**21 15 40.1**	**+2.1**
SGD	**Sagiada**	**4.19**	**327**	P	**Pn**		**21 15 40.1**	**+2.1**
SLUM	**Salum**	**4.93**	**160**	P	**Pn**		**21 15 49.0**	**+0.9**
	baz=166							
SLUM				S	**Sn**		**21 16 38.2**	**-5.6**
	baz=166							
SLUM	**Salum**	**4.93**	**160**	P	**Pn**		**21 15 49.0**	**+0.9**
TAR1	**Taranto**	**6.39**	**315**	*e*Pn	**Pn**		**21 16 09.5**	**+1.6**
BARS	**Barje**	**6.75**	**351**	*e*Pn	**Pn**		**21 16 17.0**	**+4.2**
SG1	**Sgolgore (BA)**	**6.94**	**314**	*e*Pn	**Pn**		**21 16 17.2**	**+1.7**
BAI	**Bari**	**7.01**	**317**	*e*Pn	**Pn**		**21 16 17.9**	**+1.6**
SWA2		**7.14**	**164**	P	**Pn**		**21 16 19.6**	**+1.4**
	baz=168							
SWA2				AMP			21 17 00.0	
	comp=E,450μm,0.2s,logA/T=6.3,baz=168							
SWA2				S	**Sn**		**21 17 31.9**	**-5.9**
	baz=168							
SWA2		**7.14**	**164**	P	**Pn**		**21 16 19.6**	**+1.4**
CDT	**Castel del Mon**	**7.33**	**314**	*e*Pn	**Pn**		**21 16 21.7**	**+0.9**
IVAS	**Ivanjica**	**7.79**	**343**	*e*Pn	**Pn**		**21 16 26.7**	**-0.3**
MS1	**Monte Sant'Ang**	**7.93**	**317**	*e*Pn	**Pn**		**21 16 30.5**	**+1.5**
BBLS	**Lazići**	**8.24**	**340**	*e*Pn	**Pn**		**21 16 32.6**	**-0.7**
AWBH		**9.17**	**147**	P	**Pn**		**21 16 46.1**	**+0.2**
	baz=149							
AWBH		**9.17**	**147**	P	**Pn**		**21 16 46.1**	**+0.2**
GLL	**Jalalah**	**9.69**	**130**	P	**Pn**		**21 16 52.2**	**-0.7**
	baz=132							
HFRF	**Wahat Farafira**	**9.96**	**153**	P	**Pn**		**21 16 57.5**	**+0.8**
	baz=155							
HFRF	**Wahat Farafira**	**9.96**	**153**	P	**Pn**		**21 16 57.5**	**+0.8**
UDBI	**Udbina**	**10.12**	**328**	*e*Pn	**Pn**		**21 16 57.1**	**-1.7**
UDBI				Sn	**Sn**		**21 18 43.2**	**-7.2**
HNKL	**Nakhl**	**10.95**	**121**	P	**Pn**		**21 17 09.4**	**-0.9**
	baz=122							
HNKL				S	Sn		21 18 57.4	-13
	baz=122							

TRN 12 21:18:41.1, 17°.27N×60°.85W, h3km, MD3.5, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TBG	**Guadaloupe-3**	**1.60**	**209**	*e*P	Pg	21 19 13.4	+1.6
TBG				*e*S	Sg	21 19 35.8	+3.2
BBL	**Barber's Block**	**1.83**	**199**	*e*P	Pg	21 19 15.8	-0.5
BBL				*e*S	Sg	21 19 42.3	+2.3
PCM	**Pelee Case Pet**	**2.46**	**188**	*e*P	Pg	21 19 30.2	+1.9

IDC 12 21:20:30.3±2.9, 28°.27S×176°.76W, h0km, mb3.6/2, mb1 3.8/2, mb1mx3.6/28, mbtmp3.6/2, Error ellipse: s-maj=91.2km s-min=28.1km az=128.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.41**	**226**	Pn	Pb	21 20 57.7	+0.1
	59nm,0.3s,baz=300,slow=20,SNR=6.4						
RAO				Sn	Sg	21 21 15.8	0.0
	403nm,0.3s,baz=116,slow=19,SNR=7.3						
ASAR	**Alice Springs**	**44.35**	**264**	P	P	21 28 43.1	+0.4
	0.5nm,0.7s,baz=95,slow=7.4,SNR=3.7						
WRA	**Warramunga Arr**	**45.15**	**269**	P	P	21 28 49.0	0.0
	0.7nm,0.7s,baz=109,slow=7.8,SNR=4.6						
FINES	**FINESS Array B**	**143.49**	**342**	PKP	PKPdf	21 40 07.3	+1.1
	2.8nm,0.6s,baz=64,slow=3.5,SNR=13						
NB2	**NORSAR Subarra**	**146.79**	**353**	PKP	PKPab	21 40 20.3	+5.2
	comp=Z,0.7nm,0.6s,baz=8.0,slow=2.9						
AKASG	**Malin Array Be**	**150.21**	**326**	PKPbc	PKPbc	21 40 21.7	-1.3
	comp=Z,0.3nm,0.4s,baz=49,slow=2.0,SNR=5.5						

*GEN **12** 21:27:12.1, 43°.93N×11°.95E, h2km, ML3.4*
*LDG **12** 21:27:12.9±0.2, 43°.96N×12°.01E, h10km, Md3.0/3, Ml3.6/14, Error ellipse: s-maj=4.1km s-min=3.0km az=155.0*
*CSEM **12** 21:27:12.9±0.1, 43°.90N×11°.85E, h10km, ML3.7/22, Error ellipse: s-maj=2.1km s-min=1.8km az=38.0*
*ROM **12** 21:27:12.5±0.1, 43°.94N×11°.87E, h8km, Ml3.4/39, Error ellipse: s-maj=1.2km s-min=0.7km az=15.0*
*IDC **12** 21:27:12.9±1.7, 44°.13N×11°.59E, h0km, mb3.4/3, mb1 3.5/8, mb1mx3.3/56, mbtmp3.4/8, ML3.7/4, Error ellipse: s-maj=24.5km s-min=15.6km az=74.0*
*ISCJB **12** 21:27:12.9±0.2, 43°.94N±0°.02×11°.84E±0°.02, h20km±2km, mb3.5/3, Error ellipse: s-maj=2.8km s-min=1.9km az=179.9*
*BGR **12** 21:27:14.1±0.6, 43°.89N×11°.84E, h10km, ML3.6/15, Error ellipse: s-maj=14.5km s-min=10.0km az=11.0*
*PRU **12** 21:27:15.1, 44°.03N×12°.10E, h0km*
*STR **12** 21:27:21.0±0.5, 44°.40N×11°.43E, h10km, Ml3.7, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 12 21:27:12.8±0.7, 43°.92N±0°.02×11°.84E±0°.01, h10km±4km, n299, σ1§69/429, mb3.4/3, 12C-1D, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
SFI	**Santa Sofia**	**0.02**	**166**	⇑*i*Pg	**Pg**		**21 27 14.4**	**-0.2**
SFI				Sg	**Sg**		**21 27 15.7**	**-0.2**
	75μm,0.7s							
SFI	**Santa Sofia**	**0.02**	**166**	⇑*i*Pg	**Pg**		**21 27 14.4**	**-0.2**
SFI				Sg	**Sg**		**21 27 15.7**	**-0.2**
	75μm,0.7s							
ASQU	**Asqua**	**0.13**	**197**	⇑*i*Pg	**Pg**		**21 27 16.4**	**+0.5**
ASQU				Sg	**Sg**		**21 27 19.3**	**+1.2**
	68μm,0.3s							
ASQU	**Asqua**	**0.13**	**197**	⇑*i*Pg	**Pg**		**21 27 16.4**	**+0.5**
ASQU				Sg	**Sg**		**21 27 19.3**	**+1

1µm,0.2s
SSFR Montelago di S 0.84 125 Pg **Pg** 21 27 28.1 -0.8
1µm,0.2s
FROS Frosini 0.87 215 Pg **Pb** 21 27 30.0 0.0
2µm,1.0s
FROS Frosini 0.87 215 Pg **Pb** 21 27 30.0 0.0
2µm,1.0s
ARVD Arcevia 0.90 118 Pg **Pg** 21 27 29.5 -0.7
570nm,0.6s
ARVD Arcevia 0.90 118 Pg **Pg** 21 27 29.5 -0.7
570nm,0.6s
BDI Bagni Di Lucca 0.91 279 Pg **Pg** 21 27 30.0 -0.3
629nm,0.7s
BDI Bagni Di Lucca 0.91 279 Pg **Pg** 21 27 30.0 -0.3
629nm,0.7s
ATCC AVT- Casa Cast 0.94 141 Pg **Pg** 21 27 30.5 -0.3
2µm,0.5s
ATCC AVT- Casa Cast 0.94 141 Pg **Pg** 21 27 30.5 -0.3
2µm,0.5s
MAIM Mastiano 0.98 270 Pg **Pg** 21 27 31.3 -0.3
781nm,0.9s
MAIM Mastiano 0.98 270 P **Pg** 21 27 31.5 -0.1
MAIM S **Sb** 21 27 44.9 +0.2
MGAB Montegabbione 1.03 169 Pg **Pb** 21 27 32.7 0.0
2µm,0.4s
MGAB Montegabbione 1.03 169 Pg **Pb** 21 27 32.7 0.0
2µm,0.4s
SNTG Esanatoglia 1.04 129 Pg **Pg** 21 27 31.9 -0.9
654nm,0.5s
SNTG Esanatoglia 1.04 129 Pg **Pg** 21 27 31.9 -0.9
654nm,0.5s
TRIF Trifonti 1.06 221 Pg **Pn** 21 27 33.6 -0.1
498nm,0.6s
TRIF Trifonti 1.06 221 Pg **Pn** 21 27 33.6 -0.1
498nm,0.6s
SASS Sassa 1.07 232 Pg **Pg** 21 27 33.0 -0.3
400nm,0.8s
SASS Sassa 1.07 232 Pg **Pg** 21 27 33.0 -0.3
400nm,0.8s
SARO Sassorosso 1.07 285 P **Pb** 21 27 33.7 +0.2
SARO S **Sn** 21 27 48.7 -0.3
SACS San Casciano d 1.07 177 Pg **Pg** 21 27 33.2 -0.2
712nm,0.5s
ARCI Arcidosso 1.10 194 Pg **Pg** 21 27 33.8 -0.2
2µm,1.1s
ARCI Arcidosso 1.10 194 Pg **Pg** 21 27 33.8 -0.2
2µm,1.1s
CING Cingoli 1.12 119 Pg **Pb** 21 27 33.6 -0.8
613nm,0.8s
CING Cingoli 1.12 119 Pg **Pb** 21 27 33.6 -0.8
613nm,0.8s
MCIV Monte Civitell 1.15 186 Pg **Pb** 21 27 34.5 -0.3
521nm,1.3s
MCIV Monte Civitell 1.15 186 Pg **Pb** 21 27 34.5 -0.3
521nm,1.3s
FDMO Fiordimonte 1.27 134 Pg **Pn** 21 27 35.8 -0.8
407nm,0.7s
FDMO Fiordimonte 1.27 134 Pg **Pn** 21 27 35.8 -0.8
407nm,0.7s
LATE Laterza 1.31 181 Pg **Pn** 21 27 36.9 -0.3
2µm,1.7s
LATE Laterza 1.31 181 Pg **Pn** 21 27 36.9 -0.3
2µm,1.7s
CASP Castiglione de 1.33 213 Pg **Pn** 21 27 36.6 -0.9
211nm,0.6s
CASP Castiglione de 1.33 213 Pg **Pn** 21 27 36.6 -0.9
211nm,0.6s
GRAM Graiana 1.40 295 P **Pb** 21 27 39.0 -0.1
GRAM S **Sb** 21 27 56.8 -0.2
CODM Codolo 1.51 289 P **Pn** 21 27 40.2 +0.3
CODM S **Sn** 21 27 59.4 -0.3
MARN Marana (Italy) 1.77 346ĥ *e*Pg **Pn** 21 27 43.6 0.0
MARN Marana (Italy) 1.77 346 *e*Pg **Pn** 21 27 43.6 0.0
CGRP Cima Grappa 1.96 359ĥ *e*Pn **Pn** 21 27 45.9 -0.4
CGRP *e*Sn **Sn** 21 28 11.2 +0.2
CGRP Cima Grappa 1.96 359 *e*Pn **Pn** 21 27 45.9 -0.4
CGRP *e*Sn **Sn** 21 28 11.2 +0.2
DDS Dosso del Somm 2.02 347ĥ *e*Pn **Pn** 21 27 46.8 -0.3
DDS Dosso del Somm 2.02 347 *e*P **Pn** 21 27 46.8 -0.3
VARN Col Varnada, M 2.08 5ĥ *e*Pn **Pn** 21 27 47.2 -0.7
VARN Col Varnada, M 2.08 5 *e*Pn **Pn** 21 27 47.2 -0.7
POLC Polcenigo 2.16 12 *e*Pn **Pn** 21 27 48.5 -0.3
POLC Polcenigo 2.16 12 *e*Pn **Pn** 21 27 48.5 -0.3
PANI Panarotta 2.16 351 *e*Pn **Pn** 21 27 49.1 0.0
PANI Panarotta 2.16 351 *e*Pn **Pn** 21 27 49.1 0.0
RNI Roncone 2.23 338 *e*Pn **Pn** 21 27 50.3 +0.2
RNI Roncone 2.23 338 *e*Pn **Pn** 21 27 50.3 +0.2
TRI Trieste 2.25 37ĥ *e*Pn **Pn** 21 27 49.0 -1.1
TRI Trieste 2.25 37 *e*Pn **Pn** 21 27 49.0 -1.1
SABO M.te Sabotino 2.41 31ĥ *e*Pn **Pn** 21 27 51.8 -0.5
SABO M.te Sabotino 2.41 31 *e*Pn **Pn** 21 27 51.8 -0.5
CIMO Cimolais 2.43 10 *e*Pn **Pn** 21 27 51.8 -0.8
CIMO Cimolais 2.43 10 *e*Pn **Pn** 21 27 51.8 -0.8
PCP Piancastagn 2.45 286 P **Pn** 21 27 52.0 -0.9
PGF Pioggiola 2.49 238 *e*Pn **Pn** 21 27 53.2 -0.3
PGF *e*Sn **Sn** 21 28 23.1 -0.9
25nm,0.3s
PGF Pioggiola 2.49 238 *e*Pn **Pn** 21 27 53.2 -0.3
PGF *e*Sn **Sn** 21 28 23.1 -0.9
13nm,0.3s
OZOL Ozolo 2.55 348 *e*Pn **Pn** 21 27 55.0 +0.7
OZOL Ozolo 2.55 348 *e*Pn **Pn** 21 27 55.0 +0.7
VINO Villanova 2.55 23ĥ *e*Pn **Pn** 21 27 53.5 -0.7
VINO Villanova 2.55 23 *e*Pn **Pn** 21 27 53.5 -0.7
DRE Drenchia 2.59 29 *e*Pn **Pn** 21 27 54.4 -0.4
DRE Drenchia 2.59 29 *e*Pn **Pn** 21 27 54.4 -0.4
ROBS Robic 2.61 26 *i* Pn **Pn** 21 27 54.3 -0.7
ROBS *i* Sn **Sn** 21 28 26.6 -0.1
comp=Z,68nm,0.2s
ROBS Robic 2.61 26 Pn **Pn** 21 27 54.3 -0.7
ROBS *i* Sn **Sn** 21 28 26.6 -0.1
comp=Z,68nm,0.2s
CARE Lago del Cares 2.63 342 *e*Pn **Pn** 21 27 56.7 +1.0
CARE Lago del Cares 2.63 342 *e*Pn **Pn** 21 27 56.7 +1.0
RORO Rocca Rossa 2.73 275 P **Pn** 21 27 56.0 -0.7
ZOU Zoufplan 2.75 16ĥ *e*Pn **Pn** 21 27 56.8 -0.4
IMI Imperia 2.85 271 P **Pn** 21 27 58.0 -0.5
ABTA Abfaltersbach 2.87 9 *e*Pn **Pn** 21 27 59.1 +0.4
comp=Z,20nm,0.5s,SNR=11
ABTA *i* Sn **Sn** 21 28 35.2 +2.0
comp=Z,86nm,0.7s
ABTA Abfaltersbach 2.87 9 Pn **Pn** 21 27 59.1 +0.4
comp=Z,20nm,0.5s,SNR=11
ABTA Sn **Sn** 21 28 35.2 +2.0
comp=Z,86nm,0.7s
ACOM Acomizza, Ital 2.88 24 *e*Pn **Pn** 21 27 58.7 -0.3
ACOM Acomizza, Ital 2.88 24 *e*Pn **Pn** 21 27 58.7 -0.3
UDBI Udbina 2.88 76 *e*Pn **Pn** 21 28 01.1 +2.2
UDBI Sn **Sn** 21 28 35.9 +2.2
UDBI Udbina 2.88 76 *e*Pn **Pn** 21 28 01.0 +2.2
UDBI Sn **Sn** 21 28 35.9 +2.2
NEGI Seborga 2.99 270 P **Pn** 21 27 59.7 -0.6
MYKA Terra Mystica 2.99 24 *i* Pn **Pn** 21 28 00.8 +0.4
comp=Z,8.9nm,0.3s
MYKA *i* Sn **Sn** 21 28 37.1 +0.7
comp=Z,19nm,0.4s
MYKA Terra Mystica 2.99 24 Pn **Pn** 21 28 00.8 +0.4
comp=Z,8.9nm,0.3s
MYKA Sn **Sn** 21 28 37.1 +0.7
comp=Z,19nm,0.4s
MOZS Mozjanca 3.00 37 *i* Pn **Pn** 21 28 00.2 -0.3
MOZS *i* Sn **Sn** 21 28 37.0 +0.4
MOZS Mozjanca 3.00 37 *i* Pn **Pn** 21 28 00.2 -0.3
MOZS *i* Sn **Sn** 21 28 37.0 +0.4
OZLJ Ozalj 3.09 55 *e*Pn **Pn** 21 28 01.5 -0.1
OZLJ Sn **Sn** 21 28 38.7 +0.2
OZLJ Ozalj 3.09 55 *e*Pn **Pn** 21 28 01.4 -0.1
OZLJ Sn **Sn** 21 28 38.7 +0.2
PDKS Podkum 3.10 45 *i* Pn **Pn** 21 28 01.5 -0.3
PDKS *i* Sn **Sn** 21 28 39.8 +0.9
PDKS Podkum 3.10 45 *i* Pn **Sn** 21 28 01.5 -0.3
PDKS *i* Sn **Sn** 21 28 39.8 +0.9
DAVOX Davos/Dischmat 3.18 335 Pn **Pn** 21 28 00.6 -2.4
comp=Z,0.4nm,0.3s,baz=86,slow=2.9,SNR=4.0
DAVOX Pg **Pb** 21 28 05.6 -3.9
comp=Z,9.2nm,0.3s,baz=160,slow=14,SNR=44
DAVOX Lg Lg 21 28 43.9
comp=Z,6.4nm,0.3s,baz=64,slow=22,SNR=6.9
SBF Sospel 3.19 270 *e*Pn **Pn** 21 28 02.7 -0.3
SBF *e*Sn **Sn** 21 28 39.8 -1.3
comp=Z,54nm,0.4s
SBF Sospel 3.19 270 *e*Pn **Pn** 21 28 02.7 -0.3
SBF *e*Sn **Sn** 21 28 39.8 -1.3
comp=Z,27nm,0.4s
FETA Feichten 3.20 346 *i* Pn **Pn** 21 28 05.3 +2.0
comp=Z,46nm,0.7s,SNR=24
FETA *i* Sn **Sn** 21 28 44.6 +3.0
comp=Z,25nm,0.5s
FETA Feichten 3.20 346 Pn **Pn** 21 28 05.3 +2.0
comp=Z,46nm,0.7s,SNR=24
FETA Sn **Sn** 21 28 44.6 +3.0
comp=Z,25nm,0.5s
ENR Entracque 3.20 277 P **Pn** 21 28 03.3 0.0
ENR S **Sn** 21 28 38.0 -3.5
OBKA Obir 3.22 36 *i* Pn **Pn** 21 28 03.5 -0.1
comp=Z,5.5nm,0.3s
OBKA *i* Sg **Sg** 21 28 58.7 +2.5
comp=Z,63nm,0.6s
OBKA Obir 3.22 36 *e*Pn **Pn** 21 28 04.5 +1.0
OBKA Obir 3.22 36 Pn **Pn** 21 28 04.5 +1.0
OBKA Sg **Sg** 21 28 58.7 +2.5
comp=Z,63nm,0.6s
TRAV Traversella 3.33 300 P **Pn** 21 28 05.7 +0.8
KBA Koelnbreinsper 3.33 18 *i* Pn **Pn** 21 28 05.7 +0.6
comp=Z,5.2nm,0.3s,SNR=8.1
KBA *i* Sn **Sn** 21 28 44.4 -0.4
comp=Z,21nm,0.5s
KBA Koelnbreinsper 3.33 18 *e*Pn **Pn** 21 28 05.6 +0.5
KBA Koelnbreinsper 3.33 18 Pn **Pn** 21 28 05.6 +0.5
KBA Sn **Sn** 21 28 44.4 -0.4
comp=Z,21nm,0.5s
WTTA Wattenberg 3.35 358 *i* Pn **Pn** 21 28 08.2 +2.8
comp=Z,17nm,0.6s
WTTA *i* Sn **Sn** 21 28 48.5 +3.3
comp=Z,37nm,0.5s
WTTA Wattenberg 3.35 358ĥ *e*PN **Pn** 21 28 07.2 +1.9
WTTA *e*SN **Sn** 21 28 48.0 +2.8
WTTA Wattenberg 3.35 358 *e*Pn **Pn** 21 28 07.8 +2.4
WTTA *e*Sn **Sn** 21 28 48.8 +3.6
WTTA Wattenberg 3.35 358 Pn **Sn** 21 28 07.8 +2.4
WTTA Sn **Sn** 21 28 48.5 +3.3
comp=Z,37nm,0.5s
WATA Walderalm 3.42 357 *i* Pn **Pn** 21 28 08.6 +2.3
comp=Z,20nm,0.5s,SNR=14
WATA *i* Sn **Sn** 21 28 50.7 +3.7
comp=Z,22nm,0.5s
WATA Walderalm 3.42 357 Pn **Pn** 21 28 08.6 +2.3
comp=Z,20nm,0.5s,SNR=14
WATA Sn **Sn** 21 28 50.7 +3.7
comp=Z,22nm,0.5s
MOTA Moosalm 3.46 352 *i* Pn **Pn** 21 28 09.5 +2.6
comp=Z,19nm,0.5s,SNR=12
MOTA *i* Sn **Sb** 21 28 52.9 -3.6
comp=Z,24nm,0.5s
MOTA Moosalm 3.46 352 Pn **Pn** 21 28 09.5 +2.6
comp=Z,19nm,0.5s,SNR=12
SOKA Soboth 3.56 38 *i* Pn **Pn** 21 28 08.3 +0.1
comp=Z,5.2nm,0.4s
SOKA *i* Sn **Sn** 21 28 50.7 +0.4
comp=Z,34nm,0.6s
SOKA Soboth 3.56 38 Pn **Pn** 21 28 08.3 +0.1
comp=Z,5.2nm,0.4s
SOKA Sn **Sn** 21 28 50.7 +0.4
comp=Z,34nm,0.6s
PLONS Plons/SG 3.58 332 *e*Pn **Pn** 21 28 11.3 +2.9
PLONS *e*Sn **Sn** 21 28 53.7 +3.0
PLONS Plons/SG 3.58 332 Pn **Pn** 21 28 11.3 +2.9
PLONS Sn **Sn** 21 28 53.7 +3.0
BISS Bistriski jare 3.58 39 *i* Pn **Pn** 21 28 08.2 -0.2
BISS Bistriski jare 3.58 39 *i* Pn **Pn** 21 28 08.2 -0.2
DAVA Damuels 3.64 338 *i* Pn **Pn** 21 28 12.1 +2.8
comp=Z,27nm,0.5s
DAVA *i* Sn **Sn** 21 28 56.3 +3.9
comp=Z,83nm,0.6s
DAVA Damuels 3.64 338 *e*Pn **Pn** 21 28 11.8 +2.5
DAVA *e*Sn **Sn** 21 28 55.5 +3.1
DAVA Damuels 3.64 338 Pn **Pn** 21 28 11.8 +2.5
DAVA Sn **Sn** 21 28 55.5 +3.1
RETA Reutte 3.65 348 *i* Pn **Pn** 21 28 11.5 +2.1
comp=Z,12nm,0.4s,SNR=9.1
RETA *i* Sn **Sn** 21 28 55.6 +3.1
comp=Z,29nm,0.5s
RETA Reutte 3.65 348 Pn **Pn** 21 28 11.5 +2.1
comp=Z,12nm,0.4s,SNR=9.1
RETA Sn **Sn** 21 28 55.6 +3.1
comp=Z,29nm,0.5s
OBER Oberstdorf 3.65 343 *e*Pn **Pn** 21 28 11.6 +2.2
OBER *e*Sn **Sn** 21 28 56.0 +3.4
OBER Oberstdorf 3.65 343 Pn **Pn** 21 28 11.6 +2.2
OBER Sn **Sn** 21 28 56.0 +3.4
MBDF Montbardon 3.73 284 *e*Pn **Pn** 21 28 10.5 0.0
MBDF Montbardon 3.73 284 *e*Pn **Pn** 21 28 10.5 0.0
RRL Rocca Remolon 3.75 287 P **Pn** 21 28 13.3 +2.3
FRF La Foret Royal 3.78 266 *e*Pn **Pn** 21 28 11.1 0.0
FRF *e*Sn **Sn** 21 28 52.5 -3.2
comp=Z,8.5nm,0.3s
FRF La Foret Royal 3.78 266 *e*Pn **Pn** 21 28 11.1 0.0
FRF *e*Sn **Sn** 21 28 52.5 -3.2
comp=Z,4.2nm,0.3s
RJOB Jochberg 3.88 10 *e*Pn **Pn** 21 28 14.3 +1.8
RJOB *e*Sn **Sb** 21 29 03.6 -4.6
RJOB Jochberg 3.88 10 Pn **Pn** 21 28 14.3 +1.8
LMR La Mourre 3.92 263 *e*Pn **Pn** 21 28 12.6 -0.4
LMR *e*Sn **Sn** 21 28 57.3 -1.7
comp=Z,9.2nm,0.4s
LMR La Mourre 3.92 263 *e*Pn **Pn** 21 28 12.6 -0.4
LMR *e*Sn **Sn** 21 28 57.3 -1.7
comp=Z,4.6nm,0.4s
LPG La Plagne 3.96 295 *e*P **Pn** 21 28 16.7 +2.9
LPG La Plagne 3.96 295 *e*P **Pn** 21 28 16.7 +2.9
LPL La Plagne 3.98 295 *e*Pn **Pn** 21 28 15.0 +1.0
LPL *e*Sn **Sn** 21 28 58.4 -2.4
comp=Z,27nm,0.4s
LPL La Plagne 3.98 295 *e*Pn **Pn** 21 28 15.0 +1.0
LPL *e*Sn **Sn** 21 28 58.4 -2.4
comp=Z,14nm,0.4s
WILA Wila 4.05 331 *e*Pn **Pn** 21 28 17.5 +2.5
WILA *e*Sn **Sn** 21 29 02.1 -0.4
WILA Wila 4.05 331 Pn **Pn** 21 28 17.5 +2.5
WILA Sn **Sn** 21 29 02.1 -0.4
ARSA Arzberg 4.21 37 *i* Pn **Pn** 21 28 16.7 -0.4
comp=Z,6.8nm,0.4s,SNR=5.5
ARSA *i* Sn **Sn** 21 29 05.4 -1.0
comp=Z,8.7nm,0.6s
ARSA Arzberg 4.21 37 *e*Pn **Pn** 21 28 16.7 -0.4
ARSA Arzberg 4.21 37 P **Pn** 21 28 16.7 -0.4
comp=Z,6.8nm,0.4s,SNR=5.5
ARSA Sn **Sn** 21 29 05.4 -1.0
comp=Z,8.7nm,0.6s
MOA Molln 4.28 22 *i* Pn **Pn** 21 28 19.0 +1.0
comp=Z,7.8nm,0.6s
MOA *i* Sn **Sn** 21 29 08.2 +0.2
comp=Z,18nm,0.5s
MOA Molln 4.28 22 *e*Pn **Pn** 21 28 18.6 +0.6
MOA *e*Sn **Sn** 21 29 08.2 +0.2
MOA Molln 4.28 22 Pn **Pn** 21 28 18.6 +0.6
MOA Sn **Sn** 21 29 08.2 +0.2
ORIF Oris-en-Rattie 4.39 285 *e*Pn **Pn** 21 28 19.7 +0.2
ORIF Oris-en-Rattie 4.39 285 *e*Pn **Pn** 21 28 19.7 +0.2
SULZ Cheisacher 4.45 325 *e*Pn **Pn** 21 28 22.5 +2.1
SULZ *e*Sn **Sn** 21 29 11.1 -1.2
SULZ Cheisacher 4.45 325 Pn **Pn** 21 28 22.5 +2.1
SULZ Sn **Sn** 21 29 11.1 -1.2
BALST Balsthal 4.49 321 *e*Pn **Pn** 21 28 22.9 +2.0
BALST *e*Sn **Sn** 21 29 11.1 -2.0
BALST Balsthal 4.49 321 Pn **Pn** 21 28 22.9 +2.0
BALST Sn **Sn** 21 29 11.1 -2.0
SLE Schleitheim 4.50 330 *e*Pn **Pn** 21 28 22.4 +1.3
SLE *e*Sn **Sn** 21 29 11.9 -1.5
SLE Schleitheim 4.50 330 Pn **Pn** 21 28 22.4 +1.3
SLE Sn **Sn** 21 29 11.9 -1.5
SMRF Simiane la Rot 4.53 273 *e*Pn **Pn** 21 28 22.4 +1.0
SMRF Simiane la Rot 4.53 273 *e*Pn **Pn** 21 28 22.4 +1.0
SPAK Spaichingen-Ko 4.69 334 P **Pn** 21 28 24.2 +0.5
SPAK S **Sn** 21 29 17.1 -1.2
FELD Feldberg im Sc 4.78 327 P **Pn** 21 28 25.5 +0.5
FELD S **Sn** 21 29 18.6 -1.8
CABF La Chapelle 4.87 306 *e*Pn **Pn** 21 28 28.1 +1.9
CABF La Chapelle 4.87 306 *e*Pn **Pn** 21 28 28.1 +1.9
CONA Conrad Observa 4.89 34 *i* Pn **Pn** 21 28 26.3 -0.2
comp=Z,7.3nm,0.5s
CONA *i* Sn **Sn** 21 29 23.5 +0.3
comp=Z,8.5nm,0.4s
CONA Conrad Observa 4.89 34 Pn **Pn** 21 28 26.3 -0.2
comp=Z,7.3nm,0.5s
CONA Sn **Sn** 21 29 23.5 +0.3
comp=Z,8.5nm,0.4s
LOMF Lomont 4.91 316 P **Pn** 21 28 27.7 +0.9
LOMF S **Sn** 21 29 22.3 -1.4
LOMF Lomont 4.91 316 P **Pn** 21 28 27.7 +0.9
LOMF S **Sn** 21 29 22.3 -1.4
BFO Black Forest 5.04 332 *e*Pn **Pn** 21 28 29.5 +1.1
BFO *e*Sn **Sn** 21 29 24.0 -2.7
BFO Black Forest 5.04 332 Pn **Pn** 21 28 29.5 +1.1
BFO Sn **Sn** 21 29 24.0 -2.7
GEC2 GERESS Array S 5.09 14 *e*Pn **Pn** 21 28 29.5 +0.3
GEC2 *e*Sn **Sn** 21 29 25.5 -2.6
GEC2 GERESS Array S 5.09 14 Pn **Pn** 21 28 29.5 +0.3
GEC2 Sn **Sn** 21 29 25.5 -2.6
GERES GERESS Array B 5.09 14 Pn **Pn** 21 28 28.6 -0.6
comp=Z,2.1nm,0.3s,baz=194,slow=14,SNR=32
GERES Sn **Sn** 21 29 27.7 -0.3
comp=Z,2.4nm,0.3s,baz=197,slow=22,SNR=7.1
MOF Molkenrain 5.12 322 P **Pn** 21 28 30.1 +0.4
MOF Molkenrain 5.12 322 P **Pn** 21 28 30.1 +0.4
STU Stuttgart 5.19 340 *e*Sn **Sn** 21 29 29.7 -0.6
STU Stuttgart 5.19 340 Sn **Sn** 21 29 29.7 -0.6
VIVF Saint-Julien-l 5.22 283 *e*Pn **Pn** 21 28 31.2 +0.2
VIVF Saint-Julien-l 5.22 283 *e*Pn **Pn** 21 28 31.2 +0.2
HINF Hinteralfeld 5.23 320 *e*Pn **Pn** 21 28 30.9 -0.1
HINF *e*Sn **Sn** 21 29 26.5 -4.8
comp=Z,58nm,0.6s
HINF Hinteralfeld 5.23 320 *e*Pn **Pn** 21 28 30.9 -0.1
HINF *e*Sn **Sn** 21 29 26.5 -4.8
comp=Z,29nm,0.6s
WET Wettzell 5.27 7 *e*Pn **Pn** 21 28 33.3 +1.6
WET *e*Sn **Sn** 21 29 29.0 -3.5
WET Wettzell 5.27 7 Pn **Pn** 21 28 33.3 +1.6
WET Sn **Sn** 21 29 29.0 -3.5
KHC Kasperske Hory 5.35 12 *e*PN **Pn** 21 28 32.3 -0.4
KHC *ex* x 21 28 42.4
KHC *e*PG **Pg** 21 28 55.8 +0.6
KHC *e*SN **Sn** 21 29 31.7 -2.6
KHC *ex* x 21 29 49.4
KHC Kasperske Hory 5.35 12 Pn **Pn** 21 28 32.3 -0.4
KHC Sn **Sn** 21 29 31.7 -2.6
ECH Echery 5.39 324 P **Pn** 21 28 33.7 +0.4
ECH Echery 5.39 324 *e*Pn **Pn** 21 28 34.4 +1.1
ECH *e*Sn **Sn** 21 29 33.0 -2.4
ECH Echery 5.39 324 P **Pn** 21 28 33.7 +0.4
ECH Echery 5.39 324 Pn **Pn** 21 28 34.4 +1.1
ECH Sn **Sn** 21 29 33.0 -2.4
CDF Champ du Feu 5.50 326 *e*Pn **Pn** 21 28 35.3 +0.5
CDF *e*Sn **Sn** 21 29 34.9 -3.2
comp=Z,36nm,0.5s
CDF Champ du Feu 5.50 326 *e*Pn **Pn** 21 28 35.3 +0.5
TEKS Tekeris 5.56 81 *e*Pn **Pn** 21 28 36.3 +0.7
HAU Haudompre 5.60 319 *e*Pn **Pn** 21 28 37.1 +1.0
HAU *e*Sn **Sn** 21 29 35.8 -4.7
comp=Z,49nm,0.5s
HAU Haudompre 5.60 319 *e*Pn **Pn** 21 28 37.1 +1.0
LANF Langenberg 5.78 333 P **Pn** 21 28 39.4 +0.8
LANF Langenberg 5.78 333 P **Pn** 21 28 39.4 +0.8
THEF They Montfort 5.93 319 P **Pn** 21 28 40.9 +0.3
THEF S **Sn** 21 29 47.0 -1.6
THEF They Montfort 5.93 319 P **Pn** 21 28 40.9 +0.3
THEF S **Sn** 21 29 47.0 -1.6
KTD Kalmit 5.99 336 P **Pn** 21 28 41.0 -0.5
KTD S **Sn** 21 29 48.9 -1.2
SMOL Smolenice 6.01 38 *e*Pn **Pn** 21 28 40.8 -1.0
SMOL Smolenice 6.01 38 *e*PN **Pn** 21 28 40.8 -1.0
SMOL *e*SN **Sn** 21 29 45.6 -5.0
IVAS Ivanjica 6.03 90 *e*Pn **Pn** 21 28 43.8 +1.7
TOD Tromm 6.06 341 P **Pn** 21 28 42.3 -0.1
SMF Signal de Mont 6.27 299 *e*Pn **Pn** 21 28 45.9 +0.6
SMF *e*Sn **Sn** 21 29 52.6 -4.3
comp=Z,19nm,0.5s
SMF Signal de Mont 6.27 299 *e*Pn **Pn** 21 28 45.9 +0.6
PAGF Fort de Pagny 6.28 320 *e*Pn **Pn** 21 28 45.0 -0.5
PAGF *e*Sn **Sn** 21 29 53.9 -3.4
comp=Z,11nm,0.6s
PAGF Fort de Pagny 6.28 320 *e*Pn **Pn** 21 28 45.0 -0.5
VRAC Vranov 6.30 30 Pn **Pn** 21 28 46.5 +0.7
comp=Z,0.6nm,0.3s,baz=221,slow=8.2,SNR=4.6
VRAC Sn **Sn** 21 29 51.6 -6.3
comp=Z,0.5nm,0.3s,baz=262,slow=8.3,SNR=4.8
VRAC Vranov 6.30 30 *e*Pn **Pn** 21 28 46.9 +1.1
GOPC GO Pecny, Ondr 6.33 18 *e*PN **Pn** 21 28 45.4 -0.7
GOPC *e*SN **Sn** 21 29 54.8 -3.6
GOPC *ex* x 21 30 09.1
GOPC GO Pecny, Ondr 6.33 18 Pn **Pn** 21 28 45.4 -0.7
NKC Novy Kostel 6.33 4 *e*PN **Pn** 21 28 45.8 -0.3
NKC *e*SN **Sn** 21 29 56.3 -2.2
NKC Novy Kostel 6.33 4 Pn **Pn** 21 28 45.8 -0.3
NKC Sn **Sn** 21 29 56.3 -2.2
PRU Pruhonice 6.34 16 *e*PN **Pn** 21 28 46.6 +0.3
PRU *e*SN **Sn** 21 29 55.6 -3.2
PRU Pruhonice 6.34 16 Pn **Pn** 21 28 46.6 +0.3
SFTF Sexfontaines 6.38 315 *e*Pn **Pn** 21 28 46.6 -0.3
baz=139
SFTF *e*Sn **Sn** 21 29 54.2 -5.6
comp=Z,39nm,0.8s
SFTF Sexfontaines 6.38 315 *e*Pn **Pn** 21 28 46.6 -0.3
LOR Lormes 6.52 304 *e*Pn **Pn** 21 28 49.8 +1.0
baz=127
LOR *e*Sn **Sn** 21 29 58.8 -4.5
comp=Z,29nm,0.5s
LOR Lormes 6.52 304 *e*Pn **Pn** 21 28 49.8 +1.0
MEZF Maizieres J'vi 6.57 317 *e*Sn **Sn** 21 29 58.5 -5.8
comp=Z,28nm,0.7s
AVF Avril sur Loir 6.63 299 *e*Pn **Pn** 21 28 48.2 -2.1
AVF Avril sur Loir 6.63 299 *e*Pn **Pn** 21 28 48.2 -2.1
SSF Saint Saulge 6.65 301 *e*Pn **Pn** 21 28 51.2 +0.7
SSF *e*Sn **Sn** 21 30 02.8 -3.5
comp=Z,6.1nm,0.4s
SSF Saint Saulge 6.65 301 *e*Pn **Pn** 21 28 51.2 +0.7
RUP Ruppelstein 6.65 332 P **Pn** 21 28 51.6 +1.1
VYHS Vyhne 6.67 44 *e*Pn **Pn** 21 28 50.3 -0.5
VYHS Vyhne 6.67 44 *e*PN **Pn** 21 28 50.3 -0.5
VYHS *e*SN **Sn** 21 29 59.1 -7.7
SELS Selova 6.78 93 *e*Pn **Pn** 21 28 53.3 +1.0
WLF Walferdange 6.95 328 PN **Pn** 21 28 56.4 +1.8
WLF SN **Sn** 21 30 14.5 +0.9
comp=N,9.0nm,0.0s
WLF Walferdange 6.95 328 Pn **Pn** 21 28 56.4 +1.8
WLF Sn **Sn** 21 30 14.4 +0.9
MTLF Montolieu 7.01 269 *e*Pn **Pn** 21 28 55.7 +0.2
MTLF Montolieu 7.01 269 *e*Pn **Pn** 21 28 55.7 +0.2
MORC Moravsky Berou 7.04 32 *e*Pn **Pn** 21 28 58.0 +2.1
CAF Calviac 7.07 282 *e*P **Pn** 21 29 00.6 +4.2
BRG Berggiesshubel 7.10 11 PN **Pn** 21 28 56.9 +0.2
BRG *i* 21 30 16.8
BRG *e* 21 31 11.1
comp=N,8.2nm,1.0s
DPC Dobruska-Polom 7.12 24 *e*PN **Pn** 21 28 56.7 -0.3
DPC *e*SN **Sn** 21 30 12.7 -5.3
DPC Dobruska-Polom 7.12 24 Pn **Pn** 21 28 56.7 -0.3
OKC Ostrava-Krasne 7.33 34 *e*PN **Pn** 21 29 01.3 +1.5
OKC Ostrava-Krasne 7.33 34 Pn **Pn** 21 29 01.3 +1.5
BARS Barje 7.35 95 *e*Pn **Pn** 21 29 01.6 +1.4
CLL Collm 7.43 6 *e*Pn **Pn** 21 29 01.0 -0.2
CLL *e*Sn **Sn** 21 30 22.0 -3.6
CLL *e*Sg **Sg** 21 31 10.0 -1.2
RJF Les Rejaudoux 7.50 284 *e*Pn **Pn** 21 29 01.8 -0.4
RJF Les Rejaudoux 7.50 284 *e*Pn **Pn** 21 29 01.8 -0.4
MEM Membach 7.78 331 PN **Pn** 21 29 07.9 +1.9
MEM Membach 7.78 331 Pn **Pn** 21 29 07.9 +1.9
BCLA Clavier 7.88 328 PN **Pn** 21 29 09.6 +2.2
BCLA SN **Sn** 21 30 33.0 -3.5
comp=E,6.1nm,0.0s
BCLA Clavier 7.88 328 Pn **Pn** 21 29 09.5 +2.2
DOU Dourbes 7.92 324 PN **Pn** 21 29 12.8 +4.9
DOU SN **Sn** 21 30 35.5 -1.9
comp=E,5.6nm,0.0s
KEST Kesra 8.40 194 Pn **Pn** 21 29 20.1 +5.4
comp=E,0.4nm,0.3s,baz=326,slow=7.3,SNR=4.6
EPF Esparros 8.41 268 *e*Pn **Pn** 21 29 13.2 -1.6
EPF Esparros 8.41 268 *e*Pn **Pn** 21 29 13.2 -1.6
EKA Eskdalemuir Ar 14.96 325 Pn **Pn** 21 30 42.6 -1.5
baz=137,slow=15,SNR=3.3
KURBB Kurchatov Arra 44.35 57 P **P** 21 35 23.4 +0.5
comp=E,0.2nm,0.5s,baz=304,slow=8.0,SNR=3.2
MKAR Makanchi Array 48.06 61 P **P** 21 35 53.6 +1.4
comp=E,0.9nm,0.7s,baz=296,slow=6.0,SNR=8.2
SONM Songino Array 61.83 50 P **P** 21 37 34.5 +2.5
comp=E,0.2nm,0.6s,baz=308,slow=7.0,SNR=3.3

CASC 12 21:36:23.0±2.6, 10°.80N×85°.04W, h3^{km}±10^{km}, MD4.5, ML3.6, 1C-3D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VCR	**Vista de Mar**	**0.89**	**221**	⇓*iP*	Pg	21 36 39.1	-1.0
VCR				*eS*	Sn	21 36 55.1	-0.9
JCR	**Jicaral**	**0.95**	**185**	⇓*iP*	Pg	21 36 40.7	-0.5
JCR				*eS*	Sb	21 36 55.8	+0.7
CGA2	**Cerro Gallo 2**	**0.96**	**144**	⇓*iP*	Pg	21 36 40.7	-0.7
CGA2				*eS*	Sg	21 36 54.6	+0.7
ESPN	**Las Esperanzas**	**1.56**	**27**	*eP*	Pn	21 36 51.4	-0.3
URSC	**Urasca**	**1.56**	**128**	⇑*eP*	Pn	21 36 52.1	+0.2
URSC				*eS*	Sb	21 37 13.1	+0.1
MGAN	**Managua**	**1.79**	**319**	*eP*	Pn	21 36 53.9	-0.9
XAVN	**Gruta Xavier**	**1.84**	**317**	*eP*	Pn	21 36 55.3	-0.3
COPN	**Copaltepe**	**2.05**	**312**	*eP*	Pn	21 36 57.5	-0.9
MOMN	**Momotombo**	**2.17**	**317**	*eP*	Pn	21 36 59.3	-0.9
CNGN	**Cerro Negro**	**2.35**	**316**	*eP*	Pn	21 37 01.9	-0.6
CNGN				*eS*	Sb	21 37 34.4	-1.0
CNGN				AML	AML	21 37 41.0	
	comp=N,483nm,0.5s						
BRU2	**Volcan**	**3.05**	**131**	*eP*	Pb	21 37 19.0	+0.9
BRU2				*eS*	Sb	21 37 56.1	+0.3
TBS2		**3.08**	**130**	*eP*	Pn	21 37 13.9	+1.2
TBS2				*eS*	Sb	21 37 55.8	-0.7

IDC 12 21:39:42.3±1.1, 20°.77N×146°.32E, h0km, mb3.8/7, mb1 3.9/7, mb1mx3.6/52, mbtmp3.8/7, Error ellipse: s-maj=38.0km s-min=26.6km az=73.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H11N1	**WAKE ISLAND Hy**	**19.33**	**90**	T	T	22 03 57.9	
	baz=274						
H11N2	**WAKE ISLAND Hy**	**19.33**	**89**	T	T	22 03 57.9	
	baz=274						
H11N3	**WAKE ISLAND Hy**	**19.35**	**89**	T	T	22 03 59.0	
	baz=274						
SONM	**Songino Array**	**41.92**	**320**	P	P	21 47 35.9	+1.1
	0.5nm,0.8s,baz=136,slow=6.6,SNR=2.8						
WRA	**Warramunga Arr**	**42.13**	**197**	P	P	21 47 36.0	-0.5
	0.8nm,0.7s,baz=19,slow=8.7,SNR=5.9						
ZALV	**Zalesovo Beam**	**56.75**	**322**	P	P	21 49 27.7	-0.2
	0.5nm,0.6s,baz=104,slow=12,SNR=3.0						
MKAR	**Makanchi Array**	**57.47**	**313**	P	P	21 49 33.3	+0.1
	0.2nm,0.6s,baz=93,slow=8.0,SNR=3.1						
ILAR	**Eielson Array**	**61.54**	**27**	P	P	21 50 00.3	-0.6
	0.7nm,0.9s,baz=272,slow=6.3,SNR=5.7						
BVAR	**Borovoye Array**	**65.27**	**320**	P	P	21 50 25.6	-0.3
	1.3nm,0.5s,baz=78,slow=6.3,SNR=11						
FINES	**FINESS Array B**	**85.25**	**335**	P	P	21 52 19.9	-0.9
	3.1nm,1.0s,baz=78,slow=3.9,SNR=6.9						
LPAZ	**La Paz**	**147.07**	**88**	PKPbc	PKPbc	21 59 29.3	+0.5
	0.7nm,0.7s,baz=292,slow=5.4,SNR=3.2						

*IDC **12** 21:56:04.5±0.9, 37°.27N×143°.80E, h0km, mb3.7/8, mb1 3.8/11, mb1mx3.7/37, mbtmp3.7/11, ML3.7/3, Error ellipse: s-maj=24.9km s-min=18.1km az=107.0*
*ISCJB **12** 21:56:07.6±0.6, 37°.41N±0°.04×143°.58E±0°.05, h33km, mb3.7/8, Error ellipse: s-maj=6.3km s-min=5.2km az=29.1*
*JMA **12** 21:56:09.1±0.2, 37°.47N×143°.51E, h53km, M4.1*
ISC 12 21:56:09.8±1.0, 37°.44N±0°.05×143°.59E±0°.09, h35km, n29, σ1§95/40, mb3.7/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.04**	**300**	P	**Pn**	**21 56 41.3**	**-0.2**
JIO				S	**Sn**	**21 57 05.2**	**-0.6**
JFK	**Kawauchi**	**2.16**	**269**	P	**Pn**	**21 56 42.8**	**-0.5**
JFK				S	**Sn**	**21 57 07.4**	**-1.5**
OFUJ	**Ofunato**	**2.23**	**318**	P	**Pn**	**21 56 43.6**	**-0.6**
OFUJ				S	**Sn**	**21 57 09.2**	**-1.2**
JMK	**Ichinoseki**	**2.40**	**310**	P	**Pn**	**21 56 46.2**	**-0.3**
JMK				S	**Sn**	**21 57 13.7**	**-1.0**
JFT	**Otama**	**2.59**	**273**	P	**Pn**	**21 56 49.8**	**+0.7**
JFT				S	**Sn**	**21 57 19.2**	**-0.1**
JOM	**Ohasama**	**2.71**	**319**	P	**Pn**	**21 56 50.7**	**-0.1**
JOM				S	**Sn**	**21 57 21.9**	**-0.5**
JANG	**Nango**	**3.34**	**332**	P	**Pn**	**21 56 59.5**	**0.0**
JANG				*eS*	**Sn**	**21 57 36.9**	**-1.1**
JAG	**Ashikaga**	**3.46**	**254**	P	**Pn**	**21 57 01.0**	**-0.2**
JAG				S	**Sn**	**21 57 39.1**	**-1.8**
JRY	**Ryogami san**	**4.02**	**251**	P	**Pn**	**21 57 08.4**	**-0.5**
JRY				S	**Sn**	**21 57 51.5**	**-3.3**
JOD2	**Odawara 2**	**4.23**	**240**	*eS*	**Sn**	**21 57 56.9**	**-3.0**
MJAR	**Matsushiro Arr**	**4.40**	**260**	Pn	**Pn**	**21 57 15.3**	**+1.3**
	2.8nm,0.3s,baz=90,slow=15,SNR=16						
MAT	**Matsushiro**	**4.40**	**260**	P	**Pn**	**21 57 15.3**	**+1.3**
MAT				S	**Sn**	**21 58 04.0**	**-0.1**
JOT	**Ohata**	**4.40**	**334**	P	**Pn**	**21 57 14.4**	**+0.4**
JKB	**Kayabe**	**4.86**	**337**	*eS*	**Sn**	**21 58 11.7**	**-3.6**
JCH	**Churui**	**5.17**	**358**	P	**Pn**	**21 57 23.0**	**-1.6**
JCH				*eS*	**Sn**	**21 58 18.4**	**-4.6**
JHJ	**Hachijo jima 2**	**5.32**	**217**	Pn	**Pn**	**21 57 23.9**	**-2.7**
	9.9nm,0.3s,baz=37,slow=22,SNR=14						
JHJ				Sn	**Sn**	**21 58 20.9**	**-5.8**
	7.6nm,0.3s,baz=73,slow=19,SNR=3.6						
ASAJ	**Asahikawa**	**6.71**	**354**	Pn	**Pn**	**21 57 44.9**	**-0.9**
	1.2nm,0.3s,baz=202,slow=18,SNR=8.3						
ASAJ				Sn	**Sn**	**21 58 58.2**	**-2.7**
	baz=216,slow=8.7						
KLR	**Kul'dur**	**14.57**	**328**	Pn	**Pn**	**21 59 31.6**	**-1.7**
	0.1nm,0.3s,baz=125,slow=12,SNR=4.9						
H11N2	**WAKE ISLAND Hy**	**26.91**	**125**	T	T	22 29 50.7	
	baz=316,slow=74,SNR=5.4						
H11N1	**WAKE ISLAND Hy**	**26.91**	**125**	T	T	22 29 49.0	
	baz=316						
H11N3	**WAKE ISLAND Hy**	**26.92**	**125**	T	T	22 29 53.5	
	baz=316,slow=74,SNR=4.2						
SONM	**Songino Array**	**29.01**	**303**	P	**P**	**22 02 09.5**	**+3.1**
	0.2nm,0.3s,baz=99,slow=8.9,SNR=3.3						
ZALV	**Zalesovo Beam**	**42.93**	**312**	P	**P**	**22 04 05.6**	**+0.8**
	0.3nm,0.3s,baz=96,slow=10,SNR=3.0						
ZALV				PcP	**PcP**	**22 05 55.1**	**+0.2**
	0.8nm,0.6s,baz=91,slow=5.0,SNR=3.7						
CMAR	**Chiang Mai Arr**	**43.28**	**257**	P	**P**	**22 04 09.3**	**+1.2**
	0.7nm,0.4s,baz=52,slow=6.1,SNR=6.3						
MKAR	**Makanchi Array**	**45.37**	**302**	P	**P**	**22 04 26.0**	**+1.4**
	0.6nm,0.8s,baz=90,slow=12,SNR=4.7						
ILAR	**Eielson Array**	**48.22**	**33**	P	**P**	**22 04 47.2**	**+0.7**
	1.0nm,0.7s,baz=263,slow=6.6,SNR=11						
INK	**Inuvik**	**53.23**	**27**	P	**P**	**22 05 25.4**	**+1.1**
	1.4nm,0.6s,baz=308,slow=5.1,SNR=3.6						
WRA	**Warramunga Arr**	**57.74**	**190**	P	**P**	**22 05 56.1**	**-1.0**
	0.5nm,0.5s,baz=8.8,slow=7.2,SNR=6.8						
ASAR	**Alice Springs**	**61.46**	**190**	P	**P**	**22 06 21.6**	**-1.2**
	0.3nm,0.6s,baz=7.5,slow=7.8,SNR=3.3						

IDC 12 22:14:41.0±1.8, 3°.40N×125°.93E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.5/37, mbtmp3.6/4, MS3.7/1, Ms1 3.7/1, ms1mx2.8/28, Error ellipse: s-maj=118.0km s-min=23.2km az=69.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**21.37**	**181**	P	P	22 19 31.7	+1.6
	1.0nm,0.4s,baz=354,slow=8.1,SNR=15						
WRA	**Warramunga Arr**	**24.62**	**161**	P	P	22 20 03.2	-0.1
	1.0nm,0.6s,baz=337,slow=10,SNR=10						
ASAR	**Alice Springs**	**28.00**	**164**	P	P	22 20 32.8	-1.0
	0.4nm,0.8s,baz=345,slow=8.8,SNR=3.2						
CTA	**Charters Tower**	**30.71**	**140**	LR	LR	22 35 15.6	
	comp=Z,126nm,19.3s,slow=40						
MKAR	**Makanchi Array**	**57.38**	**326**	P	P	22 24 31.1	-0.1
	0.4nm,0.4s,baz=121,slow=7.3,SNR=9.9						

*FUNV **12** 22:16:52.5, 9°.82N×73°.75W, h21km, MW2.9*
*RSNC **12** 22:16:55.3±0.5, 7°.91N×74°.65W, h1km±7km, ML2.3*
ISC 12 22:16:51.4±2.9, 9°.74N±0°.09×73°.8W±0°.2, h29km±23km, n9, σ1§13/14, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OCAC	**Ocana**	**1.57**	**162**	*eP*	**Pb**	**22 17 19.8**	**-0.1**
OCAC				*eS*	**Sn**	**22 17 37.9**	**+0.9**
OCAC				*i*		22 17 44.3	
	comp=Z,24nm,1.3s						
VIRV	**Villa del Rosa**	**1.57**	**61**	*eP*	**Pn**	**22 17 17.9**	**+0.4**
VIRV				*eS*	**Sn**	**22 17 36.2**	**-0.7**
GRMC	**Gramalote, San**	**2.24**	**154**	*eP*	**Pn**	**22 17 26.8**	**0.0**
GRMC				*eS*	**Sn**	**22 17 51.1**	**-2.5**
GRMC				*i*		22 17 58.9	
	comp=Z,38nm,0.3s						
CBRI	**Barrientos, No**	**2.25**	**154**	*eP*	**Pn**	**22 17 26.6**	**-0.3**
CAPV	**Capacho**	**2.38**	**142**	*eP*	**Pn**	**22 17 30.0**	**+1.3**
CAPV				*eS*	**Sn**	**22 17 58.6**	**+1.5**
VIGV	**El Vigia**	**2.57**	**110**	*eP*	**Pn**	**22 17 31.8**	**+0.5**
VIGV				*eS*	**Sn**	**22 18 01.2**	**-0.4**
SOCV	**Socops**	**3.26**	**116**	*eP*	**Pn**	**22 17 40.3**	**-0.3**
CURV	**Curarigua**	**3.80**	**86**	*eP*	**Pn**	**22 17 48.7**	**+0.5**
BAUV	**El Baul**	**5.75**	**97**	*eP*	**Pn**	**22 18 14.8**	**0.0**

IDC 12 22:19:50.1±3.1, 33°.29S×178°.59W, h0km, mb3.9/2, mb1 4.2/3, mb1mx3.7/31, mbtmp4.0/3, ML3.9/1, MS2.9/1, Ms1 2.9/1, ms1mx2.8/19, Error ellipse: s-maj=70.6km s-min=36.3km az=116.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**4.07**	**8**	LR	LR	22 21 45.7	
	comp=Z,147nm,20.7s,baz=318,slow=28						
URZ	**Urewera**	**6.06**	**214**	Pn	Pn	22 21 21.8	+0.8
	3.3nm,0.3s,baz=289,slow=5.6,SNR=11						
URZ				Sn	Sn	22 22 29.4	-1.7
	0.9nm,0.3s,baz=342,slow=20,SNR=4.5						
ASAR	**Alice Springs**	**42.53**	**270**	P	P	22 27 47.8	+0.1
	1.5nm,0.7s,baz=110,slow=7.5,SNR=15						
WRA	**Warramunga Arr**	**43.78**	**275**	P	P	22 27 57.5	-0.3
	0.9nm,0.6s,baz=116,slow=7.8,SNR=14						
FINES	**FINESS Array B**	**147.65**	**338**	PKPbc	PKPbc	22 39 34.8	-0.9
	2.2nm,0.8s,baz=36,slow=5.2,SNR=5.4						

*ISCJB **12** 22:27:30.4±0.5, 1°.76N±0°.02×127°.50E±0°.03, h147km±5km, mb4.6/67, Error ellipse: s-maj=5.8km s-min=3.7km az=156.3*
*MOS **12** 22:27:31.6±1.0, 1°.82N×127°.47E, h156km, mb4.7/13, Error ellipse: s-maj=12.8km s-min=7.3km az=114.6*
*NEIC **12** 22:27:31.4±0.8, 1°.77N×127°.51E, h142km±7km, mb4.7/37, Error ellipse: s-maj=6.4km s-min=3.9km az=62.0*
*IDC **12** 22:27:32.4±1.6, 1°.76N×127°.60E, h151km±14km, mb4.0/26, mb1 4.1/28, mb1mx4.0/40, mbtmp4.5/28, Error ellipse: s-maj=16.9km s-min=7.0km az=77.0*
*DJA **12** 22:27:32.2±0.4, 2°.1N±4°×12°.7E±°, h125km±4km, M4.9/18, mb5.0/18, mB5.2/11, MLv5.3/8, Mw(mB)4.6/11, Mwp6.0/1*
*KLM **12** 22:27:32.2, 1°.67N×127°.49E, h125km, mb5.0, MS6.3*
ISC 12 22:27:31.8±0.6, 1°.74N±0°.04×127°.47E±0°.05, h146km±5km, n189, σ1§42/220, mb4.5/67, 12C-5D, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LBMI	**Labuha**	**2.37**	**179**	P	**Pn**	**22 28 11.6**	**+0.5**
SGSI	**Sangihe**	**2.73**	**315**	P	**Pn**	**22 28 12.4**	**-3.3**
KMSI	**Cibinong**	**3.68**	**252**	P	**Pn**	**22 28 26.8**	**-1.0**
SANI	**Sanana**	**4.05**	**201**	P	**Pn**	**22 28 30.7**	**-1.9**
SIJI	**Sorong**	**4.60**	**124**	P	**Pn**	**22 28 39.6**	**-0.3**
	17nm,0.3s,baz=27,slow=18,SNR=3.2						
LUWI	**Luwuk**	**5.45**	**240**	P	**Pn**	**22 28 49.5**	**-1.7**
LUWI	**Luwuk**	**5.45**	**240**	*ePn*	**Pn**	**22 28 49.5**	**-1.7**
LUWI				*eSn*	**Sn**	**22 29 52.0**	**-1.2**
DMPH	**Davao City--Mi**	**5.65**	**340**	*eS*	**Sn**	**22 29 59.2**	**+1.2**
MRSI	**Marisa**	**5.67**	**257**	P	**Pn**	**22 28 53.1**	**-1.0**
FAKI	**Fak Fak**	**6.65**	**134**	P	**Pn**	**22 29 08.0**	**+0.7**
FAKI	**Fak Fak**	**6.65**	**134**	*ePn*	**Pn**	**22 29 08.5**	**+1.2**
KDI	**Kendari**	**7.46**	**221**	P	**Pn**	**22 29 17.1**	**-0.9**
	76nm,0.7s,2µm0.4nm						
PCI	**Palu**	**8.07**	**251**	P	**Pn**	**22 29 24.9**	**-1.4**
PCI	**Palu**	**8.07**	**251**	P	**Pn**	**22 29 27.6**	**+1.3**
PCI				pmax	pmax		
	comp=Z,136nm,1.1s						
TTSI	**Tana Toraja**	**9.01**	**238**	P	**Pn**	**22 29 37.6**	**-1.1**
SPSI	**Sidrap Palu**	**9.56**	**234**	P	**Pn**	**22 29 46.0**	**-0.1**
MYLDM	**Lahad Datu**	**9.58**	**291**	⇑P	**Pn**	**22 29 47.5**	**+1.1**
MYLDM	**Lahad Datu**	**9.58**	**291**	*ePn*	**Pn**	**22 29 47.1**	**+0.7**
MYLDM				*eSn*	**Sn**	**22 31 34.7**	**+2.1**
TSM	**Tawau**	**9.91**	**285**	⇓P	**Pn**	**22 29 49.7**	**-1.1**
KAPI	**Kappang**	**10.22**	**229**	P	**Pn**	**22 29 56.2**	**+1.2**
	comp=Z,35nm,0.3s,baz=26,slow=3.5,SNR=47						
KAPI				S	**Sn**	**22 31 44.4**	**-3.6**
	comp=Z,9.7nm,0.3s,baz=54,slow=19,SNR=11						
KAPI	**Kappang**	**10.22**	**229**	*ePn*	**Pn**	**22 29 55.9**	**+1.0**
KAPI				*eSn*	**Sn**	**22 31 45.5**	**-2.6**
SDKM	**Sandakan**	**10.96**	**291**	⇓P	**Pn**	**22 30 05.0**	**+0.2**
KDM	**Kudat**	**11.78**	**296**	⇑P	**Pn**	**22 30 18.1**	**+2.6**
SOEI	**Soe**	**11.86**	**196**	*ePn*	**P**	**22 30 21.2**	**-2.4**
KKM	**Kota Kinabalu**	**12.01**	**291**	⇓P	**Pn**	**22 30 18.7**	**+0.1**
BBKI	**Banjar Baru**	**13.64**	**248**	P	**Pn**	**22 30 40.0**	**+0.5**
	comp=Z,69nm,1.2s,comp=Z,45µm						
MTN	**Manton Dam**	**14.94**	**166**	P	**Pn**	**22 30 54.1**	**-1.7**
	baz=15,SNR=31						
MTN	**Manton Dam**	**14.94**	**166**	*ePn*	**Pn**	**22 30 56.3**	**+0.5**
SBUM	**Sibu**	**15.26**	**273**	⇑P	**P**	**22 31 03.2**	**+1.9**
SBUM	**Sibu**	**15.26**	**273**	*ePn*	**Pn**	**22 30 59.3**	**-0.4**
	comp=Z,46nm,0.8s						
STKI	**Sintang**	**16.08**	**264**	P	**P**	**22 31 10.8**	**+0.4**
JAGI	**Jajag, Banyuwa**	**16.71**	**232**	*eP*	**P**	**22 31 17.3**	**-0.1**
	comp=Z,21nm,0.8s						
KSM	**Kuching**	**17.16**	**269**	⇓P	**Pn**	**22 31 23.5**	**+0.6**
KSM	**Kuching**	**17.16**	**269**	*eP*	**Pn**	**22 31 22.8**	**-0.2**
	comp=Z,51nm,1.1s						
KNRA	**Kununurra**	**17.36**	**176**	P	**Pn**	**22 31 25.0**	**-0.2**
	baz=17						
PWJI	**Pagerwojo**	**18.39**	**238**	P	**Pn**	**22 31 37.7**	**+0.1**
FITZ	**Fitzroy Crossi**	**19.80**	**185**	P	**P**	**22 31 50.4**	**-0.7**
	comp=Z,2.1nm,0.3s,baz=19,slow=9.5,SNR=53						
FITZ	**Fitzroy Crossi**	**19.80**	**185**	P	**P**	**22 31 50.5**	**-0.6**
	baz=20,SNR=15						
FITZ	**Fitzroy Crossi**	**19.80**	**185**	*eP*	**P**	**22 31 50.5**	**-0.6**
	comp=Z,16nm,0.6s						
CISI	**Cisompet, Garu**	**21.68**	**245**	*eP*	**P**	**22 32 10.4**	**-0.8**
	comp=Z,53nm,1.2s						
COEN	**Coen**	**22.04**	**136**	P	**P**	**22 32 15.0**	**+0.1**
	baz=22,SNR=5.0						
COEN	**Coen**	**22.04**	**136**	*eP*	**P**	**22 32 15.2**	**+0.3**
	comp=Z,70nm,1.7s						
YULB	**Yu-li**	**22.34**	**345**	*eP*	**P**	**22 32 15.6**	**-2.1**
	comp=Z,29nm,1.4s						
PMG	**Port Moresby**	**22.53**	**120**	*eP*	**P**	**22 32 20.5**	**+0.8**
PMG				pmax	pmax		
	comp=Z,80nm,1.0s						
WB4	**Warramunga Arr**	**22.55**	**163**	P	**P**	**22 32 19.6**	**-0.2**
	baz=23						
WRAB	**Tennant Creek**	**22.57**	**163**	*ceP*	**P**	**22 32 19.8**	**-0.3**
WRAB				pmax	pmax		
	comp=Z,171nm,0.7s						
WRAB	**Tennant Creek**	**22.57**	**163**	*eP*	**P**	**22 32 19.9**	**-0.2**
	comp=Z,76nm,0.6s						
WR1	**Warramunga Arr**	**22.58**	**163**	*eP*	**P**	**22 32 20.0**	**-0.2**
WR1				*ePcP*	**PcP**	**22 36 08.7**	**+0.2**
WR1				*eS*	**S**	**22 36 15.4**	**-1.4**
WRA	**Warramunga Arr**	**22.58**	**163**	P	**P**	**22 32 20.0**	**-0.2**
	comp=Z,74nm,0.6s,baz=343,slow=10,SNR=476						
WRA				PcP	**PcP**	**22 36 08.7**	**+0.2**
	comp=Z,1.0nm,0.5s,baz=330,slow=2.1,SNR=5.0						
WRA				S	**S**	**22 36 15.4**	**-1.4**
	comp=Z,2.6nm,0.9s,baz=333,slow=20,SNR=5.0						
WB2	**Warramunga Arr**	**22.59**	**163**	*eP*	**P**	**22 32 19.9**	**-0.2**
SSLB	**Suanglung**	**22.80**	**344**	*eP*	**P**	**22 32 21.0**	**-1.2**
	comp=Z,40nm,1.6s						
KLSI		**23.60**	**254**	P	**P**	**22 32 31.8**	**+2.1**
MYKOM	**Kota Tinggi**	**23.61**	**270**	⇓P	**P**	**22 32 31.2**	**+1.5**
MYKOM	**Kota Tinggi**	**23.61**	**270**	*eP*	**P**	**22 32 30.7**	**+1.0**
	comp=Z,36nm,0.7s						
MBWA	**Marble Bar**	**23.99**	**198**	*eP*	**P**	**22 32 33.0**	**0.0**
	comp=Z,133nm,1.9s						
KASI	**Kota Agung**	**24.05**	**252**	P	**P**	**22 32 39.5**	**+5.8**
KGM	**Kluang**	**24.14**	**271**	⇑P	**P**	**22 32 36.6**	**+2.1**
LWLI	**Liwa**	**24.33**	**254**	P	**P**	**22 32 38.7**	**+2.3**
	comp=Z,79nm,0.7s						
QIZ	**Qiongzhong**	**24.36**	**316**	P	**P**	**22 32 37.8**	**+1.4**
QIZ				pP	**pP**	**22 33 06.3**	**+0.1**
QIZ				sP	**sP**	**22 33 23.5**	**-0.4**
QIZ				S	**S**	**22 36 48.2**	**+2.8**
QIZ				sS	**sS**	**22 37 39.9**	**+0.8**
QIZ				LR	LR		
	comp=E,140nm,17.3s						
QIZ				LR	LR		
	comp=Z,130nm,20.4s						
KTGM	**Kuala Trenggan**	**24.55**	**279**	⇑P	**P**	**22 32 41.1**	**+2.9**
LHSI	**Lahat**	**24.57**	**257**	P	**P**	**22 32 44.5**	**+6.1**
QIS	**Mount Isa**	**25.15**	**152**	P	**P**	**22 32 44.8**	**+1.2**
	baz=25,SNR=9.6						
UBPT	**Khong Chiam**	**25.53**	**303**	P	**P**	**22 32 49.3**	**+2.2**
	comp=Z,20nm,1.1s						
AS31	**Alice Springs**	**26.02**	**166**	*eP*	**P**	**22 32 51.5**	**0.0**
	comp=Z,12nm,0.4s						
AS31				*ePcP*	**PcP**	**22 36 16.4**	**+0.4**
AS31				*eS*	**S**	**22 37 09.7**	**-2.0**
AS31				*eScP*	**ScP**	**22 39 43.3**	**+1.1**
ASAR	**Alice Springs**	**26.02**	**166**	P	**P**	**22 32 51.5**	**0.0**
	comp=Z,25nm,0.5s,baz=349,slow=7.3,SNR=354						
ASAR				PcP	**PcP**	**22 36 16.4**	**+0.4**
	comp=Z,2.2nm,0.6s,baz=354,slow=1.9,SNR=8.5						
ASAR				S	**S**	**22 37 09.7**	**-2.0**
	comp=Z,0.6nm,0.8s,baz=341,slow=17,SNR=3.0						
ASAR				ScP	**ScP**	**22 39 43.3**	**+1.1**
	comp=Z,0.4nm,0.7s,baz=339,slow=3.2,SNR=3.9						
AS01	**Alice Springs**	**26.03**	**166**	*eP*	**P**	**22 32 51.6**	**0.0**
AS01				*ePcP*	**PcP**	**22 36 16.2**	**+0.2**
IPM	**Ipoh**	**26.54**	**276**	*eP*	**P**	**22 32 54.9**	**-1.4**
	comp=Z,55nm,1.8s						
WRKA	**Warakurna**	**26.63**	**178**	P	**P**	**22 32 57.2**	**+0.2**
	baz=27,SNR=79						
SRAK	**Srakaew**	**27.94**	**297**	P	**P**	**22 33 06.9**	**-1.8**
	comp=Z,51nm,0.8s						
CTA	**Charters Tower**	**28.46**	**141**	P	**P**	**22 33 13.3**	**0.0**
	comp=Z,2.5nm,0.6s,baz=326,slow=11,SNR=3.4						
CBIJ	**Chichi jima**	**28.89**	**28**	*eP*	**P**	**22 33 16.4**	**-0.6**
	comp=Z,19nm,0.5s						
MEEK	**Meekatharra**	**29.48**	**196**	P	**P**	**22 33 22.2**	**-0.1**
	baz=30,SNR=31						
GSI	**Gununguitoli**	**29.89**	**270**	*eP*	**P**	**22 33 26.4**	**+0.4**
	comp=Z,58nm,1.3s						
UTTA	**Uttaradit**	**30.85**	**303**	P	**P**	**22 33 36.3**	**+1.9**
	comp=Z,2.2nm,0.8s						
JNU	**Nakatsue**	**31.38**	**5**	P	**P**	**22 33 38.1**	**-0.8**
	comp=Z,4.2nm,0.8s,baz=310,slow=3.3,SNR=3.6						
FORT	**Forrest**	**32.35**	**179**	P	**P**	**22 33 47.4**	**0.0**
	baz=32,SNR=8.8						
FORT	**Forrest**	**32.35**	**179**	*eP*	**P**	**22 33 47.5**	**+0.1**
	comp=Z,250nm,0.8s						
CM01	**Chiang Mai Arr**	**32.50**	**303**	*eP*	**P**	**22 33 49.2**	**+0.3**
CM31	**Chiang Mai Arr**	**32.53**	**303**	*eP*	**P**	**22 33 50.3**	**+1.1**
CMAR	**Chiang Mai Arr**	**32.53**	**303**	P	**P**	**22 33 50.3**	**+1.1**
	comp=Z,2.2nm,0.8s,baz=116,slow=6.9,SNR=14						
MORW	**Morawa**	**32.53**	**199**	P	**P**	**22 33 49.1**	**+0.1**
	baz=32,SNR=5.8						
CHTO	**Chiang Mai**	**32.70**	**303**	*eP*	**P**	**22 33 51.6**	**+1.0**
CHTO				pmax	pmax		
	comp=Z,7.0nm,1.0s						
CHTO	**Chiang Mai**	**32.70**	**303**	*eP*	**P**	**22 33 51.6**	**+1.0**
	comp=Z,7.1nm,1.0s						
ENH	**Enshi**	**33.11**	**331**	*eP*	**P**	**22 33 54.9**	**+0.8**
	comp=Z,5.5nm,0.8s						
CMAI	**Chiengmai2**	**33.15**	**305**	P	**P**	**22 33 56.9**	**+2.2**
JHJ2	**Mitsune**	**33.29**	**19**	*eP*	**P**	**22 33 55.7**	**+0.2**
	comp=Z,186nm,1.7s						
KMI	**Kunming**	**33.31**	**316**	P	**P**	**22 33 57.6**	**+1.5**
KMI				pP	pP	22 34 08.9	-19
KMI				sP	sP	22 34 15.4	-29
KMI				pmax	pmax		
	comp=Z,8.0nm,1.2s						
KMBL	**Kambalda**	**33.35**	**189**	P	**P**	**22 33 56.1**	**-0.1**
	baz=33,SNR=22						
COCO	**West Island**	**33.43**	**245**	*eP*	**P**	**22 33 56.0**	**-1.0**
COCO	**West Island**	**33.43**	**245**	*eP*	**P**	**22 33 56.0**	**-1.0**
	comp=Z,181nm,0.4s						
BLDU	**Ballidu**	**33.77**	**197**	P	**P**	**22 33 59.8**	**0.0**
	baz=34,SNR=27						
KLBR	**Kellerberrin**	**34.41**	**195**	P	**P**	**22 34 05.4**	**+0.1**
	baz=34,SNR=37						
MUN	**Mundaring**	**35.20**	**197**	P	**P**	**22 34 12.2**	**+0.2**
	baz=35						
BBOO	**Buckleboo**	**35.31**	**167**	P	**P**	**22 34 13.1**	**+0.1**
	baz=35,SNR=138						
BBOO	**Buckleboo**	**35.31**	**167**	*eP*	**P**	**22 34 13.1**	**+0.1**
	comp=Z,42nm,0.5s						
EIDS	**Eidsvold**	**35.34**	**141**	*eP*	**P**	**22 34 13.8**

YAK				*e*SS		**SS**	**22 49 18.9**	**-6.3**
YAK				pmax		pmax		
	comp=Z,15nm,0.9s							
YAK				pmax		pmax		
	comp=N,4.0nm,1.3s							
YAK				pmax		pmax		
	comp=E,4.0nm,1.0s							
YAK				pmax		pmax		
	comp=Z,7.0nm,0.5s							
YAK				pmax		pmax		
	comp=N,2.0nm,0.5s							
YAK				pmax		pmax		
	comp=E,2.0nm,0.4s							
YAK				smax		smax		
	comp=N,2.0nm,0.4s							
YAK				smax		smax		
	comp=E,2.0nm,0.4s							
AAK	**Ala-Archa**	**62.32**	**318**	*e*P		**P**	**22 37 38.0**	**-0.9**
AAK				pmax		pmax		
	comp=Z,3.0nm,0.8s							
ZAA0	**Zalesovo Array**	**62.68**	**333**	*e*P		**P**	**22 37 40.0**	**-0.9**
ZALV	**Zalesovo Beam**	**62.68**	**333**	P		**P**	**22 37 40.1**	**-0.8**
	comp=Z,1.2nm,0.4s,baz=136,slow=8.6,SNR=5.7							
ZAA1	**Zalesovo Array**	**62.69**	**333**	*e*P		**P**	**22 37 40.1**	**-0.8**
KBL	**Kabul**	**63.31**	**308**	*e*P		**P**	**22 37 46.6**	**+0.8**
KBL				pmax		pmax		
	comp=Z,4.0nm,0.8s							
KBL	**Kabul**	**63.31**	**308**	*e*P		**P**	**22 37 46.6**	**+0.8**
	comp=Z,3.5nm,0.8s							
SEY	**Seymchan**	**63.80**	**12**	P		**P**	**22 37 49.3**	**+1.3**
	comp=Z,1.1nm,0.3s,baz=244,slow=1.9,SNR=13							
SEY	**Seymchan**	**63.80**	**12**	*ce*P		**P**	**22 37 48.2**	**+0.2**
KURK	**Kurchatov**	**63.80**	**328**	*e*P		**P**	**22 37 48.3**	**0.0**
KURK	**Kurchatov**	**63.80**	**328**	*e*P		**P**	**22 37 48.3**	**0.0**
NVS	**Novosibirsk**	**63.97**	**333**	*e*P		**P**	**22 37 48.1**	**-1.2**
KKAR	**Karatay Array**	**65.18**	**317**	*e*P		**P**	**22 37 58.2**	**+0.7**
KKAR				pmax		pmax		
	comp=Z,21nm,0.8s							
KKAR	**Karatay Array**	**65.18**	**317**	*e*P		**P**	**22 37 58.2**	**+0.7**
	comp=Z,21nm,0.8s							
CASY	**Casey**	**68.95**	**187**	*e*P		**P**	**22 38 21.6**	**+0.9**
	comp=Z,4.1nm,0.6s							
BRVK	**Borovoye**	**69.45**	**327**	*ce*P		**P**	**22 38 24.2**	**+0.1**
BRVK				pmax		pmax		
	comp=Z,10.0nm,1.0s							
BRVK	**Borovoye**	**69.45**	**327**	*e*P		**P**	**22 38 24.3**	**+0.1**
	comp=Z,5.5nm,0.9s							
TIXI	**Tiksi**	**69.81**	**0**	P		**P**	**22 38 25.3**	**-0.7**
	comp=Z,1.7nm,0.4s,baz=130,slow=4.5,SNR=3.3							
TIXI	**Tiksi**	**69.81**	**0**	*ce*P		**P**	**22 38 26.1**	**+0.2**
TIXI				pmax		pmax		
	comp=Z,3.0nm,1.2s							
TIXI	**Tiksi**	**69.81**	**0**	*e*P		**P**	**22 38 25.3**	**-0.7**
TIXI				*e*PcP		**PcP**	**22 38 46.0**	**-1.6**
ZRNK	**Zerenda**	**70.10**	**327**	*e*P		**P**	**22 38 28.1**	**0.0**
ZRNK				pmax		pmax		
	comp=Z,5.0nm,0.7s							
ZRNK	**Zerenda**	**70.10**	**327**	*e*P		**P**	**22 38 28.1**	**0.0**
	comp=Z,5.2nm,0.7s							
NRIK	**Noril'sk**	**72.52**	**346**	P		**P**	**22 38 42.3**	**-0.1**
	comp=Z,4.1nm,0.6s,baz=127,slow=7.0,SNR=4.9							
GEYT	**Alibeck**	**72.71**	**309**	P		**P**	**22 38 44.7**	**+0.6**
	comp=Z,1.9nm,0.6s,baz=134,slow=6.2,SNR=5.8							
ABKAR	**Akbulak array**	**74.15**	**321**	*e*P		**P**	**22 38 52.5**	**+0.2**
	comp=Z,22nm,0.8s							
SVE	**Sverdlovsk**	**76.03**	**329**	*e*P		**P**	**22 39 02.8**	**-0.1**
SVE				pmax		pmax		
	comp=Z,8.0nm,0.8s							
ARU	**Arti**	**77.00**	**328**	P		**P**	**22 39 07.7**	**-0.6**
	comp=Z,3.3nm,0.6s,baz=113,slow=3.0,SNR=8.0							
ARU	**Arti**	**77.00**	**328**	*c* iP		**P**	**22 39 07.4**	**-0.9**
ARU							22 41 57.5	
ARU				S		**S**	**22 48 46.3**	**+1.6**
ARU				SS		**SS**	**22 53 38.4**	**-6.3**
ARU				pmax		pmax		
	comp=Z,6.0nm,0.8s							
ARU	**Arti**	**77.00**	**328**	*e*P		**P**	**22 39 07.7**	**-0.6**
	comp=Z,5.0nm,0.8s							
VNDA	**Vanda**	**81.38**	**173**	P		**P**	**22 39 32.1**	**+0.4**
	comp=Z,7.4nm,0.7s,baz=318,slow=6.4,SNR=44							
MAW	**Mawson**	**82.16**	**200**	P		**P**	**22 39 36.7**	**+0.8**
	comp=Z,0.9nm,0.5s,baz=68,slow=9.5,SNR=6.6							
SBA	**Scott Base**	**82.28**	**172**	*e*P		**P**	**22 39 38.1**	**+1.7**
SBA				pmax		pmax		
	comp=Z,3.0nm,0.8s							
SBA	**Scott Base**	**82.28**	**172**	*e*P		**P**	**22 39 38.1**	**+1.7**
	comp=Z,3.2nm,0.8s							
KDAK	**Kodiak Island**	**83.17**	**32**	*ce*P		**P**	**22 39 42.5**	**+1.1**
KBZ	**Khabaz**	**84.87**	**314**	P		**P**	**22 39 50.1**	**-0.2**
	comp=Z,0.9nm,0.6s,baz=131,slow=7.8,SNR=2.7							
ILAR	**Eielson Array**	**86.57**	**25**	P		**P**	**22 39 56.3**	**-2.0**
	comp=Z,0.4nm,0.7s,baz=226,slow=4.5,SNR=4.3							
ILB	**Eielson Array**	**86.57**	**25**	*e*P		**P**	**22 39 56.3**	**-2.0**
VSR	**Storozhevoye**	**87.59**	**321**	*e*P		**P**	**22 40 01.7**	**-1.8**
VSR				pmax		pmax		
	comp=Z,6.0nm,1.1s							
KMBO	**Kilima Mbogo**	**90.25**	**269**	P		**P**	**22 40 18.1**	**+1.0**
	comp=Z,1.1nm,0.7s,baz=350,slow=9.1,SNR=3.1							
KMBO	**Kilima Mbogo**	**90.25**	**269**	*e*P		**P**	**22 40 18.1**	**+1.0**
KMBO				pmax		pmax		
	comp=Z,19nm,1.8s							
KMBO	**Kilima Mbogo**	**90.25**	**269**	*e*P		**P**	**22 40 18.1**	**+1.0**
	comp=Z,19nm,1.8s							
SYO	**Syowa Base**	**90.85**	**201**	↑*e*P		**P**	**22 40 17.7**	**-0.6**
ARCES	**ARCESS Array B**	**92.56**	**340**	P		**P**	**22 40 25.5**	**-0.8**
	comp=Z,3.0nm,0.7s,baz=90,slow=6.4,SNR=7.0							
SPITS	**Spitsbergen Ar**	**92.56**	**349**	P		**P**	**22 40 25.1**	**-1.1**
	comp=Z,2.4nm,0.6s,baz=82,slow=12,SNR=5.3							
FIA0	**FINESS Array S**	**93.92**	**332**	*e*P		**P**	**22 40 32.1**	**-0.6**
FIA0	**FINESS Array S**	**93.92**	**332**	*e*P		**P**	**22 40 32.1**	**-0.6**
FINES	**FINESS Array B**	**93.92**	**332**	P		**P**	**22 40 32.1**	**-0.6**
	comp=Z,7.4nm,1.2s,baz=101,slow=2.8,SNR=3.8							
LTX	**Lajitas**	**122.20**	**53**	*e*PKIKP		**PKPdf**	**22 46 10.7**	**+0.5**
LTX	**Lajitas**	**122.20**	**53**	*e*PKPdf		**PKPdf**	**22 46 10.7**	**+0.5**
TXAR	**Lajitas Array**	**122.20**	**53**	PKP		**PKPdf**	**22 46 10.7**	**+0.5**
	comp=Z,0.6nm,0.7s,baz=154,slow=0.8,SNR=11							
USHA	**Ushuaia**	**125.51**	**169**	PKP		**PKPdf**	**22 46 16.5**	**+0.9**
	comp=Z,19nm,0.9s,baz=243,slow=9.0,SNR=2.9							
CPUP	**Villa Florida**	**155.12**	**170**	PKPbc		PKPbc	22 47 16.0	
	comp=Z,1.7nm,0.8s,baz=184,slow=5.2,SNR=3.8							
CPUP				PKPab		**PKPab**	**22 47 34.6**	**+1.2**
	comp=Z,1.5nm,0.6s,baz=166,slow=4.4,SNR=4.9							
LPAZ	**La Paz**	**158.91**	**134**	PKP2		**PKPab**	**22 47 48.8**	**-2.1**
	comp=Z,2.1nm,0.9s,baz=201,slow=3.3,SNR=7.5							
LPAZ	**La Paz**	**158.91**	**134**	*e*PKP2		**PKPab**	**22 47 52.7**	**+1.8**
LPAZ	**La Paz**	**158.91**	**134**	*e*PKPab		**PKPab**	**22 47 52.6**	**+1.8**

IDC 12 23:00:46.7±3.0, 27.88S×176.95W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.7/16, mbtmp3.8/3, MS3.1/1, Ms1 3.1/1, ms1mx2.7/19, Error ellipse: s-maj=68.4km s-min=37.1km az=114.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**1.61**	**212**	Pn		Pn	23 01 16.5	+0.1
	89nm,0.3s,baz=68,slow=19,SNR=2.1							
RAO				Sn		Sn	23 01 34.4	-3.4
	326nm,0.3s,baz=90,slow=20,SNR=6.0							
PPT	**Papeete**	**27.20**	**74**	LR		LR	23 18 16.2	
	comp=Z,33nm,18.0s,baz=341,slow=39							
STKA	**Stephens Creek**	**36.01**	**253**	P		P	23 07 49.4	-0.2
	0.7nm,0.5s,baz=90,slow=14,SNR=4.4							
ASAR	**Alice Springs**	**44.22**	**264**	P		P	23 08 57.5	-0.5
	0.9nm,0.7s,baz=104,slow=7.6,SNR=10.0							
WRA	**Warramunga Arr**	**44.99**	**269**	P		P	23 09 04.3	+0.2
	1.5nm,0.7s,baz=109,slow=7.5,SNR=7.9							
NB2	**NORSAR Subarra1**	**46.39**	**353**	PKP		PKPdf	23 20 28.1	+0.3
	comp=Z,0.7nm,0.6s,baz=11,slow=2.8							
NOA	**NORSAR Array B**	**46.39**	**353**	PKPbc		PKPdf	23 20 28.3	+0.5
	comp=Z,0.9nm,0.8s,baz=7.4,slow=4.2,SNR=3.5							

*BEO **12** 23:18:42.9±0.7, 41.25N×20.45E, h0km, M2.3/9*
*ATH **12** 23:18:43.0, 41.45N×20.37E, h16km±2km, ML2.9/2, Error ellipse: s-maj=4.4km s-min=1.7km az=190.0*
*SKO **12** 23:18:43.2, 41.35N×20.31E, h23km, M1.7, ML2.7*
*PDG **12** 23:18:44.5±0.6, 41.36N×20.25E, h5km±1km, ML2.7/11, Error ellipse: s-maj=0.8km s-min=1.3km az=0.0*
*CSEM **12** 23:18:44.3±0.2, 41.35N×20.34E, h2km, ML2.3, Error ellipse: s-maj=4.6km s-min=2.8km az=53.0*
*TIR **12** 23:18:44.2, 41.23N×20.29E, h7km, ML2.1*
*THE **12** 23:18:45.2, 41.35N×20.43E, h1km, ML2.3/6, Error ellipse: s-maj=1.2km s-min=0.5km az=346.0*

ISC 12 23:18:44.2±1.0, 41.35N±0.02×20.34E±0.02, h6km±9km, n80, σ0.85/136, 11C-9D, Albania

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
TIR	**Tirane**	**0.36**	**269**	*i* Pg		**Pg**	**23 18 51.1**	**0.0**
TIR				*i* Sg		**Sg**	**23 18 57.1**	**+1.3**
TIR	**Tirane**	**0.36**	**269**	*e*Pg		**Pg**	**23 18 50.9**	**-0.2**
TIR				*e*Sg		**Sg**	**23 18 56.3**	**+0.5**
TIR	**Tirane**	**0.36**	**269**	*i* Pg		**Pg**	**23 18 51.1**	**0.0**
TIR				*e*Sg		**Sg**	**23 18 56.3**	**+0.5**
TIR	**Tirane**	**0.36**	**269**	P		**Pg**	**23 18 51.0**	**-0.1**
TIR				S		**Sg**	**23 18 56.7**	**+0.9**
TIR				AML		AML	23 18 57.5	
	comp=N,5946μm,0.2s							
TIR				AML		AML	23 18 58.1	
	comp=E,4156μm,0.2s							
OHR	**Ohrid**	**0.42**	**125**	↑*i* Pg		**Pg**	**23 18 52.9**	**+0.6**
OHR				↑*i* Sg		**Sb**	**23 19 00.2**	**-0.6**
OHR				*e*Lg		Lg	23 19 00.3	
	comp=N,585nm,0.4s							
OHR				*e*Lg		Lg	23 19 00.5	
	comp=E,373nm,0.6s							
OHR	**Ohrid**	**0.42**	**125**	↑*i* Pg		**Pg**	**23 18 52.9**	**+0.6**
OHR				↑↑*i* Sg		**Sb**	**23 19 00.1**	**-0.6**
OHR				*e*Lg		Lg	23 19 00.2	
	comp=E,585nm,0.4s							
FNA	**Florina**	**0.97**	**126**	P		**Pg**	**23 19 02.3**	**-0.4**
FNA				S		**Sg**	**23 19 15.7**	**+0.4**
FNA	**Florina**	**0.97**	**126**	P		**Pg**	**23 19 02.4**	**-0.4**
FNA				S		**Sg**	**23 19 15.7**	**+0.4**
FNA	**Florina**	**0.97**	**126**	P		**Pg**	**23 19 02.4**	**-0.4**
FNA				S		**Sb**	**23 19 16.4**	**-0.1**
FNA				AML		AML	23 19 20.3	
	comp=E,1214μm,0.4s							
FNA				AML		AML	23 19 20.9	
	comp=N,1032μm,0.4s							
ULC	**Ulcinj**	**1.02**	**307**	↓↓*i* Pg		**Pg**	**23 19 02.3**	**-1.5**
ULC				*e*Sg		**Sg**	**23 19 17.4**	**+0.3**
ULC	**Ulcinj**	**1.02**	**307**	↓↓*i* Pg		**Pg**	**23 19 02.3**	**-1.5**
ULC	**Ulcinj**	**1.02**	**307**	P		**Pg**	**23 19 02.8**	**-1.0**
ULC				*e*Sg		**Sg**	**23 19 17.4**	**+0.3**
SKO	**Skopje**	**1.03**	**53**	*i* Pg		**Pg**	**23 19 04.0**	**0.0**
SKO				*i* Sg		**Sb**	**23 19 18.4**	**+0.1**
SKO				*e*Lg		Lg	23 19 18.5	
	comp=E,14nm,0.8s							
SKO				*e*Lg		Lg	23 19 18.7	
	comp=N,14nm,0.4s							
SKO	**Skopje**	**1.03**	**53**	*i* Pg		**Pg**	**23 19 03.9**	**0.0**
SKO				*i* Sg		**Sb**	**23 19 18.3**	**+0.1**
SKO				*e*Lg		Lg	23 19 18.4	
	comp=N,14nm,0.8s							
NEST	**Nestorio**	**1.08**	**150**	P		**Pg**	**23 19 04.8**	**-0.1**
NEST				S		**Sb**	**23 19 19.9**	**+0.1**
NEST	**Nestorio**	**1.08**	**150**	P		**Pg**	**23 19 04.9**	**0.0**
NEST				S		**Sb**	**23 19 19.9**	**+0.1**
NEST	**Nestorio**	**1.08**	**150**	P		**Pg**	**23 19 04.9**	**0.0**
ZATK	**Zatriq**	**1.11**	**11**	P		**Pn**	**23 19 06.5**	**0.0**
DRME	**Dracevica, Mon**	**1.20**	**314**	↑*i* Pg		**Pg**	**23 19 05.6**	**-1.6**
DRME				*e*Sg		**Sn**	**23 19 23.9**	**-0.3**
DRME	**Dracevica, Mon**	**1.20**	**314**	↑*i* Pg		**Pg**	**23 19 05.6**	**-1.6**
DRME				*e*Sg		**Sn**	**23 19 23.9**	**-0.3**
PVY	**Plav**	**1.27**	**347**	*e*Pg		**Pg**	**23 19 07.4**	**-1.2**
PVY				*e*Sg		**Sn**	**23 19 27.3**	**+1.1**
PVY	**Plav**	**1.27**	**347**	*e*Pg		**Pg**	**23 19 07.4**	**-1.2**
PVY				*e*Sg		**Sn**	**23 19 27.3**	**+1.1**
PEJK	**Peje**	**1.29**	**358**	P		**Pg**	**23 19 09.7**	**+0.8**
PENT	**Pentalofos**	**1.30**	**152**	P		**Pn**	**23 19 08.9**	**-0.2**
PENT	**Pentalofos**	**1.30**	**152**	P		**Pn**	**23 19 08.8**	**-0.2**
PDG	**Podgorica**	**1.35**	**323**	P		**Pn**	**23 19 08.5**	**-1.1**
PDG	**Podgorica**	**1.35**	**323**	↑*i* Pg		**Pn**	**23 19 08.5**	**-1.1**
PDG				*e*Sg		**Sn**	**23 19 29.7**	**+1.9**
PDG	**Podgorica**	**1.35**	**323**	P		**Pn**	**23 19 08.5**	**-1.1**
PDG				*e*Sg		**Sn**	**23 19 28.5**	**+0.7**
TTG	**Podgorica**	**1.35**	**323**	↓↓*i* Pg		**Pn**	**23 19 08.4**	**-1.1**
TTG				*e*Sg		**Sn**	**23 19 28.5**	**+0.7**
BUM	**Brajici-Budva**	**1.44**	**312**	↑*i* Pg		**Pn**	**23 19 09.9**	**-1.0**
BUM				*e*Sg		**Sg**	**23 19 31.7**	**+1.3**
BUM	**Brajici-Budva**	**1.44**	**312**	↑*i* Pg		**Pn**	**23 19 09.9**	**-1.0**
BUM				*e*Sg		**Sg**	**23 19 31.7**	**+1.3**
KZN	**Kozani**	**1.51**	**133**	P		**Pn**	**23 19 11.8**	**0.0**
KZN				S		**Sg**	**23 19 32.5**	**-0.1**
KZN	**Kozani**	**1.51**	**133**	P		**Pn**	**23 19 12.1**	**+0.3**
KZN				S		**Sg**	**23 19 32.5**	**-0.1**
BEY	**Berane**	**1.55**	**348**	*e*Pg		**Pb**	**23 19 13.1**	**-0.3**
BEY				*e*Sg		**Sg**	**23 19 36.1**	**+2.0**
IVA	**Berane**	**1.55**	**348**	*e*Pg		**Pb**	**23 19 13.1**	**-0.3**
IVA				*e*Sg		**Sg**	**23 19 36.1**	**+2.0**
CEME	**Cevo**	**1.60**	**319**	*e*Pg		**Pn**	**23 19 12.8**	**-0.3**
CEME				*e*Sg		**Sg**	**23 19 36.9**	**+1.4**
CEME	**Cevo**	**1.60**	**319**	*e*Pg		**Pn**	**23 19 12.8**	**-0.3**
CEME				*e*Sg		**Sg**	**23 19 36.9**	**+1.4**
GRG	**Griva**	**1.61**	**104**	P		**Pn**	**23 19 12.8**	**-0.4**
GRG				S		**Sb**	**23 19 34.5**	**-0.4**
GRG	**Griva**	**1.61**	**104**	P		**Pn**	**23 19 12.8**	**-0.4**
GRG				S		**Sb**	**23 19 34.5**	**-0.4**
KEK	**Kerkira**	**1.69**	**194**	P		**Pn**	**23 19 14.8**	**+0.5**
KEK				S		**Sg**	**23 19 38.6**	**+0.2**
KEK	**Kerkira**	**1.69**	**194**	P		**Pn**	**23 19 14.8**	**+0.5**
KEK				S		**Sg**	**23 19 38.6**	**+0.2**
JAN	**Janina**	**1.74**	**167**	P		**Pg**	**23 19 18.5**	**+1.0**
SGD	**Sagiada**	**1.74**	**183**	P		**Pb**	**23 19 15.8**	**-0.7**
SGD				S		**Sg**	**23 19 39.7**	**-0.4**
SGD	**Sagiada**	**1.74**	**183**	P		**Pb**	**23 19 15.8**	**-0.7**
SGD				S		**Sg**	**23 19 39.7**	**-0.4**
SGD	**Sagiada**	**1.74**	**183**	P		**Pg**	**23 19 17.1**	**-0.5**
NKME	**Niksic**	**1.75**	**324**	*e*Pn		**Pn**	**23 19 15.6**	**+0.4**
NKME				*e*Sn		**Sg**	**23 19 41.2**	**+0.8**
NKME	**Niksic**	**1.75**	**324**	*e*Pn		**Pn**	**23 19 15.6**	**+0.4**
NKME				*e*Sn		**Sg**	**23 19 41.2**	**+0.8**
HCY	**Herceg Novi**	**1.76**	**309**	↑*i* Pn		**Pn**	**23 19 15.7**	**+0.5**
HCY				*e*Sn		**Sg**	**23 19 41.3**	**+0.6**
HCY	**Herceg Novi**	**1.76**	**309**	↑*i* Pn		**Pn**	**23 19 15.7**	**+0.5**
HCY				*e*Sn		**Sg**	**23 19 41.3**	**+0.6**
NKY	**Niksic**	**1.77**	**326**	↓↓*i* Pn		**Pn**	**23 19 16.0**	**+0.5**
NKY				*e*Sn		**Sg**	**23 19 41.4**	**+0.3**
NKY	**Niksic**	**1.77**	**326**	↓↓*i* Pn		**Pn**	**23 19 16.0**	**+0.5**
NKY				*e*Sn		**Sg**	**23 19 41.4**	**+0.3**
IGT	**Igoumenitsa**	**1.82**	**180**	P		**Pb**	**23 19 17.0**	**-0.9**
IGT				S		**Sb**	**23 19 41.4**	**+0.5**
IGT	**Igoumenitsa**	**1.82**	**180**	P		**Pb**	**23 19 17.0**	**-0.9**
IGT				S		**Sb**	**23 19 41.4**	**+0.5**
IGT	**Igoumenitsa**	**1.82**	**180**	P		**Pb**	**23 19 17.1**	**-0.7**
BARS	**Barje**	**1.83**	**36**	*e*Pg		**Pb**	**23 19 18.5**	**+0.4**
BARS				*e*Sg		**Sg**	**23 19 42.4**	**-0.6**
BARS	**Barje**	**1.83**	**36**	*e*Pg		**Pb**	**23 19 18.5**	**+0.4**
BARS				*e*Sg		**Sg**	**23 19 42.4**	**-0.6**
KNT	**Kendrikon**	**1.94**	**95**	P		**Pn**	**23 19 17.7**	**0.0**
KNT	**Kendrikon**	**1.94**	**95**	P		**Pn**	**23 19 17.7**	**0.0**
SELS	**Selova**	**1.95**	**17**	*e*Pg		**Pn**	**23 19 18.3**	**+0.4**
SELS				*e*Sg		**Sg**	**23 19 46.8**	**-0.1**
BRY	**Bratogost**	**2.05**	**320**	↓↓*i* Pn		**Pn**	**23 19 20.3**	**+1.0**
BRY				*e*Sn		**Sb**	**23 19 48.1**	**+0.5**
BRY	**Bratogost**	**2.05**	**320**	↓↓*i* Pn		**Pn**	**23 19 20.3**	**+1.0**
BRY				*e*Sn		**Sb**	**23 19 48.1**	**+0.5**
LIT	**Litokhoron**	**2.06**	**127**	P		**Pn**	**23 19 19.3**	**-0.1**
LIT	**Litokhoron**	**2.06**	**127**	P		**Pn**	**23 19 19.3**	**-0.1**
LIT	**Litokhoron**	**2.06**	**127**	P		**Pn**	**23 19 18.9**	**-0.5**
UPM	**Unac-Piva**	**2.13**	**331**	↓↓*i* Pn		**Pn**	**23 19 21.8**	**+1.2**
UPM				*e*Sn		**Sb**	**23 19 50.2**	**0.0**
UPM	**Unac-Piva**	**2.13**	**331**	↓↓*i* Pn		**Pn**	**23 19 21.8**	**+1.2**
UPM	**Unac-Piva**	**2.13**	**331**	P		**Pn**	**23 19 23.4**	**-0.3**
UPM				*e*Sn		**Sb**	**23 19 50.2**	**0.0**
IVAS	**Ivanjica**	**2.23**	**357**	*e*Pn		**Pn**	**23 19 21.2**	**-0.5**
IVAS				*e*Sn		**Sb**	**23 19 53.3**	**+0.6**
IVAS	**Ivanjica**	**2.23**	**357**	*e*Pn		**Pn**	**23 19 21.2**	**-0.5**
IVAS				*e*Sn		**Sb**	**23 19 53.3**	**+0.6**
BOVS	**Bovan**	**2.50**	**23**	*e*Pn		**Pn**	**23 19 26.1**	**+0.8**
BOVS	**Bovan**	**2.50**	**23**	*e*Pn		**Pn**	**23 19 26.1**	**+0.8**
GRUS	**Gruza**	**2.55**	**6**	*e*Pn		**Pn**	**23 19 26.6**	**+0.5**
GRUS	**Gruza**	**2.55**	**6**	*e*Pn		**Pn**	**23 19 26.6**	**+0.5**
ZAPS	**Zavoj**	**2.56**	**41**	*e*Pg		**Pb**	**23 19 28.9**	**-1.7**
ZAPS				*e*Sg		**Sb**	**23 20 03.5**	**+1.0**
BBLS	**Lazići**	**2.60**	**345**	*e*Pn		**Pb**	**23 19 29.9**	**-1.4**
BBLS				*e*Sn		**Sb**	**23 20 02.2**	**-1.4**
BBLS	**Lazići**	**2.60**	**345**	*e*Pn		**Pb**	**23 19 29.9**	**-1.4**
BBLS				*e*Sn		**Sb**	**23 20 02.2**	**-1.4**
DIVS	**Divibare**	**2.76**	**355**	*e*Pn		**Pb**	**23 19 31.6**	**-2.3**
DIVS	**Divibare**	**2.76**	**355**	*e*Pn		**Pb**	**23 19 31.6**	**-2.3**
TEKS	**Tekeris**	**3.25**	**350**	*e*Pn		**Pn**	**23 19 37.1**	**+1.4**
TEKS	**Tekeris**	**3.25**	**350**	*e*Pn		**Pn**	**23 19 37.1**	**+1.4**

DDA 12 23:20:30.5, 39.01N×29.05E, h7km, Md2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**277**	*i* P		Pg	23 20 36.2	+0.5
DEMI				*i* S		Sg	23 20 40.0	+0.8
GDZ	**Gediz**	**0.34**	**77**	*i* P		Pg	23 20 37.7	+0.5
GDZ				*i* S		Sg	23 20 42.5	+0.8
MANT	**Manisa**	**0.65**	**217**	*i* P		Pg	23 20 43.4	+0.4
MANT				*i* S		Sg	23 20 52.4	+1.0

*CSEM **12** 23:24:04.9±0.1, 67.82N×20.21E, h1km, ML1.4, Error ellipse: s-maj=1.5km s-min=1.3km az=58.0, Mining explosion.*
*UPP **12** 23:24:05.0, 67.83N×20.20E, h0km, ML1.4, Mining explosion.*

HEL 12 23:24:05.7±0.1, 67.83N×20.20E, h0km, ML1.6, ML1.4(UPP), Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KUA	**Kurravaara**	**0.14**	**23**	*i* P		Pg	23 24 07.9	-0.4
KUA				*i* S		Sg	23 24 09.8	-0.3
KUA	**Kurravaara**	**0.14**	**23**	P		Pg	23 24 07.9	-0.4
	baz=200							
KUA				S		Sg	23 24 09.8	-0.3
NIKU	**Nikkaluokta**	**0.44**	**276**	*i* P		Pg	23 24 13.5	-0.6
NIKU				*i* S		Sg	23 24 19.6	-0.2
NIKU	**Nikkaluokta**	**0.44**	**276**	P		Pg	23 24 13.5	-0.6
NIKU				S		Sg	23 24 19.6	-0.3
LANU	**Lannavaara**	**0.71**	**71**	*e*P		Pg	23 24 18.4	-1.0
LANU				*e*S		Sg	23 24 28.2	-0.3
LANU	**Lannavaara**	**0.71**	**71**	P		Pg	23 24 18.4	-0.9
LANU				Sg		Sg	23 24 28.2	-0.3
DUNU	**Dundret**	**0.72**	**168**	*i* P		Pg	23 24 18.4	-1.1
DUNU	**Dundret**	**0.72**	**168**	P		Pg	23 24 18.4	-1.1
MASU	**Masugnsbyn**	**0.78**	**118**	*i* P		Pg	23 24 19.9	-0.8
MASU	**Masugnsbyn**	**0.78**	**118**	P		Pg	23 24 19.9	-0.8
KIF	**Kilpisjarvi**	**1.20**	**10**	*e*P		Pg	23 24 28.3	-0.4
KIF	**Kilpisjarvi**	**1.20**	**10**	*e*PB		Pg	23 24 28.4	-0.3
	baz=197							
KIF				*e*S		Sg	23 24 44.0	-0.3
KIF	**Kilpisjarvi**	**1.20**	**10**	*e*P		Pg	23 24 28.3	-0.4
KIF				Sg		Sg	23 24 44.0	-0.3
PAJU	**Pajala**	**1.39**	**124**	*e*P		Pg	23 24 31.0	-1.2
PAJU	**Pajala**	**1.39**	**124**	P		Pg	23 24 31.0	-1.2
HEF	**Hetta**	**1.42**	**64**	*e*P		Pn	23 24 31.1	-1.7
HEF	**Hetta**	**1.42**	**64**	*e*PG		Pn	23 24 31.2	-1.6
HEF				MSG			23 24 48.8	
	comp=Z,5.2nm,0.2s							
HEF				*e*SN		Sn	23 24 54.3	+2.1
HEF	**Hetta**	**1.42**	**64**	Sn		Sn	23 24 54.3	+2.1
HEF	**Hetta**	**1.42**	**64**	*e*P		Pn	23 24 31.1	-1.7
ERTU

ISAD				*e*Pn	**Pn**	**23 37 01.0**	**+0.5**
WSAR	**Wadi Sarin**	**5.58**	**124**	Pn	**Pn**	**23 37 03.0**	**+1.0**
	comp=Z,0.2nm,0.3s,baz=302,slow=7.2,SNR=7.9						
WSAR				Sn	**Sn**	**23 38 04.1**	**-2.1**
	comp=Z,0.7nm,0.3s,baz=246,slow=20,SNR=3.8						
ICHK	**Chekchek**	**5.82**	**7**	*e*AMB	AMB	23 37 21.0	
	comp=Z,144nm,0.2s						
ICHK				*e*Pn	**Pn**	**23 37 03.1**	**-2.5**
IGAR	**Gharneh**	**6.09**	**347**	*e*AMB	AMB	23 37 20.7	
	comp=Z,71nm,0.2s						
IGAR				*e*Pn	**Pn**	**23 37 09.0**	**-0.3**
IZEF	**Zefreh**	**6.52**	**351**	*e*Pn	**Pn**	**23 37 13.8**	**-1.4**
IZEF				*e*AMB	AMB	23 37 24.6	
	comp=Z,42nm,0.2s						
IZEF	**Zefreh**	**6.52**	**351**	*e*Pn	**Pn**	**23 37 13.8**	**-1.4**
IPIR	**Pirpir**	**6.65**	**340**	*e*Pn	**Pn**	**23 37 16.6**	**-0.4**
IPIR				*e*AMB	AMB	23 38 38.6	
	comp=Z,74nm,0.2s						
IPIR	**Pirpir**	**6.65**	**340**	*e*Pn	**Pn**	**23 37 16.6**	**-0.4**
GNI	**Garni**	**15.53**	**334**	P	**P**	**23 39 21.0**	**-1.6**
	SNR=7.8						
BRTR	**Keskin Array B**	**21.27**	**313**	P	**P**	**23 40 25.6**	**-0.1**
	comp=Z,0.8nm,0.6s,baz=132,slow=12,SNR=8.8						
BVAR	**Borovoye Array**	**29.36**	**21**	P	**P**	**23 41 39.6**	**-2.5**
	comp=Z,0.2nm,0.4s,baz=214,slow=12,SNR=3.4						
MKAR	**Makanchi Array**	**30.43**	**41**	P	**P**	**23 41 50.7**	**-0.9**
	comp=Z,0.5nm,0.6s,baz=232,slow=9.1,SNR=4.2						
KURBB	**Kurchatov Arra**	**30.76**	**32**	P	**P**	**23 41 54.0**	**-0.3**
	comp=Z,0.4nm,0.3s,baz=231,slow=8.5,SNR=4.4						
ZALV	**Zalesovo Beam**	**35.85**	**32**	P	**P**	**23 42 37.2**	**-1.6**
	comp=Z,2.2nm,0.8s,baz=236,slow=8.9,SNR=8.6						

CASC 12 23:47:52.6±2.3, 10.78N×85.05W, h6km±12km, MD4.0, ML3.5, 2C-3D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ARE1	**Arenal 1**	**0.46**	**134**	*e*P	Pb	23 48 03.2	+0.1
ARE1				*e*S	Sb	23 48 10.2	-0.1
VCR	**Vista de Mar**	**0.87**	**221**	*i*P	Pb	23 48 09.9	-0.2
VCR				*e*S	Sb	23 48 23.3	+1.2
JCR	**Jicaral**	**0.93**	**184**	*i*P	Pg	23 48 09.9	-0.6
JCR				*e*S	Sb	23 48 23.3	-0.6
CGA2	**Cerro Gallo 2**	**0.95**	**143**	*i*P	Pg	23 48 09.7	-1.3
CGA2				*e*S	Sg	23 48 23.1	-0.3
CONN	**Concepcion**	**0.96**	**324**	*e*P	Pg	23 48 09.8	-1.2
URSC	**Urasca**	**1.57**	**127**	*e*P	Pn	23 48 21.2	0.0
ESPN	**Las Esperanzas**	**1.58**	**28**	*e*P	Pn	23 48 20.9	-0.4
ESPN				*e*S	Sg	23 48 43.3	-0.3
ESPN				AML	AML	23 48 44.6	
	comp=E,609nm,0.6s						
CNGN	**Cerro Negro**	**2.35**	**317**	*e*P	Pn	23 48 31.5	-0.4
TBS2		**3.08**	**130**	*e*P	Pb	23 48 46.8	-1.2

JMA 13 00:02:28.8, 38.43N×141.83E, h58km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.38**	**274**	P	Pn	00 02 39.4	0.0
JIO				S	Sn	00 02 46.8	-0.2
OFUJ	**Ofunato**	**0.66**	**349**	P	Pn	00 02 42.5	0.0
OFUJ				S	Sn	00 02 52.4	0.0
JMK	**Ichinoseki**	**0.71**	**318**	P	Pn	00 02 43.3	+0.3
JMK				S	Sn	00 02 53.6	+0.2
JOU	**Okura**	**0.92**	**266**	P	Pn	00 02 45.9	+0.2
JOU				S	Sn	00 02 58.5	+0.3
JMM	**Marumori**	**0.99**	**236**	P	Pn	00 02 46.4	-0.2
JMM				S	Sn	00 02 59.3	-0.5
JOM	**Ohasama**	**1.12**	**338**	P	Pn	00 02 48.6	+0.2
JYK	**Kaneyama**	**1.25**	**293**	P	Pn	00 02 50.4	+0.3
JYK				S	Sn	00 03 06.5	+0.5
JFK	**Kawauchi**	**1.30**	**216**	P	Pn	00 02 50.7	-0.1
JFK				S	Sn	00 03 06.8	-0.5
JRG	**Rokugo**	**1.34**	**316**	P	Pn	00 02 51.7	+0.4
JRG				S	Sn	00 03 09.9	+1.7
JYS	**Shirataka**	**1.40**	**262**	eS	Sn	00 03 10.3	+0.6
JFT	**Otama**	**1.49**	**233**	P	Pn	00 02 53.9	+0.6
JFT				S	Sn	00 03 11.9	+0.1

*GEN **13** 00:08:29.5, 44.00N×12.00E, h2km, ML2.1*
*ISCJB **13** 00:08:30.9±0.3, 43.92N±0.02×11.87E±0.02, h9km±3km, Error ellipse: s-maj=4.4km s-min=2.6km az=23.2*
*IASPEI **13** 00:08:30.7±1.0, 43.92N±0.03×11.87E±0.02, h8km±5km, Error ellipse: s-maj=4.5km s-min=2.7km az=36.0, GT5 selection from ISC bulletin GT5 identified by Bond and McLaughlin (2009) selection criteria Bond and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*VIE **13** 00:08:30.0±1.3, 43.84N×12.14E, h6km, mb2.1/7, ML2.3/9, Error ellipse: s-maj=12.4km s-min=10.0km az=43.0*
*ROM **13** 00:08:30.6±0.1, 43.93N×11.87E, h8km, Md2.7/22, Ml2.1/20, Error ellipse: s-maj=1.5km s-min=0.8km az=24.0*
*CSEM **13** 00:08:31.1±0.1, 43.90N×11.86E, h10km, ML2.7/9, Error ellipse: s-maj=2.8km s-min=2.0km az=42.0*

ISC 13 00:08:31.0±0.8, 43.92N±0.02×11.88E±0.02, h6km±5km, n71, σ1s00/105, 1D, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SFI	**Santa Sofia**	**0.03**	**244**	Pg	**Pg**	**00 08 32.2**	**-0.1**
SFI				Sg	**Sg**	**00 08 33.4**	**+0.2**
	22μm,0.2s						
SFI	**Santa Sofia**	**0.03**	**244**	Pg	**Pg**	**00 08 32.2**	**-0.1**
SFI				Sg	**Sg**	**00 08 33.4**	**+0.2**
	22μm,0.2s						
ASQU	**Asqua**	**0.14**	**209**	Pg	**Pg**	**00 08 34.3**	**+0.4**
ASQU				Sg	**Sg**	**00 08 37.2**	**+1.4**
	2μm,0.2s						
ASQU	**Asqua**	**0.14**	**209**	Pg	**Pg**	**00 08 34.3**	**+0.4**
ASQU				Sg	**Sg**	**00 08 37.2**	**+1.4**
	2μm,0.2s						
T0502	**Localit San**	**0.19**	**95**	Pg	**Pg**	**00 08 35.1**	**+0.4**
T0502				Sg	**Sg**	**00 08 38.8**	**+1.6**
	583nm,0.7s						
VMG	**Vicchio**	**0.25**	**281**	Pg	**Pg**	**00 08 36.0**	**+0.1**
VMG				Sg	**Sg**	**00 08 40.2**	**+1.0**
VMG	**Vicchio**	**0.25**	**281**	Pg	**Pg**	**00 08 36.0**	**+0.1**
VMG				Sg	**Sg**	**00 08 40.2**	**+1.0**
CPGN	**Carpegna, Ital**	**0.34**	**110**	Pg	**Pb**	**00 08 38.8**	**-0.7**
	14μm,8.7s						
CPGN	**Carpegna, Ital**	**0.34**	**110**	Pg	**Pb**	**00 08 38.8**	**-0.7**
	14μm,8.7s						
SEI	**Scarperia**	**0.40**	**290**	Pg	**Pg**	**00 08 38.5**	**-0.3**
SEI				Sg	**Sg**	**00 08 45.1**	**+1.0**
SEI	**Scarperia**	**0.40**	**290**	Pg	**Pg**	**00 08 38.5**	**-0.3**
SEI				Sg	**Sg**	**00 08 45.1**	**+1.0**
IMOL	**Imola, Italy**	**0.45**	**347**	Pg	**Pb**	**00 08 40.6**	**-0.7**
	8μm,11.0s						
IMOL	**Imola, Italy**	**0.45**	**347**	Pg	**Pb**	**00 08 40.6**	**-0.7**
	8μm,11.0s						
BADI	**Badiali**	**0.48**	**147**	Pg	**Pb**	**00 08 40.5**	**-1.4**
BADI				Sg	**Sb**	**00 08 48.9**	**-0.3**
	114nm,0.3s						
BADI	**Badiali**	**0.48**	**147**	Pg	**Pb**	**00 08 40.5**	**-1.4**
BADI				Sg	**Sb**	**00 08 48.9**	**-0.3**
	114nm,0.3s						
ATMC	**Monte Cedrone**	**0.52**	**154**	Pg	**Pb**	**00 08 41.2**	**-1.3**
ATMC				Sg	**Sb**	**00 08 50.1**	**-0.2**
	144nm,0.3s						
ATMC	**Monte Cedrone**	**0.52**	**154**	Pg	**Pb**	**00 08 41.2**	**-1.3**
ATMC				Sg	**Sb**	**00 08 50.1**	**-0.2**
	144nm,0.3s						
MTRZ	**Monterenzio**	**0.55**	**327**	Pg	**Pg**	**00 08 41.8**	**+0.2**
	188nm,0.3s						
MTRZ	**Monterenzio**	**0.55**	**327**	Pg	**Pg**	**00 08 41.8**	**+0.2**
	188nm,0.3s						
PTF	**Prato**	**0.59**	**274**	Pg	**Pg**	**00 08 41.9**	**-0.4**
PTF				Sg	**Sg**	**00 08 50.8**	**+0.8**
PTF	**Prato**	**0.59**	**274**	Pg	**Pg**	**00 08 41.9**	**-0.4**
PTF				Sg	**Sg**	**00 08 50.8**	**+0.8**
CAFI	**Castiglion Fio**	**0.59**	**174**	Pg	**Pg**	**00 08 42.6**	**+0.3**
CAFI				Sg	**Sb**	**00 08 52.0**	**-0.3**
	79nm,0.4s						
CAFI	**Castiglion Fio**	**0.59**	**174**	Pg	**Pg**	**00 08 42.6**	**+0.3**
CAFI				Sg	**Sb**	**00 08 52.0**	**-0.3**
	79nm,0.4s						
FNVD	**Fontana Vidola**	**0.60**	**295**	Pg	**Pg**	**00 08 42.3**	**-0.3**
FNVD				Sg	**Sg**	**00 08 51.6**	**+1.2**
	146nm,0.6s						
FNVD	**Fontana Vidola**	**0.60**	**295**	Pg	**Pg**	**00 08 42.3**	**-0.3**
FNVD				Sg	**Sg**	**00 08 51.6**	**+1.2**
	146nm,0.6s						
ATPC	**Poggio Castell**	**0.60**	**136**	Pg	**Pb**	**00 08 42.9**	**-1.0**
	93nm,0.5s						
ATPC	**Poggio Castell**	**0.60**	**136**	Pg	**Pb**	**00 08 42.9**	**-1.0**
	93nm,0.5s						
CSNT	**Castellina Chi**	**0.62**	**224**	Pg	**Pg**	**00 08 42.7**	**-0.1**
	73nm,0.5s						
CSNT	**Castellina Chi**	**0.62**	**224**	Pg	**Pg**	**00 08 42.7**	**-0.1**
	73nm,0.5s						
ATVO	**AVT- Monte Val**	**0.66**	**144**	Pg	**Pb**	**00 08 43.6**	**-1.2**
	120nm,0.3s						
ATVO	**AVT- Monte Val**	**0.66**	**144**	Pg	**Pb**	**00 08 43.6**	**-1.2**
	120nm,0.3s						
CRMI	**Carmignano**	**0.67**	**259**	Pg	**Pg**	**00 08 43.6**	**-0.3**
CRMI				Sg	**Sg**	**00 08 53.5**	**+0.9**
	112nm,0.5s						
CRMI	**Carmignano**	**0.67**	**259**	Pg	**Pg**	**00 08 43.6**	**-0.3**
CRMI				Sg	**Sg**	**00 08 53.5**	**+0.9**
	112nm,0.5s						
FSSB	**Fossombrone**	**0.69**	**109**	Pg	**Pb**	**00 08 44.2**	**-1.1**
	78nm,0.3s						
FSSB	**Fossombrone**	**0.69**	**109**	Pg	**Pb**	**00 08 44.2**	**-1.1**
	78nm,0.3s						
MPAG	**Monte Paganucc**	**0.70**	**114**	Pg	**Pb**	**00 08 44.6**	**-1.0**
	33nm,0.5s						
MPAG	**Monte Paganucc**	**0.70**	**114**	Pg	**Pb**	**00 08 44.6**	**-1.0**
	33nm,0.5s						
FRON	**Frontone**	**0.73**	**123**	Pg	**Pb**	**00 08 45.1**	**-1.0**
	29nm,0.4s						
FRON	**Frontone**	**0.73**	**123**	Pg	**Pb**	**00 08 45.1**	**-1.0**
	29nm,0.4s						
ATTE	**AVT- Monte Tez**	**0.80**	**154**	Pg	**Pb**	**00 08 46.4**	**-0.8**
	71nm,0.5s						
ATTE	**AVT- Monte Tez**	**0.80**	**154**	Pg	**Pb**	**00 08 46.4**	**-0.8**
	71nm,0.5s						
MURB	**Monte Urbino**	**0.80**	**144**	Pg	**Pb**	**00 08 46.9**	**-0.4**
	160nm,0.3s						
MURB	**Monte Urbino**	**0.80**	**144**	Pg	**Pb**	**00 08 46.9**	**-0.4**
	160nm,0.3s						
SSFR	**Montelago di S**	**0.81**	**126**	Pg	**Pb**	**00 08 46.6**	**-0.9**
	66nm,0.2s						
SSFR	**Montelago di S**	**0.81**	**126**	Pg	**Pb**	**00 08 46.6**	**-0.9**
	66nm,0.2s						
POPM	**Popiglio**	**0.82**	**279**	P	**Pg**	**00 08 46.3**	**-0.4**
POPM				S	**Sg**	**00 08 57.9**	**+0.5**
FROS	**Frosini**	**0.88**	**217**	Pg	**Pg**	**00 08 48.3**	**+0.4**
	63nm,0.7s						
FROS	**Frosini**	**0.88**	**217**	Pg	**Pg**	**00 08 48.3**	**+0.4**
	63nm,0.7s						
MAIM	**Mastiano**	**1.00**	**270**	P	**Pg**	**00 08 49.7**	**-0.5**
SARO	**Sassorosso**	**1.10**	**285**	P	**Pg**	**00 08 51.4**	**-0.7**
GRAM	**Graiana**	**1.43**	**294**	P	**Pn**	**00 08 56.0**	**-1.4**
CODM	**Codolo**	**1.54**	**289**	P	**Pn**	**00 08 57.6**	**-1.3**
MARN	**Marana (Italy)**	**1.79**	**345**	*e*Pn	**Pn**	**00 09 01.7**	**-0.7**
MARN				*e*Sn	**Sn**	**00 09 25.4**	**+0.1**
MARN	**Marana (Italy)**	**1.79**	**345**	*e*Pn	**Pn**	**00 09 01.7**	**-0.7**
MARN				*e*Sn	**Sn**	**00 09 25.4**	**+0.1**
CGRP	**Cima Grappa**	**1.96**	**358**	*i*P	**Pg**	**00 09 03.9**	**-1.0**
CGRP				*e*Sn	**Sn**	**00 09 29.1**	**-0.8**
CGRP	**Cima Grappa**	**1.96**	**358**	*e*Pn	**Pn**	**00 09 03.9**	**-1.0**
CGRP				*e*Sn	**Sn**	**00 09 29.1**	**-0.8**
SKDS	**Skadanscina**	**2.23**	**42**	*i* Pn	**Pn**	**00 09 07.0**	**-1.4**
SKDS	**Skadanscina**	**2.23**	**42**	Pn	**Pn**	**00 09 07.0**	**-1.4**
OZOL	**Ozolo**	**2.56**	**347**	*e*Pn	**Pn**	**00 09 13.2**	**+0.2**
OZOL	**Ozolo**	**2.56**	**347**	*e*Pn	**Pn**	**00 09 13.2**	**+0.2**
UDBI	**Udbina**	**2.86**	**76**	*e*Pn	**Pn**	**00 09 17.5**	**+0.4**
UDBI				Sn	**Sb**	**00 09 54.9**	**-2.7**
ABTA	**Abfaltersbach**	**2.87**	**9**	Pn	**Pn**	**00 09 17.2**	**0.0**
	751nm,0.0s						
ABTA				Sn	**Sn**	**00 09 51.6**	**-0.5**
	0.8nm,0.2s						
MOZS	**Mozjanca**	**2.99**	**36**	*i* Pn	**Pn**	**00 09 19.2**	**+0.3**
MOZS				*i* Sn	**Sn**	**00 09 55.5**	**+0.4**
MOZS	**Mozjanca**	**2.99**	**36**	*i* Pn	**Pn**	**00 09 19.2**	**+0.3**
MOZS				*i* Sn	**Sn**	**00 09 55.5**	**+0.4**
PDKS	**Podkum**	**3.08**	**45**	*i* Pn	**Pn**	**00 09 20.0**	**-0.1**
PDKS	**Podkum**	**3.08**	**45**	*i* Pn	**Pn**	**00 09 20.0**	**-0.1**
OBKA	**Obir**	**3.21**	**35**	Pn	**Pn**	**00 09 22.8**	**+0.9**
	0.4nm,0.3s						
OBKA				Sn	**Sn**	**00 10 01.0**	**+0.6**
	2.1nm,0.2s						
FETA	**Feichten**	**3.21**	**346**	Pn	**Pn**	**00 09 23.6**	**+1.6**
	0.2nm,0.1s						
MOTA	**Moosalm**	**3.47**	**351**	Pn	**Pn**	**00 09 27.3**	**+1.7**
	2.1nm,0.4s						
MOTA				Sn	**Sn**	**00 10 10.4**	**+3.3**
	0.9nm,0.2s						
DAVA	**Damuels**	**3.65**	**338**	Pn	**Pn**	**00 09 29.8**	**+1.7**
	0.6nm,0.1s						
DAVA				Sn	**Sn**	**00 10 15.2**	**+3.7**
	3.9nm,0.4s						
RETA	**Reutte**	**3.66**	**348**	Pn	**Pn**	**00 09 28.9**	**+0.8**
	0.8nm,0.2s						
RETA				Sn	**Sn**	**00 10 12.5**	**+1.0**
	0.2nm,0.1s						

*NIED **13** 00:10:00, 37.90N×143.30E, h11km, Mw3.8 Best double couple: M0 6.06000×10^14 NP1:φs=323.00000°, δ58.00000°, λ173.00000°. NP2:φs=56.00000°, δ84.00000°, λ32.00000°.*
*IDC **13** 00:10:28.1±1.1, 37.73N×143.79E, h0km, mb3.7/6, mb1 3.7/10, mb1mx3.6/35, mbtmp3.7/10, ML3.4/3, MS3.1/4, Ms1 3.1/4, ms1mx2.8/40, Error ellipse: s-maj=26.9km s-min=18.7km az=91.0*
*ISCJB **13** 00:10:31.2±0.8, 37.84N±0.04×143.37E±0.07, h19km, mb3.6/6, MS3.4/2, Error ellipse: s-maj=8.5km s-min=5.6km az=8.3*
*JMA **13** 00:10:33.7±0.2, 37.91N×143.27E, h36km, M3.8*

ISC 13 00:10:31.5±1.0, 37.87N±0.05×143.43E±0.09, h19km, n34, σ1s74/33, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.75**	**290**	P	**Pn**	**00 11 00.7**	**-0.1**
OFUJ	**Ofunato**	**1.84**	**312**	P	**Pn**	**00 11 01.8**	**-0.3**
OFUJ				*e*S	**Sn**	**00 11 22.7**	**-2.1**
JMK	**Ichinoseki**	**2.05**	**303**	P	**Pn**	**00 11 05.1**	**+0.2**
JMM	**Marumori**	**2.09**	**271**	P	**Pn**	**00 11 05.6**	**+0.1**
JFK	**Kawauchi**	**2.09**	**257**	P	**Pn**	**00 11 05.4**	**-0.2**
JOM	**Ohasama**	**2.32**	**314**	P	**Pn**	**00 11 09.1**	**+0.4**
JOM				*e*S	**Sn**	**00 11 35.0**	**-1.7**
JFT	**Otama**	**2.48**	**263**	P	**Pn**	**00 11 12.2**	**+1.3**
JFT				*e*S	**Sn**	**00 11 40.1**	**-0.6**
JYK	**Kaneyama**	**2.63**	**294**	P	**Pn**	**00 11 14.1**	**+1.1**
JYK				*e*S	**Sn**	**00 11 43.3**	**-1.1**
JANG	**Nango**	**2.91**	**330**	P	**Pb**	**00 11 19.1**	**-3.8**
JAW	**Awa shima**	**3.35**	**281**	P	**Pn**	**00 11 24.5**	**+1.6**
JAG	**Ashikaga**	**3.49**	**247**	P	**Pn**	**00 11 25.5**	**+0.7**
BSO1	**Boso 1**	**3.77**	**212**	P	**Pn**	**00 11 28.7**	**+0.5**
BSO1				S	**Sn**	**00 12 12.0**	**+0.2**
JOT	**Ohata**	**3.96**	**333**	P	**Pn**	**00 11 32.6**	**+1.3**
JRY	**Ryogami san**	**4.07**	**244**	P	**Pn**	**00 11 34.0**	**+1.1**
JRY				S	**Sn**	**00 12 18.6**	**-1.4**
JSD	**Sado**	**4.09**	**274**	P	**Pn**	**00 11 34.3**	**+1.2**
MJAR	**Matsushiro Arr**	**4.38**	**254**	Pn	**Pn**	**00 11 39.2**	**+2.2**
	1.0nm,0.3s,baz=68,slow=9.9,SNR=8.6						
JHJ	**Hachijo jima 2**	**5.60**	**213**	Pn	**Pn**	**00 11 52.1**	**-1.6**
	13nm,0.3s,baz=332,slow=17,SNR=9.8						
JHJ				Sn	**Sn**	**00 12 54.4**	**-3.1**
	28nm,0.3s,baz=70,slow=23,SNR=6.9						
ASAJ	**Asahikawa**	**6.27**	**354**	Pn	**Pn**	**00 12 05.0**	**+2.0**
	baz=322,slow=19						
JNU	**Nakatsue**	**11.28**	**249**	LR	LR	00 17 56.7	
	comp=Z,52nm,20.3s,baz=108,slow=39						
KSRS	**Korea Array**	**12.30**	**273**	Pn	**Pn**	**00 13 29.0**	**+3.3**
	0.1nm,0.3s,baz=275,slow=38,SNR=4.1						
KSRS				LR	LR	00 18 01.5	
	comp=Z,40nm,21.2s,baz=58,slow=36						
H11N2	**WAKE ISLAND Hy 27.25**	**125**		T	T	00 45 04.0	
	baz=317,slow=75,SNR=31						
H11N1	**WAKE ISLAND Hy 27.26**	**125**		T	T	00 44 53.4	
	baz=317,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy 27.27**	**125**		T	T	00 44 57.4	
	baz=317,slow=75,SNR=24						
H11S1	**WAKE ISLAND Hy 28.02**	**127**		T	T	00 45 57.8	
	baz=319,slow=76,SNR=6.3						
H11S3	**WAKE ISLAND Hy 28.02**	**127**		T	T	00 46 00.5	
	baz=319,slow=76,SNR=5.8						
H11S2	**WAKE ISLAND Hy 28.04**	**127**		T	T	00 45 55.6	
	baz=319,slow=76,SNR=6.3						

SONM	**Songino Array**	**28.68**	**302**	P	**P**	**00 16 28.8**	**+1.5**
	0.3nm,0.4s,baz=112,slow=6.8,SNR=6.3						
TIXI	**Tiksi**	**34.67**	**352**	LR	LR	00 31 34.2	
	comp=Z,41nm,19.9s,baz=138,slow=36						
ZALV	**Zalesovo Beam**	**42.55**	**312**	P	**P**	**00 18 28.1**	**+2.3**
	0.6nm,0.4s,baz=97,slow=10,SNR=3.6						
MKAR	**Makanchi Array**	**45.04**	**302**	P	**P**	**00 18 47.7**	**+1.8**
	0.8nm,0.7s,baz=90,slow=9.0,SNR=7.3						
ILAR	**Eielson Array**	**47.93**	**33**	P	**P**	**00 19 07.0**	**-1.3**
	0.2nm,0.7s,baz=266,slow=7.6,SNR=2.7						
WRA	**Warramunga Arr**	**58.14**	**190**	P	**P**	**00 20 21.2**	**-2.7**
	baz=11,slow=8.0,SNR=4.0						
ASAR	**Alice Springs**	**61.86**	**190**	P	**P**	**00 20 50.5**	**+1.0**
	0.1nm,0.3s,baz=355,slow=5.6,SNR=3.4						
FINES	**FINESS Array B**	**68.82**	**333**	P	**P**	**00 21 35.3**	**+1.2**
	4.4nm,1.1s,baz=35,slow=7.2,SNR=3.3						
FINES				LR	LR	00 53 23.6	
	comp=Z,35nm,20.8s,baz=56,slow=37						

BUC 13 00:12:06.7±1.1, 45.51N×26.08E, h2km, MD1.9/3, 2C-6D, Error ellipse: s-maj=13.1km s-min=4.8km az=333.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MLR	**Muntele Rosu**	**0.09**	**260**	*i*P	Pg	00 12 08.8	+0.2
MLR				S	Sg	00 12 10.3	+0.5
MLR	**Muntele Rosu**	**0.09**	**260**	*i*P	Pg	00 12 08.8	+0.2
MLR				*i* S	Sg	00 12 10.3	+0.5
PLOR	**Plostina**	**0.53**	**49**	*i*P	Pb	00 12 18.0	-0.8
PLOR				S	Sb	00 12 26.1	-0.8
PLOR	**Plostina**	**0.53**	**49**	*i*P	Pb	00 12 18.0	-0.8
PLOR				*i* S	Sb	00 12 26.1	-0.8
DOPR	**Dopca**	**0.67**	**314**	*i*P	Pb	00 12 21.2	+0.1
DOPR				S	Sb	00 12 30.4	-0.4
DOPR	**Dopca**	**0.67**	**314**	*i*P	Pb	00 12 21.2	+0.1
DOPR				*i* S	Sb	00 12 30.4	-0.4
VOIR		**0.72**	**265**	S	Sb	00 12 33.7	+1.2
VOIR		**0.72**	**265**	*i* S	Sb	00 12 33.7	+1.2
ARR	**Arges**	**1.02**	**263**	*i*P	Pn	00 12 28.5	+0.3
ARR				S	Sn	00 12 43.8	+0.7
ARR	**Arges**	**1.02**	**263**	*i*P	Pn	00 12 28.5	+0.3
ARR				*i* S	Sn	00 12 43.8	+0.7

CASC 13 00:14:48.6±1.7, 10.76N×85.11W, h5km±15km, MD4.1, ML2.5, 3C, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCR	**Jicaral**	**0.90**	**180**	*e*P	Pg	00 15 06.0	+0.1
CONN	**Concepcion**	**0.95**	**328**	*e*P	Pg	00 15 06.7	-0.1
CGA2	**Cerro Gallo 2**	**0.97**	**139**	*e*P	Pg	00 15 06.0	-1.2
URSC	**Urasca**	**1.60**	**125**	*e*P	Pn	00 15 18.1	+0.4
ESPN	**Las Esperanzas**	**1.64**	**29**	*e*P	Pn	00 15 17.6	-0.5
COPN	**Copaltepe**	**2.03**	**314**	*e*P	Pn	00 15 23.3	-0.2
COPN				*e*S	Sn	00 15 49.2	-0.1
COPN				AML	AML	00 15 53.9	
	comp=Z,35nm,0.6s						

*MDD **13** 00:34:34.8±0.9, 36.95N×13.65W, h47km±35km, mb3.6/10, Error ellipse: s-maj=10.5km s-min=4.0km az=50.0, PRXIMO*
*INMG **13** 00:34:34.6±1.1, 36.76N×13.75W, h10km, ML2.5, Error ellipse: s-maj=6.2km s-min=2.9km az=132.0*
*CSEM **13** 00:34:37.4±0.4, 37.15N×13.18W, h20km, ML2.8/6, Error ellipse: s-maj=7.7km s-min=6.3km az=27.0*

ISC 13 00:34:25.9±1.5, 36.89N±0.06×13.75W±0.07, h10km, n75, σ3s35/129, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PTEO	**Sao Teotonio**	**4.07**	**79**	*e*Pn	**Pn**	**00 35 31.6**	**+3.4**
PTEO				*e*Sn	**Sn**	**00 36 13.3**	**-2.5**
PTEO				A	A	00 36 14.3	
	8.1nm,0.8s						
PTEO	**Sao Teotonio**	**4.07**	**79**	P	**Pn**	**00 35 31.6**	**+3.4**
PTEO				S	**Sn**	**00 36 13.3**	**-2.5**
	4.1nm,0.8s						
PTEO	**Sao Teotonio**	**4.07**	**79**	P	**Pn**	**00 35 31.6**	**+3.4**
PTEO				S	**Sn**	**00 36 13.3**	**-2.5**
	4.1nm,0.8s						
PMAFR	**Mafra**	**4.09**	**58**	*e*Pn	**Pn**	**00 35 32.3**	**+3.7**
PMAFR				*e*Sn	**Sn**	**00 36 15.5**	**-1.0**
PMAFR				A	A	00 36 25.1	
	20nm,0.8s						
PMAFR	**Mafra**	**4.09**	**58**	P	**Pn**	**00 35 32.2**	**+3.7**
	0.3nm,0.0s,SNR=4.0						
PMAFR				S	**Sn**	**00 36 15.3**	**-1.2**
	3.1nm,0.1s,SNR=7.9						
PMAFR	**Mafra**	**4.09**	**58**	P	**Pn**	**00 35 32.2**	**+3.7**
	0.3nm,0.0s,SNR=4.0						
PMAFR				*e*Sn	**Sn**

	1.1nm,0.1s,SNR=7.9								
PCAS	**Casmilo, Conde**	**5.19**	**51**	*e*Pn		**Pn**	**00 35 47.6**	**+3.9**	
PCAS				*e*Sn		**Sn**	**00 36 42.7**	**-1.0**	
PCAS	**Casmilo, Conde**	**5.19**	**51**	*e*Pn		**Pn**	**00 35 47.6**	**+3.9**	
PCAS				*e*Sn		**Sn**	**00 36 42.7**	**-1.0**	
PESTR	**Estremoz**	**5.26**	**66**	*e*Pn		**Pn**	**00 35 48.3**	**+3.7**	
PESTR				*e*Sn		**Sn**	**00 36 42.4**	**-2.9**	
PESTR				A		A	00 37 12.4		
	2.2nm,0.7s								
PESTR	**Estremoz**	**5.26**	**66**	*e*Pn		**Pn**	**00 35 48.3**	**+3.7**	
PESTR				*e*Sn		**Sn**	**00 36 42.4**	**-2.9**	
	2.2nm,0.7s								
PBAR	**Barrancos**	**5.49**	**74**	*e*Pn		**Pn**	**00 35 50.9**	**+3.2**	
PBAR				*e*Sn		**Sn**	**00 36 47.6**	**-3.3**	
PBAR				A		A	00 36 52.7		
	3.6nm,0.4s								
PBAR	**Barrancos**	**5.49**	**74**	P		**Pn**	**00 35 50.9**	**+3.2**	
PBAR				S		**Sn**	**00 36 47.6**	**-3.3**	
	3.6nm,0.4s								
PBAR	**Barrancos**	**5.49**	**74**	P		**Pn**	**00 35 50.9**	**+3.2**	
PBAR				S		**Sn**	**00 36 47.6**	**-3.3**	
	3.6nm,0.4s								
PMRV	**Marv??o**	**5.62**	**61**	*e*Pn		**Pn**	**00 35 53.5**	**+4.0**	
PMRV				*e*Sn		**Sn**	**00 36 51.7**	**-2.4**	
PMRV				A		A	00 36 53.9		
	2.1nm,0.3s								
PMRV	**Marv??o**	**5.62**	**61**	P		**Pn**	**00 35 53.5**	**+4.0**	
PMRV				S		**Sn**	**00 36 51.7**	**-2.4**	
	2.1nm,0.3s								
PMRV	**Marv??o**	**5.62**	**61**	P		**Pn**	**00 35 53.5**	**+4.0**	
PMRV				S		**Sn**	**00 36 51.7**	**-2.4**	
	2.1nm,0.3s								
EBAD	**Badajoz**	**5.65**	**69**	P		**Pn**	**00 35 53.3**	**+3.3**	
	0.3nm,0.1s,SNR=7.9								
EBAD				S		**Sn**	**00 36 51.2**	**-3.7**	
	0.9nm,0.1s,SNR=6.6								
EBAD	**Badajoz**	**5.65**	**69**	P		**Pn**	**00 35 53.3**	**+3.3**	
	0.3nm,0.1s,SNR=7.9								
EBAD				S		**Sn**	**00 36 51.2**	**-3.7**	
	0.9nm,0.1s,SNR=6.6								
EMIN	**Mina Concepcio**	**5.71**	**79**	P		**Pn**	**00 35 54.1**	**+3.4**	
	0.1nm,0.1s,SNR=7.9								
EMIN				S		**Sn**	**00 36 52.6**	**-3.8**	
	1.8nm,0.2s,SNR=6.7								
EMIN	**Mina Concepcio**	**5.71**	**79**	P		**Pn**	**00 35 54.1**	**+3.4**	
	0.1nm,0.1s,SNR=7.9								
EMIN				S		**Sn**	**00 36 52.6**	**-3.8**	
	1.8nm,0.2s,SNR=6.7								
PCBR	**Castelo Branco**	**5.74**	**57**	*e*Pn		**Pn**	**00 35 55.3**	**+4.1**	
PCBR				*e*Sn		**Sn**	**00 36 54.5**	**-2.7**	
PCBR				A		A	00 37 07.2		
	1.5nm,0.8s								
PCBR	**Castelo Branco**	**5.74**	**57**	P		**Pn**	**00 35 55.3**	**+4.1**	
PCBR				S		**Sn**	**00 36 54.5**	**-2.7**	
	0.8nm,0.8s								
PCBR	**Castelo Branco**	**5.74**	**57**	P		**Pn**	**00 35 55.3**	**+4.1**	
PCBR				S		**Sn**	**00 36 54.5**	**-2.7**	
	0.8nm,0.8s								
MTE	**Manteigas**	**5.99**	**52**	*e*Sn		**Sn**	**00 37 01.7**	**-1.7**	
MTE				A		A	00 37 17.7		
	3.2nm,0.8s								
MTE	**Manteigas**	**5.99**	**52**	S		**Sn**	**00 37 01.7**	**-1.7**	
	1.6nm,0.8s								
MTE	**Manteigas**	**5.99**	**52**	S		**Sn**	**00 37 01.7**	**-1.7**	
	1.6nm,0.8s								
ESPR	**Espera**	**6.33**	**88**	S		**Sn**	**00 37 09.6**	**-2.0**	
	1.6nm,0.1s,SNR=7.9								
ESPR	**Espera**	**6.33**	**88**	S		**Sn**	**00 37 09.6**	**-2.0**	
	1.6nm,0.1s,SNR=7.9								
POLO	**Lamas de Olo**	**6.44**	**44**	*e*Pn		**Pn**	**00 36 04.4**	**+3.5**	
POLO				*e*Sn		**Sn**	**00 37 12.0**	**-2.5**	
POLO				A		A	00 37 23.2		
	1.2nm,0.9s								
POLO	**Lamas de Olo**	**6.44**	**44**	*e*Pn		**Pn**	**00 36 04.4**	**+3.5**	
POLO				*e*Sn		**Sn**	**00 37 12.0**	**-2.5**	
	1.2nm,0.9s								
PGAV	**Gavieira, Arco**	**6.61**	**38**	*e*Pn		**Pn**	**00 36 07.1**	**+3.9**	
PGAV				*e*Sn		**Sn**	**00 37 15.5**	**-3.2**	
PGAV	**Gavieira, Arco**	**6.61**	**38**	*e*Pn		**Pn**	**00 36 07.1**	**+3.9**	
PGAV				*e*Sn		**Sn**	**00 37 15.5**	**-3.2**	
ELOB	**Lobios**	**6.64**	**40**	P		**Pn**	**00 36 07.6**	**+3.9**	
	0.3nm,0.1s,SNR=7.9								
ELOB				S		**Sn**	**00 37 15.2**	**-4.3**	
	0.5nm,0.1s,SNR=7.9								
ELOB	**Lobios**	**6.64**	**40**	P		**Pn**	**00 36 07.6**	**+3.9**	
	0.3nm,0.1s,SNR=7.9								
ELOB				S		**Sn**	**00 37 15.2**	**-4.3**	
	0.5nm,0.1s,SNR=7.9								
ECAB	**El Cabril**	**6.73**	**77**	P		**Pn**	**00 36 08.4**	**+3.6**	
	0.1nm,0.1s,SNR=7.9								
ECAB				S		**Sn**	**00 37 16.9**	**-4.7**	
	0.4nm,0.1s,SNR=7.9								
ECAB	**El Cabril**	**6.73**	**77**	P		**Pn**	**00 36 08.4**	**+3.6**	
	0.1nm,0.1s,SNR=7.9								
ECAB				S		**Sn**	**00 37 16.9**	**-4.7**	
	0.4nm,0.1s,SNR=7.9								
MVO	**Moncorvo**	**6.75**	**49**	*e*Pn		**Pn**	**00 36 08.3**	**+3.1**	
MVO				*e*Sn		**Sn**	**00 37 18.8**	**-3.4**	
MVO				A		A	00 37 25.1		
	2.4nm,0.5s								
MVO	**Moncorvo**	**6.75**	**49**	P		**Pn**	**00 36 07.6**	**+2.5**	
	0.2nm,0.0s,SNR=7.9								
MVO				S		**Sn**	**00 37 17.5**	**-4.7**	
	0.2nm,0.1s,SNR=7.9								
MVO	**Moncorvo**	**6.75**	**49**	P		**Pn**	**00 36 07.6**	**+2.5**	
	0.2nm,0.0s,SNR=7.9								
MVO	**Moncorvo**	**6.75**	**49**	*e*Pn		**Pn**	**00 36 08.3**	**+3.1**	
MVO				S		**Sn**	**00 37 17.5**	**-4.7**	
	0.2nm,0.1s,SNR=7.9								
MVO				*e*Sn		**Sn**	**00 37 18.8**	**-3.4**	
	2.4nm,0.5s								
EPLA	**Plasencia**	**6.80**	**60**	S		**Sn**	**00 37 19.6**	**-3.7**	
	0.1nm,0.1s,SNR=7.9								
EPLA	**Plasencia**	**6.80**	**60**	S		**Sn**	**00 37 19.6**	**-3.7**	
	0.1nm,0.1s,SNR=7.9								
PBRG	**Braganca**	**7.32**	**46**	*e*Pn		**Pn**	**00 36 16.8**	**+3.9**	
PBRG	**Braganca**	**7.32**	**46**	P		**Pn**	**00 36 16.8**	**+3.9**	
PBRG	**Braganca**	**7.32**	**46**	P		**Pn**	**00 36 16.8**	**+3.9**	
EAGO	**Agolada(Pontev**	**7.34**	**35**	P		**Pn**	**00 36 16.1**	**+3.0**	
	0.4nm,0.1s,SNR=7.9								
EAGO				S		**Sn**	**00 37 30.5**	**-6.0**	
	0.2nm,0.1s,SNR=7.9								
EAGO	**Agolada(Pontev**	**7.34**	**35**	P		**Pn**	**00 36 16.1**	**+3.0**	
	0.4nm,0.1s,SNR=7.9								
EAGO				S		**Sn**	**00 37 30.5**	**-6.0**	
	0.2nm,0.1s,SNR=7.9								
EADA	**Adamuz**	**7.40**	**77**	P		**Pn**	**00 36 18.3**	**+4.3**	
	0.1nm,0.1s,SNR=7.9								
EADA				S		**Sn**	**00 37 33.3**	**-4.8**	
	0.2nm,0.1s,SNR=7.9								
EADA	**Adamuz**	**7.40**	**77**	P		**Pn**	**00 36 18.3**	**+4.3**	
	0.1nm,0.1s,SNR=7.9								
EADA				S		**Sn**	**00 37 33.3**	**-4.8**	
	0.2nm,0.1s,SNR=7.9								
EPON	**Pontenova**	**8.18**	**36**	P		**Pn**	**00 36 27.4**	**+2.7**	
	0.3nm,0.1s,SNR=7.9								
EPON	**Pontenova**	**8.18**	**36**	P		**Pn**	**00 36 27.4**	**+2.7**	
	0.3nm,0.1s,SNR=7.9								

CASC 13 00:35:11.0±2.6, 10.77N×85.11W, h13km±16km, MD4.4, ML4.5, 2C-3D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE1	**Arenal 1**	**0.49**	**129**	⇑*e*P	Pg	00 35 20.4	-0.3
ARE1				*e*S	Sb	00 35 28.1	-0.5
VCR	**Vista de Mar**	**0.82**	**219**	⇓*i*P	Pg	00 35 26.0	-1.0
VCR				*e*S	Sg	00 35 37.8	+0.1
JCR	**Jicaral**	**0.91**	**180**	⇓*i*P	Pg	00 35 27.2	-1.5
JCR				*e*S	Sg	00 35 40.1	-0.6
CGA2	**Cerro Gallo 2**	**0.98**	**140**	⇓*i*P	Pb	00 35 27.2	-2.8
CGA2				*e*S	Sg	00 35 41.6	-1.2
URSC	**Urasca**	**1.60**	**125**	⇑*i*P	Pn	00 35 38.8	-0.4
URSC				*e*S	Sb	00 36 01.2	+0.3
ESPN	**Las Esperanzas**	**1.62**	**29**	*e*P	Pn	00 35 38.1	-1.2
ESPN				*e*S	Sn	00 35 59.4	-0.8
ESPN				AML	AML	00 36 02.5	
	comp=N,8μm,0.7s						
XAVN	**Gruta Xavier**	**1.82**	**319**	*e*P	Pn	00 35 42.4	+0.3
COPN	**Copaltepe**	**2.02**	**314**	*e*P	Pn	00 35 44.4	-0.5
MOMN	**Momotombo**	**2.15**	**319**	*e*P	Pn	00 35 46.6	-0.1
CNGN	**Cerro Negro**	**2.32**	**318**	*e*P	Pn	00 35 49.4	+0.3
BRU2	**Volcan**	**3.09**	**129**	*e*P	Pn	00 36 02.2	+2.6
BRU2				*e*S	Sn	00 36 40.0	+3.5
TBS2		**3.11**	**129**	*e*P	Pn	00 36 02.1	+2.1
TBS2				*i* S	Sb	00 36 45.7	+1.4
ZANG	**Zanguenga, Cho**	**5.47**	**109**	*e*P	Pn	00 36 31.5	-0.8
ZANG				*e*S	Sn	00 37 35.9	+0.8

ISCJB 13 00:37:06.5±1.0, 12.1N±0.1×87.79W±0.06, h56km±8km, mb3.9/6, MS3.2/1, Error ellipse: s-maj=20.4km s-min=5.0km az=27.3
CASC 13 00:37:07.3±1.1, 12.13N×87.78W, h34km±11km, ML3.5
IDC 13 00:37:14.2±8.6, 12.38N×87.98W, h92km±61km, mb3.6/6, mb1 3.9/7, mb1mx3.5/32, mbtmp3.9/7, ML3.6/1, MS3.4/1, Ms1 3.4/1, ms1mx2.7/27, Error ellipse: s-maj=62.3km s-min=50.4km az=160.0
ISC 13 00:37:07.3±1.8, 12.1N±0.1×87.76W±0.07, h48km±14km, n31, σ0.98/36, mb4.1/6, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNGN	**Cerro Negro**	**1.11**	**69**	*e*P	**Pn**	**00 37 26.8**	**+0.2**
COPN	**Copaltepe**	**1.15**	**86**	*e*P	**Pn**	**00 37 27.2**	**+0.1**
CNCH	**Conchagua**	**1.17**	**357**	*e*P	**Pn**	**00 37 26.8**	**-0.6**
MOMN	**Momotombo**	**1.23**	**76**	*e*P	**Pn**	**00 37 28.3**	**+0.1**
XAVN	**Gruta Xavier**	**1.41**	**88**	*e*P	**Pn**	**00 37 31.0**	**+0.5**
VSM	**San Miguel**	**1.41**	**339**	*e*P	**Pn**	**00 37 30.2**	**-0.6**
LCY	**Lacayo**	**1.41**	**338**	*e*P	**Pn**	**00 37 30.1**	**-0.7**
TISN	**Laguna Tiscapa**	**1.46**	**88**	*e*P	**Pn**	**00 37 31.7**	**+0.4**
PACA	**Pacayal**	**1.46**	**338**	*e*P	**Pn**	**00 37 31.0**	**-0.5**
PACA				*e*S	**Sn**	**00 37 50.5**	**+0.9**
MGAN	**Managua**	**1.48**	**88**	*e*P	**Pn**	**00 37 31.9**	**+0.3**
MGAN				*e*S	**Sn**	**00 37 50.7**	**+0.9**
MGAN				AML	AML	00 37 53.6	
	comp=N,341nm,0.4s						
CAHU	**Cacacuatique**	**1.71**	**345**	*e*P	**Pn**	**00 37 34.8**	**-0.2**
SNVI	**San Vicente**	**1.83**	**325**	*e*P	**Pn**	**00 37 36.3**	**-0.3**
SNVI				*e*S	**Sn**	**00 37 58.5**	**-0.1**
LFRS	**El Faro**	**1.97**	**320**	*e*P	**Pn**	**00 37 37.5**	**-1.0**
LBRS	**Las Brisas**	**2.05**	**323**	*e*P	**Pn**	**00 37 39.4**	**-0.1**
LFU	**La Fuente**	**2.10**	**321**	*e*P	**Pn**	**00 37 39.5**	**-0.6**
LFU				*e*S	**Sn**	**00 38 05.8**	**+0.6**
SNET	**Serv Nac Est T**	**2.13**	**318**	*e*S	**Sn**	**00 38 05.0**	**-0.9**
SNET				AML	AML	00 38 11.2	
	comp=Z,1μm,0.3s						
BOQS	**Boqueron**	**2.20**	**318**	*e*P	**Pn**	**00 37 41.6**	**0.0**
BOQS				*e*S	**Sn**	**00 38 08.5**	**+0.8**
SBLS	**San Blas**	**2.50**	**314**	*e*P	**Pn**	**00 37 46.0**	**+0.2**
MONT	**Ecomontaæa**	**2.53**	**314**	*e*P	**Pn**	**00 37 47.3**	**+1.1**
RBDL	**Robledal**	**2.74**	**317**	*e*P	**Pn**	**00 37 48.8**	**-0.2**
CUS1	**Cusmapa**	**2.79**	**310**	*e*P	**Pn**	**00 37 49.4**	**-0.2**
CMIG	**Matias Romero**	**8.49**	**307**	P	**Pn**	**00 39 10.2**	**+2.4**
	comp=Z,0.7nm,0.3s,baz=155,slow=9.4,SNR=5.5						
CMIG				S	**Sn**	**00 40 38.8**	**-3.5**
	comp=Z,0.1nm,0.3s,baz=122,slow=12,SNR=2.0						
ATAH	**Atahualpa**	**21.26**	**154**	LR	LR	00 49 03.6	
	comp=Z,106nm,19.2s,baz=345,slow=33						
TXAR	**Lajitas Array**	**22.65**	**322**	P	**P**	**00 42 06.0**	**+1.3**
	comp=Z,6.3nm,0.7s,baz=137,slow=10.0,SNR=39						
TKL	**Tuckaleechee C**	**23.73**	**8**	P	**P**	**00 42 16.1**	**+1.0**
	comp=Z,3.7nm,0.5s,baz=174,slow=13,SNR=7.6						
PDAR	**Pinedale Array**	**35.93**	**332**	P	**P**	**00 44 03.6**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=116,slow=10,SNR=6.6						
ULM	**Lac du Bonnet**	**38.62**	**352**	P	**P**	**00 44 24.7**	**-1.1**
	comp=Z,2.1nm,0.6s,baz=162,slow=9.4,SNR=3.1						
YKA	**Yellowknife Ar**	**53.87**	**345**	P	**P**	**00 46 24.8**	**-0.5**
	comp=Z,1.1nm,0.7s,baz=132,slow=9.2,SNR=3.8						
ILAR	**Eielson Array**	**66.21**	**336**	P	**P**	**00 47 49.9**	**0.0**
	comp=Z,0.4nm,0.7s,baz=137,slow=5.1,SNR=4.2						
WRA	**Warramunga Arr**	**138.88**	**254**	PKP	**PKPdf**	**00 56 30.2**	**+0.9**
	comp=Z,0.8nm,1.1s,baz=82,slow=1.8,SNR=5.1						
CMAR	**Chiang Mai Arr**	**148.92**	**348**	PKPbc	**PKPbc**	**00 56 50.4**	**-0.3**
	comp=Z,0.8nm,0.7s,baz=350,slow=4.6,SNR=3.7						

IDC 13 00:43:21.8±4.4, 17.54S×175.28W, h0km, mb4.4/4, mb1 4.6/4, mb1mx3.9/31, mbtmp4.4/4, Error ellipse: s-maj=208.6km s-min=29.7km az=139.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**41.42**	**242**	P	P	00 51 10.2	-0.1
	2.1nm,0.5s,baz=85,slow=10,SNR=7.0						
WRA	**Warramunga Arr**	**47.63**	**259**	P	P	00 51 59.8	-0.3
	2.7nm,0.5s,baz=96,slow=7.7,SNR=35						
ASAR	**Alice Springs**	**47.76**	**254**	P	P	00 52 01.3	+0.2
	20nm,0.6s,baz=91,slow=8.2,SNR=232						
ILAR	**Eielson Array**	**84.89**	**12**	P	P	00 55 58.5	+0.4
	0.3nm,0.5s,baz=215,slow=5.8,SNR=5.4						
BRTR	**Keskin Array B**	**146.59**	**317**	PKPbc	PKPdf	01 03 04.6	+0.3
	0.9nm,0.8s,baz=129,slow=5.3,SNR=6.0						
GERES	**GERESS Array B**	**147.93**	**349**	PKPbc	PKPbc	01 03 08.2	-1.0
	0.1nm,0.3s,baz=5.7,slow=5.4,SNR=4.0						

IDC 13 01:05:02.9±3.7, 16.40S×177.38E, h0km, mb3.7/5, mb1 3.9/5, mb1mx3.8/20, mbtmp3.7/5, MS3.8/13, Ms1 3.8/13, ms1mx3.6/26, Error ellipse: s-maj=147.3km s-min=29.8km az=137.0
ISC 13 01:05:08.5±2.1, 15.7S±0.5×176.6E±0.5, h10km, n37, σ2.14/17, mb3.6/5, MS3.8/11, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**11.51**	**235**	LR	LR	01 11 26.7	
	comp=Z,495nm,20.2s,baz=40,slow=33						
DZM	**Mont Dzumac**	**11.51**	**235**	*e*LQ	LQ	01 10 06.9	
	2μm,25.9s						
DZM				*e*LR	LR	01 10 35.6	
	720nm,24.8s						
RAO	**Raoul Island**	**14.42**	**160**	LR	LR	01 11 41.4	
	comp=Z,579nm,19.3s,baz=276,slow=30						
URZ	**Urewera**	**22.50**	**179**	LR	LR	01 17 12.9	
	comp=Z,312nm,19.3s,baz=14,slow=34						
RAR	**Rarotonga**	**23.07**	**107**	LR	LR	01 16 38.5	
	comp=Z,95nm,21.8s,baz=310,slow=31						
RPZ	**Rata Peaks**	**28.34**	**188**	LR	LR	01 20 04.4	
	comp=Z,159nm,19.7s,baz=353,slow=32						
PPT2	**Papeete2**	**32.45**	**98**	*e*LQ	LQ	01 18 14.7	
	452nm,25.0s						
PPT2				*e*LR	LR	01 19 36.2	
	330nm,28.2s						
PPT	**Papeete**	**32.45**	**98**	LR	LR	01 23 37.2	
	comp=Z,57nm,18.1s,baz=272,slow=35						
TBI	**Tubuai**	**32.84**	**109**	*e*LQ	LQ	01 18 37.5	
	1μm,37.2s						
TBI				*e*LR	LR	01 19 52.4	
	373nm,28.8s						
H11S2	**WAKE ISLAND Hy**	**35.32**	**344**	T	T	01 50 29.0	
	baz=161,slow=74						
H11S3	**WAKE ISLAND Hy**	**35.33**	**344**	T	T	01 50 30.7	
	baz=161,slow=74						
H11S1	**WAKE ISLAND Hy**	**35.34**	**344**	T	T	01 50 30.8	
	baz=161						
STKA	**Stephens Creek**	**35.66**	**237**	P	**P**	**01 12 06.4**	**-0.6**
	2.0nm,0.8s,baz=90,slow=9.1,SNR=3.0						
STKA				LR	LR	01 25 21.6	
	comp=Z,173nm,18.9s,baz=40,slow=34						
WRA	**Warramunga Arr**	**40.37**	**258**	P	**P**	**01 12 46.4**	**-0.5**
	0.6nm,0.5s,baz=90,slow=7.6,SNR=2.0						
ASAR	**Alice Springs**	**40.85**	**252**	P	**P**	**01 12 50.7**	**-0.1**
	1.1nm,0.8s,baz=85,slow=8.7,SNR=7.4						
TAOE	**Nuku Hiva Isla**	**42.75**	**86**	*e*LR	LR	01 24 23.9	
	125nm,26.0s						
VNDA	**Vanda**	**62.30**	**184**	LR	LR	01 39 14.1	
	comp=Z,73nm,18.8s,baz=20,slow=33						
MJAR	**Matsushiro Arr**	**63.33**	**326**	LR	LR	01 38 34.4	
	comp=Z,66nm,21.7s,baz=90,slow=31						
KSRS	**Korea Array**	**69.30**	**320**	LR	LR	01 42 03.3	
	comp=Z,60nm,21.8s,baz=86,slow=31						
MAW	**Mawson**	**84.28**	**201**	LR	LR	01 52 03.2	
	comp=Z,73nm,18.6s,baz=61,slow=34						
ILAR	**Eielson Array**	**84.89**	**15**	P	**P**	**01 17 40.9**	**-2.3**
	0.2nm,0.5s,baz=230,slow=4.2,SNR=4.2						
SONM	**Songino Array**	**88.77**	**321**	P	**P**	**01 18 03.8**	**+1.2**
	0.2nm,0.5s,baz=98,slow=2.9,SNR=2.4						
TXAR	**Lajitas Array**	**88.92**	**59**	LR	LR	01 50 41.2	
	comp=Z,58nm,18.7s,baz=0.0,slow=31						
PDAR	**Pinedale Array**	**89.11**	**45**	LR	LR	01 53 45.5	
	comp=Z,47nm,19.0s,baz=274,slow=33						
KHC	**Kasperske Hory**	**143.87**	**341**	*e*P	**PKPdf**	**01 24 47.6**	**+3.4**
GERES	**GERESS Array B**	**144.08**	**341**	PKPbc	**PKPdf**	**01 24 42.0**	**-2.6**
	0.3nm,0.7s,baz=48,slow=2.6,SNR=3.3						
CONA	**Conrad Observa**	**144.13**	**338**	*i* PKPbc	**PKPdf**	**01 24 47.1**	**+2.3**
	2.8nm,1.1s						
MOA	**Molln**	**144.76**	**339**	*i* PKiKP	**PKiKP**	**01 24 50.8**	**+1.3**
	6.0nm,1.9s						
ARSA	**Arzberg**	**144.82**	**337**	*i* PKiKP	**PKiKP**	**01 24 50.3**	**+0.7**
	3.4nm,1.2s						
SOKA	**Soboth**	**145.48**	**337**	*i* PKPdf	**PKPab**	**01 24 45.2**	**-2.1**
	2.4nm,1.2s						
OBKA	**Obir**	**145.80**	**338**	*i* PKiKP	**PKiKP**	**01 24 54.0**	**+2.3**
	2.6nm,1.1s						
MYKA	**Terra Mystica**	**146.02**	**339**	*i* PKPbc	**PKPab**	**01 24 52.7**	**+3.4**
	1.6nm,0.6s						
RETA	**Reutte**	**146.18**	**343**	*i* PKiKP	**PKiKP**	**01 24 54.4**	**+1.9**
	4.7nm,1.6s						
MOTA	**Moosalm**	**146.21**	**342**	*i* PKiKP	**PKiKP**	**01 24 53.8**	**+1.2**
	1.2nm,0.4s						
ABTA	**Abfaltersbach**	**146.30**	**340**	*i* PKPdf	**PKPab**	**01 24 50.1**	**-0.3**
	2.3nm,1.1s						
DAVA	**Damuels**	**146.61**	**343**	*i* PKPdf	**PKPbc**	**01 24 48.4**	**-2.2**
	8.6nm,1.7s						
FETA	**Feichten**	**146.61**	**342**	*i* PKPab	PKPab	01 24 58.9	+7.2
	3.0nm,1.2s						

MEX 13 01:14:49.6±0.6, 14.72N×93.90W, h20km±999km, MD4.2, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**2.18**	**20**	*e*P	Pn	01 15 21.9	-2.9
TGIG				*e*S	Sn	01 15 47.6	-3.6
CCIG	**Comitan**	**2.30**	**47**	*e*P	Pn	01 15 24.6	-1.9
CCIG				*i* S	Sn	01 15 51.0	-3.4

DDA 13 01:31:48.7, 39.12N×29.03E, h15km, Ml4.3
MOS 13 01:31:48.9±0.9, 39.19N×29.07E, h8km, mb4.2/10, Error ellipse: s-maj=5.3km s-min=3.9km az=99.8
IDC 13 01:31:48.2±0.9, 39.05N×29.03E, h0km, mb3.9/11, mb1 3.9/18, mb1mx3.7/43, mbtmp3.8/18, ML3.7/6, MS2.8/8, Ms1 2.8/8, ms1mx2.5/50, Error ellipse: s-maj=16.1km s-min=11.0km az=35.0
ISCJB 13 01:31:48.9±0.4, 39.14N±0.01×29.03E±0.02, h5km±3km, mb3.9/17, MS3.1/3, Error ellipse: s-maj=2.1km s-min=2.0km az=157.8
ISK 13 01:31:49.2, 39.12N×29.03E, h2km, ML4.2
CSEM 13 01:31:49.5±0.1, 39.12N×29.03E, h2km, mb4.1/8, Error ellipse: s-maj=1.9km s-min=1.7km az=21.0
NEIC 13 01:31:49.9, 39.13N×29.03E, h5km, mb4.2/3, ML4.2(ISK), ML4.1(THE), After ISK.
THE 13 01:31:50.0, 39.12N×29.04E, h1km, ML4.1/8, Error ellipse: s-maj=1.0km s-min=0.5km az=72.0
ISC 13 01:31:50.2±0.9, 39.14N±0.01×29.03E±0.01, h6km±6km, n415, σ1.27/523, mb4.0/17, MS2.7/3, 42C-28D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**248**	⇑*i*P	**Pg**	**01 31 54.9**	**-0.4**
DEMI				*i* S	**Sg**	**01 31 58.7**	**-0.1**
DEMI	**Demirci**	**0.26**	**248**	P	**Pg**	**01 31 54.9**	**-0.4**
DEMI				S	**Sg**	**01 31 58.7**	**-0.1**
GEDZ	**Gediz**	**0.31**	**108**	PG	**Pg**	**01 31 56.0**	**-0.3**
GEDZ	**Gediz**	**0.31**	**108**	*i* Pg	**Pg**	**01 31 56.0**	**-0.3**
GDZ	**Gediz**	**0.36**	**98**	⇑*i*P	**Pg**	**01 31 56.5**	**-0.7**
GDZ				*i* S	**Sg**	**01 32 01.3**	**-0.6**
GDZ	**Gediz**	**0.36**	**98**	P	**Pg**	**01 31 56.5**	**-0.7**
GDZ				S	**Sg**	**01 32 01.3**	**-0.6**
TVSB	**Tavsanli**	**0.46**	**47**	PG	**Pg**	**01 31 58.6**	**-0.5**
TVSB	**Tavsanli**	**0.46**	**47**	Pg	**Pg**	**01 31 58.8**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**47**	Pg	**Pg**	**01 31 58.8**	**-0.3**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*PG	**Pg**	**01 32 02.3**	**-1.1**
KULA	**Kula-Manisa**	**0.69**	**205**	P	**Pg**	**01 32 02.2**	**-1.2**
KULA	**Kula-Manisa**	**0.69**	**205**	P	**Pg**	**01 32 02.2**	**-1.2**
KULA	**Kula-Manisa**	**0.69**	**205**	P	**Pg**	**01 32 02.2**	**-1.2**
MANT	**Manisa**	**0.74**	**210**	⇑*i*P	**Pg**	**01 32 02.1**	**-2.4**
MANT				*i* S	**Sg**	**01 32 11.9**	**-2.3**
MANT	**Manisa**	**0.74**	**210**	P	**Pg**	**01 32 02.2**	**-2.4**
MANT				S	**Sg**	**01 32 11.9**	**-2.3**
AKS	**Akhisar**	**0.98**	**255**	*e*PG	**Pg**	**01

AYVA Ayvalik 1.82 276⇓iP Pn 01 32 21.2 -0.8
AYVA iS Sg 01 32 48.2 -0.6
AYVA Ayvalik 1.82 276 P Pn 01 32 21.2 -0.8
KRBG Karabiga-Canak 1.83 314 ePN Pn 01 32 22.4 +0.3
KRBG Karabiga-Canak 1.83 314 ePn Pn 01 32 22.4 +0.3
MRMT Marmara Adasi 1.83 323 ePN Pn 01 32 23.1 +0.9
MRMT Marmara Adasi 1.83 323 ePn Pn 01 32 23.1 +0.9
SPNC Sapanca-Adapaz 1.83 32 ePN Pb 01 32 23.4 -0.7
SPNC Sapanca-Adapaz 1.83 32 ePn Pb 01 32 23.4 -0.7
ISK Istanbul-Kandi 1.92 1 ePN Pn 01 32 24.4 +1.0
ISK Istanbul-Kandi 1.92 1 P Pn 01 32 22.3 -1.1
ISK S Sn 01 32 48.3 +0.4
ISK Istanbul-Kandi 1.92 1 P Pn 01 32 24.4 +1.0
ISK S Sn 01 32 48.3 +0.4
ISK Istanbul-Kandi 1.92 1 P Pn 01 32 22.3 -1.1
ISK Istanbul-Kandi 1.92 1 ePn Pn 01 32 24.4 +1.0
ISK S Sn 01 32 48.3 +0.4
ISK Istanbul-Kandi 1.92 1 Pn Pn 01 32 24.4 +1.0
ISK S Sn 01 32 48.3 +0.4
GOLH Golhisar 1.95 167 iP Pn 01 32 23.0 -0.8
GOLH iS Sg 01 32 56.0 +3.3
GOLH Golhisar 1.95 167 P Pn 01 32 23.0 -0.8
SVRH Sivrihisar-ESK 1.96 80 ePN Pn 01 32 25.0 +0.9
SVRH Sivrihisar-ESK 1.96 80 ePn Pn 01 32 25.0 +0.9
SVRH Sivrihisar-ESK 1.96 80 Pn Pn 01 32 25.0 +0.9
DGB ˜zmir 2.00 238⇑iP Pb 01 32 26.6 -0.4
DGB iS Sb 01 32 52.1 0.0
GCAM G?zelcaml? 2.01 225 iP Pn 01 32 25.8 +1.1
GCAM iS Sb 01 32 53.0 +0.6
GCAM G?zelcaml? 2.01 225 P Pn 01 32 25.8 +1.1
GLHS Glhisar (BURDU 2.02 169 ePN Pn 01 32 25.3 +0.5
GLHS Glhisar (BURDU 2.02 169 ePn Pn 01 32 25.3 +0.5
BGKT Bogazkoy 2.05 355 ePN Pn 01 32 25.9 +0.8
BGKT Bogazkoy 2.05 355 ePn Pn 01 32 25.9 +0.8
URLA Izmir 2.06 248 iP Pb 01 32 28.0 +0.1
URLA iS Sg 01 32 56.9 +0.7
BCK Bucak 2.08 143 ePN Pn 01 32 26.1 +0.5
BCK Bucak 2.08 143 ePn Pn 01 32 26.1 +0.5
BTAS Taskesti 2.08 46 iP Pn 01 32 25.4 -0.3
BTAS iS Sg 01 32 58.3 +1.2
BTAS Taskesti 2.08 46 P Pn 01 32 25.4 -0.3
YER Yerkesik 2.09 197 ePN Pn 01 32 26.4 +0.7
YER Yerkesik 2.09 197 P Pn 01 32 24.5 -1.2
YER S Sn 01 32 51.1 -0.9
YER Yerkesik 2.09 197 P Pn 01 32 26.4 +0.7
YER S Sn 01 32 51.1 -0.9
YER Yerkesik 2.09 197 P Pn 01 32 24.5 -1.2
YER Yerkesik 2.09 197 ePn Pn 01 32 26.4 +0.7
YER S Sn 01 32 51.1 -0.9
YER Yerkesik 2.09 197 Pn Pn 01 32 26.4 +0.7
YER S Sn 01 32 51.1 -0.9
MLSB Milas 2.09 209 ePN Pn 01 32 26.7 +1.0
MLSB Milas 2.09 209 ePn Pn 01 32 26.7 +1.0
SART Tekirdag 2.10 318 iP Pg 01 32 29.9 -0.6
SART iS Sg 01 32 57.8 +0.1
RKY Sarkoy-Tekirda 2.10 318 ePN Pn 01 32 26.5 +0.6
RKY Sarkoy-Tekirda 2.10 318 ePn Pn 01 32 26.5 +0.6
RKY Sarkoy-Tekirda 2.10 318 Pn Pn 01 32 26.5 +0.6
KLYT Kilyos 2.11 0 ePN Pn 01 32 26.3 +0.3
KLYT Kilyos 2.11 0 ePn Pn 01 32 26.3 +0.3
MDUB Mudurnu 2.13 51 ePN Pn 01 32 27.2 +0.8
MDUB Mudurnu 2.13 51 ePn Pn 01 32 27.3 +0.8
LPK Lapseki 2.14 306 ePN Pn 01 32 27.2 +0.9
LPK Lapseki 2.14 306 ePn Pn 01 32 27.3 +0.9
PRK Paraskevi 2.14 274 P Pn 01 32 25.9 -0.5
PRK S Sn 01 32 53.7 +0.4
PRK Paraskevi 2.14 274 P Pn 01 32 25.9 -0.5
PRK S Sn 01 32 53.7 +0.4
PRK Paraskevi 2.14 274 P Pn 01 32 25.9 -0.5
PRK S Sn 01 32 53.7 +0.4
PRK Paraskevi 2.14 274 P Pn 01 32 25.9 -0.5
PRK S Sn 01 32 53.7 +0.4
KAND Kocaeli-Kandir 2.15 24 iP Pn 01 32 25.9 -0.6
KAND iS Sn 01 32 53.2 -0.2
KAND Kocaeli-Kandir 2.15 24 P Pn 01 32 25.9 -0.6
KAND S Sn 01 32 53.2 -0.2
ZEY ˜zmir 2.17 246 iP Pb 01 32 29.4 -0.4
ZEY iS Sg 01 32 59.1 -0.8
TKR Tekirdag 2.17 329 ePN Pn 01 32 27.4 +0.6
TKR Tekirdag 2.17 329 ePn Pn 01 32 27.4 +0.6
TKR Tekirdag 2.17 329 Pn Pn 01 32 27.4 +0.6
EZN Ezine 2.20 289 ePN Pn 01 32 28.4 +1.2
EZN Ezine 2.20 289 P Pn 01 32 26.9 -0.3
EZN S Sn 01 32 54.9 +0.2
EZN Ezine 2.20 289 P Pn 01 32 26.9 -0.3
EZN S Sn 01 32 54.9 +0.2
EZN Ezine 2.20 289 P Pn 01 32 26.9 -0.3
EZN Ezine 2.20 289 ePn Pn 01 32 28.4 +1.2
EZN S Sn 01 32 54.9 +0.2
EZN Ezine 2.20 289 P Pn 01 32 26.9 -0.3
EZN S Sn 01 32 54.9 +0.2
SAHE Sakarya_HENDEK 2.21 39 iP Pn 01 32 26.9 -0.5
SAHE iS Sn 01 32 53.0 -2.1
SAHE Sakarya_HENDEK 2.21 39 P Pn 01 32 26.9 -0.5
CRLT Corlu 2.22 334 ePN Pn 01 32 28.8 +1.3
CRLT Corlu 2.22 334 ePn Pn 01 32 28.8 +1.3
CRLT Corlu 2.22 334 Pn Pn 01 32 28.8 +1.3
KIZT Kizilcal 2.24 96 ePN Pn 01 32 28.8 +0.9
KIZT Kizilcal 2.24 96 ePn Pn 01 32 28.8 +0.9
SUTC Sutluce-Ispart 2.27 136 ePN Pn 01 32 28.6 +0.3
SUTC Sutluce-Ispart 2.27 136 ePn Pn 01 32 28.6 +0.3
SUTC Sutluce-Ispart 2.27 136 Pn Pn 01 32 28.6 +0.3
TURN Turunc 2.29 189 iP Pn 01 32 29.2 +0.8
TURN iS Sg 01 33 09.7 +5.9
GELI Tayfur-Gelibol 2.33 303 ePN Pn 01 32 29.7 +0.6
GELI Tayfur-Gelibol 2.33 303 ePn Pn 01 32 29.7 +0.6
KORT Korkueli 2.38 154 iP Pn 01 32 29.9 +0.1
KORT iS Sg 01 33 08.8 +2.2
KORT Korkueli 2.38 154 P Pn 01 32 29.9 +0.1
BOZC Bozcaada 2.41 288⇓iP Pn 01 32 29.5 -0.5
BOZC iS Sn 01 32 59.9 +0.1
BDRM Kayabasi 2.42 212 iP Pn 01 32 29.0 -1.2
BDRM iS Sg 01 33 10.1 +2.2
BDRM Kayabasi 2.42 212 P Pn 01 32 29.0 -1.2
CHOS Chios island 2.44 253 P Pn 01 32 29.6 -1.0
CHOS S Sn 01 33 00.9 +0.1
CHOS Chios island 2.44 253 P Pn 01 32 29.6 -1.0
CHOS S Sn 01 33 00.9 +0.1
CHOS Chios island 2.44 253 P Pn 01 32 29.6 -1.0
ERIK Erikli-Kesan 2.46 309 ePN Pn 01 32 32.2 +1.4
ERIK Erikli-Kesan 2.46 309 ePn Pn 01 32 32.2 +1.4
KESN Edirne-Kesan 2.47 314 iP Pn 01 32 30.4 -0.9
KESN iS Sg 01 33 08.2 -1.3
KESN Edirne-Kesan 2.47 314 P Pn 01 32 30.4 -0.9
SIGR SIGRI 2.47 273 P Pn 01 32 29.9 -1.0
SIGR S Sn 01 33 01.1 -0.2
SIGR SIGRI 2.47 273 P Pn 01 32 29.9 -1.0
SIGR S Sn 01 33 01.1 -0.2
SIGR SIGRI 2.47 273 P Pn 01 32 29.9 -1.0
BODT Bodrum 2.48 214 P Pn 01 32 29.6 -1.5
BODT S Sn 01 33 01.6 0.0
BODT Bodrum 2.48 214 P Pn 01 32 29.6 -1.5
BODT S Sn 01 33 01.6 0.0
BODT Bodrum 2.48 214 P Pn 01 32 29.6 -1.5
KDHN Kadinhani 2.49 103 iP Pn 01 32 31.2 -0.1
KDHN iS Sg 01 33 12.3 +2.1
KDHN Kadinhani 2.49 103 P Pn 01 32 31.2 -0.1
GADA Gvkgeada 2.63 294 P Pn 01 32 33.0 -0.2
GADA S Sn 01 33 05.8 +0.4
GADA Gvkgeada 2.63 294 P Pn 01 32 33.0 -0.2
GADA S Sn 01 33 05.8 +0.4
GADA Gvkgeada 2.63 294 P Pn 01 32 33.0 -0.2
ENEZ Enez 2.73 307 P Pn 01 32 34.3 -0.1
ENEZ S Sn 01 33 08.0 +0.3
ENEZ Enez 2.73 307 P Pn 01 32 34.3 -0.1
ENEZ S Sn 01 33 08.0 +0.3
PHSR Pinarhisar 2.74 336 ePN Pn 01 32 36.0 +1.4
PHSR Pinarhisar 2.74 336 ePn Pn 01 32 36.0 +1.4
LADK Ladik-KONYA 2.77 109 ePN Pn 01 32 36.0 +0.8
LADK Ladik-KONYA 2.77 109 ePn Pn 01 32 36.0 +0.8
LADK Ladik-KONYA 2.77 109 Pn Pn 01 32 36.0 +0.8
KDZE Karadeniz Ereo 2.85 40 ePN Pn 01 32 37.8 +1.6
KDZE Karadeniz Ereo 2.85 40 ePn Pn 01 32 37.8 +1.6
BCAM Yenicaga 2.87 53 iP Pn 01 32 36.3 -0.3
BCAM iS Sg 01 33 21.4 -1.1
BCAM Yenicaga 2.87 53 P Pn 01 32 36.3 -0.3
ALN Alexandroupoli 2.88 308 P Pn 01 32 36.2 -0.4
ALN S Sn 01 33 12.5 +0.9
ALN Alexandroupoli 2.88 308 P Pn 01 32 36.2 -0.4
ALN S Sn 01 33 12.5 +0.9
ALN Alexandroupoli 2.88 308 P Pn 01 32 36.2 -0.4
ALN S Sn 01 33 12.5 +0.9
ALN Alexandroupoli 2.88 308 P Pn 01 32 36.2 -0.4
ALN S Sn 01 33 12.5 +0.9
NIS1 Nisyros Isl. 2.93 211 P Pn 01 32 36.1 -1.1
NIS1 S Sn 01 33 12.1 -0.6
NIS1 Nisyros Isl. 2.93 211 P Pn 01 32 36.1 -1.1
NIS1 S Sn 01 33 12.1 -0.6
NIS1 Nisyros Isl. 2.93 211 P Pn 01 32 36.1 -1.1
NIS1 S Sn 01 33 12.1 -0.6
LOD Lodumlu 2.98 74 ePN Pn 01 32 39.7 +1.6
LOD Lodumlu 2.98 74 ePn Pn 01 32 39.7 +1.6
ANTO Ankara 3.00 75 eP Pn 01 32 38.3 0.0
ANTO Ankara 3.00 75 ePn Pn 01 32 38.3 0.0
ANTO Ankara 3.00 75 ePn Pn 01 32 38.3 0.0
ANTO ePg Pg 01 32 46.1 -1.6
ANTO eSg Sg 01 33 24.6 -2.1
SMTH Samothraki Isl 3.00 297 P Pn 01 32 37.9 -0.4
SMTH S Sn 01 33 15.0 +0.4
SMTH Samothraki Isl 3.00 297 P Pn 01 32 37.9 -0.4
SMTH S Sn 01 33 15.0 +0.4
SMTH Samothraki Isl 3.00 297 P Pn 01 32 37.9 -0.4
SMTH S Sn 01 33 15.0 +0.4
ARG Arkhangelos 3.01 194 P Pn 01 32 37.5 -0.8
ARG S Sn 01 33 14.4 -0.2
ARG Arkhangelos 3.01 194 P Pn 01 32 37.5 -0.8
ARG S Sn 01 33 14.4 -0.2
ARG Arkhangelos 3.01 194 P Pn 01 32 37.5 -0.8
ARG S Sn 01 33 14.4 -0.2
ARG Arkhangelos 3.01 194 P Pn 01 32 37.5 -0.8
ARG S Sn 01 33 14.4 -0.2
KSL Kastellorizon 3.02 171 P Pn 01 32 37.9 -0.6
KSL Kastellorizon 3.02 171 P Pn 01 32 37.9 -0.6
LIA Limnos Island 3.07 285 P Pn 01 32 38.8 -0.3
LIA S Sn 01 33 16.8 +0.7
LIA Limnos Island 3.07 285 P Pn 01 32 38.8 -0.3
LIA S Sn 01 33 16.8 +0.7
LIA Limnos Island 3.07 285 P Pn 01 32 38.8 -0.3
LIA S Sn 01 33 16.8 +0.7
EDRB Edirne 3.22 328 P Pn 01 32 40.4 -0.8
EDRB S Sn 01 33 19.4 -0.4
EDRB Edirne 3.22 328 P Pn 01 32 40.4 -0.8
EDRB S Sn 01 33 19.4 -0.4
EDRB Edirne 3.22 328 P Pn 01 32 40.4 -0.8
EDRB S Sn 01 33 19.4 -0.4
APE Apeiranthos 3.45 234⇓iP Pb 01 32 53.2 +1.5
APE Apeiranthos 3.45 234 S Sg 01 33 37.5 -3.4
APE Apeiranthos 3.45 234⇑iP Pn 01 32 44.8 +0.4
APE Apeiranthos 3.45 234 iP Pn 01 32 44.8 +0.4
BR131 Keskin Array S 3.62 79 ePn Pn 01 32 47.2 +0.3
BR131 Keskin Array S 3.62 79 ePn Pn 01 32 47.2 +0.3
BRTR Keskin Array B 3.62 79 Pn Pn 01 32 46.9 0.0
3.7nm,0.3s,baz=256,slow=14,SNR=71
BRTR Sn Sn 01 33 28.1 -1.8
3.5nm,0.3s,baz=246,slow=20,SNR=3.1
BRTR Lg Lg 01 33 44.7
1.2nm,0.3s,baz=255,slow=29,SNR=2.8
KAVA Kavala 3.93 300 P Pn 01 32 50.5 -0.5
KAVA S Sn 01 33 37.6 +0.2
KAVA Kavala 3.93 300 P Pn 01 32 50.5 -0.5
KAVA S Sn 01 33 37.6 +0.2
KAVA Kavala 3.93 300 P Pn 01 32 50.5 -0.5
KAVA S Sn 01 33 37.6 +0.2
OUR Ouranopolis 4.07 289 P Pn 01 32 52.4 -0.5
OUR Ouranopolis 4.07 289 P Pn 01 32 52.4 -0.5
OUR Ouranopolis 4.07 289 P Pn 01 32 52.4 -0.5
OUR Ouranopolis 4.07 289 P Pn 01 32 52.4 -0.5
PAIG Paliouri 4.21 282 P Pn 01 32 54.1 -0.7
PAIG Paliouri 4.21 282 P Pn 01 32 54.1 -0.7
PAIG Paliouri 4.21 282 P Pn 01 32 54.1 -0.7
PAIG Paliouri 4.21 282 P Pn 01 32 54.1 -0.7
PLD Plovdiv 4.43 313 P Pn 01 32 57.6 -0.2
PLD Plovdiv 4.43 313 P Pn 01 32 57.6 -0.2
PLG Polygyros 4.47 288 P Pn 01 32 58.3 -0.2
PLG S Sn 01 33 51.9 +1.0
PLG Polygyros 4.47 288 P Pn 01 32 58.3 -0.2
PLG S Sn 01 33 51.9 +1.0
PLG Polygyros 4.47 288 P Pn 01 32 58.3 -0.2
PLG S Sn 01 33 51.9 +1.0
PLG Polygyros 4.47 288 P Pn 01 32 58.3 -0.2
PLG S Sn 01 33 51.9 +1.0
NVR Nevrokopi 4.53 301 P Pn 01 32 59.1 -0.2
NVR Nevrokopi 4.53 301 P Pn 01 32 59.1 -0.2
NVR Nevrokopi 4.53 301 P Pn 01 32 59.1 -0.2
NVR Nevrokopi 4.53 301 P Pn 01 32 59.1 -0.2
SRS Serrai 4.61 297 P Pn 01 32 59.8 -0.6
SRS Serrai 4.61 297 P Pn 01 32 59.8 -0.6
SRS Serrai 4.61 297 P Pn 01 32 59.8 -0.6
SRS Serrai 4.61 297 P Pn 01 32 59.8 -0.6
SOH Sokhos 4.67 293 P Pn 01 33 01.3 +0.1
SOH Sokhos 4.67 293 P Pn 01 33 01.3 +0.1
NPS Neapolis 4.73 216 P Pn 01 33 03.6 +1.5
NPS Neapolis 4.73 216 P Pn 01 33 03.6 +1.5
LAST Lasithi 4.88 217 ePn Pn 01 33 05.3 +1.2
LAST Lasithi 4.88 217 ePn Pn 01 33 05.3 +1.2
IDI Anoyia 5.07 222 Pn Pn 01 33 06.1 -0.6
1.1nm,0.3s,baz=18,slow=7.1,SNR=22
IDI Sn Sn 01 34 01.8 -3.8
1.1nm,0.3s,baz=305,slow=16,SNR=3.0
KNT Kendrikon 5.11 295 P Pn 01 33 07.5 +0.2
KNT Kendrikon 5.11 295 P Pn 01 33 07.5 +0.2
KNT Kendrikon 5.11 295 P Pn 01 33 07.5 +0.2
KNT Kendrikon 5.11 295 P Pn 01 33 07.5 +0.2
AGG Agios Georgios 5.21 271 P Pn 01 33 09.3 +0.6
AGG Agios Georgios 5.21 271 P Pn 01 33 09.3 +0.6
TIRR Tirgusor 5.33 355⇓iP Pn 01 33 09.9 -0.4
TIRR Tirgusor 5.33 355 eP Pn 01 33 09.8 -0.5
TIRR e 01 34 08.6
TIRR Tirgusor 5.33 355⇓iP Pn 01 33 09.9 -0.4
TIRR S Sn 01 34 08.6 -3.3
TIRR Tirgusor 5.33 355 eP Pn 01 33 09.8 -0.5
TIRR eSn Sn 01 34 08.6 -3.3
GRG Griva 5.40 292 P Pn 01 33 12.3 +1.1
GRG Griva 5.40 292 P Pn 01 33 12.3 +1.1
CSS Mathiatis 5.41 139 ePn Pn 01 33 10.5 -0.8
CSS Mathiatis 5.41 139 ePn Pn 01 33 10.5 -0.8
TLB Topalu 5.49 353⇑iP Pn 01 33 11.9 -0.5
TLB Topalu 5.49 353 S Sn 01 34 13.1 -2.7
TLB Topalu 5.49 353 ⇑P Pn 01 33 11.9 -0.5
TLB Topalu 5.49 353⇑iP Pn 01 33 11.9 -0.5
KZN Kozani 5.71 284 P Pn 01 33 17.7 +2.1
KZN Kozani 5.71 284 P Pn 01 33 17.7 +2.1
TLCR 6.04 359⇑iP Pn 01 33 20.0 0.0
TLCR 6.04 359 ⇑P Pn 01 33 20.0 0.0
TLCR 6.04 359⇑iP Pn 01 33 20.0 0.0
CFR Carcaliu 6.07 354⇑iP Pn 01 33 19.5 -0.9
CFR Carcaliu 6.07 354 ⇑P Pn 01 33 19.5 -0.9
CFR Carcaliu 6.07 354 P Pn 01 33 19.5 -0.9
FNA Florina 6.10 288 P Pn 01 33 21.4 +0.5
FNA Florina 6.10 288 P Pn 01 33 21.4 +0.5
ISR Istrita 6.25 344⇑iP Pn 01 33 24.9 +1.9
ISR Istrita 6.25 344 ⇑P Pn 01 33 24.9 +1.9
ISR Istrita 6.25 344⇑iP Pn 01 33 24.9 +1.9
JAN Janina 6.36 277 P Pn 01 33 28.5 +4.1
JAN Janina 6.36 277 P Pn 01 33 28.5 +4.1
SEV Sevastopol' 6.42 31⇑eP Pn 01 33 24.1 -1.0
SEV e 01 34 33.1
SEV pmax pmax
comp=Z,11nm,0.3s
SEV smax smax
comp=N,30nm,0.4s
SEV smax smax
comp=E,18nm,0.4s
SEV Sevastopol' 6.42 31 eP Pn 01 33 24.1 -1.0
comp=E,11nm,0.3s
SEV eS Sn 01 34 33.1 -5.5
comp=E,30nm,0.4s
YAL Yalta 6.57 34 eP Pn 01 33 27.2 -0.1
YAL e 01 34 38.1
YAL pmax pmax
comp=Z,49nm,0.4s
YAL smax smax
comp=N,28nm,0.4s
YAL smax smax
comp=E,24nm,0.4s
YAL Yalta 6.57 34 eP Pn 01 33 27.2 -0.1
comp=E,49nm,0.4s
YAL eS Sn 01 34 38.1 -4.4
MLR Muntele Rosu 6.74 341 Pn Pn 01 33 30.6 +0.9
baz=183,slow=18
MLR Sn Sn 01 34 47.1 +0.2
comp=E,0.2nm,0.3s,baz=137,slow=16,SNR=1.9
MLR Lg Lg 01 35 26.9
comp=E,0.1nm,0.3s,baz=270,slow=20,SNR=2.2
MLR Muntele Rosu 6.74 341⇑iP Pn 01 33 30.7 +0.9
MLR Muntele Rosu 6.74 341 eP Pn 01 33 29.7 -0.1
MLR 01 34 47.1
MLR Muntele Rosu 6.74 341 ePn Pn 01 33 29.7 -0.1
MLR Muntele Rosu 6.74 341 ePn Pn 01 33 29.7 -0.1
MLR Sn Sn 01 34 47.1 +0.2
MLR Lg Lg 01 35 26.9
IGT Igoumenitsa 6.75 276 P Pn 01 33 34.3 +4.5
IGT Igoumenitsa 6.75 276 P Pn 01 33 34.3 +4.5
ODBI Odobesti 6.78 348⇓iP Pn 01 33 31.3 +1.2
ODBI Odobesti 6.78 348⇓iP Pn 01 33 31.3 +1.2
ALU Alushta 6.83 34 eP Pn 01 33 32.8 +1.9
ALU e 01 34 44.0
ALU pmax pmax
comp=Z,7.0nm,0.2s
ALU smax smax
comp=N,143nm,0.4s
ALU Alushta 6.83 34 eP Pn 01 33 32.8 +1.9
comp=N,7.0nm,0.2s
ALU eS Sn 01 34 44.0 -4.9
comp=N,143nm,0.4s
SIM Simferopol' 6.93 31⇓eP Pn 01 33 32.3 +0.1
SIM e 01 34 46.2
SIM pmax pmax
comp=Z,108nm,0.3s
SIM smax smax
comp=N,44nm,0.5s
SIM smax smax
comp=E,96nm,0.5s
SIM Simferopol' 6.93 31 eP Pn 01 33 32.3 +0.1
comp=E,108nm,0.3s
SIM eS Sn 01 34 46.2 -5.1
PLOR Plostina 6.93 346⇑iP Pn 01 33 32.8 +0.5
PLOR Plostina 6.93 346 ⇑P Pn 01 33 32.8 +0.5
PLOR Plostina 6.93 346⇑iP Pn 01 33 32.8 +0.5
VOIR 6.95 336⇓iP Pn 01 33 32.8 +0.3
VOIR 6.95 336 ⇓P Pn 01 33 32.8 +0.3
VOIR 6.95 336⇓iP Pn 01 33 32.8 +0.3
ARR Arges 7.02 334⇑iP Pn 01 33 33.8 +0.2
ARR Arges 7.02 334⇑iP Pn 01 33 33.8 +0.2
BOVS Bovan 7.10 312 iPn Pn 01 33 34.9 +0.3
SELS Selova 7.22 307⇑iPn Pn 01 33 36.1 -0.2
SUDU Sudak 7.26 36 eP Pn 01 33 36.2 -0.6
SUDU e 01 34 55.4
SUDU pmax pmax
comp=Z,11nm,0.3s
SUDU smax smax
comp=E,33nm,0.3s
SUDU smax smax
comp=N,21nm,0.5s
SUDU Sudak 7.26 36 eP Pn 01 33 36.2 -0.6
comp=N,11nm,0.3s
SUDU eS Sn 01 34 55.4 -4.1
comp=N,21nm,0.5s
DOPR Dopca 7.33 340⇓iP Pn 01 33 38.1 +0.4
DOPR Dopca 7.33 340⇓iP Pn 01 33 38.1 +0.4
LOT Lotru 7.41 330⇓iP Pn 01 33 38.2 -0.7
LOT Lotru 7.41 330⇓iP Pn 01 33 38.2 -0.7
LOT S Sn 01 35 01.7 -1.6
TESR Tescani 7.57 347⇑iP Pn 01 33 40.7 -0.3
TESR Tescani 7.57 347⇑iP Pn 01 33 40.7 -0.3
KUBS Kucevo 7.61 316 iPn Pn 01 33 39.2 -2.4
MILM Milestii Mici 7.78 359⇑iP Pn 01 33 43.8 0.0
MILM Milestii Mici 7.78 359⇑iP Pn 01 33 43.8 0.0
GRUS Gruza 7.83 310⇑iPn Pn 01 33 44.4 -0.2
MDVR Moldovita 7.84 318⇓iP Pn 01 33 44.4 -0.3
MDVR Moldovita 7.84 318 S Sn 01 35 10.4 -3.3
MDVR Moldovita 7.84 318⇓iP Pn 01 33 44.4 -0.3
MMAI Mount Meron Ar 8.00 138 Pn Pn 01 33 45.5 -1.5
comp=N,5.0nm,0.3s,baz=316,slow=11,SNR=30
MMAI Sn Sn 01 35 15.6 -2.2
comp=N,0.7nm,0.3s,baz=301,slow=25,SNR=2.9
IVAS Ivanjica 8.01 306 ePn Pn 01 33 46.3 -0.8
DIVS Divibare 8.38 309⇑iPn Pn 01 33 51.9 -0.4
BZS Buzias 8.48 322⇑iP Pn 01 33 52.8 -0.7
BZS Buzias 8.48 322 ⇑P Pn 01 33 52.8 -0.7
BZS Buzias 8.48 322⇑iP Pn 01 33 52.8 -0.7
BBLS Lazići 8.62 306 ePn Pn 01 33 56.0 +0.5
TEKS Tekeris 8.91 310 ePn Pn 01 33 57.7 -1.7
BURAR Bucovina Array 8.91 343⇓iP Pn 01 34 00.6 +1.1
BURAR Bucovina Array 8.91 343 ⇓P Pn 01 34 00.6 +1.1
BURAR Bucovina Array 8.91 343⇓iP Pn 01 34 00.6 +1.1
DRGR 8.94 331⇑iP Pn 01 34 00.6 +0.8
DRGR 8.94 331 ⇑P Pn 01 34 00.6 +0.8
DRGR 8.94 331⇑iP Pn 01 34 00.6 +0.8
SORM Soroca 9.01 357⇓iP Pn 01 33 59.9 -0.7
SORM Soroca 9.01 357 ⇓P Pn 01 33 59.9 -0.7
SORM Soroca 9.01 357⇓iP Pn 01 33 59.9 -0.7
ASF Jabal al Asfar 9.45 135 Pn Pn 01 34 08.3 +1.4
comp=N,0.3nm,0.3s,baz=317,slow=19,SNR=3.0
TIP Timpagrande 9.53 274 ePn Pn 01 34 07.2 -0.8
comp=N,4.7nm,1.0s
TIP Timpagrande 9.53 274 ePn Pn 01 34 07.2 -0.8
comp=N,4.7nm,1.0s
CUC Castrocucco 10.24 279 ePn Pn 01 34 18.0 +0.4
CUC Castrocucco 10.24 279 ePn Pn 01 34 18.0 +0.4
EIL Elat 10.63 151 Pn Pn 01 34 22.2 -0.8
comp=N,0.6nm,0.3s,baz=0.3,slow=12,SNR=6.2
KVAR Kislovodsk Arr 11.31 60 LR LR 01 40 29.7
comp=N,38nm,19.0s,baz=300,slow=46
KBZ Khabaz 11.37 62 LR LR 01 40 09.0
comp=N,40nm,18.3s,baz=227,slow=44
KIEV Kiev 11.55 1 eP Pn 01 34 36.4 +0.9
KIEV Kiev 11.55 1 ePn Pn 01 34 36.4 +0.9
KIEV Kiev 11.55 1 ePn Pn 01 34 36.4 +0.9
AKASG Malin Array Be 11.56 1 Pn Pn 01 34 36.9 +1.2
comp=N,0.6nm,0.3s,baz=175,slow=12,SNR=4.0
NCK Nalchik 11.78 64⇑eP Pn 01 34 37.8 -1.0
NCK Nalchik 11.78 64 eP Pn 01 34 37.8 -1.0
GNI Garni 12.16 80 LR LR 01 39 36.1
comp=N,85nm,18.1s,baz=284,slow=38
GNI Garni 12.16 80 eP Pn 01 34 44.0 0.0
GNI Garni 12.16 80 ePn Pn 01 34 44.0 0.0
GNI Garni 12.16 80 ePn Pn 01 34 44.0 0.0
VRAC Vranov 13.50 323 LR LR 01 40 32.6
comp=N,28nm,19.5s,baz=30,slow=39
VSR Storozhevoye 14.02 27 eP Pn 01 35 10.3 +1.2
VSR pmax pmax
comp=Z,6.0nm,0.7s
VSR Storozhevoye 14.02 27 eP Pn 01 35 10.3 +1.2
comp=Z,6.0nm,0.7s
ABTA Abfaltersbach 14.27 308 i pP P 01 35 22.0 +1.8
comp=Z,2.7nm,1.0s
GERES GERESS Array B 14.66 316 Pn Pn 01 35 18.3 +0.2
comp=Z,0.1nm,0.3s,baz=137,slow=13,SNR=3.8
GERES LR LR 01 42 07.2
comp=Z,30nm,20.4s,baz=16,slow=42
FETA Feichten 15.49 306 iP P 01 35 36.9 +3.1
comp=Z,5.9nm,1.1s
RETA Reutte 15.67 308 iP P 01 35 42.3 +6.6
comp=Z,4.8nm,1.4s
DAVOX Davos/Dischmat 15.94 305 LR LR 01 42 57.9
comp=Z,42nm,20.0s,baz=84,slow=42
DAVA Damuels 16.13 307 i pP P 01 35 42.3 +1.4
comp=Z,8.0nm,1.1s
DAVA Damuels 16.13 307 P P 01 35 42.3 +1.4
comp=Z,8.0nm,1.1s
CLL Collm 16.55 323 eP Pn 01 35 34.0 -8.7
CLL Collm 16.55 323 eP Pn 01 35 34.0 -8.7
CLL Collm 16.55 323 eP Pn 01 35 34.0 -8.7
OBN Obninsk 16.77 15 eP P 01 35 47.9 +0.3
OBN pmax pmax
comp=Z,11nm,1.5s
OBN Obninsk 16.77 15 eP P 01 35 47.9 +0.3
comp=Z,11nm,1.5s
FINES FINESS Array B 22.40 356 P P 01 36 48.8 -0.3
comp=Z,1.1nm,0.6s,baz=170,slow=12,SNR=4.4
FINES FINESS Array B 22.40 356 eP P 01 36 50.4 +1.3
FINES pmax pmax
comp=Z,1.0nm,0.6s
KLMR Klimovskoe 22.70 13 eP P 01 36 49.1 -3.2
KLMR pmax pmax
comp=Z,5.0nm,0.8s
GEYT Alibeck 22.75 84 P P 01 36 52.9 -0.2
comp=Z,3.8nm,0.9s,baz=287,slow=10,SNR=7.9
HFS Hagfors 23.13 340 P P 01 36 56.9 +0.2
comp=Z,4.5nm,0.9s,baz=138,slow=12,SNR=4.3
AKTK Aktyubinsk 23.32 52 P P 01 36 57.4 -1.4
comp=Z,2.0nm,0.5s
AKTO Aktyubinsk 23.32 52 P P 01 36 57.4 -1.4
comp=Z,1.6nm,0.5s,baz=244,slow=9.0,SNR=5.5

AKTO				LR	LR	01 48 54.4	
	comp=Z,20nm,20.1s,baz=289,slow=44						
NB2	**NORSAR Subarra**	**24.56**	**339**	P	**P**	**01 37 09.4**	**-1.1**
	comp=Z,6.3nm,1.4s,baz=145,slow=9.3						
NB2	**NORSAR Subarra**	**24.56**	**339**	P	**P**	**01 37 09.4**	**-1.1**
	comp=Z,6.3nm,1.4s,SNR=4.1						
NOA	**NORSAR Array B**	**24.56**	**339**	P	**P**	**01 37 09.7**	**-0.9**
	comp=Z,1.7nm,0.9s,baz=142,slow=8.1,SNR=4.2						
NOA				LR	LR	01 48 08.3	
	comp=Z,24nm,18.1s,baz=300,slow=40						
NOA	**NORSAR Array B**	**24.56**	**339**	*eP*	**P**	**01 37 09.9**	**-0.6**
NOA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
NOA	**NORSAR Array B**	**24.56**	**339**	*eP*	**P**	**01 37 09.9**	**-0.6**
	comp=Z,2.0nm,0.8s						
ARU	**Arti**	**26.02**	**39**	P	**P**	**01 37 23.0**	**-0.8**
	comp=Z,1.3nm,0.3s,baz=243,slow=6.4,SNR=6.4						
ARU	**Arti**	**26.02**	**39**	*d iP*	**P**	**01 37 23.2**	**-0.5**
ARU				S	**S**	**01 41 55.7**	**+1.0**
ARU				SS	**SnSn**	**01 42 51.8**	**+0.2**
ARU				pmax	pmax		
	comp=Z,9.0nm,2.5s						
ARU	**Arti**	**26.02**	**39**	*eP*	**P**	**01 37 23.6**	**-0.1**
	comp=Z,2.2nm,0.5s						
ARU				S	**S**	**01 41 55.7**	**+1.0**
ARU	**Arti**	**26.02**	**39**	*eP*	**P**	**01 37 23.6**	**-0.1**
	comp=Z,2.3nm,0.5s						
EKA	**Eskdalemuir Ar**	**26.88**	**318**	P	**P**	**01 37 31.9**	**+0.4**
	comp=Z,1.0nm,0.5s,baz=114,slow=12,SNR=16						
ESK	**Eskdalemuir**	**26.89**	**318**	*eP*	**P**	**01 37 32.6**	**+1.0**
ESK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ESK	**Eskdalemuir**	**26.89**	**318**	*eP*	**P**	**01 37 32.6**	**+1.0**
	comp=Z,3.5nm,0.6s						
ESK	**Eskdalemuir**	**26.89**	**318**	*eP*	**P**	**01 37 32.6**	**+1.0**
	comp=Z,3.5nm,0.6s						
AAK	**Ala-Archa**	**34.23**	**69**	*iP*	**P**	**01 38 38.9**	**+2.1**
AAK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
AAK	**Ala-Archa**	**34.23**	**69**	*eP*	**P**	**01 38 36.2**	**-0.6**
	comp=Z,2.2nm,0.6s						
AAK	**Ala-Archa**	**34.23**	**69**	*eP*	**P**	**01 38 36.2**	**-0.6**
	comp=Z,2.2nm,0.6s						
MKAR	**Makanchi Array**	**39.07**	**61**	P	**P**	**01 39 17.3**	**-0.5**
	comp=Z,1.0nm,0.6s,baz=280,slow=7.4,SNR=10						
MKAR	**Makanchi Array**	**39.07**	**61**	*eP*	**P**	**01 39 16.9**	**-0.9**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ZALV	**Zalesovo Beam**	**40.05**	**49**	P	**P**	**01 39 24.6**	**-1.2**
	comp=Z,0.6nm,0.3s,baz=282,slow=10,SNR=4.7						
TLY	**Talaya**	**51.65**	**50**	*eP*	**P**	**01 40 58.6**	**+1.1**
TLY				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TLY	**Talaya**	**51.65**	**50**	*eP*	**P**	**01 40 58.6**	**+1.1**
	comp=Z,2.0nm,1.0s						
SONM	**Songino Array**	**54.61**	**54**	P	**P**	**01 41 18.5**	**-0.9**
	comp=Z,0.8nm,0.5s,baz=286,slow=6.6,SNR=8.3						
SONM	**Songino Array**	**54.61**	**54**	*eP*	**P**	**01 41 21.5**	**+2.0**
SONM				pmax	pmax		
	comp=Z,1.0nm,0.5s						
SCHQ	**Schefferville**	**62.17**	**319**	P	**P**	**01 42 10.5**	**-1.6**
	comp=Z,1.8nm,0.5s,baz=24,slow=5.7,SNR=5.4						
BILL	**Bilibino**	**68.42**	**16**	*eP*	**P**	**01 42 51.4**	**-0.9**
BILL				pmax	pmax		
	comp=Z,5.0nm,1.1s						
BILL	**Bilibino**	**68.42**	**16**	*eP*	**P**	**01 42 51.4**	**-0.9**
	comp=Z,5.0nm,1.1s						
MJAR	**Matsushiro Arr**	**80.39**	**50**	LR	LR	02 23 32.3	
	comp=Z,91nm,19.3s,baz=225,slow=39						

NIED ***13*** *01:44:00.37°.90N×143°.40E,h8km,Mw4.2 Best double couple: M₀2.21000×10¹⁵ NP1:φs334.00000°,δ67.00000°, λ164.00000°. NP2:φs70.00000°,δ75.00000°,λ24.00000°.*

IDC ***13*** *01:44:17.9±0.8,37°.75N×143°.54E,h0km,mb4.1/13, mb1 4.2/19,mb1mx4.1/38,mbtmp4.1/19,ML3.6/6,MS3.2/10, Ms1 3.3/10,ms1mx3.1/43,Error ellipse: s-maj=19.2km s-min=15.9km az=129.0*

NEIC ***13*** *01:44:19.5±2.7,37°.81N×143°.53E,h10km±16km,mb4.5/10, Error ellipse: s-maj=9.2km s-min=5.7km az=122.0*

ISCJB ***13*** *01:44:20.0±1.4,37°.78N±0°.03×143°.39E±0°.04, h24km±10km,mb4.2/24,MS3.4/4,Error ellipse: s-maj=5.9km s-min=4.8km az=34.3*

JMA ***13*** *01:44:20.6±0.2,37°.86N×143°.44E,h43km,M4.4*

ISC 13 01:44:22.0±4.1,37°.80N±0°.04×143°.41E±0°.07,h25km±29km, n67,σ1$41/68,mb4.4/24,MS3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.75**	**293**	P	Pn	01 44 49.4	-1.4
JIO				*e*S	**Sn**	**01 45 10.5**	**-1.8**
OFUJ	**Ofunato**	**1.87**	**314**	P	Pn	01 44 50.7	-1.7
OFUJ				*e*S	**Sn**	**01 45 12.6**	**-2.7**
JMK	**Ichinoseki**	**2.07**	**304**	P	Pn	01 44 53.7	-1.5
JMK				*e*S	**Sn**	**01 45 18.6**	**-1.6**
JOM	**Ohasama**	**2.36**	**316**	P	Pn	01 44 57.8	-1.3
JOM				S	**Sn**	**01 45 25.6**	**-1.6**
JFT	**Otama**	**2.46**	**264**	P	**Pn**	**01 45 00.3**	**-0.2**
JFT				*e*S	**Sn**	**01 45 29.3**	**-0.4**
JYK	**Kaneyama**	**2.65**	**296**	P	**Pn**	**01 45 02.1**	**-1.0**
JYK				*e*S	**Sn**	**01 45 34.4**	**0.0**
JANG	**Nango**	**2.96**	**331**	P	**Pn**	**01 45 07.0**	**-0.4**
JNS	**Sasagawa**	**3.24**	**272**	P	**Pn**	**01 45 11.6**	**+0.3**
JAW	**Awa shima**	**3.35**	**283**	P	**Pn**	**01 45 13.0**	**+0.3**
JAG	**Ashikaga**	**3.45**	**248**	P	**Pn**	**01 45 13.9**	**-0.2**
JAG				*e*S	**Sn**	**01 45 53.3**	**-0.9**
BSO1	**Boso 1**	**3.70**	**213**	P	**Pn**	**01 45 16.2**	**-0.9**
BSO1				*e*S	**Sn**	**01 45 59.1**	**-0.6**
JRY	**Ryogami san**	**4.03**	**245**	P	**Pn**	**01 45 21.9**	**-0.2**
JRY				*e*S	**Sn**	**01 46 07.4**	**-1.1**
JSD	**Sado**	**4.08**	**275**	P	**Pn**	**01 45 22.2**	**-0.6**
ERM	**Erimo**	**4.22**	**357**	*e*Pn	Pn	01 45 22.1	-2.5
ERM				*e*Sn	**Sn**	**01 46 07.0**	**-6.0**
JOD2	**Odawara 2**	**4.30**	**235**	P	**Pn**	**01 45 25.4**	**-0.5**
JOD2				S	**Sn**	**01 46 12.8**	**-2.5**
MJAR	**Matsushiro Arr**	**4.34**	**255**	Pn	**Pn**	**01 45 27.5**	**+1.1**
	9.0nm,0.3s,baz=84,slow=15,SNR=50						
MJAR				Sn	**Sn**	**01 46 15.3**	**-0.9**
	5.7nm,0.3s,baz=86,slow=24,SNR=5.4						
MJAR				LR	LR	01 47 02.4	
	comp=Z,74nm,20.1s,baz=315,slow=37						
MAJO	**Matsushiro**	**4.34**	**255**	*e*Pn	**Pn**	**01 45 27.1**	**+0.7**
MAT	**Matsushiro**	**4.34**	**255**	P	**Pn**	**01 45 27.8**	**+1.4**
MAT				*e*S	**Sn**	**01 46 15.3**	**-0.9**
JHJ2	**Mitsune**	**5.52**	**213**	*e*Pn	**Pn**	**01 45 42.1**	**-0.4**
	56nm,0.3s						
JHJ2				*e*Sn	**Sn**	**01 46 41.0**	**-4.2**
JHJ	**Hachijo jima 2**	**5.53**	**213**	Pn	**Pn**	**01 45 41.8**	**-0.9**
	50nm,0.3s,baz=358,slow=17,SNR=18						
JHJ				Sn	**Sn**	**01 46 41.2**	**-4.2**
	80nm,0.3s,baz=79,slow=24,SNR=10						
JHJ				LR	LR	01 48 05.3	
	comp=Z,200nm,18.6s,baz=124,slow=41						
ASAJ	**Asahikawa**	**6.34**	**355**	*e*Pn	**Pn**	**01 45 52.7**	**-1.2**
	7.5nm,0.4s						
USRK	**Ussuriysk Ar.**	**10.74**	**310**	Pn	**Pn**	**01 46 54.5**	**+0.5**
	0.9nm,0.3s,baz=112,slow=12,SNR=13						
USRK				LR	LR	01 51 01.7	
	comp=Z,144nm,19.8s,baz=125,slow=37						
JNU	**Nakatsue**	**11.23**	**249**	Pn	**Pn**	**01 47 00.8**	**-0.2**
	0.3nm,0.3s,baz=76,slow=8.3,SNR=4.7						
JNU				LR	LR	01 51 46.5	
	comp=Z,216nm,18.1s,baz=118,slow=40						
JNU	**Nakatsue**	**11.23**	**249**	*e*Pn	Pn	01 46 59.2	-1.7
KSRS	**Korea Array**	**12.29**	**273**	Pn	**Pn**	**01 47 17.4**	**+2.1**
	0.3nm,0.3s,baz=90,slow=13,SNR=8.7						
KSRS				LR	LR	01 51 38.2	
	comp=Z,111nm,20.0s,baz=68,slow=35						
KSAR	**Wonju Array Be**	**12.32**	**273**	Pn	**Pn**	**01 47 17.4**	**+1.7**
PETK	**Petropavlovsk-**	**18.24**	**28**	P	**Pn**	**01 48 33.0**	**-0.2**
	0.6nm,0.3s,baz=196,slow=10,SNR=7.0						
PETK				LR	LR	01 55 26.7	
	comp=Z,36nm,20.5s,baz=226,slow=37						
BJT	**Baijiatuao**	**21.29**	**284**	*e*P	**P**	**01 49 05.8**	**-0.8**
	16nm,0.6s						
GUMO	**Guam**	**24.15**	**177**	LR	LR	01 57 01.8	
	comp=Z,44nm,21.6s,baz=250,slow=32						
YAK	**Yakutsk**	**25.71**	**345**	LR	LR	02 00 26.3	
	comp=Z,127nm,19.2s,baz=148,slow=38						
SEY	**Seymchan**	**25.75**	**9**	P	**P**	**01 49 50.0**	**-0.3**
	1.9nm,0.7s,baz=188,slow=13,SNR=5.6						
H11N2	**WAKE ISLAND Hy**	**27.22**	**125**	T	T	02 18 47.4	
	baz=317,slow=74,SNR=98						
H11N1	**WAKE ISLAND Hy**	**27.23**	**125**	T	T	02 18 41.6	
	baz=317,slow=74,SNR=21						
H11N3	**WAKE ISLAND Hy**	**27.24**	**125**	T	T	02 18 36.1	
	baz=317,slow=74,SNR=29						
H11S1	**WAKE ISLAND Hy**	**27.99**	**127**	T	T	02 19 44.7	
	baz=318,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**27.99**	**127**	T	T	02 19 34.5	
	baz=318,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.01**	**127**	T	T	02 19 37.6	
	baz=318,slow=76,SNR=12						
SONM	**Songino Array**	**28.70**	**302**	P	**P**	**01 50 17.6**	**+0.5**
	1.2nm,0.4s,baz=100,slow=9.1,SNR=11						
ENH	**Enshi**	**28.98**	**265**	*e*P	**P**	**01 50 20.9**	**+1.2**
	17nm,0.7s						
ZALV	**Zalesovo Beam**	**42.58**	**312**	P	**P**	**01 52 16.0**	**+0.4**
	6.1nm,0.8s,baz=85,slow=7.5,SNR=11						
ZALV				PcP	**PcP**	**01 54 08.1**	**+0.6**
	1.2nm,0.6s,baz=96,slow=2.9,SNR=3.4						
ZALV				LR	LR	02 10 31.6	
	comp=Z,68nm,18.8s,baz=272,slow=37						
MKAR	**Makanchi Array**	**45.06**	**302**	P	**P**	**01 52 36.3**	**+0.5**
	5.1nm,0.7s,baz=88,slow=9.9,SNR=17						
KURK	**Kurchatov**	**46.72**	**308**	*e*P	**P**	**01 52 48.4**	**-0.3**
	84nm,0.7s						
ILAR	**Eielson Array**	**47.99**	**33**	P	**P**	**01 52 58.6**	**+0.2**
	2.0nm,0.8s,baz=267,slow=6.8,SNR=21						
GUN	**Gumba**	**48.66**	**276**	*e*P	**P**	**01 53 05.4**	**+0.9**
	13nm,0.3s						
KKN	**Kakani**	**49.19**	**276**	*e*P	**P**	**01 53 09.2**	**+0.8**
	24nm,0.7s						
PKIN	**Phulchoki**	**49.19**	**276**	*e*P	**P**	**01 53 09.2**	**+0.7**
	18nm,0.6s						
GKN	**Gorkha**	**49.60**	**277**	*e*P	**P**	**01 53 12.2**	**+0.8**
	30nm,0.9s						
DANN	**Dangsing**	**50.13**	**278**	*e*P	**P**	**01 53 16.2**	**+0.6**
KOLN	**Koldanda**	**50.52**	**277**	*e*P	**P**	**01 53 19.8**	**+1.3**
	6.6nm,0.5s						
PYUN	**Piuthan**	**50.85**	**278**	*e*P	**P**	**01 53 21.7**	**+0.7**
	13nm,0.4s						
BRVK	**Borovoye**	**51.29**	**312**	*e*P	**P**	**01 53 24.1**	**+0.4**
	6.2nm,0.7s						
AAK	**Ala-Archa**	**51.53**	**298**	*e*P	**P**	**01 53 25.1**	**-0.7**
	3.0nm,0.6s						
KKAR	**Karatay Array**	**54.12**	**300**	*e*P	**P**	**01 53 45.2**	**+0.5**
	2.1nm,0.6s						
ARU	**Arti**	**56.84**	**319**	*e*P	**P**	**01 54 03.9**	**-0.3**
	2.5nm,0.6s						
WRAB	**Tennant Creek**	**58.05**	**190**	*e*P	**P**	**01 54 12.8**	**-0.1**
	4.1nm,0.8s						
WRA	**Warramunga Arr**	**58.06**	**190**	P	**P**	**01 54 12.4**	**-0.7**
	1.9nm,0.7s,baz=9.8,slow=7.3,SNR=12						
ABKAR	**Akbulak array**	**58.66**	**310**	*e*P	**P**	**01 54 17.1**	**+0.1**
	1.8nm,0.4s						
ASAR	**Alice Springs**	**61.79**	**190**	P	**P**	**01 54 38.1**	**-0.5**
	0.4nm,0.8s,baz=14,slow=8.9,SNR=4.3						
GEYT	**Alibeck**	**64.85**	**299**	P	**P**	**01 54 58.6**	**-0.4**
	3.1nm,0.9s,baz=11,slow=3.0,SNR=5.5						
FINES	**FINESS Array B**	**68.87**	**333**	P	**P**	**01 55 24.1**	**+0.1**
	3.0nm,0.9s,baz=38,slow=13,SNR=3.9						
SUMG	**Summit**	**69.91**	**1**	*e*P	**P**	**01 55 30.1**	**-0.7**
	2.0nm,0.6s						
KBZ	**Khabaz**	**71.60**	**311**	P	**P**	**01 55 42.6**	**+1.5**
	2.5nm,0.8s,baz=228,slow=15,SNR=5.1						
FFC	**Flin Flon**	**72.19**	**34**	*e*P	**P**	**01 55 44.1**	**-0.4**
	1.3nm,0.7s						
NOA	**NORSAR Array B**	**74.09**	**338**	LR	LR	02 33 39.1	
	comp=Z,36nm,18.8s,baz=195,slow=40						
AKASG	**Malin Array Be**	**74.66**	**323**	P	**P**	**01 55 59.3**	**+0.3**
	0.2nm,0.3s,baz=37,slow=3.6,SNR=3.1						
PDAR	**Pinedale Array**	**75.99**	**47**	P	**P**	**01 56 06.6**	**-0.6**
	0.5nm,0.6s,baz=310,slow=1.4,SNR=6.4						
TXAR	**Lajitas Array**	**88.39**	**54**	P	**P**	**01 57 12.5**	**+0.4**
	0.2nm,0.6s,baz=305,slow=3.0,SNR=5.1						

ISCJB ***13*** *01:53:55.7±0.5,39°.11N±0°.03×29°.00E±0°.03,h3km±6km, Error ellipse: s-maj=5.2km s-min=3.5km az=161.1*

CSEM ***13*** *01:53:55.9±0.1,39°.11N×29°.00E,h2km,MD3.1,Error ellipse: s-maj=2.6km s-min=2.2km az=147.0*

ISK ***13*** *01:53:55.6,39°.11N×29°.03E,h5km,MD2.7*

DDA ***13*** *01:53:55.3,39°.13N×29°.00E,h7km,Md3.1*

ISC 13 01:53:55.9±0.9,39°.12N±0°.02×28°.99E±0°.02,h11km±8km, n49,σ0$73/68,2C,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**250**	*i*P	**Pg**	**01 54 00.9**	**+0.2**
DEMI				*i* S	**Sg**	**01 54 04.2**	**+0.3**
DEMI	**Demirci**	**0.23**	**250**	P	**Pg**	**01 54 00.9**	**+0.2**
DEMI				S	**Sg**	**01 54 04.2**	**+0.3**
GEDZ	**Gediz**	**0.34**	**103**	*e*Pg	**Pg**	**01 54 02.3**	**-0.3**
GEDZ	**Gediz**	**0.34**	**103**	*e*Pg	**Pg**	**01 54 02.3**	**-0.3**
GDZ	**Gediz**	**0.38**	**94**	*i*P	**Pg**	**01 54 03.3**	**-0.3**
GDZ				*i* S	**Sg**	**01 54 08.7**	**+0.1**
GDZ	**Gediz**	**0.38**	**94**	P	**Pg**	**01 54 03.3**	**-0.3**
GDZ				S	**Sg**	**01 54 08.7**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**48**	*e*PG	**Pg**	**01 54 05.1**	**-0.4**
TVSB				*e*SG	**Sg**	**01 54 11.7**	**-0.4**
TVSB	**Tavsanli**	**0.49**	**48**	*e*Pg	**Pg**	**01 54 05.1**	**-0.4**
TVSB				*e*Sg	**Sg**	**01 54 11.7**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*PG	**Pb**	**01 54 09.0**	**-0.5**
KULA				*e*SG	**Sg**	**01 54 17.5**	**+0.3**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*Pg	**Pb**	**01 54 09.0**	**-0.5**
KULA				*e*Sg	**Sg**	**01 54 17.5**	**+0.3**
MANT	**Manisa**	**0.71**	**208**	*i* P	**Pg**	**01 54 08.7**	**-1.1**
MANT				*i* S	**Sg**	**01 54 18.0**	**-1.1**
MANT	**Manisa**	**0.71**	**208**	P	**Pg**	**01 54 08.6**	**-1.1**
MANT				S	**Sg**	**01 54 18.0**	**-1.1**
KHL	**Karahalli**	**0.90**	**152**	*e*PG	**Pg**	**01 54 13.0**	**-0.2**
KHL				*e*SG	**Sb**	**01 54 25.7**	**+0.1**
KHL	**Karahalli**	**0.90**	**152**	*e*Pg	**Pg**	**01 54 13.0**	**-0.2**
KHL				*e*Sg	**Sb**	**01 54 25.7**	**+0.1**
AKS	**Akhisar**	**0.95**	**256**	*e*PG	**Pb**	**01 54 14.7**	**+0.3**
AKS	**Akhisar**	**0.95**	**256**	*e*Pg	**Pb**	**01 54 14.7**	**+0.3**
BALB	**Balikesir**	**1.00**	**302**	*e*PG	**Pn**	**01 54 16.5**	**+0.5**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg	**Pn**	**01 54 16.5**	**+0.5**
IGD	**Bursa**	**1.16**	**8**	*i* P	**Pg**	**01 54 16.5**	**-1.6**
IGD				*i* S	**Sg**	**01 54 32.8**	**-0.3**
BALY	**Balya**	**1.23**	**301**	*i* P	**Pg**	**01 54 18.5**	**-1.0**
BALY				*i* S	**Sg**	**01 54 34.1**	**-1.4**
BALY	**Balya**	**1.23**	**301**	P	**Pg**	**01 54 18.5**	**-1.0**
BALY				S	**Sg**	**01 54 34.1**	**-1.4**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pn**	**01 54 20.5**	**+1.1**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pn**	**01 54 20.5**	**+1.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**01 54 20.2**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**01 54 20.2**	**+0.8**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pn**	**01 54 20.4**	**+0.8**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pn**	**01 54 20.4**	**+0.8**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pn**	**01 54 21.1**	**+1.3**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pn**	**01 54 21.1**	**+1.3**
BORA	**Eskisehir**	**1.36**	**56**	*i* P	**Pn**	**01 54 20.9**	**-0.1**
BORA				*i* S	**Sn**	**01 54 40.0**	**+0.8**
BORA	**Eskisehir**	**1.36**	**56**	P	**Pn**	**01 54 20.9**	**-0.1**
BORA				S	**Sn**	**01 54 40.0**	**+0.8**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN	**Pg**	**01 54 22.1**	**-0.1**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn	**Pg**	**01 54 22.1**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pg**	**01 54 23.5**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pg**	**01 54 23.5**	**+0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pb**	**01 54 23.2**	**+0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pb**	**01 54 23.2**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*PN	**Pg**	**01 54 23.6**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*Pn	**Pg**	**01 54 23.6**	**-0.2**
ESKT	**Eskisehir**	**1.50**	**74**	*e*PN	**Pg**	**01 54 24.2**	**-0.4**
ESKT	**Eskisehir**	**1.50**	**74**	*i* P	**Pn**	**01 54 23.4**	**+0.5**
ESKT				*i* S	**Sn**	**01 54 42.0**	**-0.5**
ESKT	**Eskisehir**	**1.50**	**74**	*e*Pn	**Pg**	**01 54 24.2**	**-0.4**
SEYT	**Eskypehyr**	**1.50**	**74**	P	**Pn**	**01 54 23.4**	**+0.5**
SEYT				S	**Sn**	**01 54 42.0**	**-0.5**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**01 54 27.6**	**+1.1**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**01 54 27.6**	**+1.1**
MRMT	**Marmara Adasi**	**1.83**	**325**	*e*PN	**Pn**	**01 54 28.6**	**+1.2**
MRMT	**Marmara Adasi**	**1.83**	**325**	*e*Pn	**Pn**	**01 54 28.6**	**+1.2**
ISK	**Istanbul-Kandi**	**1.94**	**2**	*e*PN	**Pb**	**01 54 30.7**	**-0.7**
ISK	**Istanbul-Kandi**	**1.94**	**2**	*e*Pn	**Pb**	**01 54 30.7**	**-0.7**

WEL 13 01:54:18.4±0.5,37°.45S×176°.23E,h171km±5km,ML3.6/6, 1D,Error ellipse: s-maj=10.3km s-min=6.5km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**1.06**	**139**	*i*PN	Pn	01 54 46.1	+0.5
URZ					SN	Sn	01 55 06.9	+0.1
HAZ	**Te Kaha**	**1.27**	**104**		PN	Pn	01 54 47.3	-0.1
HAZ					SN	Sn	01 55 10.1	+0.3
HAZ					SN		01 55 10.3	
MWZ	**Matawai**	**1.35**	**131**		PN	Pn	01 54 48.5	+0.3
MWZ					SN	Sn	01 55 10.8	-0.5
RIGZ	**Rimuhau**	**1.74**	**136**		PN	Pn	01 54 52.3	+0.2
RIGZ					AML	AML	01 55 19.8	
RIGZ					AML	AML	01 55 20.2	
CNGZ	**Carnagh Statio**	**1.87**	**124**		PN	Pn	01 54 53.8	+0.4
KNZ	**Kokohu**	**1.93**	**145**		PN	Pn	01 54 53.4	-0.6
CKHZ	**Cape Kidnapper**	**2.30**	**164**		PN	Pn	01 54 57.5	-0.7
CKHZ					AML	AML	01 55 30.5	
KAHZ	**Kahuranaki**	**2.39**	**168**		PN	Pn	01 54 58.5	-0.8
PNHZ	**Pukenui**	**2.46**	**181**		PN	Pn	01 54 59.0	-1.1
TSZ	**Takapari Road**	**2.61**	**185**		PN	Pn	01 55 00.6	-1.3
TSZ					AML	AML	01 55 04.2	
MRZ	**Mangatainoka R**	**3.24**	**189**		PN	Pn	01 55 06.8	-2.7
MRZ					AML	AML	01 55 48.8	

IDC 13 01:58:16.6±3.7,14°.36S×167°.68E,h0km,mb4.3/3, mb1 4.3/4,mb1mx3.8/37,mbtmp4.2/4,ML4.2/1,MS2.9/1, Ms1 2.9/1,ms1mx2.7/32,Error ellipse: s-maj=76.6km s-min=41.8km az=91.0,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.76**	**189**	Pn	Pn	02 00 09.4	-1.6
	3.3nm,0.3s,baz=252,slow=20,SNR=11						
DZM				Sn	Sn	02 01 34.5	-5.2
	0.5nm,0.3s,baz=294,slow=20,SNR=2.1						
HNR	**Honiara**	**9.01**	**302**	LR	LR	02 04 23.5	
	comp=Z,68nm,19.2s,baz=61,slow=41						
STKA	**Stephens Creek**	**29.54**	**229**	P	P	02 04 24.6	+1.5
	4.1nm,0.6s,baz=52,slow=8.4,SNR=8.3						
WRA	**Warramunga Arr**	**32.30**	**255**	P	P	02 04 46.5	-1.1
	261nm,1.1s,baz=85,slow=8.5,SNR=2.5						
ASAR	**Alice Springs**	**33.18**	**249**	P	P	02 04 55.1	-0.2
	1.3nm,0.8s,baz=80,slow=8.8,SNR=12						
MKAR	**Makanchi Array**	**97.21**	**316**	P	P	02 11 51.3	0.0
	0.5nm,0.7s,baz=118,slow=5.7,SNR=3.7						

ISCJB ***13*** *02:01:52.4±1.0,36°.27S±0°.03×73°.62W±0°.04,h7km±6km, mb4.7/78,MS4.4/12,Error ellipse: s-maj=5.4km s-min=4.5km az=2.1*

IDC ***13*** *02:01:52.7±0.6,36°.19S×73°.38W,h0km,mb4.6/11, mb1 4.6/15,mb1mx4.5/28,mbtmp4.6/15,ML4.8/4,MS4.5/15, Ms1 4.4/15,ms1mx4.3/21,Error ellipse: s-maj=25.3km s-min=13.5km az=82.0*

GCMT ***13*** *02:01:53.0±0.3,36°.33S×73°.88W,h21km±1km,MW5.0/62, Moment Tensor Solution. s24,c27; s62,c81; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr3.27±.21; Mθθ-0.22±.12; Mφφ-3.05±.14; Mrθ-0.89±.20; Mrφ-0.21±.07; Mθφ-3.02±.24; Best double couple: M₀4.37700×10¹⁶ NP1:φs182.00000°,δ67.00000°,λ89.00000°. NP2: φs6.00000°,δ23.00000°,λ93.00000°. Principal axes: T 4.4810, Plg68.0000°, Azm90.0000°; N -0.2080, Plg1.0000°, Azm183.0000°; P -4.2740, Plg22.0000°, Azm273.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***13*** *02:01:53.0,36°.34S×73°.60W,h32km,mb4.7/73, ML4.9(GUC),After GUC.*

NEIC Felt [IV] at Concepcion and Tome; [III] at Arauco, Chiguayante, Chillan, Cobquecura, Hualpen, San Fabian, San Pedro de la Paz and Talcahuano; [II] at Cauquenes and Penco.

GUC ***13*** *02:01:53.7±0.6,36°.34S×73°.60W,h32km±2km,ML4.9*

MOS ***13*** *02:01:56.9±1.2,36°.27S×73°.43W,h33km,mb4.9/23,Error ellipse: s-maj=18.2km s-min=8.3km az=98.9*

*B

comp=Z,653nm,18.2s,baz=340,slow=38
ATAH Atahualpa 29.32 350 LR LR 02 17 24.5
comp=Z,253nm,20.2s,baz=176,slow=32
BDFB Brasilia 30.58 55 LR LR 02 21 34.7
comp=Z,1µm,20.0s,baz=168,slow=39
BDFB Brasilia 30.58 55 *e*P **P 02 08 10.5 +1.9**
BDFB pmax pmax
comp=Z,32nm,1.1s
BDFB Brasilia 30.58 55 *e*P **P 02 08 10.4 +1.9**
comp=Z,32nm,1.1s
OTAV Otavalo 36.59 352 *e*P **P 02 09 01.7 +0.6**
comp=Z,11nm,1.3s
PTGA Pitinga 37.49 23 P **P 02 09 07.7 -0.6**
comp=Z,11nm,0.9s,baz=208,slow=10,SNR=20
PTGA Pitinga 37.49 23 *e*P **P 02 09 08.1 -0.3**
comp=Z,12nm,0.8s
SJAC San Juan de Ar 39.31 359 *e*P **P 02 09 23.4 -0.3**
PRAC Prado 39.77 358 *e*P **P 02 09 29.6 +2.1**
comp=Z,28nm,1.4s
GUYC Guyana, Colomb 41.28 357 *e*P **P 02 09 41.2 +0.7**
NORC Norcasia 41.60 358 *e*P **P 02 09 43.3 +0.6**
RUSC La Rusia 41.91 1 *e*P **P 02 09 46.2 +0.5**
RUSC La Rusia 41.91 1 *e*P **P 02 09 47.4 +1.7**
comp=Z,14nm,1.3s
HELC Santa Helena 42.25 357 *e*P **P 02 09 46.9 -1.4**
HELC Santa Helena 42.25 357 *e*P **P 02 09 49.0 +0.7**
comp=Z,35nm,1.0s
DBBC Dabeiba 43.10 356 *e*P **P 02 09 56.0 +1.1**
GRMC Gramalote, San 43.73 1 *e*P **P 02 09 56.8 -3.2**
VNA1 Neumayer--Stab 48.10 156 P **P 02 10 34.8 +1.0**
SNAA Sanae 49.98 157 P **P 02 10 47.8 -0.4**
SNAA Sanae 49.98 157 *d iP* **P 02 10 49.0 +0.8**
SNAA Sanae 49.98 157 *e*P **P 02 10 47.9 -0.4**
comp=Z,27nm,0.9s
SVB Belmont 50.58 15 *e*P **P 02 10 52.0 -1.3**
comp=Z,90nm,0.5s
QSPA South Pole Qui 54.00 180 *e*P **P 02 11 18.2 -0.2**
comp=Z,66nm,1.0s
RKT Rikitea 54.20 266 *e*T T 03 09 33.8
comp=Z,3.5nm,0.2s
CELP Cerrillos 54.41 8 *e*P **P 02 11 21.3 -0.4**
NVL N'lazarevskaya 54.75 156 *e*P **P 02 11 22.4 -1.1**
SBA Scott Base 60.65 192 *e*P **P 02 12 07.0 +2.1**
SBA pmax pmax
comp=Z,7.0nm,1.1s
SBA Scott Base 60.65 192 *e*P **P 02 12 07.0 +2.1**
comp=Z,7.4nm,1.1s
VNDA Vanda 61.68 192 P **P 02 12 12.8 +0.8**
comp=Z,1.6nm,0.9s,baz=175,slow=1.6,SNR=6.9
VNDA Vanda 61.68 192 *e*P **P 02 12 13.6 +1.6**
comp=Z,3.7nm,1.0s
SYO Syowa Base 64.22 158 *eX* **P 02 12 25.5 -3.4**
SYO Syowa Base 64.22 158 *epP* pP 02 12 31.2 -0.9
TBI Tubuai 65.67 258 *e*LR LR 02 32 32.3
comp=Z,436nm,30.0s
TAOE Nuku Hiva Isla 66.02 277 *e*S **S 02 21 30.4 +0.6**
comp=Z,92nm,24.4s
TAOE Nuku Hiva Isla 66.02 277 *e*LR LR 02 32 49.5
comp=Z,253nm,29.7s
MEH Mehetia 67.41 264 *e*T T 03 26 02.6
comp=Z,84nm,0.2s
736A Circle Diamond 68.54 338 P **P 02 12 58.0 +1.0**
baz=160
TIAR Tiarei 68.60 264 *e*T T 03 27 32.1
comp=Z,7.0nm,0.2s
833A Chaparral WMA, 68.70 336 P **P 02 12 58.4 +0.4**
baz=158
PAE Paea 68.73 263 *e*T T 03 27 41.6
comp=Z,2.2nm,0.4s
347A Saraland 68.75 346 P **P 02 12 58.9 +0.7**
baz=167
PPT2 Papeete2 68.77 263 *e*S **S 02 22 04.3 +1.5**
comp=Z,167nm,22.8s
PPT2 Papeete2 68.77 263 *e*LR LR 02 33 53.0
comp=Z,421nm,25.2s,baz=112
PPT Papeete 68.78 263 LR LR 02 35 37.8
comp=Z,145nm,21.9s,baz=138,slow=29
636A Smothers Creek 69.03 338 P **P 02 13 01.3 +1.3**
baz=160
342A Flagon Creek P 69.54 343 P **P 02 13 04.4 +1.2**
baz=164
HPIG 69.78 330 *e*P **P 02 13 06.8 +1.8**
comp=Z,6.6nm,1.1s
GOGA Godfrey 69.92 351 *e*P **P 02 13 04.4 -1.0**
GOGA pmax pmax
comp=Z,4.0nm,0.6s
GOGA Godfrey 69.92 351 *e*P **P 02 13 04.4 -1.0**
comp=Z,3.8nm,0.6s
340A Bronson 69.97 341 P **P 02 13 07.2 +1.4**
baz=163
534A Blanco 69.98 337 P **P 02 13 06.9 +1.0**
baz=159
533A Kerrville 70.20 337 P **P 02 13 07.9 +0.6**
baz=158
Z47A Carrollton 70.41 347 P **P 02 13 08.9 +0.5**
baz=168
Z48A Northport 70.50 348 P **P 02 13 09.2 +0.2**
baz=168
434A Burnet 70.64 338 P **P 02 13 10.7 +0.7**
baz=159
JCT Junction City 70.82 336 P **P 02 13 11.7 +0.5**
baz=158
JCT Junction City 70.82 336 *e*P **P 02 13 12.0 +0.9**
JCT pmax pmax
comp=Z,6.0nm,0.8s
JCT Junction City 70.82 336 *e*P **P 02 13 12.0 +0.9**
comp=Z,6.0nm,0.8s
335A Moody 70.82 338 P **P 02 13 12.1 +1.1**
baz=160
433A Art 70.85 337 P **P 02 13 11.0 -0.2**
baz=158,SNR=5.2
Y47A UCPARC, Winfie 71.06 347 P **P 02 13 13.0 +0.6**
baz=168
334A Lometa 71.12 338 P **P 02 13 13.0 +0.1**
baz=159
TXAR Lajitas Array 71.14 332 P **P 02 13 13.6 +0.5**
comp=Z,2.2nm,0.6s,baz=152,slow=8.6,SNR=46
TXAR LR LR 02 39 58.7
comp=Z,283nm,18.4s,baz=0.0,slow=32
TX31 Lajitas Ar. Si 71.14 332 *e*P **P 02 13 13.7 +0.6**
333A Richland Sprin 71.34 337 P **P 02 13 14.4 +0.2**
baz=159
MAW Mawson 71.37 164 P **P 02 13 13.9 -0.1**
comp=Z,3.2nm,0.8s,baz=297,slow=9.6,SNR=5.3
MAW LR LR 02 46 19.9
comp=Z,334nm,18.1s,baz=234,slow=37
MAW Mawson 71.37 164 P **P 02 13 13.9 -0.1**
MAW pmax pmax
comp=Z,4.0nm,0.9s
MAW MLR MLR
comp=Z,334nm,18.1s
MAW Mawson 71.37 164 *e*P **P 02 13 14.6 +0.6**
comp=Z,3.7nm,1.5s
KMSC Kings Mountain 71.39 353 P **P 02 13 14.4 0.0**
baz=173
KMSC Kings Mountain 71.39 353 *e*P **P 02 13 14.5 0.0**
comp=Z,6.6nm,0.8s
WHTX Lake Whitney, 71.50 339 P **P 02 13 15.5 +0.4**
baz=160
WHTX Lake Whitney, 71.50 339 *e*P **P 02 13 17.2 +2.1**
comp=Z,13nm,1.0s
233A Rising Star 71.96 337 P **P 02 13 18.3 +0.3**
baz=159
SWET Sewanee 72.03 349 *e*P **P 02 13 18.4 +0.1**
comp=Z,4.9nm,0.7s
CPCT Cooper Cave 72.06 351 *e*P **P 02 13 18.6 +0.2**
comp=Z,5.4nm,1.0s
TKL Tuckaleechee C 72.17 351 *e*P **P 02 13 18.6 -0.5**
TKL pmax pmax
comp=Z,7.0nm,0.9s
TKL Tuckaleechee C 72.17 351 *e*P **P 02 13 18.6 -0.5**
comp=Z,7.1nm,0.9s
Z36A Blue Ridge 72.40 340 P **P 02 13 20.9 +0.3**
baz=161
133A Hamilton Ranch 72.51 338 P **P 02 13 21.7 +0.5**
baz=159
X40A Basin Creek Fa 72.64 343 P **P 02 13 22.6 +0.7**
baz=164
ABTX Abilene, Hawle 72.75 337 P **P 02 13 23.0 +0.3**
baz=158
MIAR Mount Ida 72.88 343 P **P 02 13 23.9 +0.6**
baz=163
X39A Fountain Ranch 72.97 342 P **P 02 13 24.0 +0.1**
baz=163
Z33A Whitaker Ranch 73.09 338 P **P 02 13 24.7 0.0**
baz=159
W41B Gary Mavity, V 73.17 344 P **P 02 13 25.2 +0.2**
baz=164
Y35A Marietta 73.17 340 P **P 02 13 25.1 +0.1**
baz=160
WVT Waverly 73.23 348 *e*P **P 02 13 24.7 -0.6**
WVT pmax pmax
comp=Z,12nm,1.1s
WVT Waverly 73.23 348 *e*P **P 02 13 24.7 -0.6**
comp=Z,12nm,1.1s
X301 Greenbrier Sit 73.27 344 *e*P **P 02 13 25.7 +0.1**
comp=Z,13nm,0.9s
WHAR Wooly Hollow 73.29 344 *e*P **P 02 13 26.7 +0.9**
comp=Z,10nm,1.0s
X38A Whitesboro 73.30 342 P **P 02 13 26.3 +0.5**
baz=162
X201 Greenbrier Sit 73.31 344 *e*P **P 02 13 26.0 +0.1**
comp=Z,13nm,1.0s
X37A Clayton 73.36 341 P **P 02 13 26.7 +0.5**
baz=162
W39A Magazine 73.55 343 P **P 02 13 27.4 +0.2**
baz=163,SNR=6.9
W38A Poteau 73.61 342 P **P 02 13 27.5 -0.1**
baz=163
X36A Centrahoma 73.61 340 P **P 02 13 27.2 -0.4**
baz=161
X35A Drake 73.62 340 P **P 02 13 28.4 +0.7**
baz=161
Y33A Hilltop Ranch, 73.72 338 P **P 02 13 28.4 0.0**
baz=159
V41A Mountainview 73.74 344 P **P 02 13 28.2 -0.2**
baz=165,SNR=9.2
W37B Quinton 73.90 341 P **P 02 13 29.6 +0.2**
baz=162
MNTX Cornudas Mount 73.90 332 P **P 02 13 29.5 0.0**
baz=154
MNTX Cornudas Mount 73.90 332 *e*P **P 02 13 29.8 +0.3**
comp=Z,4.4nm,1.1s
V40A Witts Springs 73.90 344 P **P 02 13 29.5 +0.1**
baz=164
X34A Smith Ranch, M 74.05 339 P **P 02 13 30.4 +0.2**
baz=160
U42A Revenden 74.08 345 P **P 02 13 30.4 +0.1**
baz=165
W36A Wetumka 74.11 341 P **P 02 13 30.7 +0.1**
baz=161
V39A Pettigrew 74.13 343 P **P 02 13 30.8 +0.1**
baz=163,SNR=6.5
W35A Tecumseh 74.30 340 P **P 02 13 31.3 -0.4**
baz=161
V38A Canehill 74.33 342 P **P 02 13 31.7 -0.1**
baz=163
PBMO Poplar Bluff 74.33 346 *e*P **P 02 13 31.5 -0.4**
comp=Z,6.5nm,0.8s
U40A Yellville 74.44 344 P **P 02 13 32.0 -0.4**
baz=165,SNR=6.5
WMOK Wichita Mounta 74.45 339 P **P 02 13 32.5 -0.1**
baz=159
WMOK Wichita Mounta 74.45 339 *e*P **P 02 13 32.7 +0.1**
WMOK pmax pmax
comp=Z,7.0nm,1.3s
WMOK Wichita Mounta 74.45 339 *e*P **P 02 13 32.7 +0.1**
comp=Z,6.6nm,1.3s
U39A Green Forest 74.61 343 P **P 02 13 33.6 +0.1**
baz=164
HHAR Hobs 74.62 343 *e*P **P 02 13 33.5 -0.1**
comp=Z,32nm,2.0s
V36A Jenks 74.65 341 P **P 02 13 33.8 +0.1**
baz=162
TUL1 Leonard 74.72 341 P **P 02 13 34.2 +0.1**
baz=162
TUL1 Leonard 74.72 341 *e*P **P 02 13 34.2 +0.1**
comp=Z,8.8nm,0.8s
W33A Caddo, Fort Co 74.75 339 P **P 02 13 35.0 +0.7**
baz=160
SUR Sutherland 74.78 119 *e*P **P 02 13 35.9 +0.8**
comp=Z,15nm,0.8s
V35A Meyer Ranch, C 74.86 340 P **P 02 13 34.8 -0.2**
baz=161
T41A Mountain View 74.86 345 P **P 02 13 34.8 -0.1**
baz=165
S45A Carrier Mills 74.87 348 P **P 02 13 34.9 0.0**
baz=168
W32A Sentinel 74.95 338 P **P 02 13 35.5 0.0**
baz=159,SNR=7.9
S44A Carbondale 75.00 347 P **P 02 13 35.0 -0.7**
baz=167
MSTX Muleshoe 75.01 335 P **P 02 13 35.9 -0.1**
baz=156
MSTX Muleshoe 75.01 335 *e*P **P 02 13 37.1 +1.1**
comp=Z,20nm,1.5s
SIUC Southern Illin 75.02 347 *e*P **P 02 13 35.9 +0.1**
comp=Z,32nm,0.4s
U37A Salina 75.02 342 P **P 02 13 35.2 -0.6**
baz=162
S43A Fulton Ridge, 75.03 346 P **P 02 13 35.3 -0.6**
baz=166,SNR=10
V34A Guthrie 75.11 340 P **P 02 13 36.3 -0.1**
baz=160
T40A Mansfield 75.13 344 P **P 02 13 35.8 -0.6**
baz=164
T39A Clever 75.20 344 P **P 02 13 36.7 -0.1**
baz=164
V33A Lossen Ranch, 75.32 339 P **P 02 13 38.0 +0.4**
baz=160
S41A Jillco Farms, 75.38 345 P **P 02 13 38.3 +0.4**
baz=165
U35A Pawnee 75.41 341 P **P 02 13 38.1 0.0**
baz=161,SNR=6.0
T38A Diamond 75.42 343 P **P 02 13 38.0 -0.1**
baz=163
AMTX Amarillo 75.48 336 P **P 02 13 39.6 +0.9**
baz=157
AMTX Amarillo 75.48 336 *e*P **P 02 13 41.2 +2.6**
comp=Z,10nm,0.8s
S40A Lebanon 75.55 344 P **P 02 13 39.3 +0.4**
baz=164
121A Cookes Peak, D 75.58 331 P **P 02 13 40.4 +1.0**
baz=152
121A Cookes Peak, D 75.58 331 *e*P **P 02 13 41.3 +1.9**
comp=Z,11nm,1.5s
T37A Cheyville 18 75.65 342 P **P 02 13 39.0 -0.5**
baz=162,SNR=5.1
U34A Anderson Ranch 75.68 340 P **P 02 13 39.7 +0.1**
baz=160
S39A Bolivar 75.82 344 P **P 02 13 40.4 0.0**
baz=164
T36A Boggs Farm, Ca 75.83 342 P **P 02 13 40.5 0.0**
baz=162
U33A Lingo Farm, Me 75.84 340 P **P 02 13 40.4 -0.2**
baz=160
T35A Sooner Cattle 75.86 341 P **P 02 13 41.1 +0.5**
baz=161
S38A Stockton 75.90 343 P **P 02 13 40.1 -0.7**
baz=163,SNR=8.2
U32A Winter Ranch, 76.04 339 P **P 02 13 41.1 -0.6**
baz=159
T34A McClaskey Farm 76.14 341 P **P 02 13 42.3 +0.1**
baz=161
R40A Maddies Statio 76.17 345 P **P 02 13 42.5 +0.2**
baz=165
S37A Fort Scott 76.24 343 P **P 02 13 42.4 -0.4**
baz=163
Q43A New Douglas 76.29 347 P **P 02 13 42.9 -0.2**
baz=167
R39A Chumby, Stover 76.36 344 P **P 02 13 42.6 -0.8**
baz=164,SNR=6.4
S36A Lake Cedric, C 76.39 342 P **P 02 13 43.9 +0.2**
baz=162
Q42A Golden Eagle 76.42 346 P **P 02 13 44.0 +0.2**
baz=166
R38A Fenwick Farm, 76.43 344 P **P 02 13 44.0 +0.2**
baz=163
T33A Patterson Ranc 76.48 340 P **P 02 13 44.2 0.0**
baz=160,SNR=6.7
S35A Otter Creek Ra 76.53 342 P **P 02 13 44.6 +0.1**
baz=161
LIC Lamto 76.60 72 *e*P **P 02 13 44.4 -1.0**
comp=Z,30nm,1.2s
ACSO Alum Creek Sta 76.60 353 *e*P **P 02 13 44.4 -0.4**
comp=Z,14nm,0.5s
TUC Tucson 76.62 328 P **P 02 13 46.3 +1.1**
baz=150
TUC Tucson 76.62 328 *e*P **P 02 13 47.4 +2.2**
TUC pmax pmax
comp=Z,3.0nm,1.0s
TUC Tucson 76.62 328 *e*P **P 02 13 47.4 +2.2**
comp=Z,2.6nm,1.0s
LPM Los Pinos Moun 76.70 332 *e*P **P 02 13 48.9 +3.1**
R37A Teagarden Farm 76.77 343 P **P 02 13 46.5 +0.8**
baz=163
Q40A Laux Farm, Aux 76.81 345 P **P 02 13 46.3 +0.3**
baz=165
N59A State Game Lan 76.81 358 P **P 02 13 46.6 +0.6**
baz=178
TIC Toumodi 76.87 72 *e*P **P 02 13 47.4 +0.4**
S33A Kaszmaul Farm, 76.90 340 P **P 02 13 46.8 +0.3**
baz=160
KIC Kosan Boka 76.90 72 *e*P **P 02 13 47.6 +0.4**
comp=Z,43nm,1.0s
LAZ Ladron 76.97 332 *e*P **P 02 13 49.2 +1.9**
DBIC Dimbokro 77.01 72 P **P 02 13 47.9 +0.1**
comp=Z,9.2nm,0.8s,baz=219,slow=7.5,SNR=12
DBIC LR LR 02 46 49.8
comp=Z,210nm,18.1s,baz=218,slow=35
DBIC Dimbokro 77.01 72 *e*P **P 02 13 48.6 +0.9**
comp=Z,10nm,0.9s
P42A Winchester 77.04 347 P **P 02 13 46.7 -0.6**
baz=166,SNR=7.1
Q39A Willow Grove F 77.05 345 P **P 02 13 47.0 -0.3**
baz=164
N54A Moraine State 77.06 355 P **P 02 13 47.3 0.0**
baz=175
Q38A Cooks Store, C 77.11 344 P **P 02 13 47.6 -0.1**
baz=164
214A Organ Pipe Nat 77.20 326 P **P 02 13 47.2 -1.2**
baz=149
ANMO Albuquerque 77.20 333 P **P 02 13 49.3 +0.7**
baz=153
ANMO Albuquerque 77.20 333 *iP* **P 02 13 50.4 +1.8**
ANMO pmax pmax
comp=Z,4.0nm,1.0s
ANMO Albuquerque 77.20 333 *e*P **P 02 13 50.0 +1.5**
comp=Z,3.7nm,1.0s
P41A Barry, Barry 77.26 346 P **P 02 13 48.3 -0.2**
baz=166
P40A Paris 77.32 345 P **P 02 13 48.4 -0.4**
baz=165,SNR=9.0
R34A Isabella, Hill 77.36 341 P **P 02 13 49.3 +0.2**
baz=161
R33A Olander Ranch, 77.56 340 P **P 02 13 50.2 -0.1**
baz=160
M54A Oil Creek Stat 77.58 355 P **P 02 13 49.9 -0.4**
baz=175
O41A Passleys Farm, 77.65 346 P **P 02 13 50.2 -0.4**
baz=166
P38A Dawn 77.72 344 P **P 02 13 50.9 -0.2**
baz=164
CASY Casey 77.76 182 *e*P **P 02 13 51.5 +0.4**
comp=Z,6.6nm,0.8s
HDIL Hopedale 77.79 348 P **P 02 13 51.2 -0.3**
baz=167
HDIL Hopedale 77.79 348 *e*P **P 02 13 51.0 -0.4**
comp=Z,13nm,0.6s
O40A La Belle 77.85 346 P **P 02 13 51.5 -0.3**
baz=165
R32A Long Quarter, 77.87 340 P **P 02 13 51.9 -0.1**
baz=160
P37A Lathrop 77.87 344 P **P 02 13 51.4 -0.5**
baz=163
O39A Kirksville 78.11 345 P **P 02 13 53.2 -0.1**
baz=164
Q32A Meitler Ranch, 78.36 340 P **P 02 13 55.1 +0.4**
baz=160
O37A Wolven Farm, M 78.38 344 P **P 02 13 54.7 0.0**
baz=163
P34A Walnut Farm, R 78.42 342 P **P 02 13 55.8 +0.8**
baz=161
T25A Trinidad 78.44 335 P **P 02 13 56.1 +0.7**
baz=155
T25A Trinidad 78.44 335 *e*P **P 02 13 56.6 +1.2**
comp=Z,9.7nm,1.0s
CBKS Cedar Bluff 78.52 339 P **P 02 13 55.5 -0.1**
baz=159
N39A Derby Farms, D 78.71 345 P **P 02 13 56.0 -0.5**
baz=165,SNR=8.6
N38A Joes South For 78.78 345 P **P 02 13 56.6 -0.3**
baz=164
M39A Webster 79.22 346 P **P 02 13 59.1 -0.2**
baz=165
IKP In-Ko-Pah, Jac 79.29 324 P **P 02 14 00.8 +0.7**
baz=146
SDCO Great Sand Dun 79.36 335 P **P 02 14 01.3 +0.7**
baz=154
SDCO Great Sand Dun 79.36 335 *e*P **P 02 14 01.6 +1.0**
comp=Z,3.1nm,1.1s
M38A Pleasantville 79.37 345 P **P 02 14 00.2 0.0**
baz=164
N35A Tabor 79.38 343 P **P 02 13 59.8 -0.4**
baz=162
L41A Preston 79.48 347 P **P 02 14 00.5 -0.2**
baz=166
Y12C Blythe 79.48 326 P **P 02 14 02.1 +1.2**
baz=148
Y12C Blythe 79.48 326 *e*P **P 02 14 04.8 +3.9**
comp=Z,5.0nm,0.9s
M37A Trindle Farm, 79.54 344 P **P 02 14 01.3 +0.3**
baz=163
N34A Lincoln 79.56 342 P **P 02 14 01.3 +0.1**
baz=161
L40A Anamosa 79.60 347 P **P 02 14 01.2 -0.2**
baz=166
WUAZ Wupatki 79.63 329 *e*P **P 02 14 03.4 +1.5**
comp=Z,4.8nm,1.0s
TSUM Tsumeb 79.73 106 *e*P **P 02 14 03.1 +0.1**
comp=Z,3.2nm,0.9s
L39A Vinton 79.81 346 P **P 02 14 02.0 -0.5**
baz=165
BC3 Big Chuckawall 79.82 325 P **P 02 14 04.4 +1.4**
baz=147
S22A 4UR Ranch, Cre 79.83 334 P **P 02 14 03.3 +0.2**
baz=153
S22A 4UR Ranch, Cre 79.83 334 *e*P **P 02 14 04.7 +1.6**
K41A Shullsburg 79.96 347 P **P 02 14 03.4 +0.1**
baz=166
MVCO Mesa Verde 79.97 332 P **P 02 14 04.3 +0.4**
baz=152
MVCO Mesa Verde 79.97 332 *e*P **P 02 14 05.8 +2.0**
comp=Z,6.6nm,1.3s
L38A Oak Wood Farm, 80.01 345 P **P 02 14 03.5 -0.1**
baz=164
BOSA Boshof 80.07 118 P **P 02 14 04.6 -0.1**
comp=Z,7.6nm,0.9s,baz=220,slow=2.5,SNR=8.9
BOSA LR LR 02 47 34.8
comp=Z,158nm,18.3s,baz=221,slow=34
BOSA Boshof 80.07 118 *e*P **P 02 14 04.6 -0.1**
BOSA pmax pmax
comp=Z,11nm,1.2s
BOSA Boshof 80.07 118 *e*P **P 02 14 04.6 -0.1**
comp=Z,11nm,1.2s
L37A Phoenix Point, 80.16 345 P **P 02 14 04.3 -0.1**
baz=164
K40A Colesburg 80.20 347 P **P 02 14 03.9 -0.7**
baz=166
TPFO Pinon Flats 80.25 325 P **P 02 14 06.2 +1.0**
baz=146
J41A Loganville 80.65 348 P **P 02 14 06.9 -0.1**
baz=167
SCI2 San Clemente I 80.73 323 P **P 02 14 07.0 -0.7**
baz=145
K37A Belmond 80.75 345 P **P 02 14 07.4 -0.3**
baz=164
J40A Soldiers Grove 80.80 347 P **P 02 14 07.5 -0.3**
baz=166
K36A Gilmore City 80.80 344 P **P 02 14 07.9 0.0**
baz=163
PV01 Paradox Valley 80.81 333 *e*P **P 02 14 09.9 +1.6**
GMRC Granite Mounta 80.86 326 P **P 02 14 09.6 +1.1**
baz=147
J39A Decorah 80.92 347 P **P 02 14 08.2 -0.2**
baz=165
PV05 Paradox Valley 80.96 332 *e*P **P 02 14 11.3 +2.2**
PLVO Plevna 80.97 357 *e*P **P 02 14 09.4 +0.7**
SMCO Snowmass 81.16 334 *e*P **P 02 14 13.8 +3.4**
comp=Z,5.8nm,1.1s
PV10 Paradox Valley 81.20 332 *e*P **P 02 14 12.0 +1.6**
J37A Redenius Farm, 81.26 345 P **P 02 14 09.9 -0.4**
baz=164
J36A Seneca 1, Swea 81.44 345 P **P 02 14 11.1 -0.1**
baz=163
KNB Kanab 81.51 329 *e*P **P 02 14 14.5 +2.5**
KNB pmax pmax
comp=Z,7.0nm,1.0s
KNB Kanab 81.51 329 *e*P **P 02 14 14.5 +2.5**
comp=Z,6.6nm,1.0s
TUQ Turquoise Moun 81.52 326 P **P 02 14 13.6 +1.6**
baz=147
J35A Milford 81.66 344 P **P 02 14 12.1 -0.3**

baz=163
I38A **Scanlan Farm,** 81.72 346 P P 02 14 12.6 -0.1
baz=165
J34A **George** 81.75 344 P P 02 14 12.8 -0.1
baz=162
K31A **O'Neill** 81.81 341 P P 02 14 13.8 +0.5
baz=160
I37A **Lemond, Waseca** 81.90 346 P P 02 14 13.9 +0.2
baz=164
J33A **Davis** 82.02 343 P P 02 14 14.5 +0.2
baz=161
I36A **Fitzsimmons Fa** 82.03 345 P P 02 14 14.7 +0.4
baz=164
SHPR **Sheep Range** 82.08 327 eP P 02 14 17.1 +2.1
comp=Z,4.4nm,1.0s
I35A **Creekview Farm** 82.08 344 P P 02 14 14.8 +0.2
baz=163
TRQ **Mont Tremblant** 82.09 359 eP P 02 14 14.8 +0.2
MTPU **Mount Pierson** 82.13 330 eP P 02 14 17.1 +1.7
comp=Z,18nm,1.9s
CCUT **Cedar City** 82.19 329 eP P 02 14 17.4 +1.8
comp=Z,4.7nm,0.9s
ECSD **EROS Data Cent** 82.33 343 P P 02 14 16.0 +0.1
baz=162
ECSD **EROS Data Cent** 82.33 343 eP P 02 14 15.6 -0.4
comp=Z,11nm,0.5s
N23A **Red Feather La** 82.34 336 P P 02 14 15.8 -0.6
baz=154
SRU **San Rafael Swe** 82.40 332 eP P 02 14 17.9 +1.2
SRU pmax pmax
comp=Z,5.0nm,0.8s
SRU **San Rafael Swe** 82.40 332 eP P 02 14 17.9 +1.2
comp=Z,4.9nm,0.8s
LBTB **Lobatse** 82.43 115 eP P 02 14 17.8 +0.5
LBTB pmax pmax
comp=Z,9.0nm,1.0s
LBTB **Lobatse** 82.43 115 eP P 02 14 17.8 +0.5
comp=Z,9.0nm,1.0s
O20A **White River Ci** 82.46 334 P P 02 14 17.3 +0.4
baz=152
O20A **White River Ci** 82.46 334 eP P 02 14 17.6 +0.7
MSU **Marysvale** 82.53 330 eP P 02 14 19.2 +1.8
MSU **Marysvale** 82.53 330 eP P 02 14 19.2 +1.8
H36A **Jessenland, He** 82.55 345 P P 02 14 17.1 +0.1
baz=164
I33A **Coleman** 82.67 343 P P 02 14 18.4 +0.7
baz=161
TMUT **Trail Mountain** 82.83 331 eP P 02 14 22.1 +3.0
comp=Z,7.1nm,1.0s
H35A **Sunnyside Ranc** 82.85 345 P P 02 14 18.5 -0.2
baz=163
SPMN **Marine on St.** 82.95 346 P P 02 14 18.8 -0.3
baz=164
SPMN **Marine on St.** 82.95 346 eP P 02 14 18.6 -0.5
H34A **Spellman Lake,** 83.03 344 P P 02 14 19.7 +0.2
baz=162
G36A **St. Michael** 83.14 346 P P 02 14 20.2 +0.1
baz=164
H32A **Carlson Farm,** 83.25 343 P P 02 14 20.6 -0.1
baz=161
H33A **Prehn Over Nor** 83.26 344 P P 02 14 21.0 +0.3
baz=161
F36A **Milaca** 83.70 346 P P 02 14 22.4 -0.5
baz=164
R11A **Troy Canyon, C** 83.80 328 P P 02 14 24.6 +0.7
baz=147
F34A **Alexandria** 83.99 345 P P 02 14 24.6 +0.2
baz=163
K22A **Casper** 84.11 336 P P 02 14 26.0 +0.7
baz=154
K22A **Casper** 84.11 336 eP P 02 14 25.9 +0.5
comp=Z,6.8nm,0.9s
DUG **Dugway, Tooele** 84.23 331 P P 02 14 26.4 +0.4
baz=149
DUG **Dugway, Tooele** 84.23 331 eP P 02 14 27.3 +1.3
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG **Dugway, Tooele** 84.23 331 eP P 02 14 27.3 +1.3
comp=Z,4.3nm,0.8s
CTU **Camp Tracy** 84.24 332 eP P 02 14 28.2 +2.1
comp=Z,10nm,0.8s
F33A **5 Mile Ranch,** 84.26 344 P P 02 14 25.6 -0.2
baz=162
E36A **McGregor** 84.28 346 P P 02 14 25.4 -0.6
baz=164
F32A **Veblen** 84.47 344 P P 02 14 26.5 -0.3
baz=161
TCUT **Toone Canyon** 84.48 332 eP P 02 14 29.1 +1.7
comp=Z,10.0nm,1.0s
RSSD **Black Hills** 84.66 338 P P 02 14 28.2 0.0
baz=156
RSSD **Black Hills** 84.66 338 eP P 02 14 27.6 -0.6
RSSD pmax pmax
comp=Z,4.0nm,0.7s
RSSD **Black Hills** 84.66 338 eP P 02 14 27.6 -0.6
comp=Z,3.7nm,0.7s
D37A **Cotton** 84.74 347 P P 02 14 27.8 -0.4
baz=165
HWUT **Hardware Ranch** 84.96 332 eP P 02 14 29.9 +0.2
comp=Z,13nm,1.1s
D35A **Remer** 84.97 346 P P 02 14 29.3 -0.1
baz=164
SPUT **South Promonto** 85.04 332 eP P 02 14 32.1 +2.0
comp=Z,7.3nm,0.9s
F29A **Eureka** 85.08 342 P P 02 14 29.5 -0.5
baz=159
C38A **Sawbill Land.** 85.08 348 P P 02 14 29.4 -0.6
baz=166
D34A **Park Rapids** 85.21 345 P P 02 14 30.0 -0.6
baz=163
BW06 **Boulder Array** 85.24 334 P P 02 14 30.5 -0.6
baz=152
BW06 **Boulder Array** 85.24 334 eP P 02 14 30.5 -0.6
PDAR **Pinedale Array** 85.24 334 P P 02 14 31.3 +0.1
comp=Z,1.0nm,0.7s,baz=134,slow=4.3,SNR=9.7
C37A **Embarrass** 85.25 347 P P 02 14 30.5 -0.3
baz=165
E31A **Nome** 85.30 343 P P 02 14 31.0 0.0
baz=161
D33A **AnnSam, Waubun** 85.39 345 P P 02 14 31.5 0.0
baz=162
C36A **Pine Crest Far** 85.40 347 P P 02 14 30.7 -0.8
baz=165
C35A **Jirik Farms, M** 85.56 346 P P 02 14 32.3 0.0
baz=164
ELK **Elko** 85.67 330 eP P 02 14 35.0 +1.7
ELK pmax pmax
comp=Z,2.0nm,0.9s
ELK **Elko** 85.67 330 eP P 02 14 35.0 +1.7
comp=Z,2.2nm,0.9s
D31A **Mcclaflin, Tow** 85.72 344 P P 02 14 33.1 0.0
baz=161
TORD **Torodi Ar. Bea** 86.08 71 P P 02 14 34.9 -0.8
comp=Z,2.8nm,0.8s,baz=219,slow=4.7,SNR=20
TORD LR LR 02 52 32.4
comp=Z,249nm,18.4s,baz=275,slow=35
B35A **Bob, Littlefor** 86.14 347 P P 02 14 34.7 -0.5
baz=164
B34A **Aery, Baudette** 86.44 346 P P 02 14 36.5 -0.1
baz=163
AGMN **Agassiz Nation** 86.50 345 P P 02 14 37.0 0.0
baz=162
AGMN **Agassiz Nation** 86.50 345 eP P 02 14 36.7 -0.2
comp=Z,7.3nm,0.5s
B32A **Ashes, Strandq** 86.73 345 P P 02 14 38.2 +0.1
baz=162
FLWY **Flagg Ranch** 86.80 334 eP P 02 14 40.3 +1.5
D26A **Manning** 86.87 341 P P 02 14 39.1 +0.2
baz=157
A33A **Warroad** 87.01 346 P P 02 14 39.3 -0.1
baz=163
B30A **Myrvik Farm, E** 87.18 344 P P 02 14 40.1 -0.2
baz=160
B29A **Wagenman Farm,** 87.43 343 P P 02 14 41.6 +0.2
baz=160
B28A **Dugan Ranch, T** 87.66 342 P P 02 14 42.3 -0.2
baz=159
HLID **Hailey** 87.72 332 P P 02 14 43.9 +0.7
baz=148
HLID **Hailey** 87.72 332 eP P 02 14 44.0 +0.8
comp=Z,1.8nm,0.9s
A29A **Manning Farm,** 87.83 343 P P 02 14 43.9 +0.5
baz=160
MCMT **McKenzie Canyo** 88.21 333 eP P 02 14 47.2 +1.6
ULM **Lac du Bonnet** 88.36 346 P P 02 14 45.3 -0.5
comp=Z,5.1nm,0.7s,baz=172,slow=2.6,SNR=6.2
ULM **Lac du Bonnet** 88.36 346 eP P 02 14 45.6 -0.2
AFI **Afiamalu** 88.43 254 P P 02 14 45.7 -1.6

LSZ **Lusaka** 90.21 109 eP P 02 14 57.5 +1.8
LSZ pmax pmax
comp=Z,7.0nm,1.2s
LSZ **Lusaka** 90.21 109 eP P 02 14 57.5 +1.8
comp=Z,7.4nm,1.2s
FCC **Fort Churchill** 96.20 349 eP P 02 15 23.4 +1.5
FCC pmax pmax
comp=Z,8.0nm,0.9s
FCC **Fort Churchill** 96.20 349 eP P 02 15 23.4 +1.5
comp=Z,8.0nm,0.9s
KIP **Kipapa** 98.16 290 P Pdif 02 15 32.3 +0.5
ESDC **Sonseca Array** 98.97 47 LR LR 02 59 03.8
comp=Z,143nm,19.8s,baz=220,slow=35
GERES **GERESS Array B** 114.56 47 PKP PKPdf 02 20 33.3 -1.0
comp=Z,0.2nm,0.4s,baz=212,slow=4.7,SNR=4.7
ASAR **Alice Springs** 115.04 208 PKP **PKPdf** 02 20 36.1 -0.1
comp=Z,0.4nm,0.5s,baz=132,slow=1.9,SNR=4.9
BRTR **Keskin Array B** 123.93 63 PKP **PKPdf** 02 20 51.8 -1.0
comp=Z,1.2nm,0.8s,baz=210,slow=2.1,SNR=6.3
KIEV **Kiev** 124.55 49 ePKIKP **PKPdf** 02 20 54.2 +0.9
KIEV **Kiev** 124.55 49 ePKPdf **PKPdf** 02 20 54.2 +0.9
AKASG **Malin Array Be** 124.56 49 PKP **PKPdf** 02 20 51.1 -2.2
comp=Z,0.2nm,0.3s,baz=315,slow=1.6,SNR=3.9
ARCES **ARCESS Array B** 126.54 26 PKP **PKPdf** 02 20 55.8 -0.9
comp=Z,1.6nm,0.8s,baz=207,slow=1.1,SNR=3.6
OBN **Obninsk** 129.87 45 i/PKIKP **PKPdf** 02 21 04.4 +1.1
OBN pmax pmax
comp=Z,4.0nm,0.7s
PALK **Pallekele** 142.75 134 ePKIKP **PKPdf** 02 21 29.4 +0.8
PALK **Pallekele** 142.75 134 ePKPdf **PKPdf** 02 21 29.4 +0.8
ABKAR **Akbulak array** 143.97 54 ePKPdf PKPab 02 21 26.6 -0.2
NRIK **Noril'sk** 145.25 12 PKPbc **PKPbc** 02 21 29.7 -1.2
comp=Z,12nm,1.0s,baz=31,slow=3.0,SNR=7.3
BRVK **Borovoye** 149.64 45 ePKP2 **PKPbc** 02 21 43.6 0.0
BRVK **Borovoye** 149.64 45 ePKPbc **PKPbc** 02 21 43.6 0.0
YAK **Yakutsk** 150.40 338 ePKIKP **PKPbc** 02 21 44.4 -0.7
YAK pmax pmax
comp=Z,57nm,0.8s
YAK pmax pmax
comp=N,9.0nm,1.4s
YAK pmax pmax
comp=E,7.0nm,1.1s
YAK **Yakutsk** 150.40 338 ePKPbc **PKPbc** 02 21 44.6 -0.5
YAK ePKPab **PKPab** 02 21 52.7 +1.1
NKL **Nikolayevsk** 150.78 316 ePKIKP **PKPbc** 02 21 46.0 -0.3
ASAJ **Asahikawa** 151.51 297 ePKPbc **PKPbc** 02 21 48.8 +0.5
ASAJ ePKPab **PKPab** 02 21 57.4 +0.6
JHJ2 **Mitsune** 152.51 273 ePKPbc **PKPbc** 02 21 52.2 +1.3
AAK **Ala-Archa** 154.56 66 ePKP2 **PKPab** 02 22 10.4 +0.4
AAK **Ala-Archa** 154.56 66 ePKPab **PKPab** 02 22 10.3 +0.4
NVS **Novosibirsk** 155.46 33 ePKP2 **PKPab** 02 22 11.2 -1.9
KSH **Kashi** 155.73 73 ePKP **PKPdf** 02 21 49.3 +0.8
KSH PKS **PKSdf** 02 25 22.2 -0.4
KSH ePP **PP** 02 25 55.7 +3.2
KSH SKS **SKSdf** 02 28 50.2 -4.8
KSH SKKS **SKKSac** 02 32 39.8 -2.1
KSH AMB AMB
comp=E,85nm,5.5s
KSH LR LR
comp=E,51nm,6.2s
KSH LR LR
comp=E,55nm,7.2s
KSH LR LR
comp=E,65nm,7.3s
ZALV **Zalesovo Beam** 156.74 34 PKP **PKPdf** 02 21 48.4 -0.8
comp=E,2.5nm,0.7s,baz=288,slow=2.3,SNR=8.3
ZALV PKPab **PKPab** 02 22 18.9 +0.2
comp=E,4.3nm,0.8s,baz=300,slow=6.4,SNR=8.5
MKAR **Makanchi Array** 159.10 52 PKP **PKPdf** 02 21 51.2 -1.2
comp=E,1.7nm,0.9s,baz=248,slow=1.3,SNR=8.7
MKAR PKPab **PKPab** 02 22 28.9 -0.3
comp=E,1.7nm,0.9s,baz=270,slow=3.6,SNR=4.5
WMQ **Urumqi** 163.74 57 ePKP **PKPdf** 02 21 55.9 -1.5
ZAK **Zakamensk** 165.67 8 ePKP2 PKPab 02 22 46.9 -11
HHC **Hu-ho-hao-te** 173.93 321 ePKP **PKPdf** 02 22 01.2 -2.9
HHC AMB AMB
comp=E,95nm,7.4s

*IDC **13** 02:02:00.9±7.5, 35°.01N×140°.97E, h90km±45km, mb3.3/3, mb1 3.3/4, mb1mx3.1/44, mbtmp3.5/4, Error ellipse: s-maj=86.8km s-min=35.6km az=179.0*
*ISCJB **13** 02:02:04.3±1.1, 37°.22N±0°.03×141°.00E±0°.07, h9km±4km, mb3.5/3, Error ellipse: s-maj=9.7km s-min=5.5km az=13.3*
*JMA **13** 02:02:05.6, 37°.22N×140°.91E, h8km, M3.4*
JMA Felt II J1.
ISC 13 02:02:04.7±1.1, 37°.21N±0°.04×140°.94E±0°.06, h15km±6km, n12, σ0s95/21, mb3.5/3, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
ONAJ	**Iwakimizuishiy**	0.16	226	↑P	**Pg**	02 02 08.8	0.0
ONAJ				S	**Sg**	02 02 11.2	-0.3
JFK	**Kawauchi**	0.16	341	↑P	**Pg**	02 02 08.9	+0.1
JFK				S	**Sg**	02 02 11.3	-0.3
JFT	**Otama**	0.57	303	↑P	**Pg**	02 02 16.4	+0.4
JFT				S	**Sg**	02 02 24.0	+0.4
JMM	**Marumori**	0.66	350	↑P	**Pg**	02 02 17.9	+0.2
JMM				S	**Sg**	02 02 26.8	+0.3
JHO	**Hitachi**	0.67	207	↓P	**Pg**	02 02 18.1	+0.3
JHO				S	**Sg**	02 02 26.9	+0.2
JSB	**Shiboa**	0.85	254	↑P	**Pb**	02 02 22.0	+0.7
JSB				S	**Sb**	02 02 33.1	+0.5
JFY	**Yanaizu**	1.00	282	↑P	**Pg**	02 02 24.2	0.0
JFY				S	**Sg**	02 02 37.1	-0.2
MJAR	**Matsushiro Arr**	2.29	254	P	**Pn**	02 02 41.3	-0.8
	2.6nm,0.3s,baz=105,slow=9.9,SNR=7.7						
MJAR				S	**Sb**	02 03 14.6	+0.7
	7.2nm,0.3s,baz=86,slow=28,SNR=15						
MAT	**Matsushiro**	2.29	254	P	**Pb**	02 02 45.8	0.0
MAT				S	**Sb**	02 03 15.8	+1.8
SONM	**Songino Array**	27.37	304	P	**P**	02 07 48.0	-1.5
	0.7nm,0.8s,baz=90,slow=7.6,SNR=3.7						
MKAR	**Makanchi Array**	43.70	302	P	**P**	02 10 07.3	-1.9
	1.0nm,0.9s,baz=81,slow=8.9,SNR=4.3						
ILAR	**Eielson Array**	49.55	32	P	**P**	02 10 56.5	+1.9
	0.4nm,0.8s,baz=248,slow=6.3,SNR=4.3						

*MOS **13** 02:02:53.6±1.1, 3°.88N×126°.49E, h38km, mb4.9/17, Error ellipse: s-maj=15.2km s-min=7.1km az=115.8*
*IDC **13** 02:02:54.6±2.1, 3°.85N×126°.51E, h36km±16km, mb4.2/20, mb1 4.3/22, mb1mx4.2/38, mbtmp4.4/22, ML3.9/2, MS3.7/10, Ms1 3.7/10, ms1mx3.3/43, Error ellipse: s-maj=24.7km s-min=11.0km az=76.0*
*DJA **13** 02:02:55.1±1.1, 4°.N±9°×12°.7E±°, h10km, M5.0/5, mb5.1/5, mB5.3/3, MLv5.0/5, Mw(mB)4.7/3*
*ISCJB **13** 02:02:58.6±0.6, 3°.90N±0°.03×126°.72E±0°.04, h82km±5km, mb4.6/83, Error ellipse: s-maj=7.1km s-min=4.2km az=169.1*
*NEIC **13** 02:02:58.4±0.9, 4°.02N×126°.75E, h62km±8km, mb4.8/46, Error ellipse: s-maj=8.7km s-min=5.7km az=69.0*
*BJI **13** 02:02:58.5, 4°.00N×126°.80E, h61km, mb4.8/40, mB4.9/28, Ms4.2/15, Ms7 4.2/10*
*MAN **13** 02:02:59, 4°.10N×126°.74E, h223km, mb5.2, ML4.2, MS4.4*
ISC 13 02:02:59.2±0.6, 3°.91N±0°.04×126°.74E±0°.06, h74km±5km, n179, σ1s79/197, mb4.8/83, 8C-3D, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
SGSI	**Sangihe**	1.23	260	P	**Pn**	02 03 17.0	-3.9
SGSI				S	**Pn**	02 03 16.9	-3.9
DAV	**Davao City (W)**	3.34	340	Pn	**Pn**	02 03 44.9	-4.3
	40nm,0.3s,baz=146,slow=15,SNR=2.1						
DAV				Sn	**Sn**	02 04 29.3	+1.6
	64nm,0.3s,baz=359,slow=23,SNR=4.4						
CTBH	**Cotabato--PC H**	4.12	323	i/P	**Pn**	02 04 01.6	+1.8
CTBH				*i* S	**Sn**	02 04 50.9	+4.1
BIPH	**Bislig**	4.26	355	↓eP	**Pn**	02 04 03.9	+2.1
BIPH				*e*S	**Sn**	02 04 50.7	+0.5
KMSI	**Cibinong**	4.31	220	P	**Pn**	02 04 06.4	+4.0
LBMI	**Labuha**	4.58	170	P	**Pn**	02 04 03.3	-2.8
CGP	**Cagayan de Oro**	4.95	336	↓eP	**Pn**	02 04 12.4	+1.3
CGP				*e*S	**Sn**	02 05 08.5	+1.4
MRSI	**Marisa**	5.88	235	P	**Pn**	02 04 23.3	-0.6
MRSI				S	**Pn**	02 04 23.6	-0.3
LUWI	**Luwuk**	6.32	219	P	**Pn**	02 04 31.8	+1.9
LUWI				S	**Pn**	02 04 32.4	+2.5
LUWI	**Luwuk**	6.32	219	ePn	**Pn**	02 04 31.6	+1.7
MYLDM	**Lahad Datu**	8.31	279	ePn	**Pn**	02 04 57.5	+0.4
FAKI	**Fak Fak**	8.74	141	P	**Pn**	02 05 01.5	-1.4

FAKI **Fak Fak** 8.74 141 ePn **Pn** 02 05 01.3 -1.6
TTSI **Tana Toraja** 9.78 225 P Pn 02 05 24.5 +7.4
KKM **Kota Kinabalu** 10.70 282 ePn **Pn** 02 05 30.6 +0.9
KAPI **Kappang** 11.29 218 LR LR 02 10 39.5
comp=Z,348nm,18.5s,baz=91,slow=42
KAPI **Kappang** 11.29 218 ePn **Pn** 02 05 38.7 +1.0
TGY **Tagaytay City** 11.63 331 LR LR 02 10 54.1
comp=Z,456nm,20.5s,baz=212,slow=41
MMRI **Maumere** 13.25 200 ePn **Pn** 02 06 06.6 +2.2
SOEI **Soe** 13.80 190 ePn **Pn** 02 06 13.2 +1.5
SBUM **Sibu** 14.57 265 ePn **Pn** 02 06 23.9 +2.2
JAY **Jayapura** 15.35 114 Pn **Pn** 02 06 33.0 +1.2
0.1nm,0.3s,baz=270,slow=22,SNR=4.9
TWSI **Taliwang, Sumb** 15.95 218 P P 02 06 41.4 -0.2
KSM **Kuching** 16.59 262 ePn P 02 06 49.0 +0.4
41nm,1.2s
MTN **Manton Dam** 17.21 165 ePn **Pn** 02 06 52.7 -2.3
21nm,0.6s
YULB **Yu-li** 20.07 345 eP P 02 07 23.1 -3.7
86nm,2.0s
TPUB **Ta-pu** 20.16 344 eP P 02 07 24.9 -2.9
33nm,0.7s
GUMO **Guam** 20.32 61 LR LR 02 13 54.7
comp=Z,125nm,20.4s,baz=260,slow=32
SSLB **Suanglung** 20.53 345 eP P 02 07 29.1 -2.7
15nm,0.7s
FITZ **Fitzroy Crossi** 21.90 183 P P 02 07 44.9 -1.6
4.1nm,0.6s,baz=355,slow=5.3,SNR=20
FITZ **Fitzroy Crossi** 21.90 183 eP P 02 07 45.2 -1.3
49nm,1.7s
QIZ **Qiongzhong** 22.32 314 P P 02 07 51.3 +0.3
QIZ sP **sP** 02 08 15.7 +0.2
QIZ S **S** 02 11 52.2 +0.3
UBPT **Khong Chiam** 23.79 300 P P 02 08 04.0 -1.4
30nm,1.3s
PMG **Port Moresby** 24.27 123 LR LR 02 18 08.4
comp=Z,229nm,18.1s,baz=315,slow=37
WRAB **Tennant Creek** 24.85 163 ceP P 02 08 13.2 -1.8
WRAB pmax pmax
comp=Z,22nm,1.2s
WRAB **Tennant Creek** 24.85 163 eP P 02 08 13.3 -1.7
comp=Z,26nm,0.8s
WRA **Warramunga Arr** 24.85 163 P P 02 08 13.7 -1.4
comp=Z,495nm,0.9s,baz=343,slow=11,SNR=5.5
WRA S **S** 02 12 36.0 +3.0
comp=Z,0.2nm,0.3s,baz=335,slow=18,SNR=1.2
WB2 **Warramunga Arr** 24.86 163 eP P 02 08 13.9 -1.2
comp=Z,25nm,0.7s
IPM **Ipoh** 25.65 272 eP P 02 08 23.3 +0.9
MBWA **Marble Bar** 25.85 195 eP P 02 08 26.9 +2.8
comp=Z,37nm,0.7s
AS31 **Alice Springs** 28.29 166 eP P 02 08 48.8 +2.9
comp=Z,2.1nm,0.8s
ASAR **Alice Springs** 28.29 166 P P 02 08 44.5 -1.5
comp=Z,0.9nm,0.6s,baz=348,slow=6.7,SNR=6.3
ASAR PcP **PcP** 02 11 57.2 -0.4
comp=Z,0.8nm,0.5s,baz=351,slow=2.0,SNR=4.5
ASAR ScP **ScP** 02 15 36.2 +3.8
comp=Z,0.5nm,0.8s,baz=1.6,slow=3.9,SNR=4.2
AS01 **Alice Springs** 28.30 166 eP P 02 08 48.9 +2.9
WHN **Wuhan** 28.96 338 eP P 02 08 58.5 +6.7
WHN LR LR
comp=Z,450nm,21.8s
JNU **Nakatsue** 29.32 7 P P 02 08 53.8 -1.2
comp=Z,11nm,0.8s,baz=301,slow=0.7,SNR=7.6
GYA **Guiyang** 29.53 321 P P 02 09 00.4 +3.3
GYA pP pP 02 09 16.8 +2.3
GYA PP **PnPn** 02 09 58.2 +3.3
GYA S **S** 02 13 47.4 +0.6
GYA sS sS 02 14 18.0 +1.2
GYA SS **SnSn** 02 15 24.6 +2.8
GYA pmax pmax
comp=Z,10.0nm,0.8s
GYA pmax pmax
comp=Z,90nm,4.9s
GYA LR LR
comp=Z,500nm,17.4s
GYA LR LR
comp=Z,480nm,17.2s
GYA LR LR
comp=Z,440nm,17.6s
CMAR **Chiang Mai Arr** 30.79 300 P P 02 09 05.8 -2.4
comp=Z,1.2nm,0.4s,baz=120,slow=7.7,SNR=8.8
CMAR ScP **ScP** 02 15 44.0 +3.4
comp=Z,1.2nm,0.4s,baz=144,slow=3.0,SNR=7.0
ENH **Enshi** 30.88 330 eP P 02 09 07.5 -1.4
comp=Z,9.8nm,0.7s
CMMT **Chiang Mai** 30.93 301 P P 02 09 17.5 +8.0
CHTO **Chiang Mai** 30.94 301 eP P 02 09 08.6 -0.9
CHTO pmax pmax
comp=Z,6.0nm,0.9s
CHTO **Chiang Mai** 30.94 301 eP P 02 09 08.6 -0.9
comp=Z,6.3nm,0.9s
KMI **Kunming** 31.26 315 P P 02 09 15.6 +3.1
KMI pmax pmax
comp=Z,8.0nm,0.6s
KSAR **Wonju Array Be** 33.39 2 P P 02 09 31.4 +0.7
KSAR **Wonju Array Be** 33.39 2 P P 02 09 31.4 +0.7
KSRS **Korea Array** 33.40 2 P P 02 09 31.4 +0.6
comp=Z,4.0nm,0.7s,baz=181,slow=10.0,SNR=8.0
KSRS LR LR 02 23 59.4
comp=Z,58nm,20.2s,baz=178,slow=38
MJAR **Matsushiro Arr** 34.15 17 P P 02 09 34.6 -2.7
comp=Z,0.8nm,0.4s,baz=184,slow=8.8,SNR=5.2
MJAR PcP **PcP** 02 12 13.9 +0.9
comp=Z,1.4nm,0.5s,baz=145,slow=1.4,SNR=4.6
XAN **Xi'an** 34.26 333 P P 02 09 36.5 -1.9
XAN pP pP 02 09 52.1 -3.9
XAN pmax pmax
comp=Z,11nm,0.8s
XAN pmax pmax
comp=Z,34nm,9.2s
CD2 **Chengdu** 34.50 324 eP P 02 09 40.5 0.0
CD2 pP pP 02 09 58.2 +0.1
CD2 sP sP 02 10 07.2 +0.5
CD2 S **S** 02 15 04.0 0.0
CD2 sS sS 02 15 35.1 +0.9
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
FORT **Forrest** 34.52 178 eP P 02 09 41.4 +0.9
DL2 **Dalian** 35.14 353 P P 02 09 46.6 +0.8
DL2 pmax pmax
comp=Z,34nm,0.7s
BJT **Baijiatuao** 37.19 347 eP P 02 10 03.4 +0.1
BJT pmax pmax
comp=Z,22nm,0.8s
BJT **Baijiatuao** 37.19 347 eP P 02 10 03.4 +0.1
comp=Z,22nm,0.8s
BJI **Beijing** 37.21 347 P P 02 10 03.5 0.0
BJI pmax pmax
comp=Z,17nm,0.7s
BJI pmax pmax
comp=Z,74nm,3.4s
SNY **Shenyang** 37.86 356 ↑P P 02 10 09.5 +0.6
SNY pmax pmax
comp=Z,21nm,0.5s
STKA **Stephens Creek** 38.30 159 P P 02 10 12.0 -0.7
comp=Z,11nm,0.8s,baz=331,slow=8.2,SNR=18
STKA PcP **PcP** 02 12 25.9 +0.3
comp=Z,2.9nm,0.5s,baz=335,slow=6.0,SNR=4.1
STKA **Stephens Creek** 38.30 159 eP P 02 10 12.8 +0.1
STKA 02 12 25.9
STKA pmax pmax
comp=Z,3.0nm,0.9s
STKA **Stephens Creek** 38.30 159 eP P 02 10 12.8 +0.1
comp=Z,3.3nm,0.9s
STKA PcP **PcP** 02 12 25.9 +0.3
LZH **Lanzhou** 38.35 329 eP P 02 10 19.3 +5.9
LZH pP sP 02 10 35.5 -4.2
LZH pmax pmax
comp=Z,21nm,1.0s
HHC **Hu-ho-hao-te** 39.23 342 eP P 02 10 22.4 +1.8
HHC pP pP 02 10 37.8 -0.7
HHC sP sP 02 10 44.7 -2.3
HHC S **S** 02 16 17.4 +1.6
HHC pmax pmax
comp=Z,22nm,0.8s
HHC pmax pmax
comp=Z,87nm,8.5s
HHC LR LR
comp=Z,90nm,13.6s
HHC LR LR
comp=Z,100nm,13.6s
CN2 **Changchun** 39.74 359 eP P 02 10 24.4 -0.2

CN2						pmax	pmax			
	comp=Z,10.0nm,0.6s									
USRK	**Ussuriysk Ar.**	**40.39**	**6**	P		**P**		**02 10 30.0**	**0.0**	
	comp=Z,4.7nm,0.7s,baz=190,slow=7.1,SNR=11									
MDJ	**Mudanjiang**	**40.62**	**3**	P		**P**		**02 10 32.2**	**+0.3**	
MDJ						pmax	pmax			
	comp=Z,15nm,0.7s									
MDJ						pmax	pmax			
	comp=Z,30nm,6.2s									
LSA	**Lhasa**	**42.33**	**311**	*eP*		**P**		**02 10 46.4**	**-0.3**	
LSA						pmax	pmax			
	comp=Z,11nm,0.4s									
LSA	**Lhasa**	**42.33**	**311**	*eP*		**P**		**02 10 46.4**	**-0.3**	
	comp=Z,11nm,0.4s									
GTA	**Gaotai**	**42.95**	**329**	*eP*		**P**		**02 10 52.7**	**+1.5**	
GTA					pP	pP		02 11 10.6	+1.3	
GTA					sP	sP		02 11 20.3	+2.6	
GTA					pmax	pmax				
	comp=Z,3.0nm,0.7s									
CAN	**Canberra**	**44.27**	**154**	*eP*		**P**		**02 11 03.1**	**+1.4**	
CAN					pmax	pmax				
	comp=Z,30nm,1.2s									
CAN	**Canberra**	**44.27**	**154**	*eP*		**P**		**02 11 03.1**	**+1.4**	
	comp=Z,30nm,1.2s									
KLR	**Kul'dur**	**45.35**	**5**	*c iP*		**P**		**02 11 10.1**	**0.0**	
PALK	**Pallekele**	**45.92**	**276**	*eP*		**P**		**02 11 15.1**	**-0.1**	
PALK	**Pallekele**	**45.92**	**276**	*eP*		**P**		**02 11 15.1**	**-0.1**	
DZM	**Mont Dzumac**	**46.63**	**125**	*eP*		**P**		**02 11 20.0**	**-0.7**	
	comp=Z,8.1nm,0.7s									
SONM	**Songino Array**	**47.13**	**341**	P		**P**		**02 11 24.0**	**-0.2**	
	comp=Z,1.5nm,0.6s,baz=155,slow=7.4,SNR=14									
SONM					LR	LR		02 33 48.6		
	comp=Z,82nm,18.1s,baz=168,slow=39									
SONM	**Songino Array**	**47.13**	**341**	P		**P**		**02 11 24.0**	**-0.2**	
SONA1	**Songino Array**	**47.14**	**341**	*eP*		**P**		**02 11 23.8**	**-0.5**	
NKL	**Nikolayevsk**	**50.41**	**11**	*eP*		**P**		**02 11 49.0**	**0.0**	
TLY	**Talaya**	**51.36**	**342**	LR		LR		02 34 09.1		
	comp=Z,76nm,21.6s,baz=144,slow=36									
TLY	**Talaya**	**51.36**	**342**	*eP*		**P**		**02 11 57.3**	**+1.0**	
TLY					pmax	pmax				
	comp=Z,4.0nm,0.9s									
TLY					MLR	MLR				
	comp=Z,36nm,16.0s									
WMQ	**Urumqi**	**52.58**	**325**	*eP*		**P**		**02 12 04.9**	**-0.7**	
WMQ					pP	pP		02 12 23.6	-0.6	
WMQ					S	**S**		**02 19 23.4**	**-3.9**	
WMQ					SS	**SS**		**02 23 00.0**	**-6.5**	
WMQ					pmax	pmax				
	comp=Z,10.0nm,0.6s									
WMQ					pmax	pmax				
	comp=Z,81nm,4.4s									
WMQ					LR	LR				
	comp=Z,340nm,25.0s									
WMQ					LR	LR				
	comp=Z,230nm,25.0s									
WMQ					LR	LR				
	comp=Z,270nm,21.8s									
PEA0	**Petropavlovsk-**	**55.26**	**22**	*eP*		**P**		**02 12 25.2**	**+0.4**	
PETK	**Petropavlovsk-**	**55.26**	**22**	P		**P**		**02 12 25.3**	**+0.5**	
	comp=Z,4.3nm,0.7s,baz=184,slow=4.1,SNR=5.6									
MK01	**Makanchi Array**	**57.39**	**325**	*eP*		**P**		**02 12 39.3**	**-0.9**	
MK31	**Makanchi Array**	**57.41**	**325**	*eP*		**P**		**02 12 39.1**	**-1.2**	
MK31	**Makanchi Array**	**57.41**	**325**	*eP*		**P**		**02 12 39.1**	**-1.2**	
MKAR	**Makanchi Array**	**57.41**	**325**	P		**P**		**02 12 39.4**	**-0.9**	
	comp=Z,3.2nm,0.4s,baz=118,slow=8.5,SNR=35									
MKAR					ScP	**ScP**		**02 17 29.8**	**+2.9**	
	comp=Z,1.2nm,0.8s,baz=123,slow=4.5,SNR=5.8									
MKAR					LR	LR		02 39 08.7		
	comp=Z,81nm,19.1s,baz=90,slow=38									
MKAR	**Makanchi Array**	**57.41**	**325**	*eP*		**P**		**02 12 39.1**	**-1.2**	
MAKZ	**Makanchi**	**57.60**	**325**	*eP*		**P**		**02 12 42.3**	**+0.7**	
MAKZ					pmax	pmax				
	comp=Z,7.0nm,0.8s									
MAKZ	**Makanchi**	**57.60**	**325**	*eP*		**P**		**02 12 42.3**	**+0.7**	
	comp=Z,6.5nm,0.8s									
KSH	**Kashi**	**57.92**	**315**	P		**P**		**02 12 44.6**	**+0.5**	
KSH				*es*	P	sP		02 13 12.1	+0.8	
KSH				*eP*	cP	**PcP**		**02 13 37.8**	**+2.1**	
KSH				S		**S**		**02 20 33.0**	**-5.9**	
KSH				sS		sS		02 21 06.7	-4.3	
KSH				ScS		**ScS**		**02 22 23.3**	**-4.0**	
KSH				pmax	pmax					
	comp=Z,46nm,4.4s									
KSH				LR	LR					
	comp=Z,63nm,8.2s									
KSH				LR	LR					
	comp=Z,67nm,4.4s									
YAK	**Yakutsk**	**58.03**	**2**	*eP*		**P**		**02 12 44.4**	**+0.2**	
YAK					pmax	pmax				
	comp=Z,35nm,0.8s									
YAK					pmax	pmax				
	comp=N,16nm,1.2s									
YAK					pmax	pmax				
	comp=E,5.0nm,1.1s									
YAK	**Yakutsk**	**58.03**	**2**	*eP*		**P**		**02 12 43.8**	**-0.4**	
	comp=E,40nm,0.7s									
MA2	**Magadan**	**58.53**	**14**	P		**P**		**02 12 48.4**	**+0.6**	
	comp=E,2.5nm,0.2s,baz=196,slow=6.8,SNR=4.7									
AAK	**Ala-Archa**	**60.23**	**318**	LR		LR		02 41 43.8		
	comp=E,88nm,20.7s,baz=84,slow=39									
AAK	**Ala-Archa**	**60.23**	**318**	*eP*		**P**		**02 13 00.1**	**0.0**	
AAK	**Ala-Archa**	**60.23**	**318**	*eP*		**P**		**02 13 00.1**	**0.0**	
ZAA0	**Zalesovo Array**	**60.43**	**333**	*eP*		**P**		**02 13 04.8**	**+3.8**	
ZALV	**Zalesovo Beam**	**60.43**	**333**	P		**P**		**02 12 59.8**	**-1.2**	
	comp=E,1.6nm,0.5s,baz=124,slow=5.2,SNR=6.4									
KURK	**Kurchatov**	**61.59**	**327**	*ceP*		**P**		**02 13 09.2**	**+0.3**	
KURK					pmax	pmax				
	comp=Z,27nm,0.8s									
KURK	**Kurchatov**	**61.59**	**327**	*eP*		**P**		**02 13 08.7**	**-0.3**	
NVS	**Novosibirsk**	**61.71**	**333**	*eP*		**P**		**02 13 13.6**	**+3.9**	
SEY	**Seymchan**	**61.85**	**13**	*eP*		**P**		**02 13 10.9**	**+0.4**	
KKAR	**Karatay Array**	**63.11**	**317**	*eP*		**P**		**02 13 18.6**	**-0.6**	
KKAR					pmax	pmax				
	comp=Z,5.0nm,0.7s									
KKAR	**Karatay Array**	**63.11**	**317**	*eP*		**P**		**02 13 18.6**	**-0.6**	
	comp=Z,4.9nm,0.7s									
BRVK	**Borovoye**	**67.25**	**327**	*eP*		**P**		**02 13 45.6**	**-0.2**	
BRVK					pmax	pmax				
	comp=Z,13nm,0.8s									
BRVK	**Borovoye**	**67.25**	**327**	*eP*		**P**		**02 13 46.9**	**+1.1**	
	comp=Z,10.0nm,0.9s									
TIXI	**Tiksi**	**67.66**	**1**	*ceP*		**P**		**02 13 48.2**	**+0.1**	
TIXI					pmax	pmax				
	comp=Z,2.0nm,0.6s									
TIXI	**Tiksi**	**67.66**	**1**	*eP*		**P**		**02 13 47.6**	**-0.5**	
	comp=Z,6.8nm,0.8s									
ZRNK	**Zerenda**	**67.90**	**326**	*eP*		**P**		**02 13 49.0**	**-1.0**	
ZRNK					pmax	pmax				
	comp=Z,8.0nm,0.8s									
ZRNK	**Zerenda**	**67.90**	**326**	*eP*		**P**		**02 13 49.0**	**-1.0**	
	comp=Z,7.8nm,0.8s									
BILL	**Bilibino**	**69.38**	**15**	*eP*		**P**		**02 14 00.9**	**+2.1**	
BILL				*e*				02 16 34.6		
BILL					pmax	pmax				
	comp=Z,5.0nm,1.1s									
GEYT	**Alibeck**	**70.79**	**309**	P		**P**		**02 14 07.5**	**-0.7**	
	comp=Z,1.8nm,0.6s,baz=142,slow=7.5,SNR=4.8									
ABKAR	**Akbulak array**	**72.02**	**321**	*eP*		**P**		**02 14 15.0**	**-0.2**	
	comp=Z,2.8nm,0.6s									
UNV	**Unalaska Valle**	**73.27**	**35**	*eP*		**P**		**02 14 22.4**	**-0.2**	
	comp=Z,22nm,0.8s									
ARU	**Arti**	**74.79**	**328**	*d iP*		**P**		**02 14 30.7**	**-0.7**	
ARU					*PP	**PcP**		**02 14 47.3**	**+2.2**	
ARU								02 17 14.8		
ARU				S		**S**		**02 24 04.0**	**+1.8**	
ARU				SS		**SS**		**02 28 47.2**	**-4.1**	
ARU				pmax	pmax					
	comp=Z,5.0nm,0.6s									
ARU	**Arti**	**74.79**	**328**	*eP*		**P**		**02 14 30.3**	**-1.1**	
	comp=Z,5.7nm,0.6s									
SDPT	**Sand Point**	**77.04**	**34**	*eP*		**P**		**02 14 44.0**	**-0.2**	
	comp=Z,39nm,0.5s									
CHGN	**Chignik**	**78.37**	**33**	*eP*		**P**		**02 14 51.9**	**+0.4**	
SVW2	**Sparrevohn**	**80.64**	**29**	*eP*		**P**		**02 15 05.5**	**+1.7**	
	comp=Z,15nm,1.2s									
TT01	**Tatalina**	**80.73**	**27**	*eP*		**P**		**02 15 05.1**	**+0.8**	
TTA	**Tatalina**	**80.73**	**27**	*eP*		**P**		**02 15 05.9**	**+1.5**	
	comp=Z,18nm,1.4s									
KDAK	**Kodiak Island**	**81.73**	**32**	*ceP*		**P**		**02 15 11.0**	**+1.3**	
KDAK	**Kodiak Island**	**81.73**	**32**	*eP*		**P**		**02 15 10.6**	**+0.9**	
	comp=Z,32nm,0.9s									
CAST	**Castle Rocks**	**82.57**	**27**	*eP*		**P**		**02 15 13.4**	**-0.6**	
	comp=Z,9.5nm,0.6s									
SUA	**Susitna One**	**83.00**	**29**	*eP*		**P**		**02 15 17.2**	**+0.8**	
	comp=Z,15nm,0.8s									
KIV	**Kislovodsk**	**83.02**	**314**	*eP*		**P**		**02 15 16.4**	**-0.5**	
KIV					pmax	pmax				
	comp=Z,4.0nm,1.1s									
KTH	**Kantishna Hill**	**83.10**	**27**	*eP*		**P**		**02 15 19.2**	**+2.3**	
	comp=Z,20nm,1.2s									
TRF	**Thorofare Moun**	**83.37**	**27**	*eP*		**P**		**02 15 19.9**	**+1.5**	
	comp=Z,28nm,1.4s									
RC01	**Rabbit Creek A**	**83.46**	**29**	*eP*		**P**		**02 15 19.1**	**+0.5**	
	comp=Z,12nm,0.8s									
VNDA	**Vanda**	**83.61**	**173**	P		**P**		**02 15 18.2**	**-0.8**	
	comp=Z,2.7nm,0.9s,baz=323,slow=3.8,SNR=6.3									
VNDA	**Vanda**	**83.61**	**173**	*eP*		**P**		**02 15 19.4**	**+0.4**	
	comp=Z,3.4nm,1.0s									
COLD	**Coldfoot**	**83.72**	**23**	*eP*		**P**		**02 15 21.9**	**+2.1**	
	comp=Z,11nm,1.2s									
PMR	**Palmer**	**83.78**	**29**	*eP*		**P**		**02 15 20.7**	**+0.5**	
	comp=Z,23nm,1.2s									
MCK	**McKinley**	**84.00**	**26**	*eP*		**P**		**02 15 22.1**	**+0.7**	
	comp=Z,24nm,1.1s									
RND	**Reindeer**	**84.01**	**27**	*eP*		**P**		**02 15 21.8**	**+0.2**	
	comp=Z,11nm,1.1s									
SML	**Sawmill**	**84.17**	**28**	*eP*		**P**		**02 15 23.3**	**+1.0**	
	comp=Z,30nm,1.2s									
WRH	**Wood River Hil**	**84.41**	**26**	*eP*		**P**		**02 15 24.2**	**+0.9**	
	comp=Z,24nm,1.7s									
COLA	**College**	**84.53**	**25**	*eP*		**P**		**02 15 23.7**	**-0.2**	
CCB	**Clear Creek Bu**	**84.54**	**26**	*eP*		**P**		**02 15 24.7**	**+0.7**	
	comp=Z,22nm,1.5s									
SCM	**Sheep Creek Mo**	**84.65**	**28**	*eP*		**P**		**02 15 26.8**	**+2.0**	
	comp=Z,16nm,1.0s									
ILAR	**Eielson Array**	**84.94**	**25**	P		**P**		**02 15 25.3**	**-0.7**	
	comp=Z,1.0nm,0.5s,baz=248,slow=4.9,SNR=12									
IL1	**Eielson Array**	**84.94**	**25**	*eP*		**P**		**02 15 24.8**	**-1.3**	
KLMR	**Klimovskoe**	**85.25**	**331**	*eP*		**P**		**02 15 26.3**	**-1.4**	
KLMR					pmax	pmax				
	comp=Z,9.0nm,0.6s									
DIV	**Divide**	**85.38**	**29**	*eP*		**P**		**02 15 29.7**	**+1.2**	
	comp=Z,21nm,0.9s									
VSR	**Storozhevoye**	**85.45**	**321**	*eP*		**P**		**02 15 28.1**	**-0.8**	
VSR					pmax	pmax				
	comp=Z,6.0nm,0.8s									
OBN	**Obninsk**	**86.92**	**325**	*eP*		**P**		**02 15 34.6**	**-1.4**	
OBN					pmax	pmax				
	comp=Z,7.0nm,1.0s									
OBN					MLR	MLR				
	comp=Z,41nm,18.0s									
KMBO	**Kilima Mbogo**	**89.56**	**269**	*eP*		**P**		**02 15 49.6**	**-0.2**	
	comp=Z,7.9nm,1.2s									
BR131	**Keskin Array S**	**89.91**	**310**	*eP*		**P**		**02 15 50.0**	**-0.8**	
BRTR	**Keskin Array B**	**89.91**	**310**	P		**P**		**02 15 48.9**	**-1.9**	
	comp=Z,1.9nm,0.9s,baz=122,slow=5.2,SNR=11									
INK	**Inuvik**	**89.99**	**21**	*eP*		**P**		**02 15 50.9**	**+0.7**	
	comp=Z,3.0nm,0.9s									
ARCES	**ARCESS Array B**	**90.28**	**340**	P		**P**		**02 15 50.8**	**-0.9**	
	comp=Z,2.8nm,0.8s,baz=79,slow=6.3,SNR=7.8									
BR231	**Keskin MP Arra**	**90.56**	**310**	*eP*		**P**		**02 15 49.0**	**-4.7**	
FINES	**FINESS Array B**	**91.68**	**332**	P		**P**		**02 15 57.5**	**-0.7**	
	comp=Z,2.3nm,0.7s,baz=103,slow=4.3,SNR=9.4									
AKASG	**Malin Array Be**	**91.76**	**321**	P		**P**		**02 15 57.5**	**-1.3**	
	comp=Z,0.9nm,0.5s,baz=67,slow=5.0,SNR=8.3									
KIEV	**Kiev**	**91.77**	**321**	*eP*		**P**		**02 15 56.7**	**-2.2**	
KIEV					pmax	pmax				
	comp=Z,1.0nm,1.0s									
SYO	**Syowa Base**	**92.60**	**201**	*ep*		pP		02 16 20.2	-2.3	
BUR08	**Bucovina Ar. S**	**94.88**	**318**	*eP*		**P**		**02 16 13.4**	**-0.1**	
CRVS	**Cervenica-Dubn**	**97.04**	**320**	*eP*		**P**		**02 16 23.1**	**0.0**	
CRVS	**Cervenica-Dubn**	**97.04**	**320**	*e*		**P**		**02 16 23.1**	**0.0**	
NB2	**NORSAR Subarra**	**98.63**	**334**	P		**P**		**02 16 29.0**	**-1.1**	
	comp=Z,1.1nm,0.6s,baz=68,slow=4.6									
NOA	**NORSAR Array B**	**98.63**	**334**	P		**P**		**02 16 28.9**	**-1.1**	
	comp=Z,0.8nm,0.7s,baz=68,slow=4.6,SNR=4.3									
NOA					LR	LR		03 06 24.9		
	comp=Z,44nm,20.1s,baz=230,slow=39									
NOA	**NORSAR Array B**	**98.63**	**334**	P		**P**		**02 16 29.0**	**-1.1**	
SMCO	**Snowmass**	**114.60**	**44**	*ePKiKP*		PKPdf		02 21 35.2	+3.2	
MNTX	**Cornudas Mount**	**119.12**	**50**	*ePKPdf*		**PKPdf**		**02 21 42.3**	**+1.9**	
TXAR	**Lajitas Array**	**121.48**	**52**	PKP		**PKPdf**		**02 21 46.0**	**+0.9**	
	comp=Z,0.7nm,0.7s,baz=277,slow=0.8,SNR=11									
TORD	**Torodi Ar. Bea**	**122.87**	**288**	PKP		**PKPdf**		**02 21 47.9**	**-0.1**	
	comp=Z,0.5nm,0.4s,baz=42,slow=2.3,SNR=20									
JCT	**Junction City**	**123.93**	**49**	*ePKIKP*		**PKPdf**		**02 21 50.9**	**+1.1**	
JCT	**Junction City**	**123.93**	**49**	*ePKPdf*		**PKPdf**		**02 21 50.9**	**+1.1**	
MIAR	**Mount Ida**	**126.14**	**41**	*ePKIKP*		**PKPdf**		**02 21 55.9**	**+2.1**	
MIAR	**Mount Ida**	**126.14**	**41**	*ePKPdf*		**PKPdf**		**02 21 55.9**	**+2.1**	
TRQA	**Tornquist**	**145.09**	**168**	*ePKPdf*		**PKPab**		**02 22 28.8**	**+0.4**	

IDC 13 02:07:49.7±1.7, 36°28S×73°62W, h0km, mb3.6/4, mb1 3.9/5, mb1mx3.8/22, mbtmp3.7/5, ML4.1/1, Error ellipse: s-maj=52.0km s-min=20.5km az=70.0, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PLCA	**Paso Flores**	**5.06**	**153**	Pn		Pn	02 09 08.5	+1.6
	1.6nm,0.3s,baz=353,slow=12,SNR=19							
PLCA				Lg		Lg	02 10 29.9	
	2.0nm,0.3s,baz=90,slow=20,SNR=2.7							
LPAZ	**La Paz**	**20.50**	**15**	P		Pn	02 12 31.8	-0.3
	2.2nm,0.8s,baz=189,slow=7.9,SNR=5.7							
SIV	**San Ignacio**	**23.09**	**32**	P		P	02 12 56.5	-0.6
	2.0nm,0.7s,baz=235,slow=14,SNR=4.0							
TXAR	**Lajitas Array**	**71.12**	**332**	P		P	02 19 09.8	-0.1
	0.4nm,0.6s,baz=154,slow=7.9,SNR=6.7							
TORD	**Torodi Ar. Bea**	**86.19**	**71**	P		P	02 20 32.6	-0.7
	0.3nm,0.6s,baz=220,slow=4.8,SNR=3.6							

IDC 13 02:12:12.0±1.1, 36°21S×73°40W, h0km, mb3.9/6, mb1 4.2/10, mb1mx4.0/25, mbtmp4.1/10, ML4.4/4, Error ellipse: s-maj=33.6km s-min=17.3km az=77.0
ISCJB 13 02:12:13.4±0.5, 36°27S±0°05×73°64W±0°05, h27km, mb4.0/14, Error ellipse: s-maj=7.3km s-min=5.4km az=38.1
NEIC 13 02:12:14.0, 36°34S×73°54W, h31km, mb4.3/10, ML4.4(GUC), After GUC.
NEIC Felt [IV] at Concepcion, Penco and San Pedro de la Paz; [III] at Arauco, Chiguayante, Coronel, Hualpen and Talcahuano; [II] at Chanco and Pelluhue.
GUC 13 02:12:14.0±0.6, 36°34S×73°54W, h31km±4km, ML4.4
ISC 13 02:12:14.6±0.7, 36°28S±0°05×73°48W±0°06, h27km, n29, σ1°24/33, mb4.2/14, 3C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
COCH	**Cobquecura**	**0.58**	**75**	*i*	P	**Pn**	**02 12 26.9**	**-0.1**
COCH				*i*	S	**Sn**	**02 12 36.3**	**+0.7**
COCH				IAML			02 12 37.4	
	comp=N,44μm,0.5s							
CCSP	**San Pedro de C**	**0.64**	**152**	*i*	P	**Pb**	**02 12 26.5**	**-0.6**
CCSP				*i*	S	**Sb**	**02 12 36.1**	**+0.4**
CCSP				IAML			02 12 38.8	
	comp=N,24μm,0.4s							
CCHI	**Chillan**	**1.18**	**106**	*i*	P	**Pb**	**02 12 36.2**	**0.0**
CCHI				*i*	S	**Sb**	**02 12 52.8**	**+1.7**
CCHI				IAML			02 13 00.9	
	comp=E,12μm,0.5s							
TALC	**Talca**	**1.74**	**60**	*i*	P	**Pb**	**02 12 45.6**	**-0.2**
TALC				*i*	S	**Sb**	**02 13 08.9**	**+1.7**
PLCA	**Paso Flores**	**5.00**	**154**	Pn		**Pn**	**02 13 29.7**	**+1.7**
	comp=E,1.4nm,0.3s,baz=353,slow=14,SNR=8.4							
PLCA				Lg		Lg	02 14 52.0	
	comp=E,3.9nm,0.3s,baz=263,slow=23,SNR=5.8							
LCO	**Las Campanas**	**7.62**	**19**	*ePn*		**Pn**	**02 14 03.0**	**-1.1**
TRQA	**Tornquist**	**9.35**	**104**	*ePn*		**Pn**	**02 14 26.4**	**-1.1**
	comp=E,14nm,0.9s							
TRQA				*e*	Sn	**Sn**	**02 16 09.9**	**-1.9**
LVC	**Limon Verde**	**14.19**	**17**	Pn		**Pn**	**02 15 33.4**	**-0.7**
	comp=E,7.9nm,0.3s,baz=180,slow=20,SNR=2.7							
CPUP	**Villa Florida**	**16.98**	**59**	Pn		**Pn**	**02 16 09.7**	**-0.4**
	comp=E,0.1nm,0.3s,baz=248,slow=3.5,SNR=3.3							
USHA	**Ushuaia**	**18.88**	**171**	P		**Pn**	**02 16 36.0**	**+2.7**
	comp=E,5.4nm,0.3s,baz=355,slow=15,SNR=2.9							
EFI	**East Falkland**	**18.91**	**149**	*eP*		**P**	**02 16 31.5**	**-1.5**
	comp=E,10.0nm,0.6s							
LPAZ	**La Paz**	**20.47**	**15**	P		Pn	02 16 52.9	-0.3
	comp=E,3.7nm,0.7s,baz=182,slow=8.1,SNR=18							
SIV	**San Ignacio**	**23.03**	**32**	P		**P**	**02 17 18.0**	**+0.3**
	comp=E,7.1nm,0.8s,baz=226,slow=12,SNR=16							
SNAA	**Sanae**	**49.94**	**157**	*eP*		**P**	**02 21 02.9**	**-2.7**
GOGA	**Godfrey**	**69.96**	**351**	*eP*		**P**	**02 23 23.2**	**-0.1**
	comp=E,1.7nm,0.6s							
TXAR	**Lajitas Array**	**71.17**	**332**	P		**P**	**02 23 32.2**	**+1.2**
	comp=E,0.6nm,0.6s,baz=152,slow=8.0,SNR=9.1							
MNTX	**Cornudas Mount**	**73.94**	**332**	*eP*		**P**	**02 23 47.4**	**+0.1**
	comp=E,1.1nm,0.9s							
TUL1	**Leonard**	**74.76**	**341**	*eP*		**P**	**02 23 52.3**	**+0.4**
	comp=E,2.7nm,0.5s							
121A	**Cookes Peak, D**	**75.61**	**331**	*eP*		**P**	**02 23 55.0**	**-2.1**
	comp=E,1.0nm,0.5s							
DBIC	**Dimbokro**	**77.02**	**72**	P		**P**	**02 24 06.5**	**+1.1**
	comp=E,1.9nm,0.7s,baz=225,slow=9.3,SNR=3.9							
SDCO	**Great Sand Dun**	**79.40**	**335**	*eP*		**P**	**02 24 18.3**	**0.0**
	comp=E,1.1nm,0.9s							
ECSD	**EROS Data Cent**	**82.37**	**343**	*eP*		**P**	**02 24 33.9**	**+0.1**
	comp=E,2.4nm,0.8s							
DUG	**Dugway, Tooele**	**84.26**	**331**	*eP*		**P**	**02 24 44.4**	**+0.7**
	comp=E,1.1nm,0.6s							
RSSD	**Black Hills**	**84.70**	**338**	*eP*		**P**	**02 24 45.7**	**-0.2**
	comp=E,1.6nm,0.8s							
HWUT	**Hardware Ranch**	**85.00**	**332**	*eP*		**P**	**02 24 48.0**	**+0.5**
	comp=E,2.3nm,0.8s							
PDAR	**Pinedale Array**	**85.28**	**334**	P		**P**	**02 24 50.8**	**+1.9**
	comp=E,0.2nm,0.5s,baz=122,slow=4.4,SNR=2.9							
TORD	**Torodi Ar. Bea**	**86.09**	**71**	P		**P**	**02 24 53.9**	**+0.7**
	comp=E,1.2nm,1.0s,baz=223,slow=2.7,SNR=4.3							
BVAR	**Borovoye Array**	**149.74**	**45**	PKPbc		**PKPbc**	**02 32 01.9**	**+0.5**
	comp=E,0.9nm,0.7s,baz=254,slow=5.5,SNR=6.3							
MKAR	**Makanchi Array**	**159.12**	**52**	PKP		**PKPdf**	**02 32 10.1**	**+0.2**
	comp=E,0.6nm,0.7s,baz=214,slow=1.0,SNR=4.4							

ISCJB 13 02:30:37.8±0.6, 9°47N±0°05×121°97E±0°05, h10km, mb3.8/9, MS3.6/3, Error ellipse: s-maj=7.5km s-min=6.7km az=20.1
IDC 13 02:30:37.7±0.9, 9°74N×122°68E, h0km, mb3.8/7, mb1 4.0/7, mb1mx3.6/48, mbtmp3.8/7, MS3.6/3, Ms1 3.6/3, ms1mx2.8/52, Error ellipse: s-maj=60.1km s-min=17.8km az=62.0
NEIC 13 02:30:39.0±0.5, 9°74N×122°71E, h10km, mb4.4/2, Error ellipse: s-maj=36.1km s-min=9.8km az=61.0
NEIC Felt [I PIVS] at Sipalay.
MAN 13 02:30:40, 9°53N×121°93E, h26km, mb4.8, ML3.7, MS3.7
ISC 13 02:30:39.9±0.8, 9°57N±0°07×122°08E±0°07, h10km, n21, σ1°88/23, mb3.8/9, MS3.6/3, 4C-3D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SNPH	**Sibulan**	**1.17**	**101**	*i*	P	Pn	02 30 57.4	-5.0
SNPH				*i*	S	**Sb**	**02 31 13.1**	**-4.3**
JAP	**San Jose, Anti**	**1.18**	**354**	*e*	P	**Pn**	**02 31 01.5**	**-0.9**
TBP	**Tagbilaran**	**1.77**	**86**	*i*	P	**Pn**	**02 31 12.2**	**+1.6**
LLP	**Lapu-Lapu**	**2.00**	**68**	*e*	P	**Pn**	**02 31 14.6**	**+0.8**
LLP				*e*	S	**Sn**	**02 31 41.4**	**+2.4**
RCP	**Roxas**	**2.08**	**18**	*e*	P	**Pn**	**02 31 15.4**	**+0.5**
RCP				*e*	S	**Sn**	**02 31 42.1**	**+1.2**
CGP	**Cagayan de Oro**	**2.81**	**113**	*i*	P	**Pn**	**02 31 26.2**	**+1.3**
CGP				*e*	S	**Sn**	**02 32 01.5**	**+2.5**
PLP	**Palo**	**3.27**	**61**	*i*	P	**Pn**	**02 31 32.3**	**+1.1**
PLP				*e*	S	**Sn**	**02 32 10.4**	**+0.3**
CMAR	**Chiang Mai Arr**	**24.09**	**294**	P		**P**	**02 35 59.9**	**+4.0**
	0.6nm,0.4s,baz=111,slow=7.2,SNR=3.3							
WRAB	**Tennant Creek**	**31.71**	**158**	*eP*		**P**	**02 37 02.1**	**-1.9**
	3.1nm,0.9s							
WRA	**Warramunga Arr**	**31.72**	**158**	P		**P**	**02 37 02.2**	**-1.9**
	2.1nm,0.7

IDC ***13*** *02:52:40.9±1.4, 37°.93N×143°.87E, h0km, mb3.5/5, mb1 3.7/6, mb1mx3.5/33, mbtmp3.5/6, ML3.1/1, MS2.9/2, Ms1 3.0/2, ms1mx2.4/46, Error ellipse: s-maj=31.5km s-min=28.3km az=91.0*
JMA ***13*** *02:52:43.5±0.2, 38°.15N×143°.50E, h31km, M3.4*
ISCJB ***13*** *02:52:44.1±1.1, 38°.14N±0°.09×143°.42E±0°.09, h19km, mb3.5/5, MS3.4/1, Error ellipse: s-maj=13.3km s-min=9.9km az=171.4*

ISC 13 02:52:44.8±1.2, 38°.14N±0°.09×143°.48E±0°.10, h19km, n15, σ1§43/19, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.70**	**304**	P	**Pn**	**02 53 12.2**	**-1.2**
JIO	**Ouri**	**1.71**	**281**	P	**Pn**	**02 53 12.3**	**-1.2**
JIO				*e*S	**Sn**	**02 53 33.0**	**-1.7**
JMK	**Ichinoseki**	**1.95**	**295**	P	**Pn**	**02 53 16.0**	**-0.8**
JMM	**Marumori**	**2.14**	**263**	P	**Pn**	**02 53 18.4**	**-1.1**
JMM				S	**Sn**	**02 53 44.5**	**-1.0**
JOM	**Ohasama**	**2.17**	**309**	P	**Pn**	**02 53 19.2**	**-0.6**
JOM				*e*S	**Sn**	**02 53 45.4**	**-0.7**
JOU	**Okura**	**2.23**	**277**	P	**Pn**	**02 53 20.3**	**-0.4**
JOU				*e*S	**Sn**	**02 53 46.5**	**-1.2**
JFT	**Otama**	**2.56**	**257**	P	**Pn**	**02 53 25.2**	**-0.1**
JYS	**Shirataka**	**2.69**	**273**	P	**Pn**	**02 53 27.0**	**-0.1**
JAW	**Awa shima**	**3.34**	**277**	P	**Pn**	**02 53 36.2**	**+0.2**
MJAR	**Matsushiro Arr**	**4.49**	**251**	Pn	**Pn**	**02 53 52.3**	**+0.5**
	0.8nm,0.3s,baz=76,slow=14,SNR=6.9						
MJAR				LR	LR	02 56 04.3	
	comp=Z,52nm,18.5s,baz=110,slow=43						
SONM	**Songino Array**	**28.56**	**302**	P	**P**	**02 58 41.1**	**+1.6**
	0.2nm,0.4s,baz=98,slow=6.0,SNR=3.3						
ZALV	**Zalesovo Beam**	**42.40**	**312**	P	**P**	**03 00 40.2**	**+2.4**
	0.7nm,0.4s,baz=104,slow=6.1,SNR=2.9						
MKAR	**Makanchi Array**	**44.93**	**302**	P	**P**	**03 01 01.1**	**+2.8**
	0.5nm,0.7s,baz=74,slow=5.3,SNR=3.7						
ILAR	**Eielson Array**	**47.68**	**33**	P	**P**	**03 01 18.4**	**-1.3**
	0.5nm,0.8s,baz=261,slow=6.0,SNR=6.0						
ILAR				LR	LR	03 24 52.1	
	comp=Z,37nm,19.0s,baz=116,slow=40						
WRA	**Warramunga Arr**	**58.41**	**190**	P	**P**	**03 02 37.3**	**-1.8**
	0.5nm,0.9s,baz=10.0,slow=7.1,SNR=3.4						

IDC ***13*** *03:15:57.9±0.7, 5°.59N×126°.25E, h0km, mb4.0/10, mb1 4.2/10, mb1mx3.9/50, mbtmp4.0/10, MS3.0/1, Ms1 3.0/1, ms1mx2.5/38, Error ellipse: s-maj=62.4km s-min=15.4km az=74.0*
ISCJB ***13*** *03:16:10.6±0.6, 5°.40N±0°.06×126°.1E±0°.2, h116km, mb3.8/10, Error ellipse: s-maj=28.0km s-min=8.1km az=174.7*

ISC 13 03:16:12.0±0.7, 5°.42N±0°.08×126°.1E±0°.2, h116km, n13, σ0§40/16, mb4.0/10, 2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KCP	**Kidapawan**	**1.85**	**328**⇓	*e*P	**Pn**	**03 16 43.4**	**-0.2**
BIPH	**Bislig**	**2.76**	**6**⇓	*i*P	**Pn**	**03 16 55.0**	**-0.1**
BIPH				*e*S	**Sn**	**03 17 28.2**	**+0.1**
FITZ	**Fitzroy Crossi**	**23.38**	**181**	P	**P**	**03 21 10.5**	**0.0**
	2.9nm,0.5s,baz=8.3,slow=8.0,SNR=22						
FITZ				LR	LR	03 31 47.1	
	comp=Z,39nm,20.5s,baz=112,slow=40						
WRA	**Warramunga Arr**	**26.49**	**162**	P	**P**	**03 21 38.7**	**0.0**
	1.1nm,0.7s,baz=342,slow=10,SNR=3.2						
ASAR	**Alice Springs**	**29.91**	**165**	P	**P**	**03 22 08.6**	**-0.5**
	0.4nm,0.5s,baz=346,slow=7.3,SNR=7.3						
ASAR				PcP	**PcP**	**03 25 09.8**	**+0.5**
	0.4nm,0.6s,baz=342,slow=2.7,SNR=4.5						
STKA	**Stephens Creek**	**39.94**	**159**	P	**P**	**03 23 35.2**	**+0.2**
	1.7nm,0.6s,baz=335,slow=8.2,SNR=6.6						
SONM	**Songino Array**	**45.49**	**341**	P	**P**	**03 24 19.8**	**-0.1**
	0.2nm,0.4s,baz=154,slow=5.9,SNR=3.1						
SONM				PcP	**PcP**	**03 25 56.8**	**0.0**
	0.5nm,0.6s,baz=153,slow=4.1,SNR=4.0						
MKAR	**Makanchi Array**	**55.80**	**325**	P	**P**	**03 25 37.7**	**+0.6**
	0.8nm,0.4s,baz=113,slow=7.1,SNR=12						
ILAR	**Eielson Array**	**83.87**	**25**	P	**P**	**03 28 28.4**	**-0.1**
	0.7nm,0.8s,baz=250,slow=5.2,SNR=7.0						
ARCES	**ARCESS Array B**	**88.64**	**340**	P	**P**	**03 28 52.0**	**+0.2**
	1.1nm,0.7s,baz=94,slow=6.2,SNR=5.0						
FINES	**FINESS Array B**	**90.04**	**332**	P	**P**	**03 28 57.8**	**-0.6**
	1.6nm,0.8s,baz=45,slow=6.1,SNR=4.1						
HFS	**Hagfors**	**96.22**	**332**	P	**P**	**03 29 26.4**	**-0.6**
	2.0nm,0.8s,baz=96,slow=9.1,SNR=4.1						
TORD	**Torodi Ar. Bea**	**121.76**	**289**	PKP	**PKPdf**	**03 34 54.1**	**+0.7**
	0.5nm,0.5s,baz=79,slow=1.8,SNR=8.4						

SCB ***13*** *03:16:53.2±0.8, 22°.79S×66°.76W, h198km, Ml3.9/3, Error ellipse: s-maj=19.9km s-min=9.2km az=35.0*
ISCJB ***13*** *03:16:54.8±0.4, 22°.92S±0°.03×66°.60W±0°.03, h222km, mb4.0/3, Error ellipse: s-maj=4.6km s-min=4.3km az=17.8*
NEIC ***13*** *03:16:55.5±0.7, 22°.90S×66°.51W, h213km±11km, mb4.2/3, Error ellipse: s-maj=13.8km s-min=9.2km az=105.0*
IDC ***13*** *03:16:55.7±0.9, 22°.82S×66°.51W, h213km±14km, mb3.8/3, mb1 3.8/8, mb1mx3.4/35, mbtmp4.3/8, Error ellipse: s-maj=19.8km s-min=15.5km az=119.0*
GUC ***13*** *03:16:57.4±0.4, 22°.74S×67°.14W, h256km±14km, ML4.6*

ISC 13 03:16:55.3±0.6, 22°.86S±0°.05×66°.62W±0°.05, h222km, n33, σ1§32/51, mb3.9/3, 14C-9D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MOCB	**Mochara**	**1.84**	**30**⇑	*i*Pn	**Pn**	**03 17 35.6**	**+1.0**
MOCB			⇑	*i*Sn	**S**	**03 18 05.6**	**+0.5**
	220nm,0.4s						
LVC	**Limon Verde**	**2.12**	**276**	P	**Pn**	**03 17 39.1**	**+1.9**
	6µm,0.3s,baz=97,slow=5.1,SNR=836						
LVC				S	**S**	**03 18 10.7**	**+1.1**
	1µm,0.3s,baz=255,slow=20,SNR=18						
PB09	**IPOC Station P**	**2.65**	**293**⇑	*i*P	**Pn**	**03 17 44.4**	**+2.0**
PB09				*e*S	**S**	**03 18 19.8**	**+0.8**
PB09				IAML		03 18 21.7	
	comp=E,1µm,0.5s						
PB06	**IPOC Station P**	**2.73**	**273**⇑	*i*P	**Pn**	**03 17 44.5**	**+1.2**
PB06				*i*S	**S**	**03 18 20.7**	**+0.1**
PB06				IAML		03 18 22.0	
	comp=N,670nm,0.5s						
PB01	**IPOC Station P**	**3.21**	**304**⇑	*i*P	**Pn**	**03 17 49.9**	**+1.1**
PB01				*i*S	**S**	**03 18 30.4**	**-0.1**
PB01				IAML		03 18 31.4	
	comp=E,481nm,0.3s						
PB07	**IPOC Station P**	**3.23**	**290**⇑	*i*P	**Pn**	**03 17 50.1**	**+1.2**
PB07				*i*S	**S**	**03 18 29.7**	**-1.1**
PB07				IAML		03 18 30.5	
	comp=N,1µm,0.5s						
PB04	**IPOC Station P**	**3.30**	**278**⇑	*i*P	**Pn**	**03 17 50.8**	**+1.0**
PB04				*i*S	**S**	**03 18 31.3**	**-1.1**
PB04				IAML		03 18 32.7	
	comp=N,707nm,0.5s						
ANCH	**Antofagasta**	**3.58**	**256**⇑	*i*P	**Pn**	**03 17 54.4**	**+1.6**
ANCH				*i*S	**S**	**03 18 36.9**	**-1.0**
PB08	**IPOC Station P**	**3.59**	**318**⇑	*i*P	**Pn**	**03 17 55.4**	**+2.0**
PB08				*i*S	**S**	**03 18 39.5**	**+0.7**
PB08				IAML		03 18 41.9	
	comp=N,419nm,0.7s						
PB10	**IPOC Station P**	**3.67**	**259**⇑	*i*P	**Pn**	**03 17 55.2**	**+1.1**
PB10				*i*S	**S**	**03 18 38.2**	**-1.8**
HMBC	**Humberstone**	**3.98**	**310**⇑	*i*P	**Pn**	**03 17 57.9**	**0.0**
HMBC				*i*S	**S**	**03 18 44.7**	**-2.2**
PSGC	**Pisagua**	**4.60**	**314**⇑	*i*P	**Pn**	**03 18 04.8**	**-0.8**
PSGC				*i*S	**S**	**03 18 57.5**	**-3.3**
MNMC	**Minye Minye**	**4.63**	**323**⇑	*i*P	**Pn**	**03 18 06.8**	**+0.7**
MNMC				*i*S	**S**	**03 19 00.3**	**-1.5**
BBOJ	**La Paz, Jacaqu**	**6.04**	**346**⇓	*i*P	**Pn**	**03 18 26.2**	**+2.2**
BBOE	**La Paz, Chanca**	**6.15**	**348**⇓	*i*Pn	**Pn**	**03 18 27.9**	**+2.4**
BBOE			⇓	*i*Sn	**S**	**03 19 37.4**	**+0.5**
BBOD	**La Paz, Gloria**	**6.46**	**343**⇓	*i*Pn	**Pn**	**03 18 31.3**	**+1.8**
BBOD			⇓	*i*Sn	**S**	**03 19 43.9**	**-0.3**
	comp=N,26nm,0.6s						
LPAZ	**La Paz**	**6.69**	**347**	P	**Pn**	**03 18 33.7**	**+1.3**
	comp=N,2.9nm,0.3s,baz=153,slow=6.6,SNR=93						
LPAZ				S	**S**	**03 19 49.1**	**-0.5**
	comp=N,0.7nm,0.3s,baz=86,slow=25,SNR=10						
LPAZ	**La Paz**	**6.69**	**347**⇓	*i*Pn	**Pn**	**03 18 33.6**	**+1.2**
LPAZ				*e*Sn	**S**	**03 19 48.1**	**-1.5**
BBOB	**La Paz, Bander**	**6.83**	**346**⇓	*i*Pn	**Pn**	**03 18 35.1**	**+0.9**
BBOB			⇓	*i*Sn	**S**	**03 19 51.4**	**-1.4**
	comp=N,29nm,0.6s						
LCO	**Las Campanas**	**7.14**	**210**	*e*Pn	**Pn**	**03 18 36.6**	**-1.2**
LCO				*e*S	S	03 19 45.7	-14
SIV	**San Ignacio**	**8.61**	**38**	P	**Pn**	**03 18 55.1**	**-1.5**
	comp=N,8.9nm,0.3s,baz=228,slow=13,SNR=84						
SIV	**San Ignacio**	**8.61**	**38**⇓	*i*P	**Pn**	**03 18 55.0**	**-1.5**
CPUP	**Villa Florida**	**9.14**	**114**	P	**Pn**	**03 19 01.9**	**-1.2**
	comp=N,0.2nm,0.3s,baz=294,slow=11,SNR=8.1						
SAML	**Samuel**	**14.22**	**14**	*e*Pn	**Pn**	**03 20 07.3**	**+0.1**
	comp=N,4.4nm,0.8s						
TRQA	**Tornquist**	**15.66**	**166**	*e*Pn	**P**	**03 20 24.0**	**-0.1**
	comp=N,14nm,1.3s						
SPB	**Sao Paulo**	**17.66**	**96**	*e*P	**P**	**03 20 46.4**	**+0.4**
	comp=N,14nm,0.8s						
PLCA	**Paso Flores**	**18.12**	**190**	P	**Pn**	**03 20 53.0**	**-0.7**
	comp=N,0.2nm,0.3s,baz=28,slow=12,SNR=6.2						
BDFB	**Brasilia**	**18.97**	**71**	P	**P**	**03 21 01.9**	**+1.4**
	baz=258,slow=11						
RCBR	**Riachuelo**	**34.12**	**65**	P	**P**	**03 23 19.9**	**+0.4**
	comp=N,10nm,1.0s,baz=260,slow=12,SNR=4.0						
DBIC	**Dimbokro**	**67.12**	**72**	P	**P**	**03 27 25.9**	**+0.3**
	comp=N,1.8nm,0.8s,baz=224,slow=11,SNR=3.5						
SYO	**Syowa Base**	**74.48**	**159**⇑	*e*P	**P**	**03 28 09.4**	**+0.5**
TORD	**Torodi Ar. Bea**	**75.84**	**69**	P	**P**	**03 28 17.1**	**-0.6**
	comp=N,1.0nm,0.4s,baz=246,slow=4.2,SNR=24						
MKAR	**Makanchi Array**	**145.43**	**39**	PKPbc	**PKPab**	**03 36 08.7**	**+1.0**
	comp=N,0.8nm,0.5s,baz=314,slow=4.2,SNR=7.6						

IDC ***13*** *03:19:27.2±2.0, 37°.58N×143°.85E, h0km, mb3.7/3, mb1 3.9/6, mb1mx3.5/59, mbtmp3.8/6, ML3.7/2, MS3.6/1, Ms1 3.6/1, ms1mx2.5/32, Error ellipse: s-maj=40.5km s-min=25.0km az=88.0*
ISCJB ***13*** *03:19:30.3±0.8, 37°.60N±0°.04×143°.72E±0°.06, h33km, mb3.7/3, MS3.6/1, Error ellipse: s-maj=7.6km s-min=5.7km az=24.0*
JMA ***13*** *03:19:31.0±0.2, 37°.62N×143°.64E, h43km, M3.5*

ISC 13 03:19:32.5±1.5, 37°.62N±0°.05×143°.7E±0°.1, h35km, n22, σ1§51/33, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.02**	**295**	P	**Pn**	**03 20 03.3**	**-0.7**
JIO				*e*S	**Sn**	**03 20 27.2**	**-0.7**
JFK	**Kawauchi**	**2.24**	**264**	P	**Pn**	**03 20 06.0**	**-1.1**
JFK				*e*S	**Sn**	**03 20 32.4**	**-1.1**
JMM	**Marumori**	**2.30**	**277**	P	**Pn**	**03 20 07.2**	**-0.6**
JMM				S	**Sn**	**03 20 34.2**	**-0.6**
JMK	**Ichinoseki**	**2.35**	**305**	P	**Pn**	**03 20 07.9**	**-0.6**
ONAJ	**Iwakimizuishiy**	**2.35**	**258**	P	**Pn**	**03 20 08.1**	**-0.5**
ONAJ				S	**Sn**	**03 20 34.6**	**-1.6**
JOM	**Ohasama**	**2.63**	**316**	P	**Pn**	**03 20 11.9**	**-0.5**
JOM				*e*S	**Sn**	**03 20 42.1**	**-1.0**
JFT	**Otama**	**2.65**	**269**	P	**Pn**	**03 20 13.1**	**+0.4**
JFT				S	**Sn**	**03 20 44.3**	**+0.6**
JYK	**Kaneyama**	**2.91**	**298**	P	**Pn**	**03 20 16.7**	**+0.4**
JANG	**Nango**	**3.23**	**329**	P	**Pn**	**03 20 20.4**	**-0.2**
JAG	**Ashikaga**	**3.58**	**252**	P	**Pn**	**03 20 25.6**	**+0.1**
BSO1	**Boso 1**	**3.67**	**217**	P	**Pn**	**03 20 25.8**	**-0.5**
BSO1				*e*S	**Sn**	**03 21 08.8**	**+0.7**
JRY	**Ryogami san**	**4.15**	**249**	P	**Pn**	**03 20 33.1**	**-0.2**
JRY				S	**Sn**	**03 21 19.1**	**-1.5**
JOT	**Ohata**	**4.27**	**332**	P	**Pn**	**03 20 35.6**	**+0.6**
JSD	**Sado**	**4.30**	**277**	P	**Pn**	**03 20 36.5**	**+1.1**
MJAR	**Matsushiro Arr**	**4.50**	**258**	Pn	**Pn**	**03 20 39.6**	**+1.5**
	3.7nm,0.3s,baz=88,slow=15,SNR=31						
MJAR				Sn	**Sn**	**03 21 32.5**	**+3.3**
	0.4nm,0.3s,baz=50,slow=25,SNR=4.3						
MAT	**Matsushiro**	**4.50**	**258**	P	**Pn**	**03 20 39.7**	**+1.6**
MAT				*e*S	**Sn**	**03 21 32.2**	**+2.9**
JHJ	**Hachijo jima 2**	**5.50**	**216**	Pn	**Pn**	**03 20 50.3**	**-1.5**
	7.0nm,0.3s,baz=108,slow=20,SNR=3.7						
JHJ				Sn	**Sn**	**03 21 49.0**	**-4.8**
	11nm,0.3s,baz=75,slow=20,SNR=3.6						
ASAJ	**Asahikawa**	**6.54**	**353**	Pn	**Pn**	**03 21 06.2**	**-0.1**
	baz=193,slow=10						
ASAJ				Sn	**Sn**	**03 22 17.7**	**-1.9**
	baz=229,slow=20,SNR=3.0						
ZALV	**Zalesovo Beam**	**42.86**	**312**	P	**P**	**03 27 28.0**	**+0.9**
	0.4nm,0.3s,baz=68,slow=5.6,SNR=2.3						
MKAR	**Makanchi Array**	**45.34**	**302**	P	**P**	**03 27 47.3**	**+0.2**
	0.4nm,0.6s,baz=84,slow=7.9,SNR=3.1						
AAK	**Ala-Archa**	**51.79**	**299**	LR	LR	03 50 00.9	
	comp=Z,57nm,19.1s,slow=35						
WRA	**Warramunga Arr**	**57.92**	**190**	P	**P**	**03 29 21.1**	**0.0**
	1.0nm,0.7s,baz=13,slow=7.4,SNR=5.9						

CASC 13 03:22:58.2±1.8, 10°.77N×85°.03W, h12km±8km, MD4.0, ML3.4, 3C, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ARE1	**Arenal 1**	**0.44**	**135**⇑	*i*P	Pb	03 23 07.8	-0.1
ARE1				*e*S	Sg	03 23 13.2	+0.4
VCR	**Vista de Mar**	**0.87**	**222**	*e*P	Pg	03 23 14.9	-0.2
VCR				*e*S	Sb	03 23 27.5	+0.5
JCR	**Jicaral**	**0.92**	**185**⇑	*e*P	Pg	03 23 15.0	-1.1
JCR				*e*S	Sg	03 23 27.7	-0.4
CGA2	**Cerro Gallo 2**	**0.94**	**143**⇑	*i*P	Pg	03 23 14.9	-1.4
CGA2				*e*S	Sg	03 23 27.5	-1.1
URSC	**Urasca**	**1.55**	**127**	*e*P	Pn	03 23 26.1	+0.3
URSC				*e*S	Sg	03 23 47.8	-0.3
ESPN	**Las Esperanzas**	**1.58**	**27**	*e*P	Pn	03 23 25.6	-0.5
ESPN				*e*S	Sb	03 23 47.3	-0.1
ESPN				AML	AML	03 23 50.2	
	comp=N,521nm,0.2s						
COPN	**Copaltepe**	**2.07**	**313**	*e*P	Pn	03 23 32.0	-0.8
MOMN	**Momotombo**	**2.19**	**318**	*e*P	Pn	03 23 34.0	-0.5
CNGN	**Cerro Negro**	**2.37**	**317**	*e*P	Pn	03 23 36.3	-0.6

IDC ***13*** *03:25:45.1±2.3, 29°.74S×175°.99W, h0km, mb3.9/3, mb1 4.1/4, mb1mx3.8/23, mbtmp4.0/4, ML3.3/1, Error ellipse: s-maj=37.3km s-min=36.8km az=62.0*
ISCJB ***13*** *03:25:47.0±2.1, 29°.82S±0°.10×175°.9W±0°.2, h28km, mb3.9/3, Error ellipse: s-maj=22.7km s-min=12.6km az=162.4*

ISC 13 03:25:48.2±1.9, 29°.7S±0°.1×175°.9W±0°.2, h28km, n6, σ1§59/8, mb4.0/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.82**	**285**	Pn	**Pn**	**03 26 17.3**	**-0.3**
	256nm,0.3s,baz=311,slow=3.0,SNR=6.5						
RAO				Sn	**Sn**	**03 26 39.1**	**-0.6**
	170nm,0.3s,baz=85,slow=22,SNR=3.6						
URZ	**Urewera**	**10.29**	**212**	Pn	**Pn**	**03 28 11.7**	**-2.2**
	0.2nm,0.3s,baz=193,slow=14,SNR=2.8						
URZ				Sn	**Sn**	**03 30 09.7**	**+1.5**
	1.7nm,0.3s,baz=60,slow=18,SNR=7.2						
STKA	**Stephens Creek**	**36.40**	**256**	P	**P**	**03 32 52.4**	**+2.1**
	1.4nm,0.6s,baz=106,slow=8.7,SNR=6.6						
ASAR	**Alice Springs**	**44.96**	**265**	P	**P**	**03 34 01.7**	**+0.5**
	0.7nm,0.6s,baz=97,slow=7.8,SNR=13						
WRA	**Warramunga Arr**	**45.90**	**270**	P	**P**	**03 34 07.9**	**-0.7**
	0.6nm,0.3s,baz=110,slow=8.0,SNR=14						
FINES	**FINESS Array B**	**145.11**	**342**	PKPbc	**PKPdf**	**03 45 22.2**	**-0.1**
	2.0nm,0.9s,baz=108,slow=4.5,SNR=4.4						

IDC ***13*** *03:31:50.2±2.8, 36°.48N×141°.63E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.2/34, mbtmp3.2/3, ML2.9/1, Error ellipse: s-maj=62.4km s-min=30.9km az=39.0*
ISCJB ***13*** *03:31:56.8±1.6, 35°.81N±0°.06×141°.10E±0°.09, h13km±7km, mb3.4/2, Error ellipse: s-maj=12.9km s-min=9.5km az=160.1*
JMA ***13*** *03:31:59.7±0.1, 35°.77N×140°.87E, h14km±1km, M3.4*
JMA Felt I J1.

ISC 13 03:31:55.6±2.3, 35°.84N±0°.06×141°.2E±0°.1, h12km±10km, n10, σ1§74/15, 2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.28**	**239**	⇓P	**Pg**	**03 32 02.3**	**+1.0**
CHOJ				S	**Sg**	**03 32 04.3**	**-0.8**
JYT	**Yasato**	**0.86**	**297**	P	**Pg**	**03 32 12.8**	**+0.5**
JYT				S	**Sg**	**03 32 22.5**	**-1.2**
JCN	**Nagara**	**0.88**	**242**	P	**Pg**	**03 32 13.1**	**+0.4**
JCN				S	**Sg**	**03 32 23.4**	**-0.8**
JHO	**Hitachi**	**0.90**	**329**	P	**Pn**	**03 32 15.9**	**+1.8**
BSO4	**Boso 4**	**1.08**	**218**	⇓P	**Pn**	**03 32 17.1**	**+0.7**
BSO4				X		03 32 30.7	
BSO3	**Boso 3**	**1.16**	**207**	P	**Pn**	**03 32 18.1**	**+0.7**
MJAR	**Matsushiro Arr**	**2.48**	**287**	Pn	**Pn**	**03 32 36.0**	**+0.2**
	2.0nm,0.3s,baz=89,slow=8.4,SNR=18						
MJAR				Sn	**Sn**	**03 33 08.3**	**+2.3**
	2.6nm,0.3s,baz=99,slow=25,SNR=5.4						
MAT	**Matsushiro**	**2.48**	**287**	P	**Pn**	**03 32 36.2**	**+0.4**
MAT				S	**Sn**	**03 33 07.6**	**+1.6**
MKAR	**Makanchi Array**	**44.58**	**303**	P	**P**	**03 40 03.5**	**-4.0**
	0.2nm,0.3s,baz=95,slow=10,SNR=3.7						
WRA	**Warramunga Arr**	**55.85**	**188**	P	**P**	**03 41 34.3**	**+1.2**
	0.3nm,0.7s,baz=7.9,slow=7.5,SNR=3.1						

WAR ***13*** *03:35:18.1, 51°.53N×16°.10E, h1km*
CSEM ***13*** *03:35:19.2±0.5, 51°.47N×16°.09E, h1km, Error ellipse: s-maj=7.1km s-min=3.6km az=173.0*

PRU 13 03:35:18.5, 51°.50N×16°.09E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.67**	**169**	*e*Pg	Pg	03 35 31.3	0.0
KSP				*e*Sg	Sg	03 35 40.4	+0.4
KSP	**Ksiaz**	**0.67**	**169**	*e*Pg	Pg	03 35 31.3	0.0
KSP				*e*Sg	Sg	03 35 40.4	+0.4
KSP	**Ksiaz**	**0.67**	**169**	*e*Pg	Pg	03 35 31.3	0.0
KSP				*e*Sg	Sg	03 35 40.4	+0.4
UPC	**Upice**	**0.99**	**183**	*e*PG	Pg	03 35 37.7	+0.2
UPC	**Upice**	**0.99**	**183**	Pg	Pg	03 35 37.7	+0.2
DPC	**Dobruska-Polom**	**1.16**	**173**	*e*PG	Pb	03 35 41.1	-0.3
DPC				*e*SG	Sg	03 35 55.5	-0.2
	comp=Z,2.8nm,0.3s						
DPC	**Dobruska-Polom**	**1.16**	**173**	Pg	Pb	03 35 41.1	-0.3
DPC				Sg	Sg	03 35 55.5	-0.2
	2.8nm,0.3s						
PVCC	**Panska Ves**	**1.37**	**225**	*e*SG	Sb	03 36 02.8	-0.2
	comp=Z,16nm,0.2s						
PVCC	**Panska Ves**	**1.37**	**225**	Sg	Sb	03 36 02.8	-0.2
	16nm,0.2s						
BRG	**Berggiesshubel**	**1.49**	**246**	PG	Pn	03 35 46.5	0.0
BRG				SG	Sg	03 36 06.2	-0.1
	4.9nm,0.3s						
KRLC	**Kraliky**	**1.49**	**163**	*e*SG	Sg	03 36 05.8	-0.6
KRLC	**Kraliky**	**1.49**	**163**	Sg	Sg	03 36 05.8	-0.6
GOPC	**GO Pecny, Ondr**	**1.79**	**208**	*e*SG	Sg	03 36 16.1	+0.1
GOPC	**GO Pecny, Ondr**	**1.79**	**208**	Sg	Sg	03 36 16.1	+0.1
PRU	**Pruhonice**	**1.81**	**214**	*e*SG	Sg	03 36 16.2	-0.2
	comp=Z,2.6nm,0.4s						
PRU	**Pruhonice**	**1.81**	**214**	Sg	Sg	03 36 16.2	-0.2
	2.6nm,0.4s						
CLL	**Collm**	**1.94**	**266**	*e*(Pg)	Pb	03 35 55.0	+0.2
CLL				*e*Sg	Sb	03 36 19.0	-0.5
KHC	**Kasperske Hory**	**2.87**	**215**	*e*SG	Sg	03 36 49.9	-0.6
KHC	**Kasperske Hory**	**2.87**	**215**	Sg	Sg	03 36 49.9	-0.6

NIED ***13*** *03:36:00, 39°.00N×142°.40E, h29km, Mw3.4 Best double couple: M0 1.58000×10^14 NP1:φs320.00000°, δ24.00000°, λ-119.00000°. NP2:φs172.00000°, δ69.00000°, λ-78.00000°.*

JMA 13 03:36:56.3±0.1, 39°.05N×142°.43E, h31km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.59**	**273**	P	Pb	03 37 08.2	-0.1
OFUJ				S	Sb	03 37 16.3	-0.2
MIYJ	**Miyakonagasawa**	**0.71**	**318**	P	Pn	03 37 09.6	-0.6
MIYJ				S	Sb	03 37 19.1	-0.6
JMK	**Ichinoseki**	**0.95**	**264**	P	Pn	03 37 13.5	0.0
JMK				S	Sn	03 37 25.7	-0.2
JOM	**Ohasama**	**0.98**	**296**	P	Pn	03 37 14.2	+0.3
JOM				S	Sb	03 37 27.3	0.0
JTH	**Tanohata**	**0.99**	**334**	P	Pn	03 37 14.3	+0.2
JIO	**Ouri**	**1.03**	**235**	P	Pn	03 37 14.1	-0.5
JIO				S	Sn	03 37 26.5	-1.5
JKZ	**Kuzumaki**	**1.26**	**318**	P	Pn	03 37 18.7	+0.8
JKZ				S	Sb	03 37 34.8	-0.7
JRG	**Rokugo**	**1.44**	**284**	P	Pn	03 37 20.9	+0.7
JRG				S	Sb	03 37 39.9	-0.5
JANG	**Nango**	**1.50**	**332**	P	Pn	03 37 21.9	+0.8
JANG				S	Sb	03 37 40.9	-1.2
JOU	**Okura**	**1.54**	**244**	P	Pn	03 37 22.1	+0.4
MAT	**Matsushiro**	**4.18**	**234**	P	Pn	03 38 01.7	+3.8
MAT

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
	1µm,0.6s						
MA9	**Marino**	**0.67**	**183**	Pg	**Pg**	**03 37 45.2**	**0.0**
	1µm,0.6s						
FAGN	**Fagnano**	**0.67**	**104**	Pg	**Pn**	**03 37 45.4**	**-1.1**
FAGN	**Fagnano**	**0.67**	**104**	Pg	**Pn**	**03 37 45.4**	**-1.1**
RDP	**Rocca di Papa**	**0.68**	**180**	Pg	**Pg**	**03 37 45.0**	**-0.4**
	973nm,0.4s						
RDP	**Rocca di Papa**	**0.68**	**180**	Pg	**Pg**	**03 37 45.0**	**-0.4**
	973nm,0.4s						
TERO	**Teramo**	**0.69**	**74**	Pg	**Pb**	**03 37 44.2**	**-1.1**
TERO				Sg	**Sg**	**03 37 54.5**	**-0.2**
	343nm,0.2s						
TERO	**Teramo**	**0.69**	**74**	Pg	**Pb**	**03 37 44.2**	**-1.1**
TERO				Sg	**Sg**	**03 37 54.5**	**-0.2**
	343nm,0.2s						
LATE	**Laterza**	**0.69**	**285**	Pg	**Pb**	**03 37 44.9**	**-0.5**
	498nm,0.4s						
LATE	**Laterza**	**0.69**	**285**	Pg	**Pb**	**03 37 44.9**	**-0.5**
	498nm,0.4s						
SACS	**San Casciano d**	**0.72**	**305**	Pg	**Pb**	**03 37 45.3**	**-0.6**
SACS				Sg	**Sg**	**03 37 56.1**	**+0.2**
	206nm,0.6s						
ATCC	**AVT- Casa Cast**	**0.75**	**356**	Pg	**Pb**	**03 37 45.3**	**-1.1**
	955nm,0.5s						
ATCC	**AVT- Casa Cast**	**0.75**	**356**	Pg	**Pb**	**03 37 45.3**	**-1.1**
	955nm,0.5s						
LAV9	**Lanuvio**	**0.76**	**181**	Pg	**Pg**	**03 37 46.5**	**-0.4**
	1µm,0.4s						
LAV9	**Lanuvio**	**0.76**	**181**	Pg	**Pg**	**03 37 46.5**	**-0.4**
	1µm,0.4s						
GUAR	**Guarcino**	**0.78**	**145**	Pg	**Pg**	**03 37 46.7**	**-0.6**
GUAR	**Guarcino**	**0.78**	**145**	Pg	**Pg**	**03 37 46.7**	**-0.6**
ATTE	**AVT- Monte Tez**	**0.81**	**341**	Pg	**Pb**	**03 37 46.3**	**-1.1**
	308nm,0.4s						
ATTE	**AVT- Monte Tez**	**0.81**	**341**	Pg	**Pb**	**03 37 46.3**	**-1.1**
	308nm,0.4s						
SNTG	**Esanatoglia**	**0.83**	**12**	Pg	**Pb**	**03 37 46.6**	**-1.3**
	276nm,0.2s						
SNTG	**Esanatoglia**	**0.83**	**12**	Pg	**Pb**	**03 37 46.6**	**-1.3**
	276nm,0.2s						
MURB	**Monte Urbino**	**0.84**	**351**	Pg	**Pb**	**03 37 46.8**	**-1.1**
	2µm,0.4s						
MURB	**Monte Urbino**	**0.84**	**351**	Pg	**Pb**	**03 37 46.8**	**-1.1**
	2µm,0.4s						
OFFI	**Offida**	**0.87**	**55**	Pg	**Pg**	**03 37 48.5**	**-0.5**
	1µm,0.5s						
OFFI	**Offida**	**0.87**	**55**	Pg	**Pg**	**03 37 48.5**	**-0.5**
	1µm,0.5s						
VVLD	**Villa Vallelon**	**0.88**	**130**	Pg	**Pn**	**03 37 49.2**	**-0.2**
	196nm,0.8s						
VVLD	**Villa Vallelon**	**0.88**	**130**	Pg	**Pn**	**03 37 49.2**	**-0.2**
	196nm,0.8s						
ATVO	**AVT- Monte Val**	**0.97**	**347**	Pg	**Pb**	**03 37 49.5**	**-0.7**
	334nm,0.8s						
ATVO	**AVT- Monte Val**	**0.97**	**347**	Pg	**Pb**	**03 37 49.5**	**-0.7**
	334nm,0.8s						
SSFR	**Montelago di S**	**1.00**	**3**	Pg	**Pb**	**03 37 49.6**	**-1.1**
SSFR	**Montelago di S**	**1.00**	**3**	Pg	**Pb**	**03 37 49.6**	**-1.1**
CING	**Cingoli**	**1.00**	**21**	Pg	**Pb**	**03 37 49.6**	**-1.2**
	278nm,0.5s						
CING	**Cingoli**	**1.00**	**21**	Pg	**Pb**	**03 37 49.6**	**-1.2**
	278nm,0.5s						
CAFI	**Castiglion Fio**	**1.05**	**329**	Pg	**Pb**	**03 37 50.6**	**-0.9**
	136nm,0.6s						
CAFI	**Castiglion Fio**	**1.05**	**329**	Pg	**Pb**	**03 37 50.6**	**-0.9**
	136nm,0.6s						
ATPC	**Poggio Castell**	**1.06**	**350**	Pg	**Pb**	**03 37 50.9**	**-0.8**
	448nm,0.4s						
ATPC	**Poggio Castell**	**1.06**	**350**	Pg	**Pb**	**03 37 50.9**	**-0.8**
	448nm,0.4s						
ARVD	**Arcevia**	**1.07**	**9**	Pg	**Pb**	**03 37 50.8**	**-1.2**
	155nm,0.5s						
ARVD	**Arcevia**	**1.07**	**9**	Pg	**Pb**	**03 37 50.8**	**-1.2**
	155nm,0.5s						
ATMC	**Monte Cedrone**	**1.08**	**339**	Pg	**Pb**	**03 37 51.4**	**-0.7**
	368nm,0.5s						
ATMC	**Monte Cedrone**	**1.08**	**339**	Pg	**Pb**	**03 37 51.4**	**-0.7**
	368nm,0.5s						
GUMA	**Gualdo di Mace**	**1.10**	**55**	Pg	Pb	03 37 46.1	-6.2
	2µm,0.5s						
GUMA	**Gualdo di Mace**	**1.10**	**55**	Pg	Pb	03 37 46.1	-6.2
	2µm,0.5s						
MAON	**Monte Argentar**	**1.17**	**270**	Pg	**Pn**	**03 37 52.0**	**-1.3**
	98nm,1.0s						
MAON	**Monte Argentar**	**1.17**	**270**	Pg	**Pn**	**03 37 52.0**	**-1.3**
	98nm,1.0s						
PARC	**Parchiule**	**1.26**	**344**	Pg	**Pn**	**03 37 54.0**	**-0.6**
	138nm,0.4s						
PARC	**Parchiule**	**1.26**	**344**	Pg	**Pn**	**03 37 54.0**	**-0.6**
	138nm,0.4s						
UDBI	**Udbina**	**3.05**	**46**	*e*Pn	**Pn**	**03 38 20.6**	**+1.4**
UDBI				Sn	**Sn**	**03 38 58.0**	**+2.8**
ROBS	**Robic**	**3.85**	**8**	*i* Pn	**Pn**	**03 38 31.0**	**+0.9**
ROBS				*i* Sn	**Sn**	**03 39 15.0**	**+0.2**
ROBS	**Robic**	**3.85**	**8**	*i* Pn	**Pn**	**03 38 31.0**	**+0.9**
ROBS				*i* Sn	**Sn**	**03 39 15.0**	**+0.2**
PDKS	**Podkum**	**3.98**	**24**	*i* Pn	**Pn**	**03 38 33.7**	**+1.7**
PDKS				*i* Sn	**Sn**	**03 39 19.0**	**+1.0**
PDKS	**Podkum**	**3.98**	**24**	*i* Pn	**Pn**	**03 38 33.7**	**+1.7**
PDKS				*i* Sn	**Sn**	**03 39 19.0**	**+1.0**
MYKA	**Terra Mystica**	**4.25**	**9**	*i* Pn	**Pn**	**03 38 36.7**	**+1.0**
	1.0nm,0.2s						
MYKA				*i* Sn	**Sn**	**03 39 25.2**	**+0.5**
	0.1nm,0.1s						
OBKA	**Obir**	**4.28**	**17**	*i* Pn	**Pn**	**03 38 36.9**	**+0.8**
	0.7nm,0.1s						
OBKA				*i* Sn	**Sn**	**03 39 26.4**	**+0.8**
	4.6nm,0.3s						
ABTA	**Abfaltersbach**	**4.31**	**358**	*i* Pn	**Pn**	**03 38 37.8**	**+1.3**
	1.3nm,0.2s						
ABTA				*i* Sn	**Sn**	**03 39 27.1**	**+0.7**
	2.6nm,0.3s						
SOKA	**Soboth**	**4.55**	**21**	*i* Pn	**Pn**	**03 38 41.9**	**+2.0**
	0.7nm,0.2s						
SOKA				*i* Sn	**Sn**	**03 39 33.5**	**+1.2**
	0.8nm,0.3s						
KBA	**Koelnbreinsper**	**4.66**	**5**	*i* Pn	**Pn**	**03 38 43.5**	**+2.0**
	1.9nm,0.2s						
KBA				*i* Sn	**Sn**	**03 39 36.5**	**+1.4**
	1.1nm,0.1s						
FETA	**Feichten**	**4.80**	**344**	*e*Pn	**Pn**	**03 38 46.7**	**+3.4**
	0.2nm,0.2s						
FETA				*i* Sn	**Sn**	**03 39 38.3**	**-0.1**
ARSA	**Arzberg**	**5.21**	**22**	*i* Pn	**Pn**	**03 38 49.9**	**+1.0**
	0.9nm,0.3s						
ARSA				*i* Sn	**Sn**	**03 39 47.7**	**-0.7**
	1.4nm,0.4s						
DAVA	**Damuels**	**5.25**	**338**	*e*Pn	**Pn**	**03 38 52.7**	**+3.1**
	0.4nm,0.2s						
MOA	**Molln**	**5.52**	**11**	*i* Pn	**Pn**	**03 38 54.6**	**+1.5**
	0.9nm,0.2s						
MOA				*i* Sn	**Sn**	**03 39 58.0**	**+1.9**
	2.1nm,0.4s						
CONA	**Conrad Observa**	**5.92**	**21**	*i* Pn	**Pn**	**03 38 60.0**	**+1.3**
	0.5nm,0.2s						
CONA				*i* Sn	**Sn**	**03 40 08.6**	**+2.5**
	0.9nm,0.3s						
KHC	**Kasperske Hory**	**6.72**	**5**	*e*PN	**Pn**	**03 39 09.5**	**-0.1**
KHC				*e*SN	**Sn**	**03 40 24.2**	**-1.4**
KHC	**Kasperske Hory**	**6.72**	**5**	Pn	**Pn**	**03 39 09.5**	**-0.1**
KHC				Sn	**Sn**	**03 40 24.2**	**-1.4**
OFUJ	**Ofunato**	**0.76**	**287**	P	**Pb**	**04 11 06.3**	**0.0**
OFUJ				*e*S	**Sb**	**04 11 16.0**	**-0.3**
MIYJ	**Miyakonagasawa**	**0.94**	**320**	P	**Pn**	**04 11 08.7**	**-0.3**
MIYJ				S	**Sn**	**04 11 20.4**	**-1.1**
JIO	**Ouri**	**1.06**	**248**	P	**Pn**	**04 11 10.6**	**0.0**
JIO				S	**Sn**	**04 11 23.0**	**-1.3**
JMK	**Ichinoseki**	**1.08**	**276**	P	**Pn**	**04 11 11.0**	**+0.1**
JMK				S	**Sn**	**04 11 24.0**	**-0.9**
JOM	**Ohasama**	**1.19**	**302**	P	**Pn**	**04 11 12.5**	**+0.1**
JOM				S	**Sn**	**04 11 27.2**	**-0.4**
JTH	**Tanohata**	**1.22**	**332**	P	**Pn**	**04 11 12.7**	**-0.2**
JTH				S	**Sn**	**04 11 28.2**	**-0.3**
JOU	**Okura**	**1.59**	**253**	P	**Pn**	**04 11 18.7**	**+0.7**
JOU				*e*S	**Sn**	**04 11 37.3**	**-0.3**
JRG	**Rokugo**	**1.62**	**290**	P	**Pn**	**04 11 18.8**	**+0.5**
JRG				*e*S	**Sn**	**04 11 38.5**	**+0.2**
JMM	**Marumori**	**1.73**	**236**	P	**Pn**	**04 11 20.3**	**+0.5**
JMM				S	**Sn**	**04 11 40.4**	**-0.5**
JANG	**Nango**	**1.73**	**331**	P	**Pn**	**04 11 19.8**	**-0.1**
JYK	**Kaneyama**	**1.75**	**273**	P	**Pn**	**04 11 20.7**	**+0.6**
ERM	**Erimo**	**3.19**	**7**	*ce*P	**Pn**	**04 11 39.7**	**-0.1**
ERM				pmax	pmax		
	comp=Z,52nm,1.0s						
ERM	**Erimo**	**3.19**	**7**	*e*Pn	**Pn**	**04 11 40.4**	**+0.6**
MJAR	**Matsushiro Arr**	**4.18**	**238**	P	**Pn**	**04 11 56.1**	**+2.6**
	comp=Z,12nm,0.3s,baz=37,slow=10,SNR=48						
MJAR				S	**Sn**	**04 12 43.7**	**+2.3**
	comp=Z,4.0nm,0.3s,baz=42,slow=12,SNR=4.7						
MJAR				LR	LR	04 13 45.6	
	comp=Z,368nm,20.4s,baz=60,slow=42						
MAJO	**Matsushiro**	**4.18**	**238**	*d* iP	**Pn**	**04 11 56.4**	**+2.9**
MAJO	**Matsushiro**	**4.18**	**238**	*e*Pn	**Pn**	**04 11 56.4**	**+2.9**
MAJO				*e*Sn	**Sn**	**04 12 34.2**	**-7.2**
MAT	**Matsushiro**	**4.18**	**238**	P	**Pn**	**04 11 56.2**	**+2.7**
MAT				S	**Sn**	**04 12 48.4**	**+7.0**
ASAJ	**Asahikawa**	**5.26**	**360**	P	**Pn**	**04 12 09.7**	**+1.4**
	baz=270,slow=20						
ASAJ	**Asahikawa**	**5.26**	**360**	*e*Pn	**Pn**	**04 12 07.3**	**-0.9**
ASAJ				*e*Sn	**Sn**	**04 13 06.3**	**-1.6**
INU	**Inuyama**	**5.67**	**234**	*e*Pn	**Pn**	**04 12 16.0**	**+2.0**
JHJ2	**Mitsune**	**6.16**	**202**	*e*Pn	**Pn**	**04 12 20.6**	**-0.1**
JHJ2				*e*Sn	**Sn**	**04 13 24.7**	**-5.5**
JHJ	**Hachijo jima 2**	**6.16**	**203**	P	**Pn**	**04 12 21.5**	**+0.8**
	comp=Z,20nm,0.3s,baz=253,slow=20,SNR=3.8						
JHJ				S	**Sn**	**04 13 25.6**	**-4.7**
	comp=Z,76nm,0.3s,baz=266,slow=23,SNR=11						
KUR	**Kuril'sk**	**7.48**	**30**	*e*P	**Pn**	**04 12 38.8**	**+0.1**
KUR				*e*S	**Sn**	**04 13 57.1**	**-5.5**
KUR				pmax	pmax		
	comp=Z,18nm,0.7s						
KUR				smax	smax		
	comp=N,49nm,0.5s						
KUR				smax	smax		
	comp=E,41nm,0.4s						
YSS	**Yuzh-Sakhalins**	**8.10**	**1**	*e*P	**Pn**	**04 12 48.0**	**+0.8**
YSS				*e*S	**Sn**	**04 14 16.0**	**-1.7**
YSS				pmax	pmax		
	comp=Z,40nm,0.8s						
YSS				smax	smax		
	comp=N,40nm,1.1s						
YSS				MLR	MLR		
	comp=Z,200nm,15.0s						
YSS	**Yuzh-Sakhalins**	**8.10**	**1**	*e*Pn	**Pn**	**04 12 48.1**	**+0.9**
USRK	**Ussuriysk Ar.**	**9.58**	**307**	P	**Pn**	**04 13 08.4**	**+0.8**
	comp=Z,0.7nm,0.3s,baz=119,slow=17,SNR=21						
USRK				LR	LR	04 16 42.5	
	comp=Z,224nm,18.7s,baz=106,slow=37						
JNU	**Nakatsue**	**11.08**	**243**	P	**Pn**	**04 13 30.6**	**+2.3**
	comp=Z,0.3nm,0.3s,baz=343,slow=11,SNR=2.3						
JNU	**Nakatsue**	**11.08**	**243**	*e*Pn	**Pn**	**04 13 28.4**	**+0.1**
MDJ	**Mudanjiang**	**11.29**	**305**	P	Pn	04 13 36.0	+5.0
MDJ				pmax	pmax		
	comp=Z,11nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,15nm,6.0s						
MDJ	**Mudanjiang**	**11.29**	**305**	*e*Pn	Pn	04 13 36.7	+5.7
KSRS	**Korea Array**	**11.64**	**268**	P	**Pn**	**04 13 37.8**	**+1.9**
	comp=Z,0.1nm,0.3s,baz=76,slow=14,SNR=6.8						
KSRS				LR	LR	04 17 44.2	
	comp=Z,128nm,19.9s,baz=76,slow=35						
KSAR	**Wonju Array Be**	**11.68**	**268**	P	**Pn**	**04 13 37.8**	**+1.5**
KSAR	**Wonju Array Be**	**11.68**	**268**	P	**Pn**	**04 13 37.8**	**+1.5**
TYV	**Tymovskoe**	**12.01**	**0**	*e*P	Pn	04 13 36.2	-4.5
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
TYV				MLR	MLR		
	comp=Z,500nm,18.0s						
KLR	**Kul'dur**	**12.96**	**327**	LR	LR	04 18 44.3	
	comp=Z,251nm,20.4s,baz=177,slow=36						
NKL	**Nikolayevsk**	**14.36**	**355**	*e*P	Pn	04 14 07.0	-5.8
SKR	**Severo-Kuril's**	**15.20**	**35**	*i* P	**Pn**	**04 14 25.7**	**+1.6**
BJI	**Beijing**	**20.42**	**282**	P	**P**	**04 15 25.8**	**-0.6**
BJI				pmax	pmax		
	comp=Z,9.0nm,1.6s						
MA2	**Magadan**	**21.38**	**11**	P	**P**	**04 15 37.0**	**+0.4**
	comp=Z,6.3nm,0.3s,baz=187,slow=9.1,SNR=7.7						
CLNS	**Chul'man**	**21.45**	**333**	*e*P	**P**	**04 15 36.1**	**-1.3**
CLNS				pmax	pmax		
	comp=Z,15nm,0.9s						
CLNS				pmax	pmax		
	comp=E,7.0nm,0.9s						
CLNS				pmax	pmax		
	comp=N,14nm,1.3s						
HHC	**Hu-ho-hao-te**	**23.85**	**285**	*e*P	**P**	**04 16 01.1**	**-1.5**
HHC				pP	pP	04 16 10.8	+0.1
HHC				sP	sP	04 16 14.5	+0.2
HHC				S	**S**	**04 20 09.0**	**-7.8**
HHC				pmax	pmax		
	comp=Z,15nm,0.8s						
HHC				pmax	pmax		
	comp=Z,68nm,7.6s						
HHC				LR	LR		
	comp=N,130nm,14.8s						
HHC				LR	LR		
	comp=E,150nm,14.8s						
HHC				LR	LR		
	comp=Z,79nm,13.6s						
YAK	**Yakutsk**	**24.52**	**345**	P	**P**	**04 16 07.8**	**-0.6**
	comp=Z,32nm,0.5s,baz=27,slow=1.6,SNR=5.2						
YAK	**Yakutsk**	**24.52**	**345**	*e*P	**P**	**04 16 06.8**	**-1.5**
YAK				*e**PP	**pP**	**04 16 15.5**	**-1.2**
YAK				*e*PPP	PPP	04 16 47.1	
YAK				*e*		04 19 46.7	
YAK				*e*S	**S**	**04 20 25.0**	**-1.9**
YAK				*e**SS	**sS**	**04 20 39.7**	**-0.8**
YAK				*e*SS	**SnSn**	**04 21 12.4**	**-0.3**
YAK				*e*		04 27 08.2	
YAK				pmax	pmax		
	comp=Z,26nm,1.1s						
YAK				pmax	pmax		
	comp=N,17nm,1.2s						
YAK				pmax	pmax		
	comp=E,6.0nm,1.4s						
YAK				smax	smax		
	comp=N,82nm,2.4s						
YAK				smax	smax		
	comp=E,69nm,2.4s						
YAK	**Yakutsk**	**24.52**	**345**	*e*P	**P**	**04 16 06.9**	**-1.5**
	comp=E,34nm,0.8s						
WHN	**Wuhan**	**24.59**	**259**	P	**P**	**04 16 04.3**	**-5.0**
WHN				S	S	04 20 10.9	-18
WHN				LR	LR		
	comp=Z,340nm,22.1s						
SEY	**Seymchan**	**24.83**	**11**	P	**P**	**04 16 13.1**	**+2.0**
	comp=Z,7.1nm,0.8s,baz=200,slow=6.7,SNR=19						
BOD	**Bodaibo**	**26.53**	**325**	*e*P	**P**	**04 16 22.6**	**-4.0**
BOD				pmax	pmax		
	comp=Z,8.0nm,1.1s						
SONA1	**Songino Array**	**27.60**	**301**	*e*P	**P**	**04 16 36.0**	**-0.5**
SONM	**Songino Array**	**27.60**	**301**	P	**P**	**04 16 35.7**	**-0.9**
	comp=Z,2.6nm,0.6s,baz=97,slow=9.1,SNR=22						
SONM				LR	LR	04 27 52.6	
	comp=Z,94nm,18.8s,baz=104,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.35**	**125**	T	T	04 47 13.2	
	baz=317,slow=75,SNR=1168						
H11N1	**WAKE ISLAND Hy**	**28.36**	**125**	T	T	04 47 13.9	
	baz=317,slow=75,SNR=536						
H11N3	**WAKE ISLAND Hy**	**28.37**	**125**	T	T	04 47 10.4	
	baz=317,slow=75,SNR=900						
ENH	**Enshi**	**28.46**	**263**	*e*P	**P**	**04 16 44.8**	**+0.6**
	comp=Z,9.3nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**29.14**	**127**	T	T	04 48 10.5	
	baz=318,slow=76,SNR=173						
H11S3	**WAKE ISLAND Hy**	**29.14**	**127**	T	T	04 48 10.2	
	baz=318,slow=76,SNR=130						
H11S2	**WAKE ISLAND Hy**	**29.15**	**127**	T	T	04 48 11.3	
	baz=318,slow=76,SNR=108						
TLY	**Talaya**	**29.89**	**308**	*e*P	**P**	**04 16 56.9**	**+0.2**
TLY				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,86nm,17.0s						
ZAK	**Zakamensk**	**29.93**	**306**	*e*P	**P**	**04 16 55.9**	**-1.2**
ZAK				*e*		04 23 48.4	
ZAK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
LZH	**Lanzhou**	**30.73**	**277**	*e*P	**P**	**04 17 03.3**	**-1.1**
LZH				pP	pP	04 17 14.8	+2.0
LZH				sP	sP	04 17 19.6	+3.3
LZH				pmax	pmax		
	comp=Z,11nm,1.0s						
BILL	**Bilibino**	**32.02**	**17**	*e*P	**P**	**04 17 18.5**	**+3.3**
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TIXI	**Tiksi**	**33.61**	**352**	*e*P	**P**	**04 17 30.4**	**+1.4**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.9s						
QIZ	**Qiongzhong**	**34.55**	**245**	P	**P**	**04 17 37.9**	**+0.1**
QIZ				S	**S**	**04 23 04.5**	**-0.5**
QIZ				LR	LR		
	comp=Z,99nm,8.0s						
KMI	**Kunming**	**36.19**	**260**	P	**P**	**04 17 52.8**	**+0.7**
KMI				pmax	pmax		
	comp=Z,10.0nm,0.5s						
WMQ	**Urumqi**	**40.89**	**295**	*e*P	**P**	**04 18 31.1**	**-0.1**
WMQ				pP	pP	04 18 41.3	+1.6
WMQ				pmax	pmax		
	comp=Z,12nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,88nm,3.6s						
ZAA0	**Zalesovo Array**	**41.41**	**311**	*e*P	**P**	**04 18 34.8**	**-0.4**
ZALV	**Zalesovo Beam**	**41.41**	**311**	P	**P**	**04 18 34.8**	**-0.5**
	comp=Z,4.2nm,0.6s,baz=85,slow=7.7,SNR=14						
ZALV				LR	LR	04 36 23.2	
	comp=Z,66nm,18.1s,baz=224,slow=37						
NRIK	**Noril'sk**	**42.02**	**334**	LR	LR	04 36 58.3	
	comp=Z,112nm,21.1s,baz=104,slow=37						
CMAR	**Chiang Mai Arr**	**42.88**	**254**	LR	LR	04 38 33.8	
	comp=Z,23nm,18.3s,baz=45,slow=39						
SVW2	**Sparrevohn**	**43.51**	**38**	*e*P	**P**	**04 18 53.6**	**+1.3**
	comp=Z,6.0nm,0.8s						
MK01	**Makanchi Array**	**43.97**	**301**	*e*P	**P**	**04 18 55.6**	**-0.6**
MK31	**Makanchi Array**	**43.97**	**301**	*e*P	**P**	**04 18 56.1**	**-0.1**
MK31	**Makanchi Array**	**43.97**	**301**	*e*P	**P**	**04 18 56.1**	**-0.1**
MKAR	**Makanchi Array**	**43.97**	**301**	P	**P**	**04 18 55.8**	**-0.5**
	comp=Z,4.3nm,0.7s,baz=83,slow=9.9,SNR=20						
MKAR				LR	LR	04 37 28.2	
	comp=Z,52nm,20.9s,baz=70,slow=36						
MAKZ	**Makanchi**	**44.18**	**301**	*e*P	**P**	**04 18 56.5**	**-1.4**
MAKZ				pmax	pmax		
	comp=Z,5.0nm,0.8s						
MAKZ	**Makanchi**	**44.18**	**301**	*e*P	**P**	**04 18 56.5**	**-1.4**
	comp=Z,5.0nm,0.8s						
KDAK	**Kodiak Island**	**45.12**	**43**	*ce*P	**P**	**04 19 06.8**	**+1.7**
KURK	**Kurchatov**	**45.57**	**307**	*ce*P	**P**	**04 19 08.0**	**-0.8**
KURK				pmax	pmax		
	comp=Z,27nm,0.9s						
KURK	**Kurchatov**	**45.57**	**307**	*e*P	**P**	**04 19 08.4**	**-0.4**
	comp=Z,9.6nm,0.9s						
KURBB	**Kurchatov Arra**	**45.64**	**307**	P	**P**	**04 19 08.8**	**-0.6**
	comp=Z,6.0nm,0.6s,baz=80,slow=8.2,SNR=56						
KTH	**Kantishna Hill**	**45.72**	**35**	*e*P	**P**	**04 19 10.0**	**+0.1**
	comp=Z,11nm,0.9s						
RND	**Reindeer**	**46.65**	**35**	*e*P	**P**	**04 19 18.5**	**+1.3**
RND				pmax	pmax		
	comp=Z,7.0nm,0.8s						
RND	**Reindeer**	**46.65**	**35**	*e*P	**P**	**04 19 18.5**	**+1.3**
	comp=Z,6.5nm,0.8s						
WRH	**Wood River Hil**	**46.95**	**34**	*e*P	**P**	**04 19 19.6**	**+0.1**
	comp=Z,4.9nm,0.9s						
WRH				*e*PcP	**PcP**	**04 20 52.3**	**+0.8**
SML	**Sawmill**	**46.97**	**37**	*e*P	**P**	**04 19 21.2**	**+1.5**
SML				pmax	pmax		
	comp=Z,10.0nm,0.8s						
SML	**Sawmill**	**46.97**	**37**	*e*P	**P**	**04 19 21.2**	**+1.5**
	comp=Z,10nm,0.8s						
CCB	**Clear Creek Bu**	**47.07**	**33**	*e*P	**P**	**04 19 21.7**	**+1.4**
	comp=Z,20nm,1.8s						
HDA	**Harding Lake**	**47.45**	**34**	*e*P	**P**	**04 19 23.5**	**+0.1**
	comp=Z,6.9nm,0.8s						
IL1	**Eielson Array**	**47.46**	**33**	*e*P	**P**	**04 19 24.1**	**+0.7**
IL1				*e*PcP	**PcP**	**04 20 52.8**	**-0.5**
ILAR	**Eielson Array**	**47.46**	**33**	P	**P**	**04 19 24.6**	**+1.1**
	comp=Z,6.5nm,0.7s,baz=268,slow=6.5,SNR=70						
ILAR	**Eielson Array**	**47.46**	**33**	P	**P**	**04 19 24.6**	**+1.1**
ILAR				pmax	pmax		
	comp=Z,6.0nm,0.7s						
ILB	**Eielson Array**	**47.46**	**33**	*e*P	**P**	**04 19 23.8**	**+0.4**
KLU	**Klutina**	**48.15**	**38**	*e*P	**P**	**04 19 29.6**	**+0.7**
	comp=Z,6.9nm,0.8s						
BRVK	**Borovoye**	**50.11**	**311**	*ce*P	**P**	**04 19 44.6**	**+0.6**
BRVK				pmax	pmax		
	comp=Z,4.0nm,0.6s						
AAK	**Ala-Archa**	**50.47**	**297**	*i* P	**P**	**04 19 48.2**	**+1.1**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ZRNK	**Zerenda**	**50.89**	**312**	*e*P	**P**	**04 19 49.7**	**-0.1**
ZRNK				pmax	pmax		
	comp=Z,19nm,1.9s						
ZRNK	**Zerenda**	**50.89**	**312**	*e*P	**P**	**04 19 49.7**	**-0.1**
	comp=Z,18nm,1.9s						
HYT	**Haines Junctio**	**52.28**	**38**	*e*P	**P**	**04 20 02.1**	**+1.8**
	comp=Z,12nm,1.0s						
INK	**Inuvik**	**52.34**	**28**	P	**P**	**04 20 02.1**	**+1.7**
	comp=Z,2.9nm,0.6s,baz=335,slow=4.5,SNR=6.6						
KKAR	**Karatay Array**	**53.04**	**299**	*e*P	**P**	**04 20 05.8**	**-0.2**
KKAR	**Karatay Array**	**53.04**	**299**	*e*P	**P**	**04 20 05.8**	**-0.2**
ARU	**Arti**	**55.63**	**318**	*c* iP	**P**	**04 20 25.0**	**+0.4**
ARU						04 22 27.0	
ARU				S	**S**	**04 28 10.0**	**+1.5**
ARU				SS	**SS**	**04 31 52.8**	**-0.5**
ARU				pmax	pmax		
	comp=Z,9.0nm,1.7s						
ABKAR	**Akbulak array**	**57.49**	**310**	*e*P	**P**	**04 20 37.6**	**-0.4**
WRA	**Warramunga Arr**	**59.00**	**189**	P	**P**	**04 20 48.2**	**-0.6**
	comp=Z,3.9nm,0.6s,baz=5.6,slow=7.1,SNR=44						
YKA	**Yellow

	comp=Z,3.0nm,0.9s							
CMB	**Columbia Colle**	**72.06**	**55**	*e*P		**P**	**04 22 13.9**	**+0.7**
	comp=Z,3.2nm,0.9s							
LRM	**Limekiln Ridge**	**72.19**	**45**	*e*P		**P**	**04 22 14.5**	**+0.4**
DLMT	**Dillon**	**72.39**	**46**	*e*P		**P**	**04 22 16.4**	**+1.3**
	comp=Z,11nm,1.6s							
HLID	**Hailey**	**72.45**	**48**	*e*P		**P**	**04 22 17.3**	**+1.7**
	comp=Z,1.8nm,0.9s							
BOZ	**Bozeman (W)**	**72.76**	**45**	*e*P		**P**	**04 22 18.1**	**+0.8**
BOZ				pmax		pmax		
	comp=Z,2.0nm,0.7s							
BOZ	**Bozeman (W)**	**72.76**	**45**	*e*P		**P**	**04 22 18.1**	**+0.8**
	comp=Z,2.3nm,0.7s							
NOA	**NORSAR Array B**	**72.87**	**338**	P		**P**	**04 22 17.3**	**-0.3**
	comp=Z,0.5nm,0.7s,baz=259,slow=7.3,SNR=3.3							
NOA				LR		LR	04 59 26.6	
	comp=Z,34nm,19.3s,baz=60,slow=40							
AKASG	**Malin Array Be**	**73.43**	**322**	P		**P**	**04 22 20.1**	**-0.8**
	comp=Z,1.0nm,0.5s,baz=44,slow=6.1,SNR=5.5							
KIEV	**Kiev**	**73.44**	**322**	*i* P		**P**	**04 22 19.2**	**-1.9**
KIEV				pmax		pmax		
	comp=Z,2.0nm,0.9s							
R11A	**Troy Canyon, C**	**74.91**	**53**	*e*P		**P**	**04 22 30.6**	**+0.5**
	comp=Z,2.3nm,0.8s							
HWUT	**Hardware Ranch**	**75.31**	**48**	*e*P		**P**	**04 22 34.3**	**+1.9**
	comp=Z,4.7nm,1.0s							
TPNV	**Topopah Spring**	**75.34**	**54**	*e*P		**P**	**04 22 34.2**	**+1.6**
TPNV				pmax		pmax		
	comp=Z,5.0nm,1.0s							
TPNV	**Topopah Spring**	**75.34**	**54**	*e*P		**P**	**04 22 34.2**	**+1.6**
	comp=Z,4.9nm,1.0s							
DUG	**Dugway, Tooele**	**75.46**	**50**	*e*P		**P**	**04 22 34.0**	**+0.8**
DUG				pmax		pmax		
	comp=Z,3.0nm,0.8s							
DUG	**Dugway, Tooele**	**75.46**	**50**	*e*P		**P**	**04 22 34.0**	**+0.8**
	comp=Z,2.6nm,0.8s							
BW06	**Boulder Array**	**75.73**	**46**	*e*P		**P**	**04 22 35.4**	**+0.6**
PDAR	**Pinedale Array**	**75.73**	**46**	P		**P**	**04 22 35.5**	**+0.7**
	comp=Z,1.2nm,0.7s,baz=225,slow=1.9,SNR=10							
PDAR				LR		LR	05 00 30.6	
	comp=Z,20nm,18.0s,baz=276,slow=39							
SHPR	**Sheep Range**	**76.31**	**54**	*e*P		**P**	**04 22 38.3**	**+0.2**
	comp=Z,3.9nm,1.2s							
MTPU	**Mount Pierson**	**77.19**	**51**	*e*P		**P**	**04 22 45.4**	**+2.0**
	comp=Z,3.6nm,0.9s							
KNB	**Kanab**	**77.45**	**53**	*e*P		**P**	**04 22 46.5**	**+1.9**
KNB				pmax		pmax		
	comp=Z,4.0nm,1.1s							
KNB	**Kanab**	**77.45**	**53**	*e*P		**P**	**04 22 46.5**	**+1.9**
	comp=Z,4.1nm,1.1s							
SRU	**San Rafael Swe**	**77.51**	**50**	*e*P		**P**	**04 22 45.9**	**+1.0**
SRU				pmax		pmax		
	comp=Z,5.0nm,0.8s							
SRU	**San Rafael Swe**	**77.51**	**50**	*e*P		**P**	**04 22 45.9**	**+1.0**
	comp=Z,4.7nm,0.8s							
BRTR	**Keskin Array B**	**78.34**	**312**	LR		LR	05 02 24.3	
	comp=Z,14nm,18.1s,baz=76,slow=40							
Y14A	**Wickenburg**	**79.29**	**55**	*e*P		**P**	**04 22 55.1**	**+0.5**
	comp=Z,17nm,1.0s							
VYHS	**Vyhne**	**79.75**	**326**	*e*P		**P**	**04 22 57.0**	**+0.2**
VYHS	**Vyhne**	**79.75**	**326**	*e*P		**P**	**04 22 57.0**	**+0.2**
CLL	**Collm**	**79.98**	**331**	⇓*i*P		**P**	**04 22 57.8**	**-0.2**
	comp=Z,5.0nm,1.0s							
CLL	**Collm**	**79.98**	**331**	⇓*i*P		**P**	**04 22 57.8**	**-0.2**
CLL				pmax		pmax		
	comp=Z,5.0nm,1.0s							
S22A	**4UR Ranch, Cre**	**80.59**	**49**	*e*P		**P**	**04 23 03.9**	**+1.9**
	comp=Z,4.6nm,1.3s							
SDCO	**Great Sand Dun**	**81.37**	**48**	*e*P		**P**	**04 23 06.8**	**+0.8**
	comp=Z,2.1nm,1.1s							
CONA	**Conrad Observa**	**81.47**	**327**	*i* P		**P**	**04 23 05.9**	**-0.2**
	comp=Z,5.3nm,1.7s							
GERES	**GERESS Array B**	**81.65**	**329**	P		**P**	**04 23 06.9**	**-0.2**
	comp=Z,0.4nm,0.6s,baz=38,slow=6.8,SNR=3.5							
GERES				LR		LR	05 02 36.7	
	comp=Z,62nm,19.0s,baz=38,slow=38							
ANMO	**Albuquerque**	**82.70**	**51**	*ce*P		**P**	**04 23 14.8**	**+1.8**
ANMO				pmax		pmax		
	comp=Z,4.0nm,1.2s							
ANMO	**Albuquerque**	**82.70**	**51**	*e*P		**P**	**04 23 12.6**	**-0.4**
	comp=Z,4.7nm,1.3s							
SOKA	**Soboth**	**82.80**	**327**	*i* P		**P**	**04 23 12.9**	**-0.2**
	comp=Z,3.9nm,0.9s							
OBKA	**Obir**	**83.14**	**327**	*i* P		**P**	**04 23 14.2**	**-0.7**
	comp=Z,1.9nm,0.8s							
KBA	**Koelnbreinsper**	**83.20**	**328**	*i* PcP		**P**	**04 23 16.0**	**+0.7**
	comp=Z,3.0nm,0.9s							
SCHQ	**Schefferville**	**83.33**	**17**	P		**P**	**04 23 15.4**	**-0.2**
	comp=Z,1.3nm,0.4s,baz=253,slow=7.7,SNR=3.9							
MYKA	**Terra Mystica**	**83.43**	**327**	*i* P		**P**	**04 23 15.5**	**-0.8**
	comp=Z,2.3nm,0.7s							
RETA	**Reutte**	**83.92**	**329**	*i* P		**P**	**04 23 19.1**	**+0.2**
	comp=Z,7.1nm,1.1s							
FETA	**Feichten**	**84.31**	**329**	*i* PcP		**P**	**04 23 21.4**	**+0.4**
	comp=Z,2.4nm,0.8s							
DAVA	**Damuels**	**84.43**	**330**	*i* PcP		**P**	**04 23 21.6**	**+0.1**
	comp=Z,4.5nm,0.9s							
FUORN	**Ofenpass-Fuorn**	**84.82**	**329**	*e*P		**P**	**04 23 23.3**	**-0.4**
	comp=Z,3.7nm,0.6s							
TX31	**Lajitas Ar. Si**	**88.27**	**53**	*e*P		**P**	**04 23 41.1**	**+0.4**
TXAR	**Lajitas Array**	**88.27**	**53**	P		**P**	**04 23 41.5**	**+0.8**
	comp=Z,1.0nm,0.6s,baz=292,slow=3.2,SNR=22							
LPAZ	**La Paz**	**144.95**	**59**	PKPbc		**PKPab**	**04 30 25.6**	**-0.9**
	comp=Z,1.7nm,0.8s,baz=0.6,slow=6.1,SNR=9.1							
LVC	**Limon Verde**	**148.64**	**68**	*e*PKPdf		**PKPdf**	**04 30 33.7**	**+0.8**
SIV	**San Ignacio**	**149.18**	**49**	PKPbc		**PKPbc**	**04 30 37.8**	**0.0**
	comp=Z,2.6nm,0.6s,baz=322,slow=1.7,SNR=6.6							

IDC ***13*** *04:18:52.4±2.2,36°.75S×74°.45W,h0km,mb3.2/2, mb1 3.6/3,mb1mx3.5/24,mbtmpb3.3/3,ML3.6/1,MS2.8/2, Ms1 2.8/2,ms1mx2.6/9,Error ellipse: s-maj=78.2km s-min=21.9km az=61.0*

ISCJB ***13*** *04:18:55.6±1.3,36°.54S±0°.08×73°.82W±0°.10,h33km, mb3.2/1,MS2.8/1,Error ellipse: s-maj=12.1km s-min=11.1km az=20.1*

GUC ***13*** *04:18:55.2±0.5,36°.51S×73°.85W,h45km±2km,ML3.7*

ISC 13 04:18:57.3±1.7,36°.49S±0°.09×73°.7W±0°.1,h35km,n7, σ0s87/8,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCSP	**San Pedro de C**	**0.61**	**126**	*i* P	**Pn**	**04 19 08.5**	**-1.0**
CCSP				*i* S	**Sn**	**04 19 17.9**	**-0.1**
CCSP				IAML		04 19 23.1	
	comp=N,9μm,0.6s						
COCH	**Cobquecura**	**0.83**	**65**	*i* P	**Pn**	**04 19 11.6**	**-1.0**
COCH				*i* S	**Sn**	**04 19 24.3**	**+0.8**
CCHI	**Chillan**	**1.33**	**95**	*i* P	**Pn**	**04 19 18.9**	**-0.5**
CCHI				*i* S	**Sn**	**04 19 36.8**	**+1.0**
CCHI				IAML		04 19 48.6	
	comp=E,1μm,0.9s						
PLCA	**Paso Flores**	**4.91**	**151**	Pn	**Pn**	**04 20 08.7**	**0.0**
	comp=E,0.5nm,0.3s,baz=335,slow=17,SNR=15						
PLCA				Lg	Lg	04 21 31.7	
	comp=E,0.7nm,0.3s,baz=90,slow=20,SNR=3.4						
PLCA				LR	LR	04 22 05.8	
	comp=E,85nm,21.1s,baz=6.0,slow=39						
LPAZ	**La Paz**	**20.73**	**15**	P	Pn	04 23 39.7	+1.8
	comp=E,0.7nm,0.7s,baz=193,slow=6.4,SNR=3.9						
SIV	**San Ignacio**	**23.31**	**32**	LR	LR	04 33 43.9	
	comp=E,30nm,18.1s,baz=11,slow=37						
TXAR	**Lajitas Array**	**71.27**	**333**	P	**P**	**04 30 13.4**	**+0.3**
	comp=E,0.2nm,0.6s,baz=146,slow=8.7,SNR=4.4						

WEL 13 04:22:34.5±0.1,43°.58S×172°.68E,h9km,ML3.6/18,3C-3D, Error ellipse: s-maj=0.7km s-min=0.4km az=90.0,South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.04**	**276**	⇓PG	Pg	04 22 36.0	-0.2
CRLZ				AML	AML	04 22 37.3	
CRLZ				AML	AML	04 22 37.3	
CRLZ				AML	AML	04 22 37.3	
CRLZ				AML	AML	04 22 37.3	
MQZ	**McQueen's Vall**	**0.13**	**188**	⇑PG	Pg	04 22 37.6	+0.2
MQZ				SG	Sg	04 22 39.7	+0.3
MQZ				AML	AML	04 22 39.8	
OXZ	**Oxford**	**0.53**	**298**	⇓P*	Pg	04 22 44.8	0.0
OXZ				AML	AML	04 22 46.4	
OXZ				AML	AML	04 22 46.5	
LTZ	**Lake Taylor**	**0.85**	**339**	P*	Pg	04 22 50.9	+0.1
LTZ				S*	Sg	04 23 02.5	+0.5
RPZ	**Rata Peaks**	**1.19**	**263**	⇓P*	Pb	04 22 56.0	-1.2
RPZ				AML	AML	04 23 13.5	
RPZ				AML	AML	04 23 14.6	
INZ	**Inchbonnie**	**1.24**	**313**	P*	Pn	04 22 56.6	-1.5
KHZ	**Kahutara**	**1.32**	**29**	AML	AML	04 23 23.8	
KHZ				AML	AML	04 23 23.9	
KHZ				AML	AML	04 23 30.9	
WVZ	**Waitaha Valley**	**1.50**	**289**	PN	Pn	04 23 00.9	-0.8
WVZ				AML	AML	04 23 29.1	
WVZ				AML	AML	04 23 31.8	
DSZ	**Denniston Nort**	**1.94**	**340**	PN	Pn	04 23 07.0	-0.7
DSZ				AML	AML	04 23 18.2	
DSZ				AML	AML	04 23 44.3	
DSZ				AML	AML	04 23 44.3	
DSZ				AML	AML	04 23 44.3	
LBZ	**Lake Benmore**	**1.97**	**245**	PN	Pn	04 23 07.4	-0.7
LBZ				AML	AML	04 23 44.5	
LBZ				AML	AML	04 23 44.8	
ODZ	**Otahua Downs**	**2.07**	**224**	⇑PN	Pn	04 23 08.1	-1.4
ODZ				AML	AML	04 23 40.3	
ODZ				AML	AML	04 23 41.0	
ODZ				AML	AML	04 23 48.4	
ODZ				AML	AML	04 23 53.0	
FOZ	**Fox Glacier**	**2.08**	**270**	PN	Pn	04 23 10.0	+0.4
FOZ				AML	AML	04 23 35.5	
FOZ				AML	AML	04 23 35.6	
FOZ				AML	AML	04 23 41.0	
FOZ				AML	AML	04 23 41.0	
NNZ	**Nelson**	**2.42**	**13**	AML	AML	04 23 39.6	
QRZ	**Quartz Range**	**2.75**	**358**	AML	AML	04 23 35.3	
QRZ				AML	AML	04 24 06.6	
JCZ	**Jackson Bay**	**2.86**	**259**	AML	AML	04 24 12.2	
JCZ				AML	AML	04 24 38.5	
WKZ	**Wanaka**	**2.91**	**243**	AML	AML	04 24 15.5	
WKZ				AML	AML	04 24 19.9	
EAZ	**Earnscleugh**	**2.93**	**234**	PN	Pn	04 23 20.4	-0.8
EAZ				AML	AML	04 24 11.4	
EAZ				AML	AML	04 24 11.4	
EAZ				AML	AML	04 24 14.3	
EAZ				AML	AML	04 24 14.3	
TUZ	**Tuapeka**	**3.22**	**221**	⇑PN	Pn	04 23 23.8	-1.4
TUZ				AML	AML	04 24 26.8	
TUZ				AML	AML	04 24 29.5	
SYZ	**Scrubby Hill**	**3.88**	**219**	PN	Pn	04 23 33.5	-0.7
SYZ				AML	AML	04 26 05.3	

IDC ***13*** *04:23:43.4±6.4,8°.81S×115°.58E,h0km,mb3.6/3, mb1 3.8/4,mb1mx3.5/48,mbtmpb3.6/4,ML2.8/1,Error ellipse: s-maj=134.4km s-min=86.9km az=44.0*

ISCJB ***13*** *04:23:54.6±0.7,9°.3S±0°.1×115°.36E±0°.08,h100km, mb3.5/3,Error ellipse: s-maj=17.7km s-min=6.3km az=35.3*

DJA ***13*** *04:23:56.4±0.8,9°.S±12°.×11°.5E±°,h122km±8km,M3.3/6, MLv3.3/6*

ISC 13 04:23:54.7±0.9,9°.4S±0°.1×115°.32E±0°.07,h100km,n12, σ2s26/15,mb3.3/3,South of Bali

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DNP	**Denpasar**	**0.69**	**351**	P	**Pn**	**04 24 13.8**	**+1.7**
DNP				S	**Sn**	**04 24 29.3**	**+4.2**
SRBI	**Singaraja**	**1.28**	**355**	P	**Pn**	**04 24 16.1**	**-2.2**
JAGI	**Jajag, Banyuwa**	**1.46**	**308**	P	**Pn**	**04 24 21.6**	**+1.1**
JAGI				S	**Sn**	**04 24 40.7**	**+0.7**
TWSI	**Taliwang, Sumb**	**1.66**	**68**	P	**Pn**	**04 24 23.2**	**+0.2**
ABJI	**Asem Bagus**	**1.90**	**325**	P	**Pn**	**04 24 22.4**	**-3.5**
GMJI	**Gumukmas**	**2.15**	**300**	P	**Pn**	**04 24 29.9**	**+0.7**
BLJI	**Banyuglugur**	**2.35**	**313**	P	**Pn**	**04 24 31.2**	**-0.6**
PLAI	**Plampang**	**2.48**	**78**	P	**Pn**	**04 24 33.9**	**+0.3**
FITZ	**Fitzroy Crossi**	**13.26**	**132**	Pn	**Pn**	**04 26 55.0**	**-4.0**
	0.0nm,0.3s,baz=321,slow=13,SNR=2.2						
FITZ				Sn	**Sn**	**04 29 26.1**	**+1.2**
	0.2nm,0.3s,baz=180,slow=20,SNR=6.5						
WRA	**Warramunga Arr**	**21.17**	**122**	P	**P**	**04 28 32.0**	**-0.1**
	0.8nm,0.5s,baz=298,slow=12,SNR=16						
ASAR	**Alice Springs**	**22.75**	**131**	P	**P**	**04 28 49.9**	**+1.1**
	0.8nm,0.5s,baz=310,slow=9.7,SNR=12						
STKA	**Stephens Creek**	**33.09**	**136**	P	**P**	**04 30 22.4**	**+1.2**
	1.1nm,0.5s,baz=324,slow=8.7,SNR=5.4						

IDC 13 04:26:19.9±4.5,28°.39S×176°.60W,h0km,mb3.7/3, mb1 3.9/3,mb1mx3.6/36,mbtmpb3.7/3,Error ellipse: s-maj=204.3km s-min=52.4km az=153.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**36.17**	**254**	P	P	04 33 23.9	-0.3
	2.2nm,0.9s,baz=79,slow=13,SNR=3.2						
ASAR	**Alice Springs**	**44.48**	**264**	P	P	04 34 32.9	-0.4
	0.5nm,0.7s,baz=104,slow=6.5,SNR=6.3						
WRA	**Warramunga Arr**	**45.30**	**269**	P	P	04 34 39.9	+0.2
	0.8nm,0.8s,baz=110,slow=7.7,SNR=8.6						
AKASG	**Malin Array Be**	**150.39**	**326**	PKPbc	PKPbc	04 46 12.6	-0.3
	0.6nm,0.5s,baz=48,slow=3.2,SNR=3.3						

NIED ***13*** *04:26:00,35°.60N×141°.50E,h26km,Mw3.9 Best double couple: M0 8.91000×10^14 NP1:φs21.00000°,δ39.00000°, λ99.00000°. NP2:φs189.00000°,δ52.00000°,λ83.00000°.*

ISCJB ***13*** *04:26:42.6±1.3,35°.67N±0°.04×141°.66E±0°.05,h2km±8km, mb4.1/13,Error ellipse: s-maj=7.1km s-min=6.6km az=160.9*

IDC ***13*** *04:26:45.0±0.7,35°.75N×141°.47E,h0km,mb3.9/10, mb1 4.1/13,mb1mx3.9/53,mbtmpb3.9/13,ML3.2/3,MS2.8/3, Ms1 2.8/3,ms1mx2.6/48,Error ellipse: s-maj=21.1km s-min=15.5km az=87.0*

JMA ***13*** *04:26:45.4±0.2,35°.57N×141°.52E,h8km±2km,M3.9*

NEIC ***13*** *04:26:49.5±0.6,35°.70N×141°.48E,h35km,mb4.1/3,Error ellipse: s-maj=14.4km s-min=10.0km az=101.0*

ISC 13 04:26:44.5±3.2,35°.59N±0°.05×141°.47E±0°.06,h3km±20km, n37,σ1s29/37,mb4.0/13,1C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.51**	**283**	⇑P	**Pb**	**04 26 56.2**	**+0.1**
CHOJ				*e*S	**Sb**	**04 27 03.3**	**-0.1**
BSO1	**Boso 1**	**1.02**	**204**	P	**Pb**	**04 27 05.8**	**+0.1**
KTR	**Katsuura**	**1.04**	**245**	P	**Pn**	**04 27 06.8**	**+0.8**
BSO4	**Boso 4**	**1.11**	**237**	P	**Pn**	**04 27 06.7**	**-0.1**
BSO3	**Boso 3**	**1.11**	**225**	P	**Pb**	**04 27 06.6**	**+0.4**
JYT	**Yasato**	**1.22**	**302**	P	**Pn**	**04 27 08.8**	**+0.4**
JYT				S	**Sn**	**04 27 25.4**	**0.0**
MJAR	**Matsushiro Arr**	**2.81**	**291**	Pn	**Pn**	**04 27 31.6**	**+1.2**
	7.8nm,0.3s,baz=207,slow=1.6,SNR=27						
MJAR				LR	LR	04 28 11.0	
	comp=Z,40nm,20.6s,baz=125,slow=32						
MAJO	**Matsushiro**	**2.81**	**291**	*e*Pn	**Pn**	**04 27 32.8**	**+2.4**
MAJO				*e*S	**Sn**	**04 28 05.0**	**+0.2**
MAT	**Matsushiro**	**2.81**	**291**	P	**Pn**	**04 27 32.2**	**+1.8**
MAT				*e*S	**Sb**	**04 28 08.6**	**-1.6**
JHJ2	**Mitsune**	**2.83**	**209**	*e*Pn	**Pn**	**04 27 29.6**	**-0.9**
JHJ2				*e*S	**Sn**	**04 28 02.3**	**-2.9**
JHJ	**Hachijo jima 2**	**2.83**	**210**	Pn	**Pn**	**04 27 31.6**	**+1.0**
	35nm,0.3s,baz=265,slow=22,SNR=12						
JHJ				Sn	**Sn**	**04 28 03.7**	**-1.6**
	96nm,0.3s,baz=68,slow=22,SNR=11						
ERM	**Erimo**	**6.55**	**11**	*e*Pn	**Pn**	**04 28 20.1**	**-1.6**
	9.4nm,0.4s						
ERM				*e*S	**Sn**	**04 29 36.0**	**-0.9**
ASAJ	**Asahikawa**	**8.56**	**5**	Pn	**Pn**	**04 28 48.2**	**-1.0**
	baz=270,slow=20						
KSRS	**Korea Array**	**11.06**	**284**	LR	LR	04 33 46.5	
	comp=Z,122nm,20.5s,baz=100,slow=38						
USRK	**Ussuriysk Ar.**	**11.26**	**323**	Pn	**Pn**	**04 29 24.7**	**-1.5**
	0.2nm,0.3s,baz=132,slow=14,SNR=2.5						
USRK				LR	LR	04 33 42.8	
	comp=Z,102nm,18.3s,baz=150,slow=38						
YSS	**Yuzh-Sakhalins**	**11.39**	**4**	*e*Pn	**Pn**	**04 29 27.1**	**-0.9**
H11N2	**WAKE ISLAND Hy**	**27.39**	**118**	T	T	05 01 33.2	
	baz=311,slow=75,SNR=97						
H11N1	**WAKE ISLAND Hy**	**27.40**	**119**	T	T	05 01 30.2	
	baz=311,slow=75,SNR=66						
H11N3	**WAKE ISLAND Hy**	**27.41**	**118**	T	T	05 01 34.7	
	baz=311,slow=75,SNR=80						
H11S1	**WAKE ISLAND Hy**	**28.06**	**121**	T	T	05 02 13.9	
	baz=312,slow=75,SNR=63						
H11S3	**WAKE ISLAND Hy**	**28.06**	**121**	T	T	05 02 12.1	
	baz=312,slow=75,SNR=84						
H11S2	**WAKE ISLAND Hy**	**28.07**	**121**	T	T	05 02 15.0	
	baz=312,slow=75,SNR=61						
SONM	**Songino Array**	**28.65**	**306**	P	**P**	**04 32 43.0**	**+0.5**
	0.7nm,0.8s,baz=110,slow=9.5,SNR=3.7						
ZALV	**Zalesovo Beam**	**42.93**	**314**	P	**P**	**04 34 44.0**	**-0.3**
	0.8nm,0.4s,baz=97,slow=8.4,SNR=3.0						
MKAR	**Makanchi Array**	**44.94**	**303**	P	**P**	**04 35 00.6**	**0.0**
	1.2nm,0.6s,baz=88,slow=9.4,SNR=11						
KURK	**Kurchatov**	**46.87**	**309**	*e*P	**P**	**04 35 16.3**	**+0.6**
	20nm,0.4s						
ILAR	**Eielson Array**	**50.69**	**32**	P	**P**	**04 35 45.4**	**+0.4**
	0.8nm,0.7s,baz=263,slow=6.6,SNR=11						
FITZ	**Fitzroy Crossi**	**55.47**	**198**	P	**P**	**04 36 22.0**	**+1.4**
	1.8nm,0.7s,baz=22,slow=13,SNR=6.0						
FITZ	**Fitzroy Crossi**	**55.47**	**198**	*e*P	**P**	**04 36 20.2**	**-0.4**
	1.7nm,0.9s						
WRAB	**Tennant Creek**	**55.63**	**188**	*e*P	**P**	**04 36 23.4**	**+1.7**
	3.9nm,0.4s						
WRA	**Warramunga Arr**	**55.64**	**188**	P	**P**	**04 36 23.8**	**+1.9**
	3.6nm,0.5s,baz=3.8,slow=7.7,SNR=16						
ABKAR	**Akbulak array**	**58.91**	**311**	*e*P	**P**	**04 36 44.5**	**-0.3**
	0.4nm,0.5s						
ASAR	**Alice Springs**	**59.37**	**188**	P	**P**	**04 36 51.1**	**+3.0**
	1.1nm,0.4s,baz=19,slow=12,SNR=21						
AKASG	**Malin Array Be**	**75.47**	**323**	P	**P**	**04 38 29.1**	**-0.6**
	0.6nm,0.4s,baz=47,slow=5.9,SNR=5.3						
PDAR	**Pinedale Array**	**78.64**	**45**	P	**P**	**04 38 48.2**	**+0.1**
	0.4nm,0.5s,baz=94,slow=1.9,SNR=4.3						
TXAR	**Lajitas Array**	**90.96**	**52**	P	**P**	**04 39 51.1**	**+0.8**
	0.3nm,0.7s,baz=290,slow=3.6,SNR=5.7						
LPAZ	**La Paz**	**147.36**	**62**	PKPbc	**PKPbc**	**04 46 30.1**	**-0.8**
	0.8nm,0.7s,baz=325,slow=7.3,SNR=5.9						

IDC 13 04:28:27.6±2.0,29°.95S×176°.26W,h0km,mb3.7/2, mb1 4.0/2,mb1mx3.6/35,mbtmpb3.7/2,Error ellipse: s-maj=70.2km s-min=27.9km az=29.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.60**	**295**	Pn	Pg	04 28 58.6	+0.4
	80nm,0.3s,baz=90,slow=20,SNR=2.7						
RAO				Sn	Sg	04 29 19.9	+0.9
	633nm,0.3s,baz=200,slow=23,SNR=7.6						
ASAR	**Alice Springs**	**44.64**	**266**	P	P	04 36 41.4	-0.8
	0.3nm,0.4s,baz=101,slow=7.6,SNR=4.3						
WRA	**Warramunga Arr**	**45.59**	**271**	P	P	04 36 48.8	-1.0
	1.2nm,0.5s,baz=111,slow=7.2,SNR=8.2						
FINES	**FINESS Array B**	**145.22**	**341**	PKPbc	PKPbc	04 48 04.8	-1.3
	3.2nm,1.0s,baz=22,slow=2.1,SNR=4.3						
TORD	**Torodi Ar. Bea**	**163.18**	**173**	PKPab	PKPab	04 49 23.4	+0.8
	0.4nm,0.6s,baz=190,slow=3.7,SNR=4.2						

JMA 13 04:30:53.4,36°.88N×140°.67E,h7km±1km,M3.6,8C Broadband fault plane solution: P waves. NP1: φs319.00000°,δ55.00000°,λ-103.00000°. **NP2:** φs161.00000°,δ37.00000°,λ-72.00000°. **Principal axes:** T Plg9.0000°, Azm58.0000°; N Plg11.0000°, Azm326.0000°; P Plg76.0000°, Azm187.0000°; **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**25**	⇑P	Pg	04 30 58.3	0.0
ONAJ				*e*S	Sg	04 31 02.0	+0.4
JHO	**Hitachi**	**0.28**	**197**	⇑P	Pg	04 30 59.0	+0.1
JHO				S	Sg	04 31 03.1	+0.5
JFK	**Kawauchi**	**0.51**	**19**	⇑P	Pg	04 31 03.1	-0.2
JFK				S	Sg	04 31 10.1	+0.1
JSB	**Shiboa**	**0.61**	**279**	⇑P	Pb	04 31 05.9	-0.5
JSB				S	Sb	04 31 14.6	-0.6
JFT	**Otama**	**0.69**	**337**	⇑P	Pg	04 31 06.8	+0.1
JFT				S	Sg	04 31 16.1	+0.4
JYT	**Yasato**	**0.76**	**211**	⇑P	Pg	04 31 07.6	-0.3
JFY	**Yanaizu**	**0.93**	**305**	⇑P	Pg	04 31 11.1	-0.2
JFY				S	Sg	04 31 23.4	-0.1
JMM	**Marumori**	**0.99**	**6**	⇑P	Pg	04 31 11.5	-0.9
JMM				S	Sg	04 31 24.5	-0.8
MAT	**Matsushiro**	**2.01**	**261**	P	Pn	04 31 28.5	+0.8
MAT				S	Sb	04 31 54.9	-0.6

IDC 13 04:32:19.6±4.5,14°.66S×167°.42E,h152km±38km,mb3.8/7, mb1 4.0/8,mb1mx3.6/42,mbtmpb4.2/8 Error ellipse: s-maj=29.2km s-min=24.3km az=16.0,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**7.43**	**187**	P	Pn	04 34 06.5	+1.1
	3.2nm,0.3s,baz=135,slow=11,SNR=12						
DZM				S	Sn	04 35 27.1	-1.5
	1.4nm,0.3s,baz=122,slow=19,SNR=3.0						
STKA	**Stephens Creek**	**29.14**	**230**	P	P	04 38 07.6	+1.1
	4.3nm,0.4s,baz=54,slow=9.1,SNR=23				

	1.2nm,0.3s,baz=67,slow=11,SNR=9.4						
MJAR				Sn	**Sn**	**04 39 53.0**	**+2.0**
	1.0nm,0.3s,baz=60,slow=13,SNR=4.2						
MJAR				LR	LR	04 40 56.0	
	comp=Z,88nm,18.9s,baz=95,slow=41						
MAT	**Matsushiro**	**4.52**	**252**	P	**Pn**	**04 39 00.9**	**+1.9**
MAT				*e*S	**Sn**	**04 39 49.8**	**-1.3**
JHJ	**Hachijo jima 2**	**5.81**	**213**	Pn	**Pn**	**04 39 16.4**	**-0.3**
	12nm,0.3s,baz=144,slow=19,SNR=2.9						
JHJ				Sn	**Sn**	**04 40 17.2**	**-5.5**
	8.3nm,0.3s,baz=90,slow=20,SNR=2.6						
KSRS	**Korea Array**	**12.39**	**272**	LR	LR	04 44 35.4	
	comp=Z,320nm,20.2s,baz=144,slow=33						
SEY	**Seymchan**	**25.48**	**9**	P	**P**	**04 43 18.6**	**+0.4**
	1.9nm,0.2s,baz=161,slow=3.7,SNR=4.7						
SONM	**Songino Array**	**28.66**	**302**	P	**P**	**04 43 48.1**	**+1.0**
	0.4nm,0.7s,baz=79,slow=7.5,SNR=4.1						
ZALV	**Zalesovo Beam**	**42.49**	**312**	P	**P**	**04 45 45.5**	**+0.1**
	0.7nm,0.3s,baz=93,slow=8.8,SNR=2.6						
MKAR	**Makanchi Array**	**45.02**	**302**	P	**P**	**04 46 06.0**	**+0.2**
	0.5nm,0.6s,baz=88,slow=9.2,SNR=4.1						
ILAR	**Eielson Array**	**47.72**	**33**	P	**P**	**04 46 27.1**	**+0.5**
	0.6nm,0.8s,baz=263,slow=6.7,SNR=5.8						
ASAR	**Alice Springs**	**62.06**	**190**	P	**P**	**04 48 11.1**	**+0.2**
	0.3nm,0.6s,baz=11,slow=10,SNR=3.8						

ISCJB ***13*** *04:39:38.1±0.7, 23.96N±0.03×122.41E±0.02, h10km±6km, Error ellipse: s-maj=4.7km s-min=3.2km az=161.8*
JMA ***13*** *04:39:38.7±0.2, 23.94N×122.39E, h20km±5km, M2.4*
TAP ***13*** *04:39:39.6, 24.01N×122.39E, h27km±1km, ML2.9, D*

ISC 13 04:39:39.1±1.1, 23.98N±0.03×122.38E±0.03, h22km±13km, n32, σ0.76/54, 1C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.70**	**48**	P	**Pb**	**04 39 52.4**	**-0.1**
JYNG				S	**Sb**	**04 40 01.3**	**-0.4**
TWD	**Chiawan**	**0.72**	**278**	*e*S	**Sb**	**04 40 03.2**	**+0.8**
	baz=275						
ENA	**Nanau**	**0.73**	**307**	*e*P	**Pb**	**04 39 53.2**	**0.0**
	baz=313						
ENA				*e*S	**Sn**	**04 40 04.8**	**+0.3**
	baz=313						
YOJ	**Yonaguni jima**	**0.75**	**50**	P	**Pb**	**04 39 53.2**	**-0.2**
YOJ				S	**Sn**	**04 40 04.0**	**-0.9**
TWC	**Suao**	**0.79**	**322**	*e*P	**Pb**	**04 39 52.3**	**-1.8**
	baz=320						
TWC				S	**Sb**	**04 40 04.7**	**+0.3**
	baz=320						
EGS		**0.95**	**335**	*e*P	**Pn**	**04 39 57.5**	**+0.5**
	baz=323						
EGS				*e*S	**Sb**	**04 40 09.7**	**+0.7**
	baz=323						
TWE	**Neicheng**	**0.98**	**319**	*e*P	**Pn**	**04 39 56.8**	**-0.7**
	baz=316						
TWE				*e*S	**Sn**	**04 40 11.0**	**+0.4**
	baz=316						
ENTT	**Nioudou**	**0.99**	**312**	*e*P	**Pn**	**04 39 57.7**	**+0.1**
	baz=309						
ENTT				*e*S	**Sn**	**04 40 11.4**	**+0.5**
	baz=309						
WHF	**Hehuan Shan**	**1.03**	**279**	P	**Pn**	**04 39 58.4**	**-0.2**
	baz=264						
WHF				S	**Sb**	**04 40 12.1**	**+0.4**
	baz=264						
EHY	**Hungye**	**1.08**	**244**	*e*P	**Pn**	**04 39 57.5**	**-1.3**
	baz=242						
EHY				S	**Sn**	**04 40 13.5**	**+0.3**
	baz=242						
TWB1	**Santiao Chiao**	**1.08**	**341**	*e*P	**Pn**	**04 39 56.5**	**-2.4**
	baz=339						
TWT	**Tachien**	**1.13**	**284**	*e*P	**Pb**	**04 40 00.7**	**+0.7**
	baz=271						
TWT				*e*S	**Sn**	**04 40 15.7**	**+1.0**
	baz=271						
WDT	**Danda**	**1.16**	**259**	P	**Pn**	**04 40 00.1**	**-0.2**
	baz=256						
WDT				S	**Sn**	**04 40 15.3**	**-0.3**
	baz=256						
TWF1	**Yuli**	**1.17**	**238**	i*P*	**Pn**	**04 40 00.0**	**-0.1**
	baz=236						
TWF1				*i* S	**Sn**	**04 40 15.4**	**-0.1**
	baz=236						
NWF	**Wu-fen Shan**	**1.21**	**333**	*e*P	**Pn**	**04 40 00.6**	**-0.2**
	baz=331						
CHKT	**Chengkung**	**1.28**	**227**	*e*P	**Pn**	**04 40 01.0**	**-0.6**
	baz=225						
CHKT				*e*S	**Sn**	**04 40 16.4**	**-1.6**
	baz=225						
IRIF	**Iriomote-Funau**	**1.28**	**74**	P	**Pb**	**04 40 02.4**	**-0.1**
SMLT	**Sun Moon Lake**	**1.36**	**266**	*e*P	**Pb**	**04 40 03.7**	**-0.2**
	baz=254						
SMLT				*e*S	**Sb**	**04 40 20.9**	**+0.1**
	baz=254						
TYC	**Yuchr**	**1.39**	**267**	*e*P	**Pn**	**04 40 03.0**	**-0.2**
	baz=265						
YUS	**Yu-Shan**	**1.40**	**250**	P	**Pb**	**04 40 04.4**	**-0.3**
	baz=247						
YUS				S	**Sn**	**04 40 21.2**	**-0.5**
	baz=247						
NSTT	**Nanjuang**	**1.41**	**297**	*e*S	**Sn**	**04 40 21.6**	**+0.3**
	baz=295						
TWY	**Chenhua**	**1.47**	**331**	*e*P	**Pn**	**04 40 04.7**	**+0.5**
	baz=329						
JKRS	**Kuro-shima**	**1.51**	**80**	P	**Pn**	**04 40 05.4**	**+0.6**
TWQ1	**Liyutan**	**1.51**	**284**	*e*S	**Sb**	**04 40 26.2**	**+1.0**
	baz=281						
ALS	**Alishan**	**1.52**	**252**	*e*P	**Pn**	**04 40 06.0**	**+0.9**
	baz=250						
ALS				*e*S	**Sb**	**04 40 25.4**	**-0.3**
	baz=250						
CHN5	**Tsauling**	**1.60**	**256**	*e*P	**Pn**	**04 40 07.0**	**+0.8**
	baz=243						
CHN5				*e*S	**Sb**	**04 40 28.4**	**+0.5**
	baz=243						
JIJ	**Ishigaki jima**	**1.66**	**76**	P	**Pn**	**04 40 07.6**	**+0.8**
JIJ				S	**Sn**	**04 40 27.6**	**+0.3**
CHN4	**Tsaushan**	**1.75**	**249**	*e*P	**Pb**	**04 40 10.3**	**-0.3**
	baz=248						
CHN4				*e*S	**Sb**	**04 40 33.3**	**+1.1**
	baz=248						
WTP	**Ta-pu**	**1.78**	**246**	*e*P	**Pb**	**04 40 09.9**	**-1.1**
	baz=244						
WTP				*e*S	**Sb**	**04 40 33.8**	**+0.9**
	baz=244						
JISG	**Ishigakijimahi**	**1.86**	**71**	P	**Pn**	**04 40 09.9**	**+0.3**
CHN1	**Nanshi**	**1.87**	**245**	*e*P	**Pb**	**04 40 12.1**	**-0.5**
	baz=244						
CHN1				*e*S	**Sb**	**04 40 35.6**	**0.0**
	baz=244						
TWK	**Hsinying**	**1.88**	**248**	*e*P	**Pn**	**04 40 10.9**	**+1.1**
	baz=246						
TWK				*e*S	**Sb**	**04 40 35.6**	**-0.1**
	baz=246						

CSEM ***13*** *04:40:12.2±0.5, 51.55N×16.13E, h2km, Error ellipse: s-maj=7.0km s-min=4.8km az=9.0*
WAR ***13*** *04:40:13.0, 51.54N×16.08E, h1km*

PRU 13 04:40:13.4, 51.52N×16.12E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.69**	**171**	*e*Pg	Pg	04 40 26.4	-0.1
KSP				*e*Sg	Sg	04 40 36.3	+0.8
KSP	**Ksiaz**	**0.69**	**171**	*e*Pg	Pg	04 40 26.4	-0.1
KSP				*e*Sg	Sg	04 40 36.3	+0.9
KSP	**Ksiaz**	**0.69**	**171**	*e*Pg	Pg	04 40 26.4	-0.1
KSP				*e*Sg	Sg	04 40 36.3	+0.9
UPC	**Upice**	**1.02**	**184**	*e*PG	Pg	04 40 32.6	-0.2
UPC				*e*SG	Sg	04 40 46.8	+0.8
	comp=Z,6.8nm,0.3s						
UPC	**Upice**	**1.02**	**184**	Pg	Pg	04 40 32.6	-0.2
UPC				Sg	Sg	04 40 46.8	+0.8
	6.8nm,0.3s						
DPC	**Dobruska-Polom**	**1.18**	**174**	*e*PG	Pg	04 40 35.4	-0.6
DPC				*e*SG	Sg	04 40 50.8	-0.4
	comp=Z,2.9nm,0.3s						
DPC	**Dobruska-Polom**	**1.18**	**174**	Pg	Pg	04 40 35.4	-0.6
DPC				Sg	Sg	04 40 50.8	-0.4
	2.9nm,0.3s						
PVCC	**Panska Ves**	**1.40**	**225**	*e*PG	Pn	04 40 39.4	-0.7
PVCC				*e*SG	Sg	04 40 58.1	-0.1
	comp=Z,12nm,0.2s						
PVCC	**Panska Ves**	**1.40**	**225**	Pg	Pn	04 40 39.4	-0.7
PVCC				Sg	Sg	04 40 58.1	-0.1
	12nm,0.2s						
KRLC	**Kraliky**	**1.51**	**164**	*e*PG	Pn	04 40 41.6	-0.1
KRLC				*e*SG	Sg	04 41 01.5	-0.2
KRLC	**Kraliky**	**1.51**	**164**	Pg	Pn	04 40 41.6	-0.1
KRLC				Sg	Sg	04 41 01.5	-0.2
BRG	**Berggiesshubel**	**1.52**	**246**	PG	Pn	04 40 41.1	-0.7
BRG				SG	Sg	04 41 01.3	-0.8
	5.7nm,0.4s						
PRU	**Pruhonice**	**1.83**	**214**	*e*SG	Sb	04 41 10.9	-0.3
PRU	**Pruhonice**	**1.83**	**214**	Sg	Sb	04 41 10.9	-0.3
MORC	**Moravsky Berou**	**1.97**	**152**	*e*Pn	Pn	04 40 47.0	-1.0
MORC				*e*Sg	Sb	04 41 15.2	+0.1

IDC 13 04:40:29.1±0.8, 13.07N×143.67E, h215km±12km, mb3.0/5, mb1 3.2/5, mb1mx3.1/40, mbtmp3.6/5, Error ellipse: s-maj=29.3km s-min=16.7km az=96.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.28**	**66**	P	Pn	04 41 02.3	0.0
	17nm,0.3s,baz=322,slow=15,SNR=7.1						
GUMO				S	S	04 41 28.3	+0.3
	58nm,0.3s,baz=343,slow=19,SNR=10						
WRA	**Warramunga Arr**	**34.07**	**196**	P	P	04 46 52.5	-0.8
	0.9nm,0.6s,baz=20,slow=9.8,SNR=15						
ASAR	**Alice Springs**	**37.74**	**195**	P	P	04 47 25.1	+0.7
	0.2nm,0.5s,baz=15,slow=14,SNR=5.2						
CMAR	**Chiang Mai Arr**	**43.29**	**283**	P	P	04 48 10.2	+0.2
	0.7nm,0.4s,baz=82,slow=6.1,SNR=3.4						
SONM	**Songino Array**	**46.49**	**326**	P	P	04 48 34.9	0.0
	0.5nm,0.5s,baz=124,slow=7.4,SNR=4.3						
MKAR	**Makanchi Array**	**61.05**	**316**	P	P	04 50 19.5	-0.7
	0.3nm,0.5s,baz=86,slow=8.1,SNR=3.6						
ILAR	**Eielson Array**	**69.53**	**25**	P	P	04 51 14.4	+0.1
	0.4nm,0.6s,baz=252,slow=5.7,SNR=7.7						

IDC ***13*** *04:50:01.1±1.3, 9.81N×122.49E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.5/37, mbtmp3.6/4, Error ellipse: s-maj=172.5km s-min=21.0km az=68.0*
MAN ***13*** *04:50:02, 9.44N×121.90E, h36km, mb4.5, ML3.3, MS3.2*
ISCJB ***13*** *04:50:04.3±0.9, 9.46N±0.07×122.04E±0.07, h37km, mb3.6/4, Error ellipse: s-maj=10.4km s-min=9.5km az=148.4*

ISC 13 04:50:05.6±1.1, 9.43N±0.09×122.16E±0.09, h37km, n8, σ2s84/10, mb3.6/4, 2C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.07**	**94**	i*P*	**Pn**	**04 50 20.3**	**-3.8**
SNPH				*i* S	**Sn**	**04 50 37.2**	**-0.5**
JAP	**San Jose, Anti**	**1.33**	**351**	*e*P	**Pn**	**04 50 25.0**	**-2.6**
LLP	**Lapu-Lapu**	**1.99**	**64**	*e*P	Pn	04 50 37.9	+1.2
LLP				*e*S	**Sn**	**04 51 04.4**	**+4.0**
RCP	**Roxas**	**2.20**	**15**	*e*P	**Pn**	**04 50 38.9**	**-0.7**
RCP				*e*S	**Sn**	**04 51 06.4**	**+0.9**
WRA	**Warramunga Arr**	**31.55**	**158**	P	**P**	**04 56 26.8**	**+2.1**
	0.6nm,0.8s,baz=338,slow=9.2,SNR=3.9						
ASAR	**Alice Springs**	**34.84**	**161**	P	**P**	**04 56 56.6**	**+3.3**
	1.2nm,0.6s,baz=342,slow=7.4,SNR=14						
SONM	**Songino Array**	**40.53**	**344**	P	**P**	**04 57 39.9**	**-1.4**
	0.4nm,0.7s,baz=170,slow=10.0,SNR=3.1						
MKAR	**Makanchi Array**	**50.31**	**325**	P	**P**	**04 58 58.5**	**-0.2**
	0.7nm,0.7s,baz=128,slow=9.3,SNR=4.4						

IDC ***13*** *05:06:45.5±0.6, 28.98S×176.68W, h0km, mb4.7/17, mb1 4.9/18, mb1mx4.7/35, mbtmp4.7/18, ML4.8/1, MS4.9/23, Ms1 4.9/23, ms1mx4.8/28, Error ellipse: s-maj=20.2km s-min=14.6km az=149.0*
GCMT ***13*** *05:06:47.5±0.1, 29.05S×176.46W, h14km, MW5.4/114, Moment Tensor Solution. s93,c166; s114,c192; Duration: 1s2 Moment tensor: Scale 1017Nm; Mrr0.99±.02; Mθθ-0.01±.02; Mϕϕ-0.98±.02; Mrθ0.21±.04; Mθϕ-0.39±.01; Mϕr0.96±.04; Best double couple: Mo1.44200×1017 NP1:ϕs14.00000°, δ66.00000°, λ85.00000°. NP2:ϕs205.00000°, δ24.00000°, λ100.00000°. Principal axes: T 1.3830, Plg68.0000°, Azm275.0000°; N 0.1190, Plg4.0000°, Azm16.0000°; P -1.5020, Plg21.0000°, Azm107.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***13*** *05:06:47.5±0.2, 29.12S×176.86W, h10km, mb5.2/70 Error ellipse: s-maj=8.3km s-min=4.8km az=145.0*
ISCJB ***13*** *05:06:49.6±0.2, 29.16S±0.04×176.86W±0.04, h32km, mb5.1/96, MS5.0/43, Error ellipse: s-maj=7.2km s-min=4.1km az=145.7*
MOS ***13*** *05:06:50.2±1.0, 28.99S×176.82W, h33km, mb5.2/41, MS5.1/13, Error ellipse: s-maj=10.9km s-min=9.1km az=78.2*
BJI ***13*** *05:06:50.4, 28.76S×176.41W, h37km, mb5.2/40, mB5.6/40, Ms5.2/45, Ms7 5.0/43*

ISC 13 05:06:50.0±0.5, 29.31S±0.04×176.56W±0.05, h32km±2km, h32km:pP-P, n371, σ2s13/397, mb5.2/95, MS5.0/45, 12C-3D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.19**	**272**	Pn	**Pn**	**05 07 09.8**	**-0.7**
	4μm,0.3s,baz=97,slow=6.6,SNR=45						
RAO				Sn	**Sb**	**05 07 27.4**	**+0.3**
	8μm,0.3s,baz=289,slow=23,SNR=9.4						
RAO	**Raoul Island**	**1.19**	**272**	*e*Pn	**Pn**	**05 07 10.5**	**+0.1**
RAO				Sn	**Sb**	**05 07 27.4**	**+0.3**
RAO				*e*Sn	**Sn**	**05 07 33.3**	**+7.7**
OUZ	**Omahuta**	**10.21**	**232**	*e*Pn	Pn	05 09 19.6	+5.3
URZ	**Urewera**	**10.37**	**209**	Pn	Pn	05 09 11.8	-4.6
	2.8nm,0.3s,baz=236,slow=3.6,SNR=8.7						
URZ				Sn	**Sn**	**05 11 08.4**	**-3.1**
	15nm,0.3s,baz=198,slow=13,SNR=7.8						
URZ				LR	LR	05 13 26.2	
	comp=Z,9μm,18.1s,baz=25,slow=38						
URZ	**Urewera**	**10.37**	**209**	Pn	Pn	05 09 11.8	-4.6
URZ				*e*Pn	Pn	05 09 18.7	+2.3
URZ				*e*Sn	**Sn**	**05 11 09.9**	**-1.6**
BKZ	**Black Stump Fm**	**11.39**	**208**	*e*Pn	**Pn**	**05 09 35.0**	**+4.5**
MSVF	**Nonsavu**	**12.54**	**336**	*e*P	**Pn**	**05 09 44.0**	**-2.3**
MSVF	**Nonsavu**	**12.54**	**336**	*e*Pn	**Pn**	**05 09 44.7**	**-1.6**
BFZ	**Birch Farm**	**12.78**	**206**	*e*Pn	Pn	05 09 54.5	+5.0
BFZ				*e*Sn	**Sn**	**05 12 04.5**	**-6.2**
KHZ	**Kahutara**	**15.33**	**209**	*e*Pn	**P**	**05 10 28.8**	**+0.4**
	99nm,0.7s						
KHZ				*e*Sn	**Sn**	**05 13 04.5**	**-8.2**
AFI	**Afiamalu**	**15.95**	**17**	Pn	**Pn**	**05 10 29.0**	**-3.2**
	3.8nm,0.3s,baz=196,slow=16,SNR=3.5						
AFI				Sn	Sn	05 13 06.6	-22
	1.6nm,0.3s,baz=110,slow=7.6,SNR=1.5						
AFI				LR	LR	05 18 26.2	
	comp=Z,1μm,18.8s,baz=197,slow=45						
LTZ	**Lake Taylor**	**16.18**	**211**	*e*Pn	**Pn**	**05 10 35.1**	**+0.1**
	308nm,1.8s						
OXZ	**Oxford**	**16.72**	**210**	*e*Pn	**Pn**	**05 10 37.1**	**-4.6**
	133nm,0.5s						
OXZ				*e*Sn	Sn	05 13 32.8	-14
DZM	**Mont Dzumac**	**16.92**	**291**	Pn	**P**	**05 10 48.6**	**+2.3**
	2.0nm,0.3s,baz=142,slow=12,SNR=9.0						
DZM				LR	LR	05 16 08.9	
	comp=Z,16μm,18.3s,baz=128,slow=34						
DZM	**Mont Dzumac**	**16.92**	**291**	*e*P	**P**	**05 10 47.4**	**+1.1**
	246nm,1.4s						
DZM				*e*LR	LR	05 14 47.3	
	16μm,23.3s						
DZM	**Mont Dzumac**	**16.92**	**291**	*e*Pn	**Pn**	**05 10 44.5**	**0.0**
	262nm,1.6s						
RAR	**Rarotonga**	**17.17**	**66**	Pn	**Pn**	**05 10 42.4**	**-5.2**
	2.8nm,0.3s,baz=227,slow=11,SNR=6.5						
RAR				Sn	Sn	05 13 36.1	-22
	1.3nm,0.3s,baz=78,slow=17,SNR=1.6						
RAR				LR	LR	05 17 31.3	
	comp=Z,2μm,18.7s,baz=242,slow=38						
RPZ	**Rata Peaks**	**17.46**	**211**	Pn	**Pn**	**05 10 44.7**	**-6.4**
	2.1nm,0.3s,baz=266,slow=21,SNR=1.5						
RPZ				Sn	Sn	05 13 49.0	-15
	2.5nm,0.3s,baz=42,slow=20,SNR=2.8						
RPZ				LR	LR	05 18 17.9	
	comp=Z,8μm,18.4s,baz=30,slow=39						
RPZ	**Rata Peaks**	**17.46**	**211**	Pn	**Pn**	**05 10 44.7**	**-6.4**
RPZ				*e*Pn	**P**	**05 10 52.0**	**0.0**
RPZ				Sn	Sn	05 13 49.0	-15
RPZ				*e*Sn	**S**	**05 14 04.9**	**-7.0**
ODZ	**Otahua Downs**	**18.69**	**209**	*e*P	**Pn**	**05 11 06.2**	**+0.2**
	254nm,1.7s						
TBI	**Tubuai**	**24.97**	**83**	*e*LQ	LQ	05 16 56.6	
	4μm,28.5s						
TBI				*e*LR	LR	05 18 17.3	
	6μm,28.0s,baz=250						
TBI	**Tubuai**	**24.97**	**83**	*e*T	T	05 37 51.3	
	12nm,0.3s						
PAE	**Paea**	**27.25**	**71**	*e*T	T	05 40 38.7	
	5.5nm,0.3s						
PPT2	**Papeete2**	**27.29**	**71**	*e*LQ	LQ	05 17 48.7	
	4μm,24.5s						
PPT2				*e*LR	LR	05 19 15.9	
	6μm,26.5s,baz=238						
PPT2	**Papeete2**	**27.29**	**71**	*e*T	T	05 40 41.8	
	5.4nm,0.3s						
PPT	**Papeete**	**27.30**	**71**	LR	LR	05 20 23.3	
	comp=Z,2μm,20.6s,baz=244,slow=30						
TVO	**Taravao**	**27.46**	**71**	*e*T	T	05 40 54.2	
	1.8nm,0.3s						
ARMA	**Armidale**	**27.57**	**260**	P	**P**	**05 12 36.8**	**+2.4**
	baz=28,SNR=6.7						
ARMA	**Armidale**	**27.57**	**260**	*e*P	**P**	**05 12 37.3**	**+3.0**
	41nm,1.1s						
MGCD	**Mangrove Creek**	**27.85**	**254**	P	**P**	**05 12 37.5**	**+0.8**
	baz=28,SNR=5.2						
EIDS	**Eidsvold**	**28.96**	**270**	P	**P**	**05 12 48.1**	**+1.4**
	baz=29						
HNR	**Honiara**	**29.59**	**307**	LR	LR	05 24 06.8	
	comp=Z,3μm,18.1s,baz=153,slow=36						
CAN	**Canberra**	**29.62**	**249**	P	**P**	**05 12 54.8**	**+2.3**
	baz=30						
CAN	**Canberra**	**29.62**	**249**	*e*P	**P**	**05 12 53.8**	**+1.3**
CAN				pmax	pmax		
	comp=Z,37nm,1.0s						
CAN	**Canberra**	**29.62**	**249**	*e*P	**P**	**05 12 53.8**	**+1.3**
	comp=Z,37nm,1.0s						
YNG	**Young**	**30.10**	**251**	P	**P**	**05 12 58.7**	**+2.0**
	baz=30,SNR=6.8						
VAH	**Vaihoa**	**30.11**	**69**	*e*T	T	05 44 11.6	
	comp=Z,14nm,0.2s						
RMQ	**Roma**	**30.72**	**267**	P	**P**	**05 13 04.8**	**+2.6**
	baz=31,SNR=6.8						
CMSA	**Cobar Meteorol**	**32.53**	**256**	P	**P**	**05 13 19.0**	**+0.9**
	baz=33,SNR=6.2						
CTA	**Charters Tower**	**34.89**	**277**	P	**P**	**05 13 38.4**	**-0.4**
	comp=Z,18nm,0.8s,baz=94,slow=12,SNR=3.6						
STKA	**Stephens Creek**	**35.96**	**255**	P	**P**	**05 13 47.9**	**+0.1**
	comp=Z,7.5nm,0.7s,baz=99,slow=11,SNR=9.7						
STKA				LR	LR	05 27 50.6	
	comp=Z,6μm,18.1s,baz=89,slow=35						
STKA	**Stephens Creek**	**35.96**	**255**	P	**P**	**05 13 48.0**	**+0.1**
	baz=36,SNR=11						
STKA	**Stephens Creek**	**35.96**	**255**	*e*P	**P**	**05 13 48.1**	**+0.3**
	comp=Z,11nm,0.9s						
RKT	**Rikitea**	**37.66**	**91**	*e*LR	LR	05 24 09.7	
	comp=Z,4μm,27.8s,baz=257						
HTT	**Hallett**	**38.02**	**252**	P	**P**	**05 14 05.7**	**+0.3**
	baz=38,SNR=15						
PMG	**Port Moresby**	**39.31**	**293**	LR	LR	05 28 20.8	
	comp=Z,4μm,19.8s,baz=134,slow=33						
PMG	**Port Moresby**	**39.31**	**293**	*e*P	**P**	**05 14 15.7**	**-0.6**
PMG				pmax	pmax		
	comp=Z,118nm,1.1s						
TAOE	**Nuku Hiva Isla**	**39.72**	**67**	*e*S	**S**	**05 20 16.6**	**-5.2**
	comp=Z,937nm,24.4s						
TAOE				*e*LR	LR	05 24 59.6	
	comp=Z,3μm,26.5s,baz=242						
COEN	**Coen**	**40.21**	**284**	P	**P**	**05 14 23.6**	**-0.2**
	baz=40,SNR=4.0						
COEN	**Coen**	**40.21**	**284**	*e*P	**P**	**05 14 21.0**	**-2.8**
	comp=Z,72nm,1.6s						
BBOO	**Buckleboo**	**40.48**	**253**	P	**P**	**05 14 24.6**	**-1.3**
	baz=40,SNR=17						
BBOO	**Buckleboo**	**40.48**	**253**	*e*P	**P**	**05 14 26.9**	**+0.9**
	comp=Z,46nm,1.1s						
AS01	**Alice Springs**	**44.40**	**265**	*e*P	**P**	**05 14 54.9**	**-3.0**
AS31	**Alice Springs**	**44.44**	**265**	*e*P	**P**	**05 14 57.2**	**-1.1**
	comp=Z,11nm,1.3s						
ASAR	**Alice Springs**	**44.44**	**265**	P	**P**	**05 14 56.4**	**-1.9**
	comp=Z,13nm,0.6s,baz=103,slow=7.2,SNR=64						
ASAR				LR	LR	05 33 18.0	
	comp=Z,9μm,18.2s,baz=116,slow=36						
WB2	**Warramunga Arr**	**45.32**	**270**	*e*P	**P**	**05 15 03.5**	**-1.7**
	comp=Z,104nm,1.6s						
WRAB	**Tennant Creek**	**45.32**	**270**	*de*P	**P**	**05 15 03.4**	**-1.8**
WRAB				pmax	pmax		
	comp=Z,70nm,0.9s						
WRAB	**Tennant Creek**	**45.32**	**270**	*e*P	**P**	**05 15 03.5**	**-1.8**
	comp=Z,79nm,1.6s						
WRA	**Warramunga Arr**	**45.33**	**270**	P	**P**	**05 15 03.3**	**-2.0**
	comp=Z,19nm,0.7s,baz=110,slow=8.0,SNR=38						
WRA				LR	LR	05 33 22.1	
	comp=Z,3μm,18.0s,baz=115,slow=35						
WRA	**Warramunga Arr**	**45.33**	**270**	P	**P**	**05 15 03.3**	**-2.0**
WRA				pmax	pmax		
	comp=Z,18nm,0.7s						
WRA				MLR	MLR		
	comp=Z,3μm,18.0s						
WB0	**Warramunga Arr**	**45.35**	**271**	P	**P**	**05 15 03.9**	**-1.6**
	baz=45						
FORT	**Forrest**	**47.55**	**254**	*e*P	**P**	**05 15 20.5**	**-2.1**
	comp=Z,296nm,0.8s						
WRKA	**Warakurna**	**48.87**	**261**	P	**P**	**05 15 30.6**	**-2.4**
	baz=49,SNR=88						
SBA	**Scott Base**	**49.22**	**185**	*e*P	P	05 15 39.5	+4.7
SBA				pmax	pmax		
	comp=Z,50nm,0.9s						
SBA	**Scott Base**	**49.22**	**185**	*e*P	P	05 15 39.5	+4.7
	comp=Z,50nm,0.9s						
VNDA	**Vanda**	**49.31**	**186**	P	**P**	**05 15 39.4**	**+3.9**
	comp=Z,5.2nm,0.8s,baz=4.0,slow=9.0,SNR=17						
VNDA				LR	LR	05 32 50.0	
	comp=Z,1μm,20.9s,baz=20,slow=32						
VNDA	**Vanda**	**49.31**	**186**	*e*P	**P**	**05 15 37.8**	**+2.3**
	comp=Z,17nm,1.1s						
KNRA	**Kununurra**	**51.89**	**273**	P	**P**	**05 15 55.1**	**-0.7**
	baz=52						
FITZ	**Fitzroy Crossi**	**53.63**	**268**	P	**P**	**05 16 06.9**	**-1.8**
	comp=Z,18nm,1.1s,baz=

SYO **Syowa Base** 78.45 193 ⇑ *i* PcP **PcP** 05 18 57.2 +0.8
SNAA **Sanae** 79.20 178 P **P** 05 18 53.2 +1.7
SNAA **Sanae** 79.20 178 *e*P **P** 05 18 52.7 +1.2
SNAA pmax pmax
comp=Z,33nm,1.2s
SNAA **Sanae** 79.20 178 *e*P **P** 05 18 52.6 +1.2
comp=Z,33nm,1.2s
JNU **Nakatsue** 79.59 317 P **P** 05 18 54.5 +0.5
comp=Z,4.7nm,0.8s,baz=84,slow=5.9,SNR=3.8
VNA1 **Neumayer--Stat** 79.97 176 P **P** 05 18 57.4 +1.8
NVL **N'lazarevskaya** 80.03 183 *e*P **P** 05 18 58.2 +2.3
NVL *e*S **S** 05 29 00.9 +3.4
ERM **Erimo** 80.11 331 *ce*P **P** 05 18 56.9 +0.3
ERM pmax pmax
comp=Z,30nm,2.0s
KUR **Kuril'sk** 80.95 335 *e*P P 05 18 53.6 -7.4
KUR *e* 05 22 01.2
KUR *i* S **S** 05 29 06.3 -1.1
KUR *e*SSS SSS 05 37 37.0
KUR MLR MLR
comp=N,968nm,18.0s
KUR MLR MLR
comp=E,303nm,18.0s
KUR MLR MLR
comp=Z,801nm,18.0s
PLCA **Paso Flores** 82.33 133 LR LR 05 50 08.4
comp=Z,444nm,18.1s,baz=292,slow=32
QZH **Quanzhou** 82.38 304 ⇑ *i* P P 05 18 57.8 -11
QZH **Quanzhou** 82.38 304 S S 05 29 12.0 -11
QZH pmax pmax
comp=Z,730nm,7.2s
QZH LR LR
comp=N,2μm,23.5s
QZH LR LR
comp=E,970nm,15.3s
QZH LR LR
comp=Z,1μm,18.1s
EFI **East Falkland** 83.01 147 *i* P **P** 05 19 14.6 +2.6
EFI pmax pmax
comp=Z,68nm,1.8s
MONP2 **Monument Peak** 84.10 47 P **P** 05 19 19.3 +1.3
baz=230
YSS **Yuzh-Sakhalins** 84.33 333 *ce*P **P** 05 19 19.0 +0.5
YSS *e**SP **pP** 05 19 29.2 +0.5
YSS *e*S **S** 05 29 43.5 +1.7
YSS pmax pmax
comp=Z,20nm,0.9s
YSS smax smax
comp=N,12μm,7.0s
KSRS **Korea Array** 84.34 319 P **P** 05 19 18.7 -0.1
comp=N,3.8nm,0.9s,baz=103,slow=3.9,SNR=6.0
KSRS LR LR 05 52 51.8
comp=N,242nm,20.8s,baz=140,slow=33
SSE **Sheshan** 84.35 310 P **P** 05 19 18.6 -0.4
SSE S **S** 05 29 42.5 -0.3
SSE pmax pmax
comp=N,36nm,0.7s
SSE pmax pmax
comp=N,330nm,8.5s
SSE LR LR
comp=N,340nm,22.1s
SSE LR LR
comp=N,350nm,22.1s
SSE LR LR
comp=N,600nm,21.7s
KSAR **Wonju Array Be** 84.36 319 P **P** 05 19 18.7 -0.2
KSAR **Wonju Array Be** 84.36 319 P **P** 05 19 18.7 -0.2
KS01 **Wonju Array Si** 84.38 319 *e*P **P** 05 19 19.6 +0.6
VES **Vestal, Richgr** 84.39 43 P **P** 05 19 20.1 +1.0
baz=228
EDW2 **Edwards Air Fo** 84.42 45 P **P** 05 19 20.4 +1.0
baz=229
PFO **Pinyon Flats O** 84.55 47 P **P** 05 19 20.5 +0.3
baz=230
PFO **Pinyon Flats O** 84.55 47 *e*P **P** 05 19 20.8 +0.6
PFO pmax pmax
comp=Z,14nm,1.4s
PFO **Pinyon Flats O** 84.55 47 *e*P **P** 05 19 20.8 +0.6
comp=Z,14nm,1.4s
TPFO **Pinon Flats** 84.55 47 P **P** 05 19 21.0 +0.9
baz=230
ISA **Isabella, Lake** 84.64 44 P **P** 05 19 22.0 +1.5
baz=228
PET **Petropavlovsk** 84.79 345 *e*P **P** 05 19 20.5 -0.2
PET *e*S **S** 05 29 43.6 -2.5
PET pmax pmax
comp=Z,200nm,10.5s
PET pmax pmax
comp=Z,300nm,10.9s
PET MLR MLR
comp=Z,800nm,19.0s
PET MLR MLR
comp=Z,800nm,20.0s
LRMC **Laurel Mtn Rad** 85.00 45 P **P** 05 19 23.8 +1.4
baz=229
PEA0 **Petropavlovsk-** 85.08 345 *e*P **P** 05 19 23.0 +0.8
PETK **Petropavlovsk-** 85.08 345 P **P** 05 19 21.9 -0.3
comp=Z,4.8nm,0.7s,baz=133,slow=6.3,SNR=4.2
PETK LR LR 05 55 58.6
comp=Z,444nm,18.1s,baz=171,slow=35
BELC **Belle Mtn. Jos** 85.09 47 P **P** 05 19 23.3 +0.4
baz=230
CMB **Columbia Colle** 85.11 41 *e*P **P** 05 19 23.2 +0.4
CMB pmax pmax
comp=Z,11nm,1.1s
CMB **Columbia Colle** 85.11 41 *e*P **P** 05 19 23.2 +0.4
comp=Z,11nm,1.1s
BC3 **Big Chuckawall** 85.21 47 P **P** 05 19 24.5 +1.0
baz=230
GLA **Glamis** 85.23 48 *e*P **P** 05 19 25.6 +2.1
GLA pmax pmax
comp=Z,32nm,1.6s
GLA **Glamis** 85.23 48 *e*P **P** 05 19 25.6 +2.1
comp=Z,32nm,1.6s
KHMM **Horse Mountain** 85.25 37 *e*P **P** 05 19 26.0 +2.4
comp=Z,22nm,1.3s
AFDM **Forest Hills D** 85.41 40 *e*P **P** 05 19 25.2 +1.0
comp=Z,29nm,1.9s
GSC **Goldstone, Bar** 85.43 45 P **P** 05 19 25.6 +1.1
baz=229
GSC **Goldstone, Bar** 85.43 45 *e*P **P** 05 19 25.3 +0.8
GSC pmax pmax
comp=Z,20nm,1.3s
GSC **Goldstone, Bar** 85.43 45 *e*P **P** 05 19 25.3 +0.8
comp=Z,20nm,1.3s
MPMC **Manual Prospec** 85.50 44 P **P** 05 19 25.8 +0.8
baz=229
ORV **Oroville** 85.53 39 *e*P **P** 05 19 25.3 +0.5
ORV pmax pmax
comp=Z,21nm,1.5s
ORV **Oroville** 85.53 39 *e*P **P** 05 19 25.3 +0.5
comp=Z,21nm,1.5s
DAC **Darwin (Calif)** 85.58 44 *e*P **P** 05 19 26.8 +1.4
DAC pmax pmax
comp=Z,10.0nm,1.4s
DAC **Darwin (Calif)** 85.58 44 *e*P **P** 05 19 26.8 +1.4
comp=Z,10nm,1.4s
QIZ **Qiongzhong** 85.67 294 P **P** 05 19 27.0 +1.0
QIZ pP **pP** 05 19 36.8 +0.6
QIZ S **S** 05 29 57.0 +0.6
QIZ sS **sS** 05 30 13.1 -0.2
QIZ LR LR
comp=Z,250nm,16.6s
QIZ LR LR
comp=Z,220nm,19.4s
QIZ LR LR
comp=Z,240nm,24.1s
WDC **Whiskeytown Da** 85.68 38 *e*P **P** 05 19 26.3 +0.8
WDC pmax pmax
comp=Z,44nm,1.8s
WDC **Whiskeytown Da** 85.68 38 *e*P **P** 05 19 26.3 +0.8
comp=Z,44nm,1.8s
IRM **Iron Mountain** 85.73 47 P **P** 05 19 27.4 +1.4
baz=230
113A **Mohawk Valley,** 85.75 49 *e*P **P** 05 19 27.4 +1.4
113A *ep*P **sP** 05 19 38.4 -1.5
GMRC **Granite Mounta** 85.81 46 P **P** 05 19 27.6 +1.1
baz=230
N02D **Trinity Center** 85.87 38 P **P** 05 19 28.1 +1.6
baz=225
Y12C **Blythe** 85.87 48 P **P** 05 19 28.3 +1.7
baz=231
Y12C **Blythe** 85.87 48 *e*P **P** 05 19 28.5 +1.9
comp=Z,28nm,1.6s
O03D **Paynes Creek** 85.88 39 P **P** 05 19 27.0 +0.3
baz=226

WAKR **Walker** 85.98 41 *e*P **P** 05 19 28.9 +1.6
comp=Z,21nm,1.3s
M02C **Callahan** 86.09 37 P **P** 05 19 28.9 +1.3
baz=225
FURC **Furnace Creek,** 86.15 44 P **P** 05 19 28.8 +0.9
baz=229
LDFC **Landfair** 86.34 46 *e*P **P** 05 19 31.3 +2.2
comp=Z,26nm,1.1s
YBH **Yreka Blue Hor** 86.40 37 *e*P **P** 05 19 30.6 +1.4
YBH pmax pmax
comp=Z,10.0nm,0.9s
YBH **Yreka Blue Hor** 86.40 37 *e*P **P** 05 19 30.6 +1.4
comp=Z,10nm,0.9s
NJ2 **Nanjing** 86.50 310 *e*P **P** 05 19 31.0 +1.3
NJ2 pmax pmax
comp=Z,26nm,0.5s
PSI **Prapat** 86.58 275 *e*P **P** 05 19 33.5 +2.7
PSI pmax pmax
comp=Z,37nm,1.4s
PSI **Prapat** 86.58 275 *e*P **P** 05 19 33.5 +2.7
comp=Z,37nm,1.4s
PAHR **Pah Rah Range** 86.82 40 *e*P **P** 05 19 32.2 +0.9
PAHR *epP **pP** 05 19 42.7 +1.1
TPNV **Topopah Spring** 86.84 44 P **P** 05 19 32.5 +0.9
baz=230
TPNV **Topopah Spring** 86.84 44 *e*P **P** 05 19 32.3 +0.8
TPNV pmax pmax
comp=Z,20nm,1.4s
TPNV **Topopah Spring** 86.84 44 *e*P **P** 05 19 32.3 +0.8
comp=Z,20nm,1.4s
HUMO **Hull Mountain** 86.89 37 *e*P **P** 05 19 33.3 +1.8
comp=Z,34nm,1.8s
USRK **Ussuriysk Ar.** 86.96 326 P **P** 05 19 31.9 +0.2
comp=Z,2.6nm,0.8s,baz=132,slow=2.1,SNR=10.0
USRK LR LR 05 53 27.1
comp=Z,364nm,20.4s,baz=134,slow=32
Y14A **Wickenburg** 86.97 48 *e*P **P** 05 19 33.9 +1.8
comp=Z,47nm,1.0s
W13A **Hualapai Mount** 87.13 47 *e*P **P** 05 19 34.3 +1.2
comp=Z,15nm,1.3s
SHPR **Sheep Range** 87.22 45 *e*P **P** 05 19 35.2 +1.8
comp=Z,13nm,1.3s
TUC **Tucson** 87.45 51 P **P** 05 19 35.9 +1.5
baz=233
TUC **Tucson** 87.45 51 *e*P **P** 05 19 36.0 +1.5
TUC pmax pmax
comp=Z,24nm,1.2s
TUC **Tucson** 87.45 51 *e*P **P** 05 19 36.0 +1.5
comp=Z,24nm,1.2s
HPIG 87.94 58 *e*P **P** 05 19 38.3 +1.1
comp=Z,8.8nm,1.1s
K05A **Summer Lake** 88.06 38 *e*P **P** 05 19 38.5 +1.2
comp=Z,47nm,1.8s
R11A **Troy Canyon, C** 88.15 43 *e*P **P** 05 19 38.2 +0.4
comp=Z,11nm,1.8s
J05D **Fort Rock, OR** 88.27 37 P **P** 05 19 38.7 +0.5
baz=226
X16A **Lo Mia Camp, P** 88.29 49 *e*P **P** 05 19 40.1 +1.6
comp=Z,18nm,1.4s
MDJ **Mudanjiang** 88.45 325 P **P** 05 19 40.0 +1.2
MDJ pP pP 05 19 49.1 +0.1
MDJ sP sP 05 19 53.3 +0.6
MDJ S **SKSac** 05 30 07.8 +2.5
MDJ pmax pmax
comp=Z,10.0nm,1.1s
MDJ pmax pmax
comp=Z,260nm,6.2s
MDJ LR LR
comp=Z,220nm,35.5s
MDJ LR LR
comp=Z,170nm,31.4s
MDJ LR LR
comp=Z,470nm,23.0s
WHN **Wuhan** 88.70 306 ⇑ *i* P **P** 05 19 40.8 +0.4
WHN pmax pmax
comp=Z,690nm,9.9s
WHN LR LR
comp=Z,3μm,22.9s
WHN LR LR
comp=Z,950nm,15.9s
WHN LR LR
comp=Z,2μm,19.8s
HABR **Khabarovsk** 88.72 330 *e*P **P** 05 19 38.8 -1.1
HABR *e**PP **pP** 05 19 49.3 -0.9
HABR *e**SP **sP** 05 19 53.4 -0.4
HABR *e* 05 23 06.6
HABR *e*PPP PPP 05 25 02.3
HABR *e* 05 30 27.3
HABR *e*SS SS 05 36 12.8 -4.4
HABR MLR MLR
comp=Z,223nm,23.0s
LCMT **Little Creek M** 88.73 46 *e*P **P** 05 19 42.0 +1.4
comp=Z,14nm,1.3s
U15A **North Rim** 88.97 47 *e*P **P** 05 19 42.9 +1.0
CCUT **Cedar City** 89.00 45 *e*P **P** 05 19 42.9 +1.0
comp=Z,15nm,1.4s
KNB **Kanab** 89.00 46 *e*P **P** 05 19 43.5 +1.6
KNB pmax pmax
comp=Z,31nm,1.4s
KNB **Kanab** 89.00 46 *e*P **P** 05 19 43.5 +1.6
comp=Z,31nm,1.4s
WUAZ **Wupatki** 89.00 48 P **P** 05 19 42.6 +0.7
baz=233
WUAZ **Wupatki** 89.00 48 *e*P **P** 05 19 43.3 +1.4
comp=Z,23nm,1.3s
DL2 **Dalian** 89.01 317 ⇑ P **P** 05 19 40.8 -0.8
DL2 SKS **SKSac** 05 30 08.9 +0.1
DL2 S **SKKSac** 05 30 23.3 +2.7
DL2 pmax pmax
comp=Z,35nm,0.8s
DL2 pmax pmax
comp=Z,310nm,7.4s
DL2 LR LR
comp=Z,230nm,20.8s
DL2 LR LR
comp=Z,490nm,19.4s
DL2 LR LR
comp=Z,710nm,18.4s
X18A **Snowflake** 89.34 49 *e*P **P** 05 19 45.0 +1.5
comp=Z,20nm,1.4s
PKCU **Pink Cliffs** 89.58 46 *e*P **P** 05 19 47.9 +3.1
comp=Z,32nm,1.7s
MTPU **Mount Pierson** 90.03 45 *e*P **P** 05 19 49.3 +2.4
comp=Z,36nm,1.8s
CN2 **Changchun** 90.04 322 *e*P **P** 05 19 46.3 0.0
CN2 pmax pmax
comp=Z,20nm,1.5s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,200nm,20.0s
CN2 LR LR
comp=Z,200nm,20.0s
CN2 LR LR
comp=Z,300nm,22.0s
NKL **Nikolayevsk** 90.15 336 *e*P **P** 05 19 46.0 -0.5
NKL *e* 05 30 24.0
NKL pmax pmax
comp=Z,40nm,1.0s
MSU **Marysvale** 90.33 45 *e*P **P** 05 19 50.1 +2.0
MSU **Marysvale** 90.33 45 *e*P **P** 05 19 50.1 +2.0
D05A **Enumclaw** 90.62 34 *e*P **P** 05 19 50.7 +1.8
comp=Z,50nm,1.3s
TX31 **Lajitas Ar. Si** 90.74 57 *e*P **P** 05 19 50.3 +0.2
TX31 *ep*P **P** 05 19 51.4 +1.3
TXAR **Lajitas Array** 90.74 57 P **P** 05 19 50.8 +0.7
comp=Z,6.4nm,1.2s,baz=212,slow=4.4,SNR=21
TXAR PKPPKP **P'P'df** 05 45 21.6 -2.1
comp=Z,0.0nm,0.5s,baz=180,slow=2.7,SNR=4.1
TXAR LR LR 05 54 05.9
comp=Z,323nm,19.2s,baz=0.0,slow=31
MNTX **Cornudas Mount** 90.82 54 P **P** 05 19 50.9 +0.5
baz=236
MNTX **Cornudas Mount** 90.82 54 *e*P **P** 05 19 51.1 +0.8
comp=Z,11nm,1.3s
G08A **Pilot Rock** 90.83 37 *e*P **P** 05 19 51.2 +1.1
comp=Z,24nm,1.4s
LAZ **Ladron** 91.14 51 *e*P **P** 05 19 53.5 +1.5
MFID **Camas Ranch** 91.28 39 *e*P **P** 05 19 52.6 +0.3
comp=Z,17nm,1.5s
BNM **Barren Site** 91.35 51 *e*P **P** 05 19 54.3 +1.3
TMUT **Trail Mountain** 91.40 45 *e*P **P** 05 19 55.0 +1.8
comp=Z,6.5nm,1.0s
SRU **San Rafael Swe** 91.71 45 *e*P **P** 05 19 55.1 +0.6
SRU pmax pmax
comp=Z,8.0nm,1.1s

SRU **San Rafael Swe** 91.71 45 *e*P **P** 05 19 55.1 +0.6
comp=Z,7.8nm,1.1s
ANMO **Albuquerque** 91.92 51 P **P** 05 19 56.5 +1.0
baz=236
ANMO **Albuquerque** 91.92 51 *ce*P **P** 05 19 56.3 +0.7
ANMO pmax pmax
comp=Z,9.0nm,1.2s
ANMO **Albuquerque** 91.92 51 *e*P **P** 05 19 56.2 +0.7
comp=Z,7.7nm,1.1s
D08A **Wollman Farm,** 92.05 35 *e*P **P** 05 19 56.7 +1.1
comp=Z,46nm,1.9s
GYA **Guiyang** 92.11 299 P **P** 05 19 58.3 +1.8
GYA pP sP 05 20 08.5 -1.9
GYA PP **PP** 05 23 40.0 +2.9
GYA SKS **SKSac** 05 30 25.8 -1.8
GYA S **S** 05 30 54.6 -2.4
GYA sS sS 05 31 12.3 -1.7
GYA SS **SS** 05 37 07.4 0.0
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.9s
GYA LR LR
comp=Z,550nm,19.4s
GYA LR LR
comp=Z,510nm,20.2s
GYA LR LR
comp=Z,540nm,20.6s
HLID **Hailey** 92.16 40 P **P** 05 19 57.4 +1.0
baz=231
HLID **Hailey** 92.16 40 *e*P **P** 05 19 57.3 +0.9
comp=Z,4.3nm,1.0s
PV01 **Paradox Valley** 92.37 47 *e*P **P** 05 19 58.4 +0.8
TCUT **Toone Canyon** 92.39 43 *e*P **P** 05 19 59.8 +2.1
comp=Z,22nm,1.4s
BJI **Beijing** 93.04 315 P **P** 05 20 00.3 0.0
BJI SKS **SKSac** 05 30 32.6 +0.8
BJI S **ScS** 05 31 05.6 -0.5
BJI SS **SS** 05 37 21.1 +1.1
BJI pmax pmax
comp=Z,17nm,1.8s
BJI pmax pmax
comp=Z,240nm,3.5s
BJI LR LR
comp=Z,270nm,25.3s
BJI LR LR
comp=Z,290nm,26.1s
BJI LR LR
comp=Z,460nm,26.9s
933A **Laredo** 93.09 60 P **P** 05 20 02.1 +1.2
baz=239
S22A **4UR Ranch, Cre** 93.27 48 P **P** 05 20 02.6 +0.8
baz=235
S22A **4UR Ranch, Cre** 93.27 48 *e*P **P** 05 20 03.2 +1.4
comp=Z,3.4nm,1.0s
MCMT **McKenzie Canyo** 93.83 40 *e*P **P** 05 20 05.2 +1.0
MSTX **Muleshoe** 93.91 53 *e*P **P** 05 20 05.3 +0.7
comp=Z,13nm,1.3s
TIY **Taiyuan** 94.09 311 *e*P **P** 05 20 03.8 -1.5
TIY SKS **SKSac** 05 30 39.5 +1.6
TIY S **S** 05 31 12.1 -1.8
TIY pmax pmax
comp=Z,160nm,3.8s
TIY LR LR
comp=Z,270nm,14.8s
TIY LR LR
comp=Z,370nm,19.4s
TIY LR LR
comp=Z,570nm,24.8s
SDCO **Great Sand Dun** 94.13 49 P **P** 05 20 06.1 +0.3
baz=236
SDCO **Great Sand Dun** 94.13 49 *e*P **P** 05 20 06.8 +1.0
comp=Z,11nm,1.9s
SNOW **Snow King Moun** 94.19 42 *e*P **P** 05 20 07.2 +1.3
comp=Z,8.0nm,1.1s
CMAR **Chiang Mai Arr** 94.23 289 P **P** 05 20 07.2 +0.9
comp=Z,1.6nm,0.3s,baz=126,slow=4.6,SNR=2.7
DLMT **Dillon** 94.30 39 *e*P **P** 05 20 07.9 +1.7
comp=Z,10.0nm,1.3s
KMI **Kunming** 94.46 296 P **P** 05 20 10.3 +2.8
KMI sP sP 05 20 24.6 +3.2
KMI PP **PP** 05 23 54.1 -1.5
KMI SKS **SKSac** 05 30 41.8 +1.0
KMI S **S** 05 31 17.0 -1.0
KMI sS sS 05 31 34.4 -0.6
KMI SS **SS** 05 37 35.5 -5.8
KMI pmax pmax
comp=Z,11nm,0.7s
KMI pmax pmax
comp=Z,72nm,3.2s
KMI LR LR
comp=Z,280nm,16.9s
KMI LR LR
comp=Z,290nm,20.0s
KMI LR LR
comp=Z,450nm,21.8s
XAN **Xi'an** 94.46 307 P **P** 05 20 07.3 +0.2
XAN pP pP 05 20 18.1 +0.8
XAN PP **PP** 05 23 59.8 +4.5
XAN SKS **SKSac** 05 30 39.1 -1.0
XAN S **S** 05 31 17.3 0.0
XAN SS **SS** 05 37 36.3 -4.5
XAN pmax pmax
comp=Z,6.0nm,1.1s
XAN pmax pmax
comp=Z,150nm,10.4s
XAN LR LR
comp=Z,230nm,19.7s
XAN LR LR
comp=Z,430nm,19.7s
XAN LR LR
comp=Z,630nm,19.7s
BW06 **Boulder Array** 94.48 43 *e*P **P** 05 20 10.4 +3.2
PDAR **Pinedale Array** 94.48 43 P **P** 05 20 07.3 +0.1
comp=Z,0.4nm,0.7s,baz=216,slow=4.3,SNR=3.2
PDAR PKKPbc **PKKPdf** 05 37 14.4 +7.1
comp=Z,0.6nm,0.7s,baz=197,slow=2.8,SNR=5.7
PDAR LR LR 05 58 06.4
comp=Z,710nm,18.2s,baz=252,slow=33
433A **Art** 94.85 57 P **P** 05 20 09.0 0.0
baz=239
BOZ **Bozeman (W)** 95.02 40 P **P** 05 20 09.9 +0.4
baz=233
BOZ **Bozeman (W)** 95.02 40 *e*P **P** 05 20 10.3 +0.8
BOZ pmax pmax
comp=Z,7.0nm,1.3s
BOZ **Bozeman (W)** 95.02 40 *e*P **P** 05 20 10.3 +0.8
comp=Z,6.6nm,1.3s
SEY **Seymchan** 95.21 346 P **P** 05 20 09.0 -0.7
comp=Z,1.6nm,0.2s,baz=116,slow=4.3,SNR=6.7
SEY **Seymchan** 95.21 346 P **P** 05 20 09.0 -0.7
SEY pmax pmax
comp=Z,2.0nm,0.2s
333A **Richland Sprin** 95.22 57 P **P** 05 20 10.5 -0.1
baz=239
HHC **Hu-ho-hao-te** 96.39 313 *e*P **P** 05 20 16.0 +0.2
HHC sP sP 05 20 30.8 +1.1
HHC SKS **SKSac** 05 30 48.8 -1.3
HHC S **S** 05 31 30.6 -3.2
HHC SS **SS** 05 38 07.8 -0.2
HHC pmax pmax
comp=Z,25nm,1.0s
HHC pmax pmax
comp=Z,150nm,9.6s
HHC LR LR
comp=Z,260nm,18.5s
HHC LR LR
comp=Z,380nm,18.5s
HHC LR LR
comp=Z,550nm,18.5s
CD2 **Chengdu** 96.58 302 *e*P **P** 05 20 16.6 -0.2
CD2 pP pP 05 20 27.8 +0.7
CD2 PP **PP** 05 24 10.6 -1.2
CD2 SKS **SKSac** 05 30 50.3 -1.1
CD2 S **S** 05 31 34.3 -1.5
CD2 sS sS 05 31 53.3 +0.5
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,6.2s
ILAR **Eielson Array** 96.59 12 P **P** 05 20 15.1 -0.9
comp=Z,0.7nm,0.7s,baz=224,slow=5.7,SNR=6.6
ILAR PP PP 05 24 03.3 -7.8
comp=Z,0.2nm,0.7s,baz=236,slow=6.0,SNR=2.4
LPAZ **La Paz** 97.43 113 LR LR 05 58 07.2
comp=Z,204nm,18.5s,baz=252,slow=32

BILL	**Bilibino**	**97.89**	**354**	*e*P		Pdif	05 20 22.1	+0.3
BILL				*e*			05 24 20.5	
BILL					pmax	pmax		
	comp=Z,2.0nm,1.1s							
BILL					MLR	MLR		
	comp=Z,572nm,19.0s							
LAO	**LASA Array**	**98.68**	**41**	*e*P		Pdif	05 20 28.6	+2.6
	comp=Z,18nm,0.9s							
LZH	**Lanzhou**	**99.08**	**306**	*e*P		**Pdif**	**05 20 30.8**	**+2.6**
LZH					pP	pP	05 20 40.0	+1.6
LZH					pmax	pmax		
	comp=Z,17nm,1.0s							
CPUP	**Villa Florida**	**99.66**	**127**		LR	LR	06 01 25.1	
	comp=Z,357nm,18.2s,baz=225,slow=33							
WMQ	**Urumqi**	**113.54**	**308**	*e*PKP		**PKiKP**	**05 25 25.3**	**+0.4**
WMQ					PP	**PP**	**05 26 22.6**	**+5.3**
WMQ					SKS	**SKSdf**	**05 32 28.3**	**-6.3**
WMQ					AMB	AMB		
	comp=Z,130nm,5.2s							
WMQ					LR	LR		
	comp=Z,180nm,12.0s							
WMQ					LR	LR		
	comp=Z,270nm,21.4s							
WMQ					LR	LR		
	comp=Z,290nm,24.6s							
MK01	**Makanchi Array**	**118.02**	**310**	*e*PKPdf		**PKPdf**	**05 25 32.4**	**-1.0**
MK31	**Makanchi Array**	**118.03**	**310**	*e*PKIKP		**PKPdf**	**05 25 32.6**	**-0.8**
MK31	**Makanchi Array**	**118.03**	**310**	*e*PKPdf		**PKPdf**	**05 25 32.5**	**-0.8**
MKAR	**Makanchi Array**	**118.03**	**310**	PKP		**PKPdf**	**05 25 32.6**	**-0.8**
	comp=Z,1.0nm,0.7s,baz=127,slow=0.4,SNR=9.9							
ZALV	**Zalesovo Beam**	**118.05**	**319**	PKP		**PKPdf**	**05 25 31.9**	**-1.2**
	comp=Z,0.5nm,0.3s,baz=51,slow=1.1,SNR=3.9							
MAKZ	**Makanchi**	**118.24**	**310**	*e*PKIKP		**PKPdf**	**05 25 38.5**	**+4.7**
MAKZ	**Makanchi**	**118.24**	**310**	*e*PKPdf		**PKPdf**	**05 25 38.5**	**+4.7**
BOSA	**Boshof**	**118.75**	**202**	PKP		**PKPdf**	**05 25 37.0**	**+1.4**
	comp=Z,2.2nm,0.9s,baz=117,slow=4.5,SNR=2.2							
BOSA	**Boshof**	**118.75**	**202**	PKIKP		**PKPdf**	**05 25 37.0**	**+1.4**
BOSA					pmax	pmax		
	comp=Z,2.0nm,0.9s							
NVS	**Novosibirsk**	**119.13**	**319**	*e*PKIKP		**PKPdf**	**05 25 34.4**	**-0.7**
KSH	**Kashi**	**120.76**	**301**	*e*PKP		**PKPdf**	**05 25 40.3**	**+1.3**
KSH				*e*SPKP			05 25 55.3	
KSH				*e*PP		**PP**	**05 27 11.1**	**+3.2**
KSH					PKS	**PKSdf**	**05 29 15.4**	**-0.3**
KSH					SKS	**SKSdf**	**05 32 47.4**	**-1.4**
KSH					SKKS	**SKKSac**	**05 33 59.5**	**-5.3**
KSH					AMB	AMB		
	comp=Z,89nm,5.2s							
KSH					LR	LR		
	comp=Z,130nm,7.1s							
KSH					LR	LR		
	comp=Z,96nm,5.2s							
KURK	**Kurchatov**	**121.20**	**314***c*	*i*PKIKP		**PKPdf**	**05 25 38.8**	**-0.4**
KURK					pmax	pmax		
	comp=Z,82nm,2.5s							
KURK	**Kurchatov**	**121.20**	**314**	*e*PKPdf		**PKPdf**	**05 25 38.8**	**-0.4**
KURBB	**Kurchatov Arra**	**121.24**	**314**	PKP		**PKPdf**	**05 25 38.1**	**-1.3**
	comp=Z,1.9nm,0.8s,baz=102,slow=1.9,SNR=13							
AAK	**Ala-Archa**	**122.55**	**304**	*i*PKIKP		**PKPdf**	**05 25 43.9**	**+1.5**
KBL	**Kabul**	**124.94**	**294**	*e*PKIKP		**PKPdf**	**05 25 48.4**	**+1.2**
KBL	**Kabul**	**124.94**	**294**	*e*PKPdf		**PKPdf**	**05 25 48.4**	**+1.2**
KKAR	**Karatay Array**	**125.51**	**304**	*e*PKIKP		**PKPdf**	**05 25 48.0**	**+0.1**
KKAR	**Karatay Array**	**125.51**	**304**	*e*PKPdf		**PKPdf**	**05 25 48.0**	**+0.1**
BVAR	**Borovoye Array**	**126.49**	**316**	PKP		**PKPdf**	**05 25 47.2**	**-2.2**
	comp=Z,2.2nm,0.8s,baz=112,slow=1.6,SNR=13							
BRVK	**Borovoye**	**126.56**	**316***c*	*i*PKIKP		**PKPdf**	**05 25 49.3**	**-0.2**
BRVK					pmax	pmax		
	comp=Z,48nm,1.7s							
BRVK	**Borovoye**	**126.56**	**316**	*e*PKPdf		**PKPdf**	**05 25 50.0**	**+0.5**
ZRNK	**Zerenda**	**127.33**	**316**	*e*PKIKP		**PKPdf**	**05 25 50.6**	**-0.4**
ZRNK	**Zerenda**	**127.33**	**316**	*e*PKPdf		**PKPdf**	**05 25 50.6**	**-0.4**
ARU	**Arti**	**133.03**	**321**	*i*PKIKP		**PKPdf**	**05 26 02.6**	**+0.9**
ARU							05 28 26.4	
ABKAR	**Akbulak array**	**133.14**	**312**	*e*PKPdf		**PKPdf**	**05 26 03.3**	**+1.2**
GEYT	**Alibeck**	**134.22**	**296**	PKP		**PKPdf**	**05 26 06.4**	**+1.9**
	comp=Z,3.0nm,0.5s,baz=122,slow=7.4,SNR=3.6							
AKTO	**Aktyubinsk**	**134.28**	**313**	PKP		**PKPdf**	**05 26 03.8**	**-0.4**
	comp=Z,0.6nm,0.3s,baz=34,slow=3.6,SNR=3.9							
ARCES	**ARCESS Array B**	**137.78**	**349**	PKP		**PKPdf**	**05 26 10.4**	**+0.2**
	comp=Z,2.4nm,0.8s,baz=28,slow=3.3,SNR=6.1							
H10S3	**ASCENSION HYDR**	**138.15**	**153**	T		T	08 01 42.1	
	baz=204,slow=74,SNR=11							
H10S2	**ASCENSION HYDR**	**138.15**	**153**	T		T	08 01 42.6	
	baz=204,slow=74,SNR=32							
H10S1	**ASCENSION HYDR**	**138.16**	**153**	T		T	08 01 44.0	
	baz=204,slow=74,SNR=14							
H10N3	**ASCENSION HYDR**	**139.22**	**152**	T		T	08 03 00.5	
	baz=203,slow=75,SNR=39							
H10N1	**ASCENSION HYDR**	**139.23**	**152**	T		T	08 03 01.8	
	baz=203,slow=75,SNR=39							
H10N2	**ASCENSION HYDR**	**139.24**	**152**	T		T	08 03 01.4	
	baz=203,slow=75,SNR=41							
KLMR	**Klimovskoe**	**140.38**	**333**	*e*PKIKP		PKPpre	05 26 10.1	
KLMR					pmax	pmax		
	comp=Z,14nm,1.1s							
DGRG	**David-gareji**	**144.06**	**301**	P		**PKPdf**	**05 26 21.5**	**-0.9**
DGRG	**David-gareji**	**144.06**	**301**	PKIKP		**PKPdf**	**05 26 21.5**	**-0.9**
MOS	**Moscow**	**144.12**	**327**	*e*PKIKP		**PKPdf**	**05 26 21.5**	**-0.4**
MOS					pmax	pmax		
	comp=Z,53nm,1.1s							
SEAG	**Tbilisi Sea**	**144.45**	**302**	P		**PKPab**	**05 26 17.8**	**-3.6**
DUS	**Dusheti**	**144.48**	**302**	P		**PKPab**	**05 26 20.1**	**-1.5**
DUS	**Dusheti**	**144.48**	**302**	PKIKP		**PKPab**	**05 26 20.0**	**-1.5**
TBLG	**Delisi**	**144.50**	**302**	P		PKPpre	05 26 14.8	
TBLG	**Delisi**	**144.50**	**302**	PKHKP		PKPpre	05 26 14.8	
FINES	**FINESS Array B**	**144.53**	**341**	PKP		**PKPab**	**05 26 20.1**	**-0.8**
	comp=Z,9.0nm,0.8s,baz=54,slow=4.1,SNR=19							
FINES	**FINESS Array B**	**144.53**	**341**	PKIKP		**PKPab**	**05 26 20.1**	**-0.8**
FINES					pmax	pmax		
	comp=Z,7.0nm,0.6s							
GUDG	**Gudauri**	**144.60**	**303**	P		**PKPdf**	**05 26 24.1**	**+0.6**
GNI	**Garni**	**144.66**	**299**	PKP		**PKPab**	**05 26 21.4**	**-0.9**
	comp=Z,5.9nm,0.3s,baz=123,slow=3.4,SNR=11							
GNI	**Garni**	**144.66**	**299***c*	*i*PKIKP		**PKPdf**	**05 26 23.3**	**-0.3**
GNI					pmax	pmax		
	comp=Z,284nm,2.5s							
GNI	**Garni**	**144.66**	**299**	*e*PKPdf		**PKPdf**	**05 26 23.1**	**-0.5**
ZEI	**Tsey**	**144.97**	**304**	*i*PKIKP		PKPbc	05 26 22.7	-0.8
ZEI					pmax	pmax		
	comp=Z,94nm,0.8s							
OBN	**Obninsk**	**144.97**	**327**	*e*PKIKP		PKPbc	05 26 21.1	-1.6
OBN				*e*			05 29 42.0	
OBN					pmax	pmax		
	comp=Z,39nm,1.0s							
NCK	**Nalchik**	**145.07**	**305**	*e*PKIKP		**PKPdf**	**05 26 24.1**	**+0.1**
ONI	**Oni**	**145.33**	**303**	P		**PKPab**	**05 26 24.9**	**+0.2**
ONI	**Oni**	**145.33**	**303**	PKIKP		**PKPab**	**05 26 24.8**	**+0.2**
KBZ	**Khabaz**	**145.52**	**306**	PKPbc		**PKPab**	**05 26 25.3**	**+0.1**
	comp=Z,8.9nm,1.0s,baz=92,slow=5.1,SNR=17							
VSR	**Storozhevoye**	**145.55**	**320**	*e*PKIKP		**PKPdf**	**05 26 24.1**	**-0.4**
KVAR	**Kislovodsk Arr**	**145.62**	**306**	PKPbc		**PKPbc**	**05 26 25.3**	**-0.1**
	comp=Z,6.5nm,0.5s,baz=36,slow=0.8,SNR=14							
KIV	**Kislovodsk**	**145.63**	**306**	*i*PKIKP		**PKPbc**	**05 26 25.4**	**0.0**
KIV					pmax	pmax		
	comp=Z,25nm,1.0s							
KIV	**Kislovodsk**	**145.63**	**306**	*e*PKPbc		**PKPab**	**05 26 29.1**	**+3.4**
NEY	**Neytrino**	**145.74**	**305***c*	*i*PKIKP		**PKPab**	**05 26 26.3**	**0.0**
NEY					pmax	pmax		
	comp=Z,4.0nm,0.7s							
VSU	**Vasula**	**146.72**	**338***c*	*i*PKIKP		**PKPdf**	**05 26 26.5**	**+0.2**
VSU					pmax	pmax		
	comp=Z,134nm,0.7s							
SOC	**Sochi**	**147.81**	**306**	*e*PKP2		**PKPbc**	**05 26 30.1**	**-1.4**
SOC				*e*			05 29 54.7	
SOC				*e*SS		SS	05 48 59.7	-2.4
SOC					pmax	pmax		
	comp=Z,8.0nm,0.4s							
NB2	**NORSAR Subarra**	**147.84**	**353**	PKP		**PKPbc**	**05 26 30.3**	**-0.9**
	comp=Z,8.1nm,0.9s,baz=16,slow=3.2							
NOA	**NORSAR Array B**	**147.84**	**353**	PKPbc		**PKPbc**	**05 26 30.0**	**-1.2**
	comp=Z,2.1nm,0.6s,baz=14,slow=4.4,SNR=7.8							
NOA	**NORSAR Array B**	**147.84**	**353**	PKIKP		**PKPbc**	**05 26 30.0**	**-1.2**
NOA					pmax	pmax		
	comp=Z,2.0nm,0.6s							
NOA	**NORSAR Array B**	**147.84**	**353**	PKPbc		**PKPbc**	**05 26 30.0**	**-1.2**
IZAR	**Zarasai**	**148.97**	**335**	*e*P		**PKPbc**	**05 26 33.0**	**-1.2**
IZAR					IAmb	IAmb	05 26 51.1	
	comp=Z,25nm,1.0s							
ANN	**Anapa**	**149.04**	**309**	*i*PKP2		**PKPbc**	**05 26 34.3**	**-0.4**
ANN					pmax	pmax		
	comp=Z,109nm,1.5s							
ANN					MLR	MLR		
	comp=Z,253nm,22.0s							
IDID	**Didziasalis**	**149.11**	**334**	*e*P		**PKPbc**	**05 26 34.5**	**0.0**
IDID					IAmb	IAmb	05 26 47.8	
	comp=Z,12nm,0.9s							
ISAL	**Salakas**	**149.15**	**335**	*e*P		**PKPbc**	**05 26 33.9**	**-0.7**
ISAL					IAmb	IAmb	05 26 49.2	
	comp=Z,9.4nm,1.0s							
NACGM	**Naroch**	**149.40**	**333**	*e*		**PKPdf**	**05 26 33.0**	**+2.2**
NACGM				*e*LR		LR	06 30 30.0	
AKASG	**Malin Array Be**	**151.16**	**325**	PKPbc		**PKPbc**	**05 26 39.0**	**-0.7**
	comp=Z,13nm,0.8s,baz=47,slow=2.7,SNR=31							
AKASG				PP		**PP**	**05 30 15.9**	**-2.0**
	comp=Z,0.6nm,0.4s,baz=53,slow=3.7,SNR=4.0							
KIEV	**Kiev**	**151.17**	**325**	*e*PKIKP		**PKPbc**	**05 26 38.7**	**-0.9**
KIEV	**Kiev**	**151.17**	**325**	*e*PKPbc		**PKPbc**	**05 26 38.7**	**-0.9**
BRTR	**Keskin Array B**	**153.15**	**301**	PKPbc		**PKPbc**	**05 26 44.2**	**-0.5**
	comp=Z,3.5nm,0.9s,baz=113,slow=3.3,SNR=11							
KIS	**Kishinev**	**153.53**	**319**	*e*PKP		**PKPbc**	**05 26 48.0**	**+2.9**
KIS					LRM	MLR	06 37 55.0	
	comp=Z,400nm,22.0s							
KIS	**Kishinev**	**153.53**	**319**	*e*PKIKP		**PKPbc**	**05 26 48.0**	**+2.9**
KIS				*e*			05 27 04.0	
BR231	**Keskin MP Arra**	**153.77**	**301**	*e*PKPbc		**PKPbc**	**05 26 45.3**	**-0.7**
LVV	**L'vov**	**154.24**	**328**	*e*PKIKP		**PKPbc**	**05 26 52.2**	**+5.7**
KOLS	**Kolonicke sedl**	**155.68**	**329**	*e*PKIKP		**PKPdf**	**05 26 41.7**	**+1.4**
KOLS	**Kolonicke sedl**	**155.68**	**329**	*e*PKP		**PKPdf**	**05 26 41.7**	**+1.4**
KOLS				*e*			05 27 07.5	
STHS	**Stebnicka Huta**	**155.77**	**331**	*e*PKP2		**PKPab**	**05 27 05.4**	**-1.6**
STHS	**Stebnicka Huta**	**155.77**	**331**	*e*PKP		**PKPab**	**05 27 05.4**	**-1.6**
MLR	**Muntele Rosu**	**156.03**	**319**	*e*PKP2		**PKPab**	**05 27 08.5**	**+0.1**
MLR	**Muntele Rosu**	**156.03**	**319**	*e*PKPab		**PKPab**	**05 27 08.5**	**+0.1**
CRVS	**Cervenica-Dubn**	**156.06**	**330**	*e*PKP2		**PKPab**	**05 27 05.8**	**-2.5**
CRVS	**Cervenica-Dubn**	**156.06**	**330**	*e*PKP		**PKPab**	**05 27 05.8**	**-2.5**
OKC	**Ostrava-Krasne**	**156.65**	**336**	AMS		AMS	06 55 10.0	
	comp=Z,400nm,18.1s							
UPC	**Upice**	**156.80**	**339**	AMS		AMS	06 41 20.0	
	comp=Z,400nm,17.1s							
KECS	**Kecovo**	**156.80**	**330**	*e*PKP2		**PKPab**	**05 27 12.1**	**+0.6**
KECS	**Kecovo**	**156.80**	**330**	*e*PKP		**PKPab**	**05 27 12.1**	**+0.6**
DPC	**Dobruska-Polom**	**156.84**	**339**	*e*PKPAB		**PKPab**	**05 27 12.2**	**+0.6**
DPC				*ep*PKP		**pPKPab**	**05 27 17.1**	**-4.8**
DPC				*ex*		x	05 27 27.9	
DPC				*e*PP		**PP**	**05 30 48.3**	**-1.3**
DPC					AMS	AMS	06 38 20.0	
	comp=Z,300nm,21.2s							
DPC	**Dobruska-Polom**	**156.84**	**339**	*e*PKP2		**PKPab**	**05 27 12.2**	**+0.6**
DPC				*e*			05 30 48.3	
DPC					MLR	MLR		
	comp=Z,300nm,21.2s							
CLL	**Collm**	**156.89**	**345**	*e*PKPdf		**PKPdf**	**05 26 44.0**	**+2.2**
CLL				*i*	PKPab	**PKPab**	**05 27 10.4**	**-1.3**
	comp=Z,8.0nm,1.0s							
CLL				*e*PP		**PP**	**05 30 49.0**	**-0.6**
CLL				*e*			05 31 39.0	
CLL				*e*PPS		PPS	05 42 15.0	
CLL				*e*			05 45 42.0	
CLL				*e*SSS		SSS	05 56 42.0	
CLL				*e*			05 59 36.0	
CLL					LmV		06 45 00.0	
	comp=Z,400nm,18.8s							
CLL	**Collm**	**156.89**	**345**	*e*PKIKP		**PKPdf**	**05 26 44.0**	**+2.2**
CLL					pmax	pmax		
	comp=Z,8.0nm,1.0s							
CLL					MLR	MLR		
	comp=Z,400nm,18.8s							
BRG	**Berggiesshubel**	**157.06**	**343**	*e*PKP		**PKPab**	**05 27 05.9**	**-6.5**
	comp=Z,17nm,1.6s							
BRG					SS	SS	05 50 54.0	+12
BRG	**Berggiesshubel**	**157.06**	**343**	*e*PKP2		**PKPab**	**05 27 05.9**	**-6.5**
BRG					pmax	pmax		
	comp=Z,17nm,1.6s							
PVCC	**Panska Ves**	**157.20**	**341**	*e*PKPAB		**PKPab**	**05 27 19.3**	**+6.2**
PVCC				*e*PP		PP	05 30 42.5	-8.9
PVCC					AMS	AMS	06 54 10.0	
	comp=Z,400nm,18.1s							
PVCC	**Panska Ves**	**157.20**	**341**	*e*PKP2		**PKPab**	**05 27 19.3**	**+6.2**
PVCC					MLR	MLR		
	comp=Z,400nm,18.1s							
VYHS	**Vyhne**	**157.48**	**333**	*e*PKP2		**PKPab**	**05 27 14.2**	**-0.2**
VYHS	**Vyhne**	**157.48**	**333**	*e*PKP		**PKPab**	**05 27 14.2**	**-0.2**
GOPC	**GO Pecny, Ondr**	**157.69**	**340**	AMS		AMS	06 48 30.0	
	comp=Z,500nm,21.6s							
PRU	**Pruhonice**	**157.69**	**341**	*e*PKPAB		**PKPab**	**05 27 18.8**	**+3.6**
PRU				*e*PP		**PP**	**05 30 51.6**	**-2.6**
PRU					AMS	AMS	06 44 20.0	
	comp=Z,600nm,19.9s							
PRU	**Pruhonice**	**157.69**	**341**	*e*PKP2		**PKPab**	**05 27 18.8**	**+3.6**
PRU				*e*			05 30 51.6	
PRU					MLR	MLR		
	comp=Z,600nm,19.9s							
NKC	**Novy Kostel**	**158.02**	**344**	*e*PKPAB		**PKPab**	**05 27 21.4**	**+4.8**
NKC				*ex*		x	05 27 33.8	
NKC	**Novy Kostel**	**158.02**	**344**	*e*PKP2		**PKPab**	**05 27 21.4**	**+4.8**
KHC	**Kasperske Hory**	**158.74**	**341**	*e*PKPAB		**PKPab**	**05 27 23.6**	**+3.8**
KHC				*ex*		x	05 27 34.8	
KHC				*e*PP		**PP**	**05 30 57.7**	**-2.2**
KHC					AMS	AMS	06 48 40.0	
	comp=Z,600nm,17.7s							
KHC	**Kasperske Hory**	**158.74**	**341**	*e*PKP2		**PKPab**	**05 27 23.6**	**+3.8**
KHC				*e*			05 30 57.7	
KHC					MLR	MLR		
	comp=Z,600nm,17.7s							
KHC	**Kasperske Hory**	**158.74**	**341**	*e*PKPab		**PKPab**	**05 27 23.6**	**+3.8**
CONA	**Conrad Observa**	**159.08**	**336**	*i*PKPab		**PKPab**	**05 27 23.4**	**+2.0**
	comp=Z,9.2nm,1.1s							
MOA	**Molln**	**159.68**	**339**	*i*PKPab		**PKPab**	**05 27 24.6**	**+0.6**
	comp=Z,13nm,1.4s							
ARSA	**Arzberg**	**159.77**	**336**	*i*PKPab		**PKPab**	**05 27 24.2**	**-0.2**
	comp=Z,1.9nm,0.7s							
SOKA	**Soboth**	**160.44**	**336**	*i*PKPab		**PKPab**	**05 27 25.5**	**-1.9**
	comp=Z,8.9nm,1.1s							
KBA	**Koelnbreinsper**	**160.66**	**339**	*i*PKPab		**PKPab**	**05 27 28.7**	**+0.3**
	comp=Z,2.4nm,0.6s							
OBKA	**Obir**	**160.75**	**336**	*i*PKPab		**PKPab**	**05 27 25.1**	**-3.7**
	comp=Z,2.3nm,0.7s							
MYKA	**Terra Mystica**	**160.96**	**338**	*i*PKPab		**PKPab**	**05 27 28.9**	**-0.7**
	comp=Z,5.1nm,1.1s							
WTTA	**Wattenberg**	**160.97**	**343**	*i*pPKPab		**PKPab**	**05 27 31.4**	**+1.6**
	comp=Z,13nm,1.2s							
RETA	**Reutte**	**160.98**	**345**	*i*PKPab		**PKPab**	**05 27 28.4**	**-1.3**
	comp=Z,6.0nm,1.0s							
MOTA	**Moosalm**	**161.03**	**344**	*i*PKPab		**PKPab**	**05 27 30.1**	**+0.1**
	comp=Z,3.7nm,0.8s							
ABTA	**Abfaltersbach**	**161.20**	**340**	*i*sPKPab		**PKPab**	**05 27 35.4**	**+4.7**
	comp=Z,7.1nm,1.0s							
DAVA	**Damuels**	**161.36**	**346**	*i*PKPab		**PKPab**	**05 27 32.3**	**+0.8**
	comp=Z,9.2nm,1.2s							
FETA	**Feichten**	**161.43**	**344**	*i*PKPab		**PKPab**	**05 27 27.4**	**-4.4**
	comp=Z,10.0nm,1.4s							
FUORN	**Ofenpass-Fuorn**	**161.91**	**345**	*e*PKPab		**PKPab**	**05 27 35.5**	**+1.5**
TORD	**Torodi Ar. Bea**	**163.84**	**174**	PKP		**PKPdf**	**05 26 51.1**	**+0.6**
	comp=Z,1.2nm,0.9s,baz=221,slow=1.0,SNR=4.8							
TORD					PKPab	**PKPab**	**05 27 44.1**	**+1.3**
	comp=Z,8.0nm,1.0s,baz=184,slow=3.5,SNR=12							
TORD				PP		**PP**	**05 31 26.4**	**-0.6**
	comp=Z,1.4nm,1.0s,baz=202,slow=3.1,SNR=3.6							
KEST	**Kesra**	**171.89**	**324**	PP		PP	05 32 06.0	-2.8
	comp=Z,4.7nm,0.8s,baz=108,slow=3.2,SNR=5.5							

NIED ***13*** *05:09:00.35°.70N×141°.00E, h8km, Mw3.7 Best double couple: M0 3.70000×10^14 NP1:φs=8.00000°, δ41.00000°, λ-55.00000°. NP2:φs145.00000°, δ57.00000°, λ-117.00000°.*

JMA 13 05:09:03.8±0.1, 35°.73N×140°.96E, h9km±1km, M3.6, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.09**	**252**	↑P		Pg		05 09 06.1	0.0
CHOJ						S	Sg	05 09 08.1	+0.4
JCN	**Nagara**	**0.69**	**244**	P		Pb		05 09 18.0	0.0
JCN				S		Sb		05 09 27.2	-0.5
JYT	**Yasato**	**0.80**	**309**	P		Pg		05 09 18.9	-0.2
JYT				*e*S		Sg		05 09 29.1	-0.4
BSO4	**Boso 4**	**0.90**	**215**	P		Pb		05 09 21.5	0.0
JHO	**Hitachi**	**0.93**	**340**	P		Pg		05 09 21.4	-0.4
JHO				S		Sg		05 09 33.9	0.0
BSO3	**Boso 3**	**1.00**	**202**	P		Pg		05 09 22.4	-0.5
BSO1	**Boso 1**	**1.07**	**179**	P		Pb		05 09 22.9	-1.3
MAT	**Matsushiro**	**2.37**	**291**	P		Pn		05 09 44.0	+1.1
MAT				*e*S		Sn		05 10 13.4	+1.3

IDC 13 05:12:28.2±2.3, 59°.13S×149°.51E, h0km, mb4.4/3, mb1 4.6/3, mb1mx4.1/35, mbtmp4.4/3, MS4.6/4, Ms1 4.6/4, ms1mx4.1/20, Error ellipse: s-maj=126.8km s-min=33.2km az=83.0, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**18.94**	**172**	LR		LR	LR	05 23 16.3	
	comp=Z,1μm,19.0s,baz=352,slow=34								
H01W1	**Cape Leeuwin H**	**33.53**	**301**	T		T	T	05 54 45.0	
	baz=146,slow=75,SNR=195								
H01W2	**Cape Leeuwin H**	**33.53**	**301**	T		T	T	05 54 44.9	
	baz=146,slow=75,SNR=265								
H01W3	**Cape Leeuwin H**	**33.55**	**301**	T		T	T	05 54 45.8	
	baz=146,slow=75,SNR=190								
ASAR	**Alice Springs**	**37.12**	**336**	P		P		05 19 40.0	-0.3
	3.5nm,0.8s,baz=166,slow=9.1,SNR=11								
ASAR				PcP		PcP		05 21 59.8	-0.9
	0.8nm,0.8s,baz=139,slow=2.1,SNR=3.0								
DZM	**Mont Dzumac**	**38.95**	**25**	LR		LR		05 34 02.4	
	comp=Z,1μm,19.9s,baz=199,slow=33								
WRA	**Warramunga Arr**	**40.65**	**338**	P		P		05 20 09.2	-0.7
	13nm,1.1s,baz=164,slow=7.1,SNR=13								
WRA				PcP		PcP		05 22 11.1	-0.6
	1.0nm,0.9s,baz=188,slow=2.9,SNR=3.7								
FITZ	**Fitzroy Crossi**	**44.51**	**327**	P		P		05 20 41.9	+0.6
	5.4nm,1.1s,baz=197,slow=14,SNR=3.9								
HNR	**Honiara**	**50.22**	**13**	LR		LR		05 38 18.0	
	comp=Z,557nm,19.6s,baz=202,slow=31								
H08S2	**Diego Garcia H**	**76.82**	**277**	T		T		06 48 43.9	
	baz=148,slow=76,SNR=43								
H08S1	**Diego Carcia H**	**76.83**	**277**	T		T		06 48 44.8	
	baz=148,slow=76,SNR=55								
H08S3	**Diego Garcia H**	**76.84**	**277**	T		T		06 48 45.5	
	baz=148,slow=76,SNR=44								
NNA	**Nana**	**99.87**	**134**	LR		LR		06 00 02.0	
	comp=Z,246nm,20.0s,baz=270,slow=29								
GERES	**GERESS Array B**	**152.56**	**268**	PKPbc		PKPbc		05 32 27.1	+1.6
	0.3nm,0.3s,baz=193,slow=3.0,SNR=3.1								
FINES	**FINESS Array B**	**152.62**	**299**	PKPbc		PKPbc		05 32 25.2	+0.2
	3.2nm,0.7s,baz=106,slow=6.2,SNR=4.9								
ESDC	**Sonseca Array**	**154.28**	**233**	PKPab		PKPab		05 32 41.4	-2.1
	0.3nm,0.5s,baz=124,slow=5.9,SNR=3.9								
ARCES	**ARCESS Array B**	**154.62**	**317**	PKPab		PKPab		05 32 44.4	+0.3
	1.1nm,0.6s,baz=70,slow=5.2,SNR=3.7								

NEIC ***13*** *05:33:52.5±0.7, 29°.92S×176°.35W, h10km, mb4.4/1, Error ellipse: s-maj=18.5km s-min=16.5km az=217.0*

ISCJB ***13*** *05:33:53.4±0.9, 30°.12S±0°.07×176°.3W±0°.1, h24km, mb4.2/8, Error ellipse: s-maj=13.4km s-min=9.7km az=157.0*

IDC ***13*** *05:34:01.0±3.1, 29°.53S×176°.52W, h71km±24km, mb3.9/7, mb1 4.1/7, mb1mx3.9/22, mbtmp4.2/7, Error ellipse: s-maj=28.3km s-min=26.1km az=62.0*

ISC 13 05:33:55.1±0.7, 29°.94S±0°.08×176°.36W±0°.08, h24km, n23, σ1s63/27, mb4.3/8, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.52**	**296**	P		**Pb**		**05 34 22.4**	**-0.2**
	120nm,0.3s,baz=95,slow=22,SNR=3.4								
RAO				S		**Sb**		**05 34 42.9**	**+1.5**
	2μm,0.3s,baz=88,slow=20,SNR=10			

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.88**	**161**	P	P	05 47 09.1	+0.2
	0.8nm,0.3s,baz=340,slow=11,SNR=13						
ASAR	**Alice Springs**	**26.27**	**165**	P	P	05 47 40.6	-0.2
	0.2nm,0.5s,baz=343,slow=7.8,SNR=4.3						
MKAR	**Makanchi Array**	**59.06**	**326**	P	P	05 52 05.5	-0.1
	0.1nm,0.3s,baz=122,slow=7.0,SNR=2.9						

*ISCJB **13** 05:54:08.1±0.6,32˚.24N±0˚.03×115˚.20W±0˚.04,h32km±4km, Error ellipse: s-maj=5.8km s-min=5.0km az=179.3*
*NEIC **13** 05:54:08.7,32˚.18N×115˚.26W,h10km,ML3.2(ECX), ML3.1(PAS),After PAS.*
*ECX **13** 05:54:09.0±0.5,32˚.17N×115˚.22W,h6km,MD3.0,ML3.2*
*MEX **13** 05:54:10.0±0.5,32˚.27N×115˚.12W,h23km±15km,MD3.7*

ISC 13 05:54:07.5±1.1,32˚.23N±0˚.03×115˚.19W±0˚.03,h23km±8km, n33,σ0ᵗ67/47,8C-4D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.21**	**333**	*e*P	**Pb**	**05 54 14.2**	**+1.1**
CPBX				*e*S	**Sb**	**05 54 17.8**	**+0.9**
CPBX				IAML		05 54 18.8	
	comp=N,14μm,0.2s						
CPBX				⇑*e*		05 54 18.8	
CPBX	**Cerro Prieto**	**0.21**	**333**	*i*S	**Sb**	**05 54 13.7**	**-3.2**
EMSC	**East Mesa**	**0.54**	**19**	⇑*i*P	**Pn**	**05 54 19.6**	**-0.2**
DREC	**Desert Rsrch C**	**0.61**	**340**	⇓*e*P	**Pn**	**05 54 20.7**	**-0.2**
COA	**Coachella**	**0.63**	**5**	⇓*i*P	**Pn**	**05 54 20.9**	**-0.2**
YMD	**Yuma Desert**	**0.64**	**59**	⇑*i*P	**Pn**	**05 54 21.0**	**-0.2**
ERPC	**Ernies Place**	**0.65**	**322**	⇓*i*P	**Pn**	**05 54 21.5**	**+0.2**
WESC	**Westside Schoo**	**0.70**	**319**	⇑*e*P	**Pn**	**05 54 21.9**	**-0.1**
YUH	**Yuha Desert**	**0.74**	**304**	⇑*i*P	**Pb**	**05 54 22.0**	**+0.2**
RMX	**La Rumorosa**	**0.84**	**297**	*e*P	**Pb**	**05 54 23.0**	**-0.5**
RMX				*e*S	**Sb**	**05 54 34.2**	**-0.2**
RMX				⇓*e*		05 54 34.6	
RMX				IAML		05 54 34.6	
	comp=E,756nm,0.2s						
GLA	**Glamis**	**0.88**	**21**	P	**Pb**	**05 54 24.3**	**+0.2**
	baz=203,SNR=65						
GLA				S	**Sb**	**05 54 35.7**	**+0.3**
	baz=203						
SWSC	**Sam W. Stewart**	**0.88**	**324**	P	**Pb**	**05 54 24.3**	**+0.2**
	baz=149						
SWSC				S	**Sb**	**05 54 35.1**	**-0.4**
	baz=149						
IKP	**In-Ko-Pah, Jac**	**0.88**	**299**	P	**Pb**	**05 54 24.3**	**+0.2**
	baz=123,SNR=49						
IKP				S	**Sb**	**05 54 35.6**	**0.0**
	baz=123						
IKP	**In-Ko-Pah, Jac**	**0.88**	**299**	⇑*e*P	**Pb**	**05 54 24.4**	**+0.2**
CRR	**Carrizo Plain**	**0.93**	**315**	⇑*i*P	**Pn**	**05 54 25.4**	**+0.5**
ZAX	**El Zacaton**	**1.17**	**232**	⇑*e*P	**Pn**	**05 54 28.2**	**-0.3**
SPX	**San Pedro Mart**	**1.20**	**191**	*e*P	**Pn**	**05 54 29.2**	**-0.1**
SPX	**San Pedro Mart**	**1.20**	**191**	*i*P	**Pn**	**05 54 29.2**	**-0.1**
SPX				*e*S	**Sn**	**05 54 44.4**	**-0.7**
MONP2	**Monument Peak**	**1.23**	**303**	P	**Pn**	**05 54 29.7**	**+0.1**
	baz=126,SNR=47						
MONP2				Sb	**Sb**	**05 54 46.3**	**+0.5**
	baz=126						
CBX	**Cerro Bola**	**1.25**	**274**	*e*P	**Pb**	**05 54 30.8**	**+0.3**
CBX				*e*S	**Sn**	**05 54 45.8**	**-0.2**
CBX	**Cerro Bola**	**1.25**	**274**	*e*P	**Sb**	**05 54 30.4**	**-0.1**
CBX				*e*S	**Sb**	**05 54 46.7**	**+0.5**
CBX	**Cerro Bola**	**1.25**	**274**	*e*P	**Pb**	**05 54 30.8**	**+0.3**
CBX				*e*S	**Sn**	**05 54 45.8**	**-0.2**
TJIG	**Tijuana**	**1.27**	**280**	*e*P	**Pn**	**05 54 30.0**	**0.0**
TJIG				*e*S	**Sn**	**05 54 45.7**	**-0.6**
BC3	**Big Chuckawall**	**1.44**	**351**	P	**Pn**	**05 54 32.3**	**-0.1**
	baz=174						
BC3				S	**Sn**	**05 54 50.4**	**-0.2**
	baz=174						
TPFO	**Pinon Flats**	**1.73**	**323**	P	**Pn**	**05 54 36.0**	**-0.4**
	baz=145,SNR=14						
PFO	**Pinyon Flats O**	**1.74**	**323**	P	**Pn**	**05 54 36.1**	**-0.4**
	baz=145,SNR=13						
PFO				S	**Sn**	**05 54 57.8**	**-0.3**
	baz=145						
109C	**Camp Elliot, M**	**1.74**	**293**	P	**Pn**	**05 54 36.8**	**+0.4**
	baz=114,SNR=24						
109C				Sb	**Sb**	**05 55 00.8**	**+0.5**
	baz=114						
IRM	**Iron Mountain**	**1.92**	**1**	P	**Pn**	**05 54 39.0**	**+0.1**
	baz=183						
214A	**Organ Pipe Nat**	**2.04**	**97**	P	**Pn**	**05 54 40.8**	**+0.3**
	baz=277,SNR=18						
214A	**Organ Pipe Nat**	**2.04**	**97**	*e*Pn	**Pn**	**05 54 40.6**	**+0.1**
MURC	**Murrieta**	**2.17**	**310**	P	**Pn**	**05 54 41.5**	**-0.8**
	baz=131						
CIS	**Catalina Islan**	**2.95**	**294**	Sb	**Sb**	**05 55 36.8**	**+1.6**
	baz=114						
TUC	**Tucson**	**3.73**	**88**	*e*Pn	**Pb**	**05 55 13.1**	**+0.3**

*CSEM **13** 05:57:42.5±0.2,55˚.69N×11˚.72E,h20km,ML2.2,Error ellipse: s-maj=4.7km s-min=2.7km az=29.0*
*UPP **13** 05:57:42.1,55˚.68N×11˚.70E,h21km,ML1.9*
*BER **13** 05:57:44.9±2.8,55˚.78N×11˚.57E,h18km±16km,MD2.9, ML1.7,ML1.8(NAO)*
*NAO **13** 05:57:45.0±4.5,55˚.92N×11˚.47E,h11km±20km,ML1.8*

ISC 13 05:57:42.0±1.0,55˚.72N±0˚.04×11˚.69E±0˚.03,h32km±9km, n49,σ1ᵗ44/74,Denmark

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COP	**Copenhagen**	**0.42**	**95**	*i*P	**Pb**	**05 57 50.9**	**-0.5**
COP				*i*S	**Sb**	**05 57 57.1**	**-0.6**
COP	**Copenhagen**	**0.42**	**95**	*i*P	**Pb**	**05 57 51.0**	**-0.4**
	SNR=118						
COP				*i*S	**Sb**	**05 57 57.1**	**-0.6**
	SNR=118						
LLD	**Lille Linde**	**0.49**	**142**	*i*P	**Pb**	**05 57 52.4**	**0.0**
LLD	**Lille Linde**	**0.49**	**142**	*i*P	**Pb**	**05 57 52.4**	**0.0**
	SNR=114						
BJUU	**Bjuv**	**0.83**	**64**	P	**Pn**	**05 57 57.7**	**+0.2**
BJUU				S	**Sb**	**05 58 08.7**	**-0.3**
BJUU	**Bjuv**	**0.83**	**64**	P	**Pn**	**05 57 57.7**	**+0.2**
BJUU				S	**Sb**	**05 58 08.6**	**-0.3**
LUNU	**Lund**	**1.00**	**94**	P	**Pn**	**05 58 00.2**	**+0.3**
LUNU				S	**Sn**	**05 58 13.4**	**+0.5**
LUNU	**Lund**	**1.00**	**94**	P	**Pn**	**05 58 00.2**	**+0.3**
LUNU				S	**Sn**	**05 58 13.4**	**+0.5**
FABU	**Falkenberg**	**1.41**	**24**	P	**Pb**	**05 58 07.1**	**-0.5**
FABU				S	**Sb**	**05 58 26.1**	**+0.9**
FABU	**Falkenberg**	**1.41**	**24**	P	**Pb**	**05 58 07.1**	**-0.5**
FABU				S	**Sb**	**05 58 26.1**	**+0.9**
DEL	**Delary**	**1.44**	**58**	P	**Pb**	**05 58 07.9**	**-0.3**
DEL				S	**Sb**	**05 58 26.5**	**+0.5**
DEL	**Delary**	**1.44**	**58**	P	**Pb**	**05 58 07.9**	**-0.3**
DEL				S	**Sb**	**05 58 26.5**	**+0.5**
MUD	**Monsted U'grnd**	**1.59**	**299**	*i*P	**Pb**	**05 58 10.1**	**-0.6**
MUD				*i*S	**Sb**	**05 58 31.2**	**+0.8**
MUD	**Monsted U'grnd**	**1.59**	**299**	*i*P	**Pb**	**05 58 10.2**	**-0.5**
	SNR=56						
MUD				*i*S	**Sb**	**05 58 31.3**	**+0.9**
	SNR=56						
BSD	**Bornholm Skovb**	**1.94**	**107**	*e*P	**Pb**	**05 58 15.2**	**-1.4**
BSD				*e*S	**Sb**	**05 58 41.3**	**+0.9**
BSD	**Bornholm Skovb**	**1.94**	**107**	*i*P	**Pn**	**05 58 13.3**	**+0.6**
BSD				*i*S	**Sn**	**05 58 37.0**	**+1.0**
BSD				*e*S	**Sb**	**05 58 37.3**	**-3.1**
BSD				*i*		05 58 41.9	
BSD	**Bornholm Skovb**	**1.94**	**107**	*e*P	**Pn**	**05 58 13.3**	**+0.6**
	SNR=56						
BSD	**Bornholm Skovb**	**1.94**	**107**	*i*Pg	**Pb**	**05 58 15.6**	**-1.1**
	SNR=94						
BSD				*e*S	**Sn**	**05 58 37.3**	**+1.3**
GNOU	**Gnosjoe**	**1.95**	**35**	P	**Pb**	**05 58 15.2**	**-1.6**
GNOU	**Gnosjoe**	**1.95**	**35**	P	**Pb**	**05 58 15.2**	**-1.6**
BORU	**Boraas**	**2.01**	**17**	P	**Pn**	**05 58 15.8**	**+2.1**
BORU	**Boraas**	**2.01**	**17**	P	**Pn**	**05 58 15.8**	**+2.1**
VXJU	**Vaexsjoe**	**2.17**	**55**	P	**Pn**	**05 58 17.4**	**+1.4**
VXJU	**Vaexsjoe**	**2.17**	**55**	P	**Pn**	**05 58 17.4**	**+1.4**
TJOU	**Tjoern**	**2.32**	**359**	P	**Pn**	**05 58 19.8**	**+1.9**
TJOU	**Tjoern**	**2.32**	**359**	P	**Pn**	**05 58 19.8**	**+1.9**
BLEU	**Blekinge**	**2.39**	**74**	P	**Pn**	**05 58 20.6**	**+1.7**
BLEU	**Blekinge**	**2.39**	**74**	P	**Pn**	**05 58 20.6**	**+1.7**
FKPU	**Falk**	**2.69**	**24**	P	**Pn**	**05 58 25.9**	**+2.8**
FKPU	**Falk**	**2.69**	**24**	P	**Pn**	**05 58 25.9**	**+2.8**
OSKU	**Oskarshamn**	**2.86**	**57**	P	**Pn**	**05 58 27.1**	**+1.7**
OSKU	**Oskarshamn**	**2.86**	**57**	*e*P	**Pn**	**05 58 27.1**	**+1.7**
HOMB	**Homborsund**	**3.09**	**327**	*e*P	**Pn**	**05 58 29.8**	**+1.3**
HOMB				*e*S	**Sn**	**05 59 02.7**	**-1.6**
HOMB				IAML		05 59 05.0	
	comp=Z,6.3nm,0.4s						
HOMB	**Homborsund**	**3.09**	**327**	*i*P	**Pn**	**05 58 29.9**	**+1.3**
	SNR=56						
HOMB				*e*S	**Sn**	**05 59 02.7**	**-1.6**
	SNR=55						
SNART	**Snartemo**	**3.59**	**319**	*e*S	**Sn**	**05 59 15.6**	**-1.0**
SNART	**Snartemo**	**3.59**	**319**	*e*S	**Sn**	**05 59 15.6**	**-1.0**
	SNR=55						
KON	**Kongsberg**	**4.09**	**345**	Sn	**Sn**	**05 59 28.4**	**-0.7**
KON				Lg	Lg	05 59 48.0	
KONO	**Kongsberg**	**4.09**	**345**	Sn	**Sn**	**05 59 28.4**	**-0.7**
KONO	**Kongsberg**	**4.09**	**345**	Sn	**Sn**	**05 59 28.4**	**-0.7**
KONO				Lg	Lg	05 59 48.0	
HFS	**Hagfors**	**4.55**	**13**	Pn	**Pn**	**05 58 50.2**	**+1.6**
	baz=200,slow=14						
HFS				Sn	**Sn**	**05 59 39.7**	**-0.7**
	baz=193,slow=28						
HFS				Lg	Lg	06 00 02.7	
	baz=195,slow=28						
HFS	**Hagfors**	**4.55**	**13**	Pn	**Pn**	**05 58 50.2**	**+1.6**
	baz=200,slow=14						
HFS				Sn	**Sn**	**05 59 39.7**	**-0.7**
	baz=193,slow=28						
HFS				Lg	Lg	06 00 02.7	
	baz=195,slow=28						
HFS	**Hagfors**	**4.55**	**13**	Pn	**Pn**	**05 58 50.2**	**+1.6**
	SNR=5.3						
HFS				Sn	**Sn**	**05 59 39.7**	**-0.7**
	SNR=3.8						
HFS				Lg	Lg	06 00 02.7	
	SNR=6.6						
BLS5	**Blasjo**	**4.66**	**325**	*e*P	**Pn**	**05 58 52.1**	**+2.0**
BLS5				*e*S	**Sn**	**05 59 40.5**	**-2.5**
BLS5	**Blasjo**	**4.66**	**325**	*e*P	**Pn**	**05 58 52.1**	**+2.0**
	SNR=53						
BLS5				*e*S	**Sn**	**05 59 40.5**	**-2.5**
	SNR=53						
KMY	**Karmoy**	**4.93**	**318**	*e*S	**Sn**	**05 59 47.9**	**-1.8**
KMY				IAML		05 59 53.2	
KMY	**Karmoy**	**4.93**	**318**	*e*S	**Sn**	**05 59 47.9**	**-1.8**
	SNR=53						
NB2	**NORSAR Subarra**	**5.34**	**358**	Pn	**Pn**	**05 59 01.0**	**+1.5**
	baz=180,slow=14						
NB2				Sn	**Sn**	**05 59 57.3**	**-2.6**
	baz=190,slow=28						
NB2				Lg	Lg	06 00 30.0	
NB2	**NORSAR Subarra**	**5.34**	**358**	Pn	**Pn**	**05 59 01.0**	**+1.5**
	baz=180,slow=14						
NB2				Sn	**Sn**	**05 59 57.3**	**-2.6**
	baz=190,slow=28						
NB2				Lg	Lg	06 00 30.0	
NB2	**NORSAR Subarra**	**5.34**	**358**	Pn	**Pn**	**05 59 01.0**	**+1.5**
	SNR=9.9						

*IDC **13** 06:00:15.8±1.1,21˚.86S×67˚.10W,h182km±17km,mb3.6/2, mb1 3.5/6,mb1mx3.3/24,mbtmp4.0/6,Error ellipse: s-maj=27.7km s-min=14.4km az=98.0*
*ISCJB **13** 06:00:16.1±0.7,21˚.94S±0˚.04×67˚.5W±0˚.1,h215km±11km, mb3.9/2,Error ellipse: s-maj=17.5km s-min=6.5km az=5.9*
*GUC **13** 06:00:16.8±0.5,21˚.93S×67˚.68W,h214km±12km,ML4.1*

ISC 13 06:00:15.6±0.9,21˚.92S±0˚.05×67˚.32W±0˚.10, h197km±13km,n19,σ1ᵗ40/30,8C-3D,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.63**	**245**	P	**Pn**	**06 00 51.3**	**+0.8**
	332nm,0.3s,baz=49,slow=10,SNR=31						
LVC				S	**Sn**	**06 01 17.6**	**0.0**
	1μm,0.3s,baz=248,slow=21,SNR=72						
PB09	**IPOC Station P**	**1.79**	**273**	⇑*i*P	**Pn**	**06 00 53.0**	**+1.1**
PB09				IAML		06 01 28.1	
	comp=E,651nm,0.1s						
PB01	**IPOC Station P**	**2.20**	**293**	⇑*i*P	**Pn**	**06 00 56.8**	**+0.7**
PB01				*i*S	**Sn**	**06 01 27.1**	**-0.4**
PB01				IAML		06 01 31.1	
	comp=E,206nm,0.2s						
PB06	**IPOC Station P**	**2.23**	**249**	⇑*i*P	**Pn**	**06 00 56.7**	**+0.3**
PB06				*i*S	**Sn**	**06 01 27.8**	**-0.5**
PB06				IAML		06 01 29.7	
	comp=E,515nm,0.3s						
PB07	**IPOC Station P**	**2.39**	**274**	⇓*i*P	**Pn**	**06 00 58.7**	**+0.5**
PB07				*i*S	**Sn**	**06 01 30.6**	**-0.8**
PB07				IAML		06 01 32.0	
	comp=N,558nm,0.2s						
PB08	**IPOC Station P**	**2.46**	**316**	⇑*i*P	**Pn**	**06 01 00.9**	**+1.7**
PB08				*i*S	**Sn**	**06 01 35.0**	**+1.8**
PB08				IAML		06 01 36.3	
	comp=E,272nm,0.3s						
PB04	**IPOC Station P**	**2.66**	**260**	⇑*i*P	**Pn**	**06 01 01.5**	**+0.3**
PB04				*i*S	**Sn**	**06 01 35.4**	**-1.4**
PB04				IAML		06 01 44.4	
	comp=N,373nm,0.4s						
HMBC	**Humberstone**	**2.90**	**304**	⇑*i*P	**Pn**	**06 01 04.4**	**+0.4**
HMBC				*i*S	**Sn**	**06 01 40.9**	**-0.9**
HMBC				IAML		06 01 44.5	
	comp=N,318nm,0.3s						
ANCH	**Antofagasta**	**3.35**	**238**	⇓*i*P	**Pn**	**06 01 10.2**	**+1.0**
ANCH				*i*S	**Sn**	**06 01 49.4**	**-1.8**
PB10	**IPOC Station P**	**3.38**	**241**	⇑*i*P	**Pn**	**06 01 10.3**	**+0.7**
PB10				*i*S	**Sn**	**06 01 49.3**	**-2.7**
PB10				IAML		06 01 50.4	
	comp=N,1μm,0.3s						
PSGC	**Pisagua**	**3.49**	**311**	IAML		06 02 00.9	
	comp=E,125nm,0.4s						
MNMC	**Minye Minye**	**3.50**	**322**	⇑*i*P	**Pn**	**06 01 12.7**	**+1.3**
MNMC				*i*S	**Sn**	**06 01 55.1**	**+0.2**
MNMC				IAML		06 01 57.0	
	comp=E,817nm,0.2s						
PB12	**IPOC Station P**	**4.33**	**319**	⇓*i*P	**Pn**	**06 01 20.7**	**-0.9**
PB12				*i*S	**Sn**	**06 02 11.5**	**-1.8**
LPAZ	**La Paz**	**5.65**	**352**	P	**Pn**	**06 01 40.6**	**+1.7**
	comp=E,1.4nm,0.3s,baz=144,slow=4.6,SNR=65						
LPAZ				S	**Sn**	**06 02 44.1**	**-0.5**
	comp=E,0.4nm,0.3s,baz=262,slow=22,SNR=1.5						
SIV	**San Ignacio**	**8.35**	**46**	P	**Pn**	**06 02 10.4**	**-3.1**
	comp=E,13nm,0.3s,baz=251,slow=10,SNR=164						
SIV				S	Sn	06 03 37.3	-10
	comp=E,1.6nm,0.3s,baz=255,slow=10,SNR=3.7						
CPUP	**Villa Florida**	**10.13**	**118**	P	**Pn**	**06 02 35.4**	**-1.1**
	comp=E,0.3nm,0.3s,baz=294,slow=13,SNR=7.3						
PLCA	**Paso Flores**	**18.96**	**188**	P	**P**	**06 04 24.0**	**+2.0**
	comp=E,0.1nm,0.3s,baz=29,slow=13,SNR=3.9						
PTGA	**Pitinga**	**22.24**	**20**	P	**P**	**06 04 55.4**	**-1.1**
	comp=E,1.6nm,0.3s,baz=209,slow=12,SNR=7.4						
TORD	**Torodi Ar. Bea**	**76.11**	**70**	P	**P**	**06 11 43.2**	**+1.1**
	comp=E,0.8nm,0.4s,baz=254,slow=5.4,SNR=21						

IDC 13 06:11:29.7±0.9,50˚.17S×6˚.92W,h0km,mb4.0/7, mb1 4.1/7,mb1mx4.0/18,mbtmp4.0/7,MS3.9/2,Ms1 3.8/2, ms1mx3.4/21,Error ellipse: s-maj=28.2km s-min=24.3km az=67.0,Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOSA	**Boshof**	**32.50**	**61**	P	P	06 18 02.3	+0.2
	1.9nm,0.8s,baz=194,slow=10.0,SNR=2.6						
BOSA				LR	LR	06 27 43.7	
	comp=Z,443nm,20.6s,baz=168,slow=30						
MAW	**Mawson**	**37.58**	**144**	P	P	06 18 45.0	-0.3
	2.1nm,1.0s,baz=254,slow=8.8,SNR=4.8						
H10S2	**ASCENSION HYDR**	**41.58**	**348**	T	T	07 03 59.0	
	baz=172,slow=74,SNR=8.6						
H10S3	**ASCENSION HYDR**	**41.59**	**348**	T	T	07 03 59.9	
	baz=172,slow=74,SNR=7.2						
H10S1	**ASCENSION HYDR**	**41.60**	**348**	T	T	07 03 59.6	
	baz=172,slow=74,SNR=8.1						
PLCA	**Paso Flores**	**44.37**	**257**	LR	LR	06 34 26.2	
	comp=Z,66nm,20.6s,baz=173,slow=31						
CPUP	**Villa Florida**	**45.12**	**283**	P	P	06 19 47.6	-0.1
	1.8nm,0.8s,baz=103,slow=5.3,SNR=5.5						
VNDA	**Vanda**	**52.39**	**177**	P	P	06 20 43.2	+0.3
	1.7nm,0.9s,baz=233,slow=10,SNR=3.5						
DBIC	**Dimbokro**	**56.64**	**2**	P	P	06 21 14.4	-0.1
	3.1nm,0.7s,baz=155,slow=6.7,SNR=4.4						
LPAZ	**La Paz**	**59.28**	**282**	P	P	06 21 34.0	+0.1
	0.6nm,0.8s,baz=215,slow=6.7,SNR=2.4						
TORD	**Torodi Ar. Bea**	**63.50**	**9**	P	P	06 22 01.7	+0.1
	0.9nm,0.6s,baz=195,slow=7.5,SNR=6.6						
ILAR	**Eielson Array**	**154.55**	**320**	PKPbc	PKPbc	06 31 30.2	-0.8
	0.4nm,0.7s,baz=61,slow=1.4,SNR=4.2						

*NIED **13** 06:14:00.29˚.20N×130˚.90E,h8km,Mw4.1 Best double couple: M0 1.54000×10^15 NP1:φ=73.00000°,δ21.00000°, λ-6.00000°. NP2:φ=168.00000°,δ88.00000°, λ-111.00000°.*
*ISCJB **13** 06:14:20.6±0.8,29˚.12N±0˚.04×130˚.94E±0˚.07,h40km±8km, mb4.3/8,MS4.2/2,Error ellipse: s-maj=11.6km s-min=3.8km az=24.1*
*JMA **13** 06:14:21.1±0.1,29˚.15N×130˚.85E,h68km±3km,M3.9*
*IDC **13** 06:14:22.4±1.1,30˚.02N×130˚.53E,h0km,mb3.9/7, mb1 4.0/8,mb1mx3.8/42,mbtmp3.9/8,ML3.4/1,MS3.8/3, Ms1 3.8/3,ms1mx3.1/55,Error ellipse: s-maj=28.3km s-min=25.7km az=102.0*

ISC 13 06:14:22.1±1.6,29˚.15N±0˚.04×130˚.84E±0˚.08,h34km±4km, n28,σ0ᵗ53/36,mb4.1/8,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**1.09**	**310**	P	**Pn**	**06 14 40.9**	**-0.1**
JNN				*e*S	**Sb**	**06 14 56.3**	**-0.1**
JYAK	**Yakushimahirau**	**1.12**	**345**	P	**Pn**	**06 14 41.4**	**-0.1**
JYAK				S	**Sn**	**06 14 56.0**	**+0.3**
JZK	**Kikaishima**	**1.13**	**223**	P	**Pn**	**06 14 41.5**	**-0.1**
JZK				*e*S	**Sb**	**06 14 57.1**	**-0.5**
JAM	**Amami Oshima**	**1.31**	**236**	P	**Pn**	**06 14 43.7**	**-0.3**
JAM				*e*S	**Sn**	**06 15 00.4**	**+0.1**
JKC	**Kuchinoerabu**	**1.42**	**337**	P	**Pn**	**06 14 45.4**	**-0.2**
JKC				S	**Sn**	**06 15 03.0**	**-0.1**
JTAJ	**Takarajima**	**1.43**	**271**	P	**Pn**	**06 14 45.4**	**-0.3**
JTN	**Tanegashima 3**	**1.50**	**5**	P	**Pn**	**06 14 46.1**	**-0.7**
JTN				*e*S	**Sn**	**06 15 04.9**	**-0.3**
JAMN	**Amaminishikomi**	**1.72**	**239**	P	**Pn**	**06 14 50.0**	**+0.3**
JAMN				S	**Sn**	**06 15 11.1**	**+0.7**
JTSR	**Tashiro 2**	**2.01**	**2**	P	**Pn**	**06 14 53.7**	**0.0**
JTSR				S	**Sn**	**06 15 18.2**	**+0.5**
JTK	**Tokunoshima**	**2.15**	**231**	P	**Pn**	**06 14 55.9**	**+0.3**
JTK				S	**Sn**	**06 15 21.7**	**+0.6**
JSU	**Suzuyama**	**2.37**	**352**	P	**Pn**	**06 14 58.4**	**-0.3**
JSU				S	**Sn**	**06 15 25.6**	**-1.0**
JNAR	**Kushima--Naru**	**2.40**	**9**	P	**Pn**	**06 14 59.1**	**+0.1**
JOKE	**Okinoerabujima**	**2.68**	**229**	P	**Pn**	**06 15 02.7**	**-0.2**
JOKE				*e*S	**Sn**	**06 15 33.7**	**-0.5**
JTZ	**Takazaki**	**2.75**	**4**	P	**Pn**	**06 15 04.2**	**+0.3**
JTZ				S	**Sn**	**06 15 36.3**	**+0.4**
JOW	**Kunigami**	**3.24**	**225**	P	**Pn**	**06 15 09.7**	**-0.9**
JKE	**Kume jima 2**	**4.56**	**233**	P	**Pn**	**06 15 28.1**	**-0.7**
JHJ	**Hachijo jima 2**	**8.63**	**60**	LR	LR	06 19 29.6	
	comp=Z,112nm,18.1s,baz=70,slow=36						
MJAR	**Matsushiro Arr**	**9.63**	**38**	Pn	**Pn**	**06 16 38.0**	**-0.3**
	0.4nm,0.3s,baz=204,slow=15,SNR=3.2						
SONM	**Songino Array**	**26.54**	**321**	P	**P**	**06 19 56.0**	**-0.8**
	0.2nm,0.4s,baz=132,slow=8.6,SNR=2.9						
PETK	**Petropavlovsk-**	**31.01**	**32**	P	**P**	**06 20 37.0**	**+0.6**
	2.4nm,0.7s,baz=205,slow=6.4,SNR=3.2						
WRA	**Warramunga Arr**	**48.92**	**176**	P	P	06 23 17.6	+13
	3μm,1.1s,baz=355,slow=8.4,SNR=11						
ILAR	**Eielson Array**	**60.77**	**29**	P	**P**	**06 24 29.7**	**-0.6**
	0.2nm,0.5s,baz=260,slow=5.0,SNR=4.2						
STKA	**Stephens Creek**	**61.55**	**170**	LR	LR	06 52 08.9	
	comp=Z,102nm,19.0s,baz=24,slow=36						
OBN	**Obninsk**	**68.95**	**322**	LR	LR	06 57 35.9	
	comp=Z,241nm,18.4s,baz=270,slow=38						
KBZ	**Khabaz**	**69.11**	**309**	P	**P**	**06 25 25.9**	**+1.1**
	2.8nm,0.8s,baz=46,slow=3.7,SNR=6.5						
FINES	**FINESS Array B**	**71.46**	**331**	P	**P**	**06 25 39.0**	**+0.1**
	1.6nm,0.8s,baz=62,slow=6.5,SNR=2.8						
AKASG	**Malin Array Be**	**74.81**	**320**	P	**P**	**06 25 58.9**	**-0.1**
	0.9nm,0.4s,baz=58,slow=6.3,SNR=8.5						
BRTR	**Keskin Array B**	**77.06**	**308**	P	**P**	**06 26 13.2**	**+1.0**
	1.5nm,0.8s,baz=81,slow=7.6,SNR=7.9						

IDC 13 06:14:57.8±2.7,30˚.32S×138˚.38E,h0km,mb1 3.5/4, mb1mx3.3/32,mbtmp3.2/4,ML3.0/4,Error ellipse: s-maj=66.9km s-min=14.3km az=42.0,South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.17**	**120**	Pn	Pn	06 15 48.3	-0.6
	0.7nm,0.3s,baz=301,slow=13,SNR=18						
STKA				Pg	Pg	06 15 57.3	-1.2
	2.4nm,0.3s,baz=297,slow=14,SNR=26						
STKA				Sn	Sn	06 16 27.3	-0.1
	4.1nm,0.3s,baz=344,slow=22,SNR=8.7						
STKA				Lg	Lg	06 16 37.2	
	3.9nm,0.3s,baz=235,slow=9.8,SNR=7.0						
ASAR	**Alice Springs**	**7.73**	**328**	Pn	Pn	06 16 52.4	+0.7
	0.1nm,0.3s,baz=151,slow=12,SNR=5.9						
ASAR				Sn	Sn	06 18 20.3	+0.3
	0.2nm,0.3s,ba

MDNY	**Mudanya-Bursa**	**1.34**	**339**	*e*Pn	**Pg**	**06 16 38.3**	**+0.1**
AKS	**Akhisar**	**1.34**	**260**	*e*PN	**Pg**	**06 16 38.3**	**0.0**
AKS	**Akhisar**	**1.34**	**260**	*e*Pn	**Pg**	**06 16 38.3**	**0.0**
BALB	**Balikesir**	**1.36**	**293**	*e*PN	**Pn**	**06 16 37.8**	**+0.4**
BALB	**Balikesir**	**1.36**	**293**	*e*Pn	**Pn**	**06 16 37.8**	**+0.4**
KCTX	**Karacabey (Bur**	**1.45**	**323**	*e*PN	**Pb**	**06 16 39.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.45**	**323**	*e*Pn	**Pb**	**06 16 39.4**	**0.0**
GULT	**Gulveren**	**1.52**	**30**	*e*PN	**Pg**	**06 16 41.5**	**-0.4**
GULT	**Gulveren**	**1.52**	**30**	*e*Pn	**Pg**	**06 16 41.5**	**-0.4**
ARMT	**Armutlu**	**1.53**	**341**	*e*PN	**Pb**	**06 16 40.7**	**-0.1**
ARMT	**Armutlu**	**1.53**	**341**	*e*Pn	**Pb**	**06 16 40.7**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.72**	**228**	*e*PN	**Pb**	**06 16 44.1**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.72**	**228**	*e*Pn	**Pb**	**06 16 44.1**	**-0.1**
SAHE	**Sakarya_HENDEK**	**2.02**	**30**	*i* P	**Pb**	**06 16 49.6**	**+0.4**
SAHE				*i* S	**Sg**	**06 17 18.5**	**+1.0**
SAHE	**Sakarya_HENDEK**	**2.02**	**30**	P	**Pb**	**06 16 49.6**	**+0.4**

IDC 13 06:30:55.2±1.5, 28°64S×176°59W, h0km, mb4.0/2, mb1 4.3/2, mb1mx3.8/28, mbtmp4.0/2, MS3.5/2, Ms1 3.5/2, ms1mx3.1/26, Error ellipse: s-maj=56.9km s-min=25.4km az=154.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.31**	**242**	Pn	Pn	06 31 21.4	+0.6
	220nm,0.3s,baz=99,slow=19,SNR=6.1						
RAO				Sn	Sn	06 31 40.2	+1.2
	1um,0.3s,baz=80,slow=15,SNR=10						
DZM	**Mont Dzumac**	**16.66**	**289**	LR	LR	06 40 16.2	
	comp=Z,211nm,18.8s,baz=77,slow=34						
PPT	**Papeete**	**27.12**	**72**	LR	LR	06 47 01.9	
	comp=Z,71nm,18.2s,baz=190,slow=36						
ASAR	**Alice Springs**	**44.47**	**265**	P	P	06 39 07.7	-0.7
	2.2nm,0.9s,baz=106,slow=7.6,SNR=14						
WRA	**Warramunga Arr**	**45.30**	**270**	P	P	06 39 14.8	-0.3
	1.5nm,0.7s,baz=109,slow=7.7,SNR=15						
BVAR	**Borovoye Array**	**125.99**	**317**	PKP	PKPdf	06 50 00.5	+1.6
	0.3nm,0.5s,baz=96,slow=9.4,SNR=2.4						
FINES	**FINESS Array B**	**143.90**	**342**	PKP	PKPdf	06 50 32.7	+0.8
	3.3nm,0.8s,baz=69,slow=2.9,SNR=3.5						
AKASG	**Malin Array Be**	**150.60**	**326**	PKPbc	PKPbc	06 50 47.7	-1.0
	0.3nm,0.3s,baz=44,slow=2.8,SNR=5.6						
TORD	**Torodi Ar. Bea**	**164.50**	**174**	PKPab	PKPab	06 51 54.8	-1.2
	1.3nm,1.1s,baz=195,slow=4.5,SNR=4.2						

*ISCJB **13** 06:32:16.7±0.8, 14°.8S±0°.3×174°.4W±0°.1, h33km, mb4.3/5, Error ellipse: s-maj=38.5km s-min=9.8km az=158.9*
*IDC **13** 06:32:21.6±3.6, 14°.72S×174°.45W, h56km±35km, mb3.7/4, mb1 4.0/4, mb1mx3.6/33, mbtmp4.0/4, ML5.2/1, Error ellipse: s-maj=41.1km s-min=23.2km az=137.0*
ISC 13 06:32:19.2±0.8, 14°.7S±0°.2×174°.5W±0°.1, h35km, n12, σ1§47/11, mb4.0/5, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.72**	**74**	P	**Pn**	**06 33 03.1**	**+2.6**
	382nm,0.3s,baz=163,slow=1.4,SNR=344						
AFI				S	**Sn**	**06 33 29.2**	**-2.9**
	316nm,0.3s,baz=119,slow=23,SNR=11						
H11S2	**WAKE ISLAND Hy 37.83**	**330**		T	T	07 20 10.6	
	baz=146,slow=75,SNR=10.0						
H11S3	**WAKE ISLAND Hy 37.84**	**330**		T	T	07 20 11.2	
	baz=146,slow=75,SNR=9.9						
H11S1	**WAKE ISLAND Hy 37.84**	**330**		T	T	07 20 11.2	
	baz=146,slow=75,SNR=7.1						
STKA	**Stephens Creek**	**43.51**	**239**	P	**P**	**06 40 18.9**	**-0.7**
	1.9nm,0.7s,baz=91,slow=7.6,SNR=4.0						
WRA	**Warramunga Arr**	**49.01**	**256**	P	**P**	**06 41 03.1**	**+0.1**
	5.3nm,0.8s,baz=90,slow=7.6,SNR=5.1						
ASAR	**Alice Springs**	**49.36**	**251**	P	**P**	**06 41 06.1**	**+0.4**
	39nm,0.7s,baz=87,slow=8.1,SNR=238						
ASAR				PcP	**PcP**	**06 42 28.4**	**+0.5**
	0.9nm,0.6s,baz=99,slow=3.7,SNR=3.9						
VNDA	**Vanda**	**63.98**	**186**	P	**P**	**06 42 48.5**	**-0.1**
	0.3nm,0.5s,baz=359,slow=6.0,SNR=3.5						
ILAR	**Eielson Array**	**81.95**	**12**	P	**P**	**06 44 34.8**	**-0.1**
	0.5nm,0.6s,baz=234,slow=6.3,SNR=6.0						
KMBO	**Kilima Mbogo**	**144.90**	**246**	PKP	**PKPab**	**06 51 52.5**	**-0.6**
	0.8nm,0.3s,baz=63,slow=9.0,SNR=4.2						
BRTR	**Keskin Array B**	**144.95**	**321**	PKP	**PKPab**	**06 51 52.2**	**-0.2**
	1.1nm,0.7s,baz=60,slow=1.0,SNR=4.9						
GERES	**GERESS Array B**	**145.28**	**351**	PKPbc	**PKPbc**	**06 51 52.7**	**-0.5**
	0.8nm,0.6s,baz=29,slow=2.2,SNR=7.0						

*NIED **13** 06:36:00, 37°.90N×143°.40E, h8km, Mw4.3 Best double couple: M0 3.72000×10^15 NP1:φs=349.00000°, δ=38.00000°, λ=-112.00000°. NP2:φs=197.00000°, δ=55.00000°, λ=-74.00000°.*
*IDC **13** 06:36:54.8±0.6, 37°.82N×143°.49E, h0km, mb4.2/19, mb1 4.3/24, mb1mx4.2/38, mbtmp4.2/24, ML3.0/4, MS3.4/4, Ms1 3.4/4, ms1mx3.1/39, Error ellipse: s-maj=17.1km s-min=14.4km az=114.0*
*MOS **13** 06:36:56.7±1.0, 37°.86N×143°.41E, h22km, mb4.5/32, Error ellipse: s-maj=9.4km s-min=6.9km az=109.5*
*ISCJB **13** 06:36:56.5±0.3, 37°.84N±0°.04×143°.35E±0°.03, h19km, mb4.4/54, MS3.9/6, Error ellipse: s-maj=5.3km s-min=3.2km az=158.2*
*JMA **13** 06:36:57.6±0.1, 37°.95N×143°.36E, h38km, M4.6*
*NEIC **13** 06:37:00.7±0.8, 37°.81N×143°.40E, h36km±7km, mb4.5/15, Error ellipse: s-maj=7.9km s-min=5.6km az=123.0*
ISC 13 06:36:58.1±0.5, 37°.76N±0°.05×143°.42E±0°.05, h19km, n123, σ2§10/137, mb4.4/55, MS3.9/6, 10C-6D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.78**	**294**	P	**Pn**	**06 37 25.3**	**-2.4**
JIO				eS	**Sn**	**06 37 45.6**	**-4.2**
OFUJ	**Ofunato**	**1.91**	**314**	P	**Pn**	**06 37 26.4**	**-3.2**
JMM	**Marumori**	**2.08**	**274**	P	**Pn**	**06 37 30.5**	**-1.5**
JMM				eS	**Sn**	**06 37 54.6**	**-2.8**
JMK	**Ichinoseki**	**2.10**	**305**	P	**Pn**	**06 37 29.7**	**-2.5**
JOM	**Ohasama**	**2.39**	**316**	P	**Pn**	**06 37 33.6**	**-2.6**
JFT	**Otama**	**2.46**	**265**	P	**Pn**	**06 37 37.0**	**-0.2**
JFT				eS	**Sn**	**06 38 05.5**	**-1.2**
JYK	**Kaneyama**	**2.67**	**297**	P	**Pn**	**06 37 38.4**	**-1.7**
JYK				eS	**Sn**	**06 38 07.6**	**-4.3**
JNS	**Sasagawa**	**3.25**	**272**	P	**Pn**	**06 37 47.8**	**-0.2**
JNS				eS	**Sn**	**06 38 24.8**	**-1.4**
JAW	**Awa shima**	**3.36**	**283**	P	**Pn**	**06 37 49.0**	**-0.6**
JAG	**Ashikaga**	**3.44**	**248**	P	**Pn**	**06 37 50.5**	**-0.1**
JAG				eS	**Sn**	**06 38 30.1**	**-0.8**
JRY	**Ryogami san**	**4.02**	**246**	P	**Pn**	**06 37 58.9**	**+0.3**
JRY				eS	**Sn**	**06 38 42.4**	**-2.8**
JSD	**Sado**	**4.09**	**275**	P	**Pn**	**06 37 58.5**	**-1.1**
ERM	**Erimo**	**4.26**	**357**	*ce*P	**Pn**	**06 37 59.7**	**-2.1**
ERM				pmax	pmax		
	comp=Z,18nm,1.2s						
ERM	**Erimo**	**4.26**	**357**	*e*Pn	**Pn**	**06 37 60.0**	**-1.9**
MJAR	**Matsushiro Arr**	**4.34**	**255**	Pn	**Pn**	**06 38 04.1**	**+1.1**
	comp=Z,6.0nm,0.3s,baz=79,slow=14,SNR=32						
MJAR				Sn	**Sn**	**06 38 54.1**	**+1.0**
	comp=Z,6.6nm,0.3s,baz=91,slow=28,SNR=6.3						
MJAR				LR	LR	06 39 47.8	
	comp=Z,347nm,20.8s,baz=85,slow=40						
MAJO	**Matsushiro**	**4.34**	**255**	*d* iP	**Pn**	**06 38 04.4**	**+1.4**
MAJO	**Matsushiro**	**4.34**	**255**	*e*Pn	**Pn**	**06 38 04.6**	**+1.6**
MAT	**Matsushiro**	**4.34**	**255**	P	**Pn**	**06 38 04.4**	**+1.4**
MAT				S	**Sn**	**06 38 52.4**	**-0.7**
MJB9	**Matsu-Tunnel**	**4.34**	**255**	*e*Pn	**Pn**	**06 38 04.6**	**+1.6**
JHJ2	**Mitsune**	**5.49**	**213**	*e*Pn	**Pn**	**06 38 18.5**	**-0.4**
JHJ	**Hachijo jima 2**	**5.50**	**214**	Pn	**Pn**	**06 38 18.6**	**-0.3**
	comp=Z,104nm,0.3s,baz=45,slow=20,SNR=19						
JHJ				Sn	**Sn**	**06 39 17.4**	**-4.2**
	comp=Z,107nm,0.3s,baz=278,slow=22,SNR=9.6						
INU	**Inuyama**	**5.69**	**247**	*e*Pn	**Pn**	**06 38 23.4**	**+1.8**
ASAJ	**Asahikawa**	**6.38**	**355**	*e*Pn	**Pn**	**06 38 32.6**	**+1.5**
YSS	**Yuzh-Sakhalins**	**9.20**	**357**	*e*P	**Pn**	**06 39 07.9**	**-1.8**
YSS				pmax	pmax		
	comp=Z,10.0nm,0.5s						
VLA	**Vladivostok**	**10.29**	**305**	‖ *e*P	**Pn**	**06 39 25.6**	**+1.0**
VLA				pmax	pmax		
	comp=Z,19nm,0.7s						
USRK	**Ussuriysk Ar.**	**10.77**	**310**	Pn	**Pn**	**06 39 31.6**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=127,slow=15,SNR=5.9						
USRK				LR	LR	06 43 39.6	
	comp=Z,218nm,18.2s,baz=130,slow=38						
JNU	**Nakatsue**	**11.22**	**249**	Pn	**Pn**	**06 39 40.0**	**+2.5**
	comp=Z,0.3nm,0.3s,baz=57,slow=17,SNR=3.1						
KSRS	**Korea Array**	**12.30**	**273**	Pn	**Pn**	**06 39 53.4**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=88,slow=12,SNR=6.7						
KSRS				LR	LR	06 44 18.4	
	comp=Z,116nm,19.1s,baz=101,slow=36						
KSAR	**Wonju Array Be**	**12.33**	**273**	P	**Pn**	**06 39 53.4**	**+0.8**
KSAR	**Wonju Array Be**	**12.33**	**273**	Pn	**Pn**	**06 39 53.4**	**+0.8**
KLR	**Kul'dur**	**14.23**	**327**	Pn	**Pn**	**06 40 14.3**	**-4.2**
	comp=Z,0.1nm,0.3s,baz=150,slow=10,SNR=4.2						
NKL	**Nikolayevsk**	**15.51**	**354**	*e*P	**P**	**06 40 46.0**	**+6.2**
PEA0	**Petropavlovsk-**	**18.27**	**28**	*e*P	P	06 41 20.6	+10
PEA0B	**Petropavlovsk-**	**18.27**	**28**	*e*P	P	06 41 20.7	+10
PETK	**Petropavlovsk-**	**18.27**	**28**	P	**Pn**	**06 41 10.1**	**-0.3**
	comp=Z,0.1nm,0.3s,baz=202,slow=10,SNR=3.1						
TIA	**Tai'an**	**21.04**	**274**	‖ P	P	06 41 50.9	+10
TIA				pmax	pmax		
	comp=Z,20nm,0.7s						
BJI	**Beijing**	**21.30**	**285**	P	**P**	**06 41 42.5**	**-1.0**
BJI				pmax	pmax		
	comp=Z,13nm,0.9s						
BJI				pmax	pmax		
	comp=Z,60nm,3.7s						
CLNS	**Chul'man**	**22.71**	**333**	*e*P	P	06 42 06.6	+8.0
CLNS				pmax	pmax		
	comp=Z,20nm,1.0s						
CLNS				pmax	pmax		
	comp=E,6.0nm,1.1s						
CLNS				pmax	pmax		
	comp=N,13nm,0.9s						
HHC	**Hu-ho-hao-te**	**24.77**	**287**	*e*P	**P**	**06 42 18.5**	**-0.2**
HHC				sP	sP	06 42 35.4	+8.6
HHC				S	**S**	**06 46 34.3**	**-5.8**
HHC				pmax	pmax		
	comp=Z,7.0nm,0.7s						
HHC				pmax	pmax		
	comp=Z,100nm,6.4s						
HHC				LR	LR		
	comp=N,220nm,13.2s						
HHC				LR	LR		
	comp=E,220nm,14.3s						
HHC				LR	LR		
	comp=Z,180nm,15.1s						
WHN	**Wuhan**	**25.05**	**262**	‖ *i*P	P	06 42 30.5	+9.4
WHN				S	**S**	**06 46 51.1**	**+6.7**
WHN				pmax	pmax		
	comp=Z,110nm,1.4s						
WHN				LR	LR		
	comp=Z,540nm,13.4s						
YAK	**Yakutsk**	**25.75**	**345**	P	**P**	**06 42 25.6**	**-1.5**
	comp=Z,13nm,0.4s,baz=190,slow=0.9,SNR=2.6						
YAK	**Yakutsk**	**25.75**	**345**	*e*P	**P**	**06 42 30.6**	**+3.5**
YAK				*e**PP	**sP**	**06 42 40.6**	**+5.3**
YAK				*e*		06 43 07.8	
YAK				*e*PPP	PPP	06 43 17.8	
YAK				*e*		06 45 58.8	
YAK				*e*S	**S**	**06 46 59.6**	**+4.7**
YAK				*e**SS	sS	06 47 13.7	+9.2
YAK				*e*SS	**SnSn**	**06 47 59.4**	**+9.1**
YAK				*e*SSS	SSS	06 48 17.1	
YAK				*e*		06 53 25.4	
YAK				pmax	pmax		
	comp=Z,18nm,0.7s						
YAK				pmax	pmax		
	comp=N,14nm,1.3s						
YAK				pmax	pmax		
	comp=E,7.0nm,1.5s						
YAK				pmax	pmax		
	comp=Z,9.0nm,0.4s						
YAK				pmax	pmax		
	comp=E,8.0nm,1.0s						
YAK				pmax	pmax		
	comp=N,13nm,1.1s						
YAK				smax	smax		
	comp=E,52nm,3.1s						
YAK				smax	smax		
	comp=N,102nm,2.3s						
YAK				MLR	MLR		
	comp=E,107nm,14.0s						
YAK				MLR	MLR		
	comp=N,100nm,11.0s						
YAK				MLR	MLR		
	comp=Z,95nm,10.0s						
SEY	**Seymchan**	**25.79**	**9**	P	**P**	**06 42 27.3**	**-0.2**
	comp=Z,1.3nm,0.2s,baz=201,slow=3.7,SNR=9.6						
H11N2	**WAKE ISLAND Hy 27.20**	**125**		T	T	07 11 25.7	
	baz=317,slow=75,SNR=119						
H11N1	**WAKE ISLAND Hy 27.20**	**125**		T	T	07 11 21.5	
	baz=317,slow=75,SNR=24						
H11N3	**WAKE ISLAND Hy 27.21**	**125**		T	T	07 11 27.5	
	baz=317,slow=75,SNR=31						
BOD	**Bodaibo**	**27.80**	**326**	*e*P	**P**	**06 42 43.6**	**-2.1**
BOD				pmax	pmax		
	comp=Z,15nm,0.9s						
H11S1	**WAKE ISLAND Hy 27.96**	**127**		T	T	07 12 21.9	
	baz=318,slow=76,SNR=19						
H11S3	**WAKE ISLAND Hy 27.96**	**127**		T	T	07 12 28.9	
	baz=318,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy 27.98**	**127**		T	T	07 12 23.7	
	baz=318,slow=76,SNR=13						
SONA1	**Songino Array**	**28.72**	**302**	*e*P	**P**	**06 42 56.0**	**+1.8**
SONM	**Songino Array**	**28.73**	**302**	P	**P**	**06 42 54.3**	**0.0**
	comp=Z,1.5nm,0.6s,baz=100,slow=8.5,SNR=12						
SONM				LR	LR	06 54 45.4	
	comp=Z,135nm,18.0s,baz=130,slow=37						
TLY	**Talaya**	**31.08**	**310**	‖ *e*P	**P**	**06 43 16.6**	**+1.7**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ZAK	**Zakamensk**	**31.09**	**307**	*e*P	**P**	**06 43 13.7**	**-1.4**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BILL	**Bilibino**	**32.89**	**16**	*e*P	**P**	**06 43 28.5**	**-2.0**
BILL				*e*		06 44 39.9	
BILL				*e*PPP	PPP	06 44 52.4	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.1s						
GTA	**Gaotai**	**33.88**	**287**	*e*P	**P**	**06 43 42.0**	**+2.3**
GTA				pP	sP	06 43 46.8	-1.1
GTA				sP	pP	06 43 49.5	+4.0
GTA				S	**S**	**06 49 01.1**	**-2.2**
GTA				sS	sS	06 49 32.4	+20
GTA				SS	**SnSn**	**06 51 12.3**	**+3.2**
GTA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,53nm,6.4s						
GTA				LR	LR		
	comp=N,180nm,15.7s						
GTA				LR	LR		
	comp=E,130nm,14.0s						
GTA				LR	LR		
	comp=Z,170nm,15.7s						
QIZ	**Qiongzhong**	**34.68**	**247**	P	**P**	**06 43 46.0**	**-0.6**
QIZ				pP	**sP**	**06 43 57.1**	**+2.2**
QIZ				S	**S**	**06 49 13.1**	**-2.6**
QIZ				LR	LR		
	comp=Z,190nm,12.4s						
TIXI	**Tiksi**	**34.78**	**352**	‖ *e*P	**P**	**06 43 46.7**	**-0.2**
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.2s						
KMI	**Kunming**	**36.65**	**262**	P	**P**	**06 44 05.3**	**+1.5**
KMI				pmax	pmax		
	comp=Z,11nm,0.8s						
WMQ	**Urumqi**	**41.94**	**297**	*e*P	**P**	**06 44 45.8**	**-1.8**
WMQ				pP	sP	06 44 59.0	+3.1
WMQ				sP	pP	06 45 04.5	+11
WMQ				pmax	pmax		
	comp=Z,15nm,0.9s						
WMQ				pmax	pmax		
	comp=Z,130nm,4.1s						
ZALV	**Zalesovo Beam**	**42.62**	**312**	P	**P**	**06 44 54.1**	**+1.3**
	comp=Z,2.2nm,0.3s,baz=108,slow=9.3,SNR=3.2						
ZALV				PcP	**PcP**	**06 46 44.0**	**-0.7**
	comp=Z,3.0nm,0.6s,baz=106,slow=2.0,SNR=3.8						
CMAR	**Chiang Mai Arr**	**43.22**	**256**	P	**P**	**06 44 58.3**	**+0.1**
	comp=Z,1.1nm,0.3s,baz=55,slow=3.4,SNR=4.3						
MK01	**Makanchi Array**	**45.09**	**302**	*e*P	**P**	**06 45 12.4**	**-0.5**
MK31	**Makanchi Array**	**45.09**	**302**	*e*P	**P**	**06 45 12.9**	**0.0**
MK31	**Makanchi Array**	**45.09**	**302**	*e*P	**P**	**06 45 12.9**	**0.0**
MKAR	**Makanchi Array**	**45.09**	**302**	P	**P**	**06 45 12.3**	**-0.6**
	comp=Z,1.5nm,0.8s,baz=87,slow=9.8,SNR=9.1						
MKAR	**Makanchi Array**	**45.09**	**302**	*e*P	**P**	**06 45 13.2**	**+0.3**
KURK	**Kurchatov**	**46.75**	**308**	*ce*P	**P**	**06 45 25.0**	**-0.8**
KURK				pmax	pmax		
	comp=Z,27nm,0.7s						
KURK	**Kurchatov**	**46.75**	**308**	*e*P	**P**	**06 45 25.2**	**-0.6**
	comp=Z,16nm,0.8s						
RND	**Reindeer**	**47.18**	**35**	*e*P	**P**	**06 45 28.6**	**-0.5**
RND				pmax	pmax		
	comp=Z,6.0nm,1.0s						
RND	**Reindeer**	**47.18**	**35**	*e*P	**P**	**06 45 28.6**	**-0.5**
	comp=Z,5.7nm,1.0s						
COLA	**College**	**47.61**	**33**	‖ *e*P	**P**	**06 45 32.3**	**0.0**
COLA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
HDA	**Harding Lake**	**48.01**	**33**	*e*P	**P**	**06 45 38.0**	**+2.5**
	comp=Z,5.3nm,1.0s						
IL1	**Eielson Array**	**48.02**	**33**	*e*P	**P**	**06 45 34.5**	**-1.1**
ILAR	**Eielson Array**	**48.02**	**33**	P	**P**	**06 45 34.9**	**-0.7**
	comp=Z,2.4nm,0.8s,baz=266,slow=6.7,SNR=23						
VOSK	**Vostochnaya**	**50.99**	**312**	*e*P	**P**	**06 45 58.0**	**-0.4**
VOSK				pmax	pmax		
	comp=Z,8.0nm,1.2s						
VOSK	**Vostochnaya**	**50.99**	**312**	*e*P	**P**	**06 45 58.0**	**-0.4**
	comp=Z,8.0nm,1.2s						
BVAR	**Borovoye Array**	**51.27**	**312**	P	**P**	**06 45 59.8**	**-0.7**
	comp=Z,0.7nm,0.5s,baz=72,slow=9.5,SNR=6.0						
BVAR				PcP	**PcP**	**06 47 15.1**	**-0.2**
	comp=Z,1.9nm,0.7s,baz=90,slow=1.5,SNR=5.1						
BRVK	**Borovoye**	**51.32**	**312**	‖ *e*P	**P**	**06 46 00.7**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,8.0nm,1.2s						
BRVK	**Borovoye**	**51.32**	**312**	*e*P	**P**	**06 46 01.1**	**+0.2**
	comp=Z,3.9nm,1.0s						
AAK	**Ala-Archa**	**51.55**	**298**	‖ *e*P	**P**	**06 46 03.0**	**+0.1**
AAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
KSH	**Kashi**	**51.57**	**294**	*e*P	**P**	**06 46 07.4**	**+4.3**
KSH				*e*pP	sP	06 46 19.5	+8.1
KSH				PcS	**PcS**	**06 51 16.3**	**+1.4**
KSH				S	**S**	**06 53 25.9**	**+3.0**
KSH				ScS	**ScS**	**06 55 50.8**	**-1.8**
KSH				pmax	pmax		
	comp=Z,57nm,3.9s						
KSH				LR	LR		
	comp=N,96nm,7.7s						
KSH				LR	LR		
	comp=E,85nm,7.8s						
KSH				LR	LR		
	comp=Z,120nm,7.9s						
ZRNK	**Zerenda**	**52.10**	**312**	*e*P	**P**	**06 46 06.3**	**-0.4**
ZRNK				pmax	pmax		
	comp=Z,6.0nm,1.1s						
ZRNK	**Zerenda**	**52.10**	**312**	*e*P	**P**	**06 46 06.3**	**-0.4**
	comp=Z,6.0nm,1.1s						
HYT	**Haines Junctio**	**52.76**	**37**	*e*P	**P**	**06 46 13.0**	**+1.4**
	comp=Z,6.3nm,0.9s						
ARU	**Arti**	**56.88**	**319**	*c* iP	**P**	**06 46 40.7**	**-0.6**
ARU						06 47 34.8	
ARU						06 48 45.8	
ARU				S	**S**	**06 54 33.0**	**-0.7**
ARU				SS	**SS**	**06 58 15.3**	**-6.1**
ARU				pmax	pmax		
	comp=Z,6.0nm,1.7s						
WRAB	**Tennant Creek**	**58.01**	**190**	*d* iP	**P**	**06 46 49.3**	**-0.3**
WRAB				pmax	pmax		
	comp=Z,68nm,1.7s						
WRAB	**Tennant Creek**	**58.01**	**190**	*e*P	**P**	**06 46 50.0**	**+0.3**
	comp=Z,15nm,0.8s						
WB2	**Warramunga Arr**	**58.02**	**190**	*e*P	**P**	**06 46 50.0**	**+0.3**
	comp=Z,14nm,0.8s						
WRA	**Warramunga Arr**	**58.02**	**190**	P	**P**	**06 46 49.6**	**-0.2**
	comp=Z,13nm,0.7s,baz=8.5,slow=7.3,SNR=0.1						
ABKAR	**Akbulak array**	**58.69**	**310**	*e*P	**P**	**06 46 53.3**	**-0.9**
AS01	**Alice Springs**	**61.74**	**190**	*e*P	**P**	**06 47 15.3**	**+0.1**
ASAR	**Alice Springs**	**61.75**	**190**	P	**P**	**06 47 15.8**	**+0.4**
	comp=Z,3.6nm,0.8s,baz=12,slow=6.3,SNR=31						
GEYT	**Alibeck**	**64.88**	**299**	P	**P**	**06 47 36.0**	**-0.1**
	comp=Z,2.1nm,0.3s,baz=32,slow=12,SNR=2.6						
OBN	**Obninsk**	**68.47**	**324**	‖ *e*P	**P**	**06 47 58.8**	**+0.2**
OBN				pmax	pmax		
	comp=Z,6.0nm,0.7s						
FINES	**FINESS Array B**	**68.91**	**333**	P	**P**	**06 48 00.6**	**-0.6**
	comp=Z,2.9nm,0.6s,baz=60,slow=11,SNR=6.8						
FINES	**FINESS Array B**	**68.91**	**333**	P	**P**	**06 48 00.6**	**-0.6**
FINES				pmax	pmax		
	comp=Z,4.0nm,0.8s						
K05A	**Summer Lake**	**69.25**	**52**	*e*P	**P**	**06 48 05.2**	**+1.2**
	comp=Z,9.8nm,1.0s						
STKA	**Stephens Creek**	**69.30**	**182**	P	**P**	**06 48 04.8**	**+0.9**
	comp=Z,1.9nm,0.8s,baz=351,slow=13,SNR=3.4						
VSR	**Storozhevoye**	**69.43**	**319**	*e*P	**P**	**06 48 03.5**	**-1.2**
VSR				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KIV	**Kislovodsk**	**71.63**	**312**	*e*P	**P**	**06 48 19.0**	**+0.6**
KIV				pmax	pmax		
	comp=Z,13nm,1.1s						
KBZ	**Khabaz**	**71.64**	**311**	P	**P**	**06 48 18.4**	**+0.1**
	comp=Z,3.5nm,0.8s,baz=23,slow=7.7,SNR=6.0						
NB2	**NORSAR Subarra**	**74.13**	**339**	P	**P**	**06 48 31.9**	**-0.8**
	comp=Z,3.1nm,0.9s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**74.13**	**338**	P	**P**	**06 48 32.0**	**-0.8**
	comp=Z,1.5nm,0.8s,baz=39,slow=5.8,SNR=5.8						
NOA	**NORSAR Array B**	**74.13**	**338**	P	**P**	**06 48 32.0**	**-0.8**
NOA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AKASG	**Malin Array Be**	**74.69**	**323**	P	**P**	**06 48 35.0**	**-1.2**
	comp=Z,0.3nm,0.3s,baz=42,slow=6.1,SNR=7.4						
AKASG	**Malin Array Be**	**74.69**	**323**	P	**P**	**06 48 35.0**	**-1.2**
KIEV	**Kiev**	**74.70**	**323**	‖ *e*P	**P**	**06 48 35.1**	**-1.2**
KIEV				pmax	pmax		
	com

JTO				S	Sn	06 52 23.4	-4.2
JSJ	**Shimokoshiki**	**2.88**	**305**	P	Pn	06 51 53.8	-1.5
JSJ				*e*S	**Sn**	**06 52 28.2**	**-0.9**
JTAJ	**Takarajima**	**2.99**	**254**	P	**Pn**	**06 51 56.3**	**-0.5**
JTAJ				*e*S	**Sn**	**06 52 31.2**	**-0.5**
JAM	**Amami Oshima**	**2.99**	**238**	P	Pn	06 51 55.1	-1.7
JAM				*e*S	**Sn**	**06 52 29.2**	**-2.6**
JAMN	**Amaminishikomi**	**3.40**	**239**	P	**Pn**	**06 52 01.4**	**-1.0**
JAMN				S	**Sn**	**06 52 39.9**	**-2.0**
JNA	**Nagahama**	**3.50**	**360**	P	**Pn**	**06 52 04.1**	**+0.3**
JNA				S	**Sn**	**06 52 41.9**	**-2.5**
JTK	**Tokunoshima**	**3.83**	**235**	S	**Sn**	**06 52 49.9**	**-2.5**
JMN	**Monobe**	**3.86**	**18**	P	**Pn**	**06 52 08.7**	**-0.1**
JAI	**Aioi**	**4.10**	**24**	P	**Pn**	**06 52 12.2**	**+0.2**
JAI				S	**Sn**	**06 52 54.2**	**-4.8**
MJAR	**Matsushiro Arr**	**8.06**	**35**	Pn	**Pn**	**06 53 08.4**	**+1.9**
	0.3nm,0.3s,baz=222,slow=16,SNR=3.2						
KSRS	**Korea Array**	**8.31**	**334**	P*n*	**Pn**	**06 53 12.3**	**+2.5**
	0.2nm,0.3s,baz=160,slow=14,SNR=3.2						
KSRS				LR	LR	06 56 31.9	
	comp=Z,51nm,19.2s,baz=300,slow=38						
MKAR	**Makanchi Array**	**41.98**	**308**	P	**P**	**06 59 02.0**	**+2.1**
	0.6nm,0.8s,baz=87,slow=7.4,SNR=4.6						
WRA	**Warramunga Arr**	**49.73**	**178**	P	**P**	**07 00 00.8**	**-0.3**
	1.9nm,0.8s,baz=353,slow=7.8						
BVAR	**Borovoye Array**	**50.05**	**316**	P	**P**	**07 00 04.9**	**+1.6**
	0.4nm,0.5s,baz=78,slow=7.7,SNR=4.1						
ASAR	**Alice Springs**	**53.42**	**178**	P	**P**	**07 00 29.9**	**+1.3**
	1.0nm,0.7s,baz=15,slow=11,SNR=11						
AKTO	**Aktyubinsk**	**57.90**	**313**	P	**P**	**07 01 04.6**	**+4.0**
	1.2nm,0.5s,baz=77,slow=5.6,SNR=5.6						
FINES	**FINESS Array B**	**71.39**	**331**	P	**P**	**07 02 29.2**	**+0.8**
	2.1nm,0.7s,baz=103,slow=8.4,SNR=4.6						
BRTR	**Keskin Array B**	**77.63**	**309**	P	**P**	**07 03 07.1**	**+1.9**
	0.5nm,0.6s,baz=4.4,slow=5.3,SNR=3.3						
PFO	**Pinyon Flats O**	**89.17**	**51**	LR	LR	07 43 05.5	
	comp=Z,85nm,18.2s,baz=55,slow=35						

FUNV ***13*** *07:06:02.8, 5.˝98N× 72.˚04W, h85km, MW3.0*
RSNC ***13*** *07:06:04.2± 0.3, 6.˚24N× 71.˚92W, h1km±4km, ML2.2*

ISC 13 07:06:02.2±1.9**, 6.˚26N**±0.˚06×**71.˚88W**±0.˚05**, h8**km±13km**, n12,** σ1**§25/20, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RUSC	**La Rusia**	**1.25**	**253**	*e*P	**Pb**	**07 06 26.1**	**-0.2**
RUSC				*e*S	**Sn**	**07 06 43.3**	**-0.4**
RUSC				*i*		07 06 45.2	
	comp=Z,14nm,0.3s						
BARC	**Barichara**	**1.34**	**284**	*e*P	**Pg**	**07 06 27.4**	**-0.5**
BARC				*e*S	**Sn**	**07 06 45.5**	**+0.1**
BARC				*i*		07 06 51.4	
	comp=Z,43nm,0.4s						
GIRC	**Giron, Santand**	**1.54**	**302**	*e*P	**Pb**	**07 06 31.0**	**0.0**
CAPV	**Capacho**	**1.65**	**345**	*e*P	**Pn**	**07 06 32.7**	**+1.0**
CAPV				*e*S	**Sb**	**07 06 55.1**	**+1.1**
CBRI	**Barrientos, No**	**1.71**	**328**	*e*P	**Pb**	**07 06 34.0**	**0.0**
CBRI				*e*S	**Sg**	**07 06 56.9**	**-0.2**
CBRI				*i*		07 07 01.4	
	comp=Z,73nm,0.3s						
BRRC	**Barranca, Sant**	**2.00**	**295**	*e*P	**Pn**	**07 06 37.5**	**+1.1**
BRRC				*i*		07 06 44.9	
	comp=Z,23nm,0.1s						
BRRC				*e*S	**Sb**	**07 07 03.4**	**-0.6**
SOCV	**Socops**	**2.25**	**27**	*e*P	**Pn**	**07 06 41.4**	**+1.6**
SOCV				*e*S	**Sb**	**07 07 11.4**	**+0.2**
ELOV	**Elorza**	**2.49**	**73**	*e*P	**Pn**	**07 06 44.5**	**+1.5**
VIGV	**El Vigia**	**2.61**	**11**	*e*P	**Pn**	**07 06 47.2**	**+2.4**
HELC	**Santa Helena**	**3.63**	**269**	*e*P	**Pn**	**07 06 59.9**	**+0.9**
HELC				*i*		07 07 12.0	
	comp=Z,3.9nm,0.4s						
VIRV	**Villa del Rosa**	**4.25**	**353**	*e*P	**Pn**	**07 07 07.0**	**-0.2**
VIRV				*e*S	**Sn**	**07 07 55.6**	**-1.4**
BAUV	**El Baul**	**4.64**	**55**	*e*P	**Pn**	**07 07 13.2**	**+0.6**
BAUV				*e*S	**Sn**	**07 08 04.2**	**-2.6**

NIED ***13*** *07:07:00, 37.˚90N× 143.˚40E, h8km, Mw3.5 Best double couple: M0≏2.20000×10^14 NP1:ϕs 72.00000°, δ 38.00000°, λ 8.00000°. NP2:ϕs 336.00000°, δ 85.00000°, λ 128.00000°.*

JMA 13 07:07:01.1±0.2**, 37.˚87N×143.˚39E, h40km, M3.7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.71**	**291**	P	Pn	07 07 35.5	+1.1
JIO				S	Sn	07 07 56.4	+1.4
OFUJ	**Ofunato**	**1.81**	**312**	P	Pn	07 07 36.8	+1.0
OFUJ				S	Sn	07 07 58.7	+1.1
JMK	**Ichinoseki**	**2.02**	**303**	P	Pn	07 07 40.0	+1.4
JMK				S	Sn	07 08 04.4	+1.8
JOU	**Okura**	**2.21**	**284**	P	Pn	07 07 43.0	+1.8
JOM	**Ohasama**	**2.29**	**315**	P	Pn	07 07 43.9	+1.5
JOM				S	Sn	07 08 11.4	+2.0
JFT	**Otama**	**2.45**	**263**	P	Pn	07 07 46.2	+1.7
JFT				*e*S	Sn	07 08 14.8	+1.6
JRG	**Rokugo**	**2.64**	**306**	P	Pn	07 07 48.8	+1.6
JANG	**Nango**	**2.89**	**330**	S	Sn	07 08 24.4	+0.2
JAG	**Ashikaga**	**3.46**	**247**	P	Pn	07 07 59.7	+1.2
BSO1	**Boso 1**	**3.75**	**212**	P	Pn	07 08 01.9	-0.1
BSO1				*e*S	Sn	07 08 44.9	+0.2
JOT	**Ohata**	**3.95**	**333**	S	Sn	07 08 49.9	-0.2
JRY	**Ryogami san**	**4.04**	**244**	P	Pn	07 08 07.3	+0.8
JRY				S	Sn	07 08 52.0	-0.6

IDC ***13*** *07:08:02.4± 3.5, 36.˚14N× 70.˚97E, h84km± 30km, mb3.7/9, mb1 3.8/14, mb1mx3.4/58, mbtmp4.0/14, MS3.3/1, Ms1 3.3/1, ms1mx2.6/47, Error ellipse: s-maj=28.6km s-min=21.0km az=175.0*
ISCJB ***13*** *07:08:03.4± 0.4, 36.˚39N± 0.˚03× 70.˚93E± 0.˚05, h100km, mb3.8/8, Error ellipse: s-maj=6.4km s-min=3.8km az=155.2*
NNC ***13*** *07:08:08.7± 1.8, 36.˚68N× 70.˚71E, h120km± 25km, mb3.5, mpv4.3, Error ellipse: s-maj=17.2km s-min=10.9km az=147.0*

ISC 13 07:08:04.0±0.6**, 36.˚32N**±0.˚05×**70.˚92E**±0.˚06**, h100**km**, n46,** σ2**§25/55, mb4.0/8, 10C-5D, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CEP	**Cherat**	**2.62**	**162**	P	Pn	07 08 50.4	+5.6
DZET	**Dzherino**	**2.99**	**327**	⇑P	**Pn**	**07 08 50.1**	**+0.5**
	45nm,0.3s						
DZET				⇑S	**Sn**	**07 09 21.9**	**-3.0**
	282nm,0.3s						
CHCP	**Chirah Chowk**	**3.28**	**143**	P	Pn	07 08 59.0	+5.5
THW	**Thamme Wali**	**3.58**	**169**	P	Pn	07 09 02.4	+4.8
SARP	**Sargodha**	**4.62**	**161**	P	**Pn**	**07 09 15.2**	**+3.6**
THN	**Thein Dam**	**5.55**	**133**	*ex*	**Pn**	**07 09 23.3**	**-0.8**
THN				*e*S	**Sn**	**07 10 24.0**	**-2.5**
MNAS	**Manas**	**6.28**	**11**	⇑P	**Pn**	**07 09 34.6**	**+0.4**
	14nm,0.5s						
MNAS				⇑S	**Sn**	**07 10 43.2**	**-1.4**
	20nm,0.7s						
JWA	**Jwalamukhi**	**6.32**	**133**	*e*P	**Pn**	**07 09 38.0**	**+3.4**
JWA				*e*S	**Sn**	**07 10 44.0**	**-1.3**
KK31	**Karatay Array**	**6.78**	**357**	⇓P	**Pn**	**07 09 41.2**	**+0.3**
	8.1nm,0.3s,baz=174,slow=12,SNR=2						42
KK31				⇑S	**Sn**	**07 10 51.2**	**-5.4**
	4.4nm,0.3s,baz=189,slow=21,SNR=6.8						
AAK	**Ala-Archa**	**6.89**	**23**	P	**Pn**	**07 09 43.9**	**+1.4**
	11nm,0.3s,baz=189,slow=8.2,SNR=35						
AAK				S	**Sn**	**07 10 58.4**	**-1.0**
	2.6nm,0.3s,baz=327,slow=20,SNR=9.4						
AAK	**Ala-Archa**	**6.89**	**23**	⇑P	**Pn**	**07 09 43.7**	**+1.2**
	24nm,0.5s						
AAK				⇓S	**Sn**	**07 10 58.4**	**-1.0**
	27nm,0.7s						
SDNR	**Sundarnagar**	**6.96**	**132**	*e*P	Pn	07 09 47.6	+4.3
SDNR				*e*S	**Sn**	**07 10 59.6**	**-1.4**
TKM2	**Tokmak 2**	**7.52**	**27**	⇑P	**Pn**	**07 09 51.7**	**+0.6**
	4.4nm,0.3s						
TKM2				⇓S	**Sn**	**07 11 14.9**	**+0.2**
	8.4nm,0.7s						
KKR	**Kurukshetra**	**8.04**	**140**	*ex*	**Sn**	**07 11 29.5**	**+2.2**
BHGR	**Bahadurgarh**	**9.15**	**145**	*ex*	**Sn**	**07 11 56.4**	**+2.1**
KHET	**Khetri**	**9.20**	**152**	*e*S	**Sn**	**07 11 51.7**	**-4.0**
KHET				IAML		07 11 54.9	
	comp=E,47nm,0.7s						
KHET				IAML		07 11 55.1	
	comp=N,44nm,0.2s						
NDI	**New Delhi**	**9.29**	**143**	*ex*	**Sn**	**07 11 50.5**	**-7.1**
NDI				*e*S	**Sn**	**07 11 54.0**	**-3.6**
KUDL	**Kundal**	**9.42**	**148**	*e*P	**Pn**	**07 10 19.3**	**+2.5**
KUDL				*e*S	**Sn**	**07 11 56.3**	**-4.5**
KUDL				IAML		07 12 00.5	
	comp=N,37nm,0.4s						
KUDL				IAML		07 12 01.0	
	comp=E,41nm,0.4s						
SONA	**Sohna**	**9.59**	**145**	*e*S	**Sn**	**07 12 00.2**	**-4.7**
SONA				IAML		07 12 03.2	
	comp=E,52nm,0.6s						
SONA				IAML		07 12 04.8	
	comp=N,30nm,0.3s						
GEYT	**Alibeck**	**10.35**	**283**	P	**Pn**	**07 10 28.7**	**-0.7**
	comp=N,1.9nm,0.3s,baz=106,slow=11,SNR=6.4						
GEYT				S	**Sn**	**07 12 21.0**	**-2.4**
	comp=N,2.8nm,0.3s,baz=130,slow=23,SNR=4.5						
OTUK	**Ortayu**	**11.96**	**5**	⇑P	**Pn**	**07 10 48.8**	**-2.3**
	comp=N,4.5nm,0.8s						
OTUK				⇑S	**Sn**	**07 13 02.3**	**-0.2**
	comp=N,0.5nm,0.2s						
PYUN	**Piuthan**	**13.09**	**125**	*e*P	**Pn**	**07 11 06.0**	**-0.3**
	comp=N,17nm,0.3s						
MK31	**Makanchi Array**	**13.48**	**36**	⇓P	**Pn**	**07 11 11.7**	**+0.7**
	comp=N,1.6nm,0.8s,baz=226,slow=14,SNR=7.3						
MKAR	**Makanchi Array**	**13.48**	**36**	P	**Pn**	**07 11 10.8**	**-0.2**
	comp=N,0.1nm,0.3s,baz=227,slow=13,SNR=8.2						
KOLN	**Koldanda**	**13.71**	**125**	*e*P	**Pn**	**07 11 14.9**	**+0.5**
	comp=N,9.9nm,0.3s						
GKN	**Gorkha**	**14.26**	**122**	*e*P	**Pn**	**07 11 20.7**	**-0.8**
	comp=N,13nm,0.3s						
DMN	**Daman**	**14.83**	**122**	*e*P	**Pn**	**07 11 29.0**	**+0.1**
	comp=N,16nm,0.4s						
KKN	**Kakani**	**14.84**	**121**	*e*P	**Pn**	**07 11 29.0**	**+0.1**
	comp=N,11nm,0.4s						
PKIN	**Phulchoki**	**15.05**	**121**	*e*P	**Pn**	**07 11 32.2**	**+0.5**
	comp=N,7.0nm,0.2s						
GUN	**Gumba**	**15.19**	**119**	*e*P	**Pn**	**07 11 33.6**	**+0.2**
	comp=N,15nm,0.4s						
AB31	**Akbulak array**	**15.21**	**332**	P	**Pn**	**07 11 32.0**	**-1.1**
	comp=N,2.3nm,0.6s,baz=150,slow=12,SNR=72						
AB31				S	Sn	07 14 06.9	-14
	comp=N,4.5nm,0.7s,baz=150,slow=23,SNR=13						
KURBB	**Kurchatov Arra**	**15.31**	**19**	P	**Pn**	**07 11 31.2**	**-3.3**
	comp=N,0.1nm,0.3s,baz=215,slow=12,SNR=6.3						
RAMN	**Ramite**	**16.28**	**121**	*e*P	**P**	**07 11 47.7**	**-0.5**
	comp=N,12nm,0.4s						
BVAR	**Borovoye Array**	**16.71**	**359**	P	**P**	**07 11 52.6**	**+0.2**
	comp=N,0.5nm,0.3s,baz=164,slow=12,SNR=8.0						
BVAR				LR	LR	07 18 29.9	
	comp=N,92nm,18.1s,baz=255,slow=37						
AKTO	**Aktyubinsk**	**16.90**	**331**	P	**P**	**07 11 55.1**	**+0.5**
	comp=N,0.5nm,0.3s,baz=143,slow=12,SNR=13						
AKTO	**Aktyubinsk**	**16.90**	**331**	⇑P	**Pn**	**07 11 54.4**	**+0.2**
	comp=N,4.1nm,0.8s						
AKTO				⇓S	Sn	07 14 50.3	-12
	comp=N,4.1nm,0.8s						
ZALV	**Zalesovo Beam**	**20.11**	**24**	P	**P**	**07 12 30.1**	**+0.5**
	comp=N,5.4nm,0.4s,baz=226,slow=12,SNR=13						
BRTR	**Keskin Array B**	**29.43**	**288**	P	**P**	**07 14 00.6**	**+2.4**
	comp=N,0.6nm,0.6s,baz=92,slow=7.4,SNR=3.6						
AKASG	**Malin Array Be**	**33.01**	**309**	P	**P**	**07 14 30.4**	**+1.0**
	comp=N,0.7nm,0.4s,baz=82,slow=7.2,SNR=8.2						
FINES	**FINESS Array B**	**37.60**	**326**	P	**P**	**07 15 10.2**	**+1.7**
	comp=N,1.1nm,0.4s,baz=123,slow=8.9,SNR=8.7						
ARCES	**ARCESS Array B**	**41.29**	**338**	P	**P**	**07 15 41.2**	**+2.1**
	comp=N,2.1nm,0.6s,baz=106,slow=8.9,SNR=6.5						
HFS	**Hagfors**	**43.17**	**322**	P	**P**	**07 15 55.6**	**+1.2**
	comp=N,3.2nm,0.5s,baz=99,slow=9.2,SNR=16						
NB2	**NORSAR Subarra**	**44.48**	**323**	P	**P**	**07 16 05.7**	**+0.7**
	comp=Z,1.6nm,0.6s,baz=96,slow=7.9						
NOA	**NORSAR Array B**	**44.48**	**323**	P	**P**	**07 16 05.9**	**+0.9**
	comp=Z,2.0nm,0.6s,baz=97,slow=7.9,SNR=9.0						
TORD	**Torodi Ar. Bea**	**65.65**	**269**	P	**P**	**07 18 37.6**	**-0.3**
	comp=Z,0.4nm,0.4s,baz=59,slow=5.5,SNR=8.4						
WRA	**Warramunga Arr**	**81.95**	**122**	P	**P**	**07 20 12.8**	**0.0**
	comp=Z,0.3nm,0.6s,baz=326,slow=5.0,SNR=4.7						

IDC ***13*** *07:09:12.7± 0.7, 1.˚03N× 125.˚46E, h0km, mb3.9/11, mb1 4.0/12, mb1mx3.9/51, mbtmp3.9/12, ML3.7/1, MS3.9/1, Ms1 3.9/1, ms1mx2.8/36, Error ellipse: s-maj=47.9km s-min=13.2km az=78.0*
ISCJB ***13*** *07:09:18.0± 0.6, 1.˚27N± 0.˚06× 126.˚21E± 0.˚07, h50km, mb3.9/11, MS4.0/1, Error ellipse: s-maj=9.6km s-min=9.1km az=165.9*
DJA ***13*** *07:09:23.8± 1.5, 1.˚N± 4.˚× 12.˚6E± .˚, h29km± 13km, M4.5/6, MLv4.5/6*

ISC 13 07:09:20.0±0.7**, 1.˚18N**±0.˚08×**126.˚04E**±0.˚07**, h50**km**, n18,** σ2**§91/21, mb3.9/11, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KMSI	**Cibinong**	**2.15**	**254**	P	Pn	**07 09 56.2**	**+2.8**
KMSI				S	**Sn**	**07 10 21.2**	**+2.4**
LBMI	**Labuha**	**2.32**	**141**	P	**Pn**	**07 10 00.2**	**+4.4**
LBMI				S	**Sn**	**07 10 27.8**	**+4.6**
SANI	**Sanana**	**3.21**	**181**	P	**Pn**	**07 10 09.1**	**+1.1**
LUWI	**Luwuk**	**3.94**	**236**	P	**Pn**	**07 10 22.2**	**+4.2**
NLAI	**Namlea**	**4.52**	**166**	P	**Pn**	**07 10 28.5**	**+2.6**
FITZ	**Fitzroy Crossi**	**19.17**	**181**	P	**P**	**07 13 37.6**	**-1.9**
	0.2nm,0.3s,baz=356,slow=14,SNR=4.9						
WRA	**Warramunga Arr**	**22.52**	**159**	P	**P**	**07 14 14.5**	**-1.2**
	3.2nm,0.5s,baz=331,slow=11,SNR=49						
WRA				S	**S**	**07 18 12.5**	**-7.0**
	2.3nm,0.9s,baz=329,slow=20,SNR=5.9						
ASAR	**Alice Springs**	**25.86**	**163**	P	**P**	**07 14 46.8**	**-0.3**
	1.1nm,0.5s,baz=341,slow=7.4,SNR=21						
ASAR				PcP	**PcP**	**07 18 14.4**	**-1.1**
	0.7nm,0.5s,baz=346,slow=1.9,SNR=9.7						
STKA	**Stephens Creek**	**36.03**	**157**	P	**P**	**07 16 16.5**	**-0.1**
	1.3nm,0.5s,baz=340,slow=8.8,SNR=7.5						
KSRS	**Korea Array**	**36.14**	**3**	P	**P**	**07 16 18.2**	**+0.8**
	1.7nm,0.6s,baz=178,slow=9.3,SNR=3.4						
USRK	**Ussuriysk Ar.**	**43.16**	**6**	P	**P**	**07 17 15.5**	**-0.3**
	1.2nm,0.5s,baz=198,slow=7.8,SNR=3.3						
KLR	**Kul'dur**	**48.12**	**5**	P	**P**	**07 17 57.8**	**+3.0**
	0.7nm,0.4s,baz=214,slow=7.3,SNR=3.5						
SONM	**Songino Array**	**49.49**	**343**	P	**P**	**07 18 05.5**	**-0.1**
	0.5nm,0.8s,baz=175,slow=7.2,SNR=3.5						
MKAR	**Makanchi Array**	**59.26**	**326**	P	P	07 19 14.3	-2.2
	0.6nm,0.4s,baz=122,slow=7.3,SNR=12						
MKAR				LR	LR	07 45 04.1	
	comp=Z,104nm,19.9s,baz=118,slow=36						
KURBB	**Kurchatov Arra**	**63.52**	**328**	P	**P**	**07 19 43.5**	**-1.5**
	0.4nm,0.4s,baz=127,slow=6.6,SNR=4.3						
VNDA	**Vanda**	**81.00**	**173**	P	**P**	**07 21 28.1**	**-0.8**
	0.5nm,0.5s,baz=308,slow=6.0,SNR=4.3						
MAW	**Mawson**	**81.14**	**200**	P	**P**	**07 21 28.8**	**-1.0**
	0.5nm,0.4s,baz=39,slow=7.0,SNR=4.8						
TORD	**Torodi Ar. Bea**	**123.02**	**286**	PKP	**PKPdf**	**07 28 10.3**	**-1.7**
	0.6nm,0.9s,baz=85,slow=0.8,SNR=3.7						

NIED ***13*** *07:12:00, 37.˚70N× 143.˚50E, h11km, Mw3.7 Best double couple: M0≏4.72000×10^14 NP1:ϕs 335.00000°, δ 30.00000°, λ -147.00000°. NP2:ϕs 216.00000°, δ 75.00000°, λ -64.00000°.*
IDC ***13*** *07:12:06.9± 0.9, 37.˚53N× 143.˚67E, h0km, mb3.9/7, mb1 4.0/11, mb1mx3.8/58, mbtmp3.9/11, ML3.9/3, Error ellipse: s-maj=21.8km s-min=18.4km az=96.0*
ISCJB ***13*** *07:12:09.7± 1.6, 37.˚62N± 0.˚04× 143.˚46E± 0.˚05, h33km± 13km, mb3.9/7, Error ellipse: s-maj=7.4km s-min=5.4km az=35.2*
JMA ***13*** *07:12:09.6± 0.3, 37.˚69N× 143.˚46E, h41km, M3.9*

ISC 13 07:12:10.9±3.2**, 37.˚66N**±0.˚03×**143.˚43E**±0.˚06**, h29**km±25km**, n38,** σ1**§47/37, mb3.8/7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.82**	**296**	P	Pn	07 12 39.9	-0.4
JIO				S	**Sn**	**07 13 01.8**	**-0.6**
OFUJ	**Ofunato**	**1.98**	**316**	P	Pn	07 12 41.5	-0.9
JFK	**Kawauchi**	**2.05**	**262**	P	Pn	07 12 42.8	-0.7
JFK				*e*S	**Sn**	**07 13 07.5**	**-0.7**
JMM	**Marumori**	**2.10**	**276**	P	Pn	07 12 43.7	-0.4
JMM				S	**Sn**	**07 13 09.2**	**0.0**
JMK	**Ichinoseki**	**2.16**	**307**	P	Pn	07 12 44.5	-0.4
JFT	**Otama**	**2.46**	**268**	P	**Pn**	**07 12 49.5**	**+0.4**
JFT				S	**Sn**	**07 13 18.7**	**+0.5**
JOM	**Ohasama**	**2.46**	**318**	P	Pn	07 12 48.7	-0.4
JOM				S	**Sn**	**07 13 17.8**	**-0.4**
JYK	**Kaneyama**	**2.72**	**298**	P	**Pn**	**07 12 53.1**	**+0.5**
JANG	**Nango**	**3.09**	**332**	P	**Pn**	**07 12 57.5**	**-0.2**
JAW	**Awa shima**	**3.39**	**285**	P	**Pn**	**07 13 02.9**	**+1.0**
JAG	**Ashikaga**	**3.41**	**250**	P	**Pn**	**07 13 02.5**	**+0.3**
JAG				S	**Sn**	**07 13 42.5**	**+0.8**
BSO1	**Boso 1**	**3.60**	**214**	P	**Pn**	**07 13 03.4**	**-0.8**
BSO1				*e*S	**Sn**	**07 13 45.7**	**+0.2**
JRY	**Ryogami san**	**3.99**	**247**	P	**Pn**	**07 13 10.3**	**+0.2**
JRY				S	**Sn**	**07 13 54.9**	**-1.0**
JOT	**Ohata**	**4.14**	**334**	P	**Pn**	**07 13 12.5**	**+0.3**
JOD2	**Odawara 2**	**4.24**	**237**	P	**Pn**	**07 13 13.6**	**0.0**
JOD2				S	**Sn**	**07 14 00.7**	**-1.4**
MJAR	**Matsushiro Arr**	**4.32**	**257**	P*n*	**Pn**	**07 13 16.6**	**+1.9**
	7.4nm,0.3s,baz=73,slow=9.0,SNR=35						
MJAR				Sn	**Sn**	**07 14 05.8**	**+1.7**
	1.2nm,0.3s,baz=83,slow=15,SNR=2.8						
MAT	**Matsushiro**	**4.32**	**257**	P	**Pn**	**07 13 16.2**	**+1.5**
MAT				*e*S	**Sn**	**07 14 06.5**	**+2.4**
MAT	**Matsushiro**	**4.32**	**257**	P	**Pn**	**07 13 16.7**	**+2.0**
JYN	**Shimob**	**4.49**	**243**	P	**Pn**	**07 13 18.0**	**+1.0**
JYN				S	**Sn**	**07 14 08.0**	**-0.2**
JHJ	**Hachijo jima 2**	**5.42**	**214**	P*n*	**Pn**	**07 13 29.0**	**-0.8**
	23nm,0.3s,baz=137,slow=22,SNR=8.9						
JHJ				Sn	Sn	07 14 25.8	-5.5
	39nm,0.3s,baz=116,slow=21,SNR=5.5						
ASAJ	**Asahikawa**	**6.48**	**355**	P*n*	**Pn**	**07 13 44.3**	**+0.1**
	baz=181,slow=9.8						
ASAJ				Sn	**Sn**	**07 14 55.7**	**-1.4**
	baz=90,slow=16						
USRK	**Ussuriysk Ar.**	**10.84**	**311**	P*n*	**Pn**	**07 14 47.8**	**+3.8**
	0.2nm,0.3s,baz=114,slow=14,SNR=4.3						
KSRS	**Korea Array**	**12.31**	**274**	P*n*	**Pn**	**07 15 07.6**	**+3.5**
	0.2nm,0.3s,baz=80,slow=14,SNR=3.8						
KLR	**Kul'dur**	**14.32**	**328**	P*n*	Pn	07 15 30.1	-1.5
	0.1nm,0.3s,baz=142,slow=14,SNR=7.5						
H11N2	**WAKE ISLAND Hy**	**27.14**	**125**	T	T	07 46 05.6	
	baz=317,slow=74						
H11N1	**WAKE ISLAND Hy**	**27.14**	**125**	T	T	07 46 09.7	
	baz=317						
H11N3	**WAKE ISLAND Hy**	**27.15**	**125**	T	T	07 46 07.5	
	baz=317,slow=74						
H11S1	**WAKE ISLAND Hy**	**27.90**	**127**	T	T	07 47 06.4	
	baz=318						
H11S3	**WAKE ISLAND Hy**	**27.90**	**127**	T	T	07 47 08.1	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**27.91**	**127**	T	T	07 47 10.5	
	baz=318						
SONM	**Songino Array**	**28.78**	**303**	P	**P**	**07 18 09.4**	**+3.2**
	0.5nm,0.5s,baz=98,slow=7.5,SNR=3.9						
MKAR	**Makanchi Array**	**45.15**	**302**	P	**P**	**07 20 26.1**	**+1.4**
	0.8nm,0.7s,baz=89,slow=7.9,SNR=3.2						
KURBB	**Kurchatov Arra**	**46.88**	**308**	P	**P**	**07 20 39.6**	**+1.3**
	1.7nm,0.5s,baz=81,slow=8.2,SNR=7.3						
ILAR	**Eielson Array**	**48.10**	**33**	P	**P**	**07 20 48.3**	**+0.7**
	0.4nm,0.6s,baz=262,slow=5.9,SNR=6.9						
WRA	**Warramunga Arr**	**57.93**	**190**	P	**P**	**07 21 59.9**	**-0.6**
	4.6nm,0.7s,baz=11,slow=7.4,SNR=41						
ASAR	**Alice Springs**	**61.66**	**190**	P	**P**	**07 22 25.7**	**-0.4**
	0.8nm,0.7s,baz=14,slow=6.0,SNR=7.7						
PDAR	**Pinedale Array**	**76.07**	**47**	P	**P**	**07 23 56.5**	**+0.6**
	0.3nm,0.5s,baz=360,slow=1.3,SNR=5.7						
LPAZ	**La Paz**	**144.99**	**61**	PKP	PKPbc	07 31 47.9	+2.1
	0.3nm,0.7s,baz=333,slow=4.5,SNR=3.5						

IDC ***13*** *07:14:29.5± 2.2, 18.˚10S× 175.˚37W, h216km± 22km, mb3.7/8, mb1 3.9/10, mb1mx3.7/36, mbtmp4.3/10, Error ellipse: s-maj=25.4km s-min=13.6km az=143.0*
ISCJB ***13*** *07:14:31.0± 0.6, 18.˚05S± 0.˚1× 175.˚3W± 0.˚1, h254km, mb4.0/9, Error ellipse: s-maj=18.0km s-min=11.2km az=139.2*

ISC 13 07:14:32.5±0.6**, 18.˚1S**±0.˚1×**175.˚3W**±0.˚1**, h254**km**, n15,** σ1**§36/18, mb4.0/9, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**5.35**

IRIF Iriomote-Funau 0.70 185 P Pn 07 19 59.2 -0.8
IRIF S Sn 07 20 13.7 -0.7
JIJ Ishigaki jima 0.74 155 P Pn 07 19 59.6 -0.7
JIJ S Sn 07 20 14.1 -0.9
JKRS Kuro-shima 0.82 166 P Pn 07 20 00.7 -0.2
JKRS S Sn 07 20 16.1 0.0
JTJ Tarama 0.91 115 P Pn 07 20 01.6 -0.1
JTJ S Sn 07 20 17.5 -0.1
YOJ Yonaguni jima 0.92 232 P Pn 07 20 01.5 -0.3
YOJ S Sn 07 20 16.9 -0.8
YOJ Yonaguni jima 0.92 232⇓iP Pn 07 20 01.6 -0.3
baz=235
YOJ iS Sn 07 20 16.6 -1.1
baz=235
YOJ Yonaguni jima 0.92 232 eP Pn 07 20 01.5 -0.3
YOJ e 07 20 14.0
YOJ Yonaguni jima 0.92 232 ePn Pn 07 20 01.5 -0.3
YOJ eSn Sn 07 20 14.0 -3.7
JYNG Yonagunijimaku 0.97 233 P Pn 07 20 02.0 -0.3
JYNG S Sn 07 20 18.4 -0.2
HATJ Hateruma jima 0.98 180 P Pn 07 20 01.9 -0.5
HATJ S Sn 07 20 18.1 -0.6
JIRB Irabujima 1.26 99 P Pn 07 20 05.2 -0.2
JIRB S Sn 07 20 23.7 -0.3
JIKM Ikemajima 1.32 95 P Pn 07 20 06.2 +0.2
JIKM S Sn 07 20 25.4 +0.3
JMJ Miyako jima 2 1.37 99 P Pn 07 20 06.8 +0.2
JMJ S Sn 07 20 26.2 0.0
JMJ Miyako jima 2 1.37 99 eP Pn 07 20 06.8 +0.2
baz=94
JMJ S Sn 07 20 25.9 -0.3
baz=94
JOGS Gusukube 1.48 100 P Pn 07 20 08.3 +0.4
JOGS S Sn 07 20 29.1 +0.6
TWB1 Santiao Chiao 1.64 269⇓iP Pn 07 20 10.5 +0.7
baz=279
TWB1 eS Sn 07 20 32.3 +0.5
baz=279
PCYT Pengchaiyu 1.67 291⇓iP Pn 07 20 11.4 +1.3
baz=299
PCYT S Sn 07 20 34.7 +2.3
baz=299
EGS 1.71 264 eP Pn 07 20 11.3 +0.8
baz=269
TWC Suao 1.82 257 ⇑P Pn 07 20 12.1 +0.2
baz=260
NWF Wu-fen Shan 1.83 271⇓iP Pn 07 20 13.1 +1.0
baz=284
TWE Neicheng 1.96 261 eP Pn 07 20 14.7 +1.0
baz=264
TWE eS Sn 07 20 40.5 +1.7
baz=264
ENA Nanau 1.97 252 eP Pn 07 20 14.3 +0.6
baz=256
TWY Chenhua 2.01 277⇓iP Pn 07 20 15.4 +1.2
baz=288
TWY eS Sn 07 20 41.2 +1.5
baz=288
TWA Mucha 2.01 269⇓iP Pn 07 20 15.7 +1.4
baz=272
TWA S Sn 07 20 41.4 +1.5
baz=272
TAP1 Taipei 2.06 271 eP Pn 07 20 15.8 +0.8
baz=281
TAP1 eS Sn 07 20 41.4 +0.3
baz=281
ENTT Nioudou 2.07 259 eP Pn 07 20 16.1 +1.1
baz=269
ENTT eS Sn 07 20 43.1 +2.0
baz=269
TATO Taipei 2.10 269 P Pn 07 20 16.4 +1.1
SNR=15
TATO Taipei 2.10 269 ePn Pn 07 20 16.4 +1.1
TATO eSn Sn 07 20 44.5 +2.7
TWS1 Kuangyinshan 2.16 272⇓eP Pn 07 20 17.6 +1.4
baz=282
TWS1 eS Sn 07 20 46.2 +3.0
baz=282
NACB Ninganchiao 2.18 247 ePn Pn 07 20 15.6 -0.8
NACB eSn Sn 07 20 46.3 +2.5
TWD Chiawan 2.22 245 ⇑P Pn 07 20 16.3 -0.6
baz=248
TWD eS Sn 07 20 41.9 -2.7
baz=248
YHNB Yeheng 2.23 261 ePn Pn 07 20 18.1 +1.0
YHNB eSn Sn 07 20 48.1 +3.1
NSK Sanguang 2.25 261 eP Pn 07 20 18.7 +1.3
baz=269
NSK eS Sn 07 20 45.6 +0.3
baz=269
HWA Hwalien 2.26 243 eP Pn 07 20 17.5 +0.1
baz=237
NNS Nan Shan 2.29 255 eP Pn 07 20 18.8 +0.9
baz=249
NCU National Centr 2.37 269 eP Pn 07 20 20.2 +1.4
baz=278
NCU eS Sn 07 20 49.8 +1.7
baz=278
ESF Shoufeng Towns 2.39 241 eP Pn 07 20 19.1 0.0
baz=238
WHF Hehuan Shan 2.47 249 eP Pn 07 20 21.1 +0.5
baz=252
WHF eS Sn 07 20 49.4 -1.6
baz=252
ESL Shilin 2.48 241 eP Pn 07 20 19.1 -1.1
baz=237
ESL eS Sn 07 20 46.9 -3.6
baz=237
TWT Tachien 2.51 252 eP Pn 07 20 21.8 +1.0
baz=249
NSTT Nanjuang 2.58 262 eP Pn 07 20 22.4 +1.0
baz=256
NSTT eS Sn 07 20 52.2 -0.5
baz=256
HSN Hsinchu 2.58 265 eP Pn 07 20 23.0 +1.5
baz=275
EHY Hungye 2.73 237 eP Pn 07 20 22.1 -1.3
baz=233
WDT Danda 2.75 243 ⇑P Pn 07 20 23.5 -0.5
baz=239
WDT eS Sn 07 20 53.8 -3.4
baz=239
YULB Yu-li 2.81 235 ePn Pn 07 20 23.1 -1.4
YULB eSn Sn 07 20 53.0 -5.2
NSY Sanyi 2.83 258 eP Pn 07 20 25.5 +0.6
baz=260
NSY eS Sn 07 20 58.6 -0.2
baz=260
TWF1 Yuli 2.83 234⇑iP Pn 07 20 23.8 -1.1
baz=231
TWF1 eS Sn 07 20 55.6 -3.2
baz=231
TWQ1 Liyutan 2.84 257 eP Pn 07 20 25.8 +0.9
baz=258
SSLB Suanglung 2.88 245 ePn Pn 07 20 25.1 -0.4
SSLB eSn Sn 07 20 58.8 -1.1
SMLT Sun Moon Lake 2.88 247 ⇓P Pn 07 20 26.0 +0.5
baz=245
SMLT eS Sn 07 20 59.3 -0.7
baz=245
TYC Yuchr 2.91 248 eP Pn 07 20 26.3 +0.5
baz=245
TYC eS Sn 07 20 59.9 -0.6
baz=245
CHKT Chengkung 2.94 230 eP Pn 07 20 24.3 -1.9
baz=226
CHKT eS Sn 07 20 56.2 -5.1
baz=226
TCU Taichung 2.98 253 eP Pn 07 20 27.0 +0.3
baz=255
JKE Kume jima 2 2.98 64 P Pn 07 20 26.9 +0.1
JKE S Sn 07 21 02.2 -0.1
YUS Yu-Shan 3.02 240⇑iP Pn 07 20 27.8 0.0
baz=235
YUS S Sn 07 21 00.8 -3.0
baz=235
WNT Mingjian 3.06 249 eP Pn 07 20 29.3 +1.4
baz=250
WNT eS Sn 07 21 04.4 +0.2
baz=250
ALS Alishan 3.13 242⇑eP Pn 07 20 29.4 +0.4
baz=237
ALS eS Sn 07 21 05.4 -0.7
baz=237
ELDTW Lidau 3.14 235 ⇑P Pn 07 20 27.7 -1.2
baz=230
CHN5 Tsauling 3.19 244 ⇓P Pn 07 20 30.4 +0.8
baz=238
CHN5 eS Sn 07 21 07.6 +0.4
baz=238
WGK Gukeng 3.24 246 eP Pn 07 20 31.8 +1.6
baz=247
WGK eS Sn 07 21 09.2 +0.8
baz=247
TTN Taitung 3.33 227 eP Pn 07 20 29.7 -1.6
baz=226
TTN eS Sn 07 21 08.4 -2.0
baz=226
TWG Pinlang 3.33 229 ⇑P Pn 07 20 29.6 -1.8
baz=227
TWG eS Sn 07 21 06.3 -4.1
baz=227
TWG Pinlang 3.33 229 ePn Pn 07 20 29.4 -2.0
TWG eSn Sn 07 21 01.8 -8.7
STYT Tauyuan 3.35 237 ⇑P Pn 07 20 31.7 +0.1
baz=238
STYT S Sn 07 21 08.5 -2.5
baz=238
TPUB Ta-pu 3.37 240 ePn Pn 07 20 32.4 +0.4
TPUB eSn Sn 07 21 00.0 -11
CHN4 Tsaushan 3.38 241⇓eP Pn 07 20 32.8 +0.9
baz=238
CHN4 eS Sn 07 21 12.4 +0.9
baz=238
CHN2 Minshiung 3.38 244 eP Pn 07 20 32.9 +0.8
baz=238
CHN2 eS Sn 07 21 12.6 +0.9
baz=238
WTCT Ta-ch'eng 3.41 251 eP Pn 07 20 32.4 0.0
baz=252
WTCT eS Sn 07 21 10.7 -1.7
baz=252
WTP Ta-pu 3.41 239 ⇓P Pn 07 20 33.3 +0.8
baz=240
WTP eS Sn 07 21 12.3 -0.1
baz=240
CHY Chiayi 3.44 244 eP Pn 07 20 33.7 +0.8
baz=237
CHY S Sn 07 21 13.0 -0.1
baz=237
JAGN Aguni-jima 3.47 63 P Pn 07 20 33.1 0.0
JAGN S Sn 07 21 12.7 -0.9
TWK Hsinying 3.50 240 eP Pn 07 20 33.4 -0.3
baz=241
TWK S Sn 07 21 14.3 -0.3
baz=241
CHN1 Nanshi 3.51 239 ⇓P Pn 07 20 34.5 +0.7
baz=240
CHN1 S Sn 07 21 14.2 -0.6
baz=240
SGST Jiashian 3.53 237 ⇓P Pn 07 20 35.1 +1.1
baz=238
SGST S Sn 07 21 14.7 -0.5
baz=238
WSF Szhu 3.55 248 eP Pn 07 20 35.1 +0.8
baz=258
WSF eS Sn 07 21 15.2 -0.4
baz=258
ECL Taimali 3.56 228 eP Pn 07 20 32.5 -2.0
baz=235
LAY Lan-yu 3.63 215 ⇑P Pn 07 20 32.5 -2.9
baz=215
LAY eS Sn 07 21 11.1 -6.5
baz=215
CHN8 Yiju 3.68 244 eP Pn 07 20 36.7 +0.7
baz=236
CHN8 eS Sn 07 21 18.5 -0.3
baz=236
SSD Sandimen 3.69 232 eP Pn 07 20 36.1 0.0
baz=230
SSD eS Sn 07 21 17.6 -1.4
baz=230
CHN3 Shinhua 3.70 239 eP Pn 07 20 37.4 +1.1
baz=239
CHN3 eS Sn 07 21 20.1 +0.9
baz=239
JJT2 Tamagusuku 2 3.73 72 P Pn 07 20 36.9 +0.2
JJT2 eS Sn 07 21 19.1 -0.9
TAW Tawu 3.77 226 eP Pn 07 20 35.5 -1.6
baz=218
TAW eS Sn 07 21 16.8 -4.0
baz=218
SCLT Jiali 3.78 241 eP Pn 07 20 37.4 0.0
baz=242
SCLT eS Sn 07 21 21.0 -0.1
baz=242
EAST Anshuo 3.78 226⇑eP Pn 07 20 35.5 -2.0
baz=231
EAST eS Sn 07 21 18.0 -3.2
baz=231
TWM1 Shoushan 3.79 235 eP Pn 07 20 39.0 +1.4
baz=236
TWM1 eS Sn 07 21 24.4 +2.9
baz=236
SGLT Jiouru 3.80 233 eP Pn 07 20 36.7 -0.9
baz=234
TAI1 Yung-k'ang 3.82 239 eP Pn 07 20 38.2 +0.3
baz=248
TAI1 eS Sn 07 21 21.2 -0.9
baz=248
SCZT Fangliau 3.94 228 eP Pn 07 20 39.5 0.0
baz=227
SCZT eS Sn 07 21 22.0 -3.0
baz=227
JNTH Nagotoyohara 4.08 68 P Pn 07 20 40.5 -0.9
JNTH S Sn 07 21 25.8 -2.6
TSEB Hengchuen, Pin 4.10 221 eP Pn 07 20 41.4 -0.3
baz=229
TSEB eS Sn 07 21 27.0 -1.9
baz=229
HEN Hengchun 4.12 224 eP Pn 07 20 41.1 -0.9
baz=223
HEN eS Sn 07 21 26.9 -2.4
baz=223
TWK1 Hengchun 4.13 222 eP Pn 07 20 40.5 -1.5
baz=217
TWP Hsiaoliuchiu 4.13 230 eP Pn 07 20 43.3 +1.2
baz=230
PNG Penghu 4.14 250 eP Pn 07 20 41.2 -0.9
baz=251
PNG eS Sn 07 21 26.0 -3.8
baz=251
WDGT Dungji 4.17 246 ⇑P Pn 07 20 42.0 -0.6
baz=246
WDGT S Sn 07 21 27.2 -3.4
baz=246
JIH Iheya 4.24 61 P Pn 07 20 42.9 -0.6
JIH S Sn 07 21 30.1 -2.1
JOW Kunigami 4.41 65 P Pn 07 20 44.5 -1.2
JOW Kunigami 4.41 65⇓eP Pn 07 20 44.6 -1.2
baz=64
JOW Kunigami 4.41 65 ePn Pn 07 20 44.6 -1.2
QZH Quanzhou 4.73 270⇓iPn Pn 07 20 41.3 -8.7
QZH Sn Sn 07 21 31.3 -13
QZH smax smax
comp=N,680nm,1.1s
QZH smax smax
comp=E,370nm,1.0s
QZH LR LR
comp=N,5μm,11.3s
QZH LR LR
comp=E,1μm,3.2s
QZH LR LR
comp=Z,2μm,15.6s
JOKE Okinoerabujima 4.87 61 P Pn 07 20 50.2 -1.8
JOKE eS Sn 07 21 44.0 -3.3
KNM Kinmen 4.92 264 eP Pn 07 20 54.5 +1.9
baz=264
JTK Tokunoshima 5.37 58 P Pn 07 20 56.6 -2.1
JTK S Sn 07 21 56.4 -2.9
JAMN Amaminishikomi 5.77 55 P Pn 07 21 01.9 -2.2
JAM Amami Oshima 6.18 56 P Pn 07 21 07.4 -2.2
JTAJ Takarajima 6.32 48 P Pn 07 21 10.5 -1.0
JZK Kikaishima 6.41 58 P Pn 07 21 11.1 -1.7
SSE Sheshan 6.46 340 P Pn 07 21 14.3 +0.9
SSE pmax pmax
comp=Z,180nm,2.6s
JMZ Minamidaito 2 6.75 82 P Pn 07 21 14.0 -3.4
CVP Callao Caves 7.53 195 eP Pn 07 21 26.2 -1.7
NJ2 Nanjing 8.23 329 eP Pn 07 21 38.1 +0.8
NJ2 S Sn 07 23 11.6 +3.0
NJ2 pmax pmax
comp=Z,200nm,0.5s
NJ2 smax smax
comp=Z,220nm,2.0s
NJ2 smax smax
comp=Z,200nm,1.2s
NJ2 LR LR
comp=Z,2μm,3.9s
NJ2 LR LR
comp=Z,3μm,4.1s
NJ2 LR LR
comp=Z,940nm,6.0s
GZH Guangzhou 9.75 261 P Pn 07 21 52.6 -5.3
GZH S Sn 07 23 37.3 -8.3
GZH pmax pmax
comp=Z,380nm,0.9s
WHN Wuhan 10.00 305 ⇓P Pn 07 22 01.9 +0.6
WHN LR LR
comp=Z,6μm,3.6s
WHN LR LR
comp=Z,6μm,3.8s
WHN LR LR
comp=Z,3μm,7.0s
JNU Nakatsue 10.16 36 P Pn 07 22 03.0 -0.4
comp=Z,1.3nm,0.3s,baz=201,slow=11,SNR=8.4
JNU Nakatsue 10.16 36 ePn Pn 07 22 04.5 +1.1
LQP Lukban 11.07 191⇑eP Sn 07 24 26.6 +8.5
TGY Tagaytay City 11.21 194 P Pn 07 22 19.1 +1.5
comp=Z,50nm,0.3s,baz=21,slow=17,SNR=2.1
TGY S Sn 07 24 25.9 +4.8
comp=Z,35nm,0.3s,baz=199,slow=18,SNR=2.5
TGY LR LR 07 26 45.5
comp=Z,189nm,20.1s,baz=37,slow=38
TIA Tai'an 12.53 334 ⇓P Pn 07 22 36.8 +1.9
TIA sP sP 07 23 06.8
TIA pmax pmax
comp=Z,60nm,1.4s
TIA pmax pmax
comp=Z,1μm,6.2s
TIA LR LR
comp=Z,840nm,19.8s
TIA LR LR
comp=Z,2μm,11.0s
TIA LR LR
comp=Z,1μm,10.0s
INCN Inchon 12.64 10 ePn P 07 22 40.9 -2.1
KS15 Wonju Array Si 12.85 15 ePn Pn 07 22 41.9 +2.9
KSAR Wonju Array Be 12.85 15 P Pn 07 22 40.5 +1.5
KSAR Wonju Array Be 12.85 15 P Pn 07 22 40.5 +1.5
KSRS Korea Array 12.87 15 P Pn 07 22 40.5 +1.2
comp=Z,2.1nm,0.3s,baz=201,slow=12,SNR=65
KSRS LR LR 07 28 00.3
comp=Z,363nm,19.1s,baz=200,slow=39
KS01 Wonju Array Si 12.88 15 ePn Pn 07 22 40.8 +1.3
ENH Enshi 13.71 296 ePn Pn 07 22 50.5 +0.2
comp=Z,219nm,1.3s
PLP Palo 13.84 175⇑iP Pn 07 22 54.1 +2.0
DL2 Dalian 13.95 353⇓iP Pn 07 22 54.9 +1.7
DL2 sP sP 07 23 27.5
DL2 S Sn 07 25 30.6 +3.5
DL2 pmax pmax
comp=Z,130nm,1.1s
DL2 pmax pmax
comp=Z,750nm,6.1s
QIZ Qiongzhong 14.25 248 P Pn 07 22 57.0 -0.3
QIZ S Sn 07 25 34.9 +0.3
QIZ pmax pmax
comp=Z,44nm,4.7s
QIZ LR LR
comp=Z,380nm,15.7s
QIZ LR LR
comp=Z,400nm,14.4s
QIZ LR LR
comp=Z,420nm,11.5s
INU Inuyama 15.35 45 eP P 07 23 16.0 +2.9
comp=Z,24nm,0.9s
GYA Guiyang 15.51 279⇑iP Pn 07 23 13.9 +0.7
GYA PP pP 07 23 28.0 -8.2
GYA S Sn 07 26 00.6 -4.4
GYA pmax pmax
comp=Z,70nm,1.0s
GYA pmax pmax
comp=Z,420nm,9.9s
GYA LR LR
comp=Z,730nm,8.9s
GYA LR LR
comp=Z,380nm,8.7s
GYA LR LR
comp=Z,530nm,0.6s
XAN Xi'an 15.74 308 P Pn 07 23 16.0 +0.1
XAN sP sP 07 23 47.5 -6.1
XAN S Sn 07 26 10.6 +0.2
XAN pmax pmax
comp=Z,49nm,0.8s
XAN pmax pmax
comp=Z,870nm,9.3s
TIY Taiyuan 15.92 325 eP P 07 23 20.5 +1.1
TIY pmax pmax
comp=Z,120nm,1.0s
TIY pmax pmax
comp=Z,2μm,5.9s
TIY LR LR
comp=Z,750nm,7.8s
TIY LR LR
comp=Z,430nm,5.4s
TIY LR LR
comp=Z,500nm,8.7s
JHJ Hachijo jima 2 16.11 56 P P 07 23 25.4 +3.9
comp=Z,38nm,0.3s,baz=198,slow=10,SNR=13
JHJ2 Mitsune 16.14 56 ePn P 07 23 25.9 +4.2
comp=Z,588nm,1.0s
BJT Baijiatuau 16.25 339 eP P 07 23 23.4 +0.4
BJT pmax pmax
comp=Z,58nm,0.8s
BJT Baijiatuau 16.25 339 eP P 07 23 23.4 +0.4
comp=Z,58nm,0.8s
BJI Beijing 16.27 339 P P 07 23 22.8 -0.4
BJI S Sn 07 26 22.9 -0.1
BJI pmax pmax
comp=Z,55nm,1.6s
BJI pmax pmax
comp=Z,2μm,7.2s
BJI LR LR
comp=Z,420nm,11.1s
BJI LR LR
comp=Z,390nm,8.2s
SNY Shenyang 16.75 359 P P 07 23 29.0 +0.6
SNY sP sP 07 23 58.0 -6.7
SNY S Sn 07 26 34.6 +0.2
SNY pmax pmax
comp=Z,68nm,1.8s
SNY pmax pmax
comp=Z,1μm,3.7s
SNY LR LR
comp=Z,490nm,6.8s
SNY LR LR
comp=Z,1μm,16.6s
SNY LR LR
comp=Z,680nm,9.2s
MAJO Matsushiro 16.85 44 eP P 07 23 30.9 +1.3
MAJO pmax pmax
comp=Z,15nm,0.7s
MAJO Matsushiro 16.85 44 ePn P 07 23 30.9 +1.3
comp=Z,15nm,0.7s
MAT Matsushiro 16.85 44 P Pn 07 23 28.9 -0.6
MAT S Sn 07 26 23.2 -14
MJAR Matsushiro Arr 16.85 44 P Pn 07 23 28.6 -1.0
comp=Z,1.4nm,0.3s,baz=230,slow=9.6,SNR=12
MJAR ScP ScP 07 31 33.9 -0.1
comp=Z,0.1nm,0.3s,baz=234,slow=4.5,SNR=6.2
DAV Davao City (W) 17.95 174 LR LR 07 30 11.7
comp=Z,324nm,21.7s,baz=342,slow=35
CD2 Chengdu 18.63 293 ⇓P P 07 23 49.8 +0.5
CD2 pP pP 07 24 09.8 -1.0
CD2 sP sP 07 24 23.9 -1.8
CD2 S S 07 27 14.3 -1.3
CD2 pmax pmax
comp=Z,430nm,0.5s
CD2 pmax pmax
comp=Z,950nm,4.5s
CD2 LR LR
comp=Z,1μm,7.1s
CD2 LR LR
comp=Z,970nm,6.1s
CD2 LR LR
comp=Z,1μm,6.3s
CN2 Changchun 18.77 4 eP P 07 23 51.3 +0.7
CN2 esP sP 07 24 24.6 -2.4

CN2 pmax pmax
comp=Z,70nm,1.0s
CN2 pmax pmax
comp=Z,500nm,8.0s
CN2 LR LR
comp=Z,400nm,20.0s
CN2 LR LR
comp=Z,600nm,20.0s
CN2 LR LR
comp=Z,500nm,20.0s
HHC Hu-ho-hao-te 18.79 330 *e*P **Pn 07 23 52.3 -0.5**
HHC sP sP 07 24 24.4 -3.0
HHC S **S 07 27 15.3 -3.2**
HHC pmax pmax
comp=Z,67nm,1.0s
HHC pmax pmax
comp=Z,1μm,5.9s
HHC LR LR
comp=Z,460nm,9.9s
HHC LR LR
comp=Z,290nm,8.6s
HHC LR LR
comp=Z,230nm,9.6s
KMI Kunming 19.08 275 P **Pn 07 23 56.3 -0.2**
KMI pP pP 07 24 16.5 +0.6
KMI sP sP 07 24 30.6 -0.2
KMI S **S 07 27 20.0 -4.8**
KMI pmax pmax
comp=Z,44nm,1.3s
KMI pmax pmax
comp=Z,380nm,6.4s
KMI LR LR
comp=Z,460nm,7.6s
KMI LR LR
comp=Z,400nm,5.6s
KMI LR LR
comp=Z,170nm,5.3s
KDM Kudat 19.21 201 ⇑P **Pn 07 23 58.0 +0.2**
VLA Vladivostok 19.22 18*c* *i*P **P 07 23 52.8 -2.7**
BTO Baotou 19.33 327 *e*P **P 07 23 56.9 0.0**
MDJ Mudanjiang 20.09 12 P **P 07 24 05.8 +0.8**
MDJ pP pP 07 24 25.3 -1.4
MDJ sP sP 07 24 39.4 -2.2
MDJ S **S 07 27 39.5 -4.7**
MDJ pmax pmax
comp=Z,24nm,1.0s
MDJ pmax pmax
comp=Z,130nm,6.1s
MDJ LR LR
comp=Z,270nm,16.1s
MDJ LR LR
comp=Z,750nm,24.8s
MDJ LR LR
comp=Z,360nm,19.8s
MDJ Mudanjiang 20.09 12 *e*P **P 07 24 04.4 -0.5**
comp=Z,14nm,0.8s
KKM Kota Kinabalu 20.24 202 ⇑P **P 07 24 08.3 +1.5**
KKM Kota Kinabalu 20.24 202 *e*P **P 07 24 07.0 +0.2**
comp=Z,180nm,1.0s
USRK Ussuriysk Ar. 20.25 17 P **P 07 24 05.3 -1.3**
comp=Z,87nm,0.8s,baz=202,slow=8.8,SNR=11
SDKM Sandakan 20.30 199 ⇓P **P 07 24 08.8 +1.3**
LZH Lanzhou 20.37 307 *e*P **P 07 24 09.3 +1.1**
LZH pP pP 07 24 27.8 -2.2
LZH sP sP 07 24 47.0 +2.1
LZH S **S 07 27 46.3 -3.8**
LZH SS Sn 07 28 30.1 +29
LZH pmax pmax
comp=Z,56nm,1.0s
LZH pmax pmax
comp=Z,510nm,4.4s
LZH LR LR
comp=Z,840nm,11.0s
LZH LR LR
comp=Z,800nm,10.0s
LZH LR LR
comp=Z,890nm,12.3s
MYLDM Lahad Datu 20.39 195 ⇑P Pn 07 24 11.7 +0.1
MYLDM Lahad Datu 20.39 195 *e*P Pn 07 24 10.6 -0.9
comp=Z,302nm,1.1s
TSM Tawau 21.40 196 ⇓P **P 07 24 20.9 +1.7**
UTTA Uttaradit 22.81 256 P **P 07 24 35.2 +1.5**
comp=Z,11nm,0.9s
GUMO Guam 22.88 116 P **P 07 24 34.2 -0.1**
comp=Z,217nm,1.1s,baz=3.8,slow=3.9,SNR=6.2
GUMO pP **pP 07 24 58.1 +0.9**
comp=Z,197nm,1.1s,baz=44,slow=2.1,SNR=3.7
GUMO Guam 22.88 116 *e*P **P 07 24 35.5 +1.1**
GUMO *PP **pP 07 24 58.1 +0.9**
GUMO pmax pmax
comp=Z,521nm,1.3s
GUMO Guam 22.88 116 *e*P **P 07 24 35.5 +1.1**
comp=Z,522nm,1.3s
GUMO pP **pP 07 24 58.1 +0.9**
ERM Erimo 23.30 39*d* *i*P **P 07 24 35.2 -2.9**
ERM pmax pmax
comp=Z,23nm,0.8s
ERM Erimo 23.30 39 *e*P **P 07 24 35.7 -2.4**
comp=Z,23nm,0.6s
ERM *e*S **S 07 28 47.9 +6.4**
LAMP Lampang 23.34 259 P **P 07 24 39.6 +0.9**
comp=Z,60nm,0.8s,comp=Z,422nm
CMAI Chiengmai2 23.41 262 P **P 07 24 40.6 +1.0**
comp=Z,636nm,1.2s,comp=Z,8μm
CHTO Chiang Mai 23.86 260 P **P 07 24 43.9 +0.5**
comp=Z,348nm,1.1s,comp=Z,4μm
CHTO Chiang Mai 23.86 260 *e*P **P 07 24 43.6 +0.2**
CHTO pmax pmax
comp=Z,89nm,1.1s
CHTO Chiang Mai 23.86 260 *e*P **P 07 24 43.6 +0.2**
comp=Z,89nm,1.1s
CM01 Chiang Mai Arr 23.98 259 *e*P **P 07 24 44.6 +0.2**
CM01 *e*ScP **ScP 07 31 50.6 -0.6**
CM31 Chiang Mai Arr 23.98 259 *e*P **P 07 24 44.6 +0.1**
CMAR Chiang Mai Arr 23.98 259 P **P 07 24 45.0 +0.6**
comp=Z,33nm,0.8s,baz=60,slow=8.2,SNR=66
CMAR PcP **PcP 07 28 23.7 +0.1**
comp=Z,3.3nm,0.4s,baz=79,slow=0.7,SNR=8.7
CMAR ScP **ScP 07 31 51.9 +0.6**
comp=Z,6.9nm,0.8s,baz=48,slow=0.9,SNR=24
HIA Hailar 24.39 354 *e*P **P 07 24 46.9 -1.1**
HIA pmax pmax
comp=Z,55nm,1.0s
HIA Hailar 24.39 354 *e*P **P 07 24 46.9 -1.1**
comp=Z,55nm,1.0s
ASAJ Asahikawa 24.43 34 P **P 07 24 46.8 -1.5**
baz=218,slow=9.6
ASAJ Asahikawa 24.43 34 *e*P **P 07 24 46.4 -1.9**
comp=Z,28nm,0.5s
MRSI Marisa 24.48 184 P **P 07 24 51.3 +2.3**
comp=Z,261nm,0.8s,comp=Z,4μm
GTA Gaotai 24.74 311 *e*P **P 07 24 50.9 -0.5**
GTA pP pP 07 25 13.4 -3.3
GTA sP sP 07 25 26.1 -4.6
GTA PcP **PcP 07 28 26.4 +1.2**
GTA S **S 07 29 03.6 -1.4**
GTA sS sS 07 29 44.3 -5.3
GTA SS **SnSn 07 30 10.1 +4.5**
GTA pmax pmax
comp=Z,27nm,1.6s
GTA pmax pmax
comp=Z,190nm,8.6s
GTA LR LR
comp=Z,400nm,9.0s
GTA LR LR
comp=Z,610nm,8.8s
GTA LR LR
comp=Z,910nm,9.0s
UMPA Umpang Tak 24.91 254 P **P 07 24 55.9 +3.0**
comp=Z,25nm,1.1s,comp=Z,338nm
KLR Kul'dur 24.94 12 P **P 07 24 51.1 -1.8**
comp=Z,14nm,0.6s,baz=194,slow=7.8,SNR=29
KLR pP **pP 07 25 19.3 +1.0**
comp=Z,25nm,0.8s,baz=196,slow=8.3,SNR=4.4
KLR PcP **PcP 07 28 25.6 +0.4**
comp=Z,4.0nm,0.6s,baz=248,slow=3.4,SNR=4.5
KLR ScP **ScP 07 31 51.8 -1.5**
comp=Z,2.4nm,0.8s,baz=202,slow=2.9,SNR=4.2
HABR Khabarovsk 25.01 18 *e*P **P 07 24 50.6 -2.9**
HABR *e**PP **pP 07 25 12.6 -6.4**
HABR *e* 07 28 23.4
HABR *e*S **S 07 29 07.0 -1.7**
HABR *e* 07 35 41.6
HABR pmax pmax
comp=Z,13nm,0.9s
HABR MLR MLR
comp=Z,97nm,16.0s
SBUM Sibu 25.08 208 ⇑P **P 07 24 55.2 +0.7**
SBUM Sibu 25.08 208 *e*P **P 07 24 53.8 -0.7**
comp=Z,76nm,1.1s
LBMI Labuha 25.77 171 P **P 07 25 02.5 +1.8**
comp=Z,392nm,1.1s,comp=Z,4μm
LUWI Luwuk 25.94 182 P **P 07 25 01.0 -1.2**
comp=Z,229nm,1.2s,comp=Z,8μm
LUWI Luwuk 25.94 182 *e*P **P 07 25 01.5 -0.7**
comp=Z,253nm,1.1s
PCI Palu 26.07 189 P **P 07 25 05.8 +2.4**
comp=Z,344nm,1.2s,comp=Z,4μm
PCI Palu 26.07 189 P **P 07 25 05.5 +2.1**
PCI pmax pmax
comp=Z,344nm,1.2s
YSS Yuzh-Sakhalins 26.58 30 *e*P **P 07 25 08.2 +0.5**
YSS *e* 07 25 32.6
YSS pmax pmax
comp=Z,20nm,1.0s
SONM Songino Array 26.59 333 P **P 07 25 06.7 -1.4**
comp=Z,32nm,0.7s,baz=148,slow=8.8,SNR=165
SONM PcP **PcP 07 28 29.3 +0.1**
comp=Z,5.0nm,0.9s,baz=126,slow=2.7,SNR=5.8
SONM ScP **ScP 07 31 57.2 -1.2**
comp=Z,1.7nm,0.7s,baz=162,slow=6.1,SNR=7.6
SONM LR LR 07 37 02.1
comp=Z,261nm,19.5s,baz=144,slow=39
SONA1 Songino Array 26.60 333 *e*P **P 07 25 06.2 -1.9**
KSM Kuching 26.80 211 ⇑P **P 07 25 11.1 +1.1**
KSM Kuching 26.80 211 *e*P **P 07 25 10.1 0.0**
comp=Z,69nm,1.1s
SANI Sanana 27.01 175 P **P 07 25 10.9 -0.9**
comp=Z,240nm,0.7s,comp=Z,2μm
MTKI Muara Teweh, K 27.23 200 P **P 07 25 14.7 +0.9**
comp=Z,212nm,1.2s,comp=Z,8μm
KUR Kuril'sk 27.99 38⇓ *e*P **P 07 25 20.1 -0.2**
TTSI Tana Toraja 28.18 188 P **P 07 25 22.7 +0.4**
comp=Z,70nm,1.1s
NLAI Namlea 28.29 173 P **P 07 25 22.6 -0.6**
comp=Z,170nm,0.9s,comp=Z,2μm
MSAI Masohi 28.65 169 P **P 07 25 27.6 +1.2**
comp=Z,33nm,1.2s,comp=Z,2μm
SHL Shillong 28.82 278 *e*P **P 07 25 28.7 +0.5**
SHL IAmb IAmb 07 25 29.6
comp=Z,158nm,0.1s
FAKI Fak Fak 28.97 162 P **P 07 25 29.0 -0.3**
comp=Z,230nm,1.1s,comp=Z,2μm
FAKI Fak Fak 28.97 162 *e*P **P 07 25 29.6 +0.3**
comp=Z,246nm,1.1s
LSA Lhasa 29.31 286 P **P 07 25 33.6 +0.8**
LSA pmax pmax
comp=Z,39nm,0.8s
LSA Lhasa 29.31 286 *e*P **P 07 25 33.1 +0.3**
LSA pmax pmax
comp=Z,26nm,0.7s
LSA Lhasa 29.31 286 *e*P **P 07 25 33.1 +0.3**
comp=Z,26nm,0.7s
BBKI Banjar Baru 29.64 198 P **P 07 25 35.3 +0.1**
comp=Z,159nm,1.2s,comp=Z,5μm
ZAK Zakamensk 29.86 333 *e*P **P 07 25 34.3 -2.7**
ZAK *e* 07 32 06.9
ZAK pmax pmax
comp=Z,18nm,1.4s
IPM Ipoh 29.94 231 *e*P **P 07 25 38.2 +0.3**
comp=Z,51nm,1.1s
MYKOM Kota Tinggi 30.08 223 *e*P **P 07 25 39.4 +0.3**
comp=Z,38nm,0.8s
KAPI Kappang 30.13 188 P **P 07 25 39.0 -0.5**
comp=Z,22nm,0.7s,baz=41,slow=6.1,SNR=8.5
KAPI LR LR 07 37 34.5
comp=Z,179nm,20.6s,baz=14,slow=36
KAPI Kappang 30.13 188 *e*P **P 07 25 39.7 +0.2**
comp=Z,125nm,1.4s
TLY Talaya 30.74 335 P **P 07 25 43.8 -0.7**
comp=Z,42nm,0.6s,baz=211,slow=3.1,SNR=28
TLY Talaya 30.74 335 *e*P **P 07 25 44.2 -0.3**
TLY *e* 07 26 12.9
TLY pmax pmax
comp=Z,42nm,0.6s
TLY MLR MLR
comp=Z,166nm,14.0s
TLY Talaya 30.74 335 *e*P **P 07 25 44.2 -0.3**
comp=Z,49nm,0.7s
IRK Irkutsk 30.95 336 *e*P **P 07 25 45.3 -1.2**
IRK pmax pmax
comp=Z,53nm,1.6s
GENI Genyem 31.73 148 P **P 07 25 56.2 +2.6**
comp=Z,80nm,1.3s
MOY Mondy 31.78 333 *e*P **P 07 25 53.4 -0.5**
MOY pmax pmax
comp=Z,150nm,2.0s
PPBI Pangkal Pinang 32.01 215 P **P 07 25 57.5 +1.4**
comp=Z,42nm,1.3s,comp=Z,7μm
RAMN Ramite 33.42 281 *e*P **P 07 26 08.6 0.0**
comp=Z,54nm,0.8s
MMRI Maumere 33.50 183 P **P 07 26 09.5 +0.4**
comp=Z,324nm,1.1s,comp=Z,4μm
MMRI Maumere 33.50 183 *e*P **P 07 26 09.4 +0.3**
comp=Z,426nm,1.3s
MNSI Mandailing Nat 33.59 228 P **P 07 26 09.4 -0.5**
comp=Z,50nm,0.7s
SRBI Singaraja 33.97 195 P **P 07 26 15.9 +2.8**
GUN Gumba 33.98 283 *e*P **P 07 26 13.4 -0.2**
comp=Z,44nm,0.6s
BLJI Banyuglugur 34.07 198 P **P 07 26 15.1 +1.2**
PLAI Plampang 34.17 191 P **P 07 26 15.4 +0.6**
NGJI Ngawi 34.38 202 P **P 07 26 19.4 +2.8**
comp=Z,126nm,1.3s
PKIN Phulchoki 34.43 283 *e*P **P 07 26 16.7 -0.7**
comp=Z,17nm,0.5s
BOK Bokaro 34.47 276 *e*P **P 07 26 18.1 +0.6**
KKN Kakani 34.52 283 *e*P **P 07 26 17.1 -1.0**
comp=Z,48nm,0.7s
DNP Denpasar 34.54 195 P **P 07 26 21.5 +3.5**
comp=Z,589nm,1.2s
SOEI Soe 34.58 179 P **P** 07 26 26.1 +7.6
comp=Z,46nm,0.8s
SOEI Soe 34.58 179 *e*P **P 07 26 16.9 -1.6**
comp=Z,45nm,1.0s
GMJI Gumukmas 34.61 198 P **P 07 26 21.4 +2.8**
comp=Z,60nm,1.7s,comp=Z,1μm
DMN Daman 34.68 283 *e*P **P 07 26 19.2 -0.4**
comp=Z,64nm,0.8s
LHSI Lahat 34.80 217 P **P 07 26 22.2 +1.9**
comp=Z,61nm,0.8s
WMQ Urumqi 34.83 312⇑ *i*P **P 07 26 20.6 +0.2**
WMQ pP pP 07 26 44.0 -2.6
WMQ sP sP 07 26 56.1 -4.1
WMQ PP **PP 07 27 44.3 +2.7**
WMQ PcP **PcP 07 28 51.6 +0.6**
WMQ sS sS 07 32 25.5 -2.6
WMQ pmax pmax
comp=Z,17nm,1.8s
WMQ pmax pmax
comp=Z,130nm,5.0s
WMQ LR LR
comp=Z,390nm,8.0s
WMQ LR LR
comp=Z,440nm,9.8s
WMQ LR LR
comp=Z,540nm,19.8s
KLI Kotabumi 34.97 214 P **P 07 26 23.0 +1.3**
WOJI Wonogiri, Jawa 35.00 203 P **P 07 26 23.5 +1.5**
GKN Gorkha 35.07 284 *e*P **P 07 26 21.9 -0.8**
comp=Z,20nm,0.3s
KSI Kapahiang 35.18 219 P **P 07 26 24.6 +1.0**
BWNR Bhubaneshwar 35.30 270 *e*P **P 07 26 21.9 -2.6**
LWLI Liwa 35.51 215 P **P 07 26 29.4 +2.9**
comp=Z,117nm,0.8s,comp=Z,9μm
DBJI Dramaga 35.52 210 P **P 07 26 28.4 +1.9**
KASI Kota Agung 35.71 214 P **P 07 26 29.3 +1.2**
comp=Z,63nm,0.9s
CISI Cisompet, Garu 35.94 208 P **P 07 26 29.7 -0.4**
CISI Cisompet, Garu 35.94 208 *e*P **P 07 26 29.6 -0.5**
comp=Z,63nm,0.8s
KOLN Koldanda 36.00 283 *e*P **P 07 26 30.5 -0.3**
comp=Z,50nm,0.7s
PYUN Piuthan 36.51 284 *e*P **P 07 26 34.7 -0.4**
comp=Z,47nm,0.6s
YAK Yakutsk 37.20 5 P **P 07 26 38.3 -1.9**
comp=Z,113nm,0.7s,baz=235,slow=0.9,SNR=23
YAK PcP **PcP 07 28 57.2 -0.3**
comp=Z,15nm,0.4s,baz=204,slow=1.8,SNR=4.1
YAK LR LR 07 43 14.7
comp=Z,149nm,18.6s,baz=188,slow=38
YAK Yakutsk 37.20 5 *e*P **P 07 26 37.8 -2.4**
YAK *e**PP **pP 07 27 06.6 0.0**
YAK *e* 07 28 05.9
YAK *e* 07 28 57.6
YAK *e*S **S 07 32 17.5 -0.5**
YAK *e* 07 36 37.7
YAK pmax pmax
comp=E,13nm,1.3s
YAK pmax pmax
comp=Z,116nm,0.8s
YAK pmax pmax
comp=N,35nm,1.0s
YAK pmax pmax
comp=Z,129nm,4.0s
YAK pmax pmax
comp=N,69nm,2.1s
YAK pmax pmax
comp=E,18nm,1.5s
YAK smax smax
comp=N,38nm,2.3s
YAK smax smax
comp=E,45nm,3.3s
YAK Yakutsk 37.20 5 *e*P **P 07 26 37.6 -2.5**
comp=E,140nm,0.8s
YAK PcP **PcP 07 28 57.2 -0.3**
PATS Pohnpei 37.63 113 *e*P **P 07 26 45.0 +0.5**
comp=E,124nm,1.1s
PEA0 Petropavlovsk- 37.84 33 *e*P **P 07 26 43.9 -1.9**
PETK Petropavlovsk- 37.84 33 P **P 07 26 44.0 -1.8**
comp=E,11nm,0.6s,baz=168,slow=4.3,SNR=16
PETK LR LR 07 42 09.2
comp=E,94nm,19.9s,baz=245,slow=36
PET Petropavlovsk 38.27 34 *e*P **P 07 26 47.4 -1.9**
PET pmax pmax
comp=Z,83nm,0.5s
PET Petropavlovsk 38.27 34 *e*P **P 07 26 47.4 -1.9**
comp=Z,53nm,0.6s
VIS Vishakhapatnam 38.27 267 *e*P **P 07 26 50.8 +1.0**
MTN Manton Dam 38.32 168 *e*P **P 07 26 49.8 -0.4**
comp=Z,115nm,0.6s
MA2 Magadan 39.31 21 P **P 07 26 58.1 +0.2**
comp=Z,3.9nm,0.5s,baz=246,slow=10.0,SNR=2.3
MA2 PcP **PcP 07 29 04.7 +0.5**
comp=Z,11nm,0.7s,baz=215,slow=2.8,SNR=6.3
MK01 Makanchi Array 39.41 314 *e*P **P 07 26 57.2 -1.7**
MK31 Makanchi Array 39.42 314*ce*P **P 07 26 58.1 -1.0**
MK31 pmax pmax
comp=Z,13nm,0.5s
MK31 Makanchi Array 39.42 314 *e*P **P 07 26 58.0 -1.1**
MKAR Makanchi Array 39.42 314 P **P 07 26 57.9 -1.2**
comp=Z,22nm,0.5s,baz=102,slow=9.1,SNR=158
MKAR PcP **PcP 07 29 04.9 0.0**
comp=Z,9.7nm,0.8s,baz=92,slow=6.1,SNR=6.8
MKAR ScP **ScP 07 32 41.6 -1.1**
comp=Z,2.1nm,0.8s,baz=106,slow=5.8,SNR=6.7
MAKZ Makanchi 39.63 314 *e*P **P 07 26 59.8 -1.0**
MAKZ pmax pmax
comp=Z,39nm,0.6s
MAKZ Makanchi 39.63 314 *e*P **P 07 26 59.8 -1.0**
comp=Z,39nm,0.6s
H11N1 WAKE ISLAND Hy 40.07 89 T T 08 09 21.2
baz=285
H11N2 WAKE ISLAND Hy 40.08 89 T T 08 09 23.7
baz=285
H11N3 WAKE ISLAND Hy 40.09 89 T T 08 09 25.7
baz=285
PDGK Podgornoye 40.41 308 *i* P **P 07 27 06.4 -0.9**
PDGK pmax pmax
comp=Z,37nm,0.7s
ZAA0 Zalesovo Array 40.86 325 *e*P **P 07 27 08.2 -2.6**
ZAA0 *e*P **P 07 27 09.1 -1.8**
ZALV Zalesovo Beam 40.86 325 P **P 07 27 08.9 -1.9**
comp=Z,64nm,0.6s,baz=112,slow=8.0,SNR=116
ZALV PcP **PcP 07 29 08.1 -1.2**
comp=Z,3.3nm,0.5s,baz=109,slow=3.1,SNR=4.0
PMG Port Moresby 41.12 143*c* *i*P **P 07 27 13.9 +0.6**
PMG pmax pmax
comp=Z,358nm,1.2s
PMG Port Moresby 41.12 143 *e*P **P 07 27 14.5 +1.2**
comp=Z,88nm,1.0s
NGP Nagpur 41.21 274 *e*P **P 07 27 14.4 +0.2**
NGP IAmb IAmb 07 27 15.1
comp=Z,38nm,0.7s
SMLA Simla 41.35 289 *e*P **P 07 27 15.7 +0.5**
DHRM DHARAMSHALA 42.03 291 *e*P **P 07 27 20.5 -0.5**
DHRM IAmb IAmb 07 27 24.0
comp=Z,46nm,0.7s
NVS Novosibirsk 42.10 326 *e*P **P 07 27 19.6 -1.3**
NVS *e* 07 27 46.5
NVS *e* 07 29 03.5
NVS pmax pmax
comp=Z,86nm,1.9s
NVS pmax pmax
comp=N,37nm,1.4s
NVS pmax pmax
comp=E,57nm,1.7s
BHPL Bhopal 42.20 278 *e*P **P 07 27 21.9 -0.4**
BHPL IAmb IAmb 07 27 22.9
comp=Z,50nm,1.1s
SEY Seymchan 42.38 19⇑ *e*P **P 07 27 22.8 -0.3**
KSH Kashi 42.45 302 P **P 07 27 27.6 +3.4**
KSH *e*sP sP 07 28 05.0 +0.5
KSH *e*PP **PcP 07 29 11.5 -3.5**
KSH *e*PcP PP 07 29 17.6 +13
KSH *e*ScP **ScP 07 32 57.1 +2.2**
KSH S **S 07 33 42.4 +5.0**
KSH ScS **ScS 07 37 14.6 +0.8**
KSH pmax pmax
comp=Z,54nm,1.0s
KSH LR LR
comp=Z,410nm,10.5s
KSH LR LR
comp=Z,280nm,9.3s
KSH LR LR
comp=Z,310nm,8.7s
THN Thein Dam 42.52 291 *e*P **P 07 27 23.0 -1.6**
MDRS Chennai 42.68 262 *e*P **P 07 27 25.4 -0.7**
HYB Hyderabad 42.70 269 *i* P **P 07 27 27.0 +0.7**
comp=Z,50nm,1.0s
FITZ Fitzroy Crossi 42.91 177 P **P 07 27 27.3 -0.6**
comp=Z,70nm,0.8s,baz=7.5,slow=8.8,SNR=87
FITZ PcP **PcP 07 29 16.7 +0.2**
comp=Z,6.4nm,0.6s,baz=2.4,slow=4.7,SNR=5.0
FITZ Fitzroy Crossi 42.91 177 *e*P **P 07 27 27.2 -0.7**
comp=Z,86nm,0.9s
FITZ PcP **PcP 07 29 16.7 +0.2**
KURK Kurchatov 43.00 319*d* *i*P **P 07 27 26.8 -1.4**
KURK pmax pmax
comp=Z,347nm,1.5s
KURK Kurchatov 43.00 319 *e*P **P 07 27 26.9 -1.4**
comp=Z,85nm,1.3s
KURK PcP **PcP 07 29 15.9 -0.6**
KURBB Kurchatov Arra 43.02 318 P **P 07 27 27.1 -1.4**
comp=Z,22nm,0.8s,baz=110,slow=7.7,SNR=95
KURBB PcP **PcP 07 29 15.9 -0.7**
comp=Z,6.0nm,0.8s,baz=114,slow=3.4,SNR=8.1
COEN Coen 43.12 152 *e*P **P 07 27 30.5 +0.9**
comp=Z,161nm,0.8s
TKM2 Tokmak 2 43.14 307 *i* P **P 07 27 29.0 -0.8**
TKM2 pmax pmax
comp=Z,33nm,0.6s
FRU Bishkek 43.84 307 *e*P **P 07 27 35.0 -0.2**
FRU *e* 07 27 59.0
FRU pmax pmax
comp=Z,80nm,1.6s
AAK Ala-Archa 43.91 306 P **P 07 27 35.9 +0.1**
comp=Z,4.6nm,0.4s,baz=87,slow=5.9,SNR=16
AAK PcP **PP 07 29 20.3 0.0**
comp=Z,5.3nm,0.7s,baz=82,slow=5.5,SNR=4.2
AAK Ala-Archa 43.91 306*d* *i*P **P 07 27 35.6 -0.3**
AAK pmax pmax
comp=Z,25nm,1.0s
AAK Ala-Archa 43.91 306 P **P 07 27 36.1 +0.2**
SNR=8.1
AAK Ala-Archa 43.91 306 *e*P **P 07 27 35.9 +0.1**
comp=Z,16nm,1.0s
AAK PcP **PP 07 29 20.3 0.0**
MNAS Manas 45.35 306 *i* P **P 07 27 46.6 -0.7**
MNAS pmax pmax
comp=Z,56nm,1.2s
WRAB Tennant Creek 45.86 166*c* *i*P **P 07 27 51.2 -0.1**
WRAB pmax pmax
comp=Z,307nm,0.9s
WRAB Tennant Creek 45.86 166 *e*P **P 07 27 51.5 +0.1**
comp=Z,164nm,1.0s
WRA Warramunga Arr 45.87 166 P **P 07 27 51.5 +0.1**
comp=Z,100nm,0.7s,baz=348,slow=8.3,SNR=373
WRA pP **pP 07 28 18.1 -0.6**

comp=Z,36nm,0.8s,baz=347,slow=8.4,SNR=7.4
WRA PcP **PcP** 07 29 27.1 +0.4
comp=Z,1.5nm,0.5s,baz=350,slow=5.2,SNR=2.7
WB2 Warramunga Arr 45.87 166 *e*P **P** 07 27 51.4 0.0
comp=Z,148nm,0.8s
MBWA Marble Bar 46.09 185 *e*P **P** 07 27 52.3 -0.8
comp=Z,77nm,0.8s
OTUK Ortayu 46.31 314 P **P** 07 27 53.8 -0.8
OTUK pmax pmax
comp=Z,53nm,0.9s
POO Poona 46.63 272 *e*P **P** 07 27 58.0 +0.5
TIXI Tiksi 46.73 2 LR LR 07 49 56.9
comp=Z,247nm,18.7s,baz=192,slow=39
TIXI Tiksi 46.73 2*d*eP **P** 07 27 54.9 -2.6
TIXI pmax pmax
comp=Z,76nm,1.2s
TIXI Tiksi 46.73 2 *e*P **P** 07 27 55.4 -2.1
comp=Z,39nm,0.7s
KK31 Karatay Array 46.87 306*c*eP **P** 07 27 58.5 -0.5
KK31 pmax pmax
comp=Z,2.0nm,0.4s
KKAR Karatay Array 46.87 306 *e*P **P** 07 27 58.9 -0.2
KKAR Karatay Array 46.87 306 *e*P **P** 07 27 58.9 -0.2
GOA Goa 47.61 268 *e*P **P** 07 28 04.9 -0.2
KBL Kabul 47.96 295 *e*P **P** 07 28 08.3 +0.5
KBL pmax pmax
comp=Z,105nm,1.1s
KBL Kabul 47.96 295 *e*P **P** 07 28 08.3 +0.5
comp=Z,105nm,1.1s
VOSK Vostochnaya 48.13 319 P **P** 07 28 07.0 -1.6
VOSK pmax pmax
comp=Z,27nm,0.7s
VOSK Vostochnaya 48.13 319 *e*P **P** 07 28 06.8 -1.8
comp=Z,27nm,0.6s
BRVK Borovoye 48.62 320*d i*P **P** 07 28 11.0 -1.3
BRVK pmax pmax
comp=Z,166nm,1.2s
BRVK Borovoye 48.62 320 *e*P **P** 07 28 11.1 -1.2
comp=Z,71nm,1.2s
NRIK Noril'sk 49.22 344 P **P** 07 28 15.4 -1.3
comp=Z,47nm,0.8s,baz=108,slow=10,SNR=46
NRIK PcP **PcP** 07 29 37.9 -0.1
comp=Z,20nm,0.8s,baz=117,slow=3.3,SNR=5.3
NRIK LR LR 07 51 55.5
comp=Z,303nm,18.4s,baz=136,slow=39
ZRNK Zerenda 49.34 319 *i* P **P** 07 28 16.8 -1.1
ZRNK pmax pmax
comp=Z,60nm,0.7s
ZRNK Zerenda 49.34 319 *e*P **P** 07 28 16.6 -1.3
comp=Z,57nm,0.7s
AS31 Alice Springs 49.39 168 *e*P **P** 07 28 19.1 +0.5
comp=Z,21nm,0.6s
ASAR Alice Springs 49.40 168 P **P** 07 28 19.0 +0.4
comp=Z,44nm,0.6s,baz=352,slow=11,SNR=422
ASAR pP **pP** 07 28 45.5 -0.7
comp=Z,11nm,0.8s,baz=341,slow=5.8,SNR=3.0
ASAR PcP **PcP** 07 29 39.3 0.0
comp=Z,5.9nm,0.7s,baz=351,slow=2.9,SNR=3.1
ASAR ScP **ScP** 07 33 23.4 -0.3
comp=Z,2.1nm,1.0s,baz=348,slow=3.8,SNR=5.3
ASAR Alice Springs 49.40 168 P **P** 07 28 19.0 +0.4
ASAR *PP **pP** 07 28 45.5 -0.7
ASAR 07 29 39.3
ASAR pmax pmax
comp=Z,38nm,0.5s
AS01 Alice Springs 49.40 168 *e*P **P** 07 28 18.1 -0.5
CTA Charters Tower 49.89 152 P **P** 07 28 23.4 +1.0
comp=Z,40nm,1.1s,baz=334,slow=9.9,SNR=20
CTAO Charters Tower 49.89 152 *e*P **P** 07 28 23.0 +0.6
CTAO pmax pmax
comp=Z,53nm,1.0s
CTAO Charters Tower 49.89 152 *e*P **P** 07 28 23.0 +0.6
comp=Z,53nm,1.0s
BILL Bilibino 50.09 19⇑*i*P **P** 07 28 23.9 +0.6
BILL *e**PP **pP** 07 28 49.1 -1.9
BILL *e* 07 29 42.5
BILL *e* 07 30 16.1
BILL *e*PPP PPP 07 31 18.1
BILL pmax pmax
comp=Z,8.0nm,1.0s
AB31 Akbulak array 54.56 314*c*eP **P** 07 28 56.0 -0.6
AB31 pmax pmax
comp=Z,29nm,0.7s
ABKAR Akbulak array 54.56 314 *e*P **P** 07 28 55.8 -0.8
SVE Sverdlovsk 54.78 323*c i*P **P** 07 28 57.5 -0.6
SVE pmax pmax
comp=Z,120nm,1.0s
FORT Forrest 55.65 176 *e*P **P** 07 29 04.3 -0.2
comp=Z,478nm,0.8s
ARU Arti 55.87 322*d i*P **P** 07 29 04.1 -1.8
ARU *e* 07 30 01.7
ARU 07 31 08.9
ARU S **S** 07 36 44.1 0.0
ARU pmax pmax
comp=Z,153nm,1.7s
ARU Arti 55.87 322 *e*P **P** 07 29 04.5 -1.4
comp=Z,66nm,0.8s
GEYT Alibeck 56.43 300 P **P** 07 29 10.7 +0.5
comp=Z,76nm,0.8s,baz=52,slow=2.4,SNR=107
GEYT LR LR 07 57 00.1
comp=Z,124nm,19.1s,baz=145,slow=40
EIDS Eidsvold 56.63 150 *e*P **P** 07 29 11.9 +0.3
comp=Z,20nm,1.0s
EIDS *e*pP **pP** 07 29 40.0 +0.1
SOKR Solikamsk 57.14 326*c i*P **P** 07 29 13.2 -1.6
SOKR pmax pmax
comp=Z,118nm,1.4s
NWAO Narrogin (SRO) 57.98 187 *e*P **P** 07 29 21.1 +0.2
NWAO pmax pmax
comp=Z,98nm,0.8s
NWAO Narrogin (SRO) 57.98 187 P **P** 07 29 22.1 +1.1
SNR=6.9
NWAO Narrogin (SRO) 57.98 187 *e*P **P** 07 29 21.1 +0.2
comp=Z,98nm,0.8s
BBOO Buckleboo 58.70 168 *e*P **P** 07 29 26.0 0.0
comp=Z,47nm,1.0s
WBK Wadi Bani Khal 58.84 282 P **P** 07 29 28.4 +1.0
SNR=11
STKA Stephens Creek 59.09 162 P **P** 07 29 29.1 +0.4
comp=Z,21nm,0.8s,baz=343,slow=5.4,SNR=32
STKA Stephens Creek 59.09 162 *e*P **P** 07 29 29.1 +0.4
comp=Z,6.3nm,0.9s
BIDO Bidbid 59.34 284 P **P** 07 29 31.3 +0.6
SNR=9.1
SMDO Samad 59.53 283 P **P** 07 29 32.7 +0.6
SNR=8.8
JMDO Jabal Madar 59.68 282 P **P** 07 29 33.3 +0.2
SNR=6.0
HOQ Hoqain 60.04 284 P **P** 07 29 36.4 +0.9
SNR=20
BANOM Banah 60.29 287 *i* P **P** 07 29 37.3 +0.1
SNR=8.2
BANOM Banah 60.29 287 P **P** 07 29 37.7 +0.4
SNR=8.2
UOSS Minazif 60.63 286 *e*P **P** 07 29 39.6 0.0
comp=Z,17nm,0.8s
HATD Hatta, Dubai 60.73 286 *i* P **P** 07 29 41.0 +0.7
SNR=6.7
ARQ Araqi 60.80 284 P **P** 07 29 41.2 +0.5
SNR=6.1
ASHO Ashiyiah 60.83 285 *i* P **P** 07 29 40.2 -0.8
SNR=15
ASHO Ashiyiah 60.83 285 P **P** 07 29 41.3 +0.3
SNR=8.7
NAZ Nazwa, Dubai 61.10 286 *i* P **P** 07 29 43.4 +0.7
SNR=10
NAZ Nazwa, Dubai 61.10 286 P **P** 07 29 42.7 0.0
SNR=9.5
FAQ Al Faqa, Dubai 61.22 286 *i* P **P** 07 29 44.0 +0.4
SNR=12
FAQ Al Faqa, Dubai 61.22 286 P **P** 07 29 43.6 0.0
SNR=8.2
ARMA Armidale 61.25 153 *e*P **P** 07 29 45.3 +1.7
comp=Z,29nm,0.8s
CHGN Chignik 62.84 38 *e*P **P** 07 29 52.2 -1.6
TT01 Tatalina 63.58 30 *e*P **P** 07 29 59.0 +0.5
TTA Tatalina 63.58 30 *e*P **P** 07 29 59.0 +0.3
TTA pmax pmax
comp=Z,14nm,1.0s
TTA Tatalina 63.58 30 *e*P **P** 07 29 59.0 +0.3
comp=Z,14nm,1.0s
SVW2 Sparrevohn 63.92 32 *e*P **P** 07 30 01.4 +0.5
comp=Z,16nm,0.8s
PPLA Purkeypile 65.33 30 *e*P **P** 07 30 10.5 +0.4
comp=Z,21nm,0.7s
RSO Redoubt South 65.36 33 *e*P **P** 07 30 10.9 +0.4

OHAK Old Harbor 65.54 36 *e*P **P** 07 30 10.7 -0.7
comp=Z,42nm,1.0s
SPU Mount Spurr 65.61 32 *e*P **P** 07 30 11.9 0.0
COLD Coldfoot 65.65 25 *e*P **P** 07 30 12.7 +0.7
comp=Z,8.8nm,0.9s
KLMR Klimovskoe 65.72 328 *e*P **P** 07 30 08.3 -4.2
KLMR pmax pmax
comp=Z,216nm,1.3s
KTH Kantishna Hill 65.81 29 *e*P **P** 07 30 13.5 +0.4
comp=Z,12nm,0.8s
KDAK Kodiak Island 65.83 36 *e*P **P** 07 30 12.9 -0.3
KDAK pmax pmax
comp=Z,626nm,1.5s
KDAK Kodiak Island 65.83 36 *e*P **P** 07 30 12.9 -0.3
comp=Z,626nm,1.5s
GUDG Gudauri 65.95 307 P **P** 07 30 15.2 +0.6
VRH Novokhopyorsk 66.06 317 *e*P **P** 07 30 14.0 -0.8
VRH pmax pmax
comp=Z,340nm,0.9s
TRF Thorofare Moun 66.11 29 *e*P **P** 07 30 15.7 +0.5
comp=Z,66nm,1.9s
SUA Susitna One 66.19 32 *e*P **P** 07 30 15.6 -0.1
comp=Z,67nm,0.8s
CNPM China Poot 66.25 34 *e*P **P** 07 30 16.2 +0.2
comp=Z,24nm,0.7s
GNI Garni 66.28 305 *i* P **P** 07 30 16.3 -0.4
SNR=8.2
GNI Garni 66.28 305*d i*P **P** 07 30 16.7 0.0
GNI pmax pmax
comp=Z,194nm,1.5s
GNI Garni 66.28 305 P **P** 07 30 17.2 +0.5
SNR=12
GNI Garni 66.28 305 *e*P **P** 07 30 18.0 +1.3
comp=Z,81nm,1.4s
ZEI Tsey 66.30 308 *e*P **P** 07 30 13.2 -3.6
ZEI pmax pmax
comp=Z,199nm,1.5s
BRLK Bradley Lake 66.39 33 *e*P **P** 07 30 16.6 -0.3
comp=Z,51nm,0.9s
MCK McKinley 66.66 29 *e*P **P** 07 30 18.3 -0.2
MCK pmax pmax
comp=Z,16nm,0.9s
MCK McKinley 66.66 29 *e*P **P** 07 30 18.2 -0.2
comp=Z,16nm,0.9s
ONI Oni 66.67 308 P P 07 30 13.3 -5.6
ONI Oni 66.67 308 P P 07 30 13.3 -5.7
RC01 Rabbit Creek A 66.73 32 *e*P **P** 07 30 18.3 -0.7
comp=Z,16nm,0.8s
RND Reindeer 66.75 29 *e*P **P** 07 30 18.2 -1.0
RND pmax pmax
comp=Z,34nm,0.6s
RND Reindeer 66.75 29 *e*P **P** 07 30 18.2 -1.0
comp=Z,34nm,0.6s
KBZ Khabaz 66.80 309 P **P** 07 30 19.9 +0.2
comp=Z,36nm,1.0s,baz=78,slow=6.2,SNR=62
BGD Bogdanovka 66.86 306 P **P** 07 30 21.8 +1.3
KIV Kislovodsk 66.90 309 *i* P **P** 07 30 20.3 -0.2
SNR=28
KIV Kislovodsk 66.90 309 *e*P **P** 07 30 19.8 -0.7
KIV pmax pmax
comp=Z,150nm,1.1s
KIV MLR MLR
comp=Z,104nm,17.0s
KIV Kislovodsk 66.90 309 P **P** 07 30 20.4 -0.1
SNR=41
KIV Kislovodsk 66.90 309 *e*P **P** 07 30 20.5 +0.1
comp=Z,211nm,1.3s
WRH Wood River Hil 66.91 28 *e*P **P** 07 30 19.1 -0.9
comp=Z,8.0nm,0.6s
PMR Palmer 66.93 31 *e*P **P** 07 30 19.1 -1.1
PMR pmax pmax
comp=Z,24nm,0.9s
PMR Palmer 66.93 31 *e*P **P** 07 30 19.1 -1.1
comp=Z,24nm,0.9s
COLA College 66.94 28 *e*P **P** 07 30 20.1 -0.1
COLA pmax pmax
comp=Z,9.0nm,0.6s
COLA College 66.94 28 *e*P **P** 07 30 20.1 -0.1
comp=Z,8.9nm,0.6s
CCB Clear Creek Bu 67.00 28 *e*P **P** 07 30 19.9 -0.7
comp=Z,5.7nm,0.8s
NEY Neytrino 67.04 308*c*eP **P** 07 30 21.9 +0.4
NEY pmax pmax
comp=Z,6.0nm,1.2s
SML Sawmill 67.27 31 *e*P **P** 07 30 22.2 -0.2
SML pmax pmax
comp=Z,30nm,0.8s
SML Sawmill 67.27 31 *e*P **P** 07 30 22.2 -0.2
comp=Z,30nm,0.8s
APA Apatity 67.28 335⇓*i*P **P** 07 30 20.3 -2.0
APA *i* 07 30 51.5
APA pmax pmax
comp=Z,35nm,0.9s
APA MLR MLR
comp=Z,400nm,15.0s
IL1 Eielson Array 67.36 28 *e*P **P** 07 30 20.7 -2.2
ILAR Eielson Array 67.36 28 P **P** 07 30 21.2 -1.7
comp=Z,3.2nm,0.5s,baz=259,slow=4.8,SNR=64
ILAR PcP **PcP** 07 30 48.8 -0.9
comp=Z,1.2nm,0.6s,baz=282,slow=4.9,SNR=4.8
ILAR Eielson Array 67.36 28 P **P** 07 30 21.2 -1.7
ILAR 07 30 48.8
ILAR pmax pmax
comp=Z,4.0nm,0.5s
ILB Eielson Array 67.36 28 *e*P **P** 07 30 21.2 -1.7
DHY Denali Highway 67.47 30 *e*P **P** 07 30 23.1 -0.7
comp=Z,8.8nm,0.7s
MOS Moscow 67.58 322 *e*P **P** 07 30 21.9 -2.5
MOS *e* 07 30 55.6
MOS *e* 07 39 50.2
MOS pmax pmax
comp=Z,500nm,1.3s
MOS pmax pmax
comp=Z,273nm,0.9s
VSR Storozhevoye 67.63 317 *e*P **P** 07 30 23.5 -1.3
VSR pmax pmax
comp=Z,140nm,1.0s
SCM Sheep Creek Mo 67.73 31 *e*P **P** 07 30 25.3 -0.1
SCM pmax pmax
comp=Z,150nm,1.5s
SCM Sheep Creek Mo 67.73 31 *e*P **P** 07 30 25.3 -0.1
comp=Z,150nm,1.5s
MSVF Nonsavu 67.81 123⇑*e*P **P** 07 30 27.6 +1.1
MSVF pmax pmax
comp=Z,78nm,1.2s
OBN Obninsk 68.31 322*d i*P **P** 07 30 27.5 -1.4
OBN *e* 07 30 52.5
OBN *e**PP **pP** 07 30 56.3 -1.8
OBN *e* 07 32 56.7
OBN pmax pmax
comp=Z,98nm,0.7s
OBN Obninsk 68.31 322 *e*P **P** 07 30 27.9 -1.0
comp=Z,98nm,0.7s
PAX Paxson 68.34 29 *e*P **P** 07 30 29.3 +0.1
PAX pmax pmax
comp=Z,13nm,0.7s
PAX Paxson 68.34 29 *e*P **P** 07 30 29.2 +0.1
comp=Z,13nm,0.7s
KLU Klutina 68.46 31 *e*P **P** 07 30 29.9 0.0
comp=Z,36nm,1.2s
DIV Divide 68.61 31 *e*P **P** 07 30 31.2 +0.4
comp=Z,65nm,1.0s
EYAK Cordova Ski Ar 68.76 32 *e*P **P** 07 30 31.9 +0.3
comp=Z,38nm,1.0s
DOT Dot Lake 68.81 29 *e*P **P** 07 30 31.7 -0.3
comp=Z,29nm,0.6s
SOC Sochi 69.08 309 *e*P **P** 07 30 33.2 -0.8
SPA0 Spitsbergen Ar 69.16 348 *e*P **P** 07 30 33.3 -0.6
BMRM Bremner River 69.20 31 *e*P **P** 07 30 34.5 0.0
comp=Z,42nm,1.0s
RAGM Ragged Mountai 69.31 32 *e*P **P** 07 30 35.5 +0.4
comp=Z,125nm,1.4s
ARA0 ARCESS Array S 69.64 338 *e*P **P** 07 30 36.7 -0.3
ARCES ARCESS Array B 69.64 338 P **P** 07 30 35.8 -1.2
comp=Z,13nm,0.9s,baz=73,slow=6.6,SNR=13
ARCES PcP **PcP** 07 30 59.0 -0.2
comp=Z,24nm,0.7s,baz=76,slow=5.1,SNR=24
KBS Kingsbay 69.66 349 *e*P **P** 07 30 36.2 -0.7
KBS pmax pmax
comp=Z,74nm,1.9s
KBS Kingsbay 69.66 349 *e*P **P** 07 30 36.2 -0.7
comp=Z,74nm,1.9s
EGAK Eagle 69.75 27 *e*P **P** 07 30 37.6 -0.1
comp=Z,40nm,1.5s
HSPB Hornsund (broa 69.78 347 *e*P **P** 07 30 37.9 +0.2
CRQM Cirque 69.95 31 *e*P **P** 07 30 39.0 -0.3

comp=Z,64nm,1.2s
BALM Baldy 70.25 31 *e*P **P** 07 30 41.1 +0.1
BALM pmax pmax
comp=Z,25nm,1.2s
BALM Baldy 70.25 31 *e*P **P** 07 30 41.1 +0.1
comp=Z,25nm,1.2s
ANN Anapa 70.34 311 *e*P **P** 07 30 40.6 -1.0
ANN *e**PP **PcP** 07 31 04.8 +2.3
ANN *eS* **S** 07 39 45.7 +1.2
ANN pmax pmax
comp=Z,183nm,1.0s
ANN pmax pmax
ANN comp=N,52nm,1.0s
ANN pmax pmax
comp=E,47nm,1.0s
DAWY Dawson 70.69 28 *e*P **P** 07 30 43.3 -0.2
comp=E,10nm,0.8s
PCA Pinnacle 71.51 32 *e*P **P** 07 30 49.3 +0.7
comp=E,221nm,1.1s
INK Inuvik 71.54 22 *e*P **P** 07 30 48.3 -0.2
INK pmax pmax
comp=Z,19nm,1.2s
INK Inuvik 71.54 22 *e*P **P** 07 30 48.3 -0.2
comp=Z,19nm,1.2s
FIA1 FINESS Array S 71.91 330 *e*P **P** 07 30 49.5 -1.2
FIA1 *e*P **P** 07 30 50.0 -0.7
FINES FINESS Array B 71.91 330 P **P** 07 30 49.8 -1.0
comp=Z,27nm,0.8s,baz=64,slow=6.4,SNR=44
FINES pP **pP** 07 31 21.9 +1.7
comp=Z,16nm,0.8s,baz=74,slow=6.9,SNR=5.4
SIM Simferopol' 72.55 312 *e*P **P** 07 30 54.2 -0.8
SIM pmax pmax
comp=Z,212nm,0.9s
HYT Haines Junctio 72.56 31 *e*P **P** 07 30 56.0 +1.0
comp=Z,53nm,1.3s
VSU Vasula 72.58 327*d i*P **P** 07 30 53.9 -0.9
VSU pmax pmax
comp=Z,327nm,1.7s
DHAK Deception Hill 72.82 32 *e*P **P** 07 30 57.9 +1.6
comp=Z,137nm,1.2s
IDID Didziasalis 73.64 324 *e*P **P** 07 31 00.3 -0.9
IZAR Zarasai 73.76 324 *e*P **P** 07 31 00.9 -0.9
IZAR lAmb lAmb 07 31 02.9
comp=Z,33nm,0.8s
NACGM Naroch 73.77 323 *e* **P** 07 31 01.0 -0.9
NACGM *e*LR LR 08 16 28.0
AKASG Malin Array Be 73.81 319 P **P** 07 31 00.8 -1.4
comp=Z,38nm,0.6s,baz=58,slow=6.3,SNR=114
AKASG pP **pP** 07 31 33.4 +1.5
comp=Z,3.7nm,0.7s,baz=58,slow=6.4,SNR=1.4
AKBB Malin Array Si 73.81 319 *e*P **P** 07 31 00.9 -1.4
AKBB pmax pmax
comp=Z,41nm,0.6s
AKBB Malin Array Si 73.81 319 *e*P **P** 07 31 00.9 -1.4
comp=Z,41nm,0.6s
KIEV Kiev 73.82 319*d i*P **P** 07 31 00.7 -1.6
KIEV pmax pmax
comp=Z,34nm,1.0s
KIEV Kiev 73.82 319 *e*P **P** 07 31 00.9 -1.4
comp=Z,40nm,0.7s
AK11 Malin Array Si 73.85 319 *e*P **P** 07 31 00.9 -1.6
ISAL Salakas 73.88 324 *e*P **P** 07 31 01.7 -0.9
ISAL lAmb lAmb 07 31 03.6
comp=Z,23nm,0.9s
SKAG Skagway 74.07 31 *e*P **P** 07 31 04.5 +1.0
comp=Z,52nm,1.0s
DAMY Dhamar 74.53 279 *e*P **P** 07 31 09.0 +1.6
comp=Z,52nm,1.2s
BR131 Keskin Array S 74.58 307 *e*P **P** 07 31 07.0 -0.2
BRTR Keskin Array B 74.58 307 P **P** 07 31 06.1 -1.0
comp=Z,38nm,0.9s,baz=100,slow=5.1,SNR=122
BRTR pP **pP** 07 31 38.4 +1.7
comp=Z,3.9nm,0.7s,baz=97,slow=5.1,SNR=1.6
ANTO Ankara 75.14 307 *e*P **P** 07 31 09.9 -0.4
ANTO pmax pmax
comp=Z,65nm,0.8s
ANTO Ankara 75.14 307 P **P** 07 31 09.8 -0.5
SNR=12
ANTO Ankara 75.14 307 *e*P **P** 07 31 09.9 -0.4
comp=Z,65nm,0.8s
BR231 Keskin MP Arra 75.16 307 *e*P **P** 07 31 07.5 -2.9
SORM Soroca 75.24 316⇓*i*P **P** 07 31 09.3 -1.2
SORM Soroca 75.24 316 ⇓P **P** 07 31 09.3 -1.2
KIS Kishinev 75.35 315⇑*i*P **P** 07 31 09.0 -2.2
comp=Z,150nm,1.0s
KIS Kishinev 75.35 315*α i*P **P** 07 31 09.0 -2.2
KIS *e* 07 31 43.0
KIS pmax pmax
comp=Z,150nm,1.0s
KIS pmax pmax
comp=Z,200nm,1.0s
DAG Danmarks Havn 75.88 352 *i* P **P** 07 31 11.8 -1.9
comp=Z,24nm,1.1s
DAG Danmarks Havn 75.88 352 *i* P **P** 07 31 11.8 -1.9
DAG pmax pmax
comp=Z,31nm,1.1s
TLCR 76.01 313⇓*i*P **P** 07 31 14.1 -0.9
TLCR 76.01 313 ⇓P **P** 07 31 14.1 -0.9
SUW Suwalki 76.05 323 *e*P **P** 07 31 13.9 -1.1
SUW *e*pP **pP** 07 31 46.7 +1.9
SUW Suwalki 76.05 323 *e*P **P** 07 31 13.9 -1.1
SUW *e**PP **pP** 07 31 46.7 +1.9
CFR Carcaliu 76.45 314⇑*i*P **P** 07 31 16.8 -0.7
CFR Carcaliu 76.45 314 ⇑P **P** 07 31 16.8 -0.7
CSS Mathiatis 76.47 302 *e*P **P** 07 31 17.1 -0.8
comp=Z,15nm,0.9s
TIRR Tirgusor 76.54 313⇑*i*P **P** 07 31 17.7 -0.3
TIRR Tirgusor 76.54 313 *e*P **P** 07 31 17.5 -0.5
TIRR pmax pmax
comp=Z,51nm,1.0s
TIRR Tirgusor 76.54 313 *e*P **P** 07 31 17.5 -0.5
comp=Z,51nm,1.0s
TLB Topalu 76.74 313⇓*i*P **P** 07 31 18.5 -0.6
TLB Topalu 76.74 313 ⇓P **P** 07 31 18.5 -0.6
WRAK Wrangell Islan 76.75 34 *e*P **P** 07 31 20.4 +1.5
comp=Z,31nm,0.8s
CRAG Craig 76.76 35 *e*P **P** 07 31 19.4 +0.4
comp=Z,58nm,1.1s
HARR Harsova 76.77 313⇓*i*P **P** 07 31 19.1 -0.2
HARR Harsova 76.77 313 ⇓P **P** 07 31 19.1 -0.2
TESR Tescani 76.92 315⇓*i*P **P** 07 31 19.4 -0.7
DLBC Dease Lake 77.00 31 *e*P **P** 07 31 21.2 +0.8
comp=Z,57nm,1.3s
PLOR Plostina 77.17 315⇓*i*P **P** 07 31 21.8 +0.2
PLOR Plostina 77.17 315 ⇓P **P** 07 31 21.8 +0.2
LVV L'vov 77.23 319 *e*P **P** 07 31 20.4 -1.4
BUR08 Bucovina Ar. S 77.39 317 *e*P **P** 07 31 22.4 -0.5
BURAR Bucovina Array 77.39 317⇓*i*P **P** 07 31 22.5 -0.4
BURAR Bucovina Array 77.39 317 ⇓P **P** 07 31 22.5 -0.4
ISR Istrita 77.52 314⇓*i*P **P** 07 31 25.0 +1.4
ISR Istrita 77.52 314 ⇓P **P** 07 31 25.0 +1.4
ISP Isparta 77.53 306⇓*i*P **P** 07 31 23.8 -0.1
ISP Isparta 77.53 306*c i*P **P** 07 31 23.1 -0.8
ISP pmax pmax
comp=Z,63nm,1.0s
ISP Isparta 77.53 306 *e*P **P** 07 31 22.4 -1.4
comp=Z,67nm,1.0s
MLR Muntele Rosu 77.76 315⇓*i*P **P** 07 31 24.4 -0.6
MLR Muntele Rosu 77.76 315 *e*P **P** 07 31 24.1 -0.9
MLR pmax pmax
comp=Z,41nm,0.8s
MLR Muntele Rosu 77.76 315 *e*P **P** 07 31 24.1 -0.9
comp=Z,41nm,0.8s
SECR 77.86 314⇓*i*P **P** 07 31 26.1 +0.7
DOPR Dopca 77.93 315⇓*i*P **P** 07 31 25.8 0.0
KWP Kalwaria Pacla 78.10 319 *e*P **P** 07 31 26.5 -0.1
KWP *e*pP **pP** 07 31 59.5 +3.0
KWP Kalwaria Pacla 78.10 319 *e*P **P** 07 31 26.5 -0.1
KWP *e**PP **pP** 07 31 59.5 +3.0
NC405 NORSAR Array S 78.33 333 *e*P **P** 07 31 26.6 -1.1
NC405 *e*pP **pP** 07 32 00.1 +2.6
VOIR 78.36 315⇓*i*P **P** 07 31 27.2 -1.1
VOIR 78.36 315 ⇓P **P** 07 31 27.2 -1.1
NC303 NORSAR Array S 78.41 333 *e*P **P** 07 31 27.6 -0.5
NB2 NORSAR Subarra 78.57 333 P **P** 07 31 27.5 -1.6
comp=Z,30nm,0.9s,baz=61,slow=5.6
NB2 NORSAR Subarra 78.57 333 P **P** 07 31 27.5 -1.6
baz=61,slow=5.6
NB2 NORSAR Subarra 78.57 333 P **P** 07 31 27.4 -1.6
NB2 pmax pmax
comp=Z,25nm,1.0s
NOA NORSAR Array B 78.57 333 P **P** 07 31 27.6 -1.6
comp=Z,16nm,0.8s,baz=59,slow=5.5,SNR=40
NOA pP **pP** 07 31 59.7 +0.7
comp=Z,12nm,1.0s,baz=59,slow=5.5,SNR=5.5

NOA LR LR 08 10 25.3
comp=Z,134nm,18.7s,baz=60,slow=39
NC602 NORSAR Array S 78.60 332 *e*P **P 07 31 27.6 -1.5**
NC602 *ep*P **pP 07 32 01.2 +2.1**
NC204 NORSAR Array S 78.64 333 *e*P **P 07 31 28.3 -1.1**
KOLS Kolonicke sedl 78.65 319 *e*P **P 07 31 29.3 -0.4**
KOLS pmax pmax
comp=Z,13nm,0.9s
KOLS Kolonicke sedl 78.65 319 *e*P **P 07 31 29.3 -0.4**
SZH Strazhica 78.65 312 *i*P **P 07 31 29.7 -0.1**
ARR Arges 78.66 315 ⇓*i*P **P 07 31 29.7 -0.2**
NBO02 NORSAR Array S 78.72 333 *e*P **P 07 31 28.9 -0.9**
UZH Uzhgorod 78.76 318 *e*P **P 07 31 30.0 -0.3**
UZH *e* 07 31 37.2
UZH *e* 07 31 57.2
UZH *e* 07 32 15.0
NAO01 NORSAR Array S 78.81 333 *e*P **P 07 31 29.6 -0.8**
TRPA Tarpa 78.83 318 ⇓*e*P **P 07 31 30.9 +0.3**
STHS Stebnicka Huta 79.05 320 *e*P **P 07 31 31.3 -0.6**
STHS pmax pmax
comp=Z,18nm,1.1s
STHS Stebnicka Huta 79.05 320 *e*P **P 07 31 31.3 -0.6**
CRVS Cervenica-Dubn 79.14 319 *e*P **P 07 31 32.2 -0.2**
CRVS Cervenica-Dubn 79.14 319 *e*P **P 07 31 32.2 -0.2**
LOT Lotru 79.18 315 ⇓*i*P **P 07 31 32.4 -0.4**
DRGR 79.28 317 ⇓*i*P **P 07 31 32.8 -0.5**
DRGR 79.28 317 ⇓P **P 07 31 32.8 -0.5**
YER Yerkesik 79.44 306 P **P 07 31 35.3 +1.0**
YER Yerkesik 79.44 306 P **P 07 31 35.3 +1.0**
YER Yerkesik 79.44 306 P **P 07 31 35.3 +1.0**
OJC Ojcow 79.54 321 *e*P **P 07 31 34.0 -0.5**
OJC *ep*P **pP 07 32 07.2 +2.7**
OJC Ojcow 79.54 321 *e*P **P 07 31 33.8 -0.7**
OJC pmax pmax
comp=Z,71nm,1.0s
OJC Ojcow 79.54 321 *e*P **P 07 31 33.8 -0.7**
comp=Z,71nm,1.0s
DEV Deva 79.55 316 ⇓*i*P **P 07 31 35.4 +0.8**
DEV Deva 79.55 316 ⇓P **P 07 31 35.4 +0.8**
NIE Niedzica 79.61 320 *e*P **P 07 31 34.9 0.0**
NIE Niedzica 79.61 320 *e*P **P 07 31 34.9 0.0**
SRE Strehaia 79.87 315 ⇓*i*P **P 07 31 37.6 +1.2**
SRE Strehaia 79.87 315 ⇓P **P 07 31 37.6 +1.2**
BSD Bornholm Skovb 79.88 326 *i*P **P 07 31 35.2 -1.0**
comp=Z,58nm,1.2s
BSD Bornholm Skovb 79.88 326 *e*P **P 07 31 35.2 -1.0**
BSD pmax pmax
comp=Z,58nm,1.2s
KECS Kecovo 79.91 319 *e*P **P 07 31 35.7 -0.8**
KECS pmax pmax
comp=Z,10.0nm,1.0s
KECS Kecovo 79.91 319 *e*P **P 07 31 35.7 -0.8**
PLD Plovdiv 79.95 312 P **P 07 31 37.1 +0.2**
MPEP Malo Peshtene 80.08 313 *i*P **P 07 31 37.7 +0.2**
SIRR Siria 80.17 317 ⇓*i*P **P 07 31 37.5 -0.5**
LANS Liptovska Anna 80.21 320 *e*P **P 07 31 38.5 +0.3**
LANS Liptovska Anna 80.21 320 *e*P **P 07 31 38.5 +0.3**
URZ Urewera 80.38 140 P **P 07 31 38.6 -0.4**
comp=Z,5.9nm,0.6s,baz=321,slow=14,SNR=2.7
BZS Buzias 80.48 316 ⇓*i*P **P 07 31 39.1 -0.5**
BZS Buzias 80.48 316 ⇓P **P 07 31 39.1 -0.5**
PSZ Piszkesteto 80.52 319 ⇓*i*P **P 07 31 40.3 +0.4**
PSZ Piszkesteto 80.52 319 *e*P **P 07 31 39.0 -0.9**
PSZ pmax pmax
comp=Z,29nm,1.0s
PSZ Piszkesteto 80.52 319 *e*P **P 07 31 39.0 -0.9**
comp=Z,29nm,1.0s
PSZ Piszkesteto 80.52 319 ⇓*e*P **P 07 31 39.5 -0.4**
KULLO Kullorsuaq 80.63 0 *i*P **P 07 31 38.8 -1.1**
KULLO Kullorsuaq 80.63 0 *i*P **P 07 31 38.8 -1.1**
OKC Ostrava-Krasne 80.66 321 *e*P **P 07 31 40.4 -0.1**
OKC Ostrava-Krasne 80.66 321 *e*P **P 07 31 40.4 -0.1**
OKC MLR MLR
comp=Z,400nm,22.1s
VTS Vitosha 80.75 313 P **P 07 31 41.9 +0.5**
VTS Vitosha 80.75 313 ⇓*i*P **P 07 31 41.0 -0.4**
VTS Vitosha 80.75 313 ⇓P **P 07 31 41.0 -0.4**
VTS Vitosha 80.75 313 *i*P **P 07 31 41.5 +0.1**
VTS Vitosha 80.75 313 *e*P **P 07 31 40.3 -1.1**
comp=Z,80nm,0.8s
MDVR Moldovita 80.78 315 ⇓*i*P **P 07 31 40.7 -0.7**
MMB Musomiste 80.83 312 *i*P **P 07 31 41.6 -0.1**
VYHS Vyhne 80.88 319 *e*P **P 07 31 41.6 -0.2**
VYHS pmax pmax
comp=Z,32nm,1.2s
VYHS Vyhne 80.88 319 *e*P **P 07 31 41.6 -0.2**
KARP Karpathos 80.91 305 *e*P **P 07 31 41.3 -0.8**
comp=Z,49nm,1.0s
RPZ Rata Peaks 80.99 147 P **P 07 31 42.0 -0.1**
comp=Z,27nm,0.6s,baz=292,slow=5.0,SNR=3.1
MORC Moravsky Berou 81.04 321 ⇓*i*P **P 07 31 42.3 -0.4**
MORC Moravsky Berou 81.04 321 *e*P **P 07 31 42.2 -0.4**
MORC pmax pmax
comp=Z,126nm,1.2s
MORC Moravsky Berou 81.04 321 *e*P **P 07 31 42.2 -0.4**
comp=Z,126nm,1.2s
SRS Serrai 81.13 311 P **P 07 31 42.1 -1.1**
KKB Krupnik 81.15 312 *i*P **P 07 31 42.8 -0.5**
KSP Ksiaz 81.23 322 *e*P **P 07 31 43.0 -0.5**
KSP *ep*P **pP 07 32 16.7 +3.1**
KSP Ksiaz 81.23 322 *e*P **P 07 31 43.0 -0.5**
KSP *e**PP **pP 07 32 16.7 +3.1**
YKA Yellowknife Ar 81.25 24 P **P 07 31 42.6 -0.7**
comp=Z,27nm,0.9s,baz=311,slow=5.0,SNR=51
DPC Dobruska-Polom 81.45 322 *e*P **P 07 31 44.6 -0.2**
DPC *e*PCP **PcP 07 31 48.1 -2.4**
DPC *ep*P **pP 07 32 18.6 +3.7**
DPC Dobruska-Polom 81.45 322 *e*P **P 07 31 44.6 -0.2**
DPC *e* 07 32 18.6
UPC Upice 81.55 322 *e*P **P 07 31 45.0 -0.2**
UPC Upice 81.55 322 *e*P **P 07 31 45.0 -0.2**
PAIG Paliouri 81.58 310 P **P 07 31 45.4 -0.2**
KNT Kendrikon 81.58 311 P **P 07 31 46.0 +0.4**
KNT Kendrikon 81.58 311 P **P 07 31 46.0 +0.4**
KNT Kendrikon 81.58 311 P **P 07 31 46.0 +0.4**
SCO Scoresbysund 81.70 349 *i*P **P 07 31 45.6 0.0**
comp=Z,34nm,1.1s
SCO Scoresbysund 81.70 349 *i*P **P 07 31 45.6 0.0**
SCO pmax pmax
comp=Z,34nm,1.1s
SMOL Smolenice 81.70 320 *e*P **P 07 31 47.8 +1.7**
SMOL Smolenice 81.70 320 *e*P **P 07 31 47.8 +1.7**
VAY Valandovo 81.73 312 *i*P **P 07 31 46.3 -0.1**
VRAC Vranov 81.80 321 ⇓*i*P **P 07 31 46.5 -0.1**
VRAC Vranov 81.80 321 ⇓P **P 07 31 46.5 -0.1**
SUMG Summit 81.89 355 ⇓*i*P **P 07 31 46.9 -0.2**
comp=Z,20nm,0.7s
SUMG Summit 81.89 355 ⇓*i*P **P 07 31 46.9 -0.2**
SUMG pmax pmax
comp=Z,20nm,0.7s
SUMG Summit 81.89 355 *e*P **P 07 31 46.4 -0.7**
comp=Z,61nm,1.3s
MUD Monsted U'grnd 81.94 329 *i*P **P 07 31 46.9 -0.2**
comp=Z,41nm,1.1s
MUD Monsted U'grnd 81.94 329 *e*P **P 07 31 46.9 -0.2**
MUD pmax pmax
comp=Z,41nm,1.1s
DIVS Divibare 82.19 315 P **P 07 31 49.6 +0.8**
SKO Skopje 82.20 313 *i*P **P 07 31 49.3 +0.5**
LAST Lasithi 82.32 305 P **P 07 31 50.1 +0.5**
LAST Lasithi 82.32 305 *e*P **P 07 31 49.1 -0.5**
comp=Z,94nm,0.7s
LIT Litokhoron 82.32 311 P **P 07 31 48.9 -0.6**
BRG Berggiesshubel 82.51 323 *e*P **P 07 31 49.7 -0.5**
comp=Z,27nm,1.7s
BRG *e* 07 32 23.9
comp=Z,17nm,1.5s
BRG Berggiesshubel 82.51 323 *e*P **P 07 31 49.7 -0.5**
BRG *e* 07 32 23.9
BRG pmax pmax
comp=Z,27nm,1.7s
BRG pmax pmax
comp=Z,17nm,1.5s
GOPC GO Pecny, Ondr 82.53 322 *e*P **P 07 31 50.2 -0.2**
GOPC *ep*P **pP 07 32 24.5 +4.0**
GOPC GO Pecny, Ondr 82.53 322 *e*P **P 07 31 50.2 -0.2**
GOPC *e* 07 32 24.5
PRU Pruhonice 82.63 322 *e*P **P 07 31 50.7 -0.2**
PRU *ex* x 07 32 25.4
PRU Pruhonice 82.63 322 *e*P **P 07 31 50.7 -0.2**
PRU *e* 07 32 25.4
IDI Anoyia 82.70 305 *e*P **P 07 31 50.3 -1.3**
comp=Z,58nm,1.3s

KZN Kozani 82.73 311 P **P 07 31 51.4 -0.3**
CLL Collm 82.79 324 *i*P **P 07 31 51.2 -0.5**
comp=Z,40nm,1.6s
CLL *e* 07 31 58.0
CLL *es*P **pP 07 32 24.0 +2.1**
CLL *e*S **S 07 42 00.0 0.0**
CLL Lm MLR 08 14 00.0
comp=Z,100nm,19.0s
CLL Collm 82.79 324 *i*P **P 07 31 51.2 -0.5**
CLL *e**SP **pP 07 32 24.0 +2.1**
CLL pmax pmax
comp=Z,40nm,1.6s
CLL Collm 82.79 324 *e*P **P 07 31 50.6 -1.1**
comp=Z,43nm,1.6s
IVA Berane 82.82 314 *e*P **P 07 31 51.0 -1.1**
CONA Conrad Observa 82.90 320 *i*P **P 07 31 52.8 +0.4**
comp=Z,37nm,1.1s,SNR=18
PVY Plav 82.90 314 *e*P **P 07 31 51.2 -1.4**
AGG Agios Georgios 82.91 310 P **P 07 31 51.3 -1.3**
AGG Agios Georgios 82.91 310 *e*P **P 07 31 50.6 -2.0**
AGG pmax pmax
comp=Z,154nm,0.8s
AGG Agios Georgios 82.91 310 *e*P **P 07 31 50.6 -2.0**
comp=Z,154nm,0.8s
PLE Pljevlja 82.93 315 ⇓*i*P **P 07 31 51.5 -1.2**
OHR Ohrid 83.02 312 *i*P **P 07 31 52.4 -0.7**
UPM Unac-Piva 83.30 315 ⇓*i*P **P 07 31 53.6 -1.1**
KALE Kalithea 83.33 309 P **P 07 31 54.6 -0.2**
SERG Sergoula 83.37 309 P **P 07 31 54.0 -1.0**
ANX Ano Chora 83.39 309 P **P 07 31 54.4 -0.7**
NKY Niksic 83.43 314 ⇓*i*P **P 07 31 54.6 -0.7**
ARSA Arzberg 83.44 319 *i*P **P 07 31 55.2 0.0**
comp=Z,14nm,1.3s
PDG Podgorica 83.44 314 ⇓*i*P **P 07 31 55.0 -0.2**
TTG Podgorica 83.44 314 ⇓*i*P **P 07 31 54.4 -0.8**
KLV Kalavryta, Ach 83.47 309 P **P 07 31 54.5 -1.0**
NKME Niksic 83.48 314 ⇓*i*P **P 07 31 54.6 -0.9**
LAKA Lakka 83.51 309 P **P 07 31 54.7 -1.0**
TIR Tirane 83.54 313 ⇓*i*P **P 07 31 55.8 +0.1**
TIR Tirane 83.54 313 ⇓P **P 07 31 55.8 +0.1**
TIR Tirane 83.54 313 *e*P **P 07 31 55.8 +0.1**
comp=Z,143nm,1.3s
DRME Dracevica, Mon 83.60 314 ⇓*i*P **P 07 31 55.5 -0.5**
KHC Kasperske Hory 83.60 322 *e*P **P 07 31 56.2 +0.3**
KHC *e*PCP **PcP 07 32 00.2 +0.2**
KHC *ex* x 07 32 30.6
KHC *e*S **S 07 42 10.6 +2.2**
KHC Kasperske Hory 83.60 322 *e*P **P 07 31 56.2 +0.3**
KHC *e* 07 32 30.6
KHC *e*S **S 07 42 10.6 +2.2**
KHC Kasperske Hory 83.60 322 *e*P **P 07 31 56.2 +0.3**
comp=Z,9.8nm,1.2s
CEME Cevo 83.61 314 ⇓*i*P **P 07 31 55.1 -1.0**
NKC Novy Kostel 83.66 323 *e*P **P 07 31 56.4 +0.2**
NKC *ep*P **pP 07 32 30.1 +3.7**
NKC Novy Kostel 83.66 323 *e*P **P 07 31 56.4 +0.2**
NKC *e* 07 32 30.1
ULC Ulcinj 83.66 313 ⇓*i*P **P 07 31 55.3 -1.1**
GEC2 GERESS Array S 83.68 321 *e*P **P 07 31 56.6 +0.1**
GEC2 pmax pmax
comp=Z,23nm,0.9s
GEC2 GERESS Array S 83.68 321 *e*P **P 07 31 56.5 +0.1**
comp=Z,23nm,0.9s
GERES GERESS Array B 83.68 321 P **P 07 31 55.8 -0.7**
comp=Z,18nm,0.9s,baz=57,slow=3.7,SNR=54
GERES LR LR 08 11 37.8
comp=Z,84nm,21.1s,baz=60,slow=37
BRY Bratogost 83.68 315 ⇓*i*P **P 07 31 55.6 -1.0**
GEA0 GERESS Array S 83.69 321 *e*P **P 07 31 55.6 -0.8**
DSL Palaion Diasel 83.72 310 P **P 07 31 56.0 -0.7**
BUM Brajici-Budva 83.74 314 ⇓*i*P **P 07 31 55.8 -1.0**
MOA Molln 83.87 320 *i*P **P 07 31 57.2 -0.2**
comp=Z,22nm,1.1s,SNR=9.1
PDO Prodromos 83.90 310 P **P 07 31 56.7 -0.9**
HCY Herceg Novi 83.93 314 ⇓*i*P **P 07 31 56.3 -1.4**
PERS Pernice 83.99 319 *i*P **P 07 31 57.1 -0.9**
SOKA Soboth 84.02 319 *i*P **P 07 31 57.4 -0.8**
comp=Z,18nm,0.8s,SNR=15
ITM Ithomi 84.02 308 P **P 07 31 57.4 -0.9**
ITM Ithomi 84.02 308 P **P 07 31 57.4 -0.9**
IGT Igoumenitsa 84.06 311 P **P 07 31 56.7 -1.7**
OBKA Obir 84.39 319 *i*PcP **P 07 32 00.1 0.0**
comp=Z,19nm,0.9s,SNR=9.5
KFL Anninata 84.40 309 P **P 07 31 59.7 -0.5**
BOJS Bojanci 84.47 318 *i*P **P 07 31 59.9 -0.5**
VLS Valsamata 84.51 310 P **P 07 32 00.2 -0.5**
ZKS Zakynthos 84.59 309 P **P 07 32 00.6 -0.6**
LJU Ljubljana 84.64 319 *i*P **P 07 32 00.4 -0.8**
KBA Koelnbreinsper 84.80 320 *i*P **P 07 32 01.7 -0.5**
comp=Z,11nm,0.6s,SNR=9.2
KBA Koelnbreinsper 84.80 320 P **P 07 32 01.7 -0.5**
MYKA Terra Mystica 84.86 319 *i*P **P 07 32 01.8 -0.6**
comp=Z,12nm,1.3s
LLLB Lillooet 85.05 36 *e*P **P 07 32 04.3 +1.1**
comp=Z,52nm,1.7s
TRI Trieste 85.27 319 P **P 07 32 05.3 +1.0**
PGC Sidney 85.27 38 *e*P **P 07 32 05.5 +1.2**
comp=Z,14nm,0.8s
ABTA Abfaltersbach 85.46 320 *i*P **P 07 32 04.0 -1.4**
comp=Z,15nm,1.0s,SNR=6.8
WATA Walderalm 85.69 321 *i*PcP **P 07 32 07.6 +1.0**
comp=Z,5.4nm,0.6s
WTTA Wattenberg 85.69 321 *i*P **P 07 32 06.0 -0.7**
comp=Z,18nm,1.0s,SNR=6.3
NLWA Neilton Lookou 85.72 39 *e*P **P 07 32 08.1 +1.5**
comp=Z,8.7nm,0.8s
MOTA Moosalm 85.95 321 *i*P **P 07 32 07.2 -0.7**
comp=Z,6.4nm,0.7s
RETA Reutte 86.07 321 *i*PcP **P 07 32 08.7 +0.3**
comp=Z,5.7nm,0.8s
B05A Bryant 86.24 38 P **P 07 32 09.7 +0.6**
baz=304
FETA Feichten 86.34 321 *i*PcP **P 07 32 09.7 -0.2**
comp=Z,21nm,1.3s,SNR=9.3
E03A Lebam 86.36 40 *e*P **P 07 32 10.7 +1.0**
comp=Z,29nm,1.1s
TIP Timpagrande 86.67 312 P **P 07 32 12.2 +0.7**
TIP Timpagrande 86.67 312 *e*P **P 07 32 11.4 0.0**
comp=Z,49nm,1.0s
DAVA Damuels 86.68 321 *i*PcP **P 07 32 11.4 -0.1**
comp=Z,26nm,1.2s,SNR=5.8
FUORN Ofenpass-Fuorn 86.83 321 *e*P **P 07 32 12.4 0.0**
comp=Z,106nm,1.8s
MEM Membach 86.85 326 P **P 07 32 11.9 -0.1**
comp=Z,9.8nm,1.4s
CUC Castrocucco 86.89 313 *e*P **P 07 32 11.7 -0.9**
comp=Z,13nm,1.0s
D05A Emmclaw 86.90 39 *e*P **P 07 32 14.3 +1.9**
comp=Z,20nm,0.8s
BFO Black Forest 86.95 323 *e*P **P 07 32 11.2 -1.5**
BFO pmax pmax
comp=Z,32nm,1.4s
BFO Black Forest 86.95 323 *e*P **P 07 32 11.2 -1.5**
comp=Z,32nm,1.4s
AQU L'Aquila 87.24 316 *e*P **P 07 32 14.5 +0.3**
AQU pmax pmax
comp=Z,59nm,1.1s
AQU L'Aquila 87.24 316 *e*P **P 07 32 14.5 +0.3**
comp=Z,59nm,1.1s
LON Longmire 87.25 39 *e*P **P 07 32 15.0 +0.9**
LON pmax pmax
comp=Z,7.0nm,1.0s
LON Longmire 87.25 39 *e*P **P 07 32 15.0 +0.9**
comp=Z,6.7nm,1.0s
TUE Stuetta 87.44 321 *e*P **P 07 32 15.2 0.0**
comp=Z,88nm,1.6s
CDF Champ du Feu 87.48 323 P **P 07 32 14.1 -1.1**
CDF pmax pmax
comp=Z,41nm,1.2s
EDM Edmonton 87.68 30 *e*P **P 07 32 16.3 +0.3**
EDM pmax pmax
comp=Z,54nm,1.0s
EDM Edmonton 87.68 30 *e*P **P 07 32 16.3 +0.3**
comp=Z,54nm,1.0s
B08A Colville Reser 87.70 37 *e*P **P 07 32 17.4 +1.2**
comp=Z,19nm,0.9s
CEL Celeste 87.71 311 *e*P **P 07 32 16.8 +0.3**
comp=Z,104nm,1.0s
I03D Drain, OR 88.04 42 P **P 07 32 18.4 +0.6**
baz=303
HINF Hinteralfeld 88.06 323 *e*P **P 07 32 16.2 -1.7**
HINF pmax pmax
comp=Z,10.0nm,0.7s
SFJD Kangerlussuaq 88.16 358 ⇓*i*P **P 07 32 16.7 -1.2**
comp=Z,22nm,0.9s

SFJD Kangerlussuaq 88.16 358 ⇓*i*P **P 07 32 16.7 -1.2**
SFJD pmax pmax
comp=Z,22nm,0.9s
G05D Wamic, OR 88.39 40 P **P 07 32 19.9 +0.4**
baz=305
I04A Tendick Farm, 88.55 42 P **P 07 32 21.3 +1.0**
baz=304
BENWA Benson Ranch 88.56 38 P **P 07 32 19.9 -0.4**
C09A Chrisman Ranch 88.60 37 *e*P **P 07 32 21.2 +0.8**
comp=Z,22nm,1.1s
SENIN Lac Senin/Sane 88.66 322 *e*P **P 07 32 20.2 -0.8**
comp=Z,9.7nm,0.8s
D08A Wollman Farm, 88.69 37 *e*P **P 07 32 21.7 +0.8**
comp=Z,19nm,0.8s
HAWA Hanford 88.74 38 *e*P **P 07 32 22.1 +0.9**
comp=Z,20nm,0.9s
G06A Carlson Farm, 88.78 40 *e*P **P 07 32 22.4 +0.9**
comp=Z,16nm,0.9s
HUMO Hull Mountain 88.88 43 *e*P **P 07 32 23.5 +1.6**
comp=Z,5.1nm,0.6s
I05D Terrebonne, OR 88.88 41 P **P 07 32 22.4 +0.5**
baz=305
NEW Newport 88.94 36 P **P 07 32 22.4 +0.3**
baz=308
NEW Newport 88.94 36 *e*P **P 07 32 22.6 +0.5**
NEW pmax pmax
comp=Z,21nm,0.8s
NEW Newport 88.94 36 *e*P **P 07 32 22.6 +0.5**
comp=Z,21nm,0.8s
CABF La Chapelle 89.19 322 *e*P **P 07 32 21.9 -1.5**
CABF pmax pmax
comp=Z,35nm,1.6s
E09A Wood Farm, Sta 89.44 38 *e*P **P 07 32 26.1 +1.7**
comp=Z,21nm,0.9s
LPG La Plagne 89.48 321 *e*P **P 07 32 24.2 -0.8**
LPG pmax pmax
comp=Z,38nm,0.8s
LPL La Plagne 89.48 321 *e*P **P 07 32 24.0 -0.9**
LPL pmax pmax
comp=Z,31nm,0.7s
YBH Yreka Blue Hor 89.52 43 *e*P **P 07 32 26.3 +1.3**
YBH pmax pmax
comp=Z,12nm,1.1s
YBH Yreka Blue Hor 89.52 43 *e*P **P 07 32 26.3 +1.3**
comp=Z,12nm,1.1s
J05D Fort Rock, OR 89.55 41 P **P 07 32 25.6 +0.4**
baz=305
M02C Callahan 89.61 44 P **P 07 32 26.1 +0.7**
baz=304
G08A Pilot Rock 89.71 39 *e*P **P 07 32 27.3 +1.4**
comp=Z,7.7nm,1.1s
M04C Macdoel 90.03 43 P **P 07 32 27.6 +0.2**
baz=304
K05A Summer Lake 90.07 42 *e*P **P 07 32 29.4 +1.7**
comp=Z,28nm,1.2s
WALA Waterton Lakes 90.10 34 *e*P **P 07 32 28.9 +1.3**
comp=Z,27nm,1.0s
WDC Whiskeytown Da 90.26 44 *e*P **P 07 32 29.5 +1.2**
WDC pmax pmax
comp=Z,8.0nm,1.3s
WDC Whiskeytown Da 90.26 44 *e*P **P 07 32 29.5 +1.2**
comp=Z,7.6nm,1.3s
F10A Beach Ranch, E 90.28 38 *e*P **P 07 32 29.9 +1.5**
comp=Z,7.9nm,0.9s
ORIF Oris-en-Rattie 90.32 321 *e*P **P 07 32 27.6 -1.1**
ORIF pmax pmax
comp=Z,22nm,0.9s
BSMT Bassoo Peak 90.42 35 *e*P **P 07 32 30.1 +0.9**
AVF Avril sur Loir 90.58 324 *e*P **P 07 32 27.3 -2.4**
AVF pmax pmax
comp=Z,18nm,1.3s
JTMT Jette 90.75 35 *e*P **P 07 32 31.6 +1.0**
FCC Fort Churchill 90.80 19 *e*P **P 07 32 29.8 -0.6**
FCC pmax pmax
comp=Z,42nm,0.9s
FCC Fort Churchill 90.80 19 *e*P **P 07 32 29.8 -0.6**
comp=Z,42nm,0.9s
YBMT Yellow Bay 90.82 35 *e*P **P 07 32 32.1 +1.2**
SSB Saint Sauveur 90.86 322 *e*P **P 07 32 30.8 -0.3**
SSB pmax pmax
comp=Z,60nm,1.6s
SSB Saint Sauveur 90.86 322 *e*P **P 07 32 30.8 -0.3**
comp=Z,60nm,1.6s
O03D Paynes Creek 90.89 44 P **P 07 32 31.9 +0.5**
baz=304
MOD Modoc Plateau 90.90 42 *e*P **P 07 32 33.0 +1.5**
comp=Z,13nm,0.9s
BMO Blue Mountains 90.91 39 *e*P **P 07 32 32.0 +0.5**
comp=Z,29nm,1.0s
SWMT Swartz Lake 91.05 35 *e*P **P 07 32 32.6 +0.6**
VSL Villasalto 91.35 315 *e*P **P 07 32 33.8 +0.4**
comp=Z,28nm,1.2s
FFC Flin Flon 91.39 25 *e*P **P 07 32 32.7 -0.6**
FFC pmax pmax
comp=Z,62nm,1.1s
FFC Flin Flon 91.39 25 *e*P **P 07 32 32.7 -0.6**
comp=Z,62nm,1.1s
SLMT Seeley Lake 91.48 35 *e*P **P 07 32 34.6 +0.5**
ORV Oroville 91.50 45 *e*P **P 07 32 34.5 +0.4**
ORV pmax pmax
comp=Z,6.0nm,0.8s
ORV Oroville 91.50 45 *e*P **P 07 32 34.5 +0.4**
comp=Z,5.5nm,0.8s
MSO Missoula 91.52 36 P **P 07 32 34.4 +0.2**
baz=310
MSO Missoula 91.52 36 *e*P **P 07 32 34.6 +0.4**
comp=Z,12nm,0.9s
CASY Casey 91.59 185 *e*P **P 07 32 34.3 +0.7**
comp=Z,54nm,1.2s
WVOR Wild Horse Val 91.59 41 *e*P **P 07 32 35.3 +0.6**
WVOR pmax pmax
comp=Z,11nm,0.9s
WVOR Wild Horse Val 91.59 41 *e*P **P 07 32 35.3 +0.6**
comp=Z,11nm,0.9s
CHMT Chamberlain Mo 91.82 35 *e*P **P 07 32 36.5 +0.7**
AFDM Forest Hills D 92.18 45 *e*P **P 07 32 38.1 +0.8**
comp=Z,4.3nm,1.0s
CAF Calviac 92.45 323 *e*P **P 07 32 38.0 -0.4**
CAF pmax pmax
comp=Z,35nm,1.5s
MFID Camas Ranch 92.64 39 *e*P **P 07 32 40.6 +1.2**
comp=Z,20nm,1.0s
PAHR Pah Rah Range 92.75 44 *e*P **P 07 32 41.2 +1.2**
comp=Z,11nm,0.9s
LRM Limekiln Ridge 92.96 36 *e*P **P 07 32 42.2 +1.1**
CMB Columbia Colle 93.08 45 *e*P **P 07 32 42.6 +1.1**
CMB pmax pmax
comp=Z,8.0nm,0.8s
CMB Columbia Colle 93.08 45 *e*P **P 07 32 42.6 +1.1**
comp=Z,8.2nm,0.8s
DLMT Dillon 93.18 36 *e*P **P 07 32 42.8 +0.8**
comp=Z,15nm,0.8s
QUIF Quistinic 93.18 327 *e*P **P 07 32 45.0 +3.3**
QUIF pmax pmax
comp=Z,36nm,1.4s
HLID Hailey 93.34 38 P **P 07 32 43.9 +1.1**
baz=310
HLID Hailey 93.34 38 *e*P **P 07 32 44.6 +1.8**
comp=Z,14nm,0.9s
MCMT McKenzie Canyo 93.39 37 *e*P **P 07 32 44.0 +1.0**
WAKR Walker 93.41 45 *e*P **P 07 32 45.0 +1.8**
comp=Z,6.6nm,1.0s
KEST Kesra 93.49 312 P **P 07 32 43.1 -0.3**
comp=Z,23nm,0.8s,baz=240,slow=0.9,SNR=25
KEST Kesra 93.49 312 *e*P **P 07 32 43.5 0.0**
comp=Z,32nm,0.9s
BOZ Bozeman (W) 93.50 35 P **P 07 32 43.3 -0.2**
baz=312
BOZ Bozeman (W) 93.50 35 *e*P **P 07 32 44.0 +0.6**
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 93.50 35 *e*P **P 07 32 44.0 +0.6**
comp=Z,3.4nm,0.8s
BMN Battle Mountai 93.65 42 *e*P **P 07 32 46.3 +2.1**
BMN pmax pmax
comp=Z,9.0nm,1.0s
BMN Battle Mountai 93.65 42 *e*P **P 07 32 46.2 +2.1**
comp=Z,9.2nm,1.0s
ELK Elko 94.64 41 *e*P **P 07 32 50.9 +2.0**
ELK pmax pmax
comp=Z,5.0nm,1.1s
ELK Elko 94.64 41 *e*P **P 07 32 50.9 +2.0**
comp=Z,4.9nm,1.1s
DGMT Dagmar 95.16 30 P **P 07 32 51.4 +0.6**
baz=318
VES Vestal, Richgr 95.20 47 P **P 07 32 51.1 -0.1**
baz=306

PKM	**Mcpherson Peak**	**95.27**	**48**	P		**P**	07 32 51.1	**-0.7**
	baz=306							
DAC	**Darwin (Calif)**	**95.91**	**45**	*e*P		**P**	07 32 55.5	**+0.8**
DAC				pmax		pmax		
	comp=Z,5.0nm,0.9s							
DAC	**Darwin (Calif)**	**95.91**	**45**	*e*P		**P**	07 32 55.5	**+0.8**
	comp=Z,5.3nm,0.9s							
R11A	**Troy Canyon, C**	**95.92**	**43**	P		**P**	07 32 55.1	**+0.4**
	baz=308							
R11A	**Troy Canyon, C**	**95.92**	**43**	*e*P		**P**	07 32 55.0	**+0.4**
	comp=Z,3.5nm,0.9s							
MPMC	**Manual Prospec**	**96.11**	**46**	P		**P**	07 32 55.6	**0.0**
	baz=307							
HWUT	**Hardware Ranch**	**96.21**	**38**	*e*P		**P**	07 32 57.2	**+1.2**
	comp=Z,13nm,1.6s							
FURC	**Furnace Creek,**	**96.27**	**45**	P		**P**	07 32 56.4	**+0.4**
	baz=308							
TPNV	**Topopah Spring**	**96.37**	**44**	P		**P**	07 32 57.0	**+0.3**
	baz=308							
TPNV	**Topopah Spring**	**96.37**	**44**	*e*P		**P**	07 32 57.2	**+0.5**
TPNV				pmax		pmax		
	comp=Z,4.0nm,1.0s							
TPNV	**Topopah Spring**	**96.37**	**44**	*e*P		**P**	07 32 57.1	**+0.5**
	comp=Z,3.9nm,1.0s							
DUG	**Dugway, Tooele**	**96.42**	**40**	*e*P		**P**	07 32 58.6	**+1.7**
DUG				pmax		pmax		
	comp=Z,5.0nm,1.3s							
DUG	**Dugway, Tooele**	**96.42**	**40**	*e*P		**P**	07 32 58.6	**+1.7**
	comp=Z,5.2nm,1.3s							
PDAR	**Pinedale Array**	**96.54**	**36**	P		**P**	07 32 57.5	**0.0**
	comp=Z,0.4nm,0.6s,baz=111,slow=3.3,SNR=4.0							
GSC	**Goldstone, Bar**	**97.01**	**46**	*e*P		Pdif	07 33 00.9	+1.3
GSC				pmax		pmax		
	comp=Z,7.0nm,1.1s							
GSC	**Goldstone, Bar**	**97.01**	**46**	*e*P		Pdif	07 33 00.9	+1.3
	comp=Z,7.4nm,1.1s							
ULM	**Lac du Bonnet**	**97.21**	**24**	P		**P**	07 32 58.6	**-1.4**
	comp=Z,7.7nm,0.7s,baz=353,slow=6.9,SNR=6.9							
ULM	**Lac du Bonnet**	**97.21**	**24**	*e*P		**P**	07 32 58.8	**-1.2**
ULM				pmax		pmax		
	comp=Z,6.0nm,0.8s							
ULM	**Lac du Bonnet**	**97.21**	**24**	*e*P		**P**	07 32 58.8	**-1.2**
	comp=Z,5.5nm,0.8s							
MSU	**Marysvale**	**97.89**	**41**	*e*P		Pdif	07 33 05.8	+2.1
MSU	**Marysvale**	**97.89**	**41**	*e*P		Pdif	07 33 05.8	+2.1
A32A	**Rocking H Ranc**	**98.05**	**26**	P		**P**	**07 33 03.6**	**-0.3**
	baz=324							
MTPU	**Mont Pierson**	**98.19**	**41**	*e*P		Pdif	07 33 07.3	+2.1
	comp=Z,2.9nm,1.0s							
PFO	**Pinyon Flats O**	**98.26**	**47**	P		Pdif	07 33 05.3	0.0
	comp=Z,4.8nm,0.9s,baz=297,slow=6.6,SNR=6.7							
PFO	**Pinyon Flats O**	**98.26**	**47**	P		Pdif	07 33 05.9	+0.6
	baz=308							
PFO	**Pinyon Flats O**	**98.26**	**47**	*e*P		Pdif	07 33 07.1	+1.8
PFO				pmax		pmax		
	comp=Z,5.0nm,0.9s							
PFO	**Pinyon Flats O**	**98.26**	**47**	*e*P		Pdif	07 33 07.1	+1.8
	comp=Z,4.7nm,0.9s							
TPFO	**Pinon Flats**	**98.27**	**47**	P		Pdif	07 33 05.8	+0.5
	baz=308							
B32A	**Ashes, Strandq**	**98.46**	**26**	P		**P**	**07 33 05.2**	**-0.5**
	baz=324							
U15A	**North Rim**	**99.17**	**43**	*e*P		**Pdif**	**07 33 11.2**	**+1.8**
B35A	**Bob, Littlefor**	**99.57**	**24**	P		**Pdif**	**07 33 09.9**	**-0.7**
	baz=326							
WUAZ	**Wupatki**	**100.32**	**43**	*e*Pdif		**Pdif**	**07 33 18.4**	**+3.9**
BOSA	**Boshof**	**108.60**	**247**	PKiKP		**PKiKP**	**07 37 56.3**	**+0.1**
	comp=Z,1.9nm,0.8s,baz=83,slow=3.5,SNR=3.1							
TXAR	**Lajitas Array**	**109.29**	**43**	PKiKP		**PKiKP**	**07 37 57.6**	**0.0**
	comp=Z,1.5nm,0.9s,baz=211,slow=1.6,SNR=6.8							
TXAR				PKKP		**PKKPdf**	**07 49 17.9**	**-0.2**
	comp=Z,0.4nm,0.9s,baz=134,slow=8.9,SNR=3.9							
TORD	**Torodi Ar. Bea**	**111.99**	**297**	PKiKP		**PKiKP**	**07 38 01.9**	**-1.0**
	comp=Z,1.8nm,0.6s,baz=28,slow=3.2,SNR=13							
DBIC	**Dimbokro**	**120.95**	**295**	PKP		**PKPdf**	**07 38 19.3**	**-0.8**
	comp=Z,7.6nm,0.8s,baz=6.5,slow=2.5,SNR=11							
KIC	**Kosan Boka**	**121.03**	**295**	*e*P		**PKPdf**	**07 38 19.0**	**-1.3**
	comp=Z,30nm,1.0s							
TIC	**Toumodi**	**121.10**	**295**	*e*P		**PKPdf**	**07 38 18.6**	**-1.8**
LIC	**Lamto**	**121.34**	**295**	*e*P		**PKPdf**	**07 38 20.4**	**-0.5**
GRMC	**Gramalote, San**	**143.65**	**29**	*e*P		PKPab	07 38 57.5	-2.1
CBRI	**Barrientos, No**	**143.65**	**29**	*e*P		PKPab	07 38 59.4	-0.2
BRRC	**Barranca, Sant**	**143.78**	**30**	*e*P		PKPab	07 38 59.4	-0.5
BARC	**Barichara**	**144.48**	**30**	*e*P		**PKPab**	**07 39 02.6**	**-0.2**
RUSC	**La Rusia**	**145.14**	**30**	*e*P		**PKPbc**	**07 39 04.5**	**-1.0**
POPC	**Popayan, Colom**	**146.15**	**39**	*e*P		**PKPdf**	**07 39 07.3**	**+0.1**
CMBC	**Cumbal**	**146.75**	**42**	*e*P		**PKPbc**	**07 39 09.7**	**-0.7**
CRUC	**La Cruz**	**146.78**	**40**	*e*P		**PKPdf**	**07 39 08.4**	**0.0**
OTAV	**Otavalo**	**146.91**	**44**	*e*P		**PKPdf**	**07 39 09.2**	**+0.5**
OTAV	**Otavalo**	**146.91**	**44**	*e*PKPdf		**PKPdf**	**07 39 09.3**	**+0.5**
LPAZ	**La Paz**	**165.85**	**54**	PKP		**PKPdf**	**07 39 34.0**	**+0.8**
	comp=Z,1.1nm,0.7s,baz=242,slow=8.6,SNR=6.3							
LPAZ				PKPab		**PKPab**	**07 40 32.5**	**-0.7**
	comp=Z,4.0nm,0.8s,baz=353,slow=7.5,SNR=9.8							
BDFB	**Brasilia**	**167.91**	**319**	PKP		**PKPdf**	**07 39 35.0**	**+0.9**
	comp=Z,1.5nm,0.7s,baz=348,slow=27,SNR=3.5							
BDFB				PKPab		**PKPab**	**07 40 42.1**	**+0.5**
	comp=Z,8.7nm,0.7s,baz=168,slow=26,SNR=12							

BJI ***13*** *07:25:14.6,21˙31S×174˙06W,h10km,mb5.2/37, mB5.7/32,Ms5.1/39,Ms7 4.8/39*

IDC ***13*** *07:25:14.2±0.4,21˙48S×174˙38W,h0km,mb4.8/25, mb1 4.9/26,mb1mx4.8/41,mbtmp4.8/26,ML5.3/2,MS4.7/20, Ms1 4.7/20,ms1mx4.6/27,Error ellipse: s-maj=17.2km s-min=13.3km az=115.0*

ISCJB ***13*** *07:25:15.6±0.1,21˙86S±0˙04×174˙13W±0˙03,h25km, mb5.2/176,MS4.9/44,Error ellipse: s-maj=6.9km s-min=3.6km az=153.8*

GCMT ***13*** *07:25:16.2±0.1,21˙73S×173˙77W,h14km,MW5.2/115, Moment Tensor Solution. s77,c113; s115,c196; Duration: 1s0 Moment tensor: Scale 10¹⁷Nm; Mrr0.80±.02; Mθθ-0.07±.02; Mϕϕ-0.73±.02; Mrθ0.23±.04; Mθϕ-0.32±.01; Mrϕ0.31±.03; Best double couple: M₀0.91800×10¹⁷ NP1:ϕs28.00000°,δ58.00000°, λ97.00000°. NP2:ϕs195.00000°,δ33.00000°,λ79.00000°. Principal axes: T 0.8910, Plg76.0000°, Azm321.0000°; N 0.0540, Plg6.0000°, Azm204.0000°; P -0.9440, Plg12.0000°, Azm113.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***13*** *07:25:16.2±0.2,21˙51S×174˙36W,h10km,mb5.3/137 Error ellipse: s-maj=8.9km s-min=4.8km az=140.0*

MOS ***13*** *07:25:20.1±1.4,21˙19S×174˙18W,h30km,mb5.3/63, MS5.0/14,Error ellipse: s-maj=15.0km s-min=9.3km az=79.2*

ISC 13 07:25:18.1±0.2,21˚63S±0˙05×174˚15W±0˙05,h25km, n665,σ1$53/709,mb5.3/175,MS5.0/49,26C-35D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIUE	**Niue**	**4.71**	**58**	P	Pn	07 26 18.9	-8.7
	baz=4.4,SNR=17						
AFI	**Afiamalu**	**8.01**	**17**	Pn	Pn	07 27 04.7	-8.3
	7.3nm,0.3s,baz=45,slow=2.2,SNR=9.0						
AFI				Sn	Sn	07 28 27.9	-15
	8.3nm,0.3s,baz=197,slow=19,SNR=3.0						
AFI	**Afiamalu**	**8.01**	**17**	*e*Pn	Pn	07 27 07.0	-6.0
AFI				Sn	Sn	07 28 27.9	-15
MSVF	**Nonsavu**	**8.31**	**296**	*c i*P	**Pn**	**07 27 20.0**	**+2.9**
MSVF	**Nonsavu**	**8.31**	**296**	*e*Pn	**Pn**	**07 27 20.5**	**+3.4**
RAO	**Raoul Island**	**8.31**	**203**	Pn	**Pn**	**07 27 15.1**	**-2.0**
	140nm,0.3s,baz=72,slow=20,SNR=3.3						
RAO				Sn	**Sn**	**07 28 46.6**	**-3.6**
	181nm,0.3s,baz=86,slow=23,SNR=4.4						
RAO				LR	LR	07 30 07.9	
	comp=Z,2μm,21.1s,baz=43,slow=35						
RAR	**Rarotonga**	**13.40**	**91**	Pn	Pn	07 28 18.0	-8.8
	10nm,0.3s,baz=295,slow=8.5,SNR=16						
RAR				Sn	Sn	07 30 34.1	-21
	2.9nm,0.3s,baz=112,slow=19,SNR=5.5						
DZM	**Mont Dzumac**	**18.02**	**265**	P	**P**	**07 29 28.4**	**+1.1**
	0.7nm,0.3s,baz=85,slow=18,SNR=5.6						
DZM				LR	LR	07 35 24.4	
	comp=Z,2μm,19.6s,baz=100,slow=34						
DZM	**Mont Dzumac**	**18.02**	**265**	*e*P	**P**	**07 29 29.4**	**+2.0**
	204nm,1.5s						
DZM				eLR	LR	07 33 41.2	
	3μm,23.2s						
DZM	**Mont Dzumac**	**18.02**	**265**	*e*Pn	**P**	**07 29 29.7**	**+2.3**
	353nm,2.0s						
URZ	**Urewera**	**18.20**	**203**	P	**P**	**07 29 30.1**	**+1.0**
	2.4nm,0.3s,baz=288,slow=2.8,SNR=12						
URZ	**Urewera**	**18.20**	**203**	*e*Pn	**P**	**07 29 31.6**	**+2.5**
	46nm,1.0s						
TBI	**Tubuai**	**22.87**	**99**	*e*S	S	07 34 15.3	-13
	2μm,26.8s						
TBI				eLR	LR	07 35 24.2	
	4μm,30.2s,baz=265						
PAE	**Paea**	**23.47**	**85**	*e*P	**P**	**07 30 23.1**	**-2.8**
	57nm,1.4s						
PAE	**Paea**	**23.47**	**85**	*e*T	T	07 54 20.4	
	2.5nm,0.3s						
PPT2	**Papeete2**	**23.49**	**84**	*e*P	**P**	**07 30 23.7**	**-2.5**
	215nm,1.4s						
PPT2				eLQ	LQ	07 34 46.7	
	3μm,25.2s						
PPT2				eLR	LR	07 35 37.8	
	5μm,27.0s,baz=248						
PPT	**Papeete**	**23.49**	**84**	*e*P	P	07 30 33.6	+7.4
PPT	**Papeete**	**23.49**	**84**	*e*P	P	07 30 33.6	+7.4
TIAR	**Tiarei**	**23.71**	**85**	*e*P	**P**	**07 30 25.4**	**-2.9**
	38nm,1.1s						
MEH	**Mehetia**	**24.82**	**86**	*e*P	**P**	**07 30 36.2**	**-2.3**
	59nm,1.3s						
RPZ	**Rata Peaks**	**25.22**	**206**	P	**P**	**07 30 40.4**	**-1.5**
	26nm,0.9s,baz=30,slow=8.1,SNR=2.7						
RPZ				LR	LR	07 41 27.8	
	comp=Z,3μm,18.5s,baz=26,slow=38						
HNR	**Honiara**	**27.69**	**292**	LR	LR	07 40 13.7	
	comp=Z,943nm,21.2s,baz=129,slow=33						
ARMA	**Armidale**	**31.87**	**247**	P	**P**	**07 31 41.0**	**-0.6**
	baz=32						
TAOE	**Nuku Hiva Isla**	**35.09**	**74**	*e*S	**S**	**07 37 37.8**	**-3.3**
	302nm,24.0s						
TAOE				eLR	LR	07 40 54.8	
	3μm,28.1s,baz=247						
RKT	**Rikitea**	**36.19**	**100**	*e*S	**S**	**07 37 50.3**	**-7.4**
	310nm,25.5s						
RKT				eLR	LR	07 41 32.4	
	3μm,29.8s,baz=265						
CTA	**Charters Tower**	**36.96**	**265**	P	**P**	**07 32 23.4**	**-2.3**
	8.4nm,0.8s,baz=99,slow=14,SNR=6.0						
CTAO	**Charters Tower**	**36.96**	**265**	*e*P	**P**	**07 32 24.3**	**-1.3**
CTAO				pmax	pmax		
	comp=Z,27nm,1.1s						
CTAO	**Charters Tower**	**36.96**	**265**	*e*P	**P**	**07 32 24.3**	**-1.3**
	comp=Z,28nm,1.1s						
CMSA	**Cobar Meteorol**	**37.06**	**246**	P	**P**	**07 32 24.4**	**-1.9**
	baz=37,SNR=8.8						
QLP	**Quilpie**	**38.18**	**254**	P	**P**	**07 32 35.4**	**-0.5**
	baz=38,SNR=4.1						
PMG	**Port Moresby**	**39.09**	**282**	LR	LR	07 46 45.7	
	comp=Z,862nm,19.4s,baz=170,slow=33						
PMG	**Port Moresby**	**39.09**	**282**	*e*P	**P**	**07 32 43.4**	**-0.2**
PMG				pmax	pmax		
	comp=Z,162nm,1.2s						
MTSU	**Mount Surprise**	**39.13**	**268**	P	**P**	**07 32 42.5**	**-1.4**
	baz=39						
STKA	**Stephens Creek**	**40.57**	**246**	P	**P**	**07 32 53.7**	**-2.1**
	comp=Z,14nm,0.8s,baz=91,slow=10,SNR=7.8						
STKA				LR	LR	07 48 33.5	
	comp=Z,1μm,20.0s,baz=80,slow=35						
STKA	**Stephens Creek**	**40.57**	**246**	P	**P**	**07 32 54.0**	**-1.7**
	baz=41,SNR=12						
STKA	**Stephens Creek**	**40.57**	**246**	*e*P	**P**	**07 32 54.2**	**-1.6**
	comp=Z,5.2nm,0.9s						
HTT	**Hallett**	**42.92**	**244**	P	**P**	**07 33 13.1**	**-1.9**
	baz=43,SNR=8.4						
BBOO	**Buckleboo**	**45.29**	**245**	P	**P**	**07 33 31.5**	**-2.5**
	baz=46,SNR=8.6						
KIP	**Kipapa**	**45.60**	**211**	*e*P	**P**	**07 33 34.7**	**-1.7**
KIP				pmax	pmax		
	comp=Z,187nm,1.0s						
AS01	**Alice Springs**	**47.72**	**257**	*e*P	**P**	**07 33 49.4**	**-3.8**
AS31	**Alice Springs**	**47.77**	**257**	*e*P	**P**	**07 33 51.1**	**-2.4**
	comp=Z,5.5nm,0.9s						
ASAR	**Alice Springs**	**47.77**	**257**	P	**P**	**07 33 50.8**	**-2.8**
	comp=Z,15nm,0.8s,baz=94,slow=7.9,SNR=35						
ASAR				S	**S**	**07 40 43.2**	**-5.6**
	comp=Z,3.1nm,0.9s,baz=95,slow=15,SNR=12						
ASAR				LR	LR	07 52 30.6	
	comp=Z,1μm,18.1s,baz=96,slow=34						
WR7	**Warramunga Arr**	**47.88**	**262**	P	**P**	**07 33 51.7**	**-2.7**
	baz=48						
WB2	**Warramunga Arr**	**47.99**	**262**	*e*P	**P**	**07 33 52.4**	**-2.9**
	comp=Z,34nm,1.0s						
WRAB	**Tennant Creek**	**48.00**	**262**	*e*P	**P**	**07 33 52.3**	**-3.0**
WRAB				pmax	pmax		
	comp=Z,34nm,1.1s						
WRAB	**Tennant Creek**	**48.00**	**262**	*e*P	**P**	**07 33 52.3**	**-3.0**
	comp=Z,34nm,1.1s						
WRA	**Warramunga Arr**	**48.01**	**262**	P	**P**	**07 33 52.3**	**-3.1**
	comp=Z,14nm,0.8s,baz=92,slow=8.6,SNR=33						
WRA				S	**S**	**07 40 45.8**	**-6.5**
	comp=Z,4.0nm,1.3s,baz=98,slow=14,SNR=2.5						
WRA				LR	LR	07 52 03.7	
	comp=Z,448nm,18.2s,baz=105,slow=34						
WRA	**Warramunga Arr**	**48.01**	**262**	P	**P**	**07 33 52.3**	**-3.1**
WRA				S	**S**	**07 40 45.8**	**-6.5**
WRA				pmax	pmax		
	comp=Z,19nm,0.9s						
WRA				smax	smax		
	comp=N,4.0nm,1.3s						
FORT	**Forrest**	**52.16**	**247**	*e*P	**P**	**07 34 24.7**	**-2.1**
	comp=N,372nm,0.8s						
WRKA	**Warakurna**	**52.62**	**254**	P	**P**	**07 34 27.8**	**-2.5**
	baz=53,SNR=12						
FITZ	**Fitzroy Crossi**	**56.44**	**262**	P	**P**	**07 34 57.8**	**-0.3**
	baz=57,SNR=6.5						
FITZ	**Fitzroy Crossi**	**56.44**	**262**	*e*P	**P**	**07 34 57.0**	**-1.1**
	comp=N,85nm,1.8s						
SBA	**Scott Base**	**57.01**	**185**	*e*P	**P**	**07 35 04.3**	**+3.0**
SBA				pmax	pmax		
	comp=Z,50nm,1.1s						
SBA	**Scott Base**	**57.01**	**185**	*e*P	**P**	**07 35 04.3**	**+3.0**
	comp=Z,50nm,1.1s						
VNDA	**Vanda**	**57.14**	**186**	P	**P**	**07 35 03.8**	**+1.7**
	comp=Z,14nm,1.0s,baz=8.7,slow=6.8,SNR=40						
VNDA				LR	LR	07 55 04.9	
	comp=Z,471nm,20.7s,baz=18,slow=31						
VNDA	**Vanda**	**57.14**	**186**	*e*P	**P**	**07 35 04.3**	**+2.1**
	comp=Z,24nm,1.1s						
SOEI	**Soe**	**60.12**	**271**	*e*P	**P**	**07 35 24.4**	**+0.4**
	comp=Z,79nm,1.0s						
KLBR	**Kellerberrin**	**60.84**	**245**	P	**P**	**07 35 27.4**	**-1.2**
	baz=61,SNR=10						
MBWA	**Marble Bar**	**61.11**	**257**	*e*P	**P**	**07 35 30.3**	**-0.3**
	comp=Z,34nm,1.2s						
BLDU	**Ballidu**	**61.88**	**246**	P	**P**	**07 35 34.5**	**-1.2**
	baz=62,SNR=4.6						
MORW	**Morawa**	**62.72**	**248**	P	**P**	**07 35 40.4**	**-1.0**
	baz=63,SNR=3.8						
CASY	**Casey**	**64.49**	**206**	*e*P	**P**	**07 35 54.3**	**+2.0**
	comp=Z,54nm,1.2s						
QSPA	**South Pole Qui**	**68.44**	**180**	*e*P	**P**	**07 36 19.0**	**+1.2**
MJAR	**Matsushiro Arr**	**73.29**	**322**	P	**P**	**07 36 45.3**	**-2.1**
	comp=Z,9.2nm,0.8s,baz=159,slow=6.0,SNR=6.8						
MJAR				LR	LR	08 05 07.9	
	comp=Z,201nm,20.5s,baz=110,slow=33						
MAJO	**Matsushiro**	**73.29**	**322**	*c i*P	**P**	**07 36 46.0**	**-1.5**
MAJO				pmax	pmax		
	comp=Z,91nm,0.9s						
MAT	**Matsushiro**	**73.29**	**322**	P	**P**	**07 36 45.7**	**-1.8**
MAT				S	**SKiKP**	**07 46 16.6**	**-1.0**
YUK	**Yuzh-Kuril'sk**	**74.91**	**331**	*e*P	**P**	**07 36 57.0**	**+0.3**
KUR	**Kuril'sk**	**75.00**	**333**	P	**P**	**07 36 54.8**	**-2.4**
KUR				eS	**S**	**07 46 29.3**	**-4.0**
KUR				MLR	MLR		
	comp=E,289nm,19.0s						
KUR				MLR	MLR		
	comp=Z,729nm,19.0s						
UNV	**Unalaska Valle**	**75.45**	**5**	*e*P	**P**	**07 36 58.2**	**-1.3**
	comp=Z,36nm,1.1s						
JNU	**Nakatsue**	**75.59**	**315**	P	**P**	**07 36 59.2**	**-1.7**
	comp=Z,11nm,0.9s,baz=119,slow=5.7,SNR=7.2						
JNU	**Nakatsue**	**75.59**	**315**	*e*P	**P**	**07 36 59.7**	**-1.2**
	comp=Z,11nm,0.8s						
SAO	**San Andreas Ge**	**76.45**	**41**	*e*P	**P**	**07 37 05.8**	**+0.1**
SAO				pmax	pmax		
	comp=Z,45nm,1.4s						
SAO	**San Andreas Ge**	**76.45**	**41**	*e*P	**P**	**07 37 05.8**	**+0.1**
	comp=Z,45nm,1.4s						
HOPS	**Hopland Field**	**76.95**	**38**	*e*P	**P**	**07 37 10.0**	**+1.5**
	comp=Z,61nm,1.4s						
MURC	**Murrieta**	**77.20**	**46**	P	**P**	**07 37 09.4**	**-0.6**
	baz=233						
BFSC	**Mount Baldy Ra**	**77.28**	**45**	P	**P**	**07 37 10.1**	**-0.5**
	baz=233						
MONP2	**Monument Peak**	**77.30**	**47**	P	**P**	**07 37 10.0**	**-0.9**
	baz=234						
VES	**Vestal, Richgr**	**77.34**	**43**	P	**P**	**07 37 09.5**	**-1.2**
	baz=232						
IKP	**In-Ko-Pah, Jac**	**77.37**	**47**	P	**P**	**07 37 10.4**	**-0.7**
	baz=234						
KMRM	**Mail Ridge**	**77.41**	**37**	*e*P	**P**	**07 37 11.7**	**+0.5**
	comp=Z,69nm,1.1s						
EDW2	**Edwards Air Fo**	**77.45**	**44**	P	**P**	**07 37 11.0**	**-0.5**
	baz=232						
ISA	**Isabella, Lake**	**77.62**	**44**	P	**P**	**07 37 12.0**	**-0.4**
	baz=232						
PFO	**Pinyon Flats O**	**77.70**	**46**	P	**P**	**07 37 13.5**	**+0.5**
	comp=Z,1.4nm,0.8s,baz=266,slow=5.6,SNR=3.9						
PFO	**Pinyon Flats O**	**77.70**	**46**	*e*P	**P**	**07 37 13.2**	**+0.2**
	comp=Z,15nm,1.4s						
TPFO	**Pinon Flats**	**77.70**	**46**	P	**P**	**07 37 12.9**	**-0.1**
	baz=234						
SWSC	**Sam W. Stewart**	**77.75**	**47**	P	**P**	**07 37 13.3**	**+0.2**
	baz=234						
KHMM	**Horse Mountain**	**77.84**	**37**	*e*P	**P**	**07 37 15.5**	**+1.9**
	comp=Z,17nm,1.1s						
CMB	**Columbia Colle**	**77.91**	**41**	*e*P	**P**	**07 37 13.2**	**-0.8**
CMB				pmax	pmax		
	comp=Z,21nm,1.3s						
CMB	**Columbia Colle**	**77.91**	**41**	*e*P	**P**	**07 37 13.2**	**-0.8**
	comp=Z,21nm,1.3s						
AFDM	**Forest Hills D**	**78.15**	**40**	*e*P	**P**	**07 37 14.8**	**-0.4**
	comp=Z,27nm,1.4s						
ORV	**Oroville**	**78.23**	**39**	*e*P	**P**	**07 37 15.3**	**-0.4**
ORV				pmax	pmax		
	comp=Z,29nm,1.4s						
ORV	**Oroville**	**78.23**	**39**	*e*P	**P**	**07 37 15.3**	**-0.4**
	comp=Z,29nm,1.4s						
BELC	**Belle Mtn. Jos**	**78.24**	**46**	P	**P**	**07 37 15.6**	**-0.4**
	baz=234						
WDC	**Whiskeytown Da**	**78.31**	**38**	*e*P	**P**	**07 37 16.0**	**-0.1**
WDC				pmax	pmax		
	comp=Z,40nm,1.4s						
WDC	**Whiskeytown Da**	**78.31**	**38**	*e*P	**P**	**07 37 16.0**	**-0.1**
	comp=Z,40nm,1.4s						
PEA0	**Petropavlovsk-**	**78.34**	**343**	*e*P	**P**	**07 37 14.3**	**-1.6**
PEA0B	**Petropavlovsk-**	**78.34**	**343**	*e*P	**P**	**07 37 14.5**	**-1.4**
	comp=Z,27nm,0.9s						
PETK	**Petropavlovsk-**	**78.34**	**343**	P	**P**	**07 37 13.9**	**-2.0**
	comp=Z,14nm,0.8s,baz=117,slow=8.1,SNR=19						
PETK				LR	LR	08 07 49.8	
	comp=Z,615nm,20.3s,baz=149,slow=33						
CWC	**Cottonwood Cre**	**78.35**	**43**	P	**P**	**07 37 15.5**	**-1.1**
	baz=232						
BC3	**Big Chuckawall**	**78.40**	**47**	P	**P**	**07 37 16.5**	**-0.4**
	baz=234						
GSC	**Goldstone, Bar**	**78.48**	**45**	P	**P**	**07 37 16.2**	**-1.0**
	baz=233						
GLA	**Glamis**	**78.48**	**47**	P	**P**	**07 37 16.5**	**-0.7**
	baz=235						
N02D	**Trinity Center**	**78.48**	**37**	P	**P**	**07 37 16.8**	**-0.3**
	baz=228,SNR=8.4						
MPMC	**Manual Prospec**	**78.49**	**44**	P	**P**	**07 37 16.6**	**-0.8**
	baz=233						
HEC	**Hector,Ludlow**	**78.50**	**45**	P	**P**	**07 37 16.2**	**-1.2**
	baz=234						
O03D	**Paynes Creek**	**78.55**	**38**	P	**P**	**07 37 16.2**	**-1.2**
	baz=229,SNR=22						
DAC	**Darwin (Calif)**	**78.56**	**43**	*e*P	**P**	**07 37 19.1**	**+1.4**
DAC				pmax	pmax		
	comp=Z,16nm,1.6s						
DAC	**Darwin (Calif)**	**78.56**	**43**	*e*P	**P**	**07 37 19.1**	**+1.4**
	comp=Z,16nm,1.6s						
YSS	**Yuzh-Sakhalins**	**78.56**	**331**	*c e*P	**P**	**07 37 16.2**	**-1.0**
YSS				*e**SP	**pP**	**07 37 22.2**	**-3.1**
YSS				*e*		07 37 28.3	
YSS				*e*		07 40 12.0	
YSS				*e*S	**S**	**07 47 13.9**	**+1.8**
YSS				*e*		07 47 37.0	
YSS				*e*SS	**SS**	**07 52 16.0**	**-0.6**
YSS				pmax	pmax		
	comp=Z,300nm,3.7s						
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS				smax	smax		
	comp=N,700nm,12.0s						
YSS				smax	smax		
	comp=E,400nm,11.0s						
M02C	**Callahan**	**78.68**	**37**	P	**P**	**07 37 18.2**	**0.0**
	baz=228,SNR=13						
CHGN	**Chignik**	**78.76**	**9**	*e*P	**P**	**07 37 18.8**	**+0.7**
L02D	**Cave Junction,**	**78.78**	**36**	P	**P**	**07 37 18.4**	**-0.2**
	baz=227						
WAKR	**Walker**	**78.79**	**41**	*e*P	**P**	**07 37 19.1**	**+0.1**
	comp=E,31nm,1.2s						
IRM	**Iron Mountain**	**78.90**	**46**	P	**P**	**07 37 19.0**	**-0.5**
	baz=234						
GMRC	**Granite Mounta**	**78.93**	**46**	P	**P**	**07 37 18.9**	**-0.9**
	baz=234						
YBH	**Yreka Blue Hor**	**78.99**	**37**	*e*P	**P**	**07 37 20.1**	**+0.2

BMN pmax pmax
comp=Z,41nm,1.8s
BMN Battle Mountai 81.33 40 *e*P **P 07 37 32.2 -0.5**
comp=Z,41nm,1.8s
I05D Terrebonne, OR 81.47 35 P **P 07 37 32.4 -0.8**
baz=229,SNR=7.4
X16A Lo Mia Camp, P 81.58 48 *e*P **P 07 37 34.3 +0.2**
comp=Z,11nm,1.1s
TYV Tymovskoe 81.58 334 *e*P **P 07 37 31.0 -2.5**
TYV *e*S **S 07 47 42.0 -1.9**
TYV pmax pmax
comp=Z,13nm,0.8s
TYV smax smax
comp=E,1µm,10.0s
TYV MLR MLR
comp=E,1µm,16.0s
TYV MLR MLR
comp=Z,1µm,16.0s
MAW Mawson 81.69 199 P **P 07 37 35.4 +1.5**
comp=Z,20nm,1.0s,baz=112,slow=6.0,SNR=19
MAW LR LR 08 12 29.8
comp=Z,914nm,19.2s,baz=84,slow=35
MAW Mawson 81.69 199 *e*P **P 07 37 36.1 +2.2**
MAW pmax pmax
comp=Z,16nm,1.5s
MAW Mawson 81.69 199 *e*P **P 07 37 36.1 +2.2**
comp=Z,16nm,1.5s
WVOR Wild Horse Val 81.74 38 *e*P **P 07 37 34.6 -0.2**
WVOR pmax pmax
comp=Z,17nm,1.2s
WVOR Wild Horse Val 81.74 38 *e*P **P 07 37 34.6 -0.2**
comp=Z,17nm,1.2s
E03A Lebam 81.81 33 *e*P **P 07 37 34.6 -0.1**
comp=Z,33nm,1.0s
LCMT Little Creek M 81.81 45 *e*P **P 07 37 35.5 +0.3**
comp=Z,16nm,1.5s
ON2 Olympics--Nort 81.93 32 P **P 07 37 37.8 +2.4**
USRK Ussuriysk Ar. 81.95 324 P **P 07 37 35.3 -0.3**
comp=Z,2.4nm,0.8s,baz=83,slow=4.8,SNR=4.5
USRK LR LR 08 11 12.6
comp=Z,751nm,19.4s,baz=123,slow=34
CCUT Cedar City 82.04 44 *e*P **P 07 37 35.9 -0.7**
comp=Z,17nm,1.5s
CROR Criterion Ridg 82.09 35 P **P 07 37 36.0 -0.4**
WUAZ Wupatki 82.23 47 P **P 07 37 36.8 -0.7**
baz=237
WUAZ Wupatki 82.23 47 *e*P **P 07 37 37.8 +0.3**
comp=Z,11nm,1.3s
NLWA Neilton Lookou 82.24 32 *e*P **P 07 37 39.3 +2.2**
comp=Z,29nm,1.2s
ERK Elk Rock 82.26 33 P **P 07 37 37.3 -0.1**
G06A Carlson Farm, 82.44 35 *e*P **P 07 37 39.8 +1.5**
comp=Z,58nm,1.5s
PKCU Pink Cliffs 82.67 45 *e*P **P 07 37 41.9 +1.9**
comp=Z,111nm,2.0s
X18A Snowflake 82.67 49 *e*P **P 07 37 41.5 +1.6**
comp=Z,6.9nm,1.2s
ELK Elko 82.72 41 *e*P **P 07 37 39.2 -0.8**
ELK pmax pmax
comp=Z,15nm,1.4s
ELK Elko 82.72 41 *e*P **P 07 37 39.2 -0.8**
comp=Z,15nm,1.4s
LON Longmire 82.83 33 *e*P **P 07 37 41.3 +1.0**
LON pmax pmax
comp=Z,16nm,1.2s
LON Longmire 82.83 33 *e*P **P 07 37 41.3 +1.0**
comp=Z,16nm,1.2s
CNPM China Poot 83.02 12 *e*P **P 07 37 41.9 +1.0**
comp=Z,55nm,1.3s
FMW Mount Fremont 83.03 33 P **P 07 37 41.3 -0.1**
D05A Enumclaw 83.04 33 *e*P **P 07 37 41.8 +0.6**
comp=Z,160nm,1.3s
MTPU Mount Pierson 83.09 45 *e*P **P 07 37 43.1 +0.9**
comp=Z,62nm,1.6s
121A Cookes Peak, D 83.17 51 P **P 07 37 41.6 -0.9**
baz=239
MYKOM Kota Tinggi 83.22 275 *e*P **P 07 37 43.0 0.0**
comp=Z,94nm,1.6s
HABR Khabarovsk 83.24 329 *e*P **P 07 37 41.0 -1.2**
HABR *e* 07 40 51.7
HABR *e*PPP PPP 07 42 43.1
HABR *e*S **S 07 48 01.2 +0.3**
HABR *e*SSS SSS 07 56 54.4
HABR MLR MLR
comp=Z,525nm,20.0s
BRLK Bradley Lake 83.31 12 *e*P **P 07 37 43.3 +0.9**
comp=Z,86nm,1.5s
PGC Sidney 83.31 31 *e*P **P 07 37 44.4 +1.9**
comp=Z,36nm,1.2s
NAC Naches 83.33 34 P **P 07 37 43.1 +0.3**
MSU Marysvale 83.36 44 *e*P **P 07 37 44.0 +0.6**
MSU Marysvale 83.36 44 *e*P **P 07 37 44.0 +0.6**
G08A Pilot Rock 83.38 36 *e*P **P 07 37 43.0 -0.2**
comp=Z,35nm,1.2s
NJ2 Nanjing 83.38 308 *e*P **P 07 37 44.8 +1.5**
NJ2 pmax pmax
comp=Z,12nm,0.7s
MDJ Mudanjiang 83.54 323 P **P 07 37 44.8 +1.0**
MDJ pmax pmax
comp=Z,18nm,0.9s
MDJ pmax pmax
comp=Z,250nm,6.3s
MDJ Mudanjiang 83.54 323 P **P 07 37 44.5 +0.7**
MDJ pP PcP 07 37 47.8 -0.3
MDJ sP pP 07 37 49.1 -2.9
MDJ S **S 07 48 06.9 +2.8**
MDJ pmax pmax
comp=Z,18nm,0.8s
MDJ pmax pmax
comp=Z,250nm,6.1s
MDJ LR LR
comp=Z,370nm,26.9s
MDJ LR LR
comp=Z,470nm,20.2s
MDJ LR LR
comp=Z,900nm,20.2s
MDJ Mudanjiang 83.54 323 *e*P **P 07 37 43.9 +0.1**
comp=Z,137nm,1.8s
B05A Bryant 83.71 32 P **P 07 37 44.0 -0.6**
baz=228
A04D Lummi Island 83.72 31 P **P 07 37 44.0 -0.6**
baz=227
JCW Jim Creek 83.74 32 P **P 07 37 46.6 +1.7**
BBB Bella Bella 83.75 26 *e*P **P 07 37 47.2 +2.5**
comp=Z,26nm,1.1s
HAWA Hanford 83.78 35 *e*P **P 07 37 47.0 +1.9**
comp=Z,44nm,1.4s
DUG Dugway, Tooele 83.90 43 P **P 07 37 45.2 -0.9**
baz=235
DUG Dugway, Tooele 83.90 43 *e*P **P 07 37 47.5 +1.5**
DUG pmax pmax
comp=Z,10.0nm,1.4s
DUG Dugway, Tooele 83.90 43 *e*P **P 07 37 47.5 +1.5**
comp=Z,10nm,1.4s
MFID Camas Ranch 83.97 39 *e*P **P 07 37 46.0 -0.2**
comp=Z,22nm,1.2s
BMO Blue Mountains 84.01 37 *e*P **P 07 37 45.8 -0.7**
comp=Z,15nm,1.1s
RPW Rockport 84.12 32 P **P 07 37 46.3 -0.5**
ETW Entiat 84.16 33 P **P 07 37 46.5 -0.6**
TMUT Trail Mountain 84.42 44 *e*P **P 07 37 49.3 +0.4**
comp=Z,47nm,1.3s
SPU Mount Spurr 84.43 11 *e*P **P 07 37 48.4 +0.3**
MNTX Cornudas Mount 84.52 53 P **P 07 37 48.3 -0.8**
baz=241,SNR=6.5
MNTX Cornudas Mount 84.52 53 *e*P **P 07 37 48.7 -0.5**
comp=Z,18nm,1.5s
D08A Wollman Farm, 84.53 34 *e*P **P 07 37 49.0 +0.1**
comp=Z,22nm,1.0s
LAZ Ladron 84.59 50 *e*P **P 07 37 49.7 -0.1**
E09A Wood Farm, Sta 84.60 35 *e*P **P 07 37 50.8 +1.6**
comp=Z,37nm,1.4s
QIZ Qiongzhong 84.60 293 P **P 07 37 49.6 -0.3**
QIZ S **S 07 48 18.9 +3.0**
QIZ LR LR
comp=Z,190nm,13.2s
TX31 Lajitas Ar. Si 84.68 56 *e*P **P 07 37 49.2 -0.9**
TX31 *e*P **P 07 37 49.7 -0.4**
TXAR Lajitas Array 84.68 56 P **P 07 37 49.1 -1.1**
comp=Z,2.3nm,1.0s,baz=213,slow=6.0,SNR=17
TXAR LR LR 08 09 02.9
comp=Z,551nm,19.7s,baz=0.0,slow=31
RC01 Rabbit Creek A 84.76 12 *e*P **P 07 37 51.0 +1.3**
comp=Z,80nm,1.6s
SRU San Rafael Swe 84.76 44 *e*P **P 07 37 50.3 -0.2**
SRU pmax pmax
comp=Z,39nm,1.2s
SRU San Rafael Swe 84.76 44 *e*P **P 07 37 50.2 -0.2**
comp=Z,39nm,1.2s
P17A Butcher Ranch, 84.82 44 *e*P **P 07 37 51.1 +0.3**
comp=Z,35nm,1.3s
BNM Barren Site 84.83 50 *e*P **P 07 37 51.2 +0.2**
CTU Camp Tracy 84.85 43 *e*P **P 07 37 52.9 +2.0**
comp=Z,33nm,1.1s
HLID Hailey 84.89 39 P **P 07 37 50.1 -0.8**
baz=234
HLID Hailey 84.89 39 *e*P **P 07 37 50.5 -0.5**
comp=Z,15nm,1.1s
LPM Los Pinos Moun 84.91 50 *e*P **P 07 37 51.4 +0.1**
SUA Susitna One 84.92 11 *e*P **P 07 37 50.5 -0.1**
comp=Z,21nm,0.9s
JLU Jordanelle 84.99 43 *e*P **P 07 37 53.3 +1.6**
comp=Z,30nm,1.7s
DL2 Dalian 85.04 315 ⇑P **P 07 37 50.6 -1.0**
DL2 S **S 07 48 22.8 +3.4**
DL2 pmax pmax
comp=Z,29nm,1.5s
DL2 pmax pmax
comp=Z,320nm,4.3s
DL2 LR LR
comp=Z,300nm,18.8s
DL2 LR LR
comp=Z,320nm,17.0s
DL2 LR LR
comp=Z,340nm,17.7s
EYAK Cordova Ski Ar 85.08 14 *e*P **P 07 37 52.6 +1.4**
comp=Z,49nm,1.4s
MVCO Mesa Verde 85.09 47 P **P 07 37 51.7 -0.5**
baz=238
MVCO Mesa Verde 85.09 47 *e*P **P 07 37 54.5 +2.3**
comp=Z,25nm,1.5s
PV05 Paradox Valley 85.15 46 *e*P **P 07 37 54.6 +2.1**
B08A Colville Reser 85.16 33 *e*P **P 07 37 51.2 -0.9**
comp=Z,27nm,1.3s
TCUT Toone Canyon 85.31 42 *e*P **P 07 37 53.4 +0.1**
comp=Z,109nm,1.6s
PMR Palmer 85.34 12 *e*P **P 07 37 54.4 +1.9**
PMR pmax pmax
comp=Z,41nm,1.4s
PMR Palmer 85.34 12 *e*P **P 07 37 54.4 +1.9**
comp=Z,42nm,1.4s
C09A Chrisman Ranch 85.34 34 *e*P **P 07 37 54.5 +1.6**
comp=Z,32nm,1.3s
ANMO Albuquerque 85.35 50 P **P 07 37 52.9 -0.7**
baz=240
ANMO Albuquerque 85.35 50⇑ *e*P **P 07 37 53.6 +0.1**
ANMO pmax pmax
comp=Z,29nm,1.2s
ANMO Albuquerque 85.35 50 *e*P **P 07 37 53.1 -0.4**
comp=Z,33nm,1.3s
PV09 Paradox Valley 85.35 46 *e*P **P 07 37 55.5 +1.9**
KLR Kul'dur 85.36 328 P **P 07 37 52.9 0.0**
comp=Z,3.9nm,1.0s,baz=82,slow=5.7,SNR=6.3
WRAK Wrangell Islan 85.37 22 *e*P **P 07 37 53.6 +0.8**
comp=Z,20nm,1.3s
LLLB Lillooet 85.40 30 *e*P **P 07 37 55.0 +1.9**
comp=Z,56nm,1.6s
CN2 Changchun 85.41 321 *e*P **P 07 37 53.0 -0.4**
CN2 *e*S **S 07 48 23.3 +0.4**
CN2 pmax pmax
comp=Z,10.0nm,1.0s
CN2 pmax pmax
comp=Z,300nm,3.0s
CN2 LR LR
comp=Z,200nm,20.0s
CN2 LR LR
comp=Z,300nm,20.0s
CN2 LR LR
comp=Z,300nm,22.0s
HWUT Hardware Ranch 85.48 42 *e*P **P 07 37 53.1 -0.9**
comp=Z,15nm,1.5s
TTA Tatalina 85.49 8 *e*P **P 07 37 54.4 +1.0**
TTA pmax pmax
comp=Z,55nm,1.4s
TTA Tatalina 85.49 8 *e*P **P 07 37 54.4 +1.0**
comp=Z,55nm,1.4s
PV01 Paradox Valley 85.53 46 *e*P **P 07 37 53.9 -0.5**
DIV Divide 85.59 13 *e*P **P 07 37 54.0 +0.1**
comp=Z,43nm,1.2s
DHAK Deception Hill 85.70 18 *e*P **P 07 37 51.5 -2.9**
comp=Z,75nm,1.3s
BMRM Bremner River 85.71 14 *e*P **P 07 37 55.2 +0.7**
comp=Z,57nm,1.2s
MA2 Madan 85.87 343 P **P 07 37 54.7 -0.5**
comp=Z,5.6nm,0.7s,baz=147,slow=8.1,SNR=5.7
PLCA Paso Flores 85.87 132 P **P 07 37 56.9 +0.9**
comp=Z,12nm,1.1s,baz=256,slow=6.0,SNR=8.3
PLCA LR LR 08 08 28.9
comp=Z,514nm,19.0s,baz=303,slow=30
PLCA Paso Flores 85.87 132 *e*P **P 07 37 57.7 +1.7**
comp=Z,120nm,2.0s
WHN Wuhan 86.02 305 P **P 07 37 58.0 +1.3**
WHN S **S 07 48 27.3 -2.1**
WHN LR LR
comp=Z,620nm,17.1s
NEW Newport 86.24 34 P **P 07 37 56.7 -0.7**
comp=Z,3.3nm,1.1s,baz=198,slow=21,SNR=3.6
NEW Newport 86.24 34 P **P 07 37 56.7 -0.7**
NEW pmax pmax
comp=Z,1.0nm,0.4s
BALM Baldy 86.29 15 *e*P **P 07 37 58.4 +1.0**
BALM pmax pmax
comp=Z,31nm,1.2s
BALM Baldy 86.29 15 *e*P **P 07 37 58.4 +1.0**
comp=Z,31nm,1.2s
SYO Syowa Base 86.38 192⇑ *e*P **P 07 37 55.6 -2.2**
SYO Syowa Base 86.38 192⇓ *e*pP pP 07 38 02.0 -4.0
AHID Auburn Hatcher 86.41 41 *e*P **P 07 37 59.8 +1.1**
comp=Z,11nm,1.1s
S22A 4UR Ranch, Cre 86.51 47 P **P 07 37 58.3 -1.0**
baz=239
S22A 4UR Ranch, Cre 86.51 47 *e*P **P 07 37 58.8 -0.5**
comp=Z,35nm,1.8s
CAST Castle Rocks 86.53 10 *e*P **P 07 37 58.6 +0.1**
comp=Z,28nm,1.2s
MCMT McKenzie Canyo 86.54 39 *e*P **P 07 37 59.8 +0.6**
SNAA Sanae 86.75 177 P **P 07 38 00.2 +0.4**
SNAA Sanae 86.75 177 *e*P **P 07 38 00.1 +0.4**
SNAA pmax pmax
comp=Z,36nm,1.2s
SNAA Sanae 86.75 177 *e*P **P 07 38 00.1 +0.4**
comp=Z,36nm,1.2s
O20A White River Ci 86.80 45 P **P 07 37 59.9 -0.7**
baz=238
O20A White River Ci 86.80 45 *e*P **P 07 38 01.7 +1.1**
comp=Z,24nm,1.7s
IPM Ipoh 86.83 276 *e*P **P 07 38 02.5 +1.4**
comp=Z,135nm,1.7s
KTH Kantishna Hill 86.84 10 *e*P **P 07 38 00.4 +0.4**
comp=Z,53nm,1.6s
SKAG Skagway 86.84 19 *e*P **P 07 38 01.9 +1.9**
comp=Z,56nm,1.4s
TRF Thorfare Moun 86.85 10 *e*P **P 07 37 60.0 -0.2**
comp=Z,73nm,1.4s
REDW Red Top Meadow 86.90 41 *e*P **P 07 38 02.1 +1.1**
comp=Z,7.7nm,1.1s
DLMT Dillon 86.99 38 *e*P **P 07 38 01.8 +0.5**
SNOW Snow King Moun 87.01 41 *e*P **P 07 38 00.9 -0.7**
comp=Z,7.6nm,1.1s
RND Reindeer 87.06 11 *e*P **P 07 38 01.7 +0.6**
RND pmax pmax
comp=Z,67nm,1.3s
RND Reindeer 87.06 11 *e*P **P 07 38 01.7 +0.6**
comp=Z,67nm,1.3s
832A Faith Ranch, C 87.08 58 P **P 07 38 00.8 -1.2**
baz=244
MSO Missoula 87.08 37 P **P 07 38 01.2 -0.5**
baz=234
SMCO Snowmass 87.14 46 *e*P **P 07 38 04.0 +1.5**
comp=Z,5.8nm,1.0s
933A Laredo 87.34 59 P **P 07 38 02.0 -1.2**
baz=244
MCK McKinley 87.35 11 *e*P **P 07 38 02.9 +0.5**
MCK pmax pmax
comp=Z,117nm,1.7s
MCK McKinley 87.35 11 *e*P **P 07 38 02.9 +0.5**
comp=Z,117nm,1.7s
HYT Haines Junctio 87.35 17 *e*P **P 07 38 04.8 +2.1**
comp=Z,37nm,1.6s
BW06 Boulder Array 87.36 42 P **P 07 38 02.0 -1.3**
baz=237
BW06 Boulder Array 87.36 42 *e*P **P 07 38 04.0 +0.7**
comp=Z,4.1nm,1.1s
PDAR Pinedale Array 87.36 42 P **P 07 38 01.6 -1.7**
comp=Z,2.5nm,1.0s,baz=224,slow=4.1,SNR=10
PDAR LR LR 08 11 06.6
comp=Z,399nm,19.0s,baz=263,slow=32
SDCO Great Sand Dun 87.42 48 P **P 07 38 02.7 -1.0**
baz=240
SDCO Great Sand Dun 87.42 48 *e*P **P 07 38 05.4 +1.6**
comp=Z,7.3nm,1.6s
VNA1 Neumayer--Stat 87.43 175 P **P 07 38 04.5 +1.5**
MSTX Muleshoe 87.53 52 P **P 07 38 03.1 -1.0**
baz=242,SNR=5.5
MSTX Muleshoe 87.53 52 *e*P **P 07 38 03.5 -0.6**
comp=Z,21nm,1.1s
833A Chaparral WMA, 87.56 58 P **P 07 38 03.2 -1.0**
baz=244
034A Hebbronville 87.58 60 P **P 07 38 02.7 -1.7**
baz=244
MENT Mentasta 87.65 13 *e*P **P 07 38 05.3 +1.3**
comp=Z,40nm,1.5s
BOZ Bozeman (W) 87.71 39 P **P 07 38 03.2 -1.6**
baz=236
BOZ Bozeman (W) 87.71 39 *e*P **P 07 38 04.6 -0.2**
BOZ pmax pmax
comp=Z,7.0nm,1.3s
BOZ Bozeman (W) 87.71 39 *e*P **P 07 38 04.6 -0.2**
comp=Z,7.0nm,1.3s
DLBC Dease Lake 87.73 21 P **P 07 38 04.5 +0.1**
comp=Z,9.3nm,1.2s,baz=225,slow=6.2,SNR=6.8
DLBC Dease Lake 87.73 21 *e*P **P 07 38 04.5 +0.1**
comp=Z,24nm,1.4s
834A Tilden 88.14 59 P **P 07 38 06.0 -1.1**
baz=244
PSI Prapat 88.16 274 *e*P **P 07 38 07.7 0.0**
PSI pmax pmax
comp=Z,44nm,1.3s
PSI Prapat 88.16 274 *e*P **P 07 38 07.7 0.0**
comp=Z,44nm,1.3s
EFI East Falkland 88.17 146 *de*P **P 07 38 08.2 +1.4**
EFI pmax pmax
comp=Z,53nm,1.1s
WRH Wood River Hil 88.17 11 *e*P **P 07 38 06.7 +0.4**
comp=Z,80nm,1.4s
JCT Junction City 88.18 56 *e*P P 07 38 00.3 -7.0
comp=Z,12nm,1.3s
SKLT Songkhla 88.20 278 P **P 07 38 10.0 +2.3**
comp=Z,35nm,1.5s
DOT Dot Lake 88.21 13 *e*P **P 07 38 04.1 -2.4**
comp=Z,41nm,0.9s
633A Saathoff Ranch 88.22 57 P **P 07 38 06.5 -0.9**
baz=244
SEY Seymchan 88.33 345 P **P 07 38 06.3 -0.8**
comp=Z,13nm,0.8s,baz=138,slow=5.8,SNR=24
CCB Clear Creek Bu 88.39 11 *e*P **P 07 38 06.9 -0.4**
comp=Z,47nm,1.4s
WALA Waterton Lakes 88.41 35 *e*P **P 07 38 07.1 -0.9**
comp=Z,16nm,1.3s
COLA College 88.59 11 *e*P **P 07 38 09.6 +1.4**
COLA pmax pmax
comp=Z,40nm,0.4s
COLA College 88.59 11 *e*P **P 07 38 09.6 +1.4**
comp=Z,40nm,0.4s
533A Kerrville 88.60 57 P **P 07 38 07.5 -1.7**
baz=244
IL1 Eielson Array 88.67 11 *e*P **P 07 38 07.5 -1.2**
ILAR Eielson Array 88.67 11 P **P 07 38 07.5 -1.2**
comp=Z,9.9nm,1.1s,baz=210,slow=5.6,SNR=28
N23A Red Feather La 88.69 45 *e*P **P 07 38 11.6 +1.9**
comp=Z,8.7nm,1.2s
333A Richland Sprin 89.19 56 P **P 07 38 10.5 -1.4**
baz=244
K22A Casper 89.21 43 P **P 07 38 10.6 -1.4**
baz=239
BJI Beijing 89.24 314 P **P 07 38 12.3 +0.4**
BJI S **S 07 48 59.9 +0.1**
BJI SS **SS 07 54 57.8 +2.8**
BJI pmax pmax
comp=Z,510nm,3.4s
BJI LR LR
comp=Z,240nm,21.6s
ABTX Abilene, Hawle 89.25 54 P **P 07 38 11.0 -1.3**
baz=244
ABTX Abilene, Hawle 89.25 54 *e*P **P 07 38 11.4 -0.9**
comp=Z,92nm,2.0s
635A Leesville 89.30 58 P **P 07 38 11.4 -1.0**
baz=245
434A Burnet 89.52 57 P **P 07 38 12.2 -1.3**
baz=244
DAWY Dawson 89.60 15 *e*P **P 07 38 13.8 +0.6**
comp=Z,31nm,1.4s
ENH Enshi 89.66 303 *e*P **P 07 38 14.1 -0.1**
comp=Z,119nm,1.6s
736A Circle Diamond 89.67 59 P **P 07 38 12.9 -1.3**
baz=245
334A Lometa 89.76 56 P **P 07 38 13.2 -1.4**
baz=244
EGAK Eagle 89.82 13 *e*P **P 07 38 15.9 +1.9**
comp=Z,55nm,1.6s
234A Clairette 90.13 56 P **P 07 38 15.7 -0.7**
baz=245
Z33A Whitaker Ranch 90.21 54 P **P 07 38 15.8 -0.9**
baz=244
X32A Elmer 90.31 53 P **P 07 38 16.4 -0.7**
baz=244
GYA Guiyang 90.34 298 P **P 07 38 18.3 +0.7**
GYA PP **PP 07 41 54.6 +2.4**
GYA SKS **SKSac 07 48 47.0 -0.7**
GYA S **S 07 49 10.3 -0.7**
GYA SS **SS 07 55 14.4 +2.7**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,140nm,7.9s
GYA LR LR
comp=Z,550nm,19.4s
GYA LR LR
comp=Z,510nm,20.2s
GYA LR LR
comp=Z,540nm,20.6s
134A White-Moore Ra 90.42 55 P **P 07 38 16.4 -1.3**
baz=245
BILL Bilibino 90.57 353⇓ *e*P **P 07 38 16.6 -0.9**
BILL *e* 07 41 48.7
BILL pmax pmax
comp=Z,7.0nm,1.1s
BILL MLR MLR
comp=Z,611nm,18.0s
Y33A Hilltop Ranch, 90.62 54 P **P 07 38 17.6 -1.0**
baz=244
W32A Sentinel 90.65 52 P **P 07 38 17.7 -1.0**
baz=244
738A Farr-Stevens R 90.76 59 P **P 07 38 18.1 -1.2**
baz=246
WMOK Wichita Mounta 90.82 53 P **P 07 38 18.5 -1.0**
baz=244
336A Riesel 90.87 57 P **P 07 38 18.2 -1.5**
baz=245
X33A Lawton 90.95 53 P **P 07 38 19.2 -0.8**
baz=244
V32A Arapaho 91.06 52 P **P 07 38 20.7 +0.2**
baz=244
EDM Edmonton 91.14 32 *e*P **P 07 38 21.6 +1.0**
EDM pmax pmax
comp=Z,34nm,1.4s
EDM Edmonton 91.14 32 *e*P **P 07 38 21.6 +1.0**
comp=Z,34nm,1.4s
W33A Caddo, Fort Co 91.23 53 P **P 07 38 20.2 -1.2**
baz=244
U32A Winter Ranch, 91.38 51 P **P 07 38 21.0 -1.1**
baz=244,SNR=6.6
LAO LASA Array 91.44 40 P **P 07 38 21.7 -0.5**
baz=240
LAO LASA Array 91.44 40 *e*P **P 07 38 24.4 +2.2**
comp=Z,24nm,1.3s
X34A Smith Ranch, M 91.47 53 P **P 07 38 21.8 -0.7**
baz=245
RSSD Black Hills 91.51 43 P **P 07 38 21.3 -1.5**
baz=241
RSSD Black Hills 91.51 43 *e*P **P 07 38 23.6 +0.9**
RSSD pmax pmax
comp=Z,12nm,1.3s
RSSD Black Hills 91.51 43 *e*P **P 07 38 23.6 +0.9**
comp=Z,12nm,1.3s
136A Ennis 91.56 56 P **P 07 38 21.8 -1.1**
baz=245
V33A Lossen Ranch, 91.66 52 P **P 07 38 21.9 -1.5**
baz=245
XAN Xi'an 91.69 306 P **P 07 38 23.5 -0.1**

XAN sP pP 07 38 30.3 -1.5
XAN SKS **SKSac 07 48 53.5 -1.4**
XAN S **S 07 49 20.1 -2.7**
XAN SS **SS 07 55 31.6 +0.8**
XAN pmax pmax
comp=Z,19nm,1.0s
XAN pmax pmax
comp=Z,170nm,6.2s
XAN LR LR
comp=Z,110nm,19.4s
XAN LR LR
comp=Z,160nm,25.0s
XAN LR LR
comp=Z,190nm,20.1s
HIA Hailar 91.72 323⇓*e*P **P 07 38 24.5 +1.2**
HIA pmax pmax
comp=Z,5.0nm,0.9s
Y35A Marietta 91.77 54 P **P 07 38 23.4 -0.5**
baz=245
T32A Huddler Ranch, 91.78 51 P **P 07 38 23.6 -0.3**
baz=244
237A Washetta, Mont 91.92 56 P **P 07 38 23.2 -1.4**
baz=246
Z36A Blue Ridge 91.97 55 P **P 07 38 23.7 -1.1**
baz=246
S32A Newby Ranch, P 92.00 50 P **P 07 38 23.7 -1.2**
baz=244
539A Cross D Ranch, 92.01 58 P **P 07 38 24.0 -1.1**
baz=246
X35A Drake 92.03 54 P **P 07 38 24.7 -0.4**
baz=245
UTTA Uttaradit 92.19 288 P **P 07 38 29.4 +3.2**
comp=Z,3.9nm,1.1s
137A Heron Place, G 92.21 56 P **P 07 38 25.3 -0.6**
baz=246
Y36A Durant 92.34 54 P **P 07 38 25.5 -1.0**
baz=246
W35A Tecumseh 92.42 53 P **P 07 38 26.0 -0.9**
baz=245
R32A Long Quarter, 92.47 50 P **P 07 38 25.8 -1.3**
baz=244,SNR=6.6
X36A Centrahoma 92.57 54 P **P 07 38 27.1 -0.5**
baz=246
S33A Kaszmaul Farm, 92.62 51 P **P 07 38 26.7 -1.1**
baz=245
V35A Meyer Ranch, C 92.70 53 P **P 07 38 27.3 -0.8**
baz=245
HHC Hu-ho-hao-te 92.73 313 *e*P **P 07 38 29.3 +1.0**
HHC sP pP 07 38 36.9 +0.4
HHC SKS **SKSac 07 49 00.8 +0.2**
HHC S **S 07 49 31.1 -0.9**
HHC SS **SS 07 55 43.3 -2.3**
HHC pmax pmax
comp=Z,13nm,0.9s
HHC pmax pmax
comp=Z,240nm,8.8s
HHC LR LR
comp=Z,210nm,14.8s
HHC LR LR
comp=Z,220nm,15.9s
HHC LR LR
comp=Z,280nm,16.7s
Q32A Meitler Ranch, 92.82 49 P **P 07 38 27.1 -1.5**
baz=244,SNR=5.3
Y37A Hugo 92.88 55 P **P 07 38 27.5 -1.5**
baz=246
W36A Wetumka 92.89 53 P **P 07 38 27.6 -1.5**
baz=246
R33A Olander Ranch, 92.94 50 P **P 07 38 28.2 -1.1**
baz=245
KMI Kunming 93.07 296 P **P 07 38 32.3 +1.9**
KMI pP pP 07 38 36.3 -2.3
KMI sP sP 07 38 37.9 -3.6
KMI SKS **SKSac 07 49 04.8 +1.4**
KMI S **ScS 07 49 39.4 +1.7**
KMI SS **SS 07 55 51.8 +0.5**
KMI pmax pmax
comp=Z,18nm,0.7s
KMI LR LR
comp=Z,190nm,20.4s
KMI LR LR
comp=Z,400nm,19.7s
KMI LR LR
comp=Z,570nm,21.1s
LAMP Lampang 93.30 288 P **P 07 38 33.3 +2.0**
comp=Z,7.2nm,1.1s
S34A Willow Spring 93.31 51 P **P 07 38 30.2 -0.7**
baz=245
X37A Clayton 93.31 54 P **P 07 38 29.6 -1.4**
baz=246
Q33A Connelly Farm, 93.34 49 P **P 07 38 30.1 -0.9**
baz=245
V36A Jenks 93.37 53 P **P 07 38 30.3 -1.0**
baz=246
T35A Sooner Cattle 93.42 52 P **P 07 38 30.8 -0.6**
baz=246
R34A Isabella, Hill 93.46 50 P **P 07 38 31.1 -0.6**
baz=245
W37B Quinton 93.49 54 P **P 07 38 30.1 -1.8**
baz=246
DGMT Dagmar 93.52 39 P **P 07 38 30.3 -1.3**
baz=241,SNR=6.8
DGMT Dagmar 93.52 39 *e*P **P 07 38 33.6 +2.0**
comp=Z,46nm,1.1s
TUL1 Leonard 93.53 53 P **P 07 38 30.9 -1.1**
baz=246
TUL1 Leonard 93.53 53 *e*P **P 07 38 33.0 +1.0**
comp=Z,12nm,1.1s
M31A Lambtecht Ranc 93.55 47 P **P 07 38 31.0 -1.0**
baz=244
K30A Basset 93.70 45 P **P 07 38 31.8 -0.9**
baz=244
X38A Whitesboro 93.75 54 P **P 07 38 31.9 -1.1**
baz=246
CM01 Chiang Mai Arr 93.85 288 *e*P **P 07 38 34.4 +0.6**
S35A Otter Creek Ra 93.87 51 P **P 07 38 32.1 -1.4**
baz=246
CMAR Chiang Mai Arr 93.88 288 P **P 07 38 34.1 +0.1**
comp=Z,3.7nm,0.5s,baz=124,slow=2.8,SNR=21
CMAR LR LR 08 23 16.2
comp=Z,87nm,18.0s,baz=156,slow=37
D26A Manning 93.88 41 P **P 07 38 32.6 -0.7**
baz=242
140A Cam and Jess, 93.91 57 P **P 07 38 32.5 -1.3**
baz=247
T36A Boggs Farm, Ca 93.94 52 P **P 07 38 32.6 -1.2**
baz=246
Q34A Chapman 93.94 50 P **P 07 38 32.1 -1.7**
baz=246,SNR=5.1
O33A Hebron 93.97 48 P **P 07 38 32.5 -1.4**
baz=245,SNR=5.0
L31A Butterfield Fa 94.00 46 P **P 07 38 32.7 -1.4**
baz=244
V37A Hulbert 94.00 53 P **P 07 38 33.2 -1.0**
baz=246
CHTO Chiang Mai 94.01 289 P **P 07 38 36.5 +1.9**
comp=Z,55nm,1.4s
CHTO Chiang Mai 94.01 289 *e*P **P 07 38 34.1 -0.5**
CHTO pmax pmax
comp=Z,12nm,1.0s
CHTO Chiang Mai 94.01 289 *e*P **P 07 38 34.1 -0.5**
comp=Z,12nm,1.0s
J30A Dallas 94.07 45 P **P 07 38 33.0 -1.3**
baz=244,SNR=7.7
X39A Fountain Ranch 94.23 55 P **P 07 38 34.7 -0.6**
baz=247
U37A Salina 94.23 53 P **P 07 38 34.5 -0.7**
baz=246
KSU1 Kansas State U 94.25 50 P **P 07 38 34.4 -0.8**
baz=246
KSU1 Kansas State U 94.25 50 *e*P **P 07 38 36.5 +1.4**
comp=Z,10nm,1.1s
K31A O'Neill 94.25 46 P **P 07 38 34.3 -0.9**
baz=245,SNR=8.1
P34A Walnut Farm, R 94.28 49 P **P 07 38 34.9 -0.4**
baz=246
CMAI Chiengmai2 94.32 290 P **P 07 38 38.6 +2.4**
A25A Svangstu Ranch 94.37 39 P **P 07 38 34.5 -1.1**
baz=242
S36A Lake Cedric, C 94.42 51 P **P 07 38 34.5 -1.5**
baz=246
CD2 Chengdu 94.43 301 *e*P **P 07 38 36.4 +0.1**
CD2 pP PcP 07 38 39.8 +3.1
CD2 PP **PP 07 42 23.8 -0.5**
CD2 SKS **SKSac 07 49 11.4 +1.2**
CD2 S **ScS 07 49 48.8 +0.3**
CD2 SS **SS 07 56 12.3 +2.0**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,6.2s
CD2 LR LR
comp=Z,730nm,11.5s
CD2 LR LR
comp=Z,750nm,8.9s
CD2 LR LR
comp=Z,330nm,8.0s
INK Inuvik 94.46 14 P **P 07 38 36.5 +1.0**
comp=Z,4.4nm,1.1s,baz=229,slow=13,SNR=3.9
V38A Canehill 94.54 53 P **P 07 38 36.0 -0.7**
baz=247
P35A Duane Minner, 94.84 49 P **P 07 38 37.7 -0.2**
baz=246
M33A Taylor Creek F 94.86 47 P **P 07 38 36.6 -1.4**
baz=246
LVC Limon Verde 94.93 117 *e*P **P 07 38 41.5 +2.3**
comp=Z,22nm,1.2s
F29A Eureka 94.95 43 P **P 07 38 36.9 -1.4**
baz=244
I31A Royce, Wessing 95.00 45 P **P 07 38 36.7 -1.9**
baz=245,SNR=5.3
T38A Diamond 95.09 52 P **P 07 38 38.1 -1.0**
baz=247
J32A Parkston 95.17 45 P **P 07 38 37.9 -1.5**
baz=245
P36A Good Intent, A 95.45 50 P **P 07 38 39.3 -1.5**
baz=247
I32A Karley and Nic 95.70 45 P **P 07 38 40.1 -1.6**
baz=246
J33A Davis 95.74 46 P **P 07 38 40.2 -1.8**
baz=246,SNR=5.1
R38A Fenwick Farm, 95.82 51 P **P 07 38 41.5 -0.9**
baz=247
W41B Gary Mavity, V 95.90 55 P **P 07 38 41.4 -1.4**
baz=248
H32A Carlson Farm, 95.92 44 P **P 07 38 41.7 -1.0**
baz=246
WHAR Wooly Hollow 95.92 55 *e*P **P 07 38 43.7 +0.8**
comp=Z,16nm,1.5s
F31A Hecla 95.96 43 P **P 07 38 40.9 -1.9**
baz=245
P37A Lathrop 96.05 50 P **P 07 38 42.6 -0.9**
baz=247
YKA Yellowknife Ar 96.07 24 LR LR 08 15 44.3
comp=Z,23nm,20.7s,baz=180,slow=32
ECSD EROS Data Cent 96.14 45 P **P 07 38 42.2 -1.5**
baz=246
ECSD EROS Data Cent 96.14 45 *e*P **P 07 38 42.8 -1.0**
comp=Z,34nm,1.4s
LZH Lanzhou 96.32 306 *e*P **P 07 38 42.1 -2.9**
LZH pmax pmax
comp=Z,14nm,1.0s
Q38A Cooks Store, C 96.33 51 P **P 07 38 44.1 -0.6**
baz=248
H33A Prehn Over Nor 96.44 44 P **P 07 38 44.6 -0.5**
baz=246
R39A Chumby, Stover 96.50 51 P **P 07 38 44.6 -0.9**
baz=248
C30A Mose, Pekin 96.59 41 P **P 07 38 45.4 -0.3**
baz=245
P38A Dawn 96.64 50 P **P 07 38 45.6 -0.5**
baz=248
A29A Manning Farm, 96.65 40 P **P 07 38 45.5 -0.4**
baz=245
B30A Myrvik Farm, E 97.00 41 P **P 07 38 47.1 -0.5**
baz=246
R40A Maddies Statio 97.05 52 P **P 07 38 46.8 -1.2**
baz=248
C31A Landman Farms, 97.08 41 P **P 07 38 46.7 -1.2**
baz=246
F33A 5 Mile Ranch, 97.20 44 P **P 07 38 48.3 -0.1**
baz=247
A30A Hoffart Farm, 97.22 40 P **P 07 38 48.0 -0.5**
baz=246
Q40A Laux Farm, Aux 97.45 51 P **P 07 38 48.7 -1.1**
baz=248
L38A Oak Wood Farm, 97.99 48 P **P 07 38 50.8 -1.4**
baz=248
O40A La Belle 98.01 50 P **P 07 38 51.1 -1.2**
baz=249
B32A Ashes, Strandq 98.06 41 P **P 07 38 51.1 -1.2**
baz=247
A32A Rocking H Ranc 98.30 41 Pdiff **P 07 38 53.0 -0.4**
baz=247
LPAZ La Paz 98.31 111 LR LR 08 16 45.1
comp=Z,666nm,18.1s,baz=262,slow=31
AGMN Agassiz Nation 98.44 41 Pdiff **P 07 38 53.6 -0.4**
baz=247
AGMN Agassiz Nation 98.44 41 *e*P Pdif 07 38 54.8 +0.8
comp=Z,12nm,1.4s
A33A Warroad 98.97 41 Pdiff **P 07 38 55.3 -1.0**
baz=248
SONM Songino Array 98.98 318 P **P 07 38 55.4 -1.2**
comp=Z,0.2nm,0.5s,baz=92,slow=4.8,SNR=2.9
SONM LR LR 08 20 54.2
comp=Z,177nm,19.5s,baz=128,slow=34
F36A Milaca 98.99 44 Pdiff **P 07 38 56.4 -0.1**
baz=248
C35A Jirik Farms, M 99.38 42 Pdiff **Pdif 07 38 57.8 -0.5**
baz=248
D36A Goodland 99.70 43 Pdiff **Pdif 07 38 59.2 -0.5**
baz=249
TOLC Tolima 99.88 89 *e*P **Pdif 07 39 04.2 +2.6**
PRAC Prado 99.97 90 *e*P **Pdif 07 39 07.1 +5.4**
GUYC Guyana, Colomb 100.04 88 *e*P **Pdif 07 39 02.9 +0.4**
D37A Cotton 100.17 43 Pdiff **Pdif 07 39 01.6 -0.1**
baz=249
HELC Santa Helena 100.25 87 *e*P **Pdif 07 38 59.4 -4.0**
NORC Norcasia 100.64 88 *e*P **Pdif 07 39 02.9 -1.9**
SJAC San Juan de Ar 100.68 91 *e*P **Pdif 07 39 09.4 +4.4**
TIXI Tiksi 100.78 344⇑*e*P **Pdif 07 39 04.5 +0.6**
TIXI pmax pmax
comp=Z,1.0nm,0.9s
ROSC El Rosal 100.90 89 P **Pdif 07 39 06.6 +0.3**
comp=Z,9.6nm,0.7s,baz=0.0,slow=7.1,SNR=8.5
VILC Villavicencio, 101.22 90 *e*P **Pdif 07 39 07.8 +0.4**
CHIC Chingaza 101.37 90 *e*P **Pdif 07 39 06.2 -2.3**
MDRS Chennai 109.04 277 *ex* **Pdif 07 39 35.8 -6.1**
MDRS *ex* x 07 44 59.8
MDRS *ex* x 07 52 55.8
MDRS *ex* x 07 59 23.8
WMQ Urumqi 110.39 310 *e*PKP **PKiKP 07 43 44.8 -3.4**
WMQ PP **PP 07 44 23.0 -0.8**
WMQ AMB AMB
comp=Z,130nm,5.8s
WMQ LR LR
comp=Z,140nm,19.7s
WMQ LR LR
comp=Z,150nm,28.4s
WMQ LR LR
comp=Z,220nm,26.0s
MKAR Makanchi Array 114.59 313 PKP PKPdf 07 43 55.6 -0.4
comp=Z,18nm,1.0s,baz=108,slow=4.0,SNR=5.1
KURK Kurchatov 117.27 317*d* *i*PKIKP **PKPdf 07 44 00.2 -0.8**
KURK pmax pmax
comp=Z,13nm,1.2s
KSH Kashi 118.49 304 *e*PKP **PKPdf 07 44 02.1 -1.8**
KSH SKS **SKSdf 07 51 13.6 -1.0**
KSH AMB AMB
comp=Z,69nm,5.9s
KSH LR LR
comp=Z,130nm,11.0s
KSH LR LR
comp=Z,82nm,6.7s
KSH LR LR
comp=Z,190nm,11.7s
AAK Ala-Archa 119.83 308⇑*i*PKIKP **PKPdf 07 44 05.4 -1.1**
VOSK Vostochnaya 121.93 319 *e*PKIKP **PKPdf 07 44 09.9 -0.1**
VOSK Vostochnaya 121.93 319 *e*PKPdf **PKPdf 07 44 09.9 -0.1**
BRVK Borovoye 122.31 320 *e*PKIKP **PKPdf 07 44 11.1 +0.4**
BRVK Borovoye 122.31 320 *e*PKPdf **PKPdf 07 44 11.1 +0.4**
KKAR Karatay Array 122.76 308 *e*PKIKP **PKPdf 07 44 12.5 +0.6**
KKAR Karatay Array 122.76 308 *e*PKPdf **PKPdf 07 44 12.5 +0.6**
ZRNK Zerenda 123.09 320 *e*PKIKP **PKPdf 07 44 11.5 -0.7**
ZRNK Zerenda 123.09 320 *e*PKPdf **PKPdf 07 44 11.5 -0.7**
SPA0 Spitsbergen Ar 123.18 357 *e*PKPdf **PKPdf 07 44 12.2 +0.5**
SPITS Spitsbergen Ar 123.18 357 PKP **PKPdf 07 44 11.6 -0.2**
comp=Z,11nm,0.9s,baz=111,slow=4.7,SNR=7.4
SUMG Summit 123.37 15 *i* P **PKPdf 07 44 12.7 0.0**
comp=Z,23nm,1.4s
SUMG Summit 123.37 15 *i* PKIKP **PKPdf 07 44 12.7 0.0**
SUMG pmax pmax
comp=Z,23nm,1.4s
SUMG Summit 123.37 15 *e*PKPdf **PKPdf 07 44 13.3 +0.6**
KBL Kabul 123.59 298 *e*PKIKP **PKPdf 07 44 15.4 +1.4**
KBL Kabul 123.59 298 *e*PKPdf **PKPdf 07 44 15.4 +1.4**
BOSA Boshof 126.65 201 PKP **PKPdf 07 44 20.0 -0.1**
comp=Z,7.6nm,1.1s,baz=145,slow=2.1,SNR=5.9
BOSA Boshof 126.65 201 *e*PKPdf **PKPdf 07 44 22.3 +2.2**
SOKR Solikamsk 127.86 330*d* *i*PKIKP **PKPdf 07 44 20.8 -0.2**
SOKR pmax pmax
comp=Z,27nm,1.3s
ARU Arti 128.16 326 *i* PKIKP **PKPdf 07 44 22.4 +0.6**
ARU 07 46 25.5
ARU 07 51 33.2
ARU SP SP 07 56 31.9 +3.2
ARU SS **SS 08 03 32.2 -6.2**
ARU MLR MLR
comp=Z,591nm,23.0s
ARU Arti 128.16 326 *e*PKPdf **PKPdf 07 44 22.4 +0.6**
SCO Scoresbysund 128.45 12 *i* P **PKPdf 07 44 23.9 +2.0**
comp=Z,25nm,1.3s
SCO Scoresbysund 128.45 12 *i* PKIKP **PKPdf 07 44 23.9 +2.0**
SCO pmax pmax
comp=Z,25nm,1.3s
ABKAR Akbulak array 129.38 317 *e*PKPdf **PKPdf 07 44 25.8 +1.5**
ARCES ARCESS Array B 130.64 351 PKP **PKPdf 07 44 26.3 +0.2**
comp=Z,4.7nm,0.8s,baz=63,slow=0.3,SNR=6.8
APA Apatity 130.92 346 *i* PKHKP PKPpre 07 44 12.0
APA pmax pmax
comp=Z,8.0nm,1.2s
GEYT Alibeck 132.42 302 PKP **PKPdf 07 44 32.0 +1.5**
comp=Z,1.6nm,0.5s,baz=183,slow=3.0,SNR=3.6
KLMR Klimovskoe 134.32 338 *e*PKIKP **PKPdf 07 44 33.2 -0.1**
KLMR pmax pmax
comp=Z,11nm,1.4s
LSZ Lusaka 137.27 213 *e*PKIKP **PKPdf 07 44 42.3 +1.9**
LSZ Lusaka 137.27 213 *e*PKPdf **PKPdf 07 44 42.2 +1.9**
FIA1 FINESS Array S 137.81 346 *e*PKPdf **PKPdf 07 44 42.3 +2.5**
FINES FINESS Array B 137.81 346 PKP **PKPdf 07 44 41.1 +1.3**
comp=Z,4.0nm,0.9s,baz=145,slow=7.0,SNR=5.2
OBN Obninsk 139.42 333⇑*i*PKIKP **PKPdf 07 44 42.0 -0.9**
OBN *e* 07 47 35.0
OBN pmax pmax
comp=Z,9.0nm,1.1s
NOA NORSAR Array B 140.45 356 PKP **PKPdf 07 44 45.2 +0.5**
comp=Z,2.6nm,1.0s,baz=14,slow=4.1,SNR=3.3
VSR Storozhevoye 140.71 327 *e*PKIKP **PKPdf 07 44 45.7 +0.3**
VSR pmax pmax
comp=Z,20nm,1.9s
KMBO Kilima Mbogo 141.89 238 PKP **PKPdf 07 44 47.3 -1.7**
comp=Z,0.8nm,0.3s,baz=135,slow=4.3,SNR=4.3
KIV Kislovodsk 142.31 315 *i* PKIKP **PKPdf 07 44 50.5 +1.9**
KIV pmax pmax
comp=Z,7.0nm,1.1s
NEY Neytrino 142.57 314⇑*i*PKIKP **PKPdf 07 44 53.2 +4.0**
SOC Sochi 144.41 316⇓*e*PKIKP PKPbc 07 44 50.8 +0.1
SOC *e* 07 48 07.3
SOC *e*PPP PPP 07 51 18.9
SOC pmax pmax
comp=Z,10.0nm,0.4s
SOC MLR MLR
comp=Z,179nm,14.2s
SUW Suwalki 145.09 342 *e*PKP **PKPdf 07 44 52.9 -0.1**
SUW Suwalki 145.09 342 *e*PKIKP **PKPdf 07 44 52.9 -0.1**
MUD Monsted U'grnd 145.14 357 *i* P **PKPbc 07 44 52.5 0.0**
comp=Z,139nm,1.3s
MUD *e* 07 45 29.7
MUD Monsted U'grnd 145.14 357 *i* PKIKP **PKPbc 07 44 52.5 0.0**
MUD pmax pmax
comp=Z,140nm,1.3s
ANN Anapa 145.25 319 *i* PKIKP **PKPbc 07 44 52.3 -1.0**
ANN *e* 07 48 13.0
ANN pmax pmax
comp=Z,98nm,1.3s
KLNR Kaliningrad 145.34 345*d* *i*PKIKP **PKPdf 07 44 54.1 +0.7**
AKASG Malin Array Be 145.69 333 PKPbc **PKPdf 07 44 53.0 -1.1**
comp=Z,16nm,0.8s,baz=39,slow=3.7,SNR=33
KIEV Kiev 145.70 333*c* *i*PKP2 **PKPdf 07 44 52.4 -1.8**
KIEV Kiev 145.70 333 *e*PKPdf **PKPdf 07 44 54.0 -0.2**
AK11 Malin Array Si 145.73 333 *e*PKPdf **PKPdf 07 44 53.1 -1.1**
BSD Bornholm Skovb 145.88 351 *i* P **PKPdf 07 44 53.9 -0.4**
comp=Z,78nm,1.3s
BSD *e* 07 45 20.7
BSD Bornholm Skovb 145.88 351 *i* PKP2 **PKPdf 07 44 53.9 -0.4**
BSD pmax pmax
comp=Z,78nm,1.3s
DSB Dublin 147.08 14 *e*PKPdf **PKPbc 07 44 58.7 +0.1**
SIM Simferopol' 147.14 322 *i* PKP2 **PKPbc 07 44 59.7 +0.7**
SIM pmax pmax
comp=Z,72nm,1.1s
GKP Gorka Klasztor 147.23 347 *e*PKP **PKPab 07 45 00.8 +0.1**
GKP Gorka Klasztor 147.23 347 *e*PKP2 **PKPab 07 45 00.8 +0.1**
SORM Soroca 147.99 331⇓*i*P **PKPdf 07 44 58.5 +0.4**
SORM Soroca 147.99 331⇓PKIKP **PKPdf 07 44 58.5 +0.4**
LVV L'vov 148.41 337 *e*PKP2 **PKPbc 07 45 02.6 +0.3**
CMLA Cha da Macela 148.55 52 *i* PKP2 **PKPab 07 45 06.3 -0.2**
KIS Kishinev 148.60 329 *e*PKP **PKPbc 07 45 04.0 +1.2**
KIS LRM MLR 08 49 50.0
comp=Z,300nm,24.0s
KIS Kishinev 148.60 329 *e*PKP2 **PKPbc 07 45 04.0 +1.2**
KIS MLR MLR
comp=Z,400nm,22.0s
KIS MLR MLR
comp=Z,300nm,24.0s
KWP Kalwaria Pacla 149.03 339 *e*PKP **PKPbc 07 45 04.1 +0.2**
KWP Kalwaria Pacla 149.03 339 *e*PKP2 **PKPbc 07 45 04.1 +0.2**
OJC Ojcow 149.42 342 *e*PKP **PKPdf 07 45 02.5 +2.1**
OJC Ojcow 149.42 342 *e*PKIKP **PKPdf 07 45 02.5 +2.1**
OJC Ojcow 149.42 342 *e*PKPdf **PKPbc 07 45 02.9 -2.0**
STHS Stebnicka Huta 149.70 340 *e*PKP2 **PKPbc 07 45 06.9 +1.3**
STHS Stebnicka Huta 149.70 340 *e*PKP **PKPbc 07 45 06.9 +1.3**
KSP Ksiaz 149.72 347 *e*PKP **PKPbc 07 45 06.2 +0.7**
KSP Ksiaz 149.72 347 *e*PKP2 **PKPbc 07 45 06.2 +0.7**
BURAR Bucovina Array 149.74 334⇓*i*P **PKPdf 07 45 02.0 +0.9**
KOLS Kolonicke sedl 149.77 338 *e*PKP **PKPdf 07 45 03.4 +2.4**
CLL Collm 149.86 351 *e*PKPdf **PKPdf 07 45 03.0 +2.0**
CLL ⇓*i*PKPbc **PKiKP 07 45 06.4 -0.4**
comp=Z,70nm,1.3s
CLL ⇑*i*PKPab **PKPab 07 45 12.2 +0.9**
comp=Z,52nm,1.4s
CLL *e* 07 45 19.0
CLL Lm MLR 08 59 00.0
comp=N,200nm,20.0s
CLL Lm MLR 08 59 00.0
comp=E,200nm,20.6s
CLL Lm MLR 08 59 00.0
comp=Z,300nm,19.3s
TESR Tescani 149.97 331⇓*i*P **PKPdf 07 45 02.1 +0.7**
NIE Niedzica 149.99 341 *e*PKP **PKPdf 07 45 03.4 +2.0**
NIE Niedzica 149.99 341 *e*PKHKP **PKPdf 07 45 03.4 +2.0**
UZH Uzhgorod 150.03 338 *e*PKP2 **PKPbc 07 45 07.4 +1.1**
CRVS Cervenica-Dubn 150.07 339 *e*PKHKP **PKPdf 07 45 04.0 +2.5**
CRVS *e* 07 45 09.0
CRVS Cervenica-Dubn 150.07 339 *e*PKP **PKPdf 07 45 04.0 +2.5**
CRVS *e* 07 45 09.0
UPC Upice 150.09 347 *e*PKPDF **PKPdf 07 45 03.2 +1.7**
UPC ⇑*e*PKP **PKiKP 07 45 07.4 +0.1**
UPC *e*PKPAB **PKPab 07 45 14.2 +1.9**
UPC AMS AMS 08 56 20.0
comp=Z,400nm,19.7s
UPC Upice 150.09 347 *e*PKHKP **PKPdf 07 45 03.2 +1.7**
UPC MLR MLR
comp=Z,400nm,19.7s
BRG Berggiesshubel 150.13 350 *e*PKP **PKPdf 07 45 03.6 +2.1**
comp=Z,23nm,1.4s
BRG *e* 07 45 07.3
comp=Z,72nm,1.4s
comp=N,304nm,19.5s
comp=E,118nm,22.3s
comp=Z,351nm,19.4s
BRG Berggiesshubel 150.13 350 *e*PKHKP **PKPdf 07 45 03.6 +2.1**
BRG pmax pmax
comp=Z,23nm,1.4s
BRG MLR MLR
comp=N,304nm,19.5s
BRG MLR MLR
comp=E,118nm,22.3s
BRG MLR MLR
comp=Z,351nm,19.4s
DPC Dobruska-Polom 150.18 346 *e*PKPDF **PKPdf 07 45 03.5 +1.8**
DPC ⇑*e*PKP **PKiKP 07 45 08.0 +0.4**
DPC *e*PKPAB **PKPab 07 45 14.6 +1.9**
DPC AMS AMS 08 56 50.0
comp=Z,400nm,20.2s
DPC Dobruska-Polom 150.18 346 *e*PKHKP **PKPdf 07 45 03.5 +1.8**
DPC *e* 07 45 08.0
DPC MLR MLR

comp=Z,400nm,20.2s
OKC Ostrava-Krasne 150.22 344 *e*SS SS 08 07 59.2 +2.4
OKC AMS AMS 08 53 20.0
comp=Z,400nm,22.1s
CFR Carcaliu 150.23 327⇓ *i*P **PKPdf 07 45 02.6 +0.8**
CFR Carcaliu 150.23 327 ⇓PKHKP **PKPdf 07 45 02.6 +0.8**
BR131 Keskin Array S 150.24 314 *e*PKPbc **PKPbc 07 45 07.0 -0.3**
BRTR Keskin Array B 150.24 314 PKP **PKPdf 07 45 02.6 +0.4**
comp=Z,16nm,1.1s,baz=72,slow=4.0,SNR=22
BRTR PKPbc **PKPbc 07 45 07.5 +0.1**
comp=Z,16nm,1.1s,baz=126,slow=2.5,SNR=35
KRLC Kraliky 150.33 346⇑ *e*PKP **PKPbc 07 45 07.5 +0.4**
KRLC *e*PKPAB **PKPab 07 45 15.0 +1.6**
KRLC Kraliky 150.33 346 *e*PKP2 **PKPbc 07 45 07.5 +0.4**
PVCC Panska Ves 150.36 349 *e*PKPDF **PKPdf 07 45 04.1 +2.2**
PVCC ⇑*e*PKP **PKiKP 07 45 08.5 +0.6**
PVCC Panska Ves 150.36 349 *e*PKHKP **PKPdf 07 45 04.1 +2.2**
MORC Moravsky Berou 150.43 345⇓ *i*P **PKPdf 07 45 02.4 +0.3**
MORC Moravsky Berou 150.43 345 ⇓PKIKP **PKPdf 07 45 02.4 +0.3**
MORC Moravsky Berou 150.43 345 *e*PKPbc **PKPbc 07 45 08.5 +1.1**
PLOR Plostina 150.46 330⇓ *i*P **PKPbc 07 45 07.9 +0.3**
PLOR Plostina 150.46 330 ⇓PKIKP **PKPbc 07 45 07.9 +0.3**
LANS Liptovska Anna 150.48 342 *e*PKIKP **PKPbc 07 45 08.7 +1.2**
LANS Liptovska Anna 150.48 342 *e*PKP **PKPbc 07 45 08.6 +1.1**
HARR Harsova 150.67 327⇓ *i*P **PKPdf 07 45 02.7 +0.2**
HARR Harsova 150.67 327 ⇓PKIKP **PKPdf 07 45 02.7 +0.2**
TLB Topalu 150.69 327⇓ *i*P **PKPdf 07 45 05.3 +2.8**
TLB Topalu 150.69 327 ⇓PKIKP **PKPdf 07 45 05.3 +2.8**
ANTO Ankara 150.73 314 *e*PKIKP **PKPbc 07 45 09.6 +1.2**
ANTO Ankara 150.73 314 *e*PKPbc **PKPbc 07 45 09.6 +1.2**
KECS Kecovo 150.76 340 *e*PKIKP **PKPbc 07 45 09.3 +1.2**
KECS Kecovo 150.76 340 *e*PKP **PKPbc 07 45 09.3 +1.2**
BR231 Keskin MP Arra 150.76 314 *e*PKPbc **PKPbc 07 45 08.6 0.0**
PRU Pruhonice 150.88 348⇑ *e*PKP **PKPbc 07 45 09.2 +0.9**
PRU *e*PKPAB **PKPab 07 45 15.7 +0.1**
PRU *e*SS SS 08 08 09.2 +5.2
PRU AMS AMS 09 01 10.0
comp=Z,300nm,18.3s
PRU Pruhonice 150.88 348 *e*PKIKP **PKPbc 07 45 09.2 +0.9**
PRU *e* 07 45 15.7
PRU MLR MLR
comp=Z,300nm,18.3s
GOPC GO Pecny, Ondr 150.90 348⇑ *e*PKP **PKPbc 07 45 09.3 +0.9**
GOPC *e*PKPAB **PKPab 07 45 17.7 +2.0**
GOPC *e*pPKP **pPKPdf 07 45 21.2 +10**
GOPC AMS AMS 08 52 40.0
comp=Z,400nm,22.3s
GOPC GO Pecny, Ondr 150.90 348 *e*PKIKP **PKPbc 07 45 09.3 +0.9**
GOPC *e* 07 45 17.7
GOPC *e* 07 45 21.2
GOPC MLR MLR
comp=Z,400nm,22.3s
NKC Novy Kostel 150.99 351 *e*PKPDF **PKPdf 07 45 04.7 +1.8**
NKC ⇑*e*PKP **PKiKP 07 45 09.5 +0.3**
NKC *e*PKPAB **PKPab 07 45 16.0 0.0**
NKC AMS AMS 08 53 00.0
comp=Z,400nm,18.5s
NKC Novy Kostel 150.99 351 *e*PKIKP **PKPdf 07 45 04.7 +1.8**
NKC *e* 07 45 09.5
NKC *e* 07 45 16.0
NKC MLR MLR
comp=Z,400nm,18.5s
MLR Muntele Rosu 151.06 330⇓ *i*P **PKPdf 07 45 03.4 +0.1**
MLR Muntele Rosu 151.06 330 ⇓PKIKP **PKPdf 07 45 03.4 +0.1**
MLR Muntele Rosu 151.06 330 *e*PKPbc **PKPbc 07 45 09.7 +0.6**
MEM Membach 151.08 360 PKPbc **PKPbc 07 45 09.7 +0.9**
VRAC Vranov 151.09 345⇑ *i*P **PKPdf 07 45 04.9 +1.8**
VRAC Vranov 151.09 345 ⇑PKIKP **PKPdf 07 45 04.9 +1.8**
VYHS Vyhne 151.25 342 *e*PKIKP **PKPdf 07 45 05.5 +2.2**
VYHS *e* 07 45 10.5
VYHS Vyhne 151.25 342 *e*PKP **PKPdf 07 45 05.5 +2.2**
VYHS *e* 07 45 10.5
BCLA Clavier 151.27 1 PKPbc **PKPbc 07 45 10.4 +1.2**
DRGR 151.41 335⇓ *i*P **PKPdf 07 45 04.8 +1.1**
DRGR 151.41 335 ⇓PKIKP **PKPdf 07 45 04.8 +1.1**
PSZ Piszkesteto 151.44 340⇑ *i*P **PKPbc 07 45 10.4 +0.6**
PSZ Piszkesteto 151.44 340 ⇑PKIKP **PKPbc 07 45 10.4 +0.6**
PSZ Piszkesteto 151.44 340 *e*PKPbc **PKPbc 07 45 10.8 +0.9**
VOIR 151.51 331⇓ *i*P **PKPdf 07 45 06.4 +2.5**
VOIR 151.51 331 ⇓PKIKP **PKPdf 07 45 06.4 +2.5**
DOU Dourbes 151.58 2 PKPbc **PKPbc 07 45 11.4 +1.4**
ARR Arges 151.75 331⇓ *i*P **PKPdf 07 45 05.7 +1.4**
KHC Kasperske Hory 151.88 349 *e*PKPDF **PKPdf 07 45 05.4 +1.1**
KHC ⇑*e*PKP **PKiKP 07 45 11.6 +0.5**
KHC *e*PKPAB **PKPab 07 45 22.7 +2.9**
KHC AMS AMS 09 00 00.0
comp=Z,300nm,21.0s
KHC Kasperske Hory 151.88 349 *e*PKIKP **PKPdf 07 45 05.4 +1.1**
KHC *e* 07 45 11.6
KHC MLR MLR
comp=Z,300nm,21.0s
KHC Kasperske Hory 151.88 349 *e*PKPdf **PKPdf 07 45 05.1 +0.8**
KHC *e*PKPbc **PKiKP 07 45 11.2 +0.1**
GEC2 GERESS Array S 152.13 349 *e*PKIKP **PKPdf 07 45 07.2 +2.4**
GEC2 *e* 07 45 12.4
GEC2 *e* 07 45 21.9
GEC2 GERESS Array S 152.13 349 *e*PKPdf **PKPdf 07 45 07.2 +2.4**
GEC2 *e*PKPbc **PKiKP 07 45 12.3 +0.6**
GEC2 *e*PKPab **PKPab 07 45 21.9 +0.9**
GERES GERESS Array B 152.13 349 PKP **PKPdf 07 45 05.1 +0.3**
comp=Z,2.1nm,1.0s,baz=110,slow=1.6,SNR=9.6
GERES PKPbc **PKiKP 07 45 11.8 +0.1**
comp=Z,8.3nm,0.9s,baz=0.0,slow=5.3,SNR=21
GEA0 GERESS Array S 152.14 349 *e*PKPdf **PKPdf 07 45 06.0 +1.2**
GEA0 *e*PKPbc **PKPbc 07 45 11.5 +0.1**
SIRR Siria 152.25 336⇓ *i*P **PKPdf 07 45 06.3 +1.4**
CSS Mathiatis 152.50 305 *e*PKPbc **PKPbc 07 45 12.8 +0.2**
CONA Conrad Observa 152.56 345 *i* PKiKP **PKiKP 07 45 13.1 +0.5**
comp=Z,42nm,1.5s,SNR=6.7
BZS Buzias 152.81 335⇓ *i*P **PKPdf 07 45 07.0 +1.3**
BZS Buzias 152.81 335 ⇓PKIKP **PKPdf 07 45 07.1 +1.3**
MOA Molln 152.98 347 *i* pPKPdf **PKPdf 07 45 07.7 +1.7**
comp=Z,12nm,1.6s
WLS Welschbruch 153.25 358 PKP **PKPbc 07 45 14.4 +0.6**
ARSA Arzberg 153.27 345 *i* pPKPdf **PKPdf 07 45 08.2 +1.8**
comp=Z,12nm,1.2s
BFO Black Forest 153.29 356 *e*PKIKP **PKPbc 07 45 13.2 -0.7**
BFO Black Forest 153.29 356 *e*PKPbc **PKPbc 07 45 13.2 -0.7**
ECH Echery 153.46 358 PKP **PKPbc 07 45 16.1 +1.8**
MDVR Moldovita 153.47 334⇓ *i*P **PKPbc 07 45 13.4 -1.0**
THEF They Montfort 153.47 360 PKP **PKPbc 07 45 14.6 +0.3**
KBA Koelnbreinsper 153.90 348 *i* PKPdf **PKPdf 07 45 08.3 +0.8**
comp=Z,11nm,1.1s
RETA Reutte 153.90 352 *i* PKiKP **PKiKP 07 45 16.0 +0.6**
comp=Z,11nm,1.0s
SOKA Soboth 153.92 346 *i* PKPdf **PKPdf 07 45 07.6 +0.1**
comp=Z,13nm,1.4s,SNR=7.6
WATA Walderalm 153.94 351 *i* PKiKP **PKiKP 07 45 16.5 +0.9**
comp=Z,4.5nm,0.5s
PERS Pernice 153.94 345 *e*PKPdf **PKPdf 07 45 07.3 -0.1**
MOTA Moosalm 154.00 352 *i* PKiKP **PKiKP 07 45 16.6 +0.9**
comp=Z,17nm,1.1s
WTTA Wattenberg 154.00 351 *i* PKiKP **PKiKP 07 45 16.3 +0.5**
comp=Z,13nm,1.0s
OBKA Obir 154.19 346 *i* pPKPdf **PKPdf 07 45 09.8 +1.9**
comp=Z,11nm,1.4s
DAVA Damuels 154.20 354 *i* PKiKP **PKiKP 07 45 17.5 +1.4**
comp=Z,20nm,1.3s
MYKA Terra Mystica 154.27 348 *i* pPKPdf **PKPdf 07 45 09.9 +2.0**
comp=Z,10nm,1.5s
LOMF Lomont 154.33 358 PKP **PKPbc 07 45 16.5 +0.3**
FETA Feichten 154.37 352 *i* pPKPdf **PKPdf 07 45 09.7 +1.6**
comp=Z,8.8nm,1.1s
ABTA Abfaltersbach 154.37 349 *i* pPKPdf **PKPdf 07 45 09.3 +1.2**
comp=Z,18nm,1.1s
LJU Ljubljana 154.64 346 *e*PKPdf **PKPdf 07 45 09.3 +1.0**
VOJS Vojsko 154.79 347 *i* PKPdf **PKPdf 07 45 08.6 -0.1**
FUORN Ofenpass-Fuorn 154.82 353 *e*PKPdf **PKPdf 07 45 10.5 +1.6**
FUORN *e*PKPbc **PKiKP 07 45 19.0 +1.5**
BOJS Bojanci 154.97 344 *e*PKPdf **PKPdf 07 45 09.8 +1.0**
TUE Stuetta 155.06 354 *e*PKPdf **PKPdf 07 45 10.9 +1.7**
TUE *e*PKPbc PKPbc 07 45 19.9
AGG Agios Georgios 157.64 324 *e*PKIKP **PKPdf 07 45 13.9 +1.3**
AGG Agios Georgios 157.64 324 *e*PKPdf **PKPdf 07 45 13.9 +1.3**
ES19 SONSECA Array 160.16 23 *e*PKPdf **PKPdf 07 45 17.9 +2.3**
ESDC Sonseca Array 160.16 23 PKP **PKPdf 07 45 16.5 +0.9**
comp=Z,0.2nm,0.3s,baz=350,slow=2.0,SNR=7.5
ESDC PKPab **PKPab 07 45 55.9 +0.3**
comp=Z,0.2nm,0.3s,baz=301,slow=3.2,SNR=4.8
LIC Lamto 161.42 144 *e*PKP1 **PKPdf 07 45 18.2 +0.6**
KIC Kosan Boka 161.69 144 *e*PKP1 **PKPdf 07 45 18.1 +0.2**
comp=Z,46nm,1.2s
TIC Toumodi 161.77 143 *e*PKP1 **PKPdf 07 45 17.3 -0.7**

DBIC Dimbokro 161.88 144 PKP **PKPdf 07 45 18.4 +0.3**
comp=Z,13nm,1.2s,baz=107,slow=7.1,SNR=4.3
DBIC PKPab **PKPab 07 46 03.7 +0.1**
comp=Z,4.1nm,0.9s,baz=218,slow=10,SNR=3.4
TOA0 Torodi Ar. Sit 170.68 154 *e*PKPdf **PKPdf 07 45 24.3 -0.6**
TOA0 *e*PKPdf PKPdf 07 45 25.3 +0.4
TOA0 *e*PKPab **PKPab 07 46 43.9 +1.5**
TORD Torodi Ar. Bea 170.68 154 PKP **PKPdf 07 45 24.7 -0.2**
comp=Z,5.5nm,1.1s,baz=291,slow=1.1,SNR=15
TORD PKPab **PKPab 07 46 43.8 +1.5**
comp=Z,3.2nm,1.0s,baz=186,slow=3.0,SNR=6.0

MAN 13 07:25:52, 9.50N×122.10E, h32km, mb4.9, ML3.8, MS3.8, 1C-3D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.13**	**98**⇓	*i*P	Pn	07 26 06.7	-5.0
SNPH				*i* S	Sn	07 26 21.5	-4.8
LLP	**Lapu-Lapu**	**2.01**	**66**⇓	*i*P	Pb	07 26 25.9	-2.0
LLP				*e*S	Sn	07 26 47.1	-0.7
RCP	**Roxas**	**2.14**	**17**⇓	*e*P	Pn	07 26 26.1	+0.6
RCP				*e*S	Sn	07 26 50.6	-0.4
PLP	**Palo**	**3.28**	**59**⇑	*e*P	Pn	07 26 42.6	+1.3
PLP				*i* S	Sn	07 27 20.9	+1.7

IDC **13** *07:27:28.9±5.6, 24.83N×123.28E, h0km, mb3.6/2, mb1 3.8/2, mb1mx3.3/51, mbtmp3.6/2, Error ellipse: s-maj=355.4km s-min=28.1km az=60.0*
ISCJB **13** *07:27:39.9±0.6, 25.09N±0.08×123.78E±0.05, h119km±6km, mb3.6/2, Error ellipse: s-maj=14.2km s-min=6.0km az=157.2*
JMA **13** *07:27:42.0±0.1, 25.01N×123.80E, h109km±2km, M3.8*
ISC 13 07:27:40.7±1.0, 25.11N±0.10×123.77E±0.06, h114km±10km, n20, σ0.65/32, Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JISG	**Ishigakijimahi**	**0.72**	**136**	P	**Pn**	**07 27 59.7**	**+0.2**
JISG				S	**Sn**	**07 28 13.3**	**-0.4**
IRIF	**Iriomote-Funau**	**0.77**	**182**	P	**Pn**	**07 28 00.0**	**0.0**
IRIF				S	**Sn**	**07 28 13.9**	**-0.7**
JIJ	**Ishigaki jima**	**0.82**	**155**	P	**Pn**	**07 28 00.3**	**-0.1**
JIJ				S	**Sn**	**07 28 13.9**	**-1.4**
JKRS	**Kuro-shima**	**0.90**	**166**	P	**Pn**	**07 28 01.4**	**+0.2**
JKRS				S	**Sn**	**07 28 15.6**	**-1.0**
YOJ	**Yonaguni jima**	**0.94**	**227**	P	**Pn**	**07 28 02.3**	**+0.7**
YOJ				*e*S	**Sn**	**07 28 17.1**	**-0.3**
JTJ	**Tarama**	**0.97**	**119**	P	**Pn**	**07 28 02.2**	**+0.4**
JTJ				S	**Sn**	**07 28 17.8**	**0.0**
JYNG	**Yonagunijimaku**	**0.99**	**229**	P	**Pn**	**07 28 02.9**	**+0.8**
JYNG				*e*S	**Sn**	**07 28 18.3**	**0.0**
HATJ	**Hateruma jima**	**1.05**	**178**	P	**Pn**	**07 28 02.7**	**0.0**
HATJ				S	**Sn**	**07 28 18.7**	**-0.6**
JIRB	**Irabujima**	**1.31**	**102**	P	**Pn**	**07 28 05.8**	**+0.4**
JIRB				*e*S	**Sn**	**07 28 23.9**	**-0.3**
JIKM	**Ikemajima**	**1.36**	**98**	P	**Pn**	**07 28 06.9**	**+0.9**
JIKM				S	**Sn**	**07 28 25.6**	**+0.4**
JMJ	**Miyako jima 2**	**1.42**	**102**	P	**Pn**	**07 28 07.5**	**+0.8**
JMJ				S	**Sn**	**07 28 26.9**	**+0.4**
JOGS	**Gusukube**	**1.53**	**103**	P	**Pn**	**07 28 09.0**	**+1.0**
JOGS				S	**Sn**	**07 28 29.4**	**+0.6**
JKE	**Kume jima 2**	**2.98**	**65**	P	**Pn**	**07 28 27.2**	**+0.7**
JNTH	**Nagotoyohara**	**4.08**	**69**	P	**Pn**	**07 28 41.0**	**-0.2**
JOW	**Kunigami**	**4.41**	**66**	P	**Pn**	**07 28 45.1**	**-0.4**
JOKE	**Okinoerabujima**	**4.86**	**62**	P	**Pn**	**07 28 50.7**	**-0.9**
JTK	**Tokunoshima**	**5.36**	**59**	P	**Pn**	**07 28 57.4**	**-0.9**
MKAR	**Makanchi Array**	**39.34**	**314**	P	**P**	**07 34 58.8**	**0.0**
	0.3nm,0.3s,baz=100,slow=8.4,SNR=5.7						
WRA	**Warrmunga Arr**	**45.95**	**166**	P	**P**	**07 35 51.9**	**-0.4**
	210nm,1.0s,baz=347,slow=8.8,SNR=5.7						
ASAR	**Alice Springs**	**49.48**	**168**	P	**P**	**07 36 20.2**	**+0.7**
	0.7nm,0.6s,baz=351,slow=12,SNR=4.9						

GUC 13 07:28:05.7±0.6, 36.48S×73.76W, h37km±6km, ML3.7, 2C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCSP	**San Pedro de C**	**0.63**	**125**	*e*P	Pn	07 28 17.6	-0.7
CCSP				*i* S	Sn	07 28 27.6	+0.5
CCSP				IAML		07 28 33.5	
	comp=N,6μm,0.5s						
COCH	**Cobquecura**	**0.86**	**66**⇑	*i*P	Pn	07 28 21.4	+0.2
COCH				*i* S	Sn	07 28 33.2	+0.7
COCH				IAML		07 28 39.3	
	comp=N,2μm,0.5s						
CCHI	**Chillan**	**1.36**	**96**⇑	*i*P	Pn	07 28 29.5	+1.5
CCHI				IAML		07 28 59.8	
	comp=E,2μm,0.8s						

NIED **13** *07:33:00, 37.90N×143.40E, h8km, Mw3.8 Best double couple: M0 6.49000×10^14 NP1:φs 7.00000°, δ34.00000°, λ-105.00000°. NP2:φs 204.00000°, δ58.00000°, λ-80.00000°*
ISCJB **13** *07:33:22.4±0.9, 37.83N±0.04×143.33E±0.08, h19km, mb4.1/5, Error ellipse: s-maj=8.6km s-min=5.7km az=173.5*
IDC **13** *07:33:22.8±1.9, 37.52N×143.49E, h0km, mb3.6/3, mb1 3.7/7, mb1mx3.6/52, mbtmp3.7/7, ML3.6/3, MS2.9/1, Ms1 2.9/1, ms1mx2.5/47, Error ellipse: s-maj=45.0km s-min=21.6km az=69.0*
JMA **13** *07:33:23.2±0.1, 37.94N×143.41E, h43km, M3.9*
ISC 13 07:33:23.1±1.3, 37.88N±0.04×143.44E±0.10, h19km, n26, σ1.89/30, mb3.9/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.74**	**290**	P	**Pn**	**07 33 51.4**	**-0.9**
JIO				S	**Sn**	**07 34 11.7**	**-2.3**
OFUJ	**Ofunato**	**1.83**	**311**	P	**Pn**	**07 33 52.3**	**-1.3**
JMK	**Ichinoseki**	**2.04**	**302**	P	**Pn**	**07 33 55.7**	**-0.7**
JMK				*e*S	**Sn**	**07 34 19.9**	**-1.5**
JOM	**Ohasama**	**2.31**	**314**	P	**Pn**	**07 33 59.4**	**-0.7**
JOM				S	**Sn**	**07 34 26.2**	**-1.9**
JFT	**Otama**	**2.49**	**263**	P	**Pn**	**07 34 02.7**	**+0.1**
JFT				*e*S	**Sn**	**07 34 31.7**	**-0.7**
JYK	**Kaneyama**	**2.63**	**294**	P	**Pn**	**07 34 04.3**	**-0.2**
JAW	**Awa shima**	**3.35**	**281**	P	**Pn**	**07 34 14.6**	**+0.2**
JAG	**Ashikaga**	**3.50**	**247**	P	**Pn**	**07 34 16.3**	**-0.2**
JAG				S	**Sn**	**07 34 56.5**	**-0.9**
BSO1	**Boso 1**	**3.79**	**212**	P	**Pn**	**07 34 19.5**	**-0.4**
BSO1				*e*S	**Sn**	**07 35 03.2**	**-0.4**
JRY	**Ryogami san**	**4.08**	**244**	P	**Pn**	**07 34 24.7**	**+0.2**
JRY				S	**Sn**	**07 35 10.1**	**-1.7**
JSD	**Sado**	**4.10**	**274**	P	**Pn**	**07 34 25.2**	**+0.5**
JOD2	**Odawara 2**	**4.37**	**235**	P	**Pn**	**07 34 28.5**	**0.0**
JOD2				*e*S	**Sn**	**07 35 15.3**	**-3.5**
MJAR	**Matsushiro Arr**	**4.38**	**254**	Pn	**Pn**	**07 34 30.2**	**+1.6**
	1.5nm,0.3s,baz=69,slow=12,SNR=10						
MAT	**Matsushiro**	**4.38**	**254**	P	**Pn**	**07 34 30.4**	**+1.7**
MAT				*e*S	**Sn**	**07 35 17.3**	**-1.9**
JKB	**Kayabe**	**4.41**	**336**	*e*S	**Sn**	**07 35 16.5**	**-3.2**
JHJ	**Hachijo jima 2**	**5.61**	**213**	Pn	**Pn**	**07 34 44.1**	**-1.3**
	19nm,0.3s,baz=334,slow=19,SNR=15						
JHJ				Sn	**Sn**	**07 35 44.3**	**-5.1**
	14nm,0.3s,baz=270,slow=20,SNR=3.9						
JHJ				LR	LR	07 36 45.9	
	comp=Z,112nm,19.2s,baz=333,slow=38						
USRK	**Ussuriysk Ar.**	**10.70**	**310**	Pn	Pn	07 36 01.1	+5.8
	0.2nm,0.3s,baz=122,slow=16,SNR=2.4						
KLR	**Kul'dur**	**14.14**	**327**	Pn	**P**	**07 36 49.0**	**-0.7**
	0.2nm,0.3s,baz=123,slow=14,SNR=4.2						
H11N2	**WAKE ISLAND Hy**	**27.25**	**125**	T	T	08 07 44.2	
	baz=317,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy**	**27.26**	**125**	T	T	08 07 46.4	
	baz=317,slow=75,SNR=10						
H11N3	**WAKE ISLAND Hy**	**27.27**	**125**	T	T	08 07 43.6	
	baz=317,slow=75,SNR=18						
SONM	**Songino Array**	**28.67**	**302**	P	P	07 39 23.4	+4.7
	0.7nm,0.7s,baz=116,slow=9.8,SNR=3.6						
ZALV	**Zalesovo Beam**	**42.54**	**312**	P	P	07 41 24.4	+7.1
	0.8nm,0.4s,baz=90,slow=8.6,SNR=2.7						
MKAR	**Makanchi Array**	**45.04**	**302**	P	**P**	**07 41 41.6**	**+4.1**
	0.4nm,0.6s,baz=86,slow=9.5,SNR=3.3						
WRA	**Warramunga Arr**	**58.15**	**190**	P	**P**	**07 43 15.8**	**+0.1**
	55nm,0.5s,baz=8.5,slow=7.3,SNR=32						
ASAR	**Alice Springs**	**61.87**	**190**	P	**P**	**07 43 41.7**	**+0.5**
	0.8nm,0.8s,baz=11,slow=6.9,SNR=7.3						

NSSP **13** *07:33:36.5, 38.50N×45.55E, h10km, Ms3.2*
DDA **13** *07:33:37.2, 38.57N×45.48E, h7km, Md3.1*
TEH **13** *07:33:37.4, 38.37N×45.27E, h12km, ML3.2*
ISCJB **13** *07:33:39.7±0.9, 38.46N±0.04×45.54E±0.05, h6km±8km, Error ellipse: s-maj=7.1km s-min=5.3km az=135.7*
CSEM **13** *07:33:39.5±0.4, 38.43N×45.50E, h2km, ML3.2, Error ellipse: s-maj=12.9km s-min=6.8km az=179.0*
ISC 13 07:33:39.6±1.0, 38.47N±0.03×45.50E±0.03, h8km±11km, n17, σ0.89/27, 1C-6D, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ISHB	**Shabestar**	**0.20**	**153**⇑	*e*Pg	**Pg**	**07 33 43.5**	**-0.4**
ISHB				*e*AMB	AMB	07 33 43.6	
	comp=Z,44μm,0.1s						
ISHB				*e*Sg	**Sg**	**07 33 47.2**	**+0.4**
IMRD	**Marand**	**0.29**	**33**	*e*Pg	**Pg**	**07 33 46.0**	**+0.4**
IMRD				*e*AMB	AMB	07 33 57.6	
	comp=Z,90μm,0.1s						
IMRD	**Marand**	**0.29**	**33**	*e*Pg	**Pg**	**07 33 46.0**	**+0.4**
ITBZ	**Tabriz**	**0.56**	**114**⇓	*e*Pg	**Pg**	**07 33 50.7**	**+0.2**
ITBZ				*e*AMB	AMB	07 33 51.1	
	comp=Z,11μm,0.1s						
ITBZ	**Tabriz**	**0.56**	**114**⇓	*e*Pg	**Pg**	**07 33 50.7**	**+0.2**
GRS	**Goris**	**1.22**	**32**⇓	*i*P	**Pb**	**07 34 01.0**	**-2.0**
GRS				⇓*i*S	**Sg**	**07 34 18.0**	**-0.9**
IHRS	**Heris**	**1.22**	**96**	*e*AMB	AMB	07 34 09.6	
	comp=Z,7μm,0.1s						
IHRS				*e*Pn	**Pb**	**07 34 03.0**	**-0.1**
BASK	**Baskale_VAN**	**1.25**	**251**	*i* P	Pb	07 33 56.7	-6.7
BASK				*i* S	**Sg**	**07 34 18.4**	**-1.2**
BASK	**Baskale_VAN**	**1.25**	**251**	P	Pb	07 33 56.7	-6.7
BASK				S	**Sg**	**07 34 18.5**	**-1.2**
IBST	**Bostanabad**	**1.34**	**124**	*e*Sg	**Sb**	**07 34 22.0**	**-0.4**
IBST				*e*Pn	**Pn**	**07 34 03.5**	**-1.3**
IBST				*e*AMB	AMB	07 34 24.5	
	comp=Z,4μm,0.1s						
HAKT	**HAKKARI**	**1.68**	**238**	*i* P	**Pn**	**07 34 09.4**	**-0.1**
HAKT				*i* S	**Sg**	**07 34 34.1**	**+0.5**
HAKT	**HAKKARI**	**1.68**	**238**	P	**Pn**	**07 34 09.4**	**-0.1**
HAKT				S	**Sg**	**07 34 34.1**	**+0.5**
GNI	**Garni**	**1.78**	**341**⇓	*i*P	**Pn**	**07 34 11.3**	**+0.5**
GNI				⇓*i*S	**Sb**	**07 34 36.1**	**+1.0**
ISRB	**Sarab**	**1.83**	**110**	*e*Pn	**Pb**	**07 34 13.3**	**0.0**
ISRB				*e*Sg	**Sg**	**07 34 39.6**	**+1.3**
ISRB				*e*AMB	AMB	07 34 41.9	
	comp=Z,2μm,0.2s						
ISRB	**Sarab**	**1.83**	**110**	*e*Pn	**Pb**	**07 34 13.3**	**0.0**
ISRB				*e*Sg	**Sg**	**07 34 39.6**	**+1.3**
GEVA	**Gevas**	**1.92**	**266**	*i* P	**Pn**	**07 34 13.8**	**+1.1**
GEVA				*i* S	**Sb**	**07 34 39.5**	**+0.3**
GEVA	**Gevas**	**1.92**	**266**	P	**Pn**	**07 34 13.8**	**+1.1**
GEVA				S	**Sb**	**07 34 39.5**	**+0.3**

ISCJB **13** *07:35:58.5±1.3, 32.46S±0.07×70.95W±0.09, h76km±14km, Error ellipse: s-maj=13.7km s-min=9.3km az=33.2*
SJA **13** *07:35:58.4±0.7, 32.32S×70.77W, h21km±3km, ML2.3, MW2.9*
GUC **13** *07:35:58.0±0.4, 32.44S×70.92W, h70km±6km, ML2.6*
ISC 13 07:35:58.2±2.7, 32.50S±0.07×71.0W±0.1, h79km±21km, n12, σ1.51/21, 5D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROCH	**El Roble**	**0.47**	**183**⇓	*i*P	**Pn**	**07 36 12.1**	**+0.1**
ROCH				*i* S	**Sn**	**07 36 22.8**	**+0.7**
ROCH				IAML		07 36 26.5	
	comp=E,273nm,0.1s						
ROC1	**El Roble**	**0.48**	**184**	*e*P	**Pn**	**07 36 12.1**	**+0.1**
ROC1				*e*S	**Sn**	**07 36 22.6**	**+0.4**
PEL	**Peldehue**	**0.69**	**159**⇓	*i*P	**Pn**	**07 36 13.7**	**-0.1**
PEL				*i* S	**Sn**	**07 36 25.8**	**+0.5**
PEL				IAML		07 36 26.7	
	comp=N,471nm,0.2s						
CLCH	**Cerro Calan**	**0.97**	**158**⇓	*i*P	**Pn**	**07 36 17.1**	**+0.1**
CLCH				*i* S	**Sn**	**07 36 31.6**	**+0.7**
CLCH				IAML		07 36 32.2	
	comp=N,165nm,0.3s						
RCDM	**Rinconada Maip**	**1.00**	**172**⇓	*i*P	Pn	07 36 11.4	-5.8
RCDM				*i* S	**Sn**	**07 36 26.1**	**-5.3**
FCH	**Farellones**	**1.01**	**145**⇓	*i*P	**Pn**	**07 36 18.0**	**+0.3**
FCH				*i* S	**Sn**	**07 36 33.0**	**+0.8**
FCH				IAML		07 36 33.4	
	comp=N,369nm,0.3s						
ANTU	**Antumapu**	**1.11**	**165**	*e*P	**Pn**	**07 36 19.0**	**+0.4**
ANTU				*e*S	**Sn**	**07 36 34.7**	**+0.9**
ANTU				IAML		07 36 36.8	
	comp=E,260nm,0.2s						
AUSP	**Uspallata**	**1.37**	**79**	*e*P	**Pn**	**07 36 21.8**	**-0.4**
AUSP				*e*S	**Sn**	**07 36 38.4**	**-1.7**
RTLS	**Leoncito**	**1.59**	**64**	*e*P	**Pn**	**07 36 25.0**	**+0.1**
RTLS				*e*S	**Sn**	**07 36 43.7**	**-1.3**
ASAL	**Salagasta**	**1.81**	**94**	*e*P	**Pn**	**07 36 28.5**	**+0.9**
ASAL				*e*S	**Sn**	**07 36 50.9**	**+0.9**
ACCO	**Cerro Coronel**	**2.51**	**41**	*e*P	**Pn**	**07 36 37.5**	**+0.3**
ACCO				IAML		07 37 11.1	
	comp=Z,18nm,0.3s						
ACDV	**Cuesta del Vie**	**2.81**	**35**	*e*P	**Pn**	**07 36 42.0**	**+0.9**

CSEM **13** *07:43:30.7, 43.95N×11.89E, h7km, MD1.8/5*
ROM 13 07:43:30.7±0.1, 43.95N×11.89E, h7km±1km, Md1.8/5, Ml1.4/1, Error ellipse: s-maj=2.2km s-min=0.8km az=37.0, Central Italy

TPIG	**Tehuac#an**	**2.45**	**353**	*i* P	Pn	07 48 55.8	-2.0
TPIG				*i* S	Sn	07 49 23.9	-3.7
ACX	**Acapulco**	**2.86**	**288**	*i* P	Pg	07 49 31.5	+19
ACX				*e*S	Sb	07 49 45.9	+2.1
PLIG	**Platanillo**	**3.37**	**316**	*i* P	Pn	07 49 07.9	-2.5
PLIG				*i* S	Sn	07 49 46.6	-3.7

ISCJB ***13*** *08:23:26.8±0.2, 15°.61S×0°.03×71°.78W±0°.04, h132km, mb4.3/47, Error ellipse: s-maj=6.2km s-min=2.6km az=144.8*
NEIC ***13*** *08:23:27.1±0.5, 15°.61S×71°.65W, h112km±4km, mb4.5/34, Error ellipse: s-maj=6.9km s-min=4.1km az=61.0*
NEIC Felt at Arequipa and Chilca.
IDC ***13*** *08:23:28.1±1.7, 15°.55S×71°.66W, h122km±15km, mb4.1/17, mb1 4.1/23, mb1mx4.1/36, mbtmp4.5/23, Error ellipse: s-maj=15.4km s-min=10.3km az=62.0*
GUC ***13*** *08:23:28.7±0.3, 16°.20S×72°.15W, h159km±25km, ML5.1*
SCB ***13*** *08:23:29.9±0.8, 15°.41S×71°.42W, h140km±4km, Ml4.1/1, Error ellipse: s-maj=20.3km s-min=13.4km az=134.0*

ISC 13 08:23:28.5±0.4, 15°.71S±0°.04×71°.87W±0°.05, h132km, n279, σ1§27/297, mb4.3/47, 12C-1D, Southern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARCH	**Arica**	**3.15**	**152**	*e*P	**Pn**	**08 24 17.3**	**+0.2**
ARCH				*e*S	**Sn**	**08 24 53.5**	**-1.2**
ARCH				IAML		08 24 55.9	
	comp=N,3μm,0.3s						
PB12	**IPOC Station P**	**3.24**	**153⇑**	*e*P	**Pn**	**08 24 17.7**	**-0.8**
PB12				*e*S	**Sn**	**08 24 54.5**	**-2.5**
BBOD	**La Paz, Gloria**	**3.28**	**107⇑**	*i*Pn	**Pn**	**08 24 21.9**	**+2.5**
PB13	**IPOC Station P**	**3.46**	**139⇑**	*e*P	**Pn**	**08 24 23.1**	**+1.4**
PB13				*e*S	**Sn**	**08 25 04.3**	**+1.5**
BBOB	**La Paz, Bander**	**3.62**	**97⇑**	*i*Pn	**Pn**	**08 24 25.4**	**+1.5**
BBOB				⇑*i*Sn	**Sn**	**08 25 06.6**	**0.0**
	comp=N,323nm,0.8s						
LPAZ	**La Paz**	**3.64**	**100**	P	**Pn**	**08 24 26.1**	**+1.9**
	comp=N,5.1nm,0.3s,baz=309,slow=8,3,SNR=196						
LPAZ				S	**Sn**	**08 25 06.0**	**-1.2**
	comp=N,2.8nm,0.3s,baz=0.0,slow=20,SNR=3.6						
LPAZ	**La Paz**	**3.64**	**100⇑**	*e*P	**Pn**	**08 24 26.0**	**+1.8**
LPAZ	**La Paz**	**3.64**	**100⇑**	*i*Pn	**Pn**	**08 24 26.0**	**+1.8**
LPAZ				*e*Sn	**Sn**	**08 25 05.8**	**-1.4**
BBOJ	**La Paz, Jacaqu**	**3.75**	**110⇑**	*i*Pn	**Pn**	**08 24 28.5**	**+3.0**
BBOE	**La Paz, Chanca**	**3.89**	**107⇑**	*i*Pn	**Pn**	**08 24 30.3**	**+2.8**
MNMC	**Minye Minye**	**4.03**	**148⇑**	*e*P	**Pn**	**08 24 28.7**	**-0.4**
MNMC				*e*S	**Sn**	**08 25 14.5**	**-1.5**
MNMC				IAML		08 25 18.2	
	comp=N,1μm,0.4s						
PSGC	**Pisagua**	**4.21**	**157⇑**	*e*P	**Pn**	**08 24 29.5**	**-1.7**
PSGC				*e*S	**Sn**	**08 25 16.3**	**-3.5**
PSGC				IAML		08 25 18.4	
	comp=E,904nm,0.5s						
HMBC	**Humberstone**	**4.92**	**158**	*e*P	**Pn**	**08 24 39.3**	**-1.3**
HMBC				*e*S	**Sn**	**08 25 32.7**	**-4.1**
PB01	**IPOC Station P**	**5.76**	**157**	*e*Pn	**Pn**	**08 24 50.9**	**-1.1**
NNA	**Nana**	**6.08**	**307**	P	**Pn**	**08 24 56.3**	**0.0**
	comp=E,6.3nm,0.3s,baz=139,slow=15,SNR=7.5						
NNA				S	**Sn**	**08 26 02.7**	**-2.1**
	comp=E,7.1nm,0.3s,baz=210,slow=20,SNR=7.6						
PB04	**IPOC Station P**	**6.78**	**166**	*e*Pn	**Pn**	**08 25 04.2**	**-1.6**
LVC	**Limon Verde**	**7.41**	**158**	P	**Pn**	**08 25 13.8**	**-0.6**
	comp=E,258nm,0.3s,baz=333,slow=9,3,SNR=70						
LVC				S	**Sn**	**08 26 34.2**	**-3.0**
	comp=E,628nm,0.3s,baz=204,slow=22,SNR=15						
PB10	**IPOC Station P**	**7.86**	**171**	*e*Pn	**Pn**	**08 25 18.8**	**-1.3**
PB10				*e*Sn	**Sn**	**08 26 40.3**	**-7.2**
MOCB	**Mochara**	**8.08**	**134**	*e*P	**Pn**	**08 25 24.9**	**+1.4**
SIV	**San Ignacio**	**10.40**	**93**	P	**Pn**	**08 25 51.4**	**-2.9**
	comp=E,2.2nm,0.3s,baz=301,slow=1.7,SNR=23						
SIV				S	**Sn**	**08 27 45.5**	**-3.6**
	baz=78,slow=1.0,SNR=4.4						
SIV	**San Ignacio**	**10.40**	**93**	*e*P	**Pn**	**08 25 50.9**	**-3.4**
ATAH	**Atahualpa**	**10.65**	**322**	P	**Pn**	**08 25 59.0**	**+0.9**
	comp=E,0.4nm,0.3s,baz=28,slow=4.5,SNR=3.6						
ATAH				S	**Sn**	**08 27 52.8**	**-3.1**
	comp=E,0.4nm,0.3s,baz=53,slow=20,SNR=2.9						
SAML	**Samuel**	**10.83**	**53**	*e*Pn	**Pn**	**08 25 55.8**	**-4.2**
OTAV	**Otavalo**	**17.13**	**337**	*e*P	**P**	**08 27 15.5**	**-4.6**
CPUP	**Villa Florida**	**17.18**	**130**	P	**Pn**	**08 27 20.6**	**0.0**
	comp=E,0.2nm,0.3s,baz=325,slow=11,SNR=5.5						
CMBC	**Cumbal**	**17.56**	**340**	*e*P	**Pn**	**08 27 28.8**	**+3.1**
POPC	**Popayan, Colom**	**18.75**	**345**	*e*P	**Pn**	**08 27 38.6**	**-1.0**
PTGA	**Pitinga**	**18.97**	**39**	P	**P**	**08 27 37.8**	**-2.0**
	comp=E,19nm,0.3s,baz=220,slow=13,SNR=139						
PTGA	**Pitinga**	**18.97**	**39**	*e*P	**P**	**08 27 37.8**	**-2.0**
	comp=E,46nm,0.6s						
SJAC	**San Juan de Ar**	**18.98**	**354**	*e*P	**P**	**08 27 36.8**	**-3.2**
ROSC	**El Rosal**	**20.57**	**353**	P	**P**	**08 27 56.8**	**-0.6**
	comp=E,6.1nm,0.7s,baz=158,slow=19,SNR=5.2						
ROSC	**El Rosal**	**20.57**	**353**	*e*P	**P**	**08 27 56.5**	**-0.9**
	comp=E,5.0nm,0.6s						
GUYC	**Guyana, Colomb**	**21.09**	**350**	*e*P	**P**	**08 28 00.9**	**-2.2**
NORC	**Norcasia**	**21.35**	**352**	*e*P	**P**	**08 28 03.9**	**-1.6**
RUSC	**La Rusia**	**21.50**	**357**	*e*P	**P**	**08 28 04.6**	**-3.0**
HELC	**Santa Helena**	**22.06**	**350**	*e*P	**P**	**08 28 11.8**	**-1.6**
BARC	**Barichara**	**22.20**	**357**	*e*P	**P**	**08 28 13.2**	**-1.4**
BDFB	**Brasilia**	**22.97**	**93**	P	**P**	**08 28 21.8**	**-0.1**
	comp=E,4.4nm,0.5s,baz=168,slow=27,SNR=8.8						
CBRI	**Barrientos, No**	**23.30**	**358**	*e*P	**P**	**08 28 22.8**	**-2.2**
GRMC	**Gramalote, San**	**23.30**	**358**	*e*P	**P**	**08 28 22.8**	**-2.2**
SDV	**Santo Domingo**	**24.47**	**3**	P	**P**	**08 28 35.3**	**-0.4**
	comp=E,14nm,0.6s,baz=204,slow=9.1,SNR=12						
SDV	**Santo Domingo**	**24.47**	**3**	*e*P	**P**	**08 28 35.4**	**-0.4**
	comp=E,26nm,0.9s						
PLCA	**Paso Flores**	**24.95**	**178**	P	**P**	**08 28 41.4**	**+1.7**
	comp=E,2.1nm,0.6s,baz=16,slow=11,SNR=4.5						
PCRV	**Puerto La Cruz**	**26.70**	**16**	P	**P**	**08 28 54.6**	**-1.1**
	comp=E,6.0nm,0.7s,baz=173,slow=8.1,SNR=3.2						
USHA	**Ushuaia**	**39.13**	**177**	P	**P**	**08 30 44.2**	**+1.3**
	comp=E,15nm,0.6s,baz=330,slow=10,SNR=5.6						
347A	**Saraland**	**49.51**	**341**	P	**P**	**08 32 06.2**	**+0.5**
	baz=158						
034A	**Hebbronville**	**49.86**	**328**	P	**P**	**08 32 09.3**	**+0.8**
	baz=145						
Z47A	**Carrollton**	**51.04**	**342**	P	**P**	**08 32 16.9**	**-0.3**
	baz=160						
Z48A	**Northport**	**51.06**	**343**	P	**P**	**08 32 16.9**	**-0.5**
	baz=160						
833A	**Chaparral WMA,**	**51.25**	**329**	P	**P**	**08 32 19.1**	**+0.2**
	baz=145						
Y47A	**UCPARC, Winfie**	**51.64**	**343**	P	**P**	**08 32 20.9**	**-0.8**
	baz=160						
633A	**Saathoff Ranch**	**52.07**	**330**	P	**P**	**08 32 25.6**	**+0.6**
	baz=146						
WHTX	**Lake Whitney,**	**53.40**	**333**	P	**P**	**08 32 35.0**	**+0.3**
	baz=149						
333A	**Richland Sprin**	**53.53**	**331**	P	**P**	**08 32 35.6**	**-0.1**
	baz=147						
234A	**Clairette**	**53.71**	**332**	P	**P**	**08 32 37.1**	**+0.1**
	baz=148						
X40A	**Basin Creek Fa**	**53.76**	**339**	P	**P**	**08 32 37.6**	**+0.4**
	baz=154						
V44A	**Blytheville**	**54.03**	**342**	P	**P**	**08 32 39.6**	**+0.4**
	baz=158						
Z36A	**Blue Ridge**	**54.06**	**335**	P	**P**	**08 32 39.8**	**+0.3**
	baz=150						
233A	**Rising Star**	**54.07**	**332**	P	**P**	**08 32 39.4**	**-0.3**
	baz=147						
MIAR	**Mount Ida**	**54.08**	**338**	P	**P**	**08 32 39.4**	**-0.1**
	baz=154						
134A	**White-Moore Ra**	**54.17**	**333**	P	**P**	**08 32 40.5**	**+0.2**
	baz=148						
X39A	**Fountain Ranch**	**54.24**	**337**	P	**P**	**08 32 41.3**	**+0.5**
	baz=153						
TXAR	**Lajitas Array**	**54.30**	**325**	P	**P**	**08 32 41.6**	**+0.2**
	comp=E,1.0nm,0.7s,baz=156,slow=8.8,SNR=15						
TX31	**Lajitas Ar. Si**	**54.30**	**325**	*e*P	**P**	**08 32 41.5**	**+0.1**
TX31				*e*P	**P**	**08 32 41.7**	**+0.3**
Y37A	**Hugo**	**54.35**	**336**	P	**P**	**08 32 42.7**	**+1.1**
	baz=151						
133A	**Hamilton Ranch**	**54.58**	**332**	P	**P**	**08 32 43.7**	**+0.4**
	baz=147						
X38A	**Whitesboro**	**54.65**	**337**	P	**P**	**08 32 43.6**	**-0.1**
	baz=152						
V41A	**Mountainview**	**54.70**	**340**	P	**P**	**08 32 43.5**	**-0.6**
	baz=156						
W39A	**Magazine**	**54.73**	**338**	P	**P**	**08 32 44.2**	**-0.1**
	baz=154						
X37A	**Clayton**	**54.79**	**336**	P	**P**	**08 32 45.2**	**+0.5**
	baz=152						
W38A	**Poteau**	**54.89**	**337**	P	**P**	**08 32 45.1**	**-0.4**
	baz=153						
ABTX	**Abilene, Hawle**	**54.92**	**331**	P	**P**	**08 32 46.0**	**+0.2**
	baz=147						
U42A	**Revenden**	**54.92**	**341**	P	**P**	**08 32 45.1**	**-0.6**
	baz=157						
Z33A	**Whitaker Ranch**	**55.08**	**332**	P	**P**	**08 32 46.9**	**0.0**
	baz=148						
X36A	**Centrahoma**	**55.16**	**335**	P	**P**	**08 32 46.9**	**-0.5**
	baz=151						
Y34A	**Reagan Ranch,**	**55.21**	**334**	P	**P**	**08 32 47.7**	**-0.1**
	baz=149						
V39A	**Pettigrew**	**55.26**	**338**	P	**P**	**08 32 48.0**	**-0.2**
	baz=154						
W37B	**Quinton**	**55.30**	**337**	P	**P**	**08 32 48.6**	**+0.2**
	baz=152						
V38A	**Canehill**	**55.56**	**338**	P	**P**	**08 32 49.7**	**-0.5**
	baz=153						
S44A	**Carbondale**	**55.58**	**343**	P	**P**	**08 32 49.9**	**-0.4**
	baz=159						
SIUC	**Southern Illin**	**55.59**	**343**	*e*P	**P**	**08 32 50.1**	**-0.3**
	comp=E,13nm,0.7s						
W36A	**Wetumka**	**55.61**	**336**	P	**P**	**08 32 50.6**	**0.0**
	baz=151						
U39A	**Green Forest**	**55.69**	**339**	P	**P**	**08 32 50.6**	**-0.6**
	baz=154						
X34A	**Smith Ranch, M**	**55.80**	**334**	P	**P**	**08 32 52.4**	**+0.4**
	baz=149						
V37A	**Hulbert**	**55.84**	**337**	P	**P**	**08 32 52.3**	**0.0**
	baz=152						
W35A	**Tecumseh**	**55.88**	**335**	P	**P**	**08 32 52.4**	**-0.2**
	baz=150						
O56A	**Blue Knob Stat**	**56.04**	**354**	P	**P**	**08 32 53.8**	**+0.1**
	baz=172						
R44A	**Waltonville**	**56.05**	**344**	P	**P**	**08 32 54.0**	**+0.3**
	baz=160						
V36A	**Jenks**	**56.06**	**336**	P	**P**	**08 32 53.9**	**0.0**
	baz=152						
T40A	**Mansfield**	**56.07**	**340**	P	**P**	**08 32 53.6**	**-0.3**
	baz=156						
S41A	**Jillco Farms,**	**56.22**	**341**	P	**P**	**08 32 54.2**	**-0.8**
	baz=157						
U37A	**Salina**	**56.30**	**338**	P	**P**	**08 32 55.6**	**+0.1**
	baz=153						
WMOK	**Wichita Mounta**	**56.32**	**333**	P	**P**	**08 32 55.5**	**-0.2**
	baz=148						
W33A	**Caddo, Fort Co**	**56.53**	**334**	P	**P**	**08 32 57.6**	**+0.4**
	baz=149,SNR=6.1						
T38A	**Diamond**	**56.56**	**339**	P	**P**	**08 32 56.8**	**-0.6**
	baz=154						
Q44A	**Meyer Farm, Va**	**56.65**	**344**	P	**P**	**08 32 57.2**	**-0.7**
	baz=160						
V34A	**Guthrie**	**56.73**	**335**	P	**P**	**08 32 58.1**	**-0.5**
	baz=150						
S39A	**Bolivar**	**56.82**	**340**	P	**P**	**08 32 58.3**	**-0.9**
	baz=155						
W32A	**Sentinel**	**56.84**	**333**	P	**P**	**08 32 59.4**	**0.0**
	baz=148,SNR=6.8						
T37A	**Cheneyville 18**	**56.87**	**338**	P	**P**	**08 32 59.4**	**-0.1**
	baz=153						
U35A	**Pawnee**	**56.88**	**336**	P	**P**	**08 32 59.5**	**-0.1**
	baz=151						
R40A	**Maddies Statio**	**57.03**	**341**	P	**P**	**08 32 59.6**	**-1.0**
	baz=156						
V33A	**Lossen Ranch,**	**57.03**	**334**	P	**P**	**08 33 00.9**	**+0.1**
	baz=149						
MNTX	**Cornudas Mount**	**57.06**	**326**	P	**P**	**08 33 00.8**	**-0.2**
	baz=140						
MNTX	**Cornudas Mount**	**57.06**	**326**	*e*P	**P**	**08 33 00.9**	**-0.2**
	comp=E,4.3nm,1.3s						
Q42A	**Golden Eagle**	**57.08**	**343**	P	**P**	**08 32 59.9**	**-1.1**
	baz=158						
V32A	**Arapaho**	**57.26**	**334**	P	**P**	**08 33 02.4**	**0.0**
	baz=148						
S37A	**Fort Scott**	**57.40**	**338**	P	**P**	**08 33 02.3**	**-1.0**
	baz=153						
R38A	**Fenwick Farm,**	**57.47**	**339**	P	**P**	**08 33 02.6**	**-1.1**
	baz=154						
MSTX	**Muleshoe**	**57.51**	**330**	P	**P**	**08 33 03.9**	**-0.4**
	baz=144						
MSTX	**Muleshoe**	**57.51**	**330**	*e*P	**P**	**08 33 04.8**	**+0.5**
	comp=E,6.9nm,1.1s						
T34A	**McClaskey Farm**	**57.63**	**336**	P	**P**	**08 33 04.6**	**-0.3**
	baz=151						
S36A	**Lake Cedric, C**	**57.64**	**338**	P	**P**	**08 33 04.5**	**-0.5**
	baz=152						
S35A	**Otter Creek Ra**	**57.87**	**337**	P	**P**	**08 33 06.3**	**-0.3**
	baz=152						
P41A	**Barry, Barry**	**57.94**	**343**	P	**P**	**08 33 05.8**	**-1.2**
	baz=158						
Q39A	**Willow Grove F**	**57.94**	**341**	P	**P**	**08 33 06.4**	**-0.6**
	baz=156						
Q38A	**Cook Store, C**	**58.07**	**340**	P	**P**	**08 33 07.5**	**-0.4**
	baz=155						
P40A	**Paris**	**58.09**	**342**	P	**P**	**08 33 07.3**	**-0.7**
	baz=157						
R36A	**Gordon, Harris**	**58.14**	**338**	P	**P**	**08 33 08.2**	**-0.3**
	baz=153						
S33A	**Kaszmaul Farm,**	**58.44**	**336**	P	**P**	**08 33 10.4**	**-0.2**
	baz=150						
T32A	**Huddler Ranch,**	**58.46**	**335**	P	**P**	**08 33 10.9**	**+0.2**
	baz=149						
Q35A	**Mercer Eighty,**	**58.81**	**338**	P	**P**	**08 33 12.3**	**-0.8**
	baz=152						
P37A	**Lathrop**	**58.88**	**340**	P	**P**	**08 33 13.1**	**-0.4**
	baz=154						
121A	**Cookes Peak, D**	**59.01**	**325**	P	**P**	**08 33 16.0**	**+1.2**
	baz=139						
Q34A	**Chapman**	**59.20**	**337**	P	**P**	**08 33 15.3**	**-0.4**
	baz=152						
R32A	**Long Quarter,**	**59.44**	**336**	P	**P**	**08 33 17.4**	**0.0**
	baz=150						
P34A	**Walnut Farm, R**	**59.70**	**338**	P	**P**	**08 33 19.2**	**0.0**
	baz=152						
Q32A	**Meitler Ranch,**	**59.87**	**336**	P	**P**	**08 33 20.5**	**+0.2**
	baz=150						
N37A	**Lee Faris, Mou**	**59.89**	**341**	P	**P**	**08 33 20.0**	**-0.4**
	baz=155						
L41A	**Preston**	**60.01**	**344**	P	**P**	**08 33 20.1**	**-1.2**
	baz=159						
LAZ	**Ladron**	**60.08**	**327**	*e*P	**P**	**08 33 23.3**	**+1.2**
ANMO	**Albuquerque**	**60.14**	**327**	P	**P**	**08 33 23.0**	**+0.5**
	baz=141						
N36A	**Muff Farm, Cla**	**60.19**	**340**	P	**P**	**08 33 22.4**	**-0.1**
	baz=154						
L40A	**Anamosa**	**60.20**	**343**	P	**P**	**08 33 22.2**	**-0.3**
	baz=158						
O34A	**Beatrice**	**60.22**	**338**	P	**P**	**08 33 22.1**	**-0.6**
	baz=152						
P32A	**Huiting Farm,**	**60.43**	**336**	P	**P**	**08 33 23.6**	**-0.6**
	baz=150						
O33A	**Hebron**	**60.45**	**338**	P	**P**	**08 33 23.9**	**-0.4**
	baz=151						
N35A	**Tabor**	**60.45**	**339**	P	**P**	**08 33 23.9**	**-0.4**
	baz=153						
N34A	**Lincoln**	**60.73**	**339**	P	**P**	**08 33 25.7**	**-0.4**
	baz=152						
T25A	**Trinidad**	**60.85**	**331**	P	**P**	**08 33 28.1**	**+0.8**
	baz=144						
K39A	**Oelwein**	**60.98**	**343**	P	**P**	**08 33 27.1**	**-0.7**
	baz=158						
L36A	**Harm Buss Farm**	**61.25**	**341**	P	**P**	**08 33 28.9**	**-0.7**
	baz=155						
N32A	**Stulken Farm,**	**61.31**	**337**	P	**P**	**08 33 30.4**	**+0.3**
	baz=151						
J40A	**Soldiers Grove**	**61.31**	**344**	P	**P**	**08 33 29.3**	**-0.7**
	baz=159						
KSCO	**Kaye Shedlock'**	**61.57**	**333**	P	**P**	**08 33 32.3**	**+0.3**
	baz=146						
KSCO	**Kaye Shedlock'**	**61.57**	**333**	*e*P	**P**	**08 33 32.9**	**+0.8**
	comp=E,9.3nm,0.7s						
K36A	**Gilmore City**	**61.67**	**341**	P	**P**	**08 33 31.6**	**-0.9**
	baz=155						
L34A	**Svendsen Farm,**	**61.69**	**339**	P	**P**	**08 33 32.0**	**-0.6**
	baz=153						
SDCO	**Great Sand Dun**	**61.86**	**330**	P	**P**	**08 33 35.4**	**+1.2**
	baz=143						
SDCO	**Great Sand Dun**	**61.86**	**330**	*e*P	**P**	**08 33 35.0**	**+0.8**
	comp=E,5.2nm,0.6s						
J37A	**Redenius Farm,**	**62.01**	**342**	P	**P**	**08 33 33.8**	**-0.9**
	baz=156						
J36A	**Seneca 1, Swea**	**62.26**	**342**	P	**P**	**08 33 35.8**	**-0.5**
	baz=155						
I38A	**Scanlan Farm,**	**62.34**	**343**	P	**P**	**08 33 36.0**	**-0.9**
	baz=158						
X16A	**Lo Mia Camp, P**	**62.46**	**324**	*e*P	**P**	**08 33 39.6**	**+1.4**
	comp=E,3.3nm,0.8s						
S22A	**4UR Ranch, Cre**	**62.51**	**329**	P	**P**	**08 33 39.4**	**+0.8**
	baz=141						
L31A	**Butterfield Fa**	**62.74**	**338**	P	**P**	**08 33 40.6**	**+1.0**
	baz=150						
OGNE	**Ogallala**	**62.93**	**335**	P	**P**	**08 33 41.5**	**+0.5**
	baz=147						
H37A	**Dierke Farm, C**	**63.00**	**343**	P	**P**	**08 33 41.2**	**-0.1**
	baz=157						
J33A	**Davis**	**63.09**	**340**	P	**P**	**08 33 42.0**	**+0.1**
	baz=153						
K31A	**O'Neill**	**63.10**	**338**	P	**P**	**08 33 41.9**	**-0.1**
	baz=151						
WUAZ	**Wupatki**	**63.22**	**324**	P	**P**	**08 33 44.7**	**+1.6**
	baz=136						
WUAZ	**Wupatki**	**63.22**	**324**	*e*P	**P**	**08 33 44.7**	**+1.6**
	comp=E,5.6nm,1.0s						
H36A	**Jessenland, He**	**63.28**	**343**	P	**P**	**08 33 43.0**	**-0.1**
	baz=156						
ECSD	**EROS Data Cent**	**63.34**	**340**	P	**P**	**08 33 43.8**	**+0.2**
	baz=153						
J32A	**Parkston**	**63.44**	**339**	P	**P**	**08 33 44.2**	**+0.1**
	baz=152						
K30A	**Basset**	**63.46**	**337**	P	**P**	**08 33 44.7**	**+0.3**
	baz=150						
ISCO	**Idaho Springs**	**63.55**	**331**	P	**P**	**08 33 45.4**	**+0.1**
	baz=143						
SPMN	**Marine on St.**	**63.56**	**344**	P	**P**	**08 33 45.0**	**+0.1**
	baz=157						
H35A	**Sunnyside Ranc**	**63.66**	**342**	P	**P**	**08 33 44.9**	**-0.6**
	baz=155,SNR=5.6						
PV01	**Paradox Valley**	**63.68**	**328**	*e*P	**P**	**08 33 47.4**	**+1.2**
SMCO	**Snowmass**	**63.70**	**330**	*e*P	**P**	**08 33 46.7**	**+0.3**
	comp=E,2.8nm,0.6s						
I32A	**Karley and Nic**	**63.89**	**340**	P	**P**	**08 33 47.2**	**+0.1**
	baz=152						
H34A	**Spellman Lake,**	**63.91**	**341**	P	**P**	**08 33 47.4**	**+0.1**
	baz=154						
J30A	**Dallas**	**63.98**	**338**	P	**P**	**08 33 47.8**	**0.0**
	baz=150						
G35A	**Watkins**	**64.03**	**342**	P	**P**	**08 33 47.1**	**-0.9**
	baz=156						
H33A	**Prehn Over Nor**	**64.23**	**341**	P	**P**	**08 33 49.6**	**+0.2**
	baz=153						
I31A	**Royce, Wessing**	**64.25**	**339**	P	**P**	**08 33 49.4**	**-0.1**
	baz=151,SNR=15						
H32A	**Carlson Farm,**	**64.30**	**340**	P	**P**	**08 33 49.9**	**0.0**
	baz=152						
F36A	**Milaca**	**64.34**	**343**	P	**P**	**08 33 49.7**	**-0.4**
	baz=157						
W13A	**Hualapai Mount**	**64.36**	**323**	*e*P	**P**	**08 33 52.3**	**+1.6**
	comp=E,2.4nm,1.0s						
MONP2	**Monument Peak**	**64.41**	**319**	P	**P**	**08 33 51.7**	**+0.7**
	baz=131						
IRM	**Iron Mountain**	**64.46**	**321**	P	**P**	**08 33 52.2**	**+1.1**
	baz=133						
N23A	**Red Feather La**	**64.58**	**332**	P	**P**	**08 33 52.5**	**+0.5**
	baz=143						
G33A	**Ortonville**	**64.59**	**341**	P	**P**	**08 33 51.5**	**-0.2**
	baz=154						
H31A	**Wolsey**	**64.63**	**339**	P	**P**	**08 33 51.7**	**-0.3**
	baz=151						
F35A	**Swanville**	**64.63**	**343**	P	**P**	**08 33 51.9**	**-0.1**
	baz=156						
E36A	**McGregor**	**64.87**	**344**	P	**P**	**08 33 53.1**	**-0.4**
	baz=157						
O20A	**White River Ci**	**65.06**	**330**	P	**P**	**08 33 55.4**	**+0.3**
	baz=141						
F33A	**5 Mile Ranch,**	**65.13**	**341**	P	**P**	**08 33 54.9**	**-0.2**
	baz=154						
E35A	**Pequot Lakes**	**65.22**	**343**	P	**P**	**08 33 55.5**	**-0.2**
	baz=156						
LCMT	**Little Creek M**	**65.34**	**324**	*e*P	**P**	**08 33 58.6**	**+1.7**
	comp=E,1.8nm,0.7s						
E34A	**Wadena**	**65.40**	**343**	P	**P**	**08 33 56.7**	**-0.2**
	baz=155						
MTPU	**Mount Pierson**	**65.50**	**326**	*e*P	**P**	**08 33 59.5**	**+1.4**
	comp=E,2.3nm,0.7s						
E33A	**Westby DABS, E**	**65.64**	**342**	P	**P**	**08 33 58.0**	**-0.4**
	baz=154						
C37A	**Embarrass**	**65.72**	**345**	P	**P**	**08 33 58.8**	**-0.1**
	baz=158						
EYMN	**Ely**	**65.75**	**346**	P	**P**	**08 33 58.9**	**-0.2**
	baz=159						
F31A	**Hecla**	**65.77**	**340**	P	**P**	**08 33 59.1**	**-0.2**
	baz=152,SNR=6.0						
CCUT	**Cedar City**	**65.79**	**325**	*e*P	**P**	**08 34 01.1**	**+1.2**
	comp=E,3.1nm,0.8s						
MSU	**Marysvale**	**65.84**	**326**	*e*P	**P**	**08 34 01.8**	**+1.6**
C36A	**Pine Crest Far**	**65.91**	**345**	P	**P**	**08 33 59.7**	**-0.4**
	baz=158,SNR=5.7						
F30A	**Leola**	**66.00**	**340**	P	**P**	**08 34 01.0**	**+0.2**
	baz=151						
SHPR	**Sheep Range**	**66.08**	**323**	*e*P	**P**	**08 34 03.5**	**+1.9**
	comp=E,6.3nm,0.9s						
C35A	**Jirik Farms, M**	**66.16**	**344**	P	**P**	**08 34 02.2**	**+0.5**
	baz=156						
D33A	**AnnSam, Waubun**	**66.17**	**342**	P	**P**	**08 34 02.3**	**+0.6**
	baz=154						
K22A	**Casper**	**66.25**	**333**	P	**P**	**08 34 03.0**	**+0.4**
	baz=143						
F29A	**Eureka**	**66.28**	**339**	P	**P**	**08 34 02.7**	**+0.2**
	baz=150						
C34A	**RKJ Ranch, Bem**	**66.36**	**343**	P	**P**	**08 34 02.4**	**-0.6**
	baz=156,SNR=5.4						
RSSD	**Black Hills**	**66.39**	**335**	P	**P**	**08 34 04.3**	**+0.7**
	baz=146						
B35A	**Bob, Littlefor**	**66.70**	**344**	P	**P**	**08 34 04.3**	**-0.9**
	baz=157						
C33A	**Trail**	**66.71**	**343**	P	**P**	**08 34 05.3**

MSO	**Missoula**	**72.83**	**331**	P		**P**	**08 34 44.7**	**+1.8**
	baz=137								
BMO	**Blue Mountains**	**73.05**	**328**	*e*P		**P**	**08 34 45.2**	**+1.0**
	comp=E,2.0nm,0.8s								
M04C	**Macdoel**	**73.46**	**323**	P		**P**	**08 34 47.9**	**+1.2**
	baz=130								
F10A	**Beach Ranch, E**	**73.79**	**329**	*e*P		**P**	**08 34 50.1**	**+1.6**
	comp=E,9.8nm,1.5s								
M02C	**Callahan**	**73.80**	**323**	P		**P**	**08 34 49.6**	**+0.9**
	baz=129								
J05D	**Fort Rock, OR**	**74.09**	**325**	P		**P**	**08 34 51.7**	**+1.3**
	baz=130								
L02D	**Cave Junction,**	**74.72**	**323**	P		**P**	**08 34 55.5**	**+1.6**
	baz=128								
I05D	**Terrebonne, OR**	**74.83**	**326**	P		**P**	**08 34 56.3**	**+1.8**
	baz=130								
EDM	**Edmonton**	**77.36**	**336**	*e*P		**P**	**08 35 08.4**	**-0.2**
	comp=E,22nm,1.3s								
TOA0	**Torodi Ar. Sit**	**78.20**	**73**	*e*P		**P**	**08 35 12.2**	**-1.8**
	comp=E,4.4nm,0.9s								
TOA0				*e*P		**P**	**08 35 12.4**	**-1.6**
TORD	**Torodi Ar. Bea**	**78.20**	**73**	P		**P**	**08 35 12.4**	**-1.7**
	comp=E,3.3nm,0.7s,baz=258,slow=5.2,SNR=20								
TORD				pP		**pP**	**08 35 47.3**	**+0.3**
	comp=E,1.7nm,1.0s,baz=259,slow=4.0,SNR=2.4								
SBA	**Scott Base**	**80.98**	**191**	*e*P		**P**	**08 35 31.1**	**+3.1**
	comp=E,3.6nm,0.8s								
VNDA	**Vanda**	**82.02**	**190**	P		**P**	**08 35 36.0**	**+2.5**
	comp=E,2.4nm,0.8s,baz=119,slow=3.8,SNR=16								
VNDA	**Vanda**	**82.02**	**190**	*e*P		**P**	**08 35 36.0**	**+2.5**
	comp=E,3.3nm,0.9s								
SYO	**Syowa Base**	**82.87**	**160⇑**	*e*P		**P**	**08 35 37.0**	**-1.0**
SYO	**Syowa Base**	**82.87**	**160⇓**	*e*PcP		**PcP**	**08 35 42.6**	**+0.1**
SUR	**Sutherland**	**83.96**	**122**	P		**P**	**08 35 45.4**	**+0.9**
	comp=E,0.4nm,1.0s,baz=231,slow=6.5,SNR=2.3								
YKA	**Yellowknife Ar**	**84.83**	**342**	P		**P**	**08 35 47.7**	**-0.1**
	comp=E,3.9nm,0.6s,baz=137,slow=5.3,SNR=28								
YKA				pP		**pP**	**08 36 23.6**	**+2.2**
	comp=E,1.2nm,0.8s,baz=135,slow=5.4,SNR=2.5								
BOSA	**Boshof**	**88.67**	**119**	P		**P**	**08 36 07.6**	**0.0**
	comp=E,1.5nm,0.6s,baz=278,slow=3.7,SNR=4.0								
MAW	**Mawson**	**90.64**	**164**	P		**P**	**08 36 17.2**	**+1.4**
	comp=E,3.2nm,0.6s,baz=244,slow=11,SNR=8.0								
SUMG	**Summit**	**90.83**	**10**	*e*P		**P**	**08 36 17.3**	**+0.5**
	comp=E,5.3nm,0.8s								
MATP	**Matopo**	**93.97**	**112**	P		**P**	**08 36 33.0**	**+0.7**
	comp=E,1.6nm,1.0s,baz=268,slow=8.2,SNR=5.7								
ILAR	**Eielson Array**	**97.84**	**335**	P		**PKPdf**	**08 36 48.3**	**-0.3**
	comp=E,0.3nm,0.7s,baz=123,slow=2.7,SNR=3.6								
STKA	**Stephens Creek**	**122.82**	**214**	PKP		**PKPdf**	**08 42 10.6**	**+1.0**
	comp=E,2.4nm,0.7s,baz=113,slow=5.9,SNR=11								
ABKAR	**Akbulak array**	**128.61**	**39**	*e*PKPdf		**PKPdf**	**08 42 21.3**	**+1.3**
ZRNK	**Zerenda**	**131.79**	**31**	*e*PKPdf		**PKPdf**	**08 42 27.2**	**+1.3**
AS01	**Alice Springs**	**133.43**	**213**	*e*PKPdf		**PKPdf**	**08 42 30.2**	**+0.2**
ASAR	**Alice Springs**	**133.45**	**213**	PKP		**PKPdf**	**08 42 30.5**	**+0.5**
	comp=E,1.8nm,0.6s,baz=125,slow=1.9,SNR=26								
WRA	**Warramunga Arr**	**136.19**	**217**	PKP		**PKPdf**	**08 42 36.2**	**+1.0**
	comp=E,3.9nm,0.5s,baz=132,slow=1.7,SNR=45								
ZALV	**Zalesovo Beam**	**137.72**	**20**	PKP		**PKPdf**	**08 42 37.7**	**+0.7**
	comp=E,2.0nm,0.4s,baz=286,slow=1.0,SNR=3.2								
USRK	**Ussuriysk Ar.**	**145.13**	**329**	PKPbc		**PKPdf**	**08 42 50.6**	**+0.1**
	comp=E,2.3nm,0.6s,baz=24,slow=4.3,SNR=5.2								
MJAR	**Matsushiro Arr**	**146.17**	**314**	PKPbc		**PKPab**	**08 42 54.3**	**-0.4**
	comp=E,5.6nm,0.8s,baz=62,slow=1.3,SNR=17								
MAJO	**Matsushiro**	**146.17**	**314**	*e*PKPdf		**PKPab**	**08 42 54.6**	**-0.1**
MJB9	**Matsu-Tunnel**	**146.17**	**314**	*e*PKPdf		**PKPab**	**08 42 54.5**	**-0.1**
SONA1	**Songino Array**	**147.93**	**2**	*e*PKPbc		**PKPbc**	**08 42 59.2**	**+0.8**
SONM	**Songino Array**	**147.94**	**2**	PKPbc		**PKPbc**	**08 42 59.3**	**+0.8**
	comp=E,4.9nm,0.5s,baz=320,slow=1.8,SNR=30								
KSRS	**Korea Array**	**152.15**	**325**	PKPbc		**PKPbc**	**08 43 10.0**	**+1.2**
	comp=E,3.1nm,0.6s,baz=1.7,slow=2.1,SNR=8.0								
KSAR	**Wonju Array Be**	**152.18**	**325**	PKPbc		**PKPbc**	**08 43 10.0**	**+1.1**

NIED ***13*** *08:35:00, 36.90N×141.50E, h5km, Mw3.9 Best double couple: M0 7.75000×10^14 NP1:φ=25.00000°, δ=37.00000°, λ=-91.00000°. NP2:φ=206.00000°, δ=53.00000°, λ=-89.00000°.*

IDC ***13*** *08:35:01.2±0.9, 36.92N×141.34E, h0km, mb3.8/7, mb1 3.9/11, mb1mx3.7/54, mbtmp3.7/11, ML3.3/4, MS3.1/4, Ms1 3.1/4, ms1mx2.8/44, Error ellipse: s-maj=23.1km s-min=17.1km az=95.0*

ISCJB ***13*** *08:35:02.5±1.4, 36.92N±0.03×141.44E±0.09, h23km±9km, mb3.9/7, Error ellipse: s-maj=12.8km s-min=5.4km az=8.7*

JMA ***13*** *08:35:02.2±0.1, 36.91N×141.45E, h31km±1km, M3.9*

JMA Felt I J1.

ISC 13 08:35:03.4±1.8, 36°95N±0.04×141°37E±0.08, h14km±10km, n27, σ1§30/28, mb4.0/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
ONAJ	**Iwakimizuishiy**	**0.48**	**288**	P		**Pg**	**08**	**35**	**13.0 +0.1**
ONAJ				S		**Sb**	**08**	**35**	**20.7 0.0**
JFK	**Kawauchi**	**0.57**	**317**	P		**Pg**	**08**	**35**	**14.6 -0.1**
JFK				S		**Sb**	**08**	**35**	**23.5 +0.2**
JHO	**Hitachi**	**0.73**	**242**	P		**Pg**	**08**	**35**	**15.9 -1.6**
JHO				S		**Sg**	**08**	**35**	**27.4 +0.3**
JFT	**Otama**	**1.00**	**305**	P		**Pb**	**08**	**35**	**22.0 -0.5**
JFT				S		**Sg**	**08**	**35**	**36.1 +0.3**
JMM	**Marumori**	**1.02**	**334**	P		**Pb**	**08**	**35**	**21.9 -1.0**
JMM				S		**Sb**	**08**	**35**	**35.9 -0.3**
JIO	**Ouri**	**1.50**	**359**	P		**Pn**	**08**	**35**	**28.7 -1.2**
JIO				S		**Sn**	**08**	**35**	**47.7 -1.6**
JOU	**Okura**	**1.52**	**339**	*e*S		**Sn**	**08**	**35**	**48.5 -1.3**
MJAR	**Matsushiro Arr**	**2.57**	**262**	Pn		**Pn**	**08**	**35**	**45.0 +0.3**
	2.6nm,0.3s,baz=86,slow=15,SNR=26								
MJAR				LR		LR	08	37	06.5
	comp=Z,198nm,18.7s,baz=90,slow=50								
MAT	**Matsushiro**	**2.57**	**262**	P		**Pn**	**08**	**35**	**45.3 +0.6**
MAT				*e*S		**Sb**	**08**	**36**	**20.4 -0.4**
JHJ	**Hachijo jima 2**	**4.04**	**199**	Pn		**Pn**	**08**	**36**	**04.9 +0.1**
	15nm,0.3s,baz=327,slow=21,SNR=16								
JHJ				Sn		**Sn**	**08**	**36**	**51.4 -0.6**
	5.8nm,0.3s,baz=222,slow=20,SNR=3.7								
ASAJ	**Asahikawa**	**7.22**	**7**	Pn		**Pn**	**08**	**36**	**50.3 +1.8**
	0.7nm,0.3s,baz=184,slow=6.7,SNR=4.5								
USRK	**Ussuriysk Ar.**	**10.16**	**318**	Pn		**Pn**	**08**	**37**	**32.8 +4.0**
	0.1nm,0.3s,baz=126,slow=14,SNR=3.7								
USRK				LR		LR	08	41	06.8
	comp=Z,143nm,18.8s,baz=110,slow=36								
KSRS	**Korea Array**	**10.74**	**277**	Pn		**Pn**	**08**	**37**	**38.3 +1.5**
	0.1nm,0.3s,baz=77,slow=18,SNR=3.2								
KSRS				LR		LR	08	41	35.7
	comp=Z,73nm,19.0s,baz=90,slow=37								
KLR	**Kul'dur**	**14.12**	**333**	LR		LR	08	43	19.7
	comp=Z,131nm,19.1s,baz=164,slow=35								
SONM	**Songino Array**	**27.80**	**304**	P		**P**	**08**	**40**	**50.3 -1.8**
	0.3nm,0.7s,baz=103,slow=8.8,SNR=2.6								
H11N2	**WAKE ISLAND Hy 28.14**	**121**		T		T	09	10	17.3
	baz=313,slow=76,SNR=905								
H11N1	**WAKE ISLAND Hy 28.14**	**121**		T		T	09	10	15.9
	baz=313,slow=76,SNR=785								
H11N3	**WAKE ISLAND Hy 28.16**	**121**		T		T	09	10	18.6
	baz=313,slow=76,SNR=699								
H11S1	**WAKE ISLAND Hy 28.85**	**123**		T		T	09	11	10.0
	baz=315,slow=76,SNR=276								
H11S3	**WAKE ISLAND Hy 28.85**	**123**		T		T	09	11	10.0
	baz=315,slow=76,SNR=268								
H11S2	**WAKE ISLAND Hy 28.86**	**123**		T		T	09	11	11.2
	baz=315,slow=76,SNR=240								
KURBB	**Kurchatov Arra**	**46.02**	**308**	P		**P**	**08**	**43**	**27.3 +1.0**
	2.4nm,0.8s,baz=81,slow=7.7,SNR=2.6								
ILAR	**Eielson Array**	**49.58**	**32**	P		**P**	**08**	**43**	**53.8 +0.1**
	1.1nm,0.9s,baz=279,slow=7.0,SNR=11								
WRA	**Warramunga Arr**	**56.98**	**188**	P		**P**	**08**	**44**	**47.7 -0.9**
	1.6nm,0.7s,baz=5.4,slow=7.3,SNR=14								
AKTO	**Aktyubinsk**	**58.70**	**312**	P		**P**	**08**	**44**	**59.3 -1.1**
	0.8nm,0.6s,baz=66,slow=10.0,SNR=3.7								
ASAR	**Alice Springs**	**60.70**	**188**	P		**P**	**08**	**45**	**14.2 -0.2**
	1.1nm,0.8s,baz=21,slow=5.9,SNR=9.2								
TXAR	**Lajitas Array**	**90.20**	**52**	P		**P**	**08**	**48**	**05.0 +1.1**
	0.4nm,0.8s,baz=322,slow=3.8,SNR=4.5								

TIF ***13*** *08:42:32.8, 41.11N×43.92E, h13km±1km*

DDA ***13*** *08:42:32.8, 41.11N×43.88E, h7km, Md3.2*

CSEM ***13*** *08:42:33.4±0.1, 41.09N×43.91E, h2km, ML2.8, Error ellipse: s-maj=2.8km s-min=1.5km az=136.0*

ISC 13 08:42:33.5±1.0, 41°10N±0.02×43°90E±0.02, h11km±9km, n27, σ0§47/54, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
BGD	**Bogdanovka**	**0.28**	**306**	P		**Pg**	**08**	**42**	**39.4 +0.1**
BGD				S		**Sg**	**08**	**42**	**43.9 +0.7**
BGD	**Bogdanovka**	**0.28**	**306**	P		**Pg**	**08**	**42**	**39.4 +0.1**
BGD				S		**Sg**	**08**	**42**	**43.9 +0.7**
AKH	**Akhalkalaki**	**0.43**	**315**	P		**Pg**	**08**	**42**	**41.9 -0.2**
AKH				S		**Sg**	**08**	**42**	**47.9 -0.1**
AKH	**Akhalkalaki**	**0.43**	**315**	P		**Pg**	**08**	**42**	**41.9 -0.2**
AKH				S		**Sg**	**08**	**42**	**47.8 -0.1**
EAK	**Akyaka**	**0.47**	**208**	*i* P		**Pg**	**08**	**42**	**42.7 -0.1**
EAK				*i* S		**Sg**	**08**	**42**	**49.5 +0.5**
EAK	**Akyaka**	**0.47**	**208**	P		**Pg**	**08**	**42**	**42.7 -0.1**
EAK				S		**Sg**	**08**	**42**	**49.5 +0.5**
KZR	**Kazreti**	**0.48**	**54**	P		**Pg**	**08**	**42**	**42.9 -0.1**
KZR				S		**Sg**	**08**	**42**	**49.5 +0.2**
KZR	**Kazreti**	**0.48**	**54**	P		**Pg**	**08**	**42**	**42.9 -0.1**
KZR				S		**Sg**	**08**	**42**	**49.5 +0.2**
DIGO	**Kars**	**0.79**	**210**	*i* P		**Pg**	**08**	**42**	**48.6 -0.3**
DIGO				*i* S		**Sg**	**08**	**42**	**59.0 -0.2**
DIGO	**Kars**	**0.79**	**210**	P		**Pg**	**08**	**42**	**48.6 -0.3**
DIGO				S		**Sg**	**08**	**42**	**59.0 -0.2**
TBLG	**Delisi**	**0.89**	**45**	P		**Pg**	**08**	**42**	**49.9 -0.8**
TBLG				S		**Sb**	**08**	**43**	**02.6 -0.4**
TBLG	**Delisi**	**0.89**	**45**	P		**Pg**	**08**	**42**	**49.9 -0.8**
TBLG				S		**Sb**	**08**	**43**	**02.5 -0.5**
SEAG	**Tbilisi Sea**	**0.95**	**45**	P		**Pg**	**08**	**42**	**51.4 -0.4**
SEAG				S		**Sb**	**08**	**43**	**04.8 +0.1**
SEAG	**Tbilisi Sea**	**0.95**	**45**	P		**Pg**	**08**	**42**	**51.4 -0.4**
SEAG				S		**Sb**	**08**	**43**	**04.8 +0.1**
DUS	**Dusheti**	**1.16**	**31**	P		**Pn**	**08**	**42**	**55.8 0.0**
DUS				S		**Sn**	**08**	**43**	**13.0 +1.3**
DUS	**Dusheti**	**1.16**	**31**	P		**Pn**	**08**	**42**	**55.9 +0.1**
DUS				S		**Sn**	**08**	**43**	**13.0 +1.3**
GUDG	**Gudauri**	**1.43**	**17**	P		**Pg**	**08**	**43**	**00.5 -0.5**
GUDG				S		**Pg**	**08**	**43**	**20.1 +0.4**
GUDG	**Gudauri**	**1.43**	**17**	P		**Pg**	**08**	**43**	**00.3 -0.3**
GUDG				S		**Sg**	**08**	**43**	**20.0 +0.4**
ARTV	**Artvin**	**1.49**	**274**	*i* P		**Pb**	**08**	**43**	**01.3 -0.1**
ARTV				*i* S		**Sg**	**08**	**43**	**21.4 -0.1**
ARTV	**Artvin**	**1.49**	**274**	P		**Pb**	**08**	**43**	**01.3 -0.1**
ARTV				S		**Sg**	**08**	**43**	**21.4 -0.1**
DAGI	**Agillar**	**1.50**	**270**	*i* P		**Pb**	**08**	**43**	**01.5 +0.1**
DAGI				*i* S		**Sg**	**08**	**43**	**21.9 +0.1**
ONI	**Oni**	**1.52**	**348**	P		**Pb**	**08**	**43**	**01.6 -0.3**
ONI				S		**Sg**	**08**	**43**	**22.4 -0.2**
ONI	**Oni**	**1.52**	**348**	P		**Pb**	**08**	**43**	**01.6 -0.3**
ONI				S		**Sg**	**08**	**43**	**22.2 -0.4**
DDEM	**Demirkent**	**1.64**	**263**	*i* P		**Pb**	**08**	**43**	**03.3 -0.6**
DDEM				*i* S		**Sg**	**08**	**43**	**25.6 -0.6**
DDEM	**Demirkent**	**1.64**	**263**	P		**Pb**	**08**	**43**	**03.3 -0.6**
DDEM				S		**Sg**	**08**	**43**	**25.6 -0.6**
DBOC	**Borcka**	**1.70**	**279**	*i* P		**Pb**	**08**	**43**	**04.4 -0.4**
DBOC				*i* S		**Sb**	**08**	**43**	**26.3 0.0**
DBOC	**Borcka**	**1.70**	**279**	P		**Pb**	**08**	**43**	**04.4 -0.4**
DBOC				S		**Sb**	**08**	**43**	**26.3 0.0**

ISCJB ***13*** *08:45:45.9±0.5, 50.01N±0.04×18.53E±0.03, h0km, Error ellipse: s-maj=5.2km s-min=2.4km az=11.2*

IPEC ***13*** *08:45:47.1±0.2, 49.97N×18.63E, h2km±2km, ML1.7/3, Error ellipse: s-maj=2.3km s-min=1.1km az=161.0*

CSEM ***13*** *08:45:47.1±0.3, 49.99N×18.55E, h2km, ML2.5/7, Error ellipse: s-maj=6.9km s-min=3.0km az=7.0*

PRU ***13*** *08:45:48.0, 49.98N×18.54E, h0km*

ISC 13 08:45:46.4±0.8, 49°96N±0.03×18°55E±0.02, h0km, n30, σ0§65/54, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
OKC	**Ostrava-Krasne**	**0.29**	**245**	*e*Pg		**Pb**	**08**	**45**	**53.9 -0.5**
OKC				*e*Sg		**Sb**	**08**	**45**	**58.5 -1.3**
	comp=Z,36nm,0.4s								
OKC	**Ostrava-Krasne**	**0.29**	**245**	Pg		**Pb**	**08**	**45**	**53.9 -0.5**
OKC				Sg		**Sb**	**08**	**45**	**58.5 -1.3**
	36nm,0.4s								
MORC	**Moravsky Berou**	**0.68**	**255**	*e*Pg		**Pb**	**08**	**46**	**01.1 0.0**
MORC				*e*Sg		**Sb**	**08**	**46**	**10.1 -0.9**
	14nm,0.3s								
OJC	**Ojcow**	**0.85**	**72**	*e*Pg		**Pg**	**08**	**46**	**02.0 -0.6**
OJC				*e*Sg		**Sg**	**08**	**46**	**13.4 -0.2**
OJC	**Ojcow**	**0.85**	**72**	*e*Pg		**Pg**	**08**	**46**	**02.0 -0.6**
OJC				*e*Sg		**Sg**	**08**	**46**	**13.4 -0.2**
LANS	**Liptovska Anna**	**1.01**	**143**	*e*Pg		**Pg**	**08**	**46**	**06.0 +0.3**
LANS				*e*Sg		**Sb**	**08**	**46**	**20.2 -0.4**
LANS	**Liptovska Anna**	**1.01**	**143**	*e*PG		**Pg**	**08**	**46**	**06.0 +0.3**
LANS				*e*SG		**Sb**	**08**	**46**	**20.2 -0.4**
KRLC	**Kraliky**	**1.14**	**276**	*e*PG		**Pb**	**08**	**46**	**08.9 -0.2**
KRLC				*e*SG		**Sb**	**08**	**46**	**24.3 -0.2**
KRLC	**Kraliky**	**1.14**	**276**	Pg		**Pb**	**08**	**46**	**08.9 -0.2**
KRLC				Sg		**Sb**	**08**	**46**	**24.3 -0.2**
NIE	**Niedzica**	**1.26**	**115**	*e*Pg		**Pb**	**08**	**46**	**11.0 -0.1**
NIE				*e*Sg		**Sn**	**08**	**46**	**29.0 0.0**
NIE	**Niedzica**	**1.26**	**115**	*e*Pg		**Pb**	**08**	**46**	**11.0 -0.1**
NIE				*e*Sg		**Sn**	**08**	**46**	**29.0 0.0**
VRAC	**Vranov**	**1.43**	**244**	*e*Pg		**Pb**	**08**	**46**	**14.2 +0.3**
VRAC				*e*Sg		**Sn**	**08**	**46**	**33.4 +0.3**
	7.7nm,0.3s								
VYHS	**Vyhne**	**1.48**	**173**	*e*Pg		**Pb**	**08**	**46**	**15.4 +0.6**
VYHS				*e*Sn		**Sg**	**08**	**46**	**33.9 0.0**
VYHS	**Vyhne**	**1.48**	**173**	*e*PG		**Pb**	**08**	**46**	**15.4 +0.6**
VYHS				*e*SN		**Sg**	**08**	**46**	**33.9 0.0**
VYHS				*e*LG		Lg	08	46	34.9
DPC	**Dobruska-Polom**	**1.48**	**286**	*e*PG		**Pb**	**08**	**46**	**15.6 +0.7**
DPC				*e*SG		**Sn**	**08**	**46**	**35.1 +0.6**
	comp=Z,9.4nm,0.3s								
DPC	**Dobruska-Polom**	**1.48**	**286**	Pg		**Pb**	**08**	**46**	**15.6 +0.7**
DPC				Sg		**Sn**	**08**	**46**	**35.1 +0.6**
	9.4nm,0.3s								
KRUC	**Moravsky**	**1.67**	**238**	*e*Pn		**Pb**	**08**	**46**	**17.9 0.0**
KRUC				*e*Sg		**Sg**	**08**	**46**	**40.7 +0.8**
	6.3nm,0.2s								
UPC	**Upice**	**1.72**	**290**	*e*SG		**Sg**	**08**	**46**	**43.3 +1.8**
UPC	**Upice**	**1.72**	**290**	Sg		**Sg**	**08**	**46**	**43.3 +1.8**
STHS	**Stebnicka Huta**	**1.83**	**106**	*e*Pn		**Pb**	**08**	**46**	**21.1 +0.3**
STHS				*e*Sn		**Sg**	**08**	**46**	**46.4 +1.1**
STHS	**Stebnicka Huta**	**1.83**	**106**	*e*PN		**Pb**	**08**	**46**	**21.1 +0.3**
STHS				*e*SN		**Sg**	**08**	**46**	**46.4 +1.1**
STHS				*e*LG		Lg	08	46	54.2
KECS	**Kecovo**	**1.95**	**139**	*e*Pn		**Pg**	**08**	**46**	**23.4 -0.3**
KECS				*e*Sn		**Sb**	**08**	**46**	**47.0 -0.6**
KECS	**Kecovo**	**1.95**	**139**	*e*PN		**Pg**	**08**	**46**	**23.4 -0.3**
KECS				*e*SN		**Sb**	**08**	**46**	**47.0 -0.6**
KECS				*e*LG		Lg	08	46	53.2
GOPC	**GO Pecny, Ondr**	**2.43**	**270**	*e*SG		**Sg**	**08**	**47**	**04.1 -0.3**
GOPC	**GO Pecny, Ondr**	**2.43**	**270**	Sg		**Sg**	**08**	**47**	**04.1 -0.3**
PRU	**Pruhonice**	**2.59**	**272**	*e*SG		**Sg**	**08**	**47**	**09.2 -0.2**
	comp=Z,3.5nm,0.3s								
PRU	**Pruhonice**	**2.59**	**272**	Sg		**Sg**	**08**	**47**	**09.2 -0.2**
	3.5nm,0.3s								
BRG	**Berggiesshubel**	**3.08**	**289**	PG		**Pg**	**08**	**46**	**44.5 -1.0**
BRG				SG		**Sg**	**08**	**47**	**26.2 +0.8**
	3.8nm,0.5s								
KHC	**Kasperske Hory**	**3.34**	**257**	*e*PG		**Pg**	**08**	**46**	**50.8 +0.4**
KHC				*e*SG		**Sg**	**08**	**47**	**33.4 -0.3**
	comp=Z,3.6nm,0.3s								
KHC	**Kasperske Hory**	**3.34**	**257**	Pg		**Pg**	**08**	**46**	**50.8 +0.4**
KHC				Sg		**Sg**	**08**	**47**	**33.4 -0.3**
	3.6nm,0.3s								

ISCJB ***13*** *09:20:10.3±0.9, 29.76S±0.08×175.99W±0.09, h35km, mb4.0/7, Error ellipse: s-maj=11.6km s-min=11.3km az=167.5*

IDC ***13*** *09:20:17.1±2.9, 29.25S×176.24W, h73km±20km, mb3.7/7, mb1 3.9/7, mb1mx3.6/33, mbtmp3.9/7, Error ellipse: s-maj=48.2km s-min=22.9km az=165.0*

ISC 13 09:20:12.0±0.8, 29°56S±0.10×176°00W±0.10, h35km, n16, σ2§25/19, mb4.0/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
RAO	**Raoul Island**	**1.70**	**280**	P		**Pn**	**09**	**20**	**39.9 +0.8**
	352nm,0.3s,baz=90,slow=10,SNR=16								
RAO				S		**Sn**	**09**	**21**	**00.6 +1.0**
	643nm,0.3s,baz=291,slow=22,SNR=9.8								
URZ	**Urewera**	**10.39**	**212**	P		**Pn**	**09**	**22**	**39.0 +0.5**
	0.8nm,0.3s,baz=100,slow=7.5,SNR=5.9								
URZ				S		**Sn**	**09**	**24**	**37.9 +4.2**
	2.2nm,0.3s,baz=72,slow=20,SNR=9.2								
RPZ	**Rata Peaks**	**17.50**	**213**	P		**Pn**	**09**	**24**	**12.2 -1.0**
	1.0nm,0.3s,baz=34,slow=3.6,SNR=3.5								
RPZ				S		**Sn**	**09**	**27**	**20.1 -6.9**
	0.5nm,0.3s,baz=16,slow=20,SNR=2.1								
CTA	**Charters Tower**	**35.40**	**277**	P		**P**	**09**	**27**	**04.8 0.0**
	3.6nm,0.8s,baz=78,slow=8.4,SNR=3.8								
STKA	**Stephens Creek**	**36.36**	**255**	P		**P**	**09**	**27**	**13.4 +0.6**
	3.1nm,1.0s,baz=104,slow=14,SNR=6.3								
ASAR	**Alice Springs**	**44.89**	**265**	P		**P**	**09**	**28**	**22.3 -1.1**
	1.0nm,0.6s,baz=98,slow=7.6,SNR=18								
WRA	**Warramunga Arr**	**45.81**	**270**	P		**P**	**09**	**28**	**29.4 -1.4**
	1.4nm,0.8s,baz=109,slow=7.8,SNR=9.8								
FITZ	**Fitzroy Crossi**	**54.10**	**268**	P		**P**	**09**	**29**	**33.0 -0.6**
	0.8nm,0.5s,baz=94,slow=8.5,SNR=4.1								
TXAR	**Lajitas Array**	**90.48**	**56**	P		**P**	**09**	**33**	**10.6 +0.2**
	0.7nm,1.0s,baz=188,slow=7.6,SNR=5.1								
PDAR	**Pinedale Array**	**94.34**	**43**	P		**P**	**09**	**33**	**28.6 +0.5**
	0.3nm,0.7s,baz=227,slow=6.1,SNR=3.0								
FINES	**FINESS Array B**	**144.92**	**342**	PKP		**PKPab**	**09**	**39**	**42.9 -1.0**
	1.5nm,0.7s,baz=79,slow=4.1,SNR=4.1								
NB2	**NORSAR Subarra**	**148.15**	**353**	PKP		**PKPbc**	**09**	**39**	**52.9 -0.6**
	comp=Z,1.0nm,0.5s,baz=9.4,slow=2.9								
NOA	**NORSAR Array B**	**148.15**	**353**	PKPbc		**PKPbc**	**09**	**39**	**52.9 -0.6**
	comp=Z,0.5nm,0.7s,baz=12,slow=1.8,SNR=4.9								
HFS	**Hagfors**	**148.73**	**351**	PKPbc		**PKPbc**	**09**	**39**	**54.2 -0.7**
	comp=Z,1.5nm,0.5s,baz=39,slow=3.9,SNR=5.5								
AKASG	**Malin Array Be**	**151.64**	**325**	PKPbc		**PKPbc**	**09**	**40**	**02.1 -0.1**
	comp=Z,0.6nm,0.4s,baz=40,slow=2.2,SNR=4.0								
TORD	**Torodi Ar. Bea**	**163.53**	**172**	PKPab		**PKPab**	**09**	**41**	**05.5 +2.5**
	comp=Z,1.6nm,0.8s,baz=182,slow=4.3,SNR=7.9								

IDC ***13*** *09:27:51.3±2.1, 12.25N×125.12E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/59, mbtmp3.6/4, Error ellipse: s-maj=206.8km s-min=24.6km az=64.0*

MAN ***13*** *09:27:53, 12.17N×124.07E, h52km, mb4.2, ML3.1, MS2.8*

ISC 13 09:27:54.4±1.0, 11°88N±0.08×124°01E±0.06, h13km, n7, σ1§41/12, mb3.6/4,3C, Leyte

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
PLP	**Palo**	**1.18**	**127⇑**	*i* P		**Pg**	**09**	**28**	**16.7 -0.5**
PLP				*i* S		**Sn**	**09**	**28**	**34.1 +1.5**
RCP	**Roxas**	**1.28**	**256⇑**	*e*P		**Pg**	**09**	**28**	**17.7 -0.2**
RCP				*e*S		**Sg**	**09**	**28**	**36.3 +0.6**
LLP	**Lapu-Lapu**	**1.55**	**182⇑**	*e*P		**Pg**	**09**	**28**	**

PB01 eSn Sn 09 51 05.2 +0.1
LVC Limon Verde 3.04 149 P Pn 09 51 09.5 +0.7
comp=N,323nm,0.3s,baz=334,slow=9.6,SNR=56
LVC S Sn 09 51 45.3 +1.1
comp=N,2µm,0.3s,baz=271,slow=18,SNR=13
LVC LR LR 09 52 28.4
comp=N,3µm,19.6s,baz=320,slow=42
LVC Limon Verde 3.04 149 ePn Pn 09 51 09.0 +0.1
LVC S Sn 09 51 45.3 +1.1
PB10 IPOC Station P 3.50 180 ePn Pn 09 51 12.4 -2.5
BBOJ La Paz, Jacaqu 3.76 38⇑iPn Pn 09 51 22.9 +4.0
BBOD La Paz, Gloria 3.83 30⇑iPn Pn 09 51 23.9 +4.0
BBOE La Paz, Chanca 4.01 38⇑iPn Pn 09 51 26.0 +3.6
LPAZ La Paz 4.36 33 P Pn 09 51 30.9 +3.6
comp=N,2.3nm,0.3s,baz=232,slow=6.5,SNR=54
LPAZ LR LR 09 53 37.1
comp=N,507nm,18.7s,baz=225,slow=45
LPAZ La Paz 4.36 33⇑iPn Pn 09 51 30.8 +3.6
BBOB La Paz, Bander 4.48 32⇑iPn Pn 09 51 32.3 +3.5
BBOB ⇑iSn Sn 09 52 18.6 -1.4
comp=N,115nm,0.6s
MOCB Mochara 4.80 106⇑iP Pn 09 51 36.7 +3.6
SIV San Ignacio 9.89 68 P Pn 09 52 41.6 -1.0
comp=N,5.7nm,0.3s,baz=278,slow=9.5,SNR=40
SIV LR LR 09 57 25.6
comp=N,194nm,21.8s,baz=208,slow=43
SIV San Ignacio 9.89 68 eP Pn 09 52 43.0 +0.4
NNA Nana 9.97 322 P Pn 09 52 43.9 +0.1
comp=N,1.0nm,0.3s,baz=135,slow=11,SNR=2.4
NNA S Sn 09 54 27.2 -7.2
comp=N,1.5nm,0.3s,baz=229,slow=19,SNR=3.8
NNA LR LR 09 56 20.4
comp=N,115nm,21.6s,baz=168,slow=36
SAML Samuel 13.11 34 ePn Pn 09 53 24.7 -1.9
comp=N,3.0nm,1.0s
CPUP Villa Florida 13.72 120 P Pn 09 53 34.6 -0.4
comp=N,0.1nm,0.3s,baz=286,slow=12,SNR=4.4
CPUP LR LR 10 00 11.7
comp=N,92nm,19.0s,baz=301,slow=43
TRQA Tornquist 19.49 159 eP P 09 54 47.0 +0.5
comp=N,1.7nm,0.5s
PLCA Paso Flores 20.68 180 P P 09 54 59.8 +0.4
comp=N,5.4nm,0.6s,baz=24,slow=14,SNR=19
PLCA LR LR 10 01 49.2
comp=N,108nm,18.6s,baz=353,slow=33
PTGA Pitinga 21.78 30 P P 09 55 09.5 -1.9
comp=N,4.4nm,0.3s,baz=318,slow=23,SNR=22
PTGA Pitinga 21.78 30 eP P 09 55 09.6 -1.7
PTGA epP pP 09 55 21.7 0.0
BDFB Brasilia 21.91 82 LR LR 10 05 21.9
comp=N,160nm,19.6s,baz=354,slow=41
CMBC Cumbal 21.98 340 eP P 09 55 21.0 +7.1
CRUC La Cruz 22.32 343 eP P 09 55 21.6 +4.1
POPC Popayan, Colom 23.18 344 eP P 09 55 29.1 +2.8
ROSC El Rosal 24.95 351 P P 09 55 44.4 +1.4
comp=N,7.2nm,0.5s,baz=219,slow=17,SNR=3.5
ROSC LR LR 10 07 17.2
comp=N,51nm,19.3s,baz=192,slow=41
NORC Norcasia 25.74 350 eP P 09 55 49.6 -0.2
RUSC La Rusia 25.84 354 eP P 09 55 50.9 -0.3
HELC Santa Helena 26.47 349 eP P 09 55 56.0 -0.7
BARC Barichara 26.54 354 eP P 09 55 55.2 -2.0
CBRI Barrientos, No 27.62 355 eP P 09 56 04.0 -2.9
SJCC San Jacinto, C 30.04 351 eP P 09 56 25.8 -2.5
RCBR Riachuelo 36.52 72 P P 09 57 24.0 -0.7
comp=N,6.3nm,0.6s,baz=245,slow=8.5,SNR=5.5
SWET Sewanee 56.80 345 eP P 10 00 02.5 -0.6
comp=N,2.8nm,0.5s
SWET epP pP 10 00 16.2 +1.1
WLAR White Oak Lake 57.54 338 eP P 10 00 09.2 +1.0
comp=N,21nm,0.8s
333A Richland Sprin 57.85 331 P P 10 00 10.3 -0.2
baz=148
234A Clairette 58.05 332 P P 10 00 11.9 +0.1
baz=149
WVT Waverly 58.15 344 eP P 10 00 11.2 -1.3
comp=N,8.2nm,0.6s
WVT epP pP 10 00 26.0 +1.5
233A Rising Star 58.40 332 P P 10 00 14.4 0.0
baz=148
Z36A Blue Ridge 58.43 335 P P 10 00 14.7 +0.2
baz=151
MIAR Mount Ida 58.48 338 P P 10 00 14.7 -0.1
baz=154
MIAR Mount Ida 58.48 338 eP P 10 00 14.8 0.0
comp=N,4.1nm,0.7s
TXAR Lajitas Array 58.50 326 P P 10 00 15.2 0.0
comp=N,0.3nm,0.5s,baz=153,slow=9.0,SNR=11
TXAR PcP PcP 10 01 05.9 +0.5
comp=N,0.5nm,0.6s,baz=156,slow=4.6,SNR=9.1
W41B Gary Mavity, V 58.59 339 P P 10 00 15.1 -0.5
baz=156
X39A Fountain Ranch 58.64 337 P P 10 00 16.1 +0.1
baz=154,SNR=6.3
Y37A Hugo 58.73 336 P P 10 00 17.2 +0.6
baz=152,SNR=5.0
133A Hamilton Ranch 58.91 332 P P 10 00 17.9 0.0
baz=149
X38A Whitesboro 59.05 337 P P 10 00 19.2 +0.5
baz=153,SNR=5.4
V41A Mountainview 59.12 340 P P 10 00 18.8 -0.5
baz=156
W39A Magazine 59.14 338 P P 10 00 19.5 +0.2
baz=154
X37A Clayton 59.18 336 P P 10 00 19.8 +0.1
baz=153,SNR=7.5
Y35A Marietta 59.23 334 P P 10 00 20.1 +0.1
baz=151
ABTX Abilene, Hawle 59.24 332 P P 10 00 20.5 +0.2
baz=148
ABTX Abilene, Hawle 59.24 332 eP P 10 00 20.4 +0.2
comp=N,5.4nm,0.7s
W38A Poteau 59.29 337 P P 10 00 20.7 +0.3
baz=154
U42A Revenden 59.34 341 P P 10 00 20.0 -0.8
baz=157
Z33A Whitaker Ranch 59.42 333 P P 10 00 21.2 -0.2
baz=149
X36A Centrahoma 59.54 335 P P 10 00 21.5 -0.7
baz=152
U41A Viola 59.55 340 P P 10 00 21.6 -0.6
baz=157
Y34A Reagan Ranch, 59.57 334 P P 10 00 22.1 -0.3
baz=150
X35A Drake 59.63 335 P P 10 00 22.3 -0.6
baz=151
V39A Pettigrew 59.67 338 P P 10 00 22.9 -0.3
baz=155,SNR=7.9
W37B Quinton 59.69 336 P P 10 00 23.4 +0.2
baz=153,SNR=6.1
S45A Carrier Mills 59.81 344 P P 10 00 23.2 -0.7
baz=160
V38A Canehill 59.96 338 P P 10 00 24.6 -0.5
baz=154,SNR=6.7
W36A Wetumka 59.99 336 P P 10 00 24.4 -0.9
baz=152
S44A Carbondale 60.01 343 P P 10 00 24.5 -0.8
baz=160
U39A Green Forest 60.10 339 P P 10 00 25.3 -0.7
baz=155
S43A Fulton Ridge, 60.13 342 P P 10 00 25.4 -0.8
baz=159
X34A Smith Ranch, M 60.16 334 P P 10 00 26.4 0.0
baz=150
HHAR Hobbs 60.17 338 eP P 10 00 26.0 -0.5
comp=N,3.9nm,0.8s
V37A Hulbert 60.24 337 P P 10 00 26.7 -0.2
baz=153
W35A Tecumseh 60.25 335 P P 10 00 26.0 -1.1
baz=151
X33A Lawton 60.38 334 P P 10 00 27.5 -0.5
baz=150
O56A Blue Knob Stat 60.41 353 P P 10 00 28.5 +0.4
baz=171
V36A Jenks 60.45 336 P P 10 00 28.1 -0.3
baz=152,SNR=5.1
T40A Mansfield 60.48 340 P P 10 00 27.9 -0.7
baz=156
TUL1 Leonard 60.51 337 P P 10 00 28.7 -0.1
baz=153
X32A Elmer 60.61 333 P P 10 00 28.8 -0.8
baz=149
S41A Jillco Farms, 60.64 341 P P 10 00 29.1 -0.6
baz=157
T39A Clever 60.65 339 P P 10 00 29.3 -0.5
baz=155
WMOK Wichita Mounta 60.67 333 eP P 10 00 29.9 0.0
comp=N,0.9nm,0.7s
U37A Salina 60.70 337 P P 10 00 29.6 -0.5
baz=153
N59A State Game Lan 60.79 356 P P 10 00 30.6 0.0
baz=174
S40A Lebanon 60.89 340 P P 10 00 30.6 -0.7
baz=156
W33A Caddo, Fort Co 60.90 334 P P 10 00 31.4 0.0
baz=150,SNR=6.5
T38A Diamond 60.97 338 P P 10 00 31.6 -0.3
baz=154,SNR=6.0
Q44A Meyer Farm, Va 61.08 344 P P 10 00 32.0 -0.6
baz=160
V34A Guthrie 61.10 335 P P 10 00 32.1 -0.8
baz=151
W32A Sentinel 61.20 333 P P 10 00 33.1 -0.4
baz=149,SNR=6.9
S39A Bolivar 61.24 340 P P 10 00 33.1 -0.6
baz=155,SNR=7.1
N54A Moraine State 61.27 352 P P 10 00 33.9 +0.1
baz=170
U35A Pawnee 61.27 336 P P 10 00 33.8 -0.2
baz=152
T37A Cheneyville 18 61.27 338 P P 10 00 33.6 -0.3
baz=154,SNR=7.3
MNTX Cornudas Mount 61.27 326 P P 10 00 33.4 -0.7
baz=142
MNTX Cornudas Mount 61.27 326 eP P 10 00 33.5 -0.6
comp=N,7.7nm,1.6s
Q43A New Douglas 61.30 343 P P 10 00 34.3 +0.3
baz=159
S38A Stockton 61.38 339 P P 10 00 34.2 -0.5
baz=155
V33A Lossen Ranch, 61.40 335 P P 10 00 34.4 -0.5
baz=150
R40A Maddies Statio 61.45 341 P P 10 00 34.4 -0.7
baz=157
Q42A Golden Eagle 61.50 342 P P 10 00 34.8 -0.6
baz=158
T36A Boggs Farm, Ca 61.56 337 P P 10 00 35.2 -0.7
baz=153
U34A Anderson Ranch 61.63 335 P P 10 00 36.1 -0.3
baz=151
R39A Chumby, Stover 61.71 340 P P 10 00 36.7 -0.2
baz=156
M54A Oil Creek Stat 61.76 352 P P 10 00 37.0 -0.2
baz=170
MSTX Muleshoe 61.81 330 P P 10 00 37.2 -0.6
baz=145
MSTX Muleshoe 61.81 330 eP P 10 00 38.2 +0.4
comp=N,6.7nm,0.9s
S37A Fort Scott 61.81 338 P P 10 00 37.2 -0.3
baz=154
U33A Lingo Farm, Me 61.86 335 P P 10 00 37.0 -0.9
baz=150
R38A Fenwick Farm, 61.88 339 P P 10 00 37.4 -0.7
baz=155,SNR=6.6
SFIN Lafayette 62.00 346 P P 10 00 37.3 -1.4
baz=162
SFIN Lafayette 62.00 346 eP P 10 00 37.4 -1.4
comp=N,11nm,0.6s
T34A McClaskey Farm 62.01 336 P P 10 00 38.4 -0.5
baz=152
Q40A Laux Farm, Aux 62.03 341 P P 10 00 38.6 -0.4
baz=157
S36A Lake Cedric, C 62.05 338 P P 10 00 38.8 -0.4
baz=153
P42A Winchester 62.08 343 P P 10 00 38.5 -0.9
baz=159
S35A Otter Creek Ra 62.27 337 P P 10 00 40.2 -0.5
baz=152
R37A Teagarden Farm 62.31 339 P P 10 00 40.4 -0.5
baz=154
Q39A Willow Grove F 62.36 340 P P 10 00 40.7 -0.5
baz=156
P41A Barry, Barry 62.36 342 P P 10 00 40.1 -1.1
baz=158
Q38A Cooks Store, C 62.49 340 P P 10 00 41.7 -0.4
baz=155,SNR=6.5
P40A Paris 62.52 341 P P 10 00 41.9 -0.4
baz=157
P39B Salisbury 62.69 341 P P 10 00 42.8 -0.6
baz=156
O41A Passleys Farm, 62.72 343 P P 10 00 43.1 -0.5
baz=158
S33A Kaszmaul Farm, 62.83 336 P P 10 00 44.3 -0.1
baz=151
T32A Huddler Ranch, 62.83 335 P P 10 00 44.4 -0.1
baz=150
O40A La Belle 63.01 342 P P 10 00 44.9 -0.6
baz=157
P38A Dawn 63.06 340 P P 10 00 45.4 -0.5
baz=156
R34A Isabella, Hill 63.16 337 P P 10 00 46.2 -0.4
baz=152
S32A Newby Ranch, P 63.28 335 P P 10 00 47.1 -0.3
baz=150
P37A Lathrop 63.29 340 P P 10 00 47.2 -0.2
baz=155
P36A Good Intent, A 63.61 339 P P 10 00 48.8 -0.7
baz=154
O37A Wolven Farm, M 63.75 340 P P 10 00 50.0 -0.4
baz=155
P35A Duane Minner, 63.80 338 P P 10 00 50.0 -0.8
baz=153
R32A Long Quarter, 63.82 336 P P 10 00 50.3 -0.7
baz=150
N39A Derby Farms, D 63.89 342 P P 10 00 50.6 -0.8
baz=157
Q33A Connelly Farm, 63.99 337 P P 10 00 51.8 -0.3
baz=151
P34A Walnut Farm, R 64.11 338 P P 10 00 52.4 -0.4
baz=152
SNAA Sanae 64.21 161 eP P 10 00 54.0 +0.8
Q32A Meitler Ranch, 64.26 336 P P 10 00 53.6 -0.3
baz=151
N37A Lee Faris, Mou 64.31 340 P P 10 00 53.6 -0.5
baz=155
O33A Hebron 64.84 337 P P 10 00 57.0 -0.6
baz=152
M37A Trindle Farm, 64.85 341 P P 10 00 57.2 -0.4
baz=156
N35A Tabor 64.87 339 P P 10 00 57.0 -0.8
baz=154
N34A Lincoln 65.14 339 P P 10 00 58.8 -0.7
baz=153
T25A Trinidad 65.16 331 P P 10 00 59.5 -0.6
baz=145
L38A Oak Wood Farm, 65.19 342 P P 10 00 59.0 -0.8
baz=157
K40A Colesburg 65.19 343 P P 10 00 59.4 -0.4
baz=159
K39A Oelwein 65.40 343 P P 10 01 00.9 -0.3
baz=158
J41A Loganville 65.53 345 P P 10 01 01.3 -0.7
baz=160
K38A Parksburg 65.60 342 P P 10 01 01.8 -0.6
baz=157
L36A Harm Buss Farm 65.67 341 P P 10 01 02.5 -0.4
baz=155
J40A Soldiers Grove 65.74 344 P P 10 01 02.8 -0.5
baz=159
J39A Decorah 65.94 343 P P 10 01 03.9 -0.8
baz=158
K37A Belmond 65.96 342 P P 10 01 04.3 -0.5
baz=156
K36A Gilmore City 66.09 341 P P 10 01 05.3 -0.3
baz=155
L34A Svendsen Farm, 66.10 339 P P 10 01 05.5 -0.2
baz=153
SDCO Great Sand Dun 66.16 330 P P 10 01 07.2 +0.6
baz=144
SDCO Great Sand Dun 66.16 330 eP P 10 01 07.5 +0.9
comp=N,5.2nm,1.1s
BGNE Belgrade 66.22 338 P P 10 01 06.2 -0.3
baz=152
K35A Storm Lake 66.41 340 P P 10 01 07.4 -0.3
baz=155
J37A Redenius Farm, 66.44 342 P P 10 01 07.6 -0.3
baz=156
J36A Seneca 1, Swea 66.69 341 P P 10 01 09.2 -0.3
baz=156
I38A Scanlan Farm, 66.76 343 P P 10 01 10.0 +0.1
baz=158
L31A Butterfield Fa 67.14 338 P P 10 01 13.1 +0.7
baz=151
J33A Davis 67.51 339 P P 10 01 14.1 -0.6
baz=153
ECSD EROS Data Cent 67.76 340 P P 10 01 15.8 -0.4
baz=154
K30A Basset 67.86 337 P P 10 01 17.0 +0.1
baz=150
PV01 Paradox Valley 67.94 328 eP P 10 01 19.0 +1.2
comp=N,136nm,0.9s
SPMN Marine on St. 67.98 343 P P 10 01 17.4 -0.2
baz=157
H35A Sunnyside Ranc 68.08 342 P P 10 01 18.1 -0.1
baz=155
J30A Dallas 68.38 338 P P 10 01 20.6 +0.5
baz=151
U15A North Rim 68.57 325 eP P 10 01 23.1 +1.3
comp=N,4.6nm,1.1s
H33A Prehn Over Nor 68.65 340 P P 10 01 21.6 -0.2
baz=154
I31A Royce, Wessing 68.66 339 P P 10 01 22.0 +0.2
baz=152
F36A Milaca 68.77 343 P P 10 01 21.5 -1.0
baz=157
GMRC Granite Mounta 69.29 321 P P 10 01 27.9 +1.7
baz=135
O20A White River Ci 69.35 330 P P 10 01 27.1 +0.6
baz=142
SRU San Rafael Swe 69.67 328 eP P 10 01 28.9 +0.4
comp=N,2.8nm,0.8s
SRU epP pP 10 01 40.9 +0.1
CCUT Cedar City 69.98 325 eP P 10 01 31.6 +1.2
comp=N,15nm,1.8s
QSPA South Pole Qui 70.19 180 eP P 10 01 32.3 +1.0
comp=N,7.4nm,0.5s
C36A Pine Crest Far 70.34 344 P P 10 01 31.3 -0.8
baz=158
C35A Jirik Farms, M 70.58 343 P P 10 01 32.8 -0.9
baz=157
RSSD Black Hills 70.77 335 P P 10 01 35.3 +0.1
baz=147
B35A Bob, Littlefor 71.12 344 P P 10 01 36.3 -0.6
baz=157
TPNV Topopah Spring 71.15 323 P P 10 01 38.6 +1.0
baz=135
DUG Dugway, Tooele 71.64 327 P P 10 01 41.4 +1.0
baz=138
R11A Troy Canyon, C 71.77 324 P P 10 01 42.0 +0.7
baz=136
C30A Mose, Pekin 71.89 341 P P 10 01 41.6 +0.1
baz=152
B32A Ashes, Strandq 71.93 342 P P 10 01 41.3 -0.4
baz=154
PDAR Pinedale Array 72.03 331 P P 10 01 43.0 +0.2
comp=N,0.5nm,0.6s,baz=122,slow=6.4,SNR=6.1
HWUT Hardware Ranch 72.08 329 eP P 10 01 43.6 +0.5
comp=N,2.3nm,0.7s
B30A Myrvik Farm, E 72.51 341 P P 10 01 45.4 +0.2
baz=153
B29A Wagenman Farm, 72.84 340 P P 10 01 46.5 -0.7
baz=152
A29A Manning Farm, 73.20 341 P P 10 01 49.4 +0.1
baz=152
RLMT Red Lodge 73.75 333 P P 10 01 52.9 -0.1
baz=142
LAO LASA Array 73.76 335 eP P 10 01 52.8 0.0
comp=N,24nm,0.8s
SCHQ Scheffville 74.59 2 P P 10 02 00.5 +1.3
comp=N,2.1nm,0.5s,baz=239,slow=17,SNR=3.6
PAHR Pah Rah Range 74.83 323 eP P 10 02 00.5 +1.3
comp=N,3.4nm,0.9s
HLID Hailey 74.94 329 P P 10 02 00.9 +1.1
baz=138
HLID Hailey 74.94 329 eP P 10 01 58.9 -0.9
comp=N,2.8nm,0.8s
BOZ Bozeman (W) 75.20 332 P P 10 02 01.9 +0.6
baz=140
DLMT Dillon 75.43 331 eP P 10 02 02.8 +0.2
comp=N,8.7nm,1.5s
MFID Camas Ranch 75.53 328 eP P 10 02 04.2 +1.1
comp=N,4.1nm,1.0s
VNDA Vanda 78.05 190 P P 10 02 16.1 -0.6
comp=N,1.2nm,0.7s,baz=105,slow=6.1,SNR=7.1
TOA0 Torodi Ar. Sit 78.34 71 eP P 10 02 18.6 -0.8
TOA0 epP pP 10 02 31.5 -0.4
TORD Torodi Ar. Bea 78.34 71 P P 10 02 18.1 -1.4
comp=N,1.2nm,0.4s,baz=247,slow=5.2,SNR=13
TORD LR LR 10 35 29.8
comp=N,44nm,19.9s,baz=35,slow=35
I05D Terrebonne, OR 79.03 326 P P 10 02 23.3 +0.7
baz=132
EDM Edmonton 81.74 336 eP P 10 02 36.6 -0.4
comp=N,12nm,1.0s
EDM epP pP 10 02 50.2 +0.7
MAW Mawson 86.21 164 P P 10 03 00.1 +0.4
comp=N,1.0nm,0.6s,baz=196,slow=7.4,SNR=4.6
MAW pP pP 10 03 11.7 -0.5
comp=N,1.2nm,0.6s,baz=211,slow=5.9,SNR=3.1
YKA Yellowknife Ar 89.25 341 P P 10 03 14.0 -0.1
comp=N,2.5nm,0.6s,baz=138,slow=4.4,SNR=19
YKA pP pP 10 03 27.0 +0.3
comp=N,2.1nm,0.9s,baz=136,slow=4.9,SNR=4.7
H11S2 WAKE ISLAND Hyl 26.12 279 T T 12 28 44.7
baz=102,slow=74,SNR=154
H11S1 WAKE ISLAND Hyl 26.12 279 T T 12 28 42.1
baz=102,slow=74,SNR=92
H11S3 WAKE ISLAND Hyl 26.13 279 T T 12 28 45.2
baz=102,slow=74,SNR=127
H11N3 WAKE ISLAND Hyl 26.16 280 T T 12 28 37.6
baz=100,slow=75,SNR=42
H11N2 WAKE ISLAND Hyl 26.18 280 T T 12 28 45.6
baz=100,slow=75,SNR=36
H11N1 WAKE ISLAND Hyl 26.18 280 T T 12 28 48.2
baz=100,slow=75,SNR=41
SEY Seymchan 128.10 337 PKP PKPdf 10 09 24.3 +0.3
comp=N,1.6nm,0.8s,baz=30,slow=20,SNR=3.8
ASAR Alice Springs 130.47 210 PKP PKPdf 10 09 29.6 -0.2
comp=N,0.8nm,0.5s,baz=126,slow=1.7,SNR=10.0
ABKAR Akbulak array 131.09 41 ePKPdf PKPdf 10 09 30.6 +0.5
WRA Warramunga Arr 133.40 213 PKP PKPdf 10 09 35.3 -0.1
comp=N,1.1nm,0.6s,baz=154,slow=1.8,SNR=19
WRA pPKP pPKPdf 10 09 49.4 +0.9
comp=N,0.4nm,0.6s,baz=156,slow=1.4,SNR=2.7
BVAR Borovoye Array 135.41 33 PKP PKPdf 10 09 38.4 +0.2
comp=N,0.6nm,0.6s,baz=210,slow=1.2,SNR=3.8
KURK Kurchatov 140.89 31 ePKPdf PKPpre 10 09 39.9
ZALV Zalesovo Beam 141.22 23 PKP PKPdf 10 09 46.3 -2.4
comp=N,1.9nm,0.7s,baz=274,slow=3.6,SNR=4.5
MK31 Makanchi Array 145.29 33 ePKPbc PKPdf 10 09 56.5 +0.3
MKAR Makanchi Array 145.29 33 PKPbc PKPdf 10 09 56.3 +0.1
comp=N,5.5nm,0.7s,baz=321,slow=4.3,SNR=31
MK01 Makanchi Array 145.31 33 ePKPbc PKPdf 10 09 56.4 +0.1
KSH Kashi 145.33 49 ePKPbc PKPab 10 09 56.8 +0.1
KSH esPKP 10 10 11.9
KSH PP PP 10 13 19.0 +2.6
KSH Kashi 145.33 49 SKKS SKKSac 10 20 04.0 -1.6
KSH AMB AMB
comp=Z,57nm,4.3s
KLR Kul'dur 145.78 334 PKPbc PKPab 10 09 57.9 0.0
comp=Z,4.4nm,0.7s,baz=35,slow=4.2,SNR=17
USRK Ussuriysk Ar. 149.40 327 PKPbc PKPbc 10 10 07.8 +0.3
comp=Z,4.6nm,0.8s,baz=356,slow=1.5,SNR=8.6
SONA1 Songino Array 152.11 4 ePKPbc PKPbc 10 10 14.3 +0.3
SONM Songino Array 152.12 4 PKPbc PKPbc 10 10 14.2 +0.2
comp=Z,2.1nm,0.5s,baz=322,slow=1.6,SNR=19
SONM pPKPbc pPKPbc 10 10 26.8 -0.3
comp=Z,2.0nm,0.6s,baz=333,slow=1.8,SNR=8.7

IDC 13 09:53:14.8±1.4, 20.73N±146.41E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.6/54, mbtmp3.8/5, Error ellipse: s-maj=50.1km s-min=28.7km az=96.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H11S3	**WAKE ISLAND Hy**	**19.23**	**93**	T	T	10 17 35.6	
	baz=280						
H11S1	**WAKE ISLAND Hy**	**19.25**	**93**	T	T	10 17 36.4	
	baz=280						
H11N1	**WAKE ISLAND Hy**	**19.25**	**89**	T	T	10 17 40.7	
	baz=277						
H11S2	**WAKE ISLAND Hy**	**19.25**	**93**	T	T	10 17 36.8	
	baz=280						
H11N2	**WAKE ISLAND Hy**	**19.25**	**89**	T	T	10 17 37.6	
	baz=277						
H11N3	**WAKE ISLAND Hy**	**19.27**	**89**	T	T	10 17 38.9	
	baz=277						
WRA	**Warramunga Arr**	**42.12**	**197**	P	P	10 01 08.8	-0.1
	0.5nm,0.7s,baz=16,slow=8.8,SNR=3.7						
MKAR	**Makanchi Array**	**57.55**	**313**	P	P	10 03 06.6	+0.3
	0.2nm,0.2s,baz=99,slow=6.8,SNR=3.0						

ILAR	**Eielson Array**	**61.53**	**27**	P		P		10 03 33.5	0.0
	0.5nm,0.8s,baz=267,slow=5.6,SNR=6.1								
BVAR	**Borovoye Array**	**65.35**	**320**	P		P		10 03 59.1	+0.2
	0.9nm,0.5s,baz=70,slow=6.0,SNR=5.2								
FINES	**FINESS Array B**	**85.32**	**335**	P		P		10 05 52.6	-0.9
	4.1nm,1.1s,baz=41,slow=5.4,SNR=3.5								

IDC ***13*** *09:53:55.7±1.0,20.76N×146.38E,h0km,mb3.9/10, mb1 4.0/10,mb1mx3.8/53,mbtmp3.9/10,MS3.3/1, Ms1 3.3/1,ms1mx2.6/49,Error ellipse: s-maj=28.4km s-min=25.3km az=69.0*

ISCJB ***13*** *09:53:58.6±1.0,20.7N±0.2×146.5E±0.2,h34km,mb3.9/10, Error ellipse: s-maj=26.2km s-min=21.6km az=178.3*

ISC 13 09:54:00.6±1.0,20.7N±0.2×146.4E±0.2,h34km,n18, σθ51/11,mb4.0/10,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op	ISC	h	m	s	ISC
GUMO	**Guam**	**7.23**	**192**	LR	LR	09	57	50.5	
	comp=Z,212nm,19.6s,baz=5.5,slow=32								
H11S3	**WAKE ISLAND Hy**	**19.23**	**93**	T	T	10	18	16.5	
	baz=281,slow=74								
H11S1	**WAKE ISLAND Hy**	**19.24**	**93**	T	T	10	18	16.9	
	baz=281,slow=74								
H11N1	**WAKE ISLAND Hy**	**19.25**	**89**	T	T	10	18	18.5	
	baz=276								
H11S2	**WAKE ISLAND Hy**	**19.25**	**93**	T	T	10	18	17.7	
	baz=281								
H11N2	**WAKE ISLAND Hy**	**19.25**	**89**	T	T	10	18	18.7	
	baz=276								
H11N3	**WAKE ISLAND Hy**	**19.27**	**89**	T	T	10	18	19.9	
	baz=276								
KSRS	**Korea Array**	**23.16**	**320**	P	**P**	**09**	**59**	**04.4**	**+0.4**
	2.4nm,0.9s,baz=143,slow=8.6,SNR=2.8								
SONM	**Songino Array**	**42.03**	**320**	P	**P**	**10**	**01**	**49.2**	**+0.4**
	0.3nm,0.4s,baz=130,slow=6.3,SNR=2.7								
WRA	**Warramunga Arr**	**42.09**	**197**	P	**P**	**10**	**01**	**49.5**	**0.0**
	0.7nm,0.7s,baz=19,slow=8.9,SNR=6.6								
ZALV	**Zalesovo Beam**	**56.85**	**322**	P	**P**	**10**	**03**	**40.8**	**-1.0**
	0.7nm,0.4s,baz=106,slow=9.1,SNR=2.4								
MKAR	**Makanchi Array**	**57.58**	**313**	P	**P**	**10**	**03**	**46.4**	**-0.7**
	0.2nm,0.2s,baz=94,slow=5.9,SNR=2.8								
ILAR	**Eielson Array**	**61.56**	**27**	P	**P**	**10**	**04**	**13.8**	**-0.3**
	1.3nm,0.8s,baz=253,slow=5.8,SNR=11								
BVAR	**Borovoye Array**	**65.37**	**320**	P	**P**	**10**	**04**	**39.4**	**-0.1**
	1.6nm,0.6s,baz=93,slow=6.0,SNR=8.3								
INK	**Inuvik**	**67.28**	**23**	P	**P**	**10**	**04**	**51.5**	**+0.1**
	1.8nm,0.7s,baz=273,slow=6.4,SNR=3.7								
YKA	**Yellowknife Ar**	**75.91**	**28**	P	**P**	**10**	**05**	**43.5**	**0.0**
	1.0nm,0.6s,baz=293,slow=5.3,SNR=5.2								
AKASG	**Malin Array Be**	**90.04**	**326**	P	**P**	**10**	**06**	**57.3**	**+0.5**
	0.4nm,0.3s,baz=46,slow=5.3,SNR=4.1								
LPAZ	**La Paz**	**146.99**	**88**	PKPbc	**PKPab**	**10**	**13**	**42.9**	**+0.1**
	1.2nm,0.7s,baz=211,slow=4.4,SNR=3.5								

IDC ***13*** *09:55:11.5±1.5,42.61N×12.34E,h0km,mb3.8/5, mb1 3.8/10,mb1mx3.6/51,mbtmp3.7/10,ML3.7/4,MS2.9/8, Ms1 2.9/8,ms1mx2.7/48,Error ellipse: s-maj=23.5km s-min=16.9km az=84.0*

CSEM ***13*** *09:55:12.7±0.1,42.44N×12.66E,h8km,ML3.8/17,Error ellipse: s-maj=2.6km s-min=1.9km az=27.0*

ISCJB ***13*** *09:55:12.8±0.2,42.45N±0.01×12.68E±0.02,h23km±2km, mb3.7/4,MS2.9/3,Error ellipse: s-maj=2.6km s-min=1.8km az=25.3*

NEIC ***13*** *09:55:12.0,42.44N×12.72E,h8km,ML3.6(ROM),Felt in ROM.*

NEIC Felt [IV] in the Terni-Contigliano area. Felt in much of Lazio and Umbria and in parts of Abruzzo.

ROM ***13*** *09:55:12.3±0.1,42.44N×12.71E,h7km±1km,Ml3.8/34, Error ellipse: s-maj=1.1km s-min=0.9km az=42.0*

LDG ***13*** *09:55:12.7±0.1,42.46N×12.74E,h10km,Ml3.4/8,Error ellipse: s-maj=4.1km s-min=3.2km az=31.0*

PDG ***13*** *09:55:12.8±0.7,42.46N×12.71E,h14km±1km,ML3.7/12, Error ellipse: s-maj=1.0km s-min=1.4km az=0.0*

GEN ***13*** *09:55:13.2,42.44N×12.72E,h8km,ML3.6*

PRU ***13*** *09:55:14.3,42.38N×12.88E,h22km*

BGR ***13*** *09:55:14.2±0.7,42.47N×12.82E,h10km,ML3.8/7,Error ellipse: s-maj=13.3km s-min=11.1km az=0.0*

STR ***13*** *09:55:18.9±0.6,43.61N×13.66E,h10km,Ml3.4,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

BEO ***13*** *09:55:29.9±0.9,42.83N×14.20E,h0km,M3.5/5*

ISC 13 09:55:13.2±0.8,42.44N±0.02×12.68E±0.02,h12km±6km, n274,σ1§71/398,mb3.6/4,MS2.9/3,18C-8D,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op	ISC	h	m	s	ISC
CESX	**Cesi**	**0.19**	**336**	⇑*i*	*i*Pg		**Pg**	**09 55 16.9**	**-0.5**
CESX					Sg		**Sg**	**09 55 20.2**	**-0.2**
CESX	**Cesi**	**0.19**	**336**	⇑*i*	*i*Pg		**Pg**	**09 55 16.9**	**-0.5**
CESX					Sg		**Sg**	**09 55 20.2**	**-0.2**
LNSS	**Leonessa**	**0.31**	**58**		Pg		**Pg**	**09 55 19.1**	**-0.5**
LNSS					Sg		**Sg**	**09 55 24.0**	**+0.1**
LNSS	**Leonessa**	**0.31**	**58**		Pg		**Pg**	**09 55 19.1**	**-0.5**
LNSS					Sg		**Sg**	**09 55 24.0**	**+0.1**
FIAM	**Fiamignano**	**0.36**	**117**		Pg		**Pg**	**09 55 20.1**	**-0.4**
FIAM					Sg		**Sg**	**09 55 26.1**	**+0.7**
	8µm,0.6s								
FIAM	**Fiamignano**	**0.36**	**117**		Pg		**Pg**	**09 55 20.1**	**-0.4**
FIAM					Sg		**Sg**	**09 55 26.1**	**+0.7**
	8µm,0.6s								
MTCE	**Montecelio**	**0.41**	**174**		Pg		**Pg**	**09 55 21.1**	**-0.3**
MTCE					Sg		**Sb**	**09 55 28.5**	**-0.2**
	6µm,0.4s								
MTCE	**Montecelio**	**0.41**	**174**		Pg		**Pg**	**09 55 21.1**	**-0.3**
MTCE					Sg		**Sb**	**09 55 28.5**	**-0.2**
	6µm,0.4s								
RM32	**Poggio Cancell**	**0.47**	**73**		Pg		**Pg**	**09 55 21.8**	**-0.7**
RM32					Sg		**Sg**	**09 55 29.2**	**+0.4**
	5µm,0.7s								
RM32	**Poggio Cancell**	**0.47**	**73**		Pg		**Pg**	**09 55 21.8**	**-0.7**
RM32					Sg		**Sg**	**09 55 29.2**	**+0.4**
	5µm,0.7s								
CERT	**Cerreto**	**0.54**	**155**		Pg		**Pg**	**09 55 23.0**	**-0.7**
CERT					Sg		**Sg**	**09 55 31.4**	**+0.6**
	6µm,0.6s								
CERT	**Cerreto**	**0.54**	**155**		Pg		**Pg**	**09 55 23.0**	**-0.7**
CERT					Sg		**Sg**	**09 55 31.4**	**+0.6**
	6µm,0.6s								
AQU	**L'Aquila**	**0.54**	**99**		Pg		**Pg**	**09 55 23.0**	**-0.7**
AQU					Sg		**Sg**	**09 55 31.2**	**+0.3**
	7µm,1.0s								
AQU	**L'Aquila**	**0.54**	**99**	*e*	Pg		**Pg**	**09 55 23.1**	**-0.7**
AQU					Sg		**Sg**	**09 55 31.2**	**+0.3**
	7µm,1.0s								
AQU	**L'Aquila**	**0.54**	**99**	*e*	Pg		**Pg**	**09 55 23.1**	**-0.7**
AQU				*e*	Sg		**Sg**	**09 55 31.5**	**+0.7**
ROM9	**Roma**	**0.62**	**192**		Pg		**Pg**	**09 55 25.6**	**+0.4**
	16µm,1.0s								
ROM9	**Roma**	**0.62**	**192**		Pg		**Pg**	**09 55 25.6**	**+0.4**
	16µm,1.0s								
TOLF	**Tolfa**	**0.63**	**234**		Pg		**Pg**	**09 55 25.1**	**-0.3**
TOLF					Sg		**Sg**	**09 55 34.6**	**+0.9**
	5µm,0.7s								
TOLF	**Tolfa**	**0.63**	**234**		Pg		**Pg**	**09 55 25.1**	**-0.3**
TOLF					Sg		**Sg**	**09 55 34.6**	**+0.9**
	5µm,0.7s								
MGAB	**Montegabbione**	**0.64**	**319**		Pg		**Pg**	**09 55 25.1**	**-0.5**
MGAB					Sg		**Sb**	**09 55 35.1**	**0.0**
	8µm,0.5s								
MGAB	**Montegabbione**	**0.64**	**319**		Pg		**Pg**	**09 55 25.1**	**-0.5**
MA9	**Marino**	**0.67**	**182**		Pg		**Pg**	**09 55 26.0**	**-0.1**
	14µm,0.7s								
MA9	**Marino**	**0.67**	**182**		Pg		**Pg**	**09 55 26.0**	**-0.1**
	14µm,0.7s								
FDMO	**Fiordimonte**	**0.67**	**26**		Pg		**Pg**	**09 55 25.1**	**-1.1**
FDMO					Sg		**Sg**	**09 55 35.3**	**+0.2**
	11µm,0.3s								
FDMO	**Fiordimonte**	**0.67**	**26**		Pg		**Pg**	**09 55 25.1**	**-1.1**
FDMO					Sg		**Sg**	**09 55 35.3**	**+0.2**
	11µm,0.3s								
LATE	**Laterza**	**0.67**	**286**		Pg		**Pg**	**09 55 26.2**	**-0.1**
	4µm,0.3s								
LATE	**Laterza**	**0.67**	**286**		Pg		**Pg**	**09 55 26.2**	**-0.1**
	4µm,0.3s								
RDP	**Rocca di Papa**	**0.68**	**178**		Pg		**Pg**	**09 55 26.1**	**-0.2**
	24µm,0.6s								
RDP	**Rocca di Papa**	**0.68**	**178**		Pg		**Pg**	**09 55 26.1**	**-0.2**
	24µm,0.6s								
SACS	**San Casciano d**	**0.70**	**306**		Pg		**Pg**	**09 55 26.6**	**-0.3**
SACS					Sg		**Sb**	**09 55 37.4**	**+0.3**
	8µm,1.3s								
TERO	**Teramo**	**0.70**	**74**		Pg		**Pg**	**09 55 25.5**	**-1.4**
TERO					Sg		**Sg**	**09 55 35.8**	**-0.4**
	4µm,0.8s								
TERO	**Teramo**	**0.70**	**74**		Pg		**Pg**	**09 55 25.5**	**-1.4**
TERO					Sg		**Sg**	**09 55 35.8**	**-0.4**
	4µm,0.8s								
LAV9	**Lanuvio**	**0.76**	**179**		Pg		**Pg**	**09 55 27.8**	**0.0**
	13µm,0.5s								
LAV9	**Lanuvio**	**0.76**	**179**		Pg		**Pg**	**09 55 27.8**	**0.0**
	13µm,0.5s								
VCEL	**Villa Celiera**	**0.86**	**92**		Pg		**Pg**	**09 55 29.0**	**-0.8**
	4µm,0.8s								
VCEL	**Villa Celiera**	**0.86**	**92**		Pg		**Pg**	**09 55 29.0**	**-0.8**
	4µm,0.8s								
OFFI	**Offida**	**0.89**	**56**		Pg		**Pg**	**09 55 29.8**	**-0.6**
	9µm,0.6s								
OFFI	**Offida**	**0.89**	**56**		Pg		**Pg**	**09 55 29.8**	**-0.6**
	9µm,0.6s								
TRTR	**Tortoreto Alta**	**0.98**	**67**		Pg		**Pg**	**09 55 31.6**	**-0.5**
	11µm,1.0s								
TRTR	**Tortoreto Alta**	**0.98**	**67**		Pg		**Pg**	**09 55 31.6**	**-0.5**
	11µm,1.0s								
ARCI	**Arcidosso**	**0.98**	**295**		Pg		**Pg**	**09 55 32.0**	**-0.2**
	1µm,1.3s								
ARCI	**Arcidosso**	**0.98**	**295**		Pg		**Pg**	**09 55 32.0**	**-0.2**
	1µm,1.3s								
INTR	**Introdacqua**	**1.00**	**115**		Pg		**Pg**	**09 55 30.5**	**-2.0**
	4µm,0.7s								
INTR	**Introdacqua**	**1.00**	**115**		Pg		**Pg**	**09 55 30.5**	**-2.0**
	4µm,0.7s								
CING	**Cingoli**	**1.01**	**22**		Pg		**Pg**	**09 55 31.0**	**-1.7**
	2µm,0.3s								
CING	**Cingoli**	**1.01**	**22**		Pg		**Pg**	**09 55 31.0**	**-1.7**
	2µm,0.3s								
CAFI	**Castiglion Fio**	**1.04**	**330**		Pg		**Pb**	**09 55 32.1**	**-1.0**
	912nm,0.3s								
CAFI	**Castiglion Fio**	**1.04**	**330**		Pg		**Pb**	**09 55 32.1**	**-1.0**
	912nm,0.3s								
POFI	**Posta Fibreno**	**1.05**	**133**		Pg		**Pb**	**09 55 31.9**	**-1.4**
	1µm,0.8s								
POFI	**Posta Fibreno**	**1.05**	**133**		Pg		**Pb**	**09 55 31.9**	**-1.4**
	1µm,0.8s								
BADI	**Badiali**	**1.12**	**343**		Pg		**Pb**	**09 55 33.5**	**-1.0**
BADI	**Badiali**	**1.12**	**343**		Pg		**Pb**	**09 55 33.5**	**-1.0**
MAON	**Monte Argentar**	**1.15**	**270**		Pg		**Pb**	**09 55 33.4**	**-1.6**
	870nm,0.8s								
MAON	**Monte Argentar**	**1.15**	**270**		Pg		**Pb**	**09 55 33.4**	**-1.6**
	870nm,0.8s								
FSSB	**Fossombrone**	**1.26**	**3**		Pg		**Pn**	**09 55 35.7**	**-0.9**
	3µm,0.3s								
FSSB	**Fossombrone**	**1.26**	**3**		Pg		**Pn**	**09 55 35.7**	**-0.9**
	3µm,0.3s								
CERA	**Filignano**	**1.30**	**130**		Pg		**Pn**	**09 55 36.4**	**-0.8**
	2µm,0.8s								
CERA	**Filignano**	**1.30**	**130**		Pg		**Pn**	**09 55 36.4**	**-0.8**
	2µm,0.8s								
AOI	**Ancona**	**1.30**	**31**		Pg		**Pn**	**09 55 36.9**	**-0.3**
	2µm,0.9s								
AOI	**Ancona**	**1.30**	**31**		Pg		**Pn**	**09 55 36.9**	**-0.3**
	2µm,0.9s								
CASP	**Castiglione de**	**1.39**	**285**		Pg		**Pn**	**09 55 37.1**	**-1.3**
	1µm,1.3s								
CASP	**Castiglione de**	**1.39**	**285**		Pg		**Pn**	**09 55 37.1**	**-1.3**
	1µm,1.3s								
MIDA	**Miranda**	**1.41**	**124**		Pg		**Pb**	**09 55 39.4**	**-0.1**
	1µm,0.8s								
MIDA	**Miranda**	**1.41**	**124**		Pg		**Pb**	**09 55 39.4**	**-0.1**
	1µm,0.8s								
ASQU	**Asqua**	**1.51**	**335**		Pg		**Pn**	**09 55 38.8**	**-1.3**
	1µm,1.0s								
MODR	**Mondragone**	**1.57**	**145**		Pg		**Pn**	**09 55 39.8**	**-1.0**
	1µm,1.4s								
VENT	**Ventotene**	**1.73**	**161**		Pg		**Pn**	**09 55 43.2**	**+0.2**
	974nm,1.1s								
PTRJ	**Pietraroja**	**1.75**	**127**		Pg		**Pn**	**09 55 43.4**	**+0.1**
	1µm,0.8s								
POPM	**Popiglio**	**2.14**	**319**		P		**Pn**	**09 55 48.0**	**-0.7**
MAIM	**Mastiano**	**2.18**	**313**		Pg		**Pn**	**09 55 48.9**	**-0.3**
	120nm,0.8s								
MAIM	**Mastiano**	**2.18**	**313**		P		**Pn**	**09 55 48.4**	**-0.8**
VLC	**Villacollemand**	**2.40**	**317**	*e*	Pn		**Pn**	**09 55 52.3**	**-0.1**
VLC				*e*	Sn		**Sb**	**09 56 25.5**	**-0.5**
VLC	**Villacollemand**	**2.40**	**317**	*e*	Pn		**Pn**	**09 55 52.3**	**-0.1**
VLC				*e*	Sn		**Sb**	**09 56 25.5**	**-0.5**
SARO	**Sassorosso**	**2.42**	**317**		P		**Pn**	**09 55 51.4**	**-1.2**
PGF	**Pioggiola**	**2.73**	**274**	*e*	Pn		**Pn**	**09 55 56.0**	**-0.9**
PGF				*e*	Sn		**Sn**	**09 56 27.9**	**-1.9**
	35nm,0.5s								
PGF	**Pioggiola**	**2.73**	**274**	*e*	Pn		**Pn**	**09 55 56.0**	**-0.9**
PGF				*e*	Sn		**Sn**	**09 56 27.9**	**-1.9**
	17nm,0.5s								
GRAM	**Graiana**	**2.80**	**318**		P		**Pn**	**09 55 57.4**	**-0.5**
CDT	**Castel del Mon**	**3.01**	**116**	*e*	Pn		**Pn**	**09 56 03.3**	**+2.7**
UDBI	**Udbina**	**3.07**	**46**	*i*	Pn		**Pn**	**09 56 02.5**	**+0.9**
UDBI					Sn		**Sn**	**09 56 38.8**	**+0.7**
UDBI	**Udbina**	**3.07**	**46**	*i*	Pn		**Pn**	**09 56 02.4**	**+0.9**
UDBI					Sn		**Sn**	**09 56 38.8**	**+0.7**
RIY	**Rijeka**	**3.17**	**24**	⇑	Pn		**Pn**	**09 56 02.7**	**-0.1**
TRI	**Trieste**	**3.36**	**13**	*e*	Pn		**Pn**	**09 56 04.2**	**-1.3**
TRI				*e*	Sn		**Sn**	**09 56 41.7**	**-3.6**
TRI	**Trieste**	**3.36**	**13**	*e*	Pn		**Pn**	**09 56 04.2**	**-1.3**
TRI				*e*	Sn		**Sn**	**09 56 41.7**	**-3.6**
CUC	**Castrocucco**	**3.40**	**135**	*e*	Pn		**Pb**	**09 56 10.3**	**-3.0**
CUC	**Castrocucco**	**3.40**	**135**	*e*	Pn		**Pb**	**09 56 10.3**	**-3.0**
CEY	**Cerknica**	**3.53**	**20**	*e*	Pn		**Pn**	**09 56 07.1**	**-0.8**
PCP	**Piancastagn**	**3.67**	**306**		P		**Pn**	**09 56 09.5**	**-0.3**
VOJS	**Vojsko**	**3.70**	**13**	*i*	Pn		**Pn**	**09 56 09.5**	**-0.7**
VOJS				*i*	Sn		**Sn**	**09 56 53.8**	**+0.1**
VOJS	**Vojsko**	**3.70**	**13**		Pn		**Pn**	**09 56 09.5**	**-0.7**
VOJS				*i*	Sn		**Sn**	**09 56 53.8**	**+0.1**
OZLJ	**Ozalj**	**3.76**	**31**	*i*	Pn		**Pn**	**09 56 11.5**	**+0.6**
OZLJ					Sn		**Sn**	**09 56 54.6**	**-0.5**
OZLJ	**Ozalj**	**3.76**	**31**	*i*	Pn		**Pn**	**09 56 11.5**	**+0.6**
OZLJ					Sn		**Sn**	**09 56 54.5**	**-0.5**
LJU	**Ljubljana**	**3.84**	**20**	*e*	Pn		**Pn**	**09 56 12.1**	**0.0**
CRES	**Cresnjev**	**3.93**	**30**	*e*	Pn		**Pn**	**09 56 12.5**	**-0.5**
VNDS	**Vrh nad Dolski**	**3.94**	**21**	*i*	Pn		**Pn**	**09 56 13.4**	**0.0**
VNDS				*i*	Sn		**Sn**	**09 56 59.7**	**+0.1**
VNDS	**Vrh nad Dolski**	**3.94**	**21**	*i*	Pn		**Pn**	**09 56 13.4**	**0.0**
VNDS				*i*	Sn		**Sn**	**09 56 59.7**	**+0.1**
MRAK	**Mrakovica**	**4.00**	**48**	*e*	Pn		**Pn**	**09 56 15.3**	**+1.0**
SBF	**Sospel**	**4.10**	**292**	*e*	Pn		**Pn**	**09 56 14.7**	**-1.0**
SBF				*e*	Sn		**Sn**	**09 57 00.2**	**-3.3**
	38nm,0.7s								
SBF	**Sospel**	**4.10**	**292**	*e*	Pn		**Pn**	**09 56 14.7**	**-1.0**
SBF				*e*	Sn		**Sn**	**09 57 00.2**	**-3.3**
	19nm,0.7s								
TREB	**Trebinje**	**4.19**	**84**	*e*	Pn		**Pn**	**09 56 17.3**	**+0.4**
MYKA	**Terra Mystica**	**4.25**	**9**	*i*	Pn		**Pn**	**09 56 17.6**	**-0.2**
	6.4nm,0.4s,SNR=9.5								
MYKA					*i* Sn		**Sn**	**09 57 07.6**	**+0.3**
	23nm,0.7s								
MYKA	**Terra Mystica**	**4.25**	**9**		Pn		**Pn**	**09 56 17.6**	**-0.2**
	6.4nm,0.4s,SNR=9.5								
MYKA					Sn		**Sn**	**09 57 07.6**	**+0.3**
	23nm,0.7s								
OBKA	**Obir**	**4.29**	**18**	*e*	Pn		**Pn**	**09 56 19.0**	**+0.7**
	4.2nm,0.4s								
OBKA					*i* Sn		**Sn**	**09 57 10.4**	**+2.2**
	70nm,0.9s								
OBKA	**Obir**	**4.29**	**18**	*e*	Pn		**Pn**	**09 56 18.2**	**-0.1**
OBKA	**Obir**	**4.29**	**18**		Pn		**Pn**	**09 56 18.2**	**-0.1**
OBKA					Sn		**Sn**	**09 57 10.4**	**+2.2**
	70nm,0.9s								
HCY	**Herceg Novi**	**4.30**	**88**	⇑	Pn		**Pn**	**09 56 18.8**	**+0.4**
HCY					Sn		**Sn**	**09 57 08.8**	**+0.4**
HCY	**Herceg Novi**	**4.30**	**88**	⇑	Pn		**Pn**	**09 56 18.8**	**+0.4**
HCY					Sn		**Sn**	**09 57 08.8**	**+0.4**
ABTA	**Abfaltersbach**	**4.31**	**358**	*i*	Pn		**Pn**	**09 56 19.1**	**+0.5**
	27nm,0.6s,SNR=12								
ABTA					*i* Sn		**Sn**	**09 57 09.8**	**+0.9**
	71nm,0.9s								
ABTA	**Abfaltersbach**	**4.31**	**358**		Pn		**Pn**	**09 56 19.1**	**+0.5**
	27nm,0.6s,SNR=12								
ABTA					Sn		**Sn**	**09 57 09.8**	**+0.9**
	71nm,0.9s								
BRY	**Bratogost**	**4.34**	**82**	*e*	Pn		**Pn**	**09 56 19.4**	**+0.3**
BRY				*e*	Sn		**Sn**	**09 57 09.7**	**0.0**
BRY	**Bratogost**	**4.34**	**82**	*e*	Pn		**Pn**	**09 56 19.4**	**+0.3**
BRY				*e*	Sn		**Sn**	**09 57 09.7**	**0.0**
TIP	**Timpagrande**	**4.49**	**135**	*e*	Pn		**Pn**	**09 56 23.8**	**+2.8**
TIP	**Timpagrande**	**4.49**	**135**	*e*	Pn		**Pn**	**09 56 23.8**	**+2.8**
BISS	**Bistriski jare**	**4.56**	**22**	*i*	Pn		**Pn**	**09 56 21.3**	**-0.7**
BISS	**Bistriski jare**	**4.56**	**22**	*i*	Pn		**Pn**	**09 56 21.3**	**-0.7**
SOKA	**Soboth**	**4.56**	**21**	*i*	Pn		**Pn**	**09 56 23.7**	**+1.6**
	3.4nm,0.4s								
SOKA					*i* Sn		**Sn**	**09 57 15.8**	**+0.8**
	11nm,0.5s								
SOKA	**Soboth**	**4.56**	**21**		Pn		**Pn**	**09 56 23.7**	**+1.6**
	3.4nm,0.4s								
SOKA					Sn		**Sn**	**09 57 15.8**	**+0.8**
	11nm,0.5s								
BUM	**Brajici-Budva**	**4.60**	**90**	*e*	Pn		**Pn**	**09 56 23.3**	**+0.7**
BUM				*e*	Sn		**Sn**	**09 57 16.1**	**+0.1**
BUM	**Brajici-Budva**	**4.60**	**90**	*e*	Pn		**Pn**	**09 56 23.3**	**+0.7**
BUM				*e*	Sn		**Sn**	**09 57 16.1**	**+0.1**
CEME	**Cevo**	**4.61**	**87**	⇑	Pn		**Pn**	**09 56 23.1**	**+0.4**
CEME					Sn		**Sn**	**09 57 16.9**	**+0.7**
CEME	**Cevo**	**4.61**	**87**	⇑	Pn		**Pn**	**09 56 23.1**	**+0.4**
CEME					Sn		**Sn**	**09 57 16.9**	**+0.7**
LMR	**La Mourre**	**4.62**	**283**	*e*	Pn		**Pn**	**09 56 21.6**	**-1.2**
LMR	**La Mourre**	**4.62**	**283**	*e*	Pn		**Pn**	**09 56 21.6**	**-1.2**
NKME	**Niksic**	**4.64**	**84**	⇑	Pn		**Pn**	**09 56 24.2**	**+1.1**
NKME					Sn		**Sn**	**09 57 17.2**	**+0.3**
NKME	**Niksic**	**4.64**	**84**	⇑	Pn		**Pn**	**09 56 24.2**	**+1.1**
NKME					Sn		**Sn**	**09 57 17.2**	**+0.3**
UPM	**Unac-Piva**	**4.64**	**78**	*e*	Pn		**Pn**	**09 56 23.8**	**+0.6**
UPM				*e*	Sn		**Sn**	**09 57 16.9**	**-0.2**
UPM	**Unac-Piva**	**4.64**	**78**	*e*	Pn		**Pn**	**09 56 23.8**	**+0.6**
UPM				*e*	Sn		**Sn**	**09 57 16.9**	**-0.2**
KBA	**Koelnbreinsper**	**4.67**	**6**	*i*	Pn		**Pn**	**09 56 23.3**	**-0.3**
	12nm,0.5s,SNR=19								
KBA					*i* Sn		**Sn**	**09 57 18.4**	**+0.7**
	19nm,0.4s								
KBA	**Koelnbreinsper**	**4.67**	**6**	*e*	Pn		**Pn**	**09 56 23.9**	**+0.3**
KBA				*e*	Sn		**Sn**	**09 57 15.4**	**-2.3**
KBA	**Koelnbreinsper**	**4.67**	**6**		Pn		**Pn**	**09 56 23.9**	**+0.3**
KBA					Sn		**Sn**	**09 57 15.4**	**-2.3**
NKY	**Niksic**	**4.67**	**83**	⇓	*i* Pn		**Pn**	**09 56 24.4**	**+0.8**
NKY					*e* Sn		**Sn**	**09 57 18.0**	**+0.3**
NKY	**Niksic**	**4.67**	**83**	⇓	*i* Pn		**Pn**	**09 56 24.4**	**+0.8**
NKY					*e* Sn		**Sn**	**09 57 18.0**	**+0.3**
TUE	**Stuetta**	**4.69**	**331**	*e*	Pn		**Pn**	**09 56 24.0**	**+0.1**
TUE				*e*	Sn		**Sn**	**09 57 18.8**	**+1.5**
TUE	**Stuetta**	**4.69**	**331**	*e*	Pn		**Pn**	**09 56 24.0**	**+0.1**
TUE				*e*	Sn		**Sn**	**09 57 19.8**	**+1.5**
DAVOX	**Davos/Dischmat**	**4.78**	**336**		Pn		**Pn**	**09 56 26.4**	**+1.2**
	2.5nm,0.3s,baz=159,slow=17,SNR=22								
DAVOX					Sn		**Sn**	**09 57 15.8**	**-4.8**
	0.4nm,0.3s,baz=154,slow=18,SNR=2.1								
FETA	**Feichten**	**4.79**	**344**	*i*	Pn		**Pn**	**09 56 26.4**	**+1.1**
	30nm,1.0s,SNR=14								
FETA					*i* Sn		**Sn**	**09 57 20.5**	**-0.3**
	20nm,0.7s								
FETA	**Feichten**	**4.79**	**344**		Pn		**Pn**	**09 56 26.4**	**+1.1**
	30nm,1.0s,SNR=14								
FETA					Sn		**Sn**	**09 57 20.5**	**-0.3**
	20nm,0.7s								
DRME	**Dracevica, Mon**	**4.83**	**91**	⇑	*i* Pn		**P

MOA	**Molln**	**5.53**	**11**	*i* Pn	**Pn**	**09 56 35.4**	**+0.1**
	9.1nm,0.7s,SNR=10.0						
MOA				*i* Sn	**Sn**	**09 57 39.3**	**+0.6**
	18nm,0.4s						
MOA	**Molln**	**5.53**	**11**	*e*Pn	**Pn**	**09 56 35.3**	**+0.1**
MOA				*e*Sn	**Sn**	**09 57 37.0**	**-1.7**
MOA	**Molln**	**5.53**	**11**	Pn	**Pn**	**09 56 35.3**	**0.0**
MOA				Sn	**Sn**	**09 57 37.0**	**-1.7**
DIVS	**Divibare**	**5.59**	**70**	*e*Pn	**Pn**	**09 56 36.9**	**+0.7**
DIVS				*e*Sn	Sn	09 57 26.3	-14
DIVS	**Divibare**	**5.59**	**70**	*e*Pn	**Pn**	**09 56 36.9**	**+0.7**
IVAS	**Ivanjica**	**5.59**	**76**	*e*Pn	**Pn**	**09 56 36.8**	**+0.6**
IVAS				*e*Sn	Sn	09 57 27.2	-13
IVAS	**Ivanjica**	**5.59**	**76**	*e*Pn	**Pn**	**09 56 36.8**	**+0.6**
FGSL	**Fruska Gora**	**5.83**	**60**	*e*Pn	**Pn**	**09 56 39.7**	**+0.3**
FRGS	**Fruska Gora**	**5.83**	**60**	*e*Pn	**Pn**	**09 56 39.7**	**+0.3**
TRUS	**Trudelj**	**5.91**	**70**	*e*Pn	**Pn**	**09 56 40.5**	**0.0**
TRUS	**Trudelj**	**5.91**	**70**	*e*Pn	**Pn**	**09 56 40.5**	**0.0**
CONA	**Conrad Observa**	**5.93**	**21**	*e*Pn	**Pn**	**09 56 41.3**	**+0.4**
	11nm,0.9s,SNR=6.3						
CONA	**Conrad Observa**	**5.93**	**21**	Pn	**Pn**	**09 56 41.3**	**+0.4**
	11nm,0.9s,SNR=6.3						
SULZ	**Cheisacher**	**6.04**	**329**	*e*Pn	**Pn**	**09 56 43.9**	**+1.7**
SULZ				*e*Sn	**Sn**	**09 57 52.6**	**+1.4**
SULZ	**Cheisacher**	**6.04**	**329**	Pn	**Pn**	**09 56 43.9**	**+1.7**
SULZ				Sn	**Sn**	**09 57 52.6**	**+1.4**
BALST	**Balsthal**	**6.05**	**326**	*e*Pn	**Pn**	**09 56 43.6**	**+1.2**
BALST				*e*Sn	**Sn**	**09 57 47.5**	**-4.0**
BALST	**Balsthal**	**6.05**	**326**	Pn	**Pn**	**09 56 43.6**	**+1.2**
GRUS	**Gruza**	**6.05**	**73**	*e*Pn	**Pn**	**09 56 42.4**	**0.0**
GRUS				*e*Sn	Sn	09 57 37.8	-14
GRUS	**Gruza**	**6.05**	**73**	*e*Pn	**Pn**	**09 56 42.4**	**0.0**
SLE	**Schleitheim**	**6.10**	**332**	*e*Pn	**Pn**	**09 56 43.2**	**+0.1**
SLE				*e*Sn	**Sn**	**09 57 50.2**	**-2.6**
SLE	**Schleitheim**	**6.10**	**332**	Pn	**Pn**	**09 56 43.2**	**+0.1**
SELS	**Selova**	**6.25**	**80**	*e*Pn	**Pn**	**09 56 46.3**	**+1.1**
SELS	**Selova**	**6.25**	**80**	*e*Pn	**Pn**	**09 56 46.3**	**+1.1**
VIVF	**Saint-Julien-l**	**6.29**	**295**	*e*Pn	**Pn**	**09 56 44.3**	**-1.5**
VIVF	**Saint-Julien-l**	**6.29**	**295**	*e*Pn	**Pn**	**09 56 44.3**	**-1.5**
CABF	**La Chapelle**	**6.30**	**314**	*e*Pn	**Pn**	**09 56 44.5**	**-1.4**
CABF	**La Chapelle**	**6.30**	**314**	*e*Pn	**Pn**	**09 56 44.5**	**-1.4**
FELD	**Feldberg im Sc**	**6.37**	**330**	P	**Pn**	**09 56 45.6**	**-1.3**
LOMF	**Lomont**	**6.44**	**322**	P	**Pn**	**09 56 48.0**	**+0.2**
LOMF				S	**Sn**	**09 58 03.9**	**+2.7**
LOMF	**Lomont**	**6.44**	**322**	P	**Pn**	**09 56 48.0**	**+0.2**
GEC2	**GERESS Array S**	**6.45**	**6**	*e*Pn	**Pn**	**09 56 47.1**	**-0.9**
GEC2				*e*Sn	**Sn**	**09 57 56.6**	**-4.9**
GEC2	**GERESS Array S**	**6.45**	**6**	Pn	**Pn**	**09 56 47.1**	**-0.9**
GERES	**GERESS Array B**	**6.45**	**6**	Pn	**Pn**	**09 56 46.8**	**-1.2**
	1.5nm,0.3s,baz=170,slow=13,SNR=14						
GERES				Sn	**Sn**	**09 57 56.6**	**-4.9**
	4.2nm,0.3s,baz=172,slow=24,SNR=9.2						
GERES				LR	LR	10 00 03.8	
	comp=Z,133nm,19.4s,baz=166,slow=46						
BFO	**Black Forest**	**6.64**	**334**	*e*Pn	**Pn**	**09 56 49.5**	**-1.1**
BFO				*e*Sn	**Sn**	**09 58 02.1**	**-4.0**
BFO	**Black Forest**	**6.64**	**334**	Pn	**Pn**	**09 56 49.5**	**-1.1**
MOF	**Molkenrain**	**6.69**	**326**	P	**Pn**	**09 56 50.9**	**-0.3**
MOF	**Molkenrain**	**6.69**	**326**	P	**Pn**	**09 56 50.9**	**-0.3**
WET	**Wettzell**	**6.71**	**1**	*e*Pn	**Pn**	**09 56 50.3**	**-1.2**
WET				*e*Sn	**Sn**	**09 58 04.2**	**-3.6**
WET	**Wettzell**	**6.71**	**1**	Pn	**Pn**	**09 56 50.3**	**-1.2**
BOVS	**Bovan**	**6.72**	**77**	*e*Pn	**Pn**	**09 56 52.8**	**+1.2**
BOVS	**Bovan**	**6.72**	**77**	*e*Pn	**Pn**	**09 56 52.8**	**+1.2**
KHC	**Kasperske Hory**	**6.72**	**5**	*e*PN	**Pn**	**09 56 50.9**	**-0.8**
KHC				*ex*	x	09 56 55.4	
KHC				*ex*	x	09 57 02.2	
KHC				*e*SN	**Sn**	**09 58 05.0**	**-3.2**
KHC	**Kasperske Hory**	**6.72**	**5**	Pn	**Pn**	**09 56 50.9**	**-0.8**
KHC	**Kasperske Hory**	**6.72**	**5**	*e*Pn	**Pn**	**09 56 49.2**	**-2.5**
	2.6nm,0.6s						
KHC				*e*Sn	**Sn**	**09 58 04.2**	**-4.1**
BARS	**Barje**	**6.75**	**84**	*e*Pn	**Pn**	**09 56 52.5**	**+0.5**
BARS				*e*Sn	Sn	09 57 55.3	-13
BARS	**Barje**	**6.75**	**84**	*e*Pn	**Pn**	**09 56 52.5**	**+0.5**
HINF	**Hinteralfeld**	**6.78**	**325**	*e*Pn	**Pn**	**09 56 49.6**	**-2.8**
HINF				*e*Sn	**Sn**	**09 58 02.8**	**-6.7**
	4.5nm,0.3s						
ECH	**Echery**	**6.97**	**328**	P	**Pn**	**09 56 53.9**	**-1.1**
ECH				S	**Sn**	**09 58 12.6**	**-1.6**
ECH	**Echery**	**6.97**	**328**	*e*Pn	**Pn**	**09 56 54.6**	**-0.4**
ECH				*e*Sn	**Sn**	**09 58 11.5**	**-2.6**
ECH	**Echery**	**6.97**	**328**	P	**Pn**	**09 56 53.9**	**-1.1**
ECH	**Echery**	**6.97**	**328**	Pn	**Pn**	**09 56 54.6**	**-0.4**
ECH				S	**Sn**	**09 58 12.6**	**-1.6**
CDF	**Champ du Feu**	**7.08**	**329**	*e*Pn	**Pn**	**09 56 55.2**	**-1.5**
CDF				*e*Sn	**Sn**	**09 58 10.2**	**-6.9**
	8.0nm,0.5s						
CDF	**Champ du Feu**	**7.08**	**329**	*e*Pn	**Pn**	**09 56 55.2**	**-1.5**
HAU	**Haudompre**	**7.14**	**323**	*e*Pn	**Pn**	**09 56 56.5**	**-0.9**
HAU				*e*Sn	**Sn**	**09 58 11.6**	**-6.8**
	18nm,0.3s						
HAU	**Haudompre**	**7.14**	**323**	*e*Pn	**Pn**	**09 56 56.5**	**-0.9**
KEST	**Kesra**	**7.18**	**202**	Pn	**Pn**	**09 57 02.1**	**+4.1**
	1.0nm,0.3s,baz=90,slow=2.0,SNR=11						
ZAPS	**Zavoj**	**7.36**	**80**	*e*Pn	**Pn**	**09 57 01.5**	**+1.1**
ZAPS	**Zavoj**	**7.36**	**80**	*e*Pn	**Pn**	**09 57 01.5**	**+1.1**
VRAC	**Vranov**	**7.39**	**20**	Pn	**Pn**	**09 56 59.6**	**-1.3**
	0.4nm,0.3s,baz=242,slow=15,SNR=1.8						
VRAC				LR	LR	10 00 39.3	
	comp=Z,62nm,20.4s,baz=210,slow=45						
VYHS	**Vyhne**	**7.44**	**33**	*e*Pn	**Pn**	**09 57 01.8**	**+0.3**
VYHS	**Vyhne**	**7.44**	**33**	*e*PN	**Pn**	**09 57 01.8**	**+0.3**
THEF	**They Montfort**	**7.47**	**323**	P	**Pn**	**09 57 02.2**	**+0.3**
THEF	**They Montfort**	**7.47**	**323**	P	**Pn**	**09 57 02.2**	**+0.3**
LOR	**Lormes**	**7.91**	**311**	*e*Pn	**Pn**	**09 57 06.8**	**-1.2**
	baz=122						
LOR				*e*Sn	**Sn**	**09 58 30.8**	**-6.6**
LOR	**Lormes**	**7.91**	**311**	*e*Pn	**Pn**	**09 57 06.8**	**-1.2**
CAF	**Calviac**	**8.09**	**292**	*e*Pn	**Pn**	**09 57 09.3**	**-1.1**
CAF	**Calviac**	**8.09**	**292**	*e*Pn	**Pn**	**09 57 09.3**	**-1.1**
BGF	**Bois d'Agland**	**8.15**	**304**	*e*Pn	**Pn**	**09 57 08.9**	**-2.3**
BGF	**Bois d'Agland**	**8.15**	**304**	*e*Pn	**Pn**	**09 57 08.9**	**-2.3**
KECS	**Kecovo**	**8.16**	**40**	*e*Pn	**Pn**	**09 57 13.9**	**+2.5**
KECS	**Kecovo**	**8.16**	**40**	*e*PN	**Pn**	**09 57 13.9**	**+2.5**
DRGR		**8.37**	**55**	⇑*i*P	Pn	09 57 07.4	-6.9
BRG	**Berggiesshubel**	**8.48**	**5**	SN	**Sn**	**09 58 47.2**	**-4.1**
BRG				*e*		09 59 49.9	
	10nm,1.0s						
	comp=N,182nm,10.3s						
	comp=E,147nm,16.6s						
	comp=Z,266nm,10.2s						
CLL	**Collm**	**8.88**	**1**	*e*Pn	**Pn**	**09 57 18.0**	**-3.2**
CLL				*e*Sn	**Sn**	**09 58 54.0**	**-7.0**
CLL				*e*Sg	**Sg**	**10 00 05.0**	**+7.1**
CRVS	**Cervenica-Dubn**	**8.92**	**41**	*e*PN	**Pn**	**09 57 24.9**	**+3.2**
STHS	**Stebnicka Huta**	**9.18**	**38**	*e*PN	**Pn**	**09 57 28.3**	**+3.0**
MLR	**Muntele Rosu**	**10.04**	**68**	Pn	**Pn**	**09 57 40.1**	**+2.8**
	baz=216,slow=7.5,SNR=4.4						
MLR				LR	LR	10 02 22.7	
	comp=Z,31nm,18.2s,baz=270,slow=42						
MLR	**Muntele Rosu**	**10.04**	**68**	⇑*i*P	**Pn**	**09 57 41.1**	**+3.9**
BRTR	**Keskin Array B**	**16.03**	**93**	Pn	**P**	**09 59 03.4**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=283,slow=9.6,SNR=3.0						
HFS	**Hagfors**	**17.73**	**2**	LR	LR	10 07 13.7	
	comp=Z,75nm,19.1s,baz=186,slow=41						
NOA	**NORSAR Array B**	**18.65**	**358**	P	**P**	**09 59 30.3**	**-0.4**
	comp=Z,0.1nm,0.3s,baz=188,slow=14,SNR=3.3						
NOA				LR	LR	10 06 59.2	
	comp=Z,25nm,19.4s,baz=170,slow=38						
FINES	**FINESS Array B**	**20.67**	**18**	P	**P**	**09 59 53.0**	**+0.4**
	comp=Z,3.8nm,0.9s,baz=161,slow=12,SNR=3.8						
FINES				LR	LR	10 08 31.5	
	comp=Z,30nm,19.7s,baz=92,slow=39						
KBZ	**Khabaz**	**22.05**	**76**	P	**P**	**10 00 12.0**	**+4.4**
	comp=Z,1.1nm,0.6s,baz=281,slow=5.2,SNR=3.4						
BORG	**Borgarnes**	**29.48**	**331**	LR	LR	10 13 30.1	
	comp=Z,30nm,18.7s,baz=75,slow=38						
TORD	**Torodi Ar. Bea**	**30.70**	**201**	P	**P**	**10 01 28.2**	**+0.3**
	comp=Z,0.8nm,0.8s,baz=22,slow=8.2,SNR=6.2						
TORD				LR	LR	10 13 42.0	
	comp=Z,42nm,18.7s,baz=285,slow=36						
ARU	**Arti**	**32.29**	**48**	P	**P**	**10 01 41.0**	**-0.5**
	comp=Z,2.0nm,0.3s,baz=270,slow=5.9,SNR=8.7						
BVAR	**Borovoye Array**	**39.22**	**54**	P	**P**	**10 02 42.1**	**+1.0**
	comp=Z,0.4nm,0.4s,baz=298,slow=9.5,SNR=2.9						

NEIC ***13*** *09:56:32.2, 15°.31N×94°.77W, h16km, MD4.2(MEX), After MEX.*

MEX 13 09:56:32.5±0.6, 15°.33N×94°.78W, h36km±34km, MD4.2, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.35**	**289**	*e*P		Pn	09 56 53.8	-1.1
HUIG				*e*S		Sn	09 57 08.7	-2.9
HUIG	**Huatulco**	**1.35**	**289**	*e*P		Pn	09 56 53.9	-1.0
HUIG				*e*S		Sn	09 57 08.7	-2.9
TGIG		**2.15**	**48**	*e*P		Pn	09 57 04.9	-0.9
TGIG				*e*S		Sn	09 57 28.9	-2.3
TGIG		**2.15**	**48**	*e*P		Pn	09 57 04.9	-0.9
TGIG				*e*S		Sn	09 57 28.9	-2.3
CCIG	**Comitan**	**2.71**	**69**	*e*P		Pn	09 57 12.0	-1.7
CCIG				*i* S		Sn	09 57 43.2	-2.3
CCIG	**Comitan**	**2.71**	**69**	*e*P		Pn	09 57 14.1	+0.3
CCIG				*e*S		Sn	09 57 44.6	-0.9
PNIG	**Pinotepa**	**3.39**	**289**	*e*P		Pn	09 57 22.4	-0.5
PNIG				*i* S		Sn	09 58 00.4	-1.6
TPIG	**Tehuac#an**	**3.94**	**322**	*i* P		Pn	09 57 29.6	-1.0
TPIG				*i* S		Sn	09 58 14.7	-1.1
TEIG	**Tepich**	**7.88**	**51**	*e*Pn		Pn	09 58 23.2	-1.4
TEIG				*e*Sn		Sn	09 59 51.7	-0.8
JCT	**Junction City**	**15.77**	**344**	*e*Pn		Pn	10 00 13.5	+1.6

NIED ***13*** *09:58:00, 37°.50N×144°.40E, h8km, Mw3.6 Best double couple: M₀2.59000×10¹⁴ NP1:φs318.00000°, δ28.00000°, λ-77.00000°. NP2:φs124.00000°, δ63.00000°, λ-97.00000°.*

IDC ***13*** *09:58:26.1±0.9, 37°.32N×144°.61E, h0km, mb3.6/6, mb1 3.8/8, mb1mx3.6/47, mbtmp3.7/8, ML3.6/2, MS2.2/1, Ms1 2.2/1, ms1mx2.0/47, Error ellipse: s-maj=25.8km s-min=19.8km az=109.0*

ISCJB ***13*** *09:58:28.1±0.7, 37°.46N±0°.04×144°.50E±0°.06, h33km, mb3.6/6, Error ellipse: s-maj=6.5km s-min=5.5km az=20.6*

JMA ***13*** *09:58:30.6±0.2, 37°.54N×144°.36E, h45km, M3.9*

ISC 13 09:58:31.2±1.0, 37°.55N±0°.05×144°.43E±0°.08, h35km, n28, σ2s67/41, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.60**	**291**	P		**Pn**	**09 59 10.7**	**0.0**
JIO				S		**Sn**	**09 59 40.9**	**-0.1**
OFUJ	**Ofunato**	**2.66**	**306**	P		**Pn**	**09 59 12.1**	**+0.6**
JMK	**Ichinoseki**	**2.89**	**300**	P		**Pn**	**09 59 15.1**	**+0.4**
JMK				S		**Sn**	**09 59 48.6**	**+0.4**
JOU	**Okura**	**3.09**	**286**	P		**Pn**	**09 59 18.0**	**+0.5**
JOU				S		**Sn**	**09 59 53.7**	**+0.5**
JOM	**Ohasama**	**3.12**	**309**	P		**Pn**	**09 59 18.5**	**+0.6**
JOM				S		**Sn**	**09 59 54.3**	**+0.3**
BSO1	**Boso 1**	**4.02**	**225**	P		**Pn**	**09 59 28.0**	**-1.8**
BSO1				S		**Sn**	**10 00 12.9**	**-2.6**
JTM	**Tenmabayashi**	**4.16**	**322**	P		**Pn**	**09 59 33.2**	**+1.1**
JTM				S		**Sn**	**10 00 17.9**	**-1.5**
JOT	**Ohata**	**4.63**	**327**	P		**Pn**	**09 59 39.9**	**+1.2**
JOT				S		**Sn**	**10 00 29.2**	**-2.0**
JRY	**Ryogami san**	**4.70**	**253**	P		**Pn**	**09 59 38.8**	**-0.8**
JRY				S		**Sn**	**10 00 29.8**	**-3.1**
JOD2	**Odawara 2**	**4.88**	**244**	*e*S		**Sn**	**10 00 34.1**	**-3.2**
JKB	**Kayabe**	**5.06**	**330**	P		**Pn**	**09 59 45.7**	**+1.2**
JKB				S		**Sn**	**10 00 39.1**	**-2.6**
MJAR	**Matsushiro Arr**	**5.08**	**260**	Pn		**Pn**	**09 59 45.5**	**+0.7**
	2.1nm,0.3s,baz=89,slow=15,SNR=20							
MJAR				Sn		**Sn**	**10 00 43.9**	**+1.6**
	1.5nm,0.3s,baz=96,slow=25,SNR=8.0							
MAT	**Matsushiro**	**5.08**	**260**	P		**Pn**	**09 59 46.0**	**+1.1**
MAT				S		**Sn**	**10 00 43.7**	**+1.4**
JCH	**Churui**	**5.12**	**351**	P		**Pn**	**09 59 44.5**	**-0.9**
JCH				*e*S		**Sn**	**10 00 39.8**	**-3.5**
JHJ2	**Mitsune**	**5.82**	**222**	P		**Pn**	**09 59 53.0**	**-2.0**
JHJ2				S		**Sn**	**10 00 53.5**	**-7.0**
JHJ	**Hachijo jima 2**	**5.83**	**222**	Pn		**Pn**	**09 59 53.0**	**-2.2**
	4.7nm,0.3s,baz=328,slow=24,SNR=11							
JHJ				Sn		**Sn**	**10 00 53.0**	**-7.7**
	30nm,0.3s,baz=114,slow=23,SNR=11							
JHJ				LR		LR	10 01 55.6	
	comp=Z,23nm,19.8s,baz=199,slow=36							
NEM2	**Nemuro 2**	**5.89**	**9**	P		**Pn**	**09 59 52.7**	**-3.2**
NEM2				*e*S		**Sn**	**10 00 56.2**	**-6.0**
JTKR	**Abashiri--Toko**	**6.42**	**357**	P		**Pn**	**10 00 02.1**	**-1.2**
JTKR				S		**Sn**	**10 01 10.7**	**-4.6**
ASAJ	**Asahikawa**	**6.70**	**349**	Pn		**Pn**	**10 00 07.2**	**+0.1**
	baz=200,slow=13							
H11N2	**WAKE ISLAND Hy**	**26.42**	**126**	T		T	10 31 23.6	
	baz=319,slow=75							
H11N1	**WAKE ISLAND Hy**	**26.43**	**126**	T		T	10 31 23.6	
	baz=319							
H11N3	**WAKE ISLAND Hy**	**26.44**	**126**	T		T	10 31 25.0	
	baz=319,slow=75							
SONM	**Songino Array**	**29.52**	**303**	P		**P**	**10 04 34.6**	**+2.3**
	0.2nm,0.3s,baz=102,slow=7.9,SNR=2.9							
MKAR	**Makanchi Array**	**45.88**	**302**	P		**P**	**10 06 52.1**	**+2.0**
	0.7nm,0.6s,baz=74,slow=11,SNR=5.8							
ILAR	**Eielson Array**	**47.76**	**33**	P		**P**	**10 07 05.3**	**+0.8**
	0.5nm,1.0s,baz=275,slow=6.2,SNR=4.1							
WRA	**Warramunga Arr**	**57.97**	**191**	P		**P**	**10 08 18.6**	**-1.6**
	1.0nm,0.5s,baz=12,slow=7.2,SNR=12							
ASAR	**Alice Springs**	**61.69**	**191**	P		**P**	**10 08 44.5**	**-1.3**
	0.7nm,0.8s,baz=15,slow=3.8,SNR=6.2							
PDAR	**Pinedale Array**	**75.57**	**47**	P		**P**	**10 10 13.9**	**+1.3**
	0.1nm,0.3s,baz=294,slow=4.3,SNR=2.7							

ISCJB ***13*** *10:05:31.9±0.7, 6°.81N±0°.05×73°.06W±0°.05, h151km±6km, Error ellipse: s-maj=10.6km s-min=5.2km az=38.1*

FUNV ***13*** *10:05:31.4, 6°.53N×73°.13W, h142km, MW2.6*

RSNC ***13*** *10:05:33.3±1.4, 6°.80N×73°.09W, h145km±8km, ML2.5*

ISC 13 10:05:31.9±1.4, 6°.79N±0°.05×73°.03W±0°.05, h152km±8km, n17, σ0s91/30, 1C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.24**	**218**	*e*P		**Pn**	**10 05 52.8**	**0.0**
BARC				*e*S		**Sn**	**10 06 07.5**	**-1.2**
BARC				*i*			10 06 08.8	
	comp=Z,59nm,0.2s							
GIRC	**Giron, Santand**	**0.33**	**331**	*e*P		**Pn**	**10 05 53.0**	**+0.1**
GIRC				*e*S		**Sn**	**10 06 08.0**	**-1.0**
PAMC	**Pamplona, Colo**	**0.64**	**31**	*e*P		**Pn**	**10 05 55.8**	**+1.0**
PAMC				*e*S		**Sn**	**10 06 12.6**	**+0.3**
BRRC	**Barranca, Sant**	**0.75**	**295**	⇓*i*P		**Sn**	**10 05 54.7**	**-0.2**
BRRC				*e*S		**Sn**	**10 06 11.7**	**-0.7**
BRRC				*i*			10 06 12.4	
	comp=Z,86nm,0.1s							
RUSC	**La Rusia**	**0.89**	**183**	*e*P		**Pn**	**10 05 57.0**	**+0.4**
RUSC				*e*S		**Sn**	**10 06 15.6**	**+0.3**
RUSC				*i*			10 06 17.5	
	comp=Z,26nm,0.3s							
CBRI	**Barrientos, No**	**0.95**	**14**	*e*P		**Pn**	**10 05 57.4**	**+0.7**
CBRI				*e*S		**Sn**	**10 06 16.2**	**+0.5**
CBRI				*i*			10 06 21.0	
	comp=Z,42nm,0.5s							
GRMC	**Gramalote, San**	**0.95**	**14**	⇑*i*P		**Pn**	**10 05 57.0**	**+0.3**
CAPV	**Capacho**	**1.29**	**34**	*e*P		**Pn**	**10 06 00.9**	**+1.1**
CAPV				*e*S		**Sn**	**10 06 21.5**	**+0.5**
OCAC	**Ocana**	**1.47**	**349**	*e*P		**Pn**	**10 06 02.1**	**+0.6**
OCAC				*e*S		**Sn**	**10 06 23.2**	**-1.1**
OCAC				*i*			10 06 26.6	
	comp=Z,30nm,0.2s							
NORC	**Norcasia**	**2.19**	**236**	*e*P		**Pn**	**10 06 09.1**	**-0.4**
HELC	**Santa Helena**	**2.55**	**257**	*e*P		**Pn**	**10 06 15.1**	**+1.0**
HELC				*e*S		**Sn**	**10 06 46.4**	**-0.2**
HELC				*i*			10 06 51.3	
	comp=Z,24nm,0.4s							
SOCV	**Socops**	**2.62**	**55**	*e*P		**Pn**	**10 06 15.4**	**+0.7**
DBBC	**Dabeiba**	**3.16**	**274**	*e*P		**Pn**	**10 06 20.7**	**-0.8**
PRAC	**Prado**	**3.56**	**211**	*e*P		**Pn**	**10 06 27.6**	**+1.0**
PRAC				*e*S		**Sn**	**10 07 09.6**	**+0.5**
PRAC				*i*			10 07 12.9	
	comp=Z,19nm,0.3s							
VIRV	**Villa del Rosa**	**3.75**	**9**	*e*P		**Pn**	**10 06 29.9**	**+1.0**
VIRV				*e*S		**Sn**	**10 07 14.1**	**+0.8**
CURV	**Curarigua**	**4.42**	**43**	*e*P		**Pn**	**10 06 37.9**	**+0.1**
CURV				*e*S		**Sn**	**10 07 28.0**	**-1.1**
BAUV	**El Baul**	**5.39**	**66**	*e*P		**Pn**	**10 06 50.6**	**+0.1**
BAUV				*e*S		**Sn**	**10 07 49.3**	**-2.7**

NEIC ***13*** *10:16:14.9, 31°.99N×115°.10W, h19km, ML3.4(ECX), ML3.3(PAS), After ECX.*

ECX ***13*** *10:16:15.1±0.5, 31°.98N×115°.14W, h12km, MD3.1, ML3.4*

MEX ***13*** *10:16:15.1±0.8, 32°.05N×114°.90W, h31km±16km, MD4.0*

ISC 13 10:16:11.7±1.1, 32°.04N±0°.03×115°.01W±0°.03, h13km±10km, n40, σ1s03/59, 3C-2D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.45**	**327**	⇑*e*P		**Pn**	**10 16 23.6**	**-0.4**
CPBX				*e*S		**Sb**	**10 16 30.2**	**+2.0**
CPBX	**Cerro Prieto**	**0.45**	**327**	*e*P		**Pn**	**10 16 23.6**	**-0.4**
CPBX				*i* S		**Sb**	**10 16 28.2**	**0.0**
ECBX	**El Chinero**	**0.57**	**183**	⇑*e*P		**Pb**	**10 16 23.5**	**0.0**
ECBX				*e*S		**Sg**	**10 16 31.0**	**+0.7**
DREC	**Desert Rsrch C**	**0.85**	**334**	*e*P		**Pn**	**10 16 29.9**	**+0.6**
SGL	**Mount Signal**	**0.86**	**315**	*i* P		**Pn**	**10 16 29.6**	**+0.1**
WESC	**Westside Schoo**	**0.94**	**320**	*e*P		**Pn**	**10 16 31.4**	**+0.8**
GLA	**Glamis**	**1.02**	**9**	P		**Pg**	**10 16 31.6**	**+0.2**
	baz=192,SNR=243							
GLA				Sb		**Sb**	**10 16 45.2**	**+0.5**
	baz=192							
RMX	**La Rumorosa**	**1.06**	**302**	*e*P		**Pn**	**10 16 33.3**	**+0.8**
RMX				*e*S		**Sn**	**10 16 46.5**	**-0.8**
SPX	**San Pedro Mart**	**1.06**	**201**	*e*P		**Pg**	**10 16 32.4**	**+0.1**
SPX				IAML			10 16 48.3	
	comp=E,723nm,0.5s							
SPX				⇑*e*			10 16 48.3	
SPX	**San Pedro Mart**	**1.06**	**201**	*e*P		**Pg**	**10 16 32.1**	**-0.2**
SPX				*i* S		**Sg**	**10 16 46.2**	**0.0**
IKP	**In-Ko-Pah, Jac**	**1.11**	**304**	P		**Pn**	**10 16 33.0**	**-0.1**
	baz=127,SNR=30							
IKP				S		**Sn**	**10 16 48.6**	**+0.2**
	baz=127							
IKP	**In-Ko-Pah, Jac**	**1.11**	**304**	*e*P		**Pn**	**10 16 33.2**	**+0.1**
SWSC	**Sam W. Stewart**	**1.12**	**324**	S		**Sn**	**10 16 47.9**	**-0.6**
	baz=148							
ZAX	**El Zacaton**	**1.20**	**244**	*e*P		**Pb**	**10 16 33.9**	**-0.4**
ECNX	**Esteban Cantu**	**1.40**	**255**	*e*P		**Pb**	**10 16 37.3**	**-0.6**
CBX	**Cerro Bola**	**1.43**	**281**	*e*P		**Pb**	**10 16 38.0**	**-0.3**
CBX				*e*S		**Sg**	**10 16 57.1**	**-0.6**
CBX	**Cerro Bola**	**1.43**	**281**	⇓*e*P		**Pb**	**10 16 38.2**	**-0.1**
CBX				IAML			10 17 00.1	
	comp=N,831nm,0.4s							
CBX				⇓*e*			10 17 00.1	
CBX	**Cerro Bola**	**1.43**	**281**	*e*P		**Pb**	**10 16 38.0**	**-0.3**
CBX				*e*S		**Sg**	**10 16 57.1**	**-0.6**
TJIG	**Tijuana**	**1.46**	**286**	*e*P		**Pb**	**10 16 38.4**	**-0.4**
TJIG				*e*S		**Sb**	**10 16 56.5**	**-0.8**
MONP2	**Monument Peak**	**1.47**	**306**	P		**Pn**	**10 16 38.1**	**+0.1**
	baz=129							
MONP2				S		**Sg**	**10 16 59.8**	**+0.8**
	baz=129							
PBX	**Punta Banda**	**1.49**	**259**	*e*P		**Pn**	**10 16 38.4**	**+0.2**
BC3	**Big Chuckawall**	**1.65**	**347**	P		**Pn**	**10 16 40.9**	**+0.3**
	baz=170,SNR=16							
BC3				S		**Sn**	**10 17 01.6**	**-0.2**
	baz=170							
Y12C	**Blythe**	**1.75**	**13**	P		**Pn**	**10 16 42.4**	**+0.5**
	baz=196,SNR=20							
214A	**Organ Pipe Nat**	**1.87**	**92**	P		**Pn**	**10 16

0.4nm,0.3s,baz=42,slow=2.2,SNR=5.9

ISCJB ***13*** *10:43:02.7±0.5,64.00N±0.02×28.24E±0.09,h0km, Error ellipse: s-maj=6.0km s-min=2.7km az=8.2*
CSEM ***13*** *10:43:03.9±0.4,63.93N×28.40E,h1km,ML2.8, Error ellipse: s-maj=11.6km s-min=6.5km az=105.0,Mining explosion.*
HEL ***13*** *10:43:05.0±0.1,63.99N×28.07E,h0km,ML2.8, Explosion*
NAO ***13*** *10:43:05.5±1.3,63.92N×27.95E,ML2.3*
IDC ***13*** *10:43:05.7±1.3,63.85N×28.24E,h0km,mb1 3.1/4, mb1mx3.0/49,mbtmp3.1/4,ML2.7/4, Error ellipse: s-maj=17.4km s-min=7.4km az=104.0*
BER ***13*** *10:43:07.7±5.3,64.01N×27.64E,h0km±24km, ML2.3(NAO)*
UPP ***13*** *10:43:10.0±2.4,64.03N×27.45E,h0km,ML2.0, Suspected explosion*

ISC 13 10:43:04.7±0.8, 63.92N±0.03×28.02E±0.04, h0km, n58, σ1§88/87, Finland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SUF	**Sumiainen**	**1.47**	**216**	PG	**Pn**	**10 43 32.9**	**+0.4**
SUF				MSG		10 43 51.1	
	comp=Z,33nm,0.2s						
SUF				SN	**Sn**	**10 43 53.4**	**+1.0**
SUF	**Sumiainen**	**1.47**	**216**	Pg	**Pn**	**10 43 32.8**	**+0.4**
SUF				Sn	**Sn**	**10 43 53.4**	**+1.0**
OUFX	**Oulainen**	**1.52**	**288**	PN	**Pn**	**10 43 33.0**	**-0.1**
OUFX				SN	**Sg**	**10 43 57.2**	**+3.7**
OUFX	**Oulainen**	**1.52**	**288**	Pn	**Pn**	**10 43 33.0**	**-0.1**
JOF	**Joensuu**	**1.79**	**123**	PG	**Pn**	**10 43 37.4**	**+0.6**
	baz=309						
JOF				SN	**Sg**	**10 44 01.5**	**-0.6**
JOF	**Joensuu**	**1.79**	**123**	Pg	**Pn**	**10 43 37.4**	**+0.6**
JOF				Sn	**Sg**	**10 44 01.5**	**-0.6**
MSF	**Maaselka**	**2.04**	**12**	PG	**Pn**	**10 43 40.6**	**+0.3**
MSF				SG	**Sn**	**10 44 06.0**	**-0.6**
MSF	**Maaselka**	**2.04**	**12**	Pg	**Pn**	**10 43 40.6**	**+0.3**
MSF				Sg	**Sn**	**10 44 05.9**	**-0.6**
KU6	**Riekki**	**2.26**	**20**	PG	**Pn**	**10 43 44.1**	**+0.9**
	baz=204						
KU6				MSG		10 44 09.8	
	comp=Z,12nm,0.2s						
KU6				SG	**Sn**	**10 44 12.2**	**+0.4**
KU6	**Riekki**	**2.26**	**20**	Pg	**Pn**	**10 43 44.1**	**+0.9**
KU6				Sg	**Sn**	**10 44 12.1**	**+0.4**
KEF	**Keuruu**	**2.27**	**221**	MSG		10 44 14.2	
	comp=Z,1μm,0.2s						
KEF				SG	**Sg**	**10 44 20.2**	**+2.6**
FIA0	**FINESS Array S**	**2.65**	**201**	Pn	**Pb**	**10 43 52.0**	**-0.9**
	baz=19,slow=16						
FIA0				Sn	**Sn**	**10 44 22.4**	**+1.2**
	baz=32,slow=18						
FIA0				Lg	Lg	10 44 26.3	
	baz=23,slow=28						
FIA0	**FINESS Array S**	**2.65**	**201**	Pn	**Pb**	**10 43 52.0**	**-0.9**
	baz=19,slow=16						
FIA0				Sn	**Sn**	**10 44 22.4**	**+1.2**
	baz=32,slow=18						
FIA0				Lg	Lg	10 44 26.3	
	baz=23,slow=28						
FIA0	**FINESS Array S**	**2.65**	**201**	PB	**Pb**	**10 43 51.8**	**-1.0**
	baz=20						
FIA0				SB	**Sb**	**10 44 26.0**	**+0.2**
FIA0	**FINESS Array S**	**2.65**	**201**	Pb	**Pb**	**10 43 51.8**	**-1.0**
FIA0				Sn	**Sn**	**10 44 22.4**	**+1.2**
	SNR=50						
FIA0				Lg	Lg	10 44 26.3	
	SNR=7.1						
FINES	**FINESS Array B**	**2.65**	**201**	Pn	**Pb**	**10 43 51.7**	**-1.2**
	comp=Z,1.6nm,0.3s,baz=20,slow=15,SNR=48						
FINES				Lg	Lg	10 44 25.9	
	comp=Z,3.0nm,0.3s,baz=22,slow=26,SNR=31						
TOF	**Tornio**	**2.68**	**326**	PB	**Pn**	**10 43 49.9**	**+1.0**
TOF	**Tornio**	**2.68**	**326**	Pb	**Pn**	**10 43 49.9**	**+1.0**
RNF	**Rovaniemi**	**2.83**	**344**	PB	**Pn**	**10 43 52.1**	**+1.1**
RNF				SG	**Sb**	**10 44 30.1**	**-1.0**
RNF	**Rovaniemi**	**2.83**	**344**	Pb	**Pn**	**10 43 52.1**	**+1.1**
VJF	**Virojoki**	**3.40**	**184**	PN	**Pn**	**10 44 01.9**	**+3.0**
VJF				SB	**Sb**	**10 44 47.9**	**+0.3**
VJF	**Virojoki**	**3.40**	**184**	Pn	**Pn**	**10 44 01.9**	**+3.0**
PVF	**Pernaja**	**3.54**	**198**	PB	**Pb**	**10 44 07.4**	**-0.6**
PVF				SG	**Sg**	**10 44 58.7**	**+0.5**
ERTU	**Ertsjaerv**	**3.61**	**320**	P	**Pn**	**10 44 03.0**	**+1.3**
ERTU	**Ertsjaerv**	**3.61**	**320**	P	**Pn**	**10 44 03.0**	**+1.3**
PAJU	**Pajala**	**3.73**	**329**	P	**Pn**	**10 44 05.4**	**+2.0**
PAJU				S	**Sn**	**10 44 48.4**	**+0.5**
PAJU	**Pajala**	**3.73**	**329**	P	**Pn**	**10 44 05.4**	**+2.0**
PAJU				S	**Sn**	**10 44 48.4**	**+0.5**
HUSU	**Husum**	**3.97**	**266**	P	**Pn**	**10 44 08.6**	**+1.9**
HUSU	**Husum**	**3.97**	**266**	P	**Pn**	**10 44 08.6**	**+1.9**
MEF	**Metsahovi**	**4.09**	**206**	*e*P	**Pb**	**10 44 15.3**	**-2.1**
	SNR=51						
MEF				*e*S	**Sn**	**10 45 02.3**	**+5.5**
	comp=Z,11nm,0.6s,SNR=51						
MASU	**Masugnsbyn**	**4.33**	**328**	P	**Pn**	**10 44 13.2**	**+1.5**
MASU	**Masugnsbyn**	**4.33**	**328**	P	**Pn**	**10 44 13.2**	**+1.5**
DUNU	**Dundret**	**4.46**	**319**	P	**Pn**	**10 44 14.8**	**+1.3**
DUNU				S	**Sn**	**10 45 05.3**	**-0.8**
DUNU	**Dundret**	**4.46**	**319**	P	**Pn**	**10 44 14.8**	**+1.3**
DUNU				S	**Sn**	**10 45 05.3**	**-0.8**
HEMU	**Hemsoen**	**4.68**	**259**	P	**Pn**	**10 44 18.1**	**+1.7**
HEMU	**Hemsoen**	**4.68**	**259**	P	**Pn**	**10 44 18.1**	**+1.7**
LANU	**Lannavaara**	**4.82**	**332**	P	**Pn**	**10 44 20.6**	**+2.2**
LANU	**Lannavaara**	**4.82**	**332**	P	**Pn**	**10 44 20.6**	**+2.2**
KUA	**Kurravaara**	**5.12**	**326**	P	**Pn**	**10 44 25.0**	**+2.4**
KUA	**Kurravaara**	**5.12**	**326**	P	**Pn**	**10 44 25.0**	**+2.4**
NIKU	**Nikkaluokta**	**5.41**	**321**	P	**Pn**	**10 44 28.5**	**+2.1**
NIKU	**Nikkaluokta**	**5.41**	**321**	P	**Pn**	**10 44 28.5**	**+2.1**
HASU	**Hassela**	**5.49**	**256**	P	**Pn**	**10 44 29.1**	**+1.6**
HASU	**Hassela**	**5.49**	**256**	P	**Pn**	**10 44 29.1**	**+1.6**
ARA0	**ARCESS Array S**	**5.73**	**351**	Pn	**Pn**	**10 44 31.1**	**+0.3**
	baz=167,slow=16						
ARA0				Sn	**Sn**	**10 45 34.2**	**-2.9**
	baz=171,slow=28						
ARA0				Lg	Lg	10 45 56.6	
	baz=159,slow=37						
ARA0	**ARCESS Array S**	**5.73**	**351**	Pn	**Pn**	**10 44 31.1**	**+0.3**
	baz=167,slow=16						
ARA0				Sn	**Sn**	**10 45 34.2**	**-2.9**
	baz=171,slow=28						
ARA0				Lg	Lg	10 45 56.6	
	baz=159,slow=37						
ARA0	**ARCESS Array S**	**5.73**	**351**	Pn	**Pn**	**10 44 31.1**	**+0.3**
	SNR=50						
ARA0				Sn	**Sn**	**10 45 34.2**	**-2.9**
	SNR=50						
ARA0				Lg	Lg	10 45 56.6	
ARCES	**ARCESS Array B**	**5.73**	**351**	Pn	**Pn**	**10 44 31.3**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=165,slow=15,SNR=20						
ARCES				Sn	**Sn**	**10 45 34.4**	**-2.8**
	comp=Z,0.7nm,0.3s,baz=168,slow=25,SNR=8.8						
ARCES				Lg	Lg	10 45 56.9	
	comp=Z,0.6nm,0.3s,baz=169,slow=25,SNR=3.3						
SLIT	**Slitere, Latvi**	**6.91**	**207**	*e*S	**Sn**	**10 46 05.4**	**-0.8**
	SNR=51						
HFA0	**Hagfors New Ar**	**7.73**	**247**	*e*P	**Pn**	**10 45 00.9**	**+2.6**
	SNR=51						
HFS	**Hagfors**	**7.73**	**247**	Pn	**Pn**	**10 44 58.1**	**-0.1**
	baz=57,slow=11						
HFS				Sn	**Sn**	**10 46 22.1**	**-4.3**
	baz=58,slow=28						
HFS				Lg	Lg	10 47 00.3	
	baz=56,slow=28						
HFS	**Hagfors**	**7.73**	**247**	Pn	**Pn**	**10 44 59.4**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=63,slow=13,SNR=12						
HFS				Sn	**Sn**	**10 46 21.2**	**-5.2**
	comp=Z,0.2nm,0.3s,baz=60,slow=23,SNR=2.9						
HFS				Lg	Lg	10 46 59.9	
	comp=Z,0.3nm,0.3s,baz=69,slow=33,SNR=3.8						
HFS	**Hagfors**	**7.73**	**247**	Pn	**Pn**	**10 44 58.1**	**-0.1**
	baz=57,slow=11						
HFS				Sn	**Sn**	**10 46 22.1**	**-4.3**
	baz=58,slow=28						
HFS				Lg	Lg	10 47 00.3	
	baz=56,slow=28						
HFS	**Hagfors**	**7.73**	**247**	Pn	**Pn**	**10 44 58.2**	**-0.1**
	SNR=50						
NB2	**NORSAR Subarra**	**8.30**	**257**	Pn	**Pn**	**10 45 07.2**	**+1.1**
	baz=63,slow=14						
NB2	**NORSAR Subarra**	**8.30**	**257**	Pn	**Pn**	**10 45 07.2**	**+1.1**
	baz=63,slow=14						
NB2	**NORSAR Subarra**	**8.30**	**257**	Pn	**Pn**	**10 45 07.2**	**+1.1**
	SNR=50						
NOA	**NORSAR Array B**	**8.30**	**257**	Pn	**Pn**	**10 45 06.6**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=63,slow=5.2,SNR=3.2						
NOA				Sn	**Sn**	**10 46 35.7**	**-4.7**
	comp=Z,0.2nm,0.3s,baz=51,slow=24,SNR=3.4						
NOA				Lg	Lg	10 47 23.1	
	comp=Z,0.3nm,0.3s,baz=18,slow=18,SNR=3.2						

JMA 13 10:48:06.8,36.72N×140.60E,h8km, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.11**	**193**	P	Pg	10 48 09.5	+0.1
JHO				S	Sg	10 48 11.3	+0.2
ONAJ	**Iwakimizuishiy**	**0.41**	**23**	P	Pg	10 48 15.0	+0.1

JMA 13 10:48:12.1,36.71N×140.60E,h11km±1km, M1.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.10**	**194**	P	Pg	10 48 15.0	+0.2
JHO				S	Sg	10 48 16.8	0.0
ONAJ	**Iwakimizuishiy**	**0.42**	**22**	P	Pg	10 48 20.5	0.0
ONAJ				S	Sg	10 48 26.3	+0.2
ONAJ	**Iwakimizuishiy**	**0.42**	**22**	S	Pg	10 48 20.5	0.0
JYT	**Yasato**	**0.58**	**214**	P	Pg	10 48 23.6	+0.2
JFK	**Kawauchi**	**0.69**	**18**	P	Pg	10 48 25.1	-0.4
JFK				S	Sg	10 48 34.1	-0.5
JFT	**Otama**	**0.83**	**345**	P	Pg	10 48 28.0	-0.2
JFT				S	Sg	10 48 38.6	-0.5
JAG	**Ashikaga**	**0.97**	**253**	P	Pg	10 48 30.2	-0.5
JAG				S	Sg	10 48 43.0	-0.3
JFY	**Yanaizu**	**1.00**	**314**	S	Sg	10 48 44.4	+0.1

NNC 13 10:58:49.4±0.3, 51.29N×75.56E, h0km, mb3.6, mpv3.2, 10C-7D, Error ellipse: s-maj=8.0km s-min=2.4km az=21.0, Suspected Mining explosion., Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KURBB	**Kurchatov Arra**	**1.99**	**108**	⇑Pn	Pn	10 59 24.4	0.0
	22nm,0.2s						
KURBB				⇑Sn	Sb	10 59 51.1	-0.8
	40nm,0.3s						
KURK	**Kurchatov**	**2.02**	**105**	⇑Pn	Pn	10 59 24.4	-0.2
	4.3nm,0.2s						
KURK				⇓Sn	Sn	10 59 51.5	+1.0
	21nm,0.5s						
VOSK	**Vostochnaya**	**3.17**	**299**	⇑Pg	Pb	10 59 47.5	+0.9
VOSK				⇓Lg	Lg	11 00 30.1	
BVA0	**Borovoye Array**	**3.63**	**301**	⇑Pg	Pb	10 59 53.7	-0.6
	0.8nm,0.3s,baz=114,slow=13,SNR=11						
BVA0				⇑Lg	Lg	11 00 43.9	
	3.9nm,0.5s,baz=112,slow=27,SNR=7.0						
OTUK	**Ortayu**	**3.69**	**216**	⇓Pg	Pb	10 59 56.2	+0.8
	1.5nm,0.5s						
OTUK				⇑Lg	Lg	11 00 48.0	
	5.2nm,0.8s						
BRVK	**Borovoye**	**3.70**	**301**	⇓Pg	Pb	10 59 56.6	+1.0
BRVK				⇑Lg	Lg	11 00 47.2	
	3.9nm,0.5s						
CHKZ	**Chkalovo**	**3.85**	**310**	⇑Pn	Pn	10 59 51.2	+1.3
CHKZ				⇓Lg	Lg	11 00 53.5	
	4.5nm,0.5s						
ZRNK	**Zerenda**	**4.37**	**295**	⇓Pg	Pb	11 00 09.2	+2.2
ZRNK				⇑Lg	Lg	11 01 09.4	
	2.3nm,0.7s						
MK31	**Makanchi Array**	**6.31**	**133**	⇓Lg	Lg	11 02 10.0	
	2.3nm,0.8s,baz=324,slow=31,SNR=5.0						

NIED ***13*** *11:01:00,39.50N×143.50E,h26km,Mw3.6 Best double couple: M₀2.92000×10¹⁴ NP1:φs184.00000°,δ28.00000°, λ73.00000°. NP2:φs23.00000°,δ63.00000°,λ99.00000°.*
ISCJB ***13*** *11:01:51.9±0.8,39.53N±0.04×143.53E±0.08,h11km, mb3.5/6,MS3.0/2,Error ellipse: s-maj=8.7km s-min=5.2km az=12.7*
JMA ***13*** *11:01:53.7±0.2,39.51N×143.50E,h29km±4km,M3.8*
IDC ***13*** *11:01:54.4±2.1,39.61N×143.08E,h0km,mb3.5/6, mb1 3.6/8,mb1mx3.5/53,mbtmp3.6/8,ML3.5/2,MS2.9/3, Ms1 2.9/3,ms1mx2.4/55,Error ellipse: s-maj=58.0km s-min=20.2km az=71.0*

ISC 13 11:01:54.4±1.2, 39.56N±0.05×143.41E±0.08, h11km, n31, σ1§14/30, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.23**	**271**	P	**Pn**	**11 02 16.3**	**-1.3**
MIYJ				*e*S	**Sb**	**11 02 32.8**	**-0.8**
JTH	**Tanohata**	**1.25**	**288**	P	**Pn**	**11 02 16.9**	**-1.0**
OFUJ	**Ofunato**	**1.43**	**251**	P	**Pn**	**11 02 19.0**	**-1.3**
JOM	**Ohasama**	**1.64**	**268**	P	**Pn**	**11 02 22.7**	**-0.5**
JANG	**Nango**	**1.67**	**300**	P	**Pn**	**11 02 22.5**	**-1.1**
JMK	**Ichinoseki**	**1.81**	**251**	P	**Pn**	**11 02 24.7**	**-0.8**
JIO	**Ouri**	**1.95**	**236**	P	**Pn**	**11 02 26.0**	**-1.4**
JRG	**Rokugo**	**2.16**	**267**	P	**Pn**	**11 02 30.1**	**-0.2**
JTM	**Tenmabayashi**	**2.18**	**305**	P	**Pn**	**11 02 30.3**	**-0.3**
JTM				*e*S	**Sn**	**11 02 57.9**	**+0.4**
JAH	**Hinai**	**2.23**	**287**	P	**Pn**	**11 02 31.4**	**+0.1**
JOU	**Okura**	**2.45**	**242**	P	**Pn**	**11 02 33.8**	**-0.6**
JOU				S	**Sn**	**11 03 03.3**	**-1.0**
JYK	**Kaneyama**	**2.46**	**256**	P	**Pn**	**11 02 34.2**	**-0.2**
JOT	**Ohata**	**2.56**	**316**	P	**Pn**	**11 02 36.0**	**+0.1**
JKB	**Kayabe**	**2.95**	**323**	*e*S	**Sn**	**11 03 17.5**	**+1.0**
JCH	**Churui**	**3.06**	**359**	S	**Sn**	**11 03 17.8**	**-1.4**
JFT	**Otama**	**3.15**	**231**	P	**Pn**	**11 02 43.4**	**-0.6**
JFT				S	**Sn**	**11 03 21.2**	**-0.5**
MAT	**Matsushiro**	**5.09**	**235**	P	**Pn**	**11 03 11.4**	**+0.7**
MAT				*e*S	**Sn**	**11 04 11.6**	**+2.1**
MJAR	**Matsushiro Arr**	**5.09**	**235**	Pn	**Pn**	**11 03 11.0**	**+0.4**
	1.3nm,0.3s,baz=40,slow=12,SNR=25						
MJAR				LR	LR	11 05 19.7	
	comp=Z,52nm,20.2s,baz=90,slow=42						
JHJ	**Hachijo jima 2**	**7.06**	**206**	Pn	**Pn**	**11 03 35.9**	**-1.8**
	4.5nm,0.3s,baz=75,slow=20,SNR=15						
JHJ				Sn	Sn	11 04 49.0	-8.9
	8.7nm,0.3s,baz=74,slow=22,SNR=5.1						
SONM	**Songino Array**	**27.80**	**300**	P	**P**	**11 07 42.4**	**-1.1**
	0.4nm,0.4s,baz=80,slow=9.5,SNR=2.6						
SONM				LR	LR	11 20 41.8	
	comp=Z,27nm,18.3s,baz=329,slow=41						
H11N2	**WAKE ISLAND Hy**	**28.26**	**128**	T	T	11 37 20.1	
	baz=319						
H11N1	**WAKE ISLAND Hy**	**28.27**	**128**	T	T	11 37 22.7	
	baz=319						
H11N3	**WAKE ISLAND Hy**	**28.28**	**128**	T	T	11 37 21.1	
	baz=319						
H11S1	**WAKE ISLAND Hy**	**29.08**	**129**	T	T	11 38 30.0	
	baz=322						
H11S3	**WAKE ISLAND Hy**	**29.08**	**130**	T	T	11 38 25.7	
	baz=322						
H11S2	**WAKE ISLAND Hy**	**29.09**	**129**	T	T	11 38 32.6	
	baz=322						
ZALV	**Zalesovo Beam**	**41.43**	**310**	P	**P**	**11 09 40.4**	**-0.3**
	0.6nm,0.4s,baz=98,slow=72,SNR=3.3						
MKAR	**Makanchi Array**	**44.16**	**300**	P	**P**	**11 10 02.6**	**-0.5**
	0.7nm,0.6s,baz=87,slow=8.8,SNR=4.9						
MKAR				LR	LR	11 30 18.7	
	comp=Z,22nm,18.2s,baz=184,slow=39						
BVAR	**Borovoye Array**	**50.07**	**311**	P	**P**	**11 10 49.1**	**+0.1**
	0.7nm,0.5s,baz=72,slow=9.3,SNR=3.9						
WRA	**Warramunga Arr**	**59.79**	**190**	P	**P**	**11 12 00.0**	**+0.4**
	0.3nm,0.9s,baz=6.5,slow=7.0,SNR=3.2						
ASAR	**Alice Springs**	**63.52**	**190**	P	**P**	**11 12 28.0**	**+3.3**
	0.2nm,0.7s,baz=17,slow=6.8,SNR=2.7						

MAN 13 11:04:33,10.11N×125.67E,h17km,mb4.5,ML3.3,MS3.2, 3C, Leyte

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLP	**Palo**	**1.25**	**327**	⇑*e*P	Pn	11 04 55.5	-0.2
PLP				*i* S	Sg	11 05 16.9	+3.3
LLP	**Lapu-Lapu**	**1.69**	**277**	*e*P	Pn	11 04 50.6	-11
LLP				*e*S	Sn	11 05 15.1	-8.0
CGP	**Cagayan de Oro**	**1.91**	**211**	⇑*i*P	Pn	11 05 05.6	+0.8
CGP				*i* S	Sn	11 05 19.9	-8.5
BIPH	**Bislig**	**2.03**	**160**	⇑*i*P	Pn	11 05 06.3	-0.1
BIPH				*i* S	Sn	11 05 31.3	-0.2

IDC 13 11:17:09.4±6.9, 2.31S×99.91E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/63, mbtmp3.4/3, Error ellipse: s-maj=340.5km s-min=26.6km az=53.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H08S2	**Diego Garcia H**	**27.81**	**258**	T	T	11 51 34.0	
	baz=80,slow=75,SNR=65						
H08S3	**Diego Garcia H**	**27.82**	**258**	T	T	11 51 26.7	
	baz=80,slow=75,SNR=78						
H08S1	**Diego Garcia H**	**27.83**	**258**	T	T	11 51 29.9	
	baz=80,slow=75,SNR=61						
H01W3	**Cape Leeuwin H**	**35.01**	**159**	T	T	12 00 57.8	
	baz=336						
H01W2	**Cape Leeuwin H**	**35.03**	**159**	T	T	12 00 58.5	
	baz=336						
H01W1	**Cape Leeuwin H**	**35.03**	**159**	T	T	12 01 00.1	
	baz=336						
WRA	**Warramunga Arr**	**37.92**	**120**	P	P	11 24 28.2	-0.6
	0.2nm,0.6s,baz=298,slow=8.2,SNR=3.4						
ASAR	**Alice Springs**	**39.15**	**126**	P	P	11 24 39.4	+0.2
	0.3nm,0.6s,baz=303,slow=8.1,SNR=7.9						
MKAR	**Makanchi Array**	**51.30**	**345**	P	P	11 26 15.1	-0.2
	0.2nm,0.3s,baz=159,slow=6.2,SNR=2.2						
TXAR	**Lajitas Array**	**145.00**	**38**	PKPbc	PKPab	11 36 48.5	-0.3
	0.2nm,0.7s,baz=325,slow=1.1,SNR=3.4						

IDC ***13*** *11:19:19.9±1.2,15.27S×172.13W,h0km,mb4.1/4, mb1 4.4/4,mb1mx3.8/45,mbtmp4.1/4,MS3.5/4,Ms1 3.5/4, ms1mx3.1/26,Error ellipse: s-maj=43.7km s-min=17.6km az=120.0*
ISCJB ***13*** *11:19:22.0±1.1,15.4S±0.1×172.2W±0.2,h23km,mb4.1/4, MS3.5/3,Error ellipse: s-maj=36.6km s-min=9.7km az=23.5*

ISC 13 11:19:23.3±1.2, 15.3S±0.1×172.1W±0.3, h23km, n15, σ1§10/7, mb4.1/4, MS3.6/3, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**1.44**	**12**	Pn	**Pn**	**11 19 48.1**	**0.0**
	46nm,0.3s,baz=194,slow=17,SNR=123						
AFI				Sn	**Sn**	**11 20 07.1**	**+0.9**
	baz=217,slow=20						
RAO	**Raoul Island**	**14.87**	**200**	LR	LR	11 28 25.0	
	comp=Z,123nm,18.4s,baz=340,slow=37						
PPT	**Papeete**	**21.69**	**99**	LR	LR	11 30 11.2	
	comp=Z,84nm,19.0s,baz=31,slow=30						
URZ	**Urewera**	**24.76**	**201**	P	**P**	**11 24 44.9**	**+1.7**
	8.9nm,0.5s,baz=9.5,slow=6.1,SNR=4.4						
HNR	**Honiara**	**27.93**	**279**	LR	LR	11 34 58.2	
	comp=Z,201nm,20.5s,baz=142,slow=34						
H11S2	**WAKE ISLAND Hy**	**39.58**	**327**	T	T	12 09 03.9	
	baz=145,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**39.59**	**327**	T	T	12 09 05.0	
	baz=145,slow=76,SNR=15						
H11S1	**WAKE ISLAND Hy**	**39.59**	**327**	T	T	12 09 04.6	
	baz=145,slow=76,SNR=4.2						
H11N3	**WAKE ISLAND Hy**	**40.50**	**329**	T	T	12 10 10.1	
	baz=146,slow=76,SNR=3.8						
H11N1	**WAKE ISLAND Hy**	**40.51**	**329**	T	T	12 10 10.3	
	baz=146,slow=76,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**40.52**	**329**	T	T	12 10 10.6	
	baz=146,slow=76,SNR=2.4						
WRA	**Warramunga Arr**	**51.11**	**257**	P	**P**	**11 28 24.1**	**-0.5**
	0.5nm,0.5s,baz=91,slow=7.4,SNR=6.9						
ASAR	**Alice Springs**	**51.35**	**252**	P	**P**	**11 28 25.9**	**-0.5**
	5.7nm,0.7s,baz=87,slow=8.4,SNR=70						
ASAR				LR	LR	11 49 24.7	
	comp=Z,52nm,19.5s,baz=91,slow=35						
TXAR	**Lajitas Array**	**79.51**	**56**	P	**P**	**11 31 27.8**	**-0.8**
	0.6nm,1.0s,baz=224,slow=5.0,SNR=4.4						
BRTR	**Keskin Array B**	**146.90**	**322**	PKPbc	**PKPbc**	**11 39 04.0**	**-0.3**
	0.4nm,0.5s,baz=100,slow=1.8,SNR=2.9						

IDC 13 11:19:49.2±15.0, 9.89S×118.91E, h0km, mb3.8/1, mb1 3.8/3, mb1mx3.4/52, mbtmp3.6/3, ML3.6/2, Error ellipse: s-maj=298.8km s-min=151.4km az=7.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**17.93**	**126**	P	Pn	11 24 00.5	+0.3
	0.3nm,0.3s,baz=302,slow=12,SNR=13						
ASAR	**Alice Springs**	**19.81**	**136**	P	P	11 24 21.4	-0.1
	0.1nm,0.3s,baz=312,slow=9.2,SNR=15						
STKA	**Stephens Creek**	**30.33**	**139**	P	P	11 26 02.6	0.0
	0.5nm,0.4s,baz=326,slow=7.3,SNR=3.7						

NIED ***13*** *11:20:00,36.90N×143.30E,h5km,Mw3.6 Best double couple: M₀2.63000×10¹⁴ NP1:φs19.00000°,δ24.00000°, λ-92.00000°. NP2:φs201.00000°,δ66.00000°, λ-89.00000°.*
IDC ***13*** *11:20:21.9±1.8,36.89N×143.50E,h0km,mb3.7/4, mb1 3.8/6,mb1mx3.5/67,mbtmp3.7/6,ML3.6/2,MS2.7/2, Ms1 2.7/2,ms1mx2.3/52,Error ellipse: s-maj=45.0km s-min=22.1km az=76.0*
ISCJB ***13*** *11:20:25.2±0.8,36.93N±0.04×143.27E±0.06,h33km, mb3.7/4,MS3.0/1,Error ellipse: s-maj=7.0km s-min=5.7km az=2.9*
JMA ***13*** *11:20:25.4±0.2,36.95N×143.26E,h45km,M3.5*

ISC 13 11:20:27.3±1.4, 36.97N±0.05×143.2E±0.1, h35km, n20, σ1§69/31, mb3.7/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.92**	**283**	P	**Pn**	**11 20 57.1**	**-0.4**
JFK				S	**Sn**	**11 21 20.0**	**-0.4**
JIO	**Ouri**	**2.10**	**315**	P	**Pn**	**11 20 59.7**	**-0.2**
JIO				*e*S	**Sn**	**11 21 24.3**	**-0.5

mb1 4.0/6, mb1mx3.7/44, mbtmp3.9/6, ML4.2/1, MS2.8/1, Ms1 2.8/1, ms1mx2.4/38, Error ellipse: s-maj=55.8km s-min=20.8km az=51.0
*ISCJB **13** 11:26:39.8±0.7, 11°01S±0°07×115°17E±0°08, h35km, mb4.0/5, Error ellipse: s-maj=13.7km s-min=6.3km az=140.2*
*NEIC **13** 11:26:40.8±0.9, 11°08S×114°99E, h35km, mb4.1/2, Error ellipse: s-maj=20.5km s-min=10.6km az=61.0*
*DJA **13** 11:26:42.1±0.9, 11°S±7'×11°5E±', h10km, M4.1/5, MLv4.1/5*

ISC 13 11:26:40.7±0.8, 11°08S±0°07×115°31E±0°07, h35km, n23, σ2§96/25, mb4.0/5, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWSI	**Taliwang, Sumb**	**2.80**	**34**	P	**Pn**	**11 27 24.0**	**+0.9**
JAGI	**Jajag, Banyuwa**	**2.83**	**336**	P	**Pn**	**11 27 22.5**	**-1.0**
JAGI				S	**Sn**	**11 27 52.0**	**-4.5**
JAGI	**Jajag, Banyuwa**	**2.83**	**336**	*e*Pn	**Pn**	**11 27 21.6**	**-1.9**
JAGI				*e*Sn	**Sn**	**11 27 53.0**	**-3.5**
SRBI	**Singaraja**	**2.98**	**358**	P	**Pn**	**11 27 26.3**	**+0.8**
PLAI	**Plampang**	**3.31**	**48**	P	**Pn**	**11 27 30.9**	**+0.9**
PLAI				S	**Sn**	**11 28 05.3**	**-2.9**
GMJI	**Gumukmas**	**3.34**	**327**	P	**Pn**	**11 27 29.3**	**-1.2**
ABJI	**Asem Bagus**	**3.43**	**342**	P	**Sn**	**11 28 13.4**	**+2.2**
BLJI	**Banyuglugur**	**3.72**	**333**	P	**Sn**	**11 28 19.0**	**+0.6**
PWJI	**Pagerwojo**	**4.60**	**311**	P	**Pn**	**11 27 47.4**	**-0.4**
KAPI	**Kappang**	**7.46**	**36**	Pn	**Pn**	**11 28 29.4**	**+2.2**
KAPI	3.4nm,0.3s,baz=215,slow=7.1,SNR=6.6			Sn	**Sn**	**11 29 48.8**	**-1.9**
KAPI	7.4nm,0.3s,baz=249,slow=23,SNR=7.5			LR	LR	11 31 54.4	
SOEI	comp=Z,59nm,19.1s,baz=138,slow=41 **Soe**	**8.91**	**82**	*e*Pn	**Pn**	**11 28 50.3**	**+3.1**
MBWA	31nm,0.6s **Marble Bar**	**10.88**	**158**	*e*Pn	**Pn**	**11 29 13.2**	**-0.9**
FITZ	91nm,0.3s **Fitzroy Crossi**	**12.19**	**126**	Pn	**Pn**	**11 29 32.8**	**+0.8**
FITZ	0.2nm,0.3s,baz=301,slow=7.9,SNR=9.8			Sn	**Sn**	**11 31 40.8**	**-5.9**
WRA	0.6nm,0.3s,baz=355,slow=23,SNR=8.1 **Warramunga Arr**	**20.33**	**118**	P	Pn	11 31 17.7	+1.5
WRA	1.1nm,0.5s,baz=290,slow=13,SNR=11			S	**S**	**11 34 53.1**	**-7.1**
WRAB	0.5nm,0.6s,baz=289,slow=23,SNR=3.5 **Tennant Creek**	**20.33**	**118**	*e*P	Pn	11 31 18.4	+2.1
ASAR	1.6nm,0.5s **Alice Springs**	**21.68**	**128**	P	**P**	**11 31 32.3**	**+3.6**
ASAR	1.2nm,0.6s,baz=303,slow=9.6,SNR=17			S	**S**	**11 35 25.8**	**-1.2**
COEN	0.2nm,0.6s,baz=304,slow=23,SNR=3.9 **Coen**	**27.35**	**99**	*e*P	**P**	**11 32 25.4**	**+2.7**
STKA	16nm,1.2s **Stephens Creek**	**31.89**	**134**	P	**P**	**11 33 06.2**	**+3.3**
H08S2	1.5nm,0.9s,baz=326,slow=6.1,SNR=3.8 **Diego Garcia H**	**42.35**	**271**	T	T	12 19 39.6	
H08S3	baz=97 **Diego Garcia H**	**42.37**	**271**	T	T	12 19 31.0	
H08S1	baz=97 **Diego Garcia H**	**42.37**	**271**	T	T	12 19 38.1	
MKAR	baz=97 **Makanchi Array**	**64.74**	**336**	P	**P**	**11 37 15.3**	**-0.2**
ZALV	0.4nm,0.3s,baz=138,slow=7.2,SNR=9.2 **Zalesovo Beam**	**69.76**	**341**	P	**P**	**11 37 46.6**	**-0.5**
	0.8nm,0.4s,baz=164,slow=5.9,SNR=3.7						

*CSEM **13** 11:55:38.9±0.6, 51°56N×16°15E, h1km, Error ellipse: s-maj=9.4km s-min=6.0km az=17.0*
*WAR **13** 11:55:40.0, 51°53N×16°10E, h1km*

PRU 13 11:55:40.6, 51°52N×16°12E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.69**	**171**	*e*Pg	Pg	11 55 53.1	-0.6
KSP				*e*Sg	Sg	11 56 02.8	+0.2
KSP	**Ksiaz**	**0.69**	**171**	*e*Pg	Pg	11 55 53.1	-0.6
KSP				*e*Sg	Sg	11 56 02.8	+0.2
KSP	**Ksiaz**	**0.69**	**171**	*e*Pg	Pg	11 55 53.1	-0.6
KSP				*e*Sg	Sg	11 56 02.8	+0.2
UPC	**Upice**	**1.02**	**184**	*e*PG	Pg	11 55 59.8	-0.2
UPC	comp=Z,9.0nm,0.3s			*e*SG	Sg	11 56 13.1	-0.1
UPC	**Upice**	**1.02**	**184**	Pg	Pg	11 55 59.8	-0.2
UPC	9.0nm,0.3s			Sg	Sg	11 56 13.1	-0.1
DPC	**Dobruska-Polom**	**1.18**	**174**	*e*PG	Pg	11 56 02.1	-1.1
DPC	comp=Z,3.3nm,0.2s			*e*SG	Sg	11 56 17.7	-0.7
DPC	**Dobruska-Polom**	**1.18**	**174**	Pg	Pg	11 56 02.1	-1.1
DPC	3.3nm,0.2s			Sg	Sg	11 56 17.7	-0.7
PVCC	**Panska Ves**	**1.40**	**225**	*e*PG	Pn	11 56 06.4	-0.9
PVCC	comp=Z,14nm,0.2s			*e*SG	Sg	11 56 25.5	+0.1
PVCC	**Panska Ves**	**1.40**	**225**	Pg	Pn	11 56 06.4	-0.9
PVCC	14nm,0.2s			Sg	Sg	11 56 25.5	+0.1
KRLC	**Kraliky**	**1.51**	**164**	*e*PG	Pn	11 56 08.0	-0.9
KRLC				*e*SG	Sg	11 56 28.4	-0.5
KRLC	**Kraliky**	**1.51**	**164**	Pg	Pn	11 56 08.0	-0.9
KRLC				Sg	Sg	11 56 28.4	-0.5
BRG	**Berggiesshubel**	**1.52**	**246**	PG	Pn	11 56 08.4	-0.6
BRG	13nm,0.4s			SG	Sg	11 56 28.5	-0.7
GOPC	**GO Pecny, Ondr**	**1.82**	**208**	*e*SG	Sb	11 56 37.6	-0.4
GOPC	**GO Pecny, Ondr**	**1.82**	**208**	Sg	Sb	11 56 37.6	-0.4

*NIED **13** 11:59:00, 35°80N×141°40E, h17km, Mw3.8 Best double couple: M₀5.35000×10¹⁴ NP1:φs339.00000°, δ9.00000°, λ-130.00000°. NP2:φs199.00000°, δ83.00000°, λ-84.00000°.*
*IDC **13** 11:59:16.8±0.9, 35°67N×141°40E, h0km, mb3.7/8, mb1 3.8/11, mb1mx3.6/53, mbtmp3.7/11, ML3.1/2, MS2.8/2, Ms1 2.8/2, ms1mx2.4/38, Error ellipse: s-maj=24.6km s-min=18.3km az=82.0*
*ISCJB **13** 11:59:18.3±0.7, 35°71N±0°05×141°53E±0°06, h26km, mb3.7/8, MS4.3/1, Error ellipse: s-maj=7.5km s-min=6.5km az=172.0*
*JMA **13** 11:59:19.0±0.2, 35°75N×141°44E, h23km±2km, M3.7*

ISC 13 11:59:20.9±0.9, 35°78N±0°06×141°32E±0°07, h26km, n28, σ1§04/24, mb3.7/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.39**	**259**	P	**Pb**	**11 59 28.6**	**-0.7**
CHOJ				S	**Sb**	**11 59 35.6**	**+0.6**
JCN	**Nagara**	**0.98**	**249**	P	**Pb**	**11 59 40.4**	**+1.2**
JYT	**Yasato**	**1.02**	**296**	P	**Pn**	**11 59 38.6**	**-0.9**
JHO	**Hitachi**	**1.03**	**324**	P	**Pn**	**11 59 38.8**	**-0.9**
BSO1	**Boso 1**	**1.16**	**194**	P	**Pn**	**11 59 39.7**	**-1.2**
BSO3	**Boso 3**	**1.18**	**215**	P	**Pn**	**11 59 40.8**	**-0.6**
JFK	**Kawauchi**	**1.63**	**347**	P	**Pn**	**11 59 47.4**	**-0.5**
JAG	**Ashikaga**	**1.65**	**294**	P	**Pn**	**11 59 47.7**	**-0.4**
MJAR	**Matsushiro Arr**	**2.63**	**288**	Pn	**Pn**	**12 00 02.6**	**+0.9**
MJAR	3.2nm,0.3s,baz=103,slow=9.1,SNR=55			Sn	**Sb**	**12 00 37.7**	**-1.6**
MJAR	3.6nm,0.3s,baz=92,slow=19,SNR=7.0			LR	LR	12 01 08.0	
MAT	comp=Z,100nm,18.5s,baz=120,slow=41 **Matsushiro**	**2.63**	**288**	P	**Pn**	**12 00 02.8**	**+1.1**
MAT				S	**Sb**	**12 00 38.6**	**-0.7**
JHJ	**Hachijo jima 2**	**2.94**	**206**	Pn	**Pn**	**12 00 04.8**	**-1.1**
JHJ	6.2nm,0.3s,baz=341,slow=22,SNR=16			Sn	**Sn**	**12 00 39.4**	**-1.0**
ASAJ	8.0nm,0.3s,baz=52,slow=19,SNR=3.6 **Asahikawa**	**8.39**	**6**	Pn	**Pn**	**12 01 19.2**	**-1.5**
KSRS	baz=175,slow=11 **Korea Array**	**10.90**	**283**	LR	LR	12 06 03.1	
H11N2	comp=Z,74nm,21.4s,baz=120,slow=37 **WAKE ISLAND Hy**	**27.59**	**119**	T	T	12 33 52.5	
H11N1	baz=311,slow=75,SNR=75 **WAKE ISLAND Hy**	**27.60**	**119**	T	T	12 33 53.0	
H11N3	baz=311,slow=75,SNR=62 **WAKE ISLAND Hy**	**27.61**	**119**	T	T	12 33 53.8	
H11S1	baz=311,slow=75,SNR=62 **WAKE ISLAND Hy**	**28.26**	**121**	T	T	12 34 56.8	
H11S3	baz=313,slow=76,SNR=19 **WAKE ISLAND Hy**	**28.26**	**121**	T	T	12 34 42.5	
H11S2	baz=313,slow=76,SNR=26 **WAKE ISLAND Hy**	**28.27**	**121**	T	T	12 34 48.7	
	baz=313,slow=76,SNR=13						

SONM	**Songino Array**	**28.44**	**306**	P	**P**	**12 05 14.7**	**+1.1**
	0.4nm,0.5s,baz=114,slow=9.2,SNR=3.8						
ZALV	**Zalesovo Beam**	**42.71**	**313**	P	**P**	**12 07 16.4**	**+0.9**
	0.7nm,0.3s,baz=93,slow=8.7,SNR=3.4						
MKAR	**Makanchi Array**	**44.73**	**303**	P	**P**	**12 07 31.7**	**-0.2**
	0.8nm,0.6s,baz=86,slow=9.1,SNR=5.9						
KURBB	**Kurchatov Arra**	**46.72**	**309**	P	**P**	**12 07 48.1**	**+0.6**
	1.6nm,0.5s,baz=83,slow=7.7,SNR=13						
ILAR	**Eielson Array**	**50.59**	**32**	P	**P**	**12 08 17.8**	**+0.7**
	0.4nm,0.7s,baz=268,slow=6.0,SNR=6.5						
WRA	**Warramunga Arr**	**55.81**	**188**	P	**P**	**12 08 54.2**	**-1.6**
	1.4nm,0.9s,baz=1.4,slow=7.4,SNR=9.6						
ASAR	**Alice Springs**	**59.54**	**188**	P	**P**	**12 09 21.2**	**-0.9**
	0.3nm,0.8s,baz=14,slow=12,SNR=4.8						
DZM	**Mont Dzumac**	**62.26**	**154**	LR	LR	12 30 56.4	
	comp=Z,241nm,20.9s,baz=14,slow=31						
TXAR	**Lajitas Array**	**90.94**	**52**	P	**P**	**12 12 23.9**	**+1.0**
	0.1nm,0.5s,baz=339,slow=4.8,SNR=2.6						

IDC 13 12:00:48.9±999.0, 45°81N×48°11E, h0km, Error ellipse: s-maj=522.1km s-min=218.1km az=132.0, Caspian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON**	**2.86**	**332**	*i*		13 23 50.0	
	baz=143,slow=319,SNR=1.4						
I26DE	**FREYUNG INFRAS**	**23.39**	**290**	*i*		14 26 20.0	
	baz=82,slow=307,SNR=2.2						
I48TN	**KESRA INFRASON**	**30.75**	**265**	*i*		15 04 40.0	
	baz=55,slow=323,SNR=1.8						

*ISCJB **13** 12:07:31.0±0.6, 45°02N±0°02×22°34E±0°03, h5km±4km, Error ellipse: s-maj=4.5km s-min=3.5km az=135.8*
*CSEM **13** 12:07:31.3±0.1, 45°02N×22°34E, h5km, ML1.6, Error ellipse: s-maj=3.6km s-min=2.9km az=126.0*
*BUC **13** 12:07:31.3±0.4, 45°02N×22°32E, h15km, MD2.6/3, Error ellipse: s-maj=5.7km s-min=3.5km az=346.0*
*BEO **13** 12:07:32.1±0.4, 45°00N×22°33E, h4km±2km, M1.6/8*

ISC 13 12:07:31.3±1.1, 45°03N±0°02×22°36E±0°02, h6km±9km, n45, σ0§53/71, 9C-18D, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJES	**Djerdap**	**0.38**	**162**	*e*Sg	**Sg**	**12 07 44.0**	**+0.4**
MDVR	**Moldovita**	**0.52**	**242**	⇓*i*P	**Pg**	**12 07 41.7**	**+0.4**
MDVR	**Moldovita**	**0.52**	**242**	⇓*i*P	**Pg**	**12 07 41.7**	**+0.4**
MDVR				*i* S	**Sg**	**12 07 48.7**	**+0.6**
MDVR	**Moldovita**	**0.52**	**242**	⇓*i*P	**Pg**	**12 07 41.7**	**+0.4**
MDVR				S	**Sg**	**12 07 48.7**	**+0.6**
SRE	**Strehaia**	**0.71**	**121**	⇓*i*P	**Pb**	**12 07 46.0**	**+0.1**
SRE	**Strehaia**	**0.71**	**121**	⇓*i*P	**Pb**	**12 07 46.0**	**+0.1**
SRE				*i* S	**Sb**	**12 07 56.4**	**+0.5**
SRE	**Strehaia**	**0.71**	**121**	⇓*i*P	**Pb**	**12 07 46.0**	**+0.1**
SRE				S	**Sb**	**12 07 56.4**	**+0.5**
KUBS	**Kucevo**	**0.78**	**219**	*e*Pg	**Pg**	**12 07 44.7**	**-1.6**
KUBS				*e*Sg	**Sg**	**12 07 56.4**	**-0.1**
KUBS	**Kucevo**	**0.78**	**219**	*e*Pg	**Sg**	**12 07 44.7**	**-1.6**
KUBS				*e*Sg	**Sg**	**12 07 56.4**	**-0.1**
BZS	**Buzias**	**0.79**	**319**	⇑*i*P	**Pg**	**12 07 46.4**	**0.0**
BZS	**Buzias**	**0.79**	**319**	⇑*i*P	**Pg**	**12 07 46.4**	**0.0**
BZS				*i* S	**Sb**	**12 07 58.3**	**0.0**
BZS	**Buzias**	**0.79**	**319**	*e*Pg	**Pg**	**12 07 45.9**	**-0.5**
BZS				*e*Sg	**Sb**	**12 07 58.7**	**+0.4**
BZS	**Buzias**	**0.79**	**319**	*e*Pg	**Pg**	**12 07 45.9**	**-0.5**
BZS	**Buzias**	**0.79**	**319**	⇑*i*P	**Pg**	**12 07 46.4**	**0.0**
BZS				S	**Sb**	**12 07 58.3**	**0.0**
DEV	**Deva**	**0.94**	**24**	⇓*i*P	**Pb**	**12 07 49.9**	**0.0**
DEV	**Deva**	**0.94**	**24**	⇓*i*P	**Pb**	**12 07 49.9**	**0.0**
DEV	**Deva**	**0.94**	**24**	⇓*i*P	**Pb**	**12 07 49.9**	**0.0**
LOT	**Lotru**	**1.08**	**67**	⇑*i*P	**Pg**	**12 07 51.7**	**-0.4**
LOT	**Lotru**	**1.08**	**67**	⇑*i*P	**Pg**	**12 07 51.7**	**-0.4**
LOT				*i* S	**Sn**	**12 08 07.9**	**-0.5**
LOT	**Lotru**	**1.08**	**67**	⇑*i*P	**Pg**	**12 07 51.7**	**-0.4**
BOVS	**Bovan**	**1.47**	**199**	*e*Pg	**Pn**	**12 07 58.4**	**+0.2**
BOVS				*e*Sg	**Sg**	**12 08 18.7**	**+0.3**
BOVS	**Bovan**	**1.47**	**199**	*e*Pg	**Pn**	**12 07 58.4**	**+0.2**
BOVS				*e*Sg	**Sg**	**12 08 18.7**	**+0.3**
TRUS	**Trudelj**	**1.61**	**241**	*e*Pn	**Pn**	**12 08 00.2**	**0.0**
TRUS				*e*Sn	**Sn**	**12 08 21.1**	**-0.1**
TRUS	**Trudelj**	**1.61**	**241**	*e*Pn	**Pn**	**12 08 00.2**	**0.0**
TRUS				*e*Sn	**Sn**	**12 08 21.1**	**-0.1**
GRUS	**Gruza**	**1.64**	**226**	*e*Sn	**Sg**	**12 08 23.3**	**-0.5**
GRUS	**Gruza**	**1.64**	**226**	*e*Sn	**Sg**	**12 08 23.3**	**-0.5**
ZAPS	**Zavoj**	**1.77**	**173**	*e*Pn	**Pn**	**12 08 02.7**	**+0.3**
ZAPS				*e*Sn	**Sb**	**12 08 27.0**	**+0.6**
DRGR		**1.78**	**8**	⇓*i*P	**Pn**	**12 08 03.3**	**+0.7**
DRGR		**1.78**	**8**	⇓*i*P	**Pn**	**12 08 03.3**	**+0.7**
DRGR				*i* S	**Sn**	**12 08 25.3**	**-0.3**
DRGR		**1.78**	**8**	*e*Pn	**Pn**	**12 08 02.8**	**+0.2**
DRGR				*e*Sn	**Sg**	**12 08 28.4**	**-0.1**
DRGR		**1.78**	**8**	*e*Pn	**Pn**	**12 08 02.8**	**+0.2**
DRGR		**1.78**	**8**	⇓*i*P	**Pn**	**12 08 03.3**	**+0.7**
DRGR				S	**Sn**	**12 08 25.3**	**-0.3**
VOIR		**1.95**	**77**	⇓*i*P	**Pn**	**12 08 05.1**	**+0.2**
VOIR		**1.95**	**77**	⇓*i*P	**Pn**	**12 08 05.1**	**+0.2**
VOIR				*i* S	**Sn**	**12 08 29.9**	**+0.2**
VOIR		**1.95**	**77**	⇓*i*P	**Pn**	**12 08 05.1**	**+0.2**
VOIR				S	**Sn**	**12 08 29.9**	**+0.2**
IVAS	**Ivanjica**	**2.15**	**228**	*e*Pn	**Pn**	**12 08 06.5**	**-1.1**
IVAS	**Ivanjica**	**2.15**	**228**	*e*Pn	**Pn**	**12 08 06.5**	**-1.1**
BARS	**Barje**	**2.25**	**190**	*e*Pn	**Pn**	**12 08 09.2**	**+0.3**
BARS				*e*Sn	**Sn**	**12 08 37.9**	**+1.0**
BARS	**Barje**	**2.25**	**190**	*e*Pn	**Pn**	**12 08 09.2**	**+0.3**
BARS				*e*Sn	**Sn**	**12 08 37.9**	**+1.0**
DOPR	**Dopca**	**2.33**	**65**	⇓*i*P	**Pn**	**12 08 10.2**	**+0.1**
DOPR	**Dopca**	**2.33**	**65**	⇓*i*P	**Pn**	**12 08 10.2**	**+0.1**
DOPR				*i* S	**Sn**	**12 08 38.9**	**-0.2**
DOPR	**Dopca**	**2.33**	**65**	⇓*i*P	**Pn**	**12 08 10.2**	**+0.1**
DOPR				S	**Sn**	**12 08 38.9**	**-0.2**
MLR	**Muntele Rosu**	**2.58**	**78**	⇑*i*P	**Pn**	**12 08 13.9**	**+0.3**
MLR	**Muntele Rosu**	**2.58**	**78**	⇑*i*P	**Pn**	**12 08 13.9**	**+0.3**
MLR				*i* S	**Sn**	**12 08 44.2**	**-1.1**
MLR	**Muntele Rosu**	**2.58**	**78**	⇑*i*P	**Pn**	**12 08 13.9**	**+0.3**
MLR				S	**Sn**	**12 08 44.2**	**-1.1**

*NSSP **13** 12:11:19.8, 38°90N×45°20E, h6km, Ms3.2*
*TEH **13** 12:11:20.5, 38°90N×45°15E, h6km, ML3.0*
*ISCJB **13** 12:11:21.8±0.9, 38°87N±0°05×45°31E±0°08, h10km, Error ellipse: s-maj=10.4km s-min=5.4km az=151.9*
*CSEM **13** 12:11:21.5±0.5, 38°92N×45°36E, h2km, ML3.0, Error ellipse: s-maj=14.3km s-min=6.9km az=65.0*

ISC 13 12:11:22.0±1.2, 38°92N±0°04×45°35E±0°06, h10km, n15, σ1§02/20, 3C-3D, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMRD	**Marand**	**0.35**	**126**	*e*Pg	**Pg**	**12 11 29.2**	**+0.2**
IMRD				*e*Sg	**Sb**	**12 11 35.3**	**-0.7**
IMRD				*e*AMB	AMB	12 11 36.5	
	comp=Z,57μm,0.1s						
IMRD	**Marand**	**0.35**	**126**	*e*Pg	**Pg**	**12 11 29.2**	**+0.2**
ISHB	**Shabestar**	**0.67**	**161**	*e*Pg	**Pg**	**12 11 33.6**	**-1.4**
ISHB				*e*AMB	AMB	12 11 34.6	
	comp=Z,32μm,0.1s						
ITBZ	**Tabriz**	**0.93**	**137**	*e*Pg	**Pg**	**12 11 38.7**	**-1.2**
ITBZ				*e*AMB	AMB	12 11 39.2	
	comp=Z,12μm,0.1s						
ITBZ	**Tabriz**	**0.93**	**137**	*e*Pg	**Pg**	**12 11 38.7**	**-1.2**
GRS	**Goris**	**0.96**	**53**	⇓*e*P	**Pg**	**12 11 38.9**	**-1.7**
GRS				⇓S	**Sg**	**12 11 53.7**	**+0.6**
GRS	**Goris**	**0.96**	**53**	⇓P	**Pg**	**12 11 38.9**	**-1.7**
GRS				S	**Sg**	**12 11 53.7**	**+0.6**
GNI	**Garni**	**1.31**	**339**	⇑*i*P	**Pn**	**12 11 46.4**	**-0.2**
GNI				⇓*i*S	**Sb**	**12 12 05.2**	**+1.3**
GNI	**Garni**	**1.31**	**339**	⇑P	**Pn**	**12 11 46.4**	**-0.2**
GNI				S	**Sb**	**12 12 05.2**	**+1.3**
IHRS	**Heris**	**1.46**	**114**	*e*Pn	**Pn**	**12 11 49.1**	**+0.5**
IHRS				*e*AMB	AMB	12 12 14.2	
	comp=Z,3μm,0.1s						
IHRS	**Heris**	**1.46**	**114**	*e*Pn	**Pn**	**12 11 49.1**	**+0.5**
IBST	**Bostanabad**	**1.72**	**135**	*e*Pn	**Pn**	**12 11 52.4**	**+0.2**
IBST				*e*AMB	AMB	12 12 20.8	
	comp=Z,837nm,0.1s						
IBST	**Bostanabad**	**1.72**	**135**	*e*Pn	**Pn**	**12 11 52.4**	**+0.2**
ISRB	**Sarab**	**2.13**	**120**	*e*Pn	**Pn**	**12 11 58.7**	**+0.9**
ISRB				*e*AMB	AMB	12 12 09.4	
	comp=Z,849nm,0.2s						
ISRB	**Sarab**	**2.13**	**120**	*e*Pn	**Pn**	**12 11 58.7**	**+0.9**

*IDC **13** 12:21:42.6±3.0, 23°16S×173°78E, h0km, mb4.1/7, mb1 4.2/8, mb1mx4.0/25, mbtmp4.0/8, ML3.2/1, MS3.5/12, Ms1 3.5/12, ms1mx3.3/26, Error ellipse: s-maj=100.7km s-min=26.5km az=152.0*
*ISCJB **13** 12:21:45.0±0.7, 23°5S±0°1×173°77E±0°09, h33km, mb4.0/9, MS3.5/9, Error ellipse: s-maj=20.2km s-min=8.4km az=26.2*
*NEIC **13** 12:21:47.5±0.6, 23°32S×173°70E, h35km, mb4.2/3, Error ellipse: s-maj=18.1km s-min=10.6km az=189.0*

ISC 13 12:21:47.4±0.7, 23°4S±0°2×173°7E±0°1, h35km, n24, σ1§23/16, mb4.0/9, MS3.5/9, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**6.85**	**280**	Pn	**Pn**	**12 23 24.5**	**-1.0**
	0.5nm,0.3s,baz=72,slow=20,SNR=3.1						
RAO	**Raoul Island**	**9.49**	**130**	LR	LR	12 26 51.9	
	comp=Z,211nm,20.0s,baz=340,slow=32						
RAO	**Raoul Island**	**9.49**	**130**	*e*Pn	**Pn**	**12 24 03.0**	**+1.4**
RAO				*e*Sn	**Sn**	**12 25 45.3**	**-1.6**
AFI	**Afiamalu**	**16.66**	**58**	LR	LR	12 30 19.9	
	comp=Z,169nm,18.1s,baz=177,slow=31						
HNR	**Honiara**	**19.16**	**314**	LR	LR	12 31 53.9	
	comp=Z,106nm,20.3s,baz=176,slow=32						
EIDS	**Eidsvold**	**20.71**	**260**	*e*P	**P**	**12 26 24.7**	**-0.2**
	14nm,1.3s						
CAN	**Canberra**	**24.53**	**235**	*e*P	**P**	**12 27 02.5**	**-1.3**
	520nm,4.1s						
CTA	**Charters Tower**	**25.71**	**272**	P	**P**	**12 27 15.8**	**+1.1**
	2.6nm,0.6s,baz=90,slow=6.1,SNR=2.5						
PMG	**Port Moresby**	**28.97**	**294**	LR	LR	12 35 57.5	
	comp=Z,85nm,19.5s,baz=103,slow=30						
PPT	**Papeete**	**34.80**	**87**	LR	LR	12 38 32.7	
	comp=Z,116nm,21.2s,baz=106,slow=29						
ASAR	**Alice Springs**	**36.43**	**261**	P	**P**	**12 28 49.9**	**+0.8**
	2.0nm,0.8s,baz=88,slow=8.9,SNR=20						
ASAR				LR	LR	12 42 26.2	
	comp=Z,72nm,18.6s,baz=82,slow=34						
WRAB	**Tennant Creek**	**36.68**	**268**	*e*P	**P**	**12 28 51.2**	**+0.1**
	0.6nm,0.5s						
WRA	**Warramunga Arr**	**36.69**	**268**	P	**P**	**12 28 50.4**	**-0.9**
	1.5nm,0.7s,baz=102,slow=8.7,SNR=6.7						
FITZ	**Fitzroy Crossi**	**45.12**	**267**	*e*P	**P**	**12 30 01.5**	**+0.9**
	7.1nm,0.8s						
GUMO	**Guam**	**46.36**	**320**	LR	LR	12 49 31.1	
	comp=Z,52nm,18.3s,baz=182,slow=36						
MJAR	**Matsushiro Arr**	**68.41**	**330**	LR	LR	12 58 47.5	
	comp=Z,24nm,21.8s,baz=200,slow=33						
KSRS	**Korea Array**	**74.31**	**324**	LR	LR	13 05 17.9	
	comp=Z,38nm,18.1s,baz=166,slow=35						
PETK	**Petropavlovsk-**	**77.46**	**350**	P	**P**	**12 33 37.7**	**-1.2**
	2.3nm,0.8s,baz=163,slow=5.3,SNR=4.8						
PETK				LR	LR	12 59 33.0	
	comp=Z,21nm,20.7s,baz=129,slow=29						
CMAR	**Chiang Mai Arr**	**84.00**	**293**	P	**P**	**12 34 17.1**	**+2.4**
	0.5nm,0.4s,baz=134,slow=2.6,SNR=5.0						
ILAR	**Eielson Array**	**93.02**	**16**	P	**P**	**12 34 55.6**	**-1.2**
	0.7nm,1.0s,baz=224,slow=5.0,SNR=5.1						
SONM	**Songino Array**	**93.06**	**321**	P	**P**	**12 34 58.0**	**+0.5**
	0.2nm,0.5s,baz=122,slow=5.2,SNR=2.4						
SONM				LR	LR	13 16 33.4	
	comp=Z,22nm,18.0s,baz=138,slow=35						
NEW	**Newport**	**94.33**	**39**	LR	LR	13 08 44.8	
	comp=Z,21nm,20.1s,baz=255,slow=30						
ABKAR	**Akbulak array**	**122.76**	**315**	*e*PKPdf	**PKPdf**	**12 40 39.6**	**+0.2**
GERES	**GERESS Array B**	**150.11**	**333**	PKPbc	**PKPbc**	**12 41 34.6**	**+0.2**
	0.7nm,0.7s,baz=49,slow=3.0,SNR=5.7						

IDC 13 12:24:49.0±1.9, 29°40S×176°22W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/23, mbtmp3.5/2, MS3.0/1, Ms1 3.0/1, ms1mx2.7/15, Error ellipse: s-maj=77.7km s-min=44.9km az=13.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**10.42**	**210**	LR	LR	12 31 47.9	
	comp=Z,90nm,19.5s,baz=6.0,slow=40						
ASAR	**Alice Springs**	**44.72**	**265**	P	P	12 33 04.3	+0.1
	0.7nm,1.1s,baz=105,slow=8.3,SNR=3.8						
WRA	**Warramunga Arr**	**45.62**	**270**	P	P	12 33 11.0	-0.5
	0.5nm,0.6s,baz=110,slow=7.9,SNR=5.8						
AKASG	**Malin Array Be**	**151.41**	**325**	PKPbc	PKPbc	12 44 44.6	+0.2
	0.2nm,0.3s,baz=59,slow=2.4,SNR=2.4						
TORD	**Torodi Ar. Bea**	**163.71**	**173**	PKPab	PKPab	12 45 45.6	-0.8
	1.3nm,0.9s,baz=198,slow=4.2,SNR=6.3						

**J

BOOM				⇑*e*S		**Sg**	**12 31 46.3**	**+0.5**
	baz=35							
CHMS	**Chumysh**	**2.54**	**9**	⇑*i*P		**Pb**	**12 31 14.2**	**-0.3**
	baz=10.0							
CHMS				⇑*i*S		**Sb**	**12 31 45.7**	**-0.2**
	baz=10.0							
BTK	**Batken**	**2.61**	**262**	⇑*e*P		**Pb**	**12 31 16.3**	**+0.6**
	baz=259							
BTK				⇑*e*S		**Sb**	**12 31 49.4**	**+1.6**
	baz=259							
TKM2	**Tokmak 2**	**2.65**	**23**	⇑Pg		**Pg**	**12 31 18.3**	**-1.3**
	2.4nm,0.2s							
TKM2				⇑Lg		Lg	12 31 54.0	
	17nm,0.3s							
KDJ	**Kajisay**	**2.79**	**53**	⇑*e*P		**Pb**	**12 31 19.3**	**+0.5**
	baz=55							
KDJ				⇑*e*S		**Sb**	**12 31 55.7**	**+2.6**
	baz=55							
KST	**Kastek**	**2.88**	**27**	*e*P		**Pg**	**12 31 22.8**	**-1.1**
	6.6nm,0.3s							
KST				*e*S		**Sg**	**12 32 00.3**	**-0.9**
	10nm,0.7s							
DGS	**Degeres**	**3.00**	**23**	*e*P		**Pg**	**12 31 24.5**	**-1.7**
	7.4nm,0.5s							
DGS				*e*S		**Sg**	**12 32 03.5**	**-1.5**
	16nm,0.6s							
IZV	**Izvestkoviy**	**3.13**	**35**	*e*P		**Pg**	**12 31 27.5**	**-1.2**
	8.9nm,0.5s							
IZV				*e*S		**Sg**	**12 32 09.0**	**-0.2**
	23nm,0.6s							
MDOK	**Medeo**	**3.42**	**38**	*e*P		**Pg**	**12 31 33.1**	**-1.2**
	3.8nm,0.3s							
MDOK				*e*S		**Sg**	**12 32 18.1**	**-0.7**
	6.5nm,0.6s							
IUG	**Iuzhnay**	**3.54**	**299**	*e*P		**Pg**	**12 31 34.6**	**-1.9**
	46nm,0.6s							
IUG				*e*S		**Sg**	**12 32 20.8**	**-1.6**
	41nm,0.4s							
KK31	**Karatay Array**	**3.79**	**315**	Pg		**Pb**	**12 31 37.1**	**+1.4**
	1.5nm,0.2s,baz=136,slow=15,SNR=16							
KK31				Lg		Lg	12 32 28.1	
	4.1nm,0.2s,baz=131,slow=28,SNR=8.4							
BRLS	**Boroldav**	**4.08**	**306**	*e*P		**Pg**	**12 31 44.8**	**-2.1**
	0.8nm,0.4s							
BRLS				*e*S		**Sg**	**12 32 38.0**	**-1.8**
	15nm,0.4s							
DZET	**Dzherino**	**4.46**	**250**	⇓Pg		**Pg**	**12 31 53.8**	**-0.4**
	2.2nm,0.4s							
DZET				⇑Lg		Lg	12 32 52.8	
	16nm,0.6s							
ARXS	**Arharly**	**4.60**	**35**	*e*P		**Pg**	**12 31 54.0**	**-2.8**
	3.3nm,0.4s							
ARXS				*e*S		**Sg**	**12 32 54.2**	**-2.1**
	9.7nm,0.3s							

CASC 13 12:47:15.0±1.8, 10°.78N×85°.04W, h8km±8km, MD4.0, ML3.5,5C, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ARE1	**Arenal 1**	**0.45**	**135**	⇑*i*P	Pb	12 47 24.8	-0.3
ARE1				*e*S	Sb	12 47 31.2	-0.7
VCR	**Vista de Mar**	**0.87**	**222**	⇑*e*P	Pg	12 47 32.0	+0.2
VCR				*e*S	Sb	12 47 45.1	+0.8
JCR	**Jicaral**	**0.92**	**184**	⇑*e*P	Pg	12 47 31.7	-1.1
JCR				*e*S	Sg	12 47 44.9	+0.1
CGA2	**Cerro Gallo 2**	**0.94**	**143**	⇑*e*P	Pg	12 47 31.7	-1.5
CGA2				*e*S	Sg	12 47 45.1	-0.4
CONN	**Concepcion**	**0.97**	**324**	*e*P	Pg	12 47 32.5	-1.2
URSC	**Urasca**	**1.55**	**127**	⇑*e*P	Pn	12 47 43.4	+0.3
URSC				*e*S	Sg	12 48 04.8	-0.3
ESPN	**Las Esperanzas**	**1.58**	**27**	*e*P	Pn	12 47 42.9	-0.4
ESPN				*e*S	Sb	12 48 04.8	+0.1
ESPN				AML	AML	12 48 07.8	
	comp=N,742nm,0.3s						
COPN	**Copaltepe**	**2.06**	**313**	*e*P	Pn	12 47 48.9	-1.0

IDC 13 12:51:54.2±1.6, 7°.00S×128°.50E, h0km, mb3.7/2, mb1 3.9/4, mb1mx3.6/27, mbtmp3.7/4, ML3.8/2, MS2.8/1, Ms1 2.8/1, ms1mx2.6/23, Error ellipse: s-maj=105.4km s-min=28.8km az=69.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**14.06**	**157**	Pn	Pn	12 55 14.2	-0.6
	0.4nm,0.3s,baz=336,slow=14,SNR=12						
WRA				Sn	Sn	12 57 36.2	-15
	1.2nm,0.3s,baz=336,slow=22,SNR=8.4						
ASAR	**Alice Springs**	**17.36**	**163**	P	Pn	12 55 58.7	+0.6
	0.5nm,0.3s,baz=342,slow=11,SNR=49						
ASAR				S	Sn	12 58 56.1	-16
	0.2nm,0.3s,baz=341,slow=26,SNR=5.1						
KSRS	**Korea Array**	**44.23**	**359**	LR	LR	13 18 41.6	
	comp=Z,13nm,19.8s,baz=280,slow=36						
SONM	**Songino Array**	**57.99**	**343**	P	P	13 01 49.6	+0.8
	0.4nm,0.6s,baz=165,slow=7.2,SNR=2.9						
MKAR	**Makanchi Array**	**67.42**	**328**	P	P	13 02 50.8	-0.9
	0.6nm,0.5s,baz=117,slow=7.7,SNR=5.6						

IDC 13 13:16:57.4±1.2, 9°.49S×158°.30E, h0km, mb3.7/4, mb1 3.8/4, mb1mx3.5/28, mbtmp3.7/4, Error ellipse: s-maj=40.5km s-min=23.2km az=164.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**1.62**	**88**	Pn	Pn	13 17 27.2	-0.1
	71nm,0.3s,baz=221,slow=7.3,SNR=47						
HNR				Sn	Sn	13 17 47.1	-1.8
	112nm,0.3s,baz=209,slow=19,SNR=11						
HNR	**Honiara**	**1.62**	**88**	*e*P	Pn	13 17 26.0	-1.3
HNR				*e*S	Sn	13 17 46.0	-3.0
WRA	**Warramunga Arr**	**25.36**	**243**	P	P	13 22 26.6	0.0
	1.4nm,0.9s,baz=69,slow=9.2,SNR=7.5						
ASAR	**Alice Springs**	**27.24**	**236**	P	P	13 22 43.5	-0.1
	0.4nm,0.3s,baz=61,slow=11,SNR=3.3						
SONM	**Songino Array**	**73.20**	**326**	P	P	13 28 30.6	+0.2
	1.0nm,0.7s,baz=136,slow=4.6,SNR=6.0						
MKAR	**Makanchi Array**	**87.43**	**318**	P	P	13 29 46.8	-0.1
	0.2nm,0.5s,baz=114,slow=5.7,SNR=3.3						

IDC 13 13:35:27.8±3.4, 18°.76S×178°.44W, h559km±190km, mb3.1/4, mb1 3.2/4, mb1mx2.8/41, mbtmp4.0/4, Error ellipse: s-maj=243.8km s-min=99.6km az=108.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**38.20**	**242**	P	P	13 42 00.6	+0.2
	1.0nm,0.7s,baz=88,slow=13,SNR=3.8						
WRA	**Warramunga Arr**	**44.46**	**260**	P	P	13 42 49.4	-0.6
	1.5nm,0.4s,baz=97,slow=7.6,SNR=6.8						
ASAR	**Alice Springs**	**44.54**	**255**	P	P	13 42 50.5	-0.1
	2.6nm,0.7s,baz=88,slow=8.0,SNR=90						
ASAR				S	S	13 48 46.4	+0.3
	0.6nm,0.6s,baz=93,slow=15,SNR=8.9						
FITZ	**Fitzroy Crossi**	**52.87**	**261**	P	P	13 43 52.2	-0.1
	0.5nm,0.3s,baz=90,slow=4.0,SNR=5.5						

IDC ***13*** *13:36:44.2±6.7, 36°.71N×142°.04E, h0km, mb3.3/2, mb1 3.4/3, mb1mx3.2/44, mbtmp3.1/3, ML2.8/1, MS2.8/2, Ms1 2.8/2, ms1mx2.5/19, Error ellipse: s-maj=144.3km s-min=43.8km az=30.0*

ISCJB ***13*** *13:36:49.0±2.0, 36°.92N±0°.05×141°.5E±0°.1, h4km±19km, mb3.4/2, MS3.5/1, Error ellipse: s-maj=14.3km s-min=6.1km az=20.9*

JMA ***13*** *13:36:50.8±0.1, 36°.91N×141°.45E, h28km±1km, M3.1*

ISC 13 13:36:48.2±2.0, 36°.87N±0°.05×141°.62E±0°.08, h23km±14km, n20, σ1s21/23, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.69**	**290**	P	**Pb**	**13 37 01.6**	**-0.1**
ONAJ				S	**Sb**	**13 37 09.5**	**-1.3**
JFK	**Kawauchi**	**0.77**	**310**	P	**Pb**	**13 37 03.2**	**+0.2**
JFK				S	**Sb**	**13 37 12.0**	**-1.1**
JHO	**Hitachi**	**0.88**	**253**	P	**Pb**	**13 37 05.3**	**+0.5**
JHO				S	**Sb**	**13 37 16.0**	**-0.1**
JMM	**Marumori**	**1.19**	**327**	P	**Pb**	**13 37 10.2**	**+0.1**
JMM				S	**Sn**	**13 37 24.4**	**-0.5**
JFT	**Otama**	**1.21**	**303**	P	**Pb**	**13 37 10.7**	**+0.3**
JFT				S	**Sn**	**13 37 24.8**	**-0.6**
JYT	**Yasato**	**1.31**	**241**	P	**Pb**	**13 37 12.3**	**+0.2**
JYT				*e*S	**Sn**	**13 37 27.3**	**-0.6**
JIO	**Ouri**	**1.59**	**352**	P	**Pb**	**13 37 17.2**	**+0.3**
JIO				S	**Sb**	**13 37 35.8**	**-0.8**
JFY	**Yanaizu**	**1.62**	**290**	P	**Pb**	**13 37 17.6**	**+0.2**
JFY				S	**Sn**	**13 37 36.1**	**+0.6**
JOU	**Okura**	**1.67**	**333**	P	**Pb**	**13 37 19.0**	**+0.7**
MJAR	**Matsushiro Arr**	**2.76**	**264**	Pn	**Pn**	**13 37 33.7**	**+2.7**
	1.1nm,0.3s,baz=86,slow=15,SNR=7.0						
MJAR				Sn	**Sb**	**13 38 07.9**	**-2.3**
	1.5nm,0.3s,baz=97,slow=10,SNR=5.9						
MJAR				LR	LR	13 38 47.3	
	comp=Z,40nm,20.0s,baz=230,slow=40						
MAT	**Matsushiro**	**2.76**	**264**	P	**Pn**	**13 37 33.0**	**+2.0**
MAT				S	**Sb**	**13 38 09.3**	**-0.9**
H11N2	**WAKE ISLAND Hy**	**27.93**	**121**	T	T	14 12 02.5	
	baz=313,slow=75,SNR=341						
H11N1	**WAKE ISLAND Hy**	**27.93**	**121**	T	T	14 12 06.4	
	baz=313,slow=75,SNR=436						
H11N3	**WAKE ISLAND Hy**	**27.94**	**121**	T	T	14 12 06.6	
	baz=313,slow=75,SNR=240						
H11S1	**WAKE ISLAND Hy**	**28.64**	**123**	T	T	14 12 57.4	
	baz=315,slow=76,SNR=83						
H11S3	**WAKE ISLAND Hy**	**28.64**	**123**	T	T	14 12 57.5	
	baz=315,slow=76,SNR=95						
H11S2	**WAKE ISLAND Hy**	**28.65**	**123**	T	T	14 12 58.6	
	baz=315,slow=76,SNR=73						
FITZ	**Fitzroy Crossi**	**56.72**	**198**	LR	LR	14 10 22.6	
	comp=Z,37nm,19.0s,slow=36						
WRA	**Warramunga Arr**	**56.92**	**188**	P	**P**	**13 46 31.1**	**-0.4**
	0.3nm,0.9s,baz=7.5,slow=7.7,SNR=2.7						
ASAR	**Alice Springs**	**60.65**	**188**	P	**P**	**13 46 55.3**	**-2.1**
	0.3nm,1.0s,baz=13,slow=8.6,SNR=3.4						

IDC 13 13:37:59.6±6.7, 0°.24S×122°.12E, h292km±41km, mb3.3/3, mb1 3.3/4, mb1mx2.9/37, mbtmp3.9/4, Error ellipse: s-maj=97.1km s-min=60.8km az=64.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**18.08**	**169**	P	P	13 41 50.1	-0.6
	0.1nm,0.3s,baz=16,slow=13,SNR=11						
WRA	**Warramunga Arr**	**22.95**	**149**	P	P	13 42 38.4	-0.6
	0.9nm,0.3s,baz=327,slow=10,SNR=38						
ASAR	**Alice Springs**	**25.94**	**155**	P	P	13 43 06.2	+0.3
	0.7nm,0.4s,baz=344,slow=14,SNR=37						
ASAR				PcP	PcP	13 46 25.9	-0.5
	0.4nm,0.3s,baz=347,slow=2.1,SNR=15						
ASAR				ScP	ScP	13 49 37.0	-0.9
	0.1nm,0.5s,baz=327,slow=2.5,SNR=4.1						
STKA	**Stephens Creek**	**36.46**	**151**	P	P	13 44 38.0	+0.7
	2.9nm,0.6s,baz=323,slow=9.3,SNR=7.4						

ISCJB ***13*** *13:38:59.6±0.7, 36°.25S±0°.04×73°.70W±0°.06, h10km, mb4.0/5, MS3.4/2, Error ellipse: s-maj=7.6km s-min=5.6km az=163.0*

NEIC ***13*** *13:39:00.0, 36°.26S×73°.61W, h19km, ML4.1(GUC), After GUC.*

NEIC Felt [III] at Concepcion, Penco, San Pedro de la Paz and Talcahuano.

IDC ***13*** *13:39:00.5±1.3, 36°.25S×73°.43W, h0km, mb4.0/6, mb1 4.1/7, mb1mx3.9/20, mbtmp4.0/7, ML3.9/1, MS3.2/5, Ms1 3.2/5, ms1mx2.9/20, Error ellipse: s-maj=45.2km s-min=22.0km az=86.0*

GUC ***13*** *13:39:00.6±0.3, 36°.26S×73°.61W, h19km±2km, ML4.1*

ISC 13 13:39:01.8±0.9, 36°.27S±0°.04×73°.57W±0°.07, h10km, n34, σ2s11/39, mb3.9/5, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COCH	**Cobquecura**	**0.64**	**78**	⇑*e*P	**Pg**	**13 39 13.9**	**-0.3**
COCH				*e*S	**Sb**	**13 39 24.3**	**+0.1**
COCH				IAML		13 39 26.2	
	comp=N,29μm,0.8s						
CCSP	**San Pedro de C**	**0.69**	**148**	*e*P	**Pg**	**13 39 14.7**	**-0.4**
CCSP				*e*S	**Sb**	**13 39 25.1**	**-0.3**
CCSP				IAML		13 39 28.1	
	comp=N,13μm,0.3s						
CCHI	**Chillan**	**1.25**	**106**	*e*P	**Pn**	**13 39 24.2**	**-1.1**
CCHI				*e*S	**Sg**	**13 39 42.1**	**+0.1**
CCHI				IAML		13 39 52.0	
	comp=E,8μm,6.2s						
TALC	**Talca**	**1.79**	**62**	*e*P	**Pn**	**13 39 32.9**	**+0.1**
TALC				*e*S	**Sb**	**13 39 57.2**	**0.0**
NICH	**Los Niches**	**2.28**	**57**	*e*P	**Pn**	**13 39 40.1**	**+0.6**
CANA	**Caviahue**	**2.58**	**130**	*i*S	**Sg**	**13 40 27.9**	**+3.4**
CLCH	**Cerro Calan**	**3.79**	**42**	*e*P	**Pn**	**13 40 00.9**	**+0.6**
ROC1	**El Roble**	**3.90**	**33**	*i*P	**Pn**	**13 40 03.1**	**+1.1**
ROC1				*i*S	**Sg**	**13 41 09.7**	**+2.8**
AAGR	**Agrelo**	**5.03**	**52**	*i*P	**Pn**	**13 40 19.5**	**+2.1**
PLCA	**Paso Flores**	**5.05**	**153**	Pn	**Pn**	**13 40 18.3**	**+0.7**
	comp=E,1.0nm,0.3s,baz=353,slow=11,SNR=26						
PLCA				Lg	Lg	13 41 36.8	
	comp=E,1.3nm,0.3s,baz=298,slow=17,SNR=1.6						
PLCA				LR	LR	13 41 54.2	
	comp=E,62nm,20.8s,baz=327,slow=35						
ARCO	**CERRO ARCO**	**5.13**	**50**	*i*P	**Pn**	**13 40 21.0**	**+2.2**
ARCO				IAML		13 40 25.7	
	comp=Z,47nm,0.4s						
ARCO				*i*S	**Sg**	**13 41 40.6**	**-5.9**
AUSP	**Uspallata**	**5.31**	**42**	*i*P	**Pn**	**13 40 22.9**	**+1.4**
AUSP				*i*S	**Sb**	**13 41 43.8**	**+5.0**
ASAL	**Salagasta**	**5.36**	**48**	*i*P	**Pn**	**13 40 23.8**	**+1.9**
ASAL				*i*S	**Sb**	**13 41 45.5**	**+5.5**
RTLS	**Leoncito**	**5.69**	**40**	*i*P	**Pn**	**13 40 27.6**	**+0.9**
RTCV	**Cerro Valdivia**	**6.06**	**45**	*i*P	**Pn**	**13 40 32.1**	**+0.7**
RTLL	**Cerro Villicun**	**6.50**	**42**	*i*P	**Pn**	**13 40 37.4**	**-0.1**
RTLL				*i*S	**Sb**	**13 42 09.2**	**-3.5**
AMOG	**MOGNA**	**6.79**	**40**	*i*P	**Pn**	**13 40 40.6**	**-0.9**
ACCO	**Cerro Coronel**	**6.80**	**35**	*i*P	**Pn**	**13 40 40.6**	**-1.3**
MRA	**San Martin**	**7.54**	**62**	*i*P	**Pn**	**13 40 52.4**	**+0.6**
MRA				IAML		13 41 54.3	
	comp=Z,9.7nm,0.6s						
AVFE	**Valle Fertil**	**7.57**	**44**	*i*P	**Pn**	**13 40 51.2**	**-1.0**
AVFE				IAML		13 40 54.3	
	comp=Z,12nm,0.2s						
ACHE	**Chepes**	**7.68**	**50**	*i*P	**Pn**	**13 40 53.1**	**-0.8**
AGUA	**GUANDACOL**	**7.99**	**34**	*i*P	**Pn**	**13 40 54.6**	**-3.5**
TCA	**Tanti**	**8.94**	**59**	*i*P	**Pn**	**13 41 10.0**	**-1.0**
TRQA	**Tornquist**	**9.42**	**104**	Pn	**Pn**	**13 41 16.9**	**-0.7**
	comp=Z,19nm,0.9s						
TRQA				*e*		13 41 23.8	
TRQA				eLg	Lg	13 43 58.5	
LVC	**Limon Verde**	**14.20**	**18**	LR	LR	13 47 23.4	
	comp=Z,199nm,18.0s,baz=221,slow=36						
CPUP	**Villa Florida**	**17.03**	**59**	LR	LR	13 48 40.9	
	comp=Z,42nm,20.8s,baz=234,slow=34						
LPAZ	**La Paz**	**20.48**	**15**	P	Pn	13 43 41.2	-1.3
	comp=Z,2.4nm,0.8s,baz=192,slow=6.5,SNR=8.9						
SIV	**San Ignacio**	**23.05**	**32**	P	**P**	**13 44 06.5**	**-0.9**
	comp=Z,2.3nm,0.8s,baz=223,slow=14,SNR=8.3						
SIV				LR	LR	13 55 00.1	
	comp=Z,135nm,18.1s,baz=180,slow=42						
PMSA	**Palmer Station**	**29.11**	**172**	P	**P**	**13 45 02.3**	**0.0**
	comp=Z,4.6nm,0.5s,baz=307,slow=9.2,SNR=5.0						
ATAH	**Atahualpa**	**29.33**	**350**	LR	LR	13 54 33.8	
	comp=Z,67nm,19.5s,baz=240,slow=32						
TXAR	**Lajitas Array**	**71.13**	**332**	P	**P**	**13 50 21.1**	**+0.6**
	comp=Z,0.4nm,0.6s,baz=160,slow=8.2,SNR=6.7						
DBIC	**Dimbokro**	**77.08**	**72**	P	**P**	**13 50 55.6**	**0.0**
	comp=Z,3.9nm,0.9s,baz=253,slow=17,SNR=3.1						
TORD	**Torodi Ar. Bea**	**86.15**	**71**	P	**P**	**13 51 42.6**	**-0.9**
	comp=Z,0.8nm,0.9s,baz=240,slow=4.2,SNR=4.1						
ZALV	**Zalesovo Beam**	**156.80**	**34**	PKPab	**PKPab**	**13 59 25.6**	**-0.7**
	comp=Z,0.3nm,0.4s,baz=328,slow=5.1,SNR=4.6						

CSEM ***13*** *13:43:24.8±0.7, 35°.85N×4°.81W, h20km, mb3.8, Error ellipse: s-maj=12.9km s-min=7.5km az=174.0*

INMG ***13*** *13:43:25.6±1.2, 35°.92N×4°.82W, h7km±9km, ML2.1, Error ellipse: s-maj=6.3km s-min=4.2km az=109.0*

MDD ***13*** *13:43:25.3±0.4, 35°.72N×4°.61W, h46km±10km, mb3.8/3, Error ellipse: s-maj=2.7km s-min=2.3km az=106.0, PRIMO*

IGIL ***13*** *13:43:25.7, 35°.92N×4°.84W, h2km, ML1.8*

ISC 13 13:43:20.4±2.2, 35°.7N±0°.1×4°.67W±0°.05, h10km, n46, σ1s84/71, 1C, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EMIJ	**Mijas**	**0.82**	**354**	P	**Pn**	**13 43 40.4**	**+2.3**
	1.5nm,0.1s,SNR=7.3						
EMIJ				S	**Sn**	**13 43 51.4**	**+1.0**
	20nm,0.2s						
EMIJ	**Mijas**	**0.82**	**354**	P	**Pn**	**13 43 40.4**	**+2.3**
	1.5nm,0.1s,SNR=7.3						
EMIJ				S	**Sn**	**13 43 51.4**	**+1.0**
	20nm,0.2s						
ESPR	**Espera**	**1.48**	**320**	S	**Sn**	**13 44 08.7**	**+2.4**
	4.8nm,0.3s,SNR=7.9						
EBER	**Berja**	**1.84**	**51**	S	**Sn**	**13 44 13.2**	**-2.5**
	2.8nm,0.3s,SNR=7.9						
ECAB	**El Cabril**	**2.40**	**346**	P	**Pn**	**13 44 01.2**	**+1.4**
	0.2nm,0.1s,SNR=6.0						
ECAB				S	**Sn**	**13 44 27.8**	**-1.6**
	5.0nm,0.2s,SNR=26						
ECAB	**El Cabril**	**2.40**	**346**	P	**Pn**	**13 44 01.2**	**+1.4**
	0.2nm,0.1s,SNR=6.0						
ECAB				S	**Sn**	**13 44 27.8**	**-1.6**
	5.0nm,0.2s,SNR=26						
EADA	**Adamuz**	**2.42**	**2**	P	**Pn**	**13 44 01.7**	**+1.6**
	1.1nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**13 44 28.4**	**-1.4**
	1.7nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**2.42**	**2**	P	**Pn**	**13 44 01.7**	**+1.6**
	1.1nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**13 44 28.4**	**-1.4**
	1.7nm,0.1s,SNR=7.9						
EQES	**Quesada**	**2.42**	**32**	P	**Pn**	**13 44 01.0**	**+0.8**
	0.4nm,0.1s,SNR=7.9						
EQES				S	**Sn**	**13 44 27.9**	**-2.0**
	0.5nm,0.2s,SNR=4.0						
EQES	**Quesada**	**2.42**	**32**	P	**Pn**	**13 44 01.0**	**+0.8**
	0.4nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**2.58**	**322**	P	**Pn**	**13 44 03.8**	**+1.6**
	0.5nm,0.2s,SNR=8.2						
EMIN				S	**Sn**	**13 44 32.3**	**-1.4**
	2.7nm,0.1s,SNR=22						
EMIN	**Mina Concepcio**	**2.58**	**322**	P	**Pn**	**13 44 03.8**	**+1.6**
	0.5nm,0.2s,SNR=8.2						
EMIN				S	**Sn**	**13 44 32.3**	**-1.4**
	2.7nm,0.1s,SNR=22						
EGRO	**El Granado**	**2.88**	**309**	⇑P	**Pn**	**13 44 07.9**	**+1.5**
	4.4nm,0.1s,SNR=18						
EGRO				S	**Sn**	**13 44 39.9**	**-1.2**
	4.2nm,0.1s,SNR=10						
EGRO	**El Granado**	**2.88**	**309**	P	**Pn**	**13 44 07.9**	**+1.5**
	4.4nm,0.1s,SNR=18						
EGRO				S	**Sn**	**13 44 39.9**	**-1.2**
	4.2nm,0.1s,SNR=10						
PBDV	**Barranco-do-Ve**	**3.02**	**301**	*e*Sn	**Sn**	**13 44 43.5**	**-1.1**
PBDV				A	A	13 44 44.7	
	3.2nm,0.3s						
PBDV	**Barranco-do-Ve**	**3.02**	**301**	S	**Sn**	**13 44 43.5**	**-1.1**
	3.2nm,0.3s						
PBDV	**Barranco-do-Ve**	**3.02**	**301**	S	**Sn**	**13 44 43.5**	**-1.1**
	3.2nm,0.3s						
PBAR	**Barrancos**	**3.08**	**323**	*e*Pn	**Pn**	**13 44 10.7**	**+1.6**
PBAR				*e*Sn	**Sn**	**13 44 44.3**	**-1.7**
PBAR				A	A	13 44 46.5	
	9.0nm,0.3s						
PBAR	**Barrancos**	**3.08**	**323**	P	**Pn**	**13 44 10.7**	**+1.6**
PBAR				S	**Sn**	**13 44 44.3**	**-1.7**
	9.0nm,0.3s						
PBAR	**Barrancos**	**3.08**	**323**	P	**Pn**	**13 44 10.7**	**+1.6**
PBAR				S	**Sn**	**13 44 44.3**	**-1.7**
	9.0nm,0.3s						
PCVE	**Castro Verde**	**3.30**	**306**	*e*Pn	**Pn**	**13 44 13.4**	**+1.3**
PCVE				*e*Sn	**Sn**	**13 44 49.4**	**-2.0**
PCVE				A	A	13 45 02.7	
	3.2nm,0.6s						
PCVE	**Castro Verde**	**3.30**	**306**	P	**Pn**	**13 44 13.4**	**+1.3**
PCVE				S	**Sn**	**13 44 49.4**	**-2.0**
	3.2nm,0.6s						
PCVE	**Castro Verde**	**3.30**	**306**	P	**Pn**	**13 44 13.4**	**+1.3**
PCVE				S	**Sn**	**13 44 49.4**	**-2.0**
	3.2nm,0.6s						
PBEJ	**Beja**	**3.43**	**313**	*e*Sn	**Sn**	**13 44 51.9**	**-2.7**
PBEJ	**Beja**	**3.43**	**313**	S	**Sn**	**13 44 51.9**	**-2.7**
PBEJ	**Beja**	**3.43**	**313**	S	**Sn**	**13 44 51.9**	**-2.7**
MESJ	**Messejana**	**3.54**	**307**	*e*P	**Pn**	**13 44 16.7**	**+1.4**
MESJ				*e*S	**Sn**	**13 44 54.1**	**-3.1**
MESJ				AML	AML	13 44 55.8	
	comp=E,2.6nm,0.1s						
MESJ	**Messejana**	**3.54**	**307**	*e*Pn	**Pn**	**13 44 16.7**	**+1.4**
MESJ				*e*Sn	**Sn**	**13 44 55.4**	**-1.8**
MESJ				A	A	13 45 03.4	
	comp=E,3.6nm,0.5s						
MESJ	**Messejana**	**3.54**	**307**	P	**Pn**	**13 44 16.7**	**+1.4**
MESJ				S	**Sn**	**13 44 55.4**	**-1.8**
	comp=E,3.6nm,0.5s						
MESJ	**Messejana**	**3.54**	**307**	P	**Pn**	**13 44 16.7**	**+1.4**
MESJ				S	**Sn**	**13 44 55.4**	**-1.8**
	comp=E,3.6nm,0.5s						
EBAD	**Badajoz**	**3.54**	**329**	P	**Pn**	**13 44 17.0**	**+1.6**
	comp=E,0.4nm,0.1s,SNR=7.9						
EBAD				S	**Sn**	**13 44 55.5**	**-1.8**
	comp=E,8.3nm,0.1s,SNR=21						
EBAD	**Badajoz**	**3.54**	**329**	P	**Pn**	**13 44 17.0**	**+1.6**
	comp=E,0.4nm,0.1s,SNR=7.9						
EBAD				S	**Sn**	**13 44 55.5**	**-1.8**
	comp=E,8.3nm,0.1s,SNR=21						
MORF	**Marmelete**	**3.56**	**297**	*e*Sn	**Sn**	**13 44 57.5**	**-0.5**
MORF	**Marmelete**	**3.56**	**297**	S	**Sn**	**13 44 57.5**	**-0.5**
**

σ1§78/10, **mb3.5/7, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**6.99**	**332**	Pn	**Pn**	**14 03 52.5**	**+0.2**
	1.1nm,0.3s,baz=107,slow=19,SNR=3.1						
JHJ				Sn	**Sn**	**14 05 08.3**	**-2.3**
	2.9nm,0.3s,baz=127,slow=20,SNR=2.9						
MJAR	**Matsushiro Arr**	**10.61**	**336**	Pn	**Pn**	**14 04 40.4**	**-1.6**
	0.4nm,0.3s,baz=161,slow=12,SNR=8.0						
KLR	**Kul'dur**	**24.07**	**341**	P	**P**	**14 07 26.8**	**+2.5**
	0.9nm,0.5s,baz=129,slow=8.2,SNR=4.3						
SONM	**Songino Array**	**35.71**	**316**	P	**P**	**14 09 08.3**	**+0.6**
	0.2nm,0.3s,baz=120,slow=8.5,SNR=2.5						
WRA	**Warramunga Arr**	**47.48**	**192**	P	**P**	**14 10 42.7**	**-1.4**
	2.8nm,0.8s,baz=12,slow=8.4,SNR=12						
FITZ	**Fitzroy Crossi**	**48.07**	**203**	P	**P**	**14 10 48.3**	**-0.3**
	2.4nm,0.8s,baz=37,slow=9.8,SNR=6.2						
ASAR	**Alice Springs**	**51.20**	**191**	P	**P**	**14 11 11.0**	**-1.4**
	0.3nm,0.8s,baz=15,slow=12,SNR=4.1						
MKAR	**Makanchi Array**	**51.56**	**310**	P	**P**	**14 11 16.9**	**+1.9**
	0.7nm,0.6s,baz=90,slow=7.4,SNR=5.1						
ILAR	**Eielson Array**	**57.22**	**29**	P	**P**	**14 11 55.5**	**-0.3**
	0.3nm,0.9s,baz=243,slow=7.9,SNR=2.9						

MEX 13 14:08:14.6±0.5, 16.82N×100.14W, h5km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.26**	**332**	*e*P	Pg	14 08 19.4	-0.2
CAIG				*e*S	Sg	14 08 22.9	-0.2
ACX	**Acapulco**	**0.28**	**80**	*e*P	Pg	14 08 20.5	+0.5
ACX				*e*S	Sg	14 08 23.9	+0.2
MEIG	**Mezcala**	**1.21**	**24**	*e*P	Pg	14 08 34.9	-2.9
MEIG				*i* S	Sg	14 08 50.0	-3.5
ARIG	**Puente Sto Nin**	**1.47**	**352**	*i* P	Pn	14 08 38.3	-3.5
ARIG				*e*S	Sn	14 08 57.2	-4.2
TLIG	**Tlapa**	**1.68**	**64**	*i* P	Pn	14 08 42.1	-2.7
TLIG				*e*S	Sn	14 09 02.5	-4.2
PLIG	**Platanillo**	**1.68**	**21**	*i* P	Pn	14 08 41.2	-3.5
PLIG				*e*S	Sn	14 09 01.2	-5.5
PNIG	**Pinotepa**	**1.98**	**102**	*i* P	Pn	14 08 46.6	-2.2
PNIG				*i* S	Sn	14 09 10.0	-4.0

*ISCJB **13** 14:09:39.2±0.3, 24.36N±0.03×122.98E±0.02, h47km±5km, Error ellipse: s-maj=5.5km s-min=2.4km az=176.2*
*JMA **13** 14:09:39.0, 24.35N×122.97E, h50km±1km, M3.0*
*TAP **13** 14:09:41.1, 24.39N×122.74E, h13km±1km, ML3.1, D*
ISC 13 14:09:39.8±1.2, 24.36N±0.04×122.99E±0.02, h44km±7km, n45, σ1§11/83, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.10**	**338**	P	**Pn**	**14 09 46.7**	**-0.2**
JYNG				S	**Sn**	**14 09 52.2**	**+0.4**
YOJ	**Yonaguni jima**	**0.10**	**13**	P	**Pn**	**14 09 46.9**	**0.0**
YOJ				S	**Sn**	**14 09 52.2**	**+0.3**
IRIF	**Iriomote-Funau**	**0.68**	**92**	P	**Pn**	**14 09 52.6**	**-0.4**
IRIF				S	**Sn**	**14 10 02.6**	**+0.1**
HATJ	**Hateruma jima**	**0.81**	**112**	P	**Pn**	**14 09 54.2**	**-0.5**
HATJ				*e*S	**Sn**	**14 10 05.8**	**+0.2**
JKRS	**Kuro-shima**	**0.94**	**97**	P	**Pn**	**14 09 56.6**	**0.0**
JKRS				S	**Sn**	**14 10 09.2**	**+0.3**
JIJ	**Ishigaki jima**	**1.06**	**90**	P	**Pn**	**14 09 57.6**	**-0.5**
JIJ				S	**Sn**	**14 10 11.1**	**-0.6**
TWC	**Suao**	**1.06**	**284**	P	**Pn**	**14 09 57.4**	**-0.8**
	baz=285						
TWC				S	**Sn**	**14 10 09.4**	**-2.5**
	baz=285						
EGS		**1.07**	**297**	*e*P	**Pn**	**14 09 58.9**	**+0.5**
	baz=301						
TWB1	**Santiao Chiao**	**1.11**	**306**	*e*P	**Pn**	**14 09 57.5**	**-1.4**
	baz=312						
TWB1				*e*S	**Sn**	**14 10 11.6**	**-1.5**
	baz=312						
ENA	**Nanau**	**1.14**	**274**	*e*P	**Pn**	**14 09 58.8**	**-0.4**
	baz=272						
ENA				*e*S	**Sn**	**14 10 12.5**	**-1.1**
	baz=272						
JISG	**Ishigakijimahi**	**1.23**	**79**	P	**Pn**	**14 10 00.1**	**-0.4**
JISG				S	**Sn**	**14 10 15.5**	**-0.4**
TWE	**Neicheng**	**1.25**	**287**	P	**Pn**	**14 10 00.6**	**-0.2**
	baz=288						
TWE				*e*S	**Sn**	**14 10 14.9**	**-1.6**
	baz=288						
TWD	**Chiawan**	**1.30**	**258**	*e*P	**Pn**	**14 10 02.2**	**+0.8**
	baz=253						
TWD				*e*S	**Sn**	**14 10 16.5**	**-1.1**
	baz=253						
NWF	**Wu-fen Shan**	**1.30**	**303**	*e*P	**Pn**	**14 10 01.9**	**+0.3**
	baz=307						
NWF				*e*S	**Sn**	**14 10 16.7**	**-1.2**
	baz=307						
ENTT	**Nioudou**	**1.32**	**282**	*e*P	**Pn**	**14 10 02.6**	**+0.8**
	baz=283						
ENTT				*e*S	**Sn**	**14 10 17.9**	**-0.3**
	baz=283						
TWA	**Mucha**	**1.42**	**296**	*e*P	**Pn**	**14 10 03.5**	**+0.4**
	baz=299						
TWA				*e*S	**Sn**	**14 10 19.8**	**-0.7**
	baz=299						
NNS	**Nan Shan**	**1.47**	**273**	*e*P	**Pn**	**14 10 05.7**	**+1.7**
	baz=272						
NNS				*e*S	**Sn**	**14 10 21.6**	**-0.4**
	baz=272						
NSK	**Sanguang**	**1.52**	**282**	P	**Pn**	**14 10 05.6**	**+1.1**
	baz=282						
NSK				*e*S	**Sn**	**14 10 22.0**	**-1.0**
	baz=282						
ESL	**Shilin**	**1.52**	**249**	*e*P	**Pn**	**14 10 03.8**	**-0.6**
	baz=244						
ESL				*e*S	**Sn**	**14 10 20.7**	**-2.3**
	baz=244						
TWY	**Chenhua**	**1.56**	**306**	*e*P	**Pn**	**14 10 05.7**	**+0.7**
	baz=310						
TWY				*e*S	**Sn**	**14 10 23.8**	**-0.1**
	baz=310						
WHF	**Hehuan Shan**	**1.58**	**263**	*e*P	**Pn**	**14 10 05.5**	**-0.2**
	baz=259						
WHF				*e*S	**Sn**	**14 10 24.9**	**-0.4**
	baz=259						
JTJ	**Tarama**	**1.59**	**80**	P	**Pn**	**14 10 05.4**	**0.0**
JTJ				S	**Sn**	**14 10 24.6**	**-0.1**
TWT	**Tachien**	**1.66**	**267**	*e*P	**Pn**	**14 10 08.3**	**+1.8**
	baz=264						
TWT				*e*S	**Sn**	**14 10 26.5**	**-0.2**
	baz=264						
EHY	**Hungye**	**1.74**	**241**	*e*P	**Pn**	**14 10 06.4**	**-1.2**
	baz=235						
EHY				*e*S	**Sn**	**14 10 26.5**	**-2.1**
	baz=235						
NSTT	**Nanjuang**	**1.83**	**279**	*e*P	**Pn**	**14 10 10.8**	**+2.1**
	baz=278						
NSTT				*e*S	**Sn**	**14 10 32.8**	**+2.1**
	baz=278						
TWF1	**Yuli**	**1.84**	**237**	*e*P	**Pn**	**14 10 08.1**	**-0.8**
	baz=231						
TWF1				*e*S	**Sn**	**14 10 29.3**	**-1.8**
	baz=231						
CHKT	**Chengkung**	**1.94**	**230**	*e*P	**Pn**	**14 10 11.0**	**+0.7**
	baz=224						
SMLT	**Sun Moon Lake**	**1.96**	**256**	*e*P	**Pn**	**14 10 12.5**	**+1.9**
	baz=253						
SMLT				*e*S	**Sn**	**14 10 34.1**	**-0.1**
	baz=253						
TYC	**Yuchr**	**2.00**	**257**	*e*P	**Pn**	**14 10 12.2**	**+1.2**
	baz=254						
TYC				*e*S	**Sn**	**14 10 35.0**	**+0.2**
	baz=254						
JIRB	**Irabujima**	**2.04**	**76**	P	**Pn**	**14 10 11.9**	**+0.2**
JIRB				S	**Sn**	**14 10 36.3**	**+0.3**
YUS	**Yu-Shan**	**2.05**	**245**	*e*P	**Pn**	**14 10 12.1**	**-0.2**
	baz=241						
YUS				*e*S	**Sn**	**14 10 34.5**	**-2.4**
	baz=241						
JIKM	**Ikemajima**	**2.13**	**74**	*e*S	**Sn**	**14 10 38.0**	**-0.2**
ELDTW	**Lidau**	**2.15**	**238**	*e*P	**Pn**	**14 10 11.8**	**-1.4**
	baz=232						
ALS	**Alishan**	**2.17**	**247**	*e*P	**Pn**	**14 10 13.8**	**+0.2**
	baz=243						
ALS				*e*S	**Sn**	**14 10 38.6**	**-0.8**
	baz=243						
CHN5	**Tsauling**	**2.24**	**251**	*e*P	**Pn**	**14 10 16.3**	**+1.8**
	baz=247						
CHN5				*e*S	**Sn**	**14 10 41.5**	**+0.5**
	baz=247						
WGK	**Gukeng**	**2.31**	**254**	*e*P	**Pn**	**14 10 16.0**	**+0.6**
	baz=250						
TWG	**Pinlang**	**2.33**	**229**	*e*P	**Pn**	**14 10 14.9**	**-0.7**
	baz=224						
STYT	**Tauyuan**	**2.36**	**240**	*e*P	**Pn**	**14 10 15.4**	**-0.7**
	baz=235						
STYT				*e*S	**Sn**	**14 10 42.9**	**-1.0**
	baz=235						
CHN4	**Tsaushan**	**2.41**	**246**	*e*P	**Pn**	**14 10 17.6**	**+0.9**
	baz=242						
CHN4				*e*S	**Sn**	**14 10 46.1**	**+1.1**
	baz=242						
WTP	**Ta-pu**	**2.44**	**243**	*e*P	**Pn**	**14 10 18.4**	**+1.2**
	baz=239						
WTP				*e*S	**Sn**	**14 10 45.9**	**+0.1**
	baz=239						
TWK	**Hsinying**	**2.53**	**245**	*e*P	**Pn**	**14 10 20.1**	**+1.7**
	baz=241						
TWK				*e*S	**Sn**	**14 10 49.2**	**+1.1**
	baz=241						
CHN1	**Nanshi**	**2.54**	**243**	*e*P	**Pn**	**14 10 20.3**	**+1.8**
	baz=239						
CHN1				*e*S	**Sn**	**14 10 47.4**	**-0.8**
	baz=239						
SGST	**Jiashian**	**2.54**	**240**	*e*P	**Pn**	**14 10 20.9**	**+2.4**
	baz=236						
SGST				*e*S	**Sn**	**14 10 48.5**	**+0.2**
	baz=236						
SSD	**Sandimen**	**2.69**	**234**	*e*P	**Pn**	**14 10 22.2**	**+1.6**
	baz=229						
SSD				*e*S	**Sn**	**14 10 52.9**	**+0.9**
	baz=229						
EAST	**Anshuo**	**2.78**	**225**	*e*P	**Pn**	**14 10 22.5**	**+0.7**
	baz=220						

*ISCJB **13** 14:11:23.3±0.3, 23.88N±0.02×121.61E±0.02, h14km, Error ellipse: s-maj=3.2km s-min=2.0km az=33.4*
*TAP **13** 14:11:23.0, 23.92N×121.57E, h43km, ML2.8, C*
*JMA **13** 14:11:23.3, 23.91N×121.56E, h39km±1km*
ISC 13 14:11:23.7±0.7, 23.92N±0.02×121.51E±0.02, h14km, n34, σ1§62/65, 1D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	**Hwalien**	**0.11**	**56**	*e*P	**Pg**	**14 11 30.3**	**+3.4**
	baz=32						
HWA				*e*S	**Sg**	**14 11 35.5**	**+6.4**
	baz=32						
ESL	**Shilin**	**0.12**	**214**	P	**Pb**	**14 11 30.2**	**+2.4**
	baz=229						
ESL				*e*S	**Sb**	**14 11 34.8**	**+4.2**
	baz=229						
TWD	**Chiawan**	**0.18**	**26**	*i* P	**Pb**	**14 11 31.0**	**+2.1**
	baz=10.0						
TWD				*i* S	**Sb**	**14 11 36.3**	**+4.1**
	baz=10.0						
WHF	**Hehuan Shan**	**0.32**	**316**	⇓*i* P	**Pb**	**14 11 32.9**	**+1.5**
	baz=309						
WHF				*i* S	**Sn**	**14 11 39.8**	**-1.2**
	baz=309						
EHY	**Hungye**	**0.44**	**203**	*e*P	**Pb**	**14 11 34.1**	**+0.8**
	baz=208						
EHY				*e*S	**Sb**	**14 11 41.5**	**+1.7**
	baz=208						
TWT	**Tachien**	**0.45**	**318**	*i* P	**Pb**	**14 11 34.5**	**+1.0**
	baz=311						
TWT				*i* S	**Sb**	**14 11 42.1**	**+1.9**
	baz=311						
NNS	**Nan Shan**	**0.53**	**347**	P	**Pb**	**14 11 35.4**	**+0.4**
	baz=341						
NNS				S	**Sb**	**14 11 43.6**	**+1.0**
	baz=341						
ENA	**Nanau**	**0.55**	**23**	P	**Pb**	**14 11 34.8**	**-0.4**
	baz=17						
ENA				*e*S	**Sb**	**14 11 42.7**	**-0.2**
	baz=17						
SMLT	**Sun Moon Lake**	**0.56**	**267**	P	**Pg**	**14 11 35.8**	**+1.1**
	baz=266						
SMLT				*e*S	**Sb**	**14 11 45.6**	**+2.4**
	baz=266						
TWF1	**Yuli**	**0.59**	**199**	*e*P	**Pb**	**14 11 36.0**	**+0.2**
	baz=203						
TWF1				*e*S	**Sb**	**14 11 44.7**	**+0.5**
	baz=203						
TYC	**Yuchr**	**0.60**	**269**	P	**Pg**	**14 11 36.4**	**+1.0**
	baz=269						
TYC				*e*S	**Sb**	**14 11 45.8**	**+1.6**
	baz=269						
YUS	**Yu-Shan**	**0.67**	**230**	*e*P	**Pg**	**14 11 37.3**	**+0.5**
	baz=232						
YUS				S	**Sg**	**14 11 47.0**	**+1.3**
	baz=232						
ENTT	**Nioudou**	**0.72**	**4**	P	**Pg**	**14 11 37.5**	**-0.2**
ENTT				S	**Sg**	**14 11 47.2**	**0.0**
TWC	**Suao**	**0.76**	**24**	*e*P	**Pg**	**14 11 37.7**	**-0.7**
	baz=20						
TWC				*e*S	**Sb**	**14 11 48.2**	**-0.6**
	baz=20						
ALS	**Alishan**	**0.76**	**238**	*e*P	**Pg**	**14 11 39.0**	**+0.4**
	baz=239						
ALS				*e*S	**Sg**	**14 11 50.0**	**+1.4**
	baz=239						
NSK	**Sanguang**	**0.77**	**350**	P	**Pg**	**14 11 38.5**	**-0.1**
	baz=346						
NSK				S	**Sg**	**14 11 48.7**	**0.0**
	baz=346						
TWQ1	**Liyutan**	**0.80**	**303**	*e*P	**Pg**	**14 11 39.1**	**0.0**
	baz=300						
TWQ1				*e*S	**Sg**	**14 11 50.9**	**+1.2**
	baz=300						
TWE	**Neicheng**	**0.81**	**10**	*e*P	**Pg**	**14 11 38.3**	**-1.2**
	baz=7.0						
TWE				*e*S	**Sg**	**14 11 49.2**	**-1.0**
	baz=7.0						
CHKT	**Chengkung**	**0.82**	**189**	*e*P	**Pg**	**14 11 39.5**	**-0.2**
	baz=192						
CHKT				*e*S	**Sg**	**14 11 50.0**	**-0.5**
	baz=192						
CHN5	**Tsauling**	**0.82**	**247**	*e*P	**Pg**	**14 11 39.5**	**-0.2**
	baz=248						
CHN5				*e*S	**Sg**	**14 11 51.9**	**+1.3**
	baz=248						
NSTT	**Nanjuang**	**0.85**	**327**	*e*P	**Pg**	**14 11 40.1**	**0.0**
	baz=324						
NSTT				*e*S	**Sg**	**14 11 52.0**	**+0.7**
	baz=324						
ELDTW	**Lidau**	**0.85**	**212**	*e*P	**Pg**	**14 11 39.6**	**-0.7**
	baz=214						
ELDTW				*e*S	**Sg**	**14 11 51.4**	**-0.1**
	baz=214						
WGK	**Gukeng**	**0.90**	**255**	*e*P	**Pb**	**14 11 40.7**	**-0.3**
	baz=255						
WGK				*e*S	**Sb**	**14 11 53.2**	**+0.3**
	baz=255						
CHN4	**Tsaushan**	**1.01**	**236**	P	**Pb**	**14 11 42.7**	**-0.3**
	baz=237						
CHN4				*e*S	**Sb**	**14 11 56.5**	**+0.4**
	baz=237						
STYT	**Tauyuan**	**1.02**	**223**	*e*P	**Pb**	**14 11 42.8**	**-0.4**
	baz=224						
STYT				*e*S	**Sb**	**14 11 55.8**	**-0.7**
	baz=224						
WTP	**Ta-pu**	**1.06**	**231**	*e*P	**Pb**	**14 11 42.8**	**-1.0**
	baz=232						
WTP				*e*S	**Sb**	**14 11 57.5**	**-0.1**
	baz=232						
CHN1	**Nanshi**	**1.16**	**231**	*e*P	**Pn**	**14 11 44.6**	**-0.9**
	baz=232						
CHN1				*e*S	**Sb**	**14 12 00.3**	**-0.1**
	baz=232						
SGST	**Jiashian**	**1.19**	**226**	*e*P	**Pn**	**14 11 44.4**	**-1.5**
	baz=227						
SGST				*e*S	**Sb**	**14 12 00.7**	**-0.6**
	baz=227						
SSD	**Sandimen**	**1.42**	**215**	*e*P	**Pn**	**14 11 49.2**	**+0.1**
	baz=216						
SSD				*e*S	**Sn**	**14 12 06.8**	**-0.7**
	baz=216						
YOJ	**Yonaguni jima**	**1.48**	**68**	P	**Pn**	**14 11 47.8**	**-2.0**
YOJ				*e*S	**Sn**	**14 12 07.3**	**-1.6**
IRIF	**Iriomote-Funau**	**2.07**	**78**	P	**Pn**	**14 11 56.4**	**-1.6**
IRIF				*e*S	**Sn**	**14 12 21.7**	**-2.0**
JKRS	**Kuro-shima**	**2.31**	**82**	P	**Pn**	**14 11 59.9**	**-1.4**
JIJ	**Ishigaki jima**	**2.45**	**79**	P	**Pn**	**14 12 01.0**	**-2.2**
JISG	**Ishigakijimahi**	**2.64**	**75**	P	**Pn**	**14 12 03.7**	**-2.2**

IDC 13 14:15:49.0±7.4, 16.06S×173.94W, h0km, mb3.8/2, mb1 4.0/3, mb1mx3.6/26, mbtmp3.8/3, ML3.5/1, MS3.5/2, Ms1 3.5/2, ms1mx3.0/25, Error ellipse: s-maj=388.8km s-min=28.6km az=145.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.99**	**45**	Pn	Pn	14 16 36.7	-1.1
	5.9nm,0.3s,baz=274,slow=13,SNR=14						
AFI				Sn	Sn	14 17 09.9	-4.6
	baz=108,slow=20						
PAE	**Paea**	**23.36**	**97**	*e*T	T	14 45 47.6	
	2.7nm,0.3s						
PPT	**Papeete**	**23.36**	**97**	LR	LR	14 28 20.4	
	comp=Z,57nm,20.2s,baz=124,slow=32						
PPT2	**Papeete2**	**23.36**	**97**	*e*LR	LR	14 26 54.5	
	166nm,25.2s						
PPT2	**Papeete2**	**23.36**	**97**	*e*T	T	14 45 49.0	
	4.0nm,0.4s						
TIAR	**Tiarei**	**23.58**	**97**	*e*T	T	14 46 04.2	
	3.1nm,0.3s						
TVO	**Taravao**	**23.67**	**98**	*e*T	T	14 46 11.8	
	2.0nm,0.4s						
TBI	**Tubuai**	**24.13**	**111**	*e*LR	LR	14 27 24.2	
	206nm,25.5s						
TBI	**Tubuai**	**24.13**	**111**	*e*T	T	14 47 03.6	
	8.0nm,0.3s						
VAH	**Vaihoa**	**25.34**	**92**	*e*T	T	14 48 08.1	
	10.0nm,0.3s						
TAOE	**Nuku Hiva Isla**	**33.72**	**82**	*e*LR	LR	14 31 31.5	
	115nm,25.3s						
RKT	**Rikitea**	**37.29**	**107**	*e*T	T	15 03 23.9	
	5.8nm,0.3s						
H11S2	**WAKE ISLAND Hy**	**39.27**	**330**	T	T	15 03 55.7	
	baz=149,slow=75,SNR=31						
H11S3	**WAKE ISLAND Hy**	**39.28**	**330**	T	T	15 03 51.3	
	baz=149,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**39.29**	**330**	T	T	15 03 56.9	
	baz=149,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**40.24**	**331**	T	T	15 05 00.8	
	baz=151,slow=76,SNR=23						
H11N1	**WAKE ISLAND Hy**	**40.24**	**331**	T	T	15 05 01.3	
	baz=151,slow=76,SNR=46						
H11N2	**WAKE ISLAND Hy**	**40.25**	**331**	T	T	15 04 58.9	
	baz=151,slow=76,SNR=23						
WRA	**Warramunga Arr**	**49.19**	**257**	P	P	14 24 38.6	-0.9
	1.0nm,1.2s,baz=94,slow=7.2,SNR=3.0						
ASAR	**Alice Springs**	**49.42**	**252**	P	P	14 24 41.0	-0.1
	1.6nm,0.8s,baz=85,slow=8.1,SNR=13						
ULM	**Lac du Bonnet**	**94.77**	**39**	LR	LR	15 11 12.7	
	comp=Z,46nm,18.4s,baz=55,slow=35						
BRTR	**Keskin Array B**	**146.34**	**320**	PKPbc	PKPbc	14 35 32.7	+0.4
	0.2nm,0.3s,baz=35,slow=4.0,SNR=2.4						

*KRNET **13** 14:28:55.4±0.1, 38.33N×73.34E, mb3.8*
*NNC **13** 14:28:58.4±3.1, 38.61N×73.05E, h132km±66km, mb2.8, mpv3.6, Error ellipse: s-maj=32.0km s-min=19.3km az=6.0*
ISC 13 14:28:57.4±2.6, 38.6N±0.2×73.12E±0.07, h103km, n13, σ3§04/26, 15C-9D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**2.29**	**309**	⇑*i* P	**Pn**	**14 29 36.4**	**+2.5**
	baz=312						
BTK				⇑*i* S	**Sn**	**14 30 06.3**	**+4.5**
	baz=312						
AML	**Almayashu**	**3.53**	**7**	⇑*i* P	**Pn**	**14 29 52.6**	**+2.0**
	baz=4.0						
AML				⇑*i* S	**Sn**	**14 30 34.3**	**+2.6**
	baz=4.0						
UCH	**Uchtor**	**3.75**	**16**	⇓*i* P	**Pn**	**14 29 55.5**	**+1.8**
	baz=13						
UCH				⇓*i* S	**Sn**	**14 30 39.2**	**+2.0**
	baz=13						
KZA	**Kyzart**	**3.81**	**25**	⇑*i* P	**Pn**	**14 29 56.0**	**+1.6**
	baz=21						
KZA				⇑*i* S	**Sn**	**14 30 40.0**	**+1.4**
	baz=21						
MNAS	**Manas**	**3.89**	**353**	⇓P	**Pn**	**14 29 57.5**	**+2.3**
	6.6nm,0.3s						
MNAS				⇓S	**Sn**	**14 30 42.5**	**+2.5**
	8.9nm,0.4s						
EKS2	**Erkin-Say**	**4.06**	**7**	⇑*i* P	**Pn**	**14 30 00.2**	**+2.7**
	baz=4.0						
EKS2				⇑*i* S	**Sn**	**14 30 47.1**	**+2.9**
	baz=4.0						
AAK	**Ala-Archa**	**4.14**	**14**	⇓*i* P	**Pn**	**14 30 00.6**	**+2.0**
	baz=11						
AAK				⇓*i* S	**Sn**	**14 30 48.0**	**+2.0**
	baz=11						
AAK	**Ala-Archa**	**4.14**	**14**	⇑P	**Pn**	**14 30 00.5**	**+2.0**
	9.1nm,0.5s						
AAK				⇑S	**Sn**	**14 30 50.7**	**+4.7**
	9.1nm,0.5s						
ULHL	**Ulahol**	**4.33**	**32**	⇑*i* P	**Pn**	**14 30 01.6**	**+0.4**
	baz=29						
ULHL				⇑*i* S	**Sn**	**14 30 49.6**	**-1.1**
	baz=29						
TKM2	**Tokmak 2**	**4.69**	**23**	⇑P	**Pn**	**14 30 06.4**	**+0.4**
	4.0nm,0.6s						
TKM2				⇓S	**Sn**	**14 31 02.1**	**+2.7**
	5.1nm,0.6s						
KK31	**Karatay Array**	**4.89**	**337**	P	**Pn**	**14 30 10.8**	**+2.2**
	2.7nm,0.3s,baz=146,slow=12,SNR=49						
KK31				S	**Sn**	**14 31 05.6**	**+1.5**
	9.1nm,0.3s,baz=150,slow=20,SNR=16						
AB31	**Akbulak array**	**14.23**	**323**	⇓P	**Pn**	**14 32 12.2**	**-1.7**
	0.4nm,0.4s,baz=131,slow=13,SNR=9.5						
AB31				⇑S	**Sn**	**14 34 43.5**	**-7.0**
	0.4nm,0.4s,baz=129,slow=26,SNR=10						
AKTO	**Aktyubinsk**	**15.95**	**323**	⇑P	**P**	**14 32 37.0**	**-0.1**
	0.7nm,0.5s						
AKTO				⇓S	**Sn**	**14 35 26.1**	**-5.9**
	0.4nm,0.5s						

*IDC **13** 14:33:23.1±0.8, 9.56N×122.14E, h0km, mb3.8/10, mb1 4.0/10, mb1mx3.7/46, mbtmp3.8/10, MS3.3/11, Ms1 3.3/11, ms1mx3.1/37, Error ellipse: s-maj=44.4km s-min=15.3km az=66.0*
*NEIC **13** 14:33:24.6±0.5, 9.59N×122.20E, h10km, mb4.5/3, Error ellipse: s-maj=15.0km s-min=8.4km az=68.0*
NEIC Felt [II PIVS] at Sipalay.
*MAN **13** 14:33:25, 9.60N×122.13E, h19km, mb5.3, ML4.3, MS4.5*
MAN INTENSITY II - SIPALAY CITY NEGROS OCCIDENTAL.
*ISCJB **13** 14:33:26.6±0.4, 9.59N±0.04×122.13E±0.03, h37km, mb4.0/13, MS3.3/10, Error ellipse: s-maj=6.2km s-min=4.7km az=175.3*
ISC 13 14:33:28.6±0.6, 9.68N±0.05×122.17E±0.04, h37km, n32, σ2§24/30, mb3.9/13, MS3.4/10, 3C-5D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**1.08**	**348**	⇑*i* P	**Pn**	**14 33 45.5**	**-1.8**
SNPH	**Sibulan**	**1.11**	**108**	⇑*i* P	Pn	14 33 39.4	-8.3
SNPH				*i* S	**Sn**	**14 33 54.0**	**-7.7**
LLP	**Lapu-Lapu**	**1.88**	**70**	⇓*e*P	**Pn**	**14 33 56.7**	**-1.6**
LLP				*e*S	**Sn**	**14 34 19.6**	**-1.1**
RCP	**Roxas**	**1.95**	**17**	⇓*e*P	**Pn**	**14 34 00.2**	**+1.0**
RCP				*e*S	**Sn**	**14 34 24.6**	**+2.1**
CGP	**Cagayan de Oro**	**2.78**	**116**	⇓*e*P	**Pn**	**14 34 10.9**	**+0.3**
CGP				*e*S	**Sn**	**14 34 43.3**	**+0.4**
PLP	**Palo**	**3.13**	**62**	⇑*e*P	**Pn**	**14 34 13.8**

FITZ	**Fitzroy Crossi** 2.8nm,1.0s	**27.82**	**173**	*e*P	**P**	**14**	**39**	**13.4**	**-1.1**
JHJ	**Hachijo jima 2** comp=Z,60nm,18.3s,baz=270,slow=34	**28.42**	**32**	LR	LR	14	49	47.7	
MJAR	**Matsushiro Arr** comp=Z,37nm,18.1s,baz=220,slow=38	**30.44**	**26**	LR	LR	14	52	36.0	
WRAB	**Tennant Creek** 7.1nm,1.3s	**31.78**	**158**	*e*P	**P**	**14**	**39**	**48.5**	**-1.2**
WRA	**Warramunga Arr** 1.3nm,1.0s,baz=332,slow=10,SNR=5.2	**31.79**	**158**	P	**P**	**14**	**39**	**47.3**	**-2.5**
ASAR	**Alice Springs** 1.5nm,0.7s,baz=342,slow=6.8,SNR=28	**35.08**	**161**	P	**P**	**14**	**40**	**17.1**	**-1.3**
ASAR	0.7nm,0.9s,baz=348,slow=1.9,SNR=4.8			PcP	**PcP**	**14**	**42**	**48.8**	**-1.0**
KLR	**Kul'dur** 0.6nm,0.4s,baz=225,slow=7.1,SNR=2.5	**40.23**	**10**	P	**P**	**14**	**41**	**01.8**	**+0.2**
SONM	**Songino Array** 0.4nm,0.6s,baz=162,slow=5.9,SNR=3.1	**40.29**	**344**	P	**P**	**14**	**41**	**02.7**	**+0.3**
SONM	comp=Z,56nm,19.0s,baz=122,slow=39			LR	LR	14	59	38.5	
STKA	**Stephens Creek** 2.3nm,0.9s,baz=343,slow=11,SNR=2.6	**45.31**	**157**	P	**P**	**14**	**41**	**43.2**	**+0.1**
MKAR	**Makanchi Array** 1.7nm,1.0s,baz=113,slow=9.3,SNR=6.9	**50.11**	**325**	P	**P**	**14**	**42**	**20.7**	**+0.5**
PETK	**Petropavlovsk-** comp=Z,38nm,20.9s,baz=164,slow=35	**51.90**	**26**	LR	LR	15	03	26.8	
ZALV	**Zalesovo Beam** 0.4nm,0.3s,baz=124,slow=7.5,SNR=2.7	**53.27**	**333**	P	**P**	**14**	**42**	**44.3**	**+0.8**
KURK	**Kurchatov** 24nm,1.0s	**54.32**	**327**	*e*P	**P**	**14**	**42**	**51.5**	**+0.1**
NRIK	**Noril'sk** comp=Z,28nm,19.2s,baz=124,slow=38	**63.63**	**347**	LR	LR	15	13	33.3	
BRTR	**Keskin Array B** comp=Z,15nm,18.2s,baz=108,slow=39	**82.77**	**309**	LR	LR	15	27	50.2	
ARCES	**ARCESS Array B** 4.8nm,1.5s,baz=70,slow=5.2,SNR=3.5	**83.33**	**339**	P	**P**	**14**	**45**	**54.1**	**+2.7**
AKASG	**Malin Array Be** 0.2nm,0.3s,baz=71,slow=4.6,SNR=4.5	**84.45**	**320**	P	**P**	**14**	**45**	**57.6**	**+0.1**
NOA	**NORSAR Array B** comp=Z,16nm,19.7s,baz=75,slow=38	**91.47**	**333**	LR	LR	15	30	41.2	

*ISCJB **13** 15:02:00.9±0.7, 19.89S×0.03×69.33W×0.08, h105km±6km, mb3.5/2, Error ellipse: s-maj=12.9km s-min=4.8km az=174.3*
*GUC **13** 15:02:00.3±0.4, 19.87S×69.20W, h96km±2km, ML4.1*
*IDC **13** 15:02:02.6±1.1, 19.97S×68.75W, h125km±11km, mb3.3/2, mb1 3.7/5, mb1mx3.3/26, mbtmp4.0/5, Error ellipse: s-maj=39.3km s-min=9.2km az=98.0*

ISC 13 15:02:00.5±0.9, 19.89S±0.03×69.31W±0.08, h102km±7km, n22, σ1§33/27, 4C-5D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.29**	**150**	⇓	*e*P		**Pn**	**15 02 15.4**	**-0.4**
PB08					*e*S		**Sn**	**15 02 26.6**	**-0.6**
PB11	**IPOC Station P**	**0.35**	**291**	⇓	*e*P		**Pn**	**15 02 15.8**	**+0.1**
PB11					*e*S		**Sn**	**15 02 27.7**	**+0.5**
HMBC	**Humberstone**	**0.67**	**234**	⇑	*e*P		**Pn**	**15 02 18.4**	**+0.5**
HMBC					*e*S		**Sn**	**15 02 32.5**	**+1.4**
HMBC	comp=E,7μm,0.2s				IAML			15 02 33.8	
MNMC	**Minye Minye**	**0.80**	**340**	⇓	*e*P		**Pn**	**15 02 19.7**	**+0.3**
MNMC					*e*S		**Sn**	**15 02 33.4**	**-0.1**
MNMC	comp=N,8μm,0.7s				IAML			15 02 34.9	
PSGC	**Pisagua**	**0.82**	**290**	⇑	*e*P		**Pn**	**15 02 20.0**	**+0.6**
PSGC					*e*S		**Sn**	**15 02 34.7**	**+1.2**
PB01	**IPOC Station P**	**1.16**	**188**	⇑	*e*P		**Pn**	**15 02 23.3**	**+0.3**
PB01					*e*S		**Sn**	**15 02 40.7**	**+0.7**
PB01	comp=N,6μm,0.3s				IAML			15 02 42.3	
PB13	**IPOC Station P**	**1.55**	**353**	⇓	*e*P		**Pn**	**15 02 28.9**	**+0.7**
PB13					*e*S		**Sn**	**15 02 50.5**	**+1.5**
PB12	**IPOC Station P**	**1.59**	**323**	⇓	*e*P		**Pn**	**15 02 28.3**	**+0.2**
PB12					*e*S		**Sn**	**15 02 49.4**	**+0.3**
PB12	comp=E,3μm,0.3s				IAML			15 02 55.2	
PB09	**IPOC Station P**	**1.90**	**178**	⇓	*e*P		**Pn**	**15 02 32.8**	**+0.8**
PB09					*e*S		**Sn**	**15 02 57.5**	**+1.5**
PB07	**IPOC Station P**	**1.91**	**196**	*e*P			**Pn**	**15 02 33.0**	**+0.8**
PB07					*e*S		**Sn**	**15 02 58.2**	**+1.9**
LVC	**Limon Verde** comp=E,816nm,0.3s,baz=5.0,slow=10,SNR=76	**2.73**	**172**	P			**Pn**	**15 02 44.0**	**+0.9**
LVC	comp=E,1μm,0.3s,baz=116,slow=19,SNR=15			S			**Sn**	**15 03 17.7**	**+1.9**
LPAZ	**La Paz** comp=E,9.6nm,0.3s,baz=198,slow=7.2,SNR=148	**3.75**	**18**	P			**Pn**	**15 02 58.3**	**+1.3**
LPAZ	baz=68,slow=19,SNR=1.2			S			**Sn**	**15 03 43.9**	**+3.3**
SIV	**San Ignacio** comp=E,2.4nm,0.3s,baz=271,slow=12,SNR=31	**8.74**	**65**	P			Pn	15 03 59.4	-4.7
TORD	**Torodi Ar. Bea** comp=E,0.3nm,0.4s,baz=251,slow=5.0,SNR=7.2	**77.17**	**71**	P			**P**	**15 13 40.9**	**-2.7**
YKA	**Yellowknife Ar** comp=E,0.3nm,0.6s,baz=132,slow=4.8,SNR=2.2	**89.55**	**341**	P			**P**	**15 14 46.1**	**+0.2**
H11S2	**WAKE ISLAND Hy** baz=102,slow=75,SNR=15	**27.29**	**278**	T			T	17 40 42.7	
H11S1	**WAKE ISLAND Hy** baz=102,slow=75,SNR=18	**27.30**	**278**	T			T	17 40 42.2	
H11S3	**WAKE ISLAND Hy** baz=102,slow=75,SNR=22	**27.31**	**278**	T			T	17 40 43.2	
H11N3	**WAKE ISLAND Hy** baz=101,slow=74,SNR=11	**27.33**	**280**	T			T	17 40 50.6	
H11N2	**WAKE ISLAND Hy** baz=101,slow=74,SNR=13	**27.34**	**280**	T			T	17 40 50.2	
H11N1	**WAKE ISLAND Hy** baz=101,slow=74,SNR=8.3	**27.35**	**280**	T			T	17 40 50.7	
WRA	**Warramunga Arr** comp=E,0.5nm,1.0s,baz=149,slow=1.8,SNR=2.1	**134.13**	**212**	PKP			**PKPdf**	**15 21 06.1**	**-0.8**

*IDC **13** 15:03:37.2±1.6, 32.85S×178.11W, h0km, mb4.3/4, mb1 4.5/6, mb1mx4.0/27, mbtmp4.3/6, ML3.9/2, Error ellipse: s-maj=48.0km s-min=31.3km az=143.0*
*ISCJB **13** 15:03:38.5±1.3, 33.03S±0.10×177.18W±0.2, h34km, mb4.5/6, Error ellipse: s-maj=23.1km s-min=12.8km az=17.7*
*NEIC **13** 15:03:41.7±0.8, 32.95S×177.99W, h35km, mb4.5/1, Error ellipse: s-maj=18.7km s-min=18.3km az=150.0*

ISC 13 15:03:40.9±1.1, 33.1S±0.1×177.8W±0.2, h34km, n16, σ1§35/16, mb4.5/6, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera** 2.9nm,0.3s,baz=273,slow=3.2,SNR=17	**6.64**	**217**	Pn			**Pn**	**15 05 17.9**	**+1.8**
URZ	6.4nm,0.3s,baz=16,slow=23,SNR=14			Sn			**Sn**	**15 06 31.0**	**+0.3**
OUZ	**Omahuta**	**7.47**	**251**	*e*P			**Pn**	**15 05 29.6**	**+2.1**
RPZ	**Rata Peaks** 0.5nm,0.3s,baz=29,slow=13,SNR=2.7	**13.76**	**216**	Pn			**Pn**	**15 06 52.2**	**-1.4**
RPZ	0.5nm,0.3s,baz=300,slow=20,SNR=4.8			Sn			Sn	15 09 12.0	-13
CTA	**Charters Tower** 4.1nm,0.5s,baz=118,slow=11,SNR=11	**34.50**	**283**	P			**P**	**15 10 25.3**	**-0.7**
CTAO	**Charters Tower** 63nm,1.0s	**34.50**	**283**	*e*P			**P**	**15 10 25.4**	**-0.7**
ASAR	**Alice Springs** 2.4nm,0.6s,baz=110,slow=7.6,SNR=52	**43.22**	**270**	P			**P**	**15 11 37.8**	**-1.3**
WRAB	**Tennant Creek** 4.8nm,0.6s	**44.45**	**275**	*e*P			**P**	**15 11 47.1**	**-1.8**
WRA	**Warramunga Arr** 3.3nm,0.4s,baz=114,slow=7.9,SNR=55	**44.45**	**275**	P			**P**	**15 11 47.2**	**-1.7**
FITZ	**Fitzroy Crossi** 1.0nm,0.6s,baz=113,slow=5.3,SNR=5.9	**52.59**	**272**	P			**P**	**15 12 50.4**	**-1.2**
PMSA	**Palmer Station** 44nm,1.1s	**69.76**	**155**	*e*P			**P**	**15 14 47.5**	**+0.3**
SYO	**Syowa Base**	**74.57**	**193**	⇑	*e*P		P	15 15 07.0	-8.9
FINES	**FINESS Array B** 2.9nm,0.6s,baz=45,slow=4.0,SNR=11	**147.70**	**339**	PKPbc			**PKPbc**	**15 23 22.1**	**+0.9**
NB2	**NORSAR Subarra** comp=Z,1.5nm,1.0s,baz=17,slow=2.6	**151.41**	**351**	PKP			**PKPbc**	**15 23 31.1**	**+0.6**
NOA	**NORSAR Array B** comp=Z,0.3nm,0.6s,baz=15,slow=4.6,SNR=2.7	**151.41**	**351**	PKPbc			**PKPbc**	**15 23 31.4**	**+1.0**
AKASG	**Malin Array Be** comp=Z,0.2nm,0.3s,baz=67,slow=2.2,SNR=4.1	**153.50**	**320**	PKPbc			**PKPbc**	**15 23 36.4**	**+1.1**
BRTR	**Keskin Array B** comp=Z,1.0nm,0.7s,baz=160,slow=3.9,SNR=4.9	**153.94**	**294**	PKPbc			**PKPbc**	**15 23 37.0**	**+0.1**

*IDC **13** 15:03:44.0±1.0, 22.45S×174.81W, h0km, mb4.1/7, mb1 4.3/7, mb1mx4.0/28, mbtmp4.1/7, Error ellipse: s-maj=45.8km s-min=24.4km az=141.0*

*ISCJB **13** 15:03:44.3±0.7, 22.13S±0.08×174.3W±0.1, h35km, mb4.2/10, Error ellipse: s-maj=18.2km s-min=9.2km az=23.2*
*NEIC **13** 15:03:48.7±0.8, 22.27S×174.76W, h35km, mb4.4/2, Error ellipse: s-maj=30.9km s-min=16.5km az=118.0*

ISC 13 15:03:47.9±0.7, 22.25S±0.09×174.3W±0.1, h35km, n15, σ2§79/16, mb4.2/10, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu** 4.9nm,0.3s,baz=22,slow=2.2,SNR=8.3	**8.64**	**16**	Pn			**Pn**	**15 05 49.9**	**-0.6**
AFI	2.2nm,0.3s,baz=30,slow=20,SNR=2.5			Sn			**Sn**	**15 07 23.4**	**-3.4**
AFI	**Afiamalu**	**8.64**	**16**	*e*Pn			**Pn**	**15 05 50.5**	**0.0**
AFI				Sn			**Sn**	**15 07 23.4**	**-3.4**
RAR	**Rarotonga** 1.6nm,0.3s,baz=268,slow=18,SNR=8.4	**13.53**	**88**	Pn			**Pn**	**15 06 54.9**	**-2.5**
RAR	1.5nm,0.3s,baz=128,slow=19,SNR=2.3			Sn			Sn	15 09 13.4	-13
STKA	**Stephens Creek** 1.1nm,0.5s,baz=92,slow=15,SNR=5.0	**40.20**	**247**	P			**P**	**15 11 19.1**	**-2.1**
ASAR	**Alice Springs** 1.9nm,0.8s,baz=93,slow=7.5,SNR=5.4	**47.51**	**258**	P			**P**	**15 12 16.4**	**-3.6**
WRA	**Warramunga Arr** 2.5nm,0.6s,baz=92,slow=8.2,SNR=6.2	**47.80**	**263**	P			**P**	**15 12 18.7**	**-3.6**
SBA	**Scott Base** 1.0nm,0.9s	**56.39**	**185**	P			**P**	**15 13 25.1**	**-0.2**
QSPA	**South Pole Qui** 14nm,1.1s	**67.83**	**180**	*e*P			**P**	**15 14 42.0**	**-0.3**
PETK	**Petropavlovsk-** 2.9nm,0.8s,baz=145,slow=8.1,SNR=5.1	**78.89**	**343**	P			**P**	**15 15 50.1**	**+2.8**
MAW	**Mawson** 2.2nm,0.5s,baz=142,slow=7.1,SNR=8.1	**81.07**	**199**	P			**P**	**15 15 59.0**	**0.0**
USRK	**Ussuriysk Ar.** 3.5nm,0.9s,baz=129,slow=6.1,SNR=5.9	**82.37**	**324**	P			**P**	**15 16 09.7**	**+3.6**
TXAR	**Lajitas Array** 0.9nm,0.9s,baz=226,slow=8.6,SNR=7.9	**85.13**	**56**	P			**P**	**15 16 24.7**	**+3.9**
ILAR	**Eielson Array** 0.9nm,0.8s,baz=209,slow=4.4,SNR=7.4	**89.30**	**11**	P			**P**	**15 16 42.5**	**+2.5**
MKAR	**Makanchi Array** 0.2nm,0.5s,baz=227,slow=4.8,SNR=3.0	**114.92**	**313**	PKP			PKPdf	15 22 25.3	+0.3
AKASG	**Malin Array Be** 1.2nm,0.6s,baz=38,slow=4.3,SNR=8.8	**146.18**	**333**	PKPbc			**PKPab**	**15 23 25.4**	**+0.4**

*NSSC **13** 15:06:27.3±1.1, 33.88N×35.72E, h0km±5km, ML1.5*
*CSEM **13** 15:06:28.0, 33.87N×35.83E, h7km, ML2.9*
*GRAL **13** 15:06:28.0±0.3, 33.87N×35.83E, h8km±6km, MD2.9*

ISC 13 15:06:28.1±1.1, 33.87N±0.03×35.81E±0.04, h4km±12km, n13, σ0§62/23, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.14**	**284**	*e*P			**Pg**	**15 06 31.0**	**+0.2**
BHL	**Bhannes**	**0.14**	**284**	*e*P			**Pg**	**15 06 31.0**	**+0.2**
DQRL	**Deir Qamar**	**0.26**	**231**	*e*P			**Pg**	**15 06 33.1**	**0.0**
DQRL					*e*S		**Sg**	**15 06 36.9**	**+0.3**
DQRL	**Deir Qamar**	**0.26**	**231**	*e*P			**Pg**	**15 06 33.1**	**0.0**
DQRL					*e*S		**Sg**	**15 06 36.9**	**+0.3**
RCY	**Rachaya**	**0.37**	**177**	*e*P			**Pg**	**15 06 35.0**	**-0.3**
RCY					*e*S		**Sg**	**15 06 40.0**	**-0.1**
HWQ	**Hawqa**	**0.42**	**15**	*e*P			**Pg**	**15 06 35.6**	**-0.6**
HWQ	**Hawqa**	**0.42**	**15**	*e*P			**Pg**	**15 06 35.6**	**-0.6**
BRBR	**Barbar**	**0.47**	**166**	*e*P			**Pg**	**15 06 37.1**	**-0.1**
BRBR					*e*S		**Sb**	**15 06 45.0**	**-1.5**
BRBR	comp=E,61nm,0.4s				AML	AML		15 06 45.9	
BRBR	comp=N,59nm,0.3s				AML	AML		15 06 48.5	
BRBR	comp=Z,29nm,0.6s				AML	AML		15 06 49.1	
MARH	**Ras Al Marh**	**0.58**	**74**	*e*P			**Pb**	**15 06 40.2**	**-0.7**
MARH					*e*S		**Sb**	**15 06 49.2**	**-0.5**
MARH	comp=E,64nm,0.3s				AML	AML		15 06 50.9	
MARH	comp=N,27nm,0.4s				AML	AML		15 06 51.7	
MARH	comp=Z,95nm,0.3s				AML	AML		15 06 53.5	
HAWK	**Haweek**	**0.81**	**37**	*e*P			**Pg**	**15 06 43.6**	**-0.1**
HAWK					*e*S		**Sb**	**15 06 56.6**	**+0.4**
HAWK	comp=Z,21nm,0.4s				AML	AML		15 06 57.5	
HAWK	comp=E,19nm,0.3s				AML	AML		15 06 58.0	
HAWK	comp=N,17nm,0.3s				AML	AML		15 06 58.5	
ROOS	**tl_alroos**	**1.26**	**76**	*e*P			**Pb**	**15 06 53.4**	**+0.9**
ROOS					*e*S		**Sn**	**15 07 10.9**	**+0.8**
ROOS	comp=E,19nm,0.6s				AML	AML		15 07 18.4	
ROOS	comp=Z,17nm,0.5s				AML	AML		15 07 26.5	
ROOS	comp=N,13nm,0.5s				AML	AML		15 07 35.5	
SALA	**Sala**	**1.39**	**146**	*e*P			**Pn**	**15 06 54.4**	**0.0**
SALA					*e*P		**Pg**	**15 06 55.4**	**+0.7**
SALA					*e*S		**Sn**	**15 07 13.7**	**+0.3**
SALA	comp=E,1.8nm,0.6s				AML	AML		15 07 17.9	
SALA	comp=N,15nm,0.4s				AML	AML		15 07 18.8	
SALA	comp=Z,6.1nm,0.6s				AML	AML		15 07 22.1	
ZALF	**Zalf**	**1.58**	**126**	*e*P			**Pb**	**15 06 57.4**	**-0.6**
ZALF					*e*S		**Sg**	**15 07 19.8**	**+0.8**
ZALF	comp=Z,4.9nm,0.4s				AML	AML		15 07 21.0	
ZALF	comp=E,7.2nm,0.3s				AML	AML		15 07 22.2	
ZALF	comp=N,3.8nm,0.5s				AML	AML		15 07 30.4	

*ISK **13** 15:14:30.8, 34.86N×33.89E, h42km, ML2.5*
*NSSC **13** 15:14:31.5±0.8, 35.18N×33.90E, h27km±239km, MD1.6, ML2.1*
*ISCJB **13** 15:14:32.6±0.9, 35.00N±0.06×33.87E±0.07, h50km±16km, Error ellipse: s-maj=10.5km s-min=8.2km az=34.8*

ISC 13 15:14:33.4±1.5, 35.00N±0.06×33.87E±0.06, h43km±24km, n9, σ0§78/16, Cyprus region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LFK	**Lefkose**	**0.39**	**315**	*e*PG			**Pn**	**15 14 42.4**	**-0.6**
LFK					*e*SG		**Sn**	**15 14 50.6**	**+0.9**
LEF	**Lefka**	**0.81**	**279**	*e*PG			**Pn**	**15 14 47.5**	**-0.8**
LEF					*e*SG		**Sn**	**15 14 59.5**	**+0.3**
MERS	**Mersin**	**1.94**	**16**	*e*PN			**Pn**	**15 15 04.1**	**+0.3**
HAWK	**Haweek**	**2.15**	**102**	*e*P			**Pn**	**15 15 06.2**	**-0.5**
HAWK					*e*S		**Sn**	**15 15 30.7**	**-1.5**
HAWK	comp=N,106nm,0.3s				AML	AML		15 15 31.8	
TAHT	**Tahtakopru-Hat**	**2.33**	**53**	*e*PN			**Pn**	**15 15 09.0**	**-0.3**
TAHT					*e*SN		**Sn**	**15 15 36.5**	**-0.2**
MARH	**Ras Al Marh**	**2.37**	**114**	*e*P			**Pn**	**15 15 10.2**	**+0.2**
MARH					*e*S		**Sn**	**15 15 38.2**	**+0.1**
MARH	comp=N,13nm,0.5s				AML	AML		15 15 43.3	
MARH	comp=E,15nm,0.4s				AML	AML		15 15 43.8	
KARA	**Karaisali**	**2.45**	**23**	*e*PN			**Pn**	**15 15 11.6**	**+0.7**
ROOS	**tl_alroos**	**2.94**	**105**	*e*P			**Pn**	**15 15 18.2**	**+0.5**
ROOS					*e*S		**Sn**	**15 15 51.0**	**-0.9**
ROOS	comp=E,45nm,0.3s				AML	AML		15 15 55.0	
ROOS	comp=N,24nm,0.6s				AML	AML		15 15 56.7	
SALA	**Sala**	**3.30**	**133**	*e*P			**Pn**	**15 15 23.7**	**+1.0**
SALA					*e*S		**Sn**	**15 16 01.2**	**+0.4**
SALA	comp=N,12nm,0.4s				AML	AML		15 16 04.2	
SALA	comp=E,1.1nm,0.3s				AML	AML		15 16 06.5	

IDC 13 15:21:42.6±1.3, 27.01N×144.25E, h0km, mb3.4/5, mb1 3.7/8, mb1mx3.5/40, mbtmp3.6/8, ML3.4/3, Error ellipse: s-maj=40.9km s-min=21.0km az=79.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2** 1.9nm,0.3s,baz=54,slow=22,SNR=7.0	**7.22**	**329**	Pn			Pn	15 23 27.4	-2.0
JHJ	1.1nm,0.3s,baz=240,slow=18,SNR=2.2			Sn			Sn	15 24 38.6	-14
MJAR	**Matsushiro Arr** 0.5nm,0.3s,baz=146,slow=18,SNR=5.3	**10.80**	**333**	Pn			Pn	15 24 16.3	-2.3
KSRS	**Korea Array** 0.1nm,0.3s,baz=110,slow=10,SNR=3.6	**17.28**	**311**	P			Pn	15 25 46.1	+0.8
H11N2	**WAKE ISLAND Hy** baz=292	**21.99**	**104**	T			T	15 49 37.2	
H11N1	**WAKE ISLAND Hy** baz=292	**21.99**	**104**	T			T	15 49 41.5	
H11N3	**WAKE ISLAND Hy** baz=292	**22.01**	**104**	T			T	15 50 04.3	
SONM	**Songino Array** 0.3nm,0.5s,baz=115,slow=9.9,SNR=2.2	**36.06**	**315**	P			P	15 28 47.5	+1.5
WRA	**Warramunga Arr** 0.6nm,0.6s,baz=12,slow=8.6,SNR=7.2	**47.65**	**193**	P			P	15 30 21.2	+0.4
ASAR	**Alice Springs** 0.3nm,0.8s,baz=6.8,slow=9.3,SNR=3.4	**51.36**	**192**	P			P	15 30 47.9	-1.3
MKAR	**Makanchi Array** 0.3nm,0.7s,baz=89,slow=10,SNR=3.5	**51.95**	**310**	P			P	15 30 53.2	-0.2
ILAR	**Eielson Array** 0.7nm,0.9s,baz=236,slow=6.4,SNR=6.5	**56.91**	**28**	P			P	15 31 29.2	+0.1

*ISCJB **13** 15:23:00.9±0.7, 6.83N±0.05×73.08W±0.05, h154km±6km, Error ellipse: s-maj=11.1km s-min=4.5km az=40.1*
*FUNV **13** 15:23:02.9, 7.01N×73.10W, h174km, MW2.4*
*RSNC **13** 15:23:03.1±0.8, 6.80N×73.14W, h143km±5km, ML2.8*

ISC 13 15:23:00.2±1.4, 6.86N±0.05×73.09W±0.06, h160km±8km, n22, σ1§39/35, 1C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.18**	**288**	*e*P			**Pn**	**15 23 22.5**	**+0.5**
GIRC	**Giron, Santand**	**0.24**	**335**	*e*P			**Pn**	**15 23 22.6**	**+0.6**
BARC	**Barichara**	**0.28**	**198**	⇓	*i*P		**Pn**	**15 23 22.3**	**+0.1**
BARC					*e*S		**Sn**	**15 23 37.3**	**-1.8**
BARC	comp=Z,104nm,0.4s				*i*			15 23 39.1	
PAMC	**Pamplona, Colo**	**0.61**	**39**	*e*P			**Pn**	**15 23 25.0**	**+1.1**
PAMC					*e*S		**Sn**	**15 23 41.9**	**-0.1**
BRRC	**Barranca, Sant**	**0.66**	**292**	⇑	*i*P		**Pn**	**15 23 24.0**	**+0.5**
BRRC					*e*S		**Sn**	**15 23 40.4**	**-1.1**
BRRC	comp=Z,80nm,0.2s				*i*			15 23 43.0	
CBRI	**Barrientos, No**	**0.90**	**19**	*e*P			**Pn**	**15 23 26.7**	**+1.3**
CBRI					*e*S		**Sn**	**15 23 45.3**	**+0.5**
RUSC	**La Rusia**	**0.96**	**179**	*e*P			**Pn**	**15 23 26.6**	**+0.4**
RUSC					*e*S		**Sn**	**15 23 44.8**	**-1.4**
RUSC	comp=Z,66nm,0.3s				*i*			15 23 46.9	
CAPV	**Capacho**	**1.26**	**38**	*e*P			**Pn**	**15 23 30.1**	**+1.6**
CAPV					*e*S		**Sn**	**15 23 51.5**	**+1.3**
OCAC	**Ocana**	**1.39**	**351**	*e*P			**Pn**	**15 23 30.3**	**+0.7**
OCAC	comp=Z,46nm,0.2s				*i*			15 23 59.4	
NORC	**Norcasia**	**2.19**	**234**	*e*P			**Pn**	**15 23 38.3**	**+0.2**
NORC					*e*S		**Sn**	**15 24 06.2**	**-1.3**
CHIC	**Chingaza**	**2.31**	**196**	*e*P			**Pn**	**15 23 41.1**	**+1.2**
CHIC					*e*S		**Sn**	**15 24 10.0**	**-0.6**
CHIC	comp=Z,24nm,0.5s				*i*			15 24 17.8	
ROSC	**El Rosal**	**2.35**	**211**	*e*P			**Pn**	**15 23 41.8**	**+1.3**
ROSC	comp=Z,49nm,0.4s				*i*			15 24 17.4	
HELC	**Santa Helena**	**2.51**	**255**	*e*P			**Pn**	**15 23 44.1**	**+1.8**
HELC					*e*S		**Sn**	**15 24 14.4**	**-0.4**
HELC	comp=Z,57nm,0.4s				*i*			15 24 20.8	
VIGV	**El Vigia**	**2.61**	**41**	*e*P			**Pn**	**15 23 44.2**	**+1.1**
VIGV					*e*S		**Sn**	**15 24 14.8**	**-1.7**
SOCV	**Socops**	**2.63**	**57**	*e*P			**Pn**	**15 23 44.9**	**+1.5**
SOCV					*e*S		**Sn**	**15 24 16.6**	**-0.3**
GUYC	**Guyana, Colomb**	**2.81**	**235**	*e*P			**Pn**	**15 23 47.0**	**+1.0**
GUYC	comp=Z,30nm,0.2s				*i*			15 24 31.1	
TOLC	**Tolima**	**3.17**	**225**	*e*P			**Pn**	**15 23 52.2**	**+1.8**
PRAC	**Prado**	**3.60**	**210**	*e*P			**Pn**	**15 23 55.8**	**+0.1**
PRAC					*e*S		**Sn**	**15 24 38.4**	**-0.4**
PRAC	comp=Z,70nm,0.2s				*i*			15 24 42.0	
SJAC	**San Juan de Ar**	**3.67**	**194**	*e*P			**Pn**	**15 23 56.8**	**+0.3**
VIRV	**Villa del Rosa**	**3.68**	**11**	*e*P			**Pn**	**15 23 57.7**	**+1.1**
VIRV					*e*S		**Sn**	**15 24 35.9**	**-4.7**
CURV	**Curarigua**	**4.40**	**44**	*e*P			**Pn**	**15 24 07.2**	**+1.1**
BAUV	**El Baul**	**5.41**	**67**	*e*P			**Pn**	**15 24 19.1**	**-0.2**

*ISCJB **13** 15:27:11.1±0.6, 32.80S±0.05×178.1W±0.1, h10km, mb5.0/26, MS4.2/14, Error ellipse: s-maj=12.8km s-min=6.0km az=14.0*
*IDC **13** 15:27:11.7±0.7, 32.49S×178.07W, h0km, mb4.5/10, mb1 4.6/11, mb1mx4.4/34, mbtmp4.5/11, ML4.5/1, MS4.1/13, Ms1 4.1/13, ms1mx3.8/28, Error ellipse: s-maj=23.4km s-min=20.4km az=134.0*
*BJI **13** 15:27:12.2, 32.58S×177.90W, h12km, mb5.1/11, mB5.4/12, Ms5.2/8, Ms7 4.8/6*
*NEIC **13** 15:27:14.2±0.8, 32.76S×178.14W, h18km±4km, mb5.0/12, Error ellipse: s-maj=9.7km s-min=6.0km az=114.0*
*MOS **13** 15:27:16.6±1.2, 32.34S×178.29W, h33km, mb5.1/15, Error ellipse: s-maj=16.4km s-min=11.7km az=117.6*

ISC 13 15:27:12.7±0.5, 32.67S±0.06×177.99W±0.08, h10km, n164, σ1§46/162, mb5.0/26, MS4.2/14, 4C-1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 52nm,0.3s,baz=65,slow=19,SNR=3.5	**3.41**	**1**	Pn			Pn	15 28 02.3	-3.6
RAO	243nm,0.3s,baz=48,slow=21,SNR=5.4			Sn			**Sn**	**15 28 42.6**	**-3.8**
MXZ	**Matakaoa Point**	**5.75**	**211**	*e*Pn			**Pn**	**15 28 37.7**	**-0.3**
URZ	**Urewera**	**6.86**	**214**	Pn			**Pn**	**15 28 54.7**	**+1.4**
URZ				Sn			**Sn**	**15 30 10.2**	**-1.2**
URZ	**Urewera**	**6.86**	**214**	*e*Pn			**Pn**	**15 28 52.6

baz=32,SNR=14
HNR Honiara 30.83 314 LR LR 15 44 43.8
comp=Z,367nm,18.2s,baz=134,slow=34
ARPS Mount Arapiles 33.10 252 P **P** **15 33 50.4 +1.6**
baz=34,SNR=5.6
QLP Quilpie 33.27 271 P **P** **15 33 51.5 +1.1**
baz=32,SNR=9.6
STKA Stephens Creek 34.04 260 P **P** **15 33 57.7 +0.7**
2.8nm,0.7s,baz=93,slow=12,SNR=7.5
STKA LR LR 15 47 48.7
comp=Z,659nm,18.0s,baz=55,slow=36
STKA Stephens Creek 34.04 260 P **P** **15 33 57.7 +0.7**
STKA pmax pmax
comp=Z,4.0nm,0.9s
STKA MLR MLR
comp=Z,659nm,18.0s
CTA Charters Tower 34.23 283 P **P** **15 34 00.1 +1.2**
comp=Z,8.6nm,0.6s,baz=106,slow=11,SNR=19
CTAO Charters Tower 34.23 283 *e*P **P** **15 33 59.7 +0.9**
CTAO pmax pmax
comp=Z,88nm,1.8s
CTAO Charters Tower 34.23 283 *e*P **P** **15 33 59.7 +0.9**
comp=Z,88nm,1.8s
HTT Hallett 35.94 257 P **P** **15 34 14.1 +0.7**
baz=37
MTSU Mount Surprise 36.79 284 P **P** **15 34 22.1 +1.3**
baz=38,SNR=14
BBOO Buckleboo 38.41 257 P **P** **15 34 33.9 -0.5**
baz=39
RKT Rikitea 38.97 87 *e*LR LR 15 45 12.7
comp=Z,312nm,30.8s
QIS Mount Isa 39.54 277 P **P** **15 34 44.3 +0.3**
baz=40,SNR=8.0
COEN Coen 39.95 289 P **P** **15 34 48.4 +0.9**
baz=41,SNR=4.2
TAOE Nuku Hiva Isla 42.23 64 *e*LR LR 15 46 31.5
comp=Z,138nm,22.7s
AS01 Alice Springs 43.01 269 *e*P **P** **15 35 11.3 -1.2**
AS31 Alice Springs 43.04 269 *e*P **P** **15 35 11.9 -1.0**
comp=Z,5.4nm,0.8s
ASAR Alice Springs 43.05 269 P **P** **15 35 12.3 -0.5**
comp=Z,16nm,0.8s,baz=106,slow=7.0,SNR=180
ASAR LR LR 15 53 19.6
comp=Z,257nm,18.5s,baz=104,slow=36
ASAR Alice Springs 43.05 269 P **P** **15 35 12.4 -0.5**
ASAR pmax pmax
comp=Z,17nm,0.8s
ASAR MLR MLR
comp=Z,257nm,18.5s
WB2 Warramunga Arr 44.23 274 *e*P **P** **15 35 21.1 -1.2**
comp=Z,47nm,1.2s
WRAB Tennant Creek 44.23 274 *e*P **P** **15 35 20.5 -1.9**
WRAB pmax pmax
comp=Z,42nm,1.2s
WRAB Tennant Creek 44.23 274 *e*P **P** **15 35 20.5 -1.9**
comp=Z,42nm,1.2s
WRA Warramunga Arr 44.24 274 P **P** **15 35 21.6 -0.8**
comp=Z,21nm,0.8s,baz=114,slow=7.7,SNR=145
WRA ScP **ScP** **15 40 58.0 -1.1**
comp=Z,0.7nm,0.9s,baz=113,slow=4.0,SNR=4.9
WB7 Warramunga Arr 44.25 275 P **P** **15 35 22.2 -0.4**
baz=45
FORT Forrest 45.52 257 P **P** **15 35 31.8 -0.7**
baz=46,SNR=19
FORT Forrest 45.52 257 *e*P **P** **15 35 30.9 -1.6**
comp=Z,436nm,0.8s
VNDA Vanda 45.84 186 LR LR 15 51 20.7
comp=Z,152nm,19.1s,baz=10,slow=32
WRKA Warakurna 47.24 265 P **P** **15 35 44.9 -1.3**
baz=48,SNR=63
KMBL Kambalda 50.39 254 P **P** **15 36 09.6 -0.6**
baz=51
KNRA Kununurra 50.92 276 P **P** **15 36 14.2 -0.2**
baz=52
FITZ Fitzroy Crossi 52.40 272 P **P** **15 36 24.9 -0.5**
baz=53
FITZ Fitzroy Crossi 52.40 272 *e*P **P** **15 36 24.3 -1.1**
comp=Z,16nm,1.0s
MEEK Meekatharra 54.72 259 P **P** **15 36 40.8 -1.6**
baz=56,SNR=5.1
MORW Morawa 55.92 255 P **P** **15 36 50.0 -1.1**
baz=57
MBWA Marble Bar 56.02 265 *e*P **P** **15 36 49.6 -2.2**
comp=Z,14nm,0.9s
SOEI Soe 57.71 280 *e*P **P** **15 37 03.0 -1.1**
comp=Z,36nm,0.8s
PCI Palu 66.29 285 P **P** **15 38 00.1 -1.5**
PCI pmax pmax
comp=Z,14nm,0.9s
MAW Mawson 70.19 201 LR LR 16 07 36.6
comp=Z,192nm,20.2s,baz=64,slow=34
SYO Syowa Base 74.91 193‖ *e*P **P** **15 38 52.3 -1.0**
SNAA Sanae 75.89 178 P **P** **15 39 00.9 +1.9**
SNAA Sanae 75.89 178 *e*P **P** **15 39 00.5 +1.5**
SNAA Sanae 75.89 178 *e*P **P** **15 39 00.5 +1.5**
comp=Z,517nm,0.9s
VNA1 Neumayer--Stat 76.71 176 P P 15 39 16.4 +13
MJAR Matsushiro Arr 80.11 326 P **P** **15 39 21.1 -1.6**
comp=Z,1.7nm,0.8s,baz=167,slow=6.1,SNR=6.0
MAJO Matsushiro 80.11 326‖ *e*P **P** **15 39 21.1 -1.7**
MAJO pmax pmax
comp=Z,27nm,1.1s
PLCA Paso Flores 80.96 133 P **P** **15 39 29.0 +1.4**
comp=Z,4.0nm,0.9s,baz=294,slow=3.6,SNR=3.2
PLCA LR LR 16 10 22.2
comp=Z,105nm,18.9s,baz=318,slow=32
JNU Nakatsue 81.26 319 P **P** **15 39 27.6 -1.5**
comp=Z,4.0nm,0.8s,baz=135,slow=5.7,SNR=4.8
QIZ Qiongzhong 85.97 295 P **P** **15 39 55.0 +1.5**
QIZ S **S** **15 50 29.3 +1.7**
QIZ LR LR
comp=Z,150nm,13.2s
KSRS Korea Array 86.08 320 LR LR 16 17 20.4
comp=Z,46nm,18.1s,baz=86,slow=35
YSS Yuzh-Sakhalins 86.79 334 *e*P **P** **15 39 56.7 -0.1**
YSS *e* 15 40 04.8
YSS *e*S S 15 50 25.5 -8.8
YSS pmax pmax
comp=Z,10.0nm,1.0s
PETK Petropavlovsk- 88.01 346 P **P** **15 40 03.3 +0.7**
comp=Z,8.0nm,1.0s,baz=110,slow=8.7,SNR=10
PETK LR LR 16 16 50.5
comp=Z,48nm,18.4s,baz=135,slow=34
TYV Tymovskoe 90.13 336 *e*P **P** **15 40 12.8 +0.2**
TYV pmax pmax
comp=E,22nm,1.0s
TYV pmax pmax
comp=Z,22nm,1.0s
GYA Guiyang 92.68 300 P **P** **15 40 26.3 +1.1**
GYA PP **PP** **15 44 11.8 +4.4**
GYA SKS **SKSac** **15 50 58.6 -0.6**
GYA S **S** **15 51 28.5 -1.9**
GYA SS **SS** **15 57 45.3 +1.8**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,7.9s
GYA LR LR
comp=Z,530nm,19.6s
GYA LR LR
comp=Z,510nm,20.0s
GYA LR LR
comp=Z,500nm,20.3s
KLR Kul'dur 93.00 330 P **P** **15 40 26.7 +0.8**
comp=Z,1.8nm,0.9s,baz=298,slow=18,SNR=3.1
TXAR Lajitas Array 93.60 57 P **P** **15 40 30.9 +1.5**
comp=Z,0.6nm,1.1s,baz=170,slow=5.5,SNR=3.4
LPAZ La Paz 97.20 114 LR LR 16 21 25.3
comp=Z,30nm,18.1s,baz=248,slow=33
CD2 Chengdu 97.30 302 *e*P P 15 40 40.5 -5.6
CD2 pP pP 15 40 50.4 +0.9
CD2 sP sP 15 40 55.1 +4.4
CD2 Chengdu 97.30 302 S **S** **15 52 06.0 -4.2**
CD2 Chengdu 97.30 302 sS sS 15 52 22.8 +7.0
CD2 Chengdu 97.30 302 SS SS 15 58 52.8 +3.8
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.8s
CD2 Chengdu 97.30 302 *e*P **P** **15 40 46.5 +0.4**
CD2 pP sP 15 40 52.8 +2.1
CD2 sP pP 15 40 55.0 +5.5
CD2 SKS **SKSac** **15 51 22.8 -0.8**
CD2 S **S** **15 52 10.0 -0.2**
CD2 sS sS 15 52 20.6 +4.8
CD2 SS **SS** **15 58 50.4 +1.4**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.8s
PDAR Pinedale Array 97.77 44 LR LR 16 21 31.3
comp=Z,63nm,18.0s,baz=266,slow=33
HHC Hu-ho-hao-te 97.81 314 *e*P **P** **15 40 49.5 +1.2**
HHC sP sP 15 40 56.4 +3.6
HHC SKS **SKSac** **15 51 26.9 +1.0**
HHC S **S** **15 52 12.6 -1.7**
HHC SS **SS** **15 58 58.9 +2.9**
HHC pmax pmax
comp=Z,18nm,0.9s
HHC pmax pmax
comp=Z,77nm,9.7s
HHC LR LR
comp=Z,59nm,13.6s
HHC LR LR
comp=Z,59nm,14.8s
BILL Bilibino 101.10 354 *e*P **Pdif** **15 41 00.6 -1.5**
BILL pmax pmax
comp=Z,3.0nm,1.1s
MK01 Makanchi Array 119.21 309 *e*PKPdf **PKPdf** **15 46 00.7 -1.0**
MK31 Makanchi Array 119.22 309 *e*PKIKP **PKPdf** **15 46 01.0 -0.8**
MK31 Makanchi Array 119.22 309 *e*PKPdf **PKPdf** **15 46 01.0 -0.8**
MKAR Makanchi Array 119.22 309 PKP **PKPdf** **15 46 01.6 -0.1**
comp=Z,1.6nm,0.8s,baz=82,slow=1.6,SNR=9.7
MAKZ Makanchi 119.43 309 *e*PKIKP **PKPdf** **15 46 01.4 -0.8**
MAKZ Makanchi 119.43 309 *e*PKPdf **PKPdf** **15 46 01.4 -0.8**
PLVO Plevna 119.48 53 *e*pPKPdf pPKPdf 15 46 08.8 +3.1
ZALV Zalesovo Beam 119.72 318 PKP **PKPdf** **15 46 02.0 -0.4**
comp=Z,0.8nm,0.3s,baz=118,slow=2.1,SNR=4.0
KSH Kashi 121.38 299 *e*PKP **PKPdf** **15 46 05.8 -0.5**
KSH *e*PP PP 15 47 46.9 +8.9
KSH SKS **SKSdf** **15 53 13.4 -5.0**
KSH SKKS **SKKSac** **15 54 34.8 -2.5**
KSH AMB AMB
comp=Z,59nm,4.8s
KSH LR LR
comp=Z,190nm,7.6s
KSH LR LR
comp=Z,120nm,7.0s
KSH LR LR
comp=Z,69nm,7.1s
KURK Kurchatov 122.61 313 PKIKP **PKPdf** **15 46 08.2 +0.1**
KURK Kurchatov 122.61 313 PKP **PKPdf** **15 46 08.2 +0.1**
KURBB Kurchatov Arra 122.64 313 PKP **PKPdf** **15 46 08.2 0.0**
baz=94,slow=1.8
KBL Kabul 125.09 292 *e*PKIKP **PKPdf** **15 46 13.0 -0.7**
KBL Kabul 125.09 292 *e*PKPdf **PKPdf** **15 46 13.0 -0.7**
KKAR Karatay Array 126.31 302 *e*PKIKP **PKPdf** **15 46 16.1 +0.6**
KKAR Karatay Array 126.31 302 *e*PKPdf **PKPdf** **15 46 16.1 +0.6**
VOSK Vostochnaya 127.63 314 *e*PKIKP **PKPdf** **15 46 17.3 -0.4**
VOSK Vostochnaya 127.63 314 *e*PKPdf **PKPdf** **15 46 17.3 -0.4**
BVAR Borovoye Array 128.02 315 PKP **PKPdf** **15 46 18.6 +0.2**
comp=Z,27nm,1.4s,baz=108,slow=3.3,SNR=16
BRVK Borovoye 128.08 315c *i*PKIKP **PKPdf** **15 46 18.5 0.0**
BRVK Borovoye 128.08 315 *e*PKPdf **PKPdf** **15 46 18.3 -0.2**
ZRNK Zerenda 128.84 314 *e*PKIKP **PKPdf** **15 46 19.7 -0.3**
ZRNK Zerenda 128.84 314 *e*PKPdf **PKPdf** **15 46 19.7 -0.3**
ABKAR Akbulak array 134.37 309 *e*PKPdf **PKPdf** **15 46 30.5 0.0**
GEYT Alibeck 134.49 293 PKP **PKPdf** **15 46 33.1 +2.0**
comp=Z,1.6nm,0.6s,baz=180,slow=3.0,SNR=5.2
ARU Arti 134.83 319 *e*PKIKP **PKPdf** **15 46 31.6 +0.4**
ARU Arti 134.83 319 *e*PKPdf **PKPdf** **15 46 31.6 +0.4**
AKTO Aktyubinsk 135.61 311 PKP **PKPdf** **15 46 33.1 +0.3**
comp=Z,2.1nm,0.9s,baz=101,slow=2.7,SNR=5.2
DGRG David-gareji 144.61 297 P **PKPab** **15 46 48.4 +0.3**
DGRG David-gareji 144.61 297 PKIKP **PKPab** **15 46 48.4 +0.3**
TBLG Delisi 145.09 297 P **PKPbc** **15 46 50.3 +0.6**
TBLG Delisi 145.09 297 PKIKP **PKPbc** **15 46 50.3 +0.6**
GUDG Gudauri 145.26 299 P **PKPbc** **15 46 51.5 +1.0**
ZEI Tsey 145.67 299 *i* PKP2 **PKPdf** **15 46 50.7 -0.8**
ONI Oni 146.01 299 P **PKPdf** **15 46 52.8 +0.9**
ONI Oni 146.01 299 PKP2 **PKPdf** **15 46 52.8 +0.9**
MOS Moscow 146.19 324 *e*PKP2 **PKPdf** **15 46 52.3 +0.7**
MOS pmax pmax
comp=Z,126nm,1.0s
MOS pmax pmax
comp=Z,200nm,1.6s
KBZ Khabaz 146.34 301 PKPbc **PKPdf** **15 46 53.6 +1.3**
comp=Z,7.2nm,0.9s,baz=270,slow=1.0,SNR=14
KIV Kislovodsk 146.47 302 *i* PKP2 **PKPdf** **15 46 53.8 +1.2**
KIV pmax pmax
comp=Z,11nm,0.9s
NEY Neytrino 146.50 300 *i* PKP2 **PKPdf** **15 46 54.4 +1.6**
OBN Obninsk 147.01 323 *i* PKP2 **PKPdf** **15 46 53.9 +0.9**
OBN pmax pmax
comp=Z,23nm,1.0s
OBN Obninsk 147.01 323 *e*PKPbc **PKPdf** **15 46 53.4 +0.4**
FIA1 FINESS Array S 147.27 339 *e*PKPdf **PKPdf** **15 46 55.0 +1.7**
FINES FINESS Array B 147.27 339 PKPbc **PKPdf** **15 46 55.7 +2.5**
comp=Z,25nm,0.9s,baz=72,slow=6.2,SNR=35
VSU Vasula 149.29 335 *i* PKP2 **PKPbc** **15 47 01.4 +0.5**
ANN Anapa 150.07 304 *e*PKP2 **PKPbc** **15 47 03.6 +0.3**
ANN pmax pmax
comp=Z,58nm,1.2s
NOA NORSAR Array B 150.99 351 PKPbc **PKPbc** **15 47 04.5 -0.6**
comp=Z,3.3nm,0.9s,baz=15,slow=4.2,SNR=5.9
NACGM Naroch 151.75 329 *e* **PKPbc** **15 47 07.0 +0.1**
SIM Simferopol' 152.33 306 *i* PKIKP **PKPbc** **15 47 10.3 +1.7**
SIM pmax pmax
comp=Z,90nm,0.9s
KONO Kongsberg 152.55 352 *i* PKIKP **PKPbc** **15 47 07.5 -1.1**
AKASG Malin Array Be 153.08 320 PKPbc **PKPbc** **15 47 10.0 0.0**
comp=Z,5.7nm,0.9s,baz=52,slow=2.8,SNR=24
KIEV Kiev 153.09 320 *e*PKIKP **PKPdf** **15 47 02.4 -0.3**
KIEV Kiev 153.09 320 *e*PKPdf **PKPdf** **15 47 02.4 -0.3**
AK11 Malin Array Si 153.12 320 *e*PKPbc **PKPbc** **15 47 10.1 -0.1**
BRTR Keskin Array B 153.62 294 PKPbc **PKPbc** **15 47 12.1 +0.3**
comp=Z,4.4nm,0.9s,baz=134,slow=3.6,SNR=20
BR231 Keskin MP Arra 154.27 295 *e*PKPbc **PKPbc** **15 47 12.3 -0.8**
OKC Ostrava-Krasne 159.07 330 *e*PKPAB **PKPab** **15 47 47.6 +0.3**
OKC Ostrava-Krasne 159.07 330 *e*PKP2 **PKPab** **15 47 47.6 +0.3**
DPC Dobruska-Polom 159.40 333 *e*PKPAB **PKPab** **15 47 49.5 +0.7**
DPC Dobruska-Polom 159.40 333 *e*PKP2 **PKPab** **15 47 49.5 +0.7**
CLL Collm 159.71 340‖ *i*P **PKPab** **15 47 49.4 -0.6**
comp=Z,9.0nm,0.9s
CLL *e* 15 47 58.0
CLL Collm 159.71 340‖ *i*PKP2 **PKPab** **15 47 49.4 -0.6**
CLL pmax pmax
comp=Z,9.0nm,0.9s
BRG Berggiesshubel 159.80 338 *e*PKP **PKPab** **15 47 50.5 +0.1**
comp=Z,12nm,1.1s
BRG Berggiesshubel 159.80 338 *e*PKP2 **PKPab** **15 47 50.5 +0.1**
BRG pmax pmax
comp=Z,13nm,1.1s
TOA0 Torodi Ar. Sit 160.56 179 *e*PKPab **PKPab** **15 47 55.8 +1.3**
TORD Torodi Ar. Bea 160.56 179 PKPab **PKPab** **15 47 55.2 +0.7**
comp=Z,1.9nm,0.6s,baz=177,slow=5.4,SNR=14
NKC Novy Kostel 160.82 339 *e*PKPAB **PKPab** **15 47 55.7 +0.8**
NKC Novy Kostel 160.82 339 *e*PKP2 **PKPab** **15 47 55.7 +0.8**
KHC Kasperske Hory 161.41 336 *e*PKPAB **PKPab** **15 47 58.2 +0.7**
KHC Kasperske Hory 161.41 336 *e*PKP2 **PKPab** **15 47 58.3 +0.7**
KHC Kasperske Hory 161.41 336 *e*PKPab **PKPab** **15 47 58.3 +0.8**
GERES GERESS Array B 161.61 335 PKPab **PKPab** **15 47 58.4 -0.1**
comp=Z,1.5nm,0.8s,baz=20,slow=4.3,SNR=7.4

MEX 13 15:33:22.7±0.4, 14.13N×93.63W, h20km±65km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.58**	**34**	*e*P	Pn	15 34 01.7	-1.7
CCIG				*i* S	Sn	15 34 30.6	-3.7
TGIG		**2.67**	**10**	*i* P	Pn	15 34 01.6	-3.1
TGIG				*i* S	Sn	15 34 33.4	-3.2

IDC 13 15:44:13.9±4.9, 9.91N×92.72E, h0km, mb3.8/2, mb1 4.0/3, mb1mx3.3/41, mbtmp3.7/3, ML3.6/1, Error ellipse: s-maj=107.9km s-min=43.4km az=91.0, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**10.42**	**35**	Pn	Pn	15 46 44.7	0.0
	0.1nm,0.3s,baz=226,slow=15,SNR=8.1						
H08S3	**Diego Garcia H**	**26.64**	**230**	T	T	16 17 56.6	
	baz=48,slow=75,SNR=5.9						
H08S2	**Diego Garcia H**	**26.64**	**230**	T	T	16 17 57.6	
	baz=48,slow=75,SNR=10						
H08S1	**Diego Carcia H**	**26.66**	**230**	T	T	16 17 53.6	
	baz=48,slow=75,SNR=9.7						
WRA	**Warramunga Arr**	**50.58**	**126**	P	P	15 53 14.6	-0.2
	0.6nm,0.5s,baz=306,slow=8.4,SNR=17						
ASAR	**Alice Springs**	**52.29**	**130**	P	P	15 53 27.6	0.0
	1.1nm,0.7s,baz=305,slow=6.9,SNR=22						

NIED ***13*** *15:44:00, 36.40N×141.30E, h32km, Mw4.1 Best double couple: M₀1.41000×10¹⁵ NP1:φ₀253.00000°, δ44.00000°, λ-94.00000°. NP2:φ₀79.00000°, δ46.00000°, λ-86.00000°.*
ISCJB ***13*** *15:44:36.7±0.6, 36.41N±0.03×141.32E±0.05, h45km±5km, mb4.1/31, MS3.5/6, Error ellipse: s-maj=7.1km s-min=5.0km az=17.3*
JMA ***13*** *15:44:37.5±0.1, 36.43N×141.25E, h48km±2km, M4.2*
JMA Felt II J1.
NEIC ***13*** *15:44:38.9±0.6, 36.42N×141.27E, h48km±5km, mb4.3/6, Error ellipse: s-maj=6.8km s-min=5.0km az=123.0*
NEIC Recorded [2 JMA] in Ibaraki.
IDC ***13*** *15:44:40.1±2.0, 36.38N×141.20E, h58km±17km, mb3.8/25, mb1 3.9/29, mb1mx3.9/43, mbtmp4.0/29, MS3.3/9, Ms1 3.3/9, ms1mx3.1/46, Error ellipse: s-maj=13.6km s-min=12.5km az=106.0*

ISC 13 15:44:38.6±1.1, 36.43N±0.05×141.27E±0.06, h45km±9km, n75, σ1.34/76, mb4.1/31, MS3.4/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.59**	**288**	P	Pn	**15 44 49.5**	**-1.2**
JHO				S	Sn	**15 44 57.8**	**-1.6**
ONAJ	**Iwakimizuishiy**	**0.77**	**331**	P	Pn	**15 44 51.8**	**-1.4**
ONAJ				S	Sn	**15 45 02.1**	**-1.6**
JYT	**Yasato**	**0.89**	**257**	P	Pn	**15 44 53.6**	**-1.1**
JYT				*e*S	Sn	**15 45 04.8**	**-1.6**
JFK	**Kawauchi**	**0.99**	**342**	P	Pn	**15 44 54.8**	**-1.3**
JFK				*e*S	Sn	**15 45 07.4**	**-1.6**
JFT	**Otama**	**1.32**	**326**	P	Pn	**15 45 00.7**	**+0.1**
JFT				S	Sn	**15 45 17.7**	**+0.7**
MJAR	**Matsushiro Arr**	**2.47**	**274**	P	Pn	**15 45 17.1**	**+0.8**
	24nm,0.3s,baz=86,slow=9.2,SNR=118						
MJAR				S	Sn	**15 45 45.4**	**+0.2**
	28nm,0.3s,baz=100,slow=17,SNR=11						
MJAR				LR	LR	15 46 36.6	
	comp=Z,189nm,18.3s,baz=110,slow=49						
MAJO	**Matsushiro**	**2.47**	**274**	*e*Pn	Pn	**15 45 17.5**	**+1.2**
MAT	**Matsushiro**	**2.47**	**274**	P	Pn	**15 45 16.6**	**+0.3**
MAT				S	Sn	**15 45 45.8**	**+0.5**
JHJ2	**Mitsune**	**3.51**	**200**	*e*Pn	Pn	**15 45 30.1**	**-0.6**
JHJ	**Hachijo jima 2**	**3.52**	**201**	P	Pn	**15 45 30.1**	**-0.6**
	104nm,0.3s,baz=336,slow=18,SNR=115						
JHJ				S	Sn	**15 46 10.3**	**-0.7**
	156nm,0.3s,baz=265,slow=24,SNR=13						
JHJ				LR	LR	15 47 12.4	
	comp=Z,203nm,18.1s,baz=334,slow=44						
INU	**Inuyama**	**3.61**	**254**	*e*Pn	Pn	**15 45 34.3**	**+2.3**
ERM	**Erimo**	**5.77**	**14**	*e*Pn	Pn	**15 46 01.2**	**-0.4**
ASAJ	**Asahikawa**	**7.75**	**7**	P	Pn	**15 46 28.0**	**-0.8**
	baz=0.0,slow=0.0						
ASAJ				S	Sn	**15 47 53.4**	**-1.7**
	baz=77,slow=17						
JNU	**Nakatsue**	**9.16**	**252**	P	Pn	**15 46 50.5**	**+2.3**
	0.3nm,0.3s,baz=3.8,slow=15,SNR=3.3						
CBIJ	**Chichi jima**	**9.33**	**175**	*e*Pn	Pn	**15 46 49.5**	**-1.1**
USRK	**Ussuriysk Ar.**	**10.50**	**321**	P	Pn	**15 47 08.3**	**+1.9**
	0.4nm,0.3s,baz=132,slow=17,SNR=4.9						
USRK				LR	LR	15 50 59.2	
	comp=Z,114nm,18.2s,baz=158,slow=36						
YSS	**Yuzh-Sakhalins**	**10.58**	**6**	*e*Pn	Pn	**15 47 07.0**	**-0.4**
KSRS	**Korea Array**	**10.73**	**279**	P	Pn	**15 47 13.9**	**+4.3**
	0.3nm,0.3s,baz=92,slow=14,SNR=6.6						
KSRS				LR	LR	15 51 02.2	
	comp=Z,89nm,20.6s,baz=86,slow=36						
KSAR	**Wonju Array Be**	**10.76**	**279**	P	Pn	**15 47 13.9**	**+3.9**
KLR	**Kul'dur**	**14.56**	**334**	P	Pn	**15 48 01.0**	**-0.7**
	0.2nm,0.3s,baz=140,slow=12,SNR=3.5						
PETK	**Petropavlovsk-**	**20.27**	**29**	P	Pn	15 49 11.9	-0.5
	1.2nm,0.7s,baz=219,slow=11,SNR=3.4						
PETK				LR	LR	15 57 24.9	
	comp=Z,38nm,18.7s,baz=161,slow=38						
HHC	**Hu-ho-hao-te**	**23.56**	**290**	*e*P	P	**15 49 44.5**	**-0.6**
HHC				pP	pP	15 49 55.5	-0.9
HHC				sP	sP	15 50 02.0	+0.1
HHC				S	**S**	**15 53 49.8**	**-6.3**
HHC				pmax	pmax		
	comp=Z,16nm,0.7s						
HHC				pmax	pmax		
	comp=Z,58nm,6.7s						
HHC				LR	LR		
	comp=N,96nm,12.3s						
HHC				LR	LR		
	comp=E,77nm,13.6s						
HHC				LR	LR		
	comp=Z,66nm,12.3s						
YAK	**Yakutsk**	**26.64**	**348**	P	P	**15 50 12.9**	**+0.2**
	comp=Z,2.8nm,0.3s,baz=332,slow=11,SNR=4.0						
YAK	**Yakutsk**	**26.64**	**348**	*e*P	P	**15 50 12.8**	**+0.2**
	comp=Z,7.7nm,0.7s						
ENH	**Enshi**	**27.17**	**266**	*e*P	P	**15 50 16.8**	**-1.1**
	comp=Z,5.2nm,0.8s						
SEY	**Seymchan**	**27.41**	**11**	P	P	**15 50 19.5**	**-0.1**
	comp=Z,1.9nm,0.8s,baz=239,slow=12,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**27.95**	**120**	T	T	16 19 56.1	
	baz=311,slow=74						
H11N1	**WAKE ISLAND Hy**	**27.95**	**120**	T	T	16 19 56.8	
	baz=311,slow=74						
H11N3	**WAKE ISLAND Hy**	**27.96**	**120**	T	T	16 20 34.8	
	baz=311						
SONA1	**Songino Array**	**28.03**	**305**	*e*P	P	**15 50 24.9**	**-0.7**
SONM	**Songino Array**	**28.03**	**305**	P	P	**15 50 25.4**	**-0.1**
	comp=Z,2.7nm,0.7s,baz=109,slow=8.5,SNR=9.8						
H11S1	**WAKE ISLAND Hy**	**28.64**	**122**	T	T	16 20 43.9	
	baz=314,slow=76,SNR=340						
H11S3	**WAKE ISLAND Hy**	**28.64**	**122**	T	T	16 20 30.9	
	baz=314,slow=76,SNR=178						
H11S2	**WAKE ISLAND Hy**	**28.65**	**122**	T	T	16 20 34.2	
	baz=314,slow=76,SNR=150						
TLY	**Talaya**	**30.64**	**312**	P	P	**15 50 49.1**	**+0.6**
	comp=Z,0.7nm,0.4s,baz=78,slow=2.2,SNR=3.5						
TIXI	**Tiksi**	**35.88**	**353**	P	P	**15 51 34.8**	**+1.0**
	comp=Z,1.1nm,0.5s,baz=206,slow=5.0,SNR=2.9						
WMQ	**Urumqi**	**41.01**	**297**	*e*P	P	**15 52 18.5**	**+1.1**
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,93nm,3.7s						
CMAR	**Chiang Mai Arr**	**41.23**	**256**	P	P	**15 52 19.2**	**-0.1**
	comp=Z,0.6nm,0.8s,baz=48,slow=6.7,SNR=4.1						
ZAA0	**Zalesovo Array**	**42.24**	**313**	*e*P	P	**15 52 26.4**	**-0.8**
ZALV	**Zalesovo Beam**	**42.24**	**313**	P	P	**15 52 27.4**	**+0.3**
	comp=Z,3.2nm,0.5s,baz=96,slow=6.8,SNR=13						
MK01	**Makanchi Array**	**44.34**	**303**	*e*P	P	**15 52 43.7**	**-0.6**
MK31	**Makanchi Array**	**44.34**	**303**	*e*P	P	**15 52 44.3**	**0.0**
MKAR	**Makanchi Array**	**44.34**	**303**	P	P	**15 52 44.4**	**+0.1**
	comp=Z,0.6nm,0.6s,baz=88,slow=10,SNR=8.7						
MKAR				LR	LR	16 12 12.6	
	comp=Z,24nm,18.4s,baz=64,slow=37						
MKAR	**Makanchi Array**	**44.34**	**303**	*e*P	P	**15 52 44.5**	**+0.2**
KURK	**Kurchatov**	**46.22**	**309**	P	P	**15 52 59.2**	**+0.3**
KURBB	**Kurchatov Arra**	**46.28**	**308**	P	P	**15 52 59.2**	**-0.3**
	comp=Z,3.6nm,0.5s,baz=85,slow=7.9,SNR=19						
ILAR	**Eielson Array**	**50.07**	**32**	P	P	**15 53 29.4**	**+0.8**
	comp=Z,3.4nm,0.7s,baz=268,slow=6.5,SNR=45						
ILB	**Eielson Array**	**50.07**	**32**	*e*P	P	**15 53 29.1**	**+0.6**
IL1	**Eielson Array**	**50.07**	**32**	*e*P	P	**15 53 29.0**	**+0.4**
VOSK	**Vostochnaya**	**50.60**	**312**	*e*P	P	**15 53 31.8**	**-1.0**
	comp=Z,7nm,0.8s						
BVAR	**Borovoye Array**	**50.90**	**313**	P	P	**15 53 35.0**	**+0.1**
	comp=Z,0.8nm,0.5s,baz=84,slow=7.7,SNR=6.0						
ZRNK	**Zerenda**	**51.73**	**313**	*e*P	P	**15 53 40.2**	**-1.0**
	comp=Z,1.8nm,0.8s						
KKAR	**Karatay Array**	**53.33**	**300**	*e*P	P	**15 53 53.5**	**+0.3**
HYT	**Haines Junctio**	**54.86**	**36**	*e*P	P	**15 54 05.7**	**+1.5**
	comp=Z,16nm,1.7s						
INK	**Inuvik**	**54.98**	**27**	P	P	**15 54 05.8**	**+1.1**
	comp=Z,1.7nm,0.5s,baz=294,slow=6.9,SNR=4.9						
WRA	**Warramunga Arr**	**56.44**	**188**	P	P	**15 54 15.3**	**-0.5**
	comp=Z,2.5nm,0.6s,baz=4.7,slow=7.4,SNR=43						
ABKAR	**Akbulak array**	**58.24**	**310**	*e*P	P	**15 54 28.0**	**-0.2**
AKTO	**Aktyubinsk**	**58.99**	**312**	P	P	**15 54 33.0**	**-0.5**
	comp=Z,0.4nm,0.5s,baz=63,slow=4.5,SNR=2.5						
ASAR	**Alice Springs**	**60.17**	**188**	P	P	**15 54 41.5**	**-0.3**
	comp=Z,0.9nm,0.7s,baz=18,slow=6.8,SNR=17						
YKA	**Yellowknife Ar**	**64.39**	**30**	P	P	**15 55 10.0**	**+0.4**
	comp=Z,1.2nm,0.8s,baz=295,slow=6.9,SNR=5.0						

AFI	**Afiamalu**	**66.84**	**129**	LR	LR	16 22 31.5	
	comp=Z,123nm,19.6s,baz=146,slow=34						
FINES	**FINESS Array B**	**69.30**	**332**	P	**P**	**15 55 41.2**	**+0.4**
	comp=Z,0.6nm,0.4s,baz=44,slow=8.2,SNR=5.1						
NB2	**NORSAR Subarra**	**74.70**	**337**	P	**P**	**15 56 13.3**	**0.0**
	comp=Z,1.0nm,0.6s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.70**	**337**	P	**P**	**15 56 12.7**	**-0.6**
	comp=Z,1.8nm,0.7s,baz=40,slow=5.8,SNR=5.6						
NOA				LR	LR	16 32 29.9	
	comp=Z,18nm,19.7s,baz=195,slow=38						
AKASG	**Malin Array Be**	**74.70**	**322**	P	**P**	**15 56 13.2**	**-0.2**
	comp=Z,1.4nm,0.6s,baz=46,slow=6.1,SNR=7.4						
PDAR	**Pinedale Array**	**78.18**	**45**	P	**P**	**15 56 33.4**	**-0.1**
	comp=Z,0.4nm,0.4s,baz=347,slow=1.2,SNR=1.5						
BRTR	**Keskin Array B**	**79.17**	**312**	P	**P**	**15 56 39.8**	**+0.8**
	comp=Z,0.7nm,0.6s,baz=80,slow=3.1,SNR=4.0						
ULM	**Lac du Bonnet**	**80.08**	**33**	P	**P**	**15 56 43.5**	**+0.1**
	comp=Z,1.8nm,0.6s,baz=320,slow=7.9,SNR=2.4						
KHC	**Kasperske Hory**	**83.00**	**328**	*eP*	**P**	**15 56 58.6**	**-0.4**
	comp=Z,3.5nm,1.5s						
GERES	**GERESS Array B**	**83.17**	**328**	P	**P**	**15 56 60.0**	**+0.1**
	comp=Z,0.4nm,0.4s,baz=44,slow=8.1,SNR=3.7						
GEA0	**GERESS Array S**	**83.17**	**328**	*eP*	**P**	**15 56 59.5**	**-0.5**
SCHQ	**Schefferville**	**85.95**	**16**	LR	LR	16 37 23.7	
	comp=Z,110nm,19.5s,baz=288,slow=37						
TXAR	**Lajitas Array**	**90.59**	**52**	P	**P**	**15 57 37.1**	**+0.7**
	comp=Z,1.1nm,0.8s,baz=300,slow=3.1,SNR=12						
TORD	**Torodi Ar. Bea**	**117.67**	**314**	PKP	**PKPdf**	**16 03 19.5**	**-0.8**
	comp=Z,0.7nm,0.9s,baz=11,slow=2.8,SNR=2.8						
LPAZ	**La Paz**	**147.10**	**60**	PKPbc	**PKPbc**	**16 04 18.4**	**+0.6**
	comp=Z,3.2nm,0.7s,baz=278,slow=2.3,SNR=15						

MAN 13 15:48:09.9±0.60N×121.98E±0.29, h29km±16km, mb4.5, ML3.4, MS3.3, 3C-1D, Sulu Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.27**	**102**	⇑*i*	P	15 48 26.2	-4.6
LLP	**Lapu-Lapu**	**2.08**	**70**	⇓*e*	P	15 48 42.5	+0.5
LLP				*e*	S	15 49 08.3	+1.3
RCP	**Roxas**	**2.09**	**21**	⇑*e*	P	15 48 43.1	+1.1
RCP				*e*	S	15 49 03.5	-3.5
CGP	**Cagayan de Oro**	**2.92**	**113**	⇑*e*	P	15 48 54.5	+1.0
CGP				*e*	S	15 49 32.2	-3.5

*IDC **13** 16:05:50.6±2.7, 16°.93S×69°.15W, h190km±16km, mb3.3/2, mb1 3.5/2, mb1mx3.1/21, mbtmp3.8/2, Error ellipse: s-maj=67.9km s-min=53.8km az=1.0*
ISC 13 16:05:47.3±1.4, 17°.2S±0°.4×69°.5W±0°.3, h168km, n6, σ1§29/7, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**1.61**	**54**	P	**Pn**	**16 06 21.2**	**+1.1**
	30nm,0.3s,baz=304,slow=4.3,SNR=885						
LPAZ				S	**Sn**	**16 06 45.2**	**-0.1**
	7.2nm,0.3s,baz=360,slow=22,SNR=14						
TORD	**Torodi Ar. Bea**	**76.49**	**72**	P	**P**	**16 17 17.5**	**-1.7**
	0.5nm,0.8s,baz=242,slow=3.1,SNR=2.0						
YKA	**Yellowknife Ar**	**87.01**	**341**	P	**P**	**16 18 12.5**	**-0.6**
	0.4nm,0.5s,baz=131,slow=4.6,SNR=5.9						
ASAR	**Alice Springs**	**133.36**	**210**	PKP	**PKPdf**	**16 24 44.8**	**+0.6**
	0.5nm,1.2s,baz=146,slow=1.8,SNR=1.4						
WRA	**Warramunga Arr**	**136.26**	**213**	PKP	**PKPdf**	**16 24 50.9**	**+1.3**
	0.1nm,0.4s,baz=138,slow=1.8,SNR=1.3						
SONM	**Songino Array**	**149.30**	**5**	PKPbc	**PKPbc**	**16 25 16.8**	**+0.4**
	0.5nm,0.4s,baz=337,slow=0.9,SNR=5.6						

*IDC **13** 16:22:22.8±1.1, 9°.82N×122°.92E, h0km, mb3.8/9, mb1 3.9/9, mb1mx3.7/60, mbtmp3.8/9, Error ellipse: s-maj=74.6km s-min=17.2km az=62.0*
*NEIC **13** 16:22:24.9±0.6, 9°.57N×122°.29E, h10km, mb4.4/2, Error ellipse: s-maj=19.9km s-min=10.7km az=70.0*
*MAN **13** 16:22:25, 9°.45N×122°.18E, h9km, mb4.8, ML3.7, MS3.7*
*ISCJB **13** 16:22:26.3±0.5, 9°.43N±0°.06×122°.19E±0°.04, h29km, mb3.8/11, Error ellipse: s-maj=8.3km s-min=5.9km az=165.8*
ISC 13 16:22:27.3±0.6, 9°.48N±0°.05×122°.27E±0°.04, h29km, n19, σ2§19/25, mb3.9/11, 2C-3D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.97**	**98**	⇓*i*	P	**16 22 40.5**	**-4.6**
SNPH				*i*	S	**16 22 56.6**	**-1.3**
JAP	**San Jose, Anti**	**1.30**	**346**	⇓*i*	P	**16 22 48.6**	**-0.9**
LLP	**Lapu-Lapu**	**1.87**	**63**	⇓*e*	P	**16 22 59.0**	**-1.9**
LLP				*e*	S	**16 23 23.7**	**-0.2**
RCP	**Roxas**	**2.12**	**13**	⇑*e*	P	**16 23 02.8**	**-2.3**
RCP				*e*	S	**16 23 31.6**	**+0.6**
CGP	**Cagayan de Oro**	**2.61**	**113**	*e*	P	**16 23 09.2**	**+1.7**
CGP				*e*	S	**16 23 43.9**	**-1.2**
PLP	**Palo**	**3.15**	**58**	⇑*i*	P	**16 23 17.5**	**+2.5**
PLP				*i*	S	**16 23 52.6**	**+0.9**
PPR	**Puerto Princes**	**3.50**	**275**	*i*	P	**16 23 19.8**	**0.0**
PPR				*i*	S	**16 23 54.9**	**-5.4**
KKM	**Kota Kinabalu**	**6.90**	**241**	*e*	Pn	**16 24 06.7**	**0.0**
	12nm,0.4s						
CMAR	**Chiang Mai Arr**	**24.30**	**294**	P	**P**	**16 27 47.2**	**+4.6**
	0.4nm,0.4s,baz=102,slow=10,SNR=2.0						
FITZ	**Fitzroy Crossi**	**27.61**	**173**	*e*	P	**16 28 14.9**	**+2.5**
	1.3nm,0.7s						
WRA	**Warramunga Arr**	**31.56**	**158**	P	**P**	**16 28 47.9**	**+0.4**
	0.7nm,0.6s,baz=339,slow=9.3,SNR=8.3						
ASAR	**Alice Springs**	**34.85**	**161**	P	**P**	**16 29 17.5**	**+1.3**
	1.5nm,0.6s,baz=341,slow=7.5,SNR=39						
SONM	**Songino Array**	**40.51**	**344**	P	**P**	**16 30 03.8**	**-0.1**
	0.1nm,0.3s,baz=170,slow=8.8,SNR=3.7						
STKA	**Stephens Creek**	**45.09**	**157**	P	**P**	**16 30 40.8**	**-0.2**
	1.2nm,0.8s,baz=335,slow=14,SNR=4.0						
MKAR	**Makanchi Array**	**50.33**	**325**	P	**P**	**16 31 22.5**	**+0.9**
	0.3nm,0.5s,baz=131,slow=8.5,SNR=5.7						
KURK	**Kurchatov**	**54.54**	**327**	*eP**	**P**	**16 31 51.9**	**-0.8**
	7.5nm,0.5s						
BRTR	**Keskin Array B**	**82.97**	**309**	P	**P**	**16 34 51.3**	**+1.1**
	0.5nm,0.5s,baz=111,slow=4.6,SNR=2.5						
AKASG	**Malin Array Be**	**84.66**	**320**	P	**P**	**16 34 58.0**	**-0.4**
	0.6nm,0.4s,baz=66,slow=5.7,SNR=1.9						
FINES	**FINESS Array B**	**84.70**	**331**	P	**P**	**16 34 58.0**	**-0.3**
	1.1nm,0.7s,baz=83,slow=4.3,SNR=5.2						

*NNC **13** 16:25:08.9±0.5, 45°.09N×80°.30E, h0km, mb2.7, mpv2.3, Error ellipse: s-maj=13.0km s-min=3.4km az=117.0*
*SOME **13** 16:25:09.0, 45°.12N×80°.18E, h15km*
*ISCJB **13** 16:25:10.8±0.5, 45°.05N±0°.06×80°.4E±0°.1, h10km, Error ellipse: s-maj=14.0km s-min=3.8km az=34.8*
ISC 13 16:25:06.9±1.0, 45°.18N±0°.04×80°.27E±0°.04, h10km, n13, σ0§98/26, 6C-3D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPS	**Kapalarasan**	**0.65**	**280**	⇑*e*	P	**16 25 19.9**	**-0.5**
	10nm,0.2s						
KAPS				⇓*e*	S	**16 25 27.3**	**-0.8**
	48nm,0.1s						
DJR	**Jarkent**	**0.91**	**202**	*e*	P	**16 25 24.4**	**-0.5**
	7.9nm,0.1s						
DJR				⇓*i*	S	**16 25 35.4**	**-0.9**
	88nm,0.3s						
PDGK	**Podgornoye**	**1.93**	**197**	⇑Pn	P	**16 25 42.2**	**-0.1**
	1.6nm,0.4s						
PDGK				⇑Sn	**Sb**	**16 26 06.0**	**-0.4**
ARXS	**Arharly**	**1.99**	**242**	*e*	P	**16 25 44.0**	**-1.0**
	14nm,0.2s						
ARXS				*e*	S	**16 26 09.5**	**-1.3**
	25nm,0.2s						
MAKZ	**Makanchi**	**2.02**	**36**	⇑Pn	P	**16 25 45.6**	**-0.1**
	0.3nm,0.2s						
MAKZ				⇓Sn	**Sg**	**16 26 12.4**	**+0.6**
	1.9nm,0.3s						
SHLS	**Shalkode**	**2.04**	**188**	*e*	P	**16 25 44.5**	**+0.3**
	11nm,0.3s						
SHLS				*e*	S	**16 26 10.3**	**+0.6**
	47nm,0.5s						
MK31	**Makanchi Array**	**2.15**	**40**	⇑Pn	P	**16 25 47.1**	**-1.0**
	0.5nm,0.2s,baz=221,slow=16,SNR=39						
MK31				⇑Sn	**Sg**	**16 26 15.1**	**-0.7**
	1.8nm,0.3s,baz=220,slow=26,SNR=27						
UZB	**Uzynbulak**	**2.22**	**204**	*e*	P	**16 25 47.5**	**+0.3**
	2.6nm,0.1s						
UZB				*e*	S	**16 26 15.2**	**+0.4**
	23nm,0.1s						

KURS	**Kuram**	**2.26**	**222**	*e*	P	**16 25 48.7**	**+0.8**
	4.1nm,1.0s						
KURS				*e*	S	**16 26 17.0**	**+1.1**
	17nm,0.3s						
ZHN	**Zhinishke**	**2.40**	**214**	*e*	P	**16 25 50.9**	**+0.6**
	3.5nm,0.1s						
ZHN				*e*	S	**16 26 20.8**	**+0.8**
	130nm,0.3s						
SATY	**Saty**	**2.51**	**213**	*e*	P	**16 25 52.6**	**+0.5**
	5.9nm,0.1s						
SATY				*e*	S	**16 26 24.2**	**+1.2**
	106nm,0.2s						
MDOK	**Medeo**	**3.07**	**230**	*e*	P	**16 26 02.6**	**+1.0**
	2.1nm,0.3s						
MDOK				*e*	S	**16 26 41.2**	**+1.9**
	19nm,0.5s						
TNSS	**Tian-Shan**	**3.21**	**229**	*e*	P	**16 26 05.4**	**+1.2**
	2.4nm,0.4s						
TNSS				*e*	S	**16 26 45.4**	**+2.0**
	7.6nm,0.4s						

IDC 13 16:26:02.4±3.3, 28°.42S×176°.52W, h0km, mb3.8/2, mb1 4.1/2, mb1mx3.6/31, mbtmp3.8/2, Error ellipse: s-maj=69.9km s-min=36.4km az=130.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.48**	**236**	Pn	Pg	16 26 30.6	-0.2
	163nm,0.3s,baz=232,slow=22,SNR=4.0						
RAO				Sn	Sn	16 26 50.4	+0.1
	664nm,0.3s,baz=58,slow=18,SNR=7.1						
ASAR	**Alice Springs**	**44.55**	**264**	P	P	16 34 16.0	-0.3
	1.0nm,0.7s,baz=100,slow=7.1,SNR=8.7						
WRA	**Warramunga Arr**	**45.36**	**269**	P	P	16 34 22.9	+0.1
	1.1nm,0.6s,baz=109,slow=7.5,SNR=8.0						
FINES	**FINESS Array B**	**143.71**	**342**	PKP	PKPdf	16 45 38.1	-0.7
	1.7nm,0.8s,baz=69,slow=4.6,SNR=4.5						

IDC 13 16:28:49.7±3.0, 33°.12S×178°.45W, h0km, mb4.0/4, mb1 4.2/5, mb1mx3.8/33, mbtmp4.0/5, ML3.9/1, Error ellipse: s-maj=63.7km s-min=36.1km az=115.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.28**	**214**	Pn	Pn	16 30 22.7	-0.8
	2.6nm,0.3s,baz=309,slow=2.0,SNR=9.9						
URZ				Sn	Sn	16 31 34.5	-1.4
	2.8nm,0.3s,baz=16,slow=19,SNR=2.5						
CTA	**Charters Tower**	**33.96**	**284**	P	P	16 35 36.0	+1.1
	1.9nm,0.5s,baz=130,slow=10,SNR=2.1						
ASAR	**Alice Springs**	**42.66**	**270**	P	P	16 36 48.1	-0.2
	1.8nm,0.6s,baz=109,slow=7.6,SNR=20						
WRA	**Warramunga Arr**	**43.89**	**275**	P	P	16 36 58.0	-0.3
	1.3nm,0.7s,baz=113,slow=8.1,SNR=7.1						
FITZ	**Fitzroy Crossi**	**52.03**	**272**	P	P	16 38 00.9	-0.4
	1.0nm,0.8s,baz=153,slow=6.8,SNR=1.3						
FINES	**FINESS Array B**	**147.54**	**338**	PKPbc	PKPbc	16 48 34.3	-0.7
	2.1nm,0.8s,baz=29,slow=3.2,SNR=6.0						

*AUST **13** 16:30:12.7±0.0, 29°.97S×139°.72E, h4km, Error ellipse: s-maj=0.4km s-min=0.1km az=354.0*
*ISCJB **13** 16:30:13.3±0.7, 30°.00S±0°.07×139°.78E±0°.10, h10km, Error ellipse: s-maj=14.6km s-min=5.7km az=145.3*
*IDC **13** 16:30:13.9±3.2, 29°.72S×140°.52E, h0km, mb1 3.3/3, mb1mx3.2/34, mbtmp3.1/3, ML3.1/3, Error ellipse: s-maj=156.9km s-min=16.3km az=62.0*
ISC 13 16:30:15.4±1.1, 30°.07S±0°.08×139°.78E±0°.08, h10km, n8, σ1§03/11, South Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**2.38**	**140**	Pn	**Pn**	**16 30 54.2**	**-0.3**
	2.1nm,0.3s,baz=315,slow=16,SNR=13						
STKA				Sn	**Sn**	**16 31 23.6**	**-0.3**
	7.1nm,0.3s,baz=195,slow=16,SNR=12						
STKA				Lg	Lg	16 31 28.0	
	9.8nm,0.3s,baz=240,slow=5.3,SNR=13						
STKA	**Stephens Creek**	**2.38**	**140**	P	**Pn**	**16 30 54.1**	**-0.5**
	baz=2.5						
HTT	**Hallett**	**3.43**	**192**	P	**Pn**	**16 31 09.4**	**+0.4**
	baz=3.5						
BBOO	**Buckleboo**	**4.19**	**228**	P	**Pn**	**16 31 18.5**	**-0.9**
	baz=4.2						
CMSA	**Cobar Meteorol**	**5.29**	**108**	P	**Pn**	**16 31 34.6**	**+0.1**
	baz=5.4						
ASAR	**Alice Springs**	**8.26**	**319**	Pn	**Pn**	**16 32 16.9**	**+1.6**
	0.2nm,0.3s,baz=137,slow=13,SNR=11						
ASAR				Sn	**Sn**	**16 33 49.4**	**+0.8**
	0.2nm,0.3s,baz=142,slow=23,SNR=5.1						
WR8	**Warramunga Arr**	**11.15**	**333**	P	**Pn**	**16 32 55.0**	**+0.1**
	baz=11						
WRA	**Warramunga Arr**	**11.22**	**333**	Pn	**Pn**	**16 32 56.2**	**+0.3**
	0.2nm,0.3s,baz=148,slow=12,SNR=14						
WRA				Sn	**Sn**	**16 34 59.5**	**-2.0**
	0.1nm,0.3s,baz=152,slow=25,SNR=2.3						

*ISCJB **13** 16:31:52.2±0.4, 37°.22N±0°.02×22°.00E±0°.02, h5km±3km, mb3.6/9, Error ellipse: s-maj=3.1km s-min=2.7km az=35.8*
*THE **13** 16:31:52.7, 37°.23N×22°.01E, h1km±1km, ML3.5/15, Error ellipse: s-maj=1.7km s-min=0.7km az=226.0*
*CSEM **13** 16:31:52.5±0.1, 37°.23N×22°.01E, h2km, ML3.3, Error ellipse: s-maj=3.1km s-min=2.3km az=31.0*
*ATH **13** 16:31:52.1, 37°.23N×22°.02E, h12km±1km, ML3.3/19, Error ellipse: s-maj=1.3km s-min=0.7km az=229.0*
*IDC **13** 16:31:58.7±1.7, 37°.26N×22°.15E, h61km±21km, mb3.4/9, mb1 3.5/14, mb1mx3.3/51, mbtmp3.6/14, ML3.1/5, MS2.3/3, Ms1 2.3/3, ms1mx2.1/37, Error ellipse: s-maj=21.6km s-min=13.8km az=3.0*
ISC 13 16:31:52.3±0.9, 37°.23N±0°.02×22°.02E±0°.01, h5km±6km, n153, σ1§15/208, mb3.8/9, 5C-3D, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ITM	**Ithomi**	**0.09**	**234**	P	**Pg**	**16 31 54.3**	**0.0**
ITM	**Ithomi**	**0.09**	**234**	P	**Pg**	**16 31 54.3**	**0.0**
ITM				S	**Sg**	**16 31 55.8**	**+0.2**
ITM	**Ithomi**	**0.09**	**234**	P	**Pg**	**16 31 53.7**	**-0.6**
ITM				S	**Sg**	**16 31 55.8**	**+0.2**
ITM				AML	AML	16 31 58.7	
ITM				AML	AML	16 31 59.1	
VLX	**Vlachokerasia**	**0.32**	**65**	P	**Pg**	**16 31 58.9**	**+0.4**
VLX				S	**Sg**	**16 32 03.8**	**+1.1**
VLX	**Vlachokerasia**	**0.32**	**65**	P	**Pg**	**16 31 58.9**	**+0.4**
VLX	**Vlachokerasia**	**0.32**	**65**	P	**Pg**	**16 31 59.5**	**+1.0**
AMT	**Artemida-Makis**	**0.39**	**320**	P	**Pg**	**16 31 59.8**	**0.0**
AMT				S	**Sg**	**16 32 06.1**	**+1.2**
AMT	**Artemida-Makis**	**0.39**	**320**	P	**Pg**	**16 31 59.8**	**0.0**
AMT				S	**Sg**	**16 32 06.1**	**+1.2**
AMT	**Artemida-Makis**	**0.39**	**320**	P	**Pg**	**16 31 59.8**	**0.0**
AMT				S	**Sg**	**16 32 06.2**	**+1.3**
PYL	**PYLOS**	**0.41**	**213**	P	**Pg**	**16 31 59.9**	**-0.3**
PYL				S	**Sg**	**16 32 05.7**	**+0.3**
PYL	**PYLOS**	**0.41**	**213**	P	**Pg**	**16 31 59.9**	**-0.3**
PYL				S	**Sg**	**16 32 04.3**	**-1.1**
PYL	**PYLOS**	**0.41**	**213**	P	**Pg**	**16 32 00.1**	**-0.1**
PYL				S	**Sg**	**16 32 04.3**	**-1.1**
PYL				AML	AML	16 32 09.6	
	comp=N,11633μm,0.4s						
PYL				AML	AML	16 32 13.4	
	comp=E,9759μm,0.4s						
DRO	**Drossia**	**0.76**	**341**	P	**Pg**	**16 32 06.8**	**-0.1**
DRO				S	**Sb**	**16 32 18.0**	**-0.7**
DRO	**Drossia**	**0.76**	**341**	P	**Pb**	**16 32 07.7**	**-0.3**
DRO				S	**Sb**	**16 32 18.0**	**-0.7**
DRO	**Drossia**	**0.76**	**341**	P	**Pb**	**16 32 07.7**	**-0.3**
DRO				S	**Sb**	**16 32 18.2**	**-0.5**
DRO				AML	AML	16 32 24.3	
	comp=E,10985μm,0.6s						
DRO				AML	AML	16 32 25.5	
	comp=N,8625μm,0.7s						
KLV	**Kalavryta, Ach**	**0.81**	**7**	P	**Pg**	**16 32 07.2**	**-0.8**
KLV				S	**Sb**	**16 32 20.6**	**+0.2**
KLV	**Kalavryta, Ach**	**0.81**	**7**	P	**Pg**	**16 32 07.5**	**-0.5**
KLV				S	**Sg**	**16 32 19.2**	**+0.6**
KLV	**Kalavryta, Ach**	**0.81**	**7**	P	**Pg**	**16 32 07.5**	**-0.5**
KLV				S	**Sg**	**16 32 19.2**	**+0.6**
KLV				AML	AML	16 32 22.8	
	comp=N,2962μm,0.5s						
KLV				AML	AML	16 32 23.4	
	comp=E,4793μm,0.7s						
VLI	**Veliai**	**0.90**	**125**	P	**Pg**	**16 32 09.8**	**+0.3**
VLI	**Veliai**	**0.90**	**125**	P	**Pg**	**16 32 09.8**	**+0.3**
VLI	**Veliai**	**0.90**	**125**	P	**Pg**	**16 32 09.9**	**+0.3**
KRND	**KRANIDI**	**0.91**	**80**	P	**Pg**	**16 32 10.2**	**+0.3**
KRND	**KRANIDI**	**0.91**	**80**	P	**Pg**	**16 32 10.2**	**+0.3**
KRND				S	**Sb**	**16 32 22.9**	**-0.2**
KRND	**KRANIDI**	**0.91**	**80**	P	**Pb**	**16 32 10.8**	**+0.2**
KRND				S	**Sb**	**16 32 22.9**	**-0.2**
KRND				AML	AML	16 32 27.6	
	comp=N,2213μm,0.3s						
KRND				AML	AML	16 32 27.7	
	comp=E,4612μm,0.6s						
RLS	**Riolos of Patr**	**0.93**	**332**	P	**Pg**	**16 32 09.8**	**-0.4**
RLS				S	**Sb**	**16 32 23.3**	**-0.4**
RLS	**Riolos of Patr**	**0.93**	**332**	P	**Pg**	**16 32 10.1**	**-0.1**
RLS				S	**Sb**	**16 32 23.3**	**-0.4**
RLS	**Riolos of Patr**	**0.93**	**332**	S	**Sb**	**16 32 23.8**	**+0.1**
RLS				AML	AML	16 32 28.5	
	comp=N,3273μm,0.6s						
RLS				AML	AML	16 32 30.3	
	comp=E,2357μm,0.4s						
THAL	**Thalero**	**0.95**	**32**	P	**Pb**	**16 32 11.3**	**0.0**
THAL	**Thalero**	**0.95**	**32**	P	**Pb**	**16 32 11.3**	**0.0**
THAL	**Thalero**	**0.95**	**32**	P	**Pg**	**16 32 10.3**	**-0.3**
THAL				AML	AML	16 32 30.3	
	comp=N,7193μm,0.5s						
THAL				AML	AML	16 32 40.5	
	comp=E,7324μm,0.5s						
VTN	**Vitineika**	**0.95**	**316**	P	**Pg**	**16 32 10.7**	**+0.1**
VTN	**Vitineika**	**0.95**	**316**	P	**Pg**	**16 32 10.7**	**+0.1**
LAKA	**Lakka**	**1.00**	**358**	P	**Pb**	**16 32 10.7**	**-1.6**
LAKA				S	**Sn**	**16 32 26.0**	**-1.7**
LAKA	**Lakka**	**1.00**	**358**	P	**Pb**	**16 32 10.7**	**-1.6**
LAKA				S	**Sn**	**16 32 26.0**	**-1.7**
LAKA	**Lakka**	**1.00**	**358**	P	**Pb**	**16 32 10.2**	**-2.0**
LAKA				S	**Sg**	**16 32 24.7**	**0.0**
DID	**Didima**	**1.01**	**74**	P	**Pb**	**16 32 11.5**	**-0.8**
DID				S	**Sb**	**16 32 25.4**	**-0.5**
DID	**Didima**	**1.01**	**74**	P	**Pg**	**16 32 12.3**	**+0.6**
DID				S	**Sb**	**16 32 25.4**	**-0.5**
DID	**Didima**	**1.01**	**74**	P	**Pg**	**16 32 12.3**	**+0.6**
DID				S	**Sg**	**16 32 24.6**	**-0.1**
DID				AML	AML	16 32 29.7	
	comp=E,3082μm,0.4s						
DID				AML	AML	16 32 29.9	
	comp=N,3538μm,0.5s						
UPR	**University Cam**	**1.06**	**350**	P	**Pg**	**16 32 13.3**	**+0.5**
UPR				S	**Sn**	**16 32 28.7**	**-0.4**
UPR	**University Cam**	**1.06**	**350**	P	**Pg**	**16 32 13.3**	**+0.5**
UPR				S	**Sn**	**16 32 28.7**	**-0.4**
UPR	**University Cam**	**1.06**	**350**	P	**Pb**	**16 32 11.1**	**-2.2**
ZKS	**Zakynthos**	**1.08**	**296**	P	**Pb**	**16 32 12.4**	**-1.2**
ZKS	**Zakynthos**	**1.08**	**296**	P	**Pb**	**16 32 12.4**	**-1.2**
ZKS				S	**Sb**	**16 32 27.2**	**-0.9**
ZKS	**Zakynthos**	**1.08**	**296**	P	**Pb**	**16 32 12.1**	**-1.6**
ZKS				S	**Sb**	**16 32 27.2**	**-0.9**
AXS	**Araxos**	**1.09**	**332**	P	**Pb**	**16 32 12.2**	**-1.4**
AXS	**Araxos**	**1.09**	**332**	P	**Pb**	**16 32 12.2**	**-1.4**
LTK	**Loutraki**	**1.09**	**43**	P	**Pb**	**16 32 12.5**	**-1.2**
LTK				S	**Sn**	**16 32 29.1**	**-0.7**
LTK	**Loutraki**	**1.09**	**43**	P	**Pb**	**16 32 12.5**	**-1.2**
LTK				S	**Sn**	**16 32 28.3**	**-1.5**
LTK	**Loutraki**	**1.09**	**43**	P	**Pb**	**16 32 12.5**	**-1.5**
LTK				S	**Sn**	**16 32 28.3**	**-1.5**
LTK				AML	AML	16 32 37.6	
	comp=E,2420μm,0.6s						
LTK				AML	AML	16 32 39.6	
	comp=N,2461μm,0.5s						
TRIZ	**Trizonia**	**1.13**	**2**	P	**Pb**	**16 32 12.5**	**-1.9**
KALE	**Kalithea**	**1.16**	**5**	P	**Pb**	**16 32 13.6**	**-1.3**
KALE	**Kalithea**	**1.16**	**5**	P	**Pb**	**16 32 13.6**	**-1.3**
KALE	**Kalithea**	**1.16**	**5**	P	**Pb**	**16 32 13.0**	**-1.9**
KALE				AML	AML	16 32 38.7	
	comp=E,1810μm,0.8s						
KALE				AML	AML	16 32 40.6	
	comp=N,2041μm,0.4s						
SERG	**Sergoula**	**1.18**	**1**	P	**Pb**	**16 32 13.8**	**-1.4**
SERG				S	**Sn**	**16 32 32.1**	**+0.1**
SERG	**Sergoula**	**1.18**	**1**	P	**Pb**	**16 32 13.8**	**-1.4**
SERG				S	**Sn**	**16 32 32.1**	**+0.1**
PROD	**Prodromos**	**1.24**	**34**	P	**Pn**	**16 32 15.2**	**-1.1**
PROD	**Prodromos**	**1.24**	**34**	P	**Pn**	**16 32 15.2**	**-1.1**
PROD				AML	AML	16 32 36.5	
	comp=E,2299μm,0.7s						
PROD				AML	AML	16 32 42.0	
	comp=N,1695μm,0.4s						
DSF	**Desfina**	**1.24**	**19**	P	**Pn**	**16 32 15.7**	**-0.8**
DSF	**Desfina**	**1.24**	**19**	P	**Pn**	**16 32 15.7**	**-0.8**
DSF	**Desfina**	**1.24**	**19**	P	**Pn**	**16 32 15.6**	**-0.8**
KYTH	**Kithira**	**1.27**	**139**	P	**Pg**	**16 32 16.9**	**+0.2**
KYTH				S	**Sg**	**16 32 36.1**	**+2.9**
KYTH	**Kithira**	**1.27**	**139**	P	**Pb**	**16 32 16.6**	**-0.2**
KYTH				S	**Sb**	**16 32 31.7**	**-1.8**
KYTH	**Kithira**	**1.27**	**139**	P	**Pb**	**16 32 16.6**	**-0.2**
KFL	**Anninata**	**1.31**	**312**	P	**Pb**	**16 32 17.1**	**-0.4**
KFL	**Anninata**	**1.31**	**312**	P	**Pb**	**16 32 17.1**

EVR	Evrytania	1.69	354	P	Pn	16 32 22.9	+0.3	
ANKY	Antikythira Is	1.71	143	P	Pg	16 32 26.1	+0.9	
ANKY				S	Sg	16 32 46.8	-0.6	
ANKY				AML	AML	16 32 56.0		
	comp=N,1197μm,0.6s							
ANKY				AML	AML	16 33 00.5		
	comp=E,999μm,0.7s							
AGG	Agios Georgios	1.80	8	P	Pn	16 32 24.6	+0.5	
AGG	Agios Georgios	1.80	8	P	Pn	16 32 24.6	+0.5	
AGG	Agios Georgios	1.80	8	P	Pg	16 32 26.8	-0.1	
LKD2	Lefkada island	1.89	326	P	Pn	16 32 25.6	+0.3	
LKD2	Lefkada island	1.89	326	P	Pn	16 32 25.6	+0.3	
SMIA	Simia	1.89	29	P	Pb	16 32 26.5	-0.9	
SMIA	Simia	1.89	29	P	Pb	16 32 26.5	-0.9	
EREA	Eretria	1.92	51	P	Pb	16 32 26.6	-1.3	
EREA				S	Sb	16 32 50.9	-1.3	
EREA	Eretria	1.92	51	P	Pb	16 32 26.6	-1.3	
EREA				S	Sb	16 32 50.9	-1.3	
EREA	Eretria	1.92	51	P	Pn	16 32 26.2	+0.4	
EREA				S	Sb	16 32 50.6	-1.6	
EREA				AML	AML	16 32 58.9		
	comp=N,678μm,0.5s							
EREA				AML	AML	16 33 01.9		
	comp=E,816μm,0.5s							
DSL	Palaion Diasel	2.03	339	P	Pb	16 32 30.1	+0.3	
DSL	Palaion Diasel	2.03	339	P	Pb	16 32 30.1	+0.3	
DSL				AML	AML	16 33 10.8		
	comp=E,1198μm,0.6s							
DSL				AML	AML	16 33 17.2		
	comp=N,994μm,0.6s							
SKIA	Skiathos	2.24	30	P	Pn	16 32 31.0	+0.9	
SKIA	Skiathos	2.24	30	P	Pn	16 32 31.0	+0.9	
SKIA	Skiathos	2.24	30	P	Pn	16 32 30.7	+0.6	
SKIA				AML	AML	16 33 08.4		
	comp=E,345μm,0.5s							
SKIA				AML	AML	16 33 08.9		
	comp=N,312μm,0.6s							
NEO	Neokhori	2.27	24	P	Pn	16 32 31.3	+0.7	
NEO	Neokhori	2.27	24	P	Pn	16 32 31.3	+0.7	
XOR	Xorichti	2.32	23	P	Pn	16 32 31.6	+0.4	
XOR	Xorichti	2.32	23	P	Pn	16 32 31.6	+0.4	
THL	Klokotos Trika	2.33	360	P	Pb	16 32 33.2	-1.6	
AOS	Alonnisos	2.42	37	P	Pn	16 32 33.2	+0.5	
AOS	Alonnisos	2.42	37	P	Pn	16 32 33.2	+0.5	
APE	Apeiranthos	2.81	92	*i*P	Pg	16 32 46.8	+0.6	
APE	Apeiranthos	2.81	92	P	Pn	16 32 39.0	+1.0	
APE	Apeiranthos	2.81	92	P	Pn	16 32 39.0	+1.0	
APE				AML	AML	16 33 13.4		
	comp=E,50μm,0.2s							
APE				AML	AML	16 33 25.3		
	comp=N,127μm,0.4s							
IDI	Anoyia	3.02	129	P	Pn	16 32 42.6	+1.6	
	comp=N,2.0nm,0.3s,baz=358,slow=12,SNR=10							
IDI				S	Sb	16 33 21.0	-3.0	
	comp=N,5.4nm,0.3s,baz=59,slow=21,SNR=5.2							
IDI				LR	LR	16 34 23.6		
	comp=N,29nm,20.3s,baz=68,slow=49							
NEST	Nestorio	3.27	347	P	Pn	16 32 45.8	+1.5	
NEST	Nestorio	3.27	347	P	Pn	16 32 45.8	+1.5	
TIR	Tirane	4.43	339	*i*P	Pb	16 33 05.2	-5.5	
TIR	Tirane	4.43	339	*i*P	Pb	16 33 05.2	-5.5	
VTS	Vitosha	5.43	9	*i*P	Pn	16 33 07.6	-6.5	
BARS	Barje	5.58	358	*e*Pn	Pn	16 33 17.7	+1.7	
PDG	Podgorica	5.61	339	*i*P	Pn	16 33 20.2	+3.8	
VAE	Valguarnera	6.07	275	P	Pn	16 33 26.3	+3.5	
	comp=N,0.8nm,0.3s,baz=260,slow=6.1,SNR=3.2							
VAE				S	Sn	16 34 38.9	+6.3	
	comp=N,1.3nm,0.3s,baz=13,slow=1.8,SNR=5.5							
GRUS	Gruza	6.72	352	*e*Pn	Pn	16 33 33.7	+2.0	
BBLS	Lazići	6.92	344	*e*Pn	Pn	16 33 34.5	+0.1	
DIVS	Divibare	7.03	348	*e*Pn	Pn	16 33 36.9	+0.9	
TEKS	Tekeris	7.55	346	*e*Pn	Pn	16 33 43.7	+0.7	
MLR	Muntele Rosu	8.76	18	P	Pn	16 34 03.9	+4.2	
	comp=N,0.1nm,0.3s,baz=190,slow=14,SNR=6.2							
MLR				LR	LR	16 38 04.8		
	comp=N,13nm,20.6s,baz=182,slow=42							
PLOR	Plostina	9.28	20	*i*P	Pn	16 34 00.6	-6.2	
BRTR	Keskin Array B	9.45	71	P	Pn	16 34 12.2	+3.1	
	comp=N,0.2nm,0.3s,baz=249,slow=13,SNR=7.6							
DRGR		9.56	3	*i*P	Pn	16 34 04.6	-6.1	
PSZ	Piszkesteto	10.79	352	*i*P	Pn	16 34 25.2	-2.3	
MMAI	Mount Meron Ar	11.74	107	P	Pn	16 34 40.8	+0.3	
	comp=N,0.5nm,0.3s,baz=298,slow=16,SNR=3.1							
GNI	Garni	17.97	74	LR	LR	16 42 48.0		
	comp=N,27nm,21.0s,baz=208,slow=36							
HFS	Hagfors	23.53	350	P	P	16 37 02.1	-1.0	
	comp=N,1.3nm,0.5s,baz=156,slow=16,SNR=4.6							
FINES	FINESS Array B	24.37	5	P	P	16 37 10.1	-1.0	
	comp=N,1.0nm,0.4s,baz=194,slow=8.8,SNR=11							
NOA	NORSAR Array B	24.79	347	P	P	16 37 14.8	-0.1	
	comp=N,0.8nm,0.7s,baz=150,slow=11,SNR=3.4							
EKA	Eskdalemuir Ar	24.88	325	P	P	16 37 15.9	+0.1	
	comp=N,0.8nm,0.6s,baz=120,slow=9.9,SNR=3.6							
TORD	Toredi Ar. Bea	30.09	222	P	P	16 38 04.3	+1.5	
	comp=N,0.3nm,0.6s,baz=32,slow=9.0,SNR=2.7							
ARCES	ARCESS Array B	32.41	2	P	P	16 38 22.4	-0.4	
	comp=N,2.8nm,0.8s,baz=188,slow=11,SNR=5.2							
KURBB	Kurchatov Arra	41.84	53	P	P	16 39 42.0	-1.0	
	comp=N,0.9nm,0.5s,baz=279,slow=8.6,SNR=7.9							
MKAR	Makanchi Array	44.79	58	P	P	16 40 05.5	-1.5	
	comp=N,0.3nm,0.4s,baz=274,slow=7.6,SNR=6.0							
ZALV	Zalesovo Beam	45.44	48	P	P	16 40 09.8	-2.2	
	comp=N,0.6nm,0.5s,baz=269,slow=11,SNR=3.2							

IDC ***13*** *16:36:39.4±0.5, 13.˚45N×124.˚55E, h0km, mb4.3/23, mb1 4.4/23, mb1mx4.2/45, mbtmp4.3/23, MS3.6/18, Ms1 3.7/18, ms1mx3.4/40, Error ellipse: s-maj=22.0km s-min=11.2km az=76.0*

ISCJB ***13*** *16:36:42.5±0.3, 13.˚63N±0.˚03×124.˚67E±0.˚05, h31km, mb4.6/55, MS3.7/15, Error ellipse: s-maj=7.0km s-min=4.1km az=175.6*

MAN ***13*** *16:36:42, 13.˚67N×124.˚72E, h115km, mb5.4, ML4.4, MS4.7*

MAN INTENSITY III - VIGA CATANDUANES; INTENSITY II - VIRAC CATANDUANES; INTENSITY I - LEGASPI CITY.

MOS ***13*** *16:36:43.1±1.0, 13.˚49N×124.˚61E, h42km, mb5.0/20, Error ellipse: s-maj=12.4km s-min=6.3km az=121.8*

NEIC ***13*** *16:36:44.7±0.3, 13.˚45N×124.˚54E, h35km, mb4.7/10, Error ellipse: s-maj=9.7km s-min=5.9km az=70.0*

NEIC Felt [III PIVS] at Viga and [II PIVS] at Virac. Felt [I PIVS] at Legaspi, Luzon.

ISC 13 16:36:44.2±0.4, 13°54N±0°04×124°60E±0°05, h31km, n114, σ1§53/112, mb4.6/55, MS3.6/15, 15C-13D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MMPH	Masbate	1.51	219	*e*P	Pb	16 37 13.6	+2.0
MMPH				*e*S	Sb	16 37 34.6	+4.3
GQP	Guinayangan	2.12	280	*e*P	Pn	16 37 18.8	+1.3
GQP				*e*S	Sb	16 37 47.5	-0.4
PLP	Palo	2.39	171	*e*P	Pb	16 37 23.8	-2.8
PLP				*i* S	Sb	16 37 52.6	-3.0
RCP	Roxas	2.67	223	*e*P	Pb	16 37 27.9	-3.5
RCP				*e*S	Sb	16 38 02.1	-1.7
LQP	Lukban	3.02	281	*e*P	Pn	16 37 30.9	+0.8
LLP	Lapu-Lapu	3.26	191	*e*P	Pn	16 37 36.3	+3.0
LLP				*e*S	Sn	16 38 14.0	+2.9
TGY	Tagaytay City	3.60	279	Pn	Pn	16 37 38.6	+0.7
	92nm,0.3s,baz=91,slow=14,SNR=4.1						
TGY				LR	LR	16 38 39.7	
	comp=Z,215nm,21.0s,baz=32,slow=34						
JAP	San Jose, Anti	3.80	223	*e*P	Pb	16 37 46.5	-4.1
PCPH	Palayan	3.94	301	*e*P	Pn	16 37 41.5	-1.1
PCPH				*e*S	Sn	16 38 25.8	-1.9
SNPH	Sibulan	4.38	198	*i* P	Pn	16 37 47.9	-0.7
SNPH				*i* S	Sn	16 38 39.3	+0.6
DAV	Davao City (W)	6.50	171	LR	LR	16 41 23.0	
	comp=Z,1μm,20.1s,baz=354,slow=44						
FAKI	Fak Fak	18.03	155	P	P	16 40 54.4	+1.6
KSM	Kuching	18.54	231	*e*Pn	P	16 40 56.9	-1.5
	16nm,0.8s						
KAPI	Kappang	19.05	195	LR	LR	16 48 46.7	
	comp=Z,216nm,20.7s,baz=29,slow=38						
GUMO	Guam	19.71	87	LR	LR	16 48 37.4	
	comp=Z,234nm,19.0s,baz=260,slow=36						
ENH	Enshi	21.72	322	*e*P	P	16 41 33.8	+0.9
	24nm,1.2s						
KSAR	Wonju Array Be	23.98	6	P	P	16 41 58.0	+2.0
KSAR	Wonju Array Be	23.98	6	P	P	16 41 58.0	+2.0
KSRS	Korea Array	24.00	7	P	P	16 41 58.0	+1.8
	2.2nm,0.8s,baz=186,slow=10,SNR=2.5						
KSRS				LR	LR	16 51 07.6	
	comp=Z,107nm,20.3s,baz=194,slow=36						
XAN	Xi'an	24.88	328	P	P	16 42 04.3	0.0
XAN				pP	pP	16 42 11.8	-1.5
XAN				pmax	pmax		
	comp=Z,26nm,1.0s						
XAN				pmax	pmax		
	comp=Z,51nm,5.9s						
CMAR	Chiang Mai Arr	25.13	285	P	P	16 42 05.8	-0.9
	comp=Z,5.8nm,0.8s,baz=94,slow=8.4,SNR=4.2						
CMAR				PcP	PcP	16 45 41.9	+1.3
	comp=Z,0.7nm,0.7s,baz=87,slow=1.0,SNR=4.7						
CMAR				LR	LR	16 52 50.0	
	comp=Z,196nm,18.7s,baz=110,slow=39						
CHTO	Chiang Mai	25.17	285	*e*P	P	16 42 06.4	-0.7
CHTO	Chiang Mai	25.17	285	*e*P	P	16 42 06.4	-0.7
MAJO	Matsushiro	25.95	26	*e*P	P	16 42 13.4	-0.6
MAJO				pmax	pmax		
	comp=Z,19nm,1.2s						
MJAR	Matsushiro Arr	25.95	26	P	P	16 42 12.8	-1.2
	comp=Z,1.8nm,0.9s,baz=202,slow=8.1,SNR=6.0						
MJAR				LR	LR	16 51 28.8	
	comp=Z,132nm,19.6s,baz=200,slow=34						
PSI	Prapat	27.52	249	LR	LR	16 53 08.7	
	comp=Z,413nm,20.8s,baz=95,slow=36						
USRK	Ussuriysk Ar.	31.20	10	P	P	16 43 00.8	+0.1
	comp=Z,4.5nm,0.7s,baz=201,slow=7.3,SNR=8.6						
FITZ	Fitzroy Crossi	31.46	178	P	P	16 43 01.0	-2.1
	comp=Z,1.1nm,0.3s,baz=4.4,slow=7.8,SNR=14						
FITZ				LR	LR	16 56 46.6	
	comp=Z,28nm,18.6s,baz=26,slow=38						
FITZ	Fitzroy Crossi	31.46	178	*e*P	P	16 43 01.0	-2.1
	comp=Z,2.8nm,0.7s						
GTA	Gaotai	33.78	324	*e*P	P	16 43 24.4	+0.9
GTA				pP	pP	16 43 29.1	-3.4
GTA				sP	sP	16 43 32.4	-3.9
GTA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
WRAB	Tennant Creek	34.62	164	*e*P	P	16 43 29.7	-1.0
WRAB	Tennant Creek	34.62	164	*e*P	P	16 43 29.7	-1.0
WRA	Warramunga Arr	34.62	164	P	P	16 43 28.8	-2.0
	comp=Z,0.8nm,0.3s,baz=345,slow=9.2,SNR=18						
WRA				PcP	PcP	16 46 05.0	+0.1
	comp=Z,0.3nm,0.4s,baz=348,slow=2.9,SNR=3.4						
LSA	Lhasa	34.84	303	*e*P	P	16 43 34.0	+0.8
LSA				pmax	pmax		
	comp=Z,40nm,1.3s						
LSA	Lhasa	34.84	303	*e*P	P	16 43 34.0	+0.8
	comp=Z,40nm,1.3s						
KLR	Kul'dur	36.07	8	*e*P	P	16 43 41.7	-1.2
SONM	Songino Array	37.40	340	P	P	16 43 55.0	+0.5
	comp=Z,7.5nm,1.1s,baz=158,slow=8.8,SNR=24						
SONM				LR	LR	16 59 48.9	
	comp=Z,61nm,20.7s,baz=159,slow=37						
SONM	Songino Array	37.40	340	P	P	16 43 55.0	+0.5
ASAR	Alice Springs	38.08	166	P	P	16 43 59.9	-0.4
	comp=Z,3.1nm,0.4s,baz=342,slow=7.2,SNR=172						
ASAR				PcP	PcP	16 46 15.1	-0.1
	comp=Z,0.9nm,0.4s,baz=337,slow=3.0,SNR=4.6						
ASAR				LR	LR	17 02 05.6	
	comp=Z,81nm,18.6s,baz=40,slow=40						
H11S3	WAKE ISLAND Hy	40.69	77	T	T	17 27 55.7	
	baz=269,slow=75,SNR=402						
H11S1	WAKE ISLAND Hy	40.70	77	T	T	17 27 55.1	
	baz=269,slow=75,SNR=290						
H11S2	WAKE ISLAND Hy	40.71	77	T	T	17 27 50.1	
	baz=269,slow=75,SNR=432						
H11N1	WAKE ISLAND Hy	40.91	75	T	T	17 28 09.8	
	baz=268,slow=74,SNR=714						
H11N2	WAKE ISLAND Hy	40.92	75	T	T	17 28 02.4	
	baz=268,slow=74,SNR=432						
H11N3	WAKE ISLAND Hy	40.93	75	T	T	17 28 03.2	
	baz=268,slow=74,SNR=606						
NWAO	Narrogin (SRO)	46.74	189	P	P	16 45 08.8	-1.8
	comp=Z,4.0nm,0.8s,baz=259,slow=12,SNR=6.1						
BBOO	Buckleboo	47.37	167	*e*P	P	16 45 15.2	-0.3
	comp=Z,9.1nm,0.4s						
PETK	Petropavlovsk-	47.41	27	P	P	16 45 16.9	+1.4
	comp=Z,8.5nm,0.9s,baz=200,slow=4.0,SNR=12						
PETK				LR	LR	17 05 43.6	
	comp=Z,39nm,19.4s,baz=207,slow=37						
PETK	Petropavlovsk-	47.41	27	P	P	16 45 17.0	+1.4
STKA	Stephens Creek	48.01	160	P	P	16 45 21.2	+0.8
	comp=Z,2.0nm,0.6s,baz=334,slow=7.9,SNR=7.4						
MK31	Makanchi Array	48.45	322	*e*P	P	16 45 24.4	+0.6
MK31				pmax	pmax		
	comp=Z,20nm,1.1s						
MKAR	Makanchi Array	48.45	322	P	P	16 45 24.4	+0.5
	comp=Z,12nm,0.9s,baz=117,slow=7.5,SNR=66						
MKAR				PcP	PcP	16 46 50.0	+0.3
	comp=Z,3.0nm,0.9s,baz=108,slow=4.3,SNR=3.9						
PDGK	Podgornoye	48.70	317	*i* P	P	16 45 26.6	+0.9
PDGK				pmax	pmax		
	comp=Z,15nm,0.9s						
KSH	Kashi	49.85	311	P	P	16 45 37.6	+2.8
KSH				*e*pP	pP	16 46 25.3	+41
KSH				*e*sP	sP	16 46 50.3	+62
KSH				*e*PP	PP	16 47 34.8	+5.1
KSH				S	S	16 52 26.1	-17
KSH				pmax	pmax		
	comp=Z,12nm,1.1s						
KSH				pmax	pmax		
	comp=Z,43nm,4.1s						
ZALV	Zalesovo Beam	50.99	331	P	P	16 45 43.1	+0.2
	comp=Z,3.4nm,0.7s,baz=123,slow=7.5,SNR=14						
TKM2	Tokmak 2	51.20	315	*i* P	P	16 45 45.8	+0.8
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
AAK	Ala-Archa	51.88	314	*e*P	P	16 45 49.4	-0.6
AAK				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KURK	Kurchatov	52.46	325	*e*P	P	16 45 54.8	+0.8
KURK	Kurchatov	52.46	325	*e*P	P	16 45 54.8	+0.8
	comp=Z,367nm,1.0s						
SEY	Seymchan	53.10	15	*ce*P	P	16 46 00.0	+1.5
MNAS	Manas	53.23	313	*i* P	P	16 46 01.1	+1.0
MNAS				pmax	pmax		
	comp=Z,14nm,1.1s						
KK31	Karatay Array	54.81	313	*ce*P	P	16 46 12.0	+0.6
KK31				pmax	pmax		
	comp=Z,13nm,1.2s						
KKAR	Karatay Array	54.81	313	*e*P	P	16 46 11.4	0.0
KKAR				pmax	pmax		
	comp=Z,14nm,1.0s						
KKAR	Karatay Array	54.81	313	*e*P	P	16 46 11.4	0.0
	comp=Z,14nm,1.0s						
OTUK	Ortayu	55.18	320	P	P	16 46 14.4	+0.4
OTUK				pmax	pmax		
	comp=Z,16nm,1.2s						
VOSK	Vostochnaya	57.62	325	P	P	16 46 30.6	-0.7
VOSK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
BVA0	Borovoye Array	58.06	325	P	P	16 46 33.7	-0.7
BVA0				pmax	pmax		
	comp=Z,13nm,1.0s						
BVAR	Borovoye Array	58.06	325	P	P	16 46 35.1	+0.8
	comp=Z,11nm,1.0s,baz=108,slow=9.5,SNR=43						
BRVK	Borovoye	58.13	325	*c* *i*P	P	16 46 35.4	+0.5
BRVK				pmax	pmax		
	comp=Z,62nm,1.0s						
BRVK	Borovoye	58.13	325	*e*P	P	16 46 35.0	+0.2
	comp=Z,64nm,1.0s						
TIXI	Tiksi	58.14	2	*e*P	P	16 46 35.3	+0.8
TIXI				pmax	pmax		
	comp=Z,7.0nm,2.5s						
TIXI				MLR	MLR		
	comp=Z,95nm,20.0s						
TIXI	Tiksi	58.14	2	*e*P	P	16 46 34.5	0.0
	comp=Z,3.2nm,0.8s						
CHKZ	Chkalovo	58.18	326	*i* P	P	16 46 34.0	-1.1
CHKZ				pmax	pmax		
	comp=Z,14nm,1.2s						
ZRNK	Zerenda	58.82	324	*i* P	P	16 46 39.7	+0.1
ZRNK				pmax	pmax		
	comp=Z,22nm,1.2s						
BILL	Bilibino	60.74	17	*e*P	P	16 46 51.7	-0.9
BILL				*e*		16 47 36.6	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GEYT	Alibeck	63.30	306	P	P	16 47 11.2	+0.8
	comp=Z,6.1nm,0.9s,baz=72,slow=0.5,SNR=12						
AB31	Akbulak array	63.35	319	*ce*P	P	16 47 10.3	-0.1
AB31				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ABKAR	Akbulak array	63.35	319	*e*P	P	16 47 10.3	-0.1
	comp=Z,3.2nm,0.8s						
SVE	Sverdlovsk	64.59	327	*e*P	P	16 47 18.0	-0.5
SVE				pmax	pmax		
	comp=Z,21nm,1.0s						
AKTO	Aktyubinsk	64.78	320	P	P	16 47 20.1	+0.2
	comp=Z,1.3nm,0.4s,baz=86,slow=7.1,SNR=7.2						
AKTO	Aktyubinsk	64.78	320	*i* P	P	16 47 18.9	-0.9
AKTO				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ARU	Arti	65.61	326	P	P	16 47 25.0	-0.1
	comp=Z,6.5nm,0.5s,baz=107,slow=5.2,SNR=15						
ARU	Arti	65.61	326	*c* *i*P	P	16 47 24.9	-0.2
ARU						16 49 48.9	
ARU				S	S	16 56 08.3	-0.2
ARU				SS	SS	17 00 17.5	-5.1
ARU				pmax	pmax		
	comp=Z,12nm,1.0s						
AFI	Afiamalu	68.66	111	LR	LR	17 13 06.7	
	comp=Z,106nm,19.3s,baz=148,slow=32						
KBZ	Khabaz	74.81	312	P	P	16 48 21.9	+0.2
	comp=Z,4.3nm,0.9s,baz=234,slow=2.7,SNR=6.9						
KBZ				LR	LR	17 25 31.4	
	comp=Z,77nm,18.7s,baz=50,slow=39						
KIV	Kislovodsk	74.94	312	*e*P	P	16 48 23.2	+0.6
KIV				pmax	pmax		
	comp=Z,12nm,1.0s						
KIV	Kislovodsk	74.94	312	*e*P	P	16 48 22.7	+0.1
	comp=Z,12nm,0.8s						
VRH	Novokhopyorsk	75.12	320	*e*P	P	16 48 22.9	-0.4
VRH				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KLMR	Klimovskoe	75.89	330	*e*P	P	16 48 25.6	-1.9
KLMR				pmax	pmax		
	comp=Z,15nm,1.3s						
VSR	Storozhevoye	76.73	320	*e*P	P	16 48 32.0	-0.5
VSR				pmax	pmax		
	comp=Z,8.0nm,0.4s						
ILAR	Eielson Array	77.23	26	P	P	16 48 36.1	+1.0
	comp=Z,0.5nm,0.6s,baz=253,slow=5.6,SNR=6.5						
OBN	Obninsk	77.90	324	*e*P	P	16 48 37.4	-1.5
OBN				*e*		16 48 45.3	
OBN				pmax	pmax		
	comp=Z,7.0nm,0.9s						
ARCES	ARCESS Array B	80.58	339	P	P	16 48 52.2	-1.1
	comp=Z,2.9nm,0.9s,baz=92,slow=8.1,SNR=4.8						
BRTR	Keskin Array B	82.21	309	P	P	16 49 02.8	0.0
	comp=Z,0.5nm,0.5s,baz=95,slow=4.9,SNR=3.5						
FINES	FINESS Array B	82.25	331	P	P	16 49 01.7	-0.6
	comp=Z,2.1nm,0.7s,baz=79,slow=7.2,SNR=2.9						
FINES				LR	LR	17 26 38.7	
	comp=Z,45nm,19.0s,baz=86,slow=36						
CFR	Carcaliu	85.00	315	*i*P	P	16 49 14.9	-1.9
CFR	Carcaliu	85.00	315	*i*P	P	16 49 14.9	-1.9
TESR	Tescani	85.68	317	*i*P	P	16 49 20.0	-0.1
PLOR	Plostina	85.85	316	*i*P	P	16 49 21.5	+0.4
PLOR	Plostina	85.85	316	*i*P	P	16 49 21.5	+0.4
BURAR	Bucovina Array	86.33	318	*i*P	P	16 49 23.9	+0.4
BURAR	Bucovina Array	86.33	318	*i*P	P	16 49 23.9	+0.4
MLR	Muntele Rosu	86.42	316	*i*P	P	16 49 21.2	-2.8
MLR	Muntele Rosu	86.42	316	*i*P	P	16 49 21.2	-2.8
BMR	Baia Mare	87.42	318	*i*P	P	16 49 22.0	-6.7
BMR	Baia Mare	87.42	318	*i*P	P	16 49 22.1	-6.6
CRVS	Cervenica-Dubn	88.34	320	*e*P	P	16 49 32.7	-0.3
CRVS	Cervenica-Dubn	88.34	320	*e*P	P	16 49 32.7	-0.3
NB2	NORSAR Subarra	89.12	333	P	P	16 49 35.5	-1.0
	comp=Z,2.2nm,1.0s,baz=71,slow=4.3						
NB2	NORSAR Subarra	89.12	333	P	P	16 49 35.5	-1.0
	baz=71,slow=4.3						
NOA	NORSAR Array B	89.12	333	LR	LR	17 32 58.9	
	comp=Z,29nm,19.3s,baz=65,slow=38						
PPT	Papeete	90.13	108	LR	LR	17 23 16.2	
	comp=Z,63nm,20.7s,baz=136,slow=31						
YKA	Yellowknife Ar	91.44	24	P	P	16 49 47.9	+0.7
	comp=Z,0.1nm,0.3s,baz=302,slow=3.9,SNR=2.4						
VNDA	Vanda	93.36	172	LR	LR	17 33 18.8	
	comp=Z,19nm,18.8s,baz=346,slow=36						

ISCJB ***13*** *16:54:07.3±0.7, 6.˚87S±0.˚07×125.˚2E±0.˚2, h511km, mb3.6/7, Error ellipse: s-maj=30.2km s-min=9.1km az=172.7*

IDC ***13*** *16:54:11.1±1.8, 7.˚00S×125.˚31E, h548km±28km, mb3.1/7, mb1 3.2/11, mb1mx3.0/34, mbtmp4.0/11, Error ellipse: s-maj=34.2km s-min=13.6km az=67.0*

ISC 13 16:54:08.6±0.8, 6°92S±0°09×125°3E±0°3, h511km, n11, σ1§00/11, mb3.6/7, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	Kappang	5.85	289	P	P	16 55 49.5	+5.5
	1.4nm,0.3s,baz=83,slow=8.1,SNR=2.3						
FITZ	Fitzroy Crossi	11.12	178	P	P	16 56 39.4	+1.5
	0.4nm,0.3s,baz=3.4,slow=9.1,SNR=18						
FITZ				S	S	16 58 38.9	-1.9
	0.1nm,0.3s,baz=44,slow=22,SNR=5.1						
WRA	Warramunga Arr	15.63	147	P	P	16 57 25.4	+0.1
	1.2nm,0.3s,baz=338,slow=9.7,SNR=44						
ASAR	Alice Springs	18.59	155	P	P	16 57 54.1	+0.2
	1.3nm,0.3s,baz=347,slow=15,SNR=251						
NWAO	Narrogin (SRO)	26.95	195	P	P	16 59 08.2	-0.5
	1.2nm,0.3s,baz=210,slow=20,SNR=1.5						
STKA	Stephens Creek	29.11	151	P	P	16 59 27.9	+0.3
	4.3nm,0.7s,baz=319,slow=14,SNR=15						
MJAR	Matsushiro

λ37.00000°. NP2:φ≈183.00000°, δ75.00000°, λ111.00000°.
IDC ***13*** *17:43:28.5±2.4, 38°.49N×142°.80E, h0km, mb3.5/3, mb1 3.7/6, mb1mx3.4/44, mbtmp3.6/6, ML3.4/2, Error ellipse: s-maj=57.0km s-min=27.7km az=62.0*
JMA ***13*** *17:43:37.5±0.1, 38°.33N×141°.98E, h47km±1km, M3.9*
JMA Felt I J1.

ISC 13 17:43:35.4±1.8,**38°.29N**±0°.04×**142°.17E**±0°.08,**h32**km±12km, **n24,** σ1°.50/30,**mb3.6**/3,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
JIO	**Ouri**	**0.67**	**285**	P		**Pb**	**17 43 48.8**	**+0.2**
JIO				*i* S		**Sb**	**17 43 56.5**	**-1.1**
OFUJ	**Ofunato**	**0.88**	**334**	P		**Pb**	**17 43 52.3**	**+0.1**
OFUJ				S		**Sn**	**17 44 02.6**	**-0.8**
JMK	**Ichinoseki**	**1.00**	**312**	P		**Pn**	**17 43 53.5**	**+0.3**
JMK				S		**Sn**	**17 44 05.1**	**-1.0**
JMM	**Marumori**	**1.17**	**249**	P		**Pn**	**17 43 55.4**	**-0.1**
JMM				S		**Sn**	**17 44 08.4**	**-1.9**
JOU	**Okura**	**1.19**	**274**	P		**Pn**	**17 43 56.0**	**+0.2**
JOU				S		**Sn**	**17 44 09.6**	**-1.3**
JOM	**Ohasama**	**1.37**	**330**	P		**Pn**	**17 43 59.2**	**+0.9**
JOM				S		**Sn**	**17 44 15.1**	**-0.2**
JFK	**Kawauchi**	**1.38**	**229**	P		**Pn**	**17 43 58.9**	**+0.5**
JFK				S		**Sn**	**17 44 14.8**	**-0.8**
JYK	**Kaneyama**	**1.55**	**294**	P		**Pn**	**17 44 01.0**	**+0.2**
JYK				S		**Sn**	**17 44 18.9**	**-1.0**
JRG	**Rokugo**	**1.63**	**313**	P		**Pn**	**17 44 02.6**	**+0.7**
JFT	**Otama**	**1.64**	**243**	P		**Pn**	**17 44 02.9**	**+0.9**
JFT				S		**Sn**	**17 44 21.8**	**-0.3**
JYS	**Shirataka**	**1.66**	**268**	P		**Pn**	**17 44 02.5**	**+0.2**
JYS				*e*S		**Sn**	**17 44 21.5**	**-1.0**
MJAR	**Matsushiro Arr**	**3.60**	**242**	Pn		**Pn**	**17 44 33.0**	**+4.0**
	1.4nm,0.3s,baz=350,slow=4.8,SNR=10							
MAT	**Matsushiro**	**3.60**	**242**	P		**Pn**	**17 44 32.6**	**+3.6**
MAT				S		**Sn**	**17 45 13.4**	**+2.9**
JHJ	**Hachijo jima 2**	**5.51**	**201**	Pn		**Pn**	**17 44 56.1**	**+0.9**
	4.8nm,0.3s,baz=315,slow=23,SNR=10.0							
JHJ				S		**Sn**	**17 45 55.1**	**-2.4**
	11nm,0.3s,baz=261,slow=22,SNR=8.0							
USRK	**Ussuriysk Ar.**	**9.68**	**311**	Pn		**Pn**	**17 45 53.3**	**+1.0**
	0.1nm,0.3s,baz=112,slow=16,SNR=1.2							
H11N2	**WAKE ISLAND Hy 28.32 124**			T		T	18 19 58.2	
	baz=316,slow=75,SNR=44							
H11N1	**WAKE ISLAND Hy 28.32 124**			T		T	18 19 49.1	
	baz=316,slow=75,SNR=46							
H11N3	**WAKE ISLAND Hy 28.33 124**			T		T	18 19 46.1	
	baz=316,slow=75,SNR=40							
H11S1	**WAKE ISLAND Hy 29.07 126**			T		T	18 20 41.7	
	baz=318,slow=76,SNR=27							
H11S3	**WAKE ISLAND Hy 29.07 126**			T		T	18 20 41.9	
	baz=318,slow=76,SNR=63							
H11S2	**WAKE ISLAND Hy 29.09 126**			T		T	18 20 42.5	
	baz=318,slow=76,SNR=21							
MKAR	**Makanchi Array**	**43.97**	**301**	P		**P**	**17 51 39.0**	**-0.5**
	0.2nm,0.5s,baz=69,slow=8.0,SNR=2.1							
WRA	**Warramunga Arr**	**58.39**	**189**	P		**P**	**17 53 27.5**	**-0.3**
	0.6nm,0.5s,baz=7.8,slow=7.7,SNR=14							
ASAR	**Alice Springs**	**62.11**	**189**	P		**P**	**17 53 53.4**	**+0.1**
	0.2nm,0.4s,baz=16,slow=11,SNR=11							

IDC 13 17:51:49.5±4.8,**10°.13S**×**164°.22E**,**h0**km,**mb3.6**/3, **mb1 3.9**/3,**mb1mx3.5**/29,**mbtmp3.6**/3,**Error ellipse: s-maj=255.2km s-min=33.1km az=138.0,Santa Cruz Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
WRA	**Warramunga Arr**	**30.41**	**248**	P		P	17 58 05.2	+1.3
	1.2nm,0.8s,baz=80,slow=10.0,SNR=8.7							
ASAR	**Alice Springs**	**31.89**	**241**	P		P	17 58 15.5	-1.4
	0.5nm,0.9s,baz=66,slow=10.0,SNR=6.3							
ILAR	**Eielson Array**	**83.13**	**19**	P		P	18 04 17.0	0.0
	0.3nm,0.6s,baz=242,slow=5.8,SNR=5.0							

MAN 13 17:52:12.9°.89N×**125°.16E**,**h132**km,**mb4.5,ML3.4,MS3.3, 2C-2D,Mindanao**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
LLP	**Lapu-Lapu**	**1.25**	**290**	*e*P		Pn	17 52 40.2	+2.6
LLP				*i* S		Sn	17 52 59.6	+2.6
PLP	**Palo**	**1.28**	**352**	*e*P		Pn	17 52 38.3	+0.4
PLP				*i* S		Sn	17 52 59.2	+1.6
CGP	**Cagayan de Oro**	**1.50**	**198**	*e*P		Pn	17 52 40.5	+0.2
CGP				*e*S		Sn	17 53 03.1	+1.3
BIPH	**Bislig**	**2.07**	**145**	*i*P		Pn	17 52 48.0	+1.0
BIPH				*i* S		Sn	17 53 13.6	-0.1

IDC 13 17:54:35.4±10.0,**20°.20S**×**167°.78E**,**h0**km,**mb3.7**/3, **mb1 3.8**/4,**mb1mx3.5**/25,**mbtmp3.6**/4,**ML2.9**/1,**Error ellipse: s-maj=182.7km s-min=41.0km az=94.0,Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.24**	**214**	Pn		Pn	17 55 13.6	-0.4
	3.4nm,0.3s,baz=74,slow=9.8,SNR=42							
DZM				S		Sn	17 55 42.8	+0.3
	19nm,0.3s,baz=42,slow=19,SNR=20							
STKA	**Stephens Creek**	**26.18**	**238**	P		P	18 00 12.0	+0.2
	1.0nm,0.6s,baz=96,slow=9.2,SNR=4.2							
WRA	**Warramunga Arr**	**31.39**	**265**	P		P	18 00 58.0	-0.4
	0.2nm,0.5s,baz=92,slow=8.6,SNR=5.4							
ASAR	**Alice Springs**	**31.57**	**257**	P		P	18 01 00.2	+0.3
	1.1nm,0.7s,baz=87,slow=8.9,SNR=23							

MEX 13 18:14:31.7±0.8,**17°.16N**×**94°.63W**,**h26**km±27km,**MD3.8, Chiapas**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
TUIG	**Tuzandepetl**	**0.90**	**13**	*i* P		Pn	18 14 46.7	-1.9
TUIG				*i* S		Sb	18 14 56.3	-3.9
TGIG		**1.49**	**104**	*i* P		Pn	18 14 54.6	-2.3
TGIG				*e*S		Sn	18 15 12.4	-3.2
HUIG	**Huatulco**	**1.98**	**226**	*e*P		Pn	18 15 00.9	-2.6
HUIG				*i* S		Sn	18 15 24.4	-3.0
VHO	**Vista Hermosa**	**2.01**	**268**	*e*P		Pn	18 15 02.6	-1.5
VHO				*e*S		Sn	18 15 25.8	-2.7
CCIG	**Comitan**	**2.54**	**110**	*i* P		Pn	18 15 09.2	-2.2
CCIG				*i* S		Sn	18 15 39.1	-2.6
TPIG	**Tehuac#an**	**2.89**	**296**	*i* P		Pn	18 15 14.9	-1.2
TPIG				*i* S		Sn	18 15 46.8	-3.4
PNIG	**Pinotepa**	**3.43**	**258**	*e*P		Pn	18 15 20.9	-2.6
PNIG				*e*S		Sn	18 15 59.9	-3.5

MAN 13 18:16:01.9°.65N×**122°.20E**,**h1**km,**mb4.4,ML3.3,MS3.1, 2C,Negros**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
SNPH	**Sibulan**	**1.07**	**106**	*i* P		Pg	18 16 18.9	-2.6
SNPH				*i* S		Sg	18 16 34.7	-0.8
LLP	**Lapu-Lapu**	**1.87**	**69**	*e*P		Pb	18 16 36.0	+0.1
LLP				*e*S		Sb	18 16 59.8	-0.1
RCP	**Roxas**	**1.98**	**16**	*e*P		Pn	18 16 36.5	+0.9
RCP				*e*S		Sb	18 17 03.0	0.0

DJA ***13*** *18:28:01.1±1.2, 8°.S±2°.×11°.9E±°, h28km±11km, M4.2/10, mb4.2/1, MLv4.2/10*
ISCJB ***13*** *18:28:05.3±0.6, 7°.45S±0°.06×120°.1E±0°.1, h10km, mb3.6/5, Error ellipse: s-maj=19.8km s-min=6.0km az=162.6*
IDC ***13*** *18:28:06.5±1.2, 7°.42S×120°.40E, h0km, mb3.6/6, mb1 3.7/9, mb1mx3.5/49, mbtmp3.6/9, ML3.7/3, MS2.7/1, Ms1 2.7/1, ms1mx2.4/33, Error ellipse: s-maj=76.0km s-min=10.2km az=55.0*

ISC 13 18:28:07.1±0.8,**7°.48S**±0°.05×**120°.3E**±0°.1,**h10**km,**n15,** σ2°.08/17,**mb3.8**/5,**Flores Sea**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
WSI	**Waingapu**	**2.17**	**181**	P		**Pn**	**18 28 41.4**	**-1.9**
WSI				S		**Sn**	**18 29 11.8**	**+1.5**
MMRI	**Maumere**	**2.20**	**121**	P		Pg	18 28 55.6	+6.2
KAPI	**Kappang**	**2.52**	**347**	Pn		**Pn**	**18 28 46.8**	**-1.4**
	13nm,0.3s,baz=190,slow=2.9,SNR=62							
KAPI				Sn		**Sg**	**18 29 28.0**	**-0.2**
	43nm,0.3s,baz=220,slow=17,SNR=11							
KAPI				LR		LR	18 30 04.7	
	comp=Z,141nm,18.6s,baz=346,slow=48							
BASI	**Baing, Sumba**	**2.73**	**175**	P		**Pn**	**18 28 49.7**	**-1.3**
SPSI	**Sidrap Palu**	**3.54**	**351**	P		**Pn**	**18 28 59.5**	**-2.7**
TTSI	**Tana Toraja**	**4.44**	**353**	P		**Pn**	**18 29 12.2**	**-2.4**
SOEI	**Soe**	**4.50**	**120**	P		**Pb**	**18 29 28.3**	**+2.0**
FITZ	**Fitzroy Crossi**	**11.75**	**154**	Pn		**Pn**	**18 30 54.2**	**-0.7**
	0.1nm,0.3s,baz=335,slow=13,SNR=7.9							
FITZ				Sn		**Sn**	**18 33 02.5**	**-3.8**
	0.5nm,0.3s,baz=176,slow=22,SNR=7.8							
WRA	**Warramunga Arr**	**18.38**	**134**	P		**P**	**18 32 24.4**	**+2.1**
	0.5nm,0.3s,baz=306,slow=12,SNR=33							
WRA				S		**S**	**18 35 49.6**	**-2.8**
	0.1nm,0.3s,baz=317,slow=22,SNR=3.2							
ASAR	**Alice Springs**	**20.70**	**143**	P		Pn	18 32 48.6	-1.4
	0.7nm,0.5s,baz=305,slow=8.4,SNR=31							
ASAR				S		Sn	18 36 43.0	-0.8
	0.5nm,0.8s,baz=315,slow=19,SNR=4.2							
STKA	**Stephens Creek**	**31.33**	**144**	P		**P**	**18 34 28.1**	**+0.3**
	2.0nm,0.9s,baz=323,slow=15,SNR=2.9							
SONM	**Songino Array**	**56.44**	**349**	P		**P**	**18 37 50.6**	**+1.5**
	0.2nm,0.4s,baz=160,slow=4.6,SNR=2.6							
MKAR	**Makanchi Array**	**63.74**	**332**	P		**P**	**18 38 40.1**	**+1.0**
	0.4nm,0.5s,baz=159,slow=7.1,SNR=5.1							
ZALV	**Zalesovo Beam**	**68.12**	**338**	P		**P**	**18 39 06.5**	**-0.6**
	0.3nm,0.4s,baz=127,slow=6.5,SNR=2.5							
KURBB	**Kurtchatov Arra**	**68.22**	**333**	P		**P**	**18 39 09.7**	**+1.9**
	0.2nm,0.5s,baz=137,slow=5.3,SNR=2.9							

IDC ***13*** *18:40:21.2±1.7, 29°.55S×176°.14W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.6/32, mbtmp3.6/2, Error ellipse: s-maj=75.0km s-min=33.7km az=14.0*

ISC 13 18:40:25.2±1.5,**30°.13S**±0°.10×**176°.3W**±0°.1,**h28**km,**n7,** σ2°.06/9,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
RAO	**Raoul Island**	**1.66**	**302**	Pn		**Pn**	**18 40 50.5**	**-2.0**
	120nm,0.3s,baz=114,slow=19,SNR=2.7							
RAO				S		**Sb**	**18 41 17.1**	**+1.5**
	283nm,0.3s,baz=41,slow=19,SNR=5.1							
URZ	**Urewera**	**9.77**	**212**	Pn		**Pn**	**18 42 41.3**	**-2.5**
	0.5nm,0.3s,baz=221,slow=20,SNR=1.1							
URZ				S		**Sn**	**18 44 34.1**	**+1.6**
	2.1nm,0.3s,baz=284,slow=18,SNR=7.2							
ASAR	**Alice Springs**	**44.60**	**266**	P		**P**	**18 48 37.0**	**+1.8**
	0.5nm,0.7s,baz=106,slow=7.1,SNR=9.1							
WRA	**Warramunga Arr**	**45.56**	**271**	P		**P**	**18 48 43.3**	**+0.4**
	1.1nm,0.8s,baz=110,slow=6.2,SNR=6.1							
FINES	**FINESS Array B**	**145.38**	**341**	PKP		**PKPbc**	**18 59 59.0**	**-0.6**
	0.9nm,0.6s,baz=45,slow=3.0,SNR=6.3							
AKASG	**Malin Array Be**	**151.96**	**324**	PKPbc		**PKPbc**	**19 00 17.3**	**+0.1**
	0.2nm,0.3s,baz=45,slow=1.9,SNR=2.3							
TORD	**Torodi Ar. Bea**	**162.99**	**173**	PKPab		**PKPab**	**19 01 17.5**	**+2.6**
	1.3nm,0.7s,baz=195,slow=4.7,SNR=7.1							

NIED ***13*** *18:49:00, 38°.40N×142°.20E, h32km, Mw4.0 Best double couple: M0 1.23000×10^15 NP1:φ≈303.00000°, δ48.00000°, λ-149.00000°. NP2:φ≈191.00000°, δ67.00000°, λ-46.00000°.*
IDC ***13*** *18:49:53.7±0.5, 38°.37N×142°.35E, h0km, mb4.0/20, mb1 4.1/26, mb1mx4.0/58, mbtmp4.0/26, ML3.7/4, MS3.2/17, Ms1 3.2/17, ms1mx3.1/47, Error ellipse: s-maj=17.6km s-min=11.4km az=90.0*
ISCJB ***13*** *18:49:55.9±0.9, 38°.38N±0°.03×142°.24E±0°.05, h27km±6km, mb4.2/26, MS3.3/11, Error ellipse: s-maj=6.5km s-min=4.7km az=20.1*
JMA ***13*** *18:49:57.3±0.1, 38°.42N×142°.17E, h32km±1km, M4.2*
JMA Felt II J1.
NEIC ***13*** *18:49:59.0±0.8, 38°.38N×142°.30E, h36km±7km, mb4.6/5, Error ellipse: s-maj=9.4km s-min=5.7km az=108.0*
NEIC Recorded [2 JMA] in Miyagi.

ISC 13 18:49:57.9±2.3,**38°.39N**±0°.04×**142°.18E**±0°.07,**h27**km±15km, **n64,** σ1°.49/68,**mb4.1**/26,**MS3.2**/11,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
JIO	**Ouri**	**0.65**	**276**	P		**Pn**	**18 50 10.0**	**-1.4**
JIO				S		**Sb**	**18 50 18.3**	**-1.2**
OFUJ	**Ofunato**	**0.79**	**330**	P		**Pn**	**18 50 11.6**	**-1.8**
OFUJ				S		**Sn**	**18 50 21.6**	**-2.7**
JMK	**Ichinoseki**	**0.93**	**307**	P		**Pn**	**18 50 14.1**	**-1.2**
JMK				S		**Sn**	**18 50 26.1**	**-1.7**
JOU	**Okura**	**1.19**	**269**	P		**Pn**	**18 50 18.2**	**-0.6**
JOU				S		**Sn**	**18 50 33.6**	**-0.5**
JMM	**Marumori**	**1.21**	**245**	P		**Pn**	**18 50 17.9**	**-1.2**
JMM				S		**Sn**	**18 50 32.7**	**-1.8**
JOM	**Ohasama**	**1.28**	**328**	P		**Pn**	**18 50 19.3**	**-0.8**
JOM				S		**Sn**	**18 50 35.3**	**-1.1**
JFK	**Kawauchi**	**1.45**	**226**	P		**Pn**	**18 50 21.0**	**-1.4**
JFK				S		**Sn**	**18 50 38.2**	**-2.4**
JYK	**Kaneyama**	**1.52**	**291**	P		**Pn**	**18 50 22.9**	**-0.4**
JYK				*e*S		**Sn**	**18 50 42.0**	**-0.1**
JRG	**Rokugo**	**1.57**	**310**	P		**Pn**	**18 50 23.6**	**-0.4**
JRG				*e*S		**Sn**	**18 50 42.5**	**-0.9**
MJAR	**Matsushiro Arr**	**3.66**	**241**	Pn		**Pn**	**18 50 53.9**	**+1.2**
	5.6nm,0.3s,baz=113,slow=9.4,SNR=37							
MJAR				LR		LR	18 52 18.8	
	comp=Z,82nm,18.7s,baz=55,slow=39							
MAJO	**Matsushiro**	**3.66**	**241**	*e*Pn		**Pn**	**18 50 53.8**	**+1.1**
MAT	**Matsushiro**	**3.66**	**241**	P		**Pn**	**18 50 53.7**	**+1.0**
MAT				S		**Sn**	**18 51 39.4**	**+4.4**
ERM	**Erimo**	**3.70**	**11**	*e*Pn		**Pn**	**18 50 53.1**	**-0.2**
JHJ2	**Mitsune**	**5.61**	**201**	*e*Pn		**Pn**	**18 51 19.0**	**-0.5**
	31nm,0.3s							
JHJ	**Hachijo jima 2**	**5.61**	**201**	Pn		**Pn**	**18 51 18.7**	**-0.8**
	30nm,0.3s,baz=92,slow=21,SNR=30							
JHJ				S		**Sn**	**18 52 18.7**	**-4.4**
	29nm,0.3s,baz=87,slow=23,SNR=8.2							
JHJ				LR		LR	18 53 38.3	
	comp=Z,118nm,21.5s,baz=110,slow=40							
ASAJ	**Asahikawa**	**5.73**	**3**	Pn		**Pn**	**18 51 21.8**	**+0.6**
	2.2nm,0.3s,baz=205,slow=14,SNR=23							
ASAJ				S		**Sn**	**18 52 25.7**	**-0.3**
	1.9nm,0.3s,baz=30,slow=20,SNR=2.7							
ASAJ	**Asahikawa**	**5.73**	**3**	*e*Pn		**Pn**	**18 51 22.2**	**+1.0**
	6.9nm,0.8s							
ASAJ				Sn		**Sn**	**18 52 25.7**	**-0.3**
USRK	**Ussuriysk Ar.**	**9.61**	**310**	Pn		**Pn**	**18 52 15.9**	**+1.5**
	0.3nm,0.3s,baz=122,slow=15,SNR=4.5							
USRK				LR		LR	18 55 48.1	
	comp=Z,164nm,19.0s,baz=138,slow=36							
JNU	**Nakatsue**	**10.57**	**244**	Pn		**Pn**	**18 52 31.4**	**+3.7**
	0.2nm,0.3s,baz=55,slow=3.5,SNR=7.0							
MDJ	**Mudanjiang**	**11.29**	**307**	*e*Pn		**Pn**	**18 52 38.1**	**+0.6**
KSRS	**Korea Array**	**11.30**	**270**	Pn		**Pn**	**18 52 41.4**	**+3.9**
	0.3nm,0.3s,baz=76,slow=14,SNR=3.6							
KSRS				LR		LR	18 56 40.7	
	comp=Z,90nm,20.1s,baz=90,slow=36							
KSAR	**Wonju Array Be**	**11.33**	**270**	Pn		**Pn**	**18 52 41.4**	**+3.4**
KLR	**Kul'dur**	**13.18**	**329**	Pn		**Pn**	**18 53 03.3**	**+0.2**
	0.0nm,0.3s,baz=342,slow=3.2,SNR=1.8							
KLR				LR		LR	18 58 03.8	
	comp=Z,142nm,19.2s,baz=135,slow=37							
PETK	**Petropavlovsk-**	**18.21**	**31**	P		**Pn**	**18 54 08.2**	**-0.5**
	baz=191,slow=6.9,SNR=2.7							
PETK				LR		LR	19 02 05.5	
	comp=Z,56nm,18.1s,baz=147,slow=40							
MA2	**Magadan**	**21.90**	**12**	LR		LR	19 02 37.2	
	comp=Z,64nm,19.1s,baz=183,slow=35							
YAK	**Yakutsk**	**24.89**	**346**	P		**P**	**18 55 17.5**	**-0.6**
	3.9nm,0.3s,baz=136,slow=3.7,SNR=3.2							
YAK				LR		LR	19 04 50.0	
	comp=Z,34nm,19.5s,baz=114,slow=36							
YAK	**Yakutsk**	**24.89**	**346**	*e*P		**P**	**18 55 18.2**	**+0.1**
	18nm,0.9s							
SEY	**Seymchan**	**25.34**	**11**	P		**P**	**18 55 22.9**	**+0.6**
	3.0nm,0.7s,baz=174,slow=9.5,SNR=7.1							
SONM	**Songino Array**	**27.56**	**302**	P		**P**	**18 55 43.8**	**+1.2**
	0.8nm,0.7s,baz=94,slow=7.6,SNR=6.5							
SONM				LR		LR	19 06 12.3	
	comp=Z,55nm,19.7s,baz=109,slow=35							
ENH	**Enshi**	**28.07**	**263**	*e*P		**P**	**18 55 46.1**	**-1.2**
	7.3nm,0.6s							
H11N2	**WAKE ISLAND Hy 28.36 124**			T		T	19 26 04.5	
	baz=316,slow=75,SNR=1438							
H11N1	**WAKE ISLAND Hy 28.37 124**			T		T	19 26 07.5	
	baz=316,slow=75,SNR=1490							
H11N3	**WAKE ISLAND Hy 28.38 124**			T		T	19 26 08.1	
	baz=316,slow=75,SNR=1188							
H11S1	**WAKE ISLAND Hy 29.13 126**			T		T	19 27 02.9	
	baz=318,slow=76,SNR=450							
H11S3	**WAKE ISLAND Hy 29.13 126**			T		T	19 27 03.0	
	baz=318,slow=76,SNR=587							
H11S2	**WAKE ISLAND Hy 29.14 126**			T		T	19 27 04.0	
	baz=318,slow=76,SNR=321							
TLY	**Talaya**	**29.92**	**309**	LR		LR	19 08 43.6	
	comp=Z,62nm,18.5s,baz=112,slow=38							
ZALV	**Zalesovo Beam**	**41.46**	**311**	P		**P**	**18 57 42.2**	**+0.1**
	1.9nm,0.6s,baz=88,slow=7.7,SNR=9.4							
ZALV				PcP		**PcP**	**18 59 39.7**	**+0.2**
	0.5nm,0.3s,baz=118,slow=2.7,SNR=2.9							
ZALV				LR		LR	19 14 57.8	
	comp=Z,34nm,18.5s,baz=74,slow=36							
NRIK	**Noril'sk**	**42.30**	**335**	LR		LR	19 16 19.0	
	comp=Z,59nm,19.1s,baz=128,slow=37							
MKAR	**Makanchi Array**	**43.92**	**301**	P		**P**	**18 58 02.4**	**+0.1**
	1.1nm,0.7s,baz=81,slow=9.2,SNR=9.8							
MKAR				LR		LR	19 15 21.9	
	comp=Z,19nm,18.8s,baz=162,slow=35							
KURK	**Kurchatov**	**45.58**	**307**	*e*P		**P**	**18 58 14.9**	**-0.5**
	96nm,0.7s							
ILAR	**Eielson Array**	**48.03**	**33**	P		**P**	**18 58 34.8**	**+0.4**
	0.4nm,0.7s,baz=268,slow=6.5,SNR=6.2							
KKAR	**Karatay Array**	**52.98**	**299**	*e*P		**P**	**18 59 11.5**	**-0.5**
	2.1nm,0.8s							
ABKAR	**Akbulak array**	**57.53**	**310**	*e*P		**P**	**18 59 44.7**	**-0.1**
	3.9nm,0.6s							
CTA	**Charters Tower**	**58.29**	**175**	P		**P**	**18 59 50.2**	**-0.1**
	1.6nm,0.5s,baz=17,slow=14,SNR=4.9							
CTAO	**Charters Tower**	**58.29**	**175**	*e*P		**P**	**18 59 50.1**	**-0.2**
FITZ	**Fitzroy Crossi**	**58.30**	**199**	P		**P**	**18 59 50.8**	**+0.5**
	2.1nm,0.6s,baz=7.8,slow=6.8,SNR=15							
WRAB	**Tennant Creek**	**58.48**	**189**	*e*P		**P**	**18 59 50.6**	**-0.9**
	6.9nm,0.8s							
WRA	**Warramunga Arr**	**58.49**	**189**	P		**P**	**18 59 51.1**	**-0.6**
	6.9nm,0.7s,baz=6.9,slow=7.3,SNR=53							
ASAR	**Alice Springs**	**62.22**	**189**	P		**P**	**19 00 16.9**	**-0.2**
	4.3nm,0.7s,baz=9.4,slow=5.3,SNR=74							
YKA	**Yellowknife Ar**	**62.33**	**31**	P		**P**	**19 00 15.2**	**-2.3**
	0.3nm,0.6s,baz=300,slow=6.3,SNR=3.4							
GEYT	**Alibeck**	**63.71**	**299**	P		**P**	**19 00 27.5**	**+0.4**
	0.4nm,0.3s,baz=84,slow=15,SNR=2.7							
FINES	**FINESS Array B**	**67.90**	**332**	P		**P**	**19 00 54.1**	**+0.5**
	2.2nm,0.8s,baz=70,slow=4.6,SNR=4.4							
FINES				LR		LR	19 32 03.3	
	comp=Z,22nm,20.0s,baz=32,slow=37							
STKA	**Stephens Creek**	**69.91**	**181**	P		**P**	**19 01 06.3**	**0.0**
	1.3nm,0.6s,baz=18,slow=5.7,SNR=5.6							
KBZ	**Khabaz**	**70.48**	**311**	P		**P**	**19 01 11.5**	**+1.6**
	1.5nm,0.8s,baz=297,slow=2.3,SNR=3.2							
HFS	**Hagfors**	**73.10**	**336**	P		**P**	**19 01 25.9**	**+0.5**
	2.1nm,1.1s,baz=46,slow=4.2,SNR=3.9							
NB2	**NORSAR Subarra**	**73.17**	**337**	P		**P**	**19 01 25.8**	**0.0**
	comp=Z,3.8nm,0.9s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**73.17**	**337**	P		**P**	**19 01 26.0**	**+0.2**
	comp=Z,0.8nm,0.8s,baz=39,slow=6.1,SNR=2.7							
NOA				LR		LR	19 40 18.7	
	comp=Z,13nm,18.1s,baz=280,slow=41							
AKASG	**Malin Array Be**	**73.59**	**322**	P		**P**	**19 01 28.3**	**-0.1**
	comp=Z,0.6nm,0.4s,baz=42,slow=5.6,SNR=6.0							
AKASG				LR		LR	19 36 25.1	
	comp=Z,25nm,19.2s,baz=255,slow=38							
PDAR	**Pinedale Array**	**76.29**	**46**	P		**P**	**19 01 44.8**	**+0.3**
	comp=Z,0.7nm,0.6s,baz=291,slow=2.5,SNR=3.8							
BRTR	**Keskin Array B**	**78.40**	**312**	P		**P**	**19 01 58.3**	**+2.1**
	comp=Z,0.4nm,0.5s,baz=54,slow=5.4,SNR=2.6							
GERES	**GERESS Array B**	**81.88**	**329**	LR		LR	19 41 05.4	
	comp=Z,28nm,20.0s,baz=21,slow=38							
TXAR	**Lajitas Array**	**88.82**	**53**	P		**P**	**19 02 48.9**	**-0.9**
	comp=Z,0.3nm,0.6s,baz=305,slow=3.2,SNR=5.5							
LPAZ	**La Paz**	**145.48**	**59**	PKPbc		**PKPdf**	**19 09 34.6**	**-0.1**
	comp=Z,1.1nm,0.5s,baz=34,slow=5.5,SNR=5.3							

CRAAG ***13*** *18:49:56.7, 35°.98N×4°.08E, Ml4.0*
IDC ***13*** *18:49:57.5±1.6, 35°.96N×4°.02E, h0km, mb3.3/2, mb1 3.4/5,

EMUR	**La Murta**	**4.71**	**296**	P		**Pn**	**18 51 09.2**	**+0.3**
	4.3nm,0.2s,SNR=9.7							
EMUR				S		**Sn**	**18 52 01.9**	**-1.6**
	2.9nm,0.3s							
ENIJ	**Nijar**	**5.21**	**284**	P		**Pn**	**18 51 15.7**	**-0.1**
	3.5nm,0.2s,SNR=7.9							
ENIJ				S		**Sn**	**18 52 12.4**	**-3.4**
	7.1nm,0.3s,SNR=7.9							
ENIJ	**Nijar**	**5.21**	**284**	P		**Pn**	**18 51 15.7**	**-0.1**
	3.5nm,0.2s,SNR=7.9							
ENIJ				S		**Sn**	**18 52 12.4**	**-3.4**
	7.1nm,0.3s,SNR=7.9							
ETOB	**Tobarra**	**5.28**	**303**	P		**Pn**	**18 51 18.3**	**+1.5**
	3.2nm,0.3s,SNR=11							
ETOB				S		**Sn**	**18 52 17.0**	**-0.6**
	4.3nm,0.5s							
ETOB	**Tobarra**	**5.28**	**303**	P		**Pn**	**18 51 18.3**	**+1.5**
	3.2nm,0.3s,SNR=11							
ETOB				S		**Sn**	**18 52 17.0**	**-0.6**
	4.3nm,0.5s							
EMOS	**Mosqueruela**	**5.73**	**322**	P		**Pn**	**18 51 24.3**	**+1.2**
	3.8nm,0.5s,SNR=7.8							
EMOS				S		**Sn**	**18 52 26.8**	**-2.1**
	4.2nm,0.7s,SNR=7.9							
EMOS	**Mosqueruela**	**5.73**	**322**	P		**Pn**	**18 51 24.3**	**+1.2**
	3.8nm,0.5s,SNR=7.8							
EMOS				S		**Sn**	**18 52 26.8**	**-2.1**
	4.2nm,0.7s,SNR=7.9							
EBER	**Berja**	**5.74**	**282**	P		**Pn**	**18 51 23.1**	**-0.1**
	1.5nm,0.3s,SNR=9.5							
EBER				S		**Sn**	**18 52 27.3**	**-1.8**
	3.5nm,0.3s,SNR=7.9							
EBER	**Berja**	**5.74**	**282**	P		**Pn**	**18 51 23.1**	**-0.1**
	1.5nm,0.3s,SNR=9.5							
EBER				S		**Sn**	**18 52 27.3**	**-1.8**
	3.5nm,0.3s,SNR=7.9							
SESP	**Santiago Espad**	**5.77**	**294**	P		**Pn**	**18 51 25.5**	**+1.9**
	6.0nm,0.3s,SNR=7.9							
SESP	**Santiago Espad**	**5.77**	**294**	P		**Pn**	**18 51 25.5**	**+1.9**
	6.0nm,0.3s,SNR=7.9							
ERTA	**Horta de San J**	**5.85**	**331**	P		**Pn**	**18 51 28.4**	**+3.9**
	2.4nm,0.4s,SNR=4.0							
ERTA	**Horta de San J**	**5.85**	**331**	P		**Pn**	**18 51 28.4**	**+3.9**
	2.4nm,0.4s,SNR=4.0							
EPOB	**Poblet**	**5.93**	**337**	P		**Pn**	**18 51 26.2**	**+0.5**
	4.7nm,0.5s,SNR=7.9							
EPOB	**Poblet**	**5.93**	**337**	P		**Pn**	**18 51 26.2**	**+0.5**
	4.7nm,0.5s,SNR=7.9							
EVIA	**Vianos**	**5.94**	**299**	P		**Pn**	**18 51 26.7**	**+0.8**
	1.2nm,0.1s,SNR=7.9							
EVIA				S		**Sn**	**18 52 34.2**	**+0.2**
	2.0nm,0.3s,SNR=7.9							
CFON	**Fontmartina**	**5.99**	**348**	P		**Pn**	**18 51 26.3**	**-0.2**
	2.8nm,0.3s,SNR=7.0							
EQES	**Quesada**	**6.07**	**290**	P		**Pn**	**18 51 29.5**	**+1.9**
	2.2nm,0.2s,SNR=11							
EQES				S		**Sn**	**18 52 38.8**	**+1.7**
	5.8nm,0.3s,SNR=7.9							
EJON	**La Jonquera**	**6.60**	**352**	P		**Pn**	**18 51 36.1**	**+1.3**
	4.2nm,0.4s,SNR=4.0							
SJAF	**Saint Jean de**	**6.63**	**352**	P		**Pn**	**18 51 36.2**	**+0.9**
	2.5nm,0.4s,SNR=7.9							
CLLI	**Llivia**	**6.77**	**346**	P		**Pn**	**18 51 39.0**	**+1.7**
	2.6nm,0.4s,SNR=7.9							
CSOR	**Sort**	**6.86**	**341**	P		**Pn**	**18 51 40.4**	**+1.9**
	1.8nm,0.4s,SNR=7.9							
EMIJ	**Mijas**	**7.22**	**278**	P		**Pn**	**18 51 43.9**	**+0.6**
	0.6nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**7.31**	**291**	P		**Pn**	**18 51 46.4**	**+1.8**
	0.7nm,0.3s,SNR=7.9							
ESDC	**Sonseca Array**	**7.42**	**303**	Pn		**Pn**	**18 51 46.6**	**+0.4**
	0.4nm,0.3s,baz=117,slow=13,SNR=4.9							
ESDC	**Sonseca Array**	**7.42**	**303**	P		**Pn**	**18 51 46.8**	**+0.6**
	0.5nm,0.2s,baz=118,slow=13,SNR=4.4							
MDT	**Midelt**	**7.85**	**249**	Pn		**Pn**	**18 51 53.3**	**+1.1**
	0.5nm,0.3s,baz=67,slow=16,SNR=9.7							
MDT				Sn		**Sn**	**18 53 19.4**	**-1.7**
	0.2nm,0.3s,baz=232,slow=19,SNR=1.1							
MDT				Lg		Lg	18 54 01.9	
	0.2nm,0.3s,baz=270,slow=16,SNR=1.7							
ECAB	**El Cabril**	**7.93**	**289**	P		**Pn**	**18 51 52.8**	**-0.3**
	3.3nm,0.6s,SNR=7.9							
IELO	**Elcoad**	**8.07**	**331**	P		**Pn**	**18 51 56.2**	**+1.1**
	0.2nm,0.2s,SNR=7.9							
EARI	**Arriondas**	**10.30**	**319**	P		**Pn**	**18 52 28.7**	**+3.1**
	2.7nm,0.6s,SNR=7.9							
ECAL	**Calabor**	**10.38**	**309**	P		**Pn**	**18 52 30.1**	**+3.4**
	2.1nm,0.4s,SNR=7.9							
TORD	**Torodi Ar. Bea**	**22.77**	**186**	P		**P**	**18 55 02.1**	**+1.7**
	0.7nm,1.0s,baz=1.6,slow=10,SNR=3.8							
HFS	**Hagfors**	**25.02**	**11**	LR		LR	19 04 49.7	
	comp=Z,32nm,18.7s,baz=337,slow=36							
MKAR	**Makanchi Array**	**57.41**	**53**	P		**P**	**18 59 47.3**	**+0.9**
	0.3nm,0.5s,baz=276,slow=5.4,SNR=1.7							

IDC 13 19:22:58.0±1.4, 29.12S×176.12W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/27, mbtmp3.6/2, Error ellipse: s-maj=64.7km s-min=26.5km az=179.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**1.58**	**265**	Pn		Pg	19 23 29.2	+0.9
	66nm,0.3s,baz=81,slow=18,SNR=3.3							
RAO				Sn		Sg	19 23 49.1	+0.3
	240nm,0.3s,baz=5.6,slow=23,SNR=5.0							
ASAR	**Alice Springs**	**44.83**	**265**	P		P	19 31 13.1	-1.1
	0.3nm,0.6s,baz=104,slow=7.9,SNR=7.2							
WRA	**Warramunga Arr**	**45.71**	**270**	P		P	19 31 20.3	-0.8
	1.3nm,0.7s,baz=110,slow=7.7,SNR=15							
FINES	**FINESS Array B**	**144.48**	**342**	PKP		PKPdf	19 42 36.0	+0.4
	2.4nm,0.9s,baz=337,slow=6.7,SNR=3.1							
AKASG	**Malin Array Be**	**151.22**	**326**	PKPbc		PKPbc	19 42 53.1	+0.1
	0.2nm,0.3s,baz=35,slow=1.9,SNR=3.3							
TORD	**Torodi Ar. Bea**	**163.98**	**172**	PKPab		PKPab	19 43 56.1	-0.5
	0.4nm,0.8s,baz=180,slow=4.3,SNR=2.8							

IDC 13 19:25:53.6±2.3, 3.47S×127.92E, h0km, mb3.1/2, mb1 3.3/3, mb1mx3.2/43, mbtmp3.1/3, ML2.8/1, Error ellipse: s-maj=186.1km s-min=29.4km az=67.0, Seram

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WRA	**Warramunga Arr**	**17.53**	**160**	P		Pn	19 29 59.7	+0.2
	0.0nm,0.3s,baz=338,slow=13,SNR=3.8							
ASAR	**Alice Springs**	**20.89**	**164**	P		P	19 30 37.9	+0.2
	0.2nm,0.5s,baz=344,slow=11,SNR=5.0							
MKAR	**Makanchi Array**	**64.16**	**327**	P		P	19 36 29.9	-0.1
	0.5nm,0.9s,baz=118,slow=5.2,SNR=3.7							

*NIED **13** 19:35:00,38.50N×141.70E,h53km,Mw3.6 Best double couple: M₀2.94000×10¹⁴ NP1:ϕ₁200.00000°,δ27.00000°, λ87.00000°. NP2:ϕ₂24.00000°,δ63.00000°,λ92.00000°.*
*ISCJB **13** 19:35:41.2±0.7,38.51N±0.04×141.79E±0.09,h63km±5km, mb3.5/5, Error ellipse: s-maj=12.1km s-min=5.6km az=12.4*
*JMA **13** 19:35:42.9±0.1,38.54N×141.72E,h54km±1km,M3.8*
JMA Felt II J1.
*IDC **13** 19:35:42.9±2.7,38.53N×141.80E,h62km±22km, mb3.3/5, mb1 3.4/10, mb1mx3.2/58, mbtmp3.6/10, ML3.2/5, MS3.1/1, Ms1 3.1/1, ms1mx2.4/22, Error ellipse: s-maj=38.1km s-min=17.1km az=81.0*

ISC 13 19:35:41.9±1.3, 38.49N±0.05×141.83E±0.10, h54km±9km, n28, σ0.9 79/31, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.38**	**265**	P		**Pn**	**19 35 52.4**	**+0.3**
JIO				S		**Sn**	**19 35 58.8**	**-0.6**
OFUJ	**Ofunato**	**0.61**	**348**	P		**Pn**	**19 35 54.9**	**+0.2**
OFUJ				S		**Sn**	**19 36 03.2**	**-0.7**
JMK	**Ichinoseki**	**0.66**	**315**	P		**Pn**	**19 35 55.5**	**+0.1**
JMK				S		**Sn**	**19 36 04.2**	**-0.9**
JOU	**Okura**	**0.92**	**263**	P		**Pn**	**19 35 58.6**	**-0.1**
JOU				S		**Sn**	**19 36 10.4**	**-0.7**
JMM	**Marumori**	**1.02**	**233**	P		**Pn**	**19 36 00.0**	**0.0**
JMM				S		**Sn**	**19 36 13.0**	**-0.4**
JOM	**Ohasama**	**1.07**	**337**	P		**Pn**	**19 36 00.8**	**+0.1**
JOM				S		**Sn**	**19 36 14.2**	**-0.3**
JYK	**Kaneyama**	**1.23**	**291**	P		**Pn**	**19 36 02.6**	**-0.2**
JRG	**Rokugo**	**1.30**	**315**	P		**Pn**	**19 36 03.6**	**-0.2**
JRG				S		**Sn**	**19 36 19.6**	**-0.5**
JFK	**Kawauchi**	**1.35**	**214**	P		**Pn**	**19 36 05.1**	**+0.7**
JFK				S		**Sn**	**19 36 21.3**	**0.0**
JYS	**Shirataka**	**1.41**	**260**	P		**Pn**	**19 36 05.5**	**+0.3**
JYS				S		**Sn**	**19 36 22.8**	**+0.1**
JFT	**Otama**	**1.52**	**231**	P		**Pn**	**19 36 07.7**	**+0.9**
MJAR	**Matsushiro Arr**	**3.47**	**237**	P		**Pn**	**19 36 34.5**	**+1.0**
	2.1nm,0.3s,baz=38,slow=12,SNR=23							
JHJ	**Hachijo jima 2**	**5.61**	**198**	P		**Pn**	**19 37 03.9**	**+1.1**
	3.6nm,0.3s,baz=76,slow=19,SNR=8.7							
JHJ				S		**Sn**	**19 38 03.0**	**-2.7**
	7.1nm,0.3s,baz=104,slow=7.7,SNR=4.0							
ASAJ	**Asahikawa**	**5.66**	**6**	P		**Pn**	**19 37 03.7**	**+0.4**
	0.9nm,0.3s,baz=203,slow=10,SNR=11							
USRK	**Ussuriysk Ar.**	**9.34**	**311**	P		**Pn**	**19 37 54.0**	**+0.2**
	0.3nm,0.3s,baz=119,slow=15,SNR=4.2							
JNU	**Nakatsue**	**10.38**	**242**	P		**Pn**	**19 38 09.2**	**+1.2**
	0.2nm,0.3s,baz=63,slow=11,SNR=2.2							
MA2	**Magadan**	**21.87**	**12**	LR		LR	19 50 18.3	
	comp=Z,44nm,18.2s,baz=112,slow=40							
H11N2	**WAKE ISLAND Hy**	**28.64**	**124**	T		T	20 11 50.6	
	baz=316,slow=75,SNR=71							
H11N1	**WAKE ISLAND Hy**	**28.65**	**124**	T		T	20 11 51.2	
	baz=316,slow=75,SNR=171							
H11N3	**WAKE ISLAND Hy**	**28.66**	**124**	T		T	20 11 52.3	
	baz=316,slow=75,SNR=66							
H11S1	**WAKE ISLAND Hy**	**29.41**	**126**	T		T	20 12 48.4	
	baz=318,slow=76,SNR=98							
H11S3	**WAKE ISLAND Hy**	**29.41**	**126**	T		T	20 12 47.3	
	baz=318,slow=76,SNR=106							
H11S2	**WAKE ISLAND Hy**	**29.42**	**126**	T		T	20 12 47.3	
	baz=318,slow=76,SNR=109							
ZALV	**Zalesovo Beam**	**41.19**	**311**	P		**P**	**19 43 20.9**	**-0.1**
	0.6nm,0.4s,baz=79,slow=7.7,SNR=4.5							
MKAR	**Makanchi Array**	**43.64**	**301**	P		**P**	**19 43 40.1**	**-0.9**
	0.7nm,0.6s,baz=82,slow=9.6,SNR=6.5							
BVAR	**Borovoye Array**	**49.85**	**311**	P		**P**	**19 44 29.4**	**0.0**
	0.3nm,0.4s,baz=80,slow=7.0,SNR=4.2							
WRA	**Warramunga Arr**	**58.54**	**188**	P		**P**	**19 45 33.3**	**+0.4**
	0.3nm,0.5s,baz=7.8,slow=7.7,SNR=8.7							
ASAR	**Alice Springs**	**62.27**	**188**	P		**P**	**19 45 58.7**	**+0.4**
	0.2nm,0.7s,baz=3.3,slow=4.8,SNR=3.7							

*ISCJB **13** 19:35:41.2±0.6,51.94N±0.08×170.33W±0.07,h31km, mb4.1/28, MS3.4/21, Error ellipse: s-maj=13.1km s-min=3.5km az=157.0*
*NEIC **13** 19:35:42.3,51.97N×170.31W,h27km,ML4.1(AEIC), After AEIC.*
*IDC **13** 19:35:47.1±4.4,52.30N×170.59W,h67km±38km, mb3.7/23, mb1 3.9/25, mb1mx3.7/63, mbtmp4.0/25, ML3.7/2, MS3.3/22, Ms1 3.3/22, ms1mx3.2/49, Error ellipse: s-maj=21.5km s-min=12.4km az=176.0*

ISC 13 19:35:42.5±0.6, 52.1N±0.1×170.45W±0.05, h31km, n78, σ1.9 55/68, mb4.2/28, MS3.4/21, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
NIKH	**Nikolski High**	**1.29**	**48**	P		**Pn**	**19 36 04.7**	**+0.3**
NIKH				S		**Sn**	**19 36 19.9**	**-0.8**
OKWR	**Okmok West Rim**	**1.89**	**45**	P		**Pn**	**19 36 14.3**	**+1.6**
OKWR				S		**Sb**	**19 36 39.2**	**-0.4**
OKAK	**Okmok**	**1.93**	**40**	P		**Pn**	**19 36 13.0**	**-0.1**
OKTU	**Okmok Mt. Tuli**	**1.93**	**48**	P		**Pn**	**19 36 14.3**	**+1.1**
OKER	**Okmok East Rim**	**1.97**	**47**	P		**Pn**	**19 36 15.7**	**+1.9**
KOSE	**Korovin Southe**	**2.23**	**277**	P		**Pb**	**19 36 20.6**	**-1.5**
KOFP	**Korovin Flat P**	**2.25**	**275**	P		**Pn**	**19 36 19.7**	**+2.1**
KONE	**Korovin Northe**	**2.27**	**278**	P		**Pn**	**19 36 20.8**	**+2.9**
KOKL	**Mount Kliuchef**	**2.32**	**276**	P		**Pb**	**19 36 21.7**	**-2.0**
MSOM	**Makushin Julie**	**2.71**	**50**	P		**Pn**	**19 36 25.0**	**+1.1**
MCIR	**Makushin Cirqu**	**2.82**	**48**	P		**Pn**	**19 36 27.7**	**+2.3**
MTBL	**Makushin Table**	**2.93**	**49**	P		**Pn**	**19 36 28.7**	**+1.8**
UNV	**Unalaska Valle**	**2.94**	**53**	P		**Pn**	**19 36 28.0**	**+0.9**
UNV				S		**Sn**	**19 37 05.7**	**+4.4**
AKRB	**Akutan Reef Bi**	**3.31**	**51**	P		**Pn**	**19 36 34.1**	**+1.9**
AKUT	**Akutan**	**3.46**	**53**	P		**Pn**	**19 36 35.6**	**+1.4**
GSMY	**Great Sitkin M**	**3.46**	**271**	P		**Pn**	**19 36 36.5**	**+2.3**
GSTD	**Great Sitkin T**	**3.52**	**271**	P		**Pn**	**19 36 37.0**	**+2.0**
GSCK	**Great Sitkin C**	**3.53**	**270**	P		**Pn**	**19 36 37.0**	**+1.9**
ETKA	**Kagalaska Isla**	**3.69**	**268**	P		**Pn**	**19 36 39.5**	**+2.1**
ADAG	**Mount Adagdak**	**3.80**	**270**	P		**Pn**	**19 36 41.4**	**+2.5**
KIKV	**Kanaga Island**	**4.16**	**269**	P		**Pn**	**19 36 46.6**	**+2.8**
KICM	**Kanaga Island**	**4.17**	**270**	P		**Pn**	**19 36 46.1**	**+2.1**
TAPA	**Tanaga Point A**	**4.57**	**269**	P		**Pn**	**19 36 51.5**	**+2.1**
TAFP	**Tanaga Falls P**	**4.66**	**270**	P		**Pn**	**19 36 53.3**	**+2.6**
SPIA	**Saint Paul Isl**	**5.07**	**1**	P		**Pn**	**19 36 59.6**	**+3.4**
DT1	**Dutton Round H**	**5.70**	**55**	P		**Pn**	**19 37 07.2**	**+2.2**
ILAR	**Eielson Array**	**17.53**	**35**	P		**P**	**19 39 46.6**	**+1.6**
	0.1nm,0.3s,baz=222,slow=10,SNR=4.2							
PETK	**Petropavlovsk-**	**19.29**	**286**	P		**P**	**19 40 05.4**	**+0.9**
	0.8nm,0.3s,baz=84,slow=14,SNR=17							
PETK				LR		LR	19 46 36.3	
	comp=Z,85nm,21.5s,baz=99,slow=34							
SEY	**Seymchan**	**22.35**	**313**	P		**P**	**19 40 37.4**	**-0.2**
	3.3nm,0.8s,baz=99,slow=10.0,SNR=8.3							
DLBC	**Dease Lake**	**23.58**	**58**	P		**P**	**19 40 52.0**	**+1.9**
	2.1nm,0.3s,baz=275,slow=11,SNR=7.8							
DLBC				LR		LR	19 51 16.9	
	comp=Z,77nm,18.5s,baz=296,slow=40							
INK	**Inuvik**	**23.92**	**33**	P		**P**	**19 40 53.3**	**+0.2**
	2.1nm,0.5s,baz=248,slow=12,SNR=5.2							
YKA	**Yellowknife Ar**	**30.90**	**48**	P		**P**	**19 41 56.8**	**+1.0**
	0.7nm,0.9s,baz=273,slow=10,SNR=5.4							
YKA				PcP		**PcP**	**19 44 51.1**	**-0.5**
	0.8nm,0.9s,baz=276,slow=2.4,SNR=4.5							
YKA				LR		LR	19 55 37.4	
	comp=Z,9.0nm,18.3s,baz=0.0,slow=39							
TIXI	**Tiksi**	**32.60**	**329**	LR		LR	19 56 13.7	
	comp=Z,47nm,19.8s,baz=182,slow=38							
YAK	**Yakutsk**	**32.84**	**311**	LR		LR	19 55 31.8	
	comp=Z,74nm,21.5s,baz=88,slow=36							
KLR	**Kul'dur**	**35.91**	**289**	LR		LR	19 58 11.1	
	comp=Z,55nm,18.3s,baz=88,slow=38							
H11N2	**WAKE ISLAND Hy**	**36.85**	**217**	T		T	20 22 05.7	
	baz=31,slow=77,SNR=12							
H11N3	**WAKE ISLAND Hy**	**36.86**	**217**	T		T	20 22 03.5	
	baz=31,slow=77,SNR=11							
H11N1	**WAKE ISLAND Hy**	**36.87**	**217**	T		T	20 22 05.6	
	baz=31,slow=77,SNR=9.6							
H11S1	**WAKE ISLAND Hy**	**38.05**	**217**	T		T	20 23 32.6	
	baz=22,slow=76,SNR=138							
H11S2	**WAKE ISLAND Hy**	**38.06**	**217**	T		T	20 23 33.2	
	baz=22,slow=76,SNR=54							
H11S3	**WAKE ISLAND Hy**	**38.06**	**217**	T		T	20 23 33.2	
	baz=22,slow=76,SNR=39							
MJAR	**Matsushiro Arr**	**39.02**	**267**	LR		LR	19 57 25.3	
	comp=Z,32nm,20.7s,baz=250,slow=33							
JHJ	**Hachijo jima 2**	**40.33**	**262**	LR		LR	19 56 17.9	
	comp=Z,45nm,20.9s,baz=115,slow=31							
PDAR	**Pinedale Array**	**41.10**	**78**	P		**P**	**19 43 24.9**	**+1.4**
	1.3nm,0.7s,baz=303,slow=3.9,SNR=12							
PDAR				LR		LR	19 59 35.1	
	comp=Z,33nm,19.0s,baz=279,slow=35							
KSRS	**Korea Array**	**44.77**	**276**	LR		LR	20 05 57.3	
	comp=Z,29nm,18.0s,baz=64,slow=40							
JNU	**Nakatsue**	**45.80**	**269**	P		**P**	**19 44 01.4**	**+0.1**
	6.5nm,0.9s,baz=50,slow=8.3,SNR=4.8							
NRIK	**Noril'sk**	**46.32**	**331**	LR		LR	20 06 53.8	
	comp=Z,36nm,18.2s,baz=89,slow=40							
SPITS	**Spitsbergen Ar**	**49.89**	**358**	P		**P**	**19 44 31.4**	**-0.9**
	4.9nm,0.9s,baz=60,slow=6.8,SNR=4.0							
SONM	**Songino Array**	**50.85**	**300**	P		**P**	**19 44 40.0**	**-0.1**
	0.8nm,0.5s,baz=58,slow=5.8,SNR=8.6							
SONM				PcP		**PcP**	**19 45 56.5**	**0.0**
	0.4nm,0.4s,baz=59,slow=2.5,SNR=4.6							
SONM				LR		LR	20 07 53.0	
	comp=Z,86nm,19.6s,baz=53,slow=38							
TXAR	**Lajitas Array**	**53.42**	**88**	P		**P**	**19 44 59.8**	**+0.5**
	0.9nm,0.9s,baz=293,slow=5.6,SNR=7.8							
TXAR				PcP		**PcP**	**19 46 06.3**	**0.0**
	0.6nm,0.8s,baz=274,slow=4.2,SNR=2.6							
TXAR				LR		LR	20 05 22.5	
	comp=Z,39nm,20.3s,baz=0.0,slow=33							
SCHQ	**Schefferville**	**56.07**	**43**	P		**P**	**19 45 18.1**	**0.0**
	7.1nm,0.9s,baz=290,slow=7.1,SNR=3.5							
SCHQ				LR		LR	20 10 23.6	
	comp=Z,74nm,18.1s,baz=107,slow=37							
ZALV	**Zalesovo Beam**	**57.15**	**317**	PcP		**PcP**	**19 46 19.8**	**-0.4**
	0.3nm,0.3s,baz=70,slow=4.7,SNR=4.2							
ARCES	**ARCESS Array B**	**58.09**	**353**	P		**P**	**19 45 31.2**	**-1.0**
	4.6nm,0.9s,baz=22,slow=6.0,SNR=5.6							
ARCES				LR		LR	20 10 05.9	
	comp=Z,37nm,21.6s,baz=14,slow=36							
TKL	**Tuckaleechee C**	**60.92**	**68**	LR		LR	20 10 49.2	
	comp=Z,44nm,18.9s,slow=34							
MKAR	**Makanchi Array**	**63.49**	**313**	P		**P**	**19 46 07.8**	**-1.5**
	0.3nm,0.6s,baz=47,slow=8.6,SNR=4.4							
MKAR				LR		LR	20 14 14.6	
	comp=Z,33nm,19.7s,baz=41,slow=36							
BVAR	**Borovoye Array**	**63.51**	**324**	P		**P**	**19 46 08.2**	**-1.1**
	0.8nm,0.4s,baz=62,slow=5.5,SNR=11							
FINES	**FINESS Array B**	**66.02**	**351**	P		**P**	**19 46 23.8**	**-1.6**
	0.8nm,0.5s,baz=13,slow=8.1,SNR=8.0							
FINES				LR		LR	20 18 54.8	
	comp=Z,34nm,18.3s,baz=20,slow=39							
NB2	**NORSAR Subarra**	**67.18**	**359**	P		**P**	**19 46 31.7**	**-1.2**
	comp=Z,2.3nm,1.0s,baz=4.3,slow=6.5							
NOA	**NORSAR Array B**	**67.18**	**359**	P		**P**	**19 46 32.2**	**-0.7**
	comp=Z,1.4nm,0.8s,baz=1.3,slow=6.3,SNR=4.7							
AKTO	**Aktyubinsk**	**69.89**	**329**	P		**P**	**19 46 49.0**	**-1.0**
	comp=Z,1.0nm,0.3s,baz=56,slow=7.1,SNR=5.5							
OBN	**Obninsk**	**70.80**	**344**	LR		LR	20 22 33.2	
	comp=Z,36nm,18.3s,baz=83,slow=40							
CMAR	**Chiang Mai Arr**	**76.02**	**282**	P		**P**	**19 47 27.1**	**+0.3**
	comp=Z,4.6nm,0.9s,baz=29,slow=6.7,SNR=22							
CMAR				LR		LR	20 24 40.4	
	comp=Z,14nm,18.1s,baz=280,slow=39							
AKASG	**Malin Array Be**	**76.20**	**347**	P		**P**	**19 47 25.2**	**-2.1**
	comp=Z,0.3nm,0.3s,baz=16,slow=5.4,SNR=6.6							
BRG	**Berggiesshubel**	**77.31**	**357**	*e*(P)		**P**	**19 47 33.9**	**+0.3**
	comp=Z,3.4nm,0.9s							
DPC	**Dobruska-Polom**	**77.74**	**356**	*e*P		**P**	**19 47 36.5**	**+0.5**
GERES	**GERESS Array B**	**79.34**	**357**	P		**P**	**19 47 45.0**	**0.0**
	comp=Z,1.1nm,0.8s,baz=349,slow=5.4,SNR=8.6							
CONA	**Conrad Observa**	**80.18**	**356**	*i* P		**P**	**19 47 49.6**	**+0.1**
	comp=Z,4.3nm,0.9s							
KBA	**Koelnbreinsper**	**81.12**	**357**	*i* P		**P**	**19 47 55.1**	**+0.4**
	comp=Z,7.7nm,0.9s							
FETA	**Feichten**	**81.23**	**359**	*i* P		**P**	**19 47 55.5**	**+0.2**
	comp=Z,4.9nm,0.9s							
SOKA	**Soboth**	**81.46**	**356**	*i* P		**P**	**19 47 56.1**	**-0.2**
	comp=Z,4.1nm,0.9s							
MLR	**Muntele Rosu**	**81.74**	**348**	LR		LR	20 26 38.2	
	comp=Z,7.7nm,19.4s,baz=9.5,slow=37							
BRTR	**Keskin Array B**	**86.15**	**342**	P		**P**	**19 48 21.1**	**+0.5**
	comp=Z,0.3nm,0.4s,baz=46,slow=4.2,SNR=3.2							
BRTR				LR		LR	20 32 03.6	
	comp=Z,15nm,19.1s,baz=30,slow=39							
WRA	**Warramunga Arr**	**86.33**	**231**	P		**P**	**19 48 20.5**	**-0.9**
	comp=Z,0.5nm,0.6s,baz=41,slow=6.4,SNR=4.8							
ESDC	**Sonseca Array**	**87.82**	**10**	P		**P**	**19 48 27.3**	**-1.3**
	comp=Z,1.7nm,0.9s,baz=351,slow=3.5,SNR=6.8							
ASAR	**Alice Springs**	**89.73**	**229**	P		**P**	**19 48 37.5**	**0.0**
	comp=Z,1.7nm,0.8s,baz=37,slow=4.5,SNR=14							
TSUM	**Tsumeb**	**146.55**	**346**	PKPbc		**PKPbc**	**19 55 21.7**	**+0.9**
	comp=Z,3.4nm,0.9s,baz=351,slow=6.7,SNR=9.6							
LBTB	**Lobatse**	**150.30**	**330**	PKPbc		**PKPbc**	**19 55 29.6**	**-0.8**
	comp=Z,4.3nm,0.9s,baz=17,slow=5.2,SNR=6.2							
BOSA	**Boshof**	**153.76**	**327**	PKPbc		**PKPbc**	**19 55 39.0**	**+0.8**
	comp=Z,1.9nm,0.8s,baz=106,slow=1.0,SNR=6.3							

*ISCJB **13** 19:41:37.4±0.7,37.01N±0.04×10.88W±0.05,h10km, Error ellipse: s-maj=5.6km s-min=4.8km az=143.3*
*MDD **13** 19:41:38.5±1.1,36.86N×11.19W,h40km, mbLg2.7/18, Error

PBDV	**Barranco-do-Ve**	**2.49**	**82**	P		**Pn**	**19 42 18.4**	**+2.4**
PBDV				S		**Sn**	**19 42 47.4**	**+0.9**
	comp=N,10.0nm,0.2s							
PVAQ	**Vaqueiros**	**2.68**	**79**	*e*Pn		**Pn**	**19 42 21.1**	**+2.5**
PVAQ				*e*Sn		**Sn**	**19 42 51.1**	**0.0**
PVAQ				A		A	19 42 53.7	
	comp=N,17nm,0.4s							
PVAQ	**Vaqueiros**	**2.68**	**79**	P		**Pn**	**19 42 21.1**	**+2.5**
PVAQ				S		**Sn**	**19 42 51.1**	**0.0**
	comp=N,17nm,0.4s							
PVAQ	**Vaqueiros**	**2.68**	**79**	P		**Pn**	**19 42 21.1**	**+2.5**
PVAQ				S		**Sn**	**19 42 51.1**	**0.0**
	comp=N,17nm,0.4s							
PBEJ	**Beja**	**2.73**	**66**	*e*Sn		**Sn**	**19 42 52.5**	**0.0**
PBEJ				A		A	19 43 02.4	
	comp=N,4.6nm,0.1s							
PBEJ	**Beja**	**2.73**	**66**	S		**Sn**	**19 42 52.5**	**0.0**
	comp=N,2.3nm,0.1s							
PBEJ	**Beja**	**2.73**	**66**	S		**Sn**	**19 42 52.5**	**0.0**
	comp=N,2.3nm,0.1s							
EVO	**Evora**	**2.87**	**55**	*e*Pn		**Pn**	**19 42 23.5**	**+2.3**
EVO				*e*Sn		**Sn**	**19 42 56.3**	**+0.6**
EVO				A		A	19 42 58.7	
	comp=N,24nm,0.1s							
EVO	**Evora**	**2.87**	**55**	P		**Pn**	**19 42 23.5**	**+2.3**
EVO				S		**Sn**	**19 42 56.3**	**+0.6**
	comp=N,24nm,0.1s							
EVO	**Evora**	**2.87**	**55**	P		**Pn**	**19 42 23.5**	**+2.3**
EVO				S		**Sn**	**19 42 56.3**	**+0.6**
	comp=N,24nm,0.1s							
EGRO	**El Granado**	**2.88**	**77**	P		**Pn**	**19 42 23.6**	**+2.2**
	comp=N,0.9nm,0.1s,SNR=7.9							
EGRO				S		**Sn**	**19 42 55.6**	**-0.6**
	comp=N,19nm,0.3s,SNR=7.9							
EGRO	**El Granado**	**2.88**	**77**	P		**Pn**	**19 42 23.6**	**+2.2**
	comp=N,0.9nm,0.1s,SNR=7.9							
EGRO				S		**Sn**	**19 42 55.6**	**-0.6**
	comp=N,19nm,0.3s,SNR=7.9							
PMTG	**Montargil**	**3.06**	**45**	*e*Pn		**Pn**	**19 42 26.0**	**+2.1**
PMTG				*e*Sn		**Sn**	**19 43 01.0**	**+0.3**
PMTG				A		A	19 43 05.7	
	comp=N,7.5nm,0.2s							
PMTG	**Montargil**	**3.06**	**45**	*e*Pn		**Pn**	**19 42 26.0**	**+2.1**
PMTG				*e*Sn		**Sn**	**19 43 01.0**	**+0.3**
	comp=N,7.5nm,0.2s							
PESTR	**Estremoz**	**3.33**	**54**	*e*Pn		**Pn**	**19 42 30.3**	**+2.7**
PESTR				*e*Sn		**Sn**	**19 43 07.3**	**+0.2**
PESTR				A		A	19 43 11.8	
	comp=N,3.9nm,0.2s							
PESTR	**Estremoz**	**3.33**	**54**	*e*Pn		**Pn**	**19 42 30.3**	**+2.7**
PESTR				*e*Sn		**Sn**	**19 43 07.3**	**+0.2**
	comp=N,3.9nm,0.2s							
PBAR	**Barrancos**	**3.40**	**68**	*e*Pn		**Pn**	**19 42 31.1**	**+2.6**
PBAR				*e*Sn		**Sn**	**19 43 08.3**	**-0.5**
PBAR				A		A	19 43 12.7	
	comp=N,12nm,0.4s							
PBAR	**Barrancos**	**3.40**	**68**	P		**Pn**	**19 42 31.1**	**+2.6**
PBAR				S		**Sn**	**19 43 08.3**	**-0.5**
	comp=N,12nm,0.4s							
PBAR	**Barrancos**	**3.40**	**68**	P		**Pn**	**19 42 31.1**	**+2.6**
PBAR				S		**Sn**	**19 43 08.3**	**-0.5**
	comp=N,12nm,0.4s							
EMIN	**Mina Concepcio**	**3.56**	**75**	P		**Pn**	**19 42 32.6**	**+1.8**
	comp=N,1.5nm,0.1s,SNR=23							
EMIN				S		**Sn**	**19 43 12.4**	**-0.5**
	comp=N,5.1nm,0.2s,SNR=13							
EMIN	**Mina Concepcio**	**3.56**	**75**	P		**Pn**	**19 42 32.6**	**+1.8**
	comp=N,1.5nm,0.1s,SNR=23							
EMIN				S		**Sn**	**19 43 12.4**	**-0.5**
	comp=N,5.1nm,0.2s,SNR=13							
EBAD	**Badajoz**	**3.65**	**59**	P		**Pn**	**19 42 34.1**	**+2.1**
	comp=N,1.7nm,0.1s,SNR=23							
EBAD				S		**Sn**	**19 43 14.9**	**-0.3**
	comp=N,8.3nm,0.2s,SNR=12							
EBAD	**Badajoz**	**3.65**	**59**	P		**Pn**	**19 42 34.1**	**+2.1**
	comp=N,1.7nm,0.1s,SNR=23							
EBAD				S		**Sn**	**19 43 14.9**	**-0.3**
	comp=N,8.3nm,0.2s,SNR=12							
PCAS	**Casmilo, Conde**	**3.69**	**32**	*e*Pn		**Pn**	**19 42 34.8**	**+2.3**
PCAS				*e*Sn		**Sn**	**19 43 17.1**	**+1.1**
PCAS				A		A	19 43 19.5	
	comp=N,5.8nm,1.1s							
PCAS	**Casmilo, Conde**	**3.69**	**32**	*e*Pn		**Pn**	**19 42 34.8**	**+2.3**
PCAS				*e*Sn		**Sn**	**19 43 17.1**	**+1.1**
	comp=N,5.8nm,1.1s							
PMRV	**Marv??o**	**3.79**	**48**?	*e*Pn		**Pn**	**19 42 35.5**	**+1.6**
PMRV				*e*Sn		**Sn**	**19 43 17.3**	**-1.2**
PMRV				A		A	19 43 20.5	
	comp=N,8.3nm,0.2s							
PMRV	**Marv??o**	**3.79**	**48**	P		**Pn**	**19 42 35.5**	**+1.6**
PMRV				S		**Sn**	**19 43 17.3**	**-1.2**
	comp=N,8.3nm,0.2s							
PMRV	**Marv??o**	**3.79**	**48**	P		**Pn**	**19 42 35.5**	**+1.6**
PMRV				S		**Sn**	**19 43 17.3**	**-1.2**
	comp=N,8.3nm,0.2s							
PCBR	**Castelo Branco**	**4.02**	**43**	*e*Pn		**Pn**	**19 42 39.1**	**+2.1**
PCBR				*e*Sn		**Sn**	**19 43 23.6**	**-0.5**
PCBR				A		A	19 43 27.8	
	comp=N,3.7nm,0.2s							
PCBR	**Castelo Branco**	**4.02**	**43**	P		**Pn**	**19 42 39.1**	**+2.1**
PCBR				S		**Sn**	**19 43 23.6**	**-0.5**
	comp=N,1.9nm,0.2s							
PCBR	**Castelo Branco**	**4.02**	**43**	P		**Pn**	**19 42 39.1**	**+2.1**
PCBR				S		**Sn**	**19 43 23.6**	**-0.5**
	comp=N,1.9nm,0.2s							
ESPR	**Espera**	**4.14**	**89**	P		**Pn**	**19 42 41.1**	**+2.4**
	comp=N,4.4nm,0.1s,SNR=8.6							
ESPR				S		**Sn**	**19 43 26.5**	**-0.7**
	comp=N,25nm,0.3s,SNR=5.5							
ESPR	**Espera**	**4.14**	**89**	P		**Pn**	**19 42 41.1**	**+2.4**
	comp=N,4.4nm,0.1s,SNR=8.6							
ESPR				S		**Sn**	**19 43 26.5**	**-0.7**
	comp=N,25nm,0.3s,SNR=5.5							
MTE	**Manteigas**	**4.40**	**37**	*e*Sn		**Sn**	**19 43 32.6**	**-1.0**
MTE				A		A	19 43 35.5	
	comp=N,5.2nm,0.3s							
MTE	**Manteigas**	**4.40**	**37**	S		**Sn**	**19 43 32.6**	**-1.0**
	comp=N,2.6nm,0.3s							
MTE	**Manteigas**	**4.40**	**37**	S		**Sn**	**19 43 32.6**	**-1.0**
	comp=N,2.6nm,0.3s							
PVIS	**Viseu**	**4.49**	**32**	*e*Pn		**Pn**	**19 42 45.7**	**+2.1**
PVIS				*e*Sn		**Sn**	**19 43 35.5**	**-0.4**
PVIS				A		A	19 43 38.6	
	comp=N,6.3nm,0.1s							
PVIS	**Viseu**	**4.49**	**32**	P		**Pn**	**19 42 45.7**	**+2.1**
PVIS				S		**Sn**	**19 43 35.5**	**-0.4**
	comp=N,3.2nm,0.1s							
PVIS	**Viseu**	**4.49**	**32**	P		**Pn**	**19 42 45.7**	**+2.1**
PVIS				S		**Sn**	**19 43 35.5**	**-0.4**
	comp=N,3.2nm,0.1s							
ECAB	**El Cabril**	**4.60**	**74**	P		**Pn**	**19 42 47.3**	**+2.3**
	comp=N,0.8nm,0.2s,SNR=16							
ECAB				S		**Sn**	**19 43 38.0**	**-0.5**
	comp=N,3.2nm,0.1s,SNR=12							
ECAB	**El Cabril**	**4.60**	**74**	P		**Pn**	**19 42 47.3**	**+2.3**
	comp=N,0.8nm,0.2s,SNR=16							
ECAB				S		**Sn**	**19 43 38.0**	**-0.5**
	comp=N,3.2nm,0.1s,SNR=12							
EPLA	**Plasencia**	**4.97**	**50**	P		**Pn**	**19 42 52.4**	**+2.2**
	comp=N,0.8nm,0.1s,SNR=7.9							
EPLA				S		**Sn**	**19 43 46.5**	**-1.3**
	comp=N,4.3nm,0.2s,SNR=7.9							
EPLA	**Plasencia**	**4.97**	**50**	P		**Pn**	**19 42 52.4**	**+2.2**
	comp=N,0.8nm,0.1s,SNR=7.9							
EPLA				S		**Sn**	**19 43 46.5**	**-1.3**
	comp=N,4.3nm,0.2s,SNR=7.9							
EMIJ	**Mijas**	**5.03**	**92**	P		**Pn**	**19 42 53.6**	**+2.6**
	comp=N,0.4nm,0.2s,SNR=7.9							
EMIJ				S		**Sn**	**19 43 48.3**	**-0.9**
	comp=N,2.9nm,0.4s,SNR=7.9							
EMIJ	**Mijas**	**5.03**	**92**	P		**Pn**	**19 42 53.6**	**+2.6**
	comp=N,0.4nm,0.2s,SNR=7.9							
EMIJ				S		**Sn**	**19 43 48.3**	**-0.9**
	comp=N,2.9nm,0.4s,SNR=7.9							
POLO	**Lamas de Olo**	**5.09**	**29**	*e*Pn		**Pn**	**19 42 53.8**	**+2.0**
POLO				*e*Sn		**Sn**	**19 43 48.9**	**-1.8**
POLO				A		A	19 43 50.2	
	comp=N,1.8nm,0.4s							
POLO	**Lamas de Olo**	**5.09**	**29**	*e*Pn		**Pn**	**19 42 53.8**	**+2.0**
POLO				*e*Sn		**Sn**	**19 43 48.9**	**-1.8**
	comp=N,1.8nm,0.4s							
MVO	**Moncorvo**	**5.24**	**35**	*e*Pn		**Pn**	**19 42 55.9**	**+2.0**
MVO				*e*Sn		**Sn**	**19 43 52.3**	**-2.1**
MVO				A		A	19 43 54.4	
	comp=N,8.0nm,0.3s							
MVO	**Moncorvo**	**5.24**	**35**	P		**Pn**	**19 42 55.8**	**+1.9**
	comp=N,1.0nm,0.1s,SNR=7.9							
MVO				S		**Sn**	**19 43 51.6**	**-2.8**
	comp=N,4.4nm,0.2s,SNR=7.9							
MVO	**Moncorvo**	**5.24**	**35**	P		**Pn**	**19 42 55.8**	**+1.9**
	comp=N,1.0nm,0.1s,SNR=7.9							
MVO				S		**Sn**	**19 43 51.6**	**-2.8**
	comp=N,4.4nm,0.2s,SNR=7.9							
MVO				*e*Sn		**Sn**	**19 43 52.3**	**-2.1**
	comp=N,8.0nm,0.3s							
EADA	**Adamuz**	**5.26**	**75**	P		**Pn**	**19 42 56.4**	**+2.2**
	comp=N,1.0nm,0.1s,SNR=7.9							
EADA				S		**Sn**	**19 43 53.2**	**-1.8**
	comp=N,3.1nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**5.26**	**75**	P		**Pn**	**19 42 56.4**	**+2.2**
	comp=N,1.0nm,0.1s,SNR=7.9							
EADA				S		**Sn**	**19 43 53.2**	**-1.8**
	comp=N,3.1nm,0.2s,SNR=7.9							
PCAB	**Cabril**	**5.30**	**25**	*e*Sn		**Sn**	**19 43 54.1**	**-1.7**
PCAB	**Cabril**	**5.30**	**25**	S		**Sn**	**19 43 54.1**	**-1.7**
PCAB	**Cabril**	**5.30**	**25**	S		**Sn**	**19 43 54.1**	**-1.7**
ELOB	**Lobios**	**5.43**	**24**	P		**Pn**	**19 42 57.9**	**+1.4**
	comp=N,1.5nm,0.2s,SNR=9.6							
ELOB				S		**Sn**	**19 43 56.6**	**-2.5**
	comp=N,5.0nm,0.2s,SNR=4.9							
ELOB	**Lobios**	**5.43**	**24**	P		**Pn**	**19 42 57.9**	**+1.4**
	comp=N,1.5nm,0.2s,SNR=9.6							
ELOB				S		**Sn**	**19 43 56.6**	**-2.5**
	comp=N,5.0nm,0.2s,SNR=4.9							
PGAV	**Gavieira, Arco**	**5.45**	**22**	*e*Pn		**Pn**	**19 42 59.1**	**+2.3**
PGAV				*e*Sn		**Sn**	**19 43 58.0**	**-1.6**
PGAV				A		A	19 44 01.3	
	comp=N,4.4nm,0.2s							
PGAV	**Gavieira, Arco**	**5.45**	**22**	*e*Pn		**Pn**	**19 42 59.1**	**+2.3**
PGAV				*e*Sn		**Sn**	**19 43 58.0**	**-1.6**
	comp=N,4.4nm,0.2s							
EGOR	**Sierra Gorda,**	**5.53**	**86**	S		**Sn**	**19 43 59.5**	**-2.2**
	comp=N,2.1nm,0.4s,SNR=7.9							
EGOR	**Sierra Gorda,**	**5.53**	**86**	S		**Sn**	**19 43 59.5**	**-2.2**
	comp=N,2.1nm,0.4s,SNR=7.9							
CIA	**Chichaoua**	**5.68**	**160**	P		**Pn**	**19 43 00.0**	**+0.1**
CIA				S		**Sn**	**19 43 58.0**	**-7.2**
PBRG	**Braganca**	**5.88**	**33**	*e*Sn		**Sn**	**19 44 07.7**	**-2.5**
PBRG				A		A	19 44 09.8	
	comp=N,2.7nm,0.2s							
PBRG	**Braganca**	**5.88**	**33**	S		**Sn**	**19 44 07.7**	**-2.5**
	comp=N,1.4nm,0.2s							
PBRG	**Braganca**	**5.88**	**33**	S		**Sn**	**19 44 07.7**	**-2.5**
	comp=N,1.4nm,0.2s							
KIB	**El Ksiba**	**5.98**	**135**	P		**Pn**	**19 43 04.0**	**-0.1**
KIB				S		**Sn**	**19 44 06.0**	**-6.7**
ECAL	**Calabor**	**5.99**	**32**	P		**Pn**	**19 43 06.2**	**+1.9**
	comp=N,1.6nm,0.4s,SNR=7.9							
ECAL				S		**Sn**	**19 44 10.9**	**-2.1**
	comp=N,3.8nm,0.3s,SNR=7.9							
ECAL	**Calabor**	**5.99**	**32**	P		**Pn**	**19 43 06.2**	**+1.9**
	comp=N,1.6nm,0.4s,SNR=7.9							
ECAL				S		**Sn**	**19 44 10.9**	**-2.1**
	comp=N,3.8nm,0.3s,SNR=7.9							
ESDC	**Sonseca Array**	**6.18**	**62**	P		**Pn**	**19 43 09.2**	**+2.3**
	comp=N,1.8nm,0.2s,baz=249,slow=13,SNR=4.3							
ESDC				S		**Sn**	**19 44 15.8**	**-1.9**
	comp=N,0.8nm,0.1s,baz=246,slow=23,SNR=5.3							
ESDC	**Sonseca Array**	**6.18**	**62**	P		**Pn**	**19 43 09.2**	**+2.3**
	comp=N,1.8nm,0.2s,SNR=4.3							
ESDC				S		**Sn**	**19 44 15.8**	**-1.9**
	comp=N,0.8nm,0.1s,SNR=5.3							
EMAZ	**Mazaricos**	**6.20**	**14**	P		**Pn**	**19 43 08.4**	**+1.3**
	comp=N,0.6nm,0.1s,SNR=7.9							
EMAZ				S		**Sn**	**19 44 12.9**	**-5.2**
	comp=N,7.3nm,0.2s,SNR=7.9							
EMAZ	**Mazaricos**	**6.20**	**14**	P		**Pn**	**19 43 08.4**	**+1.3**
	comp=N,0.6nm,0.1s,SNR=7.9							
CZD	**Col de Zad**	**6.27**	**127**	P		**Pn**	**19 43 09.0**	**+0.8**
CZD				S		**Sn**	**19 44 13.0**	**-7.0**
CZD	**Col de Zad**	**6.27**	**127**	*e*P		**Pn**	**19 43 09.0**	**+0.8**
EAGO	**Agolada(Pontev**	**6.27**	**20**	P		**Pn**	**19 43 09.0**	**+0.9**
	comp=N,1.4nm,0.2s,SNR=7.9							
EAGO				S		**Sn**	**19 44 15.2**	**-4.6**
	comp=N,2.0nm,0.1s,SNR=7.9							
EAGO	**Agolada(Pontev**	**6.27**	**20**	P		**Pn**	**19 43 09.0**	**+0.9**
	comp=N,1.4nm,0.2s,SNR=7.9							
OUK	**Oukaimeden**	**6.29**	**155**	P		**Pn**	**19 43 08.0**	**-0.5**
OUK				S		**Sn**	**19 44 13.0**	**-7.6**
EQES	**Quesada**	**6.39**	**80**	P		**Pn**	**19 43 12.3**	**+2.6**
	comp=N,0.3nm,0.1s,SNR=7.9							
EQES				S		**Sn**	**19 44 21.1**	**-1.7**
	comp=N,1.7nm,0.1s,SNR=7.9							
EQES	**Quesada**	**6.39**	**80**	P		**Pn**	**19 43 12.3**	**+2.6**
	comp=N,0.3nm,0.1s,SNR=7.9							
EQES				S		**Sn**	**19 44 21.1**	**-1.7**
	comp=N,1.7nm,0.1s,SNR=7.9							
GUD	**Guadarrama**	**6.51**	**53**	S		**Sn**	**19 44 23.8**	**-2.1**
	comp=N,1.4nm,0.3s,SNR=7.9							
GUD	**Guadarrama**	**6.51**	**53**	S		**Sn**	**19 44 23.8**	**-2.1**
	comp=N,1.4nm,0.3s,SNR=7.9							
EPON	**Pontenova**	**7.04**	**24**	P		**Pn**	**19 43 19.7**	**+1.2**
	comp=N,4.4nm,0.3s,SNR=11							
EPON				S		**Sn**	**19 44 34.7**	**-3.8**
	comp=N,1.8nm,0.3s,SNR=7.9							
EPON	**Pontenova**	**7.04**	**24**	P		**Pn**	**19 43 19.7**	**+1.2**
	comp=N,4.4nm,0.3s,SNR=11							
EPON				S		**Sn**	**19 44 34.7**	**-3.8**
	comp=N,1.8nm,0.3s,SNR=7.9							
ETOB	**Tobarra**	**7.69**	**74**	P		**Pn**	**19 43 29.0**	**+1.4**
	comp=N,0.2nm,0.1s,SNR=7.9							
ETOB				S		**Sn**	**19 44 51.7**	**-3.1**
	comp=N,0.4nm,0.2s,SNR=7.9							
ETOB	**Tobarra**	**7.69**	**74**	P		**Pn**	**19 43 29.0**	**+1.4**
	comp=N,0.2nm,0.1s,SNR=7.9							
ETOB				S		**Sn**	**19 44 51.7**	**-3.1**
	comp=N,0.4nm,0.2s,SNR=7.9							
EARI	**Arriondas**	**7.76**	**33**	S		**Sn**	**19 44 52.1**	**-4.1**
	comp=N,4.8nm,0.6s,SNR=4.0							
EARI	**Arriondas**	**7.76**	**33**	S		**Sn**	**19 44 52.2**	**-4.1**
	comp=N,4.8nm,0.6s,SNR=4.0							

NIED ***13*** *19:42:00,38°.20N×143°.60E,h11km,Mw3.6 Best double couple: M₀3.21000×10¹⁴ NP1:φ₀s330.00000°,δ64.00000°, λ179.00000°. NP2:φ₀s61.00000°,δ89.00000°,λ26.00000°.*

IDC ***13*** *19:42:05.2±1.7,38°.10N×143°.92E,h0km,mb3.6/5, mb1 3.6/9,mb1mx3.4/47,mbtmp3.6/9,ML3.2/3,MS2.4/1, Ms1 2.4/1,ms1mx2.2/38,Error ellipse: s-maj=37.9km s-min=21.1km az=77.0*

ISCJB ***13*** *19:42:08.5±0.8,38°.19N±0°.05×143°.70E±0°.06,h33km, mb3.5/5,Error ellipse: s-maj=7.3km s-min=6.9km az=140.0*

JMA ***13*** *19:42:08.5±0.1,38°.24N×143°.63E,h29km,M3.5*

ISC 13 19:42:11.4±1.4,38°.20N±0°.06×143°.6E±0°.1,h35km,n24, σ1s94/33,mb3.5/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
OFUJ	**Ofunato**	**1.74**	**301**	P	**Pn**	**19 42 37.9**		**-1.2**
OFUJ				S	**Sn**	**19 43 00.1**		**+0.1**
JIO	**Ouri**	**1.78**	**279**	P	**Pn**	**19 42 38.7**		**-0.9**
JIO				S	**Sn**	**19 43 00.7**		**-0.2**
MIYJ	**Miyakonagasawa**	**1.95**	**316**	P	**Pn**	**19 42 40.1**		**-1.8**
MIYJ				*e*S	**Sn**	**19 43 03.5**		**-1.7**
JMK	**Ichinoseki**	**2.00**	**293**	P	**Pn**	**19 42 41.9**		**-0.7**
JMK				*e*S	**Sn**	**19 43 06.6**		**+0.2**
JOM	**Ohasama**	**2.20**	**306**	P	**Pn**	**19 42 44.5**		**-0.9**
JOM				*e*S	**Sn**	**19 43 10.8**		**-0.5**
JMM	**Marumori**	**2.23**	**262**	P	**Pn**	**19 42 45.0**		**-0.8**
JMM				*e*S	**Sn**	**19 43 11.2**		**-0.9**
JOU	**Okura**	**2.30**	**275**	P	**Pn**	**19 42 46.9**		**0.0**
JOU				*e*S	**Sn**	**19 43 14.8**		**+0.8**
JRG	**Rokugo**	**2.60**	**298**	P	**Pn**	**19 42 50.5**		**-0.4**
JYK	**Kaneyama**	**2.63**	**287**	P	**Pn**	**19 42 51.4**		**+0.1**
JFT	**Otama**	**2.66**	**256**	P	**Pn**	**19 42 51.9**		**+0.2**
JFT				*e*S	**Sn**	**19 43 24.6**		**+1.8**
JANG	**Nango**	**2.70**	**324**	P	**Pn**	**19 42 52.2**		**-0.1**
MJAR	**Matsushiro Arr**	**4.59**	**251**	Pn	**Pn**	**19 43 19.6**		**+1.3**
	1.3nm,0.3s,baz=54,slow=11,SNR=5.9							
MJAR				Sn	**Sn**	**19 44 15.4**		**+5.0**
	0.9nm,0.3s,baz=67,slow=23,SNR=4.1							
MAT	**Matsushiro**	**4.59**	**251**	P	**Pn**	**19 43 18.0**		**-0.3**
MAT				S	**Sn**	**19 44 08.9**		**-1.5**
JHJ	**Hachijo jima 2**	**5.94**	**213**	Pn	**Pn**	**19 43 34.4**		**-2.5**
	12nm,0.3s,baz=339,slow=22,SNR=12							
JHJ				Sn	**Sn**	**19 44 37.3**		**-6.3**
	10nm,0.3s,baz=102,slow=21,SNR=7.2							
JHJ				LR	LR	19 45 36.3		
	comp=Z,38nm,20.7s,baz=99,slow=35							
ASAJ	**Asahikawa**	**5.96**	**353**	Pn	**Pn**	**19 43 36.3**		**-0.8**
	baz=180,slow=11							
ASAJ				Sn	**Sn**	**19 44 40.7**		**-3.3**
	baz=253,slow=19							
USRK	**Ussuriysk Ar.**	**10.59**	**308**	Pn	**Pn**	**19 44 42.8**		**+2.2**
	0.2nm,0.3s,baz=114,slow=18,SNR=3.4							
H11N2	**WAKE ISLAND Hy**	**27.34**	**126**	T	T	20 16 22.5		
	baz=318							
H11N1	**WAKE ISLAND Hy**	**27.35**	**126**	T	T	20 16 25.9		
	baz=318							
H11N3	**WAKE ISLAND Hy**	**27.36**	**126**	T	T	20 16 22.7		
	baz=318							
SONM	**Songino Array**	**28.60**	**302**	P	**P**	**19 48 05.1**		**+0.8**
	0.3nm,0.4s,baz=78,slow=8.6,SNR=3.9							
ZALV	**Zalesovo Beam**	**42.42**	**311**	P	**P**	**19 50 03.6**		**+1.3**
	0.3nm,0.3s,baz=105,slow=11,SNR=2.2							
MKAR	**Makanchi Array**	**44.97**	**301**	P	**P**	**19 50 24.1**		**+1.1**
	0.4nm,0.6s,baz=92,slow=8.8,SNR=3.7							
WRA	**Warramunga Arr**	**58.48**	**190**	P	**P**	**19 52 03.0**		**-1.0**
	0.5nm,0.7s,baz=9.0,slow=7.3,SNR=6.3							
ASAR	**Alice Springs**	**62.20**	**190**	P	**P**	**19 52 28.2**		**-1.2**
	0.3nm,0.7s,baz=13,slow=12,SNR=2.8							

MEX 13 19:48:59.1±0.4,32°.39N×115°.19W,h18km±8km,MD3.8, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
CBX	**Cerro Bola**	**1.25**	**267**	*i* P	Pn	19 49 18.6		-3.2
CBX				*e*S	Sb	19 49 33.2		-5.0
TJIG	**Tijuana**	**1.26**	**272**	*e*P	Pn	19 49 17.8		-4.0
TJIG				*i* S	Sb	19 49 33.2		-5.0

IDC 13 19:54:36.7±2.2,5°.27N×124°.17E,h0km,mb3.3/3, mb1 3.5/3,mb1mx3.3/37,mbtmp3.3/3,Error ellipse: s-maj=216.4km s-min=27.8km az=64.0,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
WRA	**Warramunga Arr**	**26.98**	**159**	P	P	20 00 21.2		**+0.9**
	0.4nm,0.7s,baz=337,slow=10,SNR=5.3							
ASAR	**Alice Springs**	**30.29**	**162**	P	P	20 00 49.1		-0.8
	0.2nm,0.5s,baz=346,slow=7.1,SNR=2.5							
MKAR	**Makanchi Array**	**54.85**	**326**	P	P	20 04 08.8		-0.1
	0.1nm,0.3s,baz=110,slow=7.2,SNR=4.2							

KRSC 13 19:55:52.7±2.2,50°.28N×157°.61E,h60km±33km,ML3.9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
SKR	**Severo-Kuril's**	**1.04**	**294**	*i* P	Pn	19 56 12.3		+1.1
SKR				*e*S	Sn	19 56 24.7		-0.3
PAU	**Pauzhetka**	**1.30**	**337**	*e*P	Pn	19 56 16.9		+2.3
PAU				*e*S	Sn	19 56 32.5		+1.4
ASAK	**Asacha**	**2.12**	**5**	*e*P	Pn	19 56 28.8		+3.0
ASAK				*e*S	Sn	19 56 53.9		+2.8
RUS	**Russkaya**	**2.23**	**14**	*e*P	Pn	19 56 30.3		+3.0
RUS				*e*S	Sn	19 56 56.4		+2.7
KRMR	**Karymshinskiy**	**2.58**	**7**	*e*P	Pn	19 56 34.8		+2.8
KRMR				*e*S	Sn	19 57 06.7		+4.6
UGLR	**Uglovaya**	**3.03**	**14**	*e*P	Pn	19 56 42.0		+3.7
AVH	**Avacha**	**3.08**	**13**	*e*P	Pn	19 56 42.9		+4.1
AVH				*e*S	Sn	19 57 19.3		+4.9
NLC	**Nalytchevo**	**3.09**	**20**	*e*P	Pn	19 56 40.0		+1.0
NLC				*e*S	Sn	19 57 16.0		+1.3
SDLR	**Sedlovina**	**3.11**	**14**	*e*P	Pn	19 56 42.5		+3.1
KRER	**Koryakskii**	**3.12**	**13**	*e*P	Pn	19 56 43.0		+3.5
KRX	**Arik**	**3.15**	**11**	*e*P	Pn	19 56 43.8		+3.8
KRX				*e*S	Sn	19 57 20.4		+3.9
SPN	**Mys Shipunski**	**3.20**	**27**	*e*P	Pn	19 56 44.7		+4.2
SPN				*e*S	Sn	19 57 20.5		+3.1
GNL	**Ganaly**	**3.43**	**3**	*e*P	Pn	19 56 45.7		+1.9
MKZ	**M

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	**1.26**	**47**	P	**Pn**	**20 15 43.2**	**0.0**
NIKH				S	**Sn**	**20 15 58.5**	**-0.5**
OKWR	**Okmok West Rim**	**1.86**	**44**	P	**Pn**	**20 15 53.7**	**+2.1**
OKTU	**Okmok Mt. Tuli**	**1.90**	**47**	P	**Pn**	**20 15 53.7**	**+1.7**
OKAK	**Okmok**	**1.91**	**39**	P	**Pn**	**20 15 52.0**	**-0.1**
OKER	**Okmok East Rim**	**1.94**	**46**	P	**Pn**	**20 15 54.2**	**+1.5**
KOSE	**Korovin Southe**	**2.27**	**277**	P	**Pn**	**20 15 59.7**	**+2.6**
KOFP	**Korovin Flat P**	**2.30**	**275**	P	**Pn**	**20 15 59.7**	**+2.2**
KOKL	**Mount Kliuchef**	**2.36**	**277**	P	**Pn**	**20 16 01.1**	**+2.8**
MCIR	**Makushin Cirqu**	**2.79**	**47**	P	**Pn**	**20 16 06.2**	**+1.9**
MTBL	**Makushin Table**	**2.90**	**49**	P	**Pn**	**20 16 08.0**	**+2.2**
UNV	**Unalaska Valle**	**2.91**	**52**	P	**Pn**	**20 16 07.5**	**+1.7**
UNV				S	**Sn**	**20 16 43.2**	**+3.7**
AKGG	**Akutan Green G**	**3.36**	**50**	P	**Pn**	**20 16 14.8**	**+2.7**
AKUT	**Akutan**	**3.43**	**52**	P	**Pn**	**20 16 15.3**	**+2.4**
GSMY	**Great Sitkin M**	**3.51**	**271**	P	**Pn**	**20 16 15.7**	**+1.6**
GSTD	**Great Sitkin T**	**3.56**	**271**	P	**Pn**	**20 16 16.1**	**+1.3**
GSCK	**Great Sitkin C**	**3.58**	**271**	P	**Pn**	**20 16 16.6**	**+1.6**
ADAG	**Mount Adagdak**	**3.85**	**270**	P	**Pn**	**20 16 20.6**	**+1.9**
KIKV	**Kanaga Island**	**4.21**	**269**	P	**Pn**	**20 16 25.4**	**+1.8**
TAPA	**Tanaga Point A**	**4.61**	**269**	P	**Pn**	**20 16 32.9**	**+3.7**
SPIA	**Saint Paul Isl**	**5.07**	**1**	P	**Pn**	**20 16 38.4**	**+2.9**
ILAR	**Eielson Array** 0.1nm,0.3s,baz=235,slow=10,SNR=4.5	**17.51**	**35**	P	**Pn**	**20 19 23.1**	**0.0**
PETK	**Petropavlovsk-** 0.3nm,0.3s,baz=83,slow=12,SNR=3.8	**19.33**	**286**	P	**P**	**20 19 43.3**	**-0.8**
YKA	**Yellowknife Ar** 0.2nm,0.5s,baz=251,slow=5.8,SNR=3.1	**30.87**	**48**	P	**P**	**20 21 35.2**	**+0.6**
H11N2	**WAKE ISLAND Hy** baz=23	**36.87**	**217**	T	T	21 01 47.6	
H11N3	**WAKE ISLAND Hy** baz=23	**36.88**	**217**	T	T	21 01 48.1	
H11N1	**WAKE ISLAND Hy** baz=23	**36.89**	**217**	T	T	21 01 46.4	
H11S1	**WAKE ISLAND Hy** baz=22,slow=76,SNR=58	**38.06**	**217**	T	T	21 03 26.9	
H11S2	**WAKE ISLAND Hy** baz=22,slow=76,SNR=37	**38.08**	**217**	T	T	21 03 29.1	
H11S3	**WAKE ISLAND Hy** baz=22,slow=76,SNR=26	**38.08**	**217**	T	T	21 03 30.3	
PDAR	**Pinedale Array** 0.7nm,0.5s,baz=274,slow=3.8,SNR=5.6	**41.06**	**78**	P	**P**	**20 23 03.6**	**+1.4**
SONM	**Songino Array** 0.4nm,0.5s,baz=76,slow=6.2,SNR=4.9	**50.90**	**300**	P	**P**	**20 24 18.8**	**-0.6**
TXAR	**Lajitas Array** 0.2nm,0.6s,baz=316,slow=2.5,SNR=2.5	**53.37**	**88**	P	**P**	**20 24 38.4**	**+0.4**
ARCES	**ARCESS Array B** 2.3nm,0.7s,baz=32,slow=8.6,SNR=2.9	**58.11**	**353**	P	**P**	**20 25 10.4**	**-0.9**
KURBB	**Kurchatov Arra** 0.3nm,0.6s,baz=44,slow=7.3,SNR=5.9	**62.26**	**318**	P	**P**	**20 25 38.4**	**-1.6**
BVAR	**Borovoye Array** 0.6nm,0.5s,baz=64,slow=7.2,SNR=5.3	**63.55**	**324**	P	**P**	**20 25 47.5**	**-1.0**
FINES	**FINESS Array B** 2.1nm,1.0s,baz=353,slow=7.7,SNR=4.5	**66.03**	**351**	P	**P**	**20 26 02.6**	**-1.9**
NOA	**NORSAR Array B** 0.8nm,0.8s,baz=1.6,slow=6.2,SNR=2.5	**67.19**	**359**	P	**P**	**20 26 11.4**	**-0.6**
HFS	**Hagfors** 1.0nm,0.4s,baz=29,slow=3.4,SNR=14	**68.06**	**358**	P	**P**	**20 26 16.4**	**-1.0**
AKTO	**Aktyubinsk** 0.8nm,0.6s,baz=36,slow=14,SNR=3.2	**69.92**	**329**	P	**P**	**20 26 27.9**	**-1.2**
CMAR	**Chiang Mai Arr** 0.5nm,0.5s,baz=23,slow=6.7,SNR=4.8	**76.07**	**282**	P	**P**	**20 27 06.2**	**+0.2**
GERES	**GERESS Array B** 0.2nm,0.5s,baz=31,slow=5.4,SNR=4.0	**79.36**	**357**	P	**P**	**20 27 23.2**	**-0.7**
WRA	**Warramunga Arr** 0.2nm,0.8s,baz=36,slow=6.0,SNR=2.9	**86.36**	**231**	P	**P**	**20 27 59.3**	**-1.1**
ASAR	**Alice Springs** 0.5nm,0.8s,baz=22,slow=5.2,SNR=3.7	**89.76**	**229**	P	**P**	**20 28 15.7**	**-0.9**

IDC 13 20:24:20.4±2.6, 28.12S×177.38W, h0km, mb3.3/2, mb1 3.6/2, mb1mx3.4/17, mbtmp3.3/2, Error ellipse: s-maj=51.3km s-min=30.2km az=86.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 92nm,0.3s,baz=107,slow=19,SNR=2.6	**1.22**	**203**	Pn	Pb	20 24 44.4	+0.1
RAO				Sn	Sn	20 25 03.5	+1.5
ASAR	**Alice Springs** 245nm,0.3s,baz=60,slow=21,SNR=4.4	**43.82**	**264**	P	P	20 32 28.3	-0.1
WRA	**Warramunga Arr** 0.3nm,0.5s,baz=109,slow=8.1,SNR=4.8	**44.60**	**270**	P	P	20 32 34.6	-0.1
TORD	**Torodi Ar. Bea** 0.4nm,0.9s,baz=169,slow=0.7,SNR=2.6	**165.08**	**176**	PKPab	PKPab	20 45 23.4	-0.4

*ISCJB **13** 20:25:41.2±1.0, 35.95N±0.04×26.89E±0.05, h7km±8km, Error ellipse: s-maj=7.9km s-min=4.7km az=42.3*
*ATH **13** 20:25:41.2, 35.90N×26.97E, h39km±5km, ML2.5/2, Error ellipse: s-maj=6.9km s-min=1.7km az=117.0*
*CSEM **13** 20:25:41.4±0.3, 35.94N×26.86E, h10km, ML2.5, Error ellipse: s-maj=7.9km s-min=5.7km az=140.0*
*DDA **13** 20:25:43.7, 36.04N×27.13E, h8km, Md2.8*

ISC 13 20:25:41.0±1.2, 35.94N±0.03×26.89E±0.03, h10km±11km, n24, σ0s73/32, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.45**	**150**	P	**Pg**	**20 25 49.9**	**0.0**
KARP				S	**Sg**	**20 25 56.2**	**+0.3**
KARP	**Karpathos**	**0.45**	**150**	P	**Pg**	**20 25 49.9**	**0.0**
KARP				S	**Sg**	**20 25 56.2**	**+0.3**
KARP	comp=N,1826μm,0.2s			AML	AML	20 25 58.8	
KARP	comp=E,2304μm,0.1s			AML	AML	20 25 59.0	
NIS1	**Nisyros Isl.**	**0.70**	**20**	P	**Pb**	**20 25 56.1**	**+0.8**
NIS1	**Nisyros Isl.**	**0.70**	**20**	P	**Pb**	**20 25 56.1**	**+0.8**
ZKR	**Zakros**	**0.99**	**214**	P	**Pn**	**20 26 01.1**	**+0.1**
ZKR	**Zakros**	**0.99**	**214**	P	**Pn**	**20 26 01.1**	**+0.1**
ZKR				S	**Sn**	**20 26 15.6**	**+0.5**
ZKR	comp=N,618μm,0.6s			AML	AML	20 26 17.3	
ZKR	comp=E,444μm,0.7s			AML	AML	20 26 18.1	
ARG	**Arkhangelos**	**1.04**	**74**	P	**Pg**	**20 26 00.8**	**-0.2**
BDRM	**Kayabasi**	**1.21**	**22**	*i* P	**Pn**	**20 26 04.4**	**+0.3**
BDRM				*i* S	**Sb**	**20 26 18.7**	**-1.0**
BDRM	**Kayabasi**	**1.21**	**22**	P	**Pn**	**20 26 04.4**	**+0.3**
BDRM				S	**Sb**	**20 26 18.7**	**-1.0**
SANT	**Santorini**	**1.23**	**291**	P	**Pg**	**20 26 05.3**	**+0.7**
SANT	**Santorini**	**1.23**	**291**	P	**Pg**	**20 26 05.3**	**+0.7**
NPS	**Neapolis**	**1.24**	**237**	P	**Pn**	**20 26 04.2**	**-0.3**
NPS				S	**Sb**	**20 26 20.4**	**-0.3**
NPS	**Neapolis**	**1.24**	**237**	P	**Pn**	**20 26 04.2**	**-0.3**
NPS				S	**Sb**	**20 26 20.4**	**-0.3**
LAST	**Lasithi**	**1.39**	**236**	P	**Pb**	**20 26 06.9**	**-0.2**
LAST	**Lasithi**	**1.39**	**236**	P	**Pb**	**20 26 06.9**	**-0.2**
APE	**Apeiranthos**	**1.57**	**316**	P	**Pn**	**20 26 07.7**	**-1.3**
APE	**Apeiranthos**	**1.57**	**316**	P	**Pn**	**20 26 07.7**	**-1.3**
TURN	**Turunc**	**1.67**	**56**	*i* P	Pn	20 26 05.3	-5.0
TURN				*i* S	Sn	20 26 22.7	-9.1
IDI	**Anoyia**	**1.75**	**249**	P	**Pn**	**20 26 11.2**	**-0.4**
IDI	**Anoyia**	**1.75**	**249**	P	**Pn**	**20 26 11.2**	**-0.4**
AKAS	**Kas**	**2.22**	**82**	*i* P	**Pn**	**20 26 18.5**	**+0.4**
AKAS	**Kas**	**2.22**	**82**	P	**Pn**	**20 26 18.5**	**+0.4**
GOLH	**Golhisar**	**2.51**	**58**	*i* P	**Pb**	**20 26 25.0**	**-1.3**
GOLH				*i* S	**Sn**	**20 26 53.9**	**+1.1**
GOLH	**Golhisar**	**2.51**	**58**	P	**Pb**	**20 26 25.0**	**-1.3**
GOLH				S	**Sn**	**20 26 53.9**	**+1.1**

*ISCJB **13** 20:31:42.2±0.6, 50.14N±0.04×18.35E±0.03, h0km, Error ellipse: s-maj=5.7km s-min=2.7km az=5.6*
*WAR **13** 20:31:43.7, 50.06N×18.41E, h1km, Mw2.2*
*CSEM **13** 20:31:43.3±0.3, 50.11N×18.39E, h1km, ML2.5/5, Error ellipse: s-maj=7.6km s-min=3.5km az=7.0*
*IPEC **13** 20:31:43.0±0.4, 50.18N×18.38E, h1km±2km, ML1.6/3, Error ellipse: s-maj=6.4km s-min=1.2km az=157.0*
*PRU **13** 20:31:45.0, 50.06N×18.36E, h0km*

ISC 13 20:31:43.5±0.8, 50.11N±0.04×18.42E±0.02, h0km, n27, σ0s70/50, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.15**	**259**	*e*Pg	**Pg**	**20 31 47.8**	**+1.4**
RAC				*e*Sg	**Sg**	**20 31 51.0**	**+2.7**
OKC	**Ostrava-Krasne**	**0.33**	**213**	*i* PG	**Pg**	**20 31 50.2**	**+0.5**
OKC	comp=Z,24nm,0.3s			*e*SG	**Sg**	**20 31 54.7**	**+0.7**
OKC	**Ostrava-Krasne** 2.1nm,0.5s	**0.33**	**213**	Pg	**Pg**	**20 31 50.2**	**+0.5**
OKC	24nm,0.3s			Sg	**Sg**	**20 31 54.7**	**+0.7**
MORC	**Moravsky Berou**	**0.66**	**240**	*e*Pg	**Pg**	**20 31 56.0**	**-0.1**
MORC	12nm,0.2s			*e*Sg	**Sg**	**20 32 04.1**	**-0.6**
OJC	**Ojcow**	**0.89**	**82**	*e*Pg	**Pg**	**20 32 00.9**	**+0.3**
OJC				*e*Sg	**Sb**	**20 32 13.7**	**-0.6**
OJC	**Ojcow**	**0.89**	**82**	*e*Pg	**Pg**	**20 32 00.9**	**+0.3**
OJC				*e*Sg	**Sb**	**20 32 13.7**	**-0.6**
OJC	**Ojcow**	**0.89**	**82**	*e*Pg	**Pg**	**20 32 00.9**	**+0.3**
OJC				*e*Sg	**Sb**	**20 32 13.7**	**-0.6**
KRLC	**Kraliky**	**1.06**	**269**	*e*PG	**Pg**	**20 32 03.6**	**-0.2**
KRLC				*e*SG	**Sg**	**20 32 17.7**	**+0.2**
KRLC	**Kraliky**	**1.06**	**269**	Pg	**Pg**	**20 32 03.6**	**-0.2**
KRLC				Sg	**Sg**	**20 32 17.7**	**+0.2**
LANS	**Liptovska Anna**	**1.18**	**144**	*e*Pg	**Pg**	**20 32 06.1**	**+0.1**
LANS				*e*Sg	**Sb**	**20 32 22.7**	**+0.2**
LANS	**Liptovska Anna**	**1.18**	**144**	*e*PG	**Pg**	**20 32 06.1**	**+0.1**
LANS				*e*SG	**Sb**	**20 32 22.7**	**+0.2**
NIE	**Niedzica**	**1.40**	**119**	*e*Pg	**Pb**	**20 32 10.8**	**+0.2**
NIE				*e*Sg	**Sn**	**20 32 30.0**	**+0.5**
NIE	**Niedzica**	**1.40**	**119**	*e*Pg	**Pb**	**20 32 10.8**	**+0.3**
NIE				*e*Sg	**Sn**	**20 32 30.0**	**+0.5**
VRAC	**Vranov**	**1.43**	**237**	*e*Pn	**Pn**	**20 32 10.2**	**-0.6**
VRAC	7.3nm,0.3s			*e*Sg	**Sg**	**20 32 28.4**	**-1.1**
VYHS	**Vyhne**	**1.64**	**170**	*e*Pg	**Pn**	**20 32 13.1**	**-0.6**
VYHS				*e*Sn	**Sn**	**20 32 35.0**	**-0.4**
VYHS	**Vyhne**	**1.64**	**170**	*e*PG	**Pn**	**20 32 13.0**	**-0.6**
VYHS				*e*SN	**Sn**	**20 32 35.0**	**-0.4**
VYHS				*e*LG	Lg	20 32 37.4	
KRUC	**Moravsky**	**1.69**	**232**	*e*Pn	**Pn**	**20 32 14.0**	**-0.2**
KRUC	4.6nm,0.2s			*e*Sg	**Sn**	**20 32 36.5**	**0.0**
STHS	**Stebnicka Huta**	**1.96**	**110**	*e*Pn	**Pg**	**20 32 21.5**	**+0.5**
STHS	**Stebnicka Huta**	**1.96**	**110**	*e*PN	**Pg**	**20 32 21.5**	**+0.5**
STHS				*e*LG	Lg	20 32 52.8	
GOPC	**GO Pecny, Ondr**	**2.35**	**267**	*e*PG	**Pg**	**20 32 27.8**	**-0.8**
GOPC				*e*SG	**Sb**	**20 32 57.0**	**+0.6**
GOPC	**GO Pecny, Ondr**	**2.35**	**267**	Pg	**Pg**	**20 32 27.8**	**-0.8**
GOPC				Sg	**Sb**	**20 32 57.0**	**+0.6**
PRU	**Pruhonice**	**2.50**	**269**	*e*PG	**Pb**	**20 32 28.7**	**-0.6**
PRU				*e*SG	**Sb**	**20 33 01.8**	**+1.1**
PRU	**Pruhonice**	**2.50**	**269**	Pg	**Pb**	**20 32 28.7**	**-0.6**
PRU				Sg	**Sb**	**20 33 01.8**	**+1.1**
PVCC	**Panska Ves** comp=Z,6.4nm,0.2s	**2.51**	**281**	*e*SG	**Sg**	**20 33 04.5**	**+0.5**
PVCC	**Panska Ves** 6.4nm,0.2s	**2.51**	**281**	Sg	**Sg**	**20 33 04.5**	**+0.5**
KHC	**Kasperske Hory**	**3.30**	**255**	*e*PN	**Pn**	**20 32 36.0**	**-0.4**
KHC				*e*PG	**Pg**	**20 32 46.5**	**-0.2**
KHC				*e*SG	**Sg**	**20 33 29.5**	**0.0**
KHC	**Kasperske Hory**	**3.30**	**255**	Pn	**Pn**	**20 32 36.0**	**-0.4**

KRSC 13 20:33:09.2±2.6, 49.71N×157.14E, h15km±7km, ML4.0, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.18**	**326**	*i* P	Pn	20 33 28.6	-2.4
SKR				*i* S	Sb	20 33 42.7	-3.4
PAU	**Pauzhetka**	**1.77**	**353**	*e*P	Pn	20 33 40.1	+0.9
PAU				*e*S	Sb	20 34 03.1	-0.2
ASAK	**Asacha**	**2.72**	**10**	*e*P	Pb	20 33 56.0	-1.5
RUS	**Russkaya**	**2.86**	**17**	*e*P	Pb	20 33 57.4	-2.5
RUS				*e*S	Sb	20 34 31.9	-2.8
KRMR	**Karymshinskiy**	**3.19**	**11**	S	Sb	20 34 41.0	-3.0
UGLR	**Uglovaya**	**3.66**	**16**	P	Pb	20 34 09.8	-3.8
UGLR				S	Sb	20 34 53.2	-4.6
AVH	**Avacha**	**3.70**	**15**	*e*P	Pb	20 34 10.6	-3.6
AVH				S	Sn	20 34 53.0	+3.9
NLC	**Nalytchevo**	**3.73**	**21**	*e*S	Sn	20 34 53.3	+3.5
SDLR	**Sedlovina**	**3.74**	**16**	*e*P	Pn	20 34 09.9	+3.5
SDLR				S	Sn	20 34 53.7	+3.6
KRER	**Koryakskii**	**3.74**	**15**	*e*P	Pb	20 34 11.0	-3.9
KRER				S	Sb	20 34 55.3	-4.8
KRX	**Arik**	**3.77**	**14**	S	Sn	20 34 55.9	+4.8
SPN	**Mys Shipunski**	**3.84**	**27**	*e*P	Pn	20 34 11.3	+3.6
SPN				S	Sn	20 34 57.2	+4.6
GNL	**Ganaly**	**4.02**	**7**	*e*P	Pn	20 34 14.0	+3.7
MKZ	**Mys Kozlova**	**5.62**	**28**	*e*P	Pn	20 34 35.1	+3.1
MKZ				S	Sn	20 35 38.9	+2.7

MAN 13 20:55:38, 9.35N×122.06E, h28km, mb4.2, ML3.0, MS2.8, 2C, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.16**	**90**	*i* P	Pn	20 55 53.9	-4.6
SNPH				*i* S	Sn	20 56 09.5	-4.0
LLP	**Lapu-Lapu**	**2.11**	**63**	*e*P	Pn	20 56 13.4	+2.0
LLP				*e*S	Sn	20 56 38.8	+2.0
RCP	**Roxas**	**2.30**	**17**	*e*P	Pn	20 56 15.5	+1.5
RCP				*e*S	Sn	20 56 43.2	+1.8

*ISCJB **13** 21:04:04.6±0.7, 29.62S±0.06×176.20W±0.08, h21km, mb4.5/15, Error ellipse: s-maj=10.7km s-min=9.1km az=165.7*
*IDC **13** 21:04:04.5±1.0, 29.29S×176.33W, h0km, mb4.2/5, mb1 4.4/7, mb1mx4.1/35, mbtmp4.3/7, ML4.1/2, MS3.3/1, Ms1 3.3/1, ms1mx2.8/29, Error ellipse: s-maj=35.4km s-min=19.5km az=168.0*
*NEIC **13** 21:04:05.2±0.6, 29.54S×176.33W, h10km, mb4.8/15, Error ellipse: s-maj=14.9km s-min=10.9km az=117.0*

ISC 13 21:04:06.7±0.7, 29.48S±0.08×176.26W±0.08, h21km, n41, σ1s59/43, mb4.4/15, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 105nm,0.3s,baz=90,slow=20,SNR=3.9	**1.47**	**278**	Pn	**Pn**	**21 04 30.7**	**-1.3**
RAO	523nm,0.3s,baz=107,slow=19,SNR=7.7			Sn	**Sb**	**21 04 51.8**	**+0.3**
RAO	**Raoul Island**	**1.47**	**278**	*e*Pn	**Pn**	**21 04 30.9**	**-1.0**
RAO				*e*Sn	**Sb**	**21 04 51.0**	**-0.5**
OUZ	**Omahuta**	**10.31**	**234**	*e*Pn	**Pn**	**21 06 34.1**	**+0.6**
URZ	**Urewera** 0.7nm,0.3s,baz=41,slow=18,SNR=3.7	**10.35**	**210**	Pn	**Pn**	**21 06 34.2**	**+0.4**
URZ	3.4nm,0.3s,baz=12,slow=23,SNR=7.4			Sn	**Sn**	**21 08 31.8**	**+2.7**
URZ	**Urewera**	**10.35**	**210**	*e*Pn	**Pn**	**21 06 34.0**	**+0.2**
URZ				*e*Sn	**Sn**	**21 08 32.0**	**+2.8**
BKZ	**Black Stump Fm**	**11.37**	**210**	*e*Pn	**Pn**	**21 06 47.0**	**-0.9**
KHZ	**Kahutara** 259nm,1.9s	**15.31**	**210**	*e*Pn	**Pn**	**21 07 41.6**	**+0.1**
OXZ	**Oxford** 254nm,1.9s	**16.70**	**211**	*e*Pn	**Pn**	**21 07 57.7**	**-1.7**
DZM	**Mont Dzumac** comp=Z,944nm,19.8s,baz=115,slow=31	**17.23**	**291**	LR	LR	21 12 47.7	
RPZ	**Rata Peaks** 1.2nm,0.3s,baz=39,slow=6.5,SNR=5.1	**17.45**	**212**	P	**P**	**21 08 10.5**	**+0.6**
RPZ	**Rata Peaks**	**17.45**	**212**	*e*Pn	**Pn**	**21 08 05.7**	**-3.1**
ODZ	**Otahua Downs** 147nm,1.9s	**18.67**	**210**	*e*P	**P**	**21 08 20.0**	**-3.3**
MLZ	**Mavora Lakes** 93nm,1.5s	**20.08**	**214**	*e*P	**P**	**21 08 36.2**	**-2.5**
CTA	**Charters Tower** 1.2nm,0.4s,baz=96,slow=13,SNR=3.6	**35.17**	**277**	P	**P**	**21 11 00.6**	**+1.2**
STKA	**Stephens Creek** 4.0nm,0.7s,baz=100,slow=11,SNR=11	**36.17**	**255**	P	**P**	**21 11 09.9**	**+2.1**
STKA	**Stephens Creek** 8.2nm,2.0s	**36.17**	**255**	*e*P	**P**	**21 11 07.5**	**-0.2**
BBOO	**Buckleboo** 59nm,1.8s	**40.68**	**253**	*e*P	**P**	**21 11 46.0**	**+0.2**
AS01	**Alice Springs**	**44.64**	**265**	*e*P	**P**	**21 12 18.4**	**+0.4**
AS31	**Alice Springs** 1.3nm,0.7s	**44.68**	**265**	*e*P	**P**	**21 12 18.7**	**+0.3**
ASAR	**Alice Springs** 3.3nm,0.8s,baz=100,slow=6.5,SNR=39	**44.68**	**265**	P	**P**	**21 12 18.3**	**-0.1**
WB2	**Warramunga Arr**	**45.58**	**270**	*e*P	**P**	**21 12 25.1**	**-0.5**
WRAB	**Tennant Creek** 2.7nm,0.8s	**45.59**	**270**	*e*P	**P**	**21 12 25.4**	**-0.1**
WR1	**Warramunga Arr** 16nm,1.5s	**45.59**	**270**	*e*P	**P**	**21 12 24.9**	**-0.7**
WRA	**Warramunga Arr**	**45.59**	**270**	P	**P**	**21 12 24.9**	**-0.7**
VNDA	**Vanda** 3.5nm,0.8s,baz=110,slow=7.7,SNR=19	**49.17**	**186**	*e*P	**P**	**21 12 49.7**	**-2.9**
MTN	**Manton Dam** 5.7nm,1.4s	**51.35**	**277**	*e*P	**P**	**21 13 08.2**	**-1.8**
FITZ	**Fitzroy Crossi** 22nm,1.4s	**53.89**	**268**	*e*P	**P**	**21 13 26.0**	**-2.8**
MBWA	**Marble Bar** 8.8nm,1.4s	**57.84**	**262**	*e*P	**P**	**21 13 55.9**	**-1.2**
QSPA	**South Pole Qui** 33nm,1.4s	**60.63**	**180**	*e*P	P	21 14 22.1	+6.2
LTX	**Lajitas** 29nm,1.2s	**90.62**	**56**	*e*P	**P**	**21 17 08.5**	**+0.6**
TXAR	**Lajitas Array** 0.3nm,0.7s,baz=210,slow=5.2,SNR=2.8	**90.62**	**56**	P	**P**	**21 17 08.5**	**+0.6**
ENH	**Enshi** 4.1nm,0.7s	**92.34**	**304**	*e*P	**P**	**21 17 17.6**	**+1.9**
FIA0	**FINESS Array S**	**144.78**	**342**	*e*PKPbc	**PKPdf**	**21 23 40.6**	**-0.7**
FINES	**FINESS Array B** 1.1nm,0.7s,baz=5.7,slow=5.6,SNR=2.8	**144.78**	**342**	PKP	**PKPdf**	**21 23 40.6**	**-0.7**
KBZ	**Khabaz** 1.1nm,0.7s,baz=133,slow=7.1,SNR=2.9	**145.83**	**305**	PKPbc	**PKPab**	**21 23 46.1**	**+1.4**
NB200	**NORSAR Array S**	**148.04**	**353**	*e*PKPbc	**PKPbc**	**21 23 50.4**	**+0.4**
NOA	**NORSAR Array B** 0.8nm,0.8s,baz=17,slow=4.1,SNR=2.7	**148.04**	**353**	PKPbc	**PKPbc**	**21 23 50.4**	**+0.4**
AKASG	**Malin Array Be** 0.4nm,0.2s,baz=41,slow=2.5,SNR=3.5	**151.45**	**325**	PKPbc	**PKPbc**	**21 23 58.3**	**-0.4**
AKBB	**Malin Array Si**	**151.45**	**325**	*e*PKPbc	**PKPbc**	**21 23 58.3**	**-0.4**
TORD	**Torodi Ar. Bea** 0.8nm,0.9s,baz=175,slow=3.3,SNR=4.2	**163.64**	**173**	PKPab	**PKPab**	**21 25 03.0**	**+2.8**
TOA1	**Torodi Ar. Sit**	**163.64**	**173**	*e*PKPab	**PKPab**	**21 25 03.0**	**+2.7**

*IDC **13** 21:04:25.9±1.1, 16.98S×172.72W, h0km, mb4.1/5, mb1 4.3/6, mb1mx3.8/43, mbtmp4.1/6, ML3.5/1, MS3.6/2, Ms1 3.6/2, ms1mx3.0/38, Error ellipse: s-maj=43.4km s-min=25.1km az=135.0*
*NEIC **13** 21:04:30.3±0.5, 17.04S×172.71W, h35km, mb4.3/2, Error ellipse: s-maj=19.4km s-min=8.8km az=132.0*

ISC 13 21:04:28.0±1.0, 16.9S±0.1×172.7W±0.2, h17km, n21, σ1s08/23, mb4.3/7, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu** 4.9nm,0.3s,baz=261,slow=19,SNR=3.6	**3.11**	**16**	Pn	**Pn**	**21 05 15.5**	**-0.9**
AFI	10.0nm,0.3s,baz=216,slow=19,SNR=5.4			Sn	**Sn**	**21 05 52.1**	**-1.2**
AFI	**Afiamalu**	**3.11**	**16**	Pn	**Pn**	**21 05 18.1**	**+1.7**
MSVF	**Nonsavu**	**8.91**	**263**	*e*Pn	Pn	21 06 43.6	+7.5
RAR	**Rarotonga** comp=Z,248nm,18.4s,baz=310,slow=35	**12.91**	**111**	LR	LR	21 12 03.1	
PPT	**Papeete** comp=Z,141nm,18.6s,baz=324,slow=33	**22.05**	**95**	LR	LR	21 16 44.3	
WR1	**Warramunga Arr** 5.5nm,1.0s	**50.21**	**258**	*e*P	**P**	**21 13 22.2**	**-1.2**
WR1				*e*PcP	**PcP**	**21 14 44.8**	**+2.2**
WRA	**Warramunga Arr** 1.7nm,0.9s,baz=96,slow=7.4,SNR=6.7	**50.21**	**258**	P	**P**	**21 13 22.2**	**-1.2**
WRA	0.5nm,0.8s,baz=97,slow=3.1,SNR=4.1			PcP	**PcP**	**21 14 44.8**	**+2.2**
AS01	**Alice Springs**	**50.29**	**253**	*e*P	**P**	**21 13 22.6**	**-1.5**
AS31	**Alice Springs** 1.3nm,0.7s	**50.33**	**253**	*e*P	**P**	**21 13 23.6**	**-0.8**
ASAR	**Alice Springs** 6.1nm,0.8s,baz=89,slow=8.4,SNR=18	**50.33**	**253**	P	**P**	**21 13 23.6**	**-0.7**
PETK	**Petropavlovsk-** 2.5nm,0.8s,baz=157,slow=8.0,SNR=3.7	**74.29**	**342**	P	**P**	**21 16 04.5**	**+0.4**
PEA1	**Petropavlovsk-**	**74.29**	**342**	*e*P	**P**	**21 16 04.5**	**+0.4**
ILAR	**Eielson Array** 0.2nm,0.6s,baz=219,slow=4.2,SNR=2.8	**83.80**	**11**	P	**P**	**21 16 56.3**	**+0.3**
ILB	**Eielson Array**	**83.80**	**11**	*e*P	**P**	**21 16 56.3**	**+0.3**
CM31	**Chiang Mai Arr**	**93.76**	**288**	*e*P	**P**	**21 17 44.6**	**-0.1**
CMAR	**Chiang Mai Arr** 1.1nm,0.8s,baz=77,slow=4.0,SNR=3.0	**93.76**	**288**	P	**P**	**21 17 44.6**	**-0.1**
GERES	**GERESS Array B** 0.4nm,0.4s,baz=101,slow=2.0,SNR=3.0	**147.74**	**352**	PKPbc	**PKPab**	**21 24 14.6**	**+0.4**
BR101	**Keskin Array S**	**147.78**	**320**	*e*PKPdf	**PKPdf**	**21 24 09.4**	**-0.2**
BR101				*e*PKPbc	**PKiKP**	**21 24 14.2**	**-0.2**
BRTR	**Keskin Array B** 0.2nm,0.4s,baz=14,slow=7.4,SNR=3.9	**147.78**	**320**	PKP	**PKPdf**	**21 24 09.4**	**-0.2**
BRTR	0.9nm,0.7s,baz=77,slow=2.6,SNR=4.9			PKPbc	**PKiKP**	**21 24 14.2**	**-0.2**
TORD	**Torodi Ar. Bea** 0.4nm,0.7s,baz=258,slow=6.6,SNR=3.0	**173.38**	**124**	PKPab	**PKPab**	**21 26 04.9**	**-0.9**
TOA1	**Torodi Ar. Sit**	**173.38**	**124**	*e*PKPab	**PKPab**	**21 26 04.9**	**-0.9**

IDC 13 21:12:24.1±1.4, 29.67S×176.07W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.8/31, mbtmp4.0/3, Error ellipse: s-maj=54.8km s-min=30.7km az=180.0, Kermadec Islands region

| Code | Station Name | Δ° |

H11S1	**WAKE ISLAND Hy 31.58 129**		T		T	21 52 20.0	
	baz=323,slow=76,SNR=4.0						
H11S3	**WAKE ISLAND Hy 31.58 129**		T		T	21 52 21.2	
	baz=323,slow=76,SNR=3.5						
H11S2	**WAKE ISLAND Hy 31.59 129**		T		T	21 52 20.5	
	baz=323,slow=76,SNR=4.2						
ZALV	**Zalesovo Beam 38.93 308**		P		**P**	**21 19 54.7 -0.5**	
	0.3nm,0.3s,baz=79,slow=7.6,SNR=3.1						
MKAR	**Makanchi Array 41.79 298**		P		**P**	**21 20 19.3 +0.3**	
	0.5nm,0.5s,baz=84,slow=10.0,SNR=7.1						
ILAR	**Eielson Array 45.76 35**		P		**P**	**21 20 50.6 +0.1**	
	0.7nm,0.8s,baz=278,slow=6.5,SNR=4.9						
WRA	**Warramunga Arr 61.53 187**		P		**P**	**21 22 45.1 -0.9**	
	0.4nm,0.5s,baz=6.0,slow=6.9,SNR=8.5						

IDC ***13*** *21:18:36.5±2.7,36.6′44N×143.43E,h0km,mb3.5/3, mb1 3.6/5,mb1mx3.4/48,mbtmp3.6/5,ML3.3/2,Error ellipse: s-maj=58.9km s-min=30.6km az=56.0*

ISCJB ***13*** *21:18:37.6±1.1,36.93N±0.07′×143.36E±0.09,h33km, mb3.4/3,Error ellipse: s-maj=11.5km s-min=7.9km az=140.8*

JMA ***13*** *21:18:39.7±0.3,36.90N×143.17E,h45km,M3.3*

ISC 13 21:18:39.3±1.7,36.88N±0.06′×143.3E±0.1′,h35km,n15, σ1s50/19,mb3.4/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**2.03**	**285**	P	**Pn**	**21 19 10.3**	**-0.7**
JFK				*e*S	**Sn**	**21 19 32.9**	**-2.3**
ONAJ	**Iwakimizuishiy**	**2.05**	**277**	P	**Pn**	**21 19 10.8**	**-0.5**
JHO	**Hitachi**	**2.25**	**264**	P	**Pn**	**21 19 13.5**	**-0.4**
JFT	**Otama**	**2.48**	**286**	P	**Pn**	**21 19 17.7**	**+0.5**
JFT				S	**Sn**	**21 19 45.5**	**-0.8**
BSO1	**Boso 1**	**2.94**	**222**	P	**Pn**	**21 19 23.9**	**+0.9**
JOM	**Ohasama**	**3.05**	**329**	*e*S	**Sn**	**21 19 58.6**	**-1.7**
JYK	**Kaneyama**	**3.12**	**312**	P	**Pn**	**21 19 25.8**	**-0.1**
JAG	**Ashikaga**	**3.16**	**263**	P	**Pn**	**21 19 26.7**	**+0.2**
JRY	**Ryogami san**	**3.68**	**258**	P	**Pn**	**21 19 33.9**	**+0.2**
MJAR	**Matsushiro Arr**	**4.14**	**267**	Pn	**Pn**	**21 19 41.0**	**+1.0**
	1.4nm,0.3s,baz=85,slow=11,SNR=12						
MJAR				Sn	**Sn**	**21 20 29.4**	**+2.2**
	0.8nm,0.3s,baz=74,slow=21,SNR=4.3						
MAT	**Matsushiro**	**4.14**	**267**	P	**Pn**	**21 19 41.0**	**+1.0**
MAT				S	**Sn**	**21 20 27.9**	**+0.7**
JHJ	**Hachijo jima 2**	**4.75**	**219**	Pn	**Pn**	**21 19 47.7**	**-0.7**
	5.5nm,0.3s,baz=68,slow=19,SNR=17						
JHJ				Sn	**Sn**	**21 20 38.5**	**-3.8**
	17nm,0.3s,baz=81,slow=23,SNR=10						
SONM	**Songino Array 29.16 304**		P		P	21 24 41.2	+4.1
	0.4nm,0.6s,baz=94,slow=7.9,SNR=3.9						
WRA	**Warramunga Arr 57.15 190**		P		**P**	**21 28 23.6**	**+1.1**
	0.2nm,0.5s,baz=7.5,slow=7.4,SNR=6.0						
ASAR	**Alice Springs 60.88 190**		P		**P**	**21 28 49.2**	**+0.9**
	0.3nm,0.6s,baz=9.8,slow=6.8,SNR=3.6						

IDC ***13*** *21:23:03.2±1.2,4.63S×103.06E,h0km,mb3.9/12, mb1 4.0/12,mb1mx3.8/40,mbtmp3.9/12,MS3.6/2, Ms1 3.6/2,ms1mx2.8/41,Error ellipse: s-maj=44.1km s-min=14.8km az=55.0*

ISCJB ***13*** *21:23:08.4±0.5,4.93S±0.06′×102.74E±0.05,h64km, mb4.1/17,Error ellipse: s-maj=9.8km s-min=4.6km az=42.1*

NEIC ***13*** *21:23:11.1±0.9,4.75S×102.96E,h66km±9km,mb4.3/7, Error ellipse: s-maj=18.7km s-min=6.3km az=49.0*

DJA ***13*** *21:23:16.0±0.5,5°S×10°E±°,h74km±10km,M3.9/7, MLv3.9/7*

ISC 13 21:23:09.9±0.6,5.06S±0.06′×102.78E±0.07,h64km,n50, σ2s13/48,mb4.2/17,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LWLI	**Liwa**	**1.27**	**88**	P	**Pn**	**21 23 34.2**	**+2.4**
LWLI				S	**Sn**	**21 23 47.4**	**-0.7**
KSI	**Kapahiang**	**1.41**	**352**	P	Pn	21 23 38.4	+4.8
KSI				S	**Sn**	**21 23 55.0**	**+3.6**
LHSI	**Lahat**	**1.43**	**31**	P	**Pn**	**21 23 34.5**	**+0.7**
LHSI				S	**Sn**	**21 23 49.5**	**-2.2**
KASI	**Kota Agung**	**1.77**	**105**	P	**Pn**	**21 23 41.8**	**+3.5**
KASI				S	**Sn**	**21 24 01.1**	**+1.3**
BLSI	**Bandar Lampung**	**2.47**	**97**	P	**Pn**	**21 23 50.0**	**+2.1**
CGJI	**Cibinong**	**3.28**	**118**	P	**Pn**	**21 24 01.9**	**+3.0**
PPSI	**Pulau Pagai**	**3.59**	**309**	P	Pn	21 24 11.2	+8.1
CISI	**Cisompet, Garu**	**5.58**	**117**	*e*Pn	**Pn**	**21 24 32.5**	**+2.0**
CISI				*e*Sn	**Sn**	**21 25 28.3**	**-5.1**
XMIS	**Christmas Isla**	**6.09**	**152**	*e*Pn	**Pn**	**21 24 38.7**	**+1.3**
XMIS				*e*Sn	**Sn**	**21 25 42.1**	**-3.6**
GSI	**Gunungsitoli**	**8.19**	**320**	*e*Pn	**Pn**	**21 25 05.7**	**-0.4**
GSI				*e*Sn	**Sn**	**21 26 36.7**	**-0.5**
UGM	**Wanagama**	**8.20**	**111**	*e*Pn	**Pn**	**21 25 09.3**	**+3.1**
PSI	**Prapat**	**8.71**	**334**	LR	LR	21 28 28.1	
	comp=Z,202nm,18.9s,baz=163,slow=39						
JAGI	**Jajag, Banyuwa**	**11.79**	**107**	*e*Pn	**Pn**	**21 25 55.4**	**+0.1**
JAGI				*e*Sn	**Sn**	**21 28 01.8**	**-3.5**
CM01	**Chiang Mai Arr**	**23.64**	**351**	*e*P	**P**	**21 28 12.7**	**-2.8**
CM31	**Chiang Mai Arr**	**23.67**	**351**	*e*P	**P**	**21 28 14.3**	**-1.6**
CMAR	**Chiang Mai Arr**	**23.67**	**351**	P	**P**	**21 28 14.3**	**-1.6**
	0.7nm,0.6s,baz=181,slow=9.0,SNR=8.0						
FITZ	**Fitzroy Crossi**	**25.83**	**122**	P	**P**	**21 28 36.2**	**+0.8**
	1.5nm,0.7s,baz=323,slow=5.0,SNR=8.8						
FITZ	**Fitzroy Crossi**	**25.83**	**122**	*e*P	**P**	**21 28 36.2**	**+0.8**
	18nm,1.8s						
H08S2	**Diego Garcia H**	**30.21**	**264**	T	T	22 01 36.7	
	baz=86,slow=76,SNR=5.5						
H08S3	**Diego Garcia H**	**30.22**	**264**	T	T	22 01 37.7	
	baz=86,slow=76,SNR=6.6						
H08S1	**Diego Carcia H**	**30.23**	**264**	T	T	22 01 38.4	
	baz=86,slow=76,SNR=5.8						
H01W3	**Cape Leeuwin H**	**31.48**	**162**	T	T	22 02 53.2	
	baz=341,slow=76,SNR=5.7						
H01W2	**Cape Leeuwin H**	**31.49**	**162**	T	T	22 02 50.9	
	baz=341,slow=76,SNR=6.2						
H01W1	**Cape Leeuwin H**	**31.50**	**162**	T	T	22 02 53.2	
	baz=341,slow=76,SNR=6.9						
WR1	**Warramunga Arr**	**34.08**	**119**	*e*P	**P**	**21 29 49.0**	**+0.5**
	20nm,1.6s						
WRA	**Warramunga Arr**	**34.08**	**119**	P	**P**	**21 29 49.0**	**+0.5**
	0.5nm,0.4s,baz=292,slow=10,SNR=16						
WRAB	**Tennant Creek**	**34.09**	**118**	*e*P	**P**	**21 29 49.1**	**+0.5**
	6.1nm,1.0s						
WB2	**Warramunga Ar**	**34.09**	**119**	*e*P	**P**	**21 29 48.8**	**+0.1**
	28nm,1.9s						
ASAR	**Alice Springs**	**35.23**	**125**	P	**P**	**21 30 00.1**	**+1.7**
	0.8nm,0.3s,baz=299,slow=7.6,SNR=17						
AS31	**Alice Springs**	**35.23**	**125**	*e*P	**P**	**21 30 00.1**	**+1.7**
	1.8nm,1.4s						
STKA	**Stephens Creek**	**45.06**	**131**	P	**P**	**21 31 22.4**	**+2.7**
	0.6nm,0.4s,baz=338,slow=5.4,SNR=4.3						
STKA	**Stephens Creek**	**45.06**	**131**	*e*P	**P**	**21 31 22.4**	**+2.7**
	4.1nm,1.8s						
KS15	**Wonju Array Si**	**48.32**	**27**	*e*P	**P**	**21 31 42.0**	**-3.0**
KSAR	**Wonju Array Be**	**48.32**	**27**	P	**P**	**21 31 42.0**	**-3.0**
KSRS	**Korea Array**	**48.35**	**27**	P	**P**	**21 31 42.0**	**-3.2**
	0.4nm,0.3s,baz=206,slow=6.8,SNR=3.0						
SONA0	**Songino Array**	**52.77**	**3**	*e*P	**P**	**21 32 17.5**	**-1.1**
	1.6nm,0.6s						
SONM	**Songino Array**	**52.77**	**3**	P	**P**	**21 32 17.5**	**-1.1**
	1.5nm,0.6s,baz=182,slow=9.1,SNR=14						
MK32	**Makanchi Array**	**54.73**	**343**	*e*P	**P**	**21 32 32.1**	**-0.7**
MKAR	**Makanchi Array**	**54.73**	**343**	P	**P**	**21 32 32.1**	**-0.7**
	1.2nm,0.5s,baz=154,slow=8.5,SNR=15						
USRK	**Ussuriysk Ar.**	**55.63**	**25**	P	**P**	**21 32 37.0**	**-2.2**
	1.7nm,0.5s,baz=195,slow=4.9,SNR=9.5						
ZAA0	**Zalesovo Array**	**60.70**	**348**	*e*P	**P**	**21 33 13.1**	**-1.3**
ZALV	**Zalesovo Beam**	**60.70**	**348**	P	**P**	**21 33 13.2**	**-1.2**
	1.4nm,0.4s,baz=163,slow=6.5,SNR=8.5						
ZAA1	**Zalesovo Array**	**60.70**	**348**	*e*P	**P**	**21 33 13.2**	**-1.2**
BR101	**Keskin Array S**	**77.42**	**312**	*e*P	**P**	**21 35 00.5**	**+1.8**
BRTR	**Keskin Array B**	**77.42**	**312**	P	**P**	**21 35 00.5**	**+1.8**
	0.7nm,0.8s,baz=115,slow=8.3,SNR=4.2						
AFI	**Afiamalu**	**84.39**	**103**	LR	LR	22 15 24.1	
	comp=Z,60nm,20.4s,baz=112,slow=37						
FIA0	**FINESS Array S**	**88.10**	**332**	*e*P	**P**	**21 35 54.1**	**+0.8**
FINES	**FINESS Array B**	**88.10**	**332**	P	**P**	**21 35 54.1**	**+0.8**
	1.0nm,0.6s,baz=41,slow=3.5,SNR=6.8						
LTX	**Lajitas**	**145.23**	**43**	*e*PKPbc	**PKPbc**	**21 42 40.8**	**-0.2**
TXAR	**Lajitas Array**	**145.23**	**43**	PKP	**PKPbc**	**21 42 40.8**	**-0.2**
	0.3nm,0.4s,baz=290,slow=0.8,SNR=7.1						

IDC 13 21:28:11.2±4.9,28.53S×176.16W,h0km,mb3.6/2,

mb1 3.9/2,mb1mx3.6/23,mbtmp3.6/2,MS3.3/1,Ms1 3.3/1, ms1mx2.8/17,Error ellipse: s-maj=171.6km s-min=38.2km az=145.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island 1.70 244**			Pn	Pb	21 28 42.9	-0.5
	244nm,0.3s,baz=53,slow=20,SNR=11						
RAO				Sn	Sn	21 29 04.0	-0.7
	445nm,0.3s,baz=41,slow=23,SNR=8.5						
PPT	**Papeete 26.72 72**			LR	LR	21 44 13.2	
	comp=Z,60nm,18.1s,baz=115,slow=36						
ASAR	**Alice Springs 44.85 264**			P	P	21 36 27.7	+0.1
	0.4nm,0.5s,baz=99,slow=6.8,SNR=11						
WRA	**Warramunga Arr 45.68 269**			P	P	21 36 33.8	-0.4
	0.5nm,0.4s,baz=110,slow=8.1,SNR=14						
FINES	**FINESS Array B 143.90 342**			PKP	PKPbc	21 47 46.7	+1.1
	1.3nm,0.8s,baz=132,slow=2.1,SNR=4.0						

MAN 13 21:28:42,13.89N×122.63E,h49km,mb3.8,ML2.6,MS2.1, 2C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GQP	**Guinayangan**	**0.18**	**273**	*i*↑*e*P	Pn	21 28 52.0	+1.9
GQP				*i* S	Sn	21 28 59.3	+3.4
LQP	**Lukban**	**1.08**	**282**	*i*↑*e*P	Pn	21 29 02.6	+1.6
PCPH	**Palayan**	**2.23**	**318**	*i*↓*e*P	Pn	21 29 18.3	+1.8
PCPH				*e*S	Sn	21 29 44.9	+2.1

NIED ***13*** *21:41:00,39.60N×142.80E,h14km,Mw3.9 Best double couple: M0 7.13000×10^14 NP1:φs72.00000°,δ57.00000°, λ-38.00000°. NP2:φs185.00000°,δ59.00000°, λ-141.00000°.*

ISCJB ***13*** *21:41:22.0±1.2,39.52N±0.04′×142.79E±0.06,h22km±7km, mb3.9/16,MS3.0/3,Error ellipse: s-maj=8.3km s-min=5.9km az=17.1*

JMA ***13*** *21:41:22.4±0.1,39.55N×142.76E,h25km±1km,M3.9*

IDC ***13*** *21:41:28.0±3.0,39.63N×142.71E,h52km±26km,mb3.7/17, mb1 3.8/20,mb1mx3.7/60,mbtmp3.9/20,ML3.1/3,MS3.0/4, Ms1 3.0/4,ms1mx2.7/43,Error ellipse: s-maj=20.5km s-min=16.3km az=102.0*

ISC 13 21:41:21.4±1.9,39.55N±0.04′×142.74E±0.07,h6km±11km, n42,σ1s32/46,mb4.0/16,MS2.9/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.71**	**272**	P	**Pb**	**21 41 36.2**	**-0.1**
MIYJ				*e*S	**Sb**	**21 41 46.0**	**-0.4**
JTH	**Tanohata**	**0.78**	**300**	P	**Pb**	**21 41 37.4**	**0.0**
JTH				S	**Sb**	**21 41 48.0**	**-0.3**
OFUJ	**Ofunato**	**0.96**	**241**	P	**Pg**	**21 41 40.1**	**+0.4**
OFUJ				*e*S	**Sg**	**21 41 52.7**	**+0.5**
JOM	**Ohasama**	**1.12**	**266**	P	**Pb**	**21 41 43.1**	**-0.2**
JOM				*e*S	**Sg**	**21 41 57.7**	**+0.2**
JKZ	**Kuzumaki**	**1.17**	**292**	P	**Pb**	**21 41 43.6**	**-0.5**
JKZ				*e*S	**Sb**	**21 41 59.2**	**-0.4**
JANG	**Nango**	**1.25**	**311**	P	**Pg**	**21 41 44.1**	**-1.3**
JANG				*e*S	**Sb**	**21 42 01.0**	**-0.8**
JMK	**Ichinoseki**	**1.32**	**244**	P	**Pg**	**21 41 46.1**	**-0.7**
JMK				*e*S	**Sg**	**21 42 02.9**	**-1.1**
JIO	**Ouri**	**1.54**	**225**	P	**Pn**	**21 41 48.7**	**-0.8**
JIO				*e*S	**Sn**	**21 42 08.1**	**-1.7**
JRG	**Rokugo**	**1.64**	**265**	P	**Pn**	**21 41 51.4**	**+0.6**
JAH	**Hinai**	**1.74**	**292**	P	**Pb**	**21 41 52.8**	**-1.0**
JAH				*e*S	**Sb**	**21 42 15.8**	**-0.1**
JTM	**Tenmabayashi**	**1.78**	**314**	P	**Pn**	**21 41 52.5**	**-0.2**
MJAR	**Matsushiro Arr**	**4.67**	**231**	P	**Pn**	**21 42 36.1**	**+3.6**
	2.0nm,0.3s,baz=35,slow=13,SNR=24						
MJAR				LR	LR	21 44 23.4	
	comp=Z,91nm,18.9s,baz=335,slow=37						
MAT	**Matsushiro**	**4.67**	**231**	P	**Pn**	**21 42 35.7**	**+3.1**
MAT				*e*S	**Sn**	**21 43 25.2**	**-1.9**
JHJ	**Hachijo jima 2**	**6.85**	**201**	P	**Pn**	**21 43 01.6**	**-0.8**
	4.2nm,0.3s,baz=1.5,slow=13,SNR=5.1						
JHJ				S	**Sn**	**21 44 18.2**	**-2.5**
	5.0nm,0.3s,baz=66,slow=20,SNR=2.7						
USRK	**Ussuriysk Ar.**	**9.27**	**304**	P	**Pn**	**21 43 38.8**	**+3.2**
	0.4nm,0.3s,baz=123,slow=15,SNR=5.8						
KSRS	**Korea Array**	**11.80**	**264**	P	**Pn**	**21 44 14.1**	**+3.9**
	0.2nm,0.3s,baz=72,slow=13,SNR=3.2						
MA2	**Magadan**	**20.68**	**12**	P	**P**	**21 46 01.8**	**-0.1**
	6.0nm,0.7s,baz=192,slow=9.9,SNR=3.7						
MA2				LR	LR	21 54 27.2	
	comp=Z,37nm,18.8s,baz=144,slow=38						
YAK	**Yakutsk**	**23.89**	**345**	LR	LR	21 58 04.0	
	comp=Z,36nm,19.4s,baz=140,slow=42						
SEY	**Seymchan**	**24.12**	**11**	P	**P**	**21 46 37.2**	**-0.6**
	11nm,1.0s,baz=204,slow=7.0,SNR=14						
SONM	**Songino Array**	**27.35**	**300**	P	**P**	**21 47 07.8**	**+0.5**
	0.4nm,0.4s,baz=101,slow=8.9,SNR=5.0						
H11N2	**WAKE ISLAND Hy 28.67 127**			T	T	22 17 17.7	
	baz=318,slow=75,SNR=179						
H11N1	**WAKE ISLAND Hy 28.68 127**			T	T	22 17 16.5	
	baz=318,slow=75,SNR=173						
H11N3	**WAKE ISLAND Hy 28.69 127**			T	T	22 17 17.7	
	baz=318,slow=75,SNR=184						
H11S1	**WAKE ISLAND Hy 29.48 128**			T	T	22 18 19.4	
	baz=320,slow=74,SNR=16						
H11S3	**WAKE ISLAND Hy 29.48 128**			T	T	22 18 21.1	
	baz=320						
H11S2	**WAKE ISLAND Hy 29.49 128**			T	T	22 18 21.2	
	baz=320,slow=74,SNR=14						
ZALV	**Zalesovo Beam 41.04 310**			P	**P**	**21 49 05.1**	**-0.2**
	1.5nm,0.4s,baz=91,slow=7.8,SNR=9.4						
ZALV				PcP	**PcP**	**21 51 04.8**	**-0.3**
	0.4nm,0.3s,baz=90,slow=2.0,SNR=2.5						
MKAR	**Makanchi Array 43.71 300**			P	**P**	**21 49 27.5**	**+0.2**
	0.9nm,0.7s,baz=85,slow=10,SNR=12						
KURBB	**Kurchatov Arra 45.32 306**			P	**P**	**21 49 39.9**	**-0.1**
	2.7nm,0.5s,baz=80,slow=8.8,SNR=28						
ILAR	**Eielson Array 46.82 34**			P	**P**	**21 49 52.6**	**+1.0**
	1.4nm,0.7s,baz=264,slow=6.4,SNR=14						
BVAR	**Borove Array 49.68 311**			P	**P**	**21 50 13.8**	**-0.1**
	0.9nm,0.5s,baz=68,slow=7.7,SNR=7.1						
SPITS	**Spitsbergen Ar 58.26 349**			LR	LR	22 18 06.7	
	comp=Z,27nm,18.3s,baz=200,slow=38						
WRA	**Warramunga Arr 59.70 189**			P	**P**	**21 51 27.6**	**+0.7**
	0.8nm,0.8s,baz=5.9,slow=6.7,SNR=6.8						
YKA	**Yellowknife Ar 61.11 31**			P	**P**	**21 51 35.6**	**-0.4**
	0.6nm,0.6s,baz=301,slow=6.0,SNR=4.0						
ASAR	**Alice Springs 63.43 189**			P	**P**	**21 51 52.5**	**+0.5**
	0.5nm,0.7s,baz=13,slow=6.1,SNR=5.1						
FINES	**FINESS Array B 67.08 332**			P	**P**	**21 52 14.6**	**-0.6**
	1.7nm,0.6s,baz=87,slow=9.7,SNR=6.0						
HFS	**Hagfors 72.22 336**			P	**P**	**21 52 46.8**	**-0.2**
	1.8nm,0.7s,baz=37,slow=10,SNR=5.5						
NB2	**NORSAR Subarra 72.27 338**			P	**P**	**21 52 46.3**	**-1.0**
	comp=Z,0.8nm,0.7s,baz=39,slow=6.2						
NOA	**NORSAR Array B 72.27 338**			P	**P**	**21 52 47.5**	**+0.1**
	comp=Z,1.1nm,0.7s,baz=38,slow=5.9,SNR=4.9						
AKASG	**Malin Array Be 72.34 322**			P	**P**	**21 52 50.9**	**-0.6**
	comp=Z,1.2nm,0.4s,baz=46,slow=6.5,SNR=5.6						
GERES	**GERESS Array B 81.11 329**			P	**P**	**21 53 37.8**	**+0.2**
	comp=Z,0.3nm,0.5s,baz=35,slow=3.7,SNR=2.5						
TXAR	**Lajitas Array 87.77 53**			P	**P**	**21 54 12.1**	**+0.4**
	comp=Z,0.2nm,0.5s,baz=294,slow=3.6,SNR=4.5						

ATH ***13*** *21:49:41.6,34.07N×26.42E,h16km±3km,ML2.9/4,Error ellipse: s-maj=5.2km s-min=2.0km az=357.0*

ISCJB ***13*** *21:49:44.8±1.4,34.1N±0.1×26.45E±0.05,h33km,Error ellipse: s-maj=14.6km s-min=5.5km az=4.5*

CSEM ***13*** *21:49:45.1±0.8,34.26N×26.35E,h10km,MD3.2,Error ellipse: s-maj=19.2km s-min=8.0km az=4.0*

DDA ***13*** *21:50:09.7,36.02N×27.87E,h8km,Md3.2*

ISC 13 21:49:46.0±1.8,34.2N±0.1×26.39E±0.04,h33km,n27, σ2s24/41,Crete

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZKR	**Zakros**	**0.93**	**351**	P	**Pn**	**21 49 59.5**	**-3.2**
ZKR				S	**Sn**	**21 50 14.1**	**-0.8**
ZKR	**Zakros**	**0.93**	**351**	P	**Pn**	**21 49 59.5**	**-3.2**
ZKR				S	**Sn**	**21 50 14.1**	**-0.8**
ZKR				AML	AML	21 50 15.4	
	comp=N,2685μm,0.4s						
ZKR				AML	AML	21 50 17.9	
	comp=E,3685μm,0.5s						
LAST	**Lasithi**	**1.22**	**322**	P	**Pb**	**21 50 08.2**	**-0.4**
LAST				S	**Sb**	**21 50 26.4**	**+2.2**
LAST	**Lasithi**	**1.22**	**322**	P	**Pb**	**21 50 08.2**	**-0.4**
NPS	**Neapolis**	**1.24**	**329**	P	**Pn**	**21 50 07.2**	**+0.1**
NPS				S	**Sb**	**21 50 27.6**	**+2.9**
NPS	**Neapolis**	**1.24**	**329**	P	**Pn**	**21 50 07.2**	**+0.1**
NPS				S	**Sb**	**21 50 27.6**	**+2.9**
NPS				AML	AML	21 50 31.0	
	comp=N,1074μm,0.5s						
NPS				AML	AML	21 50 34.9	
	comp=E,1326μm,0.7s						
KARP	**Karpathos**	**1.49**	**25**	P	**Pn**	**21 50 11.4**	**+0.9**
KARP	**Karpathos**	**1.49**	**25**	P	**Pn**	**21 50 11.4**	**+0.9**
SIVA	**Sivas**	**1.54**	**303**	P	**Pn**	**21 50 10.6**	**-0.5**
SIVA	**Sivas**	**1.54**	**303**	P	**Pn**	**21 50 10.6**	**-0.5**
IDI	**Anoyia**	**1.65**	**312**	P	**Pn**	**21 50 13.7**	**+1.0**
IDI				S	**Sb**	**21 50 36.2**	**-0.1**
IDI	**Anoyia**	**1.65**	**312**	P	**Pn**	**21 50 13.7**	**+1.0**
IDI				S	**Sb**	**21 50 36.2**	**-0.1**
IDI				AML	AML	21 50 47.6	
	comp=N,376μm,0.6s						
IDI				AML	AML	21 50 51.8	
	comp=E,249μm,0.8s						
IMMV	**Iera Moni Meta**	**2.35**	**303**	P	**Pn**	**21 50 23.0**	**+0.7**
IMMV	**Iera Moni Meta**	**2.35**	**303**	P	**Pn**	**21 50 23.0**	**+0.7**
ARG	**Arkhangelos**	**2.46**	**35**	P	**Pn**	**21 50 25.5**	**+1.7**
BDRM	**Kayabasi**	**2.99**	**16**	*i* P	**Pn**	**21 50 30.9**	**-0.2**
BDRM	**Kayabasi**	**2.99**	**16**	P	**Pn**	**21 50 30.9**	**-0.2**
TURN	**Turunc**	**3.22**	**33**	*i* P	**Pn**	**21 50 32.0**	**-2.2**
KSL	**Kastellorizon**	**3.26**	**52**	P	**Pn**	**21 50 35.8**	**+1.0**
KSL				S	**Sn**	**21 51 15.7**	**+3.3**
KSL				AML	AML	21 51 18.6	
	comp=N,52μm,0.6s						
KSL				AML	AML	21 51 21.3	
	comp=E,56μm,0.5s						
AKAS	**Kas**	**3.32**	**51**	*i* P	**Pn**	**21 50 36.5**	**+0.8**
AKAS				*i* S	**Sn**	**21 51 09.3**	**-4.9**
AKAS	**Kas**	**3.32**	**51**	P	**Pn**	**21 50 36.5**	**+0.8**
AKAS				S	**Sn**	**21 51 09.3**	**-4.9**
GOLH	**Golhisar**	**3.98**	**39**	*i* P	**Pn**	**21 50 46.4**	**+1.5**
GOLH	**Golhisar**	**3.98**	**39**	P	**Pn**	**21 50 46.3**	**+1.5**
KORT	**Korkueli**	**4.27**	**48**	*i* P	**Pn**	**21 50 52.2**	**+3.4**
KORT				*i* S	**Sn**	**21 51 39.0**	**+1.5**
KORT	**Korkueli**	**4.27**	**48**	P	**Pn**	**21 50 52.2**	**+3.4**
KORT				S	**Sn**	**21 51 39.0**	**+1.5**
GAZI	**Gazipasa**	**5.26**	**66**	*i* P	**Pn**	**21 51 02.8**	**+0.6**
GAZI				*i* S	**Sn**	**21 51 57.3**	**-4.4**
GAZI	**Gazipasa**	**5.26**	**66**	P	**Pn**	**21 51 02.8**	**+0.6**
GAZI				S	**Sn**	**21 51 57.3**	**-4.4**

IDC 13 21:51:49.8±21.0,4.81S×125.05E,h540km±310km, mb2.6/3,mb1 2.8/4,mb1mx2.4/43,mbtmp3.6/4,Error ellipse: s-maj=188.1km s-min=76.0km az=58.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr 17.55 150**			P	P	21 55 24.1	0.0
	0.2nm,0.3s,baz=333,slow=9.6,SNR=17						
ASAR	**Alice Springs 20.60 156**			P	P	21 55 51.8	-0.1
	0.4nm,0.5s,baz=341,slow=14,SNR=12						
STKA	**Stephens Creek 31.07 152**			P	P	21 57 23.9	-0.1
	0.6nm,0.3s,baz=328,slow=18,SNR=3.0						
MKAR	**Makanchi Array 63.76 329**			P	P	22 01 28.8	0.0
	0.4nm,0.6s,baz=128,slow=7.0,SNR=5.0						

ISCJB ***13*** *21:53:08.7±0.4,46.53N±0.01′×21.14E±0.03,h5km±4km, Error ellipse: s-maj=4.0km s-min=2.5km az=4.9*

CSEM ***13*** *21:53:10.4±0.1,46.55N×21.17E,h10km,ML2.1,Error ellipse: s-maj=3.5km s-min=2.3km az=103.0*

BUC ***13*** *21:53:11.0±1.3,46.54N×21.29E,h13km±5km,MD2.7/3, Error ellipse: s-maj=9.3km s-min=4.1km az=123.0*

BEO ***13*** *21:53:15.1±1.0,46.41N×21.14E,h0km,M2.0/5*

ISC 13 21:53:10.7±1.0,46.53N±0.02′×21.17E±0.02,h10km±9km, n66,σ1s05/104,13C-21D,Romania

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIRR	**Siria**	**0.43**	**128**	*i*↑P	**Pg**	**21 53 19.1**	**0.0**
SIRR				S	**Sg**	**21 53 24.6**	**-0.2**
SIRR	**Siria**	**0.43**	**128**	*i*↑P	**Pg**

DIVS	**Divibare**	**2.57**	**199**	*e*Pg	**Pg**	**21**	**54**	**00.5 +0.5**
DIVS				*e*Sg	**Sg**	**21**	**54**	**32.4 -0.9**
GRUS	**Gruza**	**2.66**	**187**	*e*Sg	**Sg**	**21**	**54**	**37.6 +1.4**
GRUS	**Gruza**	**2.66**	**187**	*e*Sg	**Sg**	**21**	**54**	**37.6 +1.4**
ARR	**Arges**	**2.68**	**115**	⇓*i*P	**Pn**	**21**	**53**	**54.2 +0.2**
ARR	**Arges**	**2.68**	**115**	⇓*i*P	**Pn**	**21**	**53**	**54.2 +0.2**
ARR				*i* S	**Sn**	**21**	**54**	**26.6 +0.1**
ARR	**Arges**	**2.68**	**115**	⇓*i*P	**Pn**	**21**	**53**	**54.2 +0.2**
ARR				S	**Sn**	**21**	**54**	**26.6 +0.1**
VOIR		**2.92**	**111**	⇓*i*P	**Pn**	**21**	**53**	**57.8 +0.6**
VOIR		**2.92**	**111**	⇓*i*P	**Pn**	**21**	**53**	**57.8 +0.6**
VOIR				*i* S	**Sn**	**21**	**54**	**32.0 -0.4**
VOIR		**2.92**	**111**	⇓*i*P	**Pn**	**21**	**53**	**57.8 +0.6**
BOVS	**Bovan**	**2.92**	**172**	*e*Sg	**Sg**	**21**	**54**	**44.5 0.0**
BOVS	**Bovan**	**2.92**	**172**	*e*Sg	**Sg**	**21**	**54**	**44.5 0.0**
BBLS	**Lazići**	**2.94**	**206**	*e*Pg	**Pg**	**21**	**54**	**06.7 -0.4**
BBLS				*e*Sg	**Sg**	**21**	**54**	**44.8 -0.5**
BBLS	**Lazići**	**2.94**	**206**	*e*Pg	**Pg**	**21**	**54**	**06.7 -0.4**
BBLS				*e*Sg	**Sg**	**21**	**54**	**44.8 -0.5**
BURAR	**Bucovina Array**	**2.97**	**67**	⇓*i*P	**Pn**	**21**	**53**	**57.8 -0.2**
BURAR	**Bucovina Array**	**2.97**	**67**	⇓*i*P	**Pn**	**21**	**53**	**57.8 -0.2**
BURAR				*i* S	**Sn**	**21**	**54**	**32.0 -1.7**
BURAR	**Bucovina Array**	**2.97**	**67**	⇓*i*P	**Pn**	**21**	**53**	**57.8 -0.2**
BURAR				S	**Sn**	**21**	**54**	**32.0 -1.7**
ZAPS	**Zavoj**	**3.42**	**162**	*e*Sg	**Sg**	**21**	**54**	**59.8 -0.7**

IDC 13 21:56:15.0±3.2, 35°.80S×178°.63E, h0km, mb4.1/2, mb1 4.3/3, mb1mx3.8/20, mbtmp4.0/3, ML3.3/1, MS3.5/7, Ms1 3.5/7, ms1mx3.2/22, Error ellipse: s-maj=70.6km s-min=36.9km az=61.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**2.74**	**206**	Pn	Pn	21 56 59.6	-0.6
	4.9nm,0.3s,baz=1.2,slow=5.8,SNR=16						
URZ				Sn	Sn	21 57 29.6	-4.4
	18nm,0.3s,baz=69,slow=23,SNR=9.3						
URZ				LR	LR	21 57 50.4	
	comp=Z,169nm,21.1s,baz=4.0,slow=35						
RPZ	**Rata Peaks**	**9.81**	**214**	LR	LR	22 03 13.4	
	comp=Z,211nm,19.6s,baz=22,slow=43						
DZM	**Mont Dzumac**	**17.32**	**319**	LR	LR	22 05 09.6	
	comp=Z,461nm,18.4s,baz=100,slow=31						
PPT	**Papeete**	**33.51**	**66**	LR	LR	22 15 20.0	
	comp=Z,65nm,19.4s,baz=92,slow=34						
ASAR	**Alice Springs**	**40.35**	**275**	P	P	22 03 54.8	+0.1
	3.0nm,0.9s,baz=117,slow=7.9,SNR=15						
WRA	**Warramunga Arr**	**41.85**	**280**	P	P	22 04 06.7	-0.3
	1.5nm,0.5s,baz=120,slow=7.8,SNR=26						
VNDA	**Vanda**	**42.46**	**185**	LR	LR	22 18 59.3	
	comp=Z,61nm,19.1s,baz=12,slow=32						
MAW	**Mawson**	**66.26**	**202**	LR	LR	22 35 18.8	
	comp=Z,56nm,18.8s,baz=63,slow=35						
MA2	**Magadan**	**97.79**	**346**	LR	LR	22 47 44.4	
	comp=Z,26nm,20.1s,baz=123,slow=32						
TORD	**Torodi Ar. Bea**	**157.27**	**188**	PKPab	PKPab	22 16 43.9	-0.3
	0.4nm,0.9s,baz=150,slow=3.2,SNR=2.8						

ISK 13 22:09:38.4, 39°.19N×40°.20E, h5km, MD2.3
DDA 13 22:09:39.1, 39°.21N×40°.21E, h7km, Md2.3
CSEM 13 22:09:39.3±0.2, 39°.19N×40°.22E, h10km, MD2.3, Error ellipse: s-maj=4.2km s-min=3.2km az=160.0
ISC 13 22:09:39.3±1.0, 39°.19N±0°.03×40°.21E±0°.02, h11km±9km, n16, σ0°.50/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YEDI	**Yedisu-Bingol**	**0.36**	**46**	*e*PG	**Pg**	**22 09 46.1**	**-0.4**
YEDI				*e*SG	**Sg**	**22 09 51.8**	**+0.5**
YEDI	**Yedisu-Bingol**	**0.36**	**46**	*e*Pg	**Pg**	**22 09 46.1**	**-0.4**
YEDI				*e*Sg	**Sg**	**22 09 51.8**	**+0.5**
BINT	**Bingol**	**0.38**	**145**	*e*Pg	**Pg**	**22 09 47.1**	**+0.1**
BINT				*e*Sg	**Sb**	**22 09 53.4**	**-0.8**
BNGB	**Bing¯¶‖**	**0.42**	**119**	*e*PG	**Pg**	**22 09 47.1**	**-0.4**
BNGB				*e*SG	**Sg**	**22 09 53.4**	**+0.3**
TNCL	**Tunceli-Merkez**	**0.53**	**262**	*i* P	**Pg**	**22 09 49.7**	**+0.1**
TNCL				*i* S	**Sb**	**22 09 57.3**	**-1.0**
TNCL	**Tunceli-Merkez**	**0.53**	**262**	P	**Pg**	**22 09 49.7**	**+0.1**
TNCL				S	**Sb**	**22 09 57.3**	**-1.0**
ERZN	**Erzincan**	**0.55**	**316**	*e*PG	**Pg**	**22 09 49.4**	**-0.6**
ERZN				*e*SG	**Sg**	**22 09 57.5**	**+0.2**
ECAT	**Cat-ERZURUM**	**0.72**	**55**	*i* P	**Pg**	**22 09 52.9**	**-0.5**
ECAT				*i* S	**Sb**	**22 10 04.1**	**0.0**
ECAT	**Cat-ERZURUM**	**0.72**	**55**	P	**Pg**	**22 09 52.8**	**-0.5**
ECAT				S	**Sb**	**22 10 04.1**	**0.0**
BNGL	**BINGOL**	**0.77**	**108**	*i* P	**Pg**	**22 09 54.3**	**0.0**
BNGL				*i* S	**Sn**	**22 10 07.6**	**-0.5**
KOPT	**Kop Dagi**	**0.85**	**15**	*i* P	**Pb**	**22 09 56.6**	**+0.2**
KOPT				*i* S	**Sb**	**22 10 07.9**	**0.0**
KOPT	**Kop Dagi**	**0.85**	**15**	P	**Pb**	**22 09 56.6**	**+0.2**
KOPT				S	**Sb**	**22 10 07.9**	**0.0**
KELT	**Kelkit**	**1.21**	**323**	*i* P	**Pg**	**22 10 02.1**	**-0.5**
KELT				*i* S	**Sn**	**22 10 19.3**	**+0.4**
KELT	**Kelkit**	**1.21**	**323**	P	**Pg**	**22 10 02.1**	**-0.5**
KELT				S	**Sn**	**22 10 19.3**	**+0.4**
KEMA	**Kemaliye**	**1.34**	**274**	*i* P	**Pn**	**22 10 04.0**	**-0.1**
KEMA				*i* S	**Sn**	**22 10 22.6**	**+0.8**
KEMA	**Kemaliye**	**1.34**	**274**	P	**Pn**	**22 10 04.0**	**-0.1**
KEMA				S	**Sn**	**22 10 22.6**	**+0.8**

IDC 13 22:32:51.0±3.1, 39°.19N×143°.01E, h0km, mb3.8/2, mb1 3.9/3, mb1mx3.4/31, mbtmp3.7/3, ML3.0/1, MS3.0/2, Ms1 3.0/2, ms1mx2.4/38, Error ellipse: s-maj=70.8km s-min=39.8km az=66.0
ISCJB 13 22:32:55.8±1.4, 39°.07N±0°.04×142°.49E±0°.10, h20km±8km, mb4.4/2, MS3.5/1, Error ellipse: s-maj=12.5km s-min=7.0km az=4.9
JMA 13 22:32:57.5±0.1, 39°.10N×142°.41E, h31km±1km, M3.4
ISC 13 22:32:57.1±2.5, 39°.10N±0°.05×142°.4E±0°.1, h27km±14km, n21, σ1°16/21, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.59**	**269**	P	**Pb**	**22 33 09.0**	**+0.1**
OFUJ				S	**Sb**	**22 33 16.9**	**-0.1**
MIYJ	**Miyakonagasawa**	**0.68**	**316**	P	**Pb**	**22 33 10.1**	**-0.2**
MIYJ				S	**Sb**	**22 33 19.0**	**-0.3**
JTH	**Tanohata**	**0.95**	**333**	P	**Pn**	**22 33 14.3**	**-0.4**
JMK	**Ichinoseki**	**0.95**	**262**	P	**Pn**	**22 33 14.5**	**-0.2**
JMK				S	**Sb**	**22 33 26.3**	**-0.9**
JOM	**Ohasama**	**0.96**	**293**	P	**Pn**	**22 33 14.8**	**-0.1**
JOM				S	**Sb**	**22 33 27.1**	**-0.3**
JIO	**Ouri**	**1.06**	**233**	P	**Pn**	**22 33 15.5**	**-0.7**
JIO				S	**Sn**	**22 33 28.0**	**-2.1**
JKZ	**Kuzumaki**	**1.23**	**317**	P	**Pn**	**22 33 19.0**	**+0.4**
JKZ				S	**Sn**	**22 33 34.5**	**+0.1**
JRG	**Rokugo**	**1.43**	**283**	P	**Pn**	**22 33 22.2**	**+0.9**
JRG				S	**Sb**	**22 33 41.3**	**+0.5**
JANG	**Nango**	**1.46**	**331**	P	**Pn**	**22 33 22.3**	**+0.6**
JANG				S	**Sn**	**22 33 40.4**	**+0.4**
MJAR	**Matsushiro Arr**	**4.20**	**234**	Pn	**Pn**	**22 34 02.0**	**+2.6**
	0.7nm,0.3s,baz=40,slow=11,SNR=20						
MAT	**Matsushiro**	**4.20**	**234**	P	**Pn**	**22 34 02.2**	**+2.7**
KSRS	**Korea Array**	**11.52**	**266**	LR	LR	22 39 44.9	
	comp=Z,23nm,19.0s,baz=190,slow=34						
H11N2	**WAKE ISLAND Hy**	**28.60**	**125**	T	T	23 09 12.7	
	baz=318,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy**	**28.61**	**125**	T	T	23 09 13.8	
	baz=318,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**28.62**	**125**	T	T	23 09 12.1	
	baz=318,slow=75,SNR=9.5						
H11S1	**WAKE ISLAND Hy**	**29.39**	**127**	T	T	23 10 11.3	
	baz=319,slow=76,SNR=6.0						
H11S3	**WAKE ISLAND Hy**	**29.39**	**127**	T	T	23 10 10.7	
	baz=319,slow=76,SNR=7.6						
H11S2	**WAKE ISLAND Hy**	**29.40**	**127**	T	T	23 10 11.3	
	baz=319,slow=76,SNR=5.0						
MKAR	**Makanchi Array**	**43.74**	**300**	P	**P**	**22 41 00.5**	**+0.5**
	0.7nm,0.8s,baz=85,slow=8.8,SNR=5.1						
WRA	**Warramunga Arr**	**59.21**	**189**	P	**P**	**22 42 55.0**	**-0.9**
	43nm,1.3s,baz=6.5,slow=7.0,SNR=5.0						
IDI	**Anoyia**	**86.17**	**313**	LR	LR	23 31 41.6	
	comp=Z,20nm,18.1s,baz=38,slow=41						

ISCJB 13 22:45:09.6±0.4, 32°.69N±0°.08×39°.86W±0°.06, h13km, mb4.3/40, MS3.7/29, Error ellipse: s-maj=12.1km s-min=6.8km az=0.9

IDC 13 22:45:09.1±0.7, 32°.71N×39°.82W, h0km, mb4.0/17, mb1 4.2/17, mb1mx4.0/39, mbtmp4.0/17, MS3.7/29, Ms1 3.7/29, ms1mx3.6/39, Error ellipse: s-maj=20.0km s-min=15.6km az=166.0
NEIC 13 22:45:10.8±0.3, 32°.66N×39°.84W, h10km, mb4.6/24, Error ellipse: s-maj=10.1km s-min=5.6km az=178.0
ISC 13 22:45:11.3±0.5, 32.7N±0°.1×39°.85W±0°.08, h13km, n83, σ1°08/62, mb4.3/40, MS3.8/29, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJG	**San Juan**	**27.74**	**245**	LR	LR	22 59 47.2	
	comp=Z,77nm,22.0s,baz=68,slow=32						
SCHQ	**Schefferville**	**29.19**	**327**	LR	LR	23 01 52.6	
	comp=Z,175nm,21.4s,baz=102,slow=34						
MDT	**Midelt**	**29.55**	**80**	LR	LR	23 00 25.0	
	comp=Z,310nm,20.3s,baz=290,slow=31						
ESDC	**Sonseca Array**	**29.65**	**66**	LR	LR	23 00 14.4	
	comp=Z,64nm,21.2s,baz=285,slow=31						
PLVO	**Plevna**	**31.24**	**304**	*e*P	**P**	**22 51 31.3**	**+0.8**
	12nm,1.2s						
BUF	**Buffalo**	**32.22**	**300**	*e*P	**P**	**22 51 37.8**	**-1.5**
SWET	**Sewanee**	**38.06**	**287**	*e*P	**P**	**22 52 28.4**	**-1.2**
	2.4nm,0.8s						
PTGA	**Pitinga**	**38.27**	**214**	P	**P**	**22 52 32.2**	**+0.7**
	2.9nm,0.8s,baz=14,slow=15,SNR=5.0						
PTGA	**Pitinga**	**38.27**	**214**	*e*P	**P**	**22 52 31.1**	**-0.4**
	7.7nm,1.1s						
DAVOX	**Davos/Dischmat**	**40.09**	**54**	P	**P**	**22 52 48.9**	**+2.2**
	2.5nm,0.7s,baz=315,slow=13,SNR=4.0						
DBIC	**Dimbokro**	**41.55**	**121**	P	**P**	**22 52 58.0**	**-0.8**
	4.1nm,0.8s,baz=306,slow=9.2,SNR=4.0						
DBIC				LR	LR	23 07 59.5	
	comp=Z,138nm,19.9s,baz=278,slow=33						
DBIC	**Dimbokro**	**41.55**	**121**	*e*P	**P**	**22 52 58.0**	**-0.8**
	19nm,1.4s						
HBAR	**Harrisburg**	**41.79**	**288**	*e*P	**P**	**22 52 59.6**	**-1.0**
ROSC	**El Rosal**	**42.45**	**237**	LR	LR	23 09 34.6	
	comp=Z,93nm,20.0s,baz=32,slow=34						
TOA1	**Torodi Ar. Sit**	**42.57**	**107**	*e*P	**P**	**22 53 06.6**	**-0.6**
	8.1nm,1.4s						
TOA0	**Torodi Ar. Sit**	**42.58**	**107**	*e*P	**P**	**22 53 06.9**	**-0.3**
	4.9nm,1.0s						
TORD	**Torodi Ar. Bea**	**42.58**	**107**	P	**P**	**22 53 06.6**	**-0.6**
	2.5nm,0.9s,baz=297,slow=5.6,SNR=14						
TORD				LR	LR	23 09 24.2	
	comp=Z,209nm,19.3s,baz=280,slow=34						
GERES	**GERESS Array B**	**42.74**	**52**	P	**P**	**22 53 07.6**	**-0.8**
	0.7nm,0.8s,baz=284,slow=7.9,SNR=3.4						
GERES				LR	LR	23 07 31.7	
	comp=Z,68nm,21.9s,baz=266,slow=31						
NB200	**NORSAR Array S**	**43.34**	**33**	*e*P	**P**	**22 53 12.8**	**-0.1**
NOA	**NORSAR Array B**	**43.34**	**33**	P	**P**	**22 53 12.7**	**-0.1**
	0.9nm,0.8s,baz=252,slow=8.6,SNR=2.8						
NOA				LR	LR	23 08 45.6	
	comp=Z,32nm,18.5s,baz=260,slow=33						
ULM	**Lac du Bonnet**	**44.40**	**310**	LR	LR	23 12 01.6	
	comp=Z,160nm,18.8s,baz=124,slow=36						
CUC	**Castrocucco**	**44.81**	**64**	*e*P	**P**	**22 53 25.3**	**+0.3**
	5.1nm,1.2s						
H10N2	**ASCENSION HYDR**	**46.96**	**145**	T	T	23 43 34.8	
	baz=330,slow=75,SNR=325						
H10N3	**ASCENSION HYDR**	**46.97**	**145**	T	T	23 43 35.3	
	baz=330,slow=75,SNR=284						
H10N1	**ASCENSION HYDR**	**46.98**	**145**	T	T	23 43 35.3	
	baz=330,slow=75,SNR=322						
W34A	**Bridge Creek,**	**47.53**	**290**	*e*P	**P**	**22 53 45.5**	**-1.0**
	26nm,1.5s						
H10S1	**ASCENSION HYDR**	**47.85**	**145**	T	T	23 44 40.3	
	baz=331,slow=75,SNR=116						
H10S3	**ASCENSION HYDR**	**47.85**	**145**	T	T	23 44 39.2	
	baz=331,slow=75,SNR=122						
H10S2	**ASCENSION HYDR**	**47.87**	**145**	T	T	23 44 39.7	
	baz=331,slow=75,SNR=146						
WMOK	**Wichita Mounta**	**48.46**	**290**	*e*P	**P**	**22 53 53.6**	**-0.1**
	4.0nm,1.0s						
OTAV	**Otavalo**	**48.60**	**236**	*e*P	**P**	**22 53 57.1**	**+1.7**
	9.4nm,1.3s						
FIA0	**FINESS Array S**	**50.47**	**35**	*e*P	**P**	**22 54 07.5**	**-1.1**
FINES	**FINESS Array B**	**50.47**	**35**	P	**P**	**22 54 07.5**	**-1.1**
	2.6nm,0.8s,baz=251,slow=5.8,SNR=8.1						
FINES				LR	LR	23 13 21.6	
	comp=Z,70nm,18.1s,baz=277,slow=34						
FIA1	**FINESS Array S**	**50.47**	**35**	*e*P	**P**	**22 54 07.0**	**-1.5**
	44nm,1.7s						
BUR08	**Bucovina Ar. S**	**50.47**	**53**	*e*P	**P**	**22 54 07.9**	**-1.1**
MSTX	**Muleshoe**	**51.84**	**290**	*e*P	**P**	**22 54 19.8**	**+0.4**
	6.9nm,1.0s						
PHWY	**Pilot Hill**	**52.00**	**299**	*e*P	**P**	**22 54 18.6**	**-2.2**
	1.8nm,0.8s						
N23A	**Red Feather La**	**52.45**	**299**	*e*P	**P**	**22 54 24.1**	**0.0**
	5.3nm,1.2s						
AKASG	**Malin Array Be**	**52.68**	**48**	P	**P**	**22 54 24.3**	**-0.9**
	2.9nm,0.7s,baz=274,slow=6.6,SNR=9.4						
AKASG				LR	LR	23 14 18.7	
	comp=Z,108nm,20.2s,baz=270,slow=33						
LTX	**Lajitas**	**54.07**	**285**	*e*P	**P**	**22 54 35.9**	**-0.1**
TXAR	**Lajitas Array**	**54.07**	**285**	P	**P**	**22 54 35.9**	**-0.1**
	1.2nm,0.9s,baz=110,slow=6.9,SNR=11						
TXAR				LR	LR	23 16 10.1	
	comp=Z,195nm,19.9s,baz=0.0,slow=34						
TX31	**Lajitas Ar. Si**	**54.07**	**285**	*e*P	**P**	**22 54 36.0**	**+0.1**
PDAR	**Pinedale Array**	**54.63**	**302**	P	**P**	**22 54 39.5**	**-0.5**
	4.2nm,1.1s,baz=64,slow=6.8,SNR=15						
PDAR				LR	LR	23 17 21.0	
	comp=Z,111nm,18.6s,baz=97,slow=35						
YKA	**Yellowknife Ar**	**54.64**	**327**	P	**P**	**22 54 38.6**	**-0.7**
	1.4nm,1.0s,baz=87,slow=7.0,SNR=8.6						
YKA				PcP	**PcP**	**22 55 40.6**	**-1.5**
	0.6nm,0.8s,baz=85,slow=4.0,SNR=4.4						
YKA				LR	LR	23 17 58.5	
	comp=Z,7.5nm,18.0s,baz=0.0,slow=36						
YKB5	**Yellowknife Ar**	**54.64**	**327**	*e*P	**P**	**22 54 38.6**	**-0.7**
YKB5				*e*PcP	**PcP**	**22 55 40.6**	**-1.5**
IMW	**Indian Meadow**	**55.34**	**304**	*e*P	**P**	**22 54 45.9**	**+0.8**
	5.5nm,0.9s						
LPAZ	**La Paz**	**55.70**	**213**	P	**P**	**22 54 48.4**	**+0.1**
	1.0nm,0.8s,baz=11,slow=9.4,SNR=4.5						
LPAZ				LR	LR	23 17 06.0	
	comp=Z,92nm,20.1s,baz=23,slow=34						
WALA	**Waterton Lakes**	**56.16**	**310**	*e*P	**P**	**22 54 51.0**	**+0.3**
	5.2nm,1.0s						
BR231	**Keskin MP Arra**	**57.53**	**61**	*e*P	**P**	**22 55 04.3**	**+3.7**
BR101	**Keskin Array S**	**58.20**	**60**	*e*P	**P**	**22 55 05.0**	**-0.4**
BR131	**Keskin Array S**	**58.20**	**60**	*e*P	**P**	**22 55 05.7**	**+0.3**
BRTR	**Keskin Array B**	**58.20**	**60**	P	**P**	**22 55 05.0**	**-0.4**
	1.3nm,0.9s,baz=267,slow=5.2,SNR=7.0						
BRTR				LR	LR	23 17 15.5	
	comp=Z,26nm,21.4s,baz=284,slow=33						
NEW	**Newport**	**58.41**	**310**	*e*P	**P**	**22 55 07.1**	**+0.5**
	4.9nm,0.9s						
SZCU	**Shurtz Canyon**	**58.70**	**297**	*e*P	**P**	**22 55 08.4**	**-0.6**
	10nm,0.9s						
MFID	**Camas Ranch**	**58.88**	**304**	*e*P	**P**	**22 55 11.5**	**+1.5**
	6.3nm,1.4s						
CPUP	**Villa Florida**	**60.99**	**198**	LR	LR	23 21 51.7	
	comp=Z,26nm,18.5s,baz=13,slow=36						
INK	**Inuvik**	**61.40**	**335**	*e*P	**P**	**22 55 27.2**	**+0.5**
	8.3nm,1.4s						
TVH3	**East Aurora ar**	**62.69**	**300**	*e*P	**P**	**22 55 37.6**	**+1.4**
	7.1nm,1.2s						
KVAR	**Kislovodsk Arr**	**63.21**	**53**	LR	LR	23 21 58.3	
	comp=Z,30nm,18.3s,baz=18,slow=35						
KBZ	**Khabaz**	**63.43**	**54**	P	**P**	**22 55 41.4**	**+0.7**
	1.0nm,0.5s,baz=280,slow=3.9,SNR=3.9						
DAWY	**Dawson**	**65.10**	**331**	*e*P	**P**	**22 55 52.5**	**+1.1**
	10nm,1.5s						
GNI	**Garni**	**66.04**	**57**	LR	LR	23 27 41.4	
	comp=Z,14nm,18.3s,baz=307,slow=39						
ILAR	**Eielson Array**	**67.70**	**334**	P	**P**	**22 56 08.2**	**+0.2**
	1.7nm,1.1s,baz=77,slow=4.0,SNR=7.7						
ILAR				LR	LR	23 25 14.6	
	comp=Z,54nm,18.3s,baz=88,slow=36						
ILB	**Eielson Array**	**67.70**	**334**	*e*P	**P**	**22 56 08.2**	**+0.2**
ARU	**Arti**	**67.78**	**36**	LR	LR	23 25 09.7	
	comp=Z,106nm,18.3s,baz=293,slow=35						
KTH	**Kantishna Hill**	**69.84**	**334**	*e*P	**P**	**22 56 23.1**	**+1.7**
	11nm,1.3s						
AKTO	**Aktyubinsk**	**70.17**	**42**	LR	LR	23 25 58.9	
	comp=Z,115nm,19.3s,slow=35						
H09W1	**TRISTAN DA CUN**	**74.01**	**157**	T	T	00 17 15.2	
	SNR=38						
ATD	**Arta Tunnel**	**77.77**	**84**	LR	LR	23 31 40.7	
	comp=Z,93nm,18.2s,baz=236,slow=36						
PLCA	**Paso Flores**	**78.35**	**203**	LR	LR	23 31 20.5	
	comp=Z,36nm,19.6s,baz=346,slow=35						
KMBO	**Kilima Mbogo**	**79.76**	**98**	LR	LR	23 33 02.7	
	comp=Z,65nm,18.7s,baz=125,slow=36						
KURK	**Kurchatov**	**80.84**	**34**	*e*P	**P**	**22 57 27.7**	**+3.0**
ZAA1	**Zalesovo Array**	**81.38**	**29**	*e*P	**P**	**22 57 28.4**	**+0.8**
ZALV	**Zalesovo Beam**	**81.39**	**29**	P	**P**	**22 57 28.4**	**+0.8**
	0.6nm,0.6s,baz=251,slow=4.5,SNR=3.6						
AAK	**Ala-Archa**	**83.91**	**43**	LR	LR	23 34 45.6	
	comp=Z,59nm,19.4s,baz=286,slow=36						
MK32	**Makanchi Array**	**85.29**	**36**	*e*P	**P**	**22 57 47.5**	**-0.5**
MKAR	**Makanchi Array**	**85.29**	**36**	P	**P**	**22 57 47.5**	**-0.5**
	0.9nm,0.8s,baz=318,slow=5.2,SNR=7.6						
MKAR				LR	LR	23 35 06.2	
	comp=Z,80nm,19.1s,baz=316,slow=35						
MK01	**Makanchi Array**	**85.31**	**36**	*e*P	**P**	**22 57 47.8**	**-0.2**
BOSA	**Boshof**	**86.78**	**127**	LR	LR	23 32 40.0	
	comp=Z,46nm,18.9s,baz=344,slow=33						
SONA0	**Songino Array**	**94.33**	**22**	*e*P	**P**	**22 58 30.5**	**-0.2**
	4.5nm,1.5s						
SONM	**Songino Array**	**94.33**	**22**	P	**P**	**22 58 30.5**	**-0.2**
	0.4nm,0.8s,baz=349,slow=2.9,SNR=3.5						
AS31	**Alice Springs**	**169.47**	**33**	*e*PKPab	**PKPab**	**23 06 31.9**	**0.0**
ASAR	**Alice Springs**	**169.47**	**33**	PKPab	**PKPab**	**23 06 31.9**	**0.0**
	0.8nm,1.0s,baz=325,slow=4.5,SNR=3.4						

IDC 13 23:16:48.8±2.0, 38°.53N×70°.79E, h0km, mb3.7/5, mb1 3.8/13, mb1mx3.6/65, mbtmp3.8/13, ML3.2/8, MS3.1/3, Ms1 3.1/3, ms1mx2.5/40, Error ellipse: s-maj=34.6km s-min=13.2km az=151.0
NNC 13 23:16:52.3±1.5, 38°.85N×70°.30E, h0km, mb4.2, mpv4.0, Error ellipse: s-maj=11.4km s-min=10.3km az=170.0
KRNET 13 23:16:52.5±0.1, 39°.00N×70°.68E, mb4.0
ISC 13 23:16:51.6±1.0, 38°.79N±0°.09×70°.62E±0°.05, h10km, n37, σ3°14/50, mb3.5/5, 35C-8D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRK	**Karamyk**	**1.15**	**53**	⇑*i*P	**Pb**	**23 17 12.1**	**-1.7**
	baz=61						
DRK				⇑*i*S	**Sb**	**23 17 26.2**	**-2.7**
	baz=61						
BTK	**Batken**	**1.28**	**7**	⇑*i*P	**Pn**	**23 17 13.1**	**-2.5**
	baz=6.0						
BTK				⇑*i*S	**Sn**	**23 17 28.4**	**-4.5**
	baz=6.0						
ARSB	**Arslanbob**	**3.11**	**35**	⇑*i*P	**Pn**	**23 17 42.2**	**+1.3**
	baz=36						
ARSB				⇑*i*S	**Sn**	**23 18 18.4**	**+0.1**
	baz=36						
ARK	**Arkit**	**3.18**	**18**	⇑*i*P	**Pn**	**23 17 42.5**	**+0.7**
	baz=19						
ARK				⇑*i*S	**Sn**	**23 18 19.0**	**-0.8**
	baz=19						
MNAS	**Manas**	**3.96**	**21**	⇑Pn	**Pn**	**23 17 55.3**	**+2.7**
	17nm,0.6s						
MNAS				⇓Sn	**Sn**	**23 18 44.9**	**+5.7**
	67nm,0.8s						
AML	**Almayashu**	**4.08**	**34**	⇑*i*P	**Pn**	**23 17 57.6**	**+3.2**
	baz=35						
AML				⇑*i*S	**Sn**	**23 18 46.1**	**+3.7**
	baz=35						
KSH	**Kashi**	**4.22**	**78**	Pn	**Pn**	**23 17 55.9**	**-0.3**
KSH				Sn	**Sb**	**23 18 53.0**	**-4.2**
KSH				smax	smax		
	comp=N,92nm,0.6s						
KSH				smax	smax		
	comp=E,100nm,1.2s						
KK31	**Karatay Array**	**4.31**	**359**	⇓Pn	**Pn**	**23 17 59.0**	**+1.7**
	comp=E,7.8nm,0.4s,baz=187,slow=13,SNR=119						
KK31				⇓Sn	**Sn**	**23 18 49.2**	**+1.6**
	comp=E,8.4nm,0.3s						
KK31				⇑Lg	Lg	23 19 04.4	
	comp=E,69nm,0.7s,baz=186,slow=29,SNR=6.6						
UCH	**Uchtor**	**4.54**	**40**	⇑*i*P	Pn	23 18 04.7	+3.9
	baz=41						
UCH				⇑*i*S	**Sn**	**23 18 59.2**	**+5.4**
	baz=41						
EKS2	**Erkin-Say**	**4.55**	**31**	⇑*i*P	**Pn**	**23 18 03.6**	**+2.9**
	baz=32						
EKS2				⇑*i*S	**Sn**	**23 18 55.8**	**+2.1**

comp=E,4.9nm,18.2s,baz=0.0,slow=40
SCHQ Schefferville 79.88 337 LR LR 00 03 13.5
comp=E,54nm,19.8s,baz=348,slow=35

*IDC **13** 23:19:50.1±0.5, 9.65N×122.34E, h0km, mb4.1/24, mb1 4.2/24, mb1mx4.0/52, mbtmp4.1/24, MS3.4/8, Ms1 3.5/8, ms1mx3.1/31, Error ellipse: s-maj=24.5km s-min=11.0km az=67.0*
*NEIC **13** 23:19:51.5±0.2, 9.66N×122.37E, h10km, mb4.7/21, Error ellipse: s-maj=8.5km s-min=4.5km az=72.0*
NEIC Felt [I PIVS] at Sipalay. Also felt at Bayawan.
*MAN **13** 23:19:52, 9.65N×122.11E, h14km, mb4.9, ML3.9, MS3.9*
MAN INTENSITY I - SIPALAY CITY NEGROS OCCIDENTAL.

ISC 13 23:19:50.1±1.4, 9.61N±0.03×122.25E±0.04, h1km±9km, n78, σ1§42/94, mb4.4/41, MS3.4/7, 5C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.01**	**105**	*ip*	**Pg**	**23 20 07.5**	**-2.0**
SNPH				*i* S	**Sg**	**23 20 21.4**	**-1.2**
JAP	**San Jose, Anti**	**1.17**	**345**	*ip*	**Pb**	**23 20 13.1**	**-0.1**
LLP	**Lapu-Lapu**	**1.83**	**67**	*ep*	**Pg**	**23 20 24.4**	**-0.9**
LLP				*i* S	**Sg**	**23 20 51.3**	**+2.2**
RCP	**Roxas**	**2.00**	**14**	*ep*	**Pb**	**23 20 26.8**	**-0.6**
RCP				*e*S	**Sb**	**23 20 52.1**	**-0.7**
CGP	**Cagayan de Oro**	**2.67**	**115**	*ep*	**Pb**	**23 20 38.6**	**-0.2**
CGP				*i* S	**Sb**	**23 21 12.5**	**+0.4**
CTBH	**Cotabato--PC H**	**3.09**	**140**	*ep*	**Pb**	**23 20 44.5**	**-1.4**
CTBH				*i* S	**Sb**	**23 21 26.2**	**+2.2**
PLP	**Palo**	**3.10**	**60**	*ep*	**Pn**	**23 20 41.8**	**+1.5**
PLP				*e*S	**Sb**	**23 21 18.7**	**-5.8**
PPR	**Puerto Princes**	**3.47**	**273**	*ep*	**Pn**	**23 20 46.6**	**+1.3**
PPR				*e*S	**Sn**	**23 21 24.4**	**-2.7**
MYLDM	**Lahad Datu**	**5.76**	**220**	*e*Pn	**Pn**	**23 21 20.6**	**+3.8**
MYLDM				*e*Sn	**Sb**	**23 22 35.0**	**-5.9**
KKM	**Kota Kinabalu**	**6.95**	**240**	*e*Pn	**Pn**	**23 21 35.0**	**+1.8**
KKM				*e*Sn	**Sn**	**23 22 52.0**	**-0.9**
LUWI	**Luwuk**	**10.59**	**177**	*e*Pn	**Pn**	**23 22 26.8**	**+3.6**
KAPI	**Kappang**	**14.74**	**190**	LR	LR	23 29 07.5	
	comp=Z,102nm,19.8s,baz=52,slow=38						
GUMO	**Guam**	**22.50**	**78**	LR	LR	23 34 08.1	
	comp=Z,84nm,19.5s,baz=251,slow=38						
MTN	**Manton Dam**	**23.99**	**158**	*ep*	**P**	**23 25 04.7**	**-1.7**
	15nm,1.1s						
PSI	**Prapat**	**24.14**	**255**	P	**P**	**23 25 09.7**	**+1.6**
	7.4nm,0.7s,baz=18,slow=4.0,SNR=7.2						
PSI	**Prapat**	**24.14**	**255**	*ep*	**P**	**23 25 09.9**	**+1.8**
	16nm,1.0s						
CM01	**Chiang Mai Arr**	**24.21**	**294**	*ep*	**P**	**23 25 08.6**	**0.0**
CM31	**Chiang Mai Arr**	**24.24**	**294**	*ep*	**P**	**23 25 09.8**	**+1.0**
CMAR	**Chiang Mai Arr**	**24.24**	**294**	P	**P**	**23 25 09.8**	**+1.0**
	5.1nm,1.0s,baz=123,slow=8.6,SNR=18						
CMAR				LR	LR	23 34 17.4	
	comp=Z,63nm,19.9s,baz=110,slow=36						
CHTO	**Chiang Mai**	**24.35**	**295**	*ep*	**P**	**23 25 10.4**	**+0.5**
	5.7nm,0.9s						
GSI	**Gunungsitoli**	**25.89**	**253**	*ep*	**P**	**23 25 23.9**	**+0.1**
	44nm,0.9s						
XMIS	**Christmas Isla**	**25.90**	**220**	*ep*	**P**	**23 25 23.9**	**0.0**
	197nm,1.6s						
FITZ	**Fitzroy Crossi**	**27.73**	**173**	P	**P**	**23 25 41.3**	**+0.9**
	4.0nm,0.9s,baz=38,slow=3.9,SNR=4.3						
FITZ	**Fitzroy Crossi**	**27.73**	**173**	*ep*	**P**	**23 25 41.3**	**+0.9**
	20nm,1.7s						
JHJ	**Hachijo jima 2**	**28.44**	**32**	LR	LR	23 35 03.9	
	comp=Z,90nm,19.8s,baz=304,slow=32						
MJAR	**Matsushiro Arr**	**30.48**	**26**	LR	LR	23 36 45.2	
	comp=Z,46nm,21.7s,baz=220,slow=33						
MBWA	**Marble Bar**	**30.67**	**185**	*ep*	**P**	**23 26 04.7**	**-1.7**
	55nm,1.8s						
WR1	**Warramunga Arr**	**31.68**	**158**	*ep*	**P**	**23 26 15.1**	**-0.3**
	6.8nm,1.1s						
WR1				*e*PcP	**PcP**	**23 29 07.3**	**-0.2**
WRA	**Warramunga Arr**	**31.68**	**158**	P	**P**	**23 26 15.1**	**-0.3**
	26nm,0.2s,baz=337,slow=9.7,SNR=3.9						
WRA				PcP	**PcP**	**23 29 07.3**	**-0.2**
	1.7nm,0.8s,baz=340,slow=3.2,SNR=5.7						
WB2	**Warramunga Arr**	**31.69**	**158**	*ep*	**P**	**23 26 15.2**	**-0.2**
	12nm,1.4s						
AS31	**Alice Springs**	**34.98**	**161**	*ep*	**P**	**23 26 45.5**	**+1.3**
	1.9nm,0.6s						
AS31				*e*PcP	**PcP**	**23 29 16.4**	**-0.3**
AS31				*e*ScP	**ScP**	**23 33 02.2**	**-1.3**
ASAR	**Alice Springs**	**34.98**	**161**	P	**P**	**23 26 45.2**	**+1.0**
	4.9nm,0.6s,baz=343,slow=7.2,SNR=59						
ASAR				PcP	**PcP**	**23 29 16.4**	**-0.3**
	1.6nm,0.8s,baz=348,slow=2.4,SNR=9.8						
ASAR				ScP	**ScP**	**23 33 02.2**	**-1.3**
	0.3nm,0.7s,baz=350,slow=3.8,SNR=4.2						
AS01	**Alice Springs**	**34.99**	**161**	*ep*	**P**	**23 26 43.8**	**-0.4**
AS01				*e*PcP	**PcP**	**23 29 16.3**	**-0.4**
USRK	**Ussuriysk Ar.**	**35.49**	**12**	P	**P**	**23 26 49.2**	**+0.9**
	1.9nm,0.7s,baz=196,slow=7.5,SNR=4.1						
KLR	**Kul'dur**	**40.29**	**10**	P	**P**	**23 27 28.7**	**-0.1**
	1.2nm,0.7s,baz=209,slow=12,SNR=3.6						
SONA0	**Songino Array**	**40.39**	**343**	*ep*	**P**	**23 27 30.0**	**+0.1**
	2.1nm,1.0s						
SONM	**Songino Array**	**40.39**	**343**	P	**P**	**23 27 30.0**	**+0.1**
	0.7nm,0.7s,baz=162,slow=9.1,SNR=5.0						
SONA1	**Songino Array**	**40.40**	**344**	*ep*	**P**	**23 27 30.4**	**+0.5**
NWAO	**Narrogin (SRO)**	**42.56**	**186**	P	**P**	**23 27 48.8**	**+1.2**
	3.9nm,0.6s,baz=66,slow=10.0,SNR=5.3						
BBOO	**Buckleboo**	**44.19**	**163**	*ep*	**P**	**23 28 02.1**	**+1.3**
	60nm,1.8s						
STKA	**Stephens Creek**	**45.21**	**157**	P	**P**	**23 28 08.4**	**-0.5**
	3.9nm,0.8s,baz=357,slow=10,SNR=6.4						
STKA				PcP	**PcP**	**23 29 48.1**	**-1.1**
	1.8nm,0.7s,baz=6.9,slow=1.2,SNR=3.1						
STKA				LR	LR	23 48 41.7	
	comp=Z,70nm,18.8s,baz=20,slow=38						
STKA	**Stephens Creek**	**45.21**	**157**	*ep*	**P**	**23 28 08.4**	**-0.5**
	5.8nm,1.8s						
STKA				*e*PcP	**PcP**	**23 29 48.1**	**-1.1**
MK01	**Makanchi Array**	**50.20**	**325**	*ep*	**P**	**23 28 48.6**	**+1.0**
MK31	**Makanchi Array**	**50.22**	**325**	*ep*	**P**	**23 28 48.8**	**+1.0**
MK32	**Makanchi Array**	**50.22**	**325**	*ep*	**P**	**23 28 48.8**	**+1.0**
MK32				*e*PcP	**PcP**	**23 30 06.5**	**-0.4**
MKAR	**Makanchi Array**	**50.22**	**325**	P	**P**	**23 28 48.8**	**+1.0**
	2.4nm,0.7s,baz=132,slow=8.9,SNR=24						
MKAR				PcP	**PcP**	**23 30 06.5**	**-0.4**
	0.4nm,0.6s,baz=156,slow=4.3,SNR=3.2						
MKAR				LR	LR	23 51 17.1	
	comp=Z,77nm,18.8s,baz=117,slow=38						
MKAR	**Makanchi Array**	**50.22**	**325**	*ep*	**P**	**23 28 48.8**	**+1.0**
	22nm,0.6s						
MKAR				PcP	**PcP**	**23 30 06.5**	**-0.4**
MAKZ	**Makanchi**	**50.41**	**325**	*ep*	**P**	**23 28 49.0**	**-0.2**
	7.8nm,1.6s						
ZALV	**Zalesovo Beam**	**53.37**	**333**	P	**P**	**23 29 10.8**	**-0.3**
	0.5nm,0.4s,baz=126,slow=7.3,SNR=3.7						
ZAA1	**Zalesovo Array**	**53.37**	**333**	*ep*	**P**	**23 29 10.8**	**-0.3**
KURBB	**Kurchatov Arra**	**54.42**	**327**	P	**P**	**23 29 19.7**	**+0.9**
	2.6nm,0.7s,baz=133,slow=6.2,SNR=16						
KURK	**Kurchatov**	**54.42**	**327**	*ep*	**P**	**23 29 19.6**	**+0.8**
KKAR	**Karatay Array**	**55.93**	**316**	*ep*	**P**	**23 29 31.5**	**+1.5**
	38nm,0.7s						
VOSK	**Vostochnaya**	**59.54**	**327**	*ep*	**P**	**23 29 55.1**	**0.0**
	2.0nm,0.8s						
BVAR	**Borovoye Array**	**60.00**	**327**	P	**P**	**23 29 58.6**	**+0.3**
	1.2nm,0.6s,baz=118,slow=8.9,SNR=9.0						
BRVK	**Borovoye**	**60.07**	**327**	*ep*	**P**	**23 29 59.7**	**+0.9**
ZRNK	**Zerenda**	**60.72**	**326**	*ep*	**P**	**23 30 03.9**	**+0.6**
	2.4nm,0.8s						
WSAR	**Wadi Sarin**	**62.09**	**291**	P	**P**	**23 30 13.0**	**0.0**
	2.3nm,0.6s,baz=158,slow=6.2,SNR=5.5						
GEYT	**Allbeck**	**63.78**	**308**	P	**P**	**23 30 25.5**	**+1.4**
	2.5nm,0.6s,baz=123,slow=5.5,SNR=6.1						
ABKAR	**Akbulak array**	**64.81**	**320**	*ep*	**P**	**23 30 31.1**	**+0.5**
	13nm,0.6s						
AKTO	**Aktyubinsk**	**66.32**	**321**	P	**P**	**23 30 40.3**	**-0.1**
	1.5nm,0.7s,baz=93,slow=8.0,SNR=7.7						
ARU	**Arti**	**67.62**	**327**	P	**P**	**23 30 48.3**	**-0.2**
	1.5nm,0.6s,baz=93,slow=18,SNR=3.2						
ARU	**Arti**	**67.62**	**327**	*ep*	**P**	**23 30 48.3**	**-0.2**
	15nm,1.8s						
BR101	**Keskin Array S**	**82.88**	**309**	*ep*	**P**	**23 32 17.4**	**+0.5**
BRTR	**Keskin Array B**	**82.88**	**309**	P	**P**	**23 32 17.4**	**+0.5**
	0.8nm,0.7s,baz=87,slow=4.8,SNR=4.6						
ARCES	**ARCESS Array B**	**83.43**	**339**	P	**P**	**23 32 19.9**	**+0.9**
	3.3nm,0.9s,baz=55,slow=7.8,SNR=3.1						
AKASG	**Malin Array Be**	**84.56**	**320**	P	**P**	**23 32 24.2**	**-0.9**
	0.4nm,0.4s,baz=76,slow=4.6,SNR=3.9						
AKBB	**Malin Array Si**	**84.56**	**320**	*ep*	**P**	**23 32 24.2**	**-0.9**
	5.8nm,1.3s						

*NIED **14** 00:00:00, 38.10N×143.50E, h5km, Mw3.6 Best double couple: M0 3.34000×10^14 NP1:φs 62.00000°, δ 32.00000°, λ -32.00000°. NP2:φs 180.00000°, δ 74.00000°, λ -118.00000°.*
*IDC **14** 00:00:57.3±1.4, 37.99N×143.70E, h0km, mb3.6/4, mb1 3.7/7, mb1mx3.6/35, mbtmp3.7/7, ML3.5/2, Error ellipse: s-maj=32.0km s-min=22.6km az=113.0*
*ISCJB **14** 00:00:58.4±0.7, 38.07N±0.04×143.51E±0.06, h19km, mb3.6/5, Error ellipse: s-maj=6.6km s-min=5.0km az=14.9*
*JMA **14** 00:00:59.7±0.1, 38.13N×143.54E, h42km, M3.5*

ISC 14 00:01:00.1±1.1, 38.11N±0.04×143.53E±0.08, h19km, n27, σ1§82/36, mb3.7/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.75**	**304**	P	**Pn**	**00 01 28.5**	**-0.9**
JIO	**Ouri**	**1.75**	**282**	P	**Pn**	**00 01 28.6**	**-0.8**
JIO				*e*S	**Sn**	**00 01 49.6**	**-1.6**
MIYJ	**Miyakonagasawa**	**1.98**	**318**	P	**Pn**	**00 01 31.1**	**-1.5**
MIYJ				*e*S	**Sn**	**00 01 54.5**	**-2.4**
JMK	**Ichinoseki**	**2.00**	**296**	P	**Pn**	**00 01 32.4**	**-0.4**
JMK				*e*S	**Sn**	**00 01 56.4**	**-0.8**
JOM	**Ohasama**	**2.21**	**309**	P	**Pn**	**00 01 35.7**	**-0.1**
JOM				S	**Sn**	**00 02 01.8**	**-0.9**
JFT	**Otama**	**2.60**	**258**	P	**Pn**	**00 01 41.2**	**+0.1**
JFT				*e*S	**Sn**	**00 02 11.8**	**-0.3**
JYK	**Kaneyama**	**2.61**	**289**	P	**Pn**	**00 01 41.3**	**0.0**
JYK				*e*S	**Sn**	**00 02 11.7**	**-0.8**
JANG	**Nango**	**2.75**	**326**	P	**Pn**	**00 01 43.3**	**+0.2**
JAW	**Awa shima**	**3.39**	**277**	P	**Pn**	**00 01 52.5**	**+0.6**
JAG	**Ashikaga**	**3.66**	**244**	P	**Pn**	**00 01 55.2**	**-0.5**
JAG				*e*S	**Sn**	**00 02 37.7**	**-0.6**
BSO1	**Boso 1**	**4.02**	**212**	P	**Pn**	**00 01 58.7**	**-1.4**
BSO1				*e*S	**Sn**	**00 02 44.9**	**-1.5**
JSD	**Sado**	**4.16**	**271**	P	**Pn**	**00 02 02.4**	**-0.1**
JSD				*e*S	**Sn**	**00 02 49.1**	**-1.5**
JNBK	**Urakawa-nobuka**	**4.21**	**352**	P	**Pn**	**00 02 02.9**	**-0.3**
JNBK				S	**Sn**	**00 02 48.5**	**-3.3**
JKB	**Kayabe**	**4.23**	**334**	*e*S	**Sn**	**00 02 48.9**	**-3.5**
JRY	**Ryogami san**	**4.25**	**242**	P	**Pn**	**00 02 03.9**	**+0.1**
JRY				*e*S	**Sn**	**00 02 50.5**	**-2.4**
MJAR	**Matsushiro Arr**	**4.52**	**251**	Pn	**Pn**	**00 02 08.3**	**+0.8**
	1.3nm,0.3s,baz=64,slow=9.7,SNR=7.3						
MAT	**Matsushiro**	**4.52**	**251**	P	**Pn**	**00 02 08.7**	**+1.2**
MAT				S	**Sn**	**00 03 01.7**	**+2.1**
JHJ	**Hachijo jima 2**	**5.84**	**213**	Pn	**Pn**	**00 02 24.6**	**-1.1**
	7.6nm,0.3s,baz=128,slow=21,SNR=4.3						
JHJ				Sn	**Sn**	**00 03 25.5**	**-6.6**
	16nm,0.3s,baz=212,slow=22,SNR=4.5						
ASAJ	**Asahikawa**	**6.04**	**354**	Pn	**Pn**	**00 02 29.0**	**+0.6**
H11N2	**WAKE ISLAND Hy**	**27.33**	**126**	T	T	00 35 23.6	
	baz=323,slow=76,SNR=6.2						
H11N1	**WAKE ISLAND Hy**	**27.34**	**126**	T	T	00 35 29.1	
	baz=323						
H11N3	**WAKE ISLAND Hy**	**27.35**	**126**	T	T	00 35 13.3	
	baz=323,slow=76,SNR=4.4						
SONM	**Songino Array**	**28.61**	**302**	P	**P**	**00 06 57.7**	**+2.4**
	0.3nm,0.6s,baz=83,slow=8.5,SNR=2.9						
ZALV	**Zalesovo Beam**	**42.45**	**312**	P	P	00 08 58.4	+4.9
	0.6nm,0.4s,baz=95,slow=8.2,SNR=3.3						
MKAR	**Makanchi Array**	**44.98**	**302**	P	**P**	**00 09 14.8**	**+0.8**
	0.6nm,0.8s,baz=88,slow=8.9,SNR=2.8						
ILAR	**Eielson Array**	**47.68**	**33**	P	**P**	**00 09 35.5**	**+0.6**
	0.9nm,0.7s,baz=262,slow=6.8,SNR=11						
WRA	**Warramunga Arr**	**58.39**	**190**	P	**P**	**00 10 53.7**	**-0.6**
	0.7nm,0.8s,baz=9.2,slow=7.3,SNR=4.7						

*IDC **14** 00:14:27.3±2.1, 28.91S×177.20W, h66km±16km, mb3.5/5, mb1 3.8/5, mb1mx3.6/18, mbtmp3.8/5, MS3.7/3, Ms1 3.7/3, ms1mx3.2/17, Error ellipse: s-maj=31.3km s-min=30.0km az=72.0*

ISC 14 00:14:23.4±1.0, 28.28S±0.22×176.18W±0.1, h36km, n11, σ1§91/10, mb3.8/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.11**	**244**	P	**Pn**	**00 14 42.7**	**+0.3**
	164nm,0.3s,baz=94,slow=18,SNR=5.6						
RAO				S	**Sn**	**00 14 58.9**	**+2.5**
	518nm,0.3s,baz=109,slow=22,SNR=9.6						
RAR	**Rarotonga**	**17.14**	**68**	LR	LR	00 25 27.3	
	comp=Z,203nm,18.4s,baz=304,slow=38						
STKA	**Stephens Creek**	**35.91**	**254**	LR	LR	00 32 58.7	
	comp=Z,106nm,18.6s,baz=31,slow=31						
ASAR	**Alice Springs**	**44.29**	**265**	P	**P**	**00 22 27.8**	**-2.1**
	1.1nm,0.9s,baz=117,slow=7.3,SNR=6.6						
ASAR				LR	LR	00 40 47.1	
	comp=Z,131nm,18.1s,baz=100,slow=36						
WRA	**Warramunga Arr**	**45.13**	**270**	P	**P**	**00 22 34.3**	**-2.3**
	1.6nm,0.7s,baz=109,slow=7.9,SNR=8.3						
VNDA	**Vanda**	**49.82**	**186**	P	**P**	**00 23 10.9**	**-1.3**
	0.8nm,1.0s,baz=8.3,slow=9.8,SNR=3.1						
PETK	**Petropavlovsk-**	**84.51**	**345**	P	**P**	**00 26 52.7**	**+0.6**
	1.7nm,0.8s,baz=118,slow=5.5,SNR=3.2						
TXAR	**Lajitas Array**	**90.61**	**57**	P	**P**	**00 27 24.5**	**+2.3**
	0.5nm,1.1s,baz=210,slow=6.3,SNR=3.7						
AKASG	**Malin Array Be**	**150.61**	**325**	PKPbc	**PKPbc**	**00 34 09.8**	**-1.3**
	0.3nm,0.2s,baz=40,slow=2.8,SNR=2.8						
BRTR	**Keskin Array B**	**152.71**	**302**	PKPbc	**PKPbc**	**00 34 16.9**	**+0.4**
	0.5nm,0.9s,baz=34,slow=3.6,SNR=3.3						
TORD	**Torodi Ar. Bea**	**164.39**	**174**	PKPab	**PKPab**	**00 35 18.5**	**+0.5**
	1.1nm,0.9s,baz=137,slow=3.4,SNR=4.5						

*TRN **14** 00:41:46.8, 18.88N×64.70W, h104km*
*ISCJB **14** 00:41:47.5±1.3, 18.9N±0.3×64.72W±0.09, h107km±14km, Error ellipse: s-maj=45.3km s-min=8.0km az=164.4*
*RSPR **14** 00:41:48.2, 18.91N×64.72W, h105km±2km, MD3.5/8*
*NEIC **14** 00:41:48.2, 18.91N×64.72W, h105km, MD3.5(RSPR), After RSPR.*

ISC 14 00:41:49.8±3.0, 19.0N±0.2×64.8W±0.1, h84km±36km, n47, σ0§71/69, 27C-14D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ABV	**Anegada**	**0.53**	**121**	*ip*	**Pn**	**00 42 03.3**	**-0.8**
ABV	**Anegada**	**0.53**	**121**	*ip*	**Pn**	**00 42 03.3**	**-0.8**
ABV				*e*S	**Sn**	**00 42 15.9**	**+1.1**
ABV	**Anegada**	**0.53**	**121**	*ip*	**Pn**	**00 42 03.3**	**-0.8**
ABV				*e*S	**Sn**	**00 42 15.8**	**+1.1**
ABVI	**Anegada Island**	**0.53**	**121**	*ip*	**Pn**	**00 42 03.3**	**-0.8**
ABVI				*e*S	**Sn**	**00 42 15.8**	**+1.0**
STVI	**Saint Thomas**	**0.67**	**192**	*ip*	**Pn**	**00 42 04.5**	**-0.9**
STVI	**Saint Thomas**	**0.67**	**192**	*ip*	**Pn**	**00 42 05.0**	**-0.4**
STVI				*e*S	**Sn**	**00 42 17.3**	**+0.3**
STVI	**Saint Thomas**	**0.67**	**192**	*ip*	**Pn**	**00 42 05.0**	**-0.4**
STVI				*e*S	**Sn**	**00 42 17.5**	**+0.5**
STVI	**Saint Thomas**	**0.67**	**192**	*ip*	**Pn**	**00 42 04.5**	**-0.9**
STVI				*e*S	**Sn**	**00 42 17.8**	**+0.8**
STVI	**Saint Thomas**	**0.67**	**192**	*ip*	**Pn**	**00 42 05.0**	**-0.4**
STVI				*e*S	**Sn**	**00 42 17.8**	**+0.8**
CBYP	**Canovanas**	**1.23**	**234**	*ip*	**Pn**	**00 42 11.3**	**-0.6**
CBYP	**Canovanas**	**1.23**	**234**	*e*S	**Sn**	**00 42 29.1**	**+0.5**
CBYP	**Canovanas**	**1.23**	**234**	*ip*	**Pn**	**00 42 10.8**	**-1.1**
CBYP	**Canovanas**	**1.23**	**234**	*ip*	**Pn**	**00 42 11.0**	**-0.9**
CBYP				*e*S	**Sn**	**00 42 27.4**	**-1.2**
CBYP	**Canovanas**	**1.23**	**234**	*ip*	**Pn**	**00 42 11.3**	**-0.6**
CBYP				*e*S	**Sn**	**00 42 29.1**	**+0.5**
CBYP	**Canovanas**	**1.23**	**234**	*ip*	**Pn**	**00 42 11.3**	**-0.6**
HUMP	**Col San Antoni**	**1.31**	**229**	*ip*	**Pn**	**00 42 12.6**	**-0.2**
HUMP	**Col San Antoni**	**1.31**	**229**	*e*S	**Sn**	**00 42 29.6**	**-0.5**
HUMP	**Col San Antoni**	**1.31**	**229**	*ip*	**Pn**	**00 42 11.9**	**-0.9**
HUMP	**Col San Antoni**	**1.31**	**229**	*ip*	**Sn**	**00 42 30.3**	**+0.1**
HUMP	**Col San Antoni**	**1.31**	**229**	*ip*	**Pn**	**00 42 12.6**	**-0.2**
HUMP				*e*S	**Sn**	**00 42 31.2**	**+1.1**
HUMP	**Col San Antoni**	**1.31**	**229**	*ip*	**Pn**	**00 42 12.6**	**-0.2**
HUMP				*e*S	**Sn**	**00 42 31.2**	**+1.1**
SJG	**San Juan**	**1.55**	**235**	*ip*	**Pn**	**00 42 15.2**	**-0.7**
SJG	**San Juan**	**1.55**	**235**	*ip*	**Pn**	**00 42 14.5**	**-1.4**
SJG	**San Juan**	**1.55**	**235**	*ip*	**Pn**	**00 42 15.2**	**-0.7**
SJG				*e*S	**Sn**	**00 42 36.4**	**+0.7**
SJG	**San Juan**	**1.55**	**235**	*ip*	**Pn**	**00 42 15.2**	**-0.7**
SJG				*e*S	**Sn**	**00 42 36.4**	**+0.7**
CELP	**Cerrillos**	**1.92**	**241**	*ip*	**Pn**	**00 42 20.1**	**-0.6**
CELP	**Cerrillos**	**1.92**	**241**	*ip*	**Pn**	**00 42 20.3**	**-0.4**
CELP	**Cerrillos**	**1.92**	**241**	*ip*	**Pn**	**00 42 20.1**	**-0.6**
CELP	**Cerrillos**	**1.92**	**241**	*ip*	**Pn**	**00 42 20.3**	**-0.4**
OBIP	**Obispado Ponce**	**1.96**	**241**	*ip*	**Pn**	**00 42 20.7**	**-0.4**
OBIP	**Obispado Ponce**	**1.96**	**241**	*ip*	**Pn**	**00 42 20.8**	**-0.4**
OBIP	**Obispado Ponce**	**1.96**	**241**	*e*S	**Sn**	**00 42 45.0**	**-0.2**
OBIP	**Obispado Ponce**	**1.96**	**241**	*ip*	**Pn**	**00 42 20.7**	**-0.4**
OBIP				*e*S	**Sn**	**00 42 46.2**	**+1.1**
OBIP	**Obispado Ponce**	**1.96**	**241**	*ip*	**Pn**	**00 42 20.7**	**-0.4**
OBIP				*e*S	**Sn**	**00 42 45.0**	**-0.2**
OBIP				*e*S	**Sn**	**00 42 46.2**	**+1.1**
AOPR	**Arecibo Observ**	**1.96**	**251**	*ip*	**Pn**	**00 42 20.7**	**-0.5**
AOPR	**Arecibo Observ**	**1.96**	**251**	*ip*	**Pn**	**00 42 20.5**	**-0.7**
AOPR	**Arecibo Observ**	**1.96**	**251**	*e*S	**Sn**	**00 42 44.6**	**-0.6**
AOPR	**Arecibo Observ**	**1.96**	**251**	*ip*	**Pn**	**00 42 20.7**	**-0.5**
AOPR				*e*S	**Sn**	**00 42 46.2**	**+1.0**
AOPR	**Arecibo Observ**	**1.96**	**251**	*ip*	**Pn**	**00 42 20.7**	**-0.5**
AOPR				*e*S	**Sn**	**00 42 46.2**	**+1.0**
LSP	**Las Mesas**	**2.31**	**249**	*ip*	**Pn**	**00 42 25.9**	**-0.1**
LSP	**Las Mesas**	**2.31**	**249**	*ip*	**Pn**	**00 42 25.8**	**-0.1**
LSP	**Las Mesas**	**2.31**	**249**	*ip*	**Pn**	**00 42 25.9**	**-0.1**
LSP				*e*S	**Sn**	**00 42 54.2**	**+0.6**
LSP	**Las Mesas**	**2.31**	**249**	*ip*	**Pn**	**00 42 25.8**	**-0.1**
LSP				*e*S	**Sn**	**00 42 54.2**	**+0.6**
CRPR	**Cabo Rojo, PR**	**2.40**	**246**	*ip*	**Pn**	**00 42 27.0**	**-0.1**
CRPR	**Cabo Rojo, PR**	**2.40**	**246**	*ip*	**Pn**	**00 42 26.9**	**-0.2**
CRPR	**Cabo Rojo, PR**	**2.40**	**246**	*ip*	**Pn**	**00 42 27.0**	**-0.1**
CRPR				*e*S	**Sn**	**00 42 56.5**	**+0.8**
CRPR	**Cabo Rojo, PR**	**2.40**	**246**	*ip*	**Pn**	**00 42 26.9**	**-0.2**
CRPR				*e*S	**Sn**	**00 42 56.5**	**+0.8**

*NIED **14** 00:46:00, 38.00N×143.20E, h11km, Mw3.9 Best double couple: M0 8.51000×10^14 NP1:φs 1.00000°, δ 30.00000°, λ -89.00000°. NP2:φs 179.00000°, δ 60.00000°, λ -91.00000°.*
*JMA **14** 00:46:18.8±0.2, 37.97N×143.21E, h31km, M4.0*
*IDC **14** 00:46:20.4±7.9, 37.82N×143.49E, h29km±56km, mb3.7/9, mb1 3.8/13, mb1mx3.7/45, mbtmp3.8/13, ML3.1/3, MS3.4/5, Ms1 3.4/5, ms1mx2.8/50, Error ellipse: s-maj=24.8km s-min=17.5km az=109.0*

ISC 14 00:46:20.6±1.0, 37.88N±0.05×143.28E±0.07, h30km±7km, n38, σ1§96/43, mb3.7/9, MS4.0/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.62**	**291**	P	**Pn**	**00 46 45.1**	**-2.1**
JIO				*e*S	**Sn**	**00 47 03.9**	**-3.2**
OFUJ	**Ofunato**	**1.74**	**314**	P	**Pn**	**00 46 45.9**	**-2.9**
OFUJ				*e*S	**Sn**	**00 47 06.1**	**-3.8**
JMK	**Ichinoseki**	**1.94**	**304**	P	**Pn**	**00 46 49.1**	**-2.4**
JMM	**Marumori**	**1.97**	**270**	P	**Pn**	**00 46 50.2**	**-1.7**
JMM				*e*S	**Sn**	**00 47 14.0**	**-1.5**
JFK	**Kawauchi**	**1.98**	**256**	P	**Pn**	**00 46 50.4**	**-1.7**
JFK				*e*S	**Sn**	**00 47 14.5**	**-1.3**
JOU	**Okura**	**2.12**	**284**	P	**Pn**	**00 46 52.8**	**-1.2**
JOM	**Ohasama**	**2.22**	**316**	P	**Pn**	**00 46 53.2**	**-2.2**
JOM				*e*S	**Sn**	**00 47 18.8**	**-3.1**
JFT	**Otama**	**2.36**	**262**	P	**Pn**	**00 46 56.8**	**-0.5**
JFT				S	**Sn**	**00 47 25.1**

YAIG				*i* S		Sn	00 47 25.2	-2.2
HUIG	**Huatulco**	**2.23**	**129**	*i* P		Pn	00 47 05.1	-1.5

IDC 14 00:56:36.2±3.3, 31°38S×177°91W, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.6/30, mbtmp3.7/3, ML4.2/1, MS3.4/1, Ms1 3.4/1, ms1mx2.9/14, Error ellipse: s-maj=76.3km s-min=28.1km az=117.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.12**	**360**	Pn	Pn	00 57 14.1	+1.3
	69nm,0.3s,baz=40,slow=17,SNR=3.1						
RAO				Sn	Sn	00 57 39.0	-0.8
	127nm,0.3s,baz=60,slow=18,SNR=4.8						
URZ	**Urewera**	**7.99**	**209**	Sn	Sn	01 00 00.4	-4.3
	1.0nm,0.3s,baz=232,slow=22,SNR=4.8						
PPT	**Papeete**	**29.12**	**68**	LR	LR	01 13 50.3	
	comp=Z,66nm,18.4s,baz=294,slow=36						
ASAR	**Alice Springs**	**43.14**	**268**	P	P	01 04 38.5	-0.1
	0.2nm,0.4s,baz=110,slow=7.9,SNR=3.6						
WRA	**Warramunga Arr**	**44.22**	**273**	P	P	01 04 47.4	0.0
	0.6nm,0.5s,baz=113,slow=7.9,SNR=9.9						
FINES	**FINESS Array B**	**146.09**	**340**	PKPbc	PKPdf	01 16 16.0	-0.5
	3.1nm,1.0s,baz=47,slow=4.4,SNR=8.9						

TRN 14 01:00:00.4, 18°.79N×64°.64W, h109km
ISCJB 14 01:00:01.1±1.4, 18°.8N±0°.3×64°.6W±0°.1, h113km±11km, Error ellipse: s-maj=48.9km s-min=8.2km az=163.0
NEIC 14 01:00:02.0, 18°.81N×64°.66W, h110km, MD3.6(RSPR), After RSPR.
RSPR 14 01:00:02.0, 18°.81N×64°.66W, h110km±1km, MD3.6/10
ISC 14 01:00:02.5±3.4, 18°.8N±0°.3×64°.7W±0°.2, h104km±28km, n30, σ0s52/48, 23C-6D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABV	**Anegada**	**0.35**	**107**	↑*eP*	**Pn**	**01 00 17.4**	**-0.3**
ABV	**Anegada**	**0.35**	**107**	↑*eP*	**Pn**	**01 00 17.4**	**-0.3**
ABV				*eS*	**Sn**	**01 00 29.6**	**+0.4**
ABVI	**Anegada Island**	**0.35**	**107**	↑*eP*	**Pn**	**01 00 17.4**	**-0.3**
ABVI				*eS*	**Sn**	**01 00 29.6**	**+0.4**
STVI	**Saint Thomas**	**0.54**	**208**	↓*eP*	**Pn**	**01 00 19.0**	**0.0**
STVI	**Saint Thomas**	**0.54**	**208**	↓*eP*	**Pn**	**01 00 19.0**	**0.0**
STVI				*eS*	**Sn**	**01 00 31.4**	**0.0**
STVI	**Saint Thomas**	**0.54**	**208**	↓*eP*	**Pn**	**01 00 19.0**	**0.0**
STVI				*eS*	**Sn**	**01 00 31.4**	**0.0**
CBYP	**Canovanas**	**1.25**	**244**	↑*eP*	**Pn**	**01 00 25.3**	**-0.7**
CBYP	**Canovanas**	**1.25**	**244**	↑*eP*	**Pn**	**01 00 25.3**	**-0.7**
CBYP				*eS*	**Sn**	**01 00 43.9**	**+0.1**
CBYP	**Canovanas**	**1.25**	**244**	↑*eP*	**Pn**	**01 00 25.3**	**-0.7**
CBYP				*eS*	**Sn**	**01 00 43.9**	**+0.1**
HUMP	**Col San Antoni**	**1.30**	**238**	↑*eP*	**Pn**	**01 00 26.2**	**-0.3**
HUMP	**Col San Antoni**	**1.30**	**238**	↑*eP*	**Pn**	**01 00 26.2**	**-0.3**
HUMP				*eS*	**Sn**	**01 00 45.4**	**+0.6**
HUMP	**Col San Antoni**	**1.30**	**238**	↑*eP*	**Pn**	**01 00 26.2**	**-0.3**
HUMP				*eS*	**Sn**	**01 00 45.4**	**+0.6**
SJG	**San Juan**	**1.57**	**243**	↑*eP*	**Pn**	**01 00 29.1**	**-0.6**
SJG	**San Juan**	**1.57**	**243**	↑*eP*	**Pn**	**01 00 29.1**	**-0.6**
SJG				*eS*	**Sn**	**01 00 51.0**	**+0.6**
SJG	**San Juan**	**1.57**	**243**	*e*Pn	**Pn**	**01 00 29.1**	**-0.6**
SJG				*eS*	**Sn**	**01 00 48.7**	**-1.7**
CELP	**Cerrillos**	**1.95**	**248**	↑*eP*	**Pn**	**01 00 34.2**	**-0.3**
CELP				*eS*	**Sn**	**01 00 59.6**	**+0.5**
CELP	**Cerrillos**	**1.95**	**248**	↑*eP*	**Pn**	**01 00 34.2**	**-0.3**
CELP				*eS*	**Sn**	**01 00 59.6**	**+0.5**
CELP	**Cerrillos**	**1.95**	**248**	↑*eP*	**Pn**	**01 00 34.2**	**-0.3**
OBIP	**Obispado Ponce**	**1.99**	**247**	↑*eP*	**Pn**	**01 00 34.9**	**-0.1**
OBIP	**Obispado Ponce**	**1.99**	**247**	↑*eP*	**Pn**	**01 00 34.9**	**-0.1**
OBIP				*eS*	**Sn**	**01 01 00.5**	**+0.6**
OBIP	**Obispado Ponce**	**1.99**	**247**	↑*eP*	**Pn**	**01 00 34.9**	**-0.1**
OBIP				*eS*	**Sn**	**01 01 00.5**	**+0.6**
AOPR	**Arecibo Observ**	**2.02**	**256**	↑*eP*	**Pn**	**01 00 35.4**	**-0.1**
AOPR	**Arecibo Observ**	**2.02**	**256**	↑*eP*	**Pn**	**01 00 35.4**	**-0.1**
AOPR				*eS*	**Sn**	**01 01 00.7**	**-0.1**
AOPR	**Arecibo Observ**	**2.02**	**256**	↑*eP*	**Pn**	**01 00 35.4**	**-0.1**
AOPR				*eS*	**Sn**	**01 01 00.7**	**-0.1**
LSP	**Las Mesas**	**2.37**	**254**	↓*eP*	**Pn**	**01 00 39.9**	**-0.1**
LSP	**Las Mesas**	**2.37**	**254**	↓*eP*	**Pn**	**01 00 39.9**	**-0.1**
LSP	**Las Mesas**	**2.37**	**254**	↓*eP*	**Pn**	**01 00 39.9**	**-0.1**
CRPR	**Cabo Rojo, PR**	**2.44**	**251**	↑*eP*	**Pn**	**01 00 40.6**	**-0.4**
CRPR	**Cabo Rojo, PR**	**2.44**	**251**	↑*eP*	**Pn**	**01 00 40.6**	**-0.4**
CRPR				*eS*	**Sn**	**01 01 11.5**	**+1.0**
CRPR	**Cabo Rojo, PR**	**2.44**	**251**	↑*eP*	**Pn**	**01 00 40.6**	**-0.4**
CRPR				*eS*	**Sn**	**01 01 11.5**	**+1.0**

IDC 14 01:03:57.7±0.6, 7°.54S×107°.30E, h0km, mb3.9/12, mb1 4.1/12, mb1mx3.8/52, mbtmp4.0/12, MS3.2/2, Ms1 3.3/2, ms1mx2.8/38, Error ellipse: s-maj=29.3km s-min=15.3km az=55.0
NEIC 14 01:04:01.9±3.5, 7°.67S×107°.15E, h28km±25km, mb4.5/4, Error ellipse: s-maj=11.8km s-min=11.4km az=183.0
DJA 14 01:04:02.9±0.7, 8°.3S×107°.7E±°, h11km±4km, M4.6/12, MLv4.6/12
ISC 14 01:04:02.3±1.5, 8°.10S±0°.05×107°.27E±0°.04, h18km±7km, n42, σ1s50/36, mb4.1/15, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**0.76**	**45**	*e*Pg	**Pg**	**01 04 16.9**	**-0.2**
CNJI	**Cibinong**	**0.79**	**350**	P	**Pb**	**01 04 18.6**	**+1.1**
CNJI				S	**Sg**	**01 04 27.8**	**-0.6**
CMJI	**Cimerak**	**1.20**	**75**	P	**Pn**	**01 04 25.3**	**+1.1**
CMJI				S	**Sn**	**01 04 42.2**	**+2.1**
SKJI	**Sukabumi**	**1.29**	**327**	P	**Pn**	**01 04 26.2**	**+0.7**
SKJI				S	**Sg**	**01 04 44.1**	**-0.2**
LEM	**Lembang**	**1.31**	**15**	P	**Pn**	**01 04 26.9**	**+1.1**
LEM				S	**Sg**	**01 04 44.5**	**-0.1**
DBJI	**Dramaga**	**1.62**	**341**	P	**Pn**	**01 04 29.9**	**0.0**
DBJI				S	**Sn**	**01 04 51.8**	**+1.5**
CGJI	**Cibinong**	**2.15**	**313**	P	**Pn**	**01 04 38.2**	**+1.0**
XMIS	**Christmas Isla**	**2.86**	**214**	*e*Pn	**Pn**	**01 04 49.0**	**+2.0**
XMIS				*eS*	**Sn**	**01 05 18.8**	**-2.3**
UGM	**Wanagama**	**3.22**	**87**	P	**Pn**	**01 04 53.2**	**+1.2**
KASI	**Kota Agung**	**3.76**	**313**	P	**Pn**	**01 05 01.9**	**+2.5**
PCJI	**Pacitan**	**3.87**	**92**	P	**Pn**	**01 05 02.3**	**+1.5**
NGJI	**Ngawi**	**4.21**	**80**	P	**Pb**	**01 05 14.2**	**-1.7**
PWJI	**Pagerwojo**	**4.49**	**89**	P	**Pn**	**01 05 10.5**	**+1.1**
JAGI	**Jajag, Banyuwa**	**6.82**	**94**	*e*Pn	**Pn**	**01 05 42.7**	**+1.2**
	29nm,0.3s						
JAGI				*eS*	**Sn**	**01 06 57.1**	**-1.6**
FITZ	**Fitzroy Crossi**	**20.45**	**121**	P	**P**	**01 08 40.2**	**+1.2**
	2.6nm,0.8s,baz=290,slow=11,SNR=6.0						
FITZ	**Fitzroy Crossi**	**20.45**	**121**	*eP*	**P**	**01 08 40.5**	**+1.6**
NWAO	**Narrogin (SRO)**	**26.38**	**161**	LR	LR	01 20 56.4	
	comp=Z,66nm,18.3s,baz=58,slow=38						
H01W3	**Cape Leeuwin H**	**27.40**	**168**	T	T	01 39 24.4	
	baz=348,slow=74,SNR=6.8						
H01W1	**Cape Leeuwin H**	**27.41**	**168**	T	T	01 39 45.1	
	baz=348						
H01W2	**Cape Leeuwin H**	**27.41**	**168**	T	T	01 39 27.7	
	baz=348,slow=74,SNR=2.2						
CMAR	**Chiang Mai Arr**	**27.64**	**343**	LR	LR	01 22 49.0	
	comp=Z,37nm,18.7s,baz=160,slow=42						
WRA	**Warramunga Arr**	**28.73**	**117**	P	**P**	**01 09 58.3**	**-0.5**
	0.3nm,0.4s,baz=295,slow=11,SNR=6.1						
WRA				PcP	**PcP**	**01 13 08.2**	**-1.0**
	0.2nm,0.4s,baz=308,slow=2.0,SNR=5.4						
WRAB	**Tennant Creek**	**28.73**	**117**	*eP*	**P**	**01 09 59.4**	**+0.4**
	0.7nm,0.4s						
ASAR	**Alice Springs**	**29.84**	**124**	P	**P**	**01 10 10.1**	**+1.3**
	0.4nm,0.5s,baz=297,slow=8.8,SNR=6.8						
H08S2	**Diego Garcia H**	**34.45**	**268**	T	T	01 47 50.3	
	baz=92,slow=75,SNR=20						
H08S3	**Diego Garcia H**	**34.46**	**268**	T	T	01 47 42.9	
	baz=92,slow=75,SNR=20						
H08S1	**Diego Carcia H**	**34.47**	**268**	T	T	01 47 43.6	
	baz=92,slow=75,SNR=19						
STKA	**Stephens Creek**	**39.71**	**131**	P	**P**	**01 11 34.8**	**+1.0**
	5.7nm,0.5s,baz=297,slow=8.1,SNR=15						
SONM	**Songino Array**	**55.69**	**359**	P	P	01 13 32.4	-5.2
	0.9nm,0.7s,baz=176,slow=7.3,SNR=6.2						
SONM				PcP	**PcP**	**01 14 33.4**	**-3.5**
	2.2nm,0.5s,baz=182,slow=4.2,SNR=15						
MKAR	**Makanchi Array**	**59.00**	**340**	P	P	01 13 54.6	-6.3
	0.4nm,0.5s,baz=154,slow=8.7,SNR=5.6						
KURBB	**Kurchatov Arra**	**63.57**	**340**	P	P	01 14 26.4	-5.3
	0.5nm,0.5s,baz=152,slow=6.1,SNR=6.0						
KURK	**Kurchatov**	**63.62**	**340**	*eP*	P	01 14 26.8	-5.2
	3.8nm,0.7s						

MAW	**Mawson**	**66.40**	**197**	P		**P**	**01 14 51.5**	**+1.6**
	5.1nm,0.6s,baz=54,slow=5.7,SNR=21								
BVAR	**Borovoye Array**	**68.47**	**337**	P		P	01 14 58.2	-5.1
	0.8nm,0.6s,baz=147,slow=7.5,SNR=4.6								
ABKAR	**Akbulak array**	**70.49**	**329**	*eP*		P	01 15 11.2	-4.6
	0.9nm,0.4s								
BOSA	**Boshof**	**79.19**	**242**	P		**P**	**01 16 06.9**	**0.0**
	2.0nm,0.8s,baz=135,slow=5.2,SNR=4.3								
QSPA	**South Pole Qui**	**81.90**	**180**	*eP*		**P**	**01 16 21.0**	**+0.4**
	7.6nm,0.7s								
BRTR	**Keskin Array B**	**82.75**	**312**	P		**P**	**01 16 23.0**	**-2.6**
	0.6nm,0.8s,baz=148,slow=7.7,SNR=4.3								
AKASG	**Malin Array Be**	**88.72**	**322**	P		P	01 16 51.1	-3.5
	0.5nm,0.4s,baz=82,slow=5.1,SNR=4.5								
TXAR	**Lajitas Array**	**144.07**	**50**	PKP		**PKPab**	**01 23 33.7**	**-1.5**
	0.2nm,0.4s,baz=250,slow=1.9,SNR=8.3								
JCT	**Junction City**	**146.28**	**45**	*e*PKPdf		**PKPdf**	**01 23 40.7**	**-0.7**
MIAR	**Mount Ida**	**147.43**	**33**	*e*PKPbc		**PKPdf**	**01 23 43.2**	**0.0**

NSSP 14 01:06:36.4, 38°.62N×46°.12E, h10km, Ms3.3
AZER 14 01:06:37.9±0.1, 38°.51N×45°.98E, h12km±2km, Error ellipse: s-maj=7.8km s-min=2.5km az=44.0
TEH 14 01:06:39.3, 38°.59N×46°.08E, h12km, ML3.1
CSEM 14 01:06:41.3±0.2, 38°.44N×46°.17E, h10km, ML3.1, Error ellipse: s-maj=5.4km s-min=5.0km az=5.0
ISC 14 01:06:37.6±1.1, 38°.61N±0°.02×46°.10E±0°.02, h13km±10km, n77, σ1s29/122, 25C-24D, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMRD	**Marand**	**0.33**	**289**	*e*Pg	**Pb**	**01 06 45.5**	**+0.1**
IMRD				*e*AMB	AMB	01 06 52.1	
	comp=Z,9μm,0.1s						
ITBZ	**Tabriz**	**0.38**	**174**	*e*Pg	**Pb**	**01 06 45.8**	**-0.5**
ITBZ				*e*Sg	**Sb**	**01 06 51.2**	**-0.9**
ITBZ				*e*AMB	AMB	01 06 52.1	
	comp=Z,23μm,0.1s						
ITBZ	**Tabriz**	**0.38**	**174**	*e*Pg	**Pb**	**01 06 45.8**	**-0.5**
ITBZ				*e*Sg	**Sb**	**01 06 51.2**	**-0.9**
ISHB	**Shabestar**	**0.50**	**230**	*e*Pg	**Pb**	**01 06 48.4**	**0.0**
ISHB				*e*AMB	AMB	01 06 57.8	
	comp=Z,31μm,0.1s						
NAX	**Nakhchivan**	**0.73**	**321**	↓P	**Pn**	**01 06 53.7**	**-0.1**
	SNR=31						
NAX				↓S	**Sn**	**01 07 05.1**	**+0.1**
NAX	**Nakhchivan**	**0.73**	**321**	P	**Pn**	**01 06 53.7**	**-0.1**
	SNR=31						
NAX				S	**Sn**	**01 07 05.1**	**+0.1**
IHRS	**Heris**	**0.80**	**111**	*e*Pg	**Pb**	**01 06 53.3**	**-0.2**
IHRS				*e*Sg	**Sb**	**01 07 05.1**	**+0.8**
IHRS				*e*AMB	AMB	01 07 07.4	
	comp=Z,23μm,0.1s						
IHRS	**Heris**	**0.80**	**111**	*e*Pg	**Pb**	**01 06 53.3**	**-0.2**
IHRS				*e*Sg	**Sb**	**01 07 05.1**	**+0.8**
GRS	**Goris**	**0.91**	**12**	↓*i*P	**Pg**	**01 06 54.0**	**-1.3**
GRS				↓*i*S	**Sg**	**01 07 07.0**	**-0.2**
IBST	**Bostanabad**	**1.10**	**145**	*e*Pg	**Pn**	**01 06 59.0**	**0.0**
IBST				*e*AMB	AMB	01 07 23.0	
	comp=Z,4μm,0.1s						
IBST	**Bostanabad**	**1.10**	**145**	*e*Pg	**Pn**	**01 06 59.0**	**0.0**
ISRB	**Sarab**	**1.46**	**122**	*e*AMB	AMB	01 07 32.8	
	comp=Z,6μm,0.1s						
ISRB				*e*Pn	**Pg**	**01 07 05.8**	**0.0**
LRK	**Lerik**	**1.76**	**88**	↓P	**Pb**	**01 07 10.4**	**+0.5**
	SNR=177						
LRK				↓S	**Sg**	**01 07 35.4**	**+1.2**
LRK	**Lerik**	**1.76**	**88**	P	**Pb**	**01 07 10.4**	**+0.5**
	SNR=177						
LRK				S	**Sg**	**01 07 35.4**	**+1.2**
BRDA	**Brd**	**1.85**	**27**	↓P	**Pg**	**01 07 13.1**	**-0.1**
	SNR=4.8						
BRDA				↑S	**Sg**	**01 07 40.8**	**+3.5**
BRDA	**Brd**	**1.85**	**27**	P	**Pg**	**01 07 13.1**	**-0.1**
	SNR=4.8						
GNI	**Garni**	**1.86**	**326**	↑*i*P	**Pg**	**01 07 13.6**	**+0.2**
GNI				↑*i*S	**Sg**	**01 07 39.8**	**+2.1**
GNI	**Garni**	**1.86**	**326**	↑P	**Pg**	**01 07 13.6**	**+0.2**
GNI				S	**Sg**	**01 07 39.8**	**+2.1**
GLBA	**Clilabad**	**1.90**	**70**	↓P	**Pg**	**01 07 13.9**	**-0.2**
	SNR=24						
GLBA				↓S	**Sg**	**01 07 40.5**	**+1.7**
GLBA	**Clilabad**	**1.90**	**70**	P	**Pg**	**01 07 13.9**	**-0.2**
	SNR=24						
GLBA				S	**Sg**	**01 07 40.5**	**+1.7**
VMUR	**Van-Muradiye**	**2.01**	**282**	*i*P	**Pg**	**01 07 15.7**	**-0.5**
VMUR	**Van-Muradiye**	**2.01**	**282**	P	**Pg**	**01 07 15.7**	**-0.5**
GANJ	**Ganja**	**2.04**	**5**	↑P	**Pg**	**01 07 17.3**	**+0.5**
	SNR=40						
GANJ				↓S	**Sg**	**01 07 44.6**	**+1.2**
GANJ	**Ganja**	**2.04**	**5**	P	**Pg**	**01 07 17.3**	**+0.5**
	SNR=40						
GANJ				S	**Sg**	**01 07 44.6**	**+1.2**
ZRD	**Zardab**	**2.07**	**36**	↑P	**Pg**	**01 07 17.6**	**+0.2**
	SNR=7.6						
ZRD				↑S	**Sg**	**01 07 47.3**	**+3.0**
ZRD	**Zardab**	**2.07**	**36**	P	**Pg**	**01 07 17.6**	**+0.2**
	SNR=7.6						
DYDN	**Diyadin**	**2.09**	**297**	*i*P	**Pg**	**01 07 18.3**	**+0.5**
DYDN	**Diyadin**	**2.09**	**297**	P	**Pg**	**01 07 18.3**	**+0.5**
LKRN	**Lenkeran, Azer**	**2.10**	**86**	↑P	**Pg**	**01 07 17.0**	**-1.0**
	SNR=19						
LKRN				↑S	**Sg**	**01 07 46.8**	**+1.6**
LKRN	**Lenkeran, Azer**	**2.10**	**86**	P	**Pg**	**01 07 17.0**	**-1.0**
	SNR=19						
LKRN				S	**Sg**	**01 07 46.8**	**+1.6**
TVAN	**Van**	**2.11**	**269**	*i*P	**Pg**	**01 07 18.3**	**+0.2**
TVAN	**Van**	**2.11**	**269**	P	**Pg**	**01 07 18.3**	**+0.2**
ASTR	**Astara**	**2.11**	**90**	↓P	**Pg**	**01 07 17.0**	**-1.1**
	SNR=53						
ASTR				↑S	**Sg**	**01 07 46.5**	**+1.0**
ASTR	**Astara**	**2.11**	**90**	P	**Pg**	**01 07 17.0**	**-1.1**
	SNR=53						
ASTR				S	**Sg**	**01 07 46.5**	**+1.0**
GDB	**GEDABAY**	**2.13**	**353**	↑P	**Pg**	**01 07 17.6**	**-0.9**
GDB				↓S	**Sg**	**01 07 46.9**	**+0.8**
GDB	**GEDABAY**	**2.13**	**353**	P	**Pg**	**01 07 17.6**	**-0.9**
GDB				S	**Sg**	**01 07 46.9**	**+0.8**
HAKT	**HAKKARI**	**2.16**	**242**	*i*P	**Pg**	**01 07 18.3**	**-0.7**
HAKT	**HAKKARI**	**2.16**	**242**	P	**Pg**	**01 07 18.3**	**-0.7**
MNGR	**Mingechevir, A**	**2.29**	**19**	↓P	**Pg**	**01 07 20.8**	**-0.8**
MNGR				↑S	**Sg**	**01 07 52.4**	**+1.1**
MNGR	**Mingechevir, A**	**2.29**	**19**	P	**Pg**	**01 07 20.8**	**-0.8**
MNGR				S	**Sg**	**01 07 52.4**	**+1.1**
KDMR	**Kurdemir**	**2.39**	**42**	↓S	**Sg**	**01 07 55.0**	**+0.4**
GEVA	**Gevas**	**2.40**	**264**	*i*P	**Pb**	**01 07 20.9**	**+0.1**
GEVA	**Gevas**	**2.40**	**264**	P	**Pb**	**01 07 20.9**	**+0.1**
QZX	**Qazax, Azerbai**	**2.51**	**347**	↓P	**Pg**	**01 07 24.8**	**-1.0**
	SNR=10.0						
QZX				↑S	**Sg**	**01 07 57.1**	**-1.2**
QZX	**Qazax, Azerbai**	**2.51**	**347**	P	**Pg**	**01 07 24.8**	**-1.0**
	SNR=10.0						
QZX				S	**Sg**	**01 07 57.1**	**-1.2**
ALIB	**Äli-Bayra**	**2.63**	**58**	↑S	**Sg**	**01 08 03.2**	**+1.1**
TUTA	**Tutak**	**2.68**	**288**	*i*P	**Pg**	**01 07 27.4**	**-1.6**
TUTA	**Tutak**	**2.68**	**288**	P	**Pg**	**01 07 27.4**	**-1.6**
QBL	**Gabala**	**2.69**	**29**	↓P	**Pb**	**01 07 26.2**	**+0.5**
	SNR=8.2						
QBL				↑S	**Sg**	**01 08 01.8**	**-2.4**
QBL	**Gabala**	**2.69**	**29**	P	**Pb**	**01 07 26.2**	**+0.5**
	SNR=8.2						
QBL				S	**Sg**	**01 08 01.8**	**-2.4**
IML	**Ismayilli**	**2.71**	**36**	↓P	**Pb**	**01 07 25.2**	**-0.8**
	SNR=5.8						
IML				↑S	**Sg**	**01 08 02.6**	**-2.2**
IML	**Ismayilli**	**2.71**	**36**	P	**Pb**	**01 07 25.2**	**-0.8**
	SNR=5.8						
IML				S	**Sg**	**01 08 02.6**	**-2.2**
SEKA	**Sheki**	**2.73**	**18**	↓P	**Pb**	**01 07 26.7**	**+0.3**
	SNR=5.4						
SEKA				↑S	**Sg**	**01 08 03.2**	**-2.3**
SEKA	**Sheki**	**2.73**	**18**	P	**Pb**	**01 07 26.7**	**+0.3**
	SNR=5.4						
SEKA				S	**Sg**	**01 08 03.2**	**-2.3**
DIGO	**Kars**	**2.77**	**311**	*i*P	**Pg**	**01 07 30.0**	**-0.8**
DIGO	**Kars**	**2.77**	**311**	P	**Pg**	**01 07 30.0**	**-0.8**
EAK	**Akyaka**	**2.83**	**318**	*i*P	**Pg**	**01 07 31.3**	**-0.6**
EAK	**Akyaka**	**2.83**	**318**	P	**Pg**	**01 07 31.3**	**-0.6**
PQL	**Pirkuli**	**2.91**	**41**	↓P	**Pb**	**01 07 29.8**	**+0.3**
	SNR=5.7						
PQL				↓S	**Sg**	**01 08 08.6**	**-2.5**
PQL	**Pirkuli**	**2.91**	**41**	P	**Pb**	**01 07 29.8**	**+0.3**
	SNR=5.7						
PQL				S	**Sg**	**01 08 08.6**	**-2.5**
GBS	**Qobustan**	**2.92**	**48**	↑P	**Pb**	**01 07 29.8**	**+0.1**
GBS				↑S	**Sb**	**01 08 07.0**	**+1.7**
GBS	**Qobustan**	**2.92**	**48**	P	**Pb**	**01 07 29.8**	**+0.1**
XNQ	**Khinaliq**	**3.01**	**31**	↑P	**Pb**	**01 07 29.3**	**-1.9**
	SNR=4.3						
XNQ				↓S	**Sb**	**01 08 11.0**	**+3.1**
XNQ	**Khinaliq**	**3.01**	**31**	P	**Pb**	**01 07 29.3**	**-1.9**
	SNR=4.3						
XNQ				S	**Sb**	**01 08 11.0**	**+3.1**
ZKTA	**Zakatala**	**3.05**	**7**	↓S	**Sg**	**01 08 14.3**	**-1.5**
SIRN	**S¨–rnak**	**3.11**	**250**	*i*P	**Pg**	**01 07 36.5**	**-0.8**
ATGJ	**Altiaghaj**	**3.14**	**43**	↑P	**Pb**	**01 07 33.3**	**-0.1**
ATGJ				↑S	**Sg**	**01 08 16.1**	**-2.4**
ATGJ	**Altiaghaj**	**3.14**	**43**	P	**Pb**	**01 07 33.3**	**-0.1**
ATGJ				S	**Sg**	**01 08 16.1**	**-2.4**
BGD	**Bogdanovka**	**3.28**	**325**	P	**Pg**	**01 07 40.4**	**0.0**
BGD				S	**Sg**	**01 08 26.5**	**+3.6**
SIZA	**Siyzn**	**3.28**	**40**	↓P	**Pb**	**01 07 34.3**	**-1.4**
SIZA				↑S	**Sg**	**01 08 21.7**	**-1.2**
SIZA	**Siyzn**	**3.28**	**40**	P	**Pb**	**01 07 34.3**	**-1.4**
TBLG	**Delisi**	**3.29**	**342**	P	Pg	01 07 49.2	+8.5
TBLG				S	**Sg**	**01 08 22.0**	**-1.2**
QUBA	**Quba, Azerbaij**	**3.31**	**33**	↓P	**Pb**	**01 07 35.2**	**-0.9**
QUBA				↑S	**Sb**	**01 08 16.3**	**0.0**
QUBA	**Quba, Azerbaij**	**3.31**	**33**	P	**Pb**	**01 07 35.2**	**-0.9**
QUBA				S	**Sb**	**01 08 16.3**	**0.0**
QSAR	**Qusar**	**3.35**	**29**	↑P	**Pb**	**01 07 36.6**	**-0.2**
BTMN	**Batman**	**3.87**	**261**	*i*P	**Pg**	**01 07 50.8**	**-0.9**
GUDG	**Gudauri**	**4.05**	**343**	P	**Pg**	**01 07 54.1**	**-1.0**
GUDG				S	**Sg**	**01 08 46.2**	**-1.4**

TRN 14 01:11:15.5, 18°.71N×64°.65W, h116km
NEIC 14 01:11:17.1, 18°.77N×64°.67W, h114km, MD3.6(RSPR), After RSPR.
RSPR 14 01:11:17.1, 18°.77N×64°.67W, h115km±4km, MD3.6/3, 3C-9D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STVI	**Saint Thomas**	**0.50**	**213**	↓*eP*	**Pn**	**01 11 34.3**	**-0.1**
STVI	**Saint Thomas**	**0.50**	**213**	↓*eP*	**Pn**	**01 11 34.3**	**-0.1**
STVI				*eS*	**Sn**	**01 11 47.0**	**-0.4**
STVI	**Saint Thomas**	**0.50**	**213**	↓*eP*	**Pn**	**01 11 34.3**	**-0.1**
STVI				*eS*	**Sn**	**01 11 47.0**	**-0.4**
CBYP	**Canovanas**	**1.23**	**246**	↑*eP*	**Pn**	**01 11 40.5**	**-0.7**
CBYP	**Canovanas**	**1.23**	**246**	↑*eP*	**Pn**	**01 11 40.5**	**-0.7**
CBYP				*eS*	**Sn**	**01 11 59.7**	**+0.3**
CBYP	**Canovanas**	**1.23**	**246**	↑*eP*	**Pn**	**01 11 40.5**	**-0.7**
CBYP				*eS*	**Sn**	**01 11 59.7**	**+0.3**
HUMP	**Col San Antoni**	**1.28**	**241**	↓*eP*	**Pn**	**01 11 41.6**	**-0.1**
HUMP	**Col San Antoni**	**1.28**	**241**	↓*eP*	**Pn**	**01 11 41.6**	**-0.1**
HUMP				*eS*	**Sn**	**01 11 60.0**	**-0.3**
HUMP	**Col San Antoni**	**1.28**	**241**	↓*eP*	**Pn**	**01 11 41.6**	**-0.1**
HUMP				*eS*	**Sn**	**01 11 60.0**	**-0.3**
SJG	**San Juan**	**1.55**	**245**	*e*Pn	**Pn**	**01 11 45.0**	**+0.2**
SJG				*eS*	**Sn**	**01 12 02.5**	**-3.2**
AOPR	**Arecibo Observ**	**2.02**	**258**	↓*eP*	**Pn**	**01 11 50.1**	**-0.5**
AOPR	**Arecibo Observ**	**2.02**	**258**	↓*eP*	**Pn**	**01 11 50.1**	**-0.5**
AOPR				*eS*	**Sn**	**01 12 16.2**	**+0.1**
AOPR	**Arecibo Observ**	**2.02**	**258**	↓*eP*	**Pn**	**01 11 50.1**

KONT	**Konya--Tatoy**	**0.46**	**15**	*e*Pg	**Pg**	**01 21 23.0**	**-0.8**
KONT				*e*Sg	**Sg**	**01 21 29.5**	**-0.5**
LADK	**Ladik-KONYA**	**0.71**	**10**	*e*PG	**Pg**	**01 21 27.9**	**-0.6**
LADK				*e*SG	**Sb**	**01 21 38.0**	**-0.9**
LADK	**Ladik-KONYA**	**0.71**	**10**	*e*Pg	**Pg**	**01 21 27.9**	**-0.6**
LADK				*e*Sg	**Sb**	**01 21 38.0**	**-0.9**
SUTC	**Sutluce-Ispart**	**0.96**	**269**	*e*PG	**Pb**	**01 21 32.4**	**-1.0**
SUTC	**Sutluce-Ispart**	**0.96**	**269**	*e*Pg	**Pb**	**01 21 32.4**	**-1.0**
KDHN	**Kadinhani**	**1.02**	**356**	*i* P	**Pg**	**01 21 32.6**	**-1.8**
KDHN				*i* S	**Sb**	**01 21 48.3**	**+0.5**
KDHN	**Kadinhani**	**1.02**	**356**	P	**Pg**	**01 21 32.6**	**-1.8**
KDHN				S	**Sb**	**01 21 48.3**	**+0.5**
ERMK	**Ermenek**	**1.03**	**147**	*i* P	**Pg**	**01 21 33.4**	**-1.1**
ERMK				*i* S	**Sn**	**01 21 49.2**	**-0.3**
ERMK	**Ermenek**	**1.03**	**147**	P	**Pg**	**01 21 33.4**	**-1.1**
ERMK				S	**Sn**	**01 21 49.2**	**-0.3**
CHBY	**Cihanbeyli**	**1.21**	**26**	*e*PN	**Pg**	**01 21 37.3**	**-0.6**
CHBY	**Cihanbeyli**	**1.21**	**26**	*e*Pn	**Pg**	**01 21 37.3**	**-0.6**
SULT	**Sultanhani-AKS**	**1.25**	**56**	*e*PN	**Pg**	**01 21 39.4**	**+0.7**
SULT	**Sultanhani-AKS**	**1.25**	**56**	*e*Pn	**Pg**	**01 21 39.4**	**+0.7**
GAZI	**Gazipasa**	**1.27**	**176**	*i* P	**Pn**	**01 21 37.5**	**-0.7**
GAZI				*i* S	**Sb**	**01 21 54.5**	**-0.3**
GAZI	**Gazipasa**	**1.27**	**176**	P	**Pn**	**01 21 37.5**	**-0.7**
GAZI				S	**Sb**	**01 21 54.5**	**-0.3**
KIZT	**Kizilcal**	**1.40**	**349**	*e*PN	**Pb**	**01 21 40.3**	**-0.6**
KIZT	**Kizilcal**	**1.40**	**349**	*e*Pn	**Pb**	**01 21 40.3**	**-0.6**
KERG	**Konya-Eregli**	**1.53**	**93**	*i* P	**Pn**	**01 21 41.2**	**-0.7**
KERG				*i* S	**Sg**	**01 22 03.5**	**-0.3**
KERG	**Konya-Eregli**	**1.53**	**93**	P	**Pn**	**01 21 41.2**	**-0.7**
KORT	**Korkueli**	**1.56**	**252**	*i* P	**Pb**	**01 21 43.0**	**-0.7**
KORT				*i* S	**Sg**	**01 22 08.2**	**+3.1**
KORT	**Korkueli**	**1.56**	**252**	P	**Pb**	**01 21 43.0**	**-0.7**
KORT				S	**Sg**	**01 22 08.2**	**+3.1**
BOLV	**Bolvadin**	**1.57**	**321**	*i* P	**Pb**	**01 21 43.1**	**-0.7**
BOLV				*i* S	**Sg**	**01 22 07.2**	**+1.9**
BOLV	**Bolvadin**	**1.57**	**321**	P	**Pb**	**01 21 43.1**	**-0.7**
BOLV				S	**Sg**	**01 22 07.2**	**+1.9**
KKUL	**Konya-Kulu**	**1.76**	**18**	*i* P	**Pb**	**01 21 46.3**	**-0.7**
KKUL				*i* S	**Sg**	**01 22 16.0**	**+4.7**
KKUL	**Konya-Kulu**	**1.76**	**18**	P	**Pb**	**01 21 46.3**	**-0.7**
KIZK	**Mersin**	**1.85**	**123**	*i* P	**Pn**	**01 21 46.5**	**+0.2**
KIZK				*i* S	**Sb**	**01 22 13.0**	**+1.3**
KIZK	**Mersin**	**1.85**	**123**	P	**Pn**	**01 21 46.5**	**+0.2**
KIZK				S	**Sb**	**01 22 13.0**	**+1.3**
MERS	**Mersin**	**1.95**	**108**	*e*PN	**Pb**	**01 21 49.5**	**-0.8**
MERS	**Mersin**	**1.95**	**108**	*e*Pn	**Pb**	**01 21 49.5**	**-0.8**
AFSR	**Af˙ar-Bala (A**	**2.06**	**19**	*e*PN	**Pn**	**01 21 49.6**	**+0.4**
AFSR	**Af˙ar-Bala (A**	**2.06**	**19**	*e*Pn	**Pn**	**01 21 49.6**	**+0.4**
BBAL	**Bala**	**2.16**	**19**	*i* P	**Pn**	**01 21 51.0**	**+0.4**
BBAL				*i* S	**Sb**	**01 22 19.8**	**-0.9**
BBAL	**Bala**	**2.16**	**19**	P	**Pn**	**01 21 51.0**	**+0.4**
BBAL				S	**Sb**	**01 22 19.8**	**-0.9**
KARA	**Karaisali**	**2.28**	**95**	*e*PN	**Pn**	**01 21 53.9**	**+1.7**
KARA	**Karaisali**	**2.28**	**95**	*e*Pn	**Pn**	**01 21 53.9**	**+1.7**

ISCJB ***14*** *01:22:06.7±1.4, 18˚.9N±0˚.3×64˚.71W±0˚.09, h109km±14km, Error ellipse: s-maj=47.2km s-min=8.3km az=164.8*
TRN ***14*** *01:22:06.1, 18˚.88N×64˚.71W, h106km*
NEIC ***14*** *01:22:07.8, 18˚.93N×64˚.74W, h104km, MD3.7(RSPR), After RSPR.*
RSPR ***14*** *01:22:07.8, 18˚.93N×64˚.74W, h104km±2km, MD3.7/10*

ISC 14 01:22:07.9±3.5, 19˚.0N±0˚.2×64˚.8W±0˚.2, h98km±35km, n30, σ0§41/46, 23C-6D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABV	**Anegada**	**0.46**	**120**	⇓*e*P	**Pn**	**01 22 22.7**	**-0.5**
ABV	**Anegada**	**0.46**	**120**	⇓*e*P	**Pn**	**01 22 22.7**	**-0.5**
ABV				*e*S	**Sn**	**01 22 35.3**	**+0.7**
ABVI	**Anegada Island**	**0.46**	**120**	⇓*e*P	**Pn**	**01 22 22.7**	**-0.5**
ABVI				*e*S	**Sn**	**01 22 35.3**	**+0.7**
STVI	**Saint Thomas**	**0.64**	**198**	⇓*e*P	**Pn**	**01 22 24.4**	**-0.2**
STVI	**Saint Thomas**	**0.64**	**198**	⇓*e*P	**Pn**	**01 22 24.4**	**-0.2**
STVI				*e*S	**Sn**	**01 22 37.4**	**+0.4**
STVI	**Saint Thomas**	**0.64**	**198**	⇓*e*P	**Pn**	**01 22 24.4**	**-0.2**
STVI				*e*S	**Sn**	**01 22 37.4**	**+0.4**
CBYP	**Canovanas**	**1.25**	**237**	⇑*e*P	**Pn**	**01 22 30.8**	**-0.4**
CBYP	**Canovanas**	**1.25**	**237**	⇑*e*P	**Pn**	**01 22 30.8**	**-0.4**
CBYP	**Canovanas**	**1.25**	**237**	⇑*e*P	**Pn**	**01 22 30.8**	**-0.4**
HUMP	**Col San Antoni**	**1.32**	**232**	⇑*e*P	**Pn**	**01 22 32.0**	**+0.1**
HUMP	**Col San Antoni**	**1.32**	**232**	⇑*e*P	**Pn**	**01 22 32.0**	**+0.1**
HUMP				*e*S	**Sn**	**01 22 50.0**	**0.0**
HUMP	**Col San Antoni**	**1.32**	**232**	⇑*e*P	**Pn**	**01 22 32.0**	**+0.1**
HUMP				*e*S	**Sn**	**01 22 50.0**	**0.0**
SJG	**San Juan**	**1.57**	**238**	⇑*e*P	**Pn**	**01 22 34.5**	**-0.5**
SJG	**San Juan**	**1.57**	**238**	⇑*e*P	**Pn**	**01 22 34.5**	**-0.5**
SJG				*e*S	**Sn**	**01 22 55.5**	**-0.1**
SJG	**San Juan**	**1.57**	**238**	*e*Pn	**Pn**	**01 22 33.7**	**-1.3**
SJG				*e*S	**Sn**	**01 22 54.6**	**-0.9**
CELP	**Cerrillos**	**1.94**	**243**	⇑*e*P	**Pn**	**01 22 39.5**	**-0.2**
CELP	**Cerrillos**	**1.94**	**243**	⇑*e*P	**Pn**	**01 22 39.5**	**-0.2**
CELP	**Cerrillos**	**1.94**	**243**	⇑*e*P	**Pn**	**01 22 39.5**	**-0.2**
OBIP	**Obispado Ponce**	**1.98**	**243**	⇑*e*P	**Pn**	**01 22 40.1**	**-0.1**
OBIP	**Obispado Ponce**	**1.98**	**243**	⇑*e*P	**Pn**	**01 22 40.1**	**-0.1**
OBIP				*e*S	**Sn**	**01 23 05.2**	**+0.4**
OBIP	**Obispado Ponce**	**1.98**	**243**	⇑*e*P	**Pn**	**01 22 40.1**	**-0.1**
OBIP				*e*S	**Sn**	**01 23 05.2**	**+0.4**
AOPR	**Arecibo Observ**	**1.99**	**253**	⇑*e*P	**Pn**	**01 22 40.0**	**-0.4**
AOPR	**Arecibo Observ**	**1.99**	**253**	⇑*e*P	**Pn**	**01 22 40.0**	**-0.4**
AOPR				*e*S	**Sn**	**01 23 05.3**	**+0.2**
AOPR	**Arecibo Observ**	**1.99**	**253**	⇑*e*P	**Pn**	**01 22 40.0**	**-0.4**
AOPR				*e*S	**Sn**	**01 23 05.3**	**+0.2**
LSP	**Las Mesas**	**2.35**	**251**	⇑*e*P	**Pn**	**01 22 45.2**	**+0.2**
LSP	**Las Mesas**	**2.35**	**251**	⇑*e*P	**Pn**	**01 22 45.2**	**+0.2**
LSP				*e*S	**Sn**	**01 23 13.8**	**+0.3**
LSP	**Las Mesas**	**2.35**	**251**	⇑*e*P	**Pn**	**01 22 45.2**	**+0.2**
LSP				*e*S	**Sn**	**01 23 13.8**	**+0.3**
CRPR	**Cabo Rojo, PR**	**2.43**	**247**	⇑*e*P	**Pn**	**01 22 46.1**	**0.0**
CRPR	**Cabo Rojo, PR**	**2.43**	**247**	⇑*e*P	**Pn**	**01 22 46.1**	**0.0**
CRPR				*e*S	**Sn**	**01 23 15.7**	**+0.4**
CRPR	**Cabo Rojo, PR**	**2.43**	**247**	⇑*e*P	**Pn**	**01 22 46.1**	**0.0**
CRPR				*e*S	**Sn**	**01 23 15.7**	**+0.4**

NEIC ***14*** *01:26:53.1, 19˚.26N×64˚.89W, h69km, MD3.6(RSPR), After RSPR.*

RSPR 14 01:26:53.1, 19˚.26N×64˚.89W, h69km±8km, MD3.6/4, 4C-7D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABV	**Anegada**	**0.75**	**135**	*e*S	Sn	01 27 19.6	-0.2
ABV	**Anegada**	**0.75**	**135**	⇓*e*P	Pn	01 27 08.0	-0.5
ABVI	**Anegada Island**	**0.75**	**135**	⇓*e*P	Pn	01 27 08.0	-0.5
ABVI				*e*S	Sn	01 27 19.6	-0.2
STVI	**Saint Thomas**	**0.90**	**184**	⇓*e*P	Pn	01 27 09.5	-0.9
STVI	**Saint Thomas**	**0.90**	**184**	⇓*e*P	Pn	01 27 09.5	-0.9
STVI				*e*S	Sn	01 27 22.1	-1.0
HUMP	**Col San Antoni**	**1.43**	**219**	⇑*e*P	Pn	01 27 16.7	-0.4
HUMP	**Col San Antoni**	**1.43**	**219**	⇑*e*P	Pn	01 27 16.7	-0.4
HUMP				*e*S	Sn	01 27 34.5	-0.8
SJG	**San Juan**	**1.65**	**226**	⇓*e*P	Pn	01 27 19.2	-0.8
SJG	**San Juan**	**1.65**	**226**	*e*S	Sn	01 27 40.3	-0.1
SJG	**San Juan**	**1.65**	**226**	*e*Pn	Pn	01 27 19.1	-0.9
SJG				*e*S	Sn	01 27 39.7	-0.7
AOPR	**Arecibo Observ**	**1.98**	**243**	*e*S	Sn	01 27 47.3	-1.1
CELP	**Cerrillos**	**1.98**	**234**	⇑*e*P	Pn	01 27 23.8	-0.7
CELP				*e*S	Sn	01 27 48.4	0.0
CELP	**Cerrillos**	**1.98**	**234**	⇑*e*P	Pn	01 27 23.8	-0.7
OBIP	**Obispado Ponce**	**2.02**	**234**	⇓*e*P	Pn	01 27 24.2	-0.9
OBIP	**Obispado Ponce**	**2.02**	**234**	⇓*e*P	Pn	01 27 24.2	-0.9
OBIP				*e*S	Sn	01 27 49.3	-0.1
CRPR	**Cabo Rojo, PR**	**2.44**	**240**	*e*S	Sn	01 27 59.2	-0.4

ISCJB ***14*** *01:28:38.3±0.3, 6˚.82N±0˚.03×73˚.05W±0˚.03, h156km±3km, mb3.5/3, Error ellipse: s-maj=6.7km s-min=3.0km az=38.2*
FUNV ***14*** *01:28:38.7, 6˚.77N×73˚.21W, h160km, MW3.6*
IDC ***14*** *01:28:39.6±0.7, 6˚.82N×73˚.01W, h157km±14km, mb3.3/3, mb1 3.6/6, mb1mx3.2/34, mbtmp3.9/6, Error ellipse: s-maj=39.6km s-min=7.5km az=133.0*
RSNC ***14*** *01:28:40.3±0.6, 6˚.80N×73˚.11W, h145km±3km, ML3.5*

ISC 14 01:28:39.6±0.8, 6˚.83N±0˚.04×73˚.07W±0˚.04, h152km±5km, n39, σ1§31/65, mb3.5/3, 1C-3D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTLC	**Betulia, Santa**	**0.21**	**295**	*e*P	**Pn**	**01 29 00.1**	**-0.4**
BTLC				*e*S	**Sn**	**01 29 15.6**	**-0.6**
BARC	**Barichara**	**0.26**	**205**	*i* P	**Pn**	**01 28 59.9**	**-0.7**
BARC				*e*S	**Sn**	**01 29 15.1**	**-1.4**
BARC				*i*		01 29 17.2	
	comp=Z,967nm,0.2s						
GIRC	**Giron, Santand**	**0.28**	**334**	*e*P	**Pn**	**01 29 00.2**	**-0.3**
GIRC				*e*S	**Sn**	**01 29 15.3**	**-1.2**
PAMC	**Pamplona, Colo**	**0.63**	**36**	*e*P	**Pn**	**01 29 02.7**	**+0.3**
PAMC				*e*S	**Sn**	**01 29 19.6**	**-0.3**
BRRC	**Barranca, Sant**	**0.69**	**294**	*e*P	**Pn**	**01 29 01.7**	**-0.5**
BRRC				*e*S	**Sn**	**01 29 18.4**	**-1.1**
BRRC				*i*		01 29 22.8	
	comp=Z,804nm,0.1s						
GRMC	**Gramalote, San**	**0.92**	**17**	*i* P	**Pn**	**01 29 05.7**	**+1.6**
GRMC				*e*S	**Sn**	**01 29 25.2**	**+2.3**
GRMC				*i*		01 29 26.5	
	comp=Z,542nm,0.3s						
CBRI	**Barrientos, No**	**0.92**	**17**	*e*P	**Pn**	**01 29 04.4**	**+0.3**
CBRI				*e*S	**Sn**	**01 29 22.4**	**-0.6**
CBRI				*i*		01 29 27.8	
	comp=Z,369nm,0.4s						
RUSC	**La Rusia**	**0.93**	**181**	*e*P	**Pn**	**01 29 03.9**	**-0.7**
RUSC				*e*S	**Sn**	**01 29 22.1**	**-1.6**
RUSC				*i*		01 29 24.2	
	comp=Z,650nm,0.3s						
CAPV	**Capacho**	**1.27**	**36**	*e*P	**Pn**	**01 29 08.0**	**+0.7**
CAPV				*e*S	**Sn**	**01 29 29.1**	**+0.6**
OCAC	**Ocana**	**1.42**	**350**	*e*P	**Pn**	**01 29 08.5**	**-0.2**
OCAC				*e*S	**Sn**	**01 29 30.1**	**-0.9**
OCAC				*i*		01 29 31.5	
	comp=Z,266nm,0.2s						
NORC	**Norcasia**	**2.18**	**235**	*e*P	**Pn**	**01 29 16.0**	**-1.1**
NORC				*e*S	**Sn**	**01 29 44.3**	**-1.6**
CHIC	**Chingaza**	**2.28**	**197**	*e*P	**Pn**	**01 29 18.4**	**-0.2**
CHIC				*e*S	**Sn**	**01 29 47.3**	**-1.3**
CHIC				*i*		01 29 55.6	
	comp=Z,138nm,0.4s						
ROSC	**El Rosal**	**2.33**	**212**	P	**Pn**	**01 29 19.7**	**+0.5**
	comp=Z,27nm,0.3s,baz=85,slow=1.2,SNR=140						
ROSC				S	**Sn**	**01 29 51.3**	**+1.6**
	comp=Z,48nm,0.3s,baz=109,slow=19,SNR=12						
ROSC	**El Rosal**	**2.33**	**212**	*e*S	**Sn**	**01 29 48.9**	**-0.8**
ROSC				*i*		01 29 56.5	
	comp=Z,247nm,0.4s						
HELC	**Santa Helena**	**2.52**	**256**	*e*P	**Pn**	**01 29 20.1**	**-1.4**
HELC				*i*		01 29 59.1	
	comp=Z,294nm,0.4s						
VIGV	**El Vigia**	**2.62**	**40**	⇑*e*P	**Pn**	**01 29 22.7**	**+0.3**
VIGV				*e*S	**Sn**	**01 29 54.5**	**-0.8**
SOCV	**Socops**	**2.63**	**57**	*e*P	**Pn**	**01 29 22.4**	**0.0**
SOCV				*e*S	**Sn**	**01 29 54.8**	**-0.8**
VILC	**Villavicencio,**	**2.77**	**193**	*e*P	**Pn**	**01 29 23.1**	**-1.1**
VILC				*e*S	**Sn**	**01 29 57.7**	**-1.2**
VILC				*i*		01 30 07.6	
	comp=Z,65nm,0.3s						
GUYC	**Guyana, Colomb**	**2.80**	**235**	*e*P	**Pn**	**01 29 24.8**	**-0.3**
GUYC				*e*S	**Sn**	**01 29 59.2**	**-0.9**
GUYC				*i*		01 30 05.0	
	comp=Z,196nm,0.4s						
DBBC	**Dabeiba**	**3.12**	**274**	*e*P	**Pn**	**01 29 28.3**	**-0.3**
TOLC	**Tolima**	**3.16**	**225**	*e*P	**Pn**	**01 29 29.5**	**+0.1**
SDV	**Santo Domingo**	**3.17**	**50**	P	**Pn**	**01 29 29.7**	**+0.4**
	comp=Z,19nm,0.3s,baz=208,slow=2.7,SNR=16						
SDV				S	**Sn**	**01 30 07.1**	**-0.7**
	comp=Z,40nm,0.3s,baz=255,slow=22,SNR=50						
ELOV	**Elorza**	**3.57**	**87**	*e*P	**Pn**	**01 29 34.4**	**+0.1**
ELOV				*e*S	**Sn**	**01 30 14.8**	**-2.0**
PRAC	**Prado**	**3.58**	**210**	*e*P	**Pn**	**01 29 33.6**	**-1.0**
PRAC				*e*S	**Sn**	**01 30 15.8**	**-1.4**
SJAC	**San Juan de Ar**	**3.64**	**194**	*e*P	**Pn**	**01 29 35.2**	**-0.1**
SJAC				*e*S	**Sn**	**01 30 17.2**	**-1.4**
SJAC				*i*		01 30 22.0	
	comp=Z,222nm,0.4s						
VIRV	**Villa del Rosa**	**3.71**	**10**	*e*P	**Pn**	**01 29 34.9**	**-1.3**
VIRV				*e*S	**Sn**	**01 30 16.4**	**-3.7**
GUVC	**San Jose del G**	**4.28**	**174**	*e*S	**Sn**	**01 30 32.2**	**-1.2**
GUVC				*i*		01 30 38.6	
	comp=Z,24nm,0.2s						
SANV	**Sanarito**	**4.39**	**53**	*e*P	**Pn**	**01 29 44.5**	**-0.7**
SANV				⇓*e*S	**Sn**	**01 30 33.7**	**-2.6**
CURV	**Curarigua**	**4.41**	**44**	*e*P	**Pn**	**01 29 44.7**	**-0.7**
CURV				*e*S	**Sn**	**01 30 34.2**	**-2.5**
TEPV	**Terepaima**	**4.94**	**51**	⇓*e*P	**Pn**	**01 29 51.8**	**-0.5**
TEPV				*e*S	**Sn**	**01 30 46.6**	**-2.5**
MALC	**Bahia Malaga**	**5.08**	**237**	*e*P	**Pn**	**01 29 54.5**	**+0.3**
MALC				*i*		01 29 57.2	
	comp=Z,32nm,0.5s						
MAPV	**Macapo**	**5.46**	**57**	*e*P	**Pn**	**01 29 58.3**	**-0.8**
POPC	**Popayan, Colom**	**5.57**	**220**	*e*P	**Pn**	**01 30 00.7**	**-0.2**
POPC				*i*		01 30 05.3	
	comp=Z,16nm,0.2s						
POPC				*e*S	**Sn**	**01 31 02.5**	**-1.9**
MONV	**Montecano**	**5.94**	**31**	⇓*e*P	**Pn**	**01 30 04.8**	**-0.8**
PCRV	**Puerto La Cruz**	**8.98**	**68**	P	**Pn**	**01 30 47.5**	**+1.4**
	comp=Z,0.7nm,0.3s,baz=320,slow=5.1,SNR=4.0						
TXAR	**Lajitas Array**	**36.49**	**312**	P	**P**	**01 35 30.6**	**+0.2**
	comp=Z,0.5nm,0.6s,baz=132,slow=8.0,SNR=7.1						
SCHQ	**Schefferville**	**48.13**	**5**	P	**P**	**01 37 04.2**	**+0.2**
	comp=Z,1.5nm,0.6s,baz=214,slow=8.2,SNR=3.7						
YKA	**Yellowknife Ar**	**63.27**	**340**	P	**P**	**01 38 51.2**	**-0.5**
	comp=Z,0.4nm,0.6s,baz=136,slow=6.4,SNR=5.1						
WRA	**Warramunga Arr**	**150.38**	**241**	PKPbc	**PKPdf**	**01 48 12.6**	**+4.0**
	comp=Z,0.4nm,0.4s,baz=110,slow=2.6,SNR=4.7						

NIED ***14*** *01:34:00, 38˚.40N×141˚.80E, h56km, Mw4.8 Best double couple: M0 1.70000×10^16 NP1:φs207.00000°, δ25.00000°, λ61.00000°. NP2:φs58.50000°, δ68.00000°, λ103.00000°.*
BJI ***14*** *01:34:54.8, 38˚.48N×141˚.80E, h71km, mb4.8/63, mB4.8/39, Ms4.1/47, Ms7 3.9/45*
IDC ***14*** *01:34:55.7±0.4, 38˚.47N×141˚.68E, h54km±2km, mb4.4/29, mb1 4.6/33, mb1mx4.5/39, mbtmp4.7/33, MS3.8/29, Ms1 3.8/29, ms1mx3.7/36, Error ellipse: s-maj=12.0km s-min=10.1km az=95.0*
JMA ***14*** *01:34:55.7, 38˚.44N×141˚.84E, h57km±1km, M4.8*
JMA Felt III J1.
MOS ***14*** *01:34:55.5±0.8, 38˚.70N×141˚.70E, h56km, mb5.2/106, Error ellipse: s-maj=6.1km s-min=4.0km az=103.5*
ISCJB ***14*** *01:34:56.2±0.3, 38˚.56N±0˚.03×141˚.68E±0˚.03, h67km±2km, mb4.8/231, Error ellipse: s-maj=4.6km s-min=2.9km az=153.7*
NEIC ***14*** *01:34:58.0±0.4, 38˚.59N×141˚.66E, h68km±3km, mb4.9/137, Error ellipse: s-maj=4.1km s-min=2.5km az=157.0*
NEIC Felt at Ichinoseki, Sendai and Shiroishi. Recorded [3 JMA] in Iwate and Miyagi.

ISC 14 01:34:55.5±0.4, 38˚.47N±0˚.04×141˚.87E±0˚.04, h56km±2km, h55km:pP-P, n505, σ1§49/560, mb4.9/233, MS3.9/47, 34C-33D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.41**	**268**	P	**Pn**	**01 35 06.3**	**+0.2**
JIO				*e*S	**Sn**	**01 35 13.7**	**0.0**
OFUJ	**Ofunato**	**0.63**	**346**	P	**Pn**	**01 35 09.3**	**+0.7**
OFUJ				S	**Sn**	**01 35 19.1**	**+0.9**
JMK	**Ichinoseki**	**0.70**	**314**	P	**Pn**	**01 35 10.2**	**+0.7**
JMK				S	**Sn**	**01 35 20.6**	**+1.0**
JOU	**Okura**	**0.95**	**264**	P	**Pn**	**01 35 12.7**	**0.0**
JOU				*e*S	**Sn**	**01 35 25.3**	**-0.1**
JMM	**Marumori**	**1.04**	**235**	P	**Pn**	**01 35 13.4**	**-0.4**
JMM				*e*S	**Sn**	**01 35 26.4**	**-1.0**
JOM	**Ohasama**	**1.10**	**336**	P	**Pn**	**01 35 15.5**	**+0.8**
JYK	**Kaneyama**	**1.26**	**291**	P	**Pn**	**01 35 17.3**	**+0.5**
JYK				S	**Sn**	**01 35 33.6**	**+0.8**
JRG	**Rokugo**	**1.33**	**314**	P	**Pn**	**01 35 18.4**	**+0.6**
JFK	**Kawauchi**	**1.35**	**216**	P	**Pn**	**01 35 17.8**	**-0.3**
JFK				*e*S	**Sn**	**01 35 34.3**	**-0.7**
JYS	**Shirataka**	**1.44**	**261**	P	**Pn**	**01 35 19.5**	**+0.3**
JYS				*e*S	**Sn**	**01 35 37.6**	**+0.6**
JFT	**Otama**	**1.54**	**232**	P	**Pn**	**01 35 20.7**	**+0.1**
JFT				*e*S	**Sn**	**01 35 39.3**	**-0.1**
JYA	**Atsumi**	**1.69**	**275**	P	**Pn**	**01 35 23.1**	**+0.4**
MAJO	**Matsushiro**	**3.49**	**238**	*e*P	**Pn**	**01 35 49.1**	**+1.9**
MAJO	**Matsushiro**	**3.49**	**238**	*e*Pn	**Pn**	**01 35 49.3**	**+2.1**
MAJO				*e*S	Sn	01 36 39.6	+12
MAT	**Matsushiro**	**3.49**	**238**	P	**Pn**	**01 35 49.2**	**+2.0**
MAT				*e*S	**Sn**	**01 36 32.4**	**+5.1**
MJAR	**Matsushiro Arr**	**3.49**	**238**	P	**Pn**	**01 35 49.2**	**+2.0**
	27nm,0.3s,baz=42,slow=12,SNR=158						
MJAR				LR	LR	01 37 27.6	
	comp=Z,1μm,21.7s,baz=60,slow=45						
MJB9	**Matsu-Tunnel**	**3.49**	**238**	*e*Pn	**Pn**	**01 35 49.4**	**+2.1**
ERM	**Erimo**	**3.68**	**15**	*d*P	**Pn**	**01 35 49.3**	**-0.5**
ERM				pmax	pmax		
	comp=Z,85nm,0.7s						
ERM	**Erimo**	**3.68**	**15**	*e*Pn	**Pn**	**01 35 49.4**	**-0.4**
ERM				*e*S	**Sn**	**01 36 33.8**	**+2.0**
INU	**Inuyama**	**4.98**	**233**	*e*Pn	**Pn**	**01 36 09.3**	**+1.6**
JHJ2	**Mitsune**	**5.60**	**198**	*e*Pn	**Pn**	**01 36 14.5**	**-1.6**
JHJ2				*e*S	**Sn**	**01 37 11.9**	**-7.2**
JHJ	**Hachijo jima 2**	**5.60**	**198**	P	**Pn**	**01 36 14.9**	**-1.2**
	comp=Z,65nm,0.3s,baz=356,slow=22,SNR=39						
JHJ				S	**Sn**	**01 37 15.5**	**-3.6**
	comp=Z,157nm,0.3s,baz=111,slow=23,SNR=9.9						
ASAJ	**Asahikawa**	**5.67**	**5**	P	**Pn**	**01 36 17.1**	**0.0**
ASAJ	**Asahikawa**	**5.67**	**5**	*e*Pn	**Pn**	**01 36 16.9**	**-0.2**
ASAJ				*e*S	Sn	01 37 36.1	+15
KUR	**Kuril'sk**	**8.11**	**32**	*e*P	**Pn**	**01 36 49.5**	**-0.9**
KUR				*e*S	**Sn**	**01 38 15.8**	**-4.8**
KUR				pmax	pmax		
	comp=Z,41nm,0.9s						
KUR				smax	smax		
	comp=N,136nm,0.7s						
KUR				smax	smax		
	comp=E,110nm,0.7s						
YSS	**Yuzh-Sakhalins**	**8.51**	**4**	⇑*e*P	**Pn**	**01 36 55.6**	**-0.3**
YSS				*e*S	**Sn**	**01 38 27.0**	**-3.4**
YSS				pmax	pmax		
	comp=Z,50nm,1.1s						
YSS				MLR	MLR		
	comp=Z,370nm,14.0s						
YSS	**Yuzh-Sakhalins**	**8.51**	**4**	*e*Pn	**Pn**	**01 36 55.9**	**0.0**
VLA	**Vladivostok**	**8.88**	**305**	*d*eP	**Pn**	**01 37 02.0**	**+1.0**
USRK	**Ussuriysk Ar.**	**9.38**	**311**	P	**Pn**	**01 37 09.6**	**+1.7**
	comp=Z,1.6nm,0.3s,baz=118,slow=15,SNR=52						
USRK				LR	LR	01 40 35.3	
	comp=Z,647nm,20.3s,baz=127,slow=37						
JNU	**Nakatsue**	**10.39**	**242**	P	**Pn**	**01 37 22.5**	**+0.7**
	comp=Z,1.0nm,0.3s,baz=76,slow=8.6,SNR=16						
JNU	**Nakatsue**	**10.39**	**242**	*e*Pn	**Pn**	**01 37 24.1**	**+2.2**
MDJ	**Mudanjiang**	**11.05**	**308**	P	**Pn**	**01 37 31.1**	**+0.3**
MDJ				S	**Sn**	**01 39 29.8**	**-3.0**
MDJ				PcP	**PcP**	**01 43 22.4**	**-2.1**
MDJ				ScS	**ScS**	**01 50 25.4**	**-2.0**
MDJ				pmax	pmax		
	comp=Z,3.0nm,0.3s						
MDJ				pmax	pmax		
	comp=Z,65nm,3.3s						
MDJ				LR	LR		
	comp=Z,300nm,22.8s						
MDJ				LR	LR		
	comp=Z,370nm,22.8s						
MDJ				LR	LR		
	comp=Z,600nm,22.3s						
MDJ	**Mudanjiang**	**11.05**	**308**	*e*Pn	**Pn**	**01 37 34.5**	**+3.7**
	comp=Z,176nm,1.1s						
KSRS	**Korea Array**	**11.06**	**269**	P	**Pn**	**01 37 34.0**	**+3.2**
	comp=Z,2.2nm,0.3s,baz=81,slow=14,SNR=15						
KSRS				LR	LR	01 41 25.7	
	comp=Z,341nm,21.7s,baz=74,

MA2	**Magadan**	**21.88**	**12**	P	**P**	**01 39 43.8**	**+0.4**		
	comp=Z,68nm,0.7s,baz=194,slow=9.1,SNR=30								
MA2				LR	LR	01 48 47.1			
	comp=Z,126nm,19.0s,baz=190,slow=38								
HHC	**Hu-ho-hao-te**	**23.40**	**285**	*e*P	**P**	**01 39 57.8**	**-1.7**		
HHC				pP	pP	01 40 14.9	+2.4		
HHC				sP	sP	01 40 24.3	+5.0		
HHC				S	**S**	**01 43 59.3**	**-9.1**		
HHC				pmax	pmax				
	comp=Z,15nm,0.8s								
HHC				pmax	pmax				
	comp=Z,89nm,9.4s								
HHC				LR	LR				
	comp=Z,140nm,12.9s								
HHC				LR	LR				
	comp=Z,230nm,13.0s								
HHC				LR	LR				
	comp=Z,210nm,16.1s								
CIT	**Chita**	**23.92**	**314**	*e*P	**P**	**01 40 04.0**	**-0.1**		
CIT				*e*		01 40 20.0			
CIT				pmax	pmax				
	comp=Z,181nm,1.5s								
WHN	**Wuhan**	**23.95**	**259**	P	**P**	**01 40 04.0**	**-0.5**		
WHN				S	**S**	**01 44 11.8**	**-5.5**		
WHN				LR	LR				
	comp=Z,420nm,13.8s								
WHN				LR	LR				
	comp=Z,170nm,8.8s								
WHN				LR	LR				
	comp=Z,570nm,17.4s								
YAK	**Yakutsk**	**24.76**	**346**	P	**P**	**01 40 10.9**	**-0.6**		
	comp=Z,20nm,0.3s,baz=307,slow=0.5,SNR=13								
YAK				LR	LR	01 50 15.7			
	comp=Z,274nm,19.5s,baz=147,slow=37								
YAK	**Yakutsk**	**24.76**	**346**	*e*P	**P**	**01 40 10.7**	**-0.8**		
YAK				*e**PP	**sP**	**01 40 32.3**	**+0.3**		
YAK				*e*		01 43 42.5			
YAK				*e*S	**S**	**01 44 27.3**	**-2.3**		
YAK				*e*		01 51 03.2			
YAK				pmax	pmax				
	comp=E,25nm,1.4s								
YAK				pmax	pmax				
	comp=N,51nm,1.2s								
YAK				pmax	pmax				
	comp=Z,89nm,1.0s								
YAK				smax	smax				
	comp=N,240nm,4.2s								
YAK				smax	smax				
	comp=E,389nm,6.2s								
YAK	**Yakutsk**	**24.76**	**346**	*e*P	**P**	**01 40 11.0**	**-0.6**		
	comp=E,76nm,0.9s								
SEY	**Seymchan**	**25.32**	**11**	P	**P**	**01 40 17.8**	**+1.1**		
	comp=E,35nm,1.0s,baz=205,slow=6.4,SNR=47								
BOD	**Bodaibo**	**26.53**	**326**	*e*P	**P**	**01 40 26.6**	**-1.0**		
BOD				pmax	pmax				
	comp=Z,31nm,0.9s								
XAN	**Xi'an**	**26.85**	**271**	P	**P**	**01 40 29.6**	**-1.2**		
XAN				pmax	pmax				
	comp=Z,12nm,0.7s								
XAN				pmax	pmax				
	comp=Z,60nm,6.7s								
XAN				LR	LR				
	comp=Z,130nm,17.3s								
XAN				LR	LR				
	comp=Z,65nm,17.5s								
XAN				LR	LR				
	comp=Z,140nm,14.7s								
SONA1	**Songino Array**	**27.31**	**302**	*e*P	**P**	**01 40 34.5**	**-0.4**		
SONM	**Songino Array**	**27.31**	**302**	P	**P**	**01 40 34.6**	**-0.3**		
	comp=Z,3.8nm,0.8s,baz=90,slow=8.1,SNR=23								
SONM				sP	**sP**	**01 40 54.6**	**-0.9**		
	comp=Z,4.6nm,1.0s,baz=97,slow=7.6,SNR=6.4								
SONM				PcP	**PcP**	**01 43 53.2**	**+0.1**		
	comp=Z,1.5nm,0.8s,baz=162,slow=2.4,SNR=4.3								
SONM				ScP	**ScP**	**01 47 28.4**	**-0.4**		
	comp=Z,0.8nm,0.9s,baz=150,slow=3.3,SNR=5.4								
SONM				LR	LR	01 51 40.7			
	comp=Z,129nm,18.6s,baz=108,slow=37								
ENH	**Enshi**	**27.84**	**263**	*e*P	**P**	**01 40 38.7**	**-1.0**		
	comp=Z,28nm,0.7s								
H11N2	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	02 11 02.6			
	baz=317,slow=75,SNR=370								
H11N1	**WAKE ISLAND Hy**	**28.62**	**124**	T	T	02 11 23.6			
	baz=317,slow=75,SNR=28								
H11N3	**WAKE ISLAND Hy**	**28.63**	**124**	T	T	02 11 21.1			
	baz=317,slow=75,SNR=220								
H11S1	**WAKE ISLAND Hy**	**29.37**	**126**	T	T	02 12 15.2			
	baz=318,slow=76,SNR=55								
H11S3	**WAKE ISLAND Hy**	**29.37**	**126**	T	T	02 12 08.3			
	baz=318,slow=76,SNR=1491								
H11S2	**WAKE ISLAND Hy**	**29.39**	**126**	T	T	02 12 09.2			
	baz=318,slow=76,SNR=960								
TLY	**Talaya**	**29.69**	**309**	P	**P**	**01 40 55.7**	**-0.2**		
	comp=Z,6.7nm,0.8s,baz=80,slow=6.5,SNR=7.0								
TLY	**Talaya**	**29.69**	**309**	*e*P	**P**	**01 40 56.2**	**+0.3**		
TLY				*e*		01 42 11.7			
TLY				pmax	pmax				
	comp=Z,22nm,1.5s								
TLY				MLR	MLR				
	comp=Z,216nm,19.0s								
ZAK	**Zakamensk**	**29.69**	**306**	*e*P	**P**	**01 40 55.2**	**-0.8**		
ZAK				pmax	pmax				
	comp=Z,11nm,1.2s								
LZH	**Lanzhou**	**30.21**	**277**	*e*P	**P**	**01 41 00.9**	**0.0**		
LZH				pP	pP	01 41 17.3	+2.5		
LZH				sP	sP	01 41 24.9	+3.5		
LZH				PcP	**PcP**	**01 44 02.3**	**+1.7**		
LZH				*e*S	**S**	**01 45 49.4**	**-7.0**		
LZH				sS	sS	01 46 24.6	+4.5		
LZH				SS	**SnSn**	**01 47 36.0**	**+1.7**		
LZH				pmax	pmax				
	comp=Z,39nm,1.0s								
LZH				pmax	pmax				
	comp=Z,74nm,4.1s								
MOY	**Mondy**	**31.31**	**308**	*e*P	**P**	**01 41 10.3**	**0.0**		
GYA	**Guiyang**	**31.84**	**258**⇑	*i*P	**P**	**01 41 15.0**	**-0.2**		
GYA				pP	sP	01 41 34.8	-1.0		
GYA				PP	**PnPn**	**01 42 24.0**	**+2.6**		
GYA				S	**S**	**01 46 19.3**	**-2.7**		
GYA				sS	sS	01 46 51.4	+5.7		
GYA				ScP	**ScP**	**01 47 43.8**	**+0.2**		
GYA				SS	**SnSn**	**01 48 13.9**	**-0.1**		
GYA				pmax	pmax				
	comp=Z,20nm,0.8s								
GYA				pmax	pmax				
	comp=Z,120nm,5.0s								
GYA				LR	LR				
	comp=Z,520nm,16.8s								
GYA				LR	LR				
	comp=Z,500nm,17.2s								
GYA				LR	LR				
	comp=Z,480nm,17.6s								
CD2	**Chengdu**	**32.05**	**268**	*e*P	**P**	**01 41 16.0**	**-1.0**		
CD2				pP	pP	01 41 33.5	+2.5		
CD2				sP	sP	01 41 42.4	+4.8		
CD2				S	**S**	**01 46 21.9**	**-3.3**		
CD2				sS	sS	01 46 52.5	+3.6		
CD2				pmax	pmax				
	comp=Z,20nm,0.5s								
CD2				pmax	pmax				
	comp=Z,140nm,5.4s								
CD2				LR	LR				
	comp=Z,220nm,14.9s								
CD2				LR	LR				
	comp=Z,240nm,14.9s								
CD2				LR	LR				
	comp=Z,150nm,16.9s								
GTA	**Gaotai**	**32.51**	**285**	*e*P	**P**	**01 41 21.1**	**+0.1**		
GTA				pP	sP	01 41 38.9	-2.7		
GTA				sP	pP	01 41 48.9	+14		
GTA				PcP	**PcP**	**01 44 08.3**	**+1.6**		
GTA				S	**S**	**01 46 26.5**	**-5.8**		
GTA				pmax	pmax				
	comp=Z,10.0nm,1.1s								
GTA				pmax	pmax				
	comp=Z,72nm,6.2s								
GTA				LR	LR				
	comp=Z,130nm,18.8s								
GTA				LR	LR				
	comp=Z,230nm,20.0s								
GTA				LR	LR				
	comp=Z,320nm,18.8s								
BILL	**Bilibino**	**32.55**	**17***c*	*i*P	**P**	**01 41 20.7**	**-0.2**		
BILL				*e*		01 42 24.0			
BILL				pmax	pmax				
	comp=Z,20nm,1.2s								
BILL				MLR	MLR				
	comp=Z,281nm,23.0s								
QIZ	**Qiongzhong**	**33.86**	**244**	P	**P**	**01 41 33.8**	**+1.0**		
QIZ				pP	**sP**	**01 41 50.9**	**-2.5**		
QIZ				S	**S**	**01 46 52.8**	**-0.4**		
QIZ				sS	**sS**	**01 47 22.4**	**+5.4**		
QIZ				LR	LR				
	comp=Z,270nm,10.1s								
QIZ				LR	LR				
	comp=Z,170nm,18.1s								
QIZ				LR	LR				
	comp=Z,150nm,17.6s								
TIXI	**Tiksi**	**33.91**	**353**	P	**P**	**01 41 32.1**	**-0.6**		
	comp=Z,5.9nm,0.7s,baz=138,slow=8.6,SNR=6.0								
TIXI	**Tiksi**	**33.91**	**353***d*	*i*P	**P**	**01 41 32.5**	**-0.2**		
TIXI				pmax	pmax				
	comp=Z,11nm,1.2s								
TIXI				MLR	MLR				
	comp=Z,174nm,18.0s								
KMI	**Kunming**	**35.55**	**260**	P	**P**	**01 41 47.5**	**-0.1**		
KMI				pP	sP	01 42 06.8	-1.5		
KMI				sP	pP	01 42 14.8	+13		
KMI				pmax	pmax				
	comp=Z,16nm,0.6s								
WMQ	**Urumqi**	**40.53**	**295**⇑	*i*P	**P**	**01 42 29.6**	**+0.4**		
WMQ				pP	sP	01 42 47.8	-2.2		
WMQ				PcP	**PcP**	**01 44 34.9**	**+4.3**		
WMQ				S	**S**	**01 48 37.8**	**+3.5**		
WMQ				pmax	pmax				
	comp=Z,59nm,1.0s								
WMQ				pmax	pmax				
	comp=Z,130nm,4.0s								
WMQ				LR	LR				
	comp=Z,260nm,17.0s								
WMQ				LR	LR				
	comp=Z,190nm,11.2s								
WMQ				LR	LR				
	comp=Z,350nm,20.9s								
ZAA0	**Zalesovo Array**	**41.23**	**311**	*e*P	**P**	**01 42 34.1**	**-0.5**		
ZAA0				*e*PcP	**PcP**	**01 44 32.3**	**-0.3**		
ZALV	**Zalesovo Beam**	**41.23**	**311**	P	**P**	**01 42 34.1**	**-0.6**		
	comp=Z,6.1nm,0.4s,baz=84,slow=7.1,SNR=47								
ZALV				sP	**sP**	**01 42 54.1**	**-1.3**		
	comp=Z,5.9nm,0.6s,baz=92,slow=7.3,SNR=4.8								
ZALV				PcP	**PcP**	**01 44 32.1**	**-0.5**		
	comp=Z,9.0nm,0.8s,baz=84,slow=3.6,SNR=6.4								
ZALV				LR	LR	02 00 25.7			
	comp=Z,157nm,18.2s,baz=70,slow=37								
CHTO	**Chiang Mai**	**42.01**	**255**	*e*P	**P**	**01 42 42.8**	**+1.4**		
CHTO	**Chiang Mai**	**42.01**	**255**	*e*P	**P**	**01 42 42.8**	**+1.4**		
NRIK	**Noril'sk**	**42.12**	**335**	P	**P**	**01 42 41.2**	**-0.5**		
	comp=Z,4.4nm,0.6s,baz=86,slow=8.7,SNR=7.5								
NRIK				PcP	**PcP**	**01 44 35.9**	**+0.6**		
	comp=Z,3.7nm,0.5s,baz=195,slow=6.2,SNR=3.7								
NRIK				LR	LR	02 01 18.3			
	comp=Z,330nm,18.9s,baz=116,slow=38								
NVS	**Novosibirsk**	**42.12**	**313**	*e*P	**P**	**01 42 42.0**	**+0.1**		
NVS				pmax	pmax				
	comp=Z,27nm,1.1s								
CMAR	**Chiang Mai Arr**	**42.22**	**254**	P	**P**	**01 42 43.1**	**-0.1**		
	comp=Z,0.9nm,0.3s,baz=42,slow=6.6,SNR=4.9								
CMAR				LR	LR	02 01 01.8			
	comp=Z,54nm,20.8s,baz=45,slow=37								
LSA	**Lhasa**	**42.45**	**274**	*e*P	**P**	**01 42 44.7**	**-0.8**		
LSA				pmax	pmax				
	comp=Z,11nm,0.8s								
LSA	**Lhasa**	**42.45**	**274**	*e*P	**P**	**01 42 44.7**	**-0.8**		
	comp=Z,11nm,0.8s								
MK01	**Makanchi Array**	**43.67**	**301**	*e*P	**P**	**01 42 53.7**	**-1.0**		
MK31	**Makanchi Array**	**43.68**	**301***ce*	P	**P**	**01 42 54.7**	**0.0**		
MK31				pmax	pmax				
	comp=Z,27nm,1.1s								
MK31	**Makanchi Array**	**43.68**	**301**	*e*P	**P**	**01 42 54.6**	**-0.1**		
MKAR	**Makanchi Array**	**43.68**	**301**	P	**P**	**01 42 54.5**	**-0.2**		
	comp=Z,11nm,0.8s,baz=83,slow=9.9,SNR=68								
MKAR				sP	**sP**	**01 43 14.6**	**-1.0**		
	comp=Z,22nm,0.8s,baz=83,slow=10,SNR=11								
MKAR				LR	LR	02 01 29.4			
	comp=Z,70nm,21.2s,baz=75,slow=37								
MAKZ	**Makanchi**	**43.88**	**301**	*e*P	**P**	**01 42 56.2**	**-0.2**		
MAKZ				pmax	pmax				
	comp=Z,30nm,1.0s								
MAKZ	**Makanchi**	**43.88**	**301**	*e*P	**P**	**01 42 56.2**	**-0.2**		
	comp=Z,30nm,1.0s								
SVW2	**Sparrevohn**	**44.17**	**38**	*e*P	**P**	**01 43 00.9**	**+2.4**		
	comp=Z,15nm,0.9s								
KURK	**Kurchatov**	**45.34**	**307**	*e*P	**P**	**01 43 07.5**	**-0.4**		
KURK	**Kurchatov**	**45.34**	**307**	*e*P	**P**	**01 43 07.5**	**-0.4**		
RSO	**Redoubt South**	**45.56**	**39**	*e*P	**P**	**01 43 08.8**	**-0.9**		
PPLA	**Purkeypile**	**45.79**	**36**	*e*P	**P**	**01 43 11.8**	**+0.3**		
	comp=Z,33nm,1.4s								
KDAK	**Kodiak Island**	**45.80**	**43**	*i*P	**P**	**01 43 12.1**	**+0.8**		
CAST	**Castle Rocks**	**45.84**	**35**	*e*P	**P**	**01 43 13.9**	**+2.2**		
	comp=Z,11nm,1.0s								
SPU	**Mount Spurr**	**45.88**	**38**	*e*P	**P**	**01 43 13.7**	**+1.6**		
KTH	**Kantishna Hill**	**46.36**	**35**	*e*P	**P**	**01 43 17.1**	**+1.2**		
	comp=Z,25nm,1.0s								
PDGK	**Podgornoye**	**46.44**	**297**	*i*P	**P**	**01 43 15.7**	**-0.9**		
PDGK				pmax	pmax				
	comp=Z,12nm,0.9s								
SUA	**Susitna One**	**46.50**	**38**	*e*P	**P**	**01 43 18.0**	**+1.0**		
	comp=Z,17nm,0.8s								
RC01	**Rabbit Creek A**	**47.01**	**38**	*e*P	**P**	**01 43 21.4**	**+0.5**		
	comp=Z,18nm,0.9s								
PMR	**Palmer**	**47.27**	**37**	*e*P	**P**	**01 43 23.2**	**+0.4**		
PMR				pmax	pmax				
	comp=Z,15nm,0.9s								
PMR	**Palmer**	**47.27**	**37**	*e*P	**P**	**01 43 23.2**	**+0.4**		
	comp=Z,15nm,0.9s								
RND	**Reindeer**	**47.30**	**35**	*e*P	**P**	**01 43 24.1**	**+1.0**		
RND				pmax	pmax				
	comp=Z,18nm,1.0s								
RND	**Reindeer**	**47.30**	**35**	*e*P	**P**	**01 43 24.1**	**+1.0**		
	comp=Z,18nm,1.0s								
GUN	**Gumba**	**47.38**	**275**	*e*P	**P**	**01 43 24.7**	**+0.1**		
	comp=Z,95nm,0.9s								
WRH	**Wood River Hil**	**47.59**	**33**	*e*P	**P**	**01 43 26.6**	**+1.3**		
	comp=Z,12nm,0.9s								
SML	**Sawmill**	**47.63**	**37**	*e*P	**P**	**01 43 26.3**	**+0.6**		
SML				pmax	pmax				
	comp=Z,17nm,0.8s								
SML	**Sawmill**	**47.63**	**37**	*e*P	**P**	**01 43 26.3**	**+0.6**		
	comp=Z,17nm,0.8s								
COLA	**College**	**47.68**	**33**	*e*P	**P**	**01 43 27.2**	**+1.3**		
COLA				pmax	pmax				
	comp=Z,5.0nm,0.8s								
COLA	**College**	**47.68**	**33**	*e*P	**P**	**01 43 27.2**	**+1.3**		
	comp=Z,4.5nm,0.8s								
CCB	**Clear Creek Bu**	**47.71**	**33**	*e*P	**P**	**01 43 27.4**	**+1.2**		
	comp=Z,13nm,1.4s								
KKN	**Kakani**	**47.91**	**275**	*e*P	**P**	**01 43 28.5**	**0.0**		
	comp=Z,83nm,0.9s								
PKIN	**Phulchoki**	**47.92**	**274**	*e*P	**P**	**01 43 28.7**	**0.0**		
	comp=Z,37nm,0.6s								
DHY	**Denali Highway**	**47.98**	**35**	*e*P	**P**	**01 43 29.6**	**+1.1**		
	comp=Z,6.3nm,0.8s								
HDA	**Harding Lake**	**48.09**	**34**	*e*P	**P**	**01 43 30.0**	**+0.8**		
	comp=Z,14nm,0.9s								
ILAR	**Eielson Array**	**48.10**	**33**	P	**P**	**01 43 29.5**	**+0.3**		
	comp=Z,7.2nm,0.7s,baz=268,slow=6.3,SNR=71								
ILAR				LR	LR	02 03 23.4			
	comp=Z,46nm,21.4s,baz=282,slow=36								
SCM	**Sheep Creek Mo**	**48.10**	**37**	*e*P	**P**	**01 43 30.8**	**+1.4**		
SCM				pmax	pmax				
	comp=Z,18nm,0.8s								
SCM	**Sheep Creek Mo**	**48.10**	**37**	*e*P	**P**	**01 43 30.8**	**+1.4**		
	comp=Z,18nm,0.8s								
GLI	**Glacier Island**	**48.31**	**38**	*e*P	**P**	**01 43 32.1**	**+1.1**		
GKN	**Gorkha**	**48.31**	**275**	*e*P	**P**	**01 43 31.3**	**-0.3**		
	comp=Z,127nm,1.1s								
FID	**Port Fidalgo**	**48.62**	**38**	*e*P	**P**	**01 43 34.6**	**+1.3**		
KLU	**Klutina**	**48.81**	**37**	*e*P	**P**	**01 43 36.5**	**+1.7**		
	comp=Z,15nm,0.9s								
DANN	**Dangsing**	**48.84**	**276**	*e*P	**P**	**01 43 36.0**	**+0.2**		
PAX	**Paxson**	**48.86**	**35**	*e*P	**P**	**01 43 36.6**	**+1.4**		
PAX				pmax	pmax				
	comp=Z,11nm,0.8s								
PAX	**Paxson**	**48.86**	**35**	*e*P	**P**	**01 43 36.6**	**+1.4**		
	comp=Z,11nm,0.8s								
DIV	**Divide**	**48.92**	**38**	*e*P	**P**	**01 43 36.9**	**+1.2**		
	comp=Z,19nm,0.9s								
EYAK	**Cordova Ski Ar**	**49.01**	**39**	*e*P	**P**	**01 43 38.1**	**+1.8**		
	comp=Z,24nm,1.0s								
KOLN	**Koldanda**	**49.23**	**276**	*e*P	**P**	**01 43 38.3**	**-0.4**		
TKM2	**Tokmak 2**	**49.28**	**297**	*i*P	**P**	**01 43 38.8**	**0.0**		
TKM2				pmax	pmax				
	comp=Z,18nm,1.0s								
DOT	**Dot Lake**	**49.42**	**34**	*e*P	**P**	**01 43 39.8**	**+0.4**		
	comp=Z,25nm,0.9s								
BMRM	**Bremner River**	**49.51**	**38**	*e*P	**P**	**01 43 41.5**	**+1.4**		
	comp=Z,15nm,0.9s								
PYUN	**Piuthan**	**49.55**	**276**	*e*P	**P**	**01 43 41.1**	**0.0**		
	comp=Z,121nm,1.0s								
VOSK	**Vostochnaya**	**49.60**	**311**	P	**P**	**01 43 40.0**	**-0.9**		
VOSK				pmax	pmax				
	comp=Z,19nm,1.1s								
VOSK	**Vostochnaya**	**49.60**	**311**	*e*P	**P**	**01 43 40.5**	**-0.4**		
	comp=Z,20nm,1.0s								
CHKZ	**Chkalovo**	**49.60**	**312**	*i*P	**P**	**01 43 39.3**	**-1.6**		
CHKZ				pmax	pmax				
	comp=Z,18nm,1.0s								
BVA0	**Borovoye Array**	**49.88**	**311**	P	**P**	**01 43 42.0**	**-1.0**		
BVA0				pmax	pmax				
	comp=Z,10.0nm,0.9s								
OTUK	**Ortayu**	**49.89**	**305**	P	**P**	**01 43 42.5**	**-0.7**		
OTUK				pmax	pmax				
	comp=Z,15nm,0.9s								
BRVK	**Borovoye**	**49.94**	**312***c*	*i*P	**P**	**01 43 43.1**	**-0.3**		
BRVK				pmax	pmax				
	comp=Z,32nm,0.8s								
BRVK	**Borovoye**	**49.94**	**312**	*e*P	**P**	**01 43 43.1**	**-0.3**		
	comp=Z,13nm,0.9s								
FRU	**Bishkek**	**49.99**	**298**	*e*P	**P**	**01 43 40.0**	**-4.0**		
FRU				*e*		01 43 52.0			
FRU				*e*		01 44 04.0			
AAK	**Ala-Archa**	**50.13**	**297***ce*	P	**P**	**01 43 45.1**	**-0.2**		
AAK				pmax	pmax				
	comp=Z,11nm,1.0s								
AAK	**Ala-Archa**	**50.13**	**297**	*e*P	**P**	**01 43 45.2**	**-0.1**		
	comp=Z,1.7nm,0.3s								
KSH	**Kashi**	**50.16**	**293**	*e*P	**P**	**01 43 49.8**	**+4.3**		
KSH				*ep*P	sP	01 44 08.3	+1.7		
KSH				*es*P	pP	01 44 16.9	+17		
KSH				*e*PP	**PP**	**01 45 46.9**	**+6.0**		
KSH				S	**S**	**01 50 54.3**	**+1.0**		
KSH				ScS	**ScS**	**01 53 30.5**	**-1.3**		
KSH				pmax	pmax				
	comp=Z,23nm,1.3s								
KSH				LR	LR				
	comp=Z,120nm,7.2s								
KSH				LR	LR				
	comp=Z,96nm,4.5s								
KSH				LR	LR				
	comp=Z,94nm,10.6s								
CRQM	**Cirque**	**50.25**	**38**	*e*P	**P**	**01 43 48.0**	**+2.1**		
	comp=Z,24nm,1.0s								
EGAK	**Eagle**	**50.54**	**33**	*e*P	**P**	**01 43 48.5**	**+0.7**		
	comp=Z,1.4nm,0.7s								
ZRNK	**Zerenda**	**50.71**	**312**	*i*P	**P**	**01 43 48.7**	**-0.6**		
ZRNK				pmax	pmax				
	comp=Z,18nm,0.9s								
ZRNK	**Zerenda**	**50.71**	**312**	*e*P	**P**	**01 43 49.2**	**-0.1**		
	comp=Z,15nm,0.8s								
DAWY	**Dawson**	**51.41**	**33**	*e*P	**P**	**01 43 55.5**	**+1.1**		
	comp=Z,20nm,1.9s								
MNAS	**Manas**	**51.57**	**298**	*i*P	**P**	**01 43 55.5**	**-0.6**		
MNAS				pmax	pmax				
	comp=Z,10.0nm,0.8s								
KK31	**Karatay Array**	**52.73**	**299***ce*	P	**P**	**01 44 03.8**	**-0.7**		
KK31				pmax	pmax				
	comp=Z,14nm,1.0s								
KKAR	**Karatay Array**	**52.73**	**299**	*e*P	**P**	**01 44 04.1**	**-0.4**		
KKAR	**Karatay Array**	**52.73**	**299**	*e*P	**P**	**01 44 04.1**	**-0.4**		
PSI	**Prapat**	**52.84**	**239**	LR	LR	02 09 35.6			
	comp=Z,112nm,18.3s,slow=39								
INK	**Inuvik**	**52.95**	**28**	P	**P**	**01 44 06.9**	**+1.2**		
	comp=Z,12nm,0.8s,baz=294,slow=6.8,SNR=18								
INK	**Inuvik**	**52.95**	**28**	*e*P	**P**	**01 44 06.6**	**+0.9**		
	comp=Z,16nm,0.9s								
SVE	**Sverdlovsk**	**54.32**	**318***de*	P	**P**	**01 44 16.1**	**+0.2**		
SVE				pmax	pmax				
	comp=Z,43nm,1.0s								
SVE				MLR	MLR				
	comp=Z,237nm,17.0s								
SOKR	**Solikamsk**	**55.41**	**322***d*	*i*P	**P**	**01 44 22.1**	**-1.6**		
SOKR				pmax	pmax				
	comp=Z,28nm,1.5s								
ARU	**Arti**	**55.53**	**318***c*	*i*P	**P**	**01 44 24.4**	**-0.3**		
ARU						01 45 24.6			
ARU						01 46 27.7			
ARU				S	**S**	**01 52 07.7**	**+2.0**		
ARU				SS	**SS**	**01 55 52.5**	**+1.9**		
ARU				pmax	pmax				
	comp=Z,42nm,1.2s								
ARU				MLR	MLR				
	comp=Z,207nm,19.0s								
ARU	**Arti**	**55.53**	**318**	*e*P	**P**	**01 44 24.2**	**-0.4**		
	comp=Z,26nm,0.9s								
KBL	**Kabul**	**57.25**	**290**	*e*P	**P**	**01 44 37.3**	**-0.2**		
KBL				pmax	pmax				
	comp=Z,30nm,1.3s								
KBL	**Kabul**	**57.25**	**290**	*e*P	**P**	**01 44 37.3**	**-0.2**		
	comp=Z,30nm,1.3s								
DLBC	**Dease Lake**	**57.28**	**39**	*e*P	**P**	**01 44 39.4**	**+2.2**		
	comp=Z,18nm,1.1s								
AB31	**Akbulak array**	**57.30**	**310***ce*	P	**P**	**01 44 36.1**	**-1.2**		
AB31				pmax	pmax				
	comp=Z,9.0nm,0.7s								
ABKAR	**Akbulak array**	**57.30**	**310**	*e*P	**P**	**01 44 36.8**	**-0.6**		
	comp=Z,7.3nm,0.7s								
FITZ	**Fitzroy Crossi**	**58.30**	**198**	*e*P	**P**	**01 44 46.4**	**+1.8**		
	comp=Z,31nm,1.4s								
WRAB	**Tennant Creek**	**58.52**	**188**⇓	*e*P	**P**	**01 44 46.4**	**+0.3**		
WRAB				pmax	pmax				
	comp=Z,12nm,0.8s								
WB2	**Warramunga Arr**	**58.53**	**188**	*e*P	**P**	**01 44 45.7**	**-0.5**		
	comp=Z,23nm,0.8s								
WRA	**Warramunga Arr**	**58.53**	**188**	P	**P**	**01 44 45.5**	**-0.7**		
	comp=Z,6.3nm,0.6s,baz=5.7,slow=6.9,SNR=61								
WRA				pP	**pP**	**01 45 00.4**	**-0.8**		
	comp=Z,21nm,0.8s,baz=7.8,slow=7.7,SNR=27								
RES	**Resolute Bay**	**61.12**

E03A **Lebam** 66.10 49 *e*P P 01 45 39.4 +2.7
comp=Z,36nm,1.1s
MOS **Moscow** 66.31 323 *e*P P 01 45 37.4 -0.4
MOS pmax pmax
comp=Z,46nm,1.2s
D05A **Enumclaw** 66.69 48 *e*P P 01 45 43.0 +2.6
comp=Z,20nm,1.0s
VRH **Novokhopyorsk** 66.76 318 *e*P P 01 45 39.6 -1.1
VRH pmax pmax
comp=Z,10.0nm,0.5s
SUF **Sumiainen** 66.87 333 P P 01 45 41.4 +0.2
SUF pmax pmax
comp=Z,30nm,1.8s
TDL **Tradedollar La** 67.00 48 P P 01 45 44.4 +1.9
LON **Longmire** 67.02 48 *e*P P 01 45 44.3 +1.7
LON pmax pmax
comp=Z,17nm,1.9s
LON **Longmire** 67.02 48 *e*P P 01 45 44.2 +1.7
comp=Z,17nm,1.9s
OBN **Obninsk** 67.17 323 *de*P P 01 45 43.1 -0.1
OBN *e* 01 46 10.7
OBN *e* 01 48 11.8
OBN *e*S S 01 54 37.6 +4.4
OBN pmax pmax
comp=Z,37nm,1.7s
OBN MLR MLR
comp=Z,66nm,15.0s
ETW **Entiat** 67.42 47 P P 01 45 46.8 +1.6
B08A **Colville Reser** 67.57 45 *e*P P 01 45 47.5 +1.5
comp=Z,18nm,1.3s
FIA1 **FINESS Array S** 67.71 332 *e*P P 01 45 46.8 +0.2
comp=Z,32nm,1.0s
FINES **FINESS Array B** 67.72 332 P P 01 45 46.2 -0.4
comp=Z,16nm,1.0s,baz=60,slow=9.1,SNR=18
FINES sP **sP** 01 46 08.0 -0.2
comp=Z,9.7nm,0.7s,baz=47,slow=8.4,SNR=5.6
FINES LR LR 02 16 50.0
comp=Z,96nm,22.0s,baz=45,slow=37
EDM **Edmonton** 68.00 39 *e*P P 01 45 49.1 +0.4
EDM pmax pmax
comp=Z,30nm,1.1s
EDM **Edmonton** 68.00 39 *e*P P 01 45 49.1 +0.4
comp=Z,30nm,1.1s
VSR **Storozhevoye** 68.09 319 *e*P P 01 45 48.6 -0.6
VSR pmax pmax
comp=Z,20nm,1.1s
C09A **Chrisman Ranch** 68.47 46 *e*P P 01 45 53.3 +1.6
comp=Z,16nm,0.8s
NEW **Newport** 68.86 45 P P 01 45 55.1 +1.1
comp=Z,8.5nm,0.8s,baz=317,slow=5.1,SNR=12
NEW **Newport** 68.86 45 *e*P P 01 45 55.2 +1.1
NEW pmax pmax
comp=Z,22nm,1.3s
NEW **Newport** 68.86 45 *e*P P 01 45 55.2 +1.1
comp=Z,22nm,1.3s
SUMG **Summit** 69.25 0⇑ *i*P P 01 45 57.3 +0.8
comp=Z,28nm,0.9s
SUMG **Summit** 69.25 0⇑ *i*P P 01 45 57.3 +0.8
SUMG pmax pmax
comp=Z,28nm,0.9s
SUMG **Summit** 69.25 0 *e*P P 01 45 56.9 +0.3
comp=Z,26nm,0.8s
VSU **Vasula** 69.40 329 *de*P P 01 45 57.4 +0.3
VSU pmax pmax
comp=Z,58nm,1.0s
K05A **Summer Lake** 69.76 51 *e*P P 01 46 02.3 +2.4
comp=Z,24nm,1.0s
NCK **Nalchik** 69.96 310⇓ *e*P P 01 46 01.1 +0.2
NCK pmax pmax
comp=Z,13nm,1.2s
WALA **Waterton Lakes** 70.14 43 *e*P P 01 46 03.2 +1.2
comp=Z,16nm,1.0s
ZEI **Tsey** 70.17 309 *e*P P 01 46 00.7 -1.8
ZEI pmax pmax
comp=Z,18nm,0.4s
KIV **Kislovodsk** 70.24 311 *e*P P 01 46 02.7 0.0
KIV *e*S S 01 55 10.6 +0.3
KIV pmax pmax
comp=Z,48nm,0.9s
KIV pmax pmax
comp=Z,10.0nm,4.7s
KIV MLR MLR
comp=Z,61nm,17.0s
KIV **Kislovodsk** 70.24 311 *e*P P 01 46 02.9 +0.2
comp=Z,49nm,1.0s
KBZ **Khabaz** 70.24 310 P P 01 46 02.7 +0.1
comp=Z,13nm,0.9s,baz=30,slow=4.2,SNR=20
KBZ LR LR 02 17 58.7
comp=Z,53nm,18.1s,baz=48,slow=37
BSMT **Bassoo Peak** 70.38 44 P P 01 46 05.3 +1.7
BLMT **Blacktail Moun** 70.51 44 *e*P P 01 46 05.9 +1.4
NEY **Neytrino** 70.62 310⇑ *e*P P 01 46 06.6 +1.4
NEY pmax pmax
comp=Z,1.0nm,0.8s
BMO **Blue Mountains** 70.70 48 *e*P P 01 46 06.7 +1.1
comp=Z,19nm,1.6s
JTMT **Jette** 70.71 44 *e*P P 01 46 07.4 +1.8
SCO **Scoresbysund** 70.72 354 *i*P P 01 46 05.6 +0.5
comp=Z,14nm,1.3s
SCO **Scoresbysund** 70.72 354 *i*P P 01 46 05.6 +0.5
SCO pmax pmax
comp=Z,14nm,1.3s
YBMT **Yellow Bay** 70.79 44 *e*P P 01 46 07.8 +1.8
SWMT **Swartz Lake** 71.01 44 *e*P P 01 46 08.7 +1.3
GNI **Garni** 71.14 307 *ce*P P 01 46 08.7 +0.3
GNI pmax pmax
comp=Z,24nm,1.2s
ORV **Oroville** 71.17 54 *e*P P 01 46 08.9 +0.6
ORV pmax pmax
comp=Z,11nm,1.3s
ORV **Oroville** 71.17 54 *e*P P 01 46 08.9 +0.6
comp=Z,11nm,1.3s
WVOR **Wild Horse Val** 71.30 50 *e*P P 01 46 10.5 +1.3
WVOR pmax pmax
comp=Z,18nm,1.6s
WVOR **Wild Horse Val** 71.30 50 *e*P P 01 46 10.5 +1.3
comp=Z,18nm,1.6s
UOSS **Minazif** 71.72 288 *e*P P 01 46 11.8 -0.1
comp=Z,35nm,1.6s
NACGM **Naroch** 71.73 327 *e* P 01 46 22.0 +11
AFDM **Forest Hills D** 71.85 55 *e*P P 01 46 14.0 +1.5
comp=Z,11nm,1.4s
SOC **Sochi** 72.21 312 *e*P P 01 46 13.9 -0.6
SOC *e* 01 48 58.7
SOC *e*S S 01 55 30.2 -2.6
SOC pmax pmax
comp=Z,13nm,0.6s
SOC MLR MLR
comp=Z,131nm,15.0s
FFC **Flin Flon** 72.31 33 *e*P P 01 46 15.3 +0.4
FFC pmax pmax
comp=Z,15nm,0.9s
FFC **Flin Flon** 72.31 33 *e*P P 01 46 15.3 +0.4
comp=Z,15nm,0.9s
MFID **Camas Ranch** 72.40 48 *e*P P 01 46 17.1 +1.3
comp=Z,7.7nm,0.9s
FCC **Fort Churchill** 72.56 27 *e*P P 01 46 16.9 +0.6
FCC pmax pmax
comp=Z,21nm,1.0s
FCC **Fort Churchill** 72.56 27 *e*P P 01 46 16.9 +0.6
comp=Z,21nm,1.0s
CMB **Columbia Colle** 72.75 55 *e*P P 01 46 19.0 +1.1
CMB pmax pmax
comp=Z,16nm,0.7s
CMB **Columbia Colle** 72.75 55 *e*P P 01 46 19.0 +1.1
comp=Z,16nm,0.7s
NC405 **NORSAR Array S** 72.80 337 *e*P P 01 46 17.9 +0.3
ANN **Anapa** 72.80 314 *e*P P 01 46 17.8 -0.1
ANN pmax pmax
comp=Z,48nm,1.3s
NC303 **NORSAR Array S** 72.81 337 *e*P P 01 46 18.2 +0.4
LRM **Limekiln Ridge** 72.88 45 *e*P P 01 46 20.1 +1.3
NC204 **NORSAR Array S** 72.95 338 *e*P P 01 46 18.7 0.0
NB2 **NORSAR Subarra** 73.00 337 P P 01 46 18.9 -0.1
comp=Z,32nm,1.0s,baz=41,slow=6.2
NB2 **NORSAR Subarra** 73.00 337 P P 01 46 18.9 -0.1
baz=41,slow=6.2
NB2 **NORSAR Subarra** 73.00 337 P P 01 46 18.5 -0.5
NB2 pmax pmax
comp=Z,25nm,1.0s
NOA **NORSAR Array B** 73.00 337 P P 01 46 18.9 -0.1
comp=Z,19nm,0.9s,baz=39,slow=5.9,SNR=55
NOA sP **sP** 01 46 40.2 -0.4
comp=Z,7.1nm,0.7s,baz=40,slow=5.9,SNR=6.0
NOA LR LR 02 21 00.4
comp=Z,168nm,21.7s,baz=40,slow=38

DLMT **Dillon** 73.08 45 *e*P P 01 46 20.4 +0.6
comp=Z,14nm,1.0s
NBO02 **NORSAR Array S** 73.11 337 *e*P P 01 46 19.6 +0.1
HLID **Hailey** 73.14 48 *e*P P 01 46 21.5 +1.2
comp=Z,4.3nm,0.9s
NBO00 **NORSAR Array S** 73.14 337 *e*P P 01 46 20.1 +0.3
NC602 **NORSAR Array S** 73.14 337 *e*P P 01 46 19.8 +0.1
NAO01 **NORSAR Array S** 73.26 337 *e*P P 01 46 20.6 +0.2
BMN **Battle Mountai** 73.33 51 *e*P P 01 46 23.0 +1.6
BMN pmax pmax
comp=Z,12nm,1.1s
BMN **Battle Mountai** 73.33 51 *e*P P 01 46 23.0 +1.6
comp=Z,12nm,1.1s
AKASG **Malin Array Be** 73.38 322 P P 01 46 20.9 -0.5
comp=Z,11nm,0.7s,baz=45,slow=6.6,SNR=41
AKASG sP **sP** 01 46 42.0 -1.0
comp=Z,4.2nm,0.5s,baz=46,slow=6.0,SNR=6.4
AKASG LR LR 02 21 31.5
comp=Z,120nm,18.2s,baz=60,slow=38
AKBB **Malin Array Si** 73.38 322 *e*P P 01 46 21.0 -0.3
AKBB pmax pmax
comp=Z,21nm,0.9s
AKBB **Malin Array Si** 73.38 322 *e*P P 01 46 21.0 -0.3
comp=Z,21nm,0.9s
KIEV **Kiev** 73.40 322 *c i*P P 01 46 20.7 -0.7
KIEV pmax pmax
comp=Z,19nm,1.0s
KIEV **Kiev** 73.40 322 *e*P P 01 46 20.9 -0.5
comp=Z,20nm,0.9s
AK11 **Malin Array Si** 73.43 322 *e*P P 01 46 21.4 -0.2
BOZ **Bozeman (W)** 73.44 45 *e*P P 01 46 23.2 +1.2
BOZ pmax pmax
comp=Z,30nm,1.5s
BOZ **Bozeman (W)** 73.44 45 *e*P P 01 46 23.1 +1.2
comp=Z,30nm,1.5s
SUW **Suwalki** 73.88 327 *e*P P 01 46 23.8 -0.3
SUW **Suwalki** 73.88 327 *e*P P 01 46 23.8 -0.3
GCMT **Greycliff** 74.42 44 *e*P P 01 46 29.4 +1.8
SFJD **Kangerlussuaq** 74.43 5 *i*P P 01 46 27.2 +0.1
comp=Z,23nm,1.1s
SFJD **Kangerlussuaq** 74.43 5 *i*P P 01 46 27.2 +0.1
SFJD pmax pmax
comp=Z,23nm,1.1s
KONO **Kongsberg** 74.60 337⇓ *e*P P 01 46 28.1 -0.1
KONO pmax pmax
comp=Z,123nm,2.5s
H17A **Grant Village** 74.80 45 *e*P P 01 46 33.0 +3.0
comp=Z,19nm,1.0s
IMW **Indian Meadow** 74.91 46 *e*P P 01 46 32.8 +2.0
comp=Z,12nm,0.8s
FLWY **Flagg Ranch** 74.93 45 *e*P P 01 46 33.5 +2.7
comp=Z,22nm,1.4s
MOOW **Moose Ponds** 75.12 46 *e*P P 01 46 33.5 +1.7
comp=Z,8.9nm,1.0s
TPAW **Teton Pass** 75.16 46 *e*P P 01 46 34.0 +1.8
comp=Z,8.7nm,0.8s
HVU **Hansel Valley** 75.19 48 *e*P P 01 46 33.9 +1.7
HVU pmax pmax
comp=Z,9.0nm,0.8s
HVU **Hansel Valley** 75.19 48 *e*P P 01 46 33.9 +1.7
comp=Z,8.8nm,0.8s
SNOW **Snow King Moun** 75.29 46 *e*P P 01 46 34.9 +2.0
comp=Z,9.9nm,1.0s
REDW **Red Top Meadow** 75.30 46 *e*P P 01 46 33.8 +0.8
comp=Z,10nm,0.9s
SORM **Soroca** 75.51 321⇑ *i*P P 01 46 33.2 -0.5
AHID **Auburn Hatcher** 75.53 47 *e*P P 01 46 35.9 +1.7
comp=Z,8.1nm,0.7s
BGU **Big Grassy Mou** 75.57 49 *e*P P 01 46 36.4 +2.0
comp=Z,5.5nm,1.0s
R11A **Troy Canyon, C** 75.60 52 *e*P P 01 46 36.0 +1.4
comp=Z,12nm,1.2s
LAO **LASA Array** 75.66 41 *e*P P 01 46 35.7 +1.0
comp=Z,32nm,1.1s
HWUT **Hardware Ranch** 76.00 48 *e*P P 01 46 38.3 +1.4
comp=Z,20nm,1.2s
TCUT **Toone Canyon** 76.40 48 *e*P P 01 46 41.1 +1.9
comp=Z,17nm,0.8s
BW06 **Boulder Array** 76.41 46 *e*P P 01 46 40.1 +0.8
comp=Z,7.6nm,0.8s
PD31 **Pinedale Array** 76.41 46 *e*P P 01 46 40.1 +0.8
PDAR **Pinedale Array** 76.41 46 P P 01 46 40.0 +0.8
comp=Z,6.8nm,0.7s,baz=262,slow=2.5,SNR=60
PDAR LR LR 02 25 17.7
comp=Z,14nm,18.2s,baz=294,slow=40
LVV **L'vov** 76.43 324 *e*P P 01 46 39.6 +0.7
LEOM **Leova** 76.68 319 *i*P P 01 46 40.5 +0.1
GSC **Goldstone, Bar** 76.69 56 *e*P P 01 46 42.1 +1.4
GSC pmax pmax
comp=Z,5.0nm,0.9s
GSC **Goldstone, Bar** 76.69 56 *e*P P 01 46 42.1 +1.4
comp=Z,4.9nm,0.9s
JLU **Jordanelle** 76.70 49 *e*P P 01 46 42.8 +1.8
comp=Z,17nm,1.4s
KWP **Kalwaria Pacla** 77.17 324 *e*P P 01 46 43.7 +0.6
KWP **Kalwaria Pacla** 77.17 324 *e*P P 01 46 43.7 +0.6
BUR08 **Bucovina Ar. S** 77.40 322 *e*P P 01 46 44.9 +0.3
BURAR **Bucovina Array** 77.41 322 ⇑ *i*P P 01 46 44.8 +0.2
TESR **Tescani** 77.46 320 ⇑ *i*P P 01 46 44.9 +0.1
MSU **Marysvale** 77.59 51 *e*P P 01 46 48.3 +2.3
MSU **Marysvale** 77.59 51 *e*P P 01 46 48.3 +2.3
CFR **Carcaliu** 77.61 318 ⇑ *i*P P 01 46 45.7 +0.1
TMUT **Trail Mountain** 77.68 49 *e*P P 01 46 47.5 +1.0
comp=Z,19nm,1.5s
KOLS **Kolonicke sedl** 77.87 324 *e*P P 01 46 47.1 +0.1
KOLS pmax pmax
comp=Z,8.0nm,1.1s
KOLS **Kolonicke sedl** 77.87 324 *e*P P 01 46 47.1 +0.1
LCMT **Little Creek M** 77.89 52 *e*P P 01 46 49.5 +2.0
comp=Z,9.4nm,1.1s
MTPU **Mount Pierson** 77.89 51 *e*P P 01 46 49.7 +1.9
PLOR **Plostina** 77.92 320 ⇓ *i*P P 01 46 48.3 +0.9
TIRR **Tirgusor** 77.95 318 ⇑ *i*P P 01 46 47.0 -0.5
STHS **Stebnicka Huta** 77.99 325 *e*P P 01 46 49.1 +1.4
STHS pmax pmax
comp=Z,11nm,1.2s
STHS **Stebnicka Huta** 77.99 325 *e*P P 01 46 49.1 +1.4
OJC **Ojcow** 78.05 326 *e*P P 01 46 48.2 +0.2
OJC **Ojcow** 78.05 326 *e*P P 01 46 48.5 +0.5
OJC pmax pmax
comp=Z,27nm,1.0s
OJC **Ojcow** 78.05 326 *e*P P 01 46 48.5 +0.5
comp=Z,27nm,1.0s
TLB **Topalu** 78.06 318 ⇓ *i*P P 01 46 48.6 +0.5
UZH **Uzhgorod** 78.08 324 ⇑ *i*P P 01 46 48.3 +0.1
UZH *i* 01 47 04.8
ULM **Lac du Bonnet** 78.11 34 P P 01 46 48.6 +0.3
comp=Z,4.1nm,0.7s,baz=325,slow=7.6,SNR=5.1
ULM **Lac du Bonnet** 78.11 34 *e*P P 01 46 48.7 +0.3
ULM pmax pmax
comp=Z,16nm,1.4s
ULM **Lac du Bonnet** 78.11 34 *e*P P 01 46 48.6 +0.3
comp=Z,16nm,1.4s
BR131 **Keskin Array S** 78.17 312 *e*P P 01 46 49.0 0.0
BRTR **Keskin Array B** 78.17 312 P P 01 46 48.9 -0.2
comp=Z,3.3nm,0.9s,baz=83,slow=3.9,SNR=21
BRTR LR LR 02 24 58.3
comp=Z,28nm,20.2s,baz=36,slow=38
K22A **Casper** 78.17 44 *e*P P 01 46 49.7 +0.6
comp=Z,12nm,1.1s
BMR **Baia Mare** 78.20 323 ⇑ *i*P P 01 46 39.9 -8.9
SRU **San Rafael Swe** 78.20 49 *e*P P 01 46 50.9 +1.6
SRU pmax pmax
comp=Z,15nm,0.8s
SRU **San Rafael Swe** 78.20 49 *e*P P 01 46 50.9 +1.6
comp=Z,15nm,0.8s
CRVS **Cervenica-Dubn** 78.27 324 *e*P P 01 46 49.7 +0.5
CRVS **Cervenica-Dubn** 78.27 324 *e*P P 01 46 49.7 +0.5
NIE **Niedzica** 78.42 325 *e*P P 01 46 50.8 +0.7
NIE **Niedzica** 78.42 325 *e*P P 01 46 50.8 +0.7
DOPR **Dopca** 78.47 320 ⇓ *i*P P 01 46 51.8 +1.4
ISR **Istrita** 78.48 319 ⇓ *i*P P 01 46 51.6 +1.1
MLR **Muntele Rosu** 78.52 320 ⇓ *i*P P 01 46 51.3 +0.4
MLR **Muntele Rosu** 78.52 320 *e*P P 01 46 51.2 +0.4
MLR pmax pmax
comp=Z,23nm,1.5s
MLR **Muntele Rosu** 78.52 320 *e*P P 01 46 51.2 +0.3
comp=Z,23nm,1.5s
RSSD **Black Hills** 78.52 42 *e*P P 01 46 51.0 0.0
RSSD pmax pmax
comp=Z,8.0nm,0.9s
RSSD **Black Hills** 78.52 42 *e*P P 01 46 51.0 0.0
comp=Z,8.3nm,0.9s
ANTO **Ankara** 78.57 312 *e*P P 01 46 51.9 +0.7
ANTO pmax pmax
comp=Z,14nm,0.8s
ANTO **Ankara** 78.57 312 *e*P P 01 46 51.9 +0.7
comp=Z,14nm,0.8s
BR231 **Keskin MP Arra** 78.60 312 *e*P P 01 46 48.6 -2.7
W13A **Hualapai Mount** 78.69 54 *e*P P 01 46 53.5 +1.5
comp=Z,5.0nm,1.1s
CJR **Cluj-Napoca** 78.83 322 ⇓ *i*P P 01 46 53.2 +0.8
U15A **North Rim** 78.85 52 *e*P P 01 46 55.0 +2.0
comp=Z,39nm,1.8s
O20A **White River Ci** 78.87 47 *e*P P 01 46 54.2 +1.2
comp=Z,9.3nm,0.9s
LANS **Liptovska Anna** 78.98 326 *e*P P 01 46 54.5 +1.3
LANS **Liptovska Anna** 78.98 326 *e*P P 01 46 54.5 +1.3
VOIR 79.01 320 ⇑ *i*P P 01 46 54.5 +1.0
VOIR 79.01 320 P P 01 46 54.4 +1.0
OKC **Ostrava-Krasne** 79.05 327 ⇓ *i*P P 01 46 54.3 +0.8
OKC **Ostrava-Krasne** 79.05 327 ⇓ *i*P P 01 46 54.3 +0.8
KSP **Ksiaz** 79.07 328 *e*P P 01 46 54.0 +0.4
KSP **Ksiaz** 79.07 328 *e*P P 01 46 54.0 +0.4
Y12C **Blythe** 79.12 56 *e*P P 01 46 55.8 +1.6
comp=Z,9.9nm,0.8s
DRGR 79.20 322 ⇓ *i*P P 01 46 55.2 +0.7
ARR **Arges** 79.27 320 ⇑ *i*P P 01 46 56.2 +1.3
MORC **Moravsky Berou** 79.35 327 ⇓ *i*P P 01 46 56.1 +0.9
MORC **Moravsky Berou** 79.35 327 *e*P P 01 46 55.7 +0.5
MORC pmax pmax
comp=Z,72nm,1.0s
MORC **Moravsky Berou** 79.35 327 *e*P P 01 46 55.7 +0.5
comp=Z,72nm,1.0s
GLA **Glamis** 79.37 56 *e*P P 01 46 57.2 +1.6
GLA pmax pmax
comp=Z,10.0nm,0.9s
GLA **Glamis** 79.37 56 *e*P P 01 46 57.2 +1.6
comp=Z,10nm,0.9s
PV09 **Paradox Valley** 79.43 49 *e*P P 01 46 58.0 +1.8
UPC **Upice** 79.44 328 ⇓ *e*P P 01 46 56.3 +0.7
UPC **Upice** 79.44 328 *e*P P 01 46 56.3 +0.7
KRLC **Kraliky** 79.45 328 *e*P P 01 46 56.4 +0.6
KRLC **Kraliky** 79.45 328 *e*P P 01 46 56.4 +0.6
PV10 **Paradox Valley** 79.56 49 *e*P P 01 46 58.8 +2.0
LOT **Lotru** 79.64 321 ⇓ *i*P P 01 46 57.6 +0.6
PHWY **Pilot Hill** 79.67 45 *e*P P 01 46 58.7 +1.3
comp=Z,14nm,1.6s
N23A **Red Feather La** 79.67 46 *e*P P 01 46 59.3 +1.8
comp=Z,12nm,1.0s
PSZ **Piszkesteto** 79.70 325 ⇑ *i*P P 01 46 57.8 +0.6
PSZ **Piszkesteto** 79.70 325 *e*P P 01 46 57.8 +0.6
PSZ pmax pmax
comp=Z,24nm,1.1s
PSZ **Piszkesteto** 79.70 325 *e*P P 01 46 57.8 +0.6
comp=Z,24nm,1.1s
PV05 **Paradox Valley** 79.72 49 *e*P P 01 46 59.5 +1.8
VYHS **Vyhne** 79.75 325 *e*P P 01 46 57.8 +0.4
VYHS pmax pmax
comp=Z,9.0nm,1.4s
VYHS **Vyhne** 79.75 325 *e*P P 01 46 57.8 +0.4
Y14A **Wickenburg** 79.98 55 *e*P P 01 47 00.2 +1.3
PV01 **Paradox Valley** 80.00 49 *e*P P 01 47 00.4 +1.2
WUAZ **Wupatki** 80.00 52 *e*P P 01 47 00.3 +1.2
comp=Z,14nm,1.1s
BRG **Berggiesshubel** 80.00 330 *e*P P 01 46 58.7 +0.1
comp=Z,14nm,1.0s
comp=N,122nm,20.2s
comp=E,165nm,21.6s
comp=Z,235nm,25.9s
BRG **Berggiesshubel** 80.00 330 *e*P P 01 46 58.7 +0.1
BRG pmax pmax
comp=Z,14nm,1.0s
BRG MLR MLR
comp=N,122nm,20.2s
BRG MLR MLR
comp=E,165nm,21.6s
BRG MLR MLR
comp=Z,235nm,25.9s
PVCC **Panska Ves** 80.02 329 ⇓ *e*P P 01 46 59.6 +0.9
PVCC AMS AMS 02 25 00.0
comp=Z,200nm,19.3s
PVCC **Panska Ves** 80.02 329 *e*P P 01 46 59.6 +0.9
PVCC MLR MLR
comp=Z,200nm,19.3s
CLL **Collm** 80.03 330 ⇑ *i*P P 01 46 58.4 -0.4
comp=Z,26nm,0.9s
CLL *i* 01 47 01.6
CLL *i* pP **sP** 01 47 19.5 -1.1
CLL Lm MLR 02 25 00.0
comp=Z,100nm,18.1s
CLL **Collm** 80.03 330 ⇑ *i*P P 01 46 58.4 -0.4
CLL *i* 01 47 01.6
CLL *i* *PP **sP** 01 47 19.5 -1.1
CLL pmax pmax
comp=Z,26nm,0.9s
CLL **Collm** 80.03 330 *e*P P 01 46 58.3 -0.5
comp=Z,24nm,0.9s
VRAC **Vranov** 80.11 327 ⇓ *i*P P 01 47 00.4 +1.1
VRAC **Vranov** 80.11 327 P P 01 47 00.3 +1.0
SMCO **Snowmass** 80.24 47 *e*P P 01 47 01.7 +1.0
comp=Z,7.6nm,1.1s
SMOL **Smolenice** 80.36 326 *e*P P 01 47 01.7 +1.1
SMOL **Smolenice** 80.36 326 *e*P P 01 47 01.7 +1.1
GOPC **GO Pecny, Ondr** 80.40 328 *e*P P 01 47 01.8 +0.9
GOPC AMS AMS 02 24 50.0
comp=Z,100nm,17.7s
GOPC **GO Pecny, Ondr** 80.40 328 *e*P P 01 47 01.8 +0.9
GOPC MLR MLR
comp=Z,100nm,17.7s
BZS **Buzias** 80.58 322 ⇓ *i*P P 01 47 02.0 +0.2
ISCO **Idaho Springs** 80.60 46 *e*P P 01 47 03.9 +1.4
ISCO pmax pmax
comp=Z,2.0nm,0.6s
ISCO **Idaho Springs** 80.60 46 *e*P P 01 47 03.9 +1.4
comp=Z,2.0nm,0.6s
MVCO **Mesa Verde** 80.65 50 *e*P P 01 47 03.7 +1.0
comp=Z,17nm,1.4s
X16A **Lo Mia Camp, P** 80.67 53 *e*P P 01 47 04.4 +1.6
comp=Z,9.7nm,1.0s
NKC **Novy Kostel** 81.10 330 ⇓ *i*P P 01 47 05.1 +0.5
NKC **Novy Kostel** 81.10 330 ⇓ *i*P P 01 47 05.1 +0.5
MDVR **Moldovita** 81.14 321 ⇓ *i*P P 01 47 05.3 +0.4
S22A **4UR Ranch, Cre** 81.28 48 *e*P P 01 47 08.2 +2.0
comp=Z,7.3nm,1.0s
Q24A **Divide** 81.43 47 *e*P P 01 47 08.2 +1.3
comp=Z,5.4nm,0.8s
CONA **Conrad Observa** 81.48 327 *i*P P 01 47 07.4 +0.7
comp=Z,13nm,0.9s,SNR=9.0
KHC **Kasperske Hory** 81.51 329 *e*P P 01 47 07.1 +0.3
KHC *e*pP **sP** 01 47 27.9 -0.8
KHC AMS AMS 02 25 00.0
comp=Z,200nm,21.9s
KHC **Kasperske Hory** 81.51 329 *e*P P 01 47 06.8 0.0
KHC pmax pmax
comp=Z,6.0nm,0.9s
KHC **Kasperske Hory** 81.51 329 *e*P P 01 47 06.8 0.0
comp=Z,6.2nm,0.9s
GEC2 **GERESS Array S** 81.68 328 *e*P P 01 47 08.1 +0.3
GEC2 pmax pmax
comp=Z,11nm,1.1s
GEC2 **GERESS Array S** 81.68 328 *e*P P 01 47 08.1 +0.3
comp=Z,10nm,1.1s
GERES **GERESS Array B** 81.68 328 P P 01 47 07.4 -0.4
comp=Z,4.4nm,0.8s,baz=38,slow=5.0,SNR=23
GERES sP **sP** 01 47 28.7 -1.0
comp=Z,2.0nm,0.8s,baz=12,slow=6.8,SNR=4.2
GERES LR LR 02 25 55.4
comp=Z,154nm,21.1s,baz=62,slow=38
GEA0 **GERESS Array S** 81.69 328 *e*P P 01 47 07.5 -0.3
EYMN **Ely** 81.74 33 *e*P P 01 47 08.8 -0.2
VTS **Vitosha** 81.97 319 ⇓ *i*P P 01 47 10.4 +0.9
SDCO **Great Sand Dun** 82.06 48 *e*P P 01 47 11.2 +1.0
comp=Z,3.7nm,1.1s
ARSA **Arzberg** 82.15 326 *i*P P 01 47 10.5 +0.3
comp=Z,9.7nm,1.1s,SNR=5.5
MOA **Molln** 82.22 327 *i*P P 01 47 10.9 +0.3
comp=Z,14nm,1.1s,SNR=7.7
TUC **Tucson** 82.45 55 *e*P P 01 47 13.6 +1.5
TUC pmax pmax
comp=Z,5.0nm,1.0s
TUC **Tucson** 82.45 55 *e*P P 01 47 13.6 +1.5
comp=Z,4.8nm,1.0s
ECSD **EROS Data Cent** 82.57 39 *e*P P 01 47 12.6 +0.2
comp=Z,9.2nm,0.9s
GROS **Grobnik** 82.77 326 *i*P P 01 47 13.1 -0.3
SOKA **Soboth** 82.80 326 *i*P P 01 47 13.8 +0.1
comp=Z,31nm,1.2s,SNR=21
T25A **Trinidad** 83.11 47 *e*P P 01 47 17.1 +1.5
comp=Z,7.4nm,0.8s

OBKA	Obir	83.15	326	*e*P		P	01 47 15.2	-0.3
	comp=Z,7.1nm,0.9s							
BEBN	Eben Emael	83.15	334	P		P	01 47 15.4	+0.2
	comp=Z,6.7nm,0.8s							
MEM	Membach	83.19	333	P		P	01 47 15.5	0.0
KBA	Koelnbreinsper	83.22	327	*i* P		P	01 47 15.9	0.0
	comp=Z,14nm,0.8s,SNR=6.6							
KBA	Koelnbreinsper	83.22	327	P		P	01 47 17.1	+1.2
LEGS	Legarje	83.24	326	*e*P		P	01 47 15.3	-0.5
SKO	Skopje	83.32	320	*i* P		P	01 47 17.0	+0.6
ANMO	Albuquerque	83.39	50*c*	*i*P		P	01 47 18.3	+1.3
ANMO				pmax		pmax		
	comp=Z,10.0nm,1.2s							
ANMO	Albuquerque	83.39	50	*e*P		P	01 47 18.4	+1.3
	comp=Z,8.1nm,1.0s							
MYKA	Terra Mystica	83.44	327	*i* P		P	01 47 16.3	-0.7
	comp=Z,9.5nm,0.9s							
BCLA	Clavier	83.60	334	P		P	01 47 17.2	-0.3
	comp=Z,21nm,1.7s							
BOJS	Bojanci	83.62	325	*e*P		P	01 47 17.5	-0.2
PAIG	Paliouri	83.63	317	P		P	01 47 17.5	-0.4
WATA	Walderalm	83.75	329	*i* P		P	01 47 18.4	-0.2
	comp=Z,6.5nm,0.9s							
WTTA	Wattenberg	83.78	328	*i* P		P	01 47 18.8	0.0
	comp=Z,8.9nm,1.1s							
BNM	Barren Site	83.83	51	*e*P		P	01 47 20.8	+1.4
ABTA	Abfaltersbach	83.83	328	*i* P		P	01 47 17.9	-1.0
	comp=Z,8.2nm,1.0s							
SCHQ	Schefferville	83.86	16	P		P	01 47 19.4	+0.5
	comp=Z,7.2nm,0.8s,baz=3.0,slow=5.1,SNR=8.9							
SCHQ				LR		LR	02 28 09.4	
	comp=Z,39nm,18.6s,baz=300,slow=38							
SNF	Seneffe	83.87	334	P		P	01 47 19.2	+0.2
WLF	Walferdange	83.93	333	P		P	01 47 20.8	+1.5
MOTA	Moosalm	83.94	329	*i* P		P	01 47 19.3	-0.3
	comp=Z,10nm,0.8s,SNR=8.7							
RETA	Reutte	83.96	329	*i* P		P	01 47 19.8	+0.2
	comp=Z,31nm,1.2s,SNR=11							
319A	Douglas	84.03	54	*e*P		P	01 47 21.9	+1.6
	comp=Z,17nm,0.9s							
DOU	Dourbes	84.11	334	P		P	01 47 19.2	-1.0
121A	Cookes Peak, D	84.20	53	*e*P		P	01 47 22.2	+0.9
	comp=Z,11nm,0.9s							
BFO	Black Forest	84.23	331	*e*P		P	01 47 20.9	0.0
BFO				pmax		pmax		
	comp=Z,26nm,1.0s							
BFO	Black Forest	84.23	331	*e*P		P	01 47 20.9	0.0
	comp=Z,26nm,1.0s							
OHR	Ohrid	84.28	319	*i* P		P	01 47 21.0	-0.3
FETA	Feichten	84.35	329	*i* PcP		P	01 47 21.7	0.0
	comp=Z,16nm,1.0s,SNR=8.5							
DAVA	Damuels	84.47	329	*i* PcP		P	01 47 22.3	-0.1
	comp=Z,34nm,1.0s,SNR=10							
WLS	Welschbruch	84.53	331	*e*P		P	01 47 22.6	+0.2
CDF	Champ du Feu	84.56	332	*e*P		P	01 47 21.8	-0.8
CDF				pmax		pmax		
	comp=Z,23nm,1.0s							
DSB	Dublin	84.60	341	*e*P		P	01 47 22.9	+0.3
	comp=Z,14nm,0.9s							
ECH	Echery	84.77	331⇑	*e*P		P	01 47 23.4	-0.2
FUORN	Ofenpass-Fuorn	84.86	329	*e*P		P	01 47 24.6	+0.2
	comp=Z,35nm,0.8s							
PPT	Papeete	84.96	117	LR		LR	02 21 50.5	
	comp=Z,73nm,18.8s,baz=334,slow=33							
MOF	Molkenrain	85.08	331	*e*P		P	01 47 24.9	-0.3
THEF	They Montfort	85.19	332	*e*P		P	01 47 25.5	-0.2
HINF	Hinteralfeld	85.21	331	*e*P		P	01 47 24.6	-1.3
HINF				pmax		pmax		
	comp=Z,9.0nm,1.0s							
TUE	Stuetta	85.35	329	*e*P		P	01 47 26.9	+0.2
	comp=Z,11nm,0.9s							
LOMF	Lomont	85.61	331⇑	*e*P		P	01 47 27.8	-0.1
SENIN	Lac Senin/Sane	86.25	330	*e*P		P	01 47 31.3	0.0
	comp=Z,8.2nm,0.8s							
CABF	La Chapelle	86.50	331	*e*P		P	01 47 31.3	-1.0
CABF				pmax		pmax		
	comp=Z,12nm,1.0s							
FLN	La Foliniere	86.95	336	*e*P		P	01 47 33.4	-0.9
FLN				pmax		pmax		
	comp=Z,27nm,1.4s							
VLDQ	Val d'Or	86.97	25	*e*P		P	01 47 33.9	-0.6
	comp=Z,26nm,1.4s							
LPL	La Plagne	87.17	330	*e*P		P	01 47 35.8	0.0
LPL				pmax		pmax		
	comp=Z,8.0nm,0.8s							
LPG	La Plagne	87.18	330	*e*P		P	01 47 35.9	0.0
LPG				pmax		pmax		
	comp=Z,10.0nm,0.8s							
AVF	Avril sur Loir	87.36	333	*e*P		P	01 47 35.6	-0.7
AVF				pmax		pmax		
	comp=Z,29nm,0.9s							
TIP	Timpagrande	87.77	320	*e*P		P	01 47 38.2	-0.4
	comp=Z,16nm,1.5s							
VIVF	Saint-Julien-l	88.52	331	*e*P		P	01 47 42.5	+0.5
VIVF				pmax		pmax		
	comp=Z,7.0nm,0.9s							
TX31	Lajitas Ar. Si	88.97	53	*e*P		P	01 47 45.5	+1.1
TXAR	Lajitas Array	88.97	53	P		P	01 47 45.0	+0.6
	comp=Z,4.4nm,0.7s,baz=295,slow=3.3,SNR=68							
TXAR				pP		pP	01 48 02.1	+1.7
	comp=Z,1.5nm,0.7s,baz=284,slow=2.0,SNR=4.4							
HPIG		89.35	56	*e*P		P	01 47 44.0	-2.4
	comp=Z,6.8nm,0.7s							
CAF	Calviac	89.42	333	*e*P		P	01 47 46.0	-0.2
CAF				pmax		pmax		
	comp=Z,6.0nm,0.8s							
HHAR	Hobbs	89.51	42	*e*P		P	01 47 47.3	+0.5
	comp=Z,7.2nm,1.0s							
LMQ	La Malbaie	89.67	21	*e*P		P	01 47 47.7	+0.4
	comp=Z,16nm,1.2s							
JCT	Junction City	90.51	49	*e*P		P	01 47 52.0	+0.4
JCT				pmax		pmax		
	comp=Z,4.0nm,0.8s							
JCT	Junction City	90.51	49	*e*P		P	01 47 52.0	+0.4
	comp=Z,4.2nm,0.8s							
WHTX	Lake Whitney,	90.78	47	*e*P		P	01 47 54.1	+1.4
	comp=Z,14nm,0.9s							
PBMO	Poplar Bluff	90.92	39	*e*P		P	01 47 54.1	+0.8
	comp=Z,13nm,1.0s							
MIAR	Mount Ida	91.02	43	*e*P		P	01 47 54.2	+0.4
MIAR				pmax		pmax		
	comp=Z,9.0nm,0.9s							
MIAR	Mount Ida	91.02	43	*e*P		P	01 47 54.2	+0.4
	comp=Z,8.9nm,0.9s							
WHAR	Wooly Hollow	91.13	42	*e*P		P	01 47 54.8	+0.5
	comp=Z,13nm,0.8s							
KEST	Kesra	94.10	323	LR		LR	02 35 50.0	
	comp=Z,99nm,18.4s,baz=270,slow=39							
ES19	SONSECA Array	96.11	334	*e*P		P	01 48 17.1	-0.1
ESDC	Sonseca Array	96.16	334	P		P	01 48 17.1	-0.3
	comp=Z,1.0nm,0.8s,baz=22,slow=4.2,SNR=4.8							
ESDC				LR		LR	02 36 38.5	
	comp=Z,94nm,20.3s,baz=125,slow=38							
SDV	Santo Domingo	124.00	40	PKP		PKPdf	01 53 48.5	+0.2
	comp=Z,5.0nm,0.3s,baz=19,slow=3.8,SNR=3.4							
LPAZ	La Paz	145.65	58	PKPbc		PKPab	01 54 29.3	-0.1
	comp=Z,12nm,0.8s,baz=326,slow=3.3,SNR=12							
LPAZ				pPKPbc		pPKPbc	01 54 46.7	+1.3
	comp=Z,8.8nm,0.7s,baz=18,slow=11,SNR=5.9							

*SCB **14** 01:47:00.1±0.6,22˚.27S×65˚.80W,h298^{km}±4^{km}, Ml4.6/1, Error ellipse: s-maj=16.3km s-min=8.2km az=25.0*

*ISCJB **14** 01:47:01.8±0.2,22˚.76S±0˚.03×66˚.21W±0˚.03, h260^{km}±2^{km}, mb4.6/45, Error ellipse: s-maj=5.6km s-min=3.7km az=144.3*

*IDC **14** 01:47:02.1±1.0,22˚.70S×65˚.96W, h245^{km}±8^{km}, mb4.2/13, mb1 4.2/19, mb1mx4.0/31, mbtmp4.7/19, Error ellipse: s-maj=13.1km s-min=10.2km az=56.0*

*SJA **14** 01:47:02.0±0.4,22˚.77S×66˚.08W, h268^{km}±4^{km}, ML4.3, MW4.4*

*NEIC **14** 01:47:02.0,22˚.77S×66˚.08W, h268^{km}, mb4.7/22, MD4.4(SJA), After SJA.*

*GUC **14** 01:47:02.6±0.4,22˚.59S×66˚.88W, h310^{km}±12^{km}, ML5.6*

ISC 14 01:47:02.5±0.5**,22˚.73S**±0˚.04×**66˚.20W**±0˚.04**, h255**^{km}±4^{km}, **n112**,σ1§**41**/139**, mb4.7**/45**, 17C-5D, Jujuy Province**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HJA	**Humahuaca**	**0.87**	**123**	*i* P	**Pn**	**01 47 38.8**	**+0.9**
HJA				*e*S	**S**	**01 48 06.1**	**+0.4**
MOCB	**Mochara**	**1.56**	**20**⇑	*e*Pn	**Pn**	**01 47 43.2**	**+0.8**
MOCB				*e*Sn	**S**	**01 48 13.6**	**-0.1**
	6μm,0.8s						

AZAP	Zapla	1.82	145	*e*P		Pn	01 47 44.2	+0.1
AZAP				*e*S		S	01 48 15.7	-1.2
ASTB	Santa Barbara	2.01	127	*e*P		Pn	01 47 45.9	+0.2
SLA	San Lorenzo	2.08	162	*e*P		Pn	01 47 46.5	+0.2
SLA				*e*S		S	01 48 19.8	-1.2
LVC	Limon Verde	2.51	272	P		Pn	01 47 51.1	+0.5
	17μm,0.3s,baz=96,slow=5.7,SNR=4016							
LVC				S		S	01 48 28.0	-0.6
	7μm,0.3s,baz=250,slow=20,SNR=19							
LVC	Limon Verde	2.51	272	⇓*i*P		Pn	01 47 52.0	+1.4
PB09	IPOC Station P	2.97	288	⇑*i*P		Pn	01 47 56.1	+1.0
PB09				IAML			01 48 38.7	
	comp=N,6μm,0.6s							
FSA	Cafayete	3.37	177	*e*P		Pn	01 47 59.8	+0.3
PB01	IPOC Station P	3.48	298	⇑*i*P		Pn	01 48 00.8	+0.1
PB01				*i* S		S	01 48 45.3	-1.6
PB01				IAML			01 48 47.2	
	comp=N,4μm,0.3s							
PB01	IPOC Station P	3.48	298	*e*Pn		Pn	01 48 00.6	-0.2
PB07	IPOC Station P	3.56	286	⇑*i*P		Pn	01 48 01.8	+0.1
PB07				*i* S		S	01 48 46.5	-2.1
PB07				IAML			01 48 48.2	
	comp=N,3μm,0.3s							
PB04	IPOC Station P	3.67	275	⇑*i*P		Pn	01 48 03.0	0.0
PB04				*i* S		S	01 48 48.9	-2.0
PB04	IPOC Station P	3.67	275	*e*Pn		Pn	01 48 03.2	+0.3
PB08	IPOC Station P	3.77	313	⇑*i*P		Pn	01 48 05.2	+0.9
PB08				*i* S		S	01 48 52.6	-0.7
ANCH	Antofagasta	3.99	255	⇓*i*P		Pn	01 48 06.5	+0.1
ANCH				*i* S		S	01 48 54.9	-2.3
PB10	IPOC Station P	4.08	258	⇑*i*P		Pn	01 48 07.3	-0.2
PB10				*i* S		S	01 48 56.5	-2.8
PB10	IPOC Station P	4.08	258	*e*Pn		Pn	01 48 07.2	-0.4
HMBC	Humberstone	4.21	305	⇑*i*P		Pn	01 48 08.4	-0.8
HMBC				*i* S		S	01 48 58.9	-3.3
MNMC	Minye Minye	4.79	318	⇑*i*P		Pn	01 48 16.6	+0.4
MNMC				*i* S		S	01 49 12.9	-2.0
PSGC	Pisagua	4.81	310	⇑*i*P		Pn	01 48 15.0	-1.3
PSGC				*i* S		S	01 49 11.0	-4.1
PB13	IPOC Station P	5.36	324	⇑*i*P		Pn	01 48 24.6	+1.1
PB13				*i* S		S	01 49 27.7	-0.3
PB12	IPOC Station P	5.63	316	⇓*i*P		Pn	01 48 24.4	-1.9
PB12				*i* S		S	01 49 28.4	-4.9
CYA	Choya	5.70	176	*e*P		Pn	01 48 26.9	-0.2
BBOJ	La Paz, Jacaqu	6.02	342	⇑*i*Pn		Pn	01 48 33.1	+1.4
BBOE	La Paz, Chanca	6.12	344	⇑*i*Pn		Pn	01 48 34.3	+1.4
VCA	Vinchina	6.25	196	*e*P		Pn	01 48 34.4	+0.4
VCA				IAML			01 48 36.0	
	comp=Z,68nm,0.3s							
BBOD	La Paz, Gloria	6.47	339	⇑*i*Pn		Pn	01 48 38.5	+1.3
LPAZ	La Paz	6.66	344	P		Pn	01 48 40.0	+0.2
	comp=Z,3.3nm,0.3s,baz=129,slow=5.7,SNR=91							
LPAZ				S		S	01 49 56.5	-1.1
	comp=Z,1.0nm,0.3s,baz=320,slow=17,SNR=10							
LPAZ	La Paz	6.66	344	⇑*i*Pn		Pn	01 48 40.4	+0.7
LPAZ				*e*Sn		S	01 49 54.2	-3.3
BBOB	La Paz, Bander	6.80	344	⇑*i*Pn		Pn	01 48 41.6	+0.2
BBOB				*e*Sn		S	01 49 56.9	-3.7
LCO	Las Campanas	7.45	212	*e*Pn		Pn	01 48 47.4	-1.8
LCO				*e*S		S	01 50 00.9	-14
SIV	San Ignacio	8.27	37	P		Pn	01 48 57.8	-1.6
	comp=Z,7.5nm,0.3s,baz=229,slow=14,SNR=129							
SIV	San Ignacio	8.27	37	⇓*i*Pn		Pn	01 48 57.7	-1.6
CPUP	Villa Florida	8.84	116	P		Pn	01 49 05.3	-1.1
	comp=Z,0.1nm,0.3s,baz=296,slow=11,SNR=9.0							
CPUP	Villa Florida	8.84	116	*e*Pn		Pn	01 49 06.3	-0.1
NNA	Nana	14.73	315	P		Pn	01 50 21.3	+1.8
	comp=Z,1.5nm,0.3s,baz=161,slow=8.4,SNR=8.9							
NNA	Nana	14.73	315	*e*Pn		Pn	01 50 21.6	+2.1
TRQA	Tornquist	15.70	168	*e*P		P	01 50 27.4	-2.3
	comp=Z,7.7nm,0.6s							
TRQA				*e*S		S	01 53 16.6	-5.4
SPB	Sao Paulo	17.28	97	*e*P		P	01 50 46.7	-0.4
	comp=Z,84nm,0.8s							
PLCA	Paso Flores	18.32	191	P		P	01 50 58.4	+0.1
	comp=Z,1.6nm,0.3s,baz=36,slow=12,SNR=29							
PLCA	Paso Flores	18.32	191	*e*P		P	01 50 58.4	+0.1
	comp=Z,26nm,0.9s							
BDFB	Brasilia	18.56	71	P		P	01 51 01.4	+0.3
	baz=258,slow=11							
BDFB	Brasilia	18.56	71	*e*P		P	01 51 01.8	+0.7
ATAH	Atahualpa	19.45	321	P		Pn	01 51 14.0	-1.5
	comp=Z,0.6nm,0.3s,baz=87,slow=4.1,SNR=3.9							
PTGA	Pitinga	22.69	16	P		P	01 51 41.1	-1.4
	comp=Z,36nm,0.8s,baz=195,slow=12,SNR=66							
PCRV	Puerto La Cruz	32.74	3	P		P	01 53 12.7	+0.9
	comp=Z,11nm,0.6s,baz=116,slow=1.0,SNR=6.4							
RCBR	Riachuelo	33.71	65	P		P	01 53 19.3	-1.0
	comp=Z,52nm,0.9s,baz=224,slow=11,SNR=14							
RCBR	Riachuelo	33.71	65	*e*P		P	01 53 19.0	-1.3
	comp=Z,50nm,0.9s							
FDF	Fort de France	37.56	8	*e*P		P	01 53 51.6	-1.2
	comp=Z,96nm,0.5s							
ANWB	Willy Bob	40.38	7	*e*P		P	01 54 13.8	-2.3
	comp=Z,138nm,0.6s							
SJG	San Juan	40.59	0	P		P	01 54 17.1	-0.6
	comp=Z,12nm,0.7s,baz=211,slow=8.3,SNR=4.8							
ZAIG	Zacatecas	57.43	319	*e*P		P	01 56 27.9	+2.4
	comp=Z,6.3nm,0.7s							
VNA1	Neumayer--Stat	58.29	161	P		P	01 56 32.2	+1.9
SNAA	Sanae	60.30	161	P		P	01 56 45.5	+1.3
SNAA	Sanae	60.30	161	*e*P		P	01 56 45.0	+0.8
	comp=Z,19nm,1.1s							
SWET	Sewanee	60.59	341	*e*P		P	01 56 47.2	+0.6
	comp=Z,1.8nm,0.7s							
TXAR	Lajitas Array	63.09	323	P		P	01 57 04.2	+0.8
	comp=Z,0.3nm,0.4s,baz=147,slow=8.1,SNR=16							
PBMO	Poplar Bluff	63.45	338	*e*P		P	01 57 06.1	+0.7
	comp=Z,11nm,1.3s							
LIC	Lamto	66.34	72	*e*P		P	01 57 23.2	-1.3
TIC	Toumodi	66.55	72	*e*P		P	01 57 23.7	-2.1
KIC	Kosan Boka	66.66	72	*e*P		P	01 57 24.9	-1.6
	comp=Z,85nm,1.0s							
DBIC	Dimbokro	66.70	72	P		P	01 57 25.2	-1.5
	comp=Z,16nm,0.6s,baz=222,slow=7.8,SNR=19							
QSPA	South Pole Qui	67.47	180	*e*P		P	01 57 31.9	+0.9
	comp=Z,20nm,0.7s							
ANMO	Albuquerque	68.92	325	*e*P		P	01 57 42.2	+1.8
	comp=Z,3.8nm,1.3s							
SMCO	Snowmass	72.44	328	*e*P		P	01 58 03.9	+2.2
	comp=Z,16nm,1.8s							
SRU	San Rafael Swe	74.19	326	*e*P		P	01 58 13.5	+1.9
	comp=Z,3.2nm,0.6s							
SYO	Syowa Base	74.47	159⇑	*e*X		P	01 58 12.0	-0.5
SYO	Syowa Base	74.47	159⇓	*e*PcP		PcP	01 58 24.0	-1.8
CCUT	Cedar City	74.59	323	*e*P		P	01 58 16.1	+2.0
	comp=Z,3.0nm,1.0s							
TOA0	Torodi Ar. Sit	75.43	69	*e*P		P	01 58 17.4	-1.5
TORD	Torodi Ar. Bea	75.43	69	P		P	01 58 17.5	-1.5
	comp=Z,9.0nm,0.3s,baz=262,slow=5.9,SNR=186							
TORD				pP		pP	01 59 19.6	+1.0
	comp=Z,3.3nm,0.6s,baz=253,slow=5.7,SNR=3.1							
SUR	Sutherland	75.79	119	P		P	01 58 21.1	0.0
	comp=Z,0.4nm,0.9s,baz=242,slow=10,SNR=5.0							
TCUT	Toone Canyon	76.13	326	*e*P		P	01 58 22.4	-0.3
	comp=Z,22nm,0.9s							
PDAR	Pinedale Array	76.44	329	P		P	01 58 25.6	+1.2
	comp=Z,0.7nm,0.6s,baz=134,slow=7.1,SNR=5.9							
SCHQ	Schefferville	77.25	360	P		P	01 58 28.9	+0.6
	comp=Z,4.3nm,0.6s,baz=198,slow=2.4,SNR=7.6							
TSUM	Tsumeb	77.28	106	*e*P		P	01 58 28.1	-1.5
	comp=Z,17nm,1.0s							
BOSA	Boshof	80.65	117	P		P	01 58 46.8	-0.9
	comp=Z,7.0nm,0.9s,baz=268,slow=4.0,SNR=9.3							
BOSA	Boshof	80.65	117	*e*P		P	01 58 46.8	-0.9
	comp=Z,9.3nm,1.0s							
PMTG	Montargil	81.95	42	*e*P		P	01 58 53.3	-0.6
	comp=Z,24nm,1.4s							
PBAR	Barrancos	82.15	43	*e*P		P	01 58 55.0	0.0
	comp=Z,34nm,1.7s							
PESTR	Estremoz	82.22	42	*e*P		P	01 58 56.1	+0.8
	comp=Z,21nm,1.2s							
PCAS	Casmilo, Conde	82.39	41	*e*P		P	01 58 56.7	+0.5
	comp=Z,25nm,1.8s							
MAW	Mawson	82.42	163	P		P	01 58 57.1	+1.2
	comp=Z,3.0nm,0.8s,baz=227,slow=10,SNR=6.0							
PCBR	Castelo Branco	82.88	42	*e*P		P	01 58 59.0	+0.3
	comp=Z,19nm,1.2s							
TAM	Tamanrasset	83.15	62	*e*P		P	01 59 00.3	-0.4
	comp=Z,19nm,1.4s							
TAM				*e*pP		pP	02 00 01.9	+0.5
MTE	Manteigas	83.18	41	*e*P		P	01 59 00.2	-0.1
	comp=Z,31nm,1.1s							
PVRL	Vila Real	83.61	40	*e*P		P	01 59 02.7	+0.3
	comp=Z,31nm,1.3s							

POLO	Lamas de Olo	83.62	40	*e*P		P	01 59 02.9	+0.3
	comp=Z,11nm,1.6s							
PCAB	Cabril	83.69	40	*e*P		P	01 59 03.0	+0.2
	comp=Z,33nm,1.2s							
PGAV	Gavieira, Arco	83.70	39	*e*P		P	01 59 02.0	-1.0
	comp=Z,23nm,1.7s							
MVO	Moncorvo	83.95	41	*e*P		P	01 59 04.0	-0.2
	comp=Z,28nm,1.1s							
MVO	Moncorvo	83.95	41	*e*P		P	01 59 04.5	+0.3
	comp=Z,28nm,1.1s							
MVO				A		A	01 59 05.7	
	comp=Z,26nm,1.0s							
PBRG	Braganca	84.51	40	*e*P		P	01 59 06.9	-0.1
	comp=Z,32nm,1.4s							
PBRG	Braganca	84.51	40	*e*P		P	01 59 07.1	+0.1
	comp=Z,32nm,1.4s							
PBRG				A		A	01 59 09.0	
	comp=Z,30nm,1.5s							
PAB	San Pablo	84.65	43	*e*P		P	01 59 07.8	+0.1
	comp=Z,19nm,0.9s							
ESDC	Sonseca Array	84.97	43	P		P	01 59 09.2	-0.1
	comp=Z,8.8nm,0.8s,baz=241,slow=4.5,SNR=37							
ESLA	Sonseca Array	84.97	43	*e*P		P	01 59 09.9	+0.6
	comp=Z,18nm,1.0s							
ES19	SONSECA Array	85.03	43	*e*P		P	01 59 09.6	0.0
LSZ	Lusaka	88.14	106	*e*P		P	01 59 25.1	-0.2
	comp=Z,22nm,1.4s							
KEST	Kesra	92.05	52	P		P	01 59 43.8	+0.9
	comp=Z,8.5nm,0.8s,baz=124,slow=6.9,SNR=9.5							
YKA	Yellowknife Ar	93.19	340	P		P	01 59 48.4	+1.0
	comp=Z,0.8nm,0.7s,baz=126,slow=4.3,SNR=5.6							
ASAR	Alice Springs	129.91	204	PKP		PKPdf	02 05 42.9	+0.4
	comp=Z,0.3nm,0.3s,baz=106,slow=1.9,SNR=5.1							
ASAR				SKPbc		SKPbc	02 08 41.2	+0.5
	comp=Z,2.5nm,0.9s,baz=140,slow=4.5,SNR=14							
GEYT	Allbeck	130.30	59	SKPbc		SKPab	02 08 43.3	+1.4
	comp=Z,2.8nm,0.8s,baz=289,slow=6.0,SNR=6.0							
ABKAR	Akbulak array	130.31	44	*e*PKPdf		PKPdf	02 05 43.3	+1.0
WRA	Warramunga Arr	133.09	207	PKP		PKPdf	02 05 49.2	+0.7
	comp=Z,0.5nm,0.4s,baz=158,slow=1.7,SNR=5.9							
WRA				SKPbc		SKPbc	02 08 52.7	+0.5
	comp=Z,6.7nm,0.9s,baz=153,slow=2.8,SNR=26							
PETK	Petropavlovsk-	135.04	324	SKPbc		SKPbc	02 08 58.6	+1.2
	comp=Z,3.5nm,0.8s,baz=102,slow=6.2,SNR=6.6							
KURBB	Kurchatov Arra	140.92	36	SKPbc		SKiKP	02 09 16.0	-0.3
	comp=Z,0.6nm,0.8s,baz=301,slow=3.7,SNR=4.4							
ZALV	Zalesovo Beam	141.93	28	PKhKP		PKPpre	02 06 00.4	
	comp=Z,0.8nm,0.4s,baz=306,slow=5.4,SNR=5.5							
ZALV				PKP		PKPdf	02 06 04.6	+0.9
	comp=Z,2.7nm,0.6s,baz=256,slow=4.5,SNR=6.4							
ZALV				SKPbc		SKiKP	02 09 18.3	0.0
	comp=Z,1.0nm,0.5s,baz=270,slow=4.4,SNR=4.1							
MKAR	Makanchi Array	145.08	39	PKP		PKPab	02 06 09.8	0.0
	comp=Z,27nm,0.8s,baz=316,slow=3.3,SNR=175							
MKAR				SKPbc		SKiKP	02 09 25.8	+0.7
	comp=Z,1.6nm,0.8s,baz=336,slow=2.7,SNR=5.7							
SONM	Songino Array	154.26	12	PKP		PKPdf	02 06 24.6	+0.6
	comp=Z,0.9nm,0.8s,baz=69,slow=1.2,SNR=7.0							
SONM				PKPbc		PKiKP	02 06 33.1	+0.6
	comp=Z,1.0nm,0.7s,baz=334,slow=1.9,SNR=7.2							
SONM				PKPab		PKPab	02 06 48.1	+0.7
	comp=Z,1.1nm,0.7s,baz=327,slow=3.3,SNR=6.2							
CMAR	Chiang Mai Arr	165.45	104	PKPab		PKPab	02 07 36.7	-0.3
	comp=Z,1.4nm,0.6s,baz=245,slow=5.3,SNR=6.7							

*DDA **14** 01:57:30.3,36˚.90N×27˚.24E, h6^{km}, Md2.7*

*ATH **14** 01:57:31.6,36˚.92N×27˚.30E, h30^{km}, ML2.7/4, Error ellipse: s-maj=1.6km s-min=0.8km az=242.0*

*ISCJB **14** 01:57:32.1±0.4,36˚.96N±0˚.02×27˚.29E±0˚.03, h9^{km}±3^{km}, Error ellipse: s-maj

FETY	**Fethiye**	**1.45**	**101**	P	**Pn**	**01 57 58.5 +0.7**
FETY				S	**Sb**	**01 58 18.3 +1.3**
FETY	**Fethiye**	**1.45**	**101**	*e*Pn	**Pn**	**01 57 59.0 +1.2**
FETY				S	**Sb**	**01 58 18.3 +1.3**
ZEY	**¨zmir**	**1.46**	**334**	*i* P	**Pn**	**01 57 56.9 -0.9**
ZEY				*i* S	**Sg**	**01 58 21.8 +3.0**
URLA	**Izmir**	**1.54**	**338**	*i* P	**Pn**	**01 57 58.6 -0.4**
URLA				*i* S	**Sg**	**01 58 23.7 +2.3**
URLA	**Izmir**	**1.54**	**338**	P	**Pn**	**01 57 58.6 -0.4**
URLA				S	**Sg**	**01 58 23.7 +2.3**
DNZL	**Cakiroluk**	**1.57**	**61**	*i* P	**Pg**	**01 58 02.2 +0.1**
DNZL				*i* S	**Sg**	**01 58 25.5 +2.9**
DNZL	**Cakiroluk**	**1.57**	**61**	P	**Pg**	**01 58 02.2 +0.1**
DNZL				S	**Sg**	**01 58 25.5 +2.9**
CHOS	**Chios island**	**1.76**	**326**	*e*PN	**Pb**	**01 58 04.6 +0.4**
CHOS	**Chios island**	**1.76**	**326**	P	**Pn**	**01 58 02.6 +0.4**
CHOS	**Chios island**	**1.76**	**326**	*e*Pn	**Pb**	**01 58 04.6 +0.4**
CHOS	**Chios island**	**1.76**	**326**	P	**Pn**	**01 58 02.6 +0.4**
GOLH	**Golhisar**	**1.82**	**80**	*i* P	**Pg**	**01 58 07.3 +0.4**
GOLH				*i* S	**Sg**	**01 58 34.6 +4.1**
GOLH	**Golhisar**	**1.82**	**80**	P	**Pg**	**01 58 07.3 +0.4**
MANT	**Manisa**	**1.84**	**32**	*i* P	**Pn**	**01 58 02.5 -0.9**
MANT				*i* S	**Sn**	**01 58 24.6 -2.0**
MANT	**Manisa**	**1.84**	**32**	P	**Pn**	**01 58 02.5 -0.9**
MANT				S	**Sn**	**01 58 24.6 -2.0**
KULA	**Kula-Manisa**	**1.91**	**34**	*e*PN	**Pn**	**01 58 05.9 +1.8**
KULA	**Kula-Manisa**	**1.91**	**34**	*e*Pn	**Pn**	**01 58 05.9 +1.8**
AKAS	**Kas**	**1.97**	**110**	*i* P	**Pg**	**01 58 09.2 -0.5**
AKAS				*i* S	**Sb**	**01 58 33.9 +1.8**
AKAS	**Kas**	**1.97**	**110**	P	**Pg**	**01 58 09.2 -0.5**
AKAS				S	**Sb**	**01 58 33.9 +1.8**
KSL	**Kastellorizon**	**1.98**	**112**	P	**Pn**	**01 58 05.5 +0.4**
ELL	**Elmali**	**2.09**	**94**	*e*PN	**Pn**	**01 58 08.4 +1.8**
ELL	**Elmali**	**2.09**	**94**	*e*Pn	**Pn**	**01 58 08.4 +1.8**
LAST	**Lasithi**	**2.31**	**221**	P	**Pn**	**01 58 10.9 +1.2**
LAST	**Lasithi**	**2.31**	**221**	P	**Pn**	**01 58 10.9 +1.2**
KORT	**Korkueli**	**2.43**	**87**	*i* P	Pn	01 58 04.5 -6.9
KORT				*i* S	**Sn**	**01 58 34.2 -6.8**
PRK	**Paraskevi**	**2.45**	**341**	P	**Pn**	**01 58 11.6 +0.1**
PRK	**Paraskevi**	**2.45**	**341**	P	**Pn**	**01 58 11.6 +0.1**
SIGR	**SIGRI**	**2.55**	**334**	P	**Pn**	**01 58 13.0 +0.1**
SIGR	**SIGRI**	**2.55**	**334**	P	**Pn**	**01 58 13.0 +0.1**
IDI	**Anoyia**	**2.56**	**231**	P	**Pn**	**01 58 14.3 +1.2**
IDI	**Anoyia**	**2.56**	**231**	P	**Pn**	**01 58 14.3 +1.2**
LIA	**Limnos Island**	**3.40**	**331**	P	**Pn**	**01 58 25.1 +0.5**
SMTH	**Samothraki Isl**	**3.80**	**339**	P	**Pn**	**01 58 29.4 -0.7**
SMTH	**Samothraki Isl**	**3.80**	**339**	P	**Pn**	**01 58 29.4 -0.7**

*SJA **14** 02:17:54.9±1.2,28°.27S×69°.57W,h278km±22km, ML3.0, MW3.3*
*GUC **14** 02:17:55.2±0.4,27°.84S×70°.16W,h40km±7km, ML3.0*
ISC 14 02:17:55.2±2.1,27°.6S±0°.3×70°.9W±0°.2,h34km±13km,n8, σ1§44/14,Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**0.52**	**58**	*i* P	**Pb**	**02 18 05.9**	**-0.2**
CPCH				*i* S	**Sb**	**02 18 13.8**	**+0.1**
VACH	**Vallenar**	**0.94**	**175**	*i* P	**Pn**	**02 18 11.9**	**0.0**
VACH				*i* S	**Sn**	**02 18 24.4**	**+0.2**
LCO	**Las Campanas**	**1.38**	**175**	*e*P	**Sn**	**02 18 34.7**	**-0.6**
LCO	**Las Campanas**	**1.38**	**175**	*i* P	**Pn**	**02 18 17.7**	**-0.5**
LCO				*i* S	**Sn**	**02 18 34.2**	**-1.2**
LCO				IAML		02 18 36.1	
	comp=E,261nm,0.3s						
TLL	**Tololo Astrono**	**2.52**	**179**	*i* P	**Pn**	**02 18 34.4**	**+0.5**
TLL				*i* S	**Sn**	**02 19 03.9**	**+0.3**
TLL				IAML		02 19 10.1	
	comp=E,225nm,0.4s						
VCA	**Vinchina**	**2.58**	**116**	*e*P	**Pn**	**02 18 35.2**	**+0.6**
VCA				*e*S	**Sn**	**02 19 03.8**	**-1.0**
VCA				IAML		02 19 12.6	
	comp=Z,57nm,0.3s						
AROD	**Rodeo**	**2.79**	**155**	*e*P	**Pn**	**02 18 39.0**	**+1.2**
AROD				*e*S	**Sn**	**02 19 12.9**	**+2.5**
ACCO	**Cerro Coronel**	**3.33**	**152**	*e*S	**Sn**	**02 19 20.6**	**-3.0**

IDC 14 02:25:08.7±5.7,2°.49S×138°.45E,h0km,mb3.6/2, mb1 3.8/2,mb1mx3.4/25,mbtmp3.6/2,ML4.1/1,Error ellipse: s-maj=215.0km s-min=69.5km az=115.0,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.81**	**193**	P	Pn	02 29 18.4	+0.3
	0.7nm,0.3s,baz=14,slow=12,SNR=32						
ASAR	**Alice Springs**	**21.51**	**191**	P	P	02 29 59.4	0.0
	0.7nm,0.5s,baz=19,slow=9.8,SNR=11						
VNDA	**Vanda**	**76.03**	**175**	P	P	02 36 57.4	0.0
	0.7nm,0.6s,baz=307,slow=5.1,SNR=3.7						

*ISCJB **14** 02:38:16.6±0.4,36°.30N±0°.04×136°.88E±0°.06, h279km±3km,mb3.5/8,Error ellipse: s-maj=7.9km s-min=6.7km az=8.2*
*JMA **14** 02:38:16.7±0.2,36°.27N×136°.96E,h281km±2km,M3.3*
*IDC **14** 02:38:17.2±0.6,36°.26N×136°.91E,h274km±5km,mb3.3/8, mb1 3.5/11,mb1mx3.2/44,mbtmp3.9/11,Error ellipse: s-maj=16.8km s-min=14.1km az=53.0*
ISC 14 02:38:17.2±0.7,36°.30N±0°.05×136°.89E±0°.06,h274km±6km, n32,σ0§82/46,mb3.4/8,Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGN	**Niukaw**	**0.35**	**102**	P	**Pn**	**02 38 52.7**	**+0.1**
JGN				S	**S**	**02 39 20.1**	**-0.4**
JKG	**Kaga**	**0.45**	**268**	P	**Pn**	**02 38 53.2**	**+0.6**
JKG				S	**S**	**02 39 21.4**	**+0.8**
MAT	**Matsushiro**	**1.09**	**77**	P	**Pn**	**02 38 55.5**	**+0.2**
MAT				S	**S**	**02 39 25.7**	**+0.4**
MAT	**Matsushiro**	**1.09**	**77**	P	**Pn**	**02 38 55.4**	**+0.2**
MAT				S	**S**	**02 39 25.7**	**+0.4**
MJAR	**Matsushiro Arr**	**1.09**	**77**	P	**Pn**	**02 38 55.7**	**+0.5**
	15nm,0.3s,baz=257,slow=6.5,SNR=76						
MJAR				S	**S**	**02 39 25.8**	**+0.4**
	baz=217,slow=11,SNR=6.5						
JSZ	**Suzu**	**1.21**	**18**	P	**Pn**	**02 38 56.1**	**+0.3**
JHG	**Hegura jima**	**1.55**	**1**	P	**Pn**	**02 38 59.0**	**+1.0**
JHG				S	**S**	**02 39 32.3**	**+1.9**
JYN	**Shimob**	**1.56**	**120**	P	**Pn**	**02 38 58.1**	**-0.3**
JYN				*e*S	**S**	**02 39 30.9**	**0.0**
JWT	**Wachi**	**1.58**	**230**	P	**Pn**	**02 38 58.6**	**+0.2**
JWT				S	**S**	**02 39 29.9**	**-1.1**
JRY	**Ryogami san**	**1.65**	**99**	P	**Pn**	**02 38 58.9**	**0.0**
JRY				S	**S**	**02 39 33.1**	**+1.1**
JIE	**Ise**	**1.91**	**185**	P	**Pn**	**02 39 01.4**	**+0.4**
JIE				S	**S**	**02 39 35.5**	**-0.2**
JSD	**Sado**	**2.05**	**32**	P	**Pn**	**02 39 02.4**	**+0.4**
JSD				S	**S**	**02 39 37.1**	**-0.6**
JOD2	**Odawara 2**	**2.06**	**119**	P	**Pn**	**02 39 02.1**	**-0.2**
JOD2				S	**S**	**02 39 38.1**	**+0.1**
JAG	**Ashikaga**	**2.07**	**86**	P	**Pn**	**02 39 01.4**	**-0.9**
JWY	**Kouya**	**2.33**	**207**	P	**Pn**	**02 39 05.2**	**+0.5**
JWY				S	**S**	**02 39 41.7**	**-0.8**
TK02	**Tokai 2**	**2.45**	**163**	P	**Pn**	**02 39 06.3**	**+0.8**
JNS	**Sasagawa**	**2.47**	**51**	P	**Pn**	**02 39 06.0**	**+0.2**
TTO1	**TONANKAI O.B.S**	**2.67**	**182**	P	**Pn**	**02 39 08.7**	**+1.1**
JHJ	**Hachijo jima 2**	**3.97**	**142**	P	**Pn**	**02 39 23.8**	**+2.0**
	12nm,0.3s,baz=248,slow=22,SNR=2.8						
JHJ				S	**S**	**02 40 13.2**	**-0.1**
	22nm,0.3s,baz=77,slow=22,SNR=7.8						
JNU	**Nakatsue**	**5.88**	**239**	P	**Pn**	**02 39 45.0**	**+0.7**
	2.2nm,0.3s,baz=61,slow=5.9,SNR=19						
KSRS	**Korea Array**	**7.28**	**282**	P	**Pn**	**02 40 03.4**	**+1.8**
	0.6nm,0.3s,baz=100,slow=13,SNR=13						
USRK	**Ussuriysk Ar.**	**8.73**	**336**	P	**Pn**	**02 40 20.8**	**+1.2**
	0.7nm,0.3s,baz=154,slow=12,SNR=46						
KLR	**Kul'dur**	**13.46**	**345**	P	**Pn**	**02 41 16.1**	**-1.8**
	2.9nm,0.3s,baz=144,slow=10,SNR=52						
SONM	**Songino Array**	**25.24**	**307**	P	**P**	**02 43 17.7**	**-0.8**
	0.8nm,0.7s,baz=107,slow=9.5,SNR=5.1						
MKAR	**Makanchi Array**	**41.43**	**302**	P	**P**	**02 45 37.3**	**0.0**
	0.9nm,0.6s,baz=90,slow=10,SNR=9.0						
WRA	**Warramunga Arr**	**55.99**	**183**	P	**P**	**02 47 26.9**	**-0.6**
	1.0nm,0.4s,baz=360,slow=7.6,SNR=12						
ASAR	**Alice Springs**	**59.71**	**183**	P	**P**	**02 47 53.0**	**-0.3**
	0.3nm,0.3s,baz=358,slow=6.2,SNR=4.8						
FINES	**FINESS Array B**	**67.73**	**331**	P	**P**	**02 48 44.9**	**0.0**
	2.3nm,0.7s,baz=46,slow=5.5,SNR=7.5						
NOA	**NORSAR Array B**	**73.41**	**336**	P	**P**	**02 49 19.4**	**+0.2**
	0.7nm,0.8s,baz=28,slow=8.0,SNR=3.4						
PDAR	**Pinedale Array**	**80.73**	**43**	P	**P**	**02 50 01.0**	**+0.6**
	0.5nm,0.7s,baz=224,slow=4.1,SNR=4.1						
TXAR	**Lajitas Array**	**93.41**	**50**	P	**P**	**02 51 02.7**	**+0.8**
	0.5nm,0.7s,baz=292,slow=3.1,SNR=6.7						
LPAZ	**La Paz**	**150.15**	**55**	PKPbc	**PKPbc**	**02 57 36.4**	**-0.5**
	0.9nm,0.9s,baz=4.7,slow=6.9,SNR=4.0						

WEL 14 02:42:15.0±0.4,38°.06S×176°.08E,h134km±4km,ML3.5/22, 4D,Error ellipse: s-maj=4.7km s-min=2.9km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUGZ	**Murupara**	**0.69**	**128**	PN	Pn	02 42 36.3	+0.6
MRHZ	**Matea Rd**	**0.82**	**161**	PN	Pn	02 42 37.3	+0.6
MRHZ				AML	AML	02 42 57.2	
MRHZ				AML	AML	02 42 57.3	
URZ	**Urewera**	**0.84**	**104**	⇓PN	Pn	02 42 36.8	0.0
URZ				SN	Sn	02 42 53.6	+0.3
BKZ	**Black Stump Fm**	**1.15**	**164**	⇓PN	Pn	02 42 39.7	0.0
BKZ				SN	Sn	02 42 58.0	-0.7
MWZ	**Matawai**	**1.18**	**104**	⇓PN	Pn	02 42 39.8	-0.1
NMHZ	**Naumai**	**1.19**	**151**	PN	Pn	02 42 40.8	+0.7
NMHZ				AML	AML	02 43 06.6	
NMHZ				AML	AML	02 43 09.7	
SNGZ	**Shannon Statio**	**1.23**	**127**	PN	Pn	02 42 40.8	+0.3
SNGZ				AML	AML	02 43 02.6	
SNGZ				AML	AML	02 43 08.3	
WHHZ	**Waihua**	**1.36**	**139**	PN	Pn	02 42 41.8	0.0
WHHZ				AML	AML	02 43 05.8	
WHHZ				AML	AML	02 43 06.0	
MOVZ	**Moawhango**	**1.37**	**191**	PN	Pn	02 42 41.9	-0.1
HAZ	**Te Kaha**	**1.38**	**78**	PN	Pn	02 42 41.6	-0.4
HAZ				AML	AML	02 43 09.3	
HAZ				AML	AML	02 43 09.3	
HAZ				AML	AML	02 43 10.2	
KWHZ	**Kaweka Forest**	**1.39**	**169**	PN	Pn	02 42 42.5	+0.3
KWHZ				SN	Sn	02 43 02.8	-0.3
KWHZ				AML	AML	02 43 05.4	
ARHZ	**Aropaoanui**	**1.40**	**149**	PN	Pn	02 42 42.4	+0.1
ARHZ				AML	AML	02 43 04.8	
ARHZ				AML	AML	02 43 04.9	
BHHZ	**Black Hill Sta**	**1.43**	**180**	PN	Pn	02 42 42.5	-0.1
TKGZ	**Te Karaka**	**1.45**	**106**	PN	Pn	02 42 42.8	+0.1
TKGZ				AML	AML	02 43 05.7	
TKGZ				AML	AML	02 43 08.4	
RIGZ	**Rimuhau**	**1.47**	**117**	PN	Pn	02 42 43.1	+0.1
RIGZ				AML	AML	02 43 08.6	
RIGZ				AML	AML	02 43 06.1	
TWGZ	**Tauwhareparae**	**1.51**	**95**	PN	Pn	02 42 44.0	+0.5
TWGZ				AML	AML	02 43 15.6	
TWGZ				AML	AML	02 43 16.5	
KNZ	**Kokohu**	**1.58**	**128**	⇓PN	Pn	02 42 43.7	-0.5
PKGZ	**Pakihiroa**	**1.59**	**85**	PN	Pn	02 42 44.5	+0.1
KRHZ	**Kereru**	**1.60**	**172**	PN	Pn	02 42 44.2	-0.2
KRHZ				AML	AML	02 43 07.7	
KRHZ				AML	AML	02 43 07.9	
PUZ	**Puketiti**	**1.72**	**91**	AML	AML	02 43 18.8	
CKHZ	**Cape Kidnapper**	**1.78**	**154**	PN	Pn	02 42 46.2	-0.3
CKHZ				AML	AML	02 43 11.6	
CKHZ				AML	AML	02 43 12.6	
KAHZ	**Kahuranaki**	**1.84**	**160**	PN	Pn	02 42 46.9	-0.4
KAHZ				AML	AML	02 43 14.1	
PNHZ	**Pukenui**	**1.86**	**177**	PN	Pn	02 42 46.8	-0.6
PNHZ				AML	AML	02 43 13.5	
TSZ	**Takapari Road**	**2.00**	**183**	PN	Pn	02 42 48.5	-0.7
PXZ	**Pawanui**	**2.06**	**163**	PN	Pn	02 42 49.0	-0.9
PXZ				AML	AML	02 43 15.6	
ANWZ	**Angora Road**	**2.42**	**173**	PN	Pn	02 42 52.8	-1.5
ANWZ				AML	AML	02 43 23.2	
ANWZ				AML	AML	02 43 24.5	
BFZ	**Birch Farm**	**2.62**	**177**	PN	Pn	02 42 54.6	-2.3
MRZ	**Mangatainoka R**	**2.63**	**188**	AML	AML	02 42 51.9	
MRZ				PN	Pn	02 42 54.6	-2.3
MRZ				AML	AML	02 43 27.1	
OGWZ	**Otaki Gorge**	**2.84**	**194**	AML	AML	02 43 31.5	
HOWZ	**Holdsworth Sta**	**2.87**	**189**	PN	Pn	02 42 57.2	-2.8
TMWZ	**Te Maipa**	**3.05**	**183**	AML	AML	02 43 36.1	
MTW	**Mount Morrison**	**3.13**	**188**	PN	Pn	02 43 00.1	-3.3
DUWZ	**D'Urville Isla**	**3.21**	**211**	PN	Pn	02 43 02.2	-2.2
TRWZ	**Traveller**	**3.35**	**185**	PN	Pn	02 43 02.9	-3.3
TRWZ				AML	AML	02 43 42.6	
PLWZ	**Palliser**	**3.56**	**190**	PN	Pn	02 43 05.4	-3.7

*IDC **14** 02:47:15.8±1.1,29°.00S×176°.36W,h0km,mb4.0/4, mb1 4.3/4,mb1mx3.9/25,mbtmp3.9/4,MS3.6/1,Ms1 3.5/1, ms1mx2.7/29,Error ellipse: s-maj=56.5km s-min=29.9km az=163.0*
*ISCJB **14** 02:47:17.9±1.1,29°.64S±0°.08×176°.0W±0°.1,h36km, mb3.9/4,MS3.5/1,Error ellipse: s-maj=12.8km s-min=11.8km az=18.6*
ISC 14 02:47:20.3±0.9,29°.5S±0°.1×176°.0W±0°.1,h36km,n12, σ1§43/13,mb4.0/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.66**	**277**	Pn	**Pn**	**02 47 47.3**	**+0.5**
	449nm,0.3s,baz=84,slow=11,SNR=31						
RAO				Sn	**Sn**	**02 48 08.2**	**+1.4**
	795nm,0.3s,baz=15,slow=22,SNR=11						
URZ	**Urewera**	**10.45**	**211**	Pn	**Pn**	**02 49 46.6**	**-0.9**
	0.9nm,0.3s,baz=276,slow=4.5,SNR=4.2						
URZ				Sn	**Sn**	**02 51 43.4**	**+0.2**
	2.3nm,0.3s,baz=233,slow=23,SNR=7.2						
STKA	**Stephens Creek**	**36.35**	**255**	LR	LR	03 08 31.5	
	comp=Z,80nm,18.8s,baz=32,slow=35						
ASAR	**Alice Springs**	**44.87**	**265**	P	**P**	**02 55 30.5**	**-1.0**
	1.0nm,0.6s,baz=110,slow=8.1,SNR=11						
WRA	**Warramunga Arr**	**45.78**	**270**	P	**P**	**02 55 37.0**	**-1.7**
	1.8nm,0.8s,baz=109,slow=7.6,SNR=8.8						
TXAR	**Lajitas Array**	**90.46**	**56**	P	**P**	**03 00 19.8**	**+1.3**
	0.5nm,0.9s,baz=217,slow=3.9,SNR=4.3						
ILAR	**Eielson Array**	**96.65**	**12**	P	**P**	**03 00 45.0**	**-1.0**
	0.5nm,0.7s,baz=212,slow=5.2,SNR=6.2						
FINES	**FINESS Array B**	**144.83**	**342**	PKP	**PKPab**	**03 06 51.0**	**-0.7**
	1.0nm,0.6s,baz=81,slow=2.5,SNR=8.8						
NB2	**NORSAR Subarra**	**148.06**	**353**	PKP	**PKPbc**	**03 07 00.7**	**-0.7**
	comp=Z,2.6nm,0.7s,baz=8.2,slow=2.8						
NOA	**NORSAR Array B**	**148.06**	**353**	PKPbc	**PKPbc**	**03 07 01.3**	**-0.2**
	comp=Z,2.9nm,0.8s,baz=13,slow=4.4,SNR=6.7						
AKASG	**Malin Array Be**	**151.55**	**325**	PKPbc	**PKPbc**	**03 07 10.1**	**-0.1**
	comp=Z,0.4nm,0.4s,baz=35,slow=1.5,SNR=4.2						
TORD	**Torodi Ar. Bea**	**163.62**	**172**	PKPab	**PKPab**	**03 08 14.6**	**+3.1**
	comp=Z,0.9nm,0.8s,baz=209,slow=4.1,SNR=6.1						

NEIC 14 02:49:53.3,51°.88N×172°.03W,h56km,ML3.5(AEIC), **After AEIC.,Andreanof Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**1.33**	**291**	P	Pn	02 50 16.4	+0.8
KOFP	**Korovin Flat P**	**1.34**	**288**	P	Pn	02 50 16.4	+0.8
KONE	**Korovin Northe**	**1.39**	**293**	P	Pn	02 50 17.4	+1.1
KOKV	**Korovin Volcan**	**1.40**	**291**	P	Pn	02 50 17.6	+1.0
KOKV				S	Sn	02 50 34.9	+0.8
KOKL	**Mount Kliuchef**	**1.41**	**289**	P	Pn	02 50 17.5	+0.8
NIKH	**Nikolski High**	**2.23**	**59**	P	Pn	02 50 26.7	-1.1
NIKH				S	Sn	02 50 53.6	-0.6
GSMY	**Great Sitkin M**	**2.50**	**275**	P	Pn	02 50 32.4	+0.9
GSTD	**Great Sitkin T**	**2.55**	**276**	P	Pn	02 50 33.3	+1.1
GSTD				S	Sn	02 51 03.1	+0.9
GSCK	**Great Sitkin C**	**2.56**	**275**	P	Pn	02 50 33.3	+1.0
ETKA	**Kagalaska Isla**	**2.71**	**271**	P	Pn	02 50 34.8	+0.4
OKWR	**Okmok West Rim**	**2.80**	**55**	P	Pn	02 50 37.1	+1.4
OKAK	**Okmok**	**2.81**	**51**	P	Pn	02 50 35.2	-0.4
ADAG	**Mount Adagdak**	**2.83**	**274**	P	Pn	02 50 37.9	+1.9
OKTU	**Okmok Mt. Tuli**	**2.86**	**57**	P	Pn	02 50 37.9	+1.5
OKER	**Okmok East Rim**	**2.89**	**55**	P	Pn	02 50 37.9	+1.0
KIKV	**Kanaga Island**	**3.19**	**272**	P	Pn	02 50 41.9	+1.1
TAFP	**Tanaga Falls P**	**3.69**	**273**	P	Pn	02 50 49.6	+1.8
TAFP				S	Sn	02 51 31.2	+1.2
MTBL	**Makushin Table**	**3.85**	**55**	P	Pn	02 50 51.1	+1.0
UNV	**Unalaska Valle**	**3.89**	**57**	*e*Pn	Pn	02 50 51.4	+1.0
UNV				*e*S	Sn	02 51 37.1	+2.4
AKUT	**Akutan**	**4.40**	**57**	*e*Pn	Pn	02 50 59.8	+2.3

GUC 14 03:03:15.0±0.9,38°.77S×73°.86W,h26km±9km,ML3.5, 1C-1D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSCH	**Puerto Saavedr**	**0.37**	**95**	⇓*i* P	Pb	03 03 23.1	0.0
PSCH				*i* S	Sn	03 03 30.3	-0.6
PSCH				IAML		03 03 36.5	
	comp=E,13μm,0.4s						
VLCH	**Valdivia**	**1.14**	**156**	⇑*i* P	Pb	03 03 36.1	0.0
VLCH				*i* S	Sb	03 03 52.4	+1.9
VLCH				IAML		03 03 57.7	
	comp=E,2μm,0.2s						
CCHI	**Chillan**	**2.58**	**34**	*i* S	Sb	03 04 30.8	-1.1

*ISCJB **14** 03:09:08.4±0.5,23°.31S±0°.05×66°.92W±0°.04,h196km, mb3.4/1,Error ellipse: s-maj=7.3km s-min=5.2km az=13.1*
*IDC **14** 03:09:09.9±1.1,23°.13S×66°.97W,h209km±21km,mb3.3/1, mb1 3.3/5,mb1mx3.0/29,mbtmp3.8/5,Error ellipse: s-maj=31.4km s-min=15.2km az=122.0*
*GUC **14** 03:09:09.8±0.3,23°.21S×67°.16W,h203km±5km,ML4.0*
ISC 14 03:09:08.6±0.9,23°.30S±0°.07×66°.91W±0°.05,h196km,n17, σ1§23/25,1C,Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HJA	**Humahuaca**	**1.38**	**86**	*e*P	**Pn**	**03 09 42.4**	**+1.0**
SLA	**San Lorenzo**	**1.91**	**138**	*e*P	**Pn**	**03 09 45.9**	**-0.1**
SLA				IAML		03 09 47.7	
	comp=Z,90nm,0.4s						
AZAP	**Zapla**	**1.92**	**119**	*e*P	**Pn**	**03 09 46.4**	**+0.2**
AZAP				IAML		03 09 46.8	
	comp=Z,116nm,0.3s						
LVC	**Limon Verde**	**1.97**	**290**	P	**Pn**	**03 09 48.3**	**+1.5**
	comp=Z,1μm,0.3s,baz=85,slow=8.2,SNR=352						
LVC				S	**Sn**	**03 10 17.7**	**+1.2**
	comp=Z,608nm,0.3s,baz=3.5,slow=23,SNR=16						
LVC	**Limon Verde**	**1.97**	**290**	*i* S	**Sn**	**03 10 15.8**	**-0.7**
PB06	**IPOC Station P**	**2.52**	**283**	*i* P	**Pn**	**03 09 53.3**	**+0.6**
PB06				*i* S	**Sn**	**03 10 26.1**	**-0.9**
PB06				IAML		03 10 29.8	
	comp=N,203nm,0.2s						
PB04	**IPOC Station P**	**3.14**	**287**	*i* P	**Pn**	**03 10 00.2**	**+0.3**
PB04				*i* S	**Sn**	**03 10 38.8**	**-1.1**
PB04				IAML		03 10 42.4	
	comp=N,170nm,0.5s						
PB07	**IPOC Station P**	**3.17**	**299**	*i* P	**Pn**	**03 10 00.7**	**+0.5**
PB07				*i* S	**Sn**	**03 10 39.5**	**-1.0**
PB07				IAML		03 10 40.4	
	comp=E,504nm,0.2s						
PB01	**IPOC Station P**	**3.28**	**313**	*i* P	**Pn**	**03 10 02.0**	**+0.5**
PB01				*i* S	**Sn**	**03 10 42.0**	**-0.9**
PB01				IAML		03 10 45.7	
	comp=N,197nm,0.3s						
PB10	**IPOC Station P**	**3.35**	**266**	⇑*i* P	**Pn**	**03 10 02.1**	**-0.1**
PB10				*i* S	**Sn**	**03 10 41.2**	**-3.1**
PB10				IAML		03 10 47.2	
	comp=N,329nm,0.4s						
AHML	**Horco Molle**	**3.75**	**158**	*e*P	Pn	03 09 57.4	-10
PB08	**IPOC Station P**	**3.78**	**326**	*i* P	**Pn**	**03 10 09.6**	**+1.7**
PB08				*i* S	**Sn**	**03 10 54.6**	**+0.3**
PB08				IAML		03 11 01.3	
	comp=E,61nm,0.3s						
LPAZ	**La Paz**	**7.07**	**350**	P	**Pn**	**03 10 49.7**	**-0.7**
	comp=E,0.5nm,0.3s,baz=193,slow=11,SNR=17						
LPAZ				S	**Sn**	**03 12 12.1**	**+1.1**
	comp=E,0.0nm,0.3s,baz=50,slow=24,SNR=3.7						
SIV	**San Ignacio**	**9.12**	**38**	P	**Pn**	**03 11 15.3**	**-1.2**
	comp=E,0.5nm,0.3s,baz=236,slow=7.8,SNR=6.0						
SIV				S	**Sn**	**03 12 57.6**	**-1.2**
	comp=E,0.1nm,0.3s,baz=231,slow=9.3,SNR=2.5						
PLCA	**Paso Flores**	**17.65**	**189**	P	**Pn**	**03 13 04.9**	**+2.2**
	comp=E,0.2nm,0.3s,baz=5.4,slow=6.0,SNR=3.7						
BDFB	**Brasilia**	**19.36**	**70**	P	**P**	**03 13 20.6**	**+0.9**
	baz=258,slow=13						
TORD	**Torodi Ar. Bea**	**76.24**	**69**	P	**P**	**03 20 35.1**	**-0.9**
	comp=E,0.4nm,0.5s,baz=259,slow=5.8,SNR=11						

IDC 14 03:15:12.7±20.0,20°.67S×173°.37W,h0km,mb4.1/5, mb1 4.3/5,mb1mx3.8/30,mbtmp4.1/5,Error ellipse: s-maj=384.3km s-min=85.2km az=89.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.79**	**264**	P	P	03 22 31.8	+0.8
	1.3nm,0.3s,baz=102,slow=11,SNR=6.3						
STKA	**Steph

LVC				*i* S	**Sn**	**03 26 55.7**	**+0.3**
PB06	**IPOC Station P**	**0.94**	**230**⇑	*i* P	**Pn**	**03 26 46.7**	**+0.6**
PB06				*i* S	**Sn**	**03 27 02.8**	**+1.3**
PB06				IAML		03 27 03.6	
	comp=N,4μm,0.7s						
PB07	**IPOC Station P**	**1.08**	**290**⇑	*i* P	**Pn**	**03 26 47.7**	**+0.1**
PB07				*i* S	**Sn**	**03 27 04.4**	**+0.3**
PB07				IAML		03 27 04.7	
	comp=N,3μm,0.3s						
PB01	**IPOC Station P**	**1.23**	**328**	*i* P	**Pn**	**03 26 48.8**	**-0.5**
PB01				*i* S	**Sn**	**03 27 06.4**	**-0.7**
PB01				IAML		03 27 07.6	
	comp=N,2μm,0.2s						
PB04	**IPOC Station P**	**1.27**	**259**	*i* P	**Pn**	**03 26 50.0**	**+0.2**
PB04				*i* S	**Sn**	**03 27 09.0**	**+1.0**
PB04				IAML		03 27 14.5	
	comp=N,1μm,0.4s						
PB08	**IPOC Station P**	**1.98**	**350**	*i* P	**Pn**	**03 26 58.9**	**+0.2**
PB08				*i* S	**Sn**	**03 27 24.1**	**+0.4**
PB10	**IPOC Station P**	**2.15**	**229**	*i* P	**Pn**	**03 27 00.1**	**-0.3**
PB10				*i* S	**Sn**	**03 27 26.7**	**-0.3**
LPAZ	**La Paz**	**5.82**	**6**	P	**Pn**	**03 27 51.8**	**+1.6**
	comp=N,0.9nm,0.3s,baz=204,slow=7.5,SNR=32						
TORD	**Torodi Ar. Bea**	**77.46**	**70**	P	**P**	**03 38 08.8**	**-1.3**
	comp=N,0.3nm,0.4s,baz=258,slow=5.3,SNR=11						
WRA	**Warramunga Arr**	**132.49**	**210**	PKP	**PKPdf**	**03 45 29.1**	**+0.3**
	comp=N,0.2nm,0.7s,baz=154,slow=1.9,SNR=3.0						
MKAR	**Makanchi Array**	**146.06**	**37**	PKPbc	**PKPdf**	**03 45 53.0**	**+0.5**
	comp=N,0.2nm,0.5s,baz=318,slow=1.9,SNR=2.8						

ISCJB ***14*** *03:28:22.5±1.0, 15°.06N±0°.08×145°.4E±0°.3, h250km, mb3.4/11, Error ellipse: s-maj=41.6km s-min=10.7km az=2.7*

IDC ***14*** *03:28:24.2±1.0, 14°.95N×145°.37E, h256km±8km, mb3.2/11, mb1 3.3/11, mb1mx3.2/49, mbtmp3.8/11, Error ellipse: s-maj=35.5km s-min=14.0km az=90.0*

ISC 14 03:28:23.8±1.2, 15°.0N±0°.1×145°.4E±0°.3, h250km, n12, σ0$83/13, mb3.6/11, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
GUMO	**Guam**	**1.52**	**201**	P		**Pn**	**03 29 03.6**	**+1.2**
	56nm,0.3s,baz=93,slow=5.4,SNR=18							
GUMO				S		**S**	**03 29 32.9**	**+0.2**
	102nm,0.3s,baz=321,slow=23,SNR=6.4							
MJAR	**Matsushiro Arr**	**22.38**	**345**	P		**P**	**03 33 01.1**	**-0.2**
	1.8nm,0.6s,baz=170,slow=9.1,SNR=7.2							
USRK	**Ussuriysk Ar.**	**31.26**	**341**	P		**P**	**03 34 21.8**	**+1.4**
	1.0nm,0.6s,baz=146,slow=10,SNR=2.7							
KLR	**Kul'dur**	**35.91**	**345**	P		**P**	**03 35 00.9**	**+0.6**
	0.5nm,0.4s,baz=149,slow=12,SNR=4.3							
WRA	**Warramunga Arr**	**36.41**	**198**	P		**P**	**03 35 04.6**	**-0.3**
	0.3nm,0.4s,baz=8.7,slow=8.0,SNR=4.6							
ASAR	**Alice Springs**	**40.07**	**197**	P		**P**	**03 35 34.4**	**-0.9**
	0.4nm,0.9s,baz=13,slow=10,SNR=3.7							
SONM	**Songino Array**	**45.90**	**324**	P		**P**	**03 36 21.8**	**+0.1**
	0.5nm,0.6s,baz=129,slow=8.4,SNR=3.8							
MKAR	**Makanchi Array**	**60.85**	**315**	P		**P**	**03 38 09.8**	**-0.3**
	0.7nm,0.4s,baz=88,slow=8.5,SNR=6.4							
KURBB	**Kurchatov Arra**	**63.90**	**319**	P		**P**	**03 38 29.7**	**-0.3**
	1.3nm,0.5s,baz=104,slow=7.0,SNR=9.2							
ILAR	**Eielson Array**	**67.05**	**26**	P		**P**	**03 38 50.2**	**+0.2**
	0.2nm,0.7s,baz=231,slow=5.7,SNR=3.0							
BVAR	**Borovoye Array**	**69.15**	**321**	P		**P**	**03 39 02.9**	**-0.4**
	0.8nm,0.5s,baz=99,slow=7.7,SNR=5.1							
FINES	**FINESS Array B**	**90.10**	**335**	P		**P**	**03 40 54.0**	**-1.3**
	2.3nm,0.8s,baz=64,slow=4.4,SNR=6.0							

ISCJB ***14*** *03:49:26.0±0.8, 23°.21S±0°.05×68°.16W±0°.08, h139km±9km, mb3.3/3, Error ellipse: s-maj=13.5km s-min=7.7km az=24.9*

IDC ***14*** *03:49:27.3±1.3, 23°.15S×68°.01W, h127km±9km, mb3.2/4, mb1 3.4/6, mb1mx3.3/19, mbtmp3.8/6, Error ellipse: s-maj=24.6km s-min=17.8km az=146.0*

GUC ***14*** *03:49:28.5±0.7, 23°.15S×68°.43W, h146km±11km, ML3.6*

ISC 14 03:49:27.0±1.2, 23°.19S±0°.08×68°.13W±0°.10, h131km±11km, n18, σ1$06/29, mb3.4/3, 8C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LVC	**Limon Verde**	**0.92**	**309**	P		**Pn**	**03 49 50.4**	**+0.6**
	943nm,0.3s,baz=133,slow=11,SNR=208							
LVC				S		**Sn**	**03 50 07.6**	**+0.7**
	4μm,0.3s,baz=223,slow=23,SNR=92							
PB06	**IPOC Station P**	**1.41**	**290**⇑	*i* P		**Pn**	**03 49 54.8**	**+0.4**
PB06				*i* S		**Sn**	**03 50 15.1**	**-0.2**
PB06				IAML			03 50 17.0	
	comp=E,1μm,0.1s							
PB09	**IPOC Station P**	**1.73**	**323**⇑	*i* P		**Pn**	**03 49 59.3**	**+1.2**
PB09				IAML			03 50 24.7	
	comp=E,463nm,0.2s							
PB04	**IPOC Station P**	**2.05**	**294**⇑	*i* P		**Pn**	**03 50 01.9**	**0.0**
PB04				*i* S		**Sn**	**03 50 27.8**	**-0.7**
PB04				IAML			03 50 32.2	
	comp=N,512nm,0.2s							
ANCH	**Antofagasta**	**2.15**	**256**⇑	*i* P		**Pn**	**03 50 03.0**	**+0.1**
ANCH				*i* S		**Sn**	**03 50 29.1**	**-1.2**
PB07	**IPOC Station P**	**2.18**	**312**⇑	*i* P		**Pn**	**03 50 03.7**	**+0.2**
PB07				*i* S		**Sn**	**03 50 31.0**	**-0.4**
PB07				IAML			03 50 35.1	
	comp=E,269nm,0.2s							
PB10	**IPOC Station P**	**2.25**	**261**⇑	*i* P		**Pn**	**03 50 03.9**	**-0.3**
PB10				*i* S		**Sn**	**03 50 30.4**	**-2.2**
PB10				IAML			03 50 32.3	
	comp=E,901nm,0.1s							
PB01	**IPOC Station P**	**2.48**	**329**⇑	*i* P		**Pn**	**03 50 07.1**	**0.0**
PB01				*i* S		**Sn**	**03 50 37.1**	**-0.9**
PB01				IAML			03 50 38.8	
	comp=N,188nm,0.2s							
PB08	**IPOC Station P**	**3.18**	**342**⇑	*i* P		**Pn**	**03 50 17.3**	**+0.8**
PB08				*i* S		**Sn**	**03 50 54.8**	**+0.3**
PB08				IAML			03 50 56.9	
	comp=E,90nm,0.3s							
MNMC	**Minye Minye**	**4.27**	**341**⇓	*i* P		**Pn**	**03 50 29.9**	**-0.8**
MNMC				*i* S		**Sn**	**03 51 19.3**	**-0.7**
LPAZ	**La Paz**	**6.87**	**0**	P		**Pn**	**03 51 06.3**	**+0.4**
	comp=E,0.8nm,0.3s,baz=171,slow=6.1,SNR=31							
LPAZ				S		**Sn**	**03 52 23.9**	**+0.8**
	baz=30,slow=23,SNR=2.0							
SIV	**San Ignacio**	**9.77**	**44**	P		**Pn**	**03 51 42.0**	**-2.4**
	comp=E,4.5nm,0.3s,baz=252,slow=9.7,SNR=37							
SIV				S		**Sn**	**03 53 30.0**	**-2.5**
	comp=E,0.3nm,0.3s,baz=322,slow=11,SNR=2.6							
BDFB	**Brasilia**	**20.39**	**72**	P		**P**	**03 53 53.9**	**0.0**
	comp=E,2.2nm,0.4s,baz=75,slow=15							
PTGA	**Pitinga**	**23.69**	**21**	P		**P**	**03 54 26.3**	**-0.7**
	comp=E,0.8nm,0.2s,baz=278,slow=18,SNR=2.8							
TXAR	**Lajitas Array**	**62.42**	**325**	P		**P**	**03 59 37.2**	**+0.8**
	comp=E,0.1nm,0.7s,baz=142,slow=9.0,SNR=3.8							
TORD	**Torodi Ar. Bea**	**77.25**	**70**	P		**P**	**04 01 07.5**	**+0.2**
	comp=E,0.5nm,0.7s,baz=253,slow=5.3,SNR=11							
WRA	**Warramunga Arr**	**131.85**	**209**	PKP		**PKPdf**	**04 08 26.4**	**+0.8**
	comp=E,0.4nm,0.9s,baz=144,slow=1.1,SNR=3.5							
MKAR	**Makanchi Array**	**146.55**	**38**	PKPbc		**PKPdf**	**04 08 52.4**	**+1.0**
	comp=E,0.4nm,0.7s,baz=283,slow=0.9,SNR=2.9							

NIED ***14*** *04:10:00, 36°.90N×141°.50E, h5km, Mw5.0 Best double couple: M0 4.18000×10¹⁶ NP1:φs32.00000°, δ37.00000°, λ-83.00000°. NP2:φs203.00000°, δ53.00000°, λ-95.00000°.*

JMA ***14*** *04:10:49.4±0.1, 36°.90N×141°.52E, h29km±1km, M5.4*
JMA Felt II J1.

IDC ***14*** *04:10:50.6±0.5, 36°.87N×141°.29E, h0km, mb4.5/42, mb1 4.5/47, mb1mx4.5/62, mbtmp4.4/47, ML3.5/5, MS4.5/31, Ms1 4.5/31, ms1mx4.4/39, Error ellipse: s-maj=12.8km s-min=10.4km az=99.0*

ISCJB ***14*** *04:10:51.5±0.6, 36°.89N±0°.02×141°.27E±0°.02, h9km±3km, mb4.8/180, MS4.8/53, Error ellipse: s-maj=3.5km s-min=2.7km az=153.3*

MOS ***14*** *04:10:55.6±1.4, 37°.26N×141°.11E, h27km, mb5.0/80, MS4.7/24, Error ellipse: s-maj=6.6km s-min=4.7km az=105.5*

GCMT ***14*** *04:10:55.0±0.2, 36°.97N×141°.34E, h12km, MW5.0/96, Moment Tensor Solution. s38,c47; s96,c156; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-3.92±.08; Mθθ1.11±.09; Mφφ2.81±.07; Mrθ0.46±.32; Mrφ1.43±.07; Mθφ-0.04±.29; Best double couple: M0 3.79700×10¹⁶*

NP1:φs215.00000°, δ47.00000°, λ-82.00000°. NP2: φs24.00000°, δ44.00000°, λ-98.00000°. Principal axes: T 3.6290, Plg1.0000°, Azm300.0000°; N 0.3370, Plg6.0000°, Azm30.0000°; P -3.9660, Plg84.0000°, Azm195.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

NEIC ***14*** *04:10:55.1±1.9, 36°.93N×141°.14E, h22km±13km, mb5.0/103 Error ellipse: s-maj=6.6km s-min=4.4km az=137.0*

NEIC Felt at Tokyo. Recorded [2 JMA] in Fukushima, Ibaraki and Saitama.

ISC 14 04:10:54.2±0.5, 36°.96N±0°.03×141°.35E±0°.03, h19km±1km, n433, σ2$03/460, mb4.9/180, MS4.9/53, 17C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.46**	**288**	P		**Pg**	**04 11 01.0**	**-2.8**
ONAJ				*e*S		**Sg**	**04 11 09.9**	**-0.2**
JFK	**Kawauchi**	**0.56**	**317**⇑	P		**Pg**	**04 11 02.6**	**-2.8**
JFK				*e*S		**Sg**	**04 11 12.6**	**-0.4**
JHO	**Hitachi**	**0.72**	**241**⇓	P		**Pg**	**04 11 04.4**	**-4.0**
JHO				*e*S		**Sg**	**04 11 15.8**	**-2.1**
JFT	**Otama**	**0.98**	**305**⇑	P		**Pg**	**04 11 10.1**	**-3.3**
JFT				*e*S		**Sg**	**04 11 24.3**	**-2.0**
JMM	**Marumori**	**1.01**	**334**	P		**Pb**	**04 11 09.7**	**-3.4**
JMM				*e*S		**Sg**	**04 11 24.4**	**-2.7**
JFY	**Yanaizu**	**1.39**	**289**	P		**Pn**	**04 11 16.4**	**-2.2**
JIO	**Ouri**	**1.49**	**360**⇑	P		**Pn**	**04 11 16.9**	**-3.1**
JIO				*e*S		**Sn**	**04 11 36.0**	**-3.0**
JOU	**Okura**	**1.50**	**339**	P		**Pn**	**04 11 17.8**	**-2.4**
MJAR	**Matsushiro Arr**	**2.56**	**262**	Pn		**Pn**	**04 11 32.1**	**-2.6**
	14nm,0.3s,baz=90,slow=14,SNR=70							
MJAR				Sn		**Sb**	**04 12 11.3**	**+0.8**
	46nm,0.3s,baz=82,slow=18,SNR=7.4							
MJAR				LR		LR	04 12 38.5	
	comp=Z,7μm,20.6s,baz=75,slow=44							
MAJO	**Matsushiro**	**2.56**	**262***c*	*i*P		**Pn**	**04 11 33.9**	**-0.8**
MAJO	**Matsushiro**	**2.56**	**262**	*e*Pn		**Pn**	**04 11 34.7**	**0.0**
MAJO				*e*S		**Sn**	**04 12 05.8**	**+0.5**
MAT	**Matsushiro**	**2.56**	**262**	P		**Pn**	**04 11 33.2**	**-1.5**
MAT				*e*S		**Sn**	**04 12 06.8**	**+1.5**
MJB9	**Matsu-Tunnel**	**2.56**	**262**	*e*Pn		**Pn**	**04 11 35.0**	**+0.3**
INU	**Inuyama**	**3.86**	**247**	*e*Pn		**Pn**	**04 11 52.0**	**-0.6**
JHJ2	**Mitsune**	**4.04**	**199**	*e*Pn		**Pn**	**04 11 53.7**	**-1.3**
JHJ2				*e*S		**Sn**	**04 12 40.0**	**-1.8**
JHJ	**Hachijo jima 2**	**4.04**	**199**	Pn		**Pn**	**04 11 52.2**	**-2.9**
	67nm,0.3s,baz=327,slow=23,SNR=20							
JHJ				Sn		**Sn**	**04 12 40.2**	**-1.7**
	123nm,0.3s,baz=66,slow=20,SNR=3.9							
JHJ				LR		LR	04 13 29.4	
	comp=Z,3μm,19.0s,baz=46,slow=40							
ERM	**Erimo**	**5.24**	**15**⇓	*e*P		**Pn**	**04 12 10.8**	**-0.7**
ERM	**Erimo**	**5.24**	**15**	*e*Pn		**Pn**	**04 12 10.7**	**-0.7**
ERM				*e*S		**Sn**	**04 13 15.4**	**+4.0**
ASAJ	**Asahikawa**	**7.21**	**7**	Pn		**Pn**	**04 12 38.3**	**-0.3**
	baz=209,slow=12							
ASAJ				Sn		**Sn**	**04 14 04.1**	**+4.1**
	baz=180,slow=18							
ASAJ	**Asahikawa**	**7.21**	**7**	*e*Pn		**Pn**	**04 12 37.4**	**-1.2**
ASAJ				*e*S		**Sg**	**04 14 41.6**	**-3.9**
JNU	**Nakatsue**	**9.40**	**249**	Pn		**Pn**	**04 13 06.3**	**-2.4**
	0.4nm,0.3s,baz=25,slow=15,SNR=2.8							
JNU				Sn		**Sn**	**04 14 52.1**	**-1.8**
	baz=113,slow=7.7,SNR=2.1							
JNU	**Nakatsue**	**9.40**	**249**	*e*Pn		**Pn**	**04 13 09.7**	**+1.0**
JNU				Sn		**Sn**	**04 14 52.1**	**-1.8**
KUR	**Kuril'sk**	**9.61**	**29**	P		**Pn**	**04 13 13.0**	**+1.5**
KUR				S		**Sn**	**04 14 56.4**	**-2.5**
KUR				pmax	pmax			
	comp=Z,24nm,0.6s							
KUR				smax	smax			
	comp=N,27nm,0.7s							
KUR				smax	smax			
	comp=E,22nm,0.7s							
KUR				smax	smax			
	comp=E,325nm,5.1s							
MSHR	**Mys Shultsa**	**9.64**	**309**⇑	*e*P		**Pn**	**04 13 11.8**	**-0.1**
YSS	**Yuzh-Sakhalins**	**10.04**	**6**⇑	*e*P		**Pn**	**04 13 15.5**	**-1.9**
YSS				*e*S		**Sn**	**04 15 03.3**	**-6.1**
YSS				pmax	pmax			
	comp=Z,20nm,1.0s							
YSS				MLR	MLR			
	comp=N,2μm,11.0s							
YSS				MLR	MLR			
	comp=Z,2μm,11.0s							
YSS	**Yuzh-Sakhalins**	**10.04**	**6**	*e*Pn		**Pn**	**04 13 15.9**	**-1.4**
USRK	**Ussuriysk Ar.**	**10.14**	**318**	Pn		**Pn**	**04 13 21.4**	**+2.7**
	comp=Z,0.3nm,0.3s,baz=148,slow=25,SNR=6.6							
USRK				LR		LR	04 17 04.3	
	comp=Z,7μm,18.1s,baz=125,slow=37							
KSRS	**Korea Array**	**10.72**	**277**	Pn		**Pn**	**04 13 29.2**	**+2.5**
	comp=Z,0.1nm,0.3s,baz=86,slow=14,SNR=2.9							
KSRS				LR		LR	04 17 25.6	
	comp=Z,4μm,19.9s,baz=84,slow=37							
KS01	**Wonju Array Si**	**10.74**	**277**	*e*Pn		Pn	04 13 31.8	+4.8
KS15	**Wonju Array Si**	**10.75**	**277**	*e*Pn		Pn	04 13 33.9	+6.7
KSAR	**Wonju Array Be**	**10.75**	**277**	P		**Pn**	**04 13 29.2**	**+2.0**
KSAR	**Wonju Array Be**	**10.75**	**277**	Pn		**Pn**	**04 13 29.2**	**+2.0**
MDJ	**Mudanjiang**	**11.73**	**314**	P		**Pn**	**04 13 43.4**	**+2.8**
MDJ				S		**Sn**	**04 15 55.0**	**+4.0**
MDJ				PcP		**PcP**	**04 19 28.1**	**-0.9**
MDJ				ScP		**ScP**	**04 23 03.0**	**+2.2**
MDJ	**Mudanjiang**	**11.73**	**314**	ScS		ScS	04 26 38.0	+1.7
MDJ				pmax	pmax			
	comp=Z,14nm,1.4s							
MDJ				pmax	pmax			
	comp=Z,520nm,8.2s							
MDJ				LR	LR			
	comp=N,3μm,15.8s							
MDJ				LR	LR			
	comp=E,2μm,19.7s							
MDJ				LR	LR			
	comp=Z,5μm,18.7s							
INCN	**Inchon**	**11.75**	**277**	*e*Pn		**Pn**	**04 13 44.9**	**+4.1**
HABR	**Khabarovsk**	**12.40**	**340**	*e*P		**Pn**	**04 13 47.0**	**-2.6**
HABR				*e*S		**Sn**	**04 16 01.3**	**-5.8**
HABR				pmax	pmax			
	comp=Z,32nm,1.6s							
HABR				MLR	MLR			
	comp=Z,793nm,12.0s							
CN2	**Changchun**	**13.90**	**304**	*e*P		**Pn**	**04 14 13.8**	**+3.6**
CN2				*e*S		**Sn**	**04 16 49.8**	**+5.8**
CN2				pmax	pmax			
	comp=Z,10.0nm,0.7s							
CN2				pmax	pmax			
	comp=Z,300nm,5.0s							
CN2				LR	LR			
	comp=N,4μm,13.0s							
CN2				LR	LR			
	comp=E,5μm,13.0s							
CN2				LR	LR			
	comp=Z,5μm,15.0s							
TYV	**Tymovskoe**	**13.93**	**3**	*e*P		Pn	04 14 15.2	+4.7
TYV				pmax	pmax			
	comp=Z,13nm,0.8s							
TYV				MLR	MLR			
	comp=N,5μm,18.0s							
TYV				MLR	MLR			
	comp=Z,4μm,18.0s							
KLR	**Kul'dur**	**14.11**	**333**	Pn		**Pn**	**04 14 12.1**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=158,slow=15,SNR=2.6							
KLR				LR		LR	04 19 30.8	
	comp=Z,4μm,18.6s,baz=148,slow=37							
SNY	**Shenyang**	**14.57**	**295**	⇑P		**Pn**	**04 14 20.9**	**+1.6**
SNY				S		**Sn**	**04 17 02.3**	**+2.1**
SNY				pmax	pmax			
	comp=Z,13nm,1.6s							
SNY				pmax	pmax			
	comp=Z,440nm,5.8s							
SNY				LR	LR			
	comp=N,2μm,10.4s							
SNY				LR	LR			
	comp=E,8μm,13.7s							
SNY				LR	LR			
	comp=Z,11μm,14.3s							
JOW	**Kunigami**	**14.99**	**231**	*e*Pn		**Pn**	**04 14 25.5**	**+0.4**
	comp=Z,14nm,1.1s							
DL2	**Dalian**	**15.68**	**283**⇑	*i*P		**Pn**	**04 14 35.3**	**+1.2**
DL2				S		**Sn**	**04 17 29.1**	**+1.8**
DL2				pmax	pmax			
	comp=Z,24nm,0.9s							
DL2				pmax	pmax			
	comp=Z,450nm,6.4s							
DL2				LR	LR			
	comp=N,5μm,11.0s							
DL2				LR	LR			
	comp=E,4μm,12.6s							
DL2				LR	LR			
	comp=Z,5μm,15.7s							
NKL	**Nikolayevsk**	**16.20**	**359**	*e*P		**Pn**	**04 14 36.0**	**-4.6**
NKL				pmax	pmax			
	comp=Z,200nm,6.0s							
NKL				pmax	pmax			
	comp=Z,28nm,1.2s							
NKL				MLR	MLR			
	comp=N,2μm,12.0s							
NKL				MLR	MLR			
	comp=Z,3μm,12.0s							
SKR	**Severo-Kuril's**	**17.32**	**33**	*e*P		**P**	**04 14 58.9**	**+2.8**
SKR				pmax	pmax			
	comp=Z,300nm,3.7s							
SKR				MLR	MLR			
	comp=Z,2μm,15.0s							
SKR				MLR	MLR			
	comp=Z,1μm,14.0s							
SSE	**Sheshan**	**17.70**	**257**	P		**Pn**	**04 14 56.4**	**-3.2**
SSE				sP		**sP**	**04 15 10.8**	**+2.6**
SSE				S		**Sn**	**04 18 12.3**	**-3.9**
SSE				sS		**sS**	**04 18 30.1**	**-1.7**
SSE				pmax	pmax			
	comp=Z,23nm,0.6s							
SSE				pmax	pmax			
	comp=Z,160nm,6.0s							
SSE				LR	LR			
	comp=N,2μm,12.9s							
SSE				LR	LR			
	comp=E,3μm,12.9s							
SSE				LR	LR			
	comp=Z,4μm,14.0s							
NJ2	**Nanjing**	**19.16**	**262**	*e*P		**P**	**04 15 17.3**	**+0.8**
NJ2				S		**S**	**04 18 56.8**	**+3.8**
NJ2				pmax	pmax			
	comp=Z,10.0nm,0.5s							
NJ2				LR	LR			
	comp=N,4μm,13.0s							
NJ2				LR	LR			
	comp=E,2μm,12.2s							
NJ2				LR	LR			
	comp=Z,3μm,16.3s							
TIA	**Tai'an**	**19.46**	**275**	⇓P		**P**	**04 15 21.8**	**+2.0**
TIA				S		**S**	**04 19 08.8**	**+10**
TIA				pmax	pmax			
	comp=Z,10.0nm,1.0s							
TIA				pmax	pmax			
	comp=Z,350nm,4.3s							
TIA				LR	LR			
	comp=N,2μm,9.8s							
TIA				LR	LR			
	comp=E,3μm,14.3s							
TIA				LR	LR			
	comp=Z,4μm,13.3s							
PEA0	**Petropavlovsk-**	**19.78**	**30**	*e*P		**P**	**04 15 23.2**	**+0.1**
PEA0B	**Petropavlovsk-**	**19.78**	**30**	*e*P		**P**	**04 15 24.1**	**+1.0**
	comp=Z,56nm,1.4s							
PETK	**Petropavlovsk-**	**19.78**	**30**	P		**P**	**04 15 23.7**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=216,slow=14,SNR=3.4							
PETK				LR		LR	04 22 24.6	
	comp=Z,357nm,20.8s,baz=212,slow=35							
BJI	**Beijing**	**19.92**	**287**	P		**P**	**04 15 23.8**	**-1.0**
BJI				S		**S**	**04 19 08.1**	**0.0**
BJI				pmax	pmax			
	comp=Z,10.0nm,1.6s							
BJI				pmax	pmax			
	comp=Z,150nm,4.9s							
BJI				LR	LR			
	comp=N,2μm,13.4s							
BJI				LR	LR			
	comp=E,3μm,13.4s							
BJT	**Baijiatuau**	**19.93**	**287**	*e*P		**P**	**04 15 23.3**	**-1.5**
BJT				pmax	pmax			
	comp=Z,4.0nm,0.5s							
BJT	**Baijiatuau**	**19.93**	**287**	*e*P		**P**	**04 15 23.3**	**-1.5**
	comp=Z,4.5nm,0.5s							
PET	**Petropavlovsk**	**20.11**	**32**	*e*P		**P**	**04 15 26.3**	**-0.3**
PET				*e*S		**S**	**04 19 10.5**	**-1.0**
PET				pmax	pmax			
	comp=Z,200nm,6.0s							
PET				pmax	pmax			
	comp=Z,38nm,1.5s							
PET				MLR	MLR			
	comp=Z,600nm,16.0s							
PET				MLR	MLR			
	comp=Z,500nm,12.0s							
TIY	**Taiyuan**	**22.97**	**281**	*e*P		**P**	**04 16 04.5**	**+6.9**
TIY				S		**S**	**04 20 10.6**	**+3.6**
TIY				LR	LR			
	comp=N,2μm,12.1s							
TIY				LR	LR			
	comp=E,4μm,13.3s							
TIY				LR	LR			
	comp=Z,5μm,13.8s							
WHN	**Wuhan**	**23.30**	**262**⇑	*i*P		**P**	**04 15 57.4**	**-3.5**
WHN				S		**S**	**04 20 14.5**	**+2.0**
WHN				pmax	pmax			
	comp=Z,28nm,0.4s							
WHN				LR	LR			
	comp=N,6μm,11.6s							
WHN				LR	LR			
	comp=E,6μm,12.0s							
WHN				LR	LR			
	comp=Z,8μm,12.3s							
MA2	**Magadan**	**23.44**	**12**	P		**P**	**04 16 02.6**	**+0.6**
	comp=Z,6.3nm,0.3s,baz=203,slow=15,SNR=3.1							
HHC	**Hu-ho-hao-te**	**23.45**	**289**	*e*P		**P**	**04 16 02.4**	**-0.1**
HHC				pP		pP	04 16 08.1	0.0
HHC				sP		sP	04 16 11.1	+0.6
HHC				S		**S**	**04 20 09.3**	**-5.7**
HHC				pmax	pmax			
	comp=Z,12nm,0.6s							
HHC				pmax	pmax			
	comp=Z,96nm,6.7s							
HHC				LR	LR			
	comp=N,2μm,11.8s							
HHC				LR	LR			
	comp=E,2μm,13.1s							
HHC				LR	LR			
	comp=Z,2μm,11.4s							
YAK	**Yakutsk**	**26.13**	**347**	P		**P**	**04 16 27.4**	**+0.6**
	comp=Z,9.0nm,0.3s,baz=206,slow=2.1,SNR=1.8							
YAK	**Yakutsk**	**26.13**	**347**	*e*P		**P**	**04 16 26.9**	**+0.1**
YAK				*e**PP		**sP**	**04 16 36.0**	**+1.0**
YAK				*e*			04 17 05.7	
YAK				*e*PPP		PPP	04 17 14.6	
YAK				*e*S		**S**	**04 20 58.6**	**+1.4**
YAK				*e**SS		**sS**	**04 21 06.9**	**+0.1**
YAK				*e*SS		**SnSn**	**04 22 01.7**	**+5.8**
YAK		

XAN LR LR
comp=E,2µm,14.8s
SEY Seymchan 26.87 11 P P 04 16 33.3 -0.2
comp=Z,2µm,11.7s
ENH Enshi 27.27 265 eP P 04 16 35.5 -2.0
comp=Z,5.8nm,1.0s,baz=209,slow=9.3,SNR=13
SONA1 Songino Array 27.78 304 eP P 04 16 42.4 +0.4
SONM Songino Array 27.78 304 P P 04 16 41.7 -0.3
comp=Z,4.0nm,0.9s,baz=107,slow=8.2,SNR=12
SONM LR LR 04 28 04.3
comp=Z,1µm,19.9s,baz=110,slow=37
SONM Songino Array 27.78 304 P P 04 16 41.7 -0.3
SONM pmax pmax
comp=Z,2.0nm,0.5s
SONM MLR MLR
comp=Z,1µm,19.9s
H11N2 WAKE ISLAND Hy 28.15 121 H H 04 46 07.9
baz=313,slow=75
H11N1 WAKE ISLAND Hy 28.16 121 H H 04 46 08.5
baz=313,slow=75
H11N3 WAKE ISLAND Hy 28.17 121 T T 04 46 09.2
baz=313,slow=75
H11S1 WAKE ISLAND Hy 28.86 123 H H 04 46 56.8
baz=315,slow=76,SNR=5914
H11S3 WAKE ISLAND Hy 28.86 123 H H 04 46 59.0
baz=315,slow=76,SNR=6370
H11S2 WAKE ISLAND Hy 28.88 123 H H 04 47 01.1
baz=315,slow=76,SNR=3986
TGY Tagaytay City 29.16 224 LR LR 04 27 42.7
comp=Z,228nm,18.9s,baz=262,slow=35
LZH Lanzhou 30.03 280 eP P 04 17 00.8 -1.3
LZH pP pP 04 17 05.5 -2.4
LZH sP sP 04 17 08.6 -1.7
LZH PP PnPn 04 18 02.1 +3.2
LZH PcP PcP 04 19 58.3 -5.6
LZH eS S 04 21 55.4 -4.1
LZH sS sS 04 22 03.3 -5.8
LZH SS SnSn 04 23 27.0 -4.7
LZH pmax pmax
comp=Z,18nm,1.1s
LZH pmax pmax
comp=Z,84nm,4.8s
LZH LR LR
comp=N,2µm,12.5s
LZH LR LR
comp=E,4µm,14.2s
LZH LR LR
comp=Z,4µm,16.2s
ZAK Zakamensk 30.27 308 eP P 04 16 59.6 -4.5
ZAK pmax pmax
comp=Z,5.0nm,1.5s
TLY Talaya 30.34 311 P P 04 17 05.8 +1.2
comp=Z,6.8nm,0.8s,baz=181,slow=3.3,SNR=8.4
TLY LR LR 04 29 36.5
comp=Z,2µm,18.2s,baz=102,slow=37
TLY Talaya 30.34 311 eP P 04 17 06.2 +1.7
TLY e 04 18 17.2
TLY eS S 04 22 01.5 -2.3
TLY eSSS SSS 04 23 41.8
TLY pmax pmax
comp=Z,8.0nm,1.0s
TLY MLR MLR
comp=Z,2µm,15.0s
GYA Guiyang 31.16 260⇑ iP P 04 17 13.8 +1.7
GYA pP sP 04 17 20.0 -0.3
GYA PP PnPn 04 18 16.8 +2.9
GYA S S 04 22 17.3 +0.1
GYA sS sS 04 22 28.0 +1.2
GYA ScP ScP 04 23 50.4 +1.6
GYA SS SnSn 04 24 02.5 +3.1
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=N,550nm,16.8s
GYA LR LR
comp=E,510nm,17.2s
GYA LR LR
comp=Z,510nm,17.6s
GTA Gaotai 32.54 287 eP P 04 17 24.4 +0.3
GTA pP pP 04 17 29.8 -0.2
GTA sP sP 04 17 32.8 +0.4
GTA S S 04 22 37.5 -1.0
GTA sS sS 04 22 48.4 +0.2
GTA SS SnSn 04 24 35.3 +2.7
GTA pmax pmax
comp=Z,5.0nm,0.7s
GTA pmax pmax
comp=Z,130nm,6.4s
GTA LR LR
comp=N,2µm,13.5s
GTA LR LR
comp=E,2µm,13.8s
GTA LR LR
comp=Z,2µm,14.3s
QIZ Qiongzhong 32.85 246 P P 04 17 27.4 +0.5
QIZ S S 04 22 44.1 +0.6
QIZ Qiongzhong 32.85 246 ScS ScS 04 27 54.9 +0.2
QIZ LR LR
comp=N,1µm,13.4s
QIZ LR LR
comp=E,1µm,14.1s
QIZ LR LR
comp=Z,2µm,11.9s
KMI Kunming 34.90 261 P P 04 17 44.9 0.0
KMI pP pP 04 17 51.0 +0.2
KMI sP sP 04 17 53.6 +0.4
KMI PP PP 04 19 04.8 +0.7
KMI S S 04 23 10.6 -4.9
KMI pmax pmax
comp=Z,16nm,0.7s
KMI pmax pmax
comp=Z,11nm,0.8s
KMI LR LR
comp=N,1µm,14.5s
KMI LR LR
comp=E,1µm,13.8s
KMI LR LR
comp=Z,2µm,12.5s
TIXI Tiksi 35.36 353 P P 04 17 49.0 +0.9
comp=Z,9.6nm,1.0s,baz=132,slow=13,SNR=3.6
TIXI Tiksi 35.36 353⇑ eP P 04 17 49.8 +1.8
TIXI pmax pmax
comp=Z,5.0nm,0.9s
MYLDM Lahad Datu 37.92 219 eP P 04 18 09.9 -0.6
comp=Z,13nm,0.8s
MRSI Marisa 40.50 211 P P 04 18 33.0 +1.0
comp=Z,32nm,1.0s,comp=Z,5µm
CHTO Chiang Mai 41.22 256 eP P 04 18 38.8 +0.7
CHTO pmax pmax
comp=Z,20nm,1.3s
CHTO Chiang Mai 41.22 256 eP P 04 18 38.8 +0.7
comp=Z,20nm,1.3s
SANI Sanana 41.36 204 P P 04 18 38.9 -0.2
comp=Z,60nm,1.3s,comp=Z,885nm
CMAR Chiang Mai Arr 41.43 255 P P 04 18 38.0 -1.7
comp=Z,0.9nm,0.4s,baz=213,slow=28,SNR=3.4
CMAR LR LR 04 36 35.8
comp=Z,618nm,19.2s,baz=52,slow=37
CM01 Chiang Mai Arr 41.44 255 eP P 04 18 40.5 +0.7
ZAA0 Zalesovo Array 41.93 312 eP P 04 18 42.3 -1.1
ZALV Zalesovo Beam 41.93 312 P P 04 18 42.1 -1.3
comp=Z,14nm,0.9s,baz=90,slow=6.8,SNR=15
ZALV PcP PcP 04 20 40.1 +1.5
comp=Z,3.7nm,0.9s,baz=98,slow=1.9,SNR=2.5
ZALV LR LR 04 36 45.0
comp=Z,1µm,19.4s,baz=72,slow=37
LSA Lhasa 42.16 275 eP P 04 18 46.3 +0.1
LSA pmax pmax
comp=Z,3.0nm,0.3s
LSA Lhasa 42.16 275 eP P 04 18 46.3 +0.1
comp=Z,2.8nm,0.3s
PCI Palu 42.63 213 P P 04 18 50.2 +0.7
comp=Z,59nm,1.2s
NVS Novosibirsk 42.85 314 eP P 04 18 52.7 +1.8
NVS e 04 19 06.2
NVS pmax pmax
comp=E,44nm,2.1s
NVS pmax pmax
comp=Z,77nm,2.1s
NRIK Noril'sk 43.31 335 P P 04 18 55.4 +1.0
comp=Z,2.5nm,0.4s,baz=122,slow=7.0,SNR=7.4
NRIK LR LR 04 37 55.9
comp=Z,1µm,18.1s,baz=104,slow=38

SBUM Sibu 43.58 225 eP P 04 18 59.1 +1.9
comp=Z,29nm,1.5s
MK01 Makanchi Array 44.11 302 eP P 04 18 59.2 -2.0
MK31 Makanchi Array 44.11 302 i P P 04 18 59.1 -2.2
MK31 pmax pmax
comp=Z,7.0nm,0.8s
MK31 Makanchi Array 44.11 302 eP P 04 18 59.8 -1.5
MKAR Makanchi Array 44.11 302 P P 04 18 59.6 -1.6
comp=Z,5.3nm,0.7s,baz=83,slow=10.0,SNR=24
MKAR LR LR 04 37 29.8
comp=Z,938nm,20.5s,baz=92,slow=36
MAKZ Makanchi 44.33 302 P P 04 19 01.5 -1.4
MAKZ pmax pmax
comp=Z,22nm,1.4s
MAKZ Makanchi 44.33 302 eP P 04 19 01.5 -1.4
comp=Z,19nm,1.3s
KSM Kuching 45.46 226 eP P 04 19 12.0 -0.3
comp=Z,101nm,1.8s
SVW2 Sparrevohn 45.61 37 eP P 04 19 14.4 +1.4
comp=Z,19nm,1.2s
KURK Kurchatov 45.94 308 P P 04 19 13.8 -1.8
KURK pmax pmax
comp=Z,43nm,1.6s
KURK Kurchatov 45.94 308 eP P 04 19 14.3 -1.4
comp=Z,33nm,1.0s
KURBB Kurchatov Arra 46.01 308 P P 04 19 14.8 -1.4
comp=Z,3.9nm,0.5s,baz=84,slow=8.4,SNR=38
KAPI Kappang 46.37 210 eP P 04 19 19.6 +0.2
comp=Z,98nm,1.3s
PDGK Podgornoye 46.77 298 P P 04 19 23.5 +1.3
PDGK pmax pmax
comp=Z,24nm,1.5s
RAMN Ramite 46.96 274 eP P 04 19 22.8 -1.5
comp=Z,64nm,0.7s
RSO Redoubt South 46.99 38 eP P 04 19 24.5 +0.5
GUN Gumba 47.11 276 eP P 04 19 26.7 +1.1
PPLA Purkeypile 47.26 35 eP P 04 19 26.8 +0.8
comp=Z,57nm,1.5s
CAST Castle Rocks 47.31 34 eP P 04 19 29.4 +3.1
comp=Z,27nm,1.5s
SPU Mount Spurr 47.32 37 eP P 04 19 28.0 +1.6
KKN Kakani 47.64 276 eP P 04 19 30.3 +0.7
PKIN Phulchoki 47.64 276 eP P 04 19 29.6 0.0
comp=Z,10.0nm,0.6s
KTH Kantishna Hill 47.84 34 eP P 04 19 31.6 +1.2
comp=Z,24nm,1.2s
GKN Gorkha 48.06 276 eP P 04 19 33.4 +0.7
comp=Z,62nm,1.0s
PMR Palmer 48.72 37 eP P 04 19 39.4 +2.3
PMR pmax pmax
comp=Z,12nm,1.0s
PMR Palmer 48.72 37 eP P 04 19 39.4 +2.3
comp=Z,12nm,1.0s
RND Reindeer 48.77 34 eP P 04 19 40.2 +2.6
RND pmax pmax
comp=Z,13nm,1.0s
RND Reindeer 48.77 34 eP P 04 19 40.2 +2.6
comp=Z,13nm,1.0s
KOLN Koldanda 48.99 277 eP P 04 19 39.1 -0.8
comp=Z,19nm,0.7s
WRH Wood River Hil 49.08 33 eP P 04 19 42.7 +2.8
comp=Z,17nm,1.5s
SML Sawmill 49.08 36 eP P 04 19 42.2 +2.2
SML pmax pmax
comp=Z,79nm,2.0s
SML Sawmill 49.08 36 eP P 04 19 42.2 +2.2
comp=Z,79nm,2.0s
SOEI Soe 49.16 203 P P 04 19 41.5 +0.4
SOEI Soe 49.16 203 eP P 04 19 41.2 +0.1
comp=Z,97nm,1.2s
CCB Clear Creek Bu 49.19 33 eP P 04 19 44.5 +3.8
comp=Z,12nm,1.4s
PYUN Piuthan 49.33 277 eP P 04 19 42.0 -0.6
comp=Z,92nm,1.0s
HNR Honiara 49.34 155 LR LR 04 37 48.5
comp=Z,434nm,21.2s,baz=337,slow=33
DHY Denali Highway 49.45 35 eP P 04 19 45.6 +2.6
comp=Z,21nm,1.4s
SCM Sheep Creek Mo 49.56 36 eP P 04 19 46.4 +2.8
SCM pmax pmax
comp=Z,93nm,2.0s
SCM Sheep Creek Mo 49.56 36 eP P 04 19 46.4 +2.8
comp=Z,93nm,2.0s
HDA Harding Lake 49.57 33 eP P 04 19 44.1 +0.4
comp=Z,49nm,1.8s
ILAR Eielson Array 49.58 32 P P 04 19 43.0 -0.7
comp=Z,4.5nm,0.7s,baz=267,slow=5.8,SNR=33
ILAR LR LR 04 42 21.2
comp=Z,216nm,19.2s,baz=288,slow=38
ILB Eielson Array 49.58 32 eP P 04 19 43.2 -0.5
TKM2 Tokmak 2 49.62 298 P P 04 19 45.7 +1.1
KLU Klutina 50.26 37 eP P 04 19 52.1 +3.2
comp=Z,8.5nm,1.0s
VOSK Vostochnaya 50.29 312 P P 04 19 47.7 -1.6
VOSK Vostochnaya 50.29 312 eP P 04 19 47.7 -1.6
comp=Z,11nm,0.8s
CHKZ Chkalovo 50.33 313 P P 04 19 47.2 -2.3
CHKZ pmax pmax
comp=Z,12nm,1.2s
FRU Bishkek 50.34 299 eP P 04 19 47.0 -2.8
FRU pmax pmax
comp=Z,60nm,2.0s
DIV Divide 50.37 37 eP P 04 19 50.6 +0.8
comp=Z,29nm,1.3s
KSH Kashi 50.39 294 eP P 04 19 54.3 +3.9
KSH esP sP 04 20 03.8 +5.0
KSH ePcP PcP 04 21 13.1 +4.4
KSH PcS PcS 04 25 08.6 +2.6
KSH S S 04 27 04.8 +2.0
KSH Kashi 50.39 294 SS SS 04 30 38.3 +2.0
KSH pmax pmax
comp=Z,220nm,4.8s
KSH LR LR
comp=N,2µm,15.6s
KSH LR LR
comp=E,1µm,16.2s
KSH LR LR
comp=Z,2µm,16.2s
OTUK Ortayu 50.43 306 P P 04 19 50.7 +0.3
OTUK pmax pmax
comp=Z,7.0nm,1.1s
MTN Manton Dam 50.46 193 eP P 04 19 50.0 -0.8
comp=Z,37nm,0.8s
AAK Ala-Archa 50.48 298⇓ eP P 04 19 50.4 -0.7
AAK pmax pmax
comp=Z,4.0nm,0.9s
AAK Ala-Archa 50.48 298 eP P 04 19 50.6 -0.5
comp=Z,1.3nm,0.2s
BVA0 Borovoye Array 50.58 312 i P P 04 19 47.8 -3.7
BVA0 pmax pmax
comp=Z,15nm,1.3s
BVAR Borovoye Array 50.58 312 P P 04 19 50.3 -1.2
comp=Z,3.4nm,0.5s,baz=81,slow=9.6,SNR=12
BRVK Borovoye 50.64 312⇑ eP P 04 19 50.9 -1.0
BRVK pmax pmax
comp=Z,22nm,0.8s
BRVK Borovoye 50.64 312 eP P 04 19 50.2 -1.7
comp=Z,13nm,1.1s
TWSI Taliwang, Sumb 50.92 212 P P 04 19 56.3 +1.9
comp=Z,27nm,0.8s
BMRM Bremner River 50.95 37 eP P 04 19 56.5 +2.3
comp=Z,22nm,1.1s
ZRNK Zerenda 51.42 312 eP P 04 19 56.1 -1.7
ZRNK pmax pmax
comp=Z,10.0nm,0.9s
ZRNK Zerenda 51.42 312 eP P 04 19 56.1 -1.7
comp=Z,10nm,0.9s
CRQM Cirque 51.69 37 eP P 04 20 03.0 +3.1
comp=Z,31nm,1.2s
MNAS Manas 51.92 299 P P 04 20 02.2 +0.3
MNAS pmax pmax
comp=Z,10.0nm,0.8s
EGAK Eagle 52.03 32 eP P 04 20 04.3 +2.2
comp=Z,48nm,1.9s
DAWY Dawson 52.89 33 eP P 04 20 10.4 +1.8
comp=Z,9.1nm,1.3s
KK31 Karatay Array 53.12 300 i P P 04 20 09.7 -0.9
KK31 pmax pmax
comp=Z,7.0nm,1.0s
KKAR Karatay Array 53.12 300 eP P 04 20 10.4 -0.1
KKAR Karatay Array 53.12 300 eP P 04 20 10.4 -0.1
GSI Gunungsitoli 53.72 239 P P 04 20 14.8 -0.4
GSI Gunungsitoli 53.72 239 eP P 04 20 14.3 -0.9
comp=Z,115nm,1.1s
INK Inuvik 54.48 27 P P 04 20 19.6 -0.4
comp=Z,4.9nm,0.9s,baz=266,slow=6.0,SNR=6.2

INK LR LR 04 45 35.7
comp=Z,156nm,19.4s,baz=276,slow=38
INK Inuvik 54.48 27 eP P 04 20 21.9 +1.9
SVE Sverdlovsk 55.17 319 eP P 04 20 24.9 -0.4
SVE pmax pmax
comp=Z,30nm,1.0s
SVE MLR MLR
comp=Z,2µm,16.0s
ARU Arti 56.38 319 P P 04 20 32.5 -1.5
comp=Z,11nm,0.6s,baz=56,slow=2.6,SNR=14
ARU Arti 56.38 319 c iP P 04 20 32.1 -1.9
ARU 04 21 29.8
ARU 04 22 36.0
ARU S S 04 28 18.3 -5.1
ARU SS SS 04 32 01.1 -8.8
ARU pmax pmax
comp=Z,24nm,0.8s
ARU MLR MLR
comp=Z,1µm,18.0s
ARU Arti 56.38 319 eP P 04 20 32.2 -1.7
comp=Z,22nm,0.8s
FITZ Fitzroy Crossi 56.74 198 eP P 04 20 35.8 -1.0
HPAH Hawaii Prepara 56.89 89 eP P 04 20 38.7 +0.5
comp=Z,101nm,0.4s
WRAB Tennant Creek 56.97 188 ceP P 04 20 36.5 -2.0
WRAB pmax pmax
comp=Z,59nm,1.4s
WRAB Tennant Creek 56.97 188 eP P 04 20 36.4 -2.0
comp=Z,73nm,1.6s
WB2 Warramunga Arr 56.98 188 eP P 04 20 36.4 -2.2
comp=Z,78nm,1.6s
WRA Warramunga Arr 56.98 188 P P 04 20 36.0 -2.5
comp=Z,11nm,0.7s,baz=6.1,slow=7.4,SNR=57
WRA PcP PcP 04 21 35.2 +1.6
comp=Z,5.2nm,0.7s,baz=0.4,slow=4.2,SNR=7.4
AB31 Akbulak array 57.95 310 i P P 04 20 43.0 -2.1
AB31 pmax pmax
comp=Z,6.0nm,0.7s
ABKAR Akbulak array 57.95 310 eP P 04 20 43.3 -1.8
AKTO Aktyubinsk 58.69 312 P P 04 20 50.3 0.0
comp=Z,4.5nm,0.7s,baz=76,slow=15,SNR=7.6
DLBC Dease Lake 58.72 38 eP P 04 20 52.1 +1.6
comp=Z,40nm,1.8s
SPITS Spitsbergen Ar 60.59 349 P P 04 21 04.6 +1.7
comp=Z,8.2nm,0.9s,baz=108,slow=7.5,SNR=4.1
AS01 Alice Springs 60.70 188 eP P 04 21 01.7 -2.7
AS31 Alice Springs 60.71 188 eP P 04 21 03.5 -0.9
comp=Z,2.3nm,0.8s
ASAR Alice Springs 60.71 188 P P 04 21 02.4 -2.0
comp=Z,6.9nm,0.9s,baz=10,slow=6.4,SNR=23
ASAR PcP PcP 04 21 48.9 +0.6
comp=Z,2.8nm,0.8s,baz=12,slow=6.0,SNR=2.7
ASAR LR LR 04 47 02.2
comp=Z,138nm,19.0s,baz=14,slow=36
MBWA Marble Bar 61.30 203 eP P 04 21 07.8 -0.6
comp=Z,24nm,0.7s
APA Apatity 62.73 336⇑ iP P 04 21 18.0 +0.4
APA pmax pmax
comp=Z,6.0nm,1.3s
APA MLR MLR
comp=Z,2µm,15.0s
DZM Mont Dzumac 63.31 154 eLR LR 04 40 14.8
comp=Z,926nm,21.6s
KLMR Klimovskoe 63.79 328 eP P 04 21 23.5 -1.2
KLMR pmax pmax
comp=Z,38nm,1.3s
GEYT Alibeck 63.83 299 P P 04 21 24.6 -0.8
comp=Z,5.9nm,0.9s,baz=72,slow=4.8,SNR=7.0
GEYT LR LR 04 50 31.0
comp=Z,405nm,19.1s,baz=75,slow=37
YKA Yellowknife Ar 63.90 30 P P 04 21 23.7 -1.6
comp=Z,1.3nm,0.8s,baz=298,slow=6.5,SNR=9.1
YKA LR LR 04 51 06.1
comp=Z,10nm,20.6s,baz=0.0,slow=38
YKA Yellowknife Ar 63.90 30 P P 04 21 23.7 -1.6
YKA pmax pmax
comp=Z,3.0nm,0.9s
YKA MLR MLR
comp=Z,10.0nm,20.6s
ARCES ARCESS Array B 64.05 339 P P 04 21 26.1 -0.2
comp=Z,1.6nm,0.5s,baz=54,slow=9.2,SNR=11
ARCES LR LR 04 52 42.5
comp=Z,349nm,18.8s,baz=70,slow=39
DAG Danmarks Havn 65.84 355 i P P 04 21 39.3 +1.5
comp=Z,8.1nm,1.1s
DAG Danmarks Havn 65.84 355 i P P 04 21 39.3 +1.5
DAG pmax pmax
comp=Z,10.0nm,1.1s
MOS Moscow 67.28 323 eP P 04 21 48.3 +1.0
MOS pmax pmax
comp=Z,33nm,1.1s
MOS MLR MLR
comp=Z,800nm,14.0s
VRH Novokhopyorsk 67.60 318 eP P 04 21 43.4 -6.0
VRH pmax pmax
comp=Z,10.0nm,0.6s
OBN Obninsk 68.12 323⇓ eP P 04 21 53.6 +1.0
OBN e 04 24 20.8
OBN i S S 04 30 45.8 -5.5
OBN i SS SS 04 35 17.3 +4.2
OBN eSSS SSS 04 38 12.4
OBN pmax pmax
comp=Z,73nm,2.5s
OBN MLR MLR
comp=Z,957nm,15.0s
STKA Stephens Creek 68.48 180 P P 04 21 53.9 -1.1
comp=Z,1.9nm,0.7s,baz=346,slow=6.9,SNR=9.6
STKA Stephens Creek 68.48 180 P P 04 21 53.9 -1.1
STKA pmax pmax
comp=Z,6.0nm,0.8s
FORT Forrest 68.53 192 eP P 04 21 55.9 +0.6
comp=Z,314nm,0.6s
FINES FINESS Array B 68.86 332 P P 04 21 56.0 -1.1
comp=Z,5.8nm,0.7s,baz=46,slow=8.2,SNR=9.8
FINES LR LR 04 54 15.9
comp=Z,855nm,18.2s,baz=43,slow=38
FINES FINESS Array B 68.86 332 P P 04 21 56.0 -1.1
FINES pmax pmax
comp=Z,6.0nm,0.7s
FINES MLR MLR
comp=Z,855nm,18.2s
VSR Storozhevoye 68.95 319 eP P 04 21 55.6 -2.3
VSR pmax pmax
comp=Z,20nm,1.4s
I03D Drain, OR 69.00 51 P P 04 22 00.9 +2.7
baz=302
EDM Edmonton 69.44 38 eP P 04 22 02.7 +1.8
EDM pmax pmax
comp=Z,30nm,1.5s
EDM Edmonton 69.44 38 eP P 04 22 02.7 +1.8
comp=Z,30nm,1.5s
I04A Tendick Farm, 69.52 50 P P 04 22 02.6 +1.0
baz=302
I05D Terrebonne, OR 69.89 49 P P 04 22 05.0 +1.1
baz=302
NEW Newport 70.22 44 P P 04 22 05.7 -0.2
baz=304
KVAR Kislovodsk Arr 70.91 311 P P 04 22 09.5 -0.7
comp=Z,23nm,1.0s,baz=339,slow=0.6,SNR=13
KBZ Khabaz 70.91 311 P P 04 22 09.4 -0.7
comp=Z,13nm,0.9s,baz=79,slow=3.3,SNR=12
KBZ LR LR 04 57 56.8
comp=Z,695nm,18.6s,baz=62,slow=40
KIV Kislovodsk 70.92 311 eP P 04 22 10.0 -0.2
KIV pmax pmax
comp=Z,39nm,1.1s
KIV MLR MLR
comp=Z,662nm,17.0s
KIV Kislovodsk 70.92 311 eP P 04 22 11.5 +1.3
comp=Z,44nm,1.0s
NEY Neytrino 71.28 310⇓ eP P 04 22 12.8 +0.2
NEY pmax pmax
comp=Z,3.0nm,1.8s
WALA Waterton Lakes 71.53 42 eP P 04 22 16.9 +3.0
comp=Z,6.0nm,1.0s
GNI Garni 71.71 307 ceP P 04 22 17.4 +2.2
GNI pmax pmax
comp=Z,17nm,0.6s
BSMT Bassoo Peak 71.75 44 eP P 04 22 19.7 +4.4
O03D Paynes Creek 71.78 53 P P 04 22 17.8 +2.2
baz=303
MOD Modoc Plateau 71.85 51 eP P 04 22 17.0 +1.0
BMO Blue Mountains 72.02 47 eP P 04 22 17.2 +0.3
comp=Z,28nm,1.8s
YBMT Yellow Bay 72.16 43 eP P 04 22 20.8 +3.0
SWMT Swartz Lake 72.38 43 eP P 04 22 21.9 +2.9

ORV	Oroville	72.38	54	eP		P		04 22 19.4	+0.4
ORV					pmax	pmax				
	comp=Z,11nm,1.3s									
ORV	Oroville	72.38	54	eP		P		04 22 19.4	+0.4
	comp=Z,11nm,1.3s									
AFDM	Forest Hills D	73.06	54	eP		P		04 22 26.2	+3.1
	comp=Z,16nm,1.6s									
ANN	Anapa	73.55	314	eP		P		04 22 27.3	+1.5
ANN				eS		S		04 31 50.7	-3.9
ANN					pmax	pmax				
	comp=Z,31nm,1.1s									
ANN					MLR	MLR				
	comp=Z,859nm,22.0s									
MFID	Camas Ranch	73.71	48	eP		P		04 22 27.9	+0.9
	comp=Z,35nm,1.9s									
FFC	Flin Flon	73.80	33	eP		P		04 22 26.5	-0.6
FFC					pmax	pmax				
	comp=Z,9.0nm,1.0s									
FFC	Flin Flon	73.80	33	eP		P		04 22 26.5	-0.6
	comp=Z,9.2nm,1.0s									
CMB	Columbia Colle	73.95	54	eP		P		04 22 29.0	+0.6
CMB					pmax	pmax				
	comp=Z,93nm,1.3s									
CMB	Columbia Colle	73.95	54	eP		P		04 22 28.9	+0.6
	comp=Z,93nm,1.3s									
FCC	Fort Churchill	74.09	27	eP		P		04 22 29.8	+1.1
FCC					pmax	pmax				
	comp=Z,35nm,1.3s									
FCC	Fort Churchill	74.09	27	eP		P		04 22 29.8	+1.1
	comp=Z,35nm,1.3s									
HFS	Hagfors	74.13	336	P		P		04 22 29.7	+0.7
	comp=Z,3.6nm,0.6s,baz=90,slow=4.4,SNR=8.4									
HFS	Hagfors	74.13	336	P		P		04 22 29.7	+0.7
HFS					pmax	pmax				
	comp=Z,5.0nm,0.7s									
NC204	NORSAR Array S	74.19	338	eP		P		04 22 30.1	+0.8
NB2	NORSAR Subarra	74.23	337	P		P		04 22 28.2	-1.4
	comp=Z,13nm,1.0s,baz=40,slow=6.2									
NB2	NORSAR Subarra	74.23	337	P		P		04 22 32.4	+2.8
NB2					pmax	pmax				
	comp=Z,11nm,1.1s									
NOA	NORSAR Array B	74.23	337	P		P		04 22 28.6	-1.0
	comp=Z,4.2nm,0.8s,baz=39,slow=5.9,SNR=12									
NOA					LR	LR		04 57 55.7		
	comp=Z,567nm,18.2s,baz=40,slow=38									
LRM	Limekiln Ridge	74.23	44	eP		P		04 22 30.5	+0.3
AKASG	Malin Array Be	74.32	322	P		P		04 22 28.6	-1.6
	comp=Z,1.3nm,0.3s,baz=46,slow=5.9,SNR=9.0									
AKASG					LR	LR		04 57 13.8		
	comp=Z,668nm,21.5s,baz=60,slow=37									
NBO02	NORSAR Array S	74.34	337	eP		P		04 22 31.8	+1.6
NBO00	NORSAR Array S	74.38	337	eP		P		04 22 33.7	+3.3
DLMT	Dillon	74.43	45	eP		P		04 22 31.2	+0.1
	comp=Z,10nm,1.0s									
HLID	Hailey	74.46	47	P		P		04 22 31.8	+0.4
	baz=306									
HLID	Hailey	74.46	47	eP		P		04 22 31.7	+0.2
	comp=Z,23nm,1.9s									
BOZ	Bozeman (W)	74.80	44	P		P		04 22 33.4	+0.1
	baz=308									
BOZ	Bozeman (W)	74.80	44	eP		P		04 22 32.9	-0.4
BOZ					pmax	pmax				
	comp=Z,25nm,1.6s									
BOZ	Bozeman (W)	74.80	44	eP		P		04 22 32.9	-0.4
	comp=Z,25nm,1.6s									
SIM	Simferopol'	75.34	315	eP		P		04 22 37.9	+1.6
SIM				eS		SKSac		04 32 43.0	-1.8
GCMT	Greycliff	75.79	43	eP		P		04 22 42.1	+3.1
PKM	Mcpherson Peak	76.13	57	P		P		04 22 41.1	0.0
	baz=306									
H17A	Grant Village	76.16	45	eP		P		04 22 43.6	+2.4
IMW	Indian Meadow	76.26	45	eP		P		04 22 42.8	+0.9
	comp=Z,14nm,1.3s									
FLWY	Flagg Ranch	76.28	45	eP		P		04 22 43.7	+1.7
	comp=Z,40nm,1.7s									
RLMT	Red Lodge	76.43	43	eP		P		04 22 43.2	+0.5
MOOW	Moose Ponds	76.46	45	eP		P		04 22 45.5	+2.5
	comp=Z,34nm,1.8s									
HVU	Hansel Valley	76.50	48	eP		P		04 22 46.5	+3.4
HVU					pmax	pmax				
	comp=Z,31nm,1.9s									
HVU	Hansel Valley	76.50	48	eP		P		04 22 46.5	+3.4
	comp=Z,31nm,1.9s									
TPAW	Teton Pass	76.51	45	eP		P		04 22 44.1	+0.8
	comp=Z,34nm,2.0s									
REDW	Red Top Meadow	76.64	46	eP		P		04 22 46.8	+2.8
	comp=Z,9.3nm,1.2s									
DAC	Darwin (Calif)	76.79	55	eP		P		04 22 45.4	+0.5
DAC					pmax	pmax				
	comp=Z,28nm,1.9s									
DAC	Darwin (Calif)	76.79	55	eP		P		04 22 45.4	+0.5
	comp=Z,28nm,1.9s									
R11A	Troy Canyon, C	76.85	52	P		P		04 22 44.0	-1.2
	baz=307									
R11A	Troy Canyon, C	76.85	52	eP		P		04 22 45.8	+0.6
	comp=Z,42nm,1.9s									
BGU	Big Grassy Mou	76.86	49	eP		P		04 22 49.7	+4.5
	comp=Z,9.5nm,1.3s									
KIS	Kishinev	76.92	320	eP		P		04 22 40.0	-5.2
KIS					LRM	MLR		04 59 12.0		
	comp=Z,2μm,16.0s									
KIS	Kishinev	76.92	320	eP		P		04 22 40.0	-5.2
KIS				e				04 33 10.0		
KIS					MLR	MLR				
	comp=E,2μm,15.0s									
KIS					MLR	MLR				
	comp=Z,2μm,15.0s									
KIS					MLR	MLR				
	comp=N,2μm,14.0s									
KIS					MLR	MLR				
	comp=Z,2μm,16.0s									
MPMC	Manual Prospec	76.98	55	P		P		04 22 46.4	+0.4
	baz=306									
HWUT	Hardware Ranch	77.32	47	eP		P		04 22 50.8	+3.1
	comp=Z,45nm,1.8s									
EDW2	Edwards Air Fo	77.35	56	P		P		04 22 48.4	+0.5
	baz=306									
DUG	Dugway, Tooele	77.44	49	P		P		04 22 47.5	-0.9
	baz=308									
DUG	Dugway, Tooele	77.44	49	eP		P		04 22 49.5	+1.0
DUG					pmax	pmax				
	comp=Z,26nm,1.7s									
DUG	Dugway, Tooele	77.44	49	eP		P		04 22 49.5	+1.0
	comp=Z,26nm,1.7s									
TCUT	Toone Canyon	77.71	48	eP		P		04 22 54.0	+3.9
	comp=Z,57nm,1.9s									
BW06	Boulder Array	77.75	45	eP		P		04 22 52.2	+2.0
PD31	Pinedale Array	77.75	45	eP		P		04 22 53.3	+3.0
PDAR	Pinedale Array	77.75	45	P		P		04 22 49.7	-0.5
	comp=Z,0.8nm,0.7s,baz=299,slow=1.5,SNR=12									
GSC	Goldstone, Bar	77.88	55	P		P		04 22 51.6	+0.7
	baz=307									
GSC	Goldstone, Bar	77.88	55	eP		P		04 22 54.0	+3.1
GSC					pmax	pmax				
	comp=Z,20nm,1.5s									
GSC	Goldstone, Bar	77.88	55	eP		P		04 22 54.0	+3.1
	comp=Z,20nm,1.5s									
JLU	Jordanelle	78.01	48	eP		P		04 22 55.1	+3.3
	comp=Z,25nm,1.7s									
TUQ	Turquoise Moun	78.38	54	P		P		04 22 54.5	+0.8
	baz=307									
CCUT	Cedar City	78.73	51	eP		P		04 22 56.1	+0.3
	comp=Z,17nm,1.5s									
BR131	Keskin Array S	78.86	312	eP		P		04 22 58.6	+2.3
BRTR	Keskin Array B	78.86	312	P		P		04 22 56.2	-0.1
	comp=Z,4.3nm,1.0s,baz=90,slow=4.3,SNR=12									
BRTR					LR	LR		05 03 59.8		
	comp=Z,246nm,18.0s,baz=49,slow=40									
MSU	Marysvale	78.87	50	eP		P		04 22 58.1	+1.6
MSU	Marysvale	78.87	50	eP		P		04 22 58.1	+1.6
GMRC	Granite Mounta	78.94	55	P		P		04 22 56.9	0.0
	baz=308									
TMUT	Trail Mountain	78.97	49	eP		P		04 23 00.3	+3.2
	comp=Z,20nm,1.7s									
STHS	Stebnicka Huta	78.99	325	eP		P		04 22 58.5	+1.8
STHS					pmax	pmax				
	comp=Z,6.0nm,0.9s									
STHS	Stebnicka Huta	78.99	325	eP		P		04 22 58.5	+1.8
A29A	Manning Farm,	79.02	36	P		P		04 22 56.5	-0.3
	baz=315									
PFO	Pinyon Flats O	79.12	56	eP		P		04 22 59.5	+1.6
PFO					pmax	pmax				
	comp=Z,32nm,1.7s									
PFO	Pinyon Flats O	79.12	56	eP		P		04 22 59.5	+1.6
	comp=Z,32nm,1.7s									
LCMT	Little Creek M	79.13	52	eP		P		04 22 59.2	+1.3
	comp=Z,45nm,1.9s									
P17A	Butcher Ranch,	79.14	49	eP		P		04 22 59.1	+1.2
	comp=Z,61nm,1.9s									
MTPU	Mount Pierson	79.16	50	eP		P		04 23 02.1	+3.8
	comp=Z,11nm,1.2s									
Q16A	Castle Valley	79.23	49	eP		P		04 23 01.8	+3.4
	comp=Z,50nm,1.8s									
CRVS	Cervenica-Dubn	79.25	324	eP		P		04 23 00.0	+1.8
CRVS	Cervenica-Dubn	79.25	324	eP		P		04 22 59.9	+1.8
BR231	Keskin MP Arra	79.30	312	eP		P		04 22 57.5	-1.2
MLR	Mumtele Rosu	79.41	320	P		P		04 22 59.8	+0.6
	comp=Z,0.5nm,0.8s,baz=72,slow=9.6,SNR=3.2									
SRU	San Rafael Swe	79.50	49	eP		P		04 23 00.6	+0.7
SRU					pmax	pmax				
	comp=Z,13nm,1.2s									
SRU	San Rafael Swe	79.50	49	eP		P		04 23 00.6	+0.7
	comp=Z,13nm,1.2s									
K22A	Casper	79.54	44	eP		P		04 23 02.8	+2.8
	comp=Z,36nm,1.9s									
ULM	Lac du Bonnet	79.59	33	P		P		04 23 01.1	+1.1
	comp=Z,1.8nm,0.5s,baz=304,slow=3.6,SNR=3.1									
ULM					LR	LR		04 58 26.4		
	comp=Z,60nm,22.0s,baz=342,slow=36									
IRM	Iron Mountain	79.66	55	P		P		04 22 59.9	-0.7
	baz=308									
B30A	Myrvik Farm, E	79.78	36	P		P		04 23 00.8	-0.2
	baz=316									
W13A	Hualapai Mount	79.90	54	eP		P		04 23 05.1	+2.9
	comp=Z,7.5nm,1.4s									
RSSD	Black Hills	79.92	42	eP		P		04 23 03.4	+1.3
RSSD	Black Hills	79.92	42	eP		P		04 23 03.4	+1.3
OKC	Ostrava-Krasne	80.08	327	AMS		AMS		05 01 40.0		
	comp=Z,800nm,16.5s									
U15A	North Rim	80.10	52	eP		P		04 23 04.5	+1.2
	comp=Z,61nm,1.9s									
O20A	White River Ci	80.20	47	eP		P		04 23 04.5	+0.9
	comp=Z,12nm,1.3s									
PDMCI	Parker Dam,Lak	80.23	54	P		P		04 23 03.6	-0.1
	baz=308									
DPC	Doska-Polom	80.49	328	AMS		AMS		05 03 30.0		
	comp=Z,1μm,13.2s									
UPC	Upice	80.51	328	AMS		AMS		05 01 40.0		
	comp=Z,900nm,15.1s									
B32A	Ashes, Strandq	80.65	35	P		P		04 23 04.5	-1.1
	baz=317									
PV09	Paradox Valley	80.73	49	eP		P		04 23 09.3	+2.6
VYHS	Vyhne	80.76	325	eP		P		04 23 06.9	+0.6
VYHS					pmax	pmax				
	comp=Z,16nm,2.2s									
VYHS	Vyhne	80.76	325	eP		P		04 23 06.9	+0.6
PV10	Paradox Valley	80.86	49	eP		P		04 23 08.1	+0.8
PV04	Paradox Valley	80.93	48	eP		P		04 23 08.4	+0.8
PV05	Paradox Valley	81.02	49	eP		P		04 23 08.8	+0.6
N23A	Red Feather La	81.02	45	P		P		04 23 08.6	+0.4
	baz=312									
N23A	Red Feather La	81.02	45	eP		P		04 23 09.3	+1.1
	comp=Z,16nm,1.3s									
AGMN	Agassiz Nation	81.03	35	P		P		04 23 06.6	-1.1
	baz=317									
PHWY	Pilot Hill	81.03	45	eP		P		04 23 10.5	+2.3
	comp=Z,30nm,1.9s									
BRG	Berggiesshubel	81.09	329	eP		P		04 23 11.1	+3.1
	comp=Z,13nm,1.5s									
BRG	Berggiesshubel	81.09	329	eP		P		04 23 11.1	+3.1
BRG					pmax	pmax				
	comp=Z,13nm,1.5s									
PVCC	Panska Ves	81.10	329	AMS		AMS		05 02 00.0		
	comp=Z,1μm,15.6s									
CLL	Collm	81.14	330	*i* P		P		04 23 11.0	+2.8
	comp=Z,18nm,1.1s									
CLL				*e*				04 23 22.0		
CLL	Collm	81.14	330	*i* P		P		04 23 11.0	+2.8
CLL				*e*				04 23 22.0		
CLL					pmax	pmax				
	comp=Z,18nm,1.1s									
Y14A	Wickenburg	81.19	54	eP		P		04 23 09.3	+0.4
	comp=Z,31nm,1.1s									
WUAZ	Wupatki	81.25	52	P		P		04 23 09.3	0.0
	baz=310									
WUAZ	Wupatki	81.25	52	eP		P		04 23 10.1	+0.8
	comp=Z,10nm,1.0s									
PV01	Paradox Valley	81.30	49	eP		P		04 23 10.5	+0.9
113A	Mohawk Valley,	81.42	55	eP		P		04 23 12.9	+2.9
	comp=Z,22nm,1.8s									
GOPC	GO Pecny, Ondr	81.47	328	AMS		AMS		05 02 10.0		
	comp=Z,1μm,15.6s									
ASF	Jabal al Asfar	81.51	304	P		P		04 23 10.8	+0.2
	comp=Z,0.7nm,0.4s,baz=353,slow=8.1,SNR=2.5									
X16A	Lo Mia Camp, P	81.90	53	eP		P		04 23 14.1	+1.3
	comp=Z,24nm,1.7s									
B35A	Bob, Littlefor	81.94	34	P		P		04 23 11.8	-0.7
	baz=319									
ISCO	Idaho Springs	81.94	46	eP		P		04 23 15.5	+2.4
ISCO					pmax	pmax				
	comp=Z,4.0nm,1.0s									
ISCO	Idaho Springs	81.94	46	eP		P		04 23 15.5	+2.4
	comp=Z,4.2nm,1.0s									
MVCO	Mesa Verde	81.94	49	eP		P		04 23 13.6	+0.5
	comp=Z,26nm,1.7s									
MMAI	Mount Meron Ar	81.97	305	P		P		04 23 12.7	-0.4
	comp=Z,4.0nm,0.8s,baz=51,slow=6.6,SNR=4.6									
NKC	Novy Kostel	82.19	330	AMS		AMS		05 03 20.0		
	comp=Z,800nm,12.4s									
KHC	Kasperske Hory	82.58	328	eP		P		04 23 18.0	+2.1
KHC				*ex*		x		04 23 30.9		
KHC					AMS	AMS		05 05 00.0		
	comp=Z,900nm,13.1s									
KHC	Kasperske Hory	82.58	328	eP		P		04 23 18.0	+2.1
KHC				*e*				04 23 30.9		
KHC					MLR	MLR				
	comp=Z,900nm,13.1s									
S22A	4UR Ranch, Cre	82.59	48	P		P		04 23 17.0	+0.5
	baz=312									
S22A	4UR Ranch, Cre	82.59	48	eP		P		04 23 17.0	+0.5
	comp=Z,6.3nm,1.1s									
F33A	5 Mile Ranch,	82.62	37	P		P		04 23 16.2	+0.1
	baz=317									
GERES	GERESS Array B	82.75	328	P		P		04 23 16.9	0.0
	comp=Z,2.2nm,0.7s,baz=34,slow=5.9,SNR=7.4									
GERES					LR	LR		05 02 31.4		
	comp=Z,456nm,18.4s,baz=48,slow=38									
GEA0	GERESS Array S	82.75	328	eP		P		04 23 15.6	-1.3
X18A	Snowflake	82.78	52	eP		P		04 23 20.5	+3.1
	comp=Z,29nm,1.9s									
EKA	Eskdalemuir Ar	83.18	340	P		P		04 23 18.9	0.0
	comp=Z,3.5nm,0.9s,baz=30,slow=7.7,SNR=4.0									
EYMN	Ely	83.23	33	P		P		04 23 18.4	-0.9
	baz=320									
EYMN	Ely	83.23	33	eP		P		04 23 18.5	-0.8
	comp=Z,47nm,1.9s									
H33A	Prehn Over Nor	83.25	38	P		P		04 23 19.6	+0.2
	baz=317									
SDCO	Great Sand Dun	83.38	47	P		P		04 23 20.3	-0.3
	baz=312									
SDCO	Great Sand Dun	83.38	47	eP		P		04 23 21.4	+0.8
	comp=Z,26nm,2.0s									
C38A	Sawbill Land.	83.50	33	P		P		04 23 19.9	-0.8
	baz=320									
TUC	Tucson	83.66	54	P		P		04 23 24.3	+2.4
	baz=310									
TUC	Tucson	83.66	54	eP		P		04 23 24.6	+2.7
TUC					pmax	pmax				
	comp=Z,31nm,2.0s									
TUC	Tucson	83.66	54	eP		P		04 23 24.6	+2.7
	comp=Z,31nm,2.0s									
L31A	Butterfield Fa	84.00	40	P		P		04 23 24.0	+0.6
	baz=316									
ECSD	EROS Data Cent	84.01	38	eP		P		04 23 22.4	-0.9
	comp=Z,16nm,1.4s									
H35A	Sunyside Ranc	84.16	37	P		P		04 23 23.1	-1.0
	baz=318									
EIL	Elat	84.37	303	P		P		04 23 26.6	+1.2
	comp=Z,4.3nm,0.6s,baz=315,slow=5.5,SNR=5.3									
T25A	Trinidad	84.43	47	P		P		04 23 26.4	+0.5
	baz=313									
T25A	Trinidad	84.43	47	eP		P		04 23 26.3	+0.4
	comp=Z,51nm,2.0s									
LAZ	Ladron	84.61	51	eP		P		04 23 29.4	+2.5
PPT	Papeete	84.65	117	LR		LR		04 51 53.4		
	comp=Z,218nm,22.0s,baz=330,slow=29									
PPT2	Papeete2	84.66	117	eLR		LR		04 49 14.4		
	comp=Z,794nm,26.5s									
PPT2	Papeete2	84.66	117	eT		T		05 56 41.3		
	comp=Z,6.7nm,0.3s									
ANMO	Albuquerque	84.67	50	P		P		04 23 27.8	+0.7
	baz=312									
ANMO	Albuquerque	84.67	50	eP		P		04 23 27.7	+0.6
ANMO					pmax	pmax				
	comp=Z,12nm,1.7s									
ANMO	Albuquerque	84.67	50	eP		P		04 23 27.7	+0.6
	comp=Z,8.9nm,1.1s									
TIAR	Tiarei	84.81	116	eT		T		05 56 51.3		
	comp=Z,6.4nm,0.2s									
BNM	Barren Site	85.10	50	eP		P		04 23 31.6	+2.3
319A	Douglas	85.24	54	eP		P		04 23 30.8	+0.9
	comp=Z,306nm,0.8s									
I37A	Lemond, Waseca	85.35	36	P		P		04 23 29.7	-0.5
	baz=319									
SCHQ	Schefferville	85.42	16	P		P		04 23 30.4	+0.1
	comp=Z,1.1nm,0.3s,baz=305,slow=2.6,SNR=3.0									
SCHQ					LR	LR		05 04 14.2		
	comp=Z,206nm,19.7s,baz=330,slow=38									
121A	Cookes Peak, D	85.44	52	P		P		04 23 31.9	+0.9
	baz=312									
121A	Cookes Peak, D	85.44	52	eP		P		04 23 31.9	+0.9
	comp=Z,8.8nm,1.2s									
MEH	Mehetia	85.93	116	eT		T		05 58 16.3		
	comp=Z,47nm,0.2s									
DAVOX	Davos/Dischmat	85.97	329	P		P		04 23 33.0	-0.4
	comp=Z,2.8nm,0.8s,baz=346,slow=23,SNR=1.8									
DAVOX	Davos/Dischmat	85.97	329	P		P		04 23 33.0	-0.4
DAVOX					pmax	pmax				
	comp=Z,3.0nm,0.8s									
TAOE	Nuku Hiva Isla	86.20	104	eLR		LR		04 50 41.2		
	comp=Z,684nm,22.1s,baz=320									
TAOE	Nuku Hiva Isla	86.20	104	eT		T		05 58 36.8		
	comp=Z,82nm,0.2s									
IDI	Anoyia	87.00	313	P		P		04 23 38.7	+0.2
	comp=Z,9.2nm,0.9s,baz=42,slow=13,SNR=3.0									
Q35A	Mercer Eighty,	87.88	41	P		P		04 23 42.1	-0.5
	baz=318									
TBI	Tubuai	88.53	121	eLR		LR		04 51 09.0		
	comp=Z,773nm,26.5s,baz=313									
TBI	Tubuai	88.53	121	eT		T		06 01 30.6		
	comp=Z,102nm,0.3s									
V34A	Guthrie	89.29	44	P		P		04 23 49.4	+0.1
	baz=317									
V34A	Guthrie	89.29	44	eP		P		04 23 49.8	+0.5
	comp=Z,11nm,1.0s									
Q39A	Willow Grove F	89.32	39	P		P		04 23 48.7	-0.7
	baz=320									
U35A	Pawnee	89.33	43	P		P		04 23 50.1	+0.6
	baz=317									
WMOK	Wichita Mounta	89.37	46	P		P		04 23 50.4	+0.7
	baz=316									
TX31	Lajitas Ar. Si	90.21	52	eP		P		04 23 54.1	+0.3
TXAR	Lajitas Array	90.21	52	P		P		04 23 53.6	-0.2
	comp=Z,1.0nm,0.5s,baz=319,slow=4.9,SNR=14									
TXAR					LR	LR		04 58 14.0		
	comp=Z,100nm,21.7s,baz=0.0,slow=32									
ABTX	Abilene, Hawle	90.38	48	eP		P		04 23 56.9	+2.4
	comp=Z,11nm,1.3s									
V37A	Hulbert	90.56	43	P		P		04 23 54.6	-0.6
	baz=318									
X36A	Centrahoma	90.86	44	P		P		04 23 55.5	-1.1
	baz=318									
U39A	Green Forest	91.07	41	P		P		04 23 56.7	-0.9
	baz=319									
V39A	Pettigrew	91.40	42	P		P		04 23 57.8	-1.3
	baz=319									
U40A	Yellville	91.42	41	P		P		04 23 57.9	-1.3
	baz=320									
X38A	Whitesboro	91.63	43	P		P		04 24 00.4	+0.2
	baz=318									
333A	Richland Sprin	91.69	48	P		P		04 24 00.5	-0.1
	baz=316									
234A	Clairette	91.71	47	P		P		04 24 00.9	+0.3
	baz=317									
WHTX	Lake Whitney,	92.11	47	P		P		04 24 02.6	+0.1
	baz=317									
WHTX	Lake Whitney,	92.11	47	eP		P		04 24 02.8	+0.3
	comp=Z,16nm,1.2s									
334A	Lometa	92.13	48	P		P		04 24 02.5	-0.1
	baz=316									
V41A	Mountainview	92.22	41	P		P		04 24 01.6	-1.3
	baz=320									
MIAR	Mount Ida	92.41	43	P		P		04 23 03.5	-0.3
	baz=319									
MIAR	Mount Ida	92.41	43	eP		P		04 24 04.0	+0.2
MIAR					pmax	pmax				
	comp=Z,10.0nm,1.3s									
MIAR	Mount Ida	92.41	43	eP		P		04 24 04.0	+0.2
	comp=Z,10nm,1.3s									
KEST	Kesra	95.05	323	LR		LR		05 10 48.1		
	comp=Z,332nm,20.5s,baz=14,slow=38									
ESDC	Sonseca Array	97.33	334	LR		LR		05 12 36.1		
	comp=Z,415nm,19.7s,baz=30,slow=38									
RKT	Rikitea	98.77	112	eLR		LR		04 56 13.0		
	comp=Z,626nm,24.8s,baz=312									
TORD	Torodi Ar. Bea	117.35	315	PKP		PKPdf		04 29 37.7	-1.3
	comp=Z,0.8nm,1.1s,baz=358,slow=1.5,SNR=6.9									
LPAZ	La Paz	146.77	60	PKPbc		PKPbc		04 30 35.4	-0.8
	comp=Z,6.6nm,0.9s,baz=356,slow=5.2,SNR=17									
LVC	Limon Verde	150.25	70	ePKPbc		PKPbc		04 30 45.6	+0.8
LCO	Las Campanas	152.07	83	ePKPbc		PKPbc		04 30 50.5	+1.8
PLCA	Paso Flores	154.95	109	PKPab		PKPab		04 31 10.1	+0.1
	comp=Z,4.9nm,1.1s,baz=247,slow=2.6,SNR=3.6									

GUC 14 04:17:46.9±0.3, 16.71S×72.32W, h91km±31km, ML3.6,
Near coast of Peru

| Code | Station Name | Δ

LANS eSg Sb 04 18 29.4 +0.7
LANS Liptovska Anna 1.01 139 ePG Pn 04 18 15.7 -0.4
LANS eSG Sb 04 18 29.4 +0.7
KRLC Kraliky 1.09 279 ||iPG Pb 04 18 17.2 +0.7
KRLC eSG Sb 04 18 32.1 +0.8
KRLC Kraliky 1.09 279 Pg Pb 04 18 17.2 +0.7
KRLC Sg Sb 04 18 32.1 +0.8
NIE Niedzica 1.29 112 ePg Pn 04 18 21.1 +1.1
NIE eSg Sn 04 18 40.1 +2.0
NIE Niedzica 1.29 112 ePg Pn 04 18 21.1 +1.1
NIE eSG Sn 04 18 40.1 +2.0
VRAC Vranov 1.35 244 Pg Pb 04 18 22.2 +1.4
57nm,0.3s,baz=66,slow=16,SNR=253
VRAC Lg Lg 04 18 40.9
43nm,0.3s,baz=152,slow=21,SNR=20
VRAC Vranov 1.35 244 ||iP Pb 04 18 21.7 +0.8
VRAC Vranov 1.35 244 S Sn 04 18 39.7 +0.2
VRAC Vranov 1.35 244 ||iP Pb 04 18 21.7 +0.8
VRAC Vranov 1.35 244 ||iPg Pb 04 18 22.2 +1.4
VRAC eSg Sb 04 18 39.5 +0.8
391nm,0.7s
VYHS Vyhne 1.44 170 ePg Pb 04 18 22.6 +0.3
VYHS eSn Sn 04 18 42.2 +0.6
VYHS Vyhne 1.44 170 ePG Pb 04 18 22.6 +0.3
VYHS eSN Sn 04 18 42.2 +0.6
VYHS eLG Lg 04 18 43.8
SMOL Smolenice 1.55 206 ePn Pg 04 18 24.7 +0.4
SMOL eSn Sn 04 18 44.6 +0.3
SMOL Smolenice 1.55 206 ePN Pg 04 18 24.7 +0.4
SMOL eSN Sn 04 18 44.6 +0.3
KRUC Moravsky 1.59 239 ||iPg Pg 04 18 25.5 +0.4
KRUC eSg Sg 04 18 46.5 +0.8
429nm,1.0s
KSP Ksiaz 1.67 305 Pn Pg 04 18 26.9 +0.2
KSP ePg Pb 04 18 28.6 +2.4
KSP eSg Sg 04 18 50.6 +2.3
KSP Ksiaz 1.67 305 ePn Pg 04 18 26.9 +0.2
UPC Upice 1.68 292 ||ePG Pb 04 18 26.8 +0.3
UPC eSG Sg 04 18 50.3 +1.7
comp=Z,402nm,0.8s
UPC AMS AMS 04 19 10.0
comp=Z,800nm,3.9s
UPC Upice 1.68 292 Pg Pb 04 18 26.8 +0.3
UPC Sg Sg 04 18 50.3 +1.7
402nm,0.8s
STHS Stebnicka Huta 1.88 104 eSn Sg 04 18 58.8 +3.9
STHS Stebnicka Huta 1.88 104 e Pg 04 18 32.3 +1.7
STHS Stebnicka Huta 1.88 104 eSN Sg 04 18 58.8 +3.9
STHS eLG Lg 04 19 01.6
KECS Kecovo 1.95 136 ePg Pg 04 18 32.8 +0.8
KECS eSn Sn 04 18 54.9 +0.7
KECS Kecovo 1.95 136 e Pn 04 18 29.8 +0.8
KECS Kecovo 1.95 136 ePG Pg 04 18 32.8 +0.8
KECS eSN Sn 04 18 54.9 +0.7
KECS eLG Lg 04 18 58.2
CRVS Cervenica-Dubn 2.21 116 ePn Pg 04 18 37.9 +1.0
CRVS Cervenica-Dubn 2.21 116 ePN Pg 04 18 37.9 +1.0
PSZ Piszkesteto 2.21 154 ||iP Pn 04 18 33.9 +1.3
PSZ Piszkesteto 2.21 154 S Sn 04 18 59.8 -0.8
PSZ Piszkesteto 2.21 154 ||iP Pn 04 18 33.9 +1.3
PSZ Piszkesteto 2.21 154 ex Pn 04 18 33.6 +1.0
GOPC GO Pecny, Ondr 2.37 272 ePN Pn 04 18 36.5 +1.7
GOPC ePG Pb 04 18 39.3 +1.1
GOPC eSG Sg 04 19 10.2 -0.6
comp=Z,302nm,1.1s
GOPC GO Pecny, Ondr 2.37 272 Pn Pn 04 18 36.5 +1.7
BUD Budapest 2.46 171 eP Pn 04 18 36.7 +0.8
BUD Budapest 2.46 171 ex Pn 04 18 36.7 +0.8
PRU Pruhonice 2.53 273 ||ePN Pn 04 18 38.1 +1.1
PRU ePG Pb 04 18 42.1 +1.2
PRU eSG Sb 04 19 14.6 +2.0
comp=Z,104nm,0.7s
PRU AMS AMS 04 19 40.0
comp=Z,400nm,3.0s
PRU Pruhonice 2.53 273 Pn Pn 04 18 38.1 +1.1
PVCC Panska Ves 2.57 285 ||ePN Pn 04 18 38.7 +1.1
PVCC ePG Pg 04 18 43.9 0.0
PVCC eSG Sg 04 19 17.7 +0.4
comp=Z,249nm,0.6s
PVCC Panska Ves 2.57 285 Pn Pn 04 18 38.7 +1.1
CONA Conrad Observa 2.62 222 ePn Pn 04 18 39.0 +0.7
18nm,0.6s
CONA eSn Sn 04 19 10.5 -0.3
56nm,0.6s
CONA Conrad Observa 2.62 222 Pn Pn 04 18 39.0 +0.7
18nm,0.6s
CONA Sn Sn 04 19 10.5 -0.3
56nm,0.6s
KOLS Kolonicke sedl 2.68 110 ePg Pg 04 18 48.8 +2.9
KOLS Kolonicke sedl 2.68 110 e Pb 04 18 42.9 -0.5
KOLS Kolonicke sedl 2.68 110 ePG Pg 04 18 48.8 +2.9
KOLS eLG Lg 04 19 38.7
UZH Uzhgorod 2.82 116 ePn Pg 04 18 49.1 +0.4
UZH Pnm 04 18 57.5
UZH eSn Sg 04 19 25.7 +0.5
UZH Snm 04 19 35.9
ONO Onokovtsy 2.83 115 ePn Pg 04 18 49.8 +1.0
ONO eSn Sg 04 19 26.4 +1.0
STZU Stuzhytsa 2.86 107 ePn Pg 04 18 48.1 -1.4
STZU Pnm 04 19 09.5
STZU eSn Sg 04 19 28.9 +2.4
STZU Snm 04 19 58.5
BRG Berggiesshubel 3.04 290 PG Pg 04 18 53.1 +0.1
BRG SG Sg 04 19 34.5 +2.0
93nm,0.6s
BRG Berggiesshubel 3.04 290 ePg Pg 04 18 53.3 +0.3
BRG eSg Sg 04 19 34.8 +2.4
BRG Berggiesshubel 3.04 290 Pg Pg 04 18 53.3 +0.3
BRG Sg Sg 04 19 34.8 +2.4
MUKU Mukachevo 3.13 116 ePn Pg 04 18 55.1 +0.4
MUKU Pnm 04 19 04.3
MUKU eSn Sg 04 19 35.9 +0.6
MUKU Snm 04 19 41.7
TRPA Tarpa 3.22 122 eP Pn 04 18 49.5 +3.0
TRPA Tarpa 3.22 122 ex Pn 04 18 49.5 +3.0
TRPA ex x 04 19 38.2
BERU Beregovo 3.23 120 ePn Pg 04 18 54.8 -1.6
BERU eSn Sg 04 19 36.4 -1.8
SHIU Shidnytsya 3.27 100 ePn Pg 04 18 56.4 -0.8
SHIU eSn Sg 04 19 40.2 +0.7
KHC Kasperske Hory 3.27 258 ePN Pn 04 18 48.4 +1.2
KHC ePG Pb 04 18 55.8 +2.2
KHC eSG Sg 04 19 39.3 -0.4
comp=Z,110nm,0.6s
KHC Kasperske Hory 3.27 258 Pn Pn 04 18 48.4 +1.2
GERES GERESS Array B 3.28 253 Pn Pn 04 18 48.5 +1.1
0.7nm,0.3s,baz=72,slow=17,SNR=21
GERES Pg Pg 04 18 57.8 +0.2
6.2nm,0.3s,baz=69,slow=16,SNR=84
GERES Lg Lg 04 19 40.0
20nm,0.3s,baz=72,slow=29,SNR=14
ARSA Arzberg 3.30 217 *i* Pn Pn 04 18 49.1 +1.6
4.5nm,0.4s
ARSA Sg Sg 04 19 42.5 +2.0
21nm,0.6s
ARSA Arzberg 3.30 217 Pn Pn 04 18 49.1 +1.6
4.5nm,0.4s
ARSA Sg Sg 04 19 42.5 +2.0
21nm,0.6s
BRIU Brid 3.38 116 ePn Pg 04 18 59.5 0.0
BRIU Pnm 04 19 09.5
BRIU eSn Sg 04 19 43.5 +0.2
BRIU Snm 04 19 58.5
FBE Freiberg 3.42 289 ePg Pg 04 18 60.0 -0.1
FBE eSg Sg 04 19 45.2 +0.9
FBE Freiberg 3.42 289 Pg Pg 04 18 60.0 -0.1
FBE Sg Sg 04 19 45.2 +0.9
MOA Molln 3.45 235 ePn Pn 04 18 51.4 +1.8
15nm,0.5s
MOA Sg Sg 04 19 43.3 -2.1
106nm,0.8s
MOA Molln 3.45 235 Pn Pn 04 18 51.4 +1.8
15nm,0.5s
MOA Sg Sg 04 19 43.3 -2.1
106nm,0.8s
TRSU Trosnyk 3.48 120 ePn Pg 04 19 00.2 -1.0
TRSU eSn Sg 04 19 45.2 -1.0
KORU Korolevo 3.54 118 ePn Pb 04 18 58.7 +0.6
KORU Pnm 04 19 08.7
KORU eSn Sg 04 19 45.7 -2.7
KORU Snm 04 19 54.7
MEZ Mezhgor'ye 3.60 111 ePn Pb 04 19 01.3 +2.2
MEZ eSn Sg 04 19 50.1 -0.1
BEHE Becsehely 3.62 199 eS Sn 04 19 36.0 +0.6
BEHE Becsehely 3.62 199 ex Sn 04 19 36.0 +0.6
MORS Morshin 3.63 100 ePn Pg 04 19 02.8 -1.3
MORS eSn Sg 04 19 53.0 +1.9
WET Wettzell 3.71 260 ePn Pn 04 18 54.6 +1.4
WET eSg Sg 04 19 54.3 +0.4
WET Wettzell 3.71 260 Pn Pn 04 18 54.6 +1.4
WET Sg Sg 04 19 54.3 +0.4
CLL Collm 3.75 294 ePn Pn 04 18 56.0 +2.3
CLL ePg Pg 04 19 07.0 +0.6
CLL eSn Sn 04 19 30.0 -8.4
CLL eSg Sg 04 19 57.0 +2.1
comp=Z,160nm,1.1s
CLL Collm 3.75 294 ePn Pn 04 18 55.8 +2.1
CLL eSg Sg 04 19 57.3 +2.4
CLL Collm 3.75 294 Pn Pn 04 18 55.8 +2.1
CLL Sg Sg 04 19 57.3 +2.4
NKC Novy Kostel 3.88 277 ||ePG Pg 04 19 07.3 -1.8
NKC eSG Sg 04 19 59.3 -0.1
comp=Z,57nm,0.5s
NKC Novy Kostel 3.88 277 Pg Pg 04 19 07.3 -1.8
NKC Sg Sg 04 20 01.1 +1.7
WERN Wernitzgruen 3.93 278 ePn Pn 04 18 58.5 +2.2
WERN eSg Sg 04 20 02.9 +2.0
WERN Wernitzgruen 3.93 278 Pn Pn 04 18 58.5 +2.2
WERN Sg Sg 04 20 02.9 +2.0
ROHR Rohrbach 3.97 277 eSg Sg 04 20 02.1 0.0
ROHR Rohrbach 3.97 277 Sg Sg 04 20 02.1 0.0
WERD Werda 3.99 280 eSg Sg 04 20 03.0 +0.3
WERD Werda 3.99 280 Sg Sg 04 20 03.0 +0.3
ROTZ Rotzenmuhle 4.05 270 ePn Pn 04 18 59.0 +1.2
ROTZ eSg Sg 04 20 05.1 +0.5
ROTZ Rotzenmuhle 4.05 270 Pn Pn 04 18 59.0 +1.2
ROTZ Sg Sg 04 20 05.1 +0.5
HKWD Heukewalde 4.07 285 eSg Sg 04 20 07.5 +2.3
HKWD Heukewalde 4.07 285 Sg Sg 04 20 07.5 +2.3
TRIB Obertriebel 4.09 279 ePg Pg 04 19 12.7 -0.3
TRIB Obertriebel 4.09 279 Pg Pg 04 19 12.7 -0.3
STNU Starunia 4.13 105 ePn Pg 04 19 12.4 -1.4
STNU eSn Sg 04 20 08.2 +0.8
RAKU Rahkiv 4.21 114 ePn Pg 04 19 12.7 -2.5
RAKU Pnm 04 19 21.5
RAKU eSn Sg 04 20 07.3 -2.4
RAKU Snm 04 20 35.5
DRGR 4.22 136 ||*i*P Pn 04 19 02.0 +1.8
DRGR 4.22 136 ||*i*P Pn 04 19 02.0 +1.8
DRGR S Sn 04 19 49.8 -0.4
SIRR Siria 4.23 148 ||*i*P Pn 04 19 02.0 +1.7
SIRR Siria 4.23 148 ||*i*P Pn 04 19 02.0 +1.7
OBKA Obir 4.29 219 *i* Pn Pn 04 19 03.1 +1.8
comp=Z,2.6nm,0.4s
OBKA Obir 4.29 219 Pn Pn 04 19 03.1 +1.8
comp=Z,2.6nm,0.4s
NSLU Nyzhne Selyshc 4.30 111 ePn Pn 04 19 02.7 +1.4
NSLU Pnm 04 19 11.9
NSLU eSn Sn 04 19 51.1 -1.1
NSLU Snm 04 20 04.3
KBA Koelnbreinsper 4.42 232 *i* Pn Pn 04 19 05.0 +1.8
comp=Z,1.7nm,0.2s
KBA eSn Sn 04 19 57.5 +2.1
comp=Z,5.6nm,0.4s
KBA Koelnbreinsper 4.42 232 Pn Pn 04 19 05.0 +1.8
comp=Z,1.7nm,0.2s
KBA Sn Sn 04 19 57.5 +2.1
comp=Z,5.6nm,0.4s
TAUT Tautenburg 4.44 287 eSg Sg 04 20 18.4 +1.1
TAUT Tautenburg 4.44 287 Sg Sg 04 20 18.4 +1.1
MOX Moxa 4.45 282 ePg Pg 04 19 21.2 +1.3
MOX Moxa 4.45 282 Pg Pg 04 19 21.2 +1.3
NEUB Neuenburg 4.45 290 eSg Sg 04 20 19.9 +2.3
NEUB Neuenburg 4.45 290 Sg Sg 04 20 19.9 +2.3
SCHD Schmiedefeld 4.69 280 ePn Pn 04 19 08.3 +1.5
SCHD ePg Pg 04 19 26.1 +1.6
SCHD Schmiedefeld 4.69 280 Pn Pn 04 19 08.3 +1.5
BZS Buzias 4.79 152 ||*i*P Pn 04 19 09.7 +1.6
BZS Buzias 4.79 152 ||*i*P Pn 04 19 09.7 +1.6
FGSL Fruska Gora 4.84 169 ePn Pn 04 19 10.0 +1.2
BURAR Bucovina Array 5.03 115 ||*i*P Pn 04 19 13.3 +1.9
BURAR Bucovina Array 5.03 115 ||*i*P Pn 04 19 13.3 +1.9
ABTA Abfaltersbach 5.07 234 ePg Pg 04 19 31.0 -0.8
comp=Z,6.9nm,0.6s
ABTA Abfaltersbach 5.07 234 Pg Pg 04 19 31.0 -0.8
comp=Z,6.9nm,0.6s
CHRU Chernivtsi 5.16 105 ePn Pg 04 19 30.9 -2.6
CHRU eSn Sg 04 20 38.1 -2.3
HORU Horodok 5.23 95 ePn Pb 04 19 30.5 +3.5
HORU eSn Sg 04 20 41.5 -1.2
WTTA Wattenberg 5.24 242 Sg Sg 04 20 45.6 +2.6
comp=Z,24nm,0.5s
WTTA Wattenberg 5.24 242 Sg Sg 04 20 45.6 +2.6
comp=Z,24nm,0.5s
TEKS Tekeris 5.41 172 ePn Pn 04 19 17.5 +0.9
KMPD K-Podol'skiy 5.41 101 ePn Pb 04 19 32.1 +2.1
KMPD eSn Sg 04 20 46.7 -1.7
MOTA Moosalm 5.51 245 ePg Pg 04 19 40.7 +0.5
comp=Z,12nm,0.6s
MOTA Moosalm 5.51 245 Pg Pg 04 19 40.7 +0.5
comp=Z,12nm,0.6s
BSD Bornholm Skovb 5.64 339 eP Pn 04 19 21.6 +1.9
SNR=53
BSD eS Sn 04 20 20.1 -5.0
SNR=53
NDNU Novodnistrovsk 5.98 99 ePn Pb 04 19 43.0 +3.3
NDNU Pnm 04 19 55.2
NDNU eSn Sg 04 21 02.4 -4.3
NDNU Snm 04 21 10.6
DAVA Damuels 6.26 249 ePn Pn 04 19 28.8 +0.4
comp=Z,1.3nm,0.3s
DAVA Sg Sg 04 21 18.1 +2.3
comp=Z,38nm,0.7s
DAVA Damuels 6.26 249 Pn Pn 04 19 28.8 +0.4
comp=Z,1.3nm,0.3s
DAVA Sg Sg 04 21 18.1 +2.3
comp=Z,38nm,0.7s
DAVOX Davos/Dischmat 6.52 245 Pn Pn 04 19 34.6 +2.7
comp=Z,0.9nm,0.3s,baz=63,slow=16,SNR=9.4
DAVOX Sn Sn 04 20 55.6 +8.6
comp=Z,0.6nm,0.3s,baz=137,slow=23,SNR=3.0
DAVOX Lg Lg 04 21 27.1
comp=Z,1.0nm,0.3s,baz=0.0,slow=20,SNR=4.0
MLR Muntele Rosu 6.71 128 Pn Pn 04 19 35.6 +1.1
comp=Z,0.0nm,0.3s,baz=185,slow=12,SNR=2.0
AKASG Malin Array Be 6.94 79 Pn Pn 04 19 37.5 -0.1
comp=Z,1.1nm,0.3s,baz=259,slow=13,SNR=4.8
AKASG Sn Sn 04 20 55.6 -1.6
comp=Z,1.1nm,0.3s,baz=261,slow=23,SNR=2.9
AKASG Lg Lg 04 21 37.7
comp=Z,0.9nm,0.3s,baz=268,slow=26,SNR=5.3
BARS Barje 7.46 161 ePn Pn 04 19 46.5 +1.7
CDF Champ du Feu 7.48 263 ePn Pn 04 19 43.1 -2.0
CDF eSg Sg 04 21 52.0 -2.8
comp=Z,54nm,0.9s
HINF Hinteralfeld 7.93 259 ePn Pn 04 19 51.5 +0.3
HINF eSg Sg 04 22 06.5 -2.8
comp=Z,19nm,0.8s
HINF Hinteralfeld 7.93 259 ePn Pn 04 19 51.5 +0.3
HAU Haudompre 8.20 261 eSg Sg 04 22 11.1 -6.5
comp=Z,50nm,1.0s
PAGF Fort de Pagny 8.44 266 eSg Sg 04 22 20.9 -4.7
comp=Z,29nm,1.5s
CABF La Chapelle 8.89 253 eSg Sg 04 22 35.8 -4.0
comp=Z,47nm,0.9s
MEZF Maizieres J'vi 8.89 266 ePn Pn 04 20 03.2 -1.1
SFTF Sexfontaines 8.98 264 eSg Sg 04 22 37.5 -5.2
comp=Z,92nm,1.4s
SFTF Sexfontaines 8.98 264 eSg Sg 04 22 37.5 -5.2
comp=Z,46nm,1.4s
BAIF Baives 9.19 276 eSn Sn 04 21 46.2 -6.1
ORIF Oris-en-Rattie 9.88 244 ePn Pn 04 20 17.5 -0.4
ORIF Oris-en-Rattie 9.88 244 ePn Pn 04 20 17.5 -0.4
SMF Signal de Mont 10.28 257 eSg Sn 04 23 17.5 +58
comp=Z,7.9nm,0.7s
SSF Saint Saulge 10.33 260 eSg 04 23 21.6
comp=Z,3.9nm,0.5s
HFS Hagfors 10.60 347 Pn Pn 04 20 28.2 +0.5
comp=Z,0.3nm,0.3s,baz=156,slow=18,SNR=7.3
BGF Bois d'Agland 10.94 258 ePn Pn 04 20 29.5 -2.8
BGF Bois d'Agland 10.94 258 ePg Pn 04 21 18.9 +47
NOA NORSAR Array B 11.88 343 Pn Pn 04 20 44.5 -0.6
comp=Z,0.4nm,0.3s,baz=151,slow=12,SNR=9.0
FINES FINESS Array B 12.32 17 Pn Pn 04 20 49.8 -1.3
comp=Z,0.7nm,0.3s,baz=202,slow=11,SNR=18
GRR Gorron 12.74 271 ePn Pn 04 20 55.7 -1.2
EKA Eskdalemuir Ar 14.18 301 Pn Pn 04 21 15.5 -1.0
baz=103,slow=16,SNR=3.3
ARCES ARCESS Array B 19.98 7 P Pn 04 22 31.2 +1.3
comp=Z,1.6nm,0.5s,baz=189,slow=14,SNR=7.5

IDC 14 04:25:00.9±6.1, 22°.39S×178°.57E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.7/29, mbtmp3.7/3, MS3.3/2, Ms1 3.3/2, ms1mx2.9/29, Error ellipse: s-maj=170.0km s-min=96.1km az=144.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**12.46**	**49**	LR	LR		04 31 30.5	
	comp=Z,115nm,18.0s,baz=162,slow=31							
STKA	**Stephens Creek**	**34.10**	**246**	P	P		04 31 46.2	-1.2
	2.3nm,0.6s,baz=89,slow=11,SNR=6.7							
ASAR	**Alice Springs**	**41.00**	**259**	P	P		04 32 47.2	+1.2
	0.4nm,0.5s,baz=97,slow=7.2,SNR=4.8							
WRA	**Warramunga Arr**	**41.21**	**265**	P	P		04 32 47.5	-0.3
	0.3nm,0.3s,baz=98,slow=7.9,SNR=7.2							
PETK	**Petropavlovsk-**	**77.33**	**347**	LR	LR		05 09 14.4	
	comp=Z,24nm,19.6s,baz=156,slow=34							
AKASG	**Malin Array Be**	**142.99**	**327**	PKP	PKPdf		04 44 35.8	-0.6
	0.5nm,0.5s,baz=48,slow=3.3,SNR=4.8							

NIED ***14*** *04:32:00, 38°.00N×143°.20E, h14km, Mw3.7 Best double couple: M0 3.49000×10^14 NP1: ϕs 321.00000°, δ 49.00000°, λ -163.00000°. NP2: ϕs 219.00000°, δ 77.00000°, λ -42.00000°.*

IDC ***14*** *04:32:09.2±2.4, 37°.72N×143°.47E, h0km, mb3.6/3, mb1 3.7/5, mb1mx3.5/33, mbtmp3.7/5, ML3.6/2, Error ellipse: s-maj=45.2km s-min=29.8km az=69.0*

ISCJB ***14*** *04:32:10.3±1.1, 37°.93N±0°.06×143°.28E±0°.09, h19km, mb3.5/3, Error ellipse: s-maj=10.1km s-min=7.8km az=10.5*

JMA ***14*** *04:32:11.9±0.4, 37°.96N×143°.21E, h33km, M3.5*

ISC 14 04:32:11.3±1.5, 37°.90N±0°.06×143°.4E±0°.1, h19km, n22, σ2s 10/23, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.67**	**290**	P	P	**Pn**	**04 32 38.2**	**-1.3**
OFUJ	**Ofunato**	**1.77**	**312**	P	P	**Pn**	**04 32 39.0**	**-1.9**
JMK	**Ichinoseki**	**1.97**	**303**	P	P	**Pn**	**04 32 42.4**	**-1.3**
JMK					*e*S	**Sn**	**04 33 05.1**	**-2.8**
JMM	**Marumori**	**2.02**	**270**	P	P	**Pn**	**04 32 43.6**	**-0.8**
JMM					*e*S	**Sn**	**04 33 07.4**	**-1.7**
JFK	**Kawauchi**	**2.04**	**255**	P	P	**Pn**	**04 32 43.4**	**-1.2**
JFK					*e*S	**Sn**	**04 33 06.3**	**-3.2**
JOU	**Okura**	**2.17**	**283**	P	P	**Pn**	**04 32 45.9**	**-0.5**
JOM	**Ohasama**	**2.25**	**315**	P	P	**Pn**	**04 32 46.2**	**-1.3**
JOM					*e*S	**Sn**	**04 33 11.8**	**-2.9**
JFT	**Otama**	**2.42**	**262**	P	P	**Pn**	**04 32 49.9**	**0.0**
JYK	**Kaneyama**	**2.56**	**294**	P	P	**Pn**	**04 32 51.0**	**-0.8**
JRG	**Rokugo**	**2.60**	**306**	P	P	**Pn**	**04 32 52.1**	**-0.2**
MJAR	**Matsushiro Arr**	**4.32**	**253**	Pn	Pn	**Pn**	**04 33 17.1**	**+1.1**
	1.1nm,0.3s,baz=82,slow=15,SNR=5.9							
MJAR					Sn	**Sn**	**04 34 07.4**	**+1.5**
	0.5nm,0.3s,baz=81,slow=16,SNR=3.4							
MAT	**Matsushiro**	**4.32**	**253**	P	P	**Pn**	**04 33 17.8**	**+1.8**
MAT					S	**Sn**	**04 34 05.5**	**-0.4**
JHJ	**Hachijo jima 2**	**5.59**	**212**	Pn	Pn	**Pn**	**04 33 32.3**	**-1.2**
	13nm,0.3s,baz=64,slow=21,SNR=3.2							
JHJ					Sn	**Sn**	**04 34 32.0**	**-5.1**
	12nm,0.3s,baz=260,slow=24,SNR=3.8							
H11N2	**WAKE ISLAND Hy 27.32**	**125**		T	T		05 05 14.3	
	baz=316,slow=75,SNR=6.6							
H11N1	**WAKE ISLAND Hy 27.33**	**125**		T	T		05 05 14.8	
	baz=316,slow=75,SNR=6.7							
H11N3	**WAKE ISLAND Hy 27.34**	**125**		T	T		05 05 17.9	
	baz=316,slow=75,SNR=5.7							
H11S1	**WAKE ISLAND Hy 28.09**	**127**		T	T		05 06 12.1	
	baz=318,slow=76,SNR=7.2							
H11S3	**WAKE ISLAND Hy 28.10**	**127**		T	T		05 06 12.0	
	baz=318,slow=76,SNR=8.9							
H11S2	**WAKE ISLAND Hy 28.11**	**127**		T	T		05 06 14.0	
	baz=318,slow=76,SNR=8.7							
SONM	**Songino Array**	**28.60**	**302**	P	P		**04 38 07.5**	**+1.2**
	0.4nm,0.8s,baz=94,slow=9.4,SNR=4.0							
MKAR	**Makanchi Array**	**44.97**	**302**	P	P		**04 40 28.5**	**+3.4**
	0.5nm,0.6s,baz=87,slow=8.4,SNR=3.5							
WRA	**Warramunga Arr**	**58.16**	**190**	P	P		**04 42 03.5**	**-0.5**
	0.6nm,0.7s,baz=8.8,slow=7.4,SNR=5.8							

ISCJB ***14*** *04:58:22.5±0.5, 40°.15N±0°.02×29°.91E±0°.04, h4km±5km, Error ellipse: s-maj=5.1km s-min=3.7km az=147.8*

DDA ***14*** *04:58:22.1, 40°.15N×29°.99E, h7km, Md2.8*

ISK ***14*** *04:58:22.9, 40°.13N×29°.80E, h5km, MD2.6*

CSEM ***14*** *04:58:22.8±0.2, 40°.14N×29°.90E, h5km, MD2.6, Error ellipse: s-maj=5.3km s-min=3.8km az=69.0*

ISC 14 04:58:22.7±1.0, 40°.13N±0°.02×29°.93E±0°.02, h5km±9km, n33, σ0s 65/50, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
CAVI	**Cavuskoy**	**0.10**	**319**	*e*PG	**Pg**		**04 58 25.2**	**+0.3**
CAVI	**Cavuskoy**	**0.10**	**319**	*e*Pg	**Pg**		**04 58 25.2**	**+0.3**
ADVT	**Abdulvahap**	**0.34**	**335**	*e*PG	**Pg**		**04 58 29.6**	**+0.3**
ADVT				*e*SG	**Sg**		**04 58 34.2**	**+0.5**
ADVT	**Abdulvahap**	**0.34**	**335**	*e*Pg	**Pg**		**04 58 29.6**	**+0.3**
ADVT				*e*Sg	**Sg**		**04 58 34.2**	**+0.5**
IZI	**Iznik**	**0.41**	**301**	*e*PG	**Pg**		**04 58 29.7**	**-0.9**
IZI				*e*SG	**Sg**		**04 58 35.0**	**-0.9**
IZI	**Iznik**	**0.41**	**301**	*e*Pg	**Pg**		**04 58 29.7**	**-0.9**
IZI				*e*Sg	**Sg**		**04 58 35.0**	**-0.9**
BORA	**Eskisehir**	**0.47**	**121**	*i* P	**Pg**		**04 58 31.2**	**-0.7**
BORA				*i* S	**Sg**		**04 58 37.5**	**-0.5**
BORA	**Eskisehir**	**0.47**	**121**	P	**Pg**		**04 58 31.2**	**-0.7**
BORA				S	**Sg**		**04 58 37.5**	**-0.5**
GULT	**Gulveren**	**0.54**	**56**	*e*PG	**Pb**		**04 58 35.7**	**+0.9**
GULT	**Gulveren**	**0.54**	**56**	*e*Pg	**Pb**		**04 58 35.7**	**+0.9**
IGD	**Bursa**	**0.57**	**284**	*i* P	**Pg**		**04 58 32.1**	**-1.6**
IGD				*i* S	**Sg**		**04 58 40.6**	**-0.6**
HRT	**Hereke**	**0.72**	**344**	*e*PG	**Pg**		**04 58 37.0**	**+0.4**
HRT	**Hereke**	**0.72**	**344**	*e*Pg	**Pg**		**04 58 37.0**	**+0.4**
TVSB	**Tavsanli**	**0.77**	**208**	*e*PG	**Pg**		**04 58 37.3**	**-0.1**
TVSB	**Tavsanli**	**0.77**	**208**	*e*Pg	**Pg**		**04 58 37.3**	**-0.1**
ESKT	**Eskisehir**	**0.93**	**130**	*e*PG	**Pn**		**04 58 42.9**	**+0.2**
ESKT	**Eskisehir**	**0.93**	**130**	*e*Pg	**Pn**		**04 58 42.9**	**+0.2**
KAND	**Kocaeli-Kandir**	**0.99**	**12**	*i* P	**Pg**		**04 58 40.9**	**-0.7**
KAND				*i* S	**Sg**		**04 58 53.5**	**-1.0**
KAND	**Kocaeli-Kandir**	**0.99**	**12**	P	**Pg**		**04 58 40.9**	**-0.7**
KAND				S	**Sg**		**04 58 53.5**	**-1.0**
SAHE	**Sakarya_HENDEK**	**1.01**	**44**	*i* P	**Pg**		**04 58 41.0**	**-1.1**
SAHE				*i* S	**Sg**		**04 58 54.7**	**-0.5**
SAHE	**Sakarya_HENDEK**	**1.01**	**44**	P	**Pg**		**04 58 41.0**	**-1.1**
SAHE				S	**Sg**		**04 58 54.7**	**-0.5**
MDUB	**Mudurnu**	**1.03**	**70**	*e*PN	**Pn**		**04 58 44.6**	**+0.6**
MDUB	**Mudurnu**	**1.03**	**70**	*e*Pn	**Pn**		**04 58 44.6**	**+0.6**
SILT	**Sile**	**1.05**	**348**	*e*PG	**Pg**		**04 58 42.5**	**-0.3**
SILT	**Sile**	**1.05**	**348**	*e*Pg	**Pg**		**04 58 42.5**	**-0.3**
GDZ	**Gediz**	**1.09**	**199**	*i* P	**Pg**		**04 58 44.1**	**+0.4**
GDZ				*i* S	**Sb**		**04 58 59.2**	**+0.3**
GDZ	**Gediz**	**1.09**	**199**	P	**Pg**		**04 58 44.1**	**+0.4**
GDZ				S	**Sb**		**04 58 59.2**	**+0.3**
ISK	**Istanbul-Kandi**	**1.15**	**325**	*e*PN	**Pg**		**04 58 44.2**	**-0.5**
ISK	**Istanbul-Kandi**	**1.15**	**325**	*e*Pn	**Pg**		**04 58 44.2**	**-0.5**
KLYT	**Kilyos**	**1.31**	**329**	*e*PN	**Pn**		**04 58 47.4**	**-0.3**
KLYT				*e*SN	**Sn**		**04 59 05.7**	**+0.1**
KLYT	**Kilyos**	**1.31**	**329**	*e*Pn	**Pn**		**04 58 47.4**	**-0.3**
KLYT				*e*Sn	**Sn**		**04 59 05.7**	**+0.1**
BOLV	**Bolvadin**	**1.61**	**150**	*i* P	**Pb**		**04 58 53.0**	**-0.1**
BOLV				*i* S	**Sb**		**04 59 14.3**	**+0.5**
BOLV	**Bolvadin**	**1.61**	**150**	P	**Pb**		**04 58 53.0**	**-0.1**
BOLV				S	**Sb**		**04 59 14.3**	**+0.5**

IDC 14 05:12:44.2±20.0, 1°.46N×126°.09E, h381km±232km, mb3.3/5, mb1 3.6/6, mb1mx3.1/46, mbtmp4.1/6, MS2.7/1, Ms1 2.7/1, ms1mx2.2/27, Error ellipse: s-maj=142.4km s-min=24.6km az=51.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.45**	**181**	P	P		05 16 44.6	-0.2
	2.6nm,0.3s,baz=1.3,slow=9.7,SNR=108							
WRA	**Warramunga Arr**	**22.76**	**160**	P	P		05 17 15.0	-0.2
	4.3nm,0.3s,baz=338,slow=10,SNR=62							

ASAR	**Alice Springs**	**26.11**	**164**	P	P	05 17 45.6	+0.4
	2.6nm,0.6s,baz=343,slow=7.3,SNR=47						
KSRS	**Korea Array**	**35.86**	**2**	LR	LR	05 33 41.4	
	comp=Z,13nm,21.1s,baz=230,slow=35						
STKA	**Stephens Creek**	**36.27**	**157**	P	P	05 19 12.9	-0.2
	3.3nm,0.6s,baz=337,slow=8.5,SNR=12						
MKAR	**Makanchi Array**	**59.06**	**326**	P	P	05 22 06.9	+1.1
	0.2nm,0.4s,baz=100,slow=9.0,SNR=3.9						
KURBB	**Kurchatov Arra**	**63.30**	**328**	P	P	05 22 32.2	-1.6
	0.4nm,0.3s,baz=126,slow=7.4,SNR=5.1						

NIED **14** *05:17:00,36˚.90N×141˚.50E,h5km,Mw3.9 Best double couple: M₀8.74000×10¹⁴ NP1:φ=32.00000°, δ=44.00000°, λ=-91.00000°. NP2:φ=214.00000°, δ=46.00000°, λ=-89.00000°.*
ISCJB **14** *05:17:26.7±1.5,36˚.86N±0˚.02×141˚.48E±0˚.04,h14km±9km, mb4.1/18,MS3.2/2,Error ellipse: s-maj=5.7km s-min=4.1km az=6.5*
IDC **14** *05:17:26.8±0.6,36˚.91N×141˚.22E,h0km,mb3.9/13, mb1 4.1/15,mb1mx4.0/51,mbtmp3.9/15,ML3.6/2,MS3.1/5, Ms1 3.1/5,ms1mx2.8/42,Error ellipse: s-maj=19.7km s-min=14.4km az=104.0*
JMA **14** *05:17:27.3±0.1,36˚.87N×141˚.47E,h30km±1km,M4.3*
JMA Felt I J1.
NEIC **14** *05:17:31.7±0.7,36˚.87N×141˚.29E,h36km±6km,mb4.4/4, Error ellipse: s-maj=8.4km s-min=5.8km az=115.0*
NEIC Recorded [1 JMA] in Fukushima and Ibaraki.

ISC 14 05:17:26.7±1.7,36˚.91N±0˚.03×141˚.36E±0˚.06,h1km±10km, n45,σ1°00/52,mb4.0/18,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.49**	**293**	P			**Pb**	**05 17 38.5**	**+0.3**
ONAJ				S			**Sb**	**05 17 47.0**	**+1.2**
JFK	**Kawauchi**	**0.60**	**319**	P			**Pb**	**05 17 40.3**	**+0.3**
JFK				S			**Sb**	**05 17 49.4**	**+0.5**
JHO	**Hitachi**	**0.70**	**245**	P			**Pb**	**05 17 41.6**	**-0.2**
JHO				S			**Sb**	**05 17 52.2**	**+0.2**
JFT	**Otama**	**1.02**	**307**	P			**Pn**	**05 17 47.9**	**-0.2**
JFT				S			**Sn**	**05 18 02.2**	**-0.9**
JMM	**Marumori**	**1.05**	**335**	P			**Pb**	**05 17 47.7**	**0.0**
JMM				S			**Sn**	**05 18 02.1**	**-1.8**
JYT	**Yasato**	**1.16**	**234**	P			**Pg**	**05 17 48.2**	**-0.8**
JYT				eS			**Sg**	**05 18 04.0**	**-0.1**
JFY	**Yanaizu**	**1.41**	**291**	P			**Pg**	**05 17 53.9**	**+0.1**
JFY				S			**Sn**	**05 18 13.2**	**+0.3**
JIO	**Ouri**	**1.54**	**360**	P			**Pn**	**05 17 54.5**	**-0.8**
JIO				S			**Sn**	**05 18 14.2**	**-1.7**
JOU	**Okura**	**1.55**	**339**	P			**Pb**	**05 17 55.8**	**-0.5**
JOU				S			**Sg**	**05 18 16.8**	**+0.2**
MJAR	**Matsushiro Arr**	**2.56**	**263**	Pn			**Pn**	**05 18 09.8**	**+0.4**
	6.9nm,0.3s,baz=89,slow=14,SNR=42								
MJAR				Sn			**Sb**	**05 18 46.4**	**+0.9**
	21nm,0.3s,baz=201,slow=18,SNR=6.3								
MAJO	**Matsushiro**	**2.56**	**263**	*e*Pn			**Pn**	**05 18 10.4**	**+1.1**
MAT	**Matsushiro**	**2.56**	**263**	P			**Pn**	**05 18 10.2**	**+0.8**
MAT				S			**Sb**	**05 18 46.6**	**+1.1**
JHJ2	**Mitsune**	**4.00**	**199**	*e*Pn			**Pn**	**05 18 29.1**	**0.0**
JHJ2				*e*Sn			**Sn**	**05 19 17.8**	**+1.2**
JHJ	**Hachijo jima 2**	**4.00**	**199**	Pn			**Pn**	**05 18 29.4**	**+0.3**
	20nm,0.3s,baz=241,slow=19,SNR=4.3								
JHJ				Sn			**Sn**	**05 19 16.2**	**-0.5**
	12nm,0.3s,baz=72,slow=19,SNR=2.9								
JHJ				LR			LR	05 20 04.5	
	comp=Z,63nm,20.9s,baz=58,slow=40								
ERM	**Erimo**	**5.28**	**15**	*e*Pn			**Pn**	**05 18 48.0**	**+1.3**
ERM				*e*Sn			**Sn**	**05 19 50.8**	**+2.6**
ASAJ	**Asahikawa**	**7.26**	**7**	*e*Pn			**Pn**	**05 19 15.9**	**+2.1**
USRK	**Ussuriysk Ar.**	**10.18**	**319**	Pn			Pn	05 19 59.1	+5.1
	0.3nm,0.3s,baz=100,slow=18,SNR=4.7								
USRK				LR			LR	05 23 30.1	
	comp=Z,128nm,19.1s,baz=146,slow=36								
KSRS	**Korea Array**	**10.74**	**277**	Pn			**Pn**	**05 20 03.7**	**+2.2**
	0.3nm,0.3s,baz=79,slow=13,SNR=2.8								
KSRS				LR			LR	05 23 59.7	
	comp=Z,140nm,19.0s,baz=88,slow=37								
KSAR	**Wonju Array Be**	**10.77**	**277**	Pn			**Pn**	**05 20 03.7**	**+1.7**
SONM	**Songino Array**	**27.82**	**304**	P			**P**	**05 23 16.2**	**-1.3**
	0.5nm,0.5s,baz=115,slow=14,SNR=3.6								
H11N2	**WAKE ISLAND Hy**	**28.12**	**121**	T			T	05 52 42.0	
	baz=313,slow=75,SNR=2242								
H11N1	**WAKE ISLAND Hy**	**28.13**	**121**	T			T	05 52 42.6	
	baz=313,slow=75,SNR=3566								
H11N3	**WAKE ISLAND Hy**	**28.14**	**121**	T			T	05 52 43.4	
	baz=313,slow=75,SNR=2284								
H11S1	**WAKE ISLAND Hy**	**28.83**	**123**	T			T	05 53 34.2	
	baz=315,slow=76,SNR=652								
H11S3	**WAKE ISLAND Hy**	**28.83**	**123**	T			T	05 53 34.4	
	baz=315,slow=76,SNR=779								
H11S2	**WAKE ISLAND Hy**	**28.84**	**123**	T			T	05 53 35.0	
	baz=315,slow=76,SNR=620								
TLY	**Talaya**	**30.38**	**311**	LR			LR	05 34 33.3	
	comp=Z,43nm,21.2s,baz=119,slow=34								
CMAR	**Chiang Mai Arr**	**41.43**	**255**	P			**P**	**05 25 13.2**	**-1.8**
	0.9nm,0.3s,baz=54,slow=6.8,SNR=2.7								
ZALV	**Zalesovo Beam**	**41.97**	**312**	P			**P**	**05 25 18.2**	**-0.7**
	0.9nm,0.3s,baz=79,slow=7.7,SNR=3.6								
MKAR	**Makanchi Array**	**44.15**	**302**	P			**P**	**05 25 36.7**	**-0.1**
	1.0nm,0.7s,baz=90,slow=9.3,SNR=9.7								
MKAR				LR			LR	05 43 11.6	
	comp=Z,39nm,18.0s,baz=96,slow=35								
KURK	**Kurchatov**	**45.97**	**308**	*e*P			**P**	**05 25 51.1**	**-0.1**
	24nm,0.8s								
ILAR	**Eielson Array**	**49.62**	**32**	P			**P**	**05 26 20.2**	**+1.0**
	1.3nm,0.7s,baz=263,slow=6.4,SNR=18								
ARU	**Arti**	**56.42**	**319**	*e*P			**P**	**05 27 09.3**	**-0.3**
	5.3nm,1.0s								
FITZ	**Fitzroy Crossi**	**56.70**	**198**	P			**P**	**05 27 11.8**	**-0.1**
	1.5nm,0.7s,baz=353,slow=8.1,SNR=7.1								
WRAB	**Tennant Creek**	**56.93**	**188**	*e*P			**P**	**05 27 12.1**	**-1.4**
	3.6nm,1.0s								
WRA	**Warramunga Arr**	**56.94**	**188**	P			**P**	**05 27 13.1**	**-0.5**
	2.0nm,0.8s,baz=6.0,slow=7.4,SNR=24								
WRA				PcP			**PcP**	**05 28 09.7**	**+0.8**
	0.7nm,1.0s,baz=359,slow=4.3,SNR=5.9								
ABKAR	**Akbulak array**	**57.99**	**310**	*e*P			**P**	**05 27 20.4**	**-0.3**
	0.5nm,0.4s								
ASAR	**Alice Springs**	**60.66**	**188**	P			**P**	**05 27 39.5**	**0.0**
	1.2nm,0.8s,baz=10.0,slow=6.7,SNR=11								
YKA	**Yellowknife Ar**	**63.93**	**30**	P			**P**	**05 28 01.4**	**+0.5**
	0.5nm,0.9s,baz=301,slow=6.5,SNR=2.8								
FINES	**FINESS Array B**	**68.90**	**332**	P			**P**	**05 28 32.6**	**-0.2**
	1.4nm,0.7s,baz=36,slow=7.1,SNR=3.6								
NOA	**NORSAR Array B**	**74.28**	**337**	P			**P**	**05 29 05.4**	**+0.1**
	1.1nm,0.7s,baz=39,slow=5.8,SNR=4.0								
AKASG	**Malin Array Be**	**74.37**	**322**	P			**P**	**05 29 05.5**	**-0.4**
	0.7nm,0.4s,baz=46,slow=6.1,SNR=5.0								
EGMT	**Eagleton**	**74.39**	**41**	*e*P			**P**	**05 29 05.8**	**-0.4**
	81nm,0.5s								
PDAR	**Pinedale Array**	**77.78**	**45**	P			**P**	**05 29 26.7**	**+0.9**
	0.1nm,0.3s,baz=266,slow=8.9,SNR=3.2								
LPAZ	**La Paz**	**146.79**	**60**	PKPbc			**PKPbc**	**05 37 11.6**	**-0.1**
	0.9nm,0.6s,baz=17,slow=7.7,SNR=4.9								

KRNET **14** *05:22:12.0±0.1,40˚.88N×74˚.77E,h12km,mb2.9*
NNC **14** *05:22:14.3±3.1,40˚.87N×74˚.94E,h0km,mb3.5,mpv3.1, Error ellipse: s-maj=23.0km s-min=13.3km az=164.0*
SOME **14** *05:22:14.5,40˚.83N×74˚.90E,h25km*

ISC 14 05:22:07.5±2.0,40˚.69N±0˚.07×74˚.89E±0˚.03,h4km±18km, n29,σ1°01/55,24C-7D,Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ARLS	**Aral**	**1.25**	**340**	⇑*i*P			**Pg**	**05 22 32.0**	**+0.6**
	baz=342								
ARLS				⇑*i*S			**Sb**	**05 22 46.8**	**-1.3**
	baz=342								
KZA	**Kyzart**	**1.41**	**11**	⇑*i*P			**Pg**	**05 22 35.6**	**+1.0**
	baz=17								
KZA				⇑*i*S			**Sg**	**05 22 55.4**	**+2.5**
	baz=17								
UCH	**Uchtor**	**1.56**	**350**	⇑*i*P			**Pg**	**05 22 38.0**	**+0.5**
	baz=352								
UCH				⇑*i*S			**Sg**	**05 22 58.3**	**+0.6**
	baz=352								
AML	**Almayashu**	**1.70**	**328**	*i* P			**Pg**	**05 22 40.0**	**-0.1**
	baz=327								
AML				*i* S			**Sb**	**05 23 01.1**	**-0.3**
	baz=327								
BOOM	**Boomskoye usch**	**1.96**	**23**	⇓*i*P			**Pg**	**05 22 45.4**	**+0.3**
	baz=28								
BOOM				⇓*i*S			**Sg**	**05 23 10.6**	**0.0**
	baz=28								
KBK	**Karagaybulak**	**1.96**	**1**	⇑*i*P			**Pg**	**05 22 45.6**	**+0.4**
	baz=4.0								
KBK				⇑*i*S			**Sg**	**05 23 11.0**	**+0.4**
	baz=4.0								
AAK	**Ala-Archa**	**1.97**	**351**	⇑*i*P			**Pg**	**05 22 45.1**	**-0.1**
	baz=353								
AAK				⇑*i*S			**Sg**	**05 23 10.4**	**-0.3**
	baz=353								
AAK	**Ala-Archa**	**1.97**	**351**	⇑Pn			**Pg**	**05 22 45.4**	**+0.2**
	9.7nm,0.5s								
AAK				⇑Sn			**Sg**	**05 23 10.5**	**-0.3**
	56nm,0.8s								
AAK	**Ala-Archa**	**1.97**	**351**	P			**Pg**	**05 22 45.6**	**+0.3**
EKS2	**Erkin-Say**	**2.14**	**337**	⇑*i*P			**Pg**	**05 22 49.4**	**+0.9**
	baz=338								
EKS2				⇑*i*S			**Sg**	**05 23 15.7**	**-0.5**
	baz=338								
KDJ	**Kajisay**	**2.24**	**49**	⇑*i*P			**Pg**	**05 22 51.7**	**+1.2**
	baz=55								
KDJ				⇑*i*S			**Sg**	**05 23 20.5**	**+0.9**
	baz=55								
TKM2	**Tokmak 2**	**2.29**	**13**	⇑*i*P			**Pg**	**05 22 51.2**	**-0.2**
	baz=17								
TKM2				⇑*i*S			**Sg**	**05 23 20.3**	**-0.8**
	baz=17								
TKM2	**Tokmak 2**	**2.29**	**13**	⇓Pn			**Pg**	**05 22 51.3**	**-0.2**
	7.3nm,0.4s								
TKM2				⇑Sn			**Sg**	**05 23 20.2**	**-0.8**
	32nm,0.6s								
MRKS	**Merke**	**2.40**	**329**	*e*P			**Pg**	**05 22 54.6**	**+1.1**
	33nm,0.3s								
MRKS				*e*S			**Sg**	**05 23 23.4**	**-1.3**
	44nm,0.4s								
ARK	**Arkit**	**2.47**	**298**	⇑*i*P			**Pg**	**05 22 54.7**	**-0.1**
	baz=294								
ARK				⇑*i*S			**Sb**	**05 23 24.8**	**+1.5**
	baz=294								
KST	**Kastek**	**2.48**	**18**	*e*P			**Pg**	**05 22 55.6**	**+0.5**
	3.8nm,0.5s								
KST				*e*S			**Sb**	**05 23 24.9**	**+1.2**
	54nm,0.5s								
BMNS	**Besmoynak**	**2.48**	**13**	*e*P			**Pg**	**05 22 55.2**	**+0.1**
	122nm,0.6s								
BMNS				*e*S			**Sb**	**05 23 23.8**	**0.0**
	96nm,0.5s								
MNAS	**Manas**	**2.54**	**316**	⇑Pn			**Pg**	**05 22 57.0**	**+1.0**
	6.3nm,0.7s								
MNAS				⇑Sn			**Sg**	**05 23 28.3**	**-0.7**
	19nm,0.5s								
DGS	**Degeres**	**2.63**	**14**	*e*P			**Pg**	**05 22 58.7**	**+0.7**
	36nm,0.5s								
DGS				*e*S			**Sg**	**05 23 30.2**	**-1.8**
	67nm,0.7s								
IZV	**Izvestkoviy**	**2.67**	**28**	*e*P			**Pg**	**05 22 59.7**	**+1.0**
	12nm,0.4s								
IZV				*e*S			**Sg**	**05 23 32.0**	**-1.3**
	61nm,0.6s								
TNSS	**Tian-Shan**	**2.81**	**32**	*e*P			**Pg**	**05 23 02.0**	**+0.8**
	15nm,0.6s								
TNSS				*e*S			**Sg**	**05 23 36.1**	**-1.5**
	41nm,1.0s								
KTBS	**Karatobe**	**3.30**	**23**	*e*P			**Pg**	**05 23 10.8**	**0.0**
KTBS				*e*S			**Sg**	**05 23 51.0**	**-2.5**
UZB	**Uzynbulak**	**3.94**	**50**	*e*P			**Pg**	**05 23 22.8**	**-0.1**
	3.1nm,0.5s								
UZB				*e*S			**Sg**	**05 24 11.6**	**-2.4**
	12nm,0.4s								
KK31	**Karatay Array**	**4.06**	**308**	⇓Pg			**Pg**	**05 23 25.3**	**0.0**
	1.3nm,0.6s,baz=126,slow=16,SNR=4.9								
KK31				Lg			Lg	05 24 16.4	
	6.3nm,0.5s,baz=128,slow=29,SNR=17								
PDGK	**Podgornoye**	**4.32**	**51**	⇑Pg			**Pg**	**05 23 30.0**	**-0.2**
	9.0nm,1.0s								
PDGK				⇓Lg			Lg	05 24 24.7	
	25nm,0.8s								
BTLS	**Baital**	**4.39**	**352**	*e*P			**Pg**	**05 23 31.9**	**+0.3**
	2.2nm,0.6s								
BTLS				*e*S			**Sg**	**05 24 27.3**	**-1.2**
	9.4nm,0.6s								
BRLS	**Borolday**	**4.42**	**300**	*e*P			**Pg**	**05 23 32.7**	**+0.5**
	0.7nm,0.4s								
BRLS				*e*S			**Sg**	**05 24 28.7**	**-0.9**
	5.9nm,0.6s								
DJR	**Jarkent**	**5.13**	**43**	⇓*i*P			**Pg**	**05 23 45.6**	**-0.2**
	3.6nm,0.5s								
DJR				⇓*i*S			**Sg**	**05 24 51.0**	**-1.3**
	9.8nm,0.6s								
KAPS	**Kapalarasan**	**5.64**	**34**	*e*P			**Pg**	**05 23 56.5**	**+1.1**
	2.5nm,0.5s								
KAPS				*e*S			**Sg**	**05 25 09.8**	**+1.3**
	5.8nm,0.4s								

IDC **14** *05:25:13.5±0.7,12˚.47N×87˚.54W,h0km,mb4.5/12, mb1 4.7/13,mb1mx4.4/33,mbtmp4.5/13,ML3.8/1, MS3.7/15, Ms1 3.7/15,ms1mx3.6/32,Error ellipse: s-maj=29.0km s-min=13.2km az=49.0*
CASC **14** *05:25:15.7±1.4, 11˚.97N×88˚.06W,h28km±20km, MD4.2, ML3.9,mb4.8(NEIC)*
ISCJB **14** *05:25:19.1±0.4,12˚.22N±0˚.04×87˚.86W±0˚.03,h65km±3km, mb4.7/125,Error ellipse: s-maj=7.3km s-min=3.3km az=35.1*
BJI **14** *05:25:20.4, 12˚.30N×87˚.80W,h55km,mB5.1/4,Ms5.2/5, Ms7 5.1/6*
NEIC **14** *05:25:20.1±0.5, 12˚.25N×87˚.83W,h53km±4km,mb4.8/120, Error ellipse: s-maj=5.3km s-min=2.8km az=217.0*
NEIC Felt [I] at La Union, El Salvador.

ISC 14 05:25:18.6±0.7,12˚.19N±0˚.06×87˚.97W±0˚.05,h41km±5km, n606,σ1°11/604,mb4.8/125,MS3.8/16,2C,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**1.09**	**7**	⇑*e*P			**Pn**	**05 25 39.0**	**+1.5**
VSM	**San Miguel**	**1.27**	**346**	⇑*e*P			**Pn**	**05 25 41.2**	**+1.0**
CNGN	**Cerro Negro**	**1.28**	**76**	*e*P			**Pn**	**05 25 39.6**	**-0.5**
CNGN				AML			AML	05 26 13.1	
	comp=E,4μm,0.5s								
PACA	**Pacayal**	**1.32**	**345**	*e*P			**Pn**	**05 25 41.0**	**+0.3**
PACA				*e*S			**Sn**	**05 25 59.9**	**+2.7**
COPN	**Copaltepe**	**1.34**	**90**	*e*P			**Pn**	**05 25 40.2**	**-0.7**
MOMN	**Momotombo**	**1.41**	**81**	*e*P			**Pn**	**05 25 41.2**	**-0.7**
XAVN	**Gruta Xavier**	**1.60**	**91**	*e*P			**Pn**	**05 25 43.6**	**-0.9**
MGAN	**Managua**	**1.68**	**91**	*e*P			**Pn**	**05 25 44.0**	**-1.6**
MGAN				*e*S			**Sn**	**05 26 08.4**	**+2.4**
MGAN				AML			AML	05 26 15.3	
	comp=N,675nm,0.7s								
MASN	**Masaya**	**1.79**	**96**	*e*P			**Pn**	**05 25 46.5**	**-0.6**
ESTN	**Estel**	**1.80**	**60**	*e*P			**Pn**	**05 25 48.0**	**+0.7**
LFU	**La Fuente**	**1.91**	**324**	*e*P			**Pn**	**05 25 47.9**	**-0.9**
SNET	**Serv Nac Est T**	**1.93**	**321**	AML			AML	05 26 19.0	
	comp=Z,1μm,0.4s								
BOQS	**Boqueron**	**2.00**	**320**	*e*P			**Pn**	**05 25 50.2**	**0.0**
BOQS				*e*S			**Sn**	**05 26 16.0**	**+1.8**
SBLS	**San Blas**	**2.30**	**316**	*e*P			**Pn**	**05 25 54.3**	**0.0**
MONT	**Ecomontaæa**	**2.33**	**316**	*e*P			**Pn**	**05 25 54.1**	**-0.7**
RTR	**El Retiro**	**2.36**	**316**	*e*P			**Pn**	**05 25 54.7**	**-0.4**
CONN	**Concepcion**	**2.37**	**105**	*e*P			**Pn**	**05 25 52.6**	**-2.5**
ESPN	**Las Esperanzas**	**3.58**	**89**	*e*P			**Pn**	**05 26 10.5**	**-1.3**
HDC	**Heredia**	**4.36**	**120**	*e*Pn			**Pn**	**05 26 23.6**	**+1.0**
CCIG	**Comitan**	**5.74**	**316**	*e*Pn			**Pn**	**05 26 44.2**	**+2.7**
TGIG		**6.76**	**313**	P			**Pn**	**05 26 57.1**	**+1.6**
TGIG				S			**Sn**	**05 28 06.7**	**-4.6**
CMIG	**Matias Romero**	**8.28**	**307**	Pn			**Pn**	**05 27 16.7**	**+0.4**
	comp=Z,1.2nm,0.3s,baz=137,slow=12,SNR=18								
CMIG				Sn			**Sn**	**05 28 47.9**	**-0.6**
	comp=Z,0.4nm,0.3s,baz=46,slow=12,SNR=1.8								
TLIG	**Tlapa**	**11.55**	**299**	*e*Pn			**Pn**	**05 28 01.9**	**+0.7**
MTDJ	**Mount Denham**	**11.72**	**58**	*e*Pn			**Pn**	**05 28 03.0**	**-0.4**
GRGC	**Isla de Gorgon**	**13.32**	**132**	*e*P			**P**	**05 28 36.4**	**+2.3**
HELC	**Santa Helena**	**13.64**	**115**	*e*Pn			**Pn**	**05 28 30.1**	**+0.1**
NORC	**Norcasia**	**14.51**	**116**	*e*P			**P**	**05 28 44.8**	**-2.6**
TOLC	**Tolima**	**14.61**	**120**	*e*P			**P**	**05 28 47.3**	**-1.5**
MOIG	**Morelia**	**14.73**	**302**	*e*Pn			**Pn**	**05 28 47.0**	**+2.4**
POPC	**Popayan, Colom**	**14.73**	**130**	*e*P			**P**	**05 28 49.3**	**-0.8**
OCAC	**Ocana**	**14.94**	**104**	*e*P			**Pn**	**05 28 48.8**	**+1.5**
CMBC	**Cumbal**	**15.04**	**137**	*e*P			**P**	**05 28 56.7**	**+3.1**
OTAV	**Otavalo**	**15.17**	**141**	*e*Pn			**Pn**	**05 28 51.5**	**+0.9**
	comp=Z,4.6nm,0.9s								
CRUC	**La Cruz**	**15.19**	**133**	*e*P			**P**	**05 28 56.7**	**+1.5**
ROSC	**El Rosal**	**15.34**	**117**	Pn			**Pn**	**05 28 52.9**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=315,slow=10,SNR=5.4								
ROSC				LR			LR	05 35 58.8	
	comp=Z,124nm,18.4s,baz=15,slow=43								
ROSC	**El Rosal**	**15.34**	**117**	*e*P			**Pn**	**05 28 52.8**	**0.0**
ROSC	**El Rosal**	**15.34**	**117**	*e*Pn			**Pn**	**05 28 52.2**	**-0.6**
	comp=Z,12nm,0.9s								
PRAC	**Prado**	**15.44**	**122**	*e*P			**P**	**05 28 57.2**	**-0.5**
PRAC	**Prado**	**15.44**	**122**	*e*Pn			**Pn**	**05 28 54.7**	**+0.9**
	comp=Z,27nm,0.8s								
GRMC	**Gramalote, San**	**15.58**	**105**	*e*P			**P**	**05 28 57.7**	**-1.7**
CBRI	**Barrientos, No**	**15.59**	**105**	*e*P			**P**	**05 28 58.7**	**-0.8**
BARC	**Barichara**	**15.61**	**110**	*e*P			**P**	**05 28 58.7**	**-1.1**
URIC	**Uribia, Colomb**	**15.64**	**90**	*e*P			**P**	**05 28 58.7**	**-1.2**
CHIC	**Chingaza**	**15.95**	**117**	*e*P			**Pn**	**05 29 00.2**	**-0.5**
RUSC	**La Rusia**	**15.97**	**112**	*e*P			**Pn**	**05 29 00.7**	**-0.3**
RUSC	**La Rusia**	**15.97**	**112**	*e*Pn			**Pn**	**05 29 01.4**	**+0.4**
	comp=Z,5.0nm,0.8s								
DWPF	**Disney Wildern**	**16.98**	**20**	*e*Pn			**Pn**	**05 29 11.2**	**-1.9**
	comp=Z,22nm,0.8s								
035Z	**Hargill**	**17.09**	**328**	P			**P**	**05 29 18.0**	**+2.2**
	baz=144,SNR=13								
SDV	**Santo Domingo**	**17.35**	**99**	Pn			**P**	**05 29 21.7**	**+2.6**
	comp=Z,0.5nm,0.3s,baz=293,slow=9.9,SNR=5.3								
SDV	**Santo Domingo**	**17.35**	**99**	*e*P			**Pn**	**05 29 16.6**	**-1.5**
	comp=Z,12nm,0.8s								
ZAIG	**Zacatecas**	**17.44**	**309**	*e*Pn			**P**	**05 29 22.1**	**+2.0**
	comp=Z,17nm,1.1s								
035A	**Encino**	**17.49**	**328**	P			**P**	**05 29 21.6**	**+1.2**
	baz=145,SNR=7.0								
936A	**North Pade Is**	**17.50**	**331**	P			**P**	**05 29 21.7**	**+1.2**
	baz=148								
KVTX	**Kingsville**	**17.89**	**330**	*e*Pn			**Pn**	**05 29 25.0**	**+0.5**
	comp=Z,87nm,0.8s								
034A	**Hebbronville**	**17.90**	**327**	P			**P**	**05 29 26.6**	**+1.7**
	baz=143,SNR=48								
934A	**Benavides**	**18.25**	**329**	P			**Pn**	**05 29 30.6**	**+1.8**
	baz=145,SNR=14								
835A	**Beeville**	**18.48**	**332**	P			**Pn**	**05 29 33.4**	**+1.7**
	baz=148,SNR=6.0								
447A	**Lucedale**	**18.53**	**358**	P			**Pn**	**05 29 33.8**	**+1.6**
	baz=178								
446A	**Poplarville**	**18.56**	**356**	P			**Pn**	**05 29 34.0**	**+1.4**
	baz=175								
445A	**Amite**	**18.58**	**354**	P			**Pn**	**05 29 34.5**	**+1.7**
	baz=172								
933A	**Laredo**	**18.65**	**327**	P			**P**	**05 29 34.0**	**+0.9**
	baz=143,SNR=20								
448A	**Bay Minette**	**18.65**	**0**	P			**Pn**	**05 29 35.3**	**+1.6**
	baz=180								
834A	**Tilden**	**18.69**	**330**	P			**Pn**	**05 29 35.1**	**+0.9**
	baz=146,SNR=43								
736A	**Circle Diamond**	**18.72**	**334**	P			**Pn**	**05 29 36.6**	**+2.1**
	baz=151,SNR=9.3								
637A	**Eagle Lake**	**18.85**	**337**	P			**Pn**	**05 29 37.5**	**+1.4**
	baz=154,SNR=8.1								
735A	**Kenedy**	**18.95**	**333**	P			**Pn**	**05 29 38.1**	**+0.7**
	baz=149								
345A	**Thompson Farm,**	**19.12**	**355**	P			**Pn**	**05 29 41.0**	**+1.6**
	baz=173								
347A	**Saraland**	**19.13**	**358**	P			**Pn**	**05 29 40.8**	**+1.4**
	baz=178,SNR=6.7								
348A	**Jackson**	**19.13**	**0**	P			**Pn**	**05 29 41.1**	**+1.6**
	baz=180,SNR=6.7								
346A	**Big Creek Wild**	**19.16**	**356**	P			**Pn**	**05 29 41.6**	**+1.8**
	baz=175,SNR=6.0								
636A	**Smothers Creek**	**19.17**	**335**	P			**Pn**	**05 29 40.8**	**+0.8**
	baz=152,SNR=19								
538A	**Harpers Horsep**	**19.25**	**340**	P			**Pn**	**05 29 41.9**	**+1.0**
	baz=157,SNR=5.3								
833A	**Chaparral WMA,**	**19.28**	**328**	P			**P**	**05 29 41.2**	**+1.2**
	baz=144,SNR=144								
440A	**Kirbyville**	**19

baz=150,SNR=21
335A **Moody** 20.91 337 P P 05 29 57.7 -0.1
baz=153,SNR=12
Z47A **Carrollton** 20.91 360 P P 05 29 58.6 +0.9
baz=179,SNR=9.3
Z46A **Louisville** 20.93 358 P P 05 29 59.2 +1.3
baz=177,SNR=5.5
140A **Cam and Jess,** 21.00 347 P Pn 05 30 00.9 -0.5
baz=164,SNR=6.2
237A **Washetta, Mont** 21.00 341 P P 05 30 00.0 +1.4
baz=158,SNR=7.3
Z48A **Northport** 21.09 1 P P 05 30 01.2 +1.5
baz=181,SNR=16
Z43A **Armstrong Fami** 21.14 352 P P 05 30 01.1 +1.0
baz=171
Z45A **Winona** 21.14 356 P P 05 30 01.7 +1.5
baz=175
433A **Art** 21.15 333 P P 05 30 00.2 -0.1
baz=148,SNR=41
139A **Bunkhouse Ranc** 21.23 345 P P 05 30 03.2 +2.1
baz=162
JCT **Junction City** 21.25 331 P P 05 30 01.6 +0.2
baz=146,SNR=19
JCT **Junction City** 21.25 331 *eP* P 05 30 01.7 +0.3
comp=Z,46nm,0.8s
334A **Lometa** 21.28 335 P P 05 30 02.8 +1.0
baz=151,SNR=51
Z42A **Norrel Spur, H** 21.30 351 P P 05 30 03.4 +1.5
baz=169
138A **Matatall Enter** 21.40 343 P P 05 30 04.9 +2.0
baz=160,SNR=10
Z41A **Richland Creek** 21.43 349 P P 05 30 05.1 +1.8
baz=167,SNR=9.6
GOGA **Godfrey** 21.52 10 *eP* P 05 30 06.2 +2.0
comp=Z,37nm,0.6s
137A **Heron Place, G** 21.54 342 P P 05 30 05.9 +1.5
baz=158
Z40A **Long Farm, Mag** 21.55 348 P P 05 30 06.4 +1.8
baz=165,SNR=20
WHTX **Lake Whitney,** 21.56 338 P P 05 30 04.8 +0.2
baz=154,SNR=9.8
WHTX **Lake Whitney,** 21.56 338 *eP* P 05 30 05.4 +0.8
comp=Z,24nm,0.9s
333A **Richland Sprin** 21.59 334 P P 05 30 04.8 -0.2
baz=149,SNR=68
Y46A **Houston** 21.61 358 P P 05 30 06.2 +1.0
baz=177,SNR=28
Y47A **UCPARC, Winfie** 21.62 0 P P 05 30 06.7 +1.4
baz=180,SNR=18
Y45A **Yeager Farm, C** 21.63 356 P P 05 30 06.2 +0.9
baz=176
136A **Ennis** 21.67 340 P P 05 30 07.5 +1.7
baz=156,SNR=51
Y44A **Strider, Charl** 21.77 355 P P 05 30 07.7 +0.8
baz=174
234A **Clairette** 21.83 336 P P 05 30 07.5 -0.1
baz=152,SNR=24
Y42A **Garnett, Star** 21.83 351 P P 05 30 08.5 +1.0
baz=170
SJG **San Juan** 21.86 72 P P 05 30 02.0 -5.9
comp=Z,3.8nm,0.3s,baz=340,slow=12,SNR=4.4
CCAR **Cane Creek** 21.91 351 *eP* P 05 30 09.7 +1.3
comp=Z,45nm,1.0s
WLAR **White Oak Lake** 21.91 348 *eP* P 05 30 10.8 +2.4
comp=Z,110nm,0.9s
Z38A **Mt. Pleasant** 21.93 344 P P 05 30 09.0 +0.5
baz=161
Y41A **Eaglette Beard** 22.01 350 P P 05 30 10.6 +1.1
baz=168,SNR=5.4
135A **Vickery Place,** 22.05 338 P P 05 30 10.1 +0.1
baz=154,SNR=7.2
Z37A **Pogue Cattle C** 22.06 343 P P 05 30 09.3 -0.6
baz=159,SNR=5.7
233A **Rising Star** 22.15 335 P P 05 30 11.0 -0.1
baz=150,SNR=48
HPIG 22.17 314 *eP* P 05 30 11.8 +0.3
comp=Z,10nm,0.8s
X45A **UM Field Stati** 22.17 357 P P 05 30 11.5 +0.2
baz=176
Y40A **Okolona** 22.26 348 P P 05 30 12.3 +0.1
baz=166,SNR=25
OXF **Oxford** 22.26 357 *eP* P 05 30 12.9 +0.8
comp=Z,78nm,1.1s
X44A **Crenshaw** 22.30 355 P P 05 30 12.8 +0.3
baz=174
134A **White-Moore Ra** 22.31 337 P P 05 30 13.8 +1.0
baz=153,SNR=20
Y39A **Lockesburg** 22.36 347 P P 05 30 14.3 +1.0
baz=164,SNR=15
Z36A **Blue Ridge** 22.37 341 P P 05 30 14.1 +0.7
baz=158,SNR=16
X43A **Marvell** 22.39 354 P P 05 30 15.2 +1.7
baz=172
TXAR **Lajitas Array** 22.46 322 P P 05 30 16.2 +1.7
comp=Z,16nm,0.7s,baz=136,slow=9.7,SNR=141
TX31 **Lajitas Ar. Si** 22.46 322 *eP* P 05 30 15.2 +0.6
Y38A **Idabel** 22.50 345 P P 05 30 15.3 +0.5
baz=162,SNR=13
X41A **Kaden, Bauxite** 22.59 350 P P 05 30 16.5 +0.8
baz=168,SNR=25
X40A **Basin Creek Fa** 22.64 350 P P 05 30 16.9 +0.7
baz=167,SNR=9.3
133A **Hamilton Ranch** 22.67 335 P P 05 30 16.4 -0.3
baz=151,SNR=42
Z35A **Perchaven, San** 22.70 340 P P 05 30 17.8 +1.0
baz=156,SNR=24
Y37A **Hugo** 22.79 343 P P 05 30 18.2 +0.4
baz=160,SNR=21
JSC **Jenkinsville** 22.83 14 *eP* P 05 30 17.1 -1.0
comp=Z,46nm,1.0s
MIAR **Mount Ida** 22.84 348 P P 05 30 19.0 +0.8
baz=165,SNR=164
MIAR **Mount Ida** 22.84 348 *eP* P 05 30 18.8 +0.5
comp=Z,135nm,0.8s
UALR **University of** 22.84 351 *eP* P 05 30 18.1 -0.2
comp=Z,34nm,0.8s
W45A **Hickory Valley** 22.89 357 P P 05 30 18.5 -0.4
baz=177,SNR=11
Y36A **Durant** 22.91 342 P P 05 30 19.8 +0.7
baz=158,SNR=26
X39A **Fountain Ranch** 22.92 347 P P 05 30 19.9 +0.8
baz=164,SNR=16
Z34A **Collier Ranch,** 22.97 338 P P 05 30 20.0 +0.4
baz=154,SNR=9.0
PCRV **Puerto La Cruz** 22.97 93 P P 05 30 16.5 -3.5
comp=Z,8.3nm,0.6s,baz=166,slow=11,SNR=4.4
ABTX **Abilene, Hawle** 22.99 334 P P 05 30 19.2 -0.7
baz=149,SNR=36
ABTX **Abilene, Hawle** 22.99 334 *eP* P 05 30 19.6 -0.3
comp=Z,82nm,0.8s
SWET **Sewanee** 23.00 4 *eP* P 05 30 19.3 -0.7
comp=Z,5.8nm,0.9s
STVI **Saint Thomas** 23.02 72 *eP* P 05 30 17.9 -2.4
comp=Z,25nm,0.8s
H06E1 **SOCORRO T-PHAS** 23.06 289 T T 05 54 08.3
SNR=13
Y35A **Marietta** 23.15 341 P P 05 30 22.1 +0.6
baz=157,SNR=115
Z33A **Whitaker Ranch** 23.21 337 P P 05 30 21.6 -0.5
baz=152,SNR=18
W41B **Gary Mavity, V** 23.21 351 P P 05 30 22.2 +0.1
baz=169,SNR=26
X38A **Whitesboro** 23.23 346 P P 05 30 23.4 +1.1
baz=162,SNR=36
X37A **Clayton** 23.30 344 P P 05 30 23.7 +0.8
baz=161,SNR=28
X301 **Greenbrier Sit** 23.30 351 *eP* P 05 30 23.4 +0.5
comp=Z,25nm,0.8s
WHAR **Wooly Hollow** 23.33 351 *eP* P 05 30 23.2 -0.1
comp=Z,33nm,0.9s
W40A **Ferguson Farm,** 23.37 349 P P 05 30 24.2 +0.7
baz=167,SNR=22
CPCT **Cooper Cave** 23.37 7 *eP* P 05 30 23.4 -0.2
comp=Z,11nm,0.8s
HBAR **Harrisburg** 23.39 354 *eP* P 05 30 24.0 +0.2
Y34A **Reagan Ranch,** 23.44 339 P P 05 30 24.7 +0.3
baz=155,SNR=18
V45A **Humboldt** 23.47 358 P P 05 30 24.0 -0.5
baz=177
W39A **Magazine** 23.51 348 P P 05 30 25.8 +0.9
baz=165,SNR=19
W38A **Poteau** 23.54 346 P P 05 30 26.0 +0.7
baz=164,SNR=62
X36A **Centrahoma** 23.55 342 P P 05 30 26.0 +0.7
baz=159,SNR=66
X35A **Drake** 23.58 341 P P 05 30 26.2 +0.5
baz=157,SNR=16
KMSC **Kings Mountain** 23.63 14 P P 05 30 26.3 +0.2
baz=196,SNR=11
KMSC **Kings Mountain** 23.63 14 *eP* P 05 30 25.8 -0.3
comp=Z,27nm,0.9s
TKL **Tuckaleechee C** 23.67 9 P P 05 30 27.7 +1.2
comp=Z,47nm,0.9s,baz=185,slow=12,SNR=44
TKL LR LR 05 40 30.2
comp=Z,148nm,18.9s,baz=283,slow=39
TKL **Tuckaleechee C** 23.67 9 *eP* P 05 30 27.1 +0.5
comp=Z,50nm,0.9s
V42A **Cord** 23.72 353 P P 05 30 26.0 -0.9
baz=171,SNR=15
GNAR **Gosnell** 23.75 356 *eP* P 05 30 27.5 +0.3
Y33A **Hilltop Ranch,** 23.80 338 P P 05 30 27.7 0.0
baz=153,SNR=19
V41A **Mountainview** 23.80 352 P P 05 30 27.4 -0.3
baz=170,SNR=25
W37B **Quinton** 23.83 345 P P 05 30 28.1 +0.1
baz=161,SNR=22
WVT **Waverly** 23.84 0 *eP* P 05 30 27.1 -1.0
comp=Z,7.8nm,0.8s
V40A **Witts Springs** 23.92 350 P P 05 30 29.2 +0.3
baz=168
W36A **Wetumka** 24.05 343 P P 05 30 29.8 -0.2
baz=160,SNR=29
X34A **Smith Ranch, M** 24.05 340 P P 05 30 30.6 +0.6
baz=156,SNR=26
V39A **Pettigrew** 24.10 349 P P 05 30 31.0 +0.4
baz=166,SNR=64
X33A **Lawton** 24.23 338 P P 05 30 31.9 +0.2
baz=154,SNR=31
U42A **Revenden** 24.24 354 P P 05 30 30.8 -0.9
baz=172,SNR=18
W35A **Tecumseh** 24.25 342 P P 05 30 31.5 -0.3
baz=158,SNR=26
LPIG **La Paz** 24.27 302 P P 05 30 34.4 +2.2
comp=Z,15nm,0.3s,baz=2.5,slow=8.9,SNR=8.5
V38A **Canehill** 24.28 347 P P 05 30 31.5 -0.6
baz=164,SNR=37
U41A **Viola** 24.32 352 P P 05 30 31.6 -0.8
baz=170,SNR=13
X32A **Elmer** 24.41 337 P P 05 30 33.4 -0.1
baz=152,SNR=86
PARMO **Parma** 24.42 357 *eP* P 05 30 33.7 +0.2
U40A **Yellville** 24.46 350 P P 05 30 33.9 +0.1
baz=168,SNR=43
V37A **Hulbert** 24.47 346 P P 05 30 33.6 -0.2
baz=163,SNR=43
WMOK **Wichita Mounta** 24.51 338 P P 05 30 33.9 -0.3
baz=154,SNR=36
WMOK **Wichita Mounta** 24.51 338 *eP* P 05 30 34.3 0.0
comp=Z,25nm,0.8s
WMOK *eScP* ScP 05 37 57.2 +9.5
TZTN **Tazewell** 24.58 9 *eP* P 05 30 34.8 0.0
comp=Z,22nm,0.8s
V36A **Jenks** 24.58 344 P P 05 30 34.1 -0.7
baz=161,SNR=19
PBMO **Poplar Bluff** 24.59 355 *eP* P 05 30 34.7 -0.2
comp=Z,35nm,0.9s
HHAR **Hobbs** 24.59 348 *eP* P 05 30 35.0 0.0
comp=Z,32nm,0.7s
U39A **Green Forest** 24.60 349 P P 05 30 34.9 -0.2
baz=167,SNR=23
W34A **Bridge Creek,** 24.61 340 P P 05 30 34.8 -0.3
baz=155,SNR=55
W34A **Bridge Creek,** 24.61 340 *eP* P 05 30 35.6 +0.4
comp=Z,161nm,0.6s
TUL1 **Leonard** 24.66 345 P P 05 30 35.2 -0.3
baz=161,SNR=37
TUL1 **Leonard** 24.66 345 *eP* P 05 30 35.3 -0.2
comp=Z,63nm,0.8s
CLNB **Carlsbad** 24.76 326 *eP* P 05 30 37.5 +0.8
CLNB *ePcP* PcP 05 34 14.3 +1.5
W33A **Caddo, Fort Co** 24.77 339 P P 05 30 37.0 +0.4
baz=155,SNR=21
V35A **Meyer Ranch, C** 24.80 343 P P 05 30 36.0 -0.9
baz=159,SNR=16
U38A **Gravette** 24.83 348 P P 05 30 36.8 -0.4
baz=165,SNR=34
U37A **Salina** 24.96 346 P P 05 30 38.0 -0.3
baz=163,SNR=13
T41A **Mountain View** 24.98 353 P P 05 30 37.9 -0.7
baz=171,SNR=28
W32A **Sentinel** 25.02 338 P P 05 30 39.0 +0.1
baz=153,SNR=69
V34A **Guthrie** 25.08 341 P P 05 30 38.7 -0.7
baz=157,SNR=48
V34A **Guthrie** 25.08 341 *eP* P 05 30 38.6 -0.8
comp=Z,106nm,0.6s
U36A **Oologah** 25.10 345 P P 05 30 39.0 -0.6
baz=162,SNR=7.5
MNTX **Cornudas Mount** 25.19 323 P P 05 30 40.9 +0.4
baz=136,SNR=19
MNTX **Cedas Mount** 25.19 323 *eP* P 05 30 40.4 -0.1
comp=Z,15nm,0.9s
T40A **Mansfield** 25.19 351 P P 05 30 40.1 -0.3
baz=169,SNR=9.0
T39A **Clever** 25.20 350 P P 05 30 40.2 -0.4
baz=167,SNR=23
V33A **Lossen Ranch,** 25.31 340 P P 05 30 41.4 -0.2
baz=156,SNR=14
U35A **Pawnee** 25.34 343 P P 05 30 41.4 -0.4
baz=159,SNR=38
S43A **Fulton Ridge,** 25.35 356 P P 05 30 41.0 -0.8
baz=175,SNR=8.2
T38A **Diamond** 25.39 348 P P 05 30 42.0 -0.2
baz=165,SNR=30
S45A **Carrier Mills** 25.39 359 P P 05 30 42.7 +0.5
baz=178
S44A **Carbondale** 25.43 358 P P 05 30 42.2 -0.3
baz=177,SNR=11
SIUC **Southern Illin** 25.45 358 *eP* P 05 30 42.6 -0.1
comp=Z,34nm,0.8s
V32A **Arapaho** 25.48 339 P P 05 30 43.1 0.0
baz=154,SNR=11
S41A **Jillco Farms,** 25.52 353 P P 05 30 43.1 -0.3
baz=171,SNR=12
MSTX **Muleshoe** 25.54 330 P P 05 30 43.4 -0.4
baz=144,SNR=61
MSTX **Muleshoe** 25.54 330 *eP* P 05 30 43.6 -0.2
comp=Z,70nm,0.7s
T37A **Cheneyville 18** 25.60 347 P P 05 30 44.1 -0.1
baz=164,SNR=34
S40A **Lebanon** 25.63 352 P P 05 30 44.1 -0.3
baz=169,SNR=15
U34A **Anderson Ranch** 25.64 342 P P 05 30 44.1 -0.4
baz=158,SNR=34
U34A **Anderson Ranch** 25.64 342 *eP* P 05 30 44.1 -0.4
comp=Z,83nm,0.7s
USIN **University of** 25.67 1 *eP* P 05 30 44.4 -0.4
comp=Z,20nm,0.8s
T36A **Boggs Farm, Ca** 25.77 345 P P 05 30 45.3 -0.3
baz=162,SNR=30
T35A **Sooner Cattle** 25.79 344 P P 05 30 45.6 -0.3
baz=160,SNR=18
AMTX **Amarillo** 25.80 333 P P 05 30 46.3 +0.3
baz=148
AMTX **Amarillo** 25.80 333 *eP* P 05 30 46.3 +0.3
comp=Z,117nm,1.4s
U33A **Lingo Farm, Me** 25.81 341 P P 05 30 45.2 -0.9
baz=156
BLA **Blacksburg** 25.82 14 *eP* P 05 30 45.9 -0.3
comp=Z,18nm,0.9s
S39A **Bolivar** 25.84 350 P P 05 30 46.5 +0.1
baz=168,SNR=92
S38A **Stockton** 25.89 349 P P 05 30 46.3 -0.5
baz=166,SNR=22
R44A **Waltonville** 25.97 358 P P 05 30 46.7 -0.7
baz=177
WCI **Wyandotte Cave** 25.98 3 *eP* P 05 30 47.3 -0.2
comp=Z,32nm,0.8s
U32A **Winter Ranch,** 26.06 339 P P 05 30 48.0 -0.3
baz=154,SNR=21
T34A **McClaskey Farm** 26.08 343 P P 05 30 47.7 -0.8
baz=159,SNR=16
S37A **Fort Scott** 26.20 348 P P 05 30 49.2 -0.3
baz=164,SNR=16
R40A **Maddies Statio** 26.28 352 P P 05 30 49.2 -1.0
baz=170,SNR=12
S36A **Lake Cedric, C** 26.33 346 P P 05 30 50.3 -0.4
baz=163,SNR=24
R39A **Chumby, Stover** 26.41 351 P P 05 30 50.9 -0.5
baz=168,SNR=22
R38A **Fenwick Farm,** 26.43 349 P P 05 30 50.8 -0.8
baz=167,SNR=33
OLIL **Olney** 26.44 360 *eP* P 05 30 51.4 -0.3
comp=Z,18nm,0.7s
T33A **Patterson Ranc** 26.45 341 P P 05 30 51.4 -0.4
baz=157
S35A **Otter Creek Ra** 26.47 345 P P 05 30 51.4 -0.6
baz=161,SNR=18
Q44A **Meyer Farm, Va** 26.62 358 P P 05 30 52.1 -1.2
baz=177,SNR=5.4
Q43A **New Douglas** 26.69 357 P P 05 30 53.5 -0.4
baz=176
Q42A **Golden Eagle** 26.71 356 P P 05 30 53.9 -0.3
baz=174
R37A **Teagarden Farm** 26.73 348 P P 05 30 53.7 -0.6
baz=165
S33A **Kaszmaul Farm,** 26.85 342 P P 05 30 54.6 -0.8
baz=158,SNR=9.5
R36A **Gordon, Harris** 26.88 347 P P 05 30 55.0 -0.7
baz=163,SNR=6.0
BLO **Bloomington** 26.91 2 *eP* P 05 30 55.4 -0.5
comp=Z,12nm,0.8s
Q40A **Laux Farm, Aux** 26.95 353 P P 05 30 55.5 -0.8
baz=171,SNR=6.7
R35A **Emporia Munici** 27.04 346 P P 05 30 56.6 -0.6
baz=162,SNR=5.4
Q39A **Willow Grove F** 27.12 351 P P 05 30 57.1 -0.7
baz=169,SNR=17
Q38A **Cooks Store, C** 27.13 350 P P 05 30 57.6 -0.3
baz=168,SNR=18
Q37A **Longview Farm,** 27.20 349 P P 05 30 57.6 -1.0
baz=166
121A **Cookes Peak, D** 27.22 321 *eP* P 05 31 00.1 +1.1
comp=Z,10nm,0.8s
S32A **Newby Ranch, P** 27.24 341 P P 05 30 58.3 -0.7
baz=156
R34A **Isabella, Hill** 27.29 344 P P 05 30 59.0 -0.4
baz=160,SNR=7.6
P42A **Winchester** 27.37 356 P P 05 30 59.0 -1.0
baz=175
319A **Douglas** 27.41 318 *eP* P 05 31 01.5 +0.9
comp=Z,15nm,1.3s
P40A **Paris** 27.47 353 P P 05 31 00.6 -0.4
baz=171,SNR=7.1
Q36A **Arnold C. Orve** 27.48 347 P P 05 31 00.3 -0.8
baz=164
R33A **Olander Ranch,** 27.50 343 P P 05 31 00.5 -0.8
baz=158,SNR=12
P41A **Barry, Barry** 27.51 355 P P 05 31 00.3 -1.0
baz=173
Q35A **Mercer Eighty,** 27.52 346 P P 05 31 00.8 -0.6
baz=162
P39B **Salisbury** 27.52 352 P P 05 31 00.7 -0.7
baz=170,SNR=9.9
BNM **Barren Site** 27.69 325 *eP* P 05 31 03.7 +0.4
P38A **Dawn** 27.77 351 P P 05 31 02.8 -0.8
baz=168,SNR=28
Q34A **Chapman** 27.80 345 P P 05 31 03.5 -0.4
baz=161,SNR=6.5
LPM **Los Pinos Moun** 27.82 325 *eP* P 05 31 05.0 +0.7
R32A **Long Quarter,** 27.83 342 P P 05 31 03.7 -0.5
baz=157,SNR=5.7
P37A **Lathrop** 27.87 349 P P 05 31 03.8 -0.7
baz=166,SNR=21
KSU1 **Kansas State U** 27.88 346 P P 05 31 04.1 -0.5
baz=161
KSU1 **Kansas State U** 27.88 346 *eP* P 05 31 04.5 -0.2
comp=Z,19nm,0.7s
O41A **Passleys Farm,** 27.94 355 P P 05 31 03.8 -1.3
baz=174,SNR=5.0
O42A **Bath** 27.96 357 P P 05 31 04.2 -1.2
baz=175
O40A **La Belle** 28.04 354 P P 05 31 04.9 -1.1
baz=172
P36A **Good Intent, A** 28.07 348 P P 05 31 05.5 -0.8
baz=165,SNR=6.7
SFIN **Lafayette** 28.09 1 P P 05 31 05.5 -1.0
baz=182
SFIN **Lafayette** 28.09 1 *eP* P 05 31 05.5 -1.0
comp=Z,10nm,0.7s
P35A **Duane Minner,** 28.15 347 P P 05 31 06.4 -0.7
baz=163,SNR=15
LAZ **Ladron** 28.16 325 *eP* P 05 31 06.7 -0.8
ANMO **Albuquerque** 28.19 327 *eP* P 05 31 09.5 +1.8
comp=Z,4.1nm,0.9s
O38A **Galt** 28.25 351 P P 05 31 07.4 -0.5
baz=168
O39A **Kirksville** 28.25 353 P P 05 31 06.9 -1.0
baz=170,SNR=5.9
ACSO **Alum Creek Sta** 28.28 8 *eP* P 05 31 08.5 +0.3
comp=Z,14nm,0.8s
HDIL **Hopedale** 28.28 358 P P 05 31 08.0 -0.2
baz=177
HDIL **Hopedale** 28.28 358 *eP* P 05 31 08.3 +0.1
comp=Z,13nm,0.8s
MCWV **Mont Chateau** 28.29 13 *eP* P 05 31 09.1 +0.8
comp=Z,19nm,1.5s
Q32A **Meitler Ranch,** 28.31 342 P P 05 31 07.9 -0.5
baz=158,SNR=9.6
P34A **Walnut Farm, R** 28.36 345 P P 05 31 08.7 -0.2
baz=161,SNR=12
O37A **Wolven Farm, M** 28.40 350 P P 05 31 08.4 -0.8
baz=167
CBKS **Cedar Bluff** 28.51 340 P P 05 31 10.0 -0.3
baz=155,SNR=6.3
CBKS **Cedar Bluff** 28.51 340 *eP* P 05 31 10.7 +0.4
comp=Z,24nm,0.6s
O36A **Bolckow** 28.51 349 P P 05 31 09.3 -0.9
baz=165,SNR=7.2
O35A **Humboldt** 28.83 347 P P 05 31 12.3 -0.8
baz=164
T25A **Trinidad** 28.90 332 P P 05 31 14.3 +0.3
baz=145,SNR=9.1
T25A **Trinidad** 28.90 332 *eP* P 05 31 14.5 +0.5
comp=Z,15nm,0.7s
P32A **Huiting Farm,** 28.90 343 P P 05 31 13.4 -0.4
baz=158,SNR=6.0
O34A **Beatrice** 28.93 346 P P 05 31 13.4 -0.5
baz=162,SNR=17
N37A **Lee Faris, Mou** 28.98 350 P P 05 31 13.8 -0.7
baz=167,SNR=7.4
TUC **Tucson** 28.99 317 *eP* P 05 31 16.3 +1.6
comp=Z,4.8nm,0.8s
O33A **Hebron** 29.05 345 P P 05 31 14.9 -0.2
baz=160,SNR=8.1
N36A **Muff Farm, Cla** 29.17 349 P P 05 31 15.6 -0.6
baz=166,SNR=13
O56A **Blue Knob Stat** 29.17 15 P P 05 31 16.8 +0.6
baz=199
N35A **Tabor** 29.35 348 P P 05 31 17.1 -0.5
baz=164,SNR=8.5
O32A **Brockman Farm,** 29.41 344 P P 05 31 18.6 +0.3
baz=159
M39A **Webster** 29.41 354 P P 05 31 17.6 -0.6
baz=171
M38A **Pleasantville** 29.48 352 P P 05 31 17.8 -0.9
baz=169,SNR=5.7
N54A **Moraine State** 29.51 12 P P 05 31 19.1 0.0
baz=196
N34A **Lincoln** 29.51 347 P P 05 31 18.3 -0.8
baz=163,SNR=5.1
M37A **Trindle Farm,** 29.59 351 P P 05 31 19.2 -0.6
baz=168,SNR=6.1
O31A **Woolman Ranch,** 29.60 342 P P 05 31 19.1 -0.9
baz=157,SNR=7.2
N33A **J Bar K, Exete** 29.64 345 P P 05 31 20.5 +0.2
baz=161
SSPA **Standing Stone** 29.69 16 *eP* P 05 31 20.1 -0.6
comp=Z,6.7nm,0.8s
KSCO **Kaye Shedlock'** 29.72 337 P P 05 31 20.7 -0.5
baz=150,SNR=6.5
KSCO **Kaye Shedlock'** 29.72 337 *eP* P 05 31 21.6 +0.5
comp=Z,19nm,0.8s
M36A **Felix, Anita** 29.76 350 P P 05 31 20.5 -0.8
baz=166,SNR=19
L41A **Preston** 29.86 356 P P 05 31 21.0 -1.1
baz=175,SNR=5.6
SDCO **Great Sand Dun** 29.89 331 P P 05 31 23.5 +0.6
baz=144,SNR=18
SDCO **Great Sand Dun** 29.89 331 *eP* P 05 31 23.3 +0.4
comp=Z,5.8nm,0.8s
L40A **Anamosa** 29.90 355 P P 05 31 21.5 -1.0
baz=173,SNR=6.5
M35A **Neola** 29.94 348 P P 05 31 22.6 -0.3
baz=164,SNR=15
L39A **Vinton** 30.03 354 P P 05 31 23.2 -0.5
baz=172
M54A **Oil Creek Stat** 30.10 12 P P 05 31 24.1 -0.3
baz=196
L38A **Oak Wood Farm,** 30.16 353 P P 05 31 24.0 -0.8
baz=170,SNR=6.4
M34A **Aspy Farms, Fr** 30.16 347 P P 05 31 24.5 -0.4
baz=163,SNR=7.2
L37A **Phoenix Point,** 30.25 351 P P 05 31 25.2 -0.4

baz=168,SNR=6.5
M33A Taylor Creek F 30.37 346 P P 05 31 26.9 +0.2
baz=162
L36A Harm Buss Farm 30.37 350 P P 05 31 25.8 -0.9
baz=167,SNR=6.6
K41A Shullsburg 30.38 357 P P 05 31 26.0 -0.8
baz=175
BGNE Belgrade 30.45 345 P P 05 31 27.6 +0.2
baz=160
BGNE Belgrade 30.45 345 eP P 05 31 27.6 +0.2
comp=Z,36nm,0.6s
BGNE epP pP 05 31 36.1 -2.5
K40A Colesburg 30.52 355 P P 05 31 27.2 -0.9
baz=174
S22A 4UR Ranch, Cre 30.53 330 P P 05 31 28.8 +0.2
baz=141
S22A 4UR Ranch, Cre 30.53 330 eP P 05 31 29.1 +0.6
comp=Z,4.4nm,0.7s
L35A Bielow Farm, R 30.54 349 P P 05 31 27.1 -1.1
baz=165,SNR=16
N59A State Game Lan 30.56 18 P P 05 31 28.8 +0.4
baz=204
L34A Svendsen Farm, 30.56 348 P P 05 31 27.9 -0.5
baz=163
K39A Oelwein 30.59 354 P P 05 31 27.2 -1.5
baz=172,SNR=6.2
M31A Lambtecht Ranc 30.61 344 P P 05 31 29.0 +0.2
baz=158
PTGA Pitinga 30.62 113 LR LR 05 45 20.4
comp=Z,177nm,18.4s,baz=298,slow=40
K38A Parkersburg 30.63 353 P P 05 31 28.3 -0.7
baz=170
JFWS Jewell Farm 30.68 357 eP P 05 31 28.8 -0.6
comp=Z,39nm,1.5s
JFWS epP pP 05 31 37.4 -3.2
X16A Lo Mia Camp, P 30.75 320 eP P 05 31 31.1 +0.7
comp=Z,2.6nm,0.8s
K36A Gilmore City 30.86 351 P P 05 31 30.3 -0.7
baz=167,SNR=8.0
K37A Belmond 30.86 352 P P 05 31 30.2 -0.8
baz=169,SNR=34
L33A Hoskins 30.95 346 P P 05 31 31.5 -0.3
baz=162
K35A Storm Lake 31.07 350 P P 05 31 32.3 -0.6
baz=166
J41A Loganville 31.11 357 P P 05 31 32.4 -0.9
baz=176,SNR=6.5
J40A Soldiers Grove 31.19 356 P P 05 31 32.9 -1.0
baz=174
K34A Le Mars 31.20 348 P P 05 31 32.8 -1.2
baz=164,SNR=14
J39A Decorah 31.20 355 P P 05 31 32.8 -1.2
baz=173
J38A Wedel Dairy, R 31.26 354 P P 05 31 33.7 -0.9
baz=171
K33A Hardington 31.31 347 P P 05 31 34.6 -0.4
baz=163
L31A Butterfield Fa 31.34 344 P P 05 31 35.4 +0.1
baz=159,SNR=6.8
J37A Redenius Farm, 31.39 352 P P 05 31 34.7 -1.0
baz=169,SNR=19
WUAZ Wupatki 31.43 322 eP P 05 31 37.1 +0.8
comp=Z,6.2nm,0.9s
J36A Seneca 1, Swea 31.52 351 P P 05 31 35.8 -0.9
baz=168,SNR=21
K32A Verdigre 31.58 346 P P 05 31 37.1 -0.3
baz=161,SNR=14
ISCO Idaho Springs 31.62 334 P P 05 31 38.4 +0.3
baz=145,SNR=5.6
ISCO Idaho Springs 31.62 334 eP P 05 31 38.4 +0.3
comp=Z,5.0nm,0.9s
BINY Binghamton 31.67 17 eP P 05 31 37.0 -1.2
comp=Z,8.4nm,0.9s
J35A Milford 31.69 350 P P 05 31 37.1 -1.2
baz=166
PV01 Paradox Valley 31.71 328 P P 05 31 39.0 +0.1
SMCO Snowmass 31.73 331 eP P 05 31 41.5 +2.3
comp=Z,7.3nm,0.8s
K31A O'Neill 31.74 345 P P 05 31 38.8 -0.1
baz=159,SNR=6.3
J34A George 31.75 349 P P 05 31 38.4 -0.4
baz=165
I38A Scanlan Farm, 31.96 354 P P 05 31 39.3 -1.4
baz=172,SNR=8.5
K30A Basset 32.02 344 P P 05 31 41.6 +0.3
baz=158,SNR=12
I37A Lemond, Waseca 32.06 353 P P 05 31 40.8 -0.7
baz=170
PV04 Paradox Valley 32.08 328 eP P 05 31 42.8 +0.7
PV04 ePcP PcP 05 34 33.3 +2.4
I35A Creekview Farm 32.13 350 P P 05 31 41.4 -0.8
baz=167,SNR=5.4
PV10 Paradox Valley 32.14 328 eP P 05 31 43.1 +0.5
PV10 ePcP PcP 05 34 33.5 +2.3
I36A Fitzsimmons Fa 32.14 352 P P 05 31 41.6 -0.7
baz=169,SNR=8.8
J32A Parkston 32.23 346 P P 05 31 42.3 -0.8
baz=161
ECSD EROS Data Cent 32.31 348 P P 05 31 42.4 -1.3
baz=164,SNR=27
ECSD EROS Data Cent 32.31 348 eP P 05 31 43.0 -0.8
comp=Z,25nm,0.9s
J31A Geddes 32.36 345 P P 05 31 43.6 -0.7
baz=160
PDMCI Parker Dam,Lak 32.43 317 P P 05 31 45.6 +0.7
baz=126
I34A Hadley 32.46 349 P P 05 31 44.5 -0.6
baz=165
H37A Dierke Farm, C 32.56 353 P P 05 31 45.1 -0.9
baz=171
U15A North Rim 32.59 322 eP P 05 31 47.1 +0.5
comp=Z,3.4nm,1.1s
J30A Dallas 32.59 344 P P 05 31 45.7 -0.6
baz=158,SNR=9.2
I33A Coleman 32.65 348 P P 05 31 46.1 -0.6
baz=164
N23A Red Feather La 32.67 334 P P 05 31 48.3 +1.1
baz=146
N23A Red Feather La 32.67 334 eP P 05 31 48.0 +0.8
comp=Z,7.6nm,0.8s
H36A Jessenland, He 32.68 352 P P 05 31 46.1 -0.8
baz=169,SNR=40
I32A Karley and Nic 32.77 347 P P 05 31 46.8 -0.9
baz=162
PHWY Pilot Hill 32.80 335 eP P 05 31 49.0 +0.5
comp=Z,7.3nm,1.0s
H35A Sunnyside Ranc 32.93 351 P P 05 31 48.5 -0.7
baz=167,SNR=66
H34A Spellman Lake, 33.05 350 P P 05 31 49.3 -0.9
baz=166,SNR=6.1
O20A White River Ci 33.09 331 P P 05 31 52.0 +1.1
baz=142,SNR=19
O20A White River Ci 33.09 331 eP P 05 31 51.5 +0.6
comp=Z,19nm,0.8s
SPMN Marine on St. 33.18 354 P P 05 31 49.9 -1.5
baz=171,SNR=21
SPMN Marine on St. 33.18 354 eP P 05 31 50.3 -1.1
comp=Z,30nm,0.8s
H32A Carlson Farm, 33.21 348 P P 05 31 50.4 -1.3
baz=163,SNR=15
H33A Prehn Over Nor 33.24 349 P P 05 31 50.7 -1.2
baz=164,SNR=7.0
KNB Kanab 33.30 322 eP P 05 31 53.8 +1.1
comp=Z,12nm,1.5s
G36A St. Michael 33.30 353 P P 05 31 51.2 -1.2
baz=169
SADO Sadowa 33.34 11 LR LR 05 46 00.8
comp=Z,194nm,18.6s,baz=190,slow=38
SADO Sadowa 33.34 11 eP P 05 31 52.4 -0.4
comp=Z,20nm,0.7s
G35A Watkins 33.39 352 P P 05 31 52.1 -1.1
baz=168
H31A Wolsey 33.42 346 P P 05 31 52.2 -1.3
baz=161,SNR=5.9
SUSD Miller 33.50 346 P P 05 31 52.9 -1.3
baz=160,SNR=7.2
G34A Benson 33.59 350 P P 05 31 53.8 -1.1
baz=166,SNR=16
Q16A Castle Valley 33.67 326 eP P 05 31 56.9 +1.0
comp=Z,2.9nm,0.6s
G33A Ortonville 33.68 349 P P 05 31 54.5 -1.2
baz=165,SNR=23
COWI Conover 33.81 359 eP P 05 31 55.9 -1.0
comp=Z,32nm,0.3s
P17A Butcher Ranch, 33.84 327 eP P 05 31 58.0 +0.6
comp=Z,7.4nm,0.7s
F36A Milaca 33.89 353 P P 05 31 56.2 -1.4
baz=170,SNR=23
G32A Webster 33.95 348 P P 05 31 56.8 -1.2
baz=163
F35A Swanville 34.02 352 P P 05 31 57.5 -1.2
baz=168,SNR=16
PLVO Plevna 34.04 14 eP P 05 31 58.8 -0.1
comp=Z,10nm,0.9s
F34A Alexandria 34.06 351 P P 05 31 57.8 -1.2
baz=167,SNR=15
G31A Conde 34.07 347 P P 05 31 57.8 -1.3
baz=162
F33A 5 Mile Ranch, 34.28 350 P P 05 31 59.7 -1.2
baz=165,SNR=94
LONY Lake Ozonia 34.30 17 eP P 05 32 01.1 0.0
comp=Z,20nm,0.9s
K22A Casper 34.37 335 P P 05 32 02.3 +0.4
baz=146
K22A Casper 34.37 335 eP P 05 32 02.4 +0.4
comp=Z,14nm,1.1s
LPAZ La Paz 34.43 145 P P 05 32 05.4 +2.2
comp=Z,0.8nm,0.7s,baz=341,slow=12,SNR=4.7
LPAZ PcP PcP 05 34 39.5 +1.2
comp=Z,0.8nm,0.8s,baz=300,slow=2.8,SNR=3.1
F32A Veblen 34.46 349 P P 05 32 01.2 -1.3
baz=164
E36A McGregor 34.51 354 P P 05 32 01.6 -1.3
baz=171,SNR=14
F31A Hecla 34.68 347 P P 05 32 03.7 -0.7
baz=162
E35A Pequot Lakes 34.69 352 P P 05 32 03.2 -1.3
baz=169,SNR=7.0
RSSD Black Hills 34.70 339 P P 05 32 05.5 +0.7
baz=151
RSSD Black Hills 34.70 339 eP P 05 32 05.0 +0.2
comp=Z,12nm,0.7s
E34A Wadena 34.75 351 P P 05 32 04.4 -0.6
baz=167,SNR=21
F30A Leola 34.83 346 P P 05 32 05.1 -0.6
baz=161
E33A Westby DABS, E 34.87 350 P P 05 32 04.7 -1.4
baz=166,SNR=12
F29A Eureka 35.02 345 P P 05 32 06.5 -0.8
baz=159
D37A Cotton 35.06 355 P P 05 32 06.2 -1.4
baz=172,SNR=11
D36A Goodland 35.15 354 P P 05 32 06.9 -1.5
baz=171,SNR=18
D35A Remer 35.16 353 P P 05 32 07.0 -1.5
baz=169,SNR=6.0
N16A Rees Ranch, Co 35.24 328 eP P 05 32 05.0 -4.6
E31A Nome 35.27 348 P P 05 32 07.9 -1.6
baz=163,SNR=12
TCUT Toone Canyon 35.40 329 eP P 05 32 11.6 +0.6
comp=Z,13nm,0.6s
D33A AnnSam, Waubun 35.47 351 P P 05 32 10.1 -1.0
baz=166,SNR=8.3
C38A Sawbill Land. 35.53 356 P P 05 32 09.7 -2.0
baz=174,SNR=9.6
C37A Embarrass 35.60 355 P P 05 32 11.0 -1.3
baz=173
D32A Dogwood Acres, 35.66 349 P P 05 32 11.3 -1.5
baz=164,SNR=9.2
C36A Pine Crest Far 35.69 354 P P 05 32 11.9 -1.2
baz=172,SNR=8.1
D31A Mcaffin, Tow 35.71 349 P P 05 32 12.0 -1.2
baz=163,SNR=18
C35A Jirik Farms, M 35.76 353 P P 05 32 12.2 -1.4
baz=170,SNR=26
BW06 Boulder Array 35.77 332 P P 05 32 13.7 -0.3
baz=142
BW06 Boulder Array 35.77 332 eP P 05 32 14.5 +0.4
BW06 ePcP PcP 05 34 39.5 -1.9
PD31 Pinedale Array 35.77 332 eP P 05 32 14.5 +0.4
PDAR Pinedale Array 35.77 332 P P 05 32 14.4 +0.4
comp=Z,2.5nm,0.8s,baz=119,slow=9.3,SNR=12
PDAR PcP PcP 05 34 42.0 +0.7
comp=Z,1.8nm,0.7s,baz=135,slow=5.1,SNR=8.6
EYMN Ely 35.77 356 P P 05 32 12.0 -1.7
baz=174,SNR=9.7
EYMN Ely 35.77 356 eP P 05 32 12.3 -1.5
comp=Z,12nm,0.6s
TRQ Mont Tremblant 35.78 16 eP P 05 32 13.3 -0.6
C34A RKJ Ranch, Bem 35.83 352 P P 05 32 12.6 -1.6
baz=168,SNR=11
HWUT Hardware Ranch 35.84 329 eP P 05 32 14.8 +0.2
comp=Z,10nm,0.8s
HWUT ePcP PcP 05 34 43.2 +1.7
C33A Trail 36.06 351 P P 05 32 14.8 -1.4
baz=167
BGU Big Grassy Mou 36.10 327 eP P 05 32 16.8 0.0
comp=Z,5.5nm,1.0s
B35A Bob, Littlefor 36.38 354 P P 05 32 17.8 -1.2
baz=170,SNR=14
C31A Landman Farms, 36.42 349 P P 05 32 18.3 -1.0
baz=168,SNR=14
AHID Auburn Hatcher 36.48 331 eP P 05 32 20.2 +0.1
comp=Z,12nm,0.6s
C30A Mose, Pekin 36.48 348 P P 05 32 19.0 -0.9
baz=162,SNR=16
B33A Robert and Kas 36.53 351 P P 05 32 18.7 -1.5
baz=167,SNR=6.8
AGMN Agassiz Nation 36.60 351 P P 05 32 19.8 -1.0
baz=167,SNR=37
AGMN Agassiz Nation 36.60 351 eP P 05 32 19.9 -0.8
comp=Z,32nm,0.8s
B34A Aery, Baudette 36.61 353 P P 05 32 19.6 -1.3
baz=169,SNR=38
PKME Peaks-Kenny Pk 36.62 22 eP P 05 32 21.7 +0.8
comp=Z,28nm,0.9s
B32A Ashes, Strandq 36.80 350 P P 05 32 21.9 -0.6
baz=166,SNR=89
D26A Manning 36.81 343 P P 05 32 22.2 -0.5
baz=168,SNR=6.1
REDW Red Top Meadow 36.82 332 eP P 05 32 23.9 +0.8
comp=Z,23nm,0.7s
SNOW Snow King Moun 36.86 332 eP P 05 32 24.5 +1.1
comp=Z,28nm,0.6s
MDND Maddock 36.86 347 P P 05 32 22.6 -0.5
baz=161,SNR=11
MDND Maddock 36.86 347 eP P 05 32 22.9 -0.1
comp=Z,83nm,0.8s
VLDQ Val D'Or 36.88 12 eP P 05 32 22.6 -0.5
comp=Z,9.5nm,0.8s
LOHW Long Hollow 36.90 332 eP P 05 32 24.8 +1.0
comp=Z,8.2nm,0.7s
TPAW Teton Pass 36.97 332 eP P 05 32 25.9 +1.6
comp=Z,11nm,0.8s
B31A Greenbush Farm 37.02 349 P P 05 32 23.5 -0.8
baz=164,SNR=23
MOOW Moose Ponds 37.08 332 eP P 05 32 25.5 +0.3
MOOW epP pP 05 32 35.9 -0.6
A33A Warroad 37.15 352 P P 05 32 24.5 -1.0
baz=168,SNR=67
B30A Myrvik Farm, E 37.17 349 P P 05 32 24.8 -0.9
baz=163,SNR=20
IMW Indian Meadow 37.28 332 eP P 05 32 26.8 -0.2
comp=Z,5.4nm,0.5s
IMW ePcP PcP 05 34 47.6 +1.6
A32A Rocking H Ranc 37.30 351 P P 05 32 25.2 -1.5
baz=166,SNR=13
FLWY Flagg Ranch 37.31 333 eP P 05 32 28.5 +1.3
FLWY epP pP 05 32 37.4 -1.1
B29A Wagenman Farm, 37.39 348 P P 05 32 26.8 -0.7
baz=161,SNR=9.4
A31A Linda, St. Vin 37.43 350 P P 05 32 26.9 -0.9
baz=165
RLMT Red Lodge 37.53 335 P P 05 32 28.4 -0.6
baz=144,SNR=6.9
RLMT Red Lodge 37.53 335 eP P 05 32 28.9 -0.1
comp=Z,11nm,0.9s
B28A Dugan Ranch, T 37.60 346 P P 05 32 28.6 -0.7
baz=160,SNR=6.0
A30A Hoffart Farm, 37.63 349 P P 05 32 28.7 -0.9
baz=163,SNR=8.5
C25A Freed Ranch, W 37.66 343 P P 05 32 29.7 -0.1
baz=155
YFT Old Faithful 37.66 333 eP P 05 32 31.8 +1.6
comp=Z,16nm,1.0s
YFT ePcP PcP 05 34 50.4 +3.4
LAO LASA Array 37.69 339 P P 05 32 30.4 +0.2
baz=150
LAO LASA Array 37.69 339 eP P 05 32 30.8 +0.7
comp=Z,12nm,1.0s
A29A Manning Farm, 37.80 348 P P 05 32 30.1 -0.9
baz=162,SNR=46
YMR Madison River 37.89 333 eP P 05 32 32.5 +0.4
comp=Z,20nm,0.9s
B26A Jensen Ranch, 37.99 345 P P 05 32 31.8 -0.9
baz=157
YHB Horse Butte 38.06 333 eP P 05 32 33.5 0.0
comp=Z,12nm,0.8s
B25A Knox Farm, Ray 38.14 344 P P 05 32 33.9 0.0
baz=155
QLMT Earthquake Lak 38.23 333 eP P 05 32 36.6 +1.7
QLMT epP pP 05 32 45.3 -1.0
LMQ La Malbaie 38.23 19 eP P 05 32 33.9 -0.8
GCMT Greycliff 38.23 335 eP P 05 32 35.1 +0.2
A26A Wade Farm, Ken 38.42 345 P P 05 32 36.2 0.0
baz=157
ULM Lac du Bonnet 38.51 352 P P 05 32 35.5 -1.4
comp=Z,36nm,0.7s,baz=169,slow=9.1,SNR=40
ULM LR LR 05 49 26.5
comp=Z,93nm,20.4s,baz=152,slow=38
ULM Lac du Bonnet 38.51 352 eP P 05 32 35.4 -1.4
comp=Z,38nm,0.8s
DGMT Dagmar 38.62 343 P P 05 32 37.7 -0.3
baz=154,SNR=21
DGMT Dagmar 38.62 343 eP P 05 32 38.5 +0.6
comp=Z,66nm,0.8s
SIV San Ignacio 38.62 136 P P 05 32 37.1 -1.2
comp=Z,8.4nm,0.6s,baz=319,slow=10.0,SNR=24
HLID Hailey 38.70 329 P P 05 32 39.0 +0.2
baz=136
HLID Hailey 38.70 329 eP P 05 32 39.4 +0.5
comp=Z,3.0nm,0.8s
HLID ePcP PcP 05 34 53.0 +2.8
A25A Svangstu Ranch 38.74 344 P P 05 32 39.0 +0.1
baz=156
MCMT McKenzie Canyo 38.87 332 eP P 05 32 42.1 +1.7
BOZ Bozeman (W) 38.95 333 P P 05 32 41.0 +0.1
baz=141,SNR=20
BOZ Bozeman (W) 38.95 333 eP P 05 32 41.5 +0.6
comp=Z,9.6nm,0.9s
DLMT Dillon 39.16 332 eP P 05 32 44.1 +1.4
comp=Z,9.9nm,0.8s
MFID Camas Ranch 39.33 327 eP P 05 32 44.3 +0.3
comp=Z,2.1nm,0.6s
MFID ePcP PcP 05 34 54.8 +2.7
LRM Limekiln Ridge 39.45 333 eP P 05 32 46.3 +1.1
WVOR Wild Horse Val 40.22 324 eP P 05 32 52.0 +0.5
comp=Z,14nm,1.7s
WVOR eS S 05 38 48.3 -7.6
CHMT Chamberlain Mo 40.64 333 eP P 05 32 54.8 -0.2
MSO Missoula 40.88 333 P P 05 32 57.1 +0.2
baz=139,SNR=12
MSO Missoula 40.88 333 eP P 05 32 57.6 +0.7
comp=Z,10nm,1.1s
SLMT Seeley Lake 41.00 333 eP P 05 32 57.9 0.0
BMO Blue Mountains 41.09 328 eP P 05 32 59.0 +0.4
comp=Z,2.4nm,0.8s
F10A Beach Ranch, E 41.82 329 eP P 05 33 04.7 +0.1
comp=Z,6.5nm,0.8s
WALA Waterton Lakes 42.58 335 eP P 05 33 10.8 0.0
comp=Z,6.7nm,0.8s
NEW Newport 43.40 332 eP P 05 33 17.9 +0.6
comp=Z,3.4nm,0.7s
C09A Chrisman Ranch 43.61 330 eP P 05 33 22.4 +3.5
comp=Z,6.2nm,0.6s
FFC Flin Flon 43.85 348 eP P 05 33 20.2 -0.5
comp=Z,9.8nm,1.0s
B08A Colville Reser 44.51 330 eP P 05 33 26.5 +0.3
comp=Z,3.7nm,0.8s
B08A epP pP 05 33 38.2 +0.5
EDM Edmonton 45.67 339 eP P 05 33 35.0 -0.3
comp=Z,20nm,0.8s
SCHQ Schefferville 45.67 17 P P 05 33 33.6 -1.6
comp=Z,24nm,0.7s,baz=218,slow=6.7,SNR=27
SCHQ LR LR 05 54 07.7
comp=Z,231nm,18.4s,baz=252,slow=38
SCHQ Schefferville 45.67 17 eP P 05 33 34.1 -1.2
comp=Z,26nm,0.8s
B05A Bryant 45.82 328 P P 05 33 36.6 +0.1
baz=130
LLLB Lillooet 47.26 331 eP P 05 33 49.3 +1.4
comp=Z,7.2nm,0.8s
BDFB Brasilia 48.25 124 LR LR 05 58 09.3
comp=Z,166nm,18.6s,baz=168,slow=41
BDFB Brasilia 48.25 124 eP P 05 33 55.8 -0.2
comp=Z,17nm,0.9s
CPUP Villa Florida 48.51 142 P P 05 33 58.0 +0.2
comp=Z,2.2nm,0.9s,baz=327,slow=10,SNR=5.7
YKA Yellowknife Ar 53.73 345 P P 05 34 35.8 -0.6
comp=Z,5.2nm,0.8s,baz=138,slow=7.8,SNR=59
YKA PcP PcP 05 35 41.6 -0.5
comp=Z,1.3nm,0.6s,baz=144,slow=4.1,SNR=7.3
YKA LR LR 06 00 57.2
comp=Z,9.3nm,18.1s,baz=180,slow=40
DLBC Dease Lake 55.93 335 eP P 05 34 52.8 +0.3
comp=Z,9.7nm,0.9s
INK Inuvik 63.30 343 eP P 05 35 42.9 -0.1
comp=Z,6.8nm,1.0s
IL1 Eielson Array 66.06 336 eP P 05 35 60.0 -1.1
ILAR Eielson Array 66.06 336 P P 05 36 00.7 -0.4
comp=Z,2.7nm,0.9s,baz=111,slow=5.2,SNR=21
ILAR PP PP 05 38 27.4 +0.8
comp=Z,0.7nm,0.9s,baz=113,slow=8.6,SNR=5.7
ILB Eielson Array 66.06 336 eP P 05 36 01.2 +0.1
RND Reindeer 66.33 335 eP P 05 36 03.3 +0.3
comp=Z,9.0nm,0.8s
SUMG Summit 66.97 14 eP P 05 36 06.7 -0.5
comp=Z,4.6nm,1.0s
NOA NORSAR Array B 83.84 29 LR LR 06 11 41.4
comp=Z,26nm,21.9s,baz=275,slow=33
ARCES ARCESS Array B 86.59 19 LR LR 06 16 23.0
comp=Z,25nm,18.4s,baz=277,slow=36
TORD Torodi Ar. Bea 86.96 77 LR LR 06 12 37.7
comp=Z,72nm,21.6s,baz=265,slow=33
GERES GERESS Array B 88.46 40 LR LR 06 14 05.3
comp=Z,41nm,19.5s,baz=274,slow=33
FINES FINESS Array B 90.43 26 LR LR 06 19 35.3
comp=Z,27nm,18.3s,baz=328,slow=36
AKASG Malin Array Be 97.02 35 LR LR 06 19 43.1
comp=Z,36nm,20.8s,baz=305,slow=34
NRIK Noril'sk 98.62 2 LR LR 06 26 01.5
comp=Z,53nm,18.9s,baz=68,slow=37
WMQ Urumqi 124.12 4 ePKP PKPdf 05 44 15.6 +2.4
WMQ LR LR
comp=Z,130nm,24.0s
HHC Hu-ho-hao-te 124.22 342 ePKP PKPdf 05 44 12.8 -0.7
KSH Kashi 126.43 15 ePKP PKPdf 05 44 19.0 +1.2
KSH ePP PP 05 46 19.8 +7.7
KSH PKS PKSdf 05 47 55.0 +0.5
KSH SKS SKSdf 05 51 26.0 -0.8
KSH SKKS SKKSac 05 53 07.6 -0.8
KSH AMB AMB
comp=Z,39nm,5.2s
KSH LR LR
comp=Z,170nm,11.0s
KSH LR LR
comp=Z,120nm,9.0s
KSH LR LR
comp=Z,95nm,6.8s
LZH Lanzhou 130.71 347 ePKP PKPdf 05 44 28.8 +2.7
ENH Enshi 134.56 339 ePKPdf PKPdf 05 44 33.7 +0.4
CD2 Chengdu 135.69 346 PKP PKPdf 05 44 34.5 -1.0
ASAR Alice Springs 138.70 248 PKhKP PKPpre 05 44 39.6
comp=Z,0.9nm,0.7s,baz=106,slow=2.8,SNR=6.4
WRA Warramunga Arr 138.71 254 PKhKP PKPpre 05 44 39.9
comp=Z,0.4nm,0.3s,baz=89,slow=1.8,SNR=20
CMAR Chiang Mai Arr 148.80 347 PKPbc PKPbc 05 45 02.9 +0.2
comp=Z,4.4nm,0.8s,baz=317,slow=1.5,SNR=13
MMRI Maumere 150.09 274 ePKPdf PKPdf 05 44 59.6 -1.4

IDC 14 05:26:47.0±2.7,5.64S×147.15E,h230km±30km,mb3.8/3, mb1 4.1/5,mb1mx3.4/33,mbtmp4.4/5,Error ellipse: s-maj=56.5km s-min=16.8km az=126.0,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.74	180	P	P	Pn	05 27 47.5	+0.7
	20nm,0.3s,baz=346,slow=8.3,SNR=30							
PMG				S	S	S	05 28 34.1	0.0
	13nm,0.3s,baz=202,slow=22,SNR=6.9							
WRA	Warramunga Arr	18.90	220	P	P	P	05 30 51.4	+0.7
	3.4nm,0.3s,baz=45,slow=12,SNR=112							
WRA				S	S	S	05 34 12.4	-0.9
	baz=36,slow=20,SNR=5.5							
ASAR	Alice Springs	22.00	214	P	P	P	05 31 24.4	+1.5
	7.4nm,0.8s,baz=44,slow=8.5,SNR=65							
FITZ	Fitzroy Crossi	24.38	238	P	P	P	05 31 44.3	-0.2
	6.5nm,0.4s,baz=56,slow=11,SNR=84							
ILAR	Eielson Array	85.09	23	P	P	P	05 38 55.6	-1.1
	0.8nm,0.7s,baz=244,slow=5.3,SNR=9.3							

*ISCJB **14** 05:27:22.4±0.7, 17°.8S×0°.1×178°.6W±0°.2, h500km, mb3.6/6, Error ellipse: s-maj=24.4km s-min=13.2km az=38.1*
*IDC **14** 05:27:24.2±2.0, 17°.91S×178°.45W, h511km±23km, mb3.3/7, mb1 3.6/8, mb1mx3.3/33, mbtmp4.1/8, Error ellipse: s-maj=23.6km s-min=13.3km az=121.0*

ISC 14 05:27:23.2±0.8, **17°.8S**±0°.2×**178°.7W**±0°.1, **h500**km, **n10**, σ1**$48**/12, **mb3.8/6, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.70**	**61**	P		**P**	**05 29 17.3**	**+0.6**
	2.5nm,0.3s,baz=80,slow=21,SNR=2.4							
AFI				S		**S**	**05 30 51.7**	**+2.0**
	0.3nm,0.3s,baz=141,slow=19,SNR=1.8							
URZ	**Urewera**	**20.70**	**189**	P		**P**	**05 31 26.8**	**-1.3**
	10nm,0.6s,baz=281,slow=1.5,SNR=7.3							
URZ				S		**S**	**05 34 47.0**	**+0.2**
	8.6nm,0.6s,baz=96,slow=17,SNR=5.8							
WRA	**Warramunga Arr**	**44.38**	**259**	P		**P**	**05 34 50.8**	**+1.9**
	0.5nm,0.6s,baz=92,slow=7.7,SNR=2.9							
ASAR	**Alice Springs**	**44.56**	**254**	P		**P**	**05 34 52.4**	**+2.1**
	2.2nm,0.5s,baz=86,slow=8.2,SNR=16							
ILAR	**Eielson Array**	**85.85**	**13**	P		**P**	**05 39 07.5**	**-1.5**
	0.2nm,0.4s,baz=225,slow=5.3,SNR=6.2							
TXAR	**Lajitas Array**	**86.17**	**58**	P		**P**	**05 39 12.0**	**+0.5**
	3.0nm,0.7s,baz=219,slow=5.9,SNR=42							
PDAR	**Pinedale Array**	**87.47**	**44**	P		**P**	**05 39 17.0**	**-0.5**
	1.1nm,0.5s,baz=222,slow=3.5,SNR=12							
YKA	**Yellowknife Ar**	**94.36**	**25**	P		**P**	**05 39 46.7**	**-1.8**
	0.5nm,0.7s,baz=246,slow=4.2,SNR=3.8							
BRTR	**Keskin Array B**	**144.52**	**315**	PKP		**PKPdf**	**05 46 02.5**	**-0.3**
	1.6nm,0.8s,baz=118,slow=3.2,SNR=7.2							
GERES	**GERESS Array B**	**147.44**	**345**	PKPbc		**PKPbc**	**05 46 10.6**	**-0.1**
	2.0nm,0.6s,baz=31,slow=3.1,SNR=11							

*ISCJB **14** 05:27:32.9±0.5, 40°.15N±0°.03×29°.98E±0°.03, h2km±8km, Error ellipse: s-maj=5.2km s-min=4.0km az=179.1*
*DDA **14** 05:27:32.1, 40°.16N×29°.95E, h7km, Md2.8*
*CSEM **14** 05:27:33.0±0.1, 40°.15N×29°.97E, h8km, MD2.5, Error ellipse: s-maj=2.8km s-min=2.5km az=179.0*
*ISK **14** 05:27:33.0, 40°.17N×29°.96E, h6km, MD2.5*

ISC 14 05:27:33.1±0.9, **40°.16N**±0°.02×**29°.96E**±0°.02, **h10**km±6km, **n23**, σ0**$66**/40, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CAVI	**Cavuskoy**	**0.10**	**297**	*e*PG		**Pg**	**05 27 35.6**	**-0.2**
CAVI				*e*SG		**Sg**	**05 27 37.5**	**-0.2**
CAVI	**Cavuskoy**	**0.10**	**297**	*e*Pg		**Pg**	**05 27 35.6**	**-0.2**
CAVI				*e*Sg		**Sg**	**05 27 37.5**	**-0.2**
ADVT	**Abdulvahap**	**0.33**	**329**	*e*PG		**Pg**	**05 27 39.6**	**0.0**
ADVT				*e*SG		**Sg**	**05 27 44.5**	**+0.5**
ADVT	**Abdulvahap**	**0.33**	**329**	*e*Pg		**Pg**	**05 27 39.6**	**0.0**
ADVT				*e*Sg		**Sg**	**05 27 44.5**	**+0.5**
IZI	**Iznik**	**0.41**	**296**	*e*PG		**Pg**	**05 27 41.3**	**0.0**
IZI	**Iznik**	**0.41**	**296**	*e*Pg		**Pg**	**05 27 41.3**	**0.0**
BORA	**Eskisehir**	**0.47**	**126**	*i* P		**Pg**	**05 27 41.5**	**-0.8**
BORA				*i* S		**Sg**	**05 27 47.9**	**-0.6**
BORA	**Eskisehir**	**0.47**	**126**	P		**Pg**	**05 27 41.5**	**-0.8**
BORA				S		**Sg**	**05 27 47.9**	**-0.6**
GULT	**Gulveren**	**0.51**	**57**	*e*PG		**Pg**	**05 27 43.4**	**+0.4**
GULT				*e*SG		**Sg**	**05 27 50.5**	**+0.8**
GULT	**Gulveren**	**0.51**	**57**	*e*Pg		**Pg**	**05 27 43.4**	**+0.4**
GULT				*e*Sg		**Sg**	**05 27 50.5**	**+0.8**
IGD	**Bursa**	**0.59**	**281**	*i* P		**Pg**	**05 27 42.4**	**-2.2**
IGD				*i* S		**Sn**	**05 27 56.5**	**-0.8**
HRT	**Hereke**	**0.70**	**342**	*e*PG		**Pg**	**05 27 46.1**	**-0.6**
HRT	**Hereke**	**0.70**	**342**	*e*Pg		**Pg**	**05 27 46.1**	**-0.6**
TVSB	**Tavsanli**	**0.80**	**209**	*e*PG		**Pg**	**05 27 48.9**	**+0.3**
TVSB	**Tavsanli**	**0.80**	**209**	*e*Pg		**Pg**	**05 27 48.9**	**+0.3**
BTAS	**Taskesti**	**0.90**	**62**	*i* P		**Pg**	**05 27 49.5**	**-0.9**
BTAS				*i* S		**Sb**	**05 28 03.6**	**+0.8**
BTAS	**Taskesti**	**0.90**	**62**	P		**Pg**	**05 27 49.5**	**-0.9**
BTAS				S		**Sb**	**05 28 03.6**	**+0.8**
ARMT	**Armutlu**	**0.93**	**296**	*e*PG		**Pb**	**05 27 51.3**	**-0.1**
ARMT				*e*SG		**Sb**	**05 28 04.5**	**+0.6**
ARMT	**Armutlu**	**0.93**	**296**	*e*Pg		**Pb**	**05 27 51.3**	**-0.1**
ARMT				*e*Sg		**Sb**	**05 28 04.5**	**+0.6**
SAHE	**Sakarya_HENDEK**	**0.97**	**44**	*i* P		**Pg**	**05 27 51.5**	**-0.4**
SAHE				*i* S		**Sb**	**05 28 04.8**	**-0.2**
SAHE	**Sakarya_HENDEK**	**0.97**	**44**	P		**Pg**	**05 27 51.5**	**-0.4**
SAHE				S		**Sb**	**05 28 04.8**	**-0.2**
GDZ	**Gediz**	**1.13**	**199**	*i* P		**Pb**	**05 27 55.1**	**+0.3**
GDZ				*i* S		**Sb**	**05 28 10.4**	**+0.8**
GDZ	**Gediz**	**1.13**	**199**	P		**Pb**	**05 27 55.1**	**+0.3**
GDZ				S		**Sb**	**05 28 10.4**	**+0.8**

*IDC **14** 05:37:55.3±1.1, 19°.24N×64°.84W, h0km, mb3.8/7, mb1 1.1/8, mb1mx3.8/34, mbtmp3.8/8, ML3.3/1, MS3.6/3, Ms1 3.6/3, ms1mx3.0/35, Error ellipse: s-maj=30.8km s-min=15.7km az=80.0*
*TRN **14** 05:37:56.1, 19°.13N×65°.02W, h3km, MD4.9*
*NEIC **14** 05:37:59.0, 19°.05N×64°.78W, h93km, mb4.3/20, MD4.3(RSPR), After RSPR.*
*RSPR **14** 05:37:59.5, 19°.05N×64°.78W, h93km±1km, MD4.3/9*
*ISCJB **14** 05:38:00.4±0.5, 19°.22N±0°.03×64°.92W±0°.02, h40km±6km, mb4.2/24, Error ellipse: s-maj=5.8km s-min=3.3km az=7.6*

ISC 14 05:38:00.7±1.4, **19°.22N**±0°.04×**64°.93W**±0°.03, **h31**km±11km, **n112**, σ1**$32**/137, **mb4.3**/24, **5C-32D, Virgin Islands**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ABV	**Anegada**	**0.75**	**131**	||*i* P	**Pn**	**05 38 14.2**	**-0.9**
ABV	**Anegada**	**0.75**	**131**	||*i* P	**Pn**	**05 38 14.2**	**-0.9**
ABV				*e*S		**Sn**	**05 38 25.8**	**+0.3**
ABVI	**Anegada Island**	**0.75**	**131**	||*i* P	**Pn**	**05 38 14.2**	**-0.9**
ABVI				*e*S		**Sn**	**05 38 25.8**	**+0.3**
STVI	**Saint Thomas**	**0.87**	**181**	||*i* P	**Pn**	**05 38 15.9**	**-0.9**
STVI	**Saint Thomas**	**0.87**	**181**	||*i* P	**Pn**	**05 38 15.9**	**-0.9**
STVI				*e*S		**Sb**	**05 38 28.6**	**0.0**
STVI	**Saint Thomas**	**0.87**	**181**	||*i* P	**Pn**	**05 38 15.9**	**-0.9**
STVI				*e*S		**Sb**	**05 38 28.6**	**0.0**
CBYP	**Canovanas**	**1.29**	**223**	||*e*P	**Pn**	**05 38 21.9**	**-0.8**
CBYP	**Canovanas**	**1.29**	**223**	||*e*P	**Pn**	**05 38 21.9**	**-0.8**
CBYP	**Canovanas**	**1.29**	**223**	||*e*P	**Pn**	**05 38 21.9**	**-0.8**
HUMP	**Col San Antoni**	**1.39**	**219**	||*e*P	**Pn**	**05 38 22.9**	**-1.1**
HUMP	**Col San Antoni**	**1.39**	**219**	||*e*P	**Pn**	**05 38 22.9**	**-1.1**
HUMP				*e*S		**Sn**	**05 38 41.4**	**+0.3**
HUMP	**Col San Antoni**	**1.39**	**219**	||*e*P	**Pn**	**05 38 22.9**	**-1.1**
HUMP				*e*S		**Sn**	**05 38 41.4**	**+0.3**
CDVI	**St. Croix**	**1.47**	**174**	*e*Pn		**Pn**	**05 38 25.9**	**+0.8**
SJG	**San Juan**	**1.60**	**226**	||*e*P	**Pn**	**05 38 25.7**	**-1.2**
SJG	**San Juan**	**1.60**	**226**	Pn		**Pn**	**05 38 26.0**	**-0.9**
	50nm,0.3s,baz=51,slow=12,SNR=66							
SJG					Sn	**Sn**	**05 38 47.0**	**+0.6**
	135nm,0.3s,baz=302,slow=15,SNR=24							
SJG					LR	LR	05 39 22.7	
	comp=Z,687nm,19.7s,baz=300,slow=52							
SJG	**San Juan**	**1.60**	**226**	||*e*P	**Pn**	**05 38 25.7**	**-1.2**
SJG				*e*S		**Sn**	**05 38 47.1**	**+0.6**
SJG	**San Juan**	**1.60**	**226**	||*e*P	**Pn**	**05 38 25.7**	**-1.2**
SJG				*e*S		**Sn**	**05 38 47.1**	**+0.6**
AOPR	**Arecibo Observ**	**1.94**	**243**	||*e*P	**Pn**	**05 38 31.3**	**-0.2**
AOPR	**Arecibo Observ**	**1.94**	**243**	||*e*P	**Pn**	**05 38 31.3**	**-0.2**
AOPR				*e*S		**Sn**	**05 38 56.3**	**+1.5**
AOPR	**Arecibo Observ**	**1.94**	**243**	||*e*P	**Sn**	**05 38 31.3**	**-0.2**
AOPR				*e*S		**Sn**	**05 38 56.3**	**+1.5**
CELP	**Cerrillos**	**1.94**	**234**	||*e*P	**Pn**	**05 38 31.1**	**-0.4**
CELP	**Cerrillos**	**1.94**	**234**	||*e*P	**Pn**	**05 38 31.1**	**-0.4**
CELP	**Cerrillos**	**1.94**	**234**	||*e*P	**Pn**	**05 38 31.1**	**-0.4**
OBIP	**Obispado Ponce**	**1.98**	**234**	||*e*P	**Pn**	**05 38 31.6**	**-0.4**
OBIP	**Obispado Ponce**	**1.98**	**234**	||*e*P	**Pn**	**05 38 31.6**	**-0.4**
OBIP				*e*S		**Sn**	**05 38 56.5**	**+0.7**
OBIP	**Obispado Ponce**	**1.98**	**234**	||*e*P	**Pn**	**05 38 31.6**	**-0.4**
OBIP				*e*S		**Sn**	**05 38 56.5**	**+0.7**
ICMP	**Isla Caja de M**	**2.02**	**229**	||*e*P	**Pn**	**05 38 32.1**	**-0.5**
ICMP	**Isla Caja de M**	**2.02**	**229**	||*e*P	**Pn**	**05 38 32.1**	**-0.5**
ICMP				*e*S		**Sn**	**05 38 56.8**	**0.0**
SMRT	**St. Maarten**	**2.11**	**123**	*e*P		**Pn**	**05 38 33.6**	**-0.3**
SMRT				*e*S		**Sb**	**05 39 03.7**	**-0.5**
SMRT	**St. Maarten**	**2.11**	**123**	*e*Pn		**Pn**	**05 38 34.7**	**+0.7**
AGPR	**Aguadilla, PR**	**2.20**	**250**	||*e*P	**Pn**	**05 38 35.0**	**-0.1**
AGPR	**Aguadilla, PR**	**2.20**	**250**	||*e*P	**Pn**	**05 38 35.0**	**-0.1**
AGPR	**Aguadilla, PR**	**2.20**	**250**	||*e*P	**Pn**	**05 38 35.0**	**-0.1**
AGP	**Aguadilla**	**2.25**	**249**	*e*Pn		**Pn**	**05 38 35.1**	**-0.7**
SABA	**Saba**	**2.26**	**135**	*e*P		**Pn**	**05 38 37.7**	**+1.7**
SABA				*e*S		**Sb**	**05 39 06.9**	**-1.6**
SABA	**Saba**	**2.26**	**135**	*e*Pn		**Pn**	**05 38 37.0**	**+1.0**
MPR	**Mayaguez**	**2.32**	**245**	*e*Pn		**Pn**	**05 38 36.9**	**0.0**
CRPR	**Cabo Rojo, PR**	**2.40**	**240**	||*e*P	**Pn**	**05 38 37.7**	**-0.1**
CRPR	**Cabo Rojo, PR**	**2.40**	**240**	||*e*P	**Pn**	**05 38 37.7**	**-0.1**
CRPR				*e*S		**Sn**	**05 39 07.0**	**+0.8**
CRPR	**Cabo Rojo, PR**	**2.40**	**240**	||*e*P	**Pn**	**05 38 37.7**	**-0.1**
CRPR				*e*S		**Sn**	**05 39 07.0**	**+0.8**
SEUS	**St. Eustatius**	**2.53**	**133**	*e*S		**Sn**	**05 39 12.0**	**+2.5**
SEUS	**St. Eustatius**	**2.53**	**133**	*e*Pn		**Pb**	**05 38 48.2**	**+2.7**
IDE	**Isla Desecheo**	**2.55**	**251**	||*e*P	**Pn**	**05 38 39.9**	**-0.1**
IDE	**Isla Desecheo**	**2.55**	**251**	||*e*P	**Pn**	**05 38 39.9**	**-0.1**
IDE				*e*S		**Sn**	**05 39 11.5**	**+1.5**
IDE	**Isla Desecheo**	**2.55**	**251**	||*e*P	**Pn**	**05 38 39.9**	**-0.1**
IDE				*e*S		**Sn**	**05 39 11.5**	**+1.5**
ANWB	**Willy Bob**	**3.36**	**117**	*e*P		**Pn**	**05 38 53.0**	**+1.9**
ANWB				*e*S		**Sb**	**05 39 35.3**	**-4.8**
ANWB	**Willy Bob**	**3.36**	**117**	Pn		**Pn**	**05 38 51.6**	**+0.5**
GDHS	**Morne Mazeau,**	**4.21**	**134**	*e*Pn		**Pn**	**05 39 03.4**	**+0.5**
DR12	**Loma Pena Alta**	**4.23**	**265**	||*e*P	**Pn**	**05 39 03.4**	**+0.2**
DR12	**Loma Pena Alta**	**4.23**	**265**	||*e*P	**Pn**	**05 39 03.4**	**+0.2**
LZG	**Guadaloupe-1**	**4.29**	**135**	*e*P		**Pn**	**05 39 05.3**	**+1.3**
SEG	**Port Louis**	**4.30**	**130**	*e*P		**Pn**	**05 39 04.1**	**0.0**
TBG	**Guadaloupe-3**	**4.59**	**136**	*e*P		**Pn**	**05 39 09.5**	**+1.5**
H05N1	**Guadeloupe/Mar**	**4.69**	**127**	Pn		**Pn**	**05 39 08.8**	**-0.7**
H05N1					Sn	**Sn**	**05 40 03.0**	**+0.2**
MGG	**Marie-Galante**	**4.76**	**133**	*e*P		**Pn**	**05 39 11.2**	**+0.8**
MGG	**Marie-Galante**	**4.76**	**133**	*e*S		**Sn**	**05 40 05.2**	**+0.6**
BBL	**Barber's Block**	**4.94**	**138**	*e*P		**Pn**	**05 39 14.8**	**+1.9**
BBL	**Barber's Block**	**4.94**	**138**	*e*S		**Sn**	**05 40 11.2**	**+2.1**
PCM	**Pelee Case Pet**	**5.65**	**140**	*e*P		**Pn**	**05 39 24.0**	**+1.4**
PCM	**Pelee Case Pet**	**5.65**	**140**	*e*P		**Pn**	**05 39 24.4**	**+1.8**
BAMF	**Morne Balai**	**5.68**	**140**	*e*P		**Pn**	**05 39 24.8**	**+1.6**
FDF	**Fort de France**	**5.75**	**140**	*e*Pn		**Pn**	**05 39 23.8**	**-0.2**
ZAM	**Aeronautique**	**5.95**	**140**	*e*P		Pn	05 39 32.7	+6.0
SDDR	**Presa de Saban**	**6.02**	**269**	*e*P		**Pn**	**05 39 29.9**	**+2.3**
SDDR	**Presa de Saban**	**6.02**	**269**	*e*S		**Sn**	**05 40 38.7**	**+3.1**
SDDR	**Presa de Saban**	**6.02**	**269**	*e*Pn		**Pn**	**05 39 28.6**	**+0.9**
SDDR					eSn	**Sn**	**05 40 36.5**	**+0.9**
PCRV	**Puerto La Cruz**	**9.00**	**178**	Pn		**Pn**	**05 40 07.5**	**-1.2**
	0.4nm,0.3s,baz=355,slow=12,SNR=3.0							
PCRV					Sn	**Sn**	**05 41 50.0**	**+1.0**
	0.9nm,0.3s,baz=328,slow=9.4,SNR=5.1							
PCRV					LR	LR	05 43 23.2	
	comp=Z,409nm,22.0s,baz=286,slow=36							
SDV	**Santo Domingo**	**11.67**	**209**	Pn		Pn	05 40 50.4	+5.0
	1.4nm,0.3s,baz=51,slow=4.5,SNR=3.7							
SDV					Sn	**Sn**	**05 42 57.9**	**+3.1**
	0.7nm,0.3s,baz=320,slow=18,SNR=2.9							
SDV					LR	LR	05 45 44.4	
	comp=Z,269nm,20.1s,baz=52,slow=40							
SDV	**Santo Domingo**	**11.67**	**209**	Pn		**Pn**	**05 40 46.6**	**+1.2**
SDV				*e*Sn		**Sn**	**05 42 56.6**	**+1.8**
BBSR	**BB Station**	**13.09**	**1**	*e*Pn		**Pn**	**05 41 06.5**	**+1.9**
GRMC	**Gramalote, San**	**13.76**	**215**	*e*P		**Pn**	**05 41 10.2**	**-3.6**
BRRC	**Barranca, Sant**	**14.76**	**216**	*e*P		**Pn**	**05 41 28.4**	**+0.9**
BARC	**Barichara**	**14.90**	**214**	*e*P		**Pn**	**05 41 31.2**	**+1.6**
RUSC	**La Rusia**	**15.45**	**212**	*e*P		**Pn**	**05 41 35.1**	**-1.8**
RUSC	**La Rusia**	**15.45**	**212**	*e*Pn		**Pn**	**05 41 38.3**	**+1.3**
	16nm,1.2s							
HELC	**Santa Helena**	**16.56**	**220**	*e*P		**Pn**	**05 41 52.1**	**+1.0**
HELC	**Santa Helena**	**16.56**	**220**	*e*Pn		**P**	**05 41 54.5**	**+1.1**
	39nm,1.1s							
HELC					eSn	**S**	**05 45 09.1**	**+3.7**
NORC	**Norcasia**	**16.68**	**217**	*e*P		**Pn**	**05 41 52.7**	**+0.4**
CHIC	**Chingaza**	**16.86**	**212**	*e*P		**Pn**	**05 41 53.8**	**-1.1**
ROSC	**El Rosal**	**16.98**	**214**	P		**P**	**05 41 58.8**	**+0.7**
	0.4nm,0.3s,baz=32,slow=9.8,SNR=5.4							
ROSC					LR	LR	05 49 21.5	
	comp=Z,155nm,18.2s,baz=54,slow=40							
ROSC	**El Rosal**	**16.98**	**214**	*e*P		**Pn**	**05 41 51.6**	**-4.9**
ROSC	**El Rosal**	**16.98**	**214**	*e*Pn		**P**	**05 41 59.4**	**+1.3**
	7.1nm,0.7s							
GUYC	**Guyana, Colomb**	**17.25**	**218**	*e*P		**P**	**05 42 01.2**	**0.0**
PTGA	**Pitinga**	**20.42**	**166**	P		**P**	**05 42 33.9**	**-1.6**
	2.6nm,0.6s,baz=357,slow=11,SNR=7.8							
CRUC	**La Cruz**	**21.13**	**215**	*e*P		**P**	**05 42 45.9**	**+2.3**
BLA	**Blacksburg**	**22.47**	**326**	*e*P		**P**	**05 42 57.5**	**0.0**
	13nm,1.1s							
OTAV	**Otavalo**	**23.06**	**217**	*e*P		P	05 42 55.3	-9.0
	11nm,1.3s							
LRAL	**Lakeview Retre**	**24.05**	**309**	*e*P		**P**	**05 43 14.8**	**+1.5**
	12nm,1.4s							
U34A	**Anderson Ranch**	**33.34**	**308**	*e*P		**P**	**05 44 36.4**	**+0.4**
	14nm,1.2s							
LPAZ	**La Paz**	**35.43**	**185**	P		**P**	**05 44 54.2**	**-0.8**
	0.7nm,0.9s,baz=3.4,slow=4.4,SNR=2.2							
TXAR	**Lajitas Array**	**36.57**	**294**	P		**P**	**05 45 04.3**	**+0.2**
	0.9nm,0.9s,baz=104,slow=7.5,SNR=8.2							
TXAR					PcP	**PcP**	**05 47 26.8**	**-0.4**
	1.2nm,1.1s,baz=111,slow=4.9,SNR=5.5							
TX31	**Lajitas Ar. Si**	**36.57**	**294**	*e*P		**P**	**05 45 05.7**	**+1.6**
T25A	**Trinidad**	**38.78**	**306**	*e*P		**P**	**05 45 24.0**	**+1.2**
	11nm,1.3s							
SDCO	**Great Sand Dun**	**39.78**	**306**	*e*P		**P**	**05 45 31.7**	**+0.4**
	5.1nm,0.9s							
PB01	**IPOC Station P**	**40.27**	**187**	*e*P		**P**	**05 45 33.3**	**-1.8**
	36nm,1.7s							
ISCO	**Idaho Springs**	**40.47**	**309**	*e*P		**P**	**05 45 37.8**	**+0.8**
	3.7nm,1.0s							
S22A	**4UR Ranch, Cre**	**40.79**	**306**	*e*P		**P**	**05 45 40.8**	**+1.1**
	2.5nm,1.1s							
PV01	**Paradox Valley**	**42.22**	**306**	*e*P		**P**	**05 45 52.9**	**+1.5**
BW06	**Boulder Array**	**44.22**	**312**	*e*P		**P**	**05 46 08.0**	**+0.5**
	4.2nm,1.1s							
PD31	**Pinedale Array**	**44.22**	**312**	*e*P		**P**	**05 46 07.9**	**+0.4**
PDAR	**Pinedale Array**	**44.22**	**312**	P		**P**	**05 46 07.2**	**-0.2**
	2.8nm,1.0s,baz=98,slow=6.6,SNR=13							
TMUT	**Trail Mountain**	**44.50**	**307**	*e*P		**P**	**05 46 10.2**	**+0.4**
	6.1nm,1.2s							
SNOW	**Snow King Moun**	**45.27**	**313**	*e*P		**P**	**05 46 16.9**	**+1.1**
	12nm,1.4s							
REDW	**Red Top Meadow**	**45.30**	**313**	*e*P		**P**	**05 46 16.5**	**+0.4**
	6.8nm,1.1s							
HWUT	**Hardware Ranch**	**45.33**	**310**	*e*P		**P**	**05 46 16.8**	**+0.6**
	4.1nm,0.9s							
CPUP	**Villa Florida**	**45.88**	**170**	P		**P**	**05 46 19.7**	**-0.6**
	1.6nm,0.7s,baz=349,slow=9.6,SNR=4.8							
BGU	**Big Grassy Mou**	**46.23**	**309**	*e*P		**P**	**05 46 23.4**	**+0.1**
	6.0nm,1.1s							
HLID	**Hailey**	**47.85**	**312**	*e*P		**P**	**05 46 36.2**	**+0.3**
	2.9nm,1.1s							
NEW	**Newport**	**50.91**	**317**	*e*P		**P**	**05 46 59.1**	**+0.1**
	5.7nm,1.1s							
YKA	**Yellowknife Ar**	**54.98**	**334**	P		**P**	**05 47 27.6**	**-1.1**
	0.6nm,0.8s,baz=114,slow=7.7,SNR=4.1							
SUMG	**Summit**	**55.47**	**9**	*e*P		**P**	**05 47 32.7**	**+0.1**
	8.7nm,1.1s							
ILAR	**Eielson Array**	**69.37**	**333**	P		**P**	**05 49 04.2**	**-1.0**
	0.7nm,0.9s,baz=106,slow=5.2,SNR=5.5							

*NIED **14** 05:48:00, 38°.10N×141°.80E, h44km, Mw3.8 Best double couple: M0=6.19000×10^14 NP1:φ=7.00000°, δ=25.00000°, λ=87.00000°. NP2:φ=190.00000°, δ=65.00000°, λ=91.00000°.*
*IDC **14** 05:48:40.5±1.1, 38°.39N×141°.82E, h0km, mb3.8/10, mb1 4.0/12, mb1mx3.9/46, mbtmp3.8/12, ML3.7/2, MS2.5/2, Ms1 2.5/2, ms1mx2.3/39, Error ellipse: s-maj=30.4km s-min=20.6km az=162.0*
*ISCJB **14** 05:48:45.9±0.7, 38°.13N±0°.04×141°.84E±0°.08, h62km±5km, mb4.1/14, Error ellipse: s-maj=10.4km s-min=5.3km az=21.2*
*NEIC **14** 05:48:47.9±0.8, 38°.20N×141°.82E, h64km±7km, mb4.2/2, Error ellipse: s-maj=11.6km s-min=6.8km az=128.0*
NEIC Recorded [2 JMA] in Fukushima and Miyagi.
*JMA **14** 05:48:47.1±0.1, 38°.12N×141°.77E, h55km±1km, M3.8*
JMA Felt II J1.

ISC 14 05:48:46.4±1.3, **38°.11N**±0°.04×**141°.89E**±0°.08, **h52**km±11km, **n43**, σ1**$20**/49, **mb3.9**/14, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.55**	**309**	P		**Pn**	**05 48 58.4**	**0.0**
JIO				S		**Sn**	**05 49 06.5**	**-0.5**
JMM	**Marumori**	**0.90**	**255**	P		**Pn**	**05 49 02.3**	**-0.6**
JMM				S		**Sn**	**05 49 13.4**	**-1.6**
JMK	**Ichinoseki**	**0.99**	**328**	P		**Pn**	**05 49 04.3**	**+0.2**
JMK				S		**Sn**	**05 49 16.6**	**-0.5**
JOU	**Okura**	**1.00**	**285**	P		**Pn**	**05 49 04.0**	**-0.2**
JOU				S		**Sn**	**05 49 16.5**	**-0.9**
JFK	**Kawauchi**	**1.10**	**228**	P		**Pn**	**05 49 05.3**	**-0.2**
JFK				S		**Sn**	**05 49 18.9**	**-0.8**
JFT	**Otama**	**1.37**	**245**	P		**Pn**	**05 49 09.3**	**+0.1**
JFT				S		**Sn**	**05 49 25.9**	**-0.3**
JOM	**Ohasama**	**1.44**	**341**	P		**Pn**	**05 49 10.7**	**+0.5**
JOM				S		**Sn**	**05 49 28.1**	**+0.1**
JYS	**Shirataka**	**1.45**	**275**	P		**Pn**	**05 49 10.1**	**-0.1**
JYS				S		**Sn**	**05 49 27.3**	**-0.8**
JYK	**Kaneyama**	**1.45**	**304**	P		**Pn**	**05 49 10.1**	**-0.2**
JYK				S		**Sn**	**05 49 27.5**	**-0.7**
JRG	**Rokugo**	**1.62**	**323**	P		**Pn**	**05 49 13.2**	**+0.6**
JYA	**Atsumi**	**1.78**	**286**	P		**Pn**	**05 49 14.6**	**-0.2**
JFY	**Yanaizu**	**1.87**	**249**	P		**Pn**	**05 49 16.3**	**+0.3**
JFY				*e*S		**Sn**	**05 49 37.8**	**-0.7**
JNS	**Sasagawa**	**2.06**	**263**	P		**Pn**	**05 49 18.6**	**+0.1**
MJAR	**Matsushiro Arr**	**3.33**	**243**	Pn		**Pn**	**05 49 36.9**	**+0.9**
	4.3nm,0.3s,baz=65,slow=11,SNR=20							
MJAR					LR	LR	05 51 13.2	
	comp=Z,81nm,19.4s,baz=90,slow=45							
MAJO	**Matsushiro**	**3.33**	**243**	*e*Pn		**Pn**	**05 49 37.3**	**+1.3**
MAT	**Matsushiro**	**3.33**	**243**	P		**Pn**	**05 49 37.3**	**+1.3**
MAT				S		**Sn**	**05 50 19.4**	**+5.1**
ERM	**Erimo**	**4.02**	**14**	*e*Pn		**Pn**	**05 49 45.9**	**+0.4**
JHJ	**Hachijo jima 2**	**5.27**	**200**	Pn		**Pn**	**05 50 02.8**	**+0.2**
	14nm,0.3s,baz=59,slow=19,SNR=2.2							
JHJ					Sn	**Sn**	**05 50 59.0**	**-2.9**
	8.6nm,0.3s,baz=124,slow=22,SNR=3.1							
ASAJ	**Asahikawa**	**6.03**	**5**	Pn		**Pn**	**05 50 12.6**	**-0.3**
	1.2nm,0.3s,baz=180,slow=4.0,SNR=4.1							
USRK	**Ussuriysk Ar.**	**9.63**	**312**	Pn		**Pn**	**05 51 03.2**	**+1.0**
	1.4nm,0.3s,baz=124,slow=14,SNR=11							
KSRS	**Korea Array**	**11.08**	**271**	Pn		**Pn**	**05 51 24.4**	**+2.3**
	0.5nm,0.3s,baz=86,slow=14,SNR=3.3							
KSRS					LR	LR	05 55 23.4	
	comp=Z,24nm,18.4s,baz=119,slow=36							
KSAR	**Wonju Array Be**	**11.11**	**271**	Pn		**Pn**	**05 51 24.4**	**+1.9**
SONM	**Songino Array**	**27.52**	**302**	P		**P**	**05 54 26.7**	**-1.4**
	0.8nm,0.5s,baz=87,slow=9.3,SNR=5.1							
H11N2	**WAKE ISLAND Hy**	**28.39**	**123**	T		T	06 24 51.2	
	baz=316,slow=75,SNR=307							
**H11

AS31	**Alice Springs**	**12.69**	**105**	*e*Pn		**Pn**	**05 54 35.1**	**+1.7**
AS01	**Alice Springs**	**12.73**	**105**	*e*Pn		**Pn**	**05 54 35.6**	**+1.5**
MTN	**Manton Dam**	**12.99**	**53**	*e*Pn		**Pn**	**05 54 37.0**	**-0.6**
WC4	**Warramunga Arr**	**13.01**	**88**	P		**Pn**	**05 54 38.3**	**+0.5**
	baz=13							
WRA	**Warramunga Arr**	**13.01**	**88**	Pn		**Pn**	**05 54 38.4**	**+0.5**
	2.6nm,0.3s,baz=269,slow=14,SNR=66							
WRA				Sn		Sn	05 56 54.0	-8.8
	5.4nm,0.3s,baz=260,slow=24,SNR=9.6							
WRA				Lg		Lg	05 58 31.7	
	baz=249,slow=30,SNR=3.1							
WB2	**Warramunga Ar**	**13.02**	**88**	*e*Pn		**Pn**	**05 54 38.4**	**+0.3**
WRAB	**Tennant Creek**	**13.02**	**88**	*e*Pn		**Pn**	**05 54 38.3**	**+0.3**
WRAB				*e*Sn		Sn	05 56 54.5	-8.6
JAGI	**Jajag, Banyuwa**	**13.86**	**333**	*e*Pn		Pn	05 54 43.4	-6.1
JAGI				*e*Sn		Sn	05 57 02.6	-21
RKGY	**Rocky Gully**	**13.93**	**192**	P		**Pn**	**05 54 49.6**	**-0.7**
	baz=14,SNR=34							
KAPI	**Kappang**	**15.89**	**357**	LR		LR	06 01 12.6	
	comp=Z,33nm,19.6s,baz=275,slow=37							
KAPI	**Kappang**	**15.89**	**357**	*e*Pn		**Pn**	**05 55 15.7**	**-0.9**
	2.6nm,0.4s							
QIS	**Mount Isa**	**17.87**	**92**	P		**P**	**05 55 43.1**	**+0.7**
	baz=18,SNR=17							
QIS	**Mount Isa**	**17.87**	**92**	P		**P**	**05 55 42.9**	**+0.6**
BBOO	**Buckleboo**	**18.18**	**134**	*e*Pn		**Pn**	**05 55 44.9**	**-0.5**
BBOO				*e*Sn		**Sn**	**05 59 06.3**	**-2.1**
STKA	**Stephens Creek**	**21.75**	**124**	P		**P**	**05 56 28.4**	**+3.9**
	5.2nm,0.5s,baz=299,slow=13,SNR=13							
STKA				S		**S**	**06 00 22.8**	**-2.4**
	6.5nm,0.6s,baz=208,slow=18,SNR=2.7							
STKA	**Stephens Creek**	**21.75**	**124**	*e*P		**P**	**05 56 27.0**	**+2.5**
	2.8nm,0.6s							
STKA				*e*S		**S**	**06 00 27.3**	**+2.1**
COEN	**Coen**	**22.71**	**76**	*e*P		**P**	**05 56 34.5**	**-0.5**
	7.4nm,0.4s							
COEN				*e*S		**S**	**06 00 47.5**	**+3.9**
CTA	**Charters Tower**	**24.13**	**92**	P		**P**	**05 56 52.5**	**+3.4**
	1.3nm,0.3s,baz=245,slow=19,SNR=2.2							
CTAO	**Charters Tower**	**24.13**	**92**	P		**P**	**05 56 48.5**	**-0.5**
	52nm,0.9s							
EIDS	**Eidsvold**	**28.42**	**105**	*e*P		**P**	**05 57 28.1**	**+0.4**
	1.0nm,0.5s							
ARMA	**Armidale**	**29.50**	**115**	*e*P		**P**	**05 57 37.8**	**+0.3**
	1.1nm,0.4s							
QIZ	**Qiongzhong**	**41.11**	**345**	P		**P**	**05 59 16.6**	**-0.5**
QIZ				S		**S**	**06 05 30.4**	**+0.2**
QIZ				LR		LR		
	comp=E,160nm,15.7s							
CMAR	**Chiang Mai Arr**	**44.52**	**330**	P		**P**	**05 59 44.1**	**-0.7**
	comp=E,2.3nm,0.6s,baz=168,slow=7.7,SNR=10							
INU	**Inuyama**	**58.17**	**16**	*e*P		**P**	**06 01 26.0**	**-0.9**
	comp=E,33nm,0.4s							
LZH	**Lanzhou**	**58.91**	**344**	*e*P		**P**	**06 01 34.3**	**+2.1**
LZH				pP		sP	06 01 39.6	+2.9
LZH				sP		pP	06 01 42.9	+7.5
LZH				pmax		pmax		
	comp=Z,15nm,1.0s							
BJI	**Beijing**	**60.84**	**356**	P		**P**	**06 01 41.3**	**-3.9**
BJI				pmax		pmax		
	comp=Z,5.0nm,0.8s							
BJI				pmax		pmax		
	comp=Z,49nm,3.6s							
HHC	**Hu-ho-hao-te**	**62.07**	**352**	*e*P		**P**	**06 01 55.8**	**+2.1**
HHC				pP		sP	06 02 00.5	+2.4
HHC				sP		pP	06 02 02.9	+6.0
HHC				S		**S**	**06 10 19.9**	**+1.3**
HHC				pmax		pmax		
	comp=Z,11nm,0.6s							
HHC				pmax		pmax		
	comp=Z,61nm,7.7s							
HHC				LR		LR		
	comp=N,120nm,14.7s							
HHC				LR		LR		
	comp=E,180nm,22.1s							
HHC				LR		LR		
	comp=Z,73nm,18.6s							
USRK	**Ussuriysk Ar.**	**65.71**	**9**	P		**P**	**06 02 17.4**	**0.0**
	comp=Z,2.2nm,0.7s,baz=199,slow=5.2,SNR=5.3							
SONM	**Songino Array**	**69.66**	**350**	P		**P**	**06 02 43.0**	**+0.5**
	comp=Z,0.8nm,0.8s,baz=165,slow=6.0,SNR=5.4							
WMQ	**Urumqi**	**71.16**	**336**	*e*P		**P**	**06 02 51.6**	**-0.1**
MKAR	**Makanchi Array**	**75.77**	**334**	P		**P**	**06 03 18.1**	**-0.6**
	comp=Z,0.8nm,0.7s,baz=137,slow=8.0,SNR=7.2							
TORD	**Torodi Ar. Bea**	**121.27**	**273**	PKP		**PKPdf**	**06 10 27.1**	**+0.1**
	comp=Z,0.3nm,0.8s,baz=38,slow=2.1,SNR=2.9							

NIED ***14*** *06:09:00,37.˚50N×142.˚80E,h26km,Mw4.0 Best double couple: M₀1.11000×10¹⁵ NP1:φ=248.00000°,δ=27.00000°, λ=130.00000°. NP2:φ=25.00000°,δ=69.00000°,λ=72.00000°.*
IDC ***14*** *06:09:31.2±1.1,37.˚60N×143.˚02E,h0km,mb3.9/8, mb1 4.0/10,mb1mx3.7/45,mbtmp3.9/10,ML3.4/2,MS3.5/4, Ms1 3.5/4,ms1mx2.9/58,Error ellipse: s-maj=28.2km s-min=25.9km az=70.0*
ISCJB ***14*** *06:09:33.0±0.6,37.˚59N±0.˚04×142.˚90E±0.˚05,h24km, mb4.1/13,MS3.6/3,Error ellipse: s-maj=7.0km s-min=5.1km az=136.6*
JMA ***14*** *06:09:33.9±0.2,37.˚49N×142.˚84E,h42km,M4.0*
NEIC ***14*** *06:09:36.8±0.8,37.˚71N×142.˚89E,h35km,mb4.3/5,Error ellipse: s-maj=16.0km s-min=9.3km az=128.0*

ISC 14 06:09:34.7±0.8,37.˚57N±0.˚06×142.˚91E±0.˚07,h24km,n43, σ1s42/44,mb4.0/13,MS3.5/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.52**	**306**	P	**Pn**	**06 09 59.6**	**-0.7**
JIO				*e*S	**Sn**	**06 10 18.0**	**-1.3**
JFK	**Kawauchi**	**1.63**	**264**	P	**Pn**	**06 10 00.1**	**-1.8**
JFK				S	**Sn**	**06 10 19.3**	**-2.9**
JMM	**Marumori**	**1.70**	**281**	P	**Pn**	**06 10 01.4**	**-1.5**
JMM				*e*S	**Sn**	**06 10 21.5**	**-2.4**
ONAJ	**Iwakimizuishiy**	**1.74**	**255**	P	**Pn**	**06 10 01.5**	**-2.0**
ONAJ				S	**Sn**	**06 10 21.9**	**-3.1**
JMK	**Ichinoseki**	**1.92**	**317**	P	**Pn**	**06 10 05.5**	**-0.3**
JMK				*e*S	**Sn**	**06 10 28.5**	**-0.7**
JOU	**Okura**	**1.94**	**295**	P	**Pn**	**06 10 05.6**	**-0.7**
JFT	**Otama**	**2.04**	**269**	P	**Pn**	**06 10 06.8**	**-0.8**
JFT				S	**Sn**	**06 10 31.1**	**-1.3**
JOM	**Ohasama**	**2.29**	**327**	P	**Pn**	**06 10 10.7**	**-0.2**
JYK	**Kaneyama**	**2.42**	**305**	P	**Pn**	**06 10 12.5**	**-0.2**
JAG	**Ashikaga**	**2.99**	**249**	P	**Pn**	**06 10 19.7**	**-0.9**
JAW	**Awa shima**	**3.02**	**288**	P	**Pn**	**06 10 21.4**	**+0.4**
MJAR	**Matsushiro Arr**	**3.90**	**256**	Pn	**Pn**	**06 10 32.6**	**-0.5**
	3.0nm,0.3s,baz=79,slow=12,SNR=22						
MAJO	**Matsushiro**	**3.90**	**256**	*e*Pn	**Pn**	**06 10 34.4**	**+1.3**
MAT	**Matsushiro**	**3.90**	**256**	P	**Pn**	**06 10 33.8**	**+0.7**
MAT				*e*S	**Sn**	**06 11 18.9**	**+0.8**
ERM	**Erimo**	**4.45**	**2**	*e*Pn	**Pn**	**06 10 39.1**	**-1.5**
ERM				*e*Sn	**Sn**	**06 11 30.3**	**-1.3**
ASAJ	**Asahikawa**	**6.55**	**358**	*e*Pn	**Pn**	**06 11 07.1**	**-2.4**
ASAJ				*e*Sn	**Sn**	**06 12 21.4**	**-1.9**
USRK	**Ussuriysk Ar.**	**10.59**	**312**	Pn	**Pn**	**06 12 08.0**	**+3.1**
	0.2nm,0.3s,baz=124,slow=15,SNR=3.8						
JNU	**Nakatsue**	**10.78**	**249**	Pn	**Pn**	**06 12 10.3**	**+2.7**
	0.2nm,0.3s,baz=203,slow=13,SNR=2.5						
KSRS	**Korea Array**	**11.90**	**274**	LR	LR	06 16 43.2	
	comp=Z,126nm,19.4s,baz=84,slow=36						
MDJ	**Mudanjiang**	**12.26**	**309**	*e*Pn	**Pn**	**06 12 26.6**	**-1.1**
BJT	**Baijiatuau**	**20.96**	**285**	*e*P	**P**	**06 14 16.4**	**+0.5**
	3.1nm,0.3s						
H11N2	**WAKE ISLAND Hy**	**27.42**	**124**	T	T	06 44 11.2	
	baz=316,slow=75,SNR=27						
H11N1	**WAKE ISLAND Hy**	**27.43**	**124**	T	T	06 44 22.1	
	baz=316,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**27.44**	**124**	T	T	06 44 08.6	
	baz=316,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**28.18**	**126**	T	T	06 45 17.9	
	baz=317,slow=75,SNR=8.6						
H11S3	**WAKE ISLAND Hy**	**28.18**	**126**	T	T	06 45 19.5	
	baz=317,slow=75,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.19**	**126**	T	T	06 45 10.6	
	baz=317,slow=75,SNR=14						
SONM	**Songino Array**	**28.49**	**303**	P	**P**	**06 15 28.3**	**+0.2**
	2.6nm,0.9s,baz=99,slow=9.6,SNR=15						
ENH	**Enshi**	**28.56**	**265**	*e*P	**P**	**06 15 29.1**	**+0.2**
	15nm,1.3s						
ZALV	**Zalesovo Beam**	**42.44**	**312**	P	**P**	**06 17 28.1**	**+0.7**
	2.5nm,0.7s,baz=93,slow=6.4,SNR=9.3						
MKAR	**Makanchi Array**	**44.85**	**302**	P	**P**	**06 17 47.4**	**+0.5**
	0.9nm,0.8s,baz=86,slow=9.8,SNR=8.0						
KURK	**Kurchatov**	**46.54**	**308**	*e*P	**P**	**06 18 00.5**	**+0.3**
	35nm,0.8s						
KKAR	**Karatay Array**	**53.89**	**300**	*e*P	**P**	**06 18 56.5**	**+0.6**
	2.7nm,1.0s						
WRAB	**Tennant Creek**	**57.76**	**190**	*e*P	**P**	**06 19 22.6**	**-1.1**
	1.7nm,0.4s						
ABKAR	**Akbulak array**	**58.51**	**310**	*e*P	**P**	**06 19 29.3**	**+0.5**
	0.3nm,0.3s						
ASAR	**Alice Springs**	**61.49**	**189**	P	**P**	**06 19 49.8**	**+0.3**
	0.4nm,0.6s,baz=23,slow=5.2,SNR=3.0						
FINES	**FINESS Array B**	**68.89**	**333**	P	**P**	**06 20 37.7**	**+0.6**
	1.7nm,0.7s,baz=66,slow=4.8,SNR=3.5						
FINES				LR	LR	06 52 05.3	
	comp=Z,28nm,18.3s,baz=302,slow=37						
HFS	**Hagfors**	**74.09**	**336**	LR	LR	06 55 56.8	
	comp=Z,54nm,18.3s,baz=40,slow=38						
NB2	**NORSAR Subarra**	**74.15**	**338**	P	**P**	**06 21 09.8**	**+1.0**
	comp=Z,2.4nm,1.0s,baz=40,slow=5.9						
NB2	**NORSAR Subarra**	**74.15**	**338**	P	**P**	**06 21 09.9**	**+1.1**
	comp=Z,2.4nm,1.0s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.15**	**338**	P	**P**	**06 21 10.2**	**+1.4**
	comp=Z,1.2nm,0.7s,baz=39,slow=5.6,SNR=3.8						
NOA				LR	LR	06 56 47.4	
	comp=Z,21nm,19.2s,baz=335,slow=38						
AKASG	**Malin Array Be**	**74.60**	**323**	P	**P**	**06 21 10.8**	**-0.7**
	comp=Z,0.4nm,0.4s,baz=44,slow=6.0,SNR=5.1						
TXAR	**Lajitas Array**	**88.85**	**53**	P	**P**	**06 22 27.3**	**+0.1**
	comp=Z,0.2nm,0.6s,baz=287,slow=3.4,SNR=3.1						

IDC 14 06:14:59.1±4.0,30.˚41S×138.˚34E,h0km,mb1 3.1/3, mb1mx3.1/28,mbtmp2.9/3,ML3.0/3,Error ellipse: s-maj=101.6km s-min=16.6km az=42.0,South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.15**	**119**	Pn	Pn	06 15 49.8	-0.3
	0.6nm,0.3s,baz=304,slow=15,SNR=6.6						
STKA				Pg	Pb	06 15 57.5	+1.5
	2.1nm,0.3s,baz=300,slow=15,SNR=17						
STKA				Sn	Sn	06 16 26.3	-2.1
	1.9nm,0.3s,baz=304,slow=15,SNR=5.3						
STKA				Lg	Lg	06 16 38.4	
	3.4nm,0.3s,baz=340,slow=21,SNR=6.9						
ASAR	**Alice Springs**	**7.79**	**328**	Pn	Pn	06 16 53.8	-0.1
	0.2nm,0.3s,baz=152,slow=11,SNR=5.8						
ASAR				Sn	Sn	06 18 22.9	0.0
	0.2nm,0.3s,baz=152,slow=22,SNR=4.3						
WRA	**Warramunga Arr**	**11.03**	**340**	Pn	Pn	06 17 38.7	+0.4
	0.2nm,0.3s,baz=163,slow=11,SNR=5.6						

DDA ***14*** *06:15:35.0,39.˚58N×35.˚44E,h4km,Md3.1*
ISK ***14*** *06:15:35.2,39.˚70N×35.˚47E,h8km,MD2.7*
CSEM ***14*** *06:15:36.1±0.2,39.˚61N×35.˚45E,h2km,MD2.7,Error ellipse: s-maj=5.0km s-min=3.6km az=11.0*

ISC 14 06:15:35.7±1.0,39.˚62N±0.˚02×35.˚45E±0.˚02,h8km±8km, n37,σ0s71/60,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOZ	**Yozgat**	**0.10**	**284**	*e*PG	**Pg**	**06 15 38.4**	**+0.2**
YOZ	**Yozgat**	**0.10**	**284**	*e*Pg	**Pg**	**06 15 38.4**	**+0.2**
CUSAR	**Sarkisla-SIVAS**	**0.65**	**107**	*i* P	**Pg**	**06 15 48.2**	**0.0**
CUSAR	**Sarkisla-SIVAS**	**0.65**	**107**	P	**Pg**	**06 15 48.2**	**0.0**
COAL	**Corum-Alaca**	**0.73**	**331**	*i* P	**Pb**	**06 15 50.1**	**-0.8**
COAL				*i* S	**Sb**	**06 16 01.5**	**+0.4**
COAL	**Corum-Alaca**	**0.73**	**331**	P	**Pb**	**06 15 50.1**	**-0.8**
COAL				S	**Sb**	**06 16 01.5**	**+0.4**
CDAG	**Cicekdag**	**0.83**	**271**	*i* P	**Pg**	**06 15 51.1**	**-0.7**
CDAG				*i* S	**Sg**	**06 16 02.5**	**-0.1**
CDAG	**Cicekdag**	**0.83**	**271**	P	**Pg**	**06 15 51.1**	**-0.7**
CDAG				S	**Sg**	**06 16 02.5**	**-0.1**
CORM	**Corum**	**0.85**	**312**	*e*PG	**Pg**	**06 15 51.2**	**-0.8**
CORM	**Corum**	**0.85**	**312**	*e*Pg	**Pg**	**06 15 51.2**	**-0.8**
CUALT	**Altinyayla-SIV**	**1.07**	**108**	*i* P	**Pg**	**06 15 55.9**	**-0.4**
CUALT				*i* S	**Sb**	**06 16 11.6**	**+0.8**
CUALT	**Altinyayla-SIV**	**1.07**	**108**	P	**Pg**	**06 15 55.9**	**-0.4**
CUALT				S	**Sb**	**06 16 11.6**	**+0.8**
CTAK	**Corum_Osmancik**	**1.15**	**334**	*i* P	**Pn**	**06 15 58.3**	**-0.1**
CTAK				*i* S	**Sn**	**06 16 15.5**	**+1.1**
CTAK	**Corum_Osmancik**	**1.15**	**334**	P	**Pn**	**06 15 58.3**	**-0.1**
CTAK				S	**Sn**	**06 16 15.5**	**+1.1**
SCER	**sogukcermik**	**1.32**	**79**	*i* P	**Pg**	**06 15 59.6**	**-1.4**
SCER				*i* S	**Sn**	**06 16 18.4**	**0.0**
SCER	**sogukcermik**	**1.32**	**79**	P	**Pg**	**06 15 59.6**	**-1.4**
SCER				S	**Sn**	**06 16 18.5**	**0.0**
KAMT	**Kaman**	**1.37**	**260**	*e*PN	**Pb**	**06 16 01.4**	**-0.3**
KAMT	**Kaman**	**1.37**	**260**	*e*Pn	**Pb**	**06 16 01.4**	**-0.3**
SARI	**SarD1z-Kayseri**	**1.42**	**148**	*e*PN	**Pg**	**06 16 02.8**	**-0.3**
SARI				*e*SN	**Sn**	**06 16 22.9**	**+1.8**
ERBA	**Erbaa**	**1.46**	**43**	*i* P	**Pg**	**06 16 03.6**	**-0.2**
ERBA				*i* S	**Sg**	**06 16 24.0**	**+1.3**
ERBA	**Erbaa**	**1.46**	**43**	P	**Pg**	**06 16 03.6**	**-0.2**
ERBA				S	**Sg**	**06 16 24.0**	**+1.3**
SERE	**Sereflikochisa**	**1.61**	**246**	*e*PN	**Pn**	**06 16 04.8**	**+0.2**
SERE	**Sereflikochisa**	**1.61**	**246**	*e*Pn	**Pn**	**06 16 04.8**	**+0.2**
AKSY	**AKSARAY - Alti**	**1.63**	**234**	*i* P	**Pb**	**06 16 05.3**	**-0.8**
AKSY				*i* S	**Sg**	**06 16 27.5**	**-0.6**
AKSY	**AKSARAY - Alti**	**1.63**	**234**	P	**Pb**	**06 16 05.3**	**-0.8**
AKSY				S	**Sg**	**06 16 27.5**	**-0.6**
NIG	**Nigde**	**1.64**	**204**	*e*PN	**Pb**	**06 16 06.2**	**-0.2**
NIG				*e*SN	**Sg**	**06 16 28.9**	**+0.4**
NIG	**Nigde**	**1.64**	**204**	*e*Pn	**Pb**	**06 16 06.2**	**-0.2**
NIG				*e*Sn	**Sg**	**06 16 28.9**	**+0.4**
ELDT	**Eldivan**	**1.78**	**300**	*i* P	**Pg**	**06 16 09.3**	**-0.6**
ELDT				*i* S	**Sb**	**06 16 31.6**	**+0.2**
ELDT	**Eldivan**	**1.78**	**300**	P	**Pg**	**06 16 09.3**	**-0.6**
ELDT				S	**Sb**	**06 16 31.6**	**+0.2**
BOYT	**Boyabat**	**1.85**	**347**	*i* P	**Pb**	**06 16 09.7**	**-0.2**
BOYT	**Boyabat**	**1.85**	**347**	P	**Pb**	**06 16 09.7**	**-0.2**
KKUL	**Konya-Kulu**	**2.01**	**258**	*i* P	**Pb**	**06 16 13.0**	**+0.3**
KKUL				*i* S	**Sb**	**06 16 38.1**	**+0.2**
KKUL	**Konya-Kulu**	**2.01**	**258**	P	**Pb**	**06 16 13.0**	**+0.3**
KKUL				S	**Sb**	**06 16 38.1**	**+0.2**
SULT	**Sultanhani-AKS**	**2.07**	**227**	*e*PN	**Pb**	**06 16 12.3**	**-1.2**
SULT	**Sultanhani-AKS**	**2.07**	**227**	*e*Pn	**Pb**	**06 16 12.4**	**-1.2**
SUSE	**Susehri**	**2.20**	**73**	*i* P	**Pb**	**06 16 14.7**	**-1.2**
SUSE				*i* S	**Sg**	**06 16 46.2**	**-0.2**
SUSE	**Susehri**	**2.20**	**73**	P	**Pb**	**06 16 14.7**	**-1.2**
SUSE				S	**Sg**	**06 16 46.2**	**-0.2**

MAN 14 06:17:38,9.˚45N×122.˚08E,h12km,mb4.6,ML3.5,MS3.4, 1C-1D,Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.15**	**95**	⇓*i*P	Pb	06 17 54.0	-5.8
SNPH				*i* S	Sb	06 18 10.6	-4.1
LLP	**Lapu-Lapu**	**2.05**	**65**	*e*P	Pn	06 18 12.7	+0.4
LLP				*e*S	Sn	06 18 38.6	+0.8
RCP	**Roxas**	**2.19**	**17**	⇑*e*P	Pn	06 18 14.5	+0.2

ISCJB ***14*** *06:21:56.8±0.3,24.˚25N±0.˚02×121.˚82E±0.˚02,h18km±4km, Error ellipse: s-maj=4.4km s-min=2.8km az=135.0*
JMA ***14*** *06:21:56.2±0.1,24.˚23N×121.˚79E,h19km±2km,M2.5*
TAP ***14*** *06:21:56.4,24.˚25N×121.˚79E,h18km,ML3.3,B*

ISC 14 06:21:56.5±0.9,24.˚24N±0.˚02×121.˚81E±0.˚02,h18km±4km, n43,σ0s64/64,6C-4D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.09**	**318**	*e*P	**Pg**	**06 22 00.4**	**+0.4**
	baz=326						
EHP				S	**Sg**	**06 22 03.1**	**+0.7**
	baz=326						
ENA	**Nanau**	**0.20**	**341**	⇓*i*P	**Pb**	**06 22 01.1**	**-0.3**
	baz=346						
ENA				*i* S	**Sg**	**06 22 04.4**	**-0.2**
	baz=346						
TWD	**Chiawan**	**0.25**	**230**	⇑*i*P	**Pb**	**06 22 02.3**	**-0.2**
	baz=233						
TWD				*i* S	**Sb**	**06 22 06.3**	**-0.2**
	baz=233						
HWA	**Hwalien**	**0.32**	**215**	*e*P	**Pb**	**06 22 04.1**	**+0.4**
	baz=219						
TWC	**Suao**	**0.37**	**6**	⇓P	**Pg**	**06 22 04.1**	**-0.1**
	baz=4.0						
TWC				*i* S	**Sg**	**06 22 09.6**	**+0.2**
	baz=4.0						
NNS	**Nan Shan**	**0.44**	**296**	⇑*i*P	**Pg**	**06 22 05.3**	**-0.2**
	baz=296						
NNS				S	**Sg**	**06 22 11.3**	**-0.4**
	baz=296						
ENTT	**Nioudou**	**0.45**	**331**	P	**Pg**	**06 22 05.5**	**-0.2**
	baz=331						
ENTT				*i* S	**Sg**	**06 22 12.0**	**+0.1**
	baz=331						
TWE	**Neicheng**	**0.49**	**345**	P	**Pg**	**06 22 06.4**	**0.0**
	baz=346						
TWE				*e*S	**Sb**	**06 22 13.3**	**-0.2**
	baz=346						
WHF	**Hehuan Shan**	**0.51**	**259**	⇑*i*P	**Pg**	**06 22 06.5**	**-0.4**
	baz=259						
WHF				*e*S	**Sg**	**06 22 12.8**	**-1.0**
	baz=259						
ILA	**Ilan**	**0.52**	**354**	*e*P	**Pb**	**06 22 07.1**	**-0.1**
	baz=347						
ESL	**Shilin**	**0.55**	**219**	*e*P	**Pg**	**06 22 06.6**	**-0.9**
	baz=225						
TWT	**Tachien**	**0.58**	**271**	P	**Pb**	**06 22 08.2**	**0.0**
	baz=270						
TWT				S	**Sb**	**06 22 16.0**	**-0.1**
	baz=270						
NSK	**Sanguang**	**0.60**	**317**	⇑*i*P	**Pb**	**06 22 08.0**	**-0.5**
	baz=317						
NSK				*i* S	**Sg**	**06 22 16.0**	**-0.4**
	baz=317						
EGS		**0.61**	**11**	⇑P	**Pg**	**06 22 08.8**	**+0.2**
	baz=17						
TWA	**Mucha**	**0.76**	**344**	*e*P	**Pb**	**06 22 10.7**	**-0.6**
	baz=345						
TWB1	**Santiao Chiao**	**0.78**	**12**	P	**Pg**	**06 22 11.7**	**-0.1**
	baz=12						
TWB1				S	**Sb**	**06 22 21.7**	**-0.2**
	baz=12						
WDT	**Danda**	**0.79**	**232**	⇓*i*P	**Pb**	**06 22 11.2**	**-0.6**
	baz=240						
WDT				*e*S	**Sg**	**06 22 22.6**	**+0.2**
	baz=240						
NWF	**Wu-fen Shan**	**0.83**	**358**	*e*P	**Pb**	**06 22 12.2**	**-0.1**
	baz=350						
NWF				S	**Sg**	**06 22 24.0**	**+0.4**
	baz=350						
NSTT	**Nanjuang**	**0.83**	**298**	⇑P	**Pb**	**06 22 12.5**	**0.0**
	baz=298						
NSTT				*i* S	**Sb**	**06 22 23.4**	**+0.1**
	baz=298						
SMLT	**Sun Moon Lake**	**0.91**	**247**	*e*P	**Pb**	**06 22 13.6**	**-0.2**
	baz=247						
TWS1	**Kuangyinshan**	**0.93**	**337**	*e*P	**Pb**	**06 22 14.0**	**-0.1**
	baz=337						
TYC	**Yuchr**	**0.93**	**249**	*e*P	**Pb**	**06 22 13.8**	**-0.3**
	baz=241						
TWQ1	**Liyutan**	**0.95**	**277**	*e*P	**Pg**	**06 22 16.1**	**+1.1**
	baz=276						
TWQ1				*e*S	**Sg**	**06 22 27.5**	**0.0**
	baz=276						
NSY	**Sanyi**	**0.97**	**280**	*e*P	**Pg**	**06 22 16.4**	**+1.1**
	baz=280						
NSY				*e*S	**Sn**	**06 22 30.3**	**+1.7**
	baz=280						
TCU	**Taichung**	**1.04**	**265**	*e*P	**Pg**	**06 22 17.1**	**+0.5**
	baz=264						
TWY	**Chenhua**	**1.05**	**350**	*e*P	**Pb**	**06 22 13.8**	**-2.2**
	baz=333						
YUS	**Yu-Shan**	**1.08**	**226**	*e*P	**Pb**	**06 22 16.4**	**-0.6**
	baz=228						
YUS				*e*S	**Sn**	**06 22 32.6**	**+0.6**
	baz=228						
YOJ	**Yonaguni jima**	**1.12**	**78**	P	**Pb**	**06 22 17.3**	**0.0**
YOJ				*e*S	**Sg**	**06 22 32.8**	**0.0**
YOJ	**Yonaguni jima**	**1.12**	**78**	⇓*e*P	**Pn**	**06 22 17.2**	**-0.1**
	baz=68						
ALS	**Alishan**	**1.17**	**232**	*e*P	**Pn**	**06 22 17.9**	**-0.4**
	baz=232						
CHN5	**Tsauling**	**1.22**	**238**	*e*P	**Pg**	**06 22 19.6**	**-0.5**
	baz=238						
ELDTW	**Lidau**	**1.27**	**215**	*e*P	**Pn**	**06 22 18.2**	**-1.3**
	baz=202						
PCYT	**Pengchaiyu**	**1.40**	**10**	*e*P	**Pb**	**06 22 21.9**	**-0.3**
	baz=8.0						
CHN4	**Tsaushan**	**1.42**	**232**	*e*P	**Pb**	**06 22 22.3**	**-0.3**
	baz=233						
CHN4				*e*S	**Sg**	**06 22 44.4**	**+1.9**
	baz=233						
STYT	**Tauyuan**	**1.44**	**222**	*e*P	**Pb**	**06 22 22.5**	**-0.4**
	baz=222						
WTP	**Ta-pu**	**1.48**	**228**	*e*P	**Pb**	**06 22 23.1**	**-0.3**
	baz=228						
TWK	**Hsinying**	**1.55**	**232**	*e*P	**Pb**	**06 22 24.8**	**0.0**
	baz=230						
CHN1	**Nanshi**	**1.58**	**228**	*e*P	**Pb**	**06 22 25.0**	**-0.2**
	baz=228						
IRIF	**Iriomote-Funau**	**1.75**	**87**	P	**Pn**	**06 22 26.6**	**+0.6**
JKRS	**Kuro-shima**	**2

PACA	**Pacayal**	**1.60**	**5**	*eP*	Pn	06 33 53.6	+0.7		
PACA				*eS*	Sn	06 34 13.1	+0.2		
TEL3	**Telica 3**	**1.74**	**66**	*eP*	Pn	06 33 54.1	-0.7		
LFRS	**El Faro**	**1.83**	**342**	*eP*	Pn	06 33 57.2	+1.0		
LFRS				*eS*	Sn	06 34 18.8	0.0		
CNGN	**Cerro Negro**	**1.84**	**70**	*eP*	Pn	06 33 55.7	-0.5		
CNGN				*eS*	Sb	06 34 21.8	0.0		
CNGN				AML	AML	06 34 25.1			
	comp=N,152nm,0.4s								
COPN	**Copaltepe**	**1.86**	**80**	*eP*	Pn	06 33 56.2	-0.3		
LBRS	**Las Brisas**	**1.94**	**343**	*eP*	Pn	06 33 58.5	+0.9		
SNET	**Serv Nac Est T**	**1.95**	**338**	AML	AML	06 34 33.0			
	comp=Z,129nm,0.3s								
MOMN	**Momotombo**	**1.96**	**74**	*eP*	Pn	06 33 57.0	-0.9		
XAVN	**Gruta Xavier**	**2.12**	**82**	*eP*	Pn	06 34 00.2	+0.2		
TISN	**Laguna Tiscapa**	**2.17**	**83**	*eP*	Pn	06 34 00.2	-0.5		
MGAN	**Managua**	**2.19**	**83**	*eP*	Pn	06 34 00.2	-0.8		
MONT	**Ecomontaæa**	**2.28**	**330**	*eP*	Pn	06 34 02.6	+0.1		
ESTN	**Estel**	**2.39**	**59**	*eP*	Pn	06 34 03.0	-0.9		

*ISCJB **14** 06:35:28.7±0.2, 11°.20N±0°.02×61°.93W±0°.02, h85km±3km, mb3.9/13, Error ellipse: s-maj=4.1km s-min=2.4km az=28.3*
*FUNV **14** 06:35:30.1, 11°.12N×61°.75W, h58km, MW4.0*
*IDC **14** 06:35:30.4±0.7, 11°.17N×61°.92W, h82km±7km, mb3.7/12, mb1 3.8/16, mb1mx3.6/50, mbtmp4.0/16, MS2.3/2, Ms1 2.3/2, ms1mx2.2/31, Error ellipse: s-maj=14.4km s-min=9.3km az=153.0*
*TRN **14** 06:35:31.4, 11°.23N×61°.83W, h66km, MD4.1*
*NEIC **14** 06:35:31.3, 11°.23N×61°.84W, h65km, mb4.3/1, MD4.1(TRN), After TRN.*
NEIC Felt at Cascade, Port of Spain and Tunapuna, Trinidad.

ISC 14 06:35:29.4±0.6, 11°.20N±0°.03×61°.96W±0°.03, h77km±5km, n97, σ1°38/133, mb3.9/13, 2C, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCE	**Chacachacare**	**0.53**	**158**	*eP*	**Pn**	**06 35 43.9**	**+0.6**
TCE				*eS*	**Sn**	**06 35 53.6**	**+0.2**
TCE	**Chacachacare**	**0.53**	**158**	*ePn*	**Pn**	**06 35 43.9**	**+0.6**
TCE				*eSn*	**Sn**	**06 35 53.6**	**+0.2**
GUIV	**Guiria**	**0.60**	**206**	*eP*	**Pn**	**06 35 43.6**	**-0.3**
GUIV				*eS*	**Sn**	**06 35 53.7**	**-0.9**
TRN	**Trinidad (W)**	**0.77**	**135**	*i* P	**Pn**	**06 35 46.1**	**+0.5**
TRN				*eS*	**Sn**	**06 35 57.4**	**-0.3**
TRN	**Trinidad (W)**	**0.77**	**135**	⇑*i* Pn	**Pn**	**06 35 46.3**	**+0.7**
TRN				*eS*	**Sn**	**06 35 57.4**	**-0.3**
GRGR	**Grenville**	**0.98**	**18**	*i* P	**Pn**	**06 35 47.8**	**-0.3**
GRGR				*eS*	**Sn**	**06 36 01.2**	**-0.7**
GRGR	**Grenville**	**0.98**	**18**	*ePn*	**Pn**	**06 35 47.8**	**-0.3**
GRGR				*eSn*	**Sn**	**06 36 01.6**	**-0.3**
GRGR	**Grenville**	**0.98**	**18**	*eP*	**Pn**	**06 35 47.7**	**-0.3**
GRGR				*eS*	**Sn**	**06 36 01.4**	**-0.5**
GRW	**Mount Saint Ca**	**1.00**	**17**	*eP*	**Pn**	**06 35 49.2**	**+0.8**
GRW	**Mount Saint Ca**	**1.00**	**17**	*ePn*	**Pn**	**06 35 49.2**	**+0.8**
TPP	**Pointe-a-Pierr**	**1.00**	**150**	*eP*	**Pn**	**06 35 49.3**	**+0.9**
TPP	**Pointe-a-Pierr**	**1.00**	**150**	*eP*	**Pn**	**06 35 49.3**	**+0.9**
ALNG	**Atlantic LNG**	**1.04**	**165**	*eP*	**Pn**	**06 35 51.7**	**+2.8**
ALNG				*eS*	**Sn**	**06 36 04.5**	**+1.2**
BUAY	**Buenos Aires**	**1.11**	**166**	*eP*	**Pn**	**06 35 52.1**	**+2.4**
BUAY				*eS*	**Sn**	**06 36 06.9**	**+2.0**
TBH	**Brigand Hill**	**1.12**	**129**	*eP*	**Pn**	**06 35 50.4**	**+0.5**
TBH				*eS*	**Sn**	**06 36 04.9**	**-0.3**
TBH	**Brigand Hill**	**1.12**	**129**	*eP*	**Pn**	**06 35 50.4**	**+0.5**
GRSS	**Sisters**	**1.15**	**17**	*eP*	**Pn**	**06 35 51.0**	**+0.9**
GRSS				*eS*	**Sn**	**06 36 06.0**	**+0.3**
GRSS	**Sisters**	**1.15**	**17**	*eP*	**Pn**	**06 35 51.0**	**+0.9**
TPR	**Prospect**	**1.16**	**90**	*eP*	**Pn**	**06 35 51.0**	**+0.8**
TPR				*eS*	**Sn**	**06 36 04.5**	**-1.4**
TPR	**Prospect**	**1.16**	**90**	*eP*	**Pn**	**06 35 51.0**	**+0.8**
BOT	**Bacolet**	**1.22**	**91**	*eP*	**Pn**	**06 35 51.4**	**+0.4**
BOT				*eS*	**Sn**	**06 36 05.8**	**-1.3**
CRUV	**Carupano**	**1.36**	**248**	*eP*	**Pn**	**06 35 53.8**	**+1.0**
CRUV				*eS*	**Sn**	**06 36 11.6**	**+1.2**
TOSP	**Speyside**	**1.40**	**86**	⇑*i* P	**Pn**	**06 35 52.5**	**-0.8**
TOSP				*eS*	**Sn**	**06 36 09.6**	**-1.7**
GUNV	**Guanoco**	**1.41**	**223**	*eP*	**Pn**	**06 35 54.6**	**+1.0**
GUNV				*eS*	**Sn**	**06 36 12.3**	**+0.7**
SVB	**Belmont**	**2.17**	**18**	*eP*	**Pn**	**06 36 03.8**	**+0.1**
SVB				*eS*	**Sn**	**06 36 28.7**	**-1.1**
SVB	**Belmont**	**2.17**	**18**	*ePn*	**Pn**	**06 36 03.6**	**0.0**
SVB				*eSn*	**Sn**	**06 36 30.0**	**+0.3**
ORIV	**Oritupano**	**2.55**	**214**	*eP*	**Pn**	**06 36 08.8**	**+0.1**
ORIV				*eS*	**Sn**	**06 36 38.7**	**-0.1**
MCLT	**Moule a Chique**	**2.69**	**22**	*eP*	**Pn**	**06 36 10.9**	**+0.3**
MCLT				*eS*	**Sn**	**06 36 40.8**	**-1.3**
PCRV	**Puerto La Cruz**	**2.82**	**249**	P	**Pn**	**06 36 14.3**	**+1.9**
	56nm,0.3s,baz=43,slow=4.8,SNR=146						
PCRV				S	**Sn**	**06 36 46.9**	**+1.5**
	32nm,0.3s,baz=84,slow=24,SNR=16						
BBGH	**Gun Hill**	**3.04**	**50**	*eP*	**Pn**	**06 36 15.4**	**+0.1**
BBGH				*eS*	**Sn**	**06 36 48.6**	**-2.0**
BBGH	**Gun Hill**	**3.04**	**50**	Pn	**Pn**	**06 36 15.1**	**-0.2**
BBGH				*eSn*	**Sn**	**06 36 51.5**	**+0.8**
H05S1	**Guadeloupe/Mar**	**3.39**	**19**	P	**Pn**	**06 36 20.0**	**-0.1**
H05S1				S	**Sn**	**06 36 57.9**	**-1.2**
BIM	**Bigot**	**3.41**	**15**	*eP*	**Pn**	**06 36 21.1**	**+0.7**
BIM				*eS*	**Sn**	**06 36 59.6**	**-0.1**
TRMF	**Trois Ilets**	**3.44**	**15**	*eP*	**Pn**	**06 36 21.5**	**+0.8**
ZAM	**Aeronautique**	**3.48**	**15**	*eP*	**Pn**	**06 36 22.0**	**+0.8**
LPMF	**Morne Lapointe**	**3.49**	**16**	*eP*	**Pn**	**06 36 22.9**	**+1.5**
MVM	**Montagne Vaucl**	**3.50**	**17**	*eP*	**Pn**	**06 36 22.4**	**+0.9**
PRGV	**PARIAGUAN**	**3.59**	**228**	*eP*	**Pn**	**06 36 23.7**	**+0.9**
PRGV				*eS*	**Sn**	**06 37 03.3**	**-0.7**
FDF	**Fort de France**	**3.60**	**12**	*eP*	**Pn**	**06 36 23.7**	**+0.7**
FDF				*eS*	**Sn**	**06 37 03.7**	**-0.8**
FDF	**Fort de France**	**3.60**	**12**	*ePn*	**Pn**	**06 36 23.4**	**+0.4**
FDF				*eSn*	**Sn**	**06 37 05.8**	**+1.4**
PML	**Morne Lenard**	**3.64**	**12**	*eP*	**Pn**	**06 36 24.0**	**+0.5**
GBMF	**Grand Be**	**3.66**	**12**	*eP*	**Pn**	**06 36 25.1**	**+1.3**
PCM	**Pelee Case Pet**	**3.67**	**11**	*eP*	**Pn**	**06 36 24.4**	**+0.5**
PCM	**Pelee Case Pet**	**3.67**	**11**	*eP*	**Pn**	**06 36 24.4**	**+0.5**
CXM	**Morne La Croix**	**3.67**	**12**	*eP*	**Pn**	**06 36 26.2**	**+2.1**
CXM				*eS*	**Sn**	**06 37 05.9**	**-0.5**
BAMF	**Morne Balai**	**3.68**	**12**	*eP*	**Pn**	**06 36 24.9**	**+0.8**
DLPL	**La Plaine**	**4.17**	**9**	*eS*	**Sn**	**06 37 17.2**	**-1.1**
BIRV	**Birongo**	**4.30**	**261**	*eP*	**Pn**	**06 36 34.2**	**+1.8**
BIRV				*eS*	**Sn**	**06 37 22.1**	**+0.7**
BBL	**Barber's Block**	**4.33**	**6**	*eP*	**Pn**	**06 36 35.3**	**+2.4**
DWS	**Wesley**	**4.39**	**8**	*eP*	**Pn**	**06 36 36.2**	**+2.5**
TBG	**Guadaloupe-3**	**4.64**	**4**	*eP*	**Pn**	**06 36 38.2**	**+1.1**
TBG	**Guadaloupe-3**	**4.64**	**4**	*eS*	**Sn**	**06 37 28.5**	**-1.2**
MERV	**Las Mercedes**	**4.69**	**246**	*eP*	**Pn**	**06 36 39.2**	**+1.4**
MERV				*eS*	**Sn**	**06 37 30.4**	**-0.5**
MGG	**Marie-Galante**	**4.74**	**7**	*eP*	**Pn**	**06 36 40.5**	**+2.1**
MGG	**Marie-Galante**	**4.74**	**7**	*eS*	**Sn**	**06 37 30.8**	**-1.2**
GDHS	**Morne Mazeau,**	**5.05**	**2**	*ePn*	**Pn**	**06 36 43.5**	**+0.7**
GDHS				*eSn*	**Sn**	**06 37 41.7**	**+1.9**
H05N1	**Guadeloupe/Mar**	**5.17**	**10**	P	**Pn**	**06 36 44.8**	**+0.5**
H05N1				S	**Sn**	**06 37 39.0**	**-3.5**
LUEV	**Luepa**	**5.34**	**175**	*eP*	**Pn**	**06 36 44.6**	**-2.2**
MLYT	**Lee's Yard**	**5.50**	**358**	*eP*	**Pn**	**06 36 51.7**	**+2.9**
MLYT	**Lee's Yard**	**5.50**	**358**	*eS*	**Sn**	**06 37 49.9**	**-0.8**
TURV	**Turiamo**	**5.83**	**263**	*eP*	**Pn**	**06 36 54.1**	**+0.8**
BAUV	**El Baul**	**6.40**	**250**	*eP*	**Pn**	**06 37 01.5**	**+0.4**
ANWB	**Willy Bob**	**6.44**	**1**	*eP*	**Pn**	**06 37 03.6**	**+2.0**
ANWB	**Willy Bob**	**6.44**	**1**	*eS*	**Sn**	**06 38 15.1**	**+1.4**
ANWB	**Willy Bob**	**6.44**	**1**	Pn	**Pn**	**06 37 01.6**	**0.0**
ANWB				*eSn*	**Sn**	**06 38 11.7**	**-1.9**
MAPV	**Macapo**	**6.54**	**259**	*eP*	**Pn**	**06 37 04.3**	**+1.3**
SMRT	**St. Maarten**	**6.90**	**351**	*ePn*	**Pn**	**06 37 09.2**	**+1.2**
TEPV	**Terepaima**	**7.22**	**261**	*eP*	**Pn**	**06 37 14.2**	**+1.8**
CURV	**Curarigua**	**7.96**	**262**	*eP*	**Pn**	**06 37 23.0**	**+1.2**
SJG	**San Juan**	**7.98**	**330**	P	**Pn**	**06 37 24.1**	**+1.4**
	1.0nm,0.3s,baz=306,slow=22,SNR=2.2						
SJG				S	**Sn**	**06 38 46.7**	**-4.8**
	3.0nm,0.3s,baz=329,slow=15,SNR=3.8						
SJG				LR	LR	06 40 54.9	
	comp=Z,18nm,19.9s,baz=158,slow=40						
SDV	**Santo Domingo**	**8.85**	**256**	P	**Pn**	**06 37 36.4**	**+1.7**
	1.3nm,0.3s,baz=357,slow=9.8,SNR=3.0						
SDV				S	**Sn**	**06 39 11.1**	**-1.9**
	4.2nm,0.3s,baz=12,slow=16,SNR=5.8						
SDV	**Santo Domingo**	**8.85**	**256**	Pn	**Pn**	**06 37 34.7**	**-0.1**
SDV				*eSn*	**Sn**	**06 39 09.7**	**-3.4**
SDDR	**Presa de Saban**	**11.88**	**312**	*ePn*	**Pn**	**06 38 19.2**	**+3.3**
SDDR				*eSn*	**Sn**	**06 40 23.0**	**-3.7**
PTGA	**Pitinga**	**12.01**	**170**	P	**Pn**	**06 38 15.5**	**-2.3**
	5.0nm,0.3s,baz=330,slow=20,SNR=58						
PTGA				S	Sn	06 40 20.8	-9.2
	5.3nm,0.3s,baz=81,slow=22,SNR=14						
PTGA				LR	LR	06 42 27.7	
	comp=Z,16nm,19.6s,baz=262,slow=35						
PTGA	**Pitinga**	**12.01**	**170**	*ePn*	**Pn**	**06 38 15.1**	**-2.7**
ROSC	**El Rosal**	**13.77**	**244**	P	**Pn**	**06 38 43.2**	**+1.5**
	0.5nm,0.3s,baz=342,slow=20,SNR=2.9						
PRAC	**Prado**	**14.81**	**241**	*ePn*	**Pn**	**06 38 54.4**	**-0.6**
PRAC				*eSn*	**Sn**	**06 41 37.9**	**-0.3**
LPAZ	**La Paz**	**27.98**	**193**	P	**P**	**06 41 15.2**	**+1.4**
	0.7nm,0.7s,baz=309,slow=8.5,SNR=4.2						
BDFB	**Brasilia**	**30.02**	**152**	P	**P**	**06 41 32.1**	**+0.8**
	1.2nm,0.5s,baz=343,slow=20						
CPUP	**Villa Florida**	**37.57**	**173**	P	**P**	**06 42 35.8**	**-0.7**
	1.3nm,0.8s,baz=342,slow=7.8,SNR=3.8						
TXAR	**Lajitas Array**	**42.81**	**301**	P	**P**	**06 43 19.9**	**-0.1**
	0.2nm,0.4s,baz=120,slow=9.8,SNR=7.2						
TXAR				pP	**pP**	**06 43 39.3**	**+0.5**
	0.5nm,0.8s,baz=116,slow=6.1,SNR=4.4						
SCHQ	**Schefferville**	**43.70**	**356**	P	**P**	**06 43 26.7**	**0.0**
	0.8nm,0.4s,baz=203,slow=13,SNR=3.0						
H10N3	**ASCENSION HYDR**	**50.86**	**110**	T	T	07 39 36.1	
	baz=292,slow=75,SNR=68						
H10N2	**ASCENSION HYDR**	**50.87**	**110**	T	T	07 39 36.7	
	baz=292,slow=75,SNR=66						
H10N1	**ASCENSION HYDR**	**50.88**	**110**	T	T	07 39 37.7	
	baz=292,slow=75,SNR=92						
H10S3	**ASCENSION HYDR**	**51.12**	**111**	T	T	07 39 54.9	
	baz=293,slow=74,SNR=45						
H10S1	**ASCENSION HYDR**	**51.13**	**111**	T	T	07 39 55.9	
	baz=293,slow=74,SNR=46						
H10S2	**ASCENSION HYDR**	**51.14**	**111**	T	T	07 39 56.3	
	baz=293,slow=74,SNR=39						
PLCA	**Paso Flores**	**52.27**	**188**	P	**P**	**06 44 32.1**	**-1.0**
	9.5nm,1.2s,baz=27,slow=8.2,SNR=6.3						
JLU	**Jordanelle**	**52.39**	**313**	*eP*	**P**	**06 44 33.2**	**-1.0**
	4.4nm,1.3s						
DBIC	**Dimbokro**	**56.52**	**89**	P	**P**	**06 45 03.3**	**-0.9**
	7.1nm,1.1s,baz=273,slow=7.8,SNR=4.7						
TORD	**Torodi Ar. Bea**	**62.11**	**81**	P	**P**	**06 45 43.0**	**+0.1**
	1.7nm,0.4s,baz=287,slow=6.6,SNR=32						
TORD				pP	**pP**	**06 46 04.3**	**+1.6**
	0.5nm,0.7s,baz=301,slow=3.8,SNR=2.3						
YKA	**Yellowknife Ar**	**63.43**	**336**	P	**P**	**06 45 50.6**	**-0.2**
	0.7nm,0.5s,baz=104,slow=7.3,SNR=3.6						
HFS	**Hagfors**	**73.22**	**30**	P	**P**	**06 46 52.7**	**+0.8**
	3.2nm,0.8s,baz=264,slow=8.0,SNR=4.2						
ARCES	**ARCESS Array B**	**78.70**	**21**	P	**P**	**06 47 24.7**	**+1.6**
	3.2nm,0.8s,baz=264,slow=8.0,SNR=3.0						
FINES	**FINESS Array B**	**79.32**	**29**	P	**P**	**06 47 27.4**	**+0.9**
	1.0nm,0.4s,baz=267,slow=3.8,SNR=7.0						
CMAR	**Chiang Mai Arr**	**145.02**	**33**	PKPbc	**PKPdf**	**06 54 59.0**	**+0.2**
	1.6nm,0.5s,baz=312,slow=5.5,SNR=8.3						
CMAR				pPKPbc	pPKPbc	06 55 20.6	+0.6
	2.0nm,0.7s,baz=316,slow=4.5,SNR=3.9						

IDC 14 06:36:25.9±1.4, 4°.40N×126°.78E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.6/53, mbtmp3.8/6, Error ellipse: s-maj=104.3km s-min=18.1km az=68.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**22.39**	**183**	P	P	06 41 26.9	+0.8
	1.2nm,0.6s,baz=354,slow=11,SNR=6.1						
WRA	**Warramunga Arr**	**25.31**	**163**	P	P	06 41 54.0	-0.4
	3.8nm,0.8s,baz=342,slow=9.9,SNR=20						
ASAR	**Alice Springs**	**28.75**	**166**	P	P	06 42 25.2	-0.2
	0.8nm,0.6s,baz=344,slow=6.5,SNR=11						
STKA	**Stephens Creek**	**38.74**	**160**	P	P	06 43 51.9	-0.2
	2.0nm,0.7s,baz=330,slow=9.0,SNR=5.4						
MKAR	**Makanchi Array**	**57.03**	**325**	P	P	06 46 13.1	-0.6
	0.2nm,0.4s,baz=108,slow=7.2,SNR=2.7						
KURBB	**Kurchatov Arra**	**61.20**	**327**	P	P	06 46 43.0	+0.5
	0.2nm,0.3s,baz=126,slow=5.9,SNR=4.9						

*ISCJB **14** 06:36:39.5±0.4, 51°.57N±0°.02×16°.20E±0°.03, h0km, mb3.5/2, Error ellipse: s-maj=3.4km s-min=2.3km az=10.5*
*IDC **14** 06:36:42.1±0.8, 51°.53N×16°.13E, h0km, mb3.6/2, mb1 3.7/8, mb1mx3.4/55, mbtmp3.5/8, ML3.3/6, Error ellipse: s-maj=14.9km s-min=7.5km az=117.0*
*BGR **14** 06:36:42.5±0.6, 51°.54N×16°.22E, h1km, ML3.1/13, Error ellipse: s-maj=6.7km s-min=2.2km az=23.0*
*CSEM **14** 06:36:42.2±0.2, 51°.51N×16°.19E, h2km, ML3.6/10, Error ellipse: s-maj=4.5km s-min=2.3km az=8.0*
*WAR **14** 06:36:43.0, 51°.53N×16°.17E, h1km, Mw2.8*
*VIE **14** 06:36:44.5±1.4, 51°.31N×16°.24E, h0km, mb2.7/6, ML3.0/6, Error ellipse: s-maj=10.0km s-min=9.5km az=73.0, Suspected Mining induced.*

ISC 14 06:36:40.6±0.6, 51°.60N±0°.03×16°.22E±0°.02, h0km, n76, σ1°31/128, 5D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.76**	**177**	*i* Pg	**Pg**	**06 36 55.9**	**+0.8**
KSP				*i* Sg	**Sg**	**06 37 05.1**	**+0.2**
KSP	**Ksiaz**	**0.76**	**177**	*e*Pg	**Pb**	**06 36 56.0**	**-0.7**
KSP				*e*Sg	**Sg**	**06 37 05.3**	**+0.4**
KSP	**Ksiaz**	**0.76**	**177**	*i* Pg	**Pb**	**06 36 55.9**	**-0.7**
KSP				*i* Sg	**Sg**	**06 37 05.1**	**+0.2**
KSP	**Ksiaz**	**0.76**	**177**	*i* Pgd	**Pg**	**06 36 55.9**	**+0.8**
KSP				*i* Sg	**Sg**	**06 37 05.1**	**+0.2**
UPC	**Upice**	**1.10**	**187**	⇓*i* PG	**Pb**	**06 37 02.2**	**-0.3**
UPC				*e*SG	**Sg**	**06 37 15.9**	**0.0**
	comp=Z,137nm,0.4s						
UPC	**Upice**	**1.10**	**187**	Pg	**Pb**	**06 37 02.2**	**-0.3**
UPC				Sg	**Sg**	**06 37 15.9**	**0.0**
	137nm,0.4s						
DPC	**Dobruska-Polom**	**1.25**	**177**	*e*PG	**Pg**	**06 37 04.8**	**+0.2**
DPC				*e*SG	**Sg**	**06 37 20.5**	**-0.3**
	comp=Z,58nm,0.2s						
DPC	**Dobruska-Polom**	**1.25**	**177**	*e*Pg	**Sg**	**06 37 04.8**	**+0.2**
DPC				*e*Sg	**Sg**	**06 37 20.3**	**-0.5**
DPC	**Dobruska-Polom**	**1.25**	**177**	Pg	**Sg**	**06 37 04.8**	**+0.2**
DPC				Sg	**Sg**	**06 37 20.3**	**-0.5**
PVCC	**Panska Ves**	**1.49**	**225**	⇓*e*PG	**Pb**	**06 37 09.2**	**0.0**
PVCC				*e*SG	**Sn**	**06 37 29.2**	**+0.3**
	comp=Z,141nm,0.2s						
PVCC	**Panska Ves**	**1.49**	**225**	Pg	**Pb**	**06 37 09.2**	**0.0**
PVCC				Sg	**Sn**	**06 37 29.2**	**+0.3**
	141nm,0.2s						
KRLC	**Kraliky**	**1.57**	**167**	*e*PG	**Pn**	**06 37 10.0**	**+0.3**
KRLC				*e*SG	**Sn**	**06 37 30.7**	**0.0**
KRLC	**Kraliky**	**1.57**	**167**	Pg	**Pn**	**06 37 10.0**	**+0.3**
KRLC				Sg	**Sn**	**06 37 30.7**	**0.0**
BRG	**Berggiesshubel**	**1.60**	**244**	PG	**Pg**	**06 37 11.8**	**+0.5**
BRG				SG	**Sg**	**06 37 32.6**	**+0.5**
	153nm,0.4s						
BRG	**Berggiesshubel**	**1.60**	**244**	*e*Pg	**Pg**	**06 37 11.9**	**+0.5**
BRG				*e*Sg	**Sg**	**06 37 32.6**	**+0.5**
BRG	**Berggiesshubel**	**1.60**	**244**	Pg	**Pg**	**06 37 11.9**	**+0.5**
BRG				Sg	**Sg**	**06 37 32.6**	**+0.5**
GOPC	**GO Pecny, Ondr**	**1.92**	**209**	*e*PN	**Pn**	**06 37 15.1**	**+0.6**
GOPC				*e*PG	**Pb**	**06 37 16.6**	**+0.2**
GOPC				*e*SG	**Sb**	**06 37 41.2**	**+0.3**
	comp=Z,27nm,0.4s						
GOPC	**GO Pecny, Ondr**	**1.92**	**209**	Pn	**Pn**	**06 37 15.1**	**+0.6**
FBE	**Freiberg**	**1.92**	**250**	*e*Sg	**Sg**	**06 37 42.5**	**+0.1**
FBE	**Freiberg**	**1.92**	**250**	Sg	**Sg**	**06 37 42.5**	**+0.1**
PRU	**Pruhonice**	**1.93**	**214**	⇓*e*PN	**Pn**	**06 37 14.7**	**0.0**
PRU				*e*PG	**Pb**	**06 37 16.8**	**+0.1**
PRU				*ex*	x	06 37 34.0	
PRU				*e*SG	**Sg**	**06 37 42.1**	**-0.5**
	comp=Z,49nm,0.4s						
PRU	**Pruhonice**	**1.93**	**214**	Pn	**Pn**	**06 37 14.7**	**0.0**
MORC	**Moravsky Berou**	**2.01**	**155**	*e*Pn	**Pn**	**06 37 16.1**	**+0.3**
MORC				*e*Sg	**Sb**	**06 37 44.2**	**+0.6**
MORC	**Moravsky Berou**	**2.01**	**155**	*e*Pn	**Pn**	**06 37 16.1**	**+0.3**
MORC				Sg	**Sb**	**06 37 44.2**	**+0.6**
CLL	**Collm**	**2.03**	**263**	*e*Pn	**Pn**	**06 37 16.0**	**-0.1**
CLL				*i* Pg	**Pg**	**06 37 20.0**	**+0.4**
CLL				*i*		06 37 22.4	
CLL				*e*		06 37 43.0	
CLL				*i* Sg	**Sg**	**06 37 46.2**	**+0.3**
	comp=Z,63nm,0.6s						
CLL				*i*		06 37 51.4	
CLL	**Collm**	**2.03**	**263**	*e*Pn	**Pn**	**06 37 16.3**	**+0.2**
CLL				*e*Sg	**Sg**	**06 37 46.3**	**+0.3**
CLL	**Collm**	**2.03**	**263**	Pn	**Pn**	**06 37 16.3**	**+0.2**
CLL				Sg	**Sg**	**06 37 46.3**	**+0.3**
OKC	**Ostrava-Krasne**	**2.15**	**144**	⇓*e*PG	**Pg**	**06 37 22.1**	**+0.4**
OKC				*e*SG	**Sb**	**06 37 48.4**	**+0.9**
	comp=Z,87nm,0.9s						
OKC	**Ostrava-Krasne**	**2.15**	**144**	*e*Pg	**Pg**	**06 37 21.8**	**+0.1**
OKC				*e*Sg	**Sb**	**06 37 48.3**	**+0.8**
OKC	**Ostrava-Krasne**	**2.15**	**144**	Pg	**Pg**	**06 37 21.8**	**+0.1**
OKC				Sg	**Sb**	**06 37 48.3**	**+0.8**
VRAC	**Vranov**	**2.31**	**174**	Pn	**Pn**	**06 37 20.6**	**+0.7**
	comp=Z,6.5nm,0.3s,baz=357,slow=17,SNR=11						
VRAC				Lg	Lg	06 37 52.2	
	comp=Z,6.3nm,0.3s,baz=90,slow=19,SNR=3.5						
VRAC	**Vranov**	**2.31**	**174**	*e*Pn	**Pn**	**06 37 20.5**	**+0.7**
VRAC				*e*Sg	**Sb**	**06 37 52.9**	**+0.8**
OJC	**Ojcow**	**2.65**	**120**	*e*Pg	**Pg**	**06 37 31.4**	**0.0**
OJC				*e*Sg	**Sg**	**06 38 06.1**	**+0.3**
OJC	**Ojcow**	**2.65**	**120**	*e*Pg	**Pg**	**06 37 31.4**	**0.0**
OJC				*e*Sg	**Sg**	**06 38 06.1**	**+0.3**
OJC	**Ojcow**	**2.65**	**120**	*e*Pg	**Pg**	**06 37 31.4**	**0.0**
OJC				*e*Sg	**Sg**	**06 38 06.1**	**+0.3**
WERD	**Werda**	**2.73**	**247**	*e*Sg	**Sg**	**06 38 08.4**	**+0.2**
WERD	**Werda**	**2.73**	**247**	Sg	**Sg**	**06 38 08.4**	**+0.2**
NKC	**Novy Kostel**	**2.75**	**242**	⇓*e*PN	**Pn**	**06 37 26.9**	**+0.9**
NKC				*e*PG	**Pg**	**06 37 33.9**	**+0.6**
NKC				*e*SG	**Sg**	**06 38 09.0**	**0.0**
	comp=Z,90nm,0.3s						
NKC	**Novy Kostel**	**2.75**	**242**	Pn	**Pn**	**06 37 26.9**	**+0.9**
KHC	**Kasperske Hory**	**2.99**	**215**	*e*PN	**Pn**	**06 37 29.4**	**0.0**
KHC				*e*PG	**Pb**	**06 37 36.1**	**+1.3**
KHC				*e*SN	**Sn**	**06 38 05.3**	**-0.6**
KHC				*e*SG	**Sg**	**06 38 15.0**	**-1.7**
	comp=Z,27nm,0.4s						
KHC	**Kasperske Hory**	**2.99**	**215**	Pn	**Pn**	**06 37 29.4**	**0.0**
MOX	**Moxa**	**3.05**	**254**	*e*Sg	**Sg**	**06 38 19.5**	**+0.8**
MOX	**Moxa**	**3.05**	**254**	Sg	**Sg**	**06 38 19.5**	**+0.8**
MANZ	**Manzenberg**	**3.07**	**240**	*e*Sg	**Sg**	**06 38 20.6**	**+1.5**
MANZ	**Manzenberg**	**3.07**	**240**	Sg	**Sg**	**06 38 20.6**	**+1.5**
ROTZ	**Rotzenmuhle**	**3.14**	**236**	*e*Pn	**Pn**	**06 37 32.5**	**+1.1**
ROTZ				*e*Sg	**Sg**	**06 38 19.7**	**-1.8**
ROTZ	**Rotzenmuhle**	**3.14**	**236**	Pn	**Pn**	**06 37 32.5**	**+1.1**
ROTZ				Sg	**Sg**	**06 38 19.7**	**-1.8**
GERES	**GERESS Array B**	**3.19**	**211**	Pn	**Pn**	**06 37 32.5**	**+0.3**
	comp=Z,1.3nm,0.3s,baz=31,slow=12,SNR=17						
GERES				Pg	**Pb**	**06 37 39.5**	**+1.2**
	comp=Z,3.4nm,0.3s,baz=31,slow=16,SNR=28						
GERES				Lg	Lg	06 38 18.4	
	com

ms1mx2.9/21, Error ellipse: s-maj=137.8km s-min=41.7km az=4.0, South Sandwich Islands region

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
PLCA Paso Flores 33.05 285 LR LR 07 08 31.9
comp=Z,39nm,20.4s,baz=154,slow=33
MAW Mawson 37.16 141 LR LR 07 10 57.2
comp=Z,48nm,19.4s,baz=240,slow=33
CPUP Villa Florida 39.43 314 P P 06 57 48.4 0.0
1.0nm,0.9s,baz=165,slow=12,SNR=2.6
CPUP LR LR 07 12 06.2
comp=Z,26nm,21.6s,baz=170,slow=33
BDFB Brasilia 46.61 331 P P 06 58 47.0 +0.3
3.9nm,1.1s,baz=343,slow=20,SNR=2.7
H10S2 ASCENSION HYDR 51.34 15 T T 07 56 00.7
baz=187,slow=74,SNR=11
H10S3 ASCENSION HYDR 51.35 15 T T 07 56 15.4
baz=187,slow=74,SNR=11
H10S1 ASCENSION HYDR 51.36 15 T T 07 56 14.9
baz=187,slow=74,SNR=8.6
H10N1 ASCENSION HYDR 52.46 15 T T 07 57 33.6
baz=199
H10N3 ASCENSION HYDR 52.46 15 T T 07 57 45.4
baz=199,slow=74
H10N2 ASCENSION HYDR 52.48 15 T T 07 57 46.3
baz=199,slow=74
LPAZ La Paz 52.70 307 P P 06 59 33.2 -0.7
1.4nm,0.6s,baz=162,slow=6.3,SNR=3.7
TORD Torodi Ar. Bea 76.03 28 P P 07 02 05.7 -0.1
1.0nm,0.5s,baz=194,slow=6.2,SNR=12
KMBO Kilima Mbogo 76.09 68 LR LR 07 32 26.5
comp=Z,19nm,18.9s,baz=106,slow=33
YKA Yellowknife Ar 138.95 315 PKP PKPdf 07 09 44.7 +1.0
0.2nm,0.5s,baz=127,slow=2.9,SNR=3.9

ISCJB **14** *06:59:06.8±0.3, 50.°02N±0.°01×0.°57W±0.°02, h9km±2km, mb3.6/7, MS3.0/2, Error ellipse: s-maj=2.0km s-min=1.7km az=18.0*
UCC **14** *06:59:08.2, 50.°14N×0.°42W, h0km, ML3.9*
CSEM **14** *06:59:08.0±0.1, 50.°10N×0.°64W, h5km, ML4.7/35, Error ellipse: s-maj=2.2km s-min=1.8km az=58.0*
IDC **14** *06:59:08.3±1.2, 50.°26N×0.°68W, h0km, mb3.6/7, mb1 3.9/12, mb1mx3.7/45, mbtmp3.7/12, ML4.1/5, MS2.7/8, Ms1 2.7/8, ms1mx2.5/46, Error ellipse: s-maj=22.6km s-min=15.4km az=36.0*
LDG **14** *06:59:09.2±0.1, 50.°18N×0.°73W, h10km, Md4.4/5, Ml4.5/68, Error ellipse: s-maj=2.0km s-min=1.9km az=44.0*
BGS **14** *06:59:10.9±0.9, 50.°12N×0.°74W, h10km, ML3.9*
NEIC **14** *06:59:10.9, 50.°12N×0.°74W, h10km, ML3.9(BGS), After BGS.*
NEIC Felt in southern England.
STR **14** *06:59:11.2±0.2, 49.°98N×0.°64W, h10km, Ml4.5, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
NAO **14** *06:59:14.0±7.8, 50.°69N×0.°16W*
ISC 14 06:59:08.3±0.4, **50.°19N**±0.°01×**0.°67W**±0.°01, **h13**km±3km, **n493, σ2.s40**/731, **mb3.6**/7, **5C, United Kingdom**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
HMNX Herstmonceux 0.94 43 eP Pn 06 59 28.8 +1.8
HMNX eS Sn 06 59 42.4 +2.1
HMNX AML AML 06 59 46.1
comp=N,7µm,0.3s
HMNX AML AML 06 59 46.2
comp=E,7µm,0.3s
HMNX Herstmonceux 0.94 43 eP Pn 06 59 28.8 +1.8
HMNX eS Sn 06 59 42.4 +2.1
HMNX AML AML 06 59 46.1
comp=N,7µm,0.3s
HMNX AML AML 06 59 46.2
comp=E,7µm,0.3s
HMNX Herstmonceux 0.94 43 eP Pn 06 59 28.8 +1.8
HMNX eS Sn 06 59 42.4 +2.1
HMNX AML AML 06 59 46.1
comp=N,7µm,0.3s
HMNX AML AML 06 59 46.2
comp=E,7µm,0.3s
HMNX Herstmonceux 0.94 43 eP Pn 06 59 28.8 +1.8
SNR=70
HMNX eS Sn 06 59 42.4 +2.1
comp=E,7µm,0.3s,SNR=70
HMNX Herstmonceux 0.94 43 eP Pn 06 59 28.8 +1.8
HMNX eS Sn 06 59 42.4 +2.1
WOL Wolverton 1.18 343 eP Pn 06 59 32.7 +2.3
WOL eS Sn 06 59 49.0 +2.6
WOL AML AML 06 59 52.4
comp=E,4µm,0.7s
WOL AML AML 06 59 59.6
comp=N,1µm,0.3s
WOL Wolverton 1.18 343 eP Pn 06 59 32.7 +2.3
WOL eS Sn 06 59 49.0 +2.6
WOL AML AML 06 59 52.4
comp=E,4µm,0.7s
WOL AML AML 06 59 59.6
comp=N,1µm,0.3s
WOL Wolverton 1.18 343 eP Pn 06 59 32.7 +2.3
WOL eS Sn 06 59 49.0 +2.6
WOL AML AML 06 59 52.4
comp=E,4µm,0.7s
WOL AML AML 06 59 59.6
comp=N,1µm,0.3s
WOL Wolverton 1.18 343 P Pn 06 59 32.7 +2.3
WOL S Sn 06 59 49.0 +2.6
WOL Wolverton 1.18 343 P Pn 06 59 32.7 +2.3
WOL S Sn 06 59 49.0 +2.6
JQE Queens East 1.33 223 eP Pg 06 59 33.2 -0.6
JQE Queens East 1.33 223 eP Pg 06 59 33.2 -0.6
JQE Queens East 1.33 223 eP Pg 06 59 33.2 -0.6
JQE Queens East 1.33 223 P Pg 06 59 33.2 -0.6
JQE Queens East 1.33 223 P Pg 06 59 33.2 -0.6
JRS Jersey 1.36 223 eP Pn 06 59 33.9 +0.9
JRS eS Sg 06 59 50.2 -1.8
JRS Jersey 1.36 223 eP Pn 06 59 33.9 +0.9
JRS eS Sg 06 59 50.2 -1.8
JRS Jersey 1.36 223 eP Pn 06 59 33.9 +0.9
JRS eS Sg 06 59 50.2 -1.8
JRS Jersey 1.36 223 P Pn 06 59 33.8 +0.9
JRS S Sg 06 59 50.2 -1.8
JRS Jersey 1.36 223 P Pn 06 59 33.9 +0.9
JRS S Sg 06 59 50.2 -1.8
JSA Saint Aubin 1.40 225 eP Pn 06 59 34.2 +0.8
JSA eS Sg 06 59 50.9 -2.3
JSA AML AML 06 59 53.8
comp=E,1µm,0.6s
JSA AML AML 06 59 53.9
comp=N,1µm,0.5s
JSA Saint Aubin 1.40 225 eP Pn 06 59 34.2 +0.8
JSA eS Sg 06 59 50.9 -2.3
JSA AML AML 06 59 53.8
comp=E,1µm,0.6s
JSA AML AML 06 59 53.9
comp=N,1µm,0.5s
JSA Saint Aubin 1.40 225 eP Pn 06 59 34.2 +0.8
JSA eS Sg 06 59 50.9 -2.3
JSA AML AML 06 59 53.8
comp=E,1µm,0.6s
JSA AML AML 06 59 53.9
comp=N,1µm,0.5s
JSA Saint Aubin 1.40 225 P Pn 06 59 34.2 +0.8
JSA S Sg 06 59 50.9 -2.3
JSA Saint Aubin 1.40 225 P Pn 06 59 34.2 +0.8
JSA S Sg 06 59 50.9 -2.3
FLN La Foliniere 1.43 175 ePn Pn 06 59 34.2 +0.3
baz=348,SNR=1.0
FLN La Foliniere 1.43 175 ePg Pn 06 59 35.7 +1.8
baz=350
FLN eSn Sg 06 59 51.2 -3.1
baz=352
FLN eSg Sb 06 59 54.4 +1.5
comp=N,2µm,0.2s,baz=343
FLN La Foliniere 1.43 175 ePn Pn 06 59 34.2 +0.3
SNR=1.0
FLN La Foliniere 1.43 175 ePg Pn 06 59 35.7 +1.8
FLN eSn Sg 06 59 51.2 -3.1
FLN eSg Sb 06 59 54.4 +1.5
comp=N,1µm,0.2s
FLN La Foliniere 1.43 175 ePn Pn 06 59 34.2 +0.3
FLN ePg Pn 06 59 35.7 +1.8
FLN eSn Sg 06 59 51.2 -3.1
FLN eSg Sb 06 59 54.4 +1.5
ELSH Elham, Standar 1.50 49 eP Pb 06 59 37.6 +1.7
ELSH eS Sn 06 59 58.5 +4.3
ELSH AML AML 07 00 04.0
comp=N,2µm,0.2s
ELSH AML AML 07 00 05.2
comp=E,2µm,0.5s
ELSH Elham, Standar 1.50 49 eP Pb 06 59 37.6 +1.7
ELSH eS Sn 06 59 58.5 +4.3
ELSH AML AML 07 00 04.0
comp=N,2µm,0.2s
ELSH AML AML 07 00 05.2
comp=E,2µm,0.5s
ELSH Elham, Standar 1.50 49 eP Pb 06 59 37.6 +1.7
ELSH eS Sn 06 59 58.5 +4.3
ELSH AML AML 07 00 04.0
comp=N,2µm,0.2s
ELSH AML AML 07 00 05.2
comp=E,2µm,0.5s
ELSH Elham, Standar 1.50 49 eP Pb 06 59 37.6 +1.7
SNR=50
ELSH eS Sn 06 59 58.5 +4.3
comp=E,2µm,0.5s,SNR=50
ELSH Elham, Standar 1.50 49 P Pb 06 59 37.6 +1.7
ELSH S Sn 06 59 58.5 +4.3
SWN1 Swindon 1.51 332 eP Pb 06 59 37.8 +1.7
SWN1 AML AML 07 00 08.6
comp=N,2µm,0.6s
SWN1 AML AML 07 00 14.8
comp=E,1µm,0.7s
SWN1 Swindon 1.51 332 eP Pb 06 59 37.8 +1.7
SWN1 AML AML 07 00 08.6
comp=N,2µm,0.6s
SWN1 AML AML 07 00 14.8
comp=E,1µm,0.7s
SWN1 Swindon 1.51 332 eP Pb 06 59 37.8 +1.7
SWN1 AML AML 07 00 08.6
comp=N,2µm,0.6s
SWN1 AML AML 07 00 14.8
comp=E,1µm,0.7s
SWN1 Swindon 1.51 332 P Pb 06 59 37.8 +1.7
SWN1 Swindon 1.51 332 P Pb 06 59 37.8 +1.7
LDF La Druitiere 1.64 167 ePn Pn 06 59 36.8 +0.1
LDF La Druitiere 1.64 167 eP Pn 06 59 38.7 +2.0
SNR=1.0
LDF eSn Sn 06 59 56.5 -1.1
LDF eSg Sb 07 00 00.9 +2.1
comp=E,2µm,0.2s,SNR=1.0
LDF La Druitiere 1.64 167 ePn Pn 06 59 36.8 +0.1
LDF La Druitiere 1.64 167 eP Pn 06 59 38.7 +2.0
SNR=1.0
LDF eSn Sn 06 59 56.5 -1.1
LDF eSg Sb 07 00 00.9 +2.1
comp=E,1µm,0.2s,SNR=1.0
LDF La Druitiere 1.64 167 eP Pn 06 59 38.7 +2.0
LDF eSn Sn 06 59 56.5 -1.1
LDF eSg Sb 07 00 00.9 +2.1
GRR Gorron 1.81 184 ePn Pn 06 59 39.2 +0.2
SNR=1.0
GRR Gorron 1.81 184 ePg Pn 06 59 42.5 +3.5
GRR eSn Sn 06 59 59.7 -2.1
comp=E,2µm,0.2s,SNR=1.0
GRR eSg Sb 07 00 04.3 +0.7
comp=E,2µm,0.2s
GRR Gorron 1.81 184 ePn Pn 06 59 39.2 +0.2
SNR=1.0
GRR Gorron 1.81 184 ePg Pn 06 59 42.5 +3.5
GRR eSn Sn 06 59 59.7 -2.1
comp=E,965nm,0.2s,SNR=1.0
GRR eSg Sb 07 00 04.3 +0.7
comp=E,934nm,0.2s
GRR Gorron 1.81 184 ePn Pn 06 59 39.2 +0.2
GRR ePg Pn 06 59 42.5 +3.5
GRR eSn Sn 06 59 59.7 -2.1
GRR eSg Sb 07 00 04.3 +0.7
STRD Stroud 1.85 330 eP Pg 06 59 42.4 -1.3
STRD AML AML 07 00 13.1
comp=E,2µm,0.5s
STRD AML AML 07 00 17.3
comp=N,2µm,0.5s
STRD Stroud 1.85 330 eP Pg 06 59 42.4 -1.3
STRD AML AML 07 00 13.1
comp=E,2µm,0.5s
STRD AML AML 07 00 17.3
comp=N,2µm,0.5s
STRD Stroud 1.85 330 eP Pg 06 59 42.4 -1.3
STRD AML AML 07 00 13.1
comp=E,2µm,0.5s
STRD AML AML 07 00 17.3
comp=N,2µm,0.5s
STRD Stroud 1.85 330 eP Pg 06 59 42.4 -1.3
SNR=50
OLDB Oldbury-Upon-S 1.90 322 eP Pb 06 59 42.7 0.0
OLDB AML AML 07 00 16.6
comp=N,2µm,0.4s
OLDB AML AML 07 00 17.7
comp=E,3µm,0.4s
OLDB Oldbury-Upon-S 1.90 322 eP Pb 06 59 42.7 0.0
OLDB AML AML 07 00 16.6
comp=N,2µm,0.4s
OLDB AML AML 07 00 17.7
comp=E,3µm,0.4s
OLDB Oldbury-Upon-S 1.90 322 eP Pb 06 59 42.7 0.0
OLDB AML AML 07 00 16.6
comp=N,2µm,0.4s
OLDB AML AML 07 00 17.7
comp=E,3µm,0.4s
OLDB Oldbury-Upon-S 1.90 322 eP Pb 06 59 42.7 0.0
SNR=50
SSW Stow on the Wo 1.93 338 eP Pg 06 59 43.9 -1.4
SSW Stow on the Wo 1.93 338 eP Pg 06 59 43.9 -1.4
SSW Stow on the Wo 1.93 338 eP Pg 06 59 43.9 -1.4
SSW Stow on the Wo 1.93 338 P Pg 06 59 43.9 -1.4
SSW Stow on the Wo 1.93 338 P Pg 06 59 43.9 -1.4
HGH Gray Hill 1.98 318 eP Pb 06 59 43.9 -0.3
HGH Gray Hill 1.98 318 eP Pb 06 59 43.9 -0.3
HGH Gray Hill 1.98 318 eP Pb 06 59 43.9 -0.3
HGH Gray Hill 1.98 318 P Pb 06 59 43.9 -0.3
HGH Gray Hill 1.98 318 P Pb 06 59 43.9 -0.3
DYA Yadsworthy 2.11 278 eP Pn 06 59 44.4 +1.2
DYA Yadsworthy 2.11 278 eP Pn 06 59 44.4 +1.2
DYA Yadsworthy 2.11 278 eP Pn 06 59 44.4 +1.2
DYA Yadsworthy 2.11 278 ePn Pn 06 59 44.3 +1.2
DYA Yadsworthy 2.11 278 ePn Pn 06 59 44.3 +1.2
MONM Monmouth 2.13 322 eP Pb 06 59 45.9 -0.8
MONM eS Sb 07 00 12.5 -0.6
MONM AML AML 07 00 19.4
comp=E,455nm,0.2s
MONM AML AML 07 00 26.7
comp=N,623nm,0.6s
MONM Monmouth 2.13 322 eP Pb 06 59 45.9 -0.8
MONM eS Sb 07 00 12.5 -0.6
MONM AML AML 07 00 19.4
comp=E,455nm,0.2s
MONM AML AML 07 00 26.7
comp=N,623nm,0.6s
MONM Monmouth 2.13 322 eP Pb 06 59 45.9 -0.8
MONM eS Sb 07 00 12.5 -0.6
MONM AML AML 07 00 19.4
comp=E,455nm,0.2s
MONM AML AML 07 00 26.7
comp=N,623nm,0.6s
MONM Monmouth 2.13 322 eP Pb 06 59 45.9 -0.8
SNR=50
MONM eS Sb 07 00 12.5 -0.6
comp=N,623nm,0.6s,SNR=50
HEX Exmoor 2.18 295 eP Pn 06 59 45.5 +1.3
HEX Exmoor 2.18 295 eP Pn 06 59 45.5 +1.3
HEX Exmoor 2.18 295 eP Pn 06 59 45.5 +1.3
HEX Exmoor 2.18 295 P Pn 06 59 45.5 +1.3
HEX Exmoor 2.18 295 P Pn 06 59 45.5 +1.3
SGMF Saint Gilles 2.30 213 ePn Pn 06 59 46.4 +0.6
SNR=1.0
SGMF eSn Sn 07 00 11.1 -2.8
SGMF eSg Sb 07 00 20.6 +2.8
comp=N,540nm,0.5s,SNR=1.0
SGMF Saint Gilles 2.30 213 ePn Pn 06 59 46.4 +0.6
SNR=1.0
SGMF eSn Sn 07 00 11.1 -2.8
SGMF eSg Sb 07 00 20.6 +2.8
comp=N,270nm,0.5s,SNR=1.0
SGMF Saint Gilles 2.30 213 ePn Pn 06 59 46.4 +0.6
SGMF eSn Sn 07 00 11.1 -2.8
SGMF eSg Sb 07 00 20.6 +2.8
MCH1 Michaelchurch 2.33 322 eP Pn 06 59 48.4 +2.1
MCH1 AML AML 07 00 34.7
comp=E,693nm,0.6s
MCH1 AML AML 07 00 41.3
comp=N,257nm,0.6s
MCH1 Michaelchurch 2.33 322 eP Pn 06 59 48.4 +2.1
MCH1 AML AML 07 00 34.7
comp=E,693nm,0.6s
MCH1 AML AML 07 00 41.3
comp=N,257nm,0.6s
MCH1 Michaelchurch 2.33 322 eP Pn 06 59 48.4 +2.1
MCH1 AML AML 07 00 34.7
comp=E,693nm,0.6s
MCH1 AML AML 07 00 41.3
comp=N,257nm,0.6s
MCH1 Michaelchurch 2.33 322 P Pn 06 59 48.4 +2.1
MCH1 Michaelchurch 2.33 322 P Pn 06 59 48.4 +2.1
ROSF Rostrenen 2.52 224 ePn Pn 06 59 49.5 +0.6
SNR=1.0
ROSF Rostrenen 2.52 224 ePg Pb 06 59 55.3 +2.0
ROSF eSn Sn 07 00 15.7 -3.7
ROSF eSg Sb 07 00 27.2 +3.0
comp=N,273nm,0.2s,SNR=1.0
ROSF Rostrenen 2.52 224 ePn Pn 06 59 49.5 +0.6
SNR=1.0
ROSF Rostrenen 2.52 224 ePg Pb 06 59 55.3 +2.0
ROSF eSn Sn 07 00 15.7 -3.7
ROSF eSg Sb 07 00 27.2 +3.0
comp=N,136nm,0.2s,SNR=1.0
ROSF Rostrenen 2.52 224 ePn Pn 06 59 49.5 +0.6
ROSF ePg Pb 06 59 55.3 +2.0
ROSF eSn Sn 07 00 15.7 -3.7
ROSF eSg Sb 07 00 27.2 +3.0
BOST Ostende 2.52 64 P Pn 06 59 50.4 +1.5
BOST Ostende 2.52 64 P Pn 06 59 50.3 +1.5
HTL Hartland 2.56 290 eP Pn 06 59 50.8 +1.4
HTL AML AML 07 00 40.2
comp=N,246nm,0.5s
HTL AML AML 07 00 40.5
comp=E,211nm,0.4s
HTL Hartland 2.56 290 eP Pn 06 59 50.8 +1.4
HTL AML AML 07 00 40.2
comp=N,246nm,0.5s
HTL AML AML 07 00 40.5
comp=E,211nm,0.4s
HTL Hartland 2.56 290 eP Pn 06 59 50.8 +1.4
HTL AML AML 07 00 40.2
comp=N,246nm,0.5s
HTL AML AML 07 00 40.5
comp=E,211nm,0.4s
HTL Hartland 2.56 290 P Pn 06 59 50.8 +1.4
HTL Hartland 2.56 290 P Pn 06 59 50.8 +1.4
CWF Charnwood Fore 2.58 351 eP Pb 06 59 52.2 -2.2
CWF AML AML 07 00 34.3
comp=N,266nm,0.2s
CWF AML AML 07 00 34.6
comp=E,473nm,0.4s
CWF Charnwood Fore 2.58 351 eP Pb 06 59 52.2 -2.2
CWF AML AML 07 00 34.3
comp=N,266nm,0.2s
CWF AML AML 07 00 34.6
comp=E,473nm,0.4s
CWF Charnwood Fore 2.58 351 eP Pb 06 59 52.2 -2.2
CWF AML AML 07 00 34.3
comp=N,266nm,0.2s
CWF AML AML 07 00 34.6
comp=E,473nm,0.4s
CWF Charnwood Fore 2.58 351 eP Pb 06 59 52.2 -2.2
SNR=50
CWF Charnwood Fore 2.58 351 ePn Pb 06 59 52.3 -2.2
HLM1 Long Mynd 2.71 330 eP Pn 06 59 53.9 +2.3
HLM1 AML AML 07 00 42.4
comp=N,272nm,0.4s
HLM1 AML AML 07 00 42.5
comp=E,352nm,0.3s
HLM1 Long Mynd 2.71 330 eP Pn 06 59 53.9 +2.3
HLM1 AML AML 07 00 42.4
comp=N,272nm,0.4s
HLM1 AML AML 07 00 42.5
comp=E,352nm,0.3s
HLM1 Long Mynd 2.71 330 eP Pn 06 59 53.9 +2.3
HLM1 AML AML 07 00 42.4
comp=N,272nm,0.4s
HLM1 AML AML 07 00 42.5
comp=E,352nm,0.3s
HLM1 Long Mynd 2.71 330 P Pn 06 59 53.9 +2.3
HLM1 Long Mynd 2.71 330 P Pn 06 59 53.9 +2.3
QUIF Quistinic 2.80 217 ePn Pn 06 59 53.2 +0.4
SNR=1.0
QUIF Quistinic 2.80 217 ePg Pb 07 00 00.1 +1.9
QUIF eSn Sn 07 00 22.6 -3.8
QUIF eSg Sb 07 00 35.4 +3.0
comp=E,304nm,0.3s,SNR=1.0
QUIF Quistinic 2.80 217 ePn Pn 06 59 53.2 +0.4
SNR=1.0
QUIF Quistinic 2.80 217 ePg Pb 07 00 00.1 +1.9
QUIF eSn Sn 07 00 22.6 -3.8
QUIF eSg Sb 07 00 35.4 +3.0
comp=E,152nm,0.3s,SNR=1.0
QUIF Quistinic 2.80 217 ePn Pn 06 59 53.2 +0.4
QUIF ePg Pb 07 00 00.1 +1.9
QUIF eSn Sn 07 00 22.6 -3.8
QUIF eSg Sb 07 00 35.4 +3.0
LPW Lampeter 2.88 313 eP Pn 06 59 56.0 +2.2
LPW AML AML 07 00 47.5
comp=E,169nm,0.7s
LPW AML AML 07 00 49.9
comp=N,163nm,0.4s
LPW Lampeter 2.88 313 eP Pn 06 59 56.0 +2.2
LPW AML AML 07 00 47.5
comp=E,169nm,0.7s
LPW AML AML 07 00 49.9
comp=N,163nm,0.4s
LPW Lampeter 2.88 313 eP Pn 06 59 56.0 +2.2
LPW AML AML 07 00 47.5
comp=E,169nm,0.7s
LPW AML AML 07 00 49.9
comp=N,163nm,0.4s
LPW Lampeter 2.88 313 eP Pn 06 59 56.0 +2.2
SNR=50
CCA1 Carnmenellis 2.93 272 eP Pn 06 59 55.5 +1.0
CCA1 AML AML 07 00 50.1
comp=E,185nm,1.0s
CCA1 AML AML 07 00 57.0
comp=N,216nm,0.7s
CCA1 Carnmenellis 2.93 272 eP Pn 06 59 55.5 +1.0
CCA1 AML AML 07 00 50.1
comp=E,185nm,1.0s
CCA1 AML AML 07 00 57.0
comp=N,216nm,0.7s
CCA1 Carnmenellis 2.93 272 eP Pn 06 59 55.5 +1.0
CCA1 AML AML 07 00 50.1
comp=E,185nm,1.0s
CCA1 AML AML 07 00 57.0
comp=N,216nm,0.7s
CCA1 Carnmenellis 2.93 272 P Pn 06 59 55.5 +1.0
CCA1 Carnmenellis 2.93 272 P Pn 06 59 55.5 +1.0
BSKQ Steenkerk 3.07 80 P Pn 06 59 58.3 +1.9
BSKQ S Sn 07 00 32.9 -0.1
BSKQ Steenkerk 3.07 80 P Pn 06 59 58.3 +1.9
BSKQ S Sn 07 00 32.9 -0.1
FOEL Foel Wylfa 3.13 331 eP Pn 06 59 59.7 +2.4
FOEL AML AML 07 00 56.6
comp=E,240nm,0.5s
FOEL AML AML 07 00 56.9
comp=N,330nm,0.6s
FOEL Foel Wylfa 3.13 331 eP Pn 06 59 59.7 +2.4
FOEL AML AML 07 00 56.6
comp=E,240nm,0.5s
FOEL AML AML 07 00 56.9
comp=N,330nm,0.6s
FOEL Foel Wylfa 3.13 331 eP Pn 06 59 59.7 +2.4
FOEL AML AML 07 00 56.6
comp=E,240nm,0.5s
FOEL AML AML 07 00 56.9
comp=N,330nm,0.6s
FOEL Foel Wylfa 3.13 331 P Pn 06 59 59.7 +2.4
FOEL Foel Wylfa 3.13 331 P Pn 06 59 59.7 +2.4
BAIF Baives 3.14 90 eP Pn 06 59 59.2 +1.8
SNR=1.0
BAIF Baives 3.14 90 ePg Pg 07 00 07.4 -1.0
BAIF eSn Sn 07 00 32.7 -2.0
comp=N,153nm,0.2s
BAIF eSg Sg 07 00 47.0 -2.1
comp=N,317nm,0.2s
BAIF Baives 3.14 90 eP Pn 06 59 59.2 +1.8
SNR=1.0
BAIF Baives 3.14 90 ePg Pg 07 00 07.4 -1.0

BAIF eSn Sn 07 00 32.7 -2.0
comp=N,77nm,0.2s
BAIF eSg Sg 07 00 47.0 -2.1
comp=N,159nm,0.2s
BAIF Baives 3.14 90 eP Pn 06 59 59.2 +1.8
BAIF ePg Pg 07 00 07.4 -1.0
BAIF eSn Sn 07 00 32.7 -2.0
BAIF eSg Sg 07 00 47.0 -2.1
BRQR Ronqui¨¤re 3.16 81 P Pn 06 59 59.5 +1.8
BRQR Ronqui¨¤re 3.16 81 P Pn 06 59 59.4 +1.8
LMK Market Rasen 3.28 4 AML AML 07 01 07.1
comp=N,1µm,0.7s
LMK AML AML 07 01 09.8
comp=E,958nm,0.6s
LMK Market Rasen 3.28 4 AML AML 07 01 07.1
comp=N,1µm,0.7s
LMK AML AML 07 01 09.8
comp=E,958nm,0.6s
LMK Market Rasen 3.28 4 AML AML 07 01 07.1
comp=N,1µm,0.7s
LMK AML AML 07 01 09.8
comp=E,958nm,0.6s
BCES Court-Saint-Et 3.38 81 P Pn 07 00 02.7 +1.9
BCES S Sn 07 00 42.1 +1.4
BCES Court-Saint-Et 3.38 81 P Pn 07 00 02.6 +1.9
BCES S Sn 07 00 42.1 +1.4
DOU Dourbes 3.39 90 ⇑P Pn 07 00 02.5 +1.7
DOU S Sn 07 00 39.6 -1.3
DOU Dourbes 3.39 90 P Pn 07 00 02.5 +1.7
DOU S Sn 07 00 39.5 -1.3
BMRD Maredsous 3.49 86 P Pn 07 00 03.8 +1.6
BMRD S Sn 07 00 42.4 -1.0
BMRD Maredsous 3.49 86 P Pn 07 00 03.8 +1.6
BMRD S Sn 07 00 42.4 -1.0
GIVF Givet 3.53 89 eP Pn 07 00 04.8 +2.0
GIVF Givet 3.53 89 ePg Pg 07 00 15.3 -0.6
GIVF eSn Sn 07 00 42.3 -2.1
comp=E,308nm,0.2s
GIVF eSg Sg 07 01 00.5 -1.2
comp=E,562nm,0.4s
GIVF Givet 3.53 89 eP Pn 07 00 04.8 +2.0
GIVF Givet 3.53 89 ePg Pg 07 00 15.3 -0.6
GIVF eSn Sn 07 00 42.3 -2.1
comp=E,154nm,0.2s
GIVF eSg Sg 07 01 00.5 -1.2
comp=E,281nm,0.4s
GIVF Givet 3.53 89 eP Pn 07 00 04.8 +2.0
GIVF ePg Pg 07 00 15.3 -0.6
GIVF eSn Sn 07 00 42.3 -2.1
GIVF eSg Sg 07 01 00.5 -1.2
MFF Saint Martin d 3.60 174 ePn Pn 07 00 02.7 -1.1
SNR=1.0
MFF Saint Martin d 3.60 174 ePg Pb 07 00 15.8 +4.0
MFF eSn Sn 07 00 41.6 -4.6
SNR=1.0
MFF eSg Sb 07 01 00.9 +5.5
comp=E,267nm,0.2s,SNR=1.0
MFF Saint Martin d 3.60 174 ePn Pn 07 00 02.7 -1.1
SNR=1.0
MFF Saint Martin d 3.60 174 ePg Pb 07 00 15.8 +4.0
MFF eSn Sn 07 00 41.6 -4.6
SNR=1.0
MFF eSg Sb 07 01 00.9 +5.5
comp=E,134nm,0.2s,SNR=1.0
MFF Saint Martin d 3.60 174 ePn Pn 07 00 02.7 -1.1
MFF ePg Pb 07 00 15.8 +4.0
MFF eSn Sn 07 00 41.6 -4.6
MFF eSg Sb 07 01 00.9 +5.5
HYF Humbligny 3.65 142 ePn Pn 07 00 05.7 +1.3
HYF Humbligny 3.65 142 ePn Pn 07 00 05.7 +1.3
HYF Humbligny 3.65 142 ePn Pn 07 00 05.7 +1.3
HYF ePg Pb 07 00 17.0 +4.4
HYF eSg Sg 07 01 04.5 -0.9
WPM1 Penmaenmawr 3.67 328 eP Pn 07 00 06.7 +1.9
WPM1 Penmaenmawr 3.67 328 eP Pn 07 00 06.7 +1.9
WPM1 Penmaenmawr 3.67 328 eP Pn 07 00 06.7 +1.9
WPM1 Penmaenmawr 3.67 328 eP Pn 07 00 06.7 +1.9
SNR=50
BGES Gesves 3.70 85 P Pn 07 00 06.6 +1.5
BGES S Sn 07 00 48.5 +0.1
BGES Gesves 3.70 85 P Pn 07 00 06.5 +1.5
BGES S Sn 07 00 48.5 +0.1
BDSL Dessel 3.79 72 P Pn 07 00 08.1 +1.8
BDSL S Sn 07 00 51.0 +0.4
BDSL Dessel 3.79 72 P Pn 07 00 08.0 +1.8
BDSL S Sn 07 00 51.0 +0.4
BMOL Mol 3.80 72 P Pn 07 00 08.1 +1.7
BMOL S Sn 07 00 52.0 +1.1
BMOL Mol 3.80 72 P Pn 07 00 08.1 +1.7
BMOL S Sn 07 00 52.0 +1.1
BCLA Clavier 3.83 84 ⇑P Pn 07 00 08.4 +1.4
BCLA S Sn 07 00 52.8 +0.9
BCLA Clavier 3.83 84 P Pn 07 00 08.3 +1.4
BCLA S Sn 07 00 52.7 +0.9
WLF1 Llynfaes 3.88 325 eP Pn 07 00 09.2 +1.7
WLF1 AML AML 07 01 20.7
comp=E,56nm,0.6s
WLF1 AML AML 07 01 27.4
comp=N,78nm,0.7s
WLF1 Llynfaes 3.88 325 eP Pn 07 00 09.2 +1.7
WLF1 AML AML 07 01 20.7
comp=E,56nm,0.6s
WLF1 AML AML 07 01 27.4
comp=N,78nm,0.7s
WLF1 Llynfaes 3.88 325 eP Pn 07 00 09.2 +1.7
WLF1 AML AML 07 01 20.7
comp=E,56nm,0.6s
WLF1 AML AML 07 01 27.4
comp=N,78nm,0.7s
WLF1 Llynfaes 3.88 325 eP Pn 07 00 09.2 +1.7
SNR=49
YRC Rhoscolyn 3.91 323 eP Pn 07 00 09.6 +1.6
YRC Rhoscolyn 3.91 323 eP Pn 07 00 09.6 +1.6
YRC Rhoscolyn 3.91 323 eP Pn 07 00 09.6 +1.6
YRC Rhoscolyn 3.91 323 eP Pn 07 00 09.6 +1.6
SNR=49
WPS Cemaes, Angles 4.00 325 eP Pn 07 00 11.3 +2.1
WPS AML AML 07 01 26.6
comp=E,117nm,0.5s
WPS AML AML 07 01 27.6
comp=N,70nm,0.6s
WPS Cemaes, Angles 4.00 325 eP Pn 07 00 11.3 +2.1
WPS AML AML 07 01 26.6
comp=E,117nm,0.5s
WPS AML AML 07 01 27.6
comp=N,70nm,0.6s
WPS Cemaes, Angles 4.00 325 eP Pn 07 00 11.3 +2.1
WPS AML AML 07 01 26.6
comp=E,117nm,0.5s
WPS AML AML 07 01 27.6
comp=N,70nm,0.6s
WPS Cemaes, Angles 4.00 325 eP Pn 07 00 11.3 +2.1
SNR=49
BSTI Sart Tilman 4.01 82 P Pn 07 00 11.1 +1.7
BSTI Sart Tilman 4.01 82 P Pn 07 00 11.0 +1.7
BLCH La Chartreuse 4.03 81 P Pn 07 00 11.4 +1.7
BLCH La Chartreuse 4.03 81 P Pn 07 00 11.3 +1.7
BEBN Eben Emael 4.10 79 P Pn 07 00 12.2 +1.7
BEBN Eben Emael 4.10 79 P Pn 07 00 12.2 +1.7
MEZF Maizieres J'vi 4.10 112 ePn Pn 07 00 11.8 +1.2
baz=296,SNR=1.0
MEZF Maizieres J'vi 4.10 112 ePg Pg 07 00 24.9 -1.9
baz=291
MEZF eSn Sn 07 00 54.6 -3.9
comp=N,54nm,0.1s,baz=292
MEZF eSg Sg 07 01 18.4 -1.5
comp=N,559nm,0.3s
MEZF Maizieres J'vi 4.10 112 ePn Pn 07 00 11.8 +1.2
SNR=1.0
MEZF Maizieres J'vi 4.10 112 ePg Pg 07 00 24.9 -1.9
MEZF eSn Sn 07 00 54.6 -3.9
comp=N,27nm,0.1s
MEZF eSg Sg 07 01 18.4 -1.5
comp=N,280nm,0.3s
MEZF Maizieres J'vi 4.10 112 ePn Pn 07 00 11.8 +1.2
MEZF ePg Pg 07 00 24.9 -1.9
MEZF eSn Sn 07 00 54.6 -3.9
MEZF eSg Sg 07 01 18.4 -1.5
BOPT Opiter 4.12 75 P Pn 07 00 12.5 +1.7
BOPT Opiter 4.12 75 P Pn 07 00 12.4 +1.7
SSF Saint Saulge 4.18 137 ePn Pn 07 00 11.9 +0.2
SNR=1.0
SSF Saint Saulge 4.18 137 ePg Pg 07 00 26.9 -1.3
SSF eSn Sn 07 00 56.2 -4.1
comp=N,75nm,0.2s,SNR=1.0
SSF eSg Sb 07 01 19.8 +7.9
comp=N,501nm,0.4s
SSF Saint Saulge 4.18 137 ePn Pn 07 00 11.9 +0.2
SNR=1.0
SSF Saint Saulge 4.18 137 ePg Pg 07 00 26.9 -1.3
SSF eSn Sn 07 00 56.2 -4.1
comp=N,38nm,0.2s,SNR=1.0
SSF eSg Sb 07 01 19.8 +7.9
comp=N,251nm,0.4s
SSF Saint Saulge 4.18 137 ePn Pn 07 00 11.9 +0.2
SSF ePg Pg 07 00 26.9 -1.3
SSF eSn Sn 07 00 56.2 -4.1
SSF eSg Sb 07 01 19.8 +7.9
LOR Lormes 4.18 133 ePn Pn 07 00 11.8 0.0
baz=318,SNR=1.0
LOR Lormes 4.18 133 ePg Pb 07 00 26.6 +4.9
baz=316
LOR eSn Sn 07 00 56.1 -4.4
comp=N,147nm,0.2s,baz=314,SNR=1.0
LOR eSg Sg 07 01 20.6 -1.9
comp=N,286nm,0.2s,baz=308
LOR Lormes 4.18 133 ePn Pn 07 00 11.8 0.0
SNR=1.0
LOR Lormes 4.18 133 ePg Pb 07 00 26.6 +4.9
LOR eSn Sn 07 00 56.1 -4.4
comp=N,74nm,0.2s,SNR=1.0
LOR eSg Sg 07 01 20.6 -1.9
comp=N,143nm,0.2s
LOR Lormes 4.18 133 ePn Pn 07 00 11.8 0.0
LOR ePg Pb 07 00 26.6 +4.9
LOR eSn Sn 07 00 56.1 -4.4
LOR eSg Sg 07 01 20.6 -1.9
SFTF Sexfontaines 4.24 116 ePn Pn 07 00 13.2 +0.7
baz=297
SFTF Sexfontaines 4.24 116 ePg Pg 07 00 27.9 -1.4
baz=299
SFTF eSn Sn 07 00 58.7 -3.1
comp=N,102nm,0.2s
SFTF eSg Sg 07 01 22.7 -1.5
comp=N,344nm,0.2s
SFTF Sexfontaines 4.24 116 ePn Pn 07 00 13.2 +0.7
SFTF Sexfontaines 4.24 116 ePg Pg 07 00 27.9 -1.4
SFTF eSn Sn 07 00 58.7 -3.1
comp=N,51nm,0.2s
SFTF eSg Sg 07 01 22.7 -1.5
comp=N,172nm,0.2s
SFTF Sexfontaines 4.24 116 ePn Pn 07 00 13.2 +0.7
SFTF ePg Pg 07 00 27.9 -1.4
SFTF eSn Sn 07 00 58.7 -3.1
SFTF eSg Sg 07 01 22.7 -1.5
HGN Heimansgroeve 4.25 80 ePn Pn 07 00 14.3 +1.6
comp=N,59nm,0.1s
HGN eSn Sn 07 01 01.4 -0.8
MEM Membach 4.29 82 P Pn 07 00 14.7 +1.5
MEM Membach 4.29 82 P Pn 07 00 14.8 +1.5
MEM S Sn 07 01 02.4 -0.7
MEM Membach 4.29 82 P Pn 07 00 14.6 +1.5
MEM S Sn 07 01 02.3 -0.7
BGF Bois d'Agland 4.32 146 ePn Pn 07 00 13.7 0.0
BGF Bois d'Agland 4.32 146 ePg Pb 07 00 29.1 +5.1
BGF eSn Sn 07 01 00.4 -3.5
comp=N,1µm,0.3s,SNR=1.0
BGF eSg Sb 07 01 24.3 +8.2
comp=N,1µm,0.4s
BGF Bois d'Agland 4.32 146 ePn Pn 07 00 13.7 0.0
BGF Bois d'Agland 4.32 146 ePg Pb 07 00 29.1 +5.1
BGF eSn Sn 07 01 00.4 -3.5
comp=N,519nm,0.3s,SNR=1.0
BGF eSg Sb 07 01 24.3 +8.2
comp=N,683nm,0.4s
BGF Bois d'Agland 4.32 146 ePn Pn 07 00 13.7 0.0
BGF ePg Pb 07 00 29.1 +5.1
BGF eSn Sn 07 01 00.4 -3.5
BGF eSg Sb 07 01 24.3 +8.2
AVF Avril sur Loir 4.33 140 ePn Pn 07 00 13.7 0.0
SNR=1.0
AVF eSn Sn 07 00 59.6 -4.3
AVF eSg Sg 07 01 24.5 -2.5
comp=N,257nm,0.4s
AVF Avril sur Loir 4.33 140 ePn Pn 07 00 13.7 0.0
SNR=1.0
AVF eSn Sn 07 00 59.6 -4.3
AVF eSg Sg 07 01 24.5 -2.5
comp=N,128nm,0.4s
AVF Avril sur Loir 4.33 140 ePn Pn 07 00 13.7 0.0
AVF eSn Sn 07 00 59.6 -4.3
AVF eSg Sg 07 01 24.5 -2.5
OPLO Oploo 4.34 69 ePn Pn 07 00 15.8 +2.0
comp=N,630nm,0.3s
OPLO eSn Sn 07 01 04.4 +0.3
TCF Toulx Ste Croi 4.35 153 ePn Pn 07 00 13.3 -0.8
SNR=1.0
TCF Toulx Ste Croi 4.35 153 ePg Pb 07 00 29.7 +5.2
TCF eSn Sn 07 01 00.8 -3.8
comp=N,92nm,0.2s
TCF eSg Sb 07 01 23.6 +6.7
comp=N,359nm,0.4s,SNR=1.0
TCF Toulx Ste Croi 4.35 153 ePn Pn 07 00 13.3 -0.8
SNR=1.0
TCF Toulx Ste Croi 4.35 153 ePg Pb 07 00 29.7 +5.2
TCF eSn Sn 07 01 00.8 -3.8
comp=N,46nm,0.2s
TCF eSg Sb 07 01 23.6 +6.7
comp=N,180nm,0.4s,SNR=1.0
TCF Toulx Ste Croi 4.35 153 ePn Pn 07 00 13.3 -0.8
TCF ePg Pb 07 00 29.7 +5.2
TCF eSn Sn 07 01 00.8 -3.8
TCF eSg Sb 07 01 23.6 +6.7
IWEX Carrickbyrne, 4.41 302 eP Pn 07 00 15.4 +0.5
IWEX Carrickbyrne, 4.41 302 eP Pn 07 00 15.4 +0.5
IWEX Carrickbyrne, 4.41 302 eP Pn 07 00 15.4 +0.5
IWEX Carrickbyrne, 4.41 302 eP Pn 07 00 15.4 +0.5
SNR=49
WLF Walferdange 4.44 94 P Pn 07 00 15.6 +0.4
WLF Walferdange 4.44 94 P Pn 07 00 15.6 +0.4
WLF Walferdange 4.44 94 ePn Pn 07 00 18.3 +3.1
WLF Walferdange 4.44 94 ePn Pn 07 00 18.3 +3.1
PAGF Fort de Pagny 4.49 109 ePn Pn 07 00 16.6 +0.7
baz=291
PAGF Fort de Pagny 4.49 109 ePg Pg 07 00 33.0 -1.1
baz=288
PAGF eSn Sn 07 01 04.6 -3.3
baz=280
PAGF eSg Sg 07 01 30.2 -2.0
comp=N,67nm,0.3s
PAGF Fort de Pagny 4.49 109 ePn Pn 07 00 16.6 +0.7
PAGF Fort de Pagny 4.49 109 ePg Pg 07 00 33.0 -1.1
PAGF eSn Sn 07 01 04.6 -3.3
PAGF eSg Sg 07 01 30.2 -2.0
comp=N,34nm,0.3s
PAGF Fort de Pagny 4.49 109 ePn Pn 07 00 16.6 +0.7
PAGF ePg Pg 07 00 33.0 -1.1
PAGF eSn Sn 07 01 04.6 -3.3
PAGF eSg Sg 07 01 30.2 -2.0
SMF Signal de Mont 4.64 138 ePn Pn 07 00 17.9 -0.2
SMF Signal de Mont 4.64 138 ePg Pb 07 00 34.8 +5.2
SMF eSn Sn 07 01 06.0 -5.9
comp=N,86nm,0.2s,SNR=1.0
SMF eSg Sg 07 01 35.1 -2.2
comp=N,334nm,0.3s
SMF Signal de Mont 4.64 138 ePn Pn 07 00 17.9 -0.2
SMF Signal de Mont 4.64 138 ePg Pb 07 00 34.8 +5.2
SMF eSn Sn 07 01 06.0 -5.9
comp=N,43nm,0.2s,SNR=1.0
SMF eSg Sg 07 01 35.1 -2.2
comp=N,167nm,0.3s
SMF Signal de Mont 4.64 138 ePn Pn 07 00 17.9 -0.2
SMF ePg Pb 07 00 34.8 +5.2
SMF eSn Sn 07 01 06.0 -5.9
SMF eSg Sg 07 01 35.1 -2.2
KESW Keswick, Cumbr 4.65 342 eP Pn 07 00 20.2 +2.0
KESW Keswick, Cumbr 4.65 342 eP Pn 07 00 20.2 +2.0
KESW Keswick, Cumbr 4.65 342 eP Pn 07 00 20.2 +2.0
KESW Keswick, Cumbr 4.65 342 P Pn 07 00 20.2 +2.0
KESW Keswick, Cumbr 4.65 342 P Pn 07 00 20.2 +2.0
WIM Isle of Man 4.67 330 eP Pn 07 00 19.9 +1.5
WIM Isle of Man 4.67 330 eP Pn 07 00 19.9 +1.5
WIM Isle of Man 4.67 330 eP Pn 07 00 19.9 +1.5
WIM Isle of Man 4.67 330 eP Pn 07 00 19.9 +1.5
SNR=49
DSB Dublin 4.69 313 ePn Pn 07 00 20.1 +1.5
DSB Dublin 4.69 313 ePn Pn 07 00 20.1 +1.5
THEF They Montfort 4.78 112 Pn Pn 07 00 20.2 +0.2
THEF Sg Sg 07 01 44.8 +3.1
THEF They Montfort 4.78 112 Pn Pn 07 00 20.2 +0.2
THEF Sg Sg 07 01 44.8 +3.1
AGO Saint Agoulin 4.86 147 Pn Pn 07 00 20.3 -0.7
AGO Saint Agoulin 4.86 147 Pn Pn 07 00 20.3 -0.7
VERF Verneugheol 4.92 153 Pn Pn 07 00 21.0 -0.9
VERF Verneugheol 4.92 153 Pg Pb 07 00 39.5 +5.2
VERF Verneugheol 4.92 153 Pn Pn 07 00 21.0 -0.9
VERF Verneugheol 4.92 153 Pg Pb 07 00 39.5 +5.2
RUP Ruppelstein 5.01 93 Pn Pn 07 00 24.2 +1.0
WTSB Winterswijk 5.03 66 ePn Pn 07 00 24.8 +1.4
comp=N,30nm,0.2s
WTSB eSn Sn 07 01 13.7 -7.6
PYM Petit Puy Mans 5.08 150 Pn Pn 07 00 23.5 -0.6
PYM Petit Puy Mans 5.08 150 Pn Pn 07 00 23.5 -0.6
HAU Haudompre 5.10 113 ePn Pn 07 00 24.3 -0.1
SNR=1.0
HAU Haudompre 5.10 113 ePg Pg 07 00 44.2 -1.7
HAU eSn Sn 07 01 18.9 -4.2
comp=N,177nm,0.3s,SNR=1.0
HAU eSg Sg 07 01 49.3 -2.6
comp=N,403nm,0.4s
HAU Haudompre 5.10 113 ePn Pn 07 00 24.3 -0.1
SNR=1.0
HAU Haudompre 5.10 113 ePg Pg 07 00 44.2 -1.7
HAU eSn Sn 07 01 18.9 -4.2
comp=N,88nm,0.3s,SNR=1.0
HAU eSg Sg 07 01 49.3 -2.6
comp=N,201nm,0.4s
HAU Haudompre 5.10 113 ePn Pn 07 00 24.3 -0.1
HAU ePg Pg 07 00 44.2 -1.7
HAU eSn Sn 07 01 18.9 -4.2
HAU eSg Sg 07 01 49.3 -2.6
RJF Les Rejaudoux 5.10 162 ePn Pn 07 00 23.0 -1.4
SNR=1.0
RJF eSn Sn 07 01 16.9 -6.3
comp=N,125nm,0.3s
RJF eSg Sg 07 01 48.7 -3.3
comp=N,257nm,0.4s
RJF Les Rejaudoux 5.10 162 ePn Pn 07 00 23.0 -1.4
SNR=1.0
RJF eSn Sn 07 01 16.9 -6.3
RJF eSg Sg 07 01 48.7 -3.3
comp=N,129nm,0.4s
RJF Les Rejaudoux 5.10 162 ePn Pn 07 00 23.0 -1.4
RJF eSn Sn 07 01 16.9 -6.3
RJF eSg Sg 07 01 48.7 -3.3
PLDF La Plantade 5.11 144 Pn Pn 07 00 23.9 -0.6
PLDF La Plantade 5.11 144 Pg Pg 07 00 44.6 -1.4
PLDF La Plantade 5.11 144 Pn Pn 07 00 23.9 -0.6
PLDF La Plantade 5.11 144 Pg Pg 07 00 44.6 -1.4
GMM Mts of Mourne 5.20 323 eP Pn 07 00 26.6 +1.0
GMM Mts of Mourne 5.20 323 eP Pn 07 00 26.6 +1.0
GMM Mts of Mourne 5.20 323 eP Pn 07 00 26.6 +1.0
GMM Mts of Mourne 5.20 323 eP Pn 07 00 26.6 +1.0
SNR=49
ECK Cauldkaine Hil 5.22 344 eP Pn 07 00 27.6 +1.7
ECK Cauldkaine Hil 5.22 344 eP Pn 07 00 27.6 +1.7
ECK Cauldkaine Hil 5.22 344 eP Pn 07 00 27.6 +1.7
ECK Cauldkaine Hil 5.22 344 eP Pn 07 00 27.6 +1.7
SNR=49
FRNF Fournols 5.27 154 Pn Pn 07 00 25.7 -1.1
FRNF Fournols 5.27 154 Pg Pb 07 00 46.6 +6.3
FRNF Fournols 5.27 154 Pn Pn 07 00 25.7 -1.1
FRNF Fournols 5.27 154 Pg Pb 07 00 46.6 +6.3
GAL1 Galloway 5.30 334 eP Pn 07 00 27.8 +0.8
GAL1 Galloway 5.30 334 eP Pn 07 00 27.8 +0.8
GAL1 Galloway 5.30 334 eP Pn 07 00 27.8 +0.8
GAL1 Galloway 5.30 334 eP Pn 07 00 27.8 +0.8
SNR=49
ABH Alteburg 5.30 90 Pn Pn 07 00 28.1 +0.9
LFF La Frestale 5.34 169 ePn Pn 07 00 26.9 -0.7
SNR=1.0
LFF eSn Sn 07 01 22.7 -6.2
comp=N,105nm,0.3s,SNR=1.0
LFF eSg Sg 07 01 56.0 -3.5
comp=N,462nm,0.6s,SNR=1.0
LFF La Frestale 5.34 169 ePn Pn 07 00 26.9 -0.7
SNR=1.0
LFF eSn Sn 07 01 22.7 -6.2
LFF eSg Sg 07 01 56.0 -3.5
comp=N,231nm,0.6s,SNR=1.0
LFF La Frestale 5.34 169 ePn Pn 07 00 26.9 -0.7
LFF eSn Sn 07 01 22.7 -6.2
LFF eSg Sg 07 01 56.0 -3.5
ESK Eskdalemuir 5.36 344 eP Pn 07 00 29.5 +1.6
ESK AML AML 07 01 31.2
comp=N,37nm,0.4s
ESK AML AML 07 01 31.6
comp=E,32nm,0.3s
ESK Eskdalemuir 5.36 344 eP Pn 07 00 29.5 +1.6
ESK AML AML 07 01 31.2
comp=N,37nm,0.4s
ESK AML AML 07 01 31.6
comp=E,32nm,0.3s
ESK Eskdalemuir 5.36 344 eP Pn 07 00 29.7 +1.8
ESK eS Sn 07 01 27.6 -1.9
ESK AML AML 07 01 31.2
comp=N,37nm,0.4s
ESK AML AML 07 01 31.6
comp=E,32nm,0.3s
ESK Eskdalemuir 5.36 344 ePn Pn 07 00 29.6 +1.6
ESK eS Sn 07 01 27.6 -1.9
comp=E,32nm,0.3s,SNR=49
ESK eSn Sn 07 01 28.8 -0.7
ESK Eskdalemuir 5.36 344 ePn Pn 07 00 29.6 +1.6
ESK eSn Sn 07 01 28.8 -0.7
EKA Eskdalemuir Ar 5.37 345 Pn Pn 07 00 29.5 +1.4
baz=161,slow=14,SNR=29
EKA Sn Sn 07 01 28.1 -1.6
baz=164,slow=25,SNR=19
EKA Lg Lg 07 01 58.1
baz=162,slow=30,SNR=3.7
HINF Hinteralfeld 5.49 113 ePn Pn 07 00 29.6 -0.1
SNR=1.0
HINF Hinteralfeld 5.49 113 ePg Pg 07 00 51.4 -1.9
HINF eSn Sn 07 01 27.5 -5.2
HINF eSg Sg 07 02 01.9 -2.5
comp=E,165nm,0.3s,SNR=1.0
HINF Hinteralfeld 5.49 113 ePn Pn 07 00 29.6 -0.1
SNR=1.0
HINF Hinteralfeld 5.49 113 ePg Pg 07 00 51.4 -1.9
HINF eSn Sn 07 01 27.5 -5.2
HINF eSg Sg 07 02 01.9 -2.5
comp=E,83nm,0.3s,SNR=1.0
HINF Hinteralfeld 5.49 113 ePn Pn 07 00 29.6 -0.1
HINF ePg Pg 07 00 51.4 -1.9
HINF eSn Sn 07 01 27.5 -5.2
HINF eSg Sg 07 02 01.9 -2.5
CDF Champ du Feu 5.49 106 ePn Pn 07 00 30.1 +0.3
SNR=1.0
CDF Champ du Feu 5.49 106 ePg Pg 07 00 50.8 -2.6
CDF eSn Sn 07 01 29.5 -3.4
CDF eSg Sg 07 02 01.6 -2.9
comp=E,170nm,0.4s
CDF Champ du Feu 5.49 106 ePn Pn 07 00 30.1 +0.3
SNR=1.0
CDF Champ du Feu 5.49 106 ePg Pg 07 00 50.8 -2.6
CDF eSn Sn 07 01 29.5 -3.4
CDF eSg Sg 07 02 01.6 -2.9
comp=E,85nm,0.4s
CDF Champ du Feu 5.49 106 ePn Pn 07 00 30.1 +0.3
CDF ePg Pg 07 00 50.8 -2.6
CDF eSn Sn 07 01 29.5 -3.4
CDF eSg Sg 07 02 01.6 -2.9
ECH Echery 5.50 108 Pn Pn 07 00 29.5 -0.3
ECH Sg Sg 07 02 07.8 +3.2
ECH Echery 5.50 108 Pn Pn 07 00 29.5 -0.3
ECH Sg Sg 07 02 07.8 +3.2
WLS Welschbruch 5.54 106 Pn Pn 07 00 30.1 -0.3
WLS Welschbruch 5.54 106 Pn Pn 07 00 30.1 -0.3
CAF Calviac 5.58 160 ePn Pn 07 00 30.2 -0.8
SNR=1.0
CAF eSn Sn 07 01 29.3 -5.6
comp=E,93nm,0.3s,SNR=1.0
CAF eSg Sg 07 02 04.1 -3.2
comp=E,289nm,0.5s
CAF Calviac 5.58 160 ePn Pn 07 00 30.2 -0.8
SNR=1.0
CAF eSn Sn 07 01 29.3 -5.6
CAF eSg Sg 07 02 04.1 -3.2
comp=E,144nm,0.5s
CAF Calviac 5.58 160 ePn Pn 07 00 30.2 -0.8
CAF eSn Sn 07 01 29.3 -5.6

CAF				*e*Sg	**Sg**	**07 02 04.1**	**-3.2**		
LBL	**Lubilhac**	**5.62**	**150**	Pn	**Pn**	**07 00 30.5**	**-1.0**		
LBL	**Lubilhac**	**5.62**	**150**	Pn	**Pn**	**07 00 30.5**	**-1.0**		
MOF	**Molkenrain**	**5.64**	**112**	Pn	**Pn**	**07 00 31.7**	**-0.1**		
MOF				Sg	**Sg**	**07 02 11.9**	**+2.7**		
MOF	**Molkenrain**	**5.64**	**112**	Pn	**Pn**	**07 00 31.7**	**-0.1**		
MOF				Sg	**Sg**	**07 02 11.9**	**+2.7**		
LANF	**Langenberg**	**5.64**	**99**	Pn	**Pn**	**07 00 32.5**	**+0.7**		
LANF				Sg	**Sg**	**07 02 14.5**	**+5.2**		
LANF	**Langenberg**	**5.64**	**99**	Pn	**Pn**	**07 00 32.5**	**+0.7**		
LANF				Sg	**Sg**	**07 02 14.5**	**+5.2**		
LOMF	**Lomont**	**5.71**	**117**	Pn	**Pn**	**07 00 32.4**	**-0.4**		
LOMF				Sg	**Sg**	**07 02 14.4**	**+2.9**		
LOMF	**Lomont**	**5.71**	**117**	Pn	**Pn**	**07 00 32.4**	**-0.4**		
LOMF				Sg	**Sg**	**07 02 14.4**	**+2.9**		
CABF	**La Chapelle**	**5.75**	**126**	*e*Pn	**Pn**	**07 00 33.6**	**+0.3**		
	SNR=1.0								
CABF	**La Chapelle**	**5.75**	**126**	*e*Pg	**Pg**	**07 00 55.9**	**-2.4**		
CABF				*e*Sn	**Sn**	**07 01 35.3**	**-3.8**		
	comp=E,65nm,0.3s,SNR=1.0								
CABF				*e*Sg	**Sg**	**07 02 09.8**	**-2.9**		
	comp=E,498nm,0.6s								
CABF	**La Chapelle**	**5.75**	**126**	*e*Pn	**Pn**	**07 00 33.6**	**+0.3**		
	SNR=1.0								
CABF	**La Chapelle**	**5.75**	**126**	*e*Pg	**Pg**	**07 00 55.9**	**-2.4**		
CABF				*e*Sn	**Sn**	**07 01 35.3**	**-3.8**		
	comp=E,32nm,0.3s,SNR=1.0								
CABF				*e*Sg	**Sg**	**07 02 09.8**	**-2.9**		
	comp=E,249nm,0.6s								
CABF	**La Chapelle**	**5.75**	**126**	*e*Pn	**Pn**	**07 00 33.6**	**+0.3**		
CABF				*e*Pg	**Pg**	**07 00 55.9**	**-2.4**		
CABF				*e*Sn	**Sn**	**07 01 35.3**	**-3.8**		
CABF				*e*Sg	**Sg**	**07 02 09.8**	**-2.9**		
EDI	**Edinburgh**	**5.94**	**346**	*e*P	**Pn**	**07 00 38.0**	**+2.2**		
EDI				*e*S	**Sn**	**07 01 42.9**	**-0.8**		
EDI	**Edinburgh**	**5.94**	**346**	*e*P	**Pn**	**07 00 38.0**	**+2.2**		
	SNR=49								
EDI				*e*S	**Sn**	**07 01 42.9**	**-0.8**		
	SNR=49								
GMK	**Mull of Kintyr**	**5.97**	**332**	*e*P	**Pn**	**07 00 37.4**	**+1.2**		
GMK	**Mull of Kintyr**	**5.97**	**332**	*e*P	**Pn**	**07 00 37.4**	**+1.2**		
GMK	**Mull of Kintyr**	**5.97**	**332**	*e*P	**Pn**	**07 00 37.4**	**+1.2**		
GMK	**Mull of Kintyr**	**5.97**	**332**	*e*P	**Pn**	**07 00 37.4**	**+1.2**		
	SNR=49								
SSB	**Saint Sauveur**	**6.04**	**142**	Pn	**Pn**	**07 00 35.5**	**-1.8**		
SSB	**Saint Sauveur**	**6.04**	**142**	Pg	**Pg**	**07 01 01.5**	**-2.3**		
SSB				Sg	**Sg**	**07 02 22.9**	**+1.0**		
SSB	**Saint Sauveur**	**6.04**	**142**	*e*Pn	**Pn**	**07 00 37.0**	**-0.3**		
SSB	**Saint Sauveur**	**6.04**	**142**	Pg	**Pg**	**07 01 01.5**	**-2.3**		
SSB				Sg	**Sg**	**07 02 22.9**	**+1.0**		
SSB	**Saint Sauveur**	**6.04**	**142**	*e*Pn	**Pn**	**07 00 37.0**	**-0.3**		
FELD	**Feldberg im Sc**	**6.15**	**109**	Pn	**Pn**	**07 00 38.4**	**-0.5**		
BFO	**Black Forest**	**6.18**	**104**	*e*Pn	**Pn**	**07 00 39.4**	**+0.3**		
BFO	**Black Forest**	**6.18**	**104**	*e*Pn	**Pn**	**07 00 39.4**	**+0.3**		
OG01	**Vacheresse**	**6.24**	**125**	Pn	**Pn**	**07 00 40.0**	**-0.1**		
OG01				Sg	**Sg**	**07 02 31.5**	**+3.0**		
OG01	**Vacheresse**	**6.24**	**125**	Pn	**Pn**	**07 00 40.0**	**-0.1**		
OG01				Sg	**Sg**	**07 02 31.5**	**+3.0**		
VIVF	**Saint-Julien-l**	**6.44**	**144**	*e*Pn	**Pn**	**07 00 42.7**	**-0.1**		
	SNR=1.0								
VIVF				*e*Sn	Sn	07 01 48.3	-7.9		
	comp=E,32nm,0.3s,SNR=1.0								
VIVF				*e*Sg	**Sg**	**07 02 31.6**	**-3.3**		
	comp=E,150nm,0.5s								
VIVF	**Saint-Julien-l**	**6.44**	**144**	*e*Pn	**Pn**	**07 00 42.7**	**-0.1**		
	SNR=1.0								
VIVF				*e*Sn	Sn	07 01 48.3	-7.9		
VIVF				*e*Sg	**Sg**	**07 02 31.6**	**-3.3**		
	comp=E,75nm,0.5s								
VIVF	**Saint-Julien-l**	**6.44**	**144**	*e*Pn	**Pn**	**07 00 42.7**	**-0.1**		
VIVF				*e*Sn	Sn	07 01 48.3	-7.9		
VIVF				*e*Sg	**Sg**	**07 02 31.6**	**-3.3**		
SPAK	**Spaichingen-Ko**	**6.54**	**105**	Pn	**Pn**	**07 00 43.9**	**-0.3**		
SENIN	**Lac Senin/Sane**	**6.55**	**123**	*e*Pn	**Pn**	**07 00 45.1**	**+0.6**		
SENIN	**Lac Senin/Sane**	**6.55**	**123**	*e*Pn	**Pn**	**07 00 45.1**	**+0.6**		
RSL	**Roselend**	**6.65**	**130**	Pn	**Pn**	**07 00 45.2**	**-0.6**		
RSL	**Roselend**	**6.65**	**130**	Pn	**Pn**	**07 00 45.2**	**-0.6**		
LPL	**La Plagne**	**6.83**	**130**	*e*Pn	**Pn**	**07 00 49.0**	**+0.7**		
	SNR=1.0								
LPL				*e*Sn	Sn	07 02 00.6	-5.3		
	comp=E,47nm,0.3s,SNR=1.0								
LPL				*e*Sg	**Sg**	**07 02 43.6**	**-3.7**		
	comp=E,85nm,0.5s								
LPL	**La Plagne**	**6.83**	**130**	*e*Pn	**Pn**	**07 00 49.0**	**+0.7**		
	SNR=1.0								
LPL				*e*Sn	Sn	07 02 00.6	-5.3		
LPL				*e*Sg	**Sg**	**07 02 43.6**	**-3.7**		
	comp=E,42nm,0.5s								
LPL	**La Plagne**	**6.83**	**130**	*e*Pn	**Pn**	**07 00 49.0**	**+0.7**		
LPL				*e*Sn	Sn	07 02 00.6	-5.3		
LPL				*e*Sg	**Sg**	**07 02 43.6**	**-3.7**		
LASF	**Ste Croix**	**6.85**	**152**	*e*Pn	**Pn**	**07 00 48.3**	**-0.1**		
	SNR=1.0								
LASF				*e*Sg	**Sg**	**07 02 43.5**	**-4.4**		
	comp=E,137nm,0.7s								
LASF	**Ste Croix**	**6.85**	**152**	*e*Pn	**Pn**	**07 00 48.3**	**-0.1**		
	SNR=1.0								
LASF				*e*Sg	**Sg**	**07 02 43.5**	**-4.4**		
	comp=E,69nm,0.7s								
LASF	**Ste Croix**	**6.85**	**152**	*e*Pn	**Pn**	**07 00 48.3**	**-0.1**		
LASF				*e*Sg	**Sg**	**07 02 43.5**	**-4.4**		
LPG	**La Plagne**	**6.85**	**130**	*e*Pn	**Pn**	**07 00 49.4**	**+0.8**		
LPG				*e*Sn	Sn	07 02 01.3	-5.3		
	comp=E,60nm,0.4s								
LPG				*e*Sg	**Sg**	**07 02 43.2**	**-4.8**		
	comp=E,127nm,0.7s								
LPG	**La Plagne**	**6.85**	**130**	*e*Pn	**Pn**	**07 00 49.4**	**+0.8**		
LPG				*e*Sn	Sn	07 02 01.3	-5.3		
LPG				*e*Sg	**Sg**	**07 02 43.2**	**-4.8**		
	comp=E,64nm,0.7s								
LPG	**La Plagne**	**6.85**	**130**	*e*Pn	**Pn**	**07 00 49.4**	**+0.8**		
LPG				*e*Sn	Sn	07 02 01.3	-5.3		
LPG				*e*Sg	**Sg**	**07 02 43.2**	**-4.8**		
ORIF	**Oris-en-Rattie**	**6.88**	**137**	*e*Pn	**Pn**	**07 00 48.9**	**0.0**		
	SNR=1.0								
ORIF				*e*Sn	Sn	07 02 01.1	-6.0		
	comp=E,36nm,0.3s								
ORIF				*e*Sg	**Sg**	**07 02 45.0**	**-4.1**		
	comp=E,143nm,0.7s								
ORIF	**Oris-en-Rattie**	**6.88**	**137**	*e*Pn	**Pn**	**07 00 48.9**	**0.0**		
	SNR=1.0								
ORIF				*e*Sn	Sn	07 02 01.1	-6.0		
ORIF				*e*Sg	**Sg**	**07 02 45.0**	**-4.1**		
	comp=E,72nm,0.7s								
ORIF	**Oris-en-Rattie**	**6.88**	**137**	*e*Pn	**Pn**	**07 00 48.9**	**0.0**		
ORIF				*e*Sn	Sn	07 02 01.1	-6.0		
ORIF				*e*Sg	**Sg**	**07 02 45.0**	**-4.1**		
OSSF	**Osses**	**6.95**	**184**	Pn	**Pn**	**07 00 47.5**	**-2.2**		
OSSF	**Osses**	**6.95**	**184**	Pn	**Pn**	**07 00 47.5**	**-2.2**		
SJPF	**Ste Jean**	**7.09**	**183**	*e*Pn	Pn	07 00 49.3	-2.3		
	SNR=1.0								
SJPF				*e*Sn	Sn	07 02 02.3	-10		
	comp=E,20nm,0.3s,SNR=1.0								
SJPF				*e*Sg	**Sg**	**07 02 50.6**	**-5.0**		
	comp=E,170nm,0.9s								
SJPF	**Ste Jean**	**7.09**	**183**	*e*Pn	Pn	07 00 49.3	-2.3		
	SNR=1.0								
SJPF				*e*Sn	Sn	07 02 02.3	-10		
	comp=E,10nm,0.3s,SNR=1.0								
SJPF				*e*Sg	**Sg**	**07 02 50.6**	**-5.0**		
	comp=E,85nm,0.9s								
SJPF	**Ste Jean**	**7.09**	**183**	*e*Pn	Pn	07 00 49.3	-2.3		
SJPF				*e*Sn	Sn	07 02 02.3	-10		
SJPF				*e*Sg	**Sg**	**07 02 50.6**	**-5.0**		
MTLF	**Montolieu**	**7.13**	**163**	*e*Pn	**Pn**	**07 00 50.8**	**-1.4**		
	SNR=1.0								
MTLF				*e*Sn	Sn	07 02 04.7	-8.3		
MTLF				*e*Sg	**Sg**	**07 02 52.6**	**-4.3**		
	comp=E,28nm,0.4s,SNR=1.0								
MTLF				*e*Sg	**Sg**	**07 02 52.6**	**-4.3**		
	comp=E,126nm,0.7s								
MTLF	**Montolieu**	**7.13**	**163**	*e*Pn	**Pn**	**07 00 50.8**	**-1.4**		
	SNR=1.0								
MTLF				*e*Sn	Sn	07 02 04.7	-8.3		
MTLF				*e*Sg	**Sg**	**07 02 52.6**	**-4.3**		
	comp=E,63nm,0.7s								
MTLF	**Montolieu**	**7.13**	**163**	*e*Pn	**Pn**	**07 00 50.8**	**-1.4**		
MTLF				*e*Sn	Sn	07 02 04.7	-8.3		
MTLF				*e*Sg	**Sg**	**07 02 52.6**	**-4.3**		
LARF	**Larrau**	**7.16**	**182**	Pn	Pn	07 00 50.3	-2.3		
LARF	**Larrau**	**7.16**	**182**	Pn	Pn	07 00 50.3	-2.3		
EPF	**Esparros**	**7.19**	**174**	*e*Pn	Pn	07 00 50.9	-2.2		
EPF				*e*Sn	Sn	07 02 05.2	-9.5		
	comp=E,30nm,0.2s,SNR=1.0								
EPF				*e*Sg	**Sg**	**07 02 54.0**	**-5.0**		
	comp=E,192nm,0.7s								
EPF	**Esparros**	**7.19**	**174**	*e*Pn	Pn	07 00 50.9	-2.2		
EPF				*e*Sn	Sn	07 02 05.2	-9.5		
EPF				*e*Sg	**Sg**	**07 02 54.0**	**-5.0**		
	comp=E,96nm,0.7s								
EPF	**Esparros**	**7.19**	**174**	*e*Pn	Pn	07 00 50.9	-2.2		
EPF				*e*Sn	Sn	07 02 05.2	-9.5		
EPF				*e*Sg	**Sg**	**07 02 54.0**	**-5.0**		
ETSF	**Etsaut**	**7.29**	**179**	*e*Pn	Pn	07 00 51.9	-2.6		
	SNR=1.0								
ETSF				*e*Sn	Sn	07 02 07.8	-9.3		
	comp=E,32nm,0.4s,SNR=1.0								
ETSF				*e*Sg	**Sg**	**07 02 56.9**	**-5.2**		
	comp=E,102nm,0.7s								
ETSF	**Etsaut**	**7.29**	**179**	*e*Pn	Pn	07 00 51.9	-2.6		
	SNR=1.0								
ETSF				*e*Sn	Sn	07 02 07.8	-9.3		
ETSF				*e*Sg	**Sg**	**07 02 56.9**	**-5.2**		
	comp=E,51nm,0.7s								
ETSF	**Etsaut**	**7.29**	**179**	*e*Pn	Pn	07 00 51.9	-2.6		
ETSF				*e*Sn	Sn	07 02 07.8	-9.3		
ETSF				*e*Sg	**Sg**	**07 02 56.9**	**-5.2**		
MBDF	**Montbardon**	**7.43**	**134**	*e*Pn	**Pn**	**07 00 58.1**	**+1.6**		
MBDF				*e*Sn	Sn	07 02 15.2	-5.5		
	comp=E,39nm,0.5s								
MBDF				*e*Sg	**Sg**	**07 03 01.3**	**-5.3**		
	comp=E,74nm,0.7s								
MBDF	**Montbardon**	**7.43**	**134**	*e*Pn	**Pn**	**07 00 58.1**	**+1.6**		
MBDF				*e*Sn	Sn	07 02 15.2	-5.5		
MBDF				*e*Sg	**Sg**	**07 03 01.3**	**-5.3**		
	comp=E,37nm,0.7s								
MBDF	**Montbardon**	**7.43**	**134**	*e*Pn	**Pn**	**07 00 58.1**	**+1.6**		
MBDF				*e*Sn	Sn	07 02 15.2	-5.5		
MBDF				*e*Sg	**Sg**	**07 03 01.3**	**-5.3**		
SMRF	**Simiane la Rot**	**7.53**	**143**	*e*Pn	**Pn**	**07 00 58.4**	**+0.6**		
SMRF				*e*Sn	Sn	07 02 16.6	-6.4		
	comp=E,12nm,0.4s								
SMRF				*e*Sg	Sg	07 03 05.1	-4.7		
	comp=E,79nm,0.8s								
SMRF	**Simiane la Rot**	**7.53**	**143**	*e*Pn	**Pn**	**07 00 58.4**	**+0.6**		
SMRF				*e*Sn	Sn	07 02 16.6	-6.4		
SMRF				*e*Sg	Sg	07 03 05.1	-4.7		
	comp=E,40nm,0.8s								
SMRF	**Simiane la Rot**	**7.53**	**143**	*e*Pn	**Pn**	**07 00 58.4**	**+0.6**		
SMRF				*e*Sn	Sn	07 02 16.6	-6.4		
SMRF				*e*Sg	Sg	07 03 05.1	-4.7		
DAVA	**Damuels**	**7.55**	**109**	*i* Pn	**Pn**	**07 01 00.7**	**+2.6**		
	comp=E,11nm,0.5s								
DAVA				*i* Sn	**Sn**	**07 02 19.8**	**-3.9**		
	comp=E,17nm,0.6s								
TUE	**Stuetta**	**7.64**	**115**	*e*Pn	**Pn**	**07 01 01.7**	**+2.3**		
TUE	**Stuetta**	**7.64**	**115**	*e*Pn	**Pn**	**07 01 01.7**	**+2.3**		
KPL	**Plockton**	**7.75**	**340**	*e*P	**Pn**	**07 01 03.0**	**+2.4**		
KPL	**Plockton**	**7.75**	**340**	*e*P	**Pn**	**07 01 03.0**	**+2.4**		
	SNR=47								
DAVOX	**Davos/Dischmat**	**7.79**	**112**	Pn	**Pn**	**07 01 03.9**	**+2.4**		
	comp=E,6.1nm,0.3s,baz=221,slow=5.4,SNR=21								
DAVOX				Sn	**Sn**	**07 02 26.7**	**-2.9**		
	comp=E,3.3nm,0.3s,baz=301,slow=18,SNR=2.1								
DAVOX				Lg	Lg	07 03 18.0			
	comp=E,2.2nm,0.3s,baz=156,slow=20,SNR=2.3								
DAVOX				LR	LR	07 04 37.5			
	comp=E,40nm,18.8s,baz=66,slow=42								
FUORN	**Ofenpass-Fuorn**	**8.10**	**112**	*e*Pn	**Pn**	**07 01 08.1**	**+2.3**		
FUORN	**Ofenpass-Fuorn**	**8.10**	**112**	*e*Pn	**Pn**	**07 01 08.1**	**+2.3**		
FETA	**Feichten**	**8.19**	**108**	*i* Pn	**Pn**	**07 01 10.2**	**+3.3**		
	comp=E,1.1nm,0.2s								
MOTA	**Moosalm**	**8.28**	**106**	*i* Pn	**Pn**	**07 01 10.5**	**+2.4**		
	comp=E,1.2nm,0.1s								
FRF	**La Foret Royal**	**8.31**	**140**	*e*Pn	**Pn**	**07 01 08.8**	**+0.5**		
	SNR=1.0								
FRF				*e*Sn	Sn	07 02 35.9	-6.1		
	comp=E,18nm,0.4s								
FRF	**La Foret Royal**	**8.31**	**140**	*e*Pn	**Pn**	**07 01 08.8**	**+0.5**		
	SNR=1.0								
FRF				*e*Sn	Sn	07 02 35.9	-6.1		
FRF	**La Foret Royal**	**8.31**	**140**	*e*Pn	**Pn**	**07 01 08.8**	**+0.5**		
FRF				*e*Sn	Sn	07 02 35.9	-6.1		
SBF	**Sospel**	**8.40**	**136**	*e*Pn	**Pn**	**07 01 10.9**	**+1.2**		
	SNR=1.0								
SBF				*e*Sn	Sn	07 02 38.8	-5.6		
	comp=E,49nm,0.4s								
SBF	**Sospel**	**8.40**	**136**	*e*Pn	**Pn**	**07 01 10.9**	**+1.2**		
	SNR=1.0								
SBF				*e*Sn	Sn	07 02 38.8	-5.6		
SBF	**Sospel**	**8.40**	**136**	*e*Pn	**Pn**	**07 01 10.9**	**+1.2**		
SBF				*e*Sn	Sn	07 02 38.8	-5.6		
NKC	**Novy Kostel**	**8.42**	**85**	*e*PN	**Pn**	**07 01 12.8**	**+2.9**		
NKC				*ex*	x	07 03 37.4			
NKC	**Novy Kostel**	**8.42**	**85**	Pn	**Pn**	**07 01 12.8**	**+2.9**		
LMR	**La Mourre**	**8.44**	**142**	*e*Pn	**Pn**	**07 01 10.6**	**+0.5**		
	SNR=1.0								
LMR				*e*Sn	Sn	07 02 38.9	-6.3		
	comp=E,6.6nm,0.2s								
LMR	**La Mourre**	**8.44**	**142**	*e*Pn	**Pn**	**07 01 10.6**	**+0.5**		
	SNR=1.0								
LMR				*e*Sn	Sn	07 02 38.9	-6.3		
LMR	**La Mourre**	**8.44**	**142**	*e*Pn	**Pn**	**07 01 10.6**	**+0.5**		
LMR				*e*Sn	Sn	07 02 38.9	-6.3		
MUD	**Monsted U'grnd**	**8.60**	**39**	*e*P	**Pn**	**07 01 13.6**	**+1.3**		
MUD				IAML		07 03 12.8			
	comp=Z,11nm,0.5s								
MUD	**Monsted U'grnd**	**8.60**	**39**	*e*P	**Pn**	**07 01 13.6**	**+1.3**		
	SNR=47								
WTTA	**Wattenberg**	**8.64**	**105**	*i* Pn	**Pn**	**07 01 16.7**	**+3.6**		
	comp=Z,1.5nm,0.2s								
CLL	**Collm**	**8.74**	**77**	*e*Pn	**Pn**	**07 01 17.0**	**+2.7**		
CLL				*e*Pg	Pg	07 01 55.0	-0.5		
CLL				*e*Sn	Sn	07 02 43.0	-10		
CLL				*e*		07 03 24.0			
CLL				*e*Sg	Sg	07 03 49.0	+0.4		
KHC	**Kasperske Hory**	**9.30**	**91**	*e*PN	**Pn**	**07 01 24.4**	**+2.4**		
KHC				*e*SN	**Sn**	**07 03 04.0**	**-2.5**		
KHC	**Kasperske Hory**	**9.30**	**91**	*e*Pn	**Pn**	**07 01 23.8**	**+1.8**		
KHC				*e*Sn	**Sn**	**07 03 05.5**	**-1.0**		
KHC	**Kasperske Hory**	**9.30**	**91**	*e*Pn	**Pn**	**07 01 23.8**	**+1.8**		
KHC				*e*Sn	**Sn**	**07 03 05.5**	**-1.0**		
BRG	**Berggiesshubel**	**9.34**	**80**	PN	**Pn**	**07 01 25.7**	**+3.3**		
SNART	**Snartemo**	**9.37**	**26⍓**	*e*P	**Pn**	**07 01 22.2**	**-0.6**		
SNART				*e*S	**Sn**	**07 03 01.9**	**-6.1**		
SNART				IAML		07 03 12.0			
	comp=Z,12nm,0.4s								
SNART	**Snartemo**	**9.37**	**26⍓**	*e*P	**Pn**	**07 01 22.2**	**-0.6**		
	SNR=47								
PBRG	**Braganca**	**9.38**	**209**	*e*P	**Pn**	**07 01 23.2**	**0.0**		
	comp=Z,16nm,1.5s								
PBRG	**Braganca**	**9.38**	**209**	*e*P	**Pn**	**07 01 23.2**	**0.0**		
	comp=Z,16nm,1.5s								
GEC2	**GERESS Array S**	**9.45**	**93**	*e*Pn	**Pn**	**07 01 25.9**	**+1.9**		
GEC2	**GERESS Array S**	**9.45**	**93**	*e*Pn	**Pn**	**07 01 25.9**	**+1.9**		
GERES	**GERESS Array B**	**9.45**	**93**	Pn	**Pn**	**07 01 24.9**	**+0.9**		
	comp=Z,1.2nm,0.3s,baz=282,slow=14,SNR=12								
GERES				Sn	**Sn**	**07 03 05.8**	**-4.3**		
	comp=Z,2.5nm,0.3s,baz=294,slow=24,SNR=6.5								
GERES				Lg	Lg	07 04 10.9			
	baz=271,slow=26,SNR=2.3								
GERES				LR	LR	07 05 35.3			
	comp=Z,33nm,19.0s,baz=284,slow=41								
GEA0	**GERESS Array S**	**9.45**	**93**	*e*Pn	**Pn**	**07 01 25.1**	**+1.0**		
GEA0				*e*Sn	**Sn**	**07 03 06.3**	**-3.8**		
GEA0	**GERESS Array S**	**9.45**	**93**	*e*Pn	**Pn**	**07 01 25.1**	**+1.0**		
GEA0				*e*Sn	**Sn**	**07 03 06.3**	**-3.8**		
STAV	**Stavanger**	**9.51**	**20**	*e*P	**Pn**	**07 01 24.3**	**-0.4**		
STAV				*e*S	**Sn**	**07 03 03.8**	**-7.5**		
STAV				IAML		07 03 11.4			
	comp=Z,9.0nm,0.5s								
STAV	**Stavanger**	**9.51**	**20**	*e*P	**Pn**	**07 01 24.3**	**-0.4**		
	SNR=47								
KMY	**Karmoy**	**9.66**	**18**	*e*P	**Pn**	**07 01 25.9**	**-1.0**		
KMY				*e*S	**Sn**	**07 03 08.9**	**-6.3**		
KMY				IAML		07 03 17.8			
	comp=Z,7.2nm,0.2s								
KMY	**Karmoy**	**9.66**	**18**	*e*P	**Pn**	**07 01 25.9**	**-1.0**		
	SNR=47								
HOMB	**Homborsund**	**9.71**	**30**	*e*P	**Pn**	**07 01 27.2**	**-0.2**		
HOMB	**Homborsund**	**9.71**	**30**	*e*P	**Pn**	**07 01 27.2**	**-0.2**		
	SNR=47								
PGAV	**Gavieira, Arco**	**9.77**	**216**	*e*P	**Pn**	**07 01 28.2**	**-0.3**		
	comp=Z,22nm,2.0s								
PGAV	**Gavieira, Arco**	**9.77**	**216**	*e*P	**Pn**	**07 01 28.2**	**-0.3**		
	comp=Z,22nm,2.0s								
KBA	**Koelnbreinsper**	**9.79**	**103**	*i* Pn	**Pn**	**07 01 32.4**	**+3.6**		
	comp=Z,1.5nm,0.2s								
KBA				*i* Sn	**Sn**	**07 03 13.8**	**-4.7**		
	comp=Z,2.5nm,0.3s								
LRW	**Lerwick**	**9.98**	**359**	*e*S	**Sn**	**07 03 15.4**	**-7.4**		
LRW				IAML		07 03 21.4			
	comp=Z,5.6nm,0.6s								
MVO	**Moncorvo**	**10.06**	**209**	*e*P	Pn	07 01 28.5	-3.9		
	comp=Z,18nm,1.7s								
MVO	**Moncorvo**	**10.06**	**209**	*e*P	Pn	07 01 28.5	-3.9		
	comp=Z,18nm,1.7s								
MOA	**Molln**	**10.09**	**98**	*i* Pn	**Pn**	**07 01 34.8**	**+2.1**		
	comp=Z,0.9nm,0.2s								
MOA				*i* Sn	**Sn**	**07 03 23.5**	**-2.2**		
	comp=Z,9.5nm,0.4s								
POLO	**Lamas de Olo**	**10.12**	**212**	*e*P	**Pn**	**07 01 32.0**	**-1.2**		
	comp=Z,10nm,1.7s								
POLO	**Lamas de Olo**	**10.12**	**212**	*e*P	**Pn**	**07 01 32.0**	**-1.2**		
	comp=Z,10nm,1.7s								
BLS5	**Blasjo**	**10.12**	**21**	*e*P	**Pn**	**07 01 31.9**	**-1.2**		
BLS5				*e*S	**Sn**	**07 03 20.3**	**-6.1**		
BLS5				IAML		07 03 45.4			
	comp=Z,6.2nm,0.7s								
PGF	**Pioggiola**	**10.14**	**135**	*e*Pn	**Pn**	**07 01 33.8**	**+0.2**		
	SNR=1.0								
PGF	**Pioggiola**	**10.14**	**135**	*e*Pn	**Pn**	**07 01 33.8**	**+0.2**		
	SNR=1.0								
PGF	**Pioggiola**	**10.14**	**135**	*e*Pn	**Pn**	**07 01 33.8**	**+0.2**		
MYKA	**Terra Mystica**	**10.16**	**105**	*i* Pn	**Pn**	**07 01 37.5**	**+3.7**		
	comp=Z,1.1nm,0.2s								
ODD1	**Odda**	**10.60**	**20⍓**	*e*P	**Pn**	**07 01 38.6**	**-1.1**		
ODD1				IAML		07 03 45.7			
	comp=Z,8.7nm,0.4s								
BSD	**Bornholm Skovb**	**10.67**	**56**	*e*P	**Pn**	**07 01 40.2**	**-0.4**		
BSD	**Bornholm Skovb**	**10.67**	**56**	*e*P	**Pn**	**07 01 40.2**	**-0.4**		
	SNR=47								
ESDC	**Sonseca Array**	**10.77**	**194**	Pn	**Pn**	**07 01 41.0**	**-1.1**		
	comp=Z,1.6nm,0.3s,baz=8.6,slow=14,SNR=8.0								
ESDC				Sn	Sn	07 03 32.0	-10		
	comp=Z,1.5nm,0.3s,baz=12,slow=23,SNR=4.9								
ASK	**Askoy**	**10.84**	**16**	*e*P	**Pn**	**07 01 41.6**	**-1.3**		
ASK				*e*S	Sn	07 03 33.5	-10		
ASK				IAML		07 03 44.9			
	comp=Z,4.5nm,0.6s								
CONA	**Conrad Observa**	**11.08**	**95**	*i* Sn	Sn	07 03 43.3	-6.9		
	comp=Z,2.6nm,0.2s								
VRAC	**Vranov**	**11.21**	**88**	Lg	Lg	07 05 03.8			
	comp=Z,0.5nm,0.3s,baz=178,slow=23,SNR=3.2								
VRAC				LR	LR	07 06 49.2			
	comp=Z,24nm,20.2s,baz=297,slow=41								
SUE	**Sulen**	**11.31**	**14**	*e*P	**Pn**	**07 01 47.9**	**-1.5**		
SUE				*e*S	Sn	07 03 45.6	-10		
SUE				IAML		07 03 55.0			
	comp=Z,7.1nm,0.6s								
**PCBR

MEX 14 07:46:36.8±0.5, 14°50N×92°52W, h7km±62km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.81**	**12**	*eP*	Pn	07 47 05.4	-3.2
CCIG				*eS*	Sn	07 47 27.0	-4.9
TGIG		**2.34**	**346**	*eP*	Pn	07 47 12.3	-3.5
TGIG				*eS*	Sn	07 47 40.5	-4.3

IDC 14 07:48:40.6±1.4, 22°.25S×174°.98W, h0km, mb3.9/7, mb1 4.3/8, mb1mx4.0/37, mbtmp4.0/8, ML4.3/1, MS3.0/1, Ms1 3.0/1, ms1mx2.6/28, Error ellipse: s-maj=65.5km s-min=22.3km az=147.0

ISCJB 14 07:48:45.2±1.3, 21°.8S±0°.3×175°.3W±0°.3, h33km, mb3.9/7, Error ellipse: s-maj=48.1km s-min=16.7km az=139.5

ISC 14 07:48:46.7±1.1, 21°.8S±0°.2×175°.1W±0°.3, h33km, n10, σ1°.9±41°/12, mb4.0/7, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**8.51**	**23**	Pn	**Pn**	**07 50 47.9**	**+0.1**
	3.0nm,0.3s,baz=32,slow=2.0,SNR=4.4						
AFI				Sn	**Sn**	**07 52 21.1**	**-1.7**
	4.0nm,0.3s,baz=95,slow=18,SNR=3.0						
AFI				LR	LR	07 53 48.6	
	comp=Z,98nm,20.4s,baz=114,slow=35						
URZ	**Urewera**	**17.68**	**200**	Sn	Sn	07 55 34.4	-32
	0.3nm,0.3s,baz=232,slow=21,SNR=4.4						
ASAR	**Alice Springs**	**46.83**	**259**	P	**P**	**07 57 12.7**	**-1.2**
	1.5nm,0.7s,baz=89,slow=8.2,SNR=14						
ASAR				PcP	**PcP**	**07 58 46.3**	**-0.3**
	0.3nm,0.8s,baz=101,slow=4.8,SNR=2.9						
WRA	**Warramunga Arr**	**47.08**	**263**	P	**P**	**07 57 14.3**	**-1.4**
	1.0nm,0.7s,baz=101,slow=8.2,SNR=20						
WRA				PcP	**PcP**	**07 58 47.1**	**-0.4**
	0.6nm,0.8s,baz=97,slow=4.0,SNR=2.9						
PETK	**Petropavlovsk-**	**78.27**	**344**	P	**P**	**08 00 45.5**	**+2.4**
	1.9nm,0.7s,baz=116,slow=9.8,SNR=4.2						
TXAR	**Lajitas Array**	**85.55**	**56**	P	**P**	**08 01 21.8**	**-0.2**
	0.8nm,0.9s,baz=216,slow=6.2,SNR=8.1						
PDAR	**Pinedale Array**	**88.13**	**42**	P	**P**	**08 01 33.5**	**-0.9**
	0.3nm,0.6s,baz=223,slow=4.9,SNR=3.4						
ILAR	**Eielson Array**	**89.05**	**12**	P	**P**	**08 01 40.0**	**+2.1**
	0.6nm,0.8s,baz=223,slow=6.1,SNR=4.4						
YKA	**Yellowknife Ar**	**96.62**	**24**	P	**P**	**08 02 12.3**	**-0.6**
	0.3nm,0.7s,baz=224,slow=5.9,SNR=3.6						
BRTR	**Keskin Array B**	**149.71**	**313**	PKPbc	**PKPbc**	**08 08 33.7**	**+0.1**
	0.8nm,0.8s,baz=60,slow=3.5,SNR=3.6						

NIED 14 07:51:00, 39°.20N×142°.40E, h32km, Mw3.6 Best double couple: M0 2.60000×10^14 NP1:φs269.00000°, δ29.00000°, λ-172.00000°. NP2:φs172.00000°, δ86.00000°, λ-61.00000°.

JMA 14 07:51:52.0±0.1, 39°.21N×142°.40E, h32km±1km, M3.8

IDC 14 07:51:56.6±2.4, 39°.10N×142°.40E, h72km±22km, mb3.3/8, mb1 3.5/10, mb1mx3.3/55, mbtmp3.6/10, MS3.1/3, Ms1 3.2/3, ms1mx2.6/28, Error ellipse: s-maj=27.8km s-min=14.2km az=96.0

ISC 14 07:51:51.0±2.0, 39°.20N±0°.04×142°.40E±0°.07, h15km±11km, n28, σ2°.8±4°.04/29, mb3.8/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**259**	P	**Pb**	**07 52 03.5**	**+0.6**
OFUJ				S	**Sb**	**07 52 11.5**	**+0.5**
MIYJ	**Miyakonagasawa**	**0.59**	**310**	P	**Pb**	**07 52 03.4**	**+0.3**
MIYJ				S	**Sb**	**07 52 11.2**	**-0.1**
JTH	**Tanohata**	**0.85**	**331**	P	**Pg**	**07 52 07.4**	**-0.1**
JOM	**Ohasama**	**0.91**	**288**	P	**Pb**	**07 52 08.5**	**+0.1**
JOM				S	**Sg**	**07 52 20.4**	**0.0**
JMK	**Ichinoseki**	**0.95**	**256**	P	**Pb**	**07 52 09.2**	**0.0**
JMK				S	**Sb**	**07 52 21.6**	**0.0**
JIO	**Ouri**	**1.11**	**228**	P	**Pb**	**07 52 10.9**	**-1.0**
JIO				S	**Sb**	**07 52 24.6**	**-1.5**
JKZ	**Kuzumaki**	**1.14**	**314**	P	**Pb**	**07 52 12.2**	**-0.3**
JKZ				S	**Sb**	**07 52 26.7**	**-0.6**
JANG	**Nango**	**1.36**	**330**	P	**Pn**	**07 52 15.0**	**-0.5**
JANG				S	**Sn**	**07 52 32.1**	**-1.2**
JRG	**Rokugo**	**1.39**	**279**	P	**Pn**	**07 52 16.2**	**+0.3**
MAT	**Matsushiro**	**4.25**	**233**	P	**Pn**	**07 52 58.5**	**+3.3**
MAT				*eS*	**Sn**	**07 53 48.4**	**+3.9**
MJAR	**Matsushiro Arr**	**4.25**	**233**	P	**Pn**	**07 52 58.6**	**+3.4**
	3.0nm,0.3s,baz=44,slow=11,SNR=37						
MJAR				LR	LR	07 54 46.5	
	comp=Z,95nm,18.6s,baz=65,slow=41						
ASAJ	**Asahikawa**	**4.92**	**2**	P	**Pn**	**07 53 07.6**	**+3.2**
	baz=223,slow=6.7						
ASAJ				S	**Sn**	**07 54 07.1**	**+6.1**
	baz=72,slow=0.0						
KSRS	**Korea Array**	**11.51**	**266**	LR	LR	07 58 28.9	
	comp=Z,48nm,18.3s,baz=135,slow=34						
H11N2	**WAKE ISLAND Hy**	**28.68**	**126**	T	T	08 28 11.3	
	baz=318,slow=75,SNR=67						
H11N1	**WAKE ISLAND Hy**	**28.68**	**126**	T	T	08 28 09.3	
	baz=318,slow=75,SNR=46						
H11N3	**WAKE ISLAND Hy**	**28.69**	**126**	T	T	08 28 09.9	
	baz=318,slow=75,SNR=36						
H11S1	**WAKE ISLAND Hy**	**29.46**	**127**	T	T	08 29 14.4	
	baz=319,slow=76,SNR=7.7						
H11S3	**WAKE ISLAND Hy**	**29.47**	**127**	T	T	08 29 20.6	
	baz=319,slow=76,SNR=7.5						
H11S2	**WAKE ISLAND Hy**	**29.48**	**127**	T	T	08 29 17.8	
	baz=319,slow=76,SNR=6.2						
ZALV	**Zalesovo Beam**	**41.07**	**311**	P	**P**	**07 59 33.4**	**-0.4**
	0.7nm,0.4s,baz=94,slow=12,SNR=2.7						
CMAR	**Chiang Mai Arr**	**42.82**	**254**	LR	LR	08 19 00.1	
	comp=Z,76nm,18.3s,baz=246,slow=38						
MKAR	**Makanchi Array**	**43.67**	**300**	P	**P**	**07 59 54.4**	**-0.7**
	0.3nm,0.6s,baz=92,slow=8.7,SNR=3.0						
KURBB	**Kurchatov Arra**	**45.32**	**306**	P	**P**	**08 00 07.1**	**-1.1**
	0.8nm,0.4s,baz=80,slow=8.6,SNR=5.4						
ILAR	**Eielson Array**	**47.26**	**33**	P	**P**	**08 00 22.9**	**-0.3**
	0.5nm,0.6s,baz=262,slow=5.8,SNR=7.4						
BVAR	**Borovoye Array**	**49.72**	**311**	P	**P**	**08 00 41.4**	**-1.0**
	0.8nm,0.5s,baz=251,slow=39,SNR=4.9						
WRA	**Warramunga Arr**	**59.31**	**189**	P	**P**	**08 01 50.4**	**-1.9**
	0.4nm,0.4s,baz=6.0,slow=7.1,SNR=14						
ASAR	**Alice Springs**	**63.04**	**189**	P	**P**	**08 02 15.0**	**-2.5**
	0.1nm,0.4s,baz=345,slow=6.7,SNR=3.0						
FINES	**FINESS Array B**	**67.27**	**332**	P	**P**	**08 02 43.7**	**-0.9**
	1.4nm,0.7s,baz=26,slow=7.7,SNR=2.9						

CASC 14 07:52:33.5±2.0, 11°.88N×88°.09W, h17km±44km, MD3.9, ML3.0, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNGN	**Cerro Negro**	**1.50**	**66**	*eP*	Pn	07 52 58.8	-0.9
CNGN				AML	AML	07 53 27.9	
	comp=N,197nm,0.5s						
COPN	**Copaltepe**	**1.50**	**78**	*eP*	Pn	07 53 00.0	+0.4
COPN				*eS*	Sn	07 53 07.9	-11
PACA	**Pacayal**	**1.59**	**352**	*eP*	Pn	07 53 01.0	-0.2
MOMN	**Momotombo**	**1.61**	**71**	*eP*	Pn	07 53 00.7	-0.5
XAVN	**Gruta Xavier**	**1.75**	**81**	*eP*	Pn	07 53 03.1	-0.1
TISN	**Laguna Tiscapa**	**1.80**	**82**	*eP*	Pn	07 53 02.5	-1.3
MGAN	**Managua**	**1.82**	**81**	*eP*	Pn	07 53 04.0	-0.1
SNVI	**San Vicente**	**1.87**	**337**	*eS*	Sb	07 53 30.9	+0.4
LFRS	**El Faro**	**1.97**	**331**	*eP*	Pn	07 53 06.4	+0.1
ESTN	**Estel**	**2.08**	**54**	*eP*	Pn	07 53 07.4	-0.3
LFU	**La Fuente**	**2.11**	**332**	*eS*	Sn	07 53 33.3	-0.7
CONN	**Concepcion**	**2.44**	**97**	*eP*	Pn	07 53 13.1	+0.5
SBLS	**San Blas**	**2.45**	**323**	*eS*	Sn	07 53 43.5	+0.8

IDC 14 08:07:23.8±3.2, 53°.77N×88°.11E, h0km, mb1 2.7/2, mb1mx2.7/56, mbtmp2.7/2, ML2.4/2, Error ellipse: s-maj=24.9km s-min=17.5km az=60.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.96**	**277**	*i*		08 19 56.2	
	baz=91,slow=325,SNR=3.1						
ZALV	**Zalesovo Beam**	**1.96**	**277**	Pn	Pn	08 07 58.8	+0.6
	1.7nm,0.3s,baz=93,slow=13,SNR=22						
ZALV				Lg	Lg	08 08 25.9	
	2.2nm,0.3s,baz=93,slow=25,SNR=18						
KURBB	**Kurchatov Arra**	**6.68**	**246**	Pn	Pn	08 09 03.6	+0.5
	0.1nm,0.3s,baz=62,slow=14,SNR=3.0						
KURBB				Sn	Sn	08 10 19.5	-0.3
	0.0nm,0.3s,baz=36,slow=13,SNR=3.0						
KURBB				Lg	Lg	08 10 55.6	
	0.0nm,0.3s,baz=59,slow=30,SNR=6.2						
MKAR	**Makanchi Array**	**7.91**	**210**	Pn	Pn	08 09 21.1	+1.1
	0.1nm,0.3s,baz=24,slow=14,SNR=2.9						
MKAR				Sn	Sn	08 10 49.3	-0.9
	0.0nm,0.3s,baz=16,slow=16,SNR=3.4						
MKAR				Lg	Lg	08 11 33.7	
	0.0nm,0.3s,baz=20,slow=34,SNR=3.1						

ISCJB 14 08:11:26.4±0.5, 38°.21N±0°.04×27°.37E±0°.04, h15km±6km, Error ellipse: s-maj=6.8km s-min=4.9km az=20.0

CSEM 14 08:11:26.6±0.1, 38°.21N×27°.37E, h15km, ML2.5, Error ellipse: s-maj=2.5km s-min=1.9km az=36.0

ISK 14 08:11:26.4, 38°.20N×27°.37E, h10km, ML2.5

DDA 14 08:11:26.6, 38°.18N×27°.34E, h7km, Ml2.8

ISC 14 08:11:26.3±1.0, 38°.19N±0°.03×27°.37E±0°.03, h16km±10km, n18, σ0°.38/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZM	**Izmir**	**0.23**	**338**	PG	**Pg**	**08 11 31.8**	**+0.3**
IZM				*eSG*	**Sg**	**08 11 34.7**	**-0.4**
IZM	**Izmir**	**0.23**	**338**	*i* Pg	**Pg**	**08 11 31.8**	**+0.3**
IZM				*eSg*	**Sg**	**08 11 34.7**	**-0.4**
DGB	**˜zmir**	**0.41**	**251**	*i* P	**Pg**	**08 11 34.9**	**+0.3**
DGB				*i* S	**Sg**	**08 11 40.2**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.48**	**120**	PG	**Pb**	**08 11 36.3**	**-0.1**
AYDB				*eSG*	**Sb**	**08 11 43.3**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.48**	**120**	*i* Pg	**Pb**	**08 11 36.3**	**-0.1**
AYDB				*eSg*	**Sb**	**08 11 43.3**	**+0.1**
GCAM	**G?zelcaml?**	**0.50**	**192**	*i* P	**Pb**	**08 11 36.5**	**-0.2**
GCAM				*i* S	**Sb**	**08 11 43.5**	**-0.2**
URLA	**Izmir**	**0.63**	**286**	*i* P	**Pg**	**08 11 38.9**	**+0.1**
URLA				*i* S	**Sg**	**08 11 47.0**	**-0.2**
URLA	**Izmir**	**0.63**	**286**	P	**Pg**	**08 11 38.9**	**+0.1**
URLA				S	**Sg**	**08 11 47.0**	**-0.2**
AKS	**Akhisar**	**0.77**	**27**	*e*PG	**Pb**	**08 11 41.6**	**+0.2**
AKS	**Akhisar**	**0.77**	**27**	*e*Pg	**Pb**	**08 11 41.6**	**+0.2**
DKL	**Dikili**	**0.95**	**338**	*e*PG	**Pb**	**08 11 44.8**	**+0.3**
DKL	**Dikili**	**0.95**	**338**	*e*Pg	**Pb**	**08 11 44.8**	**+0.3**
MANT	**Manisa**	**0.98**	**72**	*i* P	**Pb**	**08 11 45.0**	**-0.1**
MANT				*i* S	**Sb**	**08 11 56.8**	**-1.1**
MANT	**Manisa**	**0.98**	**72**	P	**Pb**	**08 11 45.0**	**-0.1**
KULA	**Kula-Manisa**	**1.07**	**72**	*e*PG	**Pg**	**08 11 47.4**	**+0.4**
KULA	**Kula-Manisa**	**1.07**	**72**	*e*Pg	**Pg**	**08 11 47.4**	**+0.4**
BODT	**Bodrum**	**1.12**	**182**	*e*PN	**Pg**	**08 11 48.6**	**+0.5**
BODT	**Bodrum**	**1.12**	**182**	*e*Pn	**Pg**	**08 11 48.6**	**+0.5**

ISCJB 14 08:15:44.0±0.3, 36°.75N±0°.02×28°.13E±0°.03, h92km±4km, Error ellipse: s-maj=3.9km s-min=3.1km az=157.4

ATH 14 08:15:44.7, 36°.77N×28°.09E, h85km±3km, ML3.1/5, Error ellipse: s-maj=3.9km s-min=1.3km az=108.0

DDA 14 08:15:45.3, 36°.90N×28°.28E, h39km, Ml3.5

CSEM 14 08:15:45.5±0.1, 36°.74N×28°.14E, h80km, ML3.1, Error ellipse: s-maj=3.3km s-min=2.7km az=73.0

ISK 14 08:15:45.6, 36°.80N×28°.11E, h77km, ML3.1

HLW 14 08:15:46.0, 36°.39N×28°.27E, h10km±8km, Md4.0, Ml3.8

THE 14 08:15:47.1, 36°.79N×28°.12E, h71km±5km, ML3.2/8, Error ellipse: s-maj=5.8km s-min=1.2km az=157.0

ISC 14 08:15:44.7±1.1, 36°.74N±0°.03×28°.13E±0°.03, h81km±7km, n109, σ1°.46/162, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TURN	**Turunc**	**0.40**	**71**	*i* P	**Pn**	**08 15 56.8**	**-0.9**
TURN				*i* S	**Sn**	**08 16 04.5**	**-2.8**
YER	**Yerkesik**	**0.41**	**17**	PG	**Pn**	**08 15 59.0**	**+1.1**
YER				*e*SG	**Sn**	**08 16 07.7**	**+0.1**
YER	**Yerkesik**	**0.41**	**17**	*i* Pg	**Pn**	**08 15 59.0**	**+1.1**
YER				*e*Sg	**Sn**	**08 16 07.7**	**+0.1**
DALY	**Dalyan (Mu˘la**	**0.42**	**80**	*e*PG	**Pn**	**08 15 59.0**	**+1.1**
DALY				*e*SG	**Sn**	**08 16 08.7**	**+1.1**
DALY	**Dalyan (Mu˘la**	**0.42**	**80**	*e*Pg	**Pn**	**08 15 59.0**	**+1.1**
DALY				*e*Sg	**Sn**	**08 16 08.7**	**+1.1**
ARG	**Arkhangelos**	**0.53**	**181**	P	**Pn**	**08 16 00.3**	**+1.5**
ARG				S	**Sn**	**08 16 10.0**	**+0.9**
ARG	**Arkhangelos**	**0.53**	**181**	P	**Pn**	**08 16 00.2**	**+1.5**
ARG				S	**Sn**	**08 16 10.4**	**+1.3**
MLSB	**Milas**	**0.62**	**333**	*e*PG	**Pn**	**08 16 00.6**	**+0.9**
MLSB	**Milas**	**0.62**	**333**	*e*Pg	**Pn**	**08 16 00.6**	**+0.9**
BDRM	**Kayabasi**	**0.64**	**300**	*i* P	**Pn**	**08 16 00.4**	**+0.6**
BDRM				*i* S	**Sn**	**08 16 10.6**	**-0.4**
BDRM	**Kayabasi**	**0.64**	**300**	P	**Pn**	**08 16 00.4**	**+0.6**
BDRM				S	**Sn**	**08 16 10.6**	**-0.4**
BODT	**Bodrum**	**0.73**	**296**	*e*PG	**Pn**	**08 16 01.6**	**+0.8**
BODT	**Bodrum**	**0.73**	**296**	*e*Pg	**Pn**	**08 16 01.6**	**+0.8**
FETY	**Fethiye**	**0.77**	**98**	*e*PG	**Pn**	**08 16 02.9**	**+1.7**
FETY	**Fethiye**	**0.77**	**98**	*e*Pg	**Pn**	**08 16 02.9**	**+1.7**
NIS1	**Nisyros Isl.**	**0.78**	**260**	P	**Pn**	**08 16 02.4**	**+1.1**
NIS1				S	**Sn**	**08 16 14.2**	**+0.6**
NIS1	**Nisyros Isl.**	**0.78**	**260**	P	**Pn**	**08 16 02.1**	**+0.8**
NIS1				S	**Sn**	**08 16 14.2**	**+0.6**
NIS1	**Nisyros Isl.**	**0.78**	**260**	P	**Pn**	**08 16 02.1**	**+0.8**
DNZL	**Cakiroluk**	**1.19**	**37**	*i* P	**Pn**	**08 16 07.6**	**+1.2**
DNZL	**Cakiroluk**	**1.19**	**37**	P	**Pn**	**08 16 07.6**	**+1.2**
GCAM	**G?zelcaml?**	**1.19**	**323**	*i* P	**Pn**	**08 16 07.2**	**+1.1**
GCAM				*i* S	**Sn**	**08 16 22.3**	**+0.1**
GCAM	**G?zelcaml?**	**1.19**	**323**	P	**Pn**	**08 16 07.2**	**+1.1**
GCAM				S	**Sn**	**08 16 22.3**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**351**	*e*PN	**Pn**	**08 16 07.7**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**351**	*e*Pn	**Pn**	**08 16 07.7**	**+1.1**
DENT	**Denizli**	**1.24**	**35**	*e*PN	**Pn**	**08 16 08.0**	**+1.2**
DENT	**Denizli**	**1.24**	**35**	*e*Pn	**Pn**	**08 16 08.0**	**+1.2**
AKAS	**Kas**	**1.29**	**113**	*i* P	**Pn**	**08 16 09.0**	**+1.5**
AKAS				*i* S	**Sn**	**08 16 25.7**	**+1.0**
AKAS	**Kas**	**1.29**	**113**	P	**Pn**	**08 16 09.0**	**+1.5**
AKAS				S	**Sn**	**08 16 25.7**	**+1.0**
KSL	**Kastellorizon**	**1.31**	**116**	P	**Pn**	**08 16 09.1**	**+1.5**
KSL				S	**Sn**	**08 16 25.8**	**+0.9**
KSL	**Kastellorizon**	**1.31**	**116**	P	**Pn**	**08 16 08.6**	**+0.9**
SMG	**Samos**	**1.41**	**313**	P	**Pn**	**08 16 09.7**	**+0.8**
SMG				S	**Sn**	**08 16 26.5**	**-0.7**
SMG	**Samos**	**1.41**	**313**	P	**Pn**	**08 16 09.7**	**+0.8**
SMG				S	**Sn**	**08 16 26.5**	**-0.7**
SMG	**Samos**	**1.41**	**313**	P	**Pn**	**08 16 09.8**	**+0.9**
SMG				S	**Sn**	**08 16 25.9**	**-1.3**
SMG				AML	AML	08 16 27.7	
	comp=E,940μm,0.2s						
SMG				AML	AML	08 16 29.0	
	comp=N,943μm,0.3s						
ELL	**Elmali**	**1.43**	**89**	*e*PN	**Pn**	**08 16 11.3**	**+2.1**
ELL	**Elmali**	**1.43**	**89**	*e*Pn	**Pn**	**08 16 11.3**	**+2.1**
KARP	**Karpathos**	**1.43**	**214**	*e*PN	**Pn**	**08 16 11.3**	**+2.1**
KARP	**Karpathos**	**1.43**	**214**	P	**Pn**	**08 16 10.8**	**+1.6**
KARP				S	**Sn**	**08 16 28.8**	**+1.2**
KARP	**Karpathos**	**1.43**	**214**	P	**Pn**	**08 16 10.8**	**+1.6**
KARP	**Karpathos**	**1.43**	**214**	*e*Pn	**Pn**	**08 16 11.3**	**+2.1**
KARP				S	**Sn**	**08 16 27.9**	**+0.3**
KARP	**Karpathos**	**1.43**	**214**	P	**Pn**	**08 16 11.2**	**+2.0**
KARP				S	**Sn**	**08 16 27.9**	**+0.3**
KARP				AML	AML	08 16 30.1	
	comp=E,3168μm,0.1s						
KARP				AML	AML	08 16 30.7	
	comp=N,1702μm,0.1s						
DGB	**˜zmir**	**1.64**	**323**	*i* P	**Pn**	**08 16 12.6**	**+0.8**
DGB				*i* S	**Sn**	**08 16 31.1**	**-1.3**
MANT	**Manisa**	**1.78**	**11**	*i* P	**Pn**	**08 16 13.0**	**-0.9**
MANT				*i* S	**Sn**	**08 16 34.6**	**-1.4**
MANT	**Manisa**	**1.78**	**11**	P	**Pn**	**08 16 13.0**	**-0.9**
MANT				S	**Sn**	**08 16 34.6**	**-1.4**
IZM	**Izmir**	**1.79**	**338**	*e*PN	**Pn**	**08 16 14.6**	**+0.7**
IZM	**Izmir**	**1.79**	**338**	*e*Pn	**Pn**	**08 16 14.6**	**+0.7**
KULA	**Kula-Manisa**	**1.82**	**13**	*e*PN	**Pn**	**08 16 15.0**	**+0.7**
KULA	**Kula-Manisa**	**1.82**	**13**	P	**Pn**	**08 16 15.4**	**+1.1**
KULA				S	**Sn**	**08 16 36.3**	**-0.4**
KULA	**Kula-Manisa**	**1.82**	**13**	*e*Pn	**Pn**	**08 16 15.0**	**+0.7**
KULA	**Kula-Manisa**	**1.82**	**13**	P	**Pn**	**08 16 15.4**	**+1.1**
KULA				S	**Sn**	**08 16 36.3**	**-0.4**
KHL	**Karahalli**	**1.93**	**35**	*e*PN	**Pn**	**08 16 16.8**	**+1.1**
KHL	**Karahalli**	**1.93**	**35**	*e*Pn	**Pn**	**08 16 16.8**	**+1.1**
URLA	**Izmir**	**2.02**	**323**	*i* P	**Pn**	**08 16 17.3**	**+0.3**
URLA				*i* S	**Sn**	**08 16 41.0**	**-0.5**
APE	**Apeiranthos**	**2.11**	**280**	*e*PN	**Pn**	**08 16 19.3**	**+1.2**
APE	**Apeiranthos**	**2.11**	**280**	P	**Pn**	**08 16 20.0**	**+1.9**
APE				S	**Sn**	**08 16 43.9**	**+0.3**
APE	**Apeiranthos**	**2.11**	**280**	P	**Pn**	**08 16 18.9**	**+0.8**
APE	**Apeiranthos**	**2.11**	**280**	*e*Pn	**Pn**	**08 16 19.3**	**+1.2**
APE				S	**Sn**	**08 16 43.9**	**+0.3**
APE	**Apeiranthos**	**2.11**	**280**	P	**Pn**	**08 16 18.9**	**+0.8**
APE				S	**Sn**	**08 16 43.7**	**+0.1**
AKS	**Akhisar**	**2.15**	**353**	*e*PN	**Pn**	**08 16 19.8**	**+1.2**
AKS	**Akhisar**	**2.15**	**353**	*e*Pn	**Pn**	**08 16 19.8**	**+1.2**
ZKR	**Zakros**	**2.25**	**224**	P	**Pn**	**08 16 22.4**	**+2.4**
ZKR	**Zakros**	**2.25**	**224**	P	**Pn**	**08 16 22.4**	**+2.4**
ZKR				S	**Sn**	**08 16 47.3**	**+0.4**
ZKR	**Zakros**	**2.25**	**224**	P	**Pn**	**08 16 21.8**	**+1.8**
ZKR				S	**Sn**	**08 16 47.3**	**+0.4**
THR5	**Thira Island,**	**2.27**	**263**	P	**Pn**	**08 16 22.8**	**+2.7**
THR5	**Thira Island,**	**2.27**	**263**	P	**Pn**	**08 16 22.8**	**+2.7**
CHOS	**Chios island**	**2.33**	**315**	P	**Pn**	**08 16 22.4**	**+1.3**
CHOS				S	**Sn**	**08 16 48.1**	**-0.8**
CHOS	**Chios island**	**2.33**	**315**	P	**Pn**	**08 16 21.8**	**+0.7**
CHOS				S	**Sn**	**08 16 48.8**	**-0.1**
CHOS	**Chios island**	**2.33**	**315**	P	**Pn**	**08 16 21.8**	**+0.7**
CHOS				S	**Sn**	**08 16 48.8**	**-0.1**
CHOS				AML	AML	08 16 50.3	
	comp=N,258μm,0.4s						
CHOS				AML	AML	08 16 50.3	
	comp=E,368μm,0.3s						
DEMI	**Demirci**	**2.34**	**11**	*i* P	**Pn**	**08 16 22.1**	**+0.8**
DEMI				*i* S	**Sn**	**08 16 48.8**	**-0.4**
DEMI	**Demirci**	**2.34**	**11**	P	**Pn**	**08 16 22.1**	**+0.8**
DEMI				S	**Sn**	**08 16 48.8**	**-0.4**
DKL	**Dikili**	**2.52**	**338**	*e*PN	**Pn**	**08 16 25.0**	**+1.5**
DKL	**Dikili**	**2.52**	**338**	*e*Pn	**Pn**	**08 16 25.0**	**+1.5**
NPS	**Neapolis**	**2.52**	**235**	P	**Pn**	**08 16 25.3**	**+1.7**
NPS				S	**Sn**	**08 16 54.1**	**+0.6**
NPS	**Neapolis**	**2.52**	**235**	P	**Pn**	**08 16 24.3**	**+0.6**
NPS				S	**Sn**	**08 16 54.1**	**+0.6**
NPS	**Neapolis**	**2.52**	**235**	P	**Pn**	**08 16 24.3**	**+0.6**
NPS				S	**Sn**	**08 16 52.4**	**-1.0**
LAST	**Lasithi**	**2.67**	**235**	P	**Pn**	**08 16 26.0**	**+0.3**
LAST	**Lasithi**	**2.67**	**235**	P	**Pn**	**08 16 26.0**	**+0.3**
PRK	**Paraskevi**	**2.90**	**330**	P	**Pn**	**08 16 30.3**	**+1.6**
PRK	**Paraskevi**	**2.90**	**330**	P	**Pn**	**08 16 29.3**	**+0.6**
PRK				S	**Sn**	**08 17 01.9**	**-0.6**
PRK	**Paraskevi**	**2.90**	**330**	P	**Pn**	**08 16 29.3**	**+0.6**
PRK				S	**Sn**	**08 17 01.9**	**-0.6**
IDI	**Anoyia**	**3.00**	**242**	P	**Pn**	**08 16 32.0**	**+1.8**
IDI				S	**Sn**	**08 17 05.1**	**-0.1**
IDI	**Anoyia**	**3.00**	**242**	P	**Pn**	**08 16 32.0**	**+1.8**
IDI				S	**Sn**	**08 17 05.1**	**-0.1**
IDI				AML	AML	08 17 09.1	
	comp=E,72μm,0.3s						
IDI				AML	AML	08 17 13.7	
	comp=N,58μm,0.3s						
SIGR	**SIGRI**	**3.05**	**325**	P	**Pn**	**08 16 31.8**	**+1.1**
SIGR	**SIGRI**	**3.05**	**325**	P	**Pn**	**08 16 31.8**	**+1.1**
SIGR				S	**Sn**	**08 17 05.4**	**-0.8**
SIGR	**SIGRI**	**3.05**	**325**	P	**Pn**	**08 16 32.8**	**+2.1**
SIGR				S	**Sn**	**08 17 05.4**	**-0.8**
SIGR				AML	AML	08 17 06.5	
	comp=N,199μm,0.3s						
SIGR				AML	AML	08 17 06.5	
	comp=E,255μm,0.4s						
SIVA	**Sivas**	**3.20**	**238**	P	**Pn**	**08 16 36.3**	**+3.5**
SIVA	**Sivas**	**3.20**	**238**	P	**Pn**	**08 16 36.3**	**+3.5**
BOZC	**Bozcaada**	**3.50**	**333**	*i* P	**Pn**	**08 16 35.6**	**-1.2**
BOZC				*i* S	**Sn**	**08 17 16.0**	**-1.1**
SMTH	**Samothraki Isl**	**4.24**	**332**	P	**Pn**	**08 16 48.5**	**+1.6**
SMTH				S	**Sn**	**08 17 33.9**	**-1.3**
SMTH	**Samothraki Isl**	**4.24**	**332**	P	**Pn**	**08 16 48.5**	**+1.6**
SMTH				S	**Sn**	**08 17 33.9**	**-1.3**
SLUM	**Salum**	**5.77**	**206**	P	**Pn**	**08 17 08.3**	**+0.5**
	baz=209						
SLUM				AMP

baz=315,slow=76,SNR=160
H11S2 WAKE ISLAND Hy 28.94 123 T T 09 01 16.7
baz=315,slow=76,SNR=123
ZALV Zalesovo Beam 41.86 312 P **P 08 32 56.9 -0.5**
0.7nm,0.3s,baz=121,slow=7.4,SNR=1.7
MKAR Makanchi Array 44.05 302 P **P 08 33 15.7 +0.4**
0.2nm,0.5s,baz=94,slow=8.7,SNR=2.2
KURBB Kurchatov Arra 45.94 308 P **P 08 33 30.5 +0.3**
0.4nm,0.3s,baz=85,slow=8.2,SNR=5.4
ILAR Eielson Array 49.57 32 P **P 08 33 57.9 -0.3**
0.4nm,0.8s,baz=278,slow=5.3,SNR=4.4
WRA Warramunga Arr 57.02 188 P **P 08 34 54.4 +1.0**
0.3nm,0.4s,baz=6.1,slow=7.4,SNR=6.0
ASAR Alice Springs 60.75 188 P **P 08 35 20.6 +1.3**
0.5nm,0.7s,baz=10,slow=5.7,SNR=5.3

IDC 14 08:34:46.7±2.5, 28.02S×177.04W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.7/19, mbtmp3.8/3, Error ellipse: s-maj=47.2km s-min=32.0km az=96.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.45**	**212**	Pn	Pb	08 35 14.6	0.0
	68nm,0.3s,baz=75,slow=20,SNR=4.1						
RAO				Sn	Sn	08 35 34.8	+0.9
	500nm,0.3s,baz=38,slow=20,SNR=9.9						
STKA	**Stephens Creek**	**35.89**	**254**	P	P	08 41 47.8	-0.8
	1.6nm,0.7s,baz=105,slow=12,SNR=4.7						
ASAR	**Alice Springs**	**44.13**	**264**	P	P	08 42 56.9	-0.3
	0.4nm,0.7s,baz=102,slow=7.6,SNR=6.7						
WRA	**Warramunga Arr**	**44.91**	**269**	P	P	08 43 03.8	+0.3
	1.5nm,0.6s,baz=111,slow=7.2,SNR=17						
TORD	**Torodi Ar. Bea**	**165.15**	**175**	PKPab	PKPab	08 55 50.1	-0.3
	0.7nm,1.1s,baz=187,slow=4.1,SNR=5.4						

*HLW **14** 08:41:51.8, 37.72N×23.12E, h10km±14km, Md4.6, Ml4.5*
*PDG **14** 08:41:54.2±0.3, 38.06N×22.30E, h6km±2km, ML4.3/13, Error ellipse: s-maj=2.1km s-min=1.1km az=90.0*
*ISCJB **14** 08:41:54.7±0.2, 37.86N±0.02×22.53E±0.02, h93km±1km, mb4.0/14, Error ellipse: s-maj=2.9km s-min=2.1km az=43.9*
*NEIC **14** 08:41:55.3, 37.83N×22.62E, h82km, mb4.7/2, After ATH.*
*CSEM **14** 08:41:55.8±0.1, 37.84N×22.51E, h87km±1km, ML4.1, Error ellipse: s-maj=2.9km s-min=2.0km az=43.0*
*ATH **14** 08:41:55.4, 37.83N×22.62E, h82km±1km, ML4.0/19, Error ellipse: s-maj=1.5km s-min=0.7km az=170.0*
*IDC **14** 08:41:56.5±2.0, 37.83N×22.55E, h96km±19km, mb3.8/12, mb1 3.8/17, mb1mx3.6/40, mbtmp4.0/17, MS2.7/5, Ms1 2.7/5, ms1mx2.5/57, Error ellipse: s-maj=18.1km s-min=15.6km az=74.0*
*ISK **14** 08:41:56.5, 37.98N×22.88E, h12km, ML3.6*
*THE **14** 08:41:56.1, 37.82N×22.61E, h80km±1km, ML4.2/24, Error ellipse: s-maj=1.4km s-min=0.6km az=272.0*

ISC 14 08:41:54.6±0.6, 37.81N±0.02×22.60E±0.02, h85km±4km, n430, σ1s83/561, mb3.8/14, 24C-17D, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THAL	**Thalero**	**0.23**	**13**	P	**Pn**	**08 42 07.8**	**+0.7**
THAL				S	**Sn**	**08 42 16.6**	**+0.2**
THAL	**Thalero**	**0.23**	**13**	P	**Pn**	**08 42 08.0**	**+0.9**
THAL				S	**Sn**	**08 42 16.6**	**+0.2**
THAL	**Thalero**	**0.23**	**13**	P	**Pn**	**08 42 08.0**	**+0.9**
THAL				S	**Sn**	**08 42 15.6**	**-0.8**
THAL				AML	AML	08 42 21.5	
	comp=E,78715μm,0.6s						
THAL				AML	AML	08 42 23.4	
	comp=N,60436μm,0.4s						
LTK	**Loutraki**	**0.36**	**54**	P	**Pn**	**08 42 08.5**	**+0.6**
LTK				S	**Sn**	**08 42 17.9**	**+0.2**
LTK	**Loutraki**	**0.36**	**54**	P	**Pn**	**08 42 08.7**	**+0.9**
LTK				S	**Sn**	**08 42 17.9**	**+0.2**
LTK	**Loutraki**	**0.36**	**54**	P	**Pn**	**08 42 08.5**	**+0.6**
LTK				S	**Sn**	**08 42 17.9**	**+0.2**
LTK	**Loutraki**	**0.36**	**54**	P	**Pn**	**08 42 08.7**	**+0.9**
LTK				S	**Sn**	**08 42 17.3**	**-0.4**
LTK				AML	AML	08 42 20.2	
	comp=E,25038μm,0.8s						
LTK				AML	AML	08 42 22.1	
	comp=N,16222μm,0.5s						
TRIP	**Tripoli**	**0.38**	**223**	P	**Pn**	**08 42 10.2**	**+2.1**
TRIP				S	**Sn**	**08 42 18.5**	**+0.5**
TRIP	**Tripoli**	**0.38**	**223**	P	**Pn**	**08 42 10.2**	**+2.1**
TRIP				S	**Sn**	**08 42 18.5**	**+0.5**
TRIP				AML	AML	08 42 19.8	
	comp=N,45954μm,0.4s						
TRIP				AML	AML	08 42 20.1	
	comp=E,43992μm,0.5s						
KLV	**Kalavryta, Ach**	**0.42**	**303**	P	**Pn**	**08 42 08.8**	**+0.5**
KLV				S	**Sn**	**08 42 18.3**	**-0.2**
KLV	**Kalavryta, Ach**	**0.42**	**303**	P	**Pn**	**08 42 09.0**	**+0.7**
KLV				S	**Sn**	**08 42 18.3**	**-0.2**
KLV	**Kalavryta, Ach**	**0.42**	**303**	P	**Pn**	**08 42 08.8**	**+0.5**
KLV				S	**Sn**	**08 42 18.3**	**-0.2**
KLV	**Kalavryta, Ach**	**0.42**	**303**	P	**Pn**	**08 42 08.8**	**+0.5**
KLV				S	**Sn**	**08 42 17.3**	**-1.2**
KLV				AML	AML	08 42 18.5	
	comp=N,28342μm,0.4s						
KLV				AML	AML	08 42 19.1	
	comp=E,27296μm,0.3s						
VLX	**Vlachokerasia**	**0.47**	**202**	P	**Pn**	**08 42 10.2**	**+1.4**
VLX				S	**Sn**	**08 42 20.1**	**+0.9**
VLX	**Vlachokerasia**	**0.47**	**202**	P	**Pn**	**08 42 10.2**	**+1.4**
VLX				S	**Sn**	**08 42 20.1**	**+0.9**
VLX	**Vlachokerasia**	**0.47**	**202**	P	**Pn**	**08 42 10.2**	**+1.4**
VLX				S	**Sn**	**08 42 20.1**	**+0.9**
VLX	**Vlachokerasia**	**0.47**	**202**	P	**Pn**	**08 42 10.9**	**+2.1**
VLX				S	**Sn**	**08 42 20.7**	**+1.4**
VLX				AML	AML	08 42 21.6	
VLX				AML	AML	08 42 24.1	
PROD	**Prodromos**	**0.51**	**28**	P	**Pn**	**08 42 09.8**	**+0.9**
PROD				S	**Sn**	**08 42 18.4**	**-1.1**
PROD	**Prodromos**	**0.51**	**28**	P	**Pn**	**08 42 09.8**	**+0.9**
PROD				AML	AML	08 42 21.1	
	comp=N,48287μm,0.3s						
PROD				AML	AML	08 42 22.0	
	comp=E,27632μm,0.3s						
DID	**Didima**	**0.59**	**121**	P	**Pn**	**08 42 10.7**	**+1.0**
DID				S	**Sn**	**08 42 22.6**	**+1.7**
DID	**Didima**	**0.59**	**121**	P	**Pn**	**08 42 11.0**	**+1.3**
DID				S	**Sn**	**08 42 22.6**	**+1.7**
DID	**Didima**	**0.59**	**121**	P	**Pn**	**08 42 10.7**	**+1.0**
DID				S	**Sn**	**08 42 22.6**	**+1.7**
DID	**Didima**	**0.59**	**121**	P	**Pn**	**08 42 11.0**	**+1.3**
DID				S	**Sn**	**08 42 23.4**	**+2.5**
DID				AML	AML	08 42 25.4	
	comp=N,12533μm,0.5s						
DID				AML	AML	08 42 27.9	
	comp=E,15973μm,0.4s						
DSF	**Desfina**	**0.60**	**355**	P	**Pn**	**08 42 10.5**	**+0.7**
DSF				S	**Sn**	**08 42 21.6**	**+0.5**
DSF	**Desfina**	**0.60**	**355**	P	**Pn**	**08 42 10.6**	**+0.7**
DSF				S	**Sn**	**08 42 21.6**	**+0.5**
DSF	**Desfina**	**0.60**	**355**	P	**Pn**	**08 42 10.5**	**+0.7**
DSF				S	**Sn**	**08 42 21.6**	**+0.5**
DSF	**Desfina**	**0.60**	**355**	P	**Pn**	**08 42 10.5**	**+0.7**
DSF				S	**Sn**	**08 42 21.2**	**+0.1**
DSF				AML	AML	08 42 22.0	
	comp=N,31794μm,0.6s						
DSF				AML	AML	08 42 22.5	
	comp=E,14987μm,0.7s						
KRND	**KRANIDI**	**0.61**	**134**	P	**Pn**	**08 42 11.1**	**+1.3**
KRND				S	**Sn**	**08 42 23.0**	**+1.9**
KRND	**KRANIDI**	**0.61**	**134**	P	**Pn**	**08 42 11.1**	**+1.3**
KRND				S	**Sn**	**08 42 22.4**	**+1.3**
KRND	**KRANIDI**	**0.61**	**134**	P	**Pn**	**08 42 11.7**	**+1.8**
KRND				S	**Sn**	**08 42 21.9**	**+0.8**
KRND				AML	AML	08 42 25.6	
	comp=N,62244μm,0.5s						
KRND				AML	AML	08 42 25.9	
	comp=E,29407μm,0.3s						
LAKA	**Lakka**	**0.65**	**311**	P	**Pn**	**08 42 11.0**	**+0.8**
LAKA				S	**Sn**	**08 42 22.1**	**+0.3**
LAKA	**Lakka**	**0.65**	**311**	P	**Pn**	**08 42 11.0**	**+0.8**
LAKA				S	**Sn**	**08 42 22.1**	**+0.3**
LAKA	**Lakka**	**0.65**	**311**	P	**Pn**	**08 42 11.0**	**+0.8**
LAKA				S	**Sn**	**08 42 22.1**	**+0.3**
LAKA	**Lakka**	**0.65**	**311**	P	**Pn**	**08 42 10.8**	**+0.6**
LAKA				S	**Sn**	**08 42 22.1**	**+0.3**
LAKA				AML	AML	08 42 24.6	
	comp=E,15624μm,0.8s						
LAKA				AML	AML	08 42 25.1	
	comp=N,7889μm,0.4s						
VIL2	**Platees**	**0.66**	**53**	P	**Pn**	**08 42 11.9**	**+1.6**
VIL2				AML	AML	08 42 26.9	
	comp=N,18448μm,0.5s						
VIL2				AML	AML	08 42 27.0	
	comp=E,12591μm,0.6s						
VILL	**Villia**	**0.67**	**58**	P	**Pn**	**08 42 11.5**	**+1.1**
VILL				S	**Sn**	**08 42 23.1**	**+1.0**
VILL	**Villia**	**0.67**	**58**	P	**Pn**	**08 42 11.5**	**+1.1**
VILL				S	**Sn**	**08 42 23.1**	**+1.0**
KALE	**Kalithea**	**0.68**	**328**	P	**Pn**	**08 42 11.3**	**+0.7**
KALE				S	**Sn**	**08 42 23.0**	**+0.5**
KALE	**Kalithea**	**0.68**	**328**	P	**Pn**	**08 42 11.3**	**+0.7**
KALE				S	**Sn**	**08 42 22.7**	**+0.2**
KALE	**Kalithea**	**0.68**	**328**	P	**Pn**	**08 42 11.3**	**+0.7**
KALE				S	**Sn**	**08 42 23.0**	**+0.5**
KALE	**Kalithea**	**0.68**	**328**	P	**Pn**	**08 42 11.1**	**+0.5**
KALE				S	**Sn**	**08 42 22.7**	**+0.2**
KALE				AML	AML	08 42 23.8	
	comp=N,16771μm,0.5s						
KALE				AML	AML	08 42 25.2	
	comp=E,15496μm,0.5s						
TRIZ	**Trizonia**	**0.69**	**323**	P	**Pn**	**08 42 11.4**	**+0.8**
TRIZ				S	**Sn**	**08 42 22.6**	**+0.2**
DRO	**Drossia**	**0.72**	**282**	P	**Pn**	**08 42 11.8**	**+0.9**
DRO	**Drossia**	**0.72**	**282**	P	**Pn**	**08 42 11.8**	**+0.9**
DRO				S	**Sn**	**08 42 24.2**	**+1.2**
DRO	**Drossia**	**0.72**	**282**	P	**Pn**	**08 42 12.9**	**+2.1**
SERG	**Sergoula**	**0.74**	**325**	P	**Pn**	**08 42 12.0**	**+0.9**
SERG				S	**Sn**	**08 42 23.9**	**+0.5**
SERG	**Sergoula**	**0.74**	**325**	P	**Pn**	**08 42 12.0**	**+0.9**
SERG				S	**Sn**	**08 42 23.9**	**+0.5**
AMT	**Artemida-Makis**	**0.76**	**249**	P	**Pn**	**08 42 13.2**	**+1.9**
AMT				S	**Sn**	**08 42 25.9**	**+2.2**
AMT	**Artemida-Makis**	**0.76**	**249**	P	**Pn**	**08 42 13.2**	**+1.9**
AMT				S	**Sn**	**08 42 25.9**	**+2.2**
AMT	**Artemida-Makis**	**0.76**	**249**	P	**Pn**	**08 42 14.0**	**+2.7**
UPR	**University Cam**	**0.80**	**307**	P	**Pn**	**08 42 13.4**	**+1.8**
UPR				S	**Sn**	**08 42 26.6**	**+2.2**
UPR	**University Cam**	**0.80**	**307**	P	**Pn**	**08 42 13.4**	**+1.8**
UPR				S	**Sn**	**08 42 26.6**	**+2.2**
UPR	**University Cam**	**0.80**	**307**	P	**Pn**	**08 42 14.2**	**+2.6**
ITM	**Ithomi**	**0.83**	**220**	P	**Pn**	**08 42 13.8**	**+1.8**
ITM				S	**Sn**	**08 42 27.1**	**+2.1**
ITM	**Ithomi**	**0.83**	**220**	P	**Pn**	**08 42 13.8**	**+1.8**
ITM				S	**Sn**	**08 42 27.1**	**+2.1**
ITM	**Ithomi**	**0.83**	**220**	P	**Pn**	**08 42 13.8**	**+1.8**
ITM				S	**Sn**	**08 42 27.1**	**+2.1**
ITM	**Ithomi**	**0.83**	**220**	P	**Pn**	**08 42 14.1**	**+2.0**
LKR	**Lokris**	**0.90**	**21**	P	**Pn**	**08 42 13.8**	**+1.0**
LKR	**Lokris**	**0.90**	**21**	P	**Pn**	**08 42 13.8**	**+1.0**
LKR				S	**Sn**	**08 42 28.7**	**+0.3**
LKR	**Lokris**	**0.90**	**21**	P	**Pn**	**08 42 13.8**	**+1.0**
LKR	**Lokris**	**0.90**	**21**	P	**Pn**	**08 42 14.1**	**+1.3**
LKR				S	**Sn**	**08 42 26.6**	**+0.3**
LKR				AML	AML	08 42 27.9	
	comp=E,34416μm,0.3s						
LKR				AML	AML	08 42 28.0	
	comp=N,23983μm,0.3s						
ATH	**Athens Observa**	**0.90**	**79**	P	**Pn**	**08 42 14.4**	**+1.6**
ATH	**Athens Observa**	**0.90**	**79**	P	**Pn**	**08 42 14.4**	**+1.6**
ATH				S	**Sn**	**08 42 27.7**	**+1.3**
ATH	**Athens Observa**	**0.90**	**79**	P	**Pn**	**08 42 14.4**	**+1.6**
RLS	**Riolos of Patr**	**0.93**	**286**	P	**Pn**	**08 42 15.0**	**+1.9**
RLS				S	**Sn**	**08 42 28.3**	**+1.4**
RLS	**Riolos of Patr**	**0.93**	**286**	P	**Pn**	**08 42 14.9**	**+1.9**
RLS				S	**Sn**	**08 42 28.3**	**+1.4**
RLS	**Riolos of Patr**	**0.93**	**286**	P	**Pn**	**08 42 15.0**	**+1.9**
RLS				S	**Sn**	**08 42 28.3**	**+1.4**
ATAL	**Atalanti**	**0.94**	**21**	P	**Pn**	**08 42 14.4**	**+1.1**
ATAL				S	**Sn**	**08 42 28.3**	**+1.0**
ATAL	**Atalanti**	**0.94**	**21**	P	**Pn**	**08 42 14.4**	**+1.1**
ATAL				S	**Sn**	**08 42 28.3**	**+1.0**
ATAL	**Atalanti**	**0.94**	**21**	P	**Pn**	**08 42 14.4**	**+1.1**
ATAL				S	**Sn**	**08 42 28.3**	**+1.0**
ATAL	**Atalanti**	**0.94**	**21**	P	**Pn**	**08 42 14.6**	**+1.3**
ATAL				AML	AML	08 42 28.4	
	comp=E,10284μm,0.5s						
ATAL				AML	AML	08 42 29.0	
	comp=N,9341μm,0.4s						
ANX	**Ano Chora**	**0.94**	**326**	P	**Pn**	**08 42 14.9**	**+1.5**
ANX				S	**Sn**	**08 42 28.8**	**+1.3**
ANX	**Ano Chora**	**0.94**	**326**	P	**Pn**	**08 42 14.9**	**+1.5**
ANX				S	**Sn**	**08 42 28.8**	**+1.3**
ANX	**Ano Chora**	**0.94**	**326**	P	**Pn**	**08 42 15.5**	**+2.0**
VLY	**Voula,Athens**	**0.95**	**87**	P	**Pn**	**08 42 14.6**	**+1.2**
VLY	**Voula,Athens**	**0.95**	**87**	P	**Pn**	**08 42 14.6**	**+1.2**
VLY				S	**Sn**	**08 42 27.6**	**+0.2**
VLY	**Voula,Athens**	**0.95**	**87**	P	**Pn**	**08 42 14.6**	**+1.2**
VLY	**Voula,Athens**	**0.95**	**87**	P	**Pn**	**08 42 15.6**	**+2.2**
VLY				S	**Sn**	**08 42 27.6**	**+0.2**
VLY				AML	AML	08 42 30.2	
	comp=N,6194μm,0.3s						
VLY				AML	AML	08 42 32.6	
	comp=E,7735μm,0.3s						
ATHU	**Athens Univers**	**0.95**	**80**	P	**Pn**	**08 42 14.8**	**+1.4**
ATHU				S	**Sn**	**08 42 28.1**	**+0.6**
ATHU	**Athens Univers**	**0.95**	**80**	P	**Pn**	**08 42 14.8**	**+1.4**
ATHU				S	**Sn**	**08 42 28.1**	**+0.6**
ATHU	**Athens Univers**	**0.95**	**80**	P	**Pn**	**08 42 14.8**	**+1.4**
ATHU				S	**Sn**	**08 42 28.1**	**+0.6**
ATHU	**Athens Univers**	**0.95**	**80**	P	**Pn**	**08 42 15.2**	**+1.8**
ATHU				S	**Sn**	**08 42 27.4**	**-0.1**
ATHU				AML	AML	08 42 29.2	
	comp=E,1604μm,0.6s						
ATHU				AML	AML	08 42 33.6	
	comp=N,2239μm,0.5s						
PTL	**Penteli**	**1.03**	**76**	P	**Pn**	**08 42 15.9**	**+1.6**
PTL				S	**Sn**	**08 42 28.9**	**-0.2**
PTL	**Penteli**	**1.03**	**76**	P	**Pn**	**08 42 15.9**	**+1.6**
PTL				S	**Sn**	**08 42 28.9**	**-0.2**
PTL	**Penteli**	**1.03**	**76**	P	**Pn**	**08 42 15.9**	**+1.6**
PTL				S	**Sn**	**08 42 28.9**	**-0.2**
PTL	**Penteli**	**1.03**	**76**	P	**Pn**	**08 42 16.4**	**+2.1**
PTL				S	**Sn**	**08 42 28.7**	**-0.4**
PTL				AML	AML	08 42 30.8	
	comp=N,5838μm,0.4s						
PTL				AML	AML	08 42 32.1	
	comp=E,3894μm,0.5s						
AXS	**Araxos**	**1.04**	**292**	P	**Pn**	**08 42 16.3**	**+1.9**
AXS				S	**Sn**	**08 42 31.1**	**+1.9**
AXS	**Araxos**	**1.04**	**292**	P	**Pn**	**08 42 16.3**	**+1.9**
AXS				S	**Sn**	**08 42 31.1**	**+1.9**
AXS	**Araxos**	**1.04**	**292**	P	**Pn**	**08 42 17.6**	**+3.2**
AXS				S	**Sn**	**08 42 31.8**	**+2.6**
VLI	**Veliai**	**1.12**	**166**	P	**Pn**	**08 42 16.5**	**+1.0**
VLI				S	**Sn**	**08 42 32.1**	**+1.0**
VLI	**Veliai**	**1.12**	**166**	P	**Pn**	**08 42 16.5**	**+1.0**
VLI				S	**Sn**	**08 42 32.1**	**+1.0**
VLI	**Veliai**	**1.12**	**166**	P	**Pn**	**08 42 16.5**	**+1.0**
VLI				S	**Sn**	**08 42 32.1**	**+1.0**
VLI	**Veliai**	**1.12**	**166**	P	**Pn**	**08 42 16.2**	**+0.8**
VLI				S	**Sn**	**08 42 31.1**	**0.0**
VLI				AML	AML	08 42 33.7	
	comp=N,14396μm,0.4s						
VLI				AML	AML	08 42 33.9	
	comp=E,8876μm,0.6s						
PYL	**PYLOS**	**1.14**	**217**	P	**Pn**	**08 42 16.5**	**+0.9**
PYL				S	**Sn**	**08 42 32.9**	**+1.5**
PYL	**PYLOS**	**1.14**	**217**	P	**Pn**	**08 42 16.5**	**+0.9**
PYL				S	**Sn**	**08 42 32.9**	**+1.5**
PYL	**PYLOS**	**1.14**	**217**	P	**Pn**	**08 42 16.5**	**+0.9**
PYL				S	**Sn**	**08 42 32.9**	**+1.5**
PYL	**PYLOS**	**1.14**	**217**	P	**Pn**	**08 42 15.8**	**+0.2**
PVO	**Paravola**	**1.17**	**314**	P	**Pn**	**08 42 18.4**	**+2.5**
PVO	**Paravola**	**1.17**	**314**	P	**Pn**	**08 42 18.4**	**+2.5**
PVO				S	**Sn**	**08 42 35.9**	**+4.0**
PVO	**Paravola**	**1.17**	**314**	P	**Pn**	**08 42 19.6**	**+3.7**
PVO				S	**Sn**	**08 42 35.9**	**+4.0**
SMIA	**Simia**	**1.17**	**24**	P	**Pn**	**08 42 17.4**	**+1.4**
SMIA				S	**Sn**	**08 42 33.9**	**+1.8**
SMIA	**Simia**	**1.17**	**24**	P	**Pn**	**08 42 17.4**	**+1.4**
SMIA				S	**Sn**	**08 42 33.9**	**+1.8**
AGG	**Agios Georgios**	**1.23**	**350**	ePN	**Pn**	**08 42 18.0**	**+1.3**
AGG				eSN	**Sn**	**08 42 34.9**	**+1.5**
AGG	**Agios Georgios**	**1.23**	**350**	P	**Pn**	**08 42 17.8**	**+1.1**
AGG				S	**Sn**	**08 42 35.6**	**+2.2**
AGG	**Agios Georgios**	**1.23**	**350**	P	**Pn**	**08 42 17.8**	**+1.1**
AGG				S	**Sn**	**08 42 35.6**	**+2.2**
AGG	**Agios Georgios**	**1.23**	**350**	P	**Pn**	**08 42 18.1**	**+1.3**
EVR	**Evrytania**	**1.27**	**331**	P	**Pn**	**08 42 19.0**	**+1.7**
EVR				S	**Sn**	**08 42 36.5**	**+2.2**
EVR	**Evrytania**	**1.27**	**331**	P	**Pn**	**08 42 19.0**	**+1.7**
EVR				S	**Sn**	**08 42 35.2**	**+0.9**
EVR	**Evrytania**	**1.27**	**331**	P	**Pn**	**08 42 19.0**	**+1.7**
EVR				S	**Sn**	**08 42 36.5**	**+2.2**
EVR	**Evrytania**	**1.27**	**331**	P	**Pn**	**08 42 19.6**	**+2.4**
EVR				S	**Sn**	**08 42 35.2**	**+0.9**
EVR				AML	AML	08 42 45.0	
	comp=N,8931μm,0.6s						
PDO	**Prodromos**	**1.36**	**306**	P	**Pn**	**08 42 18.8**	**+0.4**
PDO	**Prodromos**	**1.36**	**306**	P	**Pn**	**08 42 18.8**	**+0.4**
PDO	**Prodromos**	**1.36**	**306**	P	**Pn**	**08 42 20.4**	**+2.0**
ZKS	**Zakynthos**	**1.44**	**266**	P	**Pn**	**08 42 19.7**	**+0.3**
ZKS	**Zakynthos**	**1.44**	**266**	P	**Pn**	**08 42 19.7**	**+0.3**
ZKS	**Zakynthos**	**1.44**	**266**	P	**Pn**	**08 42 18.6**	**-0.8**
KFL	**Anninata**	**1.46**	**282**	P	**Pn**	**08 42 20.5**	**+0.9**
KFL	**Anninata**	**1.46**	**282**	P	**Pn**	**08 42 20.5**	**+0.9**
KFL	**Anninata**	**1.46**	**282**	P	**Pn**	**08 42 19.7**	**+0.1**
SKIA	**Skiathos**	**1.52**	**26**	P	**Pn**	**08 42 21.8**	**+1.5**
SKIA	**Skiathos**	**1.52**	**26**	P	**Pn**	**08 42 21.8**	**+1.5**
SKIA	**Skiathos**	**1.52**	**26**	P	**Pn**	**08 42 22.0**	**+1.7**
NEO	**Neokhori**	**1.57**	**18**	P	**Pn**	**08 42 22.1**	**+1.0**
NEO	**Neokhori**	**1.57**	**18**	P	**Pn**	**08 42 22.1**	**+1.0**
NEO	**Neokhori**	**1.57**	**18**	P	**Pn**	**08 42 22.1**	**+1.0**
NEO	**Neokhori**	**1.57**	**18**	P	**Pn**	**08 42 22.0**	**+0.9**
KYTH	**Kithira**	**1.58**	**167**	P	**Pn**	**08 42 22.7**	**+1.4**
KYTH	**Kithira**	**1.58**	**167**	P	**Pn**	**08 42 22.5**	**+1.2**
KYTH	**Kithira**	**1.58**	**167**	P	**Pn**	**08 42 22.7**	**+1.4**
KYTH	**Kithira**	**1.58**	**167**	P	**Pn**	**08 42 22.5**	**+1.2**
FYTO	**Fytoko, Volos**	**1.62**	**9**	P	**Pn**	**08 42 22.8**	**+1.2**
FYTO				S	**Sn**	**08 42 42.9**	**+0.8**
FYTO	**Fytoko, Volos**	**1.62**	**9**	P	**Pn**	**08 42 22.8**	**+1.2**
FYTO				S	**Sn**	**08 42 42.9**	**+0.8**
FYTO	**Fytoko, Volos**	**1.62**	**9**	P	**Pn**	**08 42 22.8**	**+1.2**
FYTO				S	**Sn**	**08 42 42.9**	**+0.8**
FYTO	**Fytoko, Volos**	**1.62**	**9**	P	**Pn**	**08 42 22.9**	**+1.2**
XOR	**Xorichti**	**1.62**	**17**	P	**Pn**	**08 42 22.8**	**+1.1**
XOR	**Xorichti**	**1.62**	**17**	P	**Pn**	**08 42 22.8**	**+1.1**
XOR	**Xorichti**	**1.62**	**17**	P	**Pn**	**08 42 22.8**	**+1.1**
XOR	**Xorichti**	**1.62**	**17**	P	**Pn**	**08 42 22.8**	**+1.1**
VLS	**Valsamata**	**1.63**	**284**	P	**Pn**	**08 42 22.2**	**+0.4**
VLS	**Valsamata**	**1.63**	**284**	P	**Pn**	**08 42 22.2**	**+0.4**
VLS	**Valsamata**	**1.63**	**284**	P	**Pn**	**08 42 22.2**	**+0.4**
AOS	**Alonnisos**	**1.69**	**36**	ePN	**Pn**	**08 42 23.5**	**+0.9**
AOS				eSN	**Sn**	**08 42 41.8**	**-2.0**
AOS	**Alonnisos**	**1.69**	**36**	P	**Pn**	**08 42 23.7**	**+1.2**
AOS				S	**Sn**	**08 42 44.0**	**+0.2**
AOS	**Alonnisos**	**1.69**	**36**	ePn	**Pn**	**08 42 23.5**	**+0.9**
AOS	**Alonnisos**	**1.69**	**36**	P	**Pn**	**08 42 23.8**	**+1.2**
AOS				eSn	**Sn**	**08 42 41.8**	**-2.0**
AOS				S	**Sn**	**08 42 44.0**	**+0.2**
AOS	**Alonnisos**	**1.69**	**36**	P	**Pn**	**08 42 23.7**	**+1.2**
AOS				S	**Sn**	**08 42 44.0**	**+0.2**
AOS	**Alonnisos**	**1.69**	**36**	P	**Pn**	**08 42 23.8**	**+1.2**
DSL	**Palaion Diasel**	**1.77**	**319**	P	**Pn**	**08 42 25.4**	**+1.8**
DSL	**Palaion Diasel**	**1.77**	**319**	P	**Pn**	**08 42 25.4**	**+1.8**
DSL	**Palaion Diasel**	**1.77**	**319**	P	**Pn**	**08 42 25.4**	**+1.8**
DSL	**Palaion Diasel**	**1.77**	**319**	P	**Pn**	**08 42 25.4**	**+1.8**
THL	**Klokotos Trika**	**1.81**	**346**	P	**Pn**	**08 42 25.3**	**+1.1**
THL	**Klokotos Trika**	**1.81**	**346**	P	**Pn**	**08 42 25.2**	**+1.1**
THL				S	**Sn**	**08 42 48.9**	**+2.4**
LKD2	**Lefkada island**	**1.81**	**303**	P	**Pn**	**08 42 25.2**	**+1.0**
LKD2	**Lefkada island**	**1.81**	**303**	P	**Pn**	**08 42 25.2**	**+1.0**
LKD2	**Lefkada island**	**1.81**	**303**	P	**Pn**	**08 42 25.2**	**+1.0**
LKD2	**Lefkada island**	**1.81**	**303**	P	**Pn**	**08 42 24.1**	**0.0**
MHLO	**Agia Marina, M**	**1.82**	**127**	P	**Pn**	**08 42 26.2**	**+1.9**
MHLO				S	**Sn**	**08 42 48.8**	**+1.9**
MHLO	**Agia Marina, M**	**1.82**	**127**	P	**Pn**	**08 42 26.1**	**+1.8**
MHLO				S	**Sn**	**08 42 48.8**	**+1.9**
MHLO	**Agia Marina, M**	**1.82**	**127**	P	**Pn**	**08 42 26.1**	**+1.8**
ANKY	**Antikythira Is**	**2.02**	**164**	P	**Pn**	**08 42 27.8**	**+0.9**
ANKY	**Antikythira Is**	**2.02**	**164**	P	**Pn**	**08 42 27.8**	**+0.9**
ANKY	**Antikythira Is**	**2.02**	**164**	P	**Pn**	**08 42 27.8**	**+0.9**
ANKY	**Antikythira Is**	**2.02**	**164**	P	**Pn**	**08 42 26.8**	**-0.2**
PAIG	**Paliouri**	**2.27**	**21**	P	**Pn**	**08 42 31.4**	**+1.1**
PAIG	**Paliouri**	**2.27**	**21**	P	**Pn**	**08 42 31.4**	**+1.1**
PAIG	**Paliouri**	**2

FNA	Florina	3.12	343	P		Pn	08 42 43.0	+1.4
FNA	Florina	3.12	343	P		Pn	08 42 43.0	+1.4
FNA	Florina	3.12	343	*e*Pn		Pn	08 42 45.7	+4.1
FNA	Florina	3.12	343	P		Pn	08 42 43.0	+1.4
FNA	Florina	3.12	343	P		Pn	08 42 43.0	+1.4
IDI	Anoyia	3.12	143	P		Pn	08 42 42.8	+1.0
	comp=N,5.1nm,0.3s,baz=337,slow=14,SNR=58							
IDI				S		Sn	08 43 18.3	+0.2
	comp=N,50nm,0.3s,baz=266,slow=13,SNR=14							
IDI	Anoyia	3.12	143	P		Pn	08 42 41.5	-0.2
GRG	Griva	3.14	357	*e*PN		Pn	08 42 45.0	+3.0
GRG	Griva	3.14	357	P		Pn	08 42 42.8	+0.8
GRG	Griva	3.14	357	*e*Pn		Pn	08 42 45.0	+3.0
GRG	Griva	3.14	357	P		Pn	08 42 42.8	+0.8
GVD	Gavdhos	3.20	157	P		Pn	08 42 43.8	+1.0
GVD	Gavdhos	3.20	157	P		Pn	08 42 43.8	+1.0
GVD	Gavdhos	3.20	157	P		Pn	08 42 43.8	+1.0
GVD	Gavdhos	3.20	157	P		Pn	08 42 42.8	+0.1
SIVA	Sivas	3.31	147	P		Pn	08 42 47.0	+2.8
SIVA	Sivas	3.31	147	P		Pn	08 42 46.7	+2.5
SIVA	Sivas	3.31	147	P		Pn	08 42 47.0	+2.8
SIVA	Sivas	3.31	147	P		Pn	08 42 46.7	+2.5
KNT	Kendrikon	3.35	4	*e*PN		Pn	08 42 47.5	+2.7
KNT	Kendrikon	3.35	4	P		Pn	08 42 46.8	+2.0
KNT	Kendrikon	3.35	4	*e*Pn		Pn	08 42 47.5	+2.7
KNT	Kendrikon	3.35	4	P		Pn	08 42 46.9	+2.0
SMG	Samos	3.36	90	P		Pn	08 42 47.7	+2.8
SMG	Samos	3.36	90	P		Pn	08 42 47.7	+2.8
SRS	Serrai	3.39	13	P		Pn	08 42 46.6	+1.3
SRS	Serrai	3.39	13	P		Pn	08 42 46.6	+1.3
SMTH	Samothraki Isl	3.50	40	P		Pn	08 42 46.9	+0.1
SMTH	Samothraki Isl	3.50	40	P		Pn	08 42 46.9	+0.1
GADA	Gvkgeada	3.50	46	*e*PN		Pn	08 42 48.5	+1.7
GADA	Gvkgeada	3.50	46	*e*Pn		Pn	08 42 48.5	+1.7
VAY	Valandovo	3.50	360	*i* Pn		Pn	08 42 47.5	+0.6
VAY				*i* Sn		Sn	08 43 26.9	-0.4
VAY	Valandovo	3.50	360	*i* Pn		Pn	08 42 47.4	+0.6
VAY				*i* Sn		Sn	08 43 26.8	-0.4
KAVA	Kavala	3.51	24	P		Pn	08 42 47.0	+0.1
KAVA	Kavala	3.51	24	P		Pn	08 42 47.0	+0.1
NPS	Neapolis	3.52	135	P		Pn	08 42 45.9	-1.2
NPS	Neapolis	3.52	135	P		Pn	08 42 45.9	-1.2
LAST	Lasithi	3.52	138	P		Pn	08 42 48.5	+1.4
LAST	Lasithi	3.52	138	P		Pn	08 42 48.5	+1.4
LAST	Lasithi	3.52	138	P		Pn	08 42 48.5	+1.4
LAST	Lasithi	3.52	138	P		Pn	08 42 47.4	+0.2
EZN	Ezine	3.54	54	*e*PN		Pn	08 42 48.9	+1.6
EZN	Ezine	3.54	54	*e*Pn		Pn	08 42 48.9	+1.6
OHR	Ohrid	3.58	338	*i* Pn		Pn	08 42 55.1	+7.2
OHR				*i* Sn		Sn	08 43 28.5	-0.5
NVR	Nevrokopi	3.67	15	P		Pn	08 42 50.8	+1.7
BODT	Bodrum	3.83	100	*e*PN		Pn	08 42 54.3	+3.1
BODT	Bodrum	3.83	100	*e*Pn		Pn	08 42 54.3	+3.1
ZKR	Zakros	3.97	132	P		Pn	08 42 56.0	+2.9
ZKR	Zakros	3.97	132	P		Pn	08 42 56.0	+2.9
ALN	Alexandroupoli	4.08	40	*e*PN		Pn	08 42 56.2	+1.6
ALN	Alexandroupoli	4.08	40	*e*Pn		Pn	08 42 56.2	+1.6
TIR	Tirane	4.11	330	⇑*i*P		Pn	08 42 51.8	-3.3
TIR	Tirane	4.11	330	⇑*i*P		Pn	08 42 51.8	-3.3
TIR	Tirane	4.11	330	*e*Pn		Pn	08 42 56.6	+1.5
TIR				*e*Sn		Sn	08 43 44.5	+2.5
TIR	Tirane	4.11	330	*e*Pn		Pn	08 42 56.6	+1.5
TIR				*e*Sn		Sn	08 43 44.5	+2.5
LPK	Lapseki	4.13	50	*e*PN		Pn	08 42 57.2	+1.9
LPK	Lapseki	4.13	50	*e*Pn		Pn	08 42 57.2	+1.9
ERIK	Erikli-Kesan	4.17	46	*e*PN		Pn	08 42 57.7	+1.9
ERIK	Erikli-Kesan	4.17	46	*e*Pn		Pn	08 42 57.7	+1.9
AYDB	Zeytinkoy-Aydi	4.19	87	*e*PN		Pn	08 42 58.8	+2.6
AYDB	Zeytinkoy-Aydi	4.19	87	*e*Pn		Pn	08 42 58.8	+2.6
SKO	Skopje	4.25	348	*e*Pn		Pn	08 43 01.9	+5.0
SKO				*e*Sn		Sn	08 43 42.3	-3.0
SKO	Skopje	4.25	348	*e*Pn		Pn	08 43 01.9	+5.0
SKO				*e*Sn		Sn	08 43 42.3	-3.0
KARP	Karpathos	4.31	120	*e*PN		Pn	08 43 02.5	+4.7
KARP	Karpathos	4.31	120	P		Pn	08 43 01.1	+3.3
KARP	Karpathos	4.31	120	*e*Pn		Pn	08 43 02.5	+4.7
KARP	Karpathos	4.31	120	P		Pn	08 43 01.1	+3.3
KRBG	Karabiga-Canak	4.47	53	*e*PN		Pn	08 43 02.4	+2.4
KRBG	Karabiga-Canak	4.47	53	*e*Pn		Pn	08 43 02.4	+2.4
BALB	Balikesir	4.52	65	*e*PN		Pn	08 43 02.7	+2.1
BALB	Balikesir	4.52	65	*e*Pn		Pn	08 43 02.7	+2.1
RKY	Sarkoy-Tekirda	4.57	50	*e*PN		Pn	08 43 03.7	+2.4
RKY	Sarkoy-Tekirda	4.57	50	*e*Pn		Pn	08 43 03.7	+2.4
YER	Yerkesik	4.57	97	*e*PN		Pn	08 43 04.5	+3.1
YER	Yerkesik	4.57	97	*e*Pn		Pn	08 43 04.5	+3.1
MRMT	Marmara Adasi	4.78	53	*e*PN		Pn	08 43 06.5	+2.3
MRMT	Marmara Adasi	4.78	53	*e*Pn		Pn	08 43 06.5	+2.3
TIP	Timpagrande	4.78	288	*e*PN		Pn	08 43 04.5	+0.3
TIP	Timpagrande	4.78	288	*e*Pn		Pn	08 43 04.5	+0.3
TIP				*e*Sn		Sn	08 43 50.6	-7.8
VTS	Vitosha	4.80	5	⇑*i*P		Pn	08 43 07.5	+3.0
VTS	Vitosha	4.80	5	⇑*i*P		Pn	08 43 07.5	+3.0
KULA	Kula-Manisa	4.83	80	*e*PN		Pn	08 43 07.8	+2.9
KULA	Kula-Manisa	4.83	80	*e*Pn		Pn	08 43 07.8	+2.9
ULC	Ulcinj	4.88	329	⇓*i*Pn		Pn	08 43 05.1	-0.5
ULC				*e*Sn		Sn	08 43 58.7	-2.1
ULC	Ulcinj	4.88	329	P		Pn	08 43 05.3	-0.3
ULC				*e*Sn		Sn	08 43 58.7	-2.1
DALY	Dalyan (Mu¨la	4.93	100	*e*PN		Pn	08 43 03.3	+4.1
DALY	Dalyan (Mu¨la	4.93	100	*e*Pn		Pn	08 43 10.3	+4.1
TAR1	Taranto	4.94	305	*e*Pn		Pn	08 43 06.0	-0.3
BARS	Barje	5.04	353	*i* Pn		Pn	08 43 08.5	+0.9
DRME	Dracevica, Mon	5.09	330	⇑*i*Pn		Pn	08 43 08.3	-0.1
DRME				*e*Sn		Sn	08 44 04.3	-1.6
DRME	Dracevica, Mon	5.09	330	⇑*i*Pn		Pn	08 43 08.3	-0.1
DRME				*e*Sn		Sn	08 44 04.3	-1.6
PEJK	Peje	5.14	341	P		Pn	08 43 11.1	+2.0
PVY	Plav	5.19	338	*e*Pn		Pn	08 43 10.1	+0.3
PVY				*e*Sn		Sn	08 44 06.6	-1.7
PVY	Plav	5.19	338	*e*Pn		Pn	08 43 10.1	+0.3
PVY				*e*Sn		Sn	08 44 06.6	-1.7
PDG	Podgorica	5.28	332	⇑*i*P		Pn	08 43 11.2	+0.3
PDG	Podgorica	5.28	332	⇓*i*Pn		Pn	08 43 10.5	-0.4
PDG	Podgorica	5.28	332	⇑*i*P		Pn	08 43 11.2	+0.3
PDG				*e*Sn		Sn	08 44 08.5	-1.8
TTG	Podgorica	5.28	332	⇓*i*Pn		Pn	08 43 10.5	-0.4
TTG				*e*Sn		Sn	08 44 08.5	-1.8
BUM	Brajici-Budva	5.31	329	⇓*i*Pn		Pn	08 43 10.4	-1.0
BUM				*e*Sn		Sn	08 44 08.8	-2.4
BUM	Brajici-Budva	5.31	329	⇓*i*Pn		Pn	08 43 10.4	-1.0
BUM				*e*Sn		Sn	08 44 08.8	-2.4
FETY	Fethiye	5.31	101	*e*PN		Pn	08 43 15.3	+3.9
FETY	Fethiye	5.31	101	*e*Pn		Pn	08 43 15.3	+3.9
BEY	Berane	5.46	339	⇑*i*Pn		Pn	08 43 13.8	+0.3
BEY	Berane	5.46	339	P		Pn	08 43 14.3	+0.8
IVA	Berane	5.46	339	⇑*i*Pn		Pn	08 43 13.8	+0.3
IVA				*e*Sn		Sn	08 44 13.0	-2.0
SG1	Sgolgore (BA)	5.50	305	*e*Pn		Pn	08 43 13.5	-0.4
CEME	Cevo	5.50	330	⇓*i*Pn		Pn	08 43 13.1	-1.0
CEME				*e*Sn		Sn	08 44 13.6	-2.4
CEME	Cevo	5.50	330	⇓*i*Pn		Pn	08 43 13.1	-1.0
ARMT	Armutlu	5.59	59	*e*PN		Pn	08 43 18.2	+3.1
ARMT	Armutlu	5.59	59	*e*Pn		Pn	08 43 18.3	+3.1
HCY	Herceg Novi	5.60	327	⇑*i*Pn		Pn	08 43 14.6	-0.7
HCY				*e*Sn		Sn	08 44 15.4	-2.8
HCY	Herceg Novi	5.60	327	⇑*i*Pn		Pn	08 43 14.6	-0.7
NKME	Niksic	5.68	332	⇓*i*Pn		Pn	08 43 15.9	-0.5
NKME				*e*Sn		Sn	08 44 17.6	-2.7
NKME	Niksic	5.68	332	⇓*i*Pn		Pn	08 43 15.9	-0.5
NKY	Niksic	5.70	332	⇑*i*Pn		Pn	08 43 17.0	+0.2
NKY				*e*Sn		Sn	08 44 18.5	-2.4
NKY	Niksic	5.70	332	⇑*i*Pn		Pn	08 43 17.0	+0.2
CUC	Castrocucco	5.72	294	*e*Pn		Pn	08 43 18.2	+1.2
	comp=N,21nm,0.7s							
CUC				*e*Sn		Sn	08 44 22.3	+1.0
CUC	Castrocucco	5.72	294	*e*Pn		Pn	08 43 18.2	+1.2
	comp=N,21nm,0.7s							
CUC				*e*Sn		Sn	08 44 22.3	+1.0
BOVS	Bovan	5.86	354	*i* Pn		Pn	08 43 19.0	+0.2
CDT	Castel del Mon	5.88	306	*e*Pn		Pn	08 43 18.9	-0.3
BRY	Bratogost	5.95	330	⇑*i*Pn		Pn	08 43 19.1	-1.2
BRY				*e*Sn		Sn	08 44 24.5	-2.6
BRY	Bratogost	5.95	330	⇑*i*Pn		Pn	08 43 19.1	-1.2
PLE	Pljevlja	6.03	337	⇑*i*Pn		Pn	08 43 20.9	-0.4
PLE				*e*Sn		Sn	08 44 26.1	-2.8
PLE	Pljevlja	6.03	337	⇑*i*Pn		Pn	08 43 20.9	-0.4
IVAS	Ivanjica	6.05	343	*i* Pn		Pn	08 43 20.6	-0.9
UPM	Unac-Piva	6.08	334	⇓*i*Pn		Pn	08 43 21.8	-0.2
UPM				*e*Sn		Sn	08 44 27.9	-2.2
UPM	Unac-Piva	6.08	334	⇓*i*Pn		Pn	08 43 21.8	-0.2
UPM	Unac-Piva	6.08	334	P		Pn	08 43 22.6	+0.6
GRUS	Gruza	6.24	347	*i* Pn		Pn	08 43 23.8	-0.2
MS1	Monte Sant'Ang	6.43	309	*e*Pn		Pn	08 43 25.9	-0.9
VAE	Valguarnera	6.50	270	P		Pn	08 43 35.3	+7.6
	comp=N,1.7nm,0.3s,baz=352,slow=14,SNR=4.8							
VAE				S		Sn	08 44 37.6	-2.9
	comp=N,5.9nm,0.3s,baz=11,slow=6.9,SNR=4.0							
BBLS	Lazići	6.51	339	*e*Pn		Pn	08 43 26.3	-1.5
DIVS	Divibare	6.58	343	*e*Pn		Pn	08 43 27.5	-1.3
TRUS	Trudelj	6.62	346	*i* Pn		Pn	08 43 28.5	-0.7
SLUM	Salum	6.66	160	P		Pn	08 43 26.3	-3.5
	baz=163							
SLUM				AMP			08 44 00.0	
	comp=E,450μm,0.5s,logA/T=6.0,baz=163							
SLUM				S		Sn	08 44 36.1	-8.2
	baz=163							
TEKS	Tekeris	7.12	342	*i* Pn		Pn	08 43 34.9	-1.1
CLTB	Caltabellotta	7.44	271	*e*Pn		Pn	08 43 42.0	+1.4
	comp=E,7.2nm,0.4s							
CLTB	Caltabellotta	7.44	271	*e*Pn		Pn	08 43 42.0	+1.4
	comp=E,7.2nm,0.4s							
BZS	Buzias	7.83	355	⇑*i*P		Pn	08 43 46.9	+1.2
BZS	Buzias	7.83	355	⇑*i*P		Pn	08 43 46.9	+1.2
VOIR		7.84	13	⇓*i*P		Pn	08 43 48.1	+2.2
VOIR		7.84	13	⇓*i*P		Pn	08 43 48.1	+2.2
TLB	Topalu	7.91	30	⇑*i*P		Pn	08 43 48.9	+2.1
TLB	Topalu	7.91	30	⇑*i*P		Pn	08 43 48.9	+2.1
TIRR	Tirgusor	7.96	32	⇓*i*P		Pn	08 43 49.6	+2.2
TIRR	Tirgusor	7.96	32	⇓*i*P		Pn	08 43 49.6	+2.2
BLY	Banja Luka	8.04	331	*e*Pn		Pn	08 43 49.4	+0.9
MLR	Muntele Rosu	8.07	17	P		Pn	08 43 52.7	+3.6
	comp=E,0.4nm,0.3s,baz=225,slow=4.8,SNR=15							
MLR				LR		LR	08 47 21.6	
	comp=E,15nm,20.2s,baz=209,slow=4.0							
MLR	Muntele Rosu	8.07	17	⇑*i*P		Pn	08 43 52.0	+2.9
UDBI	Udbina	8.46	325	*i* Pn		Pn	08 43 53.3	-1.1
UDBI				Sn		Sn	08 45 22.6	-5.5
UDBI	Udbina	8.46	325	*i* Pn		Pn	08 43 53.2	-1.1
PLOR	Plostina	8.58	19	⇓*i*P		Pn	08 43 58.4	+2.4
PLOR	Plostina	8.58	19	⇓*i*P		Pn	08 43 58.4	+2.4
BRTR	Keskin Array B	8.83	74	P		Pn	08 44 04.0	+4.4
	comp=E,0.8nm,0.3s,baz=258,slow=13,SNR=17							
SWA2		8.87	164	P		Pn	08 43 57.7	-2.3
	baz=166							
KEST	Kesra	10.83	263	S		Sn	08 46 20.2	-5.9
	comp=E,0.4nm,0.3s,baz=32,slow=20,SNR=5.0							
GLL	Jalalah	11.18	135	P		Pn	08 44 27.9	-3.5
	baz=136							
RSH		11.45	123	P		Pn	08 44 31.2	-3.8
	baz=124							
RSH				S		Sn	08 46 27.6	-13
	baz=124							
MMAI	Mount Meron Ar	11.49	111	P		Pn	08 44 39.7	+4.0
	comp=E,0.3nm,0.3s,baz=301,slow=12,SNR=3.0							
MMAI				S		Sn	08 46 35.4	-6.7
	comp=E,4.3nm,0.3s,baz=295,slow=28,SNR=5.4							
HFRF	Wahat Farafira	11.67	154	P		Pn	08 44 35.3	-2.8
	baz=156							
NBNS	Bani Suef	11.70	139	P		Pn	08 44 35.7	-2.7
	baz=140							
HNKL	Nakhl	12.29	126	P		Pn	08 44 43.5	-3.1
	baz=127							
HNKL				AMP			08 47 38.9	
	comp=N,110μm,0.5s,logA/T=5.4,baz=127							
GERES	GERESS Array B	12.78	332	P		Pn	08 44 54.9	+1.9
	comp=N,0.3nm,0.3s,baz=151,slow=15,SNR=3.3							
GERES				LR		LR	08 51 27.1	
	comp=N,28nm,18.6s,baz=283,slow=45							
DAVOX	Davos/Dischmat	12.98	318	S		Sn	08 47 14.4	-4.1
	comp=N,0.8nm,0.3s,baz=342,slow=19,SNR=4.3							
EIL	Elat	13.09	125	P		Pn	08 44 54.8	-2.4
	comp=N,0.4nm,0.3s,baz=12,slow=9.3,SNR=7.3							
EIL				S		Sn	08 47 11.4	-10
	comp=N,1.7nm,0.3s,baz=51,slow=3.2,SNR=8.8							
KBZ	Khabaz	16.46	63	P		P	08 45 42.3	+0.9
	comp=N,0.1nm,0.3s,baz=242,slow=13,SNR=3.6							
HFS	Hagfors	23.05	349	P		P	08 46 52.1	-0.4
	comp=N,2.7nm,0.5s,baz=159,slow=12,SNR=16							
FINES	FINESS Array B	23.76	4	P		P	08 46 58.4	-0.4
	comp=N,2.3nm,0.7s,baz=176,slow=7.6,SNR=7.2							
FINES				LR		LR	08 56 12.8	
	comp=N,20nm,20.4s,baz=222,slow=36							
NB2	NORSAR Subarra	24.33	347	P		P	08 47 04.3	+0.2
	comp=Z,1.3nm,0.6s,baz=153,slow=10							
NB2	NORSAR Subarra	24.33	347	P		P	08 47 04.3	+0.2
	comp=Z,1.3nm,0.6s,SNR=7.1							
NOA	NORSAR Array B	24.33	347	P		P	08 47 04.3	+0.2
	comp=Z,1.4nm,0.6s,baz=154,slow=9.2,SNR=8.0							
NOA				LR		LR	08 59 17.7	
	comp=Z,8.2nm,20.2s,baz=170,slow=43							
EKA	Eskdalemuir Ar	24.69	324	P		P	08 47 08.2	+0.9
	comp=Z,0.8nm,0.5s,baz=124,slow=10,SNR=4.7							
ARU	Arti	30.26	40	P		P	08 47 58.3	+1.1
	comp=Z,4.8nm,0.2s,baz=258,slow=9.2,SNR=4.3							
TORD	Torodi Ar. Bea	30.83	223	P		P	08 48 03.5	+0.9
	comp=Z,0.9nm,0.6s,baz=37,slow=8.8,SNR=8.5							
ARCES	ARCESS Array B	31.82	2	P		P	08 48 11.2	+0.3
	comp=Z,6.1nm,1.0s,baz=193,slow=7.4,SNR=6.2							
BRVK	Borovoye	36.04	49	*e*P		P	08 48 48.9	+1.4
	comp=Z,12nm,0.7s							
BRVK	Borovoye	36.04	49	*e*P		P	08 48 48.9	+1.4
	comp=Z,12nm,0.7s							
BVAR	Borovoye Array	36.10	49	LR		LR	09 05 23.1	
	comp=Z,86nm,21.2s,baz=258,slow=39							
KKAR	Karatay Array	36.44	66	*e*P		P	08 48 52.4	+1.3
	comp=Z,2.9nm,0.6s							
KKAR	Karatay Array	36.44	66	*e*P		P	08 48 52.4	+1.3
	comp=Z,2.9nm,0.6s							
MKAR	Makanchi Array	44.09	58	P		P	08 49 54.9	+0.6
	comp=Z,3.7nm,0.4s,baz=271,slow=7.5,SNR=50							
ZALV	Zalesovo Beam	44.72	48	P		P	08 49 59.7	+0.7
	comp=Z,3.3nm,0.4s,baz=275,slow=8.6,SNR=15							
SONM	Songino Array	59.42	51	P		P	08 51 49.5	+1.2
	comp=Z,0.3nm,0.4s,baz=266,slow=4.3,SNR=2.7							
YKA	Yellowknife Ar	74.28	341	P		P	08 53 23.2	+1.1
	comp=Z,0.7nm,0.7s,baz=35,slow=5.6,SNR=6.8							
ILAR	Eielson Array	77.42	355	P		P	08 53 41.1	+1.1
	comp=Z,0.6nm,0.7s,baz=346,slow=2.3,SNR=5.5							
WRA	Warramunga Arr	118.88	94	PKP		PKPdf	09 00 33.9	+0.4
	comp=Z,0.3nm,0.9s,baz=317,slow=2.1,SNR=4.6							
ASAR	Alice Springs	120.50	98	PKP		PKPdf	09 00 36.9	+0.3
	comp=Z,0.5nm,0.6s,baz=322,slow=1.8,SNR=9.8							

DDA ***14*** *08:47:01.5,39.65N×37.38E,h7km,Ml3.2*
CSEM ***14*** *08:47:02.6±0.2,39.65N×37.35E,h2km,ML3.2, Error ellipse: s-maj=4.7km s-min=4.1km az=30.0*
ISK ***14*** *08:47:03.4,39.63N×37.29E,h6km,ML2.9*

ISC 14 08:47:02.3±1.0,39.65N±0.02×37.37E±0.02,h4km±9km, n56,σ0 86/86, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCER	**sogukcermik**	0.28	319	*i* P	Pg	08 47 07.5	-0.3
SCER				*i* S	Sg	08 47 12.2	+0.7
SCER	**sogukcermik**	0.28	319	P	Pg	08 47 07.5	-0.3
SCER				S	Sg	08 47 12.2	+0.7
CUKAN	**kangal_SIVAS**	0.34	167	*i* P	Pg	08 47 08.5	-0.5
CUKAN				*i* S	Sg	08 47 13.8	+0.4
CUKAN	**kangal_SIVAS**	0.34	167	P	Pg	08 47 08.5	-0.5
CUKAN				S	Sg	08 47 13.9	+0.4
CUALT	**Altinyayla-SIV**	0.60	232	*i* P	Pg	08 47 13.1	-0.8
CUALT				*i* S	Sb	08 47 23.6	-0.8
CUALT	**Altinyayla-SIV**	0.60	232	P	Pg	08 47 13.1	-0.8
CUALT				S	Sb	08 47 23.6	-0.8
SUSE	**Susehri**	0.85	49	*i* P	Pg	08 47 18.1	-0.6
SUSE				*i* S	Sb	08 47 32.6	+0.9
SUSE	**Susehri**	0.85	49	P	Pg	08 47 18.1	-0.6
CUSAR	**Sarkisla-SIVAS**	0.90	255	*i* P	Pg	08 47 18.1	-1.4
CUSAR				*i* S	Sb	08 47 32.6	-0.3
CUSAR	**Sarkisla-SIVAS**	0.90	255	P	Pg	08 47 18.1	-1.4
CUSAR				S	Sb	08 47 32.6	-0.3
KEMA	**Kemaliye**	0.95	113	*i* P	Pg	08 47 19.4	-1.1
KEMA				*i* S	Sg	08 47 33.5	+0.5
KEMA	**Kemaliye**	0.95	113	P	Pg	08 47 19.5	-1.1
KEMA				S	Sg	08 47 33.5	+0.5
TOKA	**Tokat**	0.96	315	*i* P	Pg	08 47 19.6	-1.1
TOKA				*i* S	Sb	08 47 33.9	-0.7
TOKA	**Tokat**	0.96	315	P	Pg	08 47 19.6	-1.1
TOKA				S	Sb	08 47 33.9	-0.7
DARE	**Darende-Malaty**	1.08	175	*e*PG	Pn	08 47 24.2	-0.2
DARE				*e*SG	Sn	08 47 39.4	-0.4
DARE	**Darende-Malaty**	1.08	175	*e*Pg	Pn	08 47 24.2	-0.1
DARE				*e*Sg	Sn	08 47 39.4	-0.4
REFA	**Refahiye_ERZ¯**	1.11	103	*i* P	Pg	08 47 23.4	-0.2
REFA				*i* S	Sb	08 47 39.6	+0.5
REFA	**Refahiye_ERZ¯**	1.11	103	P	Pg	08 47 23.4	-0.2
REFA				S	Sb	08 47 39.6	+0.5
ERBA	**Erbaa**	1.13	336	*i* P	Pg	08 47 23.1	-0.9
ERBA				*i* S	Sn	08 47 40.8	-0.2
ERBA	**Erbaa**	1.13	336	P	Pg	08 47 23.1	-0.9
ORDU	**Ordu-Boztepe**	1.39	16	*i* P	Pn	08 47 27.7	-0.9
ORDU				*i* S	Sn	08 47 47.3	-0.1
ORDU	**Ordu-Boztepe**	1.39	16	P	Pn	08 47 27.7	-0.9
ORDU				S	Sn	08 47 47.3	-0.1
AKCD	**Akcadag**	1.42	162	*i* P	Pn	08 47 27.9	-1.2
AKCD				*i* S	Sg	08 47 49.2	+1.2
AKCD	**Akcadag**	1.42	162	P	Pn	08 47 27.9	-1.2
AKCD				S	Sg	08 47 49.2	+1.2
BNN	**Bunyan**	1.42	236	*e*PN	Pb	08 47 29.5	0.0
BNN				*e*SN	Sg	08 47 48.5	+0.5
BNN	**Bunyan**	1.42	236	*e*Pn	Pb	08 47 29.5	0.0
BNN				*e*Sn	Sg	08 47 48.6	+0.5
SARI	**SarD1z-Kayseri**	1.44	211	*e*PN	Pb	08 47 29.9	0.0
KELT	**Kelkit**	1.54	70	*i* P	Pn	08 47 29.9	-0.8
KELT				*i* S	Sb	08 47 51.7	+0.3
KELT	**Kelkit**	1.54	70	P	Pn	08 47 29.9	-0.8
KELT				S	Sb	08 47 51.7	+0.3
YOZ	**Yozgat**	1.58	270	*e*PN	Pn	08 47 30.9	-0.3
YOZ	**Yozgat**	1.58	270	*e*Pn	Pn	08 47 30.9	-0.3
ESPY	**Espiye-Giresun**	1.64	39	*e*PN	Pg	08 47 34.1	+0.3
ESPY	**Espiye-Giresun**	1.64	39	*e*Pn	Pg	08 47 34.1	+0.3
ELZG	**Elazig**	1.71	132	*i* P	Pn	08 47 33.2	+0.2
ELZG				*i* S	Sb	08 47 57.0	+0.8
ELZG	**Elazig**	1.71	132	P	Pn	08 47 33.2	+0.2
ELZG				S	Sb	08 47 57.0	+0.8
KVT	**Kavak**	1.75	325	*e*PN	Pb	08 47 35.1	+0.1
KVT	**Kavak**	1.75	325	*e*Pn	Pb	08 47 35.1	+0.1
TNCL	**Tunceli-Merkez**	1.77	107	*i* P	Pb	08 47 34.9	-0.5
TNCL				*i* S	Sg	08 47 59.4	+0.2
TNCL	**Tunceli-Merkez**	1.77	107	P	Pb	08 47 34.9	-0.5
TNCL				S	Sg	08 47 59.4	+0.2

	comp=Z,1µm,24.6s								
TBI				eLR	LR	09 12 17.3			
	comp=Z,9µm,27.0s,baz=116								
TBI	**Tubuai**	**49.38**	**271**	*e*T	T	09 51 06.5			
	comp=Z,1.9nm,0.3s								
TAOE	**Nuku Hiva Isla**	**50.84**	**293**	*e*S	**S**	**09 05 36.4**	**-4.4**		
	comp=Z,1µm,25.0s								
TAOE				eLR	LR	09 13 02.6			
	comp=Z,4µm,26.1s,baz=151								
MEH	**Mehetia**	**51.25**	**278**	*e*T	T	09 53 24.3			
	comp=Z,37nm,0.3s								
QSPA	**South Pole Qui**	**52.03**	**180**	*e*P	**P**	**08 58 32.6**	**-0.2**		
	comp=Z,37nm,1.1s								
TVO	**Taravao**	**52.23**	**277**	*e*T	T	09 54 39.0			
	comp=Z,1.9nm,0.3s								
TIAR	**Tiarei**	**52.43**	**277**	*e*T	T	09 54 53.4			
	comp=Z,7.3nm,0.2s								
PPT2	**Papeete2**	**52.59**	**277**	*e*S	**S**	**09 06 04.4**	**-0.5**		
	comp=Z,2µm,24.8s								
PPT2				eLR	LR	09 13 39.2			
	comp=Z,5µm,25.0s,baz=132								
CCIG	**Comitan**	**54.21**	**2**	*e*P	**P**	**08 58 49.4**	**0.0**		
	comp=Z,121nm,1.7s								
SNAA	**Sanae**	**54.55**	**157**	*e*P	**P**	**08 58 50.7**	**-0.4**		
SNAA				pmax	pmax				
	comp=Z,168nm,1.8s								
SNAA	**Sanae**	**54.55**	**157**	*e*P	**P**	**08 58 50.7**	**-0.4**		
	comp=Z,168nm,1.8s								
SBA	**Scott Base**	**54.95**	**195**	*e*P	**P**	**08 58 55.2**	**+1.4**		
SBA				pmax	pmax				
	comp=Z,82nm,1.3s								
SBA	**Scott Base**	**54.95**	**195**	*e*P	**P**	**08 58 55.2**	**+1.4**		
	comp=Z,82nm,1.3s								
TLIG	**Tlapa**	**55.64**	**354**	*e*P	**P**	**08 59 01.7**	**+2.1**		
	comp=Z,101nm,1.8s								
VNDA	**Vanda**	**56.05**	**195**	P	**P**	**08 59 01.1**	**-0.7**		
	comp=Z,9.7nm,1.0s,baz=106,slow=7.3,SNR=36								
VNDA	**Vanda**	**56.05**	**195**	*e*P	**P**	**08 59 02.9**	**+1.1**		
VNDA				pmax	pmax				
	comp=Z,27nm,1.1s								
VNDA	**Vanda**	**56.05**	**195**	*e*P	**P**	**08 59 02.9**	**+1.1**		
	comp=Z,27nm,1.1s								
NVL	**N'lazarevskaya**	**59.29**	**158**	*e*P	**P**	**08 59 25.0**	**+0.3**		
NVL				*e*S	**S**	**09 07 31.3**	**-1.2**		
ZAIG	**Zacatecas**	**61.20**	**351**	*e*P	**P**	**08 59 41.0**	**+2.5**		
	comp=Z,90nm,1.7s								
SJG	**San Juan**	**61.73**	**30**	*e*P	**P**	**08 59 41.1**	**-0.8**		
SJG				pmax	pmax				
	comp=Z,41nm,1.1s								
SJG	**San Juan**	**61.73**	**30**	*e*P	**P**	**08 59 41.1**	**-0.8**		
	comp=Z,41nm,1.1s								
CBYP	**Canovanas**	**61.99**	**30**	*e*P	**P**	**08 59 42.5**	**-1.2**		
	comp=Z,120nm,1.8s								
SLBS	**Sierra La Lagu**	**63.40**	**343**	*e*P	**P**	**08 59 52.8**	**-0.2**		
	comp=Z,135nm,1.8s								
035Z	**Hargill**	**64.44**	**356**	P	**P**	**08 59 59.4**	**-0.3**		
	baz=176								
035A	**Encino**	**64.92**	**356**	P	**P**	**09 00 03.2**	**+0.3**		
	baz=176								
034A	**Hebbronville**	**65.08**	**355**	P	**P**	**09 00 04.1**	**+0.2**		
	baz=176								
934A	**Benavides**	**65.60**	**355**	P	**P**	**09 00 07.5**	**+0.2**		
	baz=176								
933A	**Laredo**	**65.67**	**355**	P	**P**	**09 00 07.3**	**-0.4**		
	baz=175								
HPIG		**65.74**	**348**	*e*P	**P**	**09 00 09.5**	**+1.1**		
	comp=Z,85nm,1.6s								
834A	**Tilden**	**66.12**	**355**	P	**P**	**09 00 10.7**	**+0.1**		
	baz=176								
835A	**Beeville**	**66.24**	**356**	P	**P**	**09 00 11.7**	**+0.4**		
	baz=176								
833A	**Chaparral WMA,**	**66.38**	**355**	P	**P**	**09 00 11.9**	**-0.4**		
	baz=175								
832A	**Faith Ranch, C**	**66.39**	**354**	P	**P**	**09 00 11.2**	**-1.1**		
	baz=175								
737A	**Port Lavaca**	**66.66**	**357**	P	**P**	**09 00 13.1**	**-0.9**		
	baz=178								
738A	**Farr-Stevens R**	**66.71**	**358**	P	**P**	**09 00 13.7**	**-0.6**		
	baz=178								
733A	**Divot King Ran**	**66.76**	**355**	P	**P**	**09 00 14.2**	**-0.5**		
	baz=175								
735A	**Kenedy**	**66.81**	**356**	P	**P**	**09 00 14.6**	**-0.4**		
	baz=177								
734A	**La Parita Cree**	**66.84**	**355**	P	**P**	**09 00 14.8**	**-0.4**		
	baz=176								
736A	**Circle Diamond**	**66.87**	**357**	P	**P**	**09 00 14.6**	**-0.7**		
	baz=177								
DWPF	**Disney Wildern**	**66.97**	**12**	*e*P	**P**	**09 00 16.9**	**+0.9**		
	comp=Z,262nm,1.8s								
URZ	**Urewera**	**67.08**	**239**	P	**P**	**09 00 17.5**	**+0.6**		
	comp=Z,21nm,0.9s,baz=101,slow=3.7,SNR=3.9								
638A	**Rosharon**	**67.28**	**358**	P	**P**	**09 00 16.8**	**-1.1**		
	baz=179								
637A	**Eagle Lake**	**67.32**	**358**	P	**P**	**09 00 18.0**	**-0.2**		
	baz=178								
635A	**Leesville**	**67.33**	**356**	P	**P**	**09 00 18.0**	**-0.4**		
	baz=177								
634A	**China Grove, S**	**67.36**	**356**	P	**P**	**09 00 17.6**	**-0.9**		
	baz=176								
645A	**Chauvin**	**67.37**	**3**	P	**P**	**09 00 17.9**	**-0.6**		
	baz=183								
636A	**Smothers Creek**	**67.39**	**357**	P	**P**	**09 00 18.3**	**-0.4**		
	baz=177								
633A	**Saathoff Ranch**	**67.49**	**355**	P	**P**	**09 00 19.2**	**-0.1**		
	baz=175								
SYO	**Syowa Base**	**67.70**	**164**	‖ *e*P	**P**	**09 00 17.8**	**-2.5**		
SYO	**Syowa Base**	**67.70**	**164**	‖ *i*pP	**P**	**09 00 20.6**	**+0.3**		
LTX	**Lajitas**	**67.81**	**351**	*e*P	**P**	**09 00 21.4**	**-0.1**		
LTX	**Lajitas**	**67.81**	**351**	*e*P	**P**	**09 00 21.4**	**-0.1**		
TXAR	**Lajitas Array**	**67.81**	**351**	P	**P**	**09 00 21.4**	**-0.1**		
	comp=Z,8.8nm,1.1s,baz=170,slow=6.7,SNR=39								
TX31	**Lajitas Ar. Si**	**67.81**	**351**	*e*P	**P**	**09 00 22.4**	**+0.9**		
543A	**St. Martinvill**	**67.95**	**2**	P	**P**	**09 00 21.7**	**-0.5**		
	baz=182								
539A	**Cross D Ranch,**	**67.95**	**359**	P	**P**	**09 00 21.6**	**-0.6**		
	baz=179								
535A	**Dale**	**67.96**	**356**	P	**P**	**09 00 21.4**	**-0.9**		
	baz=177								
537A	**Green Hill Far**	**67.96**	**358**	P	**P**	**09 00 21.9**	**-0.4**		
	baz=178								
542A	**Morse**	**67.97**	**1**	P	**P**	**09 00 21.8**	**-0.5**		
	baz=181								
536A	**Bastrop**	**67.99**	**357**	P	**P**	**09 00 21.4**	**-1.0**		
	baz=177								
544A	**White Castle**	**68.00**	**2**	P	**P**	**09 00 22.3**	**-0.2**		
	baz=182								
534A	**Blanco**	**68.01**	**356**	P	**P**	**09 00 21.3**	**-1.4**		
	baz=176								
538A	**Harpers Horsep**	**68.08**	**358**	P	**P**	**09 00 22.2**	**-0.9**		
	baz=178								
533A	**Kerrville**	**68.09**	**355**	P	**P**	**09 00 22.4**	**-0.8**		
	baz=176								
JCT	**Junction City**	**68.55**	**354**	P	**P**	**09 00 25.3**	**-0.8**		
	baz=175,SNR=9.2								
JCT	**Junction City**	**68.55**	**354**	*e*P	**P**	**09 00 26.0**	**0.0**		
JCT				pmax	pmax				
	comp=Z,75nm,1.6s								
JCT	**Junction City**	**68.55**	**354**	*e*P	**P**	**09 00 26.0**	**0.0**		
	comp=Z,75nm,1.6s								
440A	**Kirbyville**	**68.58**	**360**	P	**P**	**09 00 25.7**	**-0.5**		
	baz=180								
441A	**DeRidder**	**68.59**	**1**	P	**P**	**09 00 25.6**	**-0.6**		
	baz=180								
438A	**Sam Houston St**	**68.61**	**358**	P	**P**	**09 00 26.1**	**-0.2**		
	baz=179								
443A	**Delano Plantat**	**68.63**	**2**	P	**P**	**09 00 26.3**	**-0.1**		
	baz=182								
439A	**Center Grove,**	**68.64**	**359**	P	**P**	**09 00 25.5**	**-1.0**		
	baz=179								
445A	**Amite**	**68.64**	**3**	P	**P**	**09 00 25.5**	**-1.0**		
	baz=183								
436A	**Wall Ranch, Ga**	**68.67**	**357**	P	**P**	**09 00 25.8**	**-0.8**		
	baz=177								
437A	**Phantom Ranch,**	**68.70**	**358**	P	**P**	**09 00 26.1**	**-0.8**		
	baz=178								
435B	**Jarrell**	**68.71**	**356**	P	**P**	**09 00 26.4**	**-0.6**		
	baz=177								
446A	**Poplarville**	**68.75**	**4**	P	**P**	**09 00 26.4**	**-0.8**		
	baz=184								
433A	**Art**	**68.77**	**355**	P	**P**	**09 00 26.3**	**-1.1**		
	baz=176,SNR=8.9								
434A	**Burnet**	**68.78**	**356**	P	**P**	**09 00 26.3**	**-1.1**		
	baz=176								
447A	**Lucedale**	**68.80**	**5**	P	**P**	**09 00 26.7**	**-0.8**		
	baz=184								
448A	**Bay Minette**	**68.99**	**5**	P	**P**	**09 00 27.4**	**-1.3**		
	baz=185								
343A	**Vidalia**	**69.15**	**2**	P	**P**	**09 00 29.0**	**-0.6**		
	baz=182								
341A	**Kurthwood**	**69.17**	**1**	P	**P**	**09 00 29.1**	**-0.7**		
	baz=180								
339A	**Huntington**	**69.17**	**359**	P	**P**	**09 00 29.5**	**-0.4**		
	baz=179								
337A	**Centerville**	**69.18**	**358**	P	**P**	**09 00 28.9**	**-1.0**		
	baz=178								
335A	**Moody**	**69.20**	**357**	P	**P**	**09 00 29.2**	**-0.8**		
	baz=177								
338A	**Crockett**	**69.21**	**359**	P	**P**	**09 00 29.7**	**-0.4**		
	baz=179								
342A	**Flagon Creek P**	**69.22**	**1**	P	**P**	**09 00 29.7**	**-0.4**		
	baz=181								
345A	**Thompson Farm,**	**69.23**	**3**	P	**P**	**09 00 28.8**	**-1.4**		
	baz=183								
340A	**Bronson**	**69.25**	**360**	P	**P**	**09 00 28.7**	**-1.6**		
	baz=180								
336A	**Riesel**	**69.28**	**357**	P	**P**	**09 00 29.3**	**-1.2**		
	baz=177								
334A	**Lometa**	**69.29**	**356**	P	**P**	**09 00 29.0**	**-1.6**		
	baz=176,SNR=10								
333A	**Richland Sprin**	**69.33**	**355**	P	**P**	**09 00 29.4**	**-1.5**		
	baz=176,SNR=8.1								
346A	**Big Creek Wild**	**69.34**	**4**	P	**P**	**09 00 29.6**	**-1.3**		
	baz=184								
344A	**Westbrook Farm**	**69.35**	**3**	P	**P**	**09 00 30.0**	**-0.9**		
	baz=182								
347A	**Saraland**	**69.41**	**5**	P	**P**	**09 00 29.8**	**-1.4**		
	baz=184								
348A	**Jackson**	**69.47**	**5**	P	**P**	**09 00 30.4**	**-1.2**		
	baz=185								
NATX	**Nacogdoches**	**69.60**	**359**	P	**P**	**09 00 31.1**	**-1.4**		
	baz=179								
NATX	**Nacogdoches**	**69.60**	**359**	*e*P	**P**	**09 00 33.8**	**+1.4**		
	comp=Z,196nm,1.8s								
243A	**Waterproof**	**69.75**	**2**	P	**P**	**09 00 32.1**	**-1.2**		
	baz=182								
238A	**Jacksonville**	**69.85**	**359**	P	**P**	**09 00 32.8**	**-1.2**		
	baz=179								
239A	**Gary**	**69.86**	**359**	P	**P**	**09 00 32.7**	**-1.3**		
	baz=179								
237A	**Washetta, Mont**	**69.86**	**358**	P	**P**	**09 00 32.9**	**-1.2**		
	baz=178								
241A	**Mo Tay, Goldon**	**69.86**	**1**	P	**P**	**09 00 33.3**	**-0.7**		
	baz=181								
240A	**Hunter Patters**	**69.87**	**0**	P	**P**	**09 00 33.0**	**-1.1**		
	baz=180								
236A	**Katherine and**	**69.88**	**358**	P	**P**	**09 00 32.4**	**-1.8**		
	baz=178								
WHTX	**Lake Whitney,**	**69.91**	**357**	P	**P**	**09 00 32.7**	**-1.7**		
	baz=177								
WHTX	**Lake Whitney,**	**69.91**	**357**	*e*P	**P**	**09 00 34.8**	**+0.4**		
	comp=Z,114nm,1.6s								
242A	**Grayson**	**69.91**	**1**	P	**P**	**09 00 33.4**	**-1.0**		
	baz=181								
TIGA	**Tifton**	**69.92**	**9**	P	**P**	**09 00 32.4**	**-2.0**		
	baz=188								
244A	**Avery, Jackson**	**69.94**	**3**	P	**P**	**09 00 33.1**	**-1.4**		
	baz=183								
234A	**Clairette**	**69.96**	**356**	P	**P**	**09 00 34.0**	**-0.7**		
	baz=176								
245A	**Little AP, Sta**	**69.96**	**4**	P	**P**	**09 00 33.8**	**-0.9**		
	baz=183								
246A	**Jackson Lee, B**	**69.98**	**4**	P	**P**	**09 00 32.9**	**-1.9**		
	baz=184								
233A	**Rising Star**	**70.02**	**355**	P	**P**	**09 00 33.7**	**-1.4**		
	baz=176,SNR=14								
247A	**Quitman**	**70.05**	**5**	P	**P**	**09 00 33.8**	**-1.4**		
	baz=184								
VBMS	**Vicksburg**	**70.12**	**3**	P	**P**	**09 00 34.7**	**-0.9**		
	baz=183								
248A	**Dixon Mills**	**70.16**	**5**	P	**P**	**09 00 35.0**	**-0.8**		
	baz=185								
136A	**Ennis**	**70.35**	**358**	P	**P**	**09 00 35.9**	**-1.2**		
	baz=178								
MNTX	**Cornudas Mount**	**70.37**	**350**	P	**P**	**09 00 35.6**	**-1.7**		
	baz=170								
MNTX	**Cornudas Mount**	**70.37**	**350**	*e*P	**P**	**09 00 36.8**	**-0.5**		
	comp=Z,17nm,1.3s								
142A	**Monroe**	**70.40**	**2**	P	**P**	**09 00 36.5**	**-0.9**		
	baz=182,SNR=8.3								
141A	**Papa Simpson,**	**70.44**	**1**	P	**P**	**09 00 36.4**	**-1.2**		
	baz=181								
137A	**Heron Place, G**	**70.45**	**358**	P	**P**	**09 00 36.6**	**-1.1**		
	baz=178								
135A	**Vickery Place,**	**70.47**	**357**	P	**P**	**09 00 36.1**	**-1.7**		
	baz=177								
140A	**Cam and Jess,**	**70.47**	**0**	P	**P**	**09 00 36.3**	**-1.5**		
	baz=180								
138A	**Matatall Enter**	**70.50**	**359**	P	**P**	**09 00 37.0**	**-1.0**		
	baz=179								
139A	**Bunkhouse Ranc**	**70.51**	**359**	P	**P**	**09 00 37.0**	**-1.1**		
	baz=180								
134A	**White-Moore Ra**	**70.52**	**356**	P	**P**	**09 00 36.7**	**-1.4**		
	baz=176,SNR=7.3								
145A	**Houston Renfro**	**70.53**	**3**	P	**P**	**09 00 37.4**	**-0.8**		
	baz=183								
144A	**Alexander Plac**	**70.53**	**3**	P	**P**	**09 00 37.1**	**-1.0**		
	baz=183								
143A	**Sos Landing,**	**70.57**	**2**	P	**P**	**09 00 37.0**	**-1.4**		
	baz=182								
133A	**Hamilton Ranch**	**70.60**	**355**	P	**P**	**09 00 37.3**	**-1.3**		
	baz=176,SNR=9.4								
146A	**Union**	**70.61**	**4**	P	**P**	**09 00 37.8**	**-0.8**		
	baz=184								
ABTX	**Abilene, Hawle**	**70.67**	**355**	P	**P**	**09 00 38.0**	**-1.1**		
	baz=175								
ABTX	**Abilene, Hawle**	**70.67**	**355**	*e*P	**P**	**09 00 39.4**	**+0.3**		
	comp=Z,52nm,1.4s								
147A	**Livingston**	**70.69**	**5**	P	**P**	**09 00 38.1**	**-1.0**		
	baz=185								
319A	**Douglas**	**70.71**	**346**	*e*P	**P**	**09 00 40.8**	**+1.4**		
	comp=Z,45nm,1.4s								
Z37A	**Pogue Cattle C**	**71.05**	**358**	P	**P**	**09 00 40.1**	**-1.2**		
	baz=178								
Z39A	**Irene McRaven,**	**71.07**	**360**	P	**P**	**09 00 40.4**	**-1.1**		
	baz=180								
Z43A	**Armstrong Fami**	**71.08**	**2**	P	**P**	**09 00 40.4**	**-1.1**		
	baz=182								
Z38A	**Mt. Pleasant**	**71.09**	**359**	P	**P**	**09 00 40.8**	**-0.8**		
	baz=179								
Z40A	**Long Farm, Mag**	**71.09**	**0**	P	**P**	**09 00 40.3**	**-1.2**		
	baz=180								
Z41A	**Richland Creek**	**71.09**	**1**	P	**P**	**09 00 40.8**	**-0.7**		
	baz=181								
Z42A	**Norrel Spur, H**	**71.12**	**2**	P	**P**	**09 00 40.5**	**-1.2**		
	baz=182								
Z36A	**Blue Ridge**	**71.14**	**358**	P	**P**	**09 00 40.8**	**-1.1**		
	baz=178								
LRAL	**Lakeview Retre**	**71.15**	**6**	*e*P	**P**	**09 00 42.1**	**+0.2**		
	comp=Z,61nm,1.6s								
Z46A	**Louisville**	**71.17**	**4**	P	**P**	**09 00 41.6**	**-0.4**		
	baz=184								
Z44A	**Pea Ridge, Bel**	**71.18**	**3**	P	**P**	**09 00 41.8**	**-0.2**		
	baz=183								
Z47A	**Carrollton**	**71.23**	**5**	P	**P**	**09 00 41.3**	**-1.0**		
	baz=185								
Z35A	**Perchaven, San**	**71.23**	**357**	P	**P**	**09 00 40.9**	**-1.6**		
	baz=177								
Z33A	**Whitaker Ranch**	**71.27**	**356**	P	**P**	**09 00 41.8**	**-0.8**		
	baz=176								
Z45A	**Winona**	**71.30**	**4**	P	**P**	**09 00 42.4**	**-0.4**		
	baz=183								
Z34A	**Collier Ranch,**	**71.31**	**356**	P	**P**	**09 00 41.4**	**-1.4**		
	baz=177								
Z48A	**Northport**	**71.44**	**5**	P	**P**	**09 00 42.5**	**-1.2**		
	baz=185								
WLAR	**White Oak Lake**	**71.52**	**1**	*e*P	**P**	**09 00 44.9**	**+0.8**		
	comp=Z,44nm,1.3s								
121A	**Cookes Peak, D**	**71.56**	**348**	P	**P**	**09 00 44.3**	**-0.4**		
	baz=168								
Y42A	**Garnett, Star**	**71.69**	**2**	P	**P**	**09 00 44.1**	**-1.1**		
	baz=182								
Y41A	**Eaglette Beard**	**71.72**	**1**	P	**P**	**09 00 44.4**	**-1.0**		
	baz=181								
Y38A	**Idabel**	**71.76**	**359**	P	**P**	**09 00 44.8**	**-0.8**		
	baz=179								
Y36A	**Durant**	**71.77**	**358**	P	**P**	**09 00 44.8**	**-0.8**		
	baz=178,SNR=7.7								
Y39A	**Lockesburg**	**71.77**	**360**	P	**P**	**09 00 44.6**	**-1.1**		
	baz=180								
Y43A	**Makayla and Ka**	**71.79**	**2**	P	**P**	**09 00 44.8**	**-1.0**		
	baz=182								
Y35A	**Marietta**	**71.80**	**357**	P	**P**	**09 00 44.9**	**-0.9**		
	baz=177								
Y45A	**Yeager Farm, C**	**71.80**	**4**	P	**P**	**09 00 44.8**	**-1.0**		
	baz=184								
Y37A	**Hugo**	**71.83**	**358**	P	**P**	**09 00 45.3**	**-0.7**		
	baz=178								
Y40A	**Okolona**	**71.84**	**0**	P	**P**	**09 00 45.0**	**-1.1**		
	baz=180								
Y46A	**Houston**	**71.86**	**4**	P	**P**	**09 00 44.5**	**-1.6**		
	baz=184								
Y44A	**Strider, Charl**	**71.87**	**3**	P	**P**	**09 00 45.0**	**-1.2**		
	baz=183								
Y34A	**Reagan Ranch,**	**71.88**	**357**	P	**P**	**09 00 44.7**	**-1.7**		
	baz=177								
GOGA	**Godfrey**	**71.89**	**9**	*e*P	**P**	**09 00 46.3**	**0.0**		
GOGA				pmax	pmax				
	comp=Z,39nm,1.5s								
GOGA	**Godfrey**	**71.89**	**9**	*e*P	**P**	**09 00 45.8**	**-0.5**		
	comp=Z,39nm,1.5s								
TUC	**Tucson**	**71.91**	**345**	P	**P**	**09 00 46.5**	**-0.1**		
	baz=166								
TUC	**Tucson**	**71.91**	**345**	*e*P	**P**	**09 00 47.4**	**+0.8**		
TUC				pmax	pmax				
	comp=Z,64nm,1.8s								
TUC	**Tucson**	**71.91**	**345**	*e*P	**P**	**09 00 47.4**	**+0.8**		
	comp=Z,64nm,1.8s								
Y47A	**UCPARC, Winfie**	**71.94**	**5**	P	**P**	**09 00 45.4**	**-1.3**		
	baz=185								
Y33A	**Hilltop Ranch,**	**71.98**	**356**	P	**P**	**09 00 45.7**	**-1.2**		
	baz=176								
214A	**Organ Pipe Nat**	**72.01**	**343**	P	**P**	**09 00 47.0**	**-0.2**		
	baz=164								
AFI	**Afiamalu**	**72.17**	**266**	P	**P**	**09 00 48.6**	**-0.1**		
AFI				pmax	pmax				
	comp=Z,361nm,1.6s								
MSTX	**Muleshoe**	**72.28**	**352**	P	**P**	**09 00 48.0**	**-0.9**		
	baz=173								
MSTX	**Muleshoe**	**72.28**	**352**	*e*P	**P**	**09 00 49.3**	**+0.4**		
	comp=Z,92nm,1.5s								
X35A	**Drake**	**72.29**	**357**	P	**P**	**09 00 47.3**	**-1.4**		
	baz=177								
X40A	**Basin Creek Fa**	**72.32**	**1**	P	**P**	**09 00 47.8**	**-1.1**		
	baz=181								
X41A	**Kaden, Bauxite**	**72.33**	**1**	P	**P**	**09 00 47.7**	**-1.3**		
	baz=181								
X39A	**Fountain Ranch**	**72.34**	**360**	P	**P**	**09 00 48.0**	**-1.1**		
	baz=180,SNR=12								
X45A	**UM Field Stati**	**72.37**	**4**	P	**P**	**09 00 47.7**	**-1.5**		
	baz=184								
MIAR	**Mount Ida**	**72.37**	**0**	P	**P**	**09 00 48.5**	**-0.7**		
	baz=180,SNR=9.6								
MIAR	**Mount Ida**	**72.37**	**0**	*e*P	**P**	**09 00 48.6**	**-0.7**		
MIAR				pmax	pmax				
	comp=Z,53nm,1.5s								
MIAR	**Mount Ida**	**72.37**	**0**	*e*P	**P**	**09 00 48.6**	**-0.7**		
	comp=Z,53nm,1.5s								
X43A	**Marvell**	**72.40**	**3**	P	**P**	**09 00 48.0**	**-1.3**		
	baz=182								
X44A	**Crenshaw**	**72.41**	**3**	P	**P**	**09 00 48.1**	**-1.4**		
	baz=183								
X32A	**Elmer**	**72.43**	**355**	P	**P**	**09 00 48.4**	**-1.2**		
	baz=175								
X37A	**Clayton**	**72.43**	**359**	P	**P**	**09 00 48.4**	**-1.2**		
	baz=179								
X36A	**Centrahoma**	**72.44**	**358**	P	**P**	**09 00 48.8**	**-0.8**		
	baz=178,SNR=12								
X33A	**Lawton**	**72.50**	**356**	P	**P**	**09 00 48.6**	**-1.4**		
	baz=176								
X38A	**Whitesboro**	**72.50**	**359**	P	**P**	**09 00 49.2**	**-0.8**		
	baz=179,SNR=5.8								
X34A	**Smith Ranch, M**	**72.53**	**356**	P	**P**	**09 00 49.3**	**-0.9**		
	baz=177								
UALR	**University of**	**72.61**	**1**	*e*P	**P**	**09 00 51.1**	**+0.4**		
	comp=Z,42nm,1.5s								
WMOK	**Wichita Mounta**	**72.71**	**356**	P	**P**	**09 00 49.5**	**-1.8**		
	baz=176,SNR=7.2								
WMOK	**Wichita Mounta**	**72.71**	**356**	*e*P	**P**	**09 00 50.8**	**-0.5**		
WMOK				pmax	pmax				
	comp=Z,36nm,1.9s								
WMOK	**Wichita Mounta**	**72.71**	**356**	*e*P	**P**	**09 00 50.8**	**-0.5**		
	comp=Z,36nm,1.9s								
W38A	**Poteau**	**72.90**	**359**	P	**P**	**09 00 51.6**	**-0.8**		
	baz=179								
Y22D	**IRIS PASSCAL I**	**72.93**	**349**	P	**P**	**09 00 52.0**	**-0.8**		
	baz=169								
BNM	**Barren Site**	**72.96**	**349**	*e*P	**P**	**09 00 52.9**	**-0.1**		
W37B	**Quinton**	**72.98**	**359**	P	**P**	**09 00 53.4**	**+0.6**		
	baz=179								
W36A	**Wetumka**	**73.00**	**358**	P	**P**	**09 00 51.3**	**-1.7**		
	baz=178								
113A	**Mohawk Valley,**	**73.01**	**342**	*e*P	**P**	**09 00 54.1**	**+1.0**		
	comp=Z,26nm,1.5s								
W41B	**Gary Mavity, V**	**73.01**	**1**	P	**P**	**09 00 51.8**	**-1.2**		
	baz=181,SNR=12								
W39A	**Magazine**	**73.02**	**360**	P	**P**	**09 00 52.8**	**-0.3**		
	baz=180,SNR=9.4								
W40A	**Ferguson Farm,**	**73.02**	**1**	P	**P**	**09 00 52.3**	**-0.8**		
	baz=181								
W35A	**Tecumseh**	**73.03**	**357**	P	**P**	**09 00 52.1**	**-1.0**		
	baz=177								
JSC	**Jenkinsville**	**73.04**	**11**	*e*P	**P**	**09 00 53.2**	**0.0**		
JSC				pmax	pmax				
	comp=Z,55nm,1.2s								
JSC	**Jenkinsville**	**73.04**	**11**	*e*P	**P**	**09 00 53.1**	**0.0**		
	comp=Z,54nm,1.2s								
MAW	**Mawson**	**73.05**	**171**	P	**P**	**09 00 52.6**	**-0.4**		
	comp=Z,14nm,0.9s,baz=203,slow=7.7,SNR=14								
MAW	**Mawson**	**73.05**	**171**	*e*P	**P**	**09 00 52.5**	**-0.4**		
MAW				pmax	pmax				
	comp=Z,8.0nm,

V37A	Hulbert baz=179	73.72	359	P		P		09 00 56.3	-0.9
V34A	Guthrie baz=177	73.74	357	P		P		09 00 56.2	-1.2
V34A	Guthrie comp=Z,135nm,1.8s	73.74	357	eP		P		09 00 57.5	+0.2
TUL1	Leonard baz=178	73.76	358	P		P		09 00 56.5	-0.9
TUL1	Leonard comp=Z,77nm,1.8s	73.76	358	eP		P		09 00 57.1	-0.4
V33A	Lossen Ranch, baz=176	73.76	356	P		P		09 00 57.1	-0.4
CPCT	Cooper Cave comp=Z,55nm,1.9s	73.78	8	eP		P		09 00 57.6	+0.1
MONP2	Monument Peak baz=162	73.80	340	P		P		09 00 57.7	-0.3
KMSC	Kings Mountain baz=190	73.88	11	P		P		09 00 57.5	-0.6
KMSC	Kings Mountain comp=Z,125nm,2.0s	73.88	11	eP		P		09 00 58.2	0.0
X18A	Snowflake comp=Z,76nm,1.5s	73.90	346	eP		P		09 00 59.0	+0.5
Y14A	Wickenburg comp=Z,281nm,1.8s	73.96	343	eP		P		09 00 59.9	+1.2
109C	Camp Elliot, M baz=161	73.98	340	P		P		09 00 58.4	-0.4
TKL	Tuckaleechee C	74.07	8	eP		P		09 00 58.2	-1.1
TKL	comp=Z,87nm,1.9s			pmax		pmax			
TKL	Tuckaleechee C comp=Z,87nm,1.9s	74.07	8	eP		P		09 00 58.2	-1.1
X16A	Lo Mia Camp, P comp=Z,60nm,1.7s	74.08	345	eP		P		09 01 00.6	+1.0
HHAR	Hobbs comp=Z,62nm,1.7s	74.11	360	eP		P		09 00 59.8	+0.3
Y12C	Blythe baz=163	74.13	342	P		P		09 00 59.7	0.0
Y12C	Blythe comp=Z,73nm,1.6s	74.13	342	eP		P		09 01 00.6	+0.9
WVT	Waverly	74.16	5	eP		P		09 00 58.9	-0.9
WVT	comp=Z,68nm,1.8s			pmax		pmax			
WVT	Waverly comp=Z,68nm,1.8s	74.16	5	eP		P		09 00 58.9	-0.9
U40A	Yellville baz=181,SNR=7.1	74.19	1	P		P		09 00 59.1	-0.8
U41A	Viola baz=182	74.19	2	P		P		09 00 58.0	-2.0
U39A	Green Forest baz=180,SNR=7.6	74.21	0	P		P		09 00 58.9	-1.2
U42A	Revenden baz=182,SNR=7.2	74.21	2	P		P		09 00 58.6	-1.4
U36A	Oologah baz=178	74.24	358	P		P		09 00 58.4	-1.8
U37A	Salina baz=179,SNR=11	74.24	359	P		P		09 00 59.2	-1.0
U35A	Pawnee baz=178	74.25	358	P		P		09 00 59.0	-1.3
U38A	Gravette baz=180,SNR=9.4	74.27	359	P		P		09 00 59.3	-1.1
BC3	Big Chuckawall baz=162	74.27	341	P		P		09 01 00.3	-0.3
U34A	Anderson Ranch baz=177	74.34	357	P		P		09 00 59.6	-1.3
U34A	Anderson Ranch comp=Z,31nm,1.2s	74.34	357	eP		P		09 01 01.2	+0.3
U32A	Winter Ranch, baz=176	74.36	356	P		P		09 01 00.2	-0.8
U33A	Lingo Farm, Me baz=176	74.36	356	P		P		09 01 00.1	-0.9
W18A	Petrified Fore baz=167	74.43	346	P		P		09 01 01.4	-0.2
TPFO	Pinon Flats baz=162	74.48	340	P		P		09 01 01.8	0.0
PFO	Pinyon Flats O baz=162	74.49	340	P		P		09 01 01.7	-0.2
PFO	Pinyon Flats O	74.49	340	eP		P		09 01 03.3	+1.4
PFO	comp=Z,56nm,1.8s			pmax		pmax			
PFO	Pinyon Flats O comp=Z,56nm,1.8s	74.49	340	eP		P		09 01 03.0	+1.1
PDMCI	Parker Dam,Lak baz=164	74.57	343	P		P		09 01 02.2	0.0
PBMO	Poplar Bluff comp=Z,42nm,1.6s	74.67	3	eP		P		09 01 01.7	-0.9
IRM	Iron Mountain baz=163	74.67	342	P		P		09 01 03.0	+0.2
MURC	Murrieta baz=161	74.67	340	P		P		09 01 03.2	+0.3
BELC	Belle Mtn. Jos baz=162	74.74	341	P		P		09 01 03.7	+0.3
T35A	Sooner Cattle baz=178	74.78	358	P		P		09 01 02.6	-0.8
CIS	Catalina Islan baz=160	74.83	339	P		P		09 01 02.3	-1.4
T39A	Clever baz=180,SNR=8.5	74.85	0	P		P		09 01 03.1	-0.7
T38A	Diamond baz=180	74.86	360	P		P		09 01 02.8	-1.1
T41A	Mountain View baz=182	74.89	2	P		P		09 01 02.5	-1.5
T36A	Boggs Farm, Ca baz=178	74.91	358	P		P		09 01 03.1	-1.0
T34A	McClaskey Farm baz=177	74.91	357	P		P		09 01 03.0	-1.2
T37A	Cheneyville 18 baz=179	74.95	359	P		P		09 01 02.8	-1.5
TZTN	Tazewell comp=Z,64nm,1.6s	74.97	9	eP		P		09 01 04.3	-0.1
T40A	Mansfield baz=181,SNR=7.2	74.98	1	P		P		09 01 03.6	-1.0
T33A	Patterson Ranc baz=176	75.02	356	P		P		09 01 04.1	-0.6
FMP	Fort Macarthur baz=160	75.08	339	P		P		09 01 05.1	-0.1
NEE2	Needles Airpor baz=163	75.12	342	P		P		09 01 05.2	-0.2
WUAZ	Wupatki baz=166,SNR=8.3	75.13	345	P		P		09 01 06.1	+0.4
WUAZ	Wupatki comp=Z,78nm,1.8s	75.13	345	eP		P		09 01 06.4	+0.7
T32A	Huddler Ranch, baz=176	75.15	356	P		P		09 01 04.9	-0.7
BBRC	Big Bear Solar baz=161	75.22	340	P		P		09 01 06.7	+0.4
W13A	Hualapai Mount comp=Z,54nm,1.9s	75.27	343	eP		P		09 01 07.9	+1.4
GMRC	Granite Mounta baz=162	75.40	342	P		P		09 01 07.3	+0.2
BFSC	Mount Baldy Ra baz=161	75.40	340	P		P		09 01 06.6	-0.6
S40A	Lebanon baz=181,SNR=12	75.43	1	P		P		09 01 05.5	-1.6
S41A	Jillco Farms, baz=182,SNR=7.2	75.43	2	P		P		09 01 05.8	-1.3
MIR	Mirnyy	75.45	183	eP		P		09 01 07.0	0.0
MIR	comp=Z,4.0nm,1.6s			pmax		pmax			
S38A	Stockton baz=180,SNR=13	75.45	360	P		P		09 01 05.9	-1.3
S43A	Fulton Ridge, baz=183	75.47	3	P		P		09 01 05.1	-2.2
S39A	Bolivar baz=180,SNR=9.3	75.51	0	P		P		09 01 06.4	-1.2
S33A	Kaszmaul Farm, baz=177	75.52	357	P		P		09 01 06.7	-0.9
LDFC	Landfair comp=Z,61nm,1.3s	75.54	342	eP		P		09 01 09.9	+2.0
S35A	Otter Creek Ra baz=178	75.54	358	P		P		09 01 06.8	-0.9
S36A	Lake Cedric, C baz=178,SNR=6.3	75.56	359	P		P		09 01 06.6	-1.3
S34A	Willow Spring baz=177	75.58	357	P		P		09 01 06.8	-1.1
S37A	Fort Scott baz=179,SNR=14	75.59	359	P		P		09 01 06.8	-1.1
T25A	Trinidad baz=171	75.60	351	P		P		09 01 07.7	-0.6
T25A	Trinidad comp=Z,81nm,1.7s	75.60	351	eP		P		09 01 09.6	+1.3
DECC	Green Verdugo baz=160	75.60	339	P		P		09 01 08.3	+0.1
HEC	Hector,Ludlow baz=162	75.61	341	P		P		09 01 07.9	-0.3
S44A	Carbondale baz=184	75.63	4	P		P		09 01 06.3	-1.9
S45A	Carrier Mills baz=184	75.65	4	P		P		09 01 06.3	-2.1
S32A	Newby Ranch, P baz=176	75.67	356	P		P		09 01 08.0	-0.5
BLG	Laguna Peak, P baz=160	75.67	339	P		P		09 01 08.2	-0.4
SCZ2	Santa Cruz Isl baz=159	75.73	338	P		P		09 01 08.9	0.0
RRX	Edison Barstow baz=161	75.83	340	P		P		09 01 08.4	-1.0
R38A	Fenwick Farm, baz=180,SNR=8.8	76.01	360	P		P		09 01 08.6	-1.8
OSI	Osito Audit: C baz=160	76.05	339	P		P		09 01 10.3	-0.5
TUQ	Turquoise Moun baz=162	76.08	342	P		P		09 01 10.6	-0.4
EDW2	Edwards Air Fo baz=161	76.10	340	P		P		09 01 10.2	-0.8
R40A	Maddies Statio baz=181	76.12	1	P		P		09 01 09.2	-1.8
R39A	Chumby, Stover baz=181,SNR=6.7	76.14	1	P		P		09 01 09.6	-1.5
R37A	Teagarden Farm baz=179	76.14	359	P		P		09 01 10.1	-1.0
R36A	Gordon, Harris baz=179	76.16	359	P		P		09 01 09.9	-1.4
SBC	Santa Barbara baz=159	76.17	338	P		P		09 01 12.2	+0.8
R35A	Emporia Munici baz=178	76.18	358	P		P		09 01 10.8	-0.5
GSC	Goldstone, Bar baz=162,SNR=8.4	76.18	341	P		P		09 01 11.1	-0.5
GSC	Goldstone, Bar	76.18	341	eP		P		09 01 12.4	+0.9
GSC	comp=Z,54nm,1.6s			pmax		pmax			
GSC	Goldstone, Bar comp=Z,54nm,1.6s	76.18	341	eP		P		09 01 12.4	+0.9
R34A	Isabella, Hill baz=177	76.19	357	P		P		09 01 10.9	-0.5
R44A	Waltonville baz=184	76.19	4	P		P		09 01 09.2	-2.2
U15A	North Rim comp=Z,84nm,1.7s	76.20	345	eP		P		09 01 12.8	+0.9
R33A	Olander Ranch, baz=177	76.23	357	P		P		09 01 10.9	-0.8
MVCO	Mesa Verde baz=168,SNR=12	76.25	348	P		P		09 01 11.5	-0.6
MVCO	Mesa Verde comp=Z,73nm,1.6s	76.25	348	eP		P		09 01 12.5	+0.4
SDCO	Great Sand Dun baz=170,SNR=17	76.34	350	P		P		09 01 12.3	-0.3
SDCO	Great Sand Dun comp=Z,41nm,1.6s	76.34	350	eP		P		09 01 12.6	0.0
WCI	Wyandotte Cave	76.36	6	eP		P		09 01 11.1	-1.3
WCI	comp=Z,17nm,1.0s			pmax		pmax			
WCI	Wyandotte Cave comp=Z,17nm,1.0s	76.36	6	eP		P		09 01 11.1	-1.3
R32A	Long Quarter, baz=176	76.38	356	P		P		09 01 12.1	-0.4
S22A	4UR Ranch, Cre baz=170,SNR=16	76.52	349	P		P		09 01 13.6	-0.1
S22A	4UR Ranch, Cre comp=Z,65nm,1.6s	76.52	349	eP		P		09 01 14.9	+1.3
ARVC	Arvin baz=160	76.56	339	P		P		09 01 13.2	-0.4
LRMC	Laurel Mtn Rad baz=161	76.58	340	P		P		09 01 13.8	0.0
SHOC	Shoshone, Teco baz=162	76.61	341	P		P		09 01 14.0	+0.1
PKM	Mcpherson Peak baz=159	76.62	338	P		P		09 01 14.3	+0.1
Q37A	Longview Farm, baz=179	76.70	359	P		P		09 01 12.6	-1.6
Q35A	Mercer Eighty, baz=178	76.71	358	P		P		09 01 13.9	-0.4
OLIL	Olney comp=Z,94nm,1.9s	76.73	5	eP		P		09 01 14.5	+0.1
Q38A	Cooks Store, C baz=180	76.78	0	P		P		09 01 13.6	-1.1
Q42A	Golden Eagle baz=183	76.79	3	P		P		09 01 12.7	-2.0
Q34A	Chapman baz=177	76.80	357	P		P		09 01 14.1	-0.8
Q36A	Arnold C. Orve baz=179	76.80	359	P		P		09 01 14.1	-0.8
CBKS	Cedar Bluff baz=175	76.83	355	P		P		09 01 14.4	-0.7
Q40A	Laux Farm, Aux baz=181	76.83	1	P		P		09 01 13.9	-1.2
Q44A	Meyer Farm, Va baz=184	76.85	4	P		P		09 01 13.8	-1.3
Q43A	New Douglas baz=183	76.85	3	P		P		09 01 13.5	-1.7
Q39A	Willow Grove F baz=181	76.87	1	P		P		09 01 13.8	-1.4
KNB	Kanab	76.88	344	eP		P		09 01 16.8	+1.2
KNB	comp=Z,70nm,1.6s			pmax		pmax			
KNB	Kanab comp=Z,70nm,1.6s	76.88	344	eP		P		09 01 16.8	+1.2
Q33A	Connelly Farm, baz=177	76.91	357	P		P		09 01 15.0	-0.5
SHPR	Sheep Range comp=Z,100nm,1.8s	76.91	342	eP		P		09 01 17.4	+1.6
JSRW	J. Sargeant Re	76.93	13	eP		P		09 01 15.5	-0.1
Q32A	Meitler Ranch, baz=176	76.94	356	P		P		09 01 15.1	-0.5
LCMT	Little Creek M comp=Z,26nm,1.5s	76.96	344	eP		P		09 01 17.2	+1.2
ISA	Isabella, Lake baz=160	76.96	340	P		P		09 01 16.6	+0.7
ISA	Isabella, Lake	76.96	340	eP		P		09 01 16.9	+0.9
ISA	comp=Z,38nm,1.4s			pmax		pmax			
ISA	Isabella, Lake comp=Z,38nm,1.4s	76.96	340	eP		P		09 01 16.8	+0.8
KSU1	Kansas State U baz=178	76.96	358	P		P		09 01 15.4	-0.4
KSU1	Kansas State U comp=Z,26nm,1.0s	76.96	358	eP		P		09 01 16.1	+0.3
SMMC	Simmler baz=177	77.07	338	P		P		09 01 17.1	+0.6
MPMC	Manual Prospec baz=161,SNR=11	77.07	340	P		P		09 01 16.5	-0.2
PV01	Paradox Valley	77.17	348	eP		P		09 01 17.4	+0.2
PV05	Paradox Valley	77.20	348	eP		P		09 01 19.1	+1.7
KSCO	Kaye Shedlock' baz=173	77.26	353	P		P		09 01 17.2	-0.4
BLO	Bloomington	77.28	6	eP		P		09 01 17.2	-0.3
BLO	comp=Z,38nm,1.4s			pmax		pmax			
BLO	Bloomington comp=Z,38nm,1.4s	77.28	6	eP		P		09 01 17.2	-0.3
FURC	Furnace Creek, baz=162	77.30	341	P		P		09 01 17.6	-0.1
VES	Vestal, Richgr baz=160	77.30	339	P		P		09 01 17.0	-0.7
DAC	Darwin (Calif)	77.31	340	eP		P		09 01 19.2	+1.1
DAC	comp=Z,38nm,1.5s			pmax		pmax			
DAC	Darwin (Calif) comp=Z,38nm,1.5s	77.31	340	eP		P		09 01 19.1	+1.1
P39B	Salisbury baz=181	77.31	1	P		P		09 01 15.9	-1.8
P33A	Williams Farm, baz=177	77.34	357	P		P		09 01 17.3	-0.6
P40A	Paris baz=181	77.36	1	P		P		09 01 17.1	-0.9
P35A	Duane Minner, baz=178	77.37	358	P		P		09 01 17.2	-0.9
P37A	Lathrop baz=180	77.41	360	P		P		09 01 16.3	-2.0
P34A	Walnut Farm, R baz=178,SNR=7.2	77.42	358	P		P		09 01 18.1	-0.3
P38A	Dawn baz=180	77.44	0	P		P		09 01 16.9	-1.5
P36A	Good Intent, A baz=179	77.45	359	P		P		09 01 17.0	-1.5
P42A	Winchester baz=183	77.47	3	P		P		09 01 17.3	-1.3
PV10	Paradox Valley	77.48	348	eP		P		09 01 19.6	+0.6
Q24A	Divide baz=171,SNR=6.5	77.49	351	P		P		09 01 19.3	+0.1
Q24A	Divide comp=Z,38nm,1.4s	77.49	351	eP		P		09 01 19.6	+0.5
SZCU	Shurtz Canyon comp=Z,119nm,1.6s	77.49	344	eP		P		09 01 20.3	+1.3
CCUT	Cedar City comp=Z,41nm,1.3s	77.51	344	eP		P		09 01 18.7	-0.4
PAGB	Antelope Grade comp=Z,56nm,1.4s	77.53	338	eP		P		09 01 20.8	+1.7
P41A	Barry, Barry baz=182	77.53	2	P		P		09 01 16.4	-2.5
P32A	Huiting Farm, baz=176	77.57	356	P		P		09 01 18.9	-0.3
CWC	Cottonwood Cre baz=161	77.59	340	P		P		09 01 19.0	-0.6
TPNV	Topopah Spring baz=162,SNR=14	77.60	342	P		P		09 01 20.0	+0.4
TPNV	Topopah Spring	77.60	342	eP		P		09 01 21.1	+1.5
TPNV	comp=Z,67nm,1.5s			pmax		pmax			
TPNV	Topopah Spring comp=Z,67nm,1.5s	77.60	342	eP		P		09 01 20.6	+0.9
PV09	Paradox Valley	77.62	348	eP		P		09 01 21.1	+1.3
MTPU	Mount Pierson comp=Z,59nm,1.8s	77.73	345	eP		P		09 01 21.9	+1.3
RCTC	Rector, Farmer baz=160	77.78	339	P		P		09 01 19.1	-1.3
MSVF	Nonsavu	77.85	257	i P		P		09 01 21.2	-0.3
MSVF	comp=Z,137nm,1.9s			pmax		pmax			
GRAC	Grapevine Rang baz=161	77.92	341	P		P		09 01 21.5	+0.2
O38A	Galt baz=180	77.94	0	P		P		09 01 20.1	-1.1
SMCO	Snowmass comp=Z,42nm,1.5s	77.94	350	eP		P		09 01 22.9	+1.1
O36A	Bolckow baz=179	77.96	359	P		P		09 01 19.8	-1.5
O40A	La Belle baz=182	77.96	1	P		P		09 01 19.9	-1.4
O33A	Hebron baz=177,SNR=7.2	77.97	357	P		P		09 01 20.5	-0.9
O41A	Passleys Farm, baz=182	77.98	2	P		P		09 01 19.9	-1.5
O37A	Wolven Farm, M baz=180	77.98	360	P		P		09 01 19.7	-1.8
O34A	Beatrice baz=178,SNR=12	78.05	358	P		P		09 01 21.2	-0.6
O39A	Kirksville baz=181	78.08	1	P		P		09 01 20.7	-1.3
O42A	Bath baz=183	78.09	3	P		P		09 01 20.1	-1.9
O35A	Humboldt baz=178	78.11	358	P		P		09 01 20.5	-1.6
O31A	Woolen Ranch, baz=176	78.14	356	P		P		09 01 21.8	-0.5
MSU	Marysvale	78.19	345	eP		P		09 01 24.3	+1.4
MSU	Marysvale	78.19	345	eP		P		09 01 24.3	+1.4
O32A	Brockman Farm, baz=176	78.19	356	P		P		09 01 22.4	-0.3
TIN	Tinemaha, Big baz=161	78.21	340	P		P		09 01 23.4	+0.5
ISCO	Idaho Springs baz=170,SNR=6.5	78.37	351	P		P		09 01 23.8	-0.2
ISCO	Idaho Springs	78.37	351	eP		P		09 01 25.3	+1.3
ISCO	comp=Z,35nm,1.6s			pmax		pmax			
ISCO	Idaho Springs comp=Z,35nm,1.6s	78.37	351	eP		P		09 01 25.3	+1.3
SFIN	Lafayette baz=185	78.44	5	P		P		09 01 22.1	-1.8
SRU	San Rafael Swe	78.45	347	eP		P		09 01 25.1	+0.7
SRU	comp=Z,40nm,1.5s			pmax		pmax			
SRU	San Rafael Swe comp=Z,40nm,1.5s	78.45	347	eP		P		09 01 25.1	+0.7
HDIL	Hopedale baz=184	78.48	3	P		P		09 01 22.3	-1.9
HDIL	Hopedale comp=Z,102nm,1.8s	78.48	3	eP		P		09 01 23.8	-0.4
N37A	Lee Faris, Mou baz=180	78.58	360	P		P		09 01 23.1	-1.6
N38A	Joes South For baz=180	78.61	0	P		P		09 01 23.6	-1.3
N33A	J Bar K, Exete baz=177	78.63	357	P		P		09 01 24.5	-0.5
N36A	Muff Farm, Cla baz=179	78.64	359	P		P		09 01 24.3	-0.8
N32A	Stulken Farm, baz=176	78.69	357	P		P		09 01 25.0	-0.4
N34A	Lincoln baz=178	78.69	358	P		P		09 01 24.6	-0.8
N35A	Tabor baz=178	78.70	359	P		P		09 01 24.9	-0.5
N39A	Derby Farms, D baz=181	78.70	1	P		P		09 01 23.9	-1.5
TMUT	Trail Mountain comp=Z,59nm,1.2s	78.76	346	eP		P		09 01 27.1	+0.9
R11A	Troy Canyon, C baz=163,SNR=25	78.77	343	P		P		09 01 26.6	+0.5
R11A	Troy Canyon, C comp=Z,52nm,1.5s	78.77	343	eP		P		09 01 26.8	+0.7
N31A	Bailey Ranch, baz=176	78.78	356	P		P		09 01 25.5	-0.4
P17A	Butcher Ranch, comp=Z,32nm,1.2s	78.84	347	eP		P		09 01 27.4	+0.9
O20A	White River Ci baz=168,SNR=19	79.07	349	P		P		09 01 27.8	0.0
O20A	White River Ci comp=Z,32nm,1.1s	79.07	349	eP		P		09 01 28.8	+1.1
OGNE	Ogallala baz=173	79.12	354	P		P		09 01 27.8	-0.1
M37A	Trindle Farm, baz=180	79.22	360	P		P		09 01 27.5	-0.8
M38A	Pleasantville baz=180	79.24	0	P		P		09 01 26.8	-1.5
M36A	Felix, Anita baz=179	79.28	359	P		P		09 01 26.9	-1.7
M35A	Neola baz=178	79.30	359	P		P		09 01 27.6	-1.1
M31A	Lambtecht Ranc baz=176	79.30	356	P		P		09 01 27.8	-0.9
M39A	Webster baz=181	79.31	1	P		P		09 01 27.6	-1.2
O56A	Blue Knob Stat baz=192	79.32	12	P		P		09 01 27.7	-1.2
BGNE	Belgrade baz=176	79.33	357	P		P		09 01 28.2	-0.7
BGNE	Belgrade comp=Z,91nm,1.1s	79.33	357	eP		P		09 01 29.9	+1.0
M34A	Aspy Farms, Fr baz=178	79.36	358	P		P		09 01 28.0	-1.0
M33A	Taylor Creek F baz=177	79.45	357	P		P		09 01 28.5	-1.0
N23A	Red Feather La baz=170,SNR=10	79.49	351	P		P		09 01 30.0	-0.1
N23A	Red Feather La comp=Z,60nm,1.5s	79.49	351	eP		P		09 01 31.8	+1.7
MPU	Maple Canyon comp=Z,45nm,1.5s	79.54	346	eP		P		09 01 31.6	+1.3
NLU	North Lily Min comp=Z,86nm,1.7s	79.56	346	eP		P		09 01 31.7	+1.3
TVH3	East Aurora ar comp=Z,75nm,1.9s	79.59	340	eP		P		09 01 32.3	+1.6
TVH2	Borealis Mine comp=Z,37nm,1.6s	79.59	340	eP		P		09 01 32.3	+1.6
TVH1	TV Hill, Hawth comp=Z,92nm,1.8s	79.67	340	eP		P		09 01 32.7	+1.4
CMB	Columbia Colle	79.72	339	eP		P		09 01 32.2	+1.1
CMB	comp=Z,31nm,1.2s			pmax		pmax			
CMB	Columbia Colle comp=Z,31nm,1.3s	79.72	339	eP		P		09 01 31.0	-0.1
N54A	Moraine State baz=191	79.78	11	P		P		09 01 29.6	-1.7
SSPA	Standing Stone comp=Z,45nm,1.5s	79.79	12	eP		P		09 01 30.3	-1.1
L34A	Svendsen Farm, baz=178	79.82	358	P		P		09 01 29.7	-1.8
PHWY	Pilot Hill comp=Z,54nm,1.4s	79.83	351	eP		P		09 01 33.3	+1.3
WAKR	Walker comp=Z,89nm,1.8s	79.89	340	eP		P		09 01 33.9	+1.6
L32A	Elgin baz=177	79.91	357	P		P		09 01 31.6	-0.4
L40A	Anamosa baz=182	79.91	2	P		P		09 01 30.6	-1.4
L36A	Harm Buss Farm baz=179	79.92	359	P		P		09 01 30.7	-1.4
DUG	Dugway, Tooele baz=165,SNR=17	79.94	345	P		P		09 01 32.2	-0.2
DUG	Dugway, Tooele	79.94	345	eP		P		09 01 33.0	+0.6
DUG	comp=Z,56nm,1.3s			pmax		pmax			
DUG	Dugway, Tooele	79.94	345	eP		P		09 01 33.0	+0.6

comp=Z,56nm,1.4s
L37A Phoenix Point, 79.94 0 P P 09 01 31.0 -1.2
baz=180
L35A Bielow Farm, R 79.94 359 P P 09 01 31.2 -1.0
baz=179
L41A Preston 79.95 2 P P 09 01 30.5 -1.7
baz=183
L39A Vinton 79.96 1 P P 09 01 31.1 -1.2
baz=181
L38A Oak Wood Farm, 79.96 1 P P 09 01 31.7 -0.5
baz=181
L33A Hoskins 80.05 357 P P 09 01 31.6 -1.2
baz=177
JLU Jordanelle 80.07 346 eP P 09 01 34.5 +1.2
comp=Z,67nm,1.7s
L31A Butterfield Fa 80.12 356 P P 09 01 33.0 -0.2
baz=176
YERR Yerington 80.29 340 eP P 09 01 36.1 +1.7
comp=Z,65nm,1.4s
K36A Gilmore City 80.46 360 P P 09 01 34.1 -0.8
baz=179
K38A Parkersburg 80.47 1 P P 09 01 33.8 -1.2
baz=181
K33A Hardington 80.47 358 P P 09 01 33.8 -1.3
baz=177
K41A Shullsburg 80.48 3 P P 09 01 33.4 -1.7
baz=183
PNTR Pine Nut 80.48 340 eP P 09 01 37.2 +1.7
comp=Z,51nm,1.3s
K34A Le Mars 80.53 358 P P 09 01 34.4 -0.9
baz=178
K39A Oelwein 80.54 1 P P 09 01 33.4 -1.9
baz=182
K35A Storm Lake 80.55 359 P P 09 01 34.8 -0.7
baz=179
K40A Colesburg 80.55 2 P P 09 01 33.4 -2.0
baz=182
TCUT Toone Canyon 80.56 347 eP P 09 01 36.8 +0.9
comp=Z,77nm,1.6s
K31A O'Neill 80.57 356 P P 09 01 35.0 -0.5
baz=176
K32A Verdigre 80.57 357 P P 09 01 34.5 -1.0
baz=177
K37A Belmond 80.58 0 P P 09 01 33.8 -1.8
baz=180
K30A Basset 80.66 356 P P 09 01 35.2 -0.9
baz=175
BGU Big Grassy Mou 80.69 345 eP P 09 01 36.8 +0.4
comp=Z,18nm,1.3s
AFDM Forest Hills D 80.73 339 eP P 09 01 36.6 0.0
comp=Z,42nm,1.3s
JFWS Jewell Farm 80.79 3 eP P 09 01 36.4 -0.3
JFWS pmax pmax
comp=Z,57nm,1.7s
JFWS Jewell Farm 80.79 3 eP P 09 01 36.4 -0.3
comp=Z,57nm,1.7s
ODNJ Ogdensburg 80.82 15 eP P 09 01 35.1 -1.8
comp=Z,31nm,1.4s
PAHR Pah Rah Range 81.00 340 eP P 09 01 39.7 +1.6
comp=Z,57nm,1.5s
HWUT Hardware Ranch 81.06 347 eP P 09 01 38.0 -0.4
comp=Z,18nm,1.3s
J34A George 81.12 358 P P 09 01 37.7 -0.8
baz=178
J37A Redenius Farm, 81.13 0 P P 09 01 37.2 -1.3
baz=180
J38A Wedel Dairy, R 81.14 1 P P 09 01 37.2 -1.4
baz=181
J36A Seneca 1, Swea 81.15 360 P P 09 01 37.9 -0.7
baz=180
J39A Decorah 81.17 2 P P 09 01 37.3 -1.4
baz=182
J33A Davis 81.19 358 P P 09 01 37.9 -0.9
baz=177
J35A Milford 81.19 359 P P 09 01 37.6 -1.3
baz=179
J31A Geddes 81.23 356 P P 09 01 38.1 -1.0
baz=176
J41A Loganville 81.25 3 P P 09 01 37.3 -1.8
baz=183
J40A Soldiers Grove 81.26 2 P P 09 01 37.1 -2.1
baz=182
J32A Parkston 81.27 357 P P 09 01 37.6 -1.6
baz=177
K22A Casper 81.30 351 P P 09 01 39.6 -0.1
baz=170
K22A Casper 81.30 351 eP P 09 01 40.8 +1.2
comp=Z,111nm,1.4s
J30A Dallas 81.31 356 P P 09 01 38.7 -0.8
baz=175,SNR=22
ORV Oroville 81.45 339 eP P 09 01 41.9 +1.6
ORV pmax pmax
comp=Z,42nm,1.8s
ORV Oroville 81.45 339 eP P 09 01 40.1 -0.2
comp=Z,42nm,1.8s
HVU Hansel Valley 81.46 346 eP P 09 01 40.5 0.0
HVU pmax pmax
comp=Z,30nm,1.3s
HVU Hansel Valley 81.46 346 eP P 09 01 40.5 0.0
comp=Z,30nm,1.4s
ECSD EROS Data Cent 81.59 358 P P 09 01 39.9 -1.0
baz=178
ECSD EROS Data Cent 81.59 358 eP P 09 01 41.1 +0.1
comp=Z,81nm,1.8s
I35A Creekview Farm 81.68 359 P P 09 01 40.4 -1.0
baz=179
I37A Lemond, Waseca 81.83 0 P P 09 01 41.3 -0.9
baz=180
I36A Fitzsimmons Fa 81.83 360 P P 09 01 40.8 -1.4
baz=180
BW06 Boulder Array 81.85 348 P P 09 01 42.1 -0.5
baz=168,SNR=30
BW06 Boulder Array 81.85 348 eP P 09 01 42.3 -0.4
PD31 Pinedale Array 81.85 348 eP P 09 01 42.5 -0.2
PDAR Pinedale Array 81.85 348 P P 09 01 42.5 -0.2
comp=Z,8.2nm,0.8s,baz=152,slow=5.9,SNR=57
I38A Scanlan Farm, 81.87 1 P P 09 01 41.1 -1.3
baz=181
I34A Hadley 81.88 358 P P 09 01 41.2 -1.3
baz=178
I33A Coleman 81.91 358 P P 09 01 41.6 -1.0
baz=178
I32A Karley and Nic 81.91 357 P P 09 01 41.5 -1.2
baz=177
I31A Royce, Wessing 81.96 357 P P 09 01 41.5 -1.4
baz=176
AHID Auburn Hatcher 82.11 347 eP P 09 01 44.4 +0.4
comp=Z,71nm,1.6s
O03D Paynes Creek 82.22 339 P P 09 01 44.1 -0.4
baz=158,SNR=12
H32A Carlson Farm, 82.39 357 P P 09 01 43.7 -1.4
baz=177
SUSD Miller 82.39 356 P P 09 01 44.1 -1.0
baz=176
H36A Jessenland, He 82.39 360 P P 09 01 44.3 -0.8
baz=180
H37A Dierke Farm, C 82.40 1 P P 09 01 43.7 -1.4
baz=181
H31A Wolsey 82.40 357 P P 09 01 44.1 -1.1
baz=176
RSSD Black Hills 82.46 353 P P 09 01 45.5 -0.3
baz=172
RSSD Black Hills 82.46 353 eP P 09 01 46.2 +0.4
RSSD pmax pmax
comp=Z,46nm,1.4s
RSSD Black Hills 82.46 353 eP P 09 01 45.9 +0.1
comp=Z,46nm,1.4s
H34A Spellman Lake, 82.50 359 P P 09 01 44.4 -1.3
baz=178
H35A Sunnyside Ranc 82.52 359 P P 09 01 44.3 -1.5
baz=179
H33A Prehn Over Nor 82.54 358 P P 09 01 44.6 -1.3
baz=178
REDW Red Top Meadow 82.64 348 eP P 09 01 47.2 +0.5
comp=Z,91nm,1.6s
WDC Whiskeytown Da 82.70 338 eP P 09 01 47.4 +0.5
WDC pmax pmax
comp=Z,85nm,1.6s
WDC Whiskeytown Da 82.70 338 eP P 09 01 47.4 +0.5
comp=Z,85nm,1.6s
KMRM Mail Ridge 82.72 337 eP P 09 01 48.0 +1.0
comp=Z,165nm,1.6s
SNOW Snow King Moun 82.72 348 eP P 09 01 47.0 -0.2
comp=Z,94nm,1.8s
TPAW Teton Pass 82.78 347 eP P 09 01 48.2 +0.7
comp=Z,51nm,1.3s
LOHW Long Hollow 82.84 348 eP P 09 01 47.9 +0.1
comp=Z,41nm,1.5s
H25A Fruitdale 82.91 353 P P 09 01 47.5 -0.5
baz=172
MOOW Moose Ponds 83.00 348 eP P 09 01 49.2 +0.6
comp=Z,54nm,1.9s
G35A Watkins 83.04 360 P P 09 01 47.6 -0.9
baz=179
G33A Ortonville 83.04 358 P P 09 01 47.0 -1.5
baz=178
SPMN Marine on St. 83.04 1 P P 09 01 47.5 -1.1
baz=181,SNR=5.4
SPMN Marine on St. 83.04 1 eP P 09 01 47.0 -1.5
comp=Z,39nm,1.3s
G36A St. Michael 83.05 0 P P 09 01 47.1 -1.4
baz=180
G34A Benson 83.07 359 P P 09 01 47.4 -1.3
baz=178
N02D Trinity Center 83.11 338 P P 09 01 49.0 0.0
baz=158,SNR=11
G31A Conde 83.14 357 P P 09 01 47.0 -2.0
baz=176
G32A Webster 83.14 357 P P 09 01 47.0 -2.1
baz=177
IMW Indian Meadow 83.18 348 eP P 09 01 50.6 +1.0
comp=Z,33nm,1.3s
ACCN Adirondack Com 83.23 15 eP P 09 01 48.5 -1.0
comp=Z,86nm,1.8s
MOD Modoc Plateau 83.30 340 eP P 09 01 51.1 +0.9
comp=Z,80nm,1.6s
FLWY Flagg Ranch 83.32 348 eP P 09 01 51.1 +0.8
comp=Z,74nm,1.4s
KHMM Horse Mountain 83.32 338 eP P 09 01 52.5 +2.3
comp=Z,44nm,1.2s
WVOR Wild Horse Val 83.38 342 eP P 09 01 51.8 +1.3
WVOR pmax pmax
comp=Z,47nm,1.3s
WVOR Wild Horse Val 83.38 342 eP P 09 01 51.8 +1.3
comp=Z,47nm,1.4s
HLID Hailey 83.50 345 P P 09 01 50.9 -0.2
baz=164,SNR=28
HLID Hailey 83.50 345 eP P 09 01 52.5 +1.3
comp=Z,43nm,1.3s
YPP Pitchstone Pla 83.52 348 eP P 09 01 51.7 +0.3
comp=Z,46nm,1.9s
M02C Callahan 83.54 338 P P 09 01 51.0 -0.3
baz=157,SNR=16
M04C Macdoel 83.61 339 P P 09 01 51.4 -0.3
baz=158,SNR=21
F34A Alexandria 83.62 359 P P 09 01 50.3 -1.2
baz=179
MFID Camas Ranch 83.66 344 eP P 09 01 52.9 +1.0
comp=Z,36nm,1.4s
F35A Swanville 83.68 359 P P 09 01 50.9 -0.8
baz=179
F36A Milaca 83.68 0 P P 09 01 50.2 -1.6
baz=180,SNR=9.1
F33A 5 Mile Ranch, 83.69 358 P P 09 01 50.3 -1.5
baz=178
F32A Veblen 83.74 358 P P 09 01 50.9 -1.2
baz=177
F31A Hecla 83.77 357 P P 09 01 51.1 -1.2
baz=176
F30A Leola 83.78 356 P P 09 01 51.4 -0.9
baz=176
YBH Yreka Blue Hor 83.81 339 eP P 09 01 53.1 +0.4
YBH pmax pmax
comp=Z,42nm,1.4s
YBH Yreka Blue Hor 83.81 339 eP P 09 01 53.1 +0.4
comp=Z,42nm,1.4s
F29A Eureka 83.83 356 P P 09 01 51.2 -1.3
baz=175
DZM Mont Dzumac 83.92 247 eLR LR 09 28 21.9
comp=Z,4µm,27.2s
YMR Madison River 83.93 348 eP P 09 01 55.2 +1.8
comp=Z,88nm,1.5s
COWI Conover 84.02 3 eP P 09 01 53.2 -0.3
comp=Z,52nm,1.6s
YHH Holmes Hill 84.03 348 eP P 09 01 55.5 +1.5
comp=Z,75nm,1.5s
YHB Horse Butte 84.05 348 eP P 09 01 54.2 +0.2
comp=Z,49nm,1.8s
RLMT Red Lodge 84.11 349 P P 09 01 54.1 -0.2
baz=168,SNR=7.1
RLMT Red Lodge 84.11 349 eP P 09 01 55.5 +1.2
comp=Z,44nm,1.3s
QLMT Earthquake Lak 84.17 347 eP P 09 01 55.2 +0.7
PLVO Plevna 84.22 12 eP P 09 01 54.4 -0.2
comp=Z,78nm,1.7s
K05A Summer Lake 84.23 340 eP P 09 01 55.8 +0.9
comp=Z,221nm,1.8s
LONY Lake Ozonia 84.24 14 eP P 09 01 54.2 -0.5
comp=Z,48nm,1.4s
E36A McGregor 84.33 0 P P 09 01 53.9 -1.2
baz=180
E34A Wadena 84.34 359 P P 09 01 53.8 -1.3
baz=179
E33A Westby DABS, E 84.34 358 P P 09 01 53.7 -1.4
baz=178
K04D Chiloquin, OR 84.37 340 P P 09 01 54.4 -1.1
baz=158
E35A Pequot Lakes 84.37 360 P P 09 01 54.1 -1.2
baz=180
E37A Wrenshall 84.39 1 P P 09 01 53.8 -1.6
baz=181
MCMT McKenzie Canyo 84.42 346 eP P 09 01 57.4 +1.5
E31A Nome 84.45 357 P P 09 01 55.2 -0.6
baz=177
E32A Braaten, Kindr 84.46 358 P P 09 01 54.9 -0.8
baz=177
L02D Cave Junction, 84.46 338 P P 09 01 55.0 -0.8
baz=157
HUMO Hull Mountain 84.69 339 eP P 09 01 57.1 +0.1
comp=Z,58nm,1.6s
GCMT Greycliff 84.82 349 eP P 09 01 58.0 +0.2
J05D Fort Rock, OR 84.84 340 P P 09 01 57.9 0.0
baz=159,SNR=24
DLMT Dillon 84.89 347 eP P 09 01 59.3 +1.2
comp=Z,65nm,1.7s
D35A Remer 84.90 360 P P 09 01 56.5 -1.5
baz=180
D31A Mcclaflin, Tow 84.94 357 P P 09 01 57.2 -0.9
baz=177
D33A AnnSam, Waubun 84.98 359 P P 09 01 57.3 -1.1
baz=178
D37A Cotton 84.98 1 P P 09 01 56.4 -2.0
baz=181
BOZ Bozeman (W) 84.99 348 P P 09 01 58.8 +0.1
baz=166,SNR=17
BOZ Bozeman (W) 84.99 348 eP P 09 01 59.0 +0.3
BOZ pmax pmax
comp=Z,59nm,1.7s
BOZ Bozeman (W) 84.99 348 eP P 09 01 59.0 +0.3
comp=Z,59nm,1.8s
D36A Goodland 84.99 0 P P 09 01 56.7 -1.7
baz=180
D32A Dogwood Acres, 85.00 358 P P 09 01 57.4 -1.0
baz=177
D26A Manning 85.20 354 P P 09 02 00.1 +0.7
baz=173,SNR=8.9
LCCM Lewis and Clar 85.22 347 eP P 09 02 01.4 +1.6
LAO LASA Array 85.24 351 P P 09 01 59.7 0.0
baz=170,SNR=9.0
LAO LASA Array 85.24 351 eP P 09 02 00.9 +1.2
comp=Z,55nm,1.4s
LRM Limekiln Ridge 85.31 347 eP P 09 02 00.7 +0.4
BMO Blue Mountains 85.35 343 eP P 09 02 00.3 -0.1
comp=Z,44nm,1.8s
C34A RKJ Ranch, Bem 85.47 359 P P 09 01 59.2 -1.6
baz=179
C35A Jirik Farms, M 85.52 360 P P 09 01 59.1 -2.0
baz=180
C37A Embarrass 85.56 1 P P 09 01 59.5 -1.7
baz=181
C38A Sawbill Land. 85.56 2 P P 09 01 59.8 -1.5
baz=182
C36A Pine Crest Far 85.58 1 P P 09 01 59.8 -1.5
baz=181
C33A Trail 85.59 359 P P 09 01 59.6 -1.8
baz=178
C30A Moose, Pekin 85.62 357 P P 09 01 59.9 -1.7
baz=176
I04A Tendick Farm, 85.63 340 P P 09 02 00.6 -1.1
baz=158,SNR=5.2
C32A Crookston 85.68 358 P P 09 02 00.7 -1.1
baz=178
C31A Landman Farms, 85.68 357 P P 09 02 00.4 -1.4
baz=177,SNR=6.7
EYMN Ely 85.79 2 P P 09 02 00.2 -2.1
baz=182
EYMN Ely 85.79 2 eP P 09 02 01.7 -0.7
comp=Z,20nm,1.2s
I03D Drain, OR 85.80 339 P P 09 02 01.7 -0.8
baz=157
MDND Maddock 85.82 356 P P 09 02 01.6 -0.9
baz=175
I05D Terrebonne, OR 85.85 341 P P 09 02 02.9 +0.1
baz=159,SNR=9.9
C25A Freed Ranch, W 85.94 354 P P 09 02 02.3 -0.8
baz=172
AGMN Agassiz Nation 86.13 359 P P 09 02 03.0 -1.1
baz=178,SNR=8.8
AGMN Agassiz Nation 86.13 359 eP P 09 02 03.5 -0.6
comp=Z,102nm,1.8s
G08A Pilot Rock 86.15 342 eP P 09 02 05.4 +1.1
comp=Z,60nm,1.5s
B35A Bob, Littlefor 86.18 0 P P 09 02 02.3 -2.0
baz=180,SNR=6.2
B32A Ashes, Strandq 86.25 358 P P 09 02 02.5 -2.1
baz=178,SNR=8.9
B34A Aery, Baudette 86.31 359 P P 09 02 03.6 -1.3
baz=179
B31A Greenbush Farm 86.31 357 P P 09 02 03.5 -1.4
baz=177,SNR=6.5
B30A Myrvik Farm, E 86.36 357 P P 09 02 04.0 -1.2
baz=176,SNR=15
F10A Beach Ranch, E 86.40 344 eP P 09 02 06.1 +0.6
comp=Z,38nm,1.4s
B29A Wagenman Farm, 86.42 356 P P 09 02 04.8 -0.7
baz=176
B28A Dugan Ranch, T 86.46 356 P P 09 02 05.1 -0.6
baz=175
B25A Knox Farm, Ray 86.49 354 P P 09 02 05.1 -0.7
baz=173
CHMT Chamberlain Mo 86.50 347 eP P 09 02 07.7 +1.5
G06A Carlson Farm, 86.50 341 eP P 09 02 06.7 +0.7
comp=Z,111nm,1.8s
B26A Jensen Ranch, 86.52 354 P P 09 02 04.7 -1.4
baz=173
G05D Wamic, OR 86.69 341 P P 09 02 06.3 -0.6
baz=159
A33A Warroad 86.77 359 P P 09 02 05.8 -1.3
baz=179,SNR=7.4
A32A Rocking H Ranc 86.77 358 P P 09 02 05.7 -1.4
baz=178
DGMT Dagmar 86.78 353 P P 09 02 06.2 -1.1
baz=172
DGMT Dagmar 86.78 353 eP P 09 02 08.3 +1.0
comp=Z,184nm,1.8s
A31A Linda, St. Vin 86.80 358 P P 09 02 05.9 -1.4
baz=177
A30A Hoffart Farm, 86.85 357 P P 09 02 06.0 -1.6
baz=176
SLMT Seeley Lake 86.86 347 eP P 09 02 09.4 +1.5
A29A Manning Farm, 86.87 356 P P 09 02 06.2 -1.5
baz=176,SNR=11
A28A Rude Farm, Bot 86.92 356 P P 09 02 07.1 -0.9
baz=175
A27A Ledoux Ranch, 87.02 355 P P 09 02 07.7 -0.7
baz=174
A26A Wade Farm, Ken 87.02 355 P P 09 02 08.0 -0.5
baz=174
A25A Svangstu Ranch 87.15 354 P P 09 02 08.7 -0.4
baz=173
VLDQ Val d'Or 87.15 11 eP P 09 02 08.3 -0.7
comp=Z,40nm,1.4s
SWMT Swartz Lake 87.21 346 eP P 09 02 11.0 +1.4
HAWA Hanford 87.32 342 eP P 09 02 11.5 +1.6
comp=Z,62nm,1.6s
JTMT Jette 87.50 346 eP P 09 02 12.3 +1.4
YBMT Yellow Bay 87.56 347 eP P 09 02 12.7 +1.5
F04A Amboy 87.61 340 eP P 09 02 13.1 +1.8
comp=Z,48nm,1.5s
BSMT Bassoo Peak 87.69 346 eP P 09 02 12.9 +1.0
BLMT Blacktail Moun 87.76 346 eP P 09 02 13.6 +1.3
D08A Wollman Farm, 87.80 343 eP P 09 02 13.6 +1.3
comp=Z,40nm,1.3s
F04D Rainier, OR 87.91 340 P P 09 02 12.5 -0.2
baz=157
ULM Lac du Bonnet 88.09 359 P P 09 02 13.2 -0.3
comp=Z,9.5nm,1.0s,baz=164,slow=4.8,SNR=8.7
ULM Lac du Bonnet 88.09 359 eP P 09 02 12.9 -0.6
ULM pmax pmax
comp=Z,57nm,1.5s
ULM Lac du Bonnet 88.09 359 eP P 09 02 12.9 -0.6
comp=Z,57nm,1.5s
LON Longmire 88.21 341 eP P 09 02 15.7 +1.4
LON pmax pmax
comp=Z,45nm,2.0s
LON Longmire 88.21 341 eP P 09 02 15.7 +1.4
comp=Z,45nm,2.0s
C09A Chrisman Ranch 88.36 344 eP P 09 02 16.3 +1.5
comp=Z,135nm,1.9s
NEW Newport 88.55 345 P P 09 02 15.3 -0.5
baz=162
NEW Newport 88.55 345 eP P 09 02 16.1 +0.3
NEW pmax pmax
comp=Z,70nm,1.8s
NEW Newport 88.55 345 eP P 09 02 15.9 +0.1
D05A Enumclaw 88.67 341 eP P 09 02 16.6 +0.3
comp=Z,66nm,1.6s
WALA Waterton Lakes 88.69 347 eP P 09 02 18.3 +1.8
comp=Z,58nm,1.7s
C06D Leavenworth 89.08 342 P P 09 02 17.2 -1.0
baz=159
B08A Colville Reser 89.12 343 eP P 09 02 19.6 +1.2
comp=Z,57nm,1.9s
B05A Bryant 89.69 342 P P 09 02 21.0 -0.1
baz=158
A04D Lummi Island 90.27 341 P P 09 02 23.6 -0.1
baz=158
PGC Sidney 90.39 341 eP P 09 02 25.5 +1.2
comp=Z,69nm,1.9s
EIDS Eidsvold 92.31 235 eP P 09 02 35.2 +1.1
comp=Z,33nm,1.4s
BOSA Boshof 92.46 130 P P 09 02 34.2 -0.7
comp=Z,2.6nm,0.9s,baz=199,slow=8.5,SNR=4.8
EDM Edmonton 92.61 348 eP P 09 02 34.3 -0.3
EDM pmax pmax
comp=Z,35nm,1.5s
EDM Edmonton 92.61 348 eP P 09 02 34.3 -0.3
comp=Z,35nm,1.5s
FFC Flin Flon 92.82 355 eP P 09 02 34.8 -0.7
FFC pmax pmax
comp=Z,25nm,1.5s
FFC Flin Flon 92.82 355 eP P 09 02 34.8 -0.7
comp=Z,25nm,1.5s
STKA Stephens Creek 93.28 225 P P 09 02 36.8 -1.7
comp=Z,2.7nm,0.9s,baz=122,slow=7.5,SNR=4.3
YKA Yellowknife Ar 101.74 350 P Pdif 09 03 14.3 -1.2
comp=Z,0.2nm,0.7s,baz=157,slow=3.4,SNR=3.3
H01W1 Cape Leeuwin H 102.80 203 T T 10 59 03.6
baz=155,slow=76,SNR=27
H01W2 Cape Leeuwin H 102.80 203 T T 10 58 58.6
baz=155,slow=76,SNR=22
H01W3 Cape Leeuwin H 102.81 203 T T 10 58 59.2
baz=155,slow=76,SNR=22
ASAR Alice Springs 103.92 224 Pdiff Pdif 09 03 25.5 -1.0
comp=Z,0.5nm,0.8s,baz=138,slow=4.3,SNR=4.7
ILAR Eielson Array 110.71 339 PKiKP PKiKP 09 07 54.6 -0.7
comp=Z,0.7nm,0.9s,baz=215,slow=1.1,SNR=4.6
DAVOX Davos/Dischmat 125.11 55 PKP PKPdf 09 08 24.1 +0.4
comp=Z,1.9nm,0.4s,baz=73,slow=5.2,SNR=6.5
DAVA Damuels 125.29 54 ePKiKP PKiKP 09 08 25.4 +1.0
comp=Z,13nm,1.3s
FETA Feichten 125.75 55 i PKPdf PKPdf 09 08 24.7 -0.2
comp=Z,14nm,1.5s
RETA Reutte 125.92 54 i PKPdf PKPdf 09 08 26.1 +1.0
comp=Z,20nm,1.7s
MOTA Moosalm 126.09 54 i PKPdf PKPdf 09 08 25.3 -0.3
comp=Z,1.7nm,0.5s
WTTA Wattenberg 126.41 55 ePKiKP PKiKP 09 08 27.3 +0.7
comp=Z,22nm,1.7s
ABTA Abfaltersbach 126.81 56 ePKPdf PKPdf 09 08 27.6 +0.7
comp=Z,4.0nm,0.6s
TIP Timpagrande 127.04 66 ePKPdf PKPdf 09 08 27.5 0.0
CADS Cadrg 127.44 56 ePKPdf PKPdf 09 08 27.8 -0.2
KBA Koelnbreinsper 127.45 55 ePKPdf PKPdf 09 08 28.5 +0.3
comp=Z,11nm,1.7s
MYKA Terra Mystica 127.50 56 ePKPdf PKPdf 09 08 28.7 +0.6
comp=Z,4.0nm,0.8s
NKC Novy Kostel 127.84 51 AMS AMS 09 59 40.0
comp=Z,1µm,25.1s
LJU Ljubljana 127.90 57 ePKPdf PKPdf 09 08 28.4 -0.4
OBKA Obir 128.06 56 ePKPdf PKPdf 09 08 30.1 +0.9
comp=Z,5.8nm,1.2s
GEA0 GERESS Array S 128.22 53 ePKPdf PKPdf 09 08 28.9 -0.6

GEC2	GERESS Array S	128.22	53	ePKIKP	PKPdf	09 08 29.9	+0.4		
GEC2	GERESS Array S	128.22	53	ePKPdf	PKPdf	09 08 29.9	+0.4		
GERES	GERESS Array B	128.22	53	PKP	PKPdf	09 08 29.2	-0.2		
	comp=Z,1.2nm,0.8s,baz=191,slow=1.4,SNR=6.3								
KHC	Kasperske Hory	128.22	53	ePKPdf	PKPdf	09 08 30.1	+0.7		
KHC				epPKP	pPKPdf	09 08 35.6	+2.8		
KHC				AMS	AMS	10 08 10.0			
	comp=Z,700nm,15.1s								
KHC	Kasperske Hory	128.22	53	ePKIKP	PKPdf	09 08 30.1	+0.7		
KHC				e		09 08 35.6			
KHC				MLR	MLR				
	comp=Z,700nm,15.1s								
KHC	Kasperske Hory	128.22	53	ePKPdf	PKPdf	09 08 30.0	+0.6		
MOA	Molln	128.28	55	ePKPdf	PKPdf	09 08 30.2	+0.6		
	comp=Z,13nm,1.5s								
SOKA	Soboth	128.43	56	i PKPdf	PKPdf	09 08 30.8	+0.8		
	comp=Z,5.6nm,1.2s								
BILL	Bilibino	128.44	332⇓	ePKIKP	PKPdf	09 08 29.7	+0.5		
BILL				e		09 10 31.7			
BILL				pmax	pmax				
	comp=Z,21nm,2.0s								
CLL	Collm	128.48	50⇑	iPKPdf	PKPdf	09 08 29.9	+0.2		
	comp=Z,56nm,2.0s								
CLL				i		09 08 35.7			
	comp=Z,40nm,1.9s								
CLL				e		09 08 50.0			
CLL				eSS	SS	09 27 54.0	+2.1		
CLL				eSSS	SSS	09 32 12.0			
CLL				Lm	MLR	10 07 00.0			
	comp=N,300nm,22.0s								
CLL				Lm	MLR	10 07 00.0			
	comp=E,600nm,21.4s								
CLL				Lm	MLR	10 07 00.0			
	comp=Z,800nm,20.3s								
CLL	Collm	128.48	50⇑	iPKIKP	PKPdf	09 08 29.9	+0.2		
CLL				i		09 08 35.7			
CLL				pmax	pmax				
	comp=Z,56nm,2.0s								
CLL				MLR	MLR				
	comp=Z,800nm,20.3s								
ARSA	Arzberg	128.92	56	ePKPdf	PKPdf	09 08 31.5	+0.7		
	comp=Z,5.6nm,1.1s								
BRG	Berggiesshubel	128.93	51	ePKP	PKPdf	09 08 30.6	-0.1		
	comp=Z,2.3nm,0.6s								
BRG	Berggiesshubel	128.93	51	ePKIKP	PKPdf	09 08 32.0	+1.4		
BRG				pmax	pmax				
	comp=Z,35nm,2.0s								
BRG	Berggiesshubel	128.93	51	ePDIFF	PKPdf	09 08 32.0	+1.4		
	comp=Z,35nm,2.0s								
PRU	Pruhonice	129.07	52	AMS	AMS	10 13 20.0			
	comp=Z,600nm,18.0s								
GOPC	GO Pecny, Ondr	129.20	52	AMS	AMS	10 02 30.0			
	comp=Z,700nm,22.8s								
PVCC	Panska Ves	129.23	51	AMS	AMS	10 13 30.0			
	comp=Z,600nm,16.1s								
CONA	Conrad Observa	129.34	55	ePKPdf	PKPdf	09 08 32.1	+0.4		
	comp=Z,12nm,1.4s								
NB200	NORSAR Array S	129.58	38	ePKPdf	PKPdf	09 08 30.7	-0.9		
NOA	NORSAR Array B	129.58	38	PKP	PKPdf	09 08 30.7	-0.9		
	comp=Z,0.4nm,0.6s,baz=253,slow=1.4,SNR=2.9								
PEA0	Petropavlovsk-	129.95	312	ePKPdf	PKPdf	09 08 31.9	-0.6		
PEA0B	Petropavlovsk-	129.95	312	ePKPdf	PKPdf	09 08 30.9	-1.6		
PETK	Petropavlovsk-	129.95	312	PKP	PKPdf	09 08 32.0	-0.5		
	comp=Z,8.0nm,1.0s,baz=64,slow=3.4,SNR=9.5								
PEA1	Petropavlovsk-	129.95	312	ePKPdf	PKPdf	09 08 32.0	-0.5		
UPC	Upice	130.11	52	ePKPdf	PKPdf	09 08 34.6	+1.7		
UPC				AMS	AMS	10 04 20.0			
	comp=Z,700nm,22.6s								
DPC	Dobruska-Polom	130.26	52	ePKPdf	PKPdf	09 08 34.7	+1.4		
DPC				AMS	AMS	10 09 50.0			
	comp=Z,700nm,23.6s								
DPC	Dobruska-Polom	130.26	52	ePKIKP	PKPdf	09 08 34.7	+1.4		
DPC				MLR	MLR				
	comp=Z,700nm,23.6s								
HFS	Hagfors	130.66	39	PKP	PKPdf	09 08 34.5	+0.9		
	comp=Z,1.9nm,0.7s,baz=267,slow=5.8,SNR=2.8								
OKC	Ostrava-Krasne	131.28	53	AMS	AMS	10 13 30.0			
	comp=Z,600nm,17.0s								
VYHS	Vyhne	131.40	55	ePKP	PKPdf	09 08 34.3	-1.1		
SEY	Seymchan	133.88	325	c iPKIKP	PKPdf	09 08 40.9	+1.3		
MLR	Muntele Rosu	135.44	61	PKP	PKPdf	09 08 43.1	-0.2		
	comp=Z,0.3nm,0.4s,baz=209,slow=4.8,SNR=6.8								
MLR	Muntele Rosu	135.44	61	ePKIKP	PKPdf	09 08 43.6	+0.3		
MLR	Muntele Rosu	135.44	61	ePKPdf	PKPdf	09 08 43.4	+0.2		
KIS	Kishinev	137.69	59	ePKP	PKPdf	09 08 52.0	+4.8		
KIS				eLR	LR	09 56 50.0			
	comp=Z,900nm,24.0s								
KIS	Kishinev	137.69	59	ePKIKP	PKPdf	09 08 52.0	+4.8		
KIS				MLR	MLR				
	comp=Z,900nm,22.0s								
KIS				MLR	MLR				
	comp=Z,900nm,24.0s								
YSS	Yuzh-Sakhalins	138.26	301	ePKIKP	PKPdf	09 08 48.9	+0.7		
YSS				pmax	pmax				
	comp=Z,20nm,1.3s								
YSS				MLR	MLR				
	comp=Z,440nm,18.0s								
AK11	Malin Array Si	138.39	54	ePKPdf	PKPdf	09 08 50.6	+2.2		
KIEV	Kiev	138.42	53⇓	ePKIKP	PKPdf	09 08 49.0	+0.6		
AKASG	Malin Array Be	138.43	53	PKP	PKPdf	09 08 48.6	+0.2		
	comp=Z,0.9nm,0.6s,baz=275,slow=2.6,SNR=9.1								
APA	Apatity	138.71	28	i PKHKP	PKPpre	09 08 29.0			
APA				pmax	pmax				
	comp=Z,8.0nm,0.8s								
APA				MLR	MLR				
	comp=Z,1μm,11.0s								
MJAR	Matsushiro Arr	139.09	284	PKhKP	PKPpre	09 08 41.6			
	comp=Z,1.9nm,0.8s,baz=139,slow=3.9,SNR=4.4								
BR101	Keskin Array S	139.57	71	ePKPdf	PKPdf	09 08 52.8	+1.6		
BRTR	Keskin Array B	139.57	71	PKP	PKPdf	09 08 52.8	+1.6		
	comp=Z,1.4nm,0.8s,baz=195,slow=1.7,SNR=5.0								
OBN	Obninsk	142.85	46⇓	ePKIKP	PKPdf	09 08 52.3	-4.0		
OBN				e		09 08 57.5			
OBN				e		09 12 05.1			
OBN				eSS	SS	09 30 48.5	+4.8		
OBN				pmax	pmax				
	comp=Z,46nm,1.4s								
KLMR	Klimovskoe	143.27	37	ePKIKP	PKPdf	09 08 56.8	0.0		
KLMR				pmax	pmax				
	comp=Z,23nm,1.3s								
ANN	Anapa	143.32	64	i PKIKP	PKPdf	09 09 00.1	+2.7		
ANN				pmax	pmax				
	comp=Z,52nm,1.8s								
ANN				MLR	MLR				
	comp=Z,737nm,25.0s								
MOS	Moscow	143.38	45	ePKIKP	PKPab	09 08 53.2	-0.1		
HABR	Khabarovsk	143.59	302	ePKHKP	PKPpre	09 08 50.8			
HABR				e		09 16 06.5			
HABR				eSS	SS	09 30 46.0	-6.7		
HABR				eSSS	SSS	09 36 08.5			
HABR				pmax	pmax				
	comp=Z,100nm,1.7s								
HABR				pmax	pmax				
	comp=N,11nm,1.7s								
HABR				pmax	pmax				
	comp=E,27nm,1.7s								
YAK	Yakutsk	144.36	326	ePKHKP	PKPpre	09 08 54.9			
YAK				e		09 12 13.7			
YAK				pmax	pmax				
	comp=Z,86nm,1.0s								
YAK				pmax	pmax				
	comp=E,27nm,1.3s								
YAK				pmax	pmax				
	comp=N,5.0nm,1.0s								
YAK				pmax	pmax				
	comp=E,118nm,2.3s								
VSR	Storozhevoye	144.72	53	ePKIKP	PKPab	09 08 57.3	-1.2		
SOC	Sochi	144.80	66	c iPKIKP	PKPab	09 08 59.6	+0.5		
SOC				i		09 09 04.2			
SOC				e		09 12 17.7			
SOC				ePPP	PPP	09 15 30.2			
SOC				pmax	pmax				
	comp=Z,81nm,0.9s								
SOC				MLR	MLR				
	comp=Z,193nm,17.0s								
USRK	Ussuriysk Ar.	145.40	295	PKPbc	PKPdf	09 08 59.5	-1.6		
	comp=Z,43nm,0.9s,baz=108,slow=3.3,SNR=61								
MSHR	Mys Shultsa	145.80	292	c iPKP2	PKPdf	09 09 01.8	0.0		
VRH	Novokhopyorsk	146.33	53	ePKP2	PKPdf	09 09 03.8	+1.4		
VRH				pmax	pmax				
	comp=Z,20nm,0.7s								
CHVG	Ch'k'valeri	146.41	68	P	PKPbc	09 09 05.0	+0.8		
KIV	Kislovodsk	146.98	66	i PKP2	PKPbc	09 09 06.7	+0.7		
KIV				pmax	pmax				
	comp=Z,36nm,1.1s								
KIV				MLR	MLR				
	comp=Z,386nm,23.0s								
KIV	Kislovodsk	146.98	66	PKPdf	PKPdf	09 09 04.1	+0.2		
	SNR=13								
KIV	Kislovodsk	146.98	66	P	PKPdf	09 09 04.1	+0.2		
	SNR=13								
KBZ	Khabaz	147.11	66	PKPbc	PKPdf	09 09 05.8	+1.8		
	comp=Z,3.0nm,0.7s,baz=244,slow=3.1,SNR=15								
MDJ	Mudanjiang	147.14	295	ePKPdf	PKPdf	09 09 05.1	+1.0		
KSRS	Korea Array	147.25	282	PKPbc	PKPdf	09 09 05.2	+0.8		
	comp=Z,12nm,0.9s,baz=120,slow=4.2,SNR=12								
AKH	Akhalkalaki	147.26	71	P	PKPdf	09 09 05.0	+0.3		
AKH	Akhalkalaki	147.26	71	PKIKP	PKPdf	09 09 04.9	+0.3		
KS01	Wonju Array Si	147.27	282	ePKPdf	PKPdf	09 09 04.3	-0.2		
GOF	Gofitskoye	147.32	64⇑	i PKP2	PKPbc	09 09 07.2	+0.5		
GOF				pmax	pmax				
	comp=Z,145nm,1.8s								
ONI	Oni	147.39	69	P	PKPdf	09 09 04.6	0.0		
ONI	Oni	147.39	69	PKIKP	PKPdf	09 09 04.6	0.0		
ZEI	Tsey	147.74	68	ePKP2	PKPdf	09 09 07.1	+1.7		
ZEI				pmax	pmax				
	comp=Z,214nm,2.0s								
GNI	Garni	147.99	73	ePKHKP	PKPpre	09 09 00.5			
GNI	Garni	147.99	73	PKPdf	PKPpre	09 09 00.2			
	SNR=18								
GNI	Garni	147.99	73	P	PKPdf	09 09 00.2	-5.6		
	SNR=18								
GUDG	Gudauri	148.13	69	P	PKPdf	09 09 03.4	-2.7		
TBLG	Delisi	148.23	70	P	PKPdf	09 09 06.0	-0.1		
TBLG	Delisi	148.23	70	PKIKP	PKPdf	09 09 05.9	-0.1		
CLNS	Chul'man	148.49	319	ePKIKP	PKPdf	09 09 06.3	+0.4		
CLNS				pmax	pmax				
	comp=Z,12nm,1.1s								
CLNS				pmax	pmax				
	comp=E,51nm,0.9s								
CLNS				pmax	pmax				
	comp=N,18nm,1.0s								
NRIK	Noril'sk	148.79	359	PKPbc	PKPbc	09 09 09.8	-0.1		
	comp=N,6.6nm,0.7s,baz=6.1,slow=2.5,SNR=5.7								
GROC	Groznyy	149.17	68	ePKIKP	PKPdf	09 09 09.5	+2.1		
GROC				pmax	pmax				
	comp=Z,138nm,1.7s								
FAQ	Al Faqa, Dubai	150.79	108	PKPdf	PKPdf	09 09 10.3	-0.3		
	SNR=6.6								
FAQ	Al Faqa, Dubai	150.79	108	P	PKPdf	09 09 10.3	-0.3		
	SNR=6.6								
NAZ	Nazwa, Dubai	150.98	108	PKPdf	PKPbc	09 09 15.9	-0.7		
	SNR=8.6								
NAZ	Nazwa, Dubai	150.98	108	P	PKPbc	09 09 15.9	-0.7		
	SNR=8.6								
SOKR	Solikamsk	151.55	32⇑	iPKIKP	PKPpre	09 08 59.7			
SOKR				pmax	pmax				
	comp=Z,19nm,1.0s								
QIZ	Qiongzhong	151.94	234	PKPbc	PKPdf	09 09 12.3	-0.2		
QIZ				PP	PP	09 13 00.9	+1.4		
BOD	Bodaibo	153.28	326	ePKIKP	PKPdf	09 09 10.7	-2.5		
BOD				pmax	pmax				
	comp=Z,33nm,1.7s								
ARU	Arti	154.12	36	i PKIKP	PKPdf	09 09 11.5	-3.0		
WHN	Wuhan	155.62	260	PKP	PKPdf	09 09 21.1	+3.7		
WHN				PP	PP	09 13 36.5	+16		
WHN	Wuhan	155.62	260	SKKS	SKKSac	09 20 16.3	+6.1		
AKTO	Aktyubinsk	156.56	49	PKP	PKPdf	09 09 17.6	-0.4		
	comp=Z,0.8nm,0.5s,baz=64,slow=2.6,SNR=6.8								
BJI	Beijing	156.73	284	PKP	PKPdf	09 09 15.0	-3.5		
BJI				PP	PP	09 13 29.3	+2.5		
CM31	Chiang Mai Arr	157.41	213	ePKPab	PKPab	09 09 50.5	-0.9		
CMAR	Chiang Mai Arr	157.41	213	PKP	PKPdf	09 09 19.1	-1.0		
	comp=Z,1.1nm,0.3s,baz=213,slow=1.8,SNR=8.4								
CMAR				PKPab	PKPab	09 09 50.3	-1.1		
	comp=Z,0.7nm,0.3s,baz=177,slow=2.9,SNR=3.3								
GEYT	Alibeck	157.90	82	PKP	PKPdf	09 09 19.6	-0.5		
	comp=Z,1.0nm,0.3s,baz=158,slow=1.6,SNR=2.8								
ABKAR	Akbulak array	158.14	51	ePKPdf	PKPdf	09 09 20.1	+0.1		
ABKAR				ePKPab	PKPab	09 09 53.6	-0.2		
GYA	Guiyang	159.18	242	PKPbc	PKPdf	09 09 22.0	-0.2		
GYA				PKPab	PKPab	09 10 02.3	+3.2		
GYA				PKS	PKSdf	09 12 54.6	-1.3		
GYA				PP	PP	09 13 44.6	+4.4		
GYA				AMB	AMB				
	comp=Z,130nm,7.8s								
HHC	Hu-ho-hao-te	160.29	286	ePKP	PKPdf	09 09 25.3	+2.4		
HHC				PP	PP	09 13 52.0	+5.6		
ZRNK	Zerenda	161.02	33	ePKIKP	PKPdf	09 09 23.0	-0.2		
ZRNK	Zerenda	161.02	33	ePKPdf	PKPdf	09 09 23.0	-0.2		
XAN	Xi'an	161.21	264	PKP	PKPdf	09 09 22.5	-1.6		
XAN				PP	PP	09 13 57.5	+6.1		
XAN				SKS	SKSdf	09 17 05.4	+36		
BRVK	Borovoye	161.49	31	ePKIKP	PKPpre	09 09 16.9			
BVAR	Borovoye Array	161.56	31	PKP	PKPdf	09 09 23.0	-0.8		
	comp=Z,0.7nm,0.4s,baz=96,slow=1.4,SNR=4.2								
BVAR				PKPab	PKPab	09 10 08.4	-0.2		
	comp=Z,1.3nm,0.7s,baz=305,slow=5.1,SNR=2.9								
TLY	Talaya	161.79	323	ePKP2	PKPab	09 10 11.2	+1.6		
TLY				pmax	pmax				
	comp=Z,28nm,1.9s								
SONA1	Songino Array	162.41	310	ePKPdf	PKPdf	09 09 22.4	-2.6		
SONA1				ePKPab	PKPab	09 10 12.1	-0.6		
SONA0	Songino Array	162.42	310	ePKPdf	PKPdf	09 09 24.2	-0.8		
SONA0				ePKPab	PKPab	09 10 12.0	-0.7		
SONM	Songino Array	162.42	310	PKP	PKPdf	09 09 24.2	-0.8		
	comp=Z,0.4nm,0.6s,baz=108,slow=0.9,SNR=4.6								
SONM				PKPab	PKPab	09 10 12.0	-0.7		
	comp=Z,9.6nm,1.0s,baz=64,slow=3.4,SNR=21								
ZAK	Zakamensk	162.80	321	ePKP2	PKPab	09 10 14.1	-0.1		
ZAK				pmax	pmax				
	comp=Z,17nm,1.9s								
CD2	Chengdu	163.84	249	PKP	PKPdf	09 09 27.0	+0.2		
CD2				pPKP	pPKPdf	09 09 30.6	+0.4		
CD2				sPKP		09 09 31.9			
CD2				PP	PP	09 14 06.3	+1.1		
CD2				SKS	SKSdf	09 16 31.6	+0.2		
ZAA1	Zalesovo Array	164.21	3	ePKPdf	PKPdf	09 09 24.8	-1.5		
ZAA0	Zalesovo Array	164.21	3	ePKPdf	PKPdf	09 09 25.2	-1.0		
ZALV	Zalesovo Beam	164.21	3	PKP	PKPdf	09 09 24.8	-1.5		
	comp=Z,2.2nm,0.5s,baz=174,slow=1.3,SNR=5.3								
KURK	Kurchatov	166.37	21	ePKIKP	PKPdf	09 09 26.6	-1.6		
KURK				e		09 10 29.5			
KURK	Kurchatov	166.37	21	ePKPdf	PKPdf	09 09 26.6	-1.6		
KURK				ePKPab	PKPab	09 10 29.5	-0.2		
KURBB	Kurchatov Arra	166.43	21	PKP	PKPdf	09 09 26.6	-1.7		
	comp=Z,4.4nm,1.1s,baz=313,slow=0.8,SNR=4.3								
KURBB				PKPab	PKPab	09 10 29.5	-0.5		
	comp=Z,0.7nm,0.7s,baz=337,slow=4.6,SNR=4.8								
GTA	Gaotai	169.32	281	ePKP	PKPdf	09 09 29.5	-1.3		
GTA				PP	PP	09 14 34.9	+1.2		
GTA				SKS	SKSdf	09 16 27.8	-6.7		
AAK	Ala-Archa	170.02	60	PKPdf	PKPdf	09 09 32.0	+0.8		
	SNR=5.4								
AAK	Ala-Archa	170.02	60	P	PKPdf	09 09 32.0	+0.8		
	SNR=5.4								
FRU	Bishkek	170.03	59	ePKIKP	PKPdf	09 09 29.0	-2.0		
FRU				e		09 10 44.5			
FRU				pmax	pmax				
	comp=Z,130nm,2.5s								
MK31	Makanchi Array	170.93	17	ePKIKP	PKPdf	09 09 30.3	-1.1		
MK31	Makanchi Array	170.93	17	ePKPdf	PKPdf	09 09 29.8	-1.6		
MK32	Makanchi Array	170.93	17	ePKPdf	PKPdf	09 09 29.7	-1.7		
MKAR	Makanchi Array	170.93	17	PKP	PKPdf	09 09 29.7	-1.6		
	comp=Z,1.9nm,1.0s,baz=274,slow=3.2,SNR=6.8								
KSH	Kashi	171.90	77	ePKP	PKPdf	09 09 32.0	-0.2		
KSH				PKS	PKSdf	09 13 03.3	-1.3		
KSH				ePP	PP	09 14 33.8	-13		
KSH				SKS	SKSdf	09 16 34.8	-0.8		
KSH	Kashi	171.90	77	SS	SS	09 35 23.4	-32		
KSH				AMB	AMB				
	comp=Z,77nm,4.5s								
KSH				LR	LR				
	comp=N,160nm,9.5s								
KSH				LR	LR				
	comp=E,130nm,5.7s								
KSH				LR	LR				
	comp=Z,150nm,8.6s								
WMQ	Urumqi	174.27	349	ePKP	PKPdf	09 09 32.9	-0.1		
WMQ				PP	PP	09 14 56.3	-0.3		

IDC ***14*** *08:52:29.7±0.5,38.°21S×93.°93W,h0km,mb5.1/15, mb1 5.2/16,mb1mx5.0/26,mbtmp5.1/16,ML4.3/1,MS5.2/19, Ms1 5.2/19,ms1mx5.1/24,Error ellipse: s-maj=17.1km s-min=14.9km az=100.0*
MOS ***14*** *08:52:30.5±1.3,38.°13S×93.°77W,h10km,mb5.6/48, MS5.1/37,Error ellipse: s-maj=15.9km s-min=7.8km az=94.0*
ISCJB ***14*** *08:52:30.1±0.2,38.°06S±0.°04×93.°63W±0.°06,h10km, mb5.3/188,MS5.2/368,Error ellipse: s-maj=6.9km s-min=5.2km az=141.7*
NEIC ***14*** *08:52:31.6±0.2,38.°24S×93.°77W,h10km,mb5.4/182, MS5.1/299,Error ellipse: s-maj=6.2km s-min=4.5km az=60.0*
GCMT ***14*** *08:52:31.6±0.1,38.°15S×93.°76W,h12km,MW5.5/127, Moment Tensor Solution. s89,c141; s127,c230; Duration: 1s4 Moment tensor: Scale 10^17Nm; Mrr=2.21±.03; Mθθ-0.07±.03; Mϕϕ2.29±.03; Mrθ0.59±.10; Mθϕ0.04±.03; Mϕr-0.84±.10; Best double couple: M=2.47300×10^17 NP1:ϕs347.00000°,δ57.00000°, λ-106.00000°. NP2:ϕs194.00000°,δ36.00000°, λ-68.00000°. Principal axes: T 2.4430, Plg10.0000°, Azm88.0000°; N 0.0650, Plg13.0000°, Azm356.0000°; P -2.5030, Plg73.0000°, Azm216.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***14*** *08:52:32.3,38.°10S×93.°70W,h11km,mB5.4/20,Ms5.6/21, Ms7 5.5/21*

ISC 14 08:52:31.7±0.3,38.°21S±0.°06×93.°64W±0.°06,h10km, n1155,σ1s20/947,mb5.4/188,MS5.2/368,6C-6D,West Chile Rise

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PLCA	Paso Flores	18.00	105	P		P		08 56 44.3	+1.8
	0.2nm,0.3s,baz=296,slow=12,SNR=10								
PLCA				LR		LR		09 01 58.2	
	comp=Z,12μm,19.8s,baz=271,slow=31								
PLCA	Paso Flores	18.00	105	eP		P		08 56 44.5	+2.0
PLCA				pmax		pmax			
	comp=Z,191nm,1.4s								
PLCA	Paso Flores	18.00	105	ePn		P		08 56 44.5	+2.0
	comp=Z,191nm,1.4s								
ROC1	El Roble	19.11	81	eP		Pn		08 56 57.5	+1.6
	comp=Z,50nm,1.1s								
LCO	Las Campanas	21.15	71	eP		P		08 57 19.1	+1.9
	comp=Z,149nm,1.2s								
USHA	Ushuaia	23.82	142	P		P		08 57 46.0	+1.3
	comp=Z,165nm,1.0s,baz=268,slow=11,SNR=8.0								
USHA				LR		LR		09 04 59.6	
	comp=Z,32μm,19.6s,baz=276,slow=31								
PB10	IPOC Station P	24.55	60	eP		P		08 57 52.7	+1.0
	comp=Z,157nm,1.6s								
TRQA	Tornquist	24.85	100	eP		P		08 57 53.9	-0.5
	comp=Z,250nm,1.8s								
PB04	IPOC Station P	25.62	59	eP		P		08 58 01.8	+0.2
	comp=Z,177nm,1.3s								
LVC	Limon Verde	26.28	61	P		P		08 58 08.7	+0.9
	comp=Z,305nm,1.1s,baz=228,slow=8.7,SNR=13								
LVC				LR		LR		09 05 56.0	
	comp=Z,29μm,19.0s,baz=260,slow=30								
LVC	Limon Verde	26.28	61	eP		P		08 58 08.8	+1.0
	comp=Z,209nm,1.5s								
PB01	IPOC Station P	26.96	57	eP		P		08 58 14.8	+1.1
	comp=Z,117nm,1.5s								
PB11	IPOC Station P	27.76	55	eP		P		08 58 21.4	+0.5
	comp=Z,146nm,1.6s								
EFI	East Falkland	28.24	130	eP		P		08 58 26.3	+1.6
EFI				pmax		pmax			
	comp=Z,77nm,1.2s								
EFI				MLR		MLR			
	comp=Z,8μm,18.0s								
EFI	East Falkland	28.24	130	eP		P		08 58 26.3	+1.6
	comp=Z,77nm,1.2s								
EFI				LR		LR			
	comp=Z,8μm,18.0s								
NNA	Nana	30.11	34	eP		P		08 58 43.1	+1.4
NNA				pmax		pmax			
	comp=Z,61nm,1.1s								
NNA	Nana	30.11	34	eP		P		08 58 43.1	+1.4
	comp=Z,61nm,1.1s								
LPAZ	La Paz	31.30	53	P		P		08 58 54.1	+1.3
	comp=Z,54nm,1.1s,baz=208,slow=6.7,SNR=21								
LPAZ				LR		LR		09 08 35.0	
	comp=Z,4μm,21.5s,baz=208,slow=31								
LPAZ	La Paz	31.30	53	eP		P		08 58 54.1	+1.3
LPAZ				pmax		pmax			
	comp=Z,69nm,1.0s								
LPAZ	La Paz	31.30	53	eP		P		08 58 54.1	+1.3
	comp=Z,69nm,1.0s								
PMSA	Palmer Station	31.78	156	P		P		08 58 56.6	+0.8
	comp=Z,29nm,1.2s,baz=311,slow=5.1,SNR=7.6								
PMSA	Palmer Station	31.78	156	eP		P		08 58 57.5	+1.6
	comp=Z,104nm,1.5s								
CPUP	Villa Florida	32.71	80	P		P		08 59 04.8	+0.3
	comp=Z,24nm,1.2s,baz=249,slow=8.3,SNR=9.6								
CPUP				PcP		PcP		09 01 50.6	+0.6
	comp=Z,4.3nm,0.9s,baz=257,slow=4.7,SNR=3.9								
CPUP				LR		LR		09 11 01.9	
	comp=Z,5μm,18.1s,baz=252,slow=34								
CPUP	Villa Florida	32.71	80	eP		P		08 59 04.0	-0.4
CPUP	Villa Florida	32.71	80	eP		P		08 59 04.0	-0.4
ATAH	Atahualpa	33.88	28	P		P		08 59 16.7	+1.5
	comp=Z,60nm,1.0s,baz=210,slow=5.7,SNR=18								
SIV	San Ignacio	36.18	61	P		P

comp=Z,5µm,26.6s
MEH Mehetia 51.36 277 *e*T T 09 56 31.8
comp=Z,27nm,0.2s
SDV Santo Domingo 51.54 30 LR LR 09 21 32.2
comp=Z,4µm,19.4s,baz=204,slow=34
SDV Santo Domingo 51.54 30 *e*P **P 09 01 37.5 -0.6**
SDV comp=Z,83nm,1.4s LR LR
comp=Z,4µm,20.0s
QSPA South Pole Qui 52.01 180 *e*P **P 09 01 40.8 -0.3**
TVO Taravao 52.34 277 *e*T T 09 57 43.0
comp=Z,1.6nm,0.3s
TIAR Tiarei 52.55 277 *e*T T 09 58 02.0
comp=Z,10nm,0.3s
PPT2 Papeete2 52.71 277 *e*S **S 09 09 21.6 +6.8**
comp=Z,2µm,24.5s
PPT2 *e*LR LR 09 16 49.9
comp=Z,5µm,25.0s
PPT Papeete 52.72 277 LR LR 09 18 30.8
comp=Z,2µm,18.8s,baz=317,slow=30
VNA1 Neumayer--Stat 52.99 155 P **P 09 01 49.2 +1.2**
URIC Uribia, Colomb 53.63 27 *e*P **P 09 01 51.4 -1.9**
CCIG Comitan 54.22 2 *e*P **P 09 01 57.4 -0.5**
comp=Z,86nm,1.5s
SNAA Sanae 54.49 157 P **P 09 01 59.5 +0.4**
SNAA Sanae 54.49 157 *e*P **P 09 01 58.8 -0.3**
SNAA pmax pmax
comp=Z,107nm,1.3s
SNAA Sanae 54.49 157 *e*P **P 09 01 58.8 -0.3**
comp=Z,107nm,1.3s
SBA Scott Base 54.96 195 *e*P **P 09 02 03.1 +0.8**
SBA pmax pmax
comp=Z,38nm,1.1s
SBA Scott Base 54.96 195 *e*P **P 09 02 03.1 +0.8**
comp=Z,38nm,1.1s
CMIG Matias Romero 55.02 359 LR LR 09 19 19.0
comp=Z,1µm,21.9s,baz=161,slow=29
PCRV Puerto La Cruz 55.24 36 LR LR 09 23 07.0
comp=Z,3µm,21.7s,slow=33
VNDA Vanda 56.06 195 P **P 09 02 10.1 -0.2**
comp=Z,10nm,1.2s,baz=116,slow=6.6,SNR=6.7
VNDA LR LR 09 21 27.9
comp=Z,854nm,19.6s,baz=110,slow=31
VNDA Vanda 56.06 195 *e*P **P 09 02 11.5 +1.2**
VNDA pmax pmax
comp=Z,36nm,1.5s
VNDA Vanda 56.06 195 *e*P **P 09 02 11.5 +1.2**
comp=Z,36nm,1.5s
GRGR Grenville 58.35 37 PFAKE 09 02 40.0 +13
GRGR LR LR
comp=Z,1µm,22.0s
RAR Rarotonga 58.73 267 LR LR 09 20 53.2
comp=Z,2µm,18.8s,baz=116,slow=29
NVL N'lazarevskaya 59.23 158 *e*P **P 09 02 32.8 +0.1**
SVB Belmont 59.53 37 PFAKE 09 02 50.0 +15
SVB LR LR
comp=Z,1µm,22.0s
GTBY Guantanamo Bay 60.39 20 *e*P **P 09 02 40.9 -0.3**
comp=Z,65nm,1.1s
SDD Santo Domingo 60.62 26 PFAKE 09 03 00.0 +17
SDD LR LR
comp=Z,1µm,21.0s
FDF Fort de France 60.84 37 PFAKE 09 03 00.0 +16
FDF LR LR
comp=Z,1µm,20.0s
ZAIG Zacatecas 61.23 351 *e*P **P 09 02 48.2 +1.0**
comp=Z,111nm,1.9s
RCBR Riachuelo 61.28 74 PFAKE 09 03 00.0 +12
RCBR LR LR
comp=Z,4µm,18.0s
MPR Mayaguez 61.40 29 PFAKE 09 03 00.0 +12
MPR LR LR
comp=Z,2µm,18.0s
SJG San Juan 61.69 30 LR LR 09 28 51.0
comp=Z,576nm,19.0s,baz=212,slow=35
SJG San Juan 61.69 30 *e*P **P 09 02 48.9 -1.1**
SJG pmax pmax
comp=Z,60nm,1.0s
SJG San Juan 61.69 30 *e*P **P 09 02 48.9 -1.1**
comp=Z,60nm,1.0s
GDHS Morne Mazeau, 61.90 35 *e*P **P 09 02 48.9 -2.7**
comp=Z,162nm,1.4s
CBYP Canovanas 61.95 30 *e*P **P 09 02 50.9 -0.9**
comp=Z,56nm,1.2s
SEUS St. Eustatius 62.44 33 PFAKE 09 03 10.0 +15
SEUS LR LR
comp=Z,2µm,21.0s
SABA Saba 62.44 33 PFAKE 09 03 10.0 +15
SABA LR LR
comp=Z,2µm,20.0s
SMRT St. Maarten 62.90 33 PFAKE 09 03 10.0 +12
SMRT LR LR
comp=Z,1µm,19.0s
GRTK Grand Turk 63.06 24 PFAKE 09 03 10.0 +11
GRTK LR LR
comp=Z,900nm,20.0s
ANWB Willy Bob 63.12 34 PFAKE 09 03 10.0 +10
ANWB LR LR
comp=Z,500nm,18.0s
SLBS Sierra La Lagu 63.44 343 *e*P **P 09 03 00.9 -0.9**
comp=Z,122nm,1.8s
LPIG La Paz 63.93 343 LR LR 09 23 57.3
comp=Z,446nm,20.1s,baz=172,slow=30
035Z Hargill 64.47 356 P **P 09 03 08.2 -0.1**
baz=176
035A Encino 64.94 356 P **P 09 03 11.0 -0.4**
baz=176
034A Hebbronville 65.10 355 P **P 09 03 12.3 -0.1**
baz=176
KVTX Kingsville 65.53 356 PFAKE 09 03 30.0 +15
KVTX LR LR
comp=Z,800nm,18.0s
934A Benavides 65.63 355 P **P 09 03 16.7 +0.9**
baz=176,SNR=5.2
933A Laredo 65.69 355 P **P 09 03 15.9 -0.4**
baz=175
HPIG 65.78 348 *e*P **P 09 03 16.6 -0.5**
comp=Z,111nm,1.9s
HPIG LR LR
comp=Z,1µm,21.0s
834A Tilden 66.15 355 P **P 09 03 19.5 +0.3**
baz=176
835A Beeville 66.27 356 P **P 09 03 20.0 +0.1**
baz=176
833A Chaparral WMA, 66.41 354 P **P 09 03 20.7 -0.1**
baz=175
832A Faith Ranch, C 66.41 354 P **P 09 03 20.5 -0.4**
baz=175
BFZ Birch Farm 66.50 236 PFAKE 09 03 30.0 +8.5
BFZ LR LR
comp=Z,4µm,22.0s
737A Port Lavaca 66.68 357 P **P 09 03 23.4 +0.8**
baz=178
733A Divot King Ran 66.79 355 P **P 09 03 22.6 -0.7**
baz=175
735A Kenedy 66.83 356 P **P 09 03 23.4 -0.2**
baz=177
734A La Parita Cree 66.87 355 P **P 09 03 23.6 -0.2**
baz=176
736A Circle Diamond 66.89 357 P **P 09 03 24.1 +0.2**
baz=177
DWPF Disney Wildern 66.96 12 PFAKE 09 03 40.0 +16
DWPF LR LR
comp=Z,1µm,22.0s
638A Rosharon 67.30 358 P **P 09 03 27.3 +0.8**
baz=179
637A Eagle Lake 67.34 357 P **P 09 03 26.5 -0.3**
baz=178
635A Leesville 67.36 356 P **P 09 03 26.0 -0.9**
baz=177
645A Chauvin 67.38 3 P **P 09 03 26.6 -0.4**
baz=183
634A China Grove, S 67.39 356 P **P 09 03 26.3 -0.8**
baz=176
636A Smothers Creek 67.42 357 P **P 09 03 27.3 +0.1**
baz=177
633A Saathoff Ranch 67.52 355 P **P 09 03 27.6 -0.3**
baz=175
SYO Syowa Base 67.66 164 ⇑*i*P **P 09 03 25.3 -3.1**
LTX Lajitas 67.84 351 *e*P **P 09 03 29.7 -0.4**
LTX Lajitas 67.84 351 *e*P **P 09 03 29.7 -0.4**
TX31 Lajitas Ar. Si 67.84 351 *e*P **P 09 03 29.7 -0.4**
TXAR Lajitas Array 67.84 351 P **P 09 03 29.7 -0.4**
comp=Z,5.5nm,0.9s,baz=165,slow=7.9,SNR=13
TXAR PKP2bc 09 31 51.1
comp=Z,0.8nm,1.1s,baz=329,slow=1.6,SNR=4.0
539A Cross D Ranch, 67.97 359 P **P 09 03 31.4 +0.6**
baz=179
537A Green Hill Far 67.98 358 P **P 09 03 30.9 +0.1**
baz=178
535A Dale 67.98 356 P **P 09 03 30.1 -0.8**
baz=177
536A Bastrop 68.01 357 P **P 09 03 30.4 -0.5**
baz=177
534A Blanco 68.04 355 P **P 09 03 30.4 -0.8**
baz=176
540A Vidor 68.07 360 P **P 09 03 31.3 0.0**
baz=180
538A Harpers Horsep 68.10 358 P **P 09 03 31.3 -0.3**
baz=179
533A Kerrville 68.12 355 P **P 09 03 31.0 -0.7**
baz=176
442A Mamou 68.58 1 P **P 09 03 35.3 +0.8**
baz=181
JCT Junction City 68.58 354 P **P 09 03 33.6 -1.0**
baz=175,SNR=8.1
JCT Junction City 68.58 354 *e*P **P 09 03 33.9 -0.7**
JCT pmax pmax
JCT comp=Z,62nm,1.3s MLR MLR
comp=Z,600nm,18.0s
JCT Junction City 68.58 354 *e*P **P 09 03 33.9 -0.7**
comp=Z,62nm,1.3s
JCT LR LR
comp=Z,600nm,18.0s
440A Kirbyville 68.60 360 P **P 09 03 34.9 +0.3**
baz=180
441A DeRidder 68.61 0 P **P 09 03 35.0 +0.3**
baz=180
444A Pine Grove 68.62 3 P **P 09 03 35.3 +0.5**
baz=183
438A Sam Houston St 68.63 358 P **P 09 03 35.2 +0.4**
baz=179
443A Delano Plantat 68.64 2 P **P 09 03 35.7 +0.8**
baz=182
445A Amite 68.65 3 P **P 09 03 35.1 +0.1**
baz=183
439A Center Grove, 68.66 359 P **P 09 03 35.5 +0.5**
baz=179
436A Wall Ranch, Ga 68.69 357 P **P 09 03 35.1 -0.1**
baz=178
437A Phantom Ranch, 68.72 358 P **P 09 03 35.3 -0.1**
baz=178
435B Jarrell 68.74 356 P **P 09 03 35.1 -0.4**
baz=177
446A Poplarville 68.76 4 P **P 09 03 35.1 -0.6**
baz=184
433A Art 68.80 355 P **P 09 03 34.8 -1.1**
baz=176,SNR=6.2
434A Burnet 68.81 356 P **P 09 03 35.0 -1.0**
baz=176,SNR=6.9
447A Lucedale 68.81 5 P **P 09 03 34.7 -1.2**
baz=184
448A Bay Minette 69.00 5 P **P 09 03 36.8 -0.4**
baz=185
343A Vidalia 69.16 2 P **P 09 03 37.7 -0.5**
baz=182
341A Kurthwood 69.19 0 P **P 09 03 37.4 -0.9**
baz=180,SNR=6.9
339A Huntington 69.19 359 P **P 09 03 37.8 -0.5**
baz=179
337A Centerville 69.20 358 P **P 09 03 37.8 -0.6**
baz=178
335A Moody 69.22 357 P **P 09 03 37.4 -1.2**
baz=177,SNR=7.6
338A Crockett 69.23 358 P **P 09 03 37.9 -0.6**
baz=179
342A Flagon Creek P 69.24 1 P **P 09 03 37.9 -0.7**
baz=181,SNR=7.3
345A Thompson Farm, 69.24 3 P **P 09 03 37.8 -0.9**
baz=183
340A Bronson 69.27 360 P **P 09 03 37.7 -1.1**
baz=180
BRAL Brewton 69.30 6 PFAKE 09 03 50.0 +11
BRAL LR LR
comp=Z,500nm,21.0s
336A Riesel 69.30 357 P **P 09 03 38.0 -1.0**
baz=177
334A Lometa 69.32 356 P **P 09 03 37.4 -1.8**
baz=176
346A Big Creek Wild 69.35 4 P **P 09 03 37.7 -1.6**
baz=184
333A Richland Sprin 69.36 355 P **P 09 03 38.2 -1.2**
baz=176,SNR=9.1
344A Westbrook Farm 69.36 3 P **P 09 03 38.8 -0.6**
baz=182
347A Saraland 69.42 5 P **P 09 03 38.6 -1.1**
baz=184
348A Jackson 69.47 5 P **P 09 03 39.2 -0.8**
baz=185
NATX Nacogdoches 69.62 359 P **P 09 03 40.1 -0.9**
baz=179
NATX Nacogdoches 69.62 359 *e*P **P 09 03 41.7 +0.7**
comp=Z,226nm,1.9s
243A Waterproof 69.76 2 P **P 09 03 41.6 -0.2**
baz=182
238A Jacksonville 69.87 359 P **P 09 03 42.2 -0.3**
baz=179
239A Gary 69.87 359 P **P 09 03 41.7 -0.8**
baz=179
241A Mo Tay, Goldon 69.88 1 P **P 09 03 42.1 -0.5**
baz=181
237A Washetta, Mont 69.88 358 P **P 09 03 42.5 -0.1**
baz=178
240A Hunter Patters 69.89 360 P **P 09 03 42.2 -0.5**
baz=180
236A Katherine and 69.90 357 P **P 09 03 42.1 -0.6**
baz=178
TIGA Tifton 69.92 9 P **P 09 03 42.5 -0.4**
baz=188
242A Grayson 69.93 1 P **P 09 03 42.3 -0.6**
baz=181
WHTX Lake Whitney, 69.93 357 P **P 09 03 42.4 -0.5**
baz=177,SNR=6.6
WHTX Lake Whitney, 69.93 357 *e*P **P 09 03 42.0 -0.9**
comp=Z,185nm,1.9s
WHTX LR LR
comp=Z,400nm,21.0s
244A Avery, Jackson 69.95 3 P **P 09 03 43.2 +0.2**
baz=183,SNR=5.7
245A Little AP, Sta 69.97 3 P **P 09 03 42.8 -0.3**
baz=183
234A Clairette 69.98 356 P **P 09 03 42.8 -0.4**
baz=176,SNR=5.6
246A Jackson Lee, B 69.99 4 P **P 09 03 42.7 -0.6**
baz=184
233A Rising Star 70.04 355 P **P 09 03 43.0 -0.6**
baz=176,SNR=13
247A Quitman 70.06 5 P **P 09 03 43.0 -0.7**
baz=184
VBMS Vicksburg 70.13 3 P **P 09 03 44.3 +0.2**
baz=183
VBMS Vicksburg 70.13 3 PFAKE 09 04 00.0 +16
VBMS LR LR
comp=Z,400nm,20.0s
248A Dixon Mills 70.16 5 P **P 09 03 43.8 -0.5**
baz=185
136A Ennis 70.38 357 P **P 09 03 44.8 -0.8**
baz=178
MNTX Cornudas Mount 70.41 349 P **P 09 03 44.5 -1.4**
baz=170,SNR=10
MNTX Cornudas Mount 70.41 349 *e*P **P 09 03 44.0 -1.8**
comp=Z,17nm,1.1s
MNTX LR LR
comp=Z,900nm,19.0s
142A Monroe 70.42 2 P **P 09 03 45.3 -0.6**
baz=182
141A Papa Simpson, 70.46 1 P **P 09 03 45.6 -0.4**
baz=181
137A Heron Place, G 70.47 358 P **P 09 03 45.9 -0.3**
baz=178
140A Cam and Jess, 70.49 0 P **P 09 03 45.4 -0.9**
baz=180
135A Vickery Place, 70.49 357 P **P 09 03 45.5 -0.9**
baz=177
138A Matatall Enter 70.52 359 P **P 09 03 46.0 -0.5**
baz=179
139A Bunkhouse Ranc 70.53 359 P **P 09 03 46.2 -0.3**
baz=180
145A Houston Renfro 70.54 3 P **P 09 03 46.1 -0.4**
baz=183
134A White-Moore Ra 70.54 356 P **P 09 03 46.0 -0.7**
baz=176,SNR=9.2
144A Alexander Plac 70.54 3 P **P 09 03 45.7 -0.9**
baz=183
143A Socs Landing, 70.58 2 P **P 09 03 46.2 -0.6**
baz=182,SNR=6.8
146A Union 70.61 4 P **P 09 03 46.4 -0.7**
baz=184
133A Hamilton Ranch 70.63 355 P **P 09 03 46.1 -1.1**
baz=176,SNR=7.2
ABTX Abilene, Hawle 70.69 355 P **P 09 03 46.6 -1.0**
baz=175
ABTX Abilene, Hawle 70.69 355 *e*P **P 09 03 46.2 -1.4**
comp=Z,91nm,1.8s
ABTX LR LR
comp=Z,400nm,18.0s
147A Livingston 70.70 5 P **P 09 03 46.8 -0.8**
baz=185
319A Douglas 70.75 346 *e*P **P 09 03 48.0 -0.1**
comp=Z,60nm,1.7s
319A LR LR
comp=Z,500nm,21.0s
Z37A Pogue Cattle C 71.07 358 P **P 09 03 49.0 -0.8**
baz=178
Z39A Irene McRaven, 71.09 360 P **P 09 03 49.1 -0.8**
baz=180
Z43A Armstrong Fami 71.09 2 P **P 09 03 48.5 -1.4**
baz=182
Z40A Long Farm, Mag 71.11 0 P **P 09 03 49.5 -0.6**
baz=180
Z38A Mt. Pleasant 71.11 359 P **P 09 03 49.0 -1.0**
baz=179
Z41A Richland Creek 71.11 1 P **P 09 03 49.2 -0.8**
baz=181
Z42A Norrel Spur, H 71.14 1 P **P 09 03 49.3 -0.9**
baz=182
LRAL Lakeview Retre 71.15 6 *e*P **P 09 03 50.0 -0.4**
comp=Z,70nm,1.6s
LRAL LR LR
comp=Z,400nm,20.0s
Z36A Blue Ridge 71.17 358 P **P 09 03 49.3 -1.1**
baz=178
Z46A Louisville 71.17 4 P **P 09 03 49.7 -0.8**
baz=184,SNR=5.3
Z44A Pea Ridge, Bel 71.19 3 P **P 09 03 49.0 -1.5**
baz=183
Z47A Carrollton 71.23 5 P **P 09 03 49.7 -1.1**
baz=185,SNR=9.7
Z35A Perchaven, San 71.26 357 P **P 09 03 49.9 -1.1**
baz=177
Z33A Whitaker Ranch 71.29 355 P **P 09 03 50.0 -1.2**
baz=176
Z45A Winona 71.31 3 P **P 09 03 50.1 -1.2**
baz=183
Z34A Collier Ranch, 71.33 356 P **P 09 03 49.8 -1.6**
baz=177
Z48A Northport 71.45 5 P **P 09 03 51.2 -0.9**
baz=185,SNR=5.8
WLAR White Oak Lake 71.53 0 *e*P **P 09 03 53.2 +0.6**
comp=Z,46nm,1.1s
WLAR LR LR
comp=Z,400nm,19.0s
121A Cookes Peak, D 71.60 347 P **P 09 03 52.7 -0.7**
baz=168
Y42A Garnett, Star 71.70 2 P **P 09 03 52.7 -0.9**
baz=182
Y41A Eaglette Beard 71.73 1 P **P 09 03 53.1 -0.7**
baz=181
Y38A Idabel 71.78 359 P **P 09 03 53.3 -0.8**
baz=179
CCAR Cane Creek 71.78 2 PFAKE 09 04 10.0 +16
CCAR LR LR
comp=Z,500nm,21.0s
Y39A Lockesburg 71.78 360 P **P 09 03 53.4 -0.7**
baz=180
Y36A Durant 71.79 358 P **P 09 03 53.1 -1.0**
baz=178,SNR=8.4
Y43A Makayla and Ka 71.80 2 P **P 09 03 53.8 -0.4**
baz=182
Y45A Yeager Farm, C 71.81 4 P **P 09 03 53.2 -1.0**
baz=184
Y35A Marietta 71.82 357 P **P 09 03 53.3 -1.0**
baz=177,SNR=6.1
Y37A Hugo 71.85 358 P **P 09 03 53.8 -0.7**
baz=178
Y40A Okolona 71.86 0 P **P 09 03 54.0 -0.5**
baz=180
Y46A Houston 71.87 4 P **P 09 03 53.6 -1.0**
baz=184
Y44A Strider, Charl 71.88 3 P **P 09 03 53.6 -1.0**
baz=183
GOGA Godfrey 71.88 9 *e*P **P 09 03 54.6 -0.1**
GOGA pmax pmax
comp=Z,37nm,1.4s
GOGA MLR MLR
comp=Z,500nm,20.0s
GOGA Godfrey 71.88 9 *e*P **P 09 03 54.6 -0.1**
comp=Z,37nm,1.4s
GOGA LR LR
comp=Z,500nm,20.0s
Y34A Reagan Ranch, 71.91 356 P **P 09 03 53.7 -1.2**
baz=177
Y47A UCPARC, Winfie 71.95 5 P **P 09 03 54.3 -0.8**
baz=185
TUC Tucson 71.95 345 P **P 09 03 54.7 -0.6**
baz=166
TUC Tucson 71.95 345 *e*P **P 09 03 55.1 -0.2**
TUC pmax pmax
comp=Z,64nm,1.9s
TUC MLR MLR
comp=Z,1µm,18.0s
TUC Tucson 71.95 345 *e*P **P 09 03 55.1 -0.2**
comp=Z,64nm,1.9s
TUC LR LR
comp=Z,1µm,18.0s
Y33A Hilltop Ranch, 72.00 356 P **P 09 03 54.2 -1.2**
baz=176
NHSC New Hope 72.05 12 PFAKE 09 04 10.0 +14
NHSC LR LR
comp=Z,1µm,21.0s
214A Organ Pipe Nat 72.06 343 P **P 09 03 55.2 -0.7**
baz=164
X35A Drake 72.31 357 P **P 09 03 55.5 -1.8**
baz=177
MSTX Muleshoe 72.31 352 P **P 09 03 56.2 -1.3**
baz=173,SNR=7.9
MSTX Muleshoe 72.31 352 *e*P **P 09 03 56.4 -1.0**
comp=Z,33nm,1.0s
MSTX LR LR
comp=Z,600nm,18.0s
X41A Kaden, Bauxite 72.35 1 P **P 09 03 56.7 -0.8**
baz=181
X39A Fountain Ranch 72.36 360 P **P 09 03 56.8 -0.8**
baz=180,SNR=11
X45A UM Field Stati 72.38 4 P **P 09 03 56.5 -1.2**
baz=184
MIAR Mount Ida 72.39 0 P **P 09 03 56.0 -1.7**
baz=180,SNR=11
MIAR Mount Ida 72.39 0 *e*P **P 09 03 56.9 -0.8**
MIAR pmax pmax
comp=Z,51nm,1.3s
MIAR MLR MLR
comp=Z,400nm,20.0s
MIAR Mount Ida 72.39 0 *e*P **P 09 03 56.9 -0.8**
comp=Z,51nm,1.3s
MIAR LR LR
comp=Z,400nm,20.0s
X43A Marvell 72.41 2 P **P 09 03 56.7 -1.1**
baz=182
X44A Crenshaw 72.42 3 P **P 09 03 56.6 -1.3**
baz=183
X37A Clayton 72.45 359 P **P 09 03 56.1 -2.0**
baz=179
X32A Elmer 72.46 355 P **P 09 03 56.8 -1.4**
baz=176
X36A Centrahoma 72.46 358 P **P 09 03 56.9 -1.2**
baz=178,SNR=10
OXF Oxford 72.46 4 *e*P **P 09 03 56.7 -1.4**
OXF pmax pmax
comp=Z,39nm,1.1s
OXF Oxford 72.46 4 *e*P **P 09 03 56.7 -1.4**
comp=Z,39nm,1.1s
X38A Whitesboro 72.52 359 P **P 09 03 57.0 -1.6**
baz=179
X33A Lawton 72.53 356 P **P 09 03 56.7 -1.9**
baz=176,SNR=5.9
X34A Smith Ranch, M 72.55 356 P **P 09 03 58.3 -0.5**
baz=177
UALR University of 72.63 1 *e*P **P 09 03 58.8 -0.4**
comp=Z,51nm,1.5s
UALR LR LR
comp=Z,400nm,18.0s

WMOK **Wichita Mounta** 72.74 356 P P 09 03 58.8 -1.1
baz=176
WMOK **Wichita Mounta** 72.74 356 eP P 09 03 58.6 -1.3
WMOK pmax pmax
comp=Z,12nm,1.1s
WMOK MLR MLR
comp=Z,400nm,20.0s
WMOK **Wichita Mounta** 72.74 356 eP P 09 03 58.6 -1.3
comp=Z,12nm,1.1s
WMOK LR LR
comp=Z,400nm,20.0s
W38A **Poteau** 72.92 359 P P 09 04 00.3 -0.5
baz=179
Y22D **IRIS PASSCAL I** 72.97 348 P P 09 04 00.9 -0.5
baz=169
Y22D **IRIS PASSCAL I** 72.97 348 PFAKE 09 04 10.0 +8.6
Y22D LR LR
comp=Z,1µm,20.0s
BNM **Barren Site** 73.00 349 eP P 09 04 02.3 +0.6
W37B **Quinton** 73.00 358 P P 09 03 59.7 -1.7
baz=179
MAW **Mawson** 73.02 171 P P 09 04 00.8 -0.4
comp=Z,15nm,1.2s,baz=191,slow=9.0,SNR=7.6
MAW **Mawson** 73.02 171 eP P 09 04 00.3 -0.9
MAW pmax pmax
comp=Z,11nm,1.4s
MAW MLR MLR
comp=Z,200nm,18.0s
MAW **Mawson** 73.02 171 eP P 09 04 00.3 -0.9
comp=Z,11nm,1.4s
MAW LR LR
comp=Z,200nm,18.0s
W36A **Wetumka** 73.02 358 P P 09 03 59.8 -1.7
baz=178,SNR=6.7
W41B **Gary Mavity, V** 73.03 1 P P 09 04 00.4 -1.1
baz=181,SNR=9.7
JSC **Jenkinsville** 73.04 11 eP P 09 04 01.4 -0.2
JSC pmax pmax
comp=Z,90nm,1.4s
JSC **Jenkinsville** 73.04 11 eP P 09 04 01.4 -0.2
comp=Z,90nm,1.4s
W40A **Ferguson Farm,** 73.04 0 P P 09 04 01.1 -0.5
baz=181,SNR=8.2
W39A **Magazine** 73.04 360 P P 09 04 01.3 -0.2
baz=180,SNR=11
MET **Memphis--Engin** 73.05 3 PFAKE 09 04 10.0 +8.4
MET LR LR
comp=Z,700nm,22.0s
W35A **Tecumseh** 73.06 357 P P 09 04 00.4 -1.3
baz=178
113A **Mohawk Valley,** 73.06 342 PFAKE 09 04 10.0 +8.2
113A LR LR
comp=Z,900nm,20.0s
X301 **Greenbrier Sit** 73.09 1 eP P 09 04 01.3 -0.6
comp=Z,85nm,1.6s
AMTX **Amarillo** 73.11 353 P P 09 04 01.1 -1.1
baz=174
AMTX **Amarillo** 73.11 353 eP P 09 04 01.4 -0.8
comp=Z,38nm,1.0s
AMTX LR LR
comp=Z,900nm,18.0s
W45A **Hickory Valley** 73.12 4 P P 09 04 00.8 -1.3
baz=184
W33A **Caddo, Fort Co** 73.13 356 P P 09 04 01.4 -0.8
baz=176,SNR=12
WHAR **Wooly Hollow** 73.14 1 eP P 09 04 01.1 -1.2
comp=Z,86nm,1.6s
WHAR LR LR
comp=Z,500nm,21.0s
W32A **Sentinel** 73.15 355 P P 09 04 01.2 -1.1
baz=176
LPM **Los Pinos Moun** 73.16 349 eP P 09 04 02.6 +0.1
W34A **Bridge Creek,** 73.18 356 P P 09 04 01.9 -0.6
baz=177
W34A **Bridge Creek,** 73.18 356 eP P 09 04 02.5 0.0
comp=Z,91nm,1.6s
W34A LR LR
comp=Z,600nm,18.0s
LAZ **Ladron** 73.33 348 eP P 09 04 03.0 -0.5
SWET **Sewanee** 73.41 7 eP P 09 04 03.4 -0.4
comp=Z,23nm,1.5s
IKP **In-Ko-Pah, Jac** 73.54 340 P P 09 04 04.6 -0.1
baz=162
GLA **Glamis** 73.59 342 P P 09 04 04.0 -0.9
baz=163
GLA **Glamis** 73.59 342 PFAKE 09 04 20.0 +15
GLA LR LR
comp=Z,1µm,18.0s
V41A **Mountainview** 73.64 1 P P 09 04 04.0 -1.1
baz=181,SNR=6.1
V40A **Witts Springs** 73.65 1 P P 09 04 03.7 -1.5
baz=181,SNR=8.1
V36A **Jenks** 73.66 358 P P 09 04 04.0 -1.2
baz=178,SNR=6.2
V35A **Meyer Ranch, C** 73.66 357 P P 09 04 03.6 -1.7
baz=178
V42A **Cord** 73.68 2 P P 09 04 03.1 -2.2
baz=182,SNR=6.9
V39A **Pettigrew** 73.68 360 P P 09 04 03.9 -1.6
baz=180,SNR=6.2
V38A **Canehill** 73.71 359 P P 09 04 03.9 -1.6
baz=180,SNR=6.9
V45A **Humboldt** 73.71 4 P P 09 04 03.4 -2.1
baz=184
BAR **Barrett** 73.72 340 eP P 09 04 06.6 +0.9
comp=Z,39nm,1.8s
V32A **Arapaho** 73.73 355 P P 09 04 04.5 -1.2
baz=176
SWSC **Sam W. Stewart** 73.74 341 P P 09 04 05.9 +0.1
baz=162
V37A **Hulbert** 73.74 359 P P 09 04 04.5 -1.2
baz=179
V44A **Blytheville** 73.75 3 P P 09 04 04.1 -1.6
baz=183
ANMO **Albuquerque** 73.75 349 P P 09 04 05.2 -0.9
baz=170
ANMO **Albuquerque** 73.75 349 ceP P 09 04 04.8 -1.3
ANMO pmax pmax
comp=Z,29nm,1.8s
ANMO **Albuquerque** 73.75 349 eP P 09 04 05.6 -0.5
comp=Z,58nm,1.9s
ANMO LR LR
comp=Z,1µm,19.0s
V34A **Guthrie** 73.76 357 P P 09 04 04.6 -1.2
baz=177,SNR=6.9
V34A **Guthrie** 73.76 357 eP P 09 04 05.8 -0.1
comp=Z,80nm,1.5s
V34A LR LR
comp=Z,600nm,18.0s
CPCT **Cooper Cave** 73.78 8 eP P 09 04 04.7 -1.3
comp=Z,35nm,1.5s
TUL1 **Leonard** 73.78 358 P P 09 04 03.6 -2.3
baz=178,SNR=6.7
TUL1 **Leonard** 73.78 358 eP P 09 04 05.1 -0.9
comp=Z,41nm,1.0s
V33A **Lossen Ranch,** 73.79 356 P P 09 04 04.7 -1.3
baz=176
MONP2 **Monument Peak** 73.85 340 P P 09 04 05.8 -0.9
baz=162
HALT **Halls** 73.86 4 PFAKE 09 04 20.0 +14
HALT LR LR
comp=Z,752µm,18.0s
KMSC **Kings Mountain** 73.87 10 P P 09 04 05.2 -1.3
baz=190,SNR=6.9
KMSC **Kings Mountain** 73.87 10 eP P 09 04 07.2 +0.6
comp=Z,76nm,1.5s
KMSC LR LR
comp=Z,1µm,18.0s
X18A **Snowflake** 73.94 346 eP P 09 04 07.5 +0.3
comp=Z,101nm,1.8s
X18A LR LR
comp=Z,1µm,18.0s
Y14A **Wickenburg** 74.00 343 eP P 09 04 07.7 +0.3
comp=Z,243nm,1.8s
Y14A LR LR
comp=Z,2µm,19.0s
109C **Camp Elliot, M** 74.03 340 P P 09 04 06.3 -1.2
baz=161
TKL **Tuckaleechee C** 74.07 8 eP P 09 04 07.7 0.0
TKL pmax pmax
comp=Z,63nm,1.7s
TKL MLR MLR
comp=Z,500nm,20.0s
TKL **Tuckaleechee C** 74.07 8 eP P 09 04 07.7 0.0
comp=Z,63nm,1.7s
TKL LR LR
comp=Z,500nm,20.0s
HHAR **Hobbs** 74.12 360 eP P 09 04 07.4 -0.6
comp=Z,27nm,1.2s
X16A **Lo Mia Camp, P** 74.13 345 eP P 09 04 08.3 0.0
comp=Z,61nm,1.9s
X16A LR LR
comp=Z,800nm,19.0s
WVT **Waverly** 74.17 5 eP P 09 04 07.2 -1.0
WVT pmax pmax
comp=Z,46nm,1.5s
WVT MLR MLR
comp=Z,400nm,22.0s
WVT **Waverly** 74.17 5 eP P 09 04 07.2 -1.0
comp=Z,46nm,1.5s
WVT LR LR
comp=Z,400nm,22.0s
Y12C **Blythe** 74.18 342 P P 09 04 07.7 -0.6
baz=163
Y12C **Blythe** 74.18 342 eP P 09 04 07.8 -0.5
comp=Z,39nm,1.4s
Y12C LR LR
comp=Z,1µm,18.0s
U40A **Yellville** 74.20 1 P P 09 04 07.4 -1.0
baz=181,SNR=6.5
U41A **Viola** 74.20 1 P P 09 04 06.6 -1.8
baz=182
U39A **Green Forest** 74.22 0 P P 09 04 06.9 -1.6
baz=180,SNR=7.1
U42A **Revenden** 74.22 2 P P 09 04 07.3 -1.2
baz=182,SNR=6.1
U36A **Oologah** 74.26 358 P P 09 04 07.1 -1.6
baz=178
U37A **Salina** 74.26 359 P P 09 04 07.4 -1.3
baz=179,SNR=12
U35A **Pawnee** 74.27 357 P P 09 04 07.4 -1.4
baz=178,SNR=9.7
U38A **Gravette** 74.28 359 P P 09 04 07.5 -1.4
baz=180,SNR=11
BC3 **Big Chuckawall** 74.32 341 P P 09 04 09.2 -0.2
baz=162
PVMO **Portageville** 74.34 3 PFAKE 09 04 20.0 +11
PVMO LR LR
comp=Z,600nm,19.0s
U34A **Anderson Ranch** 74.36 357 P P 09 04 08.7 -0.7
baz=177
U34A **Anderson Ranch** 74.36 357 eP P 09 04 09.3 -0.1
comp=Z,61nm,1.1s
U34A LR LR
comp=Z,600nm,19.0s
U32A **Winter Ranch,** 74.39 356 P P 09 04 09.1 -0.5
baz=176
U33A **Lingo Farm, Me** 74.39 356 P P 09 04 08.9 -0.6
baz=176
W18A **Petrified Fore** 74.47 346 P P 09 04 10.2 0.0
baz=167
W18A **Petrified Fore** 74.47 346 PFAKE 09 04 20.0 +10
W18A LR LR
comp=Z,500nm,19.0s
SCI2 **San Clemente I** 74.53 338 P P 09 04 10.3 -0.1
baz=160
CNNC **Cliffs of the** 74.53 13 PFAKE 09 04 20.0 +10
CNNC LR LR
comp=Z,1µm,19.0s
TPFO **Pinon Flats** 74.53 340 P P 09 04 09.9 -0.7
baz=162
PFO **Pinyon Flats O** 74.54 340 eP P 09 04 10.1 -0.5
PFO pmax pmax
comp=Z,41nm,1.7s
PFO **Pinyon Flats O** 74.54 340 eP P 09 04 10.1 -0.5
comp=Z,41nm,1.7s
PDMCI **Parker Dam,Lak** 74.62 343 P P 09 04 11.2 +0.3
baz=164
PBMO **Poplar Bluff** 74.68 3 eP P 09 04 09.5 -1.6
PBMO LR LR
comp=Z,500nm,20.0s
IRM **Iron Mountain** 74.72 342 P P 09 04 11.0 -0.5
baz=163
MURC **Murrieta** 74.73 340 P P 09 04 10.9 -0.7
baz=161
BELC **Belle Mtn. Jos** 74.79 341 P P 09 04 11.6 -0.4
baz=162
T35A **Sooner Cattle** 74.80 358 P P 09 04 10.7 -1.2
baz=178,SNR=5.7
T39A **Clever** 74.86 0 P P 09 04 10.9 -1.4
baz=180,SNR=7.0
T38A **Diamond** 74.88 359 P P 09 04 10.7 -1.6
baz=180,SNR=10
CIS **Catalina Islan** 74.88 339 P P 09 04 11.9 -0.6
baz=160
T41A **Mountain View** 74.90 2 P P 09 04 10.6 -1.9
baz=182,SNR=5.5
T36A **Boggs Farm, Ca** 74.93 358 P P 09 04 11.3 -1.3
baz=176,SNR=7.0
T34A **Mcaskey Farm** 74.93 357 P P 09 04 11.3 -1.4
baz=177,SNR=11
TZTN **Tazewell** 74.97 8 eP P 09 04 12.5 -0.4
comp=Z,103nm,1.6s
T37A **Cheneyville 18** 74.97 359 P P 09 04 10.9 -2.0
baz=179,SNR=8.1
T40A **Mansfield** 75.00 1 P P 09 04 11.4 -1.7
baz=181
T33A **Patterson Ranc** 75.04 356 P P 09 04 12.1 -1.2
baz=176,SNR=8.9
FMP **Fort Macarthur** 75.14 339 P P 09 04 12.9 -1.0
baz=160
WUAZ **Wupatki** 75.18 345 P P 09 04 14.0 -0.3
baz=166,SNR=7.3
WUAZ **Wupatki** 75.18 345 eP P 09 04 15.2 +0.9
comp=Z,58nm,1.6s
WUAZ LR LR
comp=Z,800nm,18.0s
T32A **Huddler Ranch,** 75.18 356 P P 09 04 13.1 -1.0
baz=176
BBRC **Big Bear Solar** 75.28 340 P P 09 04 14.6 -0.4
baz=161
W13A **Hualapai Mount** 75.32 343 eP P 09 04 14.9 -0.3
comp=Z,18nm,1.4s
W13A LR LR
comp=Z,800nm,19.0s
S40A **Lebanon** 75.44 1 P P 09 04 13.9 -1.7
baz=181,SNR=9.7
S41A **Jillco Farms,** 75.45 2 P P 09 04 13.8 -1.8
baz=182
GMRC **Granite Mounta** 75.45 341 P P 09 04 15.5 -0.3
baz=162,SNR=5.7
BFSC **Mount Baldy Ra** 75.46 340 P P 09 04 14.7 -1.2
baz=161,SNR=5.1
S38A **Stockton** 75.47 360 P P 09 04 14.3 -1.5
baz=180,SNR=11
S43A **Fulton Ridge,** 75.48 3 P P 09 04 14.1 -1.7
baz=183,SNR=5.4
S39A **Bolivar** 75.53 0 P P 09 04 14.6 -1.5
baz=180,SNR=11
S33A **Kaszmaul Farm,** 75.54 356 P P 09 04 15.5 -0.7
baz=177
S35A **Otter Creek Ra** 75.56 358 P P 09 04 14.8 -1.5
baz=178,SNR=6.0
S36A **Lake Cedric, C** 75.58 358 P P 09 04 14.8 -1.6
baz=178,SNR=9.0
LDFC **Landfair** 75.59 342 eP P 09 04 16.9 +0.3
comp=Z,112nm,1.6s
LDFC LR LR
comp=Z,900nm,18.0s
S37A **Fort Scott** 75.61 359 P P 09 04 14.7 -1.8
baz=179,SNR=13
S34A **Willow Spring** 75.61 357 P P 09 04 15.7 -0.8
baz=177
T25A **Trinidad** 75.63 351 P P 09 04 15.6 -1.4
baz=171,SNR=6.4
T25A **Trinidad** 75.63 351 eP P 09 04 16.8 -0.2
comp=Z,54nm,1.4s
T25A LR LR
comp=Z,1µm,18.0s
S44A **Carbondale** 75.64 4 P P 09 04 15.4 -1.2
baz=184
DECC **Green Verdugo** 75.66 339 P P 09 04 16.7 -0.2
baz=160
S45A **Carrier Mills** 75.66 4 P P 09 04 15.4 -1.4
baz=184
HEC **Hector,Ludlow** 75.66 341 P P 09 04 16.6 -0.4
baz=162
SIUC **Southern Illin** 75.66 4 PFAKE 09 04 30.0 +13
SIUC LR LR
comp=Z,500nm,22.0s
BLG **Laguna Peak, P** 75.73 338 P P 09 04 17.1 -0.2
baz=160
RRX **Edison Barstow** 75.88 340 P P 09 04 18.1 0.0
baz=161
R38A **Fenwick Farm,** 76.02 360 P P 09 04 17.9 -1.0
baz=180
BLA **Blacksburg** 76.04 11 eP P 09 04 18.6 -0.5
BLA pmax pmax
comp=Z,87nm,1.8s
BLA MLR MLR
comp=Z,1µm,19.0s
BLA **Blacksburg** 76.04 11 eP P 09 04 18.6 -0.5
comp=Z,87nm,1.8s
BLA LR LR
comp=Z,1µm,19.0s
OSI **Osito Audit: C** 76.11 339 P P 09 04 18.8 -0.7
baz=160
TUQ **Turquoise Moun** 76.13 341 P P 09 04 19.3 -0.4
baz=162
R40A **Maddies Statio** 76.14 1 P P 09 04 18.4 -1.1
baz=181
EDW2 **Edwards Air Fo** 76.15 340 P P 09 04 18.8 -1.0
baz=161
R39A **Chumby, Stover** 76.15 0 P P 09 04 18.0 -1.6
baz=181,SNR=5.0
R37A **Teagarden Farm** 76.16 359 P P 09 04 19.1 -0.5
baz=179
R36A **Gordon, Harris** 76.18 358 P P 09 04 18.4 -1.3
baz=179,SNR=5.8
R35A **Emporia Munici** 76.20 358 P P 09 04 18.7 -1.1
baz=178
R44A **Waltonville** 76.20 4 P P 09 04 18.4 -1.5
baz=184
R34A **Isabella, Hill** 76.21 357 P P 09 04 19.3 -0.7
baz=177
GSC **Goldstone, Bar** 76.23 341 P P 09 04 20.3 0.0
baz=162
GSC **Goldstone, Bar** 76.23 341 eP P 09 04 20.7 +0.5
GSC pmax pmax
comp=Z,54nm,1.7s
GSC MLR MLR
comp=Z,600nm,21.0s
GSC **Goldstone, Bar** 76.23 341 eP P 09 04 20.7 +0.5
comp=Z,54nm,1.7s
GSC LR LR
comp=Z,600nm,21.0s
SBC **Santa Barbara** 76.23 338 P P 09 04 18.4 -1.8
baz=159
U15A **North Rim** 76.25 345 eP P 09 04 19.9 -0.7
comp=Z,60nm,1.6s
U15A LR LR
comp=Z,700nm,18.0s
R33A **Olander Ranch,** 76.25 356 P P 09 04 20.0 -0.2
baz=177,SNR=7.4
MVCO **Mesa Verde** 76.29 348 P P 09 04 19.4 -1.3
baz=168,SNR=5.1
MVCO **Mesa Verde** 76.29 348 eP P 09 04 19.8 -0.9
comp=Z,76nm,1.8s
MVCO LR LR
comp=Z,900nm,21.0s
WCI **Wyandotte Cave** 76.37 6 eP P 09 04 18.8 -2.1
WCI pmax pmax
comp=Z,69nm,1.6s
WCI **Wyandotte Cave** 76.37 6 eP P 09 04 18.8 -2.1
comp=Z,68nm,1.6s
SDCO **Great Sand Dun** 76.37 350 P P 09 04 20.3 -1.0
baz=171,SNR=9.9
SDCO **Great Sand Dun** 76.37 350 eP P 09 04 21.3 +0.1
comp=Z,29nm,1.4s
SDCO LR LR
comp=Z,600nm,20.0s
R32A **Long Quarter,** 76.40 356 P P 09 04 20.7 -0.3
baz=176
S22A **4UR Ranch, Cre** 76.56 349 P P 09 04 21.9 -0.4
baz=170,SNR=6.2
S22A **4UR Ranch, Cre** 76.56 349 eP P 09 04 22.7 +0.4
comp=Z,77nm,1.9s
S22A LR LR
comp=Z,1µm,19.0s
ARVC **Arvin** 76.62 339 P P 09 04 23.0 +0.7
baz=160
LRMC **Laurel Mtn Rad** 76.63 340 P P 09 04 22.0 -0.6
baz=161
SHOC **Shoshone, Teco** 76.66 341 P P 09 04 22.6 0.0
baz=162
PKM **Mcpherson Peak** 76.68 338 P P 09 04 22.7 -0.2
baz=159
Q37A **Longview Farm,** 76.72 359 P P 09 04 21.0 -1.7
baz=179
Q35A **Mercer Eighty,** 76.73 358 P P 09 04 22.0 -0.9
baz=178
ASCN **Ascension** 76.73 90 PFAKE 09 04 40.0 +16
ASCN LR LR
comp=Z,3µm,22.0s
OLIL **Olney** 76.74 4 eP P 09 04 22.8 -0.1
comp=Z,68nm,1.5s
OLIL LR LR
comp=Z,500nm,18.0s
Q38A **Cooks Store, C** 76.80 0 P P 09 04 22.7 -0.5
baz=180
Q42A **Golden Eagle** 76.80 2 P P 09 04 22.1 -1.1
baz=183
Q36A **Arnold C. Orve** 76.81 359 P P 09 04 22.0 -1.4
baz=179
Q34A **Chapman** 76.82 357 P P 09 04 22.7 -0.6
baz=177
Q40A **Laux Farm, Aux** 76.84 1 P P 09 04 22.1 -1.4
baz=181
CBKS **Cedar Bluff** 76.86 355 P P 09 04 22.8 -0.8
baz=175
CBKS **Cedar Bluff** 76.86 355 PFAKE 09 04 40.0 +16
CBKS LR LR
comp=Z,900nm,22.0s
Q44A **Meyer Farm, Va** 76.86 4 P P 09 04 22.1 -1.5
baz=184
Q43A **New Douglas** 76.86 3 P P 09 04 22.6 -1.0
baz=183
Q39A **Willow Grove F** 76.88 1 P P 09 04 22.7 -1.0
baz=181
JSRW **J. Sargeant Re** 76.92 13 eP P 09 04 23.1 -0.9
KNB **Kanab** 76.92 344 eP P 09 04 25.4 +1.1
KNB pmax pmax
comp=Z,86nm,1.7s
KNB **Kanab** 76.92 344 eP P 09 04 25.4 +1.1
comp=Z,86nm,1.7s
Q33A **Connelly Farm,** 76.93 357 P P 09 04 23.9 -0.1
baz=177,SNR=5.7
Q32A **Meitler Ranch,** 76.96 356 P P 09 04 24.0 -0.2
baz=176
SHPR **Sheep Range** 76.96 342 eP P 09 04 25.1 +0.6
comp=Z,68nm,1.6s
KSU1 **Kansas State U** 76.98 358 P P 09 04 23.7 -0.6
baz=178
KSU1 **Kansas State U** 76.98 358 eP P 09 04 24.0 -0.3
comp=Z,42nm,1.0s
KSU1 LR LR
comp=Z,400nm,20.0s
LCMT **Little Creek M** 77.01 344 eP P 09 04 24.8 +0.1
comp=Z,34nm,1.8s
LCMT LR LR
comp=Z,600nm,20.0s
ISA **Isabella, Lake** 77.02 339 P P 09 04 25.1 +0.4
baz=160
ISA **Isabella, Lake** 77.02 339 PFAKE 09 04 40.0 +15
ISA LR LR
comp=Z,600nm,19.0s
MPMC **Manual Prospec** 77.12 340 P P 09 04 25.2 -0.2
baz=161
SMMC **Simmler** 77.13 338 P P 09 04 25.6 +0.4
baz=159
PV01 **Paradox Valley** 77.21 348 eP P 09 04 25.6 -0.3
PKCU **Pink Cliffs** 77.23 345 PFAKE 09 04 40.0 +14
PKCU LR LR
comp=Z,800nm,19.0s
PV05 **Paradox Valley** 77.24 348 eP P 09 04 26.3 +0.2
BLO **Bloomington** 77.28 6 eP P 09 04 25.1 -0.9
BLO pmax pmax
comp=Z,57nm,1.4s
BLO MLR MLR
comp=Z,500nm,19.0s
BLO **Bloomington** 77.28 6 eP P 09 04 25.1 -0.9
comp=Z,57nm,1.4s
BLO LR LR
comp=Z,500nm,19.0s
KSCO **Kaye Shedlock'** 77.29 353 P P 09 04 26.8 +0.7
baz=173
KSCO **Kaye Shedlock'** 77.29 353 PFAKE 09 04 40.0 +14
KSCO LR LR
comp=Z,800nm,18.0s
P39B **Salisbury** 77.33 1 P P 09 04 24.8 -1.4
baz=181
FURC **Furnace Creek,** 77.35 341 P P 09 04 26.7 +0.3
baz=162

VES	**Vestal, Richgr**	**77.36**	**339**	P		**P**	**09 04 26.1**	**-0.4**	
	baz=160								
DAC	**Darwin (Calif)**	**77.36**	**340**	*eP*		**P**	**09 04 27.2**	**+0.5**	
DAC				pmax		pmax			
	comp=Z,46nm,1.9s								
DAC	**Darwin (Calif)**	**77.36**	**340**	*eP*		**P**	**09 04 27.2**	**+0.5**	
	comp=Z,46nm,1.9s								
P33A	**Williams Farm,**	**77.36**	**357**	P		**P**	**09 04 25.6**	**-0.8**	
	baz=177								
P40A	**Paris**	**77.38**	**1**	P		**P**	**09 04 25.4**	**-1.1**	
	baz=181								
P35A	**Duane Minner,**	**77.39**	**358**	P		**P**	**09 04 26.3**	**-0.3**	
	baz=178								
P37A	**Lathrop**	**77.43**	**359**	P		**P**	**09 04 25.4**	**-1.4**	
	baz=180								
P34A	**Walnut Farm, R**	**77.44**	**357**	P		**P**	**09 04 26.0**	**-0.8**	
	baz=178,SNR=7.9								
P38A	**Dawn**	**77.46**	**0**	P		**P**	**09 04 25.7**	**-1.2**	
	baz=180								
P36A	**Good Intent, A**	**77.47**	**359**	P		**P**	**09 04 26.1**	**-0.9**	
	baz=179								
P42A	**Winchester**	**77.48**	**3**	P		**P**	**09 04 25.2**	**-1.8**	
	baz=183								
CBN	**Corbin Frederi**	**77.50**	**13**	PFAKE			09 04 40.0	+13	
CBN				LR		LR			
	comp=Z,700nm,18.0s								
PV10	**Paradox Valley**	**77.52**	**348**	*eP*		**P**	**09 04 26.9**	**-0.7**	
Q24A	**Divide**	**77.53**	**351**	P		**P**	**09 04 27.9**	**+0.1**	
	baz=171,SNR=7.8								
Q24A	**Divide**	**77.53**	**351**	*eP*		**P**	**09 04 28.8**	**+1.1**	
	comp=Z,59nm,1.5s								
Q24A				LR		LR			
	comp=Z,900nm,20.0s								
SZCU	**Shurtz Canyon**	**77.54**	**344**	*eP*		**P**	**09 04 29.2**	**+1.5**	
	comp=Z,170nm,1.9s								
SZCU				LR		LR			
	comp=Z,600nm,18.0s								
P41A	**Barry, Barry**	**77.55**	**2**	P		**P**	**09 04 26.4**	**-1.0**	
	baz=182								
CCUT	**Cedar City**	**77.55**	**344**	*eP*		**P**	**09 04 27.8**	**-0.1**	
	comp=Z,55nm,1.6s								
CCUT				LR		LR			
	comp=Z,800nm,21.0s								
PAGB	**Antelope Grade**	**77.59**	**338**	*eP*		**P**	**09 04 27.9**	**+0.1**	
	comp=Z,34nm,1.2s								
PAGB				LR		LR			
	comp=Z,2µm,18.0s								
P32A	**Huiting Farm,**	**77.59**	**356**	P		**P**	**09 04 27.9**	**+0.2**	
	baz=176								
TPNV	**Topopah Spring**	**77.65**	**342**	P		**P**	**09 04 28.1**	**-0.2**	
	baz=162,SNR=9.1								
TPNV	**Topopah Spring**	**77.65**	**342**	*eP*		**P**	**09 04 29.1**	**+0.8**	
TPNV				pmax		pmax			
	comp=Z,73nm,1.8s								
TPNV				MLR		MLR			
	comp=Z,700nm,20.0s								
TPNV	**Topopah Spring**	**77.65**	**342**	*eP*		**P**	**09 04 29.1**	**+0.8**	
	comp=Z,73nm,1.8s								
TPNV				LR		LR			
	comp=Z,700nm,20.0s								
PV09	**Paradox Valley**	**77.66**	**348**	*eP*		**P**	**09 04 27.7**	**-0.8**	
MTPU	**Mount Pierson**	**77.78**	**345**	*eP*		**P**	**09 04 29.7**	**+0.5**	
	comp=Z,71nm,2.0s								
MTPU				LR		LR			
	comp=Z,800nm,19.0s								
RCTC	**Rector, Farmer**	**77.84**	**339**	P		**P**	**09 04 29.2**	**+0.1**	
	baz=160								
O38A	**Galt**	**77.96**	**0**	P		**P**	**09 04 28.8**	**-0.9**	
	baz=180								
O40A	**La Belle**	**77.97**	**1**	P		**P**	**09 04 28.6**	**-1.2**	
	baz=182								
O36A	**Bolckow**	**77.97**	**359**	P		**P**	**09 04 28.6**	**-1.2**	
	baz=179								
GRAC	**Grapevine Rang**	**77.98**	**341**	P		**P**	**09 04 29.9**	**0.0**	
	baz=161								
SMCO	**Snowmass**	**77.98**	**349**	*eP*		**P**	**09 04 31.0**	**+0.6**	
	comp=Z,37nm,1.3s								
O41A	**Passleys Farm,**	**77.99**	**2**	P		**P**	**09 04 28.1**	**-1.8**	
	baz=182,SNR=8.7								
O33A	**Hebron**	**77.99**	**357**	P		**P**	**09 04 29.0**	**-1.0**	
	baz=177,SNR=8.6								
O37A	**Wolven Farm, M**	**78.00**	**360**	P		**P**	**09 04 28.6**	**-1.4**	
	baz=180								
O34A	**Beatrice**	**78.07**	**358**	P		**P**	**09 04 29.6**	**-0.7**	
	baz=178,SNR=10								
O39A	**Kirksville**	**78.09**	**1**	P		**P**	**09 04 29.5**	**-1.0**	
	baz=181								
O42A	**Bath**	**78.10**	**3**	P		**P**	**09 04 28.8**	**-1.7**	
	baz=183								
O35A	**Humboldt**	**78.13**	**358**	P		**P**	**09 04 29.5**	**-1.1**	
	baz=178								
O31A	**Woolen Ranch,**	**78.16**	**356**	P		**P**	**09 04 30.0**	**-0.9**	
	baz=176								
PMPB	**Monarch Peak**	**78.20**	**338**	PFAKE			09 04 40.0	+8.7	
PMPB				LR		LR			
	comp=Z,2µm,18.0s								
O32A	**Brockman Farm,**	**78.21**	**356**	P		**P**	**09 04 30.3**	**-0.9**	
	baz=176,SNR=5.6								
MSU	**Marysvale**	**78.23**	**345**	*eP*		**P**	**09 04 31.8**	**+0.2**	
MSU	**Marysvale**	**78.23**	**345**	*eP*		**P**	**09 04 31.8**	**+0.2**	
TIN	**Tinemaha, Big**	**78.26**	**340**	P		**P**	**09 04 31.9**	**+0.2**	
	baz=161								
TCRU	**Three Creeks R**	**78.38**	**345**	PFAKE			09 04 40.0	+7.6	
TCRU				LR		LR			
	comp=Z,800nm,18.0s								
ISCO	**Idaho Springs**	**78.41**	**351**	P		**P**	**09 04 31.9**	**-0.7**	
	baz=170								
ISCO	**Idaho Springs**	**78.41**	**351**	*eP*		**P**	**09 04 33.7**	**+1.1**	
ISCO				pmax		pmax			
	comp=Z,31nm,1.5s								
ISCO				MLR		MLR			
	comp=Z,800nm,18.0s								
ISCO	**Idaho Springs**	**78.41**	**351**	*eP*		**P**	**09 04 33.6**	**+1.1**	
	comp=Z,31nm,1.5s								
ISCO				LR		LR			
	comp=Z,800nm,18.0s								
HDIL	**Hopedale**	**78.49**	**3**	P		**P**	**09 04 30.8**	**-1.8**	
	baz=184								
HDIL	**Hopedale**	**78.49**	**3**	PFAKE			09 04 40.0	+7.4	
HDIL				LR		LR			
	comp=Z,500nm,21.0s								
SRU	**San Rafael Swe**	**78.50**	**347**	*eP*		**P**	**09 04 32.9**	**-0.1**	
SRU				pmax		pmax			
	comp=Z,59nm,1.7s								
SRU				MLR		MLR			
	comp=Z,600nm,19.0s								
SRU	**San Rafael Swe**	**78.50**	**347**	*eP*		**P**	**09 04 32.9**	**-0.1**	
	comp=Z,59nm,1.7s								
SRU				LR		LR			
	comp=Z,600nm,19.0s								
MCWV	**Mont Chateau**	**78.52**	**11**	PFAKE			09 04 40.0	+7.2	
MCWV				LR		LR			
	comp=Z,700nm,21.0s								
N37A	**Lee Faris, Mou**	**78.59**	**360**	P		**P**	**09 04 32.2**	**-1.0**	
	baz=180								
PSUT	**Pine Spring**	**78.60**	**344**	PFAKE			09 04 50.0	+16	
PSUT				LR		LR			
	comp=Z,700nm,18.0s								
N38A	**Joes South For**	**78.63**	**0**	P		**P**	**09 04 32.3**	**-1.1**	
	baz=180								
N33A	**J Bar K, Exete**	**78.65**	**357**	P		**P**	**09 04 32.9**	**-0.7**	
	baz=177								
N36A	**Muff Farm, Cla**	**78.66**	**359**	P		**P**	**09 04 32.7**	**-0.9**	
	baz=179								
ACSO	**Alum Creek Sta**	**78.67**	**8**	*eP*		**P**	**09 04 34.0**	**+0.3**	
	comp=Z,59nm,1.5s								
ACSO				LR		LR			
	comp=Z,500nm,18.0s								
N32A	**Stulken Farm,**	**78.71**	**356**	P		**P**	**09 04 33.3**	**-0.7**	
	baz=176								
N34A	**Lincoln**	**78.72**	**358**	P		**P**	**09 04 32.9**	**-1.0**	
	baz=178,SNR=5.5								
N35A	**Tabor**	**78.72**	**358**	P		**P**	**09 04 33.3**	**-0.6**	
	baz=178								
N39A	**Derby Farms, D**	**78.72**	**1**	P		**P**	**09 04 33.0**	**-0.9**	
	baz=181								
SDMD	**Soldier's Deli**	**78.77**	**13**	*eP*		**P**	**09 04 34.2**	**0.0**	
	comp=Z,24nm,1.2s								
TMUT	**Trail Mountain**	**78.80**	**346**	*eP*		**P**	**09 04 34.9**	**0.0**	
	comp=Z,24nm,1.0s								
TMUT				LR		LR			
	comp=Z,900nm,19.0s								
R11A	**Troy Canyon, C**	**78.82**	**343**	P		**P**	**09 04 34.6**	**-0.2**	
	baz=163,SNR=6.9								
R11A	**Troy Canyon, C**	**78.82**	**343**	*eP*		**P**	**09 04 34.8**	**0.0**	
	comp=Z,68nm,1.9s								
R11A				LR		LR			
	comp=Z,800nm,20.0s								
P17A	**Butcher Ranch,**	**78.89**	**347**	*eP*		**P**	**09 04 35.2**	**+0.1**	
	comp=Z,32nm,1.3s								
P17A				LR		LR			
	comp=Z,500nm,18.0s								
SAO	**San Andreas Ge**	**78.90**	**338**	PFAKE			09 04 50.0	+15	
SAO				LR		LR			
	comp=Z,2µm,20.0s								
P18A	**Preston Nutter**	**78.95**	**347**	PFAKE			09 04 50.0	+14	
P18A				LR		LR			
	comp=Z,700nm,19.0s								
O20A	**White River Ci**	**79.11**	**349**	P		**P**	**09 04 36.0**	**-0.4**	
	baz=168,SNR=9.2								
O20A	**White River Ci**	**79.11**	**349**	*eP*		**P**	**09 04 36.3**	**0.0**	
	comp=Z,38nm,1.1s								
O20A				LR		LR			
	comp=Z,700nm,21.0s								
OGNE	**Ogallala**	**79.15**	**354**	P		**P**	**09 04 35.1**	**-1.3**	
	baz=173								
OGNE	**Ogallala**	**79.15**	**354**	PFAKE			09 04 50.0	+14	
OGNE				LR		LR			
	comp=Z,900nm,20.0s								
M37A	**Trindle Farm,**	**79.24**	**360**	P		**P**	**09 04 35.5**	**-1.2**	
	baz=180								
M38A	**Pleasantville**	**79.25**	**0**	P		**P**	**09 04 35.6**	**-1.2**	
	baz=180								
M36A	**Felix, Anita**	**79.29**	**359**	P		**P**	**09 04 35.7**	**-1.4**	
	baz=179								
O56A	**Blue Knob Stat**	**79.31**	**12**	P		**P**	**09 04 35.5**	**-1.7**	
	baz=192,SNR=7.1								
M35A	**Neola**	**79.32**	**358**	P		**P**	**09 04 36.2**	**-1.0**	
	baz=178								
M39A	**Webster**	**79.32**	**1**	P		**P**	**09 04 36.3**	**-0.9**	
	baz=181								
M31A	**Lambtecht Ranc**	**79.33**	**356**	P		**P**	**09 04 36.9**	**-0.4**	
	baz=176								
BGNE	**Belgrade**	**79.35**	**357**	P		**P**	**09 04 36.3**	**-1.0**	
	baz=176								
BGNE	**Belgrade**	**79.35**	**357**	*eP*		**P**	**09 04 37.3**	**-0.1**	
	comp=Z,140nm,1.1s								
BGNE				LR		LR			
	comp=Z,500nm,18.0s								
M34A	**Aspy Farms, Fr**	**79.38**	**358**	P		**P**	**09 04 36.5**	**-1.0**	
	baz=178								
AMC	**Almaden**	**79.39**	**337**	*eP*		**P**	**09 04 37.8**	**+0.1**	
MVL	**Millersville**	**79.43**	**13**	*eP*		**P**	**09 04 37.8**	**0.0**	
	comp=Z,33nm,1.3s								
M33A	**Taylor Creek F**	**79.47**	**357**	P		**P**	**09 04 37.0**	**-1.0**	
	baz=177								
N23A	**Red Feather La**	**79.53**	**351**	P		**P**	**09 04 38.7**	**0.0**	
	baz=170,SNR=12								
N23A	**Red Feather La**	**79.53**	**351**	*eP*		**P**	**09 04 38.7**	**0.0**	
	comp=Z,77nm,1.6s								
N23A				LR		LR			
	comp=Z,900nm,18.0s								
PSUB	**Penn St. - Bra**	**79.53**	**14**	*eP*		**P**	**09 04 37.6**	**-0.8**	
	comp=Z,88nm,1.7s								
PSUB				LR		LR			
	comp=Z,700nm,21.0s								
MPU	**Maple Canyon**	**79.58**	**346**	*eP*		**P**	**09 04 38.0**	**-0.9**	
	comp=Z,32nm,1.4s								
MPU				LR		LR			
	comp=Z,1µm,19.0s								
NLU	**North Lily Min**	**79.61**	**346**	*eP*		**P**	**09 04 39.2**	**+0.1**	
	comp=Z,68nm,1.7s								
TVH3	**East Aurora ar**	**79.64**	**340**	*eP*		**P**	**09 04 40.6**	**+1.3**	
	comp=Z,39nm,1.6s								
TVH2	**Borealis Mine**	**79.64**	**340**	*eP*		**P**	**09 04 40.3**	**+1.0**	
	comp=Z,54nm,1.9s								
TVH1	**TV Hill, Hawth**	**79.72**	**340**	*eP*		**P**	**09 04 41.1**	**+1.1**	
	comp=Z,64nm,1.7s								
CMB	**Columbia Colle**	**79.77**	**339**	*eP*		**P**	**09 04 40.3**	**+0.5**	
CMB				pmax		pmax			
	comp=Z,40nm,1.7s								
CMB				MLR		MLR			
	comp=Z,799nm,18.0s								
CMB	**Columbia Colle**	**79.77**	**339**	*eP*		**P**	**09 04 40.2**	**+0.5**	
	comp=Z,40nm,1.7s								
CMB				LR		LR			
	comp=Z,799nm,18.0s								
N54A	**Moraine State**	**79.78**	**10**	P		**P**	**09 04 38.2**	**-1.5**	
	baz=191,SNR=6.6								
SSPA	**Standing Stone**	**79.78**	**12**	*eP*		**P**	**09 04 39.2**	**-0.5**	
	comp=Z,70nm,1.6s								
SSPA				LR		LR			
	comp=Z,1µm,20.0s								
L34A	**Svendsen Farm,**	**79.84**	**358**	P		**P**	**09 04 39.1**	**-0.9**	
	baz=178								
PHWY	**Pilot Hill**	**79.87**	**351**	*eP*		**P**	**09 04 40.9**	**+0.3**	
	comp=Z,56nm,1.7s								
PHWY				LR		LR			
	comp=Z,700nm,20.0s								
L40A	**Anamosa**	**79.92**	**2**	P		**P**	**09 04 39.0**	**-1.4**	
	baz=182,SNR=5.3								
L32A	**Elgin**	**79.94**	**357**	P		**P**	**09 04 39.8**	**-0.8**	
	baz=177								
L36A	**Harm Buss Farm**	**79.94**	**359**	P		**P**	**09 04 39.8**	**-0.7**	
	baz=179								
WAKR	**Walker**	**79.95**	**340**	*eP*		**P**	**09 04 41.9**	**+0.9**	
	comp=Z,60nm,1.6s								
WAKR				LR		LR			
	comp=Z,1µm,18.0s								
L37A	**Phoenix Point,**	**79.96**	**360**	P		**P**	**09 04 39.8**	**-0.9**	
	baz=180								
L41A	**Preston**	**79.96**	**2**	P		**P**	**09 04 38.7**	**-2.0**	
	baz=183								
L35A	**Bielow Farm, R**	**79.96**	**359**	P		**P**	**09 04 39.9**	**-0.8**	
	baz=179								
L39A	**Vinton**	**79.97**	**1**	P		**P**	**09 04 39.8**	**-0.9**	
	baz=181								
L38A	**Oak Wood Farm,**	**79.98**	**1**	P		**P**	**09 04 40.4**	**-0.4**	
	baz=181								
DUG	**Dugway, Tooele**	**79.98**	**345**	P		**P**	**09 04 41.3**	**+0.3**	
	baz=165,SNR=11								
DUG	**Dugway, Tooele**	**79.98**	**345**	*eP*		**P**	**09 04 40.5**	**-0.5**	
DUG				pmax		pmax			
	comp=Z,65nm,1.5s								
DUG				MLR		MLR			
	comp=Z,600nm,20.0s								
DUG	**Dugway, Tooele**	**79.98**	**345**	*eP*		**P**	**09 04 40.5**	**-0.5**	
	comp=Z,66nm,1.5s								
DUG				LR		LR			
	comp=Z,600nm,20.0s								
L33A	**Hoskins**	**80.07**	**357**	P		**P**	**09 04 40.6**	**-0.7**	
	baz=177								
JLU	**Jordanelle**	**80.11**	**346**	*eP*		**P**	**09 04 42.3**	**+0.5**	
	comp=Z,32nm,1.7s								
JLU				LR		LR			
	comp=Z,600nm,20.0s								
L31A	**Butterfield Fa**	**80.15**	**356**	P		**P**	**09 04 42.0**	**+0.2**	
	baz=176,SNR=9.3								
LUPA	**Lehigh Univers**	**80.19**	**14**	PFAKE			09 04 50.0	+8.0	
LUPA				LR		LR			
	comp=Z,600nm,19.0s								
YERR	**Yerington**	**80.34**	**340**	*eP*		**P**	**09 04 43.8**	**+0.7**	
	comp=Z,77nm,1.6s								
YERR				LR		LR			
	comp=Z,500nm,20.0s								
N59A	**State Game Lan**	**80.43**	**14**	P		**P**	**09 04 42.3**	**-1.0**	
	baz=194								
K36A	**Gilmore City**	**80.47**	**359**	P		**P**	**09 04 42.2**	**-1.2**	
	baz=180								
K38A	**Parkersburg**	**80.48**	**1**	P		**P**	**09 04 42.4**	**-1.1**	
	baz=181								
K41A	**Shullsburg**	**80.50**	**2**	P		**P**	**09 04 41.9**	**-1.6**	
	baz=183								
PNTR	**Pine Nut**	**80.54**	**340**	*eP*		**P**	**09 04 44.3**	**+0.2**	
	comp=Z,86nm,1.7s								
PNTR				LR		LR			
	comp=Z,1µm,18.0s								
K34A	**Le Mars**	**80.55**	**358**	P		**P**	**09 04 42.1**	**-1.8**	
	baz=178								
K39A	**Oelwein**	**80.55**	**1**	P		**P**	**09 04 41.2**	**-2.6**	
	baz=182								
K40A	**Colesburg**	**80.56**	**2**	P		**P**	**09 04 42.3**	**-1.6**	
	baz=182								
K35A	**Storm Lake**	**80.57**	**359**	P		**P**	**09 04 43.0**	**-0.9**	
	baz=179								
K32A	**Verdigre**	**80.59**	**357**	P		**P**	**09 04 43.3**	**-0.8**	
	baz=177								
K31A	**O'Neill**	**80.59**	**356**	P		**P**	**09 04 44.5**	**+0.4**	
	baz=176								
K37A	**Belmond**	**80.60**	**0**	P		**P**	**09 04 43.0**	**-1.1**	
	baz=180								
TCUT	**Toone Canyon**	**80.60**	**346**	*eP*		**P**	**09 04 44.8**	**+0.3**	
	comp=Z,52nm,1.5s								
TCUT				LR		LR			
	comp=Z,1µm,19.0s								
K30A	**Basset**	**80.69**	**356**	P		**P**	**09 04 44.9**	**+0.3**	
	baz=175								
BGU	**Big Grassy Mou**	**80.73**	**345**	*eP*		**P**	**09 04 44.6**	**-0.4**	
	comp=Z,35nm,1.7s								
BGU				LR		LR			
	comp=Z,600nm,19.0s								
AFDM	**Forest Hills D**	**80.79**	**339**	*eP*		**P**	**09 04 45.1**	**-0.2**	
	comp=Z,54nm,1.7s								
AFDM				LR		LR			
	comp=Z,1µm,18.0s								
JFWS	**Jewell Farm**	**80.81**	**3**	PFAKE			09 05 00.0	+15	
JFWS				LR		LR			
	comp=Z,400nm,19.0s								
ODNJ	**Ogdensburg**	**80.81**	**14**	*eP*		**P**	**09 04 44.2**	**-1.0**	
	comp=Z,55nm,1.4s								
ODNJ				LR		LR			
	comp=Z,600nm,18.0s								
ERPA	**Erie**	**80.91**	**10**	PFAKE			09 05 00.0	+14	
ERPA				LR		LR			
	comp=Z,1µm,21.0s								
SPUT	**South Promonto**	**80.98**	**346**	PFAKE			09 05 00.0	+14	
SPUT				LR		LR			
	comp=Z,600nm,20.0s								
KSPA	**Keystone Colle**	**81.05**	**13**	PFAKE			09 05 00.0	+13	
KSPA				LR		LR			
	comp=Z,600nm,19.0s								
PAHR	**Pah Rah Range**	**81.06**	**340**	*eP*		**P**	**09 04 47.4**	**+0.6**	
	comp=Z,66nm,1.8s								
PAHR				LR		LR			
	comp=Z,900nm,22.0s								
HWUT	**Hardware Ranch**	**81.11**	**346**	PFAKE			09 05 00.0	+13	
HWUT				LR		LR			
	comp=Z,700nm,20.0s								
J37A	**Redenius Farm,**	**81.14**	**0**	P		**P**	**09 04 46.2**	**-0.8**	
	baz=180								
J34A	**George**	**81.14**	**358**	P		**P**	**09 04 46.2**	**-0.8**	
	baz=178								
J38A	**Wedel Dairy, R**	**81.16**	**1**	P		**P**	**09 04 46.4**	**-0.6**	
	baz=181								
J36A	**Seneca 1, Swea**	**81.16**	**359**	P		**P**	**09 04 46.6**	**-0.5**	
	baz=180								
J39A	**Decorah**	**81.19**	**1**	P		**P**	**09 04 45.8**	**-1.4**	
	baz=182								
BMN	**Battle Mountai**	**81.19**	**342**	PFAKE			09 05 00.0	+12	
BMN				LR		LR			
	comp=Z,500nm,19.0s								
J33A	**Davis**	**81.21**	**358**	P		**P**	**09 04 46.3**	**-1.0**	
	baz=178								
J35A	**Milford**	**81.21**	**359**	P		**P**	**09 04 46.5**	**-0.9**	
	baz=179								
J31A	**Geddes**	**81.25**	**356**	P		**P**	**09 04 47.2**	**-0.4**	
	baz=176								
J41A	**Loganville**	**81.26**	**3**	P		**P**	**09 04 46.6**	**-1.0**	
	baz=183								
J40A	**Soldiers Grove**	**81.27**	**2**	P		**P**	**09 04 46.4**	**-1.2**	
	baz=182								
J32A	**Parkston**	**81.29**	**357**	P		**P**	**09 04 46.8**	**-1.0**	
	baz=177								
J30A	**Dallas**	**81.33**	**356**	P		**P**	**09 04 47.8**	**-0.3**	
	baz=176,SNR=13								
K22A	**Casper**	**81.33**	**350**	P		**P**	**09 04 48.3**	**0.0**	
	baz=170,SNR=14								
K22A	**Casper**	**81.33**	**350**	*eP*		**P**	**09 04 48.6**	**+0.4**	
	comp=Z,158nm,1.6s								
K22A				LR		LR			
	comp=Z,1µm,18.0s								
YLE	**Yale**	**81.38**	**16**	PFAKE			09 05 00.0	+12	
YLE				LR		LR			
	comp=Z,700nm,20.0s								
HOPS	**Hopland Field**	**81.45**	**337**	PFAKE			09 05 00.0	+11	
HOPS				LR		LR			
	comp=Z,2µm,18.0s								
HVU	**Hansel Valley**	**81.50**	**346**	PFAKE			09 05 00.0	+11	
HVU				LR		LR			
	comp=Z,500nm,19.0s								
ORV	**Oroville**	**81.50**	**339**	*eP*		**P**	**09 04 50.3**	**+1.3**	
ORV				pmax		pmax			
	comp=Z,67nm,1.8s								
ORV				MLR		MLR			
	comp=Z,2µm,20.0s								
ORV	**Oroville**	**81.50**	**339**	*eP*		**P**	**09 04 50.3**	**+1.3**	
	comp=Z,67nm,1.8s								
ORV				LR		LR			
	comp=Z,2µm,20.0s								
ECSD	**EROS Data Cent**	**81.61**	**358**	P		**P**	**09 04 49.0**	**-0.5**	
	baz=178,SNR=9.8								
ECSD	**EROS Data Cent**	**81.61**	**358**	PFAKE			09 05 00.0	+11	
ECSD				LR		LR			
	comp=Z,700nm,18.0s								
BINY	**Binghamton**	**81.63**	**13**	PFAKE			09 05 00.0	+10	
BINY				LR		LR			
	comp=Z,600nm,18.0s								
I35A	**Creekview Farm**	**81.70**	**359**	P		**P**	**09 04 49.2**	**-0.8**	
	baz=179								
MMNY	**Mt. Morris Dam**	**81.83**	**12**	*eP*		**P**	**09 04 49.9**	**-0.7**	
I37A	**Lemond, Waseca**	**81.85**	**0**	P		**P**	**09 04 50.1**	**-0.6**	
	baz=180,SNR=12								
I36A	**Fitzsimmons Fa**	**81.85**	**360**	P		**P**	**09 04 48.8**	**-1.9**	
	baz=180								
I38A	**Scanlan Farm,**	**81.88**	**1**	P		**P**	**09 04 49.2**	**-1.6**	
	baz=181								
BW06	**Boulder Array**	**81.89**	**348**	P		**P**	**09 04 50.6**	**-0.7**	
	baz=168,SNR=14								
BW06	**Boulder Array**	**81.89**	**348**	*eP*		**P**	**09 04 50.5**	**-0.8**	
BW06				LR		LR			
	comp=Z,800nm,18.0s								
PD31	**Pinedale Array**	**81.89**	**348**	*eP*		**P**	**09 04 50.5**	**-0.7**	
PDAR	**Pinedale Array**	**81.89**	**348**	P		**P**	**09 04 50.5**	**-0.7**	
	comp=Z,8.7nm,0.9s,baz=166,slow=5.3,SNR=15								
I34A	**Hadley**	**81.89**	**358**	P		**P**	**09 04 50.2**	**-0.8**	
	baz=178								
I33A	**Coleman**	**81.93**	**358**	P		**P**	**09 04 49.7**	**-1.4**	
	baz=178								
I32A	**Karley and Nic**	**81.93**	**357**	P		**P**	**09 04 49.9**	**-1.3**	
	baz=177								
I31A	**Royce, Wessing**	**81.98**	**356**	P		**P**	**09 04 50.1**	**-1.3**	
	baz=176								
AHID	**Auburn Hatcher**	**82.15**	**347**	*eP*		**P**	**09 04 52.4**	**-0.1**	
	comp=Z,17nm,1.2s								
AHID				LR		LR			
	comp=Z,800nm,18.0s								
BRYW	**Bryant College**	**82.26**	**16**	PFAKE			09 05 00.0	+7.1	
BRYW				LR		LR			
	comp=Z,1µm,20.0s								
O03D	**Paynes Creek**	**82.28**	**339**	P		**P**	**09 04 51.6**	**-1.5**	
	baz=158,SNR=6.6								
H32A	**Carlson Farm,**	**82.41**	**357**	P		**P**	**09 04 52.5**	**-1.2**	
	baz=177								
H36A	**Jessenland, He**	**82.41**	**360**	P		**P**	**09 04 52.9**	**-0.7**	
	baz=180		

WDC LR LR
comp=Z,800nm,20.0s
SNOW Snow King Moun 82.76 348 *eP* **P 09 04 55.9 +0.1**
comp=Z,44nm,1.4s
SNOW LR LR
comp=Z,600nm,21.0s
KMRM Mail Ridge 82.77 337 *eP* **P 09 04 55.3 -0.4**
comp=Z,119nm,1.6s
KMRM LR LR
comp=Z,1µm,20.0s
HRV Adam Dziewonsk 82.81 16 PFAKE 09 05 10.0 +14
HRV LR LR
comp=Z,700nm,21.0s
TPAW Teton Pass 82.82 347 *eP* **P 09 04 55.9 -0.2**
comp=Z,77nm,1.5s
LOHW Long Hollow 82.88 348 *eP* **P 09 04 56.0 -0.4**
comp=Z,64nm,1.8s
LOHW LR LR
comp=Z,800nm,18.0s
H25A Fruitdale 82.94 353 P **P 09 04 56.5 0.0**
baz=172,SNR=5.6
MOOW Moose Ponds 83.04 348 *eP* **P 09 04 57.5 +0.3**
comp=Z,23nm,1.4s
MOOW LR LR
comp=Z,700nm,18.0s
G35A Watkins 83.06 359 P **P 09 04 56.0 -1.0**
baz=179,SNR=6.3
SPMN Marine on St. 83.06 1 P **P 09 04 55.3 -1.7**
baz=181,SNR=6.7
SPMN Marine on St. 83.06 1 *eP* **P 09 04 57.1 +0.1**
comp=Z,36nm,1.1s
SPMN LR LR
comp=Z,600nm,20.0s
G33A Ortonville 83.06 358 P **P 09 04 55.3 -1.8**
baz=178
G36A St. Michael 83.07 360 P **P 09 04 56.0 -1.0**
baz=180
G34A Benson 83.09 359 P **P 09 04 55.5 -1.6**
baz=178
G31A Conde 83.16 357 P **P 09 04 56.5 -1.0**
baz=176
G32A Webster 83.16 357 P **P 09 04 56.4 -1.2**
baz=177
N02D Trinity Center 83.17 338 P **P 09 04 57.1 -0.6**
baz=158,SNR=11
ACCN Adirondack Com 83.21 15 *eP* **P 09 04 57.9 +0.1**
comp=Z,66nm,1.6s
IMW Indian Meadow 83.22 347 *eP* **P 09 04 57.7 -0.5**
comp=Z,71nm,1.8s
IMW LR LR
comp=Z,600nm,22.0s
FLWY Flagg Ranch 83.36 348 *eP* **P 09 04 59.4 +0.6**
comp=Z,155nm,1.9s
FLWY LR LR
comp=Z,600nm,20.0s
MOD Modoc Plateau 83.36 340 *eP* **P 09 04 59.2 +0.4**
comp=Z,76nm,1.6s
MOD LR LR
comp=Z,800nm,19.0s
KHMM Horse Mountain 83.38 337 *eP* **P 09 04 59.9 +0.9**
comp=Z,38nm,1.2s
WVOR Wild Horse Val 83.43 342 *eP* **P 09 04 58.8 -0.3**
WVOR pmax pmax
comp=Z,98nm,2.0s
WVOR MLR MLR
comp=Z,700nm,19.0s
WVOR Wild Horse Val 83.43 342 *eP* **P 09 04 58.8 -0.3**
comp=Z,98nm,2.0s
WVOR LR LR
comp=Z,700nm,19.0s
HLID Hailey 83.55 345 P **P 09 04 59.7 -0.1**
baz=164,SNR=13
HLID Hailey 83.55 345 *eP* **P 09 04 59.8 +0.1**
comp=Z,88nm,1.8s
HLID LR LR
comp=Z,500nm,19.0s
YPP Pitchstone Pla 83.56 348 *eP* **P 09 05 01.0 +1.0**
comp=Z,14nm,1.2s
YPP LR LR
comp=Z,600nm,19.0s
M02C Callahan 83.59 338 P **P 09 04 59.6 -0.4**
baz=157,SNR=10
SADO Sadowa 83.63 10 *eP* **P 09 04 59.1 -0.8**
comp=Z,22nm,1.1s
SADO LR LR
comp=Z,1µm,20.0s
F34A Alexandria 83.64 359 P **P 09 04 58.8 -1.1**
baz=179
H17A Grant Village 83.64 348 PFAKE 09 05 10.0 +10
H17A LR LR
comp=Z,1µm,19.0s
M04C Macdoel 83.67 339 P **P 09 05 00.4 0.0**
baz=158,SNR=15
F35A Swanville 83.69 359 P **P 09 04 58.9 -1.4**
baz=179
F36A Milaca 83.69 0 P **P 09 04 58.9 -1.3**
baz=180,SNR=7.8
MFID Camas Ranch 83.70 344 *eP* **P 09 05 00.8 +0.3**
comp=Z,28nm,1.4s
MFID LR LR
comp=Z,600nm,18.0s
F33A 5 Mile Ranch, 83.70 358 P **P 09 04 58.8 -1.5**
baz=178
FFD Franklin Falls 83.71 16 PFAKE 09 05 10.0 +10
FFD LR LR
comp=Z,1µm,18.0s
YFT Old Faithful 83.74 348 PFAKE 09 05 10.0 +9.2
YFT LR LR
comp=Z,1µm,19.0s
F32A Veblen 83.76 358 P **P 09 04 59.7 -0.9**
baz=177
F31A Hecla 83.79 357 P **P 09 04 60.0 -0.8**
baz=176
F30A Leola 83.81 356 P **P 09 04 59.7 -1.2**
baz=176
F29A Eureka 83.85 356 P **P 09 05 00.0 -1.1**
baz=175
YBH Yreka Blue Hor 83.87 339 *eP* **P 09 05 00.9 -0.5**
YBH pmax pmax
comp=Z,12nm,0.9s
YBH MLR MLR
comp=Z,2µm,19.0s
YBH Yreka Blue Hor 83.87 339 *eP* **P 09 05 00.9 -0.5**
comp=Z,12nm,0.9s
YBH LR LR
comp=Z,2µm,19.0s
YNR Norris Junctio 83.97 348 PFAKE 09 05 10.0 +8.0
YNR LR LR
comp=Z,700nm,20.0s
YMR Madison River 83.97 348 *eP* **P 09 05 03.6 +1.6**
comp=Z,95nm,1.7s
YMR LR LR
comp=Z,600nm,20.0s
DZM Mont Dzumac 84.01 247 *e*LR LR 09 31 33.8
comp=Z,4µm,24.4s
COWI Conover 84.03 3 *eP* **P 09 05 01.4 -0.6**
comp=Z,24nm,1.1s
COWI LR LR
comp=Z,700nm,22.0s
YHH Holmes Hill 84.07 348 *eP* **P 09 05 02.7 +0.1**
comp=Z,120nm,1.8s
YHH LR LR
comp=Z,800nm,21.0s
YHB Horse Butte 84.09 348 *eP* **P 09 05 04.2 +1.6**
comp=Z,49nm,1.8s
RLMT Red Lodge 84.14 349 P **P 09 05 02.7 -0.2**
baz=168,SNR=7.3
RLMT Red Lodge 84.14 349 *eP* **P 09 05 02.4 -0.5**
comp=Z,76nm,1.8s
RLMT LR LR
comp=Z,900nm,20.0s
SACV Santiago Islan 84.15 66 PFAKE 09 05 10.0 +6.7
SACV LR LR
comp=Z,500nm,20.0s
PLVO Plevna 84.21 12 *eP* **P 09 05 01.9 -0.9**
comp=Z,48nm,1.2s
PLVO LR LR
comp=Z,1µm,20.0s
QLMT Earthquake Lak 84.21 347 *eP* **P 09 05 05.0 +1.8**
LONY Lake Ozonia 84.23 14 *eP* **P 09 05 02.3 -0.7**
comp=Z,52nm,1.3s
LONY LR LR
comp=Z,700nm,19.0s
K05A Summer Lake 84.28 340 *eP* **P 09 05 03.0 -0.6**
comp=Z,167nm,1.8s
K05A LR LR
comp=Z,2µm,19.0s
E36A McGregor 84.35 0 P **P 09 05 02.6 -1.0**
baz=180
E34A Wadena 84.36 359 P **P 09 05 03.0 -0.7**
baz=179
E33A Westby DABS, E 84.36 358 P **P 09 05 02.4 -1.3**
baz=178
E35A Pequot Lakes 84.39 359 P **P 09 05 02.8 -1.0**
baz=180
E37A Wrenshall 84.41 1 P **P 09 05 02.7 -1.1**
baz=181
K04D Chiloquin, OR 84.42 340 P **P 09 05 03.8 -0.4**
baz=158
MCMT McKenzie Canyo 84.46 346 *eP* **P 09 05 04.2 -0.3**
E31A Nome 84.48 357 P **P 09 05 03.6 -0.7**
baz=177
E32A Braaten, Kindr 84.48 358 P **P 09 05 03.6 -0.6**
baz=177
L02D Cave Junction, 84.52 338 P **P 09 05 03.7 -0.8**
baz=157
FRNY Flat Rock 84.62 14 PFAKE 09 05 20.0 +15
FRNY LR LR
comp=Z,700nm,19.0s
HUMO Hull Mountain 84.74 339 *eP* **P 09 05 04.8 -0.9**
comp=Z,84nm,2.0s
HUMO LR LR
comp=Z,1µm,19.0s
J05D Fort Rock, OR 84.89 340 P **P 09 05 06.6 0.0**
baz=159,SNR=19
D35A Remer 84.91 360 P **P 09 05 04.5 -1.9**
baz=180
DLMT Dillon 84.93 347 *eP* **P 09 05 06.8 0.0**
comp=Z,58nm,1.6s
DLMT LR LR
comp=Z,400nm,18.0s
D31A Mcclaflin, Tow 84.96 357 P **P 09 05 05.1 -1.5**
baz=177
D33A AnnSam, Waubun 85.00 358 P **P 09 05 05.5 -1.3**
baz=178
D37A Cotton 85.00 1 P **P 09 05 05.7 -1.2**
baz=181
D36A Goodland 85.01 0 P **P 09 05 05.1 -1.8**
baz=180
D32A Dogwood Acres, 85.02 358 P **P 09 05 05.8 -1.1**
baz=177
BOZ Bozeman (W) 85.03 347 P **P 09 05 07.1 -0.1**
baz=166,SNR=6.4
BOZ Bozeman (W) 85.03 347 *eP* **P 09 05 06.8 -0.5**
BOZ pmax pmax
comp=Z,46nm,1.8s
BOZ MLR MLR
comp=Z,700nm,19.0s
BOZ Bozeman (W) 85.03 347 *eP* **P 09 05 06.8 -0.5**
comp=Z,46nm,1.8s
BOZ LR LR
comp=Z,700nm,19.0s
D26A Manning 85.23 354 P **P 09 05 07.5 -0.6**
baz=173,SNR=13
LCCM Lewis and Clar 85.26 347 *eP* **P 09 05 09.7 +1.3**
LAO LASA Array 85.27 351 P **P 09 05 07.2 -1.0**
baz=170
LAO LASA Array 85.27 351 *eP* **P 09 05 09.2 +0.9**
comp=Z,55nm,1.4s
LAO LR LR
comp=Z,900nm,19.0s
LRM Limekiln Ridge 85.35 347 *eP* **P 09 05 09.1 +0.1**
BMO Blue Mountains 85.40 343 *eP* **P 09 05 09.9 +0.9**
comp=Z,44nm,1.8s
BMO LR LR
comp=Z,500nm,20.0s
C34A RKJ Ranch, Bem 85.49 359 P **P 09 05 07.7 -1.5**
baz=179
C35A Jirik Farms, M 85.53 360 P **P 09 05 08.1 -1.4**
baz=180,SNR=6.0
C37A Embarrass 85.57 1 P **P 09 05 08.6 -1.0**
baz=181
C38A Sawbill Land. 85.58 2 P **P 09 05 07.6 -2.1**
baz=182,SNR=6.8
C36A Pine Crest Far 85.59 1 P **P 09 05 08.4 -1.4**
baz=181,SNR=5.7
C33A Trail 85.61 359 P **P 09 05 09.0 -0.9**
baz=178
C30A Mose, Pekin 85.64 357 P **P 09 05 08.9 -1.2**
baz=176
I04A Tendick Farm, 85.69 340 P **P 09 05 09.1 -1.3**
baz=158
C31A Landman Farms, 85.70 357 P **P 09 05 09.3 -1.0**
baz=177,SNR=6.3
EYMN Ely 85.80 1 P **P 09 05 09.4 -1.4**
baz=182,SNR=11
EYMN Ely 85.80 1 *eP* **P 09 05 08.8 -2.0**
comp=Z,20nm,1.2s
EYMN LR LR
comp=Z,700nm,19.0s
MDND Maddock 85.84 356 P **P 09 05 10.0 -1.1**
baz=175
MDND Maddock 85.84 356 *eP* **P 09 05 10.7 -0.4**
comp=Z,138nm,1.4s
MDND LR LR
comp=Z,600nm,18.0s
I03D Drain, OR 85.86 339 P **P 09 05 09.9 -1.3**
baz=157
I05D Terrebonne, OR 85.90 340 P **P 09 05 10.8 -0.7**
baz=159,SNR=8.7
C25A Freed Ranch, W 85.97 354 P **P 09 05 11.6 -0.1**
baz=173
B33A Robert and Kas 86.12 359 P **P 09 05 10.6 -1.8**
baz=179
AGMN Agassiz Nation 86.15 359 P **P 09 05 10.8 -1.7**
baz=178,SNR=9.2
AGMN Agassiz Nation 86.15 359 *eP* **P 09 05 11.6 -0.9**
comp=Z,54nm,1.5s
AGMN LR LR
comp=Z,600nm,19.0s
B35A Bob, Littlefor 86.19 360 P **P 09 05 10.7 -2.0**
baz=180,SNR=8.8
G08A Pilot Rock 86.20 342 *eP* **P 09 05 13.2 +0.2**
comp=Z,68nm,1.6s
G08A LR LR
comp=Z,700nm,20.0s
B32A Ashes, Strandq 86.27 358 P **P 09 05 11.1 -2.0**
baz=178,SNR=8.8
B34A Aery, Baudette 86.32 359 P **P 09 05 11.4 -2.0**
baz=179
B31A Greenbush Farm 86.33 357 P **P 09 05 12.2 -1.2**
baz=177,SNR=6.9
B30A Myrvik Farm, E 86.38 357 P **P 09 05 12.7 -1.0**
baz=176,SNR=14
F10A Beach Ranch, E 86.44 344 *eP* **P 09 05 13.2 -0.9**
comp=Z,27nm,1.4s
F10A LR LR
comp=Z,700nm,20.0s
B29A Wagenman Farm, 86.45 356 P **P 09 05 12.4 -1.6**
baz=176
B28A Dugan Ranch, T 86.49 356 P **P 09 05 13.6 -0.7**
baz=175,SNR=7.3
B25A Knox Farm, Ray 86.52 354 P **P 09 05 14.4 0.0**
baz=173
CHMT Chamberlain Mo 86.55 347 *eP* **P 09 05 14.8 0.0**
B26A Jensen Ranch, 86.55 354 P **P 09 05 14.2 -0.4**
baz=173
G06A Carlson Farm, 86.56 341 *eP* **P 09 05 14.5 -0.2**
comp=Z,80nm,1.8s
COR Corvallis 86.66 339 PFAKE 09 05 30.0 +15
COR LR LR
comp=Z,900nm,19.0s
G05D Wamic, OR 86.74 341 P **P 09 05 14.0 -1.5**
baz=159
A33A Warroad 86.78 359 P **P 09 05 14.1 -1.5**
baz=179,SNR=7.2
A32A Rocking H Ranc 86.79 358 P **P 09 05 14.2 -1.4**
baz=178
DGMT Dagmar 86.81 353 P **P 09 05 15.3 -0.5**
baz=172
DGMT Dagmar 86.81 353 *eP* **P 09 05 16.9 +1.1**
comp=Z,64nm,1.4s
DGMT LR LR
comp=Z,800nm,18.0s
A31A Linda, St. Vin 86.82 358 P **P 09 05 14.6 -1.2**
baz=177
A30A Hoffart Farm, 86.87 357 P **P 09 05 14.9 -1.2**
baz=176
A29A Manning Farm, 86.90 356 P **P 09 05 14.7 -1.5**
baz=176,SNR=11
SLMT Seeley Lake 86.91 347 *eP* **P 09 05 16.6 +0.1**
A28A Rude Farm, Bot 86.94 356 P **P 09 05 15.5 -1.0**
baz=175
A27A Ledoux Ranch, 87.05 355 P **P 09 05 16.2 -0.7**
baz=174
A26A Wade Farm, Ken 87.05 354 P **P 09 05 16.4 -0.6**
baz=174
VLDQ Val d'Or 87.15 11 *eP* **P 09 05 16.4 -1.0**
comp=Z,40nm,1.4s
E09A Wood Farm, Sta 87.16 343 PFAKE 09 05 30.0 +12
E09A LR LR
comp=Z,400nm,20.0s
A25A Svangstu Ranch 87.18 354 P **P 09 05 16.5 -1.1**
baz=179
G03D McMinnville, O 87.23 340 P **P 09 05 17.2 -0.7**
baz=157
SWMT Swartz Lake 87.26 346 *eP* **P 09 05 19.3 +1.2**
HAWA Hanford 87.37 342 PFAKE 09 05 30.0 +11
HAWA LR LR
comp=Z,700nm,18.0s
JTMT Jette 87.54 346 *eP* **P 09 05 19.0 -0.5**
YBMT Yellow Bay 87.60 346 *eP* **P 09 05 20.5 +0.7**
E07A Sunnyside 87.60 342 PFAKE 09 05 30.0 +10
E07A LR LR
comp=Z,1µm,18.0s
F04A Amboy 87.67 340 PFAKE 09 05 30.0 +10
F04A LR LR
comp=Z,600nm,20.0s
BSMT Bassoo Peak 87.73 346 *eP* **P 09 05 20.5 -0.1**
BLMT Blacktail Moun 87.81 346 *eP* **P 09 05 20.9 0.0**
D08A Wollman Farm, 87.85 343 *eP* **P 09 05 21.2 +0.4**
comp=Z,68nm,1.8s
D08A LR LR
comp=Z,600nm,18.0s
LMQ La Malbaie 87.88 16 PFAKE 09 05 30.0 +9.0
LMQ LR LR
comp=Z,700nm,19.0s
F04D Rainier, OR 87.96 340 P **P 09 05 20.8 -0.5**
baz=157
ULM Lac du Bonnet 88.11 359 P **P 09 05 20.5 -1.5**
comp=Z,25nm,1.3s,baz=175,slow=5.7,SNR=9.6
ULM LR LR 09 41 03.6
comp=Z,512nm,21.0s,baz=148,slow=33
ULM Lac du Bonnet 88.11 359 *eP* **P 09 05 20.5 -1.5**
ULM pmax pmax
comp=Z,57nm,1.5s
ULM MLR MLR
comp=Z,700nm,18.0s
ULM Lac du Bonnet 88.11 359 *eP* **P 09 05 20.5 -1.5**
comp=Z,57nm,1.5s
ULM LR LR
comp=Z,700nm,18.0s
LON Longmire 88.27 341 *eP* **P 09 05 24.0 +1.1**
LON pmax pmax
comp=Z,45nm,2.0s
LON MLR MLR
comp=Z,1µm,18.0s
LON Longmire 88.27 341 *eP* **P 09 05 24.0 +1.1**
comp=Z,45nm,2.0s
LON LR LR
comp=Z,1µm,18.0s
C09A Chrisman Ranch 88.41 344 *eP* **P 09 05 24.8 +1.3**
comp=Z,85nm,1.8s
C09A LR LR
comp=Z,1µm,18.0s
OBSR Observation Ro 88.41 341 *eP* **P 09 05 24.7 +0.9**
LTY Liberty 88.45 342 PFAKE 09 05 30.0 +6.2
LTY LR LR
comp=Z,700nm,22.0s
ARMA Armidale 88.53 232 PFAKE 09 05 40.0 +15
ARMA LR LR
comp=Z,2µm,20.0s
E03A Lebam 88.54 340 PFAKE 09 05 40.0 +16
E03A LR LR
comp=Z,900nm,20.0s
NEW Newport 88.60 345 P **P 09 05 24.2 -0.2**
baz=162,SNR=7.3
NEW Newport 88.60 345 *eP* **P 09 05 24.6 +0.2**
NEW pmax pmax
comp=Z,53nm,1.8s
NEW MLR MLR
comp=Z,800nm,18.0s
NEW Newport 88.60 345 *eP* **P 09 05 24.6 +0.2**
comp=Z,53nm,1.8s
NEW LR LR
comp=Z,800nm,18.0s
D05A Enumclaw 88.72 341 *eP* **P 09 05 26.2 +1.3**
comp=Z,66nm,1.6s
D05A LR LR
comp=Z,600nm,20.0s
WALA Waterton Lakes 88.73 347 PFAKE 09 05 40.0 +15
WALA LR LR
comp=Z,700nm,18.0s
B08A Colville Reser 89.17 343 *eP* **P 09 05 27.1 0.0**
comp=Z,57nm,1.9s
B08A LR LR
comp=Z,700nm,18.0s
NLWA Neilton Lookou 89.40 340 PFAKE 09 05 40.0 +12
NLWA LR LR
comp=Z,800nm,19.0s
JOHN Johnston Islan 89.55 292 PFAKE 09 05 40.0 +10
JOHN LR LR
comp=Z,3µm,19.0s
B05A Bryant 89.74 341 P **P 09 05 28.8 -0.9**
baz=158
B06A Marblemount 89.83 342 PFAKE 09 05 40.0 +10
B06A LR LR
comp=Z,700nm,18.0s
A04D Lummi Island 90.32 341 P **P 09 05 32.1 -0.2**
baz=158
PGC Sidney 90.44 341 PFAKE 09 05 40.0 +7.1
PGC LR LR
comp=Z,500nm,18.0s
LLLB Lillooet 91.87 342 PFAKE 09 05 50.0 +10
LLLB LR LR
comp=Z,1µm,18.0s
BOSA Boshof 92.36 130 P **P 09 05 42.3 -0.5**
comp=Z,8.6nm,1.1s,baz=246,slow=4.4,SNR=6.5
BOSA Boshof 92.36 130 *eP* **P 09 05 42.5 -0.3**
BOSA Boshof 92.36 130 *eP* **P 09 05 42.5 -0.3**
EDM Edmonton 92.65 348 *eP* **P 09 05 42.3 -0.9**
EDM pmax pmax
comp=Z,46nm,1.9s
EDM MLR MLR
comp=Z,500nm,20.0s
EDM Edmonton 92.65 348 *eP* **P 09 05 42.3 -0.9**
comp=Z,46nm,1.9s
EDM LR LR
comp=Z,500nm,20.0s
FFC Flin Flon 92.84 355 *eP* **P 09 05 43.0 -1.0**
FFC pmax pmax
comp=Z,25nm,1.5s
FFC MLR MLR
comp=Z,1µm,19.0s
FFC Flin Flon 92.84 355 *eP* **P 09 05 43.0 -1.0**
comp=Z,25nm,1.5s
FFC LR LR
comp=Z,1µm,19.0s
STKA Stephens Creek 93.35 224 LR LR 09 40 58.6
comp=Z,941nm,18.3s,baz=149,slow=31
STKA Stephens Creek 93.35 224 *eP* **P 09 05 45.2 -2.0**
STKA pmax pmax
comp=Z,7.0nm,1.8s
STKA MLR MLR
comp=Z,300nm,21.0s
STKA Stephens Creek 93.35 224 *eP* **P 09 05 45.2 -2.0**
comp=Z,6.8nm,1.8s
STKA LR LR
comp=Z,300nm,21.0s
TSUM Tsumeb 93.91 118 PFAKE 09 06 00.0 +10
TSUM LR LR
comp=Z,1µm,19.0s
LBTB Lobatse 95.17 127 *eP* **P 09 05 55.0 -0.8**
LBTB pmax pmax
comp=Z,42nm,1.4s
LBTB Lobatse 95.17 127 *eP* **P 09 05 55.0 -0.8**
comp=Z,42nm,1.4s
BBOO Buckleboo 95.56 220 PFAKE 09 06 10.0 +13
BBOO LR LR
comp=Z,2µm,19.0s
FCC Fort Churchill 96.61 360 PFAKE 09 06 10.0 +8.9
FCC LR LR
comp=Z,700nm,22.0s
ROSA Rosais 97.31 46 PFAKE 09 06 20.0 +15
ROSA LR LR
comp=Z,1µm,19.0s
CRAG Craig 99.22 338 PFAKE 09 06 20.0 +7.1
CRAG LR LR
comp=Z,600nm,20.0s
CTA Charters Tower 99.27 235 LR LR 09 42 38.1
comp=Z,824nm,21.9s,baz=132,slow=30
CTAO Charters Tower 99.27 235 PFAKE 09 06 20.0 +5.8

CTAO LR LR
comp=Z,1μm,18.0s
DLBC Dease Lake 100.97 341 PFAKE 09 06 30.0 +9.2
DLBC LR LR
comp=Z,700nm,21.0s
YKW3 Yellowknife Ar 101.84 350 PFAKE 09 06 40.0 +16
YKW3 LR LR
comp=Z,600nm,22.0s
TORD Torodi Ar. Bea 102.16 83 PP PP 09 10 35.6 -3.5
comp=Z,1.7nm,1.1s,baz=249,slow=5.6,SNR=4.4
H01W1 Cape Leeuwin H 102.83 203 T T 11 02 07.0
baz=155,slow=76,SNR=14
H01W2 Cape Leeuwin H 102.83 203 T T 11 02 08.0
baz=155,slow=76,SNR=16
H01W3 Cape Leeuwin H 102.84 203 T T 11 02 08.2
baz=155,slow=76,SNR=18
SKAG Skagway 103.25 340 PFAKE 09 06 40.0 +9.3
SKAG LR LR
comp=Z,500nm,20.0s
DHAK Deception Hill 103.76 338 PFAKE 09 06 40.0 +6.9
DHAK LR LR
comp=Z,1μm,20.0s
LSZ Lusaka 103.87 122 PFAKE 09 06 50.0 +15
LSZ LR LR
comp=Z,1μm,21.0s
ASAR Alice Springs 103.98 224 Pdiff **Pdif 09 06 38.2 +3.0**
comp=Z,0.5nm,0.9s,baz=150,slow=3.9,SNR=4.1
HYT Haines Junctio 104.99 339 PFAKE 09 06 50.0 +11
HYT LR LR
comp=Z,800nm,18.0s
PCA Pinnacle 105.19 338 PFAKE 09 11 00.0
PCA LR LR
comp=Z,1μm,18.0s
COEN Coen 105.72 238 PFAKE 09 11 10.0
COEN LR LR
comp=Z,1μm,22.0s
RABL Rabaul 106.10 251 PFAKE 09 11 10.0
RABL LR LR
comp=Z,700nm,20.0s
PMG Port Moresby 106.21 244 PFAKE 09 11 10.0
PMG LR LR
comp=Z,1μm,19.0s
BALM Baldy 106.56 338 PFAKE 09 11 10.0
BALM LR LR
comp=Z,900nm,20.0s
CRQM Cirque 106.58 337 PFAKE 09 11 10.0
CRQM LR LR
comp=Z,800nm,20.0s
WR2 Warramunga Arr 106.67 227 PFAKE 09 11 10.0
WR2 LR LR
comp=Z,1μm,18.0s
WC4 Warramunga Arr 106.68 227 PFAKE 09 11 10.0
WC4 LR LR
comp=Z,2μm,18.0s
WR1 Warramunga Arr 106.69 227 PFAKE 09 11 10.0
WR1 LR LR
comp=Z,2μm,19.0s
WRAB Tennant Creek 106.69 227 PFAKE 09 11 10.0
WRAB LR LR
comp=Z,2μm,18.0s
WB3 Warramunga Arr 106.70 227 PFAKE 09 11 10.0
WB3 LR LR
comp=Z,2μm,19.0s
WC1 Warramunga Arr 106.71 227 PFAKE 09 11 10.0
WC1 LR LR
comp=Z,2μm,21.0s
WB8 Warramunga Arr 106.77 227 PFAKE 09 11 10.0
WB8 LR LR
comp=Z,2μm,19.0s
RAGM Ragged Mountai 106.78 336 PFAKE 09 11 10.0
RAGM LR LR
comp=Z,1μm,18.0s
WB9 Warramunga Arr 106.78 227 PFAKE 09 11 10.0
WB9 LR LR
comp=Z,3μm,18.0s
BMRM Bremner River 107.20 337 PFAKE 09 11 10.0
BMRM LR LR
comp=Z,800nm,21.0s
EYAK Cordova Ski Ar 107.24 336 PFAKE 09 11 10.0
EYAK LR LR
comp=Z,1μm,19.0s
OHAK Old Harbor 107.48 331 PFAKE 09 11 10.0
OHAK LR LR
comp=Z,1μm,19.0s
KDAK Kodiak Island 107.60 331 PFAKE 09 11 10.0
KDAK LR LR
comp=Z,3μm,21.0s
FID Port Fidalgo 107.63 336 PFAKE 09 11 10.0
FID LR LR
comp=Z,700nm,18.0s
RTC Rabat Centre 107.82 61 PFAKE 09 11 10.0
RTC LR LR
comp=Z,5μm,22.0s
GLI Glacier Island 107.93 336 PFAKE 09 11 10.0
GLI LR LR
comp=Z,700nm,18.0s
KLU Klutina 108.01 336 PFAKE 09 11 10.0
KLU LR LR
comp=Z,700nm,18.0s
DAWY Dawson 108.15 341 PFAKE 09 11 10.0
DAWY LR LR
comp=Z,700nm,19.0s
PFVI Vila Bisbo 108.26 57 PFAKE 09 11 10.0
PFVI LR LR
comp=Z,1μm,18.0s
CNPM China Poot 108.35 333 PFAKE 09 11 10.0
CNPM LR LR
comp=Z,1μm,19.0s
BRLK Bradley Lake 108.40 333 PFAKE 09 11 10.0
BRLK LR LR
comp=Z,1μm,20.0s
MENT Mentasta 108.45 338 PFAKE 09 11 10.0
MENT LR LR
comp=Z,700nm,21.0s
HOM Homer 108.59 333 PFAKE 09 11 10.0
HOM LR LR
comp=Z,1μm,20.0s
H11S2 WAKE ISLAND Hyl 108.64 279 T T 11 08 24.2
baz=126,slow=75,SNR=6.2
H11S1 WAKE ISLAND Hyl 108.65 279 T T 11 08 27.3
baz=126,slow=75,SNR=9.1
H11S3 WAKE ISLAND Hyl 108.65 279 T T 11 08 26.6
baz=126,slow=75,SNR=7.8
SCM Sheep Creek Mo 108.72 336 PFAKE 09 11 10.0
SCM LR LR
comp=Z,600nm,19.0s
RC01 Rabbit Creek A 108.96 335 PFAKE 09 11 10.0
RC01 LR LR
comp=Z,500nm,19.0s
PAX Paxson 109.00 338 PFAKE 09 11 10.0
PAX LR LR
comp=Z,300nm,19.0s
SML Sawmill 109.02 336 PFAKE 09 11 10.0
SML LR LR
comp=Z,600nm,18.0s
PMR Palmer 109.12 335 PFAKE 09 11 10.0
PMR LR LR
comp=Z,700nm,18.0s
PVAQ Vaqueiros 109.15 57 *e*LR LR 09 42 06.5
comp=Z,1μm,20.0s
EGAK Eagle 109.18 340 PFAKE 09 11 10.0
EGAK LR LR
comp=Z,700nm,20.0s
DHY Denali Highway 109.65 337 PFAKE 09 11 10.0
DHY LR LR
comp=Z,600nm,19.0s
SFJD Kangerlussuaq 109.88 17 PFAKE 09 11 10.0
SFJD LR LR
comp=Z,600nm,20.0s
INK Inuvik 110.31 345 PFAKE 09 11 10.0
INK LR LR
comp=Z,900nm,22.0s
RND Reindeer 110.35 337 PFAKE 09 11 10.0
RND LR LR
comp=Z,800nm,18.0s
PMRV Marv??o 110.47 56 *e*LR LR 09 42 24.2
comp=Z,1μm,20.0s
TAM Tamanrasset 110.67 77 PFAKE 09 11 20.0
TAM LR LR
comp=Z,1μm,20.0s
ILAR Eielson Array 110.76 338 PKiKP **PKiKP 09 11 03.6 -0.2**
comp=Z,0.6nm,0.9s,baz=177,slow=1.9,SNR=3.6
ILB Eielson Array 110.76 338 *e*PKiKP **PKiKP 09 11 03.2 -0.6**
WRH Wood River Hil 110.90 338 PFAKE 09 11 20.0
WRH LR LR
comp=Z,500nm,19.0s
MTE Manteigas 110.90 55 *e*LR LR 09 43 00.7
comp=Z,1μm,20.0s
MTE Manteigas 110.90 55 PFAKE 09 11 20.0
MTE LR LR
comp=Z,1μm,19.0s
CCB Clear Creek Bu 110.94 338 PFAKE 09 11 20.0
CCB LR LR
comp=Z,400nm,18.0s
SVW2 Sparrevohn 111.00 333 PFAKE 09 11 20.0
SVW2 LR LR
comp=Z,1μm,18.0s
UNV Unalaska Valle 111.02 323 PFAKE 09 11 20.0
UNV LR LR
comp=Z,1μm,20.0s
PPLA Purkeypile 111.06 335 PFAKE 09 11 20.0
PPLA LR LR
comp=Z,599nm,18.0s
MANU Manus Island 111.09 250 PFAKE 09 11 20.0
MANU LR LR
comp=Z,700nm,21.0s
BWN Browne 111.09 337 PFAKE 09 11 20.0
BWN LR LR
comp=Z,600nm,20.0s
KTH Kantishna Hill 111.11 336 PFAKE 09 11 20.0
KTH LR LR
comp=Z,600nm,18.0s
COLA College 111.12 338 PFAKE 09 11 20.0
COLA LR LR
comp=Z,400nm,22.0s
PGAV Gavieira, Arco 111.28 53 *e*LR LR 09 46 10.2
comp=Z,1μm,20.0s
CAST Castle Rocks 111.39 336 PFAKE 09 11 20.0
CAST LR LR
comp=Z,600nm,19.0s
MVO Moncorvo 111.64 54 *e*LR LR 09 43 16.8
comp=Z,1μm,20.0s
FYU Fort Yukon 111.64 340 PFAKE 09 11 20.0
FYU LR LR
comp=Z,800nm,19.0s
NIKH Nikolski High 111.65 321 PFAKE 09 11 20.0
NIKH LR LR
comp=Z,800nm,20.0s
ABPO Ambohimpanom 112.25 140 PFAKE 09 11 20.0
ABPO LR LR
comp=Z,1μm,21.0s
PAB San Pablo 112.53 57 PFAKE 09 11 20.0
PAB LR LR
comp=Z,1μm,19.0s
RES Resolute Bay 112.61 360 PFAKE 09 11 20.0
RES LR LR
comp=Z,500nm,22.0s
ESLA Sonseca Array 112.85 57 PFAKE 09 11 20.0
ESLA LR LR
comp=Z,1μm,19.0s
FITZ Fitzroy Crossi 112.94 221 PFAKE 09 11 20.0
FITZ LR LR
comp=Z,700nm,22.0s
MBWA Marble Bar 113.14 214 PFAKE 09 11 20.0
MBWA LR LR
comp=Z,800nm,19.0s
COLD Coldfoot 113.48 339 PFAKE 09 11 20.0
COLD LR LR
comp=Z,602nm,19.0s
MTN Manton Dam 114.16 229 PFAKE 09 11 20.0 +8.1
MTN LR LR
comp=Z,2μm,19.0s
SPIA Saint Paul Isl 114.66 324 PFAKE 09 11 20.0 +8.6
SPIA LR LR
comp=Z,1μm,20.0s
MBAR Mbarara 116.00 113 PFAKE 09 11 30.0 +14
MBAR LR LR
comp=Z,1μm,22.0s
SUMG Summit 116.86 16 PFAKE 09 11 30.0 +14
SUMG LR LR
comp=Z,400nm,19.0s
BORG Borgarnes 116.99 27 PFAKE 09 11 30.0 +14
BORG LR LR
comp=Z,500nm,20.0s
GAMB Gambell 118.65 330 PFAKE 09 11 30.0 +11
GAMB LR LR
comp=Z,1μm,19.0s
KEST Kesra 120.14 66 PFAKE 09 11 30.0 +7.2
KEST LR LR
comp=Z,1μm,20.0s
KMBO Kilima Mbogo 120.24 119 PFAKE 09 11 40.0 +16
KMBO LR LR
comp=Z,1μm,21.0s
SMY Shemya 120.52 315 PFAKE 09 11 30.0 +7.2
SMY LR LR
comp=Z,600nm,20.0s
SOEI Soe 120.59 225 PFAKE 09 11 40.0 +16
SOEI LR LR
comp=Z,2μm,22.0s
SSB Saint Sauveur 121.02 55 PFAKE 09 11 40.0 +16
SSB LR LR
comp=Z,1μm,21.0s
FAKI Fak Fak 121.09 237 PFAKE 09 11 40.0 +15
FAKI LR LR
comp=Z,1μm,22.0s
VSL Villasalto 121.84 63 PFAKE 09 11 40.0 +14
VSL LR LR
comp=Z,1μm,22.0s
BNI Bardonecchia 122.31 56 PFAKE 09 11 40.0 +13
BNI LR LR
comp=Z,2μm,20.0s
MMRI Maumere 122.63 223 PFAKE 09 11 40.0 +12
MMRI LR LR
comp=Z,500nm,21.0s
SENIN Lac Senin/Sane 123.22 54 PFAKE 09 11 40.0 +11
SENIN LR LR
comp=Z,2μm,21.0s
WLF Walferdange 123.73 50 PFAKE 09 11 40.0 +11
WLF LR LR
comp=Z,1μm,21.0s
WDD Wied Dalam 123.96 69 PFAKE 09 11 40.0 +10
WDD LR LR
comp=Z,2μm,20.0s
TUE Stuetta 124.58 55 PFAKE 09 11 40.0 +8.9
TUE LR LR
comp=Z,1μm,21.0s
BFO Black Forest 124.60 52 *i* PKIKP **PKPdf 09 11 32.0 +1.1**
BFO Black Forest 124.60 52 PFAKE 09 11 40.0 +9.1
BFO LR LR
comp=Z,700nm,22.0s
DAVOX Davos/Dischmat 125.03 55 PKP **PKPdf 09 11 32.3 +0.3**
comp=Z,3.7nm,0.7s,baz=252,slow=1.9,SNR=5.7
DAVA Damuels 125.21 54 *e*PKPdf **PKPdf 09 11 32.4 +0.1**
comp=Z,27nm,1.6s
FUORN Ofenpass-Fuorn 125.22 55 *e*PKPdf **PKPdf 09 11 32.6 +0.1**
FUORN LR LR
comp=Z,2μm,21.0s
STU Stuttgart 125.29 52 PFAKE 09 11 40.0 +7.8
STU LR LR
comp=Z,700nm,22.0s
FETA Feichten 125.66 55 *e*PKPdf **PKPdf 09 11 33.1 -0.1**
comp=Z,21nm,1.2s
AQU L'Aquila 125.78 61 PFAKE 09 11 50.0 +17
AQU LR LR
comp=Z,900nm,22.0s
RETA Reutte 125.84 54 *e*PKPdf **PKPdf 09 11 33.7 +0.3**
comp=Z,20nm,1.3s
CEL Celeste 125.96 66 PFAKE 09 11 50.0 +16
CEL LR LR
comp=Z,2μm,19.0s
MOTA Moosalm 126.01 54 *i* PKPdf **PKPdf 09 11 33.5 -0.3**
comp=Z,21nm,1.1s
WTTA Wattenberg 126.33 55 *i* PKPdf **PKPdf 09 11 34.6 +0.1**
comp=Z,22nm,1.6s
CUC Castrocucco 126.58 64 *e*PKPdf **PKPdf 09 11 33.5 -1.4**
CUC LR LR
comp=Z,900nm,19.0s
ABTA Abfaltersbach 126.72 55 *i* PKPdf **PKPdf 09 11 34.4 -0.7**
comp=Z,13nm,1.1s
JAGI Jajag, Banyuwa 126.81 215 PFAKE 09 11 50.0 +14
JAGI LR LR
comp=Z,800nm,18.0s
TIP Timpagrande 126.94 66 *e*PKPdf **PKPdf 09 11 35.1 -0.6**
TIP LR LR
comp=Z,2μm,20.0s
KAPI Kappang 127.00 223 PFAKE 09 11 50.0 +13
KAPI LR LR
comp=Z,600nm,19.0s
TRI Trieste 127.20 57 PFAKE 09 11 50.0 +14
TRI LR LR
comp=Z,700nm,19.0s
CADS Cadrg 127.35 56 *e*PKPdf **PKPdf 09 11 36.3 0.0**
KBA Koelnbreinsper 127.37 55 *i* PKPdf **PKPdf 09 11 35.5 -0.9**
comp=Z,13nm,1.5s
MYKA Terra Mystica 127.42 56 *i* PKPdf **PKPdf 09 11 35.6 -0.8**
comp=Z,8.9nm,1.2s
MOZS Mozjanca 127.84 57 *e*PKPdf **PKPdf 09 11 37.5 +0.3**
GEA0 GERESS Array S 128.14 53 *e*PKPdf **PKPdf 09 11 37.2 -0.5**
GEC2 GERESS Array S 128.14 53 *e*PKIKP **PKPdf 09 11 37.5 -0.2**
GEC2 MLR MLR
comp=Z,600nm,20.0s
GEC2 GERESS Array S 128.14 53 *e*PKPdf **PKPdf 09 11 37.5 -0.2**
GEC2 LR LR
comp=Z,600nm,20.0s
GERES GERESS Array B 128.14 53 PKP **PKPdf 09 11 37.5 -0.2**
comp=Z,2.0nm,1.0s,baz=222,slow=1.3,SNR=12
KHC Kasperske Hory 128.14 53 *e*PKPdf **PKPdf 09 11 37.7 0.0**
KHC *e*pPKP **pPKPdf 09 11 45.1 +4.0**
KHC Kasperske Hory 128.14 53 *e*PKIKP **PKPdf 09 11 37.7 0.0**
KHC *e* 09 11 45.1
KHC Kasperske Hory 128.14 53 PFAKE 09 11 50.0 +12
KHC LR LR
comp=Z,300nm,19.0s
MOA Molln 128.20 55 *e*PKPdf **PKPdf 09 11 37.4 -0.4**
comp=Z,5.7nm,1.2s
CLL Collm 128.40 50 ⇓ *i* PKPdf **PKPdf 09 11 37.4 -0.6**
comp=Z,30nm,1.5s
CLL *e* 09 11 46.0
CLL *e*Sdif Sdif 09 22 12.0 +24
CLL *e*PPS PPS 09 25 29.0
CLL *e*SS **SS 09 31 00.0 +0.6**
CLL *e*SSS SSS 09 35 48.0
CLL Collm 128.40 50 ⇓ *i* PKIKP **PKPdf 09 11 37.4 -0.6**
CLL pmax pmax
comp=Z,30nm,1.5s
CLL Collm 128.40 50 PFAKE 09 11 50.0 +12
CLL LR LR
comp=Z,900nm,19.0s
KONO Kongsberg 128.48 39 PFAKE 09 11 50.0 +12
KONO LR LR
comp=Z,400nm,18.0s
BILL Bilibino 128.51 332 ⇓ *i* PKIKP **PKPdf 09 11 37.4 -0.3**
BILL *e* 09 13 41.0
BILL *e*PPP PPP 09 16 30.0
BILL pmax pmax
comp=Z,20nm,1.3s
BILL MLR MLR
comp=Z,552nm,17.0s
BILL Bilibino 128.51 332 PFAKE 09 11 50.0 +12
BILL LR LR
comp=Z,1μm,20.0s
ARSA Arzberg 128.84 56 *e*PKPdf **PKPdf 09 11 38.4 -0.6**
comp=Z,16nm,1.7s
BRG Berggiesshubel 128.85 51 *e*PKP **PKPdf 09 11 39.0 +0.1**
comp=Z,28nm,1.7s
BRG SS SS 09 31 38.0 +33
CONA Conrad Observa 129.25 55 *e*PKPdf **PKPdf 09 11 39.1 -0.8**
comp=Z,12nm,1.2s
RGN Rugen 129.39 46 PFAKE 09 11 50.0 +10
RGN LR LR
comp=Z,1μm,19.0s
PET Petropavlovsk 129.47 312 PFAKE 09 11 50.0 +10
PET LR LR
comp=Z,600nm,20.0s
NB200 NORSAR Array S 129.52 38 *e*PKPdf **PKPdf 09 11 39.6 -0.3**
NOA NORSAR Array B 129.52 38 PKP **PKPdf 09 11 39.6 -0.3**
comp=Z,3.9nm,1.1s,baz=266,slow=2.0,SNR=2.5
TIR Tirane 129.94 64 PFAKE 09 11 50.0 +8.7
TIR LR LR
comp=Z,2μm,21.0s
PEA0 Petropavlovsk- 130.05 312 *e*PKPdf **PKPdf 09 11 39.4 -1.7**
PEA0B Petropavlovsk- 130.05 312 *e*PKPdf **PKPdf 09 11 40.0 -1.0**
PEA0B LR LR
comp=Z,600nm,22.0s
PETK Petropavlovsk- 130.05 312 PKP **PKPdf 09 11 39.6 -1.4**
comp=Z,6.7nm,1.0s,baz=100,slow=4.4,SNR=9.7
PEA1 Petropavlovsk- 130.05 312 *e*PKPdf **PKPdf 09 11 39.6 -1.5**
DPC Dobruska-Polom 130.19 52 *e*PKPdf **PKPdf 09 11 41.6 +0.1**
DPC *e*pPKP **PKiKP 09 11 43.8 +1.5**
DPC *e*sPKP 09 11 47.0
DPC Dobruska-Polom 130.19 52 *e*PKIKP **PKPdf 09 11 41.6 +0.1**
DPC *e* 09 11 43.8
DPC *e* 09 11 47.0
SKR Severo-Kuril's 130.44 308 ⇑ *e*PKIKP **PKPdf 09 11 40.6 -1.3**
AGG Agios Georgios 130.92 68 PFAKE 09 11 50.0 +6.7
AGG LR LR
comp=Z,3μm,20.0s
VYHS Vyhne 131.32 55 *e*PKP **PKPdf 09 11 45.4 +1.7**
IDI Anoyia 131.46 74 PFAKE 09 12 00.0 +16
IDI LR LR
comp=Z,1μm,20.0s
LAST Lasithi 131.85 74 PFAKE 09 12 00.0 +15
LAST LR LR
comp=Z,800nm,19.0s
PSZ Piszkesteto 131.87 56 PFAKE 09 12 00.0 +15
PSZ LR LR
comp=Z,900nm,21.0s
SANT Santorini 132.29 72 PFAKE 09 12 00.0 +14
SANT LR LR
comp=Z,900nm,22.0s
VTS Vitosha 132.69 64 PFAKE 09 12 00.0 +13
VTS LR LR
comp=Z,700nm,19.0s
KARP Karpathos 133.27 74 PFAKE 09 12 00.0 +12
KARP LR LR
comp=Z,200nm,20.0s
SEY Seymchan 133.96 324 *c i* PKIKP **PKPdf 09 11 47.9 -0.3**
BUR08 Bucovina Ar. S 135.30 57 *e*PKPdf **PKPdf 09 11 53.1 +1.8**
MLR Muntele Rosu 135.35 61 *e*PKIKP **PKPdf 09 11 51.5 0.0**
MLR MLR MLR
comp=Z,1μm,18.0s
MLR Muntele Rosu 135.35 61 *e*PKPdf **PKPdf 09 11 51.5 0.0**
MLR LR LR
comp=Z,1μm,18.0s
MYLDM Lahad Datu 136.02 230 PFAKE 09 12 00.0 +6.4
MYLDM LR LR
comp=Z,500nm,19.0s
DAMY Dhamar 136.15 111 PFAKE 09 12 10.0 +16
DAMY LR LR
comp=Z,1μm,18.0s
ISP Isparta 136.59 72 PFAKE 09 12 10.0 +16
ISP LR LR
comp=Z,500nm,22.0s
FIA0 FINESS Array S 136.71 37 *e*PKIKP **PKPdf 09 11 53.5 +0.2**
FIA0 FINESS Array S 136.71 37 *e*PKPdf **PKPdf 09 11 53.5 +0.2**
FINES FINESS Array B 136.71 37 PKP **PKPdf 09 11 53.5 +0.2**
comp=Z,5.9nm,1.1s,baz=277,slow=3.6,SNR=4.2
TIRR Tirgusor 136.83 63 PFAKE 09 12 10.0 +16
TIRR LR LR
comp=Z,900nm,20.0s
ERM Erimo 137.07 294 PFAKE 09 12 10.0 +15
ERM LR LR
comp=Z,2μm,20.0s
SBUM Sibu 137.25 220 PFAKE 09 12 10.0 +14
SBUM LR LR
comp=Z,400nm,20.0s
KSM Kuching 137.34 217 PFAKE 09 12 10.0 +14
KSM LR LR
comp=Z,400nm,19.0s
CSS Mathiatis 137.78 78 PFAKE 09 12 10.0 +14
CSS LR LR
comp=Z,100nm,19.0s
KKM Kota Kinabalu 138.06 228 PFAKE 09 12 10.0 +13
KKM LR LR
comp=Z,900nm,22.0s
AK11 Malin Array Si 138.31 54 *e*PKPdf **PKPdf 09 11 58.4 +1.7**
KIEV Kiev 138.34 53 *e*PKIKP **PKPdf 09 11 58.3 +1.6**
KIEV MLR MLR
comp=Z,600nm,20.0s
KIEV Kiev 138.34 53 *e*PKPdf **PKPdf 09 11 58.3 +1.6**
KIEV LR LR
comp=Z,600nm,20.0s
AKASG Malin Array Be 138.35 53 PKP **PKPdf 09 11 56.2 -0.5**
comp=Z,0.6nm,0.4s,baz=274,slow=2.4,SNR=11
AKBB Malin Array Si 138.35 53 *e*PKIKP **PKPdf 09 11 58.6 +1.9**
AKBB MLR MLR
comp=Z,900nm,22.0s
AKBB Malin Array Si 138.35 53 *e*PKPdf **PKPdf 09 11 58.6 +1.9**
AKBB LR LR
comp=Z,900nm,22.0s
YSS Yuzh-Sakhalins 138.37 301 *e*PKIKP **PKPdf 09 11 56.3 -0.5**
YSS pmax pmax
comp=Z,20nm,2.0s
YSS MLR MLR
comp=Z,660nm,16.0s
YSS MLR MLR
comp=N,250nm,17.0s

YSS					MLR	MLR			
	comp=E,470nm,16.0s								
YSS	**Yuzh-Sakhalins**	**138.37**	**301**		PFAKE		09 12 10.0	+13	
YSS					LR	LR			
	comp=Z,600nm,19.0s								
ANTO	**Ankara**	**138.88**	**70**		PFAKE		09 12 10.0	+12	
ANTO					LR	LR			
	comp=Z,900nm,22.0s								
MJAR	**Matsushiro Arr**	**139.21**	**284**		PKP	**PKPdf**	**09 11 57.8**	**-1.0**	
	comp=Z,2.5nm,1.1s,baz=139,slow=2.0,SNR=5.5								
MAJO	**Matsushiro**	**139.21**	**284**		PFAKE		09 12 10.0	+11	
MAJO					LR	LR			
	comp=Z,400nm,21.0s								
MJB9	**Matsu-Tunnel**	**139.21**	**284**		PFAKE		09 12 10.0	+11	
MJB9					LR	LR			
	comp=Z,100nm,20.0s								
BR101	**Keskin Array S**	**139.47**	**71**	*e*	PKPdf	**PKPdf**	**09 11 58.2**	**-1.1**	
BRTR	**Keskin Array B**	**139.47**	**71**		PKP	**PKPdf**	**09 11 58.2**	**-1.1**	
	comp=Z,2.2nm,0.9s,baz=222,slow=1.7,SNR=7.5								
INU	**Inuyama**	**139.73**	**282**		PFAKE		09 12 10.0	+10	
INU					LR	LR			
	comp=Z,800nm,21.0s								
TIXI	**Tiksi**	**140.19**	**340**		PFAKE		09 12 10.0	+11	
TIXI					LR	LR			
	comp=Z,300nm,20.0s								
OBN	**Obninsk**	**142.78**	**47**	*e*	PKHKP	PKPpre	09 12 00.0		
OBN				*e*			09 15 10.3		
OBN				*e*	PPP	PPP	09 18 27.7		
OBN					pmax	pmax			
	comp=Z,76nm,2.3s								
OBN	**Obninsk**	**142.78**	**47**		PFAKE		09 12 20.0	+15	
OBN					LR	LR			
	comp=Z,800nm,20.0s								
JOW	**Kunigami**	**143.16**	**265**		PFAKE		09 12 20.0	+14	
JOW					LR	LR			
	comp=Z,700nm,21.0s								
KLMR	**Klimovskoe**	**143.22**	**37**	*e*	PKHKP	PKPab	09 12 01.9	+1.0	
KLMR					pmax	pmax			
	comp=Z,45nm,1.4s								
ANN	**Anapa**	**143.23**	**64**	*i*	PKHKP	**PKPdf**	**09 12 08.0**	**+2.3**	
ANN					pmax	pmax			
	comp=Z,23nm,0.9s								
MOS	**Moscow**	**143.31**	**45**	*e*	PKHKP	PKPab	09 12 02.3	+0.9	
MOS					MLR	MLR			
	comp=Z,1μm,21.0s								
HABR	**Khabarovsk**	**143.69**	**302**	*e*	PKHKP	PKPpre	09 12 00.9		
HABR				*i*			09 12 04.8		
HABR				*i*			09 12 08.4		
HABR				*e*			09 19 10.5		
HABR				*e*	SS	SS	09 33 57.1	-5.2	
HABR				*e*	SSS	SSS	09 39 19.4		
HABR					pmax	pmax			
	comp=E,16nm,1.5s								
HABR					pmax	pmax			
	comp=N,13nm,1.5s								
HABR					pmax	pmax			
	comp=Z,94nm,1.5s								
YAK	**Yakutsk**	**144.43**	**326**	*i*	PKIKP	**PKPab**	**09 12 03.9**	**-1.6**	
YAK	**Yakutsk**	**144.43**	**326**		PFAKE		09 12 20.0	+13	
YAK					LR	LR			
	comp=Z,700nm,20.0s								
VSR	**Storozhevoye**	**144.65**	**53**	*e*	PKIKP	**PKPab**	**09 12 06.6**	**0.0**	
VSR					pmax	pmax			
	comp=Z,170nm,1.4s								
SOC	**Sochi**	**144.70**	**66**	*d*	PKIKP	**PKPab**	**09 12 07.4**	**+0.3**	
SOC				*i*			09 12 11.8		
SOC				*e*			09 15 28.9		
SOC				*e*	PPP	PPP	09 18 43.0		
KULM	**Kulim**	**144.74**	**205**	*e*	PKPdf	**PKPab**	**09 12 06.7**	**-1.4**	
KULM					LR	LR			
	comp=Z,400nm,22.0s								
USRK	**Ussuriysk Ar.**	**145.50**	**295**		PKPbc	**PKPdf**	**09 12 07.8**	**-1.9**	
	comp=Z,27nm,1.1s,baz=109,slow=2.6,SNR=17								
VRH	**Novokhopyorsk**	**146.25**	**53**	*e*	PKP2	**PKPdf**	**09 12 10.5**	**-0.2**	
VRH					pmax	pmax			
	comp=Z,70nm,1.3s								
KIV	**Kislovodsk**	**146.88**	**66**	*e*	PKP2	**PKPdf**	**09 12 13.3**	**+1.1**	
KIV					pmax	pmax			
	comp=Z,50nm,1.0s								
KIV	**Kislovodsk**	**146.88**	**66**		PKPdf	**PKPbc**	**09 12 15.0**	**+0.9**	
	SNR=12								
KIV	**Kislovodsk**	**146.88**	**66**		P	**PKPbc**	**09 12 15.0**	**+0.9**	
	SNR=12								
KIV	**Kislovodsk**	**146.88**	**66**	*e*	PKPdf	**PKPdf**	**09 12 12.9**	**+0.8**	
KIV					LR	LR			
	comp=Z,300nm,21.0s								
KVAR	**Kislovodsk Arr**	**146.89**	**66**		PKPbc	**PKPdf**	**09 12 13.7**	**+1.5**	
	comp=Z,46nm,1.1s,baz=294,slow=2.5,SNR=17								
NACB	**Ninganchiao**	**146.98**	**255**		PFAKE		09 12 20.0	+3.7	
NACB					LR	LR			
	comp=Z,700nm,20.0s								
KBZ	**Khabaz**	**147.01**	**66**		PKPbc	**PKPdf**	**09 12 13.7**	**+1.4**	
	comp=Z,22nm,1.1s,baz=226,slow=4.2,SNR=10								
GOF	**Gofitskoye**	**147.22**	**64**	*e*	PKP2	**PKPdf**	**09 12 14.4**	**+1.8**	
GOF					pmax	pmax			
	comp=Z,161nm,1.4s								
MDJ	**Mudanjiang**	**147.25**	**295**	*e*	PKPdf	**PKPdf**	**09 12 12.9**	**+0.3**	
MDJ					LR	LR			
	comp=Z,700nm,22.0s								
KSRS	**Korea Array**	**147.36**	**282**		PKPbc	**PKPdf**	**09 12 14.2**	**+1.1**	
	comp=Z,7.6nm,0.9s,baz=116,slow=3.4,SNR=11								
KS15	**Wonju Array Si**	**147.39**	**282**	*e*	PKPdf	**PKPdf**	**09 12 14.3**	**+1.3**	
KS01	**Wonju Array Si**	**147.39**	**282**	*e*	PKPdf	**PKPdf**	**09 12 14.2**	**+1.2**	
YHNB	**Yeheng**	**147.42**	**256**		PFAKE		09 12 20.0	+1.9	
YHNB					LR	LR			
	comp=Z,500nm,21.0s								
ZEI	**Tsey**	**147.65**	**68**	*i*	PKIKP	**PKPdf**	**09 12 12.5**	**-1.1**	
ZEI					pmax	pmax			
	comp=Z,168nm,1.5s								
GNI	**Garni**	**147.89**	**73**		PKPbc	**PKPbc**	**09 12 16.6**	**-0.5**	
	comp=Z,16nm,0.7s,baz=170,slow=3.9,SNR=6.5								
GNI	**Garni**	**147.89**	**73**	*e*	PKP2	**PKPdf**	**09 12 15.7**	**+1.6**	
GNI					MLR	MLR			
	comp=Z,400nm,22.0s								
GNI	**Garni**	**147.89**	**73**	*e*	PKPdf	**PKPdf**	**09 12 15.7**	**+1.6**	
GNI				*e*	PKPbc	**PKPbc**	**09 12 16.6**	**-0.5**	
GNI				*e*	PKPbc	**PKiKP**	**09 12 18.8**	**-0.2**	
GNI					LR	LR			
	comp=Z,400nm,22.0s								
INCN	**Inchon**	**148.36**	**281**		PFAKE		09 12 30.0	+8.5	
INCN					LR	LR			
	comp=Z,600nm,22.0s								
PALK	**Pallekele**	**148.78**	**169**	*i*	PKP2	**PKPbc**	**09 12 20.7**	**+0.7**	
PALK	**Pallekele**	**148.78**	**169**	*e*	PKPdf	**PKPdf**	**09 12 15.9**	**-0.3**	
NRIK	**Noril'sk**	**148.81**	**359**		PKPbc	**PKPdf**	**09 12 17.2**	**+2.7**	
	comp=Z,14nm,1.0s,baz=79,slow=1.0,SNR=9.2								
CN2	**Changchun**	**150.18**	**293**	*e*	PKPbc	**PKPdf**	**09 12 20.1**	**+2.7**	
FAQ	**Al Faqa, Dubai**	**150.68**	**108**		PKPdf	**PKPbc**	**09 12 22.8**	**-1.5**	
	SNR=5.2								
FAQ	**Al Faqa, Dubai**	**150.68**	**108**		P	**PKPbc**	**09 12 22.8**	**-1.5**	
	SNR=5.2								
NAZ	**Nazwa, Dubai**	**150.87**	**108**		PKPdf	**PKPbc**	**09 12 23.4**	**-1.4**	
	SNR=10								
NAZ	**Nazwa, Dubai**	**150.87**	**108**		P	**PKPbc**	**09 12 23.4**	**-1.4**	
	SNR=10								
ASHO	**Ashiyiah**	**150.99**	**109**		PKPdf	**PKPbc**	**09 12 25.7**	**+0.6**	
	SNR=6.0								
ASHO	**Ashiyiah**	**150.99**	**109**		P	**PKPbc**	**09 12 25.7**	**+0.6**	
	SNR=6.0								
UOSS	**Minazif**	**151.25**	**109**	*e*	PKPdf	**PKPdf**	**09 12 18.1**	**-1.5**	
UOSS				*e*	PKPbc	**PKPbc**	**09 12 24.8**	**-0.9**	
UOSS				*e*	PKPab	**PKPab**	**09 12 33.7**	**+0.1**	
UOSS					LR	LR			
	comp=Z,1μm,20.0s								
SOKR	**Solikamsk**	**151.50**	**32**	*d*	PKIKP	**PKPdf**	**09 12 22.7**	**+3.8**	
SOKR					pmax	pmax			
	comp=Z,92nm,1.5s								
WBK	**Wadi Bani Khal**	**151.86**	**116**		PKPdf	**PKPbc**	**09 12 27.3**	**+0.1**	
	SNR=6.0								
WBK	**Wadi Bani Khal**	**151.86**	**116**		P	**PKPbc**	**09 12 27.3**	**+0.1**	
	SNR=6.0								
QIZ	**Qiongzhong**	**152.03**	**233**		PKPbc	**PKPdf**	**09 12 20.0**	**-1.0**	
QIZ					PP	**PP**	**09 16 08.6**	**+0.3**	
QIZ					SS	SS	09 35 36.9	+1.0	
QIZ					LR	LR			
	comp=Z,170nm,15.4s								
QIZ					LR	LR			
	comp=Z,220nm,19.5s								
QIZ					LR	LR			
	comp=Z,370nm,20.2s								
BOD	**Bodaibo**	**153.35**	**326**	*e*	PKIKP	**PKPdf**	**09 12 17.8**	**-3.9**	
BOD					pmax	pmax			
	comp=Z,13nm,1.5s								
HIA	**Hailar**	**153.68**	**306**		PFAKE		09 12 30.0	-0.3	
HIA					LR	LR			
	comp=Z,1μm,20.0s								
ARU	**Arti**	**154.07**	**36**		PKP	**PKPdf**	**09 12 22.6**	**-0.2**	
	comp=Z,1.8nm,0.3s,baz=294,slow=2.3,SNR=5.4								
ARU	**Arti**	**154.07**	**36**	*i*	PKIKP	**PKPdf**	**09 12 22.0**	**-0.8**	
ARU	**Arti**	**154.07**	**36**	*e*	PKPdf	**PKPdf**	**09 12 23.3**	**+0.5**	
ARU				*e*	PKPbc	**PKPbc**	**09 12 31.5**	**+0.6**	
ARU				*e*	PKPab	**PKPab**	**09 12 45.9**	**+1.4**	
ARU					LR	LR			
	comp=Z,600nm,21.0s								
AKTO	**Aktyubinsk**	**156.48**	**50**		PKP	**PKPdf**	**09 12 26.3**	**0.0**	
	comp=Z,1.3nm,0.6s,baz=316,slow=1.2,SNR=6.8								
BJI	**Beijing**	**156.84**	**284**		PKP	**PKPab**	**09 12 54.0**	**-2.9**	
BJT	**Baijiatuan**	**156.85**	**284**		PFAKE		09 12 40.0	+13	
BJT					LR	LR			
	comp=Z,800nm,21.0s								
CM01	**Chiang Mai Arr**	**157.42**	**213**	*e*	PKPdf	**PKPdf**	**09 12 25.9**	**-2.5**	
CMAR	**Chiang Mai Arr**	**157.46**	**213**		PKP	**PKPdf**	**09 12 27.6**	**-1.0**	
	comp=Z,0.8nm,0.6s,baz=247,slow=1.8,SNR=4.6								
GEYT	**Alibeck**	**157.79**	**82**		PKP	**PKPdf**	**09 12 28.4**	**0.0**	
	comp=Z,1.5nm,0.4s,baz=300,slow=3.2,SNR=6.4								
GEYT					PKPab	**PKPab**	**09 13 01.6**	**+0.4**	
	comp=Z,1.7nm,0.7s,baz=255,slow=4.5,SNR=4.6								
ABKAR	**Akbulak array**	**158.06**	**51**	*e*	PKPdf	**PKPdf**	**09 12 27.9**	**-0.4**	
ABKAR				*e*	PKPab	**PKPab**	**09 13 02.8**	**+0.9**	
GYA	**Guiyang**	**159.27**	**242**		PKP	**PKPdf**	**09 12 30.0**	**-0.7**	
GYA					PKPab	**PKPab**	**09 13 09.8**	**+1.9**	
GYA					PKS	**PKSdf**	**09 16 02.4**	**-2.0**	
GYA					PP	**PP**	**09 16 51.6**	**+2.5**	
GYA					AMB	AMB			
	comp=Z,130nm,8.2s								
ENH	**Enshi**	**159.34**	**254**		PFAKE		09 12 40.0	+9.5	
ENH					LR	LR			
	comp=Z,400nm,20.0s								
HHC	**Hu-ho-hao-te**	**160.40**	**286**	*e*	PKP	**PKPdf**	**09 12 33.3**	**+1.8**	
HHC					PP	**PP**	**09 16 59.4**	**+4.0**	
HHC					SS	SS	09 37 08.8	+1.6	
HHC					AMB	AMB			
	comp=Z,57nm,10.8s								
HHC					LR	LR			
	comp=Z,250nm,24.5s								
HHC					LR	LR			
	comp=Z,500nm,20.2s								
HHC					LR	LR			
	comp=Z,580nm,18.8s								
ZRNK	**Zerenda**	**160.98**	**34**	*e*	PKIKP	**PKPdf**	**09 12 30.9**	**-0.6**	
ZRNK	**Zerenda**	**160.98**	**34**	*e*	PKPdf	**PKPdf**	**09 12 30.9**	**-0.6**	
BRVK	**Borovoye**	**161.44**	**32**	*e*	PKIKP	**PKPdf**	**09 12 32.0**	**0.0**	
BRVK	**Borovoye**	**161.44**	**32**	*e*	PKPdf	**PKPdf**	**09 12 32.0**	**0.0**	
BRVK				*e*	PKPab	**PKPab**	**09 13 18.0**	**+1.5**	
BVAR	**Borovoye Array**	**161.51**	**32**		PKP	**PKPdf**	**09 12 31.5**	**-0.6**	
	comp=Z,5.4nm,1.1s,baz=158,slow=1.6,SNR=7.5								
BVAR					PKPab	**PKPab**	**09 13 16.0**	**-0.7**	
	comp=Z,0.5nm,0.3s,baz=205,slow=3.0,SNR=7.5								
TLY	**Talaya**	**161.87**	**324**	*c*	PKP2	**PKPab**	**09 13 18.2**	**-0.2**	
TLY					pmax	pmax			
	comp=Z,26nm,2.1s								
VOSK	**Vostochnaya**	**161.98**	**31**	*e*	PKIKP	**PKPdf**	**09 12 32.3**	**-0.3**	
VOSK	**Vostochnaya**	**161.98**	**31**	*e*	PKPdf	**PKPdf**	**09 12 32.3**	**-0.3**	
SONA1	**Songino Array**	**162.51**	**310**	*e*	PKPdf	**PKPdf**	**09 12 31.0**	**-2.5**	
SONA1					PKPab	**PKPab**	**09 13 20.1**	**-1.4**	
SONA0	**Songino Array**	**162.52**	**310**	*e*	PKPdf	**PKPdf**	**09 12 31.7**	**-1.8**	
SONA0					PKPab	**PKPab**	**09 13 20.2**	**-1.3**	
SONM	**Songino Array**	**162.52**	**310**		PKP	**PKPdf**	**09 12 31.7**	**-1.8**	
	comp=Z,1.5nm,1.1s,baz=157,slow=1.1,SNR=4.1								
SONM					PKPab	**PKPab**	**09 13 20.2**	**-1.3**	
	comp=Z,5.6nm,1.0s,baz=81,slow=2.0,SNR=11								
ZAK	**Zakamensk**	**162.88**	**321**	*e*	PKP2	**PKPab**	**09 13 21.7**	**-1.3**	
ZAK					pmax	pmax			
	comp=Z,11nm,2.2s								
CD2	**Chengdu**	**163.94**	**248**		PKP	**PKPdf**	**09 12 35.0**	**-0.3**	
CD2					pPKP	pPKPdf	09 12 38.8	+0.1	
CD2					sPKP		09 12 40.0		
CD2					PP	**PP**	**09 17 14.3**	**+0.2**	
CD2					SKS	**SKSdf**	**09 19 39.8**	**-0.1**	
CD2					SKKS	**SKKSac**	**09 24 01.8**	**-0.2**	
CD2					SS	**SS**	**09 37 44.8**	**+1.1**	
CD2					AMB	AMB			
	comp=Z,220nm,6.2s								
CD2					LR	LR			
	comp=Z,390nm,19.4s								
CD2					LR	LR			
	comp=Z,280nm,16.4s								
CD2					LR	LR			
	comp=Z,410nm,20.4s								
ZAA1	**Zalesovo Array**	**164.22**	**3**	*e*	PKPdf	**PKPdf**	**09 12 33.1**	**-1.6**	
ZAA0	**Zalesovo Array**	**164.22**	**3**	*e*	PKPdf	**PKPdf**	**09 12 32.8**	**-1.9**	
ZALV	**Zalesovo Beam**	**164.22**	**3**		PKP	**PKPdf**	**09 12 33.1**	**-1.6**	
	comp=Z,0.7nm,0.4s,baz=198,slow=1.4,SNR=4.0								
LZH	**Lanzhou**	**165.89**	**267**	*e*	PKP	**PKPdf**	**09 12 36.0**	**-1.0**	
LZH					pPKP	pPKPdf	09 12 43.3	+2.9	
LZH					sPKP		09 12 46.3		
LZH					PKS	**PKSdf**	**09 16 04.6**	**-5.3**	
LZH					PP	**PP**	**09 17 28.0**	**+3.3**	
LZH					SS	SS	09 38 02.0	-2.4	
LZH					AMB	AMB			
	comp=Z,230nm,4.4s								
LZH					LR	LR			
	comp=Z,280nm,16.5s								
LZH					LR	LR			
	comp=Z,510nm,18.6s								
LZH					LR	LR			
	comp=Z,1μm,20.0s								
KURK	**Kurchatov**	**166.34**	**21**	*e*	PKIKP	**PKPdf**	**09 12 34.8**	**-1.8**	
KURK				*e*			09 12 35.2		
KURK				*e*			09 13 38.3		
KURK	**Kurchatov**	**166.34**	**21**	*e*	PKPdf	**PKPdf**	**09 12 34.8**	**-1.8**	
KURK				*e*	PKPdf	PKPdf	09 12 35.2	-1.4	
KURK				*e*	PKPab	**PKPab**	**09 13 38.3**	**+0.3**	
KURBB	**Kurchatov Arra**	**166.40**	**22**		PKP	**PKPdf**	**09 12 34.8**	**-1.8**	
	comp=Z,7.3nm,1.3s,baz=318,slow=1.1,SNR=9.3								
KURBB					PKPab	**PKPab**	**09 13 38.3**	**+0.1**	
	comp=Z,1.2nm,0.9s,baz=340,slow=4.2,SNR=5.1								
GTA	**Gaotai**	**169.43**	**281**	*e*	PKP	**PKPdf**	**09 12 38.3**	**-1.0**	
GTA					PP	**PP**	**09 17 41.1**	**-1.6**	
GTA					SKS	**SKSdf**	**09 19 36.5**	**-6.5**	
GTA					SKKS	**SKKSac**	**09 24 27.3**	**-2.1**	
GTA					SS	**SS**	**09 38 36.3**	**-3.6**	
GTA					AMB	AMB			
	comp=Z,340nm,5.7s								
GTA					LR	LR			
	comp=Z,330nm,19.0s								
GTA					LR	LR			
	comp=Z,410nm,19.0s								
GTA					LR	LR			
	comp=Z,610nm,20.2s								
AAK	**Ala-Archa**	**169.93**	**60**	*e*	PKIKP	**PKPdf**	**09 12 40.8**	**+1.3**	
AAK				*e*			09 13 54.5		
AAK	**Ala-Archa**	**169.93**	**60**	*e*	PKPdf	**PKPdf**	**09 12 40.8**	**+1.3**	
AAK				*e*	PKPab	**PKPab**	**09 13 54.5**	**0.0**	
AAK				*e*	PKPab	PKPab	09 13 56.2	+1.6	
MAKZ	**Makanchi**	**170.82**	**19**	*e*	PKIKP	**PKPdf**	**09 12 38.3**	**-1.4**	
MAKZ	**Makanchi**	**170.82**	**19**	*e*	PKPdf	**PKPdf**	**09 12 38.3**	**-1.4**	
MK31	**Makanchi Array**	**170.91**	**18**	*e*	PKIKP	**PKPdf**	**09 12 38.4**	**-1.4**	
MK31	**Makanchi Array**	**170.91**	**18**	*e*	PKPdf	**PKPdf**	**09 12 38.4**	**-1.4**	
MK32	**Makanchi Array**	**170.91**	**18**	*e*	PKPdf	**PKPdf**	**09 12 38.0**	**-1.8**	
MK32				*e*	PKPab	**PKPab**	**09 13 57.7**	**-0.6**	
MKAR	**Makanchi Array**	**170.91**	**18**		PKP	**PKPdf**	**09 12 38.0**	**-1.8**	
	comp=Z,1.5nm,1.0s,baz=301,slow=0.8,SNR=6.7								
MKAR					PKPab	**PKPab**	**09 13 57.7**	**-0.6**	
	comp=Z,1.9nm,1.1s,baz=338,slow=1.6,SNR=2.4								
MKAR	**Makanchi Array**	**170.91**	**18**	*e*	PKIKP	**PKPdf**	**09 12 38.4**	**-1.4**	
MKAR	**Makanchi Array**	**170.91**	**18**	*e*	PKPdf	**PKPdf**	**09 12 38.4**	**-1.4**	
MK01	**Makanchi Array**	**170.94**	**18**	*e*	PKPdf	**PKPdf**	**09 12 36.9**	**-2.8**	
WMQ	**Urumqi**	**174.30**	**350**	*e*	PKP	**PKPdf**	**09 12 40.0**	**-1.4**	
WMQ					PP	**PP**	**09 18 10.3**	**+5.1**	
WMQ					AMB	AMB			
	comp=Z,150nm,7.6s								
WMQ					LR	LR			
	comp=Z,480nm,18.4s								
WMQ					LR	LR			
	comp=Z,600nm,21.2s								
WMQ					LR	LR			
	comp=Z,800nm,21.6s								

MEX 14 08:55:02.6±0.4, 31.87N×115.02W, h4km, MD4.0, Baja California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBX	**Cerro Bola**	**1.47**	**288**	*e*	P	08 55 26.1	-3.8
CBX				*e*	S	08 55 45.1	-4.4
TJIG	**Tijuana**	**1.52**	**292**	*i*	P	08 55 26.3	-4.3
TJIG				*e*	S	08 55 45.4	-5.3

CASC 14 09:03:11.5±1.7, 11.85N×88.46W, h3km±12km, MD3.7, ML3.0, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LCY	**Lacayo**	**1.58**	**6**	*e*	P	09 03 39.3	-1.2
PACA	**Pacayal**	**1.62**	**5**	*e*	P	09 03 41.3	+0.2
CNGN	**Cerro Negro**	**1.84**	**69**	*e*	P	09 03 42.7	-1.4
CNGN				*e*	S	09 04 09.5	+0.3
CNGN					AML	09 04 12.6	
	comp=N,151nm,0.5s						
COPN	**Copaltepe**	**1.85**	**79**	*e*	P	09 03 44.0	-0.2
LFRS	**El Faro**	**1.86**	**342**	*e*	P	09 03 45.4	-0.9
LFRS				*e*	S	09 04 09.3	+0.7
MOMN	**Momotombo**	**1.96**	**73**	*e*	P	09 03 44.6	-1.0
SNET	**Serv Nac Est T**	**1.98**	**338**		AML	09 04 11.3	
	comp=Z,117nm,0.1s						
LFU	**La Fuente**	**2.00**	**341**	*e*	P	09 03 46.2	-0.1
XAVN	**Gruta Xavier**	**2.11**	**82**	*e*	P	09 03 47.9	+0.2
ESTN	**Estel**	**2.39**	**58**	*e*	P	09 03 50.7	-1.0
RBDL	**Robledal**	**2.55**	**332**	*e*	S	09 04 26.3	+0.7

IDC 14 09:12:17.9±2.2, 12.06N×87.77W, h0km, mb4.1/7, mb1 4.3/8, mb1mx3.9/50, mbtmp4.1/8, ML3.2/1, MS4.8/5, Ms1 4.9/5, ms1mx4.0/34, Error ellipse: s-maj=44.3km s-min=38.5km az=3.0

CASC 14 09:12:21.1±1.3, 11.82N×88.10W, h35km±22km, MD4.0, ML2.9, mb4.3(NEIC)

NEIC 14 09:12:26.9±0.8, 12.20N×87.96W, h63km±8km, mb4.3/28, Error ellipse: s-maj=12.5km s-min=6.0km az=221.0

ISC 14 09:12:24.6±0.8, 12.09N±0.08×87.97W±0.07, h43km±5km, n276, σ0.94/274, mb4.4/31, MS4.8/6, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CNGN	**Cerro Negro**	**1.30**	**72**	*e*	**P**	**09 12 45.8**	**-0.7**
LCY	**Lacayo**	**1.36**	**346**	*e*	**P**	**09 12 47.2**	**-0.1**
LCY				*e*	**S**	**09 13 07.1**	**+2.9**
PACA	**Pacayal**	**1.41**	**346**	*e*	**P**	**09 12 47.7**	**-0.3**
PACA				*e*	**S**	**09 13 09.5**	**+4.0**
TISN	**Laguna Tiscapa**	**1.66**	**88**	*e*	**P**	**09 12 49.5**	**-1.8**
MGAN	**Managua**	**1.68**	**88**	*e*	**P**	**09 12 50.1**	**-1.5**
MGAN				*e*	**S**	**09 13 13.3**	**+1.3**
MGAN					AML	09 13 16.6	
	comp=N,61nm,0.3s						
ESTN	**Estel**	**1.85**	**57**	*e*	**P**	**09 12 54.0**	**0.0**
LFRS	**El Faro**	**1.86**	**325**	*e*	**P**	**09 12 52.6**	**-1.5**
LFRS				*e*	**S**	**09 13 16.6**	**+0.2**
LBRS	**Las Brisas**	**1.94**	**327**	*e*	**P**	**09 12 54.6**	**-0.6**
SNET	**Serv Nac Est T**	**2.01**	**322**		AML	09 13 34.0	
	comp=Z,230nm,0.4s						
BQQS	**Boqueron**	**2.08**	**322**	*e*	**P**	**09 12 56.8**	**-0.4**
BQQS				*e*	**S**	**09 13 23.7**	**+1.8**
MONT	**Ecomontaæa**	**2.40**	**317**	*e*	**P**	**09 13 00.7**	**+1.0**
HDC	**Heredia**	**4.32**	**118**	*e*	**P**	**09 13 30.1**	**+2.2**
CMIG	**Matias Romero**	**8.34**	**307**		**P**	**09 14 23.4**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=130,slow=10,SNR=6.5						
CMIG					Sn	09 16 05.7	+10
	comp=Z,0.1nm,0.3s,baz=137,slow=18,SNR=2.8						
TLIG	**Tlapa**	**11.60**	**299**	*e*	**P**	**09 15 09.5**	**+1.7**
HELC	**Santa Helena**	**13.60**	**114**	*e*	**P**	**09 15 35.9**	**+0.5**
PRAC	**Prado**	**15.39**	**122**	*e*	**P**	**09 16 03.6**	**+0.6**
	comp=Z,6.6nm,0.7s						
035Z	**Hargill**	**17.17**	**328**	P	**P**	**09 16 23.5**	**+0.9**
	baz=144						
035A	**Encino**	**17.57**	**329**	P	**P**	**09 16 27.7**	**+0.7**
	baz=145						
034A	**Hebbronville**	**17.98**	**328**	P	**P**	**09 16 32.9**	**+1.4**
	baz=144,SNR=11						
934A	**Benavides**	**18.33**	**329**	P	**Pn**	**09 16 37.9**	**+2.2**
	baz=145						
835A	**Beeville**	**18.57**	**332**	P	**Pn**	**09 16 39.7**	**+1.2**
	baz=148						
447A	**Lucedale**	**18.62**	**358**	P	**Pn**	**09 16 40.9**	**+1.8**
	baz=178						
933A	**Laredo**	**18.73**	**327**	P	**P**	**09 16 40.2**	**+0.5**
	baz=143						
834A	**Tilden**	**18.77**	**330**	P	**Pn**	**09 16 41.2**	**+0.2**
	baz=146,SNR=16						
736A	**Circle Diamond**	**18.80**	**335**	P	**Pn**	**09 16 42.1**	**+0.7**
	baz=151						
347A	**Saraland**	**19.23**	**359**	P	**Pn**	**09 16 47.1**	**+0.6**
	baz=178						
636A	**Smothers Creek**	**19.26**	**335**	P	**

Z41A	Richland Creek	21.53	349	P		P	09 17 10.1	0.0	
	baz=167								
GOGA	Godfrey	21.62	10	eP		P	09 17 11.1	+0.1	
	comp=Z,6.4nm,0.6s								
Z40A	Long Farm, Mag	21.65	348	P		P	09 17 12.5	+1.1	
	baz=165								
333A	Richland Sprin	21.68	334	P		P	09 17 11.1	-0.7	
	baz=150,SNR=17								
Y46A	Houston	21.71	358	P		P	09 17 12.7	+0.7	
	baz=178,SNR=5.6								
Y47A	UCPARC, Winfie	21.71	0	P		P	09 17 12.8	+0.8	
	baz=180								
136A	Ennis	21.76	340	P		P	09 17 14.2	+1.6	
	baz=157,SNR=9.9								
234A	Clairette	21.92	336	P		P	09 17 14.0	-0.3	
	baz=152								
WLAR	White Oak Lake	22.01	348	eP		P	09 17 14.8	-0.4	
	comp=Z,17nm,0.9s								
Y41A	Eaglette Beard	22.10	350	P		P	09 17 16.7	+0.5	
	baz=168								
233A	Rising Star	22.24	335	P		P	09 17 17.3	-0.5	
	baz=151,SNR=8.3								
X45A	UM Field Stati	22.27	357	P		P	09 17 19.2	+1.2	
	baz=176								
Y40A	Okolona	22.35	348	P		P	09 17 19.7	+0.7	
	baz=166,SNR=6.0								
Y39A	Lockesburg	22.45	347	P		P	09 17 21.3	+1.3	
	baz=164								
Z36A	Blue Ridge	22.46	341	P		P	09 17 21.1	+1.0	
	baz=158								
TX31	Lajitas Ar. Si	22.54	322	eP		P	09 17 21.2	+0.1	
TXAR	Lajitas Array	22.54	322	P		P	09 17 21.8	+0.7	
	comp=Z,2.3nm,0.5s,baz=136,slow=9.8,SNR=52								
Y38A	Idabel	22.60	345	P		P	09 17 22.0	+0.5	
	baz=162								
X41A	Kaden, Bauxite	22.68	350	P		P	09 17 22.8	+0.3	
	baz=168,SNR=5.1								
133A	Hamilton Ranch	22.76	336	P		P	09 17 23.5	+0.2	
	baz=151,SNR=9.0								
Z35A	Perchaven, San	22.79	340	P		P	09 17 24.4	+0.8	
	baz=156,SNR=5.7								
Y37A	Hugo	22.88	343	P		P	09 17 24.9	+0.4	
	baz=160,SNR=5.6								
MIAR	Mount Ida	22.93	348	P		P	09 17 25.8	+0.8	
	baz=168,SNR=33								
MIAR	Mount Ida	22.93	348	eP		P	09 17 25.2	+0.2	
	comp=Z,30nm,0.8s								
UALR	University of	22.93	351	eP		P	09 17 25.0	0.0	
	comp=Z,21nm,1.3s								
W45A	Hickory Valley	22.99	357	P		P	09 17 25.5	-0.1	
	baz=177								
Y36A	Durant	23.00	342	P		P	09 17 26.3	+0.6	
	baz=159,SNR=5.2								
X39A	Fountain Ranch	23.01	347	P		P	09 17 26.4	+0.6	
	baz=164								
Z34A	Collier Ranch,	23.05	338	P		P	09 17 26.2	-0.1	
	baz=154								
ABTX	Abilene, Hawle	23.08	334	P		P	09 17 26.4	-0.2	
	baz=150								
ABTX	Abilene, Hawle	23.08	334	eP		P	09 17 26.0	-0.6	
	comp=Z,16nm,0.8s								
Y35A	Marietta	23.24	341	P		P	09 17 28.7	+0.5	
	baz=157,SNR=15								
Z33A	Whitaker Ranch	23.30	337	P		P	09 17 28.5	-0.2	
	baz=152								
W41B	Gary Mavity, V	23.31	351	P		P	09 17 29.3	+0.5	
	baz=169,SNR=5.0								
X38A	Whitesboro	23.33	346	P		P	09 17 29.7	+0.7	
	baz=163								
X37A	Clayton	23.39	344	P		P	09 17 30.2	+0.6	
	baz=162,SNR=7.5								
WHAR	Wooly Hollow	23.43	351	eP		P	09 17 29.8	-0.2	
	comp=Z,8.8nm,0.9s								
W40A	Ferguson Farm,	23.46	349	P		P	09 17 30.6	+0.4	
	baz=167								
CPCT	Cooper Cave	23.46	7	eP		P	09 17 31.2	+0.9	
	comp=Z,5.8nm,1.2s								
CPCT				ePcP		PcP	09 21 17.5	+2.1	
Y34A	Reagan Ranch,	23.53	339	P		P	09 17 31.3	+0.4	
	baz=155								
W39A	Magazine	23.60	348	P		P	09 17 32.0	+0.4	
	baz=166								
W38A	Poteau	23.64	347	P		P	09 17 32.2	+0.3	
	baz=164,SNR=11								
X36A	Centrahoma	23.64	343	P		P	09 17 32.9	+0.9	
	baz=159,SNR=17								
X35A	Drake	23.67	341	P		P	09 17 32.5	+0.2	
	baz=158,SNR=14								
KMSC	Kings Mountain	23.73	14	P		P	09 17 33.1	+0.3	
	baz=196								
TKL	Tuckaleechee C	23.77	8	P		P	09 17 33.7	+0.5	
	comp=Z,9.7nm,0.9s,baz=174,slow=12,SNR=11								
TKL	Tuckaleechee C	23.77	8	eP		P	09 17 33.0	-0.2	
	comp=Z,8.1nm,0.8s								
V42A	Cord	23.81	353	P		P	09 17 32.8	-0.8	
	baz=172								
Y33A	Hilltop Ranch,	23.89	338	P		P	09 17 34.1	-0.2	
	baz=153								
V41A	Mountainview	23.89	352	P		P	09 17 34.0	-0.3	
	baz=170,SNR=5.6								
W37B	Quinton	23.92	345	P		P	09 17 34.3	-0.3	
	baz=162								
V40A	Witts Springs	24.01	350	P		P	09 17 35.3	-0.2	
	baz=168,SNR=9.1								
W36A	Wetumka	24.14	343	P		P	09 17 36.0	-0.6	
	baz=160,SNR=7.0								
X34A	Smith Ranch, M	24.14	340	P		P	09 17 37.1	+0.4	
	baz=156,SNR=14								
V39A	Pettigrew	24.20	349	P		P	09 17 37.3	+0.1	
	baz=166,SNR=18								
X33A	Lawton	24.32	339	P		P	09 17 38.0	-0.2	
	baz=154,SNR=29								
U42A	Revenden	24.34	354	P		P	09 17 37.4	-0.9	
	baz=172								
W35A	Tecumseh	24.34	342	P		P	09 17 37.7	-0.7	
	baz=158,SNR=6.8								
V38A	Canehill	24.37	347	P		P	09 17 39.2	+0.5	
	baz=165,SNR=5.8								
U41A	Viola	24.41	352	P		P	09 17 38.6	-0.5	
	baz=171								
X32A	Elmer	24.50	337	P		P	09 17 40.0	+0.1	
	baz=152,SNR=13								
U40A	Yellville	24.56	350	P		P	09 17 40.2	-0.2	
	baz=168,SNR=10								
V37A	Hulbert	24.56	346	P		P	09 17 40.9	+0.5	
	baz=163,SNR=6.1								
WMOK	Wichita Mounta	24.59	338	P		P	09 17 40.7	-0.1	
	baz=154,SNR=10								
WMOK	Wichita Mounta	24.59	338	eP		P	09 17 40.4	-0.4	
	comp=Z,5.9nm,0.8s								
V36A	Jenks	24.67	344	P		P	09 17 40.7	-0.7	
	baz=161								
HHAR	Hobbs	24.68	348	eP		P	09 17 41.2	-0.3	
	comp=Z,8.8nm,0.7s								
U39A	Green Forest	24.69	349	P		P	09 17 41.3	-0.4	
	baz=167								
W34A	Bridge Creek,	24.70	341	P		P	09 17 41.6	-0.2	
	baz=156,SNR=5.6								
TUL1	Leonard	24.75	345	P		P	09 17 41.4	-0.7	
	baz=161,SNR=5.9								
TUL1	Leonard	24.75	345	eP		P	09 17 41.7	-0.4	
	comp=Z,13nm,0.7s								
W33A	Caddo, Fort Co	24.86	339	P		P	09 17 42.9	-0.2	
	baz=155								
V35A	Meyer Ranch, C	24.90	343	P		P	09 17 42.8	-0.7	
	baz=159								
U38A	Gravette	24.92	348	P		P	09 17 43.5	-0.3	
	baz=165,SNR=7.3								
U37A	Salina	25.05	346	P		P	09 17 45.5	+0.6	
	baz=163								
T41A	Mountain View	25.08	353	P		P	09 17 45.1	0.0	
	baz=171,SNR=5.2								
W32A	Sentinel	25.11	338	P		P	09 17 45.3	-0.2	
	baz=153,SNR=15								
V34A	Guthrie	25.17	342	P		P	09 17 45.2	-0.8	
	baz=158,SNR=12								
U36A	Oologah	25.19	345	P		P	09 17 46.3	+0.2	
	baz=162								
MNTX	Cornudas Mount	25.27	323	P		P	09 17 46.9	0.0	
	baz=137								
MNTX	Cornudas Mount	25.27	323	eP		P	09 17 46.5	-0.4	
	comp=Z,2.0nm,0.9s								
MNTX				epP		sP	09 18 02.5	-1.2	
T40A	Mansfield	25.29	351	P		P	09 17 46.7	-0.3	
	baz=170								
T39A	Clever	25.30	350	P		P	09 17 46.4	-0.7	
	baz=168,SNR=6.5								
V33A	Lossen Ranch,	25.40	340	P		P	09 17 46.9	-1.2	
	baz=156								
U35A	Pawnee	25.43	343	P		P	09 17 47.6	-0.7	
	baz=160,SNR=8.1								
T38A	Diamond	25.48	348	P		P	09 17 48.3	-0.5	
	baz=166,SNR=5.7								
S44A	Carbondale	25.52	358	P		P	09 17 48.2	-1.0	
	baz=177								
V32A	Arapaho	25.57	339	P		P	09 17 48.7	-1.0	
	baz=154								
S41A	Jillco Farms,	25.61	353	P		P	09 17 48.9	-1.0	
	baz=171								
MSTX	Muleshoe	25.63	331	P		P	09 17 49.7	-0.6	
	baz=145,SNR=14								
T37A	Cheneyville 18	25.70	347	P		P	09 17 50.5	-0.2	
	baz=164,SNR=8.6								
S40A	Lebanon	25.72	352	P		P	09 17 50.9	-0.1	
	baz=170								
U34A	Anderson Ranch	25.73	342	P		P	09 17 50.6	-0.4	
	baz=158,SNR=6.2								
U34A	Anderson Ranch	25.73	342	eP		P	09 17 50.4	-0.7	
	comp=Z,16nm,0.6s								
T36A	Boggs Farm, Ca	25.86	345	P		P	09 17 52.0	-0.2	
	baz=162								
AMTX	Amarillo	25.88	333	P		P	09 17 52.5	-0.1	
	baz=148								
AMTX	Amarillo	25.88	333	eP		P	09 17 52.9	+0.4	
	comp=Z,8.6nm,0.8s								
T35A	Sooner Cattle	25.89	344	P		P	09 17 52.6	+0.2	
	baz=160								
S39A	Bolivar	25.94	350	P		P	09 17 52.6	-0.3	
	baz=168,SNR=24								
S38A	Stockton	25.98	349	P		P	09 17 52.7	-0.6	
	baz=167								
R44A	Waltonville	26.07	358	P		P	09 17 53.2	-0.8	
	baz=178								
WCI	Wyandotte Cave	26.07	3	eP		P	09 17 53.5	-0.7	
	comp=Z,6.5nm,0.6s								
WCI				epP		sP	09 18 10.6	-0.3	
T34A	McClaskey Farm	26.17	343	P		P	09 17 54.0	-1.1	
	baz=159								
S37A	Fort Scott	26.29	348	P		P	09 17 55.4	-0.7	
	baz=165								
R40A	Maddies Statio	26.37	352	P		P	09 17 55.8	-1.0	
	baz=170								
S36A	Lake Cedric, C	26.42	346	P		P	09 17 56.3	-1.0	
	baz=163								
R39A	Chumby, Stover	26.50	351	P		P	09 17 57.2	-0.9	
	baz=169,SNR=5.1								
R38A	Fenwick Farm,	26.52	349	P		P	09 17 57.5	-0.7	
	baz=167,SNR=6.7								
S35A	Otter Creek Ra	26.56	345	P		P	09 17 58.0	-0.5	
	baz=162								
T32A	Huddler Ranch,	26.85	340	P		P	09 18 00.3	-0.9	
	baz=156								
S33A	Kaszmaul Farm,	26.94	342	P		P	09 18 00.8	-1.2	
	baz=158								
R36A	Gordon, Harris	26.98	347	P		P	09 18 01.4	-0.9	
	baz=164								
Q39A	Willow Grove F	27.21	351	P		P	09 18 03.5	-0.9	
	baz=169								
Q38A	Cooks Store, C	27.23	350	P		P	09 18 03.1	-1.4	
	baz=168								
Q35A	Mercer Eighty,	27.61	346	P		P	09 18 05.3	-2.6	
	baz=163								
P41A	Barry, Barry	27.61	355	P		P	09 18 06.0	-2.0	
	baz=173								
P39B	Salisbury	27.61	352	P		P	09 18 06.5	-1.5	
	baz=170								
P38A	Dawn	27.86	351	P		P	09 18 09.2	-1.0	
	baz=168								
Q34A	Chapman	27.89	345	P		P	09 18 09.3	-1.1	
	baz=161								
P37A	Lathrop	27.96	349	P		P	09 18 09.2	-1.9	
	baz=167								
P35A	Duane Minner,	28.24	347	P		P	09 18 12.4	-1.2	
	baz=163								
Q32A	Meitler Ranch,	28.40	342	P		P	09 18 14.4	-0.6	
	baz=158								
O36A	Bolckow	28.61	349	P		P	09 18 15.4	-1.4	
	baz=166								
T25A	Trinidad	28.98	332	eP		P	09 18 20.3	-0.2	
	comp=Z,3.1nm,0.7s								
P32A	Huiting Farm,	28.99	343	P		P	09 18 19.6	-0.7	
	baz=158								
O34A	Beatrice	29.02	346	P		P	09 18 19.9	-0.6	
	baz=162								
N37A	Lee Faris, Mou	29.08	350	P		P	09 18 20.1	-0.9	
	baz=167								
O33A	Hebron	29.14	345	P		P	09 18 20.4	-1.1	
	baz=160								
N36A	Muff Farm, Cla	29.27	349	P		P	09 18 21.6	-1.0	
	baz=166								
N35A	Tabor	29.44	348	P		P	09 18 24.1	-0.2	
	baz=165								
M38A	Pleasantville	29.57	352	P		P	09 18 25.8	+0.4	
	baz=170								
N54A	Moraine State	29.60	12	P		P	09 18 26.0	+0.4	
	baz=196								
N34A	Lincoln	29.60	347	P		P	09 18 25.6	-0.1	
	baz=163								
M37A	Trindle Farm,	29.68	351	P		P	09 18 26.2	-0.1	
	baz=168								
O31A	Woolen Ranch,	29.70	342	P		P	09 18 26.3	-0.2	
	baz=157								
KSCO	Kaye Shedlock'	29.81	337	P		P	09 18 27.8	+0.1	
	baz=150								
SDCO	Great Sand Dun	29.98	331	eP		P	09 18 29.0	-0.4	
	comp=Z,7.1nm,1.9s								
SDCO				epP		sP	09 18 44.5	-1.7	
M35A	Neola	30.04	348	P		P	09 18 29.3	-0.2	
	baz=165								
L36A	Harm Buss Farm	30.46	350	P		P	09 18 32.5	-0.8	
	baz=167								
L35A	Bielow Farm, R	30.63	349	P		P	09 18 34.2	-0.5	
	baz=165								
K39A	Oelwein	30.69	354	P		P	09 18 34.2	-1.1	
	baz=172								
K37A	Belmond	30.96	352	P		P	09 18 36.7	-0.9	
	baz=169,SNR=7.8								
J37A	Redenius Farm,	31.48	352	P		P	09 18 41.6	-0.6	
	baz=170								
J36A	Seneca 1, Swea	31.61	351	P		P	09 18 42.6	-0.8	
	baz=168								
K32A	Verdigre	31.67	346	P		P	09 18 43.3	-0.6	
	baz=161								
K30A	Basset	32.11	344	P		P	09 18 47.6	-0.2	
	baz=158								
I36A	Fitzsnmons Fa	32.24	352	P		P	09 18 48.2	-0.6	
	baz=169								
ECSD	EROS Data Cent	32.40	348	P		P	09 18 49.7	-0.6	
	baz=164								
ECSD	EROS Data Cent	32.40	348	eP		P	09 18 47.7	-2.6	
	comp=Z,4.4nm,0.9s								
J30A	Dallas	32.68	344	P		P	09 18 53.1	+0.3	
	baz=159								
H36A	Jessenland, He	32.77	352	P		P	09 18 53.0	-0.6	
	baz=169,SNR=8.4								
H35A	Sunnyside Ranc	33.02	351	P		P	09 18 54.8	-1.0	
	baz=168,SNR=12								
O20A	White River Ci	33.17	331	eP		P	09 18 57.2	-0.2	
	comp=Z,3.8nm,0.8s								
SPMN	Marine on St.	33.28	354	P		P	09 18 56.8	-1.1	
	baz=171								
SPMN	Marine on St.	33.28	354	eP		P	09 18 56.1	-1.8	
	comp=Z,7.8nm,0.9s								
H32A	Carlson Farm,	33.31	348	P		P	09 18 57.0	-1.2	
	baz=163								
H33A	Prehn Over Nor	33.34	349	P		P	09 18 57.8	-0.7	
	baz=164								
G36A	St. Michael	33.40	353	P		P	09 18 58.4	-0.6	
	baz=170								
SADO	Sadowa	33.43	11	P		P	09 18 58.8	-0.5	
	comp=Z,2.9nm,0.5s,baz=216,slow=9.9,SNR=5.3								
ACCN	Adirondack Com	33.54	19	ePcP		PcP	09 21 39.1	-1.1	
G34A	Benson	33.68	350	P		P	09 19 00.7	-0.8	
	baz=166								
MTPU	Mount Pierson	33.69	324	ePcP		PcP	09 21 40.5	-0.7	
G33A	Ortonville	33.77	349	P		P	09 19 01.0	-1.3	
	baz=165,SNR=6.6								
F36A	Milaca	33.99	353	P		P	09 19 02.9	-1.2	
	baz=170								
F35A	Swanville	34.12	352	P		P	09 19 04.1	-1.1	
	baz=168								
F34A	Alexandria	34.16	351	P		P	09 19 04.3	-1.3	
	baz=167								
F33A	5 Mile Ranch,	34.37	350	P		P	09 19 06.3	-1.1	
	baz=166,SNR=14								
E36A	McGregor	34.60	354	P		P	09 19 08.1	-1.4	
	baz=171,SNR=6.6								
E35A	Pequot Lakes	34.78	352	P		P	09 19 10.4	-0.5	
	baz=169								
E34A	Wadena	34.85	351	P		P	09 19 10.5	-1.1	
	baz=168,SNR=5.9								
E33A	Westby DABS, E	34.97	350	P		P	09 19 11.6	-0.9	
	baz=166								
F29A	Eureka	35.11	346	P		P	09 19 12.5	-1.3	
	baz=160								
JLU	Jordanelle	35.12	328	eP		P	09 19 12.5	-1.8	
	comp=Z,9.2nm,1.7s								
JLU				eS		S	09 24 44.9	+0.6	
D37A	Cotton	35.16	355	P		P	09 19 12.8	-1.4	
	baz=172								
D36A	Goodland	35.24	354	P		P	09 19 13.2	-1.7	
	baz=171,SNR=5.4								
C38A	Sawbill Land.	35.62	356	P		P	09 19 16.3	-1.9	
	baz=174								
C36A	Pine Crest Far	35.79	354	P		P	09 19 18.9	-0.8	
	baz=172								
PDAR	Pinedale Array	35.85	332	P		P	09 19 20.4	-0.1	
	comp=Z,0.3nm,0.6s,baz=122,slow=7.8,SNR=3.6								
C35A	Jirik Farms, M	35.85	353	P		P	09 19 18.6	-1.5	
	baz=170,SNR=5.8								
EYMN	Ely	35.86	356	P		P	09 19 18.7	-1.6	
	baz=174								
B35A	Bob, Littlefor	36.48	354	P		P	09 19 24.3	-1.1	
	baz=170								
C31A	Landman Farms,	36.52	349	P		P	09 19 24.6	-1.2	
	baz=164								
AGMN	Agassiz Nation	36.69	351	P		P	09 19 26.0	-1.3	
	baz=167,SNR=5.7								
AGMN	Agassiz Nation	36.69	351	eP		P	09 19 26.1	-1.2	
	comp=Z,6.0nm,0.7s								
B34A	Aery, Baudette	36.71	353	P		P	09 19 26.3	-1.2	
	baz=169,SNR=6.5								
B32A	Ashes, Strandq	36.89	350	P		P	09 19 28.0	-1.0	
	baz=166,SNR=9.2								
D26A	Manning	36.90	343	P		P	09 19 28.7	-0.5	
	baz=156								
SNOW	Snow King Moun	36.94	332	eP		P	09 19 29.1	-0.7	
	comp=Z,8.3nm,1.3s								
B31A	Greenbush Farm	37.11	349	P		P	09 19 29.7	-1.2	
	baz=164,SNR=6.4								
A33A	Warroad	37.25	352	P		P	09 19 30.8	-1.2	
	baz=168,SNR=9.4								
B30A	Myrvik Farm, E	37.26	349	P		P	09 19 31.3	-0.9	
	baz=163								
A32A	Rocking H Ranc	37.39	351	P		P	09 19 31.9	-1.4	
	baz=166,SNR=7.5								
B28A	Dugan Ranch, T	37.69	346	P		P	09 19 35.5	-0.3	
	baz=160								
A30A	Hoffart Farm,	37.73	349	P		P	09 19 35.7	-0.4	
	baz=163								
A29A	Manning Farm,	37.90	348	P		P	09 19 36.9	-0.6	
	baz=162								
ULM	Lac du Bonnet	38.60	352	P		P	09 19 41.9	-1.5	
	comp=Z,5.6nm,0.6s,baz=173,slow=8.2,SNR=6.5								
ULM	Lac du Bonnet	38.60	352	eP		P	09 19 41.7	-1.7	
	comp=Z,6.6nm,0.7s								
DGMT	Dagmar	38.71	343	P		P	09 19 45.1	+0.7	
	baz=154								
DGMT	Dagmar	38.71	343	eP		P	09 19 44.3	-0.1	
	comp=Z,11nm,0.8s								
MCMT	McKenzie Canyo	38.96	332	eP		P	09 19 48.2	+1.4	
SCHQ	Schefferville	45.77	17	P		P	09 20 40.1	-1.6	
	comp=Z,4.9nm,0.7s,baz=241,slow=9.2,SNR=6.9								
YKA	Yellowknife Ar	53.83	345	P		P	09 21 42.1	-0.7	
	comp=Z,1.0nm,0.8s,baz=137,slow=7.6,SNR=9.8								
YKA				PcP		PcP	09 22 48.3	+0.2	
	comp=Z,0.5nm,0.7s,baz=144,slow=3.5,SNR=5.1								
YKA				LR		LR	09 46 05.0		
	comp=Z,47nm,20.0s,baz=180,slow=38								
ESDC	Sonseca Array	77.81	52	LR		LR	09 55 05.6		
	comp=Z,943nm,18.8s,baz=245,slow=33								
NOA	NORSAR Array B	83.92	29	LR		LR	10 01 24.9		
	comp=Z,293nm,20.3s,baz=240,slow=35								
GERES	GERESS Array B	88.53	40	LR		LR	10 00 13.4		
	comp=Z,371nm,21.4s,baz=235,slow=32								
KEST	Kesra	88.87	54	LR		LR	10 00 14.6		
	comp=Z,1μm,21.3s,baz=192,slow=32								
FINES	FINESS Array B	90.51	26	LR		LR	10 05 26.2		
	comp=Z,346nm,20.7s,baz=266,slow=35								
ASAR	Alice Springs	138.67	248	PKP		PKPdf	09 31 45.8	-1.0	
	comp=Z,0.3nm,1.0s,baz=101,slow=1.9,SNR=2.5								
WRA	Warramunga Arr	138.69	254	PKP		PKPdf	09 31 46.6	-0.2	
	comp=Z,0.3nm,0.8s,baz=86,slow=2.8,SNR=3.5								
CMAR	Chiang Mai Arr	148.89	347	PKPbc		PKPbc	09 32 09.2	+0.5	
	comp=Z,1.8nm,0.9s,baz=350,slow=4.5,SNR=5.7								

NIED **14** *09:15:00,38.˚10N×143.˚40E,h11km,Mw3.6 Best double couple: M₀2.44000×10¹⁴ NP1:φ=152.00000°,δ20.00000°, λ79.00000°. NP2:φ=344.00000°,δ71.00000°,λ94.00000°.*
IDC **14** *09:15:02.3±2.5,37.˚94N×143.˚45E,h0km,mb3.6/4, mb1 3.7/6,mb1mx3.5/62,mbtmp3.7/6,ML3.4/2,Error ellipse: s-maj=57.8km s-min=25.6km az=74.0*
ISCJB **14** *09:15:03.6±1.0,37.˚97N±0.˚06×143.˚38E±0.˚08,h19km, mb3.6/4,Error ellipse: s-maj=9.5km s-min=7.9km az=18.8*
JMA **14** *09:15:04.9±0.2,38.˚09N×143.˚40E,h38km,M3.5*

ISC 14 09:15:04.5±1.5,37.˚99N±0.˚06×143.˚5E±0.˚1,h19km,n20,
σ1§59/24,mb3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	1.72	286	P		Pn 09 15 32.4	-0.9
JIO				eS		Sn 09 15 52.2	-2.5
OFUJ	Ofunato	1.77	308	P		Pn 09 15 32.8	-1.2
JMK	Ichinoseki	1.99	299	P		Pn 09 15 36.3	-0.8
JMK				eS		Sn 09 15 59.5	-2.0
JOU	Okura	2.23	281	P		Pn 09 15 40.3	0.0
JOM	Ohasama	2.24	312	P		Pn 09 15 39.9	-0.6
JFT	Otama	2.51	260	P		Pn 09 15 44.9	+0.7
JFT				eS		Sn 09 16 14.0	-0.3
JYK	Kaneyama	2.59	292	P		Pn 09 15 45.6	+0.2
JRG	Rokugo	2.61	303	P		Pn 09 15 45.4	-0.2
JAG	Ashikaga	3.55	245	P		Pn 09 15 58.8	+0.2
JAG				eS		Sn 09 16 39.2	-0.8
JRY	Ryogami san	4.14	243	P		Pn 09 16 07.1	+0.5
JRY				eS		Sn 09 16 51.9	-2.6
MJAR	Matsushiro Arr	4.42	252	Pn		Pn 09 16 10.0	-0.5
	1.1nm,0.3s,baz=74,slow=15,SNR=12						
MAT	Matsushiro	4.42	253	P		Pn 09 16 12.4	+1.8
MAT				S		Sn 09 17 03.3	+1.8
JHJ	Hachijo

STVI			eS	Sb	09 16 15.9	+0.7	
STVI	**Saint Thomas**	**0.87**	**178** *i* P	**Pn**	09 16 04.2	-0.3	
STVI			eS	Sb	09 16 15.9	+0.7	
CBYP	**Canovanas**	**1.26**	**221** *e* P	**Pg**	09 16 09.6	-0.8	
CBYP	**Canovanas**	**1.26**	**221** *e* Pn	**Pg**	09 16 09.6	-0.8	
CBYP			eS	Sn	09 16 27.3	+0.3	
CBYP	**Canovanas**	**1.26**	**221** *e* Pn	**Pg**	09 16 09.9	-0.5	
CBYP			eSn	Sb	09 16 26.9	+0.5	
HUMP	**Col San Antoni**	**1.36**	**217** *e* P	**Pn**	09 16 11.2	-0.1	
HUMP	**Col San Antoni**	**1.36**	**217** *e* P	**Pn**	09 16 11.2	-0.1	
HUMP			eS	Sb	09 16 28.7	-0.4	
HUMP	**Col San Antoni**	**1.36**	**217** *e* Pn	**Pn**	09 16 11.2	-0.1	
HUMP			eSn	Sb	09 16 28.4	-0.8	
CDVI	**St. Croix**	**1.48**	**172** *e* Pn	**Pb**	09 16 14.1	+0.2	
CDVI			eSn	Sn	09 16 31.9	-0.5	
SJG	**San Juan**	**1.57**	**225** *e* P	**Pn**	09 16 14.0	-0.1	
SJG	**San Juan**	**1.57**	**225** Pn	**Pn**	09 16 14.1	0.0	
	61nm,0.3s,baz=65,slow=11,SNR=84						
SJG			Sn	Sn	09 16 33.5	-1.0	
	165nm,0.3s,baz=299,slow=18,SNR=19						
SJG	**San Juan**	**1.57**	**225** *e* P	**Pn**	09 16 14.0	-0.1	
SJG			eS	Sn	09 16 34.0	-0.5	
AOPR	**Arecibo Observ**	**1.89**	**243** *e* P	**Pn**	09 16 19.2	+0.6	
AOPR	**Arecibo Observ**	**1.89**	**243** *e* P	**Pn**	09 16 19.2	+0.6	
AOPR			eS	Sn	09 16 43.4	+0.9	
AOPR	**Arecibo Observ**	**1.89**	**243** *e* P	**Pn**	09 16 19.2	+0.6	
AOPR			eS	Sn	09 16 43.4	+0.9	
OBIP	**Obispado Ponce**	**1.94**	**233** *e* P	**Pn**	09 16 19.8	+0.6	
OBIP	**Obispado Ponce**	**1.94**	**233** *e* P	**Pn**	09 16 19.8	+0.6	
OBIP			eS	Sn	09 16 43.9	+0.3	
OBIP	**Obispado Ponce**	**1.94**	**233** *e* P	**Pn**	09 16 19.8	+0.6	
OBIP			eS	Sn	09 16 43.9	+0.3	
ICMP	**Isla Caja de M**	**1.98**	**228** *e* P	**Pn**	09 16 20.1	+0.3	
ICMP	**Isla Caja de M**	**1.98**	**228** *e* P	**Pn**	09 16 20.1	+0.3	
AGPR	**Aguadilla, PR**	**2.15**	**250** *e* P	**Pn**	09 16 22.9	+0.7	
AGPR	**Aguadilla, PR**	**2.15**	**250** *e* P	**Pn**	09 16 22.9	+0.7	
AGPR	**Aguadilla, PR**	**2.15**	**250** *e* P	**Pn**	09 16 22.9	+0.7	
SMRT	**St. Maarten**	**2.16**	**123** *e* P	**Pn**	09 16 23.4	+1.1	
SMRT			eS	Sn	09 16 49.1	-0.1	
SMRT	**St. Maarten**	**2.16**	**123** *e* Pn	**Pn**	09 16 22.6	+0.3	
AGP	**Aguadilla**	**2.20**	**249** *e* Pn	**Pn**	09 16 22.6	-0.2	
LSP	**Las Mesas**	**2.25**	**243** *e* P	**Pn**	09 16 24.4	+0.9	
LSP	**Las Mesas**	**2.25**	**243** *e* P	**Pn**	09 16 24.4	+0.9	
LSP	**Las Mesas**	**2.25**	**243** *e* P	**Pn**	09 16 24.4	+0.9	
MPR	**Mayaguez**	**2.28**	**244** *e* Pn	**Pn**	09 16 24.3	+0.4	
MPR			eSn	Sn	09 16 51.7	-0.4	
SABA	**Saba**	**2.30**	**134** *e* P	**Pn**	09 16 26.0	+1.7	
SABA			eS	Sb	09 16 56.2	-0.2	
SABA	**Saba**	**2.30**	**134** *e* Pn	**Pn**	09 16 24.6	+0.3	
CRPR	**Cabo Rojo, PR**	**2.35**	**239** *e* P	**Pn**	09 16 25.6	+0.7	
CRPR	**Cabo Rojo, PR**	**2.35**	**239** *e* P	**Pn**	09 16 25.6	+0.7	
CRPR			eS	Sn	09 16 54.1	+0.3	
CRPR	**Cabo Rojo, PR**	**2.35**	**239** *e* P	**Pn**	09 16 25.6	+0.7	
CRPR			eS	Sn	09 16 54.1	+0.3	
IDE	**Isla Desecheo**	**2.50**	**251** *e* P	**Pn**	09 16 27.8	+0.8	
IDE	**Isla Desecheo**	**2.50**	**251** *e* P	**Pn**	09 16 27.8	+0.8	
IDE			eS	Sn	09 16 58.9	+1.3	
IDE	**Isla Desecheo**	**2.50**	**251** *e* P	**Pn**	09 16 27.8	+0.8	
IDE			eS	Sn	09 16 58.9	+1.3	
SEUS	**St. Eustatius**	**2.57**	**132** *e* P	**Pb**	09 16 31.2	-1.2	
SEUS			eS	Sg	09 17 08.5	-0.4	
SEUS	**St. Eustatius**	**2.57**	**132** *e* Pn	**Pb**	09 16 31.5	-0.9	
ANWB	**Willy Bob**	**3.41**	**117** *e* P	**Pn**	09 16 41.7	+2.2	
ANWB	**Willy Bob**	**3.41**	**117** *e* S	**Sb**	09 17 28.1	-0.3	
ANWB	**Willy Bob**	**3.41**	**117** *e* Pn	**Pn**	09 16 39.5	0.0	
ANWB			ePg	Pb	09 16 45.5	-1.3	
MLYT	**Lee's Yard**	**3.65**	**133** *e* P	**Pn**	09 16 45.1	+2.3	
MLYT			eS	Sn	09 17 28.6	+2.7	
DR12	**Loma Pena Alta**	**4.18**	**265** *e* P	**Pn**	09 16 52.0	+1.9	
DR12	**Loma Pena Alta**	**4.18**	**265** *e* P	**Pn**	09 16 52.0	+1.9	
GDHS	**Morne Mazeau,**	**4.25**	**133** *e* Pn	**Pn**	09 16 51.3	+0.2	
SCG	**Saint Claude**	**4.48**	**135** *e* P	**Pn**	09 16 56.8	+2.5	
TBG	**Guadaloupe-3**	**4.63**	**136** *e* P	**Pn**	09 16 57.9	+1.6	
TBG	**Guadaloupe-3**	**4.63**	**136** *e* S	**Sn**	09 17 49.5	-0.6	
MGG	**Marie-Galante**	**4.81**	**133** *e* P	**Pn**	09 16 59.7	+1.0	
BBL	**Barber's Block**	**4.98**	**137** *e* P	**Pn**	09 17 02.5	+1.3	
DWS	**Wesley**	**5.06**	**135** *e* P	**Pn**	09 17 04.9	+2.8	
PCM	**Pelee Case Pet**	**5.68**	**140** *e* P	**Pn**	09 17 12.8	+1.9	
BAMF	**Morne Balai**	**5.72**	**140** *e* P	**Pn**	09 17 12.8	+1.4	
GBMF	**Grand Be**	**5.73**	**140** *e* P	**Pn**	09 17 13.3	+1.9	
SDDR	**Presa de Saban**	**5.96**	**269** *e* P	**Pn**	09 17 16.3	+2.3	
SDDR	**Presa de Saban**	**5.96**	**269** *e* S	**Sn**	09 18 21.7	-1.4	
SDDR	**Presa de Saban**	**5.96**	**269** *e* Pn	**Pn**	09 17 16.3	+1.6	
LGNH	**LØogne**	**7.25**	**266** *e* Pn	**Pn**	09 17 32.3	0.0	
PCRV	**Puerto La Cruz**	**9.01**	**178** Pn	**Pn**	09 17 58.2	+1.8	
	1.4nm,0.3s,baz=261,slow=2.3,SNR=5.9						
PCRV			Sn	Sn	09 19 35.3	-2.7	
	0.6nm,0.3s,baz=297,slow=16,SNR=2.7						
SDV	**Santo Domingo**	**11.65**	**209** Pn	**Pn**	09 18 33.7	+0.9	
	6.7nm,0.3s,baz=303,slow=19,SNR=9.9						
SDV			Sn	Sn	09 20 43.2	+0.1	
	1.1nm,0.3s,baz=343,slow=19,SNR=2.9						
SDV	**Santo Domingo**	**11.65**	**209** *e* Pn	**Pn**	09 18 36.3	+3.5	
SDV			Sn	Sn	09 20 43.2	+0.1	
ROSC	**El Rosal**	**16.95**	**214** P	**P**	09 19 48.6	+2.6	
	1.2nm,0.3s,baz=68,slow=19,SNR=1.6						
PTGA	**Pitinga**	**20.44**	**165** P	**P**	09 20 23.0	-1.0	
	2.0nm,0.5s,baz=339,slow=14,SNR=7.1						
PTGA	**Pitinga**	**20.44**	**165** *e* P	**P**	09 20 23.7	-0.2	
	6.0nm,0.8s						
OTAV	**Otavalo**	**23.04**	**217** *e* P	**P**	09 20 54.6	+2.3	
	7.1nm,0.9s						
LPAZ	**La Paz**	**35.43**	**185** P	**P**	09 22 42.6	-0.8	
	0.5nm,0.5s,baz=18,slow=9.6,SNR=2.7						
LPAZ	**La Paz**	**35.43**	**185** P	**P**	09 22 42.6	-0.8	
LPAZ			*e*		09 22 53.7		
TXAR	**Lajitas Array**	**36.52**	**294** P	**P**	09 22 52.2	0.0	
	0.8nm,0.8s,baz=110,slow=11,SNR=11						
T25A	**Trinidad**	**38.73**	**306** *e* P	**P**	09 23 11.4	+0.5	
	7.1nm,1.2s						
SDCO	**Great Sand Dun**	**39.73**	**306** *e* P	**P**	09 23 19.5	+0.1	
	4.2nm,0.9s						
PB01	**IPOC Station P**	**40.27**	**187** *e* P	**P**	09 23 23.3	-0.4	
	45nm,1.9s						
ISCO	**Idaho Springs**	**40.43**	**309** *e* P	**P**	09 23 25.4	+0.2	
	4.7nm,1.2s						
S22A	**4UR Ranch, Cre**	**40.75**	**306** *e* P	**P**	09 23 27.5	-0.4	
	3.0nm,1.1s						
PV10	**Paradox Valley**	**42.59**	**306** *e* P	**P**	09 23 43.6	+0.7	
PDAR	**Pinedale Array**	**44.18**	**312** P	**P**	09 23 55.7	+0.1	
	2.2nm,1.0s,baz=108,slow=7.7,SNR=9.4						
BW06	**Boulder Array**	**44.18**	**312** *e* P	**P**	09 23 55.4	-0.3	
	7.1nm,1.3s						
BW06			*e* P	**P**	09 23 55.7	+0.1	
SNOW	**Snow King Moun**	**45.23**	**313** *e* P	**P**	09 24 04.3	+0.3	
	4.9nm,1.0s						
HWUT	**Hardware Ranch**	**45.28**	**310** *e* P	**P**	09 24 04.6	+0.2	
	4.3nm,1.0s						
CPUP	**Villa Florida**	**45.89**	**170** P	**P**	09 24 07.7	-1.4	
	2.4nm,0.8s,baz=354,slow=10,SNR=7.6						
BGU	**Big Grassy Mou**	**46.19**	**309** *e* P	**P**	09 24 11.8	+0.3	
	9.3nm,1.3s						
DLMT	**Dillon**	**47.06**	**315** *e* P	**P**	09 24 19.5	+1.2	
	7.1nm,1.3s						
HLID	**Hailey**	**47.81**	**312** *e* P	**P**	09 24 24.5	+0.3	
	5.2nm,1.4s						
HLID			*e*		09 24 37.2		
MFID	**Camas Ranch**	**48.78**	**311** *e* P	**P**	09 24 31.9	+0.3	
	4.0nm,1.0s						
YKA	**Yellowknife Ar**	**54.96**	**334** P	**P**	09 25 15.5	-1.7	
	0.3nm,0.7s,baz=105,slow=7.2,SNR=4.1						
SUMG	**Summit**	**55.47**	**9** *e* P	**P**	09 25 20.9	-0.3	
	9.8nm,1.2s						
ILAR	**Eielson Array**	**69.34**	**333** P	**P**	09 26 52.8	-1.0	
	0.5nm,0.7s,baz=102,slow=5.6,SNR=5.6						
ASAR	**Alice Springs**	**161.87**	**253** PKPab	**PKPab**	09 36 32.8	-1.5	
	0.5nm,0.8s,baz=112,slow=4.2,SNR=4.0						

*ISCJB **14** 09:17:06.2±0.6, 6.80N±0.04×73.08W±0.05, h159km±5km, Error ellipse: s-maj=9.5km s-min=4.2km az=33.1*
*FUNV **14** 09:17:08.2, 6.85N×72.99W, h174km, MW2.9*
*RSNC **14** 09:17:08.7±0.9, 6.77N×73.13W, h144km±5km, ML2.8*

ISC 14 09:17:05.3±1.4, 6.81N±0.04×73.05W±0.05, h167km±8km, n25, σ1§56/42, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.25**	**296**	*i* P	**Pn**	**09 17 28.3**	**+0.3**
BARC	**Barichara**	**0.25**	**213**	*i* P	**Pn**	**09 17 28.2**	**+0.1**
BARC				*eS*	**Sn**	**09 17 43.5**	**-2.0**
BARC				*i*		09 17 46.6	
	comp=Z,118nm,0.3s						

GIRC	**Giron, Santand**	**0.31**	**331**	*i* P	**Pn**	**09 17 28.4**	**+0.3**
PAMC	**Pamplona, Colo**	**0.63**	**33**	*eP*	**Pn**	**09 17 31.0**	**+1.2**
PAMC				*eS*	**Sn**	**09 17 48.1**	**-0.5**
BRRC	**Barranca, Sant**	**0.73**	**294**	*i* P	**Pn**	**09 17 30.1**	**+0.3**
BRRC				*eS*	**Sn**	**09 17 47.1**	**-1.5**
BRRC				*i*		09 17 49.9	
	comp=Z,110nm,0.2s						
RUSC	**La Rusia**	**0.91**	**182**	*eP*	**Pn**	**09 17 32.0**	**+0.4**
RUSC				*eS*	**Sn**	**09 17 50.2**	**-1.6**
RUSC				*i*		09 17 53.6	
	comp=Z,93nm,0.4s						
GRMC	**Gramalote, San**	**0.94**	**15**	*i* P	**Pn**	**09 17 34.0**	**+2.6**
GRMC				*eS*	**Sn**	**09 17 53.4**	**+1.8**
GRMC				*i*		09 17 54.7	
	comp=Z,155nm,0.3s						
CBRI	**Barrientos, No**	**0.94**	**15**	*eP*	**Pn**	**09 17 32.7**	**+1.3**
CBRI				*eS*	**Sn**	**09 17 51.2**	**-0.4**
CBRI				*i*		09 17 54.6	
	comp=Z,100nm,0.2s						
CAPV	**Capacho**	**1.28**	**35**	*eP*	**Pn**	**09 17 36.4**	**+2.1**
CAPV				*eS*	**Sn**	**09 17 57.1**	**+0.4**
OCAC	**Ocana**	**1.45**	**349**	*eP*	**Pn**	**09 17 36.9**	**+1.0**
OCAC				*eS*	**Sn**	**09 17 58.6**	**-0.9**
OCAC				*i*		09 18 03.6	
	comp=Z,123nm,0.4s						
NORC	**Norcasia**	**2.19**	**236**	*eP*	**Pn**	**09 17 43.8**	**+0.1**
NORC				*eS*	**Sn**	**09 18 11.6**	**-1.9**
CHIC	**Chingaza**	**2.27**	**198**	*eP*	**Pn**	**09 17 46.2**	**+1.2**
CHIC				*eS*	**Sn**	**09 18 15.0**	**-0.7**
CHIC				*i*		09 18 23.9	
	comp=Z,38nm,0.5s						
ROSC	**El Rosal**	**2.33**	**213**	*eP*	**Pn**	**09 17 47.7**	**+2.0**
ROSC				*eS*	**Sn**	**09 18 16.3**	**-0.6**
ROSC				*i*		09 18 23.2	
	comp=Z,59nm,0.5s						
HELC	**Santa Helena**	**2.54**	**256**	*eP*	**Pn**	**09 17 50.0**	**+1.8**
HELC				*eS*	**Sn**	**09 18 19.2**	**-2.1**
HELC				*i*		09 18 26.5	
	comp=Z,64nm,0.3s						
HELC	**Santa Helena**	**2.54**	**256**	*eSn*	**Pn**	**09 17 50.2**	**+2.1**
SOCV	**Socops**	**2.62**	**56**	*eP*	**Pn**	**09 17 50.7**	**+1.9**
SOCV				*eS*	**Sn**	**09 18 21.8**	**-0.6**
VILC	**Villavicencio,**	**2.75**	**194**	*eP*	**Pn**	**09 17 52.1**	**+1.6**
VILC				*eS*	**Sn**	**09 18 24.7**	**-0.9**
VILC				*i*		09 18 28.7	
	comp=Z,22nm,0.4s						
DBBC	**Dabeiba**	**3.15**	**274**	*eP*	**Pn**	**09 17 56.1**	**+0.8**
TOLC	**Tolima**	**3.16**	**226**	*eP*	**Pn**	**09 17 57.7**	**+2.0**
PRAC	**Prado**	**3.58**	**211**	*eP*	**Pn**	**09 18 01.8**	**+1.1**
PRAC				*eS*	**Sn**	**09 18 42.9**	**-1.0**
VIRV	**Villa del Rosa**	**3.73**	**10**	*eP*	**Pn**	**09 18 03.3**	**+0.8**
VIRV				*eS*	**Sn**	**09 18 45.0**	**-2.2**
QARV	**Quebrada Arrib**	**4.20**	**36**	*eP*	**Pn**	**09 18 10.2**	**+1.5**
CURV	**Curarigua**	**4.41**	**44**	*eP*	**Pn**	**09 18 12.6**	**+1.2**
CURV				*eS*	**Sn**	**09 18 58.9**	**-4.2**
DABV	**Dabajuro**	**4.73**	**30**	*eP*	**Pn**	**09 18 16.2**	**+0.7**
BAUV	**El Baul**	**5.39**	**67**	*eP*	**Pn**	**09 18 23.7**	**-0.4**

MEX 14 09:33:02.9±0.3, 14.58N×92.67W, h72km±11km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.77**	**17**	*eP*	Pn	09 33 30.2	-1.4
CCIG				*i* S	Sn	09 33 52.2	-1.3
TGIG		**2.22**	**349**	*eP*	Pn	09 33 36.5	-1.3
TGIG				*i* S	Sn	09 34 02.5	-1.8

*ISCJB **14** 09:37:08.6±0.7, 24.38S±0.09×180.0W±0.1, h517km, mb3.7/8, Error ellipse: s-maj=16.8km s-min=8.6km az=32.5*
*IDC **14** 09:37:08.1±2.3, 24.52S×179.93E, h481km±26km, mb3.3/9, mb1 3.5/10, mb1mx3.3/33, mbtmp4.2/10, Error ellipse: s-maj=23.1km s-min=16.7km az=162.0*

ISC 14 09:37:10.3±0.8, 24.5S±0.1×180.0E±0.1, h517km, n11, σ1§61/12, mb3.7/8, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**13.11**	**38**	P	**P**	**09 39 58.2**	**-2.4**
	2.2nm,0.3s,baz=286,slow=11,SNR=3.5						
AFI				S	S	09 42 13.0	-8.1
	1.3nm,0.3s,baz=195,slow=19,SNR=2.4						
URZ	**Urewera**	**13.91**	**189**	P	P	09 40 00.4	-8.3
	0.7nm,0.3s,baz=117,slow=7.1,SNR=3.8						
URZ				S	**S**	**09 42 34.6**	**-1.1**
	0.7nm,0.3s,baz=73,slow=21,SNR=6.7						
RPZ	**Rata Peaks**	**20.50**	**199**	P	**P**	**09 41 11.5**	**-0.9**
	22nm,1.0s,baz=55,slow=1.8,SNR=6.1						
CTA	**Charters Tower**	**31.47**	**271**	P	**P**	**09 42 49.5**	**+0.1**
	5.0nm,0.4s,baz=94,slow=11,SNR=11						
STKA	**Stephens Creek**	**34.48**	**249**	P	**P**	**09 43 14.8**	**-0.1**
	2.0nm,0.5s,baz=90,slow=11,SNR=10						
ASAR	**Alice Springs**	**41.93**	**261**	P	**P**	**09 44 14.9**	**-0.7**
	0.8nm,0.6s,baz=95,slow=7.1,SNR=18						
WRA	**Warramunga Arr**	**42.36**	**267**	P	**P**	**09 44 18.0**	**-1.0**
	3.2nm,0.6s,baz=102,slow=8.3,SNR=36						
WRA				ScP	**ScP**	**09 49 05.1**	**+3.1**
	0.6nm,0.7s,baz=102,slow=3.7,SNR=6.5						
FITZ	**Fitzroy Crossi**	**50.77**	**266**	P	**P**	**09 45 23.1**	**+0.3**
	2.5nm,0.7s,baz=124,slow=9.2,SNR=7.9						
VNDA	**Vanda**	**53.76**	**185**	P	**P**	**09 45 44.0**	**+0.7**
	0.5nm,0.6s,baz=358,slow=8.3,SNR=4.0						
TXAR	**Lajitas Array**	**90.77**	**58**	P	**P**	**09 49 20.1**	**+1.7**
	0.7nm,0.8s,baz=214,slow=6.5,SNR=10.0						
PDAR	**Pinedale Array**	**93.14**	**44**	P	**P**	**09 49 30.1**	**+1.0**
	0.3nm,0.7s,baz=250,slow=2.7,SNR=2.8						

MEX 14 09:37:29.9±0.3, 14.62N×92.68W, h50km±22km, MD4.1, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.74**	**17**	*eP*	Pn	09 37 56.6	-1.2
CCIG				*eS*	Sn	09 38 16.9	-2.0
TGIG		**2.19**	**349**	*eP*	Pn	09 38 02.6	-1.4
TGIG				*eS*	Sn	09 38 28.3	-1.7

IDC 14 09:39:48.2±8.5, 5.15S×151.09E, h65km±61km, mb3.4/3, mb1 3.7/4, mb1mx3.3/37, mbtmp3.8/4, ML2.3/1, Error ellipse: s-maj=112.6km s-min=54.1km az=126.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.75**	**222**	P	Pn	09 41 11.1	+0.1
	5.7nm,0.3s,baz=36,slow=14,SNR=11						
PMG				S	Sn	09 42 16.4	+0.7
	2.2nm,0.3s,baz=165,slow=20,SNR=3.3						
WRA	**Warramunga Arr**	**21.95**	**226**	P	P	09 44 36.6	-0.2
	1.4nm,0.8s,baz=52,slow=10,SNR=8.4						
ASAR	**Alice Springs**	**24.76**	**220**	P	P	09 45 04.1	+0.1
	0.7nm,0.7s,baz=57,slow=9.2,SNR=8.6						
FITZ	**Fitzroy Crossi**	**28.00**	**241**	P	P	09 45 33.4	+0.2
	2.3nm,0.9s,baz=57,slow=8.5,SNR=9.2						
TORD	**Torodi Ar. Bea**	**148.78**	**287**	PKPbc	PKPbc	09 59 28.7	-0.7
	0.4nm,0.6s,baz=97,slow=2.2,SNR=5.3						

JMA 14 09:49:44.3, 33.99N×135.23E, h8km, M0.0, Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JWM	**Minabe**	**0.17**	**144**	P	Pg	09 49 48.0	+0.1
JWM				S	Sg	09 49 50.6	+0.2

JMA 14 09:50:38.1, 36.05N×137.56E, h9km±1km, M3.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGN	**Niukaw**	**0.26**	**311**	P	Pg	09 50 43.4	0.0
JGN				S	Sg	09 50 46.8	-0.2
JNT	**Takato**	**0.50**	**110**	P	Pg	09 50 47.8	0.0
JNT				S	Sg	09 50 54.6	+0.2
JNG	**Nsakai**	**0.56**	**51**	P	Pg	09 50 49.3	+0.2
JNG				S	Sg	09 50 56.8	+0.3
JTT	**Ttatey**	**0.58**	**342**	P	Pg	09 50 49.6	+0.2
JTT				S	Sg	09 50 57.6	+0.5
MAT	**Matsushiro**	**0.72**	**47**	P	Pg	09 50 51.7	-0.3
MAT				S	Sg	09 51 01.1	-0.2
MAT	**Matsushiro**	**0.72**	**47**	P	Pg	09 50 51.7	-0.3
MAT				S	Sg	09 51 01.3	0.0
JYN	**Shimob**	**0.97**	**124**	P	Pg	09 50 56.7	-0.1
JYN				S	Sb	09 51 09.8	-0.3

*IDC **14** 10:06:26.1±3.8, 10.22N×85.11W, h0km, mb4.0/4, mb1 4.2/5, mb1mx3.7/34, mbtmp4.0/5, ML3.6/1, MS3.8/4, Ms1 3.8/4, ms1mx3.1/42, Error ellipse: s-maj=73.5km s-min=47.1km az=176.0*
*NEIC **14** 10:06:27.6±0.9, 10.21N×85.11W, h10km, mb4.1/4, Error ellipse: s-maj=17.7km s-min=16.9km az=110.0*
*CASC **14** 10:06:30.3±3.0, 10.70N×85.27W, h1km±13km, MD4.6, ML3.2, mb4.1(NEIC)*

ISC 14 10:06:30.1±1.1, 10.2N±0.1×85.46W±0.1, h22km, n21, σ1§66/23, mb4.1/9, MS4.0/3, 1C, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HDC	**Heredia**	**1.34**	**99**	*eP*	**Pb**	**10 06 53.5**	**-1.1**
HDC				*eS*	**Sb**	**10 07 15.6**	**+4.1**
URSC	**Urasca**	**1.70**	**103**	*i* P	**Pb**	**10 06 59.3**	**-1.5**
URSC				*eS*	**Sb**	**10 07 24.3**	**+2.6**
XAVN	**Gruta Xavier**	**2.10**	**336**	*eP*	**Pn**	**10 07 03.1**	**-0.8**
MOMN	**Momotombo**	**2.42**	**334**	*eP*	**Pn**	**10 07 07.5**	**-0.9**
CNGN	**Cerro Negro**	**2.57**	**332**	*eP*	**Pn**	**10 07 09.0**	**-1.5**
CNGN				*eS*	**Sn**	**10 07 40.6**	**-0.5**
CNGN				AML	AML	10 07 44.6	
	comp=E,196nm,0.6s						
BRU2	**Volcan**	**3.08**	**117**	*eP*	**Pb**	**10 07 23.0**	**-1.3**
BRU2				*eS*	**Sb**	**10 08 01.1**	**-0.4**
TBS2		**3.11**	**117**	*eP*	**Pb**	**10 07 22.8**	**-1.9**
TBS2				*eS*	Sb	10 08 12.1	+10
CMIG	**Matias Romero**	**11.42**	**308**	Pn	**Pn**	**10 09 14.5**	**+2.5**
	comp=E,0.4nm,0.3s,baz=119,slow=12,SNR=7.8						
CMIG				LR	LR	10 12 45.9	
	comp=E,74nm,20.5s,baz=173,slow=32						
LRAL	**Lakeview Retre**	**22.75**	**357**	*eP*	**P**	**10 11 31.5**	**+0.6**
	comp=E,5.3nm,0.8s						
GOGA	**Godfrey**	**23.15**	**4**	*eP*	**P**	**10 11 33.3**	**-1.7**
	comp=E,7.4nm,1.0s						
OXF	**Oxford**	**24.45**	**352**	*eP*	**P**	**10 11 47.0**	**-0.4**
	comp=E,27nm,1.1s						
TKL	**Tuckaleechee C**	**25.37**	**3**	P	**P**	**10 11 55.7**	**0.0**
	comp=E,3.2nm,0.8s,baz=184,slow=9.7,SNR=3.8						
TXAR	**Lajitas Array**	**25.53**	**321**	P	**P**	**10 11 58.7**	**+1.4**
	comp=E,2.2nm,0.8s,baz=141,slow=9.1,SNR=33						
MNTX	**Cornudas Mount**	**28.24**	**322**	P	**P**	**10 12 23.1**	**+1.5**
	comp=E,3.2nm,0.4s						
ANMO	**Albuquerque**	**31.19**	**325**	P	**P**	**10 12 48.8**	**+0.8**
	comp=E,1.5nm,0.6s						
SCHQ	**Schefferville**	**46.89**	**15**	P	**P**	**10 14 56.8**	**-1.9**
	comp=E,2.4nm,0.7s,baz=222,slow=7.4,SNR=5.1						
SCHQ				LR	LR	10 34 13.1	
	comp=E,161nm,18.6s,baz=333,slow=36						
YKA	**Yellowknife Ar**	**56.27**	**344**	P	**P**	**10 16 08.3**	**-0.3**
	comp=E,0.5nm,0.8s,baz=150,slow=6.5,SNR=4.5						
NOA	**NORSAR Array B**	**84.36**	**29**	LR	LR	10 54 22.5	
	comp=E,39nm,20.4s,baz=65,slow=34						
VRAC	**Vranov**	**90.07**	**40**	LR	LR	10 57 49.2	
	comp=E,154nm,18.0s,baz=25,slow=34						
ASAR	**Alice Springs**	**140.19**	**245**	PKP	**PKPdf**	**10 25 58.4**	**+0.4**
	comp=E,0.2nm,0.6s,baz=116,slow=3.4,SNR=2.6						
WRA	**Warramunga Arr**	**140.47**	**251**	PKP	**PKPdf**	**10 25 58.6**	**+0.1**
	comp=E,0.6nm,0.8s,baz=86,slow=2.5,SNR=2.8						

JMA 14 10:06:46.0±0.3, 25.20N×122.68E, h203km±4km, M3.9, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.78**	**162**	P	Pn	10 07 14.9	+0.1
JYNG				S	S	10 07 38.2	+1.2
YOJ	**Yonaguni jima**	**0.79**	**158**	P	Pn	10 07 15.1	+0.3
YOJ				*eS*	S	10 07 38.2	+1.1
IRIF	**Iriomote-Funau**	**1.29**	**

JOU	**Okura**	**2.16**	**281**	P	**Pn**	**10 23 34.0**	**+0.7**
JOU				*e*S	**Sn**	**10 23 58.2**	**-1.4**
JOM	**Ohasama**	**2.20**	**313**	P	**Pn**	**10 23 34.3**	**+0.4**
JOM				*e*S	**Sn**	**10 23 58.9**	**-1.7**
JFT	**Otama**	**2.44**	**260**	P	**Pn**	**10 23 38.2**	**+1.0**
JFT				*e*S	**Sn**	**10 24 05.9**	**-0.6**
JYK	**Kaneyama**	**2.54**	**293**	P	**Pn**	**10 23 39.4**	**+0.9**
JRG	**Rokugo**	**2.56**	**304**	P	**Pn**	**10 23 39.6**	**+0.8**
JTM	**Tenmabayashi**	**3.32**	**328**	*e*S	**Sn**	**10 24 26.1**	**-2.1**
JAG	**Ashikaga**	**3.48**	**245**	P	**Pn**	**10 23 52.0**	**+0.5**
JAG				*e*S	**Sn**	**10 24 31.1**	**-1.1**
MJAR	**Matsushiro Arr**	**4.35**	**252**	Pn	**Pn**	**10 24 05.5**	**+2.0**
	0.5nm,0.3s,baz=87,slow=16,SNR=6.0						
MJAR				Sn	**Sn**	**10 24 56.4**	**+2.7**
	1.2nm,0.3s,baz=114,slow=12,SNR=4.9						
JHJ	**Hachijo jima 2**	**5.66**	**212**	Pn	**Pn**	**10 24 21.1**	**-0.3**
	5.7nm,0.3s,baz=73,slow=19,SNR=15						
JHJ				Sn	**Sn**	**10 25 20.8**	**-5.1**
	12nm,0.3s,baz=29,slow=22,SNR=10						
H11N2	**WAKE ISLAND Hy 27.36**		**125**	T	T	10 57 33.4	
	baz=317,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy 27.37**		**125**	T	T	10 57 29.5	
	baz=317,slow=75,SNR=6.7						
H11N3	**WAKE ISLAND Hy 27.38**		**125**	T	T	10 57 46.3	
	baz=317,slow=75,SNR=12						
KURBB	**Kurchatov Arra**	**46.65**	**308**	P	**P**	**10 31 26.2**	**+0.8**
	0.6nm,0.6s,baz=82,slow=8.0,SNR=5.4						
WRA	**Warramunga Arr**	**58.23**	**190**	P	**P**	**10 32 52.2**	**+0.7**
	0.6nm,0.6s,baz=7.7,slow=7.1,SNR=6.5						
ASAR	**Alice Springs**	**61.96**	**190**	P	**P**	**10 33 18.1**	**+1.1**
	0.3nm,0.8s,baz=8.9,slow=6.6,SNR=3.6						

MOS ***14*** *10:26:50.8±1.1,48.°96N×155.°79E, h7km,mb4.0/2, Error ellipse: s-maj=45.1km s-min=6.2km az=76.8*
IDC ***14*** *10:26:51.5±1.0,49.°00N×156.°13E, h0km,mb3.5/5, mb1 3.8/6, mb1mx3.5/49, mbtmp3.5/6, ML2.5/1, Error ellipse: s-maj=37.9km s-min=22.6km az=120.0*
ISCJB ***14*** *10:26:55.9±0.7,49.°18N±0.°07×155.°8E±0.°2, h35km, mb3.4/5, Error ellipse: s-maj=23.6km s-min=6.4km az=22.1*
KRSC ***14*** *10:26:56.6±1.8,49.°39N×156.°43E, h7km±19km, ML4.2*

ISC 14 10:26:57.0±1.1, 49.°2N±0.°1×155.°7E±0.°2, h35km, n39, σ1§70/40, mb3.5/5, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SKR	**Severo-Kuril's**	**1.51**	**9**	PN		**Pn**	**10 27 20.6**	**-0.9**
SKR	**Severo-Kuril's**	**1.51**	**9**	*e*P		**Pn**	**10 27 20.6**	**-0.9**
SKR				*e*S		**Sn**	**10 27 37.6**	**-2.4**
PAU	**Pauzhetka**	**2.38**	**16**	PN		**Pn**	**10 27 33.3**	**-0.2**
PAU	**Pauzhetka**	**2.38**	**16**	*e*P		**Pn**	**10 27 33.3**	**-0.2**
PAU				*e*S		**Sn**	**10 27 59.6**	**-1.8**
ASAK	**Asacha**	**3.48**	**22**	PN		**Pn**	**10 27 49.5**	**+0.9**
ASAK	**Asacha**	**3.48**	**22**	*e*P		**Pn**	**10 27 49.5**	**+0.9**
RUS	**Russkaya**	**3.69**	**27**	PN		**Pn**	**10 27 51.8**	**+0.3**
RUS	**Russkaya**	**3.69**	**27**	*e*P		**Pn**	**10 27 51.8**	**+0.3**
RUS				*e*S		**Sn**	**10 28 30.2**	**-3.5**
KRMR	**Karymshinskiy**	**3.94**	**22**	*e*S		**Sn**	**10 28 40.9**	**+0.9**
PETK	**Petropavlovsk-**	**4.11**	**17**	Pn		**Pn**	**10 27 58.5**	**+1.2**
	1.5nm,0.3s,baz=173,slow=12,SNR=14							
PETK				Sn		Sn	10 28 53.9	+10
	0.7nm,0.3s,baz=200,slow=12,SNR=2.9							
PET	**Petropavlovsk**	**4.26**	**24**	*e*PN		**Pn**	**10 28 01.7**	**+2.5**
DALK	**Dalny**	**4.29**	**25**	PN		**Pn**	**10 28 01.2**	**+1.5**
DALK	**Dalny**	**4.29**	**25**	*e*P		**Pn**	**10 28 01.2**	**+1.5**
UGLR	**Uglovaya**	**4.47**	**25**	PN		**Pn**	**10 28 04.2**	**+2.0**
UGLR	**Uglovaya**	**4.47**	**25**	*e*P		**Pn**	**10 28 04.2**	**+2.0**
UGLR				*e*S		**Sn**	**10 28 53.8**	**+0.8**
KOK	**Koryaka**	**4.49**	**23**	PN		**Pn**	**10 28 05.3**	**+2.7**
KOK	**Koryaka**	**4.49**	**23**	*e*P		**Pn**	**10 28 05.3**	**+2.7**
AVH	**Avacha**	**4.50**	**24**	PN		**Pn**	**10 28 04.7**	**+2.1**
AVH	**Avacha**	**4.50**	**24**	*e*P		**Pn**	**10 28 04.7**	**+2.1**
AVH				*e*S		**Sn**	**10 28 54.8**	**+1.2**
KRER	**Koryakskii**	**4.53**	**24**	PN		**Pn**	**10 28 05.0**	**+1.8**
KRER	**Koryakskii**	**4.53**	**24**	*e*P		**Pn**	**10 28 05.0**	**+1.8**
KRER				*e*S		**Sn**	**10 28 55.7**	**+1.0**
SDLR	**Sedlovina**	**4.55**	**25**	PN		**Pn**	**10 28 04.1**	**+0.8**
SDLR	**Sedlovina**	**4.55**	**25**	*e*P		**Pn**	**10 28 04.1**	**+0.8**
KRX	**Arik**	**4.56**	**23**	PN		**Pn**	**10 28 05.8**	**+2.3**
KRX	**Arik**	**4.56**	**23**	*e*P		**Pn**	**10 28 05.8**	**+2.3**
KRX				*e*S		**Sn**	**10 28 57.3**	**+2.0**
GNL	**Ganaly**	**4.72**	**16**	PN		**Pn**	**10 28 07.3**	**+1.6**
GNL	**Ganaly**	**4.72**	**16**	*e*P		**Pn**	**10 28 07.3**	**+1.6**
H11N2	**WAKE ISLAND Hy 30.73**		**159**	T		T	11 05 47.8	
	baz=345,slow=76,SNR=13							
H11N1	**WAKE ISLAND Hy 30.75**		**159**	T		T	11 05 53.2	
	baz=345,slow=76,SNR=9.9							
H11N3	**WAKE ISLAND Hy 30.75**		**159**	T		T	11 05 44.3	
	baz=345,slow=76,SNR=7.6							
H11S1	**WAKE ISLAND Hy 31.86**		**160**	T		T	11 07 12.0	
	baz=346,slow=76,SNR=45							
H11S3	**WAKE ISLAND Hy 31.87**		**160**	T		T	11 07 20.9	
	baz=346,slow=76,SNR=344							
H11S2	**WAKE ISLAND Hy 31.88**		**160**	T		T	11 07 12.8	
	baz=346,slow=76,SNR=28							
ILAR	**Eielson Array**	**33.54**	**41**	P		**P**	**10 33 31.6**	**-1.4**
	0.3nm,0.7s,baz=255,slow=6.6,SNR=4.6							
MKAR	**Makanchi Array**	**47.40**	**297**	P		**P**	**10 35 29.5**	**+1.9**
	0.4nm,0.8s,baz=47,slow=6.9,SNR=2.7							
WRA	**Warramunga Arr**	**71.41**	**201**	P		**P**	**10 38 12.4**	**-1.0**
	0.5nm,0.5s,baz=16,slow=6.2,SNR=5.6							
TXAR	**Lajitas Array**	**74.78**	**63**	P		**P**	**10 38 33.0**	**-0.6**
	0.1nm,0.6s,baz=310,slow=3.2,SNR=4.7							
TXAR	**Lajitas Array**	**74.78**	**63**	P		**P**	**10 38 33.0**	**-0.6**
ASAR	**Alice Springs**	**75.10**	**201**	P		**P**	**10 38 35.2**	**0.0**
	0.5nm,0.5s,baz=13,slow=5.3,SNR=13							

IDC ***14*** *10:31:04.6±0.9,33.°13S×178.°35W, h0km, mb4.5/4, mb1 4.7/5, mb1mx4.1/33, mbtmp4.5/5, ML4.3/1, MS3.9/5, Ms1 3.9/5, ms1mx3.6/21, Error ellipse: s-maj=38.0km s-min=28.3km az=158.0*
NEIC ***14*** *10:31:06.2±0.5, 33.°06S×178.°33W, h10km, mb4.5/2, Error ellipse: s-maj=12.9km s-min=6.9km az=110.0*

ISC 14 10:31:09.2±0.8, 33.°16S±0.°07×178.°3W±0.°1, h32km, n37, σ1§39/40, mb4.5/7, MS4.0/3, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RAO	**Raoul Island**	**3.91**	**5**	Sn		**Sn**	**10 32 49.3**	**-2.5**
	120nm,0.3s,baz=307,slow=22,SNR=2.2							
WMGZ	**Waiomatatini S**	**5.36**	**209**	PN		**Pn**	**10 32 26.3**	**-0.7**
WMGZ				SN		**Sn**	**10 33 28.6**	**+1.0**
PKGZ	**Pakihiroa**	**5.56**	**211**	PN		**Pn**	**10 32 27.6**	**-2.2**
PKGZ				SN		**Sn**	**10 33 33.3**	**+0.6**
HAZ	**Te Kaha**	**5.58**	**214**	PN		**Pn**	**10 32 29.5**	**-0.6**
HAZ				SN		**Sn**	**10 33 34.8**	**+1.7**
PUZ	**Puketiti**	**5.64**	**209**	PN		**Pn**	**10 32 27.9**	**-2.9**
PUZ				SN		**Sn**	**10 33 33.0**	**-1.6**
TWGZ	**Tauwhareparae**	**5.84**	**210**	PN		**Pn**	**10 32 31.8**	**-1.9**
TWGZ				SN		**Sn**	**10 33 40.2**	**+0.6**
CNGZ	**Carnagh Statio**	**6.02**	**207**	PN		**Pn**	**10 32 33.9**	**-2.1**
URZ	**Urewera**	**6.30**	**215**	Pn		**Pn**	**10 32 38.7**	**-1.2**
	6.8nm,0.3s,baz=45,slow=8.6,SNR=52							
URZ				Sn		**Sn**	**10 33 50.6**	**-0.3**
	14nm,0.3s,baz=210,slow=22,SNR=8.6							
URZ	**Urewera**	**6.30**	**215**	Pn		**Pn**	**10 32 38.7**	**-1.2**
URZ				*e*Pn		**Pn**	**10 32 38.9**	**-1.1**
URZ				Sn		**Sn**	**10 33 50.6**	**-0.3**
URZ	**Urewera**	**6.30**	**215**	PN		**Pn**	**10 32 38.1**	**-1.8**
OUZ	**Omahuta**	**7.01**	**251**	*e*Pn		**Pn**	**10 32 49.1**	**-0.5**
	78nm,1.0s							
RPZ	**Rata Peaks**	**13.42**	**215**	Pn		**Pn**	**10 34 13.4**	**-4.0**
	2.0nm,0.3s,baz=348,slow=14,SNR=8.3							
RPZ				Sn		Sn	10 36 31.6	-14
	0.5nm,0.3s,baz=336,slow=18,SNR=3.8							
RPZ				LR		LR	10 39 15.3	
	comp=Z,184nm,19.2s,baz=22,slow=36							
DZM	**Mont Dzumac**	**17.42**	**305**	LR		LR	10 39 32.6	
	comp=Z,418nm,21.0s,baz=142,slow=29							
DZM	**Mont Dzumac**	**17.42**	**305**	*e*LR		LR	10 39 31.3	
	771nm,22.6s							
EIDS	**Eidsvold**	**27.73**	**278**	*e*P		**P**	**10 36 56.1**	**+1.2**
	16nm,1.2s							
PPT2	**Papeete2**	**30.11**	**66**	*e*LR		LR	10 45 10.7	
	172nm,23.0s							
PPT	**Papeete**	**30.12**	**66**	LR		LR	10 49 58.8	
	comp=Z,122nm,18.6s,baz=23,slow=38							
STKA	**Stephens Creek**	**33.69**	**261**	LR		LR	10 51 04.8	
	comp=Z,439nm,18.2s,baz=66,slow=36							

CTA	**Charters Tower**	**34.07**	**283**	P		**P**	**10 37 51.7**	**+0.8**
	7.7nm,0.5s,baz=119,slow=9.5,SNR=13							
CTAO	**Charters Tower**	**34.07**	**283**	*e*P		**P**	**10 37 51.5**	**+0.6**
	23nm,0.5s							
ASAR	**Alice Springs**	**42.77**	**270**	P		**P**	**10 39 03.4**	**-0.5**
	4.1nm,0.5s,baz=110,slow=7.6,SNR=136							
ASAR				LR		LR	10 57 12.9	
	comp=Z,163nm,18.8s,baz=335,slow=37							
WRAB	**Tennant Creek**	**44.00**	**275**	*e*P		**P**	**10 39 13.2**	**-0.7**
	4.6nm,0.6s							
WRA	**Warramunga Arr**	**44.00**	**275**	P		**P**	**10 39 13.0**	**-0.9**
	2.3nm,0.4s,baz=116,slow=7.6,SNR=31							
QSPA	**South Pole Qui**	**56.96**	**180**	*e*P		**P**	**10 40 53.7**	**+2.4**
	9.3nm,0.7s							
SYO	**Syowa Base**	**74.38**	**193**	*e*X		**P**	**10 42 43.0**	**-0.3**
PETK	**Petropavlovsk-**	**88.41**	**346**	P		**P**	**10 43 57.9**	**+0.3**
	0.6nm,0.5s,baz=113,slow=8.2,SNR=2.8							
MKAR	**Makanchi Array**	**119.31**	**309**	PKP		**PKPdf**	**10 49 54.9**	**-0.1**
	0.1nm,0.3s,baz=107,slow=1.4,SNR=3.0							
BVAR	**Borovoye Array**	**128.16**	**314**	PKP		**PKPdf**	**10 50 12.3**	**+0.7**
	0.5nm,0.3s,baz=129,slow=2.6,SNR=3.1							
FINES	**FINESS Array B**	**147.62**	**338**	PKPbc		**PKPbc**	**10 50 49.5**	**-0.1**
	3.7nm,0.4s,baz=40,slow=4.4,SNR=19							
NB2	**NORSAR Subarra**	**151.42**	**350**	PKP		**PKPbc**	**10 50 59.2**	**+0.1**
	comp=Z,1.3nm,0.5s,baz=16,slow=2.6							
NOA	**NORSAR Array B**	**151.42**	**350**	PKPbc		**PKPbc**	**10 50 59.2**	**+0.1**
	comp=Z,1.3nm,0.5s,baz=14,slow=4.1,SNR=9.8							
EIL	**Elat**	**151.46**	**272**	PKPbc		**PKPbc**	**10 51 01.1**	**+1.0**
	comp=Z,4.1nm,0.6s,baz=65,slow=2.9,SNR=6.6							
MMAI	**Mount Meron Ar**	**151.81**	**279**	PKPbc		**PKPbc**	**10 51 01.6**	**+0.7**
	comp=Z,2.2nm,0.4s,baz=60,slow=3.4,SNR=7.4							
HFS	**Hagfors**	**151.88**	**347**	PKPbc		**PKPbc**	**10 51 00.1**	**0.0**
	comp=Z,3.7nm,0.8s,baz=111,slow=3.3,SNR=8.4							
AKASG	**Malin Array Be**	**153.26**	**319**	PKPbc		**PKPbc**	**10 51 03.9**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=69,slow=1.8,SNR=4.5							
BRTR	**Keskin Array B**	**153.56**	**294**	PKPbc		**PKPbc**	**10 51 04.8**	**+0.1**
	comp=Z,1.2nm,0.5s,baz=140,slow=3.9,SNR=8.4							
TORD	**Torodi Ar. Bea**	**160.08**	**180**	PKPab		**PKPab**	**10 51 46.1**	**+0.6**
	comp=Z,1.4nm,0.9s,baz=180,slow=2.8,SNR=6.6							

MEX 14 10:43:57.5±0.4, 17.°39N×101.°12W, h10km±12km, MD3.7, 1C, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ZIIG	**Zihuatanejo**	**0.40**	**303**	*i* P		Pg	10 44 05.2	-0.2
ZIIG				*i* S		Sg	10 44 10.7	0.0
CAIG	**El Cayaco**	**0.88**	**113**	*e*P		Pg	10 44 11.8	-2.6
CAIG				*i* S		Sg	10 44 23.4	-2.5
ARIG	**Puente Sto Nin**	**1.15**	**39**	*e*P		Pb	10 44 15.8	-3.7
ARIG				*e*S		Sb	10 44 30.4	-4.2
MEIG	**Mezcala**	**1.52**	**69**	*i* P		Pn	10 44 22.0	-2.9
MEIG				*e*S		Sn	10 44 40.6	-4.2
PLIG	**Platanillo**	**1.83**	**57**	*i* P		Pn	10 44 25.1	-4.0
PLIG				ĩ*i* S		Sn	10 44 47.4	-5.0

MEX 14 11:05:08.4±0.5, 16.°19N×98.°03W, h5km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PNIG	**Pinotepa**	**0.22**	**336**	*e*P		Pg	11 05 12.0	-0.7
PNIG				*i* S		Sg	11 05 15.9	+0.2
TLIG	**Tlapa**	**1.46**	**340**	*e*P		Pn	11 05 32.4	-3.2
TLIG				*i* S		Sb	11 05 50.3	-4.7
VHO	**Vista Hermosa**	**1.52**	**55**	*e*P		Pn	11 05 33.1	-3.4
VHO				*e*S		Sn	11 05 51.8	-5.0
HUIG	**Huatulco**	**1.90**	**102**	*i* P		Pn	11 05 38.0	-3.5
HUIG				*i* S		Sn	11 06 01.1	-4.7
TPIG	**Tehuac#an**	**2.31**	**16**	*i* P		Pn	11 05 43.8	-3.5
TPIG				*e*S		Sn	11 06 11.6	-4.6
PLIG	**Platanillo**	**2.60**	**328**	*i* P		Pn	11 05 47.4	-3.9
PLIG				*i* S		Sn	11 06 20.1	-3.2
YAIG	**Yautepec**	**2.83**	**340**	*i* P		Pn	11 05 52.1	-2.4
YAIG				*i* S		Sn	11 06 24.7	-4.4

IDC ***14*** *11:17:30.6±0.5, 38.°20S×93.°83W, h0km, mb4.7/14, mb1 4.8/15, mb1mx4.7/24, mbtmp4.7/15, ML3.8/1, MS4.6/18, Ms1 4.5/18, ms1mx4.5/19, Error ellipse: s-maj=18.3km s-min=16.0km az=128.0*
ISCJB ***14*** *11:17:30.7±0.3, 38.°12S±0.°06×93.°14W±0.°08, h10km, mb5.1/130, MS4.6/22, Error ellipse: s-maj=9.1km s-min=7.7km az=142.0*
MOS ***14*** *11:17:31.4±1.4, 38.°18S×93.°71W, h10km, mb5.4/36, Error ellipse: s-maj=25.6km s-min=8.8km az=93.7*
BJI ***14*** *11:17:31.9, 38.°10S×92.°90W, h10km, mB5.1/17, Ms5.2/16, Ms7 5.0/18*
NEIC ***14*** *11:17:32.3±0.3, 38.°19S×93.°06W, h10km, mb5.2/119, Error ellipse: s-maj=11.3km s-min=8.6km az=58.0*
GCMT ***14*** *11:17:32.3±0.1, 38.°21S×93.°77W, h12km, MW5.2/110, Moment Tensor Solution. s72,c105; s110,c185; Duration: 1§0 Moment tensor: Scale 1017Nm; Mrr=0.76±.01; Mθθ 0.03±.01; Mφφ 0.73±.01; Mrθ 0.33±.04; Mθφ-0.14±.01; Mφr-0.26±.03; Best double couple: M=0.86500×10^17 NP1=φs332.00000°, δ59.00000°, λ-108.00000°. NP2=φs184.00000°, δ35.00000°, λ-63.00000°. Principal axes: T 0.8260, Plg12.0000°, Azm75.0000°; N 0.0770, Plg15.0000°, Azm342.0000°; P -0.9030, Plg70.0000°, Azm202.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 14 11:17:32.1±0.3, 38.°22S±0.°07×93.°48W±0.°06, h10km, n764, σ1§22/758, mb5.2/131, MS4.6/22, 6C-2D, West Chile Rise

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PLCA	**Paso Flores**	**17.87**	**105**	P		**P**	**11 21 44.3**	**+2.8**
	0.1nm,0.3s,baz=280,slow=12,SNR=6.7							
PLCA				LR		LR	11 26 58.8	
	comp=Z,3μm,20.2s,baz=294,slow=31							
PLCA	**Paso Flores**	**17.87**	**105**	*e*P		**Pn**	**11 21 38.4**	**-2.5**
PLCA	**Paso Flores**	**17.87**	**105**	*e*Pn		**Pn**	**11 21 38.4**	**-2.5**
	98nm,1.6s							
PLCA				P		**P**	**11 21 44.3**	**+2.8**
LCO	**Las Campanas**	**21.03**	**71**	*e*P		**P**	**11 22 19.6**	**+3.2**
	159nm,1.6s							
USHA	**Ushuaia**	**23.74**	**143**	P		**P**	**11 22 46.8**	**+2.5**
	70nm,0.8s,baz=271,slow=11,SNR=5.5							
USHA				LR		LR	11 30 09.5	
	comp=Z,6μm,18.8s,baz=280,slow=32							
TRQA	**Tornquist**	**24.72**	**99**	*e*P		**P**	**11 22 52.0**	**-1.6**
	94nm,1.4s							
PB04	**IPOC Station P**	**25.52**	**58**	*e*P		**P**	**11 22 59.2**	**-1.9**
	100nm,1.3s							
LVC	**Limon Verde**	**26.18**	**61**	P		**P**	**11 23 08.6**	**+1.4**
	91nm,1.1s,baz=231,slow=9.1,SNR=13							
LVC				LR		LR	11 30 57.8	
	comp=Z,10μm,19.7s,baz=224,slow=31							
LVC	**Limon Verde**	**26.18**	**61**	*e*P		**P**	**11 23 00.9**	**-6.3**
LVC				P		**P**	**11 23 08.6**	**+1.4**
PB01	**IPOC Station P**	**26.86**	**57**	*e*P		**P**	**11 23 14.8**	**+1.7**
	103nm,1.6s							
NNA	**Nana**	**30.05**	**34**	P		**P**	**11 23 42.3**	**+0.8**
	3.8nm,0.4s,baz=222,slow=6.7,SNR=2.6							
NNA				LR		LR	11 32 45.6	
	comp=Z,1μm,18.5s,baz=206,slow=30							
LPAZ	**La Paz**	**31.20**	**53**	P		**P**	**11 23 54.4**	**+2.0**
	12nm,1.1s,baz=234,slow=7.1,SNR=8.2							
LPAZ				LR		LR	11 33 46.9	
	comp=Z,562nm,20.1s,baz=214,slow=31							
LPAZ	**La Paz**	**31.20**	**53**	*e*P		P	11 23 44.8	-7.6
LPAZ	**La Paz**	**31.20**	**53**	*e*P		P	11 23 44.8	-7.6
LPAZ				P		**P**	**11 23 54.4**	**+2.0**
CPUP	**Villa Florida**	**32.59**	**79**	P		**P**	**11 24 04.9**	**+1.1**
	2.3nm,0.8s,baz=236,slow=11,SNR=4.4							
CPUP				LR		LR	11 36 03.5	
	comp=Z,1μm,18.7s,baz=248,slow=34							
CPUP	**Villa Florida**	**32.59**	**79**	*e*P		**P**	**11 24 00.4**	**-3.4**
CPUP	**Villa Florida**	**32.59**	**79**	*e*P		**P**	**11 24 00.4**	**-3.4**
ATAH	**Atahualpa**	**33.83**	**28**	P		**P**	**11 24 16.7**	**+1.6**
	32nm,1.0s,baz=174,slow=9.2,SNR=4.9							
SIV	**San Ignacio**	**36.07**	**61**	P		**P**	**11 24 35.8**	**+1.7**
	5.5nm,1.0s,baz=243,slow=6.8,SNR=11							
SIV				PcP		**PcP**	**11 27 01.0**	**+0.8**
	1.7nm,0.6s,baz=220,slow=3.9,SNR=3.6							
RKT	**Rikitea**	**38.40**	**281**	*e*LR		LR	11 35 18.8	
	2μm,29.2s,baz=123							
SAML	**Samuel**	**39.90**	**51**	*e*P		**P**	**11 25 03.1**	**-3.3**
	64nm,1.8s							
OTAV	**Otavalo**	**40.70**	**23**	*e*P		**P**	**11 25 11.0**	**-2.5**
	75nm,1.5s							
PRAC	**Prado**	**45.14**	**27**	*e*P		**P**	**11 25 46.0**	**-3.0**
	96nm,1.6s							
BDFB	**Brasilia**	**45.79**	**73**	P		**P**	**11 25 56.8**	**+2.4**
	1.9nm,0.4s,baz=169,slow=27,SNR=3.8							
BDFB				LR		LR	11 44 25.0	
	comp=Z,1μm,18.0s,baz=168,slow=35							
ROSC	**El Rosal**	**46.39**	**27**	P		**P**	**11 26 04.0**	**+4.7**
	4.2nm,0.4s,baz=136,slow=7.6,SNR=13							
ROSC				LR		LR	11 43 22.4	
	comp=Z,406nm,18.1s,baz=214,slow=33							
ROSC	**El Rosal**	**46.39**	**27**	*e*P		**P**	**11 26 03.0**	**+3.8**
ROSC	**El Rosal**	**46.39**	**27**	*e*P		**P**	**11 26 01.8**	**+2.5**
	78nm,1.5s							
CHIC	**Chingaza**	**46.41**	**28**	*e*P		P	11 26 05.3	+5.9
NORC	**Norcasia**	**46.87**	**26**	*e*P		**P**	**11 26 04.2**	**+1.5**
HELC	**Santa Helena**	**47.23**	**25**	*e*P		**P**	**11 26 07.0**	**+1.2**
HELC	**Santa Helena**	**47.23**	**25**	*e*P		**P**	**11 26 08.8**	**+3.0**
HELC				*e*			11 26 13.6	
RUSC	**La Rusia**	**47.81**	**28**	*e*P		**P**	**11 26 10.4**	**-0.1**
RUSC	**La Rusia**	**47.81**	**28**	*e*P		**P**	**11 26 13.0**	**+2.5**
	32nm,1.6s							
PTGA	**Pitinga**	**48.36**	**48**	*e*P		**P**	**11 26 16.3**	**+2.1**
	49nm,1.7s							
BARC	**Barichara**	**48.42**	**27**	*e*P		**P**	**11 26 14.3**	**-0.6**
GRMC	**Gramalote, San**	**49.60**	**27**	*e*P		**P**	**11 26 25.7**	**+1.8**
CBRI	**Barrientos, No**	**49.60**	**27**	*e*P		**P**	**11 26 21.7**	**-2.2**
TBI	**Tubuai**	**49.62**	**270**	*e*S		**S**	**11 33 30.6**	**-1.7**
	350nm,25.8s							
TBI				*e*LR		LR	11 40 26.3	
	3μm,27.2s,baz=120							
TAOE	**Nuku Hiva Isla**	**51.07**	**292**	*e*S		**S**	**11 33 52.8**	**0.0**
	390nm,25.6s							
TAOE				*e*LR		LR	11 41 09.7	
	1μm,26.1s,baz=148							
MEH	**Mehetia**	**51.49**	**277**	*e*T		T	12 21 28.3	
	13nm,0.2s							
TIAR	**Tiarei**	**52.67**	**277**	*e*T		T	12 22 56.8	
	2.7nm,0.2s							
PPT2	**Papeete2**	**52.83**	**277**	*e*S		**S**	**11 34 12.9**	**-4.0**
	676nm,24.8s							
PPT2				*e*LR		LR	11 41 49.1	
	2μm,25.2s,baz=112							
PPT	**Papeete**	**52.84**	**277**	LR		LR	11 42 52.9	
	comp=Z,722nm,18.8s,baz=150,slow=29							
CCIG	**Comitan**	**54.23**	**2**	*e*P		**P**	**11 27 00.5**	**+2.2**
	48nm,1.4s							
SNAA	**Sanae**	**54.43**	**157**	*e*P		**P**	**11 26 59.7**	**+0.5**
SNAA				pmax		pmax		
	comp=Z,62nm,1.5s							
SNAA	**Sanae**	**54.43**	**157**	*e*P		**P**	**11 26 59.7**	**+0.5**
	comp=Z,62nm,1.5s							
SBA	**Scott Base**	**54.98**	**195**	*e*P		**P**	**11 27 03.1**	**+0.2**
SBA				pmax		pmax		
	comp=Z,15nm,1.0s							
SBA	**Scott Base**	**54.98**	**195**	*e*P		**P**	**11 27 03.1**	**+0.2**
	comp=Z,15nm,1.0s							
VNDA	**Vanda**	**56.09**	**195**	P		**P**	**11 27 10.9**	**+0.1**
	comp=Z,4.5nm,1.0s,baz=115,slow=6.0,SNR=12							
VNDA				LR		LR	11 46 37.0	
	comp=Z,206nm,20.1s,baz=108,slow=31							
VNDA	**Vanda**	**56.09**	**195**	*e*P		**P**	**11 27 10.5**	**-0.4**
VNDA				pmax		pmax		
	comp=Z,27nm,1.5s							
VNDA	**Vanda**	**56.09**	**195**	*e*P		**P**	**11 27 10.5**	**-0.4**
	comp=Z,27nm,1.5s							
NVL	**N'lazarevskaya**	**59.18**	**158**	*e*P		**P**	**11 27 32.3**	**-0.4**
ZAIG	**Zacatecas**	**61.26**	**350**	*e*P		**P**	**11 27

447A Lucedale 68.81 4 P P 11 28 36.7 +0.3
baz=184
433A Art 68.82 355 P P 11 28 35.9 -0.6
baz=175
434A Burnet 68.82 356 P P 11 28 36.0 -0.5
baz=176
448A Bay Minette 68.99 5 P P 11 28 37.4 -0.1
baz=184
343A Vidalia 69.17 2 P P 11 28 38.6 0.0
baz=181
341A Kurthwood 69.19 0 P P 11 28 38.3 -0.4
baz=180
339A Huntington 69.20 359 P P 11 28 38.7 -0.1
baz=179
337A Centerville 69.21 358 P P 11 28 39.3 +0.4
baz=178
338A Crockett 69.24 358 P P 11 28 39.4 +0.4
baz=178
335A Moody 69.24 356 P P 11 28 38.7 -0.3
baz=176
342A Flagon Creek P 69.24 1 P P 11 28 40.0 +0.9
baz=181
345A Thompson Farm, 69.24 3 P P 11 28 39.9 +0.9
baz=182
340A Bronson 69.28 360 P P 11 28 38.9 -0.4
baz=179
336A Riesel 69.32 357 P P 11 28 39.2 -0.3
baz=177
334A Lometa 69.33 356 P P 11 28 39.2 -0.5
baz=176
346A Big Creek Wild 69.35 4 P P 11 28 39.3 -0.4
baz=183
344A Westbrook Farm 69.36 3 P P 11 28 39.6 -0.2
baz=182
333A Richland Sprin 69.38 355 P P 11 28 39.9 -0.1
baz=175
347A Saraland 69.42 5 P P 11 28 40.3 +0.2
baz=184
348A Jackson 69.47 5 P P 11 28 40.9 +0.4
baz=184
NATX Nacogdoches 69.63 359 P P 11 28 42.1 +0.6
baz=179
243A Waterproof 69.76 2 P P 11 28 42.9 +0.7
baz=181
238A Jacksonville 69.88 359 P P 11 28 42.4 -0.6
baz=178
239A Gary 69.88 359 P P 11 28 42.5 -0.5
baz=179
241A Mo Tay, Goldon 69.88 1 P P 11 28 42.2 -0.8
baz=180
237A Washetta, Mont 69.89 358 P P 11 28 42.6 -0.5
baz=178
240A Hunter Patters 69.90 360 P P 11 28 42.7 -0.4
baz=179
TIGA Tifton 69.91 9 P P 11 28 43.6 +0.4
baz=188
236A Katherine and 69.92 357 P P 11 28 43.3 +0.1
baz=177
242A Grayson 69.93 1 P P 11 28 43.4 +0.1
baz=181
WHTX Lake Whitney, 69.95 356 P P 11 28 43.2 -0.2
baz=176
WHTX Lake Whitney, 69.95 356 eP P 11 28 43.4 0.0
comp=Z,68nm,1.4s
244A Avery, Jackson 69.95 3 P P 11 28 43.7 +0.3
baz=182
245A Little AP, Sta 69.97 3 P P 11 28 44.2 +0.6
baz=183
246A Jackson Lee, B 69.99 4 P P 11 28 43.6 0.0
baz=183
234A Clairette 70.00 356 P P 11 28 43.5 -0.2
baz=176
233A Rising Star 70.06 355 P P 11 28 43.7 -0.5
baz=175
247A Quitman 70.06 4 P P 11 28 44.4 +0.3
baz=184
VBMS Vicksburg 70.13 3 P P 11 28 44.2 -0.3
baz=182
248A Dixon Mills 70.16 5 P P 11 28 44.9 +0.2
baz=184
136A Ennis 70.39 357 P P 11 28 46.3 +0.2
baz=177
142A Monroe 70.42 1 P P 11 28 46.6 +0.3
baz=181
MNTX Cornudas Mount 70.44 349 P P 11 28 45.3 -1.2
baz=170,SNR=6.7
MNTX Cornudas Mount 70.44 349 eP P 11 28 46.0 -0.5
comp=Z,13nm,1.3s
141A Papa Simpson, 70.46 1 P P 11 28 47.1 +0.6
baz=180
137A Heron Place, G 70.49 358 P P 11 28 46.6 -0.1
baz=178
140A Cam and Jess, 70.50 360 P P 11 28 47.1 +0.4
baz=180
135A Vickery Place, 70.51 356 P P 11 28 46.7 -0.2
baz=176
138A Matatall Enter 70.53 359 P P 11 28 47.5 +0.5
baz=178
145A Houston Renfro 70.54 3 P P 11 28 47.0 0.0
baz=183
139A Bunkhouse Ranc 70.54 359 P P 11 28 46.0 -1.0
baz=179
144A Alexander Plac 70.55 3 P P 11 28 46.7 -0.3
baz=182
134A White-Moore Ra 70.56 356 P P 11 28 46.7 -0.4
baz=176
143A Socs Landing, 70.59 2 P P 11 28 46.4 -0.9
baz=181
146A Union 70.61 4 P P 11 28 47.0 -0.5
baz=183
133A Hamilton Ranch 70.65 355 P P 11 28 47.4 -0.3
baz=175
147A Livingston 70.70 5 P P 11 28 47.8 -0.1
baz=184
ABTX Abilene, Hawle 70.71 354 P P 11 28 47.7 -0.4
baz=174
ABTX Abilene, Hawle 70.71 354 eP P 11 28 48.2 0.0
comp=Z,41nm,1.5s
319A Douglas 70.79 346 eP P 11 28 51.6 +2.9
comp=Z,24nm,1.3s
Z37A Pogue Cattle C 71.08 358 P P 11 28 50.2 -0.1
baz=178
Z43A Armstrong Fami 71.10 2 P P 11 28 50.1 -0.3
baz=182
Z39A Irene McRaven, 71.10 359 P P 11 28 50.8 +0.4
baz=179
Z40A Long Farm, Mag 71.11 0 P P 11 28 50.6 +0.1
baz=180
Z41A Richland Creek 71.12 1 P P 11 28 50.9 +0.4
baz=180
Z38A Mt. Pleasant 71.12 359 P P 11 28 50.5 0.0
baz=178
Z42A Norrel Spur, H 71.14 1 P P 11 28 50.3 -0.4
baz=181
LRAL Lakeview Retre 71.15 6 eP P 11 28 50.0 -0.7
comp=Z,36nm,1.4s
Z46A Louisville 71.17 4 P P 11 28 51.1 +0.2
baz=183
Z36A Blue Ridge 71.18 357 P P 11 28 50.5 -0.4
baz=177
Z44A Pea Ridge, Bel 71.19 3 P P 11 28 50.9 -0.1
baz=182
Z47A Carrollton 71.23 5 P P 11 28 50.8 -0.4
baz=184
Z35A Perchaven, San 71.27 357 P P 11 28 50.4 -1.0
baz=176
Z33A Whitaker Ranch 71.31 355 P P 11 28 51.1 -0.7
baz=175
Z45A Winona 71.31 3 P P 11 28 51.0 -0.7
baz=183
Z34A Collier Ranch, 71.34 356 P P 11 28 51.1 -0.8
baz=176
Z48A Northport 71.44 5 P P 11 28 52.1 -0.4
baz=185
WLAR White Oak Lake 71.54 0 eP P 11 29 00.4 +7.3
121A Cookes Peak, D 71.64 347 P P 11 28 54.0 0.0
baz=168
Y42A Garnett, Star 71.71 1 P P 11 28 53.7 -0.4
baz=181
Y41A Eaglette Beard 71.74 1 P P 11 28 53.9 -0.4
baz=180
Y38A Idabel 71.79 359 P P 11 28 53.7 -0.8
baz=179
Y39A Lockesburg 71.79 359 P P 11 28 53.7 -0.8
baz=179
Y36A Durant 71.80 358 P P 11 28 53.6 -1.1
baz=177
Y43A Makayla and Ka 71.81 2 P P 11 28 54.0 -0.7
baz=182
Y45A Yeager Farm, C 71.81 3 P P 11 28 54.0 -0.7
baz=183
Y35A Marietta 71.83 357 P P 11 28 54.4 -0.4
baz=177
Y46A Houston 71.86 4 P P 11 28 54.2 -0.9
baz=184
GOGA Godfrey 71.87 9 eP P 11 29 01.9 +6.8
GOGA Godfrey 71.87 9 eP P 11 29 01.9 +6.8
Y44A Strider, Charl 71.88 3 P P 11 28 54.9 -0.2
baz=182
Y34A Reagan Ranch, 71.92 356 P P 11 28 55.1 -0.3
baz=176
Y47A UCPARC, Winfie 71.95 5 P P 11 28 55.5 0.0
baz=184
TUC Tucson 72.00 345 P P 11 28 56.1 +0.2
baz=166
TUC Tucson 72.00 345 eP P 11 28 56.7 +0.8
TUC pmax pmax
comp=Z,15nm,1.4s
TUC Tucson 72.00 345 eP P 11 28 56.7 +0.8
comp=Z,15nm,1.4s
Y33A Hilltop Ranch, 72.02 356 P P 11 28 55.7 -0.3
baz=175
214A Organ Pipe Nat 72.10 343 P P 11 28 56.8 +0.2
baz=164
X35A Drake 72.32 357 P P 11 28 57.7 -0.1
baz=177
MSTX Muleshoe 72.34 352 P P 11 28 57.2 -0.8
baz=172,SNR=8.2
MSTX Muleshoe 72.34 352 eP P 11 28 58.1 +0.1
comp=Z,60nm,1.4s
X40A Basin Creek Fa 72.34 1 P P 11 28 57.1 -0.7
baz=180
X41A Kaden, Bauxite 72.35 1 P P 11 28 57.8 -0.1
baz=180
X39A Fountain Ranch 72.36 359 P P 11 28 57.8 -0.2
baz=179,SNR=10
X45A UM Field Stati 72.38 4 P P 11 28 57.4 -0.7
baz=183
MIAR Mount Ida 72.40 360 P P 11 28 58.0 -0.2
baz=180
MIAR Mount Ida 72.40 360 eP P 11 28 58.3 +0.1
MIAR pmax pmax
comp=Z,33nm,1.3s
MIAR Mount Ida 72.40 360 eP P 11 28 58.2 +0.1
comp=Z,32nm,1.3s
X43A Marvell 72.41 2 P P 11 28 58.1 -0.2
baz=182
X44A Crenshaw 72.42 3 P P 11 28 57.6 -0.7
baz=182
X37A Clayton 72.46 358 P P 11 28 57.9 -0.7
baz=178
X36A Centrahoma 72.47 358 P P 11 28 58.5 -0.2
baz=177
X32A Elmer 72.47 355 P P 11 28 58.8 +0.1
baz=175
X38A Whitesboro 72.53 359 P P 11 28 58.5 -0.5
baz=178
X33A Lawton 72.54 356 P P 11 28 58.6 -0.5
baz=176
X34A Smith Ranch, M 72.56 356 P P 11 28 58.8 -0.4
baz=176
WMOK Wichita Mounta 72.76 355 P P 11 28 60.0 -0.5
baz=175
WMOK Wichita Mounta 72.76 355 eP P 11 28 59.9 -0.5
WMOK e 11 29 06.0
WMOK Wichita Mounta 72.76 355 eP P 11 28 59.9 -0.5
WMOK ePcP sP 11 29 06.0 +1.2
W38A Poteau 72.93 359 P P 11 29 01.3 -0.1
baz=179
MAW Mawson 72.99 171 P P 11 29 00.7 -0.7
comp=Z,7.3nm,1.0s,baz=188,slow=6.8,SNR=7.7
MAW LR LR 11 59 03.2
comp=Z,169nm,20.1s,baz=240,slow=34
Y22D IRIS PASSCAL I 73.00 348 P P 11 29 02.7 +0.7
baz=169
W37B Quinton 73.01 358 P P 11 29 01.3 -0.6
baz=178
JSC Jenkinsville 73.02 11 eP P 11 29 00.9 -1.0
JSC pmax pmax
comp=Z,75nm,1.4s
JSC Jenkinsville 73.02 11 eP P 11 29 00.8 -1.0
comp=Z,75nm,1.4s
BNM Barren Site 73.03 349 eP P 11 29 03.2 +0.9
W41B Gary Mavity, V 73.03 1 P P 11 29 01.8 -0.1
baz=181
W36A Wetumka 73.03 358 P P 11 29 02.9 +0.9
baz=177
W40A Ferguson Farm, 73.04 0 P P 11 29 02.4 +0.4
baz=180
W39A Magazine 73.05 360 P P 11 29 02.1 0.0
baz=179
W35A Tecumseh 73.07 357 P P 11 29 01.7 -0.6
baz=177
X301 Greenbrier Sit 73.10 1 eP P 11 29 02.5 +0.2
comp=Z,68nm,1.6s
W45A Hickory Valley 73.12 4 P P 11 29 02.2 -0.2
baz=183
AMTX Amarillo 73.13 353 P P 11 29 02.6 -0.1
baz=173
AMTX Amarillo 73.13 353 eP P 11 29 03.1 +0.5
comp=Z,39nm,1.2s
W33A Caddo, Fort Co 73.15 356 P P 11 29 02.6 0.0
baz=176
WHAR Wooly Hollow 73.15 1 eP P 11 29 02.8 +0.2
comp=Z,44nm,1.3s
W32A Sentinel 73.17 355 P P 11 29 02.5 -0.3
baz=175
LPM Los Pinos Moun 73.19 349 eP P 11 29 01.7 -1.4
W34A Bridge Creek, 73.19 356 P P 11 29 03.0 +0.1
baz=176
W34A Bridge Creek, 73.19 356 eP P 11 29 02.9 -0.1
comp=Z,34nm,1.1s
LAZ Ladron 73.36 348 eP P 11 29 01.7 -2.5
SWET Sewanee 73.40 6 eP P 11 29 03.7 -0.5
comp=Z,18nm,1.4s
IKP In-Ko-Pah, Jac 73.59 340 P P 11 29 05.5 +0.1
baz=161
GLA Glamis 73.64 341 P P 11 29 05.5 -0.1
baz=162
V41A Mountainview 73.64 1 P P 11 29 05.2 -0.4
baz=181
V40A Witts Springs 73.66 1 P P 11 29 05.4 -0.3
baz=180
V36A Jenks 73.67 358 P P 11 29 05.9 +0.2
baz=178
V35A Meyer Ranch, C 73.68 357 P P 11 29 05.4 -0.4
baz=177
V42A Cord 73.68 2 P P 11 29 05.0 -0.8
baz=181
V39A Pettigrew 73.69 360 P P 11 29 05.5 -0.4
baz=180
V38A Canehill 73.72 359 P P 11 29 05.5 -0.5
baz=179
V37A Hulbert 73.75 359 P P 11 29 05.7 -0.4
baz=178
V32A Arapaho 73.75 355 P P 11 29 05.8 -0.4
baz=175
V34A Guthrie 73.78 357 P P 11 29 05.5 -0.9
baz=176
ANMO Albuquerque 73.78 349 P P 11 29 06.5 -0.1
baz=169
ANMO Albuquerque 73.78 349 eP P 11 29 06.1 -0.6
ANMO pmax pmax
comp=Z,5.0nm,1.2s
ANMO Albuquerque 73.78 349 eP P 11 29 07.1 +0.5
comp=Z,17nm,1.4s
SWSC Sam W. Stewart 73.79 341 P P 11 29 06.8 +0.3
baz=162
TUL1 Leonard 73.79 358 P P 11 29 05.9 -0.6
baz=178
TUL1 Leonard 73.79 358 eP P 11 29 08.3 +1.8
comp=Z,24nm,1.1s
V33A Lossen Ranch, 73.80 356 P P 11 29 06.2 -0.3
baz=176
KMSC Kings Mountain 73.86 10 P P 11 29 06.5 -0.3
baz=190
KMSC Kings Mountain 73.86 10 eP P 11 29 05.9 -0.9
comp=Z,61nm,1.5s
MONP2 Monument Peak 73.90 340 P P 11 29 07.5 0.0
baz=161
X18A Snowflake 73.98 346 eP P 11 29 09.8 +2.0
comp=Z,72nm,1.7s
TKL Tuckaleechee C 74.06 8 eP P 11 29 07.9 -0.1
TKL pmax pmax
comp=Z,55nm,1.8s
TKL Tuckaleechee C 74.06 8 eP P 11 29 07.9 -0.1
comp=Z,55nm,1.8s
109C Camp Elliot, M 74.08 339 P P 11 29 08.2 0.0
baz=161
HHAR Hobbs 74.13 360 eP P 11 29 08.2 -0.2
comp=Z,29nm,1.3s
WVT Waverly 74.16 5 eP P 11 29 08.0 -0.6
WVT pmax pmax
comp=Z,22nm,1.4s
WVT Waverly 74.16 5 eP P 11 29 08.0 -0.6
comp=Z,22nm,1.4s
X16A Lo Mia Camp, P 74.17 345 eP P 11 29 10.1 +1.1
comp=Z,40nm,1.8s
U40A Yellville 74.21 1 P P 11 29 08.4 -0.5
baz=180
U42A Revenden 74.23 2 P P 11 29 08.1 -0.9
baz=182
Y12C Blythe 74.23 342 P P 11 29 09.5 +0.5
baz=183
Y12C Blythe 74.23 342 eP P 11 29 09.9 +0.9
comp=Z,31nm,1.3s
U39A Green Forest 74.23 0 P P 11 29 08.5 -0.5
baz=180
U37A Salina 74.27 359 P P 11 29 08.9 -0.3
baz=178,SNR=10
U36A Oologah 74.27 358 P P 11 29 08.8 -0.4
baz=178
U35A Pawnee 74.28 357 P P 11 29 09.1 -0.2
baz=177
U38A Gravette 74.29 359 P P 11 29 08.9 -0.5
baz=179
BC3 Big Chuckawall 74.37 341 P P 11 29 10.1 +0.1
baz=162
U34A Anderson Ranch 74.38 357 P P 11 29 09.5 -0.4
baz=176
U34A Anderson Ranch 74.38 357 eP P 11 29 09.2 -0.7
comp=Z,56nm,1.4s
U32A Winter Ranch, 74.40 355 P P 11 29 09.9 -0.2
baz=175
U33A Lingo Farm, Me 74.40 356 P P 11 29 09.6 -0.4
baz=176
CNNC Cliffs of the 74.50 13 eP P 11 29 10.0 -0.6
comp=Z,100nm,0.3s
W18A Petrified Fore 74.51 346 P P 11 29 11.4 +0.5
baz=166
TPFO Pinon Flats 74.58 340 P P 11 29 11.7 +0.4
baz=161
PFO Pinyon Flats O 74.59 340 P P 11 29 11.7 +0.4
baz=161
PDMCI Parker Dam,Lak 74.66 342 P P 11 29 11.8 +0.2
baz=163
PBMO Poplar Bluff 74.68 3 eP P 11 29 11.1 -0.5
comp=Z,24nm,1.3s
IRM Iron Mountain 74.77 342 P P 11 29 12.5 +0.3
baz=162
MURC Murrieta 74.78 340 P P 11 29 12.6 +0.3
baz=161
T35A Sooner Cattle 74.81 357 P P 11 29 12.2 -0.2
baz=177
BELC Belle Mtn. Jos 74.84 341 P P 11 29 13.2 +0.4
baz=162
T39A Clever 74.87 0 P P 11 29 12.2 -0.5
baz=180
T38A Diamond 74.89 359 P P 11 29 12.8 0.0
baz=179
T41A Mountain View 74.91 1 P P 11 29 13.1 +0.2
baz=181
CIS Catalina Islan 74.94 339 P P 11 29 12.7 -0.4
baz=160
T36A Boggs Farm, Ca 74.94 358 P P 11 29 13.3 +0.2
baz=178
T34A McClaskey Farm 74.95 357 P P 11 29 13.0 -0.2
baz=177
T37A Chenoyville 18 74.98 359 P P 11 29 13.3 -0.1
baz=178
T40A Mansfield 75.00 1 P P 11 29 13.1 -0.4
baz=180
WUAZ Wupatki 75.22 345 P P 11 29 15.5 +0.6
baz=165
WUAZ Wupatki 75.22 345 eP P 11 29 16.0 +1.1
comp=Z,37nm,1.6s
W13A Hualapai Mount 75.36 343 eP P 11 29 16.4 +0.6
comp=Z,15nm,1.4s
S40A Lebanon 75.45 1 P P 11 29 15.4 -0.6
baz=180,SNR=5.3
S41A Jillco Farms, 75.45 1 P P 11 29 15.6 -0.4
baz=181
S38A Stockton 75.48 360 P P 11 29 15.6 -0.6
baz=179,SNR=11
S43A Fulton Ridge, 75.48 3 P P 11 29 15.2 -1.0
baz=182
GMRC Granite Mounta 75.49 341 P P 11 29 17.2 +0.7
baz=162
BFSC Mount Baldy Ra 75.51 339 P P 11 29 16.5 -0.1
baz=160
S39A Bolivar 75.54 0 P P 11 29 16.2 -0.3
baz=180
S33A Kaszmaul Farm, 75.55 356 P P 11 29 16.5 -0.2
baz=176
S35A Otter Creek Ra 75.57 358 P P 11 29 16.6 -0.2
baz=177
S36A Lake Cedric, C 75.59 358 P P 11 29 16.7 -0.2
baz=178
S37A Fort Scott 75.61 359 P P 11 29 16.5 -0.4
baz=179
S34A Willow Spring 75.62 357 P P 11 29 16.7 -0.3
baz=177
S45A Carrier Mills 75.66 4 P P 11 29 16.8 -0.4
baz=184
T25A Trinidad 75.66 351 P P 11 29 17.5 -0.1
baz=171,SNR=10
T25A Trinidad 75.66 351 eP P 11 29 18.6 +1.1
comp=Z,45nm,1.5s
DECC Green Verdugo 75.71 339 P P 11 29 18.2 +0.5
baz=160
HEC Hector,Ludlow 75.71 341 P P 11 29 17.8 +0.1
baz=161
S32A Newby Ranch, P 75.71 356 P P 11 29 17.8 +0.2
baz=175
BLG Laguna Peak, P 75.78 338 P P 11 29 18.6 +0.6
baz=159
SCZ2 Santa Cruz Isl 75.84 338 P P 11 29 19.2 +0.8
baz=159
RRX Edison Barstow 75.93 340 P P 11 29 19.0 +0.2
baz=161
R38A Fenwick Farm, 76.03 360 P P 11 29 18.9 -0.4
baz=179
R40A Maddies Statio 76.14 1 P P 11 29 19.5 -0.5
baz=181
OSI Osito Audit: C 76.16 339 P P 11 29 20.6 +0.4
baz=160
R37A Teagarden Farm 76.17 359 P P 11 29 20.2 +0.1
baz=179
TUQ Turquoise Moun 76.18 341 P P 11 29 21.3 +0.9
baz=162
R36A Gordon, Harris 76.19 358 P P 11 29 20.1 -0.2
baz=178
R44A Waltonville 76.20 4 P P 11 29 20.7 +0.5
baz=183
EDW2 Edwards Air Fo 76.20 339 P P 11 29 20.7 +0.3
baz=160
R35A Emporia Munici 76.21 358 P P 11 29 20.6 +0.2
baz=178
R34A Isabella, Hill 76.22 357 P P 11 29 20.3 -0.2
baz=177
R33A Olander Ranch, 76.27 356 P P 11 29 21.5 +0.8
baz=181
GSC Goldstone, Bar 76.28 341 P P 11 29 21.8 +0.8
baz=161
GSC Goldstone, Bar 76.28 341 eP P 11 29 21.9 +1.0
GSC pmax pmax
comp=Z,26nm,1.5s
GSC Goldstone, Bar 76.28 341 eP P 11 29 21.9 +1.0
comp=Z,26nm,1.5s
SBC Santa Barbara 76.28 338 P P 11 29 22.7 +1.9
baz=159
U15A North Rim 76.29 344 eP P 11 29 22.5 +1.3
MVCO Mesa Verde 76.33 348 P P 11 29 21.3 0.0
baz=168,SNR=7.6
MVCO Mesa Verde 76.33 348 eP P 11 29 21.5 +0.2
comp=Z,33nm,1.4s
SDCO Great Sand Dun 76.40 350 P P 11 29 21.8 0.0
baz=170,SNR=8.0
SDCO Great Sand Dun 76.40 350 eP P 11 29 22.6 +0.8
comp=Z,9.2nm,1.2s
R32A Long Quarter, 76.42 356 P P 11 29 21.8 +0.2
baz=175
S22A 4UR Ranch, Cre 76.59 349 P P 11 29 22.9 0.0
baz=169,SNR=11

S22A 4UR Ranch, Cre 76.59 349 eP P 11 29 24.1 +1.3
comp=Z,35nm,1.5s
ARVC Arvin 76.67 339 P P 11 29 23.2 +0.2
baz=160
LRMC Laurel Mtn Rad 76.68 340 P P 11 29 23.3 0.0
baz=160
SHOC Shoshone, Teco 76.71 341 P P 11 29 24.1 +0.8
baz=162
Q37A Longview Farm, 76.72 359 P P 11 29 22.6 -0.7
baz=179
PKM Mcpherson Peak 76.73 338 P P 11 29 24.0 +0.3
baz=159
OLIL Olney 76.74 4 eP P 11 29 29.8 +6.5
Q35A Mercer Eighty, 76.74 358 P P 11 29 23.8 +0.5
baz=178
Q38A Cooks Store, C 76.80 360 P P 11 29 23.2 -0.4
baz=180
Q36A Arnold C. Orve 76.83 358 P P 11 29 23.5 -0.3
baz=178
Q34A Chapman 76.83 357 P P 11 29 24.0 +0.1
baz=177
Q40A Laux Farm, Aux 76.85 1 P P 11 29 23.5 -0.5
baz=181
Q44A Meyer Farm, Va 76.86 4 P P 11 29 23.3 -0.7
baz=183
Q43A New Douglas 76.86 3 P P 11 29 23.5 -0.5
baz=183
CBKS Cedar Bluff 76.87 355 P P 11 29 24.0 -0.1
baz=175
CBKS Cedar Bluff 76.87 355 eP P 11 29 25.5 +1.4
CBKS pmax pmax
comp=Z,8.0nm,0.3s
CBKS Cedar Bluff 76.87 355 eP P 11 29 25.5 +1.4
comp=Z,7.6nm,0.3s
Q39A Willow Grove F 76.89 0 P P 11 29 23.5 -0.7
baz=180
JSRW J. Sargeant Re 76.90 13 eP P 11 29 21.1 -3.2
Q33A Connelly Farm, 76.95 357 P P 11 29 24.4 -0.1
baz=176
Q32A Meitler Ranch, 76.98 356 P P 11 29 24.4 -0.3
baz=176
KSU1 Kansas State U 77.00 358 P P 11 29 24.6 -0.1
baz=177
KSU1 Kansas State U 77.00 358 eP P 11 29 24.9 +0.1
comp=Z,31nm,1.1s
SHPR Sheep Range 77.01 342 eP P 11 29 25.9 +0.8
comp=Z,45nm,1.6s
LCMT Little Creek M 77.05 344 eP P 11 29 25.7 +0.4
comp=Z,16nm,1.6s
ISA Isabella, Lake 77.07 339 P P 11 29 25.6 +0.2
baz=160
MPMC Manual Prospec 77.17 340 P P 11 29 26.3 +0.2
baz=161,SNR=6.1
SMMC Simmler 77.18 338 P P 11 29 26.9 +0.9
baz=159
PV01 Paradox Valley 77.24 348 eP P 11 29 26.8 +0.3
PV05 Paradox Valley 77.28 347 eP P 11 29 28.9 +2.2
KSCO Kaye Shedlock' 77.31 353 P P 11 29 26.1 -0.6
baz=172
P39B Salisbury 77.33 1 P P 11 29 25.8 -0.8
baz=180
P33A Williams Farm, 77.38 357 P P 11 29 26.9 0.0
baz=176
P40A Paris 77.38 1 P P 11 29 26.2 -0.7
baz=181
FURC Furnace Creek, 77.40 341 P P 11 29 27.3 +0.3
baz=161
P35A Duane Minner, 77.41 358 P P 11 29 27.0 0.0
baz=178
DAC Darwin (Calif) 77.41 340 eP P 11 29 27.7 +0.3
DAC pmax pmax
comp=Z,18nm,1.4s
DAC Darwin (Calif) 77.41 340 eP P 11 29 27.7 +0.3
comp=Z,18nm,1.4s
VES Vestal, Richgr 77.41 339 P P 11 29 27.4 +0.2
baz=159
P37A Lathrop 77.44 359 P P 11 29 26.9 -0.3
baz=179
P34A Walnut Farm, R 77.45 357 P P 11 29 27.4 +0.1
baz=177
P38A Dawn 77.47 360 P P 11 29 27.2 -0.2
baz=180
P36A Good Intent, A 77.48 359 P P 11 29 26.4 -1.0
baz=178
P42A Winchester 77.48 2 P P 11 29 26.8 -0.6
baz=182
P41A Barry, Barry 77.55 2 P P 11 29 27.1 -0.7
baz=182
PV04 Paradox Valley 77.55 348 eP P 11 29 28.0 -0.1
Q24A Divide 77.55 351 P P 11 29 28.3 0.0
baz=170
PV10 Paradox Valley 77.56 348 eP P 11 29 30.2 +1.9
CCUT Cedar City 77.59 344 eP P 11 29 28.9 +0.5
comp=Z,24nm,1.3s
P32A Huiting Farm, 77.61 356 P P 11 29 28.2 0.0
baz=176
PV09 Paradox Valley 77.69 347 eP P 11 29 29.4 +0.3
CWC Cottonwood Cre 77.69 340 P P 11 29 29.6 +0.6
baz=160
TPNV Topopah Spring 77.70 341 P P 11 29 29.8 +0.8
baz=162,SNR=6.6
TPNV Topopah Spring 77.70 341 eP P 11 29 29.8 +0.8
TPNV pmax pmax
comp=Z,33nm,1.5s
TPNV Topopah Spring 77.70 341 eP P 11 29 29.8 +0.8
comp=Z,33nm,1.5s
MTPU Mount Pierson 77.82 345 eP P 11 29 30.2 +0.3
comp=Z,26nm,1.7s
RCTC Rector, Farmer 77.89 339 P P 11 29 31.4 +1.6
baz=159
O38A Galt 77.96 0 P P 11 29 29.2 -0.9
baz=180
O40A La Belle 77.98 1 P P 11 29 29.4 -0.8
baz=181
O36A Bolckow 77.98 359 P P 11 29 29.4 -0.9
baz=178
O41A Passleys Farm, 77.99 2 P P 11 29 31.3 +1.0
baz=182,SNR=5.7
O33A Hebron 78.01 357 P P 11 29 30.5 +0.1
baz=176
O37A Wolven Farm, M 78.01 359 P P 11 29 29.6 -0.8
baz=179
SMCO Snowmass 78.01 349 eP P 11 29 31.4 +0.4
comp=Z,35nm,1.4s
GRAC Grapevine Rang 78.03 341 P P 11 29 31.3 +0.6
baz=161
O34A Beatrice 78.08 357 P P 11 29 31.0 +0.2
baz=177
O39A Kirksville 78.10 1 P P 11 29 30.1 -0.8
baz=180
O35A Humboldt 78.14 358 P P 11 29 30.9 -0.3
baz=178
O31A Woolen Ranch, 78.18 355 P P 11 29 31.6 +0.2
baz=175
MSU Marysvale 78.27 345 eP P 11 29 32.6 +0.4
MSU Marysvale 78.27 345 eP P 11 29 32.6 +0.4
ISCO Idaho Springs 78.44 350 P P 11 29 33.4 +0.2
baz=170
ISCO Idaho Springs 78.44 350 eP P 11 29 33.1 -0.1
ISCO pmax pmax
comp=Z,31nm,1.9s
ISCO Idaho Springs 78.44 350 eP P 11 29 33.1 -0.1
comp=Z,31nm,1.9s
SFIN Lafayette 78.44 5 P P 11 29 31.7 -1.1
baz=185
HDIL Hopedale 78.49 3 P P 11 29 32.4 -0.6
baz=183
SRU San Rafael Swe 78.53 347 eP P 11 29 34.2 +0.6
SRU pmax pmax
comp=Z,27nm,1.4s
SRU San Rafael Swe 78.53 347 eP P 11 29 34.2 +0.6
comp=Z,27nm,1.4s
N37A Lee Faris, Mou 78.60 359 P P 11 29 32.9 -0.8
baz=179
N38A Joes South For 78.63 0 P P 11 29 33.2 -0.7
baz=180
N33A J Bar K, Exete 78.66 357 P P 11 29 33.0 -1.0
baz=176
ACSO Alum Creek Sta 78.66 8 eP P 11 29 34.1 0.0
comp=Z,37nm,1.3s
N36A Muff Farm, Cla 78.67 359 P P 11 29 33.8 -0.3
baz=178
N39A Derby Farms, D 78.72 1 P P 11 29 34.0 -0.3
baz=180
N34A Lincoln 78.73 358 P P 11 29 34.2 -0.2
baz=177
N35A Tabor 78.73 358 P P 11 29 34.3 0.0
baz=178

N32A Stulken Farm, 78.73 356 P P 11 29 35.1 +0.7
baz=176
N31A Bailey Ranch, 78.82 356 P P 11 29 35.4 +0.5
baz=175
TMUT Trail Mountain 78.84 346 eP P 11 29 36.5 +1.0
comp=Z,35nm,1.4s
R11A Troy Canyon, C 78.86 342 P P 11 29 36.3 +0.8
baz=162,SNR=11
R11A Troy Canyon, C 78.86 342 eP P 11 29 36.2 +0.8
comp=Z,27nm,1.5s
P17A Butcher Ranch, 78.92 346 eP P 11 29 36.5 +0.7
comp=Z,16nm,1.1s
MLAC Mammoth, Mammo 79.02 340 P P 11 29 36.7 +0.4
baz=160
O20A White River Ci 79.14 349 P P 11 29 37.4 +0.5
baz=168,SNR=8.4
O20A White River Ci 79.14 349 eP P 11 29 37.8 +0.9
comp=Z,23nm,1.2s
OGNE Ogallala 79.17 353 P P 11 29 37.4 +0.4
baz=173
M37A Trindle Farm, 79.25 360 P P 11 29 36.5 -0.7
baz=179
M38A Pleasantville 79.26 0 P P 11 29 36.8 -0.4
baz=180
O56A Blue Knob Stat 79.30 12 P P 11 29 36.7 -0.9
baz=192
M36A Felix, Anita 79.30 359 P P 11 29 37.1 -0.4
baz=179
M39A Webster 79.33 1 P P 11 29 36.8 -0.8
baz=181
M35A Neola 79.33 358 P P 11 29 37.0 -0.7
baz=178
M31A Lambtecht Ranc 79.34 356 P P 11 29 38.0 +0.2
baz=175
BGNE Belgrade 79.36 356 P P 11 29 37.9 0.0
baz=176
M34A Aspy Farms, Fr 79.39 358 P P 11 29 38.2 +0.2
baz=177
M33A Taylor Creek F 79.48 357 P P 11 29 38.5 0.0
baz=177
N23A Red Feather La 79.56 350 P P 11 29 39.8 +0.5
baz=170
N23A Red Feather La 79.56 350 eP P 11 29 39.5 +0.2
comp=Z,35nm,1.4s
N54A Moraine State 79.76 10 P P 11 29 39.5 -0.5
baz=190
SSPA Standing Stone 79.76 12 eP P 11 29 38.9 -1.1
comp=Z,40nm,1.4s
CMB Columbia Colle 79.83 339 eP P 11 29 40.4 -0.1
CMB pmax pmax
comp=Z,19nm,1.3s
CMB Columbia Colle 79.83 339 eP P 11 29 40.4 -0.1
comp=Z,19nm,1.3s
L34A Svendsen Farm, 79.85 358 P P 11 29 40.6 +0.1
baz=177
PHWY Pilot Hill 79.89 351 eP P 11 29 40.9 -0.2
PHWY ePcP PcP 11 29 48.5 -0.1
L40A Anamosa 79.93 2 P P 11 29 40.5 -0.4
baz=182
L36A Harm Buss Farm 79.95 359 P P 11 29 40.7 -0.3
baz=179
L32A Elgin 79.95 357 P P 11 29 41.5 +0.5
baz=176
L41A Preston 79.96 2 P P 11 29 41.4 +0.4
baz=182
L37A Phoenix Point, 79.97 360 P P 11 29 40.6 -0.4
baz=179
L35A Bielow Farm, R 79.97 358 P P 11 29 41.0 -0.2
baz=178
L39A Vinton 79.97 1 P P 11 29 42.0 +0.9
baz=181
L38A Oak Wood Farm, 79.98 0 P P 11 29 41.3 +0.2
baz=180
WAKR Waker 80.00 340 eP P 11 29 41.9 +0.3
comp=Z,56nm,1.8s
DUG Dugway, Tooele 80.02 345 P P 11 29 42.4 +0.7
baz=164,SNR=7.4
DUG Dugway, Tooele 80.02 345 eP P 11 29 42.7 +1.1
DUG pmax pmax
comp=Z,25nm,1.2s
DUG Dugway, Tooele 80.02 345 eP P 11 29 42.7 +1.1
comp=Z,25nm,1.2s
L33A Hoskins 80.08 357 P P 11 29 42.0 +0.2
baz=177
JLU Jordanelle 80.15 346 eP P 11 29 42.2 -0.3
comp=Z,35nm,1.9s
L31A Butterfield Fa 80.17 356 P P 11 29 42.4 +0.2
baz=175
M54A Oil Creek Stat 80.34 10 P P 11 29 43.9 +0.7
baz=191
N59A State Game Lan 80.41 14 P P 11 29 42.6 -0.9
baz=194
K36A Gilmore City 80.48 359 P P 11 29 43.9 +0.1
baz=179
K38A Parkersburg 80.49 1 P P 11 29 44.3 +0.4
baz=180
K41A Shullsburg 80.50 2 P P 11 29 43.6 -0.4
baz=182
K39A Oelwein 80.56 1 P P 11 29 45.2 +0.9
baz=181
K34A Le Mars 80.56 358 P P 11 29 44.4 +0.1
baz=178
K40A Colesburg 80.57 2 P P 11 29 45.2 +0.9
baz=182
K35A Storm Lake 80.58 359 P P 11 29 44.3 -0.1
baz=178
K32A Verdigre 80.60 357 P P 11 29 44.6 +0.1
baz=176
K31A O'Neill 80.61 356 P P 11 29 44.4 -0.2
baz=176
K37A Belmond 80.61 360 P P 11 29 44.5 -0.1
baz=180
TCUT Toone Canyon 80.64 346 eP P 11 29 45.4 +0.3
comp=Z,81nm,1.9s
K30A Basset 80.71 355 P P 11 29 45.2 +0.1
baz=175
JFWS Jewell Farm 80.81 2 eP P 11 29 51.8 +6.2
JFWS Jewell Farm 80.81 2 eP P 11 29 51.8 +6.2
AFDM Forest Hills D 80.84 339 eP P 11 29 43.6 -2.3
comp=Z,30nm,1.5s
PAHR Pah Rah Range 81.11 340 eP P 11 29 47.1 -0.4
comp=Z,23nm,1.3s
HWUT Hardware Ranch 81.14 346 eP P 11 29 47.4 -0.3
comp=Z,19nm,1.4s
J37A Redenius Farm, 81.15 360 P P 11 29 47.2 -0.2
baz=180
J34A George 81.16 358 P P 11 29 47.5 +0.1
baz=178
J38A Wedel Dairy, R 81.16 1 P P 11 29 46.9 -0.6
baz=180
J36A Seneca 1, Swea 81.17 359 P P 11 29 47.3 -0.2
baz=179
J39A Decorah 81.19 1 P P 11 29 47.4 -0.2
baz=181
J33A Davis 81.22 357 P P 11 29 48.1 +0.3
baz=177
J35A Milford 81.22 359 P P 11 29 47.4 -0.5
baz=178
J41A Loganville 81.27 3 P P 11 29 47.8 -0.3
baz=182
J31A Geddes 81.27 356 P P 11 29 47.6 -0.5
baz=176
J40A Soldiers Grove 81.27 2 P P 11 29 47.6 -0.5
baz=182
J32A Parkston 81.31 357 P P 11 29 48.0 -0.3
baz=176
J30A Dallas 81.35 356 P P 11 29 48.9 +0.3
baz=175
K22A Casper 81.36 350 P P 11 29 48.9 +0.1
baz=169,SNR=9.3
K22A Casper 81.36 350 eP P 11 29 46.3 -2.5
K22A esP pP 11 29 49.0 -3.1
ORV Oroville 81.56 338 eP P 11 29 49.5 -0.2
ORV pmax pmax
comp=Z,52nm,1.9s
ORV Oroville 81.56 338 eP P 11 29 49.5 -0.2
comp=Z,52nm,1.9s
ECSD EROS Data Cent 81.62 358 P P 11 29 50.0 +0.1
baz=177
ECSD EROS Data Cent 81.62 358 eP P 11 29 47.7 -2.2
comp=Z,38nm,1.4s
I35A Creekview Farm 81.71 359 P P 11 29 50.4 0.0
baz=178
I37A Lemond, Waseca 81.85 0 P P 11 29 51.2 0.0
baz=180
I36A Fitzsimmons Fa 81.86 360 P P 11 29 51.2 0.0
baz=179
I38A Scanlan Farm, 81.89 1 P P 11 29 50.9 -0.4
baz=181
I34A Hadley 81.91 358 P P 11 29 51.4 -0.1
baz=178
BW06 Boulder Array 81.92 348 P P 11 29 51.8 -0.1
baz=167,SNR=14
BW06 Boulder Array 81.92 348 eP P 11 29 51.5 -0.3
comp=Z,38nm,1.4s
PD31 Pinedale Array 81.92 348 eP P 11 29 52.1 +0.3
PDAR Pinedale Array 81.92 348 P P 11 29 51.5 -0.3
PDAR LR LR 12 02 24.5
comp=Z,6.7nm,1.0s,baz=182,slow=4.5,SNR=16
comp=Z,125nm,19.0s,baz=144,slow=33
I33A Coleman 81.94 358 P P 11 29 51.4 -0.2
baz=177
I32A Karley and Nic 81.95 357 P P 11 29 51.2 -0.4
baz=176
I31A Royce, Wessing 82.00 356 P P 11 29 51.4 -0.5
baz=176
AHID Auburn Hatcher 82.18 347 eP P 11 29 53.2 +0.1
comp=Z,46nm,1.8s
O03D Paynes Creek 82.33 339 P P 11 29 53.5 -0.3
baz=158
H36A Jessenland, He 82.42 360 P P 11 29 53.6 -0.5
baz=179
H32A Carlson Farm, 82.42 357 P P 11 29 53.6 -0.6
baz=176
H37A Dierke Farm, C 82.42 0 P P 11 29 53.6 -0.5
baz=180
SUSD Miller 82.43 356 P P 11 29 54.0 -0.2
baz=175
H31A Wolsey 82.44 356 P P 11 29 54.1 -0.2
baz=176
RSSD Black Hills 82.52 352 P P 11 29 55.0 +0.1
baz=171
RSSD Black Hills 82.52 352 eP P 11 29 55.2 +0.3
RSSD pmax pmax
comp=Z,31nm,1.4s
RSSD Black Hills 82.52 352 eP P 11 29 55.2 +0.3
comp=Z,31nm,1.4s
H34A Spellman Lake, 82.53 358 P P 11 29 54.9 +0.2
baz=178
H35A Sunnyside Ranc 82.55 359 P P 11 29 54.7 -0.1
baz=179
H33A Prehn Over Nor 82.57 358 P P 11 29 54.6 -0.3
baz=177
REDW Red Top Meadow 82.72 347 eP P 11 29 56.5 +0.5
comp=Z,52nm,1.5s
SNOW Snow King Moun 82.80 347 eP P 11 29 57.4 +1.0
comp=Z,42nm,1.6s
WDC Whiskeytown Da 82.81 338 eP P 11 29 56.5 +0.3
WDC pmax pmax
comp=Z,51nm,1.5s
WDC Whiskeytown Da 82.81 338 eP P 11 29 56.5 +0.3
comp=Z,51nm,1.5s
KMRM Mail Ridge 82.83 337 eP P 11 30 00.7 +4.3
comp=Z,90nm,1.4s
TPAW Teton Pass 82.86 347 eP P 11 29 57.5 +0.7
comp=Z,22nm,1.1s
LOHW Long Hollow 82.92 348 eP P 11 29 57.6 +0.6
comp=Z,12nm,1.1s
H25A Fruitdale 82.97 353 P P 11 29 57.7 +0.7
baz=172
G35A Watkins 83.06 359 P P 11 29 57.2 -0.2
baz=179
SPMN Marine on St. 83.07 0 eP P 11 29 58.5 +1.0
comp=Z,15nm,0.9s
G36A St. Michael 83.07 360 P P 11 29 57.2 -0.2
baz=179
MOOW Moose Ponds 83.07 347 eP P 11 29 58.0 +0.2
comp=Z,29nm,2.0s
G33A Ortonville 83.08 358 P P 11 29 56.8 -0.7
baz=177
G34A Benson 83.10 358 P P 11 29 57.1 -0.6
baz=178
G32A Webster 83.17 357 P P 11 29 57.6 -0.5
baz=176
G31A Conde 83.17 357 P P 11 29 57.3 -0.7
baz=176
N02D Trinity Center 83.22 338 P P 11 29 58.7 +0.3
baz=157
IMW Indian Meadow 83.25 347 eP P 11 29 59.0 +0.1
comp=Z,25nm,1.4s
FLWY Flagg Ranch 83.39 348 eP P 11 30 00.5 +1.0
comp=Z,102nm,1.8s
KHMM Horse Mountain 83.43 337 eP P 11 30 02.4 +2.7
comp=Z,39nm,1.3s
WVOR Wild Horse Val 83.47 342 eP P 11 30 00.5 +0.7
WVOR pmax pmax
comp=Z,10.0nm,1.0s
WVOR Wild Horse Val 83.47 342 eP P 11 30 00.5 +0.7
comp=Z,10nm,1.0s
HLID Hailey 83.59 345 P P 11 30 01.3 +0.9
baz=183,SNR=11
HLID Hailey 83.59 345 eP P 11 29 57.2 -3.1
comp=Z,21nm,1.1s
SADO Sadowa 83.62 10 eP P 11 30 06.3 +6.0
M02C Callahan 83.65 338 P P 11 30 00.9 +0.3
baz=157,SNR=11
F34A Alexandria 83.65 359 P P 11 30 00.2 -0.2
baz=178
F36A Milaca 83.70 360 P P 11 29 59.8 -0.9
baz=180,SNR=5.3
F35A Swanville 83.70 359 P P 11 30 00.1 -0.6
baz=179
F33A 5 Mile Ranch, 83.72 358 P P 11 30 00.2 -0.6
baz=177
M04C Macdoel 83.72 339 P P 11 30 01.4 +0.3
baz=158,SNR=9.6
MFID Camas Ranch 83.75 344 eP P 11 30 01.5 +0.4
F32A Veblen 83.77 357 P P 11 30 00.6 -0.4
baz=177
F31A Hecla 83.81 357 P P 11 30 01.0 -0.3
baz=176
F29A Eureka 83.87 356 P P 11 30 01.3 -0.3
baz=175
YBH Yreka Blue Hor 83.92 338 eP P 11 30 02.0 -0.1
YBH pmax pmax
comp=Z,45nm,1.7s
YBH Yreka Blue Hor 83.92 338 eP P 11 30 01.9 -0.1
comp=Z,45nm,1.7s
YMR Madison River 84.01 348 eP P 11 30 02.4 -0.2
COWI Conover 84.03 3 eP P 11 30 01.7 -0.7
comp=Z,29nm,1.3s
DZM Mont Dzumac 84.12 247 eLR LR 11 56 30.4
comp=Z,1µm,27.6s
YHB Horse Butte 84.12 347 eP P 11 30 04.5 +1.3
comp=Z,28nm,1.7s
RLMT Red Lodge 84.17 349 P P 11 30 03.8 +0.4
baz=167
RLMT Red Lodge 84.17 349 eP P 11 30 03.8 +0.4
comp=Z,15nm,1.1s
PLVO Plevna 84.19 12 eP P 11 30 09.3 +6.1
QLMT Earthquake Lak 84.24 347 eP P 11 30 04.6 +0.8
K05A Summer Lake 84.33 340 eP P 11 30 05.6 +1.3
comp=Z,88nm,1.5s
E36A McGregor 84.36 0 P P 11 30 03.5 -0.5
baz=180
E34A Wadena 84.37 359 P P 11 30 03.7 -0.4
baz=178
E33A Westby DABS, E 84.37 358 P P 11 30 03.8 -0.3
baz=178
E35A Pequot Lakes 84.40 359 P P 11 30 03.4 -0.9
baz=179
E31A Nome 84.49 357 P P 11 30 03.9 -0.8
baz=176
E32A Braaten, Kindr 84.49 358 P P 11 30 04.5 -0.2
baz=177
MCMT McKenzie Canyo 84.50 346 eP P 11 30 05.9 +0.8
L02D Cave Junction, 84.57 338 P P 11 30 05.3 +0.1
baz=156
HUMO Hull Mountain 84.80 339 eP P 11 30 06.8 +0.4
comp=Z,34nm,1.8s
D35A Remer 84.92 360 P P 11 30 06.2 -0.6
baz=179
J05D Fort Rock, OR 84.94 340 P P 11 30 06.8 -0.5
baz=158
DLMT Dillon 84.97 347 eP P 11 30 06.0 -1.3
comp=Z,22nm,1.4s
D31A Mcclaflin, Tow 84.97 357 P P 11 30 06.2 -0.9
baz=176
D37A Cotton 85.00 1 P P 11 30 06.4 -0.9
baz=180
D33A AnnSam, Waubun 85.01 358 P P 11 30 06.4 -0.9
baz=178
D36A Goodland 85.02 0 P P 11 30 06.4 -0.9
baz=180
D32A Dogwood Acres, 85.03 358 P P 11 30 07.0 -0.4
baz=177

BOZ	**Bozeman (W)**	**85.07**	**347**	P		**P**	**11 30 08.2**	**+0.4**
	baz=166,SNR=7.0								
BOZ	**Bozeman (W)**	**85.07**	**347**	*e*P		**P**	**11 30 08.1**	**+0.3**
BOZ					pmax	pmax			
	comp=Z,26nm,1.6s								
BOZ	**Bozeman (W)**	**85.07**	**347**	*e*P		**P**	**11 30 08.1**	**+0.3**
	comp=Z,26nm,1.6s								
D26A	**Manning**	**85.25**	**354**	P		**P**	**11 30 08.5**	**-0.1**
	baz=173,SNR=5.2								
LAO	**LASA Array**	**85.30**	**351**	P		**P**	**11 30 09.1**	**+0.3**
	baz=170								
LAO	**LASA Array**	**85.30**	**351**	*e*P		**P**	**11 30 09.8**	**+1.0**
	comp=Z,83nm,1.8s								
LRM	**Limekiln Ridge**	**85.38**	**347**	*e*P		**P**	**11 30 10.8**	**+1.3**
BMO	**Blue Mountains**	**85.44**	**343**	*e*P		**P**	**11 30 11.4**	**+1.7**
	comp=Z,34nm,1.9s								
C34A	**RKJ Ranch, Bem**	**85.50**	**359**	P		**P**	**11 30 08.4**	**-1.4**
	baz=178								
C35A	**Jirik Farms, M**	**85.54**	**360**	P		**P**	**11 30 09.4**	**-0.5**
	baz=179								
C37A	**Embarrass**	**85.58**	**1**	P		**P**	**11 30 09.3**	**-0.8**
	baz=181								
C38A	**Sawbill Land.**	**85.58**	**1**	P		**P**	**11 30 09.1**	**-1.1**
	baz=181								
C36A	**Pine Crest Far**	**85.60**	**0**	P		**P**	**11 30 09.6**	**-0.7**
	baz=180								
C30A	**Mose, Pekin**	**85.66**	**357**	P		**P**	**11 30 10.6**	**0.0**
	baz=176								
C32A	**Crookston**	**85.71**	**358**	P		**P**	**11 30 10.6**	**-0.2**
	baz=177								
C31A	**Landman Farms,**	**85.72**	**357**	P		**P**	**11 30 10.6**	**-0.2**
	baz=176								
I04A	**Tendick Farm,**	**85.74**	**339**	P		**P**	**11 30 10.9**	**-0.2**
	baz=157								
EYMN	**Ely**	**85.80**	**1**	P		**P**	**11 30 11.9**	**+0.7**
	baz=181								
EYMN	**Ely**	**85.80**	**1**	*e*P		**P**	**11 30 11.4**	**+0.1**
	comp=Z,18nm,1.4s								
MDND	**Maddock**	**85.86**	**356**	P		**P**	**11 30 11.5**	**-0.1**
	baz=175								
MDND	**Maddock**	**85.86**	**356**	*e*P		**P**	**11 30 12.2**	**+0.6**
	comp=Z,88nm,1.4s								
I03D	**Drain, OR**	**85.91**	**339**	P		**P**	**11 30 12.1**	**+0.3**
	baz=157								
I05D	**Terrebonne, OR**	**85.95**	**340**	P		**P**	**11 30 12.4**	**+0.3**
	baz=158								
B33A	**Robert and Kas**	**86.13**	**359**	P		**P**	**11 30 12.0**	**-0.9**
	baz=178								
AGMN	**Agassiz Nation**	**86.16**	**358**	P		**P**	**11 30 12.2**	**-0.9**
	baz=178								
AGMN	**Agassiz Nation**	**86.16**	**358**	*e*P		**P**	**11 30 12.4**	**-0.6**
	comp=Z,24nm,1.2s								
B35A	**Bob, Littlefor**	**86.20**	**360**	P		**P**	**11 30 12.6**	**-0.6**
	baz=180								
G08A	**Pilot Rock**	**86.24**	**342**	*e*P		**P**	**11 30 15.0**	**+1.4**
	comp=Z,24nm,1.2s								
B32A	**Ashes, Strandq**	**86.28**	**358**	P		**P**	**11 30 13.1**	**-0.5**
	baz=177								
B34A	**Aery, Baudette**	**86.33**	**359**	P		**P**	**11 30 13.0**	**-0.9**
	baz=179								
B31A	**Greenbush Farm**	**86.34**	**357**	P		**P**	**11 30 13.6**	**-0.3**
	baz=176								
B30A	**Myrvik Farm, E**	**86.40**	**357**	P		**P**	**11 30 13.8**	**-0.3**
	baz=176								
B29A	**Wagenman Farm,**	**86.46**	**356**	P		**P**	**11 30 14.2**	**-0.3**
	baz=175								
F10A	**Beach Ranch, E**	**86.49**	**344**	*e*P		**P**	**11 30 15.3**	**+0.5**
	comp=Z,21nm,1.4s								
B28A	**Dugan Ranch, T**	**86.51**	**355**	P		**P**	**11 30 14.8**	**+0.1**
	baz=174								
B25A	**Knox Farm, Ray**	**86.54**	**354**	P		**P**	**11 30 14.2**	**-0.7**
	baz=172								
B26A	**Jensen Ranch,**	**86.57**	**354**	P		**P**	**11 30 15.1**	**0.0**
	baz=173								
CHMT	**Chamberlain Mo**	**86.58**	**347**	*e*P		**P**	**11 30 16.6**	**+1.2**
A33A	**Warroad**	**86.79**	**359**	P		**P**	**11 30 15.3**	**-0.7**
	baz=178								
A32A	**Rocking H Ranc**	**86.80**	**358**	P		**P**	**11 30 15.5**	**-0.6**
	baz=177								
A31A	**Linda, St. Vin**	**86.83**	**358**	P		**P**	**11 30 15.7**	**-0.6**
	baz=177								
DGMT	**Dagmar**	**86.83**	**353**	P		**P**	**11 30 16.3**	**-0.1**
	baz=171								
A30A	**Hoffart Farm,**	**86.89**	**357**	P		**P**	**11 30 16.1**	**-0.5**
	baz=176								
A29A	**Manning Farm,**	**86.91**	**356**	P		**P**	**11 30 16.2**	**-0.5**
	baz=175								
SLMT	**Seeley Lake**	**86.94**	**346**	*e*P		**P**	**11 30 16.4**	**-0.6**
A28A	**Rude Farm, Bot**	**86.96**	**356**	P		**P**	**11 30 16.5**	**-0.5**
	baz=174								
A26A	**Wade Farm, Ken**	**87.07**	**354**	P		**P**	**11 30 17.9**	**+0.4**
	baz=173								
VLDQ	**Val d'Or**	**87.13**	**11**	*e*P		P	11 30 23.9	+6.2
A25A	**Svangstu Ranch**	**87.20**	**354**	P		**P**	**11 30 18.5**	**+0.4**
	baz=172								
G03D	**McMinnville, O**	**87.28**	**339**	P		**P**	**11 30 18.5**	**0.0**
	baz=157								
SWMT	**Swartz Lake**	**87.29**	**346**	*e*P		**P**	**11 30 21.2**	**+2.5**
JTMT	**Jette**	**87.58**	**346**	*e*P		**P**	**11 30 20.8**	**+0.7**
YBMT	**Yellow Bay**	**87.64**	**346**	*e*P		**P**	**11 30 22.9**	**+2.5**
BSMT	**Bassoo Peak**	**87.77**	**346**	*e*P		**P**	**11 30 23.3**	**+2.2**
BLMT	**Blacktail Moun**	**87.84**	**346**	*e*P		**P**	**11 30 23.9**	**+2.5**
D08A	**Wollman Farm,**	**87.89**	**343**	*e*P		**P**	**11 30 23.9**	**+2.5**
	comp=Z,14nm,1.2s								
F04D	**Rainier, OR**	**88.01**	**340**	P		**P**	**11 30 22.0**	**-0.1**
	baz=157								
ULM	**Lac du Bonnet**	**88.12**	**358**	P		**P**	**11 30 22.9**	**+0.5**
	comp=Z,4.0nm,1.0s,baz=215,slow=3.7,SNR=4.9								
ULM					LR	LR	12 07 22.7		
	comp=Z,116nm,18.2s,baz=122,slow=34								
ULM	**Lac du Bonnet**	**88.12**	**358**	*e*P		**P**	**11 30 22.1**	**-0.3**
ULM					pmax	pmax			
	comp=Z,26nm,1.2s								
ULM	**Lac du Bonnet**	**88.12**	**358**	*e*P		**P**	**11 30 22.1**	**-0.3**
	comp=Z,26nm,1.2s								
LON	**Longmire**	**88.31**	**341**	*e*P		**P**	**11 30 25.0**	**+1.4**
LON					pmax	pmax			
	comp=Z,31nm,1.9s								
LON	**Longmire**	**88.31**	**341**	*e*P		**P**	**11 30 25.0**	**+1.4**
	comp=Z,31nm,1.9s								
C09A	**Chrisman Ranch**	**88.45**	**344**	*e*P		**P**	**11 30 24.5**	**+0.4**
	comp=Z,58nm,1.6s								
NEW	**Newport**	**88.64**	**344**	P		**P**	**11 30 25.0**	**0.0**
	comp=Z,3.3nm,1.0s,baz=234,slow=5.9,SNR=7.5								
NEW	**Newport**	**88.64**	**344**	P		**P**	**11 30 25.3**	**+0.3**
	baz=161								
NEW	**Newport**	**88.64**	**344**	*e*P		**P**	**11 30 25.5**	**+0.5**
NEW	**Newport**	**88.64**	**344**	*e*P		**P**	**11 30 25.5**	**+0.5**
D05A	**Enumclaw**	**88.77**	**341**	*e*P		**P**	**11 30 29.4**	**+3.8**
	comp=Z,28nm,1.3s								
B05A	**Bryant**	**89.79**	**341**	P		**P**	**11 30 30.9**	**+0.6**
	baz=158								
BOSA	**Boshof**	**92.26**	**130**	LR		LR	12 06 01.7		
	comp=Z,154nm,20.9s,baz=207,slow=32								
FFC	**Flin Flon**	**92.86**	**355**	*e*P		**P**	**11 30 45.6**	**+1.1**
FFC					pmax	pmax			
	comp=Z,28nm,1.6s								
FFC	**Flin Flon**	**92.86**	**355**	*e*P		**P**	**11 30 45.6**	**+1.1**
	comp=Z,28nm,1.6s								
DBIC	**Dimbokro**	**93.00**	**84**	LR		LR	12 08 15.2		
	comp=Z,255nm,21.7s,baz=222,slow=33								
STKA	**Stephens Creek**	**93.43**	**224**	LR		LR	12 05 48.1		
	comp=Z,279nm,19.4s,baz=191,slow=31								
LBTB	**Lobatse**	**95.06**	**127**	*e*P		**P**	**11 30 57.4**	**+1.7**
LBTB					pmax	pmax			
	comp=Z,43nm,1.8s								
LBTB	**Lobatse**	**95.06**	**127**	*e*P		**P**	**11 30 57.4**	**+1.7**
	comp=Z,43nm,1.8s								
SCHQ	**Schefferville**	**95.46**	**15**	LR		LR	12 13 49.8		
	comp=Z,86nm,18.4s,baz=242,slow=35								
H01W1	**Cape Leeuwin H**	**102.87**	**203**	T		T	13 27 11.9		
	baz=155								
H01W2	**Cape Leeuwin H**	**102.87**	**203**	T		T	13 27 12.5		
	baz=155								
H01W3	**Cape Leeuwin H**	**102.89**	**203**	T		T	13 27 12.8		
	baz=155								
H11S2	**WAKE ISLAND Hyl**	**108.76**	**279**	T		T	13 33 27.0		
	baz=126,slow=76,SNR=27								
H11S1	**WAKE ISLAND Hyl**	**108.78**	**279**	T		T	13 33 24.6		
	baz=126,slow=76,SNR=27								
H11S3	**WAKE ISLAND Hyl**	**108.78**	**279**	T		T	13 33 26.4		
	baz=126,slow=76,SNR=20								
DOT	**Dot Lake**	**109.16**	**339**	*e*Pdif		**Pdif**	**11 31 55.6**	**-1.8**
ILAR	**Eielson Array**	**110.82**	**338**	PKiKP		**PKiKP**	**11 36 06.2**	**+1.9**
	comp=Z,0.4nm,0.9s,baz=180,slow=0.7,SNR=3.1								
TIP	**Timpagrande**	**126.83**	**66**	*e*P		**PKPdf**	**11 36 42.0**	**+6.0**
GEA0	**GERESS Array S**	**128.04**	**53**	*e*P		**PKPdf**	**11 36 39.5**	**+1.6**
GERES	**GERESS Array B**	**128.04**	**53**	PKP		**PKPdf**	**11 36 39.1**	**+1.1**
	comp=Z,0.9nm,0.8s,baz=90,slow=0.7,SNR=8.5								
CLL	**Collm**	**128.31**	**50**	*e*PKPdf		**PKPdf**	**11 36 40.0**	**+1.8**
	comp=Z,12nm,1.2s								
CLL				*e*			11 36 45.0		
CLL				LmV			12 32 00.0		
	comp=Z,200nm,19.0s								
CLL	**Collm**	**128.31**	**50**	*e*PKIKP		**PKPdf**	**11 36 40.0**	**+1.8**
CLL				*e*			11 36 45.0		
CLL				pmax		pmax			
	comp=Z,12nm,1.2s								
CLL				MLR		MLR			
	comp=Z,200nm,19.0s								
BILL	**Bilibino**	**128.58**	**332**	*e*PKIKP		**PKPdf**	**11 36 38.4**	**+0.1**
BILL				*e*			11 38 45.9		
BILL				*i* PPP		PPP	11 41 33.5		
BILL				pmax		pmax			
	comp=Z,3.0nm,0.4s								
BRG	**Berggiesshubel**	**128.76**	**51**	*e*P		**PKPdf**	**11 36 41.6**	**+2.5**
	comp=Z,28nm,1.9s								
	comp=N,163nm,12.3s								
	comp=E,218nm,15.2s								
	comp=Z,249nm,16.7s								
BRG	**Berggiesshubel**	**128.76**	**51**	*e*PKIKP		**PKPdf**	**11 36 41.6**	**+2.5**
BRG				pmax		pmax			
	comp=Z,28nm,1.9s								
BRG				MLR		MLR			
	comp=N,163nm,12.3s								
BRG				MLR		MLR			
	comp=E,218nm,15.2s								
BRG				MLR		MLR			
	comp=Z,249nm,16.7s								
PETK	**Petropavlovsk-**	**130.15**	**312**	PKP		**PKPdf**	**11 36 40.5**	**-1.2**
	comp=Z,2.8nm,1.0s,baz=1.9,slow=4.3,SNR=3.7								
VYHS	**Vyhne**	**131.22**	**55**	*e*PKIKP		**PKPdf**	**11 36 45.8**	**+1.9**
VYHS	**Vyhne**	**131.22**	**55**	*e*PKP		**PKPdf**	**11 36 45.8**	**+1.9**
SEY	**Seymchan**	**134.04**	**324**	PKP		**PKPdf**	**11 36 49.5**	**+0.8**
	comp=Z,1.5nm,0.6s,baz=359,slow=1.0,SNR=7.4								
SEY	**Seymchan**	**134.04**	**324**	*i* PKIKP		**PKPdf**	**11 36 49.9**	**+1.2**
MLR	**Muntele Rosu**	**135.25**	**60**	*e*PKIKP		**PKPdf**	**11 36 54.1**	**+2.4**
MLR	**Muntele Rosu**	**135.25**	**60**	*e*P		**PKPdf**	**11 36 54.1**	**+2.4**
ERM	**Erimo**	**137.19**	**294**	*i* PKIKP		**PKPdf**	**11 36 56.8**	**+1.6**
KIEV	**Kiev**	**138.25**	**53**	*i* PKIKP		**PKPdf**	**11 36 57.0**	**+0.1**
AKASG	**Malin Array Be**	**138.25**	**53**	PKP		**PKPdf**	**11 36 56.2**	**-0.7**
	comp=Z,0.4nm,0.3s,baz=280,slow=2.3,SNR=5.0								
YSS	**Yuzh-Sakhalins**	**138.48**	**301**	*e*PKIKP		**PKPdf**	**11 36 57.1**	**-0.4**
YSS				MLR		MLR			
	comp=Z,130nm,17.0s								
YSS				MLR		MLR			
	comp=N,100nm,18.0s								
YSS				MLR		MLR			
	comp=E,110nm,20.0s								
MJAR	**Matsushiro Arr**	**139.33**	**284**	PKP		**PKPdf**	**11 36 56.9**	**-2.6**
	comp=E,1.3nm,0.8s,baz=100,slow=3.0,SNR=4.8								
TIXI	**Tiksi**	**140.24**	**341**	PKP		**PKPdf**	**11 37 00.2**	**+0.2**
	comp=E,4.9nm,0.8s,baz=50,slow=2.3,SNR=6.3								
TIXI	**Tiksi**	**140.24**	**341**	*i* PKIKP		**PKPdf**	**11 37 00.4**	**+0.5**
TIXI	**Tiksi**	**140.24**	**341**	*e*P		**PKPdf**	**11 37 00.9**	**+0.9**
OBN	**Obninsk**	**142.70**	**47**	*i* PKIKP		**PKPdf**	**11 37 06.6**	**+1.8**
OBN				*e*			11 40 12.0		
OBN				*e*PPP		PPP	11 43 27.8		
OBN				pmax		pmax			
	comp=Z,9.0nm,0.4s								
KLMR	**Klimovskoe**	**143.15**	**37**	*e*PKIKP		**PKPdf**	**11 37 05.5**	**+0.1**
KLMR				pmax		pmax			
	comp=Z,22nm,1.4s								
MOS	**Moscow**	**143.22**	**45**	*e*PKHKP		PKPpre	11 37 01.0		
YAK	**Yakutsk**	**144.51**	**326**	*e*PKIKP		**PKPab**	**11 37 04.3**	**-1.9**
YAK				pmax		pmax			
	comp=N,3.0nm,1.1s								
YAK				pmax		pmax			
	comp=Z,40nm,1.0s								
YAK				pmax		pmax			
	comp=E,14nm,1.1s								
YAK	**Yakutsk**	**144.51**	**326**	*e*P		**PKPab**	**11 37 04.9**	**-1.2**
VSR	**Storozhevoye**	**144.55**	**53**	*e*PKIKP		PKPbc	11 37 07.4	+0.5
VSR				pmax		pmax			
	comp=Z,100nm,1.9s								
SOC	**Sochi**	**144.59**	**66**	*d i* PKIKP		**PKPdf**	**11 37 08.2**	**-0.3**
SOC				*i*			11 37 12.6		
SOC				*e*			11 40 25.3		
SOC							12 34 35.1		
SOC				pmax		pmax			
	comp=Z,80nm,1.1s								
VLA	**Vladivostok**	**145.57**	**293**	*i* PKIKP		**PKPab**	**11 37 14.2**	**+3.5**
USRK	**Ussuriysk Ar.**	**145.62**	**295**	PKPbc		**PKPdf**	**11 37 08.2**	**-2.1**
	comp=Z,13nm,1.0s,baz=101,slow=3.1,SNR=4.1								
KLR	**Kul'dur**	**145.99**	**304**	PKPbc		**PKPdf**	**11 37 09.9**	**-0.9**
	baz=100,slow=3.1								
KLR	**Kul'dur**	**145.99**	**304**	*i* PKP2		**PKPab**	**11 37 15.9**	**+3.8**
MSHR	**Mys Shultsa**	**146.03**	**292**	*i* PKP2		**PKPab**	**11 37 15.6**	**+3.1**
VRH	**Novokhopyorsk**	**146.15**	**53**	*e*PKIKP		**PKPdf**	**11 37 08.9**	**-2.0**
VRH				pmax		pmax			
	comp=Z,5.0nm,0.6s								
NEY	**Neytrino**	**146.72**	**67**	*i* PKP2		**PKPab**	**11 37 15.3**	**-0.1**
KIV	**Kislovodsk**	**146.77**	**66**	*i* PKP2		**PKPab**	**11 37 15.9**	**+0.5**
KIV				pmax		pmax			
	comp=Z,27nm,1.0s								
KIV				MLR		MLR			
	comp=Z,115nm,23.0s								
KBZ	**Khabaz**	**146.90**	**66**	PKPbc		**PKPbc**	**11 37 14.9**	**+0.6**
	comp=Z,4.6nm,0.9s,baz=233,slow=3.3,SNR=7.8								
KBZ	**Khabaz**	**146.90**	**66**	PKP2		**PKPbc**	**11 37 15.0**	**+0.6**
GOF	**Gofitskoye**	**147.11**	**64**	*e*PKP2		**PKPab**	**11 37 17.0**	**+0.4**
GOF				pmax		pmax			
	comp=Z,66nm,0.8s								
ONI	**Oni**	**147.18**	**68**	P		**PKPdf**	**11 37 13.8**	**+0.7**
ONI	**Oni**	**147.18**	**68**	PKIKP		**PKPdf**	**11 37 13.8**	**+0.7**
NCK	**Nalchik**	**147.38**	**67**	*i* PKP2		**PKPab**	**11 37 17.5**	**-0.3**
KSRS	**Korea Array**	**147.48**	**282**	PKPbc		**PKPdf**	**11 37 14.9**	**+1.3**
	comp=Z,7.0nm,1.1s,baz=111,slow=4.0,SNR=13								
KSAR	**Wonju Array Be**	**147.51**	**282**	PKP2		**PKPdf**	**11 37 14.9**	**+1.2**
KSAR	**Wonju Array Be**	**147.51**	**282**	PKPbc		**PKPdf**	**11 37 14.9**	**+1.2**
GNI	**Garni**	**147.77**	**73**	*i* PKP2		**PKPab**	**11 37 18.5**	**-1.1**
TBLG	**Delisi**	**148.02**	**70**	P		**PKPbc**	**11 37 18.8**	**+1.1**
TBLG	**Delisi**	**148.02**	**70**	PKP2		**PKPbc**	**11 37 18.7**	**+1.1**
CLNS	**Chul'man**	**148.66**	**319**	*e*PKIKP		**PKPdf**	**11 37 13.7**	**-1.3**
CLNS				pmax		pmax			
	comp=Z,18nm,0.9s								
CLNS				pmax		pmax			
	comp=N,7.0nm,0.8s								
CLNS				pmax		pmax			
	comp=E,8.0nm,1.0s								
NRIK	**Noril'sk**	**148.81**	**359**	PKPbc		**PKPbc**	**11 37 18.6**	**-0.2**
	comp=E,4.0nm,0.5s,baz=317,slow=2.1,SNR=12								
CN2	**Changchun**	**150.30**	**293**	*e*PKPbc		**PKPbc**	**11 37 21.3**	**-1.9**
SOKR	**Solikamsk**	**151.44**	**32**	*e i* PKIKP		**PKPbc**	**11 37 24.9**	**-0.4**
SOKR				pmax		pmax			
	comp=Z,40nm,1.5s								
QIZ	**Qiongzhong**	**152.12**	**233**	PKPbc		**PKPdf**	**11 37 22.3**	**+0.7**
QIZ				PP		**PP**	**11 41 11.5**	**+2.2**
QIZ				SS		SS	12 00 44.5	+7.1
QIZ				LR		LR			
	comp=Z,170nm,16.0s								
BOD	**Bodaibo**	**153.43**	**326**	*e*PKIKP		**PKPdf**	**11 37 17.0**	**-5.2**
BOD				pmax		pmax			
	comp=Z,22nm,1.4s								
ARU	**Arti**	**154.00**	**36**	*i* PKIKP		**PKPdf**	**11 37 23.9**	**+0.8**
BJI	**Beijing**	**156.97**	**284**	PKP		**PKPdf**	**11 37 20.0**	**-7.6**
CMAR	**Chiang Mai Arr**	**157.52**	**212**	PKP		**PKPdf**	**11 37 28.5**	**-0.5**
	comp=Z,0.4nm,0.3s,baz=128,slow=0.9,SNR=4.4								
CMAR				PKPab		**PKPab**	**11 38 00.0**	**-0.6**
	comp=Z,0.7nm,0.3s,baz=158,slow=2.6,SNR=3.6								
GEYT	**Alibeck**	**157.67**	**82**	PKP		**PKPdf**	**11 37 29.6**	**+0.9**
	comp=Z,1.1nm,0.4s,baz=335,slow=6.4,SNR=2.8								
GYA	**Guiyang**	**159.38**	**241**	PKP		**PKPdf**	**11 37 30.3**	**-0.9**
GYA				PKPab		**PKPab**	**11 38 11.0**	**+2.2**
GYA				PKS		**PKSdf**	**11 41 01.8**	**-3.1**
GYA				AMB		AMB			
	comp=Z,110nm,8.2s								
HHC	**Hu-ho-hao-te**	**160.52**	**286**	*e*PKP		**PKPdf**	**11 37 33.3**	**+1.3**
HHC				PP		**PP**	**11 42 01.8**	**+5.3**
HHC				SS		SS	12 02 12.8	+3.9
HHC				AMB		AMB			
	comp=Z,46nm,8.7s								
HHC				LR		LR			
	comp=Z,81nm,21.0s								
HHC				LR		LR			
	comp=Z,160nm,20.6s								
HHC				LR		LR			
	comp=Z,110nm,17.9s								
XAN	**Xi'an**	**161.44**	**264**	PKP		PKPdf	11 37 24.6	-8.5
XAN				PKP		PKPdf	11 37 24.6	-8.5
XAN				PP		**PP**	**11 41 54.0**	**-7.4**
SONM	**Songino Array**	**162.62**	**310**	PKP		**PKPdf**	**11 37 33.0**	**-1.0**
	comp=Z,0.5nm,0.8s,baz=119,slow=1.9,SNR=3.8								
SONM				PKPab		**PKPab**	**11 38 20.8**	**-1.6**
	comp=Z,3.9nm,1.1s,baz=80,slow=3.1,SNR=11								
ZAK	**Zakamensk**	**162.97**	**321**	*e*PKP2		**PKPab**	**11 38 22.2**	**-1.6**
ZAK				*e*			11 42 05.7		
ZAK				pmax		pmax			
	comp=Z,9.0nm,1.6s								
ZAK				pmax		pmax			
	comp=Z,5.0nm,2.0s								
CD2	**Chengdu**	**164.05**	**248**	PKP		**PKPdf**	**11 37 35.5**	**-0.3**
CD2				pPKP		pPKPdf	11 37 38.9	-0.3
CD2				sPKP			11 37 40.1		
CD2				PP		**PP**	**11 42 16.3**	**+1.2**
CD2				SKS		**SKSdf**	**11 44 40.1**	**-0.3**
CD2				SKKS		**SKKSac**	**11 49 03.8**	**+0.8**
CD2				SS		**SS**	**12 02 48.6**	**+3.3**
CD2				AMB		AMB			
	comp=Z,220nm,5.8s								
ZALV	**Zalesovo Beam**	**164.22**	**4**	PKP		**PKPdf**	**11 37 34.3**	**-0.8**
	comp=Z,0.8nm,0.6s,baz=294,slow=1.4,SNR=5.0								
ZALV				PKPab		**PKPab**	**11 38 27.7**	**-1.2**
	comp=Z,1.2nm,0.5s,baz=306,slow=5.0,SNR=4.0								
LZH	**Lanzhou**	**166.02**	**267**	*e*PKP		**PKPdf**	**11 37 35.1**	**-2.4**
LZH				pPKP		pPKPdf	11 37 39.8	-1.1
LZH				sPKP			11 37 43.0		
LZH				LR		LR			
	comp=Z,340nm,17.3s								
LZH				LR		LR			
	comp=Z,250nm,16.1s								
LZH				LR		LR			
	comp=Z,270nm,19.7s								
FRU	**Bishkek**	**169.84**	**59**	PKIKP		**PKPdf**	**11 37 39.0**	**-0.7**
FRU				*e*			11 38 56.0		
MKAR	**Makanchi Array**	**170.88**	**19**	PKP		**PKPdf**	**11 37 38.5**	**-1.7**
	comp=Z,1.9nm,1.1s,baz=24,slow=1.7,SNR=6.5								
KSH	**Kashi**	**171.67**	**78**	*e*PKP		**PKPdf**	**11 37 41.4**	**+0.5**
KSH				PKS		**PKSdf**	**11 41 12.8**	**-0.5**
KSH				*e*PP		**PP**	**11 42 52.0**	**-2.3**
KSH				SKS		**SKSdf**	**11 44 43.8**	**-0.5**
KSH				SKKS		**SKKSac**	**11 49 39.0**	**-1.7**
KSH				SS		**SS**	**12 03 53.4**	**-9.0**
KSH				LR		LR			
	comp=Z,120nm,7.8s								
KSH				LR		LR			
	comp=Z,77nm,8.0s								
KSH				LR		LR			
	comp=Z,140nm,10.8s								
WMQ	**Urumqi**	**174.33**	**351**	*e*PKP		**PKPdf**	**11 37 39.3**	**-2.5**
WMQ				PP		**PP**	**11 43 04.1**	**-1.6**
WMQ				AMB		AMB			
	comp=Z,110nm,6.9s								
WMQ				LR		LR			
	comp=Z,200nm,26.5s								
WMQ				LR		LR			
	comp=Z,220nm,29.7s								
WMQ				LR		LR			
	comp=Z,220nm,24.4s								

IDC 14 11:23:14.3±17.0, 37.08S×93.99W, h0km, mb3.8/3, mb1 4.2/3, mb1mx3.9/20, mbtmpg3.8/3, Error ellipse: s-maj=434.9km s-min=55.0km az=5.0, West Chile Rise

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**30.86**	**55**	P	P	11 29 33.0	0.0
	3.4nm,1.0s,baz=229,slow=13,SNR=4.5						
TXAR	**Lajitas Array**	**66.69**	**351**	P	P	11 34 06.9	0.0
	0.7nm,1.0s,baz=172,slow=7.1,SNR=4.5						
PDAR	**Pinedale Array**	**80.73**	**348**	P	P	11 35 29.4	+0.1
	0.8nm,0.8s,baz=161,slow=6.2,SNR=5.2						

NIED ***14*** *11:32:00, 37.60N×143.80E, h5km, Mw3.5 Best double couple: M0 2.07000×10^14 NP1:ϕs=60.00000°, δ45.00000°, λ-31.00000°. NP2:ϕs173.00000°, δ68.00000°, λ-131.00000°.*

JMA 14 11:32:20.7±0.2, 37.58N×143.77E, h51km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.10**	**295**	P	Pn	11 32 54.6	+1.2
JIO				S	Sn	11 33 19.9	+1.5
OFUJ	**Ofunato**	**2.23**	**313**	P	Pn	11 32 56.0	+0.8
OFUJ				S	Sn	11 33 22.5	+1.0
JFK	**Kawauchi**	**2.31**	**266**	P	Pn	11 32 57.4	+1.0
JFK				S	Sn	11 33 23.8	+0.2
JMK	**Ichinoseki**	**2.43**	**305**	P	Pn	11 32 59.3	+1.4
JOM	**Ohasama**	**2.71**	**315**	P	Pn	11 33 03.4	+1.6
JOM				S	Sn	11 33 35.0	+1.7
JFT	**Otama**	**2.73**	**270**	P	Pn	11 33 04.1	+2.1
JFT				S	Sn	11 33 35.4	+1.6
JYK	**Kaneyama**	**3.00**	**297**	P	Pn	11 33 07.9	+2.2

0.5nm,0.3s,baz=233,slow=20,SNR=3.2
H11N2 WAKE ISLAND Hy 27.41 125 T T 12 13 43.2
baz=317,slow=75,SNR=24
H11N1 WAKE ISLAND Hy 27.42 125 T T 12 13 37.7
baz=317,slow=75,SNR=16
H11N3 WAKE ISLAND Hy 27.43 125 T T 12 13 42.5
baz=317,slow=75,SNR=24
H11S1 WAKE ISLAND Hy 28.18 127 T T 12 14 37.5
baz=319,slow=76,SNR=6.6
H11S3 WAKE ISLAND Hy 28.18 127 T T 12 14 33.8
baz=319,slow=76,SNR=6.6
H11S2 WAKE ISLAND Hy 28.20 127 T T 12 14 38.7
baz=319,slow=76,SNR=8.2
WRA Warramunga Arr 58.21 190 P **P 11 48 58.1 +0.6**
1.0nm,0.6s,baz=8.1,slow=7.2,SNR=10
ASAR Alice Springs 61.93 190 P **P 11 49 23.8 +0.8**
0.2nm,0.7s,baz=4.0,slow=6.8,SNR=4.1

*IDC **14** 11:42:27.8±1.4,38°.70N×142°.47E,h0km,mb3.3/2, mb1 3.6/6,mb1mx3.4/48,mbtmp3.5/6,ML3.1/4,MS4.0/1, Ms1 4.0/1,ms1mx2.5/23,Error ellipse: s-maj=41.1km s-min=22.1km az=108.0*
*ISCJB **14** 11:42:31.1±1.0,38°.68N±0°.04×142°.1E±0°.1,h42km±14km, mb3.4/2,MS4.0/1,Error ellipse: s-maj=13.9km s-min=6.0km az=18.4*
*JMA **14** 11:42:31.9,38°.70N×142°.04E,h48km±1km,M3.8*
JMA Felt II J1.
ISC 14 11:42:31.3±1.8,38°.64N±0°.05×142°.09E±0°.09,h30km±12km, n23,σ1§73/26,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.55**	**323**	P	**Pn**	**11 42 42.9**	**-0.1**
OFUJ				*e*S	**Sb**	**11 42 50.4**	**+0.2**
JIO	**Ouri**	**0.61**	**252**	P	**Pb**	**11 42 44.2**	**+0.6**
JIO				*e*S	**Sb**	**11 42 52.7**	**+0.7**
JMK	**Ichinoseki**	**0.75**	**295**	P	**Pb**	**11 42 45.6**	**-0.3**
JMK				*e*S	**Sb**	**11 42 55.2**	**-0.5**
JOM	**Ohasama**	**1.04**	**323**	P	**Pn**	**11 42 49.3**	**-0.5**
JOM				*e*S	**Sb**	**11 43 01.1**	**-1.9**
JOU	**Okura**	**1.15**	**257**	P	**Pn**	**11 42 51.5**	**+0.1**
JOU				*e*S	**Sn**	**11 43 06.1**	**-0.1**
JMM	**Marumori**	**1.28**	**233**	P	**Pn**	**11 42 53.3**	**+0.1**
JMM				*e*S	**Sn**	**11 43 08.9**	**-0.4**
JTH	**Tanohata**	**1.30**	**352**	P	**Pn**	**11 42 53.3**	**-0.2**
JTH				*e*S	**Sn**	**11 43 09.1**	**-0.8**
JRG	**Rokugo**	**1.36**	**304**	P	**Pn**	**11 42 53.8**	**-0.4**
JYK	**Kaneyama**	**1.38**	**282**	P	**Pn**	**11 42 54.3**	**-0.2**
JYK				*e*S	**Sn**	**11 43 10.9**	**-0.8**
MJAR	**Matsushiro Arr**	**3.73**	**237**	Pn	**Pn**	**11 43 29.5**	**+2.7**
	1.6nm,0.3s,baz=33,slow=13,SNR=12						
MAT	**Matsushiro**	**3.73**	**237**	P	**Pn**	**11 43 29.4**	**+2.6**
MAT				S	**Sb**	**11 44 17.3**	**-4.0**
ASAJ	**Asahikawa**	**5.48**	**4**	Pn	**Pn**	**11 43 50.0**	**-0.8**
	0.8nm,0.3s,baz=196,slow=19,SNR=8.4						
JHJ	**Hachijo jima 2**	**5.82**	**199**	Pn	**Pn**	**11 43 56.1**	**+0.6**
	3.7nm,0.3s,baz=30,slow=14,SNR=7.8						
JHJ				Sn	**Sn**	**11 44 58.0**	**-3.3**
	5.9nm,0.3s,baz=253,slow=19,SNR=3.4						
USRK	**Ussuriysk Ar.**	**9.40**	**309**	Pn	**Pn**	**11 44 47.8**	**+3.2**
	0.3nm,0.3s,baz=140,slow=14,SNR=6.0						
H11N2	**WAKE ISLAND Hy 28.56**	**124**		T	T	12 18 48.2	
	baz=317,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy 28.57**	**124**		T	T	12 18 55.4	
	baz=317,slow=75,SNR=25						
H11N3	**WAKE ISLAND Hy 28.58**	**124**		T	T	12 18 52.8	
	baz=317,slow=75,SNR=17						
H11S1	**WAKE ISLAND Hy 29.33**	**126**		T	T	12 19 41.3	
	baz=318,slow=76,SNR=23						
H11S3	**WAKE ISLAND Hy 29.33**	**126**		T	T	12 19 51.7	
	baz=318,slow=76,SNR=31						
H11S2	**WAKE ISLAND Hy 29.34**	**126**		T	T	12 19 48.0	
	baz=318,slow=76,SNR=28						
ILAR	**Eielson Array**	**47.85**	**33**	P	**P**	**11 51 04.8**	**-1.2**
	0.2nm,0.5s,baz=270,slow=6.1,SNR=4.1						
PMG	**Port Moresby**	**48.03**	**173**	LR	LR	12 09 32.0	
	comp=Z,167nm,21.4s,baz=128,slow=34						
WRA	**Warramunga Arr**	**58.73**	**189**	P	**P**	**11 52 28.7**	**+2.4**
	0.3nm,0.8s,baz=5.3,slow=6.9,SNR=2.9						

*IDC **14** 11:43:53.9±1.4,0°.98N×100°.01E,h204km±11km,mb3.4/5, mb1 3.5/6,mb1mx3.1/46,mbtmp3.9/6,Error ellipse: s-maj=68.2km s-min=13.9km az=48.0*
*ISCJB **14** 11:43:54.1±0.6,1°.1N±0°.1×100°.01E±0°.09,h200km, mb3.5/5,Error ellipse: s-maj=16.8km s-min=7.7km az=37.4*
*DJA **14** 11:43:57.5±0.7,1°.N±5°×10°.0E±°,h181km±6km,M3.0/3, MLv3.0/3*
ISC 14 11:43:54.1±0.8,1°.1N±0°.1×100°.03E±0°.09,h200km,n10, σ1§52/16,mb3.7/5,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNSI	**Mandailing Nat**	**0.55**	**235**	P	**Pn**	**11 44 23.4**	**+2.0**
MNSI				S	**Sn**	**11 44 42.4**	**-0.1**
BKNI	**Bangkinang**	**1.28**	**128**	P	**Pn**	**11 44 27.9**	**+2.0**
BKNI				S	**Sn**	**11 44 52.9**	**+2.3**
PSI	**Prapat**	**2.01**	**327**	P	**Pn**	**11 44 34.0**	**+1.2**
	9.6nm,0.3s,baz=144,slow=9.6,SNR=36						
PSI				S	**Sn**	**11 45 03.8**	**+0.7**
	1.1nm,0.3s,baz=309,slow=19,SNR=8.9						
GSI	**Gunungsitoli**	**2.46**	**274**	P	**Pn**	**11 44 40.0**	**+2.4**
GSI				S	**Sn**	**11 45 10.4**	**-1.0**
SDSI	**Sungai Dareh**	**2.47**	**145**	P	**Pn**	**11 44 38.9**	**+1.3**
FITZ	**Fitzroy Crossi**	**31.62**	**128**	P	**P**	**11 49 57.4**	**-1.0**
	1.9nm,1.0s,baz=323,slow=5.1,SNR=2.5						
WRA	**Warramunga Arr**	**39.61**	**124**	P	**P**	**11 51 05.5**	**-1.1**
	3.0nm,0.6s,baz=303,slow=9.1,SNR=30						
WRA				PcP	**PcP**	**11 53 08.9**	**-0.8**
	0.4nm,0.5s,baz=320,slow=2.5,SNR=7.3						
ASAR	**Alice Springs**	**41.11**	**129**	P	**P**	**11 51 17.2**	**-1.6**
	0.2nm,0.3s,baz=296,slow=7.6,SNR=14						
ASAR				PcP	**PcP**	**11 53 13.9**	**-0.6**
	0.3nm,0.6s,baz=309,slow=2.5,SNR=4.9						
MKAR	**Makanchi Array**	**48.06**	**344**	P	**P**	**11 52 13.8**	**+0.4**
	0.6nm,0.3s,baz=155,slow=8.3,SNR=11						
BRTR	**Keskin Array B**	**71.27**	**312**	P	**P**	**11 54 51.5**	**-0.6**
	0.9nm,0.6s,baz=116,slow=7.0,SNR=4.9						

*ISCJB **14** 12:14:07.8±1.2,14°.8N±0°.1×52°.8E±0°.1,h10km,mb3.6/10, MS3.5/3,Error ellipse: s-maj=19.2km s-min=18.9km az=153.3*
*IDC **14** 12:14:07.3±2.0,14°.69N×52°.76E,h0km,mb3.8/10, mb1 3.9/11,mb1mx3.6/42,mbtmp3.8/11,ML3.7/1,MS3.5/4, Ms1 3.5/4,ms1mx3.0/47,Error ellipse: s-maj=43.2km s-min=25.1km az=36.0*
ISC 14 12:14:09.1±1.5,14°.8N±0°.2×52°.8E±0°.2,h10km,n16, σ0§95/14,mb3.7/10,MS3.3/3,Eastern Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABTO	**Aybut**	**2.64**	**11**	P	**Pn**	**12 14 50.2**	**-1.6**
RBK	**Rabkut**	**3.07**	**27**	P	**Pn**	**12 14 58.6**	**+0.9**
	SNR=37						
JMDO	**Jabal Madar**	**9.12**	**33**	P	**Pn**	**12 16 20.9**	**+0.1**
	SNR=6.2						
WSAR	**Wadi Sarin**	**10.11**	**32**	Pn	**Pn**	**12 16 33.3**	**-1.1**
	0.6nm,0.3s,baz=249,slow=8.1,SNR=6.6						
WSAR				LR	LR	12 20 33.1	
	comp=Z,144nm,21.8s,baz=215,slow=38						
MMAI	**Mount Meron Ar**	**24.06**	**322**	LR	LR	12 29 54.3	
	comp=Z,54nm,20.2s,baz=145,slow=39						
BRTR	**Keskin Array B**	**29.99**	**330**	P	**P**	**12 20 19.6**	**+1.5**
	0.8nm,0.9s,baz=155,slow=9.1,SNR=4.3						
KBZ	**Khabaz**	**30.08**	**346**	P	**P**	**12 20 19.6**	**+1.0**
	1.5nm,0.8s,baz=135,slow=14,SNR=2.7						
AAK	**Ala-Archa**	**33.50**	**30**	LR	LR	12 37 24.5	
	comp=Z,310nm,18.1s,baz=254,slow=42						
MKAR	**Makanchi Array**	**40.34**	**32**	P	**P**	**12 21 47.5**	**+0.5**
	0.8nm,0.7s,baz=219,slow=6.8,SNR=3.9						
AKASG	**Malin Array Be**	**40.59**	**337**	P	**P**	**12 21 48.6**	**-0.2**
	0.2nm,0.3s,baz=140,slow=7.1,SNR=2.5						
BVAR	**Borovoye Array**	**40.66**	**16**	P	**P**	**12 21 49.7**	**+0.3**
	1.0nm,0.7s,baz=217,slow=7.2,SNR=6.0						
KURBB	**Kurchatov Arra**	**41.41**	**25**	P	**P**	**12 21 56.1**	**+0.5**
	0.8nm,0.8s,baz=226,slow=8.3,SNR=11						
CMAR	**Chiang Mai Arr**	**44.33**	**79**	P	**P**	**12 22 20.0**	**+0.2**
	1.1nm,0.7s,baz=280,slow=9.1,SNR=5.4						
CMAR				LR	LR	12 41 22.6	
	comp=Z,38nm,18.8s,baz=95,slow=37						
ZALV	**Zalesovo Beam**	**46.47**	**26**	P	**P**	**12 22 35.6**	**-0.6**
	1.0nm,0.4s,baz=203,slow=9.7,SNR=5.1						
FINES	**FINESS Array B**	**50.41**	**344**	P	**P**	**12 23 05.7**	**-0.7**
	1.1nm,0.6s,baz=136,slow=18,SNR=3.0						
ASAR	**Alice Springs**	**87.97**	**115**	P	**P**	**12 26 59.2**	**-0.7**
	0.3nm,0.6s,baz=288,slow=4.4,SNR=5.1						

IDC 14 12:15:02.8±2.6,21°.86N×91°.91E,h0km,mb3.4/3, mb1 3.4/4,mb1mx3.2/44,mbtmp3.3/4,ML3.4/1,Error ellipse: s-maj=77.7km s-min=26.9km az=64.0,Bay of Bengal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**7.42**	**116**	Pn	Pn	12 16 51.2	-1.2
	0.2nm,0.3s,baz=292,slow=14,SNR=4.8						
MKAR	**Makanchi Array**	**26.07**	**345**	P	P	12 20 37.6	-0.4
	0.3nm,0.6s,baz=151,slow=7.9,SNR=3.6						
SONM	**Songino Array**	**28.41**	**21**	P	P	12 20 59.4	+0.2
	0.2nm,0.3s,baz=207,slow=6.1,SNR=2.5						
ASAR	**Alice Springs**	**60.97**	**135**	P	P	12 25 18.5	+0.4
	0.3nm,0.9s,baz=313,slow=6.2,SNR=4.6						

*IDC **14** 12:19:59.4±1.4,36°.14S×73°.23W,h0km,mb3.8/5, mb1 4.1/8,mb1mx3.9/29,mbtmp3.9/8,ML4.1/3,MS3.7/4, Ms1 3.6/4,ms1mx3.2/29,Error ellipse: s-maj=41.9km s-min=18.6km az=76.0*
*ISCJB **14** 12:20:01.8±0.7,36°.18S±0°.04×73°.50W±0°.08,h33km, mb3.9/4,MS3.6/2,Error ellipse: s-maj=8.8km s-min=6.2km az=3.3*
*NEIC **14** 12:20:02.0,36°.25S×73°.43W,h35km,ML4.2(GUC),After GUC.*
*GUC **14** 12:20:02.4±0.7,36°.25S×73°.43W,h35km±4km,ML4.2*
ISC 14 12:20:03.8±0.8,36°.21S±0°.05×73°.41W±0°.09,h35km,n20, σ1§31/22,mb3.9/4,2C-3D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.51**	**81**	↓*i*P	**Pn**	**12 20 12.9**	**-1.6**
COCH				*i* S	**Sn**	**12 20 21.4**	**-0.6**
COCH				IAML		12 20 22.3	
	comp=E,22μm,1.1s						
CCSP	**San Pedro de C**	**0.67**	**159**	↓*i*P	**Pn**	**12 20 14.4**	**-2.4**
CCSP				*i* S	**Sn**	**12 20 24.7**	**-1.4**
CCSP				IAML		12 20 25.5	
	comp=N,25μm,0.3s						
CCHI	**Chillan**	**1.14**	**110**	↑*i*P	**Pn**	**12 20 23.0**	**-0.2**
CCHI				*i* S	**Sn**	**12 20 40.2**	**+2.5**
CCHI				IAML		12 20 45.7	
	comp=E,14μm,1.0s						
TALC	**Talca**	**1.65**	**61**	↑*i*P	**Pn**	**12 20 30.8**	**+0.5**
NICH	**Los Niches**	**2.15**	**56**	*e*P	**Pn**	**12 20 37.9**	**+0.8**
FCH	**Farellones**	**3.85**	**43**	↓*i*P	**Pn**	**12 21 00.5**	**-0.3**
FCH				*i* S	**Sn**	**12 21 45.2**	**+0.1**
PLCA	**Paso Flores**	**5.04**	**154**	Pn	**Pn**	**12 21 18.4**	**+1.6**
	comp=E,1.7nm,0.3s,baz=350,slow=13,SNR=46						
PLCA				Lg	Lg	12 22 40.6	
	comp=E,4.3nm,0.3s,baz=114,slow=23,SNR=7.2						
LVC	**Limon Verde**	**14.11**	**17**	Pn	**Pn**	**12 23 19.7**	**-1.7**
	comp=E,4.6nm,0.3s,baz=211,slow=5.9,SNR=2.1						
LVC				LR	LR	12 28 55.3	
	comp=E,661nm,19.4s,baz=208,slow=38						
CPUP	**Villa Florida**	**16.89**	**59**	Pn	**Pn**	**12 23 55.6**	**-1.8**
	comp=E,0.1nm,0.3s,baz=222,slow=13,SNR=5.2						
CPUP				LR	LR	12 30 26.9	
	comp=E,108nm,21.1s,baz=234,slow=38						
LPAZ	**La Paz**	**20.39**	**15**	P	**P**	**12 24 39.0**	**+0.7**
	comp=E,0.9nm,0.6s,baz=196,slow=12,SNR=9.0						
SIV	**San Ignacio**	**22.94**	**32**	P	**P**	**12 25 04.0**	**-1.0**
	comp=E,3.7nm,0.9s,baz=226,slow=12,SNR=12						
SIV				LR	LR	12 35 49.7	
	comp=E,180nm,19.9s,baz=176,slow=42						
VNA1	**Neumayer--Stat**	**48.10**	**156**	P	P	12 28 27.7	-12
SNAA	**Sanae**	**49.98**	**157**	P	**P**	**12 28 55.0**	**+1.0**
QSPA	**South Pole Qui**	**54.03**	**180**	*e*P	**P**	**12 29 25.1**	**+0.7**
VNDA	**Vanda**	**61.71**	**192**	LR	LR	12 52 45.8	
	comp=E,47nm,19.8s,baz=114,slow=32						
TXAR	**Lajitas Array**	**71.14**	**332**	P	**P**	**12 31 20.1**	**+1.3**
	comp=E,0.5nm,0.7s,baz=149,slow=7.6,SNR=5.7						
BOSA	**Boshof**	**80.03**	**118**	P	**P**	**12 32 10.3**	**+0.3**
	comp=E,3.0nm,0.9s,baz=196,slow=6.5,SNR=4.4						
TORD	**Torodi Ar. Bea**	**86.01**	**71**	P	**P**	**12 32 40.2**	**-0.7**
	comp=E,0.7nm,0.9s,baz=237,slow=5.0,SNR=3.7						
BVAR	**Borovoye Array**	**149.65**	**45**	PKPbc	**PKPbc**	**12 39 49.6**	**+0.5**
	comp=E,0.6nm,0.6s,baz=308,slow=5.5,SNR=4.1						
MKAR	**Makanchi Array**	**159.03**	**52**	PKP	**PKPdf**	**12 39 57.7**	**0.0**
	comp=E,0.2nm,0.5s,baz=8.7,slow=1.9,SNR=3.5						

IDC 14 12:25:21.5±8.6,28°.27S×177°.36W,h0km,mb3.8/3, mb1 4.0/3,mb1mx3.7/26,mbtmp3.8/3,MS3.6/1,Ms1 3.6/1, ms1mx2.7/26,Error ellipse: s-maj=156.5km s-min=27.3km az=89.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.09**	**206**	Pn	Pn	12 25 44.5	+0.4
	83nm,0.3s,baz=82,slow=11,SNR=12						
RAO				Sn	Sn	12 26 00.4	+0.4
	328nm,0.3s,baz=357,slow=22,SNR=8.5						
HNR	**Honiara**	**28.40**	**307**	LR	LR	12 41 29.6	
	comp=Z,110nm,19.5s,baz=98,slow=34						
STKA	**Stephens Creek**	**35.55**	**254**	P	P	12 32 20.4	-0.1
	1.6nm,0.8s,baz=96,slow=9.2,SNR=3.2						
ASAR	**Alice Springs**	**43.82**	**264**	P	P	12 33 29.3	-0.3
	0.9nm,0.6s,baz=97,slow=6.8,SNR=20						
WRA	**Warramunga Arr**	**44.62**	**270**	P	P	12 33 35.9	-0.1
	1.3nm,1.0s,baz=112,slow=7.3,SNR=8.5						

*DDA **14** 12:34:54.4,40°.15N×29°.95E,h7km,Md2.6*
*ISCJB **14** 12:34:55.4±0.4,40°.15N±0°.03×29°.94E±0°.04,h7km±5km, Error ellipse: s-maj=6.0km s-min=4.2km az=140.0*
*CSEM **14** 12:34:55.8±0.2,40°.14N×29°.94E,h2km,MD2.0,Error ellipse: s-maj=5.1km s-min=3.6km az=51.0*
*ISK **14** 12:34:55.9,40°.17N×29°.89E,h4km,MD2.0*
ISC 14 12:34:55.6±1.1,40°.15N±0°.02×29°.97E±0°.02,h1km±24km, n27,σ0§60/41,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAVI	**Cavuskoy**	**0.11**	**301**	*e*PG	**Pg**	**12 34 57.6**	**-0.1**
CAVI				*e*SG	**Sg**	**12 34 58.8**	**-0.3**
CAVI	**Cavuskoy**	**0.11**	**301**	*e*Pg	**Pg**	**12 34 57.6**	**-0.1**
CAVI				*e*Sg	**Sg**	**12 34 58.8**	**-0.3**
GPA	**Golpazari**	**0.30**	**61**	*e*PG	**Pb**	**12 35 03.5**	**-0.3**
GPA	**Golpazari**	**0.30**	**61**	*e*Pg	**Pb**	**12 35 03.5**	**-0.3**
ADVT	**Abdulvahap**	**0.34**	**329**	*e*PG	**Pg**	**12 35 01.8**	**-0.2**
ADVT				*e*SG	**Sg**	**12 35 07.0**	**+0.6**
ADVT	**Abdulvahap**	**0.34**	**329**	*e*Pg	**Pg**	**12 35 01.8**	**-0.2**
ADVT				*e*Sg	**Sg**	**12 35 07.0**	**+0.6**
IZI	**Iznik**	**0.42**	**297**	*e*PG	**Pg**	**12 35 03.8**	**+0.1**
IZI				*e*SG	**Sg**	**12 35 09.4**	**+0.2**
IZI	**Iznik**	**0.42**	**297**	*e*Pg	**Pg**	**12 35 03.8**	**+0.1**
IZI				*e*Sg	**Sg**	**12 35 09.4**	**+0.2**
BORA	**Eskisehir**	**0.46**	**125**	*i* P	**Pg**	**12 35 03.7**	**-0.6**
BORA				*i* S	**Sg**	**12 35 10.6**	**+0.3**
BORA	**Eskisehir**	**0.46**	**125**	P	**Pg**	**12 35 03.7**	**-0.6**
BORA				S	**Sg**	**12 35 10.6**	**+0.3**
GULT	**Gulveren**	**0.51**	**55**	*e*PG	**Pb**	**12 35 07.2**	**-0.2**
GULT	**Gulveren**	**0.51**	**55**	*e*Pg	**Pb**	**12 35 07.2**	**-0.2**
IGD	**Bursa**	**0.60**	**282**	*i* P	**Pg**	**12 35 05.3**	**-1.7**
TVSB	**Tavsanli**	**0.80**	**209**	*e*PG	**Pb**	**12 35 11.7**	**-0.6**
TVSB	**Tavsanli**	**0.80**	**209**	*e*Pg	**Pb**	**12 35 11.7**	**-0.6**
ESKT	**Eskisehir**	**0.92**	**132**	*e*PG	**Pb**	**12 35 15.2**	**+0.7**
ESKT	**Eskisehir**	**0.92**	**132**	*i* P	**Pg**	**12 35 12.1**	**-1.2**
ESKT				*i* S	**Sg**	**12 35 26.3**	**+1.1**
ESKT	**Eskisehir**	**0.92**	**132**	*e*Pg	**Pb**	**12 35 15.2**	**+0.7**
SEYT	**Eskypehyr**	**0.92**	**132**	P	**Pg**	**12 35 12.1**	**-1.2**
SEYT				S	**Sg**	**12 35 26.3**	**+1.1**
ARMT	**Armutlu**	**0.94**	**297**	*e*PG	**Pg**	**12 35 13.8**	**+0.2**
ARMT	**Armutlu**	**0.94**	**297**	*e*Pg	**Pg**	**12 35 13.8**	**+0.2**
KAND	**Kocaeli-Kandir**	**0.96**	**10**	*i* P	**Pg**	**12 35 13.9**	**-0.1**
KAND				*i* S	**Sg**	**12 35 26.4**	**-0.1**
KAND	**Kocaeli-Kandir**	**0.96**	**10**	P	**Pg**	**12 35 13.9**	**-0.1**
KAND				S	**Sg**	**12 35 26.4**	**-0.1**
SILT	**Sile**	**1.04**	**346**	*e*PG	**Pg**	**12 35 15.7**	**+0.3**
SILT	**Sile**	**1.04**	**346**	*e*Pg	**Pg**	**12 35 15.7**	**+0.3**
GDZ	**Gediz**	**1.12**	**200**	*i* P	**Pg**	**12 35 17.2**	**+0.2**
GDZ				*i* S	**Sg**	**12 35 32.1**	**+0.6**
GDZ	**Gediz**	**1.12**	**200**	P	**Pg**	**12 35 17.2**	**+0.2**
GDZ				S	**Sg**	**12 35 32.1**	**+0.6**

*IDC **14** 12:38:16.2±5.5,36°.96N×144°.67E,h0km,mb3.4/2, mb1 3.6/4,mb1mx3.3/47,mbtmp3.5/4,ML3.2/2,Error ellipse: s-maj=107.2km s-min=45.8km az=18.0*
*ISCJB **14** 12:38:18.1±1.1,37°.18N±0°.05×144°.33E±0°.09,h26km, mb3.4/2,Error ellipse: s-maj=10.1km s-min=7.1km az=159.4*
*JMA **14** 12:38:22.0±0.5,37°.31N×144°.20E,h43km,M3.0*
ISC 14 12:38:18.8±1.8,37°.21N±0°.06×144°.4E±0°.1,h26km,n15, σ1§54/19,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.74**	**298**	P	**Pn**	**12 39 01.5**	**+0.5**
JIO				S	**Sn**	**12 39 32.2**	**-1.1**
JFK	**Kawauchi**	**2.84**	**274**	P	**Pn**	**12 39 03.1**	**+0.6**
JFK				S	**Sn**	**12 39 35.0**	**-0.9**
OFUJ	**Ofunato**	**2.87**	**311**	P	**Pn**	**12 39 04.7**	**+1.9**
OFUJ				*e*S	**Sn**	**12 39 33.8**	**-2.7**
JMK	**Ichinoseki**	**3.07**	**305**	P	**Pn**	**12 39 07.0**	**+1.4**
JMK				S	**Sn**	**12 39 39.9**	**-1.6**
JFT	**Otama**	**3.27**	**277**	P	**Pn**	**12 39 10.2**	**+1.7**
JFT				S	**Sn**	**12 39 47.1**	**+0.5**
JOM	**Ohasama**	**3.34**	**313**	S	**Sn**	**12 39 46.4**	**-1.9**
JRY	**Ryogami san**	**4.60**	**257**	P	**Pn**	**12 39 27.7**	**+0.9**
JRY				*e*S	**Sn**	**12 40 18.0**	**-1.4**
JOD2	**Odawara 2**	**4.74**	**247**	*e*S	**Sn**	**12 40 22.7**	**+0.1**
MJAR	**Matsushiro Arr**	**5.03**	**264**	Pn	**Pn**	**12 39 34.8**	**+2.2**
	0.7nm,0.3s,baz=88,slow=14,SNR=7.3						
JHJ	**Hachijo jima 2**	**5.58**	**224**	Pn	**Pn**	**12 39 40.6**	**+0.5**
	2.0nm,0.3s,baz=275,slow=23,SNR=6.2						
JHJ				Sn	**Sn**	**12 40 41.1**	**-2.4**
	6.2nm,0.3s,baz=238,slow=22,SNR=7.5						
H11N2	**WAKE ISLAND Hy 26.22**	**125**		T	T	13 11 02.6	
	baz=321,slow=74,SNR=8.1						
H11N1	**WAKE ISLAND Hy 26.23**	**125**		T	T	13 10 55.8	
H11N3	**WAKE ISLAND Hy 26.24**	**125**		T	T	13 11 06.1	
	baz=313,slow=74,SNR=4.2						
WRA	**Warramunga Arr**	**57.64**	**191**	P	**P**	**12 48 06.5**	**-0.2**
	0.4nm,1.0s,baz=11,slow=7.3,SNR=5.8						
ASAR	**Alice Springs**	**61.36**	**191**	P	**P**	**12 48 32.5**	**+0.1**
	0.3nm,0.9s,baz=0.9,slow=7.6,SNR=4.5						

IDC 14 12:40:01.7±2.2,54°.27N×86°.16E,h0km,mb1 3.2/3, mb1mx3.1/47,mbtmp3.2/3,ML2.7/3,Error ellipse: s-maj=18.0km s-min=12.2km az=54.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.85**	**249**	*i*		12 45 50.0	
	baz=65,slow=326,SNR=2.2						
ZALV	**Zalesovo Beam**	**0.85**	**249**	Pg	Pg	12 40 16.6	-1.4
	1.1nm,0.3s,baz=68,slow=18,SNR=11						
ZALV				Lg	Lg	12 40 30.1	
	3.1nm,0.3s,baz=67,slow=30,SNR=20						
KURBB	**Kurchatov Arra**	**5.92**	**235**	Pn	Pn	12 41 31.7	+1.1
	0.1nm,0.3s,baz=52,slow=14,SNR=28						
KURBB				Lg	Lg	12 43 10.7	
	0.0nm,0.3s,baz=28,slow=23,SNR=4.6						
MKAR	**Makanchi Array**	**7.88**	**200**	Pn	Pn	12 41 57.9	+0.5
	0.2nm,0.3s,baz=23,slow=13,SNR=12						
MKAR				Lg	Lg	12 44 10.2	
	0.1nm,0.3s,baz=27,slow=29,SNR=4.6						
BVAR	**Borovoye Array**	**9.45**	**269**	Pn	Pn	12 42 19.0	0.0
	0.1nm,0.3s,baz=78,slow=13,SNR=2.4						

IDC 14 12:44:16.2±2.7,54°.17N×86°.44E,h0km,mb1 3.3/2, mb1mx3.1/45,mbtmp3.3/2,ML2.9/2,Error ellipse: s-maj=23.1km s-min=15.2km az=43.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.98**	**258**	*i*		12 50 49.2	
	baz=77,slow=317,SNR=7.1						
ZALV	**Zalesovo Beam**	**0.98**	**258**	Pg	Pg	12 44 33.7	-1.3
	1.3nm,0.3s,baz=79,slow=17,SNR=9.4						
ZALV				Lg	Lg	12 44 48.6	
	1.4nm,0.3s,baz=83,slow=20,SNR=5.6						
KURBB	**Kurchatov Arra**	**6.00**	**237**	Pn	Pn	12 45 47.1	+0.8
	0.2nm,0.3s,baz=54,slow=14,SNR=18						
KURBB				Lg	Lg	12 47 29.9	
	0.1nm,0.3s,baz=57,slow=33,SNR=6.4						
MKAR	**Makanchi Array**	**7.84**	**201**	Pn	Pn	12 46 12.5	+1.0
	0.3nm,0.3s,baz=25,slow=13,SNR=8.7						

*NIED **14** 13:00:00,35°.80N×141°.00E,h11km,Mw3.7 Best double couple: M0 3.52000×10^14 NP1:φs17.00000°,δ45.00000°, λ-66.00000°. NP2:φs165.00000°,δ50.00000°, λ-113.00000°.*
*ISCJB **14** 13:00:02.0±1.3,35°.82N±0°.03×141°.15E±0°.07,h2km±7km, mb3.6/6,Error ellipse: s-maj=9.4km s-min=5.5km az=3.

s-min=4.3km az=19.4
*NEIC **14** 13:18:53.8±0.4,33°.24S×178°.53W,h35km,mb5.0/10, Error ellipse: s-maj=11.8km s-min=9.2km az=104.0*
ISC 14 13:18:52.9±0.6,**33°28S**±0°.07×**178°25W**±0°.10,**h32**km,**n71,** σ1§**48**/69,**mb4.8**/19,**MS4.0**/10,**2C, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PKGZ	**Pakihiroa**	**5.49**	**212**	PN		**Pn**	**13 20 11.5**	**-1.0**
PKGZ				SN		**Sn**	**13 21 15.3**	**+0.7**
HAZ	**Te Kaha**	**5.52**	**215**	PN		**Pn**	**13 20 12.6**	**-0.2**
PUZ	**Puketiti**	**5.57**	**210**	PN		**Pn**	**13 20 12.0**	**-1.5**
PUZ				SN		**Sn**	**13 21 18.2**	**+1.8**
TWGZ	**Tauwhareparae**	**5.77**	**211**	PN		**Pn**	**13 20 14.9**	**-1.5**
TWGZ				SN		**Sn**	**13 21 24.4**	**+2.9**
CNGZ	**Carnagh Statio**	**5.94**	**208**	PN		**Pn**	**13 20 17.9**	**-0.7**
TKGZ	**Te Karaka**	**6.05**	**211**	PN		**Pn**	**13 20 19.5**	**-0.6**
TKGZ				SN		**Sn**	**13 21 29.1**	**+0.9**
MWZ	**Matawai**	**6.10**	**213**	PN		**Pn**	**13 20 20.1**	**-0.8**
MWZ				SN		**Sn**	**13 21 31.1**	**+1.5**
URZ	**Urewera**	**6.24**	**216**	Pn		**Pn**	**13 20 22.0**	**-0.7**
	8.3nm,0.3s,baz=273,slow=4.1,SNR=48							
URZ				Sn		**Sn**	**13 21 33.7**	**+0.7**
	24nm,0.3s,baz=70,slow=22,SNR=12							
URZ	**Urewera**	**6.24**	**216**	*e*Pn		**Pn**	**13 20 20.3**	**-2.5**
URZ				*e*Sn		**Sn**	**13 21 33.0**	**0.0**
URZ	**Urewera**	**6.24**	**216**	PN		**Pn**	**13 20 21.8**	**-0.9**
SNGZ	**Shannon Statio**	**6.55**	**212**	PN		**Pn**	**13 20 27.5**	**+0.4**
SNGZ				SN		**Sn**	**13 21 43.1**	**+2.4**
MUGZ	**Murupara**	**6.58**	**217**	PN		**Pn**	**13 20 27.2**	**-0.2**
MUGZ				SN		**Sn**	**13 21 41.7**	**+0.4**
KNZ	**Kokohu**	**6.62**	**209**	PN		**Pn**	**13 20 26.9**	**-0.9**
OUZ	**Omahuta**	**7.03**	**252**	*e*Pn		**Pn**	**13 20 36.8**	**+3.3**
BKZ	**Black Stump Fm**	**7.25**	**214**	*e*Pn		**Pn**	**13 20 35.4**	**-1.2**
BKZ	**Black Stump Fm**	**7.25**	**214**	PN		**Pn**	**13 20 36.1**	**-0.5**
BFZ	**Birch Farm**	**8.60**	**209**	PN		**Pn**	**13 20 51.8**	**-3.3**
BFZ				SN		**Sn**	**13 22 27.3**	**-3.7**
RPZ	**Rata Peaks**	**13.36**	**216**	Pn		Pn	13 21 54.0	-6.2
	0.9nm,0.3s,baz=340,slow=12,SNR=4.7							
RPZ				Sn		Sn	13 24 15.2	-12
	2.0nm,0.3s,baz=83,slow=22,SNR=8.1							
DZM	**Mont Dzumac**	**17.54**	**306**	P		**P**	**13 22 54.0**	**-2.0**
	0.2nm,0.3s,baz=111,slow=17,SNR=5.4							
DZM				LR		LR	13 28 39.2	
	comp=Z,1μm,19.6s,baz=132,slow=34							
DZM	**Mont Dzumac**	**17.54**	**306**	*e*P		**P**	**13 22 58.6**	**+2.6**
	82nm,1.4s							
DZM				*e*LR		LR	13 27 07.8	
	1μm,21.2s							
DZM	**Mont Dzumac**	**17.54**	**306**	*e*Pn		**Pn**	**13 22 53.0**	**-2.1**
	84nm,1.5s							
RAR	**Rarotonga**	**20.31**	**58**	LR		LR	13 30 25.4	
	comp=Z,151nm,19.6s,baz=199,slow=34							
TBI	**Tubuai**	**27.13**	**76**	*e*LR		LR	13 31 21.5	
	312nm,29.8s							
PPT2	**Papeete2**	**30.11**	**66**	*e*LR		LR	13 32 40.8	
	196nm,21.2s							
PPT	**Papeete**	**30.12**	**66**	LR		LR	13 37 27.7	
	comp=Z,257nm,18.1s,baz=197,slow=37							
STKA	**Stephens Creek**	**33.73**	**261**	P		**P**	**13 25 31.2**	**-0.1**
	0.9nm,0.4s,baz=64,slow=7.9,SNR=4.6							
STKA				LR		LR	13 38 49.2	
	comp=Z,688nm,18.3s,baz=62,slow=36							
CTA	**Charters Tower**	**34.16**	**284**	P		**P**	**13 25 36.0**	**+0.8**
	4.7nm,0.5s,baz=123,slow=10,SNR=11							
CTAO	**Charters Tower**	**34.16**	**284**	*e*P		P	13 25 29.9	-5.3
	67nm,0.7s							
RKT	**Rikitea**	**39.22**	**86**	*e*LR		LR	13 36 59.4	
	310nm,24.0s							
PMG	**Port Moresby**	**39.73**	**299**	LR		LR	13 40 48.8	
	comp=Z,247nm,18.3s,baz=136,slow=33							
TAOE	**Nuku Hiva Isla**	**42.69**	**64**	*e*LR		LR	13 38 29.3	
	161nm,26.8s							
AS01	**Alice Springs**	**42.79**	**270**	*e*P		**P**	**13 26 46.5**	**-1.3**
AS31	**Alice Springs**	**42.83**	**270**	*e*P		**P**	**13 26 47.1**	**-0.9**
	4.1nm,0.7s							
ASAR	**Alice Springs**	**42.83**	**270**	P		**P**	**13 26 47.1**	**-1.0**
	11nm,0.8s,baz=111,slow=7.1,SNR=115							
ASAR				PcP		**PcP**	**13 28 38.3**	**-0.6**
	3.5nm,1.0s,baz=112,slow=5.0,SNR=5.2							
ASAR				LR		LR	13 43 56.5	
	comp=Z,126nm,19.3s,baz=106,slow=35							
WB2	**Warramunga Arr**	**44.06**	**275**	*e*P		**P**	**13 26 56.9**	**-1.2**
	30nm,1.2s							
WRAB	**Tennant Creek**	**44.07**	**275**	*e*P		**P**	**13 26 54.4**	**-3.7**
	34nm,1.3s							
WRA	**Warramunga Arr**	**44.07**	**275**	P		**P**	**13 26 56.8**	**-1.3**
	13nm,0.8s,baz=117,slow=7.6,SNR=52							
WRA				LR		LR	13 44 06.5	
	comp=Z,235nm,22.0s,baz=285,slow=34							
SBA	**Scott Base**	**45.16**	**184**	*e*P		P	13 27 11.5	+5.5
	13nm,1.3s							
FITZ	**Fitzroy Crossi**	**52.20**	**272**	*e*P		**P**	**13 27 58.3**	**-2.6**
	31nm,1.6s							
CASY	**Casey**	**52.52**	**209**	*e*P		**P**	**13 28 02.2**	**-0.4**
	12nm,0.8s							
QSPA	**South Pole Qui**	**56.84**	**180**	*e*P		**P**	**13 28 35.9**	**+1.8**
	85nm,0.8s							
MAW	**Mawson**	**69.55**	**201**	P		**P**	**13 30 00.2**	**+2.1**
	0.6nm,0.4s,baz=176,slow=14,SNR=4.0							
SYO	**Syowa Base**	**74.28**	**193**ǁ	*i*P		**P**	**13 30 27.0**	**+0.6**
SYO	**Syowa Base**	**74.28**	**193**ǁ	*e*pP		pP	13 30 36.2	-0.2
SNAA	**Sanae**	**75.30**	**178**	P		**P**	**13 30 34.2**	**+1.9**
SNAA	**Sanae**	**75.30**	**178**	*e*P		**P**	**13 30 32.7**	**+0.3**
JHJ	**Hachijo jima 2**	**76.95**	**325**	LR		LR	14 02 13.0	
	comp=Z,55nm,18.2s,baz=120,slow=34							
KSRS	**Korea Array**	**86.40**	**320**	P		**P**	**13 31 31.8**	**-0.1**
	2.0nm,0.8s,baz=136,slow=4.7,SNR=5.9							
KSAR	**Wonju Array Be**	**86.41**	**320**	P		**P**	**13 31 31.8**	**-0.1**
YSS	**Yuzh-Sakhalins**	**87.24**	**334**	*e*P		**P**	**13 31 33.6**	**-2.1**
	16nm,1.0s							
PEA0	**Petropavlovsk-**	**88.54**	**346**	*e*P		**P**	**13 31 41.5**	**-0.3**
PEA0B	**Petropavlovsk-**	**88.54**	**346**	*e*P		**P**	**13 31 41.2**	**-0.6**
	14nm,1.1s							
PETK	**Petropavlovsk-**	**88.54**	**346**	P		**P**	**13 31 42.1**	**+0.3**
	5.8nm,0.9s,baz=119,slow=6.5,SNR=9.4							
PETK				LR		LR	14 07 45.0	
	comp=Z,65nm,19.6s,baz=142,slow=33							
USRK	**Ussuriysk Ar.**	**89.44**	**327**	P		**P**	**13 31 46.5**	**+0.2**
	2.0nm,0.8s,baz=102,slow=13,SNR=3.2							
KLR	**Kul'dur**	**93.41**	**330**	P		**P**	**13 32 04.8**	**+0.3**
	1.3nm,0.9s,baz=359,slow=4.6,SNR=4.0							
TXAR	**Lajitas Array**	**94.11**	**58**	P		**P**	**13 32 09.7**	**+1.3**
	0.4nm,0.8s,baz=251,slow=3.8,SNR=3.6							
TXAR				LR		LR	14 10 01.2	
	comp=Z,73nm,18.0s,baz=0.0,slow=33							
PDAR	**Pinedale Array**	**98.35**	**44**	LR		LR	14 14 19.7	
	comp=Z,79nm,18.1s,baz=268,slow=34							
BORG	**Borgarnes**	**145.47**	**17**	PKPbc		**PKPab**	**13 38 28.0**	**+0.9**
	13nm,1.0s,baz=316,slow=5.3,SNR=4.5							
KBZ	**Khabaz**	**146.46**	**300**	PKPbc		**PKPbc**	**13 38 30.7**	**+0.2**
	6.2nm,0.9s,baz=172,slow=1.7,SNR=8.6							
FIA1	**FINESS Array S**	**147.75**	**338**	*e*PKPbc		**PKPbc**	**13 38 33.8**	**+0.2**
FINES	**FINESS Array B**	**147.75**	**338**	PKPbc		**PKPbc**	**13 38 33.4**	**-0.1**
	11nm,0.6s,baz=79,slow=4.1,SNR=22							
NB2	**NORSAR Subarra**	**151.55**	**350**	PKP		**PKPbc**	**13 38 42.9**	**-0.1**
	comp=Z,13nm,0.9s,baz=20,slow=4.4							
NOA	**NORSAR Array B**	**151.55**	**350**	PKPbc		**PKPbc**	**13 38 43.0**	**-0.1**
	comp=Z,0.6nm,0.5s,baz=18,slow=3.0,SNR=12							
NBO02	**NORSAR Array S**	**151.59**	**351**	*e*PKPbc		**PKPbc**	**13 38 43.2**	**+0.2**
AKASG	**Malin Array Be**	**153.39**	**319**	PKPbc		**PKPbc**	**13 38 47.1**	**-0.3**
	comp=Z,1.2nm,0.6s,baz=60,slow=2.3,SNR=6.4							
BR131	**Keskin Array S**	**153.66**	**293**	*e*PKPbc		**PKPbc**	**13 38 49.1**	**+0.6**
BRTR	**Keskin Array B**	**153.66**	**293**	PKPbc		**PKPbc**	**13 38 48.6**	**+0.1**
	comp=Z,3.9nm,0.8s,baz=132,slow=3.5,SNR=16							
TOA0	**Torodi Ar. Sit**	**159.96**	**180**	*e*PKPab		**PKPab**	**13 39 30.8**	**+2.1**
TORD	**Torodi Ar. Bea**	**159.96**	**180**	PKPab		**PKPab**	**13 39 27.9**	**-0.7**
	comp=Z,1.4nm,0.9s,baz=182,slow=2.1,SNR=5.4							
GERES	**GERESS Array B**	**162.06**	**334**	PKPab		**PKPab**	**13 39 36.4**	**-0.8**
	comp=Z,0.7nm,0.6s,baz=11,slow=2.7,SNR=6.5							
GEA0	**GERESS Array S**	**162.07**	**334**	*e*PKPab		**PKPab**	**13 39 36.5**	**-0.7**

*ISCJB **14** 13:30:48.8±1.0,49°.93N±0°.04×0°.41W±0°.04,h14km±4km, Error ellipse: s-maj=7.3km s-min=3.8km az=11.4*
*LDG **14** 13:30:48.9±0.2,50°.10N×0°.67W,h5km,Md2.7/3,Ml2.6/17, Error ellipse: s-maj=2.8km s-min=2.2km az=8.0*
*CSEM **14** 13:30:49.3±0.3,50°.03N×0°.57W,h15km,ML2.6/11, Error ellipse: s-maj=5.8km s-min=4.2km az=14.0*
*BGS **14** 13:30:50.6±0.2,50°.11N×0°.73W,h10km,ML1.8*
ISC 14 13:30:47.9±1.4,**50°10N**±0°.04×**0°57W**±0°.03,**h14**km±9km, **n52,** σ1§**58**/102**, United Kingdom**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WOL	**Wolverton**	**1.28**	**342**	*e*P		**Pn**	**13 31 12.5**	**+1.1**
WOL	**Wolverton**	**1.28**	**342**	*e*P		**Pn**	**13 31 12.5**	**+1.1**
WOL	**Wolverton**	**1.28**	**342**	*e*P		**Pn**	**13 31 12.5**	**+1.1**
JQE	**Queens East**	**1.31**	**227**	*e*P		**Pn**	**13 31 12.5**	**+0.8**
JQE	**Queens East**	**1.31**	**227**	*e*P		**Pn**	**13 31 12.5**	**+0.8**
JQE	**Queens East**	**1.31**	**227**	*e*P		**Pn**	**13 31 12.5**	**+0.8**
JDG	**Jersey Dam (Ga**	**1.32**	**227**	*e*P		**Pb**	**13 31 12.8**	**+0.5**
JDG				*e*S		**Sn**	**13 31 28.9**	**-0.2**
JDG	**Jersey Dam (Ga**	**1.32**	**227**	*e*P		**Pb**	**13 31 12.8**	**+0.5**
JDG				*e*S		**Sn**	**13 31 28.9**	**-0.2**
JDG	**Jersey Dam (Ga**	**1.32**	**227**	*e*P		**Pb**	**13 31 12.8**	**+0.5**
JDG				*e*S		**Sn**	**13 31 28.9**	**-0.2**
JDC	**Jersey Dam (Cr**	**1.32**	**227**	*e*P		**Pn**	**13 31 12.8**	**+0.9**
JDC				*e*S		**Sn**	**13 31 29.0**	**-0.3**
JDC	**Jersey Dam (Cr**	**1.32**	**227**	*e*P		**Pn**	**13 31 12.8**	**+0.9**
JDC				*e*S		**Sn**	**13 31 29.0**	**-0.3**
JDC	**Jersey Dam (Cr**	**1.32**	**227**	*e*P		**Pn**	**13 31 12.8**	**+0.9**
JDC				*e*S		**Sn**	**13 31 29.0**	**-0.3**
FLN	**La Foliniere**	**1.34**	**177**	*e*Pn		**Pg**	**13 31 13.4**	**-0.2**
	baz=349							
FLN	**La Foliniere**	**1.34**	**177**	*e*Pg		**Pg**	**13 31 14.9**	**+1.3**
	baz=354,SNR=1.0							
FLN				*e*Sn		**Sg**	**13 31 30.4**	**-0.6**
	baz=353,SNR=1.0							
FLN				*e*Sg		**Sn**	**13 31 33.6**	**+3.9**
	21nm,0.2s							
FLN	**La Foliniere**	**1.34**	**177**	*e*Pn		**Pg**	**13 31 13.4**	**-0.2**
FLN	**La Foliniere**	**1.34**	**177**	*e*Pg		**Pg**	**13 31 14.9**	**+1.3**
	SNR=1.0							
FLN				*e*Sn		**Sg**	**13 31 30.4**	**-0.6**
	SNR=1.0							
FLN				*e*Sg		**Sn**	**13 31 33.6**	**+3.9**
	10nm,0.2s							
JRS	**Jersey**	**1.34**	**228**	*e*P		**Pb**	**13 31 13.2**	**+0.5**
JRS				*e*S		**Sn**	**13 31 29.4**	**-0.3**
JRS	**Jersey**	**1.34**	**228**	*e*P		**Pb**	**13 31 13.2**	**+0.5**
JRS				*e*S		**Sn**	**13 31 29.4**	**-0.3**
JRS	**Jersey**	**1.34**	**228**	*e*P		**Pb**	**13 31 13.2**	**+0.5**
JRS				*e*S		**Sn**	**13 31 29.4**	**-0.3**
JSA	**Saint Aubin**	**1.38**	**229**	*e*P		**Pn**	**13 31 13.8**	**+1.1**
JSA				*e*S		**Sb**	**13 31 30.7**	**-0.2**
JSA				AML		AML	13 31 32.8	
	comp=E,18nm,0.4s							
JSA				AML		AML	13 31 32.9	
	comp=N,17nm,0.2s							
JSA	**Saint Aubin**	**1.38**	**229**	*e*P		**Pn**	**13 31 13.8**	**+1.1**
JSA				*e*S		**Sb**	**13 31 30.7**	**-0.2**
JSA				AML		AML	13 31 32.8	
	comp=E,18nm,0.4s							
JSA				AML		AML	13 31 32.9	
	comp=N,17nm,0.2s							
JSA	**Saint Aubin**	**1.38**	**229**	*e*P		**Pn**	**13 31 13.8**	**+1.1**
JSA				*e*S		**Sb**	**13 31 30.7**	**-0.2**
	comp=N,17nm,0.2s							
LDF	**La Druitiere**	**1.53**	**169**	*e*Pn		**Pn**	**13 31 15.6**	**+0.8**
LDF	**La Druitiere**	**1.53**	**169**	*e*P		**Pg**	**13 31 17.6**	**+0.3**
	SNR=1.0							
LDF				*e*Sn		**Sg**	**13 31 35.7**	**-1.5**
	comp=N,13nm,0.2s,SNR=1.0							
LDF				*e*Sg		**Sb**	**13 31 40.1**	**+4.8**
	comp=N,12nm,0.2s							
LDF	**La Druitiere**	**1.53**	**169**	*e*Pn		**Pn**	**13 31 15.6**	**+0.8**
LDF	**La Druitiere**	**1.53**	**169**	*e*P		**Pg**	**13 31 17.6**	**+0.3**
	SNR=1.0							
LDF				*e*Sn		**Sg**	**13 31 35.7**	**-1.5**
	comp=N,6.3nm,0.2s,SNR=1.0							
LDF				*e*Sg		**Sb**	**13 31 40.1**	**+4.8**
	comp=N,5.8nm,0.2s							
GRR	**Gorron**	**1.72**	**186**	*e*Pn		**Pn**	**13 31 18.0**	**+0.6**
	SNR=1.0							
GRR	**Gorron**	**1.72**	**186**	*e*Pg		**Pg**	**13 31 21.6**	**+0.7**
	SNR=1.0							
GRR				*e*Sn		**Sn**	**13 31 38.7**	**-0.4**
	SNR=1.0							
GRR				*e*Sg		**Sg**	**13 31 43.2**	**0.0**
	comp=N,14nm,0.2s,SNR=1.0							
GRR	**Gorron**	**1.72**	**186**	*e*Pn		**Pn**	**13 31 18.0**	**+0.6**
	SNR=1.0							
GRR	**Gorron**	**1.72**	**186**	*e*Pg		**Pg**	**13 31 21.6**	**+0.7**
	SNR=1.0							
GRR				*e*Sn		**Sn**	**13 31 38.7**	**-0.4**
	SNR=1.0							
GRR				*e*Sg		**Sg**	**13 31 43.2**	**0.0**
	comp=N,6.9nm,0.2s,SNR=1.0							
SGMF	**Saint Gilles**	**2.26**	**216**	*e*Pn		**Pn**	**13 31 25.1**	**+0.4**
SGMF				*e*Sn		**Sn**	**13 31 50.3**	**-2.1**
	SNR=1.0							
SGMF				*e*Sg		**Sg**	**13 31 59.6**	**-0.8**
	comp=N,2.5nm,0.2s,SNR=1.0							
SGMF	**Saint Gilles**	**2.26**	**216**	*e*Pn		**Pn**	**13 31 25.1**	**+0.4**
SGMF				*e*Sn		**Sn**	**13 31 50.3**	**-2.1**
	SNR=1.0							
SGMF				*e*Sg		**Sg**	**13 31 59.6**	**-0.8**
	comp=N,1.2nm,0.2s,SNR=1.0							
ROSF	**Rostrenen**	**2.50**	**226**	*e*Pn		**Pn**	**13 31 28.1**	**+0.1**
	SNR=1.0							
ROSF				*e*Sn		**Sn**	**13 31 56.0**	**-2.3**
	SNR=1.0							
ROSF				*e*Sg		**Sg**	**13 32 06.4**	**-1.7**
	comp=N,5.0nm,0.2s,SNR=1.0							
ROSF	**Rostrenen**	**2.50**	**226**	*e*Pn		**Pn**	**13 31 28.1**	**+0.1**
	SNR=1.0							
ROSF				*e*Sn		**Sn**	**13 31 56.0**	**-2.3**
	SNR=1.0							
ROSF				*e*Sg		**Sg**	**13 32 06.4**	**-1.7**
	comp=N,2.5nm,0.2s,SNR=1.0							
QUIF	**Quistinic**	**2.77**	**219**	*e*Pn		**Pn**	**13 31 31.9**	**+0.1**
QUIF				*e*Sg		**Sg**	**13 32 14.5**	**-2.3**
	comp=N,2.8nm,0.2s,SNR=1.0							
QUIF	**Quistinic**	**2.77**	**219**	*e*Pn		**Pn**	**13 31 31.9**	**+0.1**
QUIF				*e*Sg		**Sg**	**13 32 14.5**	**-2.3**
	comp=N,1.4nm,0.2s,SNR=1.0							
MFF	**Saint Martin d**	**3.51**	**175**	*e*Pg		**Pg**	**13 31 54.8**	**-0.3**
MFF				*e*Sg		**Sg**	**13 32 38.4**	**-2.1**
	comp=N,1.9nm,0.2s,SNR=1.0							
MFF	**Saint Martin d**	**3.51**	**175**	*e*Pg		**Pg**	**13 31 54.8**	**-0.3**
MFF				*e*Sg		**Sg**	**13 32 38.4**	**-2.1**
	comp=N,0.9nm,0.2s,SNR=1.0							
SSF	**Saint Saulge**	**4.07**	**137**	*e*Pn		**Pn**	**13 31 49.8**	**+0.1**
	SNR=1.0							
SSF				*e*Sn		**Sn**	**13 32 34.9**	**-2.2**
	comp=N,1.9nm,0.3s,SNR=1.0							
SSF	**Saint Saulge**	**4.07**	**137**	*e*Pn		**Pn**	**13 31 49.8**	**+0.1**
	SNR=1.0							
SSF				*e*Sn		**Sn**	**13 32 34.9**	**-2.2**
	comp=N,0.9nm,0.3s,SNR=1.0							
LOR	**Lormes**	**4.08**	**132**	*e*Pn		**Pn**	**13 31 50.7**	**+0.9**
	comp=N,1.6nm,0.2s,baz=312							
LOR				*e*Sn		**Sn**	**13 32 35.3**	**-2.0**
	baz=318,SNR=1.0							
LOR				*e*Sg		**Sg**	**13 32 57.8**	**-1.0**
	comp=N,3.8nm,0.3s,SNR=1.0							
LOR	**Lormes**	**4.08**	**132**	*e*Pn		**Pn**	**13 31 50.7**	**+0.9**
	comp=N,0.8nm,0.2s							
LOR				*e*Sn		**Sn**	**13 32 35.3**	**-2.0**
	SNR=1.0							
LOR				*e*Sg		**Sg**	**13 32 57.8**	**-1.0**
	comp=N,1.9nm,0.3s,SNR=1.0							
BGF	**Bois d'Agland**	**4.21**	**146**	*e*Pn		**Pn**	**13 31 52.8**	**+1.2**
	SNR=1.0							
BGF				*e*Sg		**Sg**	**13 33 01.9**	**-1.2**
	comp=N,15nm,0.5s							
BGF	**Bois d'Agland**	**4.21**	**146**	*e*Pn		**Pn**	**13 31 52.8**	**+1.2**
	SNR=1.0							
BGF				*e*Sg		**Sg**	**13 33 01.9**	**-1.2**
	comp=N,7.6nm,0.5s							
AVF	**Avril sur Loir**	**4.22**	**140**	*e*Pn		**Pn**	**13 31 52.2**	**+0.5**
	SNR=1.0							
AVF				*e*Sn		**Sn**	**13 32 37.5**	**-3.2**
	SNR=1.0							
AVF				*e*Sg		**Sg**	**13 33 01.1**	**-2.1**
	comp=N,2.3nm,0.4s,SNR=1.0							
AVF	**Avril sur Loir**	**4.22**	**140**	*e*Pn		**Pn**	**13 31 52.2**	**+0.5**
	SNR=1.0							
AVF				*e*Sn		**Sn**	**13 32 37.5**	**-3.2**
	SNR=1.0							
AVF				*e*Sg		**Sg**	**13 33 01.1**	**-2.1**
	comp=N,1.1nm,0.4s,SNR=1.0							
TCF	**Toulx Ste Croi**	**4.24**	**153**	*e*Sn		**Sn**	**13 32 39.0**	**-2.4**
	SNR=1.0							
TCF				*e*Sg		**Sg**	**13 33 02.5**	**-1.5**
	comp=N,1.2nm,0.3s,SNR=1.0							
TCF	**Toulx Ste Croi**	**4.24**	**153**	*e*Sn		**Sn**	**13 32 39.0**	**-2.4**
	SNR=1.0							
TCF				*e*Sg		**Sg**	**13 33 02.5**	**-1.5**
	comp=N,0.6nm,0.3s,SNR=1.0							
RJF	**Les Rejaudoux**	**5.00**	**163**	*e*Sn		**Sn**	**13 32 56.6**	**-3.4**
	comp=N,1.3nm,0.3s,SNR=1.0							
RJF	**Les Rejaudoux**	**5.00**	**163**	*e*Sn		**Sn**	**13 32 56.6**	**-3.4**
	comp=N,0.6nm,0.3s,SNR=1.0							
LFF	**La Frestale**	**5.24**	**170**	*e*Pn		**Pn**	**13 32 06.0**	**+0.3**
LFF	**La Frestale**	**5.24**	**170**	*e*Pn		**Pn**	**13 32 06.0**	**+0.3**

*IDC **14** 13:37:09.8±5.0,22°.39S×68°.98W,h0km,mb3.6/1, mb1 3.5/2,mb1mx3.4/25,mbtmp3.5/2,ML3.4/1,Error ellipse: s-maj=149.5km s-min=57.7km az=76.0*
*ISCJB **14** 13:37:26.3±0.8,21°.18S±0°.04×69°.1W±0°.1,h123km±7km, mb3.2/1,Error ellipse: s-maj=18.6km s-min=5.8km az=2.6*
*GUC **14** 13:37:26.1±0.5,21°.16S×69°.03W,h116km±3km,ML3.6*
ISC 14 13:37:26.9±1.0,**21°20S**±0°.04×**69°2W**±0°.1,**h121**km±8km, **n13,** σ1§**39**/23**, 7C-1D, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PB01	**IPOC Station P**	**0.34**	**297**ǁ	*e*P		**Pn**	**13 37 43.8**	**-0.5**
PB01				*e*S		**Sn**	**13 37 56.9**	**-0.4**
PB09	**IPOC Station P**	**0.60**	**188**ǁ	*e*P		**Pn**	**13 37 45.7**	**-0.2**
PB09				*e*S		**Sn**	**13 38 00.1**	**0.0**
PB07	**IPOC Station P**	**0.86**	**232**ǁ	*e*P		**Pn**	**13 37 48.6**	**+0.7**
PB07				*e*S		**Sn**	**13 38 05.3**	**+1.5**
PB07				IAML			13 38 06.5	
	comp=E,2μm,0.5s							
PB08	**IPOC Station P**	**1.05**	**0**ǁ	*e*P		**Pn**	**13 37 49.4**	**-0.6**
PB08				*e*S		**Sn**	**13 38 06.5**	**-0.9**
PB08				IAML			13 38 06.9	
	comp=E,2μm,0.2s							
HMBC	**Humberstone**	**1.14**	**323**ǁ	*e*P		**Pn**	**13 37 50.5**	**-0.1**
HMBC				*e*S		**Sn**	**13 38 09.0**	**+0.5**
HMBC				IAML			13 38 10.2	
	comp=E,2μm,0.6s							
PB04	**IPOC Station P**	**1.46**	**219**ǁ	*e*P		**Pn**	**13 37 55.0**	**+0.9**
PB04				*e*S		**Sn**	**13 38 16.8**	**+2.0**
PB04				IAML			13 38 18.0	
	comp=N,776nm,0.3s							
PB06	**IPOC Station P**	**1.55**	**194**	*e*P		**Pn**	**13 37 55.5**	**+0.4**
PB06				*e*S		**Sn**	**13 38 17.2**	**+0.6**
PB06				IAML			13 38 18.9	
	comp=E,630nm,0.3s							
PSGC	**Pisagua**	**1.83**	**330**ǁ	*e*P		**Pn**	**13 37 57.9**	**-0.6**
PSGC				*e*S		**Sn**	**13 38 22.8**	**+0.3**
PSGC				IAML			13 38 24.5	
	comp=N,516nm,0.5s							
MNMC	**Minye Minye**	**2.10**	**349**ǁ	*e*P		**Pn**	**13 38 01.6**	**-0.4**
MNMC				*e*S		**Sn**	**13 38 28.2**	**-0.5**
PB10	**IPOC Station P**	**2.64**	**209**	*e*P		**Pn**	**13 38 08.6**	**0.0**
PB10				*e*S		**Sn**	**13 38 36.0**	**-4.7**
LPAZ	**La Paz**	**4.98**	**11**	Pn		**Pn**	**13 38 42.2**	**+2.0**
	comp=N,0.4nm,0.3s,baz=170,slow=4.1,SNR=8.9							
TORD	**Torodi Ar. Bea**	**77.47**	**71**	P		**P**	**13 49 09.2**	**-0.4**
	comp=N,0.2nm,0.4s,baz=244,slow=5.9,SNR=2.5							
MKAR	**Makanchi Array**	**145.53**	**35**	PKPbc		**PKPab**	**13 56 51.9**	**+0.4**
	comp=N,0.5nm,0.7s,baz=316,slow=4.0,SNR=4.1							

*ISCJB **14** 13:43:24.3±0.5,37°.25N±0°.04×28°.19E±0°.03,h0km,Error ellipse: s-maj=5.6km s-min=3.6km az=13.9*
*CSE

ASAR				LR	LR	14 12 46.8		
	comp=Z,353nm,19.8s,baz=161,slow=33							
DZM	**Mont Dzumac**	**40.60**	**17**	LR	LR	14 11 24.6		
	comp=Z,743nm,18.9s,baz=206,slow=31							
DZM	**Mont Dzumac**	**40.60**	**17**	eLR	LR	14 09 37.0		
	1um,25.1s							
WRA	**Warramunga Arr**	**44.09**	**333**	P	P	13 58 38.8	-0.6	
	1.5nm,0.9s,baz=167,slow=6.8,SNR=9.2							
WRA				LR	LR	14 14 51.3		
	comp=Z,336nm,20.2s,baz=125,slow=33							
FITZ	**Fitzroy Crossi**	**48.08**	**322**	LR	LR	14 18 17.0		
	comp=Z,310nm,18.3s,baz=168,slow=35							
PMG	**Port Moresby**	**52.58**	**351**	LR	LR	14 19 15.8		
	comp=Z,448nm,18.3s,baz=156,slow=33							
TBI	**Tubuai**	**53.91**	**71**	eLR	LR	14 15 10.8		
	142nm,29.2s							
TBI	**Tubuai**	**53.91**	**71**	eT	T	14 57 29.0		
	112nm,0.4s							
TVO	**Taravao**	**58.87**	**68**	eT	T	15 03 40.8		
	1.8nm,0.3s							
PPT2	**Papeete2**	**58.90**	**68**	eLR	LR	14 17 53.7		
	126nm,21.8s							
PPT2	**Papeete2**	**58.90**	**68**	eT	T	15 03 43.5		
	6.0nm,0.4s							
PPT	**Papeete**	**58.92**	**68**	LR	LR	14 18 58.3		
	comp=Z,121nm,19.9s,baz=146,slow=29							
MEH	**Mehetia**	**59.31**	**69**	eT	T	15 04 14.4		
	8.8nm,0.2s							
RKT	**Rikitea**	**60.81**	**85**	eLR	LR	14 18 24.6		
	325nm,28.0s							
RKT	**Rikitea**	**60.81**	**85**	eT	T	15 06 06.4		
	14nm,0.3s							
VAH	**Vaihoa**	**61.84**	**68**	eT	T	15 07 22.9		
	52nm,0.2s							
PLCA	**Paso Flores**	**71.57**	**146**	LR	LR	14 27 23.2		
	comp=Z,126nm,18.7s,baz=208,slow=31							
BOSA	**Boshof**	**80.99**	**224**	LR	LR	14 37 16.8		
	comp=Z,135nm,18.3s,baz=166,slow=35							
CPUP	**Villa Florida**	**88.54**	**152**	LR	LR	14 39 52.8		
	comp=Z,69nm,19.2s,baz=198,slow=34							
CMAR	**Chiang Mai Arr**	**91.18**	**309**	LR	LR	14 42 40.9		
	comp=Z,61nm,18.9s,baz=138,slow=34							
LPAZ	**La Paz**	**95.24**	**139**	LR	LR	14 37 32.6		
	comp=Z,41nm,18.5s,baz=143,slow=30							
MJAR	**Matsushiro Arr**	**98.88**	**347**	LR	LR	14 46 26.7		
	comp=Z,38nm,20.4s,baz=115,slow=34							
AKASG	**Malin Array Be**	**148.50**	**275**	PKPbc	PKPbc	14 10 17.2	+0.2	
	0.4nm,0.5s,baz=126,slow=2.1,SNR=3.8							

*IDC **14** 13:51:01.0±0.8, 37.84N×144.43E, h0km, mb3.7/9, mb1 3.9/13, mb1mx3.8/46, mbtmp3.7/13, ML3.2/4, MS3.1/5, Ms1 3.1/5, ms1mx2.8/38, Error ellipse: s-maj=23.3km s-min=16.1km az=121.0*

*ISCJB **14** 13:51:03.9±0.7, 37.80N±0.09×144.39E±0.08, h33km, mb3.7/9, MS3.4/1, Error ellipse: s-maj=13.9km s-min=7.0km az=147.8*

ISC 14 13:51:05.7±0.8, 37.77N±0.09×144.42E±0.09, h35km, n17, σ1§28/18, mb3.7/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.11**	**258**	Pn	**Pn**	**13 52 20.8**	**+1.0**
	1.9nm,0.3s,baz=80,slow=15,SNR=21						
MJAR				Sn	**Sn**	**13 53 20.1**	**+2.5**
	0.9nm,0.3s,baz=88,slow=28,SNR=6.1						
MJAR				LR	LR	13 54 38.7	
	comp=Z,91nm,21.7s,baz=90,slow=43						
MAT	**Matsushiro**	**5.11**	**258**	P	**Pn**	**13 52 20.9**	**+1.1**
MAT				S	**Sn**	**13 53 16.0**	**-1.6**
JHJ	**Hachijo jima 2**	**5.99**	**221**	Pn	**Pn**	**13 52 32.0**	**+0.2**
	3.4nm,0.3s,baz=334,slow=22,SNR=7.8						
JHJ				Sn	**Sn**	**13 53 36.5**	**-2.6**
	6.1nm,0.3s,baz=70,slow=22,SNR=3.5						
USRK	**Ussuriysk Ar.**	**11.38**	**308**	LR	LR	13 57 38.9	
	comp=Z,89nm,19.9s,baz=154,slow=35						
KSRS	**Korea Array**	**13.09**	**274**	LR	LR	13 58 51.3	
	comp=Z,68nm,18.1s,baz=74,slow=36						
KLR	**Kul'dur**	**14.67**	**325**	Pn	**Pn**	**13 54 29.2**	**-1.3**
	0.1nm,0.3s,baz=139,slow=11,SNR=2.4						
KLR				LR	LR	13 59 58.1	
	comp=Z,74nm,18.9s,baz=141,slow=37						
PETK	**Petropavlovsk-**	**17.90**	**27**	P	**P**	**13 55 12.1**	**0.0**
	0.1nm,0.3s,baz=188,slow=8.7,SNR=3.3						
SEY	**Seymchan**	**25.66**	**8**	P	**P**	**13 56 31.7**	**-0.2**
	1.0nm,0.6s,baz=118,slow=9.5,SNR=4.9						
SONM	**Songino Array**	**29.39**	**302**	P	**P**	**13 57 04.4**	**-1.2**
	0.3nm,0.5s,baz=99,slow=8.9,SNR=2.0						
MKAR	**Makanchi Array**	**45.76**	**302**	P	**P**	**13 59 24.3**	**+0.7**
	0.9nm,0.7s,baz=85,slow=9.6,SNR=8.6						
MKAR				LR	LR	14 18 19.1	
	comp=Z,40nm,19.0s,baz=92,slow=36						
ILAR	**Eielson Array**	**47.59**	**33**	P	**P**	**13 59 37.1**	**-0.5**
	0.7nm,0.9s,baz=276,slow=6.4,SNR=6.8						
INK	**Inuvik**	**52.64**	**28**	P	**P**	**14 00 15.8**	**+0.1**
	1.0nm,0.7s,baz=296,slow=4.8,SNR=3.1						
WRA	**Warramunga Arr**	**58.18**	**191**	P	**P**	**14 00 56.9**	**+0.7**
	1.4nm,0.7s,baz=13,slow=7.4,SNR=12						
ASAR	**Alice Springs**	**61.90**	**191**	P	**P**	**14 01 22.9**	**+1.2**
	0.4nm,0.7s,baz=13,slow=8.6,SNR=5.7						
NB2	**NORSAR Subarra**	**74.41**	**338**	P	**P**	**14 02 39.9**	**+0.1**
	comp=Z,0.8nm,0.6s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**74.41**	**338**	P	**P**	**14 02 39.5**	**-0.3**
	comp=Z,1.6nm,0.8s,baz=38,slow=5.8,SNR=4.8						
PDAR	**Pinedale Array**	**75.43**	**47**	P	**P**	**14 02 47.0**	**+0.8**
	comp=Z,0.4nm,0.6s,baz=260,slow=3.6,SNR=3.2						

IDC 14 14:20:47.0±2.6, 28.27S×176.67W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/24, mbtmp3.7/2, Error ellipse: s-maj=87.9km s-min=27.6km az=132.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.47**	**228**	Pn	Pn	14 21 14.6	-0.1
	132nm,0.3s,baz=314,slow=23,SNR=4.6						
RAO				Sn	Sn	14 21 35.2	+0.6
	257nm,0.3s,baz=263,slow=23,SNR=6.4						
ASAR	**Alice Springs**	**44.43**	**264**	P	P	14 28 59.8	-0.1
	0.6nm,0.6s,baz=100,slow=6.8,SNR=12						
WRA	**Warramunga Arr**	**45.23**	**269**	P	P	14 29 06.3	0.0
	1.0nm,0.8s,baz=109,slow=7.7,SNR=6.4						
AKASG	**Malin Array Be**	**150.25**	**326**	PKPbc	PKPbc	14 40 39.2	-0.5
	0.2nm,0.3s,baz=44,slow=2.7,SNR=4.0						
BRTR	**Keskin Array B**	**152.52**	**302**	PKPbc	PKPbc	14 40 45.5	0.0
	0.2nm,0.4s,baz=93,slow=1.1,SNR=2.2						

MEX 14 14:24:04.3±0.4, 14.50N×92.88W, h40km±50km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.92**	**22**	*i* P	Pn	14 24 32.9	-1.8
CCIG				*i* S	Sn	14 24 55.6	-2.1
TGIG		**2.28**	**354**	*i* P	Pn	14 24 38.3	-1.3
TGIG				*i* S	Sn	14 25 04.7	-1.8

MEX 14 14:24:12.2±0.6, 15.43N×98.62W, h5km, MD3.7, Off coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**1.07**	**26**	*e*P	Pg	14 24 29.4	-3.3
PNIG				*e*S	Sg	14 24 43.6	-2.9
TLIG	**Tlapa**	**2.12**	**1**	*i* P	Pn	14 24 45.7	-2.7
TLIG				*i* S	Sn	14 25 11.6	-3.7
CAIG	**El Cayaco**	**2.25**	**316**	*i* P	Pn	14 24 47.2	-3.0
CAIG				*e*S	Sn	14 25 14.0	-4.4
VHO	**Vista Hermosa**	**2.44**	**48**	*e*P	Pn	14 24 50.2	-2.7
VHO				*i* S	Sn	14 25 19.6	-3.6
HUIG	**Huatulco**	**2.44**	**82**	*i* P	Pn	14 24 46.6	-6.2

IDC 14 14:28:15.0±5.9, 61.72S×156.41E, h0km, mb3.5/2, mb1 3.9/3, mb1mx3.7/28, mbtmp3.6/3, ML3.9/1, MS3.5/5, Ms1 3.5/5, ms1mx3.2/20, Error ellipse: s-maj=336.5km s-min=40.3km az=75.0, Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VNDA	**Vanda**	**15.97**	**176**	Pn	Pn	14 32 00.7	+0.1
	0.4nm,0.3s,baz=355,slow=13,SNR=16						
VNDA				Sn	S	14 35 19.5	+7.1
	0.4nm,0.3s,baz=325,slow=5.0,SNR=6.2						
VNDA				LR	LR	14 37 22.6	
	comp=Z,163nm,20.6s,baz=357,slow=34						
RPZ	**Rata Peaks**	**20.01**	**32**	LR	LR	14 39 01.7	
	comp=Z,118nm,19.3s,baz=224,slow=32						
MAW	**Mawson**	**36.78**	**220**	LR	LR	14 49 45.9	
	comp=Z,74nm,19.9s,baz=60,slow=35						
H01W1	**Cape Leeuwin H**	**37.77**	**296**	T	T	15 14 52.3	
H01W2	**Cape Leeuwin H**	**37.77**	**295**	T	T	15 14 52.4	
	baz=148,slow=75,SNR=32						
H01W3	**Cape Leeuwin H**	**37.78**	**296**	T	T	15 14 53.5	
	baz=148,slow=75,SNR=46						
DZM	**Mont Dzumac**	**40.23**	**14**	LR	LR	14 48 51.0	
	comp=Z,61nm,20.1s,baz=116,slow=31						
ASAR	**Alice Springs**	**41.03**	**328**	P	P	14 35 59.8	0.0
	0.5nm,0.7s,baz=162,slow=8.2,SNR=8.2						
WRA	**Warramunga Arr**	**44.49**	**330**	P	P	14 36 27.6	-0.3
	0.8nm,0.7s,baz=163,slow=7.4,SNR=6.3						
KAPI	**Kappang**	**62.81**	**318**	LR	LR	15 07 34.1	
	comp=Z,50nm,18.2s,baz=128,slow=38						
H08S2	**Diego Garcia H**	**80.43**	**272**	T	T	16 08 07.2	
	baz=151,slow=76,SNR=6.5						
H08S1	**Diego Garcia H**	**80.44**	**272**	T	T	16 08 04.7	
	baz=151,slow=76,SNR=5.0						
H08S3	**Diego Garcia H**	**80.45**	**272**	T	T	16 08 09.7	
	baz=151,slow=76,SNR=7.8						

MAN 14 14:28:41, 9.44N×122.14E, h13km, mb4.4, ML3.3, MS3.1, 2C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.08**	**95**	*i* P	Pn	14 28 56.9	-4.7
SNPH				*i* S	Sb	14 29 11.9	-3.8
TBP	**Tagbilaran**	**1.71**	**82**	*i* P	Pb	14 29 12.0	-0.4
LLP	**Lapu-Lapu**	**2.00**	**64**	*e*P	Pn	14 29 14.6	+0.1
LLP				*e*S	Sb	14 29 41.1	-0.8
RCP	**Roxas**	**2.19**	**16**	*e*P	Pn	14 29 17.9	+0.9
RCP				*e*S	Sn	14 29 45.6	+1.5

SJA 14 14:29:31.5±0.2, 31.44S×68.58W, h100km±1km, ML2.3, MW3.5, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RTLL	**Cerro Villicun**	**0.14**	**38**	*i* P	Pn	14 29 46.1	+0.6
RTCV	**Cerro Valdivia**	**0.42**	**176**	*i* P	Pn	14 29 47.4	+0.6
RTCV				*i* S	Sn	14 29 59.3	+1.1
AMOG	**MOGNA**	**0.51**	**8**	*i* P	Pn	14 29 48.1	+0.6
AMOG				*i* S	Sn	14 30 00.4	+1.1
RTLS	**Leoncito**	**0.71**	**240**	*i* P	Pn	14 29 50.6	+1.3
RTLS				*i* S	Sn	14 30 04.5	+1.8
ACCO	**Cerro Coronel**	**0.95**	**334**	*i* P	Pn	14 29 53.1	+1.4
ACCO				*i* S	Sn	14 30 09.0	+2.1
AUSP	**Uspallata**	**1.04**	**221**	*i* P	Pn	14 29 54.0	+1.3
AUSP				*i* S	Sn	14 30 10.7	+2.1
ASAL	**Salagasta**	**1.17**	**191**	*i* P	Pn	14 29 54.7	+0.9
AVFE	**Valle Fertil**	**1.24**	**51**	*i* P	Pn	14 29 55.8	+1.0
AVFE				IAML		14 30 14.0	
	comp=Z,22nm,0.2s						
ACDV	**Cuesta del Vie**	**1.35**	**340**	*i* P	Pn	14 29 57.3	+1.2
ACDV				*i* S	Sn	14 30 16.4	+1.7
ARCO	**CERRO ARCO**	**1.43**	**192**	IAML		14 31 28.2	
	comp=Z,61nm,0.5s						
AROD	**Rodeo**	**1.49**	**329**	*i* P	Pn	14 29 59.5	+1.6
AROD				*i* S	Sn	14 30 20.2	+2.3

*NIED **14** 14:42:00, 38.00N×143.30E, h14km, Mw3.9 Best double couple: M○7.36000×10^14 NP1:∅±1.00000°, δ18.00000°, λ-157.00000°. NP2:∅±249.00000°, δ83.00000°, λ-73.00000°.*

*IDC **14** 14:42:10.2±2.4, 37.83N×143.58E, h0km, mb3.5/3, mb1 3.7/5, mb1mx3.4/37, mbtmp3.6/5, ML3.8/2, MS3.3/1, Ms1 3.3/1, ms1mx2.5/35, Error ellipse: s-maj=55.3km s-min=31.0km az=62.0*

*ISCJB **14** 14:42:11.5±0.9, 37.93N±0.04×143.32E±0.08, h19km, mb3.6/3, MS3.3/1, Error ellipse: s-maj=8.9km s-min=5.9km az=170.2*

*JMA **14** 14:42:13.1±0.2, 38.01N×143.33E, h39km, M3.7*

ISC 14 14:42:12.6±1.4, 37.91N±0.05×143.34E±0.10, h19km, n19, σ1§73/26, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.67**	**290**	P	**Pn**	**14 42 40.2**	**-0.5**
JIO				*e*S	**Sn**	**14 43 00.1**	**-1.4**
OFUJ	**Ofunato**	**1.76**	**312**	P	**Pn**	**14 42 41.0**	**-1.0**
OFUJ				S	**Sn**	**14 43 01.3**	**-2.6**
JMK	**Ichinoseki**	**1.97**	**303**	P	**Pn**	**14 42 44.4**	**-0.5**
JMM	**Marumori**	**2.02**	**270**	P	**Pn**	**14 42 45.7**	**+0.1**
JMM				*e*S	**Sn**	**14 43 08.8**	**-1.5**
JOM	**Ohasama**	**2.24**	**315**	P	**Pn**	**14 42 48.2**	**-0.4**
JOM				*e*S	**Sn**	**14 43 14.2**	**-1.6**
JFT	**Otama**	**2.42**	**262**	S	**Sn**	**14 43 20.2**	**+0.1**
JYK	**Kaneyama**	**2.55**	**294**	P	**Pn**	**14 42 53.2**	**+0.3**
JRG	**Rokugo**	**2.59**	**306**	P	**Pn**	**14 42 53.7**	**+0.2**
JANG	**Nango**	**2.84**	**331**	P	**Pn**	**14 42 57.5**	**+0.6**
JANG				*e*S	**Sn**	**14 43 29.0**	**-1.7**
JAG	**Ashikaga**	**3.44**	**246**	P	**Pn**	**14 43 05.7**	**+0.6**
JAG				S	**Sn**	**14 43 45.3**	**-0.1**
BSO1	**Boso 1**	**3.77**	**211**	P	**Pn**	**14 43 09.2**	**+0.1**
JRY	**Ryogami san**	**4.03**	**243**	P	**Pn**	**14 43 14.2**	**+1.0**
MJAR	**Matsushiro Arr**	**4.32**	**253**	Pn	**Pn**	**14 43 19.4**	**+2.2**
	2.0nm,0.3s,baz=84,slow=15,SNR=12						
MAT	**Matsushiro**	**4.32**	**253**	P	**Pn**	**14 43 19.5**	**+2.3**
MAT				S	**Sn**	**14 44 03.9**	**-3.2**
JHJ	**Hachijo jima 2**	**5.59**	**212**	Pn	**Pn**	**14 43 34.2**	**-0.5**
	24nm,0.3s,baz=328,slow=21,SNR=4.8						
JHJ				Sn	**Sn**	**14 44 33.4**	**-4.9**
	11nm,0.3s,baz=82,slow=22,SNR=2.3						
MKAR	**Makanchi Array**	**44.96**	**302**	P	**P**	**14 50 28.2**	**+1.9**
	0.2nm,0.5s,baz=86,slow=9.0,SNR=2.3						
FITZ	**Fitzroy Crossi**	**58.15**	**200**	LR	LR	15 20 02.7	
	comp=Z,24nm,18.8s,baz=54,slow=39						
WRA	**Warramunga Arr**	**58.16**	**190**	P	**P**	**14 52 05.7**	**+0.5**
	0.6nm,0.5s,baz=9.2,slow=7.1,SNR=4.2						
ASAR	**Alice Springs**	**61.88**	**190**	P	**P**	**14 52 31.0**	**+0.3**
	0.6nm,1.0s,baz=21,slow=8.0,SNR=3.2						

*ISK **14** 14:53:12.6, 37.35N×28.36E, h14km, MD2.8, ML2.1*

*ISCJB **14** 14:53:16.0±0.8, 37.24N±0.07×28.20E±0.04, h0km, Error ellipse: s-maj=10.3km s-min=4.3km az=16.4*

*DDA **14** 14:53:15.8, 37.25N×28.16E, h7km, Md2.8, Suspected Mining explosion.*

*CSEM **14** 14:53:16.0±0.5, 37.18N×28.20E, h2km, MD2.8, Error ellipse: s-maj=19.6km s-min=9.1km az=9.0, Suspected Mining explosion.*

ISC 14 14:53:15.2±0.9, 37.17N±0.05×28.05E±0.04, h0km, n15, σ1§53/21, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.19**	**101**	*e*PG	**Pg**	**14 53 18.2**	**-0.6**
YER	**Yerkesik**	**0.19**	**101**	*e*Pg	**Pg**	**14 53 18.2**	**-0.6**
MLSB	**Milas**	**0.25**	**300**	*e*PG	**Pb**	**14 53 22.6**	**-0.1**
MLSB				*e*SG	**Sb**	**14 53 28.8**	**+1.2**
MLSB	**Milas**	**0.25**	**300**	*e*Pg	**Pb**	**14 53 22.6**	**-0.1**
MLSB				*e*Sg	**Sb**	**14 53 28.8**	**+1.2**
BDRM	**Kayabasi**	**0.50**	**258**	*i* P	**Pb**	**14 53 26.6**	**-0.2**
BDRM				*i* S	**Sb**	**14 53 37.2**	**+2.6**
BDRM	**Kayabasi**	**0.50**	**258**	P	**Pb**	**14 53 26.6**	**-0.2**
BDRM				S	**Sb**	**14 53 37.2**	**+2.6**
TURN	**Turunc**	**0.53**	**124**	*i* P	**Pg**	**14 53 24.7**	**-0.7**
TURN				*i* S	**Sg**	**14 53 33.0**	**+0.8**
DALY	**Dalyan (Mu¨la**	**0.60**	**126**	*e*PG	**Pg**	**14 53 23.9**	**-2.7**
DALY	**Dalyan (Mu¨la**	**0.60**	**126**	*e*Pg	**Pg**	**14 53 23.9**	**-2.7**
BODT	**Bodrum**	**0.60**	**260**	*e*PG	**Pn**	**14 53 30.4**	**-0.6**
BODT	**Bodrum**	**0.60**	**260**	*e*Pg	**Pn**	**14 53 30.4**	**-0.6**
DNZL	**Cakiroluk**	**0.95**	**57**	*i* P	**Pg**	**14 53 32.2**	**-1.1**
DNZL	**Cakiroluk**	**0.95**	**57**	P	**Pg**	**14 53 32.2**	**-1.1**
AKAS	**Kas**	**1.56**	**126**	*i* P	**Pb**	**14 53 45.4**	**+0.4**
AKAS				*i* S	**Sb**	**14 54 07.7**	**+2.3**
AKAS	**Kas**	**1.56**	**126**	P	**Pb**	**14 53 45.4**	**+0.4**

IDC 14 15:00:32.3±2.0, 8.13S×129.80E, h0km, mb4.0/1, mb1 3.6/4, mb1mx3.3/35, mbtmp3.5/4, ML3.5/3, Error ellipse: s-maj=68.0km s-min=25.1km az=76.0, Timor Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.71**	**202**	Pn	Pn	15 03 08.0	+0.9
	0.3nm,0.3s,baz=27,slow=12,SNR=15						
FITZ				Sn	Sn	15 05 14.1	+6.4
	0.3nm,0.3s,baz=160,slow=24,SNR=4.2						
WRA	**Warramunga Arr**	**12.54**	**160**	Pn	Pn	15 03 30.5	-1.7
	0.4nm,0.3s,baz=338,slow=13,SNR=17						
WRA				Sn	Sn	15 05 56.3	+3.7
	0.6nm,0.3s,baz=332,slow=22,SNR=6.4						
ASAR	**Alice Springs**	**15.94**	**166**	Pn	Pn	15 04 17.1	-1.0
	0.2nm,0.3s,baz=340,slow=8.2,SNR=13						
ASAR				Sn	Sn	15 07 19.1	+3.4
	0.1nm,0.3s,baz=354,slow=26,SNR=3.4						
ZALV	**Zalesovo Beam**	**72.50**	**334**	P	P	15 12 00.9	+0.1
	1.1nm,0.7s,baz=107,slow=6.8,SNR=4.1						

*NIED **14** 15:02:00, 36.70N×142.40E, h26km, Mw3.9 Best double couple: M○6.77000×10^14 NP1:∅±26.00000°, δ42.00000°, λ110.00000°. NP2:∅±180.00000°, δ51.00000°, λ73.00000°.*

*IDC **14** 15:02:46.4±0.7, 36.62N×142.46E, h0km, mb3.8/12, mb1 4.0/15, mb1mx3.9/43, mbtmp3.9/15, ML3.7/3, MS3.0/6, Ms1 2.9/6, ms1mx2.7/42, Error ellipse: s-maj=21.0km s-min=16.1km az=114.0*

*NEIC **14** 15:02:48.9±3.3, 36.69N×142.45E, h18km±20km, mb4.7/7, Error ellipse: s-maj=9.7km s-min=6.3km az=132.0*

*JMA **14** 15:02:49.2±0.2, 36.73N×142.36E, h42km, M3.8*

ISC 14 15:02:46.3±2.7, 36.71N±0.04×142.37E±0.06, h1km±16km, n64, σ1§48/74, mb4.0/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.32**	**288**	P	**Pn**	**15 03 11.4**	**-0.6**
ONAJ				*e*S	**Sg**	**15 03 27.8**	**-1.0**
JFK	**Kawauchi**	**1.37**	**299**	P	**Pn**	**15 03 11.9**	**-0.7**
JFK				*e*S	**Sg**	**15 03 28.7**	**-1.5**
JHO	**Hitachi**	**1.46**	**267**	P	**Pn**	**15 03 13.3**	**-0.4**
JHO				*e*S	**Sg**	**15 03 31.7**	**-1.3**
JMM	**Marumori**	**1.71**	**313**	P	**Pn**	**15 03 16.8**	**-0.5**
JFT	**Otama**	**1.82**	**297**	P	**Pn**	**15 03 19.3**	**+0.5**
JFT				S	**Sn**	**15 03 41.5**	**-1.0**
JIO	**Ouri**	**1.93**	**335**	P	**Pn**	**15 03 19.9**	**-0.3**
JIO				*e*S	**Sn**	**15 03 43.1**	**-2.0**
JOU	**Okura**	**2.14**	**321**	P	**Pn**	**15 03 24.2**	**+1.0**
JOU				*e*S	**Sn**	**15 03 51.3**	**+0.8**
BSO1	**Boso 1**	**2.34**	**209**	P	**Pn**	**15 03 26.4**	**+1.0**
BSO1				*e*S	**Sn**	**15 03 55.5**	**+0.9**
JAG	**Ashikaga**	**2.37**	**264**	P	**Pn**	**15 03 26.6**	**+0.3**
JAG				S	**Sn**	**15 03 54.1**	**-1.9**
JMK	**Ichinoseki**	**2.42**	**338**	P	**Pn**	**15 03 27.4**	**+0.4**
JMK				*e*S	**Sn**	**15 03 55.3**	**-2.0**
JYK	**Kaneyama**	**2.72**	**325**	P	**Pn**	**15 03 31.6**	**+0.4**
MJAR	**Matsushiro Arr**	**3.35**	**268**	Pn	**Pn**	**15 03 41.5**	**+1.6**
	6.3nm,0.3s,baz=82,slow=7.8,SNR=50						
MJAR				LR	LR	15 05 13.5	
	comp=Z,173nm,19.6s,baz=100,slow=43						
MAJO	**Matsushiro**	**3.36**	**268**	*e*Pn	**Pn**	**15 03 41.3**	**+1.4**
MAT	**Matsushiro**	**3.36**	**268**	P	**Pn**	**15 03 41.6**	**+1.7**
MAT				S	**Sn**	**15 04 17.4**	**-3.0**
MJB9	**Matsu-Tunnel**	**3.36**	**268**	*e*Pn	**Pn**	**15 03 41.7**	**+1.7**
JHJ2	**Mitsune**	**4.16**	**211**	*e*Pn	**Pn**	**15 03 51.2**	**+0.4**
JHJ	**Hachijo jima 2**	**4.16**	**211**	Pn	**Pn**	**15 03 51.1**	**+0.1**
	3.8nm,0.3s,baz=342,slow=23,SNR=11						
JHJ				Sn	**Sn**	**15 04 36.6**	**-3.7**
	9.1nm,0.3s,baz=100,slow=22,SNR=6.3						
INU	**Inuyama**	**4.55**	**254**	*e*Pn	**Pn**	**15 03 58.2**	**+1.9**
ERM	**Erimo**	**5.34**	**6**	*e*Pn	**Pn**	**15 04 06.2**	**-0.9**
ASAJ	**Asahikawa**	**7.40**	**1**	Pn	**Pn**	**15 04 35.7**	**+0.2**
	1.8nm,0.3s,baz=215,slow=12,SNR=22						
ASAJ				Sn	**Sn**	**15 05 57.1**	**-3.0**
	2.6nm,0.3s,baz=125,slow=8.0,SNR=8.9						
ASAJ	**Asahikawa**	**7.40**	**1**	*e*Pn	**Pn**	**15 04 35.7**	**+0.2**
ASAJ				*e*Sn	**Sn**	**15 05 56.4**	**-3.7**
USRK	**Ussuriysk Ar.**	**10.88**	**317**	LR	LR	15 09 28.5	
	comp=Z,94nm,20.5s,baz=118,slow=37						
KSRS	**Korea Array**	**11.57**	**278**	Pn	**Pn**	**15 05 37.0**	**+4.4**
	0.1nm,0.3s,baz=92,slow=14,SNR=3.1						
KSRS				LR	LR	15 09 52.9	
	comp=Z,92nm,19.2s,baz=65,slow=36						
KS01	**Wonju Array Si**	**11.59**	**278**	*e*Pn	**Pn**	**15 05 34.6**	**+1.8**
KSAR	**Wonju Array Be**	**11.60**	**278**	Pn	**Pn**	**15 05 37.0**	**+4.0**
PEA0	**Petropavlovsk-**	**19.60**	**28**	*e*P	**P**	**15 07 14.0**	**-1.8**
PETK	**Petropavlovsk-**	**19.60**	**28**	LR	LR	15 14 12.2	
	comp=Z,31nm,21.6s,baz=106,slow=35						
MA2	**Magadan**	**23.52**	**11**	P	**P**	**15 07 58.1**	**+0.5**
	5.0nm,0.8s,baz=163,slow=5.3,SNR=7.1						
SEY	**Seymchan**	**26.97**	**10**	P	**P**	**15 08 30.8**	**+1.6**
	1.5nm,0.5s,baz=133,slow=6.7,SNR=5.7						
ENH	**Enshi**	**28.08**	**266**	*e*P	**P**	**15 08 39.0**	**-0.5**
	38nm,1.8s						

JHO				S	Sn	15 04 35.8	-0.6
JFT	**Otama**	**0.83**	**314**	P	Pn	15 04 32.5	+0.6
JFT				*e*S	Sn	15 04 43.4	+0.1
JMM	**Marumori**	**0.95**	**346**	P	Pn	15 04 33.1	-0.4
JMM				*e*S	Sn	15 04 45.2	-0.9
JFY	**Yanaizu**	**1.20**	**293**	P	Pn	15 04 37.2	+0.3
JAG	**Ashikaga**	**1.41**	**249**	P	Pn	15 04 39.9	+0.2
MAT	**Matsushiro**	**2.35**	**261**	P	Pn	15 04 53.7	+1.2
MAT				S	Sn	15 05 26.2	+6.0

NIED **14** *15:10:00, 36.˙70N× 142.˙40E, h26km, Mw3.5 Best double couple: M⊙2.29000×10^14 NP1:φs197.00000°, δ42.00000°, λ85.00000°. NP2:φs24.00000°, δ48.00000°, λ95.00000°.*
IDC **14** *15:10:12.7± 1.0, 36.˙65N× 142.˙56E, h0km, mb3.4/6, mb1 3.7/8, mb1mx3.5/47, mbtmp3.5/8, ML3.5/2, Error ellipse: s-maj=26.8km s-min=21.9km az=110.0*
JMA **14** *15:10:15.7± 0.2, 36.˙74N× 142.˙40E, h42km, M3.5*
ISC 14 15:10:14.6± 2.7, 36.˙72N± 0.˙04× 142.˙31E± 0.˙07, h11km± 15km, n22, σ1§24/34, mb3.5/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.27**	**288**	P	**Pn**	**15 10 38.2**	**-0.1**
ONAJ				S	**Sg**	**15 10 55.7**	**+0.1**
JFK	**Kawauchi**	**1.32**	**300**	P	**Pn**	**15 10 38.6**	**-0.4**
JFK				*e*S	**Sg**	**15 10 55.6**	**-1.5**
JHO	**Hitachi**	**1.41**	**266**	P	**Pn**	**15 10 40.4**	**+0.3**
CHOJ	**Chosi**	**1.56**	**230**	P	**Pn**	**15 10 43.0**	**+0.9**
CHOJ				*e*S	**Sn**	**15 11 01.9**	**-0.4**
JMM	**Marumori**	**1.67**	**314**	P	**Pn**	**15 10 43.9**	**+0.2**
JFT	**Otama**	**1.77**	**297**	P	**Pn**	**15 10 46.4**	**+1.3**
JFT				S	**Sn**	**15 11 08.1**	**+0.5**
JIO	**Ouri**	**1.89**	**336**	P	**Pn**	**15 10 46.9**	**+0.1**
JIO				*e*S	**Sn**	**15 11 09.8**	**-0.8**
JAG	**Ashikaga**	**2.32**	**264**	P	**Pn**	**15 10 53.5**	**+0.8**
JAG				*e*S	**Sn**	**15 11 20.3**	**-0.9**
BSO1	**Boso 1**	**2.33**	**208**	P	**Pn**	**15 10 52.9**	**+0.6**
BSO1				*e*S	**Sn**	**15 11 21.3**	**+0.6**
JMK	**Ichinoseki**	**2.39**	**339**	P	**Pn**	**15 10 54.2**	**+0.6**
JMK				*e*S	**Sn**	**15 11 22.1**	**-0.8**
JYK	**Kaneyama**	**2.68**	**325**	P	**Pn**	**15 10 58.6**	**+0.9**
JRY	**Ryogami san**	**2.84**	**257**	P	**Pn**	**15 11 00.5**	**+0.6**
JRY				*e*S	**Sn**	**15 11 32.7**	**-1.4**
JOM	**Ohasama**	**2.86**	**344**	P	**Pn**	**15 11 00.5**	**+0.3**
JOM				*e*S	**Sn**	**15 11 33.4**	**-1.2**
MJAR	**Matsushiro Arr**	**3.31**	**268**	Pn	**Pn**	**15 11 08.3**	**+2.0**
	5.2nm,0.3s,baz=86,slow=8.3,SNR=37						
MAT	**Matsushiro**	**3.31**	**268**	P	**Pn**	**15 11 08.1**	**+1.8**
MAT				S	**Sn**	**15 11 42.9**	**-2.7**
JHJ	**Hachijo jima 2**	**4.15**	**211**	Pn	**Pn**	**15 11 18.4**	**+0.6**
	5.6nm,0.3s,baz=323,slow=18,SNR=8.2						
JHJ					Sn	**Sn**	**15 12 02.9**	**-3.5**
	9.9nm,0.3s,baz=77,slow=22,SNR=6.5						
SONM	**Songino Array**	**28.56**	**304**	P		**P**	**15 16 11.7**	**+1.3**
	0.6nm,0.7s,baz=102,slow=8.4,SNR=4.7						
MKAR	**Makanchi Array**	**44.90**	**303**	P		**P**	**15 18 30.5**	**+1.4**
	0.2nm,0.6s,baz=87,slow=12,SNR=3.8						
ILAR	**Eielson Array**	**49.37**	**32**	P		**P**	**15 19 03.1**	**-0.6**
	0.4nm,0.8s,baz=250,slow=5.7,SNR=6.5						
WRA	**Warramunga Arr**	**56.86**	**189**	P		**P**	**15 19 58.3**	**-1.0**
	0.4nm,0.8s,baz=7.3,slow=7.1,SNR=4.8						
ASAR	**Alice Springs**	**60.58**	**189**	P		**P**	**15 20 24.9**	**-0.3**
	0.4nm,0.9s,baz=356,slow=6.0,SNR=6.8						
PDAR	**Pinedale Array**	**77.37**	**46**	P		**P**	**15 22 09.6**	**-0.2**
	0.2nm,0.4s,baz=335,slow=5.5,SNR=3.7						

MAN 14 15:14:37, 9.˙52N× 122.˙05E, h13km, mb4.5, ML3.4, MS3.3, 1C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.19**	**98**	*i* P	Pn	15 14 54.4	-5.0
SNPH				*i* S	Sb	15 15 10.8	-3.9
LLP	**Lapu-Lapu**	**2.05**	**67**	*i* P	Pn	15 15 12.3	+1.0
LLP				*e*S	Sb	15 15 38.6	-0.9
RCP	**Roxas**	**2.14**	**19**	*e*P	Pn	15 15 13.4	+0.9
RCP				*e*S	Sn	15 15 40.6	+1.6

NIED **14** *15:29:00, 36.˙70N× 142.˙40E, h26km, Mw3.9 Best double couple: M⊙7.00000×10^14 NP1:φs24.00000°, δ41.00000°, λ108.00000°. NP2:φs180.00000°, δ51.00000°, λ75.00000°.*
IDC **14** *15:29:45.5± 0.8, 36.˙65N× 142.˙43E, h0km, mb3.9/10, mb1 4.0/13, mb1mx3.8/37, mbtmp3.9/13, ML3.7/3, MS2.9/1, Ms1 2.9/1, ms1mx2.4/40, Error ellipse: s-maj=22.3km s-min=15.8km az=113.0*
NEIC **14** *15:29:46.6± 3.7, 36.˙69N× 142.˙44E, h6km± 23km, mb4.6/12, Error ellipse: s-maj=10.5km s-min=6.9km az=126.0*
ISCJB **14** *15:29:48.0± 1.4, 36.˙71N± 0.˙03× 142.˙36E± 0.˙04, h27km± 10km, mb4.3/23, MS2.8/1, Error ellipse: s-maj=5.1km s-min=4.6km az=43.0*
JMA **14** *15:29:47.5± 0.1, 36.˙74N× 142.˙40E, h32km, M3.8*
ISC 14 15:29:46.8± 2.9, 36.˙70N± 0.˙04× 142.˙36E± 0.˙05, h7km± 17km, n69, σ1§32/72, mb4.3/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.31**	**288**	P	**Pn**	**15 30 10.4**	**-1.1**
ONAJ				*e*S	**Sg**	**15 30 28.0**	**-1.0**
JFK	**Kawauchi**	**1.36**	**300**	P	**Pn**	**15 30 10.9**	**-1.3**
JHO	**Hitachi**	**1.44**	**267**	P	**Pn**	**15 30 12.5**	**-0.8**
JHO				*e*S	**Sn**	**15 30 30.3**	**-2.1**
JMM	**Marumori**	**1.71**	**313**	P	**Pn**	**15 30 16.5**	**-0.4**
JMM				*e*S	**Sn**	**15 30 37.6**	**-1.3**
JFT	**Otama**	**1.81**	**297**	P	**Pn**	**15 30 18.3**	**0.0**
JFT				S	**Sn**	**15 30 40.5**	**-1.0**
JIO	**Ouri**	**1.92**	**336**	P	**Pn**	**15 30 19.0**	**-0.9**
JIO				*e*S	**Sn**	**15 30 41.9**	**-2.4**
BSO1	**Boso 1**	**2.33**	**209**	P	**Pn**	**15 30 25.8**	**+0.8**
BSO1				S	**Sn**	**15 30 54.5**	**+0.8**
JAG	**Ashikaga**	**2.36**	**264**	P	**Pn**	**15 30 25.8**	**0.0**
JAG				S	**Sn**	**15 30 53.4**	**-1.6**
JMK	**Ichinoseki**	**2.42**	**338**	P	**Pn**	**15 30 26.3**	**-0.4**
JMK				S	**Sn**	**15 30 54.7**	**-1.8**
JYK	**Kaneyama**	**2.72**	**325**	P	**Pn**	**15 30 30.7**	**-0.1**
JRY	**Ryogami san**	**2.87**	**257**	P	**Pn**	**15 30 32.9**	**-0.1**
JRY				*e*S	**Sn**	**15 31 06.2**	**-1.6**
JOM	**Ohasama**	**2.89**	**343**	P	**Pn**	**15 30 32.6**	**-0.6**
JOM				*e*S	**Sn**	**15 31 06.4**	**-1.8**
JOD2	**Odawara 2**	**3.02**	**243**	P	**Pn**	**15 30 35.7**	**+0.8**
JAW	**Awa shima**	**3.03**	**306**	P	**Pn**	**15 30 38.0**	**+3.0**
MJAR	**Matsushiro Arr**	**3.34**	**268**	Pn	**Pn**	**15 30 40.3**	**+0.9**
	6.3nm,0.3s,baz=50,slow=29,SNR=49						
MJAR					Sn	**Sn**	**15 31 19.6**	**+0.2**
	2.7nm,0.3s,baz=75,slow=15,SNR=3.1						
MAJO	**Matsushiro**	**3.34**	**268**	*e*Pn	**Pn**	**15 30 40.8**	**+1.4**
MAT	**Matsushiro**	**3.34**	**268**	P	**Pn**	**15 30 40.6**	**+1.2**
MAT				S	**Sn**	**15 31 18.4**	**-1.0**
MJB9	**Matsu-Tunnel**	**3.35**	**269**	*e*Pn	**Pn**	**15 30 40.9**	**+1.4**
JHJ2	**Mitsune**	**4.15**	**211**	*e*Pn	**Pn**	**15 30 50.8**	**+0.4**
JHJ2				*e*Sn	**Sn**	**15 31 35.3**	**-3.9**
JHJ	**Hachijo jima 2**	**4.16**	**211**	Pn	**Pn**	**15 30 50.3**	**-0.3**
	6.5nm,0.3s,baz=119,slow=20,SNR=15						
JHJ					Sn	**Sn**	**15 31 35.9**	**-3.4**
	13nm,0.3s,baz=92,slow=22,SNR=7.5						
INU	**Inuyama**	**4.54**	**254**	*e*Pn	**Pn**	**15 30 58.4**	**+2.6**
ERM	**Erimo**	**5.34**	**6**	*e*Pn	**Pn**	**15 31 05.3**	**-1.5**
ASAJ	**Asahikawa**	**7.41**	**1**	Pn	**Pn**	**15 31 34.4**	**-0.8**
	1.7nm,0.3s,baz=208,slow=13,SNR=16						
ASAJ	**Asahikawa**	**7.41**	**1**	*e*Pn	**Pn**	**15 31 34.7**	**-0.5**
CBIJ	**Chichi jima**	**9.58**	**181**	*e*Pn	Pn	15 31 59.9	-5.2
KS01	**Wonju Array Si**	**11.58**	**278**	*e*Pn	Pn	15 32 37.8	+5.4
KS15	**Wonju Array Si**	**11.59**	**278**	*e*Pn	Pn	15 32 38.6	+6.1
MA2	**Magadan**	**23.53**	**11**	P	**P**	**15 34 56.5**	**-0.7**
	4.0nm,0.8s,baz=182,slow=8.3,SNR=6.3						
YAK	**Yakutsk**	**26.56**	**347**	P	**P**	**15 35 25.5**	**+0.5**
	5.2nm,0.6s,baz=24,slow=1.1,SNR=3.5						
YAK	**Yakutsk**	**26.56**	**347**	*e*P	**P**	**15 35 24.9**	**0.0**
	7.4nm,0.7s						
SEY	**Seymchan**	**26.98**	**10**	P	**P**	**15 35 29.9**	**+1.3**
	2.2nm,0.8s,baz=252,slow=23,SNR=5.3						
H11N2	**WAKE ISLAND Hy**	**27.33**	**122**	T	T	16 04 18.7	
	baz=314,slow=75,SNR=9.8						
H11N1	**WAKE ISLAND Hy**	**27.34**	**122**	T	T	16 04 13.0	
	baz=314,slow=75,SNR=8.1						
H11N3	**WAKE ISLAND Hy**	**27.35**	**122**	T	T	16 04 13.7	
	baz=314,slow=75,SNR=7.4						
H11S1	**WAKE ISLAND Hy**	**28.04**	**124**	T	T	16 05 12.4	
	baz=316,slow=76,SNR=4.8						
H11S3	**WAKE ISLAND Hy**	**28.05**	**124**	T	T	16 05 14.1	
	baz=316,slow=76,SNR=5.4						
H11S2	**WAKE ISLAND Hy**	**28.06**	**124**	T	T	16 05 16.9	
	baz=316,slow=76,SNR=4.3						
SONA1	**Songino Array**	**28.59**	**304**	*e*P	**P**	**15 35 43.9**	**+0.3**
SONA0	**Songino Array**	**28.60**	**304**	*e*P	**P**	**15 35 44.5**	**+0.9**
	1.9nm,1.0s						
SONM	**Songino Array**	**28.60**	**304**	P	**P**	**15 35 44.5**	**+0.9**
	1.1nm,0.8s,baz=110,slow=8.5,SNR=8.4						
TGY	**Tagaytay City**	**29.55**	**226**	LR	LR	15 48 45.1	
	comp=Z,21nm,18.5s,baz=213,slow=39						
MIDW	**Midway**	**34.81**	**92**	*e*P	**P**	**15 36 37.6**	**-0.6**
	236nm,1.6s						
NIKH	**Nikolski High**	**37.42**	**48**	*e*P	**P**	**15 37 01.6**	**+1.3**
	57nm,1.5s						
MK32	**Makanchi Array**	**44.94**	**303**	*e*P	**P**	**15 38 02.2**	**+0.1**
MKAR	**Makanchi Array**	**44.94**	**303**	P	**P**	**15 38 02.2**	**+0.1**
	0.3nm,0.6s,baz=88,slow=10.0,SNR=4.2						
KURK	**Kurchatov**	**46.73**	**308**	*e*P	P	15 38 21.3	+5.1
HDA	**Harding Lake**	**49.35**	**33**	*e*P	**P**	**15 38 36.0**	**-0.4**
	13nm,1.6s						
ILAR	**Eielson Array**	**49.37**	**32**	P	**P**	**15 38 36.5**	**+0.1**
	1.2nm,0.8s,baz=268,slow=6.7,SNR=16						
ILB	**Eielson Array**	**49.37**	**32**	*e*P	**P**	**15 38 35.9**	**-0.5**
IL1	**Eielson Array**	**49.37**	**32**	*e*P	**P**	**15 38 36.4**	**-0.1**
MID	**Middleton Isla**	**49.97**	**39**	*e*P	**P**	**15 38 43.3**	**+2.2**
	120nm,1.1s						
VOSK	**Vostochnaya**	**51.07**	**312**	*e*P	**P**	**15 38 52.1**	**+2.6**
	5.2nm,1.7s						
WR1	**Warramunga Arr**	**56.85**	**189**	*e*P	**P**	**15 39 31.1**	**-0.9**
	33nm,2.0s						
WRA	**Warramunga Arr**	**56.85**	**189**	P	**P**	**15 39 31.1**	**-0.9**
	0.4nm,0.7s,baz=7.3,slow=7.1,SNR=6.7						
ABKAR	**Akbulak array**	**58.73**	**311**	*e*P	**P**	**15 39 43.6**	**-1.4**
	6.5nm,0.6s						
AS01	**Alice Springs**	**60.56**	**189**	*e*P	**P**	**15 39 56.5**	**-1.3**
ASAR	**Alice Springs**	**60.57**	**189**	P	**P**	**15 39 57.4**	**-0.5**
	0.5nm,0.8s,baz=12,slow=6.8,SNR=5.3						
YKA	**Yellowknife Ar**	**63.71**	**30**	P	**P**	**15 40 18.6**	**+0.1**
	0.6nm,0.8s,baz=301,slow=7.5,SNR=3.6						
YKB5	**Yellowknife Ar**	**63.71**	**30**	*e*P	**P**	**15 40 18.6**	**+0.1**
AFDM	**Forest Hills D**	**72.55**	**54**	*e*P	**P**	**15 41 15.0**	**+0.5**
	14nm,1.9s						
LRM	**Limekiln Ridge**	**73.85**	**45**	*e*P	**P**	**15 41 22.7**	**+0.4**
DLMT	**Dillon**	**74.04**	**45**	*e*P	**P**	**15 41 24.2**	**+0.9**
	8.4nm,1.8s						
BOZ	**Bozeman (W)**	**74.42**	**44**	*e*P	**P**	**15 41 26.6**	**+1.0**
	5.3nm,1.5s						
PAGB	**Antelope Grade**	**74.82**	**57**	*e*P	**P**	**15 41 29.2**	**+1.3**
	9.8nm,0.9s						
BW06	**Boulder Array**	**77.35**	**46**	*e*P	**P**	**15 41 41.3**	**-1.2**
NLU	**North Lily Min**	**77.59**	**49**	*e*P	**P**	**15 41 41.8**	**-2.1**
	3.4nm,1.0s						
LTX	**Lajitas**	**89.72**	**53**	*e*P	**P**	**15 42 46.4**	**+0.4**
TXAR	**Lajitas Array**	**89.72**	**53**	P	**P**	**15 42 46.4**	**+0.4**
	0.6nm,0.8s,baz=289,slow=3.8,SNR=5.9						
LPAZ	**La Paz**	**146.20**	**61**	PKPbc	**PKPdf**	**15 49 27.7**	**-0.3**
	1.4nm,0.8s,baz=48,slow=9.4,SNR=5.5						

ISCJB **14** *15:31:33.8± 0.3, 23.˙59N± 0.˙01× 121.˙66E± 0.˙02, h26km± 2km, Error ellipse: s-maj=2.9km s-min=1.8km az=39.4*
JMA **14** *15:31:33.2± 0.1, 23.˙58N× 121.˙62E, h34km± 2km, M2.8*
TAP **14** *15:31:34.8, 23.˙60N× 121.˙62E, h25km, ML3.3, C*
ISC 14 15:31:34.0± 0.9, 23.˙59N± 0.˙02× 121.˙62E± 0.˙02, h31km± 7km, n67, σ0§70/123, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ESL	**Shilin**	**0.28**	**323**	P	**Pb**	**15 31 41.3**	**0.0**
	baz=321						
ESL				*e*S	**Sb**	**15 31 46.3**	**+0.1**
	baz=321						
EHY	**Hungye**	**0.28**	**253**	P	**Pb**	**15 31 41.4**	**+0.1**
	baz=249						
EHY				*e*S	**Sb**	**15 31 46.2**	**-0.1**
	baz=249						
TWF1	**Yuli**	**0.38**	**231**	*e*P	**Pb**	**15 31 42.8**	**+0.1**
	baz=229						
TWF1				*e*S	**Sb**	**15 31 48.5**	**0.0**
	baz=229						
HWA	**Hwalien**	**0.39**	**359**	*e*P	**Pn**	**15 31 43.2**	**-0.2**
	baz=358						
HWA				*e*S	**Sn**	**15 31 49.2**	**-0.5**
	baz=358						
TWD	**Chiawan**	**0.49**	**358**	*e*P	**Pb**	**15 31 44.5**	**+0.2**
	baz=357						
TWD				*e*S	**Sb**	**15 31 51.5**	**+0.2**
	baz=357						
CHKT	**Chengkung**	**0.54**	**205**	*e*P	**Pb**	**15 31 45.1**	**-0.1**
	baz=204						
CHKT				*e*S	**Sn**	**15 31 53.7**	**+0.1**
	baz=204						
YUS	**Yu-Shan**	**0.62**	**261**	*e*P	**Pb**	**15 31 46.9**	**+0.1**
	baz=259						
YUS				*e*S	**Sb**	**15 31 54.7**	**-0.7**
	baz=259						
WHF	**Hehuan Shan**	**0.64**	**330**	*e*P	**Pb**	**15 31 46.5**	**-0.6**
	baz=329						
WHF				*e*S	**Sb**	**15 31 55.3**	**-0.7**
	baz=329						
ELDTW	**Lidau**	**0.68**	**234**	*e*P	**Pb**	**15 31 46.8**	**-0.8**
	baz=232						
ELDTW				*e*S	**Sb**	**15 31 55.1**	**-1.6**
	baz=232						
SMLT	**Sun Moon Lake**	**0.72**	**294**	*e*P	**Pb**	**15 31 47.9**	**-0.3**
	baz=292						
SMLT				*e*S	**Sb**	**15 31 56.7**	**-1.1**
	baz=292						
ALS	**Alishan**	**0.75**	**264**	P	**Pn**	**15 31 48.9**	**+0.2**
	baz=262						
ALS				*e*S	**Sb**	**15 31 58.7**	**-0.2**
	baz=262						
TYC	**Yuchr**	**0.76**	**294**	*e*P	**Pn**	**15 31 48.5**	**-0.1**
	baz=293						
TYC				*e*S	**Sb**	**15 31 58.7**	**-0.2**
	baz=293						
TWT	**Tachien**	**0.77**	**329**	*e*P	**Pb**	**15 31 49.1**	**-0.1**
	baz=326						
TWT				*e*S	**Sb**	**15 31 58.7**	**-0.7**
	baz=326						
ENA	**Nanau**	**0.84**	**8**	*e*P	**Pn**	**15 31 49.4**	**-0.3**
	baz=8.0						
ENA				*e*S	**Sb**	**15 32 00.5**	**-0.7**
	baz=8.0						
CHN5	**Tsauling**	**0.86**	**271**	*e*P	**Pb**	**15 31 50.7**	**+0.2**
	baz=269						
CHN5				*e*S	**Sn**	**15 32 02.1**	**+0.5**
	baz=269						
NNS	**Nan Shan**	**0.87**	**345**	*e*P	**Pb**	**15 31 49.9**	**-0.5**
	baz=345						
NNS				*e*S	**Sb**	**15 32 01.3**	**-0.9**
	baz=345						
STYT	**Tauyuan**	**0.90**	**242**	P	**Pn**	**15 31 50.9**	**+0.3**
	baz=240						
STYT				*e*S	**Sn**	**15 32 02.2**	**-0.3**
	baz=240						
WNT	**Mingjian**	**0.90**	**289**	*e*P	**Pb**	**15 31 51.2**	**0.0**
	baz=287						
WNT				*e*S	**Sb**	**15 32 05.1**	**+2.2**
	baz=287						
TWG	**Pinlang**	**0.92**	**213**	*e*P	**Pn**	**15 31 50.0**	**-0.8**
	baz=212						
TWG				*e*S	**Sb**	**15 32 04.9**	**+1.7**
	baz=212						
TTN	**Taitung**	**0.94**	**207**	*e*S	**Sb**	**15 32 03.9**	**+0.1**
	baz=206						
CHN4	**Tsaushan**	**0.97**	**256**	*e*P	**Pb**	**15 31 52.4**	**+0.1**
	baz=255						
CHN4				*e*S	**Sb**	**15 32 05.9**	**+1.1**
	baz=255						
WGK	**Gukeng**	**0.97**	**276**	*e*P	**Pb**	**15 31 52.4**	**0.0**
	baz=274						
WGK				*e*S	**Sb**	**15 32 05.3**	**+0.5**
	baz=274						
WTP	**Ta-pu**	**0.98**	**250**	P	**Pb**	**15 31 52.6**	**0.0**
	baz=248						
WTP				*e*S	**Sb**	**15 32 05.7**	**+0.5**
	baz=248						
TCU	**Taichung**	**1.02**	**303**	*e*P	**Pb**	**15 31 53.6**	**+0.4**
	baz=302						
TCU				*e*S	**Sb**	**15 32 07.7**	**+1.4**
	baz=302						
TWC	**Suao**	**1.04**	**12**	*e*P	**Pb**	**15 31 53.5**	**+0.1**
	baz=12						
TWC				*e*S	**Sb**	**15 32 06.4**	**-0.3**
	baz=12						
ENTT	**Nioudou**	**1.04**	**358**	*e*P	**Pn**	**15 31 52.5**	**-0.1**
	baz=357						
ENTT				*e*S	**Sn**	**15 32 05.8**	**-0.3**
	baz=357						
CHN2	**Minshiung**	**1.05**	**267**	*e*P	**Pb**	**15 31 54.2**	**+0.6**
	baz=266						
CHN2				*e*S	**Sb**	**15 32 08.3**	**+1.3**
	baz=266						
SGST	**Jiashian**	**1.08**	**242**	*e*P	**Pb**	**15 31 54.5**	**+0.4**
	baz=241						
SGST				*e*S	**Sb**	**15 32 08.6**	**+0.8**
	baz=241						
CHN1	**Nanshi**	**1.08**	**248**	*e*P	**Pb**	**15 31 54.0**	**-0.2**
	baz=247						
CHN1				*e*S	**Sb**	**15 32 08.5**	**+0.6**
	baz=247						
TWQ1	**Liyutan**	**1.08**	**315**	*e*P	**Pb**	**15 31 54.4**	**+0.2**
	baz=313						
TWQ1				*e*S	**Sb**	**15 32 09.2**	**+1.3**
	baz=313						
TWK	**Hsinying**	**1.08**	**253**	*e*S	**Sb**	**15 32 08.9**	**+0.8**
	baz=251						
CHY	**Chiayi**	**1.10**	**265**	*e*P	**Pb**	**15 31 54.5**	**+0.1**
	baz=264						
CHY				*e*S	**Sb**	**15 32 08.6**	**+0.2**
	baz=264						
NSK	**Sanguang**	**1.11**	**348**	*e*P	**Pn**	**15 31 53.6**	**+0.2**
	baz=347						
NSK				*e*S	**Sn**	**15 32 07.0**	**-0.7**
	baz=347						
TWE	**Neicheng**	**1.13**	**2**	*e*P	**Pn**	**15 31 53.9**	**+0.2**
	baz=2.0						
TWE				*e*S	**Sn**	**15 32 08.3**	**+0.2**
	baz=2.0						
NSY	**Sanyi**	**1.13**	**317**	*e*P	**Pb**	**15 31 55.4**	**+0.3**
	baz=315						
NSY				*e*S	**Sb**	**15 32 11.0**	**+1.5**
	baz=315						
ECL	**Taimali**	**1.16**	**212**	*e*P	**Pn**	**15 31 53.2**	**-1.0**
	baz=211						
ECL				*e*S	**Sn**	**15 32 06.6**	**-2.4**
	baz=211						
NSTT	**Nanjuang**	**1.18**	**332**	*e*P	**Pn**	**15 31 54.4**	**0.0**
	baz=331						
NSTT				*e*S	**Sn**	**15 32 09.0**	**-0.4**
	baz=331						
SSD	**Sandimen**	**1.24**	**227**	*e*P	**Pb**	**15 31 56.5**	**-0.3**
	baz=226						
SSD				*e*S	**Sb**	**15 32 13.2**	**+0.8**
	baz=226						
WTCT	**Ta-ch'eng**	**1.25**	**283**	*e*P	**Pb**	**15 31 56.9**	**-0.2**
	baz=281						
WTCT				*e*S	**Sb**	**15 32 13.5**	**+0.6**
	baz=281						
CHN3	**Shinhua**	**1.26**	**246**	*e*P	**Pb**	**15 31 57.5**	**+0.4**
	baz=245						
CHN3				*e*S	**Sb**	**15 32 13.2**	**+0.2**
	baz=245						
WSF	**Szhu**	**1.28**	**272**	*e*P	**Pn**	**15 31 55.9**	**+0.1**
	baz=271						
WSF				*e*S	**Sb**	**15 32 13.1**	**-0.5**
	baz=271						
EGS		**1.28**	**13**	*e*P	**Pb**	**15 31 58.0**	**+0.5**
	baz=13						
EGS				*e*S	**Sn**	**15 32 11.8**	**-0.1**
	baz=13						
CHN8	**Yiju**	**1.31**	**260**	*e*P	**Pn**	**15 31 57.0**	**+0.8**
	baz=258						
CHN8				*e*S	**Sb**	**15 32 13.9**	**-0.7**
	baz=258						
TWM1	**Shoushan**	**1.34**	**235**	*e*P	**Pb**	**15 31 59.0**	**+0.5**
	baz=234						
TWM1				*e*S	**Sb**	**15 32 16.6**	**+1.3**
	baz=234						
HSN	**Hsinchu**	**1.34**	**334**	*e*S	**Sb**	**15 32 15.8**	**+0.4**
	baz=335						
SGLT	**Jiouru**	**1.35**	**230**	*e*S	**Sb**	**15 32 15.9**	**+0.4**
	baz=229						
SCLT	**Jiali**	**1.37**	**253**	*e*S	**Sb**	**15 32 16.5**	**+0.3**
	baz=251						
TWA	**Mucha**	**1.38**	**359**	*e*S	**Sn**	**15 32 14.9**	**+0.4**
	baz=358						
TAI1	**Yung-k'ang**	**1.39**	**247**	*e*S	**Sn**	**15 32 15.2**	**+0.7**
	baz=246						
EAST	**Anshuo**	**1.40**	**211**	*e*P	**Pb**	**15 31 59.7**	**+0.2**
	baz=210						
EAST				*e*S	**Sb**	**15 32 16.4**	**-0.5**
	baz=210						
TAW	**Tawu**	**1.40**	**209**	*e*P	**Pb**	**15 31 59.2**	**-0.2**
	baz=208						
TAW				*e*S	**Sn**	**15 32 14.3**	**-0.4**
	baz=208						
NCU	**National Centr**	**1.43**	**344**	*e*S	**Sb**	**15 32 17.6**	**-0.3**
	baz=343						
TAP	**Taipei**	**1.45**	**356**	*e*S	**Sb**	**15 32 17.4**	**-1.0**
	baz=356						
TWB1	**Santiao Chiao**	**1.45**	**13**	*e*S	**Sb**	**15 32 17.6**	**-0.9**
	baz=13						
NWF	**Wu-fen Shan**	**1.48**	**6**	*e*P	**Pn**	**15 31 59.7**	**+1.0**
	baz=5.0						
NWF				*e*S	**Sb**	**15 32 18.5**	**-1.0**
	baz=5.0						
JYNG	**Yonagunijimaku**	**1.49**	**55**	P	**Pn**	**15 31 59.3**	**+0.7**
JYNG				*e*S	**Sn**	**15 32 17.0**	**0.0**
TWS1	**Kuangyinshan**	**1.51**	**353**	*e*P	**Pb**	**15 32 00.3**	**-1.2**
	baz=353						
TWS1				*e*S	**Sb**	**15 32 19.4**	**-0.9**
	baz=353						
SCZT	**Fangliau**	**1.52**	**217**

MJAR	**Matsushiro Arr**	**3.34**	**268**	Pn		**Pn**	15 38 10.1	**+1.3**
	5.5nm,0.3s,baz=104,slow=8.7,SNR=38							
MJAR				Sn		**Sn**	**15 38 48.8**	**+0.5**
	6.4nm,0.3s,baz=83,slow=8.5,SNR=5.1							
MAT	**Matsushiro**	**3.34**	**268**	P		**Pn**	**15 38 08.8**	**-0.1**
MAT				*e*S		**Sn**	**15 38 48.3**	**0.0**
JHJ	**Hachijo jima 2**	**4.15**	**211**	Pn		**Pn**	**15 38 19.9**	**-0.1**
	14nm,0.3s,baz=0.1,slow=16,SNR=8.2							
JHJ				Sn		**Sn**	**15 39 05.4**	**-2.9**
	22nm,0.3s,baz=285,slow=21,SNR=7.5							
INU	**Inuyama**	**4.53**	**254**	*e*Pn		**Pn**	**15 38 27.6**	**+2.4**
ERM	**Erimo**	**5.34**	**6**	*e*P		Pn	15 38 22.2	-14
ASAJ	**Asahikawa**	**7.41**	**1**	Pn		**Pn**	**15 39 03.6**	**-1.1**
	1.7nm,0.3s,baz=219,slow=11,SNR=7.7							
ASAJ	**Asahikawa**	**7.41**	**1**	*e*Pn		**Pn**	**15 39 04.0**	**-0.7**
USRK	**Ussuriysk Ar.**	**10.88**	**317**	Pn		Pn	15 39 57.8	+5.6
	0.2nm,0.3s,baz=130,slow=13,SNR=7.3							
KSRS	**Korea Array**	**11.55**	**278**	Pn		**Pn**	**15 40 04.9**	**+3.4**
	baz=96,slow=12,SNR=2.9							
KSAR	**Wonju Array Be**	**11.59**	**278**	Pn		**Pn**	**15 40 04.9**	**+3.0**
MA2	**Magadan**	**23.53**	**11**	P		**P**	**15 42 25.5**	**-0.9**
	3.3nm,0.5s,baz=188,slow=9.5,SNR=6.9							
YAK	**Yakutsk**	**26.56**	**347**	P		**P**	**15 42 53.5**	**-0.7**
	7.5nm,0.4s,baz=312,slow=1.2,SNR=5.8							
YAK	**Yakutsk**	**26.56**	**347**	*e*P		**P**	**15 42 53.4**	**-0.7**
	9.9nm,0.6s							
SEY	**Seymchan**	**26.98**	**10**	P		**P**	**15 42 58.9**	**+1.0**
	2.9nm,0.8s,baz=130,slow=7.2,SNR=6.9							
H11N2	**WAKE ISLAND Hy**	**27.33**	**122**	T		T	16 11 36.3	
	baz=314,slow=75,SNR=7.1							
H11N1	**WAKE ISLAND Hy**	**27.34**	**122**	T		T	16 11 42.9	
	baz=314,slow=75,SNR=7.1							
H11N3	**WAKE ISLAND Hy**	**27.35**	**122**	T		T	16 11 48.3	
	baz=314,slow=75,SNR=6.2							
H11S1	**WAKE ISLAND Hy**	**28.05**	**124**	T		T	16 12 42.4	
	SNR=4.4							
H11S3	**WAKE ISLAND Hy**	**28.05**	**124**	T		T	16 12 32.8	
H11S2	**WAKE ISLAND Hy**	**28.06**	**124**	T		T	16 12 38.5	
SONA1	**Songino Array**	**28.59**	**304**	*e*P		**P**	**15 43 13.3**	**+0.5**
SONA0	**Songino Array**	**28.59**	**304**	*e*P		**P**	**15 43 13.6**	**+0.8**
	3.7nm,1.1s							
SONM	**Songino Array**	**28.59**	**304**	P		**P**	**15 43 13.6**	**+0.8**
	2.1nm,0.9s,baz=102,slow=8.8,SNR=13							
TIXI	**Tiksi**	**35.71**	**353**	*e*P		**P**	**15 44 13.6**	**-1.0**
	2.2nm,0.8s							
ZAA0	**Zalesovo Array**	**42.69**	**313**	*e*P		**P**	**15 45 13.7**	**+0.5**
ZAA1	**Zalesovo Array**	**42.69**	**313**	*e*P		**P**	**15 45 14.3**	**+1.2**
ZALV	**Zalesovo Beam**	**42.69**	**313**	P		**P**	**15 45 14.3**	**+1.2**
	0.3nm,0.3s,baz=98,slow=10,SNR=2.1							
NRIK	**Noril'sk**	**43.88**	**335**	LR		LR	16 05 23.6	
	comp=Z,59nm,18.4s,baz=320,slow=38							
MK01	**Makanchi Array**	**44.93**	**303**	*e*P		**P**	**15 45 31.2**	**-0.1**
MK31	**Makanchi Array**	**44.93**	**303**	*e*P		**P**	**15 45 29.9**	**-1.5**
MK32	**Makanchi Array**	**44.93**	**303**	*e*P		**P**	**15 45 31.6**	**+0.3**
MKAR	**Makanchi Array**	**44.93**	**303**	P		**P**	**15 45 31.6**	**+0.3**
	0.4nm,0.4s,baz=87,slow=8.0,SNR=6.7							
MKAR	**Makanchi Array**	**44.93**	**303**	*e*P		**P**	**15 45 29.9**	**-1.5**
	15nm,1.0s							
KURK	**Kurchatov**	**46.73**	**308**	*e*P		**P**	**15 45 45.5**	**+0.1**
IL1	**Eielson Array**	**49.37**	**32**	*e*P		**P**	**15 46 05.3**	**-0.4**
ILAR	**Eielson Array**	**49.37**	**32**	P		**P**	**15 46 05.8**	**+0.1**
	1.5nm,0.8s,baz=266,slow=8.5,SNR=17							
ILB	**Eielson Array**	**49.37**	**32**	*e*P		**P**	**15 46 04.9**	**-0.8**
ZRNK	**Zerenda**	**52.19**	**313**	*e*P		**P**	**15 46 25.5**	**-1.5**
	11nm,2.0s							
DHAK	**Deception Hill**	**54.14**	**39**	*e*P		**P**	**15 46 40.2**	**-1.1**
	32nm,1.0s							
HPAH	**Hawaii Prepara**	**56.08**	**89**	*e*P		**P**	**15 46 58.5**	**+2.6**
	99nm,1.1s							
FITZ	**Fitzroy Crossi**	**56.75**	**199**	LR		LR	16 10 04.7	
	comp=Z,50nm,18.1s,baz=159,slow=35							
WR1	**Warramunga Arr**	**56.85**	**189**	*e*P		**P**	**15 47 00.4**	**-0.8**
	17nm,1.6s							
WRA	**Warramunga Arr**	**56.85**	**189**	P		**P**	**15 47 00.4**	**-0.8**
	0.5nm,0.5s,baz=6.9,slow=7.1,SNR=7.7							
AS01	**Alice Springs**	**60.56**	**189**	*e*P		**P**	**15 47 26.5**	**-0.5**
ASAR	**Alice Springs**	**60.57**	**189**	P		**P**	**15 47 26.4**	**-0.7**
	0.6nm,0.7s,baz=9.0,slow=6.8,SNR=6.2							
YKA	**Yellowknife Ar**	**63.71**	**30**	P		**P**	**15 47 47.4**	**-0.3**
	0.5nm,0.7s,baz=299,slow=6.3,SNR=3.9							
YKB5	**Yellowknife Ar**	**63.71**	**30**	*e*P		**P**	**15 47 47.4**	**-0.3**
LRM	**Limekiln Ridge**	**73.85**	**45**	*e*P		**P**	**15 48 51.6**	**+0.1**
BOZ	**Bozeman (W)**	**74.42**	**44**	*e*P		**P**	**15 48 55.6**	**+0.9**
	2.3nm,0.9s							
NOA	**NORSAR Array B**	**74.78**	**338**	LR		LR	16 26 18.8	
	comp=Z,21nm,18.1s,baz=135,slow=39							
PDAR	**Pinedale Array**	**77.36**	**46**	P		**P**	**15 49 12.1**	**+0.4**
	0.7nm,0.8s,baz=222,slow=2.0,SNR=5.0							
LTX	**Lajitas**	**89.72**	**53**	*e*P		**P**	**15 50 15.3**	**+0.2**
TXAR	**Lajitas Array**	**89.72**	**53**	P		**P**	**15 50 15.3**	**+0.2**
	0.5nm,0.6s,baz=337,slow=5.3,SNR=8.1							
LPAZ	**La Paz**	**146.20**	**61**	PKPbc		**PKPbc**	**15 56 58.0**	**-0.1**
	1.3nm,0.7s,baz=9.0,slow=10,SNR=5.8							

IDC 14 15:41:00.5±8.9, 66°.36S×177°.32E, h0km, mb3.7/3, mb1 4.0/3, mb1mx3.7/20, mbtmp3.7/3, MS4.0/2, Ms1 3.9/2, ms1mx3.1/22, Error ellipse: s-maj=407.7km s-min=58.2km az=59.0, Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RPZ	**Rata Peaks**	**22.95**	**348**	LR	LR	15 53 33.9	
	comp=Z,274nm,19.4s,baz=190,slow=33						
MAW	**Mawson**	**38.62**	**214**	LR	LR	16 04 25.9	
	comp=Z,217nm,18.1s,baz=62,slow=36						
H01W1	**Cape Leeuwin H**	**47.88**	**279**	T	T	16 40 20.8	
	baz=148,slow=75,SNR=51						
H01W2	**Cape Leeuwin H**	**47.88**	**278**	T	T	16 40 23.2	
	baz=148,slow=75,SNR=36						
H01W3	**Cape Leeuwin H**	**47.89**	**279**	T	T	16 40 22.1	
	baz=148,slow=75,SNR=40						
ASAR	**Alice Springs**	**50.67**	**305**	P	P	15 49 59.5	-1.8
	0.7nm,0.8s,baz=155,slow=6.8,SNR=4.6						
WRA	**Warramunga Arr**	**54.00**	**308**	P	P	15 50 26.1	+0.1
	0.9nm,1.1s,baz=162,slow=7.5,SNR=2.9						
FITZ	**Fitzroy Crossi**	**58.64**	**299**	P	P	15 51 00.7	+1.5
	1.7nm,0.9s,baz=156,slow=12,SNR=3.0						
H08S2	**Diego Garcia H**	**88.93**	**253**	T	T	17 33 42.5	
	baz=151,slow=76,SNR=4.3						
H08S1	**Diego Garcia H**	**88.94**	**253**	T	T	17 33 48.2	
	baz=151,slow=76,SNR=3.5						
H08S3	**Diego Garcia H**	**88.95**	**253**	T	T	17 33 36.9	
	baz=151,slow=76,SNR=4.8						
BRTR	**Keskin Array B**	**146.42**	**236**	PKPbc	PKPdf	16 00 41.3	+0.1
	0.4nm,0.8s,baz=77,slow=3.1,SNR=3.0						

NIED ***14*** *15:41:00, 36°.70N×142°.40E, h20km, Mw3.8 Best double couple: M₀5.73000×10¹⁴ NP1:φs175.00000°, δ24.00000°, λ66.00000°. NP2:φs21.00000°, δ68.00000°, λ100.00000°.*
IDC ***14*** *15:41:17.5±0.9, 36°.69N×142°.52E, h0km, mb3.8/7, mb1 3.8/12, mb1mx3.6/42, mbtmp3.7/12, ML2.8/3, Error ellipse: s-maj=21.7km s-min=18.0km az=93.0*
JMA ***14*** *15:41:19.6±0.3, 36°.74N×142°.40E, h25km, M3.6*
NEIC ***14*** *15:41:21.1±2.3, 36°.72N×142°.49E, h29km±17km, mb4.5/16, Error ellipse: s-maj=8.4km s-min=6.6km az=116.0*

ISC 14 15:41:20.8±3.6, 36°.73N±0°.05×142°.44E±0°.06, h28km±28km, n61, σ1§46/70, mb4.4/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.37**	**286**	P	Pn	**15 41 42.4**	**-1.7**
JFK	**Kawauchi**	**1.41**	**297**	P	Pn	**15 41 43.3**	**-1.4**
JFK				*e*S	Sn	**15 42 00.9**	**-1.4**
JHO	**Hitachi**	**1.51**	**266**	P	Pn	**15 41 45.1**	**-0.9**
JMM	**Marumori**	**1.74**	**311**	P	Pn	**15 41 48.8**	**-0.4**
JMM				*e*S	Sn	**15 42 09.6**	**-0.8**
JFT	**Otama**	**1.86**	**296**	P	Pn	**15 41 51.0**	**+0.2**
JFT				S	Sn	**15 42 12.7**	**-0.7**
JIO	**Ouri**	**1.93**	**334**	P	Pn	**15 41 51.4**	**-0.4**
JOU	**Okura**	**2.16**	**320**	P	Pn	**15 41 56.1**	**+1.1**
JOU				*e*S	Sn	**15 42 21.9**	**+1.0**
JFY	**Yanaizu**	**2.29**	**288**	P	Pn	**15 41 57.6**	**+0.8**
JFY				*e*S	Sn	**15 42 25.8**	**+1.7**
JAG	**Ashikaga**	**2.42**	**264**	P	Pn	**15 41 58.4**	**-0.2**
JAG				*e*S	Sn	**15 42 26.0**	**-1.4**
JMK	**Ichinoseki**	**2.42**	**337**	P	Pn	**15 41 58.8**	**+0.2**
JMK				*e*S	Sn	**15 42 26.8**	**-0.5**
MJAR	**Matsushiro Arr**	**3.41**	**268**	Pn	Pn	**15 42 12.9**	**+0.8**
	3.6nm,0.3s,baz=101,slow=11,SNR=12						
MJAR				Sn	Sn	**15 42 54.1**	**+2.4**
	1.7nm,0.3s,baz=84,slow=13,SNR=4.3						
MAJO	**Matsushiro**	**3.41**	**268**	*e*Pn	Pn	**15 42 12.9**	**+0.7**
MAT	**Matsushiro**	**3.41**	**268**	P	Pn	**15 42 12.9**	**+0.7**
MAT				S	Sn	**15 42 49.2**	**-2.5**
MJB9	**Matsu-Tunnel**	**3.41**	**268**	*e*Pn	Pn	**15 42 12.7**	**+0.4**
JHJ2	**Mitsune**	**4.20**	**212**	*e*Pn	Pn	**15 42 23.2**	**+0.1**
JHJ2				*e*Sn	Sn	**15 43 07.9**	**-3.3**
JHJ	**Hachijo jima 2**	**4.21**	**212**	Pn	Pn	**15 42 23.1**	**0.0**
	4.2nm,0.3s,baz=258,slow=18,SNR=1.7						
JHJ				Sn	Sn	**15 43 08.8**	**-2.6**
	7.6nm,0.3s,baz=45,slow=23,SNR=1.7						
INU	**Inuyama**	**4.61**	**254**	*e*Pn	Pn	**15 42 29.9**	**+1.3**
ERM	**Erimo**	**5.31**	**6**	*e*Pn	Pn	**15 42 37.4**	**-0.9**
ERM				*e*Sn	Sn	**15 43 32.7**	**-5.8**
ASAJ	**Asahikawa**	**7.38**	**1**	Pn	Pn	**15 43 06.7**	**0.0**
	baz=214,slow=11						
ASAJ	**Asahikawa**	**7.38**	**1**	*e*Pn	Pn	**15 43 06.1**	**-0.6**
CBIJ	**Chichi jima**	**9.60**	**181**	*e*Pn	Pn	**15 43 36.6**	**-0.6**
USRK	**Ussuriysk Ar.**	**10.91**	**316**	Pn	Pn	**15 43 55.1**	**+0.1**
	0.1nm,0.3s,baz=136,slow=13,SNR=3.2						
KSRS	**Korea Array**	**11.62**	**278**	Pn	Pn	**15 44 07.6**	**+2.9**
	baz=87,slow=14,SNR=2.9						
KS15	**Wonju Array Si**	**11.65**	**278**	*e*Pn	Pn	**15 44 06.9**	**+1.7**
KSAR	**Wonju Array Be**	**11.65**	**278**	Pn	Pn	**15 44 07.7**	**+2.4**
JOW	**Kunigami**	**15.55**	**235**	*e*Pn	Pn	**15 44 57.7**	**-0.5**
	36nm,1.5s						
YAK	**Yakutsk**	**26.55**	**347**	P	P	**15 46 56.9**	**+0.9**
	4.7nm,0.6s,baz=185,slow=2.9,SNR=4.4						
YAK	**Yakutsk**	**26.55**	**347**	*e*P	P	**15 46 57.0**	**+1.0**
	6.3nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**27.28**	**122**	T	T	16 15 49.1	
	baz=314,slow=75,SNR=5.8						
H11N1	**WAKE ISLAND Hy**	**27.29**	**122**	T	T	16 15 52.3	
	baz=314,slow=75,SNR=5.3						
H11N3	**WAKE ISLAND Hy**	**27.30**	**122**	T	T	16 15 50.3	
	baz=314,slow=75,SNR=5.4						
ENH	**Enshi**	**28.13**	**266**	*e*P	P	**15 47 10.5**	**-0.1**
	5.0nm,0.6s						
SONA1	**Songino Array**	**28.64**	**304**	*e*P	P	**15 47 16.0**	**+1.0**
SONA0	**Songino Array**	**28.64**	**304**	*e*P	P	**15 47 16.3**	**+1.3**
	2.6nm,0.9s						
SONM	**Songino Array**	**28.64**	**304**	P	P	**15 47 16.3**	**+1.3**
	2.8nm,1.0s,baz=104,slow=9.0,SNR=12						
TLY	**Talaya**	**31.15**	**311**	*e*P	P	**15 47 38.0**	**+0.8**
	2.1nm,1.2s						
GSTR	**Great Sitkin T**	**32.88**	**49**	*e*P	P	**15 47 52.0**	**-0.2**
TIXI	**Tiksi**	**35.70**	**353**	*e*P	P	**15 48 17.0**	**+0.6**
	10.0nm,1.8s						
NIKH	**Nikolski High**	**37.36**	**48**	*e*P	P	**15 48 29.7**	**-1.1**
	75nm,1.6s						
KKM	**Kota Kinabalu**	**38.83**	**225**	*e*P	P	**15 48 41.5**	**-2.2**
	9.2nm,1.1s						
MK01	**Makanchi Array**	**44.98**	**302**	*e*P	P	**15 49 32.5**	**-1.0**
MK31	**Makanchi Array**	**44.98**	**303**	*e*P	P	**15 49 31.9**	**-1.7**
MK32	**Makanchi Array**	**44.98**	**303**	*e*P	P	**15 49 34.5**	**+0.9**
MKAR	**Makanchi Array**	**44.98**	**303**	P	P	**15 49 34.5**	**+0.9**
	0.6nm,0.6s,baz=89,slow=8.8,SNR=6.3						
MKAR	**Makanchi Array**	**44.98**	**303**	*e*P	P	**15 49 32.0**	**-1.5**
	7.6nm,0.8s						
TARA	**Tarawa**	**45.08**	**134**	*e*P	P	**15 49 35.5**	**+1.0**
	157nm,1.1s						
MAKZ	**Makanchi**	**45.19**	**303**	*e*P	P	**15 49 34.4**	**-0.8**
	7.7nm,1.7s						
TT01	**Tatalina**	**45.20**	**35**	*e*P	P	**15 49 36.2**	**+1.2**
RND	**Reindeer**	**48.47**	**34**	*e*P	P	**15 49 58.7**	**-2.0**
	4.7nm,0.8s						
HDA	**Harding Lake**	**49.30**	**33**	*e*P	P	**15 50 08.0**	**+1.1**
	8.3nm,1.1s						
IL1	**Eielson Array**	**49.31**	**32**	*e*P	P	**15 50 06.8**	**-0.2**
ILAR	**Eielson Array**	**49.31**	**32**	P	P	**15 50 08.4**	**+1.4**
	0.5nm,0.7s,baz=267,slow=6.9,SNR=6.9						
ILB	**Eielson Array**	**49.31**	**32**	*e*P	P	**15 50 07.9**	**+0.8**
FID	**Port Fidalgo**	**49.71**	**38**	*e*P	P	**15 50 08.2**	**-1.9**
	11nm,1.2s						
WR1	**Warramunga Arr**	**56.88**	**189**	*e*P	P	**15 51 03.2**	**0.0**
	20nm,1.8s						
WRA	**Warramunga Arr**	**56.88**	**189**	P	P	**15 51 03.2**	**0.0**
	0.6nm,0.9s,baz=4.9,slow=7.1,SNR=3.4						
ABKAR	**Akbulak array**	**58.77**	**311**	*e*P	P	**15 51 16.1**	**-0.1**
	8.9nm,0.9s						
AS31	**Alice Springs**	**60.60**	**189**	*e*P	P	**15 51 29.5**	**+0.5**
	0.9nm,0.9s						
ASAR	**Alice Springs**	**60.60**	**189**	P	P	**15 51 30.0**	**+1.0**
	0.1nm,0.4s,baz=24,slow=9.4,SNR=3.8						
LTX	**Lajitas**	**89.65**	**53**	*e*P	P	**15 54 17.4**	**+0.9**
TXAR	**Lajitas Array**	**89.65**	**53**	P	P	**15 54 17.4**	**+0.9**
	0.4nm,0.8s,baz=316,slow=3.5,SNR=4.2						

JMA 14 15:49:56.9±0.2, 30°.65N×132°.12E, h58km±4km, M3.6, Southeast of Shikoku

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTN	**Tanegashima 3**	**0.98**	**271**	P	Pn	15 50 14.7	+0.1
JTN				*e*S	Sn	15 50 28.4	+0.6
JNAR	**Kushima--Naru**	**1.14**	**320**	P	Pn	15 50 17.1	+0.4
JNAR				*e*S	Sn	15 50 31.7	+0.3
JTSR	**Tashiro 2**	**1.15**	**297**	P	Pn	15 50 16.7	-0.2
JTSR				*e*S	Sn	15 50 32.6	+0.8
JYAK	**Yakushimahirau**	**1.45**	**254**	P	Pn	15 50 21.4	+0.5
JYAK				*e*S	Sn	15 50 39.0	+0.1
JTZ	**Takazaki**	**1.53**	**325**	P	Pn	15 50 22.4	+0.5
JTZ				*e*S	Sn	15 50 40.8	0.0
JSU	**Suzuyama**	**1.66**	**301**	P	Pn	15 50 24.4	+0.6
JSU				*e*S	Sn	15 50 44.9	+0.8
JKC	**Kuchinoerabu**	**1.67**	**264**	P	Pn	15 50 24.5	+0.7
JKC				*e*S	Sn	15 50 45.1	+0.9
JTSN	**Tsuno**	**1.68**	**342**	P	Pn	15 50 24.2	+0.3
JTSN				*e*S	Sn	15 50 43.9	-0.4
JNN	**Nakanoshima**	**2.10**	**248**	P	Pn	15 50 30.5	+0.8
JNN				*e*S	Sn	15 50 55.7	+0.9
JIU2	**Izumi 2**	**2.19**	**330**	P	Pn	15 50 31.4	+0.4
JIU2				*e*S	Sn	15 50 58.2	+1.2
JTO	**Tosashimizu**	**2.28**	**15**	P	Pn	15 50 30.6	-1.5
JTO				*e*S	Sn	15 50 54.5	-4.6
JSJ	**Shimokoshiki**	**2.30**	**297**	P	Pn	15 50 32.3	-0.1
JSJ				*e*S	Sn	15 50 58.4	-1.2
UWA2	**Uwa jima 2**	**2.59**	**9**	P	Pn	15 50 35.9	-0.5
UWA2				S	Sn	15 51 03.4	-3.4

NIED ***14*** *16:27:00, 35°.70N×140°.00E, h71km, Mw3.7 Best double couple: M₀3.88000×10¹⁴ NP1:φs182.00000°, δ21.00000°, λ97.00000°. NP2:φs355.00000°, δ69.00000°, λ87.00000°.*
ISCJB ***14*** *16:27:36.8±0.6, 35°.59N±0°.04×140°.03E±0°.07, h81km±4km, mb3.6/7, Error ellipse: s-maj=10.3km s-min=5.8km az=150.4*
JMA ***14*** *16:27:37.8±0.2, 35°.68N×140°.03E, h68km±2km, M3.5 Broadband fault plane solution: P waves. NP1: φs354.00000°, δ73.00000°, λ82.00000°. NP2: φs201.00000°, δ19.00000°, λ116.00000°. Principal axes: T Plg61.0000°, Azm252.0000°; N Plg8.0000°, Azm357.0000°; P Plg28.0000°, Azm91.0000°;*
JMA Felt I J1.
IDC ***14*** *16:27:37.2±3.9, 35°.57N×140°.13E, h71km±26km, mb3.5/7, mb1 3.5/10, mb1mx3.3/43, mbtmp3.7/10, MS2.7/2, Ms1 2.7/2, ms1mx2.4/34 Error ellipse: s-maj=54.7km s-min=6.7km az=66.0*

ISC 14 16:27:37.9±0.9, 35°.61N±0°.05×140°.03E±0°.07, h75km±7km, n25, σ0§82/28, mb3.8/7, 2C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCN	**Nagara**	**0.24**	**144**	↑P	Pn	**16 27 49.4**	**+0.2**
JCN				*e*S	Sn	**16 27 58.6**	**+1.1**
JOD2	**Odawara 2**	**0.84**	**246**	↓P	Pn	**16 27 54.4**	**-0.4**
JOD2				S	Sn	**16 28 06.6**	**-0.8**
BSO3	**Boso 3**	**0.90**	**154**	↑P	Pn	**16 27 54.8**	**-0.3**
JAG	**Ashikaga**	**0.94**	**330**	↓P	Pn	**16 27 55.1**	**-0.8**
JAG				S	Sn	**16 28 07.6**	**-1.7**
JRY	**Ryogami san**	**1.00**	**294**	↓P	Pn	**16 27 56.8**	**+0.1**
JRY				S	Sn	**16 28 10.7**	**-0.1**
JIM2	**Oshima 3**	**1.02**	**209**	P	Pn	**16 27 56.1**	**-0.8**
JIM2				S	Sn	**16 28 10.3**	**-0.8**
JYN	**Shimob**	**1.22**	**265**	↓P	Pn	**16 27 59.3**	**-0.1**
JYN				S	Sn	**16 28 15.3**	**-0.3**
MJAR	**Matsushiro Arr**	**1.74**	**303**	P	Pn	**16 28 05.7**	**-0.6**
	30nm,0.3s,baz=58,slow=1.5,SNR=153						
MJAR				S	Sn	**16 28 28.4**	**+0.6**
	14nm,0.3s,baz=144,slow=11,SNR=7.5						
MAT	**Matsushiro**	**1.75**	**303**	P	Pn	**16 28 06.5**	**+0.2**
MAT				S	Sn	**16 28 27.5**	**-0.3**
JHJ	**Hachijo jima 2**	**2.50**	**185**	P	Pn	**16 28 16.4**	**0.0**
	39nm,0.3s,baz=325,slow=23,SNR=29						
JHJ				S	Sn	**16 28 44.5**	**-1.2**
	56nm,0.3s,baz=221,slow=23,SNR=12						
JHJ				LR	LR	16 28 56.2	
	comp=Z,27nm,20.6s,baz=319,slow=32						
JNU	**Nakatsue**	**7.96**	**254**	P	Pn	**16 29 32.1**	**+1.1**
	0.3nm,0.3s,baz=263,slow=11,SNR=4.5						
KSRS	**Korea Array**	**9.92**	**284**	P	Pn	**16 29 59.8**	**+2.2**
	0.2nm,0.3s,baz=95,slow=14,SNR=5.7						
SONM	**Songino Array**	**27.69**	**307**	P	P	**16 33 18.9**	**-0.1**
	0.3nm,0.5s,baz=116,slow=6.6,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**28.44**	**117**	T	T	17 03 03.5	
	baz=308,slow=75,SNR=10						
H11N1	**WAKE ISLAND Hy**	**28.45**	**117**	T	T	17 03 18.9	
	baz=308,slow=75,SNR=8.9						
H11N3	**WAKE ISLAND Hy**	**28.46**	**117**	T	T	17 03 23.6	
	baz=308,slow=75,SNR=9.0						
H11S1	**WAKE ISLAND Hy**	**29.09**	**119**	T	T	17 03 45.7	
	baz=311,slow=76,SNR=4.4						
H11S3	**WAKE ISLAND Hy**	**29.09**	**119**	T	T	17 03 45.9	
	baz=311,slow=76,SNR=5.7						
H11S2	**WAKE ISLAND Hy**	**29.11**	**119**	T	T	17 04 05.0	
	baz=311,slow=76,SNR=5.2						
ZALV	**Zalesovo Beam**	**42.07**	**314**	P	P	**16 35 22.0**	**0.0**
	0.8nm,0.5s,baz=90,slow=7.4,SNR=4.6						
MKAR	**Makanchi Array**	**43.94**	**303**	P	P	**16 35 37.5**	**+0.1**
	0.9nm,0.5s,baz=85,slow=10,SNR=9.9						
WRA	**Warramunga Arr**	**55.51**	**187**	P	P	**16 37 04.8**	**-0.5**
	1.2nm,0.5s,baz=0.3,slow=7.5,SNR=43						
ASAR	**Alice Springs**	**59.24**	**187**	P	P	**16 37 31.4**	**-0.1**
	0.5nm,0.8s,baz=1.2,slow=6.3,SNR=10						
FINES	**FINESS Array B**	**69.55**	**332**	P	P	**16 38 38.8**	**+0.4**
	0.5nm,0.3s,baz=57,slow=7.0,SNR=6.4						
FINES				LR	LR	17 13 04.5	
	comp=Z,24nm,19.1s,baz=346,slow=39						
AKASG	**Malin Array Be**	**74.73**	**322**	P	P	**16 39 09.4**	**-0.1**
	0.4nm,0.4s,baz=45,slow=6.3,SNR=4.3						

ISCJB ***14*** *16:40:47.7±1.0, 6°.1S±0°.1×154°.4E±0°.1, h61km, mb3.5/8, Error ellipse: s-maj=27.3km s-min=10.7km az=137.5*
IDC ***14*** *16:40:53.6±5.3, 6°.14S×154°.27E, h94km±44km, mb3.3/8, mb1 3.5/9, mb1mx3.4/43, mbtmp3.7/9, MS3.1/4, Ms1 3.1/4, ms1mx2.8/19, Error ellipse: s-maj=42.7km s-min=21.0km az=108.0*

ISC 14 16:40:49.3±1.1, 6°.1S±0°.2×154°.5E±0°.2, h61km, n11, σ1§22/11, mb3.5/8, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**6.32**	**122**	LR	LR	16 44 57.7	
	comp=Z,162nm,18.9s,baz=91,slow=38						
PMG	**Port Moresby**	**7.96**	**245**	P	Pn	**16 42 42.1**	**-0.2**
	3.7nm,0.3s,baz=115,slow=4.3,SNR=12						
PMG				S	Sn	**16 44 12.4**	**+1.4**
	1.6nm,0.3s,baz=338,slow=19,SNR=7.4						
PMG				LR	LR	16 45 40.4	
	comp=Z,215nm,19.4s,baz=82,slow=37						
WRA	**Warramunga Arr**	**23.91**	**233**	P	P	**16 45 57.4**	**-0.4**
	1.3nm,0.9s,baz=57,slow=10,SNR=4.5						
ASAR	**Alice Springs**	**26.38**	**227**	P	P	**16 46 20.2**	**0.0**
	0.6nm,0.9s,baz=59,slow=9.7,SNR=10.0						
ASAR				PcP	PcP	**16 49 44.3**	**-0.5**
	0.9nm,0.6s,baz=68,slow=2.2,SNR=13						
STKA	**Stephens Creek**	**28.31**	**204**	P	P	**16 46 37.4**	**+0.1**
	1.0nm,0.7s,baz=22,slow=12,SNR=3.8						
STKA				LR	LR	16 56 49.6	
	comp=Z,68nm,18.6s,baz=20,slow=34						

comp=Z,36nm,21.5s,baz=55,slow=38
MAJO Matsushiro 3.89 237 *e*Pn **Pn 16 48 09.2 +1.8**
MAT Matsushiro 3.89 237 P **Pn 16 48 09.7 +2.2**
MAT S **Sn 16 48 54.8 +2.9**
MJB9 Matsu-Tunnel 3.89 237 *e*Pn **Pn 16 48 09.3 +1.8**
INU Inuyama 5.39 233 *e*Pn **Pn 16 48 30.6 +2.7**
ASAJ Asahikawa 5.40 2 *e*Pn **Pn 16 48 29.0 +1.0**
JHJ2 Mitsune 5.94 200 *e*Pn **Pn 16 48 37.0 +1.5**
JHJ2 *e*Sn **Sn 16 49 39.3 -3.0**
JHJ Hachijo jima 2 5.95 201 P **Pn 16 48 36.8 +1.2**
8.0nm,0.3s,baz=313,slow=23,SNR=14
JHJ S **Sn 16 49 38.9 -3.4**
15nm,0.3s,baz=277,slow=22,SNR=7.8
JHJ LR LR 16 50 32.9
comp=Z,48nm,18.2s,baz=330,slow=33
YSS Yuzh-Sakhalins 8.23 2 *e*Pn **Pn 16 49 08.0 +1.1**
USRK Ussuriysk Ar. 9.46 309 P **Pn 16 49 24.1 +0.4**
1.3nm,0.3s,baz=118,slow=14,SNR=24
KSRS Korea Array 11.38 268 P **Pn 16 49 53.9 +3.9**
0.5nm,0.3s,baz=74,slow=14,SNR=7.7
KSRS LR LR 16 53 39.0
comp=Z,43nm,20.3s,baz=80,slow=34
KS01 Wonju Array Si 11.40 268 *e*Pn **Pn 16 49 52.5 +2.3**
KS15 Wonju Array Si 11.42 268 *e*Pn **Pn 16 49 53.2 +2.8**
KSAR Wonju Array Be 11.42 268 P **Pn 16 49 53.9 +3.5**
KLR Kul'dur 12.94 328 P **Pn 16 50 10.4 -0.7**
0.1nm,0.3s,baz=118,slow=13,SNR=4.4
KLR LR LR 16 54 32.2
comp=Z,48nm,20.5s,baz=134,slow=34
YAK Yakutsk 24.59 346 P **P 16 52 24.5 -0.4**
5.2nm,0.3s,baz=152,slow=5.5,SNR=8.4
YAK Yakutsk 24.59 346 *e*P **P 16 52 24.3 -0.6**
9.9nm,0.7s
SONA1 Songino Array 27.45 301 *e*P **P 16 52 51.4 +0.3**
SONA0 Songino Array 27.45 301 *e*P **P 16 52 50.7 -0.5**
4.4nm,1.6s
SONM Songino Array 27.45 301 P **P 16 52 50.7 -0.5**
0.3nm,0.4s,baz=100,slow=8.5,SNR=4.2
H11N2 WAKE ISLAND Hy 28.48 125 T T 17 23 29.3
baz=317,slow=75,SNR=725
H11N1 WAKE ISLAND Hy 28.49 125 T T 17 23 35.1
baz=317,slow=75,SNR=485
H11N3 WAKE ISLAND Hy 28.50 125 T T 17 23 33.9
baz=317,slow=75,SNR=787
H11S1 WAKE ISLAND Hy 29.26 127 T T 17 24 29.4
baz=318,slow=76,SNR=112
H11S3 WAKE ISLAND Hy 29.26 127 T T 17 24 22.2
baz=318,slow=76,SNR=214
H11S2 WAKE ISLAND Hy 29.27 127 T T 17 24 29.6
baz=318,slow=76,SNR=142
TLY Talaya 29.78 308 *e*P **P 16 53 11.0 -0.6**
1.9nm,0.9s
TIXI Tiksi 33.70 352 *e*P **P 16 53 45.2 -0.6**
5.4nm,0.9s
ZAA0 Zalesovo Array 41.30 311 *e*P **P 16 54 49.8 -0.4**
ZAA1 Zalesovo Array 41.30 311 *e*P **P 16 54 50.1 -0.1**
ZALV Zalesovo Beam 41.30 311 P **P 16 54 50.1 -0.1**
3.7nm,0.5s,baz=90,slow=8.1,SNR=16
MK01 Makanchi Array 43.82 301 *e*P **P 16 55 10.2 -0.6**
MK31 Makanchi Array 43.82 301 *e*P **P 16 55 10.4 -0.4**
MK32 Makanchi Array 43.82 301 *e*P **P 16 55 10.6 -0.2**
MKAR Makanchi Array 43.82 301 P **P 16 55 10.6 -0.3**
0.9nm,0.4s,baz=83,slow=11,SNR=13
MKAR Makanchi Array 43.82 301 *e*P **P 16 55 10.5 -0.3**
16nm,0.5s
MAKZ Makanchi 44.03 301 *e*P **P 16 55 12.6 +0.1**
11nm,1.8s
KURK Kurchatov 45.45 307 *e*P **P 16 55 23.3 -0.3**
VOSK Vostochnaya 49.68 311 *e*P **P 16 55 55.4 -1.1**
8.2nm,1.7s
ZRNK Zerenda 50.78 312 *e*P **P 16 56 03.4 -1.4**
2.2nm,0.8s
HLK Haleakala 55.31 90 *e*P **P 16 56 38.5 -0.4**
190nm,1.2s
ARU Arti 55.56 318 *e*P **P 16 56 38.9 -0.9**
3.8nm,0.8s
WR1 Warramunga Arr 58.83 189 *e*P **P 16 57 04.2 +1.0**
13nm,1.5s
WRA Warramunga Arr 58.83 189 P **P 16 57 04.2 +1.0**
2.0nm,0.5s,baz=7.1,slow=7.0,SNR=49
AS01 Alice Springs 62.55 189 *e*P **P 16 57 30.1 +1.6**
AS31 Alice Springs 62.55 189 *e*P **P 16 57 29.8 +1.3**
2.2nm,1.4s
ASAR Alice Springs 62.55 189 P **P 16 57 30.1 +1.6**
0.8nm,0.7s,baz=358,slow=4.8,SNR=28
FIA0 FINESS Array S 67.64 332 *e*P **P 16 58 01.8 +0.7**
FINES FINESS Array B 67.64 332 P **P 16 58 01.8 +0.7**
0.9nm,0.6s,baz=32,slow=14,SNR=3.4
AKASG Malin Array Be 73.38 322 P **P 16 58 35.5 -0.7**
0.4nm,0.4s,baz=46,slow=6.8,SNR=5.6
AKBB Malin Array Si 73.38 322 *e*P **P 16 58 36.3 0.0**
20nm,1.8s
KIEV Kiev 73.39 322 *e*P **P 16 58 36.0 -0.3**

*ISK **14** 16:51:21.3, 38.13N×39.05E, h5km, ML3.1*
*CSEM **14** 16:51:22.7±0.2, 38.12N×39.04E, h2km, ML3.1, Error ellipse: s-maj=4.8km s-min=3.6km az=168.0*
*DDA **14** 16:51:22.2, 38.11N×39.02E, h2km, Ml3.5*
*NSSC **14** 16:51:26.4±1.6, 37.66N×38.82E, h2km±15km, ML3.1*
ISC 14 16:51:22.7±1.1, **38.13N**±0.02×**39.04E**±0.02, **h4km**±10km, **n60**, σ0**70**/90, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SVRC	**Sivrice-ELAZID**	**0.33**	**40**	*e*PG		**Pg**	**16 51 28.7**	**-0.4**
SVRC				*e*SG		**Sg**	**16 51 34.1**	**+0.7**
SVRC	**Sivrice-ELAZID**	**0.33**	**40**	*e*Pg		**Pg**	**16 51 28.7**	**-0.4**
SVRC				*e*Sg		**Sg**	**16 51 34.1**	**+0.7**
PTK	**Pertek**	**0.81**	**20**	*e*PG		**Pg**	**16 51 37.1**	**-1.2**
PTK	**Pertek**	**0.81**	**20**	*e*Pg		**Pg**	**16 51 37.1**	**-1.2**
DIYA	**Diyarbakir**	**0.88**	**103**	*i* P		**Pg**	**16 51 39.8**	**+0.2**
DIYA				*i* S		**Sb**	**16 51 52.7**	**0.0**
DIYA	**Diyarbakir**	**0.88**	**103**	P		**Pg**	**16 51 39.8**	**+0.2**
DIYA				S		**Sb**	**16 51 52.7**	**0.0**
ATAB	**Bozova**	**0.88**	**222**	*i* P		**Pg**	**16 51 39.6**	**-0.1**
ATAB				*i* S		**Sg**	**16 51 51.7**	**+0.6**
ATAB	**Bozova**	**0.88**	**222**	P		**Pg**	**16 51 39.6**	**-0.1**
ATAB				S		**Sg**	**16 51 51.7**	**+0.6**
DYBB	**Diyarbakir**	**0.89**	**101**	*e*PG		**Pg**	**16 51 39.8**	**+0.1**
AKCD	**Akcadag**	**0.90**	**281**	*i* P		**Pg**	**16 51 39.3**	**-0.6**
AKCD				*i* S		**Sg**	**16 51 51.6**	**+0.1**
AKCD	**Akcadag**	**0.90**	**281**	P		**Pg**	**16 51 39.3**	**-0.6**
AKCD				S		**Sg**	**16 51 51.6**	**+0.1**
DIY	**Diyarbakir**	**0.96**	**104**	*e*Pg		**Pg**	**16 51 39.8**	**-1.4**
TNCL	**Tunceli-Merkez**	**1.06**	**22**	*i* P		**Pn**	**16 51 44.6**	**+0.1**
TNCL				*i* S		**Sb**	**16 51 58.7**	**+0.7**
TNCL	**Tunceli-Merkez**	**1.06**	**22**	P		**Pn**	**16 51 44.6**	**+0.1**
TNCL				S		**Sb**	**16 51 58.7**	**+0.7**
KEMA	**Kemaliye**	**1.22**	**340**	*i* P		**Pg**	**16 51 44.7**	**-1.4**
KEMA				*i* S		**Sg**	**16 52 01.7**	**-0.1**
KEMA	**Kemaliye**	**1.22**	**340**	P		**Pg**	**16 51 44.7**	**-1.4**
KEMA				S		**Sg**	**16 52 01.7**	**-0.1**
MAZI	**Mazidag**	**1.30**	**120**	*e*PN		**Pg**	**16 51 46.8**	**-0.8**
MAZI				*e*SN		**Sn**	**16 52 05.9**	**+0.3**
MAZI	**Mazidag**	**1.30**	**120**	*e*Pn		**Pg**	**16 51 46.8**	**-0.8**
MAZI				*e*Sn		**Sn**	**16 52 05.9**	**+0.3**
DARE	**Darende-Malaty**	**1.30**	**290**	*e*PN		**Pb**	**16 51 47.9**	**+0.1**
DARE				*e*SN		**Sn**	**16 52 06.5**	**+0.9**
DARE	**Darende-Malaty**	**1.30**	**290**	*e*Pn		**Pb**	**16 51 47.9**	**+0.1**
DARE				*e*Sn		**Sn**	**16 52 06.6**	**+0.9**
BINT	**Bingol**	**1.36**	**56**	*e*Pn		**Pb**	**16 51 50.8**	**+2.0**
GZT	**Gaziantep**	**1.40**	**237**	*i* P		**Pn**	**16 51 48.7**	**-0.5**
BNGB	**Bing˜¶l**	**1.55**	**56**	*e*PN		**Pn**	**16 51 50.8**	**-0.4**
BNGB				*e*SN		**Sg**	**16 52 13.3**	**+0.8**
ERZN	**Erzincan**	**1.55**	**20**	*e*PN		**Pb**	**16 51 52.0**	**-0.1**
MARD	**Mardin**	**1.60**	**120**	*i* P		**Pn**	**16 51 51.6**	**-0.3**
MARD				*i* S		**Sg**	**16 52 13.8**	**-0.4**
EZC	**Erzincan**	**1.64**	**8**	*e*Pn		**Pn**	**16 51 52.0**	**-0.5**
KBSD	**Kabsdagh**	**1.64**	**133**	*e*P		**Pb**	**16 51 53.4**	**-0.2**
KBSD				*e*S		**Sb**	**16 52 14.5**	**-0.1**
KBSD				AML		AML	16 52 21.2	
	comp=Z,395nm,0.5s							
EUZM	**Uzumlu**	**1.66**	**18**	*i* P		**Pb**	**16 51 53.7**	**-0.2**
EUZM	**Uzumlu**	**1.66**	**18**	P		**Pb**	**16 51 53.7**	**-0.2**
SVAN	**Silvan-Diyarba**	**1.70**	**89**	*e*PN		**Pn**	**16 51 53.1**	**-0.1**
SVAN	**Silvan-Diyarba**	**1.70**	**89**	*e*Pn		**Pn**	**16 51 53.1**	**-0.1**
CUKAN	**kangal_SIVAS**	**1.71**	**314**	*i* P		**Pn**	**16 51 53.8**	**+0.3**
CUKAN				*i* S		**Sn**	**16 52 15.7**	**-0.1**
CUKAN	**kangal_SIVAS**	**1.71**	**314**	P		**Pn**	**16 51 53.8**	**+0.3**
CUKAN				S		**Sn**	**16 52 15.7**	**-0.1**
GAZ	**Gaziantep**	**1.74**	**237**	*e*PN		**Pn**	**16 51 54.3**	**+0.6**
GAZ	**Gaziantep**	**1.74**	**237**	*e*Pn		**Pn**	**16 51 54.3**	**+0.6**
YEDI	**Yedisu-Bingol**	**1.76**	**41**	*e*PN		**Pn**	**16 51 54.2**	**+0.1**
YEDI	**Yedisu-Bingol**	**1.76**	**41**	*e*Pn		**Pn**	**16 51 54.2**	**+0.1**
BTMN	**Batman**	**1.78**	**97**	*i* P		**Pn**	**16 51 54.2**	**-0.1**
BTMN				*i* S		**Sg**	**16 52 19.8**	**0.0**
BTMN	**Batman**	**1.78**	**97**	P		**Pn**	**16 51 54.2**	**-0.1**
BTMN				S		**Sg**	**16 52 19.8**	**0.0**
KMRS	**Kahramanmaras**	**1.81**	**251**	*e*PN		**Pn**	**16 51 54.6**	**0.0**
KMRS	**Kahramanmaras**	**1.81**	**251**	*e*Pn		**Pn**	**16 51 54.6**	**0.0**
HCB	**Kahramanmara˜**	**1.86**	**246**	*i* P		**Pn**	**16 51 54.4**	**-1.0**
HCB				*i* S		**Sg**	**16 52 22.2**	**-0.3**
SFNV	**Sufian**	**1.91**	**153**	*e*P		**Pn**	**16 51 56.6**	**+0.5**
SFNV				*e*S		**Sn**	**16 52 17.7**	**-2.9**
SFNV				AML		AML	16 52 27.4	
	comp=Z,637nm,0.6s							
KELT	**Kelkit**	**2.02**	**5**	*i* P		**Pn**	**16 51 59.0**	**+1.1**
KELT				*i* S		**Sg**	**16 52 28.0**	**+0.2**
KELT	**Kelkit**	**2.02**	**5**	P		**Pn**	**16 51 59.0**	**+1.1**
KELT				S		**Sg**	**16 52 28.0**	**+0.2**
SARI	**SarD1z-Kayseri**	**2.08**	**279**	*e*PN		**Pn**	**16 51 59.2**	**+0.6**
KAMA	**Osmaniye**	**2.10**	**244**	*i* P		**Pn**	**16 51 57.9**	**-0.9**
KAMA				*i* S		**Sn**	**16 52 24.6**	**-0.8**
ANDN	**Andirin**	**2.20**	**256**	*i* P		**Pn**	**16 51 59.6**	**-0.6**
ANDN				*i* S		**Sg**	**16 52 33.5**	**0.0**
ANDN	**Andirin**	**2.20**	**256**	P		**Pn**	**16 51 59.6**	**-0.6**
KSRV	**Kasrt alli**	**2.26**	**181**	*e*P		**Pg**	**16 52 06.6**	**+0.6**
KSRV				*e*S		**Sg**	**16 52 36.0**	**+0.7**
KSRV				AML		AML	16 52 47.4	
	comp=Z,133nm,0.5s							
DRWC	**Darouich**	**2.42**	**232**	*e*P		**Pn**	**16 52 02.3**	**-0.8**
EZM	**Erzurum**	**2.53**	**45**	*e*PN		**Pn**	**16 52 04.7**	**-0.2**
BNN	**Bunyan**	**2.61**	**287**	*e*PN		**Pn**	**16 52 07.2**	**+1.4**
BNN	**Bunyan**	**2.61**	**287**	*e*Pn		**Pn**	**16 52 07.2**	**+1.4**
KOZT	**Kozan**	**2.63**	**257**	*e*PN		**Pn**	**16 52 05.9**	**0.0**
KOZT	**Kozan**	**2.63**	**257**	*e*Pn		**Pn**	**16 52 05.9**	**0.0**
SIRT	**Sirnak**	**2.76**	**102**	*e*PN		**Pn**	**16 52 08.1**	**+0.2**
SIRT	**Sirnak**	**2.76**	**102**	*e*Pn		**Pn**	**16 52 08.1**	**+0.2**
TAHT	**Tahtakopru-Hat**	**2.87**	**233**	*e*PN		**Pn**	**16 52 09.6**	**+0.3**
TAHT	**Tahtakopru-Hat**	**2.87**	**233**	*e*Pn		**Pn**	**16 52 09.6**	**+0.3**

*ISCJB **14** 17:07:17.0±0.7, 43.52N±0.05×105.19W±0.07, h0km, Error ellipse: s-maj=7.8km s-min=7.5km az=175.7*
*NEIC **14** 17:07:17.4±0.9, 43.45N×105.31W, h0km, ML1.9, Error ellipse: s-maj=15.7km s-min=7.8km az=148.0, Suspected Mining explosion.*
NEIC 76 km [47 miles] N of Douglas.
*IDC **14** 17:07:19.6±1.2, 43.60N×105.69W, h0km, mb1 4.0/2, mb1mx3.3/51, mbtmp3.7/2, ML3.4/3, Error ellipse: s-maj=21.5km s-min=9.9km az=155.0*
ISC 14 17:07:16.7±0.9, **43.46N**±0.04×**105.40W**±0.05, **h0km**, **n13**, σ1§**67**/16, **Wyoming**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
K22A	**Casper**	**1.16**	**226**	*e*Pg		**Pg**	**17 07 38.8**	**-0.1**
RSSD	**Black Hills**	**1.19**	**56**	*e*Pn		**Pb**	**17 07 38.8**	**-1.4**
PHWY	**Pilot Hill**	**2.16**	**181**	Pn		**Pb**	**17 07 55.3**	**-1.5**
PHWY				*e*Sn		**Sb**	**17 08 24.2**	**0.0**
PDAR	**Pinedale Array**	**3.12**	**259**	Pn		**Pb**	**17 08 11.6**	**-1.7**
	0.7nm,0.3s,baz=78,slow=18,SNR=7.8							
PDAR				Lg		Lg	17 08 51.0	
	2.0nm,0.3s,baz=79,slow=34,SNR=12							
BW06	**Boulder Array**	**3.13**	**259**	*e*Pn		**Pn**	**17 08 10.0**	**+2.6**
BW06				*e*Sn		**Sb**	**17 08 50.6**	**-1.4**
RLMT	**Red Lodge**	**3.24**	**302**	Pn		**Pn**	**17 08 10.7**	**+1.7**
RLMT				*e*Sn		**Sb**	**17 08 53.5**	**-1.6**
ISCO	**Idaho Springs**	**3.66**	**183**	Pn		**Pb**	**17 08 20.5**	**-2.0**
ISCO				*e*Sn		**Sb**	**17 09 07.2**	**-0.3**
O20A	**White River Ci**	**3.95**	**214**	Pn		**Pn**	**17 08 20.7**	**+2.0**
HWUT	**Hardware Ranch**	**4.92**	**250**	*e*Sg		**Sg**	**17 09 56.3**	**+1.6**
BOZ	**Bozeman (W)**	**4.96**	**298**	*e*P		**Pb**	**17 08 42.9**	**-1.5**
BMN	**Battle Mountai**	**9.32**	**255**	*e*Pn		Pn	17 09 42.6	+10
	3.3nm,0.5s							
ULM	**Lac du Bonnet**	**9.41**	**41**	Pn		**Pn**	**17 09 34.4**	**+1.0**
	1.8nm,0.3s,baz=223,slow=19,SNR=8.2							
TXAR	**Lajitas Array**	**14.17**	**174**	Pn		**P**	**17 10 45.2**	**-1.2**
	0.2nm,0.3s,baz=1.2,slow=15,SNR=7.2							

*IDC **14** 17:16:58.2±5.2, 35.31N×73.13E, h0km, mb3.6/2, mb1 3.5/5, mb1mx3.3/42, mbtmp3.5/5, ML3.2/3, Error ellipse: s-maj=170.2km s-min=28.0km az=87.0*
ISC 14 17:16:59.3±2.1, **35.5N**±0.1×**72.8E**±0.3, **h10km**, **n8**, σ3§**87**/6, **3C-3D, Pakistan**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MNAS	**Manas**	**6.95**	**358**	⇓Pn		**Pn**	**17 18 42.5**	**+1.1**
	1.7nm,0.7s							
MNAS				⇓Sn		Sn	17 19 47.5	-13
	2.5nm,0.4s							
AAK	**Ala-Archa**	**7.22**	**10**	Pn		**Pn**	**17 18 49.7**	**+4.6**
	1.5nm,0.3s,baz=172,slow=6.4,SNR=3.4							
AAK				Sn		**Sn**	**17 20 03.4**	**-3.8**
	0.3nm,0.3s,baz=336,slow=20,SNR=4.5							
KK31	**Karatay Array**	**7.77**	**348**	⇑Pn		Pn	17 18 48.7	-3.7
	0.5nm,0.2s,baz=182,slow=12,SNR=16							
KK31				⇑Sn		Sn	17 19 58.4	-22
	1.8nm,0.4s,baz=182,slow=20,SNR=6.8							
MKAR	**Makanchi Array**	**13.32**	**29**	Pn		**Pn**	**17 20 10.1**	**+1.6**
	0.1nm,0.3s,baz=216,slow=12,SNR=3.5							
KURBB	**Kurchatov Arra**	**15.65**	**14**	Pn		**Pn**	**17 20 41.5**	**+1.8**
	0.0nm,0.3s,baz=201,slow=10,SNR=6.1							
AB31	**Akbulak array**	**16.65**	**329**	⇑Pg		Pg	17 49 08.4	
	0.1nm,0.3s,baz=338,slow=15							
AB31				⇓Lg		Lg	17 49 39.2	
	0.2nm,0.3s,baz=338,slow=27,SNR=3.0							
ZALV	**Zalesovo Beam**	**20.25**	**21**	P		Pn	17 21 36.4	-0.1
	1.8nm,0.3s,baz=222,slow=11,SNR=17							
ASAR	**Alice Springs**	**82.50**	**126**	P		**P**	**17 29 21.0**	**-1.3**
	0.2nm,0.6s,baz=324,slow=6.6,SNR=5.6							

IDC 14 17:17:55.5±4.9, **20.27S**×**169.52E**, **h0km**, **mb3.5**/2, **mb1 3.8**/3, **mb1mx3.5**/24, **mbtmp3.5**/3, **ML3.3**/1, **Error ellipse: s-maj=162.9km s-min=37.2km az=138.0, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.38**	**237**	Pn		Pn	17 18 51.3	+1.6
	3.1nm,0.3s,baz=116,slow=4.8,SNR=152							
DZM				Sn		Sn	17 19 29.8	-0.9
	6.8nm,0.3s,baz=119,slow=22,SNR=8.7							
WRA	**Warramunga Arr**	**33.00**	**264**	P		P	17 24 32.7	+0.1
	0.5nm,0.6s,baz=98,slow=8.2,SNR=7.3							
ASAR	**Alice Springs**	**33.15**	**258**	P		P	17 24 33.0	-0.9
	0.8nm,1.1s,baz=79,slow=8.1,SNR=5.5							
GERES	**GERESS Array B**	**145.51**	**331**	PKPbc		PKPdf	17 37 35.1	-0.6
	0.5nm,0.7s,baz=37,slow=3.3,SNR=4.0							

MEX 14 17:22:38.7±0.4, **18.59N**×**101.56W**, **h17km**±6km, **MD3.8, Guerrero**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.98**	**174**	*e*P		Pb	17 22 54.0	-3.3
ZIIG				*e*S		Sb	17 23 05.9	-4.0
ARIG	**Puente Sto Nin**	**1.20**	**105**	*e*P		Pn	17 22 57.3	-3.4
ARIG				*e*S		Sb	17 23 11.0	-5.1
MEIG	**Mezcala**	**1.96**	**109**	*e*P		Pn	17 23 08.6	-2.7
MEIG				*i* S		Sn	17 23 31.4	-4.2
PLIG	**Platanillo**	**1.97**	**95**	*i* P		Pn	17 23 09.0	-2.3
PLIG				*i* S		Sn	17 23 32.0	-3.7
EZ5V		**2.12**	**295**	*i* P		Pn	17 23 10.1	-3.6
EZ5V				*i* S		Sn	17 23 35.5	-4.3
R15V		**2.36**	**285**	*e*P		Pn	17 23 13.2	-3.6
R15V				*i* S		Sn	17 23 41.2	-4.2

*ISCJB **14** 17:23:57.2±1.3, 33.36S±0.06×178.1W±0.2, h34km, mb4.5/7, Error ellipse: s-maj=24.1km s-min=7.0km az=11.4*
*IDC **14** 17:24:03.6±6.0, 33.40S×178.44W, h61km±50km, mb4.1/5, mb1 4.3/7, mb1mx3.8/32, mbtmp4.4/7, ML3.9/2, Error ellipse: s-maj=38.9km s-min=33.5km az=53.0*
*NEIC **14** 17:24:04.1±2.4, 33.50S×178.38W, h70km±18km, mb4.8/3, Error ellipse: s-maj=24.0km s-min=16.6km az=54.0*
ISC 14 17:23:59.5±1.1, **33.34S**±0.09×**178.1W**±0.2, **h34km**, **n28**, σ1§**16**/32, **mb4.4**/7, **South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WMGZ	**Waiomatatini S**	**5.30**	**212**	*e*PN		**Pn**	**17 25 18.9**	**+2.6**
WMGZ				SN		**Sn**	**17 26 19.1**	**+2.9**
PKGZ	**Pakihiroa**	**5.51**	**214**	PN		**Pn**	**17 25 18.3**	**-0.9**
PKGZ				SN		**Sn**	**17 26 21.8**	**+0.4**
HAZ	**Te Kaha**	**5.55**	**216**	*e*PN		**Pn**	**17 25 19.2**	**-0.4**
PUZ	**Puketiti**	**5.58**	**211**	PN		**Pn**	**17 25 19.0**	**-1.2**
PUZ				SN		**Sn**	**17 26 23.9**	**+0.8**
TWGZ	**Tauwhareparae**	**5.79**	**212**	PN		**Pn**	**17 25 23.0**	**-0.1**
CNGZ	**Carnagh Statio**	**5.95**	**209**	PN		**Pn**	**17 25 25.2**	**0.0**
MWZ	**Matawai**	**6.13**	**214**	PN		**Pn**	**17 25 25.6**	**-2.0**
URZ	**Urewera**	**6.27**	**217**	P		**Pn**	**17 25 29.8**	**+0.2**
	7.9nm,0.3s,baz=294,slow=2.0,SNR=45							
URZ				S		**Sn**	**17 26 39.3**	**-0.7**
	13nm,0.3s,baz=232,slow=22,SNR=12							
URZ	**Urewera**	**6.27**	**217**	*e*P		**Pn**	**17 25 29.3**	**-0.3**
	63nm,0.9s							
URZ				S		**Sn**	**17 26 39.3**	**-0.7**
URZ	**Urewera**	**6.27**	**217**	PN		**Pn**	**17 25 29.2**	**-0.3**
RIGZ	**Rimuhau**	**6.33**	**211**	PN		**Pn**	**17 25 31.4**	**+1.1**
SNGZ	**Shannon Statio**	**6.58**	**213**	PN		**Pn**	**17 25 33.6**	**-0.2**
OUZ	**Omahuta**	**7.14**	**252**	*e*P		**Pn**	**17 25 43.3**	**+1.8**
DZM	**Mont Dzumac**	**17.69**	**305**	P		**P**	**17 28 03.8**	**-0.2**
	0.2nm,0.3s,baz=111,slow=17,SNR=3.8							
CTA	**Charters Tower**	**34.31**	**284**	P		**P**	**17 30 42.6**	**-0.3**
	3.2nm,0.5s,baz=115,slow=10,SNR=7.4							
CTAO	**Charters Tower**	**34.31**	**284**	*e*P		**P**	**17 30 42.5**	**-0.5**
	21nm,0.6s							
ASAR	**Alice Springs**	**42.97**	**270**	P		**P**	**17 31 54.1**	**-1.4**
	5.3nm,0.7s,baz=112,slow=7.8,SNR=100							
WRAB	**Tennant Creek**	**44.21**	**275**	*e*P		**P**	**17 32 04.3**	**-1.3**
	4.5nm,0.7s							
WRA	**Warramunga Arr**	**44.22**	**275**	P		**P**	**17 32 04.2**	**-1.5**
	4.8nm,0.7s,baz=116,slow=8.0,SNR=52							
FITZ	**Fitzroy Crossi**	**52.34**	**272**	P		**P**	**17 33 07.0**	**-1.3**
	2.2nm,0.8s,baz=128,slow=4.4,SNR=9.2							
QSPA	**South Pole Qui**	**56.78**	**180**	*e*P		P	17 33 45.4	+5.4
	8.1nm,0.9s							
PETK	**Petropavlovsk-**	**88.64**	**346**	P		**P**	**17 36 49.1**	**+0.6**
	1.2nm,0.6s,baz=134,slow=7.2,SNR=5.8							
MKAR	**Makanchi Array**	**119.58**	**309**	PKP		**PKPdf**	**17 42 45.2**	**-0.1**
	0.5nm,0.6s,baz=104,slow=5.1,SNR=5.3							
FINES	**FINESS Array B**	**147.86**	**338**	PKPbc		**PKPbc**	**17 43 40.3**	**+0.1**
	2.8nm,0.5s,baz=329,slow=1.1,SNR=16							
NB2	**NORSAR Subarra**	**151.63**	**350**	PKP		**PKPbc**	**17 43 50.7**	**+1.2**
	comp=Z,1.7nm,0.8s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**151.63**	**350**	PKPbc		**PKPbc**	**17 43 50.4**	**+0.9**
	comp=Z,0.8nm,0.5s,baz=15,slow=4.2,SNR=4.7							
AKASG	**Malin Array Be**	**153.53**	**319**	PKPbc		**PKPbc**	**17 43 54.4**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=58,slow=2.5,SNR=4.5							
BRTR	**Keskin Array B**	**153.82**	**293**	PKPbc		**PKPbc**	**17 43 55.6**	**+0.4**
	comp=Z,1.3nm,0.6s,baz=144,slow=3.7,SNR=8.8							

MEX 14 17:24:51.5±1.0, **16.07N**×**98.00W**, **h5km**, **MD3.7, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PNIG	**Pinotepa**	**0.34**	**339**	*e*P		Pg	17 24 57.0	-1.1
PNIG				*e*S		Sg	17 25 02.6	0.0
VHO	**Vista Hermosa**	**1.57**	**51**	*e*P		Pn	17 25 15.9	-4.3
VHO				*i* S		Sn	17 25 36.6	-4.5
TLIG	**Tlapa**	**1.58**	**340**	*e*P		Pn	17 25 17.6	-2.7
TLIG				*i* S		Sn	17 25 37.1	-4.1
HUIG	**Huatulco**	**1.85**	**99**	*i* P		Pn	17 25 19.8	-4.0
HUIG				*i* S		Sn	17 25 43.4	-4.2
TPIG	**Tehuac#an**	**2.41**	**15**	*i* P		Pn	17 25 27.9	-3.9
TPIG				*i* S		Sn	17 25 58.1	-3.7
PLIG	**Platanillo**	**2.72**	**328**	*i* P		Pn	17 25 33.2	-2.8
PLIG				*e*S		Sn	17 26 06.2	-3.0

*DJA **14** 17:30:46.6±0.8, 8.S±3×117.E±, h12km±6km, M4.2/8, mb4.5/1, MLv4.1/8*
*ISCJB **14** 17:30:47.4±0.6, 7.77S±0.05×117.41E±0.04, h33km, mb3.4/2, Error ellipse: s-maj=6.6km s-min=5.3km az=174.4*
*IDC **14** 17:30:49.4±1.6, 7.88S×117.95E, h0km, mb3.2/2, mb1 3.6/5, mb1mx3.3/38, mbtmp3.4/5, ML3.6/2, MS2.3/1, Ms1 2.3/1, ms1mx2.2/15, Error ellipse: s-maj=30.2km s-min=18.6

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.38**	**214**	Pn	Pn	17 43 27.2	-0.9
	1.8nm,0.3s,baz=280,slow=2.7,SNR=15						
URZ				Sn	Sn	17 44 37.2	-4.4
	2.7nm,0.3s,baz=200,slow=21,SNR=9.6						
ASAR	**Alice Springs**	**42.73**	**270**	P	P	17 49 52.2	+0.1
	1.0nm,0.7s,baz=110,slow=7.7,SNR=22						
WRA	**Warramunga Arr**	**43.96**	**275**	P	P	17 50 02.0	0.0
	0.4nm,0.3s,baz=116,slow=8.3,SNR=16						
FINES	**FINESS Array B**	**147.50**	**338**	PKPbc	PKPbc	18 01 37.3	-0.9
	0.6nm,0.4s,baz=54,slow=2.6,SNR=5.0						

NIED **14** *17:52:00,38.50N×142.30E,h38km,Mw3.6 Best double couple: M₀2.88000×10¹⁴ NP1:φs177.00000°,δ28.00000°, λ174.00000°. NP2:φs272.00000°,δ87.00000°,λ62.00000°.*
IDC **14** *17:52:17.2±1.3,38.37N×142.69E,h0km,mb3.7/3, mb1 3.7/7,mb1mx3.5/33,mbtmp3.7/7,ML3.1/4,MS2.8/4, Ms1 2.8/4,ms1mx2.5/35,Error ellipse: s-maj=36.6km s-min=19.2km az=91.0*
ISCJB **14** *17:52:20.1±1.2,38.39N±0.04×142.41E±0.07,h30km±8km, mb4.0/4,MS3.5/1,Error ellipse: s-maj=8.9km s-min=6.2km az=19.7*
JMA **14** *17:52:22.0±0.1,38.48N×142.31E,h36km±2km,M3.7*
ISC 14 17:52:20.1±2.0,38.41N±0.05×142.38E±0.09,h17km±10km, n27,σ1°31/29,mb3.9/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.81**	**274**	P	**Pg**	**17 52 36.4**	**+0.6**
JIO				*e*S	**Sg**	**17 52 46.1**	**-0.4**
OFUJ	**Ofunato**	**0.87**	**321**	P	**Pg**	**17 52 36.8**	**-0.2**
OFUJ				*e*S	**Sg**	**17 52 47.0**	**-1.5**
JMK	**Ichinoseki**	**1.05**	**301**	P	**Pn**	**17 52 39.6**	**-0.4**
JOU	**Okura**	**1.34**	**269**	P	**Pn**	**17 52 44.6**	**+0.6**
JOU				*e*S	**Sn**	**17 53 01.0**	**-0.5**
JOM	**Ohasama**	**1.36**	**322**	P	**Pn**	**17 52 44.2**	**0.0**
JOM				*e*S	**Sn**	**17 53 00.1**	**-1.7**
JMM	**Marumori**	**1.36**	**247**	P	**Pn**	**17 52 44.9**	**+0.7**
JMM				*e*S	**Sn**	**17 53 00.9**	**-0.9**
JFK	**Kawauchi**	**1.58**	**229**	P	**Pn**	**17 52 47.3**	**0.0**
JFK				*e*S	**Sn**	**17 53 06.1**	**-1.2**
JYK	**Kaneyama**	**1.66**	**289**	P	**Pn**	**17 52 48.8**	**+0.5**
JYK				*e*S	**Sn**	**17 53 08.9**	**-0.3**
JRG	**Rokugo**	**1.68**	**307**	P	**Pn**	**17 52 49.2**	**+0.6**
JFT	**Otama**	**1.84**	**242**	P	**Pn**	**17 52 52.0**	**+1.2**
JFT				*e*S	**Sn**	**17 53 13.8**	**+0.1**
MJAR	**Matsushiro Arr**	**3.80**	**242**	Pn	**Pn**	**17 53 21.5**	**+3.7**
	1.2nm,0.3s,baz=65,slow=9.2,SNR=9.9						
MJAR				LR	LR	17 55 00.8	
	comp=Z,51nm,20.2s,baz=40,slow=41						
MAT	**Matsushiro**	**3.80**	**242**	P	**Pn**	**17 53 19.1**	**+1.3**
MAT				*e*S	**Sn**	**17 54 00.3**	**-1.8**
JHJ	**Hachijo jima 2**	**5.68**	**203**	Pn	**Pn**	**17 53 43.5**	**-0.1**
	6.9nm,0.3s,baz=103,slow=17,SNR=7.9						
JHJ				Sn	**Sn**	**17 54 46.9**	**-1.5**
	3.3nm,0.3s,baz=255,slow=20,SNR=2.8						
JHJ				LR	LR	17 56 07.0	
	comp=Z,78nm,18.1s,baz=124,slow=40						
ASAJ	**Asahikawa**	**5.71**		P	**Pn**	**17 53 45.4**	**+1.4**
	0.5nm,0.3s,baz=212,slow=15,SNR=7.3						
USRK	**Ussuriysk Ar.**	**9.72**	**310**	Pn	**Pn**	**17 54 42.0**	**+2.9**
	0.2nm,0.3s,baz=125,slow=15,SNR=5.4						
KLR	**Kul'dur**	**13.25**	**328**	LR	LR	18 00 44.1	
	comp=Z,40nm,18.5s,baz=157,slow=38						
SEY	**Seymchan**	**25.30**	**11**	P	**P**	**17 57 45.1**	**-0.2**
	1.2nm,0.6s,baz=247,slow=9.9,SNR=4.9						
H11N2	**WAKE ISLAND Hy**	**28.24**	**124**	T	T	18 26 25.0	
	baz=316						
H11N1	**WAKE ISLAND Hy**	**28.25**	**124**	T	T	18 26 27.8	
	baz=316,slow=74						
H11N3	**WAKE ISLAND Hy**	**28.26**	**124**	T	T	18 26 28.6	
	baz=316,slow=74						
H11S1	**WAKE ISLAND Hy**	**29.01**	**126**	T	T	18 27 18.2	
	baz=315,slow=75,SNR=6.8						
H11S3	**WAKE ISLAND Hy**	**29.01**	**126**	T	T	18 27 21.2	
	baz=315,slow=75,SNR=6.2						
H11S2	**WAKE ISLAND Hy**	**29.03**	**126**	T	T	18 27 19.1	
	baz=315,slow=75,SNR=4.2						
MKAR	**Makanchi Array**	**44.05**	**301**	P	**P**	**18 00 27.1**	**+0.3**
	5.3nm,0.4s,baz=87,slow=9.0,SNR=8.6						
WRA	**Warramunga Arr**	**58.53**	**189**	P	**P**	**18 02 15.2**	**-0.4**
	1.0nm,0.8s,baz=7.1,slow=7.0,SNR=7.6						
ASAR	**Alice Springs**	**62.26**	**189**	P	**P**	**18 02 41.0**	**+0.1**
	0.5nm,0.8s,baz=357,slow=5.4,SNR=7.2						
GERES	**GERESS Array B**	**81.94**	**329**	LR	LR	18 47 17.8	
	comp=Z,18nm,19.1s,baz=298,slow=40						

CSEM **14** *17:56:22.8±0.8,35.77N×43.53E,h2km,MD3.2,Error ellipse: s-maj=15.5km s-min=10.7km az=148.0*
ISK **14** *17:56:22.8,35.84N×43.41E,h5km,MD3.2*
ISC 14 17:56:20.4±3.5,35.7N±0.1×43.33E±0.08,h0km±22km,n15, σ0°82/28,Iraq

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUKT	**Cukurca**	**1.52**	**8**	*e*PN	**Pg**	**17 56 50.1**	**+0.5**
CUKT				*e*SN	**Sg**	**17 57 10.9**	**+1.6**
CUKT	**Cukurca**	**1.52**	**8**	*e*Pn	**Pg**	**17 56 50.1**	**+0.5**
CUKT				*e*Sn	**Sg**	**17 57 10.9**	**+1.6**
HAKT	**HAKKARI**	**1.84**	**9**	*i* P	**Pb**	**17 56 54.4**	**-0.7**
HAKT				*i* S	**Sg**	**17 57 19.0**	**-0.6**
HAKT	**HAKKARI**	**1.84**	**9**	P	**Pb**	**17 56 54.4**	**-0.7**
HAKT				S	**Sg**	**17 57 19.0**	**-0.6**
HKR	**Hakkari**	**1.86**	**10**	*e*PN	**Pg**	**17 56 56.1**	**-0.1**
HKR				*e*SN	**Sg**	**17 57 19.9**	**-0.5**
HKR	**Hakkari**	**1.86**	**10**	*e*Pn	**Pg**	**17 56 56.1**	**-0.1**
HKR				*e*Sn	**Sg**	**17 57 19.9**	**-0.5**
SIRT	**Sirnak**	**1.90**	**338**	*e*PN	**Pb**	**17 56 56.6**	**+0.6**
SIRT				*e*SN	**Sg**	**17 57 21.2**	**-0.3**
SIRT	**Sirnak**	**1.90**	**338**	*e*Pn	**Pb**	**17 56 56.6**	**+0.6**
SIRT				*e*Sn	**Sg**	**17 57 21.2**	**-0.3**
SIRN	**S¨–rnak**	**1.90**	**337**	*i* P	**Pb**	**17 56 56.2**	**+0.1**
SIRN				*i* S	**Sg**	**17 57 20.8**	**-0.8**
SIRN	**S¨–rnak**	**1.90**	**337**	P	**Pb**	**17 56 56.2**	**+0.1**
SIRN				S	**Sg**	**17 57 20.8**	**-0.8**
MARD	**Mardin**	**2.59**	**308**	*i* P	**Pb**	**17 57 08.4**	**+0.7**
MARD				*i* S	**Sb**	**17 57 42.0**	**+1.8**
BTMN	**Batman**	**2.71**	**323**	*i* P	**Pb**	**17 57 09.1**	**-0.7**
BTMN				*i* S	**Sb**	**17 57 43.2**	**-0.5**
BTMN	**Batman**	**2.71**	**323**	P	**Pb**	**17 57 09.1**	**-0.7**
BTMN				S	**Sb**	**17 57 43.2**	**-0.5**
MAZI	**Mazidag**	**2.89**	**307**	*e*PN	**Pb**	**17 57 12.1**	**-0.8**
MAZI	**Mazidag**	**2.89**	**307**	*e*Pn	**Pb**	**17 57 12.1**	**-0.8**

NIED **14** *18:09:00,37.60N×141.90E,h8km,Mw3.3 Best double couple: M₀1.18000×10¹⁴ NP1:φs61.00000°,δ56.00000°, λ-34.00000°. NP2:φs171.00000°,δ62.00000°, λ-141.00000°.*
JMA 14 18:09:30.3±0.1,37.56N×141.90E,h22km±2km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.84**	**257**	P	Pb	18 09 45.9	-0.3
JFK				*e*S	Sb	18 09 56.8	-0.2
JMM	**Marumori**	**0.93**	**290**	P	Pb	18 09 47.4	-0.3
ONAJ	**Iwakimizuishiy**	**0.99**	**243**	P	Pb	18 09 48.3	-0.5
JIO	**Ouri**	**0.99**	**334**	P	Pb	18 09 48.2	-0.6
JFT	**Otama**	**1.24**	**269**	P	Pb	18 09 52.8	-0.3
JFT				*e*S	Sb	18 10 09.0	+0.3
JOU	**Okura**	**1.27**	**310**	P	Pb	18 09 53.4	-0.1
JOU				*e*S	Sb	18 10 09.5	+0.2
JMK	**Ichinoseki**	**1.49**	**339**	P	Pn	18 09 55.9	+0.2
JYS	**Shirataka**	**1.59**	**295**	P	Pb	18 09 58.6	-0.5
JYS				*e*S	Sb	18 10 19.3	+0.5
JFY	**Yanaizu**	**1.75**	**266**	P	Pb	18 10 00.7	-1.1
JFY				*e*S	Sb	18 10 23.0	-0.3
JYK	**Kaneyama**	**1.82**	**319**	P	Pn	18 10 01.0	+0.7
MAT	**Matsushiro**	**3.12**	**252**	P	Pn	18 10 21.4	+3.2
MAT				S	Sn	18 10 58.8	+3.9

ISCJB **14** *18:13:05.7±0.5,41.59N±0.02×24.01E±0.04,h5km±5km, Error ellipse: s-maj=5.6km s-min=3.2km az=163.8*
CSEM **14** *18:13:06.2±0.2,41.57N×24.02E,h10km,ML1.5,Error ellipse: s-maj=4.4km s-min=2.0km az=72.0*

SOF **14** *18:13:06.1,41.57N×24.02E,h10km,MD2.8*
THE **14** *18:13:07.1,41.53N×23.99E,h14km±1km,ML1.6/4,Error ellipse: s-maj=1.7km s-min=0.9km az=190.0*
ATH **14** *18:13:07.5,41.49N×24.00E,h17km±3km,ML1.5/4,Error ellipse: s-maj=3.5km s-min=1.4km az=200.0*
BEO **14** *18:13:10.6±1.1,41.58N×23.81E,h0km,M1.6/3*
ISC 14 18:13:06.8±1.0,41.56N±0.02×23.99E±0.03,h11km±8km, n32,σ0°83/56,Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MMB	**Musomiste**	**0.20**	**279**	P	**Pg**	**18 13 10.6**	**-0.5**
NVR	**Nevrokopi**	**0.23**	**205**	P	**Pg**	**18 13 11.7**	**+0.1**
NVR				S	**Sg**	**18 13 15.1**	**+0.2**
NVR	**Nevrokopi**	**0.23**	**205**	P	**Pg**	**18 13 11.7**	**+0.1**
NVR				S	**Sg**	**18 13 15.3**	**+0.4**
SRS	**Serrai**	**0.53**	**214**	P	**Pg**	**18 13 17.2**	**0.0**
SRS				S	**Sg**	**18 13 24.9**	**+0.6**
SRS	**Serrai**	**0.53**	**214**	P	**Pg**	**18 13 17.2**	**0.0**
SRS				S	**Sg**	**18 13 24.9**	**+0.6**
SRS	**Serrai**	**0.53**	**214**	P	**Pg**	**18 13 17.2**	**0.0**
SRS				S	**Sg**	**18 13 25.1**	**+0.8**
SRS				AML	AML	18 13 26.3	
	comp=N,102μm,0.1s						
SRS				AML	AML	18 13 27.1	
	comp=E,156μm,0.1s						
RZN	**Rozhen**	**0.56**	**76**	P	**Pg**	**18 13 17.3**	**-0.4**
KAVA	**Kavala**	**0.69**	**145**	P	**Pg**	**18 13 19.8**	**-0.3**
KAVA				S	**Sg**	**18 13 29.2**	**+0.1**
KAVA	**Kavala**	**0.69**	**145**	P	**Pg**	**18 13 19.8**	**-0.3**
KAVA				S	**Sg**	**18 13 28.9**	**-0.2**
KAVA	**Kavala**	**0.69**	**145**	P	**Pg**	**18 13 19.9**	**-0.3**
KKB	**Krupnik**	**0.75**	**295**	P	**Pg**	**18 13 20.6**	**-0.7**
PLD	**Plovdiv**	**0.76**	**44**	*e*Pg	**Pn**	**18 13 27.0**	**+3.4**
PLD				*e*Sg	**Sn**	**18 13 37.1**	**+2.0**
KNT	**Kendrikon**	**0.91**	**245**	P	**Pg**	**18 13 24.9**	**+0.5**
KNT				S	**Sg**	**18 13 36.6**	**+0.3**
KNT	**Kendrikon**	**0.91**	**245**	P	**Pg**	**18 13 24.9**	**+0.5**
KNT				S	**Sg**	**18 13 36.4**	**+0.1**
KNT	**Kendrikon**	**0.91**	**245**	P	**Pb**	**18 13 25.1**	**+0.4**
KNT				S	**Sg**	**18 13 36.4**	**+0.1**
KNT				AML	AML	18 13 37.5	
	comp=N,69μm,0.2s						
KNT				AML	AML	18 13 39.3	
	comp=E,62μm,0.2s						
KDZ	**Kurdzhali**	**1.07**	**85**	P	**Pg**	**18 13 25.0**	**-2.5**
HORT	**Hortiatis**	**1.17**	**215**	P	**Pb**	**18 13 29.4**	**+0.2**
HORT				S	**Sb**	**18 13 44.2**	**-0.3**
HORT	**Hortiatis**	**1.17**	**215**	P	**Pb**	**18 13 29.4**	**+0.2**
HORT				S	**Sb**	**18 13 44.2**	**-0.3**
VTS	**Vitosha**	**1.19**	**331**	P	**Pb**	**18 13 29.3**	**-0.2**
VTS				S	**Sb**	**18 13 45.0**	**+0.1**
VTS	**Vitosha**	**1.19**	**331**	*e*Pg	**Pb**	**18 13 29.2**	**-0.2**
VTS				*e*Sg	**Sn**	**18 13 45.8**	**0.0**
VTS	**Vitosha**	**1.19**	**331**	P	**Pb**	**18 13 28.4**	**-1.1**
VTS	**Vitosha**	**1.19**	**331**	P	**Pb**	**18 13 29.3**	**-0.2**
VTS				S	**Sb**	**18 13 45.0**	**+0.1**
OUR	**Ouranopolis**	**1.22**	**180**	P	**Pb**	**18 13 29.2**	**-0.3**
OUR				S	**Sb**	**18 13 45.4**	**-0.3**
OUR	**Ouranopolis**	**1.22**	**180**	P	**Pn**	**18 13 29.2**	**-0.7**
OUR				S	**Sb**	**18 13 45.5**	**-0.3**
OUR	**Ouranopolis**	**1.22**	**180**	P	**Pn**	**18 13 29.2**	**-0.7**
OUR				S	**Sb**	**18 13 45.5**	**-0.3**
OUR				AML	AML	18 13 47.4	
	comp=N,154μm,0.2s						
OUR				AML	AML	18 13 47.7	
	comp=E,116μm,0.4s						
PLG	**Polygyros**	**1.25**	**199**	P	**Pn**	**18 13 29.0**	**-1.4**
PLG				S	**Sb**	**18 13 46.8**	**+0.1**
PLG	**Polygyros**	**1.25**	**199**	P	**Pn**	**18 13 29.0**	**-1.4**
PLG				S	**Sb**	**18 13 46.8**	**+0.1**
PLG				AML	AML	18 13 49.1	
	comp=N,51μm,0.4s						
PLG				AML	AML	18 13 50.0	
	comp=E,50μm,0.3s						
ZAPS	**Zavoj**	**1.99**	**330**	*e*Pg	**Pg**	**18 13 44.3**	**-0.7**
ZAPS				*e*Sg	**Sg**	**18 14 11.7**	**+1.0**
BARS	**Barje**	**2.05**	**309**	*e*Pg	**Pg**	**18 13 45.4**	**-0.7**
BARS				*e*Sg	**Sg**	**18 14 12.0**	**-0.7**
BARS	**Barje**	**2.05**	**309**	*e*Pg	**Pg**	**18 13 45.4**	**-0.7**
BARS				*e*Sg	**Sg**	**18 14 12.0**	**-0.7**
BOVS	**Bovan**	**2.67**	**322**	*e*Sg	**Sg**	**18 14 32.5**	**-0.3**
BOVS	**Bovan**	**2.67**	**322**	*e*Sg	**Sg**	**18 14 32.5**	**-0.3**

ISCJB **14** *18:34:19.4±0.5,24.40N±0.02×122.02E±0.02,h5km±3km, Error ellipse: s-maj=3.9km s-min=2.5km az=143.7*
TAP **14** *18:34:20.3,24.42N×121.91E,h19km,ML3.0,B*
JMA **14** *18:34:20.0±0.1,24.37N×121.93E,h20km,M2.3*
ISC 14 18:34:19.8±0.9,24.39N±0.02×121.95E±0.02,h20km±4km, n46,σ0°64/73,3C-1D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.19**	**280**	⇑*i*P	**Pg**	**18 34 24.7**	**-0.2**
	baz=272						
ENA				S	**Sb**	**18 34 27.7**	**-0.3**
	baz=272						
EHP	**Heping Village**	**0.21**	**246**	*e*P	**Pg**	**18 34 25.4**	**+0.3**
	baz=233						
TWC	**Suao**	**0.23**	**337**	⇓*i*P	**Pg**	**18 34 25.4**	**-0.1**
	baz=350						
TWC				*i* S	**Sb**	**18 34 28.4**	**-0.7**
	baz=350						
ILA	**Ilan**	**0.41**	**334**	*e*P	**Pb**	**18 34 28.8**	**+0.3**
	baz=333						
ILA				*e*S	**Sb**	**18 34 34.6**	**+0.3**
	baz=333						
TWE	**Neicheng**	**0.41**	**322**	P	**Pg**	**18 34 28.3**	**-0.2**
	baz=324						
TWE				S	**Sg**	**18 34 33.5**	**-0.9**
	baz=324						
ENTT	**Nioudou**	**0.43**	**305**	*i* P	**Pg**	**18 34 28.6**	**-0.1**
	baz=305						
ENTT				S	**Sg**	**18 34 33.7**	**-1.0**
	baz=305						
EGS		**0.45**	**358**	*e*P	**Pg**	**18 34 29.1**	**-0.1**
	baz=2.0						
EGS				*e*S	**Sb**	**18 34 35.5**	**+0.1**
	baz=2.0						
TWD	**Chiawan**	**0.45**	**226**	*e*P	**Pg**	**18 34 28.9**	**-0.2**
	baz=225						
TWD				*e*S	**Sn**	**18 34 37.3**	**-1.4**
	baz=225						
HWA	**Hwalien**	**0.52**	**217**	*e*P	**Pn**	**18 34 31.4**	**-0.7**
	baz=218						
NNS	**Nan Shan**	**0.53**	**275**	⇑*i*P	**Pb**	**18 34 30.3**	**-0.3**
	baz=274						
NNS				S	**Sb**	**18 34 36.9**	**-0.9**
	baz=274						
NSK	**Sanguang**	**0.61**	**298**	P	**Pg**	**18 34 32.0**	**-0.1**
	baz=297						
NSK				*i* S	**Sb**	**18 34 39.3**	**-0.7**
	baz=297						
TWB1	**Santiao Chiao**	**0.61**	**3**	*e*P	**Pg**	**18 34 32.1**	**0.0**
	baz=359						
TWB1				*e*S	**Sb**	**18 34 39.6**	**-0.4**
	baz=359						
WHF	**Hehuan Shan**	**0.67**	**248**	⇑*i*P	**Pb**	**18 34 33.0**	**-0.2**
	baz=253						
WHF				*e*S	**Sg**	**18 34 43.4**	**+0.9**
	baz=253						
NWF	**Wu-fen Shan**	**0.69**	**347**	P	**Pg**	**18 34 34.0**	**+0.4**
	baz=340						
NWF				S	**Sg**	**18 34 42.6**	**-0.2**
	baz=340						
TWT	**Tachien**	**0.72**	**259**	*e*P	**Pg**	**18 34 34.0**	**-0.2**
	baz=258						
TWT				*e*S	**Sn**	**18 34 44.9**	**-0.7**
	baz=258						
ESL	**Shilin**	**0.75**	**219**	*e*P	**Pg**	**18 34 34.5**	**-0.1**
	baz=223						
ESL				*e*S	**Sn**	**18 34 46.5**	**+0.5**
	baz=223						
TAP1	**Taipei**	**0.75**	**329**	*e*P	**Pn**	**18 34 35.8**	**+0.4**
	baz=319						
TWS1	**Kuangyinshan**	**0.85**	**326**	*e*P	**Pn**	**18 34 37.6**	**+0.8**
	baz=317						
NSTT	**Nanjuang**	**0.90**	**285**	*e*P	**Pb**	**18 34 36.8**	**+0.1**
	baz=284						
JYNG	**Yonagunijimaku**	**0.91**	**86**	P	**Pn**	**18 34 37.4**	**-0.1**
JYNG				*e*S	**Sb**	**18 34 49.0**	**+0.4**
TWY	**Chenhua**	**0.93**	**340**	*e*P	**Pg**	**18 34 38.3**	**+0.2**
	baz=341						
TWY				*e*S	**Sg**	**18 34 50.4**	**0.0**
	baz=341						
YOJ	**Yonaguni jima**	**0.97**	**86**	P	**Pn**	**18 34 38.4**	**+0.1**
YOJ				S	**Sb**	**18 34 50.6**	**+0.3**
YOJ	**Yonaguni jima**	**0.97**	**86**	*e*P	**Pb**	**18 34 37.9**	**-0.1**
	baz=87						
EHY	**Hungye**	**1.05**	**213**	*e*P	**Pg**	**18 34 40.1**	**-0.3**
	baz=211						
TWQ1	**Liyutan**	**1.07**	**268**	*e*P	**Pg**	**18 34 41.5**	**+0.7**
	baz=268						
TWQ1				*e*S	**Sg**	**18 34 55.0**	**+0.1**
	baz=268						
NSY	**Sanyi**	**1.08**	**271**	*e*P	**Pg**	**18 34 41.9**	**+1.0**
	baz=271						
SMLT	**Sun Moon Lake**	**1.09**	**242**	*e*P	**Pg**	**18 34 41.0**	**0.0**
	baz=247						
SMLT				*e*S	**Sg**	**18 34 56.6**	**+1.3**
	baz=247						
TYC	**Yuchr**	**1.11**	**244**	*e*P	**Pg**	**18 34 41.4**	**0.0**
	baz=243						
TCU	**Taichung**	**1.19**	**258**	*e*P	**Pg**	**18 34 43.6**	**+0.7**
	baz=258						
TWF1	**Yuli**	**1.20**	**210**	*e*P	**Pn**	**18 34 41.0**	**-0.5**
	baz=222						
WNT	**Mingjian**	**1.27**	**246**	*e*P	**Pg**	**18 34 44.4**	**+0.1**
	baz=237						
ALS	**Alishan**	**1.37**	**230**	*e*P	**Pb**	**18 34 45.2**	**+0.3**
	baz=216						
CHN5	**Tsauling**	**1.41**	**236**	*e*P	**Pg**	**18 34 46.3**	**-0.8**
	baz=236						
WGK	**Gukeng**	**1.45**	**241**	*e*P	**Pg**	**18 34 47.2**	**-0.7**
	baz=242						
WGK				*e*S	**Sg**	**18 35 08.3**	**+1.4**
	baz=242						
ELDTW	**Lidau**	**1.47**	**216**	*e*P	**Pn**	**18 34 45.2**	**-0.2**
	baz=202						
CHN4	**Tsaushan**	**1.62**	**230**	*e*P	**Pg**	**18 34 50.1**	**-1.0**
	baz=232						
CHN4				*e*S	**Sg**	**18 35 13.1**	**+0.8**
	baz=232						
IRIF	**Iriomote-Funau**	**1.62**	**92**	P	**Pn**	**18 34 47.6**	**+0.3**
IRIF				S	**Sn**	**18 35 06.8**	**-0.9**
STYT	**Tauyuan**	**1.64**	**222**	*e*P	**Pb**	**18 34 49.2**	**-0.2**
	baz=224						
STYT				*e*S	**Sg**	**18 35 12.8**	**-0.2**
	baz=224						
WTP	**Ta-pu**	**1.68**	**227**	*e*P	**Pb**	**18 34 50.9**	**+0.8**
	baz=229						
WTP				*e*S	**Sg**	**18 35 13.8**	**-0.2**
	baz=229						
CHN1	**Nanshi**	**1.77**	**228**	*e*P	**Pb**	**18 34 52.5**	**+0.8**
	baz=230						
CHN1				*e*S	**Sg**	**18 35 17.2**	**+0.1**
	baz=230						
SGST	**Jiashian**	**1.81**	**224**	*e*P	**Pb**	**18 34 52.6**	**+0.3**
	baz=224						
JKRS	**Kuro-shima**	**1.89**	**94**	P	**Pn**	**18 34 52.0**	**+1.1**
JKRS				S	**Sn**	**18 35 14.3**	**+0.2**
JIJ	**Ishigaki jima**	**2.00**	**90**	*e*S	**Sn**	**18 35 15.7**	**-1.2**
SSD	**Sandimen**	**2.04**	**217**	*e*P	**Pb**	**18 34 56.3**	**+0.1**
	baz=207						
JISG	**Ishigakijimahi**	**2.16**	**84**	P	**Pn**	**18 34 55.1**	**+0.4**
JISG				S	**Sn**	**18 35 19.9**	**-1.0**
EAST	**Anshuo**	**2.24**	**207**	*e*P	**Pn**	**18 34 57.6**	**+1.7**
	baz=196						

GUC **14** *18:34:30,15.88S×69.41W,h228km*
ISCJB **14** *18:34:35.6±0.6,15.57S±0.04×69.04W±0.06,h205km±6km, mb4.8/88,Error ellipse: s-maj=10.2km s-min=5.1km az=147.2*
SCB **14** *18:34:40.5±0.5,16.09S×68.71W,h264km±2km,Ml4.7/1, Error ellipse: s-maj=11.6km s-min=5.6km az=104.0*
NEIC **14** *18:34:40.6±0.5,15.83S×69.32W,h233km±4km,mb4.9/66, Error ellipse: s-maj=7.6km s-min=4.7km az=60.0*
IDC **14** *18:34:41.0±0.5,15.84S×69.36W,h235km±4km,mb4.4/22, mb1 4.5/27,mb1mx4.4/37,mbtmp5.0/27,Error ellipse: s-maj=10.8km s-min=8.2km az=70.0*
ISC 14 18:34:40.0±0.6,15.99S±0.04×69.51W±0.05,h233km±5km, n564,σ1°41/579,mb4.9/89,4C-4D,Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOD	**La Paz, Gloria**	**1.09**	**127**	⇑*i*Pn	**Pn**	**18 35 17.1**	**+2.7**
BBOB	**La Paz, Bander**	**1.33**	**97**	⇑*i*Pn	**Pn**	**18 35 17.8**	**+1.8**
LPAZ	**La Paz**	**1.35**	**103**	P	**Pn**	**18 35 18.2**	**+1.9**
	baz=315,slow=5.7						
LPAZ				S	**S**	**18 35 45.7**	**+1.0**
	263nm,0.3s,baz=6.7,slow=17,SNR=13						
LPAZ	**La Paz**	**1.35**	**103**	*e*P	**Pn**	**18 35 17.9**	**+1.5**
LPAZ				*e*S	**S**	**18 35 43.6**	**-1.1**
LPAZ	**La Paz**	**1.35**	**103**	⇑*i*Pn	**Pn**	**18 35 18.1**	**+1.7**
LPAZ				*e*Sn	**S**	**18 35 45.5**	**+0.8**
	7μm,0.7s						
BBOJ	**La Paz, Jacaqu**	**1.60**	**128**	⇑*i*Pn	**Pn**	**18 35 20.8**	**+2.6**
BBOE	**La Paz, Chanca**	**1.68**	**120**	⇓*i*Pn	**Pn**	**18 35 20.3**	**+1.5**
PB13	**IPOC Station P**	**2.34**	**180**	*e*P	**Pn**	**18 35 23.6**	**-1.5**
PB13				*e*S	**S**	**18 35 58.0**	**-2.5**
PB13				IAML		18 36 10.6	
	comp=N,11μm,1.9s						
PB12	**IPOC Station P**	**2.73**	**197**	*e*P	**Pn**	**18 35 27.1**	**-1.5**
PB12				*e*S	**S**	**18 36 04.6**	**-2.2**
MNMC	**Minye Minye**	**3.13**	**182**	*e*P	**Pn**	**18 35 31.8**	**-1.5**
MNMC				*e*S	**S**	**18 36 12.9**	**-2.2**
PB11	**IPOC Station P**	**3.76**	**182**	*e*P	**Pn**	**18 35 39.9**	**-0.5**
PB11				*e*S	**S**	**18 36 26.6**	**-1.5**
PB08	**IPOC Station P**	**4.15**	**175**	⇓*e*P	**Pn**	**18 35 45.1**	**-0.1**
MOCB	**Mochara**	**6.39**	**146**	⇓*i*Pn	**Pn**	**18 36 14.7**	**+1.5**
MOCB				*e*Sn	**S**	**18 37 22.4**	**-5.1**
	comp=N,399nm,0.9s						
LVC	**Limon Verde**	**6.61**	**175**	P	**Pn**	**18 36 16.9**	**+

comp=N,40nm,0.8s,baz=245,slow=8.1,SNR=22

EFI	East Falkland	36.76 168	eP	P	18 41 26.3	+1.2	
GRTK	Grand Turk	37.30 358	eP	P	18 41 28.2	-1.7	
USHA	Ushuaia	38.77 179	P	P	18 41 43.2	+1.4	
	comp=N,39nm,0.7s,baz=316,slow=11,SNR=4.6						
035Z	Hargill	50.51 326	P	P	18 43 15.1	+0.4	
	baz=143						
347A	Saraland	50.54 339	P	P	18 43 13.2	-1.6	
	baz=156						
346A	Big Creek Wild	50.85 338	P	P	18 43 15.1	-2.0	
	baz=155						
248A	Dixon Mills	50.90 340	P	P	18 43 15.6	-1.8	
	baz=157						
035A	Encino	50.91 327	P	P	18 43 18.4	+0.7	
	baz=144						
345A	Thompson Farm,	50.99 337	P	P	18 43 16.9	-1.3	
	baz=154						
247A	Quitman	51.16 339	P	P	18 43 17.9	-1.5	
	baz=156						
034A	Hebbronville	51.32 326	P	P	18 43 21.3	+0.6	
	baz=143,SNR=17						
344A	Westbrook Farm	51.38 337	P	P	18 43 20.0	-1.1	
	baz=153						
245A	Little AP, Sta	51.59 338	P	P	18 43 21.1	-1.5	
	baz=154						
934A	Benavides	51.66 327	P	P	18 43 24.1	+0.9	
	baz=143,SNR=5.9						
146A	Union	51.84 339	P	P	18 43 22.9	-1.5	
	baz=156						
539A	Cross D Ranch,	51.87 332	P	P	18 43 25.2	+0.5	
	baz=148						
342A	Flagon Creek P	51.94 335	P	P	18 43 24.5	-0.7	
	baz=152						
736A	Circle Diamond	52.02 329	P	P	18 43 27.0	+1.1	
	baz=146,SNR=5.2						
Z48A	Northport	52.02 341	P	P	18 43 23.7	-2.0	
	baz=158						
Z47A	Carrollton	52.02 340	P	P	18 43 23.7	-2.1	
	baz=157						
243A	Waterproof	52.05 336	P	P	18 43 25.1	-0.9	
	baz=153						
KMSC	Kings Mountain	52.07 348	P	P	18 43 24.3	-1.8	
	baz=165						
KMSC	Kings Mountain	52.07 348	eP	P	18 43 24.5	-1.6	
	comp=N,5.3nm,0.5s						
933A	Laredo	52.07 326	P	P	18 43 26.8	+0.5	
	baz=143,SNR=13						
440A	Kirbyville	52.08 333	P	P	18 43 26.2	0.0	
	baz=150						
834A	Tilden	52.10 327	P	P	18 43 27.1	+0.6	
	baz=144						
145A	Houston Renfro	52.12 338	P	P	18 43 25.2	-1.3	
	baz=155						
341A	Kurthwood	52.25 334	P	P	18 43 26.9	-0.6	
	baz=151						
636A	Smothers Creek	52.45 329	P	P	18 43 29.3	+0.4	
	baz=146,SNR=5.9						
439A	Center Grove,	52.48 332	P	P	18 43 29.6	+0.5	
	baz=149						
537A	Green Hill Far	52.59 331	P	P	18 43 30.5	+0.6	
	baz=147						
Y47A	UCPARC, Winfie	52.60 341	P	P	18 43 27.7	-2.3	
	baz=157,SNR=5.2						
340A	Bronson	52.63 334	P	P	18 43 30.1	-0.1	
	baz=150						
734A	La Parita Cree	52.68 328	P	P	18 43 31.0	+0.3	
	baz=144						
833A	Chaparral WMA,	52.70 326	P	P	18 43 31.2	+0.4	
	baz=143,SNR=10						
635A	Leesville	52.72 329	P	P	18 43 30.7	-0.3	
	baz=145						
143A	Socs Landing,	52.75 337	P	P	18 43 30.6	-0.5	
	baz=153						
438A	Sam Houston St	52.76 332	P	P	18 43 31.5	+0.3	
	baz=148						
142A	Monroe	52.82 336	P	P	18 43 30.4	-1.2	
	baz=152						
339A	Huntington	52.84 333	P	P	18 43 31.5	-0.3	
	baz=149						
Z44A	Pea Ridge, Bel	52.91 338	P	P	18 43 31.1	-1.2	
	baz=154						
536A	Bastrop	52.94 330	P	P	18 43 32.7	+0.2	
	baz=146						
733A	Divot King Ran	52.96 327	P	P	18 43 33.0	+0.3	
	baz=143,SNR=5.5						
832A	Faith Ranch, C	52.98 326	P	P	18 43 33.0	+0.1	
	baz=142,SNR=7.2						
634A	China Grove, S	53.01 328	P	P	18 43 33.3	+0.2	
	baz=144						
240A	Hunter Patters	53.11 334	P	P	18 43 33.3	-0.4	
	baz=150						
535A	Dale	53.15 329	P	P	18 43 34.2	+0.1	
	baz=145						
338A	Crockett	53.20 332	P	P	18 43 35.2	+0.8	
	baz=148						
141A	Papa Simpson,	53.25 335	P	P	18 43 34.2	-0.6	
	baz=151						
NATX	Nacogdoches	53.26 333	P	P	18 43 34.8	0.0	
	baz=149						
NATX	Nacogdoches	53.26 333	eP	P	18 43 35.1	+0.3	
	comp=N,39nm,0.8s						
436A	Wall Ranch, Ga	53.39 331	P	P	18 43 36.0	+0.2	
	baz=146						
239A	Gary	53.40 333	P	P	18 43 36.1	+0.3	
	baz=150						
337A	Centerville	53.42 332	P	P	18 43 35.3	-0.7	
	baz=148						
Y44A	Strider, Charl	53.45 339	P	P	18 43 34.0	-2.1	
	baz=155						
Z42A	Norrel Spur, H	53.47 337	P	P	18 43 34.4	-1.9	
	baz=153						
633A	Saathoff Ranch	53.49 328	P	P	18 43 36.7	+0.1	
	baz=144,SNR=15						
140A	Cam and Jess,	53.56 335	P	P	18 43 36.6	-0.4	
	baz=151						
534A	Blanco	53.60 329	P	P	18 43 36.7	-0.7	
	baz=144,SNR=5.6						
238A	Jacksonville	53.66 333	P	P	18 43 37.9	+0.2	
	baz=149						
435B	Jarrell	53.77 330	P	P	18 43 38.7	+0.1	
	baz=146						
Z41A	Richland Creek	53.79 336	P	P	18 43 37.8	-0.8	
	baz=152						
Y42A	Garnett, Star	53.91 337	P	P	18 43 38.2	-1.3	
	baz=153						
533A	Kerrville	53.91 328	P	P	18 43 39.5	-0.2	
	baz=144						
336A	Riesel	53.92 331	P	P	18 43 39.9	+0.3	
	baz=147						
237A	Washetta, Mont	53.97 332	P	P	18 43 40.3	+0.3	
	baz=148						
Z40A	Long Farm, Mag	54.02 335	P	P	18 43 39.8	-0.6	
	baz=151						
335A	Moody	54.11 330	P	P	18 43 40.9	-0.1	
	baz=146,SNR=6.0						
434A	Burnet	54.13 329	P	P	18 43 40.7	-0.5	
	baz=145,SNR=5.8						
W45A	Hickory Valley	54.18 340	P	P	18 43 39.2	-2.3	
	baz=156						
X43A	Marvell	54.19 338	P	P	18 43 39.6	-1.8	
	baz=154						
138A	Matatall Enter	54.21 333	P	P	18 43 42.2	+0.4	
	baz=149						
137A	Heron Place, G	54.45 333	P	P	18 43 43.7	+0.3	
	baz=148,SNR=6.7						
433A	Art	54.49 329	P	P	18 43 43.5	-0.3	
	baz=144,SNR=27						
334A	Lometa	54.54 330	P	P	18 43 43.7	-0.4	
	baz=145,SNR=10						
JCT	Junction City	54.63 328	P	P	18 43 45.3	+0.4	
	baz=143,SNR=11						
JCT	Junction City	54.63 328	eP	P	18 43 45.4	+0.4	
	comp=N,25nm,0.8s						
Y40A	Okolona	54.64 336	P	P	18 43 43.8	-0.9	
	baz=151						
Z38A	Mt. Pleasant	54.67 334	P	P	18 43 44.9	-0.2	
	baz=149						
136A	Ennis	54.69 332	P	P	18 43 45.3	+0.1	
	baz=148						
WHTX	Lake Whitney,	54.72 331	P	P	18 43 45.2	-0.1	
	baz=146,SNR=7.8						
WHTX	Lake Whitney,	54.72 331	eP	P	18 43 45.2	-0.1	
	comp=N,37nm,0.7s						
X41A	Kaden, Bauxite	54.77 337	P	P	18 43 43.9	-1.8	
	baz=152						
X40A	Basin Creek Fa	54.88 336	P	P	18 43 44.5	-2.0	
	baz=152						
Y39A	Lockesburg	54.90 335	P	P	18 43 45.8	-0.8	
	baz=151,SNR=5.5						
333A	Richland Sprin	54.90 329	P	P	18 43 46.3	-0.5	
	baz=144,SNR=10						
Z37A	Pogue Cattle C	54.90 333	P	P	18 43 46.4	-0.3	
	baz=149						
234A	Clairette	55.05 330	P	P	18 43 47.7	-0.1	
	baz=146,SNR=13						
Y38A	Idabel	55.15 334	P	P	18 43 47.4	-1.1	
	baz=150						
135A	Vickery Place,	55.16 331	P	P	18 43 48.3	-0.3	
	baz=147						
MIAR	Mount Ida	55.22 336	P	P	18 43 47.4	-1.6	
	baz=151,SNR=7.9						
MIAR	Mount Ida	55.22 336	eP	P	18 43 47.3	-1.6	
	comp=N,18nm,1.1s						
W41B	Gary Mavity, V	55.27 337	P	P	18 43 47.4	-1.9	
	baz=153,SNR=7.7						
Z36A	Blue Ridge	55.32 333	P	P	18 43 49.7	0.0	
	baz=148						
X39A	Fountain Ranch	55.41 335	P	P	18 43 49.4	-0.9	
	baz=151,SNR=15						
233A	Rising Star	55.43 330	P	P	18 43 50.3	-0.2	
	baz=145,SNR=20						
134A	White-Moore Ra	55.49 331	P	P	18 43 51.0	+0.1	
	baz=146						
V42A	Cord	55.52 338	P	P	18 43 48.9	-2.2	
	baz=154						
Y37A	Hugo	55.57 334	P	P	18 43 51.5	+0.1	
	baz=149,SNR=7.6						
W40A	Ferguson Farm,	55.59 337	P	P	18 43 50.3	-1.2	
	baz=152,SNR=7.4						
V41A	Mountainview	55.78 338	P	P	18 43 50.6	-2.3	
	baz=153,SNR=11						
Y36A	Durant	55.79 333	P	P	18 43 52.8	-0.2	
	baz=148						
X38A	Whitesboro	55.83 335	P	P	18 43 52.7	-0.6	
	baz=150,SNR=16						
TXAR	Lajitas Array	55.84 324	P	P	18 43 53.8	+0.2	
	comp=N,12nm,0.7s,baz=148,slow=8.8,SNR=150						
W39A	Magazine	55.87 336	P	P	18 43 52.7	-0.9	
	baz=151,SNR=6.9						
133A	Hamilton Ranch	55.92 330	P	P	18 43 54.0	0.0	
	baz=145,SNR=24						
U42A	Revenden	55.96 339	P	P	18 43 52.0	-2.1	
	baz=154,SNR=9.2						
X37A	Clayton	55.99 334	P	P	18 43 53.8	-0.6	
	baz=149,SNR=11						
V40A	Witts Springs	56.04 337	P	P	18 43 52.8	-2.0	
	baz=152,SNR=10						
W38A	Poteau	56.05 335	P	P	18 43 54.1	-0.8	
	baz=150,SNR=9.7						
Z34A	Collier Ranch,	56.08 331	P	P	18 43 55.1	+0.1	
	baz=146						
Y35A	Marietta	56.13 332	P	P	18 43 55.2	-0.2	
	baz=148,SNR=6.2						
U41A	Viola	56.19 338	P	P	18 43 53.6	-2.2	
	baz=154,SNR=5.6						
ABTX	Abilene, Hawle	56.28 329	P	P	18 43 56.4	-0.1	
	baz=144						
ABTX	Abilene, Hawle	56.28 329	eP	P	18 43 56.2	-0.3	
	comp=N,51nm,1.3s						
S45A	Carrier Mills	56.31 342	P	P	18 43 54.3	-2.3	
	baz=154,SNR=7.1						
V39A	Pettigrew	56.38 336	P	P	18 43 55.6	-1.7	
	baz=152,SNR=16						
X36A	Centrahoma	56.39 333	P	P	18 43 56.3	-0.9	
	baz=148,SNR=9.0						
Z33A	Whitaker Ranch	56.40 331	P	P	18 43 57.5	+0.1	
	baz=146,SNR=26						
W37B	Quinton	56.49 335	P	P	18 43 57.2	-0.7	
	baz=150,SNR=9.7						
Y34A	Reagan Ranch,	56.49 332	P	P	18 43 57.6	-0.4	
	baz=147,SNR=17						
X35A	Drake	56.51 333	P	P	18 43 57.3	-0.8	
	baz=148						
S44A	Carbondale	56.53 341	P	P	18 43 56.1	-2.1	
	baz=157,SNR=10.0						
U40A	Yellville	56.54 337	P	P	18 43 56.4	-1.8	
	baz=153,SNR=13						
S43A	Fulton Ridge,	56.68 340	P	P	18 43 56.9	-2.3	
	baz=156,SNR=14						
V38A	Canehill	56.70 336	P	P	18 43 57.9	-1.5	
	baz=151,SNR=7.8						
T41A	Mountain View	56.77 339	P	P	18 43 57.5	-2.3	
	baz=154,SNR=8.7						
U39A	Green Forest	56.80 337	P	P	18 43 58.0	-2.1	
	baz=152,SNR=7.3						
W36A	Wetumka	56.82 334	P	P	18 43 59.1	-1.2	
	baz=149,SNR=12						
Y33A	Hilltop Ranch,	56.93 331	P	P	18 44 00.9	-0.2	
	baz=146,SNR=5.2						
R44A	Waltonville	56.99 342	P	P	18 43 59.0	-2.3	
	baz=157						
V37A	Hulbert	57.01 335	P	P	18 44 00.2	-1.3	
	baz=150,SNR=10						
X34A	Smith Ranch, M	57.06 332	P	P	18 44 01.7	-0.3	
	baz=147,SNR=11						
W35A	Tecumseh	57.11 333	P	P	18 44 01.0	-1.3	
	baz=148,SNR=5.2						
T40A	Mansfield	57.13 338	P	P	18 44 00.4	-2.0	
	baz=153,SNR=11						
U38A	Gravette	57.20 336	P	P	18 44 01.0	-1.8	
	baz=151						
S41A	Jillco Farms,	57.25 339	P	P	18 44 01.1	-2.1	
	baz=154,SNR=20						
V36A	Jenks	57.26 335	P	P	18 44 02.1	-1.2	
	baz=149,SNR=6.3						
TUL1	Leonard	57.30 335	P	P	18 44 02.7	-0.9	
	baz=149						
X33A	Lawton	57.32 332	P	P	18 44 02.7	-1.0	
	baz=146,SNR=7.2						
T39A	Clever	57.33 337	P	P	18 44 01.7	-2.0	
	baz=152,SNR=6.7						
U37A	Salina	57.45 336	P	P	18 44 03.7	-1.0	
	baz=150						
S40A	Lebanon	57.52 338	P	P	18 44 03.0	-2.1	
	baz=153,SNR=10						
W34A	Bridge Creek,	57.57 333	P	P	18 44 05.2	-0.3	
	baz=147						
Q44A	Meyer Farm, Va	57.58 342	P	P	18 44 02.8	-2.6	
	baz=158						
X32A	Elmer	57.58 331	P	P	18 44 05.3	-0.3	
	baz=145						
WMOK	Wichita Mounta	57.61 332	P	P	18 44 04.7	-1.1	
	baz=146,SNR=14						
WMOK	Wichita Mounta	57.61 332	eP	P	18 44 04.8	-1.0	
	comp=N,8.3nm,0.6s						
V35A	Meyer Ranch, C	57.61 334	P	P	18 44 04.9	-0.8	
	baz=148						
T38A	Diamond	57.68 337	P	P	18 44 04.4	-1.8	
	baz=151,SNR=13						
U36A	Oologah	57.69 335	P	P	18 44 05.3	-1.0	
	baz=150						
W33A	Caddo, Fort Co	57.81 332	P	P	18 44 07.1	-0.1	
	baz=146,SNR=10						
Q43A	New Douglas	57.81 341	P	P	18 44 05.2	-1.9	
	baz=157						
S39A	Bolivar	57.90 338	P	P	18 44 05.9	-1.8	
	baz=153,SNR=20						
V34A	Guthrie	57.96 333	P	P	18 44 07.3	-1.0	
	baz=148,SNR=8.5						
V34A	Guthrie	57.96 333	eP	P	18 44 07.4	-0.8	
	comp=N,50nm,0.7s						
M54A	Oil Creek Stat	57.97 351	P	P	18 44 02.9	-5.2	
	baz=168						
T37A	Cheneyville 18	58.00 336	P	P	18 44 07.0	-1.4	
	baz=151,SNR=17						
Q42A	Golden Eagle	58.05 341	P	P	18 44 06.7	-2.0	
	baz=156						
S38A	Stockton	58.06 337	P	P	18 44 07.2	-1.6	
	baz=152						
R40A	Maddies Statio	58.06 339	P	P	18 44 06.6	-2.2	
	baz=154,SNR=10						
U35A	Pawnee	58.08 334	P	P	18 44 08.3	-0.7	
	baz=149						
W32A	Sentinel	58.14 331	P	P	18 44 09.1	-0.4	
	baz=146,SNR=28						
V33A	Lossen Ranch,	58.29 333	P	P	18 44 09.8	-0.6	
	baz=147						
T36A	Boggs Farm, Ca	58.33 335	P	P	18 44 09.4	-1.2	
	baz=150,SNR=8.5						
R39A	Chumby, Stover	58.35 338	P	P	18 44 08.9	-1.9	
	baz=153,SNR=12						
SFIN	Lafayette	58.41 344	P	P	18 44 08.1	-3.1	
	baz=160						
T35A	Sooner Cattle	58.46 335	P	P	18 44 10.6	-1.0	
	baz=149,SNR=7.3						
U34A	Anderson Ranch	58.48 334	P	P	18 44 11.0	-0.7	
	baz=148,SNR=9.3						
U34A	Anderson Ranch	58.48 334	eP	P	18 44 11.0	-0.7	
	comp=N,52nm,0.8s						
S37A	Fort Scott	58.52 337	P	P	18 44 10.4	-1.6	
	baz=151,SNR=6.3						
V32A	Arapaho	58.54 332	P	P	18 44 11.9	-0.3	
	baz=146						
R38A	Fenwick Farm,	58.55 338	P	P	18 44 10.3	-2.0	
	baz=152,SNR=9.2						
MNTX	Cornudas Mount	58.59 324	P	P	18 44 12.2	-0.4	
	baz=138,SNR=65						
MNTX	Cornudas Mount	58.59 324	eP	P	18 44 12.1	-0.5	
	comp=N,49nm,1.0s						
P42A	Winchester	58.60 341	P	P	18 44 10.0	-2.6	
	baz=156						
Q40A	Laux Farm, Aux	58.63 339	P	P	18 44 10.7	-2.0	
	baz=154						
U33A	Lingo Farm, Me	58.73 333	P	P	18 44 12.7	-0.8	
	baz=147						
S36A	Lake Cedric, C	58.79 336	P	P	18 44 12.4	-1.4	
	baz=150,SNR=5.9						
T34A	McClaskey Farm	58.83 334	P	P	18 44 13.4	-0.8	
	baz=148,SNR=6.8						
P41A	Barry, Barry	58.91 341	P	P	18 44 12.5	-2.2	
	baz=156						
MSTX	Muleshoe	58.93 328	P	P	18 44 14.6	-0.4	
	baz=142,SNR=26						
MSTX	Muleshoe	58.93 328	eP	P	18 44 14.3	-0.8	
	comp=N,74nm,1.0s						
Q39A	Willow Grove F	58.98 339	P	P	18 44 13.1	-2.1	
	baz=153,SNR=8.4						
R37A	Teagarden Farm	59.01 337	P	P	18 44 13.5	-1.9	
	baz=151						
S35A	Otter Creek Ra	59.04 335	P	P	18 44 14.6	-1.0	
	baz=149,SNR=18						
U32A	Winter Ranch,	59.07 332	P	P	18 44 15.4	-0.4	
	baz=146						
O42A	Bath	59.08 342	P	P	18 44 13.3	-2.5	
	baz=157						
P40A	Paris	59.10 340	P	P	18 44 13.8	-2.1	
	baz=154,SNR=8.7						
AMTX	Amarillo	59.10 329	P	P	18 44 15.7	-0.5	
	baz=143						
AMTX	Amarillo	59.10 329	eP	P	18 44 15.7	-0.5	
	comp=N,8.8nm,0.4s						
Q38A	Cooks Store, C	59.13 338	P	P	18 44 14.5	-1.7	
	baz=153,SNR=6.1						
HDIL	Hopedale	59.18 343	P	P	18 44 13.6	-2.9	
	baz=158						
O41A	Passleys Farm,	59.26 341	P	P	18 44 14.3	-2.7	
	baz=156						
R36A	Gordon, Harris	59.27 336	P	P	18 44 15.8	-1.4	
	baz=150,SNR=11						
P39B	Salisbury	59.30 339	P	P	18 44 15.2	-2.1	
	baz=154						
T33A	Patterson Ranc	59.33 333	P	P	18 44 16.9	-0.7	
	baz=147						
Q37A	Longview Farm,	59.36 338	P	P	18 44 16.0	-1.8	
	baz=152						
S34A	Willow Spring	59.38 335	P	P	18 44 17.0	-0.9	
	baz=149						
R35A	Emporia Munici	59.54 336	P	P	18 44 18.1	-0.9	
	baz=150,SNR=5.6						
O40A	La Belle	59.58 340	P	P	18 44 16.9	-2.2	
	baz=155						
S33A	Kaszmaul Farm,	59.66 334	P	P	18 44 19.2	-0.7	
	baz=148						
P38A	Dawn	59.69 339	P	P	18 44 18.0	-2.0	
	baz=153						
T32A	Huddler Ranch,	59.70 333	P	P	18 44 19.7	-0.5	
	baz=147,SNR=7.5						
Q36A	Arnold C. Orve	59.81 337	P	P	18 44 19.4	-1.5	
	baz=151						
O39A	Kirksville	59.92 340	P	P	18 44 19.6	-1.9	
	baz=154						
Q35A	Mercer Eighty,	59.94 336	P	P	18 44 20.2	-1.5	
	baz=150,SNR=6.1						
R34A	Isabella, Hill	59.95 335	P	P	18 44 21.0	-0.8	
	baz=149,SNR=14						
P37A	Lathrop	59.95 338	P	P	18 44 19.7	-2.0	
	baz=152						
O38A	Galt	60.12 339	P	P	18 44 20.8	-2.0	
	baz=153						
S32A	Newby Ranch, P	60.15 333	P	P	18 44 22.9	-0.2	
	baz=147,SNR=7.9						
R33A	Olander Ranch,	60.25 334	P	P	18 44 22.4	-1.5	
	baz=148						
P36A	Good Intent, A	60.29 337	P	P	18 44 22.0	-2.1	
	baz=151,SNR=6.7						
Q34A	Chapman	60.35 336	P	P	18 44 23.1	-1.4	
	baz=149,SNR=8.0						
KSU1	Kansas State U	60.38 336	P	P	18 44 23.2	-1.5	
	baz=150,SNR=6.7						
KSU1	Kansas State U	60.38 336	eP	P	18 44 23.5	-1.1	
	comp=N,43nm,0.8s						
O37A	Wolven Farm, M	60.39 338	P	P	18 44 22.8	-1.9	
	baz=152						
N39A	Derby Farms, D	60.47 340	P	P	18 44 22.9	-2.3	
	baz=154						
LONY	Lake Ozonia	60.49 356	eP	P	18 44 23.9	-1.5	
	comp=N,8.7nm,0.8s						
P35A	Duane Minner,	60.52 337	P	P	18 44 23.9	-1.7	
	baz=150						
121A	Cookes Peak, D	60.57 323	P	P	18 44 27.5	+1.1	
	baz=137,SNR=13						
121A	Cookes Peak, D	60.57 323	eP	P	18 44 27.2	+0.9	
	comp=N,47nm,1.1s						
O36A	Bolckow	60.65 338	P	P	18 44 24.4	-2.1	
	baz=152						
Q33A	Connelly Farm,	60.78 335	P	P	18 44 25.8	-1.6	
	baz=148						
P34A	Walnut Farm, R	60.85 336	P	P	18 44 26.8	-1.0	
	baz=150,SNR=17						
M39A	Webster	60.90 341	P	P	18 44 25.9	-2.2	
	baz=155						
L41A	Preston	60.93 342	P	P	18 44 25.7	-2.6	
	baz=157						
N37A	Lee Faris, Mou	60.94 339	P	P	18 44 26.5	-1.9	
	baz=152						
Q32A	Meitler Ranch,	61.07 334	P	P	18 44 28.6	-0.8	
	baz=148,SNR=5.3						
P33A	Williams Farm,	61.10 335	P	P	18 44 28.6	-0.9	
	baz=149						
O35A	Humboldt	61.12 337	P	P	18 44 28.4	-1.2	
	baz=151						
L40A	Anamosa	61.14 342	P	P	18 44 27.6	-2.1	
	baz=156						
M38A	Pleasantville	61.18 340	P	P	18 44 27.6	-2.4	
	baz=154						
N36A	Muff Farm, Cla	61.25 338	P	P	18 44 28.9	-1.6	
	baz=152,SNR=8.4						
K41A	Shullsburg	61.37 343	P	P	18 44 28.9	-2.4	
	baz=157						
CBKS	Cedar Bluff	61.42 333	P	P	18 44 31.2	-0.5	
	baz=146,SNR=5.5						
CBKS	Cedar Bluff	61.42 333	eP	P	18 44 31.2	-0.5	
	comp=N,37nm,0.7s						
L39A	Vinton	61.43 341	P	P	18 44 29.2	-2.5	
	baz=155						
N35A	Tabor	61.54 338	P	P	18 44 31.0	-1.5	
	baz=151						
O33A	Hebron	61.60 336	P	P	18 44 31.8	-1.1	
	baz=149,SNR=7.3						
ANMO	Albuquerque	61.62 326	P	P	18 44 33.5	+0.1	
	baz=139						
ANMO	Albuquerque	61.62 326	eP	P	18 44 33.8	+0.5	
	comp=N,11nm,0.6s						
JFWS	Jewell Farm	61.63 343	eP	P	18 44 30.7	-2.3	
	comp=N,5.9nm,0.5s						
K40A	Colesburg	61.70 342	P	P	18 44 31.1	-2.3	
	baz=156						
L38A	Oak Wood Farm,	61.75 340	P	P	18 44 32.0	-1.9	
	baz=154						
M36A	Felix, Anita	61.76 339	P	P	18 44 32.1	-1.8	
	baz=152						
N34A	Lincoln	61.84 337	P	P	18 44 32.6	-1.8	
	baz=150						
K39A	Oelwein	61.93 341	P	P	18 44 33.0	-2.0	
	baz=155						
J41A	Loganville	61.98 343	P	P	18 44 33.1	-2.3	
	baz=157						
O32A	Brockman Farm,	62.03 335	P	P	18 44 34.9	-0.8	
	baz=148						
M35A	Neola	62.09 338	P	P	18 44 34.6	-1.4	
	baz=151						
TUC	Tucson	62.19 321	P	P	18 44 38.0	+0.9	
	baz=134						
TUC	Tucson	62.19 321	eP	P	18 44 37.7	+0.6	
	comp=N,18nm,0.9s						

J40A **Soldiers Grove** 62.22 343 P P 18 44 34.3 -2.6
baz=157
T25A **Trinidad** 62.24 329 P P 18 44 37.9 +0.4
baz=141,SNR=11
L36A **Harm Buss Farm** 62.29 339 P P 18 44 35.4 -2.0
baz=152
J39A **Decorah** 62.45 342 P P 18 44 36.0 -2.4
baz=156,SNR=6.3
M34A **Aspy Farms, Fr** 62.45 337 P P 18 44 37.1 -1.3
baz=150
N32A **Stulken Farm,** 62.47 336 P P 18 44 37.7 -1.0
baz=148
K37A **Belmond** 62.53 340 P P 18 44 36.9 -2.1
baz=154
L35A **Bielow Farm, R** 62.60 338 P P 18 44 37.9 -1.6
baz=151,SNR=6.3
J38A **Wedel Dairy, R** 62.66 341 P P 18 44 37.3 -2.5
baz=155
M33A **Taylor Creek F** 62.74 337 P P 18 44 39.0 -1.3
baz=150
L34A **Svendsen Farm,** 62.77 338 P P 18 44 39.0 -1.6
baz=151,SNR=6.7
KSCO **Kaye Shedlock'** 62.87 331 P P 18 44 41.5 0.0
baz=144
BGNE **Belgrade** 62.96 336 P P 18 44 40.8 -1.1
baz=149,SNR=6.7
BGNE **Belgrade** 62.96 336 eP P 18 44 40.7 -1.2
comp=N,118nm,0.9s
J37A **Redenius Farm,** 62.99 340 P P 18 44 40.3 -1.7
baz=154
K35A **Storm Lake** 63.03 339 P P 18 44 40.7 -1.6
baz=152
214A **Organ Pipe Nat** 63.20 319 P P 18 44 45.2 +1.5
baz=132,SNR=16
214A **Organ Pipe Nat** 63.20 319 eP P 18 44 45.0 +1.3
comp=N,199nm,1.0s
SDCO **Great Sand Dun** 63.25 329 P P 18 44 44.8 +0.6
baz=141,SNR=50
SDCO **Great Sand Dun** 63.25 329 eP P 18 44 44.5 +0.3
J36A **Seneca 1, Swea** 63.27 340 P P 18 44 41.8 -2.0
baz=153
I38A **Scanlan Farm,** 63.27 342 P P 18 44 41.7 -2.1
baz=155,SNR=7.5
L33A **Hoskins** 63.28 337 P P 18 44 42.5 -1.5
baz=150
K34A **Le Mars** 63.30 338 P P 18 44 42.8 -1.2
baz=151
L32A **Elgin** 63.42 337 P P 18 44 43.3 -1.5
baz=149
K33A **Hardington** 63.56 338 P P 18 44 44.6 -1.1
baz=150
W18A **Petrified Fore** 63.56 324 P P 18 44 47.0 +0.9
baz=136,SNR=5.7
I37A **Lemond, Waseca** 63.58 341 P P 18 44 44.2 -1.6
baz=154
J35A **Milford** 63.59 339 P P 18 44 45.2 -0.8
baz=152
I36A **Fitzsimmons Fa** 63.78 341 P P 18 44 45.4 -1.7
baz=153
J34A **George** 63.78 339 P P 18 44 45.6 -1.5
baz=151
L31A **Butterfield Fa** 63.88 336 P P 18 44 47.3 -0.6
baz=148,SNR=8.2
S22A **4UR Ranch, Cre** 63.93 328 P P 18 44 49.1 +0.5
baz=139,SNR=21
H37A **Dierke Farm, C** 63.94 342 P P 18 44 46.5 -1.6
baz=155
I35A **Creekview Farm** 63.95 340 P P 18 44 46.6 -1.7
baz=152
K32A **Verdigre** 63.97 337 P P 18 44 47.0 -1.4
baz=149
Q24A **Divide** 64.03 330 P P 18 44 49.6 +0.3
baz=141,SNR=8.3
J33A **Davis** 64.17 338 P P 18 44 48.4 -1.3
baz=150,SNR=15
OGNE **Ogallala** 64.17 333 P P 18 44 49.8 -0.1
baz=145
K31A **O'Neill** 64.23 336 P P 18 44 49.3 -0.8
baz=148
H36A **Jessenland, He** 64.25 341 P P 18 44 48.8 -1.4
baz=154
ECSD **EROS Data Cent** 64.40 339 P P 18 44 49.9 -1.3
baz=151,SNR=17
ECSD **EROS Data Cent** 64.40 339 eP P 18 44 49.7 -1.5
comp=N,27nm,1.2s
MVCO **Mesa Verde** 64.41 326 P P 18 44 52.3 +0.6
baz=138,SNR=20
MVCO **Mesa Verde** 64.41 326 eP P 18 44 52.2 +0.5
comp=N,58nm,1.2s
I34A **Hadley** 64.41 339 P P 18 44 50.0 -1.3
baz=152
SPMN **Marine on St.** 64.49 342 P P 18 44 49.8 -1.9
baz=155
SPMN **Marine on St.** 64.49 342 eP P 18 44 49.8 -1.9
comp=N,12nm,0.9s
J32A **Parkston** 64.53 337 P P 18 44 50.7 -1.4
baz=150,SNR=7.5
K30A **Basset** 64.61 336 P P 18 44 52.3 -0.3
baz=148,SNR=10
H35A **Sunnyside Ranc** 64.65 340 P P 18 44 51.0 -1.7
baz=153,SNR=8.0
I33A **Coleman** 64.74 339 P P 18 44 52.4 -1.0
baz=151
WUAZ **Wupatki** 64.78 323 P P 18 44 55.3 +1.3
baz=135,SNR=24
WUAZ **Wupatki** 64.78 323 eP P 18 44 55.1 +1.0
comp=N,45nm,1.0s
G36A **St. Michael** 64.79 341 P P 18 44 52.3 -1.3
baz=154
J31A **Geddes** 64.80 337 P P 18 44 52.6 -1.2
baz=149,SNR=5.5
ISCO **Idaho Springs** 64.90 330 P P 18 44 55.3 +0.4
baz=141,SNR=14
ISCO **Idaho Springs** 64.90 330 eP P 18 44 55.1 +0.2
H34A **Spellman Lake,** 64.93 340 P P 18 44 53.0 -1.6
baz=152,SNR=8.0
I32A **Karley and Nic** 64.96 338 P P 18 44 53.7 -1.1
baz=150,SNR=5.7
G35A **Watkins** 65.00 341 P P 18 44 53.5 -1.5
baz=153
J30A **Dallas** 65.11 336 P P 18 44 55.0 -0.8
baz=148,SNR=10
PV01 **Paradox Valley** 65.13 327 eP P 18 44 57.3 +1.0
comp=N,4µm,0.9s
GLA **Glamis** 65.20 319 P P 18 44 58.1 +1.5
baz=131
H33A **Prehn Over Nor** 65.28 339 P P 18 44 55.7 -1.1
baz=151,SNR=12
F36A **Milaca** 65.28 342 P P 18 44 54.9 -1.9
baz=154,SNR=21
I31A **Royce, Wessing** 65.35 337 P P 18 44 56.6 -0.7
baz=149
H32A **Carlson Farm,** 65.36 338 P P 18 44 56.1 -1.3
baz=150
G34A **Benson** 65.39 340 P P 18 44 55.8 -1.7
baz=152
Y12C **Blythe** 65.47 320 P P 18 45 00.0 +1.7
baz=132
E37A **Wrenshall** 65.59 343 P P 18 44 57.0 -1.8
baz=156
F35A **Swanville** 65.60 341 P P 18 44 57.2 -1.7
baz=153,SNR=9.0
PDMCI **Parker Dam,Lak** 65.60 320 P P 18 45 00.3 +1.2
baz=132
G33A **Ortonville** 65.62 339 P P 18 44 57.4 -1.6
baz=151
VNA1 **Neumayer--Stat** 65.65 161 P P 18 45 00.7 +1.9
H31A **Wolsey** 65.72 338 P P 18 44 58.4 -1.2
baz=149
F34A **Alexandria** 65.76 341 P P 18 44 58.6 -1.3
baz=153
IKP **In-Ko-Pah, Jac** 65.76 318 P P 18 45 01.9 +1.6
baz=130
E36A **McGregor** 65.80 342 P P 18 44 58.4 -1.6
baz=155,SNR=18
SUSD **Miller** 65.86 337 P P 18 44 59.2 -1.3
baz=149
N23A **Red Feather La** 65.91 330 P P 18 45 01.7 +0.4
baz=141,SNR=9.9
BC3 **Big Chuckawall** 65.99 319 P P 18 45 03.1 +1.4
baz=131,SNR=9.8
PHWY **Pilot Hill** 66.00 331 eP P 18 45 02.4 +0.5
comp=N,4.9nm,0.6s
G32A **Webster** 66.04 339 P P 18 45 00.5 -1.2
baz=150
MONP2 **Monument Peak** 66.12 318 P P 18 45 04.3 +1.6
baz=130
IRM **Iron Mountain** 66.13 320 P P 18 45 04.0 +1.5
baz=131,SNR=21
F33A **5 Mile Ranch,** 66.14 340 P P 18 45 00.7 -1.6
baz=152,SNR=13
D37A **Cotton** 66.14 343 P P 18 45 00.7 -1.6
baz=156,SNR=7.2
E35A **Pequot Lakes** 66.17 341 P P 18 45 00.8 -1.7
baz=154
NEE2 **Needles Airpor** 66.21 320 P P 18 45 04.5 +1.5
baz=132
G31A **Conde** 66.26 338 P P 18 45 01.8 -1.3
baz=150
C38A **Sawbill Land.** 66.34 344 P P 18 45 01.4 -2.2
baz=157,SNR=6.3
D36A **Goodland** 66.37 343 P P 18 45 01.8 -1.8
baz=155
E34A **Wadena** 66.37 341 P P 18 45 02.1 -1.6
baz=153
F32A **Veblen** 66.45 339 P P 18 45 02.9 -1.3
baz=151
O20A **White River Ci** 66.45 328 P P 18 45 05.4 +0.7
baz=139,SNR=14
O20A **White River Ci** 66.45 328 eP P 18 45 05.3 +0.7
comp=N,50nm,1.1s
BELC **Belle Mtn. Jos** 66.56 319 P P 18 45 07.0 +1.6
baz=130,SNR=7.4
C37A **Embarrass** 66.59 344 P P 18 45 03.3 -1.8
baz=156,SNR=11
TPFO **Pinon Flats** 66.60 318 P P 18 45 07.2 +1.6
baz=130,SNR=6.2
PFO **Pinyon Flats O** 66.60 318 P P 18 45 07.8 +2.1
comp=N,8.4nm,0.8s
PFO **Pinyon Flats O** 66.60 318 P P 18 45 07.4 +1.7
baz=130,SNR=6.3
EYMN **Ely** 66.61 344 P P 18 45 03.1 -2.1
baz=157,SNR=8.3
E33A **Westby DABS, E** 66.63 340 P P 18 45 03.5 -1.9
baz=152
C36A **Pine Crest Far** 66.80 343 P P 18 45 04.8 -1.6
baz=155,SNR=17
F31A **Hecla** 66.83 339 P P 18 45 05.7 -0.9
baz=150
GMRC **Granite Mounta** 66.86 320 P P 18 45 08.8 +1.6
baz=131,SNR=25
D34A **Park Rapids** 66.89 341 P P 18 45 05.5 -1.5
baz=153
E32A **Braaten, Kindr** 67.06 340 P P 18 45 06.7 -1.3
baz=151
MURC **Murrieta** 67.07 318 P P 18 45 10.5 +2.0
baz=129
C35A **Jirik Farms, M** 67.08 342 P P 18 45 06.3 -1.8
baz=154,SNR=7.4
F30A **Leola** 67.08 338 P P 18 45 07.6 -0.7
baz=149
D33A **AnnSam, Waubun** 67.14 341 P P 18 45 07.2 -1.4
baz=152
E31A **Nome** 67.31 339 P P 18 45 08.6 -1.1
baz=150
C34A **RKJ Ranch, Bem** 67.31 342 P P 18 45 08.0 -1.7
baz=153
HEC **Hector,Ludlow** 67.31 319 P P 18 45 11.9 +1.9
baz=130,SNR=21
F29A **Eureka** 67.37 338 P P 18 45 09.5 -0.5
baz=148
TUQ **Turquoise Moun** 67.45 320 P P 18 45 12.4 +1.4
baz=131,SNR=6.6
LIC **Lamto** 67.51 76 eP P 18 45 09.9 -1.7
comp=N,53nm,1.4s
D32A **Dogwood Acres,** 67.52 340 P P 18 45 09.6 -1.3
baz=151
K22A **Casper** 67.55 331 P P 18 45 11.7 +0.2
baz=141,SNR=7.7
K22A **Casper** 67.55 331 eP P 18 45 11.6 +0.2
comp=N,4.9nm,0.6s
B35A **Bob, Littlefor** 67.60 343 P P 18 45 09.5 -1.9
baz=155,SNR=17
RSSD **Black Hills** 67.62 334 P P 18 45 12.3 +0.3
baz=144
RSSD **Black Hills** 67.62 334 eP P 18 45 11.8 -0.1
comp=N,14nm,0.9s
SNAA **Sanae** 67.66 162 P P 18 45 12.7 +1.1
TIC **Toumodi** 67.66 76 eP P 18 45 12.1 -0.5
C33A **Trail** 67.67 341 P P 18 45 10.3 -1.5
baz=152
D31A **Mcclaflin, Tow** 67.67 340 P P 18 45 10.7 -1.2
baz=150
RRX **Edison Barstow** 67.76 319 P P 18 45 14.9 +2.2
baz=130
BFSC **Mount Baldy Ra** 67.77 318 P P 18 45 14.4 +1.5
baz=129,SNR=5.3
DBIC **Dimbokro** 67.82 76 P P 18 45 12.2 -1.3
comp=N,3.5nm,0.4s,baz=240,slow=4.3,SNR=17
KIC **Kosan Boka** 67.82 76 eP P 18 45 12.2 -1.4
comp=N,27nm,0.7s
H25A **Fruitdale** 67.84 334 P P 18 45 13.4 +0.3
baz=144
GSC **Goldstone, Bar** 67.91 320 P P 18 45 15.4 +1.7
baz=130,SNR=10
C32A **Crookston** 67.97 341 P P 18 45 11.1 -2.6
baz=152
SHOC **Shoshone, Teco** 67.97 320 P P 18 45 15.4 +1.3
baz=131
B34A **Aery, Baudette** 67.98 342 P P 18 45 12.1 -1.6
baz=154
B33A **Robert and Kas** 68.07 342 P P 18 45 12.5 -1.8
baz=153
AGMN **Agassiz Nation** 68.18 341 P P 18 45 13.5 -1.5
baz=152,SNR=14
AGMN **Agassiz Nation** 68.18 341 eP P 18 45 13.5 -1.5
comp=N,27nm,0.8s
C31A **Landman Farms,** 68.33 340 P P 18 45 14.8 -1.2
baz=150,SNR=6.8
EDW2 **Edwards Air Fo** 68.39 319 P P 18 45 18.1 +1.3
baz=129,SNR=10.0
B32A **Ashes, Strandq** 68.47 341 P P 18 45 15.3 -1.5
baz=152,SNR=7.1
LRMC **Laurel Mtn Rad** 68.57 319 P P 18 45 19.4 +1.5
baz=130,SNR=7.1
BLG **Laguna Peak, P** 68.60 317 P P 18 45 19.8 +1.8
baz=128
A33A **Warroad** 68.60 342 P P 18 45 16.2 -1.4
baz=153,SNR=9.4
TPNV **Topopah Spring** 68.64 321 P P 18 45 20.2 +1.9
baz=131,SNR=37
OSI **Osito Audit: C** 68.69 318 P P 18 45 19.9 +1.3
baz=128
FURC **Furnace Creek,** 68.70 320 P P 18 45 20.3 +1.8
baz=130,SNR=32
MPMC **Manual Prospec** 68.82 320 P P 18 45 20.8 +1.3
baz=130,SNR=17
DUG **Dugway, Tooele** 68.89 326 P P 18 45 20.9 +1.2
baz=135,SNR=16
DUG **Dugway, Tooele** 68.89 326 eP P 18 45 20.7 +0.9
comp=N,39nm,1.2s
A32A **Rocking H Ranc** 68.92 341 P P 18 45 17.7 -1.9
baz=152
MDND **Maddock** 69.01 339 P P 18 45 19.5 -0.7
baz=149,SNR=5.3
DAC **Darwin (Calif)** 69.03 320 eP P 18 45 22.1 +1.3
comp=N,25nm,0.9s
BW06 **Boulder Array** 69.08 330 P P 18 45 20.8 -0.2
baz=138,SNR=14
BW06 **Boulder Array** 69.08 330 eP P 18 45 20.8 -0.2
comp=N,22nm,1.2s
PDAR **Pinedale Array** 69.08 330 P P 18 45 20.9 -0.1
comp=N,4.1nm,0.6s,baz=120,slow=7.4,SNR=28
B30A **Myrvik Farm, E** 69.10 340 P P 18 45 19.2 -1.5
baz=150
R11A **Troy Canyon, C** 69.18 323 P P 18 45 23.3 +1.6
baz=132,SNR=23
R11A **Troy Canyon, C** 69.18 323 eP P 18 45 23.2 +1.6
comp=N,30nm,1.1s
ISA **Isabella, Lake** 69.19 319 P P 18 45 23.4 +1.8
baz=129,SNR=6.5
HWUT **Hardware Ranch** 69.24 328 eP P 18 45 22.2 +0.3
comp=N,51nm,1.3s
GRAC **Grapevine Rang** 69.35 321 P P 18 45 24.6 +2.1
baz=130
D26A **Manning** 69.35 337 P P 18 45 22.1 -0.3
baz=146
A30A **Hoffart Farm,** 69.51 340 P P 18 45 22.1 -1.2
baz=150
PKM **Mcpherson Peak** 69.57 318 P P 18 45 25.8 +1.7
baz=128,SNR=7.3
VES **Vestal, Richgr** 69.69 319 P P 18 45 26.4 +1.9
baz=128
B28A **Dugan Ranch, T** 69.79 339 P P 18 45 24.2 -0.8
baz=148,SNR=5.5
A29A **Manning Farm,** 69.81 340 P P 18 45 23.8 -1.2
baz=149,SNR=13
AHID **Auburn Hatcher** 69.85 329 eP P 18 45 26.0 +0.3
comp=N,25nm,0.8s
TIN **Tinemaha, Big** 69.92 320 P P 18 45 28.1 +2.0
baz=130
ULM **Lac du Bonnet** 69.92 342 P P 18 45 24.1 -1.5
comp=N,33nm,0.7s,baz=150,slow=5.8,SNR=41
SMMC **Simmler** 69.94 318 P P 18 45 28.3 +2.1
baz=128
RCTC **Rector, Farmer** 70.08 319 P P 18 45 28.0 +1.1
baz=129
REDW **Red Top Meadow** 70.16 329 eP P 18 45 27.9 +0.3
comp=N,6.7nm,0.7s
SNOW **Snow King Moun** 70.19 329 eP P 18 45 28.6 +0.8
comp=N,12nm,0.8s
LOHW **Long Hollow** 70.22 330 eP P 18 45 28.4 +0.4
comp=N,6.5nm,0.5s
TPAW **Teton Pass** 70.30 329 eP P 18 45 28.6 +0.1
comp=N,16nm,0.8s
MOOW **Moose Ponds** 70.39 330 eP P 18 45 29.4 +0.4
comp=N,12nm,1.1s
SCHQ **Schefferville** 70.57 2 P P 18 45 28.4 -1.1
comp=N,11nm,0.8s,baz=201,slow=5.4,SNR=7.2
IMW **Indian Meadow** 70.60 330 eP P 18 45 30.6 +0.3
comp=N,35nm,1.1s
FLWY **Flagg Ranch** 70.62 330 eP P 18 45 31.4 +1.0
comp=N,48nm,0.9s
MLAC **Mammoth, Mammo** 70.66 320 P P 18 45 32.6 +1.9
baz=129
RLMT **Red Lodge** 70.72 331 P P 18 45 31.4 +0.4
baz=139,SNR=8.6
RLMT **Red Lodge** 70.72 331 eP P 18 45 31.5 +0.6
comp=N,24nm,1.1s
A26A **Wade Farm, Ken** 70.76 338 P P 18 45 29.9 -0.9
baz=147
H17A **Grant Village** 70.79 330 eP P 18 45 33.4 +2.0
comp=N,7.7nm,0.7s
A25A **Svangstu Ranch** 71.19 337 P P 18 45 33.3 -0.1
baz=146
DGMT **Dagmar** 71.21 336 P P 18 45 33.4 -0.1
baz=144
HLID **Hailey** 72.11 327 P P 18 45 40.4 +1.2
baz=134,SNR=28
HLID **Hailey** 72.11 327 eP P 18 45 40.1 +0.9
comp=N,25nm,1.0s
MCMT **McKenzie Canyo** 72.21 329 P P 18 45 41.1 +1.2
BOZ **Bozeman (W)** 72.22 330 P P 18 45 40.1 +0.3
baz=137,SNR=17
BOZ **Bozeman (W)** 72.22 330 eP P 18 45 39.9 +0.1
comp=N,18nm,1.3s
DLMT **Dillon** 72.48 330 eP P 18 45 41.9 +0.6
comp=N,24nm,1.4s
MFID **Camas Ranch** 72.75 327 eP P 18 45 44.1 +1.3
comp=N,52nm,1.0s
EGMT **Eagleton** 73.14 333 P P 18 45 45.1 0.0
baz=139
O03D **Paynes Creek** 74.12 321 P P 18 45 51.2 +0.3
baz=128
QSPA **South Pole Qui** 74.18 180 eP P 18 45 52.3 +1.4
comp=N,57nm,0.8s
MSO **Missoula** 74.18 330 P P 18 45 51.9 +0.7
baz=135,SNR=7.5
MOD **Modoc Plateau** 74.23 323 eP P 18 45 53.0 +1.3
comp=N,24nm,0.8s
BMO **Blue Mountains** 74.50 327 P P 18 45 53.9 +0.9
M04C **Macdoel** 75.06 322 P P 18 45 57.5 +1.2
baz=128,SNR=17
N02D **Trinity Center** 75.08 321 P P 18 45 56.5 +0.2
baz=127,SNR=9.2
M02C **Callahan** 75.42 321 P P 18 45 59.0 +0.7
baz=127,SNR=10.0
K04D **Chiloquin, OR** 75.53 323 P P 18 46 00.2 +1.3
baz=128
J05D **Fort Rock, OR** 75.64 324 P P 18 46 00.9 +1.3
baz=129
FFC **Flin Flon** 75.66 341 eP P 18 45 58.4 -0.8
comp=N,11nm,0.7s
KTRM **Thompson Ridge** 76.04 322 P P 18 46 03.5 +1.5
TORD **Torodi Ar. Bea** 76.11 72 P P 18 46 01.2 -1.4
comp=N,8.6nm,0.6s,baz=266,slow=5.6,SNR=57
HUMO **Hull Mountain** 76.22 322 eP P 18 46 03.1 +0.3
comp=N,18nm,0.5s
L02D **Cave Junction,** 76.33 322 P P 18 46 04.9 +1.6
baz=127,SNR=7.3
I05D **Terrebonne, OR** 76.36 325 P P 18 46 05.2 +1.7
baz=129,SNR=11
VTHM **Trough** 76.46 326 P P 18 46 06.2 +2.1
CROR **Criterion Ridg** 76.57 325 P P 18 46 06.8 +2.1
I04A **Tendick Farm,** 76.62 324 P P 18 46 06.0 +0.9
baz=128
IRO **Indian Ridge** 76.67 324 P P 18 46 06.5 +1.1
HAWA **Hanford** 76.69 327 eP P 18 46 06.6 +1.3
comp=N,5.5nm,0.8s
NEW **Newport** 76.73 330 P P 18 46 05.8 +0.3
baz=133
G05D **Wamic, OR** 76.91 325 P P 18 46 08.6 +2.0
baz=129,SNR=6.3
I03D **Drain, OR** 77.10 323 P P 18 46 09.1 +1.6
baz=127
TDH **Tom, Dick, Har** 77.20 325 P P 18 46 09.8 +1.5
ETW **Entiat** 77.90 328 P P 18 46 13.5 +1.4
F04D **Rainier, OR** 78.37 325 P P 18 46 16.7 +2.2
baz=128
C06D **Leavenworth** 78.39 328 P P 18 46 15.1 +0.4
baz=130
EDM **Edmonton** 78.56 335 eP P 18 46 14.5 -1.0
comp=N,54nm,1.0s
B05A **Bryant** 79.23 327 P P 18 46 19.5 +0.4
baz=129,SNR=9.2
NLWA **Neilton Lookou** 79.63 326 eP P 18 46 23.1 +1.7
comp=N,126nm,1.7s
PGC **Sidney** 80.18 327 eP P 18 46 25.7 +1.5
comp=N,18nm,0.8s
PAB **San Pablo** 82.02 45 eP P 18 46 33.7 -0.6
comp=N,3.1nm,0.6s
VNDA **Vanda** 82.16 190 P P 18 46 36.4 +2.1
comp=N,3.0nm,0.8s,baz=135,slow=5.2,SNR=24
TSUM **Tsumeb** 82.20 108 eP P 18 46 36.2 +0.4
comp=N,36nm,0.9s
ESDC **Sonseca Array** 82.34 45 P P 18 46 35.8 -0.1
comp=N,1.7nm,0.5s,baz=255,slow=5.3,SNR=17
BBB **Bella Bella** 84.67 328 P P 18 46 48.6 +1.3
comp=N,15nm,0.8s,baz=145,slow=21,SNR=4.5
YKA **Yellowknife Ar** 85.82 341 P P 18 46 52.4 -0.3
comp=N,19nm,0.8s,baz=131,slow=4.9,SNR=111
BOSA **Boshof** 86.55 119 P P 18 46 57.8 +0.4
comp=N,2.3nm,0.5s,baz=263,slow=4.6,SNR=9.1
WRAK **Wrangell Islan** 89.06 330 eP P 18 47 09.4 +1.1
comp=N,6.0nm,0.6s
DLBC **Dease Lake** 89.07 333 P P 18 47 09.7 +1.2
comp=N,21nm,0.8s,baz=99,slow=2.3,SNR=38
MAW **Mawson** 89.75 164 P P 18 47 13.0 +1.6
comp=N,14nm,0.7s,baz=216,slow=6.1,SNR=50
SUMG **Summit** 90.73 9 eP P 18 47 15.7 -0.6
comp=N,9.0nm,0.2s
INK **Inuvik** 95.59 340 P P 18 47 37.9 -0.3
comp=N,3.2nm,0.6s,baz=88,slow=3.1,SNR=5.4
GERES **GERESS Array B** 97.49 41 P P 18 47 46.3 -1.1
comp=N,0.5nm,0.7s,baz=224,slow=3.7,SNR=5.9
STKA **Stephens Creek** 123.84 212 PKP PKPdf 18 53 11.6 +0.9
comp=N,1.4nm,0.5s,baz=63,slow=3.2,SNR=8.8
SEY **Seymchan** 124.81 338 PKP PKPdf 18 53 12.8 +1.2
comp=N,2.8nm,0.6s,baz=109,slow=4.8,SNR=12
PETK **Petropavlovsk-** 127.76 326 PKP PKPdf 18 53 18.8 +1.3
comp=N,3.8nm,0.9s,baz=104,slow=5.0,SNR=7.1
GEYT **Alibeck** 129.19 54 SKPbc SKPbc 18 56 19.9 +0.1
comp=N,1.2nm,0.6s,baz=305,slow=5.2,SNR=4.0
BVAR **Borovoye Array** 131.49 31 PKP PKPdf 18 53 25.6 +1.1
comp=N,1.3nm,0.7s,baz=228,slow=1.8,SNR=6.3
BVAR SKPbc SKPbc 18 56 28.1 +0.3
comp=N,2.4nm,0.6s,baz=298,slow=3.2,SNR=11
YAK **Yakutsk** 132.04 348 SKPbc SKPab 18 56 30.3 -0.2
comp=N,5.7nm,0.5s,baz=228,slow=1.1,SNR=6.7
ASAR **Alice Springs** 134.43 211 PKP PKPdf 18 53 31.9 +0.7
comp=N,2.0nm,0.7s,baz=129,slow=1.8,SNR=19
KURK **Kurchatov** 136.93 29 PKP PKPdf 18 53 36.1 +1.3
KURBB **Kurchatov Arra** 136.95 30 PKP PKPdf 18 53 36.1 +1.2
comp=N,1.6nm,0.7s,baz=314,slow=2.6,SNR=15
ZALV **Zalesovo Beam** 137.15 22 PKP PKPdf 18 53 36.0 +0.9
comp=N,9.1nm,0.7s,baz=297,slow=3.0,SNR=37
ZALV SKPbc SKPbc 18 56 46.9 +0.8
comp=N,19nm,0.8s,baz=311,slow=4.3,SNR=55
WRA **Warramunga Arr** 137.29 214 PKP PKPdf 18 53 37.6 +1.1
comp=N,1.3nm,0.4s,baz=147,slow=1.8,SNR=23
WRA SKPbc SKPbc 18 56 48.0 +0.3
comp=N,6.6nm,0.8s,baz=146,slow=2.5,SNR=8.5
MKAR **Makanchi Array** 141.37 31 PKP PKPdf 18 53 43.2 +0.1
comp=N,1.0nm,0.7s,baz=325,slow=2.3,SNR=8.0

MKAR			SKPbc	**SKPbc**	**18 56 58.2**	**+0.3**
	comp=N,6.8nm,0.7s,baz=329,slow=2.8,SNR=33					
KLR	**Kul'dur**	**142.59 337**	PKhKP	PKPpre	18 53 41.4	
	comp=N,2.1nm,0.7s,baz=13,slow=3.5,SNR=7.8					
FITZ	**Fitzroy Crossi**	**142.99 204**	PKhKP	PKPpre	18 53 44.6	
	comp=N,4.6nm,0.6s,baz=146,slow=2.1,SNR=27					
HIA	**Hailar**	**145.96 349**	*e*PKPdf	**PKPbc**	**18 53 52.5**	**+0.3**
USRK	**Ussuriysk Ar.**	**146.49 331**	PKPbc	**PKPab**	**18 53 55.0**	**-0.3**
	comp=N,26nm,0.8s,baz=15,slow=2.7,SNR=28					
MDJ	**Mudanjiang**	**147.21 334**	*e*PKPbc	**PKPab**	**18 53 58.1**	**0.0**
MJAR	**Matsushiro Arr**	**147.99 315**	PKPbc	**PKPbc**	**18 53 59.2**	**+1.0**
	comp=N,12nm,0.8s,baz=91,slow=1.3,SNR=33					
MAJO	**Matsushiro**	**147.99 315**	*e*PKPbc	**PKPbc**	**18 53 58.9**	**+0.7**
MAT	**Matsushiro**	**147.99 315**	P	**PKPbc**	**18 53 59.0**	**+0.8**
SONM	**Songino Array**	**148.06 5**	PKPbc	**PKPbc**	**18 53 58.7**	**+0.6**
	comp=N,16nm,0.8s,baz=252,slow=1.1,SNR=93					
KSRS	**Korea Array**	**153.64 328**	PKP	**PKPdf**	**18 54 05.4**	**+2.0**
	comp=N,2.3nm,0.9s,baz=340,slow=1.5,SNR=7.7					
KSRS			PKPbc	**PKiKP**	**18 54 12.7**	**+1.2**
	comp=N,6.4nm,0.7s,baz=16,slow=1.9,SNR=20					
KSRS			PKPab	**PKPab**	**18 54 25.5**	**+0.6**
	comp=N,4.2nm,0.8s,baz=44,slow=4.6,SNR=7.3					
KSAR	**Wonju Array Be**	**153.67 328**	PKP	**PKPdf**	**18 54 05.4**	**+2.0**
KSAR			PKPbc	**PKiKP**	**18 54 12.7**	**+1.2**
KSAR			PKPab	**PKPab**	**18 54 25.5**	**+0.5**

*IDC **14** 18:42:35.9±0.9, 52°.09N×171°.74W, h0km, mb3.6/8, mb3 1.3/9, mb1mx3.5/71, mbtmp3.6/9, ML3.0/1, Error ellipse: s-maj=36.4km s-min=19.1km az=176.0*
*ISCJB **14** 18:42:40.8±0.6, 52°.0N±0°.1×171°.52W±0°.06, h44km, mb3.6/8, Error ellipse: s-maj=15.5km s-min=3.7km az=166.5*
*NEIC **14** 18:42:40.4, 51°.93N×171°.47W, h41km, ML3.6(AEIC), After AEIC.*

ISC 14 18:42:42.1±0.8, 52°.0N±0°.1×171°.54W±0°.05, h44km, n33, σ0s69/31, mb3.7/8, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**1.58**	**283**	P	**Pn**	**18 43 07.7**	**+0.2**
KOFP	**Korovin Flat P**	**1.58**	**280**	P	**Pn**	**18 43 07.6**	**-0.2**
KONE	**Korovin Northe**	**1.63**	**284**	P	**Pn**	**18 43 09.0**	**+0.8**
KOKV	**Korovin Volcan**	**1.65**	**283**	P	**Pn**	**18 43 08.5**	**-0.1**
KOKV				S	**Sn**	**18 43 29.2**	**+0.7**
KOKL	**Mount Kliuchef**	**1.67**	**281**	P	**Pn**	**18 43 09.1**	**+0.3**
NIKH	**Nikolski High**	**1.89**	**59**	P	**Pn**	**18 43 10.7**	**-1.2**
NIKH				S	**Sn**	**18 43 33.9**	**-0.6**
OKER	**Okmok East Rim**	**2.56**	**55**	P	**Pn**	**18 43 21.5**	**+0.5**
GSMY	**Great Sitkin M**	**2.79**	**272**	P	**Pn**	**18 43 24.7**	**+0.5**
GSTD	**Great Sitkin T**	**2.84**	**272**	P	**Pn**	**18 43 24.6**	**-0.4**
GSTD				S	**Sn**	**18 43 58.1**	**+0.1**
GSCK	**Great Sitkin C**	**2.86**	**271**	P	**Pn**	**18 43 24.4**	**-0.7**
ADAG	**Mount Adagdak**	**3.13**	**271**	P	**Pn**	**18 43 29.5**	**+0.7**
MSOM	**Makushin Julie**	**3.31**	**55**	P	**Pn**	**18 43 32.0**	**+0.8**
MTBL	**Makushin Table**	**3.52**	**55**	P	**Pn**	**18 43 34.6**	**+0.4**
UNV	**Unalaska Valle**	**3.55**	**57**	P	**Pn**	**18 43 34.3**	**-0.3**
UNV				S	**Sn**	**18 44 15.4**	**+0.2**
AKRB	**Akutan Reef Bi**	**3.91**	**55**	P	**Pn**	**18 43 40.1**	**+0.5**
AKGG	**Akutan Green G**	**3.99**	**55**	P	**Pn**	**18 43 41.2**	**+0.6**
TAFP	**Tanaga Falls P**	**3.99**	**271**	P	**Pn**	**18 43 41.5**	**+0.9**
SPIA	**Saint Paul Isl**	**5.21**	**8**	P	**Pn**	**18 43 58.0**	**+0.6**
PETK	**Petropavlovsk-**	**18.66**	**286**	P	**P**	**18 46 54.5**	**-1.5**
	0.2nm,0.3s,baz=84,slow=14,SNR=7.9						
YKA	**Yellowknife Ar**	**31.47**	**48**	P	**P**	**18 48 59.2**	**+0.2**
	0.2nm,0.3s,baz=276,slow=7.4,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**36.38**	**216**	T	T	19 28 12.0	
	baz=22,slow=76,SNR=25						
H11N3	**WAKE ISLAND Hy**	**36.38**	**216**	T	T	19 28 10.6	
	baz=22,slow=76,SNR=28						
H11N1	**WAKE ISLAND Hy**	**36.39**	**216**	T	T	19 28 11.7	
	baz=22,slow=76,SNR=22						
H11S1	**WAKE ISLAND Hy**	**37.57**	**215**	T	T	19 29 42.8	
	baz=21,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**37.59**	**215**	T	T	19 29 40.0	
	baz=21,slow=76,SNR=17						
H11S3	**WAKE ISLAND Hy**	**37.59**	**215**	T	T	19 29 39.0	
	baz=21,slow=76,SNR=18						
PDAR	**Pinedale Array**	**41.78**	**77**	P	**P**	**18 50 28.2**	**+1.0**
	1.3nm,0.6s,baz=299,slow=4.2,SNR=8.4						
TXAR	**Lajitas Array**	**54.09**	**87**	P	**P**	**18 52 03.0**	**+0.7**
	0.6nm,0.6s,baz=299,slow=3.4,SNR=6.8						
KURBB	**Kurchatov Arra**	**61.83**	**317**	P	**P**	**18 52 55.9**	**-0.2**
	0.1nm,0.6s,baz=50,slow=7.6,SNR=4.4						
MKAR	**Makanchi Array**	**63.06**	**312**	P	**P**	**18 53 03.4**	**-1.0**
	0.1nm,0.4s,baz=47,slow=8.1,SNR=3.3						
CMAR	**Chiang Mai Arr**	**75.38**	**281**	P	**P**	**18 54 20.1**	**-0.9**
	0.6nm,0.6s,baz=15,slow=7.4,SNR=5.7						
WRA	**Warramunga Arr**	**85.75**	**230**	P	**P**	**18 55 16.5**	**+0.1**
	0.4nm,0.9s,baz=10,slow=5.0,SNR=2.4						
ASAR	**Alice Springs**	**89.16**	**228**	P	**P**	**18 55 33.2**	**+0.5**
	0.7nm,0.6s,baz=23,slow=5.1,SNR=6.9						

*NEIC **14** 18:43:28.8, 19°.27N×64°.87W, h44km, MD3.7(RSPR), After RSPR.*

RSPR 14 18:43:28.8, 19°.27N×64°.87W, h44km±11km, MD3.7/12, 21C-6D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABV	**Anegada**	**0.74**	**137**	*e*P	Pn	18 43 42.5	-0.4
ABV	**Anegada**	**0.74**	**137**	*e*S	Sn	18 43 52.1	-0.8
ABVI	**Anegada Island**	**0.74**	**137**	*e*P	Pn	18 43 42.5	-0.4
ABVI				*e*S	Sn	18 43 52.1	-0.8
STVI	**Saint Thomas**	**0.92**	**185**	*e*P	Pn	18 43 44.0	-1.3
STVI	**Saint Thomas**	**0.92**	**185**	*e*P	Pn	18 43 44.1	-1.1
STVI				*e*S	Sn	18 43 56.1	-1.2
STVI	**Saint Thomas**	**0.92**	**185**	*e*S	Sn	18 43 56.0	-1.3
STVI	**Saint Thomas**	**0.92**	**185**	*e*P	Pn	18 43 44.0	-1.3
STVI				*e*P	Pn	18 43 44.1	-1.1
CBYP	**Canovanas**	**1.36**	**224**	*e*P	Pn	18 43 49.8	-1.6
CBYP	**Canovanas**	**1.36**	**224**	*e*P	Pn	18 43 49.8	-1.6
HUMP	**Col San Antoni**	**1.46**	**220**	*e*P	Pn	18 43 52.1	-0.6
HUMP	**Col San Antoni**	**1.46**	**220**	*e*P	Pn	18 43 51.3	-1.3
HUMP	**Col San Antoni**	**1.46**	**220**	*e*P	Pn	18 43 51.3	-1.3
HUMP				*e*S	Sn	18 44 09.6	-1.0
SJG	**San Juan**	**1.67**	**227**	*e*P	Pn	18 43 54.0	-1.6
SJG	**San Juan**	**1.67**	**227**	*e*P	Pn	18 43 54.0	-1.6
SJG				*e*S	Sn	18 44 15.4	-0.5
AOPR	**Arecibo Observ**	**2.01**	**243**	*e*P	Pn	18 43 59.5	-0.7
AOPR	**Arecibo Observ**	**2.01**	**243**	*e*P	Pn	18 43 59.5	-0.7
AOPR				*e*S	Sn	18 44 23.4	-0.7
OBIP	**Obispado Ponce**	**2.05**	**234**	*e*P	Pn	18 43 59.6	-1.2
OBIP	**Obispado Ponce**	**2.05**	**234**	*e*P	Pn	18 43 59.6	-1.2
OBIP				*e*S	Sn	18 44 24.1	-1.1
ICMP	**Isla Caja de M**	**2.09**	**229**	*e*P	Pn	18 44 01.1	-0.3
ICMP	**Isla Caja de M**	**2.09**	**229**	*e*P	Pn	18 44 01.1	-0.3
ICMP				*e*S	Sn	18 44 25.6	-0.5
AGPR	**Aguadilla, PR**	**2.27**	**250**	*e*P	Pn	18 44 03.2	-0.6
AGPR	**Aguadilla, PR**	**2.27**	**250**	*e*P	Pn	18 44 03.2	-0.6
AGPR				*e*S	Sn	18 44 29.4	-1.2
GBPR	**Guanica, Bosqu**	**2.30**	**236**	*e*P	Pn	18 44 04.4	+0.2
GBPR	**Guanica, Bosqu**	**2.30**	**236**	*e*P	Pn	18 44 04.4	+0.2
CRPR	**Cabo Rojo, PR**	**2.47**	**240**	*e*P	Pn	18 44 06.4	-0.1
CRPR	**Cabo Rojo, PR**	**2.47**	**240**	*e*P	Pn	18 44 06.4	-0.1
CRPR				*e*S	Sn	18 44 34.7	-0.8
IDE	**Isla Desecheo**	**2.62**	**251**	*e*P	Pn	18 44 07.4	-1.3
IDE	**Isla Desecheo**	**2.62**	**251**	*e*P	Pn	18 44 07.4	-1.3
SDDR	**Presa de Saban**	**6.08**	**268**	*e*Pn	Pn	18 44 55.9	-0.3
	16nm,0.4s						

*ISCJB **14** 18:49:22.6±0.1, 9°.75N±0°.02×122°.24E±0°.02, h10km, mb4.9/129, MS4.3/57, Error ellipse: s-maj=3.1km s-min=2.5km az=168.9*
*GCMT **14** 18:49:23.8±0.2, 9°.72N×122°.16E, h19km±1km, MW5.0/89, Moment Tensor Solution. s32,c42; s89,c151; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr 0.49±.13; Mθθ 2.92±.11; Mϕϕ 2.43±.10; Mrθ 0.74±.19; Mθϕ -2.17±.07; Mϕr -3.11±.32; Best double couple: M◎4.51700×10^16 NP1:ϕs209.00000°, δ72.00000°, λ30.00000°. NP2: ϕs109.00000°, δ62.00000°, λ160.00000°. Principal axes: T 5.3030, Plg33.0000°, Azm72.0000°; N -1.5750, Plg56.0000°, Azm237.0000°; P -3.7320, Plg7.0000°, Azm337.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **14** 18:49:23.8±0.2, 9°.70N×122°.30E, h10km, mb5.0/55 Error ellipse: s-maj=5.1km s-min=3.4km az=95.0*
NEIC Felt [III PIVS] at Sipalay and [II PIVS] at Jinoba-an. Also felt at Bacolod, Bais and Dumaguete. Felt [II PIVS] at Iloilo, Panay.
*MAN **14** 18:49:24.9°.65N×122°.24E, h6km, mb5.3, ML4.3, MS4.6*
*BJI **14** 18:49:24.2, 9°.33N×122°.43E, h46km, mb4.8/67, mB4.9/51, Ms4.8/80, Ms7 4.6/73*
*MOS **14** 18:49:25.1±0.9, 9°.70N×122°.35E, h33km, mb5.1/62, Error ellipse: s-maj=9.1km s-min=4.6km az=113.5*
*DJA **14** 18:49:25.5±0.3, 10°.N±3°×12°.2E±°, h10km, M5.0/30, mb5.0/30, mB5.5/23, MLv5.3/3, Mw(mB)4.9/23*
*IDC **14** 18:49:26.7±2.7, 9°.64N×122°.29E, h29km±18km, mb4.5/39, mb1 4.6/42, mb1mx4.5/58, mbtmp4.7/42, ML4.7/3, MS4.2/32, Ms1 4.2/32, ms1mx4.2/44, Error ellipse: s-maj=14.6km s-min=9.5km az=76.0*
*KLM **14** 18:49:34.3, 9°.41N×121°.90E, h43km, mb5.0, MS5.6*

ISC 14 18:49:25.2±0.5, 9°.69N±0°.02×122°.26E±0°.03, h18km±1km, n376, σ1s73/423, mb5.0/129, MS4.3/59, 32C-33D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.02**	**110**	↑*i*P	Pg	18 49 38.7	-6.4
SNPH				*i* S	**Sg**	**18 49 55.3**	**-3.3**
JAP	**San Jose, Anti**	**1.09**	**344**	↑*i*P	**Pg**	**18 49 44.7**	**-1.7**
TBP	**Tagbilaran**	**1.58**	**90**	↓*i*P	**Pn**	**18 49 53.4**	**+1.1**
LLP	**Lapu-Lapu**	**1.79**	**70**	↑*i*P	**Pn**	**18 49 55.8**	**+0.6**
LLP				*e*S	**Sg**	**18 50 23.5**	**+0.5**
RCP	**Roxas**	**1.92**	**14**	↓*e*P	**Pn**	**18 49 58.1**	**+1.2**
RCP				*e*S	**Sb**	**18 50 24.4**	**+1.2**
KALP	**Kalibo**	**1.97**	**2**	↑*e*P	**Pn**	**18 49 59.6**	**+1.9**
CGP	**Cagayan de Oro**	**2.70**	**117**	↑*e*P	**Pn**	**18 50 09.1**	**+1.3**
CGP				*i* S	**Sb**	**18 50 45.6**	**-0.2**
MMPH	**Masbate**	**2.97**	**27**	*e*P	**Pb**	**18 50 16.2**	**-1.3**
MMPH				*e*S	**Sb**	**18 50 52.9**	**-0.6**
PLP	**Palo**	**3.05**	**61**	↓*i*P	**Pn**	**18 50 13.4**	**+0.9**
PLP				*i* S	**Sn**	**18 50 52.0**	**+3.4**
CTBH	**Cotabato--PC H**	**3.15**	**141**	*e*P	**Pn**	**18 50 15.5**	**+1.6**
CTBH				*i* S	**Sn**	**18 50 49.3**	**-1.7**
PPR	**Puerto Princes**	**3.48**	**272**	↓*e*P	**Pn**	**18 50 17.1**	**-1.3**
PPR				*e*S	**Sn**	**18 50 57.7**	**-1.6**
KCP	**Kidapawan**	**3.87**	**133**	↓*e*P	**Pn**	**18 50 27.2**	**+3.4**
DMPH	**Davao City--Mi**	**4.13**	**129**	↓*e*P	**Pg**	**18 50 44.5**	**+0.2**
GQP	**Guinayangan**	**4.19**	**2**	↓*e*P	**Pn**	**18 50 29.1**	**+0.9**
GQP				*e*S	**Sn**	**18 51 18.9**	**+2.2**
DAV	**Davao City (W)**	**4.19**	**128**	Pn	**Pn**	**18 50 29.8**	**+1.5**
	82nm,0.3s,baz=30,slow=4.7,SNR=8.8						
DAV	**Davao City (W)**	**4.19**	**128**	*e*Pn	**Pn**	**18 50 32.0**	**+3.7**
BIPH	**Bislig**	**4.32**	**110**	↓*i*P	**Pn**	**18 50 34.0**	**+4.0**
BIPH				*i* S	**Sn**	**18 51 22.1**	**+2.2**
LQP	**Lukban**	**4.45**	**351**	↓*e*P	**Pn**	**18 50 35.5**	**+3.5**
TGY	**Tagaytay City**	**4.57**	**344**	Pn	**Pn**	**18 50 35.0**	**+1.5**
	36nm,0.3s,baz=289,slow=8.1,SNR=4.0						
TGY				Sn	**Sn**	**18 51 30.8**	**+4.5**
	137nm,0.3s,baz=193,slow=17,SNR=3.2						
TGY				LR	LR	18 52 33.7	
	comp=Z,5μm,20.1s,baz=160,slow=40						
TGY	**Tagaytay City**	**4.57**	**344**	↓*i*P	**Pn**	**18 50 34.9**	**+1.3**
MYLDM	**Lahad Datu**	**5.83**	**220**	↑*i*P	**Pn**	**18 50 52.5**	**+1.6**
MYLDM	**Lahad Datu**	**5.83**	**220**	*e*Pn	**Pn**	**18 50 51.8**	**+0.9**
KDM	**Kudat**	**6.04**	**243**	↑*i*P	**Pn**	**18 50 53.9**	**+0.2**
KKM	**Kota Kinabalu**	**7.00**	**239**	*e*Pn	**Pn**	**18 51 05.9**	**-1.1**
GTOI	**Gorontalo**	**9.03**	**175**	P	**Pn**	**18 51 33.8**	**-0.9**
MRSI	**Marisa**	**9.16**	**182**	P	**Pn**	**18 51 38.6**	**+2.0**
KMSI	**Cibinong**	**9.22**	**169**	P	Pn	18 51 42.5	+5.1
LUWI	**Luwuk**	**10.68**	**177**	*e*Pn	**Pn**	**18 52 01.6**	**+4.2**
	182nm,0.8s						
PCI	**Palu**	**10.80**	**193**	P	**Pn**	**18 52 02.1**	**+3.0**
	50nm,1.1s,619nm						
PCI	**Palu**	**10.80**	**193**	P	**Pn**	**18 52 02.2**	**+3.1**
PCI				pmax	pmax		
	comp=Z,50nm,1.1s						
LBMI	**Labuha**	**11.51**	**153**	P	**Pn**	**18 52 07.6**	**-1.2**
SANI	**Sanana**	**12.24**	**162**	P	**Pn**	**18 52 19.7**	**+0.9**
SBUM	**Sibu**	**12.30**	**235**	↓P	**Pn**	**18 52 21.0**	**+1.3**
SBUM	**Sibu**	**12.30**	**235**	*e*Pn	**Pn**	**18 52 19.5**	**-0.1**
MTKI	**Muara Teweh, K**	**12.86**	**215**	P	Pn	18 52 42.9	+16
TTSI	**Tana Toraja**	**12.89**	**191**	P	**Pn**	**18 52 31.2**	**+3.6**
TWG	**Pinlang**	**13.10**	**355**	*e*Pn	**Pn**	**18 52 32.1**	**+1.6**
KDI	**Kendari**	**13.57**	**178**	P	**Pn**	**18 52 38.5**	**+1.6**
TPUB	**Ta-pu**	**13.62**	**354**	*e*Pn	**P**	**18 52 44.1**	**-2.3**
YULB	**Yu-li**	**13.65**	**356**	*e*Pn	**Pn**	**18 52 39.4**	**+1.4**
NLAI	**Namlea**	**13.72**	**159**	P	**P**	**18 52 44.6**	**-3.0**
	comp=Z,73nm,1.3s,comp=Z,945nm						
SPSI	**Sidrap Palu**	**13.79**	**190**	P	**P**	**18 52 46.0**	**-2.3**
	comp=Z,19nm,0.9s,comp=Z,814nm						
SSLB	**Sungilung**	**14.07**	**355**	*e*Pn	**Pn**	**18 52 47.7**	**+4.0**
STKI	**Sintang**	**14.38**	**229**	P	**Pn**	**18 52 49.4**	**+1.4**
KSM	**Kuching**	**14.42**	**236**	*e*Pn	**P**	**18 52 56.9**	**+1.6**
KAPI	**Kappang**	**14.82**	**190**	Pn	**Pn**	**18 52 53.4**	**-0.6**
	comp=Z,2.2nm,0.3s,baz=34,slow=9.4,SNR=6.3						
KAPI				LR	LR	18 58 46.9	
	comp=Z,1μm,20.0s,baz=16,slow=38						
KAPI	**Kappang**	**14.82**	**190**	*e*Pn	**Pn**	**18 52 55.3**	**+1.3**
KAPI				*e*sP		18 53 16.0	
YHNB	**Yeheng**	**14.92**	**357**	*e*Pn	**P**	**18 53 02.5**	**+1.6**
BBKI	**Banjar Baru**	**15.02**	**210**	P	**P**	**18 53 00.2**	**-1.8**
	comp=Z,97nm,1.8s,comp=Z,2μm						
QIZ	**Qiongzhong**	**15.18**	**309**	P	**Pn**	**18 52 59.8**	**+0.9**
QIZ				S	**Sn**	**18 55 48.4**	**+1.7**
QIZ				LR	LR		
	comp=Z,4μm,13.7s						
QIZ				LR	LR		
	comp=Z,3μm,17.0s						
QIZ				LR	LR		
	comp=Z,3μm,13.8s						
QIZ	**Qiongzhong**	**15.18**	**309**	*e*Pn	**Pn**	**18 52 59.0**	**+0.1**
QZH	**Quanzhou**	**15.56**	**347**	↑*i*P	**Pn**	**18 53 00.8**	**-3.0**
QZH				S	**Sn**	**18 55 50.0**	**-5.8**
QZH				pmax	pmax		
	comp=Z,170nm,0.8s						
QZH				LR	LR		
	comp=N,2μm,14.4s						
QZH				LR	LR		
	comp=E,2μm,12.8s						
QZH				LR	LR		
	comp=Z,3μm,20.5s						
GZH	**Guangzhou**	**15.82**	**328**	P	**P**	**18 53 15.9**	**+5.1**
GZH				S	**S**	**18 56 19.8**	**+3.4**
GZH				pmax	pmax		
	comp=Z,190nm,1.3s						
FAKI	**Fak Fak**	**16.00**	**141**	P	**P**	**18 53 19.6**	**+6.7**
FAKI	**Fak Fak**	**16.00**	**141**	*e*Pn	**P**	**18 53 12.2**	**-0.7**
	comp=Z,140nm,1.3s						
PBKI	**Pangkalan Bun**	**16.22**	**221**	P	**P**	**18 53 16.0**	**+0.7**
	comp=Z,183nm,1.3s,comp=Z,4μm						
JOW	**Kunigami**	**17.97**	**18**	*e*Pn	**P**	**18 53 36.1**	**+1.4**
	comp=Z,33nm,0.7s						
MMRI	**Maumere**	**18.21**	**180**	P	**P**	**18 53 40.3**	**+3.0**
MMRI	**Maumere**	**18.21**	**180**	*e*P	**P**	**18 53 39.7**	**+2.4**
	comp=Z,586nm,1.7s						
PLAI	**Plampang**	**18.93**	**194**	P	**Pn**	**18 53 47.6**	**+1.6**
SRBI	**Singaraja**	**19.00**	**202**	P	**Pn**	**18 53 50.1**	**+3.2**
	comp=Z,75nm,1.4s,comp=Z,2μm						
TWSI	**Taliwang, Sumb**	**19.08**	**196**	P	**Pn**	**18 53 51.0**	**+3.3**
SOEI	**Soe**	**19.42**	**174**	P	**Pn**	**18 53 53.8**	**+1.8**
SOEI	**Soe**	**19.42**	**174**	*e*P	**Pn**	**18 53 53.1**	**+1.1**
	comp=Z,106nm,1.0s						
TPRI	**Tanjung Pinang**	**19.68**	**245**	P	**Pn**	**18 53 56.1**	**+1.1**
	comp=Z,47nm,1.6s,comp=Z,5μm						
JAGI	**Jajag, Banyuwa**	**19.77**	**204**	P	**Pn**	**18 53 59.8**	**+3.8**
	comp=Z,59nm,1.3s,comp=Z,1μm						
JAGI	**Jajag, Banyuwa**	**19.77**	**204**	*e*P	**Pn**	**18 53 55.5**	**-0.5**
	comp=Z,180nm,1.6s						
PPBI	**Pangkal Pinang**	**19.92**	**235**	P	**Pn**	**18 53 57.7**	**-0.1**
	comp=Z,86nm,1.8s						
MYKOM	**Kota Tinggi**	**19.92**	**248**	*e*P	**Pn**	**18 53 57.4**	**-0.4**
	comp=Z,143nm,1.4s						
NGJI	**Ngawi**	**20.07**	**213**	P	Pn	18 54 02.8	+3.1
	comp=Z,143nm,1.1s						
KGM	**Kluang**	**20.32**	**249**	↓P	Pn	18 54 02.1	-0.4
PWJI	**Pagerwojo**	**20.45**	**211**	P	Pn	18 54 05.0	+0.9
WOJI	**Wonogiri, Jawa**	**20.76**	**213**	P	Pn	18 54 07.8	+0.2
	comp=Z,241nm,1.4s,comp=Z,3μm						
PCJI	**Pacitan**	**20.92**	**212**	P	Pn	18 54 11.9	+2.4
	comp=Z,111nm,1.1s						
SSE	**Sheshan**	**21.32**	**357**	P	**P**	**18 54 11.5**	**+0.4**
SSE				S	**S**	**18 58 07.0**	**-0.3**
SSE				sS	Sn	18 58 20.6	+5.7
SSE				pmax	pmax		
	comp=Z,26nm,0.8s						
SSE				pmax	pmax		
	comp=Z,32nm,2.6s						
SSE				LR	LR		
	comp=Z,820nm,20.2s						
SSE				LR	LR		
	comp=Z,550nm,20.2s						
SSE				LR	LR		
	comp=Z,980nm,20.9s						
FRIM	**Kepong**	**21.47**	**254**	↑P	**P**	**18 54 14.8**	**+1.8**
GENI	**Genyem**	**21.61**	**124**	P	**P**	**18 54 18.2**	**+3.7**
	comp=Z,68nm,1.1s,comp=Z,2μm						
IPM	**Ipoh**	**21.69**	**258**	*e*P	**P**	**18 54 15.8**	**+0.5**
	comp=Z,74nm,0.9s						
KULM	**Kulim**	**21.86**	**260**	*e*P	**P**	**18 54 18.0**	**+0.8**
	comp=Z,66nm,1.0s						
LEM	**Lembang**	**21.96**	**222**	P	**P**	**18 54 20.9**	**+2.6**
JAY	**Jayapura**	**22.02**	**123**	LR	LR	19 03 20.6	
	comp=Z,17nm,19.5s,baz=352,slow=38						
WHN	**Wuhan**	**22.02**	**342**	↑P	**P**	**18 54 22.1**	**+3.4**
WHN				sP	sP	18 54 37.0	+11
WHN				S	**S**	**18 58 23.1**	**+2.2**
WHN				LR	LR		
	comp=Z,1μm,17.0s						
WHN				LR	LR		
	comp=Z,2μm,13.6s						
WHN				LR	LR		
	comp=Z,3μm,15.6s						
CBJI	**Citeko**	**22.18**	**224**	P	P	18 54 27.9	+7.3
GYA	**Guiyang**	**22.27**	**321**	↑*i*P	**P**	**18 54 22.8**	**+1.2**
GYA				pP	sP	18 54 32.6	+3.4
GYA				PP	**PnPn**	**18 54 52.0**	**+7.6**
GYA				S	**S**	**18 58 30.4**	**+4.3**
GYA				sS	Sn	18 58 40.8	+2.7
GYA				SS	**SnSn**	**18 59 03.3**	**+9.4**
GYA				pmax	pmax		
	comp=Z,50nm,1.0s						
GYA				pmax	pmax		
	comp=Z,210nm,5.0s						
GYA				LR	LR		
	comp=Z,2μm,14.3s						
GYA				LR	LR		
	comp=Z,870nm,13.7s						
GYA				LR	LR		
	comp=Z,980nm,17.7s						
DBJI	**Dramaga**	**22.35**	**224**	P	P	18 54 32.0	+10
CISI	**Cisompet, Garu**	**22.38**	**221**	P	**P**	**18 54 27.4**	**+4.7**
CISI	**Cisompet, Garu**	**22.38**	**221**	*e*P	**P**	**18 54 24.1**	**+1.4**
	comp=Z,181nm,1.2s						
NJ2	**Nanjing**	**22.47**	**352**	*e*P	**P**	**18 54 24.8**	**+1.3**
NJ2				pP	sP	18 54 33.8	+2.7
NJ2				S	**S**	**18 58 31.6**	**+2.2**
NJ2				sS	Sn	18 58 46.8	+4.2
NJ2				pmax	pmax		
	comp=Z,21nm,0.7s						
NJ2				pmax	pmax		
	comp=Z,590nm,3.8s						
NJ2				LR	LR		
	comp=Z,1μm,16.8s						
NJ2				LR	LR		
	comp=Z,780nm,14.6s						
NJ2				LR	LR		
	comp=Z,1μm,19.0s						
GUMO	**Guam**	**22.47**	**78**	LR	LR	19 03 40.7	
	comp=Z,633nm,19.2s,baz=264,slow=38						
CNJI	**Cibinong**	**22.64**	**222**	P	**P**	**18 54 26.7**	**+1.3**
SKJI	**Sukabumi**	**22.80**	**224**	P	**P**	**18 54 30.1**	**+2.9**
LHSI	**Lahat**	**23.00**	**235**	P	**P**	**18 54 31.6**	**+2.4**
	comp=Z,64nm,1.9s,comp=Z,2μm						
BKNI	**Bangkinang**	**23.08**	**247**	P	**P**	**18 54 28.5**	**-1.6**
BKNI	**Bangkinang**	**23.08**	**247**	*e*P	**P**	**18 54 30.6**	**+0.6**
	comp=Z,234nm,1.0s						
CGJI	**Cibinong**	**23.13**	**226**	P	**P**	**18 54 33.0**	**+2.4**
SDSI	**Sungai Dareh**	**23.27**	**244**	P	**P**	**18 54 30.7**	**-1.4**
LWLI	**Liwa**	**23.29**	**232**	P	**P**	**18 54 34.6**	**+2.2**
	comp=Z,131nm,1.3s,comp=Z,2μm						
ENH	**Enshi**	**23.69**	**332**	*e*P	**P**	**18 54 35.6**	**-0.5**
	comp=Z,21nm,0.8s						
MTN	**Manton Dam**	**24.06**	**158**	P	**P**	**18 54 41.0**	**+1.4**
	baz=24,SNR=4.7						
MTN	**Manton Dam**	**24.06**	**158**	*e*P

KSAR **Wonju Array Be** 28.09 10 P P 18 55 15.8 -0.1
KSAR **Wonju Array Be** 28.09 10 P P 18 55 15.8 -0.1
KSRS **Korea Array** 28.11 10 P P 18 55 15.8 -0.2
comp=Z,3.9nm,0.9s,baz=180,slow=9.1,SNR=6.6
KSRS LR LR 19 06 19.6
comp=Z,470nm,21.4s,baz=191,slow=36
JHJ **Hachijo jima 2** 28.36 32 LR LR 19 04 57.9
comp=Z,576nm,21.2s,baz=258,slow=33
INU **Inuyama** 28.87 26 *e*P P 18 55 21.1 -1.7
comp=Z,14nm,1.1s
MJAR **Matsushiro Arr** 30.39 26 P P 18 55 35.1 -1.3
comp=Z,1.7nm,0.9s,baz=194,slow=9.4,SNR=4.7
MJAR LR LR 19 07 16.8
comp=Z,580nm,19.6s,baz=210,slow=35
BJT **Baijiatuau** 30.68 351 *e*P P 18 55 39.3 +0.4
BJT **Baijiatuau** 30.68 351 *e*P P 18 55 39.3 +0.4
BJI **Beijing** 30.70 351 P P 18 55 39.1 +0.1
BJI pP sP 18 55 50.1 +3.2
BJI sP pP 18 55 56.3 +12
BJI S **S** 19 00 37.9 -3.0
BJI sS sS 19 01 01.9 +12
BJI pmax pmax
comp=Z,11nm,1.4s
BJI pmax pmax
comp=Z,100nm,5.1s
BJI LR LR
comp=Z,750nm,22.1s
BJI LR LR
comp=Z,640nm,28.7s
MBWA **Marble Bar** 30.76 185 *e*P P 18 55 39.0 -0.7
LZH **Lanzhou** 31.15 330 *e*P P 18 55 44.1 +0.8
LZH pP sP 18 55 55.5 +4.3
LZH sP pP 18 56 02.1 +13
LZH *e*S **S** 19 00 47.4 -1.1
LZH sS sS 19 01 05.3 +7.6
LZH pmax pmax
comp=Z,36nm,1.1s
LZH pmax pmax
comp=Z,150nm,4.0s
LZH LR LR
comp=Z,1μm,13.7s
LZH LR LR
comp=Z,1μm,14.2s
LZH LR LR
comp=Z,2μm,15.2s
PMG **Port Moresby** 31.21 127 LR LR 19 10 25.1
comp=Z,279nm,18.1s,baz=304,slow=40
WRAB **Tennant Creek** 31.76 158 *ce*P P 18 55 46.5 -2.0
WRAB pmax pmax
comp=Z,40nm,1.2s
WRAB **Tennant Creek** 31.76 158 *e*P P 18 55 46.8 -1.7
comp=Z,7.1nm,0.6s
WRA **Warramunga Arr** 31.76 158 P P 18 55 47.2 -1.3
comp=Z,24nm,1.3s,baz=339,slow=9.5,SNR=18
WRA PcP **PcP** 18 58 39.2 -0.7
comp=Z,3.4nm,0.8s,baz=335,slow=3.2,SNR=8.0
WRA ScP **ScP** 19 02 19.0 -3.5
comp=Z,1.4nm,0.9s,baz=344,slow=3.9,SNR=5.4
WRA **Warramunga Arr** 31.76 158 P P 18 55 47.2 -1.3
WRA 18 58 39.2
WRA pmax pmax
comp=Z,6.0nm,0.7s
WB2 **Warramunga Arr** 31.77 158 *e*P P 18 55 47.0 -1.6
comp=Z,75nm,1.8s
WC4 **Warramunga Arr** 31.78 158 P P 18 55 47.9 -0.8
baz=32
HHC **Hu-ho-hao-te** 32.45 345 *e*P P 18 55 55.3 +0.8
HHC pP sP 18 56 07.1 +4.7
HHC sP pP 18 56 12.8 +13
HHC S **S** 19 01 08.5 +0.1
HHC pmax pmax
comp=Z,16nm,0.9s
HHC pmax pmax
comp=Z,87nm,6.4s
HHC LR LR
comp=Z,860nm,14.7s
HHC LR LR
comp=Z,930nm,15.8s
HHC LR LR
comp=Z,760nm,20.1s
CN2 **Changchun** 34.09 4 *e*P P 18 56 08.1 -0.6
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 LR LR
comp=Z,500nm,18.0s
CN2 LR LR
comp=Z,500nm,18.0s
CN2 LR LR
comp=Z,400nm,18.0s
WRKA **Warakurna** 35.02 170 P P 18 56 16.9 -0.1
baz=35,SNR=10
AS31 **Alice Springs** 35.05 161 *e*P P 18 56 16.7 -0.6
comp=Z,6.0nm,0.6s
ASAR **Alice Springs** 35.06 161 P P 18 56 16.5 -0.8
comp=Z,11nm,0.6s,baz=340,slow=7.1,SNR=146
ASAR PcP **PcP** 18 58 48.4 -0.8
comp=Z,3.6nm,0.8s,baz=356,slow=2.4,SNR=7.6
ASAR ScP **ScP** 19 02 31.9 -2.1
comp=Z,1.1nm,0.9s,baz=325,slow=2.0,SNR=4.6
ASAR LR LR 19 12 47.6
comp=Z,217nm,19.3s,baz=339,slow=40
ASAR **Alice Springs** 35.06 161 P P 18 56 16.5 -0.8
ASAR 18 58 48.4
ASAR pmax pmax
comp=Z,10.0nm,0.6s
ASAR MLR MLR
comp=Z,217nm,19.3s
AS01 **Alice Springs** 35.07 161 *e*P P 18 56 16.7 -0.7
LSA **Lhasa** 35.23 309 *e*P P 18 56 19.9 +0.6
LSA pmax pmax
comp=Z,7.0nm,0.6s
LSA **Lhasa** 35.23 309 *e*P P 18 56 19.9 +0.6
comp=Z,7.5nm,0.6s
MDJ **Mudanjiang** 35.37 9 P P 18 56 19.9 +0.2
MDJ pP sP 18 56 30.9 +3.3
MDJ sP pP 18 56 36.0 +11
MDJ PP **PnPn** 18 57 38.0 -0.3
MDJ PcP **PcP** 18 58 48.6 -1.0
MDJ S **S** 19 01 49.8 -3.5
MDJ sS sS 19 02 09.9 +7.3
MDJ PcS **PcS** 19 02 33.8 -2.7
MDJ ScS **ScS** 19 06 35.3 -3.6
MDJ pmax pmax
comp=Z,26nm,1.1s
MDJ pmax pmax
comp=Z,110nm,5.1s
MDJ LR LR
comp=Z,540nm,18.1s
MDJ LR LR
comp=Z,430nm,15.9s
MDJ LR LR
comp=Z,580nm,19.6s
MDJ **Mudanjiang** 35.37 9 *e*P P 18 56 20.1 +0.4
comp=Z,25nm,0.8s
USRK **Ussuriysk Ar.** 35.40 12 P P 18 56 20.7 +0.7
comp=Z,13nm,0.8s,baz=203,slow=8.3,SNR=15
USRK LR LR 19 10 52.4
comp=Z,466nm,20.6s,baz=176,slow=36
GTA **Gaotai** 35.74 330 *e*P P 18 56 23.3 +0.2
GTA pP sP 18 56 35.8 +4.7
GTA sP pP 18 56 41.1 +12
GTA S **S** 19 01 56.6 -2.8
GTA sS sS 19 02 17.3 +8.5
GTA pmax pmax
comp=Z,10.0nm,1.0s
GTA pmax pmax
comp=Z,81nm,6.7s
GTA LR LR
comp=Z,730nm,14.0s
GTA LR LR
comp=Z,930nm,15.4s
GTA LR LR
comp=Z,1μm,15.0s
GUN **Gumba** 38.71 303 *e*P P 18 56 48.5 -0.3
comp=Z,128nm,0.8s
PKIN **Phulchoki** 38.99 302 *e*P P 18 56 51.1 0.0
MORW **Morawa** 39.00 189 P P 18 56 50.8 +0.1
baz=39,SNR=4.6
KKN **Kakani** 39.16 302 *e*P P 18 56 51.5 -1.0
DMN **Daman** 39.25 302 *e*P P 18 56 52.8 -0.4
HIA **Hailar** 39.50 357 *e*P P 18 56 54.6 -0.1
HIA **Hailar** 39.50 357 *e*P P 18 56 54.6 -0.1
GKN **Gorkha** 39.77 302 *e*P P 18 56 56.9 -0.6
HABR **Khabarovsk** 40.12 13 *e*P P 18 56 57.4 -2.4
HABR *e**PP **sP** 18 57 07.1 -0.7
HABR *e**SP pP 18 57 11.4 +5.9
HABR *e* 18 58 30.5
HABR *e* 18 59 00.7
HABR *e*S **S** 19 03 02.9 -2.4
HABR *e**SS sS 19 03 19.7 +5.0
HABR *e*SS **SS** 19 06 02.4 -0.8
HABR *e*SSS SSS 19 06 27.0
HABR *e* 19 07 00.9
HABR pmax pmax
comp=N,17nm,2.0s
HABR pmax pmax
comp=E,16nm,2.0s
HABR pmax pmax
comp=Z,15nm,2.0s
HABR MLR MLR
comp=Z,312nm,17.0s
KLR **Kul'dur** 40.20 10 *c* *i*P P 18 57 00.7 +0.2
SONM **Songino Array** 40.31 343 P P 18 57 01.4 -0.2
comp=Z,11nm,1.1s,baz=166,slow=8.9,SNR=26
SONM PcP **PcP** 18 59 07.1 +2.1
comp=Z,1.1nm,0.7s,baz=115,slow=5.9,SNR=3.9
SONM LR LR 19 15 13.6
comp=Z,684nm,19.8s,baz=156,slow=38
SONA1 **Songino Array** 40.32 343 *e*P P 18 57 01.3 -0.4
KOLN **Koldanda** 40.56 302 *e*P P 18 57 03.9 -0.2
comp=Z,20nm,0.7s
FORT **Forest** 40.62 172 P P 18 57 04.3 +0.2
baz=41,SNR=12
FORT **Forest** 40.62 172 *e*P P 18 57 03.5 -0.7
comp=Z,354nm,0.8s
YSS **Yuzh-Sakhalins** 41.02 21⇑ *e*P P 18 57 07.1 -0.2
YSS *e* 18 57 15.8
YSS *e* 18 58 40.8
YSS *e*PPP PPP 18 59 05.4
YSS *e*S **S** 19 03 15.6 -3.1
YSS pmax pmax
comp=Z,20nm,1.2s
YSS smax smax
comp=N,200nm,15.0s
YSS MLR MLR
comp=Z,200nm,20.0s
YSS **Yuzh-Sakhalins** 41.02 21 *e*P P 18 57 05.3 -2.0
comp=Z,22nm,1.0s
PALK **Pallekele** 41.16 270 LR LR 19 15 35.1
comp=Z,596nm,18.1s,baz=116,slow=38
PALK **Pallekele** 41.16 270 *i*P P 18 57 10.4 +1.4
PYUN **Piuthan** 41.18 302 *e*P P 18 57 09.2 0.0
comp=Z,128nm,1.1s
KLBR **Kellerberrin** 41.28 186 P P 18 57 09.8 +0.2
baz=41,SNR=15
KUR **Kuril'sk** 41.70 27 *e*P P 18 57 12.5 -0.4
KUR *e*PPP PPP 18 59 16.7
KUR *e*SSS SSS 19 07 04.4
KUR MLR MLR
comp=E,214nm,15.0s
KUR MLR MLR
comp=Z,201nm,15.0s
HNR **Honiara** 42.05 116 LR LR 19 16 07.6
comp=Z,135nm,18.0s,baz=288,slow=38
NWAO **Narrogin (SRO)** 42.65 186 *e*P P 18 57 19.6 -1.2
NWAO **Narrogin (SRO)** 42.65 186 *e*P P 18 57 19.6 -1.2
HYB **Hyderabad** 43.10 285 *i*P P 18 57 25.0 +0.2
BBOO **Buckleboo** 44.27 163 P P 18 57 34.0 +0.2
baz=44,SNR=6.5
TYV **Tymovskoe** 44.35 18 *e*P P 18 57 33.0 -1.3
TYV pmax pmax
comp=Z,32nm,1.2s
TYV MLR MLR
comp=N,1μm,18.0s
TYV MLR MLR
comp=Z,1μm,18.0s
TLY **Talaya** 44.55 344 *e*P P 18 57 36.2 +0.3
TLY *e*S **S** 19 04 12.4 +1.7
TLY *e*SS **SS** 19 07 26.8 -3.9
TLY *e*SSS SSS 19 08 20.1
TLY pmax pmax
comp=Z,13nm,0.9s
TLY MLR MLR
comp=Z,438nm,19.0s
TLY **Talaya** 44.55 344 *e*P P 18 57 36.0 +0.1
comp=Z,13nm,0.9s
IRK **Irkutsk** 44.89 344 *e*P P 18 57 36.6 -2.0
IRK pmax pmax
comp=Z,32nm,1.5s
STKA **Stephens Creek** 45.29 157 P P 18 57 40.5 -1.4
comp=Z,4.9nm,0.8s,baz=346,slow=6.7,SNR=10
STKA LR LR 19 19 25.3
comp=Z,125nm,18.1s,baz=343,slow=40
STKA **Stephens Creek** 45.29 157 *e*P P 18 57 41.3 -0.7
comp=Z,2.5nm,0.9s
MOY **Mondy** 45.33 341 *e*P P 18 57 42.0 -0.2
MOY pmax pmax
comp=Z,21nm,1.2s
WMQ **Urumqi** 45.33 325 P P 18 57 43.3 +1.0
WMQ pP sP 18 57 56.5 +6.2
WMQ sP pP 18 58 00.9 +13
WMQ PcS **PcS** 19 03 12.3 -3.4
WMQ S **S** 19 04 21.8 -0.4
WMQ SS **ScS** 19 07 36.6 -1.8
WMQ pmax pmax
comp=Z,17nm,0.9s
WMQ pmax pmax
comp=Z,160nm,4.9s
WMQ LR LR
comp=Z,840nm,18.5s
WMQ LR LR
comp=Z,490nm,16.8s
WMQ LR LR
comp=Z,630nm,15.8s
HTT **Hallett** 45.72 160 P P 18 57 46.4 +0.9
baz=46,SNR=8.7
BOD **Bodaibo** 48.44 354 *e*P P 18 58 05.7 -0.5
BOD pmax pmax
comp=Z,15nm,1.4s
PDGK **Podgornoye** 50.02 320 *i*P P 18 58 18.0 -0.6
PDGK pmax pmax
comp=Z,71nm,0.9s
MK01 **Makanchi Array** 50.14 325 *e*P P 18 58 19.7 +0.2
MK31 **Makanchi Array** 50.16 325 *i*P P 18 58 19.1 -0.6
MK31 pmax pmax
comp=Z,15nm,0.8s
MK31 **Makanchi Array** 50.16 325 *e*P P 18 58 19.9 +0.2
MKAR **Makanchi Array** 50.16 325 P P 18 58 19.9 +0.3
comp=Z,12nm,0.8s,baz=133,slow=8.7,SNR=61
MKAR PcP **PcP** 18 59 38.5 -0.4
comp=Z,3.8nm,0.8s,baz=134,slow=5.2,SNR=3.6
MAKZ **Makanchi** 50.34 325 *i*P P 18 58 19.2 -1.9
MAKZ pmax pmax
comp=Z,19nm,1.0s
MAKZ **Makanchi** 50.34 325 *e*P P 18 58 21.4 +0.4
comp=Z,59nm,1.7s
KSH **Kashi** 50.73 314 P P 18 58 25.9 +1.7
KSH *e*pP sP 18 58 37.6 +5.3
KSH *e*sP pP 18 58 43.0 +13
KSH PcS **PcS** 19 03 38.4 -0.4
KSH S **S** 19 05 37.3 -1.7
KSH pmax pmax
comp=Z,51nm,1.3s
KSH LR LR
comp=Z,290nm,11.6s
KSH LR LR
comp=Z,440nm,14.9s
KSH LR LR
comp=Z,370nm,13.8s
PEA0 **Petropavlovsk-** 51.85 26 *e*P P 18 58 32.5 +0.2
PETK **Petropavlovsk-** 51.85 26 P P 18 58 32.4 +0.2
comp=Z,2.5nm,0.6s,baz=206,slow=3.5,SNR=8.5
PETK LR LR 19 18 29.7
comp=Z,290nm,21.8s,baz=226,slow=34
PET **Petropavlovsk** 52.21 27 *e*P P 18 58 35.9 +1.0
PET *e*S **S** 19 06 00.0 +1.3
PET pmax pmax
comp=Z,100nm,14.2s
TKM2 **Tokmak 2** 52.37 318 *i*P P 18 58 35.7 -0.9
TKM2 pmax pmax
comp=Z,32nm,1.0s
YAK **Yakutsk** 52.52 4 *e*P P 18 58 36.5 -0.6
YAK *e**PP **sP** 18 58 45.1 0.0
YAK *e* 18 59 48.0
YAK *e* 19 00 34.9
YAK *e*PPP PPP 19 01 40.2
YAK *e*S **S** 19 05 59.2 -3.5
YAK *e**SS **sS** 19 06 11.9 -0.4
YAK *e* 19 08 21.1
YAK *e*SS SS 19 09 32.4 -8.5
YAK *e*SSS SSS 19 11 28.3
YAK pmax pmax
comp=N,5.0nm,1.1s
YAK pmax pmax
comp=E,2.0nm,1.0s
YAK pmax pmax
comp=Z,12nm,0.9s
YAK pmax pmax
comp=Z,29nm,2.5s
YAK pmax pmax
comp=E,17nm,2.2s
YAK pmax pmax
comp=N,50nm,5.3s
YAK smax smax
comp=E,79nm,4.7s
YAK smax smax
comp=N,76nm,4.8s
YAK MLR MLR
comp=Z,302nm,15.0s
YAK MLR MLR
comp=N,372nm,20.0s
YAK MLR MLR
comp=E,271nm,19.0s
YAK **Yakutsk** 52.52 4 *e*P P 18 58 36.7 -0.4
comp=E,25nm,0.8s
AAK **Ala-Archa** 52.99 317 *i*P P 18 58 41.3 +0.2
AAK pmax pmax
comp=Z,53nm,0.9s
AAK **Ala-Archa** 52.99 317 *e*P P 18 58 42.7 +1.6
comp=Z,20nm,0.9s
ZAA0 **Zalesovo Array** 53.30 333 *e*P P 18 58 42.0 -1.0
ZALV **Zalesovo Beam** 53.30 333 P P 18 58 42.1 -0.9
comp=Z,6.3nm,0.8s,baz=116,slow=6.8,SNR=18
ZALV LR LR 19 23 40.1
comp=Z,470nm,18.1s,baz=70,slow=38
MA2 **Magadan** 54.20 17 P P 18 58 49.4 -0.1
comp=Z,10nm,0.9s,baz=196,slow=7.4,SNR=12
MA2 LR LR 19 21 56.1
comp=Z,168nm,21.6s,baz=215,slow=36
MNAS **Manas** 54.29 316 *i*P P 18 58 50.6 0.0
MNAS pmax pmax
comp=Z,36nm,0.8s
KURK **Kurchatov** 54.36 327 *e*P P 18 58 50.3 -0.5
KURK **Kurchatov** 54.36 327 *e*P P 18 58 50.3 -0.5
comp=Z,293nm,1.0s
KBL **Kabul** 54.43 306 *e*P P 18 58 52.2 +0.4
KBL pmax pmax
comp=Z,32nm,1.0s
KBL **Kabul** 54.43 306 *e*P P 18 58 52.2 +0.4
comp=Z,32nm,1.0s
KK31 **Karatay Array** 55.88 316 *i*P P 18 59 01.9 -0.1
KK31 pmax pmax
comp=Z,23nm,0.8s
KKAR **Karatay Array** 55.88 316 *e*P P 18 59 02.6 +0.6
KKAR **Karatay Array** 55.88 316 *e*P P 18 59 02.6 +0.6
OTUK **Ortayu** 56.72 322 P P 18 59 07.3 -0.6
OTUK pmax pmax
comp=Z,30nm,0.9s
SEY **Seymchan** 57.39 16 P P 18 59 12.8 +0.6
comp=Z,3.5nm,0.8s,baz=310,slow=3.5,SNR=9.4
VOSK **Vostochnaya** 59.48 327 *e*P P 18 59 26.3 -0.8
VOSK pmax pmax
comp=Z,10.0nm,0.8s
VOSK **Vostochnaya** 59.48 327 *e*P P 18 59 26.3 -0.8
comp=Z,10nm,0.8s
BVA0 **Borovoye Array** 59.93 327 *i*P P 18 59 29.4 -0.8
BVA0 pmax pmax
comp=Z,17nm,1.2s
BRVK **Borovoye** 60.01 327 *d* *i*P P 18 59 30.4 -0.3
BRVK pmax pmax
comp=Z,84nm,1.2s
BRVK **Borovoye** 60.01 327 *e*P P 18 59 30.5 -0.1
comp=Z,22nm,0.9s
ZRNK **Zerenda** 60.66 326 *i*P P 18 59 34.7 -0.4
ZRNK pmax pmax
comp=Z,18nm,1.1s
ZRNK **Zerenda** 60.66 326 *e*P P 18 59 34.7 -0.4
comp=Z,18nm,1.1s
NRIK **Noril'sk** 63.64 347 P P 18 59 54.2 -0.6
comp=Z,19nm,0.9s,baz=139,slow=6.1,SNR=12
NRIK LR LR 19 28 32.9
comp=Z,315nm,21.6s,baz=142,slow=37
GEYT **Alibeck** 63.74 307 P P 18 59 57.1 +0.9
comp=Z,22nm,1.0s,baz=128,slow=2.4,SNR=45
GEYT LR LR 19 30 27.6
comp=Z,279nm,19.6s,baz=130,slow=39
UOSS **Minazif** 64.32 293 *e*P P 18 59 59.3 -0.8
comp=Z,15nm,1.3s
HATD **Hatta, Dubai** 64.38 293 P P 19 00 00.4 -0.2
ASHO **Ashiyiah** 64.45 293 *i*P P 19 00 00.1 -0.9
SNR=5.5
AB31 **Akbulak array** 64.76 320 *i*P P 19 00 02.2 -0.3
AB31 pmax pmax
comp=Z,2.0nm,0.5s
ABKAR **Akbulak array** 64.76 320 *e*P P 19 00 02.4 -0.2
FAQ **Al Faqa, Dubai** 64.87 293 P P 19 00 03.3 -0.4
BILL **Bilibino** 65.06 17⇑ *i*P P 19 00 03.6 -0.6
BILL *e* 19 00 37.9
BILL *e* 19 02 33.7
BILL *i*S **S** 19 08 48.0 +2.6
BILL pmax pmax
comp=Z,11nm,0.8s
AKTO **Aktyubinsk** 66.26 321 *i*P P 19 00 10.7 -1.6
AKTO pmax pmax
comp=Z,12nm,0.9s
SVE **Sverdlovsk** 66.59 328⇓ *i*P P 19 00 14.1 -0.1
SVE pmax pmax
comp=Z,30nm,1.5s
ARU **Arti** 67.56 327 *d* *i*P P 19 00 19.2 -1.2
ARU 19 00 43.1
ARU PPP PPP 19 04 23.0
ARU S **S** 19 09 16.3 +0.2
ARU 19 10 12.9
ARU SS **SS** 19 13 35.3 -1.4
ARU pmax pmax
comp=Z,10.0nm,1.0s
ARU **Arti** 67.56 327 *e*P P 19 00 19.5 -0.9
comp=Z,7.0nm,0.6s
GNI **Garni** 74.29 309 P P 19 01 02.8 +0.9
comp=Z,8.3nm,0.8s,baz=158,slow=6.1,SNR=4.7
GNI **Garni** 74.29 309 P P 19 01 02.7 +0.8
GNI **Garni** 74.29 309 *e*P P 19 01 01.6 -0.3
TBLG **Delisi** 74.31 311 P P 19 01 02.3 +0.5
TBLG **Delisi** 74.31 311 P P 19 01 01.9 +0.1
GUDG **Gudauri** 74.52 311 P P 19 01 05.5 +2.3
ZEI **Tsey** 74.95 312 *e*P P 19 01 03.5 -2.2
ZEI pmax pmax
comp=Z,114nm,1.3s
BGD **Bogdanovka** 75.17 310 P P 19 01 08.4 +1.4
AKH **Akhalkalaki** 75.25 310 P P 19 01 08.4 +1.0
AKH **Akhalkalaki** 75.25 310 P P 19 01 08.7 +1.3
ONI **Oni** 75.28 311 P P 19 01 08.2 +0.8
ONI **Oni** 75.28 311 P P 19 01 07.4 0.0
KBZ **Khabaz** 75.69 313 P P 19 01 09.2 -0.4
comp=Z,12nm,1.1s,baz=115,slow=4.8,SNR=16
KBZ LR LR 19 39 16.3
comp=Z,105nm,18.1s,baz=82,slow=40
KVAR **Kislovodsk Arr** 75.84 313 P P 19 01 11.2 +0.6
comp=Z,18nm,1.0s,baz=262,slow=9.1,SNR=12
KIV **Kislovodsk** 75.84 313 *i*P P 19 01 10.5 -0.2
SNR=6.6
KIV **Kislovodsk** 75.84 313 *e*P P 19 01 10.6 -0.1
KIV *e*S **S** 19 10 51.3 -1.1
KIV pmax pmax
comp=Z,25nm,1.0s
KIV **Kislovodsk** 75.84 313 *e*P P 19 01 11.3 +0.7
comp=Z,29nm,1.1s
VRH **Novokhopyorsk** 76.59 320 *e*P P 19 01 14.0 -0.6
VRH pmax pmax
comp=Z,30nm,1.0s
SOC **Sochi** 78.00 313 *e*P P 19 01 21.0 -1.7
SOC *e* 19 01 28.7
SOC *e* 19 04 24.4
SOC *e*PPP PPP 19 06 08.5
SOC *e*S **S** 19 11 13.7 -2.0
SOC pmax pmax
comp=Z,16nm,0.9s
SOC MLR MLR
comp=Z,115nm,17.0s
KLMR **Klimovskoe** 78.06 330 *e*P P 19 01 19.4 -3.3
KLMR pmax pmax
comp=Z,19nm,1.2s
VSR **Storozhevoye** 78.19 320 *e*P P 19 01 22.4 -1.2
VSR pmax pmax
comp=Z,20nm,1.0s

MOS	**Moscow**	**79.04**	**325**	*eP*	**P**	**19 01 28.3**	**+0.1**
CAST	**Castle Rocks**	**79.46**	**27**	*eP*	**P**	**19 01 30.5**	**+0.2**
	comp=Z,8.1nm,1.0s						
ANN	**Anapa**	**79.59**	**314**	*eP*	**P**	**19 01 29.9**	**-1.5**
ANN				*eS*	**S**	**19 11 31.4**	**-1.1**
ANN				pmax	pmax		
	comp=Z,39nm,1.1s						
OBN	**Obninsk**	**79.66**	**324⇑**	*eP*	**P**	**19 01 30.7**	**-0.8**
OBN				*e*		19 01 38.7	
OBN				*e*		19 04 34.2	
OBN				*e*PPP	PPP	19 06 22.0	
OBN				*i* S	**S**	**19 11 33.1**	**+0.2**
OBN				*i* SS	**SS**	**19 16 39.3**	**-1.8**
OBN				pmax	pmax		
	comp=Z,18nm,1.2s						
COLD	**Coldfoot**	**80.18**	**23**	*eP*	**P**	**19 01 34.8**	**+0.6**
	comp=Z,6.3nm,0.9s						
APA	**Apatity**	**80.67**	**337⇑**	*iP*	**P**	**19 01 33.0**	**-3.8**
APA				*i* PPP	PPP	19 06 39.0	
APA				pmax	pmax		
	comp=Z,6.0nm,0.9s						
APA				MLR	MLR		
	comp=Z,500nm,19.0s						
ASF	**Jabal al Asfar**	**81.01**	**301**	P	**P**	**19 01 40.6**	**+1.1**
	comp=Z,12nm,0.9s,baz=58,slow=2.2,SNR=21						
WRH	**Wood River Hil**	**81.18**	**26**	*eP*	**P**	**19 01 40.3**	**+0.7**
	comp=Z,4.5nm,0.9s						
CCB	**Clear Creek Bu**	**81.29**	**26**	*eP*	**P**	**19 01 40.0**	**-0.1**
	comp=Z,4.3nm,1.0s						
IL1	**Eielson Array**	**81.67**	**26**	*eP*	**P**	**19 01 41.5**	**-0.7**
ILAR	**Eielson Array**	**81.67**	**26**	P	**P**	**19 01 41.5**	**-0.7**
	comp=Z,1.4nm,0.8s,baz=250,slow=5.2,SNR=15						
ILAR				LR	LR	19 36 44.0	
	comp=Z,112nm,21.9s,baz=277,slow=35						
ILB	**Eielson Array**	**81.67**	**26**	*eP*	**P**	**19 01 42.3**	**+0.1**
HDA	**Harding Lake**	**81.68**	**26**	*eP*	**P**	**19 01 40.7**	**-1.5**
	comp=Z,25nm,1.9s						
MMAI	**Mount Meron Ar**	**82.18**	**302**	P	**P**	**19 01 46.1**	**+0.6**
	comp=Z,8.6nm,0.9s,baz=83,slow=9.4,SNR=8.0						
BR131	**Keskin Array S**	**82.83**	**309**	*eP*	**P**	**19 01 48.9**	**-0.1**
BRTR	**Keskin Array B**	**82.83**	**309**	P	**P**	**19 01 48.5**	**-0.5**
	comp=Z,6.6nm,0.8s,baz=113,slow=5.8,SNR=36						
BRTR				PP	**PP**	**19 05 00.8**	**+1.7**
	comp=Z,0.6nm,0.6s,baz=96,slow=5.0,SNR=3.6						
BRTR				LR	LR	19 43 31.1	
	comp=Z,57nm,19.0s,baz=81,slow=39						
EIL	**Elat**	**82.95**	**299**	P	**P**	**19 01 50.0**	**+0.4**
	comp=Z,14nm,1.0s,baz=25,slow=1.4,SNR=17						
BMRM	**Bremner River**	**83.12**	**29**	*eP*	**P**	**19 01 51.2**	**+1.3**
	comp=Z,7.9nm,1.0s						
ARCES	**ARCESS Array B**	**83.35**	**339**	P	**P**	**19 01 51.1**	**+0.2**
	comp=Z,9.4nm,0.9s,baz=75,slow=9.2,SNR=8.2						
ARCES				LR	LR	19 43 55.0	
	comp=Z,301nm,18.3s,baz=81,slow=39						
ANTO	**Ankara**	**83.46**	**309**	*eP*	**P**	**19 01 52.4**	**+0.3**
ANTO				pmax	pmax		
	comp=Z,26nm,1.2s						
ANTO	**Ankara**	**83.46**	**309**	*eP*	**P**	**19 01 52.4**	**+0.3**
	comp=Z,26nm,1.2s						
BR231	**Keskin MP Arra**	**83.48**	**309**	*eP*	**P**	**19 01 49.3**	**-2.9**
CSS	**Mathiatis**	**83.65**	**304**	*eP*	**P**	**19 01 52.8**	**-0.4**
	comp=Z,6.4nm,0.9s						
EGAK	**Eagle**	**84.10**	**25**	*eP*	**P**	**19 01 54.5**	**-0.3**
	comp=Z,5.8nm,1.0s						
AKASG	**Malin Array Be**	**84.50**	**320**	P	**P**	**19 01 56.1**	**-0.9**
	comp=Z,12nm,0.8s,baz=72,slow=4.6,SNR=37						
AKASG				PP	**PP**	**19 05 14.3**	**+2.1**
	comp=Z,0.2nm,0.4s,baz=73,slow=8.2,SNR=4.1						
AKASG				LR	LR	19 44 04.1	
	comp=Z,125nm,18.4s,baz=350,slow=39						
AKBB	**Malin Array Si**	**84.50**	**320**	*eP*	**P**	**19 01 56.2**	**-0.9**
AKBB				pmax	pmax		
	comp=Z,16nm,0.9s						
AKBB	**Malin Array Si**	**84.50**	**320**	*eP*	**P**	**19 01 56.2**	**-0.9**
	comp=Z,16nm,0.9s						
KIEV	**Kiev**	**84.51**	**320⇓**	*iP*	**P**	**19 01 55.7**	**-1.4**
KIEV				pmax	pmax		
	comp=Z,21nm,1.0s						
KIEV	**Kiev**	**84.51**	**320**	*eP*	**P**	**19 01 55.9**	**-1.2**
	comp=Z,16nm,0.9s						
FINES	**FINESS Array B**	**84.51**	**331**	P	**P**	**19 01 56.2**	**-0.6**
	comp=Z,6.1nm,0.9s,baz=100,slow=6.4,SNR=7.6						
FINES				LR	LR	19 40 15.1	
	comp=Z,160nm,19.2s,baz=78,slow=36						
AK11	**Malin Array Si**	**84.54**	**320**	*eP*	**P**	**19 01 56.2**	**-1.0**
VSU	**Vasula**	**84.70**	**328**	*ceP*	**P**	**19 01 56.4**	**-1.5**
VSU				pmax	pmax		
	comp=Z,122nm,1.7s						
DAWY	**Dawson**	**84.99**	**26**	*eP*	**P**	**19 01 59.9**	**+0.6**
	comp=Z,18nm,1.4s						
KMBO	**Kilima Mbogo**	**85.27**	**268**	P	**P**	**19 02 01.7**	**-0.3**
	comp=Z,8.1nm,0.9s,baz=52,slow=7.6,SNR=13						
KMBO				LR	LR	19 40 40.8	
	comp=Z,220nm,18.3s,baz=96,slow=36						
KMBO	**Kilima Mbogo**	**85.27**	**268**	*eP*	**P**	**19 02 03.2**	**+1.2**
	comp=Z,12nm,1.0s						
SORM	**Soroca**	**85.46**	**318⇓**	*iP*	**P**	**19 02 00.6**	**-1.3**
SORM	**Soroca**	**85.46**	**318⇓**	P	**P**	**19 02 00.6**	**-1.3**
TIRR	**Tirgusor**	**86.02**	**314⇓**	*iP*	**P**	**19 02 04.6**	**-0.2**
TIRR	**Tirgusor**	**86.02**	**314**	*eP*	**P**	**19 02 03.7**	**-1.1**
TIRR				pmax	pmax		
	comp=Z,20nm,1.1s						
TIRR	**Tirgusor**	**86.02**	**314**	*eP*	**P**	**19 02 03.7**	**-1.1**
	comp=Z,20nm,1.1s						
CFR	**Carcaliu**	**86.09**	**315⇑**	*iP*	**P**	**19 02 04.7**	**-0.4**
CFR	**Carcaliu**	**86.09**	**315⇑**	P	**P**	**19 02 04.7**	**-0.4**
INK	**Inuvik**	**86.26**	**21**	P	**P**	**19 02 05.8**	**+0.3**
	comp=Z,6.1nm,0.8s,baz=277,slow=5.9,SNR=10						
INK	**Inuvik**	**86.26**	**21**	*eP*	**P**	**19 02 05.7**	**+0.3**
INK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
INK	**Inuvik**	**86.26**	**21**	*eP*	**P**	**19 02 05.7**	**+0.3**
	comp=Z,9.9nm,1.0s						
TLB	**Topalu**	**86.26**	**314⇓**	*iP*	**P**	**19 02 05.5**	**-0.5**
TLB	**Topalu**	**86.26**	**314⇓**	P	**P**	**19 02 05.5**	**-0.5**
HARR	**Harsova**	**86.32**	**315⇑**	*iP*	**P**	**19 02 06.1**	**-0.2**
HARR	**Harsova**	**86.32**	**315⇑**	P	**P**	**19 02 06.1**	**-0.2**
HYT	**Haines Junctio**	**86.56**	**29**	*eP*	**P**	**19 02 07.7**	**+0.4**
TESR	**Tescani**	**86.88**	**317⇓**	*iP*	**P**	**19 02 08.6**	**-0.4**
PLOR	**Plostina**	**87.00**	**316⇑**	*iP*	**P**	**19 02 09.8**	**+0.1**
PLOR	**Plostina**	**87.00**	**316⇑**	P	**P**	**19 02 09.8**	**+0.1**
MLR	**Muntele Rosu**	**87.56**	**316**	P	**P**	**19 02 12.3**	**-0.2**
	comp=Z,2.7nm,0.8s,baz=18,slow=2.0,SNR=28						
MLR	**Muntele Rosu**	**87.56**	**316⇑**	*iP*	**P**	**19 02 12.3**	**-0.2**
MLR	**Muntele Rosu**	**87.56**	**316**	*eP*	**P**	**19 02 11.9**	**-0.6**
MLR				pmax	pmax		
	comp=Z,12nm,0.8s						
MLR	**Muntele Rosu**	**87.56**	**316**	*eP*	**P**	**19 02 11.9**	**-0.6**
	comp=Z,12nm,0.8s						
BURAR	**Bucovina Array**	**87.63**	**318⇓**	*iP*	**P**	**19 02 12.6**	**-0.1**
BURAR	**Bucovina Array**	**87.63**	**318⇓**	P	**P**	**19 02 12.6**	**-0.1**
BUR08	**Bucovina Ar. S**	**87.63**	**318**	*eP*	**P**	**19 02 12.6**	**-0.2**
MAW	**Mawson**	**87.83**	**199**	P	**P**	**19 02 12.2**	**-0.8**
	comp=Z,1.3nm,0.7s,baz=28,slow=6.1,SNR=3.5						
MAW				LR	LR	19 37 31.0	
	comp=Z,82nm,21.2s,baz=60,slow=33						
DOPR	**Dopca**	**87.84**	**316⇓**	*iP*	**P**	**19 02 13.3**	**-0.4**
VOIR		**88.19**	**316⇓**	*iP*	P	19 02 09.4	-6.0
VOIR		**88.19**	**316⇓**	P	P	19 02 09.4	-6.0
HUMR	**Humele**	**88.42**	**315⇑**	*iP*	**P**	**19 02 15.7**	**-0.7**
LOT	**Lotru**	**89.06**	**316⇓**	*iP*	**P**	**19 02 19.1**	**-0.5**
KOLS	**Kolonicke sedl**	**89.25**	**319**	*eP*	**P**	**19 02 20.0**	**-0.3**
KOLS	**Kolonicke sedl**	**89.25**	**319**	*eP*	**P**	**19 02 20.0**	**-0.3**
UZH	**Uzhgorod**	**89.31**	**319⇓**	*iP*	**P**	**19 02 19.9**	**-0.6**
UZH				*e*		19 02 33.5	
DRGR		**89.47**	**317⇑**	*iP*	**P**	**19 02 21.0**	**-0.5**
DRGR		**89.47**	**317⇑**	P	**P**	**19 02 21.0**	**-0.5**
CRVS	**Cervenica-Dubn**	**89.78**	**320**	*eP*	**P**	**19 02 22.9**	**+0.1**
CRVS	**Cervenica-Dubn**	**89.78**	**320**	*eP*	**P**	**19 02 22.9**	**+0.1**
STHS	**Stebnicka Huta**	**89.79**	**320**	*eP*	**P**	**19 02 21.9**	**-0.9**
STHS				pmax	pmax		
	comp=Z,4.0nm,1.0s						
STHS	**Stebnicka Huta**	**89.79**	**320**	*eP*	**P**	**19 02 21.9**	**-0.9**
VNDA	**Vanda**	**89.89**	**172**	P	**P**	**19 02 21.4**	**-1.1**
	comp=Z,2.3nm,0.8s,baz=309,slow=6.0,SNR=13						
VNDA				LR	LR	19 42 51.9	
	comp=Z,83nm,20.2s,baz=330,slow=36						
VNDA	**Vanda**	**89.89**	**172**	*eP*	**P**	**19 02 21.9**	**-0.6**
	comp=Z,3.7nm,1.0s						
VTS	**Vitosha**	**90.10**	**313⇓**	*iP*	**P**	**19 02 23.7**	**-0.9**
VTS	**Vitosha**	**90.10**	**313⇓**	P	**P**	**19 02 23.7**	**-0.9**
OJC	**Ojcow**	**90.48**	**321**	*eP*	**P**	**19 02 25.7**	**-0.3**
OJC				pmax	pmax		
	comp=Z,15nm,1.3s						
OJC	**Ojcow**	**90.48**	**321**	*eP*	**P**	**19 02 25.6**	**-0.3**
	comp=Z,15nm,1.3s						
MDVR	**Moldovita**	**90.64**	**316⇓**	*iP*	**P**	**19 02 26.4**	**-0.5**
HFS	**Hagfors**	**90.70**	**332**	P	**P**	**19 02 26.8**	**0.0**
	comp=Z,7.4nm,1.2s,baz=81,slow=18,SNR=2.4						
PPT2	**Papeete2**	**91.15**	**108**	*e*LR	LR	19 31 56.3	
	comp=Z,316nm,22.5s						
NOA	**NORSAR Array B**	**91.50**	**333**	P	**P**	**19 02 32.3**	**+1.7**
	comp=Z,0.6nm,0.7s,baz=55,slow=5.8,SNR=3.0						
NOA				LR	LR	19 47 58.8	
	comp=Z,183nm,18.1s,baz=65,slow=38						
OKC	**Ostrava-Krasne**	**91.61**	**321**	AMS	AMS	19 51 00.0	
	comp=Z,200nm,12.2s						
TBI	**Tubuai**	**92.22**	**113**	*e*LR	LR	19 32 26.3	
	comp=Z,277nm,23.2s						
DPC	**Dobruska-Polom**	**92.58**	**322**	*eP*	**P**	**19 02 35.8**	**0.0**
DPC	**Dobruska-Polom**	**92.58**	**322**	*eP*	**P**	**19 02 35.8**	**0.0**
VRAC	**Vranov**	**92.74**	**321**	P	**P**	**19 02 36.2**	**-0.3**
	comp=Z,1.2nm,0.3s,baz=112,slow=4.1,SNR=6.3						
VRAC	**Vranov**	**92.74**	**321**	*iP*	**P**	**19 02 35.4**	**-1.1**
PDG	**Podgorica**	**92.97**	**314⇑**	*iP*	**P**	**19 02 36.5**	**-1.2**
PVCC	**Panska Ves**	**93.58**	**322**	*eP*	**P**	**19 02 40.3**	**0.0**
PVCC				AMS	AMS	19 51 00.0	
PVCC	**Panska Ves**	**93.58**	**322**	*eP*	**P**	**19 02 40.3**	**0.0**
PRU	**Pruhonice**	**93.78**	**322**	*eP*	**P**	**19 02 41.2**	**0.0**
PRU				*ep*P	**sP**	**19 02 47.1**	**-2.5**
PRU	**Pruhonice**	**93.78**	**322**	*eP*	**P**	**19 02 41.2**	**0.0**
PRU				*e*		19 02 47.1	
BRG	**Berggiesshubel**	**93.84**	**323**	*eP*	**P**	**19 02 39.7**	**-1.8**
	comp=Z,15nm,1.1s						
	comp=N,139nm,13.2s						
	comp=E,210nm,11.4s						
	comp=Z,327nm,15.3s						
BRG	**Berggiesshubel**	**93.84**	**323**	*eP*	**P**	**19 02 39.7**	**-1.8**
BRG				pmax	pmax		
	comp=Z,15nm,1.1s						
BRG				MLR	MLR		
	comp=N,139nm,13.2s						
BRG				MLR	MLR		
	comp=E,210nm,11.4s						
BRG				MLR	MLR		
	comp=Z,327nm,15.3s						
CLL	**Collm**	**94.24**	**324⇑**	*iP*	**P**	**19 02 42.6**	**-0.7**
	comp=Z,11nm,1.1s						
CLL				*e*PP	**PP**	**19 06 31.0**	**+1.2**
CLL				*eS*	**S**	**19 13 53.0**	**-0.9**
CLL				*e*PPS	PPS	19 16 48.0	
CLL				*e*SSSS		19 27 00.0	
CLL	**Collm**	**94.24**	**324⇑**	*iP*	**P**	**19 02 42.6**	**-0.7**
CLL				*eS*	**S**	**19 13 53.0**	**-0.9**
CLL				pmax	pmax		
	comp=Z,11nm,1.1s						
KHC	**Kasperske Hory**	**94.66**	**321**	*eP*	**P**	**19 02 44.3**	**-1.1**
KHC				AMS	AMS	19 53 30.0	
	comp=Z,200nm,16.7s						
KHC	**Kasperske Hory**	**94.66**	**321**	*eP*	**P**	**19 02 44.3**	**-1.1**
KHC				MLR	MLR		
	comp=Z,200nm,16.7s						
GEC2	**GERESS Array S**	**94.69**	**321**	*eP*	**P**	**19 02 45.0**	**-0.6**
GEC2				pmax	pmax		
	comp=Z,8.0nm,1.1s						
GEC2	**GERESS Array S**	**94.69**	**321**	*eP*	**P**	**19 02 45.0**	**-0.6**
	comp=Z,7.8nm,1.1s						
GERES	**GERESS Array S**	**94.69**	**321**	P	**P**	**19 02 45.0**	**-0.6**
	comp=Z,2.2nm,0.9s,baz=72,slow=5.7,SNR=16						
GERES				LR	LR	19 49 16.7	
	comp=Z,112nm,18.3s,baz=71,slow=38						
GERES	**GERESS Array B**	**94.69**	**321**	P	**P**	**19 02 45.0**	**-0.6**
GERES				pmax	pmax		
	comp=Z,2.0nm,0.9s						
GERES				MLR	MLR		
	comp=Z,112nm,18.3s						
GEA0	**GERESS Array S**	**94.69**	**321**	*eP*	**P**	**19 02 44.5**	**-1.0**
YKA	**Yellowknife Ar**	**95.86**	**23**	P	**P**	**19 02 50.4**	**0.0**
	comp=Z,1.8nm,0.8s,baz=303,slow=4.3,SNR=13						
YKA				LR	LR	19 47 33.3	
	comp=Z,8.8nm,21.3s,baz=0.0,slow=36						
TAOE	**Nuku Hiva Isla**	**98.88**	**97**	*e*LR	LR	19 35 17.2	
	comp=Z,347nm,24.7s						
RKT	**Rikitea**	**105.42**	**111**	*e*LR	LR	19 38 34.0	
	comp=Z,389nm,29.2s						
ESDC	**Sonseca Array**	**110.08**	**318**	PP	PP	19 08 32.0	+2.9
	comp=Z,0.5nm,0.7s,baz=49,slow=6.3,SNR=4.4						
TXAR	**Lajitas Array B**	**121.15**	**47**	PKKPbc	PKKPbc	19 18 18.8	-1.6
	comp=Z,0.5nm,0.9s,baz=142,slow=4.6,SNR=3.6						
PLCA	**Paso Flores**	**147.07**	**162**	PKPbc	**PKPbc**	**19 09 07.6**	**+0.1**
	comp=Z,10nm,0.8s,baz=243,slow=4.1,SNR=14						
STVI	**Saint Thomas**	**151.24**	**14**	*e*PKPbc	**PKPbc**	**19 09 17.9**	**-0.6**
TRQA	**Tornquist**	**151.50**	**173**	*e*PKPbc	**PKPbc**	**19 09 18.2**	**-0.4**
LPAZ	**La Paz**	**167.94**	**124**	PKP	**PKPdf**	**19 09 32.2**	**-0.2**
	comp=Z,2.9nm,0.9s,baz=105,slow=3.1,SNR=4.5						
LPAZ	**La Paz**	**167.94**	**124**	*e*PKPdf	**PKPdf**	**19 09 32.8**	**+0.5**

ISCJB ***14*** *18:50:38.4±0.4, 44.°06N±0.°04×105.°35W±0.°05, h0km, Error ellipse: s-maj=6.7km s-min=4.9km az=147.1*
IDC ***14*** *18:50:38.5±2.1, 43.°77N×105.°34W, h0km, mb1 3.5/2, mb1mx3.2/61, mbtmp3.3/2, ML3.2/2, Error ellipse: s-maj=57.2km s-min=9.2km az=150.0*
NEIC ***14*** *18:50:39.4±0.6, 44.°00N×105.°30W, h0km, ML3.0, Error ellipse: s-maj=8.4km s-min=7.3km az=156.0, Suspected Mining explosion.*
NEIC 36 km [22 miles] SSE of Gillette.

ISC 14 18:50:38.5±1.0, 44.°05N±0.°05×105.°41W±0.°04, h0km, n29, σ1s54/28, Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RSSD	**Black Hills**	**0.99**	**86**	P	**Pg**	**18 50 57.5**	**0.0**
	baz=263						
RSSD	**Black Hills**	**0.99**	**86**	*e*Pn	**Pg**	**18 50 57.6**	**+0.2**
H25A	**Fruitdale**	**1.42**	**66**	P	**Pn**	**18 51 05.5**	**-0.1**
	baz=244						
K22A	**Casper**	**1.62**	**210**	P	**Pn**	**18 51 09.0**	**+0.5**
	baz=33						
K22A				S	**Sb**	**18 51 30.5**	**+0.1**
	baz=33						
K22A	**Casper**	**1.62**	**210**	*e*Pn	**Pn**	**18 51 09.0**	**+0.5**
LAO	**LASA Array**	**2.70**	**348**	P	**Pn**	**18 51 23.9**	**+0.7**
	baz=166						
LAO	**LASA Array**	**2.70**	**348**	*e*Pn	**Pb**	**18 51 26.2**	**-1.4**
PHWY	**Pilot Hill**	**2.75**	**181**	*e*Pn	**Pn**	**18 51 25.2**	**+1.1**
RLMT	**Red Lodge**	**2.96**	**293**	*e*Pn	**Pn**	**18 51 28.2**	**+1.4**
N23A	**Red Feather La**	**3.18**	**187**	P	**Pn**	**18 51 32.2**	**+2.2**
	baz=8.5						
BW06	**Boulder Array**	**3.29**	**248**	*e*Pn	**Pn**	**18 51 33.5**	**+2.2**
PDAR	**Pinedale Array**	**3.29**	**248**	Pn	**Pn**	**18 51 33.5**	**+2.1**
	2.8nm,0.3s,baz=75,slow=18,SNR=27						
PDAR				Lg	Lg	18 52 20.2	
	6.0nm,0.3s,baz=71,slow=31,SNR=14						
D26A	**Manning**	**3.64**	**34**	P	**Pn**	**18 51 37.9**	**+1.9**
	baz=214						
LOHW	**Long Hollow**	**3.78**	**265**	*e*Pn	**Pn**	**18 51 39.9**	**+1.7**
FLWY	**Flagg Ranch**	**3.81**	**272**	*e*Pn	**Pn**	**18 51 36.8**	**-1.8**
SNOW	**Snow King Moun**	**3.92**	**263**	Pg	**Pb**	**18 51 46.6**	**-2.0**
OGNE	**Ogallala**	**3.99**	**140**	P	**Pn**	**18 51 41.8**	**+0.9**
	comp=Z,23						
OGNE	**Ogallala**	**3.99**	**140**	*e*Pn	**Pn**	**18 51 41.7**	**+0.9**
IMW	**Indian Meadow**	**3.99**	**270**	Pn	**Pn**	**18 51 42.8**	**+1.6**
REDW	**Red Top Meadow**	**4.00**	**262**	Pn	**Pn**	**18 51 40.9**	**-0.4**
TPAW	**Teton Pass**	**4.05**	**264**	*e*Pn	**Pn**	**18 51 44.7**	**+2.8**
ISCO	**Idaho Springs**	**4.25**	**182**	*e*Pn	**Pn**	**18 51 43.8**	**-1.0**
AHID	**Auburn Hatcher**	**4.34**	**255**	Pn	Pn	18 51 50.9	+5.0
DGMT	**Dagmar**	**4.50**	**10**	*e*Pn	**Pn**	**18 51 50.5**	**+2.6**
BOZ	**Bozeman (W)**	**4.70**	**292**	*e*Pn	**Pn**	**18 51 51.7**	**+0.9**
HWUT	**Hardware Ranch**	**5.14**	**244**	*e*Pn	**Pn**	**18 51 59.1**	**+2.2**
	8.9nm,0.6s						
DLMT	**Dillon**	**5.29**	**287**	Pn	**Pn**	**18 51 58.2**	**-0.6**
ULM	**Lac du Bonnet**	**8.97**	**43**	Pn	**Pn**	**18 52 49.5**	**+0.3**
	0.5nm,0.3s,baz=228,slow=15,SNR=4.3						
ULM				Lg	Lg	18 55 21.8	
	0.3nm,0.3s,baz=172,slow=11,SNR=3.9						
I56US	**NEWPORT INFRAS**	**9.15**	**301**	*i*		19 44 30.0	
	baz=113,slow=312,SNR=2.8						

MAN 14 18:52:54, 9.°57N×122.°19E, h11km, mb4.7, ML3.5, MS3.5, 4C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.06**	**102⇑**	*iP*	Pb	18 53 09.4	-5.0
SNPH				*i* S	Sg	18 53 24.6	-3.5
JAP	**San Jose, Anti**	**1.20**	**348⇑**	*eP*	Pn	18 53 09.3	-7.3
TBP	**Tagbilaran**	**1.65**	**86**	*eP*	Pb	18 53 23.8	-0.7
LLP	**Lapu-Lapu**	**1.90**	**67⇓**	*eP*	Pn	18 53 26.7	+0.3
LLP				*eS*	Sb	18 53 52.6	+0.1
RCP	**Roxas**	**2.05**	**15⇑**	*eP*	Pn	18 53 28.9	+0.4
RCP				*eS*	Sb	18 53 56.2	-0.7
CGP	**Cagayan de Oro**	**2.71**	**114⇑**	*eP*	Pn	18 53 39.9	+2.4
CGP				*eS*	Sb	18 54 15.1	-0.7
MMPH	**Masbate**	**3.11**	**27**	*eP*	Pb	18 53 47.7	-1.6
MMPH				*eS*	Sb	18 54 25.7	-1.6

IDC 14 18:54:38.6±17.0, 18.°91S×174.°20W, h0km, mb4.2/5, mb1 4.4/5, mb1mx3.8/49, mbtmp4.2/5, Error ellipse: s-maj=321.4km s-min=147.2km az=80.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**37.24**	**261**	P	P	19 01 53.2	+0.8
	2.4nm,0.3s,baz=82,slow=9.0,SNR=6.1						
STKA	**Stephens Creek**	**41.70**	**243**	P	P	19 02 28.9	-0.5
	1.0nm,0.4s,baz=89,slow=12,SNR=4.5						
ASAR	**Alice Springs**	**48.38**	**255**	P	P	19 03 22.3	-0.5
	3.5nm,0.6s,baz=89,slow=8.4,SNR=56						
WRA	**Warramunga Arr**	**48.39**	**260**	P	P	19 03 22.3	-0.5
	1.6nm,0.3s,baz=96,slow=7.5,SNR=89						
FITZ	**Fitzroy Crossi**	**56.81**	**260**	P	P	19 04 25.4	+0.2
	1.2nm,0.8s,baz=72,slow=5.8,SNR=7.6						

ISK ***14*** *18:57:29.8, 38.°95N×43.°72E, h5km, MD3.0*
DDA ***14*** *18:57:29.4, 38.°91N×43.°73E, h5km, Ml3.1*
NSSP ***14*** *18:57:30.2, 38.°85N×43.°85E, h5km, Ms3.0*
CSEM ***14*** *18:57:31.0±0.2, 38.°93N×43.°71E, h2km, ML3.1, Error ellipse: s-maj=7.2km s-min=4.1km az=100.0*

ISC 14 18:57:30.9±1.0, 38.°91N±0.°02×43.°70E±0.°02, h4km±10km, n48, σ1s03/74, 3C-3D, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VMUR	**Van-Muradiye**	**0.13**	**307**	*i* P	**Pg**	**18 57 33.2**	**-0.3**
VMUR				*i* S	**Sg**	**18 57 36.5**	**+1.2**
VMUR	**Van-Muradiye**	**0.13**	**307**	P	**Pg**	**18 57 33.2**	**-0.3**
VMUR				S	**Sg**	**18 57 36.5**	**+1.2**
CLDR	**Caldiran**	**0.28**	**36**	*e*PG	**Pg**	**18 57 36.0**	**-0.5**
CLDR				*e*SG	**Sg**	**18 57 40.6**	**+0.3**
CLDR	**Caldiran**	**0.28**	**36**	*e*Pg	**Pg**	**18 57 36.0**	**-0.5**
CLDR				*e*Sg	**Sg**	**18 57 40.6**	**+0.3**
VANB	**Van**	**0.40**	**218**	*e*PG	**Pb**	**18 57 40.0**	**-0.7**
VANB				*e*SG	**Sb**	**18 57 48.7**	**+1.5**
VANB	**Van**	**0.40**	**218**	*e*Pg	**Pb**	**18 57 40.0**	**-0.7**
VANB				*e*Sg	**Sb**	**18 57 48.7**	**+1.5**
TVAN	**Van**	**0.45**	**211**	*i* P	**Pg**	**18 57 39.3**	**-0.2**
TVAN				*i* S	**Sb**	**18 57 47.5**	**-1.1**
TVAN	**Van**	**0.45**	**211**	P	**Pg**	**18 57 39.3**	**-0.2**
TVAN				S	**Sb**	**18 57 47.5**	**-1.1**
DYDN	**Diyadin**	**0.63**	**359**	*i* P	**Pg**	**18 57 42.3**	**-0.7**
DYDN				*i* S	**Sg**	**18 57 51.8**	**+0.6**
DYDN	**Diyadin**	**0.63**	**359**	P	**Pg**	**18 57 42.3**	**-0.7**
DYDN				S	**Sg**	**18 57 51.8**	**+0.6**
GEVA	**Gevas**	**0.78**	**220**	*i* P	**Pg**	**18 57 45.2**	**-0.7**
GEVA				*i* S	**Sb**	**18 57 58.5**	**+0.3**
GEVA	**Gevas**	**0.78**	**220**	P	**Pg**	**18 57 45.2**	**-0.7**
GEVA				S	**Sb**	**18 57 58.5**	**+0.3**
TUTA	**Tutak**	**0.85**	**306**	*i* P	**Pg**	**18 57 45.9**	**-1.2**
TUTA				*i* S	**Sg**	**18 57 57.2**	**-0.9**
TUTA	**Tutak**	**0.85**	**306**	P	**Pg**	**18 57 45.9**	**-1.2**
TUTA				S	**Sg**	**18 57 57.2**	**-0.9**
AGRB	**Hanur-Agry**	**0.86**	**320**	*e*PG	**Pg**	**18 57 46.5**	**-0.9**
AGRB	**Hanur-Agry**	**0.86**	**320**	*e*Pg	**Pg**	**18 57 46.5**	**-0.9**
BASK	**Baskale_VAN**	**0.89**	**164**	*i* P	**Pg**	**18 57 47.5**	**-0.5**
BASK				*i* S	**Sb**	**18 58

LPAZ LR LR 18 59 08.9
comp=N,326nm,21.8s,baz=174,slow=37
LPAZ La Paz 2.70 29 ⇓ *i* Pn **Pn 18 58 20.2 +2.0**
LPAZ *e* Sn **Sn 18 58 50.1 -0.8**
comp=N,411nm,0.9s
BBOB La Paz, Bander 2.83 27 ⇑ *i* Pn **Pn 18 58 21.8 +2.0**
PB04 IPOC Station P 3.69 190 *e* Pn **Pn 18 58 30.5 -0.5**
LVC Limon Verde 3.95 172 P **Pn 18 58 35.6 +1.0**
comp=N,3µm,0.3s,baz=344,slow=10,SNR=56
LVC S **Sn 18 59 19.0 -1.2**
comp=N,6µm,0.3s,baz=261,slow=21,SNR=21
MOCB Mochara 4.42 126 ⇑ *i* Pn **Pn 18 58 44.8 +3.8**
PB10 IPOC Station P 4.92 192 *e* Pn **Pn 18 58 45.4 -1.8**
ALOL LOMAS DE OLMED 7.23 136 ⇓ *i* P **Sn 19 00 36.0 -3.4**
SIV San Ignacio 8.46 73 P **Pn 18 59 33.0 -2.3**
comp=N,29nm,0.3s,baz=275,slow=11,SNR=75
SIV S **Sn 19 01 04.3 -4.9**
baz=317,slow=21,SNR=8.1
SIV San Ignacio 8.46 73 ⇑ *i* P **Pn 18 59 33.0 -2.3**
NNA Nana 9.73 312 P **Pn 18 59 55.0 +2.3**
comp=N,3.3nm,0.3s,baz=171,slow=3.8,SNR=7.8
NNA S **Sn 19 01 37.2 -3.0**
comp=N,6.3nm,0.3s,baz=44,slow=24,SNR=3.5
NNA Nana 9.73 312 *e* Pn **Pn 18 59 50.8 -1.9**
NNA S **Sn 19 01 37.2 -3.0**
LCO Las Campanas 10.35 186 *e* Pn Pn 19 00 14.6 +13
SAML Samuel 11.44 33 *e* Pn **Pn 19 00 12.0 -3.6**
RTLL Cerro Villicun 12.63 176 *i* P **Pn 19 00 31.8 +0.4**
ACHE Chepes 12.69 169 *i* P **Pn 19 00 29.7 -2.5**
SJA San Juan 12.82 176 *i* P **Pn 19 00 34.5 +0.7**
TCA Tanti 13.35 162 *i* P **Pn 19 00 39.2 -1.6**
TCA IAML 19 00 43.1
comp=Z,21nm,0.5s
CPUP Villa Florida 13.56 126 P **Pn 19 00 40.7 -2.7**
comp=Z,1.6nm,0.3s,baz=306,slow=12,SNR=33
CPUP LR LR 19 07 15.8
comp=Z,121nm,19.1s,baz=324,slow=43
CPUP Villa Florida 13.56 126 *e* Pn **Pn 19 00 40.5 -2.9**
ACAN Cantantal 13.69 172 *i* P **Pn 19 00 42.3 -2.9**
ASAL Salagasta 13.87 178 *i* P **Pn 19 00 48.1 +0.6**
ATAH Atahualpa 14.39 322 P **Pn 19 00 53.5 -1.1**
comp=Z,0.2nm,0.3s,baz=58,slow=7.4,SNR=3.3
PTGA Pitinga 20.13 29 P **P 19 01 59.4 -1.7**
comp=Z,29nm,0.3s,baz=335,slow=23,SNR=280
PTGA Pitinga 20.39 163 *e* P **P 19 01 58.9 -2.1**
comp=Z,87nm,0.3s
TRQA Tornquist 20.39 163 *e* P **P 19 02 04.0 +0.4**
comp=Z,125nm,0.6s
BDFB Brasilia 20.72 85 P **P 19 02 07.0 -0.5**
comp=Z,56nm,0.7s
BDFB Brasilia 20.72 85 *e* P **P 19 02 07.1 -0.5**
BDFB pmax pmax
comp=Z,82nm,0.6s
BDFB Brasilia 20.72 85 *e* P **P 19 02 07.1 -0.5**
comp=Z,82nm,0.6s
SPB Sao Paulo 21.12 107 *e* P **P 19 02 09.6 -2.1**
comp=Z,37nm,0.4s
PLCA Paso Flores 22.00 182 P **P 19 02 22.6 +1.7**
comp=Z,23nm,0.8s,baz=26,slow=11,SNR=30
PLCA Paso Flores 22.00 182 *e* P **P 19 02 22.2 +1.3**
PLCA pmax pmax
comp=Z,31nm,0.8s
PLCA Paso Flores 22.00 182 *e* P **P 19 02 22.2 +1.3**
comp=Z,31nm,0.8s
SJAC San Juan de Ar 22.25 348 *e* P **P 19 02 23.8 0.0**
PRAC Prado 22.88 346 *e* ScP **ScP 19 09 47.4 +2.2**
ROSC El Rosal 23.85 348 LR LR 19 12 07.7
comp=Z,48nm,21.4s,baz=190,slow=37
RUSC La Rusia 24.67 351 *e* P **P 19 02 43.9 -3.0**
RUSC La Rusia 24.67 351 *e* P **P 19 02 46.0 -0.9**
comp=Z,18nm,1.1s
HELC Santa Helena 25.42 346 *e* P **P 19 02 52.1 -1.4**
comp=Z,32nm,0.6s
PAMC Pamplona, Colo 26.05 353 *e* P **P 19 02 58.0 -1.4**
SDV Santo Domingo 27.41 358 P **P 19 03 09.5 -1.8**
comp=Z,12nm,0.4s,baz=358,slow=12,SNR=6.8
SDV Santo Domingo 27.41 358 *e* P **P 19 03 08.0 -3.2**
comp=Z,18nm,0.6s
PCRV Puerto La Cruz 29.07 10 P **P 19 03 25.6 -0.2**
comp=Z,6.8nm,0.4s,baz=178,slow=6.0,SNR=3.9
PCRV LR LR 19 16 05.4
comp=Z,101nm,19.5s,baz=165,slow=38
RCBR Riachuelo 35.12 73 P **P 19 04 17.6 -1.2**
comp=Z,28nm,0.6s,baz=239,slow=8.4,SNR=24
RCBR Riachuelo 35.12 73 *e* P **P 19 04 18.7 -0.1**
comp=Z,31nm,0.6s
CELP Cerrillos 36.63 5 *e* sP sP 19 05 11.2 +2.4
SMRT St. Maarten 37.04 10 *e* P **P 19 04 31.2 -3.8**
comp=Z,134nm,1.5s
348A Jackson 52.85 340 P pP 19 07 06.0 -0.2
baz=158
347A Saraland 53.05 340 P pP 19 07 07.4 -0.3
baz=157
346A Big Creek Wild 53.35 339 P pP 19 07 09.9 -0.1
baz=156
248A Dixon Mills 53.43 341 P pP 19 07 09.9 -0.6
baz=158
345A Thompson Farm, 53.48 338 P pP 19 07 10.2 -0.7
baz=155
247A Quitman 53.67 340 P pP 19 07 11.7 -0.6
baz=157
245A Little AP, Sta 54.09 339 P pP 19 07 14.6 -0.7
baz=156
933A Laredo 54.33 327 P pP 19 07 16.1 -1.0
baz=144
736A Circle Diamond 54.34 330 P pP 19 07 16.6 -0.6
baz=147
146A Union 54.36 340 P pP 19 07 16.2 -1.1
baz=157
342A Flagon Creek P 54.39 336 P pP 19 07 17.4 -0.1
baz=153
243A Waterproof 54.52 337 P pP 19 07 18.2 -0.3
baz=154
Z47A Carrollton 54.56 341 P pP 19 07 18.4 -0.4
baz=158
Z48A Northport 54.57 341 P pP 19 07 18.6 -0.3
baz=159
636A Smothers Creek 54.78 330 P pP 19 07 20.1 -0.4
baz=147
439A Center Grove, 54.87 333 P pP 19 07 20.7 -0.4
baz=150
242A Grayson 54.94 336 P pP 19 07 21.6 0.0
baz=153
537A Green Hill Far 54.94 331 P pP 19 07 21.3 -0.4
baz=148
833A Chaparral WMA, 54.96 328 P pP 19 07 21.3 -0.5
baz=145
734A La Parita Cree 54.97 329 P pP 19 07 20.9 -0.9
baz=146
635A Leesville 55.04 330 P pP 19 07 21.5 -0.8
baz=147
340A Bronson 55.05 334 P pP 19 07 21.9 -0.5
baz=151
438A Sam Houston St 55.14 333 P pP 19 07 22.4 -0.7
baz=149
Y47A UCPARC, Winfie 55.15 341 P pP 19 07 22.3 -0.8
baz=158
241A Mo Tay, Goldon 55.20 336 P pP 19 07 23.0 -0.4
baz=152
832A Faith Ranch, C 55.23 327 P pP 19 07 23.6 -0.2
baz=144
733A Divot King Ran 55.23 328 P pP 19 07 23.2 -0.6
baz=145
Z45A Winona 55.24 339 P pP 19 07 23.4 -0.4
baz=156
Z44A Pea Ridge, Bel 55.41 339 P pP 19 07 24.3 -0.6
baz=156
Y46A Houston 55.44 340 P pP 19 07 24.8 -0.4
baz=157
240A Hunter Patters 55.54 335 P pP 19 07 25.7 -0.2
baz=152
338A Crockett 55.59 333 P pP 19 07 26.0 -0.4
baz=150
Y45A Yeager Farm, C 55.65 340 P pP 19 07 26.5 -0.2
baz=157
NATX Nacogdoches 55.67 334 P pP 19 07 26.4 -0.5
baz=151
CPCT Cooper Cave 55.69 345 *e* P **P 19 07 00.2 -0.3**
comp=Z,10nm,1.2s
141A Papa Simpson, 55.71 336 P pP 19 07 26.5 -0.7
baz=153
TKL Tuckaleechee C 55.71 346 *e* P **P 19 07 00.1 -0.6**
TKL Tuckaleechee C 55.71 346 *e* P **P 19 07 00.1 -0.6**
633A Saathoff Ranch 55.78 328 P pP 19 07 26.8 -0.9
baz=145
337A Centerville 55.81 333 P pP 19 07 27.4 -0.5
baz=149
239A Gary 55.81 334 P pP 19 07 27.7 -0.3
baz=151
SWET Sewanee 55.83 344 *e* P **P 19 07 00.9 -0.7**
SWET *e* pP **pP 19 07 27.3 -0.7**
140A Cam and Jess, 56.00 335 P pP 19 07 29.1 -0.1
baz=152
238A Jacksonville 56.07 334 P pP 19 07 29.4 -0.4
baz=150
X45A UM Field Stati 56.11 340 P pP 19 07 29.5 -0.5
baz=157
435B Jarrell 56.12 331 P pP 19 07 29.8 -0.4
baz=147
Z41A Richland Creek 56.25 336 P pP 19 07 30.5 -0.5
baz=153
336A Riesel 56.29 332 P pP 19 07 30.9 -0.4
baz=148
237A Washetta, Mont 56.36 333 P pP 19 07 31.8 -0.1
baz=150
434A Burnet 56.46 330 P pP 19 07 32.1 -0.5
baz=147
335A Moody 56.47 331 P pP 19 07 32.4 -0.3
baz=148
Z40A Long Farm, Mag 56.48 336 P pP 19 07 32.5 -0.1
baz=152
138A Matatall Enter 56.63 334 P pP 19 07 33.2 -0.5
baz=150
X43A Marvell 56.69 339 P pP 19 07 34.1 -0.1
baz=155
W45A Hickory Valley 56.72 341 P pP 19 07 33.6 -0.7
baz=157
Y41A Eaglette Beard 56.73 337 P pP 19 07 33.9 -0.6
baz=153
WLAR White Oak Lake 56.75 336 *e* pP pP 19 07 36.6 +2.0
433A Art 56.81 329 P pP 19 07 34.6 -0.5
baz=146
137A Heron Place, G 56.85 333 P pP 19 07 34.6 -0.8
baz=150
334A Lometa 56.88 331 P pP 19 07 35.0 -0.6
baz=147
JCT Junction City 56.93 329 P pP 19 07 35.3 -0.7
baz=145
WHTX Lake Whitney, 57.08 332 P pP 19 07 36.5 -0.5
baz=148
WHTX Lake Whitney, 57.08 332 *e* pP pP 19 07 37.3 +0.3
136A Ennis 57.08 333 P pP 19 07 36.4 -0.6
baz=149
Y40A Okolona 57.10 336 P pP 19 07 37.0 -0.1
baz=153
V45A Humboldt 57.19 341 P pP 19 07 37.0 -0.7
baz=158
WVT Waverly 57.21 342 *e* P **P 19 07 10.2 -1.1**
WVT Waverly 57.21 342 *e* P **P 19 07 10.2 -1.1**
WVT *e* pP **pP 19 07 36.3 -1.6**
333A Richland Sprin 57.23 330 P pP 19 07 37.3 -0.8
baz=146
Z37A Pogue Cattle C 57.32 334 P pP 19 07 38.1 -0.6
baz=150
Y39A Lockesburg 57.35 336 P pP 19 07 37.9 -1.0
baz=152
X40A Basin Creek Fa 57.35 337 P pP 19 07 38.6 -0.3
baz=153
234A Clairette 57.40 331 P pP 19 07 38.5 -0.8
baz=147
UALR University of 57.43 338 *e* pP pP 19 07 39.0 -0.5
135A Vickery Place, 57.54 332 P pP 19 07 39.5 -0.8
baz=148
MIAR Mount Ida 57.68 336 P pP 19 07 40.6 -0.6
baz=153
MIAR Mount Ida 57.68 336 *e* P **P 19 07 14.5 -0.1**
MIAR Mount Ida 57.68 336 *e* P **P 19 07 14.5 -0.1**
MIAR *e* pP **pP 19 07 40.8 -0.5**
Z36A Blue Ridge 57.72 333 P pP 19 07 40.9 -0.6
baz=149
W41B Gary Mavity, V 57.76 338 P pP 19 07 41.0 -0.8
baz=154
233A Rising Star 57.76 330 P pP 19 07 41.0 -0.9
baz=146
134A White-Moore Ra 57.85 331 P pP 19 07 41.5 -1.0
baz=148
X39A Fountain Ranch 57.86 336 P pP 19 07 42.3 -0.2
baz=152,SNR=5.6
X301 Greenbrier Sit 57.87 338 *e* P **P 19 07 15.7 -0.2**
comp=Z,19nm,1.0s
WHAR Wooly Hollow 57.88 338 *e* P **P 19 07 17.6 +1.7**
WHAR *e* pP **pP 19 07 42.8 +0.2**
Y37A Hugo 57.99 334 P pP 19 07 43.2 -0.2
baz=150
TXAR Lajitas Array 58.03 325 P **P 19 07 18.0 +0.7**
comp=Z,0.4nm,0.7s,baz=156,slow=8.0,SNR=6.0
TXAR pP **pP 19 07 44.0 +0.1**
comp=Z,1.6nm,0.7s,baz=146,slow=8.3,SNR=10
TX31 Lajitas Ar. Si 58.03 325 *e* P **P 19 07 17.9 +0.6**
TX31 *e* pP **pP 19 07 44.1 +0.2**
V42A Cord 58.03 339 P pP 19 07 43.5 -0.2
baz=155
W40A Ferguson Farm, 58.07 337 P pP 19 07 43.6 -0.4
baz=153
Z35A Perchaven, San 58.12 333 P pP 19 07 44.2 -0.2
baz=148
Y36A Durant 58.20 334 P pP 19 07 45.0 +0.1
baz=150
133A Hamilton Ranch 58.26 331 P pP 19 07 44.5 -0.9
baz=147
V41A Mountainview 58.27 338 P pP 19 07 44.9 -0.6
baz=154
X38A Whitesboro 58.28 335 P pP 19 07 44.8 -0.6
baz=151
W39A Magazine 58.34 337 P pP 19 07 45.5 -0.4
baz=153
X37A Clayton 58.42 335 P pP 19 07 46.2 -0.2
baz=151
Z34A Collier Ranch, 58.45 332 P pP 19 07 46.4 -0.3
baz=148
U42A Revenden 58.48 339 P pP 19 07 45.9 -0.9
baz=156,SNR=5.5
W38A Poteau 58.51 336 P pP 19 07 46.3 -0.7
baz=152
Y35A Marietta 58.52 333 P pP 19 07 46.7 -0.5
baz=149
V40A Witts Springs 58.53 338 P pP 19 07 46.3 -1.0
baz=154
PBMO Poplar Bluff 58.60 340 *e* P **P 19 07 20.4 -0.6**
comp=Z,31nm,0.9s
ABTX Abilene, Hawle 58.61 330 P pP 19 07 47.0 -0.9
baz=146
U41A Vici 58.70 339 P pP 19 07 47.8 -0.5
baz=155
MVL Millersville 58.72 354 *e* P **P 19 07 21.6 -0.2**
comp=Z,10nm,0.7s
Z33A Whitaker Ranch 58.76 331 P pP 19 07 48.1 -0.7
baz=147
X36A Centrahoma 58.80 334 P pP 19 07 48.5 -0.6
baz=150
V39A Pettigrew 58.86 337 P pP 19 07 48.2 -1.4
baz=153
S45A Carrier Mills 58.87 342 P pP 19 07 48.1 -1.4
baz=159,SNR=6.3
Y34A Reagan Ranch, 58.88 333 P pP 19 07 48.5 -1.1
baz=148,SNR=5.9
X35A Drake 58.92 334 P pP 19 07 49.3 -0.6
baz=149
W37B Quinton 58.92 335 P pP 19 07 49.8 -0.2
baz=151,SNR=5.6
U40A Yellville 59.03 338 P pP 19 07 49.5 -1.2
baz=154
S44A Carbondale 59.08 342 P pP 19 07 49.7 -1.4
baz=158,SNR=11
SIUC Southern Illin 59.09 342 *e* P **P 19 07 24.8 +0.4**
comp=Z,104nm,0.6s
V38A Canehill 59.16 336 P pP 19 07 50.5 -1.1
baz=152
S43A Fulton Ridge, 59.22 341 P pP 19 07 51.1 -0.9
baz=157,SNR=7.0
W36A Wetumka 59.24 335 P pP 19 07 51.5 -0.8
baz=150
T41A Mountain View 59.28 339 P pP 19 07 51.3 -1.2
baz=155
U39A Green Forest 59.28 338 P pP 19 07 51.5 -1.0
baz=153
Y33A Hilltop Ranch, 59.30 332 P pP 19 07 51.4 -1.3
baz=147
X34A Smith Ranch, M 59.46 333 P pP 19 07 53.1 -0.7
baz=148
V37A Hulbert 59.46 336 P pP 19 07 52.8 -0.9
baz=151
W35A Tecumseh 59.52 334 P pP 19 07 52.9 -1.3
baz=149
R44A Waltonville 59.55 342 P pP 19 07 53.5 -0.7
baz=158
N59A State Game Lan 59.58 354 P pP 19 07 53.6 -0.9
baz=173
T40A Mansfield 59.63 339 P pP 19 07 54.1 -0.8
baz=154
U38A Gravette 59.66 337 P pP 19 07 54.2 -0.9
baz=152
V36A Jenks 59.69 335 P pP 19 07 54.9 -0.4
baz=151,SNR=5.8
X33A Lawton 59.70 332 P pP 19 07 54.5 -0.9
baz=148
TUL1 Leonard 59.74 335 P pP 19 07 54.8 -0.8
baz=151
S41A Jillco Farms, 59.77 340 P pP 19 07 54.9 -0.9
baz=155
T39A Clever 59.82 338 P pP 19 07 56.0 -0.1
baz=154
U37A Salina 59.91 336 P pP 19 07 56.2 -0.6
baz=152
ACSO Alum Creek Sta 59.94 348 *e* P **P 19 07 29.5 -0.7**
comp=Z,30nm,1.0s
ACSO *e* pP **pP 19 07 57.0 0.0**
X32A Elmer 59.95 332 P pP 19 07 56.6 -0.5
baz=147
W34A Bridge Creek, 59.97 333 P pP 19 07 56.8 -0.5
baz=149
WMOK Wichita Mounta 59.99 332 P pP 19 07 57.1 -0.3
baz=148
WMOK Wichita Mounta 59.99 332 *e* P **P 19 07 30.1 -0.5**
WMOK Wichita Mounta 59.99 332 *e* P **P 19 07 30.1 -0.5**
WMOK *e* pP **pP 19 07 57.2 -0.2**
S40A Lebanon 60.03 339 P pP 19 07 57.0 -0.6
baz=154
V35A Meyer Ranch, C 60.03 334 P pP 19 07 57.1 -0.6
baz=150
N54A Moraine State 60.13 351 P pP 19 07 57.8 -0.5
baz=168
Q44A Meyer Farm, Va 60.13 342 P pP 19 07 57.5 -0.8
baz=158,SNR=5.5
U36A Oologah 60.14 336 P pP 19 07 57.2 -1.2
baz=151
T38A Diamond 60.16 337 P pP 19 07 57.4 -1.2
baz=153
W33A Caddo, Fort Co 60.20 333 P pP 19 07 57.8 -1.0
baz=148
Q43A New Douglas 60.37 342 P pP 19 07 59.0 -0.9
baz=158
V34A Guthrie 60.38 334 P pP 19 07 59.1 -1.0
baz=149
S39A Bolivar 60.40 338 P pP 19 07 59.3 -0.8
baz=154
T37A Cheneyville 18 60.47 337 P pP 19 07 60.0 -0.6
baz=152
U35A Pawnee 60.52 335 P pP 19 08 00.3 -0.7
baz=150
W32A Sentinel 60.52 332 P pP 19 08 00.2 -0.9
baz=147,SNR=7.4
S38A Stockton 60.55 338 P pP 19 08 01.0 -0.2
baz=153
R40A Maddies Statio 60.58 340 P pP 19 08 00.5 -0.8
baz=155
Q42A Golden Eagle 60.59 341 P pP 19 08 01.0 -0.5
baz=157
SHEL Horse Pasture 60.62 98 *i* P **P 19 07 37.1 +1.7**
M54A Oil Creek Stat 60.62 351 P pP 19 08 01.3 -0.3
baz=159
V33A Lossen Ranch, 60.69 333 P pP 19 08 01.3 -0.9
baz=148
T36A Boggs Farm, Ca 60.78 336 P pP 19 08 02.0 -0.8
baz=151
MNTX Cornudas Mount 60.79 325 P pP 19 08 02.2 -0.8
baz=140
MNTX Cornudas Mount 60.79 325 *e* P **P 19 07 36.2 +0.1**
MNTX *e* pP **pP 19 08 02.5 -0.5**
R39A Chumby, Stover 60.86 339 P pP 19 08 03.1 -0.2
baz=154
BINY Binghamton 60.87 354 *e* P **P 19 07 36.5 0.0**
comp=Z,26nm,0.9s
U34A Anderson Ranch 60.90 334 P pP 19 08 02.8 -0.8
baz=149
T35A Sooner Cattle 60.90 335 P pP 19 08 03.0 -0.6
baz=150
V32A Arapaho 60.93 333 P pP 19 08 03.6 -0.2
baz=148
S37A Fort Scott 61.00 337 P pP 19 08 04.1 -0.2
baz=152
SFIN Lafayette 61.00 345 P pP 19 08 03.2 -1.0
baz=161
SFIN Lafayette 61.00 345 *e* P **P 19 07 36.0 -1.3**
comp=Z,16nm,0.6s
R38A Fenwick Farm, 61.04 338 P pP 19 08 03.7 -0.8
baz=153
U33A Lingo Farm, Me 61.14 334 P pP 19 08 04.6 -0.6
baz=149
Q40A Laux Farm, Aux 61.15 340 P pP 19 08 04.4 -0.8
baz=155
P42A Winchester 61.15 342 P pP 19 08 04.1 -1.2
baz=157
MSTX Muleshoe 61.22 329 P pP 19 08 04.8 -1.2
baz=144
MSTX Muleshoe 61.22 329 *e* pP pP 19 08 06.4 +0.4
TRY Troy 61.22 356 *e* P **P 19 07 38.8 +0.1**
comp=Z,64nm,1.3s
S36A Lake Cedric, C 61.25 337 P pP 19 08 05.3 -0.7
baz=151
T34A McClaskey Farm 61.26 335 P pP 19 08 05.4 -0.7
baz=150,SNR=5.4
ERPA Erie 61.27 351 *e* P **P 19 07 39.1 0.0**
comp=Z,51nm,0.9s
AMTX Amarillo 61.43 330 P pP 19 08 06.1 -1.4
baz=145
P41A Barry, Barry 61.45 341 P pP 19 08 06.1 -1.2
baz=156
U32A Winter Ranch, 61.47 333 P pP 19 08 06.8 -0.7
baz=148
S35A Otter Creek Ra 61.49 336 P pP 19 08 06.9 -0.7
baz=151
Q39A Willow Grove F 61.49 339 P pP 19 08 06.8 -0.8
baz=154,SNR=6.6
P40A Paris 61.63 340 P pP 19 08 08.0 -0.6
baz=155
Q38A Cooks Store, C 61.64 339 P pP 19 08 08.0 -0.6
baz=154
O42A Bath 61.64 342 P pP 19 08 08.0 -0.5
baz=158
R36A Gordon, Harris 61.74 337 P pP 19 08 08.3 -1.1
baz=152
T33A Patterson Ranc 61.74 334 P pP 19 08 08.9 -0.5
baz=149
HDIL Hopedale 61.75 343 P pP 19 08 08.2 -1.1
baz=158
O41A Passleys Farm, 61.80 341 P pP 19 08 08.8 -0.9
baz=157
S34A Willow Spring 61.82 335 P pP 19 08 09.2 -0.7
baz=150
P39B Salisbury 61.82 340 P pP 19 08 09.0 -0.8
baz=155
R35A Emporia Munici 62.01 336 P pP 19 08 10.4 -0.8
baz=151
S33A Kaszmaul Farm, 62.08 335 P pP 19 08 10.9 -0.8
baz=149
O40A La Belle 62.11 341 P pP 19 08 11.1 -0.7
baz=156
T32A Huddler Ranch, 62.11 334 P pP 19 08 11.4 -0.5
baz=148
P38A Dawn 62.20 339 P pP 19 08 11.7 -0.7
baz=154
Q36A Arnold C. Orve 62.29 337 P pP 19 08 12.6 -0.4
baz=152
R34A Isabella, Hill 62.39 336 P pP 19 08 13.1 -0.6
baz=150
Q35A Mercer Eighty, 62.41 337 P pP 19 08 13.2 -0.7
baz=151
O39A Kirksville 62.45 340 P pP 19 08 13.4 -0.6
baz=155
P37A Lathrop 62.45 338 P pP 19 08 13.2 -0.9
baz=153
S32A Newby Ranch, P 62.56 334 P pP 19 08 14.8 -0.1
baz=148
O38A Galt 62.63 339 P pP 19 08 14.6 -0.6
baz=154
R33A Olander Ranch, 62.69 335 P pP 19 08 15.5 -0.2
baz=149
121A Cookes Peak, D 62.74 324 P pP 19 08 16.5 0.0
baz=138
319A Douglas 62.74 322 *e* pP pP 19 08 17.9 +1.6
P36A Good Intent, A 62.78 338 P pP 19 08 16.2 -0.1
baz=152

Q34A	Chapman	62.81	336	P	pP	19 08 15.9	-0.6
	baz=150						
KSU1	Kansas State U	62.84	336	P	pP	19 08 16.0	-0.7
	baz=151						
KSU1	Kansas State U	62.84	336	*e*pP	pP	19 08 18.3	+1.6
O37A	Wolven Farm, M	62.90	339	P	pP	19 08 16.0	-1.1
	baz=154						
P35A	Duane Minner,	62.99	337	P	pP	19 08 16.9	-0.8
	baz=152						
N39A	Derby Farms, D	63.00	341	P	pP	19 08 17.3	-0.4
	baz=155						
R32A	Long Quarter,	63.08	335	P	pP	19 08 17.2	-1.2
	baz=149						
VNA1	Neumayer--Stat	63.11	161	P	**P**	**19 07 52.7**	**+1.7**
Q33A	Connelly Farm,	63.22	336	P	pP	19 08 18.4	-0.9
	baz=150						
P34A	Walnut Farm, R	63.31	337	P	pP	19 08 19.0	-0.8
	baz=151						
BNM	Barren Site	63.34	326	*e*pP	pP	19 08 21.3	+0.8
M39A	Webster	63.44	341	P	pP	19 08 20.0	-0.7
	baz=156						
N37A	Lee Faris, Mou	63.45	339	P	pP	19 08 19.8	-0.9
	baz=154						
L41A	Preston	63.50	343	P	pP	19 08 20.8	-0.2
	baz=158						
Q32A	Meitler Ranch,	63.51	335	P	pP	19 08 20.4	-0.8
	baz=149						
P33A	Williams Farm,	63.55	336	P	pP	19 08 20.9	-0.6
	baz=150						
O35A	Humboldt	63.60	338	P	pP	19 08 21.7	-0.1
	baz=152						
L40A	Anamosa	63.69	342	P	pP	19 08 21.6	-0.7
	baz=157						
N36A	Muff Farm, Cla	63.76	339	P	pP	19 08 22.1	-0.7
	baz=153						
O34A	Beatrice	63.82	337	P	pP	19 08 22.8	-0.4
	baz=151						
CBKS	Cedar Bluff	63.84	334	P	pP	19 08 22.7	-0.7
	baz=148						
ANMO	Albuquerque	63.86	327	P	pP	19 08 23.5	-0.3
	baz=140						
ANMO	Albuquerque	63.86	327	*i* P	**P**	**19 07 57.3**	**+0.5**
ANMO				pmax	pmax		
	comp=Z,6.0nm,2.1s						
K41A	Shullsburg	63.93	343	P	pP	19 08 23.1	-0.8
	baz=158						
M37A	Trindle Farm,	63.98	340	P	pP	19 08 23.3	-0.9
	baz=154						
L39A	Vinton	63.98	342	P	pP	19 08 23.4	-0.8
	baz=156						
N35A	Tabor	64.03	338	P	pP	19 08 23.9	-0.8
	baz=152						
O33A	Hebron	64.06	336	P	pP	19 08 23.9	-0.9
	baz=150						
JFWS	Jewell Farm	64.20	343	*e*P	**P**	**19 07 58.4**	**-0.2**
JFWS				pmax	pmax		
	comp=Z,18nm,0.7s						
JFWS	Jewell Farm	64.20	343	*e*P	**P**	**19 07 58.4**	**-0.2**
	comp=Z,18nm,0.7s						
K40A	Colesburg	64.25	342	P	pP	19 08 25.4	-0.7
	baz=157						
M36A	Felix, Anita	64.27	339	P	pP	19 08 25.6	-0.6
	baz=153						
L38A	Oak Wood Farm,	64.29	341	P	pP	19 08 25.5	-0.8
	baz=155						
TUC	Tucson	64.30	322	P	pP	19 08 25.9	-0.7
	baz=136						
N34A	Lincoln	64.32	338	P	pP	19 08 25.7	-0.8
	baz=151						
LMN	Caledonia Moun	64.36	4	*e*P	**P**	**19 07 59.2**	**-0.3**
	comp=Z,28nm,0.9s						
K39A	Oelwein	64.48	342	P	pP	19 08 26.7	-0.8
	baz=156						
O32A	Brockman Farm,	64.48	336	P	pP	19 08 26.9	-0.7
	baz=150						
L37A	Phoenix Point,	64.53	340	P	pP	19 08 27.0	-0.8
	baz=154						
T25A	Trinidad	64.56	330	P	pP	19 08 27.4	-1.0
	baz=143						
J41A	Loganville	64.56	344	P	pP	19 08 27.4	-0.7
	baz=158						
K38A	Parkersburg	64.69	341	P	pP	19 08 28.2	-0.7
	baz=155						
TRQ	Mont Tremblant	64.76	356	*e*P	**P**	**19 08 01.7**	**-0.5**
J40A	Soldiers Grove	64.79	343	P	pP	19 08 28.7	-0.8
	baz=158						
L36A	Harm Buss Farm	64.80	340	P	pP	19 08 29.1	-0.6
	baz=153						
J39A	Decorah	65.00	342	P	pP	19 08 30.4	-0.5
	baz=156						
K37A	Belmond	65.07	341	P	pP	19 08 30.7	-0.7
	baz=154						
SNAA	Sanae	65.11	161	P	**P**	**19 08 05.3**	**+1.0**
SNAA	Sanae	65.11	161	*e*P	**P**	**19 08 04.8**	**+0.6**
SNAA				pmax	pmax		
	comp=Z,24nm,0.7s						
SNAA	Sanae	65.11	161	*e*P	**P**	**19 08 04.8**	**+0.6**
	comp=Z,24nm,0.7s						
L35A	Bielow Farm, R	65.11	339	P	pP	19 08 31.1	-0.5
	baz=152						
J38A	Wedel Dairy, R	65.21	342	P	pP	19 08 31.4	-0.9
	baz=156						
N31A	Bailey Ranch,	65.23	336	P	pP	19 08 32.5	0.0
	baz=149						
KSCO	Kaye Shedlock'	65.24	332	P	pP	19 08 32.2	-0.6
	baz=145						
214A	Organ Pipe Nat	65.27	320	P	pP	19 08 32.7	-0.2
	baz=134						
L34A	Svendsen Farm,	65.27	338	P	pP	19 08 32.0	-0.7
	baz=152						
BGNE	Belgrade	65.43	337	P	pP	19 08 33.1	-0.7
	baz=150						
BGNE	Belgrade	65.43	337	*e*P	**P**	**19 08 07.1**	**+0.5**
	comp=Z,49nm,0.7s						
J37A	Redenius Farm,	65.53	341	P	pP	19 08 33.8	-0.7
	baz=155						
K35A	Storm Lake	65.55	339	P	pP	19 08 34.0	-0.5
	baz=153						
SDCO	Great Sand Dun	65.56	329	P	pP	19 08 35.1	0.0
	baz=142						
SDCO	Great Sand Dun	65.56	329	*e*P	**P**	**19 08 08.5**	**+0.6**
	comp=Z,10nm,0.8s						
M31A	Lambtecht Ranc	65.69	336	P	pP	19 08 35.9	+0.4
	baz=149						
W18A	Petrified Fore	65.75	324	P	pP	19 08 36.1	-0.2
	baz=138						
L33A	Hoskins	65.76	338	P	pP	19 08 35.8	-0.1
	baz=151						
J36A	Seneca 1, Swea	65.80	340	P	pP	19 08 35.9	-0.3
	baz=154						
I38A	Scanlan Farm,	65.83	342	P	pP	19 08 36.0	-0.3
	baz=156						
I37A	Lemond, Waseca	66.12	341	P	pP	19 08 37.6	-0.6
	baz=155						
X16A	Lo Mia Camp, P	66.20	323	*e*pP	pP	19 08 40.6	+1.5
S22A	4UR Ranch, Cre	66.22	328	P	pP	19 08 38.9	-0.5
	baz=141						
S22A	4UR Ranch, Cre	66.22	328	*e*pP	pP	19 08 40.7	+1.4
J34A	George	66.29	339	P	pP	19 08 39.2	-0.1
	baz=152						
I36A	Fitzsimmons Fa	66.32	341	P	pP	19 08 38.7	-0.7
	baz=154						
L31A	Butterfield Fa	66.35	337	P	pP	19 08 40.3	+0.5
	baz=149						
Q24A	Divide	66.36	330	P	pP	19 08 40.1	-0.1
	baz=143						
K32A	Verdigre	66.45	337	P	pP	19 08 40.2	-0.1
	baz=150						
I35A	Creekview Farm	66.48	340	P	pP	19 08 40.7	+0.1
	baz=153						
H37A	Dierke Farm, C	66.50	342	P	pP	19 08 40.8	+0.2
	baz=156						
OGNE	Ogallala	66.58	334	P	pP	19 08 41.2	-0.2
	baz=146						
MVCO	Mesa Verde	66.66	327	P	pP	19 08 42.1	0.0
	baz=139						
MVCO	Mesa Verde	66.66	327	*e*P	**P**	**19 08 14.1**	**-0.8**
MVCO				*e*pP	**PcP**	**19 08 43.5**	**+0.3**
J33A	Davis	66.66	338	P	pP	19 08 41.2	-0.5
	baz=151						
K31A	O'Neill	66.70	337	P	pP	19 08 41.5	-0.5
	baz=150						
H36A	Jessenland, He	66.79	341	P	pP	19 08 42.3	-0.2
	baz=155						
VLDQ	Val d'Or	66.87	354	*e*P	**P**	**19 08 15.9**	**+0.3**
VLDQ				*e*pP	**PcP**	**19 08 43.7**	**+0.2**
ECSD	EROS Data Cent	66.91	339	P	pP	19 08 43.2	-0.1
	baz=152						
ECSD	EROS Data Cent	66.91	339	*e*P	**P**	**19 08 15.2**	**-0.8**
ECSD				*e*pP	**pP**	**19 08 43.2**	**-0.1**
I34A	Hadley	66.93	340	P	pP	19 08 43.2	-0.2
	baz=153						
WUAZ	Wupatki	66.95	324	P	pP	19 08 43.8	-0.1
	baz=136,SNR=5.2						
WUAZ	Wupatki	66.95	324	*e*pP	pP	19 08 45.4	+1.5
SPMN	Marine on St.	67.05	342	P	pP	19 08 44.2	+0.1
	baz=156						
SPMN	Marine on St.	67.05	342	*e*P	**P**	**19 08 16.8**	**-0.1**
	comp=Z,21nm,1.1s						
K30A	Basset	67.07	336	P	pP	19 08 44.1	-0.3
	baz=149						
H35A	Sunnyside Ranc	67.18	341	P	pP	19 08 44.7	-0.3
	baz=154						
ISCO	Idaho Springs	67.24	330	P	pP	19 08 45.6	-0.3
	baz=143						
ISCO	Idaho Springs	67.24	330	*e*P	**P**	**19 08 18.5**	**-0.1**
ISCO				*e*PP	**pP**	**19 08 47.1**	**+1.2**
ISCO	Idaho Springs	67.24	330	*e*P	**P**	**19 08 18.5**	**-0.1**
ISCO				*e*pP	**pP**	**19 08 47.1**	**+1.2**
I33A	Coleman	67.25	339	P	pP	19 08 45.4	-0.1
	baz=152						
G36A	St. Michael	67.34	342	P	pP	19 08 45.9	-0.1
	baz=155						
H34A	Spellman Lake,	67.46	340	P	pP	19 08 46.8	0.0
	baz=153						
I32A	Karley and Nic	67.46	338	P	pP	19 08 46.4	-0.5
	baz=151						
Y12C	Blythe	67.54	320	P	pP	19 08 47.4	-0.1
	baz=133						
G35A	Watkins	67.55	341	P	pP	19 08 47.3	0.0
	baz=154						
J30A	Dallas	67.58	337	P	pP	19 08 47.6	0.0
	baz=149						
PDMCI	Parker Dam,Lak	67.70	321	P	pP	19 08 48.5	0.0
	baz=134						
IKP	In-Ko-Pah, Jac	67.78	319	P	pP	19 08 49.0	-0.2
	baz=132						
SWSC	Sam W. Stewart	67.78	319	P	pP	19 08 49.3	+0.3
	baz=132						
H33A	Prehn Over Nor	67.79	339	P	pP	19 08 49.2	+0.3
	baz=152						
F36A	Milaca	67.84	342	P	pP	19 08 49.5	+0.3
	baz=155						
I31A	Royce, Wessing	67.84	338	P	pP	19 08 50.0	+0.8
	baz=150						
H32A	Carlson Farm,	67.87	339	P	pP	19 08 50.0	+0.6
	baz=151						
BC3	Big Chuckawall	68.05	320	P	pP	19 08 51.0	+0.1
	baz=133						
W13A	Hualapai Mount	68.10	322	*e*pP	pP	19 08 52.9	+1.6
U15A	North Rim	68.12	324	*e*P	**P**	**19 08 25.9**	**+1.8**
	comp=Z,11nm,1.0s						
MONP2	Monument Peak	68.14	319	P	pP	19 08 50.9	-0.7
	baz=132						
G33A	Ortonville	68.14	340	P	pP	19 08 51.0	-0.1
	baz=152						
LIC	Lamto	68.14	75	*e*P	**P**	**19 08 22.9**	**-1.5**
	comp=Z,16nm,0.5s						
F35A	Swanville	68.15	341	P	pP	19 08 51.6	+0.5
	baz=154						
BAR	Barrett	68.15	318	*e*pP	pP	19 08 52.8	+1.3
IRM	Iron Mountain	68.20	320	P	pP	19 08 52.4	+0.6
	baz=133,SNR=5.1						
N23A	Red Feather La	68.27	331	P	pP	19 08 52.5	+0.1
	baz=142						
N23A	Red Feather La	68.27	331	*e*P	**P**	**19 08 25.9**	**+0.9**
N23A				*e*pP	**pP**	**19 08 53.5**	**+1.2**
F34A	Alexandria	68.30	341	P	pP	19 08 52.7	+0.6
	baz=154						
TIC	Toumodi	68.31	75	*e*P	**P**	**19 08 24.0**	**-1.5**
SUSD	Miller	68.35	338	P	pP	19 08 52.8	+0.4
	baz=150						
E36A	McGregor	68.36	343	P	pP	19 08 52.2	-0.2
	baz=156						
KIC	Kosan Boka	68.46	75	*e*P	**P**	**19 08 25.1**	**-1.3**
	comp=Z,112nm,0.9s						
DBIC	Dimbokro	68.47	75	P	**P**	**19 08 25.3**	**-1.1**
	comp=Z,41nm,0.8s,baz=225,slow=6.4,SNR=33						
DBIC	Dimbokro	68.47	75	*e*PKPdf	**P**	**19 08 25.5**	**-1.0**
BELC	Belle Mtn. Jos	68.61	320	P	pP	19 08 55.0	+0.5
	baz=132						
TPFO	Pinon Flats	68.63	319	P	pP	19 08 54.7	+0.1
	baz=132						
PFO	Pinyon Flats O	68.64	319	P	pP	19 08 54.9	+0.2
	baz=132						
F33A	5 Mile Ranch,	68.67	340	P	pP	19 08 54.7	+0.3
	baz=152						
D37A	Cotton	68.71	343	P	pP	19 08 54.7	0.0
	baz=156						
E35A	Pequot Lakes	68.73	342	P	pP	19 08 55.0	+0.3
	baz=154						
O20A	White River Ci	68.76	329	P	pP	19 08 55.7	+0.3
	baz=140						
KNB	Kanab	68.84	324	*e*P	**P**	**19 08 30.6**	**+2.1**
KNB				*e*PP	**pP**	**19 08 58.0**	**+2.1**
KNB	Kanab	68.84	324	*e*P	**P**	**19 08 30.6**	**+2.1**
KNB				*e*pP	**pP**	**19 08 58.0**	**+2.1**
E34A	Wadena	68.92	341	P	pP	19 08 56.4	+0.4
	baz=154						
C38A	Sawbill Land.	68.93	344	P	pP	19 08 56.4	+0.4
	baz=158						
D36A	Goodland	68.93	343	P	pP	19 08 56.5	+0.4
	baz=156						
GMRC	Granite Mounta	68.94	320	P	pP	19 08 56.9	+0.4
	baz=133,SNR=5.9						
C37A	Embarrass	69.17	344	P	pP	19 08 58.0	+0.4
	baz=157						
EYMN	Ely	69.20	344	P	pP	19 08 57.5	-0.2
	baz=158						
EYMN	Ely	69.20	344	*e*P	**P**	**19 08 29.6**	**-0.6**
EYMN				*e*pP	**pP**	**19 08 57.6**	**-0.1**
MTPU	Mount Pierson	69.23	325	*e*P	**P**	**19 08 29.8**	**-1.3**
MTPU				*e*pP	**pP**	**19 09 00.3**	**+1.8**
F31A	Hecla	69.33	339	P	pP	19 08 58.9	+0.3
	baz=151						
HEC	Hector,Ludlow	69.38	320	P	pP	19 08 59.6	+0.4
	baz=132						
C36A	Pine Crest Far	69.38	343	P	pP	19 08 58.7	0.0
	baz=156						
D34A	Park Rapids	69.44	342	P	pP	19 08 59.0	-0.2
	baz=154						
CCUT	Cedar City	69.53	324	*e*P	**P**	**19 08 34.6**	**+1.8**
	comp=Z,15nm,0.9s						
TUQ	Turquoise Moun	69.54	321	P	pP	19 09 00.0	-0.2
	baz=133						
MSU	Marysvale	69.57	325	*e*P	**P**	**19 08 34.8**	**+1.8**
MSU				*e*PP	**pP**	**19 09 02.1**	**+1.6**
MSU	Marysvale	69.57	325	*e*P	**P**	**19 08 34.8**	**+1.8**
MSU				*e*pP	**pP**	**19 09 02.1**	**+1.6**
F30A	Leola	69.58	338	P	pP	19 09 00.2	+0.1
	baz=150						
C35A	Jirik Farms, M	69.64	343	P	pP	19 09 01.1	+0.7
	baz=155						
NVL	N'lazarevskaya	69.64	160	*e*P	**P**	**19 08 33.6**	**+0.9**
BFSC	Mount Baldy Ra	69.80	319	P	pP	19 09 02.0	+0.1
	baz=131						
SHPR	Sheep Range	69.82	322	*e*P	**P**	**19 08 36.4**	**+1.9**
SHPR				*e*pP	**pP**	**19 09 03.7**	**+1.7**
F29A	Eureka	69.86	338	P	pP	19 09 01.9	0.0
	baz=149						
K22A	Casper	69.92	332	P	pP	19 09 02.6	+0.1
	baz=142						
GSC	Goldstone, Bar	69.98	320	P	pP	19 09 03.5	+0.5
	baz=132						
GSC	Goldstone, Bar	69.98	320	*e*pP	pP	19 09 04.5	+1.6
RSSD	Black Hills	70.04	334	P	pP	19 09 03.8	+0.6
	baz=145						
RSSD	Black Hills	70.04	334	*e*P	**P**	**19 08 36.6**	**+0.8**
RSSD				pmax	pmax		
	comp=Z,5.0nm,0.8s						
RSSD	Black Hills	70.04	334	*e*P	**P**	**19 08 36.6**	**+0.8**
	comp=Z,5.0nm,0.8s						
D32A	Dogwood Acres,	70.05	340	P	pP	19 09 03.8	+0.9
	baz=152						
SHOC	Shoshone, Teco	70.06	321	P	pP	19 09 04.1	+0.7
	baz=133						
B35A	Bob, Littlefor	70.17	343	P	pP	19 09 03.9	+0.3
	baz=155						
D31A	Mcclaflin, Tow	70.20	340	P	pP	19 09 04.8	+0.9
	baz=151						
C33A	Trail	70.22	341	P	pP	19 09 05.0	+1.0
	baz=153						
DECC	Green Verdugo	70.23	318	P	pP	19 09 04.9	+0.5
	baz=131						
EDW2	Edwards Air Fo	70.43	319	P	pP	19 09 05.8	+0.1
	baz=131,SNR=5.1						
B34A	Aery, Baudette	70.54	343	P	pP	19 09 06.8	+0.8
	baz=154						
B33A	Robert and Kas	70.62	342	P	pP	19 09 06.9	+0.4
	baz=154						
LRMC	Laurel Mtn Rad	70.63	320	P	pP	19 09 08.1	+1.1
	baz=131						
AGMN	Agassiz Nation	70.73	342	P	pP	19 09 07.1	0.0
	baz=153						
AGMN	Agassiz Nation	70.73	342	*e*P	**P**	**19 08 39.4**	**-0.2**
AGMN				*e*pP	**pP**	**19 09 07.5**	**+0.4**
TPNV	Topopah Spring	70.76	322	P	pP	19 09 08.6	+0.9
	baz=133,SNR=7.7						
TPNV	Topopah Spring	70.76	322	*e*pP	pP	19 09 09.4	+1.6
FURC	Furnace Creek,	70.79	321	P	pP	19 09 09.2	+1.4
	baz=132						
C31A	Landman Farms,	70.86	340	P	pP	19 09 08.4	+0.5
	baz=152						
SCZ2	Santa Cruz Isl	70.89	318	P	pP	19 09 08.6	+0.1
	baz=130						
MPMC	Manual Prospec	70.90	320	P	pP	19 09 09.4	+0.7
	baz=132						
B32A	Ashes, Strandq	71.02	341	P	pP	19 09 09.4	+0.5
	baz=153						
DUG	Dugway, Tooele	71.13	326	P	pP	19 09 10.9	+0.9
	baz=136,SNR=6.1						
DUG	Dugway, Tooele	71.13	326	*e*pP	pP	19 09 11.4	+1.5
A33A	Warroad	71.16	342	P	pP	19 09 10.9	+1.2
	baz=154						
ISA	Isabella, Lake	71.24	320	P	pP	19 09 11.7	+1.1
	baz=131						
ISA	Isabella, Lake	71.24	320	*e*P	**P**	**19 08 44.7**	**+1.7**
ISA	Isabella, Lake	71.24	320	*e*P	**P**	**19 08 44.7**	**+1.7**
ISA				*e*pP	**pP**	**19 09 12.5**	**+1.9**
R11A	Troy Canyon, C	71.33	323	P	pP	19 09 12.0	+0.7
	baz=134,SNR=8.5						
R11A	Troy Canyon, C	71.33	323	*e*pP	pP	19 09 12.8	+1.5
BW06	Boulder Array	71.41	330	P	pP	19 09 12.1	+0.3
	baz=140						
BW06	Boulder Array	71.41	330	*e*P	**P**	**19 08 44.7**	**+0.5**
PDAR	Pinedale Array	71.41	330	P	**P**	**19 08 44.8**	**+0.6**
	comp=Z,1.3nm,0.7s,baz=145,slow=5.4,SNR=7.3						
PDAR				pP	**pP**	**19 09 12.2**	**+0.4**
	comp=Z,2.5nm,0.9s,baz=139,slow=7.0,SNR=4.4						
MDND	Maddock	71.52	339	P	pP	19 09 13.3	+1.3
	baz=150						
HWUT	Hardware Ranch	71.52	328	*e*P	**P**	**19 08 45.9**	**+1.1**
HWUT				*e*pP	**pP**	**19 09 13.5**	**+1.1**
PKM	Mcpherson Peak	71.57	318	P	pP	19 09 13.4	+0.6
	baz=130						
VES	Vestal, Richgr	71.73	319	P	pP	19 09 14.1	+0.6
	baz=130						
B28A	Dugan Ranch, T	72.30	339	P	pP	19 09 17.4	+0.7
	baz=149						
ULM	Lac du Bonnet	72.48	343	P	**P**	**19 08 49.2**	**-0.8**
	comp=Z,9.7nm,0.6s,baz=157,slow=6.1,SNR=12						
ULM				pP	**pP**	**19 09 18.5**	**+0.8**
	comp=Z,9.4nm,0.6s,baz=158,slow=5.7,SNR=5.9						
ULM	Lac du Bonnet	72.48	343	*e*P	**P**	**19 08 49.4**	**-0.6**
IMW	Indian Meadow	72.93	330	*e*P	**P**	**19 08 54.7**	**+1.5**
IMW				*e*pP	**pP**	**19 09 21.9**	**+1.0**
RLMT	Red Lodge	73.09	332	P	pP	19 09 22.1	+0.3
	baz=140						
RLMT	Red Lodge	73.09	332	*e*P	**P**	**19 08 55.1**	**+1.1**
RLMT				*e*pP	**pP**	**19 09 23.6**	**+1.8**
SCHQ	Schefferville	73.25	2	P	**P**	**19 08 53.8**	**-0.7**
	comp=Z,8.3nm,0.7s,baz=184,slow=3.7,SNR=9.0						
SCHQ	Schefferville	73.25	2	*e*P	**P**	**19 08 54.3**	**-0.2**
	comp=Z,9.7nm,0.8s						
A26A	Wade Farm, Ken	73.26	338	P	pP	19 09 23.4	+1.0
	baz=148						
YHH	Holmes Hill	73.56	331	*e*P	**P**	**19 08 58.8**	**+1.9**
	comp=Z,10nm,0.8s						
A25A	Svangstu Ranch	73.68	338	P	pP	19 09 25.7	+0.8
	baz=147						
WAKR	Walker	73.68	321	*e*pP	pP	19 09 27.4	+2.1
DGMT	Dagmar	73.68	337	P	pP	19 09 25.5	+0.6
	baz=146						
GCMT	Greycliff	73.79	332	*e*P	**P**	**19 08 59.5**	**+1.5**
HLID	Hailey	74.39	328	P	pP	19 09 30.0	+0.6
	baz=136,SNR=5.7						
HLID	Hailey	74.39	328	*e*P	**P**	**19 09 03.3**	**+1.7**
HLID				*e*pP	**pP**	**19 09 31.3**	**+1.9**
PAHR	Pah Rah Range	74.43	322	*e*P	**P**	**19 09 04.0**	**+2.1**
PAHR				*e*pP	**pP**	**19 09 31.7**	**+1.9**
MCMT	McKenzie Canyo	74.53	330	*e*P	**P**	**19 09 04.5**	**+2.0**
MCMT				*e*pP	**pP**	**19 09 32.1**	**+1.8**
BOZ	Bozeman (W)	74.57	331	P	pP	19 09 31.3	+1.0
	baz=139						
BOZ	Bozeman (W)	74.57	331	*e*P	**P**	**19 09 03.7**	**+1.1**
BOZ				pmax	pmax		
	comp=Z,7.0nm,1.1s						
BOZ	Bozeman (W)	74.57	331	*e*P	**P**	**19 09 03.7**	**+1.1**
	comp=Z,6.8nm,1.1s						
DLMT	Dillon	74.81	330	*e*P	**P**	**19 09 05.3**	**+1.4**
DLMT				*e*pP	**pP**	**19 09 33.6**	**+1.8**
AFDM	Forest Hills D	74.88	321	*e*pP	pP	19 09 33.5	+1.3
MFID	Camas Ranch	75.00	327	*e*P	**P**	**19 09 07.0**	**+1.9**
MFID				*e*pP	**pP**	**19 09 34.6**	**+1.6**
ORV	Oroville	75.58	321	*e*pP	pP	19 09 38.0	+1.8
O03D	Paynes Creek	76.23	321	P	pP	19 09 40.2	+0.2
	baz=129						
MOD	Modoc Plateau	76.40	323	*e*pP	pP	19 09 42.5	+1.5
MSO	Missoula	76.52	330	P	pP	19 09 42.5	+0.9
	baz=137						
MSO	Missoula	76.52	330	*e*pP	pP	19 09 43.9	+2.3
BMO	Blue Mountains	76.77	327	*e*P	**P**	**19 09 16.2**	**+1.2**
BMO				*e*pP	**pP**	**19 09 44.2**	**+1.2**
TOA0	Torodi Ar. Sit	76.93	71	*e*P	**P**	**19 09 15.0**	**-1.5**
TORD	Torodi Ar. Bea	76.93	71	P	**P**	**19 09 15.0**	**-1.5**
	comp=Z,22nm,0.5s,baz=254,slow=5.0,SNR=141						
TORD				pP	**pP**	**19 09 44.7**	**+0.3**
	comp=Z,4.7nm,0.4s,baz=249,slow=5.3,SNR=2.4						
N02D	Trinity Center	77.19	322	P	pP	19 09 45.6	+0.1
	baz=129						
M04C	Macdoel	77.20	323	P	pP	19 09 46.1	+0.6
	baz=130						
K05A	Summer Lake	77.27	324	*e*pP	pP	19 09 47.8	+1.8
M02C	Callahan	77.54	322	P	pP	19 09 47.6	+0.2
	baz=129						
L02D	Cave Junction,	78.45	322	P	pP	19 09 53.0	+0.5
	baz=128						
SBA	Scott Base	78.49	190	*e*P	**P**	**19 09 27.0**	**+2.9**
SBA				pmax	pmax		
	comp=Z,10.0nm,1.3s						
SBA	Scott Base	78.49	190	*e*P	**P**	**19 09 27.0**	**+2.9**
	comp=Z,9.9nm,1.3s						
I05D	Terrebonne, OR	78.56	325	P	pP	19 09 54.4	+1.4
	baz=130						
I04A	Tendick Farm,	78.80	324	P	pP	19 09 55.3	+0.9
	baz=129						
NEW	Newport	79.05	330	P	pP	19 09 56.5	+0.8
	baz=134						
C09A	Chrisman Ranch	79.29	329	*e*P	**P**	**19 09 30.3**	**+1.5**
C09A				*e*pP	**pP**	**19 09 58.4**	**+1.5**
VNDA	Vanda	79.52	190	P

EDM Edmonton 80.99 335 *e*P P **19 09 37.8 -0.1**
EDM *e*pP **pP** **19 10 06.4 +0.3**
PMTG Montargil 81.07 44 *e*P P **19 09 39.6 +1.0**
comp=Z,36nm,1.0s
PTOM Tomar 81.25 43 *e*P P **19 09 36.7 -2.8**
comp=Z,24nm,1.5s
TSUM Tsumeb 81.37 107 *e*P P **19 09 41.0 +0.1**
comp=Z,13nm,0.8s
TSUM *e*pP **pP** **19 10 12.4 +3.3**
PBAR Barrancos 81.38 45 *e*P P **19 09 40.9 +0.7**
comp=Z,51nm,1.8s
PESTR Estremoz 81.38 44 *e*P P **19 09 41.1 +0.8**
comp=Z,37nm,1.3s
B05A Bryant 81.51 328 P pP 19 10 10.1 +1.3
baz=130
PCBR Castelo Branco 81.98 43 *e*P P **19 09 43.5 +0.2**
comp=Z,11nm,2.1s
A04D Lummi Island 82.11 328 P pP 19 10 13.1 +1.1
baz=130
PVIS Viseu 82.18 42 *e*P P **19 09 44.8 +0.4**
comp=Z,22nm,1.6s
MTE Manteigas 82.23 43 *e*P P **19 09 45.3 +0.6**
comp=Z,20nm,1.0s
PVRL Vila Real 82.59 42 *e*P P **19 09 46.8 +0.2**
comp=Z,35nm,1.7s
POLO Lamas de Olo 82.60 42 *e*P P **19 09 46.7 0.0**
comp=Z,14nm,1.7s
PGAV Gavieira, Arco 82.62 41 *e*P P **19 09 46.7 -0.1**
comp=Z,39nm,1.7s
PCAB Cabril 82.63 42 *e*P P **19 09 46.9 +0.2**
comp=Z,39nm,1.7s
MVO Moncorvo 82.97 42 *e*P P **19 09 48.8 +0.2**
comp=Z,26nm,1.2s
PBRG Braganca 83.49 42 *e*P P **19 09 51.7 +0.5**
comp=Z,50nm,1.7s
PAB San Pablo 83.89 45 *e*P P **19 09 53.6 +0.3**
PAB pmax pmax
comp=Z,42nm,1.0s
PAB San Pablo 83.89 45 *e*P P **19 09 53.6 +0.3**
comp=Z,42nm,1.0s
TAM Tamanrasset 84.04 64 *e*P P **19 09 54.7 +0.1**
TAM pmax pmax
comp=Z,20nm,1.4s
TAM Tamanrasset 84.04 64 *e*P P **19 09 54.7 +0.1**
comp=Z,20nm,1.4s
ESDC Sonseca Array 84.21 45 P P **19 09 55.2 +0.3**
comp=Z,21nm,0.9s,baz=250,slow=5.3,SNR=69
ESDC pP **pP** **19 10 24.6 +1.3**
comp=Z,5.7nm,0.8s,baz=249,slow=5.2,SNR=5.3
ESLA Sonseca Array 84.21 45 *e*P P **19 09 55.4 +0.5**
comp=Z,27nm,0.9s
ES19 SONSECA Array 84.27 45 *e*P P **19 09 55.1 -0.1**
ES19 *e*pP **pP** **19 10 25.8 +2.2**
GUD Guadarrama 84.57 44 P P **19 09 56.9 +0.1**
GUD pmax pmax
comp=Z,17nm,0.9s
BOSA Boshof 85.24 118 P P **19 10 00.2 -0.4**
comp=Z,12nm,0.9s,baz=243,slow=4.7,SNR=14
BOSA LR LR 19 45 42.5
comp=Z,102nm,19.4s,baz=72,slow=34
BOSA Boshof 85.24 118 *e*P P **19 10 00.7 +0.1**
BOSA pmax pmax
comp=Z,13nm,0.9s
BOSA Boshof 85.24 118 *e*P P **19 10 00.7 +0.1**
comp=Z,13nm,0.9s
LBTB Lobatse 86.68 115 *e*P P **19 10 07.7 0.0**
LBTB pmax pmax
comp=Z,12nm,0.9s
LBTB Lobatse 86.68 115 *e*P P **19 10 07.7 0.0**
comp=Z,12nm,0.9s
MAW Mawson 87.17 164 P P **19 10 10.1 +1.1**
comp=Z,14nm,0.8s,baz=228,slow=6.4,SNR=29
MAW Mawson 87.17 164 *e*P P **19 10 10.1 +1.1**
MAW pmax pmax
comp=Z,3.0nm,0.8s
MAW Mawson 87.17 164 *e*P P **19 10 10.1 +1.1**
comp=Z,3.3nm,0.8s
YKA Yellowknife Ar 88.36 341 P P **19 10 14.9 +0.4**
comp=Z,9.2nm,0.6s,baz=134,slow=4.8,SNR=90
YKA pP **pP** **19 10 42.9 -0.3**
comp=Z,6.8nm,0.6s,baz=135,slow=4.8,SNR=8.8
EPF Esparros 88.66 44 P P **19 10 15.7 -0.8**
EPF pmax pmax
comp=Z,4.0nm,0.7s
QUIF Quistinic 88.81 38 P P **19 10 15.5 -1.5**
QUIF pmax pmax
comp=Z,9.0nm,0.6s
ROSF Rostrenen 88.96 38 *e*P P **19 10 16.3 -1.4**
ROSF pmax pmax
comp=Z,7.0nm,0.6s
CAF Calviac 90.62 42 *e*P P **19 10 24.4 -1.2**
CAF pmax pmax
comp=Z,50nm,1.2s
FLN La Foliniere 90.79 38 *e*P P **19 10 24.8 -1.5**
FLN pmax pmax
comp=Z,11nm,1.0s
LDF La Druitiere 90.92 38 *e*P P **19 10 25.3 -1.6**
LDF pmax pmax
comp=Z,9.0nm,0.8s
TCF Toulx Ste Croi 91.30 41 *e*P P **19 10 27.8 -1.0**
TCF pmax pmax
comp=Z,29nm,1.9s
DLBC Dease Lake 91.47 333 P P **19 10 29.7 +0.4**
comp=Z,4.4nm,0.7s,baz=136,slow=4.3,SNR=9.2
DLBC Dease Lake 91.47 333 *e*P P **19 10 31.1 +1.8**
comp=Z,4.7nm,0.8s
AVF Avril sur Loir 92.23 41 *e*P P **19 10 31.6 -1.4**
AVF pmax pmax
comp=Z,24nm,1.8s
EKA Eskdalemuir Ar 92.50 32 P P **19 10 32.8 -1.2**
comp=Z,0.5nm,0.4s,baz=234,slow=5.0,SNR=8.6
SUMG Summit 93.37 9 *e*P P **19 10 39.0 +0.8**
SUMG pmax pmax
comp=Z,10.0nm,0.8s
SUMG Summit 93.37 9 *e*P P **19 10 39.0 +0.8**
comp=Z,9.8nm,0.8s
CABF La Chapelle 93.88 42 *e*P P **19 10 40.8 +0.1**
CABF pmax pmax
comp=Z,45nm,2.0s
GERES GERESS Array B 99.47 42 P **Pdif** **19 11 04.4 -1.6**
comp=Z,0.5nm,0.6s,baz=243,slow=2.4,SNR=4.8
OBN Obninsk 114.27 37 ǁ *i*PKIKP PKPdf 19 16 01.6 -0.3
OBN *e* 19 16 56.9
OBN *e*PPP PPP 19 19 23.0
OBN *i* 19 22 52.8
OBN pmax pmax
comp=Z,7.0nm,0.5s
OBN MLR MLR
comp=Z,55nm,16.0s
KBZ Khabaz 118.74 50 PKP **PKPdf** **19 16 11.1 +0.2**
comp=Z,4.2nm,0.9s,baz=213,slow=3.3,SNR=7.6
STKA Stephens Creek 121.57 211 PKP **PKPdf** **19 16 16.7 -0.2**
comp=Z,1.9nm,0.6s,baz=77,slow=5.1,SNR=4.8
ARU Arti 126.10 33 *i* PKIKP **PKPdf** **19 16 25.1 +0.5**
ARU 19 18 19.7
ARU 19 23 26.9
ARU SP SP 19 28 03.2 -6.9
ARU Arti 126.10 33 *e*PKPdf **PKPdf** **19 16 25.5 +0.9**
SEY Seymchan 127.31 337 PKP **PKPdf** **19 16 28.1 +1.3**
comp=Z,6.7nm,0.8s,baz=104,slow=3.1,SNR=14
ABKAR Akbulak array 129.41 41 *e*PKPdf **PKPdf** **19 16 32.2 +1.0**
PEAO Petropavlovsk- 129.98 325 *e*PKPdf **PKPdf** **19 16 33.1 +1.0**
PETK Petropavlovsk- 129.98 325 PKP **PKPdf** **19 16 33.0 +0.8**
comp=Z,3.5nm,0.7s,baz=88,slow=5.6,SNR=9.4
PETK Petropavlovsk- 129.98 325 PKIKP **PKPdf** **19 16 33.0 +0.8**
GEYT Alibeck 130.70 56 PKP **PKPdf** **19 16 34.3 +0.2**
comp=Z,2.2nm,0.6s,baz=260,slow=2.6,SNR=4.2
AS01 Alice Springs 132.11 209 *e*PKPdf **PKPdf** **19 16 37.5 +0.3**
ASAR Alice Springs 132.13 209 PKP **PKPdf** **19 16 37.5 +0.3**
comp=Z,2.7nm,0.7s,baz=136,slow=2.0,SNR=27
ASAR pPKP **pPKPdf** **19 17 06.8 -0.3**
comp=Z,1.2nm,0.5s,baz=138,slow=1.9,SNR=4.4
ASAR SKPbc **SKPbc** **19 19 54.0 +0.2**
comp=Z,0.7nm,0.6s,baz=145,slow=3.9,SNR=9.2
ASAR PKKP **PKKPdf** **19 26 31.1 -0.2**
comp=Z,0.3nm,0.5s,baz=352,slow=1.5,SNR=8.1
AS31 Alice Springs 132.13 209 *e*PKPdf **PKPdf** **19 16 37.6 +0.3**
ZRNK Zerenda 133.07 33 *e*PKIKP **PKPdf** **19 16 39.2 +1.2**
ZRNK Zerenda 133.07 33 *e*PKPdf **PKPdf** **19 16 39.2 +1.2**
VOSK Vostochnaya 134.21 33 *e*PKIKP **PKPdf** **19 16 41.2 +1.0**
VOSK Vostochnaya 134.21 33 *e*PKPdf **PKPdf** **19 16 41.2 +1.0**
WB2 Warramunga Arr 135.06 213 *e*PKPdf **PKPdf** **19 16 43.6 +0.7**
WRA Warramunga Arr 135.07 213 PKP **PKPdf** **19 16 43.6 +0.7**
comp=Z,6.1nm,0.8s,baz=140,slow=1.8,SNR=33
WRA pPKP **pPKPdf** **19 17 12.6 -0.2**
comp=Z,2.2nm,0.5s,baz=144,slow=1.7,SNR=5.5
WRA SKPbc **SKPbc** **19 20 03.0 -0.6**
comp=Z,1.2nm,0.9s,baz=142,slow=3.3,SNR=5.1
NVS Novosibirsk 138.33 24 *e*PKHKP PKPpre 19 16 36.0
ZAA0 Zalesovo Array 139.61 23 *e*PKPpre PKPpre 19 16 45.4
ZAA0 *e*PKPdf **PKPdf** **19 16 47.0 -3.1**
ZALV Zalesovo Beam 139.61 23 PKP **PKPdf** **19 16 50.3 +0.2**
comp=Z,12nm,0.5s,baz=292,slow=2.5,SNR=30
ZALV pPKP **pPKPdf** **19 17 21.1 +1.1**
comp=Z,7.3nm,0.8s,baz=293,slow=2.8,SNR=4.2
ZALV SKPbc **SKPbc** **19 20 15.3 -0.5**
comp=Z,1.1nm,0.7s,baz=298,slow=3.9,SNR=4.0
FITZ Fitzroy Crossi 140.55 203 PKhKP PKPpre 19 16 46.8
comp=Z,1.7nm,0.7s,baz=183,slow=4.4,SNR=6.9
FITZ PKP **PKPdf** **19 16 53.8 +0.9**
comp=Z,4.2nm,0.7s,baz=185,slow=7.9,SNR=8.3
MTN Manton Dam 142.66 214 *e*PKPpre PKPpre 19 16 54.5
MK31 Makanchi Array 143.62 33 *e*PKIKP PKPab 19 16 54.7 +0.3
MK31 Makanchi Array 143.62 33 *e*PKPpre PKPab 19 16 54.7 +0.3
MKAR Makanchi Array 143.62 33 PKP PKPbc 19 16 55.0 -0.3
comp=Z,2.5nm,0.6s,baz=1.4,slow=2.9,SNR=18
MKAR Makanchi Array 143.62 33 *e*PKPpre PKPpre 19 16 54.7
MK01 Makanchi Array 143.64 33 *e*PKPpre PKPpre 19 16 54.9
KSH Kashi 143.68 48 *e*PKP PKPbc 19 16 55.8 0.0
KSH *es*PKP 19 17 35.3
KSH SKS **SKSdf** **19 23 53.6 -4.2**
KSH AMB AMB
comp=Z,85nm,5.1s
KSH LR LR
comp=Z,100nm,7.2s
KSH LR LR
comp=Z,120nm,6.0s
KSH LR LR
comp=Z,97nm,6.5s
MOY Mondy 146.23 11 *e*PKP2 **PKPab** **19 17 04.4 +0.2**
MOY pmax pmax
comp=Z,33nm,1.5s
TLY Talaya 146.62 8 *e*PKP2 **PKPbc** **19 17 04.8 +0.5**
TLY pmax pmax
comp=Z,16nm,0.9s
TLY Talaya 146.62 8 *e*PKPdf **PKPbc** **19 17 04.2 -0.1**
ZAK Zakamensk 147.84 9 *e*PKP2 **PKPbc** **19 17 07.6 -0.2**
ZAK pmax pmax
comp=Z,9.0nm,1.3s
WMQ Urumqi 148.44 32 *e*PKPbc **PKPbc** **19 17 07.8 -1.7**
SOEI Soe 148.66 207 *e*PKPbc **PKPbc** **19 17 12.8 +1.8**
USRK Ussuriysk Ar. 148.84 329 PKPbc **PKPbc** **19 17 11.6 +1.1**
comp=Z,11nm,0.7s,baz=38,slow=2.3,SNR=19
HYB Hyderabad 149.59 87 *i* PKP **PKPbc** **19 17 14.0 +0.9**
MJAR Matsushiro Arr 149.86 312 PKPbc **PKPbc** **19 17 14.4 +1.2**
comp=Z,6.7nm,0.8s,baz=102,slow=1.5,SNR=25
MJAR pPKPbc **pPKPbc** **19 17 43.6 +0.6**
comp=Z,2.6nm,0.6s,baz=185,slow=0.2,SNR=4.4
MAJO Matsushiro 149.86 312 *e*PKP2 **PKPbc** **19 17 14.5 +1.2**
MAJO Matsushiro 149.86 312 *e*PKPbc **PKPbc** **19 17 14.5 +1.2**
MJB9 Matsu-Tunnel 149.86 312 *e*PKPbc **PKPbc** **19 17 14.5 +1.2**
MMRI Maumere 150.50 204 *e*PKPbc **PKPbc** **19 17 15.7 +0.3**
SONA1 Songino Array 150.71 6 *e*PKPbc **PKPbc** **19 17 16.0 +0.9**
SONM Songino Array 150.72 6 PKP **PKPdf** **19 17 09.3 -0.2**
comp=Z,2.0nm,0.7s,baz=305,slow=1.3,SNR=14
SONM PKPbc **PKiKP** **19 17 15.9 +0.2**
comp=Z,19nm,0.7s,baz=320,slow=1.6,SNR=92
SONM pPKPbc **pPKPbc** **19 17 45.0 +0.1**
comp=Z,5.3nm,0.7s,baz=316,slow=1.3,SNR=3.6
KSRS Korea Array 155.88 324 PKP **PKPdf** **19 17 17.8 +0.7**
comp=Z,1.2nm,0.8s,baz=20,slow=4.0,SNR=4.4
KSAR Wonju Array Be 155.91 324 PKIKP **PKPdf** **19 17 17.8 +0.7**
KSAR Wonju Array Be 155.91 324 PKP **PKPdf** **19 17 17.8 +0.7**
GTA Gaotai 157.35 22 *e*PKP **PKPdf** **19 17 19.8 +0.7**
HHC Hu-ho-hao-te 157.88 358 *e*PKP **PKPdf** **19 17 20.6 +0.9**
PSI Prapat 160.56 143 PKPab **PKPab** **19 18 05.5 +0.3**
comp=Z,12nm,0.8s,baz=188,slow=3.6,SNR=8.1
XAN Xi'an 164.63 5 PKP **PKPdf** **19 17 19.4 -7.5**
CD2 Chengdu 166.37 25 PKP **PKPdf** **19 17 28.0 -0.4**
CMAR Chiang Mai Arr 169.01 89 PKP **PKPdf** **19 17 31.0 +0.4**
comp=Z,0.8nm,0.7s,baz=252,slow=1.7,SNR=8.2
CMAR PKPab **PKPab** **19 18 42.1 -0.4**
comp=Z,3.6nm,0.9s,baz=265,slow=5.7,SNR=17
CM01 Chiang Mai Arr 169.02 90 *e*PKPdf **PKPdf** **19 17 30.8 +0.3**
CM01 *e*PKPab **PKPab** **19 18 41.4 -1.1**
CHTO Chiang Mai 169.03 87 *e*PKP2 **PKPab** **19 18 41.9 -0.7**
CHTO Chiang Mai 169.03 87 *e*PKPab **PKPab** **19 18 41.9 -0.7**
GYA Guiyang 171.47 24 PKP **PKPdf** **19 17 30.8 -1.1**
GYA pPKP pPKPdf 19 18 01.4 -0.6
GYA sPKP 19 18 12.0
GYA PKPab **PKPab** **19 18 53.3 +0.3**
GYA PKS **PKSdf** **19 21 02.6 -1.9**
GYA PP **PP** **19 22 44.3 +1.3**
GYA AMB AMB
comp=Z,120nm,7.8s

IDC 14 18:59:56.0±3.1, 33°51S×178°69W, h0km, mb3.7/2, mb1 4.0/3, mb1mx3.6/42, mbtmp3.8/3, ML3.8/1, Error ellipse: s-maj=72.2km s-min=45.4km az=124.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**5.84**	**215**	Pn	Pn	19 01 23.6	-0.2
	2.5nm,0.3s,baz=254,slow=4.0,SNR=14						
URZ				Sn	Sn	19 02 28.8	-2.7
	4.2nm,0.3s,baz=258,slow=23,SNR=13						
ASAR	**Alice Springs**	**42.45**	**271**	P	P	19 07 52.8	-0.2
	0.9nm,0.7s,baz=112,slow=7.3,SNR=10						
WRA	**Warramunga Arr**	**43.73**	**276**	P	P	19 08 03.3	0.0
	0.4nm,0.3s,baz=117,slow=7.8,SNR=10						
FINES	**FINESS Array B**	**147.82**	**338**	PKPbc	PKPbc	19 19 41.4	-0.7
	0.6nm,0.4s,baz=64,slow=4.4,SNR=5.9						

*ISCJB **14** 19:05:01.6±0.3, 9.°62N±0.°03×122.°09E±0.°03, h10km, mb4.2/24, MS3.4/1, Error ellipse: s-maj=5.2km s-min=4.0km az=28.5*
*IDC **14** 19:05:01.3±0.5, 9.°60N×122.°21E, h0km, mb4.2/21, mb1 4.2/23, mb1mx4.1/49, mbtmp4.2/23, ML4.1/1, MS3.5/2, Ms1 3.6/2, ms1mx2.8/40, Error ellipse: s-maj=18.9km s-min=10.5km az=71.0*
*NEIC **14** 19:05:02.8±0.3, 9.°62N×122.°22E, h10km, mb4.8/3, Error ellipse: s-maj=8.9km s-min=5.4km az=74.0*
*MAN **14** 19:05:02, 9.°65N×122.°12E, h3km, mb5.0, ML3.9, MS4.0*
ISC 14 19:05:03.0±0.4, 9.°68N±0.°04×122.°18E±0.°04, h10km, n50, σ1°41/61, mb4.3/24, 8C-6D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAP	**San Jose, Anti**	**1.08**	**348**	ǁ *i*P	**Pn**	**19 05 23.8**	**-0.5**
SNPH	**Sibulan**	**1.10**	**108**	ǁ *i*P	Pb	19 05 18.3	-5.8
SNPH				*i* S	**Sb**	**19 05 33.4**	**-5.2**
TBP	**Tagbilaran**	**1.66**	**89**	ǁ *i*P	**Pn**	**19 05 32.5**	**+0.2**
LLP	**Lapu-Lapu**	**1.87**	**70**	ǁ *e*P	**Pn**	**19 05 35.1**	**-0.1**
LLP				*e*S	**Sb**	**19 06 02.5**	**+1.6**
RCP	**Roxas**	**1.95**	**17**	ǁ *e*P	**Pb**	**19 05 37.4**	**-1.3**
RCP				*e*S	**Sb**	**19 06 03.1**	**+0.1**
CGP	**Cagayan de Oro**	**2.77**	**116**	ǁ *e*P	**Pn**	**19 05 48.0**	**+0.5**
CGP				*i* S	**Sn**	**19 06 23.5**	**+2.5**
MMPH	**Masbate**	**3.02**	**28**	ǁ *e*P	**Pb**	**19 05 55.7**	**-1.2**
MMPH				*e*S	**Sb**	**19 06 33.6**	**-0.2**
PLP	**Palo**	**3.13**	**62**	ǁ *i*P	**Pn**	**19 05 52.6**	**+0.2**
PLP				*i* S	**Sn**	**19 06 28.7**	**-1.1**
CTBH	**Cotabato--PC H**	**3.19**	**140**	*e*P	**Pn**	**19 05 54.7**	**+1.5**
CTBH				*i* S	**Sn**	**19 06 33.7**	**+2.4**
PPR	**Puerto Princes**	**3.40**	**272**	ǁ *e*P	**Pn**	**19 05 56.6**	**+0.4**
PPR				*e*S	**Sn**	**19 06 36.4**	**-0.2**
DAV	**Davao City (W)**	**4.25**	**127**	Pn	**Pn**	**19 06 07.7**	**-0.1**
	11nm,0.3s,baz=80,slow=17,SNR=1.8						
DAV				Lg	Lg	19 07 15.3	
	114nm,0.3s,baz=262,slow=12,SNR=4.2						
BIPH	**Bislig**	**4.39**	**109**	ǁ *i*P	**Pn**	**19 06 12.8**	**+2.9**
BIPH				*i* S	**Sn**	**19 07 04.7**	**+3.6**
TGY	**Tagaytay City**	**4.56**	**345**	Pn	**Pn**	**19 06 13.5**	**+1.3**
	baz=192,slow=20,SNR=1.9						
TGY				LR	LR	19 08 29.3	
	comp=Z,467nm,18.1s,baz=156,slow=45						
KKM	**Kota Kinabalu**	**6.92**	**239**	*e*Pn	**Pn**	**19 06 44.9**	**+0.2**
	30nm,0.8s						
ENH	**Enshi**	**23.66**	**332**	*e*P	**P**	**19 10 15.3**	**+0.5**
PSI	**Prapat**	**24.09**	**255**	P	**P**	**19 10 19.9**	**+0.7**
	6.6nm,0.4s,baz=51,slow=7.1,SNR=8.5						
CMAR	**Chiang Mai Arr**	**24.14**	**294**	LR	LR	19 18 48.3	
	comp=Z,134nm,21.3s,baz=153,slow=34						
JNU	**Nakatsue**	**24.67**	**18**	P		**19 10 25.2**	**+1.0**
	2.4nm,0.7s,baz=126,slow=8.7,SNR=3.1						
FITZ	**Fitzroy Crossi**	**27.82**	**173**	P	**P**	**19 10 52.1**	**-0.5**
	5.1nm,0.9s,baz=360,slow=7.1,SNR=9.3						
KSAR	**Wonju Array Be**	**28.12**	**10**	P	**P**	**19 10 55.9**	**+0.7**
KSRS	**Korea Array**	**28.14**	**10**	P	**P**	**19 10 55.9**	**+0.6**
	0.8nm,0.5s,baz=187,slow=8.6,SNR=4.1						
MJAR	**Matsushiro Arr**	**30.44**	**26**	P	**P**	**19 11 15.8**	**-0.1**
	0.8nm,0.8s,baz=193,slow=10,SNR=4.1						
MBWA	**Marble Bar**	**30.74**	**184**	*e*P	**P**	**19 11 18.5**	**0.0**
WRAB	**Tennant Creek**	**31.77**	**158**	*e*P	**P**	**19 11 26.3**	**-1.4**
WRA	**Warramunga Arr**	**31.78**	**158**	P	**P**	**19 11 26.1**	**-1.7**
	2.0nm,0.6s,baz=340,slow=9.3,SNR=24						
WRA				PcP	**PcP**	**19 14 18.0**	**-1.2**
	1.0nm,0.8s,baz=336,slow=3.3,SNR=5.3						
ASAR	**Alice Springs**	**35.07**	**161**	P	**P**	**19 11 55.9**	**-0.6**
	5.5nm,0.7s,baz=345,slow=7.2,SNR=83						
ASAR				PcP	**PcP**	**19 14 26.6**	**-1.8**
	1.0nm,0.7s,baz=343,slow=2.6,SNR=7.0						
LSA	**Lhasa**	**35.17**	**309**	*e*P	**P**	**19 11 59.0**	**+1.2**
USRK	**Ussuriysk Ar.**	**35.43**	**12**	P	**P**	**19 11 59.9**	**+0.6**
	4.5nm,0.9s,baz=168,slow=3.4,SNR=5.6						
SONM	**Songino Array**	**40.30**	**344**	P	**P**	**19 12 40.2**	**-0.4**
	1.9nm,0.9s,baz=158,slow=8.4,SNR=12						
SONM				PcP	**PcP**	**19 14 44.9**	**+0.7**
	0.5nm,0.5s,baz=175,slow=3.7,SNR=3.5						
STKA	**Stephens Creek**	**45.31**	**157**	P	**P**	**19 13 20.4**	**-0.8**
	3.1nm,0.7s,baz=335,slow=6.1,SNR=11						
MKAR	**Makanchi Array**	**50.12**	**325**	P	**P**	**19 13 59.5**	**+0.9**
	3.1nm,0.8s,baz=132,slow=8.6,SNR=27						
MKAR				PcP	**PcP**	**19 15 20.7**	**+2.7**
	0.8nm,0.6s,baz=104,slow=5.0,SNR=3.9						
PETK	**Petropavlovsk-**	**51.90**	**26**	P	**P**	**19 14 11.8**	**+0.1**
	1.0nm,0.6s,baz=205,slow=4.4,SNR=6.4						
ZALV	**Zalesovo Beam**	**53.27**	**333**	P	**P**	**19 14 21.5**	**-0.4**
	1.9nm,0.8s,baz=121,slow=5.7,SNR=8.0						
KURK	**Kurchatov**	**54.33**	**327**	*e*P	**P**	**19 14 29.9**	**+0.3**
	64nm,0.9s						
KKAR	**Karatay Array**	**55.83**	**316**	*e*P	**P**	**19 14 41.6**	**+0.9**
	8.4nm,0.9s						
SEY	**Seymchan**	**57.43**	**16**	P	**P**	**19 14 52.4**	**+0.7**
	1.9nm,0.7s,baz=225,slow=12,SNR=5.5						
GEYT	**Alibeck**	**63.69**	**308**	P	**P**	**19 15 36.2**	**+1.2**
	5.0nm,0.9s,baz=130,slow=2.3,SNR=11						
ABKAR	**Akbulak array**	**64.71**	**320**	*e*P	**P**	**19 15 41.6**	**+0.2**
	1.3nm,0.6s						
ILAR	**Eielson Array**	**81.72**	**26**	P	**P**	**19 17 20.6**	**-1.0**
	0.4nm,0.7s,baz=276,slow=5.0,SNR=3.8						
BRTR	**Keskin Array B**	**82.79**	**309**	P	**P**	**19 17 27.6**	**-0.2**
	1.1nm,0.7s,baz=108,slow=6.9,SNR=6.6						
ARCES	**ARCESS Array B**	**83.33**	**339**	P	**P**	**19 17 31.9**	**+2.0**
	5.8nm,1.0s,baz=86,slow=6.2,SNR=8.0						
AKASG	**Malin Array Be**	**84.46**	**320**	P	**P**	**19 17 34.6**	**-1.4**
	2.1nm,0.8s,baz=72,slow=4.5,SNR=7.9						
FINES	**FINESS Array B**	**84.48**	**331**	P	**P**	**19 17 34.9**	**-1.0**
	1.0nm,0.6s,baz=75,slow=5.6,SNR=6.1						
SORM	**Soroca**	**85.41**	**318**	ǁ *i*P	**P**	**19 17 39.7**	**-1.2**
TESR	**Tescani**	**86.83**	**316**	ǁ *i*P	**P**	**19 17 47.7**	**-0.3**
MLR	**Muntele Rosu**	**87.51**	**316**	ǁ *i*P	**P**	**19 17 50.9**	**-0.5**
BURAR	**Bucovina Array**	**87.58**	**318**	ǁ *i*P	**P**	**19 17 51.4**	**-0.3**
VNDA	**Vanda**	**89.88**	**172**	P	**P**	**19 18 00.3**	**-1.4**
	0.7nm,0.6s,baz=312,slow=6.5,SNR=6.5						
TXAR	**Lajitas Array**	**121.22**	**47**	PKP	**PKPdf**	**19 23 56.0**	**-1.2**
	0.2nm,0.5s,baz=57,slow=2.0,SNR=4.2						
PLCA	**Paso Flores**	**147.08**	**162**	PKPbc	**PKPab**	**19 24 46.5**	**-1.7**
	3.8nm,0.9s,baz=249,slow=6.4,SNR=5.4						

*ISCJB **14** 19:18:34.7±0.4, 40°35N±0.°03×27°55E±0.°03, h11km±3km, Error ellipse: s-maj=4.8km s-min=3.6km az=171.9*
*ISK **14** 19:18:34.6, 40°38N×27°56E, h13km, MD2.7*
*DDA **14** 19:18:34.3, 40°34N×27°54E, h11km, Md2.8*
*CSEM **14** 19:18:35.0±0.1, 40°36N×27°56E, h12km, MD2.7, Error ellipse: s-maj=2.1km s-min=1.6km az=9.0*
ISC 14 19:18:34.7±0.8, 40°35N±0.°02×27°56E±0.°02, h12km±5km, n39, σ0°35/54, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KNL	**Bal¯kesir**	**0.08**	**197**	*i* P	**Pg**	**19 18 36.7**	**-0.6**
KNL				*i* S	**Sg**	**19 18 38.7**	**-0.5**
KRBG	**Karabiga-Canak**	**0.20**	**284**	*e*PG	**Pg**	**19 18 39.5**	**+0.3**
KRBG				*e*SG	**Sg**	**19 18 42.5**	**+0.3**
KRBG	**Karabiga-Canak**	**0.20**	**284**	*e*Pg	**Pg**	**19 18 39.5**	**+0.3**
KRBG				*e*Sg	**Sg**	**19 18 42.5**	**+0.3**
EDC	**Edincik**	**0.23**	**89**	*e*PG	**Pg**	**19 18 40.1**	**+0.4**
EDC				*e*SG	**Sg**	**19 18 44.0**	**+0.9**
EDC	**Edincik**	**0.23**	**89**	*e*Pg	**Pg**	**19 18 40.1**	**+0.4**
EDC				*e*Sg	**Sg**	**19 18 44.0**	**+0.9**
MRMT	**Marmara Adasi**	**0.26**	**7**	*e*PG	**Pg**	**19 18 40.0**	**-0.2**
MRMT				*e*SG	**Sg**	**19 18 43.9**	**0.0**
MRMT	**Marmara Adasi**	**0.26**	**7**	*e*Pg	**Pg**	**19 18 40.0**	**-0.2**
MRMT				*e*Sg	**Sg**	**19 18 43.9**	**0.0**
GONE	**Gonen-Balikesi**	**0.31**	**162**	*e*PG	**Pb**	**19 18 41.9**	**-0.4**
GONE	**Gonen-Balikesi**	**0.31**	**162**	*e*Pg	**Pb**	**19 18 41.9**	**-0.4**
RKY	**Sarkoy-Tekirda**	**0.45**	**320**	*e*PG	**Pg**	**19 18 43.7**	**+0.1**
RKY	**Sarkoy-Tekirda**	**0.45**	**320**	*e*Pg	**Pg**	**19 18 43.7**	**+0.1**
BALY	**Balya**	**0.61**	**175**	*i* P	**Pg**	**19 18 46.6**	**0.0**
BALY				*i* S	**Sg**	**19 18 54.3**	**-0.3**
BALY	**Balya**	**0.61**	**175**	P	**Pg**	**19 18 46.6**	**0.0**
BALY				S	**Sg**	**19 18 54.3**	**-0.3**
LPK	**Lapseki**	**0.61**	**273**	*e*PG	**Pb**	**19 18 47.1**	**-0.2**
LPK	**Lapseki**	**0.61**	**273**	*e*Pg	**Pb**	**19 18 47.1**	**-0.2**
KCTX	**Karacabey (Bur**	**0.62**	**97**	*e*PG	**Pg**	**19 18 46.8**	**0.0**
KCTX	**Karacabey (Bur**	**0.62**	**97**	*e*Pg	**Pg**	**19 18 46.8**	**0.0**
BALB	**Balikesir**	**0.75**	**160**	*e*PG	**Pb**	**19 18 50.2**	**+0.6**
BALB	**Balikesir**	**0.75**	**160**	*e*Pg	**Pb**	**19 18 50.2**	**+0.6**
GELI	**Tayfur-Gelibol**	**0.83**	**274**	*e*PG	**Pb**	**19 18 51.2**	**+0.2**
GELI	**Tayfur-Gelibol**	**0.83**	**274**	*e*Pg	**Pb**	**19 18 51.2**	**+0.2**
ERIK	**Erikli-Kesan**	**0.86**	**293**	*e*PG	**Pg**	**19 18 51.2**	**-0.1**
ERIK	**Erikli-Kesan**	**0.86**	**293**	*e*Pg	**Pg**	**19 18 51.2**	**-0.1**
ARMT	**Armutlu**	**1.02**	**77**	*e*PG	**Pg**	**19 18 54.3**	**-0.1**
ARMT				*e*SG	**Sn**	**19 19 09.4**	**+0.3**
ARMT	**Armutlu**	**1.02**	**77**	*e*Pg	**Pg**	**19 18 54.3**	**-0.1**
ARMT				*e*Sg	**Sn**	**19 19 09.4**	**+0.3**
EZN	**Ezine**	**1.08**	**242**	*e*PN	**Pn**	**19 18 55.8**	**+0.2**
EZN	**Ezine**	**1.08**	**242**	*e*Pn	**Pn**	**19 18 55.8**	**+0.2**
ENEZ	**Enez**	**1.14**	**291**	*e*PN	**Pg**	**19 18 57.0**	**+0.4**
ENEZ	**Enez**	**1.14**	**291**	*e*Pn	**Pg**	**19 18 57.1**	**+0.4**
CTKS	**Kestanelik-??a**	**1.15**	**39**	*e*PN	**Pg**	**19 18 56.

MAN 14 19:27:25,9.72N×122.27E,h7km,mb4.7,ML3.6,MS3.5, 2D,Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.02**	**112**	‖*iP*	Pg	19 27 39.4	-5.3
SNPH				*i* S	Sg	19 27 54.5	-3.5
TBP	**Tagbilaran**	**1.57**	**91**	*e*P	Pb	19 27 54.4	0.0
LLP	**Lapu-Lapu**	**1.77**	**70**	*e*P	Pn	19 27 56.2	+0.1
LLP				*e*S	Sb	19 28 20.1	-0.1
RCP	**Roxas**	**1.88**	**14**	‖*e*P	Pb	19 27 58.7	-1.0
CGP	**Cagayan de Oro**	**2.70**	**118**	*e*P	Pn	19 28 10.2	+1.3
CGP				*i* S	Sn	19 28 44.4	+2.5

IDC 14 19:40:59.2±2.7,22.17N×13.03W,h0km,mb1 3.8/2, mb1mx3.3/30,mbtmp3.9/2,ML3.6/2,Error ellipse: s-maj=90.5km s-min=47.0km az=45.0,Western Sahara

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I11CV	**MAIO ISLAND IN**	**11.82**	**236**	*i*		20 52 40.0	
	baz=52,slow=319,SNR=0.5						
TORD	**Torodi Ar. Bea**	**16.64**	**120**	Pn	Pn	19 44 53.3	-0.7
	0.1nm,0.3s,baz=310,slow=11,SNR=9.1						
TORD				Sn	Sn	19 47 58.7	-1.0
	0.1nm,0.3s,baz=310,slow=25,SNR=4.4						
DBIC	**Dimbokro**	**17.31**	**152**	P	P	19 45 03.4	-0.6
	0.3nm,0.3s,baz=308,slow=10,SNR=4.1						
I42PT	**GRACIOSA ISLAN**	**21.14**	**326**	*i*		21 48 20.0	
	baz=139,slow=325,SNR=0.5						
ASAR	**Alice Springs**	**149.55**	**99**	PKPbc	PKPbc	20 00 50.9	-0.4
	0.4nm,0.8s,baz=282,slow=2.4,SNR=3.4						

ISCJB 14 19:47:55.2±1.1,37.85N±0.07×143.4E±0.1,h19km, mb3.5/4,Error ellipse: s-maj=12.4km s-min=8.8km az=151.9
JMA 14 19:47:56.8±0.1,37.92N×143.37E,h33km,M3.4
IDC 14 19:47:57.4±7.9,37.28N×143.16E,h0km,mb3.5/4, mb1 3.6/4,mb1mx3.4/31,mbtmp3.5/4,MS2.3/1,Ms1 2.3/1, ms1mx2.1/29,Error ellipse: s-maj=293.4km s-min=25.3km az=66.0

ISC 14 19:47:56.4±1.7,37.88N±0.08×143.4E±0.1,h19km,n16, σ0§70/17,mb3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.69**	**291**	P	**Pn**	**19 48 24.9**	**+0.1**
JIO				*e*S	**Sn**	**19 48 45.1**	**-0.8**
OFUJ	**Ofunato**	**1.79**	**313**	P	**Pn**	**19 48 26.0**	**-0.3**
OFUJ				*e*S	**Sn**	**19 48 47.3**	**-1.2**
JMK	**Ichinoseki**	**1.99**	**303**	P	**Pn**	**19 48 29.3**	**+0.2**
JMM	**Marumori**	**2.03**	**271**	P	**Pn**	**19 48 29.8**	**+0.3**
JFK	**Kawauchi**	**2.04**	**256**	P	**Pn**	**19 48 29.5**	**-0.2**
JOU	**Okura**	**2.18**	**284**	P	**Pn**	**19 48 32.5**	**+0.8**
JOM	**Ohasama**	**2.27**	**315**	P	**Pn**	**19 48 33.3**	**+0.4**
JOM				*e*S	**Sn**	**19 49 00.4**	**0.0**
JFT	**Otama**	**2.42**	**262**	P	**Pn**	**19 48 35.9**	**+0.9**
JFT				*e*S	**Sn**	**19 49 04.4**	**+0.3**
JYK	**Kaneyama**	**2.58**	**295**	P	**Pn**	**19 48 38.2**	**+1.1**
JRG	**Rokugo**	**2.62**	**306**	P	**Pn**	**19 48 38.4**	**+0.7**
JANG	**Nango**	**2.88**	**331**	P	**Pn**	**19 48 42.1**	**+0.9**
MJAR	**Matsushiro Arr**	**4.32**	**254**	LR	LR	19 50 34.5	
	comp=Z,34nm,18.1s,baz=175,slow=39						
ZALV	**Zalesovo Beam**	**42.50**	**312**	P	P	19 55 56.6	+6.4
	0.5nm,0.5s,baz=87,slow=8.8,SNR=2.5						
MKAR	**Makanchi Array**	**44.99**	**302**	P	P	19 56 15.3	+4.9
	0.2nm,0.2s,baz=86,slow=8.2,SNR=3.2						
WRA	**Warrarmunga Arr**	**58.13**	**190**	P	**P**	**19 57 48.2**	**-0.6**
	0.8nm,0.7s,baz=8.5,slow=7.3,SNR=7.4						
ASAR	**Alice Springs**	**61.86**	**190**	P	**P**	**19 58 14.4**	**0.0**
	0.1nm,0.5s,baz=4.2,slow=6.0,SNR=3.8						

IDC 14 19:58:40.3±1.4,2.20S×136.71E,h0km,mb3.3/2, mb1 3.4/5,mb1mx3.3/28,mbtmp3.3/5,ML2.9/3,Error ellipse: s-maj=28.7km s-min=26.6km az=82.0,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**4.00**	**95**	Pn	Pn	19 59 43.0	+0.1
	0.2nm,0.3s,baz=257,slow=22,SNR=11						
JAY				Sn	Sn	20 00 29.6	-1.0
	0.1nm,0.3s,baz=90,slow=20,SNR=3.8						
WRA	**Warrarmunga Arr**	**17.79**	**187**	P	P	20 02 50.5	+0.1
	0.1nm,0.3s,baz=7.4,slow=13,SNR=5.2						
FITZ	**Fitzroy Crossi**	**19.18**	**214**	P	P	20 03 05.2	-0.4
	0.0nm,0.3s,baz=14,slow=12,SNR=2.0						
ASAR	**Alice Springs**	**21.52**	**187**	P	P	20 03 30.9	-0.1
	1.0nm,0.8s,baz=14,slow=12,SNR=7.3						
MKAR	**Makanchi Array**	**68.17**	**323**	P	P	20 09 42.7	+0.1
	0.2nm,0.4s,baz=124,slow=4.3,SNR=2.9						

WEL 14 20:02:47.6±0.1,43.34S×172.01E,h9km,ML3.5/13,4C-4D, Error ellipse: s-maj=1.1km s-min=0.9km az=90.0,South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OXZ	**Oxford**	**0.02**	**61**	⇑PG	Pg	20 02 49.1	-0.2
OXZ				SG	Sg	20 02 50.4	-0.1
OXZ				AML	AML	20 02 50.5	
OXZ				AML	AML	20 02 50.6	
CRLZ	**Canterbury Las**	**0.51**	**118**	⇓P*	Pg	20 02 57.4	0.0
CRLZ				AML	AML	20 03 07.1	
CRLZ				AML	AML	20 03 07.5	
LTZ	**Lake Taylor**	**0.59**	**19**	P*	Pg	20 02 59.0	0.0
LTZ				AML	AML	20 03 07.2	
MQZ	**McQueen's Vall**	**0.60**	**128**	⇑P*	Pg	20 02 58.8	-0.3
MQZ				AML	AML	20 03 09.1	
MQZ				AML	AML	20 03 09.1	
INZ	**Inchbonnie**	**0.74**	**326**	⇓P*	Pg	20 03 01.5	-0.3
RPZ	**Rata Peaks**	**0.79**	**241**	⇓P*	Pg	20 03 02.6	-0.2
RPZ				AML	AML	20 03 13.9	
RPZ				AML	AML	20 03 15.5	
WVZ	**Waitaha Valley**	**0.97**	**285**	⇓P*	Pg	20 03 05.7	-0.5
WVZ				AML	AML	20 03 20.6	
WVZ				AML	AML	20 03 20.8	
KHZ	**Kahutara**	**1.45**	**51**	⇑PN	Pn	20 03 12.1	-1.8
DSZ	**Denniston Nort**	**1.60**	**354**	PN	Pn	20 03 14.9	-1.2
DSZ				AML	AML	20 03 40.4	
DSZ				AML	AML	20 03 40.4	
DSZ				AML	AML	20 03 44.0	
DSZ				AML	AML	20 03 44.1	
FOZ	**Fox Glacier**	**1.61**	**262**	PN	Pn	20 03 16.0	-0.1
FOZ				AML	AML	20 03 42.1	
FOZ				AML	AML	20 03 43.0	
LBZ	**Lake Benmore**	**1.69**	**231**	⇑PN	Pb	20 03 19.0	+0.3
LBZ				AML	AML	20 03 41.6	
LBZ				AML	AML	20 03 42.9	
LBZ				AML	AML	20 03 42.9	
LBZ				AML	AML	20 03 43.7	
ODZ	**Otahua Downs**	**1.97**	**209**	PN	Pn	20 03 19.1	-2.0
ODZ				AML	AML	20 03 55.1	
ODZ				AML	AML	20 03 55.2	
ODZ				AML	AML	20 03 56.6	
BSWZ	**Blackbirch Sta**	**2.13**	**41**	PN	Pn	20 03 22.0	-1.2
NNZ	**Nelson**	**2.35**	**26**	PN	Pn	20 03 25.4	-0.9
TUWZ	**Tuamarina**	**2.38**	**38**	PN	Pn	20 03 25.5	-1.3
JCZ	**Jackson Bay**	**2.45**	**251**	PN	Pn	20 03 27.5	-0.4
JCZ				AML	AML	20 04 16.2	
QRZ	**Quartz Range**	**2.54**	**9**	PN	Pn	20 03 27.6	-1.3
QRZ				AML	AML	20 03 35.2	
QRZ				AML	AML	20 03 35.2	
QRZ				AML	AML	20 04 11.0	
QRZ				AML	AML	20 04 13.1	
TCW	**Tory Channel**	**2.71**	**39**	PN	Pn	20 03 29.3	-2.0
DUWZ	**D'Urville Isla**	**2.91**	**30**	PN	Pn	20 03 33.2	-0.8
PLWZ	**Palliser**	**2.98**	**55**	PN	Pn	20 03 32.3	-2.8
TUZ	**Tuapeka**	**3.12**	**212**	PN	Pn	20 03 34.9	-1.9
TUZ				AML	AML	20 04 33.3	
CAW	**Cannon Point**	**3.18**	**47**	PN	Pn	20 03 34.9	-2.9
OGWZ	**Otaki Gorge**	**3.45**	**44**	PN	Pn	20 03 38.6	-2.8
MRZ	**Mangatainoka R**	**3.77**	**46**	PN	Pn	20 03 42.6	-3.3
BFZ	**Birch Farm**	**4.12**	**51**	PN	Pn	20 03 47.7	-3.0

ISCJB 14 20:03:18.4±0.6,43.92N±0.05×105.47W±0.07,h0km,Error ellipse: s-maj=7.8km s-min=7.0km az=1.7

NEIC 14 20:03:19.6±0.8,43.90N×105.46W,h0km,ML3.0,Error ellipse: s-maj=10.0km s-min=8.5km az=175.0,Suspected Mining explosion.
NEIC 44 km [27 miles] S of Gillette.
IDC 14 20:03:21.1±2.0,43.90N×105.58W,h0km,mb1 3.6/2, mb1mx3.3/34,mbtmp3.4/2,ML3.3/2,Error ellipse: s-maj=59.2km s-min=9.1km az=149.0

ISC 14 20:03:21.2±1.0,43.84N±0.06×105.29W±0.05,h0km,n24, σ1§21/22,Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.95**	**72**	*e*Pn	**Pg**	**20 03 39.1**	**-0.2**
K22A	**Casper**	**1.49**	**218**	*e*Pn	**Pn**	**20 03 46.7**	**-2.7**
PHWY	**Pilot Hill**	**2.54**	**183**	*e*Pn	**Pn**	**20 04 02.5**	**-1.5**
LAO	**LASA Array**	**2.92**	**347**	*e*Pn	**Pn**	**20 04 08.2**	**-0.8**
RLMT	**Red Lodge**	**3.12**	**296**	Pn	Pn	20 04 07.1	-4.7
BW06	**Boulder Array**	**3.30**	**252**	*e*Pn	**Pn**	**20 04 13.9**	**-0.4**
PDAR	**Pinedale Array**	**3.30**	**252**	Pn	**Pn**	**20 04 14.3**	**0.0**
	3.3nm,0.3s,baz=74,slow=15,SNR=24						
PDAR				Lg	Lg	20 04 59.0	
	5.9nm,0.3s,baz=69,slow=29,SNR=11						
OGNE	**Ogallala**	**3.77**	**139**	*e*Pn	**Pn**	**20 04 20.1**	**-0.4**
LOHW	**Long Hollow**	**3.86**	**268**	*e*Pg	**Pb**	**20 04 29.5**	**-0.8**
FLWY	**Flagg Ranch**	**3.92**	**275**	*e*Pg	**Pb**	**20 04 32.5**	**+1.3**
MOOW	**Moose Ponds**	**3.95**	**271**	*e*Pg	**Pb**	**20 04 32.9**	**+1.1**
ISCO	**Idaho Springs**	**4.04**	**184**	*e*Pn	**Pn**	**20 04 23.9**	**-0.7**
REDW	**Red Top Meadow**	**4.07**	**265**	*e*Pg	**Pb**	**20 04 32.1**	**-1.8**
IMW	**Indian Meadow**	**4.09**	**273**	*e*Pn	**Pn**	**20 04 26.2**	**+1.0**
TPAW	**Teton Pass**	**4.12**	**267**	*e*Pg	**Pb**	**20 04 35.7**	**+0.9**
O20A	**White River Ci**	**4.31**	**212**	*e*Pn	**Pn**	**20 04 27.7**	**-0.4**
AHID	**Auburn Hatcher**	**4.38**	**258**	*e*Pg	**Pb**	**20 04 40.1**	**+1.1**
DGMT	**Dagmar**	**4.69**	**9**	*e*Pn	**Pn**	**20 04 34.1**	**+0.9**
BOZ	**Bozeman (W)**	**4.87**	**294**	*e*Pn	**Pn**	**20 04 33.7**	**-2.0**
HWUT	**Hardware Ranch**	**5.13**	**246**	Pn	**Pn**	**20 04 39.1**	**-0.4**
	5.8nm,0.6s						
PV04	**Paradox Valley**	**6.09**	**208**	*e*Pg	**Pb**	**20 05 09.2**	**+1.0**
MVCO	**Mesa Verde**	**7.06**	**201**	Pn	**Pn**	**20 05 06.8**	**+0.8**
ULM	**Lac du Bonnet**	**9.07**	**42**	Pn	**Pn**	**20 05 32.8**	**-0.5**
	0.7nm,0.3s,baz=244,slow=11,SNR=3.5						
ULM				Lg	Lg	20 08 03.2	
	0.3nm,0.3s,baz=319,slow=20,SNR=2.4						
I56US	**NEWPORT INFRAS**	**9.34**	**302**	*i*		21 00 10.0	
	baz=115,slow=313,SNR=0.7						

IDC 14 20:09:23.9±1.3,17.69S×175.13W,h194km±14km,mb4.6/3, Error ellipse: s-maj=22.3km s-min=12.6km az=135.0

ISC 14 20:09:30.6±1.0,17.8S±0.2×175.2W±0.2,h256km,n16, σ0§81/14,mb3.8/10,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**5.02**	**41**	P	Pn	20 10 37.6	-9.4
	7.4nm,0.3s,baz=196,slow=3.1,SNR=5.5						
AFI				S	S	20 11 30.7	-17
	28nm,0.3s,baz=63,slow=21,SNR=12						
MSVF	**Nonsavu**	**6.46**	**269**	*e*Pn	**Pn**	**20 11 05.5**	**+0.8**
	53nm,0.6s						
CTAO	**Charters Tower**	**36.51**	**260**	P	**P**	**20 16 11.6**	**-0.5**
	8.2nm,0.5s						
STKA	**Stephens Creek**	**41.42**	**242**	P	**P**	**20 16 52.5**	**0.0**
	3.2nm,0.5s,baz=85,slow=9.0,SNR=24						
JAY	**Jayapura**	**45.84**	**284**	LR	LR	20 35 36.6	
	comp=Z,5.6nm,20.3s,slow=34						
WRAB	**Tennant Creek**	**47.68**	**259**	*e*P	**P**	**20 17 41.4**	**-0.7**
	1.8nm,0.5s						
WRA	**Warrarmunga Arr**	**47.69**	**259**	P	**P**	**20 17 41.1**	**-1.0**
	1.8nm,0.4s,baz=97,slow=8.0,SNR=51						
ASAR	**Alice Springs**	**47.80**	**254**	P	**P**	**20 17 42.3**	**-0.7**
	15nm,0.7s,baz=94,slow=7.7,SNR=295						
VNDA	**Vanda**	**60.88**	**186**	P	**P**	**20 19 16.6**	**+0.6**
	1.9nm,1.0s,baz=4.7,slow=8.5,SNR=8.5						
MBWA	**Marble Bar**	**61.10**	**255**	*e*P	**P**	**20 19 17.5**	**-0.8**
PETK	**Petropavlovsk-**	**74.36**	**343**	P	**P**	**20 20 40.3**	**+0.2**
	1.8nm,0.6s,baz=101,slow=7.7,SNR=3.9						
MAW	**Mawson**	**85.04**	**199**	P	**P**	**20 21 37.0**	**-0.1**
	1.2nm,0.7s,baz=126,slow=10,SNR=7.2						
ILAR	**Eielson Array**	**85.07**	**12**	P	**P**	**20 21 36.4**	**-0.8**
	0.5nm,0.5s,baz=222,slow=5.7,SNR=9.5						
CMAR	**Chiang Mai Arr**	**91.75**	**289**	P	**P**	**20 22 11.5**	**+1.6**
	0.4nm,0.5s,baz=111,slow=4.1,SNR=3.1						
BRTR	**Keskin Array B**	**146.81**	**317**	PKPbc	**PKPbc**	**20 28 43.0**	**-0.1**
	0.8nm,0.8s,baz=35,slow=4.5,SNR=4.9						
GERES	**GERESS Array B**	**148.15**	**349**	PKPbc	**PKPbc**	**20 28 46.7**	**+0.4**
	0.7nm,0.8s,baz=16,slow=4.2,SNR=4.7						

NIED 14 20:18:00,38.00N×143.30E,h14km,Mw3.5 Best double couple: M₀2.14000×10¹⁴ NP1:ϕs62.00000°,δ75.00000°, λ-1.00000°. NP2:ϕs152.00000°,δ89.00000°, λ-165.00000°.

JMA 14 20:18:29.6±0.2,37.95N×143.30E,h36km,M3.7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.62**	**289**	P	Pn	20 18 56.8	+1.3
JIO				S	Sn	20 19 16.8	+1.7
OFUJ	**Ofunato**	**1.71**	**312**	P	Pn	20 18 57.8	+1.0
OFUJ				S	Sn	20 19 18.5	+1.2
JMK	**Ichinoseki**	**1.92**	**302**	P	Pn	20 19 01.0	+1.4
JMK				*e*S	Sn	20 19 24.3	+1.8
JMM	**Marumori**	**1.98**	**268**	P	Pn	20 19 01.8	+1.2
JMM				*e*S	Sn	20 19 25.5	+1.3
JFK	**Kawauchi**	**2.01**	**254**	P	Pn	20 19 01.6	+0.6
JFK				*e*S	Sn	20 19 26.5	+1.6
JOM	**Ohasama**	**2.19**	**315**	P	Pn	20 19 05.0	+1.6
JOM				S	Sn	20 19 31.3	+2.1
JFT	**Otama**	**2.39**	**261**	P	Pn	20 19 08.3	+2.1
JFT				*e*S	Sn	20 19 36.5	+2.3
JYK	**Kaneyama**	**2.50**	**294**	P	Pn	20 19 09.9	+2.2
JYK				*e*S	Sn	20 19 40.3	+3.3
JRG	**Rokugo**	**2.54**	**306**	P	Pn	20 19 10.6	+2.4
JRG				S	Sn	20 19 41.2	+3.3
JANG	**Nango**	**2.79**	**331**	P	Pn	20 19 14.8	+3.1
JAG	**Ashikaga**	**3.43**	**245**	P	Pn	20 19 21.8	+1.3
JAG				S	Sn	20 20 00.4	+0.6
MAT	**Matsushiro**	**4.30**	**252**	P	Pn	20 19 35.8	+3.3
MAT				*e*S	Sn	20 20 19.3	-2.1

IDC 14 20:28:29.6±8.1,2.69N×123.86E,h333km±87km,mb3.0/6, mb1 3.2/7,mb1mx2.9/32,mbtmp3.7/7,Error ellipse: s-maj=103.6km s-min=14.9km az=61.0,Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**8.69**	**208**	P	Pn	20 30 32.1	+0.4
	1.3nm,0.3s,baz=58,slow=15,SNR=5.9						
FITZ	**Fitzroy Crossi**	**20.73**	**175**	P	P	20 32 45.2	-0.4
	1.9nm,0.3s,baz=3.1,slow=9.0,SNR=30						
WRA	**Warrarmunga Arr**	**24.73**	**156**	P	P	20 33 21.3	-0.6
	0.4nm,0.3s,baz=335,slow=9.9,SNR=12						
ASAR	**Alice Springs**	**27.96**	**160**	P	P	20 33 50.5	-0.1
	0.2nm,0.5s,baz=338,slow=8.0,SNR=8.3						
STKA	**Stephens Creek**	**38.28**	**155**	P	P	20 35 19.8	+0.7
	0.9nm,0.3s,baz=316,slow=8.8,SNR=8.8						
MKAR	**Makanchi Array**	**56.82**	**327**	P	P	20 37 40.7	+0.6
	0.1nm,0.2s,baz=129,slow=6.9,SNR=4.8						
ZALV	**Zalesovo Beam**	**60.25**	**335**	P	P	20 38 02.9	-0.6
	0.3nm,0.4s,baz=120,slow=16,SNR=2.5						

NEIC 14 20:29:10.5,19.09N×64.85W,h82km,MD2.8(RSPR), After RSPR.

RSPR 14 20:29:10.5,19.09N×64.85W,h82km±5km,4C-2D,Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABV	**Anegada**	**0.61**	**126**	⇑*e*P	Pn	20 29 24.6	-0.8
ABV	**Anegada**	**0.61**	**126**	*e*S	Sn	20 29 36.3	-0.2
ABVI	**Anegada Island**	**0.61**	**127**	⇑*e*P	Pn	20 29 24.6	-0.8
ABVI				*e*S	Sn	20 29 36.3	-0.2
STVI	**Saint Thomas**	**0.74**	**188**	‖*e*P	Pn	20 29 26.5	-0.4
STVI	**Saint Thomas**	**0.74**	**188**	‖*e*P	Pn	20 29 26.5	-0.4
STVI				*e*S	Sn	20 29 38.5	-0.4
SJG	**San Juan**	**1.57**	**232**	‖*e*P	Pn	20 29 36.5	-0.4
SJG	**San Juan**	**1.57**	**232**	‖*e*P	Pn	20 29 36.5	-0.4
SJG				*e*S	Sn	20 29 56.4	-0.5
SDDR	**Presa de Saban**	**6.09**	**270**	*e*Pn	Pn	20 30 38.3	+0.2
	6.4nm,0.6s						

IDC 14 20:37:52.4±1.4,34.70N×24.34E,h0km,mb3.4/4, mb1 3.6/6,mb1mx3.5/36,mbtmp3.5/6,ML3.4/2,Error ellipse: s-maj=39.8km s-min=22.4km az=158.0
ISCJB 14 20:37:56.3±0.7,34.83N±0.05×24.00E±0.03,h25km±3km, mb3.4/4,Error ellipse: s-maj=8.1km s-min=4.5km az=14.3
ATH 14 20:37:57.0,34.88N×24.12E,h26km,ML3.2/7,Error ellipse: s-maj=1.5km s-min=0.9km az=203.0
CSEM 14 20:37:57.5±0.5,34.91N×24.08E,h15km,ML3.2,Error ellipse: s-maj=11.6km s-min=4.6km az=18.0
THE 14 20:37:58.8,34.95N×24.16E,h0km±1km,ML3.2/10,Error ellipse: s-maj=1.6km s-min=0.8km az=189.0

ISC 14 20:37:57.5±0.8,34.92N±0.04×24.11E±0.03,h24km±6km, n103,σ1§33/135,mb3.5/4,1D,Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.09**	**195**	P	**Pb**	**20 38 01.8**	**-0.2**
GVD				S	**Sb**	**20 38 05.1**	**+0.1**
GVD	**Gavdhos**	**0.09**	**195**	P	**Pb**	**20 38 01.8**	**-0.2**
GVD	**Gavdhos**	**0.09**	**195**	P	**Pb**	**20 38 02.1**	**+0.1**
GVD				S	**Sb**	**20 38 05.5**	**+0.5**
GVD				AML	AML	20 38 06.0	
	comp=N,43493μm,0.3s						
GVD				AML	AML	20 38 06.0	
	comp=E,43928μm,0.4s						
VAM	**Vamos**	**0.49**	**8**	P	**Pb**	**20 38 07.5**	**0.0**
VAM				S	**Sn**	**20 38 15.7**	**-1.0**
VAM	**Vamos**	**0.49**	**8**	P	**Pb**	**20 38 07.5**	**0.0**
VAM				S	**Sn**	**20 38 15.7**	**-1.0**
IMMV	**Iera Moni Meta**	**0.55**	**349**	P	**Pb**	**20 38 08.5**	**0.0**
IMMV				S	**Sn**	**20 38 17.8**	**-0.4**
IMMV	**Iera Moni Meta**	**0.55**	**349**	P	**Pb**	**20 38 08.5**	**0.0**
IMMV				S	**Sn**	**20 38 17.8**	**-0.4**
IMMV	**Iera Moni Meta**	**0.55**	**349**	P	**Pb**	**20 38 08.1**	**-0.5**
IMMV				S	**Sn**	**20 38 18.2**	**0.0**
IMMV				AML	AML	20 38 19.6	
	comp=E,15186μm,0.4s						
IMMV				AML	AML	20 38 19.8	
	comp=N,10779μm,0.3s						
TMBK	**Timbaki Herakl**	**0.56**	**74**	P	**Pb**	**20 38 08.6**	**0.0**
TMBK				S	**Sn**	**20 38 17.4**	**-1.0**
TMBK	**Timbaki Herakl**	**0.56**	**74**	P	**Pb**	**20 38 08.6**	**0.0**
TMBK				S	**Sn**	**20 38 17.4**	**-1.0**
SIVA	**Sivas**	**0.58**	**80**	P	**Pb**	**20 38 08.9**	**-0.1**
SIVA				S	**Sb**	**20 38 17.2**	**+0.3**
SIVA	**Sivas**	**0.58**	**80**	P	**Pb**	**20 38 08.6**	**-0.4**
SIVA				S	**Sb**	**20 38 17.2**	**+0.3**
SIVA	**Sivas**	**0.58**	**80**	P	**Pb**	**20 38 08.6**	**-0.4**
SIVA				S	**Sn**	**20 38 18.4**	**-0.5**
SIVA				AML	AML	20 38 25.2	
	comp=E,10932μm,0.4s						
SIVA				AML	AML	20 38 25.8	
	comp=N,8575μm,0.6s						
IDI	**Anoyia**	**0.73**	**60**	P	**Pb**	**20 38 11.2**	**-0.5**
IDI				S	**Sn**	**20 38 22.9**	**0.0**
IDI	**Anoyia**	**0.73**	**60**	P	**Pb**	**20 38 11.2**	**-0.5**
IDI				S	**Sn**	**20 38 23.5**	**+0.6**
IDI	**Anoyia**	**0.73**	**60**	P	**Pb**	**20 38 10.0**	**-1.7**
IDI				S	**Sn**	**20 38 23.5**	**+0.6**
IDI				AML	AML	20 38 25.7	
	comp=N,4308μm,0.4s						
IDI				AML	AML	20 38 25.7	
	comp=E,3534μm,0.4s						
IACM	**Heraklion**	**0.87**	**64**	P	**Pn**	**20 38 14.2**	**-0.1**
IACM				S	**Sn**	**20 38 27.9**	**+1.7**
IACM	**Heraklion**	**0.87**	**64**	P	**Pn**	**20 38 14.2**	**-0.1**
IACM				S	**Sn**	**20 38 27.9**	**+1.7**
LAST	**Lasithi**	**1.14**	**78**	P	**Pb**	**20 38 18.8**	**+0.1**
LAST				S	**Sn**	**20 38 36.4**	**+3.3**
LAST	**Lasithi**	**1.14**	**78**	P	**Pb**	**20 38 18.8**	**+0.1**
LAST				S	**Sn**	**20 38 36.1**	**+3.0**
LAST	**Lasithi**	**1.14**	**78**	P	**Pn**	**20 38 18.1**	**0.0**
ANKY	**Antikythira Is**	**1.15**	**325**	P	**Pb**	**20 38 20.1**	**+1.3**
ANKY				S	**Sb**	**20 38 36.8**	**+3.5**
ANKY	**Antikythira Is**	**1.15**	**325**	P	**Pb**	**20 38 20.1**	**+1.3**
ANKY				S	**Sb**	**20 38 36.8**	**+3.5**
ANKY	**Antikythira Is**	**1.15**	**325**	P	**Pb**	**20 38 20.6**	**+1.8**
ANKY				S	**Sb**	**20 38 37.5**	**+4.2**
ANKY				AML	AML	20 38 46.1	
	comp=N,1134μm,0.4s						
ANKY				AML	AML	20 38 47.5	
	comp=E,1095μm,0.9s						
NPS	**Neapolis**	**1.27**	**74**	P	**Pb**	**20 38 21.4**	**+0.5**
NPS				S	**Sb**	**20 38 40.5**	**+3.7**
NPS	**Neapolis**	**1.27**	**74**	P	**Pb**	**20 38 21.4**	**+0.5**
NPS				S	**Sb**	**20 38 38.6**	**+1.8**
NPS	**Neapolis**	**1.27**	**74**	P	**Pb**	**20 38 22.9**	**+2.0**
NPS				S	**Sb**	**20 38 38.6**	**+1.8**
NPS				AML	AML	20 38 45.9	
	comp=N,643μm,0.8s						
NPS				AML	AML	20 38 54.0	
	comp=E,991μm,0.9s						
KYTH	**Kithira**	**1.60**	**327**	P	**Pb**	**20 38 27.3**	**+0.9**
KYTH				S	**Sb**	**20 38 50.0**	**+3.9**
KYTH	**Kithira**	**1.60**	**327**	P	**Pb**	**20 38 27.3**	**+0.9**
KYTH				S	**Sb**	**20 38 48.7**	**+2.6**
KYTH	**Kithira**	**1.60**	**327**	P	**Pb**	**20 38 27.7**	**+1.4**
ZKR	**Zakros**	**1.74**	**83**	P	**Pb**	**20 38 29.1**	**+0.4**
ZKR	**Zakros**	**1.74**	**83**	P	**Pb**	**20 38 29.1**	**+0.4**
ZKR	**Zakros**	**1.74**	**83**	P	**Pb**	**20 38 29.3**	**+0.6**
THR6	**Thira Island,**	**1.77**	**36**

MHLO	**Agia Marina, M**	**1.78**	**7**	P		**Pb**	**20 38 29.8**	**+0.4**
MHLO				S		**Sb**	**20 38 53.8**	**+2.5**
MHLO	**Agia Marina, M**	**1.78**	**7**	P		**Pb**	**20 38 29.0**	**-0.4**
MHLO				S		**Sb**	**20 38 53.8**	**+2.5**
MHLO	**Agia Marina, M**	**1.78**	**7**	P		**Pb**	**20 38 29.0**	**-0.4**
MHLO				S		**Sb**	**20 38 52.5**	**+1.1**
MHLO				AML	AML		20 39 01.8	
	comp=N,3254μm,0.5s							
MHLO				AML	AML		20 39 05.5	
	comp=E,2250μm,0.7s							
THR5	**Thira Island,**	**1.80**	**34**	P		**Pb**	**20 38 28.8**	**-1.0**
THR5	**Thira Island,**	**1.80**	**34**	P		**Pb**	**20 38 28.8**	**-1.0**
SANT	**Santorini**	**1.81**	**37**	P		**Pb**	**20 38 28.7**	**-1.3**
SANT	**Santorini**	**1.81**	**37**	P		**Pb**	**20 38 28.7**	**-1.3**
THR3	**Thira Island,**	**1.82**	**35**	P		**Pb**	**20 38 29.2**	**-0.9**
THR3	**Thira Island,**	**1.82**	**35**	P		**Pb**	**20 38 29.2**	**-0.9**
THR2	**Thira island,**	**1.86**	**35**	P		**Pb**	**20 38 30.0**	**-0.9**
THR2	**Thira island,**	**1.86**	**35**	P		**Pb**	**20 38 30.0**	**-0.9**
CMBO	**Columbo, Santo**	**1.87**	**34**	P		**Pb**	**20 38 31.2**	**+0.2**
CMBO	**Columbo, Santo**	**1.87**	**34**	P		**Pb**	**20 38 31.2**	**+0.2**
VLI	**Veliai**	**2.03**	**332**	P		**Pb**	**20 38 32.9**	**-0.8**
VLI				S		**Sb**	**20 38 59.9**	**+1.3**
VLI	**Veliai**	**2.03**	**332**	P		**Pb**	**20 38 32.7**	**-1.0**
VLI				S		**Sb**	**20 38 59.9**	**+1.3**
VLI	**Veliai**	**2.03**	**332**	P		**Pb**	**20 38 32.7**	**-1.0**
SERI	**Serifos**	**2.25**	**8**	P		**Pb**	**20 38 35.7**	**-1.9**
SERI	**Serifos**	**2.25**	**8**	P		**Pb**	**20 38 35.7**	**-1.9**
APE	**Apeiranthos**	**2.43**	**28**	*i* P		**Pn**	**20 38 37.9**	**+2.2**
APE	**Apeiranthos**	**2.43**	**28**	P		**Pn**	**20 38 35.5**	**-0.3**
APE	**Apeiranthos**	**2.43**	**28**	P		**Pn**	**20 38 35.5**	**-0.3**
KARP	**Karpathos**	**2.57**	**75**	P		**Pn**	**20 38 39.6**	**+2.0**
KARP	**Karpathos**	**2.57**	**75**	P		**Pn**	**20 38 39.6**	**+2.0**
DID	**Didima**	**2.67**	**345**	P		**Pn**	**20 38 39.4**	**+0.3**
DID	**Didima**	**2.67**	**345**	P		**Pn**	**20 38 39.4**	**+0.3**
VLX	**Vlachokerasia**	**2.82**	**331**	P		**Pb**	**20 38 44.6**	**-2.6**
VLX	**Vlachokerasia**	**2.82**	**331**	P		**Pb**	**20 38 44.6**	**-2.6**
VLY	**Voula,Athens**	**2.94**	**355**	P		**Pn**	**20 38 42.9**	**+0.3**
VLY	**Voula,Athens**	**2.94**	**355**	P		**Pn**	**20 38 42.9**	**+0.3**
TRIP	**Tripoli**	**3.00**	**331**	P		**Pb**	**20 38 48.6**	**-1.6**
PTL	**Penteli**	**3.13**	**356**	P		**Pn**	**20 38 45.5**	**+0.2**
PTL	**Penteli**	**3.13**	**356**	P		**Pn**	**20 38 45.5**	**+0.2**
LTK	**Loutraki**	**3.23**	**344**	P		**Pn**	**20 38 46.8**	**+0.1**
LTK	**Loutraki**	**3.23**	**344**	P		**Pn**	**20 38 46.8**	**+0.1**
VILL	**Villia**	**3.30**	**349**	P		**Pn**	**20 38 47.2**	**-0.5**
VIL2	**Platees**	**3.35**	**349**	P		**Pn**	**20 38 47.2**	**-1.2**
PROD	**Prodromos**	**3.47**	**344**	P		**Pn**	**20 38 49.9**	**-0.1**
PROD	**Prodromos**	**3.47**	**344**	P		**Pn**	**20 38 49.9**	**-0.1**
KLV	**Kalavryta, Ach**	**3.49**	**334**	P		**Pn**	**20 38 51.4**	**+1.0**
KLV	**Kalavryta, Ach**	**3.49**	**334**	P		**Pn**	**20 38 51.4**	**+1.0**
ARG	**Arkhangelos**	**3.52**	**67**	P		**Pn**	**20 38 51.6**	**+1.0**
DRO	**Drossia**	**3.59**	**328**	P		**Pn**	**20 38 52.8**	**+1.1**
DRO	**Drossia**	**3.59**	**328**	P		**Pn**	**20 38 52.8**	**+1.1**
DSF	**Desfina**	**3.71**	**340**	P		**Pn**	**20 38 52.9**	**-0.4**
DSF	**Desfina**	**3.71**	**340**	P		**Pn**	**20 38 52.9**	**-0.4**
LAKA	**Lakka**	**3.73**	**333**	P		**Pn**	**20 38 55.3**	**+1.7**
LAKA	**Lakka**	**3.73**	**333**	P		**Pn**	**20 38 55.3**	**+1.7**
KALE	**Kalithea**	**3.81**	**336**	P		**Pn**	**20 38 56.2**	**+1.5**
KALE	**Kalithea**	**3.81**	**336**	P		**Pn**	**20 38 56.2**	**+1.5**
TRIZ	**Trizonia**	**3.81**	**335**	P		**Pn**	**20 38 55.0**	**+0.4**
LKR	**Lokris**	**3.83**	**347**	P		**Pn**	**20 38 54.2**	**-0.7**
LKR	**Lokris**	**3.83**	**347**	P		**Pn**	**20 38 54.2**	**-0.7**
SERG	**Sergoula**	**3.86**	**335**	P		**Pn**	**20 38 56.0**	**+0.7**
SMIA	**Simia**	**4.01**	**350**	P		**Pn**	**20 38 57.5**	**0.0**
SMIA	**Simia**	**4.01**	**350**	P		**Pn**	**20 38 57.5**	**0.0**
AOS	**Alonnisos**	**4.24**	**358**	P		**Pn**	**20 38 59.5**	**-1.1**
SKIA	**Skiathos**	**4.27**	**353**	P		**Pn**	**20 39 00.5**	**-0.5**
SKIA	**Skiathos**	**4.27**	**353**	P		**Pn**	**20 39 00.5**	**-0.5**
AGG	**Agios Georgios**	**4.33**	**341**	P		**Pn**	**20 39 01.3**	**-0.6**
AGG	**Agios Georgios**	**4.33**	**341**	P		**Pn**	**20 39 01.3**	**-0.6**
DSL	**Palaion Diasel**	**4.85**	**331**	P		**Pn**	**20 39 08.7**	**-0.2**
DSL	**Palaion Diasel**	**4.85**	**331**	P		**Pn**	**20 39 08.7**	**-0.2**
GERES	**GERESS Array B**	**15.90**	**334**	Pn		**P**	**20 41 43.4**	**+0.2**
	comp=E,0.1nm,0.3s,baz=147,slow=13,SNR=3.7							
KBZ	**Khabaz**	**16.96**	**53**	Pn		**Pn**	**20 41 53.9**	**+0.9**
	comp=E,0.0nm,0.3s,baz=260,slow=14,SNR=2.2							
ESDC	**Sonseca Array**	**22.79**	**290**	P		**P**	**20 42 58.5**	**+0.1**
	comp=E,0.3nm,0.6s,baz=90,slow=9.0,SNR=3.7							
TORD	**Torodi Ar. Bea**	**29.68**	**229**	P		**P**	**20 44 00.4**	**-1.2**
	comp=E,0.2nm,0.3s,baz=30,slow=8.0,SNR=5.2							
MKAR	**Makanchi Array**	**44.62**	**56**	P		**P**	**20 46 05.6**	**-2.3**
	comp=E,0.6nm,0.5s,baz=269,slow=7.4,SNR=7.3							
SONM	**Songino Array**	**60.30**	**50**	P		**P**	**20 48 03.0**	**-1.2**
	comp=E,0.2nm,0.3s,baz=296,slow=7.7,SNR=3.5							

*ISK **14** 20:38:38.5, 39.08N×29.07E, h5km, ML3.0*
*DDA **14** 20:38:38.8, 39.13N×29.10E, h4km, Md3.0*
*CSEM **14** 20:38:39.6±0.1, 39.07N×29.09E, h2km, ML3.0, Error ellipse: s-maj=3.6km s-min=2.9km az=146.0*
ISC 14 20:38:39.0±1.0, **39.09N**±0.02×**29.08E**±0.02, **h7**km±10km, **n70**, σ0**93**/97, **1C**, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GEDZ	**Gediz**	**0.26**	**100**	*e*PG		**Pb**	**20 38 45.1**	**-1.0**
GEDZ	**Gediz**	**0.26**	**100**	*e*Pg		**Pb**	**20 38 45.1**	**-1.0**
DEMI	**Demirci**	**0.29**	**261**	*i* P		**Pb**	**20 38 45.7**	**-0.9**
DEMI				*i* S		**Sb**	**20 38 50.1**	**-1.5**
DEMI	**Demirci**	**0.29**	**261**	P		**Pb**	**20 38 45.7**	**-0.9**
DEMI				S		**Sb**	**20 38 50.1**	**-1.5**
GDZ	**Gediz**	**0.31**	**90**	*i* P		**Pg**	**20 38 45.1**	**-0.1**
GDZ				*i* S		**Sg**	**20 38 49.4**	**+0.1**
GDZ	**Gediz**	**0.31**	**90**	P		**Pg**	**20 38 45.1**	**-0.1**
GDZ				S		**Sg**	**20 38 49.4**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*PG		**Pb**	**20 38 52.5**	**-0.4**
KULA				*e*SG		**Sb**	**20 39 01.6**	**-0.8**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*Pg		**Pb**	**20 38 52.5**	**-0.4**
KULA				*e*Sg		**Sb**	**20 39 01.6**	**-0.8**
MANT	**Manisa**	**0.72**	**214**	*i* P		**Pg**	**20 38 52.6**	**-0.4**
MANT				*i* S		**Sg**	**20 39 01.7**	**-0.6**
MANT	**Manisa**	**0.72**	**214**	P		**Pg**	**20 38 52.6**	**-0.4**
MANT				S		**Sg**	**20 39 01.7**	**-0.6**
KHL	**Karahalli**	**0.84**	**155**	*e*PG		**Pb**	**20 38 56.0**	**+0.1**
KHL	**Karahalli**	**0.84**	**155**	*e*Pg		**Pb**	**20 38 56.1**	**+0.1**
AKS	**Akhisar**	**1.01**	**258**	*e*PG		**Pb**	**20 38 58.7**	**-0.2**
AKS				*e*SG		**Sn**	**20 39 13.7**	**-0.4**
AKS	**Akhisar**	**1.01**	**258**	*e*Pg		**Pb**	**20 38 58.7**	**-0.2**
AKS				*e*Sg		**Sn**	**20 39 13.7**	**-0.4**
BALB	**Balikesir**	**1.08**	**301**	*e*PN		**Pn**	**20 39 00.6**	**0.0**
BALB	**Balikesir**	**1.08**	**301**	*e*Pn		**Pn**	**20 39 00.6**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN		**Pn**	**20 39 03.4**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn		**Pn**	**20 39 03.4**	**+0.3**
SHUT	**Suhut-Afyon**	**1.27**	**115**	*e*PN		**Pn**	**20 39 03.4**	**+0.1**
SHUT	**Suhut-Afyon**	**1.27**	**115**	*e*Pn		**Pn**	**20 39 03.4**	**+0.1**
IZI	**Iznik**	**1.28**	**14**	*e*PN		**Pb**	**20 39 04.1**	**+0.5**
IZI	**Iznik**	**1.28**	**14**	*e*Pn		**Pb**	**20 39 04.1**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*PN		**Pb**	**20 39 04.2**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*Pn		**Pb**	**20 39 04.2**	**+0.6**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN		**Pb**	**20 39 04.7**	**+0.9**
KCTX				*e*SN		**Sn**	**20 39 23.2**	**+1.9**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn		**Pb**	**20 39 04.7**	**+0.9**
KCTX				*e*Sn		**Sn**	**20 39 23.2**	**+1.9**
BORA	**Eskisehir**	**1.32**	**53**	*i* P		**Pn**	**20 39 03.7**	**-0.4**
BORA				*i* S		**Sg**	**20 39 20.9**	**-0.7**
BORA	**Eskisehir**	**1.32**	**53**	P		**Pn**	**20 39 03.7**	**-0.4**
BORA				S		**Sg**	**20 39 20.9**	**-0.7**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN		**Pg**	**20 39 06.5**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn		**Pg**	**20 39 06.5**	**0.0**
ESKT	**Eskisehir**	**1.44**	**72**	*e*PN		**Pg**	**20 39 07.3**	**+0.7**
ESKT	**Eskisehir**	**1.44**	**72**	*i* P		**Pb**	**20 39 06.1**	**-0.2**
ESKT				*i* S		**Sb**	**20 39 24.2**	**-0.7**
ESKT	**Eskisehir**	**1.44**	**72**	*e*Pn		**Pb**	**20 39 07.3**	**+0.7**
SEYT	**Eskypehyr**	**1.44**	**72**	P		**Pb**	**20 39 06.1**	**-0.1**
SEYT				S		**Sb**	**20 39 24.2**	**-0.7**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*PN		**Pg**	**20 39 06.3**	**-0.3**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*Pn		**Pg**	**20 39 06.3**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**220**	*e*PN		**Pg**	**20 39 07.6**	**+0.3**
AYDB				*e*SN		**Sg**	**20 39 28.2**	**+1.9**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**220**	*e*Pn		**Pg**	**20 39 07.6**	**+0.3**
AYDB				*e*Sn		**Sg**	**20 39 28.3**	**+1.9**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN		**Pg**	**20 39 07.5**	**0.0**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn		**Pg**	**20 39 07.5**	**0.0**
EDC	**Edincik**	**1.57**	**324**	*e*PN		**Pg**	**20 39 09.0**	**-0.1**
EDC				*e*SN		**Sg**	**20 39 30.9**	**+1.5**
EDC	**Edincik**	**1.57**	**324**	*e*Pn		**Pg**	**20 39 09.0**	**-0.1**
EDC				*e*Sn		**Sg**	**20 39 30.9**	**+1.5**
GULT	**Gulveren**	**1.74**	**39**	*e*PN		**Pb**	**20 39 11.3**	**-0.1**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn		**Pb**	**20 39 11.3**	**-0.1**
HRT	**Hereke**	**1.79**	**14**	*e*PN		**Pb**	**20 39 12.4**	**+0.2**
HRT	**Hereke**	**1.79**	**14**	*e*Pn		**Pb**	**20 39 12.4**	**+0.2**
AYVA	**Ayvalik**	**1.87**	**277**	*i* P		**Pg**	**20 39 15.7**	**+0.8**
AYVA				*i* S		**Sg**	**20 39 40.4**	**+1.3**
AYVA	**Ayvalik**	**1.87**	**277**	P		**Pg**	**20 39 15.7**	**+0.8**
AYVA				S		**Sg**	**20 39 40.4**	**+1.3**
GOLH	**Golhisar**	**1.89**	**168**	*i* P		**Pn**	**20 39 11.9**	**+0.1**
GOLH				*i* S		**Sg**	**20 39 43.1**	**+3.5**
MRMT	**Marmara Adasi**	**1.90**	**323**	*e*PN		**Pb**	**20 39 12.9**	**-1.1**
MRMT	**Marmara Adasi**	**1.90**	**323**	*e*Pn		**Pb**	**20 39 12.9**	**-1.1**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*PN		**Pb**	**20 39 14.1**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*Pn		**Pb**	**20 39 14.1**	**-0.5**
ISK	**Istanbul-Kandi**	**1.97**	**360**	*e*PN		**Pb**	**20 39 14.7**	**-0.6**
ISK	**Istanbul-Kandi**	**1.97**	**360**	*e*Pn		**Pb**	**20 39 14.7**	**-0.6**
BGKT	**Bogazkoy**	**2.10**	**354**	*e*PN		**Pb**	**20 39 16.6**	**-0.9**
BGKT	**Bogazkoy**	**2.10**	**354**	*e*Pn		**Pb**	**20 39 16.6**	**-0.9**
MDUB	**Mudurnu**	**2.14**	**49**	*e*PN		**Pb**	**20 39 17.7**	**-0.4**
MDUB	**Mudurnu**	**2.14**	**49**	*e*Pn		**Pb**	**20 39 17.7**	**-0.4**
KLYT	**Kilyos**	**2.16**	**359**	*e*PN		**Pb**	**20 39 17.5**	**-1.0**
KLYT	**Kilyos**	**2.16**	**359**	*e*Pn		**Pb**	**20 39 17.5**	**-1.0**
KAND	**Kocaeli-Kandir**	**2.18**	**23**	*i* P		**Pb**	**20 39 17.5**	**-1.2**
KAND				*i* S		**Sb**	**20 39 45.3**	**-0.6**
KAND	**Kocaeli-Kandir**	**2.18**	**23**	P		**Pb**	**20 39 17.5**	**-1.2**
KAND				S		**Sb**	**20 39 45.3**	**-0.6**
SAHE	**Sakarya_HENDEK**	**2.23**	**37**	*i* P		**Pb**	**20 39 19.8**	**+0.2**
SAHE				*i* S		**Sg**	**20 39 50.4**	**-0.1**
SAHE	**Sakarya_HENDEK**	**2.23**	**37**	P		**Pb**	**20 39 19.8**	**+0.2**
SAHE				S		**Sg**	**20 39 50.4**	**-0.1**
GELI	**Tayfur-Gelibol**	**2.40**	**304**	*e*PN		**Pb**	**20 39 20.6**	**-1.8**
GELI	**Tayfur-Gelibol**	**2.40**	**304**	*e*Pn		**Pb**	**20 39 20.7**	**-1.8**
ERIK	**Erikli-Kesan**	**2.53**	**309**	*e*PN		**Pb**	**20 39 22.7**	**-2.0**
ERIK	**Erikli-Kesan**	**2.53**	**309**	*e*Pn		**Pb**	**20 39 22.7**	**-2.0**
TIRR	**Tirgusor**	**5.39**	**355**	*i* P		**Pn**	**20 39 59.9**	**+0.1**

*IDC **14** 20:47:52.1±1.6, 34.87N×139.14E, h0km, mb3.6/3, mb1 3.9/3, mb1mx3.4/50, mbtmp3.6/3, Error ellipse: s-maj=49.4km s-min=19.2km az=73.0*
*ISCJB **14** 20:47:56.7±0.7, 35.58N±0.04×139.99E±0.06, h82km±6km, mb3.6/3, Error ellipse: s-maj=8.6km s-min=5.1km az=141.9*
*JMA **14** 20:47:57.4±0.2, 35.64N×140.00E, h71km±2km, M3.1 Broadband fault plane solution: P waves. NP1: φs1.00000°, δ67.00000°, λ90.00000°. NP2:φs181.00000°, δ23.00000°, λ90.00000°. Principal axes: T Plg68.0000°, Azm271.0000°; N Plg0.0000°, Azm1.0000°; P Plg22.0000°, Azm91.0000°;*
ISC 14 20:47:57.5±1.0, **35.59N**±0.04×**139.99E**±0.05, **h77**km±8km, **n18**, σ1**908**/**27**, **mb3.6/3**, **3C-5D**, **Near south coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JCN	**Nagara**	**0.25**	**135**	⇑P		**Pn**	**20 48 09.3**	**+0.1**
JCN				S		**Sn**	**20 48 18.4**	**+0.6**
JOD2	**Odawara 2**	**0.80**	**246**	⇓P		**Pn**	**20 48 13.9**	**-0.2**
JOD2				S		**Sn**	**20 48 25.6**	**-0.9**
BSO3	**Boso 3**	**0.90**	**151**	⇑P		**Pn**	**20 48 14.6**	**-0.3**
BSO3				S		**Sn**	**20 48 28.6**	**+0.7**
JAG	**Ashikaga**	**0.94**	**333**	⇓P		**Pn**	**20 48 15.2**	**-0.5**
JAG				S		**Sn**	**20 48 27.8**	**-1.4**
JRY	**Ryogami san**	**0.98**	**296**	⇓P		**Pn**	**20 48 16.5**	**+0.3**
JRY				S		**Sn**	**20 48 30.8**	**+0.7**
JIM2	**Oshima 3**	**0.98**	**208**	P		**Pn**	**20 48 16.2**	**0.0**
JIM2				S		**Sn**	**20 48 29.2**	**-1.0**
JYN	**Shimob**	**1.18**	**266**	⇓P		**Pn**	**20 48 18.9**	**+0.2**
JYN				S		**Sn**	**20 48 34.8**	**+0.2**
BSO1	**Boso 1**	**1.24**	**139**	⇑P		**Pn**	**20 48 18.3**	**-0.5**
BSO1				S		**Sn**	**20 48 37.2**	**+2.3**
JIZS	**Izushimoda**	**1.26**	**227**	⇓P		**Pn**	**20 48 19.8**	**+0.2**
JIZS				S		**Sn**	**20 48 36.0**	**-0.2**
JKT	**Katashina**	**1.32**	**333**	P		**Pn**	**20 48 20.1**	**-0.3**
JKT				S		**Sn**	**20 48 36.6**	**-1.1**
MJAR	**Matsushiro Arr**	**1.73**	**304**	Pn		**Pn**	**20 48 25.8**	**+0.1**
	13nm,0.3s,baz=155,slow=14,SNR=84							
MJAR				Sn		**Sn**	**20 48 49.5**	**+2.4**
	7.8nm,0.3s,baz=151,slow=17,SNR=2.8							
MAT	**Matsushiro**	**1.73**	**304**	P		**Pn**	**20 48 26.2**	**+0.5**
MAT				S		**Sn**	**20 48 47.8**	**+0.7**
H11N2	**WAKE ISLAND Hy**	**28.47**	**117**	T		T	21 23 55.3	
	baz=311,slow=75,SNR=5.8							
H11N1	**WAKE ISLAND Hy**	**28.48**	**117**	T		T	21 23 57.3	
	baz=311,slow=75,SNR=5.2							
H11N3	**WAKE ISLAND Hy**	**28.49**	**117**	T		T	21 23 56.8	
	baz=311,slow=75,SNR=5.4							
MKAR	**Makanchi Array**	**43.92**	**303**	P		**P**	**20 55 57.8**	**+1.2**
	0.4nm,0.4s,baz=88,slow=8.0,SNR=4.9							
WRA	**Warramunga Arr**	**55.49**	**186**	P		**P**	**20 57 24.5**	**+0.1**
	0.7nm,0.5s,baz=360,slow=7.4,SNR=23							
ASAR	**Alice Springs**	**59.22**	**186**	P		**P**	**20 57 48.2**	**-2.4**
	0.3nm,0.8s,baz=0.0,slow=8.3,SNR=6.0							

*CSEM **14** 20:55:07.7±0.2, 50.06N×0.62W, h10km, ML2.6/15, Error ellipse: s-maj=4.1km s-min=2.9km az=156.0*
*LDG **14** 20:55:08.3±0.1, 50.11N×0.69W, h10km, Md2.7/3, Ml2.5/26, Error ellipse: s-maj=2.6km s-min=1.8km az=158.0*
*BGS **14** 20:55:09.1±0.5, 50.08N×0.60W, h10km, ML1.8*
ISC 14 20:55:06.8±1.1, **50.10N**±0.03×**0.62W**±0.02, **h17**km±9km, **n82**, σ1**951**/148, **United Kingdom**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HMNX	**Herstmonceux**	**0.98**	**38**	*e*P		**Pn**	**20 55 26.7**	**+0.9**
HMNX	**Herstmonceux**	**0.98**	**38**	*e*P		**Pn**	**20 55 26.7**	**+0.9**
HMNX	**Herstmonceux**	**0.98**	**38**	*e*P		**Pn**	**20 55 26.7**	**+0.9**
WOL	**Wolverton**	**1.27**	**343**	*e*P		**Pn**	**20 55 32.0**	**+2.1**
WOL					AML	AML	20 55 50.4	
	comp=E,22nm,0.6s							
WOL					AML	AML	20 55 51.0	
	comp=N,9.8nm,0.3s							
WOL	**Wolverton**	**1.27**	**343**	*e*P		**Pn**	**20 55 32.0**	**+2.1**
WOL					AML	AML	20 55 50.4	
	comp=E,22nm,0.6s							
WOL					AML	AML	20 55 51.0	
	comp=N,9.8nm,0.3s							
WOL	**Wolverton**	**1.27**	**343**	*e*P		**Pn**	**20 55 32.0**	**+2.1**
	comp=N,9.8nm,0.3s							
JQE	**Queens East**	**1.29**	**226**	*e*P		**Pg**	**20 55 31.6**	**0.0**
JQE	**Queens East**	**1.29**	**226**	*e*P		**Pg**	**20 55 31.6**	**0.0**
JQE	**Queens East**	**1.29**	**226**	*e*P		**Pg**	**20 55 31.6**	**0.0**
JDG	**Jersey Dam (Ga**	**1.29**	**226**	*e*S		**Sg**	**20 55 48.2**	**-0.4**
JDG	**Jersey Dam (Ga**	**1.29**	**226**	*e*S		**Sg**	**20 55 48.2**	**-0.4**
JDG	**Jersey Dam (Ga**	**1.29**	**226**	*e*S		**Sg**	**20 55 48.2**	**-0.4**
JDC	**Jersey Dam (Cr**	**1.30**	**226**	*e*P		**Pg**	**20 55 32.0**	**+0.1**
JDC				*e*S		**Sg**	**20 55 48.4**	**-0.5**
JDC	**Jersey Dam (Cr**	**1.30**	**226**	*e*P		**Pg**	**20 55 32.0**	**+0.1**
JDC				*e*S		**Sg**	**20 55 48.4**	**-0.5**
JDC	**Jersey Dam (Cr**	**1.30**	**226**	*e*P		**Pg**	**20 55 32.0**	**+0.1**
JDC				*e*S		**Sg**	**20 55 48.3**	**-0.5**
JRS	**Jersey**	**1.32**	**227**	*e*P		**Pg**	**20 55 32.5**	**+0.3**
JRS				*e*S		**Sn**	**20 55 48.9**	**+1.4**
JRS	**Jersey**	**1.32**	**227**	*e*P		**Pg**	**20 55 32.5**	**+0.3**
JRS				*e*S		**Sn**	**20 55 48.9**	**+1.4**
JRS	**Jersey**	**1.32**	**227**	*e*P		**Pg**	**20 55 32.5**	**+0.3**
JRS				*e*S		**Sn**	**20 55 48.9**	**+1.4**
FLN	**La Foliniere**	**1.34**	**176**	*e*Pn		**Pb**	**20 55 32.3**	**+0.9**
	SNR=1.0							
FLN	**La Foliniere**	**1.34**	**176**	*e*Pg		**Pg**	**20 55 33.7**	**+1.1**
	baz=354							
FLN				*e*Sn		**Sb**	**20 55 49.3**	**+1.0**
	comp=N,12nm,0.2s,SNR=1.0							
FLN				*e*Sg		**Sn**	**20 55 52.9**	**+4.8**
	comp=N,22nm,0.2s,SNR=1.0							
FLN	**La Foliniere**	**1.34**	**176**	*e*Pn		**Pb**	**20 55 32.3**	**+0.9**
	SNR=1.0							
FLN	**La Foliniere**	**1.34**	**176**	*e*Pg		**Pg**	**20 55 33.7**	**+1.1**
FLN				*e*Sn		**Sb**	**20 55 49.3**	**+1.0**
	comp=N,6.2nm,0.2s,SNR=1.0							
FLN				*e*Sg		**Sn**	**20 55 52.9**	**+4.8**
	comp=N,11nm,0.2s,SNR=1.0							
JSA	**Saint Aubin**	**1.36**	**228**	*e*P		**Pg**	**20 55 33.0**	**0.0**
JSA				*e*S		**Sb**	**20 55 49.6**	**+0.8**
JSA					AML	AML	20 55 51.6	
	comp=E,16nm,0.2s							
JSA					AML	AML	20 55 52.3	
	comp=N,22nm,0.3s							
JSA	**Saint Aubin**	**1.36**	**228**	*e*P		**Pg**	**20 55 33.0**	**0.0**
JSA				*e*S		**Sb**	**20 55 49.6**	**+0.8**
JSA					AML	AML	20 55 51.6	
	comp=E,16nm,0.2s							
JSA					AML	AML	20 55 52.3	
	comp=N,22nm,0.3s							
JSA	**Saint Aubin**	**1.36**	**228**	*e*P		**Pg**	**20 55 33.0**	**0.0**
JSA				*e*S		**Sb**	**20 55 49.6**	**+0.8**
JSA					AML	AML	20 55 51.6	
	comp=N,22nm,0.3s							
LDF	**La Druitiere**	**1.54**	**168**	*e*Pn		**Pn**	**20 55 34.7**	**+1.2**
	SNR=1.0							
LDF	**La Druitiere**	**1.54**	**168**	*e*P		**Pg**	**20 55 36.6**	**+0.2**
LDF	**La Druitiere**	**1.54**	**168**	*e*Pg		**Pg**	**20 55 37.3**	**+0.9**
LDF				*e*Sn		**Sn**	**20 55 54.4**	**+1.3**
	comp=N,13nm,0.2s,SNR=1.0							
LDF	**La Druitiere**	**1.54**	**168**	*e*Pn		**Pn**	**20 55 34.7**	**+1.2**
	SNR=1.0							
LDF	**La Druitiere**	**1.54**	**168**	*e*P		**Pg**	**20 55 36.6**	**+0.2**
LDF	**La Druitiere**	**1.54**	**168**	*e*Pg		**Pg**	**20 55 37.3**	**+0.9**
LDF				*e*Sn		**Sn**	**20 55 54.4**	**+1.3**
	comp=N,6.5nm,0.2s,SNR=1.0							
GRR	**Gorron**	**1.72**	**185**	*e*Pn		**Pn**	**20 55 37.3**	**+1.4**
	SNR=1.0							
GRR	**Gorron**	**1.72**	**185**	*e*Pg		**Pg**	**20 55 40.5**	**+0.7**
GRR				*e*Sn		**Sn**	**20 55 57.6**	**+0.2**
	SNR=1.0							
GRR				*e*Sg		**Sg**	**20 56 02.1**	**0.0**
	comp=N,11nm,0.2s,SNR=1.0							
GRR	**Gorron**	**1.72**	**185**	*e*Pn		**Pn**	**20 55 37.3**	**+1.4**
	SNR=1.0							
GRR	**Gorron**	**1.72**	**185**	*e*Pg		**Pg**	**20 55 40.5**	**+0.7**
GRR				*e*Sn		**Sn**	**20 55 57.6**	**+0.2**
	SNR=1.0							
GRR				*e*Sg		**Sg**	**20 56 02.1**	**0.0**
	comp=N,5.6nm,0.2s,SNR=1.0							
SGMF	**Saint Gilles**	**2.24**	**215**	*e*Pn		**Pn**	**20 55 43.9**	**+0.8**
SGMF				*e*Sn		**Sn**	**20 56 09

LFF				eSn	Sn	20 57 20.6	-3.8
	comp=N,1.6nm,0.3s,SNR=1.0						
LFF	La Frestale	5.24	169	ePn	Pn	20 56 24.6	+0.2
HINF	Hinteralfeld	5.43	112	eSn	Sn	20 57 25.6	-3.4
	comp=N,1.2nm,0.3s,SNR=1.0						
CDF	Champ du Feu	5.44	105	ePn	Pn	20 56 28.4	+1.2
	SNR=1.0						
CDF				eSn	Sn	20 57 27.6	-1.8
	comp=N,1.2nm,0.4s,SNR=1.0						
CDF	Champ du Feu	5.44	105	ePn	Pn	20 56 28.4	+1.2
	SNR=1.0						
CAF	Calviac	5.49	160	ePn	Pn	20 56 28.1	+0.4
CAF				eSn	Sn	20 57 26.6	-3.8
	comp=N,0.6nm,0.2s,SNR=1.0						
CAF	Calviac	5.49	160	ePn	Pn	20 56 28.1	+0.4
EPF	Esparros	7.10	174	ePn	Pn	20 56 48.1	-1.8

*ISCJB **14** 20:56:47.7±0.3, 34.°32N±0.°02×46.°09E±0.°02, h10km, mb3.7/13, MS2.9/4, Error ellipse: s-maj=3.7km s-min=2.7km az=25.9*
*CSEM **14** 20:56:49.4±0.2, 34.°42N×46.°14E, h2km, ML3.7, Error ellipse: s-maj=6.8km s-min=3.7km az=37.0*
*TEH **14** 20:56:50.4, 34.°41N×46.°07E, h12km, ML3.7*
*THR **14** 20:56:51.3±0.6, 34.°61N×46.°31E, h8km±6km, ML3.5*
*AZER **14** 20:56:51.4±0.1, 34.°29N×47.°83E, h2km, Error ellipse: s-maj=14.6km s-min=6.0km az=270.0*
*IDC **14** 20:56:52.6±3.6, 34.°51N×46.°09E, h34km±31km, mb3.6/14, mb1 3.6/20, mb1mx3.5/47, mbtmp3.7/20, ML3.3/5, MS3.0/5, Ms1 3.0/5, ms1mx2.5/45, Error ellipse: s-maj=22.2km s-min=13.5km az=159.0*
*DSN **14** 20:56:52.8±1.1, 34.°66N×47.°21E, h5km, Error ellipse: s-maj=16.8km s-min=12.1km az=52.0*
ISC 14 20:56:49.6±0.5, **34.°44N**±0.°03×**46.°20E**±0.°03, **h10**km, **n143**, σ**2.s32**/159, **mb3.7**/13, **MS2.9**/4, **13C-19D, Western Iran**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGHG	Ghaleghazi	0.32	109	ePg	Pg	20 56 55.9	-0.2
IGHG	Ghaleghazi	0.32	109	ePg	Pg	20 56 55.9	-0.2
IVIS	Veis	0.54	80	ePg	Pg	20 56 58.5	-1.7
ILIN	Lien	0.79	52	ePg	Pg	20 57 02.2	-2.7
IKOM	Komasi	1.11	103	ePg	Pb	20 57 10.1	-0.9
IKOM	Komasi	1.11	103	ePg	Pb	20 57 10.1	-0.9
SNGE	Sanandaj	1.15	55	eSg	Sb	20 57 24.4	-2.3
SNGE				AML	AML	20 57 27.7	
	comp=N,1µm,0.4s						
SNGE				AML	AML	20 57 29.9	
	comp=E,2µm,0.5s						
SNGE	Sanandaj	1.15	55	eSg	Sb	20 57 24.4	-2.3
IBZA	Bozab	1.37	88	ePg	Pn	20 57 14.2	-0.8
IKFM	Kafar-mosalman	1.64	123	ePn	Pn	20 57 20.5	+2.0
IKFM				eSg	Sb	20 57 44.2	+3.5
IKFM	Kafar-mosalman	1.64	123	ePn	Pn	20 57 20.5	+2.0
IKFM				eSg	Sb	20 57 44.2	+3.5
ZNJK	Zanjan	3.01	42	ePn	Pn	20 57 39.0	+1.4
ZNJK	Zanjan	3.01	42	ePn	Pn	20 57 39.0	+1.4
ASAO	Ashtian	3.16	87	ePn	Pn	20 57 42.5	+2.9
ASAO				Sn	Sn	20 58 19.4	+1.9
ASAO	Ashtian	3.16	87	ePn	Pn	20 57 42.5	+2.9
KHMZ	Khomeyn	3.19	102	AML	AML	20 58 45.4	
	comp=N,106nm,0.6s						
KHMZ				AML	AML	20 58 45.5	
	comp=E,93nm,0.6s						
IRAZ	Razeghan	3.21	71	ePn	Pn	20 57 42.5	+2.2
IRAZ				eSg	Sg	20 58 34.5	+1.8
IRAZ				eAMB	AMB	20 58 43.5	
	comp=Z,2µm,0.3s						
IRAZ	Razeghan	3.21	71	ePn	Pn	20 57 42.5	+2.2
IRAZ				eSg	Sg	20 58 34.5	+1.8
IBST	Bostanabad	3.30	10	ePn	Pn	20 57 42.2	+0.6
IBST				eAMB	AMB	20 57 50.5	
	comp=Z,1µm,0.3s						
IBST				eSg	Sg	20 58 34.6	-1.1
IBST	Bostanabad	3.30	10	ePn	Pn	20 57 42.2	+0.6
IBST				eSg	Sg	20 58 34.6	-1.1
CUKT	Cukurca	3.51	324	eP	Pn	20 57 44.3	0.0
CUKT	Cukurca	3.51	324	eP	Pn	20 57 44.3	0.0
ISRB	Sarab	3.58	19	ePn	Pn	20 57 46.1	+0.7
ISRB				eAMB	AMB	20 58 00.7	
	comp=Z,1µm,0.3s						
ISRB	Sarab	3.58	19	ePn	Pn	20 57 46.1	+0.7
HAKT	HAKKARI	3.71	328	i P	Pn	20 57 47.0	-0.2
HAKT				i S	Pg	20 58 00.9	+0.1
HAKT	HAKKARI	3.71	328	P	Pn	20 57 47.0	-0.2
HKR	Hakkari	3.72	328	eP	Pn	20 57 48.4	+1.2
HKR	Hakkari	3.72	328	eP	Pn	20 57 48.4	+1.2
ITBZ	Tabriz	3.79	359	ePn	Pn	20 57 50.6	+2.4
ITBZ				eAMB	AMB	20 58 53.3	
	comp=Z,1µm,0.3s						
ITBZ	Tabriz	3.79	359	ePn	Pn	20 57 50.6	+2.4
ISHB	Shabestar	3.87	353	ePn	Pn	20 57 50.3	+1.0
ISHB				eAMB	AMB	20 58 59.4	
	comp=Z,2µm,0.4s						
IHRS	Heris	3.93	10	ePn	Pn	20 57 51.3	+1.1
IHRS				eAMB	AMB	20 59 06.5	
	comp=Z,1µm,0.5s						
IHRS	Heris	3.93	10	ePn	Pn	20 57 51.3	+1.1
GHVR	GHOM	4.21	88	ePn	Pn	20 57 55.8	+1.9
GHVR	GHOM	4.21	88	ePn	Pn	20 57 55.8	+1.9
IMRD	Marand	4.29	355	ePn	Pn	20 57 57.5	+2.5
IMRD				eAMB	AMB	20 59 14.7	
	comp=Z,1µm,0.3s						
IMRD	Marand	4.29	355	ePn	Pn	20 57 57.5	+2.5
IPIR	Pirpir	4.29	113	ePn	Pn	20 57 56.0	+0.8
IPIR				eAMB	AMB	20 59 33.9	
	comp=Z,761nm,0.4s						
IPIR	Pirpir	4.29	113	ePn	Pn	20 57 56.0	+0.8
SIRT	Sirnak	4.32	316	eP	Pn	20 57 54.9	-0.5
SIRT	Sirnak	4.32	316	eP	Pn	20 57 54.9	-0.5
SIRN	S˜–rnak	4.33	316	i P	Pn	20 57 55.7	+0.1
SIRN				i S	Pg	20 58 15.5	+3.0
SIRN	S˜–rnak	4.33	316	P	Pn	20 57 55.7	+0.1
QAM	Ghamsar	4.40	97	ePn	Pn	20 57 59.0	+2.4
QAM				eAMB	AMB	20 59 21.1	
	comp=Z,984nm,0.3s						
LRK	Lerik	4.54	22	⇑P	Pn	20 57 59.8	+1.3
	SNR=16						
LRK				⇑S	Sn	20 58 56.2	+4.9
LRK	Lerik	4.54	22	P	Pn	20 57 59.8	+1.3
	SNR=16						
LRK				S	Sn	20 58 56.2	+4.9
IKLH	Kolahrood	4.61	103	ePn	Pn	20 58 01.3	+1.7
IKLH				eAMB	AMB	20 59 29.1	
	comp=Z,693nm,0.3s						
IKLH	Kolahrood	4.61	103	ePn	Pn	20 58 01.3	+1.7
ASTR	Astara	4.61	26	⇓P	Pn	20 58 01.2	+1.9
	SNR=9.7						
ASTR				⇑S	Sn	20 58 55.7	+2.7
ASTR	Astara	4.61	26	P	Pn	20 58 01.2	+1.9
	SNR=9.7						
ASTR				S	Sn	20 58 55.7	+2.7
GEVA	Gevas	4.62	328	i P	Pn	20 57 59.6	-0.1
GEVA				i S	Pg	20 58 16.0	-2.2
GEVA	Gevas	4.62	328	P	Pn	20 57 59.6	-0.1
VANB	Van	4.73	332	eP	Pn	20 58 03.0	+1.9
VANB	Van	4.73	332	eP	Pn	20 58 03.0	+1.9
LKRN	Lenkeran, Azer	4.74	25	⇓P	Pn	20 58 04.0	+2.9
	SNR=10						
LKRN				⇓S	Sn	20 58 59.0	+2.9
LKRN	Lenkeran, Azer	4.74	25	P	Pn	20 58 04.0	+2.9
	SNR=10						
LKRN				S	Sn	20 58 59.0	+2.9
NAX	Nakhchivan	4.76	353	⇓S	Sb	20 59 17.5	+7.0
IDMV	Damavand	4.92	75	ePn	Pn	20 58 04.5	+0.7
IDMV				eAMB	AMB	20 59 35.5	
	comp=Z,595nm,0.5s						
IDMV	Damavand	4.92	75	ePn	Pn	20 58 04.5	+0.7
UMR	Umm Al-Rimmam	5.04	165	Pn	Pn	20 58 06.7	+1.5
UMR				Sn	Sn	20 59 04.9	+1.5
UMR	Umm Al-Rimmam	5.04	165	P	Pn	20 58 06.7	+1.5
UMR				S	Sn	20 59 04.9	+1.5
UMR	Umm Al-Rimmam	5.04	165	Pn	Pn	20 58 06.7	+1.5
UMR				Sn	Sn	20 59 04.9	+1.5
GLBA	Clilabad	5.11	19	⇓P	Pn	20 58 08.0	+1.9
	SNR=9.5						
GLBA				⇑S	Sn	20 59 10.9	+5.8
GLBA	Clilabad	5.11	19	P	Pn	20 58 08.0	+1.9
	SNR=9.5						
GLBA				S	Sn	20 59 10.9	+5.8
MARD	Mardin	5.26	305	i P	Pn	20 58 06.6	-1.8
MARD				i S	Pg	20 58 32.4	+2.1
BTMN	Batman	5.27	312	i P	Pn	20 58 08.7	+0.2
BTMN	Batman	5.27	312	P	Pn	20 58 08.7	+0.2
IGAR	Gharneh	5.29	111	ePn	Pn	20 58 09.7	+0.8
IGAR				eAMB	AMB	20 59 16.6	
	comp=Z,280nm,0.3s						
IZEF	Zefreh	5.33	105	ePn	Pn	20 58 11.6	+2.1
IZEF				eAMB	AMB	20 59 52.1	
	comp=Z,338nm,0.4s						
IZEF	Zefreh	5.33	105	ePn	Pn	20 58 11.6	+2.1
SVAN	Silvan-Diyarba	5.48	314	eP	Pn	20 58 11.5	+0.1
IFIR	Firoozkooh	5.51	76	ePn	Pn	20 58 12.5	+0.6
IFIR				eAMB	AMB	20 58 17.3	
	comp=Z,201nm,0.2s						
IFIR	Firoozkooh	5.51	76	ePn	Pn	20 58 12.5	+0.6
MAZI	Mazidag	5.56	305	eP	Pn	20 58 14.9	+2.4
MAZI	Mazidag	5.56	305	eP	Pn	20 58 14.9	+2.4
TUTA	Tutak	5.65	332	i P	Pn	20 58 14.4	+0.6
TUTA	Tutak	5.65	332	P	Pn	20 58 14.4	+0.6
AGRB	Hanur-Agry	5.74	334	eP	Pn	20 58 17.5	+2.6
IRAM	Ramesheh	5.81	115	ePn	Pn	20 58 17.1	+1.1
IRAM				eAMB	AMB	21 00 22.6	
	comp=Z,214nm,0.4s						
IRAM	Ramesheh	5.81	115	ePn	Pn	20 58 17.1	+1.1
GNI	Garni	5.82	349	Pn	Pb	20 58 26.7	-4.6
	comp=Z,0.5nm,0.3s,baz=205,slow=22,SNR=2.9						
GNI				Lg	Lg	20 59 54.5	
	baz=150,slow=18,SNR=2.1						
ISHM	Shahmirzad	5.97	75	ePn	Pn	20 58 19.8	+1.5
ISHM				eAMB	AMB	20 59 14.1	
	comp=Z,246nm,0.4s						
GANJ	Ganja	6.20	1	⇓P	Pb	20 58 30.7	-6.9
GANJ				⇓S	Sb	20 59 47.2	-4.6
BNGB	Bing˘¶l	6.35	317	eP	Pn	20 58 22.9	-0.5
BINT	Bingol	6.38	316	eP	Pn	20 58 22.9	-0.9
GBS	Qobustan	6.46	19	⇓P	Pn	20 58 29.2	+4.4
IML	Ismayilli	6.54	13	⇑P	Pn	20 58 31.1	+5.3
	SNR=4.0						
IML				⇓S	Sn	20 59 50.8	+10
PQL	Pirkuli	6.62	16	⇑P	Pn	20 58 32.7	+5.7
	SNR=3.7						
PQL				⇑S	Sn	20 59 50.2	+7.6
QZX	Qazax, Azerbai	6.64	355	⇓P	Pb	20 58 39.1	-6.0
QZX				⇓S	Sb	20 59 59.4	-5.2
XNQ	Khinaliq	6.90	12	⇓P	Pn	20 58 38.0	+7.1
XNQ				⇓S	Sn	20 59 56.7	+7.2
PTK	Pertek	7.05	311	eP	Pn	20 58 33.4	+0.4
PTK	Pertek	7.05	311	eP	Pn	20 58 33.4	+0.4
ASF	Jabal al Asfar	8.11	256	Pn	Pn	20 58 47.1	-0.4
	comp=Z,0.3nm,0.3s,baz=31,slow=6.9,SNR=2.4						
ASF				Sn	Sn	21 00 18.7	-0.6
	comp=Z,0.3nm,0.3s,baz=74,slow=19,SNR=2.1						
ASF				Lg	Lg	21 01 07.1	
	comp=Z,0.4nm,0.3s,baz=54,slow=21,SNR=3.9						
MMAI	Mount Meron Ar	9.11	264	Pn	Pn	20 59 02.6	+1.4
	comp=Z,0.7nm,0.3s,baz=84,slow=17,SNR=7.0						
MMAI				Lg	Lg	21 01 38.9	
	comp=Z,0.7nm,0.3s,baz=86,slow=40,SNR=3.1						
KBZ	Khabaz	9.63	346	Pn	Pn	20 59 18.0	+10
	comp=Z,0.0nm,0.3s,baz=168,slow=6.4,SNR=3.5						
KVAR	Kislovodsk Arr	9.89	345	Pn	Pn	20 59 14.5	+2.7
	baz=334,slow=22,SNR=2.0						
GEYT	Alibeck	10.24	67	Pn	Pn	20 59 23.6	+6.9
	comp=Z,0.1nm,0.3s,baz=257,slow=19,SNR=3.1						
EIL	Elat	10.66	247	Pn	Pn	20 59 24.3	+1.9
	comp=Z,0.3nm,0.3s,baz=50,slow=16,SNR=3.2						
EIL				Lg	Lg	21 02 29.8	
	comp=Z,0.2nm,0.3s,baz=86,slow=23,SNR=3.6						
BRTR	Keskin Array B	11.33	301	Pn	Pn	20 59 36.4	+4.6
	comp=Z,0.0nm,0.3s,baz=124,slow=15,SNR=3.7						
BANOM	Banah	12.17	132	i P	Pn	20 59 41.3	-1.8
	SNR=17						
BANOM	Banah	12.17	132	Pn	Pn	20 59 41.7	-1.4
	SNR=17						
BANOM				Sn	Sn	21 01 53.3	-5.6
BANOM	Banah	12.17	132	P	Pn	20 59 41.7	-1.4
	SNR=17						
BANOM				S	Sn	21 01 53.3	-5.6
NAZ	Nazwa, Dubai	12.49	136	i P	Pn	20 59 46.8	-0.6
	SNR=15						
NAZ	Nazwa, Dubai	12.49	136	Sn	Sn	21 02 01.8	-4.9
NAZ	Nazwa, Dubai	12.49	136	S	Sn	21 02 01.8	-4.9
HATD	Hatta, Dubai	12.89	135	P	Pn	20 59 51.4	-1.5
HATD	Hatta, Dubai	12.89	135	Pn	Pn	20 59 51.7	-1.1
HATD	Hatta, Dubai	12.89	135	P	Pn	20 59 51.7	-1.1
ASHO	Ashiyiah	12.95	136	i P	Pn	20 59 52.3	-1.5
	SNR=11						
WSAR	Wadi Sarin	15.57	132	Pn	Pn	21 00 27.1	-2.1
	comp=Z,1.7nm,0.3s,baz=309,slow=11,SNR=26						
IDI	Anoyia	17.51	279	P	P	21 00 57.5	+2.4
	comp=Z,0.3nm,0.3s,baz=86,slow=15,SNR=3.8						
AKTO	Aktyubinsk	18.17	25	P	Pn	21 01 02.0	+0.1
	comp=Z,0.1nm,0.3s,baz=292,slow=1.7,SNR=3.7						
AKTO				LR	LR	21 09 11.4	
	comp=Z,21nm,19.1s,baz=214,slow=41						
PLOR	Plostina	18.75	313	⇑iP	Pn	21 01 11.4	+2.4
MLR	Muntele Rosu	19.00	312	Pn	Pn	21 01 14.1	+2.0
MLR	Muntele Rosu	19.00	312	⇑iP	Pn	21 01 14.0	+1.9
TESR	Tescani	19.09	315	⇑iP	P	21 01 11.4	-0.9
SORM	Soroca	19.10	321	⇓iP	P	21 01 10.6	-1.7
VOIR		19.53	311	⇑iP	P	21 01 17.8	+0.6
DOPR	Dopca	19.57	312	⇓iP	P	21 01 17.3	-0.3
VTS	Vitosha	19.71	301	⇑iP	P	21 01 19.3	0.0
ARR	Arges	19.76	310	⇓iP	Pn	21 01 20.5	-0.7
LOT	Lotru	20.35	309	⇓iP	P	21 01 26.0	-0.1
AKASG	Malin Array Be	20.43	328	P	P	21 01 24.9	-1.9
	comp=Z,0.8nm,0.3s,baz=138,slow=9.7,SNR=5.4						
BURAR	Bucovina Array	20.51	316	⇓iP	P	21 01 27.5	-0.4
DRGR		21.59	312	⇓iP	P	21 01 39.5	0.0
BZS	Buzias	21.80	308	⇑iP	P	21 01 49.6	+7.9
KOLS	Kolonicke sedl	22.87	317	eP	P	21 01 53.7	+0.6
CRVS	Cervenica-Dubn	23.32	316	eP	P	21 02 01.0	+3.3
AAK	Ala-Archa	23.52	61	LR	LR	21 11 35.3	
	comp=Z,36nm,19.3s,baz=222,slow=38						
ARU	Arti	23.57	17	P	P	21 02 01.0	+0.9
	comp=Z,0.8nm,0.3s,baz=254,slow=18,SNR=2.5						
VYHS	Vyhne	24.69	313	eP	P	21 02 11.4	+0.7
BVAR	Borovoye Array	25.30	35	P	P	21 02 16.3	+0.1
	comp=Z,0.6nm,0.5s,baz=241,slow=7.7,SNR=3.9						
BVAR				LR	LR	21 15 22.2	
	comp=Z,77nm,20.8s,baz=252,slow=44						
VRAC	Vranov	26.37	313	P	P	21 02 23.2	-2.7
	comp=Z,1.2nm,0.6s,baz=100,slow=12,SNR=3.0						
KURBB	Kurchatov Arra	28.50	46	P	P	21 02 45.3	+0.4
	comp=Z,0.9nm,0.8s,baz=252,slow=9.0,SNR=6.5						
MKAR	Makanchi Array	29.78	55	P	P	21 02 56.7	+0.3
	comp=Z,0.7nm,0.6s,baz=248,slow=8.9,SNR=5.6						
FINES	FINESS Array B	29.94	341	P	P	21 02 55.5	-2.0
	comp=Z,0.7nm,0.5s,baz=179,slow=7.6,SNR=5.0						
HFS	Hagfors	33.26	331	P	P	21 03 25.3	-1.5
	comp=Z,2.2nm,0.5s,baz=130,slow=7.1,SNR=12						
ZALV	Zalesovo Beam	33.30	42	P	P	21 03 27.4	+0.2
	comp=Z,0.6nm,0.6s,baz=235,slow=5.1,SNR=3.0						
ZALV				LR	LR	21 18 05.5	
	comp=Z,22nm,18.3s,baz=68,slow=38						
NOA	NORSAR Array B	34.78	331	P	P	21 03 37.6	-2.4
	comp=Z,0.6nm,0.7s,baz=125,slow=8.8,SNR=2.9						
NOA				LR	LR	21 20 48.8	
	comp=Z,16nm,18.4s,baz=190,slow=41						
EKA	Eskdalemuir Ar	39.69	317	P	P	21 04 19.9	-1.7
	comp=Z,1.9nm,0.5s,baz=105,slow=8.7,SNR=12						
ESDC	Sonseca Array	39.95	293	P	P	21 04 22.6	-1.6
	comp=Z,0.9nm,0.8s,baz=69,slow=7.0,SNR=4.7						
TORD	Torodi Ar. Bea	45.46	253	P	P	21 05 08.7	-0.4
	comp=Z,0.2nm,0.4s,baz=43,slow=7.5,SNR=4.5						
CMAR	Chiang Mai Arr	49.30	95	P	P	21 05 37.5	-1.5
	comp=Z,0.8nm,0.7s,baz=287,slow=8.7,SNR=5.1						

*ISCJB **14** 20:59:18.1±0.5, 23.°89N±0.°03×122.°53E±0.°02, h23km±4km, Error ellipse: s-maj=5.2km s-min=2.6km az=164.6*
*TAP **14** 20:59:18.5, 23.°91N×122.°46E, h17km±1km, ML2.9, D*
*JMA **14** 20:59:18.6±0.2, 23.°97N×122.°51E, h19km, M2.0*
ISC 14 20:59:17.1±1.1, **23.°90N**±0.°03×**122.°52E**±0.°02, **h12**km±9km, **n30**, σ**0.s58**/59, **Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	Yonagunijimaku	0.67	35	P	Pb	20 59 30.5	-0.2
JYNG				S	Sg	20 59 38.3	-0.7
YOJ	Yonaguni jima	0.72	39	P	Pb	20 59 31.4	-0.1
YOJ				eS	Sg	20 59 39.7	-0.7
TWD	Chiawan	0.86	282	eP	Pb	20 59 34.0	+0.1
	baz=282						
TWD				eS	Sb	20 59 45.8	+0.4
	baz=282						
ENA	Nanau	0.88	307	eP	Pb	20 59 34.8	+0.5
	baz=308						
ENA				S	Sb	20 59 46.9	+0.9
	baz=308						
TWC	Suao	0.93	319	P	Pb	20 59 35.2	+0.1
	baz=321						
TWC				S	Sg	20 59 46.7	-0.6
	baz=321						
ESL	Shilin	1.00	265	eP	Pg	20 59 36.3	+0.1
	baz=264						
ESL				eS	Sg	20 59 49.5	+0.2
	baz=264						
EGS		1.08	330	eP	Pn	20 59 38.5	+0.6
	baz=333						
EGS				eS	Sn	20 59 52.8	-0.1
	baz=333						
ILA	Ilan	1.11	321	eP	Pn	20 59 39.0	+0.6
	baz=322						
ILA				eS	Sn	20 59 53.9	+0.2
	baz=322						
TWE	Neicheng	1.13	317	eP	Pn	20 59 39.0	+0.4
	baz=318						
TWE				eS	Sb	20 59 53.1	+0.1
	baz=318						
ENTT	Nioudou	1.14	310	eP	Pn	20 59 39.2	+0.4
	baz=311						
ENTT				eS	Sn	20 59 54.2	-0.1
	baz=311						
EHY	Hungye	1.17	250	eP	Pb	20 59 39.5	+0.4
	baz=248						
EHY				eS	Sg	20 59 54.7	0.0
	baz=248						
WHF	Hehuan Shan	1.17	282	P	Pg	20 59 39.4	-0.2
	baz=282						
WHF				S	Sb	20 59 55.1	+0.3
	baz=282						
NNS	Nan Shan	1.18	297	eP	Pn	20 59 40.0	+0.6
	baz=298						
NNS				eS	Sn	20 59 55.3	-0.1
	baz=298						
HATJ	Hateruma jima	1.19	82	P	Pb	20 59 40.1	+0.6
HATJ				eS	Sg	20 59 55.9	+0.5
IRIF	Iriomote-Funau	1.19	68	P	Pb	20 59 40.0	+0.5
TWF1	Yuli	1.25	244	eP	Pn	20 59 41.0	+0.7
	baz=242						
TWF1				eS	Sb	20 59 55.9	-0.6
	baz=242						
TWT	Tachien	1.27	286	eP	Pb	20 59 41.4	+0.3
	baz=285						
TWT				eS	Sb	20 59 57.5	0.0
	baz=285						
NSK	Sanguang	1.31	306	eP	Pn	20 59 41.4	+0.1
	baz=307						
NSK				eS	Sb	20 59 58.2	-0.2
	baz=307						
CHKT	Chengkung	1.33	233	eP	Pn	20 59 42.1	+0.7
	baz=231						
CHKT				S	Sb	20 59 57.5	-1.2
	baz=231						
NWF	Wu-fen Shan	1.34	330	eP	Pn	20 59 41.9	+0.2
	baz=331						
NWF				eS	Sg	20 59 59.5	-0.9
	baz=331						
JKRS	Kuro-shima	1.40	76	P	Pg	20 59 44.2	+0.2
JKRS				eS	Sb	21 00 01.7	+0.7
SMLT	Sun Moon Lake	1.48	270	eP	Pn	20 59 43.9	+0.3
	baz=268						
SMLT				eS	Sn	21 00 02.5	-0.5
	baz=268						
YUS	Yu-Shan	1.49	254	eP	Pn	20 59 44.7	+0.6
	baz=253						
YUS				eS	Sn	21 00 02.8	-1.0
	baz=253						
TYC	Yuchr	1.52	270	eP	Pn	20 59 44.9	+0.8
	baz=269						
TYC				eS	Sn	21 00 03.5	-0.2
	baz=269						
ELDTW	Lidau	1.55	243	eP	Pn	20 59 44.4	-0.2
	baz=241						
ELDTW				eS	Sn	21 00 03.6	-1.1
	baz=241						
JIJ	Ishigaki jima	1.55	72	P	Pn	20 59 44.9	+0.4
JIJ				eS	Sn	21 00 03.7	-0.9
ALS	Alishan	1.62	256	eP	Pn	20 59 46.3	+0.6
	baz=255						
ALS				eS	Sn	21 00 06.2	-0.4
	baz=255						
JISG	Ishigakijimahi	1.77	67	P	Pn	20 59 47.4	-0.1
JISG				S	Sn	21 00 09.2	-0.8
STYT	Tauyuan	1.77	246	eP	Pn	20 59 47.3	-0.3
	baz=244						
STYT				eS	Sn	21 00 10.0	-0.1
	baz=244						
CHN4	Tsaushan	1.85	253	eP	Pn	20 59 49.8	+1.2
	baz=252						
CHN4				eS	Sn	21 00 10.7	-1.2
	baz=252						

*ATH **14** 21:08:15.4, 34.°89N×24.°15E, h25km±1km, ML2.2/5, Error ellipse: s-maj=2.8km s-min=1.3km az=174.0*
*THE **14** 21:08:15.7, 34.°90N×24.°11E, h25km±3km, ML2.4/5, Error ellipse: s-maj=4.3km s-min=1.1km az=216.0*
*ISCJB **14** 21:08:16.5±1.1, 34.°88N±0.°06×24.°17E±0.°05, h22km±7km, Error ellipse: s-maj=10.1km s-min=6.4km az=15.1*
*CSEM **14** 21:08:16.1±0.5, 34.°89N×24.°19E, h15km, ML2.2, Error ellipse: s-maj=11.3km s-min=7.2km az=19.0*
ISC 14 21:08:17.2±0.9, **34.°97N**±0.°04×**24.°19E**±0.°03, **h11**km±9km, **n25**, σ**0.s89**/45, **Crete**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	Gavdhos	0.15	214	P	Pg	21 08 19.8	-0.9
GVD				S	Sg	21 08 23.8	+0.6
GVD	Gavdhos	0.15	214	P	Pg	21 08 19.7	-0.9
GVD				S	Sg	21 08 24.4	+1.2
GVD	Gavdhos	0.15	214	P	Pg	21 08 19.9	-0.9
GVD				S	Sg	21 08 24.0	+0.8
GVD				AML	AML	21 08 24.1	
	comp=N,4725µm,0.3s						
GVD				AML	AML	21 08 25.6	
	comp=E,7108µm,0.3s						
GVD	Gavdhos	0.15	214	P	Pg	21 08 19.7	-0.9
GVD				S	Sg	21 08 24.4	+1.2
GVD				AML	AML	21 08 25.2	
	comp=N,3874µm,0.2s						
GVD				AML	AML	21 08 25.8	
	comp=E,7108µm,0.3s						
VAM	Vamos	0.44	1	P	Pg	21 08 25.5	-0.4
VAM				S	Sb	21 08 33.2	-0.4
VAM	Vamos	0.44	1	P	Pg	21 08 25.4	-0.4
VAM				S	Sb	21 08 33.2	-0.4
SIVA	Sivas	0.51	84	P	Pg	21 08 26.8	-0.4
SIVA				S	Sb	21 08 35.6	-0.1
SIVA	Sivas	0.51	84	P	Pg	21 08 26.8	-0.4
SIVA				S	Sb	21 08 35.2	-0.5
SIVA	Sivas	0.51	84	P	Pg	21 08 26.9	-0.3
SIVA				S	Sb	21 08 35.4	-0.2
SIVA				AML	AML	21 08 39.9	
	comp=N,728µm,0.3s						
SIVA				AML	AML	21 08 40.6	
	comp=E,985µm,0.6s						
SIVA	Sivas	0.51	84	P	Pg	21 08 26.8	-0.4
SIVA				S	Sb	21 08 35.2	-0.5
SIVA				AML	AML	21 08 39.9	
	comp=N,728µm,0.3s						
SIVA				AML	AML	21 08 40.8	
	comp=E,747µm,0.3s						
IMMV	Iera Moni Meta	0.52	341	P	Pg	21 08 26.7	-0.7
IMMV				S	Sb	21 08 35.8	-0.2
IMMV	Iera Moni Meta	0.52	341	P	Pg	21 08 26.7	-0.7
IMMV				S	Sb	21 08 36.9	+0.9
IMMV	Iera Moni Meta	0.52	341	P	Pg	21 08 26.8	-0.7
IMMV				S	Sb	21 08 36.1	+0.1
IMMV				AML	AML	21 08 36.9	
	comp=E,1195µm,0.5s						
IMMV				AML	AML	21 08 37.5	
	comp=N,848µm,0.5s						
IMMV	Iera Moni Meta	0.52	341	P	Pg	21 08 26.1	-1.3
IMMV				S	Sb	21 08 36.9	+0.9
IMMV				AML	AML	21 08 36.9	
	comp=E,1195µm,0.5s						
IMMV				AML	AML	21 08 37.5	
	comp=N,848µm,0.5s						

IDI	**Anoya**	**0.66**	**61**	P	**Pg**	**21 08 29.2**	**-0.8**
IDI				S	**Sb**	**21 08 41.1**	**+1.2**
IDI	**Anoya**	**0.66**	**61**	P	**Pg**	**21 08 28.7**	**-1.3**
IDI				S	**Sb**	**21 08 41.1**	**+1.2**
IDI	**Anoya**	**0.66**	**61**	P	**Pg**	**21 08 28.7**	**-1.3**
IDI				S	**Sb**	**21 08 41.3**	**+1.4**
IDI				AML	AML	21 08 43.3	
	comp=E,225μm,0.5s						
IDI				AML	AML	21 08 43.6	
	comp=N,288μm,0.4s						
IDI	**Anoya**	**0.66**	**61**	P	**Pg**	**21 08 28.7**	**-1.3**
IDI				S	**Sb**	**21 08 41.1**	**+1.2**
IDI				AML	AML	21 08 43.4	
	comp=Z,187μm,0.5s						
IDI				AML	AML	21 08 43.6	
	comp=N,288μm,0.4s						
LAST	**Lasithi**	**1.07**	**79**	P	**Pg**	**21 08 36.6**	**-1.3**
LAST	**Lasithi**	**1.07**	**79**	P	**Pg**	**21 08 37.0**	**-0.9**
LAST	**Lasithi**	**1.07**	**79**	P	**Pg**	**21 08 36.6**	**-1.3**
ANKY	**Antikythira Is**	**1.16**	**321**	P	**Pb**	**21 08 38.4**	**-0.8**
ANKY				S	**Sn**	**21 08 55.3**	**+0.1**
ANKY	**Antikythira Is**	**1.16**	**321**	P	**Pb**	**21 08 38.4**	**-0.8**
ANKY				S	**Sn**	**21 08 55.3**	**+0.1**
ANKY				AML	AML	21 09 03.2	
	comp=E,139μm,1.2s						
ANKY				AML	AML	21 09 03.2	
	comp=N,66μm,0.4s						
VLI	**Veliai**	**2.02**	**330**	P	**Pn**	**21 08 52.0**	**+0.7**
VLI	**Veliai**	**2.02**	**330**	P	**Pn**	**21 08 52.0**	**+0.7**

NIED ***14*** *21:12:00.24′.20N×121′.70E, h32km, Mw4.1 Best double couple: M₀1.80000×10¹⁵ NP1:φ=230.00000°,δ45.00000°, λ-95.00000°. NP2:φ=57.00000°,δ45.00000°,λ-85.00000°.*

BJI ***14*** *21:12:15.5, 24′.27N×121′.82E, h5km, mb4.1/9, mB4.3/5, ML3.9/4, Ms3.9/6, Ms7 3.9/4*

IDC ***14*** *21:12:16.3±0.9, 24′.32N×121′.87E, h0km, mb3.8/11, mb1 4.0/11, mb1mx3.8/40, mbtmp3.8/11, MS3.2/8, Ms1 3.2/8, ms1mx3.0/43, Error ellipse: s-maj=28.7km s-min=19.0km az=69.0*

TAP ***14*** *21:12:18.7, 24′.25N×121′.78E, h14km, ML4.4, B*

JMA ***14*** *21:12:18.5±0.1, 24′.21N×121′.70E, h20km±1km, M3.6*

ISCJB ***14*** *21:12:18.7±0.3, 24′.25N±0′.01×121′.83E±0′.01, h8km±2km, mb3.7/12, MS3.2/6, Error ellipse: s-maj=2.6km s-min=1.9km az=143.3*

ISC 14 21:12:18.9±0.8, 24′24N±0′.02×121°80E±0′.02, h15km±5km, n102, σ0°88/137, mb3.9/12, MS3.1/6, 16C-13D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op		h m s	ISC
EHP	**Heping Village**	**0.08**	**323**	*e*P	**Pg**	**21 12 22.2**	**+0.2**
	baz=336						
EHP				*e*S	**Sg**	**21 12 24.4**	**+0.4**
	baz=336						
ENA	**Nanau**	**0.19**	**345**	⇑*i*P	**Pg**	**21 12 23.0**	**-0.4**
	baz=352						
TWD	**Chiawan**	**0.24**	**228**	⇓*i*P	**Pg**	**21 12 24.0**	**-0.2**
	baz=229						
TWD				*i* S	**Sg**	**21 12 27.8**	**-0.1**
	baz=229						
HWA	**Hwalien**	**0.32**	**213**	*e*P	**Pg**	**21 12 25.5**	**0.0**
	baz=217						
TWC	**Suao**	**0.37**	**8**	⇑*i*P	**Pg**	**21 12 26.2**	**-0.2**
	baz=7.0						
TWC				*e*S	**Sg**	**21 12 31.3**	**-0.2**
	baz=7.0						
NNS	**Nan Shan**	**0.43**	**297**	⇑*i*P	**Pg**	**21 12 27.3**	**-0.3**
	baz=297						
NNS				S	**Sg**	**21 12 32.5**	**-1.1**
	baz=297						
ENTT	**Nioudou**	**0.45**	**332**	⇑*i*P	**Pg**	**21 12 27.7**	**-0.2**
	baz=334						
ESF	**Shoufeng Towns**	**0.46**	**215**	*e*P	**Pb**	**21 12 28.6**	**-0.1**
	baz=223						
TWE	**Neicheng**	**0.49**	**346**	⇑*i*P	**Pg**	**21 12 28.5**	**-0.1**
	baz=349						
TWE				*i* S	**Sg**	**21 12 35.2**	**0.0**
	baz=349						
WHF	**Hehuan Shan**	**0.49**	**259**	⇑*i*P	**Pg**	**21 12 28.4**	**-0.5**
	baz=257						
ILA	**Ilan**	**0.52**	**355**	⇑*i*P	**Pb**	**21 12 29.4**	**-0.4**
	baz=351						
ILA				*e*S	**Sb**	**21 12 37.6**	**+0.5**
	baz=351						
ESL	**Shilin**	**0.54**	**218**	⇑*i*P	**Pg**	**21 12 29.3**	**-0.3**
	baz=224						
TWT	**Tachien**	**0.57**	**271**	⇑*i*P	**Pg**	**21 12 30.3**	**+0.1**
	baz=270						
TWT				*i* S	**Sg**	**21 12 37.7**	**-0.1**
	baz=270						
TEGC	**Jichi Village**	**0.58**	**204**	*e*P	**Pb**	**21 12 31.5**	**+0.6**
	baz=192						
NSK	**Sanguang**	**0.59**	**317**	⇑*i*P	**Pg**	**21 12 30.2**	**-0.3**
	baz=318						
NSK				S	**Sg**	**21 12 37.7**	**-0.7**
	baz=318						
EGS		**0.61**	**12**	⇑*i*P	**Pg**	**21 12 30.8**	**-0.1**
	baz=21						
TWA	**Mucha**	**0.76**	**345**	⇓P	**Pb**	**21 12 33.7**	**-0.2**
	baz=346						
TWB1	**Santiao Chiao**	**0.78**	**13**	⇑P	**Pg**	**21 12 33.6**	**-0.5**
	baz=8.0						
NSTT	**Nanjuang**	**0.82**	**298**	⇓P	**Pb**	**21 12 34.9**	**-0.1**
	baz=298						
NSTT				S	**Sg**	**21 12 45.0**	**-0.6**
	baz=298						
NWF	**Wu-fen Shan**	**0.82**	**359**	⇑*i*P	**Pb**	**21 12 34.8**	**-0.2**
	baz=359						
TAP1	**Taipei**	**0.83**	**343**	⇓*e*P	**Pb**	**21 12 35.1**	**+0.1**
	baz=342						
TAP1				*e*S	**Sb**	**21 12 46.0**	**0.0**
	baz=342						
TAP	**Taipei**	**0.83**	**342**	*e*P	**Pb**	**21 12 35.1**	**0.0**
	baz=342						
TAP				*e*S	**Sg**	**21 12 45.9**	**-0.3**
	baz=342						
EHY	**Hungye**	**0.85**	**211**	*e*P	**Pg**	**21 12 34.3**	**-1.2**
	baz=221						
EHY				*e*S	**Sb**	**21 12 48.0**	**+1.2**
	baz=221						
SMLT	**Sun Moon Lake**	**0.90**	**246**	⇓*i*P	**Pb**	**21 12 36.0**	**-0.3**
	baz=240						
SMLT				*e*S	**Sg**	**21 12 47.9**	**-0.2**
	baz=240						
NCU	**National Centr**	**0.91**	**323**	P	**Pn**	**21 12 37.1**	**-0.1**
	baz=322						
NCU				*e*S	**Sn**	**21 12 49.5**	**-0.6**
	baz=322						
TWS1	**Kuangyinshan**	**0.92**	**338**	⇓*e*P	**Pn**	**21 12 37.2**	**-0.2**
	baz=338						
TWS1				*e*S	**Sn**	**21 12 50.3**	**0.0**
	baz=338						
TYC	**Yuchr**	**0.92**	**249**	⇓*i*P	**Pb**	**21 12 36.3**	**-0.3**
	baz=242						
TYC				*i* S	**Sb**	**21 12 47.9**	**-0.8**
	baz=242						
HSN	**Hsinchu**	**0.94**	**307**	*e*P	**Pn**	**21 12 37.9**	**+0.4**
	baz=301						
HSN				*e*S	**Sn**	**21 12 50.4**	**-0.4**
	baz=301						
TWQ1	**Liyutan**	**0.94**	**277**	⇓*e*P	**Pn**	**21 12 37.5**	**-0.2**
	baz=277						
NSY	**Sanyi**	**0.96**	**280**	*e*P	**Pn**	**21 12 38.4**	**+0.4**
	baz=281						
NSY				*e*S	**Sg**	**21 12 50.8**	**+0.7**
	baz=281						
TWF1	**Yuli**	**1.00**	**207**	*e*P	**Pb**	**21 12 36.2**	**-1.8**
	baz=219						
TCU	**Taichung**	**1.03**	**265**	⇓P	**Pn**	**21 12 39.8**	**+1.0**
	baz=266						
TCU				*e*S	**Sn**	**21 12 53.2**	**+0.2**
	baz=266						
TWY	**Chenhua**	**1.04**	**350**	*e*P	**Pn**	**21 12 39.1**	**+0.1**
	baz=335						
JYNG	**Yonagunijimaku**	**1.07**	**79**	P	**Pg**	**21 12 39.5**	**-0.1**
JYNG				S	**Sn**	**21 12 53.7**	**-0.3**
YUS	**Yu-Shan**	**1.08**	**226**	⇑P	**Pb**	**21 12 39.4**	**-0.2**
	baz=227						
YUS				S	**Sb**	**21 12 53.8**	**+0.1**
	baz=227						
WNT	**Mingjian**	**1.08**	**250**	⇓*i*P	**Pg**	**21 12 40.2**	**+0.4**
	baz=248						
WNT				*e*S	**Sn**	**21 12 56.3**	**+2.0**
	baz=248						
YOJ	**Yonaguni jima**	**1.13**	**79**	P	**Pg**	**21 12 40.4**	**-0.3**
YOJ				*e*S	**Sn**	**21 12 56.5**	**+1.0**
YOJ	**Yonaguni jima**	**1.13**	**79**	⇓*i*P	**Pg**	**21 12 40.4**	**-0.3**
	baz=66						
YOJ				S	**Sn**	**21 12 57.0**	**+1.5**
	baz=66						
ALS	**Alishan**	**1.17**	**231**	⇑P	**Pb**	**21 12 40.9**	**-0.1**
	baz=232						
CHKT	**Chengkung**	**1.21**	**199**	*e*P	**Pn**	**21 12 39.7**	**-1.6**
	baz=186						
CHN5	**Tsauling**	**1.21**	**238**	*e*P	**Pb**	**21 12 41.9**	**+0.3**
	baz=241						
CHN5				*e*S	**Sg**	**21 12 59.2**	**+1.2**
	baz=241						
WGK	**Gukeng**	**1.26**	**244**	*e*P	**Pb**	**21 12 42.9**	**+0.5**
	baz=247						
WGK				*e*S	**Sg**	**21 13 01.2**	**+1.6**
	baz=247						
ELDTW	**Lidau**	**1.27**	**214**	*e*P	**Pn**	**21 12 41.2**	**-1.0**
	baz=202						
CHN2	**Minshiung**	**1.40**	**240**	*e*P	**Pb**	**21 12 45.0**	**+0.2**
	baz=227						
PCYT	**Pengchaiyu**	**1.40**	**10**	*e*P	**Pn**	**21 12 44.1**	**+0.1**
	baz=9.0						
CHN4	**Tsaushan**	**1.42**	**231**	*e*P	**Pb**	**21 12 45.4**	**+0.4**
	baz=235						
CHN4				*e*S	**Sg**	**21 13 06.5**	**+1.9**
	baz=235						
WTCT	**Ta-ch'eng**	**1.44**	**255**	*e*P	**Pb**	**21 12 45.3**	**-0.1**
	baz=257						
WTCT				*e*S	**Sg**	**21 13 05.5**	**+0.3**
	baz=257						
STYT	**Tauyuan**	**1.44**	**222**	⇓P	**Pn**	**21 12 45.0**	**+0.5**
	baz=224						
STYT				*e*S	**Sb**	**21 13 04.0**	**+0.4**
	baz=224						
CHY	**Chiayi**	**1.46**	**240**	*e*P	**Pb**	**21 12 46.2**	**+0.4**
	baz=228						
WTP	**Ta-pu**	**1.47**	**228**	P	**Pb**	**21 12 46.2**	**+0.2**
	baz=231						
WTP				*e*S	**Sg**	**21 13 07.7**	**+1.3**
	baz=231						
TWK	**Hsinying**	**1.54**	**231**	*e*P	**Pb**	**21 12 47.6**	**+0.4**
	baz=234						
WSF	**Szhu**	**1.56**	**248**	*e*P	**Pb**	**21 12 47.2**	**-0.4**
	baz=259						
WSF				*e*S	**Sg**	**21 13 08.9**	**-0.3**
	baz=259						
TWG	**Pinlang**	**1.56**	**205**	⇑*e*P	**Pn**	**21 12 44.6**	**-1.6**
	baz=193						
CHN1	**Nanshi**	**1.57**	**228**	*e*P	**Pb**	**21 12 47.9**	**+0.2**
	baz=232						
CHN1				*e*S	**Sg**	**21 13 10.1**	**+0.5**
	baz=232						
TTN	**Taitung**	**1.60**	**202**	*e*P	**Pn**	**21 12 47.1**	**+0.4**
	baz=205						
SGST	**Jiashian**	**1.60**	**224**	*e*P	**Pb**	**21 12 48.1**	**-0.2**
	baz=227						
SGST				*e*S	**Sg**	**21 13 10.1**	**-0.6**
	baz=227						
CHN8	**Yiju**	**1.71**	**239**	*e*P	**Pb**	**21 12 49.3**	**-0.7**
	baz=228						
CHN8				*e*S	**Sg**	**21 13 14.6**	**+0.8**
	baz=228						
CHN3	**Shinhua**	**1.75**	**229**	*e*P	**Pb**	**21 12 50.8**	**0.0**
	baz=233						
IRIF	**Iriomote-Funau**	**1.77**	**87**	P	**Pn**	**21 12 48.9**	**-0.1**
IRIF				S	**Sn**	**21 13 11.5**	**+0.3**
ECL	**Taimali**	**1.81**	**205**	*e*P	**Pn**	**21 12 47.6**	**-2.0**
	baz=195						
SCLT	**Jiali**	**1.81**	**234**	*e*P	**Pb**	**21 12 51.4**	**-0.5**
	baz=238						
SSD	**Sandimen**	**1.83**	**216**	*e*P	**Pn**	**21 12 50.9**	**+1.0**
	baz=232						
SSD				*e*S	**Sb**	**21 13 15.0**	**0.0**
	baz=232						
HATJ	**Hateruma jima**	**1.84**	**95**	P	**Pn**	**21 12 50.7**	**+0.6**
HATJ				*e*S	**Sb**	**21 13 15.4**	**+0.1**
TAI1	**Yung-k'ang**	**1.87**	**230**	*e*P	**Pb**	**21 12 52.8**	**0.0**
	baz=235						
TWM1	**Shoushan**	**1.90**	**222**	*e*P	**Pb**	**21 12 53.2**	**0.0**
	baz=225						
JKRS	**Kuro-shima**	**2.02**	**90**	P	**Pn**	**21 12 53.1**	**+0.6**
JKRS				*e*S	**Sb**	**21 13 19.6**	**-0.8**
EAST	**Anshuo**	**2.05**	**205**	*e*P	**Pn**	**21 12 51.4**	**-1.6**
	baz=197						
TAW	**Tawu**	**2.05**	**204**	*e*P	**Pb**	**21 12 54.6**	**-1.3**
	baz=195						
JIJ	**Ishigaki jima**	**2.15**	**86**	P	**Pn**	**21 12 54.4**	**+0.2**
JIJ				*e*S	**Sn**	**21 13 21.3**	**+0.7**
SCZT	**Fangliau**	**2.15**	**210**	*e*P	**Pn**	**21 12 55.8**	**+1.5**
	baz=199						
PNG	**Penghu**	**2.16**	**252**	*e*P	**Pn**	**21 12 55.2**	**+0.9**
	baz=256						
WDGT	**Dungji**	**2.19**	**244**	*e*P	**Pb**	**21 12 56.8**	**-1.4**
	baz=248						
LAY	**Lan-yu**	**2.21**	**186**	*e*P	**Pn**	**21 12 52.3**	**-2.8**
	baz=190						
JISG	**Ishigakijimahi**	**2.32**	**81**	P	**Pn**	**21 12 56.4**	**-0.2**
JISG				*e*S	**Sb**	**21 13 27.3**	**-1.6**
TWK1	**Hengchun**	**2.46**	**202**	*e*P	**Pn**	**21 12 59.3**	**+0.7**
	baz=193						
JTJ	**Tarama**	**2.68**	**81**	P	**Pn**	**21 13 03.0**	**+1.5**
JTJ				*e*S	**Sn**	**21 13 35.3**	**+1.6**
QZH	**Quanzhou**	**3.00**	**284**	⇓*i*Pn	Pn	21 12 56.5	-9.4
QZH				Sn	Sn	21 13 31.3	-10
QZH				smax	smax		
	comp=N,640nm,0.8s						
QZH				smax	smax		
	comp=E,470nm,0.8s						
QZH				LR	LR		
	comp=Z,2μm,9.6s						
KNM	**Kinmen**	**3.07**	**274**	*e*P	**Pn**	**21 13 08.0**	**+1.0**
	baz=274						
JIRB	**Irabujima**	**3.13**	**79**	P	**Pn**	**21 13 10.0**	**+2.2**
JIKM	**Ikemajima**	**3.21**	**77**	*e*S	**Sn**	**21 13 47.6**	**+0.6**
JOGS	**Gusukube**	**3.33**	**80**	P	**Pn**	**21 13 12.6**	**+2.1**
JOGS				S	**Sn**	**21 13 52.0**	**+2.2**
KSRS	**Korea Array**	**14.17**	**20**	Pn	**P**	**21 15 47.9**	**+1.3**
	comp=Z,0.3nm,0.3s,baz=201,slow=11,SNR=8.0						
KSRS				LR	LR	21 22 05.8	
	comp=Z,72nm,18.2s,baz=168,slow=42						
CD2	**Chengdu**	**17.31**	**297**	*e*P	**Pn**	**21 16 19.4**	**-0.7**
CD2				pP	pP	21 16 23.8	-1.9
CD2				sP	sP	21 16 25.1	-2.5
CD2				S	**Sn**	**21 19 33.8**	**+1.3**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.0s						
MJAR	**Matsushiro Arr**	**18.69**	**45**	LR	LR	21 24 11.3	
	comp=Z,49nm,21.3s,baz=215,slow=38						
USRK	**Ussuriysk Ar.**	**21.58**	**20**	LR	LR	21 25 01.3	
	comp=Z,62nm,18.8s,baz=219,slow=36						
CMAR	**Chiang Mai Arr**	**22.04**	**259**	P	**P**	**21 17 13.8**	**+0.6**
	comp=Z,0.5nm,0.8s,baz=67,slow=6.9,SNR=5.0						
GTA	**Gaotai**	**23.94**	**314**	*e*P	**P**	**21 17 32.9**	**+0.2**
GTA				pP	pP	21 17 37.8	+0.7
GTA				sP	sP	21 17 41.3	+2.3
GTA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
KLR	**Kul'dur**	**26.14**	**15**	P	**P**	**21 17 52.8**	**+0.3**
	comp=Z,2.2nm,0.7s,baz=190,slow=3.9,SNR=6.7						
SONM	**Songino Array**	**26.53**	**336**	P	**P**	**21 17 55.5**	**-0.6**
	comp=Z,1.0nm,0.7s,baz=146,slow=9.5,SNR=6.8						
SONM				LR	LR	21 29 18.7	
	comp=Z,61nm,21.9s,baz=133,slow=39						
MKAR	**Makanchi Array**	**38.68**	**316**	P	**P**	**21 19 41.6**	**-0.5**
	comp=Z,0.6nm,0.5s,baz=112,slow=9.1,SNR=7.9						
MKAR				LR	LR	21 36 51.3	
	comp=Z,29nm,18.1s,baz=82,slow=38						
ZALV	**Zalesovo Beam**	**40.50**	**327**	P	**P**	**21 19 55.7**	**-1.4**
	comp=Z,1.5nm,0.6s,baz=105,slow=6.9,SNR=7.4						
ZALV				LR	LR	21 37 18.3	
	comp=Z,28nm,21.1s,baz=70,slow=37						
H11S3	**WAKE ISLAND Hy**	**42.06**	**89**	T	T	22 05 28.4	
	baz=289,slow=74						
H11S1	**WAKE ISLAND Hy**	**42.07**	**89**	T	T	22 05 29.9	
	baz=289,slow=74						
H11S2	**WAKE ISLAND Hy**	**42.08**	**89**	T	T	22 05 29.9	
	baz=289						
WRA	**Warramunga Arr**	**45.59**	**163**	P	**P**	**21 20 37.8**	**-0.8**
	comp=Z,0.7nm,0.6s,baz=344,slow=8.6,SNR=6.0						
ASAR	**Alice Springs**	**49.05**	**165**	P	**P**	**21 21 06.6**	**+1.0**
	comp=Z,0.7nm,0.9s,baz=341,slow=7.5,SNR=5.2						
NRIK	**Noril'sk**	**49.49**	**345**	LR	LR	21 43 21.4	
	comp=Z,42nm,18.3s,baz=127,slow=38						
GEYT	**Alibeck**	**55.25**	**300**	P	**P**	**21 21 53.0**	**+1.3**
	comp=Z,1.9nm,0.8s,baz=64,slow=3.4,SNR=5.7						
KBZ	**Khabaz**	**65.88**	**309**	P	**P**	**21 23 02.5**	**-1.6**
	comp=Z,1.5nm,0.7s,baz=141,slow=7.8,SNR=4.1						
SPITS	**Spitsbergen Ar**	**69.54**	**348**	LR	LR	21 58 32.7	
	comp=Z,31nm,18.3s,baz=285,slow=40						
BRTR	**Keskin Array B**	**73.59**	**307**	P	**P**	**21 23 51.9**	**-0.1**
	comp=Z,1.7nm,0.8s,baz=92,slow=6.4,SNR=11						
YKA	**Yellowknife Ar**	**82.70**	**23**	P	**P**	**21 24 40.2**	**-1.6**
	comp=Z,0.6nm,0.6s,baz=309,slow=5.1,SNR=6.2						

MAN 14 21:12:23.9′.53N×122°.27E, h9km, mb4.5, ML3.3, MS3.2, 1C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op		h m s	ISC
SNPH	**Sibulan**	**0.97**	**101**	⇑*i*P	Pg	21 12 36.6	-5.2
SNPH				*i* S	Sg	21 12 51.3	-3.1
TBP	**Tagbilaran**	**1.58**	**84**	*e*P	Pn	21 12 51.4	+0.2
LLP	**Lapu-Lapu**	**1.85**	**65**	*e*P	Pn	21 12 54.6	-0.3
LLP				*e*S	Sb	21 13 20.0	-0.2
RCP	**Roxas**	**2.07**	**13**	⇓*e*P	Pn	21 12 59.3	+1.3
RCP				*e*S	Sn	21 13 25.0	+1.1

ISCJB ***14*** *21:12:42.3±0.6, 11′.2S±0′.1×164′.97E±0′.07, h31km, mb4.3/11, Error ellipse: s-maj=14.4km s-min=9.1km az=6.7*

IDC ***14*** *21:12:45.6±8.9, 11′.12S×165′.05E, h57km±65km, mb3.9/5, mb1 4.1/6, mb1mx3.6/32, mbtmp4.2/6, ML4.3/1, MS3.4/2, Ms1 3.4/2, ms1mx2.6/36, Error ellipse: s-maj=62.8km s-min=37.2km az=82.0*

NEIC ***14*** *21:12:47.9±1.1, 11′.04S×164′.85E, h69km±11km, mb4.2/6, Error ellipse: s-maj=12.0km s-min=7.3km az=165.0*

ISC 14 21:12:43.7±0.7, 11′.1S±0′.1×165°.07E±0°.08, h31km, n22, σ1s51/16, mb4.2/11, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op		h m s	ISC
HNR	**Honiara**	**5.30**	**288**	P	**Pn**	**21 14 01.5**	**+0.6**
	11nm,0.3s,baz=149,slow=6.3,SNR=2.6						
HNR				S	**Sn**	**21 15 03.0**	**+2.0**
	19nm,0.3s,baz=167,slow=22,SNR=4.5						
HNR				LR	LR	21 16 06.6	
	comp=Z,340nm,18.3s,baz=128,slow=38						
FUNA	**Funafuti**	**14.16**	**81**	*e*Pn	**P**	**21 16 07.6**	**-1.7**
PMG	**Port Moresby**	**17.70**	**274**	LR	LR	21 22 38.6	
	comp=Z,143nm,19.7s,baz=88,slow=34						
EIDS	**Eidsvold**	**19.41**	**221**	*e*P	**P**	**21 17 07.5**	**0.0**
	6.5nm,1.0s						
CTA	**Charters Tower**	**20.19**	**241**	P	**P**	**21 17 17.1**	**+1.0**
	1.9nm,0.4s,baz=66,slow=12,SNR=3.7						
RAO	**Raoul Island**	**24.05**	**141**	*e*P	**P**	**21 17 58.8**	**+2.5**
	103nm,0.3s						
H11S2	**WAKE ISLAND Hy**	**29.44**	**3**	T	T	21 49 28.0	
	baz=183,slow=76,SNR=3.3						
H11S3	**WAKE ISLAND Hy**	**29.45**	**3**	T	T	21 49 19.9	
	baz=183,slow=76,SNR=3.1						
H11S1	**WAKE ISLAND Hy**	**29.46**	**3**	T	T	21 49 45.4	
	baz=183,slow=76,SNR=2.6						
STKA	**Stephens Creek**	**29.95**	**223**	P	**P**	**21 18 48.5**	**-0.8**
	1.7nm,0.4s,baz=7.6,slow=15,SNR=21						
H11N1	**WAKE ISLAND Hy**	**30.67**	**3**	T	T	21 51 10.2	
	baz=180						
H11N3	**WAKE ISLAND Hy**	**30.67**	**3**	T	T	21 51 16.4	
	baz=180						
H11N2	**WAKE ISLAND Hy**	**30.68**	**3**	T	T	21 51 12.0	
	baz=180						
WRAB	**Tennant Creek**	**30.83**	**250**	*e*P	**P**	**21 18 55.9**	**-1.3**
	1.1nm,0.5s						
WRA	**Warramunga Arr**	**30.84**	**250**	P	**P**	**21 18 55.5**	**-1.9**
	2.2nm,0.6s,baz=82,slow=9.1,SNR=30						
ASAR	**Alice Springs**	**32.17**	**243**	P	**P**	**21 19 07.7**	**-1.5**
	2.7nm,0.6s,baz=67,slow=10.0,SNR=34						
RAR	**Rarotonga**	**35.16**	**111**	*e*P	**P**	**21 19 37.4**	**+2.3**
	7.4nm,0.8s						
CASY	**Casey**	**66.09**	**201**	P	**P**	**21 23 26.8**	**-0.7**
	0.2nm,0.9s						
COLA	**College**	**83.54**	**18**	*e*P	**P**	**21 25 08.3**	**-0.1**
	2.0nm,0.6s						
CMB	**Columbia Colle**	**84.88**	**50**	*e*P	**P**	**21 25 16.4**	**+0.6**
	4.4nm,0.4s						
INK	**Inuvik**	**90.17**	**19**	*e*P	**P**	**21 25 40.0**	**-0.5**
	1.4nm,1.0s						
MKAR	**Makanchi Array**	**93.10**	**317**	P	**P**	**21 25 53.9**	**-0.9**
	0.2nm,0.3s,baz=100,slow=5.0,SNR=3.8						

JMA 14 21:12:57.3±0.1, 27′.98N×130′.30E, h46km±2km, M3.5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op		h m s	ISC
JZK	**Kikaishima**	**0.44**	**319**	P	Pn	21 13 07.5	-0.1
JZK				*e*S	Sn	21 13 15.2	+0.3
JAM	**Amami Oshima**	**0.75**	**305**	P	Pn	21 13 11.8	+0.3
JAM				S	Sn	21 13 21.7	-0.2
JAMN	**Amaminishikomi**	**1.03**	**285**	P	Pn	21 13 15.4	+0.1
JAMN				*e*S	Sn	21 13 27.9	-0.7
JTK	**Tokunoshima**	**1.21**	**261**	P	Pn	21 13 18.4	+0.6
JTK				*e*S	Sn	21 13 33.0	-0.1
JTAJ	**Takarajima**	**1.52**	**321**	P	Pn	21 13 22.4	+0.4
JTAJ				*e*S	Sn	21 13 40.9	+0.4
JOKE	**Okinoerabujima**	**1.65**	**249**	P	Pn	21 13 24.5	+0.6
JOKE				*e*S	Sn	21 13 43.7	-0.2
JNN	**Nakanoshima**	**1.89**	**349**	P	Pn	21 13 27.9	+0.7
JNN				*e*S	Sn	21 13 50.7	+0.9
JOW	**Kunigami**	**2.13**	**238**	P	Pn	21 13 31.3	+0.8
JOW				*e*S	Sn	21 13 55.8	+0.1
JYAK	**Yakushimahirau**	**2.26**	**5**	P	Pn	21 13 33.6	+1.7
JYAK				S	Sn	21 13 59.6	+0.8
JIH	**Iheya**	**2.28**	**246**	P	Pn	21 13 33.0	+0.6
JIH				S	Sn	21 13 58.5	-0.7
JMZ	**Minamidaito 2**	**2.30**	**159**	P	Pn	21 13 33.9	+1.1
JMZ				*e*S	Sn	21 14 00.1	+0.2
JKC	**Kuchinoerabu**	**2.48**	**358**	P	Pn	21 13 36.2	+1.1
JKC				*e*S	Sn	21 14 05.0	+0.9
JNTH	**Nagotoyohara**	**2.50**	**235**	P	Pn	21 13 36.2	+0.8
JNTH				*e*S	Sn	21 14 04.4	-0.2
JTN	**Tanegashima 3**	**2.73**	**12**	P	Pn	21 13 39.7	+1.0
JTN				*e*S	Sn	21 14 11.0	+0.6
JJT2	**

EHP				*e*S		Sg	21 13 22.9	+1.2	
	baz=342								
EHP	**Heping Village**	**0.06**	**337**	*e*S		Pg	21 13 20.2	+0.4	
	baz=332								
ENA	**Nanau**	**0.18**	**352**	P		Pg	21 13 21.3	0.0	
	baz=354								
TWD	**Chiawan**	**0.23**	**222**	P		Pg	21 13 22.4	+0.3	
	baz=227								
TWD				*i* S		Sg	21 13 26.0	+0.4	
	baz=227								
HWA	**Hwalien**	**0.31**	**208**	*e*P		Pb	21 13 24.5	-0.1	
	baz=216								
TWC	**Suao**	**0.36**	**12**	*e*P		Pg	21 13 24.5	0.0	
	baz=13								
NNS	**Nan Shan**	**0.41**	**297**	*e*P		Pb	21 13 25.9	-0.4	
	baz=298								
NNS				*e*S		Sg	21 13 31.2	+0.3	
	baz=298								
ENTT	**Nioudou**	**0.43**	**335**	*e*P		Pg	21 13 26.1	+0.4	
	baz=335								
ENTT				*e*S		Sg	21 13 31.9	+0.5	
	baz=335								
WHF	**Hehuan Shan**	**0.47**	**257**	*e*P		Pb	21 13 28.2	+0.7	
	baz=257								
TWE	**Neicheng**	**0.47**	**349**	*e*P		Pb	21 13 27.1	-0.3	
	baz=350								
TWE				*e*S		Sg	21 13 33.4	+0.5	
	baz=350								
ILA	**Ilan**	**0.51**	**358**	*e*P		Pb	21 13 27.9	0.0	
	baz=350								
ESL	**Shilin**	**0.53**	**215**	*e*P		Pg	21 13 27.8	+0.1	
	baz=223								
TWT	**Tachien**	**0.54**	**270**	*e*P		Pb	21 13 28.7	+0.2	
	baz=271								
TWT				S		Sb	21 13 36.0	-0.2	
	baz=271								
NSK	**Sanguang**	**0.56**	**319**	*e*P		Pb	21 13 28.7	-0.2	
	baz=319								
NSK				*e*S		Sb	21 13 36.4	-0.5	
	baz=319								
EGS		**0.61**	**14**	*e*P		Pb	21 13 30.5	+0.8	
	baz=22								
TWA	**Mucha**	**0.74**	**347**	*e*P		Pn	21 13 33.8	+0.4	
	baz=347								
TWB1	**Santiao Chiao**	**0.78**	**15**	*e*P		Pb	21 13 32.9	+0.4	
	baz=9.0								
NSTT	**Nanjuang**	**0.79**	**298**	*e*P		Pb	21 13 33.3	+0.5	
	baz=299								
NSTT				*e*S		Sb	21 13 43.2	-0.2	
	baz=299								
NWF	**Wu-fen Shan**	**0.81**	**1**	*e*P		Pn	21 13 34.1	-0.2	
	baz=360								
EHY	**Hungye**	**0.85**	**209**	*e*P		Pg	21 13 33.6	0.0	
	baz=222								
SMLT	**Sun Moon Lake**	**0.87**	**245**	*e*P		Pn	21 13 34.8	-0.4	
	baz=239								
SMLT				*e*S		Sb	21 13 46.1	+0.3	
	baz=239								
TYC	**Yuchr**	**0.90**	**248**	*e*P		Pg	21 13 34.5	-0.1	
	baz=240								
TYC				S		Sg	21 13 46.3	-0.1	
	baz=240								
TWS1	**Kuangyinshan**	**0.90**	**339**	*e*P		Pn	21 13 35.8	+0.3	
	baz=339								
TWQ1	**Liyutan**	**0.91**	**276**	*e*P		Pn	21 13 36.0	+0.3	
	baz=276								
NSY	**Sanyi**	**0.93**	**280**	*e*P		Pn	21 13 37.1	+1.2	
	baz=281								
NSY				*e*S		Sn	21 13 49.4	+0.3	
	baz=281								
TWF1	**Yuli**	**0.99**	**206**	*e*P		Pb	21 13 35.4	-0.8	
	baz=219								
TCU	**Taichung**	**1.00**	**264**	*e*P		Pn	21 13 38.3	+1.5	
	baz=273								
TCU				*e*S		Sn	21 13 52.7	+1.9	
	baz=273								
WNT	**Mingjian**	**1.06**	**250**	*e*P		Pn	21 13 38.9	+1.2	
	baz=247								
WNT				*e*S		Sn	21 13 54.0	+1.8	
	baz=247								
YUS	**Yu-Shan**	**1.06**	**225**	*e*P		Pg	21 13 37.8	0.0	
	baz=226								
ALS	**Alishan**	**1.15**	**230**	*e*P		Pg	21 13 40.2	+0.8	
	baz=231								
CHN5	**Tsauling**	**1.19**	**237**	*e*P		Pg	21 13 41.1	+1.0	
	baz=240								
CHN5				S		Sg	21 13 57.6	+1.9	
	baz=240								
ELDTW	**Lidau**	**1.26**	**213**	*e*P		Pn	21 13 40.5	-0.1	
	baz=201								
CHN4	**Tsaushan**	**1.40**	**230**	*e*P		Pg	21 13 46.1	+2.0	
	baz=234								
CHN4				*e*S		Sg	21 14 04.9	+2.6	
	baz=234								
STYT	**Tauyuan**	**1.43**	**221**	*e*P		Pg	21 13 44.6	0.0	
	baz=223								
CHN1	**Nanshi**	**1.56**	**227**	*e*P		Pg	21 13 47.5	+0.5	
	baz=232								
CHN1				*e*S		Sg	21 14 07.6	+0.4	
	baz=232								
SGST	**Jiashian**	**1.59**	**223**	*e*P		Pg	21 13 47.3	-0.5	
	baz=226								
SSD	**Sandimen**	**1.83**	**215**	*e*P		Pb	21 13 50.3	-0.1	
	baz=230								

*ISCJB **14** 21:16:21.7±0.8, 19°.18S±0°.10×176°.6W±0°.1, h21km, mb4.5/7, MS3.7/1, Error ellipse: s-maj=20.6km s-min=11.7km az=24.7*
*IDC **14** 21:16:21.4±8.7, 19°.16S×176°.64W, h0km, mb3.9/2, mb1 4.1/2, mb1mx3.6/24, mbtmp3.9/2, MS3.3/2, Ms1 3.3/2, ms1mx2.7/40, Error ellipse: s-maj=317.4km s-min=49.7km az=17.0*
*NEIC **14** 21:16:22.8±3.8, 19°.16S×176°.62W, h12km±25km, mb4.5/4, Error ellipse: s-maj=15.2km s-min=9.3km az=108.0*

ISC 14 21:16:24.0±0.8, 19°.2S±0°.1×176°.6W±0°.1, h21km, n13, σ0°68/11, mb4.5/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**6.98**	**42**	LR		LR		21 20 35.0	
	comp=Z,152nm,20.6s,baz=116,slow=36								
AFI	**Afiamalu**	**6.98**	**42**	*e*Pn		**Pn**		**21 18 04.8**	**-0.4**
RAO	**Raoul Island**	**10.12**	**187**	*e*Pn		**Pn**		**21 18 48.0**	**-0.1**
FUNA	**Funafuti**	**11.32**	**338**	*e*Pn		**Pn**		**21 19 04.3**	**-0.4**
WRA	**Warramunga Arr**	**46.09**	**260**	P		**P**		**21 24 47.4**	**+0.4**
	0.5nm,0.3s,baz=96,slow=7.5,SNR=17								
ASAR	**Alice Springs**	**46.11**	**255**	P		**P**		**21 24 47.5**	**+0.3**
	0.9nm,0.5s,baz=96,slow=7.5,SNR=16								
MIDW	**Midway**	**47.10**	**359**	*e*P		**P**		**21 24 55.2**	**+0.6**
	4.2nm,0.4s								
NWAO	**Narrogin (SRO)**	**60.14**	**242**	*e*P		**P**		**21 26 30.4**	**0.0**
	4.2nm,0.8s								
YSS	**Yuzh-Sakhalins**	**75.30**	**333**	*e*P		**P**		**21 28 06.2**	**+0.8**
	2.9nm,0.6s								
CMB	**Columbia Colle**	**77.59**	**42**	*e*P		**P**		**21 28 18.8**	**0.0**
	0.6nm,0.4s								
PFO	**Pinyon Flats O**	**77.71**	**48**	LR		LR		21 56 33.9	
	comp=Z,33nm,18.7s,baz=132,slow=31								
COCO	**West Island**	**82.88**	**260**	*e*P		**P**		**21 28 46.3**	**-1.4**
	64nm,0.7s								
TORD	**Torodi Ar. Bea**	**173.81**	**165**	PKPab		**PKPab**		**21 38 03.3**	**+0.5**
	1.1nm,1.2s,baz=301,slow=34,SNR=3.6								

TAP 14 21:17:10.9, 24°.26N×121°.76E, h12km±1km, ML1.9, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.17**	**354**	P			Pb	21 17 15.7	-0.4
	baz=356								
ENA				*i* S			Sg	21 17 18.7	+1.2
	baz=356								
TWD	**Chiawan**	**0.23**	**221**	*e*P			Pb	21 17 16.6	-0.5
	baz=219								
TWD				S			Sg	21 17 20.4	+1.3
	baz=219								
TWC	**Suao**	**0.36**	**13**	*e*P			Pb	21 17 18.7	-0.5
	baz=14								
TWC				S			Sb	21 17 24.3	-0.6
	baz=14								
NNS	**Nan Shan**	**0.40**	**297**	P			Pb	21 17 19.8	-0.2
	baz=297								
ENTT	**Nioudou**	**0.42**	**335**	*i* P			Pb	21 17 20.3	0.0
	baz=335								
WHF	**Hehuan Shan**	**0.47**	**256**	*e*P			Pb	21 17 21.1	-0.2
	baz=255								
WHF				S			Sb	21 17 27.8	-0.5
	baz=255								
TWE	**Neicheng**	**0.47**	**350**	*e*P			Pb	21 17 20.8	-0.4
	baz=351								
TWE				*e*S			Sb	21 17 28.3	+0.3
	baz=351								
NSK	**Sanguang**	**0.56**	**319**	*e*P			Pb	21 17 22.8	+0.1
	baz=319								
NSK				*e*S			Sb	21 17 30.7	+0.1
	baz=319								

TAP 14 21:17:17.1, 24°.25N×121°.75E, h14km±1km, ML1.9, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.17**	**358**	P			Pb	21 17 22.0	-0.2
ENA				S			Sb	21 17 25.2	-0.4
TWD	**Chiawan**	**0.22**	**219**	*e*P			Pb	21 17 22.5	-0.5
	baz=217								
TWD				S			Sb	21 17 26.6	-0.2
	baz=217								
TWC	**Suao**	**0.37**	**15**	P			Pb	21 17 25.3	-0.2
	baz=16								
TWC				*e*S			Sb	21 17 30.5	-0.6
	baz=16								
NNS	**Nan Shan**	**0.39**	**299**	*e*P			Pb	21 17 25.7	-0.3
	baz=298								
NNS				*e*S			Sb	21 17 31.8	0.0
	baz=298								
NNS	**Nan Shan**	**0.39**	**299**	S			Pb	21 17 25.6	-0.4
	baz=297								
ENTT	**Nioudou**	**0.42**	**337**	P			Pb	21 17 26.4	0.0
	baz=337								
ENTT				S			Sb	21 17 32.8	+0.1
	baz=337								
ENTT	**Nioudou**	**0.42**	**337**	S			Pb	21 17 26.4	0.0
	baz=335								
WHF	**Hehuan Shan**	**0.45**	**256**	*e*P			Pb	21 17 26.9	-0.3
	baz=255								
WHF				*e*S			Sb	21 17 34.0	0.0
	baz=255								
TWE	**Neicheng**	**0.47**	**351**	*e*P			Pb	21 17 27.4	+0.1
	baz=352								
TWE				S			Sb	21 17 34.6	+0.5
	baz=352								
TWT	**Tachien**	**0.52**	**270**	*e*P			Pb	21 17 28.4	+0.2
	baz=269								
TWT				S			Sb	21 17 36.5	+0.7
	baz=269								
NSK	**Sanguang**	**0.55**	**320**	*e*P			Pg	21 17 28.1	+0.1
	baz=320								
NSK				*e*S			Sb	21 17 36.8	+0.3
	baz=320								

*ISCJB **14** 21:46:11.0±0.2, 43°.286N±0°.009×20°.80E±0°.01, h9km±1km, mb3.7/10, MS3.4/6, Error ellipse: s-maj=1.5km s-min=1.4km az=13.0*
*CSEM **14** 21:46:11.7±0.1, 43°.26N×20°.80E, h2km, ML4.1, Error ellipse: s-maj=1.8km s-min=1.7km az=173.0*
*THE **14** 21:46:11.8, 43°.30N×20°.85E, h6km±3km, ML3.8/4, Error ellipse: s-maj=3.5km s-min=0.7km az=1.0*
*PDG **14** 21:46:11.5±0.5, 43°.27N×20°.82E, h10km±1km, MD3.9/8, ML3.8/12, Error ellipse: s-maj=0.4km s-min=0.6km az=0.0*
*IDC **14** 21:46:11.7±0.7, 43°.29N×20°.70E, h0km, mb3.8/9, mb1 3.9/21, mb1mx3.7/54, mbtmp3.7/21, ML3.5/12, MS3.1/12, Ms1 3.1/12, ms1mx2.9/47, Error ellipse: s-maj=11.1km s-min=8.0km az=27.0*
*MOS **14** 21:46:11.6±1.0, 43°.28N×20°.79E, h11km, mb4.3/4, Error ellipse: s-maj=5.4km s-min=3.3km az=94.9*
*BEO **14** 21:46:12.2±0.2, 43°.25N×20°.78E, M4.1/1*
*PRU **14** 21:46:12.3, 43°.23N×20°.85E, h2km*
*NEIC **14** 21:46:12.5, 43°.23N×20°.80E, h8km, ML4.1(BEO), ML3.9(PDG), ML3.8(THE), After BEO.*
NEIC Felt at Kraljevo.
*LDG **14** 21:46:12.0±0.1, 43°.33N×20°.78E, h10km, Md3.7/2, Ml3.6/5, Error ellipse: s-maj=2.6km s-min=2.0km az=5.0*
*ROM **14** 21:46:14.3±0.7, 43°.18N×20°.60E, h10km, Ml3.8/32, Error ellipse: s-maj=11.0km s-min=5.1km az=68.0*

ISC 14 21:46:13.5±0.8, 43°.26N±0°.01×20°.77E±0°.01, h13km±6km, n516, σ1°53/640, mb3.8/10, MS3.2/6, 42C-51D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SELS	**Selova**	**0.26**	**99**	⇓*i*	P		**Pg**	**21 46 16.6**	**-2.4**
SELS	**Selova**	**0.26**	**99**	⇓*i*	P		**Pg**	**21 46 16.6**	**-2.4**
SELS					Sg		**Sg**	**21 46 28.8**	**+6.1**
SELS	**Selova**	**0.26**	**99**		Pg		**Pg**	**21 46 20.1**	**+1.1**
SELS					Sg		**Sg**	**21 46 28.8**	**+6.1**
IVAS	**Ivanjica**	**0.55**	**305**	*e*	Pg		**Pg**	**21 46 22.6**	**-1.7**
IVAS				*e*	Sg		**Sg**	**21 46 29.9**	**-1.8**
IVAS	**Ivanjica**	**0.55**	**305**	*e*	Pg		**Pg**	**21 46 22.6**	**-1.7**
IVAS				*e*	Sg		**Sg**	**21 46 29.9**	**-1.8**
GRUS	**Gruza**	**0.63**	**356**	⇑*i*	Pg		**Pg**	**21 46 24.4**	**-1.4**
GRUS				*e*	Sg		**Sb**	**21 46 34.2**	**-0.8**
GRUS	**Gruza**	**0.63**	**356**	⇑*i*	Pg		**Pg**	**21 46 24.4**	**-1.4**
GRUS				*e*	Sg		**Sb**	**21 46 34.2**	**-0.8**
PEJK	**Peje**	**0.72**	**210**	P			**Pg**	**21 46 25.7**	**-1.8**
PEJK				S			**Sg**	**21 46 35.7**	**-1.2**
BEY	**Berane**	**0.75**	**239**	P			**Pg**	**21 46 26.5**	**-1.7**
BEY				*e*	Sg		**Sb**	**21 46 38.8**	**+0.1**
IVA	**Berane**	**0.75**	**239**	⇓*i*	Pg		**Pg**	**21 46 26.4**	**-1.7**
IVA				*e*	Sg		**Sb**	**21 46 38.8**	**+0.1**
BOVS	**Bovan**	**0.78**	**61**	*e*	Pg		**Pg**	**21 46 26.5**	**-2.1**
BOVS				*e*	Sg		**Sb**	**21 46 38.7**	**-0.6**
BOVS	**Bovan**	**0.78**	**61**	*e*	Pg		**Pg**	**21 46 26.5**	**-2.1**
BOVS				*e*	Sg		**Sb**	**21 46 38.7**	**-0.6**
NISS		**0.87**	**80**	*e*	Pg		**Pb**	**21 46 28.8**	**-1.7**
NISS		**0.87**	**80**	*e*	Pg		**Pb**	**21 46 28.8**	**-1.7**
BARS	**Barje**	**0.89**	**120**	⇑*i*	Pg		**Pg**	**21 46 28.2**	**-2.5**
BARS				*e*	Sg		**Sg**	**21 46 40.5**	**-1.8**
BARS	**Barje**	**0.89**	**120**	⇑*i*	Pg		**Pg**	**21 46 28.2**	**-2.5**
BARS				*e*	Sg		**Sg**	**21 46 40.5**	**-1.8**
PVY	**Plav**	**0.90**	**222**	⇓*i*	Pg		**Pg**	**21 46 28.7**	**-2.1**
PVY				*e*	Sg		**Sb**	**21 46 42.9**	**0.0**
PVY	**Plav**	**0.90**	**222**	P			**Pg**	**21 46 28.8**	**-2.1**
PVY				*e*	Sg		**Sb**	**21 46 42.9**	**0.0**
PVY	**Plav**	**0.90**	**222**	P			**Pg**	**21 46 28.8**	**-2.1**
TRUS	**Trudelj**	**1.00**	**345**	⇑*i*	Pg		**Pg**	**21 46 30.7**	**-2.1**
TRUS				*e*	Sg		**Sn**	**21 46 46.1**	**-1.0**
TRUS	**Trudelj**	**1.00**	**345**	⇑*i*	Pg		**Pg**	**21 46 30.7**	**-2.1**
TRUS				*e*	Sg		**Sn**	**21 46 46.1**	**-1.0**
DIVS	**Divibare**	**1.01**	**326**	P			**Pg**	**21 46 31.1**	**-1.9**
DIVS				S			**Sg**	**21 46 45.1**	**-1.1**
DIVS	**Divibare**	**1.01**	**326**	⇑*i*	Pg		**Pg**	**21 46 31.1**	**-1.9**
DIVS				*e*	Sg		**Sb**	**21 46 46.3**	**+0.2**
DIVS	**Divibare**	**1.01**	**326**	⇑*i*	Pg		**Pg**	**21 46 31.1**	**-1.9**
DIVS				S			**Sg**	**21 46 45.1**	**-1.1**
PLE	**Pljevlja**	**1.01**	**274**	⇓*i*	Pg		**Pg**	**21 46 30.9**	**-2.1**
PLE				*e*	Sg		**Sn**	**21 46 47.1**	**-0.5**
PLE	**Pljevlja**	**1.01**	**274**	⇓P			**Pg**	**21 46 31.0**	**-2.1**
PLE				S			**Sn**	**21 46 47.4**	**-0.3**
PLE	**Pljevlja**	**1.01**	**274**	⇓P			**Pg**	**21 46 31.0**	**-2.1**
PLE				*e*	Sg		**Sn**	**21 46 47.1**	**-0.5**
PLE	**Pljevlja**	**1.01**	**274**	⇓P			**Pg**	**21 46 30.9**	**-2.1**
PLE				S			**Sn**	**21 46 47.4**	**-0.3**
BOLS	**Boljevac**	**1.03**	**56**	*e*	Pg		**Pg**	**21 46 29.8**	**-3.6**
BOLS				*e*	Sg		**Sb**	**21 46 45.5**	**-1.1**
BOLS	**Boljevac**	**1.03**	**56**	*e*	Pg		**Pg**	**21 46 29.8**	**-3.6**
BOLS				*e*	Sg		**Sb**	**21 46 45.5**	**-1.1**
BBLS	**Lazići**	**1.16**	**302**	⇑*i*	Pg		**Pg**	**21 46 34.1**	**-1.8**
BBLS				*e*	Sg		**Sn**	**21 46 51.2**	**-0.1**
BBLS	**Lazići**	**1.16**	**302**	⇑*i*	Pg		**Pg**	**21 46 34.1**	**-1.8**
BBLS				*e*	Sg		**Sn**	**21 46 50.9**	**-0.4**
ZAPS	**Zavoj**	**1.36**	**89**	⇓*i*	Pg		**Pb**	**21 46 37.5**	**-1.4**
ZAPS				*e*	Sg		**Sg**	**21 46 55.3**	**-2.1**
UPM	**Unac-Piva**	**1.36**	**268**	⇓*i*	Pg		**Pn**	**21 46 37.8**	**-0.6**
UPM				*e*	Sg		**Sg**	**21 46 59.3**	**+1.7**
UPM	**Unac-Piva**	**1.36**	**268**	⇓*i*	Pg		**Pb**	**21 46 38.0**	**-1.0**
UPM				*e*	Sg		**Sg**	**21 46 56.6**	**-1.0**
NKY	**Niksic**	**1.38**	**252**	⇓*i*	Pg		**Pn**	**21 46 38.0**	**-0.6**
NKY				*e*	Sg		**Sg**	**21 46 59.6**	**+1.6**
NKY	**Niksic**	**1.38**	**252**	P			**Pn**	**21 46 38.0**	**-0.6**
NKY	**Niksic**	**1.38**	**252**	⇓*i*	Pg		**Pn**	**21 46 38.0**	**-0.6**
NKY				*e*	Sg		**Sg**	**21 46 59.6**	**+1.6**
SKO	**Skopje**	**1.38**	**159**	P			**Pn**	**21 46 36.7**	**-1.8**
SKO				S			**Sg**	**21 46 57.3**	**-0.7**
SKO	**Skopje**	**1.38**	**159**	*e*Pn			**Pn**	**21 46 36.7**	**-1.8**
SKO				*e*Sn			**Sg**	**21 46 56.6**	**-1.4**
SKO	**Skopje**	**1.38**	**159**	*e*Pg			**Pn**	**21 46 37.1**	**-1.4**
SKO				*e*Sg			**Sn**	**21 46 56.0**	**-0.6**
SKO	**Skopje**	**1.38**	**159**	P			**Pn**	**21 46 37.3**	**-1.2**
SKO	**Skopje**	**1.38**	**159**	P			**Pn**	**21 46 37.3**	**-1.2**
SKO				*e*Sg			**Sn**	**21 46 56.0**	**-0.6**
SKO				S			**Sg**	**21 46 57.3**	**-0.7**
PDG	**Podgorica**	**1.39**	**234**	P			**Pn**	**21 46 37.6**	**-1.0**
PDG				S			**Sg**	**21 46 58.4**	**+0.1**
PDG	**Podgorica**	**1.39**	**234**	⇓*i*	P		**Pn**	**21 46 37.2**	**-1.4**
PDG	**Podgorica**	**1.39**	**234**	S			**Sn**	**21 46 56.8**	**0.0**
PDG	**Podgorica**	**1.39**	**234**	⇓*i*	Pg		**Pn**	**21 46 37.7**	**-1.4**
PDG				*e*	Sg		**Sb**	**21 46 55.5**	**-1.5**
PDG	**Podgorica**	**1.39**	**234**	Pn			**Pn**	**21 46 37.1**	**-1.5**
	1µm,0.7s								
PDG	**Podgorica**	**1.39**	**234**	Pn			**Pn**	**21 46 37.1**	**-1.5**
	1µm,0.7s								
PDG	**Podgorica**	**1.39**	**234**	P			**Pn**	**21 46 37.6**	**-1.0**
PDG				*e*Sg			**Sg**	**21 46 57.2**	**-1.1**
PDG				S			**Sg**	**21 46 58.4**	**+0.1**
TTG	**Podgorica**	**1.39**	**234**	⇓*i*	Pg		**Pn**	**21 46 37.2**	**-1.4**
TTG				*e*Sg			**Sg**	**21 46 59.4**	**+1.1**
NKME	**Niksic**	**1.42**	**250**	⇑*i*	Pg		**Pn**	**21 46 38.4**	**-0.7**
NKME				*e*Sg			**Sg**	**21 47 00.8**	**+1.4**
NKME	**Niksic**	**1.42**	**250**	⇑*i*	Pg		**Pn**	**21 46 38.4**	**-0.7**
NKME				*e*Sg			**Sg**	**21 47 00.8**	**+1.4**
CEME	**Cevo**	**1.54**	**243**	⇓*i*	Pg		**Pn**	**21 46 40.3**	**-0.4**
CEME				*e*Sg			**Sg**	**21 47 03.9**	**+0.8**
CEME	**Cevo**	**1.54**	**243**	⇓*i*	Pg		**Pn**	**21 46 40.3**	**-0.4**
CEME				*e*Sg			**Sg**	**21 47 03.9**	**+0.8**
BEO	**Beograd**	**1.56**	**352**	*e*Pg			**Pb**	**21 46 40.9**	**-1.4**
BEO				*e*Sg			**Sg**	**21 47 02.6**	**-1.2**
BEO	**Beograd**	**1.56**	**352**	P			**Pn**	**21 46 40.4**	**-0.6**
TEKS	**Tekeris**	**1.57**	**326**	⇓*i*	Pn		**Pn**	**21 46 40.0**	**-1.1**
TEKS				*e*Sg			**Sg**	**21 47 02.1**	**-1.9**
DRME	**Dracevica, Mon**	**1.59**	**228**	⇑*i*	Pn		**Pb**	**21 46 41.7**	**-1.0**
DRME				*e*Sn			**Sg**	**21 47 05.0**	**+0.3**
DRME	**Dracevica, Mon**	**1.59**	**228**	⇓*i*	Pn		**Pn**	**21 46 41.0**	**-0.3**
DRME				*e*Sn			**Sb**	**21 47 02.1**	**-0.6**
MDVR	**Moldovita**	**1.66**	**24**	⇓*i*	P		**Pn**	**21 46 41.0**	**-1.4**
MDVR	**Moldovita**	**1.66**	**24**	S			**Sn**	**21 47 02.4**	**-1.3**
BRY	**Bratogost**	**1.68**	**258**	⇓*i*	Pn		**Pn**	**21 46 42.2**	**-0.5**
BRY				*e*Sn			**Sg**	**21 47 06.9**	**-0.5**
BRY	**Bratogost**	**1.68**	**258**	P			**Pn**	**21 46 42.2**	**-0.2**
BRY	**Bratogost**	**1.68**	**258**	⇓*i*	Pn		**Pn**	**21 46 42.2**	**-0.5**
BRY	**Bratogost**	**1.68**	**258**	P			**Pn**	**21 46 42.5**	**-0.2**
BRY				*e*Sn			**Sb**	**21 47 04.6**	**-0.7**
BUM	**Brajici-Budva**	**1.68**	**236**	⇓*i*	Pn		**Pb**	**21 46 42.9**	**-1.5**
BUM				*e*Sn			**Sg**	**21 47 07.3**	**-0.4**
BUM	**Brajici-Budva**	**1.68**	**236**	⇓*i*	Pn		**Pb**	**21 46 42.9**	**-1.5**
BUM				*e*Sn			**Sg**	**21 47 07.3**	**-0.4**
ULC	**Ulcinj**	**1.72**	**221**	⇑*i*	Pn		**Pb**	**21 46 43.3**	**-1.7**
ULC				*e*Sn			**Sg**	**21 47 08.0**	**-0.8**
ULC	**Ulcinj**	**1.72**	**221**	⇑*i*	Pn		**Pb**	**21 46 43.3**	**-1.7**
ULC	**Ulcinj**	**1.72**	**221**	P			**Pg**	**21 46 45.0**	**-1.5**
ULC				*e*Sn			**Sg**	**21 47 08.0**	**-0.8**
TREB	**Trebinje**	**1.86**	**254**	*i* Pg			**Pb**	**21 46 45.6**	**-1.7**
TREB				*e*Sg			**Sb**	**21 47 10.5**	**0.0**
TREB	**Trebinje**	**1.86**	**254**	*e*Pn			**Pn**	**21 46 44.9**	**-0.1**
TREB	**Trebinje**	**1.86**	**254**	*i* Pg			**Pb**	**21 46 45.6**	**-1.7**
TREB				*e*Sn			**Sb**	**21 47 09.6**	**-0.9**
TREB				*e*Sg			**Sb**	**21 47 10.5**	**0.0**
HCY	**Herceg Novi**	**1.86**	**245**	⇓*i*	Pn		**Pb**	**21 46 45.7**	**-1.7**
HCY				*e*Sn			**Sg**	**21 47 11.8**	**-1.6**
HCY	**Herceg Novi**	**1.86**	**245**	P			**Pb**	**21 46 46.0**	**-1.4**
HCY	**Herceg Novi**	**1.86**	**245**	⇓*i*	Pn		**Pb**	**21 46 45.6**	**-1.8**
HCY	**Herceg Novi**	**1.86**	**245**	P			**Pb**	**21 46 46.0**	**-1.4**
HCY				*e*Sn			**Sb**	**21 47 09.6**	**-1.0**
BLJ	**Bijeljina**	**1.87**	**325**	*e*Pn			**Pn**	**21 46 44.7**	**-0.5**
BLJ				*e*Sn			**Sb**	**21 47 09.7**	**-1.0**
DJES	**Djerdap**	**1.89**	**41**	*e*Pg			**Pn**	**21 46 44.8**	**-0.7**
DJES				*e*Sg			**Sb**	**21 47 11.0**	**-0.3**
VTS	**Vitosha**	**1.91**	**110**	P			**Pn**	**21 46 44.8**	**-1.1**
VTS				S			**Sn**	**21 47 08.8**	**-1.1**
VTS	**Vitosha**	**1.91**	**110**	⇑*i*	P		**Pn**	**21 46 44.8**	**-1.1**
VTS	**Vitosha**	**1.91**	**110**	⇑*i*	Pn		**Pn**	**21 46 44.8**	**-1.1**
VTS				*e*Sn			**Sn**	**21 47 09.5**	**-0.4**
VTS	**Vitosha**	**1.91**	**110**	P			**Pn**	**21 46 44.8**	**-1.1**
VTS				S			**Sn**	**21 47 09.5**	**-0.4**
VTS	**Vitosha**	**1.91**	**110**	P			**Pn**	**21 46 44.8**

KZN S Sn 21 47 38.1 +0.3
KZN Kozani 3.05 165 P Pn 21 47 01.1 -0.4
KZN S Sn 21 47 38.1 +0.3
LOT Lotru 3.07 44⇓ *i*P Pn 21 47 00.7 -1.1
SIRR Siria 3.07 12⇓ *i*P Pn 21 47 01.0 -0.7
SIRR Siria 3.07 12 S Sn 21 47 35.2 -3.1
THE Thessaloniki 3.10 147 P Pn 21 47 00.6 -1.4
THE Thessaloniki 3.10 147 P Pn 21 47 03.7 +1.7
THE Thessaloniki 3.10 147 P Pn 21 47 00.6 -1.4
SOH Sokhos 3.11 141 P Pn 21 47 00.9 -1.4
SOH Sokhos 3.11 141 P Pn 21 47 00.8 -1.5
SOH Sokhos 3.11 141 P Pn 21 47 00.9 -1.4
PLD Plovdiv 3.12 110 P Pn 21 47 02.0 -0.4
PLD Plovdiv 3.12 110 P Pn 21 47 02.0 -0.4
HORT Hortiatis 3.18 146 P Pn 21 47 01.7 -1.6
HORT Hortiatis 3.18 146 P Pn 21 47 01.7 -1.6
MRAK Mrakovica 3.29 303 *e*Pn Pn 21 47 05.3 +0.5
MRAK *e*Sn Sn 21 47 43.9 +0.1
HUMR Humele 3.29 66⇓ *i*P Pn 21 47 03.6 -1.2
PVL Pavlikeni 3.33 89 P Pn 21 47 03.9 -1.4
PVL Pavlikeni 3.33 89 P Pn 21 47 03.9 -1.4
KPRO Kipourio 3.33 172 P Pn 21 47 05.6 +0.2
KPRO Kipourio 3.33 172 P Pn 21 47 05.6 +0.2
ZIMR 3.37 82⇓ *i*P Pn 21 47 04.9 -0.9
LIT Litokhoron 3.41 157 P Pn 21 47 05.5 -0.9
LIT Litokhoron 3.41 157 P Pn 21 47 06.1 -0.3
LIT Litokhoron 3.41 157 P Pn 21 47 06.1 -0.3
ARR Arges 3.48 51⇓ *i*P Pn 21 47 07.0 -0.4
ARR Arges 3.48 51 S Sn 21 47 47.7 -0.8
PLG Polygyros 3.51 144 P Pn 21 47 06.8 -1.0
PLG Polygyros 3.51 144 P Pn 21 47 06.8 -1.0
KAVA Kavala 3.59 128 P Pn 21 47 07.8 -1.0
KAVA Kavala 3.59 128 P Pn 21 47 07.8 -1.0
KEK Kerkira 3.62 192 P Pn 21 47 08.8 -0.5
KEK Kerkira 3.62 192 P Pn 21 47 08.8 -0.5
MTUR Matau 3.66 56⇑ *i*P Pn 21 47 09.2 -0.6
SGD Sagiada 3.67 186 P Pn 21 47 10.5 +0.6
SGD Sagiada 3.67 186 P Pn 21 47 10.5 +0.6
NOCI Noci 3.71 229 Pn Pn 21 47 09.4 -1.1
188nm,0.8s
NOCI Noci 3.71 229 Pn Pn 21 47 09.4 -1.1
188nm,0.8s
VOIR 3.76 53⇓ *i*P Pn 21 47 11.0 -0.3
OUR Ouranopolis 3.78 140 P Pn 21 47 10.5 -1.0
OUR Ouranopolis 3.78 140 P Pn 21 47 10.5 -1.0
DRGR 3.79 21⇓ *i*P Pn 21 47 09.9 -1.7
THL Klokotos Trika 3.81 165 P Pn 21 47 11.3 -0.6
THL Klokotos Trika 3.81 165 P Pn 21 47 11.3 -0.6
UDBI Udbina 3.83 291 *i* Pn Pn 21 47 12.7 +0.4
UDBI Sn Sn 21 47 55.9 -1.2
SISC Sisak 3.85 307 *i* Pn Pn 21 47 12.8 +0.4
AMUR Altamura 3.89 234 Pn Pn 21 47 12.0 -1.0
154nm,1.0s
AMUR Altamura 3.89 234 Pn Pn 21 47 12.0 -1.0
154nm,1.0s
MSAG Monte S. Angel 3.92 248 Pn Pn 21 47 12.6 -0.8
MSAG Monte S. Angel 3.92 248 Pn Pn 21 47 12.6 -0.8
BUC1 Bucharest 3.96 72⇑ *i*P Pn 21 47 13.9 0.0
BUC1 Bucharest 3.96 72 P Pn 21 47 13.8 -0.1
BUC1 Bucharest 3.96 72 P Pn 21 47 13.8 -0.1
LTRZ Laterza 3.97 229 Pn Pn 21 47 12.8 -1.3
133nm,0.8s
LTRZ Laterza 3.97 229 Pn Pn 21 47 12.8 -1.3
133nm,0.8s
PAIG Paliouri 3.98 146 P Pn 21 47 13.1 -1.1
PAIG Paliouri 3.98 146 P Pn 21 47 13.1 -1.1
CJR Cluj-Napoca 3.99 29⇓ *i*P Pn 21 47 13.5 -0.9
SGRT San Giovanni R 4.01 250 Pn Pn 21 47 13.9 -0.8
SGRT San Giovanni R 4.01 250 Pn Pn 21 47 13.9 -0.8
MRVN Minervino Murg 4.05 239 Pn Pn 21 47 14.4 -0.8
122nm,1.0s
MRVN Minervino Murg 4.05 239 Pn Pn 21 47 14.4 -0.8
122nm,1.0s
MIGL Miglionico 4.18 232 Pn Pn 21 47 16.1 -0.9
1μm,1.2s
MIGL Miglionico 4.18 232 Pn Pn 21 47 16.1 -0.9
1μm,1.2s
SECR 4.20 63⇓ *i*P Pn 21 47 16.9 -0.4
SULR 4.20 68⇑ *i*P Pn 21 47 16.6 -0.7
DOPR Dopca 4.26 49⇓ *i*P Pn 21 47 17.8 -0.3
ZAG Zagreb 4.27 309 *e*Pn Pn 21 47 18.1 -0.1
BEHE Becsehely 4.28 320⇑ *i*Pn Pn 21 47 17.9 -0.4
BEHE *e*Sn Sn 21 48 07.2 -1.0
BEHE Becsehely 4.28 320⇑ *e*Pn Pn 21 47 18.0 -0.4
BEHE *ex* x 21 48 12.6
XOR Xorichti 4.30 154 P Pn 21 47 17.4 -1.2
XOR Xorichti 4.30 154 P Pn 21 47 17.4 -1.2
MLR Muntele Rosu 4.33 57 Pn Pn 21 47 19.1 0.0
0.9nm,0.3s,baz=230,slow=2.7,SNR=79
MLR Sn Sn 21 48 10.4 +1.0
0.9nm,0.3s,baz=277,slow=18,SNR=4.1
MLR Lg Lg 21 48 34.0
1.2nm,0.3s,baz=161,slow=23,SNR=7.0
MLR LR LR 21 49 27.4
comp=Z,84nm,19.7s,baz=274,slow=45
MLR Muntele Rosu 4.33 57⇓ *i*P Pn 21 47 19.1 0.0
NEO Neokhori 4.36 154 P Pn 21 47 18.1 -1.4
NEO Neokhori 4.36 154 P Pn 21 47 18.1 -1.4
ACER Acerenza 4.37 237 Pn Pn 21 47 19.0 -0.6
209nm,0.6s
ACER Acerenza 4.37 237 Pn Pn 21 47 19.0 -0.6
209nm,0.6s
AGG Agios Georgios 4.40 164 *e*P Pn 21 47 18.9 -1.1
AGG Agios Georgios 4.40 164 P Pn 21 47 19.2 -0.8
AGG Agios Georgios 4.40 164 P Pn 21 47 19.2 -0.8
BUD Budapest 4.40 344 P Pn 21 47 19.4 -0.5
BUD Budapest 4.40 344 P Pn 21 47 19.4 -0.5
BUD Budapest 4.40 344⇓ *e*Pn Pn 21 47 19.2 -0.7
BUD *e*Sn Sn 21 48 11.9 +1.0
NVLJ Novalja 4.46 289 *e*Pn Pn 21 47 21.5 +0.8
NVLJ Sn Sn 21 48 10.4 -2.0
OZLJ Ozalj 4.47 304 *i* Pn Pn 21 47 20.9 0.0
OZLJ Sn Sn 21 48 08.5 -4.2
ISR Istrita 4.55 64 P Pn 21 47 24.4 +2.4
ISR Istrita 4.55 64 P Pn 21 47 24.4 +2.4
ALN Alexandroupoli 4.58 119 *e*P Pn 21 47 21.2 -1.2
ALN Alexandroupoli 4.58 119 P Pn 21 47 24.0 +1.5
ALN Alexandroupoli 4.58 119 P Pn 21 47 24.0 +1.5
CRES Cresnjev 4.58 306⇑ *i*Pn Pn 21 47 22.2 -0.3
CRES *e*Sn Sn 21 48 15.0 -0.6
ARCR ARCALIA 4.58 32⇓ *i*P Pn 21 47 21.9 -0.6
EDRB Edirne 4.63 106 *e*P Pn 21 47 23.9 +0.8
SCHR S. Chirico Rap 4.66 231 Pn Pn 21 47 22.8 -0.8
520nm,3.1s
MRLC Muro Lucano 4.66 239 Pn Pn 21 47 23.1 -0.6
85nm,0.8s
MRLC Muro Lucano 4.66 239 Pn Pn 21 47 23.1 -0.6
85nm,0.8s
GATE Gambatesa 4.68 250 Pn Pn 21 47 24.5 +0.7
186nm,1.1s
GATE Gambatesa 4.68 250 Pn Pn 21 47 24.5 +0.7
186nm,1.1s
CAFE Carife 4.68 243 Pn Pn 21 47 23.9 0.0
CAFE Carife 4.68 243 Pn Pn 21 47 23.9 0.0
PSZ Piszkesteto 4.70 353⇑ *i*P Pn 21 47 22.6 -1.5
PSZ Piszkesteto 4.70 353 *e*P Pn 21 47 22.6 -1.5
PSZ *e* 21 48 18.7
PSZ Piszkesteto 4.70 353 *e*P Pn 21 47 22.6 -1.5
PSZ *e*Sn Sn 21 48 18.7 +0.2
PSZ Piszkesteto 4.70 353 *e*Pn Pn 21 47 22.6 -1.5
PSZ *e*Sn Sn 21 48 18.7 +0.2
PSZ Piszkesteto 4.70 353⇑ *e*Pn Pn 21 47 22.7 -1.4
PSZ *e*Sn Sn 21 48 18.4 -0.1
AOS Alonnisos 4.71 149 *e*P Pn 21 47 24.0 -0.2
MCEL Monticello 4.73 233 Pn Pn 21 47 24.0 -0.7
75nm,0.7s
MCEL Monticello 4.73 233 Pn Pn 21 47 24.0 -0.7
75nm,0.7s
ENEZ Enez 4.74 120 *e*P Pn 21 47 23.9 -0.7
SALB San Lorenzo Be 4.74 226 Pn Pn 21 47 23.8 -1.0
77nm,0.7s
SALB San Lorenzo Be 4.74 226 Pn Pn 21 47 23.8 -1.0
77nm,0.7s
SIRI Monte Sirino - 4.79 232 Pn Pn 21 47 24.5 -0.9
78nm,0.9s
SIRI Monte Sirino - 4.79 232 Pn Pn 21 47 24.5 -0.9
78nm,0.9s
PIPA Pietrapaola 4.81 220 Pn Pn 21 47 24.7 -0.9
59nm,0.8s
PIPA Pietrapaola 4.81 220 Pn Pn 21 47 24.7 -0.9
59nm,0.8s
BMR Baia Mare 4.81 23⇓ *i*P Pn 21 47 25.1 -0.5

TRIV Trivento 4.83 254 Pn Pn 21 47 26.5 +0.5
TRIV Trivento 4.83 254 Pn Pn 21 47 26.5 +0.5
MCRV Calabrutti - M 4.85 241 Pn Pn 21 47 25.3 -1.0
54nm,0.6s
MCRV Calabrutti - M 4.85 241 Pn Pn 21 47 25.3 -1.0
54nm,0.6s
PSB1 Pescosannita 4.87 247 Pn Pn 21 47 26.8 +0.3
74nm,0.9s
PSB1 Pescosannita 4.87 247 Pn Pn 21 47 26.8 +0.3
74nm,0.9s
BSSO Busso 4.88 252 Pn Pn 21 47 27.0 +0.3
BSSO Busso 4.88 252 Pn Pn 21 47 27.0 +0.3
GADA Gvkgeada 4.91 127 *e*P Pn 21 47 26.4 -0.6
CDRU Civita di Ruta 4.93 238 Pn Pn 21 47 26.3 -1.1
32nm,0.6s
CDRU Civita di Ruta 4.93 238 Pn Pn 21 47 26.3 -1.1
32nm,0.6s
PLOR Plostina 4.93 56⇑ *i*P Pn 21 47 26.9 -0.5
CUC Castrocucco 4.95 230 Pn Pn 21 47 26.7 -0.8
86nm,0.7s
CUC Castrocucco 4.95 230 Pn Pn 21 47 26.7 -0.8
86nm,0.7s
CUC *e*Sn Sn 21 48 26.0 +1.4
CUC Castrocucco 4.95 230 *e*Pn Pn 21 47 28.0 +0.5
CUC *e*Sn Sn 21 48 26.0 +1.4
PTRJ Pietraroja 5.00 250 Pn Pn 21 47 28.1 -0.2
177nm,0.6s
PTRJ Pietraroja 5.00 250 Pn Pn 21 47 28.1 -0.2
177nm,0.6s
ERIK Erikli-Kesan 5.00 119 *e*P Pn 21 47 26.7 -1.5
TRPA Tarpa 5.02 14 *e*Pn Pn 21 47 27.4 -1.1
TRPA *e*Sn Sn 21 48 21.7 -4.7
CMPR Campora 5.04 236 Pn Pn 21 47 28.6 -0.2
71nm,0.7s
CMPR Campora 5.04 236 Pn Pn 21 47 28.6 -0.2
71nm,0.7s
TIP Timpagrande 5.08 218 Pn Pn 21 47 28.5 -0.9
43nm,0.9s
TIP Timpagrande 5.08 218 *e*Pn Pn 21 47 29.5 +0.1
26nm,0.8s
TIP Timpagrande 5.08 218 *e*Pn Pn 21 47 29.5 +0.1
26nm,0.8s
MIDA Miranda 5.09 254 Pn Pn 21 47 29.5 0.0
67nm,0.7s
MIDA Miranda 5.09 254 Pn Pn 21 47 29.5 0.0
67nm,0.7s
PAOL Paolisi 5.12 246 Pn Pn 21 47 30.3 +0.3
62nm,0.6s
PAOL Paolisi 5.12 246 Pn Pn 21 47 30.3 +0.3
62nm,0.6s
GELI Tayfur-Gelibol 5.13 122 *e*P Pn 21 47 29.0 -1.0
BULG Bulgheria - Ca 5.14 234 Pn Pn 21 47 30.1 -0.1
74nm,0.6s
BULG Bulgheria - Ca 5.14 234 Pn Pn 21 47 30.1 -0.1
74nm,0.6s
CEY Cerknica 5.17 301⇑ *i*Pn Pn 21 47 30.8 +0.2
CEY *e*Sn Sn 21 48 29.1 -0.9
VAGA Valle Agricola 5.18 251 Pn Pn 21 47 31.3 +0.5
87nm,0.6s
VAGA Valle Agricola 5.18 251 Pn Pn 21 47 31.3 +0.5
87nm,0.6s
INTR Introdacqua 5.22 258 Pn Pn 21 47 31.0 -0.3
135nm,0.8s
INTR Introdacqua 5.22 258 Pn Pn 21 47 31.0 -0.3
135nm,0.8s
KECS Kecovo 5.22 358 *e*P Pn 21 47 30.4 -0.9
KECS *e* 21 48 24.8
KECS Kecovo 5.22 358 *e*P Pn 21 47 30.4 -0.9
KECS *e*S Sn 21 48 24.8 -6.6
KECS Kecovo 5.22 358 *e*PN Pn 21 47 30.4 -0.9
KECS *e*SN Sn 21 48 24.8 -6.6
LJU Ljubljana 5.25 304 *i* Pn Pn 21 47 31.8 +0.1
LJU *e* 21 47 51.0
LJU *e*Sn Sn 21 48 28.1 -3.3
LJU *e* 21 49 01.7
LJU *e* 21 49 09.6
comp=Z,380nm,2.2s
LJU Ljubljana 5.25 304⇑ *i*Pn Pn 21 47 31.8 +0.1
LJU *e*Sn Sn 21 48 30.5 -1.5
CERA Filignano 5.27 254 Pn Pn 21 47 33.2 +1.2
comp=Z,148nm,0.8s
CERA Filignano 5.27 254 Pn Pn 21 47 33.2 +1.2
comp=Z,148nm,0.8s
TESR Tescani 5.29 50⇑ *i*P Pn 21 47 31.5 -0.7
TERO Teramo 5.30 266 Pn Pn 21 47 32.4 0.0
comp=Z,92nm,0.9s
TERO Teramo 5.30 266 Pn Pn 21 47 32.4 0.0
comp=Z,92nm,0.9s
SOKA Soboth 5.31 312 *i* Pn Pn 21 47 32.1 -0.5
comp=Z,16nm,0.4s,SNR=25
LPK Lapseki 5.33 121 *e*P Pn 21 47 32.7 0.0
BURAR Bucovina Array 5.36 34⇑ *i*P Pn 21 47 32.9 -0.3
CVDA Cernavoda 5.37 76⇓ *i*P Pn 21 47 32.1 -1.1
VYHS Vyhne 5.40 346 *e*P Pn 21 47 33.2 -0.6
VYHS *e* 21 48 30.9
VYHS Vyhne 5.40 346 *e*P Pn 21 47 33.2 -0.6
VYHS *e*S Sn 21 48 30.9 -4.9
VYHS Vyhne 5.40 346 *e*PN Pn 21 47 33.2 -0.6
VYHS *e*SN Sn 21 48 30.9 -4.9
TLB Topalu 5.42 73⇓ *i*P Pn 21 47 32.9 -1.0
RKY Sarkoy-Tekirda 5.42 116 *e*P Pn 21 47 33.3 -0.8
ARSA Arzberg 5.44 319 *i* Pn Pn 21 47 33.9 -0.4
comp=Z,38nm,0.3s,SNR=37
POFI Posta Fibreno 5.44 256 Pn Pn 21 47 34.6 +0.2
comp=Z,42nm,0.8s
POFI Posta Fibreno 5.44 256 Pn Pn 21 47 34.6 +0.2
comp=Z,42nm,0.8s
VVLD Villa Vallelon 5.46 258 Pn Pn 21 47 34.3 -0.3
comp=Z,80nm,1.1s
VVLD Villa Vallelon 5.46 258 Pn Pn 21 47 34.3 -0.3
comp=Z,80nm,1.1s
UZH Uzhgorod 5.47 11 *e*P Pn 21 47 32.4 -2.3
UZH *e*S Sn 21 48 34.8 -2.6
UZH MLR MLR
comp=Z,800nm,4.0s
UZH Uzhgorod 5.47 11 *e*P Pn 21 47 32.4 -2.3
comp=Z,800nm,4.0s
UZH *e*S Sn 21 48 34.8 -2.6
OBKA Obir 5.48 308 *i* Pn Pn 21 47 35.0 +0.1
comp=Z,21nm,0.4s,SNR=25
AQU L'Aquila 5.50 263 *e*P Pn 21 47 36.0 +0.9
AQU *e* 21 48 40.5
AQU pmax pmax
comp=Z,57nm,0.9s
AQU L'Aquila 5.50 263 *e*Pn Pn 21 47 34.8 -0.3
AQU L'Aquila 5.50 263 *e*P Pn 21 47 36.0 +0.9
comp=Z,57nm,0.9s
AQU *e*Sn Sn 21 48 40.5 +2.3
AQU L'Aquila 5.50 263 *e*Pn Pn 21 47 36.0 +0.9
comp=Z,57nm,0.9s
AQU *e*Sn Sn 21 48 40.5 +2.3
SIGR SIGRI 5.57 135 *e*P Pn 21 47 34.6 -1.4
TRI Trieste 5.58 298 *e*P Pn 21 47 36.9 +0.8
TRI pmax pmax
comp=Z,24nm,0.6s
TRI Trieste 5.58 298 *e*Pn Pn 21 47 36.9 +0.8
comp=Z,24nm,0.6s
TRI *e*Sg Sg 21 49 14.7 +2.2
TRI Trieste 5.58 298 *e*Pn Pn 21 47 36.9 +0.8
comp=Z,24nm,0.6s
TRI *e*Sg Sg 21 49 14.7 +2.2
CFR Carcaliu 5.63 68⇑ *i*P Pn 21 47 36.7 -0.1
TIRR Tirgusor 5.65 75⇑ *i*P Pn 21 47 35.9 -1.3
TIRR Tirgusor 5.65 75 *e*P Pn 21 47 36.1 -1.1
TIRR pmax pmax
comp=Z,40nm,0.7s
TIRR Tirgusor 5.65 75 *e*Pn Pn 21 47 36.1 -1.1
comp=Z,40nm,0.7s
TIRR *e*Sb Sb 21 49 00.2 +0.6
TIRR Tirgusor 5.65 75 *e*Pn Pn 21 47 36.1 -1.1
comp=Z,40nm,0.7s
TIRR *e*Sb Sb 21 49 00.2 +0.6
KRBG Karabiga-Canak 5.66 118 *e*P Pn 21 47 37.0 -0.2
CRVS Cervenica-Dubn 5.66 5 *e*P Pn 21 47 36.7 -0.6
CRVS Cervenica-Dubn 5.66 5 *e*P Pn 21 47 36.7 -0.6
CRVS Cervenica-Dubn 5.66 5 *e*PN Pn 21 47 36.7 -0.6
CRVS *e*PG Pg 21 48 08.8 +6.9
CRVS *e*SG Sg 21 49 17.0 +1.8
MANR Mangalia 5.71 82⇓ *i*P Pn 21 47 34.1 -3.8
MRMT Marmara Adasi 5.74 115 *e*P Pn 21 47 37.0 -1.5
KOLS Kolonicke sedl 5.77 10 *e*P Pn 21 47 38.6 -0.2
KOLS Kolonicke sedl 5.77 10 *e*P Pn 21 47 38.6 -0.2
KOLS Kolonicke sedl 5.77 10 *e*PN Pn 21 47 38.6 -0.2
KOLS *e*SG Sg 21 49 18.5 -0.1

CONA Conrad Observa 5.80 325 *i* Pn Pn 21 47 38.2 -1.1
comp=Z,7.9nm,0.4s,SNR=11
LANS Liptovska Anna 5.96 352 *e*P Pn 21 47 41.4 0.0
LANS *e* 21 48 49.8
LANS Liptovska Anna 5.96 352 *e*P Pn 21 47 41.4 0.0
LANS *e*S Sn 21 48 49.8 +0.3
LANS Liptovska Anna 5.96 352 *e*PN Pn 21 47 41.4 0.0
LANS *e*SN Sn 21 48 49.8 +0.3
MYKA Terra Mystica 6.08 306 *i* P Pn 21 47 43.9 +0.8
comp=Z,52nm,0.5s,SNR=33
TLCR 6.09 69⇓ *i*P Pn 21 47 42.9 -0.3
STHS Stebnicka Huta 6.17 3 *e*P Pn 21 47 44.3 +0.1
STHS *e* 21 48 49.7
STHS Stebnicka Huta 6.17 3 *e*P Pn 21 47 44.3 +0.1
STHS *e*S Sn 21 48 49.7 -4.8
STHS Stebnicka Huta 6.17 3 *e*PN Pn 21 47 44.3 +0.1
STHS *e*SN Sn 21 48 49.7 -4.8
NIE Niedzica 6.17 357 *e*Pn Pn 21 47 44.7 +0.5
NIE Niedzica 6.17 357 *e*P Pn 21 47 44.7 +0.5
NIE Niedzica 6.17 357 *e*P Pn 21 47 44.7 +0.5
DKL Dikili 6.24 130 *e*P Pn 21 47 44.8 -0.5
CHOS Chios island 6.31 139 *e*P Pn 21 47 45.1 -1.1
KCTX Karacabey (Bur 6.41 115 *e*P Pn 21 47 45.7 -2.0
MOA Molln 6.47 317 *i* P Pn 21 47 49.0 +0.6
comp=Z,3.8nm,0.2s,SNR=7.1
KBA Koelnbreinsper 6.49 309 *i* P Pn 21 47 49.8 +0.9
comp=Z,19nm,0.4s,SNR=6.0
KWP Kalwaria Pacla 6.51 11 *e*Pn Pn 21 47 52.6 +3.7
KWP Kalwaria Pacla 6.51 11 *e*P Pn 21 47 52.6 +3.7
KWP Kalwaria Pacla 6.51 11 *e*P Pn 21 47 52.6 +3.7
VRAC Vranov 6.70 336 Pn Pn 21 47 49.2 -2.4
comp=Z,1.6nm,0.3s,baz=151,slow=12,SNR=12
VRAC Sn Sn 21 49 07.4 -0.3
comp=Z,1.8nm,0.3s,baz=196,slow=11,SNR=3.4
VRAC Lg Lg 21 49 40.7
comp=Z,0.4nm,0.3s,baz=251,slow=2.3,SNR=3.0
VRAC Vranov 6.70 336⇑ *i*P Pn 21 47 50.9 -0.7
KIS Kishinev 6.81 54 *e*P Pg 21 48 26.0 +2.2
ABTA Abfaltersbach 6.81 304 *i* P Pn 21 47 54.8 +1.6
comp=Z,25nm,0.5s,SNR=18
OKC Ostrava-Krasne 6.82 346 *e*PN Pn 21 47 53.2 0.0
OKC *e*SN Sn 21 49 08.2 -2.4
OKC AMS AMS 21 51 10.0
comp=Z,300nm,7.8s
OKC Ostrava-Krasne 6.82 346 *e*P Pn 21 47 53.2 0.0
OKC *e* 21 49 08.2
OKC MLR MLR
comp=Z,300nm,7.8s
OKC Ostrava-Krasne 6.82 346 Pn Pn 21 47 53.2 0.0
OKC Sn Sn 21 49 08.2 -2.4
MORC Moravsky Berou 6.88 342⇑ *i*P Pn 21 47 53.3 -0.8
OJC Ojcow 6.99 355 *e*Pn Pn 21 47 56.4 +0.8
OJC Ojcow 6.99 355 *e*P Pn 21 47 56.4 +0.8
OJC Ojcow 6.99 355 *e*P Pn 21 47 56.4 +0.8
GERES GERESS Array B 7.44 321 Pn Pn 21 48 01.5 -0.3
comp=Z,1.1nm,0.3s,baz=148,slow=13,SNR=28
GERES Sn Sn 21 49 27.1 +1.1
comp=Z,1.0nm,0.3s,baz=140,slow=26,SNR=4.6
VAE Valguarnera 7.54 222 Pn Pn 21 48 11.1 +7.9
comp=Z,0.1nm,0.3s,baz=35,slow=9.4,SNR=2.5
VAE Sn Sn 21 49 31.5 +2.9
comp=Z,0.5nm,0.3s,baz=55,slow=17,SNR=1.8
TVSB Tavsanli 7.56 117 *e*P Pn 21 48 03.4 -0.1
AYDB Zeytinkoy-Aydi 7.58 132 *e*P Pn 21 48 02.8 -1.0
WTTA Wattenberg 7.58 305 *i* P Pn 21 48 06.1 +2.3
comp=Z,31nm,0.5s,SNR=22
WTTA Wattenberg 7.58 305⇑ *e*PN Pn 21 48 05.6 +1.7
WATA Walderalm 7.65 305 *i* P Pn 21 48 06.6 +1.8
comp=Z,17nm,0.2s,SNR=30
KHC Kasperske Hory 7.70 322 *e*PN Pn 21 48 05.3 0.0
KHC *ex* x 21 48 13.0
KHC *e*SN Sn 21 49 31.4 -1.0
KHC *ex* x 21 49 48.6
KHC Kasperske Hory 7.70 322 *e*P Pn 21 48 05.5 +0.2
KHC pmax pmax
comp=Z,5.0nm,0.8s
KHC Kasperske Hory 7.70 322 Pn Pn 21 48 05.3 0.0
KHC Sn Sn 21 49 31.4 -1.0
KHC Kasperske Hory 7.70 322 *e*Pn Pn 21 48 05.5 +0.2
comp=Z,5.3nm,0.8s
DPC Dobruska-Polom 7.72 338 *e*PN Pn 21 48 06.9 +1.3
DPC *ex* x 21 48 10.9
DPC *e*SN Sn 21 49 31.8 -1.0
DPC AMS AMS 21 51 50.0
comp=Z,300nm,8.5s
DPC Dobruska-Polom 7.72 338 *e*P Pn 21 48 06.9 +1.3
DPC *e* 21 49 31.8
DPC MLR MLR
comp=Z,300nm,8.5s
DPC Dobruska-Polom 7.72 338 Pn Pn 21 48 06.9 +1.3
DPC Sn Sn 21 49 31.8 -1.0
GULT Gulveren 7.80 108 *e*P Pn 21 48 07.5 +0.7
GOPC GO Pecny, Ondr 7.82 330 *e*PN Pn 21 48 07.6 +0.6
GOPC AMS AMS 21 51 50.0
comp=Z,300nm,6.4s
GOPC GO Pecny, Ondr 7.82 330 *e*P Pn 21 48 07.6 +0.6
GOPC MLR MLR
comp=Z,300nm,6.4s
GOPC GO Pecny, Ondr 7.82 330 Pn Pn 21 48 07.6 +0.6
MOTA Moosalm 7.94 304 *i* P Pn 21 48 10.5 +1.8
comp=Z,14nm,0.3s,SNR=36
UPC Upice 7.95 337 AMS AMS 21 51 50.0
comp=Z,300nm,11.7s
PRU Pruhonice 7.97 330 *e*PN Pn 21 48 06.6 -2.4
PRU *ex* x 21 49 51.2
PRU AMS AMS 21 52 30.0
comp=Z,300nm,11.3s
PRU Pruhonice 7.97 330 *e*P Pn 21 48 06.6 -2.4
PRU *e* 21 49 51.2
PRU MLR MLR
comp=Z,300nm,11.3s
PRU Pruhonice 7.97 330 Pn Pn 21 48 06.6 -2.4
PRU *e*S Sn 21 49 51.2 +12
FETA Feichten 8.03 301 *i* P Pn 21 48 12.8 +2.9
comp=Z,7.8nm,0.4s,SNR=12
RETA Reutte 8.21 304 *i* P Pn 21 48 13.8 +1.4
comp=Z,11nm,0.4s
PVCC Panska Ves 8.41 332 *e*PN Pn 21 48 16.4 +1.3
PVCC AMS AMS 21 52 10.0
comp=Z,400nm,5.8s
PVCC Panska Ves 8.41 332 *e*P Pn 21 48 16.4 +1.3
PVCC MLR MLR
comp=Z,400nm,5.8s
PVCC Panska Ves 8.41 332 Pn Pn 21 48 16.4 +1.3
DAVOX Davos/Dischmat 8.48 298 Pn Pn 21 48 17.4 +1.3
comp=Z,2.4nm,0.3s,baz=114,slow=17,SNR=19
DAVOX Sn Sn 21 49 52.5 +0.8
comp=Z,0.2nm,0.3s,baz=172,slow=23,SNR=1.8
DAVOX Lg Lg 21 50 43.3
comp=Z,0.2nm,0.3s,baz=301,slow=16,SNR=3.1
IDI Anoyia 8.58 157 Pn Pn 21 48 15.9 -1.5
comp=Z,0.3nm,0.3s,baz=296,slow=9.6,SNR=6.5
DAVA Damuels 8.67 301 *i* P Pn 21 48 20.5 +1.8
comp=Z,5.6nm,0.2s
TUE Stuetta 8.72 296 *e*Pn Pn 21 48 21.1 +1.6
comp=Z,13nm,0.7s
TUE Stuetta 8.72 296 *e*Pn Pn 21 48 21.1 +1.6
comp=Z,13nm,0.7s
BRG Berggiesshubel 8.92 331 PN Pn 21 48 24.5 +2.5
BRG *e* 21 49 01.7
BRG *e* 21 50 27.9
comp=Z,9.1nm,1.0s
comp=N,249nm,11.6s
comp=E,242nm,11.4s
comp=Z,256nm,9.7s
BRG Berggiesshubel 8.92 331 P Pn 21 48 24.5 +2.5
BRG pmax pmax
comp=Z,9.0nm,1.0s
BRG MLR MLR
comp=N,249nm,11.6s
BRG MLR MLR
comp=E,242nm,11.4s
BRG MLR MLR
comp=Z,256nm,9.7s
BRG Berggiesshubel 8.92 331 P Pn 21 48 24.5 +2.5
comp=Z,256nm,9.7s
NKC Novy Kostel 9.01 324 AMS AMS 21 52 00.0
comp=Z,300nm,7.2s
SEV Sevastopol' 9.40 78⇓ *i*P Pn 21 48 27.3 -1.3
SEV *e* 21 50 08.1
SEV pmax pmax
comp=Z,8.0nm,0.6s
SEV smax smax
comp=N,10.0nm,0.5s
SEV smax smax

comp=E,4.0nm,0.5s
SEV Sevastopol' 9.40 78 *i* P **Pn 21 48 27.3 -1.3**
comp=E,8.0nm,0.6s
SEV *e*S **Sn 21 50 08.1 -5.9**
KIEV Kiev 9.40 35 *i* P **Pn 21 48 30.9 +2.3**
KIEV pmax pmax
comp=Z,3.0nm,0.7s
KIEV Kiev 9.40 35 *e*Pn **Pn 21 48 28.6 0.0**
comp=Z,3.8nm,0.8s
KIEV Kiev 9.40 35 *i* P **Pn 21 48 30.9 +2.3**
comp=Z,3.0nm,0.7s
KIEV Kiev 9.40 35 *e*Pn **Pn 21 48 28.6 0.0**
comp=Z,3.8nm,0.8s
AKASG Malin Array Be 9.41 35 Pn **Pn 21 48 28.0 -0.7**
comp=Z,0.6nm,0.3s,baz=221,slow=12,SNR=8.2
AKASG Lg Lg 21 51 07.3
comp=Z,0.4nm,0.3s,baz=222,slow=29,SNR=4.6
AKASG Malin Array Be 9.41 35 *e*P **Pn 21 48 31.3 +2.6**
AKASG pmax pmax
comp=Z,1.0nm,0.3s
AKASG Malin Array Be 9.41 35 *e*P **Pn 21 48 31.3 +2.6**
comp=Z,1.0nm,0.3s
CLL Collm 9.62 329 *e*Pn **Pn 21 48 32.0 +0.4**
CLL *e*Sn Sn 21 50 02.0 -17
CLL *e* 21 50 52.0
CLL *e*Sg 21 51 30.0
CLL Lm MLR 21 52 00.0
comp=Z,100nm,19.7s
CLL Collm 9.62 329 *e*P **Pn 21 48 32.0 +0.4**
CLL Collm 9.62 329 *e*P **Pn 21 48 32.0 +0.4**
MOX Moxa 9.67 323 P **Pn 21 48 36.2 +3.9**
MOX pmax pmax
comp=Z,9.0nm,1.4s
MOX Moxa 9.67 323 P **Pn 21 48 36.2 +3.9**
comp=Z,9.0nm,1.4s
SPAK Spaichingen-Ko 9.68 304 P **Pn 21 48 32.6 +0.1**
SBF Sospel 9.70 278 *e*Pn **Pn 21 48 30.4 -2.4**
SBF Sospel 9.70 278 *e*Pn **Pn 21 48 30.4 -2.4**
SIM Simferopol' 9.75 75 *de*P **Pn 21 48 33.9 +0.5**
SIM *e*S **Sn 21 50 23.0 +0.4**
SIM pmax pmax
comp=Z,36nm,1.1s
SIM MLR MLR
comp=N,100nm,20.0s
SIM Simferopol' 9.75 75 *e*P **Pn 21 48 33.9 +0.5**
comp=N,36nm,1.1s
SIM *e*S **Sn 21 50 23.0 +0.4**
comp=N,100nm,20.0s
BFO Black Forest 10.05 305 *e*P **Pn 21 48 37.5 -0.1**
BFO pmax pmax
comp=Z,13nm,0.5s
BFO Black Forest 10.05 305 *e*Pn **Pn 21 48 37.5 -0.1**
comp=Z,13nm,0.5s
BFO Black Forest 10.05 305 *e*Pn **Pn 21 48 37.5 -0.1**
comp=Z,13nm,0.5s
FELD Feldberg im Sc 10.07 302 P **Pn 21 48 37.9 0.0**
MBDF Montbardon 10.20 283 *e*Pn **Pn 21 48 36.3 -3.3**
MBDF Montbardon 10.20 283 *e*Pn **Pn 21 48 36.3 -3.3**
BRTR Keskin Array B 10.28 106 Pn **Pn 21 48 42.7 +1.9**
comp=Z,0.1nm,0.3s,baz=284,slow=12,SNR=3.0
LPG La Plagne 10.28 287 *e*P **Pn 21 48 42.2 +1.2**
LPG *e*Sn Sn 21 50 26.0 -10
comp=Z,1.9nm,0.4s
LPG La Plagne 10.28 287 *e*P **Pn 21 48 42.2 +1.2**
LPG *e*Sn Sn 21 50 26.0 -10
comp=Z,0.9nm,0.4s
FRF La Foret Royal 10.29 276 *e*Pn **Pn 21 48 38.5 -2.2**
FRF La Foret Royal 10.29 276 *e*Pn **Pn 21 48 38.5 -2.2**
LPL La Plagne 10.30 287 *e*P **Pn 21 48 42.8 +1.7**
LPL *e*Sn Sn 21 50 26.7 -10
comp=Z,2.3nm,0.3s
LPL La Plagne 10.30 287 *e*P **Pn 21 48 42.8 +1.7**
LPL *e*Sn Sn 21 50 26.7 -10
comp=Z,1.1nm,0.3s
SUDU Sudak 10.37 76 *e*P **Pn 21 48 40.1 -1.7**
SUDU pmax pmax
comp=Z,4.0nm,0.3s
SUDU Sudak 10.37 76 *e*P **Pn 21 48 40.1 -1.7**
comp=Z,4.0nm,0.3s
LMR La Mourre 10.40 275 *e*Sn Sn 21 50 29.1 -10
comp=Z,1.0nm,0.3s
LMR La Mourre 10.40 275 *e*Sn Sn 21 50 29.1 -10
comp=Z,0.5nm,0.3s
TOD Tromm 10.41 312 P **Pn 21 48 42.2 -0.2**
MOF Molkenrain 10.60 300 P **Pn 21 48 45.4 +0.2**
MOF Molkenrain 10.60 300 P **Pn 21 48 45.4 +0.2**
LOMF Lomont 10.64 297 P **Pn 21 48 45.9 +0.3**
LOMF Lomont 10.64 297 P **Pn 21 48 45.9 +0.3**
LANF Langenberg 10.66 307 P **Pn 21 48 45.8 0.0**
LANF Langenberg 10.66 307 P **Pn 21 48 45.8 0.0**
ECH Echery 10.72 302 P **Pn 21 48 46.4 -0.3**
ECH Echery 10.72 302 P **Pn 21 48 46.4 -0.3**
CDF Champ du Feu 10.73 303 *e*Pn **Pn 21 48 43.1 -3.7**
CDF Champ du Feu 10.73 303 *e*Pn **Pn 21 48 43.1 -3.7**
HINF Hinteralfeld 10.77 300 *e*P **Pn 21 48 47.7 +0.3**
HINF *e*Sn Sn 21 50 35.4 -12
comp=Z,3.6nm,0.5s
HINF Hinteralfeld 10.77 300 *e*P **Pn 21 48 47.7 +0.3**
HINF *e*Sn Sn 21 50 35.4 -12
comp=Z,1.8nm,0.5s
ORIF Oris-en-Rattie 10.84 284 *e*Pn **Pn 21 48 46.0 -2.4**
ORIF Oris-en-Rattie 10.84 284 *e*Pn **Pn 21 48 46.0 -2.4**
CABF La Chapelle 10.93 293 *e*P **Pn 21 48 51.2 +1.5**
CABF La Chapelle 10.93 293 *e*P **Pn 21 48 51.2 +1.5**
HAU Haudompre 11.15 300 *e*P **Pn 21 48 53.1 +0.5**
HAU *e*Sn Sn 21 50 45.7 -11
comp=Z,6.4nm,0.7s
HAU Haudompre 11.15 300 *e*P **Pn 21 48 53.1 +0.5**
HAU *e*Sn Sn 21 50 45.7 -11
comp=Z,3.2nm,0.7s
VIVF Saint-Julien-l 11.70 283 *e*Pn **Pn 21 48 58.2 -1.8**
VIVF Saint-Julien-l 11.70 283 *e*Pn **Pn 21 48 58.2 -1.8**
PAGF Fort de Pagny 11.74 302 *e*P **Pn 21 49 02.4 +1.9**
PAGF Fort de Pagny 11.74 302 *e*P **Pn 21 49 02.4 +1.9**
ANN Anapa 12.09 77 *e*P **Pn 21 49 04.7 -0.7**
ANN *e*S **Sn 21 51 20.2 +0.1**
ANN pmax pmax
comp=Z,35nm,1.0s
ANN Anapa 12.09 77 *e*P **Pn 21 49 04.7 -0.7**
comp=Z,35nm,1.0s
ANN *e*S **Sn 21 51 20.2 +0.1**
LOR Lormes 12.57 294 *e*Pn **Pn 21 49 09.4 -2.5**
LOR Lormes 12.57 294 *e*Pn **Pn 21 49 09.4 -2.5**
AVF Avril sur Loir 12.82 292 *e*P **Pn 21 49 15.3 0.0**
AVF Avril sur Loir 12.82 292 *e*P **Pn 21 49 15.3 0.0**
VSR Storozhevoye 14.78 51 *e*P **Pn 21 49 41.3 -0.8**
VSR pmax pmax
comp=Z,6.0nm,0.9s
MMAI Mount Meron Ar 15.38 127 Pn **P 21 49 52.7 -2.1**
comp=Z,0.2nm,0.3s,baz=326,slow=12,SNR=2.6
MMAI LR LR 21 56 02.4
comp=Z,60nm,18.6s,baz=75,slow=38
VSU Vasula 15.67 12 *i* P **P 21 49 55.8 -2.0**
VSU pmax pmax
comp=Z,82nm,1.3s
VSU Vasula 15.67 12 *i* P **P 21 49 55.8 -2.0**
comp=Z,82nm,1.3s
OBN Obninsk 15.68 35 *e*P **Pn 21 49 54.1 +0.2**
OBN *i* S **Sn 21 52 42.0 -5.3**
OBN pmax pmax
comp=Z,16nm,1.4s
OBN MLR MLR
comp=Z,46nm,14.0s
KIV Kislovodsk 15.89 80 *e*P **Pn 21 49 57.2 +0.4**
KIV pmax pmax
comp=Z,3.0nm,1.0s
KIV MLR MLR
comp=Z,20nm,12.0s
KVAR Kislovodsk Arr 15.89 80 Pn **Pn 21 49 56.8 -0.1**
baz=192,slow=9.4,SNR=2.3
KVAR LR LR 21 58 05.8
comp=Z,37nm,18.3s,baz=101,slow=45
KBZ Khabaz 16.06 81 LR LR 21 57 50.4
comp=Z,46nm,19.4s,baz=230,slow=43
HFS Hagfors 17.44 348 P **P 21 50 16.4 -1.1**
comp=Z,0.3nm,0.3s,baz=161,slow=9.4,SNR=8.7
HFS LR LR 21 56 57.3
comp=Z,71nm,18.6s,baz=160,slow=37
EIL Elat 17.69 135 P **P 21 50 23.9 +3.5**
comp=Z,0.1nm,0.3s,baz=347,slow=14,SNR=2.2
GNI Garni 18.15 92 LR LR 21 58 38.0
comp=Z,33nm,18.0s,baz=282,slow=41
FINES FINESS Array B 18.48 8 P **P 21 50 27.7 -1.3**
comp=Z,0.2nm,0.3s,baz=210,slow=11,SNR=9.0
FINES FINESS Array B 18.48 8 *e*P **Pn 21 50 30.8 +1.7**

NB2 NORSAR Subarra 18.71 345 P **Pn 21 50 33.0 +1.1**
comp=Z,1.3nm,0.7s,baz=159,slow=11
NB2 NORSAR Subarra 18.71 345 P **Pn 21 50 33.0 +1.1**
comp=Z,1.3nm,0.7s,SNR=4.3
NOA NORSAR Array B 18.71 345 P **P 21 50 29.1 -2.4**
comp=Z,0.1nm,0.3s,baz=156,slow=14,SNR=2.9
NOA LR LR 21 58 08.4
comp=Z,24nm,18.1s,baz=70,slow=38
NOA NORSAR Array B 18.71 345 *e*P **Pn 21 50 32.5 +0.6**
NOA NORSAR Array B 18.71 345 *e*P **Pn 21 50 32.5 +0.6**
EKA Eskdalemuir Ar 19.61 316 P **Pn 21 50 41.7 -1.1**
baz=102,slow=12,SNR=3.8
KLMR Klimovskoe 20.91 26 *e*P Pn 21 50 55.9 -2.1
KLMR pmax pmax
comp=Z,16nm,1.1s
KLMR Klimovskoe 20.91 26 *e*P Pn 21 50 55.9 -2.1
comp=Z,16nm,1.1s
AKTO Aktyubinsk 26.25 61 LR LR 22 02 32.3
comp=Z,33nm,20.9s,baz=290,slow=37
ARCES ARCESS Array B 26.45 4 P **P 21 51 50.9 +1.1**
comp=Z,3.3nm,0.8s,baz=185,slow=7.2,SNR=5.1
ARCES LR LR 22 03 17.4
comp=Z,73nm,18.5s,baz=136,slow=39
ARCES ARCESS Array B 26.45 4 *e*P **P 21 51 51.8 +2.0**
ARCES pmax pmax
comp=Z,4.0nm,0.9s
ARU Arti 27.31 48 P **P 21 51 58.9 +1.3**
comp=Z,1.3nm,0.4s,baz=266,slow=5.4,SNR=4.9
ARU LR LR 22 02 35.6
comp=Z,59nm,18.8s,baz=252,slow=36
ARU Arti 27.31 48 *e*P **P 21 52 00.3 +2.7**
TORD Torodi Ar. Bea 34.22 214 P **P 21 52 59.0 +0.1**
comp=Z,0.6nm,0.7s,baz=12,slow=8.0,SNR=4.7
ZALV Zalesovo Beam 42.29 52 P **P 21 54 06.1 -0.3**
comp=Z,2.2nm,0.7s,baz=280,slow=9.9,SNR=11
ZALV Zalesovo Beam 42.29 52 *e*P **P 21 54 09.2 +2.8**
ZALV pmax pmax
comp=Z,2.0nm,0.7s
MKAR Makanchi Array 42.65 63 P **P 21 54 09.4 -0.2**
comp=Z,0.7nm,0.7s,baz=289,slow=7.6,SNR=5.6
MKAR LR LR 22 12 59.0
comp=Z,27nm,19.2s,baz=330,slow=38
MKAR Makanchi Array 42.65 63 *e*P **P 21 54 11.8 +2.2**
MKAR pmax pmax
comp=Z,1.0nm,0.7s
DBIC Dimbokro 42.86 219 P **P 21 54 10.7 -0.8**
comp=Z,2.0nm,0.5s,baz=27,slow=9.0,SNR=5.4
SONM Songino Array 57.17 53 P **P 21 56 00.6 +0.6**
comp=Z,0.3nm,0.4s,baz=298,slow=6.7,SNR=3.3
BILL Bilibino 66.03 13 *e* P **P 21 57 02.8 +3.5**
BILL *e* 21 59 27.4
BILL *e*PPP PPP 22 00 57.2
BILL *i* S S 22 06 15.2 +29
BILL pmax pmax
comp=Z,3.0nm,1.1s
BILL MLR MLR
comp=Z,76nm,20.0s
BILL Bilibino 66.03 13 *e*P **P 21 57 02.8 +3.5**
comp=Z,3.0nm,1.1s
YKA Yellowknife Ar 68.69 340 P **P 21 57 17.9 +1.7**
comp=Z,0.2nm,0.5s,baz=36,slow=5.3,SNR=3.2
ILAR Eielson Array 71.87 354 P **P 21 57 37.0 +1.3**
comp=Z,0.3nm,0.6s,baz=8.7,slow=6.0,SNR=4.0
ILAR Eielson Array 71.87 354 *e*P P 21 57 39.8 +4.1
ILAR Eielson Array 71.87 354 P **P 21 57 37.0 +1.3**
DLBC Dease Lake 75.80 345 LR LR 22 31 34.3
comp=Z,50nm,19.6s,baz=284,slow=36

ISCJB ***14*** *21:47:44.9±0.2, 52°09'N±0°04'×171°63'W±0°03, h44km, mb4.5/70, MS3.4/19, Error ellipse: s-maj=6.5km s-min=2.5km az=167.5*
IDC ***14*** *21:47:45.0±3.6, 52°24'N×171°72'W, h33km±26km, mb3.9/20, mb1 4.0/22, mb1mx3.8/60, mbtmp4.0/22, ML3.6/2, MS3.3/20, Ms1 3.3/20, ms1mx3.2/47, Error ellipse: s-maj=22.3km s-min=11.8km az=172.0*
NEIC ***14*** *21:47:47.1±0.4, 52°19'N×171°70'W, h52km±3km, mb4.5/68, ML4.1(AEIC), Error ellipse: s-maj=7.1km s-min=2.7km az=165.0*
ISC 14 21:47:46.3±0.5, 52°17'N±0°09'×171°64'W±0°03, h44km, n158, s169/159, mb4.5/70, MS3.4/19, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOSE	**Korovin Southe**	**1.49**	**278**	P	**Pn**	**21 48 12.0**	**+1.4**
KOFP	**Korovin Flat P**	**1.51**	**275**	P	**Pn**	**21 48 11.3**	**+0.4**
KONE	**Korovin Northe**	**1.54**	**279**	P	**Pn**	**21 48 12.4**	**+1.2**
KOKV	**Korovin Volcan**	**1.56**	**278**	P	**Pn**	**21 48 12.7**	**+1.1**
KOKV				S	**Sn**	**21 48 33.1**	**+2.4**
KOKL	**Mount Kliuchef**	**1.58**	**277**	P	**Pn**	**21 48 12.6**	**+0.8**
NIKH	**Nikolski High**	**1.88**	**64**	*e*Pn	**Pn**	**21 48 14.2**	**-1.7**
OKAK	**Okmok**	**2.44**	**53**	P	**Pn**	**21 48 23.1**	**-0.4**
OKWR	**Okmok West Rim**	**2.44**	**57**	P	**Pn**	**21 48 24.7**	**+1.1**
OKTU	**Okmok Mt. Tuli**	**2.50**	**59**	P	**Pn**	**21 48 24.7**	**+0.2**
OKER	**Okmok East Rim**	**2.53**	**58**	P	**Pn**	**21 48 25.9**	**+1.0**
GSMY	**Great Sitkin M**	**2.73**	**269**	P	**Pn**	**21 48 27.6**	**+0.1**
GSTD	**Great Sitkin T**	**2.78**	**269**	P	**Pn**	**21 48 29.6**	**+1.3**
GSTD				S	**Sn**	**21 49 01.1**	**+0.5**
GSCK	**Great Sitkin C**	**2.79**	**269**	P	**Pn**	**21 48 28.5**	**+0.1**
ETKA	**Kagalaska Isla**	**2.96**	**266**	P	**Pn**	**21 48 31.8**	**+1.1**
ADAG	**Mount Adagdak**	**3.07**	**268**	P	**Pn**	**21 48 32.5**	**+0.3**
MCIR	**Makushin Cirqu**	**3.38**	**56**	P	**Pn**	**21 48 37.6**	**+1.1**
MSW	**Makushin Switc**	**3.42**	**57**	P	**Pn**	**21 48 37.7**	**+0.7**
MSW				S	**Sn**	**21 49 18.8**	**+2.6**
MTBL	**Makushin Table**	**3.50**	**57**	P	**Pn**	**21 48 38.6**	**+0.5**
UNV	**Unalaska Valle**	**3.53**	**60**	P	**Pn**	**21 48 38.6**	**+0.1**
UNV				S	**Sn**	**21 49 19.3**	**+0.3**
TAFP	**Tanaga Falls P**	**3.92**	**269**	P	**Pn**	**21 48 44.3**	**+0.4**
TAFP				S	**Sn**	**21 49 30.2**	**+1.4**
AKGG	**Akutan Green G**	**3.96**	**57**	P	**Pn**	**21 48 44.8**	**+0.4**
AKUT	**Akutan**	**4.05**	**59**	*e*Pn	**Pn**	**21 48 47.2**	**+1.7**
AKUT				*e*Sn	**Sn**	**21 49 34.5**	**+2.8**
GAEA	**Gareloi East**	**4.41**	**268**	P	**Pn**	**21 48 51.4**	**+0.8**
WEBT	**Westdahl Beart**	**4.79**	**57**	P	**Pn**	**21 48 56.4**	**+0.6**
WESN	**West Dahl Nort**	**4.86**	**58**	P	**Pn**	**21 48 58.2**	**+1.4**
SPIA	**Saint Paul Isl**	**5.09**	**9**	P	**Pn**	**21 49 01.5**	**+1.7**
SVW2	**Sparrevohn**	**12.54**	**38**	*e*Pn	**Pn**	**21 50 44.2**	**+2.3**
TTA	**Tatalina**	**13.62**	**32**	*e*Pn	**Pn**	**21 50 57.3**	**+0.7**
CAST	**Castle Rocks** 17nm,1.4s	**15.27**	**35**	*e*Pn	**Pn**	**21 51 15.8**	**-2.8**
KTH	**Kantishna Hill** 37nm,1.2s	**15.77**	**36**	*e*Pn	**Pn**	**21 51 25.7**	**+0.7**
SML	**Sawmill** 14nm,1.0s	**15.86**	**43**	*e*Pn	**P**	**21 51 28.0**	**-1.3**
SCM	**Sheep Creek Mo** 19nm,1.0s	**16.30**	**44**	*e*Pn	**Pn**	**21 51 32.4**	**+0.6**
RND	**Reindeer** 17nm,1.0s	**16.45**	**38**	*e*Pn	**P**	**21 51 35.9**	**0.0**
KLU	**Klutina** 6.8nm,0.9s	**16.78**	**46**	*e*Pn	**Pn**	**21 51 37.2**	**-0.6**
DHY	**Denali Highway** 5.4nm,0.9s	**16.85**	**40**	*e*Pn	**P**	**21 51 41.2**	**+0.8**
DHY				*e*Sn	**Sn**	**21 54 34.6**	**-10**
RAGM	**Ragged Mountai** 16nm,0.6s	**16.98**	**50**	*e*Pn	**Pn**	**21 51 39.8**	**-0.5**
BMRM	**Bremner River** 9.9nm,0.8s	**17.19**	**49**	*e*Pn	**Pn**	**21 51 41.3**	**-1.7**
WRH	**Wood River Hil** 13nm,1.1s	**17.32**	**36**	*e*Pn	**P**	**21 51 46.6**	**+1.2**
CCB	**Clear Creek Bu** 13nm,1.3s	**17.52**	**35**	*e*Pn	**P**	**21 51 48.5**	**+0.9**
MDM	**Murphy Dome** 11nm,1.0s	**17.55**	**34**	*e*Pn	**P**	**21 51 49.2**	**+1.2**
CRQM	**Cirque** 12nm,0.7s	**17.81**	**50**	*e*Pn	**P**	**21 51 53.0**	**+2.0**
IL1	**Eielson Array**	**17.92**	**36**	*e*P	**P**	**21 51 53.1**	**+1.1**
ILAR	**Eielson Array** 0.2nm,0.3s,baz=232,slow=8.9,SNR=9.5	**17.92**	**36**	P	**Pn**	**21 51 48.9**	**-2.9**
ILAR				LR	LR	21 59 26.5	
	comp=Z,147nm,19.0s,baz=226,slow=39						
ILB	**Eielson Array**	**17.92**	**36**	*e*P	**P**	**21 51 52.4**	**+0.4**
COLD	**Coldfoot**	**18.41**	**27**	*e*P	**Pn**	**21 51 58.8**	**+1.1**
COLD				*es*P	**pP**	**21 52 07.9**	**+0.1**
DOT	**Dot Lake** 21nm,0.9s	**18.44**	**41**	*e*P	**Pn**	**21 51 59.9**	**+1.6**
DOT				*e*Sn	**Sn**	**21 55 23.1**	**0.0**
PETK	**Petropavlovsk-** 0.4nm,0.3s,baz=84,slow=13,SNR=4.3	**18.57**	**285**	P	**Pn**	**21 51 59.6**	**-0.2**
PETK				LR	LR	21 59 25.2	
	comp=Z,68nm,20.0s,baz=97,slow=38						
PCA	**Pinnacle** 26nm,0.8s	**19.05**	**53**	*e*P	**P**	**21 52 04.7**	**+0.1**
EGAK	**Eagle** 8.2nm,0.8s	**20.07**	**39**	*e*P	**P**	**21 52 16.1**	**+0.6**

DAWY Dawson 20.51 42 *e*P **P 21 52 21.2 +0.9**
1.5nm,0.5s
HYT Haines Junctio 20.52 52 *e*P Pn 21 52 21.9 -1.2
17nm,0.8s
SKAG Skagway 21.44 56 *e*P **P 21 52 30.6 +0.2**
13nm,0.6s
SEY Seymchan 21.79 314 P **P 21 52 33.5 -0.5**
0.9nm,0.5s,baz=48,slow=22,SNR=1.9
MA2 Magadan 22.10 304 LR LR 22 02 57.9
comp=Z,49nm,18.2s,baz=112,slow=42
DLBC Dease Lake 24.18 59 P **P 21 52 59.7 +1.5**
18nm,1.1s,baz=278,slow=8.6,SNR=14
DLBC LR LR 22 03 45.6
comp=Z,62nm,18.9s,baz=284,slow=40
DLBC Dease Lake 24.18 59 *e*P **P 21 53 00.0 +1.8**
57nm,1.5s
INK Inuvik 24.29 34 P **P 21 52 58.7 -0.2**
1.6nm,0.5s,baz=265,slow=11,SNR=5.5
INK LR LR 22 03 44.8
comp=Z,109nm,19.0s,baz=258,slow=40
INK Inuvik 24.29 34 *e*P **P 21 52 58.8 -0.2**
6.1nm,1.0s
BBB Bella Bella 26.40 73 LR LR 22 02 00.8
comp=Z,95nm,18.7s,baz=292,slow=32
LLLB Lillooet 30.61 73 *e*P **P 21 53 56.7 +0.9**
6.5nm,0.7s
YKA Yellowknife Ar 31.42 48 P **P 21 54 02.2 -0.6**
0.6nm,0.4s,baz=272,slow=8.1,SNR=9.7
YKA PcP **PcP 21 56 55.9 +0.8**
0.8nm,0.8s,baz=270,slow=2.4,SNR=6.4
YKA LR LR 22 07 50.5
comp=Z,20nm,20.4s,baz=0.0,slow=38
D05A Enumclaw 31.99 79 *e*P **P 21 54 06.9 -1.1**
47nm,1.4s
B08A Colville Reser 33.05 75 *e*P **P 21 54 18.5 +1.2**
7.8nm,0.8s
G06A Carlson Farm, 33.77 81 *e*P **P 21 54 24.9 +1.3**
19nm,1.5s
G06A *e*S **S 21 59 50.5 +6.6**
C09A Chrisman Ranch 33.94 76 *e*P **P 21 54 26.3 +1.3**
12nm,1.1s
NEW Newport 34.41 74 P **P 21 54 29.4 +0.3**
14nm,0.9s,baz=302,slow=7.2,SNR=12
NEW Newport 34.41 74 *e*P **P 21 54 29.7 +0.6**
15nm,0.9s
EDM Edmonton 34.50 65 *e*P **P 21 54 30.8 +1.0**
21nm,0.8s
K05A Summer Lake 34.94 85 *e*P **P 21 54 35.9 +2.0**
20nm,1.1s
BSMT Bassoo Peak 35.99 74 *e*P **P 21 54 43.7 +0.8**
BLMT Blacktail Moun 36.16 73 *e*P **P 21 54 45.3 +0.9**
JTMT Jette 36.34 74 *e*P **P 21 54 47.0 +1.2**
H11N2 WAKE ISLAND Hy 36.45 215 T T 22 33 19.6
baz=22,slow=76,SNR=49
H11N3 WAKE ISLAND Hy 36.46 215 T T 22 33 20.1
baz=22,slow=76,SNR=46
H11N1 WAKE ISLAND Hy 36.47 215 T T 22 33 20.5
baz=22,slow=76,SNR=46
WVOR Wild Horse Val 36.49 84 *e*P **P 21 54 48.8 +1.7**
8.5nm,0.8s
MSO Missoula 36.99 75 *e*P **P 21 54 51.7 +0.4**
14nm,1.2s
SLMT Seeley Lake 37.05 74 *e*P **P 21 54 52.6 +0.7**
SLMT *e*PcP **PcP 21 57 15.2 +3.5**
CHMT Chamberlain Mo 37.36 74 *e*P **P 21 54 54.6 +0.1**
USRK Ussuriysk Ar. 37.56 281 LR LR 22 10 36.6
comp=Z,37nm,18.7s,baz=110,slow=37
PAHR Pah Rah Range 37.62 88 *e*P **P 21 54 58.2 +1.5**
9.9nm,0.9s
H11S1 WAKE ISLAND Hy 37.65 215 T T 22 34 53.5
baz=22,slow=76,SNR=57
H11S2 WAKE ISLAND Hy 37.66 215 T T 22 34 53.2
baz=22,slow=76,SNR=23
H11S3 WAKE ISLAND Hy 37.66 215 T T 22 34 51.9
baz=22,slow=76,SNR=23
MJAR Matsushiro Arr 38.29 266 P **P 21 55 02.3 +0.1**
0.6nm,0.3s,baz=49,slow=7.6,SNR=4.9
MJAR LR LR 22 08 38.8
comp=Z,68nm,21.9s,baz=90,slow=33
MJB9 Matsu-Tunnel 38.29 266 *e*P **P 21 55 00.3 -2.0**
2.6nm,1.1s
WAKR Walker 38.32 90 *e*P **P 21 55 04.6 +1.9**
7.6nm,0.9s
MCMT McKenzie Canyo 38.69 77 *e*P **P 21 55 06.3 +0.5**
BOZ Bozeman (W) 38.98 75 *e*P **P 21 55 08.4 +0.3**
16nm,1.4s
YHH Holmes Hill 39.90 76 *e*P **P 21 55 17.2 +1.2**
17nm,1.2s
RLMT Red Lodge 40.66 74 *e*P **P 21 55 23.0 +0.8**
18nm,1.0s
R11A Troy Canyon, C 40.78 87 *e*P **P 21 55 23.8 +0.6**
5.8nm,1.1s
TPNV Topopah Spring 41.26 89 *e*P **P 21 55 28.1 +1.0**
8.4nm,0.9s
DUG Dugway, Tooele 41.35 83 *e*P **P 21 55 28.6 +0.8**
8.2nm,1.1s
LAO LASA Array 41.60 71 *e*P **P 21 55 31.1 +1.4**
13nm,0.9s
BW06 Boulder Array 41.81 77 *e*P **P 21 55 32.1 +0.4**
PDAR Pinedale Array 41.81 77 P **P 21 55 31.8 +0.1**
5.8nm,0.8s,baz=305,slow=5.2,SNR=46
PDAR LR LR 22 11 03.1
comp=Z,58nm,18.5s,baz=270,slow=33
GSC Goldstone, Bar 41.98 91 *e*P **P 21 55 33.6 +0.6**
10nm,0.9s
FCC Fort Churchill 42.14 49 *e*P **P 21 55 34.1 +0.3**
8.8nm,0.9s
TMUT Trail Mountain 42.88 83 *e*P **P 21 55 40.8 +0.3**
11nm,1.1s
P17A Butcher Ranch, 43.06 82 *e*P **P 21 55 41.5 -0.3**
7.7nm,1.0s
LCMT Little Creek M 43.07 87 *e*P **P 21 55 41.5 -0.3**
4.3nm,1.0s
K22A Casper 43.70 76 *e*P **P 21 55 47.2 +0.4**
6.3nm,0.8s
W13A Hualapai Mount 43.91 89 *e*P **P 21 55 49.3 +0.6**
3.0nm,0.8s
U15A North Rim 44.03 87 *e*P **P 21 55 50.8 +1.1**
5.1nm,0.8s
KSRS Korea Array 44.04 275 LR LR 22 14 40.8
comp=Z,16nm,18.4s,baz=57,slow=37
O20A White River Ci 44.17 80 *e*P **P 21 55 51.0 +0.2**
24nm,1.2s
RSSD Black Hills 44.31 72 *e*P **P 21 55 51.5 -0.4**
4.0nm,0.8s
PV09 Paradox Valley 44.65 82 *e*P **P 21 55 54.9 +0.2**
PV05 Paradox Valley 44.93 83 *e*P **P 21 55 57.7 +0.9**
JNU Nakatsue 45.06 268 P **P 21 55 56.6 -1.1**
3.5nm,0.8s,baz=264,slow=5.5,SNR=3.3
N23A Red Feather La 45.09 77 *e*P **P 21 55 58.6 +0.4**
6.5nm,1.0s
PV01 Paradox Valley 45.22 82 *e*P **P 21 55 59.2 +0.1**
830nm,0.9s
ULM Lac du Bonnet 45.47 61 P **P 21 56 00.0 -0.7**
5.3nm,0.9s,baz=304,slow=8.0,SNR=4.5
ULM LR LR 22 14 24.0
comp=Z,42nm,20.2s,baz=199,slow=35
SMCO Snowmass 45.53 80 *e*P **P 21 56 01.8 0.0**
9.8nm,0.4s
X16A Lo Mia Camp, P 45.87 88 *e*P **P 21 56 05.0 +0.7**
4.1nm,1.0s
AGMN Agassiz Nation 46.57 63 *e*P **P 21 56 09.3 -0.1**
11nm,1.0s
SDCO Great Sand Dun 47.33 80 *e*P **P 21 56 16.2 +0.4**
5.7nm,1.0s
TUC Tucson 47.70 90 *e*P **P 21 56 18.7 +0.3**
3.6nm,0.8s
ANMO Albuquerque 48.58 84 *e*P **P 21 56 26.2 +0.9**
6.1nm,1.4s
BNM Barren Site 49.01 85 *e*P **P 21 56 29.1 +0.4**
EYMN Ely 49.15 61 *e*P **P 21 56 28.5 -0.9**
4.5nm,0.8s
BJI Beijing 49.50 286 P **P 21 56 30.4 -1.6**
BJI pmax pmax
comp=Z,4.0nm,0.7s
SONM Songino Array 50.20 300 P **P 21 56 36.4 -1.1**
comp=Z,0.2nm,0.3s,baz=37,slow=3.6,SNR=2.4
SONM ScP **ScP 22 01 48.8 +0.7**
comp=Z,0.4nm,0.9s,baz=48,slow=2.1,SNR=2.5
SONM LR LR 22 19 39.3
comp=Z,72nm,18.9s,baz=35,slow=38
MNTX Cornudas Mount 51.44 86 *e*P **P 21 56 47.4 +0.5**
comp=Z,3.2nm,1.1s
MSTX Muleshoe 51.49 82 *e*P **P 21 56 47.3 0.0**
comp=Z,12nm,1.1s
HHC Hu-ho-hao-te 51.68 290 *e*P **P 21 56 48.9 +0.2**
HHC pP pP 21 57 01.8 +0.8
HHC sP sP 21 57 06.8 +0.7

HHC				S	S	22 04 04.5	-2.3	
HHC				pmax	pmax			
	comp=Z,7.0nm,0.7s							
HHC				pmax	pmax			
	comp=Z,78nm,9.4s							
HHC				LR	LR			
	comp=N,80nm,13.5s							
HHC				LR	LR			
	comp=E,100nm,15.4s							
HHC				LR	LR			
	comp=Z,86nm,17.7s							
U34A	**Anderson Ranch**	**52.99**	**76**	*eP*	**P**	**21 56 58.3**	**0.0**	
	comp=Z,20nm,1.0s							
WMOK	**Wichita Mounta**	**53.39**	**79**	*eP*	**P**	**21 57 00.5**	**-0.8**	
	comp=Z,5.2nm,0.9s							
TXAR	**Lajitas Array**	**54.15**	**87**	P	**P**	**21 57 07.0**	**0.0**	
	comp=Z,2.7nm,0.8s,baz=308,slow=6.2,SNR=8.6							
TXAR				LR	LR	22 18 14.8		
	comp=Z,31nm,20.1s,baz=0.0,slow=34							
SCHQ	**Schefferville**	**56.53**	**42**	LR	LR	22 20 40.8		
	comp=Z,80nm,21.5s,baz=280,slow=35							
MIAR	**Mount Ida**	**56.64**	**75**	*eP*	**P**	**21 57 24.3**	**-0.4**	
	comp=Z,15nm,1.0s							
X301	**Greenbrier Sit**	**56.86**	**74**	*eP*	**P**	**21 57 25.4**	**-0.9**	
	comp=Z,13nm,1.2s							
PBMO	**Poplar Bluff**	**56.96**	**71**	*eP*	**P**	**21 57 25.9**	**-1.1**	
	comp=Z,11nm,1.1s							
WLAR	**White Oak Lake**	**57.52**	**76**	*eP*	**P**	**21 57 31.3**	**+0.4**	
	comp=Z,29nm,0.8s							
ARCES	**ARCESS Array B**	**57.96**	**353**	LR	LR	22 24 07.1		
	comp=Z,12nm,18.1s,baz=308,slow=38							
WMQ	**Urumqi**	**62.54**	**307**	*eP*	**P**	**21 58 08.8**	**+3.5**	
MKAR	**Makanchi Array**	**62.92**	**312**	P	**P**	**21 58 07.0**	**-0.7**	
	comp=Z,0.2nm,0.3s,baz=46,slow=6.5,SNR=2.9							
MKAR	**Makanchi Array**	**62.92**	**312**	P	**P**	**21 58 07.0**	**-0.7**	
ZRNK	**Zerenda**	**63.61**	**324**	*eP*	**P**	**21 58 12.0**	**-0.1**	
	comp=Z,7.8nm,1.7s							
ARU	**Arti**	**64.15**	**332**	P	**P**	**21 58 15.3**	**-0.3**	
	comp=Z,0.8nm,0.3s,baz=49,slow=9.4,SNR=3.8							
FINES	**FINESS Array B**	**65.86**	**351**	LR	LR	22 28 18.5		
	comp=Z,18nm,21.4s,baz=23,slow=37							
NOA	**NORSAR Array B**	**67.12**	**358**	LR	LR	22 28 55.4		
	comp=Z,7.2nm,18.3s,baz=350,slow=37							
HFS	**Hagfors**	**67.97**	**357**	P	**P**	**21 58 38.6**	**-1.5**	
	comp=Z,1.6nm,0.7s,baz=35,slow=5.3,SNR=4.2							
QIZ	**Qiongzhong**	**68.20**	**279**	P	**P**	**21 58 40.9**	**-1.2**	
AKTO	**Aktyubinsk**	**69.47**	**329**	P	**P**	**21 58 49.4**	**-0.2**	
	comp=Z,1.1nm,0.6s,baz=43,slow=6.9,SNR=6.1							
KSH	**Kashi**	**71.47**	**311**	*eP*	**P**	**21 59 05.5**	**+3.4**	
KSH				*es*P	PcP	21 59 24.8	+3.4	
KSH				*e*PP	**PP**	**22 01 46.9**	**+6.4**	
KSH				S	**S**	**22 08 20.8**	**+3.5**	
KSH				ScS	**ScS**	**22 09 03.8**	**+0.4**	
KSH				pmax	pmax			
	comp=Z,22nm,4.4s							
KSH				LR	LR			
	comp=Z,130nm,6.3s							
CMAR	**Chiang Mai Arr**	**75.29**	**281**	P	**P**	**21 59 25.2**	**+0.4**	
	comp=Z,2.3nm,0.7s,baz=27,slow=6.9,SNR=18							
CM01	**Chiang Mai Arr**	**75.31**	**281**	*eP*	**P**	**21 59 24.8**	**0.0**	
CM01				*eP*cP	**pP**	**21 59 31.1**	**-6.7**	
AKASG	**Malin Array Be**	**76.00**	**346**	P	**P**	**21 59 26.4**	**-1.8**	
	comp=Z,0.2nm,0.3s,baz=21,slow=8.0,SNR=3.1							
KAPI	**Kappang**	**81.06**	**250**	LR	LR	22 30 04.0		
	comp=Z,23nm,21.6s,baz=68,slow=31							
WRA	**Warramunga Arr**	**85.80**	**230**	P	**P**	**22 00 19.9**	**-0.9**	
	comp=Z,0.8nm,0.9s,baz=34,slow=5.6,SNR=6.1							
BRTR	**Keskin Array B**	**85.87**	**341**	P	**P**	**22 00 21.0**	**-0.2**	
	comp=Z,2.2nm,0.5s,baz=22,slow=8.7,SNR=2.7							
AS01	**Alice Springs**	**89.18**	**228**	*eP*	**P**	**22 00 35.5**	**-1.5**	
ASAR	**Alice Springs**	**89.21**	**228**	P	**P**	**22 00 36.2**	**-1.0**	
	comp=Z,2.3nm,0.8s,baz=27,slow=4.7,SNR=21							
STKA	**Stephens Creek**	**93.16**	**218**	LR	LR	22 36 35.4		
	comp=Z,66nm,20.1s,baz=26,slow=31							
MAW	**Mawson**	**149.85**	**218**	PKPbc	**PKPbc**	**22 07 30.2**	**+0.3**	
	comp=Z,1.3nm,0.9s,baz=221,slow=22,SNR=2.5							
BOSA	**Boshof**	**153.31**	**325**	PKPbc	**PKPbc**	**22 07 38.8**	**-0.5**	
	comp=Z,1.0nm,0.7s,baz=318,slow=2.0,SNR=3.5							

MEX 14 21:49:21.7±0.3, 15°31N×96°14W, h15km, MD3.7, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.46**	**3**	*e*P	Pg	21 49 29.6	-1.3
HUIG				*e*S	Sg	21 49 35.6	-1.4
VHO	**Vista Hermosa**	**1.84**	**342**	*e*P	Pn	21 49 50.0	-3.0
VHO				*i* S	Sn	21 50 11.7	-4.4
PNIG	**Pinotepa**	**2.20**	**300**	*e*P	Pn	21 49 54.1	-3.6
PNIG				*e*S	Sn	21 50 19.8	-4.9
TPIG	**Tehuac#an**	**3.31**	**339**	*i* P	Pn	21 50 07.2	-6.0
TPIG				*i* S	Sn	21 50 49.4	-2.9

*IDC **14** 22:09:54.6±1.8, 30.00S×176.48W, h0km, mb3.9/3, mb1 4.1/4, mb1mx3.8/28, mbtmp3.9/4, ML3.4/1, MS3.5/3, Ms1 3.5/3, ms1mx2.9/33, Error ellipse: s-maj=33.0km s-min=29.5km az=60.0*
*ISCJB **14** 22:09:55.4±0.7, 30.02S±0.06×176.35W±0.08, h24km, mb4.3/11, MS3.5/3, Error ellipse: s-maj=10.0km s-min=9.1km az=28.6*
*NEIC **14** 22:09:55.4±0.5, 30.02S×176.40W, h10km, mb4.2/7, Error ellipse: s-maj=13.1km s-min=9.6km az=150.0*
ISC 14 22:09:57.8±0.7, 29.92S±0.08×176.44W±0.08, h24km, n20, σ1§06/21, mb4.2/11, MS3.5/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.45**	**297**	Pn	**Pb**	**22 10 23.3**	**-0.8**
	126nm,0.3s,baz=82,slow=18,SNR=6.0						
RAO				Sn	**Sb**	**22 10 41.7**	**-0.4**
	334nm,0.3s,baz=103,slow=23,SNR=10.0						
RAO	**Raoul Island**	**1.45**	**297**	*e*Pn	**Pn**	**22 10 22.8**	**+0.3**
RAO				Sn	**Sb**	**22 10 41.7**	**-0.4**
URZ	**Urewera**	**9.88**	**211**	Pn	**Pn**	**22 12 16.0**	**-2.3**
	0.4nm,0.3s,baz=1.0,slow=19,SNR=1.7						
URZ				Sn	**Sn**	**22 14 10.4**	**+1.9**
	1.1nm,0.3s,baz=211,slow=18,SNR=3.9						
RAR	**Rarotonga**	**17.34**	**64**	*e*Pn	**Pn**	**22 13 57.1**	**-1.2**
	16nm,1.0s						
HNR	**Honiara**	**30.04**	**308**	*e*P	**P**	**22 16 05.9**	**+0.8**
	52nm,0.3s						
STKA	**Stephens Creek**	**35.90**	**256**	P	**P**	**22 16 57.5**	**+1.3**
	1.3nm,0.6s,baz=111,slow=11,SNR=5.1						
PMG	**Port Moresby**	**39.64**	**293**	*e*P	**P**	**22 17 28.3**	**+0.5**
	5.8nm,0.8s						
ASAR	**Alice Springs**	**44.48**	**266**	P	**P**	**22 18 07.1**	**-0.4**
	0.5nm,0.6s,baz=103,slow=6.4,SNR=6.5						
ASAR				LR	LR	22 36 37.7	
	comp=Z,50nm,19.0s,baz=60,slow=36						
WRAB	**Tennant Creek**	**45.43**	**271**	*e*P	**P**	**22 18 14.4**	**-0.5**
	2.3nm,0.9s						
WRA	**Warramunga Arr**	**45.43**	**271**	P	**P**	**22 18 13.7**	**-1.3**
	1.5nm,0.5s,baz=112,slow=6.9,SNR=20						
CASY	**Casey**	**56.19**	**208**	*e*P	**P**	**22 19 35.6**	**+0.3**
	0.6nm,1.0s						
GUMO	**Guam**	**57.11**	**314**	LR	LR	22 40 52.6	
	comp=Z,71nm,19.2s,baz=250,slow=32						
MIDW	**Midway**	**57.82**	**359**	*e*P	**P**	**22 19 47.7**	**+0.5**
	47nm,0.6s						
PMSA	**Palmer Station**	**72.14**	**155**	LR	LR	22 47 10.6	
	comp=Z,19nm,18.7s,baz=140,slow=31						
KKM	**Kota Kinabalu**	**73.70**	**287**	*e*P	**P**	**22 21 28.9**	**-1.2**
	1.7nm,0.6s						
MAJO	**Matsushiro**	**78.63**	**324**	*e*P	**P**	**22 21 58.4**	**+0.8**
	2.2nm,0.6s						
ANMO	**Albuquerque**	**92.23**	**51**	*e*P	**P**	**22 23 05.9**	**0.0**
	0.5nm,0.7s						
ARU	**Arti**	**133.57**	**321**	*e*PKPdf	**PKPdf**	**22 29 12.2**	**+0.6**
FINES	**FINESS Array B**	**145.14**	**341**	PKPbc	**PKPdf**	**22 29 32.4**	**-0.1**
	2.9nm,0.8s,baz=339,slow=4.7,SNR=8.5						
AKASG	**Malin Array Be**	**151.72**	**324**	PKPbc	**PKPbc**	**22 29 50.9**	**+1.0**
	0.2nm,0.2s,baz=62,slow=2.0,SNR=4.7						

*ISCJB **14** 22:17:36.4±0.4, 24.23N±0.02×121.82E±0.02, h1km±3km, Error ellipse: s-maj=3.8km s-min=2.3km az=139.9*
*JMA **14** 22:17:36.4±0.1, 24.24N×121.76E, h0km, M2.8*
*TAP **14** 22:17:36.8, 24.25N×121.76E, h14km, ML3.5, B*
ISC 14 22:17:37.1±0.8, 24.23N±0.02×121.79E±0.02, h12km±6km, n54, σ0§73/86, 6C-2D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.09**	**331**	P	**Pg**	**22 17 40.2**	**+0.4**
	baz=346						
EHP				S	**Sg**	**22 17 42.4**	**+0.6**
	baz=346						
ENA	**Nanau**	**0.20**	**348**	⇑*i*P	**Pg**	**22 17 41.1**	**-0.3**
	baz=355						
ENA				*i* S	**Sg**	**22 17 44.0**	**-0.3**
	baz=355						
TWD	**Chiawan**	**0.23**	**229**	*i* P	**Pg**	**22 17 41.9**	**-0.1**
	baz=227						
TWD				*i* S	**Sg**	**22 17 45.2**	**-0.1**
	baz=227						
HWA	**Hwalien**	**0.30**	**213**	*e*P	**Pb**	**22 17 43.9**	**-0.6**
	baz=216						
TWC	**Suao**	**0.38**	**9**	⇑*i*P	**Pg**	**22 17 44.4**	**-0.2**
	baz=5.0						
TWC				*i* S	**Sg**	**22 17 49.5**	**-0.2**
	baz=5.0						
NNS	**Nan Shan**	**0.43**	**299**	⇑*i*P	**Pg**	**22 17 45.2**	**-0.4**
	baz=299						
NNS				*i* S	**Sg**	**22 17 50.8**	**-0.5**
	baz=299						
ENTT	**Nioudou**	**0.45**	**334**	⇑*i*P	**Pg**	**22 17 45.9**	**-0.1**
	baz=335						
ENTT				*i* S	**Sg**	**22 17 51.8**	**-0.2**
	baz=335						
WHF	**Hehuan Shan**	**0.48**	**260**	P	**Pg**	**22 17 46.2**	**-0.5**
	baz=258						
WHF				*e*S	**Sg**	**22 17 52.3**	**-0.9**
	baz=258						
TWE	**Neicheng**	**0.50**	**347**	⇑*i*P	**Pg**	**22 17 46.7**	**-0.2**
	baz=350						
TWE				*i* S	**Sg**	**22 17 53.3**	**-0.2**
	baz=350						
ESL	**Shilin**	**0.53**	**218**	⇓P	**Pg**	**22 17 47.2**	**-0.3**
	baz=221						
ESL				*e*S	**Sg**	**22 17 54.5**	**+0.1**
	baz=221						
ILA	**Ilan**	**0.53**	**356**	*e*P	**Pg**	**22 17 47.0**	**-0.5**
	baz=353						
ILA				*e*S	**Sb**	**22 17 55.0**	**-0.9**
	baz=353						
TWT	**Tachien**	**0.56**	**272**	P	**Pg**	**22 17 48.0**	**0.0**
	baz=271						
TWT				S	**Sg**	**22 17 55.0**	**-0.5**
	baz=271						
NSK	**Sanguang**	**0.59**	**318**	*i* P	**Pg**	**22 17 48.1**	**-0.5**
	baz=319						
NSK				S	**Sg**	**22 17 55.5**	**-0.9**
	baz=319						
EGS		**0.62**	**12**	*e*P	**Pg**	**22 17 49.3**	**+0.1**
	baz=22						
TWA	**Mucha**	**0.77**	**346**	*e*P	**Pg**	**22 17 51.3**	**-0.6**
	baz=347						
TWB1	**Santiao Chiao**	**0.79**	**13**	*e*P	**Pg**	**22 17 52.0**	**-0.4**
	baz=9.0						
NSTT	**Nanjuang**	**0.82**	**299**	*e*P	**Pb**	**22 17 53.0**	**-0.2**
	baz=299						
NSTT				S	**Sg**	**22 18 02.6**	**-1.0**
	baz=299						
NWF	**Wu-fen Shan**	**0.83**	**360**	*e*P	**Pg**	**22 17 52.8**	**-0.5**
	baz=353						
NWF				*e*S	**Sg**	**22 18 03.6**	**-0.5**
	baz=353						
EHY	**Hungye**	**0.84**	**210**	*e*P	**Pg**	**22 17 52.8**	**-0.6**
	baz=222						
SMLT	**Sun Moon Lake**	**0.88**	**247**	⇑P	**Pg**	**22 17 53.6**	**-0.6**
	baz=239						
SMLT				*e*S	**Sg**	**22 18 05.3**	**-0.4**
	baz=239						
TYC	**Yuchr**	**0.91**	**249**	P	**Pg**	**22 17 54.1**	**-0.6**
	baz=240						
TYC				S	**Sg**	**22 18 05.5**	**-1.0**
	baz=240						
NCU	**National Centr**	**0.91**	**323**	*e*P	**Pn**	**22 17 56.0**	**+0.2**
	baz=323						
TWS1	**Kuangyinshan**	**0.93**	**339**	*e*P	**Pb**	**22 17 55.0**	**-0.1**
	baz=339						
TWQ1	**Liyutan**	**0.93**	**277**	*e*P	**Pn**	**22 17 56.3**	**+0.3**
	baz=277						
NSY	**Sanyi**	**0.95**	**281**	P	**Pn**	**22 17 56.5**	**+0.2**
	baz=281						
NSY				*e*S	**Sb**	**22 18 08.7**	**+0.6**
	baz=281						
TWF1	**Yuli**	**0.99**	**207**	*e*P	**Pg**	**22 17 55.1**	**-1.0**
	baz=219						
TCU	**Taichung**	**1.02**	**265**	*e*P	**Pn**	**22 17 57.6**	**+0.5**
	baz=265						
TWY	**Chenhua**	**1.05**	**351**	*e*P	**Pn**	**22 17 57.7**	**+0.1**
	baz=335						
YUS	**Yu-Shan**	**1.06**	**226**	*e*P	**Pg**	**22 17 56.6**	**-1.1**
	baz=226						
YUS				S	**Sb**	**22 18 12.2**	**+0.5**
	baz=226						
WNT	**Mingjian**	**1.07**	**251**	*e*P	**Pn**	**22 17 58.5**	**+0.6**
	baz=247						
WNT				*e*S	**Sn**	**22 18 13.8**	**+1.2**
	baz=247						
JYNG	**Yonagunijimaku**	**1.08**	**78**	P	**Pg**	**22 17 57.7**	**-0.1**
YOJ	**Yonaguni jima**	**1.14**	**78**	P	**Pb**	**22 17 58.6**	**-0.1**
YOJ				*e*S	**Sn**	**22 18 15.3**	**+0.9**
YOJ	**Yonaguni jima**	**1.14**	**78**	⇓*i*P	**Pb**	**22 17 58.5**	**-0.1**
	baz=67						
ALS	**Alishan**	**1.15**	**231**	*e*P	**Pg**	**22 17 57.8**	**-1.5**
	baz=219						
CHKT	**Chengkung**	**1.19**	**199**	*e*P	**Pb**	**22 17 58.5**	**-1.1**
	baz=186						
CHN5	**Tsauling**	**1.20**	**238**	*e*P	**Pn**	**22 17 60.0**	**+0.3**
	baz=240						
CHN5				S	**Sn**	**22 18 17.1**	**+1.2**
	baz=240						
ELDTW	**Lidau**	**1.26**	**214**	*e*P	**Pn**	**22 17 58.7**	**-1.9**
	baz=201						
CHN4	**Tsaushan**	**1.40**	**231**	P	**Pg**	**22 18 03.6**	**-0.4**
	baz=234						
CHN4				S	**Sg**	**22 18 23.6**	**+1.4**
	baz=234						
STYT	**Tauyuan**	**1.42**	**222**	*e*P	**Pn**	**22 18 02.7**	**-0.1**
	baz=223						
STYT				*e*S	**Sg**	**22 18 24.4**	**+1.5**
	baz=223						
CHY	**Chiayi**	**1.45**	**240**	*e*P	**Pg**	**22 18 05.5**	**+0.6**
	baz=227						
WTP	**Ta-pu**	**1.46**	**228**	*e*P	**Pb**	**22 18 03.8**	**-0.3**
	baz=230						
WTP				*e*S	**Sg**	**22 18 25.2**	**+1.2**
	baz=230						
TWK	**Hsinying**	**1.53**	**231**	*e*P	**Pb**	**22 18 05.1**	**-0.3**
	baz=233						
TWG	**Pinlang**	**1.55**	**205**	*e*P	**Pn**	**22 18 02.0**	**-2.5**
	baz=192						
CHN1	**Nanshi**	**1.56**	**228**	*e*P	**Pb**	**22 18 06.0**	**+0.1**
	baz=232						
CHN1				*e*S	**Sg**	**22 18 27.6**	**+0.4**
	baz=232						
SGST	**Jiashian**	**1.59**	**224**	P	**Pb**	**22 18 06.3**	**-0.1**
	baz=227						
SGST				S	**Sg**	**22 18 28.8**	**+0.5**
	baz=227						
CHN8	**Yiju**	**1.69**	**239**	*e*P	**Pb**	**22 18 07.3**	**-0.8**
	baz=227						
CHN8				*e*S	**Sg**	**22 18 32.2**	**+0.7**
	baz=227						
IRIF	**Iriomote-Funau**	**1.78**	**86**	P	**Pn**	**22 18 07.3**	**-0.3**
IRIF				*e*S	**Sn**	**22 18 30.9**	**+0.8**
ECL	**Taimali**	**1.80**	**205**	*e*P	**Pn**	**22 18 07.3**	**-0.7**
	baz=194						
SSD	**Sandimen**	**1.82**	**216**	*e*P	**Pn**	**22 18 09.3**	**+1.1**
	baz=231						
SSD				*e*S	**Sb**	**22 18 33.8**	**+0.7**
	baz=231						
JKRS	**Kuro-shima**	**2.03**	**89**	P	**Pn**	**22 18 12.2**	**+1.2**
JKRS				*e*S	**Sb**	**22 18 39.5**	**+0.4**
EAST	**Anshuo**	**2.04**	**205**	*e*P	**Pn**	**22 18 11.6**	**+0.4**
	baz=195						
SCZT	**Fangliau**	**2.14**	**210**	*e*P	**Pb**	**22 18 15.3**	**-0.4**
	baz=197						
JIJ	**Ishigaki jima**	**2.15**	**86**	P	**Pn**	**22 18 12.4**	**-0.4**
JIJ				*e*S	**Sn**	**22 18 39.1**	**-0.3**
JISG	**Ishigakijimahi**	**2.33**	**81**	P	**Pn**	**22 18 15.0**	**-0.2**
JISG				*e*S	**Sn**	**22 18 44.1**	**+0.4**

*IDC **14** 22:21:45.6±1.5, 30.01S×176.31W, h0km, mb3.7/3, mb1 4.0/4, mb1mx3.7/33, mbtmp3.8/4, ML3.5/1, Error ellipse: s-maj=31.7km s-min=30.7km az=147.0*
*ISCJB **14** 22:21:46.5±1.7, 30.13S±0.08×176.2W±0.2, h24km, mb3.7/3, Error ellipse: s-maj=20.9km s-min=10.4km az=169.6*
ISC 14 22:21:48.8±1.5, 30.03S±0.10×176.3W±0.2, h24km, n7, σ0§80/9, mb3.9/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.64**	**298**	Pn	**Pn**	**22 22 15.9**	**-0.2**
	64nm,0.3s,baz=105,slow=20,SNR=1.6						
RAO				Sn	**Sn**	**22 22 36.4**	**0.0**
	342nm,0.3s,baz=192,slow=23,SNR=6.5						
URZ	**Urewera**	**9.87**	**212**	Pn	**Pn**	**22 24 08.0**	**-1.2**
	0.4nm,0.3s,baz=18,slow=15,SNR=1.6						
URZ				Sn	**Sn**	**22 26 00.5**	**+1.3**
	1.2nm,0.3s,baz=152,slow=19,SNR=1.7						
ASAR	**Alice Springs**	**44.63**	**266**	P	**P**	**22 29 59.8**	**+0.2**
	0.3nm,0.6s,baz=110,slow=7.4,SNR=2.8						
WRA	**Warramunga Arr**	**45.59**	**271**	P	**P**	**22 30 07.4**	**+0.1**
	1.2nm,0.7s,baz=109,slow=7.7,SNR=6.4						
MJAR	**Matsushiro Arr**	**78.81**	**324**	P	**P**	**22 33 49.7**	**+0.1**
	0.8nm,0.5s,baz=144,slow=7.4,SNR=3.7						
FINES	**FINESS Array B**	**145.30**	**341**	PKPbc	**PKPbc**	**22 41 23.5**	**0.0**
	1.0nm,0.5s,baz=63,slow=3.5,SNR=15						
AKASG	**Malin Array Be**	**151.90**	**324**	PKPbc	**PKPbc**	**22 41 42.1**	**+0.8**
	0.3nm,0.4s,baz=48,slow=2.6,SNR=2.6						

*ISCJB **14** 22:27:34.6±0.4, 24.23N±0.02×121.85E±0.02, h2km±3km, Error ellipse: s-maj=3.1km s-min=2.1km az=143.6*
*JMA **14** 22:27:34.9±0.1, 24.25N×121.76E, h12km±3km, M3.0*
*TAP **14** 22:27:35.2, 24.26N×121.77E, h16km, ML3.8, B*
ISC 14 22:27:35.4±0.8, 24.25N±0.02×121.79E±0.02, h16km±5km, n64, σ0§84/99, 10C-3D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.08**	**327**	P	**Pg**	**22 27 38.8**	**+0.2**
	baz=342						
EHP				S	**Sg**	**22 27 41.2**	**+0.5**
	baz=342						
ENA	**Nanau**	**0.19**	**347**	⇑*i*P	**Pg**	**22 27 39.7**	**-0.3**
	baz=354						
TWD	**Chiawan**	**0.24**	**227**	⇑*i*P	**Pg**	**22 27 40.5**	**-0.3**
	baz=228						
TWD				*i* S	**Sb**	**22 27 44.5**	**-0.9**
	baz=228						
HWA	**Hwalien**	**0.32**	**212**	⇓*i*P	**Pb**	**22 27 42.5**	**-0.1**
	baz=217						
HWA				*e*S	**Sb**	**22 27 48.8**	**+1.3**
	baz=217						
TWC	**Suao**	**0.37**	**9**	⇑*i*P	**Pb**	**22 27 42.9**	**-0.7**
	baz=8.0						
TWC				*i* S	**Sg**	**22 27 47.8**	**-0.3**
	baz=8.0						
NNS	**Nan Shan**	**0.42**	**297**	⇑*i*P	**Pb**	**22 27 43.9**	**-0.8**
	baz=297						
NNS				S	**Sb**	**22 27 49.4**	**-1.4**
	baz=297						
ENTT	**Nioudou**	**0.44**	**333**	⇑*i*P	**Pb**	**22 27 44.3**	**-0.5**
	baz=333						
ENTT				*i* S	**Sb**	**22 27 50.3**	**-1.0**
	baz=333						
ESF	**Shoufeng Towns**	**0.45**	**215**	*e*P	**Pb**	**22 27 44.9**	**-0.1**
	baz=223						
TWE	**Neicheng**	**0.49**	**347**	⇑*i*P	**Pb**	**22 27 45.0**	**-0.6**
	baz=348						
TWE				*i* S	**Sg**	**22 27 51.5**	**-0.2**
	baz=348						
WHF	**Hehuan Shan**	**0.49**	**258**	⇑*i*P	**Pg**	**22 27 44.9**	**-0.4**
	baz=258						
WHF				S	**Sb**	**22 27 52.0**	**-0.9**
	baz=258						
ILA	**Ilan**	**0.52**	**356**	*e*P	**Pb**	**22 27 45.7**	**-0.5**
	baz=349						
ESL	**Shilin**	**0.54**	**217**	*e*P	**Pg**	**22 27 45.6**	**-0.5**
	baz=222						
TWT	**Tachien**	**0.56**	**271**	⇑*i*P	**Pb**	**22 27 46.7**	**-0.2**
	baz=271						
TWT				*i* S	**Sb**	**22 27 53.8**	**-1.0**
	baz=271						
NSK	**Sanguang**	**0.58**	**318**	⇑*i*P	**Pb**	**22 27 46.7**	**-0.6**
	baz=318						
NSK				S	**Sg**	**22 27 53.8**	**-0.9**
	baz=318						
EGS		**0.61**	**12**	P	**Pb**	**22 27 47.6**	**-0.1**
	baz=19						
TWA	**Mucha**	**0.76**	**346**	*e*P	**Pb**	**22 27 50.2**	**0.0**
	baz=346						
TWB1	**Santiao Chiao**	**0.78**	**13**	*e*P	**Pg**	**22 27 50.1**	**-0.5**
	baz=8.0						
NSTT	**Nanjuang**	**0.81**	**298**	P	**Pb**	**22 27 51.0**	**-0.2**
	baz=298						
NSTT				S	**Sb**	**22 28 02.0**	**+0.1**
	baz=298						
NWF	**Wu-fen Shan**	**0.82**	**360**	*e*P	**Pb**	**22 27 51.5**	**+0.1**
	baz=351						
NWF				*e*S	**Sb**	**22 28 02.2**	**-0.1**
	baz=351						
TAP1	**Taipei**	**0.83**	**343**	*e*P	**Pn**	**22 27 52.4**	**0.0**
	baz=333						
TAP	**Taipei**	**0.83**	**342**	*e*P	**Pn**	**22 27 52.3**	**-0.2**
	baz=333						
EHY	**Hungye**	**0.85**	**210**	*e*P	**Pg**	**22 27 51.1**	**-0.8**
	baz=223						
SMLT	**Sun Moon Lake**	**0.89**	**246**	P	**Pb**	**22 27 52.2**	**-0.3**
	baz=240						
SMLT				S	**Sb**	**22 28 04.5**	**+0.3**
	baz=240						
NCU	**National Centr**	**0.91**	**323**	P	**Pn**	**22 27 53.5**	**0.0**
	baz=323						
NCU				S	**Sn**	**22 28 06.7**	**+0.4**
	baz=323						
TYC	**Yuchr**	**0.92**	**248**	⇓P	**Pg**	**22 27 52.5**	**-0.6**
	baz=243						
TYC				*e*S	**Sb**	**22 28 04.7**	**-0.1**
	baz=243						
TWS1	**Kuangyinshan**	**0.92**	**339**	*e*P	**Pn**	**22 27 53.7**	**+0.1**
	baz=338						
TWS1				*e*S	**Sn**	**22 28 07.4**	**+0.9**
	baz=338						
HSN	**Hsinchu**	**0.93**	**307**	*e*P	**Pn**	**22 27 54.0**	**+0.2**
	baz=301						
HSN				*e*S	**Sn**	**22 28 08.4**	**+1.6**
	baz=301						
TWQ1	**Liyutan**	**0.93**	**277**	*e*P	**Pn**	**22 27 54.0**	**+0.2**
	baz=277						
TWQ1				*e*S	**Sn**	**22 28 07.8**	**+0.9**
	baz=277						
NSY	**Sanyi**	**0.95**	**281**	*e*P	**Pn**	**22 27 54.1**	**0.0**
	baz=281						
NSY				*e*S	**

PCYT	Pengchaiyu	1.40	11	*e*P		Pb	22 28 00.7	-0.5
	baz=8.0							
CHN4	Tsaushan	1.41	231	*e*P		Pb	22 28 01.3	-0.1
	baz=236							
CHN4				S		Sg	22 28 21.9	+0.9
	baz=236							
STYT	Tauyuan	1.43	221	*e*P		Pn	22 28 01.0	+0.2
	baz=224							
CHY	Chiayi	1.45	240	*e*P		Pg	22 28 03.0	-0.4
	baz=243							
CHY				*e*S		Sg	22 28 22.6	+0.3
	baz=243							
WTP	Ta-pu	1.47	227	⇑P		Pb	22 28 02.3	0.0
	baz=232							
WTP				*e*S		Sg	22 28 23.1	+0.4
	baz=232							
TWK	Hsinying	1.54	231	*e*P		Pb	22 28 03.4	-0.2
	baz=234							
TWG	Pinlang	1.56	205	*e*P		Pn	22 28 00.2	-2.3
	baz=192							
CHN1	Nanshi	1.56	228	*e*P		Pb	22 28 03.8	-0.2
	baz=233							
CHN1				*e*S		Sg	22 28 26.7	+0.9
	baz=233							
SGST	Jiashian	1.60	224	*e*P		Pb	22 28 04.5	-0.1
	baz=228							
SGST				*e*S		Sg	22 28 26.8	-0.2
	baz=228							
CHN8	Yiju	1.70	239	*e*P		Pb	22 28 05.6	-0.6
	baz=229							
CHN8				*e*S		Sg	22 28 30.2	+0.1
	baz=229							
IRIF	Iriomote-Funau	1.77	87	P		Pn	22 28 05.1	-0.3
ECL	Taimali	1.81	205	*e*P		Pn	22 28 06.2	+0.3
	baz=195							
SSD	Sandimen	1.83	216	*e*P		Pn	22 28 06.6	+0.4
	baz=230							
JKRS	Kuro-shima	2.03	90	P		Pn	22 28 09.6	+0.7
EAST	Anshuo	2.04	205	*e*P		Pb	22 28 11.0	-1.2
	baz=197							
SCZT	Fangliau	2.15	210	*e*P		Pb	22 28 13.2	-0.7
	baz=196							
JIJ	Ishigaki jima	2.15	86	P		Pn	22 28 10.5	-0.1
JIJ				S		Sn	22 28 37.3	+0.3
PNG	Penghu	2.15	252	*e*P		Pb	22 28 12.9	-1.1
	baz=254							
JISG	Ishigakijimahi	2.33	81	P		Pn	22 28 13.1	+0.1
JISG				S		Sn	22 28 41.1	-0.2
JTJ	Tarama	2.69	81	P		Pn	22 28 20.3	+2.3
JTJ				*e*S		Sn	22 28 52.4	+2.2
JOGS	Gusukube	3.34	80	P		Pn	22 28 26.0	-0.9
JOGS				S		Sn	22 29 07.6	+1.4

IDC 14 22:30:51.4±12.0**, 19°22N×145°34E, h275**km±129km**, mb3.2**/6**, mb1 3.4**/6**, mb1mx3.0**/49**, mbtmp3.8**/6**, MS3.2**/3**, Ms1 3.2**/3**, ms1mx2.7**/18**, Error ellipse: s-maj=40.5km s-min=25.6km az=86.0, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H11S3	WAKE ISLAND Hy	20.22	89	T	T	22 55 59.4	
	baz=274						
H11S1	WAKE ISLAND Hy	20.23	89	T	T	22 56 02.6	
	baz=274						
H11S2	WAKE ISLAND Hy	20.23	89	T	T	22 56 00.8	
	baz=274						
TGY	Tagaytay City	23.91	261	LR	LR	22 42 37.0	
	comp=Z,33nm,21.1s,baz=144,slow=30						
HNR	Honiara	31.90	152	LR	LR	22 48 29.6	
	comp=Z,52nm,20.7s,baz=309,slow=33						
WRA	Warramunga Arr	40.39	196	P	P	22 38 03.0	-0.2
	0.4nm,0.7s,baz=22,slow=8.5,SNR=4.7						
SONM	Songino Array	42.53	321	P	P	22 38 20.4	0.0
	0.2nm,0.4s,baz=116,slow=9.8,SNR=3.3						
ASAR	Alice Springs	44.06	195	LR	LR	22 57 41.1	
	comp=Z,53nm,18.2s,baz=95,slow=36						
ILAR	Eielson Array	63.33	26	P	P	22 40 50.8	-0.4
	0.5nm,0.5s,baz=254,slow=5.8,SNR=7.1						
YKA	Yellowknife Ar	77.69	28	P	P	22 42 18.1	+0.6
	0.3nm,0.5s,baz=287,slow=4.9,SNR=3.3						
ARCES	ARCESS Array B	81.90	342	P	P	22 42 39.3	-0.7
	2.0nm,0.8s,baz=68,slow=9.7,SNR=3.7						
FINES	FINESS Array B	86.27	335	P	P	22 43 02.1	+0.1
	0.9nm,0.5s,baz=68,slow=4.4,SNR=9.3						

*ISCJB **14** 22:36:05.8±0.6, 19°.97S±0°.10×176°.0W±0°.1, h222km, mb4.2/20, Error ellipse: s-maj=16.7km s-min=9.8km az=136.5*

*IDC **14** 22:36:05.2±2.3, 19°.87S×176°.05W, h199km±20km, mb4.1/15, mb1 4.2/17, mb1mx4.0/34, mbtmp4.6/17, Error ellipse: s-maj=15.5km s-min=11.1km az=132.0*

*NEIC **14** 22:36:06.9±1.3, 19°.97S×175°.91W, h220km±11km, mb4.6/9, Error ellipse: s-maj=16.3km s-min=9.7km az=141.0*

ISC 14 22:36:07.4±0.5**, 20°.0S±0°.1×175°.91W±0°.09, h222**km**, n95, σ0**98**/100, mb4.2/20, 12C-15D, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	6.13	290	*e*Pn		Pn	22 37 38.7	+2.0
	106nm,0.8s							
AFI	Afiamalu	7.19	34	P		Pn	22 37 48.2	-2.2
	7.8nm,0.3s,baz=160,slow=11,SNR=3.1							
AFI				S		S	22 39 02.1	-10
	7.3nm,0.3s,baz=53,slow=18,SNR=5.3							
DZM	Mont Dzumac	16.61	260	P		Pn	22 39 48.5	+0.4
	14nm,0.5s,baz=90,slow=15,SNR=106							
DZM	Mont Dzumac	16.61	260	*e*P		P	22 39 47.2	+0.4
	162nm,0.6s							
URZ	Urewera	19.22	197	P		P	22 40 13.6	-1.2
	3.7nm,0.3s,baz=20,slow=4.9,SNR=12							
URZ	Urewera	19.22	197	*e*P		P	22 40 13.1	-1.7
	6.9nm,0.5s							
RPZ	Rata Peaks	26.09	202	P		P	22 41 22.5	+1.9
	9.4nm,0.5s,baz=285,slow=1.2,SNR=9.9							
CTA	Charters Tower	35.50	263	P		P	22 42 42.5	-0.8
	9.2nm,0.3s,baz=96,slow=11,SNR=16							
CTAO	Charters Tower	35.50	263	*e*P		P	22 42 42.3	-1.0
	142nm,0.8s							
PMG	Port Moresby	37.15	281	P		P	22 42 56.9	-0.3
	28nm,0.9s,baz=93,slow=9.0,SNR=4.6							
STKA	Stephens Creek	39.79	244	P		P	22 43 17.7	-1.4
	4.5nm,0.8s,baz=91,slow=12,SNR=11							
STKA				PcP		PcP	22 45 20.9	+0.2
	2.5nm,0.8s,baz=50,slow=6.0,SNR=3.3							
JAY	Jayapura	45.75	287	P		P	22 44 07.3	+0.2
	7.4nm,0.7s,baz=280,slow=24,SNR=30							
ASAR	Alice Springs	46.55	256	P		P	22 44 11.4	-1.9
	32nm,0.7s,baz=97,slow=8.5,SNR=236							
ASAR				PcP		PcP	22 45 43.1	-0.6
	2.5nm,0.7s,baz=102,slow=4.4,SNR=5.6							
WRAB	Tennant Creek	46.61	261	*e*P		P	22 44 11.5	-2.2
	3.1nm,0.7s							
WRA	Warramunga Arr	46.62	261	P		P	22 44 11.5	-2.3
	6.1nm,0.4s,baz=97,slow=5.3,SNR=142							
SOEI	Soe	58.45	271	*e*P		P	22 45 41.0	+0.3
	17nm,0.6s							
MJAR	Matsushiro Arr	70.95	322	P		P	22 47 00.1	-0.7
	2.5nm,0.6s,baz=159,slow=6.4,SNR=12							
PETK	Petropavlovsk-	76.26	344	P		P	22 47 31.6	+0.3
	5.9nm,0.7s,baz=110,slow=8.1,SNR=14							
PFO	Pinyon Flats O	77.75	47	P		P	22 47 39.0	-1.2
	2.1nm,0.8s,baz=243,slow=4.5,SNR=2.6							
MAW	Mawson	82.73	199	P		P	22 48 06.2	+0.3
	2.5nm,0.6s,baz=133,slow=5.8,SNR=12							
BMRM	Bremner River	84.49	15	*e*P		P	22 48 14.9	0.0
	2.3nm,0.5s							
TXAR	Lajitas Array	85.11	57	P		P	22 48 20.9	+2.1
	0.5nm,0.8s,baz=224,slow=8.8,SNR=5.9							
ILAR	Eielson Array	87.36	12	P		P	22 48 28.8	0.0
	1.0nm,0.6s,baz=221,slow=5.5,SNR=15							
ENH	Enshi	87.36	303	*e*P		P	22 48 29.7	+0.1
	3.8nm,0.4s							
COLD	Coldfoot	89.00	10	*e*P		P	22 48 36.4	0.0
	3.7nm,1.2s							
CMAR	Chiang Mai Arr	91.78	289	P		P	22 48 51.4	+0.9
	2.5nm,0.7s,baz=114,slow=3.0,SNR=13							
SONM	Songino Array	96.63	318	P		P	22 49 12.4	+0.2
	0.3nm,0.6s,baz=95,slow=3.5,SNR=2.8							
ZALV	Zalesovo Beam	111.29	321	PKiKP		PKiKP	22 54 13.6	-0.8
	1.0nm,0.8s,baz=14,slow=1.1,SNR=3.6							
MKAR	Makanchi Array	112.25	313	PKiKP		PKiKP	22 54 15.6	-1.0
	0.8nm,0.4s,baz=226,slow=0.9,SNR=5.8							
KURK	Kurchatov	114.92	318	PKP		PKPdf	22 54 20.8	-0.7
KURBB	Kurchatov Arra	114.97	317	PKP		PKPdf	22 54 20.8	-0.8
	1.5nm,0.7s,baz=99,slow=1.9,SNR=10							
BVAR	Borovoye Array	119.91	320	PKP		PKPdf	22 54 30.7	-0.4
	1.8nm,0.5s,baz=98,slow=1.4,SNR=12							
ARU	Arti	125.85	326	PKP		PKPdf	22 54 42.3	0.0
	2.6nm,0.6s,baz=332,slow=1.2,SNR=5.9							
BOSA	Boshof	127.57	204	PKP		PKPdf	22 54 47.4	+0.6
	2.0nm,0.9s,baz=285,slow=1.2,SNR=3.1							
AKTO	Aktyubinsk	127.95	319	PKP		PKPdf	22 54 46.5	0.0
	1.5nm,0.7s,baz=72,slow=2.5,SNR=6.1							
ARCES	ARCESS Array B	128.72	351	PKP		PKPdf	22 54 47.5	0.0
	3.1nm,0.8s,baz=17,slow=1.3,SNR=12							
GEYT	Alibeck	130.13	303	PKP		PKPdf	22 54 51.0	-0.1
	2.6nm,0.7s,baz=270,slow=1.2,SNR=6.6							
FINES	FINESS Array B	135.77	345	PKP		PKPdf	22 55 00.1	-0.9
	1.1nm,0.7s,baz=11,slow=3.9,SNR=6.5							
NOA	NORSAR Array B	138.64	355	PKhKP		PKPpre	22 55 00.5	
	1.0nm,0.8s,baz=16,slow=5.0,SNR=3.9							
NOA				PKP		PKiKP	22 55 07.8	-0.8
	0.5nm,0.6s,baz=14,slow=3.9,SNR=3.6							
AKASG	Malin Array Be	143.45	333	PKhKP		PKPpre	22 55 12.1	
	3.6nm,0.5s,baz=41,slow=4.1,SNR=25							
SORM	Soroca	145.72	331	⇓*i*P		PKPbc	22 55 19.7	-0.3
MILM	Milestii Mici	146.38	329	⇑*i*P		PKPbc	22 55 21.7	-0.3
LEOM	Leova	146.97	329	⇓*i*P		PKPbc	22 55 24.3	+0.6
BURAR	Bucovina Array	147.50	333	⇑*i*P		PKPbc	22 55 26.3	+1.0
TLCR		147.57	327	⇓*i*P		PKPbc	22 55 25.4	0.0
TESR	Tescani	147.70	330	⇓*i*P		PKPbc	22 55 26.6	+0.9
BRTR	Keskin Array B	147.89	314	PKP		PKPdf	22 55 23.2	-0.2
	7.0nm,0.8s,baz=112,slow=1.6,SNR=39							
BRTR				PKPbc		PKPbc	22 55 26.5	-0.1
	7.1nm,0.8s,baz=138,slow=4.8,SNR=39							
CFR	Carcaliu	147.93	327	⇓*i*P		PKPbc	22 55 26.3	0.0
CLL	Collm	147.93	349	*i* P		PKPbc	22 55 26.2	+0.1
	comp=Z,8.0nm,0.7s							
CLL				*i*			22 55 29.2	
	comp=Z,6.0nm,0.8s							
UPC	Upice	148.07	346	⇑*e*P		PKPbc	22 55 27.4	+0.8
UPC				*e*PKPAB		PKPab	22 55 30.9	+0.9
DPC	Dobruska-Polom	148.15	345	⇑*e*PKP		PKPbc	22 55 27.8	+1.0
DPC				*e*PKPAB		PKPab	22 55 30.5	+0.2
BRG	Berggiesshubel	148.17	348	*i* PKP		PKPbc	22 55 27.3	+0.5
	comp=Z,6.0nm,0.8s							
PLOR	Plostina	148.19	329	⇓*i*P		PKPbc	22 55 26.8	-0.3
TIRR	Tirgusor	148.28	326	⇓*i*P		PKPbc	22 55 26.1	-1.1
PVCC	Panska Ves	148.38	347	⇑*e*PKP		PKPbc	22 55 28.4	+1.1
PVCC				*e*PKPAB		PKPab	22 55 32.0	+0.8
TLB	Topalu	148.38	326	⇓*i*P		PKPbc	22 55 27.4	-0.1
DOPR	Dopca	148.69	331	⇓*i*P		PKPbc	22 55 29.5	+1.2
MLR	Muntele Rosu	148.78	330	⇓*i*P		PKPbc	22 55 27.9	-0.8
PRU	Pruhonice	148.89	347	⇑*e*PKP		PKPbc	22 55 29.4	+0.7
GOPC	GO Pecny, Ondr	148.91	347	⇑*e*PKP		PKPbc	22 55 29.5	+0.8
VRAC	Vranov	149.04	344	⇑*i*P		PKPbc	22 55 27.9	-1.2
DRGR		149.20	335	⇓*i*P		PKPbc	22 55 30.1	+0.5
VOIR		149.25	330	⇑*i*P		PKPbc	22 55 30.2	+0.4
PSZ	Piszkesteto	149.30	339	⇓*i*P		PKPbc	22 55 31.3	+1.5
MEM	Membach	149.37	358	PKPbc		PKPbc	22 55 30.3	+0.5
ARR	Arges	149.49	331	⇓*i*P		PKPbc	22 55 31.5	+1.1
BCLA	Clavier	149.58	358	PKPbc		PKPbc	22 55 30.0	-0.3
KHC	Kasperske Hory	149.91	348	⇑*e*PKP		PKPbc	22 55 32.0	+0.7
KHC				*e*PKPAB		PKiKP	22 55 34.0	+1.9
KHC	Kasperske Hory	149.91	348	*e*PKPbc		PKPbc	22 55 31.9	+0.7
DOU	Dourbes	149.92	359	PKPbc		PKPbc	22 55 31.8	+0.6
HUMR	Humele	149.96	329	⇑*i*P		PKPbc	22 55 31.4	0.0
GERES	GERESS Array B	150.15	347	PKPbc		PKPbc	22 55 32.1	+0.2
	comp=Z,4.1nm,0.7s,baz=31,slow=2.4,SNR=39							
CSS	Mathiatis	150.19	306	*e*PKPbc		PKPbc	22 55 31.8	-0.6
WLF	Walferdange	150.31	357	PKPbc		PKPbc	22 55 33.2	+1.1
CONA	Conrad Observa	150.50	344	*i* PKiKP		PKiKP	22 55 33.5	+0.1
	comp=Z,5.4nm,0.6s							
BZS	Buzias	150.60	334	⇓*i*P		PKPbc	22 55 33.3	+0.4
MOA	Molln	150.97	346	*i* PKiKP		PKiKP	22 55 34.0	-0.2
	comp=Z,3.1nm,0.5s							
ARSA	Arzberg	151.22	344	*i* PKiKP		PKPbc	22 55 34.3	-0.1
	comp=Z,1.2nm,0.5s							
MDVR	Moldovita	151.24	333	⇑*i*P		PKPbc	22 55 32.0	-2.5
SOKA	Soboth	151.87	344	*i* PKPbc		PKPbc	22 55 35.3	-0.6
	comp=Z,4.7nm,1.0s							
KBA	Koelnbreinsper	151.90	346	*i* PKPbc		PKPdf	22 55 32.1	+2.7
	comp=Z,5.5nm,0.7s							
RETA	Reutte	152.00	350	*i* PKiKP		PKiKP	22 55 36.6	+0.1
	comp=Z,4.1nm,1.1s							
WATA	Walderalm	152.01	349	*i* PKiKP		PKPbc	22 55 36.4	+0.1
	comp=Z,5.7nm,0.5s							
WTTA	Wattenberg	152.07	349	*i* PKiKP		PKiKP	22 55 36.8	0.0
	comp=Z,9.1nm,0.5s							
MOTA	Moosalm	152.08	350	*i* PKiKP		PKiKP	22 55 37.0	+0.3
	comp=Z,5.4nm,0.8s							
OBKA	Obir	152.16	344	*i* PKiKP		PKPbc	22 55 36.7	+0.1
	comp=Z,7.0nm,1.3s							
VTS	Vitosha	152.26	329	⇓*i*P		PKPbc	22 55 37.0	0.0
MYKA	Terra Mystica	152.26	346	*i* PKiKP		PKPbc	22 55 36.3	-0.5
	comp=Z,3.6nm,0.5s							
DAVA	Damuels	152.33	351	*i* PKiKP		PKiKP	22 55 37.8	+0.6
	comp=Z,6.8nm,0.8s							
ABTA	Abfaltersbach	152.40	347	*i* PKiKP		PKPbc	22 55 36.9	-0.3
	comp=Z,6.6nm,0.5s							
FETA	Feichten	152.46	350	*i* PKiKP		PKiKP	22 55 37.5	0.0
	comp=Z,3.7nm,0.6s							
CRNS	Crni Vrh	152.63	344	*i* PKPbc		PKPbc	22 55 37.3	-0.3
BOJS	Bojanci	152.90	343	*i* PKPbc		PKPbc	22 55 38.6	+0.5
ESDC	Sonseca Array	159.16	18	PKPab		PKPab	22 56 18.0	+0.8
	comp=Z,2.2nm,1.1s,baz=334,slow=3.8,SNR=4.9							
TORD	Torodi Ar. Bea	172.86	161	PKP		PKPdf	22 55 50.4	-0.3
	comp=Z,0.4nm,0.8s,baz=180,slow=4.3,SNR=3.1							
TORD				PKPab		PKPab	22 57 20.7	+2.7
	comp=Z,0.4nm,0.9s,baz=195,slow=4.5,SNR=2.6							

*ISCJB **14** 22:48:07.7±0.5, 27°.04N±0°.07×96°.97E±0°.07, h28km, mb4.0/16, MS2.8/4, Error ellipse: s-maj=10.9km s-min=8.5km az=19.6*

*NEIC **14** 22:48:10.8±0.4, 27°.12N×97°.06E, h35km, mb4.4/2, Error ellipse: s-maj=13.3km s-min=7.9km az=60.0*

*IDC **14** 22:48:10.1±6.3, 27°.18N×97°.15E, h27km±45km, mb3.8/14, mb1 3.8/15, mb1mx3.6/44, mbtmp3.9/15, MS3.0/4, Ms1 3.0/4, ms1mx2.6/54, Error ellipse: s-maj=29.8km s-min=13.4km az=63.0*

ISC 14 22:48:10.0±0.7**, 27°.19N**±0°.09×**97°.14E**±0°.08**, h28**km**, n29, σ1**8**41**/27**, mb4.0**/16**, MS2.8**/4**, Myanmar-India border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	Shillong	4.98	252	*i* PN		Pn	22 49 24.0	+0.9
SHL				*e*SN		Sn	22 50 22.0	+2.1
LSA	Lhasa	5.83	297	*e*Pn		Pn	22 49 34.3	-0.8
CMAR	Chiang Mai Arr	8.85	169	Pn		Pn	22 50 14.6	-1.5
	baz=324,slow=19,SNR=1.5							
CMAR				Lg		Lg	22 52 52.3	
	baz=344,slow=26,SNR=3.4							
GUN	Gumba	10.02	277	*e*P		Pn	22 50 31.6	-0.8
	54nm,0.5s							
PKIN	Phulchoki	10.44	275	*e*P		Pn	22 50 36.8	-1.3
	15nm,0.6s							
KKN	Kakani	10.54	276	*e*P		Pn	22 50 38.7	-0.8
	44nm,0.6s							
DMN	Daman	10.70	275	*e*P		Pn	22 50 40.3	-1.3
	33nm,0.7s							
GKN	Gorkha	11.12	277	*e*P		Pn	22 50 45.3	-2.0
	15nm,0.4s							
KOLN	Koldanda	12.03	276	*e*P		Pn	22 50 57.2	-2.7
	13nm,0.5s							
PYUN	Piuthan	12.57	277	*e*P		Pn	22 51 03.4	-3.9
	23nm,0.5s							
SONM	Songino Array	21.85	17	P		P	22 53 00.3	-0.1
	1.0nm,0.7s,baz=201,slow=10,SNR=6.1							
SONM				LR		LR	23 01 07.9	
	comp=Z,26nm,18.5s,baz=145,slow=36							
MKAR	Makanchi Array	22.81	333	P		P	22 53 10.2	-0.3
	2.6nm,0.7s,baz=142,slow=12,SNR=13							
AAK	Ala-Archa	24.02	316	LR		LR	23 03 04.2	
	comp=Z,22nm,19.9s,baz=145,slow=37							
KURBB	Kurchatov Arra	27.36	334	P		P	22 53 53.3	+0.6
	5.8nm,0.9s,baz=146,slow=11,SNR=49							
KURK	Kurchatov	27.40	334	*e*P		P	22 53 53.5	+0.5
	18nm,1.0s							
KSRS	Korea Array	27.85	61	LR		LR	23 06 11.1	
	comp=Z,34nm,18.5s,baz=330,slow=39							
ZALV	Zalesovo Beam	28.24	345	P		P	22 53 59.7	-0.7
	0.5nm,0.5s,baz=160,slow=9.3,SNR=3.9							
BVAR	Borovoye Array	32.57	330	P		P	22 54 39.8	+1.1
	0.8nm,0.8s,baz=134,slow=16,SNR=3.4							
GEYT	Alibeck	34.36	298	P		P	22 54 56.0	+1.4
	2.6nm,0.6s,baz=99,slow=8.9,SNR=6.9							
MAJO	Matsushiro	35.88	65	*e*P		P	22 55 08.6	+1.0
	1.4nm,0.4s							
MJAR	Matsushiro Arr	35.88	65	LR		LR	23 11 18.7	
	comp=Z,26nm,18.2s,baz=145,slow=39							
AKTO	Aktyubinsk	37.69	319	P		P	22 55 23.7	+0.9
	2.0nm,0.4s,baz=121,slow=6.6,SNR=8.4							
ARU	Arti	40.11	327	P		P	22 55 43.9	+0.8
	2.1nm,0.7s,baz=105,slow=4.2,SNR=4.0							
AKASG	Malin Array Be	55.68	314	P		P	22 57 42.9	-0.7
	0.3nm,0.3s,baz=78,slow=6.6,SNR=3.3							
FINES	FINESS Array B	57.48	327	P		P	22 57 56.7	+0.5
	1.7nm,0.9s,baz=112,slow=15,SNR=3.2							
WRA	Warramunga Arr	59.11	138	P		P	22 58 08.5	+0.3
	0.9nm,0.8s,baz=329,slow=7.5,SNR=9.1							
ASAR	Alice Springs	61.78	141	P		P	22 58 26.9	+0.5
	0.5nm,0.5s,baz=322,slow=6.7,SNR=8.4							
KMBO	Ulilima Mbogo	64.03	254	P		P	22 58 41.6	-0.2
	1.3nm,0.7s,baz=71,slow=17,SNR=3.5							
TORD	Torodi Ar. Bea	88.83	284	P		P	23 01 01.1	-0.9
	0.6nm,0.7s,baz=64,slow=3.4,SNR=4.1							

*NEIC **14** 22:53:54.6±0.5, 15°.95S×69°.39W, h236km±5km, mb4.5/63, Error ellipse: s-maj=8.3km s-min=5.4km az=62.0*

*IDC **14** 22:53:55.0±0.5, 15°.87S×69°.42W, h235km±4km, mb4.0/19, mb1 4.0/23, mb1mx4.0/27, mbtmp4.5/23, Error ellipse: s-maj=12.0km s-min=9.0km az=48.0*

*SCB **14** 22:53:56.0±0.4, 16°.10S×68°.60W, h257km±2km, Ml3.8/1, Error ellipse: s-maj=10.0km s-min=5.5km az=108.0*

ISC 14 22:53:55.2±0.3**, 16°.02S**±0°.05×**69°.49W**±0°.06**, h250**km**, n356, σ1**9**55**/357**, mb4.5**/76**, 5C-3D, Peru-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOD	La Paz, Gloria	1.06	126	⇑*i*Pn		Pn	22 54 31.3	+0.1
BBOB	La Paz, Bander	1.31	95	⇑*i*Pn		Pn	22 54 32.2	-0.6
BBOB				*e*Sn		S	22 54 58.1	-4.1
LPAZ	La Paz	1.34	102	P		Pn	22 54 32.6	-0.5
	149nm,0.3s,baz=296,slow=4.8,SNR=3751							
LPAZ				S		S	22 54 59.6	-3.1
	75nm,0.3s,baz=13,slow=23,SNR=26							
LPAZ	La Paz	1.34	102	⇑*i*Pn		Pn	22 54 32.1	-1.0
LPAZ				*e*Sn		S	22 54 58.0	-4.7
	2μm,0.7s							
BBOJ	La Paz, Jacaqu	1.57	127	⇑*i*Pn		Pn	22 54 34.9	+0.3
BBOE	La Paz, Chanca	1.65	119	⇓*i*Pn		Pn	22 54 35.1	-0.2
PB11	IPOC Station P	3.72	182	*e*Pn		Pn	22 54 55.0	-0.9
PB01	IPOC Station P	5.00	180	*e*Pn		Pn	22 55 10.0	-1.0
PB04	IPOC Station P	6.31	186	*e*Pn		Pn	22 55 26.2	-1.2
MOCB	Mochara	6.36	145	⇓*i*Pn		Pn	22 55 28.8	+0.6
MOCB				*e*Sn		S	22 56 36.9	-5.8
	51nm,0.9s							
LVC	Limon Verde	6.58	175	P		Pn	22 55 30.7	-0.2
	2μm,0.3s,baz=30,slow=11,SNR=225							
LVC				S		S	22 56 41.9	-5.7
	5μm,0.3s,baz=81,slow=22,SNR=18							
PB10	IPOC Station P	7.52	187	*e*Pn		Pn	22 55 41.8	-0.6
PB10				*e*S		S	22 57 03.9	-4.8
SIV	San Ignacio	8.10	91	P		Pn	22 55 47.8	-2.0
	0.5nm,0.3s,baz=277,slow=12,SNR=6.3							
SIV	San Ignacio	8.10	91	⇓*e*Pn		Pn	22 55 47.0	-2.8
NNA	Nana	8.18	298	P		Pn	22 55 50.5	-0.4
	6.6nm,0.3s,baz=124,slow=9.5,SNR=8.1							
NNA				S		S	22 57 22.5	-1.7
	11nm,0.3s,baz=22,slow=15,SNR=6.1							
NNA	Nana	8.18	298	*e*Pn		Pn	22 55 50.7	-0.2
NNA				*e*S		S	22 57 22.9	-1.2
ATAH	Atahualpa	12.40	314	P		Pn	22 56 44.4	+0.1
	0.8nm,0.3s,baz=124,slow=15,SNR=2.3							
LCO	Las Campanas	12.98	185	*e*Pn		Pn	22 56 51.5	+0.5
CPUP	Villa Florida	15.28	134	P		Pn	22 57 19.1	+0.3
	0.8nm,0.3s,baz=316,slow=10.0,SNR=16							
CPUP	Villa Florida	15.28	134	*e*P	

	baz=156						
534A	Blanco	53.63	329	P	P	23 02 51.1	-0.2
	baz=145						
533A	Kerrville	53.95	328	P	P	23 02 54.2	+0.7
	baz=144						
139A	Bunkhouse Ranc	53.97	334	P	P	23 02 54.1	+0.6
	baz=150						
434A	Burnet	54.17	329	P	P	23 02 55.2	+0.1
	baz=145						
138A	Matatall Enter	54.25	333	P	P	23 02 56.6	+1.1
	baz=149						
W44A	Shelby Farms P	54.41	340	P	P	23 02 58.1	+1.4
	baz=156						
137A	Heron Place, G	54.49	333	P	P	23 02 58.5	+1.2
	baz=148						
433A	Art	54.53	329	P	P	23 02 57.8	+0.1
	baz=144,SNR=12						
334A	Lometa	54.58	330	P	P	23 02 58.4	+0.4
	baz=145						
JCT	Junction City	54.67	328	P	P	23 02 59.3	+0.6
	baz=144						
JCT	Junction City	54.67	328	eP	P	23 02 59.3	+0.6
	7.6nm,0.8s						
WVT	Waverly	54.69	342	eP	P	23 02 56.5	-2.2
	34nm,1.5s						
136A	Ennis	54.73	332	P	P	23 02 59.8	+0.8
	baz=148						
WHTX	Lake Whitney,	54.75	331	P	P	23 02 59.7	+0.5
	baz=146						
WHTX	Lake Whitney,	54.75	331	eP	P	23 02 59.8	+0.5
	12nm,0.6s						
Y39A	Lockesburg	54.93	335	P	P	23 03 00.3	-0.1
	baz=151						
333A	Richland Sprin	54.94	329	P	P	23 03 01.0	+0.4
	baz=145						
234A	Clairette	55.08	330	P	P	23 03 02.1	+0.5
	baz=146,SNR=5.9						
MIAR	Mount Ida	55.26	336	P	P	23 03 01.9	-0.9
	baz=151						
W41B	Gary Mavity, V	55.30	337	P	P	23 03 02.0	-1.1
	baz=153						
Z36A	Blue Ridge	55.36	333	P	P	23 03 04.0	+0.5
	baz=148						
X39A	Fountain Ranch	55.44	335	P	P	23 03 03.8	-0.3
	baz=151						
233A	Rising Star	55.46	330	P	P	23 03 04.8	+0.5
	baz=145,SNR=5.1						
134A	White-Moore Ra	55.53	331	P	P	23 03 04.9	+0.2
	baz=146						
Y37A	Hugo	55.61	334	P	P	23 03 05.9	+0.7
	baz=149,SNR=5.1						
W40A	Ferguson Farm,	55.63	337	P	P	23 03 04.8	-0.6
	baz=152						
Z35A	Perchaven, San	55.77	332	P	P	23 03 06.3	-0.2
	baz=147						
V41A	Mountainview	55.81	338	P	P	23 03 05.3	-1.4
	baz=153						
Y36A	Durant	55.83	333	P	P	23 03 06.1	-0.7
	baz=148						
X38A	Whitesboro	55.87	335	P	P	23 03 07.1	+0.1
	baz=150,SNR=6.9						
TXAR	Lajitas Array	55.87	324	P	P	23 03 08.0	+0.7
	2.8nm,0.5s,baz=151,slow=7.4,SNR=46						
TX31	Lajitas Ar. Si	55.87	324	eP	P	23 03 08.1	+0.7
W39A	Magazine	55.91	336	P	P	23 03 07.2	-0.1
	baz=151						
133A	Hamilton Ranch	55.95	330	P	P	23 03 08.2	+0.5
	baz=145,SNR=12						
U42A	Revenden	56.00	339	P	P	23 03 06.3	-1.6
	baz=154						
X37A	Clayton	56.02	334	P	P	23 03 08.2	0.0
	baz=150						
V40A	Witts Springs	56.08	337	P	P	23 03 07.7	-1.0
	baz=153						
W38A	Poteau	56.09	335	P	P	23 03 08.3	-0.3
	baz=151						
PBMO	Poplar Bluff	56.11	340	eP	P	23 03 07.4	-1.4
	12nm,1.1s						
Z34A	Collier Ranch,	56.11	331	P	P	23 03 09.0	+0.2
	baz=146						
Y35A	Marietta	56.16	332	P	P	23 03 09.9	+0.7
	baz=148						
U41A	Viola	56.23	338	P	P	23 03 08.3	-1.4
	baz=154						
ABTX	Abilene, Hawle	56.32	329	P	P	23 03 10.8	+0.4
	baz=144						
V39A	Pettigrew	56.42	336	P	P	23 03 10.0	-1.0
	baz=152,SNR=7.1						
X36A	Centrahoma	56.42	333	P	P	23 03 10.5	-0.5
	baz=148						
Z33A	Whitaker Ranch	56.44	331	P	P	23 03 11.7	+0.5
	baz=146,SNR=11						
W37B	Quinton	56.52	335	P	P	23 03 11.5	-0.2
	baz=150						
Y34A	Reagan Ranch,	56.53	332	P	P	23 03 11.8	+0.1
	baz=147						
X35A	Drake	56.55	333	P	P	23 03 11.7	-0.2
	baz=148						
S44A	Carbondale	56.57	341	P	P	23 03 10.5	-1.4
	baz=157						
SIUC	Southern Illin	56.58	341	eP	P	23 03 10.0	-2.0
	18nm,0.8s						
U40A	Yellville	56.58	337	P	P	23 03 10.5	-1.6
	baz=153						
S43A	Fulton Ridge,	56.72	340	P	P	23 03 11.6	-1.4
	baz=156						
V38A	Canehill	56.74	336	P	P	23 03 11.9	-1.3
	baz=151						
T41A	Mountain View	56.80	339	P	P	23 03 12.1	-1.5
	baz=154						
U39A	Green Forest	56.84	337	P	P	23 03 12.3	-1.6
	baz=152						
W36A	Wetumka	56.86	334	P	P	23 03 13.7	-0.3
	baz=149						
Y33A	Hilltop Ranch,	56.97	331	P	P	23 03 14.7	-0.1
	baz=146						
V37A	Hulbert	57.05	335	P	P	23 03 14.6	-0.8
	baz=150						
X34A	Smith Ranch, M	57.10	332	P	P	23 03 16.1	+0.4
	baz=147,SNR=5.2						
W35A	Tecumseh	57.14	333	P	P	23 03 15.5	-0.5
	baz=148						
T40A	Mansfield	57.16	338	P	P	23 03 15.4	-0.8
	baz=153						
S41A	Jillco Farms,	57.29	339	P	P	23 03 15.6	-1.4
	baz=154,SNR=5.4						
V36A	Jenks	57.29	335	P	P	23 03 16.7	-0.3
	baz=149						
TUL1	Leonard	57.34	335	P	P	23 03 16.7	-0.6
	baz=150						
X33A	Lawton	57.35	332	P	P	23 03 17.1	-0.4
	baz=146						
T39A	Clever	57.37	337	P	P	23 03 16.7	-0.9
	baz=152						
U37A	Salina	57.49	336	P	P	23 03 17.7	-0.7
	baz=150						
N54A	Moraine State	57.52	351	P	P	23 03 18.1	-0.4
	baz=168						
S40A	Lebanon	57.56	338	P	P	23 03 17.6	-1.3
	baz=154						
W34A	Bridge Creek,	57.61	333	P	P	23 03 19.9	+0.6
	baz=147						
WMOK	Wichita Mounta	57.65	332	P	P	23 03 19.3	-0.3
	baz=146						
WMOK	Wichita Mounta	57.65	332	eP	P	23 03 20.1	+0.6
	2.7nm,0.6s						
V35A	Meyer Ranch, C	57.65	334	P	P	23 03 19.0	-0.5
	baz=148						
T38A	Diamond	57.72	337	P	P	23 03 18.9	-1.1
	baz=152,SNR=5.4						
W33A	Caddo, Fort Co	57.85	332	P	P	23 03 21.5	+0.5
	baz=147,SNR=5.6						
S39A	Bolivar	57.94	338	P	P	23 03 20.3	-1.2
	baz=153,SNR=6.5						
V34A	Guthrie	58.00	333	P	P	23 03 21.6	-0.4
	baz=148						
V34A	Guthrie	58.00	333	eP	P	23 03 21.8	-0.2
	17nm,0.8s						
M54A	Oil Creek Stat	58.01	351	P	P	23 03 20.2	-1.7
	baz=168						
T37A	Cheneyville 18	58.04	336	P	P	23 03 21.3	-0.9
	baz=151,SNR=6.7						
R40A	Maddies Statio	58.10	339	P	P	23 03 20.8	-1.8
	baz=154						
U35A	Pawnee	58.12	334	P	P	23 03 22.6	-0.2
	baz=149						
W32A	Sentinel	58.18	331	P	P	23 03 23.4	+0.2
	baz=146,SNR=8.8						
T36A	Boggs Farm, Ca	58.36	335	P	P	23 03 24.0	-0.4
	baz=150						
R39A	Chumby, Stover	58.39	338	P	P	23 03 23.3	-1.3
	baz=153						
SFIN	Lafayette	58.45	344	P	P	23 03 23.0	-1.9
	baz=160						
T35A	Sooner Cattle	58.49	335	P	P	23 03 25.1	-0.3
	baz=149						
U34A	Anderson Ranch	58.52	334	P	P	23 03 25.5	0.0
	baz=148						
U34A	Anderson Ranch	58.52	334	eP	P	23 03 25.6	0.0
	14nm,0.6s						
S37A	Fort Scott	58.56	337	P	P	23 03 25.4	-0.4
	baz=151						
V32A	Arapaho	58.58	332	P	P	23 03 26.6	+0.5
	baz=146						
R38A	Fenwick Farm,	58.59	338	P	P	23 03 25.0	-1.0
	baz=152						
MNTX	Cornudas Mount	58.62	324	P	P	23 03 26.7	+0.3
	baz=139						
MNTX	Cornudas Mount	58.62	324	eP	P	23 03 26.5	+0.1
	9.9nm,0.9s						
S36A	Lake Cedric, C	58.82	336	P	P	23 03 27.0	-0.6
	baz=150						
T34A	McClaskey Farm	58.87	334	P	P	23 03 27.9	0.0
	baz=148						
MSTX	Muleshoe	58.96	328	P	P	23 03 29.0	+0.2
	baz=142,SNR=5.3						
MSTX	Muleshoe	58.96	328	eP	P	23 03 29.7	+0.9
	19nm,0.9s						
Q39A	Willow Grove F	59.02	339	P	P	23 03 27.3	-1.6
	baz=153						
R37A	Teagarden Farm	59.04	337	P	P	23 03 28.5	-0.6
	baz=151						
S35A	Otter Creek Ra	59.08	335	P	P	23 03 28.8	-0.6
	baz=150,SNR=7.0						
P40A	Paris	59.14	340	P	P	23 03 28.3	-1.4
	baz=154						
Q38A	Cooks Store, C	59.17	338	P	P	23 03 29.0	-1.0
	baz=153						
O41A	Passleys Farm,	59.29	341	P	P	23 03 29.7	-1.1
	baz=156						
R36A	Gordon, Harris	59.31	336	P	P	23 03 30.1	-0.9
	baz=151						
T33A	Patterson Ranc	59.37	333	P	P	23 03 31.5	+0.1
	baz=147						
S33A	Kaszmaul Farm,	59.69	334	P	P	23 03 33.5	-0.1
	baz=148						
T32A	Huddler Ranch,	59.74	333	P	P	23 03 34.1	+0.1
	baz=147						
Q35A	Mercer Eighty,	59.98	336	P	P	23 03 34.8	-0.7
	baz=150						
P37A	Lathrop	59.99	338	P	P	23 03 33.8	-1.7
	baz=152						
Q34A	Chapman	60.39	336	P	P	23 03 37.8	-0.4
	baz=149						
121A	Cookes Peak, D	60.61	323	P	P	23 03 41.1	+1.0
	baz=137						
121A	Cookes Peak, D	60.61	323	eP	P	23 03 41.8	+1.7
	3.2nm,0.6s						
P34A	Walnut Farm, R	60.88	336	P	P	23 03 41.0	-0.6
	baz=150,SNR=5.9						
L41A	Preston	60.97	342	P	P	23 03 40.2	-1.9
	baz=157						
BNM	Barren Site	61.15	325	eP	P	23 03 45.2	+1.4
LPM	Los Pinos Moun	61.27	325	eP	P	23 03 45.9	+1.4
L39A	Vinton	61.47	341	P	P	23 03 44.3	-1.1
	baz=155						
LAZ	Ladron	61.62	325	eP	P	23 03 48.0	+1.1
O33A	Hebron	61.63	336	P	P	23 03 46.1	-0.5
	baz=149						
ANMO	Albuquerque	61.65	326	P	P	23 03 48.3	+1.3
	baz=139						
ANMO	Albuquerque	61.65	326	eP	P	23 03 47.9	+0.9
	4.8nm,0.6s						
K40A	Colesburg	61.73	342	P	P	23 03 45.9	-1.3
	baz=156						
N34A	Lincoln	61.87	337	P	P	23 03 47.5	-0.6
	baz=150						
J41A	Loganville	62.02	343	P	P	23 03 47.9	-1.1
	baz=158						
O32A	Brockman Farm,	62.07	335	P	P	23 03 49.4	-0.1
	baz=148						
M35A	Nena	62.12	338	P	P	23 03 49.3	-0.5
	baz=151						
TUC	Tucson	62.23	321	P	P	23 03 51.9	+1.1
	baz=134						
TUC	Tucson	62.23	321	eP	P	23 03 51.3	+0.5
	3.8nm,0.9s						
J40A	Soldiers Grove	62.25	343	P	P	23 03 49.3	-1.3
	baz=157						
T25A	Trinidad	62.27	329	P	P	23 03 52.2	+1.0
	baz=142						
J39A	Decorah	62.48	342	P	P	23 03 50.9	-1.2
	baz=156						
L35A	Bielow Farm, R	62.64	338	P	P	23 03 52.5	-0.7
	baz=152						
J38A	Wedel Dairy, R	62.70	341	P	P	23 03 52.4	-1.1
	baz=155						
K36A	Gilmore City	62.73	339	P	P	23 03 52.9	-0.9
	baz=153						
BGNE	Belgrade	63.00	336	P	P	23 03 55.5	-0.1
	baz=149						
214A	Organ Pipe Nat	63.24	319	P	P	23 03 59.1	+1.7
	baz=132						
214A	Organ Pipe Nat	63.24	319	eP	P	23 03 58.7	+1.3
	48nm,1.0s						
SDCO	Great Sand Dun	63.29	329	P	P	23 03 59.4	+1.4
	baz=141						
SDCO	Great Sand Dun	63.29	329	eP	P	23 03 58.5	+0.6
L31A	Butterfield Fa	63.92	336	P	P	23 04 02.7	+1.0
	baz=148						
S22A	4UR Ranch, Cre	63.97	328	P	P	23 04 03.9	+1.6
	baz=140						
S22A	4UR Ranch, Cre	63.97	328	eP	P	23 04 03.6	+1.3
	3.1nm,0.8s						
X16A	Lo Mia Camp, P	64.09	322	eP	P	23 04 05.3	+2.2
	8.5nm,1.0s						
J33A	Davis	64.20	338	P	P	23 04 02.7	-0.7
	baz=150						
OGNE	Ogallala	64.21	333	P	P	23 04 04.2	+0.6
	baz=145						
H36A	Jessenland, He	64.29	341	P	P	23 04 03.8	-0.1
	baz=154						
ECSD	EROS Data Cent	64.44	339	P	P	23 04 04.6	-0.3
	baz=151						
ECSD	EROS Data Cent	64.44	339	eP	P	23 04 04.3	-0.6
	11nm,1.3s						
MVCO	Mesa Verde	64.44	326	P	P	23 04 06.6	+1.3
	baz=138						
MVCO	Mesa Verde	64.44	326	eP	P	23 04 06.7	+1.3
	13nm,1.1s						
H35A	Sunnyside Ranc	64.69	340	P	P	23 04 05.9	-0.6
	baz=153						
Y14A	Wickenburg	64.70	321	eP	P	23 04 08.9	+2.1
WUAZ	Wupatki	64.82	323	P	P	23 04 09.7	+1.9
	baz=135						
WUAZ	Wupatki	64.82	323	eP	P	23 04 10.3	+2.6
	11nm,1.1s						
H34A	Spellman Lake,	64.97	340	P	P	23 04 08.2	-0.1
	baz=152						
I32A	Karley and Nic	65.00	338	P	P	23 04 07.9	-0.6
	baz=150						
J30A	Dallas	65.15	336	P	P	23 04 09.3	-0.2
	baz=148						
H33A	Prehn Over Nor	65.31	339	P	P	23 04 10.5	0.0
	baz=151						
F36A	Milaca	65.32	342	P	P	23 04 09.4	-1.1
	baz=154						
Y12C	Blythe	65.51	320	P	P	23 04 13.8	+1.8
	baz=132						
VNA1	Neumayer--Stat	65.62	161	P	P	23 04 27.7	+16
H31A	Wolsey	65.75	338	P	P	23 04 14.2	+0.9
	baz=149						
F34A	Alexandria	65.80	341	P	P	23 04 13.3	-0.3
	baz=153						
E36A	McGregor	65.83	342	P	P	23 04 13.3	-0.5
	baz=155						
SUSD	Miller	65.90	337	P	P	23 04 14.0	-0.3
	baz=149						
U15A	North Rim	65.99	323	eP	P	23 04 17.5	+2.2
BC3	Big Chuckawall	66.03	319	P	P	23 04 17.2	+1.8
	baz=131						
IRM	Iron Mountain	66.16	320	P	P	23 04 18.6	+2.4
	baz=131						
F33A	5 Mile Ranch,	66.17	340	P	P	23 04 15.7	-0.3
	baz=152						
D37A	Cotton	66.18	343	P	P	23 04 15.9	0.0
	baz=156						
E35A	Pequot Lakes	66.21	341	P	P	23 04 15.8	-0.4
	baz=154						
C38A	Sawbill Land.	66.38	344	P	P	23 04 16.6	-0.7
	baz=157						
D36A	Goodland	66.40	343	P	P	23 04 16.4	-1.0
	baz=155						
E34A	Wadena	66.41	341	P	P	23 04 16.9	-0.6
	baz=153						
O20A	White River Ci	66.49	328	P	P	23 04 19.6	+1.2
	baz=139						
C37A	Embarrass	66.63	344	P	P	23 04 17.7	-1.2
	baz=156						
EYMN	Ely	66.65	344	P	P	23 04 17.8	-1.2
	baz=157						
KNB	Kanab	66.70	323	eP	P	23 04 22.3	+2.6
	20nm,0.8s						
C36A	Pine Crest Far	66.84	343	P	P	23 04 19.3	-0.8
	baz=155						
F31A	Hecla	66.86	339	P	P	23 04 20.0	-0.3
	baz=150						
GMRC	Granite Mounta	66.89	320	P	P	23 04 22.7	+1.8
	baz=131						
SRU	San Rafael Swe	66.92	326	eP	P	23 04 22.7	+1.6
	11nm,1.0s						
LCMT	Little Creek M	66.94	323	eP	P	23 04 23.6	+2.3
	5.1nm,1.0s						
MTPU	Mount Pierson	67.06	324	eP	P	23 04 24.1	+1.9
	2.7nm,0.6s						
C35A	Jirik Farms, M	67.11	342	P	P	23 04 21.1	-0.8
	baz=154						
P17A	Butcher Ranch,	67.29	326	eP	P	23 04 25.2	+1.8
	14nm,1.0s						
HEC	Hector,Ludlow	67.34	319	P	P	23 04 26.2	+2.5
	baz=130						
CCUT	Cedar City	67.38	323	eP	P	23 04 25.9	+1.8
	6.3nm,0.8s						
MSU	Marysvale	67.39	325	eP	P	23 04 26.3	+2.2
SNAA	Sanae	67.62	162	P	P	23 04 26.9	+2.1
SNAA	Sanae	67.62	162	eP	P	23 04 26.2	+1.4
	7.5nm,0.6s						
B35A	Bob, Littlefor	67.64	343	P	P	23 04 24.4	-0.7
	baz=155						
RSSD	Black Hills	67.65	334	P	P	23 04 26.3	+0.7
	baz=144						
SHPR	Sheep Range	67.73	321	eP	P	23 04 28.4	+2.2
	6.8nm,0.7s						
DBIC	Dimbokro	67.82	76	P	P	23 04 27.2	+0.2
	3.4nm,0.5s,baz=236,slow=6.5,SNR=9.4						
GSC	Goldstone, Bar	67.94	320	P	P	23 04 30.0	+2.6
	baz=130						
GSC	Goldstone, Bar	67.94	320	eP	P	23 04 30.0	+2.6
	14nm,1.5s						
AGMN	Agassiz Nation	68.21	341	P	P	23 04 28.1	-0.6
	baz=153						
AGMN	Agassiz Nation	68.21	341	eP	P	23 04 28.1	-0.6
	6.6nm,0.7s						
EDW2	Edwards Air Fo	68.42	319	P	P	23 04 32.4	+2.0
	baz=129						
B32A	Ashes, Strandq	68.51	341	P	P	23 04 29.9	-0.6
	baz=152						
A33A	Warroad	68.64	342	P	P	23 04 30.9	-0.4
	baz=153						
TPNV	Topopah Spring	68.68	321	P	P	23 04 34.6	+2.6
	baz=131						
TPNV	Topopah Spring	68.68	321	eP	P	23 04 30.4	-1.6
	10nm,0.6s						
FURC	Furnace Creek,	68.73	320	P	P	23 04 35.1	+3.0
	baz=131						
MPMC	Manual Prospec	68.86	320	P	P	23 04 34.7	+1.5
	baz=130						
DUG	Dugway, Tooele	68.92	326	P	P	23 04 35.6	+2.1
	baz=135						
DUG	Dugway, Tooele	68.92	326	eP	P	23 04 35.6	+2.1
	7.1nm,1.0s						
DAC	Darwin (Calif)	69.06	320	eP	P	23 04 36.8	+2.3
	4.7nm,0.8s						
PDAR	Pinedale Array	69.12	330	P	P	23 04 36.0	+1.2
	0.9nm,0.4s,baz=134,slow=5.2,SNR=6.1						
R11A	Troy Canyon, C	69.21	323	P	P	23 04 37.6	+2.3
	baz=132						
R11A	Troy Canyon, C	69.21	323	eP	P	23 04 37.6	+2.3
	3.8nm,0.9s						
ISA	Isabella, Lake	69.22	319	P	P	23 04 38.1	+2.8
	baz=129						
CWC	Cottonwood Cre	69.47	320	P	P	23 04 39.1	+2.2
	baz=130						
BGU	Big Grassy Mou	69.56	326	eP	P	23 04 39.2	+1.9
	11nm,1.2s						
PKM	Mcpherson Peak	69.60	318	P	P	23 04 40.7	+2.9
	baz=128						
VES	Vestal, Richgr	69.72	319	P	P	23 04 40.8	+2.6
	baz=129						
A29A	Manning Farm,	69.84	340	P	P	23 04 38.3	-0.4
	baz=149						
ULM	Lac du Bonnet	69.95	342	P	P	23 04 38.4	-0.9
	6.8nm,0.4s,baz=146,slow=6.0,SNR=13						
ULM	Lac du Bonnet	69.95	342	eP	P	23 04 38.5	-0.8
	11nm,0.6s						
HVU	Hansel Valley	70.03	327	eP	P	23 04 41.9	+1.7
	8.5nm,0.8s						
SCHQ	Schefferville	70.61	2	P	P	23 04 42.3	-0.9
	1.7nm,0.5s,baz=199,slow=6.7,SNR=2.7						
FLWY	Flagg Ranch	70.66	330	eP	P	23 04 46.0	+2.0
	11nm,0.8s						
GCMT	Greycliff	71.45	332	eP	P	23 04 49.2	+0.6
HLID	Hailey	72.14	327	P	P	23 04 55.2	+2.3
	baz=134						
HLID	Hailey	72.14	327	eP	P	23 04 53.8	+1.0
	3.9nm,0.7s						
MCMT	McKenzie Canyo	72.25	329	eP	P	23 04 54.9	+1.4
BOZ	Bozeman (W)	72.26	330	P	P	23 04 54.7	+1.3
	baz=137						
MFID	Camas Ranch	72.78	327	eP	P	23 04 58.6	+2.1
	11nm,0.9s						
ORV	Oroville	73.52	321	eP	P	23 05 03.2	+2.5
	9.6nm,1.0s						
O03D	Paynes Creek	74.16	321	P	P	23 05 05.9	+1.4
	baz=128						
MSO	Missoula	74.22	330	P	P	23 05 07.5	+2.7
	baz=136						
MOD	Modoc Plateau	74.27	323	eP	P	23 05 06.5	+1.2
	6.9nm,0.8s						
BMO	Blue Mountains	74.54	327	eP	P	23 05 07.7	+1.0
	4.8nm,0.7s						
M04C	Macdoel	75.09	322	P	P	23 05 11.8	+1.9
	baz=128						
N02D	Trinity Center	75.11	321	P	P	23 05 11.4	+1.4
	baz=127						
K05A	Summer Lake	75.13	323	eP	P	23 05 11.9	+1.7
	8.5nm,1.0s						
F10A	Beach Ranch, E	75.26	328	eP	P	23 05 11.9	+1.2
	3.2nm,0.6s						
M02C	Callahan	75.45	321	P	P	23 05 13.3	+1.4
	baz=127						
J05D	Fort Rock, OR	75.67	324	P	P	23 05 15.3	+2.0
	baz=129						
KHMM	Horsrse Mountain	75.68	321	eP	P	23 05 13.4	+0.1
	48nm,1.6s						
G08A	Pilot Rock	75.71	326	eP	P	23 05 13.8	+0.5
	4.2nm,0.8s						
TOA0	Torodi Ar. Sit	76.11	72	eP	P	23 05 15.6	-0.5
TORD	Torodi Ar. Bea	76.11	72	P	P	23 05 15.4	-0.7
	5.1nm,0.5s,baz=270,slow=4.5,SNR=68						
KRMB	Red Mountain	76.17	321	eP	P	23 05 15.6	-0.5
KRMB				ePcP	PcP	23 05 19.5	-7.4
L02D	Cave Junction,	76.36	322	P	P	23 05 18.6	+1.6
	baz=127						
I05D	Terrebonne, OR	76.39	325	P	P	23 05 19.6	+2.5
	baz=129						
I04A	Tendick Farm,	76.66	324	P	P	23 05 20.6	+2.0
	baz=128						
G05D	Wamic, OR	76.95	325	P	P	23 05 22.6	+2.4
	baz=129						
I03D	Drain, OR	77.14	323	P	P	23 05 23.8	+2.6
	baz=127						
G03D	McMinnville, O	78.01	324	P	P	23 05 27.9	+1.9
	baz=128						
EDM	Edmonton	78.59	335	eP	P	23 05 29.3	+0.2
	16nm,1.0s						
E03A	Lebam	78.99	325	eP	P	23 05 30.1	-1.2
	60nm,1.4s						
B05A	Bryant	79.27	327	P	P	23 05 34.0	+1.2
	baz=129						
SYO	Syowa Base	81.81	160	eP	P	23 05 46.0	+0.1
VNDA	Vanda	82.12	190	P	P	23 05 50.8	+3.3
	6.9nm,1.4s,baz=132,slow=3.4,SNR=8.0						
TSUM	Tsumeb	82.18	108	eP	P	23 05 50.8	+1.8

	4.9nm,0.8s							
ESDC	**Sonseca Array**	**82.36**	**45**	P		**P**	**23 05 49.9**	**+0.6**
	1.0nm,0.5s,baz=255,slow=5.3,SNR=16							
ES19	**SONSECA Array**	**82.41**	**45**	*e*P		**P**	**23 05 50.1**	**+0.5**
YKA	**Yellowknife Ar**	**85.86**	**341**	P		**P**	**23 06 06.6**	**+0.3**
	3.6nm,0.5s,baz=131,slow=4.8,SNR=46							
BOSA	**Boshof**	**86.52**	**119**	P		**P**	**23 06 11.7**	**+1.0**
	1.5nm,0.8s,baz=274,slow=8.5,SNR=5.0							
DLBC	**Dease Lake**	**89.11**	**333**	*e*P		**P**	**23 06 23.9**	**+1.9**
MAW	**Mawson**	**89.71**	**164**	P		**P**	**23 06 27.3**	**+2.7**
	4.3nm,0.7s,baz=193,slow=5.5,SNR=16							
KEST	**Kesra**	**90.46**	**53**	P		**P**	**23 06 30.6**	**+1.8**
	1.9nm,0.7s,baz=6.9,slow=5.9,SNR=3.4							
GERES	**GERESS Array B**	**97.51**	**41**	P		Pdif	23 07 00.1	-0.7
	0.1nm,0.4s,baz=324,slow=4.8,SNR=3.0							
VYHS	**Vyhne**	**100.73**	**43**	*e*P		**Pdif**	**23 07 19.0**	**+3.9**
H11N3	**WAKE ISLAND Hyl**	**26.39**	**283**	T		T	01 30 53.9	
	baz=90							
H11N2	**WAKE ISLAND Hyl**	**26.40**	**283**	T		T	01 30 51.9	
	baz=90							
H11N1	**WAKE ISLAND Hyl**	**26.41**	**283**	T		T	01 30 54.1	
	baz=90							
H11S2	**WAKE ISLAND Hyl**	**26.45**	**281**	T		T	01 30 57.1	
	baz=94							
H11S1	**WAKE ISLAND Hyl**	**26.46**	**281**	T		T	01 30 56.8	
	baz=94							
H11S3	**WAKE ISLAND Hyl**	**26.47**	**281**	T		T	01 30 58.0	
	baz=94							
ABKAR	**Akbulak array**	**127.41**	**40**	*e*PKPdf		**PKPdf**	**23 12 31.7**	**+1.5**
ASAR	**Alice Springs**	**134.41**	**211**	PKhKP	PKPpre		23 12 43.5	
	0.5nm,0.5s,baz=146,slow=2.0,SNR=4.0							
ASAR				PKP		**PKiKP**	**23 12 45.9**	**+0.2**
	0.3nm,0.3s,baz=125,slow=3.0,SNR=4.6							
ZALV	**Zalesovo Beam**	**137.18**	**22**	PKP		**PKPdf**	**23 12 48.8**	**+0.4**
	3.1nm,0.6s,baz=298,slow=2.7,SNR=17							
ZALV				SKP			23 16 01.5	
	4.5nm,0.8s,baz=314,slow=4.7,SNR=19							
WRA	**Warramunga Arr**	**137.27**	**214**	PKhKP	PKPpre		23 12 48.8	
	0.5nm,0.3s,baz=145,slow=2.0,SNR=31							
MKAR	**Makanchi Array**	**141.40**	**31**	PKhKP	PKPpre		23 12 55.0	
	0.3nm,0.4s,baz=343,slow=2.1,SNR=3.5							
MKAR				SKPbc		**SKiKP**	**23 16 12.4**	**+1.0**
	1.8nm,0.7s,baz=344,slow=2.8,SNR=11							
KSH	**Kashi**	**141.87**	**45**	*e*PKP		**PKPdf**	**23 13 02.9**	**+5.3**
KSH				*ep*PKP	pPKPdf		23 14 00.8	-0.6
KSH				*es*PKP			23 14 24.5	
KSH				*e*PP	PP		23 16 21.3	+16
KSH				PKS		**PKSdf**	**23 16 36.5**	**+3.0**
KSH				SKKS			23 22 46.4	
KSH				AMB	AMB			
	comp=Z,15nm,2.9s							
FITZ	**Fitzroy Crossi**	**142.96**	**204**	PKhKP	PKPpre		23 12 58.2	
	comp=Z,2.0nm,0.6s,baz=220,slow=1.0,SNR=5.6							
USRK	**Ussuriysk Ar.**	**146.53**	**331**	PKPbc		**PKPab**	**23 13 09.2**	**+0.5**
	comp=Z,4.8nm,0.5s,baz=36,slow=3.1,SNR=12							
MJAR	**Matsushiro Arr**	**148.02**	**315**	PKPbc		**PKPab**	**23 13 13.2**	**-1.8**
	comp=Z,1.9nm,0.4s,baz=100,slow=1.4,SNR=13							
SONM	**Songino Array**	**148.09**	**5**	PKP		**PKPbc**	**23 13 09.6**	**-1.9**
	comp=Z,4.6nm,0.7s,baz=37,slow=2.2,SNR=31							
SONM				PKPbc		**PKiKP**	**23 13 13.0**	**-0.1**
	comp=Z,4.8nm,0.7s,baz=324,slow=1.9,SNR=35							
KSRS	**Korea Array**	**153.67**	**328**	PKPbc		**PKPbc**	**23 13 26.6**	**+1.9**
	comp=Z,1.9nm,0.7s,baz=8.5,slow=3.0,SNR=4.8							

BJI ***14*** *23:10:21.4, 7.°10S×129.°72E, h216km, mb4.4/27, mB4.6/22*
ISCJB ***14*** *23:10:24.0±0.2, 6.°63S±0.°02×129.°53E±0.°03, h200km, mb4.3/42, Error ellipse: s-maj=4.1km s-min=3.2km az=172.7*
IDC ***14*** *23:10:27.0±1.1, 6.°54S×129.°52E, h215km±10km, mb4.0/24, mb1 4.1/29, mb1mx4.0/42, mbtmp4.6/29, Error ellipse: s-maj=11.6km s-min=7.0km az=70.0*
DJA ***14*** *23:10:26.5±0.2, 7.°5S×13.°0E±.°, h235km±4km, M4.8/10, mb4.8/10, mB5.2/6, MLv5.1/6, Mw(mB)4.5/6*
NEIC ***14*** *23:10:26.7±0.4, 6.°64S×129.°47E, h216km±4km, mb4.8/23, Error ellipse: s-maj=5.6km s-min=4.2km az=56.0*
NEIC Felt at Darwin, Australia.
KLM ***14*** *23:10:35.0, 6.°61S×128.°97E, h237km, mb4.9, MS6.0*
ISC 14 23:10:25.3±0.3, 6.69S±0.04×129.48E±0.04, h200km, n133, σ2$00/153, mb4.4/41, 4C-4D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**2.20**	**11**	P	**Pn**	**23 11 09.1**	**+3.2**
BNDI				S	**Sn**	**23 11 44.5**	**+6.9**
SAUI	**Saumlaki**	**2.21**	**126**	P	**Pn**	**23 11 09.9**	**+3.8**
SAUI				S	**Sn**	**23 11 41.4**	**+3.5**
SAUI	**Saumlaki**	**2.21**	**126**	*e*Pn	**Pn**	**23 11 09.9**	**+3.8**
MSAI	**Masohi**	**3.37**	**351**	P	**Pn**	**23 11 22.5**	**+3.1**
MSAI				S	**Sn**	**23 12 04.5**	**+2.7**
FAKI	**Fak Fak**	**4.65**	**36**	P	**Pn**	**23 11 35.2**	**-0.2**
FAKI				S	**Sn**	**23 12 26.9**	**-3.6**
FAKI	**Fak Fak**	**4.65**	**36**	*e*Pn	**Pn**	**23 11 35.6**	**+0.2**
SANI	**Sanana**	**5.78**	**323**	P	**Pn**	**23 11 52.0**	**+2.2**
	122nm,1.4s,2µm0.5nm						
SOEI	**Soe**	**5.99**	**239**	P	**Pn**	**23 11 55.4**	**+2.8**
SOEI				S	**Sn**	**23 13 00.7**	**-0.9**
SOEI	**Soe**	**5.99**	**239**	*e*Pn	**Pn**	**23 11 54.1**	**+1.5**
SIJI	**Sorong**	**6.05**	**17**	P	**Pn**	**23 11 53.7**	**+0.4**
	27nm,0.3s,baz=269,slow=24,SNR=21						
SIJI				S	**Sn**	**23 12 57.9**	**-5.1**
	30nm,0.3s,baz=91,slow=24,SNR=20						
MTN	**Manton Dam**	**6.33**	**165**	*e*Pn	**Pn**	**23 11 59.0**	**+2.1**
LBMI	**Labuha**	**6.33**	**342**	P	**Pn**	**23 11 58.9**	**+2.0**
	99nm,0.4s,1µm0.7nm						
LBMI				S	**Sn**	**23 13 08.5**	**-1.0**
	99nm,0.4s,1µm0.7nm						
KDI	**Kendari**	**7.35**	**291**	P	Pn	23 12 15.4	+5.2
MMRI	**Maumere**	**7.43**	**254**	P	Pn	23 12 16.3	+5.1
	92nm,0.6s,5µm0.7nm						
MMRI	**Maumere**	**7.43**	**254**	*e*Pn	**Pn**	**23 12 13.4**	**+2.2**
LUWI	**Luwuk**	**8.73**	**310**	P	**Pn**	**23 12 32.1**	**+3.9**
KAPI	**Kappang**	**9.82**	**279**	P	**Pn**	**23 12 45.6**	**+3.3**
	0.5nm,0.3s,baz=287,slow=10,SNR=5.5						
KAPI				S	Sn	23 14 21.8	-10
	1.2nm,0.3s,baz=159,slow=20,SNR=2.4						
KAPI	**Kappang**	**9.82**	**279**	*e*Pn	**Pn**	**23 12 44.2**	**+1.9**
	49nm,1.5s						
KAPI				S	Sn	23 14 21.8	-10
TTSI	**Tana Toraja**	**10.28**	**290**	P	**P**	**23 12 59.5**	**+3.6**
MRSI	**Marisa**	**10.36**	**313**	P	**Pn**	**23 12 51.6**	**+2.3**
	125nm,0.6s,2µm						
PCI	**Palu**	**11.21**	**300**	P	**P**	**23 13 05.2**	**-1.0**
GENI	**Genyem**	**11.40**	**70**	P	**P**	**23 13 11.0**	**+2.6**
PLAI	**Plampang**	**11.79**	**259**	P	**P**	**23 13 11.5**	**-1.2**
JAY	**Jayapura**	**11.93**	**70**	P	**Pn**	**23 13 09.9**	**+0.4**
	0.1nm,0.3s,baz=85,slow=23,SNR=3.8						
JAY				S	**Sn**	**23 15 17.8**	**-4.8**
	0.1nm,0.3s,baz=270,slow=23,SNR=1.9						
JAY	**Jayapura**	**11.93**	**70**	P	**P**	**23 13 17.3**	**+3.0**
FITZ	**Fitzroy Crossi**	**11.94**	**198**	P	**Pn**	**23 13 08.8**	**-0.8**
	16nm,0.3s,baz=30,slow=10,SNR=89						
FITZ				S	**Sn**	**23 15 19.0**	**-3.8**
	16nm,0.3s,baz=89,slow=15,SNR=6.3						
FITZ	**Fitzroy Crossi**	**11.94**	**198**	*e*Pn	**Pn**	**23 13 08.7**	**-0.8**
FITZ				*e*S	**Sn**	**23 15 19.6**	**-3.2**
TWSI	**Taliwang, Sumb**	**12.65**	**260**	P	**Pn**	**23 13 20.2**	**+1.7**
WRAB	**Tennant Creek**	**13.99**	**161**	*e*Pn	**Pn**	**23 13 35.6**	**+0.4**
WRA	**Warramunga Arr**	**13.99**	**161**	P	**Pn**	**23 13 34.1**	**-1.1**
	2.9nm,0.3s,baz=342,slow=12,SNR=47						
WRA				S	**S**	**23 16 06.0**	**-5.2**
	6.2nm,0.3s,baz=339,slow=22,SNR=8.0						
WB2	**Warramunga Arr**	**14.00**	**161**	*e*Pn	**Pn**	**23 13 34.8**	**-0.5**
DAV	**Davao City (W)**	**14.21**	**344**	P	**Pn**	**23 13 37.7**	**-0.3**
	62nm,0.3s,baz=1.3,slow=15,SNR=4.4						
BBKI	**Banjar Baru**	**14.93**	**282**	P	**P**	**23 13 49.5**	**+1.9**
COEN	**Coen**	**15.28**	**119**	*e*P	**Pn**	**23 13 52.0**	**+0.9**
	74nm,0.8s						
MTKI	**Muara Teweh, K**	**15.63**	**291**	P	**P**	**23 13 59.8**	**+4.5**
BLJI	**Banyuglugur**	**15.79**	**265**	P	**Pn**	**23 13 59.4**	**+2.1**
TSM	**Tawau**	**15.92**	**313**	⇑P	**Pn**	**23 14 00.1**	**+1.3**
GMJI	**Gumukmas**	**15.98**	**263**	P	**P**	**23 13 59.9**	**+0.8**
MYLDM	**Lahad Datu**	**16.10**	**317**	⇓P	**Pn**	**23 14 04.5**	**+3.6**
MYLDM	**Lahad Datu**	**16.10**	**317**	*e*P	**P**	**23 14 00.8**	**+0.3**
	58nm,1.2s						
MBWA	**Marble Bar**	**17.20**	**212**	*e*P	**P**	**23 14 13.0**	**+0.5**
	22nm,0.7s						
SDKM	**Sandakan**	**17.33**	**315**	⇑P	**Pn**	**23 14 16.4**	**+0.7**
AS31	**Alice Springs**	**17.41**	**166**	*e*P	**P**	**23 14 17.4**	**+2.6**
	44nm,0.6s						
ASAR	**Alice Springs**	**17.41**	**166**	P	**P**	**23 14 16.9**	**+2.1**
	16nm,0.3s,baz=347,slow=10,SNR=614						
ASAR				S	**S**	**23 17 24.8**	**-0.7**
	2.1nm,0.3s,baz=344,slow=18,SNR=9.9						
AS01	**Alice Springs**	**17.41**	**166**	*e*P	**P**	**23 14 16.9**	**+2.0**
PMG	**Port Moresby**	**17.71**	**100**	P	**P**	**23 14 20.5**	**+2.4**
	1.9nm,0.3s,baz=212,slow=13,SNR=2.9						
PMG	**Port Moresby**	**17.71**	**100**	*e*P	**P**	**23 14 18.6**	**+0.5**
	5.4nm,0.4s						
KKM	**Kota Kinabalu**	**18.31**	**313**	⇑P	**P**	**23 14 25.5**	**+0.8**
KKM	**Kota Kinabalu**	**18.31**	**313**	*e*P	**P**	**23 14 24.2**	**-0.6**
	74nm,1.3s						
MANU	**Manus Island**	**18.42**	**76**	*e*P	**P**	**23 14 27.8**	**+2.0**
	66nm,0.8s						
SBUM	**Sibu**	**19.48**	**297**	⇓P	**P**	**23 14 39.6**	**+2.3**
SBUM	**Sibu**	**19.48**	**297**	*e*P	**P**	**23 14 38.4**	**+1.1**
	86nm,1.8s						
KSM	**Kuching**	**20.78**	**292**	⇑P	**P**	**23 14 52.4**	**+1.1**
KSM	**Kuching**	**20.78**	**292**	*e*P	**P**	**23 14 51.4**	**+0.1**
	44nm,1.2s						
CTA	**Charters Tower**	**21.03**	**131**	P	**P**	**23 14 55.9**	**+2.1**
	9.9nm,0.6s,baz=300,slow=14,SNR=10						
CTAO	**Charters Tower**	**21.03**	**131**	*e*P	**P**	**23 14 55.6**	**+1.8**
	19nm,0.9s						
CISI	**Cisompet, Garu**	**21.51**	**266**	P	**P**	**23 14 59.5**	**+0.5**
CISI	**Cisompet, Garu**	**21.51**	**266**	*e*P	**P**	**23 14 58.7**	**-0.3**
	100nm,0.7s						
CNJI	**Cibinong**	**22.19**	**267**	P	**P**	**23 15 04.2**	**-1.3**
CGJI	**Cibinong**	**23.63**	**269**	P	**P**	**23 15 18.7**	**+0.1**
FORT	**Forrest**	**24.00**	**183**	*e*P	**P**	**23 15 22.9**	**+1.1**
	1µm,0.7s						
BBOO	**Buckleboo**	**26.70**	**168**	*e*P	**P**	**23 15 47.0**	**+1.0**
	20nm,0.8s						
MYKOM	**Kota Tinggi**	**26.93**	**287**	⇓P	**P**	**23 15 51.0**	**+2.6**
MYKOM	**Kota Tinggi**	**26.93**	**287**	*e*P	**P**	**23 15 46.9**	**-1.5**
	50nm,1.3s						
STKA	**Stephens Creek**	**27.49**	**157**	P	**P**	**23 15 54.3**	**+1.1**
	4.9nm,0.5s,baz=318,slow=7.6,SNR=11						
STKA	**Stephens Creek**	**27.49**	**157**	*e*P	**P**	**23 15 52.9**	**-0.3**
	12nm,1.6s						
KGM	**Kluang**	**27.51**	**287**	⇓P	**P**	**23 15 56.2**	**+2.7**
NWAO	**Narrogin (SRO)**	**28.48**	**202**	P	**P**	**23 16 03.0**	**+1.1**
	7.7nm,0.3s,baz=270,slow=8.0,SNR=12						
PSI	**Prapat**	**31.93**	**286**	P	**P**	**23 16 31.6**	**-1.1**
	11nm,0.7s,baz=129,slow=5.3,SNR=7.5						
PSI	**Prapat**	**31.93**	**286**	*e*P	**P**	**23 16 31.6**	**-1.1**
	23nm,1.0s						
QIZ	**Qiongzhong**	**32.06**	**323**	P	**P**	**23 16 34.4**	**+0.9**
DZM	**Mont Dzumac**	**38.79**	**117**	P	**P**	**23 17 32.3**	**+1.2**
	7.5nm,0.9s,baz=90,slow=18,SNR=3.1						
DZM				ScP	**ScP**	**23 23 03.3**	**-4.4**
	7.2nm,1.1s,baz=229,slow=15,SNR=3.1						
CM01	**Chiang Mai Arr**	**39.10**	**310**	*e*P	**P**	**23 17 33.1**	**-0.5**
CM31	**Chiang Mai Arr**	**39.14**	**310**	*e*P	**P**	**23 17 33.9**	**0.0**
CMAR	**Chiang Mai Arr**	**39.14**	**310**	P	**P**	**23 17 33.5**	**-0.4**
	7.2nm,0.6s,baz=138,slow=7.3,SNR=53						
CMAR				ScP	**ScP**	**23 23 06.4**	**-2.5**
	0.5nm,0.3s,baz=151,slow=3.1,SNR=5.4						
CHTO	**Chiang Mai**	**39.35**	**311**	*e*P	**P**	**23 17 35.1**	**-0.5**
	14nm,0.7s						
GYA	**Guiyang**	**39.70**	**327**	P	**P**	**23 17 40.0**	**+1.6**
GYA				pP	pP	23 18 26.4	+5.6
GYA				sP	sP	23 18 50.3	+6.8
GYA				PP	**PnPn**	**23 19 18.0**	**-1.4**
GYA				PcP	**PcP**	**23 19 41.6**	**+0.5**
GYA				S	**S**	**23 23 27.8**	**+0.7**
GYA				sS	sS	23 24 48.5	+6.8
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA				pmax	pmax		
	comp=Z,110nm,5.0s						
MJAR	**Matsushiro Arr**	**43.78**	**10**	P	**P**	**23 18 08.9**	**-2.3**
	3.4nm,0.6s,baz=189,slow=9.3,SNR=20						
MAJO	**Matsushiro**	**43.78**	**10**	*e*P	**P**	**23 18 09.7**	**-1.6**
	19nm,1.3s						
MAT	**Matsushiro**	**43.78**	**10**	P	**P**	**23 18 08.8**	**-2.4**
MJB9	**Matsu-Tunnel**	**43.78**	**10**	*e*P	**P**	**23 18 09.7**	**-1.6**
	4.9nm,1.3s						
KSAR	**Wonju Array Be**	**43.93**	**358**	P	**P**	**23 18 11.9**	**-0.5**
KSRS	**Korea Array**	**43.94**	**358**	P	**P**	**23 18 11.9**	**-0.5**
	1.5nm,0.7s,baz=169,slow=9.3,SNR=4.0						
CD2	**Chengdu**	**44.77**	**328**	*e*P	**P**	**23 18 20.0**	**+0.8**
CD2				pP	pP	23 19 06.3	+3.8
CD2				sP	sP	23 19 30.8	+5.8
CD2				PcS	**PcS**	**23 23 51.8**	**0.0**
CD2				S	**S**	**23 24 41.5**	**+0.4**
CD2				sS	sS	23 26 03.8	+6.7
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,140nm,5.2s						
XAN	**Xi'an**	**44.95**	**336**	P	**P**	**23 18 18.5**	**-2.1**
BJI	**Beijing**	**48.09**	**346**	P	**P**	**23 18 43.1**	**-1.7**
BJI				pmax	pmax		
	comp=Z,7.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,86nm,4.9s						
LZH	**Lanzhou**	**48.89**	**332**	*e*P	**P**	**23 18 51.1**	**-0.1**
LZH				pP	pP	23 19 40.6	+5.4
LZH				pmax	pmax		
	comp=Z,16nm,1.0s						
HHC	**Hu-ho-hao-te**	**50.09**	**342**	*e*P	**P**	**23 19 03.6**	**+3.5**
HHC				pP	pP	23 19 49.3	+4.9
HHC				sP	sP	23 20 11.9	+5.3
HHC				S	**S**	**23 25 58.5**	**+2.4**
HHC				pmax	pmax		
	comp=Z,7.0nm,0.6s						
HHC				pmax	pmax		
	comp=Z,94nm,6.5s						
USRK	**Ussuriysk Ar.**	**50.70**	**2**	P	**P**	**23 19 04.0**	**-0.6**
	2.5nm,0.6s,baz=180,slow=7.5,SNR=6.4						
LSA	**Lhasa**	**51.62**	**317**	*e*P	**P**	**23 19 12.2**	**0.0**
	7.0nm,0.5s						
URZ	**Urewera**	**53.25**	**133**	P	**P**	**23 19 24.1**	**+0.7**
	8.1nm,0.8s,baz=240,slow=6.7,SNR=2.8						
PKIN	**Phulchoki**	**54.55**	**311**	*e*P	**P**	**23 19 32.6**	**-0.8**
KKN	**Kakani**	**54.75**	**311**	*e*P	**P**	**23 19 33.7**	**-1.0**
	5.5nm,0.4s						
DMN	**Daman**	**54.78**	**311**	*e*P	**P**	**23 19 33.7**	**-1.3**
	9.0nm,0.5s						
GKN	**Gorkha**	**55.34**	**311**	*e*P	**P**	**23 19 38.0**	**-0.9**
	16nm,0.3s						
KOLN	**Koldanda**	**56.01**	**310**	*e*P	**P**	**23 19 42.8**	**-0.9**
	9.6nm,0.3s						
PYUN	**Piuthan**	**56.64**	**310**	*e*P	**P**	**23 19 47.3**	**-0.9**
	6.1nm,0.2s						
SONM	**Songino Array**	**57.99**	**342**	P	**P**	**23 19 57.3**	**+0.2**
	1.5nm,0.6s,baz=156,slow=5.8,SNR=14						
SONA1	**Songino Array**	**58.00**	**342**	*e*P	**P**	**23 19 56.2**	**-1.0**
WMQ	**Urumqi**	**62.86**	**327**	*e*P	**P**	**23 20 30.3**	**+0.2**
WMQ				pmax	pmax		
	comp=Z,15nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,120nm,5.2s						
PEA0	**Petropavlovsk-**	**64.19**	**18**	*e*P	**P**	**23 20 38.3**	**-0.2**
PEA0B	**Petropavlovsk-**	**64.19**	**18**	*e*P	**P**	**23 20 38.9**	**+0.3**
PETK	**Petropavlovsk-**	**64.19**	**18**	P	**P**	**23 20 38.2**	**-0.4**
	6.6nm,0.8s,baz=194,slow=3.1,SNR=10						
KSH	**Kashi**	**67.44**	**318**	P	**P**	**23 21 00.0**	**+0.2**
KSH				*ep*P	pP	23 21 52.0	+5.4
KSH				*es*P	sP	23 22 16.3	+8.2
KSH				*e*ScP		23 25 06.1	
KSH				S	**S**	**23 29 35.9**	**-3.8**
KSH				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KSH				pmax	pmax		
	comp=Z,85nm,4.3s						
KSH				LR	LR		
	comp=N,120nm,5.3s						
KSH				LR	LR		
	comp=E,90nm,4.9s						
KSH				LR	LR		
	comp=Z,110nm,7.0s						
MK01	**Makanchi Array**	**67.67**	**327**	*e*P	**P**	**23 21 00.5**	**-0.4**
MK31	**Makanchi Array**	**67.69**	**327**	*e*P	**P**	**23 21 00.9**	**-0.1**
MKAR	**Makanchi Array**	**67.69**	**327**	P	**P**	**23 21 00.7**	**-0.3**
	5.9nm,0.6s,baz=120,slow=8.1,SNR=55						
MKAR	**Makanchi Array**	**67.69**	**327**	*e*P	**P**	**23 21 00.9**	**-0.1**
MAKZ	**Makanchi**	**67.86**	**327**	*e*P	**P**	**23 21 01.8**	**-0.3**
ZALV	**Zalesovo Beam**	**71.08**	**334**	P	**P**	**23 21 20.5**	**-1.1**
	4.2nm,0.6s,baz=123,slow=4.8,SNR=18						
KURK	**Kurchatov**	**71.99**	**329**	*e*P	**P**	**23 21 26.8**	**-0.3**
	84nm,1.1s						
VNDA	**Vanda**	**72.81**	**173**	P	**P**	**23 21 32.0**	**+0.4**
	1.1nm,0.5s,baz=325,slow=6.6,SNR=11						
VNDA	**Vanda**	**72.81**	**173**	*e*P	**P**	**23 21 31.9**	**+0.4**
MAW	**Mawson**	**75.05**	**201**	P	**P**	**23 21 45.7**	**+1.1**
	4.7nm,0.8s,baz=88,slow=6.5,SNR=10						
BRVK	**Borovoye**	**77.60**	**328**	*e*P	**P**	**23 21 59.0**	**-0.3**
GEYT	**Alibeck**	**79.62**	**310**	P	**P**	**23 22 09.8**	**-0.8**
	2.7nm,0.6s,baz=178,slow=5.3,SNR=10						
NRIK	**Noril'sk**	**81.14**	**346**	P	**P**	**23 22 18.4**	**+0.5**
	2.1nm,0.4s,baz=115,slow=6.5,SNR=3.1						
ABKAR	**Akbulak array**	**81.95**	**322**	*e*P	**P**	**23 22 21.9**	**-0.7**
	2.5nm,0.6s						
AKTO	**Aktyubinsk**	**83.52**	**322**	P	**P**	**23 22 30.4**	**-0.4**
	2.2nm,0.6s,baz=110,slow=9.0,SNR=8.3						
ARU	**Arti**	**85.17**	**328**	P	**P**	**23 22 38.2**	**-0.7**
	2.3nm,0.5s,baz=136,slow=1.0,SNR=8.8						
GNI	**Garni**	**90.26**	**310**	P	**P**	**23 23 05.0**	**+1.2**
	3.4nm,0.7s,baz=26,slow=22,SNR=2.7						
ILAR	**Eielson Array**	**93.29**	**25**	P	**P**	**23 23 14.7**	**-2.4**
	2.0nm,1.0s,baz=271,slow=4.5,SNR=12						
DAWY	**Dawson**	**96.46**	**26**	*e*P	**P**	**23 23 31.3**	**-0.3**
	0.6nm,0.3s						
BRTR	**Keskin Array B**	**98.72**	**309**	P	**P**	**23 23 40.3**	**-2.1**
	0.2nm,0.6s,baz=124,slow=7.2,SNR=1.9						
BOSA	**Boshof**	**99.17**	**240**	P	**Pdif**	**23 23 44.6**	**-0.1**
	1.8nm,1.0s,baz=83,slow=8.1,SNR=2.4						
TXAR	**Lajitas Array**	**125.21**	**59**	PKP	**PKPdf**	**23 29 02.2**	**-0.7**
	0.4nm,1.0s,baz=17,slow=1.3,SNR=3.5						
TORD	**Torodi Ar. Bea**	**128.24**	**281**	PKP	**PKPdf**	**23 29 08.4**	**-0.5**
	0.6nm,0.6s,baz=73,slow=1.5,SNR=4.0						
TORD				SKPbc	SKPbc	23 32 06.9	
	1.7nm,1.0s,baz=76,slow=4.8,SNR=5.6						
MDT	**Midelt**	**130.12**	**308**	SKPbc	**SKPbc**	**23 32 14.0**	**-2.4**
	1.0nm,0.6s,baz=49,slow=2.8,SNR=3.6						
SCHQ	**Schefferville**	**130.24**	**12**	SKPbc	**SKPbc**	**23 32 13.6**	**-2.3**
	1.2nm,0.3s,baz=291,slow=6.9,SNR=3.5						
DBIC	**Dimbokro**	**134.66**	**273**	SKPbc	**SKPbc**	**23 32 28.8**	**-3.8**
	7.7nm,1.0s,baz=124,slow=3.4,SNR=4.1						
LVC	**Limon Verde**	**145.76**	**149**	PKPbc	**PKPdf**	**23 29 43.1**	**+1.8**
	6.5nm,0.5s,baz=313,slow=2.2,SNR=3.0						
CPUP	**Villa Florida**	**146.52**	**169**	PKPbc	**PKPdf**	**23 29 44.0**	**+1.9**
	1.1nm,0.7s,baz=140,slow=2.8,SNR=3.6						
CPUP				SKPbc	**SKPbc**	**23 33 01.1**	**-2.5**
	2.0nm,0.6s,baz=194,slow=5.2,SNR=4.8						
SIV	**San Ignacio**	**155.16**	**155**	PKPab	**PKPab**	**23 30 18.9**	**-2.2**
	0.9nm,0.6s,baz=189,slow=3.2,SNR=3.7						

ISCJB ***14*** *23:21:54.0±0.5, 50.°24N±0.°03×18.°81E±0.°03, h0km, Error ellipse: s-maj=4.5km s-min=2.3km az=17.1*
CSEM ***14*** *23:21:54.5±0.4, 50.°24N×18.°86E, h1km, ML2.8/11, Error ellipse: s-maj=8.7km s-min=4.3km az=15.0*
WAR ***14*** *23:21:55.9, 50.°23N×18.°93E, h1km, Mw2.6*
ISC 14 23:21:54.5±0.8, 50.°16N±0.°03×18.°89E±0.°02, h0km, n59, σ1$41/101, 9C-6D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.46**	**260**	*e*Pg	**Pb**	**23 22 05.7**	**+0.3**
RAC				*e*Sg	**Sg**	**23 22 10.9**	**+1.8**
OKC	**Ostrava-Krasne**	**0.58**	**236**	⇓*i*PG	**Pb**	**23 22 08.0**	**+0.5**
OKC				*e*SG	**Sb**	**23 22 15.7**	**-0.6**
	comp=Z,37nm,0.5s						
OKC	**Ostrava-Krasne**	**0.58**	**236**	Pg	**Pb**	**23 22 08.0**	**+0.5**
OKC				Sg	**Sb**	**23 22 15.7**	**-0.6**
	37nm,0.5s						
OJC	**Ojcow**	**0.59**	**84**	*e*Pg	**Pg**	**23 22 06.4**	**+0.7**
OJC				*e*Sg	**Sg**	**23 22 14.3**	**+1.0**
OJC	**Ojcow**	**0.59**	**84**	*e*Pg	**Pg**	**23 22 06.4**	**+0.7**
OJC				*e*S

MOA	**Mollη**	**3.82**	**235**	Pg	**Pg**	**23 23 08.7**	**+0.9**
	0.8nm,0.2s							
MOA				Sg	**Sg**	**23 23 57.2**	**-0.1**
	4.5nm,0.6s							
CLL	**Collm**	**3.91**	**289**	*e*Pg	**Pg**	**23 23 10.0**	**+0.6**
CLL				*e*Sg	**Sg**	**23 24 05.0**	**+4.9**
NKC	**Novy Kostel**	**4.14**	**273**	*e*SG	**Sg**	**23 24 07.9**	**+0.5**
	comp=Z,6.8nm,0.4s							
NKC	**Novy Kostel**	**4.14**	**273**	Sg	**Sg**	**23 24 07.9**	**+0.5**
	6.8nm,0.4s							
DRGR		**4.22**	**142**	⇑*i*P	**Pn**	**23 22 57.7**	**-2.4**
DRGR		**4.22**	**142**	⇑*i*P	**Pn**	**23 22 57.7**	**-2.4**
DRGR				S	**Sn**	**23 23 46.8**	**-3.4**
BURAR	**Bucovina Array**	**4.89**	**119**	⇑*i*P	**Pn**	**23 23 05.3**	**-4.0**
BURAR	**Bucovina Array**	**4.89**	**119**	⇑*i*P	**Pn**	**23 23 05.3**	**-4.0**
BZS	**Buzias**	**4.90**	**157**	⇑*i*P	**Pn**	**23 23 06.1**	**-3.3**
BZS	**Buzias**	**4.90**	**157**	⇑*i*P	**Pn**	**23 23 06.1**	**-3.3**
BZS				S	**Sn**	**23 24 03.8**	**-3.0**

IDC ***14*** *23:27:57.7±0.7,3°.55S×77°.46W,h0km,mb3.9/9, mb1 4.2/13,mb1mx4.0/37,mbtmp4.0/13,ML4.0/4,MS3.4/6, Ms1 3.4/6,ms1mx2.9/32,Error ellipse: s-maj=27.1km s-min=16.0km az=73.0*

ISCJB ***14*** *23:28:00.4±0.4,3°.67S±0°.04×77°.37W±0°.08,h35km, mb3.9/13,MS3.2/5,Error ellipse: s-maj=11.6km s-min=5.6km az=179.8*

NEIC ***14*** *23:28:02.6±0.9,3°.63S×77°.37W,h36km±10km,mb4.0/5, Error ellipse: s-maj=12.7km s-min=7.8km az=78.0*

ISC 14 23:28:02.8±0.6,3°.61S±0°.06×77°.3W±0°.1,h35km,n36, σ1§32/32,mb4.0/13,MS3.1/5,Peru-Ecuador border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ATAH	**Atahualpa**	**3.66**	**197**	Pn	**Pn**	**23 28 57.0**	**-0.3**
	17nm,0.3s,baz=42,slow=7.7,SNR=37						
ATAH				Sn	**Sn**	**23 29 43.1**	**+3.7**
	13nm,0.3s,baz=132,slow=23,SNR=7.6						
OTAV	**Otavalo**	**3.98**	**344**	*e*Pn	**Pn**	**23 29 03.5**	**+1.6**
CMBC	**Cumbal**	**4.55**	**354**	*e*P	**Pn**	**23 29 08.8**	**-0.8**
CRUC	**La Cruz**	**5.16**	**4**	*e*P	**Pn**	**23 29 17.0**	**-0.9**
PRAC	**Prado**	**7.68**	**19**	*e*P	**Pn**	**23 29 52.8**	**+0.6**
NNA	**Nana**	**8.34**	**177**	Pn	**Pn**	**23 29 59.8**	**-1.5**
	3.4nm,0.3s,baz=328,slow=13,SNR=5.9						
NNA				Sn	**Sn**	**23 31 33.1**	**-1.2**
	2.7nm,0.3s,baz=288,slow=19,SNR=3.9						
ROSC	**El Rosal**	**8.92**	**20**	*e*P	**Pn**	**23 30 11.8**	**+2.2**
CHIC	**Chingaza**	**8.94**	**24**	*e*P	**Pn**	**23 30 12.0**	**+2.1**
NORC	**Norcasia**	**9.44**	**15**	*e*P	**Pn**	**23 30 17.4**	**+1.0**
RUSC	**La Rusia**	**10.35**	**24**	*e*P	**Pn**	**23 30 31.0**	**+1.7**
SDV	**Santo Domingo**	**14.10**	**28**	Pn	**Pn**	**23 31 19.9**	**-0.4**
	1.1nm,0.3s,baz=244,slow=8.5,SNR=4.8						
SDV				LR	LR	23 38 13.8	
	comp=Z,160nm,19.6s,baz=225,slow=44						
PTGA	**Pitinga**	**17.59**	**81**	P	**Pn**	**23 32 04.7**	**-0.6**
	1.2nm,0.3s,baz=273,slow=20,SNR=14						
SIV	**San Ignacio**	**20.18**	**129**	P	**P**	**23 32 34.7**	**+0.2**
	1.4nm,0.4s,baz=305,slow=11,SNR=6.1						
SIV				LR	LR	23 41 30.0	
	comp=Z,92nm,19.1s,baz=336,slow=40						
LVC	**Limon Verde**	**20.57**	**157**	LR	LR	23 40 34.6	
	comp=Z,328nm,21.3s,baz=18,slow=37						
SJG	**San Juan**	**24.24**	**27**	LR	LR	23 43 57.2	
	comp=Z,72nm,20.2s,baz=251,slow=40						
CPUP	**Villa Florida**	**29.63**	**142**	LR	LR	23 48 00.9	
	comp=Z,40nm,20.2s,baz=314,slow=40						
PLCA	**Paso Flores**	**37.46**	**172**	P	**P**	**23 35 13.7**	**+0.6**
	2.2nm,0.9s,baz=256,slow=17,SNR=3.0						
JCT	**Junction City**	**40.13**	**329**	P	**P**	**23 35 35.9**	**+0.4**
	1.8nm,0.7s						
TXAR	**Lajitas Array**	**41.36**	**324**	P	**P**	**23 35 44.6**	**-1.1**
	1.1nm,1.1s,baz=144,slow=9.1,SNR=4.9						
TXAR				PcP	**PcP**	**23 37 43.7**	**0.0**
	0.5nm,0.8s,baz=168,slow=6.4,SNR=4.7						
WMOK	**Wichita Mounta**	**43.15**	**334**	*e*P	**P**	**23 35 60.0**	**-0.2**
	3.2nm,0.9s						
MNTX	**Cornudas Mount**	**44.10**	**325**	*e*P	**P**	**23 36 06.6**	**-1.3**
	2.1nm,1.0s						
SADO	**Sadowa**	**48.19**	**358**	LR	LR	23 58 24.7	
	comp=Z,23nm,18.2s,baz=314,slow=38						
SDCO	**Great Sand Dun**	**48.75**	**330**	*e*P	**P**	**23 36 44.6**	**0.0**
	2.1nm,0.9s						
PDAR	**Pinedale Array**	**54.59**	**331**	P	**P**	**23 37 27.0**	**-1.1**
	0.5nm,0.7s,baz=134,slow=11,SNR=4.8						
ULM	**Lac du Bonnet**	**55.98**	**346**	P	**P**	**23 37 37.8**	**+0.2**
	2.9nm,0.8s,baz=162,slow=6.4,SNR=2.9						
MFID	**Camas Ranch**	**58.24**	**328**	*e*P	**P**	**23 37 53.6**	**-0.4**
	4.6nm,1.0s						
NEW	**Newport**	**62.23**	**331**	P	**P**	**23 38 21.3**	**+0.2**
	1.9nm,0.7s,baz=139,slow=6.1,SNR=3.6						
YKA	**Yellowknife Ar**	**71.74**	**343**	P	**P**	**23 39 20.4**	**-0.7**
	0.7nm,0.6s,baz=140,slow=5.6,SNR=6.9						
TORD	**Torodi Ar. Bea**	**80.16**	**76**	P	**P**	**23 40 11.9**	**+1.7**
	0.3nm,0.3s,baz=278,slow=5.3,SNR=8.8						
ILAR	**Eielson Array**	**84.67**	**336**	P	**P**	**23 40 31.0**	**-1.6**
	0.4nm,0.7s,baz=140,slow=3.3,SNR=6.0						
H11N3	**WAKE ISLAND Hyl**	**15.44**	**290**	T	T	01 51 33.5	
	baz=85						
H11N2	**WAKE ISLAND Hyl**	**15.45**	**290**	T	T	01 51 30.6	
	baz=85						
H11N1	**WAKE ISLAND Hyl**	**15.46**	**290**	T	T	01 51 33.1	
	baz=85						
KURK	**Kurchatov**	**128.88**	**19**	PKP	**PKPdf**	**23 47 08.1**	**+1.2**
KURBB	**Kurchatov Arra**	**128.93**	**20**	PKP	**PKPdf**	**23 47 08.1**	**+1.1**
	0.5nm,0.8s,baz=336,slow=2.0,SNR=3.6						
WRA	**Warramunga Arr**	**141.06**	**232**	PKhKP	PKPpre	23 47 23.4	
	0.4nm,0.7s,baz=122,slow=3.0,SNR=4.1						
WRA				PKP	**PKPdf**	**23 47 29.4**	**-1.1**
	0.7nm,0.7s,baz=110,slow=2.1,SNR=6.3						

IDC ***14*** *23:29:30.3±1.9,44°.57N×83°.28E,h0km,mb3.1/1, mb1 3.4/8,mb1mx3.3/51,mbtmp3.5/8,ML3.1/7,MS2.2/1, Ms1 2.2/1,ms1mx2.0/22,Error ellipse: s-maj=19.3km s-min=15.3km az=110.0*

BJI ***14*** *23:29:32.9,44°.43N×83°.14E,h9km,ML3.8/11*

NNC ***14*** *23:29:34.6±2.1,44°.53N×82°.81E,h13km±9km,mb4.0, mpv3.6,Error ellipse: s-maj=20.4km s-min=6.7km az=116.0*

SOME ***14*** *23:29:36.3,44°.57N×82°.82E,h5km,MS2.9*

ISC 14 23:29:32.6±0.7,44°.48N±0°.04×83°.03E±0°.03,h17km,n39, σ1§83/66,11C-12D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**2.33**	**268**	*e*P	**Pg**	**23 30 16.8**	**-0.5**
	236nm,0.2s						
DJR				⇓*i*S	**Sg**	**23 30 47.2**	**-0.4**
	365nm,0.4s						
MK31	**Makanchi Array**	**2.38**	**348**	⇓Pn	**Pb**	**23 30 12.7**	**-2.3**
	3.3nm,0.5s,baz=160,slow=13,SNR=498						
MK31				⇓Pg	**Pg**	**23 30 16.9**	**-1.3**
	14nm,0.3s,baz=160,slow=17,SNR=12						
MK31				⇑Lg	Lg	23 30 47.7	
	83nm,0.4s,baz=52,slow=48,SNR=8.7						
MKAR	**Makanchi Array**	**2.38**	**348**	Pn	**Pn**	**23 30 12.5**	**+1.6**
	5.5nm,0.3s,baz=154,slow=14,SNR=84						
MKAR				Lg	Lg	23 30 45.0	
	32nm,0.3s,baz=192,slow=14,SNR=5.4						
MKAR				Rg	Rg	23 30 58.1	
	120nm,0.6s,baz=197,slow=33,SNR=5.3						
MKAR				LR	LR	23 31 02.1	
	comp=Z,54nm,19.1s,baz=282,slow=39						
SHLS	**Shalkode**	**2.63**	**241**	*e*P	**Pg**	**23 30 22.2**	**-0.9**
	183nm,0.2s						
SHLS				*e*S	**Sg**	**23 30 55.6**	**-1.7**
	1μm,0.3s						
KAPS	**Kapalarasan**	**2.74**	**288**	*e*P	**Pg**	**23 30 25.4**	**+0.4**
	59nm,0.4s						
KAPS				*e*S	**Sg**	**23 31 00.5**	**0.0**
	220nm,0.3s						
PDGK	**Podgornoye**	**2.81**	**247**	⇓Pn	**Pn**	**23 30 17.4**	**+0.7**
	1.4nm,0.6s						
PDGK				⇑Pg	**Pb**	**23 30 21.6**	**-0.8**
	25nm,0.3s						
PDGK				⇓Lg	Lg	23 30 59.3	
	201nm,0.5s						
ZSN	**Zaisan**	**3.12**	**17**	*e*P	**Pg**	**23 30 33.6**	**+1.2**
	95nm,0.2s						
ZSN				*e*S	**Sg**	**23 31 15.2**	**+2.3**
	491nm,0.6s						
UZB	**Uzynbulak**	**3.19**	**247**	*e*P	**Pg**	**23 30 33.7**	**-0.1**
	136nm,0.6s						
UZB				*e*S	**Sg**	**23 31 14.9**	**-0.3**
	237nm,0.4s						
KPKS	**Kokpek**	**3.30**	**254**	*e*P	**Pb**	**23 30 33.1**	**+2.3**
	893nm,0.5s						
KPKS				*e*S	**Sb**	**23 31 14.2**	**+3.6**
	758nm,0.5s						
WMQ	**Urumqi**	**3.42**	**99**	*e*Pg	**Pb**	**23 30 31.4**	**-1.3**
WMQ				Sg	**Sb**	**23 31 14.9**	**+0.9**
WMQ				smax	smax		
	comp=N,180nm,0.6s						
WMQ				smax	smax		
	comp=E,190nm,0.7s						
ZHN	**Zhinishke**	**3.58**	**250**	*e*P	**Pg**	**23 30 39.9**	**-1.3**
	182nm,0.3s						
ZHN				*e*S	**Sg**	**23 31 25.8**	**-1.6**
	625nm,0.2s						
SATY	**Saty**	**3.64**	**249**	*e*P	**Pg**	**23 30 40.8**	**-1.6**
	189nm,0.4s						
SATY				*e*S	**Sg**	**23 31 27.6**	**-1.9**
	463nm,0.3s						
KURS	**Kuram**	**3.65**	**256**	*e*P	**Pg**	**23 30 42.4**	**-0.1**
	14nm,0.5s						
KURS				*e*S	**Sg**	**23 31 30.2**	**+0.5**
	82nm,0.4s						
ARXS	**Arharly**	**3.75**	**268**	*e*P	**Pg**	**23 30 41.9**	**-2.5**
	106nm,0.3s						
ARXS				*e*S	**Sg**	**23 31 29.8**	**-3.0**
	168nm,0.4s						
CHKK	**Chushkaly**	**4.38**	**264**	*e*P	**Pg**	**23 30 53.5**	**-3.0**
	62nm,0.3s						
CHKK				*e*S	**Sg**	**23 31 50.1**	**-3.2**
	255nm,0.2s						
KOTS	**Kotyrbulak**	**4.46**	**256**	*e*P	**Pg**	**23 30 57.3**	**-0.7**
KOTS				*e*S	**Sg**	**23 31 56.3**	**+0.5**
MDOK	**Medeo**	**4.53**	**255**	*e*P	**Pg**	**23 30 57.1**	**-2.2**
	44nm,0.3s						
MDOK				*e*S	**Sg**	**23 31 56.8**	**-1.1**
	171nm,0.6s						
AAA	**Alma-Ata**	**4.56**	**257**	*e*P	**Pg**	**23 30 58.1**	**-1.9**
	97nm,0.2s						
AAA				*e*S	**Sg**	**23 31 58.6**	**-0.4**
	213nm,0.3s						
KNDC	**Almaty**	**4.57**	**256**	⇑Pg	**Pb**	**23 30 56.5**	**+4.2**
	95nm,0.9s						
KNDC				⇓Lg	Lg	23 31 55.6	
	139nm,0.5s						
KTBS	**Karatobe**	**4.64**	**263**	*e*P	**Pg**	**23 31 00.0**	**-1.4**
KTBS				*e*S	**Sg**	**23 32 01.5**	**0.0**
TNSS	**Tian-Shan**	**4.64**	**254**	*e*P	**Pg**	**23 31 00.6**	**-0.9**
	46nm,0.5s						
TNSS				*e*S	**Sg**	**23 32 02.2**	**+0.6**
	152nm,0.5s						
IZV	**Izvestkoviy**	**4.87**	**255**	*e*P	**Pg**	**23 31 04.1**	**-1.7**
	64nm,0.3s						
IZV				*e*S	**Sg**	**23 32 08.3**	**-0.6**
	128nm,0.3s						
KST	**Kastek**	**5.32**	**257**	*e*P	**Pg**	**23 31 11.5**	**-2.9**
	15nm,0.5s						
KST				*e*S	**Sg**	**23 32 20.6**	**-2.6**
	106nm,0.3s						
DGS	**Degeres**	**5.39**	**259**	*e*P	**Pg**	**23 31 12.8**	**-3.1**
	51nm,0.3s						
DGS				*e*S	**Sg**	**23 32 23.1**	**-2.6**
	145nm,0.4s						
TKM2	**Tokmak 2**	**5.61**	**257**	⇑Pn	**Pn**	**23 30 58.4**	**+3.0**
	4.1nm,1.2s						
TKM2				⇑Pg	**Pb**	**23 31 12.9**	**+2.7**
	42nm,0.7s						
TKM2				⇑Lg	Lg	23 32 31.0	
	49nm,0.7s						
AAK	**Ala-Archa**	**6.47**	**256**	Pg	**Pg**	**23 31 32.4**	**-4.1**
	2.7nm,0.3s,baz=80,slow=9.2,SNR=18						
AAK				Lg	Lg	23 33 01.3	
	3.6nm,0.3s,baz=318,slow=21,SNR=2.5						
AAK	**Ala-Archa**	**6.47**	**256**	⇓Pg	Pg	23 31 31.9	-4.6
	30nm,0.8s						
AAK				⇑Lg	Lg	23 32 59.5	
	33nm,0.6s						
KURBB	**Kurchatov Arra**	**6.86**	**335**	Pn	**Pn**	**23 31 12.7**	**+0.3**
	0.4nm,0.3s,baz=149,slow=13,SNR=15						
KURBB				Sn	**Sn**	**23 32 30.5**	**+0.5**
	1.0nm,0.3s,baz=162,slow=21,SNR=6.0						
KURBB				Lg	Lg	23 33 11.1	
	1.2nm,0.3s,baz=13,slow=13,SNR=4.3						
KURBB	**Kurchatov Arra**	**6.86**	**335**	⇓Pn	**Pn**	**23 31 12.4**	**0.0**
	4.8nm,0.8s						
KURBB				⇑Sn	**Sn**	**23 32 29.6**	**-0.4**
	38nm,0.6s						
KURBB				⇑Lg	Lg	23 33 11.4	
	109nm,0.6s						
OTUK	**Ortayu**	**8.30**	**301**	⇑Pn	**Pn**	**23 31 32.1**	**0.0**
	0.9nm,0.4s						
OTUK				⇓Lg	Lg	23 33 55.7	
	98nm,1.3s						
KK31	**Karatay Array**	**9.16**	**266**	⇓Pn	**Pn**	**23 31 44.8**	**+0.8**
	0.3nm,0.2s,baz=76,slow=12,SNR=7.8						
KK31				Lg	Lg	23 34 25.4	
	13nm,0.7s,baz=71,slow=26,SNR=5.2						
ZALV	**Zalesovo Beam**	**9.55**	**6**	Pn	**Pn**	**23 31 48.2**	**-1.0**
	0.7nm,0.3s,baz=191,slow=14,SNR=11						
ZALV				Sn	**Sn**	**23 33 33.5**	**-2.6**
	1.0nm,0.3s,baz=178,slow=23,SNR=5.0						
ZALV				Lg	Lg	23 34 34.1	
	baz=202,slow=22,SNR=1.0						
BVA0	**Borovoye Array**	**11.94**	**320**	⇑Pn	**Pn**	**23 32 21.9**	**+0.1**
	1.8nm,0.6s,baz=133,slow=13,SNR=13						
BVA0				⇓Sn	**Sn**	**23 34 31.5**	**-3.0**
	1.5nm,0.5s						
BVA0				⇓Lg	Lg	23 35 46.5	
	17nm,1.0s,baz=129,slow=26,SNR=5.4						
BVAR	**Borovoye Array**	**11.94**	**320**	Pn	**Pn**	**23 32 21.8**	**-0.1**
	0.7nm,0.3s,baz=123,slow=13,SNR=16						
BVAR				Sn	**Sn**	**23 34 32.6**	**-1.9**
	0.4nm,0.3s,baz=126,slow=22,SNR=3.1						
BVAR				Lg	Lg	23 35 50.5	
	0.7nm,0.3s,baz=132,slow=26,SNR=3.1						
SONM	**Songino Array**	**16.52**	**70**	Pn	**Pn**	**23 33 23.0**	**-0.5**
	0.0nm,0.3s,baz=277,slow=11,SNR=2.2						
SONM				Lg	Lg	23 38 07.6	
	0.4nm,0.3s,baz=215,slow=38,SNR=3.5						
AKTO	**Aktyubinsk**	**17.89**	**298**	P	**P**	**23 33 41.5**	**+0.5**
	0.1nm,0.3s,baz=173,slow=8.5,SNR=1.9						
ARU	**Arti**	**19.52**	**316**	P	**Pn**	**23 34 00.3**	**+0.1**
	0.0nm,0.3s,baz=290,slow=23,SNR=1.7						
GEYT	**Alibeck**	**19.81**	**259**	P	**Pn**	**23 34 04.6**	**+0.7**
	0.5nm,0.5s,baz=73,slow=11,SNR=2.5						
CD2	**Chengdu**	**21.19**	**123**	*e*P	**P**	**23 34 18.3**	**+1.0**

ISCJB ***14*** *23:47:21.6±2.2,29°.99S±0°.09×176°.3W±0°.2,h24km, mb3.7/3,Error ellipse: s-maj=25.9km s-min=10.8km az=164.5*

IDC ***14*** *23:47:23.1±2.2,30°.00S×176°.73W,h0km,mb3.7/3, mb1 3.9/4,mb1mx3.7/23,mbtmp3.8/4,ML3.3/1,Error ellipse: s-maj=36.6km s-min=26.1km az=87.0*

ISC 14 23:47:25.0±1.9,29°.9S±0°.1×176°.5W±0°.2,h24km,n6, σ1§20/8,mb3.9/3,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.39**	**297**	Pn	**Pn**	**23 47 48.9**	**0.0**
	64nm,0.3s,baz=130,slow=22,SNR=2.7						
RAO				Sn	**Sb**	**23 48 07.7**	**+0.1**
	232nm,0.3s,baz=78,slow=19,SNR=6.0						
URZ	**Urewera**	**9.88**	**211**	Pn	**Pn**	**23 49 44.5**	**-1.1**
	0.3nm,0.3s,baz=224,slow=13,SNR=1.9						
URZ				Sn	**Sn**	**23 51 36.8**	**+1.1**
	0.5nm,0.3s,baz=16,slow=18,SNR=1.8						
STKA	**Stephens Creek**	**35.86**	**256**	P	**P**	**23 54 24.1**	**+1.1**
	0.9nm,0.5s,baz=104,slow=4.7,SNR=3.8						
ASAR	**Alice Springs**	**44.44**	**266**	P	**P**	**23 55 33.5**	**-0.8**
	0.3nm,0.6s,baz=104,slow=7.7,SNR=3.2						
WRA	**Warramunga Arr**	**45.38**	**271**	P	**P**	**23 55 40.6**	**-1.2**
	0.9nm,0.5s,baz=110,slow=7.6,SNR=12						
FINES	**FINESS Array B**	**145.10**	**341**	PKPbc	**PKPdf**	**00 07 00.8**	**+1.1**
	1.3nm,0.8s,baz=82,slow=4.0,SNR=5.4						

NIED ***15*** *00:09:00,36°.70N×141°.90E,h32km,Mw3.7 Best double couple: M₀4.45000×10¹⁴ NP1:φs237.00000°,δ43.00000°, λ-160.00000°. NP2:φs132.00000°,δ76.00000°, λ-49.00000°.*

ISCJB ***15*** *00:09:50.7±1.2,36°.71N±0°.05×141°.95E±0°.06,h22km±7km, mb3.8/11,Error ellipse: s-maj=8.4km s-min=7.2km az=156.1*

IDC ***15*** *00:09:51.8±0.8,37°.39N×141°.75E,h0km,mb3.8/7, mb1 4.0/8,mb1mx3.7/41,mbtmp3.8/8,ML3.5/1,MS2.7/4, Ms1 2.7/4,ms1mx2.5/39,Error ellipse: s-maj=23.3km s-min=21.0km az=136.0*

JMA ***15*** *00:09:52.2±0.2,36°.69N×141°.89E,h51km±5km,M3.6*

NEIC ***15*** *00:09:57.8±1.7,37°.31N×141°.60E,h44km±15km,mb4.3/4, Error ellipse: s-maj=21.0km s-min=12.1km az=131.0*

ISC 15 00:09:50.9±2.5,36.79N±0°.06×141°.92E±0°.07,h14km±14km, n34,σ1§06/32,mb3.9/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.95**	**289**	P	**Pb**	**00 10 09.2**	**0.0**
ONAJ				*e*S	**Sg**	**00 10 22.5**	**+0.8**
JFK	**Kawauchi**	**1.01**	**305**	P	**Pb**	**00 10 10.5**	**+0.2**
JFK				*e*S	**Sg**	**00 10 24.4**	**+0.7**
JHO	**Hitachi**	**1.10**	**261**	P	**Pb**	**00 10 10.9**	**-0.8**
JHO				S	**Sb**	**00 10 24.4**	**-1.5**
JMM	**Marumori**	**1.40**	**320**	P	**Pb**	**00 10 16.8**	**0.0**
JMM				S	**Sn**	**00 10 34.1**	**-0.2**
JFT	**Otama**	**1.46**	**300**	P	**Pb**	**00 10 18.0**	**+0.2**
JFT				S	**Sn**	**00 10 36.2**	**+0.4**
JIO	**Ouri**	**1.72**	**345**	P	**Pb**	**00 10 21.7**	**-0.6**
JIO				*e*S	**Sb**	**00 10 43.5**	**-0.3**
JOU	**Okura**	**1.86**	**328**	P	**Pb**	**00 10 24.6**	**-0.1**
JOU				S	**Sb**	**00 10 48.2**	**+0.3**
JFY	**Yanaizu**	**1.87**	**290**	*e*S	**Sn**	**00 10 46.9**	**+0.8**
JAG	**Ashikaga**	**2.02**	**260**	P	**Pn**	**00 10 24.5**	**0.0**
JAG				S	**Sn**	**00 10 48.0**	**-1.6**
MJAR	**Matsushiro Arr**	**2.99**	**266**	Pn	**Pn**	**00 10 39.1**	**+1.1**
	7.2nm,0.3s,baz=88,slow=14,SNR=102						
MJAR				Sn	**Sn**	**00 11 14.9**	**+1.2**
	5.2nm,0.3s,baz=159,slow=8.0,SNR=7.0						
MJAR				LR	LR	00 12 03.6	
	comp=Z,129nm,18.1s,baz=100,slow=45						
MAJO	**Matsushiro**	**3.00**	**266**	*e*Pn	**Pn**	**00 10 39.7**	**+1.7**
JHJ	**Hachijo jima 2**	**4.06**	**206**	LR	LR	00 12 57.5	
	comp=Z,132nm,18.7s,baz=78,slow=41						
ERM	**Erimo**	**5.30**	**10**	*e*Pn	**Pn**	**00 11 09.4**	**-0.2**
KSRS	**Korea Array**	**11.20**	**278**	LR	LR	00 16 44.8	
	comp=Z,24nm,18.5s,baz=95,slow=37						
MDJ	**Mudanjiang**	**12.18**	**314**	Pn	**Pn**	**00 12 41.8**	**-2.2**
KLR	**Kul'dur**	**14.47**	**332**	LR	LR	00 18 33.5	
	comp=Z,35nm,18.2s,baz=122,slow=38						
H11N2	**WAKE ISLAND Hy**	**27.68**	**121**	T	T	00 44 39.9	
	baz=313,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**27.68**	**121**	T	T	00 44 41.3	
	baz=313,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**27.69**	**121**	T	T	00 44 43.1	
	baz=313,slow=75,SNR=13						
ENH	**Enshi**	**27.72**	**266**	P	**P**	**00 15 40.5**	**+1.6**
	4.5nm,0.4s						
SONM	**Songino Array**	**28.26**	**304**	P	**P**	**00 15 42.6**	**-1.1**
	0.2nm,0.3s,baz=105,slow=8.6,SNR=3.3						
H11S1	**WAKE ISLAND Hy**	**28.39**	**123**	T	T	00 45 36.6	
	baz=315,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**28.39**	**123**	T	T	00 45 36.0	
	baz=315,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.40**	**123**	T	T	00 45 36.4	
	baz=315,slow=76,SNR=7.2						
KURK	**Kurchatov**	**46.40**	**308**	P	**P**	**00 18 14.6**	**-2.1**
	1.8nm,0.4s						
KURBB	**Kurchatov Arra**	**46.47**	**308**	P	**P**	**00 18 16.5**	**-0.8**
	0.4nm,0.2s,baz=81,slow=7.5,SNR=2.3						
COLA	**College**	**49.07**	**32**	*e*P	**P**	**00 18 37.1**	**-0.1**
	1.7nm,0.6s						
ILAR	**Eielson Array**	**49.48**	**32**	P	**P**	**00 18 41.5**	**+1.1**
	0.1nm,0.5s,baz=286,slow=7.4,SNR=4.1						
WRA	**Warramunga Arr**	**56.88**	**189**	P	P	00 19 41.8	+6.5
	0.5nm,0.3s,baz=1.4,slow=7.7,SNR=9.7						
ASAR	**Alice Springs**	**60.61**	**188**	P	P	00 20 09.6	+8.3
	0.8nm,0.8s,baz=359,slow=5.2,SNR=6.4						
PDAR	**Pinedale Array**	**77.55**	**46**	P	**P**	**00 21 47.3**	**+0.6**
	0.4nm,0.6s,baz=347,slow=3.7,SNR=3.1						
BRTR	**Keskin Array B**	**79.31**	**312**	P	**P**	**00 21 57.6**	**+1.3**
	0.3nm,0.7s,baz=32,slow=8.5,SNR=2.7						
MVCO	**Mesa Verde**	**81.70**	**49**	*e*P	**P**	**00 22 10.1**	**+0.8**
	0.5nm,0.4s						
LPAZ	**La Paz**	**146.46**	**61**	PKPbc	**PKPbc**	**00 29 33.3**	**+0.4**
	0.5nm,0.6s,baz=270,slow=7.1,SNR=3.0						

IDC 15 00:15:34.2±1.6,12°.98N×92°.54E,h0km,mb3.6/4, mb1 3.7/5,mb1mx3.4/40,mbtmp3.5/5,ML3.8/1,MS4.2/2, Ms1 4.2/2,ms1mx2.8/34,Error ellipse: s-maj=60.8km s-min=22.0km az=65.0,Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**8.23**	**48**	Pn	Pn	00 17 36.0	+1.0
	0.3nm,0.3s,baz=235,slow=15,SNR=9.9						
CMAR				Sn	Sn	00 18 56.2	-13
	0.1nm,0.3s,baz=235,slow=25,SNR=1.2						
H08S3	**Diego Garcia H**	**28.57**	**225**	T	T	00 51 11.9	
	baz=44,slow=76,SNR=8.4						
H08S2	**Diego Garcia H**	**28.57**	**225**	T	T	00 51 12.6	
	baz=44,slow=76,SN

SNPH	**Sibulan**	**1.04**	**103**	⇓	*i* P	Pg	00 35 46.1	-3.8
SNPH					*i* S	Sg	00 36 02.3	-1.2
DCPH	**Dipolog City**	**1.50**	**131**	⇑	*e* P	Pn	00 35 58.2	+0.1
DCPH					*e* S	Sn	00 36 20.1	+1.9
LLP	**Lapu-Lapu**	**1.88**	**67**		*e* P	Pn	00 36 03.6	+0.3
LLP					*e* S	Sg	00 36 30.3	-0.1
RCP	**Roxas**	**2.04**	**15**	⇑	*e* P	Pn	00 36 05.8	+0.3
RCP					*i* S	Sb	00 36 33.3	-0.5

IDC ***15*** *00:50:09.7±1.0, 9.44N×122.17E, h0km, mb3.7/8, mb1 3.8/8, mb1mx3.6/44, mbtmp3.7/8, Error ellipse: s-maj=136.1km s-min=17.0km az=66.0*
MAN ***15*** *00:50:12, 9.45N×122.02E, h31km, mb4.7, ML3.6, MS3.5*
ISCJB ***15*** *00:50:13.1±0.6, 9.45N±0.06×122.08E±0.07, h37km, mb3.7/8, Error ellipse: s-maj=9.6km s-min=8.0km az=179.0*

ISC 15 00:50:14.6±0.8, **9.45N**±0.07×**122.15E**±0.08, **h37**km, **n15, σ1s77/17, mb3.6/8, 3C-2D, Negros**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.07**	**96**	⇓	*i* P	Pn	00 50 26.4	-6.8
SNPH					*i* S	**Sn**	**00 50 41.8**	**-5.1**
JAP	**San Jose, Anti**	**1.31**	**351**	⇓	*e* P	**Pn**	**00 50 34.2**	**-2.1**
DCPH	**Dipolog City**	**1.46**	**126**	⇑	*e* P	**Pn**	**00 50 37.9**	**-0.5**
TBP	**Tagbilaran**	**1.70**	**82**	⇑	*i* P	**Pn**	**00 50 42.2**	**+0.4**
LLP	**Lapu-Lapu**	**1.98**	**64**		*e* P	**Pn**	**00 50 45.4**	**-0.2**
LLP					*e* S	**Sn**	**00 51 11.7**	**+2.5**
RCP	**Roxas**	**2.18**	**15**	⇑	*e* P	**Pn**	**00 50 48.0**	**-0.3**
RCP					*e* S	**Sn**	**00 51 12.7**	**-1.3**
WRA	**Warramunga Arr**	**31.57**	**158**		P	**P**	**00 56 33.4**	**-0.5**
	0.3nm,0.5s,baz=338,slow=9.5,SNR=5.7							
ASAR	**Alice Springs**	**34.86**	**161**		P	**P**	**00 57 03.0**	**+0.5**
	1.3nm,0.6s,baz=342,slow=7.4,SNR=17							
SONM	**Songino Array**	**40.51**	**344**		P	**P**	**00 57 50.0**	**-0.1**
	0.3nm,0.4s,baz=169,slow=10,SNR=2.1							
STKA	**Stephens Creek**	**45.11**	**156**		P	**P**	**00 58 27.9**	**+0.5**
	1.5nm,0.6s,baz=345,slow=18,SNR=3.1							
MKAR	**Makanchi Array**	**50.30**	**325**		P	**P**	**00 59 08.3**	**+0.8**
	0.2nm,0.6s,baz=115,slow=6.8,SNR=2.8							
ZALV	**Zalesovo Beam**	**53.47**	**334**		P	**P**	**00 59 32.9**	**+1.9**
	0.3nm,0.4s,baz=108,slow=9.3,SNR=2.7							
BRTR	**Keskin Array B**	**82.90**	**309**		P	**P**	**01 02 36.4**	**+0.4**
	0.2nm,0.4s,baz=103,slow=4.6,SNR=2.6							
FINES	**FINESS Array B**	**84.67**	**331**		P	**P**	**01 02 44.2**	**-0.1**
	1.4nm,0.9s,baz=113,slow=7.0,SNR=3.7							
PLCA	**Paso Flores**	**146.87**	**162**		PKPbc	**PKPab**	**01 09 54.4**	**-0.4**
	2.5nm,1.1s,baz=236,slow=3.6,SNR=3.2							

BER 15 00:53:31.5±0.5, **71.00N**×**7.28W, h3**km±155km, **MD1.6, ML2.1, 3D, Jan Mayen Island region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.33**	**268**	⇓	*i* P	Pg	00 53 38.4	+0.5
JNE					*e* S	Sg	00 53 43.4	+1.2
JNE					IAML		00 53 43.8	
	comp=Z,137nm,0.1s							
JNW	**Jan Mayen West**	**0.38**	**275**	⇓	*i* P	Pg	00 53 39.0	+0.3
JNW					*e* S	Sg	00 53 44.4	+0.8
JNW					IAML		00 53 44.6	
	comp=Z,144nm,0.2s							
JMIC	**Jan Mayen**	**0.40**	**268**	⇓	*i* P	Pg	00 53 39.2	0.0
JMIC					*e* S	Sg	00 53 45.0	+0.6
JMIC					IAML		00 53 45.4	
	comp=Z,62nm,0.3s							
JMI	**Jan Mayen**	**0.48**	**262**		*e* S	Sg	00 53 47.6	+0.7

WEL 15 00:54:33.4±0.1, **40.32S**×**176.59E, h15**km±1km, **ML3.6**/45, **9C-11D, Error ellipse: s-maj=1.2km s-min=0.7km az=90.0, North Island**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
PRHZ	**Porangahau**	**0.06**	**31**	⇑	P*	Pg	00 54 35.9	-0.6
PRHZ					S*	Sg	00 54 38.5	+0.2
PRHZ					S*		00 54 38.5	
ANWZ	**Angora Road**	**0.17**	**213**	⇓	P*	Pg	00 54 37.7	+0.1
ANWZ					AML	AML	00 54 43.6	
ANWZ					AML	AML	00 54 44.7	
WPHZ	**Waipukurau**	**0.28**	**336**	⇑	P*	Pg	00 54 39.4	0.0
WPHZ					AML	AML	00 54 45.3	
WPHZ					AML	AML	00 54 49.2	
DVHZ	**Dannevirke**	**0.33**	**274**	⇓	P*	Pg	00 54 40.3	0.0
DVHZ					S*	Sg	00 54 45.3	+0.4
DVHZ					AML	AML	00 54 46.6	
PXZ	**Pawanui**	**0.36**	**36**	⇓	P*	Pg	00 54 40.7	0.0
PXZ					AML	AML	00 54 48.5	
PXZ					AML	AML	00 54 48.5	
PXZ					AML	AML	00 54 49.6	
PXZ					AML	AML	00 54 49.6	
BFZ	**Birch Farm**	**0.45**	**216**	⇓	P*	Pg	00 54 42.6	+0.2
BFZ					AML	AML	00 54 53.6	
BFZ					AML	AML	00 54 53.6	
BFZ					AML	AML	00 54 53.8	
BFZ					AML	AML	00 54 53.8	
PNHZ	**Pukenui**	**0.51**	**323**	⇑	P*	Pg	00 54 43.3	-0.2
PNHZ					AML	AML	00 54 52.2	
PNHZ					AML	AML	00 54 53.8	
TSZ	**Takapari Road**	**0.55**	**298**	⇑	P*	Pg	00 54 44.0	-0.3
TSZ					S*	Sb	00 54 52.5	0.0
TSZ					AML	AML	00 54 55.1	
KAHZ	**Kahuranaki**	**0.57**	**23**	⇓	P*	Pg	00 54 44.9	+0.2
KAHZ					AML	AML	00 54 56.7	
KAHZ					AML	AML	00 54 58.0	
POWZ	**Post Office Ro**	**0.63**	**263**		P*	Pg	00 54 46.0	+0.1
POWZ					AML	AML	00 54 58.1	
POWZ					AML	AML	00 54 58.1	
CPWZ	**Castlepoint**	**0.66**	**207**		P*	Pg	00 54 46.4	+0.1
CPWZ					AML	AML	00 55 05.2	
CPWZ					AML	AML	00 55 05.3	
KRHZ	**Kereru**	**0.70**	**346**	⇑	P*	Pg	00 54 46.7	-0.4
KRHZ					AML	AML	00 54 58.3	
KRHZ					AML	AML	00 54 59.0	
TIWZ	**Tintock**	**0.70**	**230**		P*	Pg	00 54 46.9	-0.3
TIWZ					AML	AML	00 54 58.8	
TIWZ					AML	AML	00 55 06.2	
CKHZ	**Cape Kidnapper**	**0.76**	**30**		P*	Pg	00 54 47.2	-1.0
CKHZ					AML	AML	00 55 05.2	
CKHZ					AML	AML	00 55 10.6	
MRZ	**Mangatainoka R**	**0.84**	**246**	⇑	P*	Pb	00 54 48.7	-1.1
MRZ					AML	AML	00 55 03.2	
MRZ					AML	AML	00 55 04.6	
MCHZ	**McNeill Hill**	**0.88**	**5**	⇓	P*	Pb	00 54 49.8	-0.6
MCHZ					AML	AML	00 55 08.4	
MCHZ					AML	AML	00 55 09.1	
KWHZ	**Kaweka Forest**	**0.91**	**352**	⇓	P*	Pb	00 54 50.1	-0.8
KWHZ					AML	AML	00 55 06.0	
KWHZ					AML	AML	00 55 12.8	
BHHZ	**Black Hill Sta**	**0.93**	**334**	⇑	P*	Pb	00 54 50.2	-1.0
BHHZ					AML	AML	00 55 04.5	
BHHZ					AML	AML	00 55 04.6	
TMWZ	**Te Maipa**	**0.95**	**214**		AML	AML	00 55 13.6	
TMWZ					AML	AML	00 55 15.1	
OHWZ	**Ohakea**	**0.98**	**276**		P*	Pg	00 54 52.4	-0.1
HOWZ	**Holdsworth Sta**	**1.00**	**235**		P*	Pb	00 54 51.1	-1.4
HOWZ					AML	AML	00 55 10.1	
HOWZ					AML	AML	00 55 10.1	
ARHZ	**Aropaoanui**	**1.10**	**17**		P*	Pb	00 54 52.6	-1.5
ARHZ					AML	AML	00 55 15.2	
ARHZ					AML	AML	00 55 15.6	
MOVZ	**Moawhango**	**1.12**	**324**		P*	Pb	00 54 54.1	-0.4
MOVZ					AML	AML	00 55 11.8	
MOVZ					AML	AML	00 55 12.0	
BKZ	**Black Stump Fm**	**1.16**	**356**		P*	Pn	00 54 53.3	-1.8
BKZ					AML	AML	00 55 16.1	
BKZ					AML	AML	00 55 20.1	
MTW	**Mount Morrison**	**1.18**	**224**		P*	Pn	00 54 52.6	-2.8
MTW					AML	AML	00 55 17.6	
MTW					AML	AML	00 55 18.0	
OGWZ	**Otaki Gorge**	**1.19**	**245**	⇓	P*	Pn	00 54 53.5	-2.0
OGWZ					AML	AML	00 55 15.2	
OGWZ					AML	AML	00 55 15.5	
NMHZ	**Naumai**	**1.23**	**8**		P*	Pn	00 54 54.4	-1.8
NMHZ					AML	AML	00 55 24.6	
NMHZ					AML	AML	00 55 29.4	
TRWZ	**Traveller**	**1.28**	**212**		AML	AML	00 55 26.2	
TRWZ					AML	AML	00 55 27.0	
WHVZ	**Whangaehu Hut**	**1.29**	**323**		PN	Pn	00 54 56.6	-0.5
WHVZ					AML	AML	00 55 20.6	
WHVZ					AML	AML	00 55 26.0	
TRVZ	**Turoa**	**1.30**	**321**		PN	Pn	00 54 56.9	-0.3
TRVZ					AML	AML	00 55 19.9	
TRVZ					AML	AML	00 55 21.2	
FWVZ	**Far West T-bar**	**1.33**	**323**		PN	Pn	00 54 57.2	-0.5
FWVZ					AML	AML	00 55 22.8	
FWVZ					AML	AML	00 55 25.2	
WAZ	**Wanganui**	**1.36**	**294**	⇑	PN	Pn	00 54 57.8	0.0
WAZ					AML	AML	00 55 21.8	
WAZ					AML	AML	00 55 24.1	
NGZ	**Ngauruhoe**	**1.38**	**326**		PN	Pn	00 54 58.0	-0.2
NGZ					AML	AML	00 55 24.6	
NGZ					AML	AML	00 55 27.3	
PAWZ	**Paruwai Farm**	**1.38**	**219**		P*	Pn	00 54 55.1	-3.0
PAWZ					AML	AML	00 55 30.5	
PAWZ					AML	AML	00 55 30.5	
KIW	**Kapiti Island**	**1.39**	**247**		P*	Pn	00 54 56.4	-1.9
KIW					AML	AML	00 55 20.1	
KIW					AML	AML	00 55 23.9	
CAW	**Cannon Point**	**1.40**	**235**		P*	Pn	00 54 55.9	-2.5
CAW					AML	AML	00 55 23.0	
CAW					AML	AML	00 55 23.1	
KRVZ	**Karewarewa**	**1.43**	**329**	⇓	PN	Pn	00 54 59.2	+0.3
KRVZ					AML	AML	00 55 22.7	
KRVZ					AML	AML	00 55 31.3	
WTVZ	**West Tongariro**	**1.43**	**327**	⇓	PN	Pn	00 54 59.2	+0.3
WTVZ					AML	AML	00 55 23.1	
WTVZ					AML	AML	00 55 25.2	
RITZ	**Rihia Road**	**1.46**	**337**		PN	Pn	00 54 59.5	+0.3
RITZ					AML	AML	00 55 31.8	
RITZ					AML	AML	00 55 38.7	
MRHZ	**Matea Rd**	**1.49**	**355**		PN	Pn	00 54 58.4	-1.3
MRHZ					AML	AML	00 55 19.1	
MRHZ					AML	AML	00 55 19.1	
KNZ	**Kokohu**	**1.54**	**33**		PN	Pn	00 54 57.2	-3.1
KNZ					AML	AML	00 56 07.3	
PLWZ	**Palliser**	**1.61**	**219**		PN	Pn	00 54 57.8	-3.5
PLWZ					AML	AML	00 55 37.0	
SNGZ	**Shannon Statio**	**1.64**	**21**		PN	Pn	00 54 59.6	-2.2
SNGZ					AML	AML	00 55 41.5	
SNGZ					AML	AML	00 55 41.8	
TCW	**Tory Channel**	**1.97**	**242**		PN	Pn	00 55 03.5	-2.8
TCW					AML	AML	00 55 37.9	
TCW					AML	AML	00 55 39.9	
URZ	**Urewera**	**2.10**	**11**	⇓	PN	Pn	00 55 05.4	-2.5
MWZ	**Matawai**	**2.11**	**20**	⇑	PN	Pn	00 55 05.4	-2.9
MWZ					AML	AML	00 55 57.1	
MWZ					AML	AML	00 56 04.6	
TUWZ	**Tuamarina**	**2.29**	**240**		PN	Pn	00 55 07.4	-3.3
TUWZ					AML	AML	00 55 53.7	
TUWZ					AML	AML	00 55 54.0	

DDA 15 00:55:37.4, 40.30N×**37.92E, h7**km, **Md2.5, Turkey**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
SUSE	**Susehri**	**0.23**	**112**		*i* P	Pg	00 55 42.9	+0.8
SUSE					*i* S	Sg	00 55 46.5	+1.3
ERBA	**Erbaa**	**0.97**	**294**		*i* P	Pg	00 55 56.1	+0.2
ERBA					*i* S	Sb	00 56 09.5	0.0
KELT	**Kelkit**	**1.03**	**98**		*i* P	Pg	00 55 56.3	-0.9
KELT					*i* S	Sg	00 56 09.5	-1.2

ISCJB ***15*** *00:55:44.6±0.1, 24.27S±0.03×175.22W±0.03, h33km, mb5.5/242, MS5.0/181, Error ellipse: s-maj=5.2km s-min=2.9km az=157.7*
GCMT ***15*** *00:55:46.9±0.1, 24.30S×174.76W, h12km, MW5.3/131, Moment Tensor Solution. s99,c162; s131,c255; Duration: 1s1 Moment tensor: Scale 10^17 Nm; Mrr=1.12±.02; Mθθ 0.71±.01; Mφφ 0.41±.01; Mrθ 0.18±.03; Mθφ 0.33±.01; Mφr -0.03±.03; Best double couple: Mt1.03900×10^17 NP1:φ=243.00000°, δ49.00000°, λ-83.00000°. NP2:φ=52.00000°, δ41.00000°, λ-98.00000°. Principal axes: T 0.9380, Plg4.0000°, Azm328.0000°; N 0.2070, Plg5.0000°, Azm58.0000°; P -1.1400, Plg84.0000°, Azm202.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
BJI ***15*** *00:55:46.0, 23.90S×174.68W, h46km, mb5.4/52, mB5.7/57, Ms5.3/54, Ms7 4.9/56*
MOS ***15*** *00:55:46.4±1.1, 24.02S×175.37W, h39km, mb5.7/80, MS5.0/43, Error ellipse: s-maj=9.1km s-min=7.5km az=74.8*
NEIC ***15*** *00:55:46.9±0.9, 24.19S×175.30W, h38km±7km, mb5.6/174, MS5.0/134, Error ellipse: s-maj=4.9km s-min=3.5km az=154.0*
IDC ***15*** *00:55:47.9±2.1, 24.13S×175.35W, h45km±19km, mb4.9/28, mb1 5.0/28, mb1mx5.0/33, mbtmp5.2/28, MS4.7/20, Ms1 4.7/20, ms1mx4.5/36, Error ellipse: s-maj=13.2km s-min=9.9km az=165.0*

ISC 15 00:55:47.0±0.5, **24.41S**±0.04×**175.23W**±0.04, **h44**km±3km, **n1112, σ1s46**/1102, **mb5.5**/241, **MS5.0**/181, **44C-48D, South of Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**5.39**	**206**		P	**Pn**	**00 57 05.2**	**+0.3**
	239nm,0.3s,baz=226,slow=8.8,SNR=15							
RAO					S	**Sn**	**00 58 06.8**	**+1.2**
	1μm,0.3s,baz=132,slow=21,SNR=13							
MSVF	**Nonsavu**	**9.13**	**315**		*e* P	**Pn**	**00 57 53.5**	**-2.9**
MSVF	**Nonsavu**	**9.13**	**315**		*e* Pn	**Pn**	**00 57 53.5**	**-2.9**
AFI	**Afiamalu**	**10.94**	**18**		P	Pn	00 58 09.8	-11
	35nm,0.3s,baz=118,slow=4.3,SNR=13							
AFI					S	Sn	01 00 02.7	-19
	28nm,0.3s,baz=122,slow=23,SNR=5.6							
RAR	**Rarotonga**	**14.60**	**81**		P	Pn	00 59 00.8	-10
	11nm,0.3s,baz=279,slow=5.6,SNR=12							
RAR					S	Sn	01 01 26.0	-25
	8.8nm,0.3s,baz=71,slow=20,SNR=2.4							
RAR					LR	LR	01 03 54.2	
	comp=Z,4μm,19.9s,baz=276,slow=33							
URZ	**Urewera**	**15.27**	**203**		P	**Pn**	**00 59 12.6**	**-6.9**
	0.6nm,0.3s,baz=96,slow=13,SNR=1.7							
URZ					S	**Sn**	**01 01 57.8**	**-10**
	8.2nm,0.3s,baz=96,slow=21,SNR=12							
URZ	**Urewera**	**15.27**	**203**		*e* Pn	**P**	**00 59 23.0**	**-0.7**
	48nm,0.6s							
URZ					S	**Sn**	**01 01 57.8**	**-10**
BKZ	**Black Stump Fm**	**16.30**	**204**		*e* Pn	**P**	**00 59 38.4**	**+3.2**
	79nm,1.4s							
BKZ					*e* Sn	**Sn**	**01 02 25.5**	**-7.0**
BKZ					*e* S	**S**	**01 02 40.6**	**-3.0**
DZM	**Mont Dzumac**	**17.01**	**274**		P	**P**	**00 59 44.0**	**+0.8**
	3.3nm,0.3s,baz=86,slow=24,SNR=24							
DZM	**Mont Dzumac**	**17.01**	**274**		*e* P	**P**	**00 59 43.6**	**+0.4**
	508nm,1.6s							
DZM					*e* S	**S**	**01 02 56.4**	**-1.9**
	3μm,29.5s							
DZM					*e* LR	LR	01 03 43.8	
	3μm,21.0s							
DZM	**Mont Dzumac**	**17.01**	**274**		*e* Pn	**P**	**00 59 42.5**	**-0.7**
	408nm,1.6s							
BFZ	**Birch Farm**	**17.73**	**202**		*e* Pn	**P**	**00 59 52.8**	**+1.8**
	99nm,0.9s							
BFZ					*e* Sn	**Sn**	**01 02 57.1**	**-10**
KHZ	**Kahutara**	**20.23**	**205**		*e* P	Pn	01 00 20.8	+0.3
	109nm,1.0s							
OXZ	**Oxford**	**21.58**	**206**		*e* P	**P**	**01 00 34.7**	**+1.8**
	42nm,0.7s							
RPZ	**Rata Peaks**	**22.31**	**207**		P	**P**	**01 00 43.0**	**+2.3**
	24nm,0.6s,baz=23,slow=7.7,SNR=18							
RPZ					S	**S**	**01 04 34.7**	**-8.5**
	39nm,0.7s,baz=39,slow=15,SNR=8.7							
RPZ					LR	LR	01 09 58.8	
	comp=Z,3μm,19.6s,baz=27,slow=38							
RPZ	**Rata Peaks**	**22.31**	**207**		*e* P	**P**	**01 00 43.4**	**+2.7**
	139nm,1.4s							
RPZ					S	**S**	**01 04 34.7**	**-8.5**
FOZ	**Fox Glacier**	**22.69**	**209**		PFAKE		01 01 00.0	+15
FOZ					LR	LR		
	comp=Z,4μm,18.0s							
LBZ	**Lake Benmore**	**23.21**	**207**		PFAKE		01 01 00.0	+10
LBZ					LR	LR		
	comp=Z,4μm,19.0s							
ODZ	**Otahua Downs**	**23.57**	**206**		PFAKE		01 01 10.0	+17
ODZ					LR	LR		
	comp=Z,2μm,21.0s							
TBI	**Tubuai**	**23.58**	**93**		*e* P	**P**	**01 00 51.0**	**-2.7**
	comp=Z,248nm,1.2s							
TBI					*e* S	**S**	**01 04 58.7**	**-6.2**
	comp=Z,836nm,24.9s							
TBI					*e* LR	LR	01 06 28.7	
	comp=Z,2μm,21.5s,baz=264							
TBI	**Tubuai**	**23.58**	**93**		*e* T	T	01 24 46.0	
	comp=Z,8.1nm,0.3s							
LHI	**Lord Howe Isla**	**23.75**	**247**		PFAKE		01 01 10.0	+15
LHI					LR	LR		
	comp=Z,6μm,18.0s							
PAE	**Paea**	**24.84**	**79**		*e* P	**P**	**01 01 02.6**	**-2.7**
	comp=Z,24nm,1.1s							
PAE	**Paea**	**24.84**	**79**		*e* T	T	01 26 18.7	
	comp=Z,7.8nm,0.3s							
PPT2	**Papeete2**	**24.86**	**79**		*e* P	**P**	**01 01 03.3**	**-2.4**
	comp=Z,183nm,1.2s							
PPT2					*e* LQ	LQ	01 05 45.2	
	comp=Z,2μm,27.0s							
PPT2					*e* LR	LR	01 07 08.4	
	comp=Z,3μm,21.5s,baz=246							
PPT	**Papeete**	**24.87**	**79**		P	**P**	**01 01 00.9**	**-4.8**
	comp=Z,61nm,0.9s,baz=210,slow=8.1,SNR=4.2							
PPT					LR	LR	01 08 58.0	
	comp=Z,2μm,20.3s,baz=234,slow=32							
TIAR	**Tiarei**	**25.08**	**79**		*e* P	**P**	**01 01 05.1**	**-2.5**
	comp=Z,136nm,1.4s							
TVO	**Taravao**	**25.09**	**80**		*e* P	**P**	**01 01 05.2**	**-2.5**
	comp=Z,102nm,1.3s							
WHZ	**Wether Hill Ro**	**25.37**	**208**		*e* P	**P**	**01 01 12.2**	**+2.3**
	comp=Z,64nm,1.1s							
MEH	**Mehetia**	**26.12**	**81**		*e* P	**P**	**01 01 14.6**	**-2.5**
	comp=Z,49nm,1.2s							
MEH	**Mehetia**	**26.12**	**81**		*e* T	T	01 27 55.4	
	comp=Z,22nm,0.3s							
HNR	**Honiara**	**27.96**	**298**		LR	LR	01 11 39.4	
	comp=Z,808nm,19.4s,baz=141,slow=34							
EIDS	**Eidsvold**	**30.53**	**261**		*e* P	**P**	**01 01 56.8**	**+0.4**
	comp=Z,44nm,1.2s							
CAN	**Canberra**	**32.71**	**242**		PFAKE		01 02 30.0	+15
CAN					LR	LR		
	comp=Z,2μm,19.0s							
CTA	**Charters Tower**	**35.83**	**269**		P	**P**	**01 02 42.2**	**-0.3**
	comp=Z,52nm,0.5s,baz=92,slow=12,SNR=44							
CTAO	**Charters Tower**	**35.83**	**269**		*e* P	**P**	**01 02 42.5**	**-0.1**
CTAO					pmax	pmax		
	comp=Z,150nm,1.1s							
CTAO					MLR	MLR		
	comp=Z,2μm,19.0s							
CTAO	**Charters Tower**	**35.83**	**269**		*e* P	**P**	**01 02 42.5**	**-0.1**
	comp=Z,150nm,1.1s							
CTAO					LR	LR		
	comp=Z,2μm,19.0s							
TAU	**Tasmania Unive**	**35.86**	**230**		PFAKE		01 03 00.0	+18
TAU					LR	LR		
	comp=Z,2μm,19.0s							
RKT	**Rikitea**	**36.77**	**96**		*e* S	**S**	**01 08 29.9**	**-1.8**
	comp=Z,300nm,28.2s							
RKT					*e* LQ	LQ	01 11 04.4	
	comp=Z,793nm,29.2s							
RKT					*e* LR	LR	01 12 28.4	
	comp=Z,1μm,22.0s,baz=260							
TAOE	**Nuku Hiva Isla**	**36.86**	**71**		*e* S	**S**	**01 08 31.5**	**-1.7**
	comp=Z,352nm,24.9s							
TAOE					*e* LR	LR	01 12 42.0	
	comp=Z,1μm,21.3s							
STKA	**Stephens Creek**	**38.60**	**249**		P	**P**	**01 03 05.8**	**-0.1**
	comp=Z,9.6nm,0.6s,baz=98,slow=9.6,SNR=14							
STKA					PcP	**PcP**	**01 05 20.3**	**+2.6**
	comp=Z,9.0nm,0.9s,baz=133,slow=1.2,SNR=3.6							
STKA					LR	LR	01 18 33.2	
	comp=Z,4μm,18.5s,baz=79,slow=35							
STKA	**Stephens Creek**	**38.60**	**249**		*e* P	**P**	**01 03 06.6**	**+0.7**
STKA							01 05 20.3	
STKA					pmax	pmax		
	comp=Z,20nm,1.9s							
STKA	**Stephens Creek**	**38.60**	**249**		*e* P	**P**	**01 03 06.6**	**+0.7**
	comp=Z,20nm,1.9s							
STKA					PcP	**PcP**	**01 05 20.3**	**+2.6**
PMG	**Port Moresby**	**38.80**	**286**		P	**P**	**01 03 06.8**	**-1.0**
	comp=Z,160nm,0.8s,baz=106,slow=4.9,SNR=34							
PMG	**Port Moresby**	**38.80**	**286**		*d* P	**P**	**01 03 06.4**	**-1.4**
PMG	**Port Moresby**	**38.80**	**286**		*e* P	**P**	**01 03 06.8**	**-1.0**
	comp=Z,195nm,0.8s							
PMG					LR	LR		
	comp=Z,2μm,19.0s							
COEN	**Coen**	**40.50**	**277**		*e* P	**P**	**01 03 21.9**	**-0.1**
	comp=Z,120nm,1.3s							
BBOO	**Buckleboo**	**43.27**	**247**		*e* P	**P**	**01 03 45.3**	**+0.9**
	comp=Z,32nm,1.0s							
AS01	**Alice Springs**	**46.20**	**260**		*e* P	**P**	**01 04 05.7**	**-2.2**
AS31	**Alice Springs**	**46.25**	**260**		*e* P	**P**	**01 04 07.7**	**-0.5**
	comp=Z,14nm,0.9s							
ASAR	**Alice Springs**	**46.25**	**260**		P	**P**	**01 04 07.5**	**-0.7**
	comp=Z,45nm,0.9s,baz=98,slow=8.2,SNR=139							
ASAR					PcP	**PcP**	**01 05 44.9**	**+1.6**
	comp=Z,4.2nm,0.8s,baz=94,slow=4.0,SNR=3.7							
ASAR					S	**S**	**01 10 52.8**	**+0.7**
	comp=Z,2.2nm,0.8s,baz=100,slow=15,SNR=8.4							
ASAR					LR	LR	01 24 05.5	
	comp=Z,3μm,18.1s,baz=106,slow=37							
WB2	**Warramunga Arr**	**46.70**	**265**		*e* P	**P**	**01 04 10.8**	**-1.1**
	comp=Z,53nm,0.8s							
WRAB	**Tennant Creek**	**46.71**	**265**		*d* P	**P**	**01 04 10.3**	**-1.6**
WRAB					pmax	pmax		
	comp=Z,124nm,0.8s							
WRAB	**Tennant Creek**	**46.71**	**265**		*e* P	**P**	**01 04 10.7**	**-1.2**
	comp=Z,54nm,0.9s							
WRAB					LR	LR		
	comp=Z,3μm,19.0s							
WRA	**Warramunga Arr**	**46.72**	**265**		P	**P**	**01 04 10.5**	**-1.4**
	comp=Z,42nm,0.8s,baz=103,slow=8.2,SNR=150							
WRA					PcP	**PcP**	**01 05 46.7**	**+1.7**
	comp=Z,20nm,1.0s,baz=98,slow=3.8,SNR=11

FITZ S **S** **01 12 56.2 +1.0**
MSAI Masohi 57.67 282 P **P** **01 05 32.0 -1.3**
comp=Z,18nm,0.6s
NWAO Narrogin (SRO) 58.99 245 LR LR 01 31 17.1
comp=Z,1μm,18.0s,baz=324,slow=36
NWAO Narrogin (SRO) 58.99 245 PFAKE 01 06 00.0 +18
NWAO LR LR
comp=Z,16μm,19.0s
SOEI Soe 59.23 273 P **P** **01 05 45.3 +0.9**
comp=Z,173nm,1.0s,comp=Z,2μm
SOEI Soe 59.23 273 *e*P **P** **01 05 45.2 +0.9**
comp=Z,189nm,1.0s
MBWA Marble Bar 59.57 259 *e*P **P** **01 05 46.4 -0.1**
MBWA LR LR
comp=Z,1μm,19.0s
LBMI Labuha 60.17 284 P **P** **01 05 50.4 -0.3**
comp=Z,62nm,0.9s,comp=Z,1μm
SANI Sanana 60.87 282 P **P** **01 05 54.4 -1.1**
comp=Z,54nm,0.8s,comp=Z,850nm
MMRI Maumere 61.51 273 P **P** **01 05 59.4 -0.4**
comp=Z,82nm,1.0s
MMRI Maumere 61.51 273 *e*P **P** **01 05 59.5 -0.4**
comp=Z,65nm,0.9s
CASY Casey 61.58 206 *e*P **P** **01 06 02.3 +2.9**
comp=Z,32nm,1.0s
CASY LR LR
comp=Z,109nm,19.0s
KDI Kendari 63.06 278 P **P** **01 06 09.6 -0.6**
comp=Z,47nm,1.2s
LUWI Luwuk 64.19 281 *e*P **P** **01 06 17.7 0.0**
comp=Z,108nm,1.0s
KAPI Kappang 65.22 276 P **P** **01 06 24.5 +0.2**
comp=Z,10nm,0.5s,baz=146,slow=8.7,SNR=4.4
KAPI Kappang 65.22 276 P **P** **01 06 24.5 +0.2**
KAPI LR LR
comp=Z,420nm,20.0s
PLAI Plampang 65.50 271 P **P** **01 06 26.3 +0.1**
comp=Z,110nm,1.0s,comp=Z,1μm
DAV Davao City (W) 65.60 291 PFAKE 01 06 40.0 +13
DAV LR LR
comp=Z,308nm,21.0s
SPSI Sidrap Palu 65.64 277 P **P** **01 06 25.7 -1.3**
QSPA South Pole Qui 65.68 180 *e*P **P** **01 06 29.5 +2.8**
comp=Z,365nm,1.0s
QSPA LR LR
comp=Z,1μm,20.0s
TTSI Tana Toraja 65.98 278 P **P** **01 06 28.6 -0.7**
comp=Z,30nm,1.5s,comp=Z,634nm
TWSI Taliwang, Sumb 66.35 271 P **P** **01 06 31.4 -0.2**
comp=Z,40nm,1.2s
MIR Mirnyy 68.57 205 *i*P **P** **01 06 48.0 +3.2**
MIR pmax pmax
comp=Z,8.0nm,1.6s
JAGI Jajag, Banyuwa 68.94 270 P **P** **01 06 47.6 -0.4**
comp=Z,46nm,1.0s
GMJI Gumukmas 69.66 270 P **P** **01 06 52.5 +0.1**
comp=Z,45nm,0.9s
BLJI Banyuglugur 69.73 271 P **P** **01 06 53.0 +0.1**
comp=Z,69nm,0.8s,comp=Z,3μm
MYLDM Lahad Datu 70.82 285 *e*P **P** **01 07 03.4 +3.8**
comp=Z,56nm,1.3s
PWJI Pagerwojo 71.25 270 P **P** **01 07 02.6 +0.4**
comp=Z,53nm,0.6s
JHJ Hachijo jima 2 71.48 321 P **P** **01 07 02.1 -1.0**
comp=Z,30nm,0.3s,baz=207,slow=10,SNR=4.2
PCJI Pacitan 71.76 269 P **P** **01 07 06.3 +1.1**
comp=Z,132nm,0.7s
WOJI Wonogiri, Jawa 72.13 269 P **P** **01 07 08.6 +1.2**
comp=Z,56nm,0.8s,comp=Z,6μm
UGM Wanagama 72.46 269 P **P** **01 07 09.8 +0.3**
comp=Z,115nm,2.3s
KKM Kota Kinabalu 73.23 285 *e*P **P** **01 07 14.8 +0.7**
comp=Z,181nm,2.0s
PBKI Pangkalan Bun 73.50 275 P **P** **01 07 19.3 +3.7**
comp=Z,194nm,0.9s,comp=Z,6μm
JOW Kunigami 74.62 309 *e*P **P** **01 07 22.4 +0.6**
comp=Z,93nm,1.9s
INU Inuyama 74.67 321 *e*P **P** **01 07 21.0 -0.9**
comp=Z,43nm,1.1s
MJAR Matsushiro Arr 74.86 323 P **P** **01 07 22.5 -0.5**
comp=Z,17nm,1.0s,baz=159,slow=6.1,SNR=45
MJAR LR LR 01 35 42.1
comp=Z,368nm,21.3s,baz=120,slow=32
MJAR Matsushiro Arr 74.86 323 P **P** **01 07 22.5 -0.5**
MJAR pmax pmax
comp=Z,16nm,1.0s
MAJO Matsushiro 74.86 323 *d i*P **P** **01 07 22.4 -0.6**
MAJO pmax pmax
comp=Z,332nm,1.3s
MAJO Matsushiro 74.86 323 *e*P **P** **01 07 22.7 -0.3**
comp=Z,49nm,1.1s
MAJO LR LR
comp=Z,585nm,20.0s
MAT Matsushiro 74.86 323 P **P** **01 07 22.8 -0.2**
MAT S **S** **01 16 57.8 +1.0**
MJB9 Matsu-Tunnel 74.86 323 *e*P **P** **01 07 23.0 0.0**
SBUM Sibu 75.19 280 *e*P **P** **01 07 26.8 +1.4**
comp=Z,52nm,1.5s
LEM Lembang 75.54 269 P P 01 07 35.1 +7.5
comp=Z,808nm,0.9s
ERM Erimo 76.47 329 PFAKE 01 07 40.0 +8.0
ERM LR LR
comp=Z,805nm,20.0s
KSM Kuching 76.49 278 *e*P **P** **01 07 33.5 +0.7**
comp=Z,82nm,1.2s
KSM LR LR
comp=Z,388nm,21.0s
JNU Nakatsue 76.86 316 P **P** **01 07 34.5 0.0**
comp=Z,33nm,0.9s,baz=105,slow=3.4,SNR=30
JNU Nakatsue 76.86 316 *e*P **P** **01 07 33.8 -0.7**
comp=Z,57nm,1.0s
KUR Kuril'sk 77.04 334 *d i*P **P** **01 07 35.7 +0.6**
KUR *e*S **S** **01 17 25.7 +5.4**
KUR pmax pmax
comp=Z,49nm,1.9s
KUR pmax pmax
comp=Z,326nm,6.1s
SMY Shemya 77.37 353 *e*P **P** **01 07 36.0 -0.8**
SMY pmax pmax
comp=Z,173nm,1.2s
SMY Shemya 77.37 353 *e*P **P** **01 07 36.0 -0.8**
comp=Z,173nm,1.2s
CGJI Cibinong 77.37 268 P **P** **01 07 38.2 +0.4**
comp=Z,198nm,1.3s,comp=Z,4μm
YULB Yu-li 77.77 303 *e*P **P** **01 07 37.8 -2.0**
comp=Z,77nm,1.6s
NACB Ninganchiao 77.97 304 *e*P **P** **01 07 40.1 -0.7**
comp=Z,201nm,1.3s
SNCC San Nicolas Is 78.10 45 P **P** **01 07 41.0 -0.4**
baz=230
TPUB Ta-pu 78.23 302 *e*P **P** **01 07 41.5 -0.9**
comp=Z,115nm,0.9s
SSLB Suanglung 78.25 303 *e*P **P** **01 07 41.9 -0.6**
comp=Z,44nm,0.8s
UNV Unalaska Valle 78.29 5 *e*P **P** **01 07 41.0 -0.9**
comp=Z,61nm,1.4s
ASAJ Asahikawa 78.37 330 *e*P **P** **01 07 44.2 +1.6**
comp=Z,55nm,1.0s
YHNB Yeheng 78.41 304 *e*P **P** **01 07 44.1 +0.7**
comp=Z,128nm,1.2s
YHNB LR LR
comp=Z,327nm,19.0s
TATO Taipei 78.50 304 *e*P **P** **01 07 44.0 +0.3**
comp=Z,345nm,1.7s
TATO LR LR
comp=Z,525nm,19.0s
SCZ2 Santa Cruz Isl 78.50 44 P **P** **01 07 43.1 -0.5**
baz=230
SCI2 San Clemente I 78.56 46 P **P** **01 07 43.6 -0.4**
baz=231
SBC Santa Barbara 78.74 44 P **P** **01 07 44.3 -0.6**
baz=230
MAW Mawson 78.76 199 P **P** **01 07 47.4 +2.9**
comp=Z,39nm,1.0s,baz=116,slow=6.3,SNR=44
MAW Mawson 78.76 199 *e*P **P** **01 07 48.0 +3.5**
MAW pmax pmax
comp=Z,19nm,1.2s
MAW Mawson 78.76 199 *e*P **P** **01 07 48.0 +3.5**
comp=Z,19nm,1.2s
PPBI Pangkal Pinang 78.76 273 P P 01 07 38.9 -6.6
KASI Kota Agung 78.90 269 P **P** **01 07 46.7 +0.4**
comp=Z,186nm,1.2s
CIS Catalina Islan 78.91 46 P **P** **01 07 45.0 -0.9**
baz=231
SKR Severo-Kuril's 78.94 342 *e*P **P** **01 07 44.6 -0.9**
SKR *e* 01 07 50.0
SKR *e*S **S** **01 17 44.2 +3.7**
SKR *e* 01 17 55.8
SKR *e* 01 25 56.9
SKR pmax pmax
comp=Z,71nm,1.3s
SKR pmax pmax
comp=Z,152nm,6.4s
SKR MLR MLR
comp=Z,465nm,19.2s
BLG Laguna Peak, P 78.94 45 P **P** **01 07 45.5 -0.5**
baz=231
PKM Mcpherson Peak 78.96 44 P **P** **01 07 45.9 -0.5**
baz=230
SMMC Simmler 79.12 43 P **P** **01 07 47.1 +0.1**
baz=230
SAO San Andreas Ge 79.18 41 *e*P **P** **01 07 47.7 +0.4**
SAO pmax pmax
comp=Z,56nm,1.4s
SAO San Andreas Ge 79.18 41 *e*P **P** **01 07 47.7 +0.4**
comp=Z,56nm,1.4s
FMP Fort Macarthur 79.19 45 P **P** **01 07 47.2 -0.1**
baz=231
LPIG La Paz 79.26 57 LR LR 01 37 53.2
comp=Z,503nm,18.7s,baz=216,slow=32
109C Camp Elliot, M 79.45 47 P **P** **01 07 47.9 -0.9**
baz=232
USHA Ushuaia 79.47 146 P **P** **01 07 50.3 +1.7**
comp=Z,47nm,0.9s,baz=292,slow=6.1,SNR=4.6
OSI Osito Audit: C 79.48 44 P **P** **01 07 48.3 -0.7**
baz=231
SRIG Santa Rosalia 79.58 54 *e*P **P** **01 07 49.6 0.0**
comp=Z,95nm,1.2s
BAR Barrett 79.61 47 *e*P **P** **01 07 50.6 +0.8**
comp=Z,28nm,1.4s
HOPS Hopland Field 79.72 39 *e*P **P** **01 07 50.8 +0.6**
comp=Z,69nm,1.3s
ARVC Arvin 79.73 44 P **P** **01 07 49.8 -0.5**
baz=231
MURC Murrieta 79.83 46 P **P** **01 07 50.6 -0.3**
baz=232
MONP2 Monument Peak 79.91 47 P **P** **01 07 50.5 -1.1**
baz=232
BFSC Mount Baldy Ra 79.93 45 P **P** **01 07 51.3 -0.3**
baz=232
IKP In-Ko-Pah, Jac 79.97 47 P **P** **01 07 51.5 -0.3**
baz=233
VES Vestal, Richgr 80.03 43 P **P** **01 07 51.6 -0.3**
baz=230
EDW2 Edwards Air Fo 80.11 45 P **P** **01 07 52.1 -0.3**
baz=231
KMRM Mail Ridge 80.21 37 *e*P **P** **01 07 53.8 +1.0**
comp=Z,108nm,1.1s
RCTC Rector, Farmer 80.23 43 P **P** **01 07 52.6 -0.3**
baz=230
ISA Isabella, Lake 80.30 44 P **P** **01 07 53.5 +0.1**
baz=231
ISA Isabella, Lake 80.30 44 *e*P **P** **01 07 53.3 -0.1**
ISA pmax pmax
comp=Z,79nm,1.6s
ISA Isabella, Lake 80.30 44 *e*P **P** **01 07 53.3 -0.1**
comp=Z,79nm,1.6s
PFO Pinyon Flats O 80.32 46 P **P** **01 07 54.0 +0.2**
comp=Z,6.4nm,0.9s,baz=242,slow=4.9,SNR=8.1
PFO Pinyon Flats O 80.32 46 P **P** **01 07 53.3 -0.4**
baz=232
PFO Pinyon Flats O 80.32 46 *e*P **P** **01 07 53.9 +0.2**
PFO pmax pmax
comp=Z,19nm,1.2s
PFO MLR MLR
comp=Z,890nm,19.0s
PFO Pinyon Flats O 80.32 46 *e*P **P** **01 07 53.9 +0.2**
comp=Z,19nm,1.2s
PFO LR LR
comp=Z,890nm,19.0s
TPFO Pinon Flats 80.32 46 P **P** **01 07 53.4 -0.3**
baz=232
SWSC Sam W. Stewart 80.36 47 P **P** **01 07 53.4 -0.3**
baz=233
PET Petropavlovsk 80.39 344 *e*P **P** **01 07 52.8 -0.6**
PET *e* 01 11 03.5
PET *e*S **S** **01 17 56.0 +0.2**
PET *e*PS **PnS** **01 18 44.4 -1.9**
PET *e*PPS PPS 01 18 59.3
PET pmax pmax
comp=Z,32nm,1.8s
PET pmax pmax
comp=Z,200nm,8.7s
PET pmax pmax
comp=Z,400nm,7.8s
PET MLR MLR
comp=Z,400nm,18.0s
PET Petropavlovsk 80.39 344 *e*P **P** **01 07 52.7 -0.6**
comp=Z,49nm,1.3s
PET LR LR
comp=Z,487nm,19.0s
BBRC Big Bear Solar 80.42 46 P **P** **01 07 54.0 -0.3**
baz=232
JCC Jacoby Creek, 80.44 37 *e*P **P** **01 07 57.2 +3.2**
comp=Z,74nm,1.2s
LHSI Lahat 80.47 270 P **P** **01 07 55.5 +0.7**
comp=Z,100nm,1.4s
YSS Yuzh-Sakhalins 80.53 332 ||| *i*P **P** **01 07 55.1 +0.9**
YSS *e* 01 08 11.8
YSS *e*S **S** **01 17 54.0 -3.5**
YSS pmax pmax
comp=Z,80nm,0.9s
YSS MLR MLR
comp=Z,400nm,20.0s
YSS Yuzh-Sakhalins 80.53 332 *e*P **P** **01 07 55.3 +1.0**
comp=Z,82nm,1.0s
YSS LR LR
comp=Z,244nm,21.0s
KHMM Horse Mountain 80.65 37 *e*P **P** **01 07 56.2 +0.9**
comp=Z,42nm,1.2s
CMB Columbia Colle 80.65 41 *e*P **P** **01 07 55.0 -0.2**
CMB pmax pmax
comp=Z,37nm,1.3s
CMB Columbia Colle 80.65 41 *e*P **P** **01 07 55.0 -0.2**
comp=Z,37nm,1.3s
QZH Quanzhou 80.68 303 ||| *i*P P 01 07 49.1 -6.5
QZH Quanzhou 80.68 303 S **S** **01 17 57.0 -3.1**
QZH LR LR
comp=Z,1μm,18.6s
LRMC Laurel Mtn Rad 80.69 44 P **P** **01 07 55.5 -0.2**
baz=231
PEA0 Petropavlovsk- 80.70 344 *e*P **P** **01 07 53.6 -1.5**
PEA0B Petropavlovsk- 80.70 344 *e*P **P** **01 07 54.9 -0.2**
comp=Z,113nm,1.2s
PETK Petropavlovsk- 80.70 344 P **P** **01 07 54.3 -0.8**
comp=Z,33nm,0.8s,baz=119,slow=8.5,SNR=56
PETK LR LR 01 40 24.3
comp=Z,417nm,19.4s,baz=170,slow=33
RRX Edison Barstow 80.75 45 P **P** **01 07 55.5 -0.3**
baz=232
BELC Belle Mtn. Jos 80.86 46 P **P** **01 07 56.5 -0.1**
baz=233
AFDM Forest Hills D 80.91 40 *e*P **P** **01 07 56.5 -0.1**
comp=Z,32nm,1.2s
ORV Oroville 81.00 39 *e*P **P** **01 07 57.2 +0.2**
ORV pmax pmax
comp=Z,33nm,1.3s
ORV Oroville 81.00 39 *e*P **P** **01 07 57.2 +0.2**
comp=Z,33nm,1.3s
BC3 Big Chuckawall 81.02 47 P **P** **01 07 57.5 +0.1**
baz=233
CWC Cottonwood Cre 81.04 43 P **P** **01 07 57.0 -0.5**
baz=231
GLA Glamis 81.08 48 P **P** **01 07 57.3 -0.4**
baz=233
GLA Glamis 81.08 48 *e*P **P** **01 07 58.2 +0.6**
GLA pmax pmax
comp=Z,73nm,1.5s
GLA Glamis 81.08 48 *e*P **P** **01 07 58.2 +0.6**
comp=Z,73nm,1.5s
WDC Whiskeytown Da 81.10 38 *e*P **P** **01 07 58.0 +0.5**
WDC pmax pmax
comp=Z,61nm,1.2s
WDC Whiskeytown Da 81.10 38 *e*P **P** **01 07 58.0 +0.5**
comp=Z,61nm,1.2s
GSC Goldstone, Bar 81.14 45 P **P** **01 07 57.6 -0.4**
baz=232
GSC Goldstone, Bar 81.14 45 *e*P **P** **01 07 58.1 +0.1**
GSC pmax pmax
comp=Z,61nm,1.7s
GSC Goldstone, Bar 81.14 45 *e*P **P** **01 07 58.1 +0.1**
comp=Z,61nm,1.7s
HEC Hector,Ludlow 81.15 45 P **P** **01 07 57.4 -0.6**
baz=232
MPMC Manual Prospec 81.17 44 P **P** **01 07 58.0 -0.2**
baz=231
DAC Darwin (Calif) 81.24 44 *e*P **P** **01 07 58.8 +0.2**
DAC pmax pmax
comp=Z,77nm,1.9s
DAC Darwin (Calif) 81.24 44 *e*P **P** **01 07 58.8 +0.2**
comp=Z,76nm,1.9s
N02D Trinity Center 81.28 37 P **P** **01 07 59.0 +0.4**
baz=227,SNR=17
MLAC Mammoth, Mammo 81.33 42 P **P** **01 07 59.2 +0.1**
baz=230
O03D Paynes Creek 81.33 38 P **P** **01 07 58.0 -0.8**
baz=228,SNR=26
TIN Tinemaha, Big 81.33 43 P **P** **01 07 58.9 -0.1**
baz=231
KSI Kapahiang 81.39 270 P **P** **01 08 00.2 +0.4**
comp=Z,314nm,0.9s,comp=Z,9μm
HSIG 81.48 53 *e*P **P** **01 07 59.5 -0.3**
comp=Z,43nm,1.3s
M02C Callahan 81.48 37 P **P** **01 07 60.0 +0.3**
baz=227,SNR=27
KSRS Korea Array 81.49 318 P **P** **01 08 00.2 +0.6**
comp=Z,17nm,1.1s,baz=140,slow=5.9,SNR=15
KSRS LR LR 01 41 22.3
comp=Z,522nm,19.1s,baz=135,slow=34
KSRS Korea Array 81.49 318 P **P** **01 08 00.3 +0.6**
KSRS pmax pmax
comp=Z,19nm,1.1s
KS15 Wonju Array Si 81.51 318 *e*P **P** **01 08 01.8 +2.0**
KSAR Wonju Array Be 81.51 318 P **P** **01 08 00.3 +0.5**
KSAR Wonju Array Be 81.51 318 P **P** **01 08 00.2 +0.5**
IRM Iron Mountain 81.52 47 P **P** **01 08 00.4 +0.4**
baz=233
WAKR Walker 81.53 41 *e*P **P** **01 08 00.7 +0.7**
comp=Z,87nm,1.3s
GMRC Granite Mounta 81.56 46 P **P** **01 08 00.5 +0.2**
baz=233
L02D Cave Junction, 81.60 36 P **P** **01 08 00.3 +0.2**
baz=226,SNR=8.4
CHGN Chignik 81.65 9 *e*P **P** **01 07 59.3 -0.6**
Y12C Blythe 81.69 47 P **P** **01 08 01.0 +0.2**
baz=234
Y12C Blythe 81.69 47 *e*P **P** **01 08 01.3 +0.5**
comp=Z,22nm,1.2s
TUQ Turquoise Moun 81.79 45 P **P** **01 08 01.5 +0.1**
baz=232
214A Organ Pipe Nat 81.81 50 P **P** **01 08 01.6 +0.1**
baz=235
214A Organ Pipe Nat 81.81 50 *e*P **P** **01 08 01.4 -0.1**
comp=Z,294nm,1.8s
FURC Furnace Creek, 81.82 44 P **P** **01 08 01.7 +0.3**
baz=232
GRAC Grapevine Rang 81.83 43 P **P** **01 08 01.9 +0.3**
baz=231
SHOC Shoshone, Teco 81.84 45 P **P** **01 08 01.7 +0.1**
baz=232
LDFC Landfair 82.10 46 *e*P **P** **01 08 04.0 +0.9**
comp=Z,213nm,1.8s
NEE2 Needles Airpor 82.24 46 P **P** **01 08 04.1 +0.5**
baz=233
HUMO Hull Mountain 82.26 36 *e*P **P** **01 08 04.0 +0.4**
comp=Z,70nm,1.4s
PDMCI Parker Dam,Lak 82.28 47 P **P** **01 08 04.3 +0.5**
baz=234
M04C Macdoel 82.31 37 P **P** **01 08 03.8 -0.3**
baz=228,SNR=20
INCN Inchon 82.31 317 PFAKE 01 08 10.0 +6.0
INCN LR LR
comp=Z,493nm,20.0s
PAHR Pah Rah Range 82.33 40 *e*P **P** **01 08 04.6 +0.3**
comp=Z,60nm,1.3s
MYKOM Kota Tinggi 82.47 275 *e*P **P** **01 08 07.3 +1.9**
comp=Z,101nm,1.0s
TPNV Topopah Spring 82.50 44 P **P** **01 08 05.5 +0.3**
baz=232
TPNV Topopah Spring 82.50 44 *e*P **P** **01 08 05.4 +0.2**
TPNV pmax pmax
comp=Z,87nm,1.9s
TPNV Topopah Spring 82.50 44 *e*P **P** **01 08 05.4 +0.2**
comp=Z,87nm,1.9s
I03D Drain, OR 82.80 35 P **P** **01 08 06.1 -0.2**
baz=226,SNR=16
K04D Chiloquin, OR 82.92 37 P **P** **01 08 07.3 +0.1**
baz=228
SHPR Sheep Range 82.93 45 *e*P **P** **01 08 07.8 +0.3**
comp=Z,138nm,2.0s
COCO West Island 83.21 260 PFAKE 01 08 20.0 +11
COCO LR LR
comp=Z,3μm,19.0s
MOD Modoc Plateau 83.24 38 *e*P **P** **01 08 09.2 +0.3**
comp=Z,59nm,1.1s
MPOR Mary's Peak 83.25 34 P **P** **01 08 09.5 +0.7**
I04A Tendick Farm, 83.36 36 P **P** **01 08 08.8 -0.5**
baz=227,SNR=17
TUC Tucson 83.43 50 P **P** **01 08 10.4 +0.4**
baz=236
TUC Tucson 83.43 50 *e*P **P** **01 08 09.8 -0.2**
TUC pmax pmax
comp=Z,53nm,1.3s
TUC MLR MLR
comp=Z,1μm,20.0s
TUC Tucson 83.43 50 *e*P **P** **01 08 09.8 -0.2**
comp=Z,53nm,1.3s
TUC LR LR
comp=Z,1μm,20.0s
COR Corvallis 83.44 34 *e*P **P** **01 08 11.0 +1.4**
COR pmax pmax
comp=Z,114nm,1.4s
COR Corvallis 83.44 34 *e*P **P** **01 08 11.0 +1.4**
comp=Z,114nm,1.4s
HBO Huckleberry Mo 83.44 36 P **P** **01 08 10.2 +0.3**
K05A Summer Lake 83.46 37 *e*P **P** **01 08 10.2 +0.2**
comp=Z,128nm,1.1s
SYO Syowa Base 83.47 192 ||| *e*P **P** **01 08 10.0 +0.4**
SYO Syowa Base 83.47 192 ||| *i*PcP **PcP** **01 08 14.4 +0.6**
USRK Ussuriysk Ar. 83.62 325 P **P** **01 08 11.8 +1.2**
comp=Z,17nm,0.8s,baz=116,slow=3.3,SNR=30
USRK LR LR 01 42 30.3
comp=Z,261nm,19.0s,baz=132,slow=34
TYV Tymovskoe 83.64 335 *e*P **P** **01 08 07.5 -3.0**
TYV pmax pmax
comp=E,57nm,1.0s
TYV pmax pmax
comp=Z,57nm,1.0s
TYV pmax pmax
comp=Z,1μm,7.0s
TYV MLR MLR
comp=N,1μm,20.0s
TYV MLR MLR
comp=Z,1μm,20.0s
J05D Fort Rock, OR 83.65 36 P **P** **01 08 10.9 0.0**
baz=228,SNR=30
R11A Troy Canyon, C 83.78 43 P **P** **01 08 11.5 -0.3**
baz=232,SNR=17
R11A Troy Canyon, C 83.78 43 *e*P **P** **01 08 11.9 +0.1**
comp=Z,21nm,1.4s
G03D McMinnville, O 83.89 34 P **P** **01 08 11.9 0.0**
baz=226,SNR=6.8
319A Douglas 83.98 52 *e*P **P** **01 08 13.6 +0.7**
SNAA Sanae 84.04 178 P **P** **01 08 14.1 +1.6**
SNAA Sanae 84.04 178 *d i*P **P** **01 08 13.8 +1.3**
SNAA Sanae 84.04 178 *e*P **P** **01 08 14.1 +1.6**
KDAK Kodiak Island 84.05 12 PFAKE 01 08 20.0 +7.6
KDAK LR LR
comp=Z,250nm,21.0s
BMN Battle Mountai 84.07 41 *e*P **P** **01 08 12.9 -0.3**
BMN pmax pmax
comp=Z,79nm,1.4s
BMN Battle Mountai 84.07 41 *e*P **P** **01 08 12.9 -0.3**
comp=Z,79nm,1.4s
F03A Seaside 84.24 33 *e*P **P** **01 08 14.9 +1.2**
comp=Z,188nm,1.4s
I05D Terrebonne, OR 84.30 36 P **P** **01 08 14.1 0.0**
baz=228,SNR=7.2
HPIG 84.31 57 *e*P **P** **01 08 14.1 -0.7**
comp=Z,23nm,1.3s
NJ2 Nanjing 84.33 309 *e*P **P** **01 08 16.4 +1.9**
NJ2 pP **pP** **01 08 28.8 +1.1**
NJ2 pmax pmax
comp=Z,50nm,1.5s
LCMT Little Creek M 84.46 45 *e*P **P** **01 08 15.7 +0.4**
comp=Z,151nm,1.9s
WVOR Wild Horse Val 84.53 38 *e*P **P** **01 08 15.2 -0.2**
WVOR pmax pmax
comp=Z,79nm,1.3s
WVOR MLR MLR

comp=Z,692nm,19.0s
WVOR Wild Horse Val 84.53 38 *e*P **P 01 08 15.2 -0.2**
comp=Z,79nm,1.3s
WVOR LR LR
comp=Z,692nm,19.0s
F04D Rainier, OR 84.62 34 P **P 01 08 16.6 +1.0**
baz=226
E03A Lebam 84.67 33 *e*P **P 01 08 16.6 +0.8**
comp=Z,154nm,1.1s
ZAIG Zacatecas 84.68 62 *e*P **P 01 08 17.4 +0.5**
comp=Z,18nm,1.2s
CCUT Cedar City 84.70 45 *e*P **P 01 08 16.2 -0.4**
comp=Z,88nm,1.6s
KNB Kanab 84.74 45 *e*P **P 01 08 17.3 +0.6**
KNB pmax pmax
comp=Z,267nm,2.0s
KNB Kanab 84.74 45 *e*P **P 01 08 17.3 +0.6**
comp=Z,267nm,2.0s
U15A North Rim 84.75 46 *e*P **P 01 08 17.3 +0.4**
PLCA Paso Flores 84.75 132 P **P 01 08 18.1 +1.3**
comp=Z,18nm,1.1s,baz=259,slow=6.1,SNR=14
PLCA LR LR 01 40 38.8
comp=Z,340nm,18.2s,baz=286,slow=32
PLCA Paso Flores 84.75 132 *e*P **P 01 08 18.7 +2.0**
comp=Z,101nm,1.5s
VNA1 Neumayer--Stat 84.76 176 P **P 01 08 17.9 +1.8**
QIZ Qiongzhong 84.78 293 P **P 01 08 18.3 +1.3**
QIZ S **S 01 18 43.1 +1.0**
QIZ pmax pmax
comp=Z,360nm,7.4s
QIZ LR LR
comp=Z,280nm,20.0s
QIZ Qiongzhong 84.78 293 PFAKE 01 08 30.0 +13
QIZ LR LR
comp=Z,319nm,20.0s
WUAZ Wupatki 84.83 47 P **P 01 08 17.6 +0.5**
baz=235
WUAZ Wupatki 84.83 47 *e*P **P 01 08 18.0 +0.8**
comp=Z,89nm,1.6s
WUAZ LR LR
comp=Z,615nm,19.0s
VFP Flag Point 84.89 35 P **P 01 08 17.0 -0.3**
CROR Criterion Ridg 84.92 35 P **P 01 08 16.9 -0.4**
G05D Wamic, OR 84.92 35 P **P 01 08 17.0 -0.2**
baz=228,SNR=5.8
NVL N'lazarevskaya 84.96 182 *e*P **P 01 08 18.5 +1.4**
NVL *e*S **S 01 18 38.9 -3.4**
SHW Mount Saint He 85.09 34 P **P 01 08 18.9 +0.7**
SHW Mount Saint He 85.09 34 P **P 01 08 18.9 +0.7**
NLWA Neilton Lookou 85.11 32 *e*P **P 01 08 18.9 +0.9**
comp=Z,58nm,1.1s
NLWA LR LR
comp=Z,875nm,19.0s
ERK Elk Rock 85.11 34 P **P 01 08 18.9 +0.6**
PAYG Puerto Ayora 85.11 89 PFAKE 01 08 30.0 +11
PAYG LR LR
comp=Z,416nm,19.0s
MDJ Mudanjiang 85.17 324 P **P 01 08 19.3 +0.9**
MDJ pP pP 01 08 31.5 -0.2
MDJ sP sP 01 08 36.4 -0.3
MDJ S **S 01 18 43.9 -1.0**
MDJ SS **SS 01 24 20.4 +0.1**
MDJ pmax pmax
comp=Z,31nm,1.2s
MDJ pmax pmax
comp=Z,400nm,5.1s
MDJ LR LR
comp=Z,120nm,20.8s
MDJ LR LR
comp=Z,300nm,18.5s
MDJ LR LR
comp=Z,380nm,20.1s
MDJ Mudanjiang 85.17 324 *e*P **P 01 08 19.1 +0.7**
comp=Z,27nm,0.9s
MDJ LR LR
comp=Z,404nm,20.0s
OOW Octopus West 85.19 32 P **P 01 08 19.7 +1.2**
X18A Snowflake 85.24 49 *e*P **P 01 08 19.9 +0.6**
G06A Carlson Farm, 85.27 35 *e*P **P 01 08 19.1 +0.1**
comp=Z,61nm,1.1s
VTHM Trough 85.27 35 P **P 01 08 18.6 -0.4**
PKCU Pink Cliffs 85.32 45 *e*P **P 01 08 21.3 +1.6**
comp=Z,100nm,1.6s
TLIG Tlapa 85.56 69 *e*P **P 01 08 21.1 0.0**
comp=Z,48nm,1.3s
121A Cookes Peak, D 85.67 51 P **P 01 08 22.2 +0.7**
baz=238
121A Cookes Peak, D 85.67 51 *e*P **P 01 08 22.1 +0.6**
comp=Z,35nm,1.4s
LON Longmire 85.68 34 *e*P **P 01 08 21.0 0.0**
LON pmax pmax
comp=Z,22nm,1.2s
LON Longmire 85.68 34 *e*P **P 01 08 21.0 0.0**
comp=Z,22nm,1.2s
W18A Petrified Fore 85.72 48 P **P 01 08 22.2 +0.5**
baz=236
W18A Petrified Fore 85.72 48 *e*P **P 01 08 22.3 +0.7**
comp=Z,83nm,1.5s
DIB Dawson Inlet, 85.73 24 *e*P **P 01 08 21.4 +0.4**
comp=Z,46nm,1.2s
MTPU Mount Pierson 85.75 45 *e*P **P 01 08 22.8 +0.9**
comp=Z,228nm,2.0s
D05A Enumclaw 85.89 33 P **P 01 08 22.0 0.0**
MNSI Mandailing Nat 85.94 273 P **P 01 08 23.4 +0.4**
comp=Z,49nm,0.8s
MSU Marysvale 86.03 45 *e*P **P 01 08 23.8 +0.7**
MSU Marysvale 86.03 45 *e*P **P 01 08 23.8 +0.7**
IPM Ipoh 86.15 277 *e*P **P 01 08 25.8 +1.7**
PGC Sidney 86.19 31 *e*P **P 01 08 23.8 +0.5**
comp=Z,56nm,1.2s
NKL Nikolayevsk 86.20 335 *e*P **P 01 08 20.0 -3.2**
NKL *e* 01 18 52.0
NKL pmax pmax
comp=Z,150nm,1.6s
NKL pmax pmax
comp=Z,600nm,6.0s
NKL MLR MLR
comp=N,450nm,19.0s
NKL MLR MLR
comp=E,400nm,19.0s
NKL MLR MLR
comp=Z,600nm,19.0s
G08A Pilot Rock 86.20 36 *e*P **P 01 08 24.0 +0.3**
comp=Z,64nm,1.1s
DL2 Dalian 86.31 316 ⇓*i*P **P 01 08 25.0 +0.8**
DL2 S **S 01 18 56.0 -0.3**
DL2 pmax pmax
comp=Z,53nm,0.8s
DL2 pmax pmax
comp=Z,420nm,6.8s
DL2 LR LR
comp=Z,550nm,17.7s
DL2 LR LR
comp=Z,550nm,18.8s
EFI East Falkland 86.42 146 PFAKE 01 08 40.0 +15
EFI LR LR
comp=Z,839nm,20.0s
B05A Bryant 86.57 32 P **P 01 08 25.0 -0.2**
baz=227,SNR=9.8
A04D Lummi Island 86.59 32 P **P 01 08 25.7 +0.4**
baz=226,SNR=5.7
DUG Dugway, Tooele 86.61 43 P **P 01 08 25.9 +0.1**
baz=234
DUG Dugway, Tooele 86.61 43 *e*P **P 01 08 25.8 0.0**
DUG pmax pmax
comp=Z,12nm,1.3s
DUG MLR MLR
comp=Z,442nm,19.0s
DUG Dugway, Tooele 86.61 43 *e*P **P 01 08 25.8 0.0**
comp=Z,12nm,1.3s
DUG LR LR
comp=Z,442nm,19.0s
HAWA Hanford 86.61 35 *e*P **P 01 08 25.9 +0.4**
comp=Z,99nm,1.5s
HAWA LR LR
comp=Z,1μm,19.0s
BBB Bella Bella 86.66 27 *e*P **P 01 08 26.8 +1.2**
SVW2 Sparrevohn 86.68 9 *e*P **P 01 08 25.0 -0.5**
comp=Z,68nm,1.9s
MFID Camas Ranch 86.75 39 *e*P **P 01 08 26.4 -0.1**
WHN Wuhan 86.80 305 ⇓*i*P **P 01 08 28.6 +1.8**
WHN sP **sP 01 08 50.5 +5.4**
WHN S **S 01 19 06.3 +4.8**
WHN pmax pmax
comp=Z,340nm,1.9s
WHN pmax pmax
comp=Z,1μm,4.8s
WHN LR LR
comp=Z,990nm,19.2s
BMO Blue Mountains 86.81 37 *e*P **P 01 08 26.4 -0.3**
comp=Z,57nm,1.8s
BMO LR LR
comp=Z,606nm,19.0s
KULM Kulim 86.83 277 *e*P **P 01 08 29.2 +1.8**
KULM LR LR
comp=Z,481nm,19.0s
SNY Shenyang 86.83 319 ⇓P **P 01 08 26.3 -0.4**
SNY SS SS 01 24 39.1 -5.6
SNY pmax pmax
comp=Z,27nm,2.5s
SNY pmax pmax
comp=Z,420nm,7.1s
SNY LR LR
comp=Z,330nm,18.4s
SNY LR LR
comp=Z,350nm,18.8s
SNY LR LR
comp=Z,520nm,19.6s
BGU Big Grassy Mou 86.90 42 *e*P **P 01 08 27.4 +0.1**
comp=Z,29nm,1.8s
C06D Leavenworth 86.94 33 P **P 01 08 26.8 -0.3**
baz=228
CN2 Changchun 86.94 321 ⇓P **P 01 08 27.6 +0.4**
CN2 *e*sP sP 01 08 44.9 -0.5
CN2 *e*S **S 01 19 01.3 -1.0**
CN2 pmax pmax
comp=Z,30nm,1.2s
CN2 pmax pmax
comp=Z,400nm,5.0s
CN2 LR LR
comp=Z,400nm,18.0s
CN2 LR LR
comp=Z,300nm,18.0s
CN2 LR LR
comp=Z,800nm,20.0s
MNTX Cornudas Mount 86.97 53 P **P 01 08 27.7 0.0**
baz=239
MNTX Cornudas Mount 86.97 53 *e*P **P 01 08 27.3 -0.3**
comp=Z,35nm,1.1s
MNTX LR LR
comp=Z,298nm,19.0s
TX31 Lajitas Ar. Si 87.05 56 *e*P **P 01 08 28.1 -0.1**
TXAR Lajitas Array 87.05 56 P **P 01 08 27.7 -0.5**
comp=Z,10nm,1.0s,baz=216,slow=6.2,SNR=73
TXAR LR LR 01 40 29.6
comp=Z,235nm,20.4s,baz=0.0,slow=31
TMUT Trail Mountain 87.09 44 *e*P **P 01 08 28.9 +0.5**
comp=Z,31nm,0.4s
Y22D IRIS PASSCAL I 87.10 51 P **P 01 08 28.6 +0.2**
baz=238
LAZ Ladron 87.12 50 *e*P **P 01 08 29.0 +0.5**
KLR Kul'dur 87.18 328 *d*P **P 01 08 28.9 +0.7**
comp=Z,669nm,20.5s,baz=172,slow=32
KLR Kul'dur 87.18 328 *d*P **P 01 08 28.9 +0.7**
SPU Mount Spurr 87.33 11 *e*P **P 01 08 27.7 -1.0**
BNM Barren Site 87.35 51 *e*P **P 01 08 29.8 +0.1**
PSI Prapat 87.36 274 P **P 01 08 30.3 +0.2**
baz=141,slow=9.5
PSI Prapat 87.36 274 *e*P **P 01 08 30.4 +0.3**
PSI pmax pmax
comp=Z,87nm,1.2s
PSI Prapat 87.36 274 *e*P **P 01 08 30.4 +0.3**
comp=Z,87nm,1.2s
D08A Wollman Farm, 87.37 35 *e*P **P 01 08 29.5 +0.3**
comp=Z,53nm,1.2s
E09A Wood Farm, Sta 87.42 35 *e*P **P 01 08 29.4 -0.1**
comp=Z,62nm,1.5s
SRU San Rafael Swe 87.43 45 *e*P **P 01 08 30.1 +0.2**
SRU pmax pmax
comp=Z,49nm,1.5s
SRU San Rafael Swe 87.43 45 *e*P **P 01 08 30.1 +0.2**
comp=Z,49nm,1.5s
LPM Los Pinos Moun 87.43 50 *e*P **P 01 08 30.3 +0.2**
SPUT South Promonto 87.48 42 *e*P **P 01 08 31.0 +0.9**
comp=Z,27nm,1.2s
P17A Butcher Ranch, 87.49 44 *e*P **P 01 08 30.8 +0.6**
comp=Z,40nm,1.4s
SAW Saint Andrews 87.54 34 P **P 01 08 30.1 0.0**
CTU Camp Tracy 87.55 43 *e*P **P 01 08 30.6 +0.1**
comp=Z,57nm,1.3s
HVU Hansel Valley 87.56 42 *e*P **P 01 08 30.5 +0.1**
HVU pmax pmax
comp=Z,28nm,1.3s
HVU Hansel Valley 87.56 42 *e*P **P 01 08 30.5 +0.1**
comp=Z,28nm,1.3s
HLID Hailey 87.65 39 P **P 01 08 31.0 +0.1**
baz=233
HLID Hailey 87.65 39 *e*P **P 01 08 30.7 -0.1**
comp=Z,12nm,1.3s
HLID LR LR
comp=Z,235nm,19.0s
RC01 Rabbit Creek A 87.67 12 *e*P **P 01 08 29.7 -0.6**
comp=Z,67nm,1.2s
JLU Joanelie 87.69 43 *e*P **P 01 08 31.4 +0.2**
comp=Z,47nm,1.7s
MVCO Mesa Verde 87.70 47 P **P 01 08 30.8 -0.5**
baz=237
TIA Tai'an 87.78 312 ⇓P **P 01 08 32.4 +1.0**
TIA pmax pmax
comp=Z,40nm,1.1s
TIA pmax pmax
comp=Z,620nm,5.0s
TIA LR LR
comp=Z,280nm,18.0s
TIA LR LR
comp=Z,370nm,20.0s
TIA LR LR
comp=Z,530nm,20.0s
SUA Susitna One 87.82 11 *e*P **P 01 08 30.7 -0.5**
comp=Z,35nm,1.1s
ANMO Albuquerque 87.89 50 P **P 01 08 32.4 +0.2**
baz=238
ANMO Albuquerque 87.89 50 *d*P **P 01 08 31.9 -0.3**
ANMO pmax pmax
comp=Z,45nm,1.7s
ANMO Albuquerque 87.89 50 *e*P **P 01 08 32.0 -0.2**
ANMO LR LR
comp=Z,867nm,20.0s
GSI Gunungsitoli 87.98 272 P **P 01 08 35.3 +2.4**
comp=Z,139nm,1.3s
GSI Gunungsitoli 87.98 272 *e*P **P 01 08 35.7 +2.8**
comp=Z,114nm,1.0s
PV09 Paradox Valley 87.99 46 *e*P **P 01 08 33.0 +0.2**
EYAK Cordova Ski Ar 88.00 14 *e*P **P 01 08 31.9 0.0**
comp=Z,44nm,1.2s
B08A Colville Reser 88.01 34 *e*P **P 01 08 31.9 -0.4**
comp=Z,33nm,1.0s
TCUT Toone Canyon 88.01 43 *e*P **P 01 08 33.1 +0.3**
comp=Z,88nm,1.3s
RAGM Ragged Mountai 88.09 15 *e*P **P 01 08 32.5 +0.1**
comp=Z,45nm,1.3s
PV01 Paradox Valley 88.16 46 *e*P **P 01 08 33.3 -0.2**
C09A Chrisman Ranch 88.18 34 *e*P **P 01 08 33.1 +0.1**
comp=Z,44nm,1.0s
HWUT Hardware Ranch 88.19 42 *e*P **P 01 08 33.2 -0.3**
comp=Z,12nm,1.2s
HWUT LR LR
comp=Z,456nm,19.0s
MA2 Magadan 88.23 343 PFAKE 01 08 40.0 +7.0
MA2 LR LR
comp=Z,2μm,20.0s
PMR Palmer 88.24 12 *e*P **P 01 08 32.8 -0.2**
PMR pmax pmax
comp=Z,72nm,1.3s
PMR Palmer 88.24 12 *e*P **P 01 08 32.8 -0.2**
comp=Z,72nm,1.3s
LLLB Lillooet 88.28 31 *e*P **P 01 08 33.7 +0.2**
WRAK Wrangell Islan 88.30 22 *e*P **P 01 08 34.3 +0.9**
comp=Z,57nm,1.2s
WRAK LR LR
comp=Z,425nm,21.0s
TT01 Tatalina 88.34 9 *e*P **P 01 08 33.4 -0.1**
TTA Tatalina 88.37 9 *e*P **P 01 08 33.5 -0.2**
TTA pmax pmax
comp=Z,54nm,1.2s
TTA Tatalina 88.37 9 *e*P **P 01 08 33.5 -0.2**
comp=Z,54nm,1.2s
PNT Penticton 88.50 33 P **P 01 08 34.5 0.0**
PNT Penticton 88.50 33 P **P 01 08 34.5 0.0**
CMIG Matias Romero 88.50 71 P **P 01 08 34.4 -0.8**
comp=Z,6.5nm,0.9s,baz=247,slow=3.9,SNR=5.6
DIV Divide 88.51 14 *e*P **P 01 08 34.1 -0.3**
SML Sawmill 88.60 12 *e*P **P 01 08 34.5 -0.2**
SML pmax pmax
comp=Z,67nm,1.6s
SML Sawmill 88.60 12 *e*P **P 01 08 34.5 -0.2**
comp=Z,67nm,1.6s
BMRM Bremner River 88.63 14 *e*P **P 01 08 35.1 +0.2**
comp=Z,198nm,1.8s
DHAK Deception Hill 88.63 18 *e*P **P 01 08 35.9 +1.0**
comp=Z,63nm,1.2s
CRQM Cirque 88.78 15 *e*P **P 01 08 35.8 0.0**
comp=Z,69nm,1.2s
KLU Klutina 88.81 14 *e*P **P 01 08 35.8 0.0**
comp=Z,53nm,1.4s
SCM Sheep Creek Mo 88.82 13 *e*P **P 01 08 36.0 +0.2**
SCM pmax pmax
comp=Z,67nm,1.0s
SCM Sheep Creek Mo 88.82 13 *e*P **P 01 08 36.0 +0.2**
comp=Z,67nm,1.0s
PCA Pinnacle 88.93 17 *e*P **P 01 08 36.8 +0.4**
comp=Z,45nm,1.0s
NEW Newport 89.08 35 P **P 01 08 36.8 -0.5**
baz=231
NEW Newport 89.08 35 *e*P **P 01 08 36.6 -0.7**
NEW pmax pmax
comp=Z,18nm,1.1s
NEW MLR MLR
comp=Z,1μm,19.0s
NEW Newport 89.08 35 *e*P **P 01 08 36.6 -0.7**
comp=Z,18nm,1.1s
NEW LR LR
comp=Z,1μm,19.0s
S22A 4UR Ranch, Cre 89.11 47 P **P 01 08 38.2 +0.1**
baz=238
S22A 4UR Ranch, Cre 89.11 47 *e*P **P 01 08 38.5 +0.5**
TPTI 89.14 274 P **P 01 08 39.9 +1.5**
comp=Z,30nm,0.8s
AHID Auburn Hatcher 89.14 42 *e*P **P 01 08 38.0 +0.1**
comp=Z,28nm,1.4s
AHID LR LR
comp=Z,460nm,19.0s
MCMT McKenzie Canyo 89.31 39 *e*P **P 01 08 39.1 +0.3**
832A Faith Ranch, C 89.37 59 P **P 01 08 38.5 -0.6**
baz=242
CAST Castle Rocks 89.42 10 *e*P **P 01 08 36.7 -1.9**
comp=Z,32nm,1.1s
O20A White River Ci 89.46 45 P **P 01 08 39.3 -0.2**
baz=237
O20A White River Ci 89.46 45 *e*P **P 01 08 39.0 -0.6**
comp=Z,4.5nm,0.9s
933A Laredo 89.60 59 P **P 01 08 40.4 +0.1**
baz=242
REDW Red Top Meadow 89.63 41 *e*P **P 01 08 40.4 +0.1**
comp=Z,42nm,1.4s
TPAW Teton Pass 89.65 41 *e*P **P 01 08 40.7 +0.3**
comp=Z,20nm,1.4s
KTH Kantishna Hill 89.74 11 *e*P **P 01 08 39.0 -1.1**
comp=Z,25nm,1.0s
SNOW Snow King Moun 89.75 41 *e*P **P 01 08 41.3 +0.4**
comp=Z,31nm,1.4s
DLMT Dillon 89.77 39 *e*P **P 01 08 41.0 +0.2**
comp=Z,44nm,1.4s
SMCO Snowmass 89.77 46 *e*P **P 01 08 41.3 0.0**
comp=Z,37nm,1.8s
SKAG Skagway 89.78 19 *e*P **P 01 08 40.2 0.0**
034A Hebbronville 89.82 60 P **P 01 08 41.6 +0.4**
baz=243,SNR=9.8
833A Chaparral WMA, 89.84 59 P **P 01 08 40.9 -0.5**
baz=242
IMW Indian Meadow 89.89 41 *e*P **P 01 08 41.9 +0.4**
comp=Z,63nm,1.8s
MSO Missoula 89.89 37 P **P 01 08 40.7 -0.5**
baz=233
MSO Missoula 89.89 37 *e*P **P 01 08 40.5 -0.7**
comp=Z,29nm,1.4s
MOOW Moose Ponds 89.92 41 *e*P **P 01 08 41.8 +0.2**
comp=Z,27nm,1.5s
LOHW Long Hollow 89.92 41 *e*P **P 01 08 41.9 +0.2**
comp=Z,47nm,1.6s
DHY Denali Highway 89.94 12 *e*P **P 01 08 40.9 -0.2**
comp=Z,48nm,1.3s
RND Reindeer 89.96 12 *e*P **P 01 08 40.1 -1.0**
RND pmax pmax
comp=Z,104nm,1.2s
RND Reindeer 89.96 12 *e*P **P 01 08 40.1 -1.0**
comp=Z,104nm,1.2s
SDCO Great Sand Dun 90.00 48 P **P 01 08 42.1 -0.1**
baz=239
SDCO Great Sand Dun 90.00 48 *e*P **P 01 08 42.0 -0.3**
comp=Z,11nm,1.1s
SDCO LR LR
comp=Z,593nm,19.0s
MSTX Muleshoe 90.01 52 P **P 01 08 41.8 -0.4**
baz=240
MSTX Muleshoe 90.01 52 *e*P **P 01 08 41.7 -0.4**
035Z Hargill 90.03 61 P **P 01 08 42.4 +0.1**
baz=243
BSMT Bassoo Peak 90.05 36 *e*P **P 01 08 41.5 -0.6**
BW06 Boulder Array 90.08 42 P **P 01 08 41.5 -0.9**
baz=236
BW06 Boulder Array 90.08 42 *e*P **P 01 08 41.8 -0.6**
comp=Z,43nm,1.9s
BW06 LR LR
comp=Z,616nm,19.0s
PD31 Pinedale Array 90.08 42 *e*P **P 01 08 41.9 -0.6**
PDAR Pinedale Array 90.08 42 P **P 01 08 41.1 -1.3**
comp=Z,2.5nm,0.9s,baz=204,slow=3.3,SNR=20
PDAR PP **PP 01 12 10.0 -6.5**
comp=Z,1.0nm,1.1s,baz=235,slow=5.2,SNR=4.0
PDAR PKKPbc **PKKPbc 01 26 14.6 +0.2**
comp=Z,0.8nm,1.0s,baz=82,slow=1.9,SNR=5.1
PDAR LR LR 01 48 09.1
comp=Z,306nm,18.0s,baz=264,slow=35
733A Divot King Ran 90.10 58 P **P 01 08 42.3 -0.2**
baz=242
LCO Las Campanas 90.12 122 *e*P **P 01 08 43.9 +0.8**
comp=Z,60nm,1.2s
LRM Limekiln Ridge 90.12 38 *e*P **P 01 08 42.6 0.0**
QLMT Earthquake Lak 90.13 40 *e*P **P 01 08 43.5 +1.0**
934A Benavides 90.19 60 P **P 01 08 43.7 +0.8**
baz=243
035A Encino 90.22 60 P **P 01 08 43.2 +0.1**
baz=243
BPAW Bear Paw Mtn. 90.23 10 *e*P **P 01 08 40.9 -1.4**
JTMT Jette 90.25 36 *e*P **P 01 08 42.3 -0.7**
MLSI Meulaboh, Aceh 90.26 275 P **P 01 08 45.2 +1.6**
comp=Z,66nm,1.2s
SWMT Swartz Lake 90.26 36 *e*P **P 01 08 42.2 -0.8**
HYT Haines Junctio 90.28 17 *e*P **P 01 08 43.5 +0.8**
CHMT Chamberlain Mo 90.32 37 *e*P **P 01 08 42.5 -0.9**
ENH Enshi 90.33 303 *e*P **P 01 08 45.0 +1.3**
comp=Z,54nm,1.1s
ENH LR LR
comp=Z,421nm,19.0s
BLMT Blacktail Moun 90.37 36 *e*P **P 01 08 42.8 -0.8**
SLMT Seeley Lake 90.38 37 *e*P **P 01 08 42.3 -1.3**
H17A Grant Village 90.38 40 P **P 01 08 44.7 +0.9**
baz=236
834A Tilden 90.41 59 P **P 01 08 44.1 +0.1**
baz=243
T25A Trinidad 90.44 49 P **P 01 08 43.9 -0.3**
baz=240
T25A Trinidad 90.44 49 *e*P **P 01 08 44.1 -0.1**
YHH Holmes Hill 90.44 40 *e*P **P 01 08 46.0 +1.9**
comp=Z,44nm,1.5s
BJT Baijiatuau 90.45 314 PFAKE 01 08 50.0 +6.1
BJT LR LR
comp=Z,462nm,20.0s
BJI Beijing 90.45 314 P **P 01 08 44.5 +0.6**
BJI sP **sP 01 09 01.4 -0.8**
BJI SKS **SKSac 01 19 13.5 +1.9**
BJI S **ScS 01 19 37.8 -1.3**
BJI sS **sS 01 19 55.0 -2.9**
BJI pmax pmax
comp=Z,16nm,1.5s
BJI pmax pmax
comp=Z,470nm,6.2s
BJI LR LR
comp=Z,290nm,16.4s
BJI LR LR
comp=Z,300nm,19.1s
BJI LR LR
comp=Z,290nm,20.5s
YBMT Yellow Bay 90.47 36 *e*P **P 01 08 43.1 -0.9**
BOZ Bozeman (W) 90.49 39 P **P 01 08 44.1 0.0**
baz=235
BOZ Bozeman (W) 90.49 39 *e*P **P 01 08 43.8 -0.3**
BOZ pmax pmax
comp=Z,49nm,1.2s

BOZ					MLR	MLR			
	comp=Z,418nm,19.0s								
BOZ	**Bozeman (W)**	**90.49**	**39**	*eP*	**P**		**01 08 43.8**	**-0.3**	
	comp=Z,49nm,1.2s								
BOZ					LR	LR			
	comp=Z,418nm,19.0s								
CCIG	**Comitan**	**90.53**	**72**	*eP*	**P**		**01 08 46.0**	**+1.0**	
	comp=Z,47nm,1.3s								
JCT	**Junction City**	**90.53**	**57**	P	**P**		**01 08 43.5**	**-1.1**	
	baz=242								
JCT	**Junction City**	**90.53**	**57**	*eP*	**P**		**01 08 44.2**	**-0.4**	
JCT				pmax	pmax				
	comp=Z,30nm,1.4s								
JCT				MLR	MLR				
	comp=Z,615nm,19.0s								
JCT	**Junction City**	**90.53**	**57**	*eP*	**P**		**01 08 44.1**	**-0.4**	
	comp=Z,30nm,1.4s								
JCT				LR	LR				
	comp=Z,615nm,19.0s								
633A	**Saathoff Ranch**	**90.54**	**58**	P	**P**		**01 08 44.5**	**-0.1**	
	baz=242								
MENT	**Mentasta**	**90.57**	**14**	*eP*	**P**		**01 08 43.9**	**0.0**	
	comp=Z,39nm,1.0s								
KVTX	**Kingsville**	**90.66**	**60**	PFAKE			01 09 00.0	+15	
KVTX				LR	LR				
	comp=Z,551nm,20.0s								
DLBC	**Dease Lake**	**90.66**	**22**	*eP*	**P**		**01 08 45.5**	**+0.9**	
734A	**La Parita Cree**	**90.73**	**59**	P	**P**		**01 08 45.4**	**-0.1**	
	baz=243								
SEY	**Seymchan**	**90.76**	**346**	P	**P**		**01 08 43.1**	**-1.6**	
	comp=Z,23nm,1.1s,baz=148,slow=5.4,SNR=34								
GYA	**Guiyang**	**90.78**	**299**	P	**P**		**01 08 47.8**	**+1.9**	
GYA				pP	pP		01 09 01.3	+2.0	
GYA				PP	**PP**		**01 12 25.4**	**+3.1**	
GYA				SKS	**SKSac**		**01 19 13.0**	**-1.5**	
GYA				S	**S**		**01 19 38.8**	**-0.7**	
GYA				sS	sS		01 20 00.4	-1.4	
GYA				SS	**SS**		**01 25 44.3**	**+1.2**	
GYA				pmax	pmax				
	comp=Z,20nm,0.8s								
GYA				pmax	pmax				
	comp=Z,140nm,6.2s								
GYA				LR	LR				
	comp=Z,780nm,20.3s								
GYA				LR	LR				
	comp=Z,670nm,20.7s								
GYA				LR	LR				
	comp=Z,820nm,20.2s								
Q24A	**Divide**	**90.87**	**47**	P	**P**		**01 08 45.9**	**-0.4**	
	baz=239,SNR=8.1								
533A	**Kerrville**	**90.93**	**57**	P	**P**		**01 08 45.7**	**-0.7**	
	baz=242								
HRY	**Holter Researc**	**90.99**	**38**	*eP*	**P**		**01 08 46.7**	**+0.3**	
ISCO	**Idaho Springs**	**90.99**	**46**	P	**P**		**01 08 46.6**	**-0.2**	
	baz=239								
ISCO	**Idaho Springs**	**90.99**	**46**	*eP*	**P**		**01 08 46.8**	**0.0**	
ISCO				pmax	pmax				
	comp=Z,20nm,1.8s								
ISCO				MLR	MLR				
	comp=Z,501nm,20.0s								
ISCO	**Idaho Springs**	**90.99**	**46**	*eP*	**P**		**01 08 46.8**	**0.0**	
	comp=Z,20nm,1.8s								
ISCO				LR	LR				
	comp=Z,501nm,20.0s								
835A	**Beeville**	**91.05**	**59**	P	**P**		**01 08 47.0**	**0.0**	
	baz=243								
WRH	**Wood River Hil**	**91.08**	**11**	*eP*	**P**		**01 08 45.5**	**-0.7**	
	comp=Z,73nm,1.2s								
DOT	**Dot Lake**	**91.12**	**13**	*eP*	**P**		**01 08 46.7**	**+0.2**	
	comp=Z,128nm,1.1s								
MLY	**Manley**	**91.14**	**10**	*eP*	**P**		**01 08 45.4**	**-1.1**	
634A	**China Grove, S**	**91.14**	**58**	P	**P**		**01 08 46.8**	**-0.6**	
	baz=243								
433A	**Art**	**91.20**	**57**	P	**P**		**01 08 46.4**	**-1.2**	
	baz=242,SNR=19								
HDA	**Harding Lake**	**91.23**	**12**	*eP*	**P**		**01 08 46.7**	**-0.2**	
AMTX	**Amarillo**	**91.24**	**52**	P	**P**		**01 08 47.5**	**-0.3**	
	baz=241								
AMTX	**Amarillo**	**91.24**	**52**	*eP*	**P**		**01 08 47.6**	**-0.2**	
	comp=Z,21nm,1.2s								
WALA	**Waterton Lakes**	**91.24**	**35**	*eP*	**P**		**01 08 47.5**	**0.0**	
CCB	**Clear Creek Bu**	**91.29**	**11**	*eP*	**P**		**01 08 45.8**	**-1.3**	
735A	**Kenedy**	**91.32**	**59**	P	**P**		**01 08 48.7**	**+0.5**	
	baz=243								
534A	**Blanco**	**91.34**	**58**	P	**P**		**01 08 47.4**	**-0.9**	
	baz=243,SNR=10								
N23A	**Red Feather La**	**91.35**	**45**	P	**P**		**01 08 48.2**	**-0.2**	
	baz=239								
N23A	**Red Feather La**	**91.35**	**45**	*eP*	**P**		**01 08 48.5**	**+0.1**	
COLA	**College**	**91.49**	**11**	*eP*	**P**		**01 08 47.7**	**-0.4**	
COLA				pmax	pmax				
	comp=Z,48nm,1.0s								
COLA				MLR	MLR				
	comp=Z,568nm,20.0s								
COLA	**College**	**91.49**	**11**	*eP*	**P**		**01 08 47.7**	**-0.4**	
	comp=Z,48nm,1.0s								
COLA				LR	LR				
	comp=Z,568nm,20.0s								
333A	**Richland Sprin**	**91.55**	**56**	P	**P**		**01 08 48.2**	**-1.1**	
	baz=242,SNR=6.3								
RLMT	**Red Lodge**	**91.56**	**40**	P	**P**		**01 08 49.4**	**+0.2**	
	baz=236								
RLMT	**Red Lodge**	**91.56**	**40**	*eP*	**P**		**01 08 49.6**	**+0.4**	
	comp=Z,26nm,1.3s								
RLMT				LR	LR				
	comp=Z,338nm,19.0s								
IL1	**Eielson Array**	**91.57**	**12**	*eP*	**P**		**01 08 46.8**	**-1.7**	
ILAR	**Eielson Array**	**91.57**	**12**	P	**P**		**01 08 47.4**	**-1.1**	
	comp=Z,13nm,1.0s,baz=219,slow=4.9,SNR=70								
ILAR				PKiKP	**PKiKP**		**01 13 40.5**	**+0.7**	
	comp=Z,0.3nm,0.7s,baz=260,slow=1.6,SNR=2.6								
ILB	**Eielson Array**	**91.57**	**12**	*eP*	**P**		**01 08 47.9**	**-0.6**	
635A	**Leesville**	**91.59**	**58**	P	**P**		**01 08 49.2**	**-0.3**	
	baz=243								
ABTX	**Abilene, Hawle**	**91.66**	**55**	P	**P**		**01 08 48.7**	**-1.1**	
	baz=242,SNR=7.0								
ABTX	**Abilene, Hawle**	**91.66**	**55**	*eP*	**P**		**01 08 49.4**	**-0.3**	
TIY	**Taiyuan**	**91.77**	**311**	*eP*	**P**		**01 08 51.3**	**+1.1**	
TIY				SKS	**SKSac**		**01 19 22.3**	**+2.8**	
TIY				pmax	pmax				
	comp=Z,40nm,1.0s								
TIY				pmax	pmax				
	comp=Z,280nm,6.4s								
TRQA	**Tornquist**	**91.82**	**133**	PFAKE			01 09 00.0	+9.4	
TRQA				LR	LR				
	comp=Z,900nm,19.0s								
434A	**Burnet**	**91.86**	**57**	P	**P**		**01 08 49.4**	**-1.3**	
	baz=243								
K22A	**Casper**	**91.90**	**43**	P	**P**		**01 08 49.8**	**-0.9**	
	baz=238								
K22A	**Casper**	**91.90**	**43**	*eP*	**P**		**01 08 51.3**	**+0.5**	
233A	**Rising Star**	**91.93**	**56**	P	**P**		**01 08 50.0**	**-1.0**	
	baz=242								
736A	**Circle Diamond**	**91.95**	**59**	P	**P**		**01 08 51.2**	**+0.1**	
	baz=243								
535A	**Dale**	**92.04**	**58**	P	**P**		**01 08 50.6**	**-0.9**	
	baz=243								
334A	**Lometa**	**92.12**	**57**	P	**P**		**01 08 51.0**	**-0.8**	
	baz=243,SNR=17								
636A	**Smothers Creek**	**92.19**	**59**	P	**P**		**01 08 52.1**	**-0.1**	
	baz=243								
133A	**Hamilton Ranch**	**92.19**	**55**	P	**P**		**01 08 51.5**	**-0.7**	
	baz=242,SNR=7.0								
435B	**Jarrell**	**92.37**	**57**	P	**P**		**01 08 52.4**	**-0.6**	
	baz=243								
536A	**Bastrop**	**92.45**	**58**	P	**P**		**01 08 52.8**	**-0.6**	
	baz=243								
234A	**Clairette**	**92.50**	**56**	P	**P**		**01 08 52.6**	**-1.1**	
	baz=243,SNR=9.6								
XAN	**Xi'an**	**92.52**	**306**	P	**P**		**01 08 54.3**	**+0.6**	
XAN				pP	pP		01 09 05.3	-1.7	
XAN				PP	**PP**		**01 12 36.3**	**+0.6**	
XAN				S	**S**		**01 19 57.8**	**+3.2**	
XAN				SS	**SS**		**01 26 09.8**	**+2.2**	
XAN				pmax	pmax				
	comp=Z,20nm,0.9s								
XAN				pmax	pmax				
	comp=Z,140nm,6.5s								
XAN				LR	LR				
	comp=Z,120nm,21.2s								
XAN				LR	LR				
	comp=Z,320nm,20.6s								
XAN				LR	LR				
	comp=Z,380nm,18.6s								
DAWY	**Dawson**	**92.53**	**15**	*eP*	**P**		**01 08 53.2**	**+0.2**	
KSCO	**Kaye Shedlock'**	**92.59**	**48**	P	**P**		**01 08 53.3**	**-0.8**	
	baz=241								
NNA	**Nana**	**92.59**	**104**	PFAKE			01 09 10.0	+15	
NNA				LR	LR				
	comp=Z,377nm,19.0s								
Z33A	**Whitaker Ranch**	**92.62**	**55**	P	**P**		**01 08 53.5**	**-0.7**	
	baz=243,SNR=12								
335A	**Moody**	**92.72**	**57**	P	**P**		**01 08 53.5**	**-1.1**	
	baz=243								
637A	**Eagle Lake**	**92.74**	**59**	P	**P**		**01 08 54.7**	**0.0**	
	baz=244								
X32A	**Elmer**	**92.76**	**53**	P	**P**		**01 08 54.0**	**-0.8**	
	baz=242,SNR=14								
134A	**White-Moore Ra**	**92.81**	**56**	P	**P**		**01 08 54.3**	**-0.7**	
	baz=243,SNR=5.6								
436A	**Wall Ranch, Ga**	**92.97**	**58**	P	**P**		**01 08 55.1**	**-0.6**	
	baz=244								
WHTX	**Lake Whitney,**	**93.01**	**56**	P	**P**		**01 08 54.8**	**-1.1**	
	baz=243								
Y33A	**Hilltop Ranch,**	**93.05**	**54**	P	**P**		**01 08 55.5**	**-0.6**	
	baz=243								
W32A	**Sentinel**	**93.11**	**53**	P	**P**		**01 08 55.9**	**-0.5**	
	baz=242,SNR=16								
BILL	**Bilibino**	**93.18**	**353**	*di*	P		**P**		**01 08 55.5**	**-0.4**
BILL				*i*					01 12 37.1	
BILL					pmax	pmax				
	comp=Z,29nm,1.1s									
BILL					MLR	MLR				
	comp=Z,636nm,19.0s									
BILL	**Bilibino**	**93.18**	**353**		PFAKE				01 09 10.0	+14
BILL					LR	LR				
	comp=Z,677nm,20.0s									
336A	**Riesel**	**93.21**	**57**		P	**P**			**01 08 55.6**	**-1.3**
	baz=244									
COLD	**Coldfoot**	**93.26**	**9**	*eP*		**P**			**01 08 56.7**	**+0.5**
ATAH	**Atahualpa**	**93.26**	**99**	P		**P**			**01 09 00.6**	**+2.5**
	comp=Z,5.6nm,0.7s,baz=227,slow=7.0,SNR=8.7									
WMOK	**Wichita Mounta**	**93.28**	**53**	P		**P**			**01 08 55.5**	**-1.6**
	baz=243									
WMOK	**Wichita Mounta**	**93.28**	**53**	*eP*		**P**			**01 08 56.1**	**-1.0**
WMOK					pmax	pmax				
	comp=Z,12nm,0.6s									
WMOK					MLR	MLR				
	comp=Z,284nm,19.0s									
WMOK	**Wichita Mounta**	**93.28**	**53**	*eP*		**P**			**01 08 56.1**	**-1.0**
	comp=Z,12nm,0.6s									
WMOK					LR	LR				
	comp=Z,284nm,19.0s									
Z34A	**Collier Ranch,**	**93.29**	**55**		P	**P**			**01 08 56.4**	**-0.9**
	baz=243									
135A	**Vickery Place,**	**93.30**	**56**		P	**P**			**01 08 56.8**	**-0.5**
	baz=243									
HIA	**Hailar**	**93.35**	**323**		PFAKE				01 09 10.0	+13
HIA					LR	LR				
	comp=Z,397nm,20.0s									
KMI	**Kunming**	**93.38**	**296**		P	**P**			**01 09 00.6**	**+2.5**
KMI					pP	pP			01 09 12.8	+1.3
KMI					sP	sP			01 09 18.1	+1.7
KMI					PP	**PP**			**01 12 46.5**	**+3.6**
KMI					S	**S**			**01 20 02.0**	**-1.0**
KMI					sS	sS			01 20 23.8	-1.7
KMI					SS	**SS**			**01 26 22.8**	**+2.2**
KMI					pmax	pmax				
	comp=Z,26nm,1.1s									
KMI					pmax	pmax				
	comp=Z,150nm,4.3s									
KMI					LR	LR				
	comp=Z,280nm,17.4s									
KMI					LR	LR				
	comp=Z,340nm,21.0s									
KMI					LR	LR				
	comp=Z,450nm,20.5s									
X33A	**Lawton**	**93.39**	**54**		P	**P**			**01 08 56.7**	**-1.0**
	baz=243									
437A	**Phantom Ranch,**	**93.50**	**58**		P	**P**			**01 08 58.1**	**-0.1**
	baz=244									
V32A	**Arapaho**	**93.54**	**52**		P	**P**			**01 08 58.2**	**-0.1**
	baz=243									
Y34A	**Reagan Ranch,**	**93.67**	**54**		P	**P**			**01 08 58.0**	**-1.0**
	baz=243									
PB04	**IPOC Station P**	**93.69**	**116**	*eP*		**P**			**01 09 01.7**	**+2.1**
	comp=Z,52nm,1.2s									
W33A	**Caddo, Fort Co**	**93.69**	**53**		P	**P**			**01 08 59.6**	**+0.5**
	baz=243									
538A	**Harpers Horsep**	**93.74**	**59**		P	**P**			**01 08 59.5**	**+0.2**
	baz=244									
Z35A	**Perchaven, San**	**93.77**	**55**		P	**P**			**01 08 58.3**	**-1.1**
	baz=243									
CM01	**Chiang Mai Arr**	**93.78**	**288**	*eP*		**P**			**01 09 02.1**	**+2.3**
CM31	**Chiang Mai Arr**	**93.81**	**288**	*eP*		**P**			**01 09 02.8**	**+2.9**
CMAR	**Chiang Mai Arr**	**93.81**	**288**	P		**P**			**01 09 02.0**	**+2.1**
	comp=Z,20nm,1.0s,baz=132,slow=3.1,SNR=70									
CMAR					PP	**PP**			**01 12 44.9**	**-1.2**
	comp=Z,1.0nm,0.6s,baz=127,slow=6.0,SNR=4.1									
U32A	**Winter Ranch,**	**93.87**	**52**		P	**P**			**01 08 59.4**	**-0.5**
	baz=243									
HHC	**Hu-ho-hao-te**	**93.90**	**313**	*eP*		**P**			**01 09 00.8**	**+0.8**
HHC				sP		sP			01 09 18.3	0.0
HHC				PP		**PP**			**01 12 46.1**	**-0.4**
HHC				SKS		**SKSac**			**01 19 29.4**	**-1.8**
HHC				S		**S**			**01 20 00.3**	**-6.3**
HHC				pmax		pmax				
	comp=Z,27nm,1.1s									
HHC				pmax		pmax				
	comp=Z,270nm,6.3s									
HHC				LR		LR				
	comp=Z,140nm,12.3s									
HHC				LR		LR				
	comp=Z,270nm,14.8s									
HHC				LR		LR				
	comp=Z,250nm,14.8s									
X34A	**Smith Ranch, M**	**93.91**	**54**		P	**P**			**01 08 59.7**	**-0.3**
	baz=243,SNR=14									
337A	**Centerville**	**93.91**	**57**		P	**P**			**01 08 59.5**	**-0.7**
	baz=244									
136A	**Ennis**	**93.93**	**56**		P	**P**			**01 08 59.7**	**-0.5**
	baz=244									
OGNE	**Ogallala**	**93.93**	**47**		P	**P**			**01 08 59.3**	**-0.8**
	baz=241									
OGNE	**Ogallala**	**93.93**	**47**		PFAKE				01 09 10.0	+10
OGNE					LR	LR				
	comp=Z,673nm,20.0s									
CHTO	**Chiang Mai**	**93.95**	**289**	*eP*		**P**			**01 09 02.8**	**+2.2**
CHTO					pmax	pmax				
	comp=Z,34nm,1.0s									
CHTO					MLR	MLR				
	comp=Z,270nm,19.0s									
CHTO	**Chiang Mai**	**93.95**	**289**	*eP*		**P**			**01 09 02.8**	**+2.2**
	comp=Z,34nm,1.0s									
CHTO					LR	LR				
	comp=Z,270nm,19.0s									
HOPE	**Hope Point**	**93.95**	**157**		PFAKE				01 09 10.0	+10
HOPE					LR	LR				
	comp=Z,481nm,19.0s									
EDM	**Edmonton**	**94.01**	**32**	*eP*		**P**			**01 08 59.7**	**-0.4**
EDM	**Edmonton**	**94.01**	**32**	*eP*		**P**			**01 08 59.7**	**-0.4**
V33A	**Lossen Ranch,**	**94.13**	**53**	P		**P**			**01 09 01.9**	**+0.9**
	baz=243									
Y35A	**Marietta**	**94.19**	**55**	P		**P**			**01 09 00.5**	**-0.8**
	baz=244									
LAO	**LASA Array**	**94.20**	**40**	P		**P**			**01 09 01.8**	**+0.7**
	baz=239									
LAO	**LASA Array**	**94.20**	**40**	*eP*		**P**			**01 09 01.9**	**+0.8**
	comp=Z,51nm,1.2s									
LAO					LR	LR				
	comp=Z,489nm,19.0s									
RSSD	**Black Hills**	**94.21**	**43**	P		**P**			**01 09 00.4**	**-1.1**
	baz=240									
RSSD	**Black Hills**	**94.21**	**43**	*eP*		**P**			**01 09 01.0**	**-0.4**
RSSD					pmax	pmax				
	comp=Z,35nm,1.3s									
RSSD	**Black Hills**	**94.21**	**43**	*eP*		**P**			**01 09 01.0**	**-0.4**
	comp=Z,35nm,1.3s									
W34A	**Bridge Creek,**	**94.24**	**53**	P		**P**			**01 09 01.1**	**-0.5**
	baz=243									
W34A	**Bridge Creek,**	**94.24**	**53**	*eP*		**P**			**01 09 01.6**	**+0.1**
539A	**Cross D Ranch,**	**94.29**	**59**	P		**P**			**01 09 01.3**	**-0.5**
	baz=244									
T32A	**Huddler Ranch,**	**94.29**	**51**	P		**P**			**01 09 02.9**	**+1.1**
	baz=243									
Z36A	**Blue Ridge**	**94.35**	**56**	P		**P**			**01 09 01.2**	**-0.9**
	baz=244									
338A	**Crockett**	**94.37**	**58**	P		**P**			**01 09 01.4**	**-0.8**
	baz=244									
X35A	**Drake**	**94.45**	**54**	P		**P**			**01 09 01.1**	**-1.4**
	baz=244									
CBKS	**Cedar Bluff**	**94.48**	**49**	P		**P**			**01 09 01.8**	**-0.8**
	baz=242									
CBKS	**Cedar Bluff**	**94.48**	**49**	PFAKE					01 09 10.0	+7.4
CBKS					LR	LR				
	comp=Z,872nm,20.0s									
S32A	**Newby Ranch, P**	**94.52**	**51**	P		**P**			**01 09 02.1**	**-0.7**
	baz=243									
U33A	**Lingo Farm, Me**	**94.53**	**52**	P		**P**			**01 09 01.5**	**-1.3**
	baz=243									
LVC	**Limon Verde**	**94.57**	**117**	*eP*		**P**			**01 09 06.5**	**+2.6**
137A	**Heron Place, G**	**94.57**	**56**	P		**P**			**01 09 03.1**	**0.0**
	baz=244									
V34A	**Guthrie**	**94.69**	**53**	P		**P**			**01 09 02.8**	**-0.8**
	baz=244									
H25A	**Fruitdale**	**94.73**	**43**	P		**P**			**01 09 03.3**	**-0.4**
	baz=240									
T33A	**Patterson Ranc**	**94.73**	**51**	P		**P**			**01 09 02.9**	**-0.8**
	baz=243									
Y36A	**Durant**	**94.74**	**55**	P		**P**			**01 09 03.4**	**-0.5**
	baz=244									
PB01	**IPOC Station P**	**94.84**	**116**	*eP*		**P**			**01 09 06.9**	**+2.0**
W35A	**Tecumseh**	**94.86**	**54**	P		**P**			**01 09 03.8**	**-0.6**
	baz=244									
540A	**Vidor**	**94.91**	**59**	P		**P**			**01 09 04.0**	**-0.7**
	baz=245									
Z37A	**Pogue Cattle C**	**94.93**	**56**	P		**P**			**01 09 03.6**	**-1.1**
	baz=244									
339A	**Huntington**	**94.94**	**58**	P		**P**			**01 09 03.8**	**-1.0**
	baz=245									
U34A	**Anderson Ranch**	**94.95**	**52**	P		**P**			**01 09 04.0**	**-0.8**
	baz=244									
X36A	**Centrahoma**	**94.99**	**54**	P		**P**			**01 09 04.2**	**-0.7**
	baz=244									
R32A	**Long Quarter,**	**95.01**	**50**	P		**P**			**01 09 04.4**	**-0.6**
	baz=243									
CD2	**Chengdu**	**95.03**	**302**	*eP*		**P**			**01 09 05.3**	**0.0**
CD2				pP		pP			01 09 18.3	-0.4
CD2				sP		sP			01 09 23.4	-0.2
CD2				SKS		**SKSac**			**01 19 36.8**	**-0.8**
CD2				S		**S**			**01 20 16.3**	**-0.5**
CD2				sS		sS			01 20 38.9	-0.4
CD2				SS		**SS**			**01 26 43.8**	**+0.1**
CD2				pmax		pmax				
	comp=Z,20nm,0.5s									
CD2				pmax		pmax				
	comp=Z,220nm,5.4s									
CD2				LR		LR				
	comp=Z,570nm,17.4s									
CD2				LR		LR				
	comp=Z,380nm,19.4s									
CD2				LR		LR				
	comp=Z,280nm,19.4s									
NATX	**Nacogdoches**	**95.05**	**58**	P		**P**			**01 09 06.1**	**+0.8**
	baz=245									
NATX	**Nacogdoches**	**95.05**	**58**	PFAKE					01 09 20.0	+15
NATX				LR		LR				
	comp=Z,647nm,19.0s									
138A	**Matatall Enter**	**95.11**	**57**	P		**P**			**01 09 05.8**	**+0.2**
	baz=244									
S33A	**Kaszmaul Farm,**	**95.14**	**51**	P		**P**			**01 09 05.3**	**-0.4**
	baz=243									
V35A	**Meyer Ranch, C**	**95.16**	**53**	P		**P**			**01 09 04.9**	**-0.8**
	baz=244									
440A	**Kirbyville**	**95.16**	**59**	P		**P**			**01 09 05.0**	**-0.8**
	baz=245									
Y37A	**Hugo**	**95.27**	**55**	P		**P**			**01 09 06.0**	**-0.3**
	baz=244									
239A	**Gary**	**95.30**	**57**	P		**P**			**01 09 05.7**	**-0.8**
	baz=245									
W36A	**Wetumka**	**95.33**	**54**	P		**P**			**01 09 05.6**	**-0.9**
	baz=244									
Q32A	**Meitler Ranch,**	**95.37**	**50**	P		**P**			**01 09 06.7**	**0.0**
	baz=243									
O31A	**Woolen Ranch,**	**95.38**	**48**	P		**P**			**01 09 06.1**	**-0.6**
	baz=243									
Z38A	**Mt. Pleasant**	**95.44**	**56**	P		**P**			**01 09 07.0**	**0.0**
	baz=245									
T34A	**McClaskey Farm**	**95.46**	**52**	P		**P**			**01 09 06.3**	**-0.8**
	baz=244									
R33A	**Olander Ranch,**	**95.47**	**50**	P		**P**			**01 09 06.8**	**-0.4**
	baz=243									
340A	**Bronson**	**95.50**	**58**	P		**P**			**01 09 06.5**	**-0.8**
	baz=245									
U35A	**Pawnee**	**95.50**	**53**	P		**P**			**01 09 06.2**	**-1.1**
	baz=244									
P32A	**Huiting Farm,**	**95.63**	**49**	P		**P**			**01 09 07.4**	**-0.5**
	baz=243									
X37A	**Clayton**	**95.72**	**55**	P		**P**			**01 09 07.2**	**-1.1**
	baz=244									
V36A	**Jenks**	**95.82**	**53**	P		**P**			**01 09 07.3**	**-1.4**
	baz=244									
240A	**Hunter Patters**	**95.86**	**58**	P		**P**			**01 09 08.3**	**-0.7**
	baz=245									
T35A	**Sooner Cattle**	**95.90**	**52**	P		**P**			**01 09 07.8**	**-1.3**
	baz=244									
Y38A	**Idabel**	**95.92**	**56**	P		**P**			**01 09 07.6**	**-1.7**
	baz=245									
N31A	**Bailey Ranch,**	**95.94**	**48**	P		**P**			**01 09 08.6**	**-0.6**
	baz=243									
R34A	**Isabella, Hill**	**95.98**	**51**	P		**P**			**01 09 08.8**	**-0.6**
	baz=244									
TUL1	**Leonard**	**95.98**	**53**	P		**P**			**01 09 08.8**	**-0.7**
	baz=244									
341A	**Kurthwood**	**96.02**	**58**	P		**P**			**01 09 09.2**	**-0.6**
	baz=245									
O32A	**Brockman Farm,**	**96.14**	**49**	P		**P**			**01 09 09.6**	**-0.6**
	baz=243									
M31A	**Lambtecht Ranc**	**96.16**	**47**	P		**P**			**01 09 09.4**	**-0.8**
	baz=243									
X38A	**Whitesboro**	**96.16**	**55**	P		**P**			**01 09 09.2**	**-1.1**
	baz=245									
OTAV	**Otavalo**	**96.27**	**93**	PFAKE					01 09 20.0	+8.1
OTAV				LR		LR				
	comp=Z,388nm,20.0s									
DGMT	**Dagmar**	**96.29**	**39**	P		**P**			**01 09 10.7**	**+0.1**
	baz=240									
DGMT	**Dagmar**	**96.29**	**39**	*eP*		**P**			**01 09 11.7**	**+1.1**
DGMT					LR	LR				
	comp=Z,514nm,19.0s									
442A	**Mamou**	**96.34**	**59**	P		**P**			**01 09 10.3**	**-0.9**
	baz=246									
K30A	**Basset**	**96.34**	**46**	P		**P**			**01 09 10.8**	**-0.2**
	baz=243									
N32A	**Stulken Farm,**	**96.36**	**48**	P		**P

MIAR **Mount Ida** **97.05** **55** PFAKE 01 09 30.0 +16
MIAR LR LR
comp=Z,418nm,19.0s
Y40A **Okolona** **97.05** **56** P **P** **01 09 13.3 -1.1**
baz=246
Q35A **Mercer Eighty,** **97.08** **51** P **P** **01 09 13.4 -1.0**
baz=245
L32A **Elgin** **97.10** **47** P **P** **01 09 14.0 -0.5**
baz=244
242A **Grayson** **97.11** **58** P **P** **01 09 14.2 -0.5**
baz=246
T37A **Cheneyville 18** **97.14** **53** P **P** **01 09 14.2 -0.5**
baz=245
A25A **Svangstu Ranch** **97.14** **39** P Pdif 01 09 14.5 0.0
baz=241
LZH **Lanzhou** **97.16** **306** *e*P Pdif 01 09 17.3 +2.2
LZH pP sP 01 09 31.6 -1.7
LZH sP pP 01 09 37.8 +9.4
LZH PP **PP** **01 13 17.0 +5.0**
LZH SKS **SKSac** **01 19 47.4 -1.4**
LZH *e*S **S** **01 20 29.5 -5.7**
LZH sS sS 01 20 52.0 -5.8
LZH SS **SS** **01 27 14.8 +1.0**
LZH pmax pmax
comp=Z,47nm,1.2s
LZH pmax pmax
comp=Z,130nm,4.4s
LZH LR LR
comp=Z,2µm,16.3s
LZH LR LR
comp=Z,2µm,15.5s
LZH LR LR
comp=Z,2µm,19.4s
J31A **Geddes** **97.19** **46** P **P** **01 09 13.4 -1.4**
baz=243
U38A **Gravette** **97.24** **53** P **P** **01 09 14.3 -0.9**
baz=245
INK **Inuvik** **97.38** **14** P **P** **01 09 14.0 -1.0**
comp=Z,4.5nm,0.9s,baz=220,slow=7.9,SNR=5.4
INK **Inuvik** **97.38** **14** P **P** **01 09 14.0 -1.0**
INK pmax pmax
comp=Z,5.0nm,0.9s
INK **Inuvik** **97.38** **14** *e*P **P** **01 09 14.6 -0.4**
B26A **Jensen Ranch,** **97.38** **40** P **P** **01 09 15.5 -0.1**
baz=242
M33A **Taylor Creek F** **97.46** **48** P **P** **01 09 15.4 -0.6**
baz=244
T38A **Diamond** **97.56** **53** P **P** **01 09 15.9 -0.7**
baz=245
SUSD **Miller** **97.57** **45** P **P** **01 09 15.9 -0.6**
baz=243
F29A **Eureka** **97.65** **43** P **P** **01 09 16.0 -0.8**
baz=243
H31A **Wolsey** **97.89** **45** P **P** **01 09 16.9 -1.1**
baz=244
S38A **Stockton** **98.08** **52** P Pdif 01 09 19.2 +0.3
baz=246
LPAZ **La Paz** **98.21** **112** P Pdif 01 09 21.8 +0.9
comp=Z,2.8nm,0.9s,baz=262,slow=2.5,SNR=12
LPAZ LR LR 01 48 17.8
comp=Z,242nm,18.1s,baz=210,slow=32
LPAZ **La Paz** **98.21** **112** *e*P Pdif 01 09 22.8 +1.9
T39A **Clever** **98.22** **53** P **P** **01 09 18.8 -0.7**
baz=246
546A **Slidell** **98.28** **61** Pdiff **P** **01 09 19.3 -0.7**
baz=247
U40A **Yellville** **98.33** **54** Pdiff **P** **01 09 19.6 -0.5**
baz=246
H32A **Carlson Farm,** **98.57** **45** Pdiff **P** **01 09 21.0 0.0**
baz=244
F31A **Hecla** **98.65** **44** Pdiff Pdif 01 09 21.3 0.0
baz=244
ECSD **EROS Data Cent** **98.78** **46** Pdiff **P** **01 09 21.9 0.0**
baz=245
ECSD **EROS Data Cent** **98.78** **46** *e*P Pdif 01 09 22.3 +0.4
ECSD LR LR
comp=Z,597nm,20.0s
R39A **Chumby, Stover** **98.99** **52** Pdiff **P** **01 09 22.6 -0.4**
baz=246
YKA **Yellowknife Ar** **98.99** **24** P **P** **01 09 21.3 -1.1**
comp=Z,2.9nm,1.0s,baz=235,slow=4.2,SNR=14
YKA PP **PP** **01 13 18.6 -6.6**
comp=Z,0.3nm,0.7s,baz=231,slow=6.9,SNR=3.0
YKA PKKPbc **PKKPbc** **01 25 50.0 -0.9**
comp=Z,1.1nm,0.8s,baz=43,slow=2.9,SNR=6.5
YKA LR LR 01 49 31.1
comp=Z,31nm,19.6s,baz=180,slow=33
A29A **Manning Farm,** **99.40** **40** Pdiff **Pdif** **01 09 24.3 -0.3**
baz=244
F33A **5 Mile Ranch,** **99.88** **44** Pdiff **Pdif** **01 09 26.9 +0.2**
baz=245
SONA1 **Songino Array** **100.36** **318** *e*Pdif **Pdif** **01 09 28.9 -0.2**
SONM **Songino Array** **100.36** **318** P **Pdif** **01 09 28.7 -0.3**
comp=Z,0.7nm,0.9s,baz=116,slow=6.8,SNR=4.1
SONM PP **PP** **01 13 37.2 +1.1**
comp=Z,1.8nm,1.1s,baz=119,slow=8.6,SNR=5.8
FFC **Flin Flon** **100.50** **34** PFAKE 01 09 40.0 +11
FFC LR LR
comp=Z,637nm,20.0s
BRAL **Brewton** **100.76** **61** PFAKE 01 09 40.0 +9.0
BRAL LR LR
comp=Z,284nm,19.0s
AGMN **Agassiz Nation** **101.16** **42** PFAKE 01 09 40.0 +7.6
AGMN LR LR
comp=Z,288nm,19.0s
GTA **Gaotai** **101.41** **308** *e*P **Pdif** **01 09 33.3 -0.6**
GTA pP pP 01 09 46.8 -0.7
GTA sP sP 01 09 51.8
GTA PP **PP** **01 13 47.0 +2.8**
GTA S **Sdif** **01 21 05.0 -5.8**
GTA sS sS 01 21 30.9 -2.6
GTA SS **SS** **01 28 10.6 -2.5**
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,99nm,6.2s
GTA LR LR
comp=Z,170nm,17.6s
GTA LR LR
comp=Z,250nm,20.2s
GTA LR LR
comp=Z,240nm,17.6s
F36A **Milaca** **101.65** **45** Pdiff **Pdif** **01 09 35.4 +0.7**
baz=247
B35A **Bob, Littlefor** **102.49** **43** Pdiff **Pdif** **01 09 39.2 +0.9**
baz=248
HDIL **Hopedale** **102.53** **51** PFAKE 01 09 50.0 +11
HDIL LR LR
comp=Z,702nm,19.0s
JFWS **Jewell Farm** **102.72** **49** PFAKE 01 09 50.0 +11
JFWS LR LR
comp=Z,567nm,20.0s
J41A **Loganville** **103.04** **48** Pdiff **Pdif** **01 09 41.8 +0.9**
baz=249
TIXI **Tiksi** **103.17** **344** PFAKE 01 09 50.0 +9.2
TIXI LR LR
comp=Z,507nm,20.0s
TLY **Talaya** **103.53** **321** PFAKE 01 09 50.0 +7.1
TLY LR LR
comp=Z,332nm,20.0s
EYMN **Ely** **103.73** **43** PFAKE 01 10 00.0 +16
EYMN LR LR
comp=Z,425nm,20.0s
MTDJ **Mount Denham** **104.11** **76** PFAKE 01 10 00.0 +14
MTDJ LR LR
comp=Z,209nm,19.0s
GOGA **Godfrey** **104.40** **60** PFAKE 01 10 00.0 +13
GOGA LR LR
comp=Z,333nm,20.0s
COWI **Conover** **104.59** **46** PFAKE 01 10 00.0 +12
COWI LR LR
comp=Z,505nm,19.0s
LSA **Lhasa** **104.64** **296** PFAKE 01 10 00.0 +11
LSA LR LR
comp=Z,229nm,20.0s
SAML **Samuel** **105.94** **108** PFAKE 01 14 20.0
SAML LR LR
comp=Z,391nm,19.0s
SDV **Santo Domingo** **106.86** **88** PFAKE 01 14 20.0
SDV LR LR
comp=Z,478nm,20.0s
NHSC **New Hope** **106.90** **61** PFAKE 01 14 20.0
NHSC LR LR
comp=Z,384nm,19.0s
ACSO **Alum Creek Sta** **106.96** **53** PFAKE 01 14 20.0
ACSO LR LR
comp=Z,491nm,20.0s
AAM **Ann Arbor** **107.10** **51** PFAKE 01 14 20.0
AAM LR LR
comp=Z,860nm,20.0s
BLA **Blacksburg** **107.97** **57** PFAKE 01 14 20.0
BLA LR LR
comp=Z,364nm,20.0s
CNNC **Cliffs of the** **109.35** **59** PFAKE 01 14 20.0
CNNC LR LR
comp=Z,529nm,19.0s
SDDR **Presa de Saban** **109.92** **78** PFAKE 01 14 30.0
SDDR LR LR
comp=Z,196nm,19.0s
SPB **Sao Paulo** **110.43** **129** PFAKE 01 14 30.0
SPB LR LR
comp=Z,721nm,19.0s
CBN **Corbin Frederi** **110.56** **56** PFAKE 01 14 30.0
CBN LR LR
comp=Z,296nm,20.0s
GRTK **Grand Turk** **110.89** **75** PFAKE 01 14 30.0
GRTK LR LR
comp=Z,249nm,19.0s
WMQ **Urumqi** **111.40** **310** *e*PKP **PKiKP** **01 14 17.3 +1.0**
WMQ PP **PP** **01 15 01.5 +3.9**
WMQ SKKS 01 21 50.8
WMQ AMB AMB
comp=Z,150nm,5.4s
WMQ LR LR
comp=Z,410nm,16.4s
WMQ LR LR
comp=Z,300nm,15.1s
WMQ LR LR
comp=Z,640nm,28.8s
BINY **Binghamton** **112.57** **53** PFAKE 01 14 30.0
BINY LR LR
comp=Z,702nm,19.0s
LONY **Lake Ozonia** **114.07** **50** PFAKE 01 14 30.0 +8.7
LONY LR LR
comp=Z,567nm,20.0s
SJG **San Juan** **114.23** **80** PFAKE 01 14 30.0 +7.7
SJG LR LR
comp=Z,137nm,19.0s
ZALV **Zalesovo Beam** **115.12** **320** PKP **PKPdf** **01 14 22.3 -0.7**
comp=Z,4.4nm,0.6s,baz=175,slow=1.5,SNR=22
NRIK **Noril'sk** **115.14** **337** PKP **PKPdf** **01 14 22.8 +0.2**
comp=Z,3.8nm,0.6s,baz=86,slow=11,SNR=4.1
MK31 **Makanchi Array** **115.72** **312** PKIKP **PKPdf** **01 14 23.6 -0.8**
MK31 pmax pmax
comp=Z,11nm,1.0s
MKAR **Makanchi Array** **115.72** **312** PKP **PKPdf** **01 14 23.6 -0.8**
comp=Z,4.9nm,0.8s,baz=74,slow=3.0,SNR=30
MKAR PKKPbc **PKKPbc** **01 24 57.0 -0.7**
comp=Z,0.7nm,0.8s,baz=11,slow=1.5,SNR=3.9
NVS **Novosibirsk** **116.15** **321** *i*PKIKP **PKPdf** **01 14 24.5 -0.4**
NVS pmax pmax
comp=Z,12nm,1.0s
NVS pmax pmax
comp=N,3.0nm,0.8s
NVS pmax pmax
comp=E,3.0nm,0.7s
GRGR **Grenville** **116.25** **88** PFAKE 01 14 40.0 +14
GRGR LR LR
comp=Z,396nm,20.0s
PDGK **Podgornoye** **117.15** **308** PKIKP **PKPdf** **01 14 27.0 -0.2**
PDGK pmax pmax
comp=Z,10.0nm,0.9s
PKME **Peaks-Kenny Pk** **117.89** **50** PFAKE 01 14 40.0 +11
PKME LR LR
comp=Z,769nm,19.0s
ANWB **Willy Bob** **118.02** **82** PFAKE 01 14 40.0 +10
ANWB LR LR
comp=Z,153nm,19.0s
KURK **Kurchatov** **118.58** **316** *e*PKIKP **PKPdf** **01 14 29.6 -0.1**
KURK MLR MLR
comp=Z,770nm,19.0s
KURK **Kurchatov** **118.58** **316** *e*PKPdf **PKPdf** **01 14 29.6 -0.1**
KURK LR LR
comp=Z,770nm,19.0s
KSH **Kashi** **119.19** **303** PKP **PKPdf** **01 14 32.9 +1.4**
KSH *es*PKP 01 14 47.8
KSH *e*PP **PP** **01 15 57.1 +4.5**
KSH PKS **PKSdf** **01 18 08.1 -0.1**
KSH SKS **SKSdf** **01 21 40.1 0.0**
KSH SS **SS** **01 32 09.3 -2.0**
KSH AMB AMB
comp=Z,130nm,6.8s
KSH LR LR
comp=Z,120nm,8.4s
KSH LR LR
comp=Z,100nm,5.1s
KSH LR LR
comp=Z,200nm,6.9s
BBSR **BB Station** **119.31** **65** PFAKE 01 14 40.0 +8.3
BBSR LR LR
comp=Z,190nm,19.0s
TKM2 **Tokmak 2** **119.92** **307** PKIKP **PKPdf** **01 14 32.8 -0.1**
TKM2 pmax pmax
comp=Z,23nm,1.2s
SCHQ **Schefferville** **120.11** **39** PKP **PKPdf** **01 14 31.9 -0.7**
comp=Z,3.1nm,0.8s,baz=252,slow=8.6,SNR=3.9
ABPO **Ambohimpanom** **120.22** **228** PFAKE 01 14 50.0 +16
ABPO LR LR
comp=Z,208nm,19.0s
AAK **Ala-Archa** **120.70** **306** *i*PKIKP **PKPdf** **01 14 34.6 +0.3**
MNAS **Manas** **122.15** **306** PKIKP **PKPdf** **01 14 37.2 +0.1**
MNAS pmax pmax
comp=Z,26nm,1.0s
OTUK **Ortayu** **122.56** **313** PKIKP **PKPdf** **01 14 36.3 -1.2**
OTUK pmax pmax
comp=Z,29nm,1.3s
VOSK **Vostochnaya** **123.36** **318** PKIKP **PKPdf** **01 14 37.9 -1.0**
VOSK pmax pmax
comp=Z,30nm,1.1s
CHKZ **Chkalovo** **123.52** **319** PKIKP **PKPdf** **01 14 38.7 -0.4**
CHKZ pmax pmax
comp=Z,25nm,1.1s
KK31 **Karatay Array** **123.65** **307** *i* PKIKP **PKPdf** **01 14 39.4 -0.4**
KK31 pmax pmax
comp=Z,17nm,1.0s
KKAR **Karatay Array** **123.65** **307** *e*PKIKP **PKPdf** **01 14 39.4 -0.4**
KKAR **Karatay Array** **123.65** **307** *e*PKPdf **PKPdf** **01 14 39.4 -0.4**
BVA0 **Borovoye Array** **123.70** **319** *i* PKIKP **PKPdf** **01 14 39.6 +0.1**
BVA0 pmax pmax
comp=Z,2.0nm,0.9s
BOSA **Boshof** **123.72** **202** PKP **PKPdf** **01 14 42.1 +1.5**
comp=Z,16nm,1.0s,baz=116,slow=2.0,SNR=15
BRVK **Borovoye** **123.76** **319** *d*PKIKP **PKPdf** **01 14 39.3 -0.3**
BRVK pmax pmax
comp=Z,107nm,1.7s
BRVK **Borovoye** **123.76** **319** *e*PKPdf **PKPdf** **01 14 39.8 +0.1**
BRVK LR LR
comp=Z,136nm,19.0s
ZRNK **Zerenda** **124.54** **319** PKIKP **PKPdf** **01 14 40.7 -0.4**
ZRNK pmax pmax
comp=Z,30nm,1.0s
SFJD **Kangerlussuaq** **125.55** **23** PFAKE 01 14 50.0 +7.4
SFJD LR LR
comp=Z,335nm,20.0s
SUMG **Summit** **126.30** **15** *i*P **PKPdf** **01 14 44.5 +0.1**
comp=Z,42nm,1.2s
SUMG **Summit** **126.30** **15** *i*PKIKP **PKPdf** **01 14 44.5 +0.1**
SUMG pmax pmax
comp=Z,42nm,1.2s
SUMG **Summit** **126.30** **15** *e*PKPdf **PKPdf** **01 14 44.6 +0.1**
DAG **Danmarks Havn** **126.34** **7** *i*P **PKPdf** **01 14 42.7 -1.2**
comp=Z,17nm,1.1s
DAG **Danmarks Havn** **126.34** **7** *i*PKIKP **PKPdf** **01 14 42.7 -1.2**
DAG pmax pmax
comp=Z,21nm,1.1s
SVE **Sverdlovsk** **128.65** **324** *d*PKIKP **PKPdf** **01 14 49.4 +0.6**
SVE pmax pmax
comp=Z,38nm,1.3s
SOKR **Solikamsk** **129.73** **329** *c*PKIKP **PKPdf** **01 14 49.9 -0.8**
SOKR pmax pmax
comp=Z,60nm,1.2s
ARU **Arti** **129.86** **324** *e*PKIKP **PKPdf** **01 14 51.3 +0.2**
ARU MLR MLR
comp=Z,274nm,20.0s
ARU **Arti** **129.86** **324** *e*PKPdf **PKPdf** **01 14 51.3 +0.2**
ARU LR LR
comp=Z,274nm,20.0s
RCBR **Riachuelo** **130.28** **122** PFAKE 01 15 10.0 +17
RCBR LR LR
comp=Z,396nm,20.0s
AB31 **Akbulak array** **130.66** **315** *i* PKIKP **PKPdf** **01 14 52.8 -0.1**
AB31 pmax pmax
comp=Z,10.0nm,1.0s
ABKAR **Akbulak array** **130.66** **315** *e*PKPdf **PKPdf** **01 14 53.7 +0.8**
SCO **Scoresbysund** **131.35** **12** ⇓*i*P **PKPdf** **01 14 53.8 +0.2**
comp=Z,6.8nm,0.8s
SCO **Scoresbysund** **131.35** **12** ⇓*i*PKIKP **PKPdf** **01 14 53.8 +0.2**
SCO pmax pmax
comp=Z,7.0nm,0.8s
AKTO **Aktyubinsk** **131.67** **317** PKIKP **PKPdf** **01 14 54.5 -0.3**
AKTO pmax pmax
comp=Z,15nm,1.0s
LVZ **Lovozero** **132.81** **345** PFAKE 01 15 10.0 +14
LVZ LR LR
comp=Z,371nm,19.0s
GEYT **Alibeck** **132.99** **300** PKP **PKPdf** **01 14 58.6 +0.9**
comp=Z,12nm,0.8s,baz=22,slow=1.6,SNR=26
GEYT PP **PP** **01 17 20.8 -3.5**
comp=Z,2.7nm,0.9s,baz=38,slow=7.5,SNR=4.1
GEYT SKP 01 18 42.6
comp=Z,3.6nm,0.9s,baz=255,slow=5.8,SNR=5.9
ARCES **ARCESS Array B** **133.20** **350** PKP **PKPdf** **01 14 56.1 -1.0**
comp=Z,6.1nm,0.8s,baz=112,slow=1.0,SNR=10.0
APA **Apatity** **133.36** **345** *i* PKIKP PKPpre 01 14 52.5
APA pmax pmax
comp=Z,12nm,1.0s
LSZ **Lusaka** **134.41** **212** *e*PKIKP **PKPdf** **01 15 02.6 +1.4**
LSZ MLR MLR
comp=Z,333nm,20.0s
LSZ **Lusaka** **134.41** **212** *e*PKPdf **PKPdf** **01 15 02.6 +1.4**
LSZ LR LR
comp=Z,333nm,20.0s
TSUM **Tsumeb** **134.89** **197** *e*PKPdf **PKPdf** **01 15 02.9 +0.8**
TSUM LR LR
comp=Z,684nm,20.0s
KLMR **Klimovskoe** **136.47** **336** *e*PKIKP PKPpre 01 14 59.5
KLMR pmax pmax
comp=Z,18nm,1.0s
KMBO **Kilima Mbogo** **139.54** **236** PKhKP PKPpre 01 15 05.0
comp=Z,1.1nm,0.5s,baz=52,slow=11,SNR=4.3
KMBO PKP **PKPdf** **01 15 13.1 +2.2**
comp=Z,6.8nm,1.0s,baz=59,slow=3.8,SNR=6.7
KMBO PP **PP** **01 18 06.0 +0.6**
comp=Z,0.7nm,0.6s,baz=126,slow=5.0,SNR=3.2
KMBO **Kilima Mbogo** **139.54** **236** PKP **PKPdf** **01 15 13.1 +2.2**
KMBO PP **PP** **01 18 06.0 +0.6**
KMBO LR LR
comp=Z,447nm,20.0s
FINES **FINESS Array B** **140.22** **344** PKhKP PKPpre 01 15 03.0
comp=Z,5.4nm,0.8s,baz=50,slow=6.0,SNR=6.8
MOS **Moscow** **140.54** **331** *e*PKIKP PKPpre 01 15 06.1
VRH **Novokhopyorsk** **141.06** **323** *e*PKIKP **PKPdf** **01 15 13.0 +0.9**
VRH pmax pmax
comp=Z,60nm,1.0s
OBN **Obninsk** **141.40** **331** *d*PKIKP **PKPdf** **01 15 11.8 -0.8**
OBN pmax pmax
comp=Z,29nm,1.2s
OBN **Obninsk** **141.40** **331** *e*PKPdf **PKPdf** **01 15 12.7 +0.1**
OBN LR LR
comp=Z,403nm,20.0s
VSR **Storozhevoye** **142.43** **324** *e*PKHKP PKPpre 01 15 09.1
VSR pmax pmax
comp=Z,30nm,2.0s
TBLG **Delisi** **142.70** **307** P **PKPdf** **01 15 11.9 -3.6**
ASCN **Ascension** **142.83** **147** PFAKE 01 15 30.0 +13
ASCN LR LR
comp=Z,909nm,19.0s
GOF **Gofitskoye** **142.86** **313** ⇑*e*PKIKP **PKPdf** **01 15 12.3 -3.3**
GOF pmax pmax
comp=Z,16nm,0.8s
ZEI **Tsey** **143.01** **309** *e*PKIKP PKPbc 01 15 14.1 +1.0
ZEI pmax pmax
comp=Z,127nm,2.3s
GNI **Garni** **143.08** **305** *e*PKIKP **PKPdf** **01 15 15.2 -1.2**
GNI MLR MLR
comp=Z,308nm,21.0s
GNI **Garni** **143.08** **305** *e*PKPdf **PKPdf** **01 15 15.2 -1.2**
GNI LR LR
comp=Z,308nm,21.0s
NB2 **NORSAR Subarra** **143.12** **355** PKP PKPpre 01 15 12.6
comp=Z,7.4nm,0.9s,baz=11,slow=3.8
NOA **NORSAR Array B** **143.12** **355** PKhKP PKPpre 01 15 12.8
comp=Z,3.6nm,0.8s,baz=12,slow=3.9,SNR=10
ONI **Oni** **143.38** **309** P PKPbc 01 15 15.0 +1.1
KBZ **Khabaz** **143.41** **311** PKhKP PKPpre 01 15 14.2
comp=Z,7.5nm,0.9s,baz=133,slow=2.4,SNR=14
KIV **Kislovodsk** **143.48** **312** *i* PKIKP PKPab 01 15 13.5 +0.3
KIV *i* 01 15 20.3
KIV *i* 01 18 24.3
KIV pmax pmax
comp=Z,10.0nm,1.1s
KIV MLR MLR
comp=Z,262nm,20.0s
KIV **Kislovodsk** **143.48** **312** *e*PKPdf PKPbc 01 15 14.4 +0.2
KIV LR LR
comp=Z,280nm,19.0s
BGD **Bogdanovka** **143.65** **307** P **PKPdf** **01 15 16.2 -1.2**
AKH **Akhalkalaki** **143.69** **307** ⇓*i*P PKPbc 01 15 16.0 +1.0
AKH **Akhalkalaki** **143.69** **307** P **PKPdf** **01 15 16.3 -1.1**
EAK **Akyaka** **143.79** **306** *i* P PKPab 01 15 14.9 +0.3
HAKT **HAKKARI** **144.39** **301** *i* P **PKPab** **01 15 16.7 -0.3**
KONO **Kongsberg** **144.62** **356** PFAKE 01 15 30.0 +12
KONO LR LR
comp=Z,303nm,22.0s
MBAR **Mbarara** **144.62** **229** PFAKE 01 15 30.0 +10
MBAR LR LR
comp=Z,2µm,21.0s
GEVA **Gevas** **144.75** **302** *i* P **PKPab** **01 15 17.8 -0.5**
ARTV **Artvin** **144.88** **308** *i* P **PKPdf** **01 15 19.2 -0.3**
DAGI **Agillar** **144.92** **307** *i* P **PKPdf** **01 15 19.4 -0.1**
IZAR **Zarasai** **144.95** **339** *e*P PKPbc 01 15 18.2 0.0
IZAR lAmb lAmb 01 15 19.4
comp=Z,46nm,1.2s
DBOC **Borcka** **145.03** **308** *i* P **PKPbc** **01 15 18.8 -0.2**
ISAL **Salakas** **145.13** **339** *e*P **PKPbc** **01 15 18.6 -0.2**
ISAL lAmb lAmb 01 15 20.0
comp=Z,46nm,1.1s
IDID **Didziasalis** **145.13** **338** *e*P **PKPbc** **01 15 18.8 0.0**
IDID lAmb lAmb 01 15 19.9
comp=Z,35nm,1.0s
HOMI **Horasan** **145.21** **306** *i* P **PKPdf** **01 15 20.8 +0.6**
MICGM **Minsk** **145.37** **336** ⇓*i*P **PKPab** **01 15 20.0 +0.2**
MICGM PM 01 15 21.0
comp=N,0.2nm,1.1s
MICGM PM 01 15 21.0
comp=Z,0.7nm,1.0s
MNK **Minsk** **145.37** **336** ⇓*i*PKIKP **PKPab** **01 15 20.0 +0.2**
MNK pmax pmax
comp=Z,680nm,1.0s
MNK pmax pmax
comp=N,180nm,1.1s
SIRN **S¨¨rnak** **145.41** **301** *i* P **PKPdf** **01 15 19.8 -0.6**
NACGM **Naroch** **145.45** **338** *e*P **PKPab** **01 15 20.0 0.0**
NACGM PM 01 15 21.0
comp=Z,0.8nm,1.0s
NACGM *e*LR LR 02 18 12.0
SOC **Sochi** **145.62** **313** *d*PKIKP **PKPdf** **01 15 20.1 -0.3**
SOC *e* 01 18 39.3
SOC *e*PPP PPP 01 21 52.4
SOC pmax pmax
comp=Z,61nm,1.0s
SOC MLR MLR
comp=Z,277nm,14.0s
BNGL **BINGOL** **146.06** **304** *i* P **PKPab** **01 15 24.5 +1.3**
BTMN **Batman** **146.22** **302** *i* P **PKPab** **01 15 23.8 +0.1**
H07S1 **FLORES T-PHASE** **146.25** **55** *e*PKP **PKPbc** **01 15 22.6 -0.3**
KOPT **Kop Dagi** **146.26** **306** *i* P **PKPab** **01 15 24.4 +0.4**
MACK **Trabzon** **146.51** **308** *i* P **PKPdf** **01 15 22.7 +0.6**
ANN **Anapa** **146.62** **316** *i* PKIKP **PKPdf** **01 15 22.0 -0.1**
ANN *e* 01 15 34.6
ANN *e*SSS SSS 01 43 03.8
ANN pmax pmax
comp=Z,155nm,1.3s
MARD **Mardin** **146.72** **301** *i* P **PKPbc** **01 15 23.6 -0.8**
EUZM **Uzumlu** **146.94** **306** *i* P **PKPbc** **01 15 24.5 -0.5**
KBSD **Kabsdagh** **146.97** **301** *e*P **PKPab** **01 15 26.5 -0.1**
MZRK **Al-Mazaregh** **147.11** **299** *e*P **PKPbc** **01 15 26.1 +0.7**
KELT **Kelkit** **147.13** **307** *i* P **PKPdf** **01 15 24.5 +1.1**
GRSN **GIRESUNGRSN** **147.59** **309** *i* P **PKPbc** **01 15 26.1 -0.6**
AKASG **Malin Array Be** **147.66** **331** PKP **PKPdf** **01 15 23.4 -0.2**
comp=Z,40nm,0.9s,baz=40,slow=3.7,SNR=105
AKASG PKPbc **PKPbc** **01 15 25.9 -0.5**
comp=Z,23nm,0.6s,baz=42,slow=3.8,SNR=103
AKASG PP **PP** **01 18 49.0 -4.0**
comp=Z,0.2nm,0.3s,baz=36,slow=5.9,SNR=6.6
KIEV **Kiev** **147.67** **331** *e*PKIKP **PKPdf** **01 15 24.0 +0.4**

KIEV *e* 01 15 26.2
KIEV *e* 01 15 36.1
KIEV MLR MLR
comp=Z,228nm,20.0s
KIEV Kiev 147.67 331 *e*PKPdf **PKPdf 01 15 24.0 +0.4**
KIEV *e*PKPbc **PKPbc 01 15 26.2 -0.2**
KIEV *ep*PKPdf **pPKPdf 01 15 36.1 -1.3**
KIEV LR LR
comp=Z,228nm,20.0s
REFA Refahiye_ERZ 147.72 306 *i* P **PKPbc 01 15 27.2 0.0**
MUD Monsted U'grnd 147.82 355 *i* P **PKPbc 01 15 27.0 +0.4**
comp=Z,172nm,1.3s
MUD Monsted U'grnd 147.82 355 *i* PKP2 **PKPbc 01 15 27.0 +0.4**
MUD pmax pmax
comp=Z,170nm,1.3s
ORDU Ordu-Boztepe 147.86 309 *i* P **PKPbc 01 15 27.6 +0.2**
KEMA Kemaliye 147.96 306 *i* P **PKPbc 01 15 26.4 -1.3**
BSD Bornholm Skovb 148.42 349 *i* P **PKPbc 01 15 27.8 -0.5**
comp=Z,162nm,1.3s
BSD Bornholm Skovb 148.42 349 *i* PKP2 **PKPbc 01 15 27.8 -0.5**
BSD pmax pmax
comp=Z,160nm,1.3s
KSRV Kasrt alli 148.42 299 *e*P **PKPbc 01 15 30.6 +1.6**
ESK Eskdalemuir 148.57 9 *e*PKIKP **PKPdf 01 15 26.0 +1.0**
ESK *e* 01 15 29.0
ESK MLR MLR
comp=Z,365nm,19.0s
ESK Eskdalemuir 148.57 9 *e*PKPdf **PKPdf 01 15 26.0 +1.0**
ESK *e*PKPbc **PKPbc 01 15 28.9 +0.3**
ESK LR LR
comp=Z,365nm,19.0s
ATAB Bozova 148.61 302 *i* P **PKPbc 01 15 30.6 +1.1**
SIM Simferopol' 148.61 318 *e*PKP2 **PKPbc 01 15 30.0 +0.9**
SIM pmax pmax
comp=Z,324nm,1.0s
LLD Lille Linde 148.62 352 *i* P **PKPbc 01 15 29.3 +0.5**
LLD Lille Linde 148.62 352 *e*PKP2 **PKPbc 01 15 29.3 +0.5**
ROSA Rosais 148.65 55 *e*PKP **PKPdf 01 15 25.1 -0.6**
CUKAN kangal_SIVAS 148.70 306 *i* P **PKPbc 01 15 29.3 -0.5**
PGRA Graciosa 148.75 54 *e*PKP **PKPdf 01 15 25.8 0.0**
ERBA Erbaa 148.75 309 *i* P **PKPbc 01 15 29.0 -0.7**
SCER sogukcermik 148.77 307 *i* P **PKPbc 01 15 31.7 +1.8**
SAMS Samsun-Alacam 148.89 311 *i* P **PKPbc 01 15 29.4 -0.5**
JHLN Al Jahlan 148.91 299 *e*P **PKPbc 01 15 29.5 -0.7**
SLMH Al Salmeh 149.20 300 *e*P **PKPbc 01 15 32.7 +1.8**
GZT Gaziantep 149.20 303 *i* P **PKPbc 01 15 29.6 -1.5**
CUALT Altinyayla-SIV 149.24 306 *i* P **PKPdf 01 15 28.0 +1.2**
HAVZ Havza 149.33 310 *i* P **PKPdf 01 15 28.8 +2.0**
CUSAR Sarkisla-SIVAS 149.56 307 *i* P **PKPdf 01 15 28.6 +1.2**
GKP Gorka Klasztor 149.68 345 *e*PKP **PKPbc 01 15 31.8 +0.3**
GKP Gorka Klasztor 149.68 345 *e*PKP2 **PKPbc 01 15 31.8 +0.3**
KUZU Kuzuini 149.73 302 *i* P **PKPbc 01 15 31.5 -0.8**
BOYT Boyabat 149.75 311 *i* P **PKPbc 01 15 32.8 +0.6**
SORM Soroca 149.86 328 ⇓*i*P **PKPdf 01 15 26.7 -0.6**
SORM Soroca 149.86 328 ⇓PKIKP **PKPdf 01 15 26.7 -0.6**
DSB Dublin 150.00 13 *e*PKPdf **PKPdf 01 15 27.7 +0.4**
DSB *e*PKPbc **PKPbc 01 15 32.6 +0.3**
ANDN Andirin 150.07 304 *i* P **PKPdf 01 15 29.0 +0.9**
DRWC Darouich 150.09 302 *e*P **PKPbc 01 15 34.5 +1.3**
ROOS tl_alroos 150.13 297 *e*P **PKPbc 01 15 35.9 +2.5**
CTAK Corum_Osmancik 150.14 310 *i* P **PKPbc 01 15 34.1 +0.7**
RABH Abou Rabah 150.15 297 *e*P **PKPab 01 15 39.7 +0.2**
COAL Corum-Alaca 150.16 309 *i* P **PKPdf 01 15 28.7 +0.5**
KIS Kishinev 150.39 326 *e*PKP **PKPbc 01 15 33.0 -0.4**
KIS M M 01 15 33.5
comp=Z,300nm,1.5s
KIS LRM MLR 02 21 50.0
comp=Z,300nm,20.0s
KIS Kishinev 150.39 326 *e*PKIKP **PKPbc 01 15 33.0 -0.4**
KIS *e* 01 15 40.0
KIS *e* 01 19 08.0
KIS pmax pmax
comp=Z,300nm,1.5s
MILM Milestii Mici 150.45 326 ⇑*i*P **PKPbc 01 15 33.0 -0.6**
LVV L'vov 150.52 334 ⇑*i*PKIKP **PKPbc 01 15 34.3 +0.6**
ILGA Ilgaz 150.72 312 *i* P **PKPbc 01 15 35.0 +0.3**
MARH Ras Al Marh 150.81 296 *e*P **PKPbc 01 15 37.9 +2.6**
PSET Sete Cidades 150.81 55 *e*PKP **PKPdf 01 15 29.0 -0.2**
SALA Sala 150.82 294 *e*P **PKPbc 01 15 37.0 +1.8**
CDAG Cicekdag 150.84 308 *i* P **PKPdf 01 15 29.5 +0.2**
TOTH TOTAH 150.97 295 *e*P **PKPbc 01 15 37.4 +2.0**
CMLA Cha da Macela 150.98 56 *e*PKP **PKPdf 01 15 30.1 +0.7**
LEOM Leova 151.03 325 ⇓*i*P **PKPbc 01 15 35.1 +0.1**
LEOM Leova 151.03 325 ⇓PKIKP **PKPbc 01 15 35.1 +0.1**
ELDT Eldivan 151.16 311 *i* P **PKPbc 01 15 35.8 +0.1**
KWP Kalwaria Pacla 151.19 335 *e*PKP **PKPbc 01 15 35.9 +0.6**
KWP Kalwaria Pacla 151.19 335 *e*PKIKP **PKPbc 01 15 35.9 +0.6**
BRTR Keskin Array B 151.32 309 PKP **PKPdf 01 15 30.0 -0.1**
comp=Z,3.1nm,1.1s,baz=132,slow=1.8,SNR=15
BRTR PKPbc **PKPbc 01 15 36.3 +0.2**
comp=Z,27nm,0.8s,baz=141,slow=4.6,SNR=98
BRTR PP **PP 01 19 10.5 -4.7**
comp=Z,0.7nm,0.8s,baz=90,slow=4.3,SNR=2.8
BRBR Barbar 151.36 295 *e*P **PKPbc 01 15 36.7 +0.2**
TCHB Talchebab 151.46 294 *e*P **PKPbc 01 15 38.3 +1.8**
TLCR 151.56 323 ⇑*i*P **PKPbc 01 15 36.4 +0.2**
TLCR 151.56 323 ⇑PKIKP **PKPbc 01 15 36.4 +0.2**
PSMN Pico do Norte, 151.56 57 *e*PKP **PKPdf 01 15 30.0 -0.3**
AKSY AKSARAY - Alti 151.64 307 *i* P **PKPbc 01 15 36.9 +0.1**
OJC Ojcow 151.71 339 *e*PKP **PKPbc 01 15 36.9 +0.5**
OJC Ojcow 151.71 339 *e*PKIKP **PKPbc 01 15 36.9 +0.5**
BURAR Bucovina Array 151.71 330 ⇑*i*P **PKPdf 01 15 32.9 +2.6**
BURAR Bucovina Array 151.71 330 ⇑PKIKP **PKPdf 01 15 32.9 +2.6**
SACV Santiago Islan 151.73 104 PFAKE 01 15 40.0 +2.5
SACV LR LR
comp=Z,105nm,19.0s
BBAL Bala 151.76 309 *i* P **PKPdf 01 15 31.6 +0.9**
KERG Konya-Eregli 151.80 304 *i* P **PKPbc 01 15 35.6 -1.6**
TESR Tescani 151.82 327 ⇑*i*P **PKPbc 01 15 37.2 +0.4**
ANTO Ankara 151.86 310 *e*PKIKP **PKPdf 01 15 31.2 +0.4**
ANTO *e* 01 15 38.2
ANTO MLR MLR
comp=Z,315nm,20.0s
ANTO Ankara 151.86 310 *e*PKPdf **PKPdf 01 15 31.2 +0.4**
ANTO *e*PKPbc **PKiKP 01 15 38.2 +0.6**
ANTO LR LR
comp=Z,315nm,20.0s
STHS Stebnicka Huta 151.90 337 *e*PKIKP **PKPdf 01 15 32.7 +2.3**
STHS Stebnicka Huta 151.90 337 *e*PKP **PKPdf 01 15 32.7 +2.3**
STHS *e* 01 15 38.3
KOLS Kolonicke sedl 151.92 335 *e*PKIKP **PKPdf 01 15 31.7 +1.2**
KOLS *e* 01 15 37.8
KOLS Kolonicke sedl 151.92 335 *e*PKP **PKPdf 01 15 31.7 +1.2**
KOLS *e* 01 15 37.8
CFR Carcaliu 151.94 323 ⇑*i*P **PKPbc 01 15 34.8 -2.3**
CFR Carcaliu 151.94 323 ⇑PKIKP **PKPbc 01 15 34.8 -2.3**
BCAM Yenicaga 151.94 312 *i* P **PKPdf 01 15 31.2 +0.3**
KKUL Konya-Kulu 152.05 309 *i* P **PKPbc 01 15 36.2 -1.6**
KIZK Mersin 152.08 302 *i* P **PKPdf 01 15 32.2 +1.2**
KSP Ksiaz 152.15 344 *e*PKP **PKPbc 01 15 37.9 +0.5**
KSP Ksiaz 152.15 344 *e*PKIKP **PKPbc 01 15 37.9 +0.5**
UZH Uzhgorod 152.16 335 *e*PKIKP **PKPbc 01 15 37.6 +0.1**
UZH *e* 01 15 43.4
UZH *e* 01 15 47.8
UZH *e* 01 15 53.4
NIE Niedzica 152.23 338 *e*PKP **PKPbc 01 15 38.9 +1.2**
NIE Niedzica 152.23 338 *e*PKIKP **PKPbc 01 15 38.9 +1.2**
JOSR Joseni 152.24 328 ⇑*i*P **PKPbc 01 15 39.5 +1.7**
TIRR Tirgusor 152.24 322 ⇓*i*P **PKPbc 01 15 38.4 +0.6**
TIRR Tirgusor 152.24 322 ⇓PKIKP **PKPbc 01 15 38.4 +0.6**
CRVS Cervenica-Dubn 152.25 336 *e*PKIKP **PKPdf 01 15 31.9 +0.9**
CRVS *e* 01 15 38.7
CRVS *e* 01 15 47.9
CRVS Cervenica-Dubn 152.25 336 *e*PKP **PKPdf 01 15 31.9 +0.9**
CRVS *e* 01 15 38.7
CRVS *e* 01 15 47.9
PLOR Plostina 152.28 326 ⇓*i*P **PKPbc 01 15 38.0 +0.1**
PLOR Plostina 152.28 326 ⇓PKIKP **PKPbc 01 15 38.0 +0.1**
HARR Harsova 152.36 323 ⇑*i*P **PKPdf 01 15 32.0 +0.8**
HARR Harsova 152.36 323 ⇑PKIKP **PKPdf 01 15 32.0 +0.8**
TLB Topalu 152.37 323 ⇓*i*P **PKPbc 01 15 39.0 +0.9**
CLL Collm 152.41 349 *e*PKPdf **PKPdf 01 15 31.0 -0.1**
comp=Z,36nm,1.4s
CLL ⇓*i*PKPbc **PKiKP 01 15 38.3 +0.1**
comp=Z,97nm,1.1s
CLL *e*PKPab **PKPab 01 15 48.0 -0.1**
comp=Z,37nm,1.3s
CLL *e*PP **PP 01 19 20.0 +0.1**
CLL LmV 02 31 00.0
comp=Z,300nm,19.5s
CLL LmH 02 32 00.0
comp=N,400nm,21.0s
CLL LmH 02 32 00.0
comp=E,200nm,19.1s
CLL Collm 152.41 349 ⇓*e*PKIKP **PKPdf 01 15 31.0 -0.1**
CLL *i* 01 15 38.3
CLL *e* 01 15 48.0
CLL pmax pmax
comp=Z,36nm,1.4s
CLL pmax pmax
comp=Z,37nm,1.3s
CLL MLR MLR
comp=Z,300nm,19.5s
BMR Baia Mare 152.42 332 ⇑*i*P **PKPdf 01 15 28.7 -2.5**
BMR Baia Mare 152.42 332 ⇑PKIKP **PKPdf 01 15 28.7 -2.5**
WTSB Winterswijk 152.44 357 *e*P **PKPbc 01 15 38.2 +0.2**
comp=Z,96nm,0.9s
ARCR ARCALIA 152.50 330 ⇑*i*P **PKPbc 01 15 39.5 +1.2**
UPC Upice 152.52 344 *e*PKPDF **PKPdf 01 15 32.3 +1.0**
UPC ⇑*e*PKP **PKiKP 01 15 39.4 +0.9**
UPC *e*PKPAB **PKPab 01 15 49.0 +0.3**
UPC AMS AMS 02 27 40.0
comp=Z,400nm,21.2s
UPC Upice 152.52 344 *e*PKIKP **PKPdf 01 15 32.3 +1.0**
UPC *e* 01 15 39.4
UPC *e* 01 15 49.0
UPC MLR MLR
comp=Z,400nm,21.2s
MANR Mangalia 152.53 321 ⇑*i*P **PKPbc 01 15 39.7 +1.2**
OKC Ostrava-Krasne 152.55 341 *e*PKPDF **PKPdf 01 15 32.4 +1.0**
OKC ⇑*e*PKP **PKiKP 01 15 38.7 +0.1**
OKC *e*PKPAB **PKPab 01 15 49.9 +1.1**
OKC AMS AMS 02 34 10.0
comp=Z,300nm,24.9s
OKC Ostrava-Krasne 152.55 341 *e*PKIKP **PKPdf 01 15 32.4 +1.0**
OKC *e* 01 15 38.7
OKC *e* 01 15 49.9
OKC MLR MLR
comp=Z,300nm,24.9s
DPC Dobruska-Polom 152.59 344 *e*PKPDF **PKPdf 01 15 32.0 +0.5**
DPC ⇑*e*PKP **PKiKP 01 15 39.6 +0.9**
DPC *e*PKPAB **PKPab 01 15 50.0 +1.0**
DPC AMS AMS 02 29 10.0
comp=Z,300nm,17.2s
DPC Dobruska-Polom 152.59 344 *e*PKIKP **PKPdf 01 15 32.0 +0.5**
DPC *e* 01 15 39.6
DPC *e* 01 15 50.0
DPC MLR MLR
comp=Z,300nm,17.2s
BRG Berggiesshubel 152.64 347 *i* PKP **PKPdf 01 15 32.2 +0.7**
comp=Z,38nm,1.4s
BRG *i* 01 15 39.1
comp=Z,77nm,1.1s
BRG PP **PP 01 19 19.0 -2.3**
comp=N,181nm,16.7s
comp=E,187nm,14.4s
comp=Z,223nm,17.0s
BRG Berggiesshubel 152.64 347 *i* PKIKP **PKPdf 01 15 32.2 +0.7**
BRG *i* 01 15 39.1
BRG 01 19 19.0
BRG pmax pmax
comp=Z,38nm,1.4s
BRG MLR MLR
comp=N,181nm,16.7s
BRG MLR MLR
comp=E,187nm,14.4s
BRG MLR MLR
comp=Z,223nm,17.0s
KRLC Kraliky 152.72 343 ⇑*e*PKP **PKPbc 01 15 39.5 +0.7**
KRLC Kraliky 152.72 343 *e*PKIKP **PKPbc 01 15 39.5 +0.7**
SAHE Sakarya_HENDEK 152.74 313 *i* P **PKPdf 01 15 31.0 -1.0**
LANS Liptovska Anna 152.74 339 *e*PKIKP **PKPdf 01 15 33.1 +1.3**
LANS *e* 01 15 40.6
LANS Liptovska Anna 152.74 339 *e*PKP **PKPdf 01 15 33.0 +1.3**
LANS *e* 01 15 40.6
BTAS Taskesti 152.77 313 *i* P **PKPdf 01 15 30.9 -1.1**
MORC Moravsky Berou 152.78 342 ⇑*i*P **PKPdf 01 15 32.8 +1.0**
MORC Moravsky Berou 152.78 342 ⇑PKIKP **PKPdf 01 15 32.8 +1.0**
DOPR Dopca 152.82 327 ⇓*i*P **PKPdf 01 15 32.6 +0.7**
ISR Istrita 152.83 325 ⇑*i*P **PKPbc 01 15 40.0 +0.8**
PVCC Panska Ves 152.84 346 *e*PKPDF **PKPdf 01 15 32.8 +1.0**
PVCC ⇑*e*PKP **PKiKP 01 15 39.9 +0.8**
PVCC AMS AMS 02 30 50.0
comp=Z,300nm,17.8s
PVCC Panska Ves 152.84 346 *e*PKIKP **PKPdf 01 15 32.8 +1.0**
PVCC *e* 01 15 39.9
PVCC MLR MLR
comp=Z,300nm,17.8s
MLR Muntele Rosu 152.88 326 ⇓*i*P **PKPdf 01 15 32.2 0.0**
MLR Muntele Rosu 152.88 326 ⇓PKIKP **PKPdf 01 15 32.2 0.0**
KDHN Kadinhani 152.88 308 *i* P **PKPbc 01 15 38.2 -1.4**
KECS Kecovo 152.96 337 *e*PKIKP **PKPdf 01 15 33.4 +1.4**
KECS *e* 01 15 39.6
KECS *e* 01 15 48.8
KECS Kecovo 152.96 337 *e*PKP **PKPdf 01 15 33.4 +1.4**
KECS *e* 01 15 39.6
KECS *e* 01 15 48.8
ERMK Ermenek 152.97 303 *i* P **PKPbc 01 15 40.1 +0.2**
CJR Cluj-Napoca 153.12 331 ⇑*i*P **PKPbc 01 15 41.1 +1.3**
CSS Mathiatis 153.14 300 *i* P **PKPdf 01 15 33.1 +0.4**
PRU Pruhonice 153.35 346 *e*PKPDF **PKPdf 01 15 33.0 +0.5**
PRU ⇑*e*PKP **PKiKP 01 15 40.5 +0.3**
PRU *e*PKPAB **PKPab 01 15 52.6 +0.4**
PRU AMS AMS 02 32 20.0
comp=Z,600nm,21.1s
PRU Pruhonice 153.35 346 *e*PKIKP **PKPdf 01 15 33.0 +0.5**
PRU *e* 01 15 40.5
PRU MLR MLR
comp=Z,600nm,21.1s
ESKT Eskisehir 153.36 311 *i* P **PKPbc 01 15 40.2 -0.5**
GOPC GO Pecny, Ondr 153.37 345 ⇑*e*PKP **PKPbc 01 15 40.9 +0.7**
GOPC AMS AMS 02 32 20.0
comp=Z,400nm,16.9s
VOIR 153.37 327 ⇑*i*P **PKPdf 01 15 33.6 +0.8**
VOIR 153.37 327 ⇑PKIKP **PKPdf 01 15 33.6 +0.8**
DRGR 153.45 332 ⇓*i*P **PKPdf 01 15 33.0 +0.2**
DRGR 153.45 332 ⇓PKIKP **PKPdf 01 15 33.1 +0.2**
VRAC Vranov 153.47 343 ⇓*i*P **PKPbc 01 15 41.3 +0.9**
VYHS Vyhne 153.52 339 *e*PKIKP **PKPdf 01 15 33.6 +0.8**
VYHS *e* 01 15 41.6
VYHS Vyhne 153.52 339 *e*PKP **PKPdf 01 15 33.6 +0.8**
VYHS *e* 01 15 41.6
VYHS *e* 01 15 53.7
NKC Novy Kostel 153.54 349 *e*PKPDF **PKPdf 01 15 33.2 +0.4**
NKC ⇑*e*PKP **PKiKP 01 15 41.1 +0.5**
NKC *e*PKPAB **PKPab 01 15 52.5 -0.5**
NKC AMS AMS 02 32 20.0
comp=Z,300nm,14.4s
NKC Novy Kostel 153.54 349 *e*PKIKP **PKPdf 01 15 33.2 +0.4**
NKC *e* 01 15 41.1
NKC *e* 01 15 52.5
NKC MLR MLR
comp=Z,300nm,14.4s
PRD Provadia 153.59 321 P **PKPdf 01 15 33.1 0.0**
ARR Arges 153.62 327 ⇑*i*P **PKPdf 01 15 34.3 +1.1**
PSZ Piszkesteto 153.65 337 *e*PKIKP **PKPdf 01 15 32.8 -0.3**
PSZ *e* 01 15 41.2
PSZ MLR MLR
comp=Z,406nm,19.0s
PSZ Piszkesteto 153.65 337 *e*PKPdf **PKPdf 01 15 32.8 -0.3**
PSZ *e*PKPbc **PKiKP 01 15 41.2 +0.2**
PSZ LR LR
comp=Z,406nm,19.0s
PSZ Piszkesteto 153.65 337 ⇑*e*PKPdf **PKPab 01 15 54.5 +0.9**
HGN Heimansgroeve 153.67 358 *e*P **PKPbc 01 15 40.9 +0.2**
comp=Z,49nm,1.3s
MEM Membach 153.82 358 PKPbc **PKPbc 01 15 41.7 +0.6**
SNF Seneffe 153.94 1 PKPbc **PKPbc 01 15 42.0 +0.7**
SNF PKPab **PKPab 01 15 54.8 +0.2**
LOT Lotru 153.98 329 ⇑*i*P **PKPdf 01 15 33.6 -0.1**
BCLA Clavier 154.03 359 PKPab **PKPab 01 15 54.5 -0.5**
HUMR Humele 154.04 326 ⇑*i*P **PKPbc 01 15 41.2 -0.6**
ISP Isparta 154.32 307 PFAKE 01 15 50.0 -6.9
ISP LR LR
comp=Z,359nm,20.0s
DOU Dourbes 154.36 0 PKPbc **PKPbc 01 15 43.0 +0.7**
KHC Kasperske Hory 154.37 347 *e*PKPDF **PKPdf 01 15 34.3 +0.2**
KHC ⇑*e*PKP **PKiKP 01 15 42.9 +0.5**
KHC *e*PKPAB **PKPab 01 15 56.9 +0.3**
KHC *e*PP **PP 01 19 35.5 +4.4**
KHC AMS AMS 02 33 20.0
comp=Z,300nm,17.0s
KHC Kasperske Hory 154.37 347 *e*PKIKP **PKPdf 01 15 34.3 +0.2**
KHC *e* 01 15 42.9
KHC *e* 01 19 35.5
KHC MLR MLR
comp=Z,300nm,17.0s
KHC Kasperske Hory 154.37 347 *e*PKPdf **PKPdf 01 15 34.5 +0.5**
KHC *e*PKPbc **PKiKP 01 15 43.3 +0.8**
GDZ Gediz 154.50 311 *i* P **PKPbc 01 15 41.9 -1.3**
GERES GERESS Array B 154.62 346 PKP **PKPdf 01 15 34.4 -0.1**
comp=Z,4.8nm,1.1s,baz=96,slow=1.3,SNR=28
GERES PKPbc **PKiKP 01 15 43.5 +0.5**
comp=Z,5.5nm,1.0s,baz=50,slow=2.1,SNR=15
GERES PKPab **PKPab 01 15 57.3 -0.4**
comp=Z,3.6nm,0.8s,baz=41,slow=2.7,SNR=8.5
WLF Walferdange 154.76 358 PKPbc **PKPbc 01 15 44.4 +1.3**
WLF PKPab **PKPab 01 15 57.7 -0.5**
KORT Korkueli 154.77 306 *i* P **PKPdf 01 15 33.7 -1.4**
EDRB Edirne 154.80 319 P **PKPdf 01 15 34.6 -0.2**
BZS Buzias 154.84 331 ⇑*i*P **PKPdf 01 15 34.9 +0.1**
BZS Buzias 154.84 331 ⇑PKIKP **PKPdf 01 15 34.9 +0.1**
CONA Conrad Observa 154.93 342 *i* PKPdf **PKPdf 01 15 34.8 -0.1**
comp=Z,27nm,1.1s,SNR=5.9
SOP Sopron 154.95 341 ⇑*e*PKPdf **PKPab 01 16 00.0 +1.0**
LANF Langenberg 155.36 355 PKP **PKPdf 01 15 36.4 +1.0**
MOA Molln 155.42 345 *i* PKPdf **PKPdf 01 15 35.3 -0.2**
comp=Z,28nm,1.9s
STU Stuttgart 155.43 353 *e*PKIKP **PKPdf 01 15 35.8 +0.3**
STU Stuttgart 155.43 353 *e*PKPdf **PKPdf 01 15 35.8 +0.3**
MPEP Malo Peshtene 155.50 325 P **PKPdf 01 15 36.6 +0.8**
ARSA Arzberg 155.64 342 *i* PKPdf **PKPdf 01 15 35.3 -0.6**
comp=Z,26nm,1.9s
KDZ Kurdzhali 155.70 320 P **PKPdf 01 15 34.8 -1.3**
WLS Welschbruch 155.95 356 PKP **PKPdf 01 15 35.9 -0.4**
RZN Rozhen 156.09 321 P **PKPdf 01 15 35.7 -1.1**
KOGS Kog 156.15 340 *e*PKPdf **PKPdf 01 15 36.2 -0.3**
KOGS *i* PKPab **PKPab 01 16 04.4 +0.2**
THEF They Montfort 156.21 358 PKP **PKPdf 01 15 37.3 +0.8**
SOKA Soboth 156.30 342 *i* PKPdf **PKPdf 01 15 36.7 -0.1**
comp=Z,35nm,1.1s
VTS Vitosha 156.31 324 P **PKPdf 01 15 34.6 -2.5**
VTS Vitosha 156.31 324 ⇓*i*P **PKPdf 01 15 35.2 -1.9**
VTS Vitosha 156.31 324 ⇓PKIKP **PKPdf 01 15 35.2 -1.9**
KBA Koelnbreinsper 156.36 345 *i* PKPdf **PKPdf 01 15 36.8 -0.2**
comp=Z,17nm,1.0s
RETA Reutte 156.48 350 *i* PKPdf **PKPdf 01 15 35.2 -1.8**
comp=Z,17nm,1.3s
WATA Walderalm 156.48 348 *i* PKPdf **PKPdf 01 15 37.4 +0.3**
comp=Z,16nm,1.3s
MOF Molkenrain 156.53 356 PKP **PKPdf 01 15 37.4 +0.3**
WTTA Wattenberg 156.54 348 *i* PKPdf **PKPdf 01 15 37.7 +0.4**
comp=Z,18nm,1.4s
MOTA Moosalm 156.56 349 *i* PKPdf **PKPdf 01 15 37.2 0.0**
comp=Z,13nm,0.9s,SNR=6.4
OBKA Obir 156.59 343 *i* PKPdf **PKPdf 01 15 35.4 -1.8**
comp=Z,12nm,0.9s
MYKA Terra Mystica 156.71 344 *i* PKPdf **PKPdf 01 15 36.6 -0.7**
comp=Z,20nm,1.3s
NVR Nevrokopi 156.79 321 P **PKPdf 01 15 36.3 -1.3**
DAVA Damuels 156.81 351 *i* PKPdf **PKPdf 01 15 37.9 +0.3**
comp=Z,15nm,1.0s
ABTA Abfaltersbach 156.86 346 *i* PKPdf **PKPdf 01 15 37.4 -0.1**
comp=Z,26nm,1.2s,SNR=11
FETA Feichten 156.94 350 *i* PKPdf **PKPdf 01 15 38.3 +0.5**
comp=Z,27nm,1.2s,SNR=11
LJU Ljubljana 157.02 342 *i* PKPdf **PKPdf 01 15 37.8 +0.1**
LJU *i* PKPab **PKPab 01 16 07.6 -0.4**
LOMF Lomont 157.04 356 PKP **PKPdf 01 15 38.9 +1.2**
SRS Serrai 157.10 321 P **PKPdf 01 15 36.1 -1.8**
BOJS Bojanci 157.31 341 *i* PKPdf **PKPdf 01 15 38.1 +0.1**
KNT Kendrikon 157.46 322 P **PKPdf 01 15 36.7 -1.7**
VAV Valandovo 157.53 323 *i* PKP **PKPdf 01 15 39.6 +1.2**
PLG Polygyros 157.66 320 P **PKPdf 01 15 36.5 -2.2**
SKO Skopje 157.68 326 *i* PKP **PKPdf 01 15 39.0 +0.4**
TUE Stuetta 157.68 352 PFAKE 01 15 50.0 +11
TUE LR LR
comp=Z,275nm,19.0s
PAIG Paliouri 157.81 319 P **PKPdf 01 15 36.9 -1.9**
LIT Litokhoron 158.40 321 P **PKPdf 01 15 38.0 -1.6**
SANT Santorini 158.59 309 PFAKE 01 15 50.0 +10
SANT LR LR
comp=Z,189nm,19.0s
OHR Ohrid 158.63 325 *i* PKP **PKPdf 01 15 40.2 +0.4**
TIR Tirane 158.93 327 PFAKE 01 15 50.0 +10
TIR LR LR
comp=Z,323nm,20.0s
SSB Saint Sauveur 159.18 0 PFAKE 01 15 50.0 +10
SSB LR LR
comp=Z,336nm,20.0s
BNI Bardonecchia 159.34 356 PFAKE 01 15 50.0 +9.3
BNI LR LR
comp=Z,482nm,21.0s
PGAV Gavieira, Arco 159.41 29 *e*PKPdf **PKPdf 01 15 41.1 +0.3**
PGAV Gavieira, Arco 159.41 29 *e*LR LR 02 27 06.2
comp=Z,318nm,18.0s
ANX Ano Chora 159.71 318 P **PKPdf 01 15 38.6 -2.7**
VLC Villacollemand 159.77 348 PFAKE 01 15 50.0 +8.9
VLC LR LR
comp=Z,289nm,19.0s
DSL Palaion Diasel 159.84 321 P **PKPdf 01 15 39.5 -1.8**
DBIC Dimbokro 160.09 151 PKP **PKPdf 01 15 40.5 -1.8**
comp=Z,7.3nm,0.9s,baz=135,slow=2.9,SNR=4.2
POLO Lamas de Olo 160.10 29 *e*PKPdf **PKPdf 01 15 42.8 +1.2**
POLO Lamas de Olo 160.10 29 *e*PKPab **PKPab 01 16 21.4 -0.2**
PDO Prodromos 160.15 319 P **PKPdf 01 15 41.1 -0.5**
PBRG Braganca 160.18 26 *e*PKPdf **PKPdf 01 15 42.3 +0.7**
PBRG Braganca 160.18 26 *e*PKPab **PKPab 01 16 21.5 -0.4**
PVRL Vila Real 160.21 29 *e*PKPdf **PKPdf 01 15 43.1 +1.4**
PVRL Vila Real 160.21 29 *e*PKPab **PKPab 01 16 21.4 -0.6**
PVIS Viseu 160.58 30 *e*PKPab **PKPab 01 16 22.9 -0.8**
MVO Moncorvo 160.60 28 *e*PKPdf **PKPdf 01 15 43.5 +1.4**
MVO Moncorvo 160.60 28 *e*PKPab **PKPab 01 16 23.1 -0.7**
MVO Moncorvo 160.60 28 *e*LR LR 02 21 36.3
comp=Z,252nm,18.0s
AQU L'Aquila 160.72 340 PFAKE 01 15 50.0 +7.8
AQU LR LR
comp=Z,303nm,20.0s
ZKS Zakynthos 160.97 318 P **PKPdf 01 15 40.1 -2.5**
MTE Manteigas 161.00 30 *e*PKPdf **PKPdf 01 15 43.4 +0.8**
MTE Manteigas 161.00 30 *e*LR LR 02 22 14.9
comp=Z,298nm,18.0s
MTE Manteigas 161.00 30 PFAKE 01 15 50.0 +7.4
MTE LR LR
comp=Z,431nm,20.0s
PTOM Tomar 161.19 33 *e*PKPdf **PKPdf 01 15 44.5 +1.8**
PTOM Tomar 161.19 33 *e*PKPab **PKPab 01 16 25.8 -0.5**
PCBR Castelo Branco 161.47 31 *e*PKPdf **PKPdf 01 15 44.4 +1.4**
PMTG Montargil 161.70 34 *e*PKPab **PKPab 01 16 28.2 -0.4**
PMRV Marv??o 161.84 32 *e*PKPdf **PKPdf 01 15 45.1 +1.7**
PMRV Marv??o 161.84 32 *e*PKPab **PKPab 01 16 28.4 -0.8**
PMRV Marv??o 161.84 32 *e*LR LR 02 19 23.8
comp=Z,251nm,18.0s
CUC Castrocucco 161.89 332 PFAKE 01 15 50.0 +6.5
CUC LR LR
comp=Z,222nm,22.0s
TIP Timpagrande 162.12 328 PFAKE 01 16 00.0 +16
TIP LR LR
comp=Z,289nm,20.0s
PESTR Estremoz 162.18 33 *e*PKPdf **PKPdf 01 15 45.7 +1.9**
PESTR Estremoz 162.18 33 *e*PKPab **PKPab 01 16 29.9 -0.8**
MESJ Messejana 162.62 37 *e*P **PKPdf 01 15 44.0 -0.3**
MESJ AMS AMS 02 24 42.4
comp=Z,401nm,24.1s
MESJ Messejana 162.62 37 *e*PKPdf **PKPdf 01 15 43.9 -0.3**
PBEJ Beja 162.67 35 *e*PKPdf **PKPdf 01 15 46.0 +1.7**
MORF Marmelete 162.76 39 *e*P **PKPdf 01 15 44.0 -0.5**
MORF AMS AMS 02 25 11.4
comp=Z,427nm,18.9s
MORF Marmelete 162.76 39 *e*PKPdf **PKPdf 01 15 46.2 +1.7**
PFVI Vila Bisbo 162.78 39 *e*PKPdf **PKPdf 01 15 46.4 +2.0**
PBAR Barrancos 162.99 33 *e*PKPdf **PKPdf 01 15 45.8 +1.2**
PAB San Pablo 163.06 25 *e*PKIKP **PKPdf 01 15 46.4 +1.6**
PAB MLR MLR
comp=Z,403nm,19.0s
PAB San Pablo 163.06 25 *e*PKPdf **PKPdf 01 15 46.4 +1.6**
PAB LR LR
comp=Z,403nm,19.0s
ESDC Sonseca Array 163.09 24 PKP **PKPdf 01 15 45.9 +1.1**
comp=Z,5.2nm,1.0s,baz=353,slow=2.7,SNR=25
ESDC PKPab **PKPab 01 16 34.2 -0.4**
comp=Z,4.2nm,1.0s,baz=309,slow=4.0,SNR=6.7
ESDC PP **PP 01 20 11.3 -7.6**
comp=Z,0.4nm,0.8s,baz=0.0,slow=1.3,SNR=2.9
PBDV Barranco-do-Ve 163.21 37 *e*PKPdf **PKPdf 01 15 47.1 +2.2**
PBDV Barranco-do-Ve 163.21 37 *e*PKPab **PKPab 01 16 37.6 +2.3**
PVAQ Vaqueiros 163.21 37 *e*LR LR 02 21 43.9
comp=Z,357nm,20.0s
CEL Celeste 163.26 328 PFAKE 01 16 00.0 +15

CEL				LR	LR		
	comp=Z,367nm,22.0s						
VSL	**Villasalto**	**164.46**	**347**	PFAKE		01 16 00.0	+14
VSL				LR	LR		
	comp=Z,236nm,21.0s						
WDD	**Wied Dalam**	**165.84**	**326**	PFAKE		01 16 00.0	+13
WDD				LR	LR		
	comp=Z,352nm,19.0s						
RTC	**Rabat Centre**	**166.07**	**44**	PFAKE		01 16 00.0	+13
RTC				LR	LR		
	comp=Z,2μm,21.0s						
KEST	**Kesra**	**168.04**	**342**	PKP	**PKPdf**	**01 15 49.9**	**+0.9**
	comp=Z,6.2nm,1.0s,baz=300,slow=6.7,SNR=4.2						
KEST				PKPab	**PKPab**	**01 16 56.6**	**+0.1**
	comp=Z,9.4nm,0.9s,baz=322,slow=9.3,SNR=6.2						
TORD	**Torodi Ar. Bea**	**168.43**	**165**	PKP	**PKPdf**	**01 15 49.7**	**0.0**
	comp=Z,7.1nm,1.1s,baz=190,slow=5.9,SNR=24						
TORD				PKPab	**PKPab**	**01 17 00.0**	**+1.4**
	comp=Z,4.2nm,1.0s,baz=191,slow=3.2,SNR=6.2						
TORD				PP	**PP**	**01 20 48.9**	**+2.6**
	comp=Z,1.7nm,1.0s,baz=188,slow=5.7,SNR=4.9						
TAM	**Tamanrasset**	**178.25**	**203**	*e*PKIKP	**PKPdf**	**01 15 54.9**	**+1.4**
TAM				MLR	MLR		
	comp=Z,383nm,19.0s						
TAM	**Tamanrasset**	**178.25**	**203**	*e*PKPdf	**PKPdf**	**01 15 54.9**	**+1.4**
TAM				LR	LR		
	comp=Z,383nm,19.0s						

CSEM ***15*** *00:59:14.6,35.65N×27.22E,h18km,ML1.8/4*
ATH 15 00:59:14.7,35.65N×27.22E,h18km±3km**,ML1.8/3,Error ellipse: s-maj=8.3km s-min=1.2km az=141.0, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KARP	**Karpathos**	**0.11**	**207**	P	Pb	00 59 18.2	+0.1
KARP				S	Sb	00 59 20.6	+0.2
KARP	**Karpathos**	**0.11**	**207**	P	Pb	00 59 18.2	+0.1
KARP				S	Sb	00 59 20.6	+0.2
KARP				AML	AML	00 59 22.4	
	comp=E,1077μm,0.3s						
KARP				AML	AML	00 59 23.3	
	comp=N,1178μm,0.1s						
ARG	**Arkhangelos**	**0.93**	**52**	P	Pb	00 59 31.9	-0.3
ARG				S	Sn	00 59 45.4	-0.3
NPS	**Neapolis**	**1.37**	**254**	P	Pg	00 59 41.4	+0.3
NPS	**Neapolis**	**1.37**	**254**	P	Pg	00 59 41.4	+0.3
LAST	**Lasithi**	**1.50**	**252**	P	Pg	00 59 45.0	+1.3
LAST				S	Sg	01 00 03.5	+0.2
LAST	**Lasithi**	**1.50**	**252**	P	Pg	00 59 45.0	+1.4
IDI	**Anoyia**	**1.94**	**260**	P	Pb	00 59 50.0	+0.5
IDI				S	Sb	01 00 13.0	-0.4
IDI	**Anoyia**	**1.94**	**260**	P	Pb	00 59 50.0	+0.5
IDI				S	Sb	01 00 13.0	-0.3
IDI				AML	AML	01 00 21.8	
	comp=N,29μm,0.7s						
IDI				AML	AML	01 00 22.6	
	comp=E,24μm,0.4s						
APE	**Apeiranthos**	**1.97**	**317**	P	Pb	00 59 49.0	-1.0
APE	**Apeiranthos**	**1.97**	**317**	P	Pb	00 59 49.0	-1.1
SIVA	**Sivas**	**2.07**	**253**	P	Pn	00 59 48.9	+0.4
SIVA				S	Sb	01 00 17.7	+0.6
SIVA	**Sivas**	**2.07**	**253**	P	Pn	00 59 48.9	+0.3
SIVA				S	Sb	01 00 17.7	+0.6
SIVA				AML	AML	01 00 21.0	
	comp=E,95μm,1.7s						
SIVA				AML	AML	01 00 24.6	
	comp=N,63μm,1.0s						

MAN 15 01:06:56,8.11N×123.33E,h26km**,mb4.6,ML3.4,MS3.4, 2C-1D,Mindanao**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DCPH	**Dipolog City**	**0.47**	**3**	⇑*e*P	Pn	01 07 07.6	+0.5
DCPH				*i* S	Sb	01 07 12.5	0.0
SNPH	**Sibulan**	**1.23**	**356**	⇓*i*P	Pn	01 07 14.9	-2.7
SNPH				*i* S	Sn	01 07 29.3	-4.1
CGP	**Cagayan de Oro**	**1.40**	**76**	⇑*e*P	Pn	01 07 20.6	+0.7
CGP				*e*S	Sn	01 07 35.6	-1.9
TBP	**Tagbilaran**	**1.66**	**19**	*e*P	Pb	01 07 26.0	0.0
TBP				*e*S	Sb	01 07 45.5	-0.9

NIED ***15*** *01:18:00,37.40N×143.40E,h5km,Mw3.8 Best double couple: M05.19000×10^14 NP1:ϕs195.00000°,δ48.00000°, λ-115.00000°. NP2:ϕs49.00000°,δ48.00000°, λ-66.00000°.*
IDC ***15*** *01:18:55.0±0.8,37.22N×143.65E,h0km,mb4.0/12, mb1 4.1/17,mb1mx4.0/50,mbtmp4.0/17,ML4.3/3,MS3.3/1, Ms1 3.3/1,ms1mx2.7/46,Error ellipse: s-maj=22.0km s-min=16.5km az=101.0*
ISCJB ***15*** *01:18:58.3±1.4,37.30N±0.03×143.41E±0.04, h33km±11km,mb4.2/18,MS3.2/1,Error ellipse: s-maj=5.9km s-min=5.1km az=30.3*
JMA ***15*** *01:18:58.7±0.2,37.35N×143.41E,h50km,M4.2*
NEIC ***15*** *01:19:00.3±0.5,37.30N×143.55E,h35km,mb4.4/5,Error ellipse: s-maj=11.9km s-min=7.6km az=107.0*
ISC 15 01:18:59.5±4.0,37.32N±0.04×143.49E±0.07,h28km±29km**, n47,σ1s84/60,mb4.2/18,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.04**	**305**	P	**Pn**	**01 19 30.8**	**-1.1**
JIO				S	**Sn**	**01 19 54.1**	**-2.2**
JFK	**Kawauchi**	**2.08**	**272**	P	**Pn**	**01 19 31.4**	**-1.1**
JFK				*e*S	**Sn**	**01 19 55.3**	**-2.2**
ONAJ	**Iwakimizuishiy**	**2.15**	**265**	P	**Pn**	**01 19 32.6**	**-1.0**
ONAJ				*e*S	**Sn**	**01 19 57.4**	**-2.0**
JMM	**Marumori**	**2.21**	**285**	P	**Pn**	**01 19 33.1**	**-1.1**
JMM				*e*S	**Sn**	**01 19 58.4**	**-2.2**
JMK	**Ichinoseki**	**2.42**	**313**	P	**Pn**	**01 19 36.0**	**-1.1**
JMK				*e*S	**Sn**	**01 20 03.9**	**-1.9**
JFT	**Otama**	**2.51**	**276**	P	**Pn**	**01 19 38.4**	**-0.1**
JFT				*e*S	**Sn**	**01 20 07.0**	**-1.2**
JOM	**Ohasama**	**2.76**	**322**	P	**Pn**	**01 19 40.7**	**-1.1**
JOM				*e*S	**Sn**	**01 20 11.9**	**-2.3**
JYK	**Kaneyama**	**2.94**	**304**	P	**Pn**	**01 19 43.8**	**-0.5**
JYK				*e*S	**Sn**	**01 20 17.6**	**-1.0**
BSO1	**Boso 1**	**3.35**	**218**	P	**Pn**	**01 19 48.4**	**-1.0**
BSO1				*e*S	**Sn**	**01 20 27.9**	**0.0**
JAG	**Ashikaga**	**3.35**	**256**	P	**Pn**	**01 19 49.4**	**-0.6**
JAG				S	**Sn**	**01 20 26.6**	**-2.3**
JANG	**Nango**	**3.42**	**334**	P	**Pn**	**01 19 49.7**	**-1.0**
JANG				S	**Sn**	**01 20 26.7**	**-3.8**
JRY	**Ryogami san**	**3.91**	**252**	P	**Pn**	**01 19 56.9**	**-0.7**
JRY				*e*S	**Sn**	**01 20 39.2**	**-3.4**
JOD2	**Odawara 2**	**4.10**	**241**	P	**Pn**	**01 19 59.6**	**-0.7**
JOD2				*e*S	**Sn**	**01 20 44.6**	**-2.7**
MJAR	**Matsushiro Arr**	**4.30**	**261**	Pn	**Pn**	**01 20 03.8**	**+0.8**
	9.6nm,0.3s,baz=89,slow=15,SNR=41						
MJAR				Sn	**Sn**	**01 20 50.8**	**-1.3**
	3.0nm,0.3s,baz=91,slow=25,SNR=8.1						
MAJO	**Matsushiro**	**4.30**	**261**	*e*Pn	**Pn**	**01 20 03.9**	**+0.8**
JOT	**Ohata**	**4.48**	**336**	P	**Pn**	**01 20 05.2**	**-0.2**
JOT				*e*S	**Sn**	**01 20 51.9**	**-4.6**
ERM	**Erimo**	**4.70**	**357**	*e*Pn	**Pn**	**01 20 06.4**	**-2.1**
JHJ2	**Mitsune**	**5.16**	**217**	*e*Pn	**Pn**	**01 20 13.8**	**-1.0**
JHJ2				*e*Sn	**Sn**	**01 21 09.4**	**-4.0**
JHJ	**Hachijo jima 2**	**5.17**	**217**	Pn	**Pn**	**01 20 12.7**	**-2.2**
	16nm,0.3s,baz=328,slow=21,SNR=10						
JHJ				Sn	**Sn**	**01 21 08.6**	**-5.1**
	50nm,0.3s,baz=58,slow=22,SNR=6.5						
ASAJ	**Asahikawa**	**6.83**	**355**	Pn	**Pn**	**01 20 36.9**	**-0.8**
	11nm,0.3s,baz=209,slow=8.2,SNR=27						
USRK	**Ussuriysk Ar.**	**11.10**	**312**	Pn	**Pn**	**01 21 37.9**	**+1.7**
	0.3nm,0.3s,baz=118,slow=15,SNR=3.2						
KSRS	**Korea Array**	**12.38**	**275**	Pn	**Pn**	**01 21 56.7**	**+2.9**
	baz=83,slow=16,SNR=3.4						
KSAR	**Wonju Array Be**	**12.41**	**275**	Pn	**Pn**	**01 21 56.7**	**+2.5**
KLR	**Kul'dur**	**14.63**	**328**	Pn	**Pn**	**01 22 22.1**	**-2.3**
	0.2nm,0.3s,baz=138,slow=11,SNR=4.5						
SEY	**Seymchan**	**26.22**	**9**	P	**P**	**01 24 32.5**	**+0.8**
	4.1nm,0.6s,baz=160,slow=3.2,SNR=12						
H11N2	**WAKE ISLAND Hy**	**26.90**	**124**	T	T	01 52 46.3	
	baz=316,slow=75,SNR=9.1						
H11N1	**WAKE ISLAND Hy**	**26.91**	**124**	T	T	01 52 47.5	
	baz=316,slow=75,SNR=6.3						
H11N3	**WAKE ISLAND Hy**	**26.92**	**124**	T	T	01 52 47.5	
	baz=316,slow=75,SNR=7.2						
SONM	**Songino Array**	**29.01**	**303**	P	**P**	**01 24 58.7**	**+1.8**
	0.7nm,0.5s,baz=101,slow=9.3,SNR=4.3						
JAY	**Jayapura**	**39.71**	**184**	LR	LR	01 39 21.0	
	comp=Z,42nm,21.1s,baz=354,slow=31						
ZALV	**Zalesovo Beam**	**42.95**	**312**	P	**P**	**01 26 56.4**	**+0.7**
	0.7nm,0.4s,baz=95,slow=7.4,SNR=4.3						
MKAR	**Makanchi Array**	**45.37**	**302**	P	**P**	**01 27 15.9**	**+0.6**
	0.7nm,0.8s,baz=98,slow=8.7,SNR=3.8						
KURK	**Kurchatov**	**47.06**	**308**	*e*P	**P**	**01 27 28.0**	**-0.4**
	21nm,0.6s						
ILAR	**Eielson Array**	**48.37**	**33**	P	**P**	**01 27 38.5**	**+0.2**
	1.8nm,0.6s,baz=263,slow=6.3,SNR=21						
BRVK	**Borovoye**	**51.66**	**313**	*e*P	**P**	**01 28 04.0**	**+0.5**
	2.2nm,0.4s						
ARU	**Arti**	**57.24**	**319**	*e*P	**P**	**01 28 43.6**	**-0.4**
	2.4nm,0.7s						
WRAB	**Tennant Creek**	**57.59**	**190**	*e*P	**P**	**01 28 47.0**	**+0.2**
	3.6nm,0.8s						
WRA	**Warramunga Arr**	**57.60**	**190**	P	**P**	**01 28 45.9**	**-1.0**
	1.0nm,0.5s,baz=8.3,slow=7.2,SNR=16						
ABKAR	**Akbulak array**	**59.02**	**311**	*e*P	**P**	**01 28 56.7**	**+0.2**
	0.6nm,0.6s						
ASAR	**Alice Springs**	**61.33**	**190**	P	**P**	**01 29 12.2**	**-0.3**
	0.4nm,0.4s,baz=3.6,slow=6.5,SNR=5.7						
FORT	**Forrest**	**69.26**	**194**	*e*P	**P**	**01 30 03.3**	**-0.5**
	90nm,0.7s						
FINES	**FINESS Array B**	**69.33**	**333**	P	**P**	**01 30 04.4**	**+0.5**
	2.1nm,0.6s,baz=38,slow=9.6,SNR=8.9						
KBZ	**Khabaz**	**71.96**	**311**	P	**P**	**01 30 21.8**	**+1.5**
	2.0nm,0.8s,baz=45,slow=4.3,SNR=4.1						
NB2	**NORSAR Subarra**	**74.55**	**338**	P	**P**	**01 30 35.6**	**+0.3**
	comp=Z,0.7nm,0.6s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**74.55**	**338**	P	**P**	**01 30 35.6**	**+0.3**
	comp=Z,1.0nm,0.7s,baz=43,slow=5.4,SNR=4.4						
BRTR	**Keskin Array B**	**79.89**	**313**	P	**P**	**01 31 06.1**	**+0.3**
	comp=Z,0.3nm,0.5s,baz=35,slow=5.5,SNR=2.8						
TXAR	**Lajitas Array**	**88.63**	**54**	P	**P**	**01 31 50.6**	**+0.3**
	comp=Z,0.4nm,0.7s,baz=322,slow=2.8,SNR=6.9						

ISCJB ***15*** *01:23:17.5±0.8,61.79S±0.08×155.1E±0.4,h10km, mb4.5/6,MS4.2/12,Error ellipse: s-maj=26.0km s-min=11.3km az=177.6*
NEIC ***15*** *01:23:19.3±0.6,61.78S×155.31E,h10km,mb4.4/4,Error ellipse: s-maj=25.0km s-min=12.1km az=89.0*
GCMT ***15*** *01:23:19.3±0.3,61.70S×154.33E,h12km,MW5.0/74, Moment Tensor Solution. s22,c23; s74,c108; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-0.07±.14; Mθθ2.53±.11; Mϕϕ-2.46±.13; Mrθ-1.36±.35; Mrϕ-2.28±.11; Mθϕ0.66±.36; Best double couple: M06.66200×10^16 NP1:ϕs338.00000°,δ77.00000°,λ.16.00000°. NP2: ϕs244.00000°,δ74.00000°,λ167.00000°. Principal axes: T 3.9750, Plg20.0000°, Azm202.0000°; N -0.6270, Plg69.0000°, Azm14.0000°; P -3.3500, Plg2.0000°, Azm111.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***15*** *01:23:19.5±1.4,61.64S×154.36E,h0km,mb4.4/5, mb1 4.5/5,mb1mx4.2/21,mbtmp4.4/5,MS4.3/13, Ms1 4.3/13,ms1mx4.2/16 Error ellipse: s-maj=57.5km s-min=22.0km az=99.0*
ISC 15 01:23:19.5±0.7,61.82S±0.09×155.1E±0.2,h10km**,n42, σ1s48/20,mb4.5/6,MS4.2/12,Balleny Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VNDA	**Vanda**	**15.93**	**175**	Pn	**Pn**	**01 26 59.9**	**-3.5**
	0.5nm,0.3s,baz=346,slow=13,SNR=25						
VNDA				LR	LR	01 32 41.2	
	comp=Z,2μm,18.9s,baz=358,slow=35						
SBA	**Scott Base**	**16.54**	**171**	*e*Pn	**Pn**	**01 27 08.7**	**-2.5**
	21nm,1.1s						
CASY	**Casey**	**19.65**	**238**	*e*P	**Pn**	**01 27 49.0**	**-0.3**
	14nm,1.6s						
RPZ	**Rata Peaks**	**20.44**	**35**	LR	LR	01 34 35.8	
	comp=Z,1μm,19.1s,baz=185,slow=33						
URZ	**Urewera**	**27.23**	**40**	LR	LR	01 39 49.2	
	comp=Z,628nm,19.0s,baz=203,slow=36						
QSPA	**South Pole Qui**	**28.27**	**180**	*e*P	**P**	**01 29 13.7**	**+1.0**
	56nm,1.1s						
STKA	**Stephens Creek**	**31.20**	**337**	P	**P**	**01 29 38.4**	**-0.3**
	4.9nm,1.0s,baz=152,slow=9.6,SNR=4.7						
STKA				LR	LR	01 39 06.1	
	comp=Z,278nm,18.9s,baz=166,slow=31						
MAW	**Mawson**	**36.30**	**220**	P	**P**	**01 30 23.9**	**+1.3**
	10.0nm,1.0s,baz=123,slow=9.8,SNR=12						
MAW				LR	LR	01 45 25.4	
	comp=Z,1μm,18.3s,baz=91,slow=37						
H01W1	**Cape Leeuwin H**	**37.24**	**297**	T	T	02 09 50.6	
	baz=148,slow=75,SNR=185						
H01W2	**Cape Leeuwin H**	**37.25**	**297**	T	T	02 09 50.8	
	baz=148,slow=75,SNR=146						
H01W3	**Cape Leeuwin H**	**37.26**	**297**	T	T	02 09 50.5	
	baz=148,slow=75,SNR=160						
DZM	**Mont Dzumac**	**40.49**	**16**	P	**P**	**01 30 59.5**	**+1.2**
	14nm,1.0s,baz=193,slow=14,SNR=3.7						
DZM				LR	LR	01 43 53.2	
	comp=Z,574nm,20.1s,baz=208,slow=30						
DZM	**Mont Dzumac**	**40.49**	**16**	*e*LR	LR	01 41 35.0	
	930nm,25.4s						
DZM	**Mont Dzumac**	**40.49**	**16**	*e*P	**P**	**01 30 58.1**	**-0.2**
	21nm,1.3s						
ASAR	**Alice Springs**	**40.78**	**330**	P	**P**	**01 30 59.8**	**-0.9**
	2.5nm,0.8s,baz=167,slow=9.2,SNR=14						
ASAR				PcP	**PcP**	**01 33 02.1**	**+0.4**
	0.5nm,0.7s,baz=144,slow=3.1,SNR=2.8						
ASAR				LR	LR	01 45 45.7	
	comp=Z,439nm,18.1s,baz=190,slow=33						
WRA	**Warramunga Arr**	**44.26**	**331**	P	**P**	**01 31 27.2**	**-1.8**
	4.0nm,1.0s,baz=168,slow=6.9,SNR=8.9						
WRA				PcP	**PcP**	**01 33 13.5**	**+0.1**
	1.8nm,1.0s,baz=175,slow=2.8,SNR=2.9						
WRA				LR	LR	01 47 49.9	
	comp=Z,316nm,21.3s,baz=40,slow=34						
VNA1	**Neumayer--Stat**	**47.30**	**187**	P	**P**	**01 31 53.9**	**+1.5**
TBI	**Tubuai**	**53.54**	**70**	*e*LR	LR	01 47 51.0	
	129nm,31.5s						
TBI	**Tubuai**	**53.54**	**70**	*e*T	T	02 30 07.7	
	38nm,0.3s						
PPT2	**Papeete2**	**58.54**	**67**	*e*LR	LR	01 50 14.0	
	184nm,24.5s						
PPT	**Papeete**	**58.56**	**67**	LR	LR	01 56 23.6	
	comp=Z,96nm,18.1s,baz=24,slow=34						
RKT	**Rikitea**	**60.43**	**84**	*e*LR	LR	01 51 09.7	
	341nm,28.8s						
RKT	**Rikitea**	**60.43**	**84**	*e*T	T	02 38 52.4	
	11nm,0.3s						
VAH	**Vaihoa**	**61.48**	**68**	*e*T	T	02 40 00.3	
	80nm,0.2s						
PLCA	**Paso Flores**	**71.35**	**145**	LR	LR	02 01 19.6	
	comp=Z,115nm,18.1s,baz=256,slow=32						
H08S2	**Diego Garcia H**	**79.80**	**273**	T	T	03 03 06.9	
	baz=151,slow=76,SNR=20						
H08S1	**Diego Garcia H**	**79.81**	**273**	T	T	03 03 06.2	
	baz=151,slow=76,SNR=15						
H08S3	**Diego Garcia H**	**79.82**	**273**	T	T	03 03 08.4	
	baz=151,slow=76,SNR=20						
BOSA	**Boshof**	**81.26**	**223**	LR	LR	02 10 21.0	
	comp=Z,258nm,18.4s,baz=164,slow=35						
H08N1	**Diego Garcia H**	**81.64**	**272**	T	T	03 05 36.5	
	baz=156						
H08N3	**Diego Garcia H**	**81.65**	**272**	T	T	03 05 37.8	
	baz=156						
H08N2	**Diego Garcia H**	**81.66**	**272**	T	T	03 05 38.2	
	baz=156						
LPAZ	**La Paz**	**94.99**	**139**	LR	LR	02 13 00.0	
	comp=Z,42nm,18.9s,baz=243,slow=31						
MJAR	**Matsushiro Arr**	**98.97**	**346**	LR	LR	02 19 03.7	
	comp=Z,44nm,20.2s,baz=195,slow=34						
KURK	**Kurchatov**	**127.50**	**309**	*e*PKPdf	**PKPdf**	**01 42 23.7**	**+0.4**
TORD	**Torodi Ar. Bea**	**127.76**	**214**	PKP	**PKPdf**	**01 42 25.2**	**+0.2**
	0.6nm,1.0s,baz=146,slow=2.8,SNR=2.9						
MOOW	**Moose Ponds**	**129.16**	**69**	*e*PKPdf	**PKPdf**	**01 42 27.1**	**+0.1**
TIRR	**Tirgusor**	**144.82**	**266**	*e*PKPdf	PKPbc	01 42 54.8	+0.2
KEST	**Kesra**	**146.19**	**235**	PKPbc	**PKPab**	**01 43 00.9**	**+0.8**
	7.1nm,0.9s,baz=149,slow=5.9,SNR=4.4						
AKASG	**Malin Array Be**	**148.88**	**274**	PKPbc	**PKPbc**	**01 43 06.4**	**+0.3**
	0.0nm,0.5s,baz=118,slow=1.7,SNR=2.5						
ESDC	**Sonseca Array**	**154.40**	**220**	PKPbc	**PKPbc**	**01 43 20.7**	**+1.5**
	0.1nm,0.3s,baz=147,slow=3.1,SNR=4.1						
GERES	**GERESS Array B**	**154.93**	**257**	PKPab	**PKPab**	**01 43 33.5**	**-2.2**
	0.2nm,0.5s,baz=56,slow=0.4,SNR=2.8						

IDC ***15*** *01:31:41.8±1.6,34.63N×135.91E,h0km,mb3.6/2, mb1 3.5/4,mb1mx3.3/39,mbtmp3.4/4,ML2.9/2,MS3.9/7, Ms1 3.9/7,ms1mx3.4/42,Error ellipse: s-maj=33.8km s-min=19.4km az=148.0*
ISCJB ***15*** *01:31:42.3±0.5,34.75N±0.03×135.81E±0.03,h9km±4km, mb3.4/2,MS3.9/7,Error ellipse: s-maj=4.7km s-min=3.9km az=173.2*
JMA ***15*** *01:31:42.7,34.76N×135.81E,h11km±1km,M3.4 Broadband fault plane solution: P waves. NP1: ϕs173.00000°,δ54.00000°,λ.64.00000°. NP2:ϕs33.00000°, δ43.00000°,λ122.00000°. Principal axes: T Plg68.0000°, Azm26.0000°; N Plg21.0000°, Azm189.0000°; P Plg6.0000°, Azm281.0000°;*
JMA Felt II J1.
ISC 15 01:31:42.3±1.2,34.74N±0.04×135.84E±0.04,h6km±10km**, n20,σ0s97/25,MS4.1/7,2C-6D,Near south coast of western Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHE	**Heguri**	**0.15**	**237**	⇑P	**Pg**	**01 31 46.3**	**+0.9**
JHE				S	**Sg**	**01 31 48.6**	**+1.1**
TSUJ	**Tsu 2**	**0.48**	**93**	⇓P	**Pb**	**01 31 52.3**	**-0.9**
TSUJ				S	**Sb**	**01 31 59.2**	**-1.3**
JWY	**Kouya**	**0.56**	**202**	⇑P	**Pb**	**01 31 53.7**	**-0.9**
JWY				S	**Sb**	**01 32 01.3**	**-1.5**
JKN2	**Miekihoku**	**0.61**	**144**	⇓P	**Pb**	**01 31 54.9**	**-0.6**
JKN2				S	**Sb**	**01 32 03.6**	**-0.7**
JWT	**Wachi**	**0.65**	**327**	⇓P	**Pg**	**01 31 54.8**	**-0.1**
JWT				S	**Sg**	**01 32 02.6**	**-0.8**
JIE	**Ise**	**0.79**	**115**	⇓P	**Pb**	**01 31 57.5**	**-1.1**
JIE				S	**Sb**	**01 32 09.1**	**-0.5**
JAJ2	**Tsuna**	**0.85**	**248**	⇓P	**Pg**	**01 31 58.1**	**-0.5**
JAJ2				S	**Sg**	**01 32 09.4**	**-0.3**
JKS	**Kasai**	**0.86**	**287**	⇓P	**Pg**	**01 31 58.2**	**-0.6**
JKS				S	**Sg**	**01 32 09.1**	**-0.8**
JWM	**Minabe**	**0.97**	**205**	P	**Pb**	**01 32 01.1**	**-0.5**
JWM				S	**Sb**	**01 32 14.7**	**0.0**
MAT	**Matsushiro**	**2.64**	**46**	P	**Pn**	**01 32 26.4**	**+0.9**
MAT				S	**Sn**	**01 32 58.9**	**+1.0**
MJAR	**Matsushiro Arr**	**2.64**	**46**	Pn	**Pn**	**01 32 26.7**	**+1.2**
	2.3nm,0.3s,baz=238,slow=13,SNR=22						
MJAR				Sn	**Sn**	**01 32 59.3**	**+1.3**
	4.1nm,0.3s,baz=238,slow=33,SNR=5.8						
JNU	**Nakatsue**	**4.43**	**250**	Pn	**Pn**	**01 32 50.8**	**+0.6**
	0.7nm,0.3s,baz=58,slow=13,SNR=5.0						
JNU				Lg	Lg	01 34 03.1	
	0.4nm,0.3s,baz=210,slow=11,SNR=4.6						
SONM	**Songino Array**	**25.53**	**310**	P	**P**	**01 37 13.3**	**+1.4**
	0.5nm,0.4s,baz=116,slow=10,SNR=4.8						
SONM				LR	LR	01 47 39.9	
	comp=Z,134nm,21.4s,baz=122,slow=37						
TLY	**Talaya**	**28.62**	**316**	LR	LR	01 50 15.8	
	comp=Z,28nm,20.9s,baz=114,slow=39						
WRA	**Warramunga Arr**	**54.39**	**182**	P	**P**	**01 41 09.6**	**-0.7**
	0.4nm,0.8s,baz=352,slow=7.1,SNR=4.8						
OBN	**Obninsk**	**67.17**	**322**	LR	LR	02 16 10.7	
	comp=Z,158nm,19.4s,baz=86,slow=40						
GNI	**Garni**	**69.38**	**305**	LR	LR	02 16 00.4	
	comp=Z,63nm,20.5s,baz=40,slow=38						
AKASG	**Malin Array Be**	**73.26**	**320**	LR	LR	02 18 38.7	
	comp=Z,95nm,20.0s,baz=45,slow=38						
GERES	**GERESS Array B**	**82.16**	**326**	LR	LR	02 25 22.6	
	comp=Z,265nm,20.1s,baz=30,slow=39						
TXAR	**Lajitas Array**	**95.07**	**49**	LR	LR	02 23 12.5	
	comp=Z,67nm,21.1s,baz=0.0,slow=32						

ISCJB ***15*** *01:39:29.3±0.4,24.26N±0.02×121.80E±0.02,h8km±3km, Error ellipse: s-maj=3.7km s-min=2.3km az=138.9*
TAP ***15*** *01:39:29.1,24.25N×121.77E,h14km,ML3.5,B*
JMA ***15*** *01:39:29.2±0.1,24.23N×121.76E,h13km±2km,M2.7*
ISC 15 01:39:29.2±0.8,24.24N±0.02×121.79E±0.02,h14km±5km**, n49,σ0s69/76,7C-3D,Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.08**	**323**	P	**Pg**	**01 39 32.6**	**+0.4**
	baz=337						
EHP				*e*S	**Sg**	**01 39 34.9**	**+0.6**
	baz=337						
ENA	**Nanau**	**0.19**	**345**	⇑*i*P	**Pg**	**01 39 33.4**	**-0.2**
	baz=352						
ENA				S	**Sg**	**01 39 36.4**	**-0.2**
	baz=352						
TWD	**Chiawan**	**0.24**	**228**	⇑P	**Pg**	**01 39 34.3**	**-0.2**
	baz=228						
TWD				*i* S	**Sg**	**01 39 38.2**	**+0.1**
	baz=228						
HWA	**Hwalien**	**0.32**	**213**	*e*P	**Pb**	**01 39 36.4**	**-0.3**
	baz=217						
TWC	**Suao**	**0.37**	**8**	⇑*i*P	**Pg**	**01 39 36.6**	**-0.1**
	baz=8.0						
TWC				*i* S	**Sg**	**01 39 41.7**	**-0.1**
	baz=8.0						
NNS	**Nan Shan**	**0.43**	**297**	⇑*i*P	**Pg**	**01 39 37.7**	**-0.2**
	baz=297						
NNS				*i* S	**Sg**	**01 39 43.3**	**-0.5**
	baz=297						
ENTT	**Nioudou**	**0.45**	**332**	⇑*i*P	**Pg**	**01 39 38.2**	**0.0**
	baz=334						
ENTT				*i* S	**Sg**	**01 39 44.1**	**-0.1**
	baz=334						
TWE	**Neicheng**	**0.49**	**346**	*i* P	**Pg**	**01

YUS	**Yu-Shan**	**1.08**	**226**	*e*P		**Pb**	**01 39 49.1**	**-0.8**
	baz=226							
WNT	**Mingjian**	**1.08**	**250**	*e*P		**Pg**	**01 39 51.5**	**+1.4**
	baz=242							
YOJ	**Yonaguni jima**	**1.13**	**79**	P		**Pb**	**01 39 50.6**	**0.0**
YOJ				S		**Sn**	**01 40 07.0**	**+1.0**
YOJ	**Yonaguni jima**	**1.13**	**79**	⇓*i*P		**Pb**	**01 39 50.6**	**0.0**
	baz=68							
ALS	**Alishan**	**1.16**	**231**	*e*P		**Pb**	**01 39 50.8**	**-0.5**
	baz=231							
CHN5	**Tsauling**	**1.21**	**238**	P		**Pg**	**01 39 52.7**	**+0.2**
	baz=240							
CHN5				S		**Sg**	**01 40 09.7**	**+1.4**
	baz=240							
ELDTW	**Lidau**	**1.27**	**214**	*e*P		**Pn**	**01 39 50.9**	**-1.8**
	baz=201							
PCYT	**Pengchaiyu**	**1.40**	**10**	*e*P		**Pn**	**01 39 54.9**	**+0.5**
	baz=9.0							
CHN4	**Tsaushan**	**1.42**	**231**	*e*P		**Pn**	**01 39 54.8**	**+0.2**
	baz=234							
CHN4				*e*S		**Sg**	**01 40 16.6**	**+1.7**
	baz=234							
STYT	**Tauyuan**	**1.44**	**222**	*e*P		**Pn**	**01 39 55.0**	**+0.1**
	baz=223							
WTP	**Ta-pu**	**1.47**	**228**	*e*P		**Pb**	**01 39 56.8**	**+0.4**
	baz=231							
WTP				*e*S		**Sg**	**01 40 16.9**	**+0.3**
	baz=231							
TWK	**Hsinying**	**1.54**	**231**	*e*P		**Pg**	**01 39 58.9**	**0.0**
	baz=233							
TWG	**Pinlang**	**1.56**	**205**	*e*P		**Pb**	**01 39 58.5**	**+0.5**
	baz=192							
CHN1	**Nanshi**	**1.57**	**228**	*e*P		**Pb**	**01 39 58.3**	**+0.2**
	baz=232							
CHN1				*e*S		**Sg**	**01 40 20.7**	**+0.9**
	baz=232							
SGST	**Jiashian**	**1.60**	**224**	*e*P		**Pb**	**01 39 58.5**	**-0.2**
	baz=226							
SGST				*e*S		**Sg**	**01 40 21.2**	**+0.3**
	baz=226							
IRIF	**Iriomote-Funau**	**1.77**	**87**	P		**Pn**	**01 40 00.5**	**+1.1**
IRIF				*e*S		**Sb**	**01 40 23.0**	**-0.5**
SSD	**Sandimen**	**1.83**	**216**	*e*P		**Pb**	**01 40 02.0**	**-0.6**
	baz=230							
JKRS	**Kuro-shima**	**2.02**	**90**	P		**Pn**	**01 40 03.3**	**+0.4**
JKRS				S		**Sb**	**01 40 29.7**	**-1.1**
EAST	**Anshuo**	**2.05**	**205**	*e*P		**Pb**	**01 40 05.6**	**-0.7**
	baz=196							
JIJ	**Ishigaki jima**	**2.15**	**86**	P		**Pn**	**01 40 04.6**	**0.0**
JIJ				*e*S		**Sn**	**01 40 31.4**	**+0.3**
JISG	**Ishigakijimahi**	**2.32**	**81**	P		**Pb**	**01 40 09.6**	**-1.3**
JISG				*e*S		**Sn**	**01 40 37.5**	**+2.2**

IDC ***15*** *01:49:00.1±0.9,51°.94N×172°.35W, h0km, mb3.9/8, mb1 4.1/10,mb1mx3.7/56, mbtmp3.8/10, ML3.6/2, MS3.4/2, Ms1 3.3/2, ms1mx2.8/38, Error ellipse: s-maj=44.4km s-min=15.6km az=172.0*

ISCJB ***15*** *01:49:02.6±0.6,51°.89N±0°.09×172°.31W±0°.05, h32km, mb3.9/8, MS3.4/2, Error ellipse: s-maj=13.2km s-min=3.2km az=168.6*

NEIC ***15*** *01:49:02.1,51°.76N×172°.30W, h42km, ML3.8(AEIC), After AEIC.*

ISC 15 01:49:04.4±0.8,51°.9N±0°.1×172°.36W±0°.04, h32km, n44, σ0s88/40, mb4.0/8, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**1.12**	**292**	P	**Pn**	**01 49 23.4**	**-0.5**
KOFP	**Korovin Flat P**	**1.13**	**288**	P	**Pn**	**01 49 23.3**	**-0.7**
KONE	**Korovin Northe**	**1.18**	**294**	P	**Pn**	**01 49 24.5**	**-0.2**
KONE				S	**Sb**	**01 49 40.1**	**-1.0**
KOKL	**Mount Kliuchef**	**1.20**	**290**	P	**Pn**	**01 49 24.5**	**-0.6**
GSMY	**Great Sitkin M**	**2.29**	**274**	P	**Pn**	**01 49 38.5**	**-1.5**
GSTD	**Great Sitkin T**	**2.34**	**275**	P	**Pn**	**01 49 39.5**	**-1.2**
GSTD				S	**Sn**	**01 50 08.9**	**+0.5**
GSCK	**Great Sitkin C**	**2.35**	**273**	P	**Pn**	**01 49 39.5**	**-1.4**
NIKH	**Nikolski High**	**2.38**	**63**	P	**Pn**	**01 49 39.1**	**-2.1**
NIKH				S	**Sn**	**01 50 09.3**	**0.0**
ETKA	**Kagalaska Isla**	**2.51**	**270**	P	**Pn**	**01 49 41.7**	**-1.3**
ADAG	**Mount Adagdak**	**2.63**	**273**	P	**Pn**	**01 49 44.6**	**+0.1**
KIRH	**Kanaga Island**	**2.93**	**271**	P	**Pn**	**01 49 48.4**	**-0.4**
OKAK	**Okmok**	**2.94**	**54**	P	**Pn**	**01 49 47.3**	**-1.5**
OKWR	**Okmok West Rim**	**2.94**	**58**	P	**Pn**	**01 49 48.9**	**0.0**
KIKV	**Kanaga Island**	**2.98**	**271**	P	**Pn**	**01 49 49.4**	**-0.1**
KICM	**Kanaga Island**	**3.00**	**272**	P	**Pn**	**01 49 49.4**	**-0.2**
OKTU	**Okmok Mt. Tuli**	**3.00**	**59**	P	**Pn**	**01 49 49.3**	**-0.5**
OKER	**Okmok East Rim**	**3.03**	**58**	P	**Pn**	**01 49 50.4**	**+0.2**
TAPA	**Tanaga Island A**	**3.38**	**270**	P	**Pn**	**01 49 54.9**	**-0.1**
TAFP	**Tanaga Falls P**	**3.48**	**272**	P	**Pn**	**01 49 56.1**	**-0.2**
MCIR	**Makushin Cirqu**	**3.88**	**56**	P	**Pn**	**01 50 01.6**	**-0.2**
MTBL	**Makushin Table**	**3.99**	**57**	P	**Pn**	**01 50 03.4**	**0.0**
UNV	**Unalaska Valle**	**4.03**	**59**	P	**Pn**	**01 50 03.2**	**-0.6**
UNV				S	**Sn**	**01 50 49.8**	**-0.1**
AKSA	**Akutan Strait**	**4.58**	**59**	P	**Pn**	**01 50 11.2**	**-0.2**
WESE	**West Dahl East**	**5.32**	**58**	P	**Pn**	**01 50 21.3**	**-0.3**
SPIA	**Saint Paul Isl**	**5.40**	**12**	P	**Pn**	**01 50 23.1**	**+0.5**
BPAW	**Bear Paw Mtn.** 1.7nm,1.2s	**16.52**	**34**	*e*Pn	**P**	**01 52 55.9**	**+0.1**
PETK	**Petropavlovsk-** 1.1nm,0.3s,baz=77,slow=15,SNR=2.8	**18.20**	**286**	P	**P**	**01 53 13.1**	**-1.3**
ILAR	**Eielson Array** 0.1nm,0.3s,baz=241,slow=11,SNR=4.0	**18.37**	**36**	P	**P**	**01 53 14.1**	**-2.0**
DLBC	**Dease Lake** 4.3nm,0.8s,baz=293,slow=12,SNR=9.5	**24.68**	**58**	P	**P**	**01 54 23.4**	**+1.3**
YKA	**Yellowknife Ar** comp=Z,14nm,18.5s,baz=180,slow=39	**31.91**	**48**	LR	LR	02 09 45.4	
NEW	**Newport** 1.6nm,0.6s,baz=290,slow=7.6,SNR=4.4	**34.90**	**74**	P	**P**	**01 55 52.6**	**-0.1**
H11N2	**WAKE ISLAND Hy** baz=21,slow=76,SNR=129	**36.01**	**215**	T	T	02 34 15.1	
H11N3	**WAKE ISLAND Hy** baz=21,slow=76,SNR=135	**36.01**	**215**	T	T	02 34 15.3	
H11N1	**WAKE ISLAND Hy** baz=21,slow=76,SNR=106	**36.02**	**215**	T	T	02 34 14.2	
H11S1	**WAKE ISLAND Hy** baz=20,slow=76,SNR=116	**37.20**	**214**	T	T	02 35 45.2	
H11S2	**WAKE ISLAND Hy** baz=20,slow=76,SNR=59	**37.22**	**214**	T	T	02 35 46.9	
H11S3	**WAKE ISLAND Hy** baz=20,slow=76,SNR=60	**37.22**	**214**	T	T	02 35 47.0	
MJAR	**Matsushiro Arr** 0.8nm,0.3s,baz=39,slow=9.2,SNR=3.8	**37.83**	**266**	P	**P**	**01 56 18.2**	**+0.3**
PDAR	**Pinedale Array** 1.5nm,0.8s,baz=296,slow=4.1,SNR=12	**42.30**	**77**	P	**P**	**01 56 55.7**	**+0.6**
SONM	**Songino Array** 0.4nm,0.7s,baz=36,slow=7.5,SNR=2.3	**49.93**	**300**	P	**P**	**01 57 54.8**	**-0.1**
TXAR	**Lajitas Array** 0.4nm,0.7s,baz=304,slow=4.3,SNR=6.3	**54.60**	**86**	P	**P**	**01 58 29.6**	**-0.2**
PPT	**Papeete** comp=Z,113nm,20.8s,baz=50,slow=31	**72.00**	**157**	LR	LR	02 26 24.6	
CMAR	**Chiang Mai Arr** 1.5nm,0.8s,baz=23,slow=7.4,SNR=8.6	**74.90**	**281**	P	**P**	**02 00 43.8**	**+1.7**
ASAR	**Alice Springs** 1.2nm,0.8s,baz=36,slow=5.4,SNR=8.7	**88.72**	**228**	P	**P**	**02 01 54.7**	**+0.2**

MAN 15 01:49:42,9°.39N×122°.02E, h44km, mb4.3, ML3.1, MS2.9, 1C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.20**	**92**	⇓*i*P	Pn	01 49 59.3	-3.1
SNPH				*i* S	Sn	01 50 14.0	-3.6
LLP	**Lapu-Lapu**	**2.13**	**64**	⇑*e*P	Pn	01 50 16.0	+0.9
LLP				*e*S	Sn	01 50 42.4	+2.1
RCP	**Roxas**	**2.27**	**18**	⇓*e*P	Pn	01 50 18.6	+1.5
RCP				*e*S	Sn	01 50 46.0	+2.1

IDC ***15*** *01:50:09.9±3.0, 36°.16N×142°.69E, h0km, mb3.5/2, mb1 3.6/4, mb1mx3.3/52, mbtmp3.5/4, ML3.3/2, Error ellipse: s-maj=64.7km s-min=32.7km az=61.0*

ISCJB ***15*** *01:50:11.7±1.0, 36°.26N±0°.06×142°.47E±0°.08, h18km, mb3.4/2, Error ellipse: s-maj=9.9km s-min=8.7km az=161.3*

JMA ***15*** *01:50:13.0±0.3, 36°.28N×142°.48E, h70km, M3.1*

ISC 15 01:50:12.3±1.5,36°.24N±0°.06×142°.5E±0°.1, h18km, n19, σ1s05/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.42**	**248**	P	**Pn**	**01 50 37.3**	**+0.1**

JHO	**Hitachi**	**1.59**	**284**	P		**Pn**	**01 50 39.1**	**-0.4**
JHO				S		**Sn**	**01 50 58.5**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.60**	**303**	P		**Pn**	**01 50 39.2**	**-0.6**
BSO1	**Boso 1**	**2.00**	**218**	P		**Pn**	**01 50 45.5**	**+0.8**
JMM	**Marumori**	**2.12**	**321**	P		**Pn**	**01 50 45.8**	**-1.0**
JFT	**Otama**	**2.14**	**307**	P		**Pn**	**01 50 47.7**	**+0.5**
BSO3	**Boso 3**	**2.15**	**229**	P		**Pb**	**01 50 48.9**	**-1.7**
JAG	**Ashikaga**	**2.45**	**275**	P		**Pn**	**01 50 51.9**	**+0.5**
JAG				S		**Sn**	**01 51 20.9**	**0.0**
JRY	**Ryogami san**	**2.91**	**267**	P		**Pn**	**01 50 57.8**	**+0.1**
JOD2	**Odawara 2**	**2.92**	**252**	P		**Pn**	**01 50 58.5**	**+0.6**
JOD2				S		**Sn**	**01 51 33.2**	**+0.6**
JYK	**Kaneyama**	**3.16**	**328**	P		**Pn**	**01 51 00.8**	**-0.4**
MJAR	**Matsushiro Arr** 2.0nm,0.3s,baz=104,slow=8.8,SNR=9.3	**3.46**	**276**	Pn		**Pn**	**01 51 05.8**	**+0.5**
MAT	**Matsushiro**	**3.46**	**276**	P		**Pn**	**01 51 06.7**	**+1.4**
MAT				*e*S		**Sn**	**01 51 45.8**	**-0.1**
JHJ	**Hachijo jima 2** 8.4nm,0.3s,baz=74,slow=20,SNR=1.6	**3.82**	**216**	Pn		**Pn**	**01 51 10.5**	**+0.3**
JHJ				Sn		**Sn**	**01 51 52.2**	**-2.5**
H11N2	**WAKE ISLAND Hy** 16nm,0.3s,baz=284,slow=23,SNR=1.9 baz=313,slow=75,SNR=9.3	**27.00**	**121**	T	T	02 24 02.6		
H11N1	**WAKE ISLAND Hy** baz=313,slow=75,SNR=7.8	**27.01**	**121**	T	T	02 24 03.4		
H11N3	**WAKE ISLAND Hy** baz=313,slow=75,SNR=7.7	**27.02**	**121**	T	T	02 24 02.6		
MKAR	**Makanchi Array** 0.7nm,0.8s,baz=92,slow=9.6,SNR=5.6	**45.27**	**303**	P	**P**	**01 58 30.8**	**+2.0**
WRA	**Warramunga Arr** 0.2nm,0.9s,baz=29,slow=7.6,SNR=3.2	**56.40**	**189**	P	**P**	**01 59 52.8**	**+0.1**

IDC ***15*** *01:59:09.8±0.8, 37°.08N×140°.74E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.3/55, mbtmp3.4/3, ML3.3/1, Error ellipse: s-maj=12.9km s-min=7.5km az=4.0*

ISCJB ***15*** *01:59:11.7±0.6, 37°.06N±0°.04×140°.64E±0°.05, h15km±7km, mb3.3/2, Error ellipse: s-maj=7.5km s-min=5.9km az=141.5*

JMA ***15*** *01:59:11.6, 37°.06N×140°.56E, h3km±2km, M3.3 Broadband fault plane solution: P waves. NP1: ϕs=278.00000°, δ71.00000°, λ-95.00000°. NP2: ϕs=112.00000°, δ20.00000°, λ-77.00000°. Principal axes: T Plg26.0000°, Azm12.0000°; N Plg4.0000°, Azm280.0000°; P Plg64.0000°, Azm181.0000°;*

JMA Felt III J1.

ISC 15 01:59:11.4±1.0,37°.07N±0°.04×140°.59E±0°.04, h14km±8km, n11, σ0s62/19, 5C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**78**	⇑P	**Pg**	**01 59 15.6**	**+0.1**
ONAJ				S	**Sg**	**01 59 18.6**	**+0.3**
JFK	**Kawauchi**	**0.37**	**37**	⇑P	**Pg**	**01 59 19.3**	**+0.3**
JFK				S	**Sb**	**01 59 24.8**	**-0.7**
JHO	**Hitachi**	**0.46**	**183**	P	**Pg**	**01 59 20.3**	**-0.2**
JFT	**Otama**	**0.49**	**336**	⇑P	**Pg**	**01 59 21.5**	**+0.3**
JFT				S	**Sg**	**01 59 28.6**	**+0.7**
JSB	**Shiboa**	**0.55**	**260**	⇓P	**Pg**	**01 59 22.6**	**+0.4**
JSB				S	**Sb**	**01 59 30.3**	**-0.3**
JFY	**Yanaizu**	**0.79**	**296**	⇑P	**Pg**	**01 59 26.5**	**-0.2**
JFY				S	**Sg**	**01 59 36.6**	**-0.5**
JMM	**Marumori**	**0.81**	**11**	⇑P	**Pg**	**01 59 26.9**	**-0.3**
JMM				S	**Sg**	**01 59 37.7**	**-0.2**
MJAR	**Matsushiro Arr** 9.2nm,0.3s,baz=75,slow=15,SNR=41	**1.98**	**255**	Pn	**Pb**	**01 59 46.0**	**-1.3**
MJAR				Sn	**Sb**	**02 00 11.9**	**0.0**
MAT	**Matsushiro**	**1.99**	**255**	P	**Pb**	**01 59 46.6**	**-0.7**
MAT				S	**Sb**	**02 00 12.7**	**+0.8**
SONM	**Songino Array** 0.2nm,0.4s,baz=106,slow=10,SNR=2.2	**27.22**	**304**	P	**P**	**02 04 55.8**	**+0.9**
WRA	**Warramunga Arr** 0.3nm,0.5s,baz=2.3,slow=7.5,SNR=9.8	**57.01**	**187**	P	**P**	**02 08 57.2**	**+0.5**

ISCJB ***15*** *02:09:57.6±0.8, 33°.24S±0°.05×178°.5W±0°.1, h32km, mb4.4/7, MS3.7/3, Error ellipse: s-maj=15.9km s-min=6.8km az=11.2*

NEIC ***15*** *02:09:59.2±6.7, 33°.46S×178°.42W, h35km±43km, mb4.4/3, Error ellipse: s-maj=30.9km s-min=13.2km az=67.0*

IDC ***15*** *02:10:04.4±3.1, 33°.23S×178°.50W, h75km±26km, mb4.2/4, mb1 4.3/5, mb1mx3.8/25, mbtmp4.5/5, MS3.8/4, Ms1 3.7/4, ms1mx3.2/22, Error ellipse: s-maj=41.7km s-min=19.4km az=0.0*

ISC 15 02:09:58.9±0.7, 33°.16S±0°.07×178°.5W±0°.1, h32km, n42, σ1s99/49, mb4.5/7, MS3.6/3, 2C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.93**	**8**	S	**Sn**	**02 11 38.3**	**-3.8**
	136nm,0.3s,baz=256,slow=22,SNR=3.6						
WMGZ	**Waiomatatini S**	**5.28**	**208**	PN	**Pn**	**02 11 16.2**	**+0.6**
WMGZ				SN	**Sn**	**02 12 18.6**	**+3.3**
PKGZ	**Pakihiroa**	**5.47**	**210**	PN	**Pn**	**02 11 17.3**	**-1.0**
PKGZ				SN	**Sn**	**02 12 20.9**	**+0.7**
PUZ	**Puketiti**	**5.56**	**207**	PN	**Pn**	**02 11 18.4**	**-1.1**
RUGZ	**Raukumara Rang**	**5.71**	**212**	PN	**Pn**	**02 11 21.8**	**+0.2**
TWGZ	**Tauwhareparae**	**5.76**	**209**	PN	**Pn**	**02 11 21.5**	**-0.7**
TWGZ				SN	**Sn**	**02 12 29.4**	**+2.1**
CNGZ	**Carnagh Statio**	**5.94**	**206**	PN	**Pn**	**02 11 25.7**	**+1.1**
MWZ	**Matawai**	**6.08**	**211**	PN	**Pn**	**02 11 25.4**	**-1.3**
URZ	**Urewera** 10.0nm,0.3s,baz=65,slow=19,SNR=51	**6.21**	**214**	P	**Pn**	**02 11 27.4**	**-1.0**
URZ				S	**Sn**	**02 12 39.0**	**+0.8**
	8.8nm,0.3s,baz=175,slow=18,SNR=8.7						
URZ	**Urewera** 54nm,0.6s	**6.21**	**214**	*e*Pn	**Pn**	**02 11 25.5**	**-2.8**
URZ				*e*Sn	**Sn**	**02 12 30.8**	**-7.4**
URZ	**Urewera**	**6.21**	**214**	PN	**Pn**	**02 11 27.2**	**-1.1**
RIGZ	**Rimuhau**	**6.30**	**208**	PN	**Pn**	**02 11 28.9**	**-0.8**
RIGZ				SN	**Sn**	**02 12 40.9**	**+0.3**
SNGZ	**Shannon Statio**	**6.54**	**210**	PN	**Pn**	**02 11 33.5**	**+0.6**
KNZ	**Kokohu**	**6.61**	**207**	PN	**Pn**	**02 11 31.2**	**-2.6**
KHZ	**Kahutara**	**11.17**	**212**	*e*Pn	**Pn**	**02 12 32.1**	**-4.2**
RPZ	**Rata Peaks** 1.3nm,0.3s,baz=306,slow=23,SNR=1.7	**13.32**	**215**	P	Pn	02 12 59.1	-6.7
RPZ				S	Sn	02 15 20.7	-12
	0.4nm,0.3s,baz=96,slow=23,SNR=1.6						
DZM	**Mont Dzumac** 0.3nm,0.3s,baz=122,slow=19,SNR=4.0	**17.30**	**306**	P	**P**	**02 14 03.1**	**+3.7**
DZM				LR	LR	02 19 27.1	
	comp=Z,450nm,20.1s,baz=216,slow=32						
DZM	**Mont Dzumac**	**17.30**	**306**	*e*Pn	**P**	**02 14 02.3**	**+2.9**
STKA	**Stephens Creek** comp=Z,216nm,18.2s,baz=35,slow=36	**33.53**	**261**	LR	LR	02 30 05.0	
CTA	**Charters Tower** 4.1nm,0.5s,baz=113,slow=8.2,SNR=6.3	**33.92**	**284**	P	**P**	**02 16 41.3**	**+2.1**
CTAO	**Charters Tower** 35nm,0.6s	**33.92**	**284**	*e*P	**P**	**02 16 40.4**	**+1.2**
COEN	**Coen** 4.8nm,0.6s	**39.70**	**290**	*e*P	**P**	**02 17 30.5**	**+2.0**
ASAR	**Alice Springs** 5.8nm,0.6s,baz=111,slow=7.8,SNR=64	**42.61**	**270**	P	**P**	**02 17 52.8**	**+0.4**
ASAR				PcP	**PcP**	**02 19 44.6**	**+0.4**
	0.5nm,0.5s,baz=112,slow=4.6,SNR=2.7						
ASAR				S	**S**	**02 24 12.1**	**-1.2**
	1.4nm,0.9s,baz=111,slow=16,SNR=6.0						
ASAR				LR	LR	02 36 30.1	
	comp=Z,60nm,18.1s,baz=108,slow=37						
WRAB	**Tennant Creek** 7.8nm,0.9s	**43.84**	**275**	*e*P	**P**	**02 18 02.4**	**0.0**
WRA	**Warramunga Arr** 5.9nm,0.7s,baz=114,slow=8.0,SNR=88	**43.85**	**275**	P	**P**	**02 18 02.9**	**+0.5**
WRA				S	**S**	**02 24 29.4**	**-2.1**
	1.3nm,0.9s,baz=117,slow=12,SNR=3.6						
WRA				LR	LR	02 34 52.2	
	comp=Z,72nm,20.7s,baz=80,slow=34						
CASY	**Casey** 1.0nm,0.7s	**52.51**	**209**	*e*P	**P**	**02 19 06.8**	**-1.8**
QSPA	**South Pole Qui**	**56.95**	**180**	*e*P	**P**	**02 19 42.6**	**+1.7**
SYO	**Syowa Base**	**74.33**	**193**	⇑*e*P	**P**	**02 21 32.4**	**-0.4**
SYO	**Syowa Base**	**74.33**	**193**	⇑*e*PcP	**PcP**	**02 21 45.1**	**-2.4**
SNAA	**Sanae**	**75.41**	**179**	*e*P	**P**	**02 21 40.0**	**+0.8**
PETK	**Petropavlovsk-** 0.8nm,0.4s,baz=120,slow=5.1,SNR=3.2	**88.38**	**346**	P	**P**	**02 22 48.2**	**+1.1**
RES	**Resolute Bay**	**120.00**	**18**	*e*PKPdf	**PKPdf**	**02 28 45.5**	**+0.4**
KURK	**Kurchatov**	**122.62**	**313**	*e*PKPdf	**PKPdf**	**02 28 50.8**	**0.0**
BRVK	**Borovoye**	**128.12**	**314**	*e*PKPdf	**PKPdf**	**02 29 00.6**	**-0.7**
KBZ	**Khabaz** 2.2nm,0.8s,baz=108,slow=3.2,SNR=4.1	**146.22**	**300**	PKPbc	**PKPbc**	**02 29 36.2**	**+0.3**

KIV	**Kislovodsk**	**146.35**	**301**	*e*PKPbc	**PKPbc**	**02 29 36.9**	**+0.4**
FINES	**FINESS Array B** 12nm,0.9s,baz=43,slow=3.3,SNR=33	**147.56**	**338**	PKPbc	**PKPbc**	**02 29 38.8**	**-0.3**
NB2	**NORSAR Subarra** comp=Z,1.7nm,0.6s,baz=16,slow=2.6	**151.40**	**350**	PKP	**PKPbc**	**02 29 48.5**	**-0.2**
NOA	**NORSAR Array B** comp=Z,1.6nm,0.5s,baz=14,slow=4.1,SNR=10	**151.40**	**350**	PKPbc	**PKPbc**	**02 29 48.6**	**-0.1**
AKASG	**Malin Array Be** comp=Z,0.6nm,0.4s,baz=48,slow=2.8,SNR=3.6	**153.17**	**319**	PKPbc	**PKPbc**	**02 29 51.7**	**-1.3**
BRTR	**Keskin Array B** comp=Z,1.8nm,0.5s,baz=136,slow=3.6,SNR=19	**153.42**	**293**	PKPbc	**PKPbc**	**02 29 54.3**	**+0.2**
TORD	**Torodi Ar. Bea** comp=Z,0.4nm,0.6s,baz=168,slow=7.4,SNR=3.6	**160.07**	**181**	PKPab	**PKPab**	**02 30 35.5**	**+0.3**

ISCJB ***15*** *02:14:38.9±0.5, 39°.06N±0°.04×28°.99E±0°.04, h12km±5km, Error ellipse: s-maj=7.0km s-min=4.3km az=150.8*

CSEM ***15*** *02:14:38.7±0.1, 39°.07N×28°.97E, h10km, MD2.7, Error ellipse: s-maj=2.4km s-min=1.8km az=128.0*

ISK ***15*** *02:14:38.6, 39°.04N×29°.00E, h18km, MD2.6*

DDA ***15*** *02:14:38.7, 39°.06N×29°.00E, h7km, Md2.7*

ISC 15 02:14:38.9±0.9, 39°.05N±0°.04×29°.00E±0°.03, h13km±7km, n24, σ0s24/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**268**	*i* P	**Pg**	**02 14 43.8**	**0.0**
DEMI				*i* S	**Sg**	**02 14 47.0**	**-0.1**
DEMI	**Demirci**	**0.22**	**268**	P	**Pg**	**02 14 43.8**	**0.0**
DEMI				S	**Sg**	**02 14 47.0**	**-0.1**
GEDZ	**Gediz**	**0.32**	**91**	*e*PG	**Pg**	**02 14 45.6**	**+0.1**
GEDZ				*e*SG	**Sb**	**02 14 51.2**	**-0.4**
GEDZ	**Gediz**	**0.32**	**91**	*e*Pg	**Pg**	**02 14 45.6**	**+0.1**
GEDZ				*e*Sg	**Sb**	**02 14 51.2**	**-0.4**
GDZ	**Gediz**	**0.38**	**84**	*i* P	**Pg**	**02 14 46.5**	**0.0**
GDZ				*i* S	**Sg**	**02 14 51.9**	**+0.2**
GDZ	**Gediz**	**0.38**	**84**	P	**Pg**	**02 14 46.5**	**0.0**
GDZ				S	**Sg**	**02 14 51.9**	**+0.2**
KULA	**Kula-Manisa**	**0.60**	**207**	*e*PG	**Pg**	**02 14 50.7**	**+0.1**
KULA				*e*SG	**Sb**	**02 14 59.6**	**0.0**
KULA	**Kula-Manisa**	**0.60**	**207**	*e*Pg	**Pg**	**02 14 50.7**	**+0.1**
KULA				*e*Sg	**Sb**	**02 14 59.6**	**0.0**
MANT	**Manisa**	**0.66**	**212**	*i* P	**Pg**	**02 14 51.6**	**-0.1**
MANT				*i* S	**Sg**	**02 15 00.5**	**+0.1**
MANT	**Manisa**	**0.66**	**212**	P	**Pg**	**02 14 51.6**	**-0.1**
MANT				S	**Sg**	**02 15 00.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**338**	*e*PN	**Pn**	**02 15 02.6**	**-0.3**
KCTX				*e*SN	**Sn**	**02 15 20.6**	**+0.3**
KCTX	**Karacabey (Bur**	**1.31**	**338**	*e*Pn	**Pn**	**02 15 02.6**	**-0.3**
KCTX				*e*Sn	**Sn**	**02 15 20.6**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.32**	**356**	*e*PN	**Pn**	**02 15 02.9**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.32**	**356**	*e*Pn	**Pn**	**02 15 02.9**	**-0.1**
CAVI	**Cavuskoy**	**1.32**	**29**	*e*PN	**Pn**	**02 15 02.6**	**-0.5**
CAVI	**Cavuskoy**	**1.32**	**29**	*e*Pn	**Pn**	**02 15 02.6**	**-0.5**
IZI	**Iznik**	**1.34**	**16**	*e*PN	**Pn**	**02 15 03.3**	**0.0**
IZI	**Iznik**	**1.34**	**16**	*e*Pn	**Pn**	**02 15 03.3**	**0.0**
BORA	**Eskisehir**	**1.40**	**53**	*i* P	**Pb**	**02 15 05.0**	**0.0**
BORA				*i* S	**Sn**	**02 15 22.9**	**+0.4**
BORA	**Eskisehir**	**1.40**	**53**	P	**Pb**	**02 15 04.9**	**0.0**
BORA				S	**Sn**	**02 15 22.9**	**+0.4**
ADVT	**Abdulvahap**	**1.50**	**22**	*e*PN	**Pn**	**02 15 05.1**	**-0.3**
ADVT	**Abdulvahap**	**1.50**	**22**	*e*Pn	**Pn**	**02 15 05.1**	**-0.3**
ARMT	**Armutlu**	**1.52**	**356**	*e*PN	**Pn**	**02 15 05.9**	**+0.1**
ARMT	**Armutlu**	**1.52**	**356**	*e*Pn	**Pn**	**02 15 05.9**	**+0.1**

IDC 15 02:18:27.7±3.2, 33°.23S×178°.47W, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.6/20, mbtmp3.6/3, ML3.4/1, Error ellipse: s-maj=76.0km s-min=37.0km az=117.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera** 0.8nm,0.3s,baz=261,slow=3.5,SNR=6.6	**6.17**	**214**	Pn	**Pn**	**02 20 00.8**	**+0.7**
URZ				Sn	**Sn**	**02 21 11.9**	**+0.6**
	0.4nm,0.3s,baz=251,slow=2.4,SNR=1.9						
ASAR	**Alice Springs** 0.4nm,0.6s,baz=111,slow=7.1,SNR=4.2	**42.64**	**270**	P	P	**02 26 26.0**	**-0.1**
WRA	**Warramunga Arr** 0.5nm,0.5s,baz=119,slow=7.6,SNR=5.5	**43.88**	**275**	P	P	**02 26 35.9**	**-0.3**
FINES	**FINESS Array B** 3.5nm,1.0s,baz=16,slow=5.9,SNR=5.1	**147.64

Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.16**	**259**	P	P	02 33 15.0	-0.3
	1.1nm,0.5s,baz=101,slow=6.7,SNR=11						
WRA	**Warramunga Arr**	**44.46**	**264**	P	P	02 33 17.6	-0.1
	2.1nm,0.5s,baz=96,slow=8.4,SNR=58						
BRTR	**Keskin Array B**	**148.48**	**310**	PKPbc	PKPbc	02 44 53.0	-0.6
	0.2nm,0.5s,baz=83,slow=4.8,SNR=2.6						

*ISCJB **15** 02:31:12.6±1.1,32°.19N±0°.06×115°.21W±0°.08, h24km±8km, Error ellipse: s-maj=10.9km s-min=10.1km az=1.5*
*ECX **15** 02:31:14.0±0.5,32°.17N×115°.24W, h6km, MD2.5,ML2.7*
*MEX **15** 02:31:14.2±0.6,32°.25N×115°.09W, h26km±13km, MD3.9*

ISC 15 02:31:12.2±1.6,32°.23N±0°.06×115°.19W±0°.07, h27km±11km,n11,σ0°35/17,4C-1D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.22**	**332**	*e*P	**Pn**	**02 31 19.0**	**-0.7**
CPBX				*e*S	**Sb**	**02 31 22.3**	**-0.1**
CPBX				IAML		02 31 25.6	
	comp=N,2μm,0.2s						
CPBX				⇑*e*		02 31 25.6	
EMSC	**East Mesa**	**0.54**	**18**	*e*P	**Pn**	**02 31 24.3**	**+0.1**
SGL	**Mount Signal**	**0.62**	**313**	*e*P	**Pn**	**02 31 25.1**	**-0.2**
YUH	**Yuha Desert**	**0.75**	**304**	⇑*i*P	**Pn**	**02 31 27.2**	**+0.2**
RMX	**La Rumorosa**	**0.84**	**297**	*e*P	**Pn**	**02 31 28.2**	**-0.3**
RMX				*e*S	**Sb**	**02 31 39.4**	**0.0**
IKP	**In-Ko-Pah, Jac**	**0.89**	**299**	⇑*e*P	**Pb**	**02 31 29.7**	**+0.6**
ZAX	**El Zacaton**	**1.17**	**233**	*e*P	**Pn**	**02 31 33.1**	**+0.3**
ZAX				*e*S	**Sn**	**02 31 47.8**	**-0.1**
SPX	**San Pedro Mart**	**1.20**	**191**	⇓*e*P	**Pn**	**02 31 33.4**	**-0.2**
CBX	**Cerro Bola**	**1.26**	**274**	*e*P	**Pb**	**02 31 34.9**	**-0.3**
CBX				*e*S	**Sb**	**02 31 51.1**	**0.0**
CBX	**Cerro Bola**	**1.26**	**274**	⇑*e*P	**Pb**	**02 31 35.0**	**-0.3**
CBX				*e*S	**Sb**	**02 31 51.1**	**0.0**
CBX				IAML		02 31 52.9	
	comp=E,256nm,0.3s						
TJIG	**Tijuana**	**1.28**	**280**	*e*P	**Pn**	**02 31 34.4**	**0.0**
TJIG				*e*S	**Sn**	**02 31 51.0**	**+0.4**

*ISK **15** 02:41:42.6,39°.50N×28°.04E, h2km, MD2.7*
*ISCJB **15** 02:41:43.4±0.6,39°.50N±0°.02×28°.06E±0°.04, h2km±5km, Error ellipse: s-maj=5.0km s-min=3.8km az=149.1*
*CSEM **15** 02:41:43.6±0.1,39°.50N×28°.06E, h5km, MD2.7, Error ellipse: s-maj=3.5km s-min=2.9km az=55.0*
*DDA **15** 02:41:44.5,39°.41N×28°.06E, h7km, Md2.8*

ISC 15 02:41:43.9±0.9,39°.49N±0°.02×28°.05E±0°.02,h11km±7km, n46,σ0°59/62,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.20**	**319**	*e*PG	**Pg**	**02 41 47.9**	**-0.3**
BALB				*e*SG	**Sg**	**02 41 51.6**	**+0.5**
BALB	**Balikesir**	**0.20**	**319**	*e*Pg	**Pg**	**02 41 47.9**	**-0.3**
BALB				*e*Sg	**Sg**	**02 41 51.6**	**+0.5**
GONE	**Gonen-Balikesi**	**0.62**	**333**	*e*PG	**Pg**	**02 41 55.5**	**-0.5**
GONE	**Gonen-Balikesi**	**0.62**	**333**	*e*Pg	**Pg**	**02 41 55.5**	**-0.5**
AKS	**Akhisar**	**0.64**	**197**	*e*PG	**Pg**	**02 41 56.0**	**-0.3**
AKS				*e*SG	**Sb**	**02 42 05.7**	**-0.3**
AKS	**Akhisar**	**0.64**	**197**	*e*Pg	**Pg**	**02 41 56.0**	**-0.3**
AKS				*e*Sg	**Sb**	**02 42 05.7**	**-0.3**
DEMI	**Demirci**	**0.69**	**131**	*i* P	**Pg**	**02 41 57.0**	**-0.2**
DEMI				*i* S	**Sb**	**02 42 06.8**	**-0.7**
DEMI	**Demirci**	**0.69**	**131**	P	**Pg**	**02 41 57.0**	**-0.2**
DEMI				S	**Sb**	**02 42 06.8**	**-0.7**
KCTX	**Karacabey (Bur**	**0.81**	**17**	*e*PG	**Pg**	**02 41 58.9**	**-0.7**
KCTX	**Karacabey (Bur**	**0.81**	**17**	*e*Pg	**Pg**	**02 41 58.9**	**-0.7**
EDC	**Edincik**	**0.87**	**351**	*e*PG	**Pg**	**02 41 59.8**	**-0.9**
EDC	**Edincik**	**0.87**	**351**	*e*Pg	**Pg**	**02 41 59.8**	**-0.9**
DKL	**Dikili**	**0.98**	**245**	*e*PG	**Pg**	**02 42 02.2**	**-0.6**
DKL	**Dikili**	**0.98**	**245**	*e*Pg	**Pg**	**02 42 02.2**	**-0.6**
AYVA	**Ayvalik**	**1.07**	**261**	*i* P	**Pb**	**02 42 05.0**	**+0.5**
AYVA				*i* S	**Sn**	**02 42 19.8**	**+0.1**
AYVA	**Ayvalik**	**1.07**	**261**	P	**Pb**	**02 42 04.9**	**+0.5**
AYVA				S	**Sn**	**02 42 19.8**	**+0.1**
KRBG	**Karabiga-Canak**	**1.07**	**328**	*e*PG	**Pg**	**02 42 03.4**	**-1.1**
KRBG	**Karabiga-Canak**	**1.07**	**328**	*e*Pg	**Pg**	**02 42 03.4**	**-1.1**
MANT	**Manisa**	**1.07**	**158**	*i* P	**Pg**	**02 42 03.7**	**-0.9**
MANT				*i* S	**Sg**	**02 42 17.9**	**-0.7**
MANT	**Manisa**	**1.07**	**158**	P	**Pg**	**02 42 03.7**	**-0.9**
MANT				S	**Sg**	**02 42 17.9**	**-0.7**
KULA	**Kula-Manisa**	**1.08**	**154**	*e*PN	**Pg**	**02 42 04.3**	**-0.5**
KULA	**Kula-Manisa**	**1.08**	**154**	*e*Pn	**Pg**	**02 42 04.3**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.09**	**36**	*e*PN	**Pg**	**02 42 04.5**	**-0.4**
MDNY				*e*SN	**Sn**	**02 42 20.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.09**	**36**	*e*Pn	**Pg**	**02 42 04.5**	**-0.4**
MDNY				*e*Sn	**Sn**	**02 42 20.2**	**0.0**
MRMT	**Marmara Adasi**	**1.17**	**343**	*e*PN	**Pg**	**02 42 05.9**	**-0.5**
MRMT	**Marmara Adasi**	**1.17**	**343**	*e*Pn	**Pg**	**02 42 05.9**	**-0.5**
GDZ	**Gediz**	**1.18**	**109**	*i* P	**Pb**	**02 42 06.7**	**+0.2**
GDZ				*i* S	**Sb**	**02 42 22.6**	**+0.7**
GDZ	**Gediz**	**1.18**	**109**	P	**Pb**	**02 42 06.7**	**+0.2**
GDZ				S	**Sb**	**02 42 22.6**	**+0.7**
ARMT	**Armutlu**	**1.24**	**30**	*e*PN	**Pg**	**02 42 06.8**	**-1.0**
ARMT	**Armutlu**	**1.24**	**30**	*e*Pn	**Pg**	**02 42 06.8**	**-1.0**
RKY	**Sarkoy-Tekirda**	**1.37**	**331**	*e*PN	**Pb**	**02 42 09.6**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.37**	**331**	*e*Pn	**Pb**	**02 42 09.6**	**0.0**
IZI	**Iznik**	**1.38**	**52**	*e*PN	**Pb**	**02 42 09.9**	**0.0**
IZI	**Iznik**	**1.38**	**52**	*e*Pn	**Pb**	**02 42 09.9**	**0.0**
GELI	**Tayfur-Gelibol**	**1.51**	**307**	*e*PN	**Pb**	**02 42 11.8**	**-0.2**
GELI	**Tayfur-Gelibol**	**1.51**	**307**	*e*Pn	**Pb**	**02 42 11.8**	**-0.2**
CAVI	**Cavuskoy**	**1.55**	**62**	*e*PN	**Pb**	**02 42 12.3**	**-0.4**
CAVI	**Cavuskoy**	**1.55**	**62**	*e*Pn	**Pb**	**02 42 12.3**	**-0.4**
ADVT	**Abdulvahap**	**1.60**	**54**	*e*PN	**Pn**	**02 42 13.0**	**+0.8**
ADVT	**Abdulvahap**	**1.60**	**54**	*e*Pn	**Pn**	**02 42 13.0**	**+0.8**
CTKS	**Kestanelik-??a**	**1.78**	**11**	*e*PN	**Pn**	**02 42 14.9**	**+0.3**
CTKS	**Kestanelik-??a**	**1.78**	**11**	*e*Pn	**Pn**	**02 42 14.9**	**+0.3**
BORA	**Eskisehir**	**1.90**	**77**	*i* P	**Pb**	**02 42 18.6**	**-0.1**
BORA				*i* S	**Sg**	**02 42 45.6**	**+0.7**
BORA	**Eskisehir**	**1.90**	**77**	P	**Pb**	**02 42 18.5**	**-0.1**
BORA				S	**Sg**	**02 42 45.6**	**+0.7**
ALN	**Alexandroupoli**	**2.08**	**313**	*e*PN	**Pn**	**02 42 19.4**	**+0.6**
ALN	**Alexandroupoli**	**2.08**	**313**	*e*Pn	**Pn**	**02 42 19.4**	**+0.6**

IDC 15 02:43:36.0±2.3,20°.41S×176°.95W, h347km±26km, mb3.6/4,mb1 3.7/7,mb1mx3.4/27,mbtmp4.4/7,Error ellipse: s-maj=37.8km s-min=17.9km az=136.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**8.13**	**38**	P	Pn	02 45 32.0	+0.1
	4.9nm,0.3s,baz=32,slow=18,SNR=3.0						
AFI				S	S	02 46 54.5	-12
	2.4nm,0.3s,baz=243,slow=23,SNR=2.5						
DZM	**Mont Dzumac**	**15.58**	**261**	P	Pn	02 46 58.6	-1.2
	0.9nm,0.3s,baz=70,slow=18,SNR=6.9						
URZ	**Urewera**	**18.52**	**195**	P	P	02 47 28.5	-0.1
	0.4nm,0.3s,baz=307,slow=6.4,SNR=2.5						
URZ				S	S	02 50 46.6	+5.1
	0.5nm,0.3s,baz=243,slow=22,SNR=4.1						
STKA	**Stephens Creek**	**38.72**	**244**	P	P	02 50 27.9	-0.1
	1.1nm,0.5s,baz=87,slow=12,SNR=4.8						
ASAR	**Alice Springs**	**45.50**	**256**	P	P	02 51 22.4	0.0
	8.5nm,0.5s,baz=92,slow=8.4,SNR=92						
WRA	**Warramunga Arr**	**45.59**	**262**	P	P	02 51 22.3	-0.9
	4.5nm,0.3s,baz=95,slow=7.5,SNR=129						
ILAR	**Eielson Array**	**88.01**	**12**	P	P	02 55 45.9	-1.1
	0.1nm,0.4s,baz=227,slow=5.6,SNR=4.5						
BRTR	**Keskin Array B**	**147.50**	**313**	PKPbc	PKPbc	03 02 39.7	-0.4
	0.2nm,0.4s,baz=72,slow=4.7,SNR=3.0						
GERES	**GERESS Array B**	**150.37**	**346**	PKPbc	PKPbc	03 02 47.3	+0.5
	0.6nm,0.7s,baz=32,slow=5.2,SNR=5.6						

*ISCJB **15** 02:46:56.8±0.6,36°.06N±0°.06×71°.38E±0°.08, h100km, mb3.7/5, Error ellipse: s-maj=11.4km s-min=5.0km az=137.3*
*IDC **15** 02:46:57.3±4.8,36°.02N×71°.36E, h75km±31km, mb3.6/6, mb1 3.7/12,mb1mx3.4/50,mbtmp3.9/12, Error ellipse: s-maj=55.6km s-min=24.4km az=148.0*
*NNC **15** 02:47:06.3±3.7,36°.83N×70°.85E, h104km±81km, mb3.6, mpv4.3, Error ellipse: s-maj=28.3km s-min=27.3km az=146.0*

ISC 15 02:46:57.9±0.7,36°.11N±0°.07×71°.36E±0°.06,h100km,n26, σ2°89/33,mb3.9/5,6C-6D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAS	**Manas**	**6.43**	**8**	⇓P	**Pn**	**02 48 30.3**	**+0.1**
	10nm,0.6s						
MNAS				⇓S	**Sn**	**02 49 35.1**	**-7.0**
	17nm,0.6s						
SDNR	**Sundarnagar**	**6.55**	**133**	*e*P	Pn	02 48 42.0	+10
SDNR				*e*S	Sn	02 49 53.0	+7.9
AAK	**Ala-Archa**	**6.96**	**19**	P	**Pn**	**02 48 38.7**	**+1.4**
	12nm,0.3s,baz=184,slow=6.7,SNR=31						
AAK				S	**Sn**	**02 49 50.2**	**-4.7**
	1.3nm,0.3s,baz=207,slow=11,SNR=1.4						
AAK	**Ala-Archa**	**6.96**	**19**	⇑P	**Pn**	**02 48 38.6**	**+1.2**
	13nm,0.3s						
AAK				⇑S	**Sn**	**02 49 52.0**	**-3.0**
	9.1nm,0.6s						
KK31	**Karatay Array**	**7.01**	**355**	⇓P	**Pn**	**02 48 37.2**	**-0.7**
	9.9nm,0.2s,baz=182,slow=12,SNR=335						
KK31				⇑S	Sn	02 49 48.2	-7.9
	1.7nm,0.3s,baz=182,slow=24,SNR=3.6						
TKM2	**Tokmak 2**	**7.55**	**24**	⇓P	**Pn**	**02 48 46.5**	**+1.1**
	7.0nm,0.5s						
TKM2				⇓S	**Sn**	**02 50 05.5**	**-3.9**
	9.0nm,1.3s						
GEYT	**Alibeck**	**10.74**	**284**	P	**Pn**	**02 49 28.9**	**+0.2**
	0.8nm,0.3s,baz=94,slow=10,SNR=4.5						
GEYT				S	**Sn**	**02 51 20.9**	**-6.1**
	1.2nm,0.3s,baz=81,slow=18,SNR=5.1						
PYUN	**Piuthan**	**12.68**	**126**	*e*P	**Pn**	**02 49 51.0**	**-3.9**
	7.9nm,0.3s						
PYUN				*e*S	**Sn**	**02 52 12.9**	**-1.5**
KOLN	**Koldanda**	**13.30**	**125**	*e*P	**Pn**	**02 50 00.1**	**-2.9**
	5.1nm,0.3s						
MK31	**Makanchi Array**	**13.45**	**34**	⇑P	**P**	**02 50 14.3**	**+4.1**
	0.5nm,0.4s,baz=208,slow=9.2,SNR=9.6						
MKAR	**Makanchi Array**	**13.45**	**34**	P	**Pn**	**02 50 05.5**	**+1.0**
	0.1nm,0.3s,baz=219,slow=15,SNR=3.6						
GKN	**Gorkha**	**13.85**	**122**	*e*P	**Pn**	**02 50 08.0**	**-2.1**
	9.9nm,0.3s						
GKN				*e*S	**Sn**	**02 52 41.3**	**-1.4**
PKIN	**Phulchoki**	**14.64**	**122**	*e*P	**Pn**	**02 50 18.5**	**-1.9**
	7.7nm,0.3s						
PKIN				*e*S	**Sn**	**02 53 00.4**	**-1.6**
KURBB	**Kurchatov Arra**	**15.40**	**17**	P	**P**	**02 50 31.9**	**0.0**
	0.1nm,0.3s,baz=206,slow=11,SNR=9.1						
AB31	**Akbulak array**	**15.56**	**331**	⇓P	**Pn**	**02 50 29.2**	**-2.4**
	2.1nm,0.5s,baz=137,slow=13,SNR=54						
AB31				S	Sn	02 53 11.2	-12
	0.9nm,0.5s,baz=154,slow=24,SNR=4.1						
BVA0	**Borovoye Array**	**16.93**	**358**	⇑P	**P**	**02 50 52.2**	**+3.4**
	1.4nm,0.8s,baz=158,slow=9.3,SNR=4.3						
BVAR	**Borovoye Array**	**16.93**	**358**	P	**Pn**	**02 50 48.8**	**+0.4**
	0.4nm,0.3s,baz=166,slow=13,SNR=4.8						
AKTO	**Aktyubinsk**	**17.26**	**330**	P	**P**	**02 50 52.4**	**-0.1**
	0.6nm,0.3s,baz=140,slow=11,SNR=9.7						
AKTO	**Aktyubinsk**	**17.26**	**330**	⇑P	**P**	**02 50 51.5**	**-1.1**
	3.0nm,0.6s						
ZALV	**Zalesovo Beam**	**20.15**	**24**	P	**P**	**02 51 25.2**	**+1.2**
	2.0nm,0.3s,baz=213,slow=11,SNR=10						
FINES	**FINESS Array B**	**37.97**	**326**	P	**P**	**02 54 08.0**	**+2.5**
	0.9nm,0.6s,baz=119,slow=8.1,SNR=8.0						
ARCES	**ARCESS Array B**	**41.61**	**338**	P	**P**	**02 54 38.4**	**+2.7**
	3.9nm,0.9s,baz=116,slow=9.1,SNR=10						
NB2	**NORSAR Subarra**	**44.86**	**323**	P	**P**	**02 55 04.3**	**+2.3**
	comp=Z,0.9nm,0.5s,baz=95,slow=7.9						
NOA	**NORSAR Array B**	**44.86**	**323**	P	**P**	**02 55 04.5**	**+2.5**
	comp=Z,1.2nm,0.5s,baz=97,slow=7.7,SNR=9.0						
TORD	**Torodi Ar. Bea**	**66.00**	**269**	P	**P**	**02 57 35.7**	**+1.7**
	comp=Z,0.3nm,0.4s,baz=56,slow=5.8,SNR=7.7						
YKA	**Yellowknife Ar**	**81.62**	**3**	P	**P**	**02 59 07.4**	**+2.9**
	comp=Z,0.4nm,0.6s,baz=347,slow=5.5,SNR=3.1						

MAN 15 02:58:58,9°.52N×122°.07E, h9km, mb4.7,ML3.6,MS3.5, 5C-1D,Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.16**	**99**	⇑*i*P	Pb	02 59 17.9	-2.4
SNPH				*i* S	Sg	02 59 31.7	-3.9
JAP	**San Jose, Anti**	**1.22**	**354**	⇑*i*P	Pn	02 59 21.0	-0.3
DCPH	**Dipolog City**	**1.57**	**126**	⇑*e*P	Pg	02 59 29.0	+0.8
DCPH				*e*S	Sg	02 59 50.5	+1.9
TBP	**Tagbilaran**	**1.77**	**84**	*i* P	Pb	02 59 29.9	-0.8
TBP				*i* S	Sb	02 59 53.3	+0.1
LLP	**Lapu-Lapu**	**2.03**	**67**	⇑*e*P	Pn	02 59 32.3	-0.1
LLP				*e*S	Sb	02 59 59.5	-1.0
RCP	**Roxas**	**2.13**	**18**	⇑*e*P	Pn	02 59 34.7	+0.9
RCP				*e*S	Sn	03 00 00.7	+0.2
PLP	**Palo**	**3.29**	**60**	⇓*e*P	Pn	02 59 50.0	+0.2

*ISCJB **15** 03:00:40.7±0.6,6°.79N±0°.04×73°.02W±0°.04, h154km±6km, Error ellipse: s-maj=8.9km s-min=4.5km az=43.0*
*FUNV **15** 03:00:42.8,7°.01N×73°.04W, h172km, MW2.6*
*RSNC **15** 03:00:43.3±0.6,6°.78N×73°.10W, h141km±3km, ML2.7*

ISC 15 03:00:39.5±1.4,6°.85N±0°.04×73°.04W±0°.05,h166km±8km, n23,σ1°78/39,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GIRC	**Giron, Santand**	**0.27**	**327**	*e*P	**Pn**	**03 01 02.8**	**+0.7**
GIRC				*e*S	**Sn**	**03 01 17.3**	**-2.1**
BARC	**Barichara**	**0.29**	**208**	*i* P	**Pn**	**03 01 02.3**	**0.0**
BARC				*e*S	**Sn**	**03 01 17.0**	**-2.7**
BARC				*i*		03 01 18.3	
	comp=Z,121nm,0.3s						
PAMC	**Pamplona, Colo**	**0.59**	**35**	*e*P	**Pn**	**03 01 05.0**	**+1.3**
PAMC				*e*S	**Sn**	**03 01 21.9**	**-0.4**
BRRC	**Barranca, Sant**	**0.71**	**291**	*e*P	**Pn**	**03 01 04.0**	**+0.2**
BRRC				*e*S	**Sn**	**03 01 21.0**	**-1.4**
BRRC				*i*		03 01 25.2	
	comp=Z,116nm,0.3s						
CBRI	**Barrientos, No**	**0.89**	**16**	*e*P	**Pn**	**03 01 06.7**	**+1.5**
CBRI				*e*S	**Sn**	**03 01 25.0**	**-0.1**
CBRI				*i*		03 01 30.3	
	comp=Z,87nm,0.4s						
GRMC	**Gramalote, San**	**0.89**	**15**	*e*P	**Pn**	**03 01 08.0**	**+2.8**
GRMC				*e*S	**Sn**	**03 01 27.4**	**+2.4**
GRMC				*i*		03 01 29.9	
	comp=Z,73nm,0.3s						
RUSC	**La Rusia**	**0.95**	**182**	*e*P	**Pn**	**03 01 06.3**	**+0.2**
RUSC				*e*S	**Sn**	**03 01 24.3**	**-2.1**
RUSC				*i*		03 01 26.8	
	comp=Z,65nm,0.3s						
CAPV	**Capacho**	**1.24**	**36**	*e*P	**Pn**	**03 01 09.7**	**+1.6**
CAPV				*e*S	**Sn**	**03 01 30.6**	**+0.4**
OCAC	**Ocana**	**1.41**	**349**	*e*P	**Pn**	**03 01 11.5**	**+1.9**
OCAC				*e*S	**Sn**	**03 01 33.3**	**+0.5**
OCAC				*i*		03 01 35.9	
	comp=Z,69nm,0.2s						
NORC	**Norcasia**	**2.22**	**235**	*e*P	**Pn**	**03 01 18.6**	**+0.4**
NORC				*e*S	**Sn**	**03 01 46.4**	**-1.8**
CHIC	**Chingaza**	**2.31**	**197**	*e*P	**Pn**	**03 01 20.3**	**+0.6**
CHIC				*i*		03 01 53.3	
	comp=Z,14nm,0.3s						
HELC	**Santa Helena**	**2.56**	**255**	*e*P	**Pn**	**03 01 24.6**	**+2.1**
VIGV	**El Vigia**	**2.58**	**40**	*e*P	**Pn**	**03 01 23.9**	**+1.4**
VIGV				*e*S	**Sn**	**03 01 53.5**	**-2.3**
SOCV	**Socops**	**2.59**	**57**	*e*P	**Pn**	**03 01 24.4**	**+1.7**
SOCV				*e*S	**Sn**	**03 01 55.0**	**-1.0**
VILC	**Villavicencio,**	**2.80**	**193**	*e*S	**Sn**	**03 02 00.1**	**-0.6**
VILC				*i*		03 02 09.3	
	comp=Z,19nm,0.3s						
GUYC	**Guyana, Colomb**	**2.84**	**235**	*e*S	**Sn**	**03 02 01.3**	**-0.8**
GUYC				*i*		03 02 09.7	
	comp=Z,39nm,0.4s						
DBBC	**Dabeiba**	**3.15**	**273**	*e*P	**Pn**	**03 01 30.8**	**+1.4**
TOLC	**Tolima**	**3.19**	**225**	*e*P	**Pn**	**03 01 31.9**	**+1.6**
ELOV	**Elorza**	**3.54**	**87**	*e*P	**Pn**	**03 01 36.8**	**+2.5**
ELOV				*e*S	**Sn**	**03 02 16.3**	**-0.6**
PRAC	**Prado**	**3.62**	**211**	*e*P	**Pn**	**03 01 36.9**	**+1.5**
PRAC				*e*S	**Sn**	**03 02 18.4**	**-0.5**
VIRV	**Villa del Rosa**	**3.68**	**10**	*e*P	**Pn**	**03 01 36.2**	**0.0**
VIRV				*e*S	**Sn**	**03 02 16.5**	**-3.9**
CURV	**Curarigua**	**4.38**	**44**	*e*P	**Pn**	**03 01 45.8**	**+0.6**
CURV				*e*S	**Sn**	**03 02 32.2**	**-4.3**
BAUV	**El Baul**	**5.37**	**67**	*e*P	**Pn**	**03 01 58.9**	**+0.7**

*ISCJB **15** 03:02:52.9±1.5,28°.31S±0°.05×69°.50W±0°.06, h112km±19km, Error ellipse: s-maj=9.3km s-min=7.9km az=33.5*
*GUC **15** 03:02:53.2±0.5,28°.40S×69°.45W, h95km, ML3.0*
*SJA **15** 03:02:53.9±0.6,28°.44S×69°.34W, h130km±8km, ML3.3, MW3.3*

ISC 15 03:02:52.7±2.5,28°.32S±0°.06×69°.53W±0°.06, h120km±24km,n8,σ0°94/15,3C-1D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	**Vallenar**	**1.11**	**256**	⇑*i*P	**Pn**	**03 03 16.2**	**+0.4**
VACH				*i* S	**Sn**	**03 03 33.3**	**-0.1**
CPCH	**Copiapo**	**1.20**	**323**	⇑*i*P	**Pn**	**03 03 17.4**	**+0.6**
CPCH				*i* S	**Sn**	**03 03 35.0**	**-0.1**
VCA	**Vinchina**	**1.24**	**110**	*e*P	**Pn**	**03 03 18.2**	**+0.8**
LCO	**Las Campanas**	**1.24**	**236**	⇑*i*P	**Pn**	**03 03 17.4**	**0.0**
LCO				*i* S	**Sn**	**03 03 35.3**	**-0.9**
LCO				IAML		03 03 38.6	
	comp=E,310nm,0.2s						
AGUA	**GUANDACOL**	**1.48**	**142**	*e*P	**Pn**	**03 03 20.1**	**+0.1**
AGUA				*e*S	**Sn**	**03 03 40.3**	**-0.4**
TLL	**Tololo Astrono**	**2.15**	**211**	⇓*i*P	**Pn**	**03 03 28.2**	**-0.1**
TLL				*i* S	**Sn**	**03 03 54.7**	**-0.9**
TLL				IAML		03 03 56.7	
	comp=E,163nm,0.4s						
ACCO	**Cerro Coronel**	**2.30**	**170**	*e*P	**Pn**	**03 03 31.6**	**+1.4**
ACCO				*e*S	**Sn**	**03 03 59.4**	**+0.4**
ACCO				IAML		03 04 02.2	
	comp=Z,93nm,0.3s						
CYA	**Choya**	**3.29**	**93**	*e*P	**Pn**	**03 03 43.3**	**+0.6**
CYA				IAML		03 03 43.9	
	comp=Z,98nm,0.3s						
CYA				*e*S	**Sn**	**03 04 19.4**	**-2.1**

IDC 15 03:10:13.9±2.5,29°.97S×178°.27W, h0km, mb3.6/3, mb1 3.8/4,mb1mx3.6/37,mbtmp3.7/4,ML3.4/1,MS3.3/1, Ms1 3.3/1,ms1mx2.6/27,Error ellipse: s-maj=69.1km s-min=18.2km az=130.0,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.78**	**23**	Pn	Pn	03 10 32.1	0.0
	284nm,0.3s,baz=103,slow=4.5,SNR=14						
RAO				Sn	Sn	03 10 53.4	+8.8
	427nm,0.3s,baz=93,slow=20,SNR=8.2						
URZ	**Urewera**	**9.11**	**204**	Pn	Pn	03 12 26.8	+0.2
	0.4nm,0.3s,baz=284,slow=8.7,SNR=7.3						
URZ				Sn	Sn	03 14 21.2	+11
	2.3nm,0.3s,baz=94,slow=21,SNR=12						
RPZ	**Rata Peaks**	**16.14**	**209**	LR	LR	03 20 22.9	
	comp=Z,107nm,20.6s,baz=224,slow=38						
STKA	**Stephens Creek**	**34.35**	**256**	P	P	03 17 01.5	-1.0
	1.3nm,0.9s,baz=102,slow=14,SNR=2.4						
ASAR	**Alice Springs**	**42.90**	**267**	P	P	03 18 14.9	+0.5
	0.4nm,0.7s,baz=102,slow=7.4,SNR=5.2						
WRA	**Warramunga Arr**	**43.85**	**272**	P	P	03 18 22.4	+0.2
	0.6nm,0.5s,baz=109,slow=8.1,SNR=10.0						

CASC 15 03:20:12.2±2.2,10°.79N×85°.12W, h6km±23km, MD4.2,2C, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCR	**Jicaral**	**0.93**	**180**	⇑*e*P	Pb	03 20 30.5	-0.3
JCR				*e*S	Sb	03 20 43.1	-0.2
CGA2	**Cerro Gallo 2**	**1.00**	**140**	⇑*e*P	Pg	03 20 30.5	-0.9
CGA2				*e*S	Sg	03 20 43.9	-0.5
HDC	**Heredia**	**1.26**	**128**	*e*P	Pg	03 20 34.7	-1.7
URSC	**Urasca**	**1.62**	**125**	*e*P	Pb	03 20 42.5	-0.2
URSC				*e*S	Sg	03 21 04.4	0.0

*NIED **15** 03:21:00,37°.40N×141°.30E, h29km, Mw3.9 Best double couple: M₀8.15000×10¹⁴ NP1:φ₁319.00000°,δ30.00000°, λ-163.00000°. NP2:φ₂214.00000°,δ82.00000°, λ-61.00000°.*
*ISCJB **15** 03:21:43.7±0.8,37°.34N±0°.03×141°.48E±0°.05, h21km±5km, mb4.1/22,MS3.8/3, Error ellipse: s-maj=6.9km s-min=4.5km az=23.7*
*JMA **15** 03:21:45.8±0.1,37°.37N×141°.34E, h30km±1km, M4.1*
JMA Felt III J1.
*NEIC **15** 03:21:49.2±1.1,37°.37N×141°.21E, h50km±10km, mb4.2/6, Error ellipse: s-maj=9.2km s-min=7.7km az=86.0*
NEIC Recorded [3 JMA] in Fukushima.
*IDC **15** 03:21:49.0±2.3,37°.29N

64nm,1.0s
BRVK Borovoye 50.44 312 *e*P **P 03 30 40.8 -0.4**
8.1nm,0.9s
WRA Warramunga Arr 57.38 188 P **P 03 31 31.6 -0.7**
1.5nm,0.6s,baz=6.3,slow=7.4,SNR=18
ABKAR Akbulak array 57.76 310 *e*P **P 03 31 33.4 -1.3**
1.0nm,0.6s
ASAR Alice Springs 61.11 188 P **P 03 31 58.1 0.0**
1.0nm,0.8s,baz=4.2,slow=5.2,SNR=5.3
AFI Afiamalu 67.31 130 LR LR 03 54 05.2
comp=Z,71nm,21.7s,baz=191,slow=29
ARMA Armidale 68.09 171 *e*P **P 03 32 44.6 +1.0**
23nm,0.9s
FINES FINESS Array B 68.55 332 P **P 03 32 45.4 -0.7**
2.2nm,0.7s,baz=52,slow=9.9,SNR=6.8
SUMG Summit 70.36 360 *e*P **P 03 32 57.5 -0.2**
2.4nm,0.8s
KBZ Khabaz 70.72 311 P **P 03 32 59.8 0.0**
1.8nm,0.8s,baz=23,slow=11,SNR=4.0
BMO Blue Mountains 71.69 47 *e*P **P 03 33 05.8 -0.1**
1.3nm,0.7s
NB2 NORSAR Subarra 73.91 337 P **P 03 33 18.0 -0.6**
comp=Z,1.3nm,0.6s,baz=39,slow=6.2
NOA NORSAR Array B 73.91 337 P **P 03 33 18.4 -0.2**
comp=Z,1.4nm,0.7s,baz=38,slow=5.8,SNR=7.4
NOA LR LR 04 08 58.3
comp=Z,20nm,19.4s,baz=290,slow=38
AKASG Malin Array Be 74.07 322 P **P 03 33 18.6 -1.1**
comp=Z,1.8nm,0.6s,baz=46,slow=6.0,SNR=6.1
R11A Troy Canyon, C 76.54 52 *e*P **P 03 33 35.3 +0.9**
comp=Z,0.6nm,0.8s
PDAR Pinedale Array 77.42 46 P **P 03 33 40.3 +1.0**
comp=Z,0.4nm,0.6s,baz=270,slow=1.8,SNR=3.1
BRTR Keskin Array B 78.67 312 P **P 03 33 45.5 -0.7**
comp=Z,0.3nm,0.5s,baz=63,slow=5.0,SNR=2.8
GERES GERESS Array B 82.46 328 P **P 03 34 05.9 -0.4**
comp=Z,0.7nm,0.8s,baz=39,slow=11,SNR=3.9
RPZ Rata Peaks 85.05 159 LR LR 04 06 43.7
comp=Z,116nm,20.6s,baz=312,slow=32
TXAR Lajitas Array 89.90 52 P **P 03 34 44.1 +0.8**
comp=Z,0.5nm,0.6s,baz=331,slow=4.4,SNR=6.0
LPAZ La Paz 146.50 59 PKPbc **PKPbc 03 41 26.9 +0.4**
comp=Z,0.8nm,0.6s,baz=40,slow=1.9,SNR=4.9

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*IDC **15** 03:23:12.2±2.3,2°.48S×99°.82E,h0km,mb3.8/8,mb1 3.9/8, mb1mx3.7/46,mbtmp3.8/8, Error ellipse: s-maj=79.0km s-min=18.6km az=64.0*

*ISCJB **15** 03:23:13.8±1.1,2°.5S±0°.1×99°.7E±0°.2,h30km,mb4.0/9, Error ellipse: s-maj=30.2km s-min=8.4km az=139.8*

*NEIC **15** 03:23:16.4±1.0,2°.54S×99°.69E,h35km,mb4.2/1, Error ellipse: s-maj=33.1km s-min=8.9km az=58.0*

ISC 15 03:23:15.9±1.3,2°.5S±0°.2×99°.7E±0°.2,h30km,n19, σ0s72/14,mb4.0/9,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**3.70**	**119**	*e*Pn		**Pn**		**03 24 10.9**	**-0.2**
MNAI				*e*Sn		**Sn**		**03 24 52.9**	**-0.7**
CMAR	**Chiang Mai Arr**	**20.87**	**358**	P		**P**		**03 27 55.1**	**-0.6**
	1.1nm,0.6s,baz=188,slow=11,SNR=5.0								
MBWA	**Marble Bar**	**26.87**	**135**	*e*P		**P**		**03 28 54.1**	**-0.1**
	65nm,1.2s								
H08S2	**Diego Garcia H**	**27.59**	**258**	T		T		03 57 27.3	
	baz=80,slow=75,SNR=148								
H08S3	**Diego Garcia H**	**27.60**	**258**	T		T		03 57 29.3	
	baz=80,slow=75,SNR=147								
H08S1	**Diego Garcia H**	**27.61**	**258**	T		T		03 57 27.0	
	baz=80,slow=75,SNR=162								
H01W3	**Cape Leeuwin H**	**34.87**	**159**	T		T		04 07 06.6	
	baz=336,slow=76,SNR=9.5								
H01W2	**Cape Leeuwin H**	**34.88**	**159**	T		T		04 07 07.7	
	baz=336,slow=76,SNR=13								
H01W1	**Cape Leeuwin H**	**34.88**	**159**	T		T		04 07 07.2	
	baz=336,slow=76,SNR=8.4								
WRA	**Warramunga Arr**	**37.96**	**120**	P		**P**		**03 30 31.4**	**+0.1**
	0.4nm,0.4s,baz=306,slow=9.3,SNR=6.6								
ASAR	**Alice Springs**	**39.16**	**125**	P		**P**		**03 30 41.5**	**+0.1**
	1.6nm,0.7s,baz=303,slow=8.0,SNR=5.9								
KSAR	**Wonju Array Be**	**47.59**	**31**	P		**P**		**03 31 49.7**	**+0.7**
KSRS	**Korea Array**	**47.62**	**31**	LR		**P**		**03 31 49.7**	**+0.5**
	1.3nm,0.7s,baz=220,slow=9.0,SNR=3.5								
STKA	**Stephens Creek**	**49.00**	**131**	P		**P**		**03 32 00.7**	**+0.6**
	1.0nm,0.7s,baz=293,slow=7.7,SNR=2.8								
SONM	**Songino Array**	**50.50**	**6**	P		**P**		**03 32 12.1**	**+0.8**
	1.0nm,0.6s,baz=183,slow=8.9,SNR=6.1								
MKAR	**Makanchi Array**	**51.47**	**345**	P		**P**		**03 32 18.7**	**+0.2**
	0.4nm,0.5s,baz=147,slow=7.7,SNR=3.5								
KLR	**Kul'dur**	**58.53**	**24**	P		**P**		**03 33 08.8**	**-0.6**
	0.8nm,0.5s,baz=319,slow=20,SNR=3.6								
ABKAR	**Akbulak array**	**61.98**	**332**	*e*P		**P**		**03 33 31.8**	**-1.3**
	1.5nm,0.8s								
TXAR	**Lajitas Array**	**145.29**	**38**	PKPbc		**PKPbc**		**03 42 52.3**	**+0.9**
	0.5nm,0.6s,baz=265,slow=2.6,SNR=6.0								

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*NIED **15** 03:25:00,35°.70N×140°.70E,h50km,Mw4.1 Best double couple: M0 1.82000×10^15 NP1:φs215.00000°,δ17.00000°, λ115.00000°. NP2:φs9.00000°,δ75.00000°,λ83.00000°.*

*ISCJB **15** 03:25:14.2±0.5,35°.64N±0°.04×140°.81E±0°.07,h55km±4km, mb3.8/12,MS3.1/2,Error ellipse: s-maj=9.1km s-min=6.2km az=167.7*

*JMA **15** 03:25:15.1±0.1,35°.66N×140°.70E,h48km±1km,M3.6 Broadband fault plane solution: P waves. NP1: φs9.00000°,δ80.00000°,λ89.00000°. NP2:φs195.00000°, δ10.00000°,λ95.00000°. Principal axes: T Plg55.0000°, Azm278.0000°; N Plg1.0000°, Azm9.0000°; P Plg35.0000°, Azm100.0000°;*

JMA Felt II J1.

*IDC **15** 03:25:15.4±1.8,35°.62N×140°.69E,h46km±17km,mb3.6/12, mb1 3.8/16,mb1mx3.6/50,mbtmp3.9/16,ML3.6/3,MS3.1/4, Ms1 3.2/4,ms1mx2.8/39 Error ellipse: s-maj=24.9km s-min=10.8km az=84.0*

ISC 15 03:25:15.3±0.8,35°.65N±0°.05×140°.79E±0°.06,h47km±7km, n34,σ1s05/32,mb3.8/12,2C-3D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.08**	**46**	⇑P		**Pn**		**03 25 22.7**	**-0.1**
CHOJ				S		**Sn**		**03 25 28.8**	**+0.8**
JCN	**Nagara**	**0.53**	**245**	⇓P		**Pn**		**03 25 26.5**	**-0.2**
JCN				*e*S		**Sn**		**03 25 35.1**	**+0.2**
BSO4	**Boso 4**	**0.75**	**209**	P		**Pn**		**03 25 29.2**	**-0.3**
JYT	**Yasato**	**0.75**	**321**	⇓P		**Pn**		**03 25 28.7**	**-1.0**
JYT				*e*S		**Sn**		**03 25 38.5**	**-1.6**
BSO3	**Boso 3**	**0.87**	**195**	P		**Pn**		**03 25 30.6**	**-0.4**
JHO	**Hitachi**	**0.98**	**350**	P		**Pn**		**03 25 32.6**	**-0.1**
BSO1	**Boso 1**	**1.00**	**171**	⇑P		**Pn**		**03 25 33.0**	**+0.5**
JAG	**Ashikaga**	**1.33**	**306**	⇓P		**Pn**		**03 25 36.3**	**-1.2**
MJAR	**Matsushiro Arr**	**2.27**	**294**	P		**Pn**		**03 25 50.4**	**+0.1**
	30nm,0.3s,baz=100,slow=14,SNR=50								
MJAR				S		**Sn**		**03 26 18.8**	**+1.7**
	15nm,0.3s,baz=127,slow=15,SNR=5.5								
MJAR				LR		LR		03 26 52.5	
	comp=Z,343nm,20.4s,baz=125,slow=45								
MAT	**Matsushiro**	**2.27**	**294**	P		**Pn**		**03 25 51.2**	**+0.8**
MAT				*e*S		**Sn**		**03 26 20.2**	**+3.0**
JHJ	**Hachijo jima 2**	**2.65**	**198**	P		**Pn**		**03 25 55.6**	**0.0**
	89nm,0.3s,baz=332,slow=17,SNR=12								
JHJ				S		**Sn**		**03 26 25.4**	**-1.1**
	144nm,0.3s,baz=110,slow=22,SNR=9.8								
JNU	**Nakatsue**	**8.57**	**256**	P		**Pn**		**03 27 16.9**	**+0.1**
	0.3nm,0.3s,baz=45,slow=19,SNR=2.8								
ASAJ	**Asahikawa**	**8.57**	**9**	P		**Pn**		**03 27 15.9**	**-0.8**
	baz=89,slow=12								
KSRS	**Korea Array**	**10.51**	**284**	LR		LR		03 31 38.5	
	comp=Z,144nm,20.4s,baz=75,slow=37								
H11N2	**WAKE ISLAND Hy**	**27.91**	**118**	T		T		04 00 16.2	
	baz=303								
H11N1	**WAKE ISLAND Hy**	**27.92**	**118**	T		T		04 00 09.4	
	baz=303								
H11N3	**WAKE ISLAND Hy**	**27.93**	**118**	T		T		04 00 17.4	
	baz=303								
SONM	**Songino Array**	**28.17**	**306**	P		**P**		**03 31 02.3**	**-1.0**
	0.6nm,0.4s,baz=106,slow=9.0,SNR=4.8								
H11S3	**WAKE ISLAND Hy**	**28.57**	**120**	T		T		04 00 59.1	
	baz=312,slow=75,SNR=28								
H11S1	**WAKE ISLAND Hy**	**28.57**	**120**	T		T		04 00 59.1	
	baz=312,slow=75,SNR=32								
H11S2	**WAKE ISLAND Hy**	**28.59**	**120**	T		T		04 01 01.2	
	baz=312,slow=75,SNR=36								
CMAR	**Chiang Mai Arr**	**40.67**	**256**	LR		LR		03 50 19.6	
	comp=Z,26nm,21.9s,baz=100,slow=37								
ZALV	**Zalesovo Beam**	**42.49**	**314**	P		**P**		**03 33 04.1**	**-1.6**
	1.1nm,0.3s,baz=97,slow=6.1,SNR=6.6								
MKAR	**Makanchi Array**	**44.44**	**303**	P		**P**		**03 33 21.5**	**0.0**
	1.3nm,0.5s,baz=87,slow=9.7,SNR=6.5								
MKAR				LR		LR		03 52 06.8	
	comp=Z,27nm,18.6s,baz=76,slow=36								
ILAR	**Eielson Array**	**50.94**	**32**	P		**P**		**03 34 13.4**	**+1.8**
	0.4nm,0.7s,baz=266,slow=7.1,SNR=5.4								
FITZ	**Fitzroy Crossi**	**55.35**	**198**	P		**P**		**03 34 44.9**	**+0.5**
	1.1nm,0.5s,baz=19,slow=7.6,SNR=6.8								
WRA	**Warramunga Arr**	**55.62**	**187**	P		**P**		**03 34 45.6**	**-0.8**
	1.1nm,0.4s,baz=1.4,slow=7.7,SNR=19								
ASAR	**Alice Springs**	**59.35**	**187**	P		**P**		**03 35 13.4**	**+0.8**
	0.6nm,0.6s,baz=18,slow=12,SNR=8.7								
FINES	**FINESS Array B**	**69.80**	**332**	P		**P**		**03 36 20.6**	**+0.2**
	0.4nm,0.3s,baz=46,slow=8.2,SNR=5.7								
AKASG	**Malin Array Be**	**75.08**	**322**	P		**P**		**03 36 51.1**	**-0.9**
	0.3nm,0.2s,baz=46,slow=6.2,SNR=5.5								
NB2	**NORSAR Subarra**	**75.27**	**337**	P		**P**		**03 36 53.2**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=42,slow=5.9								
NOA	**NORSAR Array B**	**75.27**	**337**	P		**P**		**03 36 53.2**	**+0.2**
	comp=Z,1.2nm,0.7s,baz=40,slow=5.8,SNR=5.6								
BRTR	**Keskin Array B**	**79.39**	**311**	P		**P**		**03 37 17.6**	**+1.0**
	comp=Z,0.7nm,0.7s,baz=87,slow=3.0,SNR=4.6								
TXAR	**Lajitas Array**	**91.37**	**52**	P		**P**		**03 38 16.1**	**-0.4**
	comp=Z,0.2nm,0.7s,baz=282,slow=5.4,SNR=2.9								

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*ISCJB **15** 03:35:18.9±0.7,21°.15S±0°.03×68°.9W±0°.1,h128km±8km, mb3.6/1,Error ellipse: s-maj=17.5km s-min=5.3km az=2.1*

*GUC **15** 03:35:19.2±0.6,21°.16S×68°.87W,h119km±4km,ML3.9*

*IDC **15** 03:35:28.3±8.7,20°.63S×68°.10W,h161km±73km,mb3.5/1, mb1 3.4/2,mb1mx3.0/21,mbtmp3.8/2, Error ellipse: s-maj=107.4km s-min=81.7km az=92.0*

ISC 15 03:35:19.8±1.1,21°.15S±0°.04×68°.9W±0°.1,h120km±9km, n15,σ0s89/26,6C-4D,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.59**	**280**	⇓*i*P		**Pn**		**03 35 37.9**	**-0.5**
PB01				*i* S		**Sn**		**03 35 52.1**	**-0.4**
PB01				IAML				03 35 53.3	
	comp=N,5μm,0.2s								
PB09	**IPOC Station P**	**0.73**	**208**	⇑*i*P		**Pn**		**03 35 39.3**	**-0.3**
PB09				*i* S		**Sn**		**03 35 54.6**	**+0.1**
PB09				IAML				03 35 57.0	
	comp=E,8μm,0.5s								
PB08	**IPOC Station P**	**1.04**	**345**	⇓*i*P		**Pn**		**03 35 42.8**	**+0.1**
PB08				*i* S		**Sn**		**03 36 00.4**	**+0.5**
PB08				IAML				03 36 01.1	
	comp=E,894nm,0.3s								
PB07	**IPOC Station P**	**1.11**	**239**	⇑*i*P		**Pn**		**03 35 43.2**	**+0.1**
PB07				*i* S		**Sn**		**03 36 01.2**	**+0.5**
PB07				IAML				03 36 03.1	
	comp=E,4μm,0.5s								
HMBC	**Humberstone**	**1.29**	**312**	⇑*i*P		**Pn**		**03 35 45.2**	**+0.2**
HMBC				*i* S		**Sn**		**03 36 04.6**	**+0.5**
HMBC				IAML				03 36 05.9	
	comp=E,3μm,0.4s								
PB04	**IPOC Station P**	**1.68**	**225**	⇑*i*P		**Pn**		**03 35 49.3**	**-0.2**
PB04				*i* S		**Sn**		**03 36 12.1**	**0.0**
PB04				IAML				03 36 19.1	
	comp=N,1μm,0.1s								
PB06	**IPOC Station P**	**1.68**	**203**	⇑*i*P		**Pn**		**03 35 49.4**	**-0.2**
PB06				*i* S		**Sn**		**03 36 12.3**	**+0.1**
PB06				IAML				03 36 12.9	
	comp=E,2μm,0.2s								
PSGC	**Pisagua**	**1.94**	**322**	⇑*i*P		**Pn**		**03 35 52.5**	**-0.2**
PSGC				*i* S		**Sn**		**03 36 18.0**	**+0.3**
PSGC				IAML				03 36 20.0	
	comp=N,957nm,0.9s								
MNMC	**Minye Minye**	**2.12**	**341**	⇓*i*P		**Pn**		**03 35 55.5**	**+0.4**
MNMC				*i* S		**Sn**		**03 36 23.0**	**+0.9**
MNMC				IAML				03 36 31.5	
	comp=E,693nm,0.4s								
PB10	**IPOC Station P**	**2.82**	**213**	*e*P		**Pn**		**03 36 03.6**	**-0.2**
PB12	**IPOC Station P**	**2.87**	**331**	⇓*i*P		**Pn**		**03 36 03.7**	**-0.8**
PB12				*i* S		**Sn**		**03 36 38.2**	**-0.8**
ANCH	**Antofagasta**	**2.90**	**209**	*i* P		**Pn**		**03 36 05.2**	**+0.5**
LPAZ	**La Paz**	**4.89**	**8**	P		**Pn**		**03 36 33.6**	**+1.8**
	comp=E,1.7nm,0.3s,baz=184,slow=4.3,SNR=68								
LPAZ				S		**Sn**		**03 37 24.9**	**-2.8**
	comp=E,0.4nm,0.3s,baz=175,slow=11,SNR=2.3								
TORD	**Torodi Ar. Bea**	**77.20**	**70**	P		**Pn**		**03 47 00.2**	**-0.9**
	comp=E,0.6nm,0.4s,baz=252,slow=5.5,SNR=16								
MKAR	**Makanchi Array**	**145.33**	**36**	PKP		**PKPbc**		**03 54 44.9**	**+1.3**
	comp=E,1.7nm,0.7s,baz=335,slow=3.7,SNR=8.9								

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*SKHL **15** 03:52:04.3±1.0,47°.02N×152°.48E,h128km±12km,mb4.5/5, msh5.4/4*

*MOS **15** 03:52:04.3±1.4,47°.11N×152°.42E,h86km,mb4.0/3,Error ellipse: s-maj=27.1km s-min=14.0km az=65.5*

*IDC **15** 03:52:06.2±3.0,47°.20N×152°.41E,h130km±24km,mb3.3/6, mb1 3.5/9,mb1mx3.2/38,mbtmp3.8/9,MS2.7/1,Ms1 2.7/1, ms1mx2.2/23,Error ellipse: s-maj=42.8km s-min=20.0km az=159.0*

*JMA **15** 03:52:08.0±0.4,45°.96N×152°.66E,h128km,M3.6*

ISC 15 03:52:04.5±1.0,46°.9N±0°.1×152°.6E±0°.1,h150km,n42, σ2s30/43,mb3.5/6,1C-1D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.68**	**245**	⇑*i*PN		**Pn**		**03 53 01.9**	**+1.3**
KUR				*i* S		**Sn**		**03 53 45.5**	**+1.4**
KUR				pmax	pmax				
	comp=Z,30nm,0.5s								
KUR				pmax	pmax				
	comp=N,29nm,0.2s								
KUR				pmax	pmax				
	comp=E,13nm,0.2s								
KUR	**Kuril'sk**	**3.68**	**245**	*i* P		**Pn**		**03 53 01.5**	**+0.9**
KUR				AMB	AMB			03 53 02.4	
	comp=E,10.0nm,0.4s								
KUR				AMB	AMB			03 53 02.4	
	comp=E,30nm,0.4s								
KUR				*i* S		**Sn**		**03 53 43.5**	**-0.6**
KUR				A	A			03 53 47.7	
	comp=E,40nm,0.4s								
KUR				A	A			03 53 47.7	
	comp=E,70nm,0.4s								
SKR	**Severo-Kuril's**	**4.46**	**30**	*e*P		**Pn**		**03 53 08.5**	**-2.1**
SKR				AMB	AMB			03 53 39.4	
	comp=E,30nm,0.7s								
SKR				*e*S		**Sn**		**03 53 56.9**	**-5.2**
SKR				A	A			03 53 57.1	
	comp=E,70nm,0.5s								
SKR				A	A			03 53 57.1	
	comp=E,100nm,0.5s								
SHO	**Shikotan**	**5.06**	**235**	*d i*PN		**Pn**		**03 53 17.9**	**-0.8**
SHO				*i* S		**Sn**		**03 54 12.5**	**-4.0**
SHO				pmax	pmax				
	comp=Z,20nm,0.3s								
SHO				pmax	pmax				
	comp=N,16nm,0.4s								
SHO				pmax	pmax				
	comp=E,9.0nm,0.2s								
SHO	**Shikotan**	**5.06**	**235**	*i* P		**Pn**		**03 53 17.8**	**-0.9**
SHO				AMB	AMB			03 53 21.6	
	comp=E,10.0nm,0.3s								
SHO				AMB	AMB			03 53 21.6	
	comp=E,20nm,0.3s								
SHO				*i* S		**Sn**		**03 54 12.7**	**-3.8**
SHO				A	A			03 54 13.6	
	comp=E,80nm,0.3s								
YUK	**Yuzh-Kuril'sk**	**5.53**	**241**	*e*P		**Pn**		**03 53 24.3**	**-0.6**
YUK				*e*S		**Sn**		**03 54 25.2**	**-2.4**
YUK				A	A			03 54 29.2	
	comp=E,120nm,0.4s								
NEM2	**Nemuro 2**	**5.99**	**236**	P		**Pn**		**03 53 29.6**	**-1.4**
NEM2				*e*S		Sn		03 54 32.6	-6.1
JRA	**Rausu**	**6.03**	**243**	P		**Pn**		**03 53 32.1**	**+0.6**
JNK	**Nakash**	**6.46**	**242**	P		**Pn**		**03 53 37.5**	**+0.1**
YSS	**Yuzh-Sakhalins**	**6.74**	**274**	*e*P		**Pn**		**03 53 40.2**	**-0.8**
YSS				AMB	AMB			03 53 44.4	
	comp=E,20nm,0.5s								
JTKR	**Abashiri--Toko**	**6.77**	**248**	P		**Pn**		**03 53 42.5**	**+1.1**
JAK	**Akkeshi**	**6.82**	**238**	P		**Pn**		**03 53 41.3**	**-0.8**
JAK				*e*S		**Sn**		**03 54 53.6**	**-5.0**
PETK	**Petropavlovsk-**	**7.04**	**26**	P		**Pn**		**03 53 42.7**	**-2.2**
	comp=E,0.8nm,0.3s,baz=207,slow=10,SNR=4.3								
JAR	**Ashorobuto**	**7.20**	**243**	P		**Pn**		**03 53 47.8**	**+0.6**
JOB	**Onbets**	**7.38**	**241**	P		**Pn**		**03 53 49.6**	**0.0**
JOB				*e*S		**Sn**		**03 55 07.9**	**-4.2**
JKA	**Kamikawa-asahi**	**7.55**	**252**	*e*P		**Pn**		**03 53 53.8**	**+2.0**
ASAJ	**Asahikawa**	**7.55**	**252**	P		**Pn**		**03 53 53.8**	**+2.0**
	baz=84,slow=15								
ASAJ	**Asahikawa**	**7.55**	**252**	P		**Pn**		**03 53 54.2**	**+2.4**
JKK2	**Kamakawa 2**	**7.56**	**250**	P		**Pn**		**03 53 53.7**	**+1.7**
TYV	**Tymovskoe**	**7.66**	**305**	*e*P		**Pn**		**03 53 51.0**	**-2.3**
TYV				AMB	AMB			03 53 57.2	
	comp=E,10.0nm,0.8s								
JCH	**Churui**	**7.83**	**240**	P		**Pn**		**03 53 55.3**	**-0.4**
JCH				*e*S		**Sn**		**03 55 18.2**	**-4.8**
MYR	**Moyori**	**8.08**	**239**	*e*P		**Pn**		**03 53 57.7**	**-1.2**
MYR				*e*S		Sn		03 55 22.7	-6.1
JNBK	**Urakawa-nobuka**	**8.40**	**240**	P		**Pn**		**03 54 01.3**	**-1.8**
JKB	**Kayabe**	**9.66**	**243**	*e*S		Sn		03 55 59.0	-8.0
EKMR	**Ekimchan**	**14.05**	**303**	*e*P		**Pn**		**03 55 16.4**	**-0.5**
SEY	**Seymchan**	**16.08**	**360**	P		**P**		**03 55 42.4**	**0.0**
	comp=E,0.2nm,0.3s,baz=178,slow=23,SNR=5.3								
YAK	**Yakutsk**	**20.01**	**328**	LR		LR		04 05 26.1	
	comp=E,22nm,18.4s,baz=280,slow=41								
H11N2	**WAKE ISLAND Hy**	**29.51**	**152**	T		T		04 29 42.4	
	baz=340,slow=76,SNR=38								
H11N1	**WAKE ISLAND Hy**	**29.52**	**152**	T		T		04 29 45.3	
	baz=340,slow=76,SNR=38								
H11N3	**WAKE ISLAND Hy**	**29.53**	**152**	T		T		04 29 43.7	
	baz=340,slow=76,SNR=14								
H11S1	**WAKE ISLAND Hy**	**30.59**	**153**	T		T		04 31 02.1	
	baz=341,slow=76,SNR=45								
H11S3	**WAKE ISLAND Hy**	**30.60**	**153**	T		T		04 31 02.6	
	baz=341,slow=76,SNR=30								
H11S2	**WAKE ISLAND Hy**	**30.61**	**153**	T		T		04 31 04.4	
	baz=341,slow=76,SNR=43								
ILAR	**Eielson Array**	**36.66**	**39**	P		**P**		**03 58 58.2**	**+1.9**
	comp=E,0.3nm,0.7s,baz=259,slow=7.2,SNR=3.9								
MKAR	**Makanchi Array**	**46.56**	**297**	P		**P**		**04 00 18.0**	**+1.1**
	comp=E,0.2nm,0.3s,baz=69,slow=5.3,SNR=2.5								
MKAR	**Makanchi Array**	**46.56**	**297**	P		**P**		**04 00 18.0**	**+1.1**
MKAR	**Makanchi Array**	**46.56**	**297**	*e*P		**P**		**04 00 18.0**	**+1.1**
FINES	**FINESS Array B**	**63.76**	**334**	P		**P**		**04 02 21.4**	**+1.6**
	comp=E,1.5nm,0.9s,baz=46,slow=8.2,SNR=5.3								
NB2	**NORSAR Subarra**	**67.98**	**341**	P		**P**		**04 02 48.8**	**+1.9**
	comp=Z,1.8nm,0.7s,baz=30,slow=6.5								
NOA	**NORSAR Array B**	**67.98**	**341**	P		**P**		**04 02 49.2**	**+2.3**
	comp=Z,0.8nm,0.5s,baz=29,slow=6.6,SNR=4.9								
AKASG	**Malin Array Be**	**71.23**	**326**	P		**P**		**04 03 08.5**	**+1.6**
	comp=Z,0.4nm,0.3s,baz=34,slow=5.8,SNR=5.2								
TXAR	**Lajitas Array**	**77.73**	**60**	P		**P**		**04 03 48.8**	**+3.8**
	comp=Z,0.5nm,0.7s,baz=316,slow=5.2,SNR=5.6								

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*IDC **15** 04:06:36.7±1.1,29°.74S×176°.34W,h0km,mb4.2/3, mb1 4.4/5,mb1mx4.0/22,mbtmp4.3/5,ML3.5/2,MS3.4/2, Ms1 3.3/2,ms1mx2.7/30, Error ellipse: s-maj=26.3km s-min=23.3km az=180.0*

*NEIC **15** 04:06:37.9±0.8,29°.80S×176°.29W,h10km,mb4.1/2,Error ellipse: s-maj=19.8km s-min=15.3km az=99.0*

ISC 15 04:06:40.2±1.0,29°.84S±0°.09×176°.4W±0°.1,h24km,n20, σ2s63/19,mb4.2/5,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.46**	**293**	Pn		**Pb**		**04 07 06.3**	**-0.3**
	325nm,0.3s,baz=107,slow=8.2,SNR=13								
RAO				Sn		**Sb**		**04 07 25.5**	**+0.8**
	1μm,0.3s,baz=96,slow=22,SNR=18								
RAO				LR		LR		04 07 33.8	
	comp=Z,222nm,21.5s,baz=27,slow=39								
URZ	**Urewera**	**9.98**	**211**	Pn		**Pn**		**04 09 01.6**	**-0.4**
	0.3nm,0.3s,baz=23,slow=13,SNR=3.6								
URZ				Sn		**Sn**		**04 10 57.8**	**+4.5**
	1.9nm,0.3s,baz=242,slow=22,SNR=8.3								
RPZ	**Rata Peaks**	**17.09**	**212**	P		**Pn**		**04 10 37.8**	**+0.4**
	0.3nm,0.3s,baz=43,slow=11,SNR=1.9								
RPZ				S		**Sn**		**04 13 38.4**	**-8.4**
	0.3nm,0.3s,baz=20,slow=15,SNR=2.3								
DZM	**Mont Dzumac**	**17.26**	**293**	*e*LR		LR		04 14 47.8	
	149nm,25.1s								
TBI	**Tubuai**	**24.89**	**81**	*e*LR		LR		04 18 01.6	
	82nm,22.8s								
PPT2	**Papeete2**	**27.33**	**70**	*e*LR		LR		04 19 07.0	
	72nm,23.5s								
STKA	**Stephens Creek**	**35.97**	**256**	P		**P**		**04 13 39.8**	**+0.6**
	3.5nm,0.7s,baz=98,slow=7.6,SNR=6.8								
STKA				LR		LR		04 27 06.1	
	comp=Z,60nm,18.8s,baz=27,slow=34								
ASAR	**Alice Springs**	**44.54**	**266**	P		**P**		**04 14 50.5**	**+0.2**
	1.8nm,0.6s,baz=98,slow=7.4,SNR=21								
**W

FITZ				Sn	Sn	04 37 27.5	-13		
	1.1nm,0.3s,baz=107,slow=17,SNR=3.6								
WRA	**Warramunga Arr**	**14.34**	**153**	Pn	Pn	04 36 19.2	-1.3		
	1.9nm,0.3s,baz=324,slow=13,SNR=54								
WRA				Sn	Sn	04 38 43.9	-16		
	1.6nm,0.3s,baz=328,slow=22,SNR=7.1								
ASAR	**Alice Springs**	**17.54**	**160**	P	Pn	04 37 01.6	-0.6		
	1.0nm,0.3s,baz=335,slow=11,SNR=44								
ASAR				S	Sn	04 39 59.5	-19		
	0.2nm,0.3s,baz=327,slow=17,SNR=3.7								
MKAR	**Makanchi Array**	**67.03**	**328**	P	P	04 43 51.1	+0.1		
	0.4nm,0.5s,baz=111,slow=7.4,SNR=5.9								

*ISCJB **15** 04:53:08.4±0.4,32.˚78N±0.˚03×115.˚44W±0.˚03,h23km±3km, Error ellipse: s-maj=4.4km s-min=3.6km az=5.7*
*ECX **15** 04:53:09.8±0.6,32.˚82N×115.˚48W,h12km,MD2.9,ML3.1*
*NEIC **15** 04:53:09.2,32.˚79N×115.˚45W,h13km,ML3.0(PAS),After PAS.*
NEIC Felt [III] at Brawley and El Centro. Also felt at Heber and Imperial. Felt at Mexicali, Baja California.
*MEX **15** 04:53:10.4±0.6,32.˚74N×115.˚42W,h6km±16km,MD4.0*

ISC 15 04:53:09.1±1.0,32.˚77N±0.˚03×115.˚49W±0.˚02,h21km±1km, n38,σ1§94/59,8C-3D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
DREC	**Desert Rsrch C**	**0.05**	**47⇑**	*e*P	**Pb**	**04 53 11.3**		**-1.5**
DREC				*e*S	**Sb**	**04 53 13.3**		**-2.0**
ERPC	**Ernies Place**	**0.14**	**260⇑**	*i*P	**Pb**	**04 53 13.9**		**-1.2**
WESC	**Westside Schoo**	**0.20**	**267⇑**	*e*P	**Pb**	**04 53 14.6**		**-0.3**
COK	**Cook Ranch**	**0.21**	**292⇑**	*i*P	**Pb**	**04 53 14.4**		**-0.5**
SWSC	**Sam W. Stewart**	**0.31**	**304**	P	**Pb**	**04 53 15.7**		**-0.3**
	baz=120,SNR=111							
SWSC				S	**Sb**	**04 53 20.6**		**0.0**
	baz=120							
COA	**Coachella**	**0.33**	**73⇑**	*i*P	**Pn**	**04 53 15.7**		**-3.0**
CLIC	**Calipatria**	**0.37**	**356**	*e*P	**Pn**	**04 53 16.2**		**-3.0**
YUH	**Yuha Desert**	**0.38**	**252**	*e*P	**Pb**	**04 53 17.2**		**+0.2**
CPBX	**Cerro Prieto**	**0.39**	**155**	*e*P	**Pn**	**04 53 17.6**		**-1.9**
CPBX				*e*S	**Sn**	**04 53 23.6**		**-2.6**
CPBX				⇓*e*		04 53 30.7		
CPBX				IAML		04 53 30.7		
	comp=N,4μm,0.4s							
CPBX	**Cerro Prieto**	**0.39**	**155**	*e*P	**Pn**	**04 53 17.6**		**-1.9**
CPBX				*e*S	**Sb**	**04 53 22.3**		**-0.2**
RMX	**La Rumorosa**	**0.52**	**252⇓**	*e*P	**Pb**	**04 53 19.4**		**-0.3**
RMX				*e*S	**Sb**	**04 53 27.3**		**+0.5**
RMX				IAML		04 53 28.8		
	comp=E,1μm,0.2s							
RMX				⇓*e*		04 53 28.8		
IKP	**In-Ko-Pah, Jac**	**0.53**	**257**	P	**Pn**	**04 53 20.1**		**-1.4**
	baz=77,SNR=23							
IKP				S	**Sb**	**04 53 27.8**		**+0.6**
	baz=77							
IKP	**In-Ko-Pah, Jac**	**0.53**	**257⇑**	*e*P	**Pn**	**04 53 20.0**		**-1.6**
IKP				*e*S	**Sb**	**04 53 27.6**		**+0.4**
GLA	**Glamis**	**0.63**	**63**	P	**Pn**	**04 53 20.2**		**-2.7**
	baz=242,SNR=28							
GLA				S	**Sb**	**04 53 27.6**		**-2.3**
	baz=242							
MONP2	**Monument Peak**	**0.79**	**279**	P	**Pn**	**04 53 24.0**		**-1.3**
	baz=98,SNR=56							
MONP2				S	**Sb**	**04 53 35.1**		**+0.4**
	baz=98							
BC3	**Big Chuckawall**	**0.89**	**2**	P	**Pn**	**04 53 24.3**		**-2.1**
	baz=180,SNR=57							
BC3				S	**Sn**	**04 53 35.7**		**-3.1**
	baz=180							
BAR	**Barrett**	**1.00**	**265⇑**	*e*P	**Pn**	**04 53 27.2**		**-0.7**
TJIG	**Tijuana**	**1.05**	**252**	*e*P	**Pb**	**04 53 28.2**		**-0.4**
TJIG				*e*S	**Sn**	**04 53 42.6**		**-0.1**
TJIG	**Tijuana**	**1.05**	**252**	*e*P	**Pb**	**04 53 28.4**		**-0.2**
CBX	**Cerro Bola**	**1.09**	**246**	*e*P	**Pb**	**04 53 29.3**		**+0.1**
CBX				*e*S	**Sn**	**04 53 43.8**		**0.0**
CBX	**Cerro Bola**	**1.09**	**246⇑**	*e*P	**Pb**	**04 53 29.4**		**+0.1**
CBX				*e*S	**Sn**	**04 53 44.2**		**+0.4**
CBX				IAML		04 53 52.8		
	comp=N,518nm,0.8s							
CBX	**Cerro Bola**	**1.09**	**246**	*e*P	**Pb**	**04 53 29.3**		**+0.1**
CBX				*e*S	**Sn**	**04 53 43.8**		**0.0**
TPFO	**Pinon Flats**	**1.16**	**316**	P	**Pn**	**04 53 28.4**		**-1.9**
	baz=134							
PFO	**Pinyon Flats O**	**1.17**	**316**	P	**Pn**	**04 53 28.7**		**-1.7**
	baz=134							
PFO	**Pinyon Flats O**	**1.17**	**316**	*e*Pn	**Pn**	**04 53 28.8**		**-1.6**
PFO				*e*Sn	**Sn**	**04 53 45.4**		**-0.4**
109C	**Camp Elliot, M**	**1.36**	**275**	P	**Pn**	**04 53 32.4**		**-0.5**
	baz=94							
109C				S	**Sb**	**04 53 51.3**		**+0.4**
	baz=94							
ZAX	**El Zacaton**	**1.42**	**208**	*e*P	**Pb**	**04 53 34.5**		**-0.4**
MURC	**Murrieta**	**1.65**	**301**	S	**Sb**	**04 53 57.5**		**-1.7**
	baz=119							
SPX	**San Pedro Mart**	**1.72**	**179**	*e*P	**Pn**	**04 53 37.3**		**-0.8**
SPX				*e*S	**Sn**	**04 53 57.5**		**-2.2**
BFSC	**Mount Baldy Ra**	**2.33**	**310**	Sb	**Sb**	**04 54 20.6**		**+1.7**
	baz=128							
214A	**Organ Pipe Nat**	**2.41**	**109**	P	**Pn**	**04 53 46.1**		**-1.3**
	baz=291							
214A	**Organ Pipe Nat**	**2.41**	**109**	*e*Pn	**Pn**	**04 53 46.3**		**-1.1**
214A				*e*Pg	**Pb**	**04 53 53.7**		**+1.9**
214A				*e*Sn	**Sn**	**04 54 16.3**		**0.0**
PASC	**Pasadena Art C**	**2.65**	**303**	*e*Pg	**Pb**	**04 53 58.8**		**+2.9**
PASC				*e*Sg	**Sb**	**04 54 31.7**		**+3.7**
EDW2	**Edwards Air Fo**	**2.96**	**316**	Sb	**Sb**	**04 54 39.5**		**+2.5**
	baz=134							
DAC	**Darwin (Calif)**	**3.91**	**334**	*e*Pg	Pb	04 54 21.2		+3.8
TUC	**Tucson**	**4.00**	**95**	*e*Pn	**Pn**	**04 54 08.7**		**-0.7**
TUC				*e*Pg	**Pb**	**04 54 21.4**		**+2.4**
TUC				*e*Sg	**Sb**	**04 55 13.2**		**+6.2**
WUAZ	**Wupatki**	**4.38**	**50**	*e*Pn	**Pn**	**04 54 14.4**		**-0.2**
WUAZ				*e*Pg	Pb	04 54 28.9		+3.4
WUAZ				*e*Sg	**Sb**	**04 55 23.4**		**+5.5**
R11A	**Troy Canyon, C**	**5.57**	**359**	*e*Pg	Pb	04 54 54.9		+9.2
	comp=N,2.7nm,0.7s							

*IDC **15** 04:54:45.7±2.0,31.˚02S×177.˚67W,h0km,mb4.4/4, mb1 4.4/5,mb1mx4.1/20,mbtmp4.3/5,ML3.4/1,Error ellipse: s-maj=49.4km s-min=23.8km az=117.0*
*NEIC **15** 04:54:47.5±1.0,30.˚94S×177.˚69W,h10km,mb4.3/2,Error ellipse: s-maj=25.7km s-min=11.9km az=105.0*
*ISCJB **15** 04:54:50.3±2.2,30.˚89S±0.˚09×177.˚7W±0.˚4,h46km, mb4.3/6,Error ellipse: s-maj=46.0km s-min=11.1km az=9.6*

ISC 15 04:54:52.0±1.7,30.˚89S±0.˚09×177.˚8W±0.˚3,h46km,n11, σ1§66/13,mb4.3/6,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
RAO	**Raoul Island**	**1.64**	**356**	Pn	**Pn**	**04 55 18.0**		**-0.3**
	104nm,0.3s,baz=114,slow=17,SNR=7.0							
RAO				Sn	**Sn**	**04 55 35.2**		**-3.0**
	528nm,0.3s,baz=7.0,slow=23,SNR=9.6							
URZ	**Urewera**	**8.47**	**208**	Pn	**Pn**	**04 56 50.1**		**-1.9**
	0.4nm,0.3s,baz=14,slow=16,SNR=6.6							
URZ				Sn	**Sn**	**04 58 23.6**		**-2.6**
	3.5nm,0.3s,baz=299,slow=6.2,SNR=10							
CTA	**Charters Tower**	**34.07**	**280**	P	**P**	**05 01 33.6**		**+1.5**
	1.7nm,0.3s,baz=104,slow=8.3,SNR=3.4							
STKA	**Stephens Creek**	**34.56**	**258**	P	**P**	**05 01 37.5**		**+1.3**
	12nm,1.1s,baz=107,slow=12,SNR=8.3							
ASAR	**Alice Springs**	**43.27**	**267**	P	**P**	**05 02 49.1**		**-0.2**
	0.6nm,0.3s,baz=106,slow=7.4,SNR=8.7							
WRAB	**Tennant Creek**	**44.30**	**273**	*e*P	**P**	**05 02 58.0**		**+0.4**
	3.8nm,0.7s							
WRA	**Warramunga Arr**	**44.31**	**273**	P	**P**	**05 02 57.9**		**+0.3**
	2.0nm,0.3s,baz=111,slow=8.1,SNR=71							
CASY	**Casey**	**54.80**	**208**	*e*P	**P**	**05 04 18.5**		**+1.7**
	4.5nm,1.8s							
FINES	**FINESS Array B**	**145.67**	**340**	PKPbc	**PKPab**	**05 14 25.6**		**+0.3**
	2.4nm,0.4s,baz=50,slow=4.5,SNR=16							
AKASG	**Malin Array Be**	**151.81**	**322**	PKPbc	**PKPbc**	**05 14 41.7**		**+0.5**
	0.5nm,0.4s,baz=49,slow=3.7,SNR=3.4							
KIEV	**Kiev**	**151.82**	**322**	*e*PKPbc	**PKPbc**	**05 14 41.5**		**+0.2**

*ISK **15** 05:03:51.1,38.˚90N×43.˚88E,h28km, MD2.7*
*DDA **15** 05:03:52.7,38.˚93N×43.˚68E,h16km, Md2.8*
*ISCJB **15** 05:03:53.5±0.5,38.˚96N±0.˚03×43.˚72E±0.˚03,h12km±4km, Error ellipse: s-maj=4.5km s-min=4.3km az=172.2*
*CSEM **15** 05:03:53.2±0.2,38.˚94N×43.˚66E,h12km,MD2.8,Error ellipse: s-maj=6.1km s-min=4.8km az=81.0*
*TEH **15** 05:03:53.6,38.˚79N×43.˚53E,h18km,ML2.6*

ISC 15 05:03:52.6±0.8,38.˚97N±0.˚02×43.˚71E±0.˚03,h17km±5km, n24,σ0§89/41,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
VMUR	**Van-Muradiye**	**0.10**	**279**	*i*P	**Pg**	**05 03 56.0**		**-0.3**
VMUR				*i*S	**Sg**	**05 03 59.1**		**+0.3**
VMUR	**Van-Muradiye**	**0.10**	**279**	P	**Pg**	**05 03 56.0**		**-0.3**
VMUR				S	**Sg**	**05 03 59.1**		**+0.3**
CLDR	**Caldiran**	**0.24**	**44**	*e*PG	**Pg**	**05 03 58.1**		**0.0**
CLDR				*e*SG	**Sb**	**05 04 03.3**		**+0.7**
VANB	**Van**	**0.45**	**213**	*e*PG	**Pb**	**05 04 02.7**		**+0.5**
VANB				*e*SG	**Sn**	**05 04 11.2**		**-1.0**
VANB	**Van**	**0.45**	**213**	*e*Pg	**Pb**	**05 04 02.7**		**+0.5**
VANB				*e*Sg	**Sn**	**05 04 11.2**		**-1.0**
TVAN	**Van**	**0.50**	**208**	*i*P	**Pg**	**05 04 02.5**		**-0.2**
TVAN				*i*S	**Sb**	**05 04 11.3**		**+1.1**
TVAN	**Van**	**0.50**	**208**	P	**Pg**	**05 04 02.5**		**-0.2**
TVAN				S	**Sb**	**05 04 11.3**		**+1.1**
DYDN	**Diyadin**	**0.57**	**359**	*i*P	**Pb**	**05 04 04.8**		**+0.5**
DYDN				*i*S	**Sn**	**05 04 14.5**		**-0.8**
DYDN	**Diyadin**	**0.57**	**359**	P	**Pb**	**05 04 04.8**		**+0.5**
DYDN				S	**Sn**	**05 04 14.5**		**-0.8**
TUTA	**Tutak**	**0.81**	**302**	*i*P	**Pb**	**05 04 08.6**		**+0.2**
TUTA				*i*S	**Sn**	**05 04 20.4**		**-1.0**
TUTA	**Tutak**	**0.81**	**302**	P	**Pb**	**05 04 08.6**		**+0.2**
TUTA				S	**Sn**	**05 04 20.4**		**-1.0**
AGRB	**Hanur-Agry**	**0.82**	**318**	*e*PG	**Pn**	**05 04 09.1**		**-0.4**
AGRB				*e*SG	**Sn**	**05 04 22.2**		**+0.8**
AGRB	**Hanur-Agry**	**0.82**	**318**	*e*Pg	**Pn**	**05 04 09.1**		**-0.4**
AGRB				*e*Sg	**Sn**	**05 04 22.2**		**+0.8**
BASK	**Baskale_VAN**	**0.95**	**166**	*i*P	**Pb**	**05 04 10.2**		**-0.5**
BASK	**Baskale_VAN**	**0.95**	**166**	P	**Pb**	**05 04 10.2**		**-0.5**
TATV	**Tatvan**	**1.22**	**248**	*i*P	**Pn**	**05 04 14.8**		**-0.2**
TATV				*i*S	**Sg**	**05 04 31.5**		**-0.5**
TATV	**Tatvan**	**1.22**	**248**	P	**Pn**	**05 04 14.8**		**-0.2**
TATV				S	**Sg**	**05 04 31.5**		**-0.5**
HAKT	**HAKKARI**	**1.41**	**180**	*i*P	**Pn**	**05 04 18.1**		**+0.3**
HAKT				*i*S	**Sg**	**05 04 40.0**		**+1.7**
HAKT	**HAKKARI**	**1.41**	**180**	P	**Pn**	**05 04 18.1**		**+0.3**
IMRD	**Marand**	**1.58**	**99**	*e*Pn	**Pb**	**05 04 22.2**		**+0.7**
IMRD				*e*AMB	AMB	05 04 23.3		
	comp=Z,1μm,0.2s							
IMRD	**Marand**	**1.58**	**99**	*e*Pn	**Pb**	**05 04 22.2**		**+0.7**
ISHB	**Shabestar**	**1.65**	**114**	*e*Pn	**Pb**	**05 04 22.5**		**-0.2**
ISHB				*e*AMB	AMB	05 04 33.0		
	comp=Z,437nm,0.2s							
ISHB				*e*Sg	**Sg**	**05 04 47.3**		**+1.5**
IHRS	**Heris**	**2.69**	**103**	*e*Pn	**Pb**	**05 04 38.2**		**-2.3**
IHRS				*e*AMB	AMB	05 04 49.1		
	comp=Z,134nm,0.1s							
IHRS	**Heris**	**2.69**	**103**	*e*Pn	**Pb**	**05 04 38.2**		**-2.3**

*IDC **15** 05:27:42.5±1.1,24.˚43S×179.˚97W,h497km±10km, mb4.0/14,mb1 4.3/15,mb1mx3.9/39,mbtmp4.8/15,Error ellipse: s-maj=13.7km s-min=12.7km az=129.0*
*ISCJB **15** 05:27:43.1±0.1,24.˚46S±0.˚03×179.˚88E±0.˚03,h505km, mb4.7/138,Error ellipse: s-maj=5.0km s-min=2.7km az=136.7*
*NEIC **15** 05:27:44.5±0.4,24.˚53S×179.˚94E,h514km±4km, mb4.8/127,Error ellipse: s-maj=5.2km s-min=3.4km az=141.0*
*BJI **15** 05:27:44.5,24.˚50S×179.˚90E,h514km,mb4.7/15,mB5.2/8*

ISC 15 05:27:43.4±0.3,24.˚51S±0.˚05×179.˚98W±0.˚06,h505km, n343,σ1§04/365,mb4.7/138,2C,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
RAO	**Raoul Island**	**5.07**	**159**	P	**P**	**05 29 08.7**		**-2.5**
	32nm,0.3s,baz=108,slow=20,SNR=1.9							
RAO				S	**S**	**05 30 22.6**		**-0.4**
	219nm,0.3s,baz=73,slow=19,SNR=5.5							
RAO	**Raoul Island**	**5.07**	**159**	*e*P	**P**	**05 29 12.6**		**+1.4**
RAO				*e*S	**S**	**05 30 25.3**		**+2.4**
MSVF	**Nonsavu**	**6.99**	**344**	*e*P	**P**	**05 29 15.1**		**+1.1**
OUZ	**Omahuta**	**12.04**	**206**	*e*P	**P**	**05 30 25.5**		**+3.3**
DZM	**Mont Dzumac**	**12.71**	**278**	P	**P**	**05 30 32.2**		**+2.6**
	5.6nm,0.3s,baz=87,slow=16,SNR=68							
DZM	**Mont Dzumac**	**12.71**	**278**	*e*P	**P**	**05 30 31.0**		**+1.4**
AFI	**Afiamalu**	**13.08**	**38**	P	P	05 30 23.8		-10
	14nm,0.3s,baz=130,slow=23,SNR=14							
AFI				S	S	05 32 42.4		-11
	3.6nm,0.3s,baz=139,slow=11,SNR=3.8							
MXZ	**Matakaoa Point**	**13.09**	**186**	*e*P	P	05 30 38.2		+4.9
URZ	**Urewera**	**13.93**	**190**	P	**P**	**05 30 39.3**		**-2.8**
	13nm,0.3s,baz=11,slow=2.3,SNR=56							
URZ				S	**S**	**05 33 09.6**		**0.0**
	6.7nm,0.3s,baz=261,slow=10,SNR=12							
URZ	**Urewera**	**13.93**	**190**	*e*P	**P**	**05 30 43.2**		**+1.1**
URZ				*e*S	**S**	**05 33 10.8**		**+1.3**
HIZ	**Hauiti**	**14.63**	**196**	*e*P	P	05 30 54.8		+5.2
BKZ	**Black Stump Fm**	**14.91**	**191**	*e*P	**P**	**05 30 52.4**		**-0.1**
BKZ				*e*S	**S**	**05 33 27.6**		**-0.9**
BFZ	**Birch Farm**	**16.43**	**190**	*e*P	**P**	**05 31 07.4**		**-0.9**
	42nm,0.7s							
BFZ				*e*S	**S**	**05 33 56.4**		**-0.2**
SNZO	**South Karori**	**17.33**	**194**	*e*P	**P**	**05 31 17.5**		**+0.3**
	367nm,1.6s							
KHZ	**Kahutara**	**18.65**	**195**	*e*P	**P**	**05 31 29.4**		**+0.1**
	123nm,1.5s							
RAR	**Rarotonga**	**18.91**	**84**	*e*P	**P**	**05 31 30.8**		**-1.2**
	75nm,1.6s							
LTZ	**Lake Taylor**	**19.32**	**197**	*e*P	**P**	**05 31 34.2**		**-1.2**
	34nm,0.7s							
LTZ				*e*S	**S**	**05 34 44.4**		**+0.2**
LHI	**Lord Howe Isla**	**19.76**	**245**	*e*P	**P**	**05 31 42.0**		**+2.4**
	140nm,0.8s							
OXZ	**Oxford**	**19.88**	**197**	*e*P	**P**	**05 31 40.3**		**-0.3**
	50nm,0.9s							
OXZ				*e*S	**S**	**05 34 55.3**		**+2.0**
MQZ	**McQueen's Vall**	**20.08**	**196**	*e*P	**P**	**05 31 42.5**		**+0.2**
	253nm,1.8s							
RPZ	**Rata Peaks**	**20.52**	**199**	P	**P**	**05 31 45.6**		**-0.7**
	14nm,0.4s,baz=32,slow=1.0,SNR=18							
RPZ	**Rata Peaks**	**20.52**	**199**	*e*P	**P**	**05 31 45.9**		**-0.4**
	82nm,1.4s							
FOZ	**Fox Glacier**	**20.74**	**201**	*e*P	**P**	**05 31 47.5**		**-0.8**
	161nm,1.6s							
LBZ	**Lake Benmore**	**21.39**	**200**	*e*P	**P**	**05 31 52.5**		**-1.7**
	172nm,1.8s							
ODZ	**Otahua Downs**	**21.86**	**198**	*e*P	**P**	**05 31 57.6**		**-0.8**
	37nm,1.1s							
WKZ	**Wanaka**	**22.16**	**201**	*e*P	**P**	**05 32 00.9**		**-0.3**
	359nm,1.9s							
MLZ	**Mavora Lakes**	**22.93**	**202**	*e*P	**P**	**05 32 08.6**		**+0.5**
	182nm,2.0s							
DCZ	**Deep Cove**	**23.36**	**203**	*e*P	**P**	**05 32 12.5**		**+0.7**
	139nm,1.6s							
WHZ	**Wether Hill Ro**	**23.45**	**202**	*e*P	**P**	**05 32 13.2**		**+0.5**
	174nm,2.0s							
ARMA	**Armidale**	**25.83**	**251**	P	**P**	**05 32 35.6**		**+1.4**
	baz=26,SNR=21							
ARMA	**Armidale**	**25.83**	**251**	*e*P	**P**	**05 32 35.7**		**+1.6**
	39nm,0.8s							
EIDS	**Eidsvold**	**26.23**	**262**	P	**P**	**05 32 38.2**		**+0.6**
	baz=26,SNR=24							
EIDS	**Eidsvold**	**26.23**	**262**	*e*P	**P**	**05 32 38.3**		**+0.6**
	43nm,0.7s							
MGCD	**Mangrove Creek**	**26.70**	**244**	P	**P**	**05 32 43.4**		**+1.8**
	baz=27,SNR=23							
RMQ	**Roma**	**28.25**	**259**	P	**P**	**05 32 56.9**		**+1.5**
	baz=28,SNR=20							
CNB	**Canberra Magne**	**28.57**	**241**	P	**P**	**05 32 59.6**		**+1.5**
	baz=29,SNR=10							
CAN	**Canberra**	**28.86**	**241**	*e*P	**P**	**05 33 01.8**		**+1.2**
YNG	**Young**	**29.12**	**243**	P	**P**	**05 33 04.1**		**+1.2**
	baz=29,SNR=17							
MILA	**Mila**	**29.18**	**237**	P	**P**	**05 33 04.8**		**+1.4**
	baz=29,SNR=5.5							
CMSA	**Cobar Meteorol**	**31.01**	**249**	P	**P**	**05 33 19.7**		**+0.5**
	baz=31,SNR=95							
CTAO	**Charters Tower**	**31.50**	**271**	*e*P	**P**	**05 33 24.2**		**+0.6**
TOO	**Toolangi**	**32.13**	**238**	P	**P**	**05 33 29.5**		**+0.7**
	baz=32,SNR=15							
QLP	**Quilpie**	**32.29**	**259**	P	**P**	**05 33 30.5**		**+0.2**
	baz=32,SNR=39							
MOO	**Moorlands**	**32.44**	**228**	P	**P**	**05 33 32.4**		**+1.1**
	baz=32,SNR=5.8							
TAU	**Tasmania Unive**	**32.53**	**228**	*e*P	**P**	**05 33 33.0**		**+0.9**
	98nm,1.5s							
MTSU	**Mount Surprise**	**33.79**	**274**	P	**P**	**05 33 43.5**		**+0.4**
	baz=34,SNR=92							
STKA	**Stephens Creek**	**34.52**	**249**	P	**P**	**05 33 49.3**		**+0.3**
	31nm,0.6s,baz=95,slow=10,SNR=127							
STKA				ScP	**ScP**	**05 39 06.9**		**-0.1**
	3.4nm,0.7s,baz=84,slow=2.7,SNR=4.7							
STKA	**Stephens Creek**	**34.52**	**249**	P	**P**	**05 33 49.5**		**+0.5**
	baz=34,SNR=61							
STKA	**Stephens Creek**	**34.52**	**249**	*e*P	**P**	**05 33 49.5**		**+0.5**
	7.7nm,0.6s							
STKA				ScP	**ScP**	**05 39 06.9**		**-0.1**
PMG	**Port Moresby**	**34.71**	**290**	*e*P	**P**	**05 33 50.7**		**-0.1**
	61nm,0.8s							
ARPS	**Mount Arapiles**	**34.83**	**240**	P	**P**	**05 33 52.1**		**+0.6**
	baz=35,SNR=19							
COEN	**Coen**	**36.23**	**280**	P	**P**	**05 34 03.8**		**+0.3**
	baz=36,SNR=7.7							
COEN	**Coen**	**36.23**	**280**	*e*P	**P**	**05 34 04.0**		**+0.5**
	38nm,1.0s							
HTT	**Hallett**	**36.84**	**246**	P	**P**	**05 34 08.5**		**+0.1**
	baz=37,SNR=36							
QIS	**Mount Isa**	**37.44**	**268**	P	**P**	**05 34 13.1**		**-0.4**
	baz=37,SNR=7.8							
BBOO	**Buckleboo**	**39.22**	**248**	P	**P**	**05 34 27.2**		**-0.6**
	baz=39,SNR=103							
BBOO	**Buckleboo**	**39.22**	**248**	*e*P	**P**	**05 34 27.2**		**-0.6**
	51nm,0.9s							
AS01	**Alice Springs**	**41.91**	**261**	*e*P	**P**	**05 34 49.1**		**-0.3**
AS31	**Alice Springs**	**41.95**	**261**	*e*P	**P**	**05 34 49.5**		**-0.3**
	11nm,0.8s							
ASAR	**Alice Springs**	**41.96**	**261**	P	**P**	**05 34 49.5**		**-0.4**
	21nm,0.6s,baz=97,slow=7.1,SNR=201							
ASAR				ScP	**ScP**	**05 39 35.2**		**-0.5**
	4.6nm,0.8s,baz=111,slow=4.3,SNR=12							
ASAR				S	**S**	**05 40 29.0**		**-2.7**
	1.1nm,0.7s,baz=102,slow=16,SNR=4.5							
WB2	**Warramunga Arr**	**42.38**	**267**	*e*P	**P**	**05 34 52.3**		**-0.9**
	67nm,0.8s							
WB3	**Warramunga Arr**	**42.38**	**267**	P	**P**	**05 34 52.3**		**-0.8**
	baz=42							
WRAB	**Tennant Creek**	**42.38**	**267**	*e*P	**P**	**05 34 52.2**		**-1.0**
	61nm,0.9s							
WRA	**Warramunga Arr**	**42.39**	**267**	P	**P**	**05 34 52.2**		**-1.0**
	65nm,0.6s,baz=104,slow=8.1,SNR=404							
WRA				ScP	**ScP**	**05 39 38.8**		**+1.3**
	25nm,0.9s,baz=102,slow=4.1,SNR=38							
WRA				S	**S**	**05 40 34.5**		**-3.4**
	1.7nm,0.8s,baz=97,slow=14,SNR=3.2							
FORT	**Forrest**	**46.12**	**250**	P	**P**	**05 35 20.9**		**-1.0**
	baz=46,SNR=76							
FORT	**Forrest**	**46.12**	**250**	*e*P	**P**	**05 35 20.9**		**-1.0**
	1μm,0.6s							
KDU	**Kakadu**	**46.36**	**276**	P	**P**	**05 35 22.9**		**-1.1**
	baz=46,SNR=8.4							
WRKA	**Warakurna**	**46.72**	**258**	P	**P**	**05 35 26.0**		**-0.7**
	baz=47,SNR=352							
MTN	**Manton Dam**	**47.52**	**275**	P	**P**	**05 35 31.4**		**-1.4**
	baz=48,SNR=11							
MTN	**Manton Dam**	**47.52**	**275**	*e*P	**P**	**05 35 31.6**		**-1.2**
	18nm,0.6s							
KNRA	**Kununurra**	**48.70**	**270**	P	**P**	**05 35 41.3**		**-0.3**
	baz=49							
HPAH	**Hawaii Prepara**	**50.19**	**30**	*e*P	**P**	**05 35 52.7**		**+0.2**
	156nm,0.8s							
MHA	**Mahukona**	**50.23**	**30**	*e*P	**P**	**05 35 53.9**		**+1.2**
FAKI	**Fak Fak**	**50.78**	**287**	*e*P	**P**	**05 35 55.7**		**-1.2**
	80nm,1.3s							
FITZ	**Fitzroy Crossi**	**50.80**	**266**	P	**P**	**05 35 56.7**		**-0.3**
	baz=51,SNR=87							
FITZ	**Fitzroy Crossi**	**50.80**	**266**	*e*P	**P**	**05 35 56.8**		**-0.3**
	60nm,0.8s							
KMBL	**Kambalda**	**51.31**	**249**	P	**P**	**05 35 59.5**		**-1.1**
	baz=51,SNR=7.7							
SBA	**Scott Base**	**53.77**	**183**	*e*P	**P**	**05 36 20.5**		**+3.0**
	9.3nm,0.8s							
VNDA	**Vanda**	**53.78**	**185**	P	**P**	**05 36 19.0**		**+1.5**
	1.4nm,0.5s,baz=358,slow=7.3,SNR=15							
VNDA				ScP	**ScP**	**05 40 23.8**

PSI Prapat 83.06 276 eP P 05 39 14.7 -1.6
17nm,0.9s
MURC Murrieta 83.08 48 P P 05 39 16.5 +0.7
baz=235
SLBS Sierra La Lagu 83.09 60 eP P 05 39 17.5 +1.4
19nm,0.8s
VES Vestal, Richgr 83.14 46 P P 05 39 16.1 +0.1
baz=233,SNR=6.1
BFSC Mount Baldy Ra 83.14 48 P P 05 39 16.1 -0.2
baz=234
JCC Jacoby Creek, 83.20 39 eP P 05 39 17.5 +1.3
39nm,1.3s
MONP2 Monument Peak 83.21 49 P P 05 39 17.3 +0.6
baz=235,SNR=7.9
IKP In-Ko-Pah, Jac 83.29 50 P P 05 39 18.0 +1.1
baz=235,SNR=5.9
EDW2 Edwards Air Fo 83.29 47 P P 05 39 17.3 +0.4
baz=234,SNR=5.7
KHMM Horse Mountain 83.41 39 eP P 05 39 19.0 +1.5
12nm,0.7s
ISA Isabella, Lake 83.43 46 P P 05 39 18.1 +0.6
baz=234
ISA Isabella, Lake 83.43 46 eP P 05 39 18.2 +0.6
16nm,0.8s
PFO Pinyon Flats O 83.59 49 P P 05 39 19.2 +0.7
baz=235
PFO Pinyon Flats O 83.59 49 eP P 05 39 19.5 +1.0
9.9nm,1.0s
TPFO Pinon Flats 83.59 49 P P 05 39 19.2 +0.7
baz=235
CMB Columbia Colle 83.63 43 eP P 05 39 18.8 +0.3
14nm,0.9s
GSI Gunungsitoli 83.66 274 eP P 05 39 19.5 +0.4
42nm,1.0s
SWSC Sam W. Stewart 83.67 50 P P 05 39 19.5 +0.8
baz=236,SNR=5.4
AFDM Forest Hills D 83.83 42 eP P 05 39 20.1 +0.6
13nm,1.0s
ORV Oroville 83.89 42 eP P 05 39 20.1 +0.4
13nm,0.9s
WDC Whiskeytown Da 83.91 40 eP P 05 39 20.8 +1.1
14nm,1.0s
RRX Edison Barstow 83.95 47 P P 05 39 20.4 +0.3
baz=235
SNAA Sanae 84.06 179 P P 05 39 19.3 -0.8
SNAA Sanae 84.06 179 eP P 05 39 19.6 -0.6
16nm,1.7s
N02D Trinity Center 84.06 40 P P 05 39 21.6 +1.0
baz=230,SNR=8.3
BELC Belle Mtn. Jos 84.13 49 P P 05 39 21.9 +0.8
baz=235,SNR=15
CWC Cottonwood Cre 84.15 46 P P 05 39 21.6 +0.4
baz=234
O03D Paynes Creek 84.17 41 P P 05 39 21.4 +0.2
baz=231,SNR=9.8
M02C Callahan 84.25 39 P P 05 39 22.5 +1.0
baz=230,SNR=10.0
BC3 Big Chuckawall 84.31 49 P P 05 39 22.8 +0.8
baz=236,SNR=5.8
L02D Cave Junction, 84.31 38 P P 05 39 22.6 +0.9
baz=230
MPMC Manual Prospec 84.31 46 P P 05 39 22.4 +0.3
baz=234,SNR=11
GSC Goldstone, Bar 84.32 47 P P 05 39 22.4 +0.4
baz=235,SNR=8.9
GSC Goldstone, Bar 84.32 47 eP P 05 39 22.9 +0.9
13nm,0.9s
DAC Darwin (Calif) 84.37 46 eP P 05 39 23.0 +0.6
9.4nm,1.4s
HEC Hector,Ludlow 84.37 48 P P 05 39 22.6 +0.3
baz=235,SNR=6.6
CN2 Changchun 84.39 324 eP P 05 39 24.4 +2.4
CN2 pmax pmax
comp=Z,20nm,0.8s
GLA Glamis 84.40 50 P P 05 39 23.5 +1.0
baz=236,SNR=10
GLA Glamis 84.40 50 eP P 05 39 23.8 +1.4
25nm,0.8s
WAKR Walker 84.51 43 eP P 05 39 24.0 +1.0
8.4nm,0.9s
YBH Yreka Blue Hor 84.55 39 eP P 05 39 24.2 +1.2
9.4nm,0.9s
IRM Iron Mountain 84.80 49 P P 05 39 25.4 +1.1
baz=236,SNR=7.0
GMRC Granite Mounta 84.80 48 P P 05 39 25.0 +0.5
baz=235,SNR=6.7
GRAC Grapevine Rang 84.94 46 P P 05 39 25.5 +0.5
baz=234
FURC Furnace Creek, 84.96 46 P P 05 39 25.7 +0.7
baz=235
HUMO Hull Mountain 84.96 38 eP P 05 39 26.4 +1.4
17nm,1.2s
113A Mohawk Valley, 84.99 51 eP P 05 39 26.1 +0.8
14nm,1.0s
TUQ Turquoise Moun 84.99 47 P P 05 39 25.8 +0.4
baz=235,SNR=7.9
Y12C Blythe 85.00 50 P P 05 39 26.1 +0.8
baz=236
Y12C Blythe 85.00 50 eP P 05 39 26.6 +1.3
16nm,1.1s
SHOC Shoshone, Teco 85.02 47 P P 05 39 25.8 +0.4
baz=235
HSIG 85.04 55 eP P 05 39 26.4 +0.8
22nm,0.8s
M04C Macdoel 85.08 40 P P 05 39 26.3 +0.6
baz=231
214A Organ Pipe Nat 85.23 52 P P 05 39 27.3 +0.9
baz=237
214A Organ Pipe Nat 85.23 52 eP P 05 39 27.4 +0.9
28nm,0.8s
PAHR Pah Rah Range 85.27 42 eP P 05 39 27.2 +0.6
6.6nm,0.9s
LDFC Landfair 85.34 48 eP P 05 39 28.2 +1.2
32nm,0.8s
I03D Drain, OR 85.45 37 P P 05 39 28.1 +0.9
baz=230
PDMCI Parker Dam,Lak 85.57 49 P P 05 39 28.7 +0.7
baz=236,SNR=9.7
TPNV Topopah Spring 85.64 46 P P 05 39 28.8 +0.3
baz=235,SNR=16
TPNV Topopah Spring 85.64 46 eP P 05 39 29.0 +0.5
9.8nm,0.8s
K04D Chiloquin, OR 85.66 39 P P 05 39 29.1 +0.7
baz=231
I04A Tendick Farm, 86.03 38 P P 05 39 30.4 +0.4
baz=230
MOD Modoc Plateau 86.05 40 eP P 05 39 31.1 +0.7
19nm,1.4s
SHPR Sheep Range 86.11 47 eP P 05 39 31.8 +1.1
4.4nm,0.8s
Y14A Wickenburg 86.16 50 eP P 05 39 31.7 +0.7
38nm,1.1s
W13A Hualapai Mount 86.19 49 eP P 05 39 32.0 +0.8
19nm,1.6s
K05A Summer Lake 86.22 39 eP P 05 39 32.0 +0.8
21nm,1.1s
J05D Fort Rock, OR 86.37 39 P P 05 39 32.5 +0.7
baz=231
G03D McMinnville, O 86.47 36 P P 05 39 33.0 +1.0
baz=230
R11A Troy Canyon, C 86.87 45 P P 05 39 34.4 0.0
baz=235
R11A Troy Canyon, C 86.87 45 eP P 05 39 34.6 +0.3
2.1nm,0.9s
TUC Tucson 86.88 52 P P 05 39 35.8 +1.4
baz=238
TUC Tucson 86.88 52 eP P 05 39 35.8 +1.4
20nm,0.9s
I05D Terrebonne, OR 86.97 38 P P 05 39 35.1 +0.6
baz=231
BMN Battle Mountai 87.03 43 eP P 05 39 35.7 +0.7
8.2nm,0.9s
GYA Guiyang 87.07 301 eP P 05 39 35.8 +0.3
GYA pP pP 05 41 29.3 +2.1
GYA sP sP 05 42 20.0 +1.4
GYA PP PP 05 43 10.3 +1.9
GYA SKS SKSac 05 49 12.8 -1.9
GYA S S 05 49 31.5 -0.8
GYA pmax pmax
comp=Z,10.0nm,1.0s
WVOR Wild Horse Val 87.36 41 eP P 05 39 36.9 +0.4
18nm,1.1s
BJI Beijing 87.48 316 P P 05 39 37.4 +0.5
BJI pmax pmax
comp=Z,7.0nm,0.7s
319A Douglas 87.49 54 eP P 05 39 39.0 +1.6
34nm,1.0s
X16A Lo Mia Camp, P 87.51 50 eP P 05 39 38.9 +1.4
9.6nm,1.0s
G05D Wamic, OR 87.55 37 P P 05 39 37.8 +0.6
baz=231
CROR Criterion Ridg 87.57 38 P P 05 39 37.7 +0.4
LCMT Little Creek M 87.67 47 eP P 05 39 39.1 +1.0
7.4nm,0.9s
ERK Elk Rock 87.67 36 P P 05 39 38.9 +1.1
TDL Tradedollar La 87.77 36 P P 05 39 39.1 +0.9
PLCA Paso Flores 87.83 134 P P 05 39 38.5 -0.3
1.7nm,0.8s,baz=256,slow=4.2,SNR=3.2
CCUT Cedar City 87.88 47 eP P 05 39 39.5 +0.3
7.6nm,0.9s
G06A Carlson Farm, 87.92 37 eP P 05 39 39.8 +0.8
18nm,1.0s
VTHM Trough 87.93 38 P P 05 39 39.6 +0.6
KNB Kanab 87.95 48 eP P 05 39 40.5 +1.0
21nm,1.4s
U15A North Rim 88.00 48 eP P 05 39 40.8 +0.9
20nm,1.2s
WUAZ Wupatki 88.14 49 P P 05 39 40.9 +0.5
baz=238
WUAZ Wupatki 88.14 49 eP P 05 39 41.1 +0.7
12nm,1.2s
LON Longmire 88.23 36 eP P 05 39 40.8 +0.4
5.7nm,0.8s
D05A Enumclaw 88.42 35 eP P 05 39 42.5 +1.3
29nm,0.9s
PKCU Pink Cliffs 88.53 47 eP P 05 39 44.2 +1.8
7.7nm,0.7s
ZAIG Zacatecas 88.60 64 eP P 05 39 44.4 +1.4
14nm,1.4s
PGC Sidney 88.60 34 eP P 05 39 42.8 +0.9
15nm,0.8s
X18A Snowflake 88.62 51 eP P 05 39 43.9 +1.2
8.1nm,0.8s
TRW Toppenish Ridg 88.63 37 P P 05 39 42.8 +0.6
NAC Naches 88.75 36 P P 05 39 43.1 +0.4
G08A Pilot Rock 88.89 38 eP P 05 39 44.4 +0.8
12nm,0.9s
MTPU Mount Pierson 88.93 47 eP P 05 39 45.6 +1.4
12nm,0.8s
A04D Lummi Island 89.03 34 P P 05 39 44.5 +0.7
baz=230
B05A Bryant 89.05 34 P P 05 39 44.4 +0.4
baz=230,SNR=5.5
LTY Liberty 89.16 36 eP P 05 39 45.2 +0.5
6.3nm,0.6s
121A Cookes Peak, D 89.17 54 P P 05 39 46.5 +1.2
baz=240
MSU Marysvale 89.19 47 eP P 05 39 46.3 +1.0
KMI Kunming 89.56 298 P P 05 39 47.6 +0.3
KMI pmax pmax
comp=Z,13nm,0.8s
KMI pmax pmax
comp=Z,85nm,4.5s
BMO Blue Mountains 89.57 39 eP P 05 39 46.6 -0.2
21nm,1.9s
MFID Camas Ranch 89.61 41 eP P 05 39 47.6 +0.7
14nm,0.9s
MMU Miners Mountai 89.61 47 eP P 05 39 47.8 +0.5
DUG Dugway, Tooele 89.68 45 P P 05 39 47.8 +0.4
baz=237
DUG Dugway, Tooele 89.68 45 eP P 05 39 47.9 +0.5
4.2nm,1.0s
CM01 Chiang Mai Arr 89.72 290 eP P 05 39 48.9 +1.0
CMAR Chiang Mai Arr 89.75 290 P P 05 39 48.8 +0.8
4.1nm,0.7s,baz=139,slow=3.4,SNR=22
SEY Seynchan 89.87 348 P P 05 39 47.0 -0.4
2.1nm,0.5s,baz=165,slow=5.6,SNR=8.9
TMUT Trail Mountain 90.25 46 eP P 05 39 51.3 +1.1
24nm,0.7s
F10A Beach Ranch, E 90.28 38 eP P 05 39 49.7 -0.2
7.1nm,0.8s
MPU Maple Canyon 90.35 46 eP P 05 39 51.5 +0.9
7.2nm,0.8s
SPUT South Promonto 90.52 44 eP P 05 39 52.0 +0.8
13nm,0.9s
HLID Hailey 90.54 41 P P 05 39 51.8 +0.5
baz=236
HLID Hailey 90.54 41 eP P 05 39 51.9 +0.5
7.4nm,1.0s
MNTX Cornudas Mount 90.55 55 P P 05 39 52.0 +0.6
baz=241
MNTX Cornudas Mount 90.55 55 eP P 05 39 52.1 +0.7
6.2nm,0.8s
B08A Cedar Reser 90.55 36 eP P 05 39 50.8 -0.3
3.4nm,0.7s
LAZ Ladron 90.56 52 eP P 05 39 52.8 +1.1
HVU Hansel Valley 90.57 44 eP P 05 39 52.0 +0.5
13nm,0.8s
SRU San Rafael Swe 90.60 47 eP P 05 39 52.4 +0.7
15nm,0.8s
CTU Camp Tracy 90.63 45 eP P 05 39 52.4 +0.6
32nm,0.9s
P17A Butcher Ranch, 90.65 46 eP P 05 39 53.0 +1.1
22nm,1.4s
TX31 Lajitas Ar. Si 90.74 58 eP P 05 39 53.3 +0.8
TXAR Lajitas Array 90.74 58 P P 05 39 53.2 +0.7
7.8nm,0.8s,baz=214,slow=6.4,SNR=107
TXAR PKiKP PKiKP 05 44 41.9 -1.1
0.8nm,0.5s,baz=325,slow=6.9,SNR=17
JLU Jordanelle 90.78 45 eP P 05 39 53.3 +0.7
29nm,1.8s
HHC Hu-ho-hao-te 90.86 315 eP P 05 39 54.4 +1.6
HHC pP pP 05 41 49.9 +4.6
HHC S S 05 50 04.5 -1.8
HHC SS SS 05 56 25.8 +0.9
HHC pmax pmax
comp=Z,18nm,1.2s
HHC pmax pmax
comp=Z,70nm,4.4s
MVCO Mesa Verde 91.00 49 P P 05 39 53.9 +0.2
baz=240
P18A Preston Nutter 91.06 46 eP P 05 39 54.3 +0.3
13nm,1.1s
TCUT Toone Canyon 91.08 45 eP P 05 39 54.8 +0.9
23nm,0.9s
PV09 Paradox Valley 91.22 48 eP P 05 39 55.3 +0.6
PV10 Paradox Valley 91.22 48 eP P 05 39 55.0 +0.3
HWUT Hardware Ranch 91.24 44 eP P 05 39 54.5 -0.1
5.3nm,0.7s
ANMO Albuquerque 91.32 52 P P 05 39 55.3 +0.2
baz=241
ANMO Albuquerque 91.32 52 eP P 05 39 55.5 +0.3
5.3nm,0.9s
PV01 Paradox Valley 91.42 48 eP P 05 39 55.5 -0.1
NEW Newport 91.68 37 P P 05 39 55.5 -0.7
0.9nm,0.5s,baz=333,slow=11,SNR=2.7
NEW Newport 91.68 37 P P 05 39 57.5 +1.2
baz=234
AHID Auburn Hatcher 92.14 43 eP P 05 40 00.0 +1.3
7.1nm,0.9s
S22A 4UR Ranch, Cre 92.42 49 P P 05 40 00.7 +0.4
baz=241
S22A 4UR Ranch, Cre 92.42 49 eP P 05 40 00.7 +0.4
2.1nm,1.1s
DLMT Dillon 92.61 41 eP P 05 40 02.3 +1.5
2.6nm,0.9s
CMIG Matias Romero 92.64 73 P P 05 40 00.1 -1.3
3.4nm,0.9s,baz=281,slow=5.2,SNR=3.5
O20A White River Ci 92.64 47 eP P 05 40 00.3 -0.8
4.4nm,0.7s
SNOW Snow King Moun 92.72 43 eP P 05 40 03.2 +1.7
4.9nm,0.8s
SMCO Snowmass 93.02 48 eP P 05 40 03.5 +0.4
3.6nm,0.8s
CHMT Chamberlain Mo 93.07 39 eP P 05 40 03.0 0.0
BW06 Boulder Array 93.11 44 P P 05 40 03.2 -0.1
baz=239
BW06 Boulder Array 93.11 44 eP P 05 40 03.0 -0.2
2.9nm,0.8s
PD31 Pinedale Array 93.11 44 eP P 05 40 03.0 -0.2
PDAR Pinedale Array 93.11 44 P P 05 40 03.0 -0.2
2.1nm,0.7s,baz=223,slow=3.0,SNR=18
832A Faith Ranch, C 93.16 60 P P 05 40 03.7 +0.2
baz=244
SDCO Great Sand Dun 93.34 50 P P 05 40 04.7 +0.2
baz=242
SDCO Great Sand Dun 93.34 50 eP P 05 40 04.8 +0.2
3.1nm,0.8s
933A Laredo 93.42 61 P P 05 40 05.5 +0.8
baz=244
034A Hebbronville 93.66 62 P P 05 40 06.8 +1.0
baz=244
T25A Trinidad 93.82 51 P P 05 40 06.7 +0.1
baz=242
Q24A Divide 94.16 49 P P 05 40 08.4 +0.1
baz=242
Q24A Divide 94.16 49 eP P 05 40 08.8 +0.5
5.2nm,0.8s
ISCO Idaho Springs 94.24 48 P P 05 40 08.8 +0.2
baz=242
JCT Junction City 94.25 59 P P 05 40 07.9 -0.6
baz=244
633A Saathoff Ranch 94.30 60 P P 05 40 08.9 +0.2
baz=244
RLMT Red Lodge 94.49 42 P P 05 40 09.5 0.0
baz=240
N23A Red Feather La 94.54 47 P P 05 40 10.1 +0.2
baz=241
533A Kerrville 94.67 59 P P 05 40 10.2 -0.2
baz=244
433A Art 94.92 59 P P 05 40 11.1 -0.4
baz=244
534A Blanco 95.09 59 P P 05 40 12.5 +0.2
baz=245
333A Richland Sprin 95.25 58 P P 05 40 13.1 +0.1
baz=244
ABTX Abilene, Hawle 95.30 57 P P 05 40 13.5 +0.3
baz=244
635A Leesville 95.37 60 P P 05 40 13.7 +0.2
baz=245
434A Burnet 95.58 59 P P 05 40 14.4 -0.1
baz=245
233A Rising Star 95.61 57 P P 05 40 15.1 +0.5
baz=245
334A Lometa 95.83 58 P P 05 40 16.2 +0.6
baz=245
133A Hamilton Ranch 95.85 57 P P 05 40 16.3 +0.6
baz=245
KSCO Kaye Shedlock' 95.93 50 P P 05 40 16.8 +0.8
baz=243
P34A Walnut Farm, R 100.23 51 Pdiff Pdif 05 40 36.2 +1.2
baz=247
X39A Fountain Ranch 100.28 57 Pdiff Pdif 05 40 36.0 +0.6
baz=247
T38A Diamond 101.11 54 Pdiff Pdif 05 40 39.4 +0.4
baz=248
KSH Kashi 115.62 304 ePKP PKPdf 05 45 28.4 +0.2
KSH SKS SKSdf 05 51 48.5 -3.7
KSH AMB AMB
comp=Z,90nm,5.8s
PTGA Pitinga 116.77 104 ePKPdf PKPdf 05 45 30.2 -0.8
SUR Sutherland 120.05 200 ePKPdf PKPdf 05 45 37.0 -0.1
GEYT Alibeck 129.29 300 SKPab SKPab 05 48 27.5 -0.8
2.3nm,0.4s,baz=127,slow=3.8,SNR=4.6
ARCES ARCESS Array B 132.48 348 PKP PKPdf 05 45 58.9 -0.5
4.8nm,0.9s,baz=352,slow=1.8,SNR=6.4
ARCES SKPbc SKPbc 05 48 37.5 -1.4
5.2nm,0.7s,baz=29,slow=3.3,SNR=18
ARE0 ARCESS Array S 132.48 348 ePKPdf PKPdf 05 45 59.4 0.0
KIF Kilpisjarvi 133.77 350 ePKPdf PKPdf 05 46 02.1 +0.4
KMBO Kilima Mbogo 135.81 240 SKPbc SKPbc 05 48 51.8 +0.1
2.5nm,0.8s,baz=347,slow=1.1,SNR=4.8
FINES FINESS Array B 139.03 341 SKPbc SKPbc 05 48 57.7 -1.3
9.4nm,0.6s,baz=44,slow=3.1,SNR=20
NB2 NORSAR Subarra1 142.68 351 PKP PKPdf 05 46 13.9 -4.4
comp=Z,1.7nm,0.8s,baz=12,slow=3.0
NB2 NORSAR Subarra1 142.68 351 PKP SKPbc 05 49 06.9 -1.5
comp=Z,1.1nm,0.6s,baz=16,slow=2.6
NOA NORSAR Array B 142.68 351 PKhKP PKPpre 05 46 13.7
comp=Z,3.6nm,0.9s,baz=7.4,slow=2.3,SNR=8.1
NOA SKPbc SKPbc 05 49 07.3 -1.2
comp=Z,1.6nm,0.7s,baz=14,slow=4.2,SNR=7.7
OSL Oslo 143.81 351 ePKPdf PKPbc 05 46 18.6 -0.6
BER Bergen 143.96 356 ePKPdf PKPbc 05 46 19.1 -0.5
KONO Kongsberg 144.25 352 ePKPdf PKPbc 05 46 19.9 -0.6
LRW Lerwick 144.38 1 ePKPdf PKPbc 05 46 20.2 -0.8
AKASG Malin Array Be 145.49 327 PKPbc PKPdf 05 46 23.1 -0.3
comp=Z,0.5nm,0.3s,baz=43,slow=4.2,SNR=4.9
AKASG SKPbc SKPbc 05 49 14.4 -0.8
comp=Z,0.7nm,0.5s,baz=44,slow=3.2,SNR=3.5
AKBB Malin Array Si 145.49 327 ePKPdf PKPdf 05 46 23.1 -0.3
KIEV Kiev 145.50 327 ePKPdf PKPdf 05 46 23.2 -0.2
SNART Snartemo 145.81 353 ePKPdf PKPbc 05 46 25.0 -0.3
KPL Plockton 146.94 6 ePKPdf PKPbc 05 46 27.9 -0.6
BR131 Keskin Array S 147.95 306 ePKPbc PKPbc 05 46 31.3 -0.6
BR131 ePKPab PKPab 05 46 36.6 +0.2
BRTR Keskin Array B 147.95 306 PKPbc PKPbc 05 46 31.1 -0.9
comp=Z,1.7nm,0.7s,baz=140,slow=5.7,SNR=7.7
BRTR PKPab PKPab 05 46 35.9 -0.5
comp=Z,4.6nm,0.6s,baz=113,slow=3.8,SNR=19
BR231 Keskin MP Arra 148.55 307 ePKPdf PKPbc 05 46 31.9 -1.4
BR231 ePKPbc PKPab 05 46 37.1 -1.7
CRVS Cervenica-Dubn 150.40 331 ePKP PKPdf 05 46 30.9 -0.6
CRVS e 05 46 36.0
DSB Dublin 150.90 8 ePKPbc PKPbc 05 46 37.3 -1.0
CLL Collm 151.44 343 eP PKPbc 05 46 39.0 -0.6
comp=Z,8.0nm,0.8s
CLL e 05 46 49.0
CLL Collm 151.44 343 ePKPbc PKPbc 05 46 39.4 -0.2
BRG Berggiesshubel 151.57 341 ePKP PKPbc 05 46 39.4 -0.5
comp=Z,4.9nm,0.6s
KHC Kasperske Hory 153.22 340 ePKPAB PKPab 05 46 57.0 -0.9
GEA0 GERESS Array S 153.44 340 ePKPbc PKPbc 05 46 44.2 0.0
GEA0 ePKPab PKPab 05 47 00.1 +1.1
ES19 SONSECA Array 164.50 11 ePKPab PKPab 05 47 46.7 -0.6
ESDC Sonseca Array 164.51 12 PKPab PKPab 05 47 46.3 -1.0
comp=Z,0.9nm,0.5s,baz=345,slow=4.3,SNR=7.6
TOA0 Torodi Ar. Sit 168.59 188 ePKPab PKPab 05 48 05.5 -0.2
TORD Torodi Ar. Bea 168.59 188 PKPab PKPab 05 48 05.5 -0.3
comp=Z,0.9nm,0.5s,baz=171,slow=4.2,SNR=13

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*IDC **15** 05:31:13.3±1.5, 36.28S×73.45W, h0km, mb4.1/7, mb1 4.2/10, mb1mx4.0/28, mbtmp4.1/10, ML4.1/3, MS3.3/2, Ms1 3.3/2, ms1mx2.8/25, Error ellipse: s-maj=40.6km s-min=22.0km az=71.0*

*ISCJB **15** 05:31:15.4±0.6, 36.29S±0.04×73.62W±0.06, h27km, mb4.4/10, MS3.3/1, Error ellipse: s-maj=6.8km s-min=5.7km az=170.9*

*NEIC **15** 05:31:15.0, 36.31S×73.65W, h27km, mb4.5/3, ML4.3(GUC), After GUC.*

NEIC Felt [III] at Penco and Tome and [II] at Concepcion, Hualpencillo, San Pedro de la Paz and Talcahuano.

*GUC **15** 05:31:15.4±0.6, 36.31S×73.65W, h27km±4km, ML4.3*

ISC 15 05:31:17.5±0.7, 36.36S±0.05×73.50W±0.07, h27km, n27, σ1°67/32, mb4.2/10, 3C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CCSP	San Pedro de C	0.58	147	↑	iP	Pb		05 31 28.0	-1.2
CCSP					i S	Sb		05 31 38.1	+1.1
CCSP					IAML			05 31 41.1	
comp=N,16μm,0.4s									
COCH	Cobquecura	0.61	69	↑	iP	Pb		05 31 28.7	-1.0
COCH					i S	Sn		05 31 38.8	-0.7
COCH					IAML			05 31 39.6	
comp=N,37μm,0.4s									
CCHI	Chillan	1.17	103	↑	iP	Pn		05 31 38.0	-0.1
CCHI					i S	Sb		05 31 54.9	+1.0
CCHI					IAML			05 32 02.7	
comp=E,8μm,0.6s									
TALC	Talca	1.79	58		eP	Pn		05 31 47.4	+0.8
TALC					i S	Sb		05 32 10.9	-0.7
NICH	Los Niches	2.29	54		eP	Pn		05 31 53.2	-0.3
PLCA	Paso Flores	4.94	153		Pn	Pn		05 32 31.1	+1.1
comp=E,0.9nm,0.3s,baz=351,slow=12,SNR=35									
PLCA					Lg	Lg		05 33 51.6	
comp=E,0.8nm,0.3s,baz=267,slow=19,SNR=2.7									
AAGR	Agrelo	5.04	51		eP	Pn		05 32 31.6	+0.1
AAGR					eS	Sb		05 33 54.2	+8.9
AUSP	Uspallata	5.34	41		eP	Pn		05 32 35.7	-0.1
AUSP					eS	Sb		05 34 02.7	+8.6
ASAL	Salagasta	5.38	47		eP	Pn		05 32 36.5	+0.4
ASAL					eS	Sb		05 34 02.3	+7.3
RTLS	Leoncito	5.73	39		eP	Pn		05 32 40.9	-0.2
RTCV	Cerro Valdivia	6.08	44		eP	Pn		05 32 44.9	-0.8
ACAN	Cantantal	6.62	54		eP	Pn		05 32 51.6	-1.4
ACCO	Cerro Coronel	6.84	34		eP	Pn		05 32 55.1	-1.3
ACCO					IAML			05 33 00.3	
comp=Z,58nm,0.5s									
TRQA	Tornquist	9.34	104		ePn	Pn		05 33 31.4	+0.9
comp=Z,26nm,0.9s									
LVC	Limon Verde	14.27	17		Pn	Pn		05 34 37.6	-0.5
comp=Z,7.2nm,0.3s,baz=230,slow=11,SNR=4.7									
CPUP	Villa Florida	17.03	59		Pn	Pn		05 35 11.7	-2.0
comp=Z,0.1nm,0.3s,baz=236,slow=12,SNR=4.6									
CPUP					LR	LR		05 42 13.7	
comp=Z,65nm,21.0s,baz=237,slow=39									
LPAZ	La Paz	20.55	15		P	P		05 35 55.0	+0.3

comp=Z,2.9nm,0.7s,baz=195,slow=9.0,SNR=12
SIV San Ignacio 23.10 32 P **P** **05 36 19.5 -1.9**
comp=Z,3.9nm,0.7s,baz=216,slow=11,SNR=19
SIV LR LR 05 47 07.6
comp=Z,104nm,19.8s,baz=180,slow=42
NNA Nana 24.45 352 P **P** **05 36 33.0 -1.3**
comp=Z,2.8nm,0.3s,baz=152,slow=7.9,SNR=3.5
SNAA Sanae 49.87 157 *eP* **P** **05 40 08.2 +0.1**
comp=Z,256nm,1.0s
QSPA South Pole Qui 53.88 180 *eP* **P** **05 40 39.0 +0.9**
comp=Z,17nm,1.1s
SBA Scott Base 60.53 192 *eP* **P** **05 41 26.6 +1.9**
comp=Z,7.2nm,1.6s
TXAR Lajitas Array 71.23 332 P **P** **05 42 34.1 -0.1**
comp=Z,0.5nm,0.6s,baz=151,slow=9.5,SNR=6.0
DBIC Dimbokro 77.06 72 P **P** **05 43 08.4 -0.1**
comp=Z,9.9nm,1.2s,baz=177,slow=7.0,SNR=3.6
ANMO Albuquerque 77.30 333 *eP* **P** **05 43 09.9 +0.3**
comp=Z,1.0nm,0.9s
BOSA Boshof 80.03 118 P **P** **05 43 25.0 +0.1**
comp=Z,1.7nm,0.9s,baz=236,slow=10.0,SNR=3.3
TORD Torodi Ar. Bea 86.12 71 P **P** **05 43 55.6 -0.8**
comp=Z,0.5nm,0.6s,baz=205,slow=5.0,SNR=6.8

*ISCJB **15** 05:36:19.5±0.2, 63.84N±0.02×149.16W±0.05, h128km±2km, mb4.3/18, Error ellipse: s-maj=3.5km s-min=3.1km az=12.4*
*NEIC **15** 05:36:21.1±1.5, 63.82N×149.13W, h117km, MG4.0(AEIC), After AEIC.*
*IDC **15** 05:36:21.1±1.5, 63.99N×149.31W, h118km±10km, mb4.0/18, mb1 4.0/21, mb1mx3.8/48, mbtmp4.3/21, Error ellipse: s-maj=21.5km s-min=13.7km az=23.0*
ISC 15 05:36:20.6±0.6, 63.85N±0.03×149.18W±0.03, h120km±5km, n127, σ0 69/140, mb4.3/18, Central Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BWN	**Browne**	**0.35**	**339**	P	**Pn**	**05 36 38.2**	**+0.5**
BWN				S	**Sn**	**05 36 51.0**	**+0.3**
RND	**Reindeer**	**0.46**	**161**	P	**Pn**	**05 36 38.3**	**-0.1**
RND				S	**Sn**	**05 36 51.5**	**-0.3**
NEA	**Nenana**	**0.74**	**4**	P	**Pn**	**05 36 40.6**	**+0.4**
WRH	**Wood River Hil**	**0.79**	**37**	P	**Pn**	**05 36 40.8**	**+0.1**
WRH				S	**Sn**	**05 36 55.8**	**-0.1**
KTH	**Kantishna Hill**	**0.83**	**250**	P	**Pn**	**05 36 41.5**	**+0.4**
KTH				S	**Sn**	**05 36 56.6**	**+0.1**
BPAW	**Bear Paw Mtn.**	**0.83**	**289**	P	**Pn**	**05 36 41.5**	**+0.4**
BPAW				S	**Sn**	**05 36 56.4**	**-0.2**
HUR	**Hurricane**	**0.89**	**193**	P	**Pn**	**05 36 41.7**	**+0.1**
CCB	**Clear Creek Bu**	**1.00**	**36**	P	**Pn**	**05 36 42.9**	**+0.2**
CCB				S	**Sn**	**05 36 59.0**	**-0.2**
DHY	**Denali Highway**	**1.12**	**133**	P	**Pn**	**05 36 44.0**	**+0.1**
DHY				S	**Sn**	**05 37 02.1**	**+0.4**
HDA	**Harding Lake**	**1.13**	**59**	P	**Pn**	**05 36 44.1**	**+0.1**
COLA	**College**	**1.19**	**29**	P	**Pn**	**05 36 44.8**	**+0.3**
COLA				S	**Sn**	**05 37 02.2**	**-0.3**
MDM	**Murphy Dome**	**1.19**	**20**	P	**Pn**	**05 36 45.1**	**+0.5**
MDM				S	**Sn**	**05 37 02.9**	**+0.1**
PS08	**TAPS Pump Stn8**	**1.25**	**55**	P	**Pn**	**05 36 45.2**	**0.0**
CAST	**Castle Rocks**	**1.36**	**253**	P	**Pn**	**05 36 46.6**	**+0.2**
CAST				S	**Sn**	**05 37 05.9**	**-0.2**
ILAR	**Eielson Array**	**1.37**	**46**	P	**Pn**	**05 36 46.5**	**0.0**
	56nm,0.3s,baz=227,slow=11,SNR=2950						
ILAR				S	**Sn**	**05 37 05.3**	**-0.8**
	39nm,0.3s,baz=221,slow=16,SNR=16						
ILB	**Eielson Array**	**1.37**	**46**	P	**Pn**	**05 36 46.3**	**-0.1**
MLY	**Manley**	**1.37**	**331**	P	**Pn**	**05 36 47.0**	**+0.4**
CHUM	**Lake Minchumin**	**1.39**	**273**	P	**Pn**	**05 36 47.2**	**+0.5**
CUT	**Chulitna**	**1.53**	**199**	P	**Pn**	**05 36 48.4**	**+0.1**
PS10	**TAPS Pump St10**	**1.58**	**104**	P	**Pn**	**05 36 49.9**	**+0.9**
PPLA	**Purkeypile**	**1.66**	**236**	P	**Pn**	**05 36 50.4**	**+0.4**
PAX	**Paxson**	**1.89**	**116**	P	**Pn**	**05 36 53.5**	**+0.8**
PS06	**TAPS Pump Stn6**	**2.03**	**354**	P	**Pn**	**05 36 55.2**	**+0.9**
SML	**Sawmill**	**2.08**	**169**	P	**Pn**	**05 36 55.1**	**0.0**
GHO	**Glory Hole Cre**	**2.08**	**177**	P	**Pn**	**05 36 55.2**	**+0.1**
GHO				S	**Sn**	**05 37 21.3**	**-0.2**
SKT	**Skwentna**	**2.16**	**211**	P	**Pn**	**05 36 55.6**	**-0.4**
SCM	**Sheep Creek Mo**	**2.19**	**156**	P	**Pn**	**05 36 56.2**	**-0.3**
PMR	**Palmer**	**2.26**	**179**	P	**Pn**	**05 36 57.3**	**0.0**
DOT	**Dot Lake**	**2.29**	**93**	P	**Pn**	**05 36 57.4**	**-0.2**
PS11	**TAPS Pump St11**	**2.45**	**135**	P	**Pn**	**05 36 57.5**	**+0.8**
KNK	**Knik Glacier**	**2.46**	**172**	P	**Pn**	**05 37 00.4**	**+0.5**
SUA	**Susitna One**	**2.50**	**197**	P	**Pn**	**05 37 01.1**	**+0.6**
MENT	**Mentasta**	**2.62**	**108**	P	**Pn**	**05 37 02.2**	**+0.2**
STLK	**Strandline Lak**	**2.65**	**209**	P	**Pn**	**05 37 02.3**	**-0.1**
FIB	**Fire Island**	**2.73**	**190**	P	**Pn**	**05 37 04.0**	**+0.8**
RC01	**Rabbit Creek A**	**2.78**	**186**	P	**Pn**	**05 37 04.8**	**+0.9**
KLU	**Klutina**	**2.80**	**146**	P	**Pn**	**05 37 03.6**	**-0.7**
IM3	**Indian Mountai**	**2.90**	**320**	P	**Pn**	**05 37 05.9**	**+0.4**
SPCR	**Spurr Chakacha**	**3.00**	**209**	P	**Pn**	**05 37 07.4**	**+0.4**
SPWE	**Spurr West**	**3.02**	**213**	P	**Pn**	**05 37 07.9**	**+0.7**
VLZ	**Valdez**	**3.03**	**153**	P	**Pn**	**05 37 06.1**	**-1.1**
CKL	**Chakachamna La**	**3.03**	**210**	P	**Pn**	**05 37 08.4**	**+1.0**
GLI	**Glacier Island**	**3.13**	**161**	P	**Pn**	**05 37 07.7**	**-0.9**
DIV	**Divide**	**3.15**	**148**	P	**Pn**	**05 37 08.1**	**-0.8**
FYU	**Fort Yukon**	**3.20**	**30**	P	**Pn**	**05 37 09.8**	**+0.4**
TTA	**Tatalina**	**3.21**	**256**	P	**Pn**	**05 37 09.6**	**-0.1**
TT01	**Tatalina**	**3.22**	**256**	P	**Pn**	**05 37 09.8**	**0.0**
FID	**Port Fidalgo**	**3.37**	**157**	P	**Pn**	**05 37 10.6**	**-0.8**
SLKM	**Skilak Lake**	**3.38**	**189**	P	**Pn**	**05 37 12.5**	**+0.5**
BCA3	**Beaver Creek A**	**3.41**	**100**	P	**Pn**	**05 37 11.8**	**-0.5**
COLD	**Coldfoot**	**3.42**	**353**	P	**Pn**	**05 37 13.1**	**+0.7**
BGRM	**Barrier Glacie**	**3.45**	**207**	P	**Pn**	**05 37 13.5**	**+0.7**
BMRM	**Bremner River**	**3.59**	**142**	P	**Pn**	**05 37 13.8**	**-0.9**
EGAK	**Eagle**	**3.62**	**71**	P	**Pn**	**05 37 14.7**	**-0.3**
EYAK	**Cordova Ski Ar**	**3.68**	**153**	P	**Pn**	**05 37 15.0**	**-0.7**
RDJH	**Redoubt Jeurge**	**3.68**	**209**	P	**Pn**	**05 37 16.9**	**+0.9**
HIN	**Hinchinbrook I**	**3.68**	**159**	P	**Pn**	**05 37 15.1**	**-0.8**
NCT	**North Crescent**	**3.73**	**210**	P	**Pn**	**05 37 18.0**	**+1.4**
VRDI	**Verde Repeater**	**3.73**	**132**	P	**Pn**	**05 37 16.8**	**+0.1**
MCARA	**McCarthy VSAT**	**3.77**	**128**	P	**Pn**	**05 37 17.8**	**+0.8**
RDWB	**Redoubt West**	**3.78**	**209**	P	**Pn**	**05 37 18.3**	**+1.0**
SVW2	**Sparrevohn**	**4.05**	**230**	P	**Pn**	**05 37 20.9**	**+0.1**
BM3	**Burnt Mountain**	**4.06**	**26**	P	**Pn**	**05 37 21.1**	**+0.2**
RAGM	**Ragged Mountai**	**4.06**	**147**	P	**Pn**	**05 37 20.5**	**-0.5**
PTPK	**Patty Peak**	**4.17**	**128**	P	**Pn**	**05 37 20.9**	**+0.9**
BRLK	**Bradley Lake**	**4.17**	**192**	P	**Pn**	**05 37 22.6**	**+0.1**
CRQM	**Cirque**	**4.19**	**135**	P	**Pn**	**05 37 22.1**	**-0.6**
BALM	**Baldy**	**4.25**	**128**	P	**Pn**	**05 37 23.5**	**0.0**
TGL	**Tana Glacier**	**4.29**	**133**	P	**Pn**	**05 37 23.0**	**-1.0**
KIAG	**Kiagna River**	**4.32**	**130**	P	**Pn**	**05 37 23.5**	**-1.1**
DAWY	**Dawson**	**4.32**	**83**	*e*Pn	**Pn**	**05 37 23.8**	**-0.6**
NICHA	**Nichawak Mount**	**4.37**	**144**	P	**Pn**	**05 37 24.4**	**-0.6**
KHIT	**Khitrov Hills**	**4.40**	**138**	P	**Pn**	**05 37 24.7**	**-0.9**
CNPM	**China Poot**	**4.44**	**194**	P	**Pn**	**05 37 25.8**	**-0.3**
BARN	**Barnard Glacie**	**4.47**	**125**	P	**Pn**	**05 37 26.5**	**-0.1**
GRIN	**Grindle Hills**	**4.51**	**140**	P	**Pn**	**05 37 26.9**	**-0.1**
ISLE	**Juniper Island**	**4.56**	**132**	P	**Pn**	**05 37 26.7**	**-1.1**
SUCK	**Suckling Hills**	**4.56**	**144**	P	**Pn**	**05 37 27.4**	**-0.2**
MID	**Middleton Isla**	**4.63**	**162**	*e*Pn	**Pn**	**05 37 28.3**	**-0.2**
CTGM	**Chitina Glacie**	**4.66**	**125**	P	**Pn**	**05 37 29.2**	**+0.3**
GRNC	**Granite Creek**	**4.67**	**129**	P	**Pn**	**05 37 28.6**	**-0.6**
KULT	**Kultieth River**	**4.72**	**137**	P	**Pn**	**05 37 28.9**	**-0.9**
BAGL	**Bagley Icefiel**	**4.73**	**132**	P	**Pn**	**05 37 30.5**	**+0.7**
AUI	**Augustine Isla**	**4.96**	**206**	P	**Pn**	**05 37 33.7**	**+0.8**
MESA	**MESA**	**5.01**	**134**	P	**Pn**	**05 37 33.0**	**-0.8**
TABL	**Table Mountain**	**5.09**	**129**	P	**Pn**	**05 37 35.3**	**+0.5**
RKAV	**Rock Avalanche**	**5.12**	**130**	P	**Pn**	**05 37 34.9**	**-0.3**
CDD	**Cape Douglas**	**5.38**	**205**	P	**Pn**	**05 37 38.6**	**0.0**
SAMH	**Samovar Hills**	**5.44**	**129**	P	**Pn**	**05 37 39.3**	**-0.1**
FOPK	**Fourpeaked Vol**	**5.51**	**204**	P	**Pn**	**05 37 39.9**	**-0.5**
FOSS	**Fourpeaked Sta**	**5.51**	**205**	P	**Pn**	**05 37 40.3**	**-0.1**
PCA	**Pinnacle**	**5.64**	**128**	P	**Pn**	**05 37 42.5**	**+0.4**
KAHC	**Katmai Hardscr**	**5.92**	**211**	P	**Pn**	**05 37 45.5**	**-0.5**
KAWH	**Katmai**	**6.12**	**209**	P	**Pn**	**05 37 48.5**	**-0.1**
HYT	**Haines Junctio**	**6.22**	**114**	P	**Pn**	**05 37 50.9**	**+0.8**
KVTA	**Katmai Vly 10**	**6.23**	**211**	P	**Pn**	**05 37 50.0**	**0.0**
KAKN	**Katmai Knife C**	**6.25**	**210**	P	**Pn**	**05 37 50.3**	**-0.2**
KELA	**Mount Kelaz**	**6.28**	**213**	P	**Pn**	**05 37 51.0**	**+0.2**
KDAK	**Kodiak Island**	**6.30**	**197**	*e*Pn	**Pn**	**05 37 49.4**	**-1.6**
KABR	**Katmai Barrier**	**6.38**	**209**	P	**Pn**	**05 37 52.5**	**+0.3**
OHAK	**Old Harbor**	**6.95**	**199**	*e*Pn	**Pn**	**05 37 57.6**	**-2.0**
INK	**Inuvik**	**7.77**	**48**	P	**Pn**	**05 38 11.3**	**+0.6**
	4.8nm,0.3s,baz=239,slow=18,SNR=139						
INK	**Inuvik**	**7.77**	**48**	*e*Pn	**Pn**	**05 38 11.1**	**+0.4**
DLBC	**Dease Lake**	**10.70**	**112**	P	**Pn**	**05 38 51.2**	**+0.8**
	0.1nm,0.3s,baz=348,slow=20,SNR=2.4						
YKA	**Yellowknife A**	**15.55**	**79**	P	**Pn**	**05 39 52.5**	**-0.5**
	0.9nm,0.3s,baz=286,slow=10.0,SNR=20						
YKA				PcP	**PcP**	**05 44 49.6**	**+3.0**
	0.1nm,0.3s,baz=301,slow=1.6,SNR=4.1						
SEY	**Seymchan 25.41 295**			P	**P**	**05 41 36.0**	**-0.5**
	3.1nm,0.6s,baz=91,slow=7.7,SNR=7.8						
ULM	**Lac du Bonnet 30.98 90**			P	**P**	**05 42 27.7**	**+1.5**
	2.6nm,0.7s,baz=308,slow=8.2,SNR=3.3						
KLR	**Kul'dur 42.94 289**			P	**P**	**05 44 06.3**	**-0.8**
	2.0nm,0.6s,baz=51,slow=6.5,SNR=5.7						
TXAR	**Lajitas Array 44.92 118**			P	**P**	**05 44 25.0**	**+1.8**
	0.3nm,0.5s,baz=328,slow=6.5,SNR=6.2						
ARCES	**ARCESS Array B 46.85 3**			P	**P**	**05 44 37.5**	**-0.3**
	5.2nm,0.7s,baz=1.0,slow=7.3,SNR=5.6						
SONM	**Songino Array 53.98 306**			P	**P**	**05 45 33.0**	**+1.1**
	3.4nm,0.6s,baz=18,slow=5.1,SNR=20						
NB2	**NORSAR Subarra 54.56 12**			P	**P**	**05 45 35.6**	**-0.1**
	comp=Z,0.9nm,0.6s,baz=350,slow=7.4						
NOA	**NORSAR Array B 54.56 12**			P	**P**	**05 45 35.8**	**+0.2**
	comp=Z,1.1nm,0.6s,baz=350,slow=7.2,SNR=5.5						
FINES	**FINESS Array B 54.98 3**			P	**P**	**05 45 38.4**	**-0.3**
	comp=Z,2.0nm,0.5s,baz=1.8,slow=8.6,SNR=16						
ZALV	**Zalesovo Beam 55.31 324**			P	**P**	**05 45 40.6**	**-0.6**
	comp=Z,4.7nm,0.6s,baz=14,slow=7.8,SNR=14						
ARU	**Arti 58.17 342**			P	**P**	**05 46 01.1**	**-0.1**
	comp=Z,10nm,0.5s,baz=4.4,slow=3.6,SNR=18						
BVAR	**Borovoye Array 59.47 333**			P	**P**	**05 46 10.1**	**-0.2**
	comp=Z,9.2nm,0.6s,baz=38,slow=7.5,SNR=39						
KURK	**Kurchatov 59.82 327**			P	**P**	**05 46 12.4**	**-0.3**
KURBB	**Kurchatov Arra 59.93 327**			P	**P**	**05 46 12.4**	**-1.0**
	comp=Z,3.8nm,0.5s,baz=28,slow=6.6,SNR=22						
MKAR	**Makanchi Array 62.51 323**			P	**P**	**05 46 29.9**	**-1.0**
	comp=Z,3.4nm,0.6s,baz=50,slow=7.1,SNR=25						
AKASG	**Malin Array Be 65.79 1**			P	**P**	**05 46 51.0**	**-1.3**
	comp=Z,1.6nm,0.4s,baz=1.3,slow=6.6,SNR=8.3						
GERES	**GERESS Array B 66.85 12**			P	**P**	**05 46 58.4**	**-0.8**
	comp=Z,1.8nm,0.8s,baz=349,slow=5.4,SNR=9.0						
AAK	**Ala-Archa 68.38 327**			P	**P**	**05 47 08.5**	**-0.5**
	comp=Z,4.9nm,0.8s,baz=151,slow=2.1,SNR=5.0						
ESDC	**Sonseca Array 73.20 27**			P	**P**	**05 47 38.0**	**0.0**
	comp=Z,0.3nm,0.3s,baz=341,slow=5.6,SNR=5.9						
CMAR	**Chiang Mai Arr 82.80 297**			P	**P**	**05 48 30.5**	**-0.8**
	comp=Z,1.1nm,0.3s,baz=11,slow=5.4,SNR=6.4						
VNDA	**Vanda 144.26 196**			PKP	**PKPab**	**05 55 38.4**	**-0.2**
	comp=Z,1.6nm,0.9s,baz=25,slow=1.8,SNR=9.4						
BOSA	**Boshof 144.58 8**			PKP	**PKPab**	**05 55 40.4**	**-0.9**
	comp=Z,2.5nm,0.5s,baz=356,slow=2.4,SNR=7.2						

*IDC **15** 05:47:52.8±1.2, 30.05S×176.33W, h0km, mb4.0/3, mb1 4.2/4, mb1mx3.9/33, mbtmp4.0/4, ML3.7/1, Error ellipse: s-maj=29.6km s-min=25.3km az=38.0*
*NEIC **15** 05:47:54.8±1.1, 29.99S×176.42W, h10km, mb4.4/4, Error ellipse: s-maj=24.1km s-min=16.9km az=76.0*
*ISCJB **15** 05:47:56.5±1.4, 30.23S±0.07×176.5W±0.2, h24km, mb4.3/7, Error ellipse: s-maj=20.6km s-min=8.7km az=164.2*
ISC 15 05:47:57.1±1.0, 30.03S±0.08×176.5W±0.1, h24km, n17, σ1 34/21, mb4.3/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island 1.50 301**			Pn	**Pb**	**05 48 23.3**	**-1.0**
	130nm,0.3s,baz=134,slow=20,SNR=4.6						
RAO				Sn	**Sb**	**05 48 43.9**	**+1.1**
	218nm,0.3s,baz=94,slow=23,SNR=5.0						
RAO	**Raoul Island 1.50 301**			*e*Pn	**Pn**	**05 48 22.9**	**+0.4**
RAO				Sn	**Sb**	**05 48 44.0**	**+1.1**
URZ	**Urewera 9.79 211**			Pn	**Pn**	**05 50 14.0**	**-2.3**
	0.7nm,0.3s,baz=269,slow=4.4,SNR=6.9						
URZ				Sn	**Sn**	**05 52 05.2**	**-0.2**
	0.9nm,0.3s,baz=22,slow=19,SNR=6.1						
URZ	**Urewera 9.79 211**			*e*Pn	**Pn**	**05 50 15.6**	**-0.7**
URZ				Sn	**Sn**	**05 52 05.2**	**-0.2**
OUZ	**Omahuta 9.86 236**			*e*Pn	Pn	05 50 25.1	+7.8
RPZ	**Rata Peaks 16.90 213**			*e*P	**Pn**	**05 51 49.8**	**-2.2**
	124nm,1.8s						
STKA	**Stephens Creek 35.87 256**			P	**P**	**05 54 56.2**	**+1.0**
	1.6nm,0.6s,baz=95,slow=11,SNR=3.2						
ASAR	**Alice Springs 44.47 266**			P	**P**	**05 56 06.5**	**-0.2**
	0.8nm,0.6s,baz=104,slow=7.1,SNR=8.9						
WRAB	**Tennant Creek 45.42 271**			*e*P	**P**	**05 56 14.0**	**-0.3**
	2.8nm,0.6s						
WRA	**Warramunga Arr 45.43 271**			P	**P**	**05 56 13.7**	**-0.6**
	2.2nm,0.5s,baz=110,slow=7.5,SNR=24						
FORT	**Forrest 47.44 254**			*e*P	**P**	**05 56 29.7**	**-0.2**
	99nm,0.8s						
CASY	**Casey 56.09 208**			*e*P	**P**	**05 57 35.9**	**+1.9**
	0.5nm,0.8s						
QSPA	**South Pole Qui 60.08 180**			*e*P	**P**	**05 58 04.2**	**+2.2**
	2.4nm,0.6s						
FINES	**FINESS Array B 145.25 341**			PKPbc	**PKPbc**	**06 07 30.1**	**-1.7**
	1.4nm,0.6s,baz=60,slow=3.4,SNR=4.3						
KBZ	**Khabaz 146.01 305**			PKPbc	**PKPab**	**06 07 35.4**	**+0.1**
	2.0nm,0.9s,baz=127,slow=5.1,SNR=3.8						
AKASG	**Malin Array Be 151.80 324**			PKPbc	**PKPbc**	**06 07 47.1**	**-2.2**
	0.9nm,0.4s,baz=46,slow=3.0,SNR=6.1						
AKASG				PKPab	**PKPab**	**06 07 58.3**	**-0.1**
	0.8nm,0.4s,baz=42,slow=3.2,SNR=4.6						
TORD	**Torodi Ar. Bea 163.11 174**			PKPab	**PKPab**	**06 08 48.5**	**+0.6**
	1.8nm,0.8s,baz=185,slow=3.3,SNR=8.1						

*IDC **15** 05:50:22.4±0.5, 29.67S×176.72W, h0km, mb4.7/20, mb1 4.8/20, mb1mx4.7/35, mbtmp4.7/20, MS5.1/11, Ms1 5.2/11, ms1mx4.9/21, Error ellipse: s-maj=18.5km s-min=13.6km az=12.0*
*GCMT **15** 05:50:25.3±0.1, 29.60S×176.32W, h12km, MW5.4/126, Moment Tensor Solution. s97,c165; s126,c235; Duration: 1s2 Moment tensor: Scale 10^17 Nm; Mrr=1.07±.01; Mθθ=-0.07±.01; Mφφ=-0.99±.01; Mrθ=0.31±.04; Mθφ=-0.31±.01; Mφr=1.16±.03; Best double couple: Ms=1.61500×10^17 NP1:φs=15.00000°, δ=89.00000°, λ=89.00000°. NP2:φs=199.00000°, δ=21.00000°, λ=93.00000°. Principal axes: T 1.6040, Plg66.0000°, Azm283.0000°; N 0.0220, Plg1.0000°, Azm16.0000°; P -1.6260, Plg24.0000°, Azm106.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **15** 05:50:25.3±0.1, 29.82S×176.91W, h10km, mb5.1/99 Error ellipse: s-maj=6.0km s-min=3.3km az=130.0*
*ISCJB **15** 05:50:27.6±0.1, 29.94S±0.03×176.94W±0.04, h34km, mb5.2/118, MS5.2/38, Error ellipse: s-maj=5.5km s-min=3.4km az=136.6*
*BJI **15** 05:50:27.9, 29.16S×176.21W, h39km, mb5.4/30, mB5.7/34, Ms5.4/36, Ms7 5.0/36*
*MOS **15** 05:50:27.7±1.2, 29.76S×176.94W, h33km, mb5.1/38, MS5.3/16, Error ellipse: s-maj=10.6km s-min=9.7km az=103.8*
ISC 15 05:50:26.7±0.3, 29.81S±0.05×176.64W±0.05, h24km, n448, σ1 95/471, mb5.2/116, MS5.3/42, 33C-5D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island 1.24 296**			Pn	**Pn**	**05 50 46.5**	**-2.0**
	314nm,0.3s,baz=158,slow=14,SNR=8.0						
RAO				Sn	**Sn**	**05 51 02.2**	**-2.3**
	1μm,0.3s,baz=270,slow=20,SNR=13						
RAO				LR	LR	05 51 13.9	
	comp=Z,39μm,18.3s,baz=183,slow=46						
RAO	**Raoul Island 1.24 296**			*e*Pn	**Pn**	**05 50 47.6**	**-0.9**
RAO				*e*Sn	**Sn**	**05 51 01.4**	**-3.1**
OUZ	**Omahuta 9.85 234**			*e*Pn	**Pn**	**05 52 46.6**	**-0.2**
URZ	**Urewera 9.89 210**			Pn	Pn	05 52 41.9	-5.4
	1.1nm,0.3s,baz=275,slow=4.6,SNR=2.7						
URZ				Sn	**Sn**	**05 54 32.8**	**-4.8**
	7.2nm,0.3s,baz=348,slow=18,SNR=5.9						
URZ	**Urewera 9.89 210**			*e*Pn	**Pn**	**05 52 45.4**	**-2.0**
URZ				Sn	**Sn**	**05 54 32.8**	**-4.8**
BKZ	**Black Stump Fm 10.92 209**			*e*Pn	**Pn**	**05 53 01.5**	**+0.1**
HIZ	**Hauiti 11.18 217**			*e*Pn	**Pn**	**05 53 04.3**	**-0.6**
BFZ	**Birch Farm 12.30 206**			*e*Pn	**Pn**	**05 53 19.9**	**-0.5**
MSVF	**Nonsavu 12.96 337**			*e*P	**Pn**	**05 53 29.4**	**-0.1**
MSVF	**Nonsavu 12.96 337**			*e*Pn	**Pn**	**05 53 29.4**	**-0.1**
SNZO	**South Karori 13.46 209**			*e*Pn	**Pn**	**05 53 36.2**	**+0.1**
KHZ	**Kahutara 14.86 209**			*e*Pn	Pn	05 53 48.8	-6.4
	93nm,0.8s						
LTZ	**Lake Taylor 15.71 212**			*e*Pn	**Pn**	**05 54 02.9**	**-3.6**
	52nm,1.1s						
CRLZ	**Canterbury Las 16.20 209**			*e*Pn	**Pn**	**05 54 06.7**	**-5.8**
	324nm,1.5s						
OXZ	**Oxford 16.25 211**			*e*Pn	**Pn**	**05 54 11.2**	**-2.1**
	69nm,0.7s						
OXZ				*e*Sn	Sn	05 56 57.5	-15
MQZ	**McQueen's Vall 16.29 209**			*e*Pn	**Pn**	**05 54 12.8**	**-0.9**
	325nm,1.9s						
AFI	**Afiamalu 16.45 17**			Pn	Pn	05 54 06.3	-10
	1.1nm,0.3s,baz=205,slow=17,SNR=1.9						
AFI				Sn	Sn	05 56 56.7	-21
	1.8nm,0.3s,baz=195,slow=20,SNR=2.6						
RPZ	**Rata Peaks 17.00 212**			P	**Pn**	**05 54 16.3**	**-6.5**
	0.6nm,0.3s,baz=313,slow=4.7,SNR=2.9						
RPZ				S	Sn	05 57 14.8	-16
	0.7nm,0.3s,baz=114,slow=19,SNR=3.6						
RPZ	**Rata Peaks 17.00 212**			*e*Pn	**P**	**05 54 23.8**	**-0.7**
	45nm,0.7s						
RPZ				S	Sn	05 57 14.8	-16
DZM	**Mont Dzumac 17.04 293**			Pn	**P**	**05 54 27.6**	**+2.5**
	2.5nm,0.3s,baz=164,slow=16,SNR=26						
DZM	**Mont Dzumac 17.04 293**			*e*P	**P**	**05 54 26.8**	**+1.6**
	342nm,1.1s						
DZM				*e*LR	LR	05 58 31.5	
	13μm,26.6s						
DZM	**Mont Dzumac 17.04 293**			*e*P	**P**	**05 54 26.4**	**+1.2**
	165nm,1.1s						
FOZ	**Fox Glacier 17.45 215**			*e*Pn	**Pn**	**05 54 26.9**	**-1.5**
	212nm,1.6s						
RAR	**Rarotonga 17.45 65**			P	Pn	05 54 20.8	-7.7
	1.8nm,0.3s,baz=225,slow=8.6,SNR=2.8						
RAR				S	Sn	05 57 14.7	-28
	2.1nm,0.3s,baz=284,slow=12,SNR=2.3						
RAR				LR	LR	06 00 11.7	
	comp=Z,8μm,19.6s,baz=242,slow=34						
RAR	**Rarotonga 17.45 65**			*e*P	**Pn**	**05 54 25.9**	**-2.7**
RAR				pmax	pmax		
	comp=Z,175nm,1.3s						
RAR	**Rarotonga 17.45 65**			*e*Pn	**Pn**	**05 54 25.9**	**-2.7**
	comp=Z,175nm,1.3s						
RAR				S	Sn	05 57 14.7	-28
LBZ	**Lake Benmore 17.91 212**			*e*Pn	**Pn**	**05 54 33.4**	**-0.8**
	comp=Z,77nm,1.3s						
ODZ	**Otahua Downs 18.22 210**			*e*Pn	**Pn**	**05 54 36.6**	**-1.3**
	comp=Z,54nm,0.9s						
WKZ	**Wanaka 18.80 213**			*e*P	**P**	**05 54 42.3**	**-2.0**
	comp=Z,89nm,1.1s						
MLZ	**Mavora Lakes 19.62 213**			*e*P	**P**	**05 54 52.2**	**-1.1**
	comp=Z,90nm,1.4s						
WHZ	**Wether Hill Ro 20.09 213**			*e*P	**P**	**05 54 57.4**	**-1.0**
	comp=Z,99nm,1.3s						
DCZ	**Deep Cove 20.16 215**			*e*P	**P**	**05 54 58.7**	**-0.5**
	comp=Z,259nm,1.9s						
LHI	**Lord Howe Isla 20.96 259**			P	Pn	05 55 11.5	+0.9
	baz=21						
LHI	**Lord Howe Isla 20.96 259**			*e*P	Pn	05 55 09.8	-0.8
	comp=Z,245nm,0.8s						
TBI	**Tubuai 25.11 82**			*e*P	**P**	**05 55 46.8**	**-2.9**
	comp=Z,190nm,1.1s						
TBI				*e*LQ	LQ	06 00 33.2	
	comp=Z,4μm,27.0s						
TBI				*e*LR	LR	06 01 52.4	
	comp=Z,5μm,20.8s,baz=251						
TBI	**Tubuai 25.11 82**			*e*T	T	06 21 28.4	
	comp=Z,7.7nm,0.3s						
**

WRA pmax pmax
comp=Z,20nm,0.9s
WRA MLR MLR
comp=Z,2µm,18.2s
FORT Forrest 47.34 254 P **P 05 58 56.9 -1.9**
baz=48,SNR=14
FORT Forrest 47.34 254 *e*P **P 05 58 57.1 -1.7**
comp=Z,316nm,0.8s
SBA Scott Base 48.72 185 *e*P **P 05 59 08.6 -0.1**
SBA pmax pmax
comp=Z,45nm,1.3s
SBA Scott Base 48.72 185 *e*P **P 05 59 08.6 -0.1**
comp=Z,45nm,1.3s
WRKA Warakurna 48.72 262 P **P 05 59 07.9 -1.7**
baz=49,SNR=11
VNDA Vanda 48.81 186 P **P 05 59 11.0 +1.6**
comp=Z,1.2nm,0.8s,baz=14,slow=6.5,SNR=7.1
VNDA LR LR 06 16 02.3
comp=Z,2µm,20.9s,baz=20,slow=32
VNDA Vanda 48.81 186 P **P 05 59 11.0 +1.6**
VNDA pmax pmax
comp=Z,1.0nm,0.8s
VNDA Vanda 48.81 186 *e*P **P 05 59 09.4 -0.1**
comp=Z,9.8nm,1.0s
MTN Manton Dam 51.06 278 *e*P **P 05 59 27.7 +0.3**
comp=Z,26nm,1.3s
KMBL Kambalda 52.32 252 P **P 05 59 34.1 -2.5**
baz=52
FITZ Fitzroy Crossi 53.54 269 P **P 05 59 44.7 -1.1**
baz=54,SNR=10
FITZ Fitzroy Crossi 53.54 269 *e*P **P 05 59 45.0 -0.8**
comp=Z,42nm,1.1s
CASY Casey 56.21 208 *e*P **P 06 00 04.9 +0.5**
comp=Z,78nm,1.1s
MUN Mundaring 56.80 249 P **P 06 00 09.7 +0.5**
baz=57
QSPA South Pole Qui 60.30 180 *e*P **P 06 00 34.2 +1.0**
MMRI Maumere 60.73 277 *e*P **P 06 00 35.9 -0.9**
comp=Z,45nm,0.5s
MIR Mirnyy 63.18 207 *e*P **P 06 00 55.0 +2.7**
MIR pmax pmax
comp=Z,8.0nm,1.2s
TWSI Taliwang, Sumb 65.32 274 P **P 06 01 06.4 -0.8**
comp=Z,29nm,1.1s,comp=Z,2µm
PCJI Pacitan 70.53 272 P **P 06 01 39.5 -0.5**
MAW Mawson 73.27 200 P **P 06 01 55.8 +0.2**
comp=Z,5.8nm,0.7s,baz=144,slow=7.6,SNR=12
MAW Mawson 73.27 200 *e*P **P 06 01 56.2 +0.6**
comp=Z,14nm,1.4s
SBUM Sibu 74.94 282 *e*P **P 06 02 06.0 -0.2**
comp=Z,28nm,1.4s
SYO Syowa Base 77.95 193⇑ *e*X P 06 02 15.4 -6.9
MJAR Matsushiro Arr 78.43 324 P **P 06 02 24.0 -1.4**
comp=Z,12nm,0.8s,baz=160,slow=5.7,SNR=4.7
MJAR Matsushiro Arr 78.43 324 P **P 06 02 24.0 -1.4**
MJAR pmax pmax
comp=Z,12nm,0.9s
MAT Matsushiro 78.44 324 P **P 06 02 24.8 -0.6**
MAT S **S 06 12 22.8 +2.9**
SNAA Sanae 78.71 178 P **P 06 02 26.2 -0.4**
SNAA Sanae 78.71 178 *e*P **P 06 02 25.7 -0.9**
SNAA pmax pmax
comp=Z,29nm,1.2s
SNAA Sanae 78.71 178 *e*P **P 06 02 25.6 -0.9**
comp=Z,29nm,1.2s
VNA1 Neumayer--Stat 79.49 176 P **P 06 02 31.1 +0.4**
NVL N'lazarevskaya 79.53 183 *e*P P 06 02 35.8 +4.8
NVL *e**PP sP 06 02 46.2 +4.6
NVL *e* 06 05 33.3
NVL *e*S **S 06 12 30.3 -0.5**
NVL MLR MLR
comp=Z,2µm,25.0s
JNU Nakatsue 79.90 317 P **P 06 02 33.5 0.0**
comp=Z,19nm,1.1s,baz=148,slow=4.4,SNR=7.4
KUR Kuril'sk 81.37 335 *e*P **P 06 02 40.2 -0.8**
KUR *e*S **S 06 12 43.9 -6.4**
PLCA Paso Flores 82.05 133 P **P 06 02 46.2 +1.1**
comp=Z,3.8nm,0.9s,baz=294,slow=8.2,SNR=5.8
PLCA Paso Flores 82.05 133 *e*P **P 06 02 46.9 +1.7**
comp=Z,31nm,1.4s
ASAJ Asahikawa 82.47 332 P **P 06 02 47.2 +0.4**
comp=Z,9.9nm,0.8s,baz=207,slow=4.5
MURC Murrieta 84.47 46 P **P 06 03 00.5 +3.0**
baz=229
BFSC Mount Baldy Ra 84.60 45 P **P 06 03 00.8 +2.5**
baz=228
KSRS Korea Array 84.67 319 P **P 06 02 57.6 -0.7**
comp=Z,8.2nm,1.0s,baz=147,slow=7.1,SNR=6.2
KSRS Korea Array 84.67 319 P **P 06 02 57.6 -0.7**
KSRS pmax pmax
comp=Z,7.0nm,0.9s
KSAR Wonju Array Be 84.68 319 P **P 06 02 57.6 -0.8**
KSAR Wonju Array Be 84.68 319 P **P 06 02 57.6 -0.8**
YSS Yuzh-Sakhalins 84.73 333 *e*P **P 06 02 59.9 +1.5**
YSS *e* 06 03 08.7
YSS pmax pmax
comp=Z,50nm,1.0s
YSS MLR MLR
comp=Z,700nm,17.0s
YSS MLR MLR
comp=N,700nm,19.0s
YSS MLR MLR
comp=E,400nm,20.0s
YSS Yuzh-Sakhalins 84.73 333 *e*P **P 06 02 59.7 +1.3**
comp=E,41nm,0.9s
VES Vestal, Richgr 84.81 44 P **P 06 03 00.9 +1.9**
baz=227
MNSI Mandailing Nat 84.99 274 P P 06 03 09.5 +9.0
PET Petropavlovsk 85.25 345 *e*P **P 06 03 00.2 -0.6**
PET *e* 06 06 20.0
PET *e*PPP PPP 06 08 14.0
PET *e*S **S 06 13 27.1 -2.2**
PET *e*PS **PnS 06 14 22.8 -4.5**
PET *e*PPS PPS 06 14 45.0
PET *e*SS **SS 06 19 02.9 -1.8**
PET *e*SSS SSS 06 22 32.3
PET pmax pmax
comp=Z,100nm,12.9s
PET MLR MLR
comp=Z,2µm,19.0s
BELC Belle Mtn. Jos 85.49 47 P **P 06 03 04.8 +2.1**
baz=229
CMB Columbia Colle 85.54 41 *e*P **P 06 03 04.1 +1.3**
CMB pmax pmax
comp=Z,7.0nm,1.0s
CMB Columbia Colle 85.54 41 *e*P **P 06 03 04.1 +1.3**
comp=Z,7.0nm,1.0s
PEA0 Petropavlovsk- 85.54 345 *e*P **P 06 03 02.7 +0.4**
PEA0B Petropavlovsk- 85.54 345 *e*P **P 06 03 04.0 +1.7**
comp=Z,71nm,1.5s
PETK Petropavlovsk- 85.54 345 P **P 06 03 01.0 -1.3**
comp=Z,6.2nm,0.8s,baz=104,slow=5.8,SNR=6.2
IPM Ipoh 85.57 278 *e*P **P 06 03 02.0 -1.5**
comp=Z,49nm,1.2s
GLA Glamis 85.62 48 P **P 06 03 05.4 +2.2**
baz=230
GLA Glamis 85.62 48 *e*P **P 06 03 05.5 +2.2**
GLA pmax pmax
comp=Z,16nm,1.3s
GLA Glamis 85.62 48 *e*P **P 06 03 05.5 +2.2**
comp=Z,16nm,1.3s
QIZ Qiongzhong 85.81 295 P **P 06 03 04.9 +0.4**
QIZ S **S 06 13 35.8 -0.6**
QIZ sS **sS 06 13 56.8 +7.5**
QIZ LR LR
comp=Z,400nm,16.1s
QIZ LR LR
comp=Z,520nm,13.2s
QIZ LR LR
comp=Z,400nm,16.3s
GSC Goldstone, Bar 85.83 45 P **P 06 03 06.2 +1.8**
baz=229
GSC Goldstone, Bar 85.83 45 *e*P **P 06 03 06.5 +2.1**
GSC pmax pmax
comp=Z,21nm,1.5s
GSC Goldstone, Bar 85.83 45 *e*P **P 06 03 06.5 +2.1**
comp=Z,21nm,1.5s
AFDM Forest Hills D 85.84 40 *e*P **P 06 03 06.4 +2.2**
comp=Z,22nm,1.8s
MPMC Manual Prospec 85.91 44 P **P 06 03 06.4 +1.5**
baz=228
ORV Oroville 85.97 39 *e*P **P 06 03 06.2 +1.4**
ORV pmax pmax
comp=Z,27nm,1.7s
ORV Oroville 85.97 39 *e*P **P 06 03 06.2 +1.4**
comp=Z,27nm,1.7s
WDC Whiskeytown Da 86.12 38 *e*P **P 06 03 08.1 +2.6**
WDC pmax pmax
comp=Z,32nm,1.6s
WDC Whiskeytown Da 86.12 38 *e*P **P 06 03 08.1 +2.6**
comp=Z,32nm,1.6s
IRM Iron Mountain 86.13 47 P **P 06 03 07.6 +1.8**
baz=230
113A Mohawk Valley, 86.13 49 *e*P **P 06 03 07.6 +1.8**
comp=Z,5.1nm,0.7s
GMRC Granite Mounta 86.21 46 P **P 06 03 08.0 +1.7**
baz=230
214A Organ Pipe Nat 86.25 50 P **P 06 03 08.0 +1.6**
baz=231
KULM Kulim 86.30 278 *e*P **P 06 03 06.8 -0.3**
comp=Z,39nm,1.1s
N02D Trinity Center 86.31 38 P **P 06 03 08.2 +1.6**
baz=225
O03D Paynes Creek 86.32 39 P **P 06 03 08.6 +2.0**
baz=225
WAKR Walker 86.40 41 *e*P **P 06 03 10.0 +2.7**
comp=Z,26nm,1.5s
M02C Callahan 86.53 37 P **P 06 03 10.2 +2.5**
baz=225
PSI Prapat 86.55 275 *e*P **P**
PSI pmax pmax
comp=Z,41nm,1.1s
PSI Prapat 86.55 275 *e*P **P 06 03 06.9 -1.5**
comp=Z,41nm,1.1s
SHOC Shoshone, Teco 86.55 45 P **P 06 03 10.4 +2.6**
baz=229
FURC Furnace Creek, 86.56 44 P **P 06 03 10.1 +2.3**
baz=229
LDFC Landfair 86.74 46 *e*P **P 06 03 11.3 +2.4**
comp=Z,29nm,1.2s
NJ2 Nanjing 86.76 310 *e*P **P**
NJ2 pmax pmax
comp=Z,20nm,0.9s
YBH Yreka Blue Hor 86.84 37 *e*P **P 06 03 11.2 +2.0**
YBH pmax pmax
comp=Z,8.0nm,1.0s
YBH Yreka Blue Hor 86.84 37 *e*P **P 06 03 11.2 +2.0**
comp=Z,8.2nm,1.0s
GSI Gunungsitoli 86.98 273 P P 06 03 21.8 +11
GSI Gunungsitoli 86.98 273 *e*P **P 06 03 11.7 +1.3**
comp=Z,77nm,1.0s
TPNV Topopah Spring 87.25 44 P **P 06 03 14.1 +2.8**
baz=229
TPNV Topopah Spring 87.25 44 *e*P **P 06 03 13.1 +1.8**
TPNV pmax pmax
comp=Z,9.0nm,1.1s
TPNV Topopah Spring 87.25 44 *e*P **P 06 03 13.1 +1.8**
comp=Z,9.1nm,1.1s
PAHR Pah Rah Range 87.25 41 *e*P **P 06 03 12.8 +1.6**
comp=Z,24nm,1.9s
USRK Ussuriysk Ar. 87.32 326 P **P**
comp=Z,21nm,1.2s,baz=132,slow=2.8,SNR=11
HUMO Hull Mountain 87.34 37 *e*P **P 06 03 13.8 +2.4**
comp=Z,11nm,1.3s
M04C Macdoel 87.34 38 P **P 06 03 14.0 +2.3**
baz=225
Y14A Wickenburg 87.36 48 *e*P **P 06 03 14.8 +3.0**
comp=Z,50nm,1.4s
W13A Hualapai Mount 87.53 47 *e*P **P 06 03 15.9 +3.1**
comp=Z,8.3nm,1.3s
SHPR Sheep Range 87.63 45 *e*P **P 06 03 15.7 +2.6**
comp=Z,27nm,1.9s
TUC Tucson 87.83 51 P **P 06 03 16.0 +1.8**
baz=232
TUC Tucson 87.83 51 *e*P **P 06 03 16.2 +2.1**
TUC pmax pmax
comp=Z,7.0nm,1.0s
TUC Tucson 87.83 51 *e*P **P 06 03 16.2 +2.1**
comp=Z,6.5nm,1.0s
TYV Tymovskoe 87.99 336 *e*P **P 06 03 11.0 -3.3**
TYV MLR MLR
comp=E,2µm,18.0s
TYV MLR MLR
comp=Z,2µm,20.0s
319A Douglas 88.29 52 *e*P **P 06 03 19.9 +3.5**
comp=Z,20nm,1.5s
I04A Tendick Farm, 88.46 36 P **P 06 03 18.8 +2.0**
baz=225
K05A Summer Lake 88.50 38 *e*P **P 06 03 19.8 +2.6**
comp=Z,18nm,1.3s
X16A Lo Mia Camp, P 88.68 49 *e*P **P 06 03 19.9 +1.6**
comp=Z,5.4nm,0.9s
J05D Fort Rock, OR 88.71 37 P **P 06 03 20.6 +2.4**
baz=226
MDJ Mudanjiang 88.81 325 P **P 06 03 18.9 +0.5**
MDJ pP sP 06 03 29.8 +0.8
MDJ S **S 06 14 01.9 -2.2**
MDJ sS sS 06 14 22.3 +5.1
MDJ pmax pmax
comp=Z,8.0nm,1.1s
MDJ pmax pmax
comp=Z,180nm,5.2s
MDJ LR LR
comp=Z,360nm,18.4s
MDJ LR LR
comp=Z,420nm,20.8s
MDJ LR LR
comp=Z,760nm,20.8s
MDJ Mudanjiang 88.81 325 *e*P **P 06 03 19.2 +0.8**
comp=Z,48nm,1.1s
WHN Wuhan 88.94 306⇓ *i*P **P 06 03 20.8 +1.5**
WHN pP **sP 06 03 30.8 +0.8**
WHN eS **S 06 13 58.8 -7.1**
WHN LR LR
comp=Z,990nm,17.7s
BMN Battle Mountai 88.97 41 *e*P **P 06 03 21.5 +2.1**
BMN pmax pmax
comp=Z,21nm,1.8s
BMN Battle Mountai 88.97 41 *e*P **P 06 03 21.5 +2.1**
comp=Z,21nm,1.8s
LCMT Little Creek M 89.14 46 *e*P **P 06 03 22.8 +2.5**
comp=Z,5.7nm,1.1s
DL2 Dalian 89.32 317⇑ *i*P **P 06 03 19.4 -1.5**
DL2 SKS **SKSac 06 13 49.8 +0.5**
DL2 S **S 06 14 06.3 -2.8**
DL2 pmax pmax
comp=Z,61nm,1.1s
DL2 pmax pmax
comp=Z,350nm,5.3s
DL2 LR LR
comp=Z,430nm,16.1s
DL2 LR LR
comp=Z,400nm,18.2s
DL2 LR LR
comp=Z,560nm,17.2s
U15A North Rim 89.37 47 *e*P **P 06 03 23.4 +1.8**
comp=Z,11nm,0.9s
WUAZ Wupatki 89.39 48 P **P 06 03 23.7 +2.1**
baz=232
WUAZ Wupatki 89.39 48 *e*P **P 06 03 24.2 +2.6**
comp=Z,12nm,1.1s
I05D Terrebonne, OR 89.39 36 P **P 06 03 23.2 +2.0**
baz=226
CCUT Cedar City 89.40 45 *e*P **P 06 03 24.1 +2.4**
comp=Z,19nm,1.7s
KNB Kanab 89.40 46 *e*P **P 06 03 24.0 +2.4**
KNB pmax pmax
comp=Z,41nm,1.8s
KNB Kanab 89.40 46 *e*P **P 06 03 24.0 +2.4**
comp=Z,41nm,1.8s
WVOR Wild Horse Val 89.52 39 *e*P **P 06 03 23.7 +1.8**
WVOR pmax pmax
comp=Z,13nm,1.4s
WVOR Wild Horse Val 89.52 39 *e*P **P 06 03 23.7 +1.8**
comp=Z,13nm,1.4s
X18A Snowflake 89.72 49 *e*P **P 06 03 25.6 +2.4**
comp=Z,16nm,1.5s
W18A Petrified Fore 90.22 49 P **P 06 03 27.4 +2.0**
baz=233
W18A Petrified Fore 90.22 49 *e*P **P 06 03 28.1 +2.6**
comp=Z,25nm,0.8s
CN2 Changchun 90.39 322 *e*P **P 06 03 25.8 0.0**
CN2 *es*P sP 06 03 43.5 +7.1
CN2 eS **S 06 14 15.8 -3.1**
CN2 pmax pmax
comp=Z,20nm,1.1s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,300nm,18.0s
CN2 LR LR
comp=Z,300nm,18.0s
CN2 LR LR
comp=Z,500nm,20.0s
MTPU Mount Pierson 90.44 45 *e*P **P 06 03 27.9 +1.3**
comp=Z,14nm,1.4s
NKL Nikolayevsk 90.57 336 *e*P **P 06 03 25.0 -1.3**
NKL *e* 06 03 36.0
NKL pmax pmax
comp=Z,43nm,1.0s
NKL pmax pmax
comp=Z,300nm,9.0s
MSU Marysvale 90.73 45 *e*P **P 06 03 30.0 +2.2**
MSU Marysvale 90.73 45 *e*P **P 06 03 30.0 +2.2**
D05A Enumclaw 91.07 34 *e*P **P 06 03 31.3 +2.5**
comp=Z,63nm,1.4s
TX31 Lajitas Ar. Si 91.08 57 *e*P **P 06 03 31.8 +2.3**
TXAR Lajitas Array 91.08 57 P **P 06 03 30.3 +0.8**
comp=Z,1.7nm,1.1s,baz=206,slow=6.7,SNR=9.3
KLR Kul'dur 91.12 329 P **P 06 03 29.1 0.0**
comp=Z,3.9nm,0.8s,baz=89,slow=5.4,SNR=6.5
MNTX Cornudas Mount 91.18 54 P **P 06 03 31.1 +1.3**
baz=235
MNTX Cornudas Mount 91.18 54 *e*P **P 06 03 31.4 +1.6**
MNTX *ep*P **sP 06 03 41.9 +1.4**
G08A Pilot Rock 91.28 37 *e*P **P 06 03 32.4 +2.3**
comp=Z,15nm,1.2s
LAZ Ladron 91.52 51 *e*P **P 06 03 34.2 +2.7**
MFID Camas Ranch 91.71 40 *e*P **P 06 03 32.9 +0.8**
comp=Z,8.0nm,1.0s
LTY Liberty 91.76 34 *e*P **P 06 03 33.5 +1.3**
comp=Z,13nm,1.4s
TMUT Trail Mountain 91.81 45 *e*P **P 06 03 34.1 +1.1**
comp=Z,19nm,1.6s
BMO Blue Mountains 91.85 38 *e*P **P 06 03 34.8 +2.1**
comp=Z,19nm,1.9s
SRU San Rafael Swe 92.12 45 *e*P **P 06 03 35.7 +1.5**
SRU pmax pmax
comp=Z,7.0nm,1.2s
SRU San Rafael Swe 92.12 45 *e*P **P 06 03 35.7 +1.5**
comp=Z,6.9nm,1.2s
ENH Enshi 92.24 304 *e*P **P 06 03 34.8 0.0**
comp=Z,186nm,1.4s
GYA Guiyang 92.28 299 P **P 06 03 36.4 +1.2**
GYA PP **PP 06 07 20.6 +4.4**
GYA SKS **SKSac 06 14 05.5 -1.8**
GYA S **S 06 14 34.0 -3.1**
GYA sS sS 06 14 56.8 +6.6
GYA SS **SS 06 20 50.6 +2.3**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,140nm,6.2s
GYA LR LR
comp=Z,540nm,20.3s
GYA LR LR
comp=Z,500nm,20.7s
GYA LR LR
comp=Z,520nm,20.2s
ANMO Albuquerque 92.29 51 P **P 06 03 37.1 +2.0**
baz=235
ANMO Albuquerque 92.29 51⇓ *e*P **P 06 03 36.0 +0.9**
ANMO pmax pmax
comp=Z,5.0nm,1.3s
ANMO Albuquerque 92.29 51 *e*P **P 06 03 36.6 +1.5**
comp=Z,6.3nm,1.3s
D08A Wollman Farm, 92.50 35 *e*P **P 06 03 37.4 +1.9**
comp=Z,13nm,1.3s
HLID Hailey 92.59 40 P **P 06 03 38.8 +2.6**
baz=230
HLID Hailey 92.59 40 *e*P **P 06 03 38.7 +2.4**
comp=Z,5.6nm,1.0s
F10A Beach Ranch, E 92.64 37 *e*P **P 06 03 37.9 +1.6**
comp=Z,7.3nm,0.9s
PV01 Paradox Valley 92.76 47 *e*P **P 06 03 38.7 +1.4**
TCUT Toone Canyon 92.80 43 *e*P **P 06 03 38.8 +1.4**
comp=Z,15nm,1.2s
LVC Limon Verde 93.19 118 *e*P **P 06 03 41.4 +1.5**
comp=Z,21nm,1.3s
BJT Baijiatuau 93.32 315 *e*P **P 06 03 40.0 +0.5**
BJT pmax pmax
comp=Z,59nm,1.4s
BJT Baijiatuau 93.32 315 *e*P **P 06 03 40.0 +0.5**
comp=Z,59nm,1.4s
BJI Beijing 93.33 315 P **P 06 03 38.8 -0.7**
BJI sP sP 06 03 58.3 +8.1
BJI PP **PP 06 07 25.6 +1.6**
BJI SKS **SKSac 06 14 12.4 +0.3**
BJI S **ScS 06 14 47.3 +0.1**
BJI pmax pmax
comp=Z,21nm,1.9s
BJI pmax pmax
comp=Z,300nm,6.3s
BJI LR LR
comp=Z,260nm,20.2s
BJI LR LR
comp=Z,250nm,23.7s
BJI LR LR
comp=Z,550nm,40.4s
SUA Susitna One 93.34 12 *e*P **P 06 03 36.8 -2.4**
comp=Z,44nm,0.5s
S22A 4UR Ranch, Cre 93.65 48 *e*P **P 06 03 43.1 +1.7**
comp=Z,9.3nm,1.6s
MCMT McKenzie Canyo 94.26 40 *e*P **P 06 03 46.7 +2.7**
MSTX Muleshoe 94.27 53 *e*P **P 06 03 45.4 +1.3**
comp=Z,14nm,1.6s
CM01 Chiang Mai Arr 94.29 289 *e*P **P 06 03 43.7 -0.8**
CMAR Chiang Mai Arr 94.32 289 P **P 06 03 45.0 +0.5**
comp=Z,1.3nm,0.4s,baz=133,slow=2.7,SNR=6.0
CMAR LR LR 06 48 22.2
comp=Z,247nm,19.4s,baz=150,slow=37
SMCO Snowmass 94.38 47 *e*P **P 06 03 46.8 +1.9**
comp=Z,19nm,1.9s
REDW Red Top Meadow 94.50 42 *e*P **P 06 03 46.6 +1.5**
comp=Z,8.4nm,1.2s
SDCO Great Sand Dun 94.52 49 P **P 06 03 46.6 +1.1**
baz=236
KMI Kunming 94.61 296 P **P 06 03 47.6 +1.6**
KMI pP sP 06 04 00.8 +4.1
KMI sP pP 06 04 07.3 +13
KMI PP **PP 06 07 37.8 +3.2**
KMI S **S 06 14 54.3 -3.6**
KMI sS sS 06 15 15.0 +4.0
KMI pmax pmax
comp=Z,12nm,0.8s
KMI pmax pmax
comp=Z,190nm,5.0s
KMI LR LR
comp=Z,270nm,17.4s
KMI LR LR
comp=Z,250nm,20.3s
KMI LR LR
comp=Z,370nm,21.4s
SNOW Snow King Moun 94.61 42 *e*P **P 06 03 47.6 +2.0**
comp=Z,19nm,1.5s
XAN Xi'an 94.70 307 P **P 06 03 47.4 +1.4**
XAN pmax pmax
comp=Z,12nm,1.5s
XAN pmax pmax
comp=Z,86nm,6.8s
XAN LR LR
comp=Z,120nm,21.2s
XAN LR LR
comp=Z,320nm,20.6s
XAN LR LR
comp=Z,380nm,18.6s
DLMT Dillon 94.74 40 *e*P **P 06 03 47.6 +1.6**
comp=Z,6.7nm,1.2s
LOHW Long Hollow 94.79 42 *e*P **P 06 03 48.3 +1.8**
comp=Z,22nm,1.9s
PDAR Pinedale Array 94.90 43 P **P 06 03 46.7 -0.3**
comp=Z,0.7nm,0.8s,baz=199,slow=3.1,SNR=5.5
FLWY Flagg Ranch 95.02 41 *e*P **P 06 03 49.5 +2.0**
comp=Z,9.5nm,1.1s
QLMT Earthquake Lak 95.06 40 *e*P **P 06 03 50.0 +2.3**
BOZ Bozeman (W) 95.45 40 P **P 06 03 51.5 +2.1**
baz=232
BOZ Bozeman (W) 95.45 40 *e*P **P 06 03 51.4 +2.1**
BOZ pmax pmax
comp=Z,8.0nm,1.3s
BOZ Bozeman (W) 95.45 40 *e*P **P 06 03 51.4 +2.1**
comp=Z,8.1nm,1.3s
SEY Seymchan 95.67 346 LR LR 06 42 16.4
comp=Z,1µm,20.3s,baz=150,slow=33
WRH Wood River Hil 96.60 12 *e*P **P 06 03 54.5 +0.6**
comp=Z,32nm,1.8s
HHC Hu-ho-hao-te 96.67 313 *e*P **P 06 03 57.4 +2.5**
HHC pP pP 06 04 07.3 +4.5
HHC sP sP 06 04 12.8 +7.2

HHC PP **PP** **06 07 55.3 +5.2**
HHC SKS **SKSac** **06 14 29.8 -0.5**
HHC S **S** **06 15 14.3 -0.6**
HHC pmax pmax
comp=Z,16nm,1.0s
HHC pmax pmax
comp=Z,130nm,3.9s
HHC LR LR
comp=Z,270nm,18.0s
HHC LR LR
comp=Z,460nm,21.0s
HHC LR LR
comp=Z,670nm,20.2s
CD2 Chengdu 96.77 302 sP sP 06 04 13.6 +7.4
CD2 PP **PP** **06 07 51.1 +0.1**
CD2 SKS **SKSac** **06 14 28.3 -2.8**
CD2 S **S** **06 15 14.4 -1.7**
CD2 sS sS 06 15 37.3 +8.1
CD2 SS **SS** **06 21 53.0 +0.9**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.8s
CD2 LR LR
comp=Z,370nm,11.4s
CD2 LR LR
comp=Z,360nm,12.4s
CD2 LR LR
comp=Z,410nm,15.4s
IL1 Eielson Array 97.09 12 *e*P Pdif 06 03 57.1 +0.9
ILAR Eielson Array 97.09 12 P **P** **06 03 55.0 -1.1**
comp=Z,0.7nm,1.0s,baz=222,slow=5.2,SNR=5.6
ILAR Eielson Array 97.09 12 P **P** **06 03 55.0 -1.1**
ILB Eielson Array 97.09 12 *e*P Pdif 06 03 57.6 +1.5
LPAZ La Paz 97.31 113 P Pdif 06 04 00.3 +1.2
comp=Z,1.8nm,0.8s,baz=157,slow=4.4,SNR=7.8
LPAZ La Paz 97.31 113 *e*P Pdif 06 04 00.7 +1.6
comp=Z,2.6nm,0.8s
BILL Bilibino 98.38 354 *e*P Pdif 06 04 04.9 +3.1
BILL Bilibino 98.38 354 *e*P Pdif 06 04 04.9 +3.1
comp=Z,16nm,0.4s
LZH Lanzhou 99.31 306 *e*P **Pdif** **06 04 07.9 +0.9**
LZH pP sP 06 04 20.4 +2.7
LZH sP pP 06 04 25.8 +11
LZH SKS **SKSac** **06 14 41.8 -2.3**
LZH *e*S **ScS** **06 15 32.0 -5.7**
LZH sS sS 06 15 57.4 +6.5
LZH SS **SS** **06 22 25.4 -2.5**
LZH pmax pmax
comp=Z,43nm,1.2s
LZH pmax pmax
comp=Z,160nm,4.4s
LZH LR LR
comp=Z,2μm,15.2s
LZH LR LR
comp=Z,2μm,15.4s
LZH LR LR
comp=Z,2μm,18.5s
WMQ Urumqi 113.78 308 *e*PKP **PKiKP** **06 09 03.0 -0.2**
WMQ PP **PP** **06 10 01.8 +5.0**
WMQ PKS **PKSdf** **06 12 40.3 +0.5**
WMQ SKKS 06 16 46.1
WMQ SS **SS** **06 25 44.8 +0.5**
WMQ AMB AMB
comp=Z,150nm,8.6s
WMQ LR LR
comp=Z,430nm,19.8s
WMQ LR LR
comp=Z,640nm,16.8s
WMQ LR LR
comp=Z,610nm,22.1s
MK01 Makanchi Array 118.28 310 *e*PKPdf **PKPdf** **06 09 11.3 -0.4**
MK31 Makanchi Array 118.29 310 *e*PKIKP **PKPdf** **06 09 11.8 +0.1**
MK31 Makanchi Array 118.29 310 *e*PKPdf **PKPdf** **06 09 11.8 +0.1**
MKAR Makanchi Array 118.29 310 PKP **PKPdf** **06 09 09.9 -1.7**
comp=Z,1.6nm,0.8s,baz=95,slow=2.9,SNR=5.6
MKAR PKKPbc **PKKPab** **06 19 33.0 +1.9**
comp=Z,0.2nm,0.3s,baz=282,slow=2.8,SNR=3.8
MKAR Makanchi Array 118.29 310 PKIKP **PKPdf** **06 09 10.0 -1.7**
MKAR pmax pmax
comp=Z,2.0nm,0.8s
MKAR Makanchi Array 118.29 310 *e*PKPdf **PKPdf** **06 09 11.8 +0.1**
MKAR PKKPbc **PKKPab** **06 19 33.0 +1.9**
ZAA0 Zalesovo Array 118.37 318 *e*PKPdf **PKPdf** **06 09 11.8 +0.2**
ZALV Zalesovo Beam 118.37 318 PKP **PKPdf** **06 09 09.1 -2.5**
comp=Z,0.6nm,0.4s,baz=53,slow=5.6,SNR=3.4
MAKZ Makanchi 118.50 310 *e*PKIKP **PKPdf** **06 09 12.0 -0.1**
MAKZ Makanchi 118.50 310 *e*PKPdf **PKPdf** **06 09 12.0 -0.1**
KSH Kashi 120.95 301 *e*PKP **PKPdf** **06 09 18.4 +1.2**
KSH *es*PKP 06 09 34.4
KSH *e*PP **PP** **06 10 53.4 +6.5**
KSH PKS **PKSdf** **06 12 54.6 +0.7**
KSH SKS **SKSdf** **06 16 26.0 -1.8**
KSH SKKS **SKKSac** **06 17 39.8 -4.9**
KSH SS **SS** **06 27 19.8 +1.9**
KSH AMB AMB
comp=Z,88nm,4.3s
KSH LR LR
comp=Z,140nm,8.2s
KSH LR LR
comp=Z,110nm,6.6s
KSH LR LR
comp=Z,230nm,9.5s
KURK Kurchatov 121.48 314*c* *i*PKIKP **PKPdf** **06 09 16.5 -1.2**
KURK pmax pmax
comp=Z,52nm,1.7s
KURK Kurchatov 121.48 314 *e*PKPdf **PKPdf** **06 09 16.4 -1.2**
KURBB Kurchatov Arra 121.53 314 PKP **PKPdf** **06 09 15.5 -2.2**
comp=Z,3.6nm,0.8s,baz=108,slow=2.0,SNR=14
AAK Ala-Archa 122.76 304⇑ *i*PKIKP **PKPdf** **06 09 21.8 +1.2**
KKAR Karatay Array 125.72 304 *e*PKIKP **PKPdf** **06 09 25.3 -0.8**
KKAR Karatay Array 125.72 304 *e*PKPdf **PKPdf** **06 09 25.3 -0.8**
VOSK Vostochnaya 126.43 316 *e*PKIKP **PKPdf** **06 09 26.9 -0.2**
VOSK Vostochnaya 126.43 316 *e*PKPdf **PKPdf** **06 09 26.9 -0.2**
BVAR Borovoye Array 126.80 316 PKP **PKPdf** **06 09 26.4 -1.4**
comp=Z,5.0nm,0.9s,baz=79,slow=3.2,SNR=10.0
BRVK Borovoye 126.86 316*c* *i*PKIKP **PKPdf** **06 09 28.7 +0.8**
BRVK Borovoye 126.86 316 *e*PKPdf **PKPdf** **06 09 29.4 +1.5**
ZRNK Zerenda 127.63 316 *e*PKIKP **PKPdf** **06 09 29.3 -0.1**
ZRNK Zerenda 127.63 316 *e*PKPdf **PKPdf** **06 09 29.3 -0.1**
ARU Arti 133.37 321 *i* PKIKP **PKPdf** **06 09 41.3 +1.1**
ARU 06 12 07.6
ARU MLR MLR
comp=Z,976nm,21.0s
GEYT Alibeck 134.37 295 SKP **SKiKP** **06 13 18.4 -0.2**
comp=Z,2.6nm,0.3s,baz=23,slow=1.9,SNR=6.4
ARCES ARCESS Array B 138.25 349 PKP **PKPdf** **06 09 48.4 -0.5**
comp=Z,5.3nm,0.9s,baz=45,slow=0.3,SNR=6.2
KLMR Klimovskoe 140.78 333 *e*PKIKP **PKPdf** **06 09 54.9 +1.2**
KLMR pmax pmax
comp=Z,21nm,1.2s
VRH Novokhopyorsk 144.40 318 *e*PKIKP PKPbc 06 09 58.9 0.0
VRH pmax pmax
comp=Z,10.0nm,0.8s
MOS Moscow 144.50 327 *e*PKIKP **PKPab** **06 09 58.2 -0.6**
GUDG Gudauri 144.80 302 P **PKPdf** **06 10 01.6 -0.1**
GNI Garni 144.83 298*c* *i*PKIKP **PKPab** **06 10 00.6 -0.2**
GNI Garni 144.83 298 *e*PKPdf **PKPdf** **06 10 01.5 -0.3**
FIA1 FINESS Array S 144.98 341 *e*PKPbc PKPbc 06 10 00.0 -0.4
FINES FINESS Array B 144.98 341 PKP PKPbc 06 09 58.1 -2.3
comp=Z,34nm,0.9s,baz=65,slow=2.8,SNR=30
ZEI Tsey 145.18 303 *e*PKIKP **PKPbc** **06 10 01.9 -0.1**
ZEI pmax pmax
comp=Z,192nm,1.1s
OBN Obninsk 145.34 326*d* *i*PKIKP **PKPbc** **06 10 01.1 -0.7**
OBN *i* 06 10 10.9
OBN *i* 06 13 22.4
OBN pmax pmax
comp=Z,82nm,1.1s
OBN Obninsk 145.34 326 *e*PKPbc **PKPbc** **06 10 01.1 -0.7**
GOF Gofitskoye 145.38 307⇑ *i*PKIKP **PKPab** **06 10 03.0 +0.5**
GOF pmax pmax
comp=Z,155nm,1.5s
ONI Oni 145.53 303 P **PKPdf** **06 10 02.3 -0.5**
ONI Oni 145.53 303 PKIKP **PKPdf** **06 10 02.3 -0.5**
AKH Akhalkalaki 145.66 301⇑ *i*P **PKPdf** **06 10 03.2 0.0**
AKH Akhalkalaki 145.66 301 P **PKPdf** **06 10 02.6 -0.7**
AKH Akhalkalaki 145.66 301 PKIKP **PKPdf** **06 10 02.5 -0.7**
KBZ Khabaz 145.75 305 PKPbc **PKPbc** **06 10 03.4 -0.1**
comp=Z,13nm,0.9s,baz=86,slow=4.0,SNR=13
KIV Kislovodsk 145.85 305*c* *i*PKP2 **PKPdf** **06 10 03.4 +0.1**
KIV *i* 06 13 27.2
KIV *i* SS SS 06 32 07.4 -11
KIV pmax pmax
comp=Z,29nm,1.0s
KIV Kislovodsk 145.85 305 *e*PKPdf **PKPbc** **06 10 04.0 +0.1**
VSR Storozhevoye 145.87 319 *e*PKIKP **PKPdf** **06 10 02.5 -0.5**
VSR pmax pmax
comp=Z,120nm,1.5s
VSU Vasula 147.15 337*c* *i*PKP2 **PKPbc** **06 10 07.9 +0.8**
AKN Aaknes 147.53 357 *e*PKPdf **PKPab** **06 10 09.3 -0.9**
AKN IAMs_20 IAMs_20 07 21 00.9
comp=Z,522nm,21.6s
DOMB Dombas 147.54 355 *e*PKPdf **PKPab** **06 10 09.4 -0.8**
DOMB IAMs_20 IAMs_20 07 24 09.6
comp=Z,657nm,19.3s
SOC Sochi 148.03 306 *e*PKIKP **PKPdf** **06 10 07.1 +0.2**
SOC *i* 06 10 11.6
SOC *e* 06 13 35.1
SOC *e*PPP PPP 06 16 53.1
SOC pmax pmax
comp=Z,28nm,0.9s
NC303 NORSAR Array S 148.13 353 *e*PKPdf **PKPdf** **06 10 07.8 +1.3**
NC204 NORSAR Array S 148.14 353 *e*PKPdf **PKPdf** **06 10 08.3 +1.7**
NC405 NORSAR Array S 148.20 352 *e*PKPbc **PKPbc** **06 10 10.9 +1.0**
NB201 NORSAR Array S 148.31 353 *e*PKPdf **PKPdf** **06 10 07.9 +1.1**
NB2 NORSAR Subarra 148.33 353 PKP **PKPdf** **06 10 07.9 +1.0**
comp=Z,5.9nm,0.8s,baz=8.7,slow=2.9
NB2 NORSAR Subarra 148.33 353 PKP **PKPdf** **06 10 07.9 +1.0**
baz=8.7,slow=2.9
NOA NORSAR Array B 148.33 353 PKPbc **PKPdf** **06 10 07.8 +1.0**
comp=Z,7.4nm,0.8s,baz=14,slow=4.4,SNR=12
NBO02 NORSAR Array S 148.36 353 *e*PKPdf **PKPdf** **06 10 08.3 +1.5**
NBO00 NORSAR Array S 148.38 353 *e*PKPdf **PKPdf** **06 10 07.9 +0.9**
NAO01 NORSAR Array S 148.55 353 *e*PKPdf **PKPdf** **06 10 08.8 +1.6**
NC602 NORSAR Array S 148.59 352 *e*PKPdf **PKPbc** **06 10 09.9 -1.0**
NC602 NORSAR Array S 148.59 352 *e*PKPbc **PKPbc** **06 10 09.7 -1.3**
SUE Sulen 148.73 359 *e*PKPdf **PKPbc** **06 10 11.6 +0.3**
ANN Anapa 149.29 309 *i* PKP2 **PKPbc** **06 10 12.2 -1.0**
ANN *e* 06 13 42.3
ANN *e*PPP PPP 06 17 04.5
ANN pmax pmax
comp=Z,76nm,1.5s
LRW Lerwick 149.51 4 *e*PKPdf **PKPbc** **06 10 14.6 +1.4**
LRW IAMs_20 IAMs_20 07 19 07.2
comp=Z,820nm,19.2s
MICGM Minsk 149.64 331 *e*P **PKPbc** **06 10 14.0 +0.3**
MNK Minsk 149.64 331 *e*PKP2 **PKPbc** **06 10 14.0 +0.3**
NACGM Naroch 149.80 333 *e* **PKPbc** **06 10 16.0 +1.9**
NACGM *e*LR LR 07 13 34.0
ODD1 Odda 149.81 357 *e*PKPdf **PKPbc** **06 10 15.4 +1.3**
KONO Kongsberg 149.86 354 *e*PKPdf **PKPbc** **06 10 13.4 -0.7**
KONO IAMs_20 IAMs_20 07 27 30.4
comp=Z,555nm,20.6s
STAV Stavanger 150.83 358 *e*PKPdf **PKPbc** **06 10 16.5 0.0**
SNART Snartemo 151.35 356 *e*PKPdf **PKPbc** **06 10 16.6 -1.0**
AKASG Malin Array Be 151.52 324 PKPbc **PKPbc** **06 10 16.6 -1.7**
comp=Z,15nm,0.7s,baz=46,slow=2.7,SNR=28
AKBB Malin Array Si 151.52 324 *e*PKIKP **PKPbc** **06 10 17.9 -0.4**
AKBB Malin Array Si 151.52 324 *e*PKPbc **PKPbc** **06 10 17.9 -0.4**
KIEV Kiev 151.53 324*c* *i*PKIKP **PKPbc** **06 10 17.1 -1.2**
KIEV Kiev 151.53 324 *e*PKPbc **PKPbc** **06 10 17.2 -1.1**
AK11 Malin Array Si 151.56 324 *e*PKPbc **PKPbc** **06 10 17.7 -0.7**
KPL Plockton 151.76 10 *e*PKPdf **PKPbc** **06 10 18.2 -0.4**
SUW Suwalki 151.86 335 *e*P **PKPbc** **06 10 20.5 +1.5**
SUW Suwalki 151.86 335 *e*PKIKP **PKPbc** **06 10 20.5 +1.5**
BR131 Keskin Array S 153.34 300 *e*PKPbc **PKPbc** **06 10 23.6 +0.7**
BRTR Keskin Array B 153.34 300 PKPbc **PKPbc** **06 10 20.3 -2.7**
comp=Z,3.8nm,0.9s,baz=114,slow=1.5,SNR=11
SORM Soroca 153.49 321⇑ *i*P **PKPbc** **06 10 23.8 +1.0**
SORM Soroca 153.49 321⇑ *i*PKIKP **PKPbc** **06 10 23.8 +1.0**
KIS Kishinev 153.85 318 *e*PKP **PKPbc** **06 10 24.0 +0.4**
KIS Kishinev 153.85 318 *e*PP PP 06 14 06.0 -5.3
KIS Kishinev 153.85 318 *e*PKIKP **PKPbc** **06 10 24.0 +0.4**
KIS *e* 06 10 35.0
KIS *e* 06 14 16.0
ANTO Ankara 153.94 301 *e*PKIKP **PKPbc** **06 10 24.0 -0.2**
ANTO Ankara 153.94 301 *e*PKPbc **PKPbc** **06 10 24.0 -0.2**
BR231 Keskin MP Arra 153.96 301 *e*PKPbc **PKPbc** **06 10 23.2 -1.0**
CFR Carcaliu 155.19 315⇑ *i*P **PKPab** **06 10 46.1 +3.6**
CFR Carcaliu 155.19 315⇑ *i*PKP2 **PKPab** **06 10 46.1 +3.6**
KWP Kalwaria Pacla 155.36 329 *e*P **PKPab** **06 10 44.6 +1.5**
KWP Kalwaria Pacla 155.36 329 *e*PKP2 **PKPab** **06 10 44.6 +1.5**
TESR Tesgani 155.37 319⇑ *i*P **PKPab** **06 10 43.8 +0.5**
TIRR Tirgusor 155.37 313⇑ *i*P **PKPab** **06 10 45.7 +2.4**
TIRR Tirgusor 155.37 313⇑ *i*PKP2 **PKPab** **06 10 45.7 +2.4**
BUR08 Bucovina Ar. S 155.49 323 *e*PKPab **PKPab** **06 10 45.1 +1.2**
BURAR Bucovina Array 155.50 323⇑ *i*P **PKPab** **06 10 45.9 +2.0**
BURAR Bucovina Array 155.50 323⇑ *i*PKP2 **PKPab** **06 10 45.9 +2.0**
TLB Topalu 155.54 314⇑ *i*P **PKPab** **06 10 38.7 -5.3**
TLB Topalu 155.54 314⇑ *i*PKP2 **PKPab** **06 10 38.7 -5.3**
DBIC Dimbokro 155.72 160 PKP **PKPdf** **06 10 18.7 -0.6**
comp=Z,2.7nm,0.8s,baz=320,slow=17,SNR=3.0
PLOR Plostina 155.73 318⇑ *i*P PKPab 06 10 56.4 +11
KOLS Kolonicke sedl 156.06 328 *e*PKIKP **PKPdf** **06 10 21.3 +2.6**
KOLS *e* 06 10 45.8
KOLS Kolonicke sedl 156.06 328 *e*PKP **PKPdf** **06 10 21.3 +2.6**
KOLS *e* 06 10 45.8
OJC Ojcow 156.13 333 *e*P **PKPdf** **06 10 20.0 +1.3**
OJC Ojcow 156.13 333 *e*PKIKP **PKPdf** **06 10 20.0 +1.3**
STHS Stebnicka Huta 156.16 330 *e*PKP2 **PKPab** **06 10 47.2 +0.6**
STHS Stebnicka Huta 156.16 330 *e*PKP **PKPab** **06 10 47.2 +0.6**
UZH Uzhgorod 156.27 328 *e*PKIKP **PKPdf** **06 10 23.4 +4.5**
UZH *i* 06 10 29.0
UZH *e* 06 10 46.4
MLR Muntele Rosu 156.34 318⇑ *i*P PKPab 06 10 57.2 +10
DOPR Dopca 156.40 319⇑ *i*P **PKPab** **06 10 49.6 +1.9**
CRVS Cervenica-Dubn 156.45 329 *e*PKIKP **PKPdf** **06 10 25.5 +6.3**
CRVS Cervenica-Dubn 156.45 329 *e*PKP **PKPdf** **06 10 25.5 +6.3**
CRVS *e* 06 10 48.1
NIE Niedzica 156.56 331 *e*P **PKPdf** **06 10 21.5 +2.1**
NIE Niedzica 156.56 331 *e*PKIKP **PKPdf** **06 10 21.5 +2.1**
PRD Provadia 156.60 311 P **PKPab** **06 10 49.0 +0.4**
KSP Ksiaz 156.85 339 *e*P **PKPdf** **06 10 21.8 +2.1**
KSP Ksiaz 156.85 339 *e*PKIKP **PKPdf** **06 10 21.8 +2.1**
OKC Ostrava-Krasne 157.07 335 AMS AMS 07 25 50.0
comp=Z,800nm,20.5s
ARR Arges 157.18 319⇑ *i*P **PKPab** **06 10 53.0 +1.9**
KECS Kecovo 157.19 330 *e*PKP2 **PKPab** **06 10 51.3 +0.3**
KECS Kecovo 157.19 330 *e*PKP **PKPab** **06 10 51.3 +0.3**
UPC Upice 157.23 339 *e*PKPAB **PKPab** **06 10 52.5 +1.4**
UPC AMS AMS 07 23 40.0
comp=Z,600nm,17.6s
UPC Upice 157.23 339 *e*PKP2 **PKPab** **06 10 52.5 +1.4**
UPC MLR MLR
comp=Z,600nm,17.6s
DPC Dobruska-Polom 157.27 338 *e*PKPAB **PKPab** **06 10 52.0 +0.7**
DPC *ex* x 06 11 01.2
DPC AMS AMS 07 32 40.0
comp=Z,500nm,18.1s
DPC Dobruska-Polom 157.27 338 *e*PKP2 **PKPab** **06 10 52.0 +0.7**
DPC MLR MLR
comp=Z,500nm,18.1s
DRGR 157.33 324⇑ *i*P **PKPab** **06 10 52.5 +0.8**
DRGR 157.33 324⇑ *i*PKP2 **PKPab** **06 10 52.6 +0.8**
CLL Collm 157.34 344 *e*PKPdf **PKPdf** **06 10 24.0 +3.8**
CLL ⇓ *i*PKPab **PKPab** **06 10 52.0 +0.5**
comp=Z,17nm,1.1s
CLL *e*PP **PP** **06 14 29.0 -1.0**
CLL *e*SKKSac SKKSac 06 21 18.0 0.0
CLL *e*PSKS 06 24 54.0
CLL *e*PPS PPS 06 26 00.0
CLL LmH 07 27 00.0
comp=N,300nm,21.1s
CLL LmH 07 27 00.0
comp=E,400nm,19.5s
CLL LmV 07 30 00.0
comp=Z,600nm,19.0s
CLL Collm 157.34 344⇓ *e*PKIKP **PKPdf** **06 10 24.0 +3.8**
CLL pmax pmax
comp=Z,17nm,1.1s
CLL MLR MLR
comp=Z,600nm,19.0s
KRLC Kraliky 157.35 337 *e*PKPAB **PKPab** **06 10 51.7 0.0**
KRLC Kraliky 157.35 337 *e*PKP2 **PKPab** **06 10 51.7 0.0**
BRG Berggiesshubel 157.51 342 *e*P **PKPdf** **06 10 19.6 -0.9**
comp=Z,3.5nm,0.9s
BRG *e* 06 10 53.4
comp=Z,13nm,1.1s
comp=N,235nm,13.2s
comp=E,363nm,17.4s
comp=Z,596nm,20.8s
BRG Berggiesshubel 157.51 342 *e*PKIKP **PKPdf** **06 10 19.5 -0.9**
BRG pmax pmax
comp=Z,4.0nm,0.9s
BRG MLR MLR
comp=N,235nm,13.2s
BRG MLR MLR
comp=E,363nm,17.4s
BRG MLR MLR
comp=Z,596nm,20.8s
SZH Strazhica 157.51 313 P **PKPab** **06 10 52.5 -0.1**
PVCC Panska Ves 157.65 341 AMS AMS 07 35 00.0
comp=Z,600nm,19.5s
PSZ Piszkesteto 157.88 329⇑ *i*P **PKPab** **06 10 54.3 +0.2**
PSZ Piszkesteto 157.88 329 *e*PKP2 **PKPab** **06 10 54.1 0.0**
PSZ Piszkesteto 157.88 329 *e*PKPab **PKPab** **06 10 54.1 0.0**
VYHS Vyhne 157.89 332 *e*PKP2 **PKPab** **06 10 54.0 0.0**
VYHS Vyhne 157.89 332 *e*PKP **PKPab** **06 10 54.0 0.0**
GOPC GO Pecny, Ondr 158.13 340 *e*PKPAB **PKPab** **06 10 56.1 +1.1**
GOPC AMS AMS 07 28 20.0
comp=Z,500nm,20.5s
GOPC GO Pecny, Ondr 158.13 340 *e*PKP2 **PKPab** **06 10 56.1 +1.1**
GOPC MLR MLR
comp=Z,500nm,20.5s
PRU Pruhonice 158.14 340 *e*PKPAB **PKPab** **06 10 55.8 +0.8**
PRU *e*SS SS 06 34 30.0 -2.0
PRU AMS AMS 07 24 50.0
comp=Z,800nm,19.3s
PRU Pruhonice 158.14 340 *e*PKP2 **PKPab** **06 10 55.8 +0.8**
PRU *e*SS SS 06 34 30.0 -2.0
PRU MLR MLR
comp=Z,800nm,19.3s
NKC Novy Kostel 158.47 344 *e*PKPAB **PKPab** **06 10 55.6 -0.9**
NKC AMS AMS 07 29 50.0
comp=Z,700nm,16.6s
NKC Novy Kostel 158.47 344 *e*PKP2 **PKPab** **06 10 55.6 -0.9**
NKC MLR MLR
comp=Z,700nm,16.6s
KDZ Kurdzhali 158.61 309 P **PKPab** **06 10 57.3 -0.1**
MPEP Malo Peshtene 158.84 315 P **PKPab** **06 10 58.5 +0.2**
PGB Panagyurishte 159.00 313 P **PKPab** **06 10 59.2 +0.1**
KHC Kasperske Hory 159.19 341 *e*PKPAB **PKPab** **06 11 00.6 +1.0**
KHC *ex* x 06 11 10.8
KHC *ex* x 06 11 24.8
KHC *e*SS SS 06 34 41.4 -1.8
KHC AMS AMS 07 35 30.0
comp=Z,700nm,17.4s
KHC Kasperske Hory 159.19 341 *e*PKP2 **PKPab** **06 11 00.9 +1.3**
KHC Kasperske Hory 159.19 341 *e*PKPab **PKPab** **06 11 00.8 +1.3**
GERES GERESS Array B 159.41 340 PKP **PKPdf** **06 10 24.3 +1.4**
comp=Z,0.5nm,0.8s,baz=352,slow=6.0,SNR=2.9
GERES PKPab **PKPab** **06 10 59.2 -1.5**
comp=Z,1.6nm,0.8s,baz=41,slow=4.3,SNR=4.7
VTS Vitosha 159.58 314⇑ *i*P **PKPab** **06 11 01.5 -0.3**
VTS Vitosha 159.58 314⇑⇑ *i*PKP2 **PKPab** **06 11 01.5 -0.3**
VTS Vitosha 159.58 314 P **PKPab** **06 11 01.8 0.0**
VTS Vitosha 159.58 314 *e*PKPab **PKPab** **06 11 02.1 +0.3**
MMB Musomiste 159.76 311 P **PKPab** **06 11 01.8 -0.6**
VAY Valandovo 160.65 312 *i* PKP **PKPab** **06 11 06.5 +0.3**
SKO Skopje 161.02 315 *i* PKP **PKPab** **06 11 09.4 +1.5**
OHR Ohrid 161.89 313 *e*PKP **PKPab** **06 11 10.5 -1.3**
PDG Podgorica 162.04 319⇑ *i*P **PKPab** **06 11 13.9 +1.6**
TOA0 Torodi Ar. Sit 163.35 174 *e*PKPdf **PKPdf** **06 10 28.8 +0.8**
TOA0 *e*PKPdf **PKPdf** **06 10 28.9 +0.9**
TOA0 *e*PKPab **PKPab** **06 11 19.0 +0.5**
TORD Torodi Ar. Bea 163.35 174 PKP **PKPdf** **06 10 27.7 -0.3**
comp=Z,2.3nm,1.0s,baz=199,slow=2.4,SNR=6.8
TORD PKPab **PKPab** **06 11 17.8 -0.7**
comp=Z,1.3nm,0.8s,baz=211,slow=2.9,SNR=4.3
TIP Timpagrande 165.54 314 *e*PKPab **PKPab** **06 11 28.1 +0.2**
ESDC Sonseca Array 168.47 29 PKP **PKPdf** **06 10 31.2 -0.2**
comp=Z,0.3nm,0.3s,baz=236,slow=1.4,SNR=3.5
ES19 SONSECA Array 168.47 29 *e*PKPdf **PKPdf** **06 10 31.5 0.0**
TAM Tamanrasset 172.75 196 *e*PKIKP **PKPdf** **06 10 35.1 +0.7**
TAM Tamanrasset 172.75 196 *e*PKPdf **PKPdf** **06 10 35.1 +0.7**

NIED ***15*** *05:57:00,38.˚20N×143.˚60E,h8km,Mw4.5 Best double couple: M₀6.00000×10¹⁵ NP1:φ₀177.00000°,δ45.00000°, λ-135.00000°. NP2:φ₀51.00000°,δ60.00000°, λ-54.00000°.*
ISCJB ***15*** *05:57:17.4±0.8,38.˚13N±0.˚02×143.˚50E±0.˚02,h15km±5km, mb4.7/109,MS4.2/18,Error ellipse: s-maj=4.2km s-min=2.8km az=159.0*
BJI ***15*** *05:57:17.7,38.˚19N×143.˚48E,h21km,mb4.7/57,mB4.9/37, Ms4.5/46,Ms7 4.2/44*
MOS ***15*** *05:57:18.9±0.9,38.˚16N×143.˚47E,h27km,mb4.8/50,Error ellipse: s-maj=8.7km s-min=5.6km az=104.5*
JMA ***15*** *05:57:18.4±0.1,38.˚17N×143.˚55E,h37km,M4.6*
NEIC ***15*** *05:57:20.3±1.2,38.˚13N×143.˚50E,h25km±8km,mb4.9/68, Error ellipse: s-maj=4.7km s-min=2.9km az=138.0*
IDC ***15*** *05:57:21.4±3.0,38.˚05N×143.˚57E,h37km±25km,mb4.3/26, mb1 4.4/30,mb1mx4.3/52,mbtmp4.5/30,ML3.7/4, MS3.7/9, Ms1 3.7/9,ms1mx3.4/56,Error ellipse: s-maj=15.8km s-min=12.4km az=119.0*

ISC 15 05:57:19.6±0.6,38.˚13N±0.˚04×143.˚59E±0.˚04, h23km±3km, n248,σ1°73/289,mb4.8/109,MS4.2/19,7C-10D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.78**	**303**	P		**Pn**	**05 57 47.3**	**-1.5**
OFUJ				S		**Sn**	**05 58 08.5**	**-2.2**
JIO	**Ouri**	**1.79**	**281**	P		**Pn**	**05 57 47.5**	**-1.5**
JIO				S		**Sn**	**05 58 08.3**	**-2.7**
MIYJ	**Miyakonagasawa**	**2.00**	**317**	P		**Pn**	**05 57 49.9**	**-2.0**
MIYJ				S	eS	**Sn**	**05 58 13.0**	**-3.1**
JMK	**Ichinoseki**	**2.03**	**295**	P		**Pn**	**05 57 50.7**	**-1.6**
JMK				S	eS	**Sn**	**05 58 14.7**	**-2.2**
JOM	**Ohasama**	**2.24**	**308**	P		**Pn**	**05 57 54.1**	**-1.1**
JOM				S	eS	**Sn**	**05 58 20.6**	**-1.5**
JFT	**Otama**	**2.64**	**258**	P		**Pn**	**05 58 00.4**	**-0.4**
JFT				S		**Sn**	**05 58 31.5**	**-0.6**
JYK	**Kaneyama**	**2.65**	**288**	P		**Pn**	**05 58 00.3**	**-0.5**
JYK				S		**Sn**	**05 58 31.6**	**-0.6**
JANG	**Nango**	**2.76**	**325**	P		**Pn**	**05 58 01.4**	**-0.9**
JANG				S	eS	**Sn**	**05 58 32.5**	**-2.4**
JNS	**Sasagawa**	**3.39**	**266**	P		**Pn**	**05 58 10.6**	**-0.4**
JNS				S	eS	**Sn**	**05 58 49.5**	**-0.9**
JAW	**Awa shima**	**3.43**	**277**	P		**Pn**	**05 58 11.4**	**-0.1**
JAG	**Ashikaga**	**3.71**	**244**	P		**Pn**	**05 58 14.3**	**-1.1**
JAG				S		**Sn**	**05 58 56.3**	**-2.1**
JOT	**Ohata**	**3.79**	**330**	eS		**Sn**	**05 58 56.4**	**-3.9**
ERM	**Erimo**	**3.90**	**355**⇓	eP		**Pn**	**05 58 16.6**	**-1.3**
ERM	**Erimo**	**3.90**	**355**	ePn		**Pn**	**05 58 16.7**	**-1.3**
ERM				eSn		**Sn**	**05 59 02.1**	**-0.8**
BSO1	**Boso 1**	**4.06**	**212**	P		**Pn**	**05 58 17.7**	**-2.0**
BSO1				eS		**Sn**	**05 59 02.3**	**-3.9**
JNBK	**Urakawa-nobuka**	**4.19**	**352**	P		**Pn**	**05 58 21.5**	**-0.5**
JNBK				eS		**Sn**	**05 59 08.4**	**-1.9**
JSD	**Sado**	**4.20**	**270**	P		**Pn**	**05 58 21.6**	**-0.6**
JSD				eS		**Sn**	**05 59 08.0**	**-2.5**
JKB	**Kayabe**	**4.23**	**333**	P		**Pn**	**05 58 22.3**	**-0.3**
JKB				eS		**Sn**	**05 59 07.5**	**-3.8**
JRY	**Ryogami san**	**4.30**	**242**	P		**Pn**	**05 58 22.8**	**-0.7**
JRY				S		**Sn**	**05 59 09.6**	**-3.3**
JCH	**Churui**	**4.48**	**358**	P		**Pn**	**05 58 24.1**	**-1.9**
JCH				S		**Sn**	**05 59 12.9**	**-4.5**
MJAR	**Matsushiro Arr**	**4.57**	**251**	Pn		**Pn**	**05 58 27.8**	**+0.6**
MJAR	9.5nm,0.3s,baz=72,slow=12,SNR=28			Sn		**Sn**	**05 59 19.6**	**0.0**
MJAR	13nm,0.3s,baz=54,slow=14,SNR=5.6			LR		LR	06 00 14.3	
MAJO	**Matsushiro**	**4.57**	**251**	*d* *i*P		**Pn**	**05 58 27.9**	**+0.7**
MAJO	**Matsushiro**	**4.57**	**251**	*e*Pn		**Pn**	**05 58 28.2**	**+0.9**
MAT	**Matsushiro**	**4.57**	**251**	P		**Pn**	**05 58 27.8**	**+0.6**
MAT				eS		**Sn**	**05 59 19.3**	**-0.3**
MJB9	**Matsu-Tunnel**	**4.57**	**251**	ePn		**Pn**	**05 58 28.2**	**+1.0**
JHJ2	**Mitsune**	**5.87**	**213**	ePn		**Pn**	**05 58 45.6**	**+0.5**
JHJ2				eSn		**Sn**	**05 59 47.5**	**-4.2**
JHJ	**Hachijo jima 2**	**5.88**	**213**	Pn		**Pn**	**05 58 43.3**	**-2.0**
JHJ	32nm,0.3s,baz=101,slow=23,SNR=13			Sn		Sn	05 59 44.0	-7.9
JHJ	163nm,0.3s,baz=52,slow=21,SNR=9.8			LR		LR	06 00 59.7	
INU	**Inuyama**	**5.96**	**244**	ePn		**Pn**	**05 58 47.2**	**+0.9**
ASAJ	**Asahikawa**	**6.03**	**353**	ePn		**Pn**	**05 58 46.8**	**-0.4**
KUR	**Kuril'sk**	**7.79**	**23**	*e*P		**Pn**	**05 59 09.0**	**-2.3**
KUR				*e*S		**Sn**	**06 00 32.6**	**-6.1**
KUR				pmax	pmax			
KUR	comp=Z,38nm,0.4s			smax	smax			
KUR	comp=E,109nm,0.6s			smax	smax			

comp=N,53nm,0.7s
YSS Yuzh-Sakhalins 8.84 356 *e*P **Pn** **05 59 26.2 +0.4**
YSS pmax pmax
comp=Z,20nm,0.4s
YSS MLR MLR
comp=Z,600nm,16.0s
YSS Yuzh-Sakhalins 8.84 356 *e*Pn **Pn** **05 59 26.0 +0.2**
VLA Vladivostok 10.19 303⇑ *e*P **Pn** **05 59 45.7 +1.4**
USRK Ussuriysk Ar. 10.63 308 Pn **Pn** **05 59 51.9 +1.5**
comp=Z,1.2nm,0.3s,baz=118,slow=14,SNR=9.8
USRK LR LR 06 03 34.7
comp=Z,392nm,21.0s,baz=119,slow=35
JNU Nakatsue 11.48 248 Pn **Pn** **06 00 02.3 +0.2**
comp=Z,0.3nm,0.3s,baz=26,slow=12,SNR=5.3
MDJ Mudanjiang 12.34 306 P **Pn** **06 00 14.9 +1.2**
MDJ S **Sn** **06 02 32.4 +2.0**
MDJ pmax pmax
comp=Z,10.0nm,0.8s
MDJ LR LR
comp=Z,250nm,14.9s
MDJ LR LR
comp=Z,240nm,15.2s
MDJ LR LR
comp=Z,350nm,16.9s
MDJ Mudanjiang 12.34 306 *e*Pn **Pn** **06 00 15.1 +1.4**
KLR Kul'dur 14.00 326 Pn **Pn** **06 00 34.2 -2.1**
comp=Z,0.4nm,0.3s,baz=135,slow=11,SNR=9.9
KLR LR LR 06 06 19.8
comp=Z,322nm,18.7s,baz=133,slow=38
CN2 Changchun 14.82 298 *e*P **Pn** **06 00 48.3 +0.8**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
SKR Severo-Kuril's 15.39 31⇑ *e*P **P** **06 01 00.2 +0.7**
DL2 Dalian 17.20 279 P **Pn** **06 01 17.9 -0.3**
DL2 *e*S **Sn** **06 04 29.9 +1.1**
DL2 pmax pmax
comp=Z,49nm,1.0s
DL2 LR LR
comp=Z,420nm,17.8s
DL2 LR LR
comp=Z,320nm,12.6s
PEA0 Petropavlovsk- 17.89 29 *e*Pn **Pn** **06 01 25.4 -1.3**
PEA0B Petropavlovsk- 17.89 29 *e*Pn **P** **06 01 27.8 +0.7**
comp=Z,50nm,1.5s
PETK Petropavlovsk- 17.89 29 P **Pn** **06 01 23.8 -2.9**
comp=Z,0.1nm,0.3s,baz=194,slow=11,SNR=3.7
HIA Hailar 20.43 311 *e*P **P** **06 01 54.6 -0.5**
HIA pmax pmax
comp=Z,23nm,1.1s
HIA Hailar 20.43 311 *e*P **P** **06 01 54.6 -0.5**
comp=Z,23nm,1.1s
NJ2 Nanjing 21.09 261 *e*P **P** **06 01 59.6 -2.7**
NJ2 S **S** **06 05 56.1 +0.1**
NJ2 pmax pmax
comp=Z,12nm,0.5s
NJ2 LR LR
comp=Z,480nm,14.1s
NJ2 LR LR
comp=Z,510nm,19.0s
NJ2 LR LR
comp=Z,560nm,12.5s
TIA Tai'an 21.15 273 P **P** **06 02 02.3 -0.6**
BJI Beijing 21.33 284 P **P** **06 02 02.1 -2.7**
BJI pmax pmax
comp=Z,12nm,1.9s
BJI LR LR
comp=Z,320nm,16.1s
BJI LR LR
comp=Z,360nm,10.8s
BJT Baijiatuau 21.34 284 *e*P **P** **06 02 03.9 -1.0**
BJT pmax pmax
comp=Z,18nm,1.0s
BJT Baijiatuau 21.34 284 *e*P **P** **06 02 03.9 -1.0**
comp=Z,18nm,1.0s
MA2 Magadan 21.95 10 P **P** **06 02 12.0 +0.7**
comp=Z,20nm,0.8s,baz=205,slow=9.8,SNR=13
MA2 LR LR 06 12 33.2
comp=Z,134nm,18.0s,baz=191,slow=41
CLNS Chul'man 22.44 333 *e*P **P** **06 02 17.3 +0.6**
CLNS pmax pmax
comp=Z,16nm,0.9s
CLNS pmax pmax
comp=N,14nm,1.0s
CLNS pmax pmax
comp=E,8.0nm,0.9s
HHC Hu-ho-hao-te 24.79 286 *e*P **P** **06 02 38.3 -1.4**
HHC PP **PnPn** **06 03 13.3 +1.1**
HHC S **S** **06 06 56.0 -4.9**
HHC sS sS 06 07 10.8 -1.6
HHC pmax pmax
comp=E,15nm,1.0s
HHC pmax pmax
comp=E,130nm,3.9s
HHC LR LR
comp=E,130nm,8.2s
HHC LR LR
comp=E,410nm,10.6s
HHC LR LR
comp=E,390nm,12.7s
QZH Quanzhou 24.94 245⇑ *i*P **P** **06 02 38.3 -2.7**
QZH LR LR
comp=E,1μm,12.3s
WHN Wuhan 25.23 261 P **P** **06 02 43.6 0.0**
WHN pP **sP** **06 02 53.3 -0.2**
WHN LR LR
comp=E,730nm,12.7s
WHN LR LR
comp=E,2μm,14.4s
WHN LR LR
comp=E,2μm,14.8s
SEY Seymchan 25.41 9 P **P** **06 02 46.5 +1.6**
comp=E,25nm,0.8s,baz=193,slow=7.5,SNR=68
YAK Yakutsk 25.42 345 P **P** **06 02 44.8 -0.2**
comp=E,36nm,0.4s,baz=84,slow=0.5,SNR=13
YAK LR LR 06 13 28.2
comp=E,239nm,18.1s,baz=142,slow=38
YAK Yakutsk 25.42 345 *e*P **P** **06 02 45.7 +0.6**
YAK *e**PP **sP** **06 02 56.5 +1.6**
YAK *e*PPP PPP 06 03 27.0
YAK *e* 06 06 20.8
YAK *e*S **S** **06 07 05.6 -4.7**
YAK *e*SSS SSS 06 08 12.0
YAK *e* 06 13 44.0
YAK pmax pmax
comp=Z,55nm,0.8s
YAK pmax pmax
comp=N,16nm,1.0s
YAK pmax pmax
comp=E,14nm,1.2s
YAK smax smax
comp=N,10.0nm,1.5s
YAK smax smax
comp=E,18nm,1.9s
YAK Yakutsk 25.42 345 *e*P **P** **06 02 44.9 -0.2**
comp=E,77nm,0.9s
H11N2 WAKE ISLAND Hy 27.30 126 T T 06 31 59.9
baz=317,slow=76,SNR=25
H11N1 WAKE ISLAND Hy 27.31 126 T T 06 31 59.0
baz=317,slow=76,SNR=86
H11N3 WAKE ISLAND Hy 27.32 126 T T 06 32 08.2
baz=317,slow=76,SNR=28
BOD Bodaibo 27.57 325 *d i*P **P** **06 03 04.2 -0.3**
BOD pmax pmax
comp=Z,31nm,1.7s
H11S1 WAKE ISLAND Hy 28.08 128 T T 06 33 05.1
baz=318,slow=76,SNR=6.6
H11S3 WAKE ISLAND Hy 28.08 128 T T 06 32 60.0
baz=318,slow=76,SNR=5.0
H11S2 WAKE ISLAND Hy 28.10 128 T T 06 32 50.5
baz=318,slow=76,SNR=4.5
XAN Xi'an 28.21 272 P **P** **06 03 10.6 0.0**
XAN pP pP 06 03 17.5 0.0
XAN PP **PnPn** **06 04 00.5 +1.6**
XAN S **S** **06 07 55.4 +0.4**
XAN SS **SnSn** **06 09 17.1 +5.2**
XAN pmax pmax
comp=Z,14nm,1.4s
XAN pmax pmax
comp=Z,190nm,7.2s
XAN LR LR
comp=Z,220nm,14.4s
XAN LR LR
comp=Z,290nm,12.5s
XAN LR LR
comp=Z,350nm,10.9s
SONA1 Songino Array 28.64 302 *e*P **P** **06 03 15.0 +0.6**
SONM Songino Array 28.64 302 P **P** **06 03 15.1 +0.8**
comp=Z,4.2nm,0.7s,baz=95,slow=9.7,SNR=16
ENH Enshi 29.15 265 *e*P **P** **06 03 17.8 -1.1**
comp=Z,186nm,1.4s
TLY Talaya 30.95 309 LR LR 06 16 30.6
comp=Z,102nm,18.7s,baz=80,slow=37
TLY Talaya 30.95 309 *e*P P 06 03 47.1 +12
TLY *e*S **S** **06 08 45.6 +8.0**
TLY pmax pmax
comp=Z,25nm,1.3s
TLY MLR MLR
comp=Z,209nm,15.0s
ZAK Zakamensk 30.98 306 *e*P **P** **06 03 34.3 -0.7**
ZAK pmax pmax
comp=Z,11nm,1.2s
LZH Lanzhou 31.59 279 *e*P **P** **06 03 39.6 -1.0**
LZH pP pP 06 03 45.8 -1.9
LZH sP sP 06 03 48.9 -1.7
LZH PP **PnPn** **06 04 39.0 -5.3**
LZH *e*S **S** **06 08 39.8 -8.5**
LZH SS **SnSn** **06 10 30.5 -4.0**
LZH pmax pmax
comp=Z,19nm,1.2s
LZH pmax pmax
comp=Z,110nm,5.0s
LZH LR LR
comp=Z,1μm,13.2s
LZH LR LR
comp=Z,2μm,12.7s
LZH LR LR
comp=Z,2μm,16.1s
BILL Bilibino 32.50 16 *i*P **P** **06 03 47.4 -0.6**
BILL pmax pmax
comp=Z,13nm,1.3s
GYA Guiyang 33.10 260 *e*P **P** **06 03 54.8 +0.9**
GYA pP pP 06 04 02.6 +1.7
GYA PP **PnPn** **06 05 05.1 +1.3**
GYA S **S** **06 09 10.0 -1.9**
GYA sS sS 06 09 22.3 -1.2
GYA SS **SnSn** **06 11 10.8 -0.5**
GYA pmax pmax
comp=Z,10.0nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,510nm,17.3s
GYA LR LR
comp=Z,490nm,17.0s
GYA LR LR
comp=Z,520nm,16.8s
CD2 Chengdu 33.40 270 *e*P **P** **06 03 55.5 -0.9**
CD2 pP pP 06 04 03.1 -0.3
CD2 PP **PP** **06 05 10.9 -1.1**
CD2 S **S** **06 09 15.0 -1.3**
CD2 sS sS 06 09 27.9 0.0
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.2s
CD2 LR LR
comp=Z,370nm,11.4s
CD2 LR LR
comp=Z,360nm,12.4s
CD2 LR LR
comp=Z,410nm,15.4s
GTA Gaotai 33.90 286 *e*P **P** **06 04 02.0 +1.2**
GTA pmax pmax
comp=Z,11nm,1.2s
GTA pmax pmax
comp=Z,110nm,5.7s
GTA LR LR
comp=Z,160nm,21.1s
GTA LR LR
comp=Z,330nm,16.2s
GTA LR LR
comp=Z,340nm,22.1s
QIZ Qiongzhong 34.95 247 P **P** **06 04 09.8 0.0**
QIZ S **S** **06 09 40.9 +0.7**
QIZ sS **sS** **06 09 50.9 -1.0**
QIZ LR LR
comp=Z,490nm,38.4s
KMI Kunming 36.83 261 P **P** **06 04 26.8 +0.6**
KMI pmax pmax
comp=Z,9.0nm,0.6s
KMI pmax pmax
comp=Z,120nm,4.8s
KMI LR LR
comp=Z,430nm,13.5s
KMI LR LR
comp=Z,300nm,16.2s
KMI LR LR
comp=Z,310nm,17.8s
MYLDM Lahad Datu 39.96 221 *e*P **P** **06 04 51.9 -0.4**
comp=Z,58nm,2.0s
WMQ Urumqi 41.90 296 *e*P **P** **06 05 10.3 +2.2**
WMQ pP sP 06 05 16.9 -1.2
WMQ sP pP 06 05 21.8 +6.6
WMQ S **S** **06 11 26.4 +1.5**
WMQ SS **SS** **06 14 23.4 -8.0**
WMQ pmax pmax
comp=Z,16nm,0.7s
WMQ pmax pmax
comp=Z,140nm,3.6s
WMQ LR LR
comp=Z,390nm,12.8s
WMQ LR LR
comp=Z,440nm,15.3s
WMQ LR LR
comp=Z,710nm,15.7s
ZAA0 Zalesovo Array 42.47 312 *e*P **P** **06 05 12.8 +0.3**
ZALV Zalesovo Beam 42.47 312 P **P** **06 05 12.8 +0.3**
comp=Z,2.8nm,0.4s,baz=83,slow=7.3,SNR=18
ZALV PcP **PcP** **06 07 05.0 0.0**
comp=Z,3.6nm,0.7s,baz=102,slow=3.1,SNR=5.6
CM31 Chiang Mai Arr 43.44 256 *e*P **P** **06 05 19.7 -1.1**
CMAR Chiang Mai Arr 43.44 256 P **P** **06 05 21.0 +0.2**
comp=Z,1.9nm,0.3s,baz=59,slow=6.1,SNR=5.2
CMAR Chiang Mai Arr 43.44 256 P **P** **06 05 21.0 +0.2**
CMAR pmax pmax
comp=Z,1.0nm,0.3s
TT01 Tatalina 43.53 35 *e*P **P** **06 05 22.6 +1.6**
SVW2 Sparrevohn 43.60 38 *e*P **P** **06 05 23.0 +1.4**
comp=Z,8.1nm,1.0s
OHAK Old Harbor 44.78 44 *e*P **P** **06 05 31.5 +0.5**
comp=Z,142nm,1.8s
MK01 Makanchi Array 45.01 302 *e*P **P** **06 05 33.1 +0.1**
MK31 Makanchi Array 45.01 302 *e*P **P** **06 05 33.6 +0.5**
MK31 Makanchi Array 45.01 302 *e*P **P** **06 05 33.6 +0.5**
MKAR Makanchi Array 45.01 302 P **P** **06 05 33.3 +0.2**
comp=Z,3.9nm,0.7s,baz=83,slow=9.9,SNR=14
MKAR Makanchi Array 45.01 302 *e*P **P** **06 05 33.6 +0.5**
KDAK Kodiak Island 45.13 43 *i*P **P** **06 05 34.4 +0.6**
KDAK Kodiak Island 45.13 43 *e*P **P** **06 05 33.9 +0.1**
comp=Z,125nm,1.6s
MAKZ Makanchi 45.22 302 *e*P **P** **06 05 34.5 -0.2**
MAKZ pmax pmax
comp=Z,11nm,1.0s
MAKZ Makanchi 45.22 302 *e*P **P** **06 05 34.5 -0.2**
comp=Z,11nm,1.0s
CAST Castle Rocks 45.35 35 *e*P **P** **06 05 37.1 +1.6**
comp=Z,28nm,1.8s
BPAW Bear Paw Mtn. 45.86 34 *e*P **P** **06 05 40.8 +1.2**
comp=Z,29nm,2.0s
KTH Kantishna Hill 45.87 35 *e*P **P** **06 05 41.5 +1.7**
comp=Z,17nm,1.1s
MLY Manley 46.00 33 *e*P **P** **06 05 42.6 +1.9**
comp=Z,8.4nm,0.9s
COLD Coldfoot 46.35 29 *e*P **P** **06 05 44.5 +1.1**
comp=Z,18nm,1.9s
RC01 Rabbit Creek A 46.44 38 *e*P **P** **06 05 44.9 +0.8**
comp=Z,15nm,1.2s
KURK Kurchatov 46.62 308 P **P** **06 05 46.1 +0.4**
KURK pmax pmax
comp=Z,12nm,0.7s
KURK Kurchatov 46.62 308 *e*P **P** **06 05 45.6 -0.1**
comp=Z,17nm,0.8s
KURBB Kurchatov Arra 46.70 307 P **P** **06 05 46.1 -0.2**
comp=Z,12nm,0.7s,baz=82,slow=8.2,SNR=5.3
PMR Palmer 46.71 37 *e*P **P** **06 05 46.9 +0.6**
PMR pmax pmax
comp=Z,7.0nm,0.8s
PMR Palmer 46.71 37 *e*P **P** **06 05 46.9 +0.6**
comp=Z,7.1nm,0.8s
RND Reindeer 46.80 35 *e*P **P** **06 05 47.8 +0.8**
RND pmax pmax
comp=Z,9.0nm,0.9s
RND Reindeer 46.80 35 *e*P **P** **06 05 47.8 +0.8**
comp=Z,9.2nm,0.9s
MDM Murphy Dome 47.07 33 *e*P **P** **06 05 50.4 +1.4**
comp=Z,16nm,0.9s
SML Sawmill 47.09 37 *e*P **P** **06 05 50.5 +1.3**
SML pmax pmax
comp=Z,49nm,1.8s
SML Sawmill 47.09 37 *e*P **P** **06 05 50.5 +1.3**
comp=Z,49nm,1.8s
WRH Wood River Hil 47.13 33 *e*P **P** **06 05 50.5 +1.0**
comp=Z,4.2nm,0.8s
SCM Sheep Creek Mo 47.56 37 *e*P **P** **06 05 54.2 +1.2**
SCM pmax pmax
comp=Z,30nm,1.3s
SCM Sheep Creek Mo 47.56 37 *e*P **P** **06 05 54.2 +1.2**
comp=Z,30nm,1.3s
HDA Harding Lake 47.62 33 *e*P **P** **06 05 54.0 +0.7**
comp=Z,17nm,1.2s
IL1 Eielson Array 47.64 33 *e*P **P** **06 05 53.4 -0.1**
ILAR Eielson Array 47.64 33 P **P** **06 05 53.8 +0.3**
comp=Z,6.7nm,0.7s,baz=262,slow=6.5,SNR=49
ILB Eielson Array 47.64 33 *e*P **P** **06 05 54.1 +0.6**
GLI Glacier Island 47.74 38 *e*P **P** **06 05 55.2 +1.0**
comp=Z,6.9nm,0.7s
FID Port Fidalgo 48.05 38 *e*P **P** **06 05 57.6 +0.9**
comp=Z,14nm,1.2s
KLU Klutina 48.26 37 *e*P **P** **06 05 59.9 +1.5**
comp=Z,25nm,1.4s
PAX Paxson 48.35 35 *e*P **P** **06 06 01.3 +2.2**
PAX pmax pmax
comp=Z,69nm,0.7s
PAX Paxson 48.35 35 *e*P **P** **06 06 01.3 +2.2**
comp=Z,69nm,0.7s
DIV Divide 48.36 38 *e*P **P** **06 06 00.9 +1.7**
comp=Z,38nm,1.5s
EYAK Cordova Ski Ar 48.43 39 *e*P **P** **06 06 01.5 +1.9**
comp=Z,8.2nm,0.7s
BMRM Bremner River 48.94 38 *e*P **P** **06 06 05.3 +1.7**
comp=Z,21nm,1.4s
RAGM Ragged Mountai 48.97 39 *e*P **P** **06 06 04.9 +1.0**
comp=Z,58nm,1.5s
MENT Mentasta 49.15 35 *e*P **P** **06 06 07.1 +1.9**
comp=Z,23nm,1.4s
CRQM Cirque 49.68 38 *e*P **P** **06 06 11.0 +1.6**
comp=Z,46nm,1.4s
BALM Baldy 50.02 38 *e*P **P** **06 06 13.4 +1.5**
BALM pmax pmax
comp=Z,6.0nm,0.7s
BALM Baldy 50.02 38 *e*P **P** **06 06 13.4 +1.5**
comp=Z,6.1nm,0.7s
EGAK Eagle 50.09 33 *e*P **P** **06 06 12.8 +0.6**
comp=Z,19nm,1.8s
VOSK Vostochnaya 50.84 312 *e*P **P** **06 06 18.1 0.0**
VOSK pmax pmax
comp=Z,8.0nm,0.9s
VOSK Vostochnaya 50.84 312 *e*P **P** **06 06 18.1 0.0**
comp=Z,8.3nm,0.9s
DAWY Dawson 50.94 33 *e*P **P** **06 06 19.6 +0.9**
comp=Z,9.3nm,1.5s
BVAR Borovoye Array 51.12 312 P **P** **06 06 20.4 +0.2**
comp=Z,4.1nm,0.7s,baz=74,slow=8.3,SNR=18
BVAR PcP **PcP** **06 07 34.7 -0.9**
comp=Z,2.2nm,0.7s,baz=72,slow=4.7,SNR=3.8
BRVK Borovoye 51.17 312⇑ *i*P **P** **06 06 20.2 -0.4**
BRVK pmax pmax
comp=Z,19nm,1.0s
BRVK Borovoye 51.17 312 *e*P **P** **06 06 21.3 +0.7**
comp=Z,9.3nm,1.1s
OTUK Ortayu 51.19 306 P **P** **06 06 21.0 +0.2**
OTUK pmax pmax
comp=Z,6.0nm,1.0s
AAK Ala-Archa 51.49 298⇑ *e*P **P** **06 06 22.0 -1.3**
AAK pmax pmax
comp=Z,5.0nm,0.6s
KSH Kashi 51.54 294 *e*P **P** **06 06 28.3 +4.6**
KSH *e*pP sP 06 06 35.9 +2.1
KSH *e*sP pP 06 06 39.4 +8.4
KSH *e*PP **PP** **06 08 27.3 +6.4**
KSH S **S** **06 13 46.9 +4.0**
KSH pmax pmax
comp=Z,35nm,3.3s
KSH LR LR
comp=Z,170nm,5.7s
KSH LR LR
comp=Z,170nm,9.6s
KSH LR LR
comp=Z,200nm,8.0s
ZRNK Zerenda 51.95 312 *e*P **P** **06 06 26.7 +0.3**
ZRNK pmax pmax
comp=Z,8.0nm,0.9s
ZRNK Zerenda 51.95 312 *e*P **P** **06 06 26.7 +0.3**
comp=Z,7.6nm,0.9s
HYT Haines Junctio 52.39 37 *e*P **P** **06 06 31.7 +2.0**
comp=Z,18nm,0.9s
INK Inuvik 52.62 28 P **P** **06 06 32.0 +0.9**
comp=Z,4.9nm,0.8s,baz=310,slow=4.0,SNR=7.2
INK Inuvik 52.62 28 *e*P **P** **06 06 32.1 +1.0**
INK pmax pmax
comp=Z,4.0nm,0.7s
INK Inuvik 52.62 28 *e*P **P** **06 06 32.1 +1.0**
comp=Z,4.3nm,0.7s
KKAR Karatay Array 54.07 300 *e*P **P** **06 06 42.5 +0.3**
KKAR Karatay Array 54.07 300 *e*P **P** **06 06 42.5 +0.3**
SVE Sverdlovsk 55.47 319 *e*P **P** **06 06 53.1 +1.0**
ARU Arti 56.68 319 LR LR 06 33 49.1
comp=Z,189nm,18.2s,baz=50,slow=39
ARU Arti 56.68 319 *d i*P **P** **06 07 00.9 +0.1**
ARU *PP **sP** **06 07 10.9 0.0**
ARU 06 09 04.1
ARU S **S** **06 14 51.8 +0.2**
ARU SS **SS** **06 18 37.6 -1.3**
ARU pmax pmax
comp=Z,28nm,1.7s
ARU Arti 56.68 319 *e*P **P** **06 07 01.0 +0.3**
comp=Z,15nm,1.0s
DLBC Dease Lake 56.70 39 P **P** **06 07 02.4 +1.5**
comp=Z,2.9nm,0.8s,baz=304,slow=9.7,SNR=5.5
DLBC Dease Lake 56.70 39 *e*P **P** **06 07 03.5 +2.5**
comp=Z,45nm,2.0s
WRAB Tennant Creek 58.40 190⇓ *e*P **P** **06 07 13.2 0.0**
WRAB pmax pmax
comp=Z,18nm,0.8s
WRAB Tennant Creek 58.40 190 *e*P **P** **06 07 12.4 -0.8**
comp=Z,11nm,0.8s
WB2 Warramunga Arr 58.41 190 *e*P **P** **06 07 12.8 -0.4**
comp=Z,13nm,0.8s
WRA Warramunga Arr 58.41 190 P **P** **06 07 12.3 -1.0**
comp=Z,12nm,0.8s,baz=8.4,slow=7.0,SNR=58
FITZ Fitzroy Crossi 58.42 200 *e*P **P** **06 07 13.8 +0.4**
comp=Z,14nm,1.4s
ABKAR Akbulak array 58.55 310 *e*P **P** **06 07 13.9 -0.1**
KBL Kabul 58.63 291 *e*P **P** **06 07 15.1 0.0**
KBL pmax pmax
comp=Z,10.0nm,0.9s
KBL Kabul 58.63 291 *e*P **P** **06 07 15.1 0.0**
comp=Z,9.9nm,0.9s
SPITS Spitsbergen Ar 59.78 349 LR LR 06 36 15.0
comp=Z,69nm,19.8s,baz=55,slow=39
RES Resolute Bay 61.10 15 P **P** **06 07 31.2 0.0**
comp=Z,9.5nm,0.8s,baz=308,slow=7.7,SNR=3.4
YKA Yellowknife Ar 61.99 31 P **P** **06 07 36.8 -0.5**
comp=Z,1.6nm,0.8s,baz=299,slow=6.9,SNR=4.4
AS01 Alice Springs 62.13 190 *e*P **P** **06 07 38.1 -0.6**
AS31 Alice Springs 62.14 190 *e*P **P** **06 07 38.6 -0.1**
comp=Z,1.9nm,0.5s
ASAR Alice Springs 62.14 190 P **P** **06 07 38.4 -0.4**
comp=Z,1.9nm,0.7s,baz=9.2,slow=7.8,SNR=25
EIDS Eidsvold 63.55 172 *e*P **P** **06 07 48.5 +0.5**
comp=Z,63nm,1.8s
ARCES ARCESS Array B 63.57 340 P **P** **06 07 48.1 +0.3**
comp=Z,3.5nm,0.9s,baz=37,slow=6.2,SNR=4.2
NLWA Neilton Lookou 64.70 49 *e*P **P** **06 07 57.5 +1.9**
comp=Z,52nm,1.8s
GEYT Alibeck 64.81 299 P **P** **06 07 56.5 0.0**
comp=Z,5.1nm,0.5s,baz=20,slow=4.7,SNR=6.1
DAG Danmarks Havn 64.83 356 P **P** **06 07 56.5 +0.6**
DAG pmax pmax
comp=Z,8.0nm,1.1s
H04A Detroit Lake 67.08 51 *e*P **P** **06 08 12.1 +1.1**
comp=Z,18nm,1.6s
OBN Obninsk 68.24 324 *e*P **P** **06 08 17.4 -0.6**
OBN pmax pmax
comp=Z,9.0nm,1.1s
FIA1 FINESS Array S 68.64 333 *e*P **P** **06 08 20.9 +0.5**
comp=Z,86nm,1.1s
FINES FINESS Array B 68.64 333 P **P** **06 08 20.4 0.0**
comp=Z,8.4nm,0.7s,baz=38,slow=9.6,SNR=18

SUMG	**Summit**	**69.58**	**1**	*e*P		**P**	**06 08 27.3**	**+0.7**
SUMG				pmax	pmax				
	comp=Z,16nm,1.4s								
SUMG	**Summit**	**69.58**	**1**	*e*P		**P**	**06 08 27.3**	**+0.7**
	comp=Z,16nm,1.4s								
GOF	**Gofitskoye**	**70.64**	**312**⇑	*e*P		**P**	**06 08 33.5**	**+0.4**
KIV	**Kislovodsk**	**71.48**	**312**	*d*P		**P**	**06 08 39.8**	**+1.5**
KIV				*i*			06 08 44.9		
KIV				*i*			06 08 58.9		
KIV				pmax	pmax				
	comp=Z,26nm,1.0s								
KIV	**Kislovodsk**	**71.48**	**312**	*e*P		**P**	**06 08 39.4**	**+1.0**
	comp=Z,62nm,1.2s								
KBZ	**Khabaz**	**71.49**	**311**	P		**P**	**06 08 39.0**	**+0.8**
	comp=Z,11nm,0.9s,baz=27,slow=3.8,SNR=19								
KBZ	**Khabaz**	**71.49**	**311**	P		**P**	**06 08 39.0**	**+0.8**
KBZ				pmax	pmax				
	comp=Z,11nm,0.9s								
FFC	**Flin Flon**	**71.84**	**34**	*e*P		**P**	**06 08 40.9**	**+0.7**
FFC				pmax	pmax				
	comp=Z,9.0nm,1.2s								
FFC	**Flin Flon**	**71.84**	**34**	*e*P		**P**	**06 08 40.9**	**+0.7**
	comp=Z,9.2nm,1.2s								
BOZ	**Bozeman (W)**	**72.72**	**45**	*e*P		**P**	**06 08 46.7**	**+0.9**
BOZ				pmax	pmax				
	comp=Z,2.0nm,0.9s								
BOZ	**Bozeman (W)**	**72.72**	**45**	*e*P		**P**	**06 08 46.7**	**+0.9**
	comp=Z,1.9nm,0.9s								
UOSS	**Minazif**	**73.11**	**289**	*e*P		**P**	**06 08 48.1**	**-0.1**
	comp=Z,8.4nm,0.8s								
NC405	**NORSAR Array S**	**73.62**	**338**	*e*P		**P**	**06 08 51.6**	**+0.9**
NC204	**NORSAR Array S**	**73.78**	**338**	*e*P		**P**	**06 08 52.0**	**+0.4**
NB201	**NORSAR Array S**	**73.80**	**338**	*e*P		**P**	**06 08 52.5**	**+0.8**
NB2	**NORSAR Subarra**	**73.83**	**338**	P		**P**	**06 08 51.5**	**-0.4**
	comp=Z,7.1nm,0.9s,baz=39,slow=6.2								
NB2	**NORSAR Subarra**	**73.83**	**338**	P		**P**	**06 08 51.5**	**-0.4**
NB2				pmax	pmax				
	comp=Z,5.0nm,0.9s								
NOA	**NORSAR Array B**	**73.83**	**338**	P		**P**	**06 08 51.9**	**0.0**
	comp=Z,5.3nm,0.8s,baz=38,slow=5.9,SNR=15								
AKASG	**Malin Array Be**	**74.47**	**323**	P		**P**	**06 08 55.6**	**-0.1**
	comp=Z,2.4nm,0.4s,baz=46,slow=6.1,SNR=11								
AKASG	**Malin Array Be**	**74.47**	**323**	P		**P**	**06 08 55.7**	**-0.1**
AKASG				pmax	pmax				
	comp=Z,4.0nm,0.6s								
AKBB	**Malin Array Si**	**74.47**	**323**	*e*P		**P**	**06 08 56.1**	**+0.3**
AKBB				pmax	pmax				
	comp=Z,65nm,1.3s								
AKBB	**Malin Array Si**	**74.47**	**323**	*e*P		**P**	**06 08 56.1**	**+0.3**
	comp=Z,64nm,1.3s								
KIEV	**Kiev**	**74.49**	**323**⇓	*e*P		**P**	**06 08 55.6**	**-0.2**
KIEV				pmax	pmax				
	comp=Z,5.0nm,0.7s								
KIEV	**Kiev**	**74.49**	**323**	*e*P		**P**	**06 08 55.8**	**0.0**
	comp=Z,70nm,1.3s								
R11A	**Troy Canyon, C**	**74.73**	**53**	*e*P		**P**	**06 08 58.5**	**+0.8**
	comp=Z,4.2nm,1.4s								
TPNV	**Topopah Spring**	**75.14**	**55**	*e*P		**P**	**06 09 01.0**	**+0.9**
TPNV				pmax	pmax				
	comp=Z,6.0nm,1.0s								
TPNV	**Topopah Spring**	**75.14**	**55**	*e*P		**P**	**06 09 01.0**	**+0.9**
	comp=Z,5.8nm,1.0s								
DUG	**Dugway, Tooele**	**75.33**	**50**	*e*P		**P**	**06 09 01.8**	**+0.7**
DUG				pmax	pmax				
	comp=Z,4.0nm,1.1s								
DUG	**Dugway, Tooele**	**75.33**	**50**	*e*P		**P**	**06 09 01.8**	**+0.7**
	comp=Z,3.7nm,1.1s								
BW06	**Boulder Array**	**75.67**	**47**	*e*P		**P**	**06 09 03.4**	**+0.2**
	comp=Z,8.8nm,1.8s								
PD31	**Pinedale Array**	**75.67**	**47**	*e*P		**P**	**06 09 03.6**	**+0.5**
PDAR	**Pinedale Array**	**75.67**	**47**	P		**P**	**06 09 03.4**	**+0.3**
	comp=Z,1.0nm,0.7s,baz=234,slow=1.5,SNR=9.3								
MSU	**Marysvale**	**76.75**	**51**	*e*P		**P**	**06 09 10.8**	**+1.5**
MSU	**Marysvale**	**76.75**	**51**	*e*P		**P**	**06 09 10.8**	**+1.5**
MTPU	**Mount Pierson**	**77.04**	**52**	*e*P		**P**	**06 09 12.6**	**+1.5**
	comp=Z,8.8nm,1.6s								
SRU	**San Rafael Swe**	**77.39**	**50**	*e*P		**P**	**06 09 14.1**	**+1.2**
SRU				pmax	pmax				
	comp=Z,4.0nm,0.9s								
SRU	**San Rafael Swe**	**77.39**	**50**	*e*P		**P**	**06 09 14.1**	**+1.2**
	comp=Z,3.8nm,0.9s								
U15A	**North Rim**	**77.97**	**53**	*e*P		**P**	**06 09 17.9**	**+1.6**
	comp=Z,4.7nm,1.1s								
KWP	**Kalwaria Pacla**	**78.23**	**325**	*e*PKP		**P**	**06 09 18.2**	**+1.1**
KWP	**Kalwaria Pacla**	**78.23**	**325**	*e*P		**P**	**06 09 18.2**	**+1.1**
BUR08	**Bucovina Ar. S**	**78.49**	**323**	*e*P		**P**	**06 09 19.6**	**+0.9**
BURAR	**Bucovina Array**	**78.51**	**323**⇓	*i*P		**P**	**06 09 19.0**	**+0.2**
PV10	**Paradox Valley**	**78.75**	**50**	*e*P		**P**	**06 09 20.6**	**+0.1**
OJC	**Ojcow**	**79.08**	**327**	*e*PKP		**P**	**06 09 22.6**	**+0.8**
OJC	**Ojcow**	**79.08**	**327**	*e*P		**P**	**06 09 22.6**	**+0.8**
PV01	**Paradox Valley**	**79.19**	**50**	*e*P		**P**	**06 09 24.4**	**+1.5**
BRTR	**Keskin Array B**	**79.40**	**312**	P		**P**	**06 09 24.4**	**+0.5**
	comp=Z,1.2nm,0.9s,baz=60,slow=7.3,SNR=5.0								
NIE	**Niedzica**	**79.45**	**326**	*e*PKP		**P**	**06 09 25.3**	**+1.4**
NIE	**Niedzica**	**79.45**	**326**	*e*P		**P**	**06 09 25.3**	**+1.4**
KSP	**Ksiaz**	**80.06**	**329**	*e*PKP		**P**	**06 09 28.0**	**+0.9**
KSP	**Ksiaz**	**80.06**	**329**	*e*P		**P**	**06 09 28.0**	**+0.9**
MORC	**Moravsky Berou**	**80.37**	**328**⇓	*i*P		**P**	**06 09 30.3**	**+1.5**
ARR	**Arges**	**80.39**	**321**⇑	*i*P		**P**	**06 09 29.9**	**+0.8**
CLL	**Collm**	**80.99**	**331**	*e*P		**P**	**06 09 31.0**	**-1.0**
	comp=Z,8.0nm,1.1s								
CLL				*e*			06 09 43.0		
CLL	**Collm**	**80.99**	**331**	*e*P		**P**	**06 09 31.0**	**-1.0**
CLL				*e*			06 09 43.0		
CLL				pmax	pmax				
	comp=Z,8.0nm,1.1s								
KHC	**Kasperske Hory**	**82.50**	**330**	*e*P		**P**	**06 09 40.7**	**+0.6**
KHC	**Kasperske Hory**	**82.50**	**330**	*e*P		**P**	**06 09 40.7**	**+0.6**
KHC				MLR	MLR				
	comp=Z,700nm,17.4s								
ANMO	**Albuquerque**	**82.56**	**51**⇓	*e*P		**P**	**06 09 41.8**	**+0.9**
ANMO				pmax	pmax				
	comp=Z,3.0nm,1.6s								
GERES	**GERESS Array B**	**82.67**	**329**	P		**P**	**06 09 40.6**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=76,slow=4.1,SNR=4.8								
BFO	**Black Forest**	**85.17**	**332**	*i* P		**P**	**06 09 55.3**	**+1.5**
FUORN	**Ofenpass-Fuorn**	**85.84**	**330**	*e*P		**P**	**06 09 58.2**	**+0.8**
	comp=Z,45nm,1.6s								
TX31	**Lajitas Ar. Si**	**88.08**	**54**	*e*P		**P**	**06 10 08.7**	**+0.2**
TXAR	**Lajitas Array**	**88.08**	**54**	P		**P**	**06 10 08.7**	**+0.2**
	comp=Z,0.5nm,0.8s,baz=295,slow=3.5,SNR=6.1								
LPAZ	**La Paz**	**144.65**	**61**	PKP		**PKPab**	**06 16 54.1**	**0.0**
	comp=Z,0.8nm,0.6s,baz=15,slow=9.9,SNR=4.0								
LPAZ	**La Paz**	**144.65**	**61**	*e*PKPdf		PKPbc	06 16 55.5	+1.2

NIED ***15*** *06:02:00,38.°10N×143.°50E,h8km,Mw4.0 Best double couple: M₀9.59000×10¹⁴ NP1:φ₀217.00000°,δ44.00000°, λ-66.00000°. NP2:φ₀5.00000°,δ50.00000°,λ-112.00000°.*
IDC ***15*** *06:02:40.8±1.0,38.°07N×143.°52E,h0km,mb4.0/10, mb1 4.1/12,mb1mx3.9/51,mbtmp4.0/12,ML3.8/2,MS4.9/2, Ms1 4.9/2,ms1mx3.3/49,Error ellipse: s-maj=26.4km s-min=17.7km az=97.0*
JMA ***15*** *06:02:43.9±0.1,38.°15N×143.°49E,h32km,M4.0*
NEIC ***15*** *06:02:46.1±1.1,38.°07N×143.°54E,h37km±9km,mb4.6/3, Error ellipse: s-maj=14.3km s-min=7.7km az=102.0*

ISC 15 06:02:41.3±3.4,38.°10N±0.°05×143.°43E±0.°08,h1km±20km, n33,σ1s72/44,mb4.2/13,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**1.68**	**283**	P		**Pb**	**06 03 12.6**	**-0.3**
JIO				S		**Sn**	**06 03 33.6**	**-0.1**
OFUJ	**Ofunato**	**1.69**	**306**	P		**Pn**	**06 03 12.3**	**+0.4**
OFUJ				*e*S		**Sn**	**06 03 33.7**	**-0.5**
JMK	**Ichinoseki**	**1.93**	**297**	P		**Pb**	**06 03 16.2**	**-1.0**
JMK				*e*S		**Sn**	**06 03 40.2**	**+0.1**
JOM	**Ohasama**	**2.16**	**310**	P		**Pn**	**06 03 19.5**	**+1.1**
JOM				*e*S		**Sn**	**06 03 45.5**	**-0.3**
JFT	**Otama**	**2.52**	**258**	P		**Pb**	**06 03 25.4**	**-1.8**
JFT				S		**Sn**	**06 03 55.6**	**+1.0**
JYK	**Kaneyama**	**2.54**	**290**	P		**Pb**	**06 03 25.8**	**-1.9**
JYK				*e*S		**Sn**	**06 03 56.9**	**+1.7**
JANG	**Nango**	**2.71**	**327**	P		**Pn**	**06 03 27.5**	**+1.5**
JANG				*e*S		**Sn**	**06 03 58.0**	**-1.4**
JAW	**Awa shima**	**3.31**	**277**	P		**Pn**	**06 03 36.5**	**+2.4**
JAG	**Ashikaga**	**3.58**	**243**	P		**Pn**	**06 03 39.4**	**+1.5**
JAG				*e*S		**Sn**	**06 04 22.2**	**+1.3**
JOT	**Ohata**	**3.76**	**332**	*e*S		**Sn**	**06 04 24.1**	**-1.0**
ERM	**Erimo**	**3.92**	**357**	*e*Pn		**Pn**	**06 03 43.7**	**+1.2**
ERM				*e*Sn		**Sn**	**06 04 29.8**	**+0.8**
JRY	**Ryogami san**	**4.17**	**242**	P		**Pn**	**06 03 47.9**	**+1.8**
JRY				*e*S		**Sn**	**06 04 34.6**	**-0.9**
JNBK	**Urakawa-nobuka**	**4.21**	**353**	P		**Pn**	**06 03 47.0**	**+0.5**
JNBK				*e*S		**Sn**	**06 04 33.2**	**-3.0**
MJAR	**Matsushiro Arr**	**4.44**	**251**	Pn		**Pn**	**06 03 51.6**	**+1.9**
	2.0nm,0.3s,baz=47,slow=10,SNR=5.4							
MAJO	**Matsushiro**	**4.44**	**251**	*e*Pn		**Pn**	**06 03 52.9**	**+3.1**
MAT	**Matsushiro**	**4.44**	**251**	P		**Pn**	**06 03 53.0**	**+3.2**
MAT				*e*S		**Sn**	**06 04 41.7**	**-0.4**
JHJ2	**Mitsune**	**5.78**	**212**	*e*Pn		**Pn**	**06 04 09.4**	**+1.3**
JHJ	**Hachijo jima 2**	**5.79**	**212**	Pn		**Pn**	**06 04 08.2**	**-0.1**
	15nm,0.3s,baz=72,slow=20,SNR=7.3							
JHJ				Sn		**Sn**	**06 05 08.7**	**-6.5**
	3.5nm,0.3s,baz=73,slow=19,SNR=4.1							
SEY	**Seymchan**	**25.46**	**10**	P		**P**	**06 08 10.8**	**+0.5**
	3.9nm,0.8s,baz=187,slow=6.2,SNR=7.6							
SONM	**Songino Array**	**28.55**	**302**	P		**P**	**06 08 40.0**	**+1.4**
	0.7nm,0.6s,baz=77,slow=9.3,SNR=3.8							
ZALV	**Zalesovo Beam**	**42.39**	**312**	P		**P**	**06 10 36.1**	**-0.9**
	0.6nm,0.4s,baz=98,slow=8.9,SNR=2.5							
MKAR	**Makanchi Array**	**44.92**	**302**	P		**P**	**06 10 58.4**	**+0.9**
	0.8nm,0.7s,baz=78,slow=10,SNR=2.3							
KURK	**Kurchatov**	**46.54**	**308**	*e*P		**P**	**06 11 10.6**	**+0.5**
	38nm,1.0s							
KURBB	**Kurchatov Arra**	**46.62**	**307**	P		**P**	**06 11 11.1**	**+0.3**
	2.7nm,0.7s,baz=82,slow=8.0,SNR=8.1							
ILAR	**Eielson Array**	**47.73**	**33**	P		**P**	**06 11 19.4**	**+0.1**
	1.3nm,0.7s,baz=264,slow=6.7,SNR=15							
KAPI	**Kappang**	**48.21**	**212**	LR		LR	06 29 07.8	
	comp=Z,758nm,21.5s,baz=153,slow=33							
WRAB	**Tennant Creek**	**58.35**	**190**	*e*P		**P**	**06 12 37.0**	**-1.0**
	4.5nm,0.9s							
WRA	**Warramunga Arr**	**58.36**	**190**	P		**P**	**06 12 37.4**	**-0.8**
	3.6nm,0.7s,baz=9.3,slow=7.2,SNR=14							
ABKAR	**Akbulak array**	**58.48**	**310**	*e*P		**P**	**06 12 38.7**	**0.0**
	3.0nm,0.9s							
ASAR	**Alice Springs**	**62.09**	**190**	P		**P**	**06 13 03.6**	**-0.1**
	0.9nm,0.9s,baz=15,slow=7.7,SNR=4.0							
FINES	**FINESS Array B**	**68.61**	**333**	P		**P**	**06 13 45.5**	**0.0**
	1.7nm,0.6s,baz=24,slow=7.8,SNR=3.7							
AKASG	**Malin Array Be**	**74.42**	**323**	P		**P**	**06 14 19.6**	**-1.1**
	0.5nm,0.4s,baz=43,slow=6.0,SNR=4.1							
ULM	**Lac du Bonnet**	**77.73**	**34**	LR		LR	06 52 34.3	
	comp=Z,1μm,19.6s,baz=250,slow=38							

ISCJB ***15*** *06:06:23.7±0.7,30.°08S±0.°07×139.°71E±0.°10,h10km, Error ellipse: s-maj=14.9km s-min=6.2km az=141.8*
IDC ***15*** *06:06:23.9±2.3,30.°25S×139.°59E,h0km,mb1 3.0/3, mb1mx3.0/29,mbtmp2.8/3,ML2.8/2,Error ellipse: s-maj=72.5km s-min=15.1km az=48.0*
AUST ***15*** *06:06:26.6±0.5,30.°32S×139.°71E,h0km,Error ellipse: s-maj=0.4km s-min=0.1km az=354.0*

ISC 15 06:06:25.9±1.1,30.°16S±0.°08×139.°71E±0.°07,h10km,n8, σ0s71/10,South Australia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
STKA	**Stephens Creek**	**2.36**	**137**	Pn		**Pn**	**06 07 04.5**	**-0.1**
	1.3nm,0.3s,baz=312,slow=14,SNR=21							
STKA				Sn		**Sn**	**06 07 33.5**	**-0.1**
	2.4nm,0.3s,baz=307,slow=12,SNR=5.4							
STKA				Lg		Lg	06 07 39.1	
	7.3nm,0.3s,baz=231,slow=9.4,SNR=16							
STKA	**Stephens Creek**	**2.36**	**137**	P		**Pn**	**06 07 04.9**	**+0.3**
	baz=2.2							
HTT	**Hallett**	**3.33**	**191**	P		**Pn**	**06 07 17.5**	**-0.6**
	baz=3.2							
BBOO	**Buckleboo**	**4.09**	**229**	P		**Pn**	**06 07 29.5**	**+1.0**
	baz=4.0							
CMSA	**Cobar Meteorol**	**5.32**	**106**	P		**Pn**	**06 07 46.0**	**+0.6**
	baz=5.3							
ARPS	**Mount Arapiles**	**6.83**	**165**	P		**Pn**	**06 08 06.8**	**+0.7**
	baz=6.7							
ASAR	**Alice Springs**	**8.29**	**320**	Pn		**Pn**	**06 08 25.2**	**-1.0**
	baz=143,slow=13,SNR=3.2							
ASAR				Sn		**Sn**	**06 10 00.2**	**+0.4**
	0.2nm,0.3s,baz=141,slow=22,SNR=3.6							
WRA	**Warramunga Arr**	**11.27**	**333**	Pn		**Pn**	**06 09 07.0**	**-0.1**
	0.1nm,0.3s,baz=155,slow=12,SNR=6.1							

IDC 15 06:07:14.7±4.4,5.°21S×147.°12E,h176km±50km,mb3.5/3, mb1 3.7/5,mb1mx3.3/33,mbtmp4.1/5,Error ellipse: s-maj=76.8km s-min=27.4km az=124.0,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**4.17**	**179**	P		Pn	06 08 17.7	-0.2
	5.4nm,0.3s,baz=356,slow=15,SNR=11							
PMG				S		Sn	06 09 02.5	-5.0
	18nm,0.3s,baz=81,slow=23,SNR=12							
WRA	**Warramunga Arr**	**19.21**	**219**	P		P	06 11 25.4	0.0
	2.6nm,0.3s,baz=45,slow=12,SNR=54							
ASAR	**Alice Springs**	**22.32**	**213**	P		P	06 11 58.4	+0.1
	6.2nm,0.7s,baz=50,slow=7.7,SNR=21							
ZALV	**Zalesovo Beam**	**78.41**	**328**	P		P	06 18 55.2	-0.4
	0.5nm,0.3s,baz=123,slow=9.2,SNR=2.2							
ILAR	**Eielson Array**	**84.71**	**23**	P		P	06 19 29.0	+0.5
	0.4nm,0.7s,baz=252,slow=4.6,SNR=5.0							
TORD	**Torodi Ar. Bea**	**145.00**	**285**	PKPbc		PKPbc	06 26 31.1	-0.6
	0.2nm,0.4s,baz=62,slow=3.7,SNR=7.0							

IDC ***15*** *06:22:55.4±3.2,40.°39S×176.°58E,h0km,mb4.3/3, mb1 4.4/5,mb1mx4.0/32,mbtmp4.2/5,ML3.5/2,Error ellipse: s-maj=73.4km s-min=28.2km az=131.0*
ISCJB ***15*** *06:22:56.5±0.5,40.°53S±0.°03×176.°86E±0.°05,h31km±3km, mb4.3/4,Error ellipse: s-maj=6.7km s-min=2.9km az=32.2*
NEIC ***15*** *06:22:58.8,40.°40S×176.°72E,h20km,mb4.4/2, ML4.4(WEL),After WEL.*
NEIC Felt in southern Hawkes Bay and northern Wairarapa.
WEL ***15*** *06:22:59.5±0.2,40.°35S×176.°63E,h24km±1km,ML4.4/92, Error ellipse: s-maj=2.3km s-min=1.4km az=90.0*
WEL Felt from Hawke''s Bay to Manawatu, maximum reported intensity MM 5.

ISC 15 06:22:57.7±0.9,40.°39S±0.°03×176.°71E±0.°04,h25km±5km, n198,σ1s17/205,mb4.4/4,23C-12D,North Island

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PRHZ	**Porangahau**	**0.13**	**335**	P*		**Pb**	**06 23 02.6**	**0.0**
PRHZ				S*		**Sb**	**06 23 05.4**	**-0.5**
PRHZ	**Porangahau**	**0.13**	**335**	⇑P*		**Pb**	**06 23 02.6**	**0.0**
PRHZ				S*		**Sb**	**06 23 04.9**	**-1.0**
PRHZ				AML		AML	06 23 05.8	
ANWZ	**Angora Road**	**0.19**	**248**	⇓P*		**Pn**	**06 23 04.4**	**-0.7**
ANWZ				S*		**Sb**	**06 23 09.2**	**+2.2**
ANWZ				AML		AML	06 23 11.5	
PXZ	**Pawanui**	**0.38**	**18**	⇓P*		**Pn**	**06 23 07.6**	**0.0**
PXZ	**Pawanui**	**0.38**	**18**	⇓P*		**Pn**	**06 23 07.6**	**0.0**
PXZ				AML		AML	06 23 15.4	
PXZ				AML		AML	06 23 15.4	
PXZ				AML		AML	06 23 16.5	
PXZ				AML		AML	06 23 16.5	
WPHZ	**Waipukurau**	**0.38**	**327**	P*		**Pb**	**06 23 06.2**	**+0.2**
WPHZ	**Waipukurau**	**0.38**	**327**	⇑P*		**Pb**	**06 23 06.2**	**+0.2**
WPHZ				AML		AML	06 23 12.1	
WPHZ				AML		AML	06 23 12.1	
DVHZ	**Dannevirke**	**0.42**	**282**	P*		**Pb**	**06 23 07.0**	**+0.4**
DVHZ	**Dannevirke**	**0.42**	**282**	⇓P*		**Pb**	**06 23 07.0**	**+0.4**
DVHZ				S*		**Sb**	**06 23 13.1**	**+0.4**
DVHZ				AML		AML	06 23 13.3	
BFZ	**Birch Farm**	**0.46**	**230**	P*		**Pn**	**06 23 09.3**	**+0.6**
BFZ	**Birch Farm**	**0.46**	**230**	⇓P*		**Pn**	**06 23 09.4**	**+0.6**
BFZ				AML		AML	06 23 20.2	
BFZ				AML		AML	06 23 21.6	
BFZ				AML		AML	06 23 21.6	
BFZ				AML		AML	06 23 25.0	
KAHZ	**Kahuranaki**	**0.61**	**12**	P*		**Pn**	**06 23 11.6**	**+0.8**
KAHZ	**Kahuranaki**	**0.61**	**12**	⇓P*		**Pn**	**06 23 11.6**	**+0.8**
KAHZ				AML		AML	06 23 23.6	
KAHZ				AML		AML	06 23 25.2	
PNHZ	**Pukenui**	**0.61**	**320**	P*		**Pb**	**06 23 10.1**	**+0.2**
PNHZ	**Pukenui**	**0.61**	**320**	⇑P*		**Pb**	**06 23 10.1**	**+0.2**
PNHZ				AML		AML	06 23 18.6	
PNHZ				AML		AML	06 23 18.9	
CPWZ	**Castlepoint**	**0.65**	**216**	P*		**Pn**	**06 23 13.0**	**+1.6**
CPWZ	**Castlepoint**	**0.65**	**216**	P*		**Pn**	**06 23 12.8**	**+1.5**
CPWZ				AML		AML	06 23 32.3	
CPWZ				AML		AML	06 23 37.6	
TSZ	**Takapari Road**	**0.66**	**300**	P*		**Pb**	**06 23 10.1**	**-0.5**
TSZ	**Takapari Road**	**0.66**	**300**	⇑P*		**Pb**	**06 23 10.8**	**+0.2**
TSZ				AML		AML	06 23 20.3	
TSZ				AML		AML	06 23 21.2	
POWZ	**Post Office Ro**	**0.72**	**269**	P*		**Pn**	**06 23 12.8**	**+0.4**
POWZ	**Post Office Ro**	**0.72**	**269**	P*		**Pn**	**06 23 12.8**	**+0.4**
POWZ				AML		AML	06 23 24.8	
POWZ				AML		AML	06 23 24.8	
TIWZ	**Tintock**	**0.74**	**238**	P*		**Pn**	**06 23 13.5**	**+0.9**
TIWZ	**Tintock**	**0.74**	**238**	⇑P*		**Pn**	**06 23 13.5**	**+0.9**
TIWZ				AML		AML	06 23 25.6	
TIWZ				AML		AML	06 23 34.5	
CKHZ	**Cape Kidnapper**	**0.78**	**21**	P*		**Pn**	**06 23 14.0**	**+0.8**
CKHZ	**Cape Kidnapper**	**0.78**	**21**	P*		**Pn**	**06 23 14.0**	**+0.8**
CKHZ				AML		AML	06 23 32.1	
CKHZ				AML		AML	06 23 37.4	
KRHZ	**Kereru**	**0.79**	**341**	⇑P*		**Pn**	**06 23 13.5**	**+0.2**
KRHZ				AML		AML	06 23 25.4	
KRHZ				AML		AML	06 23 25.8	
MRZ	**Mangatainoka R**	**0.91**	**252**	P*		**Pn**	**06 23 15.1**	**+0.2**
MRZ	**Mangatainoka R**	**0.91**	**252**	⇑P*		**Pn**	**06 23 15.5**	**+0.6**
MRZ				AML		AML	06 23 29.7	
MRZ				AML		AML	06 23 29.9	
MCHZ	**McNeill Hill**	**0.94**	**359**	P*		**Pn**	**06 23 16.5**	**+1.1**
MCHZ	**McNeill Hill**	**0.94**	**359**	⇑PN		**Pn**	**06 23 16.5**	**+1.1**
MCHZ				AML		AML	06 23 35.9	
MCHZ				AML		AML	06 23 48.7	
TMWZ	**Te Maipa**	**0.95**	**221**	P*		**Pn**	**06 23 16.3**	**+0.8**
TMWZ	**Te Maipa**	**0.95**	**221**	P*		**Pn**	**06 23 16.3**	**+0.8**
TMWZ				AML		AML	06 23 40.3	
TMWZ				AML		AML	06 23 41.9	
KWHZ	**Kaweka Forest**	**0.99**	**347**	⇑PN		**Pb**	**06 23 16.4**	**+0.3**
KWHZ				AML		AML	06 23 32.8	
KWHZ				AML		AML	06 23 35.2	
BHHZ	**Black Hill Sta**	**1.03**	**331**	Pn		**Pb**	**06 23 17.0**	**+0.2**
BHHZ	**Black Hill Sta**	**1.03**	**331**	⇑PN		**Pb**	**06 23 17.0**	**+0.2**
BHHZ				AML		AML	06 23 31.1	
BHHZ				AML		AML	06 23 32.7	
HOWZ	**Holdsworth Sta**	**1.04**	**240**	P*		**Pb**	**06 23 17.3**	**+0.3**
HOWZ	**Holdsworth Sta**	**1.04**	**240**	⇑P*		**Pb**	**06 23 17.3**	**+0.3**
HOWZ				AML		AML	06 23 35.3	
HOWZ				AML		AML	06 23 42.5	
OHWZ	**Ohakea**	**1.08**	**279**	P*		**Pb**	**06 23 18.8**	**+1.1**
OHWZ				S*		**Sn**	**06 23 34.4**	**+3.0**
ARHZ	**Aropaoanui**	**1.15**	**11**	Pn		**Pb**	**06 23 19.4**	**+0.6**
ARHZ	**Aropaoanui**	**1.15**	**11**	PN		**Pb**	**06 23 19.4**	**+0.6**
ARHZ				AML		AML	06 23 42.0	
ARHZ				AML		AML	06 23 43.1	
MTW	**Mount Morrison**	**1.20**	**230**	P*		**Pn**	**06 23 19.2**	**+0.3**
MTW	**Mount Morrison**	**1.20**	**230**	P*		**Pn**	**06 23 19.2**	**+0.3**
MTW				AML		AML	06 23 44.4	
MTW				AML		AML	06 23 45.1	
MOVZ	**Moawhango**	**1.23**	**323**	Pn		**Pb**	**06 23 20.3**	**+0.1**
MOVZ	**Moawhango**	**1.23**	**323**	⇑PN		**Pb**	**06 23 20.3**	**+0.1**
MOVZ				AML		AML	06 23 38.6	
MOVZ				AML		AML	06 23 38.8	
BKZ	**Black Stump Fm**	**1.23**	**352**	Pn		**Pb**	**06 23 20.1**	**-0.3**
BKZ	**Black Stump Fm**	**1.23**	**352**	PN		**Pb**	**06 23 20.0**	**-0.3**
BKZ				AML		AML	06 23 43.0	
BKZ				AML		AML	06 23 46.9	
OGWZ	**Otaki Gorge**	**1.25**	**249**	P*		**Pb**	**06 23 20.2**	**-0.4**
OGWZ	**Otaki Gorge**	**1.25**	**249**	⇑P*		**Pb**	**06 23 20.2**	**-0.4**
OGWZ				AML		AML	06 23 41.7	
OGWZ				AML		AML	06 23 42.3	
TRWZ	**Traveller**	**1.27**	**217**	P*		**Pn**	**06 23 20.1**	**+0

SNGZ	Shannon Statio	1.68	17	Pn	Pn	06 23 26.1	+0.6	
SNGZ	Shannon Statio	1.68	17	PN	Pn	06 23 26.1	+0.6	
SNGZ				AML	AML	06 24 11.9		
SNGZ				AML	AML	06 24 21.4		
RATZ	Rangitukua	1.68	334	Pn	Pb	06 23 27.9	-0.1	
RATZ	Rangitukua	1.68	334	PN	Pb	06 23 27.9	-0.1	
RATZ				AML	AML	06 23 59.3		
RATZ				AML	AML	06 24 00.4		
PRGZ	Paritu Road	1.72	32	Pn	Pn	06 23 26.2	+0.1	
PRGZ	Paritu Road	1.72	32	⇓PN	Pn	06 23 26.2	+0.1	
PRGZ				AML	AML	06 24 10.2		
PRGZ				AML	AML	06 24 16.0		
WEL	Wellington	1.72	238	Pn	Pn	06 23 26.2	+0.1	
WEL	Wellington	1.72	238	PN	Pn	06 23 26.2	+0.1	
WEL				AML	AML	06 23 58.6		
WEL				AML	AML	06 23 58.6		
WEL				AML	AML	06 24 01.4		
WEL				AML	AML	06 24 01.4		
BHW	Baring Head	1.73	233	AML	AML	06 23 59.4		
BHW				AML	AML	06 24 04.0		
SNZO	South Karori	1.78	238	*e*Pn	Pn	06 23 26.6	-0.2	
SNZO				*e*Sn	Sb	06 23 57.9	+6.4	
WATZ	Wairara	1.84	335	AML	AML	06 24 04.3		
WATZ				AML	AML	06 24 05.2		
ALRZ	Allen Road	1.84	351	Pn	Pn	06 23 28.6	+0.8	
ALRZ	Allen Road	1.84	351	PN	Pn	06 23 28.6	+0.8	
ALRZ				AML	AML	06 24 03.9		
ALRZ				AML	AML	06 24 14.8		
RIGZ	Rimuhau	1.87	26	PN	Pn	06 23 28.5	+0.4	
RIGZ				AML	AML	06 24 13.1		
RIGZ				AML	AML	06 24 13.9		
PRRZ	Plateau Road	1.90	352	PN	Pn	06 23 29.4	+0.8	
PRRZ				AML	AML	06 24 08.1		
PRRZ				AML	AML	06 24 11.0		
MUGZ	Murupara	1.91	1	PN	Pn	06 23 29.1	+0.4	
VRZ	Vera Road	1.96	309	Pn	Pn	06 23 30.8	+1.4	
VRZ	Vera Road	1.96	309	PN	Pn	06 23 30.8	+1.4	
VRZ				AML	AML	06 24 09.9		
VRZ				AML	AML	06 24 11.4		
RAGZ	Rawiri	1.97	16	Pn	Pn	06 23 29.8	+0.3	
RAGZ	Rawiri	1.97	16	PN	Pn	06 23 29.8	+0.3	
RAGZ				AML	AML	06 24 19.2		
RAGZ				AML	AML	06 24 26.5		
LREZ	Lake Rotokare	2.00	297	PN	Pb	06 23 32.0	-1.4	
LREZ				AML	AML	06 24 12.1		
LREZ				AML	AML	06 24 12.2		
KUTZ	Kaahu Road	2.02	340	Pn	Pn	06 23 31.0	+0.8	
KUTZ	Kaahu Road	2.02	340	PN	Pn	06 23 31.0	+0.8	
KUTZ				AML	AML	06 23 48.2		
KUTZ				AML	AML	06 24 13.7		
HRRZ	Handcock Road	2.02	350	Pn	Pn	06 23 31.2	+1.0	
HRRZ	Handcock Road	2.02	350	PN	Pn	06 23 31.2	+1.0	
HRRZ				AML	AML	06 24 09.1		
HRRZ				AML	AML	06 24 16.1		
TCW	Tory Channel	2.02	245	Pn	Pn	06 23 30.3	+0.1	
TCW	Tory Channel	2.02	245	⇓PN	Pn	06 23 30.3	+0.1	
TCW				AML	AML	06 24 06.9		
TCW				AML	AML	06 24 07.3		
RRRZ	Republican Roa	2.05	356	Pn	Pn	06 23 31.0	+0.4	
RRRZ	Republican Roa	2.05	356	PN	Pn	06 23 31.0	+0.4	
RRRZ				AML	AML	06 24 12.6		
RRRZ				AML	AML	06 24 15.4		
TKGZ	Te Karaka	2.14	25	Pn	Pn	06 23 31.8	0.0	
TKGZ	Te Karaka	2.14	25	PN	Pn	06 23 31.7	0.0	
TKGZ				AML	AML	06 24 00.0		
TKGZ				AML	AML	06 24 00.2		
MWZ	Matawai	2.15	17	Pn	Pb	06 23 31.3	-0.7	
MWZ	Matawai	2.15	17	PN	Pb	06 23 31.3	-0.7	
MWZ				AML	AML	06 24 24.0		
MWZ				AML	AML	06 24 24.0		
MWZ				AML	AML	06 24 31.4		
URZ	Urewera	2.15	8	Pn	Pn	06 23 32.2	+0.2	
	20nm,0.3s,baz=246,slow=4.1,SNR=121							
URZ				Sn	Sn	06 23 58.2	+0.5	
	55nm,0.3s,baz=27,slow=18,SNR=19							
URZ	Urewera	2.15	8	⇑PN	Pn	06 23 32.0	+0.1	
URZ				AML	AML	06 24 22.5		
URZ				AML	AML	06 24 29.6		
TARZ	Mount Tarawera	2.15	356	Pn	Pn	06 23 33.0	+0.8	
TARZ	Mount Tarawera	2.15	356	PN	Pn	06 23 32.9	+0.8	
TARZ				AML	AML	06 24 21.5		
TARZ				AML	AML	06 24 29.3		
DUWZ	D'Urville Isla	2.16	258	PN	Pn	06 23 32.6	+0.5	
PREZ	Palmer Road	2.22	297	Pn	Pb	06 23 35.5	-1.7	
PREZ	Palmer Road	2.22	297	PN	Pb	06 23 35.5	-1.7	
PREZ				AML	AML	06 24 13.6		
PREZ				AML	AML	06 24 14.0		
CNGZ	Carnagh Statio	2.23	32	Pn	Pn	06 23 33.1	+0.1	
CNGZ	Carnagh Statio	2.23	32	PN	Pn	06 23 33.1	+0.1	
CNGZ				AML	AML	06 24 40.1		
CNGZ				AML	AML	06 24 48.4		
TLZ	Tolley Road	2.25	336	AML	AML	06 23 41.7		
TLZ				AML	AML	06 23 48.5		
DREZ	Durham Road	2.27	301	Pn	Pb	06 23 35.9	-2.1	
DREZ	Durham Road	2.27	301	PN	Pb	06 23 35.9	-2.1	
CMWZ	Cape Campbell	2.33	233	AML	AML	06 24 24.1		
TUWZ	Tuamarina	2.34	243	Pn	Pn	06 23 34.0	-0.6	
TUWZ	Tuamarina	2.34	243	PN	Pn	06 23 34.0	-0.6	
TUWZ				AML	AML	06 24 18.4		
TUWZ				AML	AML	06 24 22.9		
KHEZ	Kahui Hut	2.34	297	Pn	Pb	06 23 37.3	-2.0	
KHEZ	Kahui Hut	2.34	297	PN	Pb	06 23 37.3	-2.0	
HIZ	Hauiti	2.36	322	*e*Pn	Pn	06 23 36.5	+1.6	
HIZ	Hauiti	2.36	322	PN	Pn	06 23 36.3	+1.4	
HIZ				AML	AML	06 24 18.8		
HIZ				AML	AML	06 24 24.4		
NMEZ	Namu Road	2.39	293	Pn	Pb	06 23 37.6	-2.3	
NMEZ	Namu Road	2.39	293	PN	Pb	06 23 37.6	-2.3	
PKE	Pukeiti	2.41	299	Pn	Pb	06 23 38.2	-2.2	
PKE	Pukeiti	2.41	299	PN	Pb	06 23 38.2	-2.2	
PKE				AML	AML	06 24 18.5		
PKE				AML	AML	06 24 20.9		
TWGZ	Tauwhareparae	2.42	24	Pn	Pn	06 23 35.7	0.0	
TWGZ	Tauwhareparae	2.42	24	PN	Pn	06 23 35.7	0.0	
TWGZ				AML	AML	06 24 09.6		
TWGZ				AML	AML	06 24 12.7		
BSWZ	Blackbirch Sta	2.52	237	Pn	Pn	06 23 36.6	-0.5	
BSWZ	Blackbirch Sta	2.52	237	PN	Pn	06 23 36.6	-0.5	
BSWZ				AML	AML	06 24 25.1		
BSWZ				AML	AML	06 24 31.1		
PUZ	Puketiti	2.61	28	Pn	Pn	06 23 37.4	-0.8	
PUZ	Puketiti	2.61	28	PN	Pn	06 23 37.4	-0.8	
PUZ				AML	AML	06 24 11.1		
PUZ				AML	AML	06 24 53.9		
NNZ	Nelson	2.66	251	Pn	Pn	06 23 39.2	+0.2	
NNZ	Nelson	2.66	251	PN	Pn	06 23 39.2	+0.2	
NNZ				AML	AML	06 24 23.4		
NNZ				AML	AML	06 24 34.3		
NNZ				AML	AML	06 24 34.3		
NNZ				AML	AML	06 24 41.0		
PKGZ	Pakihiroa	2.71	23	⇑PN	Pn	06 23 39.6	-0.2	
HAZ	Te Kaha	2.76	18	PN	Pn	06 23 40.7	+0.4	
HAZ				AML	AML	06 24 15.8		
HAZ				AML	AML	06 24 19.0		
TOZ	Tahuroa Road	2.81	340	Pn	Pn	06 23 42.1	+1.0	
TOZ				AML	AML	06 23 55.3		
TOZ				AML	AML	06 24 51.1		
WMGZ	Waiomatatini S	2.89	28	PN	Pn	06 23 42.0	-0.1	
WMGZ				AML	AML	06 24 18.2		
WMGZ				AML	AML	06 24 18.2		
MXZ	Matakaoa Point	3.08	24	Pn	Pn	06 23 44.8	0.0	
MXZ	Matakaoa Point	3.08	24	PN	Pn	06 23 44.8	0.0	
MXZ				AML	AML	06 24 23.1		
MXZ				AML	AML	06 25 08.2		
KHZ	Kahutara	3.13	229	*e*Pn	Pn	06 23 44.2	-1.2	
KHZ	Kahutara	3.13	229	PN	Pn	06 23 44.2	-1.2	
KHZ				AML	AML	06 24 24.2		
KHZ				AML	AML	06 24 24.2		
KHZ				AML	AML	06 24 55.2		
KHZ				AML	AML	06 24 55.2		
QRZ	Quartz Range	3.21	261	Pn	Pn	06 23 46.6	+0.1	
QRZ	Quartz Range	3.21	261	PN	Pn	06 23 46.6	+0.1	
QRZ				AML	AML	06 24 42.8		
QRZ				AML	AML	06 24 44.7		
QRZ				AML	AML	06 24 44.7		
QRZ				AML	AML	06 24 45.6		
DSZ	Denniston Nort	3.95	248	Pn	Pn	06 23 54.1	-2.6	
DSZ	Denniston Nort	3.95	248	PN	Pn	06 23 54.1	-2.6	
DSZ				AML	AML	06 24 16.4		
DSZ				AML	AML	06 25 12.0		
LTZ	Lake Taylor	4.10	233	Pn	Pn	06 23 57.2	-1.6	
LTZ	Lake Taylor	4.10	233	PN	Pn	06 23 57.2	-1.6	
LTZ				AML	AML	06 25 26.8		
MQZ	McQueen's Vall	4.49	221	*e*Pn	Pn	06 24 04.2	+0.1	
MQZ				*e*Sn	Sn	06 24 52.0	-3.3	
MQZ	McQueen's Vall	4.49	221	PN	Pn	06 24 01.9	-2.1	
MQZ				AML	AML	06 24 52.2		
MQZ				AML	AML	06 24 52.6		
OXZ	Oxford	4.56	228	*e*Pn	Pn	06 24 05.9	+0.8	
OXZ				*e*Sn	Sn	06 24 55.2	-2.0	
OXZ	Oxford	4.56	228	PN	Pn	06 24 03.4	-1.7	
INZ	Inchbonnie	4.59	238	PN	Pn	06 24 03.9	-1.6	
RPZ	Rata Peaks	5.37	230	Pn	Pn	06 24 14.8	-1.3	
	1.2nm,0.3s,baz=206,slow=0.5,SNR=11							
RPZ				Sn	Sn	06 25 11.9	-5.3	
	3.4nm,0.3s,baz=314,slow=23,SNR=20							
RPZ	Rata Peaks	5.37	230	*e*Pn	Pn	06 24 15.5	-0.6	
	62nm,0.6s							
RPZ				*e*Pg	Pb	06 24 35.0	+4.3	
RPZ	Rata Peaks	5.37	230	PN	Pn	06 24 14.7	-1.5	
RPZ				AML	AML	06 26 06.9		
RPZ				AML	AML	06 26 45.7		
OUZ	Omahuta	5.72	333	*e*Pn	Pn	06 24 22.6	+1.5	
CTZ	Chatham Island	5.99	126	PN	Pn	06 24 26.9	+2.2	
LBZ	Lake Benmore	6.27	228	Pn	Pn	06 24 27.2	-1.4	
LBZ	Lake Benmore	6.27	228	PN	Pn	06 24 27.2	-1.4	
ODZ	Otahua Downs	6.45	222	*e*Pn	Pn	06 24 31.8	+0.7	
ODZ	Otahua Downs	6.45	222	PN	Pn	06 24 29.7	-1.4	
JCZ	Jackson Bay	6.94	235	Pn	Pn	06 24 35.6	-2.2	
JCZ	Jackson Bay	6.94	235	PN	Pn	06 24 35.6	-2.2	
JCZ				AML	AML	06 26 19.0		
TUZ	Tuapeka	7.59	221	Pn	Pn	06 24 45.8	-0.9	
TUZ	Tuapeka	7.59	221	PN	Pn	06 24 45.8	-0.9	
ASAR	Alice Springs	39.52	282	P	P	06 30 27.2	+0.6	
	1.6nm,0.5s,baz=132,slow=8.1,SNR=33							
WRAB	Tennant Creek	41.43	287	*e*P	P	06 30 42.9	+0.5	
	5.0nm,0.5s							
WRA	Warramunga Arr	41.43	287	P	P	06 30 43.0	+0.6	
	5.1nm,0.4s,baz=125,slow=8.3,SNR=127							
FITZ	Fitzroy Crossi	49.02	281	P	P	06 31 43.2	+0.6	
	1.7nm,0.5s,baz=115,slow=7.6,SNR=9.2							
FITZ	Fitzroy Crossi	49.02	281	*e*P	P	06 31 43.7	+1.1	
	2.8nm,0.8s							
SYO	Syowa Base	66.40	196	⇓*e*P	P	06 33 42.4	-1.6	
ARCES	ARCESS Array B	147.10	342	PKPbc	PKPab	06 42 38.6	-0.3	
	6.8nm,0.9s,baz=5.7,slow=2.4,SNR=6.8							

IDC 15 06:26:09.6±4.7, 22°.29S×95°.73E, h0km, mb3.8/5, mb1 3.9/5, mb1mx3.5/59, mbtmp3.8/5, Error ellipse: s-maj=173.3km s-min=25.7km az=39.0, South Indian Ocean

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NWAO	Narrogin (SRO)	21.77	124	P	P	06 31 13.5	+11
	15nm,0.2s,baz=164,slow=12,SNR=75						
NWAO				S	S	06 34 57.6	-7.0
	6.9nm,0.5s,baz=256,slow=23,SNR=7.3						
ASAR	Alice Springs	35.11	100	P	P	06 33 05.1	+0.1
	0.6nm,0.6s,baz=273,slow=8.0,SNR=6.7						
WRA	Warramunga Arr	36.03	94	P	P	06 33 12.8	-0.1
	0.7nm,0.8s,baz=264,slow=9.3,SNR=5.1						
STKA	Stephens Creek	41.68	113	P	P	06 33 59.9	-0.3
	1.4nm,0.5s,baz=288,slow=9.6,SNR=4.9						
KURBB	Kurchatov Arra	74.16	349	P	P	06 37 47.5	-0.2
	0.3nm,0.5s,baz=159,slow=5.5,SNR=3.9						
ZALV	Zalesovo Beam	76.50	353	P	P	06 38 01.4	+0.4
	1.0nm,0.6s,baz=160,slow=4.6,SNR=4.0						

ISCJB ***15*** *06:38:40.6±0.6, 46°.13N±0°.06×152°.84E±0°.08, h50km, mb3.8/12, Error ellipse: s-maj=11.4km s-min=3.7km az=135.6*
SKHL ***15*** *06:38:40.9±1.1, 45°.94N×153°.13E, h52km±7km, mb5.1/5, msh4.8/1*
MOS ***15*** *06:38:41.6±1.5, 46°.28N×152°.69E, h53km, mb4.2/7, Error ellipse: s-maj=11.2km s-min=7.7km az=53.3*
JMA ***15*** *06:38:42.5±0.7, 46°.41N×152°.57E, h30km, M4.9*
IDC ***15*** *06:38:46.0±2.6, 46°.45N×152°.38E, h64km±23km, mb3.5/12, mb1 3.8/17, mb1mx3.6/51, mbtmp3.9/17, Error ellipse: s-maj=24.2km s-min=12.9km az=138.0*

ISC 15 06:38:43.5±0.7, 46°.21N±0°.08×152°.61E±0°.08, h50km, n73, σ2s37/91, mb3.7/12, 5C-3D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUR	Kuril'sk	3.46	255	*c i*Pn	Pn	06 39 37.0	+2.2
KUR				*e*S	Sn	06 40 18.5	+4.0
KUR				pmax	pmax		
	comp=E,56nm,0.5s						
KUR				pmax	pmax		
	comp=Z,191nm,0.5s						
KUR				pmax	pmax		
	comp=N,103nm,0.6s						
KUR				pmax	pmax		
	comp=E,716nm,2.3s						
KUR				pmax	pmax		
	comp=N,827nm,2.4s						
KUR				smax	smax		
	comp=N,200nm,0.7s						
KUR				smax	smax		
	comp=E,442nm,0.7s						
KUR	Kuril'sk	3.46	255	*e*P	Pn	06 39 36.7	+1.9
KUR				AMB	AMB	06 39 38.8	
	comp=E,100nm,0.5s						
KUR				AMB	AMB	06 39 38.8	
	comp=E,60nm,0.5s						
KUR				AMB	AMB	06 39 38.8	
	comp=E,190nm,0.5s						
KUR				*e*S	Sn	06 40 18.5	+4.0
KUR				A	A	06 40 21.1	
	comp=E,800nm,2.0s						
KUR				A	A	06 40 21.1	
	comp=E,700nm,2.0s						
KUR				A	A	06 40 27.1	
	comp=E,200nm,0.7s						
KUR				A	A	06 40 27.1	
	comp=E,440nm,0.7s						
SHO	Shikotan	4.72	242	*c i*PN	Pn	06 39 52.1	+0.1
SHO				*i* S	Sn	06 40 46.1	+0.7
SHO				pmax	pmax		
	comp=N,45nm,0.4s						
SHO				pmax	pmax		
	comp=Z,242nm,0.4s						
SHO				pmax	pmax		
	comp=E,108nm,0.5s						
SHO	Shikotan	4.72	242	*i* P	Pn	06 39 52.1	+0.1
SHO				AMB	AMB	06 39 54.1	
	comp=E,50nm,0.4s						
SHO				AMB	AMB	06 39 54.1	
	comp=E,110nm,0.4s						
SHO				AMB	AMB	06 39 54.1	
	comp=E,240nm,0.4s						
SHO				*i* S	Sn	06 40 46.1	+0.7
SHO				A	A	06 41 02.2	
	comp=E,500nm,0.6s						
SKR	Severo-Kuril's	5.05	26	⇓*i*PN	Pn	06 39 56.3	-0.2
SKR				*e*S	Sn	06 40 51.7	-1.7
SKR				pmax	pmax		
	comp=Z,176nm,0.5s						
SKR				smax	smax		
	comp=E,325nm,0.6s						
SKR				smax	smax		
	comp=N,282nm,0.6s						
SKR	Severo-Kuril's	5.05	26	*i* P	Pn	06 39 56.3	-0.2
SKR				AMB	AMB	06 39 58.8	
	comp=N,180nm,0.5s						
SKR				*e*S	Sn	06 40 51.7	-1.7
SKR				A	A	06 41 16.0	
	comp=N,280nm,0.6s						
SKR				A	A	06 41 16.0	
	comp=N,320nm,0.6s						
YUK	Yuzh-Kuril'sk	5.25	248	⇑*i*PN	Pn	06 40 01.6	+2.3
YUK				*i* S	Sn	06 41 02.8	+4.4
YUK				pmax	pmax		
	comp=Z,266nm,0.2s						
YUK				pmax	pmax		
	comp=N,88nm,0.1s						
YUK				pmax	pmax		
	comp=E,164nm,0.1s						
YUK	Yuzh-Kuril'sk	5.25	248	*i* P	Pn	06 40 01.6	+2.3
YUK				AMB	AMB	06 40 05.3	
	comp=E,90nm,0.2s						
YUK				AMB	AMB	06 40 05.3	
	comp=E,160nm,0.2s						
YUK				AMB	AMB	06 40 05.3	
	comp=E,270nm,0.2s						
YUK				*i* S	Sn	06 41 02.8	+4.4
NEM2	Nemuro 2	5.66	242	P	Pn	06 40 04.6	-0.3
NEM2				*e*S	Sn	06 41 04.6	-3.8
JRA	Rausu	5.77	249	P	Pn	06 40 08.7	+2.3
JNK	Nakash	6.19	248	P	Pn	06 40 13.8	+1.6
JNK				*e*S	Sn	06 41 23.7	+2.1
JAK	Akkeshi	6.50	243	P	Pn	06 40 16.0	-0.4
JAK				*e*S	Sn	06 41 26.0	-3.2
JTKR	Abashiri--Toko	6.55	253	P	Pn	06 40 19.7	+2.5
YSS	Yuzh-Sakhalins	6.83	280	⇑*e*PN	Pn	06 40 25.8	+4.7
YSS	Yuzh-Sakhalins	6.83	280	*e*P	Pn	06 40 25.7	+4.7
JMP	Maruseppu	6.91	255	P	Pn	06 40 23.5	+1.4
JAR	Ashorobuto	6.94	248	P	Pn	06 40 24.0	+1.6
JAR				*e*S	Sn	06 41 38.7	-1.2
JOB	Onbets	7.09	245	P	Pn	06 40 25.4	+0.9
JOB				*e*S	Sn	06 41 40.4	-3.2
JKK2	Kamakawa 2	7.37	255	P	Pn	06 40 31.2	+2.8
JKA	Kamikawa-asahi	7.38	257	*e*P	Pn	06 40 31.7	+3.2
ASAJ	Asahikawa	7.38	257	P	Pn	06 40 31.7	+3.1
	baz=180,slow=0.5						
ASAJ	Asahikawa	7.38	257	P	Pn	06 40 32.1	+3.6
JCH	Churui	7.53	245	P	Pn	06 40 31.3	+0.7
JCH				*e*S	Sn	06 41 51.3	-3.3
PETK	Petropavlovsk-	7.65	24	P	Pn	06 40 31.4	-0.8
	comp=E,1.1nm,0.3s,baz=191,slow=12,SNR=14						
PETK				S	Sn	06 41 57.1	-0.3
	baz=214,slow=17,SNR=1.9						
UGL	Uglegorsk	7.68	296	*e*PN	Pn	06 40 32.8	+0.3
UGL				*e*		06 42 01.3	
UGL	Uglegorsk	7.68	296	*e*P	Pn	06 40 38.8	+6.3
MYR	Moyori	7.76	243	*e*P	Pn	06 40 34.0	+0.3
PET	Petropavlovsk	7.87	28	*e*PN	Pn	06 40 32.9	-2.2
PET				MLR	MLR		
	comp=Z,500nm,19.0s						
PET	Petropavlovsk	7.87	28	*e*P	Pn	06 40 32.9	-2.2
PET				*e*S	Sn	06 41 59.5	-3.1
JEM	Erimo	7.99	242	P	Pn	06 40 38.4	+1.6
JEM				*e*S	Sn	06 42 02.9	-2.9
ERM	Erimo	7.99	242	⇓*e*PN	Pn	06 40 38.9	+2.0
ERM	Erimo	7.99	242	*e*P	Pn	06 40 38.9	+2.0
JBT2	Biratori 2	8.09	249	P	Pn	06 40 39.2	+1.0
JNBK	Urakawa-nobuka	8.09	244	P	Pn	06 40 38.4	+0.1
JNBK				*e*S	Sn	06 42 03.8	-4.6
JNB	Noboribetsu	9.10	250	P	Pn	06 40 52.5	+0.5
JKB	Kayabe	9.39	247	P	Pn	06 40 55.6	-0.4
JYM2	Yakumo 2	9.70	249	P	Pn	06 41 00.6	+0.3
JANG	Nango	9.97	238	P	Pn	06 41 00.8	-3.2
JANG				*e*S	Sn	06 42 44.2	-10
JTM	Tenmabayashi	9.98	241	P	Pn	06 41 02.9	-1.2
JTM				*e*S	Sn	06 42 47.2	-7.4
GRNR	Gornyy	11.67	299	*e*P	Pn	06 41 31.4	+4.3
HABR	Khabarovsk	12.13	287	*e*PN	P	06 41 41.0	-3.7
HABR				pmax	pmax		
	comp=N,8.0nm,0.9s						
HABR				pmax	pmax		
	comp=E,10.0nm,0.9s						
HABR				pmax	pmax		
	comp=Z,26nm,0.9s						
HABR				MLR	MLR		
	comp=Z,457nm,14.0s						
MA2	Magadan	13.43	356	P	Pn	06 41 49.4	-1.7
	comp=Z,2.1nm,0.3s,baz=162,slow=12,SNR=5.4						
KLR	Kul'dur	14.36	290	P	Pn	06 42 04.8	+1.1
	comp=Z,0.1nm,0.3s,baz=90,slow=18,SNR=2.1						
EKMR	Ekimchan	14.44	306	*e*P	P	06 42 07.8	-2.6
EKMR				AMB	AMB	06 42 25.0	
	comp=Z,3.0nm,0.5s						
MJA0	Matsu Arr-Jizo	14.46	233	*e*P	Pn	06 42 03.3	-1.8
MAJO	Matsushiro	14.48	233	⇑*e*P	Pn	06 42 04.5	-0.9
MAJO	Matsushiro	14.48	233	*e*P	Pn	06 42 04.5	-0.9
MJAR	Matsushiro Arr	14.48	233	P	Pn	06 42 04.6	-0.8
	comp=Z,0.4nm,0.3s,baz=29,slow=14,SNR=6.4						
USRK	Ussuriysk Ar.	14.68	270	P	Pn	06 42 08.0	+0.1
	comp=Z,0.4nm,0.3s,baz=68,slow=13,SNR=5.0						
BMKR	Bomnak	17.29	308	*e*P	P	06 42 43.2	+1.3
BMKR				AMB	AMB	06 42 49.5	
	comp=Z,3.0nm,0.8s						
KSRS	Korea Array	20.31	253	P	P	06 43 16.0	+0.9
	comp=Z,4.7nm,0.8s,baz=62,slow=11,SNR=4.4						
KSRS	Korea Array	20.31	253	P	P	06 43 16.0	+0.9
KSRS				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KSRS	Korea Array	20.31	253	*e*P	P	06 43 16.0	+0.9
BILL	Bilibino	23.00	13	*d i*P	P	06 43 45.6	+2.1
BILL				pmax	pmax		
	comp=Z,28nm,1.2s						
BILL	Bilibino	23.00	13	*e*P	P	06 43 45.6	+2.1
SONM	Songino Array	31.19	290	P	P	06 44 55.0	-2.7
	comp=Z,0.3nm,0.3s,baz=27,slow=9.7,SNR=3.5						
ILAR	Eielson Array	37.19	38	P	P	06 45 48.3	-1.0
	comp=Z,0.3nm,0.6s,baz=250,slow=7.7,SNR=6.3						
ILAR	Eielson Array	37.19	38	*e*P	P	06 45 49.5	+0.2
ILAR	Eielson Array	37.19	38	*e*P	P	06 45 49.5	+0.2
INK	Inuvik	42.29	32	P	P	06 46 32.2	+0.7
	comp=Z,1.2nm,0.7s,baz=290,slow=5.4,SNR=2.9						
MKAR	Makanchi Array	46.88	298	P	P	06 47 07.7	-0.8
	comp=Z,0.4nm,0.5s,baz=62,slow=6.0,SNR=5.6						
CMAR	Chiang Mai Arr	51.91	256	P	P	06 47 48.4	+1.2
	comp=Z,1.2nm,0.3s,baz=37,slow=7.7,SNR=6.9						
WRA	Warramunga Arr	67.89	199	P	P	06 49 37.6	+1.0
	comp=Z,1.2nm,0.8s,baz=20,slow=7.1,SNR=4.6						
WRA	Warramunga Arr	67.89	199	*e*P	P	06 49 38.2	+1.6
WRA				pmax	pmax		
	comp=Z,1.0nm,0.9s						
WRA	Warramunga Arr	67.89	199	*e*P	P	06 49 38.2	+1.6
NB2	NORSAR Subarra	68.63	341	P	P	06 49 41.3	+0.4
	comp=Z,4.9nm,1.4s,baz=27,slow=6.5						
NOA	NORSAR Array B	68.63	341	P	P	06 49 40.2	-0.6
	comp=Z

GOLH	**Golhisar**	**0.97**	**40**	P	**Pg**	**06 52 56.0**	**-0.4**
GOLH				S	**Sn**	**06 53 11.2**	**-1.0**
MLSB	**Milas**	**1.14**	**315**	*e*PN	**Pn**	**06 53 00.0**	**-0.3**
MLSB	**Milas**	**1.14**	**315**	*e*Pn	**Pn**	**06 53 00.0**	**-0.3**
BDRM	**Kayabasi**	**1.22**	**298**	*i* P	**Pb**	**06 53 00.2**	**-1.1**
BDRM				*i* S	**Sn**	**06 53 17.9**	**-0.4**
BDRM	**Kayabasi**	**1.22**	**298**	P	**Pb**	**06 53 00.2**	**-1.1**
BDRM				S	**Sn**	**06 53 17.9**	**-0.4**
DENT	**Denizli**	**1.27**	**9**	*e*PN	**Pn**	**06 53 01.8**	**-0.4**
DENT	**Denizli**	**1.27**	**9**	*e*Pn	**Pn**	**06 53 01.8**	**-0.4**
NIS1	**Nisyros Isl.**	**1.30**	**275**	*e*PN	**Pg**	**06 53 03.4**	**+0.7**
NIS1	**Nisyros Isl.**	**1.30**	**275**	*e*Pn	**Pg**	**06 53 03.4**	**+0.7**
BODT	**Bodrum**	**1.31**	**296**	*e*PN	**Pn**	**06 53 02.2**	**-0.5**
BODT	**Bodrum**	**1.31**	**296**	*e*Pn	**Pn**	**06 53 02.2**	**-0.5**
KORT	**Korkueli**	**1.35**	**68**	*i* P	**Pg**	**06 53 04.0**	**+0.2**
KORT				*i* S	**Sn**	**06 53 25.2**	**+3.3**
KORT	**Korkueli**	**1.35**	**68**	P	**Pg**	**06 53 04.0**	**+0.2**
KORT				S	**Sn**	**06 53 25.2**	**+3.3**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**334**	*e*PN	**Pn**	**06 53 06.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**334**	*e*Pn	**Pn**	**06 53 06.9**	**-0.1**
KARP	**Karpathos**	**1.62**	**235**	*e*PN	**Pb**	**06 53 08.5**	**+0.3**
KARP	**Karpathos**	**1.62**	**235**	*e*Pn	**Pb**	**06 53 08.5**	**+0.3**
KULA	**Kula-Manisa**	**2.02**	**357**	*e*PN	**Pn**	**06 53 12.4**	**-0.1**
KULA	**Kula-Manisa**	**2.02**	**357**	*e*Pn	**Pn**	**06 53 12.4**	**-0.1**
SUTC	**Sutluce-Ispart**	**2.03**	**60**	*e*PN	**Pn**	**06 53 12.7**	**0.0**
SUTC	**Sutluce-Ispart**	**2.03**	**60**	*e*Pn	**Pn**	**06 53 12.7**	**0.0**
AKS	**Akhisar**	**2.50**	**342**	*e*PN	**Pn**	**06 53 19.5**	**+0.4**
AKS	**Akhisar**	**2.50**	**342**	*e*Pn	**Pn**	**06 53 19.5**	**+0.4**

ISK ***15*** *07:09:58.1, 37˚.28N×28˚.24E, h2km, MD2.6*
DDA ***15*** *07:09:58.7, 37˚.27N×28˚.14E, h7km, MD2.6*
CSEM ***15*** *07:09:59.2±0.2, 37˚.28N×28˚.21E, h8km, MD2.6, Error ellipse: s-maj=5.7km s-min=4.7km az=29.0*

ISC 15 07:09:59.1±1.1, 37˚.28N±0˚.03×28˚.20E±0˚.03, h6km±9km, n25, σ1§29/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.16**	**156**	*e*PG	**Pg**	**07 10 01.5**	**-0.9**
YER				*e*SG	**Sg**	**07 10 04.9**	**+0.4**
YER	**Yerkesik**	**0.16**	**156**	*e*Pg	**Pg**	**07 10 01.5**	**-0.9**
YER				*e*Sg	**Sg**	**07 10 04.9**	**+0.4**
MLSB	**Milas**	**0.34**	**272**	*e*PG	**Pg**	**07 10 06.0**	**+0.3**
MLSB				*e*SG	**Sb**	**07 10 12.3**	**-0.9**
MLSB	**Milas**	**0.34**	**272**	*e*Pg	**Pg**	**07 10 06.0**	**+0.3**
MLSB				*e*Sg	**Sb**	**07 10 12.3**	**-0.9**
TURN	**Turunc**	**0.52**	**142**	*i* P	**Pg**	**07 10 07.8**	**-1.3**
DALY	**Dalyan (Mu˘la**	**0.59**	**142**	*e*PG	**Pg**	**07 10 10.1**	**-0.3**
DALY				*e*SG	**Sb**	**07 10 18.8**	**-1.5**
DALY	**Dalyan (Mu˘la**	**0.59**	**142**	*e*Pg	**Pg**	**07 10 10.1**	**-0.3**
DALY				*e*Sg	**Sb**	**07 10 18.8**	**-1.5**
BDRM	**Kayabasi**	**0.64**	**251**	*i* P	**Pg**	**07 10 11.0**	**-0.4**
BDRM	**Kayabasi**	**0.64**	**251**	P	**Pg**	**07 10 11.0**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.71**	**340**	*e*PG	**Pb**	**07 10 13.0**	**-0.9**
AYDB	**Zeytinkoy-Aydi**	**0.71**	**340**	*e*Pg	**Pb**	**07 10 13.0**	**-0.9**
BODT	**Bodrum**	**0.74**	**253**	*e*PG	**Pb**	**07 10 14.0**	**-0.4**
BODT				*e*SG	**Sb**	**07 10 25.5**	**+0.7**
BODT	**Bodrum**	**0.74**	**253**	*e*Pg	**Pb**	**07 10 14.0**	**-0.4**
BODT				*e*Sg	**Sb**	**07 10 25.5**	**+0.7**
FETY	**Fethiye**	**0.96**	**132**	*e*PG	**Pg**	**07 10 17.0**	**-0.4**
FETY	**Fethiye**	**0.96**	**132**	*e*Pg	**Pg**	**07 10 17.0**	**-0.4**
NIS1	**Nisyros Isl.**	**1.06**	**231**	*e*PN	**Pn**	**07 10 19.9**	**-0.6**
NIS1	**Nisyros Isl.**	**1.06**	**231**	*e*Pn	**Pn**	**07 10 19.9**	**-0.6**
GOLH	**Golhisar**	**1.08**	**92**	*i* P	**Pn**	**07 10 21.2**	**+0.3**
GOLH	**Golhisar**	**1.08**	**92**	P	**Pn**	**07 10 21.2**	**+0.3**
MANT	**Manisa**	**1.24**	**13**	*i* P	**Pg**	**07 10 21.7**	**-1.2**
MANT				*i* S	**Sn**	**07 10 40.8**	**+0.5**
MANT	**Manisa**	**1.24**	**13**	P	**Pg**	**07 10 21.7**	**-1.2**
MANT				S	**Sn**	**07 10 40.8**	**+0.5**
KULA	**Kula-Manisa**	**1.28**	**16**	*e*PN	**Pg**	**07 10 23.6**	**0.0**
KULA	**Kula-Manisa**	**1.28**	**16**	*e*Pn	**Pg**	**07 10 23.7**	**0.0**
AKAS	**Kas**	**1.54**	**132**	*i* P	**Pg**	**07 10 28.2**	**-0.4**
AKAS				*i* S	**Sg**	**07 10 54.5**	**+6.0**
AKAS	**Kas**	**1.54**	**132**	P	**Pg**	**07 10 28.2**	**-0.4**

IDC 15 07:15:03.1±2.5, 43˚.34S×41˚.87E, h0km, mb3.8/2, mb1 3.6/4, mb1mx3.4/53, mbtmp3.6/4, ML3.1/2, MS3.6/4, Ms1 3.6/4, ms1mx3.2/46, Error ellipse: s-maj=210.1km s-min=29.2km az=29.0, Prince Edward Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SUR	**Sutherland**	**19.85**	**296**	P	P	07 19 35.5	-0.2
	0.0nm,0.3s,baz=117,slow=12,SNR=5.2						
SUR				LR	LR	07 25 30.1	
	comp=Z,19nm,19.8s,baz=142,slow=32						
BOSA	**Boshof**	**19.86**	**312**	P	P	07 19 35.3	-0.6
	0.2nm,0.3s,baz=153,slow=7.6,SNR=4.0						
BOSA				LR	LR	07 25 46.2	
	comp=Z,195nm,18.4s,baz=137,slow=32						
LBTB	**Lobatse**	**22.63**	**319**	LR	LR	07 27 01.5	
	comp=Z,151nm,21.7s,baz=180,slow=32						
DBIC	**Dimbokro**	**65.30**	**307**	LR	LR	07 52 57.4	
	comp=Z,300nm,18.3s,baz=347,slow=35						
TORD	**Torodi Ar. Bea**	**67.14**	**317**	P	P	07 25 59.2	+0.5
	1.0nm,0.9s,baz=162,slow=6.0,SNR=4.4						
WRA	**Warramunga Arr**	**78.33**	**106**	P	P	07 27 05.3	-0.1
	1.1nm,1.1s,baz=222,slow=4.5,SNR=4.6						

IDC ***15*** *07:23:05.0±1.0, 4˚.92N×125˚.53E, h0km, mb3.8/9, mb1 4.0/9, mb1mx3.7/40, mbtmp3.8/9, Error ellipse: s-maj=56.6km s-min=15.3km az=86.0*
ISCJB ***15*** *07:23:07.8±0.5, 4˚.95N±0˚.05×125˚.5E±0˚.1, h33km, mb3.8/10, Error ellipse: s-maj=15.1km s-min=7.3km az=10.4*
NEIC ***15*** *07:23:10.1±0.5, 4˚.92N×125˚.47E, h35km, mb4.0/2, Error ellipse: s-maj=14.6km s-min=9.7km az=86.0*

ISC 15 07:23:10.0±0.7, 4˚.98N±0˚.07×125˚.5E±0˚.1, h35km, n17, σ0§97/15, mb3.8/10, 1C, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DMPH	**Davao City--Mi**	**2.09**	**0**	*e*P	**Pn**	**07 23 42.4**	**-0.3**
DMPH				*e*S	Sn	07 24 18.5	+11
LUWI	**Luwuk**	**6.57**	**205**	*e*Pn	**Pn**	**07 24 44.5**	**+0.3**
LUWI				*e*Sn	**Sn**	**07 25 59.0**	**+1.1**
KKM	**Kota Kinabalu**	**9.30**	**277**	*e*Pn	**Pn**	**07 25 20.9**	**-0.9**
FITZ	**Fitzroy Crossi**	**22.93**	**180**	P	**P**	**07 28 10.9**	**-0.3**
	1.8nm,0.6s,baz=2.4,slow=7.5,SNR=7.5						
WRAB	**Tennant Creek**	**26.24**	**161**	*e*P	**P**	**07 28 41.4**	**-0.7**
	6.4nm,1.1s						
WRA	**Warramunga Arr**	**26.25**	**161**	P	**P**	**07 28 41.4**	**-0.7**
	1.1nm,0.8s,baz=340,slow=10,SNR=12						
ASAR	**Alice Springs**	**29.63**	**164**	P	**P**	**07 29 11.7**	**-0.6**
	0.3nm,0.5s,baz=344,slow=7.2,SNR=4.1						
MJAR	**Matsushiro Arr**	**33.52**	**19**	P	**P**	**07 29 45.8**	**-0.6**
	0.5nm,0.3s,baz=195,slow=8.5,SNR=2.7						
USRK	**Ussuriysk Ar.**	**39.48**	**7**	P	**P**	**07 30 36.9**	**-0.2**
	2.3nm,0.8s,baz=189,slow=18,SNR=2.8						
STKA	**Stephens Creek**	**39.73**	**158**	P	**P**	**07 30 37.9**	**-1.4**
	1.2nm,0.8s,baz=325,slow=12,SNR=2.2						
H11N1	**WAKE ISLAND Hy**	**42.86**	**66**	T	T	08 16 51.1	
	baz=254,slow=75,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**42.87**	**66**	T	T	08 16 52.5	
	baz=254,slow=75,SNR=5.0						
H11N3	**WAKE ISLAND Hy**	**42.88**	**66**	T	T	08 16 53.7	
	baz=254,slow=75,SNR=3.8						
PETK	**Petropavlovsk-**	**54.76**	**23**	P	**P**	**07 32 37.6**	**+1.5**
	0.7nm,0.4s,baz=191,slow=11,SNR=2.4						
MKAR	**Makanchi Array**	**55.84**	**325**	P	**P**	**07 32 44.4**	**+0.3**
	1.1nm,0.6s,baz=120,slow=8.2,SNR=4.0						
ILAR	**Eielson Array**	**84.52**	**25**	P	**P**	**07 35 39.6**	**+0.4**
	0.3nm,0.7s,baz=247,slow=4.3,SNR=7.1						
TXAR	**Lajitas Array**	**121.80**	**51**	PKP	**PKPdf**	**07 42 03.0**	**+1.7**
	0.2nm,0.6s,baz=84,slow=0.6,SNR=4.2						

IDC 15 07:26:51.2±6.0, 28˚.22S×176˚.87W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/27, mbtmp3.5/2, MS3.3/1, Ms1 3.3/1, ms1mx2.8/21, Error ellipse: s-maj=266.7km s-min=94.9km az=163.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.38**	**222**	Sn	Sg	07 27 29.8	-5.6
	136nm,0.3s,baz=270,slow=20,SNR=3.4						
DZM	**Mont Dzumac**	**16.29**	**288**	LR	LR	07 35 14.8	
	comp=Z,93nm,19.2s,baz=22,slow=31						
ASAR	**Alice Springs**	**44.26**	**264**	P	P	07 35 03.3	+0.5
	0.2nm,0.5s,baz=98,slow=7.8,SNR=3.9						
WRA	**Warramunga Arr**	**45.05**	**269**	P	P	07 35 08.5	-0.6
	0.6nm,0.5s,baz=110,slow=7.4,SNR=10						
FINES	**FINESS Array B**	**143.42**	**342**	PKP	PKPdf	07 46 26.7	-0.4
	1.0nm,0.5s,baz=46,slow=4.6,SNR=4.9						

ISCJB ***15*** *07:41:22.4±0.6, 21˚.40S±0˚.04×179˚.28W±0˚.04, h599km, 7km, mb4.7/114, Error ellipse: s-maj=6.6km s-min=4.9km az=34.2*
BJI ***15*** *07:41:23.6, 21˚.07S×179˚.31W, h599km, mb4.8/24, mB5.0/18*
MOS ***15*** *07:41:23.3±0.9, 21˚.35S×179˚.23W, h612km, mb4.9/10, Error ellipse: s-maj=10.6km s-min=9.7km az=114.9*
NEIC ***15*** *07:41:24.2±0.4, 21˚.41S×179˚.24W, h610km±4km, mb4.8/86, Error ellipse: s-maj=5.3km s-min=4.1km az=116.0*
IDC ***15*** *07:41:24.1±0.8, 21˚.33S×179˚.20W, h606km±9km, mb4.0/26, mb1 4.1/30, mb1mx4.0/36, mbtmp5.0/30, Error ellipse: s-maj=9.4km s-min=8.8km az=52.0*

ISC 15 07:41:24.5±0.4, 21˚.42S±0˚.04×179˚.18W±0˚.05, h613km±4km, h614km: pP-P, n296, σ1§43/334, mb4.7/114, 16C-6D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.50**	**324**	*c iP*	**P**	**07 42 55.5**	**+0.9**
MSVF	**Nonsavu**	**4.50**	**324**	*e*P	**P**	**07 42 55.4**	**+0.8**
RAO	**Raoul Island**	**7.88**	**172**	P	**P**	**07 43 21.9**	**-1.1**
	578nm,0.3s,baz=269,slow=22,SNR=16						
RAO				S	S	07 44 45.4	-15
	68nm,0.3s,baz=248,slow=22,SNR=4.1						
RAO	**Raoul Island**	**7.88**	**172**	*e*P	**P**	**07 43 22.3**	**-0.7**
RAO	**Raoul Island**	**7.88**	**172**	*e*P	**P**	**07 43 22.3**	**-0.7**
RAO				S	S	07 44 45.5	-15
AFI	**Afiamalu**	**10.27**	**45**	P	**P**	**07 43 44.5**	**-1.9**
	12nm,0.3s,baz=356,slow=5.9,SNR=15						
AFI				S	**S**	**07 45 37.8**	**-4.9**
	14nm,0.3s,baz=239,slow=23,SNR=8.4						
AFI	**Afiamalu**	**10.27**	**45**	*e*P	**P**	**07 43 44.3**	**-2.1**
AFI				*e*S	**S**	**07 45 38.0**	**-4.7**
AFI	**Afiamalu**	**10.27**	**45**	*e*P	**P**	**07 43 44.3**	**-2.1**
AFI				*e*S	**S**	**07 45 38.0**	**-4.7**
FUNA	**Funafuti**	**12.91**	**353**	*e*P	**P**	**07 44 11.3**	**-1.1**
DZM	**Mont Dzumac**	**13.38**	**265**	P	**P**	**07 44 16.2**	**-0.8**
	1.5nm,0.3s,baz=77,slow=18,SNR=17						
DZM	**Mont Dzumac**	**13.38**	**265**	*e*P	**P**	**07 44 15.2**	**-1.8**
OUZ	**Omahuta**	**15.14**	**203**	*e*P	**P**	**07 44 36.1**	**+2.9**
	266nm,1.1s						
MXZ	**Matakaoa Point**	**16.24**	**187**	*e*P	**P**	**07 44 42.5**	**-0.6**
	182nm,1.3s						
URZ	**Urewera**	**17.09**	**190**	P	**P**	**07 44 50.0**	**-1.0**
	13nm,0.3s,baz=255,slow=3.2,SNR=64						
URZ				S	**S**	**07 47 32.8**	**-6.1**
	4.9nm,0.3s,baz=197,slow=19,SNR=11						
URZ	**Urewera**	**17.09**	**190**	*e*P	**P**	**07 44 48.8**	**-2.2**
	64nm,1.0s						
URZ				*e*S	**S**	**07 47 35.3**	**-3.6**
BKZ	**Black Stump Fm**	**18.08**	**191**	*e*P	**P**	**07 44 58.8**	**-1.3**
	82nm,1.5s						
RAR	**Rarotonga**	**18.08**	**93**	P	**P**	**07 44 59.3**	**-1.0**
	1.1nm,0.3s,baz=233,slow=6.7,SNR=5.1						
BFZ	**Birch Farm**	**19.59**	**190**	*e*P	**P**	**07 45 12.6**	**-1.2**
	86nm,1.3s						
SNZO	**South Karori**	**20.50**	**193**	*e*P	**P**	**07 45 21.2**	**-0.6**
	245nm,1.4s						
KHZ	**Kahutara**	**21.81**	**195**	*e*P	**P**	**07 45 32.2**	**-1.3**
	187nm,1.6s						
LTZ	**Lake Taylor**	**22.48**	**197**	*e*P	**P**	**07 45 37.9**	**-1.6**
	75nm,1.3s						
OXZ	**Oxford**	**23.04**	**197**	*e*P	**P**	**07 45 43.6**	**-0.9**
	47nm,1.1s						
HNR	**Honiara**	**23.35**	**297**	P	**P**	**07 45 46.8**	**-0.9**
	45nm,0.4s,baz=172,slow=7.1,SNR=2.0						
RPZ	**Rata Peaks**	**23.68**	**198**	P	**P**	**07 45 51.0**	**+0.9**
	15nm,0.9s,baz=45,slow=5.7,SNR=5.0						
RPZ				S	**S**	**07 49 18.1**	**-5.2**
	18nm,1.1s,baz=240,slow=20,SNR=2.1						
RPZ	**Rata Peaks**	**23.68**	**198**	*e*P	**P**	**07 45 51.3**	**+1.2**
	116nm,1.5s						
RPZ				S	**S**	**07 49 18.1**	**-5.2**
FOZ	**Fox Glacier**	**23.88**	**200**	*e*P	**P**	**07 45 52.6**	**+0.6**
	92nm,1.2s						
TARA	**Tarawa**	**23.91**	**340**	*e*P	**P**	**07 45 52.4**	**-0.2**
	472nm,1.4s						
LBZ	**Lake Benmore**	**24.54**	**199**	*e*P	**P**	**07 45 57.8**	**0.0**
	203nm,1.8s						
WKZ	**Wanaka**	**25.30**	**200**	*e*P	**P**	**07 46 04.3**	**-0.1**
	119nm,1.4s						
MLZ	**Mavora Lakes**	**26.07**	**201**	*e*P	**P**	**07 46 12.2**	**+0.9**
	190nm,1.9s						
DCZ	**Deep Cove**	**26.48**	**202**	*e*P	**P**	**07 46 15.0**	**+0.2**
	67nm,1.4s						
WHZ	**Wether Hill Ro**	**26.59**	**200**	*e*P	**P**	**07 46 17.1**	**+1.3**
	94nm,1.5s						
EIDS	**Eidsvold**	**27.55**	**256**	*e*P	**P**	**07 46 24.6**	**+0.1**
	46nm,1.6s						
ARMA	**Armidale**	**27.68**	**245**	*e*P	**P**	**07 46 27.1**	**+1.5**
	25nm,1.3s						
PPT	**Papeete**	**28.15**	**87**	P	**P**	**07 46 30.4**	**+0.7**
	28nm,0.6s,baz=67,slow=8.5,SNR=4.7						
PPT	**Papeete**	**28.15**	**87**	*e*P	**P**	**07 46 31.1**	**+1.4**
PPT	**Papeete**	**28.15**	**87**	*e*P	**P**	**07 46 31.1**	**+1.4**
XMAS	**Kiritimati**	**31.55**	**45**	*e*P	**P**	**07 47 00.2**	**+1.3**
	86nm,0.9s						
CTA	**Charters Tower**	**32.31**	**266**	P	**P**	**07 47 05.6**	**+0.3**
	21nm,0.4s,baz=90,slow=12,SNR=12						
PMG	**Port Moresby**	**34.49**	**285**	P	**P**	**07 47 23.5**	**-0.1**
	56nm,0.7s,baz=89,slow=7.3,SNR=10.0						
PMG	**Port Moresby**	**34.49**	**285**	*d iP*	**P**	**07 47 23.4**	**-0.2**
PMG				pmax	pmax		
	comp=Z,224nm,0.8s						
PMG	**Port Moresby**	**34.49**	**285**	*e*P	**P**	**07 47 23.7**	**+0.1**
	comp=Z,57nm,0.8s						
STKA	**Stephens Creek**	**36.40**	**245**	P	**P**	**07 47 39.8**	**+0.6**
	comp=Z,7.5nm,0.6s,baz=96,slow=11,SNR=28						
STKA				ScP	**ScP**	**07 52 36.9**	**+1.5**
	comp=Z,4.7nm,1.0s,baz=76,slow=4.2,SNR=5.0						
STKA	**Stephens Creek**	**36.40**	**245**	*e*P	**P**	**07 47 39.7**	**+0.6**
	comp=Z,1.5nm,0.6s						
STKA				ScP	**ScP**	**07 52 36.9**	**+1.5**
COEN	**Coen**	**36.56**	**275**	*e*P	**P**	**07 47 40.8**	**+0.2**
	comp=Z,26nm,0.8s						
BBOO	**Buckleboo**	**41.16**	**244**	*e*P	**P**	**07 48 17.1**	**-0.2**
	comp=Z,74nm,1.8s						
AS01	**Alice Springs**	**43.20**	**258**	*e*P	**P**	**07 48 33.0**	**-0.4**
AS31	**Alice Springs**	**43.24**	**258**	*e*P	**P**	**07 48 33.6**	**-0.2**
	comp=Z,4.1nm,0.6s						
ASAR	**Alice Springs**	**43.24**	**258**	P	**P**	**07 48 33.5**	**-0.3**
	comp=Z,12nm,0.5s,baz=97,slow=7.8,SNR=224						
ASAR				PcP	**PcP**	**07 50 08.6**	**-0.1**
	comp=Z,2.5nm,0.6s,baz=116,slow=3.5,SNR=7.9						
ASAR				ScP	**ScP**	**07 53 04.0**	**+1.5**
	comp=Z,4.3nm,0.8s,baz=109,slow=4.4,SNR=13						
ASAR				S	**S**	**07 54 15.0**	**-3.0**
	comp=Z,4.3nm,0.7s,baz=95,slow=16,SNR=17						
ASAR				ScS	**ScS**	**07 57 27.1**	**+1.2**
	comp=Z,3.0nm,0.8s,baz=95,slow=7.0,SNR=16						
JAY	**Jayapura**	**43.31**	**290**	P	**P**	**07 48 34.3**	**-0.1**
	comp=Z,5.6nm,0.5s,baz=283,slow=24,SNR=7.2						
WB2	**Warramunga Arr**	**43.38**	**263**	*e*P	**P**	**07 48 34.1**	**-0.7**
	comp=Z,26nm,1.0s						
WRAB	**Tennant Creek**	**43.38**	**263**	*d iP*	**P**	**07 48 33.9**	**-0.9**
WRAB				pmax	pmax		
	comp=Z,63nm,1.0s						
WRAB	**Tennant Creek**	**43.38**	**263**	*e*P	**P**	**07 48 34.0**	**-0.8**
	comp=Z,26nm,1.0s						
WRA	**Warramunga Arr**	**43.39**	**263**	P	**P**	**07 48 34.0**	**-0.9**
	comp=Z,8.1nm,0.3s,baz=96,slow=7.6,SNR=198						
WRA				ScP	**ScP**	**07 53 04.6**	**+1.5**
	comp=Z,3.0nm,0.9s,baz=91,slow=4.2,SNR=7.0						
WRA				S	**S**	**07 54 15.2**	**-5.0**
	comp=Z,1.9nm,0.7s,baz=96,slow=14,SNR=9.3						
KEKH	**Kekaha**	**47.13**	**25**	*e*P	**P**	**07 49 03.5**	**+0.4**
	comp=Z,84nm,0.8s						
HPAH	**Hawaii Prepara**	**47.16**	**31**	*e*P	**P**	**07 49 04.3**	**+0.8**
	comp=Z,99nm,0.8s						
KIP	**Kipapa**	**47.33**	**27**	*e*P	**P**	**07 49 05.5**	**+0.9**
KIP				pmax	pmax		
	comp=Z,313nm,1.8s						
KIP	**Kipapa**	**47.33**	**27**	*e*P	**P**	**07 49 05.5**	**+0.9**
	comp=Z,313nm,1.8s						
FORT	**Forrest**	**47.92**	**247**	*e*P	**P**	**07 49 08.5**	**-0.5**
	comp=Z,202nm,0.8s						
MTN	**Manton Dam**	**48.08**	**272**	*e*P	**P**	**07 49 09.6**	**-0.8**
	comp=Z,26nm,0.6s						

GUMO	**Guam**	**49.56**	**311**	P	**P**	**07 49 21.2**	**0.0**
	comp=Z,52nm,0.6s,baz=115,slow=17,SNR=2.6							
FAKI	**Fak Fak**	**50.65**	**284**	*e*P	**P**	**07 49 28.7**	**-0.6**
	comp=Z,79nm,1.3s							
FITZ	**Fitzroy Crossi**	**51.82**	**263**	ScP	**ScP**	**07 53 39.7**	**+0.8**
	comp=Z,8.0nm,1.3s,baz=124,slow=8.3,SNR=3.1							
FITZ	**Fitzroy Crossi**	**51.82**	**263**	*e*P	**P**	**07 49 37.4**	**-0.2**
	comp=Z,17nm,1.5s							
FITZ				ScP	**ScP**	**07 53 39.7**	**+0.8**
SOEI	**Soe**	**55.44**	**273**	*e*P	**P**	**07 50 02.1**	**-1.1**
	comp=Z,50nm,0.8s							
MBWA	**Marble Bar**	**56.58**	**258**	*e*P	**P**	**07 50 10.3**	**-0.6**
	comp=Z,28nm,1.3s							
SBA	**Scott Base**	**56.89**	**184**	*e*P	**P**	**07 50 14.2**	**+2.2**
SBA				pmax	pmax			
	comp=Z,39nm,1.0s							
SBA	**Scott Base**	**56.89**	**184**	*e*P	**P**	**07 50 14.2**	**+2.2**
	comp=Z,39nm,1.0s							
VNDA	**Vanda**	**56.91**	**185**	P	**P**	**07 50 13.8**	**+1.7**
	comp=Z,7.4nm,0.5s,baz=357,slow=7.8,SNR=72							
VNDA	**Vanda**	**56.91**	**185**	*e*P	**P**	**07 50 14.1**	**+2.0**
VNDA				pmax	pmax			
	comp=Z,10.0nm,0.7s							
VNDA	**Vanda**	**56.91**	**185**	*e*P	**P**	**07 50 14.1**	**+2.0**
	comp=Z,9.6nm,0.7s							
CASY	**Casey**	**62.67**	**205**	*e*P	**P**	**07 50 50.7**	**+0.4**
	comp=Z,36nm,1.1s							
JHJ2	**Mitsune**	**66.87**	**323**	*e*P	**P**	**07 51 17.7**	**+0.5**
	comp=Z,289nm,1.2s							
QSPA	**South Pole Qui**	**68.66**	**180**	*e*P	**P**	**07 51 28.8**	**+1.1**
UGM	**Wanagama**	**68.85**	**270**	*e*P	**P**	**07 51 29.4**	**-0.3**
	comp=Z,468nm,1.8s							
MJAR	**Matsushiro Arr**	**70.30**	**325**	P	**P**	**07 51 37.2**	**-0.5**
	comp=Z,13nm,0.6s,baz=161,slow=6.1,SNR=37							
MAJO	**Matsushiro**	**70.31**	**325**	*d iP*	**P**	**07 51 37.2**	**-0.6**
MAJO				pmax	pmax			
	comp=Z,88nm,0.7s							
MAJO	**Matsushiro**	**70.31**	**325**	*e*P	**P**	**07 51 37.4**	**-0.4**
	comp=Z,17nm,0.8s							
MAT	**Matsushiro**	**70.31**	**325**	P	**P**	**07 51 37.3**	**-0.5**
MJB9	**Matsu-Tunnel**	**70.31**	**325**	*e*P	**P**	**07 51 37.7**	**-0.1**
	comp=Z,4.3nm,0.8s							
JNU	**Nakatsue**	**72.19**	**318**	*e*P	**P**	**07 51 48.8**	**-0.1**
	comp=Z,18nm,1.1s							
YULB	**Yu-li**	**73.09**	**304**	*e*P	**P**	**07 51 53.1**	**-1.1**
	comp=Z,12nm,0.7s							
TPUB	**Ta-pu**	**73.56**	**304**	*e*P	**P**	**07 51 55.4**	**-1.5**
	comp=Z,47nm,0.7s							
SSLB	**Suanglung**	**73.57**	**304**	*e*P	**P**	**07 51 55.9**	**-1.0**
	comp=Z,22nm,0.7s							
ASAJ	**Asahikawa**	**74.02**	**332**	*e*P	**P**	**07 52 00.7**	**+1.8**
	comp=Z,19nm,0.7s							
SMY	**Shemya**	**74.06**	**356**	*e*P	**P**	**07 51 58.3**	**-0.6**
SMY				pmax	pmax			
	comp=Z,45nm,0.9s							
SMY	**Shemya**	**74.06**	**356**	*e*P	**P**	**07 51 58.3**	**-0.6**
	comp=Z,44nm,0.9s							
NIKH	**Nikolski High**	**74.62**	**6**	*e*P	**P**	**07 52 01.8**	**-0.3**
	comp=Z,90nm,0.8s							
UNV	**Unalaska Valle**	**75.75**	**8**	*e*P	**P**	**07 52 07.5**	**-0.8**
	comp=Z,30nm,1.1s							
AKUT	**Akutan**	**76.12**	**8**	*e*P	**P**	**07 52 09.8**	**-0.5**
	comp=Z,162nm,1.4s							
YSS	**Yuzh-Sakhalins**	**76.23**	**334**	*i*P	**P**	**07 52 12.3**	**+1.2**
YSS				pmax	pmax			
	comp=Z,23nm,1.2s							
KSRS	**Korea Array**	**76.85**	**319**	P	**P**	**07 52 15.3**	**+0.6**
	comp

	comp=Z,26nm,0.6s								
KLU	Klutina	86.83	15	eP		P	07 53 05.9	+1.1	
	comp=Z,3.9nm,0.6s								
SEY	Seymchan	87.02	347	deP		P	07 53 05.4	-0.1	
SNAA	Sanae	87.12	179	P		P	07 53 05.5	-0.7	
SNAA	Sanae	87.12	179	c iP		P	07 53 05.4	-0.7	
SNAA	Sanae	87.12	179	eP		P	07 53 05.6	-0.5	
BALM	Baldy	87.37	17	eP		P	07 53 08.0	+0.6	
BALM	Baldy	87.37	17	eP		P	07 53 08.0	+0.6	
KTH	Kantishna Hill	87.54	12	eP		P	07 53 07.0	-1.0	
	comp=Z,9.0nm,0.8s								
HLID	Hailey	87.74	41	eP		P	07 53 11.0	+1.4	
	comp=Z,1.6nm,0.8s								
NVL	N'lazarevskaya	87.74	184	eP		P	07 53 08.5	-0.5	
XAN	Xi'an	87.82	308	P		P	07 53 10.3	+0.3	
XAN				pmax	pmax				
	comp=Z,8.0nm,0.8s								
XAN				pmax	pmax				
	comp=Z,140nm,7.7s								
RND	Reindeer	87.83	13	eP		P	07 53 09.4	0.0	
RND				pmax	pmax				
	comp=Z,22nm,0.8s								
RND	Reindeer	87.83	13	eP		P	07 53 09.4	0.0	
	comp=Z,22nm,0.8s								
VNA1	Neumayer--Stat	87.96	177	P		P	07 53 09.7	-0.3	
BPAW	Bear Paw Mtn.	88.02	12	eP		P	07 53 09.3	-0.9	
	comp=Z,7.2nm,1.5s								
MNTX	Cornudas Mount	88.18	55	eP		P	07 53 13.4	+1.6	
	comp=Z,4.7nm,0.8s								
BNM	Barren Site	88.35	52	eP		P	07 53 14.1	+1.4	
TX31	Lajitas Ar. Si	88.47	58	eP		P	07 53 14.9	+1.7	
TXAR	Lajitas Array	88.47	58	P		P	07 53 14.5	+1.3	
	comp=Z,4.4nm,0.8s,baz=218,slow=5.9,SNR=51								
TXAR				PKKPbc	PKKPbc		08 10 52.4	+0.6	
	comp=Z,0.6nm,0.7s,baz=108,slow=3.1,SNR=8.0								
KMI	Kunming	88.79	297	P		P	07 53 15.1	+0.1	
KMI				pmax	pmax				
	comp=Z,12nm,0.8s								
KMI				pmax	pmax				
	comp=Z,100nm,4.1s								
ANMO	Albuquerque	88.83	52⇑	eP		P	07 53 15.6	+0.7	
ANMO				pmax	pmax				
	comp=Z,3.0nm,0.9s								
ANMO	Albuquerque	88.83	52	eP		P	07 53 16.1	+1.2	
	comp=Z,2.5nm,0.9s								
WRH	Wood River Hil	88.94	13	eP		P	07 53 13.7	-0.7	
	comp=Z,9.0nm,0.8s								
CCB	Clear Creek Bu	89.15	13	eP		P	07 53 14.5	-0.8	
	comp=Z,12nm,1.1s								
HHC	Hu-ho-hao-te	89.21	315	eP		P	07 53 18.3	+1.9	
HHC				pP	pP		07 55 22.3	-5.9	
HHC				PP	PP		07 57 02.3	+3.4	
HHC				SKS	SKSac		08 02 45.0	-3.6	
HHC				S	S		08 03 12.1	-2.9	
HHC				SS	SS		08 09 31.5	+2.2	
HHC				pmax	pmax				
	comp=Z,29nm,1.2s								
HHC				pmax	pmax				
	comp=Z,94nm,4.6s								
DLBC	Dease Lake	89.32	23	P		P	07 53 17.2	+0.8	
	comp=Z,1.8nm,0.9s,baz=254,slow=9.4,SNR=3.9								
MDM	Murphy Dome	89.33	13	eP		P	07 53 15.7	-0.7	
	comp=Z,8.1nm,0.9s								
COLA	College	89.34	13	eP		P	07 53 15.6	-0.7	
COLA				pmax	pmax				
	comp=Z,3.0nm,0.5s								
COLA	College	89.34	13	eP		P	07 53 15.6	-0.7	
	comp=Z,3.3nm,0.5s								
CM01	Chiang Mai Arr	89.36	290	eP		P	07 53 18.4	+1.0	
CMAR	Chiang Mai Arr	89.39	290	P		P	07 53 18.9	+1.3	
	comp=Z,4.4nm,0.8s,baz=133,slow=3.6,SNR=15								
PLCA	Paso Flores	89.44	134	P		P	07 53 19.0	+1.4	
	comp=Z,9.1nm,0.7s,baz=257,slow=5.0,SNR=26								
PLCA	Paso Flores	89.44	134	eP		P	07 53 19.4	+1.8	
PLCA				pmax	pmax				
	comp=Z,15nm,0.9s								
PLCA	Paso Flores	89.44	134	eP		P	07 53 19.4	+1.8	
	comp=Z,15nm,0.9s								
ILAR	Eielson Array	89.45	13	P		P	07 53 15.9	-0.9	
	comp=Z,1.9nm,0.4s,baz=216,slow=5.0,SNR=40								
ILAR				pP	pP		07 55 28.9	+0.2	
	comp=Z,1.0nm,1.0s,baz=233,slow=5.2,SNR=4.2								
ILAR				PP	PP		07 56 55.4	-4.7	
	comp=Z,1.3nm,1.0s,baz=220,slow=7.6,SNR=4.2								
ILB	Eielson Array	89.45	13	eP		P	07 53 16.2	-0.6	
IL1	Eielson Array	89.45	13	eP		P	07 53 16.3	-0.5	
CHTO	Chiang Mai	89.52	290	eP		P	07 53 19.5	+1.3	
CHTO				pmax	pmax				
	comp=Z,6.0nm,0.6s								
CHTO	Chiang Mai	89.52	290	eP		P	07 53 19.5	+1.3	
	comp=Z,5.7nm,0.6s								
BILL	Bilibino	89.84	355	i P		P	07 53 18.4	-0.1	
BILL				pmax	pmax				
	comp=Z,5.0nm,0.8s								
S22A	4UR Ranch, Cre	89.85	49	eP		P	07 53 19.8	+0.1	
	comp=Z,3.9nm,1.3s								
BW06	Boulder Array	90.38	44	eP		P	07 53 22.2	+0.2	
PDAR	Pinedale Array	90.38	44	P		P	07 53 22.2	+0.3	
	comp=Z,0.6nm,0.5s,baz=188,slow=3.3,SNR=7.8								
DAWY	Dawson	90.64	16	eP		P	07 53 22.6	+0.2	
	comp=Z,2.5nm,0.9s								
EGAK	Eagle	90.77	15	eP		P	07 53 22.8	-0.1	
	comp=Z,3.3nm,0.7s								
SDCO	Great Sand Dun	90.78	50	eP		P	07 53 25.4	+1.3	
	comp=Z,11nm,2.0s								
EFI	East Falkland	90.90	148	eP		P	07 53 24.9	+0.9	
EFI	East Falkland	90.90	148	eP		P	07 53 24.9	+0.9	
	comp=Z,393nm,1.6s								
COLD	Coldfoot	90.98	11	eP		P	07 53 24.5	+0.7	
	comp=Z,4.1nm,1.1s								
CMIG	Matias Romero	91.00	72	P		P	07 53 25.8	+0.7	
	comp=Z,2.2nm,0.6s,baz=309,slow=3.3,SNR=4.6								
LZH	Lanzhou	92.45	308	eP		P	07 53 32.5	+0.9	
LZH				pP	pP		07 55 42.3	-1.5	
LZH				sP	sP		07 56 43.8	-0.7	
LZH				pmax	pmax				
	comp=Z,20nm,1.0s								
YAK	Yakutsk	92.55	338⇑	eP		P	07 53 30.6	-0.5	
YAK				pmax	pmax				
	comp=Z,13nm,0.6s								
SONM	Songino Array	95.72	319	P		P	07 53 45.9	-0.2	
	comp=Z,0.3nm,0.3s,baz=114,slow=3.6,SNR=2.5								
SONM				PP	PP		07 57 53.1	+4.2	
	comp=Z,0.9nm,0.8s,baz=126,slow=7.5,SNR=4.0								
TIXI	Tiksi	99.35	345	PP	PP		07 58 11.0	-4.4	
	comp=Z,6.4nm,0.8s,baz=360,slow=4.2,SNR=3.3								
LPAZ	La Paz	102.72	113	P		Pdif	07 54 21.3	+2.7	
	comp=Z,0.9nm,0.8s,baz=225,slow=5.7,SNR=5.0								
MKAR	Makanchi Array	111.02	313	PKiKP	PKiKP		07 58 48.1	-1.2	
	comp=Z,0.2nm,0.4s,baz=121,slow=1.4,SNR=2.8								
MKAR				PKKPbc	PKKPbc		08 09 48.3	-0.6	
	comp=Z,2.0nm,0.7s,baz=282,slow=3.5,SNR=14								
MKAR				PKKPab	PKKPab		08 10 01.0	+1.5	
	comp=Z,0.8nm,0.7s,baz=289,slow=3.7,SNR=4.2								
KURK	Kurchatov	113.92	317	PKiKP	PKiKP		07 58 53.4	-1.3	
KURK				PKKPbc	PKKPbc		08 09 38.8	-0.7	
KURK				PKKPab	PKKPab		08 09 47.5	+1.0	
KURBB	Kurchatov Arra	113.97	317	PKiKP	PKiKP		07 58 53.3	-1.4	
	comp=Z,0.9nm,0.5s,baz=104,slow=1.9,SNR=6.5								
KURBB				PKKPbc	PKKPbc		08 09 38.8	-0.5	
	comp=Z,1.1nm,0.6s,baz=276,slow=4.0,SNR=10.0								
KURBB				PKKPab	PKKPab		08 09 47.5	+1.2	
	comp=Z,1.7nm,0.8s,baz=276,slow=5.0,SNR=8.4								
KSH	Kashi	114.51	305	ePKP	PKPdf		07 58 57.4	+1.1	
KSH				ePP	PP		08 00 14.9	+10	
KSH				esPKP			08 02 13.6		
KSH				PKS	PKSdf		08 02 33.8	+0.7	
KSH				SKS	SKSdf		08 05 13.8	+2.5	
KSH				SKKS	SKKSac		08 06 04.1	+1.0	
KSH				AMB	AMB				
	comp=Z,100nm,5.0s								
AAK	Ala-Archa	116.00	308	PKKPbc	PKKPbc		08 09 32.0	-0.5	
	comp=Z,2.1nm,0.4s,baz=221,slow=5.4,SNR=3.8								
PTGA	Pitinga	116.75	102	ePKPdf	PKPdf		07 59 00.5	-0.8	
HUMP	Col San Antoni	117.59	80	ePKPdf	PKPdf		07 59 01.8	-0.8	
CBYP	Canovanas	117.62	80	ePKPdf	PKPdf		07 59 02.0	-0.7	
LMQ	La Malbaie	118.10	47	ePKPdf	PKPdf		07 59 01.3	-1.5	
WVL	Waterville	118.45	50	ePKPdf	PKPdf		07 59 02.8	-0.8	
STVI	Saint Thomas	118.47	80	ePKPdf	PKPdf		07 59 03.5	-0.8	
VOSK	Vostochnaya	118.72	319	ePKIKP	PKPdf		07 59 02.7	-1.2	
VOSK	Vostochnaya	118.72	319	ePKPdf	PKPdf		07 59 02.7	-1.2	
PKME	Peaks-Kenny Pk	118.74	49	ePKPdf	PKPdf		07 59 03.5	-0.5	
BVAR	Borovoye Array	119.07	320	PKP	PKPdf		07 59 03.4	-1.1	
	comp=Z,1.1nm,0.4s,baz=109,slow=3.2,SNR=6.4								
BVAR				PP	PP		08 00 38.2	+2.3	
	comp=Z,0.8nm,0.5s,baz=70,slow=13,SNR=3.8								
OPO	Ambohidratompo	119.67	232	PKP	PKPdf		07 59 07.2	+0.2	
	comp=Z,3.3nm,0.6s,baz=113,slow=4.2,SNR=3.9								
SMRT	St. Maarten	120.12	81	ePKPdf	PKPdf		07 59 05.8	-1.8	
LMN	Caledonia Moun	121.90	49	ePKPdf	PKPdf		07 59 09.3	-0.8	
SPITS	Spitsbergen Ar	122.71	356	PKP	PKPdf		07 59 10.6	-0.3	
	comp=Z,3.0nm,0.6s,baz=90,slow=10,SNR=4.3								
SUR	Sutherland	123.19	200	PKP	PKPdf		07 59 13.3	-0.2	
	comp=Z,0.8nm,0.8s,baz=62,slow=2.8,SNR=13								
SUR	Sutherland	123.19	200	ePKPdf	PKPdf		07 59 13.8	+0.3	
BOSA	Boshof	124.95	206	PKP	PKPdf		07 59 16.6	-0.2	
	comp=Z,1.0nm,0.4s,baz=100,slow=4.6,SNR=4.8								
LBTB	Lobatse	127.95	209	PKP	PKPdf		07 59 22.6	-0.1	
	comp=Z,2.8nm,0.6s,baz=118,slow=1.5,SNR=5.0								
LBTB	Lobatse	127.95	209	ePKIKP	PKPdf		07 59 22.2	-0.4	
LBTB	Lobatse	127.95	209	ePKPdf	PKPdf		07 59 22.2	-0.4	
GEYT	Alibeck	128.34	302	SKPbc	SKPbc		08 01 47.0		
	comp=Z,2.4nm,0.5s,baz=68,slow=4.0,SNR=4.5								
ARCES	ARCESS Array B	129.61	349	PKP	PKPdf		07 59 23.7	-0.5	
	comp=Z,3.7nm,0.8s,baz=318,slow=1.6,SNR=5.5								
ARCES				SKPbc	SKPbc		08 01 49.6	-0.5	
	comp=Z,19nm,0.9s,baz=44,slow=3.7,SNR=11								
MATP	Matopo	130.39	215	PKP	PKPdf		07 59 26.9	-0.5	
	comp=Z,4.1nm,0.7s,baz=170,slow=1.6,SNR=9.9								
MATP				SKPbc	SKPab		08 01 55.0	-0.1	
	comp=Z,7.3nm,0.9s,baz=161,slow=2.4,SNR=9.5								
LSZ	Lusaka	134.71	219	PKP	PKPdf		07 59 35.4	-0.2	
	comp=Z,4.4nm,0.6s,baz=214,slow=0.3,SNR=7.9								
FINES	FINESS Array B	136.33	343	PKhKP	PKPpre		07 59 27.1		
	comp=Z,0.7nm,0.5s,baz=58,slow=3.4,SNR=3.4								
FINES				PKP	PKiKP		07 59 38.0	-0.9	
	comp=Z,2.4nm,0.8s,baz=64,slow=2.3,SNR=7.2								
FINES				SKP			08 02 12.9		
	comp=Z,10nm,0.9s,baz=64,slow=4.4,SNR=12								
TSUM	Tsumeb	136.43	203	PKP	PKPdf		07 59 39.1	+0.4	
	comp=Z,4.0nm,0.8s,baz=246,slow=2.7,SNR=7.2								
KBZ	Khabaz	138.72	313	SKPab	SKPab		08 02 30.7	0.0	
	comp=Z,4.1nm,1.1s,baz=76,slow=4.3,SNR=3.8								
KVAR	Kislovodsk Arr	138.78	313	SKPbc	SKPbc		08 02 21.6	+1.2	
	comp=Z,4.5nm,0.4s,baz=66,slow=9.0,SNR=4.3								
NOA	NORSAR Array B	139.75	352	PKhKP	PKPpre		07 59 35.2		
	comp=Z,1.1nm,0.9s,baz=17,slow=4.7,SNR=3.4								
NOA				PKP	PKPdf		07 59 42.8	-0.6	
	comp=Z,0.1nm,0.3s,baz=17,slow=4.7,SNR=2.6								
NOA				SKPbc	SKPbc		08 02 23.1	+0.9	
	comp=Z,1.4nm,0.8s,baz=6.3,slow=4.0,SNR=4.5								
HFS	Hagfors	140.26	350	PKhKP	PKPpre		07 59 37.1		
	comp=Z,2.1nm,0.5s,baz=67,slow=2.4,SNR=23								
HFS				SKPbc	SKPbc		08 02 23.6	+0.1	
	comp=Z,5.3nm,0.8s,baz=48,slow=2.2,SNR=5.9								
SHEL	Horse Pasture	142.30	170	i PKIKP	PKPdf		07 59 47.9	-1.4	
SHEL	Horse Pasture	142.30	170	ePKPdf	PKPdf		07 59 47.7	-1.6	
AKASG	Malin Array Be	143.26	330	PKP	PKPab		07 59 47.2	-1.0	
	comp=Z,8.3nm,0.5s,baz=42,slow=4.4,SNR=71								
AKASG				SKPbc	SKPbc		08 02 31.1	-0.2	
	comp=Z,3.1nm,0.7s,baz=43,slow=3.0,SNR=12								
KIEV	Kiev	143.27	330	d iPKIKP	PKPab		07 59 47.2	-1.1	
KIEV	Kiev	143.27	330	ePKPdf	PKPab		07 59 47.3	-0.9	
AK11	Malin Array Si	143.30	330	ePKPdf	PKPab		07 59 47.4	-1.0	
MBAR	Mbarara	143.49	237	ePKIKP	PKPab		07 59 50.3	-0.1	
MBAR	Mbarara	143.49	237	ePKPbc	PKPab		07 59 50.3	-0.1	
EKA	Eskdalemuir Ar	146.00	4	PKPbc	PKPdf		07 59 53.4	-1.0	
	comp=Z,1.4nm,0.5s,baz=339,slow=1.8,SNR=6.1								
BRTR	Keskin Array B	146.62	311	PKPbc	PKPbc		07 59 58.1	-0.8	
	comp=Z,2.8nm,0.6s,baz=106,slow=3.3,SNR=12								
BRTR				pPKPbc	pPKPbc		08 02 18.6	+0.9	
	comp=Z,2.3nm,0.9s,baz=112,slow=3.3,SNR=6.1								
BR231	Keskin MP Arra	147.18	311	ePKPdf	PKPbc		07 59 59.0	-1.3	
BUR08	Bucovina Ar. S	147.28	329	ePKPbc	PKPbc		08 00 00.6	+0.3	
MMAI	Mount Meron Ar	147.29	298	PKPbc	PKPbc		08 00 01.3	+0.5	
	comp=Z,4.9nm,0.7s,baz=47,slow=2.4,SNR=3.3								
BURAR	Bucovina Array	147.29	329	⇑ iP	PKPab		08 00 03.7	-0.7	
TESR	Tescani	147.33	326	⇑ iP	PKPab		08 00 04.0	-0.4	
MLR	Muntele Rosu	148.37	325	PKPab	PKPab		08 00 08.9	0.0	
	comp=Z,1.3nm,0.7s,baz=172,slow=0.5,SNR=7.0								
MLR	Muntele Rosu	148.37	325	ePKP2	PKPab		08 00 08.7	-0.2	
MLR	Muntele Rosu	148.37	325	ePKPab	PKPab		08 00 08.7	-0.2	
OKC	Ostrava-Krasne	148.50	338	ePKPAB	PKPab		08 00 09.3	+0.3	
OKC	Ostrava-Krasne	148.50	338	ePKP2	PKPab		08 00 09.3	+0.3	
UPC	Upice	148.60	341	ePKPAB	PKPab		08 00 10.0	+0.5	
UPC	Upice	148.60	341	ePKP2	PKPab		08 00 10.0	+0.5	
DPC	Dobruska-Polom	148.65	341	ePKPAB	PKPab		08 00 10.3	+0.6	
DPC				epPKP	pPKPdf		08 02 27.5	+6.9	
DPC	Dobruska-Polom	148.65	341	ePKP2	PKPab		08 00 10.3	+0.6	
CLL	Collm	148.68	345	ePKP	PKPbc		08 00 05.0	+1.4	
	comp=Z,4.0nm,0.6s								
CLL				⇑ iPKPab	PKPab		08 00 09.5	-0.3	
	comp=Z,8.0nm,0.6s								
CLL	Collm	148.68	345	⇑ iPKP	pPKPab		08 02 29.2	+4.5	
	comp=Z,13nm,1.0s								
CLL	Collm	148.68	345	⇑ iPKP2	PKPab		08 00 09.5	-0.3	
CLL				pmax	pmax				
	comp=Z,8.0nm,0.6s								
MORC	Moravsky Berou	148.75	339	⇑ iP	PKPab		08 00 09.7	-0.5	
MORC	Moravsky Berou	148.75	339	ePKP2	PKPab		08 00 09.6	-0.6	
MORC	Moravsky Berou	148.75	339	ePKPab	PKPab		08 00 09.6	-0.6	
BRG	Berggiesshubel	148.85	344	ePKP	PKPab		08 00 10.3	-0.2	
	comp=Z,7.1nm,0.9s								
BRG				e			08 02 28.4		
	comp=Z,23nm,1.8s								
BRG	Berggiesshubel	148.85	344	ePKP	pPKPab		08 02 28.5	+3.1	
	comp=Z,23nm,1.8s								
BRG	Berggiesshubel	148.85	344	ePKP2	PKPab		08 00 10.3	-0.2	
BRG				pmax	pmax				
	comp=Z,7.0nm,0.9s								
ARR	Arges	149.14	326	⇑ iP	PKPbc		08 00 05.6	+0.6	
VRAC	Vranov	149.47	340	PKPab	PKPab		08 00 13.4	+0.2	
	comp=Z,6.3nm,0.6s,baz=126,slow=3.7,SNR=6.6								
PRU	Pruhonice	149.49	342	ePKPAB	PKPab		08 00 13.5	+0.3	
PRU	Pruhonice	149.49	342	ePKP2	PKPab		08 00 13.5	+0.3	
ROSA	Rosais	149.69	49	ePKPbc	PKPbc		08 00 06.9	+0.5	
NKC	Novy Kostel	149.81	345	ePKPAB	PKPab		08 00 14.3	-0.2	
NKC	Novy Kostel	149.81	345	ePKP2	PKPab		08 00 14.3	-0.2	
SIRR	Siria	149.95	330	⇑ iP	PKPbc		08 00 07.4	+0.6	
KHC	Kasperske Hory	150.54	343	ePKPAB	PKPab		08 00 18.0	+0.4	
KHC				epPKP	pPKPdf		08 02 29.8	+6.1	
KHC	Kasperske Hory	150.54	343	ePKPab	PKPab		08 00 17.8	+0.1	
GERES	GERESS Array B	150.76	342	PKPbc	PKPbc		08 00 08.9	+0.2	
	comp=Z,0.4nm,0.3s,baz=38,slow=3.8,SNR=5.2								
GERES				PKPab	PKPab		08 00 18.1	-0.6	
	comp=Z,1.6nm,0.7s,baz=20,slow=4.3,SNR=8.0								
GERES				pPKPab	pPKPab		08 02 30.0	-3.2	
	comp=Z,2.1nm,1.0s,baz=29,slow=3.0,SNR=2.6								
GEA0	GERESS Array S	150.77	342	ePKPbc	PKPbc		08 00 08.4	-0.2	
DYA	Yadsworthy	150.80	6	ePKPbc	PKPbc		08 00 08.2	-0.3	
CONA	Conrad Observa	150.91	339	i PKPab	PKPab		08 00 19.8	+0.5	
	comp=Z,8.6nm,0.8s								
MOA	Molln	151.49	341	i PKPab	PKPab		08 00 21.5	-0.2	
	comp=Z,2.9nm,0.6s								
ARSA	Arzberg	151.61	339	i PKPab	PKPab		08 00 21.5	-0.7	
	comp=Z,3.8nm,0.6s								
SOKA	Soboth	152.28	339	i PKPab	PKPab		08 00 24.8	-0.3	
	comp=Z,6.7nm,1.0s								
WATA	Walderalm	152.72	344	i PKPab	PKPab		08 00 27.9	+0.8	
	comp=Z,7.0nm,0.9s								
WTTA	Wattenberg	152.77	344	i PKPab	PKPab		08 00 27.3	0.0	
	comp=Z,7.1nm,1.0s								
MYKA	Terra Mystica	152.77	340	i PKPab	PKPab		08 00 26.4	-0.9	
	comp=Z,4.7nm,0.5s								
RETA	Reutte	152.78	345	i PKPab	PKPab		08 00 27.0	-0.2	
	comp=Z,4.2nm,0.6s								
MOTA	Moosalm	152.83	345	i PKPab	PKPab		08 00 27.7	+0.2	
	comp=Z,4.7nm,0.8s								
ABTA	Abfaltersbach	153.00	342	i PKPab	PKPab		08 00 28.1	-0.1	
	comp=Z,3.7nm,0.5s								
FETA	Feichten	153.22	345	i PKPab	PKPab		08 00 29.2	0.0	
	comp=Z,4.9nm,1.0s								
DAVOX	Davos/Dischmat	153.65	346	PKPab	PKPab		08 00 31.4	+0.3	
	comp=Z,6.2nm,0.6s,baz=355,slow=1.9,SNR=6.5								
FUORN	Ofenpass-Fuorn	153.71	345	ePKPab	PKPab		08 00 31.8	+0.4	
LAST	Lasithi	154.42	308	ePKPab	PKPab		08 00 34.5	-0.3	
ESDC	Sonseca Array	161.35	12	PKPab	PKPab		08 01 04.0	-0.5	
	comp=Z,0.1nm,0.3s,baz=338,slow=4.6,SNR=5.2								
LIC	Lamto	163.87	159	ePKP1	PKPdf		08 00 17.5	-1.9	
	comp=Z,54nm,1.8s								
LIC	Lamto	163.87	159	eP	PKPab		08 01 16.8	+0.7	
	comp=Z,20nm,0.8s								
KEST	Kesra	163.91	334	PKPab	PKPab		08 01 15.8	-0.2	
	comp=Z,4.4nm,0.7s,baz=236,slow=2.1,SNR=5.0								
KIC	Kosan Boka	164.09	159	ePKP1	PKPdf		08 00 18.4	-1.2	
	comp=Z,16nm,0.8s								
KIC	Kosan Boka	164.09	159	eP	PKPab		08 01 17.9	+0.8	
	comp=Z,36nm,0.7s								
TIC	Toumodi	164.26	158	ePKP1	PKPdf		08 00 18.5	-1.2	
TIC	Toumodi	164.26	158	eP	PKPab		08 01 18.6	+0.7	
DBIC	Dimbokro	164.34	159	PKP	PKPdf		08 00 19.1	-0.7	
	comp=Z,3.7nm,0.6s,baz=198,slow=1.4,SNR=8.7								
DBIC				PKPab	PKPab		08 01 18.9	+0.6	
	comp=Z,5.1nm,0.5s,baz=175,slow=5.6,SNR=14								
TOA0	Torodi Ar. Sit	171.73	186	ePKPdf	PKPdf		08 00 23.7	-1.0	
TOA0				ePKPab	PKPab		08 01 50.6	-0.2	
TORD	Torodi Ar. Bea	171.73	186	PKP	PKPdf		08 00 23.6	-1.0	
	comp=Z,2.6nm,0.8s,baz=302,slow=0.7,SNR=16								
TORD				PKPab	PKPab		08 01 50.6	-0.3	
	comp=Z,4.1nm,0.8s,baz=174,slow=4.1,SNR=16								
TORD				PP	PP		08 05 41.4	0.0	
	comp=Z,1.5nm,1.0s,baz=172,slow=5.4,SNR=6.1								

IDC 15 07:42:50.9±4.8, 29.41S×176.90W, h0km, mb4.4/3, mb1 4.5/3, mb1mx4.0/31, mbtmp4.4/3, Error ellipse: s-maj=166.2km s-min=46.7km az=143.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
STKA	Stephens Creek	35.64	255	P		P	07 49 50.5	-0.2
	5.5nm,0.8s,baz=94,slow=8.4,SNR=5.2							
WRA	Warramunga Arr	45.03	271	P		P	07 51 08.4	-0.2
	1.9nm,0.6s,baz=109,slow=7.7,SNR=3.4							
PETK	Petropavlovsk-	85.10	345	P		P	07 55 28.8	+0.6
	2.3nm,0.6s,baz=134,slow=8.4,SNR=3.3							
FINES	FINESS Array B	144.53	341	PKP		PKPab	08 02 27.0	0.0
	1.8nm,0.5s,baz=48,slow=2.8,SNR=6.0							

MEX 15 08:04:54.8±0.4, 14.30N×92.38W, h15km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	Comitan	1.98	7	eP	Pn	08 05 25.4	-2.6
CCIG				eS	Sn	08 05 47.7	-5.0

ISCJB 15 08:22:34.1±0.4, 39.39N±0.02×39.42E±0.04, h6km±6km, Error ellipse: s-maj=5.2km s-min=3.8km az=17.3
CSEM 15 08:22:34.2±0.1, 39.40N×39.40E, h2km, MD2.8, Error ellipse: s-maj=3.0km s-min=2.6km az=77.0
DDA 15 08:22:34.0, 39.41N×39.39E, h7km, Md2.8
ISK 15 08:22:34.4, 39.35N×39.49E, h7km, MD2.9
ISC 15 08:22:33.0±1.3, 39.38N±0.02×39.43E±0.02, h6km±11km, n29, σ1s02/45, Turkey

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

OXZ eSn Sn 08 48 37.6 -14
AFI Afiamalu 16.53 18 S Sn 08 48 40.9 -21
comp=Z,1.7nm,0.3s,baz=51,slow=23,SNR=3.5
DZM Mont Dzumac 16.83 293 P **P** **08 46 07.9 +3.1**
comp=Z,0.6nm,0.3s,baz=98,slow=14,SNR=11
DZM LR LR 08 51 01.4
comp=Z,1μm,21.3s,baz=134,slow=32
DZM Mont Dzumac 16.83 293 eLQ LQ 08 49 16.6
comp=Z,898nm,27.0s
DZM eLR LR 08 49 56.3
comp=Z,2μm,25.1s
DZM Mont Dzumac 16.83 293 ePn **Pn** **08 46 02.3 -0.5**
comp=Z,181nm,1.5s
RPZ Rata Peaks 16.87 211 P **Pn** **08 46 02.1 -0.9**
comp=Z,2.5nm,0.3s,baz=27,slow=2.3,SNR=7.2
RPZ S Sn 08 48 55.7 -14
comp=Z,0.9nm,0.3s,baz=300,slow=16,SNR=4.6
RPZ Rata Peaks 16.87 211 ePn **Pn** **08 46 02.3 -0.7**
comp=Z,30nm,0.9s
RPZ S Sn 08 48 55.7 -14
FOZ Fox Glacier 17.31 214 ePn **Pn** **08 46 08.4 -0.1**
comp=Z,218nm,1.7s
RAR Rarotonga 17.66 65 P **P** **08 46 14.4 +0.6**
comp=Z,1.4nm,0.3s,baz=143,slow=2.5,SNR=4.6
RAR S Sn 08 49 03.4 -26
comp=Z,1.4nm,0.3s,baz=81,slow=13,SNR=2.4
ODZ Otahua Downs 18.09 209 eP **P** **08 46 19.0 +0.5**
comp=Z,108nm,1.5s
WKZ Wanaka 18.66 213 eP **P** **08 46 22.4 -2.3**
comp=Z,245nm,1.8s
MLZ Mavora Lakes 19.48 213 eP **P** **08 46 34.0 +0.2**
comp=Z,56nm,1.3s
WHZ Wether Hill Ro 19.96 212 eP **P** **08 46 38.6 -0.2**
comp=Z,64nm,1.3s
DCZ Deep Cove 20.02 214 eP Pn 08 46 40.7 -0.6
comp=Z,94nm,1.5s
LHI Lord Howe Isla 20.73 259 P Pn 08 46 49.6 -0.3
baz=20
LHI Lord Howe Isla 20.73 259 eP **P** **08 46 46.5 -0.9**
comp=Z,162nm,1.0s
TBI Tubuai 25.34 82 eLQ LQ 08 52 15.3
comp=Z,949nm,36.5s
TBI eLR LR 08 53 36.5
comp=Z,710nm,30.8s,baz=247
TBI Tubuai 25.34 82 eT T 09 12 53.0
comp=Z,3.7nm,0.3s
ARMA Armidale 27.18 261 P **P** **08 47 51.9 +1.5**
baz=27
ARMA Armidale 27.18 261 eP **P** **08 47 49.0 -1.5**
comp=Z,25nm,1.0s
PAE Paea 27.71 70 eT T 09 16 14.0
comp=Z,1.6nm,0.3s
PPT2 Papeete2 27.75 70 eLQ LQ 08 53 14.0
comp=Z,508nm,25.0s
PPT2 eLR LR 08 54 39.0
comp=Z,775nm,29.5s,baz=233
PPT Papeete 27.76 70 LR LR 08 59 51.5
comp=Z,275nm,18.2s,baz=216,slow=38
EIDS Eidsvold 28.66 271 P **P** **08 48 05.7 +2.1**
baz=28,SNR=4.5
EIDS Eidsvold 28.66 271 eP **P** **08 48 04.3 +0.7**
comp=Z,90nm,1.8s
RMQ Roma 30.39 268 P **P** **08 48 21.0 +2.1**
baz=30,SNR=4.7
TOO Toolangi 32.06 246 P **P** **08 48 32.0 -1.6**
CMSA Cobar Meteorol 32.12 257 P **P** **08 48 35.6 +1.5**
baz=32,SNR=15
QLP Quilpie 34.29 266 P **P** **08 48 55.2 +2.1**
baz=34,SNR=4.8
CTAO Charters Tower 34.65 278 eP **P** **08 48 57.4 +1.1**
CTAO pmax pmax
comp=Z,31nm,1.2s
CTAO Charters Tower 34.65 278 eP **P** **08 48 57.4 +1.1**
comp=Z,31nm,1.2s
STKA Stephens Creek 35.53 256 P **P** **08 49 04.9 +1.1**
comp=Z,15nm,0.8s,baz=93,slow=10,SNR=32
STKA LR LR 09 03 00.6
comp=Z,676nm,18.0s,baz=77,slow=35
STKA Stephens Creek 35.53 256 P **P** **08 49 05.2 +1.4**
baz=35,SNR=20
STKA Stephens Creek 35.53 256 eP **P** **08 49 05.2 +1.4**
STKA pmax pmax
comp=Z,4.0nm,0.8s
STKA Stephens Creek 35.53 256 eP **P** **08 49 05.2 +1.4**
comp=Z,4.3nm,0.8s
MTSU Mount Surprise 37.13 279 P **P** **08 49 19.0 +1.5**
baz=37,SNR=5.0
HTT Hallett 37.58 253 P **P** **08 49 21.7 +0.5**
baz=37,SNR=15
BBOO Buckleboo 40.04 253 P **P** **08 49 41.9 0.0**
baz=40,SNR=12
BBOO Buckleboo 40.04 253 eP **P** **08 49 41.9 0.0**
comp=Z,17nm,0.9s
AS01 Alice Springs 44.05 266 eP **P** **08 50 14.4 -0.4**
AS31 Alice Springs 44.09 266 eP **P** **08 50 14.7 -0.4**
comp=Z,2.6nm,0.6s
ASAR Alice Springs 44.09 266 P **P** **08 50 14.1 -1.0**
comp=Z,5.2nm,0.9s,baz=106,slow=7.6,SNR=30
ASAR LR LR 09 08 40.4
comp=Z,1μm,18.1s,baz=119,slow=36
WB2 Warramunga Arr 45.02 271 eP **P** **08 50 22.0 -0.5**
comp=Z,21nm,0.8s
WRAB Tennant Creek 45.02 271 ⇑iP **P** **08 50 21.8 -0.7**
WRAB pmax pmax
comp=Z,62nm,0.9s
WRAB Tennant Creek 45.02 271 eP **P** **08 50 22.0 -0.6**
comp=Z,23nm,0.8s
WRA Warramunga Arr 45.03 271 P **P** **08 50 21.9 -0.7**
comp=Z,16nm,0.7s,baz=111,slow=7.2,SNR=78
WRA LR LR 09 08 29.0
comp=Z,501nm,18.2s,baz=110,slow=35
WB5 Warramunga Arr 45.03 271 P **P** **08 50 21.8 -0.8**
baz=45
FORT Forrest 47.11 254 eP **P** **08 50 38.4 -0.5**
comp=Z,253nm,0.8s
WRKA Warakurna 48.50 262 P **P** **08 50 49.0 -0.7**
baz=48,SNR=12
SBA Scott Base 48.69 185 eP **P** **08 50 52.5 +2.2**
SBA pmax pmax
comp=Z,20nm,1.4s
SBA Scott Base 48.69 185 eP **P** **08 50 52.5 +2.2**
comp=Z,20nm,1.4s
VNDA Vanda 48.77 186 LR LR 09 07 53.0
comp=Z,163nm,20.6s,baz=27,slow=32
VNDA Vanda 48.77 186 eP **P** **08 50 51.4 +0.4**
VNDA pmax pmax
comp=Z,4.0nm,1.0s
VNDA Vanda 48.77 186 eP **P** **08 50 51.4 +0.4**
comp=Z,4.1nm,1.0s
FITZ Fitzroy Crossi 53.31 269 LR LR 09 13 18.7
comp=Z,197nm,18.4s,baz=120,slow=35
NWAO Narrogin (SRO) 55.49 249 LR LR 09 14 49.2
comp=Z,193nm,18.9s,baz=338,slow=35
CASY Casey 56.09 208 eP **P** **08 51 46.5 +1.1**
comp=Z,25nm,0.8s
MEEK Meekatharra 56.24 256 P **P** **08 51 46.5 -0.6**
baz=56
MAW Mawson 73.18 200 P **P** **08 53 38.8 +2.0**
comp=Z,3.3nm,0.7s,baz=136,slow=9.0,SNR=8.8
MAW Mawson 73.18 200 eP **P** **08 53 38.6 +1.7**
MAW pmax pmax
comp=Z,3.0nm,1.2s
MAW Mawson 73.18 200 eP **P** **08 53 38.6 +1.7**
comp=Z,2.6nm,1.2s
SYO Syowa Base 77.89 193⇓eP **P** **08 54 02.4 -1.5**
SYO Syowa Base 77.89 193⇑eSP **P** **08 54 08.0 +4.1**
MJAR Matsushiro Arr 78.31 325 LR LR 09 29 17.0
comp=Z,33nm,18.1s,baz=110,slow=36
MAJO Matsushiro 78.31 325*c* iP **P** **08 54 05.4 -1.2**
MAJO pmax pmax
comp=Z,73nm,1.1s
MAJO Matsushiro 78.31 325 eP **P** **08 54 08.2 +1.6**
comp=Z,161nm,1.1s
MJB9 Matsu-Tunnel 78.32 325 eP **P** **08 54 06.7 0.0**
comp=Z,38nm,1.1s
SNAA Sanae 78.70 178 P **P** **08 54 09.2 +0.7**
SNAA Sanae 78.70 178 eP **P** **08 54 09.2 +0.7**
SNAA pmax pmax
comp=Z,12nm,1.1s
SNAA Sanae 78.70 178 eP **P** **08 54 09.2 +0.7**
comp=Z,12nm,1.1s
VNA1 Neumayer--Stat 79.49 176 P **P** **08 54 14.0 +1.4**
JNU Nakatsue 79.76 318 P **P** **08 54 13.8 -0.8**
comp=Z,4.5nm,0.9s,baz=144,slow=8.7,SNR=3.3
PLCA Paso Flores 82.20 133 P **P** **08 54 30.1 +2.3**
comp=Z,6.8nm,0.9s,baz=255,slow=5.4,SNR=6.6
PLCA LR LR 09 25 38.0
comp=Z,104nm,18.5s,baz=310,slow=32

PLCA Paso Flores 82.20 133 eP **P** **08 54 27.9 0.0**
PLCA pmax pmax
comp=Z,13nm,1.1s
PLCA Paso Flores 82.20 133 eP **P** **08 54 27.9 0.0**
comp=Z,13nm,1.1s
ASAJ Asahikawa 82.37 332 P **P** **08 54 28.1 -0.1**
comp=Z,13nm,1.0s,baz=146,slow=18,SNR=3.9
KSRS Korea Array 84.53 319 P **P** **08 54 40.1 +0.6**
comp=Z,4.4nm,1.0s,baz=151,slow=5.6,SNR=4.4
KSAR Wonju Array Be 84.54 319 P **P** **08 54 40.1 +0.5**
KSAR Wonju Array Be 84.54 319 P **P** **08 54 40.1 +0.5**
YSS Yuzh-Sakhalins 84.64 334⇓iP **P** **08 54 41.0 +1.2**
YSS pmax pmax
comp=Z,40nm,1.2s
YSS Yuzh-Sakhalins 84.64 334 eP **P** **08 54 39.6 -0.3**
comp=Z,34nm,1.1s
PEA0 Petropavlovsk- 85.49 345 eP **P** **08 54 43.5 -0.5**
PEA0B Petropavlovsk- 85.49 345 eP **P** **08 54 44.0 0.0**
comp=Z,12nm,0.9s
PETK Petropavlovsk- 85.49 345 P **P** **08 54 43.7 -0.2**
comp=Z,4.4nm,0.8s,baz=126,slow=6.9,SNR=7.4
PETK LR LR 09 29 33.1
comp=Z,67nm,18.8s,baz=137,slow=33
QIZ Qiongzhong 85.61 295 P **P** **08 54 45.6 +0.2**
QIZ S **S** **09 05 16.8 +0.5**
GSC Goldstone, Bar 86.00 45 eP **P** **08 54 46.2 -0.9**
GSC pmax pmax
comp=Z,5.0nm,1.0s
GSC Goldstone, Bar 86.00 45 eP **P** **08 54 46.2 -0.9**
comp=Z,4.7nm,1.0s
WAKR Walker 86.57 42 eP **P** **08 54 49.5 -0.5**
comp=Z,10nm,1.3s
USRK Ussuriysk Ar. 87.21 326 P **P** **08 54 53.0 +0.4**
comp=Z,6.4nm,0.8s,baz=105,slow=2.5,SNR=9.5
TPNV Topopah Spring 87.42 44 eP **P** **08 54 53.6 -0.5**
TPNV pmax pmax
comp=Z,5.0nm,0.9s
TPNV Topopah Spring 87.42 44 eP **P** **08 54 53.6 -0.5**
comp=Z,4.6nm,0.9s
Y14A Wickenburg 87.54 48 eP **P** **08 54 54.0 -0.6**
comp=Z,30nm,1.3s
MDJ Mudanjiang 88.69 325 P **P** **08 55 00.4 +0.7**
MDJ pP sP 08 55 10.3 -0.1
MDJ sP pP 08 55 13.4 +5.9
MDJ S **S** **09 05 39.0 -5.9**
MDJ pmax pmax
comp=Z,11nm,0.7s
HABR Khabarovsk 89.01 330 eP **P** **08 54 59.7 -1.3**
HABR e*PP **pP** **08 55 10.3 +1.4**
HABR e*SP **sP** **08 55 14.2 +2.5**
HABR eS **SKSac** **09 05 26.2 -2.7**
HABR e*SS **S** **09 05 44.5 -3.1**
HABR eSS **SS** **09 11 38.2 -3.6**
HABR eSSS SSS 09 15 13.7
HABR pmax pmax
comp=Z,43nm,1.9s
HABR MLR MLR
comp=Z,91nm,18.0s
CCUT Cedar City 89.57 45 eP **P** **08 55 03.0 -1.3**
comp=Z,5.8nm,1.3s
TIA Tai'an 90.28 312 eP **P** **08 55 08.4 +1.1**
TIA pmax pmax
comp=Z,30nm,1.1s
KLR Kul'dur 91.02 329 P **P** **08 55 11.3 +0.9**
comp=Z,1.7nm,0.8s,baz=353,slow=2.4,SNR=6.1
TXAR Lajitas Array 91.28 57 P **P** **08 55 12.5 +0.2**
comp=Z,0.7nm,1.0s,baz=216,slow=6.2,SNR=5.4
TXAR LR LR 09 31 11.9
comp=Z,72nm,18.1s,baz=0.0,slow=32
GYA Guiyang 92.09 299 P **P** **08 55 16.8 +0.6**
GYA pP sP 08 55 27.4 +0.6
GYA PP **PP** **08 59 00.3 +3.8**
GYA SKS **SKSac** **09 05 46.0 -2.1**
GYA S **S** **09 06 15.5 -1.8**
GYA sS sS 09 06 33.9 +3.5
GYA SS **SS** **09 12 29.6 +2.1**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.2s
GYA LR LR
comp=Z,540nm,20.2s
GYA LR LR
comp=Z,500nm,20.5s
GYA LR LR
comp=Z,520nm,20.6s
ANMO Albuquerque 92.48 51⇑eP **P** **08 55 18.8 +1.0**
ANMO pmax pmax
comp=Z,2.0nm,1.3s
HRU Hogsback Ridge 92.48 44 eP **P** **08 55 19.3 +1.6**
HLID Hailey 92.75 40 eP **P** **08 55 17.9 -0.9**
comp=Z,2.0nm,1.0s
F10A Beach Ranch, E 92.79 37 eP **P** **08 55 18.6 -0.2**
comp=Z,3.8nm,0.8s
BJI Beijing 93.18 315 P **P** **08 55 20.8 +0.1**
BJI pmax pmax
comp=Z,8.0nm,1.3s
BJI pmax pmax
comp=Z,180nm,5.8s
LVC Limon Verde 93.38 118 eP **P** **08 55 22.0 -0.7**
comp=Z,15nm,1.2s
TTA Tatalina 93.93 9 eP **P** **08 55 22.3 -1.4**
TTA pmax pmax
comp=Z,12nm,1.4s
TTA Tatalina 93.93 9 eP **P** **08 55 22.3 -1.4**
comp=Z,12nm,1.4s
CM01 Chiang Mai Arr 94.08 289 eP **P** **08 55 25.9 +0.6**
CMAR Chiang Mai Arr 94.11 289 P **P** **08 55 26.7 +1.2**
comp=Z,0.6nm,0.4s,baz=129,slow=3.2,SNR=4.6
CMAR LR LR 09 37 46.9
comp=Z,30nm,20.8s,baz=120,slow=36
KMI Kunming 94.41 296 P **P** **08 55 28.3 +1.3**
KMI pmax pmax
comp=Z,9.0nm,0.5s
KMI pmax pmax
comp=Z,120nm,4.4s
XAN Xi'an 94.52 307 P **P** **08 55 27.8 +0.7**
XAN pP sP 08 55 37.3 -0.5
XAN pmax pmax
comp=Z,8.0nm,1.8s
XAN pmax pmax
comp=Z,82nm,5.9s
PDAR Pinedale Array 95.06 43 P **P** **08 55 30.5 +0.9**
comp=Z,0.2nm,0.6s,baz=210,slow=5.2,SNR=2.9
PDAR LR LR 09 32 44.1
comp=Z,92nm,18.8s,baz=253,slow=32
SEY Seymchan 95.63 346⇑eP **P** **08 55 30.8 -0.6**
DLBC Dease Lake 96.22 23 LR LR 09 30 15.7
comp=Z,42nm,20.3s,baz=260,slow=30
HHC Hu-ho-hao-te 96.52 314 eP **P** **08 55 37.9 +1.8**
HHC SKS **SKSac** **09 06 13.8 +2.5**
HHC pmax pmax
comp=Z,17nm,1.0s
HHC pmax pmax
comp=Z,78nm,5.2s
HHC LR LR
comp=Z,100nm,11.1s
HHC LR LR
comp=Z,140nm,14.8s
HHC LR LR
comp=Z,130nm,13.6s
CD2 Chengdu 96.58 302 eP **P** **08 55 36.0 -0.6**
CD2 pP sP 08 55 47.0 -0.3
CD2 PP **PP** **08 59 30.8 -0.7**
CD2 SKS **SKSac** **09 06 09.8 -2.2**
CD2 S **S** **09 06 54.8 -1.5**
CD2 sS sS 09 07 13.8 +4.3
CD2 SS **SS** **09 13 31.5 +0.1**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.8s
ILAR Eielson Array 97.15 12 P **P** **08 55 36.5 -1.8**
comp=Z,0.3nm,0.8s,baz=232,slow=5.6,SNR=3.8
LPAZ La Paz 97.51 113 P Pdif 08 55 44.3 +2.4
comp=Z,1.4nm,0.8s,baz=216,slow=6.2,SNR=7.8
LPAZ LR LR 09 33 53.0
comp=Z,59nm,18.3s,baz=242,slow=32
LPAZ La Paz 97.51 113 eP **P** **08 55 40.0 -1.9**
LPAZ pmax pmax
comp=Z,3.0nm,0.8s
LPAZ La Paz 97.51 113 eP **P** **08 55 40.0 -1.9**
comp=Z,2.5nm,0.8s
LZH Lanzhou 99.14 306 eP **Pdif** **08 55 50.3 +2.2**
LZH pP sP 08 56 01.3 +2.5
LZH sP pP 08 56 05.6 +10

CPUP Villa Florida 99.59 128 LR LR 09 35 22.8
comp=Z,91nm,18.3s,baz=230,slow=32
YAK Yakutsk 101.08 337⇓iP **Pdif** **08 55 52.6 -3.2**
YAK pmax pmax
comp=Z,21nm,0.6s
SONM Songino Array 103.35 318 Pdiff **Pdif** **08 56 08.3 +1.8**
comp=Z,0.6nm,0.9s,baz=113,slow=3.7,SNR=3.7
WMQ Urumqi 113.61 308 ePKP **PKiKP** **09 00 43.9 -0.9**
KRAR Krasnoyarsk 114.28 322⇓iPKIKP PKPdf 09 00 47.3 +1.8
MK01 Makanchi Array 118.11 310 ePKPdf **PKPdf** **09 00 52.5 -0.8**
MKAR Makanchi Array 118.13 310 PKP **PKPdf** **09 00 52.7 -0.6**
comp=Z,0.6nm,0.5s,baz=82,slow=1.8,SNR=6.5
ZALV Zalesovo Beam 118.23 318 PKP **PKPdf** **09 00 52.5 -0.7**
comp=Z,1.1nm,0.3s,baz=108,slow=4.7,SNR=2.2
KSH Kashi 120.76 301 ePKP **PKPdf** **09 00 58.3 -0.4**
KSH esPKP 09 01 13.8
KSH ePP **PP** **09 02 28.8 +1.3**
KSH PKS **PKSdf** **09 04 33.9 -1.6**
KSH SKS **SKSdf** **09 08 05.9 -3.4**
KSH SKKS **SKKSac** **09 09 17.4 -8.0**
KSH AMB AMB
comp=Z,54nm,4.4s
KSH LR LR
comp=Z,140nm,6.4s
KSH LR LR
comp=Z,140nm,6.7s
KSH LR LR
comp=Z,110nm,6.6s
KURK Kurchatov 121.33 314⇓iPKIKP **PKPdf** **09 00 58.4 -0.9**
KURK Kurchatov 121.33 314 ePKPdf **PKPdf** **09 00 58.7 -0.5**
KURBB Kurchatov Arra 121.37 314 PKP **PKPdf** **09 00 58.6 -0.7**
comp=Z,2.5nm,0.7s,baz=113,slow=2.0,SNR=19
AAK Ala-Archa 122.58 304⇓iPKIKP **PKPdf** **09 01 03.6 +1.4**
KBL Kabul 124.86 293 ePKIKP **PKPdf** **09 01 06.7 -0.2**
KBL Kabul 124.86 293 ePKPdf **PKPdf** **09 01 06.7 -0.2**
KKAR Karatay Array 125.54 304 ePKIKP **PKPdf** **09 01 07.7 0.0**
KKAR Karatay Array 125.54 304 ePKPdf **PKPdf** **09 01 07.7 0.0**
VOSK Vostochnaya 126.28 316 PKIKP **PKPdf** **09 01 08.3 -0.4**
VOSK Vostochnaya 126.28 316 ePKPdf **PKPdf** **09 01 08.3 -0.4**
BVAR Borovoye Array 126.65 316 PKP **PKPdf** **09 01 09.3 -0.1**
comp=Z,3.5nm,0.8s,baz=93,slow=3.0,SNR=17
BRVK Borovoye 126.72 316⇑ePKIKP **PKPdf** **09 01 07.7 -1.8**
BRVK Borovoye 126.72 316 ePKPdf **PKPdf** **09 01 09.4 -0.1**
ZRNK Zerenda 127.48 316 ePKPdf **PKPdf** **09 01 10.8 -0.2**
ARU Arti 133.24 321 *i* PKIKP **PKPdf** **09 01 22.1 +0.3**
ARU 09 03 49.5
ARU SS SS 09 21 27.9 -3.6
GEYT Alibeck 134.17 295 PKP **PKPdf** **09 01 25.7 +1.5**
comp=Z,1.5nm,0.5s,baz=207,slow=0.3,SNR=3.7
ARCES ARCESS Array B 138.22 348 PKhKP PKPpre 09 01 24.5
comp=Z,4.9nm,1.0s,baz=260,slow=2.5,SNR=2.2
KLMR Klimovskoe 140.69 333 ePKIKP **PKPdf** **09 01 41.9 +6.5**
KLMR pmax pmax
comp=Z,11nm,1.3s
GUDG Gudauri 144.62 302 P PKPbc 09 01 42.5 +0.4
GNI Garni 144.64 298*d* iPKIKP **PKPdf** **09 01 43.3 0.0**
GNI Garni 144.64 298 ePKPdf PKPbc 09 01 42.8 +0.7
FIA1 FINESS Array S 144.92 341 ePKPdf **PKPab** **09 01 41.6 -0.5**
FINES FINESS Array B 144.92 341 PKP **PKPab** **09 01 41.5 -0.6**
comp=Z,20nm,0.7s,baz=57,slow=3.1,SNR=47
ZEI Tsey 144.99 303 *i* PKIKP PKPbc 09 01 42.5 -0.8
ZEI pmax pmax
comp=Z,142nm,1.4s
NCK Nalchik 145.11 304⇓*i*PKIKP **PKPbc** **09 01 42.9 -0.5**
GOF Gofitskoye 145.21 307⇑ePKIKP **PKPab** **09 01 44.1 +0.4**
OBN Obninsk 145.23 326 PKPbc **PKPbc** **09 01 42.8 -0.5**
comp=Z,18nm,0.5s,baz=358,slow=8.3,SNR=6.3
OBN Obninsk 145.23 326 ePKIKP **PKPbc** **09 01 42.7 -0.5**
OBN pmax pmax
comp=Z,17nm,0.9s
OBN Obninsk 145.23 326 ePKPbc **PKPbc** **09 01 43.1 -0.2**
ONI Oni 145.35 303 P **PKPbc** **09 01 44.5 +0.3**
ONI Oni 145.35 303 PKIKP **PKPbc** **09 01 44.5 +0.3**
AKH Akhalkalaki 145.47 301 P **PKPab** **09 01 45.7 +0.6**
AKH Akhalkalaki 145.47 301 PKIKP **PKPab** **09 01 45.7 +0.6**
KBZ Khabaz 145.57 305 PKPbc **PKPdf** **09 01 44.7 +0.2**
comp=Z,8.6nm,1.1s,baz=113,slow=2.6,SNR=14
KIV Kislovodsk 145.68 305*c* *i* PKP2 **PKPdf** **09 01 45.4 +0.5**
KIV pmax pmax
comp=Z,19nm,1.1s
KIV MLR MLR
comp=Z,44nm,16.0s
KIV Kislovodsk 145.68 305 ePKPdf **PKPdf** **09 01 45.4 +0.5**
VSR Storozhevoye 145.73 319 ePKHKP PKPpre 09 01 41.0
NEY Neytrino 145.78 304⇑ePKP2 **PKPdf** **09 01 45.2 0.0**
VSU Vasula 147.07 337*c* iPKP2 **PKPbc** **09 01 48.2 -0.6**
NC303 NORSAR Array S 148.11 352 ePKPbc **PKPbc** **09 01 51.3 -0.3**
NB201 NORSAR Array S 148.29 352 ePKPbc **PKPbc** **09 01 51.5 -0.5**
NB2 NORSAR Subarra1 148.31 352 PKP **PKPbc** **09 01 51.4 -0.7**
comp=Z,2.1nm,0.7s,baz=9.4,slow=2.9
NOA NORSAR Array B 148.31 352 PKPbc **PKPbc** **09 01 52.0 -0.1**
comp=Z,4.7nm,0.9s,baz=14,slow=4.4,SNR=11
NBO02 NORSAR Array S 148.34 353 ePKPbc **PKPbc** **09 01 51.4 -0.8**
NC602 NORSAR Array S 148.57 352 ePKPbc **PKPbc** **09 01 52.0 -0.8**
ANN Anapa 149.13 308 *i* PKIKP **PKPdf** **09 01 51.4 +0.9**
ANN e 09 02 05.8
KONO Kongsberg 149.85 353 ePKPbc **PKPbc** **09 01 56.3 +0.4**
ASF Jabal al Asfar 151.00 283 PKPbc **PKPbc** **09 02 00.1 +0.4**
comp=Z,4.7nm,0.7s,baz=86,slow=1.5,SNR=9.6
SIM Simferopol' 151.31 310 ePKIKP **PKPdf** **09 01 55.8 +1.9**
SIM pmax pmax
comp=Z,27μm,0.9s
AKASG Malin Array Be 151.40 324 PKPbc **PKPbc** **09 01 59.5 -0.5**
comp=Z,9.7nm,0.7s,baz=47,slow=3.0,SNR=34
AKBB Malin Array Si 151.40 324 ePKPbc **PKPbc** **09 01 59.1 -0.8**
AK11 Malin Array Si 151.44 324 ePKPbc **PKPbc** **09 01 59.8 -0.2**
MMAI Mount Meron Ar 152.30 285 PKPbc **PKPbc** **09 02 04.0 +1.3**
comp=Z,3.5nm,0.4s,baz=205,slow=3.4,SNR=12
MMAI PKPab **PKPab** **09 02 14.5 +1.8**
comp=Z,8.3nm,0.7s,baz=132,slow=2.4,SNR=7.0
EIL Elat 152.38 278 PKPbc **PKPbc** **09 02 03.5 +0.6**
comp=Z,6.5nm,0.7s,baz=220,slow=5.4,SNR=7.2
EIL PKPab **PKPab** **09 02 14.0 +0.9**
comp=Z,8.0nm,0.7s,baz=352,slow=5.3,SNR=5.9
BR131 Keskin Array S 153.15 300 ePKPbc **PKPbc** **09 02 03.2 -1.2**
BR131 ePKPab **PKPab** **09 02 16.2 +0.1**
BRTR Keskin Array B 153.15 300 PKPbc **PKPbc** **09 02 04.1 -0.3**
comp=Z,2.8nm,1.0s,baz=101,slow=2.5,SNR=11
BRTR PKPab **PKPab** **09 02 15.8 -0.4**
comp=Z,3.6nm,0.8s,baz=108,slow=4.0,SNR=5.8
BR231 Keskin MP Arra 153.77 300 ePKPbc **PKPbc** **09 02 04.9 -0.8**
TIRR Tirgusor 155.21 313 ePKPab **PKPab** **09 02 24.2 -0.4**
BUR08 Bucovina Ar. S 155.36 322 ePKPab **PKPab** **09 02 25.2 0.0**
UZH Uzhgorod 156.16 327 ePKP2 **PKPab** **09 02 28.4 0.0**
MLR Muntele Rosu 156.20 317 PKPab **PKPab** **09 02 28.4 -0.5**
comp=Z,0.5nm,0.5s,baz=41,slow=7.4,SNR=4.2
KHC Kasperske Hory 159.12 340 ePKPAB **PKPab** **09 02 41.0 -0.2**
KHC Kasperske Hory 159.12 340 ePKP2 **PKPab** **09 02 41.0 -0.2**
VTS Vitosha 159.43 314 ePKP2 **PKPab** **09 02 43.2 +0.2**
VTS Vitosha 159.43 314 ePKPab **PKPab** **09 02 43.1 +0.2**
TOA0 Torodi Ar. Sit 163.36 175 ePKPab **PKPab** **09 03 01.4 +0.9**
TORD Torodi Ar. Bea 163.36 175 PKP **PKPdf** **09 02 10.4 +0.5**
comp=Z,1.6nm,1.1s,baz=188,slow=2.9,SNR=4.5
TORD PKPab **PKPab** **09 03 01.0 +0.5**
comp=Z,1.2nm,0.6s,baz=184,slow=3.6,SNR=6.1
PAB San Pablo 168.53 30 PKIKP **PKPdf** **09 02 12.1 -1.3**
PAB San Pablo 168.53 30 ePKPdf **PKPdf** **09 02 12.2 -1.3**

*ISCJB **15** 08:50:46.4±0.5, 32.82N±0.03×115.45W±0.03, h21km±4km, Error ellipse: s-maj=4.9km s-min=3.9km az=163.7*
*ECX **15** 08:50:46.8±0.5, 32.87N×115.44W, h15km±1km, MD2.7, ML2.8*
*NEIC **15** 08:50:47.2, 32.79N×115.46W, h16km, ML2.8(PAS), After PAS.*
NEIC Felt at EI Centro.
ISC 15 08:50:46.6±0.8, 32.82N±0.03×115.47W±0.02, h18km±5km, n27, σ0 93/44, 2C-4D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DREC	**Desert Rsrch C**	**0.03**	**133**	*e*P		**Pg**	**08 50 49.2 -0.4**
DREC				*e*S		**Sg**	**08 50 51.7 +0.1**
ERPC	**Ernies Place**	**0.18**	**245**	*e*P		**Pg**	**08 50 51.7 +0.6**
COK	**Cook Ranch**	**0.22**	**277**	*e*P		**Pg**	**08 50 52.4 +0.6**
WESC	**Westside Schoo**	**0.23**	**254**⇑	*e*P		**Pg**	**08 50 52.4 +0.5**
WESC				*e*S		**Sg**	**08 50 56.4 +0.8**
SGL	**Mount Signal**	**0.28**	**232**⇓	*i*P		**Pg**	**08 50 52.7 0.0**
SWSC	**Sam W. Stewart**	**0.30**	**294**	P		**Pg**	**08 50 53.6 +0.4**
	baz=120,SNR=32						
SWSC				S		**Sb**	**08 50 58.6 +0.4**
	baz=120						

CPBX	**Cerro Prieto**	**0.43**	**161**	*e*P		**Pg**	**08 50 55.5**	**+0.3**
CPBX				*e*S		**Sg**	**08 51 01.9**	**+0.8**
CPBX				IAML			08 51 04.0	
	comp=E,2μm,0.2s							
RMX	**La Rumorosa**	**0.56**	**247**	*e*P		**Pg**	**08 50 57.2**	**-0.6**
RMX				*e*S		**Sg**	**08 51 05.6**	**+0.3**
IKP	**In-Ko-Pah, Jac**	**0.57**	**253**	P		**Pg**	**08 50 58.0**	**+0.1**
	baz=78,SNR=9.8							
IKP				S		**Sg**	**08 51 05.4**	**-0.1**
	baz=78							
IKP	**In-Ko-Pah, Jac**	**0.57**	**253**	*e*P		**Pg**	**08 50 57.8**	**-0.1**
IKP				*e*S		**Sg**	**08 51 06.5**	**+1.0**
GLA	**Glamis**	**0.59**	**67**	P		**Pb**	**08 50 58.0**	**-0.3**
	baz=242,SNR=19							
GLA				S		**Sb**	**08 51 05.7**	**-0.6**
	baz=242							
MONP2	**Monument Peak**	**0.81**	**275**	P		**Pg**	**08 51 01.9**	**-0.5**
	baz=98,SNR=14							
MONP2				S		**Sg**	**08 51 12.9**	**-0.2**
	baz=98							
BC3	**Big Chuckawall**	**0.83**	**1**	P		**Pb**	**08 51 02.3**	**-0.3**
	baz=180,SNR=30							
BC3				S		**Sb**	**08 51 13.5**	**0.0**
	baz=180							
BAR	**Barrett**	**1.02**	**262**	*e*P		**Pb**	**08 51 05.2**	**-0.6**
CBX	**Cerro Bola**	**1.13**	**244**	*e*P		**Pn**	**08 51 07.1**	**-0.5**
CBX				IAML			08 51 26.1	
	comp=N,241nm,0.5s							
TPFO	**Pinon Flats**	**1.14**	**314**	P		**Pb**	**08 51 06.4**	**-1.5**
	baz=134							
TPFO				S		**Sb**	**08 51 21.0**	**-1.4**
	baz=134							
PFO	**Pinyon Flats O**	**1.15**	**314**	P		**Pb**	**08 51 06.6**	**-1.3**
	baz=134,SNR=13							
PFO				S		**Sb**	**08 51 21.5**	**-1.1**
	baz=134							
PFO	**Pinyon Flats O**	**1.15**	**314**	*e*Pn		**Pb**	**08 51 07.2**	**-0.8**
PFO				*e*Sn		**Sg**	**08 51 23.4**	**-0.4**
Y12C	**Blythe**	**1.22**	**40**	S		**Sn**	**08 51 23.9**	**-0.9**
	baz=218							
SDRC	**San Diego Road**	**1.25**	**266**	*e*P		**Pn**	**08 51 08.4**	**-0.7**
BELC	**Belle Mtn. Jos**	**1.26**	**339**	P		**Pn**	**08 51 08.8**	**-0.6**
	baz=159							
IRM	**Iron Mountain**	**1.36**	**11**	P		**Pn**	**08 51 10.3**	**-0.4**
	baz=190,SNR=42							
109C	**Camp Elliot, M**	**1.38**	**273**	P		**Pn**	**08 51 10.5**	**-0.4**
	baz=94							
109C				Sb		**Sn**	**08 51 29.8**	**+1.0**
	baz=94							
BFSC	**Mount Baldy Ra**	**2.31**	**308**	Sb		**Sb**	**08 51 58.1**	**+1.9**
	baz=128							
214A	**Organ Pipe Nat**	**2.41**	**110**	*e*Pn		**Pn**	**08 51 24.0**	**-1.1**
214A				*e*Pg		**Pg**	**08 51 34.4**	**+1.6**
PASC	**Pasadena Art C**	**2.64**	**301**	*e*Pn		**Pn**	**08 51 29.8**	**+1.5**
PASC				*e*Pg		**Pg**	**08 51 37.3**	**+0.1**
PASC				*e*Sg		**Sb**	**08 52 08.1**	**+2.6**
R11A	**Troy Canyon, C**	**5.52**	**359**	*e*Pg		**Pg**	**08 52 33.5**	**+1.3**
	comp=N,1.3nm,0.6s							

NIED ***15*** *08:53:00,36˚20N×141˚10E,h29km,Mw3.8 Best double couple: M₀6.09000×10¹⁴ NP1:φs50.00000°,δ16.00000°, λ-58.00000°. NP2:φs197.00000°,δ77.00000°, λ-98.00000°.*

IDC ***15*** *08:53:25.3±0.8,36˚19N×141˚18E,h0km,mb3.7/9, mb1 3.9/12,mb1mx3.7/52,mbtmp3.7/12,ML3.5/2,MS3.0/4, Ms1 3.0/4,ms1mx2.6/47,Error ellipse: s-maj=20.7km s-min=18.7km az=39.0*

ISCJB ***15*** *08:53:29.3±0.8,36˚25N±0˚03×141˚15E±0˚08,h40km±7km, mb3.7/9,MS3.7/2,Error ellipse: s-maj=10.3km s-min=5.8km az=0.4*

JMA ***15*** *08:53:30.1±0.1,36˚23N×141˚08E,h46km±2km,M3.9*

JMA Felt II J1.

ISC 15 08:53:29.4±1.4,36˚27N±0˚04×141˚18E±0˚07,h26km±10km, n30,σ0°95/28,mb3.7/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.60**	**305**	P	**Pb**	**08 53 41.7**	**+0.4**
JHO				S	**Sb**	**08 53 49.6**	**+0.2**
CHOJ	**Chosi**	**0.62**	**205**	P	**Pb**	**08 53 41.8**	**+0.2**
CHOJ				S	**Sb**	**08 53 49.7**	**-0.2**
JYT	**Yasato**	**0.80**	**268**	P	**Pb**	**08 53 44.2**	**-0.4**
JYT				S	**Sb**	**08 53 53.8**	**-1.2**
ONAJ	**Iwakimizuishiy**	**0.89**	**340**	P	**Pb**	**08 53 45.9**	**-0.3**
ONAJ				S	**Sb**	**08 53 57.0**	**-0.7**
JFK	**Kawauchi**	**1.12**	**348**	P	**Pn**	**08 53 49.2**	**-0.4**
JAG	**Ashikaga**	**1.40**	**277**	P	**Pn**	**08 53 52.8**	**-0.5**
MJAR	**Matsushiro Arr**	**2.41**	**277**	Pn	**Pn**	**08 54 07.4**	**+0.1**
	20nm,0.3s,baz=87,slow=10.0,SNR=140						
MJAR				Sn	**Sn**	**08 54 35.8**	**-0.1**
	19nm,0.3s,baz=106,slow=17,SNR=11						
MJAR				LR	LR	08 55 14.4	
	comp=Z,212nm,19.9s,baz=130,slow=46						
MAT	**Matsushiro**	**2.41**	**277**	P	**Pn**	**08 54 05.8**	**-1.4**
JHJ	**Hachijo jima 2**	**3.34**	**201**	Pn	**Pn**	**08 54 21.1**	**+1.1**
	13nm,0.3s,baz=118,slow=23,SNR=6.4						
JHJ				Sn	**Sn**	**08 54 58.3**	**-0.6**
	57nm,0.3s,baz=274,slow=23,SNR=8.5						
ASAJ	**Asahikawa**	**7.92**	**7**	Pn	**Pn**	**08 55 23.6**	**+0.9**
	0.5nm,0.3s,baz=191,slow=10,SNR=4.3						
USRK	**Ussuriysk Ar.**	**10.58**	**321**	Pn	**Pn**	**08 55 59.9**	**+0.6**
	0.1nm,0.3s,baz=143,slow=11,SNR=1.9						
USRK				LR	LR	08 59 53.7	
	comp=Z,88nm,21.1s,baz=134,slow=36						
KSRS	**Korea Array**	**10.69**	**280**	Pn	**Pn**	**08 56 04.1**	**+3.3**
	0.3nm,0.3s,baz=101,slow=13,SNR=2.4						
KSRS				LR	LR	09 00 10.2	
	comp=Z,55nm,18.2s,baz=110,slow=38						
H11N2	**WAKE ISLAND Hy**	**27.93**	**119**	T	T	09 28 36.7	
	baz=311,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy**	**27.94**	**119**	T	T	09 28 37.2	
	baz=311,slow=75,SNR=27						
H11N3	**WAKE ISLAND Hy**	**27.95**	**119**	T	T	09 28 38.0	
	baz=311,slow=75,SNR=28						
SONM	**Songino Array**	**28.06**	**305**	P	**P**	**08 59 18.2**	**-0.6**
	0.6nm,0.6s,baz=119,slow=12,SNR=2.9						
H11S1	**WAKE ISLAND Hy**	**28.61**	**121**	T	T	09 29 28.9	
	baz=314,slow=75,SNR=55						
H11S3	**WAKE ISLAND Hy**	**28.61**	**121**	T	T	09 29 27.0	
	baz=314,slow=75,SNR=44						
H11S2	**WAKE ISLAND Hy**	**28.63**	**121**	T	T	09 29 24.8	
	baz=314,slow=75,SNR=46						
ZALV	**Zalesovo Beam**	**42.30**	**313**	P	**P**	**09 01 20.0**	**-0.6**
	1.0nm,0.4s,baz=83,slow=6.2,SNR=3.0						
MKAR	**Makanchi Array**	**44.37**	**303**	LR	LR	09 20 46.7	
	comp=Z,22nm,19.6s,baz=85,slow=37						
KURBB	**Kurchatov Arra**	**46.33**	**309**	P	**P**	**09 01 52.9**	**0.0**
	1.4nm,0.6s,baz=82,slow=7.6,SNR=8.3						
ILAR	**Eielson Array**	**50.24**	**32**	P	**P**	**09 02 23.7**	**+0.7**
	1.1nm,0.8s,baz=268,slow=6.2,SNR=13						
WRA	**Warramunga Arr**	**56.27**	**188**	P	**P**	**09 03 06.9**	**-0.8**
	0.4nm,0.5s,baz=6.3,slow=7.5,SNR=7.8						
ASAR	**Alice Springs**	**60.00**	**188**	P	**P**	**09 03 33.4**	**-0.5**
	0.4nm,0.9s,baz=17,slow=12,SNR=5.2						
NEW	**Newport**	**70.81**	**44**	LR	LR	09 34 50.4	
	comp=Z,166nm,18.3s,baz=217,slow=35						
AKASG	**Malin Array Be**	**74.79**	**322**	P	**P**	**09 05 07.5**	**+0.3**
	0.2nm,0.3s,baz=52,slow=6.0,SNR=3.7						
PDAR	**Pinedale Array**	**78.34**	**45**	P	**P**	**09 05 27.3**	**-0.5**
	0.4nm,0.5s,baz=270,slow=1.5,SNR=4.9						
TXAR	**Lajitas Array**	**90.74**	**52**	P	**P**	**09 06 30.9**	**+0.5**
	0.3nm,0.8s,baz=264,slow=2.5,SNR=3.7						
LPAZ	**La Paz**	**147.24**	**60**	PKPbc	**PKPbc**	**09 13 11.2**	**-0.5**
	0.5nm,0.5s,baz=272,slow=6.1,SNR=4.0						

MEX 15 08:59:00.8±0.7,13˚45N×91˚27W,h15km,MD4.0,Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.94**	**343**	*e*P	Pn	08 59 44.6	-2.5
CCIG				*i* S	Sn	09 00 17.9	-4.3
CCIG				*i* S	Sn	09 00 18.4	-3.9

ISCJB ***15*** *09:06:57.3±0.6,64˚82N±0˚03×30˚4E±0˚1,h0km,Error ellipse: s-maj=6.9km s-min=4.2km az=4.6*

HEL ***15*** *09:06:58.9±0.1,64˚81N×30˚61E,h0km,ML2.2,Explosion*

CSEM ***15*** *09:06:58.3±0.4,64˚81N×30˚56E,h1km,ML2.2,Error ellipse: s-maj=11.8km s-min=6.5km az=90.0,Mining explosion.*

NAO ***15*** *09:06:59.5±1.3,64˚79N×30˚62E,ML2.6*

IDC ***15*** *09:06:59.2±2.3,64˚80N×31˚22E,h0km,mb1 3.1/4, mb1mx2.9/46,mbtmp3.1/4,ML2.7/4,Error ellipse: s-maj=32.0km s-min=10.1km az=101.0*

BER ***15*** *09:07:00.9±4.1,64˚81N×30˚48E,h0km,ML2.6(NAO), Suspected explosion*

ISC 15 09:06:58.5±1.0,64˚81N±0˚04×30˚46E±0˚06,h0km,n32, σ1°62/55,Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KU6	**Riekki**	**1.24**	**349**	*e*P	**Pg**	**09 07 21.4**	**-1.0**
KU6				*e*S	**Sb**	**09 07 38.9**	**-0.5**
KU6	**Riekki**	**1.24**	**349**	P	**Pg**	**09 07 21.3**	**-1.0**
KU6				S	**Sb**	**09 07 38.9**	**-0.5**
MSF	**Maaselka**	**1.25**	**332**	*e*P	**Pg**	**09 07 22.4**	**-0.2**
MSF				*e*S	**Sn**	**09 07 41.4**	**+0.5**
MSF	**Maaselka**	**1.25**	**332**	P	**Pg**	**09 07 22.3**	**-0.2**
MSF				S	**Sn**	**09 07 41.3**	**+0.5**
JOF	**Joensuu**	**1.94**	**168**	*e*PG	**Pn**	**09 07 33.2**	**+0.5**
JOF				*e*SN	**Sn**	**09 07 57.4**	**-0.4**
JOF	**Joensuu**	**1.94**	**168**	Pg	**Pn**	**09 07 33.2**	**+0.5**
JOF				Sn	**Sn**	**09 07 57.3**	**-0.4**
OUL	**Oulu**	**1.96**	**280**	*e*PG	**Pb**	**09 07 35.0**	**0.0**
OUL				*e*SG	**Sg**	**09 08 01.2**	**-0.3**
OUL	**Oulu**	**1.96**	**280**	Pg	**Pb**	**09 07 35.0**	**0.0**
OUL				Sg	**Sg**	**09 08 01.1**	**-0.3**
RNF	**Rovaniemi**	**2.57**	**316**	*e*P	**Pn**	**09 07 42.5**	**+1.1**
RNF	**Rovaniemi**	**2.57**	**316**	P	**Pn**	**09 07 42.5**	**+1.1**
SUF	**Sumiainen**	**2.84**	**224**	*e*P	**Pn**	**09 07 46.8**	**+1.7**
SUF	**Sumiainen**	**2.84**	**224**	P	**Pn**	**09 07 46.8**	**+1.7**
APA0	**Apatity Array**	**2.99**	**19**	Pn	**Pn**	**09 07 47.0**	**-0.1**
	baz=196,slow=12						
APA0				Sn	**Sn**	**09 08 24.6**	**+0.9**
	baz=218,slow=28						
APA0				Lg	Lg	09 08 32.3	
	baz=191,slow=37						
APA0	**Apatity Array**	**2.99**	**19**	Pn	**Pn**	**09 07 47.0**	**-0.1**
	baz=196,slow=12						
APA0				Sn	**Sn**	**09 08 24.6**	**+0.9**
	baz=218,slow=28						
APA0				Lg	Lg	09 08 32.3	
	baz=191,slow=37						
APA0	**Apatity Array**	**2.99**	**19**	Pn	**Pn**	**09 07 47.0**	**-0.1**
	SNR=50						
APA0				Sn	**Sn**	**09 08 24.5**	**+0.9**
	SNR=50						
APA0				Lg	Lg	09 08 32.3	
	SNR=8.7						
FIA0	**FINESS Array S**	**3.92**	**212**	Pn	**Pn**	**09 08 00.8**	**+0.9**
	baz=31,slow=14						
FIA0				Pg	**Pb**	**09 08 08.8**	**+0.3**
	baz=25,slow=18						
FIA0				Sn	**Sn**	**09 08 49.4**	**+2.8**
	baz=35,slow=22						
FIA0				Lg	Lg	09 08 59.5	
	baz=27,slow=37						
FIA0	**FINESS Array S**	**3.92**	**212**	Pn	**Pn**	**09 08 00.8**	**+0.9**
	baz=31,slow=14						
FIA0				Pg	**Pb**	**09 08 08.8**	**+0.3**
	baz=25,slow=18						
FIA0				Sn	**Sn**	**09 08 49.4**	**+2.8**
	baz=35,slow=22						
FIA0				Lg	Lg	09 08 59.5	
	baz=27,slow=37						
FIA0	**FINESS Array S**	**3.92**	**212**	MSG		09 09 08.1	
	comp=Z,4.9nm,0.2s						
FIA0	**FINESS Array S**	**3.92**	**212**	Pn	**Pn**	**09 08 00.8**	**+0.9**
	SNR=50						
FIA0				Sn	**Sn**	**09 08 49.3**	**+2.8**
	SNR=50						
FIA0				Lg	Lg	09 08 59.5	
FINES	**FINESS Array B**	**3.92**	**212**	Pn	**Pn**	**09 08 01.4**	**+1.5**
	comp=Z,0.2nm,0.3s,baz=37,slow=13,SNR=6.0						
FINES				Pg	**Pb**	**09 08 10.6**	**+2.2**
	comp=Z,0.6nm,0.3s,baz=24,slow=15,SNR=12						
FINES				Lg	Lg	09 09 00.7	
	comp=Z,2.0nm,0.3s,baz=32,slow=30,SNR=12						
ARA0	**ARCESS Array S**	**5.12**	**340**	Pn	**Pn**	**09 08 16.3**	**-0.1**
	baz=154,slow=14						
ARA0				Sn	**Sn**	**09 09 15.1**	**-1.0**
	baz=160,slow=28						
ARA0				Lg	Lg	09 09 37.3	
	baz=156,slow=37						
ARA0	**ARCESS Array S**	**5.12**	**340**	Pn	**Pn**	**09 08 16.3**	**-0.1**
	baz=154,slow=14						
ARA0				Sn	**Sn**	**09 09 15.1**	**-1.0**
	baz=160,slow=28						
ARA0				Lg	Lg	09 09 37.3	
	baz=156,slow=37						
ARA0	**ARCESS Array S**	**5.12**	**340**	Pn	**Pn**	**09 08 16.3**	**-0.1**
	SNR=50						
ARA0				Sn	**Sn**	**09 09 15.1**	**-1.0**
	SNR=50						
ARA0				Lg	Lg	09 09 37.3	
	SNR=53						
ARCES	**ARCESS Array B**	**5.12**	**340**	Pn	**Pn**	**09 08 16.5**	**+0.2**
	comp=Z,0.8nm,0.3s,baz=157,slow=13,SNR=37						
ARCES				Sn	**Sn**	**09 09 15.3**	**-0.7**
	comp=Z,0.7nm,0.3s,baz=157,slow=24,SNR=5.8						
ARCES				Lg	Lg	09 09 36.0	
	comp=Z,0.8nm,0.3s,baz=152,slow=27,SNR=6.9						
HFS	**Hagfors**	**9.05**	**247**	Pn	**Pn**	**09 09 09.7**	**-0.6**
	baz=53,slow=16						
HFS				Sn	**Sn**	**09 10 46.9**	**-5.9**
	baz=59,slow=28						
HFS				Lg	Lg	09 11 42.0	
	baz=62,slow=37						
HFS	**Hagfors**	**9.05**	**247**	Pn	**Pn**	**09 09 12.5**	**+2.2**
	comp=Z,0.2nm,0.3s,baz=66,slow=13,SNR=4.1						
HFS				Sn	**Sn**	**09 10 51.5**	**-1.2**
	comp=Z,0.2nm,0.3s,baz=55,slow=23,SNR=3.2						
HFS				Lg	Lg	09 11 40.9	
	comp=Z,0.5nm,0.3s,baz=65,slow=28,SNR=6.5						
HFS	**Hagfors**	**9.05**	**247**	Pn	**Pn**	**09 09 09.7**	**-0.6**
	baz=53,slow=16						
HFS				Sn	**Sn**	**09 10 46.9**	**-5.9**
	baz=59,slow=28						
HFS				Lg	Lg	09 11 42.0	
	baz=62,slow=37						
HFS	**Hagfors**	**9.05**	**247**	Pn	**Pn**	**09 09 09.7**	**-0.6**
	SNR=50						
NB2	**NORSAR Subarra**	**9.54**	**255**	Pn	**Pn**	**09 09 18.6**	**+1.7**
	baz=58,slow=16						
NB2	**NORSAR Subarra**	**9.54**	**255**	Pn	**Pn**	**09 09 18.6**	**+1.7**
	baz=58,slow=16						
NB2	**NORSAR Subarra**	**9.54**	**255**	Pn	**Pn**	**09 09 18.6**	**+1.7**
	SNR=50						
NOA	**NORSAR Array B**	**9.54**	**255**	Pn	**Pn**	**09 09 16.3**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=55,slow=11,SNR=2.4						
NOA				Lg	Lg	09 11 57.5	
	comp=Z,0.3nm,0.3s,baz=222,slow=23,SNR=3.2						

ATH ***15*** *09:08:36.5,37˚24N×22˚01E,h5km±3km,ML2.4/15,Error ellipse: s-maj=3.3km s-min=0.7km az=172.0*

CSEM ***15*** *09:08:36.6±0.2,37˚25N×22˚01E,h2km,ML2.8,Error ellipse: s-maj=3.8km s-min=3.3km az=64.0*

THE ***15*** *09:08:36.2,37˚24N×21˚99E,h8km,ML2.8/7,Error ellipse: s-maj=0.8km s-min=0.3km az=195.0*

ISC 15 09:08:36.3±0.8,37˚24N±0˚02×22˚00E±0˚02,h7km±6km, n88,σ0°63/147,Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ITM	**Ithomi**	**0.09**	**226**	P	**Pg**	**09 08 38.2**	**-0.1**
ITM				S	**Sg**	**09 08 39.6**	**-0.2**
ITM	**Ithomi**	**0.09**	**226**	P	**Pg**	**09 08 38.2**	**-0.1**
ITM				S	**Sg**	**09 08 39.6**	**-0.2**
ITM	**Ithomi**	**0.09**	**226**	P	**Pg**	**09 08 37.8**	**-0.6**
ITM				S	**Sg**	**09 08 40.1**	**+0.3**
ITM				AML	AML	09 08 41.3	
	comp=E,14961μm,0.5s						
ITM				AML	AML	09 08 41.7	
	comp=N,11260μm,0.4s						
ITM	**Ithomi**	**0.09**	**226**	P	**Pg**	**09 08 38.0**	**-0.4**
ITM				S	**Sg**	**09 08 40.8**	**+1.0**
ITM				AML	AML	09 08 41.3	
	comp=E,14961μm,0.5s						
ITM				AML	AML	09 08 41.7	
	comp=N,11260μm,0.4s						
VLX	**Vlachokerasia**	**0.33**	**66**	P	**Pg**	**09 08 43.0**	**+0.3**
VLX				S	**Sg**	**09 08 47.8**	**+0.7**
VLX	**Vlachokerasia**	**0.33**	**66**	P	**Pg**	**09 08 43.1**	**+0.4**
VLX				S	**Sg**	**09 08 48.4**	**+1.3**
VLX				AML	AML	09 08 48.7	
	comp=E,4770μm,0.3s						
VLX				AML	AML	09 08 49.1	
	comp=N,3506μm,0.5s						
VLX	**Vlachokerasia**	**0.33**	**66**	P	**Pg**	**09 08 43.3**	**+0.6**
VLX				S	**Sg**	**09 08 48.1**	**+1.1**
VLX				AML	AML	09 08 48.7	
	comp=E,4770μm,0.3s						
VLX				AML	AML	09 08 49.1	
	comp=N,3264μm,0.4s						
TRIP	**Tripoli**	**0.36**	**36**	P	**Pg**	**09 08 43.0**	**-0.3**
TRIP				S	**Sg**	**09 08 49.2**	**+1.2**
TRIP	**Tripoli**	**0.36**	**36**	P	**Pb**	**09 08 44.5**	**-0.6**
TRIP				S	**Sg**	**09 08 48.6**	**+0.5**
TRIP				AML	AML	09 08 53.6	
	comp=N,751μm,0.4s						
TRIP				AML	AML	09 08 56.9	
	comp=E,446μm,0.3s						
TRIP	**Tripoli**	**0.36**	**36**	P	**Pg**	**09 08 43.0**	**-0.3**
TRIP				S	**Sg**	**09 08 49.2**	**+1.2**
TRIP				AML	AML	09 08 50.3	
	comp=E,767μm,0.3s						
TRIP				AML	AML	09 08 53.6	
	comp=N,751μm,0.4s						
AMT	**Artemida-Makis**	**0.38**	**321**	P	**Pg**	**09 08 43.5**	**-0.1**
AMT				S	**Sg**	**09 08 48.6**	**0.0**
AMT	**Artemida-Makis**	**0.38**	**321**	P	**Pg**	**09 08 43.9**	**+0.3**
AMT				S	**Sg**	**09 08 48.6**	**0.0**
AMT	**Artemida-Makis**	**0.38**	**321**	P	**Pg**	**09 08 43.6**	**0.0**
AMT				S	**Sg**	**09 08 49.8**	**+1.2**
AMT				AML	AML	09 08 50.9	
	comp=N,5012μm,0.2s						
AMT				AML	AML	09 08 54.5	
	comp=E,3334μm,0.7s						
AMT	**Artemida-Makis**	**0.38**	**321**	P	**Pg**	**09 08 43.9**	**+0.3**
AMT				S	**Sb**	**09 08 50.3**	**-1.1**
AMT				AML	AML	09 08 50.9	
	comp=N,5012μm,0.2s						
AMT				AML	AML	09 08 54.5	
	comp=E,3334μm,0.7s						
PYL	**PYLOS**	**0.40**	**212**	P	**Pg**	**09 08 43.8**	**-0.3**
PYL				S	**Sg**	**09 08 49.9**	**+0.5**
PYL	**PYLOS**	**0.40**	**212**	P	**Pg**	**09 08 43.8**	**-0.3**
PYL				S	**Sg**	**09 08 49.9**	**+0.5**
PYL	**PYLOS**	**0.40**	**212**	P	**Pg**	**09 08 43.9**	**-0.2**
PYL				S	**Sg**	**09 08 49.4**	**0.0**
PYL				AML	AML	09 08 51.6	
	comp=N,2906μm,0.3s						
PYL				AML	AML	09 08 52.2	
	comp=E,2379μm,0.4s						
PYL	**PYLOS**	**0.40**	**212**	P	**Pg**	**09 08 43.1**	**-1.0**
PYL				S	**Sg**	**09 08 50.5**	**+1.1**
PYL				AML	AML	09 08 51.6	
	comp=N,2906μm,0.3s						
PYL				AML	AML	09 08 52.2	
	comp=E,2379μm,0.4s						
GUR	**Goura**	**0.75**	**21**	P	**Pg**	**09 08 50.3**	**-0.4**
GUR				S	**Sg**	**09 09 01.2**	**+0.8**
GUR	**Goura**	**0.75**	**21**	P	**Pg**	**09 08 50.3**	**-0.4**
GUR				S	**Sg**	**09 09 01.2**	**+0.8**
DRO	**Drossia**	**0.75**	**342**	P	**Pg**	**09 08 50.5**	**-0.2**
DRO				S	**Sg**	**09 09 01.1**	**+0.6**
DRO	**Drossia**	**0.75**	**342**	P	**Pg**	**09 08 50.5**	**-0.2**
DRO				S	**Sg**	**09 09 00.7**	**+0.2**
DRO	**Drossia**	**0.75**	**342**	P	**Pb**	**09 08 51.3**	**-0.4**
DRO				S	**Sb**	**09 09 01.4**	**-0.8**
DRO				AML	AML	09 09 08.2	
	comp=N,1079μm,0.4s						
DRO				AML	AML	09 09 08.2	
	comp=E,1173μm,0.6s						
DRO	**Drossia**	**0.75**	**342**	P	**Pb**	**09 08 51.3**	**-0.4**
DRO				S	**Sg**	**09 09 00.7**	**+0.2**
DRO				AML	AML	09 09 08.2	
	comp=N,1079μm,0.4s						
DRO				AML	AML	09 09 08.2	
	comp=E,1173μm,0.6s						
KLV	**Kalavryta, Ach**	**0.81**	**8**	P	**Pg**	**09 08 51.4**	**-0.5**
KLV				S	**Sb**	**09 09 03.6**	**-0.4**
KLV	**Kalavryta, Ach**	**0.81**	**8**	P	**Pg**	**09 08 51.4**	**-0.5**
KLV				S	**Sg**	**09 09 02.7**	**+0.2**
KLV	**Kalavryta, Ach**	**0.81**	**8**	P	**Pg**	**09 08 51.0**	**-0.9**
KLV				S	**Sg**	**09 09 02.6**	**+0.2**
KLV				AML	AML	09 09 07.5	
	comp=E,364μm,0.6s						
KLV				AML	AML	09 09 10.2	
	comp=N,234μm,0.7s						
KLV	**Kalavryta, Ach**	**0.81**	**8**	P	**Pg**	**09 08 50.9**	**-1.0**
KLV				S	**Sg**	**09 09 02.7**	**+0.2**
KLV				AML	AML	09 09 07.5	
	comp=E,364μm,0.6s						
KLV				AML	AML	09 09 10.2	
	comp=N,234μm,0.7s						
VLI	**Veliai**	**0.91**	**125**	P	**Pg**	**09 08 53.8**	**0.0**
VLI	**Veliai**	**0.91**	**125**	P	**Pg**	**09 08 53.8**	**0.0**
VLI				S	**Sg**	**09 09 04.7**	**-0.9**
VLI	**Veliai**	**0.91**	**125**	P	**Pb**	**09 08 54.3**	**-0.1**
VLI				S	**Sg**	**09 09 04.6**	**-0.9**
VLI				AML	AML	09 09 11.0	
	comp=E,467μm,0.5s						
VLI				AML	AML	09 09 12.0	
	comp=N,381μm,0.6s						
VLI	**Veliai**	**0.91**	**125**	P	**Pg**	**09 08 53.9**	**+0.1**
VLI				S	**Sg**	**09 09 04.7**	**-0.9**
VLI				AML	AML	09 09 11.0	
	comp=E,467μm,0.5s						
VLI				AML	AML	09 09 12.0	
	comp=N,381μm,0.6s						
RLS	**Riolos of Patr**	**0.92**	**333**	P	**Pb**	**09 08 54.4**	**-0.2**
RLS				S	**Sb**	**09 09 06.7**	**-0.4**
RLS	**Riolos of Patr**	**0.92**	**333**	S	**Sb**	**09 09 07.2**	**+0.1**
RLS				AML	AML	09 09 12.2	
	comp=E,225μm,0.3s						
RLS				AML	AML	09 09 12.9	
	comp=N,300μm,0.5s						
RLS	**Riolos of Patr**	**0.92**	**333**	S	**Sb**	**09 09 06.7**	**-0.4**
RLS				AML	AML	09 09 12.2	
	comp=E,225μm,0.3s						
RLS				AML	AML	09 09 12.9	
	comp=N,300μm,0.5s						
THAL	**Thalero**	**0.95**	**33**	P	**Pg**	**09 08 53.9**	**-0.7**
THAL	**Thalero**	**0.95**	**33**	P	**Pg**	**09 08 53.9**	**-0.7**
LAKA	**Lakka**	**1.00**	**359**	P	**Pg**	**09 08 54.8**	**-0.7**
**LAK

	comp=E,258μm,0.5s							
LTK	**Loutraki**	**1.09**	**44**	P	**Pg**	**09 08 56.6**	**-0.7**
TRIZ	**Trizonia**	**1.13**	**3**	P	**Pg**	**09 08 56.8**	**-1.1**
TRIZ				S	**Sg**	**09 09 12.5**	**0.0**
TRIZ	**Trizonia**	**1.13**	**3**	S	**Sb**	**09 09 13.2**	**+0.3**
KALE	**Kalithea**	**1.16**	**5**	P	**Pg**	**09 08 57.3**	**-1.1**
KALE				S	**Sb**	**09 09 13.8**	**-0.1**
KALE	**Kalithea**	**1.16**	**5**	P	**Pg**	**09 08 57.1**	**-1.3**
KALE				S	**Sb**	**09 09 14.3**	**+0.4**
KALE				AML	AML	09 09 22.9	
	comp=E,139μm,0.8s						
KALE				AML	AML	09 09 24.6	
	comp=N,198μm,0.4s						
KALE	**Kalithea**	**1.16**	**5**	P	**Pg**	**09 08 57.3**	**-1.1**
KALE				S	**Sb**	**09 09 13.8**	**-0.1**
KALE				AML	AML	09 09 19.2	
	comp=E,163μm,0.5s						
KALE				AML	AML	09 09 22.4	
	comp=N,168μm,0.5s						
SERG	**Sergoula**	**1.17**	**2**	P	**Pg**	**09 08 57.8**	**-1.0**
SERG				S	**Sb**	**09 09 14.9**	**+0.6**
SERG	**Sergoula**	**1.17**	**2**	P	**Pg**	**09 08 57.8**	**-1.0**
SERG				S	**Sb**	**09 09 14.9**	**+0.6**
DSF	**Desfina**	**1.24**	**19**	P	**Pn**	**09 09 01.0**	**+0.8**
DSF	**Desfina**	**1.24**	**19**	P	**Pn**	**09 09 01.0**	**+0.8**
PROD	**Prodromos**	**1.24**	**35**	P	**Pb**	**09 08 59.9**	**-0.2**
PROD				S	**Sg**	**09 09 15.6**	**-0.6**
PROD	**Prodromos**	**1.24**	**35**	P	**Pg**	**09 09 00.3**	**+0.2**
PROD				S	**Sn**	**09 09 17.0**	**-0.2**
PROD				AML	AML	09 09 21.8	
	comp=N,197μm,0.5s						
PROD				AML	AML	09 09 22.6	
	comp=E,200μm,0.3s						
PROD	**Prodromos**	**1.24**	**35**	P	**Pb**	**09 08 59.9**	**-0.2**
PROD				S	**Sg**	**09 09 15.6**	**-0.6**
PROD				AML	AML	09 09 21.8	
	comp=N,197μm,0.5s						
PROD				AML	AML	09 09 22.6	
	comp=E,200μm,0.3s						
KYTH	**Kithira**	**1.28**	**139**	P	**Pn**	**09 09 00.3**	**-0.3**
KYTH	**Kithira**	**1.28**	**139**	P	**Pn**	**09 09 00.3**	**-0.3**
KFL	**Anninata**	**1.30**	**312**	P	**Pg**	**09 09 01.5**	**+0.3**
KFL				S	**Sn**	**09 09 19.5**	**+1.0**
KFL	**Anninata**	**1.30**	**312**	P	**Pn**	**09 09 00.4**	**-0.5**
KFL	**Anninata**	**1.30**	**312**	P	**Pg**	**09 09 01.5**	**+0.3**
KFL				S	**Sn**	**09 09 19.5**	**+1.0**
ANX	**Ano Chora**	**1.35**	**357**	P	**Pn**	**09 09 00.3**	**-1.4**
ANX	**Ano Chora**	**1.35**	**357**	P	**Pn**	**09 09 00.3**	**-1.4**
VILL	**Villia**	**1.39**	**48**	P	**Pn**	**09 09 02.0**	**-0.2**
VILL				S	**Sg**	**09 09 21.8**	**+0.8**
VIL2	**Platees**	**1.40**	**46**	P	**Pn**	**09 09 01.8**	**-0.4**
VIL2				S	**Sg**	**09 09 22.8**	**+1.7**
VIL2	**Platees**	**1.40**	**46**	P	**Pn**	**09 09 02.0**	**-0.2**
VIL2				S	**Sg**	**09 09 21.8**	**+0.6**
VIL2				AML	AML	09 09 27.8	
	comp=N,299μm,0.7s						
VIL2				AML	AML	09 09 30.4	
	comp=E,176μm,0.5s						
PDO	**Prodromos**	**1.50**	**335**	P	**Pg**	**09 09 05.5**	**+0.4**
PDO	**Prodromos**	**1.50**	**335**	P	**Pg**	**09 09 05.5**	**+0.4**
PDO				S	**Sg**	**09 09 25.2**	**+0.5**
PDO				AML	AML	09 09 33.5	
	comp=N,364μm,0.4s						
PDO				AML	AML	09 09 39.1	
	comp=E,344μm,0.7s						
PDO	**Prodromos**	**1.50**	**335**	P	**Pg**	**09 09 05.5**	**+0.4**
VLY	**Voula,Athens**	**1.55**	**66**	P	**Pb**	**09 09 05.4**	**+0.1**
VLY				S	**Sg**	**09 09 25.7**	**-0.4**
VLY	**Voula,Athens**	**1.55**	**66**	P	**Pb**	**09 09 05.4**	**+0.1**
VLY				S	**Sg**	**09 09 25.7**	**-0.4**
ATAL	**Atalanti**	**1.66**	**29**	P	**Pb**	**09 09 07.1**	**-0.1**
ATAL	**Atalanti**	**1.66**	**29**	P	**Pb**	**09 09 07.3**	**+0.1**
ATAL	**Atalanti**	**1.66**	**29**	P	**Pb**	**09 09 07.1**	**-0.1**
ANKY	**Antikythira Is**	**1.72**	**142**	P	**Pg**	**09 09 09.9**	**+0.6**
ANKY	**Antikythira Is**	**1.72**	**142**	P	**Pn**	**09 09 06.7**	**0.0**
ANKY	**Antikythira Is**	**1.72**	**142**	P	**Pg**	**09 09 09.9**	**+0.6**
AGG	**Agios Georgios**	**1.80**	**8**	P	**Pg**	**09 09 11.0**	**+0.2**
AGG	**Agios Georgios**	**1.80**	**8**	P	**Pg**	**09 09 11.0**	**+0.2**
LKD2	**Lefkada island**	**1.88**	**326**	P	**Pn**	**09 09 08.8**	**0.0**
LKD2				S	**Sb**	**09 09 35.2**	**+0.6**
LKD2				AML	AML	09 09 48.5	
	comp=E,106μm,0.7s						
LKD2				AML	AML	09 09 53.5	
	comp=N,152μm,0.7s						
LKD2	**Lefkada island**	**1.88**	**326**	P	**Pg**	**09 09 11.8**	**-0.5**
LKD2				S	**Sb**	**09 09 35.6**	**+1.0**
LKD2				AML	AML	09 09 48.5	
	comp=E,106μm,0.7s						
LKD2				AML	AML	09 09 53.5	
	comp=N,152μm,0.7s						
VLX	**Vlachokerasia**	**2.07**	**66**	P	**Pg**	**09 08 43.0**	**+0.3**
VLX				S	**Sg**	**09 08 47.8**	**+0.7**

MEX 15 09:16:19.7±0.6, 14°.84N×92°.88W, h69km±40km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.60**	**26**	*e*P	Pn	09 16 45.7	-0.4
CCIG				*i* S	Sn	09 17 03.8	-2.3

*NEIC **15** 09:25:33.0, 17°.25N×94°.98W, h197km, MD4.0(MEX), After MEX.*

MEX 15 09:25:32.8±0.4, 17°.29N×94°.96W, h195km±13km, MD4.0, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VHO	**Vista Hermosa**	**1.71**	**263**	*e*P	Pn	09 26 07.3	-1.0
VHO				*e*S	Sn	09 26 33.6	-2.1
VHO	**Vista Hermosa**	**1.71**	**263**	*e*P	Pn	09 26 07.3	-1.0
VHO				*e*S	Sn	09 26 33.6	-2.1
HUIG	**Huatulco**	**1.88**	**216**	*e*P	Pn	09 26 07.9	-1.8
HUIG				*i* S	Sn	09 26 36.1	-2.3
HUIG	**Huatulco**	**1.88**	**216**	*e*P	Pn	09 26 07.9	-1.8
HUIG				*i* S	Sn	09 26 36.1	-2.3
TPIG	**Tehuac#an**	**2.55**	**296**	*e*P	Pn	09 26 15.9	-1.3
TPIG				*i* S	Sn	09 26 49.1	-2.6
TPIG	**Tehuac#an**	**2.55**	**296**	*e*P	Pn	09 26 13.7	-3.5
PNIG	**Pinotepa**	**3.17**	**254**	*e*P	Pn	09 26 23.1	-1.1
PNIG				*e*S	Sn	09 27 02.4	-2.0
PNIG	**Pinotepa**	**3.17**	**254**	*e*P	Pn	09 26 23.1	-1.1
PNIG				*e*S	Sn	09 27 06.9	+2.5

IDC 15 10:00:11.8±51.0, 16°.30S×178°.35W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/27, mbtmp4.0/3, Error ellipse: s-maj=936.8km s-min=159.5km az=77.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.47**	**239**	P	P	10 07 44.0	-0.1
	2.5nm,1.0s,baz=76,slow=9.3,SNR=4.0						
WRA	**Warramunga Arr**	**44.99**	**258**	P	P	10 08 29.4	+0.1
	0.4nm,0.4s,baz=91,slow=7.9,SNR=17						
ASAR	**Alice Springs**	**45.30**	**253**	P	P	10 08 31.4	-0.3
	3.1nm,0.4s,baz=89,slow=8.2,SNR=22						

CASC 15 10:03:16.1±2.1, 10°.70N×85°.13W, h13km±26km, MD3.9, 2C-1D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	**Vista de Mar**	**0.76**	**221**	*e*P	Pg	10 03 29.9	-0.9
VCR				*e*S	Sb	10 03 41.5	-0.1
JCR	**Jicaral**	**0.85**	**179**	↑*i* P	Pg	10 03 32.4	-0.2
CGA2	**Cerro Gallo 2**	**0.94**	**136**	↑*i* P	Pg	10 03 32.4	-2.0
CGA2				*e*S	Sg	10 03 45.1	-1.6
URSC	**Urasca**	**1.58**	**123**	↓*e* P	Pb	10 03 44.9	-0.5
TBS2		**3.08**	**128**	*e*P	Pn	10 04 05.8	+1.0

MAN 15 10:07:27, 9°.64N×122°.13E, h8km, mb4.3, ML3.2, MS3.0, 3C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.13**	**105**	↑*i* P	Pg	10 07 42.8	-5.9
SNPH				*i* S	Sg	10 08 00.4	-3.0
DCPH	**Dipolog City**	**1.60**	**131**	↑*e*P	Pn	10 07 56.0	+0.4
DCPH				*e*S	Sb	10 08 16.9	-0.3
TBP	**Tagbilaran**	**1.71**	**88**	↓*i* P	Pn	10 07 57.3	+0.2
LLP	**Lapu-Lapu**	**1.93**	**70**	*e*P	Pn	10 07 59.6	-0.5
LLP				*e*S	Sb	10 08 25.9	-0.7
RCP	**Roxas**	**2.00**	**17**	↑*e*P	Pn	10 08 01.7	+0.6

*ISCJB **15** 10:37:58.3±0.5, 32°.13N±0°.02×115°.08W±0°.02, h12km±3km, mb3.6/1, MS3.1/4, Error ellipse: s-maj=3.2km s-min=2.3km az=5.0*
*IDC **15** 10:37:59.7±1.5, 32°.17N×115°.02W, h0km, mb3.7/1, mb1 3.9/4, mb1mx3.6/51, mbtmp3.5/4, ML3.8/3, MS3.2/8, Ms1 3.2/8, ms1mx2.9/42, Error ellipse: s-maj=26.3km s-min=9.2km az=33.0*
*NEIC **15** 10:38:00.2, 32°.11N×115°.13W, h13km, ML4.1(ECX), ML4.1(PAS), After ECX.*
*ECX **15** 10:38:00.1±0.7, 32°.11N×115°.11W, h15km±3km, MD3.9, ML4.1*
*MEX **15** 10:38:00.7±1.2, 32°.18N×115°.05W, h6km±172km, MD3.8*

ISC 15 10:37:59.0±1.0, 32°.10N±0°.02×115°.12W±0°.02, h10km±8km, n110, σ1s77/145, MS3.3/4, 4C-9D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.35**	**334**	↓*e*P	**Pg**	**10 38 06.7**	**+0.7**
CPBX				*e*S	**Sg**	**10 38 11.8**	**+1.1**
CPBX				IAML		10 38 16.0	
	comp=E,64μm,0.4s						
CPBX	**Cerro Prieto**	**0.35**	**334**	*e*P	**Pg**	**10 38 06.7**	**+0.7**
CPBX				*i* S	**Sg**	**10 38 08.3**	**-2.4**
ECBX	**El Chinero**	**0.63**	**175**	↓*e*P	**Pg**	**10 38 11.2**	**-0.1**
ECBX				*e*S	**Sg**	**10 38 20.3**	**+0.8**
EMSC	**East Mesa**	**0.64**	**10**	↓*i* P	**Pg**	**10 38 11.8**	**+0.2**
YMD	**Yuma Desert**	**0.66**	**47**	↑*i* P	**Pg**	**10 38 11.8**	**-0.1**
SGL	**Mount Signal**	**0.75**	**317**	*e*P	**Pg**	**10 38 13.2**	**-0.2**
DREC	**Desert Rsrch C**	**0.75**	**339**	↓*e*P	**Pg**	**10 38 13.7**	**+0.2**
COA	**Coachella**	**0.76**	**360**	*e*P	**Pg**	**10 38 13.2**	**-0.5**
ERPC	**Ernies Place**	**0.79**	**325**	*e*P	**Pg**	**10 38 14.1**	**-0.1**
WESC	**Westside Schoo**	**0.83**	**322**	↓*e*P	**Pb**	**10 38 14.6**	**-1.0**
YUH	**Yuha Desert**	**0.87**	**309**	↓*i* P	**Pb**	**10 38 15.0**	**-1.2**
COK	**Cook Ranch**	**0.90**	**326**	↓*i* P	**Pb**	**10 38 15.7**	**-1.1**
RMX	**La Rumorosa**	**0.95**	**302**	↓*e*P	**Pb**	**10 38 16.4**	**-1.3**
RMX				*e*S	**Sb**	**10 38 29.3**	**-1.1**
GLA	**Glamis**	**0.98**	**15**	P	**Pb**	**10 38 16.2**	**-1.9**
	baz=195,SNR=215						
GLA				S	**Sb**	**10 38 28.1**	**-2.9**
	baz=195						
GLA	**Glamis**	**0.98**	**15**	*e*Pg	**Pb**	**10 38 16.3**	**-1.8**
GLA				*e*Sg	**Sb**	**10 38 29.6**	**-1.5**
IKP	**In-Ko-Pah, Jac**	**1.00**	**303**	P	**Pb**	**10 38 17.5**	**-1.0**
	baz=123,SNR=357						
IKP				S	**Sb**	**10 38 31.0**	**-0.7**
	baz=123						
IKP	**In-Ko-Pah, Jac**	**1.00**	**303**	↓*e*P	**Pb**	**10 38 17.5**	**-1.0**
IKP				*e*S	**Sb**	**10 38 31.2**	**-0.5**
SWSC	**Sam W. Stewart**	**1.02**	**326**	P	**Pb**	**10 38 16.8**	**-1.9**
	baz=146,SNR=72						
SPX	**San Pedro Mart**	**1.09**	**196**	↑*e*P	**Pb**	**10 38 19.6**	**-0.7**
SPX	**San Pedro Mart**	**1.09**	**196**	*e*P	**Pb**	**10 38 19.6**	**-0.7**
SPX				*e*S	**Sb**	**10 38 33.9**	**-0.8**
ZAX	**El Zacaton**	**1.14**	**239**	↑*e*P	**Pb**	**10 38 20.0**	**-0.9**
ZAX				*e*S	**Sb**	**10 38 35.6**	**-0.3**
CBX	**Cerro Bola**	**1.32**	**279**	*e*P	**Pn**	**10 38 22.9**	**-0.7**
CBX				*e*S	**Sb**	**10 38 40.5**	**-0.6**
CBX	**Cerro Bola**	**1.32**	**279**	↑*e*P	**Pn**	**10 38 23.0**	**-0.7**
CBX				*e*S	**Sb**	**10 38 41.0**	**-0.1**
CBX				IAML		10 38 43.8	
	comp=N,4μm,0.3s						
CBX	**Cerro Bola**	**1.32**	**279**	*e*P	**Pn**	**10 38 22.9**	**-0.7**
CBX				*e*S	**Sb**	**10 38 40.5**	**-0.6**
113A	**Mohawk Valley,**	**1.32**	**60**	*e*Pg	**Pn**	**10 38 21.9**	**-1.7**
113A				*e*Sn	**Sb**	**10 38 38.5**	**-2.5**
MONP2	**Monument Peak**	**1.35**	**306**	P	**Pn**	**10 38 22.5**	**-1.7**
	baz=125,SNR=236						
MONP2				S	**Sn**	**10 38 40.7**	**-1.5**
	baz=125						
TJIG	**Tijuana**	**1.36**	**284**	*e*P	**Pn**	**10 38 23.1**	**-0.9**
TJIG				*e*S	**Sn**	**10 38 40.4**	**-1.7**
BAR	**Barrett**	**1.43**	**294**	*e*Pn	**Pn**	**10 38 24.2**	**-0.8**
BAR				*e*Sn	**Sn**	**10 38 43.7**	**-0.3**
BC3	**Big Chuckawall**	**1.57**	**350**	P	**Pn**	**10 38 25.0**	**-2.2**
	baz=170,SNR=94						
BC3				S	**Sn**	**10 38 44.5**	**-3.1**
	baz=170						
Y12C	**Blythe**	**1.72**	**17**	P	**Pn**	**10 38 27.1**	**-1.8**
	baz=197						
Y12C				S	**Sn**	**10 38 47.5**	**-3.5**
	baz=197						
Y12C	**Blythe**	**1.72**	**17**	*e*Pn	**Pn**	**10 38 27.6**	**-1.4**
Y12C				*e*Sn	**Sn**	**10 38 50.9**	**-0.1**
109C	**Camp Elliot, M**	**1.85**	**296**	P	**Pn**	**10 38 30.2**	**-0.6**
	baz=114						
109C				Sb	**Sb**	**10 38 55.8**	**-0.3**
	baz=114						
TPFO	**Pinon Flats**	**1.87**	**324**	P	**Pn**	**10 38 29.2**	**-2.0**
	baz=143						
PFO	**Pinyon Flats O**	**1.88**	**324**	Pn	**Pn**	**10 38 30.3**	**-1.0**
	comp=N,7.2nm,0.3s,baz=140,slow=14,SNR=47						
PFO				Pg	**Pg**	**10 38 35.4**	**+0.3**
	comp=N,21nm,0.3s,baz=140,slow=15,SNR=38						
PFO				LR	LR	10 38 49.6	
	comp=N,43nm,20.7s,baz=140,slow=27						
PFO				Lg	Lg	10 38 57.9	
	comp=N,31nm,0.3s,baz=90,slow=16,SNR=11						
PFO	**Pinyon Flats O**	**1.88**	**324**	P	**Pn**	**10 38 29.3**	**-2.0**
	baz=143,SNR=34						
214A	**Organ Pipe Nat**	**1.97**	**94**	P	**Pn**	**10 38 30.5**	**-2.0**
	baz=275						
214A				S	**Sn**	**10 38 55.5**	**-1.7**
	baz=275						
214A	**Organ Pipe Nat**	**1.97**	**94**	*e*Pn	**Pn**	**10 38 30.5**	**-2.0**
214A				*e*Sn	**Sn**	**10 38 56.4**	**-0.8**
BELC	**Belle Mtn. Jos**	**2.03**	**339**	P	**Pn**	**10 38 31.4**	**-2.1**
	baz=159,SNR=32						
IRM	**Iron Mountain**	**2.05**	**359**	P	**Pn**	**10 38 31.6**	**-2.0**
	baz=180,SNR=65						
PDMCI	**Parker Dam,Lak**	**2.34**	**20**	S	**Sn**	**10 39 02.9**	**-3.5**
	baz=201						
Y14A	**Wickenburg**	**2.55**	**44**	*e*Pn	**Pn**	**10 38 39.6**	**-0.9**
Y14A				*e*Sn	**Sb**	**10 39 15.8**	**-0.6**
BBRC	**Big Bear Solar**	**2.63**	**325**	Pb	**Pn**	**10 38 44.6**	**+2.9**
	baz=145						
BBRC				S	**Sn**	**10 39 10.6**	**-3.2**
	baz=145						
NEE2	**Needles Airpor**	**2.69**	**9**	P	**Pn**	**10 38 39.6**	**-2.8**
	baz=189						
NEE2				S	**Sn**	**10 39 11.2**	**-3.8**
	baz=189						
GMRC	**Granite Mounta**	**2.71**	**351**	P	**Pn**	**10 38 40.4**	**-2.4**
	baz=170,SNR=18						
LDFC	**Landfair**	**2.97**	**0**	*e*Pn	**Pn**	**10 38 46.1**	**-0.2**
BFSC	**Mount Baldy Ra**	**3.01**	**316**	P	**Pn**	**10 38 45.8**	**-1.1**
	baz=134						
SSK	**Sunset Peak**	**3.01**	**315**	*e*Pn	**Pb**	**10 38 54.1**	**+1.3**
SCI2	**San Clemente I**	**3.02**	**288**	S	**Sn**	**10 39 22.2**	**-1.0**
	baz=106						
CIS	**Catalina Islan**	**3.06**	**296**	P	**Pn**	**10 38 46.2**	**-1.3**
	baz=114						
CIS				Sb	**Sb**	**10 39 31.4**	**+0.3**
	baz=114						
FMP	**Fort Macarthur**	**3.11**	**302**	Pb	**Pb**	**10 38 53.7**	**-0.8**
	baz=120						
FMP				Sb	**Sb**	**10 39 32.7**	**+0.3**
	baz=120						
W13A	**Hualapai Mount**	**3.16**	**19**	*e*Pn	**Pn**	**10 38 48.0**	**-1.0**
W13A				*e*Sn	**Sb**	**10 39 33.7**	**-0.4**
MWC	**Mount Wilson**	**3.25**	**311**	*e*Pn	**Pn**	**10 38 50.6**	**+0.4**
MWC				*e*Sn	**Sb**	**10 39 38.7**	**+2.2**
PASC	**Pasadena Art C**	**3.29**	**310**	*e*Pn	**Pb**	**10 38 56.5**	**-1.1**
PASC				*e*Sg	**Sg**	**10 39 43.1**	**-1.8**
DECC	**Green Verdugo**	**3.44**	**309**	Sb	**Sb**	**10 39 42.8**	**+0.8**
	baz=128						
GSC	**Goldstone, Bar**	**3.48**	**337**	*e*Pn	**Pb**	**10 39 02.5**	**+1.6**
GSC				*e*Sn	**Sn**	**10 39 33.3**	**-1.5**
TUC	**Tucson**	**3.68**	**86**	P	**Pn**	**10 38 54.0**	**-2.1**
	baz=268						
TUC	**Tucson**	**3.68**	**86**	*e*Pn	**Pn**	**10 38 54.1**	**-2.0**
X16A	**Lo Mia Camp, P**	**3.85**	**52**	*e*Pn	**Pn**	**10 38 58.2**	**-0.3**
X16A				*e*Sn	**Sn**	**10 39 42.5**	**-1.4**
OSI	**Osito Audit: C**	**3.92**	**311**	Sb	**Sb**	**10 39 57.5**	**+1.8**
	baz=129						
SHPR	**Sheep Range**	**4.39**	**360**	*e*Pn	**Pn**	**10 39 07.0**	**+1.1**
MPMC	**Mount Prospec**	**4.41**	**334**	Pb	**Pb**	**10 39 14.0**	**-2.6**
	baz=153						
ISA	**Isabella, Lake**	**4.51**	**323**	*e*Pn	**Pb**	**10 39 14.6**	**-3.8**
WUAZ	**Wupatki**	**4.62**	**41**	P	**Pn**	**10 39 09.2**	**+0.1**
	baz=224						
WUAZ	**Wupatki**	**4.62**	**41**	*e*Pn	**Pn**	**10 39 10.4**	**+1.3**
WUAZ				*e*Sn	**Sn**	**10 40 04.7**	**+1.9**
U15A	**North Rim**	**4.91**	**28**	*e*Pn	**Pn**	**10 39 14.2**	**+1.0**
TPNV	**Topopah Spring**	**4.92**	**349**	P	**Pn**	**10 39 12.5**	**-0.7**
	baz=189						
TPNV	**Topopah Spring**	**4.92**	**349**	*e*Pn	**Pn**	**10 39 14.6**	**+1.4**
X18A	**Snowflake**	**4.96**	**59**	*e*Pn	**Pn**	**10 39 13.9**	**+0.2**
X18A				*e*Sn	**Sn**	**10 40 09.8**	**-1.4**
319A	**Douglas**	**5.03**	**97**	*e*Pn	**Pn**	**10 39 14.7**	**+0.1**
LCMT	**Little Creek M**	**5.14**	**17**	*e*Pn	**Pn**	**10 39 16.6**	**+0.4**
KNB	**Kanab**	**5.26**	**21**	*e*Pn	**Pn**	**10 39 18.9**	**+1.1**
SRIG	**Santa Rosalia**	**5.38**	**152**	*e*Pn	**Pn**	**10 39 17.7**	**-1.7**
W18A	**Petrified Fore**	**5.41**	**55**	P	**Pn**	**10 39 20.7**	**+0.9**
	baz=238						
W18A	**Petrified Fore**	**5.41**	**55**	*e*Pn	**Pn**	**10 39 21.2**	**+1.3**
CCUT	**Cedar City**	**5.62**	**14**	*e*Pn	**Pn**	**10 39 23.3**	**+0.4**
SZCU	**Shurtz Canyon**	**5.73**	**16**	*e*Pn	**Pn**	**10 39 25.8**	**+1.5**
PKCU	**Pink Cliffs**	**5.81**	**23**	*e*Pn	**Pn**	**10 39 28.2**	**+2.7**
121A	**Cookes Peak, D**	**6.23**	**84**	P	**Pn**	**10 39 30.5**	**-0.7**
	baz=268						
121A	**Cookes Peak, D**	**6.23**	**84**	*e*Pn	**Pn**	**10 39 30.2**	**-0.9**
	comp=N,27nm,0.7s						
121A				*e*Sn	**Sn**	**10 40 40.1**	**-2.3**
R11A	**Troy Canyon, C**	**6.24**	**357**	*e*Pn	**Pn**	**10 39 32.3**	**+1.0**
R11A				*e*Pg	**Pb**	**10 39 52.5**	**+4.6**
MTPU	**Mount Pierson**	**6.39**	**21**	*e*Pn	**Pn**	**10 39 37.0**	**+3.4**
MSU	**Marysvale**	**6.83**	**20**	*e*Pn	**Pn**	**10 39 43.9**	**+4.4**
TVH2	**Borealis Mine**	**6.93**	**336**	*e*Pn	**Pn**	**10 39 41.1**	**+0.2**
TVH2				*e*Pg	**Pg**	**10 40 13.6**	**+1.8**
TVH3	**East Aurora ar**	**6.93**	**335**	*e*Pn	**Pn**	**10 39 41.8**	**+1.0**
TVH3				*e*Pg	**Pg**	**10 40 11.8**	**+0.1**
LAZ	**Ladron**	**7.07**	**69**	*e*Pn	**Pn**	**10 39 44.1**	**+1.4**
LAZ				*e*Pg	Pg	10 40 19.6	+5.1
BNM	**Barren Site**	**7.41**	**72**	*e*Pn	**Pn**	**10 39 48.2**	**+1.2**
LPM	**Los Pinos Moun**	**7.45**	**71**	*e*Pn	**Pn**	**10 39 48.3**	**+0.4**
MVCO	**Mesa Verde**	**7.46**	**45**	*e*Pn	**Pn**	**10 39 50.7**	**+2.5**
PV05	**Paradox Valley**	**7.74**	**38**	*e*Pn	**Pn**	**10 39 53.3**	**+1.4**
PV05				*e*Lg	Lg	10 42 13.1	
ANMO	**Albuquerque**	**7.77**	**66**	*e*Pn	**Pn**	**10 39 53.6**	**+1.2**
PV10	**Paradox Valley**	**7.99**	**37**	*e*Pn	**Pn**	**10 39 58.7**	**+3.3**
PV01	**Paradox Valley**	**8.06**	**40**	*e*Pn	**Pn**	**10 39 58.9**	**+2.5**
PV04	**Paradox Valley**	**8.07**	**37**	*e*Pn	**Pn**	**10 40 00.9**	**+4.4**
PV04				*e*Sn	**Sn**	**10 41 31.5**	**+3.5**
P17A	**Butcher Ranch,**	**8.17**	**25**	*e*Pn	**Pn**	**10 39 57.3**	**-0.4**
NLU	**North Lily Min**	**8.21**	**17**	*e*Pn	**Pn**	**10 39 58.3**	**-0.1**
MNTX	**Cornudas Mount**	**8.29**	**90**	P	**Pn**	**10 39 59.1**	**-0.3**
	baz=275						
MNTX	**Cornudas Mount**	**8.29**	**90**	*e*Pn	**Pn**	**10 39 59.8**	**+0.4**
LPIG	**La Paz**	**9.03**	**151**	LR	LR	10 43 21.0	
	comp=N,142nm,21.9s,baz=22,slow=36						
SMCO	**Snowmass**	**9.68**	**41**	*e*Pn	**Pn**	**10 40 22.0**	**+3.3**
HVU	**Hansel Valley**	**9.84**	**10**	*e*Pn	Pn	10 40 28.8	+8.1
HVU				*e*Lg	Lg	10 43 06.0	
TX31	**Lajitas Ar. Si**	**10.24**	**103**	*e*Pn	**Pn**	**10 40 28.1**	**+2.0**
LTX	**Lajitas**	**10.24**	**103**	*e*Pn	**Pn**	**10 40 28.2**	**+2.1**
LTX				*e*Lg	Lg	10 43 20.3	
TXAR	**Lajitas Array**	**10.24**	**103**	Pn	**Pn**	**10 40 28.2**	**+2.1**
	comp=N,0.5nm,0.3s,baz=286,slow=13,SNR=39						
TXAR				Lg	Lg	10 43 20.3	
	comp=N,0.0nm,0.3s,baz=288,slow=26,SNR=4.3						
TXAR				LR	LR	10 45 05.2	
	comp=N,133nm,19.1s,baz=0.0,slow=42						
PDAR	**Pinedale Array**	**11.52**	**21**	Pn	**Pn**	**10 40 47.1**	**+3.3**
	comp=N,0.1nm,0.3s,baz=214,slow=11,SNR=2.1						
PDAR				Pg	Pg	10 41 28.7	
	comp=N,0.1nm,0.3s,baz=193,slow=12,SNR=3.1						
PDAR				Lg	Lg	10 44 00.6	
	comp=N,0.1nm,0.3s,baz=202,slow=21,SNR=3.3						
PDAR				LR	LR	10 45 25.5	
	comp=N,183nm,18.1s,baz=214,slow=39						
NEW	**Newport**	**16.21**	**355**	Pn	**P**	**10 41 49.2**	**-0.8**
	comp=N,0.1nm,0.3s,baz=232,slow=19,SNR=3.0						
NEW				LR	LR	10 47 55.0	
	comp=N,81nm,20.8s,baz=165,slow=37						
BBB	**Bella Bella**	**22.19**	**339**	LR	LR	10 52 06.5	
	comp=N,78nm,19.0s,baz=180,slow=38						
YKA	**Yellowknife Ar**	**30.41**	**0**	LR	LR	10 57 06.0	
	comp=N,6.7nm,20.1s,baz=180,slow=38						
ILAR	**Eielson Array**	**38.08**	**339**	P	**P**	**10 45 21.0**	**+3.4**
	comp=N

baz=170,SNR=36
BC3 S Sn 11 00 23.5 -3.0
baz=170
SDRC San Diego Road 1.67 293 eP Pn 11 00 06.9 -0.2
Y12C Blythe 1.73 17 P Pn 11 00 06.5 -1.5
baz=197
109C Camp Elliot, M 1.85 296 P Pn 11 00 09.0 -0.6
baz=115
109C Sb Sn 11 00 35.2 +2.2
baz=115
TPFO Pinon Flats 1.88 324 P Pn 11 00 08.5 -1.6
baz=144
PFO Pinyon Flats O 1.89 324 P Pn 11 00 08.6 -1.6
baz=144,SNR=24
PFO Pinyon Flats O 1.89 324 ePn Pn 11 00 08.6 -1.6
PFO eSn Sn 11 00 34.5 +0.4
214A Organ Pipe Nat 1.97 93 P Pn 11 00 09.6 -1.7
baz=275
214A Organ Pipe Nat 1.97 93 ePn Pn 11 00 09.4 -1.8
214A eSn Sn 11 00 38.1 +2.2
IRM Iron Mountain 2.06 359 P Pn 11 00 11.1 -1.4
baz=180
PDMCI Parker Dam,Lak 2.36 20 Sb Sb 11 00 50.2 +0.8
baz=201
GMRC Granite Mounta 2.73 351 P Pn 11 00 20.5 -1.3
baz=171,SNR=13
BFSC Mount Baldy Ra 3.02 316 Sb Sb 11 01 10.9 +2.2
baz=135
SCI2 San Clemente I 3.02 288 Sb Sb 11 01 10.2 +1.5
baz=106
CIS Catalina Islan 3.07 296 P Pn 11 00 25.8 -0.5
baz=114
CIS Sb Sb 11 01 11.4 +1.5
baz=114
FMP Fort Macarthur 3.12 302 Sb Sb 11 01 13.0 +1.6
baz=121
DECC Green Verdugo 3.45 310 Sb Sb 11 01 23.8 +2.8
baz=128
TUC Tucson 3.69 85 P Pn 11 00 33.7 -1.1
baz=268
TUC Tucson 3.69 85 ePn Pn 11 00 37.4 +2.5
TUC eSn Sn 11 01 18.0 -0.3
WUAZ Wupatki 4.63 41 ePn Pn 11 00 49.3 +1.4
WUAZ eSn Sn 11 01 43.5 +1.8
DAC Darwin (Calif) 4.65 335 ePn Pn 11 00 49.0 +0.7
121A Cookes Peak, D 6.23 84 ePn Pn 11 01 09.6 -0.4
comp=N,7.2nm,0.6s
121A eSn Sn 11 02 20.9 -0.3
R11A Troy Canyon, C 6.26 357 Pn Pn 11 01 09.2 -1.1
comp=N,1.8nm,0.5s
R11A eSn Sn 11 02 24.5 +2.7

*IDC **15** 11:21:49.8±1.6,16°.03S×167°.34E,h0km,mb3.9/4, mb1 4.2/5,mb1mx3.8/28,mbtmp4.0/5,ML4.5/1,Error ellipse: s-maj=51.5km s-min=26.3km az=125.0*
*ISCJB **15** 11:21:53.4±1.2,16°.22S±0°.08×167°.3E±0°.2,h39km, mb3.8/4,Error ellipse: s-maj=33.5km s-min=11.5km az=3.7*
ISC 15 11:21:55.2±1.2,16°.2S±0°.1×167°.4E±0°.3,h39km,n6, σ0s58/7,mb4.0/4,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	5.94	188	Pn	Pn		11 23 21.3	+0.6
	11nm,0.3s,baz=25,slow=18,SNR=81							
DZM				Sn	Sn		11 24 26.9	-0.6
	7.3nm,0.3s,baz=311,slow=23,SNR=7.0							
WRA	Warramunga Arr	31.61	258	P	P		11 28 14.3	-0.4
	0.4nm,0.8s,baz=88,slow=9.3,SNR=3.9							
ASAR	Alice Springs	32.29	251	P	P		11 28 20.9	+0.3
	2.4nm,0.6s,baz=78,slow=8.7,SNR=52							
PETK	Petropavlovsk-	69.50	354	P	P		11 32 59.9	+0.4
	2.3nm,0.7s,baz=136,slow=8.8,SNR=5.1							
ILAR	Eielson Array	87.86	18	P	P		11 34 39.6	-0.5
	0.4nm,0.9s,baz=236,slow=6.4,SNR=4.4							
ARCES	ARCESS Array B	121.66	345	PKP	PKPdf		11 40 44.1	-0.1
	3.4nm,0.9s,baz=48,slow=1.8,SNR=3.8							

*CSEM **15** 11:25:33.8,41°.37N×48°.36E,h13km,mb3.9*
MOS 15 11:25:33.8±1.6,41°.37N×48°.36E,h13km,mb3.9/1,1C-1D, Error ellipse: s-maj=13.9km s-min=7.0km az=123.6, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
AKT	Akhty	0.49	284	ePG	Pb		11 25 44.3	-0.1
AKT				i			11 25 50.6	
AKT				pmax	pmax			
	comp=Z,2μm,0.1s							
AKT				smax	smax			
	comp=N,3μm,0.3s							
AKT				smax	smax			
	comp=E,3μm,0.2s							
AKT				smax	smax			
	comp=E,2μm,0.2s							
AKT	Akhty	0.49	284	ePg	Pb		11 25 44.3	-0.1
	comp=E,2μm,0.1s							
AKT				i Sg	Sg		11 25 50.6	+0.5
	comp=E,3μm,0.3s							
DRN	Derbent	0.66	358	⇓iPG	Pg		11 25 46.6	-0.1
DRN				e			11 25 55.0	
DRN	Derbent	0.66	358	i Pg	Pg		11 25 46.6	-0.1
DRN				eSg	Sg		11 25 55.0	-0.5
URKR	Urkarakh	0.97	326	i PG	Pg		11 25 51.5	-1.0
URKR				i S	Sg		11 26 03.0	-2.2
URKR				pmax	pmax			
	comp=Z,124nm,0.4s							
URKR	Urkarakh	0.97	326	i Pg	Pg		11 25 51.5	-1.0
	comp=Z,124nm,0.4s							
URKR				i Sg	Sg		11 26 03.0	-2.2
KMKR	Kumukh	1.22	309	ePG	Pn		11 25 56.0	-0.7
KMKR				eS	Sb		11 26 12.0	-0.5
KMKR				pmax	pmax			
	comp=Z,28nm,0.3s							
KMKR	Kumukh	1.22	309	ePg	Pn		11 25 56.0	-0.7
	comp=Z,28nm,0.3s							
KMKR				eSg	Sb		11 26 12.0	-0.5
GNBR	Gunib	1.46	315	ePG	Pg		11 26 03.0	+1.1
GNBR				e			11 26 22.8	
GNBR				pmax	pmax			
	comp=Z,35nm,0.7s							
GNBR				smax	smax			
	comp=N,163nm,0.7s							
GNBR				smax	smax			
	comp=E,183nm,0.3s							
GNBR				smax	smax			
	comp=N,189nm,0.7s							
GNBR	Gunib	1.46	315	ePg	Pg		11 26 03.0	+1.1
	comp=N,35nm,0.7s							
GNBR				eSg	Sg		11 26 22.8	+1.9
	comp=N,189nm,0.7s							
ARKR	Arakani	1.60	321	ePG	Pg		11 26 04.0	-0.6
ARKR				eS	Sg		11 26 25.0	-0.4
ARKR	Arakani	1.60	321	ePg	Pg		11 26 04.0	-0.6
ARKR				eSg	Sg		11 26 25.0	-0.4
XNZR	Khunzakh	1.71	314	PN	Pg		11 26 06.0	-0.6
XNZR				eS	Sg		11 26 28.0	-0.7
XNZR	Khunzakh	1.71	314	Pn	Pg		11 26 06.0	-0.6
XNZR				eSg	Sg		11 26 28.0	-0.7
UNCR	Uncukul	1.78	320	ePN	Pb		11 26 07.0	+0.6
UNCR				i S	Sg		11 26 31.0	-0.2
UNCR				pmax	pmax			
	comp=Z,29nm,0.2s							
UNCR	Uncukul	1.78	320	ePn	Pb		11 26 07.0	+0.6
	comp=Z,29nm,0.2s							
UNCR				i Sg	Sg		11 26 31.0	-0.2
KRNR	Karanay	1.82	324	ePN	Pb		11 26 07.5	+0.5
KRNR				eS	Sg		11 26 32.3	0.0
KRNR	Karanay	1.82	324	ePn	Pb		11 26 07.5	+0.5
KRNR				eSg	Sg		11 26 32.3	0.0
DBC	Dubki	2.01	326	⇑iPN	Pg		11 26 20.8	+8.5
DBC				pmax	pmax			
	comp=Z,22nm,0.5s							
DBC	Dubki	2.01	326	i Pn	Pg		11 26 20.8	+8.5
	comp=Z,22nm,0.5s							
GNI	Garni	3.01	247	i PN	Pb		11 26 25.3	-2.0
GNI	Garni	3.01	247	i Pn	Pb		11 26 25.3	-2.0
NCK	Nalchik	4.12	303	i PN	Pn		11 26 37.0	+0.5
NCK	Nalchik	4.12	303	i Pn	Pn		11 26 37.0	+0.5
NEY	Neytrino	4.59	296	i PN	Pn		11 26 42.4	-0.6
NEY	Neytrino	4.59	296	i Pn	Pn		11 26 42.4	-0.6
KIV	Kislovodsk	4.92	304	i PN	Pn		11 26 45.8	-1.7
KIV	Kislovodsk	4.92	304	i Pn	Pn		11 26 45.8	-1.7
KIEV	Kiev	16.21	312	i P	Pn		11 29 20.4	-0.6
KIEV	Kiev	16.21	312	i P	Pn		11 29 20.4	-0.6
ARU	Arti	16.47	20	i P	P		11 29 26.0	-1.0
ARU				pmax	pmax			
	comp=Z,4.0nm,1.6s							
ARU	Arti	16.47	20	i P	P		11 29 26.0	-1.0
	comp=Z,4.0nm,1.6s							
BRVK	Borovoye	18.84	44	i P	Pn		11 29 54.1	+0.3
BRVK				pmax	pmax			
	comp=Z,3.0nm,0.7s							
BRVK	Borovoye	18.84	44	i P	Pn		11 29 54.1	+0.3
	comp=Z,3.0nm,0.7s							
AAK	Ala-Archa	19.44	78	i P	Pn		11 30 04.1	+2.8
AAK				pmax	pmax			
	comp=Z,3.0nm,0.4s							
AAK	Ala-Archa	19.44	78	i P	Pn		11 30 04.1	+2.8
	comp=Z,3.0nm,0.4s							

*ISCJB **15** 11:45:01.0±0.7,38°.11N±0°.03×143°.53E±0°.06,h19km, mb3.6/5,Error ellipse: s-maj=6.4km s-min=4.7km az=9.5*
*NIED **15** 11:45:00,38°.20N×143°.60E,h11km,Mw3.9 Best double couple: M0 7.20000×10^14 NP1:φs334.00000°,δ78.00000°, λ174.00000°. NP2:φs65.00000°,δ84.00000°,λ12.00000°.*
*IDC **15** 11:45:00.3±1.4,38°.09N×143°.60E,h0km,mb3.7/5, mb1 3.9/8,mb1mx3.7/39,mbtmp3.8/8,ML3.8/2,MS2.6/4, Ms1 2.6/4,ms1mx2.4/45,Error ellipse: s-maj=31.3km s-min=24.9km az=98.0*
*JMA **15** 11:45:02.1±0.2,38°.16N×143°.58E,h39km,M4.0*
ISC 15 11:45:02.5±1.0,38°.13N±0°.04×143°.55E±0°.08,h19km,n36, σ2s03/43,mb3.7/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.75	304	P	Pn		11 45 31.3	-0.6
OFUJ				eS	Sn		11 45 52.6	-1.1
JIO	Ouri	1.76	281	P	Pn		11 45 31.4	-0.6
JIO				eS	Sn		11 45 52.8	-1.1
MIYJ	Miyakonagasawa	1.98	318	P	Pn		11 45 33.4	-1.6
MIYJ				eS	Sn		11 45 57.1	-2.2
JMK	Ichinoseki	2.00	295	P	Pn		11 45 35.1	-0.2
JMK				eS	Sn		11 45 58.7	-1.1
JOM	Ohasama	2.22	308	P	Pn		11 45 38.1	-0.2
JOM				eS	Sn		11 46 04.5	-0.6
JOU	Okura	2.28	277	P	Pn		11 45 39.3	+0.1
JRG	Rokugo	2.61	300	P	Pn		11 45 44.1	+0.5
JFT	Otama	2.61	258	P	Pn		11 45 44.0	+0.3
JFT				eS	Sn		11 46 14.5	-0.5
JYK	Kaneyama	2.62	289	P	Pn		11 45 44.0	+0.1
JYK				eS	Sn		11 46 15.6	+0.4
JTM	Tenmabayashi	3.28	325	eS	Sn		11 46 29.0	-2.3
JAW	Awa shima	3.40	277	P	Pn		11 45 55.2	+0.7
JAG	Ashikaga	3.68	244	P	Pn		11 45 58.1	-0.3
JAG				eS	Sn		11 46 39.9	-1.4
JOT	Ohata	3.78	330	P	Pn		11 46 00.8	+1.1
BSO1	Boso 1	4.04	212	P	Pn		11 46 01.1	-1.7
BSO1				eS	Sn		11 46 47.5	-1.8
JSD	Sado	4.17	270	P	Pn		11 46 04.8	-0.3
JNBK	Urakawa-nobuka	4.19	352	P	Pn		11 46 05.6	+0.2
JNBK				eS	Sn		11 46 51.5	-2.4
JKB	Kayabe	4.22	334	eS	Sn		11 46 52.7	-1.9
JRY	Ryogami san	4.27	242	P	Pn		11 46 06.5	0.0
JRY				eS	Sn		11 46 53.0	-2.8
JCH	Churui	4.49	358	P	Pn		11 46 08.0	-1.4
JCH				eS	Sn		11 46 56.2	-4.9
MJAR	Matsushiro Arr	4.54	251	Pn	Pn		11 46 11.6	+1.4
	1.9nm,0.3s,baz=78,slow=14,SNR=17							
MJAR				LR	LR		11 48 25.9	
	comp=Z,66nm,18.6s,baz=5.0,slow=45							
MAT	Matsushiro	4.54	251	P	Pn		11 46 11.7	+1.5
MAT				eS	Sn		11 47 01.8	-0.7
JHJ	Hachijo jima 2	5.86	213	Pn	Pn		11 46 27.4	-1.0
	19nm,0.3s,baz=315,slow=24,SNR=9.7							
JHJ				Sn	Sn		11 47 27.7	-7.3
	21nm,0.3s,baz=73,slow=20,SNR=4.6							
JHJ				LR	LR		11 48 15.6	
	comp=Z,30nm,20.7s,baz=134,slow=33							
ASAJ	Asahikawa	6.03	353	Sn	Sn		11 47 34.0	-5.1
	baz=256,slow=17							
USRK	Ussuriysk Ar.	10.61	309	Pn	Pn		11 47 36.0	+2.6
	0.2nm,0.3s,baz=111,slow=14,SNR=3.0							
USRK				LR	LR		11 52 13.7	
	comp=Z,34nm,18.6s,baz=254,slow=41							
PETK	Petropavlovsk-	17.91	29	LR	LR		11 56 39.4	
	comp=Z,27nm,20.5s,baz=183,slow=39							
H11N2	WAKE ISLAND Hy	27.32	126	T	T		12 19 23.1	
	baz=317,slow=74,SNR=23							
H11N1	WAKE ISLAND Hy	27.33	126	T	T		12 19 25.4	
	baz=317,slow=74,SNR=12							
H11N3	WAKE ISLAND Hy	27.34	126	T	T		12 19 25.9	
	baz=317,slow=74,SNR=18							
H11S1	WAKE ISLAND Hy	28.10	128	T	T		12 20 20.7	
	baz=320							
H11S3	WAKE ISLAND Hy	28.11	128	T	T		12 20 21.3	
	baz=320							
H11S2	WAKE ISLAND Hy	28.12	128	T	T		12 20 20.7	
	baz=320							
SONM	Songino Array	28.62	302	P	P		11 50 58.4	+0.7
	0.6nm,0.7s,baz=101,slow=7.8,SNR=3.1							
ZALV	Zalesovo Beam	42.45	312	P	P		11 52 56.7	+0.8
	1.0nm,0.4s,baz=90,slow=10,SNR=2.3							
MKAR	Makanchi Array	44.98	302	P	P		11 53 17.2	+0.7
	0.4nm,0.4s,baz=74,slow=12,SNR=4.2							
ILAR	Eielson Array	47.66	33	P	P		11 53 38.2	+1.0
	0.3nm,0.7s,baz=270,slow=10.0,SNR=4.4							
WRA	Warramunga Arr	58.40	190	P	P		11 54 57.6	+0.8
	2.1nm,1.2s,baz=9.0,slow=7.1,SNR=5.3							

*IDC **15** 11:47:32.4±2.2,29°.92S×176°.02W,h0km,mb3.8/2, mb1 4.2/4,mb1mx3.8/28,mbtmp4.1/4,ML3.8/2,Error ellipse: s-maj=40.3km s-min=33.6km az=52.0*
*ISCJB **15** 11:47:36.5±2.3,30°.18S±0°.08×176°.2W±0°.2,h33km, mb3.8/2,Error ellipse: s-maj=27.1km s-min=10.0km az=164.9*
ISC 15 11:47:36.7±2.1,30°.0S±0°.1×176°.1W±0°.2,h35km,n6, σ1s58/8,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.80	295	Pn	Pn		11 48 03.6	-1.6
	54nm,0.3s,baz=120,slow=20,SNR=3.3							
RAO				Sn	Sn		11 48 27.3	+0.5
	276nm,0.3s,baz=65,slow=22,SNR=8.0							
RAO				LR	LR		11 48 34.2	
	comp=Z,207nm,19.6s,baz=222,slow=35							
URZ	Urewera	9.96	213	Pn	Pn		11 49 56.5	-0.8
	0.5nm,0.3s,baz=17,slow=11,SNR=4.0							
URZ				Sn	Sn		11 51 48.1	+0.2
	1.2nm,0.3s,baz=0.0,slow=20,SNR=5.8							
RPZ	Rata Peaks	17.08	213	Pn	Pn		11 51 31.8	-0.9
	0.5nm,0.3s,baz=302,slow=16,SNR=2.8							
ASAR	Alice Springs	44.81	266	P	P		11 55 49.5	+2.0
	0.5nm,0.7s,baz=103,slow=7.4,SNR=5.2							
WRA	Warramunga Arr	45.77	271	P	P		11 55 57.1	+1.9
	1.9nm,0.7s,baz=109,slow=7.8,SNR=12							
FINES	FINESS Array B	145.36	341	PKPbc	PKPab		12 07 09.6	-0.6
	4.3nm,1.1s,baz=20,slow=4.4,SNR=3.1							

*IDC **15** 11:55:05.0±1.4,30°.12S×176°.50W,h0km,mb4.3/4, mb1 4.4/6,mb1mx4.1/29,mbtmp4.3/6,ML4.2/2,MS3.4/2, Ms1 3.4/2,ms1mx2.9/24,Error ellipse: s-maj=29.5km s-min=23.5km az=57.0*
*NEIC **15** 11:55:07.0±1.1,30°.09S×176°.59W,h10km,mb4.6/4,Error ellipse: s-maj=23.8km s-min=15.0km az=73.0*
*ISCJB **15** 11:55:08.8±1.5,30°.21S±0°.07×176°.8W±0°.2,h24km, mb4.3/8,Error ellipse: s-maj=23.8km s-min=9.1km az=170.6*
ISC 15 11:55:09.9±1.1,30°.13S±0°.07×176°.7W±0°.1,h24km,n18, σ2s35/22,mb4.5/8,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.35	310	Pn	Pb		11 55 34.2	-0.3
	313nm,0.3s,baz=119,slow=7.5,SNR=9.0							
RAO				Sn	Sb		11 55 53.8	+2.4
	648nm,0.3s,baz=48,slow=22,SNR=13							
RAO	Raoul Island	1.35	310	ePn	Pb		11 55 34.2	-0.3
RAO				eSn	Sn		11 55 48.5	-1.9
URZ	Urewera	9.58	210	Pn	Pn		11 57 25.6	-0.6
	1.5nm,0.3s,baz=328,slow=19,SNR=9.3							
URZ				Sn	Sn		11 59 14.8	+1.8
	2.6nm,0.3s,baz=129,slow=11,SNR=7.5							
URZ	Urewera	9.58	210	ePn	Pn		11 57 26.6	+0.4
URZ				eSn	Sn		11 59 15.8	+2.8
RPZ	Rata Peaks	16.68	212	Pn	Pn		11 59 00.1	-1.9
	1.1nm,0.3s,baz=108,slow=19,SNR=5.3							
RPZ				Sn	Sn		12 01 58.5	-8.1
	0.4nm,0.3s,baz=104,slow=17,SNR=2.1							
DZM	Mont Dzumac	17.10	294	LR	LR		12 04 17.8	
	comp=Z,145nm,21.7s,baz=6.0,slow=32							
RAR	Rarotonga	17.66	64	LR	LR		12 04 50.7	
	comp=Z,99nm,18.2s,baz=306,slow=34							
CTA	Charters Tower	34.84	278	P	P		12 01 59.4	+0.1
	4.9nm,0.6s,baz=101,slow=9.8,SNR=7.9							
STKA	Stephens Creek	35.61	256	P	P		12 02 07.1	+1.4
	2.5nm,0.6s,baz=100,slow=11,SNR=9.0							
ASAR	Alice Springs	44.22	266	P	P		12 03 17.8	+0.3
	1.0nm,0.7s,baz=102,slow=6.9,SNR=20							
ASAR				PcP	PcP		12 05 01.8	0.0
	0.4nm,0.7s,baz=122,slow=4.2,SNR=3.0							
WRAB	Tennant Creek	45.18	271	eP	P		12 03 24.8	-0.3
	5.9nm,0.6s							
WRA	Warramunga Arr	45.19	271	P	P		12 03 24.9	-0.2
	5.9nm,0.7s,baz=110,slow=7.8,SNR=35							
FITZ	Fitzroy Crossi	53.46	269	eP	P		12 04 28.5	+0.1
	4.4nm,0.9s							
CASY	Casey	55.89	208	eP	P		12 04 45.0	-0.3
	0.4nm,0.5s							
QSPA	South Pole Qui	59.98	180	eP	P		12 05 16.6	+2.5
	6.2nm,0.9s							
FINES	FINESS Array B	145.26	341	PKPbc	PKPbc		12 14 42.4	-2.2
	2.2nm,0.4s,baz=46,slow=4.0,SNR=2.9							
AKASG	Malin Array Be	151.74	324	PKPbc	PKPbc		12 15 00.8	-1.2
	1.3nm,0.3s,baz=41,slow=3.3,SNR=4.5							
TORD	Torodi Ar. Bea	163.04	175	PKPab	PKPab		12 15 59.9	-0.4
	0.9nm,0.9s,baz=175,slow=3.4,SNR=4.0							

*NIED **15** 11:55:00,36°.30N×141°.80E,h20km,Mw3.7 Best double couple: M0 4.27000×10^14 NP1:φs209.00000°,δ24.00000°, λ92.00000°. NP2:φs27.00000°,δ66.00000°,λ89.00000°.*
*IDC **15** 11:55:20.8±1.0,36°.24N×142°.10E,h0km,mb3.7/8, mb1 3.8/11,mb1mx3.7/45,mbtmp3.7/11,ML3.7/2,Error ellipse: s-maj=25.3km s-min=18.8km az=87.0*
*ISCJB **15** 11:55:22.6±0.7,36°.29N±0°.04×142°.08E±0°.07,h23km, mb3.6/8,Error ellipse: s-maj=8.6km s-min=5.9km az=16.1*
*JMA **15** 11:55:25.1±0.3,36°.31N×141°.83E,h70km±5km,M3.6*
ISC 15 11:55:23.9±0.9,36°.25N±0°.05×142°.06E±0°.09,h23km,n28, σ1s23/27,mb3.6/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.12	241	P	Pn		11 55 43.8	-0.4
CHOJ				eS	Sb		11 55 58.7	0.0
JHO	Hitachi	1.26	287	P	Pn		11 55 44.1	-2.0
ONAJ	Iwakimizuishiy	1.33	310	P	Pn		11 55 45.4	-1.7
JFK	Kawauchi	1.47	320	P	Pn		11 55 47.9	-1.1
BSO1	Boso 1	1.82	209	P	Pn		11 55 54.3	+1.0
BSO1				eS	Sb		11 56 16.9	-1.5
JFT	Otama	1.88	313	P	Pn		11 55 54.5	-0.1
JMM	Marumori	1.91	328	P	Pn		11 55 54.6	-0.5
BSO3	Boso 3	1.92	222	P	Pn		11 55 55.6	+0.7
JAG	Ashikaga	2.12	276	P	Pn		11 55 56.7	-1.2
JFY	Yanaizu	2.22	302	P	Pn		11 55 59.2	-0.1
MJAR	Matsushiro Arr	3.12	277	Pn	Pn		11 56 10.1	-1.7
	8.8nm,0.3s,baz=264,slow=17,SNR=69							
MAT	Matsushiro	3.12	277	P	Pn		11 56 12.2	+0.4
MAT				eS	Sn		11 56 48.5	+0.1
JHJ	Hachijo jima 2	3.64	212	Pn	Pn		11 56 19.2	+0.3
	18nm,0.3s,baz=345,slow=23,SNR=14							
JHJ				Sn	Sn		11 56 58.4	-2.8
	84nm,0.3s,baz=70,slow=23,SNR=13							
ASAJ	Asahikawa	7.87	3	Pn	Pn		11 57 17.7	+0.8
	baz=144,slow=16							
ASAJ				Sn	Sn		11 58 42.6	-2.6
	0.2nm,0.3s,baz=253,slow=8.8,SNR=2.4							
H11N2	WAKE ISLAND Hy	27.30	120	T	T		12 29 46.2	
	baz=312,slow=75,SNR=9.6							
H11N1	WAKE ISLAND Hy	27.31	120	T	T		12 29 46.7	
	baz=312,slow=75,SNR=7.7							
H11N3	WAKE ISLAND Hy	27.32	120	T	T		12 29 46.2	
	baz=312,slow=75,SNR=8.4							
H11S1	WAKE ISLAND Hy	28.00	123	T	T		12 30 37.8	
	baz=314,slow=76,SNR=6.2							
H11S3	WAKE ISLAND Hy	28.00	123	T	T		12 30 36.3	
	baz=314,slow=76,SNR=5.9							
H11S2	WAKE ISLAND Hy	28.01	123	T	T		12 30 37.4	
	baz=314,slow=76,SNR=5.5							
SONM	Songino Array	28.66	305	P	P		12 01 19.9	+0.9
	2.1nm,0.8s,baz=100,slow=8.3,SNR=9.3							
CMAR	Chiang Mai Arr	41.81	257	P	P		12 03 12.2	+0.2
	0.6nm,0.6s,baz=49,slow=7.5,SNR=4.1							
ZALV	Zalesovo Beam	42.83	313	P	P		12 03 19.9	+0.1
	0.6nm,0.5s,baz=79,slow=7.7,SNR=3.9							
MKAR	Makanchi Array	44.98	303	P	P		12 03 38.1	+0.8
	1.0nm,0.6s,baz=92,slow=9.3,SNR=8.4							
WRA	Warramunga Arr	56.36	189	P	P		12 05 04.3	+1.0
	0.4nm,0.7s,baz=6.3,slow=7.7,SNR=3.1							
ASAR	Alice Springs	60.09	189	P	P		12 05 29.4	+0.1
	0.1nm,0.5s,baz=4.9,slow=6.4,SNR=2.7							
NOA	NORSAR Array B	75.11	338	P	P		12 07 05.3	+1.5
	0.6nm,0.6s,baz=50,slow=9.5,SNR=4.8							
PDAR	Pinedale Array	77.84	46	P	P		12 07 19.8	-0.1
	0.2nm,0.3s,baz=353,slow=3.6,SNR=3.7							

*NIED **15** 12:01:00,36°.20N×140°.10E,h71km,Mw5.5 Best double couple: M0 1.95000×10^17 NP1:φs183.00000°,δ24.00000°, λ88.00000°. NP2:φs5.00000°,δ66.00000°,λ91.00000°.*
*BJI **15** 12:01:07.5,36°.10N×140°.00E,h60km,mb5.4/83,mB5.3/59, Ms5.0/92,Ms7 4.9/87*
*ISCJB **15** 12:01:09.9±0.2,36°.13N±0°.01×139°.97E±0°.02,h81km±1km, mb5.4/388,Error ellipse: s-maj=2.5km s-min=1.9km az=152.6*
*IDC **15** 12:01:10.8±0.9,36°.11N×140°.03E,h78km±7km,mb5.1/47, mb1 5.2/50,mb1mx5.1/53,mbtmp5.4/50,MS4.5/41, Ms1 4.5/41,ms1mx4.5/44,Error ellipse: s-maj=9.9km s-min=6.0km az=84.0*
*JMA **15** 12:01:10.8±0.1,36°.16N×140°.08E,h66km±1km,M5.4 Broadband fault plane solution: P waves. NP1: φs8.00000°,δ65.00000°,λ87.00000°. NP2:φs195.00000°, δ25.00000°,λ97.00000°. Principal axes: T Plg70.0000°, Azm271.0000°; N Plg3.0000°, Azm9.0000°; P Plg20.0000°, Azm100.0000°;*
*MOS **15** 12:01:10.0±0.9,36°.19N×139°.93E,h85km,mb5.5/124, MS4.8/46 Error ellipse: s-maj=7.0km s-min=4.2km az=112.4*
*GCMT **15** 12:01:12.2±0.1,36°.13N×140°.16E,h67km,MW5.5/134, Moment Tensor Solution. s112,c204; s134,c258; Duration: 1s4 Moment tensor: Scale 10^17Nm; Mrr2.07±.03; Mθθ-0.27±.03; Mφφ-2.33±.03; Mrθ-0.12±.02; Mθφ-0.29±.02; Mφr 1.29±.03; Best double couple: Mo2.56900×10^17 NP1:φs360.00000°,δ60.00000°, λ83.00000°. NP2:φs194.00000°,δ31.00000°,λ102.00000°. Principal axes: T 2.4380, Plg74.0000°, Azm251.0000°; N 0.2680,

ONAJ **Iwakimizuishiy** 1.12 36 ⇑P Pn 12 01 30.2 -0.1
JOD2 **Odawara 2** 1.18 218 ⇓P Pn 12 01 31.6 +0.5
JOD2 S Sn 12 01 46.4 -0.4
JFY **Yanaizu** 1.23 350 ⇓P Pn 12 01 32.9 +1.2
JFY S Sn 12 01 49.5 +1.7
JHK **Hiroka** 1.31 324 ⇓P Pn 12 01 34.4 +1.7
JHK S Sn 12 01 52.6 +3.0
JFT **Otama** 1.35 12 ⇑P Pn 12 01 34.2 +0.9
JFT S Sn 12 01 51.5 +0.9
AJI **Ajiro2** 1.36 213 ⇓P Pn 12 01 33.6 +0.2
JYN **Shimob** 1.36 240 ⇓P Pn 12 01 34.9 +1.4
JYN S Sn 12 01 52.8 +1.8
JFK **Kawauchi** 1.37 31 ⇑P Pn 12 01 33.6 0.0
JFK S Sn 12 01 51.1 0.0
BSO3 **Boso 3** 1.46 163 ⇑P Pn 12 01 33.8 -0.6
MJAR **Matsushiro Arr** 1.47 284 P Pn 12 01 36.5 +1.6
1μm,0.3s,baz=88,slow=12,SNR=6485
MJAR LR LR 12 02 25.7
comp=Z,26μm,19.0s,baz=115,slow=50
MAJO **Matsushiro** 1.48 284 *d* iP Pn 12 01 36.4 +1.5
MAJO **Matsushiro** 1.48 284 *e*Pn Pn 12 01 36.5 +1.5
MAJO *e*Sn Sn 12 01 53.8 +0.2
MAT **Matsushiro** 1.48 284 P Pn 12 01 36.8 +1.9
MAT *e*S Sn 12 01 55.9 +2.3
MAT **Matsushiro** 1.48 284 P Pn 12 01 36.4 +1.5
MJB9 **Matsu-Tunnel** 1.48 284 *e*Pn Pn 12 01 36.6 +1.6
MJB9 *e*Sn Sn 12 01 53.6 0.0
JIM2 **Oshima 3** 1.54 197 ⇓P Pn 12 01 35.0 -0.8
JIM2 S Sn 12 01 53.8 -1.4
JNS **Sasagawa** 1.71 342 ⇓P Pn 12 01 39.4 +1.5
JJN **Nakama** 1.72 302 ⇓P Pn 12 01 40.8 +2.6
JYS **Shirataka** 2.02 2 ⇓P Pn 12 01 43.9 +1.7
JGN **Niukaw** 2.16 271 ⇓P Pn 12 01 46.8 +2.7
JTT **Ttatey** 2.18 282 ⇓P Pn 12 01 47.3 +3.0
JYZW **Yoshizawa** 2.19 238 P Pn 12 01 46.1 +1.7
JOU **Okura** 2.23 14 ⇑P Pn 12 01 46.5 +1.5
JSD **Sado** 2.30 324 ⇓P Pn 12 01 47.5 +1.6
JAW **Awa shima** 2.33 346 P Pn 12 01 47.7 +1.4
JYA **Atsumi** 2.40 355 ⇓P Pn 12 01 49.2 +1.9
JAO **Obara** 2.40 248 ⇓P Pn 12 01 49.5 +2.1
INU **Inuyama** 2.56 252 *e*Pn Pn 12 01 51.4 +2.0
INU *e*Sn Sn 12 02 12.3 -7.2
JJH **Hakui** 2.68 287 ⇓P Pn 12 01 53.7 +2.7
JYK **Kaneyama** 2.73 6 ⇓P Pn 12 01 53.7 +1.9
JAA **Atsumi** 2.80 237 ⇓P Pn 12 01 54.2 +1.6
JKG **Kaga** 2.95 273 ⇓P Pn 12 01 57.7 +2.9
JHG **Hegura jima** 2.96 305 ⇓P Pn 12 01 56.8 +2.0
JTB **Tobi-shima** 3.01 354 P Pn 12 01 57.3 +1.7
JHJ **Hachijo jima 2** 3.07 183 P Pn 12 01 56.2 -0.3
576nm,0.3s,baz=324,slow=20,SNR=104
JHJ S Sn 12 02 30.1 -2.0
1μm,0.3s,baz=90,slow=23,SNR=13
JHJ LR LR 12 02 39.1
comp=Z,3μm,19.8s,baz=353,slow=30
JHJ2 **Mitsune** 3.08 183 *e*Pn Pn 12 01 56.2 -0.3
JHJ2 *e*Sn Sn 12 02 33.0 +0.8
OFUJ **Ofunato** 3.17 24 ⇑P Pn 12 01 57.8 0.0
JRG **Rokugo** 3.24 9 ⇓P Pn 12 02 00.9 +2.3
JYW **Yuwa** 3.34 3 ⇓P Pn 12 02 02.9 +2.8
JOM **Ohasama** 3.43 17 ⇓P Pn 12 02 02.4 +1.1
MIYJ **Miyakonagasawa** 3.67 23 ⇓P Pn 12 02 04.5 -0.1
JWT **Wachi** 3.84 258 ⇓P Pn 12 02 08.8 +2.0
JKZ **Kuzumaki** 3.93 15 ⇓P Pn 12 02 08.9 +0.8
JAH **Hinai** 4.02 7 ⇓P Pn 12 02 11.5 +2.2
JTH **Tanohata** 4.02 21 ⇓P Pn 12 02 09.5 +0.2
JAJ2 **Tsuna** 4.53 248 ⇓P Pn 12 02 17.7 +1.4
ERM **Erimo** 6.31 22 *ce*P Pn 12 02 38.3 -2.3
ERM **Erimo** 6.31 22 *e*Pn Pn 12 02 38.0 -2.6
ERM *e*Sn Sn 12 03 48.3 -2.9
JBEP **Beppuamama** 7.61 250 P Pn 12 03 00.9 +2.4
JNU **Nakatsue** 8.11 250 P Pn 12 03 07.1 +1.9
8.2nm,0.3s,baz=123,slow=5.3,SNR=224
JNU LR LR 12 06 37.8
comp=Z,45nm,19.0s,baz=38,slow=40
ASAJ **Asahikawa** 8.16 13 P Pn 12 03 05.1 -0.7
11nm,0.3s,baz=213,slow=9.2,SNR=82
ASAJ S Sn 12 04 33.6 -2.8
7.2nm,0.3s,baz=285,slow=20,SNR=3.3
ASAJ **Asahikawa** 8.16 13 *e*Pn Pn 12 03 04.2 -1.7
ASAJ *e*Sn Sn 12 04 33.1 -3.4
JII **Iki** 8.75 257 P Pn 12 03 18.6 +4.7
YUK **Yuzh-Kuril'sk** 9.03 28 *e*P Pn 12 03 14.5 -3.2
VLA **Vladivostok** 9.31 320 *ce*P Pn 12 03 23.4 +1.8
MSHR **Mys Shultsa** 9.34 316 *e*P Pn 12 03 24.3 +2.3
KSRS **Korea Array** 9.75 281 P Pn 12 03 32.3 +4.7
9.0nm,0.3s,baz=92,slow=14,SNR=121
KSRS LR LR 12 07 11.4
comp=Z,7μm,19.5s,baz=95,slow=37
KS01 **Wonju Array Si** 9.78 281 *e*Pn Pn 12 03 31.2 +3.3
KS01 *e*Sn Sn 12 05 16.9 +0.9
KS15 **Wonju Array Si** 9.78 281 *e*Pn Pn 12 03 32.3 +4.3
KSAR **Wonju Array Be** 9.78 281 P Pn 12 03 32.3 +4.3
KSAR **Wonju Array Be** 9.78 281 P Pn 12 03 32.3 +4.3
USRK **Ussuriysk Ar.** 10.06 325 P Pn 12 03 35.2 +3.5
3.1nm,0.3s,baz=141,slow=13,SNR=58
USRK LR LR 12 07 02.4
comp=Z,5μm,21.8s,baz=130,slow=35
INCN **Inchon** 10.78 281 P Pn 12 03 45.3 +3.6
SNR=10
INCN **Inchon** 10.78 281 *e*Pn Pn 12 03 46.3 +4.7
KUR **Kuril'sk** 10.82 31 *d* iP Pn 12 03 38.7 -3.4
KUR pmax pmax
comp=Z,296nm,4.2s
KUR pmax pmax
comp=N,31nm,0.7s
KUR pmax pmax
comp=E,37nm,0.7s
KUR pmax pmax
comp=Z,74nm,0.7s
YSS **Yuzh-Sakhalins** 10.95 10 ⇓*e*P Pn 12 03 42.5 -1.3
YSS *e*S Sn 12 05 54.4 +10
YSS pmax pmax
comp=Z,60nm,0.6s
YSS MLR MLR
comp=Z,2μm,13.0s
YSS MLR MLR
comp=N,2μm,18.0s
YSS MLR MLR
comp=E,2μm,10.0s
YSS **Yuzh-Sakhalins** 10.95 10 *e*Pn Pn 12 03 42.3 -1.5
MDJ **Mudanjiang** 11.54 320 P Pn 12 03 54.6 +2.6
MDJ S Sn 12 06 10.1 +11
MDJ ScP ScP 12 13 04.9 +0.7
MDJ PcS PcS 12 13 12.3 +0.7
MDJ pmax pmax
comp=E,52nm,1.5s
MDJ pmax pmax
comp=E,360nm,5.7s
MDJ LR LR
comp=E,4μm,24.7s
MDJ LR LR
comp=E,3μm,21.9s
MDJ LR LR
comp=E,5μm,28.4s
MDJ **Mudanjiang** 11.54 320 *e*Pn Pn 12 03 55.2 +3.2
MDJ *e*Sn Sn 12 06 03.5 +4.4
HABR **Khabarovsk** 12.79 345 *e*P Pn 12 04 07.1 -1.9
HABR *e*S Sn 12 06 28.2 -1.3
HABR pmax pmax
comp=N,56nm,1.3s
HABR pmax pmax
comp=Z,98nm,1.3s
HABR pmax pmax
comp=E,6.0nm,0.6s
CN2 **Changchun** 13.47 309 *e*P Pn 12 04 20.5 +2.4
CN2 *e*sP sP 12 04 38.6
CN2 *e*S Sn 12 06 49.5 +3.4
CN2 pmax pmax
comp=E,30nm,1.3s
CN2 pmax pmax
comp=E,500nm,5.0s
CN2 LR LR
comp=E,4μm,15.0s
CN2 LR LR
comp=E,2μm,15.0s
CN2 LR LR
comp=E,2μm,18.0s
JOW **Kunigami** 13.66 230 *e*Pn Pn 12 04 22.2 +1.5
JOW *e*Sn Sn 12 06 50.4 -0.4
SNY **Shenyang** 13.93 299 ⇑P Pn 12 04 26.8 +2.6
SNY S Sn 12 07 01.3 +4.1
SNY pmax pmax
comp=E,160nm,1.6s
SNY pmax pmax
comp=E,2μm,7.2s
SNY LR LR
comp=E,4μm,12.6s
SNY LR LR
comp=E,4μm,15.7s
SNY LR LR
comp=E,5μm,15.7s
KLR **Kul'dur** 14.35 338 P Pn 12 04 28.6 -0.9
comp=E,1.2nm,0.3s,baz=143,slow=11,SNR=29
KLR LR LR 12 10 06.1
comp=E,2μm,18.0s,baz=148,slow=37
TYV **Tymovskoe** 14.79 7 *e*P Pn 12 04 30.5 -4.7
TYV pmax pmax
comp=E,31nm,0.8s
TYV pmax pmax
comp=Z,86nm,0.8s
TYV pmax pmax
comp=Z,500nm,4.0s
TYV MLR MLR
comp=N,2μm,18.0s
TYV MLR MLR
comp=Z,2μm,20.0s
DL2 **Dalian** 14.81 286 ⇓*i*P P 12 04 38.4 -1.4
DL2 sP sP 12 04 58.8
DL2 S Sn 12 07 25.4 +6.8
DL2 pmax pmax
comp=Z,560nm,1.4s
DL2 pmax pmax
comp=Z,990nm,4.0s
DL2 LR LR
comp=Z,4μm,17.8s
DL2 LR LR
comp=Z,5μm,28.0s
SSE **Sheshan** 16.45 257 P P 12 04 58.3 +0.3
SSE S Sn 12 08 00.6 +2.2
SSE pmax pmax
comp=Z,130nm,0.8s
SSE pmax pmax
comp=Z,800nm,5.5s
SSE LR LR
comp=Z,2μm,17.7s
SSE LR LR
comp=Z,1μm,17.7s
SSE LR LR
comp=Z,4μm,14.5s
JIKM **Ikemajima** 16.93 232 P P 12 05 03.5 +0.2
JOGS **Gusukube** 16.94 232 P P 12 05 04.4 +0.9
NKL **Nikolayevsk** 16.96 1 *e*P Pn 12 05 00.5 -2.1
NKL *e*S Sn 12 08 10.0 -0.3
NKL pmax pmax
comp=Z,70nm,1.5s
NKL pmax pmax
comp=Z,400nm,10.0s
NKL smax smax
comp=E,500nm,10.0s
NKL MLR MLR
comp=N,1μm,16.0s
NKL MLR MLR
comp=E,900nm,16.0s
NKL MLR MLR
comp=Z,2μm,16.0s
JIRB **Irabujima** 17.04 232 P P 12 05 04.6 0.0
OKH **Okha** 17.48 6 *e*P P 12 05 10.0 +0.9
OKH *e*S Sn 12 08 16.4 -6.3
OKH smax smax
comp=E,1μm,8.0s
OKH MLR MLR
comp=Z,2μm,15.0s
JTJ **Tarama** 17.48 233 P Pn 12 05 08.7 -0.5
JISG **Ishigakijimahi** 17.77 234 P P 12 05 11.0 -1.6
NJ2 **Nanjing** 17.97 263 *e*P Pn 12 05 16.5 +1.4
NJ2 pP pP 12 05 27.4 -2.0
NJ2 S Sn 12 08 30.9 -4.1
NJ2 pmax pmax
comp=Z,22nm,0.7s
NJ2 pmax pmax
comp=Z,890nm,4.9s
NJ2 LR LR
comp=Z,2μm,20.6s
NJ2 LR LR
comp=Z,2μm,23.3s
NJ2 LR LR
comp=Z,4μm,34.0s
JIJ **Ishigaki jima** 18.03 234 P P 12 05 14.1 -1.4
IRIF **Iriomote-Funau** 18.32 234 P P 12 05 16.6 -2.1
TIA **Tai'an** 18.45 277 ⇑P P 12 05 19.8 -0.2
TIA pmax pmax
comp=Z,220nm,1.1s
TIA pmax pmax
comp=Z,780nm,3.5s
TIA LR LR
comp=Z,1μm,14.0s
TIA LR LR
comp=Z,2μm,19.0s
TIA LR LR
comp=Z,4μm,25.0s
SKR **Severo-Kuril's** 18.56 34 *d* iP P 12 05 20.7 -0.4
SKR *i* S S 12 08 41.2 -7.2
SKR pmax pmax
comp=Z,600nm,5.2s
SKR pmax pmax
comp=Z,261nm,0.9s
SKR MLR MLR
comp=Z,2μm,19.0s
SKR MLR MLR
comp=Z,2μm,16.0s
YOJ **Yonaguni jima** 18.71 236 *e*P P 12 05 20.9 -2.1
YOJ pmax pmax
comp=Z,515nm,0.7s
YOJ **Yonaguni jima** 18.71 236 *e*P P 12 05 20.9 -2.1
comp=Z,515nm,0.7s
BJI **Beijing** 19.11 289 P P 12 05 26.1 -1.1
BJI pP pP 12 05 43.0 +1.2
BJI sP sP 12 05 47.5 -3.4
BJI S S 12 08 56.6 -3.5
BJI pmax pmax
comp=Z,260nm,1.2s
BJI LR LR
comp=Z,4μm,36.0s
BJT **Baijiatuau** 19.11 289 *e*P P 12 05 26.1 -1.1
BJT pmax pmax
comp=Z,328nm,1.1s
BJT **Baijiatuau** 19.11 289 *e*P P 12 05 26.1 -1.1
comp=Z,328nm,1.1s
TATO **Taipei** 19.42 240 *e*P Pn 12 05 32.2 -0.3
comp=Z,232nm,0.8s
YHNB **Yeheng** 19.70 239 *e*P P 12 05 32.9 -1.0
comp=Z,210nm,0.7s
HIA **Hailar** 19.71 318 *e*P P 12 05 32.7 -1.1
HIA pmax pmax
comp=Z,58nm,0.8s
HIA **Hailar** 19.71 318 *e*P P 12 05 32.6 -1.1
comp=Z,58nm,0.8s
NACB **Ninganchiao** 19.87 238 *e*P P 12 05 32.5 -3.0
comp=Z,123nm,0.8s
SSLB **Suanglung** 20.56 238 *e*P P 12 05 40.5 -2.6
comp=Z,230nm,1.2s
SSLB *e*S S 12 09 31.2 +2.1
YULB **Yu-li** 20.59 237 *e*P P 12 05 41.0 -2.4
comp=Z,165nm,0.8s
PEA0 **Petropavlovsk-** 20.99 31 *e*P P 12 05 47.6 +0.1
PEA0B **Petropavlovsk-** 20.99 31 *e*P P 12 05 47.4 -0.1
comp=Z,170nm,1.1s
PETK **Petropavlovsk-** 20.99 31 P P 12 05 48.3 +0.8
comp=Z,19nm,0.7s,baz=216,slow=7.3,SNR=29
PETK PcP PcP 12 09 52.0 +0.1
comp=Z,3.3nm,0.7s,baz=190,slow=5.9,SNR=4.2
PETK ScP ScP 12 13 21.2 -1.1
comp=Z,3.4nm,0.9s,baz=188,slow=3.0,SNR=3.9
PETK LR LR 12 13 40.5
comp=Z,881nm,20.8s,baz=220,slow=36
PEA1 **Petropavlovsk-** 20.99 31 *e*P P 12 05 48.3 +0.8
TPUB **Ta-pu** 21.11 238 *e*P P 12 05 47.1 -1.9
comp=Z,486nm,0.8s
TWG **Pinlang** 21.13 236 *e*P P 12 05 46.8 -2.5
comp=Z,2μm,0.7s
PET **Petropavlovsk** 21.33 32 *e*P P 12 05 50.9 -0.2
PET *e*S S 12 09 40.5 -3.4
PET pmax pmax
comp=Z,400nm,9.8s
PET pmax pmax
comp=Z,210nm,1.0s
PET MLR MLR
comp=Z,2μm,20.0s
PET MLR MLR
comp=Z,2μm,20.0s
PET **Petropavlovsk** 21.33 32 *e*P P 12 05 51.5 +0.4
comp=Z,215nm,1.1s
TIY **Taiyuan** 22.04 282 *e*P P 12 05 58.3 -0.7
TIY S S 12 09 55.8 -2.2
TIY pmax pmax
comp=Z,310nm,9.6s
TIY LR LR
comp=Z,1μm,14.3s
TIY LR LR
comp=Z,2μm,13.5s
TIY LR LR
comp=Z,3μm,15.6s
WHN **Wuhan** 22.11 263 ⇓*i*P P 12 05 58.9 -0.7
WHN sP sP 12 06 21.1 -2.5
WHN S S 12 09 56.5 -2.6
WHN pmax pmax
comp=Z,940nm,1.0s
WHN LR LR
comp=Z,3μm,17.6s
WHN LR LR
comp=Z,7μm,15.7s
WHN LR LR
comp=Z,7μm,16.5s
HHC **Hu-ho-hao-te** 22.67 290 *e*P P 12 06 02.1 -3.6
HHC pP pP 12 06 18.8 -1.9
HHC PP PnPn 12 06 32.3 -0.1
HHC S S 12 09 58.4 -10
HHC sS Sn 12 10 25.6 -2.1
HHC SS SnSn 12 10 52.9 +8.3
HHC pmax pmax
comp=Z,63nm,1.2s
HHC pmax pmax
comp=Z,360nm,4.3s
HHC LR LR
comp=Z,1μm,12.6s
HHC LR LR
comp=Z,1μm,11.5s
HHC LR LR
comp=Z,2μm,11.6s
GUMO **Guam** 22.93 168 P P 12 06 07.5 -0.9
comp=Z,152nm,0.8s,baz=336,slow=10.0,SNR=2.6
CLNS **Chul'man** 23.01 339 *e*P P 12 06 08.7 -0.2
CLNS *e**PP sP 12 06 36.9 +3.8
CLNS *e*S S 12 10 09.4 -4.3
CLNS pmax pmax
comp=Z,67nm,0.9s
CLNS pmax pmax
comp=N,127nm,0.8s
CLNS pmax pmax
comp=E,38nm,1.0s
CLNS smax smax
comp=E,480nm,13.5s
CLNS smax smax
comp=N,861nm,10.9s
BTO **Baotou** 23.83 290 *e*P P 12 06 12.6 -4.2
MA2 **Magadan** 24.42 13 P P 12 06 22.3 +0.6
comp=N,55nm,0.6s,baz=202,slow=9.3,SNR=48
MA2 PcP PcP 12 09 59.2 +0.4
comp=N,6.8nm,0.7s,baz=156,slow=20,SNR=3.0
CVP **Callao Caves** 24.45 226 ⇓*e*P P 12 06 19.4 -2.9
CIT **Chita** 24.51 318 *e*P P 12 06 20.2 -2.5
CIT *e* 12 06 45.6
CIT pmax pmax
comp=Z,98nm,1.0s
XAN **Xi'an** 25.45 274 P P 12 06 30.1 -1.3
XAN pP pP 12 06 44.8 -3.4
XAN PP PnPn 12 07 10.6 +0.2
XAN S S 12 10 48.3 -5.0
XAN SS SnSn 12 11 52.5 -0.1
XAN pmax pmax
comp=Z,170nm,0.7s
XAN pmax pmax
comp=Z,420nm,5.5s
XAN LR LR
comp=Z,540nm,30.9s
XAN LR LR
comp=Z,1μm,30.7s
XAN LR LR
comp=Z,2μm,28.9s
ENH **Enshi** 26.12 266 *e*P P 12 06 36.8 -0.8
comp=Z,521nm,0.8s
GZH **Guangzhou** 26.49 248 P P 12 06 35.8 -5.0
GZH S S 12 11 04.3 -5.4
GZH pmax pmax
comp=Z,840nm,0.8s
YAK **Yakutsk** 26.66 349 P P 12 06 41.3 -0.6
comp=Z,74nm,0.7s,baz=180,slow=0.3,SNR=29
YAK LR LR 12 17 19.4
comp=Z,1μm,19.9s,baz=156,slow=36
YAK **Yakutsk** 26.66 349 *i* P P 12 06 41.3 -0.6
YAK pmax pmax
comp=Z,157nm,1.3s
YAK **Yakutsk** 26.66 349 *e*P P 12 06 41.4 -0.5
comp=Z,97nm,0.8s
SONA1 **Songino Array** 27.32 306 *e*P P 12 06 47.7 -0.6
SONA0 **Songino Array** 27.32 306 *e*P P 12 06 48.0 -0.2
comp=Z,56nm,0.7s
SONM **Songino Array** 27.32 306 P P 12 06 48.0 -0.2
comp=Z,46nm,0.6s,baz=106,slow=8.8,SNR=113
SONM LR LR 12 17 51.3
comp=Z,2μm,20.4s,baz=106,slow=36
BOD **Bodaibo** 27.65 330 *d* iP P 12 06 50.7 -0.2
BOD pmax pmax
comp=Z,144nm,0.8s
SEY **Seymchan** 27.84 12 P P 12 06 53.5 +0.9
comp=Z,15nm,0.7s,baz=193,slow=6.4,SNR=25
TGY **Tagaytay City** 27.85 223 P P 12 06 53.6 +0.5
comp=Z,144nm,0.3s,baz=332,slow=8.8,SNR=4.8
TGY LR LR 12 15 50.5
comp=Z,422nm,19.6s,baz=44,slow=32
H11N2 **WAKE ISLAND Hy** 28.75 118 T T 12 37 01.8
baz=308,slow=75,SNR=94
H11N1 **WAKE ISLAND Hy** 28.75 118 T T 12 37 01.8
baz=308,slow=75,SNR=53
H11N3 **WAKE ISLAND Hy** 28.76 118 T T 12 37 00.7
baz=308,slow=75,SNR=136
LZH **Lanzhou** 29.08 281 *e*P P 12 07 04.0 -0.1
LZH pP pP 12 07 18.8 -2.3
LZH sP sP 12 07 26.0 -3.5
LZH PP PnPn 12 08 02.3 +2.7
LZH PcP PcP 12 10 11.4 +0.9
LZH *e*S S 12 11 50.4 -0.4
LZH sS sS 12 12 17.6 -2.4
LZH SS SnSn 12 13 19.5 -1.7
LZH pmax pmax
comp=Z,170nm,1.2s
LZH pmax pmax
comp=Z,400nm,5.7s
LZH LR LR
comp=Z,3μm,14.6s
LZH LR LR
comp=Z,4μm,15.2s
LZH LR LR
comp=Z,4μm,16.8s
H11S1 **WAKE ISLAND Hy** 29.41 120 T T 12 37 59.6
baz=314,slow=75,SNR=128
H11S3 **WAKE ISLAND Hy** 29.41 120 T T 12 37 59.0
baz=314,slow=75,SNR=108
H11S2 **WAKE ISLAND Hy** 29.42 120 T T 12 38 00.7
baz=314,slow=75,SNR=107
IRK **Irkutsk** 29.83 314 *e*P P 12 07 09.2 -1.1
IRK pmax pmax
comp=Z,46nm,2.5s
ZAK **Zakamensk** 29.90 310 *e*P P 12 07 09.8 -1.3
ZAK pmax pmax
comp=Z,16nm,0.9s
GYA **Guiyang** 29.95 261 P P 12 07 13.8 +2.0
GYA pP pP 12 07 28.4 -0.4
GYA PP PnPn 12 08 13.3 +2.2
GYA S S 12 12 05.0 +0.6
GYA sS sS 12 12 31.8 -1.8
GYA ScS ScS 12 17 43.6 -0.7
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,140nm,5.6s
GYA LR LR
comp=Z,580nm,17.3s
GYA LR LR
comp=Z,530nm,17.0s
GYA LR LR
comp=Z,540nm,16.8s
TLY **Talaya** 30.03 313 *e*P P 12 07 12.2 +0.1
TLY *e*S S 12 11 59.5 -5.5
TLY pmax pmax

TLY MLR MLR
comp=Z,973nm,14.0s
TLY Talaya 30.03 313 *e*P **P 12 07 12.4 +0.3**
comp=Z,25nm,0.7s
CD2 Chengdu 30.53 271 ⇑P **P 12 07 15.6 -1.2**
CD2 pP pP 12 07 30.5 -3.4
CD2 sP sP 12 07 37.9 -4.3
CD2 S **S 12 12 13.5 +0.2**
CD2 sS sS 12 12 39.5 -3.1
CD2 pmax pmax
comp=Z,260nm,0.6s
CD2 pmax pmax
comp=Z,320nm,5.2s
CD2 LR LR
comp=Z,1µm,15.5s
CD2 LR LR
comp=Z,2µm,15.3s
CD2 LR LR
comp=Z,2µm,15.3s
QIZ Qiongzhong 31.54 245 P **P 12 07 25.4 -0.3**
QIZ S **S 12 12 30.5 +1.4**
QIZ pmax pmax
comp=Z,62nm,1.3s
QIZ LR LR
comp=Z,1µm,19.4s
QIZ LR LR
comp=Z,820nm,18.7s
QIZ LR LR
comp=Z,1µm,14.1s
QIZ Qiongzhong 31.54 245 *e*P **P 12 07 26.2 +0.6**
comp=Z,54nm,0.9s
GTA Gaotai 31.72 288 P **P 12 07 26.6 -0.7**
GTA pP pP 12 07 40.8 -3.6
GTA sP sP 12 07 49.4 -3.4
GTA PcP **PcP 12 10 18.4 +1.1**
GTA S **S 12 12 30.6 -1.3**
GTA sS sS 12 12 58.1 -3.1
GTA SS **SnSn 12 14 24.8 -0.4**
GTA pmax pmax
comp=Z,20nm,0.8s
GTA pmax pmax
comp=Z,320nm,6.7s
GTA LR LR
comp=Z,970nm,17.8s
GTA LR LR
comp=Z,860nm,17.6s
GTA LR LR
comp=Z,2µm,28.5s
KMI Kunming 33.70 261 P **P 12 07 44.3 -0.5**
KMI pP pP 12 08 01.3 -0.7
KMI sP sP 12 08 08.1 -2.3
KMI PP **PnPn 12 09 00.0 +1.0**
KMI S **S 12 13 00.8 -2.3**
KMI sS sS 12 13 29.5 -3.0
KMI SS **SnSn 12 15 12.5 -1.1**
KMI pmax pmax
comp=Z,510nm,1.0s
KMI pmax pmax
comp=Z,760nm,4.1s
KMI LR LR
comp=Z,1µm,17.4s
KMI LR LR
comp=Z,2µm,17.7s
KMI LR LR
comp=Z,2µm,21.6s
BILL Bilibino 35.16 17 *e*P **P 12 07 56.1 -0.6**
BILL *i* 12 10 25.6
BILL pmax pmax
comp=Z,12nm,1.0s
BILL MLR MLR
comp=Z,499nm,19.0s
BILL Bilibino 35.16 17 *e*P **P 12 07 56.5 -0.2**
comp=Z,135nm,1.9s
TIXI Tiksi 35.99 354*c i*P **P 12 08 03.3 -0.4**
TIXI pmax pmax
comp=Z,22nm,0.7s
TIXI Tiksi 35.99 354 *e*P **P 12 08 03.4 -0.4**
comp=Z,23nm,0.7s
MYLDM Lahad Datu 36.64 218 *e*P **P 12 08 09.5 -0.4**
comp=Z,104nm,0.9s
KKM Kota Kinabalu 37.09 222 *e*P **P 12 08 13.9 +0.1**
comp=Z,32nm,1.0s
FAKI Fak Fak 39.58 192 *e*P **P 12 08 33.5 -1.1**
comp=Z,371nm,1.3s
CHTO Chiang Mai 39.97 256 *e*P **P 12 08 37.7 -0.2**
CHTO pmax pmax
comp=Z,51nm,0.8s
CHTO Chiang Mai 39.97 256 P **P 12 08 37.4 -0.4**
SNR=16
CHTO Chiang Mai 39.97 256 *e*P **P 12 08 37.7 -0.2**
comp=Z,51nm,0.8s
CM31 Chiang Mai Arr 40.17 255 *e*P **P 12 08 39.9 +0.4**
CM31 *e*PcP **PcP 12 10 43.6 +1.0**
CMAR Chiang Mai Arr 40.17 255 P **P 12 08 39.7 +0.2**
comp=Z,42nm,0.8s,baz=48,slow=6.1,SNR=79
CMAR PcP **PcP 12 10 43.4 +0.8**
comp=Z,9.8nm,0.9s,baz=30,slow=2.5,SNR=6.4
CMAR LR LR 12 27 38.0
comp=Z,1µm,18.9s,baz=65,slow=40
CM01 Chiang Mai Arr 40.18 255 *e*P **P 12 08 39.3 -0.3**
CM01 *e*PcP **PcP 12 10 43.7 +1.1**
WMQ Urumqi 40.20 297 P **P 12 08 40.3 +0.7**
WMQ sP sP 12 09 02.8 -2.6
WMQ PcP **PcP 12 10 43.5 +1.1**
WMQ PcS **PcS 12 14 35.3 +2.5**
WMQ S **S 12 14 45.1 +3.9**
WMQ SS **SS 12 17 35.5 -6.0**
WMQ pmax pmax
comp=Z,140nm,0.8s
WMQ pmax pmax
comp=Z,690nm,5.0s
WMQ LR LR
comp=Z,2µm,20.0s
WMQ LR LR
comp=Z,2µm,20.7s
WMQ LR LR
comp=Z,2µm,18.0s
LUWI Luwuk 40.37 207 *e*P **P 12 08 39.7 -1.4**
comp=Z,133nm,0.9s
LSA Lhasa 41.14 275 *e*P **P 12 08 49.3 +1.3**
LSA pmax pmax
comp=Z,235nm,0.9s
LSA Lhasa 41.14 275 *e*P **P 12 08 49.3 +1.3**
comp=Z,235nm,0.9s
ZAA0 Zalesovo Array 41.64 313 *e*P **P 12 08 51.1 0.0**
ZAA1 Zalesovo Array 41.64 313 *e*P **P 12 08 51.4 +0.2**
ZAA1 *e*PcP **PcP 12 10 46.4 -0.4**
ZALV Zalesovo Beam 41.64 313 P **P 12 08 51.4 +0.3**
comp=Z,93nm,0.7s,baz=91,slow=6.6,SNR=323
ZALV PcP **PcP 12 10 46.4 -0.4**
comp=Z,37nm,0.6s,baz=108,slow=2.5,SNR=8.9
ZALV ScP **ScP 12 14 29.4 -1.1**
comp=Z,2.2nm,0.7s,baz=94,slow=2.0,SNR=3.2
ZALV LR LR 12 26 45.7
comp=Z,718nm,18.0s,baz=71,slow=37
SHL Shillong 42.25 269 *e*P **P 12 08 56.1 -0.6**
SHL IAmb IAmb 12 08 58.2
comp=Z,76nm,0.7s
SHL *e*S **S 12 15 08.0 -4.2**
SBUM Sibu 42.26 224 *e*P **P 12 08 55.4 -1.3**
comp=Z,30nm,0.8s
NVS Novosibirsk 42.59 314⇓ *i*P **P 12 08 59.8 +0.9**
NVS *e* 12 09 17.6
NVS *e* 12 09 31.8
NVS *e*S **S 12 15 14.0 -2.2**
NVS pmax pmax
comp=Z,165nm,1.2s
NVS pmax pmax
comp=N,36nm,1.3s
NVS pmax pmax
comp=E,123nm,1.3s
NVS smax smax
comp=N,15nm,1.4s
NVS smax smax
comp=E,20nm,1.4s
NRIK Noril'sk 43.55 336 P **P 12 09 06.8 +0.3**
comp=E,34nm,0.8s,baz=109,slow=9.9,SNR=33
NRIK PcP **PcP 12 10 53.0 +0.1**
comp=E,31nm,0.9s,baz=155,slow=3.5,SNR=3.6
NRIK LR LR 12 29 10.5
comp=E,933nm,18.4s,baz=112,slow=38
MK01 Makanchi Array 43.59 303 *e*P **P 12 09 07.5 +0.4**
MK31 Makanchi Array 43.59 303 P **P 12 09 07.2 0.0**
MK31 pmax pmax
comp=Z,174nm,0.9s
MK31 Makanchi Array 43.59 303 *e*P **P 12 09 07.7 +0.5**
MK32 Makanchi Array 43.59 303 *e*P **P 12 09 07.9 +0.7**
MK32 *e*PcP **PcP 12 10 53.6 +0.1**
MKAR Makanchi Array 43.59 303 P **P 12 09 07.9 +0.7**
comp=Z,112nm,0.7s,baz=90,slow=10,SNR=420
MKAR PcP **PcP 12 10 53.6 +0.1**
comp=Z,14nm,0.8s,baz=67,slow=4.8,SNR=4.0
MKAR LR LR 12 27 35.0
comp=Z,1µm,22.0s,baz=84,slow=36
MKAR Makanchi Array 43.59 303 *e*P **P 12 09 07.8 +0.7**
comp=Z,1µm,0.8s
MAKZ Makanchi 43.81 303 P **P 12 09 08.4 -0.5**
MAKZ pmax pmax
comp=Z,156nm,0.9s
MAKZ Makanchi 43.81 303 *e*P **P 12 09 09.5 +0.7**
comp=Z,174nm,0.9s
KSM Kuching 44.15 225 *e*P **P 12 09 11.3 -0.5**
comp=Z,78nm,0.7s
SAUI Saumlaki 44.70 192 *e*P **P 12 09 14.0 -2.1**
comp=Z,1µm,1.2s
KAPI Kappang 45.17 209 *e*P **P 12 09 18.6 -1.3**
comp=Z,62nm,0.8s
KURK Kurchatov 45.55 309*c i*P **P 12 09 22.7 +0.1**
KURK pmax pmax
comp=Z,1µm,1.2s
KURK Kurchatov 45.55 309 *e*P **P 12 09 22.8 +0.2**
comp=Z,211nm,0.8s
KURK *e*S **S 12 15 60.0 +0.7**
KURBB Kurchatov Arra 45.62 308 S **S 12 16 00.0 -0.2**
comp=Z,5.0nm,1.1s,baz=80,slow=11,SNR=6.4
PMG Port Moresby 45.86 170 LR LR 12 27 17.5
comp=Z,240nm,21.4s,baz=356,slow=34
RAMN Ramite 45.92 274 *e*P **P 12 09 26.5 +0.4**
comp=Z,747nm,0.8s
GUN Gumba 46.09 276 *e*P **P 12 09 28.4 +0.8**
comp=Z,479nm,1.1s
PDGK Podgornoye 46.16 298 P **P 12 09 28.1 +0.6**
PDGK pmax pmax
comp=Z,393nm,1.4s
PKIN Phulchoki 46.62 276 *e*P **P 12 09 32.6 +0.9**
comp=Z,261nm,0.7s
KKN Kakani 46.63 276 *e*P **P 12 09 32.3 +0.6**
comp=Z,336nm,1.0s
TT01 Tatalina 46.76 34 *e*P **P 12 09 33.4 +1.5**
DMN Daman 46.84 276 *e*P **P 12 09 34.1 +0.7**
SVW2 Sparrevohn 46.88 37 *e*P **P 12 09 35.1 +2.2**
comp=Z,69nm,1.0s
GKN Gorkha 47.05 276 *e*P **P 12 09 35.6 +0.7**
comp=Z,1µm,1.0s
KULM Kulim 47.40 239 *e*P **P 12 09 36.8 -0.8**
comp=Z,67nm,1.1s
MMRI Maumere 47.62 204 *e*P **P 12 09 38.3 -0.8**
comp=Z,91nm,0.8s
IPM Ipoh 47.72 238 *e*P **P 12 09 39.1 -1.0**
comp=Z,152nm,0.8s
MYKOM Kota Tinggi 47.84 233 *e*P **P 12 09 41.0 +0.1**
comp=Z,50nm,0.9s
BOK Bokaro 47.90 271 *e*P **P 12 09 41.1 -0.3**
DGPR DIGLIPUR 47.94 254 *e*P **P 12 09 41.7 +0.1**
AAA Alma-Ata 47.97 299 *e*P **P 12 09 43.3 +1.6**
AAA *e*S **S 12 16 36.0 +1.7**
AAA pmax pmax
comp=Z,900nm,1.9s
AAA smax smax
comp=E,700nm,10.1s
AAA MLR MLR
comp=Z,1µm,17.0s
KOLN Koldanda 47.98 277 *e*P **P 12 09 42.9 +0.7**
SOEI Soe 48.05 201 *e*P **P 12 09 41.1 -1.4**
comp=Z,293nm,1.0s
OHAK Old Harbor 48.15 42 *e*P **P 12 09 39.4 -3.3**
comp=Z,53nm,0.8s
PYUN Piuthan 48.34 277 *e*P **P 12 09 45.7 +0.8**
comp=Z,2µm,1.0s
KDAK Kodiak Island 48.49 41 *e*P **P 12 09 46.0 +0.6**
KDAK pmax pmax
comp=Z,123nm,0.8s
KDAK Kodiak Island 48.49 41 *e*P **P 12 09 46.0 +0.6**
comp=Z,123nm,0.8s
PPLA Purkeypile 48.51 34 *e*P **P 12 09 47.6 +1.9**
comp=Z,170nm,1.5s
CAST Castle Rocks 48.56 34 *e*P **P 12 09 47.4 +1.5**
comp=Z,45nm,1.0s
SPU Mount Spurr 48.59 37 *e*P **P 12 09 48.3 +2.1**
PBA Port Blair 49.00 252 *e*P P 12 09 49.8 -0.1
TKM2 Tokmak 2 49.02 299 P **P 12 09 50.9 +0.9**
TKM2 pmax pmax
comp=Z,104nm,0.7s
BPAW Bear Paw Mtn. 49.05 33 *e*P **P 12 09 50.9 +1.2**
comp=Z,55nm,1.0s
KTH Kantishna Hill 49.08 34 *e*P **P 12 09 51.9 +1.9**
comp=Z,98nm,1.0s
HNR Honiara 49.12 154 LR LR 12 30 39.6
comp=Z,263nm,19.6s,baz=324,slow=36
MLY Manley 49.17 32 *e*P **P 12 09 52.2 +1.6**
comp=Z,39nm,1.0s
SUA Susitna One 49.22 36 *e*P **P 12 09 54.2 +3.1**
comp=Z,48nm,0.9s
COLD Coldfoot 49.44 29 *e*P **P 12 09 53.4 +0.8**
comp=Z,15nm,1.0s
MTN Manton Dam 49.49 191 *e*P **P 12 09 52.6 -0.9**
comp=Z,175nm,0.9s
BWNR Bhubaneshwar 49.67 267 *e*P **P 12 09 55.7 +0.7**
BWNR IAmb IAmb 12 09 56.9
comp=Z,53nm,0.8s
KSH Kashi 49.70 294⇑ *i*P **P 12 09 59.4 +4.3**
KSH *e*pP pP 12 10 15.3 +2.2
KSH *e*sP sP 12 10 22.0 +0.7
KSH *e*PcP **PcP 12 11 18.4 +3.1**
KSH S **S 12 17 04.3 +5.6**
KSH sS sS 12 17 31.0 +1.6
KSH SS **SS 12 20 34.1 +2.6**
KSH pmax pmax
comp=Z,37nm,1.0s
KSH pmax pmax
comp=Z,280nm,3.3s
KSH LR LR
comp=Z,920nm,16.5s
KSH LR LR
comp=Z,510nm,11.8s
KSH LR LR
comp=Z,1µm,20.3s
BWN Browne 49.72 33 *e*P **P 12 09 57.1 +2.4**
comp=Z,325nm,1.2s
RC01 Rabbit Creek A 49.72 37 *e*P **P 12 09 56.7 +2.0**
comp=Z,57nm,0.9s
FRU Bishkek 49.74 299⇑ *i*P **P 12 09 56.0 +0.8**
FRU *i* *PP **pP 12 10 17.0 +3.7**
FRU *e* 12 11 12.0
FRU *e*S **S 12 17 00.0 +1.0**
FRU pmax pmax
comp=Z,250nm,1.7s
FRU smax smax
comp=E,110nm,2.5s
AAK Ala-Archa 49.88 299*c i*P **P 12 09 57.2 +0.8**
AAK pmax pmax
comp=Z,108nm,0.8s
AAK Ala-Archa 49.88 299 P **P 12 09 57.0 +0.6**
AAK P **P 12 09 57.2 +0.8**
SNR=45
AAK Ala-Archa 49.88 299 *e*P **P 12 09 57.3 +0.9**
comp=Z,64nm,0.9s
COEN Coen 49.97 176 *e*P **P 12 09 57.3 +0.2**
comp=Z,42nm,0.8s
PMR Palmer 49.98 36 *e*P **P 12 09 57.0 +0.3**
PMR pmax pmax
comp=Z,43nm,0.9s
PMR Palmer 49.98 36 *e*P **P 12 09 57.0 +0.3**
comp=Z,43nm,0.9s
VOSK Vostochnaya 49.98 312 P **P 12 09 56.7 -0.2**
VOSK pmax pmax
comp=Z,93nm,0.8s
VOSK Vostochnaya 49.98 312 *e*P **P 12 09 56.9 0.0**
comp=Z,89nm,0.8s
OTUK Ortayu 49.99 306 P **P 12 09 57.2 +0.2**
OTUK pmax pmax
comp=Z,143nm,0.9s
RND Reindeer 50.01 34 *e*P **P 12 09 57.9 +0.9**
RND pmax pmax
comp=Z,59nm,1.0s
RND Reindeer 50.01 34 *e*P **P 12 09 57.9 +0.9**
comp=Z,59nm,1.0s
MDM Murphy Dome 50.23 32 *e*P **P 12 09 59.3 +0.6**
comp=Z,141nm,1.2s
BVA0 Borovoye Array 50.29 313 P **P 12 09 59.0 -0.2**
BVA0 pmax pmax
comp=Z,69nm,1.5s
BVAR Borovoye Array 50.29 313 PcP **PcP 12 11 17.1 0.0**
comp=Z,20nm,0.6s,baz=100,slow=3.4,SNR=5.5
BVAR S **S 12 17 07.4 +1.2**
comp=Z,2.0nm,0.8s,baz=64,slow=13,SNR=2.3
BVAR LR LR 12 32 42.9
comp=Z,988nm,18.4s,baz=75,slow=38
WRH Wood River Hil 50.31 32 *e*P **P 12 10 00.2 +1.0**
comp=Z,36nm,1.0s
BRVK Borovoye 50.34 313*c i*P **P 12 09 59.7 +0.1**
BRVK pmax pmax
comp=Z,132nm,1.2s
BRVK Borovoye 50.34 313 *e*P **P 12 10 00.0 +0.4**
comp=Z,49nm,1.0s
SML Sawmill 50.34 36 *e*P **P 12 10 00.7 +1.2**
SML pmax pmax
comp=Z,77nm,0.8s
SML Sawmill 50.34 36 *e*P **P 12 10 00.7 +1.2**
comp=Z,77nm,0.8s
PSI Prapat 50.38 238 *e*P **P 12 09 59.6 -0.8**
PSI *e* 12 11 18.7
PSI pmax pmax
comp=Z,87nm,0.9s
PSI Prapat 50.38 238 *e*P **P 12 09 59.6 -0.8**
comp=Z,87nm,0.9s
PSI *e*PcP **PcP 12 11 18.7 +0.6**
COLA College 50.40 32 *e*P **P 12 10 01.3 +1.5**
COLA pmax pmax
comp=Z,41nm,0.8s
COLA College 50.40 32 *e*P **P 12 10 01.3 +1.5**
comp=Z,41nm,0.8s
DHY Denali Highway 50.70 34 *e*P **P 12 10 03.3 +1.0**
comp=Z,41nm,1.0s
BKNI Bangkinang 50.77 234 *e*P **P 12 10 03.6 +0.3**
comp=Z,189nm,0.8s
HDA Harding Lake 50.81 32 *e*P **P 12 10 03.6 +0.6**
comp=Z,71nm,1.0s
HDA *e*S **S 12 17 13.1 -0.1**
IL1 Eielson Array 50.81 32 *e*P **P 12 10 03.1 +0.2**
ILAR Eielson Array 50.81 32 P **P 12 10 03.5 +0.5**
comp=Z,18nm,0.8s,baz=272,slow=6.0,SNR=150
ILAR LR LR 12 33 49.7
comp=Z,300nm,18.5s,baz=266,slow=38
ILAR Eielson Array 50.81 32 P **P 12 10 03.5 +0.5**
ILAR pmax pmax
comp=Z,23nm,0.9s
ILAR MLR MLR
comp=Z,300nm,18.5s
ILB Eielson Array 50.81 32 *e*P **P 12 10 03.3 +0.3**
SCM Sheep Creek Mo 50.82 36 *e*P **P 12 10 03.8 +0.7**
SCM pmax pmax
comp=Z,71nm,1.0s
SCM Sheep Creek Mo 50.82 36 *e*P **P 12 10 03.8 +0.7**
comp=Z,71nm,1.0s
ZRNK Zerenda 51.12 313 P **P 12 10 05.3 -0.2**
ZRNK pmax pmax
comp=Z,93nm,0.9s
ZRNK Zerenda 51.12 313 *e*P **P 12 10 05.8 +0.3**
comp=Z,122nm,1.0s
MNAS Manas 51.33 299 P **P 12 10 07.7 +0.3**
MNAS pmax pmax
comp=Z,99nm,1.1s
FID Port Fidalgo 51.34 37 *e*P **P 12 10 07.7 +0.8**
comp=Z,64nm,1.2s
DDI Dehra Dun 51.35 282 *e*P **P 12 10 08.5 +0.9**
FYU Fort Yukon 51.41 30 *e*P **P 12 10 08.1 +0.7**
comp=Z,199nm,1.6s
KLU Klutina 51.52 36 *e*P **P 12 10 09.6 +1.2**
comp=Z,45nm,1.0s
DIV Divide 51.63 37 *e*P **P 12 10 10.6 +1.3**
comp=Z,67nm,0.9s
EYAK Cordova Ski Ar 51.72 37 *e*P **P 12 10 11.2 +1.5**
comp=Z,74nm,1.0s
SMLA Simla 51.73 284 *e*P **P 12 10 10.3 0.0**
SDNR Sundarnagar 51.74 284 *e*P **P 12 10 10.6 +0.2**
UGM Wanagama 51.88 218 *e*P **P 12 10 10.2 -1.4**
comp=Z,651nm,1.5s
DHRM DHARAMSHALA 51.97 285 *e*P **P 12 10 12.3 -0.1**
DOT Dot Lake 52.14 33 *e*P **P 12 10 17.6 +4.7**
comp=Z,83nm,0.8s
BHK Bhakra 52.21 284 *e*P **P 12 10 14.2 +0.3**
BMRM Bremner River 52.22 37 *e*P **P 12 10 14.9 +1.3**
comp=Z,94nm,1.0s
RAGM Ragged Mountai 52.27 37 *e*P **P 12 10 15.1 +1.2**
comp=Z,82nm,1.2s
MENT Mentasta 52.37 34 *e*P **P 12 10 16.2 +1.5**
comp=Z,78nm,0.9s
GSI Gunungsitoli 52.38 238 *e*P **P 12 10 14.8 -0.6**
comp=Z,548nm,1.0s
GSI *e*S **S 12 17 36.4 +0.4**
KK31 Karatay Array 52.55 300 *i*P **P 12 10 16.5 +0.2**
KK31 pmax pmax
comp=Z,69nm,0.9s
KKAR Karatay Array 52.55 300 *e*P **P 12 10 16.8 +0.5**
KKAR pmax pmax
comp=Z,569nm,0.9s
KKAR Karatay Array 52.55 300 *e*P **P 12 10 16.8 +0.5**
comp=Z,569nm,0.9s
NDI New Delhi 52.70 281 *ex* P 12 10 10.5 -7.1
CRQM Cirque 52.96 37 *e*P **P 12 10 21.1 +1.9**
comp=Z,115nm,1.2s
CISI Cisompet, Garu 52.98 221 *e*P **P 12 10 17.6 -2.2**
comp=Z,252nm,1.5s
VIS Vishakhapatnam 53.01 265 *i*P **P 12 10 21.0 +1.1**
VIS *i* x x 12 12 53.2
EGAK Eagle 53.26 32 *e*P **P 12 10 21.7 +0.6**
comp=Z,41nm,0.8s
DAWY Dawson 54.12 32 *e*P **P 12 10 28.4 +0.9**
comp=Z,20nm,1.0s
NGP Nagpur 54.71 272 *e*P **P 12 10 32.4 +0.1**
BHPL Bhopal 55.00 275 *e*P **P 12 10 33.9 -0.5**
SVE Sverdlovsk 55.02 319 *d i*P **P 12 10 34.7 +0.7**
SVE pmax pmax
comp=Z,75nm,0.7s
SVE MLR MLR
comp=Z,1µm,19.0s
DZET Dzherino 55.17 296 P **P 12 10 35.2 -0.4**
DZET pmax pmax
comp=Z,85nm,0.8s
HYT Haines Junctio 55.65 36 *e*P **P 12 10 41.2 +2.5**
comp=Z,60nm,0.9s
INK Inuvik 55.65 27 P **P 12 10 39.2 +0.9**
comp=Z,16nm,0.8s,baz=277,slow=7.3,SNR=28
INK LR LR 12 35 43.6
comp=Z,266nm,22.0s,baz=284,slow=37
INK Inuvik 55.65 27 *e*P **P 12 10 39.3 +0.9**
comp=Z,46nm,0.9s
FITZ Fitzroy Crossi 55.68 197 *e*P **P 12 10 39.5 +0.4**
comp=Z,531nm,1.6s
DHAK Deception Hill 55.73 38 *e*P **P 12 10 36.7 -2.5**
comp=Z,100nm,1.2s
WRAB Tennant Creek 56.08 186 *e*P **P 12 10 41.0 -0.9**
WRAB pmax pmax
comp=Z,71nm,0.8s
WRAB Tennant Creek 56.08 186 *e*P **P 12 10 41.0 -0.9**
comp=Z,71nm,0.8s
WB2 Warramunga Arr 56.09 186 *e*P **P 12 10 41.2 -0.9**
comp=Z,75nm,0.8s
WR1 Warramunga Arr 56.09 186 *e*P **P 12 10 41.1 -0.9**
comp=Z,73nm,0.8s
WR1 *e*S **S 12 18 23.6 -2.0**
WRA Warramunga Arr 56.09 186 P **P 12 10 41.1 -0.9**
comp=Z,76nm,0.7s,baz=4.0,slow=7.6,SNR=168
WRA ScP **ScP 12 15 32.0 -0.1**
comp=Z,4.3nm,0.9s,baz=4.4,slow=4.4,SNR=5.9
WRA S **S 12 18 23.6 -2.0**
comp=Z,10nm,1.2s,baz=2.1,slow=13,SNR=8.6
WRA LR LR 12 34 45.5
comp=Z,245nm,19.8s,baz=15,slow=36
WRA PKP2bc 12 40 53.6
comp=Z,1.0nm,0.7s,baz=192,slow=1.7,SNR=6.3
ARU Arti 56.23 319 P **P 12 10 42.9 +0.2**
comp=Z,102nm,0.6s,baz=70,slow=3.3,SNR=10
ARU LR LR 12 37 23.5
comp=Z,731nm,19.4s,baz=75,slow=39
ARU Arti 56.23 319*c i*P **P 12 10 42.7 0.0**
ARU *PP **pP 12 11 01.6 +0.5**
ARU 12 11 38.0
ARU PPP PPP 12 14 03.6
ARU S **S 12 18 27.8 +1.1**
ARU 12 20 20.2
ARU pmax pmax
comp=Z,112nm,0.6s
ARU MLR MLR
comp=Z,873nm,18.0s
ARU Arti 56.23 319 *e*P **P 12 10 42.8 +0.2**

SOKR **Solikamsk** 56.29 323 *c* iP P 12 10 41.6 -1.4
comp=Z,126nm,0.7s
SOKR S S 12 18 25.1 -2.2
SOKR SSS SSS 12 24 25.7
SOKR pmax pmax
comp=Z,58nm,1.2s
SOKR MLR MLR
comp=Z,1µm,22.0s
CTA **Charters Tower** 56.29 173 P P 12 10 42.9 -0.6
comp=Z,12nm,0.9s,baz=336,slow=6.5,SNR=7.9
CTA LR LR 12 34 38.6
comp=Z,171nm,21.1s,slow=36
CTAO **Charters Tower** 56.29 173 *e*P P 12 10 42.8 -0.7
CTAO pmax pmax
comp=Z,36nm,1.2s
CTAO **Charters Tower** 56.29 173 *e*P P 12 10 42.8 -0.7
comp=Z,36nm,1.2s
KBL **Kabul** 56.64 291 *e*P P 12 10 46.1 -0.2
KBL pmax pmax
comp=Z,60nm,0.9s
KBL **Kabul** 56.64 291 *e*P P 12 10 46.1 -0.2
comp=Z,60nm,0.9s
HYB **Hyderabad** 57.03 268⇑ *i*P P 12 10 49.0 0.0
comp=Z,125nm,1.0s
HYB *e*pP **sP** 12 11 12.0 -3.4
HYB *e*PcP **PcP** 12 11 43.5 +0.2
HYB **Hyderabad** 57.03 268 *e*P P 12 10 49.0 0.0
SKAG **Skagway** 57.06 37 *e*P P 12 10 50.3 +1.8
comp=Z,51nm,1.0s
AB31 **Akbulak array** 57.60 310 *i* P P 12 10 52.4 -0.1
AB31 pmax pmax
comp=Z,37nm,0.6s
ABKAR **Akbulak array** 57.60 310 *e*P P 12 10 52.6 +0.1
comp=Z,556nm,0.6s
MDRS **Chennai** 58.04 263 *e*P P 12 10 57.3 +1.3
MDRS *ex* x 12 38 11.8
AKTO **Aktyubinsk** 58.38 312 P P 12 10 57.9 -0.1
comp=Z,65nm,0.9s,baz=72,slow=5.5,SNR=89
AKTO PcP **PcP** 12 11 47.8 -0.3
comp=Z,24nm,0.8s,baz=79,slow=4.6,SNR=4.0
AKTO S S 12 18 55.3 +0.2
comp=Z,0.4nm,0.4s,baz=168,slow=3.3,SNR=3.0
AKTO LR LR 12 37 22.7
comp=Z,939nm,18.2s,baz=75,slow=37
AKTO P4KPbc 12 48 06.8
comp=Z,1.4nm,0.7s,baz=86,slow=4.3,SNR=6.5
WRAK **Wrangell Islan** 59.53 40 *e*P P 12 11 06.0 +0.2
comp=Z,50nm,1.2s
AS01 **Alice Springs** 59.81 186 *e*P P 12 11 07.3 -0.7
AS31 **Alice Springs** 59.81 186 *e*P P 12 11 07.5 -0.6
comp=Z,17nm,0.6s
ASAR **Alice Springs** 59.81 186 P P 12 11 07.4 -0.7
comp=Z,27nm,0.7s,baz=9.5,slow=7.5,SNR=143
ASAR S S 12 19 12.1 -2.0
comp=Z,1.6nm,0.9s,baz=22,slow=24,SNR=5.7
ASAR LR LR 12 36 42.6
comp=Z,299nm,21.0s,baz=12,slow=36
ASAR PKP2bc 12 40 44.7
comp=Z,5.0nm,0.9s,baz=169,slow=1.9,SNR=20
ASAR P4KPbc 12 48 13.2
comp=Z,0.8nm,1.0s,baz=2.4,slow=4.4,SNR=4.8
DLBC **Dease Lake** 59.99 37 *e*P P 12 11 11.1 +2.1
comp=Z,63nm,1.0s
MBWA **Marble Bar** 60.18 202 P P 12 11 10.2 -0.3
SNR=15
MBWA **Marble Bar** 60.18 202 *e*P P 12 11 10.3 -0.3
comp=Z,234nm,1.0s
POO **Poona** 60.25 272⇑ *i*P P 12 11 10.0 -1.3
comp=Z,33nm,1.0s
POO *e*P P 12 11 11.7 +0.3
BOM **Bombay** 60.90 273 *ex* P 12 11 19.8 +4.1
PALK **Pallekele** 61.06 257 *i* P P 12 11 17.8 +0.9
PALK **Pallekele** 61.06 257 *e*P P 12 11 17.1 +0.2
comp=Z,206nm,1.4s
SPA0 **Spitsbergen Ar** 61.12 349 *e*P P 12 11 16.6 +0.2
SPA0 **Spitsbergen Ar** 61.12 349 *e*P P 12 11 17.0 +0.7
SPITS **Spitsbergen Ar** 61.12 349 LR LR 12 40 01.3
comp=Z,401nm,18.9s,baz=45,slow=38
KBS **Kingsbay** 61.28 350 *e*P P 12 11 18.6 +1.2
comp=Z,63nm,1.1s
KBS lAmb lAmb 12 11 19.2
comp=Z,44nm,0.9s
KBS **Kingsbay** 61.28 350 *e*P P 12 11 18.4 +1.0
KBS pmax pmax
comp=Z,55nm,1.0s
KBS **Kingsbay** 61.28 350 *e*P P 12 11 18.4 +1.0
comp=Z,55nm,1.0s
GOA **Goa** 61.88 269 *e*P P 12 11 23.1 +0.7
HSPB **Hornsund (broa** 62.02 348 *e*P P 12 11 23.3 +0.9
HSPB lAmb lAmb 12 11 24.1
comp=Z,79nm,1.0s
EIDS **Eidsvold** 62.12 169 *e*P P 12 11 23.6 0.0
comp=Z,21nm,0.8s
LVZ **Lovozero** 62.40 336 *c* iP P 12 11 23.8 -1.3
LVZ pmax pmax
comp=Z,47nm,0.8s
LVZ **Lovozero** 62.40 336 *e*P P 12 11 24.9 -0.2
comp=Z,44nm,0.8s
APA **Apatity** 62.98 336⇑ *i*P P 12 11 27.9 -1.0
APA *i* 12 12 11.0
APA pmax pmax
comp=Z,56nm,0.8s
APA MLR MLR
comp=Z,1µm,19.0s
COCO **West Island** 63.02 229 *i* P P 12 11 31.7 +1.9
DZM **Mont Dzumac** 63.12 152 LR LR 12 35 35.3
comp=Z,542nm,22.0s,baz=10,slow=33
DZM **Mont Dzumac** 63.12 152 *e*LR LR 12 30 52.2
comp=Z,2µm,33.5s
DZM **Mont Dzumac** 63.12 152 *e*P P 12 11 30.7 +0.3
comp=Z,37nm,1.2s
GEYT **Alibeck** 63.23 299 P P 12 11 31.9 +0.8
comp=Z,38nm,0.8s,baz=26,slow=3.8,SNR=35
GEYT LR LR 12 43 36.7
comp=Z,129nm,18.2s,baz=75,slow=40
TRD **Trivandrum** 63.30 261 *e*P P 12 11 32.1 +0.3
RES **Resolute Bay** 63.69 14 *e*P P 12 11 34.1 +0.6
RES pmax pmax
comp=Z,22nm,0.8s
RES **Resolute Bay** 63.69 14 *e*P P 12 11 34.1 +0.6
comp=Z,22nm,0.8s
KLMR **Klimovskoe** 63.85 328 *e*P P 12 11 32.8 -1.9
KLMR *e* 12 12 08.7
KLMR pmax pmax
comp=Z,105nm,0.8s
HAMF **Hammerfest** 64.23 341 *e*P P 12 11 35.6 -1.4
ARA0 **ARCESS Array S** 64.37 339 *e*P P 12 11 38.2 +0.2
ARCES **ARCESS Array B** 64.37 339 P P 12 11 38.6 +0.6
comp=Z,37nm,0.8s,baz=61,slow=8.5,SNR=31
ARCES LR LR 12 44 55.1
comp=Z,566nm,18.2s,baz=70,slow=41
ARE0 **ARCESS Array S** 64.37 339 lAmb lAmb 12 11 38.7
comp=Z,74nm,1.1s
ARE0 *e*P P 12 11 38.7 +0.6
ARE0 **ARCESS Array S** 64.37 339 *e*P P 12 11 38.7 +0.6
comp=Z,59nm,1.0s
MSVF **Nonsavu** 64.60 139 *e*P P 12 11 43.7 +3.5
MSVF pmax pmax
comp=Z,46nm,1.2s
MSVF **Nonsavu** 64.60 139 *e*P P 12 11 43.7 +3.5
comp=Z,46nm,1.2s
YKA **Yellowknife Ar** 65.11 30 P P 12 11 43.0 +0.1
comp=Z,13nm,0.8s,baz=301,slow=6.6,SNR=19
YKA LR LR 12 42 31.2
comp=Z,11nm,20.3s,baz=0.0,slow=38
HEF **Hetta** 65.58 339⇑ *i*P P 12 11 46.3 +0.4
KIF **Kilpisjarvi** 66.03 340⇑ *i*P P 12 11 48.7 0.0
TRO **Tromso** 66.13 341 *e*P P 12 11 49.9 +0.5
TRO lAmb lAmb 12 11 50.9
comp=Z,49nm,1.0s
DAG **Danmarks Havn** 66.50 355⇑ *i*P P 12 11 51.9 +0.2
comp=Z,57nm,0.9s
DAG **Danmarks Havn** 66.50 355⇑ *i*P P 12 11 51.9 +0.2
DAG pmax pmax
comp=Z,48nm,0.9s
ARMA **Armidale** 67.16 169 *e*P P 12 11 57.2 +0.7
comp=Z,58nm,1.5s
MOS **Moscow** 67.23 323 *e*P P 12 11 56.2 -0.4
MOS *e* 12 12 17.3
MOS *e* 12 14 25.0
MOS *e*S S 12 20 43.7 -1.9
MOS pmax pmax
comp=Z,171nm,0.9s
VRH **Novokhopyorsk** 67.42 318 *e*P P 12 11 57.8 -0.1
VRH pmax pmax
comp=Z,210nm,0.7s

FORT **Forrest** 67.56 191 *e*P P 12 11 58.8 -0.1
comp=Z,1µm,0.8s
LLLB **Lillooet** 67.65 43 *e*P P 12 12 00.5 +1.0
STKA **Stephens Creek** 67.73 179 P P 12 11 59.7 -0.2
comp=Z,22nm,0.8s,baz=346,slow=7.4,SNR=38
STKA LR LR 12 43 29.7
comp=Z,174nm,19.3s,baz=8.2,slow=38
STKA **Stephens Creek** 67.73 179 *e*P P 12 11 59.7 -0.2
comp=Z,4.9nm,0.8s
PGC **Sidney** 67.74 45 *e*P P 12 12 00.8 +0.8
comp=Z,19nm,1.0s
OBN **Obninsk** 68.07 323 P P 12 12 02.0 +0.1
comp=Z,100nm,0.7s,baz=230,slow=21,SNR=27
OBN **Obninsk** 68.07 323 *c* iP P 12 12 01.9 +0.1
OBN *i* 12 14 33.1
OBN *i* S S 12 20 51.7 -4.0
OBN pmax pmax
comp=Z,120nm,0.9s
OBN MLR MLR
comp=Z,727nm,20.0s
OBN **Obninsk** 68.07 323 *e*P P 12 12 02.0 +0.1
comp=Z,164nm,1.0s
NLWA **Neilton Lookou** 68.13 47 *e*P P 12 12 03.5 +1.0
comp=Z,42nm,0.9s
A04D **Lummi Island** 68.14 45 P P 12 12 03.1 +0.7
baz=300
STEI **Steigen** 68.27 340⇑ *i*P P 12 12 03.1 +0.1
STEI lAmb lAmb 12 12 03.7
comp=Z,45nm,0.8s
STEI *e*pP **pP** 12 12 21.3 -0.6
LOF **Lofoten** 68.58 341 *e*P P 12 12 04.6 -0.3
LOF lAmb lAmb 12 12 05.9
comp=Z,62nm,1.1s
B05A **Bryant** 68.72 45 P P 12 12 07.3 +1.2
baz=301
E03A **Lebam** 68.73 47 *e*P P 12 12 07.5 +1.3
comp=Z,42nm,0.9s
BBOO **Buckleboo** 68.75 184 *e*P P 12 12 05.9 -0.3
comp=Z,47nm,0.8s
VSR **Storozhevoye** 68.80 319 *e*P P 12 12 06.4 -0.1
VSR pmax pmax
comp=Z,200nm,0.9s
KULLO **Kullorsuaq** 68.91 5⇑ *i*P P 12 12 06.9 +0.1
comp=Z,280nm,24.0s
KULLO **Kullorsuaq** 68.91 5⇑ *i*P P 12 12 06.9 +0.1
KULLO MLR MLR
comp=Z,290nm,24.0s
FIA1 **FINESS Array S** 69.01 332 *e*P P 12 12 07.8 +0.1
FIA0 **FINESS Array S** 69.01 332 *e*P P 12 12 07.4 -0.2
FIA0 **FINESS Array S** 69.01 332 *e*P P 12 12 07.4 -0.2
FINES **FINESS Array B** 69.01 332 P P 12 12 07.4 -0.2
comp=Z,34nm,0.9s,baz=69,slow=7.6,SNR=4.4
FINES LR LR 12 46 05.4
comp=Z,311nm,19.9s,baz=52,slow=39
G03D **McMinnville, O** 69.59 49 P P 12 12 12.6 +1.0
baz=301
TDL **Tradedollar La** 69.63 47 *e*P P 12 12 13.2 +1.2
LON **Longmire** 69.66 47 *e*P P 12 12 13.1 +1.0
LON pmax pmax
comp=Z,14nm,1.0s
LON **Longmire** 69.66 47 *e*P P 12 12 13.1 +1.0
comp=Z,14nm,1.0s
F04A **Amboy** 69.73 48 *e*P P 12 12 13.8 +1.5
comp=Z,36nm,0.9s
GOF **Gofitskoye** 69.79 311⇑ *i*P P 12 12 13.3 +0.5
GOF pmax pmax
comp=Z,127nm,0.8s
KONS **Konsvik** 69.88 340⇑ *i*P P 12 12 12.3 -0.6
KONS lAmb lAmb 12 12 13.8
comp=Z,34nm,0.9s
COR **Corvallis** 69.89 49 *e*P P 12 12 13.6 +0.2
COR pmax pmax
comp=Z,67nm,1.3s
COR **Corvallis** 69.89 49 *e*P P 12 12 13.6 +0.2
comp=Z,67nm,1.3s
WSAR **Wadi Sarin** 69.97 285 P P 12 12 14.8 +0.6
comp=Z,34nm,0.9s,baz=95,slow=6.1,SNR=18
WSAR LR LR 12 45 00.7
comp=Z,319nm,21.8s,baz=72,slow=38
STOK **Stokkvaagen** 70.03 340⇑ *i*P P 12 12 13.5 -0.3
STOK lAmb lAmb 12 12 14.0
comp=Z,38nm,0.8s
WBK **Wadi Bani Khal** 70.03 284 P P 12 12 15.8 +1.1
SNR=5.8
DGRG **David-gareji** 70.19 307 P P 12 12 15.8 +0.4
DGRG **David-gareji** 70.19 307 P P 12 12 15.7 +0.4
BIDO **Bidbid** 70.22 285 P P 12 12 16.4 +0.6
SNR=6.7
B08A **Colville Reser** 70.24 44 *e*P P 12 12 16.1 +0.6
comp=Z,22nm,1.1s
GUDG **Gudauri** 70.24 308 P P 12 12 16.8 +1.0
NAC **Nanes** 70.25 46 P P 12 12 16.7 +1.1
NCK **Nalchik** 70.26 310⇑ *e*P P 12 12 16.1 +0.4
NCK pmax pmax
comp=Z,68nm,0.9s
I03D **Drain, OR** 70.33 50 P P 12 12 17.4 +1.3
baz=302
BANOM **Banah** 70.38 288 *i* P P 12 12 17.2 +0.4
SNR=27
BANOM **Banah** 70.38 288 P P 12 12 17.3 +0.5
SNR=12
ZEI **Tsey** 70.44 309 *e*P P 12 12 15.3 -1.7
ZEI pmax pmax
comp=Z,93nm,0.9s
TBLG **Delisi** 70.45 308 P P 12 12 17.6 +0.7
TBLG **Delisi** 70.45 308 P P 12 12 17.6 +0.7
SMDO **Samad** 70.52 285 P P 12 12 18.1 +0.3
SNR=8.9
SAW **Saint Andrews** 70.55 45 P P 12 12 17.8 +0.3
KBZ **Khabaz** 70.57 310 P P 12 12 18.3 +0.8
comp=Z,72nm,0.9s,baz=49,slow=3.2,SNR=108
KBZ LR LR 12 46 02.0
comp=Z,450nm,19.4s,baz=56,slow=38
KVAR **Kislovodsk Arr** 70.58 311 P P 12 12 18.7 +1.0
comp=Z,103nm,0.9s,baz=48,slow=12,SNR=55
KIV **Kislovodsk** 70.58 311 *i* P P 12 12 18.3 +0.6
SNR=22
KIV **Kislovodsk** 70.58 311 *e*P P 12 12 18.4 +0.6
KIV pmax pmax
comp=Z,151nm,0.8s
KIV **Kislovodsk** 70.58 311 P P 12 12 18.4 +0.6
SNR=46
KIV **Kislovodsk** 70.58 311 *e*P P 12 12 18.4 +0.6
comp=Z,151nm,0.8s
VSU **Vasula** 70.59 329 *c* iP P 12 12 17.5 +0.1
VSU pmax pmax
comp=Z,414nm,1.0s
EDM **Edmonton** 70.71 38 *e*P P 12 12 18.7 +0.4
EDM pmax pmax
comp=Z,50nm,0.9s
EDM **Edmonton** 70.71 38 *e*P P 12 12 18.7 +0.4
comp=Z,50nm,0.9s
G05D **Wanic, OR** 70.75 48 P P 12 12 19.9 +1.2
baz=302
HOQ **Hoqain** 70.82 286 P P 12 12 19.8 +0.4
SNR=9.1
ONI **Oni** 70.82 309 P P 12 12 20.1 +0.9
ONI **Oni** 70.82 309 P P 12 12 20.1 +0.9
JMDO **Jabal Madar** 70.84 284 P P 12 12 19.8 +0.3
SNR=6.2
I04A **Tendick Farm,** 70.85 49 P P 12 12 20.5 +1.1
baz=302
NEY **Neytrino** 70.93 310 *d* iP P 12 12 21.6 +1.6
NEY pmax pmax
comp=Z,10.0nm,0.9s
UOSS **Minazif** 70.96 287 *e*P P 12 12 20.7 +0.4
comp=Z,56nm,1.0s
L02D **Cave Junction,** 70.97 51 P P 12 12 21.3 +1.2
baz=302
HATD **Hatta, Dubai** 71.08 287 *i* P P 12 12 20.9 -0.1
SNR=7.6
HATD **Hatta, Dubai** 71.08 287 P P 12 12 21.4 +0.4
SNR=12
C09A **Chrisman Ranch** 71.14 44 *e*P P 12 12 22.2 +1.2
comp=Z,27nm,1.0s
HUMO **Hull Mountain** 71.14 51 *e*P P 12 12 21.9 +0.7
comp=Z,49nm,2.0s
D08A **Wollman Farm,** 71.18 45 *e*P P 12 12 22.0 +0.8
comp=Z,112nm,1.9s
ASHO **Ashiyiah** 71.21 287 *i* P P 12 12 21.6 -0.3
SNR=22
ASHO **Ashiyiah** 71.21 287 P P 12 12 22.2 +0.3
SNR=12
I05D **Terrebonne, OR** 71.22 49 P P 12 12 22.3 +0.7
baz=302
VTHM **Trough** 71.23 47 P P 12 12 22.6 +1.0

GNI **Garni** 71.28 306 P P 12 12 23.5 +1.4
comp=Z,20nm,0.7s,baz=195,slow=2.5,SNR=24
GNI **Garni** 71.28 306 *e*P P 12 12 22.9 +0.7
comp=Z,91nm,1.3s
NAZ **Nazwa, Dubai** 71.36 288 *i* P P 12 12 22.2 -0.4
SNR=6.0
AKH **Akhalkalaki** 71.42 308⇑ *i*P P 12 12 24.1 +1.1
BGD **Bogdanovka** 71.43 308 P P 12 12 23.8 +0.7
SUMG **Summit** 71.52 360⇑ *i*P P 12 12 24.3 +1.0
comp=Z,79nm,0.8s
SUMG *i* 12 12 43.1
comp=Z,330nm,20.0s
SUMG **Summit** 71.52 360⇑ *i*P P 12 12 24.3 +1.0
SUMG *i* 12 12 43.1
SUMG pmax pmax
comp=Z,79nm,0.8s
SUMG MLR MLR
comp=Z,330nm,20.0s
SUMG **Summit** 71.52 360 *e*P P 12 12 24.4 +1.0
comp=Z,82nm,0.8s
NEW **Newport** 71.53 43 P P 12 12 23.5 +0.1
baz=304,SNR=7.2
NEW **Newport** 71.53 43 *e*P P 12 12 24.0 +0.6
NEW pmax pmax
comp=Z,16nm,0.9s
NEW **Newport** 71.53 43 *e*P P 12 12 24.0 +0.6
comp=Z,16nm,0.9s
FAQ **Al Faqa, Dubai** 71.54 287 *i* P P 12 12 23.7 -0.1
SNR=11
ARQ **Araqi** 71.56 286 P P 12 12 24.3 +0.4
SNR=15
CHVG **Ch'k'valeri** 71.61 310 P P 12 12 23.8 -0.1
CAN **Canberra** 71.65 172 *e*P P 12 12 24.5 +0.5
CAN pmax pmax
comp=Z,58nm,1.4s
CAN **Canberra** 71.65 172 *e*P P 12 12 24.5 +0.5
comp=Z,58nm,1.4s
EAK **Akyaka** 71.73 307⇑ *i*P P 12 12 25.7 +0.8
J05D **Fort Rock, OR** 71.85 49 P P 12 12 26.1 +0.6
baz=303
M02C **Callahan** 71.86 52 P P 12 12 26.4 +0.9
baz=302,SNR=15
E09A **Wood Farm, Sta** 71.92 45 *e*P P 12 12 26.7 +1.0
comp=Z,128nm,1.9s
KMRM **Mail Ridge** 71.93 53 *e*P P 12 12 26.1 +0.2
comp=Z,25nm,1.1s
G08A **Pilot Rock** 72.12 47 *e*P P 12 12 27.9 +0.9
comp=Z,60nm,1.9s
LHEM **Herd Peak** 72.13 51 *e*P P 12 12 28.9 +1.6
N02D **Trinity Center** 72.17 52 P P 12 12 28.6 +1.2
baz=303,SNR=13
M04C **Macdoel** 72.29 51 P P 12 12 28.4 +0.2
baz=303,SNR=12
K05A **Summer Lake** 72.36 50 *e*P P 12 12 30.2 +1.5
comp=Z,36nm,1.0s
IZAR **Zarasai** 72.49 327 *e*P P 12 12 29.6 +0.7
IZAR lAmb lAmb 12 12 30.0
comp=Z,39nm,0.6s
WDC **Whiskeytown Da** 72.49 52 *e*P P 12 12 30.7 +1.5
WDC pmax pmax
comp=Z,20nm,1.0s
WDC **Whiskeytown Da** 72.49 52 *e*P P 12 12 30.7 +1.5
comp=Z,20nm,1.0s
ARTV **Artvin** 72.53 308⇑ *i*P P 12 12 30.3 +0.6
MICGM **Minsk** 72.54 325⇑ *e*P P 12 12 29.0 -0.2
MICGM PM 12 12 31.0
comp=Z,0.2nm,1.0s
MNK **Minsk** 72.54 325⇑ *e*P P 12 12 29.0 -0.2
MNK pmax pmax
comp=Z,200nm,1.0s
IDID **Didziasalis** 72.55 327 *e*P P 12 12 29.9 +0.6
IDID lAmb lAmb 12 12 31.1
comp=Z,48nm,0.8s
SOC **Sochi** 72.59 311 *e*P P 12 12 29.2 -0.5
SOC *e**PP **PcP** 12 12 46.1 -0.8
SOC *e**SP **sP** 12 12 55.5 -1.2
SOC *e* 12 15 10.9
SOC *e*PPP PPP 12 17 00.1
SOC *e*S **S** 12 21 50.8 +2.0
SOC *e*SS **SS** 12 26 31.9 +3.5
SOC *e*SSS SSS 12 29 42.3
SOC pmax pmax
comp=Z,52nm,0.7s
SOC MLR MLR
comp=Z,349nm,17.0s
DAGI **Agillar** 72.60 308⇑ *i*P P 12 12 30.7 +0.7
DBOC **Borcka** 72.61 309⇑ *i*P P 12 12 30.5 +0.5
ISAL **Salakas** 72.66 327 *e*P P 12 12 30.6 +0.7
ISAL lAmb lAmb 12 12 31.9
comp=Z,85nm,0.8s
F10A **Beach Ranch, E** 72.75 45 *e*P P 12 12 31.7 +0.9
comp=Z,14nm,0.9s
NACGM **Naroch** 72.78 326 *e*P P 12 12 30.0 -0.6
NACGM PM 12 12 32.0
NACGM eLR LR 12 41 16.0
SCO **Scoresbysund** 72.82 354⇑ *i*P P 12 12 31.8 +1.2
comp=Z,38nm,0.9s
SCO **Scoresbysund** 72.82 354⇑ *i*P P 12 12 31.8 +1.2
SCO pmax pmax
comp=Z,38nm,0.9s
WALA **Waterton Lakes** 72.83 41 *e*P P 12 12 31.7 +0.5
comp=Z,18nm,0.9s
LTIM **Timbered Crate** 72.84 51 P P 12 12 32.6 +1.3
BSMT **Bassoo Peak** 73.05 43 *e*P P 12 12 33.0 +0.4
O03D **Paynes Creek** 73.12 52 P P 12 12 33.6 +0.5
baz=303
HOMI **Horasan** 73.17 307⇑ *i*P P 12 12 34.5 +1.0
ANN **Anapa** 73.28 313 *e*P P 12 12 31.7 -2.0
ANN *e**PP **PcP** 12 12 50.5 +0.7
ANN *e* 12 15 13.3
ANN *e*S **S** 12 21 54.3 -2.2
ANN *e*SS **SS** 12 26 38.9 +0.2
ANN pmax pmax
comp=Z,159nm,1.4s
ANN MLR MLR
comp=N,931nm,23.0s
ANN MLR MLR
comp=Z,506nm,23.0s
BMO **Blue Mountains** 73.34 46 *e*P P 12 12 35.0 +0.8
comp=Z,118nm,2.0s
HAKT **HAKKARI** 73.34 304⇑ *i*P P 12 12 34.9 +0.3
JTMT **Jette** 73.39 43 *e*P P 12 12 35.5 +1.0
ERZM **Erzurum** 73.59 308 *i* P P 12 12 36.9 +0.8
SWMT **Swartz Lake** 73.68 43 *e*P P 12 12 37.0 +0.7
ORV **Oroville** 73.72 53 *e*P P 12 12 37.1 +0.6
ORV pmax pmax
comp=Z,22nm,1.1s
ORV **Oroville** 73.72 53 *e*P P 12 12 37.1 +0.6
comp=Z,22nm,1.1s
WVOR **Wild Horse Val** 73.91 49 *e*P P 12 12 38.6 +0.9
WVOR pmax pmax
comp=Z,62nm,1.6s
WVOR **Wild Horse Val** 73.91 49 *e*P P 12 12 38.6 +0.9
comp=Z,62nm,1.6s
KOPT **Kop Dagi** 74.08 308⇑ *i*P P 12 12 39.8 +0.8
MSO **Missoula** 74.12 43 P P 12 12 38.7 -0.1
baz=306,SNR=12
MSO **Missoula** 74.12 43 *e*P P 12 12 39.1 +0.3
comp=Z,73nm,1.9s
SLMT **Seeley Lake** 74.12 43 *e*P P 12 12 39.2 +0.4
AKASG **Malin Array Be** 74.25 322 P P 12 12 39.2 -0.1
comp=Z,83nm,0.7s,baz=47,slow=6.2,SNR=265
AKASG PP **PP** 12 15 25.7 +0.3
comp=Z,3.3nm,0.7s,baz=44,slow=8.8,SNR=4.3
AKASG LR LR 12 48 10.1
comp=Z,1µm,18.5s,baz=50,slow=38
AKBB **Malin Array Si** 74.25 322 *e*P P 12 12 39.3 0.0
AKBB pmax pmax
comp=Z,124nm,0.8s
AKBB **Malin Array Si** 74.25 322 *e*P P 12 12 39.3 0.0
comp=Z,124nm,0.8s
BNGL **BINGOL** 74.26 307⇑ *i*P P 12 12 41.3 +1.4
KIEV **Kiev** 74.26 322 *e*P P 12 12 39.2 -0.2
KIEV pmax pmax
comp=Z,128nm,0.8s
KIEV **Kiev** 74.26 322 *e*P P 12 12 39.2 -0.2
comp=Z,128nm,0.8s
AK11 **Malin Array Si** 74.29 322 *e*P P 12 12 39.3 -0.3
NC405 **NORSAR Array S** 74.29 337 *e*P P 12 12 39.8 +0.4
NC303 **NORSAR Array S** 74.32 337 *e*P P 12 12 39.8 +0.2
HFS **Hagfors** 74.37 335 P P 12 12 39.7 -0.1
comp=Z,53nm,0.8s,baz=72,slow=4.8,SNR=60
AFDM **Forest Hills D** 74.40 53 *e*P P 12 12 41.6 +1.1
comp=Z,25nm,1.2s
DOMB **Dombas** 74.40 338⇑ *i*P P 12 12 40.1 0.0

DOMB IAmb IAmb 12 12 41.1
comp=Z,71nm,0.7s
DOMB IAMs_20 IAMs_20 12 47 01.3
comp=Z,873nm,20.3s
MOL Molde 74.43 339⇑ *iP* **P 12 12 40.7 +0.6**
MOL IAmb IAmb 12 12 41.5
comp=Z,46nm,0.8s
CHMT Chamberlain Mo 74.45 43 *eP* **P 12 12 41.1 +0.3**
NC204 NORSAR Array S 74.47 337 *eP* **P 12 12 40.9 +0.4**
NB201 NORSAR Array S 74.47 337 *eP* **P 12 12 40.6 +0.2**
NB2 NORSAR Subarra 74.51 337 P **P 12 12 40.8 +0.1**
comp=Z,97nm,0.8s,baz=40,slow=6.2
NB2 NORSAR Subarra 74.51 337 P **P 12 12 40.8 +0.1**
baz=40,slow=6.2
NB200 NORSAR Array S 74.51 337 *eP* **P 12 12 40.8 +0.1**
NB200 *ePP* **PP 12 15 27.2 -0.1**
NOA NORSAR Array B 74.51 337 P **P 12 12 40.8 +0.1**
comp=Z,80nm,0.7s,baz=40,slow=5.8,SNR=336
NOA PP **PP 12 15 27.2 -0.1**
comp=Z,5.4nm,0.8s,baz=42,slow=8.7,SNR=5.2
NOA LR LR 12 48 09.8
comp=Z,436nm,19.4s,baz=50,slow=38
ILULI Ilulissat 74.58 4⇑ *iP* **P 12 12 41.2 +0.3**
comp=Z,22nm,0.8s
comp=Z,240nm,17.0s
ILULI Ilulissat 74.58 4 *iP* **P 12 12 41.2 +0.3**
ILULI pmax pmax
comp=Z,22nm,0.8s
ILULI MLR MLR
comp=Z,250nm,17.0s
NBO02 NORSAR Array S 74.61 337 *eP* **P 12 12 41.5 +0.2**
NC602 NORSAR Array S 74.63 336⇑ *iP* **P 12 12 41.2 -0.2**
NC602 IAmb IAmb 12 12 41.9
comp=Z,115nm,1.5s
NC602 IAMs_20 IAMs_20 12 48 32.4
comp=Z,1μm,20.4s
NC602 NORSAR Array S 74.63 336 *eP* **P 12 12 41.2 -0.2**
NBO00 NORSAR Array S 74.65 337 *eP* **P 12 12 41.7 +0.2**
NAO01 NORSAR Array S 74.76 337 *eP* **P 12 12 42.1 0.0**
BTMN Batman 74.77 306⇑ *iP* **P 12 12 43.6 +0.9**
KELT Kelkit 74.80 309⇑ *iP* **P 12 12 43.9 +0.9**
UMR Umm Al-Rimmam 74.89 296 P **P 12 12 43.1 -0.3**
AKN Aaknes 74.90 339⇑ *iP* **P 12 12 43.6 +0.7**
AKN IAmb IAmb 12 12 44.5
comp=Z,74nm,1.0s
AKN IAMs_20 IAMs_20 12 49 46.8
comp=Z,669nm,18.1s
SUW Suwalki 74.97 327 *eP* **P 12 12 43.1 -0.3**
SUW Suwalki 74.97 327⇑ *eP* **P 12 12 43.1 -0.3**
PAHR Pah Rah Range 74.99 52 *eP* **P 12 12 45.2 +1.2**
comp=Z,20nm,0.9s
FFC Flin Flon 75.03 32 *eP* **P 12 12 43.9 +0.2**
FFC pmax pmax
comp=Z,57nm,1.0s
FFC Flin Flon 75.03 32 *eP* **P 12 12 43.9 +0.2**
comp=Z,57nm,1.0s
MFID Camas Ranch 75.04 47 *eP* **P 12 12 45.2 +1.0**
comp=Z,26nm,1.0s
SIM Simferopol' 75.11 315 *deP* **P 12 12 44.8 +0.4**
SIM pmax pmax
comp=Z,392nm,0.9s
PNTR Pine Nut 75.20 52 *eP* **P 12 12 46.6 +1.2**
comp=Z,24nm,0.9s
CMB Columbia Colle 75.29 54 *eP* **P 12 12 46.6 +0.9**
CMB pmax pmax
comp=Z,49nm,1.4s
CMB Columbia Colle 75.29 54 *eP* **P 12 12 46.6 +0.9**
comp=Z,50nm,1.4s
HRY Holter Researc 75.35 43 *eP* **P 12 12 47.2 +1.3**
MARD Mardin 75.42 306⇑ *iP* **P 12 12 47.4 +0.9**
YERR Yerington 75.49 52 *eP* **P 12 12 47.9 +0.9**
comp=Z,42nm,1.1s
OSL Oslo 75.51 336⇑ *iP* **P 12 12 46.7 +0.3**
OSL IAmb IAmb 12 12 47.6
comp=Z,73nm,0.9s
OSL *epP* **pP 12 13 03.8 -1.8**
REFA Refahiye_ERZ˜ 75.54 308⇑ *iP* **P 12 12 46.6 -0.6**
LRM Limekiln Ridge 75.55 44 *eP* **P 12 12 48.1 +0.9**
WAKR Walker 75.64 53 *eP* **P 12 12 49.3 +1.5**
comp=Z,19nm,1.0s
DLMT Dillon 75.74 44 *eP* **P 12 12 49.0 +0.7**
comp=Z,84nm,1.3s
HLID Hailey 75.78 46 P **P 12 12 48.7 +0.2**
baz=307,SNR=10
HLID Hailey 75.78 46 *eP* **P 12 12 49.5 +1.0**
comp=Z,18nm,1.3s
KEMA Kemaliye 75.78 308⇑ *iP* **P 12 12 49.7 +1.2**
KLNR Kaliningrad 75.85 329 *deP* **P 12 12 49.7 +1.3**
LCCM Lewis and Clar 75.86 43 *eP* **P 12 12 49.6 +0.8**
FOO Floro 75.92 340⇑ *iP* **P 12 12 49.3 +0.6**
FOO IAmb IAmb 12 12 49.4
comp=Z,44nm,0.8s
FOO *esP* **pP 12 13 08.2 +0.3**
FOO *epP* **pP 12 13 08.3 +0.3**
MCMT McKenzie Canyo 75.92 45 *eP* **P 12 12 49.7 +0.3**
BMN Battle Mountai 75.93 50 *eP* **P 12 12 50.8 +1.4**
BMN pmax pmax
comp=Z,148nm,2.0s
BMN Battle Mountai 75.93 50 *eP* **P 12 12 50.8 +1.4**
comp=Z,148nm,2.0s
HYA Hoyanger 75.94 339⇑ *iP* **P 12 12 49.3 +0.5**
HYA IAmb IAmb 12 12 50.2
comp=Z,69nm,0.9s
HYA *epP* **pP 12 13 07.5 -0.5**
SAMS Samsun-Alacam 76.00 311⇑ *iP* **P 12 12 50.4 +0.8**
KONO Kongsberg 76.09 337⇑ *iP* **P 12 12 50.0 +0.3**
KONO IAmb IAmb 12 12 50.7
comp=Z,40nm,0.8s
KONO IAMs_20 IAMs_20 12 52 24.9
comp=Z,725nm,18.7s
KONO Kongsberg 76.09 337⇑ *eP* **P 12 12 48.9 -0.8**
KONO pmax pmax
comp=Z,257nm,0.9s
KONO Kongsberg 76.09 337 *eP* **P 12 12 50.0 +0.3**
comp=Z,40nm,0.8s
TVH1 TV Hill, Hawth 76.10 52 *eP* **P 12 12 51.6 +0.9**
comp=Z,39nm,1.2s
BOZ Bozeman (W) 76.11 43 P **P 12 12 50.9 +0.6**
baz=308,SNR=18
BOZ Bozeman (W) 76.11 43 *eP* **P 12 12 51.2 +0.8**
BOZ pmax pmax
comp=Z,23nm,1.1s
BOZ Bozeman (W) 76.11 43 *eP* **P 12 12 51.2 +0.8**
comp=Z,22nm,1.1s
TVH3 East Aurora ar 76.12 53 *eP* **P 12 12 51.9 +1.2**
comp=Z,27nm,1.1s
TVH2 Borealis Mine 76.15 53 *eP* **P 12 12 52.0 +1.2**
comp=Z,20nm,1.1s
SORM Soroca 76.30 320⇑ *iP* **P 12 12 50.8 -0.3**
MZRK Al-Mazaregh 76.35 304 *eP* **P 12 12 53.7 +2.0**
SFNV Sufian 76.37 305 *eP* **P 12 12 53.9 +2.0**
CUKAN kangal_SIVAS 76.41 309⇑ *iP* **P 12 12 53.2 +1.1**
SUE Sulen 76.44 339 *eP* **P 12 12 51.8 +0.1**
SUE IAmb IAmb 12 12 52.5
comp=Z,26nm,0.8s
SUE IAMs_20 IAMs_20 12 50 54.6
comp=Z,620nm,19.3s
PAGB Antelope Grade 76.69 55 *eP* **P 12 12 55.2 +1.6**
comp=Z,43nm,1.1s
KIS Kishinev 76.78 319 *eP* **P 12 12 53.0 -0.8**
KIS *eS* **S 12 22 35.0 -0.3**
KIS *eL* L 12 39 30.0
KIS LRM MLR 12 49 56.0
comp=Z,1μm,18.0s
KIS Kishinev 76.78 319 *eP* **P 12 12 53.0 -0.8**
KIS *e* 12 13 12.0
KIS *e* 12 13 18.0
KIS *eS* **S 12 22 35.0 -0.3**
KIS *e* 12 23 47.0
KIS MLR MLR
comp=N,700nm,18.0s
KIS MLR MLR
comp=E,800nm,18.0s
KIS MLR MLR
comp=Z,1μm,18.0s
KIS MLR MLR
comp=Z,1μm,18.0s
ASK Askoy 76.78 339⇑ *iP* **P 12 12 54.3 +0.7**
ASK IAmb IAmb 12 12 55.1
comp=Z,66nm,0.8s
SFJD Kangerlussuaq 76.81 4⇑ *iP* **P 12 12 53.9 +0.3**
comp=Z,240nm,16.0s
SFJD Kangerlussuaq 76.81 4 *eP* **P 12 12 54.2 +0.5**
SFJD pmax pmax
comp=Z,23nm,0.9s
SFJD Kangerlussuaq 76.81 4 *eP* **P 12 12 54.2 +0.5**
comp=Z,23nm,0.9s
ODD1 Odda 76.82 338⇑ *iP* **P 12 12 54.5 +0.6**
ODD1 IAmb IAmb 12 12 54.9
comp=Z,51nm,0.8s
ODD1 *epP* **pP 12 13 12.5 -0.7**
BER Bergen 76.82 339⇑ *iP* **P 12 12 54.4 +0.5**
BER IAmb IAmb 12 12 55.3
comp=Z,66nm,0.8s
BER *epP* **pP 12 13 12.4 -0.6**
CUALT Altinyayla-SIV 76.88 309⇑ *iP* **P 12 12 56.1 +1.3**
YHB Horse Butte 76.90 44 *eP* **P 12 12 56.2 +1.2**
comp=Z,17nm,0.8s
GCMT Greycliff 77.10 42 *eP* **P 12 12 57.2 +1.3**
CUSAR Sarkisla-SIVAS 77.11 309⇑ *iP* **P 12 12 57.3 +1.2**
BLS5 Blasjo 77.26 338⇑ *iP* **P 12 12 57.0 +0.7**
BLS5 IAmb IAmb 12 12 57.9
comp=Z,59nm,0.9s
LVV L'vov 77.37 323⇓ *iP* **P 12 12 57.4 +0.3**
COAL Corum-Alaca 77.39 311⇑ *iP* **P 12 12 58.5 +0.9**
VES Vestal, Richgr 77.40 55 P **P 12 12 57.6 +0.1**
baz=306
YPP Pitchstone Pla 77.42 44 *eP* **P 12 13 00.4 +2.5**
comp=Z,63nm,1.8s
KSRV Kasrt alli 77.42 305 *eP* **P 12 12 58.7 +1.0**
PKM Mcpherson Peak 77.47 56 P **P 12 12 59.5 +1.3**
baz=306
H17A Grant Village 77.47 44 P **P 12 12 59.7 +1.6**
baz=309
H17A Grant Village 77.47 44 *eP* **P 12 13 01.0 +2.9**
comp=Z,41nm,1.0s
GZT Gaziantep 77.49 307⇑ *iP* **P 12 12 59.5 +1.3**
BEL Belsk 77.51 326 *eP* **P 12 12 58.8 +0.9**
BEL Belsk 77.51 326⇑ *eP* **P 12 12 58.8 +0.9**
HOMB Homborsund 77.52 336 *eP* **P 12 12 58.1 +0.4**
HOMB IAmb IAmb 12 12 58.3
comp=Z,52nm,0.8s
HOMB IAMs_20 IAMs_20 12 49 50.1
comp=Z,718nm,18.6s
IMW Indian Meadow 77.58 44 *eP* **P 12 13 00.5 +1.7**
comp=Z,123nm,2.0s
FLWY Flagg Ranch 77.60 44 *eP* **P 12 13 01.0 +2.2**
comp=Z,137nm,2.0s
BSD Bornholm Skovb 77.63 331⇑ *iP* **P 12 12 58.3 -0.2**
BSD Bornholm Skovb 77.63 331⇑ *iP* **P 12 12 58.3 -0.2**
comp=Z,154nm,0.8s
BSD Bornholm Skovb 77.63 331⇑ *iP* **P 12 12 58.3 -0.2**
BSD pmax pmax
comp=Z,150nm,0.8s
ILGA Ilgaz 77.68 312⇑ *iP* **P 12 13 00.6 +1.2**
CWC Cottonwood Cre 77.71 54 P **P 12 13 00.5 +0.9**
baz=306
RLMT Red Lodge 77.74 43 P **P 12 13 00.8 +1.2**
baz=309
RLMT Red Lodge 77.74 43 *eP* **P 12 13 00.7 +1.1**
comp=Z,21nm,1.0s
MOOW Moose Ponds 77.78 44 *eP* **P 12 13 01.4 +1.6**
comp=Z,30nm,1.4s
SBC Santa Barbara 77.79 56 P **P 12 13 00.6 +0.8**
baz=306
KMY Karmoy 77.80 338 *eP* **P 12 12 59.9 +0.6**
KMY IAmb IAmb 12 13 00.6
comp=Z,13nm,0.7s
KMY *epP* **pP 12 13 18.3 -0.3**
KMY *esP* **sP 12 13 26.4 -0.1**
HVU Hansel Valley 77.82 47 *eP* **P 12 13 01.3 +1.3**
HVU pmax pmax
comp=Z,16nm,0.8s
HVU Hansel Valley 77.82 47 *eP* **P 12 13 01.3 +1.3**
comp=Z,16nm,0.8s
TPAW Teton Pass 77.82 45 *eP* **P 12 13 01.5 +1.3**
comp=Z,22nm,1.0s
GRAC Grapevine Rang 77.85 53 P **P 12 13 01.2 +1.1**
baz=306
STAV Stavanger 77.88 338⇑ *iP* **P 12 13 00.3 +0.5**
STAV IAmb IAmb 12 13 01.0
comp=Z,89nm,1.1s
SNART Snartemo 77.89 337⇑ *iP* **P 12 13 00.4 +0.6**
SNART IAmb IAmb 12 13 01.0
comp=Z,63nm,0.8s
PRAR RASCA 77.90 320⇓ *iP* **P 12 13 00.5 +0.4**
JHLN Al Jahlan 77.90 305 *eP* **P 12 13 01.1 +0.7**
SLMH Al Salmeh 77.92 306 *eP* P 12 12 55.1 -5.4
TLCR 77.93 318⇑ *iP* **P 12 13 00.7 +0.4**
LOHW Long Hollow 77.94 44 *eP* **P 12 13 01.9 +1.2**
comp=Z,40nm,1.8s
SNOW Snow King Moun 77.95 45 *eP* **P 12 13 00.9 +0.1**
comp=Z,20nm,1.0s
REDW Red Top Meadow 77.96 45 *eP* **P 12 13 02.0 +1.1**
comp=Z,26nm,1.1s
GKP Gorka Klasztor 78.04 329 *eP* **P 12 13 01.2 +0.5**
GKP Gorka Klasztor 78.04 329 *eP* **P 12 13 01.2 +0.5**
DAC Darwin (Calif) 78.12 54 *eP* **P 12 12 60.0 -1.9**
comp=Z,14nm,1.0s
KWP Kalwaria Pacla 78.13 324 *eP* **P 12 13 02.2 +0.8**
KWP Kalwaria Pacla 78.13 324⇑ *eP* **P 12 13 02.2 +0.8**
ANDN Andin 78.14 308⇑ *iP* **P 12 13 02.9 +1.1**
COP Copenhagen 78.15 333⇑ *iP* **P 12 13 01.9 +0.6**
COP Copenhagen 78.15 333⇑ *iP* **P 12 13 01.8 +0.5**
comp=Z,82nm,0.7s
COP Copenhagen 78.15 333⇑ *iP* **P 12 13 01.8 +0.5**
COP pmax pmax
comp=Z,82nm,0.7s
KUZU Kuzuini 78.15 307⇑ *iP* **P 12 13 02.9 +1.1**
CDAG Cicekdag 78.15 311⇑ *iP* **P 12 13 02.5 +0.7**
R11A Troy Canyon, C 78.18 51 P **P 12 13 03.0 +0.9**
baz=307
R11A Troy Canyon, C 78.18 51 *eP* **P 12 13 03.1 +0.9**
comp=Z,23nm,1.0s
AHID Auburn Hatcher 78.19 45 *eP* **P 12 13 03.3 +1.2**
comp=Z,9.8nm,0.9s
BGU Big Grassy Mou 78.19 48 *eP* **P 12 13 03.0 +0.9**
comp=Z,18nm,1.0s
ELDT Eldivan 78.20 312⇑ *iP* **P 12 13 02.8 +0.6**
TESR Tescani 78.23 320⇑ *iP* **P 12 13 02.4 +0.4**
BUR08 Bucovina Ar. S 78.24 321 *eP* **P 12 13 02.8 +0.7**
BURAR Bucovina Array 78.25 321⇑ *iP* **P 12 13 02.8 +0.6**
CFR Carcaliu 78.30 318⇑ *iP* **P 12 13 02.6 +0.2**
BORG Borgarnes 78.32 352 *eP* **P 12 13 04.7 +2.6**
BORG pmax pmax
comp=Z,80nm,1.0s
BORG Borgarnes 78.32 352 *eP* **P 12 13 04.7 +2.6**
comp=Z,80nm,1.0s
MPMC Manual Prospec 78.32 54 P **P 12 13 03.4 +0.4**
baz=306,SNR=12
LAO LASA Array 78.36 40 P **P 12 13 03.5 +0.7**
baz=311
LAO LASA Array 78.36 40 *eP* **P 12 13 03.9 +1.1**
comp=Z,86nm,1.4s
A25A Svangstu Ranch 78.42 37 P **P 12 13 03.4 +0.4**
baz=313
FURC Furnace Creek, 78.49 53 P **P 12 13 03.9 +0.3**
baz=307,SNR=8.3
LLD Lille Linde 78.50 333 *i* P **P 12 13 03.3 +0.1**
comp=Z,128nm,0.8s
LLD Lille Linde 78.50 333 *i* P **P 12 13 03.3 +0.1**
LLD pmax pmax
comp=Z,130nm,0.8s
LRMC Laurel Mtn Rad 78.54 54 P **P 12 13 04.3 +0.2**
BR101 Keskin Array S 78.54 311 *eP* **P 12 13 04.2 +0.2**
BR101 *ePP* **PP 12 16 01.9 0.0**
BR131 Keskin Array S 78.54 311 *eP* **P 12 13 04.5 +0.5**
BRTR Keskin Array B 78.54 311 P **P 12 13 04.2 +0.2**
comp=Z,27nm,0.7s,baz=100,slow=4.1,SNR=92
BRTR PP **PP 12 16 01.9 0.0**
comp=Z,4.1nm,0.9s,baz=64,slow=6.6,SNR=3.6
BRTR LR LR 12 52 07.4
comp=Z,161nm,18.4s,baz=43,slow=39
BRTR Keskin Array B 78.54 311 P **P 12 13 04.2 +0.2**
BRTR 12 16 01.9
BRTR pmax pmax
comp=Z,26nm,0.7s
BRTR pmax pmax
comp=Z,4.0nm,0.9s
BRTR MLR MLR
comp=Z,161nm,18.4s
TPNV Topopah Spring 78.60 53 P **P 12 13 05.0 +0.6**
baz=307,SNR=21
TPNV Topopah Spring 78.60 53 *eP* **P 12 13 05.2 +0.8**
TPNV pmax pmax
comp=Z,41nm,1.3s
TPNV Topopah Spring 78.60 53 *eP* **P 12 13 05.2 +0.8**
comp=Z,41nm,1.3s
TIRR Tirgusor 78.61 317⇑ *iP* **P 12 13 04.5 +0.4**
TIRR Tirgusor 78.61 317⇑ *eP* **P 12 13 04.3 +0.2**
TIRR pmax pmax
comp=Z,32nm,0.9s
TIRR Tirgusor 78.61 317 *eP* **P 12 13 04.3 +0.2**
comp=Z,32nm,0.9s
HWUT Hardware Ranch 78.64 47 *eP* **P 12 13 05.7 +1.1**
comp=Z,140nm,1.9s
PLOR Plostina 78.66 319⇑ *iP* **P 12 13 05.2 +0.8**
EDW2 Edwards Air Fo 78.68 55 P **P 12 13 05.7 +1.0**
baz=306
RSUT Red Spur Mount 78.71 46 *eP* **P 12 13 06.3 +1.2**
MUD Monsted U'grnd 78.72 335 *eP* **P 12 13 04.9 +0.5**
MUD IAmb IAmb 12 13 05.7
comp=Z,51nm,0.9s
MUD IAMs_20 IAMs_20 12 46 50.6
comp=Z,2μm,18.8s
MUD Monsted U'grnd 78.72 335 *i* P **P 12 13 04.7 +0.2**
comp=Z,53nm,0.9s
MUD Monsted U'grnd 78.72 335 *i* P **P 12 13 04.7 +0.2**
MUD pmax pmax
comp=Z,53nm,0.9s
HARR Harsova 78.73 318⇓ *iP* **P 12 13 05.5 +0.8**
TLB Topalu 78.73 317⇑ *iP* **P 12 13 05.3 +0.5**
DUG Dugway, Tooele 78.77 48 P **P 12 13 05.7 +0.5**
baz=308,SNR=18
DUG Dugway, Tooele 78.77 48 *eP* **P 12 13 06.4 +1.1**
DUG pmax pmax
comp=Z,29nm,1.1s
DUG Dugway, Tooele 78.77 48 *eP* **P 12 13 06.4 +1.1**
comp=Z,29nm,1.1s
KOLS Kolonicke sedl 78.82 323 *eP* **P 12 13 05.1 -0.1**
KOLS Kolonicke sedl 78.82 323 *eP* **P 12 13 05.1 -0.1**
LRW Lerwick 78.83 341⇑ *iP* **P 12 13 05.5 +0.5**
LRW IAmb IAmb 12 13 06.3
comp=Z,53nm,1.1s
ANTO Ankara 78.96 311 *eP* **P 12 13 07.1 +0.8**
ANTO pmax pmax
comp=Z,54nm,0.7s
ANTO Ankara 78.96 311 P **P 12 13 06.9 +0.6**
SNR=12
ANTO Ankara 78.96 311 *eP* **P 12 13 07.1 +0.8**
comp=Z,54nm,0.7s
BBAL Bala 78.96 311⇑ *iP* **P 12 13 06.7 +0.4**
A26A Wade Farm, Ken 78.97 36 P **P 12 13 06.2 +0.1**
baz=313
STHS Stebnicka Huta 78.97 324 *eP* **P 12 13 07.1 +1.1**
STHS pmax pmax
comp=Z,75nm,1.1s
STHS Stebnicka Huta 78.97 324 *eP* **P 12 13 07.1 +1.1**
BR231 Keskin MP Arra 78.99 311 *eP* **P 12 13 04.9 -1.5**
UZH Uzhgorod 79.01 323 *eP* **P 12 13 06.6 +0.4**
UZH *i* 12 13 13.0
MWC Mount Wilson 79.03 56 *eP* **P 12 13 06.5 -0.3**
MWC pmax pmax
comp=Z,23nm,1.1s
MWC Mount Wilson 79.03 56 *eP* **P 12 13 06.5 -0.3**
comp=Z,23nm,1.1s
ARCR ARCALIA 79.04 321⇓ *iP* **P 12 13 08.2 +1.8**
TCUT Toone Canyon 79.04 47 *eP* **P 12 13 07.9 +1.1**
comp=Z,243nm,2.0s
BW06 Boulder Array 79.07 45 P **P 12 13 07.3 +0.3**
baz=310
BW06 Boulder Array 79.07 45 *eP* **P 12 13 07.3 +0.3**
comp=Z,9.8nm,0.9s
PD31 Pinedale Array 79.07 45 *eP* **P 12 13 07.3 +0.4**
PDAR Pinedale Array 79.07 45 P **P 12 13 07.2 +0.2**
comp=Z,4.4nm,0.7s,baz=282,slow=1.9,SNR=30
PDAR LR LR 12 42 28.8
comp=Z,133nm,21.9s,baz=328,slow=31
OJC Ojcow 79.08 326 *eP* **P 12 13 07.3 +0.7**
OJC Ojcow 79.08 326 *eP* **P 12 13 07.4 +0.7**
OJC pmax pmax
comp=Z,126nm,0.9s
OJC Ojcow 79.08 326 *eP* **P 12 13 07.4 +0.7**
comp=Z,126nm,0.9s
CTU Camp Tracy 79.10 47 *eP* **P 12 13 08.5 +1.4**
comp=Z,51nm,0.9s
AKSY AKSARAY - Alti 79.12 310⇑ *iP* **P 12 13 07.7 +0.6**
ISR Istrita 79.20 319⇑ *iP* **P 12 13 08.5 +1.1**
GSC Goldstone, Bar 79.22 54 P **P 12 13 08.2 +0.4**
baz=307,SNR=10
GSC Goldstone, Bar 79.22 54 *eP* **P 12 13 10.2 +2.5**
GSC pmax pmax
comp=Z,12nm,0.8s
GSC Goldstone, Bar 79.22 54 *eP* **P 12 13 10.2 +2.5**
comp=Z,12nm,0.8s
DOPR Dopca 79.25 320⇓ *iP* **P 12 13 09.2 +1.6**
MLR Muntele Rosu 79.27 319 P **P 12 13 08.2 +0.3**
comp=Z,2.3nm,0.6s,baz=57,slow=4.4,SNR=19
MLR Muntele Rosu 79.27 319⇑ *iP* **P 12 13 08.2 +0.3**
MLR Muntele Rosu 79.27 319 *eP* **P 12 13 08.2 +0.3**
comp=Z,23nm,0.8s
BFSC Mount Baldy Ra 79.29 55 P **P 12 13 07.7 -0.5**
baz=307
KKUL Konya-Kulu 79.32 311⇑ *iP* **P 12 13 09.0 +0.7**
JLU Jordanelle 79.33 47 *eP* **P 12 13 09.8 +1.3**
comp=Z,94nm,2.0s
NLU North Lily Min 79.36 48 *eP* **P 12 13 09.6 +1.0**
comp=Z,11nm,0.9s
NIE Niedzica 79.42 325 *eP* **P 12 13 09.6 +1.1**
NIE Niedzica 79.42 325⇑ *eP* **P 12 13 09.6 +1.1**
SHPR Sheep Range 79.56 52 *eP* **P 12 13 11.2 +1.5**
comp=Z,19nm,0.9s
MPU Maple Canyon 79.59 48 *eP* **P 12 13 11.2 +1.4**
comp=Z,28nm,1.0s
BTAS Taskesti 79.60 313⇑ *iP* **P 12 13 09.9 +0.2**
KERG Konya-Eregli 79.65 309⇑ *iP* **P 12 13 09.9 -0.2**
CJR Cluj-Napoca 79.67 321⇑ *iP* **P 12 13 11.0 +1.1**
TUQ Turquoise Moun 79.71 54 P **P 12 13 11.0 +0.5**
baz=307
VOIR 79.78 320⇑ *iP* **P 12 13 11.0 +0.4**
A28A Rude Farm, Bot 79.80 36 P **P 12 13 11.2 +0.6**
baz=315
KECS Kecovo 79.98 324 *eP* **P 12 13 11.4 -0.1**
KECS Kecovo 79.98 324 *eP* **P 12 13 11.4 -0.1**
PRD Provadia 79.99 317 *i* P **P 12 13 12.1 +0.5**
LANS Liptovska Anna 79.99 325 *eP* **P 12 13 12.9 +1.3**
LANS Liptovska Anna 79.99 325 *eP* **P 12 13 12.9 +1.3**
ARR Arges 80.04 320⇑ *iP* **P 12 13 13.4 +1.4**
D26A Manning 80.06 38 P **P 12 13 12.1 +0.1**
baz=313
CCUT Cedar City 80.06 51 *eP* **P 12 13 12.7 +0.2**
comp=Z,19nm,1.3s
DRGR 80.06 322⇑ *iP* **P 12 13 12.5 +0.4**
B28A Dugan Ranch, T 80.08 36 P **P 12 13 12.0 -0.1**
baz=315
OKC Ostrava-Krasne 80.11 326⇑ *iP* **P 12 13 12.9 +0.8**
OKC *ex* x 12 23 39.5
OKC AMS AMS 12 52 30.0
comp=Z,600nm,15.2s
OKC Ostrava-Krasne 80.11 326⇑ *iP* **P 12 13 12.9 +0.8**
OKC MLR MLR
comp=Z,600nm,15.2s
KSP Ksiaz 80.20 328 *eP* **P 12 13 13.3 +0.7**
KSP Ksiaz 80.20 328⇑ *eP* **P 12 13 13.3 +0.7**
MSU Marysvale 80.20 49 *eP* **P 12 13 14.7 +1.5**
MSU Marysvale 80.20 49 *eP* **P 12 13 14.7 +1.5**
SZCU Shurtz Canyon 80.20 50 *eP* **P 12 13 14.6 +1.4**
comp=Z,18nm,1.2s
KDHN Kadinhani 80.21 311⇑ *iP* **P 12 13 13.1 0.0**
ZALF Zalf 80.27 304 *eP* **P 12 13 14.9 +1.5**
A29A Manning Farm, 80.28 35 P **P 12 13 13.0 -0.1**
baz=315
GMRC Granite Mounta 80.28 54 P **P 12 13 13.2 -0.4**
baz=308,SNR=8.4
TMUT Trail Mountain 80.30 48 *eP* **P 12 13 14.8 +1.0**
comp=Z,16nm,0.9s
ESKT Eskisehir 80.35 312 *i* P **P 12 13 13.4 -0.4**
BORA Eskisehir 80.36 313⇑ *iP* **P 12 13 13.8 0.0**
MORC Moravsky Berou 80.42 326⇑ *iP* **P 12 13 14.7 +0.8**
MORC Moravsky Berou 80.42 326 *eP* **P 12 13 14.5 +0.6**
MORC pmax pmax
comp=Z,270nm,1.0s
MORC Moravsky Berou 80.42 326 *eP* **P 12 13 14.4 +0.6**
comp=Z,270nm,1.0s
ISK Istanbul-Kandi 80.42 314 P **P 12 13 13.2 -0.8**
ISK Istanbul-Kandi 80.42 314 P **P 12 13 13.2 -0.8**
ISK Istanbul-Kandi 80.42 314 P **P 12 13 13.2 -0.8**
LOT Lotru 80.44 320⇑ *iP* **P 12 13 14.8 +0.6**
PFO Pinyon Flats O 80.46 55 P **P 12 13 13.9 -0.6**
baz=307,SNR=12
PFO Pinyon Flats O 80.46 55 *eP* **P 12 13 15.5 +1.0**
PFO pmax pmax
comp=Z,46nm,1.4s
PFO Pinyon Flats O 80.46 55 *eP* **P 12 13 15.5 +1.0**

comp=Z,46nm,1.4s
LDFC Landfair 80.46 53 *e*P **P** 12 13 15.6 +1.1
comp=Z,36nm,1.0s
109C Camp Elliot, M 80.46 56 P **P** 12 13 14.9 +0.6
baz=307
TPFO Pinon Flats 80.47 55 P **P** 12 13 14.9 +0.4
baz=307
LCMT Little Creek M 80.47 51 *e*P **P** 12 13 15.8 +1.3
comp=Z,30nm,1.1s
P17A Butcher Ranch, 80.47 48 *e*P **P** 12 13 15.7 +1.2
comp=Z,29nm,0.8s
MTPU Mount Pierson 80.49 50 *e*P **P** 12 13 16.5 +1.6
comp=Z,20nm,0.9s
BELC Belle Mtn. Jos 80.53 55 P **P** 12 13 14.5 -0.4
baz=307,SNR=8.6
B29A Wagenman Farm, 80.55 35 P **P** 12 13 14.6 0.0
baz=315
KRLC Kraliky 80.55 327⇑ *i*P **P** 12 13 15.2 +0.6
KRLC *e*pP **pP** 12 13 35.4 +1.4
KRLC Kraliky 80.55 327⇑ *i*P **P** 12 13 15.2 +0.6
KRLC *e* 12 13 35.4
DPC Dobruska-Polom 80.55 327⇑ *i*P **P** 12 13 15.5 +0.9
DPC *e*S **S** 12 23 13.3 -2.3
DPC AMS AMS 12 53 40.0
comp=Z,600nm,14.9s
DPC Dobruska-Polom 80.55 327⇑ *i*P **P** 12 13 15.5 +0.9
DPC *e*S **S** 12 23 13.3 -2.3
DPC MLR MLR
comp=Z,600nm,14.9s
UPC Upice 80.57 328⇑ *i*P **P** 12 13 15.3 +0.7
UPC *e*S **S** 12 23 10.8 -4.9
UPC *ex* x 12 23 45.2
UPC AMS AMS 12 53 20.0
comp=Z,600nm,14.2s
UPC Upice 80.57 328⇑ *i*P **P** 12 13 15.3 +0.7
UPC *e*S **S** 12 23 10.8 -4.9
UPC MLR MLR
comp=Z,600nm,14.2s
QASN Qassioun 80.61 305 *e*P P 12 13 09.0 -6.3
TOTH TOTAH 80.61 304 *e*P **P** 12 13 16.1 +0.9
PSZ Piszkesteto 80.66 324⇑ *i*P **P** 12 13 16.5 +1.2
PSZ Piszkesteto 80.66 324 *e*P **P** 12 13 15.8 +0.5
PSZ pmax pmax
comp=Z,93nm,0.9s
PSZ Piszkesteto 80.66 324 *e*P **P** 12 13 15.8 +0.5
comp=Z,93nm,0.9s
PSZ Piszkesteto 80.66 324⇑ *e*P **P** 12 13 16.0 +0.7
A30A Hoffart Farm, 80.69 35 P **P** 12 13 16.0 +0.6
baz=316
KNB Kanab 80.73 51 *e*P **P** 12 13 17.3 +1.3
KNB pmax pmax
comp=Z,38nm,1.1s
KNB Kanab 80.73 51 *e*P **P** 12 13 17.3 +1.3
comp=Z,38nm,1.1s
SZH Strazhica 80.75 317 *i*P **P** 12 13 15.9 +0.2
VYHS Vyhne 80.75 325 *e*P **P** 12 13 16.2 +0.5
VYHS Vyhne 80.75 325 *e*P **P** 12 13 16.2 +0.5
SALA Sala 80.80 304 *e*P **P** 12 13 17.1 +0.7
BOLV Bolvadin 80.80 311⇑ *i*P **P** 12 13 16.7 +0.5
SRU San Rafael Swe 80.83 48 *e*P **P** 12 13 17.4 +0.9
SRU pmax pmax
comp=Z,36nm,0.8s
SRU San Rafael Swe 80.83 48 *e*P **P** 12 13 17.4 +0.9
comp=Z,36nm,0.8s
ULM Lac du Bonnet 80.83 33 P **P** 12 13 14.8 -1.2
comp=Z,8.0nm,0.7s,baz=310,slow=6.1,SNR=11
ULM LR LR 12 50 27.0
comp=Z,163nm,21.4s,baz=307,slow=36
ULM Lac du Bonnet 80.83 33 *e*P **P** 12 13 15.5 -0.5
comp=Z,31nm,1.0s
K22A Casper 80.85 43 P **P** 12 13 16.5 0.0
baz=311
K22A Casper 80.85 43 *e*P **P** 12 13 17.0 +0.5
comp=Z,23nm,1.0s
MDND Maddock 80.86 36 P **P** 12 13 16.5 +0.3
baz=315
BAR Barrett 80.88 56 *e*P **P** 12 13 17.5 +0.8
comp=Z,22nm,0.9s
BRBR Barbar 80.90 305 *e*P **P** 12 13 17.7 +0.8
MONP2 Monument Peak 80.92 56 P **P** 12 13 17.2 +0.1
baz=307,SNR=10.0
JMB Yambol 80.92 317 *i*P **P** 12 13 17.3 +0.7
MMU Miners Mountai 80.94 49 *e*P **P** 12 13 18.4 +1.2
SIRR Siria 80.95 322⇑ *i*P **P** 12 13 17.5 +0.7
BIGH Upper Bighouse 80.96 342⇑ *e*P **P** 12 13 17.0 +0.5
BIGH AMB AMB 12 13 18.1
comp=Z,78nm,0.9s
MLA1 Latheron 80.98 341⇑ *e*P **P** 12 13 16.9 +0.2
IRM Iron Mountain 81.00 54 P **P** 12 13 17.3 0.0
baz=308,SNR=14
ASF Jabal al Asfar 81.01 303 P **P** 12 13 18.0 +0.6
comp=Z,29nm,0.9s,baz=23,slow=3.4,SNR=49
ASF PP **PP** 12 16 24.4 +1.8
comp=Z,3.8nm,1.0s,baz=322,slow=19,SNR=3.1
B30A Myrvik Farm, E 81.03 35 P **P** 12 13 17.2 0.0
baz=316
BC3 Big Chuckawall 81.10 55 P **P** 12 13 18.3 +0.4
baz=308,SNR=21
H25A Fruitdale 81.11 40 P **P** 12 13 17.9 +0.2
baz=313
PVCC Panska Ves 81.17 328⇑ *i*P **P** 12 13 18.7 +0.9
PVCC AMS AMS 12 52 20.0
comp=Z,500nm,17.6s
PVCC Panska Ves 81.17 328⇑ *i*P **P** 12 13 18.7 +0.9
PVCC MLR MLR
comp=Z,500nm,17.6s
BRG Berggiesshubel 81.18 329⇑ *i*P **P** 12 13 18.2 +0.4
comp=Z,54nm,0.9s
BRG *i* 12 13 24.2
comp=Z,21nm,0.8s
BRG *i*pP **pP** 12 13 33.9 -3.4
comp=Z,21nm,0.9s
BRG *e*PP **PP** 12 16 23.4 +0.2
comp=Z,12nm,0.9s
BRG S **S** 12 23 23.0 +1.0
comp=N,383nm,16.7s
comp=E,355nm,12.8s
comp=Z,581nm,15.9s
BRG Berggiesshubel 81.18 329⇑ *i*P **P** 12 13 18.2 +0.4
BRG *e* 12 16 23.4
BRG S **S** 12 23 23.0 +1.0
BRG pmax pmax
comp=Z,54nm,0.9s
BRG MLR MLR
comp=N,383nm,16.7s
BRG MLR MLR
comp=E,355nm,12.8s
BRG MLR MLR
comp=Z,581nm,15.9s
VRAC Vranov 81.19 326 P **P** 12 13 18.8 +0.8
comp=Z,58nm,0.9s,baz=51,slow=5.0,SNR=53
VRAC Vranov 81.19 326⇑ *i*P **P** 12 13 19.0 +1.0
A31A Linda, St. Vin 81.21 34 P **P** 12 13 17.5 -0.6
baz=317
RSSD Black Hills 81.22 41 P **P** 12 13 18.6 +0.1
baz=313
RSSD Black Hills 81.22 41 *e*P **P** 12 13 18.8 +0.3
RSSD pmax pmax
comp=Z,17nm,1.1s
RSSD Black Hills 81.22 41 *e*P **P** 12 13 18.8 +0.3
comp=Z,17nm,1.1s
EDRB Edirne 81.24 316 P **P** 12 13 18.8 +0.5
EDRB Edirne 81.24 316 P **P** 12 13 18.8 +0.5
W13A Hualapai Mount 81.24 53 *e*P **P** 12 13 19.1 +0.3
comp=Z,58nm,1.8s
CLL Collm 81.24 330⇑ *i*P **P** 12 13 18.2 0.0
comp=Z,115nm,0.9s
CLL *e* 12 13 27.0
CLL *e* 12 13 40.0
CLL *e*PP **PP** 12 16 23.0 -0.7
CLL *e*S **S** 12 23 24.0 +1.4
CLL *e*PS **PnS** 12 24 24.0 +6.2
CLL *e*SS SS 12 29 06.0 +28
CLL *e*SSS SSS 12 32 36.0
CLL LmH 12 51 00.0
comp=N,200nm,20.0s
CLL LmH 12 51 00.0
comp=E,400nm,19.1s
CLL LmV 12 52 00.0
comp=Z,500nm,19.6s
CLL Collm 81.24 330⇑ *i*P **P** 12 13 18.2 0.0
CLL pmax pmax
comp=Z,115nm,0.9s
CLL MLR MLR
comp=Z,500nm,19.6s
CLL Collm 81.24 330 *e*P **P** 12 13 18.4 +0.3
comp=Z,99nm,0.8s
IKP In-Ko-Pah, Jac 81.27 56 P **P** 12 13 18.9 +0.1
baz=308,SNR=15
SWSC Sam W. Stewart 81.30 56 P **P** 12 13 19.5 +0.7
baz=308
TCHB Talchebab 81.34 304 *e*P **P** 12 13 19.9 +0.8
B31A Greenbush Farm 81.37 35 P **P** 12 13 18.7 -0.2
baz=316
RSC Scourie 81.40 342⇑ *e*P **P** 12 13 19.4 +0.6
BZS Buzias 81.43 321⇑ *i*P **P** 12 13 19.4 +0.1
U15A North Rim 81.43 51 *e*P **P** 12 13 21.1 +1.2
comp=Z,140nm,2.0s
GDZ Gediz 81.45 313⇑ *i*P **P** 12 13 19.8 +0.1
MMAI Mount Meron Ar 81.50 305 P **P** 12 13 20.9 +0.9
comp=Z,29nm,0.8s,baz=51,slow=6.6,SNR=39
GAZI Gazipasa 81.52 309⇑ *i*P **P** 12 13 19.0 -0.9
O20A White River Ci 81.52 46 P **P** 12 13 20.0 -0.1
baz=311
O20A White River Ci 81.52 46 *e*P **P** 12 13 20.6 +0.4
comp=Z,26nm,0.9s
A32A Rocking H Ranc 81.53 34 P **P** 12 13 19.5 -0.3
baz=317
GOPC GO Pecny, Ondr 81.54 328⇑ *i*P **P** 12 13 20.5 +0.7
GOPC *e*pP **pP** 12 13 42.2 +3.0
GOPC *e*S **S** 12 23 23.5 -2.3
GOPC *ex* x 12 23 53.2
GOPC AMS AMS 12 54 10.0
comp=Z,600nm,13.4s
GOPC GO Pecny, Ondr 81.54 328⇑ *i*P **P** 12 13 20.5 +0.7
GOPC *e* 12 13 42.2
GOPC *e*S **S** 12 23 23.5 -2.3
GOPC MLR MLR
comp=Z,600nm,13.4s
PDMCI Parker Dam,Lak 81.56 54 P **P** 12 13 20.3 +0.1
baz=308,SNR=11
MCD Coleburn Disti 81.59 341⇑ *e*P **P** 12 13 20.0 +0.2
PRU Pruhonice 81.59 328⇑ *i*P **P** 12 13 20.5 +0.5
PRU *e*pP **pP** 12 13 42.2 +2.7
PRU *e*S **S** 12 23 23.9 -2.4
PRU *ex* x 12 23 56.9
PRU AMS AMS 12 54 10.0
comp=Z,600nm,17.0s
PRU Pruhonice 81.59 328⇑ *i*P **P** 12 13 20.5 +0.5
PRU *e* 12 13 42.2
PRU *e*S **S** 12 23 23.9 -2.4
PRU MLR MLR
comp=Z,600nm,17.0s
ISP Isparta 81.63 311 P **P** 12 13 20.0 -0.6
ISP Isparta 81.63 311 *e*P **P** 12 13 20.0 -0.6
ISP Isparta 81.63 311 *e*P **P** 12 13 20.0 -0.6
URZ Urewera 81.66 151 LR LR 12 43 33.0
comp=Z,16nm,20.6s,baz=360,slow=31
Y12C Blythe 81.66 54 P **P** 12 13 21.2 +0.5
baz=308
Y12C Blythe 81.66 54 *e*P **P** 12 13 22.0 +1.3
comp=Z,23nm,0.9s
CSS Mathiatis 81.66 307 P **P** 12 13 19.9 -0.8
CSS Mathiatis 81.66 307 *e*P **P** 12 13 20.8 0.0
comp=Z,12nm,0.8s
MME1 Meikle Cairn 81.74 341⇑ *e*P **P** 12 13 20.5 -0.3
SART Tekirdag 81.75 315⇑ *i*P **P** 12 13 21.5 +0.3
C31A Landman Farms, 81.78 35 P **P** 12 13 21.2 0.0
baz=316
MPEP Malo Peshtene 81.88 319 *i*P **P** 12 13 22.2 +0.5
GLA Glamis 81.88 55 P **P** 12 13 22.0 0.0
baz=308,SNR=10
B32A Ashes, Strandq 81.90 34 P **P** 12 13 21.4 -0.3
baz=317
MDVR Moldovita 81.96 321⇑ *i*P **P** 12 13 22.3 +0.1
RRR Rubha Reidh 81.99 342⇑ *i*P **P** 12 13 22.2 +0.2
MDO Dochfour 82.00 341⇑ *e*P **P** 12 13 21.6 -0.5
A33A Warroad 82.01 33 P **P** 12 13 22.2 -0.1
baz=318
PV09 Paradox Valley 82.05 48 *e*P **P** 12 13 24.2 +1.1
KDZ Kurdzhali 82.11 317 *i*P **P** 12 13 24.1 +1.1
RRH Rhenigidale 82.15 343⇑ *i*P **P** 12 13 23.4 +0.6
F29A Eureka 82.18 38 P **P** 12 13 23.3 0.0
baz=315
KAC Achnashellach 82.19 342⇑ *e*P **P** 12 13 23.6 +0.5
PV10 Paradox Valley 82.19 48 *e*P **P** 12 13 25.0 +1.2
PGB Panagyurishte 82.19 318 *i*P **P** 12 13 24.3 +0.9
KORT Korkueli 82.26 310⇑ *i*P **P** 12 13 23.4 -0.5
PV04 Paradox Valley 82.26 48 *e*P **P** 12 13 25.0 +1.0
ALN Alexandroupoli 82.26 316 P **P** 12 13 22.9 -0.8
ALN Alexandroupoli 82.26 316 P **P** 12 13 22.9 -0.8
ALN Alexandroupoli 82.26 316 P **P** 12 13 22.9 -0.8
AGMN Agassiz Nation 82.27 34 P **P** 12 13 22.8 -0.8
baz=318
AGMN Agassiz Nation 82.27 34 *e*P **P** 12 13 23.0 -0.7
comp=Z,18nm,0.9s
NKC Novy Kostel 82.29 329⇑ *i*P **P** 12 13 24.1 +0.4
NKC AMS AMS 12 56 10.0
comp=Z,500nm,18.4s
NKC Novy Kostel 82.29 329⇑ *i*P **P** 12 13 24.1 +0.4
NKC MLR MLR
comp=Z,500nm,18.4s
KULA Kula-Manisa 82.31 312 P **P** 12 13 24.0 -0.1
KULA Kula-Manisa 82.31 312 P **P** 12 13 24.0 -0.1
D31A Mcclaflin, Tow 82.33 36 P **P** 12 13 24.5 +0.5
baz=316
N23A Red Feather La 82.34 44 P **P** 12 13 25.4 +0.9
baz=312
N23A Red Feather La 82.34 44 *e*P **P** 12 13 25.9 +1.4
comp=Z,24nm,1.0s
PHWY Pilot Hill 82.34 44 *e*P **P** 12 13 25.3 +0.7
comp=Z,63nm,1.9s
PV05 Paradox Valley 82.34 48 *e*P **P** 12 13 25.6 +1.0
SOP Sopron 82.39 325⇑ *e*P **P** 12 13 25.1 +0.8
B33A Robert and Kas 82.42 34 P **P** 12 13 24.0 -0.5
baz=318
KPL Plockton 82.42 342⇑ *i*P **P** 12 13 24.9 +0.7
KPL Plockton 82.42 342⇑ *e*P **P** 12 13 24.8 +0.7
KPL AMB AMB 12 13 25.5
comp=Z,102nm,0.9s
EDU Dundee 82.43 340⇑ *e*P **P** 12 13 24.4 +0.1
RZN Rozhen 82.47 317 *i*P **P** 12 13 25.8 +0.7
Y14A Wickenburg 82.53 53 *e*P **P** 12 13 26.6 +1.2
comp=Z,85nm,1.0s
CONA Conrad Observa 82.53 326 *i*PcP **P** 12 13 26.1 +0.9
comp=Z,32nm,0.8s,SNR=23
F30A Leola 82.58 37 P **P** 12 13 25.3 0.0
baz=316
WUAZ Wupatki 82.58 51 P **P** 12 13 26.4 +0.7
baz=310,SNR=12
WUAZ Wupatki 82.58 51 *e*P **P** 12 13 27.0 +1.3
comp=Z,22nm,1.0s
GOLH Golhisar 82.59 311⇑ *i*P **P** 12 13 25.1 -0.5
E31A Nome 82.61 36 P **P** 12 13 25.5 0.0
baz=316
PV01 Paradox Valley 82.63 48 *e*P **P** 12 13 26.9 +0.8
KHC Kasperske Hory 82.64 328⇑ *i*P **P** 12 13 26.1 +0.4
KHC *e*pP **pP** 12 13 42.8 -2.3
KHC *e*S **S** 12 23 35.7 -1.5
KHC *ex* x 12 24 07.3
KHC AMS AMS 12 55 00.0
comp=Z,700nm,14.2s
KHC Kasperske Hory 82.64 328 *e*P **P** 12 13 26.0 +0.4
KHC pmax pmax
comp=Z,25nm,1.0s
KHC Kasperske Hory 82.64 328 *e*P **P** 12 13 25.9 +0.3
comp=Z,25nm,1.0s
B34A Aery, Baudette 82.67 33 P **P** 12 13 24.7 -1.1
baz=318
VTS Vitosha 82.68 318 P **P** 12 13 27.3 +1.2
VTS Vitosha 82.68 318⇑ *i*P **P** 12 13 26.4 +0.3
VTS Vitosha 82.68 318 *e*P **P** 12 13 26.9 +0.8
VTS pmax pmax
comp=Z,46nm,0.7s
VTS Vitosha 82.68 318 *i*P **P** 12 13 26.7 +0.6
VTS Vitosha 82.68 318 *e*P **P** 12 13 26.9 +0.8
comp=Z,46nm,0.7s
GEC2 GERESS Array S 82.81 328 *e*P **P** 12 13 26.6 0.0
GEC2 pmax pmax
comp=Z,37nm,1.0s
GEC2 GERESS Array S 82.81 328 *e*P **P** 12 13 26.6 0.0
comp=Z,37nm,1.0s
GERES GERESS Array B 82.81 328 P **P** 12 13 26.6 0.0
comp=Z,21nm,0.8s,baz=38,slow=5.0,SNR=78
GERES PKKPbc **PKKPbc** 12 31 48.8 -0.3
comp=Z,0.3nm,0.2s,baz=17,slow=1.4,SNR=3.7
GERES LR LR 12 55 58.2
comp=Z,253nm,18.2s,baz=38,slow=40
EZN Ezine 82.81 315 P **P** 12 13 26.8 +0.2
EZN Ezine 82.81 315 *e*P **P** 12 13 26.8 +0.2
EZN Ezine 82.81 315 *e*P **P** 12 13 26.8 +0.2
GEA0 GERESS Array S 82.81 328 *e*P **P** 12 13 26.5 -0.1
GADA Gvkgeada 82.81 315 P **P** 12 13 26.4 -0.2
GADA Gvkgeada 82.81 315 *e*P **P** 12 13 26.4 -0.2
SMTH Samothraki Isl 82.84 316 P **P** 12 13 26.1 -0.7
SMTH Samothraki Isl 82.84 316 *e*P **P** 12 13 26.1 -0.7
ESY Stoneypath 82.86 340⇑ *e*P **P** 12 13 26.8 +0.2
SMCO Snowmass 82.89 46 *e*P **P** 12 13 28.5 +0.9
comp=Z,15nm,0.9s
F31A Hecla 82.93 37 P **P** 12 13 26.8 -0.4
baz=316
EDI Edinburgh 83.02 340 *e*P **P** 12 13 27.5 +0.2
KAVA Kavala 83.05 316 P **P** 12 13 27.7 -0.1
KAVA Kavala 83.05 316 *e*P **P** 12 13 27.7 -0.1
MMB Musomiste 83.08 317 *i*P **P** 12 13 28.8 +0.7
EAB Aberfoyle 83.10 341⇑ *i*P **P** 12 13 28.2 +0.4
WTSB Winterswijk 83.14 333 *i*P **P** 12 13 27.9 -0.1
comp=Z,42nm,0.8s
NVR Nevrokopi 83.17 317 P **P** 12 13 28.8 +0.3
NVR Nevrokopi 83.17 317 P **P** 12 13 28.8 +0.3
B35A Bob, Littlefor 83.18 33 P **P** 12 13 28.1 -0.2
baz=319
ARSA Arzberg 83.19 326 *i*P **P** 12 13 29.0 +0.5
comp=Z,32nm,1.1s,SNR=11
AKAS Kas 83.21 310⇑ *i*P **P** 12 13 27.9 -1.0
PRK Paraskevi 83.23 314 P **P** 12 13 28.8 0.0
X16A Lo Mia Camp, P 83.23 52 *e*P **P** 12 13 30.4 +1.2
comp=Z,27nm,1.0s
KKB Krupnik 83.25 318 *i*P **P** 12 13 29.6 +0.7
ISCO Idaho Springs 83.26 45 P **P** 12 13 29.4 +0.1
baz=312
ISCO Idaho Springs 83.26 45 *e*P **P** 12 13 30.3 +0.9
ISCO pmax pmax
comp=Z,10.0nm,0.9s
ISCO Idaho Springs 83.26 45 *e*P **P** 12 13 30.3 +0.9
comp=Z,10nm,0.9s
FETY Fethiye 83.27 311 P **P** 12 13 28.8 -0.3
FETY Fethiye 83.27 311 *e*P **P** 12 13 28.8 -0.3
MVCO Mesa Verde 83.27 48 P **P** 12 13 29.6 +0.2
baz=311
MVCO Mesa Verde 83.27 48 *e*P **P** 12 13 30.2 +0.9
comp=Z,130nm,1.9s
MOA Molln 83.31 327 *i*P **P** 12 13 29.4 +0.3
comp=Z,43nm,1.1s,SNR=12
DIVS Divibare 83.31 321 P **P** 12 13 28.0 -1.3
TURN Turunc 83.41 311⇑ *i*P **P** 12 13 31.6 +1.9
G31A Conde 83.41 37 P **P** 12 13 29.8 +0.1
baz=316
LIA Limnos Island 83.42 315 P **P** 12 13 29.1 -0.6
LIA Limnos Island 83.42 315 P **P** 12 13 29.1 -0.6
YER Yerkesik 83.43 312 P **P** 12 13 30.1 +0.1
YER Yerkesik 83.43 312 *e*P **P** 12 13 30.1 +0.1
YER Yerkesik 83.43 312 *e*P **P** 12 13 30.1 +0.1
PGBU Glenifferbraes 83.47 341 *e*P **P** 12 13 30.3 +0.6
PGBU AMB AMB 12 13 30.9
comp=Z,88nm,0.9s
D34A Park Rapids 83.47 34 P **P** 12 13 29.8 -0.1
baz=318
SRS Serrai 83.48 317 P **P** 12 13 29.1 -1.0
SRS Serrai 83.48 317 *e*P **P** 12 13 29.1 -1.0
SRS Serrai 83.48 317 *e*P **P** 12 13 29.1 -1.0
SIGR SIGRI 83.49 314 P **P** 12 13 30.1 0.0
SIGR SIGRI 83.49 314 *e*P **P** 12 13 30.1 0.0
E33A Westby DABS, E 83.53 35 P **P** 12 13 30.2 0.0
baz=318
ESK Eskdalemuir 83.56 340 *e*P **P** 12 13 30.4 +0.3
ESK Eskdalemuir 83.56 340⇑ *e*P **P** 12 13 30.3 +0.2
ESK Eskdalemuir 83.56 340 *e*P **P** 12 13 30.4 +0.3
ESK pmax pmax
comp=Z,18nm,0.8s
ESK Eskdalemuir 83.56 340 *e*P **P** 12 13 30.4 +0.3
comp=Z,18nm,0.8s
C35A Jirik Farms, M 83.56 33 P **P** 12 13 30.1 -0.2
baz=319
SUSD Miller 83.61 38 P **P** 12 13 30.9 +0.2
baz=316
URLA Izmir 83.63 313⇑ *i*P **P** 12 13 30.5 -0.4
ECK Cauldkaine Hil 83.65 340⇑ *e*P **P** 12 13 30.6 0.0
BHH Howats Hill 83.75 340⇑ *e*P **P** 12 13 31.6 +0.4
GROS Grobnik 83.78 325 *i*P **P** 12 13 31.5 -0.1
H31A Wolsey 83.82 38 P **P** 12 13 31.6 -0.1
baz=316
PERS Pernice 83.83 325 *i*P **P** 12 13 32.1 +0.3
KNT Kendrikon 83.83 317 P **P** 12 13 31.7 -0.2
KNT Kendrikon 83.83 317 P **P** 12 13 31.7 -0.2
KNT Kendrikon 83.83 317 P **P** 12 13 31.7 -0.2
SOKA Soboth 83.84 325 *i*P **P** 12 13 32.3 +0.4
comp=Z,93nm,0.9s,SNR=35
EIL Elat 83.86 302 P **P** 12 13 32.4 +0.2
comp=Z,76nm,0.7s,baz=25,slow=3.9,SNR=84
EIL PP **PP** 12 16 48.3 +2.4
comp=Z,6.3nm,1.0s,baz=132,slow=15,SNR=4.5
W18A Petrified Fore 83.86 51 P **P** 12 13 32.7 +0.3
baz=310
F33A 5 Mile Ranch, 83.89 36 P **P** 12 13 32.2 +0.1
baz=318
214A Organ Pipe Nat 83.90 55 P **P** 12 13 33.0 +0.6
baz=309
214A Organ Pipe Nat 83.90 55 *e*P **P** 12 13 33.0 +0.6
comp=Z,116nm,0.8s
VAY Valandovo 83.90 318 P **P** 12 13 31.9 -0.3
VAY Valandovo 83.90 318⇑ *i*P **P** 12 13 32.7 +0.5
VAY Valandovo 83.90 318 *e*P **P** 12 13 31.9 -0.3
VAY Valandovo 83.90 318 *e*P **P** 12 13 31.9 -0.3
S22A 4UR Ranch, Cre 83.92 47 P **P** 12 13 33.6 +0.9
baz=312
S22A 4UR Ranch, Cre 83.92 47 *e*P **P** 12 13 34.0 +1.3
comp=Z,30nm,1.0s
SMG Samos 83.92 313 P **P** 12 13 32.1 -0.3
SMG Samos 83.92 313 P **P** 12 13 32.1 -0.3
BDRM Kayabasi 83.98 312⇑ *i*P **P** 12 13 32.8 +0.1
D35A Remer 84.00 34 P **P** 12 13 31.9 -0.7
baz=319
C36A Pine Crest Far 84.02 33 P **P** 12 13 32.2 -0.5
baz=320
SKO Skopje 84.06 319 P **P** 12 13 33.8 +0.8
SKO Skopje 84.06 319⇑ *i*P **P** 12 13 34.1 +1.1
SKO Skopje 84.06 319 *e*P **P** 12 13 33.8 +0.8
SKO Skopje 84.06 319 *e*P **P** 12 13 33.8 +0.8
BODT Bodrum 84.06 312 P **P** 12 13 33.0 -0.1
BODT Bodrum 84.06 312 *e*P **P** 12 13 33.0 -0.1
PLG Polygyros 84.07 317 P **P** 12 13 32.4 -0.7
PLG Polygyros 84.07 317 P **P** 12 13 32.4 -0.7
PLG Polygyros 84.07 317 P **P** 12 13 32.4 -0.7
BBO1 Bothel 84.07 340⇑ *i*P **P** 12 13 33.2 +0.4
Q24A Divide 84.08 45 P **P** 12 13 33.9 +0.3
baz=313
Q24A Divide 84.08 45 *e*P **P** 12 13 34.6 +1.0
comp=Z,14nm,1.0s
X18A Snowflake 84.11 51 *e*P **P** 12 13 34.5 +0.8
comp=Z,28nm,1.1s
HORT Hortiatis 84.11 317 P **P** 12 13 32.6 -0.8
HORT Hortiatis 84.11 317 P **P** 12 13 32.6 -0.8
J30A Dallas 84.14 39 P **P** 12 13 33.2 -0.2
baz=316
KESW Keswick, Cumbr 84.16 339⇑ *e*P **P** 12 13 33.2 0.0
PLE Pljevlja 84.17 321⇑ *i*P **P** 12 13 33.9 +0.2
GMK Mull of Kintyr 84.18 341⇑ *i*P **P** 12 13 33.4 +0.1
OBKA Obir 84.19 326 *i*P **P** 12 13 33.8 +0.2
comp=Z,23nm,0.8s,SNR=7.6
IVA Berane 84.23 320⇑ *i*P **P** 12 13 34.6 +0.6
GRG Griva 84.25 318 P **P** 12 13 33.7 -0.3
GRG Griva 84.25 318 *e*P **P** 12 13 33.7 -0.3
GRG Griva 84.25 318 *e*P **P** 12 13 33.7 -0.3
PAIG Paliouri 84.25 316 P **P** 12 13 33.5 -0.5
PAIG Paliouri 84.25 316 *e*P **P** 12 13 33.5 -0.5
PAIG Paliouri 84.25 316 *e*P **P** 12 13 33.5 -0.5
G33A Ortonville 84.29 36 P **P** 12 13 33.5 -0.6
baz=318
KBA Koelnbreinsper 84.30 327 *i*PcP **P** 12 13 34.5 +0.2
comp=Z,37nm,0.8s,SNR=6.8
H32A Carlson Farm, 84.31 37 P **P** 12 13 33.9 -0.4
baz=317
C37A Embarrass 84.33 32 P **P** 12 13 33.8 -0.5
baz=320
GAL1 Galloway 84.37 340⇑ *e*P **P** 12 13 34.4 +0.2
GAL1 AMB AMB 12 13 35.1
comp=Z,23nm,1.0s
PVY Plav 84.40 320⇑ *i*P **P** 12 13 34.5 -0.4
OZLJ Ozalj 84.43 324 P **P** 12 13 34.7 0.0
HGN Heimansgroeve 84.43 333 *i*P **P** 12 13 34.3 -0.4
comp=Z,48nm,0.9s
EYMN Ely 84.46 32 P **P** 12 13 34.5 -0.4
baz=321
EYMN Ely 84.46 32 *e*P **P** 12 13 35.0 +0.1

comp=Z,33nm,1.0s
OGNE Ogallala 84.47 42 P P 12 13 34.7 -0.5
baz=314
UPM Unac-Piva 84.51 321⇑ *i*P P 12 13 35.3 -0.2
MYKA Terra Mystica 84.51 326 *i* P P 12 13 34.8 -0.5
comp=Z,31nm,0.6s,SNR=15
H33A Prehn Over Nor 84.52 37 P P 12 13 35.2 -0.2
baz=317
K30A Basset 84.54 40 P P 12 13 35.5 +0.1
baz=316
J31A Geddes 84.54 39 P P 12 13 35.4 0.0
baz=316
LJU Ljubljana 84.55 325 *i* P P 12 13 35.0 -0.3
G34A Benson 84.64 36 P P 12 13 35.9 0.0
baz=318
I32A Karley and Nic 84.65 38 P P 12 13 35.6 -0.4
baz=317
AOS Alonnisos 84.65 315 P P 12 13 35.2 -0.8
AOS Alonnisos 84.65 315 *e*P P 12 13 35.2 -0.8
D37A Cotton 84.66 33 P P 12 13 35.5 -0.5
baz=320
SDCO Great Sand Dun 84.70 46 P P 12 13 37.3 +0.6
baz=312
SDCO Great Sand Dun 84.70 46 *e*P P 12 13 37.6 +0.9
comp=Z,18nm,1.1s
C38A Sawbill Land. 84.73 32 P P 12 13 36.4 +0.1
baz=321
NKY Niksic 84.74 321⇑ *i*P P 12 13 36.4 -0.2
STU Stuttgart 84.76 330 *e*P P 12 13 36.6 +0.2
STU pmax pmax
comp=Z,95nm,1.0s
STU Stuttgart 84.76 330 *e*P P 12 13 36.6 +0.2
comp=Z,95nm,1.0s
E36A McGregor 84.78 34 P P 12 13 36.2 -0.4
baz=320
LIT Litokhoron 84.79 317 P P 12 13 36.1 -0.7
LIT Litokhoron 84.79 317 *e*P P 12 13 36.1 -0.7
LIT Litokhoron 84.79 317 *e*P P 12 13 36.1 -0.7
NKME Niksic 84.79 321⇑ *i*P P 12 13 36.5 -0.3
JAVS Javornik 84.87 325 *i* P P 12 13 36.3 -0.8
PDG Podgorica 84.88 320 *i* P P 12 13 37.1 0.0
PDG Podgorica 84.88 320⇑ *i*P P 12 13 37.5 +0.3
TTG Podgorica 84.88 320⇑ *i*P P 12 13 37.4 +0.3
WATA Walderalm 84.88 328 *i* PcP P 12 13 37.3 +0.1
comp=Z,11nm,0.6s
XOR Xorichti 84.91 316 P P 12 13 35.5 -1.9
XOR Xorichti 84.91 316 P P 12 13 35.5 -1.9
BRY Bratogost 84.91 321⇑ *i*P P 12 13 37.2 -0.3
WTTA Wattenberg 84.91 328 *i* PcP P 12 13 37.8 +0.4
comp=Z,9.3nm,0.7s
IDGL Inch Island, C 84.91 342⇑ *e*P P 12 13 37.5 +0.5
ABTA Abfaltersbach 84.92 327 *i* P P 12 13 36.6 -0.8
comp=Z,42nm,1.1s,SNR=12
FNA Florina 84.92 318 P P 12 13 36.6 -0.9
FNA Florina 84.92 318 P P 12 13 36.6 -0.9
FNA Florina 84.92 318 P P 12 13 36.6 -0.9
J32A Parkston 84.93 38 P P 12 13 37.0 -0.4
baz=317
CEME Cevo 84.97 321⇑ *i*P P 12 13 37.5 -0.2
WIM Isle of Man 84.99 340⇑ *e*P P 12 13 37.5 0.0
TUC Tucson 85.00 53 P P 12 13 38.7 +0.7
baz=310
TUC Tucson 85.00 53 *e*P P 12 13 38.8 +0.7
TUC pmax pmax
comp=Z,23nm,1.0s
TUC Tucson 85.00 53 *e*P P 12 13 38.8 +0.8
comp=Z,24nm,1.0s
OHR Ohrid 85.00 319 *i* P P 12 13 38.0 +0.1
K31A O'Neill 85.02 39 P P 12 13 38.1 +0.2
baz=316
FYTO Fytoko, Volos 85.02 316 P P 12 13 36.8 -1.1
FYTO Fytoko, Volos 85.02 316 *e*P P 12 13 36.8 -1.1
KZN Kozani 85.04 317 P P 12 13 37.1 -1.0
KZN Kozani 85.04 317 P P 12 13 37.1 -1.0
KZN Kozani 85.04 317 P P 12 13 37.1 -1.0
MOTA Moosalm 85.08 328 *i* PcP P 12 13 38.2 0.0
comp=Z,29nm,1.1s,SNR=7.1
DRME Dracevica, Mon 85.09 320⇑ *i*P P 12 13 38.6 +0.4
UDBI Udbina 85.09 324 P P 12 13 38.0 -0.2
RETA Reutte 85.11 328 *i* PcP P 12 13 38.5 +0.2
comp=Z,44nm,0.8s,SNR=17
APE Apeiranthos 85.12 313⇑ *i*P P 12 13 36.2 -2.3
LANF Langenberg 85.15 331⇑ *e*P P 12 13 38.6 +0.2
F36A Milaca 85.16 34 P P 12 13 38.0 -0.5
baz=319
KARP Karpathos 85.16 311 *e*P P 12 13 38.9 +0.2
comp=Z,34nm,0.9s
BUM Brajici-Budva 85.16 320⇑ *i*P P 12 13 38.6 0.0
ULC Ulcinj 85.22 320⇑ *i*P P 12 13 38.8 -0.1
SMIA Simia 85.23 316 P P 12 13 38.1 -0.9
CWF Charnwood Fore 85.24 338⇑ *e*P P 12 13 38.6 -0.1
CWF AMB AMB 12 13 39.3
comp=Z,68nm,0.9s
CWF Charnwood Fore 85.24 338 *e*P P 12 13 38.8 +0.1
comp=Z,56nm,0.8s
GMM Mts of Mourne 85.26 341⇑ *i*P P 12 13 38.9 +0.1
HCY Herceg Novi 85.26 321⇑ *i*P P 12 13 38.9 -0.1
ECSD EROS Data Cent 85.28 37 P P 12 13 39.5 +0.3
baz=318
ECSD EROS Data Cent 85.28 37 *e*P P 12 13 38.8 -0.3
comp=Z,13nm,0.8s
L31A Butterfield Fa 85.29 40 P P 12 13 39.2 -0.1
baz=316
PPT Papeete 85.30 116 LR LR 12 45 26.1
comp=Z,353nm,19.6s,baz=328,slow=31
PPT2 Papeete2 85.31 116 *e*S S 12 24 08.5 +3.8
comp=Z,205nm,24.5s
PPT2 Papeete2 85.31 116 *e*LR LR 12 40 07.2
comp=Z,3μm,32.5s,baz=310
PPT2 Papeete2 85.31 116 *e*T T 13 46 42.6
comp=Z,2.9nm,0.3s
TIR Tirane 85.33 319⇑ *i*P P 12 13 39.5 +0.1
TIR Tirane 85.33 319 *e*P P 12 13 39.6 +0.1
TIR pmax pmax
comp=Z,73nm,0.9s
TIR Tirane 85.33 319 *e*P P 12 13 39.6 +0.1
comp=Z,73nm,0.9s
NEST Nestorio 85.36 318 P P 12 13 39.2 -0.5
J33A Davis 85.41 38 P P 12 13 39.5 -0.3
baz=317
H35A Sunnyside Ranc 85.42 36 P P 12 13 39.8 0.0
baz=319
THL Klokotos Trika 85.42 317 P P 12 13 36.9 -3.0
BFO Black Forest 85.46 330 *e*P P 12 13 39.5 -0.5
BFO pmax pmax
comp=Z,57nm,0.9s
BFO Black Forest 85.46 330 *e*P P 12 13 39.5 -0.5
comp=Z,57nm,0.9s
TIAR Tiarei 85.46 115 *e*T T 13 46 52.4
comp=Z,2.2nm,0.2s
PENT Pentalofos 85.47 318 P P 12 13 39.3 -0.9
ATAL Atalanti 85.47 316 P P 12 13 38.5 -1.6
ATAL Atalanti 85.47 316 *e*P P 12 13 38.5 -1.6
KSCO Kaye Shedlock' 85.48 44 P P 12 13 40.2 -0.2
baz=314
FETA Feichten 85.49 328 *i* PcP P 12 13 40.1 -0.2
comp=Z,26nm,0.8s,SNR=12
NVLJ Novalja 85.49 324 P P 12 13 39.3 -0.8
LKR Lokris 85.51 316 P P 12 13 38.7 -1.6
LKR Lokris 85.51 316 P P 12 13 38.7 -1.6
KPRO Kipourio 85.51 317 P P 12 13 39.1 -1.3
WPM1 Penmaenmawr 85.56 339⇑ *e*P P 12 13 40.4 +0.1
AGG Agios Georgios 85.63 316 P P 12 13 38.8 -2.2
AGG Agios Georgios 85.63 316 *e*P P 12 13 39.6 -1.4
AGG Agios Georgios 85.63 316 *e*P P 12 13 39.6 -1.4
DAVA Damuels 85.64 329 *i* PcP P 12 13 41.4 +0.3
comp=Z,60nm,1.0s,SNR=15
WLF1 Llynfaes 85.67 339⇑ *e*P P 12 13 40.9 +0.1
WLF1 AMB AMB 12 13 41.7
comp=Z,134nm,1.3s
FOEL Foel Wylfa 85.68 339⇑ *e*P P 12 13 41.3 +0.4
FOEL AMB AMB 12 13 42.0
comp=Z,71nm,0.8s
T25A Trinidad 85.75 46 P P 12 13 42.3 +0.5
baz=313
T25A Trinidad 85.75 46 *e*P P 12 13 42.5 +0.7
comp=Z,25nm,0.8s
WLS Welschbruch 85.79 331 *e*P P 12 13 41.3 -0.3
HLM1 Long Mynd 85.91 338⇑ *e*P P 12 13 42.0 -0.1
H36A Jessenland, He 85.94 35 P P 12 13 42.5 +0.1
baz=319
DAMY Dhamar 85.95 285 *e*P P 12 13 45.0 +1.7
comp=Z,84nm,1.1s
LAZ Ladron 85.95 50 *e*P P 12 13 43.8 +1.0
SPMN Marine on St. 85.97 34 P P 12 13 42.8 +0.2
baz=320
ANMO Albuquerque 86.00 49 P P 12 13 43.7 +0.6
baz=312
ANMO Albuquerque 86.00 49 *e*P P 12 13 43.9 +0.8
ANMO pmax pmax
comp=Z,15nm,0.9s
ANMO Albuquerque 86.00 49 *e*P P 12 13 43.9 +0.8
comp=Z,14nm,0.9s
ECH Echery 86.02 331⇑ *e*P P 12 13 42.5 -0.2
DAVOX Davos/Dischmat 86.04 328 P P 12 13 42.5 -0.5
comp=Z,11nm,0.7s,baz=24,slow=3.1,SNR=14
ANX Ano Chora 86.16 316 P P 12 13 41.5 -2.2
BGNE Belgrade 86.20 40 P P 12 13 43.7 -0.1
baz=317
DSL Palaion Diasel 86.23 317 P P 12 13 43.2 -0.8
DSL Palaion Diasel 86.23 317 *e*P P 12 13 43.2 -0.8
J35A Milford 86.24 37 P P 12 13 43.9 0.0
baz=318
DSB Dublin 86.26 341 *e*P P 12 13 43.8 0.0
comp=Z,33nm,0.8s
K34A Le Mars 86.31 38 P P 12 13 44.2 0.0
baz=318
LPM Los Pinos Moun 86.32 50 *e*P P 12 13 45.0 +0.4
I36A Fitzsimmons Fa 86.32 36 P P 12 13 44.0 -0.3
baz=319
MOF Molkenrain 86.33 330⇑ *e*P P 12 13 44.0 -0.3
LAKA Lakka 86.37 316 P P 12 13 43.2 -1.4
LAKA Lakka 86.37 316 *e*P P 12 13 43.2 -1.4
SGD Sagiada 86.37 318 P P 12 13 43.9 -0.7
GUR Goura 86.37 315 P P 12 13 43.3 -1.5
GUR Goura 86.37 315 *e*P P 12 13 43.3 -1.5
MCH1 Michaelchurch 86.40 338⇑ *e*P P 12 13 44.5 0.0
MCH1 AMB AMB 12 13 45.3
comp=Z,78nm,0.9s
H37A Dierke Farm, C 86.41 35 P P 12 13 45.2 +0.5
baz=320
KLV Kalavryta, Ach 86.41 316 P P 12 13 42.5 -2.4
KLV Kalavryta, Ach 86.41 316 *e*P P 12 13 42.5 -2.4
BNM Barren Site 86.43 50 *e*P P 12 13 46.0 +0.7
LAST Lasithi 86.44 312 P P 12 13 44.1 -1.0
LAST Lasithi 86.44 312 *e*P P 12 13 44.1 -1.0
comp=Z,68nm,0.8s
SCHQ Schefferville 86.45 15 P P 12 13 45.1 +0.4
comp=Z,16nm,0.8s,baz=345,slow=5.2,SNR=11
SCHQ LR LR 12 56 54.0
comp=Z,216nm,18.7s,baz=326,slow=39
SCHQ Schefferville 86.45 15 *e*P P 12 13 45.5 +0.8
comp=Z,40nm,1.0s
THEF They Montfort 86.47 331⇑ *e*P P 12 13 44.8 -0.1
MONM Monmouth 86.48 338⇑ *e*P P 12 13 44.7 -0.1
MONM AMB AMB 12 13 45.6
comp=Z,97nm,1.0s
TUE Stuetta 86.51 328 *e*P P 12 13 45.2 -0.2
comp=Z,48nm,1.4s
KEK Kerkira 86.53 318 P P 12 13 44.5 -0.9
KEK Kerkira 86.53 318 P P 12 13 44.5 -0.9
PDO Prodromos 86.56 317 P P 12 13 44.4 -1.1
319A Douglas 86.58 53 *e*P P 12 13 46.6 +0.7
comp=Z,21nm,0.9s
MEH Mehetia 86.60 115 *e*T T 13 48 17.6
comp=Z,18nm,0.2s
LPW Lampeter 86.61 339⇑ *e*P P 12 13 45.7 +0.2
LPW AMB AMB 12 13 46.4
comp=Z,88nm,0.9s
I37A Lemond, Waseca 86.61 35 P P 12 13 45.9 +0.2
baz=320
HGH Gray Hill 86.65 338⇑ *e*P P 12 13 45.6 -0.1
J36A Seneca 1, Swea 86.69 36 P P 12 13 46.2 +0.1
baz=319
L34A Svendsen Farm, 86.70 38 P P 12 13 46.1 0.0
baz=318
IDI Anoyia 86.70 312 P P 12 13 44.8 -1.6
comp=Z,38nm,0.8s,baz=24,slow=8.8,SNR=22
IDI Anoyia 86.70 312 *e*P P 12 13 45.3 -1.1
comp=Z,40nm,0.8s
LKD2 Lefkada island 86.72 317 P P 12 13 45.3 -1.0
LKD2 Lefkada island 86.72 317 P P 12 13 45.3 -1.0
DRO Drossia 86.72 316 P P 12 13 45.4 -1.0
121A Cookes Peak, D 86.78 52 P P 12 13 47.6 +0.7
baz=312
121A Cookes Peak, D 86.78 52 *e*P P 12 13 47.8 +0.8
comp=Z,22nm,1.0s
RLS Riolos of Patr 86.78 316 P P 12 13 45.9 -0.7
RLS Riolos of Patr 86.78 316 P P 12 13 45.9 -0.7
LOMF Lomont 86.85 330⇑ *e*P P 12 13 46.6 -0.3
VLI Veliai 86.88 314 P P 12 13 43.7 -3.4
VLI Veliai 86.88 314 P P 12 13 43.7 -3.4
COWI Conover 86.91 32 *e*P P 12 13 47.0 -0.1
comp=Z,12nm,0.9s
N33A J Bar K, Exete 87.05 40 P P 12 13 47.0 -0.9
baz=317
J37A Redenius Farm, 87.08 36 P P 12 13 47.8 -0.1
baz=320
TAOE Nuku Hiva Isla 87.09 103 *e*LR LR 12 41 16.0
comp=Z,2μm,31.5s,baz=314
I38A Scanlan Farm, 87.09 35 P P 12 13 48.0 0.0
baz=320
KFL Anninata 87.13 316 P P 12 13 47.2 -1.1
IMMV Iera Moni Meta 87.13 313 P P 12 13 47.1 -1.3
ITM Ithomi 87.14 315 P P 12 13 46.9 -1.5
ITM Ithomi 87.14 315 P P 12 13 46.9 -1.5
K36A Gilmore City 87.15 37 P P 12 13 48.2 -0.1
baz=319
CBKS Cedar Bluff 87.22 42 P P 12 13 48.5 -0.3
baz=316
ANKY Antikythira Is 87.25 313 P P 12 13 47.4 -1.5
ANKY Antikythira Is 87.25 313 *e*P P 12 13 47.4 -1.5
P32A Huiting Farm, 87.26 41 P P 12 13 48.5 -0.4
baz=316
M35A Neola 87.41 38 P P 12 13 49.6 0.0
baz=318
PYL PYLOS 87.44 315 P P 12 13 47.4 -2.4
PYL PYLOS 87.44 315 *e*P P 12 13 47.4 -2.4
K37A Belmond 87.45 36 P P 12 13 49.9 +0.1
baz=320
O33A Hebron 87.47 40 P P 12 13 49.1 -0.8
baz=317
N34A Lincoln 87.47 39 P P 12 13 49.4 -0.5
baz=318
J38A Wedel Dairy, R 87.58 35 P P 12 13 50.4 0.0
baz=320
HTL Hartland 87.72 338 *e*P P 12 13 51.2 +0.4
HTL AMB AMB 12 13 51.8
comp=Z,26nm,1.0s
Q32A Meitler Ranch, 87.74 42 P P 12 13 51.2 0.0
baz=316
O34A Beatrice 87.85 40 P P 12 13 51.4 -0.4
baz=318
AQU L'Aquila 87.86 323 *e*P P 12 13 52.5 +0.7
AQU pmax pmax
comp=Z,76nm,0.8s
AQU L'Aquila 87.86 323 *e*P P 12 13 52.5 +0.7
comp=Z,76nm,0.8s
M36A Felix, Anita 87.87 38 P P 12 13 52.0 +0.2
baz=319
P33A Williams Farm, 87.88 41 P P 12 13 51.7 -0.2
baz=317
L37A Phoenix Point, 87.88 37 P P 12 13 51.8 0.0
baz=319
N35A Tabor 87.89 39 P P 12 13 51.8 -0.1
baz=318
J39A Decorah 87.92 35 P P 12 13 51.1 -0.9
baz=321
R32A Long Quarter, 88.06 42 P P 12 13 52.3 -0.6
baz=316
Q33A Connelly Farm, 88.12 41 P P 12 13 53.0 0.0
baz=317
O35A Humboldt 88.20 39 P P 12 13 53.1 -0.3
baz=318
L38A Oak Wood Farm, 88.25 36 P P 12 13 53.3 -0.3
baz=320
P34A Walnut Farm, R 88.25 40 P P 12 13 53.3 -0.4
baz=318
N36A Muff Farm, Cla 88.27 38 P P 12 13 53.9 +0.2
baz=319
M37A Trindle Farm, 88.28 38 P P 12 13 53.8 +0.1
baz=319
J40A Soldiers Grove 88.32 34 P P 12 13 53.3 -0.6
baz=321
K39A Oelwein 88.33 35 P P 12 13 53.7 -0.3
baz=321
S32A Newby Ranch, P 88.46 43 P P 12 13 54.7 -0.1
baz=316
R33A Olander Ranch, 88.54 42 P P 12 13 54.6 -0.4
baz=317
TIP Timpagrande 88.54 319 *e*P P 12 13 55.1 0.0
comp=Z,57nm,1.6s
JSA Saint Aubin 88.59 336⇑ *e*P P 12 13 54.9 -0.1
JSA AMB AMB 12 13 55.6
comp=Z,39nm,1.1s
Q34A Chapman 88.65 41 P P 12 13 55.8 +0.2
baz=318
J41A Loganville 88.68 34 P P 12 13 55.3 -0.3
baz=322
K40A Colesburg 88.68 35 P P 12 13 55.3 -0.3
baz=321
P35A Duane Minner, 88.69 40 P P 12 13 55.5 -0.2
baz=318
M38A Pleasantville 88.69 37 P P 12 13 55.5 -0.1
baz=320
N37A Lee Faris, Mou 88.69 38 P P 12 13 55.9 +0.2
baz=319
KSU1 Kansas State U 88.69 41 P P 12 13 55.6 -0.2
baz=318
KSU1 Kansas State U 88.69 41 *e*P P 12 13 56.0 +0.3
comp=Z,24nm,0.7s
L39A Vinton 88.72 36 P P 12 13 55.7 -0.1
baz=321
O36A Bolckow 88.78 39 P P 12 13 56.3 +0.2
baz=319
T32A Huddler Ranch, 88.84 43 P P 12 13 56.3 -0.2
baz=316
MNTX Cornudas Mount 88.85 51 P P 12 13 56.5 -0.1
baz=313
MNTX Cornudas Mount 88.85 51 *e*P P 12 13 57.0 +0.4
comp=Z,27nm,1.8s
MSTX Muleshoe 88.89 48 P P 12 13 56.3 -0.7
baz=314
MSTX Muleshoe 88.89 48 *e*P P 12 13 56.9 -0.1
comp=Z,20nm,1.3s
AMTX Amarillo 88.90 46 P P 12 13 57.0 +0.1
baz=315
AMTX Amarillo 88.90 46 *e*P P 12 13 58.0 +1.0
comp=Z,23nm,1.0s
JFWS Jewell Farm 88.92 34 *e*P P 12 13 56.8 0.0
JFWS pmax pmax
comp=Z,15nm,0.9s
JFWS Jewell Farm 88.92 34 *e*P P 12 13 56.8 0.0
comp=Z,15nm,0.9s
R34A Isabella, Hill 88.94 41 P P 12 13 56.8 -0.2
baz=317
ATD Arta Tunnel 88.95 283 P P 12 13 57.8 +0.3
comp=Z,9.9nm,0.9s,baz=73,slow=19,SNR=4.1
P36A Good Intent, A 89.04 39 P P 12 13 57.4 +0.1
baz=318
S33A Kaszmaul Farm, 89.05 42 P P 12 13 57.5 +0.1
baz=317
TBI Tubuai 89.10 120 *e*S S 12 24 43.6 +2.9
comp=Z,276nm,26.0s
TBI Tubuai 89.10 120 *e*LR LR 12 41 40.9
comp=Z,1μm,33.8s,baz=311
TBI Tubuai 89.10 120 *e*T T 13 51 29.0
comp=Z,12nm,0.3s
L40A Anamosa 89.14 35 P P 12 13 57.6 -0.1
baz=321
M39A Webster 89.14 36 P P 12 13 57.6 -0.1
baz=320
K41A Shullsburg 89.14 35 P P 12 13 57.2 -0.5
baz=322
N38A Joes South For 89.14 37 P P 12 13 57.7 -0.2
baz=320
O37A Wolven Farm, M 89.17 38 P P 12 13 57.5 -0.4
baz=319
Q35A Mercer Eighty, 89.17 40 P P 12 13 57.8 -0.2
baz=318
PLDF La Plantade 89.25 331 *e*P P 12 13 58.5 +0.2
T33A Patterson Ranc 89.29 43 P P 12 13 58.4 -0.2
baz=317
U32A Winter Ranch, 89.38 44 P P 12 13 58.8 -0.2
baz=316
N39A Derby Farms, D 89.44 37 P P 12 13 59.4 +0.2
baz=320
S34A Willow Spring 89.45 42 P P 12 13 59.3 0.0
baz=317
SSB Saint Sauveur 89.46 330 *e*P P 12 13 59.0 -0.2
SSB pmax pmax
comp=Z,10.0nm,0.7s
SSB Saint Sauveur 89.46 330 *e*P P 12 13 59.0 -0.2
comp=Z,10nm,0.7s
L41A Preston 89.47 35 P P 12 13 59.4 +0.1
baz=322
R35A Emporia Munici 89.48 41 P P 12 13 59.8 +0.3
baz=318
P37A Lathrop 89.50 39 P P 12 13 59.6 +0.1
baz=319
O38A Galt 89.54 38 P P 12 13 59.4 -0.3
baz=320
VLDQ Val d'Or 89.66 24 *e*P P 12 13 59.7 -0.3
comp=Z,40nm,1.0s
PYM Petit Puy Mans 89.67 331 *e*P P 12 13 58.3 -2.0
CEL Celeste 89.67 319 *e*P P 12 13 59.7 -0.7
comp=Z,57nm,0.8s
V32A Arapaho 89.83 44 P P 12 14 01.3 +0.2
baz=316
U33A Lingo Farm, Me 89.83 43 P P 12 14 01.3 +0.2
baz=317
R36A Gordon, Harris 89.85 40 P P 12 14 01.0 -0.2
baz=318
P38A Dawn 89.88 38 P P 12 14 01.0 -0.3
baz=320
S35A Otter Creek Ra 89.89 41 P P 12 14 01.5 +0.1
baz=318
T34A McClaskey Farm 89.91 42 P P 12 14 01.6 +0.1
baz=317
Q37A Longview Farm, 89.98 39 P P 12 14 02.0 +0.2
baz=319
LBL Lubiliac 90.01 331 *e*P P 12 14 02.2 +0.3
W32A Sentinel 90.14 45 P P 12 14 03.0 +0.4
baz=316
U34A Anderson Ranch 90.15 43 P P 12 14 03.2 +0.6
baz=317
U34A Anderson Ranch 90.15 43 *e*P P 12 14 03.0 +0.4
comp=Z,27nm,0.9s
V33A Lossen Ranch, 90.18 44 P P 12 14 02.8 +0.1
baz=317
R37A Teagarden Farm 90.21 40 P P 12 14 02.3 -0.5
baz=319
S36A Lake Cedric, C 90.25 41 P P 12 14 03.0 0.0
baz=318
O40A La Belle 90.33 37 P P 12 14 02.9 -0.4
baz=321
Q38A Cooks Store, C 90.34 39 P P 12 14 03.0 -0.4
baz=320
T35A Sooner Cattle 90.36 42 P P 12 14 03.5 -0.1
baz=318
P39B Salisbury 90.38 38 P P 12 14 03.6 0.0
baz=320
W33A Caddo, Fort Co 90.56 44 P P 12 14 04.8 +0.2
baz=317
T36A Boggs Farm, Ca 90.59 41 P P 12 14 04.8 +0.2
baz=318
V34A Guthrie 90.60 43 P P 12 14 04.9 +0.2
baz=317
V34A Guthrie 90.60 43 *e*P P 12 14 05.5 +0.8
comp=Z,27nm,0.8s
Q39A Willow Grove F 90.60 38 P P 12 14 04.5 -0.2
baz=320
X32A Elmer 90.62 45 P P 12 14 04.9 +0.1
baz=316
S37A Fort Scott 90.62 40 P P 12 14 04.6 -0.2
baz=319
U35A Pawnee 90.64 42 P P 12 14 05.0 +0.1
baz=318
WMOK Wichita Mounta 90.68 45 P P 12 14 05.1 -0.1
baz=316
WMOK Wichita Mounta 90.68 45 *e*P P 12 14 05.4 +0.2
WMOK pmax pmax
comp=Z,18nm,1.3s
WMOK Wichita Mounta 90.68 45 *e*P P 12 14 05.4 +0.2
comp=Z,18nm,1.3s
P40A Paris 90.69 38 P P 12 14 05.2 +0.1
baz=320
R38A Fenwick Farm, 90.78 40 P P 12 14 04.7 -0.8
baz=319
O41A Passleys Farm, 90.81 37 P P 12 14 05.2 -0.4
baz=321
W34A Bridge Creek, 90.89 44 P P 12 14 06.2 +0.1
baz=317
X33A Lawton 90.98 45 P P 12 14 06.0 -0.6
baz=317
V35A Meyer Ranch, C 91.03 43 P P 12 14 06.4 -0.3
baz=318
T37A Chenevville 18 91.05 41 P P 12 14 06.5 -0.3
baz=319

P41A	**Barry, Barry**	**91.06**	**37**	P		**P**	12 14 07.0	+0.2
	baz=321							
Q40A	**Laux Farm, Aux**	**91.09**	**38**	P		**P**	12 14 06.6	-0.3
	baz=320							
R39A	**Chumby, Stover**	**91.13**	**39**	P		**P**	12 14 07.1	-0.1
	baz=320							
U36A	**Oologah**	**91.16**	**42**	P		**P**	12 14 06.8	-0.5
	baz=318							
S38A	**Stockton**	**91.20**	**40**	P		**P**	12 14 07.0	-0.4
	baz=319							
HDIL	**Hopedale**	**91.22**	**35**	P		**P**	12 14 07.2	-0.3
	baz=322							
HDIL	**Hopedale**	**91.22**	**35**	*e*P		**P**	12 14 08.0	+0.5
	comp=Z,25nm,0.8s							
Y33A	**Hilltop Ranch,**	**91.30**	**45**	P		**P**	12 14 08.2	+0.2
	baz=316							
X34A	**Smith Ranch, M**	**91.32**	**44**	P		**P**	12 14 07.8	-0.3
	baz=317							
T38A	**Diamond**	**91.45**	**41**	P		**P**	12 14 08.6	-0.1
	baz=319							
W35A	**Tecumseh**	**91.45**	**43**	P		**P**	12 14 08.3	-0.4
	baz=318							
S39A	**Bolivar**	**91.46**	**40**	P		**P**	12 14 08.2	-0.4
	baz=320							
P42A	**Winchester**	**91.48**	**37**	P		**P**	12 14 08.5	-0.2
	baz=322							
U37A	**Salina**	**91.48**	**41**	P		**P**	12 14 08.2	-0.6
	baz=319							
TUL1	**Leonard**	**91.49**	**42**	P		**P**	12 14 08.7	-0.2
	baz=318							
TUL1	**Leonard**	**91.49**	**42**	*e*P		**P**	12 14 09.0	+0.2
	comp=Z,19nm,0.9s							
V36A	**Jenks**	**91.50**	**42**	P		**P**	12 14 08.7	-0.2
	baz=318							
R40A	**Maddies Statio**	**91.54**	**38**	P		**P**	12 14 08.4	-0.6
	baz=320							
LTX	**Lajitas**	**91.54**	**52**	*e*P		**P**	12 14 09.9	+0.6
LTX	**Lajitas**	**91.54**	**52**	*e*P		**P**	12 14 09.9	+0.6
TX31	**Lajitas Ar. Si**	**91.54**	**52**	*e*P		**P**	12 14 09.8	+0.5
TXAR	**Lajitas Array**	**91.54**	**52**	P		**P**	12 14 09.9	+0.6
	comp=Z,6.6nm,0.6s,baz=298,slow=3.2,SNR=38							
TXAR				PP		**PP**	12 17 54.1	+6.5
	comp=Z,1.2nm,1.0s,baz=306,slow=7.7,SNR=2.8							
TXAR				PKKPbc		**PKKPbc**	12 31 27.8	0.0
	comp=Z,0.5nm,0.8s,baz=142,slow=6.0,SNR=5.7							
TXAR				LR		LR	12 49 27.8	
	comp=Z,248nm,21.9s,baz=0.0,slow=32							
ABTX	**Abilene, Hawle**	**91.70**	**47**	P		**P**	12 14 09.9	0.0
	baz=316							
ABTX	**Abilene, Hawle**	**91.70**	**47**	*e*P		**P**	12 14 10.4	+0.5
	comp=Z,66nm,1.5s							
Z33A	**Whitaker Ranch**	**91.74**	**46**	P		**P**	12 14 10.1	+0.1
	baz=316							
W36A	**Wetumka**	**91.82**	**43**	P		**P**	12 14 10.3	-0.1
	baz=318							
Y34A	**Reagan Ranch,**	**91.83**	**45**	P		**P**	12 14 10.5	+0.1
	baz=317							
U38A	**Gravette**	**91.85**	**41**	P		**P**	12 14 10.3	-0.2
	baz=319							
V37A	**Hulbert**	**91.86**	**42**	P		**P**	12 14 10.5	-0.1
	baz=319							
HPIG		**91.88**	**54**	*e*P		**P**	12 14 11.7	+0.6
	comp=Z,24nm,1.1s							
Q42A	**Golden Eagle**	**91.92**	**37**	P		**P**	12 14 10.8	+0.1
	baz=322							
T39A	**Clever**	**91.94**	**40**	P		**P**	12 14 10.3	-0.6
	baz=320							
S40A	**Lebanon**	**91.95**	**39**	P		**P**	12 14 10.4	-0.6
	baz=320							
X35A	**Drake**	**91.95**	**44**	P		**P**	12 14 10.8	-0.2
	baz=317							
133A	**Hamilton Ranch**	**92.14**	**46**	P		**P**	12 14 12.0	0.0
	baz=316							
Z34A	**Collier Ranch,**	**92.17**	**45**	P		**P**	12 14 11.7	-0.3
	baz=317							
X36A	**Centrahoma**	**92.17**	**43**	P		**P**	12 14 11.8	-0.2
	baz=318							
HHAR	**Hobbs**	**92.20**	**41**	*e*P		**P**	12 14 12.1	-0.1
	comp=Z,8.8nm,0.8s							
LRDF	**Laroque-de-Fa**	**92.21**	**330⇑**	*e*P		**P**	12 14 12.3	+0.3
W37B	**Quinton**	**92.26**	**42**	P		**P**	12 14 12.5	+0.1
	baz=318							
V38A	**Canehill**	**92.27**	**41**	P		**P**	12 14 12.1	-0.3
	baz=319							
Y35A	**Marietta**	**92.28**	**44**	P		**P**	12 14 12.3	-0.2
	baz=317							
T40A	**Mansfield**	**92.28**	**39**	P		**P**	12 14 12.0	-0.5
	baz=320							
Q43A	**New Douglas**	**92.30**	**37**	P		**P**	12 14 11.8	-0.7
	baz=322							
LMQ	**La Malbaie**	**92.32**	**20**	*e*P		**P**	12 14 12.8	+0.3
S41A	**Jillco Farms,**	**92.34**	**39**	P		**P**	12 14 11.8	-1.0
	baz=321							
U39A	**Green Forest**	**92.37**	**40**	P		**P**	12 14 12.7	-0.2
	baz=320							
SFIN	**Lafayette**	**92.37**	**34**	P		**P**	12 14 12.6	-0.2
	baz=324							
SJAF	**Saint Jean de**	**92.44**	**330⇑**	*e*P		**P**	12 14 12.7	-0.4
FILF	**Fillols**	**92.51**	**330⇑**	*e*P		**P**	12 14 13.7	+0.2
233A	**Rising Star**	**92.57**	**47**	P		**P**	12 14 13.5	-0.5
	baz=316							
Z35A	**Perchaven, San**	**92.57**	**45**	P		**P**	12 14 13.5	-0.4
	baz=317							
134A	**White-Moore Ra**	**92.65**	**46**	P		**P**	12 14 14.1	-0.2
	baz=317							
Q44A	**Meyer Farm, Va**	**92.65**	**36**	P		**P**	12 14 13.8	-0.3
	baz=322							
V39A	**Pettigrew**	**92.69**	**41**	P		**P**	12 14 14.2	-0.3
	baz=320							
X37A	**Clayton**	**92.70**	**43**	P		**P**	12 14 14.1	-0.3
	baz=318							
Y36A	**Durant**	**92.70**	**44**	P		**P**	12 14 14.0	-0.4
	baz=318							
U40A	**Yellville**	**92.72**	**40**	P		**P**	12 14 14.0	-0.5
	baz=320							
T41A	**Mountain View**	**92.75**	**39**	P		**P**	12 14 13.9	-0.7
	baz=321							
W38A	**Poteau**	**92.81**	**42**	P		**P**	12 14 14.5	-0.4
	baz=319							
VALF	**Valcebollere**	**92.86**	**330⇑**	*e*P		**P**	12 14 15.7	+0.4
X38A	**Whitesboro**	**92.94**	**42**	P		**P**	12 14 15.3	-0.2
	baz=319							
333A	**Richland Sprin**	**93.02**	**47**	P		**P**	12 14 16.0	0.0
	baz=316							
234A	**Clairette**	**93.03**	**46**	P		**P**	12 14 16.2	+0.2
	baz=317							
Z36A	**Blue Ridge**	**93.08**	**44**	P		**P**	12 14 15.8	-0.4
	baz=318							
W39A	**Magazine**	**93.11**	**41**	P		**P**	12 14 16.0	-0.3
	baz=319							
JCT	**Junction City**	**93.13**	**48**	P		**P**	12 14 16.5	-0.1
	baz=316							
JCT	**Junction City**	**93.13**	**48**	*e*P		**P**	12 14 16.6	0.0
JCT				pmax		pmax		
	comp=Z,25nm,1.1s							
JCT	**Junction City**	**93.13**	**48**	*e*P		**P**	12 14 16.6	0.0
	comp=Z,25nm,1.1s							
R44A	**Waltonville**	**93.14**	**37**	P		**P**	12 14 16.2	-0.2
	baz=322							
V40A	**Witts Springs**	**93.15**	**40**	P		**P**	12 14 16.2	-0.4
	baz=320							
RESF	**Ens**	**93.18**	**331⇑**	*e*P		**P**	12 14 17.7	+1.0
S43A	**Fulton Ridge,**	**93.19**	**38**	P		**P**	12 14 16.7	0.0
	baz=322							
U41A	**Viola**	**93.21**	**40**	P		**P**	12 14 16.0	-0.7
	baz=321							
433A	**Art**	**93.36**	**48**	P		**P**	12 14 17.1	-0.5
	baz=316							
WHTX	**Lake Whitney,**	**93.43**	**46**	P		**P**	12 14 17.9	+0.1
	baz=317							
WHTX	**Lake Whitney,**	**93.43**	**46**	*e*P		**P**	12 14 17.9	+0.1
	comp=Z,85nm,1.7s							
X39A	**Fountain Ranch**	**93.44**	**42**	P		**P**	12 14 17.9	0.0
	baz=319							
334A	**Lometa**	**93.45**	**47**	P		**P**	12 14 17.9	-0.1
	baz=317							
LARF	**Larrau**	**93.49**	**332⇑**	*e*P		**P**	12 14 18.5	+0.5
W40A	**Ferguson Farm,**	**93.49**	**41**	P		**P**	12 14 17.9	-0.2
	baz=320							
S44A	**Carbondale**	**93.49**	**37**	P		**P**	12 14 18.1	0.0
	baz=322							
SIUC	**Southern Illin**	**93.50**	**37**	*e*P		**P**	12 14 18.6	+0.5
	comp=Z,26nm,1.0s							
V41A	**Mountainview**	**93.52**	**40**	P		**P**	12 14 17.5	-0.8
	baz=320							
U42A	**Revenden**	**93.55**	**39**	P		**P**	12 14 17.9	-0.5
	baz=321							
PBMO	**Poplar Bluff**	**93.63**	**38**	*e*P		**P**	12 14 19.0	+0.3
	comp=Z,20nm,1.1s							
MIAR	**Mount Ida**	**93.71**	**42**	P		**P**	12 14 18.9	-0.2
	baz=320							
MIAR	**Mount Ida**	**93.71**	**42**	*e*P		**P**	12 14 19.5	+0.4
MIAR				pmax		pmax		
	comp=Z,25nm,1.3s							
MIAR	**Mount Ida**	**93.71**	**42**	*e*P		**P**	12 14 19.5	+0.4
	comp=Z,25nm,1.3s							
X201	**Greenbrier Sit**	**93.79**	**40**	*e*P		**P**	12 14 19.5	+0.1
	comp=Z,15nm,0.9s							
434A	**Burnet**	**93.81**	**47**	P		**P**	12 14 19.3	-0.4
	baz=317							
WHAR	**Wooly Hollow**	**93.83**	**40**	*e*P		**P**	12 14 19.6	0.0
	comp=Z,45nm,1.6s							
S45A	**Carrier Mills**	**93.83**	**37**	P		**P**	12 14 19.1	-0.5
	baz=323							
Y39A	**Locksburg**	**93.89**	**42**	P		**P**	12 14 19.6	-0.3
	baz=319							
V42A	**Cord**	**93.90**	**40**	P		**P**	12 14 19.5	-0.5
	baz=321							
W41B	**Gary Mavity, V**	**93.94**	**40**	P		**P**	12 14 19.8	-0.3
	baz=320							
W41A	**Tony Mavity, V**	**93.94**	**40**	P		**P**	12 14 19.8	-0.3
	baz=320							
X40A	**Basin Creek Fa**	**94.15**	**41**	P		**P**	12 14 21.3	+0.1
	baz=320							
336A	**Riesel**	**94.23**	**46**	P		**P**	12 14 21.6	0.0
	baz=317							
633A	**Saathoff Ranch**	**94.24**	**49**	P		**P**	12 14 21.4	-0.2
	baz=316							
534A	**Blanco**	**94.25**	**48**	P		**P**	12 14 21.8	+0.1
	baz=316							
138A	**Matatall Enter**	**94.29**	**44**	P		**P**	12 14 20.7	-1.1
	baz=318							
ACSO	**Alum Creek Sta**	**94.29**	**32**	*e*P		**P**	12 14 22.2	+0.5
	comp=Z,25nm,0.8s							
Z39A	**Irene McRaven,**	**94.36**	**43**	P		**P**	12 14 21.5	-0.6
	baz=319							
WCI	**Wyandotte Cave**	**94.47**	**35**	*e*P		**P**	12 14 22.8	+0.3
WCI				pmax		pmax		
	comp=Z,15nm,0.8s							
WCI	**Wyandotte Cave**	**94.47**	**35**	*e*P		**P**	12 14 22.8	+0.3
	comp=Z,15nm,0.8s							
M54A	**Oil Creek Stat**	**94.56**	**29**	P		**P**	12 14 22.9	-0.1
	baz=329							
832A	**Faith Ranch, C**	**94.59**	**50**	P		**P**	12 14 23.8	+0.5
	baz=316							
WLAR	**White Oak Lake**	**94.61**	**42**	*e*P		**P**	12 14 24.3	+1.1
	comp=Z,19nm,0.9s							
N54A	**Moraine State**	**94.90**	**29**	P		**P**	12 14 24.0	-0.4
	baz=329							
KEST	**Kesra**	**94.98**	**322**	P		**P**	12 14 24.1	-0.9
	comp=Z,7.9nm,0.8s,baz=288,slow=4.1,SNR=6.9							
KEST				LR		LR	13 01 27.2	
	comp=Z,413nm,18.6s,baz=356,slow=38							
KEST	**Kesra**	**94.98**	**322**	*e*P		**P**	12 14 25.2	+0.2
	comp=Z,16nm,1.0s							
WVT	**Waverly**	**95.43**	**37**	*e*P		**P**	12 14 26.9	0.0
WVT				pmax		pmax		
	comp=Z,6.0nm,0.8s							
WVT	**Waverly**	**95.43**	**37**	*e*P		**P**	12 14 26.9	0.0
	comp=Z,6.0nm,0.8s							
438A	**Sam Houston St**	**95.49**	**45**	P		**P**	12 14 27.1	-0.2
	baz=318							
Y44A	**Strider, Charl**	**95.94**	**40**	P		**P**	12 14 28.0	-1.3
	baz=322							
O56A	**Blue Knob Stat**	**96.06**	**29**	P		**P**	12 14 29.3	-0.5
	baz=330							
034A	**Hebbronville**	**96.26**	**50**	P		**P**	12 14 32.5	+1.6
	baz=316							
N59A	**State Game Lan**	**96.54**	**26**	P		**P**	12 14 30.4	-1.5
	baz=332							
PBRG	**Braganca**	**96.61**	**336**	*e*P		**P**	12 14 32.0	-0.3
	comp=Z,28nm,0.9s							
035A	**Encino**	**96.71**	**50**	P		**P**	12 14 32.0	-0.9
	baz=316							
ZAIG	**Zacatecas**	**96.77**	**56**	*e*P		**P**	12 14 34.8	+1.2
	comp=Z,15nm,1.2s							
SWET	**Sewanee**	**97.08**	**36**	*e*P		**P**	12 14 33.9	-0.6
	comp=Z,2.1nm,0.7s							
MVO	**Moncorvo**	**97.28**	**336**	*e*P		**P**	12 14 35.1	-0.2
	comp=Z,14nm,1.6s							
MVO				*e*pP		**sP**	12 15 01.1	-1.8
POLO	**Lamas de Olo**	**97.35**	**336**	*e*P		**P**	12 14 35.5	-0.2
	comp=Z,19nm,1.3s							
POLO				*e*pP		**sP**	12 15 02.1	-1.1
PVRL	**Vila Real**	**97.41**	**336**	*e*P		Pdif	12 14 36.2	+0.3
	comp=Z,22nm,1.6s							
PVRL				*e*pP		sP	12 15 00.2	-3.2
ES19	**SONSECA Array**	**97.47**	**333**	*e*P		**P**	12 14 35.9	-0.3
ESDC	**Sonseca Array**	**97.52**	**333**	P		**P**	12 14 35.8	-0.7
	comp=Z,3.5nm,0.8s,baz=15,slow=4.3,SNR=14							
ESDC				PP		**PP**	12 18 29.8	-3.6
	comp=Z,0.2nm,0.2s,baz=30,slow=8.3,SNR=5.3							
ESDC				LR		LR	13 05 56.6	
	comp=Z,213nm,18.7s,baz=40,slow=40							
TKL	**Tuckaleechee C**	**97.73**	**35**	*e*P		Pdif	12 14 37.6	+0.2
TKL				pmax		pmax		
	comp=Z,11nm,1.0s							
TKL	**Tuckaleechee C**	**97.73**	**35**	*e*P		Pdif	12 14 37.5	+0.1
	comp=Z,11nm,1.0s							
MTE	**Manteigas**	**98.14**	**336**	*e*PP		PP	12 18 43.1	+4.9
MTE	**Manteigas**	**98.14**	**336**	*e*SS		SS	12 32 55.1	+12
MTE	**Manteigas**	**98.14**	**336**	*e*LQ		LQ	12 43 29.8	
MTE				*e*LR		LR	12 47 59.3	
	comp=Z,359nm,20.0s							
PMRV	**Marv??o**	**98.96**	**335**	*e*P		Pdif	12 14 43.5	+0.7
RKT	**Rikitea**	**99.51**	**112**	*e*S		**S**	**12 26 17.9**	**+5.6**
	comp=Z,245nm,40.2s							
RKT	**Rikitea**	**99.51**	**112**	*e*LR		LR	12 46 43.9	
	comp=Z,1μm,33.2s,baz=305							
KMBO	**Kilima Mbogo**	**100.94**	**277**	PP		PP	12 18 54.1	-7.0
	comp=Z,5.7nm,0.2s,baz=65,slow=18,SNR=7.0							
VNDA	**Vanda**	**114.24**	**175**	PKP		PKPdf	12 19 40.0	-0.2
	comp=Z,2.1nm,0.7s,baz=305,slow=4.6,SNR=13							
VNDA				PKKPbc		**PKKPab**	**12 30 24.1**	**-0.2**
	comp=Z,0.9nm,0.9s,baz=246,slow=1.8,SNR=3.6							
VNDA	**Vanda**	**114.24**	**175**	PKIKP		PKPdf	12 19 40.0	-0.1
VNDA				pmax		pmax		
	comp=Z,2.0nm,0.7s							
TOA1	**Torodi Ar. Sit**	**117.08**	**313**	*e*PKPdf		**PKPdf**	**12 19 46.5**	**-1.0**
TOA1				*e*PP		PP	12 20 48.9	-8.4
TOA0	**Torodi Ar. Sit**	**117.09**	**313**	*e*PKPdf		**PKPdf**	**12 19 46.6**	**-0.9**
TORD	**Torodi Ar. Bea**	**117.09**	**313**	PKP		**PKPdf**	**12 19 46.5**	**-1.0**
	comp=Z,2.4nm,0.8s,baz=7.0,slow=2.1,SNR=12							
TORD				PP		PP	12 20 48.9	-8.4
	comp=Z,2.5nm,0.8s,baz=35,slow=5.7,SNR=5.9							
TORD				PKKPbc		**PKKPbc**	**12 30 11.6**	**+0.4**
	comp=Z,2.1nm,0.8s,baz=213,slow=2.9,SNR=4.8							
MAW	**Mawson**	**118.29**	**205**	PKP		**PKPdf**	**12 19 47.9**	**-0.2**
	comp=Z,4.6nm,0.7s,baz=102,slow=3.1,SNR=12							
MAW				PKKPbc		**PKKPab**	**12 30 06.8**	**-0.1**
	comp=Z,0.8nm,0.7s,baz=308,slow=14,SNR=3.6							
MAW	**Mawson**	**118.29**	**205**	*e*PKPdf		**PKPdf**	**12 19 48.6**	**+0.5**
LBTB	**Lobatse**	**123.39**	**262**	*e*PKIKP		**PKPdf**	**12 19 59.8**	**+0.4**
LBTB	**Lobatse**	**123.39**	**262**	*e*PKPdf		**PKPdf**	**12 19 59.8**	**+0.4**
BOSA	**Boshof**	**125.28**	**258**	PKP		**PKPdf**	**12 20 03.1**	**+0.1**
	comp=Z,12nm,0.9s,baz=56,slow=2.5,SNR=15							
OCAC	**Ocana**	**125.83**	**42**	*e*P		**PKPdf**	**12 20 04.4**	**-0.2**
QSPA	**South Pole Qui**	**125.94**	**180**	*e*PKPdf		**PKPdf**	**12 20 02.8**	**-0.2**
DBIC	**Dimbokro**	**126.09**	**315**	PKP		**PKPdf**	**12 20 04.2**	**-0.6**
	comp=Z,6.1nm,0.8s,baz=1.7,slow=3.9,SNR=7.2							
DBIC				PP		**PP**	**12 21 53.5**	**-5.1**
	comp=Z,4.8nm,0.8s,baz=4.1,slow=8.0,SNR=3.4							
GRMC	**Gramalote, San**	**126.55**	**42**	*e*P		**PKPdf**	**12 20 05.0**	**-1.0**
CBRI	**Barrientos, No**	**126.55**	**42**	*e*P		**PKPdf**	**12 20 05.0**	**-1.0**
SDV	**Santo Domingo**	**126.70**	**39**	*e*PKPdf		**PKPdf**	**12 20 06.0**	**-0.2**
SYO	**Syowa Base**	**126.94**	**206⇑**	*e*X		**PKPdf**	**12 20 02.6**	**-2.1**
TSUM	**Tsumeb**	**127.00**	**272**	*e*PKPdf		**PKPdf**	**12 20 07.1**	**+0.5**
GUYC	**Guyana, Colomb**	**127.13**	**46**	*e*P		**PKPdf**	**12 20 06.1**	**-1.4**
NORC	**Norcasia**	**127.16**	**46**	*e*P		**PKPdf**	**12 20 04.4**	**-2.6**
BARC	**Barichara**	**127.27**	**43**	*e*P		**PKPdf**	**12 20 06.1**	**-1.3**
RUSC	**La Rusia**	**127.91**	**43**	*e*PKPdf		**PKPdf**	**12 20 08.9**	**0.0**
ROSC	**El Rosal**	**128.06**	**46**	PKP		**PKPdf**	**12 20 09.8**	**+0.7**
	comp=Z,5.7nm,0.3s,baz=58,slow=22,SNR=6.2							
CHIC	**Chingaza**	**128.57**	**45**	*e*P		**PKPdf**	**12 20 08.9**	**-1.2**
NVL	**N'lazarevskaya**	**136.08**	**202**	*e*PKIKP		**PKPdf**	**12 20 21.8**	**-0.1**
SAML	**Samuel**	**145.65**	**44**	*e*PKPdf		**PKPdf**	**12 20 41.0**	**+0.1**
LPAZ	**La Paz**	**148.11**	**59**	PKPbc		**PKPdf**	**12 20 46.8**	**+1.1**
	comp=Z,20nm,0.7s,baz=251,slow=3.3,SNR=34							
PB11	**IPOC Station P**	**149.29**	**66**	*e*PKPdf		**PKPdf**	**12 20 47.2**	**+0.3**
PB11				*e*PKPbc		**PKPbc**	**12 20 51.8**	**+0.4**
PB11				*e*PKPab		**PKPab**	**12 20 56.5**	**+0.4**
RCBR	**Riachuelo**	**149.54**	**352**	*e*PKPbc		**PKPbc**	**12 20 51.7**	**-0.2**
PB01	**IPOC Station P**	**150.19**	**68**	*e*PKPdf		**PKPdf**	**12 20 49.0**	**+0.8**
PB01				*e*PKPbc		**PKiKP**	**12 20 54.0**	**-0.2**
PB01				*e*PKPab		**PKPab**	**12 20 58.6**	**-1.1**
PB04	**IPOC Station P**	**150.44**	**70**	*e*PKPbc		**PKPbc**	**12 20 54.7**	**+0.6**
PB10	**IPOC Station P**	**150.78**	**73**	*e*PKPbc		**PKPbc**	**12 20 55.0**	**+0.4**
LVC	**Limon Verde**	**151.54**	**70**	*e*PKPbc		**PKPbc**	**12 20 57.7**	**+0.8**
LCO	**Las Campanas**	**153.25**	**83**	*e*PKPbc		**PKPbc**	**12 21 01.0**	**+0.6**
PLCA	**Paso Flores**	**155.73**	**110**	PKP		**PKPdf**	**12 20 55.2**	**-0.5**
	comp=Z,3.8nm,0.9s,baz=340,slow=6.8,SNR=4.0							
PLCA				PKPab		**PKPab**	**12 21 22.9**	**+0.3**
	comp=Z,7.7nm,0.9s,baz=275,slow=3.7,SNR=5.8							
BDFB	**Brasilia**	**158.32**	**21**	PKP		**PKPdf**	**12 21 01.4**	**+1.6**
	comp=Z,1.3nm,0.3s,baz=78,slow=3.8							
BDFB				PKPab		**PKPab**	**12 21 35.3**	**+1.2**
	baz=78,slow=0.6							
CPUP	**Villa Florida**	**162.25**	**61**	PKP		**PKPdf**	**12 21 02.8**	**-0.9**
	comp=Z,3.3nm,1.0s,baz=337,slow=4.3,SNR=4.2							
CPUP				PKPab		**PKPab**	**12 21 49.3**	**-1.8**
	comp=Z,1.5nm,0.6s,baz=307,slow=3.8,SNR=4.9							
CPUP	**Villa Florida**	**162.25**	**61**	*e*PKPdf		**PKPdf**	**12 21 03.2**	**-0.5**

*CSEM **15** 12:07:00.1, 43.26°N×20.82°E, h0km, ML2.0*
BEO 15 12:07:00.1±0.3, 43.26°N×20.82°E, h0km, M2.0/9, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SELS	**Selova**	**0.22**	**100**	*e*Pg	Pg	12 07 03.7	-0.6
SELS	**Selova**	**0.22**	**100**	*e*Pg	Pg	12 07 03.7	-0.6
IVAS	**Ivanjica**	**0.58**	**303**	*e*Pg	Pg	12 07 09.9	-1.3
IVAS				*e*Sg	Sg	12 07 17.3	-1.4
IVAS	**Ivanjica**	**0.58**	**303**	*e*Pg	Pg	12 07 09.9	-1.3
IVAS				*e*Sg	Sg	12 07 17.3	-1.4
GRUS	**Gruza**	**0.63**	**353**	*e*Pg	Pg	12 07 11.6	-0.6
GRUS				*e*Sg	Sg	12 07 19.7	-0.8
GRUS	**Gruza**	**0.63**	**353**	*e*Pg	Pg	12 07 11.6	-0.6
GRUS				*e*Sg	Sg	12 07 19.7	-0.8
BOVS	**Bovan**	**0.75**	**60**	*e*Pg	Pg	12 07 13.7	-0.7
BOVS				*e*Sg	Sg	12 07 23.6	-0.5
BOVS	**Bovan**	**0.75**	**60**	*e*Pg	Pg	12 07 13.7	-0.7
BOVS				*e*Sg	Sg	12 07 23.6	-0.5
BARS	**Barje**	**0.85**	**121**	*e*Pg	Pg	12 07 15.9	-0.6
BARS				*e*Sg	Sg	12 07 27.3	-0.2
BARS	**Barje**	**0.85**	**121**	*e*Pg	Pg	12 07 15.9	-0.6
BARS				*e*Sg	Sg	12 07 27.3	-0.2
BOLS	**Boljevac**	**1.00**	**55**	*e*Pg	Pg	12 07 17.1	-2.2
BOLS				*e*Sg	Sg	12 07 30.9	-1.4
BOLS	**Boljevac**	**1.00**	**55**	*e*Pg	Pg	12 07 17.1	-2.2
BOLS				*e*Sg	Sg	12 07 30.9	-1.4
TRUS	**Trudelj**	**1.01**	**343**	*e*Pg	Pg	12 07 19.2	-0.2
TRUS				*e*Sg	Sg	12 07 32.7	+0.2
TRUS	**Trudelj**	**1.01**	**343**	*e*Pg	Pg	12 07 19.2	-0.2
TRUS				*e*Sg	Sg	12 07 32.7	+0.2
DIVS	**Divibare**	**1.03**	**325**	*e*Pg	Pg	12 07 19.1	-0.8
DIVS				*e*Sg	Sg	12 07 33.4	+0.2
DIVS	**Divibare**	**1.03**	**325**	*e*Pg	Pg	12 07 19.1	-0.8
DIVS				*e*Sg	Sg	12 07 33.4	+0.2
BBLS	**Lazići**	**1.19**	**301**	*e*Pg	Pg	12 07 22.2	-0.8
BBLS				*e*Sg	Sg	12 07 37.3	-1.2
BBLS	**Lazići**	**1.19**	**301**	*e*Pg	Pg	12 07 22.2	-0.8
BBLS				*e*Sg	Sg	12 07 37.3	-1.2
ZAPS	**Zavoj**	**1.32**	**89**	*e*Pg	Pg	12 07 24.8	-0.7
ZAPS				*e*Sg	Sg	12 07 42.8	+0.1
TEKS	**Tekeris**	**1.59**	**325**	*e*Pg	Pn	12 07 28.1	-1.5
TEKS				*e*Sg	Sg	12 07 51.3	+0.1
TEKS	**Tekeris**	**1.59**	**325**	*e*Pg	Pn	12 07 28.1	-1.5
TEKS				*e*Sg	Sg	12 07 51.3	+0.1
MDVR	**Moldovita**	**1.65**	**23**	S	Sg	12 07 54.1	+0.9
VTS	**Vitosha**	**1.88**	**110**	*e*Sg	Sb	12 07 58.9	-0.5
VTS	**V

PB14					IAML				12 13 20.0	
	comp=E,593nm,0.6s									
LPAZ	**La Paz**		**6.25**	**7**	P		**Pn**		**12 13 34.7**	**+3.0**
	comp=E,0.4nm,0.3s,baz=206,slow=7.1,SNR=8.8									
LPAZ					S		Sn		12 14 21.4	-21
	comp=E,0.5nm,0.3s,baz=186,slow=7.7,SNR=4.6									
TORD	**Torodi Ar. Bea**		**77.75**	**70**	P		**P**		**12 23 44.9**	**-2.2**
	comp=E,0.6nm,0.4s,baz=246,slow=5.6,SNR=8.5									
ASAR	**Alice Springs**		**128.99**	**207**	PKP		**PKPdf**		**12 30 58.1**	**+0.8**
	comp=E,0.5nm,1.1s,baz=141,slow=1.7,SNR=4.3									

IDC 15 12:54:48.2±8.2, 5°.93S×150°.50E, h94km±55km, mb3.3/3, mb1 3.4/4, mb1mx3.1/40, mbtmp3.6/4, ML0.9/1, MS3.7/1, Ms1 3.7/1, ms1mx2.7/22, Error ellipse: s-maj=101.8km s-min=57.1km az=124.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**4.79**	**224**	P		Pn	12 55 57.8	-0.3
	0.3nm,0.3s,baz=269,slow=6.8,SNR=2.3							
PMG				S		Sn	12 56 53.3	+0.9
	1.2nm,0.3s,baz=120,slow=20,SNR=3.0							
WRA	**Warramunga Arr**	**21.00**	**227**	P		P	12 59 24.4	+0.1
	1.0nm,0.6s,baz=53,slow=10,SNR=12							
ASAR	**Alice Springs**	**23.80**	**220**	P		P	12 59 53.0	+0.5
	0.8nm,0.7s,baz=58,slow=8.9,SNR=22							
FITZ	**Fitzroy Crossi**	**27.12**	**241**	P		P	13 00 21.8	-0.8
	0.9nm,0.6s,baz=61,slow=10,SNR=2.8							
RAO	**Raoul Island**	**37.78**	**132**	LR		LR	13 15 12.4	
	comp=Z,110nm,19.6s,baz=288,slow=32							
TORD	**Torodi Ar. Bea**	**148.44**	**285**	PKPbc		PKPbc	13 14 24.4	-0.6
	0.3nm,0.5s,baz=65,slow=2.9,SNR=3.8							

IDC 15 13:02:29.9±2.7, 54°.35N×86°.19E, h0km, mb1 3.1/2, mb1mx3.0/42, mbtmp3.1/2, ML2.9/2, Error ellipse: s-maj=21.2km s-min=14.3km az=42.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**0.90**	**244**	*i*			13 08 20.0	
	baz=66,slow=315,SNR=5.7							
ZALV	**Zalesovo Beam**	**0.90**	**244**	Pg		Pg	13 02 45.3	-1.8
	3.4nm,0.3s,baz=63,slow=16,SNR=22							
ZALV				Lg		Lg	13 03 00.1	
	8.1nm,0.3s,baz=69,slow=28,SNR=18							
KURBB	**Kurchatov Arra**	**5.98**	**234**	Pn		Pn	13 04 00.7	+1.1
	0.1nm,0.3s,baz=51,slow=13,SNR=8.1							
MKAR	**Makanchi Array**	**7.96**	**200**	Pn		Pn	13 04 27.5	+0.7
	0.4nm,0.3s,baz=24,slow=13,SNR=10							
MKAR				Sn		Sn	13 05 58.7	+1.2
	0.1nm,0.3s,baz=32,slow=14,SNR=2.9							

IDC 15 13:21:21.2±3.3, 33°.09S×178°.45W, h0km, mb3.7/2, mb1 3.9/3, mb1mx3.6/34, mbtmp3.7/3, ML3.8/1, Error ellipse: s-maj=74.2km s-min=47.1km az=119.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
URZ	**Urewera**	**6.30**	**214**	Pn		Pn	13 22 55.4	0.0
	2.3nm,0.3s,baz=273,slow=4.4,SNR=15							
URZ				Sn		Sn	13 24 05.1	-2.9
	2.7nm,0.3s,baz=56,slow=21,SNR=7.9							
ASAR	**Alice Springs**	**42.66**	**270**	P		P	13 29 19.6	-0.1
	0.5nm,0.6s,baz=112,slow=7.9,SNR=14							
WRA	**Warramunga Arr**	**43.89**	**275**	P		P	13 29 29.4	-0.4
	0.4nm,0.3s,baz=116,slow=6.5,SNR=18							
FINES	**FINESS Array B**	**147.51**	**338**	PKPbc		PKPbc	13 41 06.1	-0.4
	1.4nm,0.8s,baz=66,slow=3.4,SNR=3.5							

*IDC **15** 13:24:16.2±0.5, 10°.25N×126°.92E, h0km, mb4.4/33, mb1 4.4/33, mb1mx4.4/59, mbtmp4.4/33, MS3.7/3, Ms1 3.7/3, ms1mx3.0/47, Error ellipse: s-maj=21.7km s-min=12.0km az=78.0*

*ISCJB **15** 13:24:21.6±0.4, 10°.37N±0°.04×126°.99E±0°.04, h50km, mb4.6/63, MS4.9/2, Error ellipse: s-maj=7.3km s-min=5.1km az=135.5*

*MAN **15** 13:24:21, 10°.43N×126°.92E, h60km, mb4.9, ML3.9, MS4.0*

*MOS **15** 13:24:22.5±1.0, 10°.25N×126°.97E, h62km, mb5.2/23, Error ellipse: s-maj=18.4km s-min=6.9km az=119.1*

*NEIC **15** 13:24:25.3±1.7, 10°.31N×127°.07E, h72km±16km, mb4.8/5, Error ellipse: s-maj=12.8km s-min=8.3km az=92.0*

ISC 15 13:24:23.2±0.5, 10°.36N±0°.05×126°.94E±0°.07, h50km, n93, σ1°59/97, mb4.8/63, 8C-6D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PLP	**Palo**	**2.09**	**293**	*eP*		**Pn**	**13 24 53.4**	**-2.4**
PLP				*eS*		**Sn**	**13 25 19.9**	**-0.8**
CGP	**Cagayan de Oro**	**2.91**	**230**	*eP*		**Pn**	**13 25 07.6**	**+0.5**
CGP				*eS*		**Sn**	**13 25 41.6**	**+0.6**
LLP	**Lapu-Lapu**	**2.93**	**269**	*eP*		**Pn**	**13 25 07.3**	**0.0**
LLP				*eS*		**Sn**	**13 25 43.5**	**+2.3**
TBP	**Tagbilaran**	**3.10**	**258**	*eP*		**Pn**	**13 25 09.7**	**-0.1**
DAV	**Davao City (W)**	**3.53**	**203**	Sn		**Sn**	**13 26 00.2**	**+4.0**
	baz=305,slow=23,SNR=3.9							
DAV				LR		LR	13 26 15.3	
	comp=Z,259nm,18.5s,baz=354,slow=35							
SNPH	**Sibulan**	**3.79**	**255**	*eP*		Pn	13 25 25.2	+6.0
CTBH	**Cotabato--PC H**	**4.10**	**221**	*eP*		**Pn**	**13 25 24.5**	**+1.1**
CTBH				*iS*		**Sn**	**13 26 04.8**	**-5.3**
RCP	**Roxas**	**4.29**	**287**	*eP*		**Pn**	**13 25 25.7**	**-0.3**
KAPI	**Kappang**	**16.87**	**205**	Pn		**P**	**13 28 17.9**	**+0.5**
	0.1nm,0.3s,baz=9.6,slow=9.2,SNR=3.7							
GUMO	**Guam**	**17.83**	**78**	LR		LR	13 34 34.0	
	comp=Z,128nm,18.6s,baz=266,slow=35							
KSM	**Kuching**	**18.74**	**243**	*eP*		**Pn**	**13 28 38.4**	**-0.6**
	48nm,1.0s							
JNU	**Nakatsue**	**22.95**	**8**	P		**P**	**13 29 22.5**	**-0.8**
	6.8nm,0.8s,baz=183,slow=2.7,SNR=6.2							
ENH	**Enshi**	**25.63**	**323**	*eP*		**P**	**13 29 48.5**	**+0.2**
	49nm,1.1s							
KSAR	**Wonju Array Be**	**26.98**	**2**	P		**P**	**13 30 00.0**	**-0.3**
KSAR	**Wonju Array Be**	**26.98**	**2**	P		**P**	**13 29 60.0**	**-0.3**
KSRS	**Korea Array**	**26.99**	**2**	P		**P**	**13 29 60.0**	**-0.4**
	3.2nm,0.8s,baz=184,slow=9.2,SNR=6.5							
MJAR	**Matsushiro Arr**	**27.99**	**20**	P		**P**	**13 30 07.4**	**-2.0**
	0.9nm,0.7s,baz=192,slow=9.4,SNR=3.9							
PMG	**Port Moresby**	**28.11**	**134**	*eP*		P	13 29 57.7	-13
PMG					pmax	pmax		
	comp=Z,187nm,1.7s							
CMAR	**Chiang Mai Arr**	**28.26**	**290**	P		**P**	**13 30 11.1**	**-0.9**
	comp=Z,2.3nm,0.9s,baz=94,slow=10.0,SNR=12							
FITZ	**Fitzroy Crossi**	**28.31**	**183**	P		**P**	**13 30 09.7**	**-2.6**
	comp=Z,1.5nm,0.9s,baz=12,slow=9.3,SNR=4.0							
FITZ				PcP		**PcP**	**13 33 25.2**	**+0.7**
	comp=Z,2.3nm,0.7s,baz=304,slow=4.8,SNR=4.9							
CHTO	**Chiang Mai**	**28.34**	**290**	*eP*		**P**	**13 30 10.4**	**-2.2**
CHTO	**Chiang Mai**	**28.34**	**290**	*eP*		**P**	**13 30 10.4**	**-2.2**
WRA	**Warramunga Arr**	**30.98**	**166**	P		**P**	**13 30 33.7**	**-2.2**
	comp=Z,0.7nm,0.7s,baz=350,slow=9.5,SNR=6.3							
WRA				PcP		**PcP**	**13 33 31.9**	**+0.5**
	comp=Z,0.8nm,0.6s,baz=344,slow=2.8,SNR=6.6							
USRK	**Ussuriysk Ar.**	**34.00**	**6**	P		**P**	**13 31 02.8**	**+0.7**
	comp=Z,2.0nm,0.8s,baz=180,slow=14,SNR=3.2							
ASAR	**Alice Springs**	**34.49**	**169**	P		**P**	**13 31 05.3**	**-1.3**
	comp=Z,0.9nm,0.6s,baz=353,slow=6.6,SNR=23							
ASAR				PcP		**PcP**	**13 33 41.7**	**+0.6**
	comp=Z,1.1nm,0.6s,baz=338,slow=2.3,SNR=11							
LSA	**Lhasa**	**38.52**	**305**	*eP*		**P**	**13 31 41.6**	**+0.1**
LSA	**Lhasa**	**38.52**	**305**	*eP*		**P**	**13 31 41.6**	**+0.1**
KLR	**Kul'dur**	**38.96**	**5**	P		**P**	**13 31 44.9**	**+0.6**
	comp=Z,1.6nm,0.7s,baz=183,slow=4.6,SNR=7.9							
SONM	**Songino Array**	**41.17**	**339**	P		**P**	**13 32 03.7**	**+0.8**
	comp=Z,3.0nm,1.0s,baz=156,slow=8.3,SNR=12							
STKA	**Stephens Creek**	**44.27**	**162**	P		**P**	**13 32 27.2**	**-0.9**
	comp=Z,2.6nm,0.9s,baz=0.3,slow=11,SNR=4.3							
BOD	**Bodaibo**	**48.39**	**351**	*eP*		**P**	**13 32 59.5**	**-0.5**
BOD					pmax	pmax		
	comp=Z,4.0nm,1.4s							
PETK	**Petropavlovsk-**	**49.29**	**24**	P		**P**	**13 33 08.3**	**+1.3**
	comp=Z,1.6nm,0.6s,baz=197,slow=4.4,SNR=3.3							
YAK	**Yakutsk**	**51.62**	**2**	*eP*		**P**	**13 33 20.7**	**-3.7**
YAK					pmax	pmax		
	comp=Z,6.0nm,0.8s							
MK31	**Makanchi Array**	**52.36**	**322**	*iP*		**P**	**13 33 31.6**	**+1.3**
MK31					pmax	pmax		
	comp=Z,17nm,1.0s							
MKAR	**Makanchi Array**	**52.36**	**322**	P		**P**	**13 33 31.8**	**+1.5**
	comp=Z,10nm,0.8s,baz=116,slow=8.2,SNR=58							
MKAR				PcP		**PcP**	**13 34 41.6**	**+0.8**
	comp=Z,1.1nm,0.6s,baz=111,slow=4.5,SNR=2.8							
MAKZ	**Makanchi**	**52.56**	**322**	P		**P**	**13 33 32.6**	**+0.9**
MAKZ					pmax	pmax		
	comp=Z,27nm,1.3s							
PDGK	**Podgornoye**	**52.58**	**317**	P		**P**	**13 33 32.6**	**+0.5**
PDGK					pmax	pmax		
	comp=Z,11nm,0.7s							
ZALV	**Zalesovo Beam**	**54.87**	**331**	P		**P**	**13 33 48.6**	**+0.2**
	comp=Z,4.2nm,0.6s,baz=125,slow=6.8,SNR=13							
SEY	**Seymchan**	**55.58**	**14**	P		**P**	**13 33 54.6**	**+1.2**
	comp=Z,0.9nm,0.5s,baz=155,slow=14,SNR=2.9							
AAK	**Ala-Archa**	**55.73**	**315**	*eP*		**P**	**13 33 56.8**	**+1.7**
AAK					pmax	pmax		
	comp=Z,21nm,1.9s							
NVS	**Novosibirsk**	**56.14**	**331**	*eP*		**P**	**13 33 57.5**	**-0.1**
KURK	**Kurchatov**	**56.37**	**325**	*d iP*		**P**	**13 34 00.5**	**+1.2**
KURK					pmax	pmax		
	comp=Z,163nm,1.2s							
KURK	**Kurchatov**	**56.37**	**325**	*eP*		**P**	**13 33 59.8**	**+0.5**
KKAR	**Karatay Array**	**58.66**	**314**	*eP*		**P**	**13 34 16.5**	**+0.9**
KKAR					pmax	pmax		
	comp=Z,11nm,0.9s							
KKAR	**Karatay Array**	**58.66**	**314**	*eP*		**P**	**13 34 16.5**	**+0.9**
	comp=Z,11nm,0.9s							
OTUK	**Ortayu**	**59.08**	**321**	P		**P**	**13 34 19.2**	**+0.8**
OTUK					pmax	pmax		
	comp=Z,17nm,1.3s							
TIXI	**Tiksi**	**61.26**	**1**	P		**P**	**13 34 33.6**	**+0.8**
	comp=Z,4.8nm,0.8s,baz=313,slow=5.6,SNR=3.1							
VOSK	**Vostochnaya**	**61.53**	**325**	P		**P**	**13 34 34.9**	**-0.1**
VOSK					pmax	pmax		
	comp=Z,6.0nm,0.6s							
BVA0	**Borovoye Array**	**61.97**	**325**	*i* P		**P**	**13 34 38.5**	**+0.5**
BVA0					pmax	pmax		
	comp=Z,10.0nm,0.8s							
BRVK	**Borovoye**	**62.04**	**325**	*d iP*		**P**	**13 34 39.4**	**+0.9**
BRVK					pmax	pmax		
	comp=Z,55nm,1.0s							
BRVK	**Borovoye**	**62.04**	**325**	*eP*		**P**	**13 34 39.3**	**+0.9**
	comp=Z,42nm,0.9s							
ZRNK	**Zerenda**	**62.73**	**325**	P		**P**	**13 34 42.9**	**-0.2**
ZRNK					pmax	pmax		
	comp=Z,18nm,0.8s							
NRIK	**Noril'sk**	**64.09**	**346**	P		**P**	**13 34 52.5**	**+0.7**
	comp=Z,2.9nm,0.5s,baz=153,slow=6.8,SNR=3.6							
AFI	**Afiamalu**	**65.39**	**110**	LR		LR	13 59 20.3	
	comp=Z,392nm,21.9s,baz=241,slow=32							
GEYT	**Alibeck**	**67.02**	**307**	P		**P**	**13 35 11.8**	**+0.5**
	comp=Z,4.1nm,0.8s,baz=97,slow=3.9,SNR=6.4							
AB31	**Akbulak array**	**67.24**	**319**	*i* P		**P**	**13 35 12.7**	**+0.3**
AB31					pmax	pmax		
	comp=Z,13nm,1.0s							
ABKAR	**Akbulak array**	**67.24**	**319**	*eP*		**P**	**13 35 12.2**	**-0.2**
	comp=Z,7.5nm,0.8s							
SVE	**Sverdlovsk**	**68.50**	**327**	*eP*		**P**	**13 35 19.2**	**-1.0**
SVE					pmax	pmax		
	comp=Z,16nm,1.1s							
AKTO	**Aktyubinsk**	**68.68**	**320**	P		**P**	**13 35 21.9**	**+0.4**
	comp=Z,6.3nm,0.9s,baz=94,slow=8.0,SNR=15							
ARU	**Arti**	**69.52**	**327**	P		**P**	**13 35 26.7**	**+0.1**
	comp=Z,10nm,0.6s,baz=114,slow=4.3,SNR=22							
ARU	**Arti**	**69.52**	**327**	*c iP*		**P**	**13 35 26.5**	**0.0**
ARU							13 35 45.0	
ARU							13 37 56.5	
ARU					SS		SS	13 49 07.0	+8.4
ARU					pmax		pmax	
	comp=Z,18nm,1.0s							
ARU	**Arti**	**69.52**	**327**	*eP*		**P**	**13 35 26.0**	**-0.5**
	comp=Z,8.9nm,0.6s							
GNI	**Garni**	**77.46**	**309**	P		**P**	**13 36 14.4**	**+0.6**
	comp=Z,4.8nm,0.3s,baz=185,slow=10,SNR=4.5							
GNI	**Garni**	**77.46**	**309**	*eP*		P	13 36 16.2	+2.4
GNI					pmax	pmax		
	comp=Z,42nm,1.1s							
ZEI	**Tsey**	**77.96**	**312**	*eP*		**P**	**13 36 17.2**	**+0.6**
ZEI					pmax	pmax		
	comp=Z,70nm,1.0s							
NCK	**Nalchik**	**78.14**	**312**	*eP*		**P**	**13 36 18.8**	**+1.5**
NCK					pmax	pmax		
	comp=Z,11nm,0.4s							
KBZ	**Khabaz**	**78.64**	**313**	P		**P**	**13 36 20.9**	**+0.9**
	comp=Z,5.3nm,0.9s,baz=76,slow=5.8,SNR=8.6							
KVAR	**Kislovodsk Arr**	**78.77**	**313**	P		**P**	**13 36 21.9**	**+1.0**
	comp=Z,12nm,0.8s,baz=243,slow=6.5,SNR=6.5							
KIV	**Kislovodsk**	**78.78**	**313**	*i* P		**P**	**13 36 21.9**	**+1.0**
KIV				*i*			13 36 28.5	
KIV					pmax	pmax		
	comp=Z,13nm,0.9s							
NEY	**Neytrino**	**78.79**	**312**	*eP*		**P**	**13 36 21.9**	**+0.8**
NEY					pmax	pmax		
	comp=Z,1.0nm,1.0s							
VRH	**Novokhopyorsk**	**79.02**	**320**	*eP*		**P**	**13 36 22.4**	**+0.5**
VRH					pmax	pmax		
	comp=Z,20nm,0.7s							
ILAR	**Eielson Array**	**79.07**	**26**	P		**P**	**13 36 22.4**	**+0.4**
	comp=Z,0.6nm,0.7s,baz=228,slow=5.0,SNR=7.1							
KLMR	**Klimovskoe**	**79.78**	**330**	*eP*		**P**	**13 36 24.9**	**-1.0**
KLMR				*e*			13 39 27.8	
KLMR					pmax	pmax		
	comp=Z,11nm,0.9s							
VSR	**Storozhevoye**	**80.63**	**320**	*eP*		**P**	**13 36 31.0**	**+0.4**
VSR					pmax	pmax		
	comp=Z,10.0nm,0.9s							
OBN	**Obninsk**	**81.81**	**325**	*i* P		**P**	**13 36 37.2**	**+0.4**
OBN					pmax	pmax		
	comp=Z,12nm,0.9s							
ANN	**Anapa**	**82.45**	**314**	*eP*		**P**	**13 36 38.3**	**-2.1**
ANN				*e*			13 39 51.1	
ANN				*eS*		**S**	**13 46 59.0**	**+5.8**
ANN					pmax	pmax		
	comp=Z,32nm,1.0s							
INK	**Inuvik**	**83.96**	**22**	P		**P**	**13 36 48.4**	**+0.7**
	comp=Z,1.2nm,0.8s,baz=315,slow=2.9,SNR=4.1							
ARCES	**ARCESS Array B**	**84.34**	**340**	P		**P**	**13 36 50.3**	**+0.6**
	comp=Z,2.3nm,0.6s,baz=64,slow=5.6,SNR=6.1							
ASF	**Jabal al Asfar**	**84.61**	**302**	P		**P**	**13 36 52.5**	**+0.6**
	comp=Z,3.6nm,0.9s,baz=98,slow=3.3,SNR=5.3							
MMAI	**Mount Meron Ar**	**85.72**	**303**	P		**P**	**13 36 59.2**	**+1.8**
	comp=Z,9.5nm,1.0s,baz=102,slow=2.7,SNR=10							
FINES	**FINESS Array B**	**86.13**	**332**	P		**P**	**13 36 58.7**	**0.0**
	comp=Z,1.8nm,0.5s,baz=69,slow=5.2,SNR=15							
ANTO	**Ankara**	**86.60**	**310**	*eP*		P	13 36 55.8	-5.8
	comp=Z,86nm,0.8s							
EIL	**Elat**	**86.66**	**299**	P		**P**	**13 37 01.8**	**-0.2**
	comp=Z,6.8nm,0.9s,baz=121,slow=2.8,SNR=5.6							
AKASG	**Malin Array Be**	**86.92**	**321**	P		**P**	**13 37 02.6**	**-0.2**
	comp=Z,1.6nm,0.6s,baz=64,slow=4.7,SNR=5.7							
KIEV	**Kiev**	**86.93**	**321**	*i iP*		**P**	**13 37 03.6**	**+0.8**
KIEV					pmax	pmax		
	comp=Z,8.0nm,1.3s							
KLNR	**Kaliningrad**	**91.12**	**326**	*eP*		**P**	**13 37 19.2**	**-3.3**
HFS	**Hagfors**	**92.28**	**333**	P		**P**	**13 37 27.4**	**-0.4**
	comp=Z,0.7nm,0.4s,baz=78,slow=7.5,SNR=5.3							
NOA	**NORSAR Array B**	**92.97**	**334**	P		**P**	**13 37 30.9**	**-0.1**
	comp=Z,0.7nm,0.8s,baz=64,slow=4.7,SNR=3.0							
CLL	**Collm**	**96.41**	**325**	*eP*		**P**	**13 37 43.0**	**-3.9**
	comp=Z,3.0nm,0.5s							
CLL					*e*PP	**PP**	**13 41 40.0**	**-0.7**
CLL	**Collm**	**96.41**	**325**	*eP*		**P**	**13 37 43.0**	**-3.9**
CLL					pmax	pmax		
	comp=Z,3.0nm,0.5s							
CLL					MLR	MLR		
	comp=Z,800nm,19.7s							
GERES	**GERESS Array B**	**97.03**	**322**	P		**P**	**13 37 51.3**	**+1.3**
	comp=Z,0.2nm,0.3s,baz=39,slow=8.6,SNR=3.4							
BFO	**Black Forest**	**100.45**	**323**	*i* P		**Pdif**	**13 38 01.0**	**-4.2**
MDT	**Midelt**	**116.95**	**315**	PKP		**PKPdf**	**13 43 02.8**	**-0.4**
	comp=Z,1.9nm,0.9s,baz=252,slow=5.7,SNR=2.7							

*ISCJB **15** 13:26:00.9±0.2, 60°.75S±0°.05×23°.78W±0°.09, h10km, mb5.5/57, MS5.5/213, Error ellipse: s-maj=8.2km s-min=4.8km az=41.4*

*IDC **15** 13:26:01.3±0.3, 60°.71S×23°.52W, h0km, mb5.4/17, mb1 5.4/18, mb1mx5.4/21, mbtmp5.4/18, ML7.3/1, MS5.5/21, Ms1 5.5/21, ms1mx5.5/21, Error ellipse: s-maj=15.4km s-min=13.5km az=42.0*

*NEIC **15** 13:26:03.0±0.2, 60°.76S×23°.52W, h10km, mb5.7/43, MS5.6/163, MW6.1, MW6.1, Error ellipse: s-maj=9.1km s-min=7.0km az=217.0, Moment Tensor Solution. s24 Moment tensor: Scale 10^{18}Nm; M_{rr}=0.29; $M_{\theta\theta}$=-1.38; $M_{\phi\phi}$=1.67; $M_{r\theta}$=0.17; $M_{r\phi}$=-0.29; $M_{\theta\phi}$=0.09; Best double couple: M_o1.60000×10^{18} NP1:ϕ_s310.00000°, δ82.00000°, λ-175.00000°. NP2:ϕ_s219.00000°, δ85.00000°, λ-8.00000°. Principal axes: T 1.7000, Plg2.0000°, Azm265.0000°; N -0.2700, Plg81.0000°, Azm9.0000°; P -1.4300, Plg9.0000°, Azm174.0000°;*

*BJI **15** 13:26:02.9, 60°.80S×23°.50W, h10km, mB5.6/39, Ms5.8/45, Ms7 5.6/47*

*MOS **15** 13:26:02.7±1.6, 60°.87S×23°.73W, h10km, mb5.6/52, MS5.5/21, Error ellipse: s-maj=24.2km s-min=11.6km az=98.5*

*NEIC **15** 13:26:02.0±0.0, 60°.72S×23°.67W, h15km, Moment Tensor Solution. s10 Moment tensor: Scale 10^{18}Nm; M_{rr}=0.35; $M_{\theta\theta}$=0.03; $M_{\phi\phi}$=0.32; $M_{r\theta}$=-0.92; $M_{r\phi}$=1.28; $M_{\theta\phi}$=-0.94; Best double couple: M_o1.90000×10^{18} NP1:ϕ_s262.00000°, δ86.00000°, λ36.00000°. NP2:ϕ_s169.00000°, δ54.00000°, λ175.00000°. Principal axes: T 2.1500, Plg27.0000°, Azm132.0000°; N -1.0100, Plg53.0000°, Azm267.0000°; P -1.1400, Plg21.0000°, Azm30.0000°;*

*GCMT **15** 13:26:03.0±0.1, 61°.12S×22°.85W, h12km, MW6.1/140, Moment Tensor Solution. s139,c296; s140,c477; Duration: 2^{s}6 Moment tensor: Scale 10^{18}Nm; M_{rr}-0.49±.01; $M_{\theta\theta}$0.25±.01; $M_{\phi\phi}$0.23±.01; $M_{r\theta}$0.32±.02; $M_{\theta\phi}$1.45±.01; $M_{r\phi}$0.07±.02; Best double couple: M_o1.48800×10^{18} NP1:ϕ_s269.00000°, δ86.00000°, λ-15.00000°. NP2:ϕ_s0.00000°, δ75.00000°, λ-175.00000°. Principal axes: T 1.7270, Plg7.0000°, Azm316.0000°; N -0.4780, Plg75.0000°, Azm73.0000°; P -1.2490, Plg13.0000°, Azm224.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISC 15 13:26:02.9±1.1, 60°.99S±0°.05×23°.66W±0°.05, h9km±5km, n662, σ2°^{s}42/566, mb5.7/54, MS5.5/213, 10C-7D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VNA1	**Neumayer--Stat**	**11.52**	**154**	P		**Pn**	**13 28 45.0**	**-2.3**
VNA1				S		Sn	13 30 44.5	-11
I27DE	**GEORG VON NEUM**	**11.55**	**154**	Pn		**Pn**	**13 28 46.8**	**-0.9**
	baz=318,slow=11,SNR=0.9							
SNAA	**Sanae**	**13.48**	**151**	P		**Pn**	**13 29 11.0**	**-3.2**
SNAA				S		Sn	13 31 30.1	-14
SNAA	**Sanae**	**13.48**	**151**	*eP*		**Pn**	**13 29 11.5**	**-2.6**
NVL	**N'lazarevskaya**	**17.19**	**139**	*eP*		**Pn**	**13 30 00.8**	**-2.1**
NVL				*eS*		**Sn**	**13 33 14.8**	**+0.9**
NVL					MLR	MLR		
	comp=Z,12μm,13.0s							
PMSA	**Palmer Station**	**18.56**	**241**	P		**Pn**	**13 30 22.6**	**+2.9**
	comp=Z,104nm,0.3s,baz=90,slow=11,SNR=237							
PMSA					LR	LR	13 36 56.3	
	comp=Z,8μm,19.1s,baz=90,slow=35							
PMSA	**Palmer Station**	**18.56**	**241**	*eP*		**Pn**	**13 30 22.8**	**+3.1**
	comp=Z,218nm,0.3s							
EFI	**East Falkland**	**20.99**	**281**	*c iP*		**P**	**13 30 46.0**	**-0.1**
EFI					pmax	pmax		
	comp=Z,253nm,0.8s							
EFI	**East Falkland**	**20.99**	**281**	*eP*		**P**	**13 30 44.5**	**-1.6**
	comp=Z,547nm,1.3s							
EFI					LR	LR		
	comp=Z,12μm,22.0s							
USHA	**Ushuaia**	**24.16**	**265**	P		**P**	**13 31 20.5**	**+1.5**
	comp=Z,440nm,0.7s,baz=110,slow=8.8,SNR=31							
USHA					LR	LR	13 38 58.5	
	comp=Z,60μm,20.2s,baz=90,slow=32							
H09W1	**TRISTAN DA CUN**	**24.96**	**22**	P		**P**	**13 31 30.5**	**+4.1**
H09W1				T		T	13 57 13.7	
	SNR=3.6							
H09N1	**TRISTAN DA CUN**	**24.99**	**22**	P		**P**	**13 31 30.0**	**+3.3**
TRIS	**Tristan da Cun**	**24.99**	**22**	PFAKE			13 31 40.0	+13
TRIS					LR	LR		
	comp=Z,7μm,20.0s							
SYO	**Syowa Base**	**26.68**	**134**	*eP*		**P**	**13 31 40.0**	**-1.7**
SYO	**Syowa Base**	**26.68**	**134**	*ipP*		**P**	**13 31 41.6**	**-0.1**
QSPA	**South Pole Qui**	**29.25**	**180**	*eP*		**P**	**13 32 06.2**	**+1.3**
	comp=Z,0.6nm,0.7s							
QSPA					LR	LR		
	comp=Z,14μm,19.0s							
TRQA	**Tornquist**	**33.08**	**296**	*eP*		**P**	**13 32 36.8**	**-1.9**
	comp=Z,61nm,0.9s							
TRQA				*e*PcP		**PcP**	**13 35 23.1**	**+1.3**
TRQA					LR	LR		
	comp=Z,3μm,19.0s							
LPA	**La Plata**	**34.05**	**304**	*ceP*		**P**	**13 32 46.0**	**-

MIR smax smax
comp=N,7µm,11.0s
LCO Las Campanas 44.58 294 *e*P **P 13 34 13.4 -2.0**
comp=N,47nm,0.9s
BOSA Boshof 45.76 68 P **P 13 34 22.6 -1.9**
comp=N,66nm,0.9s,baz=201,slow=7.6,SNR=48
BOSA LR LR 13 49 25.8
comp=N,9µm,19.1s,baz=204,slow=31
BOSA Boshof 45.76 68 *e*P **P 13 34 22.3 -2.3**
comp=N,232nm,1.6s
SHEL Horse Pasture 46.78 24 PFAKE
SHEL LR LR 13 34 40.0 +7.4
comp=Z,2µm,19.0s
HJA Humahuaca 47.41 304 *i* P **P 13 34 35.1 -2.8**
BDFB Brasilia 48.56 328 P **P 13 34 47.1 +0.6**
comp=Z,50nm,1.0s,baz=163,slow=20
BDFB LR LR 13 52 26.5
comp=Z,8µm,21.4s,baz=80,slow=33
BDFB Brasilia 48.56 328 *e*P **P 13 34 47.2 +0.7**
comp=Z,155nm,1.0s
CASY Casey 48.62 157 *e*P **P 13 34 46.9 +0.6**
comp=Z,59nm,0.8s
CASY *e*PcP **PcP 13 36 13.1 +1.6**
CASY LR LR
comp=Z,3µm,21.0s
LBTB Lobatse 49.02 66 *e*P **P 13 34 48.0 -2.0**
LBTB pmax pmax
comp=Z,100nm,1.0s
LBTB Lobatse 49.02 66 *e*P **P 13 34 48.0 -2.0**
comp=Z,103nm,0.9s
LVC Limon Verde 49.39 300 *e*P **P 13 34 52.4 -0.7**
comp=Z,58nm,0.8s
LVC *e*PcP **PcP 13 36 15.1 -0.3**
LVC LR LR
comp=Z,3µm,19.0s
PB04 IPOC Station P 50.16 299 *e*P **P 13 34 56.7 -2.0**
comp=Z,172nm,0.9s
PAF Port-aux-Franc 50.28 122 PFAKE
PAF LR LR 13 35 10.0 +11
comp=Z,15µm,22.0s
TSUM Tsumeb 50.81 54 *e*P **P 13 35 01.4 -2.2**
comp=Z,102nm,1.5s
TSUM LR LR
comp=Z,5µm,19.0s
PB01 IPOC Station P 51.02 300 *e*P **P 13 35 02.9 -2.3**
comp=Z,149nm,1.0s
PB11 IPOC Station P 52.23 301 *e*P **P 13 35 13.1 -1.2**
comp=Z,167nm,1.1s
SIV San Ignacio 52.30 312 LR LR 13 55 51.4
comp=Z,3µm,21.6s,baz=150,slow=34
H10S2 ASCENSION HYDR 52.35 11 T T 14 32 17.4
baz=185,slow=75,SNR=124
H10S3 ASCENSION HYDR 52.36 11 T T 14 32 13.5
baz=185,slow=75,SNR=33
H10S1 ASCENSION HYDR 52.37 11 T T 14 32 29.4
baz=185,slow=75,SNR=110
ASCN Ascension 53.40 12 PFAKE
ASCN LR LR 13 35 30.0 +7.3
comp=Z,3µm,22.0s
H10N1 ASCENSION HYDR 53.47 11 T T 14 33 32.9
baz=179,slow=72,SNR=12
H10N3 ASCENSION HYDR 53.47 11 T T 14 33 23.9
baz=179,slow=72,SNR=88
H10N2 ASCENSION HYDR 53.49 11 T T 14 33 34.9
baz=179,slow=72,SNR=14
LPAZ La Paz 54.73 305 P **P 13 35 32.4 -0.8**
comp=Z,52nm,1.0s,baz=150,slow=7.3,SNR=43
LPAZ LR LR 13 58 59.1
comp=Z,1µm,21.9s,baz=160,slow=36
LPAZ La Paz 54.73 305 *e*P **P 13 35 32.1 -1.1**
comp=Z,110nm,1.3s
RCBR Riachuelo 55.80 345 PFAKE
RCBR LR LR 13 35 50.0 +10
comp=Z,4µm,22.0s
LSZ Lusaka 58.72 63 *e*P **P 13 35 56.9 -4.1**
LSZ pmax pmax
comp=Z,117nm,1.1s
LSZ MLR MLR
comp=Z,8µm,22.0s
LSZ Lusaka 58.72 63 *e*P **P 13 35 56.9 -4.1**
comp=Z,117nm,1.1s
LSZ LR LR
comp=Z,8µm,22.0s
SAML Samuel 59.57 313 *e*P **P 13 36 05.2 -1.5**
comp=Z,53nm,0.9s
SAML LR LR
comp=Z,3µm,19.0s
NNA Nana 62.22 298 *e*P **P 13 36 23.3 -1.5**
NNA pmax pmax
comp=Z,100nm,1.2s
NNA Nana 62.22 298 *e*P **P 13 36 23.3 -1.5**
comp=Z,100nm,1.2s
NNA LR LR
comp=Z,2µm,22.0s
ABPO Ambohimpanom 64.29 83 *e*P **P 13 36 37.4 -1.3**
ABPO pmax pmax
comp=Z,157nm,1.3s
ABPO MLR MLR
comp=Z,2µm,20.0s
ABPO Ambohimpanom 64.29 83 *e*P **P 13 36 37.4 -1.3**
comp=Z,157nm,1.3s
ABPO LR LR
comp=Z,2µm,20.0s
PTGA Pitinga 66.18 320 *e*P **P 13 36 48.8 -1.9**
comp=Z,44nm,0.9s
PTGA LR LR
comp=Z,35µm,19.0s
RER Riviere de l'E 66.61 92 PFAKE
RER LR LR 13 37 10.0 +16
comp=Z,5µm,19.0s
LIC Lamto 68.58 20 *e*PKP1 **P 13 37 05.4 -0.4**
comp=Z,162nm,1.9s
KIC Kosan Boka 68.76 20 *e*PKP1 **P 13 37 06.5 -0.5**
comp=Z,134nm,1.0s
TIC Toumodi 68.99 20 *e*PKP1 **P 13 37 06.0 -2.4**
DBIC Dimbokro 69.04 20 P **P 13 37 05.8 -3.0**
comp=Z,34nm,0.9s,baz=170,slow=7.8,SNR=22
DBIC LR LR 14 00 44.3
comp=Z,2µm,18.0s,baz=178,slow=30
DBIC Dimbokro 69.04 20 *e*P **P 13 37 05.7 -3.0**
comp=Z,49nm,1.0s
KUK Kukurantumi 69.41 25 *i* P **P 13 37 06.9 -4.1**
MBAR Mbarara 72.97 58 PFAKE 13 37 40.0 +7.2
MBAR LR LR
comp=Z,259nm,21.0s
MLZ Mavora Lakes 73.57 189 *e*P **P 13 37 36.7 +0.8**
comp=Z,104nm,1.4s
OTAV Otavalo 73.89 302 *e*P **P 13 37 36.6 -1.9**
comp=Z,148nm,1.3s
OTAV LR LR
comp=Z,1µm,19.0s
CMBC Cumbal 74.27 303 *e*P **P 13 37 44.7 +3.9**
LBZ Lake Benmore 74.38 190 *e*P **P 13 37 43.4 +2.8**
comp=Z,129nm,1.5s
SJAC San Juan de Ar 74.84 307 *e*P **P 13 37 42.1 -1.6**
RPZ Rata Peaks 74.97 191 P **P 13 37 45.3 +1.2**
comp=Z,26nm,0.9s,baz=143,slow=5.0,SNR=4.5
POPC Popayan, Colom 75.25 304 *e*P **P 13 37 47.3 +1.1**
KMBO Kilima Mbogo 75.29 65 P **P 13 37 49.4 +2.9**
comp=Z,18nm,1.1s,baz=202,slow=7.5,SNR=13
KMBO LR LR 14 07 27.8
comp=Z,5µm,20.1s,baz=186,slow=33
KMBO Kilima Mbogo 75.29 65 *e*P **P 13 37 46.4 -0.1**
comp=Z,71nm,1.8s
PRAC Prado 75.61 307 *e*P **P 13 37 49.4 +1.4**
PRAC Prado 75.61 307 *e*P **P 13 37 46.2 -1.9**
comp=Z,541nm,1.8s
SACV Santiago Islan 75.70 0 PFAKE
SACV LR LR 13 38 00.0 +12
comp=Z,780nm,19.0s
PTCN Pitcairn Islan 75.94 244 PFAKE
PTCN LR LR 13 38 00.0 +10
comp=Z,5µm,19.0s
CHIC Chingaza 76.00 308 *e*P **P 13 37 49.4 -1.3**
TAU Tasmania Unive 76.20 173 *e*P **P 13 37 53.4 +2.4**
TAU pmax pmax
comp=Z,110nm,1.4s
TAU Tasmania Unive 76.20 173 *e*P **P 13 37 53.4 +2.4**
comp=Z,111nm,1.4s
TAU LR LR
comp=Z,8µm,20.0s
ROSC El Rosal 76.42 308 P **P 13 37 53.6 +0.6**
comp=Z,21nm,0.8s,baz=90,slow=19,SNR=10
ROSC LR LR 14 14 35.3
comp=Z,1µm,18.6s,baz=154,slow=38
ROSC El Rosal 76.42 308 *e*P **P 13 37 51.0 -2.1**
ROSC El Rosal 76.42 308 *e*P **P 13 37 52.9 -0.2**
comp=Z,137nm,1.9s
TORD Torodi Ar. Bea 76.60 25 P **P 13 37 51.7 -1.8**
comp=Z,133nm,0.9s,baz=192,slow=5.9,SNR=70
TORD LR LR 14 03 44.7
comp=Z,2µm,21.4s,baz=165,slow=30
RUSC La Rusia 76.91 309 *e*P **P 13 37 55.7 -0.3**
RUSC La Rusia 76.91 309 *e*P **P 13 37 54.7 -1.3**
comp=Z,67nm,1.3s
SNZO South Karori 76.96 194 PFAKE
SNZO LR LR 13 38 10.0 +15
comp=Z,4µm,19.0s
BARC Barichara 77.59 309 *e*P **P 13 37 55.7 -3.8**
HELC Santa Helena 78.12 307 *e*P **P 13 38 01.1 -1.4**
comp=Z,72nm,1.1s
PAYG Puerto Ayora 78.25 290 PFAKE
PAYG LR LR 13 38 10.0 +7.1
comp=Z,3µm,22.0s
BRRC Barranca, Sant 78.27 309 *e*P **P 13 38 03.0 0.0**
CBRI Barrientos, No 78.48 310 *e*P **P 13 38 04.5 +0.2**
GRMC Gramalote, San 78.49 310 *e*P **P 13 38 04.5 +0.2**
SDV Santo Domingo 78.77 313 *e*P **P 13 38 04.2 -1.7**
comp=Z,110nm,1.1s
SDV LR LR
comp=Z,7µm,22.0s
GRGR Grenville 78.85 322 PFAKE 13 38 20.0 +14
GRGR LR LR
comp=Z,3µm,20.0s
BBGH Gun Hill 79.20 324 PFAKE
BBGH LR LR 13 38 20.0 +12
comp=Z,4µm,20.0s
URZ Urewera 79.66 196 *e*P **P 13 38 10.2 -0.2**
comp=Z,60nm,1.0s
RKT Rikitea 79.76 241 *e*S **S 13 48 07.7 -6.2**
comp=Z,3µm,37.2s
RKT Rikitea 79.76 241 *e*LQ LQ 13 59 43.8
comp=Z,5µm,34.8s
RKT *e*LR LR 14 03 06.3
comp=Z,5µm,30.0s,baz=149
NWAO Narrogin (SRO) 81.13 148 PFAKE
NWAO LR LR 13 38 30.0 +12
comp=Z,2µm,20.0s
FDF Fort de France 81.16 323 *e*P **P 13 38 18.6 0.0**
FDF pmax pmax
comp=Z,100nm,1.1s
FDF Fort de France 81.16 323 *e*P **P 13 38 18.6 0.0**
comp=Z,100nm,1.1s
FDF LR LR
comp=Z,1µm,21.0s
GDHS Morne Mazeau, 82.80 323 *e*P **P 13 38 28.6 +1.3**
comp=Z,173nm,1.1s
CAN Canberra 83.85 174 *e*P **P 13 38 34.5 +1.9**
CAN Canberra 83.85 174 *e*P **P 13 38 34.5 +1.9**
CAN LR LR
comp=Z,5µm,19.0s
ANWB Willy Bob 84.13 324 PFAKE
ANWB LR LR 13 38 40.0 +6.1
comp=Z,2µm,22.0s
SMRT St. Maarten 84.87 323 *e*P **P 13 38 39.7 +2.0**
comp=Z,47nm,0.9s
BBOO Buckleboo 85.08 163 *e*P **P 13 38 38.9 0.0**
comp=Z,113nm,1.9s
TBI Tubuai 85.30 228 *e*S **S 13 49 04.6 -5.9**
comp=Z,2µm,28.5s
TBI Tubuai 85.30 228 *e*LQ LQ 14 01 56.4
comp=Z,3µm,33.5s
TBI *e*LR LR 14 05 43.9
comp=Z,4µm,32.8s,baz=163
FORT Forrest 85.69 156 *e*P **P 13 38 43.6 +1.7**
STVI Saint Thomas 85.72 321 *e*P **P 13 38 40.3 -1.6**
comp=Z,74nm,1.0s
HUMP Con Antoni 85.80 320 *e*P **P 13 38 44.3 +2.0**
comp=Z,47nm,1.2s
SJG San Juan 85.86 320 PFAKE
SJG LR LR 13 38 50.0 +7.4
comp=Z,2µm,22.0s
CBYP Canovanas 85.92 320 *e*P **P 13 38 44.6 +1.6**
comp=Z,48nm,1.0s
DGAR Diego Garcia 86.54 99 PFAKE
DGAR LR LR 13 39 00.0 +14
comp=Z,4µm,20.0s
STKA Stephens Creek 86.69 167 P **P 13 38 48.2 +1.4**
comp=Z,16nm,0.8s,baz=167,slow=6.1,SNR=22
STKA LR LR 14 15 49.6
comp=Z,5µm,18.9s,baz=183,slow=34
TAM Tamanrasset 86.76 27 *e*P **P 13 38 47.4 +0.2**
TAM Tamanrasset 86.76 27 *e*P **P 13 38 46.1 -1.0**
TAM LR LR
comp=Z,2µm,22.0s
RAO Raoul Island 87.67 202 PFAKE
RAO LR LR 13 39 00.0 +8.4
comp=Z,3µm,20.0s
SDDR Presa de Saban 88.36 316 P **P 13 38 54.1 -0.7**
SDDR LR LR
comp=Z,3µm,22.0s
ATD Arta Tunnel 89.02 64 P **P 13 38 58.5 +0.4**
comp=Z,40nm,1.0s,baz=237,slow=4.9,SNR=7.7
MTDJ Mount Denham 89.90 310 PFAKE
MTDJ LR LR 13 39 10.0 +7.9
comp=Z,3µm,22.0s
GTBY Guantanamo Bay 90.57 313 PFAKE
GTBY LR LR 13 39 20.0 +15
comp=Z,2µm,20.0s
PPT2 Papeete2 90.60 231 *e*LQ LQ 14 03 46.4
comp=Z,2µm,29.0s
PPT2 *e*LR LR 14 08 09.8
comp=Z,6µm,33.8s,baz=166
PPT Papeete 90.62 231 LR LR 14 14 05.1
comp=Z,1µm,18.2s,baz=161,slow=32
GRTK Grand Turk 90.66 317 PFAKE
GRTK LR LR 13 39 20.0 +15
comp=Z,1µm,22.0s
RAR Rarotonga 90.79 220 PFAKE
RAR LR LR 13 39 20.0 +14
comp=Z,2µm,20.0s
DAMY Dhamar 92.40 64 *e*P **P 13 39 12.4 -1.7**
MBWA Marble Bar 92.98 146 *e*P **P 13 39 17.0 +0.5**
MBWA LR LR
comp=Z,3µm,20.0s
COCO West Island 93.37 122 PFAKE
COCO LR LR 13 39 30.0 +12
comp=Z,2µm,20.0s
PMOZ Porto Moniz, M 93.62 5 *e*LR LR 14 03 36.3
comp=Z,762nm,20.0s
ASAR Alice Springs 93.71 159 P **P 13 39 18.8 -1.1**
comp=Z,12nm,0.8s,baz=185,slow=4.0,SNR=63
ASAR PP **PP 13 43 05.1 +1.1**
comp=Z,2.5nm,0.9s,baz=186,slow=7.4,SNR=5.1
ASAR PKKPbc **PKKPbc 13 56 20.9 -0.4**
comp=Z,1.6nm,0.8s,baz=5.0,slow=2.9,SNR=9.0
ASAR PKPPKP **P'P'df 14 04 35.5 -5.7**
comp=Z,0.9nm,1.0s,baz=343,slow=1.0,SNR=4.1
ASAR LR LR 14 17 58.5
comp=Z,8µm,21.9s,baz=191,slow=33
AS31 Alice Springs 93.71 159 *e*P **P 13 39 20.4 +0.5**
AS01 Alice Springs 93.72 160 *e*P **P 13 39 18.5 -1.4**
TAOE Nuku Hiva Isla 94.67 243 *e*PS PS 13 51 57.0 +3.3
comp=Z,706nm,32.9s
TAOE Nuku Hiva Isla 94.67 243 *e*LR LR 14 10 00.5
comp=Z,4µm,27.6s,baz=170
RTC Rabat Centre 95.63 14 PFAKE
RTC LR LR 13 39 40.0 +12
comp=Z,10µm,19.0s
FITZ Fitzroy Crossi 97.42 151 LR LR 14 20 44.9
comp=Z,2µm,20.9s,baz=192,slow=34
WRA Warramunga Arr 97.42 159 P Pdif 13 39 37.1 +0.2
comp=Z,5.6nm,0.9s,baz=199,slow=4.1,SNR=16
WRA PP **PP 13 43 34.1 +1.2**
comp=Z,0.9nm,0.6s,baz=7.0,slow=7.4,SNR=4.9
WRA PKKPbc **PKKPdf 13 56 12.9 +1.1**
comp=Z,0.5nm,0.8s,baz=5.8,slow=3.5,SNR=5.9
WRA LR LR 14 20 14.6
comp=Z,7µm,22.0s,baz=195,slow=33
WRAB Tennant Creek 97.44 159 *ce*P Pdif 13 39 37.4 +0.5
WRAB pmax pmax
comp=Z,17nm,0.9s
WRAB Tennant Creek 97.44 159 PFAKE 13 39 50.0 +13
WRAB LR LR
comp=Z,9µm,22.0s
CMLA Cha da Macela 98.41 359 PFAKE
CMLA LR LR 13 39 50.0 +9.4
comp=Z,1µm,19.0s
PFVI Vila Bisbo 98.52 12 *e*Pdif Pdif 13 40 00.4 +19
PFVI Vila Bisbo 98.52 12 *e*SKS S 13 51 24.8 +15
PFVI *e*SS **SS 13 58 02.4 +7.1**
MORF Marmelete 98.71 12 *e*P **P 13 39 41.4 -0.6**
MORF *e*S **SKSac 13 50 19.4 -0.3**
MORF AMS AMS 14 14 25.2
comp=Z,998nm,19.5s
MORF Marmelete 98.71 12 *e*Pdif Pdif 13 40 18.3 +36
MORF *e*SKS 13 49 47.4
PBDV Barranco-do-Ve 98.72 13 *e*Pdif Pdif 13 39 47.3 +5.3
PBDV Barranco-do-Ve 98.72 13 *e*SKS **SKSac 13 50 25.3 +5.7**
PBDV *e*SS SS 13 57 25.4 -33
CTA Charters Tower 98.80 170 P Pdif 13 39 43.7 +0.7
comp=Z,5.7nm,0.9s,baz=180,slow=9.1,SNR=2.6
CTAO Charters Tower 98.80 170 PFAKE 13 40 00.0 +17
CTAO LR LR
comp=Z,7µm,22.0s
BBSR BB Station 98.86 326 PFAKE 13 39 50.0 +7.3
BBSR LR LR
comp=Z,2µm,22.0s
PVAQ Vaqueiros 98.91 13 *e*Pdif Pdif 13 40 03.5 +21
PVAQ *e*SKS 13 50 02.8
PVAQ *e*SS **SS 13 57 59.8 -0.9**
PVAQ Vaqueiros 98.91 13 *e*LR LR 14 08 07.2
comp=Z,926nm,18.0s
PCVE Castro Verde 99.10 13 *e*Pdif Pdif 13 40 02.7 +19
PCVE Castro Verde 99.10 13 *e*SKS **SKSac 13 50 27.3 +5.9**
PCVE *e*SS **SS 13 58 07.6 +4.2**
MESJ Messejana 99.28 12 *e*Pdif **Pdif 13 39 58.8 +14**
PBEJ Beja 99.51 13 *e*Pdif **Pdif 13 39 49.5 +4.1**
PNCL Nicolau / Gran 99.52 12 *e*Pdif Pdif 13 40 04.6 +19
PNCL Nicolau / Gran 99.52 12 *e*SKS S 13 51 27.9 +10
MSVF Nonsavu 99.63 201 PFAKE 13 40 00.0 +13
MSVF LR LR
comp=Z,3µm,20.0s
PBAR Barrancos 99.74 13 *e*SKS **SKSac 13 50 25.1 +0.5**
PBAR *e*SS **SS 13 58 17.3 +4.9**
EVO Evora 99.99 12 *e*Pdif Pdif 13 40 05.8 +18
KEST Kesra 100.08 27 P **Pdif 13 39 48.3 +0.2**
comp=Z,3.7nm,0.8s,baz=290,slow=5.1,SNR=2.4
KEST LR LR 14 19 19.4
comp=Z,2µm,19.9s,baz=148,slow=32
PMAFR Mafra 100.28 11 *e*SKS **SKSac 13 50 29.4 +2.2**
PMAFR *e*SS SS 13 58 32.7 +13
PESTR Estremoz 100.37 13 *e*Pdif **Pdif 13 39 58.5 +9.2**
PESTR Estremoz 100.37 13 *e*SKS **SKSac 13 50 29.3 +1.6**
PESTR *e*SS **SS 13 58 29.9 +8.8**
PMTG Montargil 100.50 12 *e*Pdif Pdif 13 40 10.8 +21
PMTG Montargil 100.50 12 *e*SKS **SKSac 13 50 29.7 +1.4**
PMTG *e*SS **SS 13 58 25.8 +2.9**
PMRV Marv??o 100.94 13 *e*SKS **Sdif 13 51 41.2 +12**
PMRV *e*SS **SS 13 58 35.6 +6.4**
PMRV Marv??o 100.94 13 *e*LR LR 14 08 36.9
comp=Z,838nm,20.0s
AFI Afiamalu 101.15 212 PFAKE 13 40 10.0 +16
AFI LR LR
comp=Z,2µm,19.0s
WDD Wied Dalam 101.40 31 PFAKE 13 40 00.0 +6.1
WDD LR LR
comp=Z,2µm,22.0s
PAB San Pablo 101.42 15 PFAKE 13 40 00.0 +6.0
PAB LR LR
comp=Z,1µm,20.0s
PCAS Casmilo, Conde 101.45 12 *e*Pdif Pdif 13 40 13.8 +20
PCAS Casmilo, Conde 101.45 12 *e*SKS **SKSac 13 50 39.3 +6.5**
PCAS *e*SS **SS 13 58 42.7 +6.6**
ESDC Sonseca Array 101.59 15 P **Pdif 13 39 57.9 +3.1**
comp=Z,0.2nm,0.2s,baz=181,slow=4.1,SNR=4.7
MTE Manteigas 101.89 13 *e*SKS **SKSac 13 50 40.1 +5.0**
MTE *e*SS **SS 13 58 46.1 +3.7**
MTE Manteigas 101.89 13 *e*LR LR 14 08 53.4
comp=Z,989nm,24.0s
MTE Manteigas 101.89 13 PFAKE 13 40 10.0 +14
MTE LR LR
comp=Z,953nm,19.0s
MVO Moncorvo 102.70 13 *e*Pdif **Pdif 13 40 12.4 +13**
MVO Moncorvo 102.70 13 *e*SKS **SKSac 13 50 42.2 +3.3**
MVO *e*SS **SS 13 58 57.0 +3.4**
MVO Moncorvo 102.70 13 *e*LR LR 14 10 00.0
comp=Z,2µm,18.0s
POLO Lamas de Olo 102.83 12 *e*Pdif Pdif 13 40 20.0 +20
PCAB Cabril 103.14 12 *e*Pdif **Pdif 13 40 01.9 +0.4**
PGAV Gavieira, Arco 103.36 12 *e*SKS **SKSac 13 50 40.6 -1.4**
PGAV *e*SS **SS 13 59 12.8 +10**
PGAV Gavieira, Arco 103.36 12 *e*LR LR 14 09 33.5
comp=Z,1µm,20.0s
VSL Villasalto 103.70 26 PFAKE 13 40 10.0 +5.9
VSL LR LR
comp=Z,1µm,20.0s
CEL Celeste 104.03 31 PFAKE 13 40 20.0 +14
CEL LR LR
comp=Z,2µm,20.0s
NHSC New Hope 104.41 314 PFAKE 13 40 20.0 +13
NHSC LR LR
comp=Z,1µm,22.0s
SANT Santorini 104.95 39 PFAKE 13 40 20.0 +10
SANT LR LR
comp=Z,816nm,20.0s
ASF Jabal al Asfar 105.04 50 PP PP 13 44 30.9 -0.5
comp=Z,1.4nm,0.5s,baz=238,slow=15,SNR=4.6
TIP Timpagrande 105.12 31 PFAKE 13 40 20.0 +10
TIP LR LR
comp=Z,2µm,20.0s
BRAL Brewton 105.22 307 PFAKE 13 44 40.0
BRAL LR LR
comp=Z,1µm,22.0s
CNNC Cliffs of the 105.56 316 PFAKE 13 44 40.0
CNNC LR LR
comp=Z,2µm,22.0s
CUC Castrocucco 105.66 30 PFAKE 13 44 40.0
CUC LR LR
comp=Z,799nm,19.0s
GOGA Godfrey 105.87 311 PFAKE 13 44 40.0
GOGA LR LR
comp=Z,2µm,21.0s
CSS Mathiatis 106.26 46 PFAKE 13 44 40.0
CSS LR LR
comp=Z,578nm,19.0s
KVTX Kingsville 106.50 297 PFAKE 13 44 40.0
KVTX LR LR
comp=Z,2µm,22.0s
AQU L'Aquila 107.32 28 PFAKE 13 44 40.0
AQU LR LR
comp=Z,1µm,21.0s
ISP Isparta 107.89 42 PFAKE 13 44 40.0
ISP LR LR
comp=Z,1µm,21.0s
TIR Tirane 107.97 33 PFAKE 13 44 40.0
TIR LR LR
comp=Z,2µm,21.0s
CBN Corbin Frederi 108.08 318 PFAKE 13 44 40.0
CBN LR LR
comp=Z,1µm,21.0s
BLA Blacksburg 108.20 315 PFAKE 13 44 40.0
BLA LR LR
comp=Z,1µm,22.0s
KAPI Kappang 108.31 141 PFAKE 13 44 40.0
KAPI LR LR
comp=Z,696nm,19.0s
SSB Saint Sauveur 108.36 21 PFAKE 13 44 40.0
SSB LR LR
comp=Z,833nm,20.0s
VLC Villacollemand 108.39 25 PFAKE 13 44 40.0
VLC LR LR
comp=Z,877nm,22.0s
FUNA Funafuti 108.41 204 PFAKE 13 44 40.0
FUNA LR LR
comp=Z,10µm,19.0s
BNI Bardonecchia 108.52 22 PFAKE 13 44 40.0
BNI LR LR
comp=Z,2µm,19.0s
NATX Nacogdoches 108.79 302 PFAKE 13 44 40.0
NATX LR LR
comp=Z,771nm,21.0s
PMG Port Moresby 109.46 170 PFAKE 13 44 50.0
PMG LR LR
comp=Z,4µm,22.0s
HNR Honiara 109.75 184 PFAKE 13 44 50.0
HNR LR LR
comp=Z,2µm,21.0s
JCT Junction City 109.87 297 PFAKE 13 44 50.0
JCT LR LR
comp=Z,501nm,20.0s
Z38A Mt. Pleasant 110.22 302 P **PKiKP 13 44 35.2 +0.8**
baz=150
TUE Stuetta 110.39 24 PFAKE 13 44 50.0
TUE LR LR
comp=Z,1µm,21.0s
ANTO Ankara 110.50 43 PFAKE 13 44 50.0

ANTO LR LR
comp=Z,1µm,21.0s
TXAR Lajitas Array 110.59 293 PKiKP **PKiKP** **13 44 37.4 +2.0**
comp=Z,1.7nm,0.9s,baz=169,slow=2.6,SNR=11
TXAR PP **PP** **13 45 09.4 -2.6**
comp=Z,0.8nm,1.0s,baz=148,slow=7.4,SNR=3.3
TXAR PKKPbc **PKKPbc** **13 55 33.6 +1.0**
comp=Z,1.4nm,0.7s,baz=263,slow=2.0,SNR=14
BRTR Keskin Array B 110.65 44 PKiKP **PKiKP** **13 44 35.6 +0.4**
comp=Z,1.1nm,0.8s,baz=174,slow=5.8,SNR=4.4
BRTR PKKPab **PKKPdf** **13 55 47.5 -3.1**
comp=Z,1.9nm,0.8s,baz=33,slow=3.6,SNR=7.5
KULM Kulim 110.71 118 PFAKE 13 44 50.0
KULM LR LR
comp=Z,2µm,20.0s
MIAR Mount Ida 110.77 304 PFAKE 13 44 50.0
MIAR LR LR
comp=Z,1µm,21.0s
W41A Tony Mavity, V 110.79 305 P **PKiKP** **13 44 36.0 +0.6**
baz=151
W41B Gary Mavity, V 110.79 305 P **PKiKP** **13 44 36.1 +0.7**
baz=151
X39A Fountain Ranch 110.96 304 P **PKiKP** **13 44 36.4 +0.6**
baz=150
V42A Cord 111.00 306 P **PKiKP** **13 44 36.7 +1.0**
baz=151
KSM Kuching 111.14 130 PFAKE 13 44 50.0
KSM LR LR
comp=Z,2µm,21.0s
BINY Binghamton 111.28 321 PFAKE 13 44 50.0
BINY LR LR
comp=Z,2µm,22.0s
U42A Revenden 111.42 307 P **PKiKP** **13 44 37.6 +1.1**
baz=151
XMAS Kiritimati 111.60 231 PFAKE 13 44 50.0
XMAS LR LR
comp=Z,4.0nm,21.0s
ACSO Alum Creek Sta 111.80 315 PFAKE 13 44 50.0
ACSO LR LR
comp=Z,1µm,22.0s
BFO Black Forest 111.98 22 PFAKE 13 44 50.0
BFO LR LR
comp=Z,1µm,19.0s
U40A Yellville 112.06 305 P **PKiKP** **13 44 38.9 +1.1**
baz=150
PKME Peaks-Kenny Pk 112.17 327 PFAKE 13 44 50.0
PKME LR LR
comp=Z,1µm,20.0s
T41A Mountain View 112.22 307 P **PKiKP** **13 44 39.3 +1.2**
baz=151
T40A Mansfield 112.61 306 P **PKiKP** **13 44 40.0 +1.2**
baz=150
S41A Jillco Farms, 112.69 307 P **PKiKP** **13 44 40.3 +1.4**
baz=150
T39A Clever 112.84 305 P **PKiKP** **13 44 40.4 +1.1**
baz=150
WLF Walferdange 112.88 21 PFAKE 13 44 50.0
WLF LR LR
comp=Z,1µm,19.0s
S40A Lebanon 113.00 306 P **PKiKP** **13 44 40.6 +1.0**
baz=150
LONY Lake Ozonia 113.06 323 PFAKE 13 44 50.0
LONY LR LR
comp=Z,2µm,22.0s
WMOK Wichita Mounta 113.09 300 P **PKiKP** **13 44 41.0 +1.1**
baz=149
WMOK Wichita Mounta 113.09 300 PFAKE 13 44 50.0
WMOK LR LR
comp=Z,537nm,21.0s
T38A Diamond 113.22 305 P **PKiKP** **13 44 41.0 +1.0**
baz=150
MNTX Cornudas Mount 113.37 293 PFAKE 13 44 50.0
MNTX LR LR
comp=Z,1µm,20.0s
S39A Bolivar 113.40 306 P **PKiKP** **13 44 41.3 +1.0**
baz=150
GERES GERESS Array B 113.55 26 PKiKP **PKiKP** **13 44 40.4 +0.1**
comp=Z,0.8nm,0.7s,baz=217,slow=0.5,SNR=4.7
GERES PP **PP** **13 45 30.3 -2.8**
comp=Z,0.5nm,0.6s,baz=196,slow=9.9,SNR=2.7
KHC Kasperske Hory 113.79 26 *e*SP SP 13 55 14.9 +5.5
KHC *ex* x 13 56 18.6
KHC *e*SS **SS** **14 01 22.1 -1.1**
KHC AMS AMS 14 27 30.0
comp=Z,2µm,20.5s
AAM Ann Arbor 113.87 315 PFAKE 13 44 50.0
AAM LR LR
comp=Z,738nm,21.0s
P42A Winchester 113.89 309 P **PKiKP** **13 44 42.2 +1.1**
baz=150
T35A Sooner Cattle 114.01 303 P **PKiKP** **13 44 42.6 +1.1**
baz=149
PSZ Piszkesteto 114.11 31 PFAKE 13 44 50.0 +8.6
PSZ LR LR
comp=Z,1µm,20.0s
U33A Lingo Farm, Me 114.26 302 P PKPdf 13 44 43.2 +1.2
baz=149
HDIL Hopedale 114.34 310 PFAKE 13 44 50.0 +8.0
HDIL LR LR
comp=Z,2µm,22.0s
P40A Paris 114.50 308 P PKPdf 13 44 43.5 +1.2
baz=150
O41A Passleys Farm, 114.56 309 P PKPdf 13 44 43.5 +1.1
baz=150
NKC Novy Kostel 114.60 25 *e*SP SP 13 55 23.3 +6.5
NKC AMS AMS 14 25 40.0
comp=Z,800nm,20.3s
Q38A Cooks Store, C 114.61 306 P PKPdf 13 44 43.6 +1.1
baz=150
GOPC GO Pecny, Ondr 114.79 26 *e*SP SP 13 55 24.1 +5.6
GOPC *ex* x 13 56 32.9
GOPC *e*SS **SS** **14 01 38.6 +2.2**
GOPC AMS AMS 14 28 10.0
comp=Z,1µm,19.8s
PRU Pruhonice 114.81 26 *e*SP SP 13 55 24.0 +5.4
PRU *ex* x 13 56 30.4
PRU *e*SS **SS** **14 01 34.0 -2.5**
PRU AMS AMS 14 28 00.0
comp=Z,1µm,20.7s
S34A Willow Spring 114.93 303 P PKPdf 13 44 44.3 +1.1
baz=149
GNI Garni 115.04 52 PFAKE 13 44 50.0 +6.4
GNI LR LR
comp=Z,3µm,22.0s
121A Cookes Peak, D 115.16 292 *e*PKPdf **PKPdf** **13 44 43.7 -0.4**
PVCC Panska Ves 115.32 26 AMS AMS 14 32 20.0
comp=Z,1µm,18.4s
UZH Uzhgorod 115.37 32 *e*PKIKP **PKPdf** **13 44 49.6 +5.9**
UZH *e* 13 44 52.8
OKC Ostrava-Krasne 115.47 29 *e*SP SP 13 55 30.5 +5.8
OKC *ex* x 13 56 42.4
OKC AMS AMS 14 31 50.0
comp=Z,700nm,18.9s
Q35A Mercer Eighty, 115.49 304 P **PKPdf** **13 44 45.6 +1.3**
baz=149
R34A Isabella, Hill 115.50 303 P **PKPdf** **13 44 45.6 +1.3**
baz=149
DPC Dobruska-Polom 115.54 27 *e*SP SP 13 55 33.5 +8.2
DPC *ex* x 13 56 42.7
DPC *e*SS **SS** **14 01 50.3 +4.1**
DPC AMS AMS 14 32 20.0
comp=Z,800nm,18.0s
UPC Upice 115.62 27 *e*SS SS 14 01 51.1 +3.9
UPC AMS AMS 14 33 00.0
comp=Z,900nm,18.4s
KIS Kishinev 115.68 37 *e* PP 13 45 38.0 -10
KIS Kishinev 115.68 37 *e*PS PS 13 55 33.0 +5.5
CLL Collm 115.74 25 *e*PP PP 13 45 53.0 +4.7
CLL *e*PPP PPP 13 48 18.0
CLL *e*PS **PS** **13 55 32.0 +4.1**
CLL *e*PPS PPS 13 56 48.0
CLL *e*SS SS 14 01 52.0 +3.4
CLL *e*SSS SSS 14 05 54.0
CLL LmV 14 32 00.0
comp=Z,800nm,19.7s
KSU1 Kansas State U 115.92 304 PFAKE 13 45 00.0 +15
KSU1 LR LR
comp=Z,2µm,22.0s
L41A Preston 116.11 310 P **PKPdf** **13 44 46.6 +1.3**
baz=150
Q33A Connelly Farm, 116.33 303 P **PKPdf** **13 44 47.1 +1.2**
baz=148
TUC Tucson 116.34 289 P **PKPdf** **13 44 47.3 +1.1**
baz=147
TUC Tucson 116.34 289 PFAKE 13 45 00.0 +14
TUC LR LR
comp=Z,2µm,21.0s
P34A Walnut Farm, R 116.39 304 P **PKPdf** **13 44 47.2 +1.2**
baz=148
ANN Anapa 116.45 44 *i* PKIKP **PKPdf** **13 44 43.0 -2.8**
ANN *e* 13 44 48.0
ANN *e*SS SS 14 01 54.0 -4.1
ANN pmax pmax
comp=Z,62nm,1.5s
K41A Shullsburg 116.50 311 P **PKPdf** **13 44 47.4 +1.3**
baz=150
M38A Pleasantville 116.56 308 P **PKPdf** **13 44 47.4 +1.1**
baz=149
ANMO Albuquerque 116.59 294 P **PKPdf** **13 44 47.8 +1.0**
baz=147
ANMO Albuquerque 116.59 294⇑ *i* PKIKP **PKPdf** **13 44 47.8 +1.0**
ANMO pmax pmax
comp=Z,8.0nm,2.5s
ANMO Albuquerque 116.59 294 PFAKE 13 45 00.0 +13
ANMO LR LR
comp=Z,1µm,20.0s
L39A Vinton 116.72 309 P **PKPdf** **13 44 47.5 +1.0**
baz=149
JFWS Jewell Farm 116.75 311 PFAKE 13 45 00.0 +13
JFWS LR LR
comp=Z,2µm,22.0s
CBKS Cedar Bluff 116.96 302 P **PKPdf** **13 44 48.0 +0.9**
baz=148
CBKS Cedar Bluff 116.96 302 PFAKE 13 45 00.0 +13
CBKS LR LR
comp=Z,1µm,22.0s
ESK Eskdalemuir 117.08 13 PFAKE 13 45 00.0 +13
ESK LR LR
comp=Z,1µm,21.0s
K39A Oelwein 117.17 310 P **PKPdf** **13 44 48.3 +0.9**
baz=149
KBZ Khabaz 117.44 49 PKP **PKPdf** **13 44 47.7 -0.1**
comp=Z,2.5nm,0.8s,baz=92,slow=1.0,SNR=6.3
KBZ PKKPab **PKKPab** **13 55 17.8 +6.0**
comp=Z,4.3nm,0.9s,baz=110,slow=5.6,SNR=6.4
KKM Kota Kinabalu 117.52 134 PFAKE 13 45 00.0 +11
KKM LR LR
comp=Z,1µm,22.0s
T25A Trinidad 117.53 297 P **PKPdf** **13 44 49.2 +0.7**
baz=147
KIV Kislovodsk 117.56 48⇑ *i* PKIKP **PKPdf** **13 44 49.3 +1.1**
KIV *i* 13 45 58.4
KIV *i* SS SS 14 02 06.3 -6.6
KIV pmax pmax
comp=Z,9.0nm,0.9s
KIV MLR MLR
comp=Z,1µm,18.0s
KIV Kislovodsk 117.56 48 PFAKE 13 45 00.0 +12
KIV LR LR
comp=Z,1µm,19.0s
KVAR Kislovodsk Arr 117.56 48 PKP **PKPdf** **13 44 48.2 0.0**
comp=Z,18nm,1.2s,baz=49,slow=7.5,SNR=6.2
KVAR PP **PP** **13 46 00.3 -1.1**
comp=Z,3.4nm,0.4s,baz=176,slow=11,SNR=2.8
J39A Decorah 117.65 310 P **PKPdf** **13 44 49.7 +1.4**
baz=149
K37A Belmond 117.89 308 P **PKPdf** **13 44 49.8 +1.0**
baz=149
L35A Bielow Farm, R 118.07 307 P **PKPdf** **13 44 51.0 +1.9**
baz=148
W18A Petrified Fore 118.21 292 P **PKPdf** **13 44 51.6 +1.7**
baz=146
I38A Scanlan Farm, 118.49 310 P **PKPdf** **13 44 51.5 +1.7**
baz=149
SDCO Great Sand Dun 118.51 297 P **PKPdf** **13 44 52.1 +1.6**
baz=146
SDCO Great Sand Dun 118.51 297 *e*PKPdf **PKPdf** **13 44 49.5 -1.1**
SDCO LR LR
comp=Z,1µm,22.0s
J36A Seneca 1, Swea 118.64 308 P **PKPdf** **13 44 51.3 +1.1**
baz=148
GEYT Alibeck 118.64 63 PKP **PKPdf** **13 44 49.2 -1.3**
comp=Z,0.9nm,0.4s,baz=274,slow=5.6,SNR=2.3
M31A Lambtecht Ranc 118.78 304 P **PKPdf** **13 44 52.4 +1.8**
baz=147
L33A Hoskins 118.79 306 P **PKPdf** **13 44 52.3 +1.7**
baz=148
GLA Glamis 118.83 287 P **PKPdf** **13 44 52.4 +1.4**
baz=146
I37A Lemond, Waseca 118.86 309 P **PKPdf** **13 44 52.7 +2.1**
baz=148
S22A 4UR Ranch, Cre 119.09 296 P **PKPdf** **13 44 53.2 +1.6**
baz=146
COWI Conover 119.10 314 *e*PKPdf **PKPdf** **13 44 52.0 +1.0**
COWI LR LR
comp=Z,1µm,22.0s
IKP In-Ko-Pah, Jac 119.10 285 P **PKPdf** **13 44 53.3 +1.8**
baz=146
KIEV Kiev 119.12 35*d* *i* PKIKP **PKPdf** **13 44 51.6 +0.8**
KIEV Kiev 119.12 35 PFAKE 13 45 00.0 +9.2
KIEV LR LR
comp=Z,758nm,19.0s
AKASG Malin Array Be 119.13 35 PKP **PKPdf** **13 44 50.1 -0.7**
comp=Z,3.6nm,0.7s,baz=236,slow=1.5,SNR=13
AKASG PP **PP** **13 46 11.1 -0.8**
comp=Z,0.7nm,0.5s,baz=202,slow=6.5,SNR=4.8
AKASG Malin Array Be 119.13 35 PKIKP **PKPdf** **13 44 50.1 -0.7**
AKASG 13 46 11.1
AKASG pmax pmax
comp=Z,3.0nm,0.7s
AKASG pmax pmax
comp=Z,1.0nm,0.5s
TARA Tarawa 119.18 199 PFAKE 13 45 00.0 +7.8
TARA LR LR
comp=Z,97nm,21.0s
SWSC Sam W. Stewart 119.20 286 P **PKPdf** **13 44 52.8 +1.2**
baz=146
Y12C Blythe 119.27 287 P **PKPdf** **13 44 53.4 +1.7**
baz=146
WUAZ Wupatki 119.28 291 P **PKPdf** **13 44 53.3 +1.4**
baz=146
WUAZ Wupatki 119.28 291 *e*PKPdf **PKPdf** **13 44 52.3 +0.4**
WUAZ LR LR
comp=Z,969nm,22.0s
Q24A Divide 119.38 298 P **PKPdf** **13 44 53.5 +1.3**
baz=146
MVCO Mesa Verde 119.39 294 P **PKPdf** **13 44 53.2 +1.0**
baz=146
MVCO Mesa Verde 119.39 294 *e*PKPdf **PKPdf** **13 44 50.8 -1.4**
MVCO LR LR
comp=Z,2µm,19.0s
MONP2 Monument Peak 119.45 285 P **PKPdf** **13 44 54.0 +1.7**
baz=146
PDMCI Parker Dam,Lak 119.55 288 P **PKPdf** **13 44 54.1 +1.9**
baz=146
BC3 Big Chuckawall 119.63 286 P **PKPdf** **13 44 54.2 +1.6**
baz=146
J33A Davis 119.65 306 P **PKPdf** **13 44 53.5 +1.4**
baz=147
OGNE Ogallala 119.71 301 P **PKPdf** **13 44 54.2 +1.7**
baz=146
OGNE Ogallala 119.71 301 *e*PKPdf **PKPdf** **13 44 53.5 +1.1**
OGNE LR LR
comp=Z,1µm,22.0s
K31A O'Neill 119.77 305 P **PKPdf** **13 44 53.8 +1.3**
baz=147
ECSD EROS Data Cent 119.86 307 P **PKPdf** **13 44 54.2 +1.6**
baz=147
ECSD EROS Data Cent 119.86 307 *e*PKPdf **PKPdf** **13 44 52.1 -0.5**
ECSD LR LR
comp=Z,2µm,21.0s
IRM Iron Mountain 119.90 287 P **PKPdf** **13 44 55.0 +2.1**
baz=146
MUD Monsted U'grnd 119.92 20 IVMs_BB IVMs_BB 14 24 31.5
comp=Z,2µm,36.5s
H35A Sunnyside Ranc 119.99 309 P **PKPdf** **13 44 54.2 +1.4**
baz=148
PFO Pinyon Flats O 120.06 286 P **PKPdf** **13 44 54.7 +1.3**
baz=146
PFO Pinyon Flats O 120.06 286 PFAKE 13 45 00.0 +6.6
PFO LR LR
comp=Z,1µm,22.0s
K30A Basset 120.16 304 P **PKPdf** **13 44 54.2 +1.1**
baz=147
ISCO Idaho Springs 120.27 298 P **PKPdf** **13 44 55.0 +1.1**
baz=146
ISCO Idaho Springs 120.27 298 *e*PKIKP **PKPdf** **13 44 54.4 +0.5**
ISCO MLR MLR
comp=Z,992nm,20.0s
ISCO Idaho Springs 120.27 298 *e*PKPdf **PKPdf** **13 44 54.4 +0.5**
ISCO LR LR
comp=Z,992nm,20.0s
SCHQ Schefferville 120.43 333 PKP **PKPdf** **13 44 51.4 -1.8**
comp=Z,11nm,0.8s,baz=148,slow=2.7,SNR=6.8
F36A Milaca 120.48 310 P **PKPdf** **13 44 55.2 +1.6**
baz=148
SCI2 San Clemente I 120.53 284 P **PKPdf** **13 44 55.4 +1.2**
baz=146
GMRC Granite Mounta 120.65 287 P **PKPdf** **13 44 55.8 +1.3**
baz=145
J30A Dallas 120.65 305 P **PKPdf** **13 44 55.8 +1.7**
baz=146
H33A Prehn Over Nor 120.71 307 P **PKPdf** **13 44 55.7 +1.5**
baz=147
G34A Benson 120.75 309 P **PKPdf** **13 44 55.7 +1.6**
baz=147
H32A Carlson Farm, 120.83 307 P **PKPdf** **13 44 55.9 +1.5**
baz=147
E36A McGregor 120.94 311 P **PKPdf** **13 44 56.1 +1.6**
baz=148
HEC Hector,Ludlow 121.00 287 P **PKPdf** **13 44 56.6 +1.5**
baz=145
D37A Cotton 121.18 312 P **PKPdf** **13 44 56.6 +1.6**
baz=148
C38A Sawbill Land. 121.24 313 P **PKPdf** **13 44 55.9 +0.9**
baz=148
TUQ Turquoise Moun 121.31 287 P **PKPdf** **13 44 57.5 +1.7**
baz=145
N23A Red Feather La 121.32 298 P **PKPdf** **13 44 56.8 +1.1**
baz=145
SUSD Miller 121.37 306 P **PKPdf** **13 44 57.3 +1.9**
baz=146
D36A Goodland 121.46 311 P **PKPdf** **13 44 57.0 +1.5**
baz=148
G32A Webster 121.48 307 P **PKPdf** **13 44 57.1 +1.5**
baz=146
DAV Davao City (W) 121.50 143 PFAKE 13 45 10.0 +13
DAV LR LR
comp=Z,1µm,20.0s
F33A 5 Mile Ranch, 121.50 309 P **PKPdf** **13 44 57.2 +1.6**
baz=147
EYMN Ely 121.51 313 P **PKPdf** **13 44 57.2 +1.6**
baz=148
EYMN Ely 121.51 313 PFAKE 13 45 10.0 +14
EYMN LR LR
comp=Z,1µm,21.0s
HOMB Homborsund 121.54 19 IVMsBB 14 30 35.7
comp=Z,814nm,21.5s
C37A Embarrass 121.57 312 P **PKPdf** **13 44 57.7 +2.0**
baz=148
CMAR Chiang Mai Arr 121.61 110 PKP **PKPdf** **13 44 56.8 +0.1**
comp=Z,7.4nm,0.8s,baz=229,slow=3.4,SNR=28
CMAR PP **PP** **13 46 29.0 0.0**
comp=Z,2.5nm,1.0s,baz=226,slow=5.9,SNR=3.8
O20A White River Ci 121.69 296 P **PKPdf** **13 44 57.3 +0.9**
baz=145
O20A White River Ci 121.69 296 *e*PKPdf **PKPdf** **13 44 55.2 -1.2**
D35A Remer 121.71 311 P **PKPdf** **13 44 57.2 +1.2**
baz=147
STAV Stavanger 121.75 17 IVMs_BB IVMs_BB 14 25 29.8
comp=Z,567nm,3.8s
C36A Pine Crest Far 121.83 312 P **PKPdf** **13 44 57.6 +1.4**
baz=147
CHTO Chiang Mai 121.92 110 *e*PKIKP **PKPdf** **13 44 56.0 -1.3**
CHTO MLR MLR
comp=Z,1µm,20.0s
CHTO Chiang Mai 121.92 110 *e*PKPdf **PKPdf** **13 44 56.0 -1.3**
CHTO LR LR
comp=Z,1µm,20.0s
E33A Westby DABS, E 121.95 309 P **PKPdf** **13 44 57.9 +1.5**
baz=147
D34A Park Rapids 122.14 310 P **PKPdf** **13 44 57.9 +1.1**
baz=147
F31A Hecla 122.28 307 P **PKPdf** **13 44 58.8 +1.7**
baz=146
BLS5 Blasjo 122.33 18 IVMsBB 14 36 01.3
comp=Z,531nm,19.9s
D33A AnnSam, Wauburn 122.42 310 P **PKPdf** **13 44 58.6 +1.2**
baz=146
VSR Storozhevoye 122.60 42 *e*PKIKP **PKPdf** **13 44 57.8 +0.3**
VSR pmax pmax
comp=Z,20nm,1.3s
B35A Bob, Littlefor 122.66 312 P **PKPdf** **13 44 58.8 +1.0**
baz=147
DAC Darwin (Calif) 122.78 287 *e*PKIKP **PKPdf** **13 44 59.2 +0.6**
DAC Darwin (Calif) 122.78 287 *e*PKPdf **PKPdf** **13 44 59.2 +0.6**
ODD1 Odda 122.83 18 *e*P **PKPdf** **13 44 59.6 +1.9**
C33A Trail 122.91 310 P **PKPdf** **13 44 60.0 +1.7**
baz=146
K22A Casper 123.00 299 P **PKPdf** **13 44 59.7 +0.8**
baz=145
KONO Kongsberg 123.03 19 *e*PKPdf **PKPdf** **13 45 00.1 +2.0**
KONO IVMs_BB IVMs_BB 14 30 45.0
comp=Z,514nm,28.9s
KONO Kongsberg 123.03 19*d* *i* PKIKP **PKPdf** **13 44 59.7 +1.7**
KONO pmax pmax
comp=Z,238nm,2.5s
KONO Kongsberg 123.03 19 PFAKE 13 45 10.0 +12
KONO LR LR
comp=Z,945nm,21.0s
D31A Mcclaflin, Tow 123.06 308 P **PKPdf** **13 44 59.8 +1.2**
baz=146
BER Bergen 123.09 17 IVMs_BB IVMs_BB 14 34 16.1
comp=Z,698nm,17.2s
B34A Aery, Baudette 123.11 311 P **PKPdf** **13 44 59.9 +1.3**
baz=146
VES Vestal, Richgr 123.12 285 P **PKPdf** **13 45 00.7 +1.7**
baz=144
CWC Cottonwood Cre 123.14 286 P **PKPdf** **13 45 00.2 +0.9**
baz=144
RSSD Black Hills 123.16 302 P **PKPdf** **13 45 00.6 +1.5**
baz=145
RSSD Black Hills 123.16 302 *e*PKIKP **PKPdf** **13 44 57.1 -2.1**
RSSD Black Hills 123.16 302 *e*PKPdf **PKPdf** **13 44 57.1 -2.1**
GRAC Grapevine Rang 123.25 287 P **PKPdf** **13 45 00.7 +1.4**
baz=144
B33A Robert and Kas 123.27 311 P **PKPdf** **13 45 00.2 +1.3**
baz=146
H25A Fruitdale 123.39 303 P **PKPdf** **13 45 00.8 +1.4**
baz=145
AGMN Agassiz Nation 123.40 310 P **PKPdf** **13 45 00.8 +1.6**
baz=146
AGMN Agassiz Nation 123.40 310 PFAKE 13 45 10.0 +11
AGMN LR LR
comp=Z,1µm,21.0s
OSL Oslo 123.49 20 *e*PKPdf **PKPdf** **13 45 00.7 +1.8**
R11A Troy Canyon, C 123.53 289 *e*PKPdf **PKPdf** **13 44 59.5 -0.5**
SUE Sulen 123.66 16 IVMs_BB IVMs_BB 14 35 47.1
comp=Z,798nm,5.0s
C31A Landman Farms, 123.68 309 P **PKPdf** **13 45 01.0 +1.2**
baz=146
B32A Ashes, Strandq 123.73 310 P **PKPdf** **13 45 01.2 +1.4**
baz=146
A33A Warroad 123.75 311 P **PKPdf** **13 45 01.3 +1.5**
baz=146
DUG Dugway, Tooele 123.76 293 P **PKPdf** **13 45 01.5 +1.2**
baz=144
DUG Dugway, Tooele 123.76 293 *e*PKIKP **PKPdf** **13 45 00.3 0.0**
DUG MLR MLR
comp=Z,1µm,22.0s
DUG Dugway, Tooele 123.76 293 *e*PKPdf **PKPdf** **13 45 00.3 0.0**
DUG LR LR
comp=Z,1µm,22.0s
HYA Hoyanger 123.97 17 *e*PKPdf **PKPdf** **13 45 02.2 +2.4**
A32A Rocking H Ranc 124.14 310 P **PKPdf** **13 45 02.1 +1.5**
baz=146
B31A Greenbush Farm 124.17 309 P **PKPdf** **13 45 01.6 +1.0**
baz=145
FOO Floro 124.22 16 *e*PKPdf **PKPdf** **13 45 02.4 +2.2**
FOO IVMsBB 14 37 48.9
comp=Z,697nm,17.1s
HWUT Hardware Ranch 124.35 295 *e*PKPdf **PKPdf** **13 45 00.2 -1.3**
HWUT LR LR
comp=Z,1µm,21.0s
NC602 NORSAR Array S 124.38 20 *e*PKPdf **PKPdf** **13 45 00.6 0.0**
NC602 IVMs_BB IVMs_BB 14 34 24.7
comp=Z,620nm,5.8s
BW06 Boulder Array 124.40 297 P **PKPdf** **13 45 02.9 +1.3**
baz=144
BW06 Boulder Array 124.40 297 PFAKE 13 45 10.0 +8.4
BW06 LR LR
comp=Z,2µm,19.0s
PDAR Pinedale Array 124.40 297 PKP **PKPdf** **13 44 59.4 -2.2**
comp=Z,5.0nm,0.9s,baz=129,slow=5.9,SNR=26
PDAR PP **PP** **13 46 52.9 +4.6**
comp=Z,1.8nm,1.1s,baz=132,slow=6.4,SNR=3.1
B30A Myrvik Farm, E 124.45 309 P **PKPdf** **13 45 02.4 +1.2**
baz=145
NB2 NORSAR Subarra 124.62 20 PKPdf **PKPdf** **13 45 00.5 -0.6**
comp=Z,7.1nm,1.0s,baz=188,slow=1.9

NB2	**NORSAR Subarra**	**124.62**	**20**	PKPdf	**PKPdf**	**13 45 00.5**	**-0.6**	**M04C**	**Macdoel**	**129.16**	**287**	P	**PKPdf**	**13 45 13.2**	**+2.7**	**BRVK**	**Borovoye**	**135.76**	**60**	*e*PKIKP	**PKPdf**	**13 45 22.5**	**+0.1**
	baz=188,slow=1.9								baz=141							BRVK				MLR	MLR		
NOA	**NORSAR Array B**	**124.62**	**20**	PKP	**PKPdf**	**13 44 59.9**	**-1.3**	**SFJD**	**Kangerlussuaq**	**129.20**	**347**	*i* P	**PKPdf**	**13 45 11.2**	**+1.6**		comp=Z,1μm,21.0s						
	comp=Z,11nm,0.8s,baz=186,slow=1.6,SNR=31								comp=Z,12nm,0.9s							**BRVK**	**Borovoye**	**135.76**	**60**	*e*PKPdf	**PKPdf**	**13 45 22.5**	**+0.1**
A30A	**Hoffart Farm,**	**124.84**	**309**	P	**PKPdf**	**13 45 03.3**	**+1.4**		comp=Z,2μm,21.0s							BRVK				LR	LR		
	baz=145							**SFJD**	**Kangerlussuaq**	**129.20**	**347**	*e*PKIKP	**PKPdf**	**13 45 11.2**	**+1.6**		comp=Z,1μm,21.0s						
B29A	**Wagenman Farm,**	**124.85**	**308**	P	**PKPdf**	**13 45 03.1**	**+1.1**	SFJD				pmax	pmax			**BVA0**	**Borovoye Array**	**135.78**	**60**	PKIKP	**PKPdf**	**13 45 23.1**	**+0.6**
	baz=145								comp=Z,12nm,0.9s							BVA0				pmax	pmax		
D26A	**Manning**	**124.89**	**305**	P	**PKPdf**	**13 45 03.6**	**+1.5**	SFJD				MLR	MLR				comp=Z,14nm,1.0s						
	baz=144							**SFJD**	**Kangerlussuaq**	**129.20**	**347**	PFAKE		13 45 20.0	+10	**BVAR**	**Borovoye Array**	**135.78**	**60**	PKhKP	PKPpre	13 45 09.5	
ULM	**Lac du Bonnet**	**125.02**	**312**	PKP	**PKPdf**	**13 45 00.2**	**-1.9**	SFJD				LR	LR				comp=Z,1.4nm,0.7s,baz=208,slow=2.9,SNR=6.7						
	comp=Z,20nm,0.8s,baz=168,slow=1.5,SNR=19								comp=Z,2μm,20.0s							BVAR				PKP	**PKiKP**	**13 45 23.9**	**-0.2**
AKN	**Aaknes**	**125.05**	**17**	*e*PKPdf	**PKPdf**	**13 45 03.2**	**+1.4**	**CHMT**	**Chamberlain Mo**	**129.29**	**298**	P	**PKPdf**	**13 45 13.2**	**+2.5**		comp=Z,6.4nm,0.8s,baz=248,slow=1.6,SNR=17						
AKN				IVMs_BB	IVMs_BB	14 36 58.9		**M02C**	**Callahan**	**129.32**	**286**	P	**PKPdf**	**13 45 13.1**	**+2.3**	**VOSK**	**Vostochnaya**	**135.81**	**60**	PKIKP	**PKPdf**	**13 45 21.1**	**-1.5**
	comp=Z,810nm,18.7s								baz=141,SNR=11							VOSK				pmax	pmax		
AHID	**Auburn Hatcher**	**125.08**	**296**	*e*PKPdf	**PKPdf**	**13 45 03.8**	**+0.9**	**KIP**	**Kipapa**	**129.39**	**240**	PFAKE		13 45 20.0	+8.6		comp=Z,10.0nm,1.1s						
AHID				LR	LR			KIP				LR	LR			**MAKZ**	**Makanchi**	**136.45**	**74**	PKIKP	**PKPdf**	**13 45 23.5**	**-0.5**
	comp=Z,1μm,19.0s								comp=Z,3μm,21.0s							MAKZ				pmax	pmax		
OBN	**Obninsk**	**125.14**	**38**	*c i*PKIKP	**PKPdf**	**13 45 02.0**	**-0.2**	**BMO**	**Blue Mountains**	**129.47**	**293**	*e*PKPdf	**PKPdf**	**13 45 11.9**	**+0.9**		comp=Z,14nm,1.4s						
OBN				*i*		13 46 57.2		BMO				LR	LR			**YHNB**	**Yeheng**	**136.54**	**131**	PFAKE		13 45 40.0	+15
OBN				pmax	pmax				comp=Z,1μm,21.0s							YHNB				LR	LR		
	comp=Z,15nm,1.0s							**MSO**	**Missoula**	**129.52**	**297**	P	**PKPdf**	**13 45 13.1**	**+2.0**		comp=Z,1μm,21.0s						
OBN	**Obninsk**	**125.14**	**38**	PFAKE		13 45 10.0	+7.8		baz=141							**ENH**	**Enshi**	**136.58**	**113**	PFAKE		13 45 40.0	+15
OBN				LR	LR			**JOHN**	**Johnston Islan**	**129.53**	**224**	PFAKE		13 45 20.0	+8.2	ENH				LR	LR		
	comp=Z,842nm,21.0s							JOHN				LR	LR				comp=Z,1μm,21.0s						
A29A	**Manning Farm,**	**125.18**	**309**	P	**PKPdf**	**13 45 03.9**	**+1.4**		comp=Z,159nm,20.0s							**MK31**	**Makanchi Array**	**136.59**	**74**	*i* PKIKP	**PKPdf**	**13 45 23.2**	**-1.1**
	baz=144							**AAK**	**Ala-Archa**	**129.81**	**72**	*e*PKIKP	**PKPdf**	**13 45 13.2**	**+1.4**	MK31				pmax	pmax		
DOMB	**Dombas**	**125.22**	**18**	*e*PKPdf	**PKPdf**	**13 45 03.9**	**+1.7**	AAK				MLR	MLR				comp=Z,13nm,1.2s						
DOMB				IVMsBB		14 40 51.5			comp=Z,2μm,21.0s							**MKAR**	**Makanchi Array**	**136.59**	**74**	PKhKP	PKPpre	13 45 14.0	
	comp=Z,598nm,15.6s							**AAK**	**Ala-Archa**	**129.81**	**72**	*e*PKPdf	**PKPdf**	**13 45 13.2**	**+1.4**		comp=Z,1.3nm,0.8s,baz=242,slow=2.6,SNR=4.2						
DOMB				IVMs_BB	IVMs_BB	14 40 51.9		AAK				LR	LR			MKAR				PKP	**PKPdf**	**13 45 24.5**	**+0.2**
	comp=Z,591nm,17.6s								comp=Z,2μm,21.0s								comp=Z,6.5nm,0.9s,baz=242,slow=2.3,SNR=15						
B28A	**Dugan Ranch, T**	**125.23**	**308**	P	**PKPdf**	**13 45 04.0**	**+1.4**	**FRU**	**Bishkek**	**130.02**	**72**	*e*PKIKP	**PKPdf**	**13 45 14.0**	**+1.9**	MKAR				PP	**PP**	**13 48 06.0**	**-1.0**
	baz=144							FRU				*e*		13 45 22.0			comp=Z,3.6nm,1.1s,baz=224,slow=5.1,SNR=3.9						
BORG	**Borgarnes**	**125.43**	**1**	PKP	**PKPdf**	**13 45 04.7**	**+2.2**	FRU				*e*		13 47 22.0		**TATO**	**Taipei**	**136.86**	**131**	PFAKE		13 45 40.0	+15
	comp=Z,15nm,0.9s,baz=134,slow=7.5,SNR=4.5							**KONS**	**Konsvik**	**130.03**	**18**	*e*PKPdf	**PKPdf**	**13 45 13.0**	**+1.8**	TATO				LR	LR		
BORG	**Borgarnes**	**125.43**	**1**	PKIKP	**PKPdf**	**13 45 04.7**	**+2.2**	**L02D**	**Cave Junction,**	**130.27**	**286**	P	**PKPdf**	**13 45 14.7**	**+2.2**		comp=Z,1μm,20.0s						
BORG				pmax	pmax				baz=141							**WMQ**	**Urumqi**	**136.97**	**81**	PKP	**PKPdf**	**13 45 25.3**	**+0.2**
	comp=Z,16nm,0.9s							**HUMO**	**Hull Mountain**	**130.32**	**287**	*e*PKPdf	**PKPdf**	**13 45 12.3**	**-0.3**	WMQ				PP	**PP**	**13 48 13.9**	**+4.4**
BORG	**Borgarnes**	**125.43**	**1**	PKP	**PKPdf**	**13 45 04.7**	**+2.2**	**KLMR**	**Klimovskoe**	**130.82**	**35**	*e*PKIKP	**PKPdf**	**13 45 12.0**	**-0.9**	WMQ				PKS	**PKSdf**	**13 49 00.8**	**-0.4**
BORG				LR	LR			KLMR				pmax	pmax			WMQ				SS	SS	14 06 14.8	+0.3
	comp=Z,996nm,20.0s								comp=Z,26nm,1.1s							WMQ				AMB	AMB		
CMB	**Columbia Colle**	**125.51**	**286**	*e*PKIKP	**PKPdf**	**13 45 05.0**	**+1.4**	**FFC**	**Flin Flon**	**130.84**	**311**	PFAKE		13 45 20.0	+6.9		comp=Z,180nm,5.4s						
CMB	**Columbia Colle**	**125.51**	**286**	*e*PKPdf	**PKPdf**	**13 45 05.0**	**+1.4**	FFC				LR	LR			WMQ				LR	LR		
A28A	**Rude Farm, Bot**	**125.56**	**308**	P	**PKPdf**	**13 45 04.7**	**+1.3**		comp=Z,2μm,22.0s								comp=Z,700nm,17.5s						
	baz=144							**I05D**	**Terrebonne, OR**	**130.91**	**290**	P	**PKPdf**	**13 45 15.7**	**+2.0**	WMQ				LR	LR		
TPAW	**Teton Pass**	**125.59**	**297**	*e*PKPdf	**PKPdf**	**13 45 04.3**	**+0.4**		baz=140								comp=Z,820nm,19.7s						
IMW	**Indian Meadow**	**125.91**	**297**	*e*PKPdf	**PKPdf**	**13 45 04.1**	**-0.4**	**I04A**	**Tendick Farm,**	**130.98**	**289**	P	**PKPdf**	**13 45 16.1**	**+2.2**	WMQ				LR	LR		
BMN	**Battle Mountai**	**125.95**	**290**	*e*PKIKP	**PKPdf**	**13 45 04.6**	**+0.1**		baz=140								comp=Z,980nm,24.7s						
BMN	**Battle Mountai**	**125.95**	**290**	*e*PKPdf	**PKPdf**	**13 45 04.6**	**+0.1**	**SCO**	**Scoresbysund**	**131.19**	**1**	*i* P	**PKPdf**	**13 45 15.6**	**+2.3**	**KULLO**	**Kullorsuaq**	**137.10**	**347**	*i* P	**PKPdf**	**13 45 26.1**	**+1.8**
FLWY	**Flagg Ranch**	**125.95**	**297**	*e*PKPdf	**PKPdf**	**13 45 03.6**	**-0.9**		comp=Z,20nm,1.1s								comp=Z,27nm,1.1s						
MOS	**Moscow**	**125.99**	**38**	*e*PKIKP	**PKPdf**	**13 45 04.9**	**+1.1**	**SCO**	**Scoresbysund**	**131.19**	**1**	*e*PKIKP	**PKPdf**	**13 45 15.6**	**+2.3**		comp=Z,1μm,21.0s						
MOS				pmax	pmax			SCO				pmax	pmax			**KULLO**	**Kullorsuaq**	**137.10**	**347**	*e*PKIKP	**PKPdf**	**13 45 26.1**	**+1.8**
	comp=Z,42nm,0.9s								comp=Z,20nm,1.1s							KULLO				pmax	pmax		
MOS				MLR	MLR			**LOF**	**Lofoten**	**131.61**	**18**	IVMs_BB	IVMs_BB	14 41 38.3			comp=Z,27nm,1.1s						
	comp=Z,1μm,20.0s								comp=Z,1μm,3.7s							KULLO				MLR	MLR		
LAO	**LASA Array**	**126.15**	**302**	P	**PKPdf**	**13 45 06.0**	**+1.5**	**HAWA**	**Hanford**	**131.66**	**293**	PFAKE		13 45 30.0	+15		comp=Z,2μm,21.0s						
	baz=143							HAWA				LR	LR			**DAG**	**Danmarks Havn**	**137.54**	**2**	*i* P	**PKPdf**	**13 45 26.9**	**+1.8**
LAO	**LASA Array**	**126.15**	**302**	*e*PKPdf	**PKPdf**	**13 45 05.2**	**+0.6**		comp=Z,1μm,21.0s								comp=Z,16nm,1.0s						
LAO				LR	LR			**GUMO**	**Guam**	**131.94**	**165**	PFAKE		13 45 30.0	+14	**DAG**	**Danmarks Havn**	**137.54**	**2**	*e*PKIKP	**PKPdf**	**13 45 26.9**	**+1.8**
	comp=Z,2μm,22.0s							GUMO				LR	LR			DAG				pmax	pmax		
RLMT	**Red Lodge**	**126.17**	**299**	P	**PKPdf**	**13 45 06.0**	**+1.1**		comp=Z,3μm,19.0s								comp=Z,16nm,1.0s						
	baz=143							**NEW**	**Newport**	**132.01**	**296**	P	**PKPdf**	**13 45 18.1**	**+2.4**	**KURBB**	**Kurchatov Arra**	**137.62**	**67**	PKhKP	PKPpre	13 45 14.9	
RLMT	**Red Lodge**	**126.17**	**299**	*e*PKPdf	**PKPdf**	**13 45 04.5**	**-0.4**		baz=139								comp=Z,0.8nm,0.3s,baz=237,slow=3.0,SNR=4.4						
RLMT				LR	LR			**NEW**	**Newport**	**132.01**	**296**	PFAKE		13 45 30.0	+14	KURBB				PKP	**PKPdf**	**13 45 26.0**	**+0.1**
	comp=Z,2μm,22.0s							NEW				LR	LR				comp=Z,5.9nm,0.8s,baz=230,slow=2.7,SNR=16						
B25A	**Knox Farm, Ray**	**126.18**	**306**	P	**PKPdf**	**13 45 06.2**	**+1.7**		comp=Z,2μm,22.0s							KURBB				PP	**PP**	**13 48 11.1**	**-2.2**
	baz=143							**GYA**	**Guiyang**	**132.05**	**113**	Pdif	**Pdif**	**13 42 11.0**	**+0.3**		comp=Z,1.1nm,0.8s,baz=231,slow=5.6,SNR=3.4						
LKWY	**Lake**	**126.21**	**298**	PFAKE		13 45 20.0	+15	GYA				PKP	**PKiKP**	**13 45 17.6**	**0.0**	KURBB				SKPbc	**SKPbc**	**13 48 57.9**	**-1.5**
LKWY				LR	LR			GYA				PP	**PP**	**13 47 43.3**	**+5.1**		comp=Z,1.2nm,1.0s,baz=247,slow=5.4,SNR=2.7						
	comp=Z,3μm,22.0s							GYA				PKS	**PKSdf**	**13 48 52.4**	**-0.8**	**KURK**	**Kurchatov**	**137.72**	**67**	PKIKP	**PKPdf**	**13 45 26.0**	**-0.1**
A26A	**Wade Farm, Ken**	**126.24**	**307**	P	**PKPdf**	**13 45 06.1**	**+1.5**	GYA				SKKS		13 54 33.0		KURK						13 48 11.1	
	baz=144							GYA				SS	**SS**	**14 05 18.3**	**+3.2**	KURK				MLR	MLR		
A25A	**Svangstu Ranch**	**126.70**	**306**	P	**PKPdf**	**13 45 07.6**	**+2.1**	GYA				AMB	AMB				comp=Z,2μm,20.0s						
	baz=143								comp=Z,170nm,8.1s							**KURK**	**Kurchatov**	**137.72**	**67**	PKP	**PKPdf**	**13 45 26.0**	**-0.1**
DGMT	**Dagmar**	**126.75**	**305**	P	**PKPdf**	**13 45 07.0**	**+1.4**	GYA				LR	LR			KURK				PP	**PP**	**13 48 11.1**	**-2.9**
	baz=143								comp=Z,220nm,20.3s							KURK				SKPbc	**SKPbc**	**13 48 57.9**	**-1.8**
DGMT	**Dagmar**	**126.75**	**305**	PFAKE		13 45 20.0	+14	GYA				LR	LR			KURK				LR	LR		
DGMT				LR	LR				comp=Z,180nm,21.0s								comp=Z,2μm,20.0s						
	comp=Z,2μm,22.0s							GYA				LR	LR			**LZH**	**Lanzhou**	**138.80**	**103**	*e*PKP	**PKPdf**	**13 45 22.8**	**-6.1**
POHA	**Pohakuloa**	**126.86**	**241**	PFAKE		13 45 20.0	+13		comp=Z,200nm,20.4s							LZH				sPKP		13 45 32.1	
POHA				LR	LR			**JMIC**	**Jan Mayen**	**132.12**	**7**	*e*PKPdf	**PKPdf**	**13 45 17.3**	**+2.2**	LZH				PP	**PP**	**13 48 19.3**	**-1.6**
	comp=Z,1μm,19.0s							JMIC				*e*PP	**PP**	**13 47 36.6**	**-1.5**	LZH				PKS	PKSdf	13 48 54.0	-11
QIZ	**Qiongzhong**	**126.90**	**121**	PKP	**PKPdf**	**13 45 09.3**	**+2.5**	JMIC				IVMs_BB	IVMs_BB	14 39 37.8		LZH				SKS	SKSdf	13 52 21.6	-18
QIZ				PP	**PP**	**13 47 06.8**	**+2.4**		comp=Z,715nm,15.1s							LZH				SKKS	SKKSac	13 54 57.0	-18
QIZ				LR	LR			**PDGK**	**Podgornoye**	**132.68**	**75**	PKIKP	**PKPdf**	**13 45 17.4**	**+0.4**	**WHN**	**Wuhan**	**138.95**	**119**	PKP	**PKPdf**	**13 45 31.3**	**+2.2**
	comp=Z,1μm,23.3s							PDGK				pmax	pmax			WHN				PP	**PP**	**13 48 25.8**	**+4.3**
QIZ				LR	LR				comp=Z,15nm,1.1s							WHN				PKS	**PKSdf**	**13 49 03.9**	**-1.3**
	comp=Z,770nm,20.6s							**OTUK**	**Ortayu**	**133.12**	**66**	PKIKP	**PKPdf**	**13 45 17.9**	**+0.2**	WHN				LR	LR		
QIZ				LR	LR			OTUK				pmax	pmax				comp=Z,3μm,19.3s						
	comp=Z,3μm,36.7s								comp=Z,11nm,1.0s							WHN				LR	LR		
QIZ	**Qiongzhong**	**126.90**	**121**	PFAKE		13 45 20.0	+13	**NLW**	**Nelson Butte**	**133.29**	**294**	P	**PKPdf**	**13 45 19.8**	**+1.6**		comp=Z,3μm,19.8s						
QIZ				LR	LR			**HEF**	**Hetta**	**133.53**	**22**	*e*PKPdf	**PKPdf**	**13 45 18.9**	**+1.1**	WHN				LR	LR		
	comp=Z,2μm,22.0s							**ARU**	**Arti**	**133.58**	**49**	PKP	**PKPdf**	**13 45 17.6**	**-0.6**		comp=Z,4μm,20.3s						
HLID	**Hailey**	**127.17**	**294**	P	**PKPdf**	**13 45 08.6**	**+1.8**		comp=Z,12nm,1.1s,baz=198,slow=3.2,SNR=7.8							**GTA**	**Gaotai**	**139.50**	**96**	*e*PKP	**PKPdf**	**13 45 24.8**	**-5.2**
	baz=142							ARU				PP	**PP**	**13 47 45.6**	**-2.2**	GTA				PP	**PP**	**13 48 24.3**	**-1.0**
HLID	**Hailey**	**127.17**	**294**	PFAKE		13 45 20.0	+13		comp=Z,1.5nm,0.4s,baz=264,slow=19,SNR=4.2							GTA				SKKS		13 55 13.3	
HLID				LR	LR			**ARU**	**Arti**	**133.58**	**49**	*i* PKIKP	**PKPdf**	**13 45 18.0**	**-0.2**	GTA				SS	**SS**	**14 06 42.1**	**-2.4**
	comp=Z,1μm,20.0s							ARU				MLR	MLR			GTA				AMB	AMB		
LSA	**Lhasa**	**127.47**	**96**	PFAKE		13 45 20.0	+12		comp=Z,2μm,22.0s								comp=Z,180nm,7.4s						
LSA				LR	LR			**ARU**	**Arti**	**133.58**	**49**	PKP	**PKPdf**	**13 45 17.6**	**-0.6**	GTA				LR	LR		
	comp=Z,2μm,21.0s							ARU				PP	**PP**	**13 47 45.6**	**-2.2**		comp=Z,650nm,24.5s						
BOZ	**Bozeman (W)**	**127.60**	**298**	P	**PKPdf**	**13 45 09.2**	**+1.7**	ARU				LR	LR			GTA				LR	LR		
	baz=142								comp=Z,2μm,21.0s								comp=Z,620nm,20.9s						
BOZ	**Bozeman (W)**	**127.60**	**298**	*e*PKIKP	**PKPdf**	**13 45 08.6**	**+1.1**	**SUMG**	**Summit**	**133.67**	**354**	*i* P	**PKPdf**	**13 45 21.1**	**+2.6**	GTA				LR	LR		
BOZ				MLR	MLR				comp=Z,26nm,1.2s								comp=Z,980nm,21.9s						
	comp=Z,1μm,20.0s								comp=Z,1μm,20.0s							**XAN**	**Xi'an**	**139.50**	**110**	PKP	**PKPdf**	**13 45 22.4**	**-7.7**
BOZ	**Bozeman (W)**	**127.60**	**298**	*e*PKPdf	**PKPdf**	**13 45 08.6**	**+1.1**	**SUMG**	**Summit**	**133.67**	**354**	*e*PKIKP	**PKPdf**	**13 45 21.1**	**+2.6**	XAN				PP	**PP**	**13 48 26.4**	**+1.3**
BOZ				LR	LR			SUMG				pmax	pmax			XAN				SKS	SKSdf	13 52 26.8	-14
	comp=Z,1μm,20.0s								comp=Z,26nm,1.2s							XAN				SKKS	**SKKSac**	**13 55 11.8**	**-6.9**
DLMT	**Dillon**	**127.79**	**297**	*e*PKPdf	**PKPdf**	**13 45 09.1**	**+1.2**	SUMG				MLR	MLR			**HSPB**	**Hornsund (broa**	**139.90**	**13**	IVMs_BB	IVMs_BB	14 47 02.6	
FINES	**FINESS Array B**	**127.90**	**28**	PKP	**PKPdf**	**13 45 05.5**	**-1.9**		comp=Z,1μm,20.0s								comp=Z,1μm,3.6s						
	comp=Z,27nm,0.8s,baz=153,slow=0.9,SNR=36							**TRO**	**Tromso**	**133.81**	**19**	IVMs_BB	IVMs_BB	14 41 13.8		**HOPEN**	**Hopen**	**140.64**	**16**	IVMs_BB	IVMs_BB	14 38 04.7	
FINES				PP	**PP**	**13 47 09.7**	**-1.2**		comp=Z,2μm,4.5s								comp=Z,4μm,3.6s						
	comp=Z,6.5nm,1.1s,baz=161,slow=8.8,SNR=3.4							**JCW**	**Jim Creek**	**134.09**	**293**	P	**PKPd**	**13 45 21.9**	**+2.3**	**YKA**	**Yellowknife Ar**	**140.99**	**312**	PKP	**PKPdf**	**13 45 32.0**	**+0.3**
O03D	**Paynes Creek**	**127.97**	**286**	P	**PKPdf**	**13 45 10.2**	**+1.9**	**B05A**	**Bryant**	**134.22**	**293**	P	**PKPdf**	**13 45 22.5**	**+2.8**		comp=Z,15nm,0.8s,baz=124,slow=2.4,SNR=18						
	baz=142,SNR=16								baz=138							YKA				PP	**PP**	**13 48 30.4**	**-3.6**
KSH	**Kashi**	**128.06**	**76**	*e*PKP	**PKPdf**	**13 45 09.5**	**+1.0**	**NLWA**	**Neilton Lookou**	**134.37**	**291**	PFAKE		13 45 30.0	+10		comp=Z,7.0nm,1.0s,baz=124,slow=6.6,SNR=6.9						
KSH				*e*PP	**PP**	**13 47 13.1**	**+0.7**	NLWA				LR	LR			**YKA**	**Yellowknife Ar**	**140.99**	**312**	PKIKP	**PKPdf**	**13 45 32.0**	**+0.3**
KSH				PKS	**PKSdf**	**13 48 44.9**	**-0.2**		comp=Z,2μm,22.0s							YKA						13 48 30.4	
KSH				SKS	**SKSdf**	**13 52 21.1**	**+1.0**	**CD2**	**Chengdu**	**134.50**	**107**	PKP	**PKPdf**	**13 45 20.8**	**-0.1**	YKA				pmax	pmax		
KSH				SKKS	**SKKSac**	**13 54 04.1**	**-5.0**	CD2				sPKP		13 45 25.4			comp=Z,17nm,0.9s						
KSH				SS	**SS**	**14 04 19.4**	**-7.0**	CD2				PP	**PP**	**13 47 54.4**	**+0.6**	YKA				pmax	pmax		
				LR	LR			CD2				SKS	**SKSdf**	**13 52 31.9**	**-0.1**		comp=Z,7.0nm,1.0s						
	comp=Z,780nm,16.7s							CD2				SKKS	**SKKSac**	**13 54 48.8**	**-0.2**	**SPITS**	**Spitsbergen Ar**	**141.02**	**12**	PKhKP	PKPpre	13 45 26.2	
KSH				LR	LR			CD2				SS	**SS**	**14 05 47.9**	**+3.2**		comp=Z,13nm,0.9s,baz=201,slow=7.7,SNR=3.7						
	comp=Z,650nm,17.9s							CD2				AMB	AMB			**KBS**	**Kingsbay**	**141.26**	**10**	IVMs_BB	IVMs_BB	14 40 11.0	
KSH				LR	LR				comp=Z,490nm,7.3s								comp=Z,1μm,3.9s						
	comp=Z,1μm,20.5s							CD2				LR	LR			**KBS**	**Kingsbay**	**141.26**	**10**	PFAKE		13 45 40.0	+8.2
WVOR	**Wild Horse Val**	**128.19**	**290**	*e*PKIKP	**PKPdf**	**13 45 09.3**	**+0.6**		comp=Z,1μm,20.7s							KBS				LR	LR		
WVOR				MLR	MLR			CD2				LR	LR				comp=Z,920nm,21.0s						
	comp=Z,723nm,20.0s								comp=Z,1μm,20.3s							**NJ2**	**Nanjing**	**142.15**	**123**	*e*PKP	**PKPdf**	**13 45 36.4**	**+1.6**
WVOR	**Wild Horse Val**	**128.19**	**290**	*e*PKPdf	**PKPdf**	**13 45 09.3**	**+0.6**	CD2				LR	LR			NJ2				PP	**PP**	**13 48 45.3**	**+4.3**
WVOR				LR	LR				comp=Z,1μm,18.7s							NJ2				SS	SS	14 07 21.3	+6.6
	comp=Z,723nm,20.0s							**SVE**	**Sverdlovsk**	**134.65**	**50** ⇓	*i* PKIKP	**PKPdf**	**13 45 21.9**	**+1.7**	NJ2				AMB	AMB		
MOD	**Modoc Plateau**	**128.54**	**289**	*e*PKPdf	**PKPdf**	**13 45 08.8**	**-0.6**	SVE				pmax	pmax				comp=Z,530nm,11.9s						
AB31	**Akbulak array**	**128.61**	**56**	*i* PKIKP	**PKPdf**	**13 45 07.2**	**-1.9**		comp=Z,19nm,0.9s								comp=Z,740nm,17.4s						
AB31				pmax	pmax			SVE				MLR	MLR			NJ2				LR	LR		
	comp=Z,21nm,0.9s								comp=Z,1μm,22.0s								comp=Z,660nm,17.9s						
ABKAR	**Akbulak array**	**128.61**	**56**	*e*PKPdf	**PKPdf**	**13 45 08.9**	**-0.2**	**APA**	**Apatity**	**134.79**	**27** ⇑	*i* PKIKP	**PKPdf**	**13 45 20.0**	**-0.2**	NJ2				LR	LR		
EGMT	**Eagleton**	**128.67**	**301**	P	**PKPdf**	**13 45 11.7**	**+2.3**	APA				*i*		13 47 53.0			comp=Z,1μm,19.0s						
	baz=141							APA				pmax	pmax			**SSE**	**Sheshan**	**142.25**	**126**	PKP	**PKPdf**	**13 45 34.3**	**-0.7**
EGMT	**Eagleton**	**128.67**	**301**	PFAKE		13 45 20.0	+11		comp=Z,11nm,0.8s							SSE				PP	**PP**	**13 48 44.4**	**+2.8**
EGMT				LR	LR			APA				pmax	pmax			SSE				AMB	AMB		
	comp=Z,420nm,20.0s								comp=Z,1μm,19.0s								comp=Z,340nm,6.2s						
AKTO	**Aktyubinsk**	**128.76**	**54**	PKP	**PKPdf**	**13 45 08.2**	**-1.1**	**ARCES**	**ARCESS Array B**	**134.85**	**22**	PKP	**PKPdf**	**13 45 20.4**	**+0.1**	SSE				LR	LR		
	comp=Z,20nm,1.0s,baz=209,slow=3.3,SNR=29								comp=Z,19nm,0.8s,baz=241,slow=1.2,SNR=15								comp=Z,820nm,46.9s						
AKTO	**Aktyubinsk**	**128.76**	**54**	PKIKP	**PKPdf**	**13 45 08.2**	**-1.1**	**ARE0**	**ARCESS Array S**	**134.85**	**22**	*e*PKPdf	**PKPdf**	**13 45 20.3**	**+0.1**	SSE				LR	LR		
AKTO				pmax	pmax			ARE0				IVMs_BB	IVMs_BB	14 40 35.7			comp=Z,810nm,46.9s						
	comp=Z,41nm,1.2s								comp=Z,2μm,4.0s							SSE				LR	LR		
N02D	**Trinity Center**	**128.93**	**286**	P	**PKPdf**	**13 45 12.0**	**+1.9**	**MCW**	**Mount Constitu**	**134.85**	**293**	PKIKP	**PKPdf**	**13 45 23.7**	**+2.7**		comp=Z,1μm,39.5s						
	baz=142,SNR=9.0							**MCW**	**Mount Constitu**	**134.85**	**293**	P	**PKPdf**	**13 45 23.7**	**+2.7**	**NVS**	**Novosibirsk**	**142.58**	**66** ⇑	*i* PKIKP	**PKPdf**	**13 45 31.5**	**-3.3**
KMI	**Kunming**	**129.12**	**110**	PKP	**PKPdf**	**13 45 12.0**	**+0.9**	**ZRNK**	**Zerenda**	**135.14**	**59**	PKIKP	**PKPdf**	**13 45 21.5**	**+0.2**	NVS				*e*		13 48 48.6	
KMI				sPKP		13 45 16.5		ZRNK				pmax	pmax			NVS				pmax	pmax		
KMI				PP	**PP**	**13 47 24.9**	**+5.6**		comp=Z,7.0nm,1.0s								comp=Z,53nm,2.0s						
KMI				SKKS		13 54 15.4		**SOKR**	**Solikamsk**	**135.28**	**45** ⇓	*i* PKIKP	**PKPdf**	**13 45 21.8**	**+0.5**	NVS				pmax	pmax		
KMI				S	**Sdif**	**13 55 24.3**	**-1.6**	SOKR						13 48 00.7			comp=N,13nm,1.8s						
KMI				SS	**SS**	**14 04 41.8**	**+2.4**	SOKR				pmax	pmax			NVS				pmax	pmax		
KMI				AMB	AMB				comp=Z,22nm,1.5s								comp=E,12nm,1.8s						
	comp=Z,180nm,5.2s							**LVZ**	**Lovozero**	**135.34**	**27**	PFAKE		13 45 30.0	+8.7	**ZALV**	**Zalesovo Beam**	**

comp=Z,1μm,19.0s
RES Resolute Bay 143.13 335 PKhKP PKPpre 13 45 29.4
comp=Z,47nm,1.0s,baz=139,slow=8.9,SNR=4.8
RES PKP **PKPdf 13 45 33.9 -1.4**
comp=Z,96nm,1.0s,baz=151,slow=5.4,SNR=17
RES Resolute Bay 143.13 335 *e*PKIKP PKPbc 13 45 33.0 +0.7
RES Resolute Bay 143.13 335 *e*PKPdf PKPbc 13 45 33.0 +0.7
TIY Taiyuan 144.14 110 *e*PKP **PKPdf 13 45 38.6 +0.3**
TIY PP PP 13 49 02.4 +9.2
TIY SS SS 14 07 42.4 +4.3
TIY AMB AMB
comp=Z,340nm,11.8s
TIY LR LR
comp=Z,750nm,16.1s
TIY LR LR
comp=Z,390nm,15.4s
TIY LR LR
comp=Z,1μm,19.8s
WRAK Wrangell Islan 144.36 295 *e*PKPdf **PKPab 13 45 35.8 -0.2**
WRAK LR LR
comp=Z,1μm,21.0s
DLBC Dease Lake 144.57 299 PKP **PKPab 13 45 36.7 -0.2**
comp=Z,141nm,1.0s,baz=105,slow=2.4,SNR=18
BTO Baotou 145.33 105 *e*PKPbc **PKPbc 13 45 39.3 -0.8**
HHC Hu-ho-hao-te 146.25 106 *e*PKPbc **PKPab 13 45 43.8 +0.1**
HHC PP **PP 13 49 10.4 +4.5**
HHC PKS **PKSdf 13 49 15.8 -1.4**
HHC SKS **SKSdf 13 52 46.6 -4.0**
HHC SKKS **SKKSac 13 55 55.3 -2.1**
HHC SS **SS 14 08 04.9 +2.6**
HHC AMB AMB
comp=Z,330nm,9.1s
HHC LR LR
comp=Z,830nm,18.2s
HHC LR LR
comp=Z,600nm,16.5s
HHC LR LR
comp=Z,800nm,19.1s
SKAG Skagway 147.42 298 *e*PKPdf **PKPdf 13 45 43.2 +0.2**
JNU Nakatsue 147.59 138 PKPbc **PKPbc 13 45 46.8 -0.2**
comp=Z,29nm,0.8s,baz=110,slow=3.2,SNR=22
JNU Nakatsue 147.59 138 *e*PKPdf **PKPdf 13 45 43.3 -0.9**
BJT Baijiatuau 147.71 112 PFAKE 13 46 00.0 +11
BJT LR LR
comp=Z,945nm,19.0s
BJI Beijing 147.73 112 PKPbc **PKPdf 13 45 45.0 +0.8**
BJI PP **PP 13 49 15.4 +1.0**
BJI SS SS 14 08 20.6 +1.9
BJI AMB AMB
comp=Z,600nm,10.0s
BJI LR LR
comp=Z,580nm,29.8s
BJI LR LR
comp=Z,2μm,34.6s
SONM Songino Array 148.94 92 PKPbc **PKPbc 13 45 49.4 -0.8**
comp=Z,75nm,1.0s,baz=215,slow=2.3,SNR=80
ZAK Zakamensk 149.13 86 *e*PKIKP **PKPdf 13 45 47.3 +1.0**
ZAK pmax pmax
comp=Z,59nm,1.2s
INCN Inchon 149.99 128 PFAKE 13 46 00.0 +1.3
INCN LR LR
comp=Z,922nm,21.0s
JHJ Hachijo jima 2 150.11 151 PKPbc **PKPbc 13 45 54.5 +1.3**
comp=Z,226nm,0.8s,baz=223,slow=7.5,SNR=7.0
TLY Talaya 150.14 84 PKPbc **PKPbc 13 45 52.8 0.0**
comp=Z,35nm,1.0s,baz=215,slow=3.3,SNR=9.1
TLY Talaya 150.14 84 *i* PKIKP **PKPdf 13 45 49.6 +1.9**
TLY *e* 13 45 54.2
TLY pmax pmax
comp=Z,81nm,1.1s
TLY Talaya 150.14 84 PKPbc **PKPbc 13 45 52.8 0.0**
TLY LR LR
comp=Z,967nm,21.0s
KSAR Wonju Array Be 150.43 130 PKIKP **PKPbc 13 45 53.8 -0.1**
KSAR Wonju Array Be 150.43 130 PKPbc **PKPbc 13 45 53.8 -0.1**
KSRS Korea Array 150.45 130 PKPbc **PKPbc 13 45 53.8 -0.1**
comp=Z,44nm,0.9s,baz=218,slow=1.9,SNR=57
INK Inuvik 150.70 314 PKPbc **PKPbc 13 45 51.9 -1.7**
comp=Z,7.4nm,0.7s,baz=114,slow=3.3,SNR=15
INK Inuvik 150.70 314 *e*PKIKP **PKPdf 13 45 47.8 -0.2**
INK Inuvik 150.70 314 *e*PKPdf **PKPdf 13 45 47.8 -0.2**
IRK Irkutsk 150.79 84 *e*PKIKP **PKPdf 13 45 49.6 +0.9**
IRK pmax pmax
comp=Z,217nm,2.0s
DAWY Dawson 151.31 304 *e*PKPbc **PKPbc 13 45 57.1 +1.9**
NRIK Noril'sk 151.51 44 PKP **PKPdf 13 45 48.1 -1.2**
comp=Z,3.2nm,0.6s,baz=243,slow=1.0,SNR=3.7
NRIK PKPbc **PKPbc 13 45 54.6 -0.8**
comp=Z,32nm,0.9s,baz=79,slow=0.5,SNR=18
BMRM Bremner River 152.19 296 *e*PKPdf **PKPdf 13 45 50.2 -0.5**
EGAK Eagle 152.29 305 *e*PKPbc **PKPbc 13 45 56.8 -0.6**
EGAK LR LR
comp=Z,1μm,22.0s
SNY Shenyang 152.44 119 ⇑PKPbc **PKPdf 13 45 49.3 -2.2**
SNY PP **PP 13 49 42.8 +1.3**
SNY SKKS 13 56 32.3
SNY SS **SS 14 09 17.4 +6.4**
SNY AMB AMB
comp=Z,590nm,12.0s
SNY LR LR
comp=Z,390nm,19.6s
SNY LR LR
comp=Z,650nm,20.4s
SNY LR LR
comp=Z,1μm,20.8s
MAJO Matsushiro 152.97 147 PFAKE 13 46 00.0 +0.2
MAJO LR LR
comp=Z,1μm,21.0s
MAT Matsushiro 152.97 147 PKP **PKPbc 13 46 00.6 +0.8**
MJAR Matsushiro Arr 152.97 147 PKP **PKPdf 13 45 54.3 +1.8**
comp=Z,1.9nm,1.0s,baz=210,slow=2.1,SNR=6.0
MJAR PKPbc **PKiKP 13 46 00.2 +0.2**
comp=Z,25nm,0.9s,baz=181,slow=3.0,SNR=44
KDAK Kodiak Island 154.34 286 PFAKE 13 46 00.0 -2.0
KDAK LR LR
comp=Z,772nm,22.0s
PMR Palmer 154.43 296 *e*PKIKP **PKPdf 13 45 51.9 -1.8**
PMR Palmer 154.43 296 *e*PKPdf **PKPdf 13 45 51.9 -1.8**
ILAR Eielson Array 154.60 303 PKP **PKPdf 13 45 51.2 -2.7**
comp=Z,2.9nm,1.0s,baz=321,slow=1.7,SNR=15
ILAR PKPbc **PiKiKP 13 46 02.9 +0.5**
comp=Z,20nm,1.0s,baz=140,slow=4.5,SNR=46
ILAR PP **PP 13 49 54.8 +1.1**
comp=Z,2.2nm,1.0s,baz=111,slow=3.7,SNR=5.4
CN2 Changchun 154.84 119 *e*PKPbc **PKPdf 13 45 52.1 -2.8**
CN2 pPKP PKPbc 13 46 02.0 -1.6
CN2 PP **PP 13 49 56.0 +0.9**
CN2 *e*SS SS 14 09 34.0 -3.3
CN2 AMB AMB
comp=Z,200nm,8.0s
CN2 LR LR
comp=Z,500nm,21.0s
CN2 LR LR
comp=Z,300nm,21.0s
CN2 LR LR
comp=Z,600nm,22.0s
COLA College 155.03 303 PFAKE 13 46 10.0 -9.1
COLA LR LR
comp=Z,1μm,21.0s
HIA Hailar 156.36 103 PFAKE 13 46 10.0 +13
HIA LR LR
comp=Z,1μm,21.0s
MDJ Mudanjiang 157.23 124 PKP **PKPdf 13 45 57.6 -0.4**
MDJ AMB AMB
comp=Z,220nm,6.8s
MDJ LR LR
comp=Z,930nm,35.6s
MDJ LR LR
comp=Z,860nm,41.5s
MDJ LR LR
comp=Z,1μm,45.9s
MDJ Mudanjiang 157.23 124 PFAKE 13 46 10.0 +12
MDJ LR LR
comp=Z,1μm,22.0s
USRK Ussuriysk Ar. 157.83 128 PKPab **PKPab 13 46 30.8 -0.8**
comp=Z,2.2nm,0.6s,baz=220,slow=4.4,SNR=4.0
BOD Bodaibo 158.50 80 *e*PKIKP **PKPdf 13 45 58.8 -0.3**
BOD pmax pmax
comp=Z,6.0nm,1.5s
ERM Erimo 159.38 151 PFAKE 13 46 10.0 +9.3
ERM LR LR
comp=Z,1μm,22.0s
ASAJ Asahikawa 161.22 148 PKPab **PKPab 13 46 48.4 +1.9**
comp=Z,5.4nm,0.9s,baz=225,slow=11,SNR=2.6
KLR Kul'dur 161.80 119 PKP **PKPdf 13 46 02.6 -0.5**
comp=Z,4.2nm,1.0s,baz=221,slow=2.4,SNR=10
KLR PKPab **PKPab 13 46 48.1 -0.8**
comp=Z,6.5nm,1.0s,baz=236,slow=4.0,SNR=5.1
HABR Khabarovsk 162.56 126 *ce*PKIKP **PKPdf 13 46 04.4 +0.5**
HABR *e* 13 46 08.0
HABR *e* 13 46 53.5
HABR *e* 13 50 38.7
HABR *e* 13 53 09.3
HABR *e*PPP PPP 13 54 23.7
HABR *e*SS SS 14 11 02.7 +3.7
HABR *e*SSS SSS 14 17 21.2
HABR pmax pmax
comp=E,28nm,1.9s
HABR pmax pmax
comp=N,5.0nm,0.7s
HABR pmax pmax
comp=Z,17nm,1.8s
YSS Yuzh-Sakhalins 163.88 145 *i* PKP2 **PKPab 13 47 00.0 +2.0**
YSS *e*SS SS 14 11 21.0 +8.6
YSS Yuzh-Sakhalins 163.88 145 PFAKE 13 46 20.0 +15
YSS LR LR
comp=Z,405nm,19.0s
TIXI Tiksi 164.83 34 PKPab **PKPab 13 46 58.6 -3.0**
comp=Z,6.6nm,0.9s,baz=36,slow=10,SNR=2.8
TIXI Tiksi 164.83 34 PKPab **PKPab 13 46 58.6 -3.0**
TIXI LR LR
comp=Z,1μm,20.0s
YAK Yakutsk 167.27 74 PKP **PKPdf 13 46 07.1 -0.4**
comp=Z,4.0nm,0.3s,baz=221,slow=0.5,SNR=4.0
YAK PKPab **PKPab 13 47 12.9 +0.3**
comp=Z,10nm,0.3s,baz=56,slow=1.3,SNR=13
YAK Yakutsk 167.27 74 *e*PKIKP **PKPdf 13 46 07.7 +0.2**
YAK pmax pmax
comp=Z,14nm,1.1s
YAK Yakutsk 167.27 74 PKP **PKPdf 13 46 07.1 -0.4**
YAK PKPab **PKPab 13 47 12.9 +0.3**
YAK LR LR
comp=Z,2μm,20.0s
TYV Tymovskoe 167.31 137 *e*PKIKP **PKPdf 13 46 09.0 +1.1**
TYV *e* 13 51 08.0
TYV pmax pmax
comp=Z,11nm,0.8s
TYV pmax pmax
comp=Z,500nm,6.0s
NKL Nikolayevsk 168.44 126 *e*PKIKP **PKPdf 13 46 06.0 -2.6**
NKL *e* 13 47 16.0
NKL *e* 13 51 09.0
NKL *e* 14 12 02.0
NKL pmax pmax
comp=Z,30nm,1.0s
NKL pmax pmax
comp=Z,500nm,7.0s
BILL Bilibino 171.74 333 *e*PKIKP **PKPdf 13 46 05.6 -4.5**
BILL pmax pmax
comp=Z,6.0nm,1.3s
BILL Bilibino 171.74 333 PFAKE 13 46 20.0 +10
BILL LR LR
comp=Z,1μm,21.0s
PET Petropavlovsk 171.92 190 PFAKE 13 46 20.0 +9.5
PET LR LR
comp=Z,1μm,20.0s
PETK Petropavlovsk- 172.07 186 PKP **PKPdf 13 46 11.2 +0.5**
comp=Z,6.5nm,0.9s,baz=108,slow=4.8,SNR=9.9
PETK PKPab **PKPab 13 47 34.9 +0.9**
comp=Z,16nm,0.8s,baz=138,slow=4.5,SNR=16
MA2 Magadan 176.89 115 PKPab **PKPab 13 47 54.6 -0.8**
comp=Z,18nm,1.0s,baz=170,slow=6.8,SNR=4.5
MA2 Magadan 176.89 115 PKPab **PKPab 13 47 54.6 -0.8**
MA2 LR LR
comp=Z,2μm,20.0s
SEY Seymchan 177.30 42 PKP **PKPdf 13 46 08.9 -3.0**
comp=Z,3.0nm,1.0s,baz=64,slow=7.9,SNR=5.1
SEY PKPab PKPab 13 47 59.5 +2.4
comp=Z,5.0nm,1.0s,baz=186,slow=0.2,SNR=4.7
SEY Seymchan 177.30 42 PKIKP **PKPdf 13 46 09.0 -3.0**
SEY pmax pmax
comp=Z,5.0nm,1.0s

*IDC **15** 13:29:56.9±3.2, 23.°91S×179.°70W, h490km±33km, mb3.7/6, mb1 3.9/7, mb1mx3.4/38, mbtmp4.5/7, Error ellipse: s-maj=38.1km s-min=25.6km az=168.0*
ISC 15 13:29:58.8±1.2, 24.°05S±0.°1×179.°7W±0.°2, h512km, n8, σ1=64/10, mb4.3/6, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**14.45 190**		P	**P**	**13 33 00.5**	**-2.4**
	0.3nm,0.3s,baz=243,slow=16,SNR=3.5						
URZ				S	**S**	**13 35 37.1**	**+2.4**
	1.0nm,0.3s,baz=189,slow=23,SNR=8.4						
CTA	**Charters Tower**	**31.74 270**		P	**P**	**13 35 40.6**	**0.0**
	26nm,0.3s,baz=93,slow=11,SNR=69						
STKA	**Stephens Creek**	**34.92 248**		P	**P**	**13 36 08.1**	**+0.8**
	2.7nm,0.4s,baz=96,slow=11,SNR=14						
ASAR	**Alice Springs**	**42.27 261**		P	**P**	**13 37 06.8**	**-0.4**
	11nm,0.8s,baz=98,slow=7.4,SNR=174						
ASAR				ScP	**ScP**	**13 41 52.9**	**+1.8**
	1.2nm,0.8s,baz=130,slow=3.7,SNR=4.2						
WRA	**Warramunga Arr**	**42.66 266**		P	**P**	**13 37 09.0**	**-1.2**
	13nm,0.5s,baz=93,slow=8.5,SNR=303						
CMAR	**Chiang Mai Arr**	**89.81 290**		P	**P**	**13 42 03.7**	**+0.7**
	0.5nm,0.6s,baz=157,slow=2.4,SNR=4.5						
TXAR	**Lajitas Array**	**90.27 58**		P	**P**	**13 42 05.7**	**+0.7**
	0.4nm,0.7s,baz=219,slow=6.8,SNR=5.2						
AKASG	**Malin Array Be**	**145.21 327**		PKPbc	**PKPdf**	**13 48 36.5**	**-1.1**
	1.2nm,0.4s,baz=42,slow=4.5,SNR=5.2						

*NIED **15** 13:33:00, 36.°80N×143.°40E, h5km, Mw4.0 Best double couple: M₀1.06000×10¹⁵ NP1:ϕs8.00000°, δ21.00000°, λ-118.00000°. NP2:ϕs218.00000°, δ71.00000°, λ-79.00000°.*
*IDC **15** 13:33:27.2±0.8, 36.°69N×143.°73E, h0km, mb4.0/8, mb1 4.1/14, mb1mx3.9/70, mbtmp4.0/14, ML3.7/5, MS3.0/1, Ms1 3.0/1, ms1mx2.5/44, Error ellipse: s-maj=19.8km s-min=16.4km az=82.0*
*ISCJB **15** 13:33:30.1±0.6, 36.°78N±0.°04×143.°44E±0.°05, h33km, mb4.0/9, Error ellipse: s-maj=5.7km s-min=4.8km az=26.1*
*JMA **15** 13:33:30.9±0.2, 36.°79N×143.°40E, h53km, M3.9*
ISC 15 13:33:32.5±0.8, 36.°77N±0.°05×143.°43E±0.°08, h35km, n40, σ1=86/47, mb3.9/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**2.13 287**		P	**Pn**	**13 34 04.6**	**-1.0**
JFK				*e*S	**Sn**	**13 34 29.1**	**-1.7**
ONAJ	**Iwakimizuishiy**	**2.14 280**		P	**Pn**	**13 34 04.6**	**-1.1**
ONAJ				*e*S	**Sn**	**13 34 30.0**	**-1.0**
JHO	**Hitachi**	**2.31 267**		P	**Pn**	**13 34 06.9**	**-1.1**
JHO				*e*S	**Sn**	**13 34 33.4**	**-1.8**
JFT	**Otama**	**2.58 288**		P	**Pn**	**13 34 11.8**	**0.0**
JFT				S	**Sn**	**13 34 42.0**	**0.0**
JMK	**Ichinoseki**	**2.79 322**		P	**Pn**	**13 34 13.6**	**-1.0**
JMK				S	**Sn**	**13 34 45.7**	**-1.4**
BSO1	**Boso 1**	**2.91 224**		P	**Pn**	**13 34 15.3**	**-0.5**
JOM	**Ohasama**	**3.18 329**		P	**Pn**	**13 34 18.8**	**-1.2**
JOM				*e*S	**Sn**	**13 34 55.9**	**-0.8**
JAG	**Ashikaga**	**3.22 265**		P	**Pn**	**13 34 20.3**	**-0.3**
JYK	**Kaneyama**	**3.24 312**		P	**Pn**	**13 34 20.5**	**-0.3**
JRY	**Ryogami san**	**3.73 260**		P	**Pn**	**13 34 26.9**	**-0.7**
JRY				*e*S	**Sn**	**13 35 08.3**	**-2.1**
JOD2	**Odawara 2**	**3.83 248**		P	**Pn**	**13 34 28.3**	**-0.7**
JOD2				*e*S	**Sn**	**13 35 10.9**	**-1.9**
JANG	**Nango**	**3.90 338**		P	**Pn**	**13 34 28.7**	**-1.1**
JANG				S	**Sn**	**13 35 11.9**	**-2.4**
MJAR	**Matsushiro Arr**	**4.21 268**		Pn	**Pn**	**13 34 34.7**	**+0.5**
	5.0nm,0.3s,baz=87,slow=14,SNR=48						
MAT	**Matsushiro**	**4.21 268**		P	**Pn**	**13 34 35.1**	**+1.0**
MAT				S	**Sn**	**13 35 22.4**	**+0.3**
JHJ2	**Mitsune**	**4.71 220**		P	**Pn**	**13 34 39.9**	**-1.1**
JHJ2				*e*S	**Sn**	**13 35 30.8**	**-3.6**
JHJ	**Hachijo jima 2**	**4.72 220**		Pn	**Pn**	**13 34 39.6**	**-1.5**
	46nm,0.3s,baz=262,slow=23,SNR=12						
JHJ				Sn	**Sn**	**13 35 29.6**	**-5.0**
	46nm,0.3s,baz=93,slow=23,SNR=7.1						
JOT	**Ohata**	**4.96 339**		P	**Pn**	**13 34 45.1**	**+0.7**
JKB	**Kayabe**	**5.43 341**		P	**Pn**	**13 34 51.3**	**+0.4**
JCH	**Churui**	**5.83 359**		P	**Pn**	**13 34 53.6**	**-2.8**
JCH				*e*S	**Sn**	**13 35 57.2**	**-4.8**
ASAJ	**Asahikawa**	**7.36 355**		Pn	**Pn**	**13 35 15.6**	**-1.8**
	3.2nm,0.3s,baz=245,slow=7.9,SNR=30						
JNU	**Nakatsue**	**10.93 254**		Pn	**Pn**	**13 36 08.4**	**+2.0**
	0.2nm,0.3s,baz=86,slow=5.6,SNR=3.9						
USRK Ussuriysk Ar. 11.44 314 Pn **Pn 13 36 14.9 +1.7**
0.2nm,0.3s,baz=112,slow=14,SNR=3.6
USRK LR LR 13 40 32.4
comp=Z,62nm,18.8s,baz=141,slow=36
KSRS Korea Array 12.40 278 Pn **Pn 13 36 29.7 +3.3**
0.1nm,0.3s,baz=90,slow=14,SNR=3.4
KLR Kul'dur 15.08 329 Pn **Pn 13 37 00.4 -2.3**
0.2nm,0.3s,baz=128,slow=13,SNR=5.4
H11N2 WAKE ISLAND Hy 26.64 123 T T 14 07 07.5
baz=320,slow=74
H11N1 WAKE ISLAND Hy 26.64 123 T T 14 06 56.7
baz=320,slow=74
H11N3 WAKE ISLAND Hy 26.66 123 T T 14 06 14.6
baz=320
H11S1 WAKE ISLAND Hy 27.37 125 T T 14 07 54.2
baz=318
H11S3 WAKE ISLAND Hy 27.38 125 T T 14 08 04.2
baz=318
H11S2 WAKE ISLAND Hy 27.39 125 T T 14 07 45.4
baz=318
SONM Songino Array 29.27 304 P **P 13 39 34.0 +2.6**
2.5nm,0.9s,baz=98,slow=8.8,SNR=12
ZALV Zalesovo Beam 43.28 313 P **P 13 41 32.6 +2.1**
0.5nm,0.3s,baz=92,slow=7.5,SNR=2.8
MKAR Makanchi Array 45.62 303 P **P 13 41 50.9 +1.6**
0.9nm,0.8s,baz=77,slow=8.8,SNR=3.1
KURBB Kurchatov Arra 47.43 308 P **P 13 42 04.7 +1.3**
0.4nm,0.3s,baz=82,slow=8.4,SNR=3.5
ILAR Eielson Array 48.85 32 P **P 13 42 12.6 -1.5**
0.7nm,0.7s,baz=262,slow=6.3,SNR=9.2
WRA Warramunga Arr 57.06 190 P **P 13 43 14.5 -0.6**
2.6nm,0.6s,baz=11,slow=7.4,SNR=15
ASAR Alice Springs 60.78 190 P **P 13 43 40.6 -0.3**
1.0nm,0.7s,baz=4.0,slow=7.0,SNR=16
NWAO Narrogin (SRO) 73.53 203 P **P 13 45 01.7 +0.1**
42nm,1.2s,baz=280,slow=6.1,SNR=2.9
TXAR Lajitas Array 88.98 54 P **P 13 46 23.6 -0.4**
0.3nm,0.7s,baz=308,slow=8.4,SNR=2.9
LPAZ La Paz 145.40 62 PKPbc **PKPdf 13 53 08.9 +1.0**
0.7nm,0.6s,baz=20,slow=12,SNR=3.6

*NIED **15** 13:36:00, 30.°00N×132.°60E, h5km, Mw3.9 Best double couple: M₀7.08000×10¹⁴ NP1:ϕs35.00000°, δ33.00000°, λ-83.00000°. NP2:ϕs206.00000°, δ58.00000°, λ-95.00000°.*
*IDC **15** 13:36:43.5±1.0, 30.°01N×132.°44E, h0km, mb4.0/6, mb1 4.0/10, mb1mx3.7/64, mbtmp3.9/10, ML3.2/4, Error ellipse: s-maj=45.7km s-min=15.5km az=79.0*
*ISCJB **15** 13:36:44.6±1.7, 29.°98N±0.°04×132.°58E±0.°05, h25km±15km, mb4.1/6, Error ellipse: s-maj=6.8km s-min=5.7km az=24.6*
*JMA **15** 13:36:44.3±0.2, 29.°98N×132.°57E, h21km, M3.6*
ISC 15 13:36:44.0±2.7, 30.°03N±0.°05×132.°50E±0.°06, h7km±16km, n26, σ1=36/36, mb4.0/6, Southeast of Shikoku

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTN	**Tanegashima 3**	**1.45 296**		P	**Pn**	**13 37 10.8**	**+0.1**
JTN				*e*S	**Sg**	**13 37 30.9**	**+0.1**
JYAK	**Yakushimahirau**	**1.73 277**		P	**Pn**	**13 37 14.7**	**+0.2**
JYAK				*e*S	**Sb**	**13 37 38.1**	**0.0**
JTSR	**Tashiro 2**	**1.77 310**		P	**Pn**	**13 37 15.5**	**+0.4**
JTSR				*e*S	**Sb**	**13 37 38.8**	**-0.4**
JNAR	**Kushima--Naru**	**1.83 325**		P	**Pn**	**13 37 16.8**	**+0.9**
JNAR				*e*S	**Sn**	**13 37 40.2**	**+0.9**
JKC	**Kuchinoerabu**	**2.04 283**		P	**Pb**	**13 37 20.2**	**-1.1**
JKC				*e*S	**Sb**	**13 37 45.5**	**-1.4**
JTZ	**Takazaki**	**2.23 327**		P	**Pn**	**13 37 22.4**	**+1.1**
JTZ				*e*S	**Sn**	**13 37 50.2**	**+1.1**
JTO	**Tosashimizu**	**2.84 5**		P	**Pn**	**13 37 29.7**	**0.0**
JTO				*e*S	**Sn**	**13 37 59.7**	**-4.4**
JSJ	**Shimokoshiki**	**2.90 305**		P	**Pn**	**13 37 30.0**	**-0.6**
JSJ				*e*S	**Sn**	**13 38 04.5**	**-1.3**
JTAJ	**Takarajima**	**3.00 254**		P	**Pn**	**13 37 33.1**	**+1.2**
JTAJ				*e*S	**Sn**	**13 38 09.1**	**+1.0**
JNU	**Nakatsue**	**3.38 336**		Pn	**Pn**	**13 37 38.9**	**+1.7**
	5.0nm,0.3s,baz=197,slow=9.5,SNR=68						
JNU				Sn	**Sn**	**13 38 18.3**	**+0.7**
	8.1nm,0.3s,baz=172,slow=9.9,SNR=7.0						
JAMN	**Amaminishikomi**	**3.41 239**		P	**Pn**	**13 37 37.7**	**+0.2**
JAMN				*e*S	**Sn**	**13 38 16.2**	**-1.9**
JNA	**Nagahama**	**3.52 360**		P	**Pn**	**13 37 40.0**	**+0.9**
JNA				*e*S	**Sn**	**13 38 18.4**	**-2.6**
JTK	**Tokunoshima**	**3.83 235**		P	**Pn**	**13 37 43.6**	**+0.3**
JTK				*e*S	**Sn**	**13 38 26.7**	**-1.9**
JMN	**Monobe**	**3.87 17**		P	**Pn**	**13 37 44.6**	**+0.6**
MJAR	**Matsushiro Arr**	**8.07 35**		Pn	**Pn**	**13 38 42.4**	**+0.9**
	0.3nm,0.3s,baz=226,slow=15,SNR=3.1						
KSRS	**Korea Array**	**8.33 334**		Pn	**Pn**	**13 38 47.2**	**+2.0**
	0.1nm,0.3s,baz=154,slow=15,SNR=6.0						
KLR	**Kul'dur**	**19.19 359**		P	**Pn**	**13 41 09.4**	**+0.3**
	0.1nm,0.3s,baz=171,slow=8.1,SNR=7.5						
H11N2	**WAKE ISLAND Hy 32.74 100**			T	T	14 17 45.0	
	baz=296,slow=74,SNR=9.0						
H11N1	**WAKE ISLAND Hy 32.74 100**			T	T	14 17 45.4	
	baz=296,slow=74,SNR=4.9						
H11N3	**WAKE ISLAND Hy 32.75 100**			T	T	14 17 46.5	
	baz=296,slow=74,SNR=4.8						
KURBB	**Kurchatov Arra**	**44.87 313**		P	**P**	**13 44 59.5**	**+0.7**
	3.0nm,0.2s,baz=97,slow=8.7,SNR=3.2						
FITZ	**Fitzroy Crossi**	**48.30 189**		P	**P**	**13 45 26.6**	**+0.6**
	2.0nm,0.8s,baz=14,slow=4.2,SNR=4.1						
WRA	**Warramunga Arr**	**49.71 178**		P	**P**	**13 45 37.3**	**+0.5**
	1.6nm,0.8s,baz=356,slow=8.2,SNR=5.3						
ASAR	**Alice Springs**	**53.40 178**		P	**P**	**13 46 05.3**	**+0.8**
	1.2nm,0.8s,baz=10,slow=13,SNR=9.5						
FINES	**FINESS Array B**	**71.41 331**		P	**P**	**13 48 05.3**	**+0.8**
	0.6nm,0.5s,baz=57,slow=8.4,SNR=2.7						
AKASG	**Malin Array Be**	**75.07 320**		P	**P**	**13 48 25.0**	**-1.3**
	0.8nm,0.5s,baz=53,slow=9.8,SNR=4.2						

*IDC **15** 13:38:50.6±1.5, 34.°79S×72.°24W, h0km, mb3.8/3, mb1 4.0/5, mb1mx3.7/29, mbtmp3.8/5, ML3.9/2, Error ellipse: s-maj=49.3km s-min=25.3km az=83.0*
*NEIC **15** 13:38:54.0, 34.°99S×72.°41W, h30km, ML4.1(GUC), After GUC.*
NEIC Felt [III] at Constitucion and [II] at Iloca.
*GUC **15** 13:38:54.2±0.4, 35.°00S×72.°41W, h30km±2km, ML4.1*
ISC 15 13:38:51.0±3.4, 34.°94S±0.°04×72.°44W±0.°06, h6km±23km, n15, σ1=89/23, mb3.9/3, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TALC	**Talca**	**0.80 125**		*i* P	**Pb**	**13 39 07.7**	**+0.3**
TALC				*i* S	**Sb**	**13 39 17.6**	**-0.8**
NICH	**Los Niches**	**1.00 94**		*i* P	**Pb**	**13 39 10.9**	**+0.2**
NICH				*i* S	**Sb**	**13 39 23.8**	**-0.2**
NICH				IAML		13 39 33.7	
	comp=E,8μm,0.4s						
COCH	**Cobquecura**	**1.22 193**		*i* P	**Pn**	**13 39 13.9**	**-0.6**
COCH				*i* S	**Sb**	**13 39 29.0**	**-1.5**
COCH				IAML		13 39 32.9	
	comp=E,4μm,0.6s						
CCHI	**Chillan**	**1.69 170**		*i* P	**Pn**	**13 39 21.2**	**+0.3**
CCHI				*i* S	**Sn**	**13 39 41.5**	**-1.3**
CCHI				IAML		13 39 50.5	
	comp=N,7μm,0.7s						
CCSP	**San Pedro de C**	**1.98 196**		*i* P	**Pn**	**13 39 25.9**	**+1.0**
CCSP				*i* S	**Sn**	**13 39 49.5**	**-0.4**
ROCH	**El Roble**	**2.29 32**		*i* P	**Pn**	**13 39 31.7**	**+2.2**
ROCH				*i* S	**Sb**	**13 40 00.4**	**-1.2**
PLCA	**Paso Flores**	**5.97 166**		Pn	**Pn**	**13 40 21.1**	**+1.2**
	comp=N,0.9nm,0.3s,baz=2.3,slow=14,SNR=9.1						
PLCA				Sn	**Sn**	**13 41 35.1**	**+6.4**
	comp=N,0.3nm,0.3s,baz=225,slow=19,SNR=1.1						
LCO	**Las Campanas**	**6.09 15**		*e*Pn	**Pn**	**13 40 22.0**	**+0.2**
TRQA	**Tornquist**	**8.98 113**		*e*Pn	**Pn**	**13 41 01.4**	**+0.3**
TRQA				*e*Sn	**Sn**	**13 42 40.4**	**-2.2**
LVC	**Limon Verde**	**12.67 15**		Pn	**Pn**	**13 41 52.0**	**-0.1**
LPAZ	**La Paz**	**18.97 13**		P	**P**	**13 43 13.3**	**-0.4**
	comp=N,0.1nm,0.3s,baz=202,slow=16,SNR=2.7						
SIV	**San Ignacio**	**21.45 31**		P	**P**	**13 43 37.5**	**-2.6**
	comp=N,4.1nm,0.8s,baz=212,slow=9.0,SNR=6.0						
SAML	**Samuel**	**27.23 20**		P	**P**	**13 44 34.8**	**-0.9**
TXAR	**Lajitas Array**	**70.39 331**		P	**P**	**13 50 06.2**	**+0.3**
	comp=N,0.5nm,0.5s,baz=158,slow=9.0,SNR=14						
TORD	**Torodi Ar. Bea**	**84.84 70**		P	**P**	**13 51 26.8**	**0.0**
	comp=N,0.5nm,0.8s,baz=249,slow=4.0,SNR=2.5						

*ISCJB **15** 13:46:33.7±1.4, 30.°32S±0.°06×176.°4W±0.°2, h10km,*

mb4.1/8,MS4.9/1,Error ellipse: s-maj=21.0km s-min=8.9km az=171.8
*IDC **15** 13:46:34.6±1.0,30°.22S×176°.39W,h0km,mb4.2/5, mb1 4.3/7,mb1mx4.0/34,mbtmp4.2/7,ML4.0/2,MS4.8/1, Ms1 4.8/1,ms1mx3.4/28,Error ellipse: s-maj=25.5km s-min=21.3km az=51.0*
*NEIC **15** 13:46:35.8±0.8,30°.26S×176°.40W,h10km,mb4.1/3,Error ellipse: s-maj=17.4km s-min=14.2km az=92.0*
ISC 15 13:46:36.1±1.0,**30°.28S**±0°.08×**176°.5W**±0°.1,**h10**km,**n22,** σ2**9**15/**24**,**mb4.2/8**,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.61**	**309**	Pn	**Pg**	**13 47 06.8**	**-0.2**
	155nm,0.3s,baz=167,slow=23,SNR=12						
RAO				Sn	**Sb**	**13 47 25.8**	**-0.6**
	298nm,0.3s,baz=118,slow=18,SNR=6.3						
RAO				LR	LR	13 47 44.8	
	comp=Z,501nm,19.6s,baz=146,slow=43						
URZ	**Urewera**	**9.56**	**212**	Pn	**Pn**	**13 48 54.7**	**+0.9**
	1.3nm,0.3s,baz=280,slow=4.1,SNR=8.6						
URZ				Sn	**Sn**	**13 50 44.0**	**+2.7**
	4.9nm,0.3s,baz=208,slow=22,SNR=9.8						
RPZ	**Rata Peaks**	**16.68**	**213**	Pn	**Pn**	**13 50 29.0**	**-0.8**
	0.6nm,0.3s,baz=30,slow=4.7,SNR=3.3						
RPZ				Sn	**Sn**	**13 53 27.6**	**-7.4**
	0.4nm,0.3s,baz=2.5,slow=16,SNR=2.5						
DZM	**Mont Dzumac**	**17.36**	**294**	P	**P**	**13 50 43.4**	**+3.5**
	0.0nm,0.3s,baz=126,slow=13,SNR=3.7						
ARMA	**Armidale**	**27.48**	**262**	*eP*	**P**	**13 52 21.7**	**-1.0**
	2.0nm,0.7s						
CAN	**Canberra**	**29.36**	**251**	*eP*	**P**	**13 52 41.7**	**+2.4**
	3.0nm,0.9s						
CTAO	**Charters Tower**	**35.08**	**278**	P	**P**	**13 53 28.5**	**-1.1**
STKA	**Stephens Creek**	**35.78**	**256**	P	**P**	**13 53 35.5**	**0.0**
	4.1nm,1.1s,baz=90,slow=12,SNR=2.3						
ASAR	**Alice Springs**	**44.43**	**266**	P	**P**	**13 54 48.0**	**+0.6**
	3.5nm,0.8s,baz=108,slow=8.1,SNR=39						
WRAB	**Tennant Creek**	**45.40**	**271**	*eP*	**P**	**13 54 54.0**	**-1.2**
	3.5nm,0.6s						
WRA	**Warramunga Arr**	**45.41**	**271**	P	**P**	**13 54 55.8**	**+0.6**
	3.9nm,0.6s,baz=110,slow=7.7,SNR=36						
FITZ	**Fitzroy Crossi**	**53.67**	**269**	P	**P**	**13 55 59.5**	**+1.2**
	1.7nm,0.8s,baz=131,slow=9.3,SNR=3.5						
FITZ	**Fitzroy Crossi**	**53.67**	**269**	*eP*	**P**	**13 55 59.1**	**+0.8**
KAPI	**Kappang**	**64.88**	**279**	LR	LR	14 24 18.5	
	comp=Z,791nm,21.1s,baz=200,slow=35						
MJAR	**Matsushiro Arr**	**78.90**	**324**	P	**P**	**13 58 39.5**	**-0.1**
	0.7nm,0.6s,baz=158,slow=5.6,SNR=4.2						
MKAR	**Makanchi Array**	**118.70**	**310**	PKP	**PKPdf**	**14 05 23.5**	**-0.7**
	0.5nm,0.7s,baz=85,slow=3.2,SNR=3.5						
FINES	**FINESS Array B**	**145.47**	**341**	PKPbc	**PKPab**	**14 06 12.9**	**-1.0**
	3.5nm,0.7s,baz=116,slow=4.4,SNR=8.9						
NB2	**NORSAR Subarra**	**148.81**	**353**	PKP	**PKPbc**	**14 06 21.7**	**-1.6**
	comp=Z,1.8nm,0.9s,baz=12,slow=4.4						
NOA	**NORSAR Array B**	**148.81**	**353**	PKPbc	**PKPbc**	**14 06 21.6**	**-1.6**
	comp=Z,0.9nm,0.7s,baz=13,slow=4.5,SNR=3.3						
AKASG	**Malin Array Be**	**151.99**	**324**	PKPbc	**PKPbc**	**14 06 30.6**	**-0.4**
	comp=Z,1.5nm,0.5s,baz=48,slow=2.9,SNR=5.9						
DBIC	**Dimbokro**	**155.23**	**160**	PKPab	**PKPab**	**14 06 56.0**	**+1.0**
	comp=Z,1.6nm,0.6s,baz=212,slow=9.5,SNR=5.8						
TORD	**Torodi Ar. Bea**	**162.87**	**174**	PKPab	**PKPab**	**14 07 29.0**	**+0.9**
	comp=Z,3.6nm,0.9s,baz=188,slow=3.7,SNR=12						

*ISCJB **15** 13:48:08.8±0.3,44°.01N±0°.04×140°.41E±0°.06, h244km±3km,mb3.7/18,Error ellipse: s-maj=7.9km s-min=6.7km az=35.5*
*JMA **15** 13:48:09.2±0.2,44°.03N×140°.34E,h242km±2km,M3.7*
*IDC **15** 13:48:09.5±0.6,44°.08N×140°.35E,h231km±6km,mb3.5/18, mb1 3.6/22,mb1mx3.5/53,mbtmp4.1/22,Error ellipse: s-maj=13.0km s-min=10.3km az=176.0*
ISC 15 13:48:09.9±0.6,**43°.97N**±0°.05×**140°.40E**±0°.06,**h240**km±6km, **n42,** σ1**9**07/**55**,**mb3.7**/18,**2C-9D**,**Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JSK	**Shakotan**	**0.62**	**175**	⇓P	**Pn**	**13 48 41.8**	**-0.2**
JYG	**Yagishiri**	**0.87**	**58**	⇓P	**Pn**	**13 48 42.4**	**-0.6**
JHR	**Hokuryu**	**0.98**	**103**	⇓P	**Pn**	**13 48 44.1**	**+0.4**
JHR				*eS*	**S**	**13 49 11.1**	**+1.0**
JSS	**Shosan**	**1.13**	**67**	⇓P	**Pn**	**13 48 44.7**	**+0.2**
JSS				*eS*	**S**	**13 49 11.3**	**-0.4**
ASAJ	**Asahikawa**	**1.59**	**84**	P	**Pn**	**13 48 47.8**	**-0.1**
	12nm,0.3s,baz=254,slow=11,SNR=166						
ASAJ				S	**S**	**13 49 16.2**	**-1.5**
	4.5nm,0.3s,baz=269,slow=23,SNR=5.3						
JKK2	**Kamakawa 2**	**1.70**	**92**	⇓P	**Pn**	**13 48 48.8**	**0.0**
JKK2				*eS*	**S**	**13 49 19.0**	**-0.3**
JWK2	**Keihoku**	**1.72**	**38**	⇑P	**Pn**	**13 48 49.0**	**+0.1**
JWK2				*eS*	**S**	**13 49 19.7**	**+0.1**
JFR	**Furan**	**1.79**	**116**	⇓P	**Pn**	**13 48 49.4**	**-0.2**
JFR				*eS*	**S**	**13 49 21.1**	**+0.4**
JSE	**Soyaes**	**1.85**	**57**	⇑P	**Pn**	**13 48 49.6**	**-0.4**
JSE				*eS*	**S**	**13 49 20.3**	**-1.3**
JOSM	**Okushiri--Mats**	**2.00**	**200**	⇓P	**Pn**	**13 48 51.6**	**+0.1**
JOSM				*eS*	**S**	**13 49 25.5**	**+1.3**
JKB	**Kayabe**	**2.13**	**167**	⇓P	**Pn**	**13 48 52.7**	**0.0**
JNBK	**Urakawa-nobuka**	**2.41**	**134**	P	**Pn**	**13 48 55.6**	**+0.1**
JNBK				*eS*	**S**	**13 49 32.1**	**+0.8**
JTKR	**Abashiri--Toko**	**2.53**	**89**	P	**Pn**	**13 48 56.8**	**+0.2**
JTKR				*eS*	**S**	**13 49 32.9**	**-0.5**
JAR	**Ashorobuto**	**2.54**	**104**	⇓P	**Pn**	**13 48 57.0**	**+0.3**
JAR				*eS*	**S**	**13 49 34.1**	**+0.5**
JCH	**Churui**	**2.55**	**121**	P	**Pn**	**13 48 55.7**	**-1.2**
JCH				*eS*	**S**	**13 49 30.9**	**-3.0**
JOT	**Ohata**	**2.63**	**169**	P	**Pn**	**13 48 57.4**	**-0.4**
JAK	**Akkeshi**	**3.27**	**106**	*eS*	**S**	**13 49 45.6**	**-2.4**
JRA	**Rausu**	**3.41**	**89**	P	**Pn**	**13 49 07.3**	**+1.1**
JANG	**Nango**	**3.69**	**167**	P	**Pn**	**13 49 08.4**	**-1.2**
JANG				*eS*	**S**	**13 49 53.8**	**-3.0**
USRK	**Ussuriysk Ar.**	**6.06**	**275**	P	**Pn**	**13 49 37.9**	**-0.6**
	2.2nm,0.3s,baz=80,slow=14,SNR=30						
MJAR	**Matsushiro Arr**	**7.61**	**193**	P	**Pn**	**13 49 58.3**	**+0.1**
	0.6nm,0.3s,baz=9.3,slow=13,SNR=6.2						
KLR	**Kul'dur**	**7.94**	**314**	P	**Pn**	**13 49 59.5**	**-2.7**
	0.1nm,0.3s,baz=118,slow=15,SNR=3.9						
KSRS	**Korea Array**	**11.48**	**240**	P	**Pn**	**13 50 48.2**	**+1.0**
	0.2nm,0.3s,baz=51,slow=13,SNR=6.6						
SONM	**Songino Array**	**23.86**	**291**	P	**P**	**13 53 01.9**	**+0.3**
	1.0nm,0.3s,baz=86,slow=8.4,SNR=6.6						
ZALV	**Zalesovo Beam**	**7.53**	**30**	P	**P**	**13 54 55.5**	**-0.2**
	3.1nm,0.3s,baz=91,slow=8.7,SNR=13						
MKAR	**Makanchi Array**	**40.11**	**295**	P	**P**	**13 55 22.4**	**+0.2**
	1.0nm,0.6s,baz=82,slow=12,SNR=10.0						
KURBB	**Kurchatov Arra**	**41.39**	**302**	P	**P**	**13 55 32.7**	**+0.2**
	7.9nm,0.5s,baz=73,slow=8.9,SNR=64						
ILAR	**Eielson Array**	**44.19**	**36**	P	**P**	**13 55 54.7**	**0.0**
	0.5nm,0.6s,baz=275,slow=8.8,SNR=8.7						
BVAR	**Borovoye Array**	**45.53**	**307**	P	**P**	**13 56 05.9**	**+0.4**
	4.5nm,0.4s,baz=82,slow=9.5,SNR=29						
INK	**Inuvik**	**48.65**	**30**	P	**P**	**13 56 29.4**	**+0.2**
	3.9nm,0.3s,baz=281,slow=6.5,SNR=33						
ARU	**Arti**	**50.78**	**315**	P	**P**	**13 56 45.4**	**0.0**
	2.5nm,0.4s,baz=27,slow=4.5						
AKTO	**Aktyubinsk**	**53.62**	**308**	P	**P**	**13 57 04.7**	**-1.6**
	1.1nm,0.5s,baz=56,slow=7.8,SNR=5.7						
ARCES	**ARCESS Array B**	**57.26**	**338**	P	**P**	**13 57 30.5**	**-1.4**
	5.2nm,1.0s,baz=40,slow=7.1,SNR=3.1						
FINES	**FINESS Array B**	**62.36**	**330**	P	**P**	**13 58 05.9**	**-0.7**
	2.2nm,0.5s,baz=50,slow=7.6,SNR=17						
WRA	**Warramunga Arr**	**63.84**	**186**	P	**P**	**13 58 17.0**	**+0.2**
	0.4nm,0.8s,baz=5.3,slow=7.3,SNR=2.8						
NB2	**NORSAR Subarra**	**67.52**	**336**	P	**P**	**13 58 39.1**	**-0.8**
	comp=Z,0.6nm,0.4s,baz=36,slow=6.5						
NOA	**NORSAR Array B**	**67.52**	**336**	P	**P**	**13 58 39.1**	**-0.8**
	comp=Z,0.6nm,0.8s,baz=26,slow=5.9,SNR=5.8						
ASAR	**Alice Springs**	**67.57**	**186**	P	**P**	**13 58 42.7**	**+2.2**
	comp=Z,0.4nm,0.8s,baz=5,slow=8.4,SNR=4.6						
AKASG	**Malin Array Be**	**68.40**	**320**	P	**P**	**13 58 45.0**	**-0.4**
	comp=Z,1.8nm,0.5s,baz=44,slow=6.3,SNR=6.7						
PDAR	**Pinedale Array**	**73.39**	**46**	P	**P**	**13 59 16.4**	**+0.6**
	comp=Z,0.9nm,0.6s,baz=284,slow=1.0,SNR=8.1						
GERES	**GERESS Array B**	**76.44**	**327**	P	**P**	**13 59 32.8**	**-0.2**
	comp=Z,0.5nm,0.3s,baz=52,slow=6.9,SNR=4.5						
TXAR	**Lajitas Array**	**86.47**	**52**	P	**P**	**14 00 26.9**	**+1.2**
	comp=Z,0.2nm,0.6s,baz=320,slow=2.4,SNR=3.0						

*JMA **15** 13:51:24.0±0.2,37°.60N×142°.03E,h26km±3km,M3.6*
*IDC **15** 13:51:24.2±3.5,37°.14N×142°.19E,h0km,mb3.7/2, mb1 3.8/4,mb1mx3.4/46,mbtmp3.7/4,ML3.1/2,MS3.8/2, Ms1 3.8/2,ms1mx3.0/44,Error ellipse: s-maj=62.0km s-min=36.2km az=7.0*
ISC 15 13:51:20.7±1.9,**37°.56N**±0°.04×**142°.13E**±0°.07,**h8**km±11km, **n24,** σ1**9**48/**30**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.02**	**259**	P	**Pg**	**13 51 41.5**	**+1.3**
JFK				S	**Sb**	**13 51 53.6**	**-0.5**
JIO	**Ouri**	**1.09**	**326**	P	**Pg**	**13 51 42.2**	**+0.6**
JIO				*eS*	**Sb**	**13 51 54.7**	**-1.3**
JMM	**Marumori**	**1.10**	**287**	P	**Pg**	**13 51 42.5**	**+0.6**
JMM				S	**Sb**	**13 51 55.3**	**-1.2**
ONAJ	**Iwakimizuishiy**	**1.16**	**247**	P	**Pg**	**13 51 43.5**	**+0.6**
ONAJ				S	**Sb**	**13 51 57.4**	**-0.7**
JOU	**Okura**	**1.41**	**305**	P	**Pb**	**13 51 47.8**	**+0.5**
JOU				S	**Sn**	**13 52 04.3**	**-1.1**
JFT	**Otama**	**1.43**	**269**	P	**Pg**	**13 51 48.3**	**+0.3**
JFT				S	**Sn**	**13 52 05.1**	**-0.7**
JMK	**Ichinoseki**	**1.56**	**333**	P	**Pb**	**13 51 49.7**	**-0.2**
JMK				*eS*	**Sn**	**13 52 07.4**	**-1.8**
JYS	**Shirataka**	**1.76**	**293**	P	**Pb**	**13 51 53.2**	**0.0**
JYS				S	**Sb**	**13 52 14.9**	**-0.6**
JFY	**Yanaizu**	**1.94**	**266**	P	**Pb**	**13 51 55.8**	**-0.4**
JFY				S	**Sn**	**13 52 19.0**	**+0.6**
JYK	**Kaneyama**	**1.94**	**315**	P	**Pb**	**13 51 55.7**	**-0.7**
JOM	**Ohasama**	**2.02**	**341**	P	**Pb**	**13 51 56.5**	**-1.2**
JOM				S	**Sn**	**13 52 19.5**	**-1.0**
JRG	**Rokugo**	**2.18**	**328**	P	**Pb**	**13 52 00.7**	**+0.4**
MJAR	**Matsushiro Arr**	**3.30**	**253**	Pn	**Pb**	**13 52 16.5**	**-2.9**
	0.9nm,0.3s,baz=140,slow=27,SNR=4.6						
MJAR				Sn	**Sn**	**13 52 55.4**	**+3.5**
	2.0nm,0.3s,baz=87,slow=17,SNR=5.2						
MJAR				LR	LR	13 53 39.6	
	comp=Z,173nm,22.0s,baz=240,slow=42						
MAT	**Matsushiro**	**3.30**	**253**	P	**Pb**	**13 52 17.1**	**-2.3**
MAT				S	**Sn**	**13 52 53.4**	**+1.4**
JHJ	**Hachijo jima 2**	**4.83**	**204**	Pn	**Pn**	**13 52 32.7**	**-0.9**
	7.1nm,0.3s,baz=66,slow=20,SNR=2.1						
JHJ				Sn	**Sn**	**13 53 27.6**	**-2.1**
	6.2nm,0.3s,baz=307,slow=20,SNR=1.4						
H11N2	**WAKE ISLAND Hy**	**27.94**	**123**	T	T	14 26 26.8	
	baz=315,slow=75,SNR=52						
H11N1	**WAKE ISLAND Hy**	**27.95**	**123**	T	T	14 26 31.7	
	baz=315,slow=75,SNR=47						
H11N3	**WAKE ISLAND Hy**	**27.95**	**123**	T	T	14 26 28.2	
	baz=315,slow=75,SNR=42						
H11S1	**WAKE ISLAND Hy**	**28.68**	**125**	T	T	14 27 26.8	
	baz=317,slow=76,SNR=39						
H11S3	**WAKE ISLAND Hy**	**28.68**	**125**	T	T	14 27 26.9	
	baz=317,slow=76,SNR=45						
H11S2	**WAKE ISLAND Hy**	**28.69**	**125**	T	T	14 27 34.4	
	baz=317,slow=76,SNR=46						
WRA	**Warramunga Arr**	**57.66**	**189**	P	**P**	**14 01 13.1**	**+1.5**
	0.7nm,0.6s,baz=6.3,slow=7.1,SNR=8.2						
ASAR	**Alice Springs**	**61.39**	**189**	P	**P**	**14 01 39.7**	**+2.5**
	0.6nm,0.7s,baz=24,slow=12,SNR=6.5						
FINES	**FINESS Array B**	**68.61**	**332**	LR	LR	14 36 00.9	
	comp=Z,492nm,19.9s,baz=215,slow=39						

*NNC **15** 13:57:54.5±1.3,50°.85N×73°.84E,h0km,mb3.5,mpv3.2, Error ellipse: s-maj=15.8km s-min=8.6km az=70.0, Suspected Mining explosion.*
*IDC **15** 13:57:56.5±2.5,50°.91N×73°.76E,h15km±14km,mb3.1/1, mb1 3.0/5,mb1mx2.9/47,mbtmp2.9/5,ML2.3/4,Error ellipse: s-maj=34.6km s-min=9.9km az=34.0*
ISC 15 13:57:52.1±0.8,**50°.85N**±0°.05×**73°.61E**±0°.05,**h0**km,**n17,** σ1**9**53/19,**6C-7D**,**Central Kazakhstan**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VOSK	**Vostochnaya**	**2.49**	**320**	⇑Pn	**Pn**	**13 58 34.7**	**+0.8**
	6.6nm,0.7s						
VOSK				⇓Sn	**Sb**	**13 59 10.3**	**+1.4**
	36nm,0.8s						
OTUK	**Ortayu**	**2.74**	**198**	⇓Pn	**Pn**	**13 58 38.4**	**+1.1**
	8.3nm,0.7s						
OTUK				⇓Sn	**Sb**	**13 59 16.9**	**+0.9**
	21nm,0.7s						
BVA0	**Borovoye Array**	**2.96**	**319**	⇑Pn	**Pb**	**13 58 44.9**	**-0.8**
	3.9nm,0.7s,baz=143,slow=16,SNR=20						
BVA0				⇓Sn	**Sb**	**13 59 24.0**	**+1.7**
	15nm,0.7s,baz=123,slow=27,SNR=14						
BVAR	**Borovoye Array**	**2.96**	**319**	Pn	**Pb**	**13 58 43.6**	**-2.0**
	1.2nm,0.3s,baz=138,slow=16,SNR=15						
BVAR				Sn	**Sb**	**13 59 22.8**	**+0.5**
	2.3nm,0.3s,baz=118,slow=30,SNR=16						
KURBB	**Kurchatov Arra**	**3.13**	**92**	Pn	**Pn**	**13 58 43.8**	**+1.1**
	0.1nm,0.3s,baz=278,slow=14,SNR=28						
KURBB				Pg	**Pg**	**13 58 50.5**	**-1.6**
	0.4nm,0.3s,baz=278,slow=14,SNR=16						
KURBB				Lg	Lg	13 59 29.4	
	0.4nm,0.3s,baz=323,slow=38,SNR=11						
KURBB	**Kurchatov Arra**	**3.13**	**92**	⇓Pn	**Pn**	**13 58 44.0**	**+1.3**
	16nm,0.6s						
KURBB				⇓Lg	Lg	13 59 30.5	
	80nm,0.7s						
MK31	**Makanchi Array**	**7.02**	**122**	⇑Lg	Lg	14 01 34.3	
	10nm,0.8s,baz=308,slow=27,SNR=6.1						
MKAR	**Makanchi Array**	**7.02**	**122**	Pn	**Pn**	**13 59 36.8**	**+0.7**
	0.0nm,0.3s,baz=303,slow=22,SNR=1.4						
MKAR				Pg	**Pb**	**13 59 56.2**	**+1.3**
	0.2nm,0.3s,baz=297,slow=14,SNR=6.4						
MKAR				Sn	**Sn**	**14 00 56.3**	**-0.3**
	0.1nm,0.3s,baz=300,slow=18,SNR=3.4						
MKAR				Lg	Lg	14 01 34.7	
	0.5nm,0.3s,baz=305,slow=25,SNR=10						
ZALV	**Zalesovo Beam**	**7.53**	**61**	Pn	**Pn**	**13 59 44.0**	**+1.0**
	0.2nm,0.3s,baz=250,slow=14,SNR=4.4						
ZALV				Sn	**Sn**	**14 01 07.9**	**-1.0**
	0.2nm,0.3s,baz=249,slow=20,SNR=3.1						
ZALV				Lg	Lg	14 01 50.2	
	baz=255,slow=22,SNR=2.4						
TKM2	**Tokmak 2**	**8.05**	**170**	⇑Lg	Lg	14 02 05.4	
	15nm,1.0s						
AAK	**Ala-Archa**	**8.24**	**175**	Lg	Lg	14 02 13.4	
	0.4nm,0.3s,baz=205,slow=20,SNR=4.5						
AAK	**Ala-Archa**	**8.24**	**175**	⇓Lg	Lg	14 02 15.7	
	22nm,0.9s						
MNAS	**Manas**	**8.40**	**186**	⇑Lg	Lg	14 02 22.8	
	7.0nm,0.8s						
PDGK	**Podgornoye**	**8.52**	**150**	⇑Lg	Lg	14 02 25.9	
	11nm,0.9s						
AKTO	**Aktyubinsk**	**9.92**	**274**	Sn	**Sn**	**14 02 04.8**	**-3.0**
	0.1nm,0.3s,baz=74,slow=7.4,SNR=1.9						
AKTO				Lg	Lg	14 03 07.7	
	0.0nm,0.3s,baz=276,slow=9.2,SNR=2.6						
ARU	**Arti**	**10.53**	**308**	Sn	**Sn**	**14 02 25.0**	**+2.3**
	0.0nm,0.3s,baz=255,slow=20,SNR=1.4						
ARU				Lg	Lg	14 03 25.9	
	0.0nm,0.3s,baz=294,slow=20,SNR=1.6						
ILAR	**Eielson Array**	**60.52**	**19**	P	**P**	**14 08 03.1**	**-0.3**
	0.2nm,0.5s,baz=318,slow=5.6,SNR=5.3						

*MAN **15** 14:02:21,9°.51N×122°.08E,h9km,mb4.7,ML3.6,MS3.5*
*IDC **15** 14:02:23.6±1.1,9°.10N×122°.50E,h0km,mb3.9/8, mb1 4.0/8,mb1mx3.7/38,mbtmp3.9/8,Error ellipse: s-maj=70.5km s-min=16.6km az=62.0*
*ISCJB **15** 14:02:26.7±0.6,9°.07N±0°.09×122°.38E±0°.06,h29km, mb3.8/8,Error ellipse: s-maj=12.3km s-min=8.6km az=173.8*
ISC 15 14:02:28.2±0.8,**9°.20N**±0°.10×**122°.39E**±0°.08,**h29**km,**n14,** σ1**9**71/14,**mb4.0**/8,**2C-4D**,**Negros**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.85**	**80**	⇓*i*P	Pn	14 02 37.5	-6.7
SNPH				*i* S	**Sb**	**14 02 54.2**	**-1.3**
DCPH	**Dipolog City**	**1.13**	**123**	⇑*e*P	**Pn**	**14 02 48.9**	**+0.9**
TBP	**Tagbilaran**	**1.53**	**71**	⇑*i*P	**Pn**	**14 02 52.8**	**-0.8**
JAP	**San Jose, Anti**	**1.60**	**344**	⇓*i*P	Pn	14 02 43.6	-11
RCP	**Roxas**	**2.37**	**8**	⇓*e*P	Pn	14 02 58.0	-7.1
CGP	**Cagayan de Oro**	**2.39**	**108**	⇓*e*P	**Pn**	**14 03 06.5**	**+1.0**
CGP				*eS*	**Sb**	**14 03 42.7**	**+3.0**
CMAR	**Chiang Mai Arr**	**24.53**	**295**	P	**P**	**14 07 46.0**	**+0.5**
	0.9nm,1.0s,baz=102,slow=7.6,SNR=5.2						
FITZ	**Fitzroy Crossi**	**27.32**	**173**	P	**P**	**14 08 09.5**	**-1.1**
	1.9nm,0.8s,baz=352,slow=7.1,SNR=2.2						
WRA	**Warramunga Arr**	**31.26**	**158**	P	**P**	**14 08 44.1**	**-1.6**
	1.5nm,0.8s,baz=336,slow=9.7,SNR=7.7						
ASAR	**Alice Springs**	**34.55**	**161**	P	**P**	**14 09 13.5**	**-0.9**
	2.7nm,0.6s,baz=344,slow=7.3,SNR=53						
ASAR				PcP	**PcP**	**14 11 45.9**	**-3.1**
	0.6nm,0.7s,baz=357,slow=3.0,SNR=5.4						
SONM	**Songino Array**	**40.82**	**343**	P	**P**	**14 10 08.1**	**+0.8**
	0.6nm,0.8s,baz=177,slow=7.2,SNR=1.9						
STKA	**Stephens Creek**	**44.78**	**157**	P	**P**	**14 10 38.5**	**-0.9**
	2.2nm,0.9s,baz=337,slow=13,SNR=2.6						
MKAR	**Makanchi Array**	**50.63**	**325**	P	**P**	**14 11 26.2**	**+1.5**
	1.3nm,0.7s,baz=122,slow=8.8,SNR=9.4						
AKASG	**Malin Array Be**	**84.96**	**320**	P	**P**	**14 15 01.6**	**+0.9**
	0.9nm,0.6s,baz=70,slow=4.5,SNR=2.6						

*SOME **15** 14:06:50.5,40°.43N×74°.28E,h0km*
*KRNET **15** 14:06:55.8±0.1,40°.56N×74°.05E,h29km,mb3.2*
*NNC **15** 14:06:57.5±4.6,40°.51N×74°.12E,h0km,mb3.7,mpv3.3, Error ellipse: s-maj=34.1km s-min=20.9km az=168.0*
ISC 15 14:06:55.7±1.4,**40°.60N**±0°.04×**74°.05E**±0°.03,**h1**km±12km, **n28,** σ1**9**72/52,**22C-11D**,**Kyrgyzstan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OHH	**Osh**	**0.96**	**266**	⇑*i*P	**Pg**	**14 07 13.9**	**-0.3**
	baz=269						
OHH				⇑*i*S	**Sg**	**14 07 27.2**	**+0.5**
	baz=269						
ARSB	**Arslanbob**	**1.09**	**312**	⇑*e*P	**Pg**	**14 07 16.2**	**-0.4**
	baz=314						
ARSB				⇑*e*S	**Sb**	**14 07 31.9**	**-0.3**
	baz=314						
ARLS	**Aral**	**1.28**	**9**	⇑*e*P	**Pg**	**14 07 21.0**	**+0.7**
	baz=9.0						
ARLS				⇑*e*S	**Sn**	**14 07 38.5**	**-0.4**
	baz=9.0						
AML	**Almayashu**	**1.56**	**350**	⇑*i*P	**Pn**	**14 07 23.6**	**-1.4**
	baz=350						
AML				⇑*i*S	**Sb**	**14 07 45.8**	**-0.2**
	baz=350						
UCH	**Uchtor**	**1.67**	**12**	⇓*i*P	**Pn**	**14 07 25.2**	**-1.4**
	baz=12						
UCH				⇓*i*S	**Sn**	**14 07 48.3**	**-0.6**
	baz=12						
KZA	**Kyzart**	**1.74**	**31**	⇑*i*P	**Pn**	**14 07 26.1**	**-1.4**
	baz=30						
KZA				⇑*i*S	**Sn**	**14 07 49.7**	**-0.8**
	baz=30						
ARK	**Arkit**	**1.98**	**308**	⇑*e*P	**Pb**	**14 07 31.5**	**-1.2**
	baz=309						
ARK				⇑*e*S	**Sb**	**14 07 56.8**	**-1.1**
	baz=309						
DRK	**Karamyk**	**2.05**	**238**	⇑*e*P	**Pb**	**14 07 33.0**	**-1.0**
	baz=239						
DRK				⇑*i*S	**Sb**	**14 07 59.9**	**-0.3**
	baz=239						
AAK	**Ala-Archa**	**2.07**	**9**	⇑Pn	**Pn**	**14 07 32.8**	**+1.0**
	7.6nm,0.3s						
AAK				Sn	**Sg**	**14 08 02.6**	**+0.5**
	27nm,0.4s						
EKS2	**Erkin-Say**	**2.07**	**354**	⇓*i*P	**Pb**	**14 07 33.0**	**-1.3**
	baz=355						
EKS2				⇓*i*S	**Sb**	**14 07 59.7**	**-0.9**
	baz=355						
MNAS	**Manas**	**2.22**	**329**	⇓Pn	**Pb**	**14 07 35.7**	**-1.0**
	12nm,0.5s						
MNAS				⇑Sn	**Sg**	**14 08 07.7**	**+0.7**
	60nm,0.4s						
MRKS	**Merke**	**2.23**	**344**	*eP*	**Pb**	**14 07 36.1**	**-0.9**
	47nm,0.4s						
MRKS				*eS*	**Sg**	**14 08 08.9**	**+1.4**
	69nm,0.3s						
ULHL	**Ulahol**	**2.33**	**44**	⇑*i*P	**Pn**	**14 07 35.8**	**+0.3**
	baz=44						
ULHL				⇑*i*S	**Sb**	**14 08 06.2**	**-2.0**
	baz=44						
BOOM	**Boomskoye usch**	**2.37**	**36**	⇓*e*P	**Pn**	**14 07 37.4**	**+1.5**
	baz=36						
BOOM				⇓*i*S	**Sb**	**14 08 09.

σ0$81/10, **mb3.8/8, Borneo**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**20.68**	**326**	P	**P**	**14 57 34.5**	**+0.4**
	2.8nm,0.9s,baz=154,slow=9.8,SNR=15						
FITZ	**Fitzroy Crossi**	**24.15**	**144**	P	**P**	**14 58 08.4**	**-1.5**
	2.7nm,0.9s,baz=322,slow=4.8,SNR=6.6						
WRA	**Warramunga Arr**	**31.23**	**134**	P	**P**	**14 59 14.4**	**+1.0**
	0.8nm,1.1s,baz=309,slow=9.4,SNR=2.6						
ASAR	**Alice Springs**	**33.43**	**139**	P	**P**	**14 59 32.3**	**-0.3**
	0.7nm,0.7s,baz=322,slow=8.2,SNR=10						
ASAR				PcP	**PcP**	**15 02 13.9**	**+0.3**
	0.4nm,0.7s,baz=318,slow=2.7,SNR=6.8						
STKA	**Stephens Creek**	**44.00**	**141**	P	**P**	**15 01 01.8**	**+0.7**
	2.2nm,0.8s,baz=330,slow=8.7,SNR=4.6						
SONM	**Songino Array**	**46.52**	**356**	P	**P**	**15 01 20.8**	**-0.2**
	0.5nm,0.4s,baz=187,slow=7.3,SNR=3.8						
MKAR	**Makanchi Array**	**51.72**	**335**	P	**P**	**15 02 01.0**	**+0.3**
	0.4nm,0.6s,baz=143,slow=8.6,SNR=5.3						
ZALV	**Zalesovo Beam**	**56.70**	**342**	P	**P**	**15 02 36.1**	**-0.7**
	1.9nm,0.5s,baz=152,slow=6.1,SNR=7.8						
BRTR	**Keskin Array B**	**79.35**	**310**	P	**P**	**15 04 59.5**	**-0.1**
	0.9nm,0.8s,baz=138,slow=9.0,SNR=5.8						

BJI ***15*** *14:55:28.7,21.˜58S×68.˜94W,h93km,mB5.2/12*
ISCJB ***15*** *14:55:29.4±0.3,20.˜96S±0.˜02×68.˜35W±0.˜03,h101km±2km, mb5.2/198,Error ellipse: s-maj=5.2km s-min=3.7km az=148.3*
SJA ***15*** *14:55:30.4±0.2,21.˜25S×68.˜56W,h224km±9km*
GCMT ***15*** *14:55:31.0±0.2,21.˜20S×68.˜89W,h112km±2km, MW5.4/108,Moment Tensor Solution. s41,c44; s108,c166; Duration: 1ł2 Moment tensor: Scale 10^17 Nm; Mrr=1.42±.03; Mθθ 0.13±.04; Mϕϕ 1.29±.04; Mrθ 0.07±.03; Mθϕ -0.49±.04; Mϕr 0.23±.04; Best double couple: M0 1.46600×10^17 NP1:ϕ3 166.00000°,δ49.00000°, λ-82.00000°. NP2:ϕ3 334.00000°,δ42.00000°, λ-99.00000°. Principal axes: T 1.4850, Plg4.0000°, Azm250.0000°; N -0.0350, Plg6.0000°, Azm340.0000°; P -1.4470, Plg83.0000°, Azm128.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
SCB ***15*** *14:55:31.1±0.4,20.˜79S×67.˜99W,h200km,Ml5.1/1 Error ellipse: s-maj=14.9km s-min=4.2km az=46.0*
GUC ***15*** *14:55:31.2±0.4,21.˜18S×68.˜78W,h125km±3km,ML5.4*
NEIC ***15*** *14:55:31.0,21.˜17S×68.˜78W,h125km,mb5.2/170,After GUC.*
NEIC Felt [III] at Alto Hospicio, Camina, Iquique, La Tirana and Pica; [II] at Calama, Huara, Oficina Maria Elena, Pisagua and Tocopilla.
IDC ***15*** *14:55:33.6±0.3,21.˜05S×68.˜49W,h121km±2km,mb4.8/18, mb1 4.9/21,mb1mx4.8/27,mbtmp5.2/21,MS4.0/4, Ms1 4.0/4,ms1mx3.8/18,Error ellipse: s-maj=13.8km s-min=9.1km az=64.0*
MOS ***15*** *14:55:36.6±1.2,20.˜73S×68.˜35W,h152km,mb5.2/35, Error ellipse: s-maj=16.0km s-min=7.3km az=108.1*

ISC 15 14:55:32.6±0.3,21.˜09S±0.˜03×68.˜59W±0.˜04,h118km±2km, n890,σ1$33/936,mb5.1/198,19C-9D,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.84**	**273**	⇑*i*P	**Pn**	**14 55 51.5**	**-1.7**
PB01				*i* S	**Sn**	**14 56 06.7**	**-1.9**
PB01				IAML		14 56 10.4	
	comp=E,84μm,0.6s						
PB09	**IPOC Station P**	**0.93**	**221**	⇑*i*P	**Pn**	**14 55 52.3**	**-1.8**
PB09				*i* S	**Sn**	**14 56 08.1**	**-2.2**
PB07	**IPOC Station P**	**1.37**	**242**	⇑*i*P	**Pn**	**14 55 56.3**	**-2.3**
HMBC	**Humberstone**	**1.47**	**303**	⇑*i*P	**Pn**	**14 55 58.4**	**-1.2**
HMBC				*i* S	**Sn**	**14 56 18.7**	**-1.5**
LVC	**Limon Verde**	**1.54**	**191**	P	**Pn**	**14 55 59.0**	**-1.8**
	comp=E,62μm,0.3s,baz=36,slow=12,SNR=9650						
LVC				S	**Sn**	**14 56 20.3**	**-1.9**
	comp=E,89μm,0.3s,baz=226,slow=15,SNR=54						
LVC	**Limon Verde**	**1.54**	**191**	⇑*i*P	**Pn**	**14 55 59.1**	**-1.7**
LVC				*i* S	**Sn**	**14 56 20.5**	**-1.8**
PB11	**IPOC Station P**	**1.66**	**323**	⇑*i*P	**Pn**	**14 56 01.5**	**-0.5**
PB11				*i* S	**Sn**	**14 56 24.1**	**-0.3**
PB06	**IPOC Station P**	**1.85**	**210**	⇑*i*P	**Pn**	**14 56 02.2**	**-2.1**
PB06				*i* S	**Sn**	**14 56 25.4**	**-3.0**
PB06				IAML		14 56 27.2	
	comp=N,29μm,1.3s						
PSGC	**Pisagua**	**2.07**	**316**	⇑*i*P	**Pn**	**14 56 05.9**	**-1.2**
PSGC				*i* S	**Sn**	**14 56 32.4**	**-1.0**
MNMC	**Minye Minye**	**2.17**	**334**	IAML		14 56 42.6	
	comp=N,39μm,0.6s						
MOCB	**Mochara**	**2.75**	**94**	⇑*i*Pn	**Pn**	**14 56 17.3**	**+1.2**
MOCB				*e*Sn	**Sn**	**14 56 51.0**	**+1.6**
	comp=N,13μm,1.6s						
PB13	**IPOC Station P**	**2.88**	**342**	⇑*i*P	**Pn**	**14 56 19.0**	**+1.1**
PB13				*e*S	**Sn**	**14 56 54.6**	**+2.1**
PB12	**IPOC Station P**	**2.96**	**326**	*i* P	**Pn**	**14 56 17.1**	**-1.4**
PB12				*i* S	**Sn**	**14 56 52.9**	**-0.9**
HJA	**Humahuaca**	**3.62**	**126**	*i* P	**Pn**	**14 56 28.7**	**+1.3**
HJA				*i* S	**Sn**	**14 57 12.0**	**+2.2**
BBOJ	**La Paz, Jacaqu**	**4.11**	**5**	⇑*i*Pn	**Pn**	**14 56 36.5**	**+2.3**
BBOE	**La Paz, Chanca**	**4.29**	**8**	⇑*i*Pn	**Pn**	**14 56 38.6**	**+2.0**
BBOD	**La Paz, Gloria**	**4.43**	**360**	⇑*i*Pn	**Pn**	**14 56 40.8**	**+2.3**
SLA	**San Lorenzo**	**4.59**	**142**	*i* P	**Pn**	**14 56 39.8**	**-0.5**
LPAZ	**La Paz**	**4.80**	**5**	*i* P	**Pn**	**14 56 46.1**	**+2.7**
LPAZ	**La Paz**	**4.80**	**5**	P	**Pn**	**14 56 44.8**	**+1.3**
	comp=N,19nm,0.3s,baz=176,slow=7.7,SNR=304						
LPAZ				S	**Sn**	**14 57 35.1**	**-3.3**
	comp=N,21nm,0.3s,baz=194,slow=19,SNR=5.9						
LPAZ	**La Paz**	**4.80**	**5**	⇑*i*Pn	**Pn**	**14 56 44.7**	**+1.3**
LPAZ				*e*Sn	**Sn**	**14 57 38.2**	**-0.2**
BBOB	**La Paz, Bander**	**4.94**	**5**	‖*i*Pn	**Pn**	**14 56 46.4**	**+1.1**
ALOL	**LOMAS DE OLMED**	**5.05**	**123**	*i* P	**Pn**	**14 56 45.5**	**-0.7**
FSA	**Cafayete**	**5.54**	**155**	*i* P	**Pn**	**14 56 51.5**	**-1.5**
AHML	**Horco Molle**	**6.40**	**153**	*i* P	**Pn**	**14 57 01.9**	**-2.6**
VCA	**Vinchina**	**7.62**	**177**	*i* P	**Pn**	**14 57 17.4**	**-3.7**
CYA	**Choya**	**7.74**	**161**	*i* P	**Pn**	**14 57 19.0**	**-3.6**
LCO	**Las Campanas**	**8.11**	**193**	*e*Pn	Pn	14 57 20.6	-7.2
	comp=N,175nm,0.6s						
LCO				*e*Sn	**Sn**	**14 58 51.7**	**-6.4**
SIV	**San Ignacio**	**8.75**	**56**	P	**Pn**	**14 57 33.4**	**-2.8**
	comp=N,101nm,0.3s,baz=262,slow=11,SNR=349						
SIV				S	**Sn**	**14 59 06.0**	**-7.2**
	baz=339,slow=20,SNR=4.9						
SIV				LR	LR	15 01 51.5	
	comp=N,2μm,18.3s,baz=284,slow=44						
SIV	**San Ignacio**	**8.75**	**56**	⇑*i*Pn	**Pn**	**14 57 32.9**	**-3.4**
ACCO	**Cerro Coronel**	**9.47**	**183**	*i* P	**Pn**	**14 57 41.9**	**-4.3**
AMOG	**MOGNA**	**9.81**	**180**	*i* P	Pn	14 57 45.5	-5.0
ACHE	**Chepes**	**10.17**	**171**	*i* P	Pn	14 57 49.9	-5.7
RTLS	**Leoncito**	**10.68**	**183**	*i* P	Pn	14 57 57.1	-5.5
RTCV	**Cerro Valdivia**	**10.73**	**180**	*i* P	Pn	14 57 57.3	-5.7
TCA	**Tanti**	**10.81**	**161**	*i* P	Pn	14 57 58.2	-6.0
ASAL	**Salagasta**	**11.46**	**181**	*i* P	Pn	14 58 06.4	-6.3
CPUP	**Villa Florida**	**11.55**	**119**	*i* P	Pn	14 58 07.7	-6.2
CPUP	**Villa Florida**	**11.55**	**119**	P	**Pn**	**14 58 10.5**	**-3.4**
	comp=N,1.5nm,0.3s,baz=299,slow=12,SNR=46						
CPUP				S	Sn	15 00 10.7	-10
	comp=N,0.3nm,0.3s,baz=241,slow=19,SNR=2.4						
MRA	**San Martin**	**11.57**	**168**	*i* P	Pn	14 58 07.7	-6.5
AAGR	**Agrelo**	**11.95**	**181**	*i* P	Pn	14 58 12.7	-6.5
NNA	**Nana**	**12.02**	**318**	P	**Pn**	**14 58 18.7**	**-1.6**
	comp=N,2.5nm,0.3s,baz=171,slow=12,SNR=7.8						
NNA				S	**Sn**	**15 00 24.6**	**-8.1**
	comp=N,4.1nm,0.3s,baz=234,slow=19,SNR=2.8						
SAML	**Samuel**	**13.15**	**24**	*e*Pn	**Pn**	**14 58 31.6**	**-3.3**
	comp=N,47nm,1.0s						
ATAH	**Atahualpa**	**16.81**	**324**	P	**P**	**14 59 22.5**	**+0.9**
	comp=N,0.5nm,0.3s,baz=165,slow=8.5,SNR=12						
TRQA	**Tornquist**	**17.84**	**163**	*e*P	**P**	**14 59 29.4**	**-3.0**
	comp=N,474nm,1.4s						
PLCA	**Paso Flores**	**19.65**	**184**	P	**P**	**14 59 52.1**	**-0.1**
	comp=N,2.2nm,0.3s,baz=20,slow=11,SNR=50						
PLCA				PcP	**PcP**	**15 04 06.8**	**+0.2**
	comp=N,0.6nm,0.3s,baz=96,slow=3.8,SNR=7.3						
PLCA	**Paso Flores**	**19.65**	**184**	*e*P	**P**	**14 59 51.6**	**-0.5**
PLCA						15 04 06.8	
PLCA				pmax	pmax		
	comp=Z,144nm,1.0s						
PLCA	**Paso Flores**	**19.65**	**184**	*e*P	**P**	**14 59 51.6**	**-0.5**
	comp=Z,144nm,1.0s						
PLCA				PcP	**PcP**	**15 04 06.8**	**+0.2**
SPB	**Sao Paulo**	**19.72**	**101**	*e*P	**P**	**14 59 50.4**	**-2.6**
	comp=Z,124nm,1.6s						
BDFB	**Brasilia**	**20.25**	**78**	P	**P**	**14 59 58.1**	**-0.8**
	comp=Z,15nm,0.5s,baz=254,slow=12						
BDFB				LR	LR	15 08 27.2	
	comp=Z,564nm,20.3s,baz=348,slow=38						
BDFB	**Brasilia**	**20.25**	**78**	*e*P	**P**	**14 59 58.4**	**-0.5**
	comp=Z,51nm,0.9s						
PTGA	**Pitinga**	**21.92**	**24**	P	**P**	**15 00 14.3**	**-2.3**
	comp=Z,57nm,0.4s,baz=209,slow=12,SNR=178						
PTGA				S	**S**	**15 04 03.5**	**-7.8**
	comp=Z,35nm,0.9s,baz=313,slow=22,SNR=8.4						
OTAV	**Otavalo**	**23.29**	**334**	*e*P	**P**	**15 00 30.1**	**-0.5**
	comp=Z,38nm,0.7s						
CMBC	**Cumbal**	**23.69**	**336**	*e*P	**P**	**15 00 36.4**	**+2.1**
PRAC	**Prado**	**25.41**	**345**	*e*P	**P**	**15 00 49.4**	**0.0**
PRAC	**Prado**	**25.41**	**345**	*e*P	**P**	**15 00 49.5**	**+0.1**
	comp=Z,44nm,0.6s						
VILC	**Villavicencio,**	**25.54**	**348**	*e*P	**P**	**15 00 50.5**	**-0.2**
GRGC	**Isla de Gorgon**	**25.72**	**337**	*e*P	**P**	**15 00 53.3**	**+1.2**
CHIC	**Chingaza**	**26.06**	**348**	*e*P	**P**	**15 00 54.5**	**-1.1**
CHRN	**Cochrane**	**26.30**	**186**	*e*P	**P**	**15 00 57.3**	**+0.3**
	comp=Z,15nm,0.8s						
ROSC	**El Rosal**	**26.38**	**347**	P	**P**	**15 01 00.1**	**+1.6**
	comp=Z,25nm,0.6s,baz=83,slow=23,SNR=10.0						
ROSC				LR	LR	15 12 51.7	
	comp=Z,638nm,19.1s,baz=176,slow=39						
ROSC	**El Rosal**	**26.38**	**347**	*e*P	**P**	**15 00 57.9**	**-0.6**
ROSC	**El Rosal**	**26.38**	**347**	*e*P	**P**	**15 00 58.9**	**+0.4**
	comp=Z,18nm,0.6s						
GUYC	**Guyana, Colomb**	**26.99**	**345**	*e*P	**P**	**15 01 05.2**	**+1.2**
RUSC	**La Lusia**	**27.18**	**350**	*e*P	**P**	**15 01 05.8**	**0.0**
RUSC	**La Rusia**	**27.18**	**350**	*e*P	**P**	**15 01 06.0**	**+0.3**
	comp=Z,58nm,0.8s						
NORC	**Norcasia**	**27.20**	**346**	*e*P	**P**	**15 01 05.2**	**-0.2**
BARC	**Barichara**	**27.88**	**350**	*e*P	**P**	**15 01 10.3**	**-1.4**
HELC	**Santa Helena**	**27.96**	**345**	*e*P	**P**	**15 01 11.4**	**-1.1**
HELC	**Santa Helena**	**27.96**	**345**	*e*P	**P**	**15 01 10.1**	**-2.4**
	comp=Z,106nm,0.6s						
CBRI	**Barrientos, No**	**28.93**	**351**	*e*P	**P**	**15 01 20.5**	**-0.5**
GRMC	**Gramalote, San**	**28.93**	**351**	*e*P	**P**	**15 01 20.5**	**-0.4**
SDV	**Santo Domingo**	**29.86**	**356**	P	**P**	**15 01 28.6**	**-0.6**
	comp=Z,40nm,0.7s,baz=186,slow=7.9,SNR=14						
SDV	**Santo Domingo**	**29.86**	**356**	*e*P	**P**	**15 01 26.9**	**-2.4**
	comp=Z,38nm,0.8s						
GRGR	**Grenville**	**33.71**	**12**	*e*P	**P**	**15 01 58.8**	**-3.9**
	comp=Z,179nm,0.7s						
SVB	**Belmont**	**34.90**	**13**	*e*P	**P**	**15 02 11.6**	**-1.4**
	comp=Z,117nm,0.9s						
RCBR	**Riachuelo**	**35.11**	**69**	*e*P	**P**	**15 02 12.1**	**-2.9**
	comp=Z,24nm,0.6s						
FDF	**Fort de France**	**36.34**	**12**	*e*P	**P**	**15 02 22.4**	**-3.0**
FDF				pmax	pmax		
	comp=Z,106nm,0.5s						
FDF	**Fort de France**	**36.34**	**12**	*e*P	**P**	**15 02 22.4**	**-3.0**
	comp=Z,106nm,0.5s						
SABA	**Saba**	**38.83**	**8**	*e*P	**P**	**15 02 44.4**	**-1.8**
	comp=Z,43nm,0.6s						
SJG	**San Juan**	**39.03**	**4**	*e*P	**P**	**15 02 45.8**	**-2.1**
SJG				pmax	pmax		
	comp=Z,144nm,0.6s						
SJG	**San Juan**	**39.03**	**4**	*e*P	**P**	**15 02 45.8**	**-2.1**
	comp=Z,144nm,0.6s						
HUMP	**Col San Antoni**	**39.08**	**4**	*e*P	**P**	**15 02 45.9**	**-2.4**
	comp=Z,87nm,1.6s						
MPR	**Mayaguez**	**39.09**	**2**	*e*P	**P**	**15 02 46.9**	**-1.5**
	comp=Z,101nm,0.7s						
ANWB	**Willy Bob**	**39.09**	**10**	*e*P	**P**	**15 02 44.0**	**-4.3**
	comp=Z,49nm,0.6s						
SMRT	**St. Maarten**	**39.27**	**8**	*e*P	**P**	**15 02 46.8**	**-3.1**
	comp=Z,61nm,0.6s						
STVI	**Saint Thomas**	**39.36**	**5**	*e*P	**P**	**15 02 48.7**	**-1.9**
	comp=Z,55nm,0.9s						
ABVI	**Anegada Island**	**39.80**	**6**	*e*P	**P**	**15 02 51.5**	**-2.7**
	comp=Z,67nm,0.6s						
HOPE	**Hope Point**	**41.09**	**152**	*e*P	**P**	**15 03 01.8**	**-2.7**
	comp=Z,167nm,1.0s						
GRTK	**Grand Turk**	**42.42**	**356**	P	**P**	**15 03 11.0**	**-4.7**
	comp=Z,64nm,0.9s						
CCIG	**Comitan**	**43.74**	**326**	*e*P	**P**	**15 03 24.4**	**-2.2**
	comp=Z,36nm,1.2s						
PMSA	**Palmer Station**	**43.77**	**177**	*e*P	**P**	**15 03 26.3**	**+0.3**
	comp=Z,86nm,1.4s						
TLIG	**Tlapa**	**48.37**	**320**	*e*P	**P**	**15 04 01.1**	**-1.7**
	comp=Z,28nm,0.8s						
DWPF	**Disney Wildern**	**50.47**	**345**	P	**P**	**15 04 13.6**	**-4.8**
	comp=Z,163nm,0.8s						
TIGA	**Tifton**	**54.18**	**344**	P	**P**	**15 04 46.2**	**+0.4**
	baz=163						
646A	**Port Sulphur**	**54.38**	**337**	P	**P**	**15 04 48.7**	**+1.5**
	baz=156						
645A	**Chauvin**	**54.55**	**336**	P	**P**	**15 04 50.0**	**+1.5**
	baz=155						
ZAIG	**Zacatecas**	**54.76**	**321**	*e*P	**P**	**15 04 52.0**	**+1.5**
	comp=Z,34nm,0.8s						
RGRS	**Roger Stewart**	**54.83**	**348**	*e*P	**P**	**15 04 50.9**	**+0.4**
	comp=Z,3μm,0.5s						
546A	**Slidell**	**54.93**	**338**	P	**P**	**15 04 51.9**	**+0.6**
	baz=156						
448A	**Bay Minette**	**54.94**	**340**	P	**P**	**15 04 51.5**	**+0.2**
	baz=158						
NHSC	**New Hope**	**55.02**	**348**	*e*P	**P**	**15 04 49.4**	**-2.4**
	comp=Z,203nm,0.8s						
447A	**Lucedale**	**55.08**	**339**	P	**P**	**15 04 52.3**	**0.0**
	baz=157						
035Z	**Hargill**	**55.24**	**328**	P	**P**	**15 04 53.7**	**+0.1**
	baz=146						
446A	**Poplarville**	**55.31**	**338**	P	**P**	**15 04 54.7**	**+0.7**
	baz=157						
544A	**White Castle**	**55.35**	**336**	P	**P**	**15 04 55.1**	**+0.9**
	baz=154						
348A	**Jackson**	**55.40**	**340**	P	**P**	**15 04 54.6**	**0.0**
	baz=158						
543A	**St. Martinvill**	**55.59**	**335**	P	**P**	**15 04 57.3**	**+1.3**
	baz=154						
347A	**Saraland**	**55.59**	**339**	P	**P**	**15 04 56.1**	**+0.1**
	baz=158						
445A	**Amite**	**55.60**	**337**	P	**P**	**15 04 57.2**	**+1.1**
	baz=156						
936A	**North Padre Is**	**55.66**	**329**	P	**P**	**15 04 57.0**	**+0.4**
	baz=147						
444A	**Pine Grove**	**55.74**	**337**	P	**P**	**15 04 57.7**	**+0.6**
	baz=155						
346A	**Big Creek Wild**	**55.89**	**338**	P	**P**	**15 04 58.3**	**+0.1**
	baz=157						
542A	**Morse**	**55.90**	**335**	P	**P**	**15 04 58.1**	**-0.1**
	baz=153						
248A	**Dixon Mills**	**55.98**	**340**	P	**P**	**15 04 58.9**	**+0.2**
	baz=159						
345A	**Thompson Farm,**	**56.02**	**338**	P	**P**	**15 04 59.7**	**+0.6**
	baz=156						
GOGA	**Godfrey**	**56.03**	**345**	*e*P	**P**	**15 04 56.6**	**-2.5**
GOGA				pmax	pmax		
	comp=Z,19nm,0.9s						
GOGA	**Godfrey**	**56.03**	**345**	*e*P	**P**	**15 04 56.6**	**-2.5**
	comp=Z,19nm,0.9s						
034A	**Hebbronville**	**56.05**	**327**	P	**P**	**15 05 00.2**	**+0.9**
	baz=146						
443A	**Delano Plantat**	**56.17**	**336**	P	**P**	**15 05 01.6**	**+1.5**
	baz=154						
247A	**Quitman**	**56.22**	**340**	P	**P**	**15 05 00.8**	**+0.4**
	baz=158						
246A	**Jackson Lee, B**	**56.35**	**339**	P	**P**	**15 05 01.3**	**-0.1**
	baz=157						
JSC	**Jenkinsville**	**56.37**	**347**	*e*P	**P**	**15 05 01.0**	**-0.5**
JSC				pmax	pmax		
	comp=Z,41nm,0.8s						
JSC	**Jenkinsville**	**56.37**	**347**	*e*P	**P**	**15 05 01.0**	**-0.5**
	comp=Z,41nm,0.8s						
344A	**Westbrook Farm**	**56.40**	**337**	P	**P**	**15 05 02.3**	**+0.5**
	baz=155						
343A	**Vidalia**	**56.57**	**336**	P	**P**	**15 05 03.3**	**+0.3**
	baz=154						
LRAL	**Lakeview Retre**	**56.62**	**341**	*e*P	**P**	**15 05 02.1**	**-1.2**
	comp=Z,26nm,0.8s						
245A	**Little AP, Sta**	**56.63**	**338**	P	**P**	**15 05 03.9**	**+0.5**
	baz=156						
835A	**Beeville**	**56.64**	**329**	P	**P**	**15 05 03.8**	**+0.3**
	baz=147						
147A	**Livingston**	**56.68**	**340**	P	**P**	**15 05 03.3**	**-0.3**
	baz=158						
441A	**DeRidder**	**56.71**	**335**	P	**P**	**15 05 05.0**	**+1.1**
	baz=153						
539A	**Cross D Ranch,**	**56.78**	**333**	P	**P**	**15 05 04.6**	**+0.2**
	baz=151						
933A	**Laredo**	**56.80**	**327**	P	**P**	**15 05 05.5**	**+0.9**
	baz=146						
736A	**Circle Diamond**	**56.84**	**330**	P	**P**	**15 05 05.8**	**+0.9**
	baz=148						
834A	**Tilden**	**56.86**	**328**	P	**P**	**15 05 06.1**	**+1.0**
	baz=146						
146A	**Union**	**56.90**	**339**	P	**P**	**15 05 05.2**	**-0.1**
	baz=157						
637A	**Eagle Lake**	**56.91**	**331**	P	**P**	**15 05 06.7**	**+1.3**
	baz=149						
244A	**Avery, Jackson**	**56.92**	**338**	P	**P**	**15 05 05.5**	**+0.2**
	baz=156						
342A	**Flagon Creek P**	**56.92**	**336**	P	**P**	**15 05 06.5**	**+1.1**
	baz=154						
440A	**Kirbyville**	**57.02**	**334**	P	**P**	**15 05 07.3**	**+1.2**
	baz=152						
243A	**Waterproof**	**57.06**	**337**	P	**P**	**15 05 06.7**	**+0.3**
	baz=155						
Z47A	**Carrollton**	**57.10**	**341**	P	**P**	**15 05 06.4**	**-0.2**
	baz=159						
735A	**Kenedy**	**57.10**	**329**	P	**P**	**15 05 07.9**	**+1.2**
	baz=148						
Z48A	**Northport**	**57.11**	**341**	P	**P**	**15 05 06.6**	**-0.1**
	baz=159						
145A	**Houston Renfro**	**57.16**	**339**	P	**P**	**15 05 07.4**	**+0.3**
	baz=156						
538A	**Harpers Horsep**	**57.21**	**332**	P	**P**	**15 05 09.2**	**+1.7**
	baz=150						
341A	**Kurthwood**	**57.22**	**335**	P	**P**	**15 05 08.3**	**+0.8**
	baz=153						
636A	**Smothers Creek**	**57.28**	**330**	P	**P**	**15 05 09.2**	**+1.2**
	baz=148						
144A	**Alexander Plac**	**57.36**	**338**	P	**P**	**15 05 09.0**	**+0.6**
	baz=156						
Z46A	**Louisville**	**57.37**	**340**	P	**P**	**15 05 08.9**	**+0.3**
	baz=158						
439A	**Center Grove,**	**57.39**	**333**	P	**P**	**15 05 10.3**	**+1.6**
	baz=151						
833A	**Chaparral WMA,**	**57.44**	**328**	P	**P**	**15 05 09.9**	**+0.8**
	baz=146						
537A	**Green Hill Far**	**57.45**	**331**	P	**P**	**15 05 10.6**	**+1.4**
	baz=149						
734A	**La Parita Cree**	**57.46**	**329**	P	**P**	**15 05 10.2**	**+0.9**
	baz=147						
635A	**Leesville**	**57.53**	**330**	P	**P**	**15 05 10.3**	**+0.6**
	baz=148						
340A	**Bronson**	**57.58**	**334**	P	**P**	**15 05 11.0**	**+1.0**
	baz=152						
438A	**Sam Houston St**	**57.66**	**333**	P	**P**	**15 05 11.8**	**+1.2**
	baz=150						
Y47A	**UCPARC, Winfie**	**57.69**	**341**	P	**P**	**15 05 10.4**	**-0.3**
	baz=159						
832A	**Faith Ranch, C**	**57.70**	**327**	P	**P**	**15 05 11.8**	**+0.8**
	baz=145						
733A	**Divot King Ran**	**57.71**	**328**	P	**P**	**15 05 11.7**	**+0.7**
	baz=146						
241A	**Mo Tay, Goldon**	**57.73**	**336**	P	**P**	**15 05 12.1**	**+1.1**
	baz=153						
143A	**Socs Landing,**	**57.77**	**337**	P	**P**	**15 05 11.3**	**0.0**
	baz=155						
339A	**Huntington**	**57.78**	**334**	P	**P**	**15 05 12.4**	**+1.0**
	baz=151						
Z45A	**Winona**	**57.78**	**339**	P	**P**	**15 05 11.5**	**+0.1**
	baz=157						
536A	**Bastrop**	**57.79**	**331**	P	**P**	**15 05 12.1**	**+0.6**
	baz=149						
634A	**China Grove, S**	**57.80**	**329**	P	**P**	**15 05 12.1**	**+0.4**
	baz=147						
142A	**Monroe**	**57.83**	**337**	P	**P**	**15 05 12.2**	**+0.5**
	baz=154						
Z44A	**Pea Ridge, Bel**	**57.95**	**338**	P	**P**	**15 05 13.0**	**+0.5**
	baz=156						
535A	**Dale**	**57.98**	**330**	P	**P**	**15 05 13.2**	**+0.3**
	baz=148						
Y46A	**Houston**	**57.98**	**340**	P	**P**	**15 05 12.3**	**-0.6**
	baz=158						
437A	**Phantom Ranch,**	**58.01**	**332**	P	**P**	**15 05 13.8**	**+0.7**
	baz=150						
240A	**Hunter Patters**	**58.07**	**335**	P	**P**	**15 05 14.7**	**+1.2**
	baz=152						
338A	**Crockett**	**58.11**	**333**	P	**P**	**15 05 15.1**	**+1.3**
	baz=151						
Z43A	**Armstrong Fami**	**58.17**	**338**	P	**P**	**15 05 14.2**	**+0.1**
	baz=155						
Y45A	**Yeager Farm, C**	**58.19**	**339**	P	**P**	**15 05 14.3**	**+0.1**
	baz=157						
NATX	**Nacogdoches**	**58.19**	**334**	P	**P**	**15 05 15.3**	**+1.0**
	baz=152						
NATX	**Nacogdoches**	**58.19**	**334**	*e*P	**P**	**15 05 14.9**	**+0.6**
	comp=Z,62nm,0.8s						
CPCT	**Cooper Cave**	**58.23**	**345**	*e*P	**P**	**15 05 13.9**	**-0.7**
	comp=Z,25nm,1.0s						
141A	**Papa Simpson,**	**58.24**	**336**	P	**P**	**15 05 15.6**	**+1.0**
	baz=153						
TKL	**Tuckaleechee C**	**58.25**	**345**	*e*P	**P**	**15 05 14.2**	**-0.5**
TKL				pmax	pmax		
	comp=Z,37nm,0.7s						
TKL	**Tuckaleechee C**	**58.25**	**345**	*e*P	**P**	**15 05 14.2**	**-0.5**
	comp=Z,37nm,0.7s						
436A	**Wall Ranch, Ga**	**58.25**	**331**	P	**P**	**15 05 15.5**	**+0.7**
	baz=

137A	Heron Place, G	59.37	333	P	P	15 05 23.6	+1.1
	baz=151						
334A	Lometa	59.38	331	P	P	15 05 22.8	+0.2
	baz=148						
JCT	Junction City	59.41	329	P	P	15 05 23.2	+0.3
	baz=146						
JCT	Junction City	59.41	329	eP	P	15 05 22.4	-0.5
JCT				pmax	pmax		
	comp=Z,27nm,0.9s						
JCT	Junction City	59.41	329	eP	P	15 05 22.4	-0.5
	comp=Z,27nm,0.9s						
W44A	Shelby Farms P	59.44	340	P	P	15 05 22.3	-0.6
	baz=157						
WHTX	Lake Whitney,	59.59	332	P	P	15 05 24.5	+0.5
	baz=149						
WHTX	Lake Whitney,	59.59	332	eP	P	15 05 24.4	+0.4
	comp=Z,33nm,0.8s						
136A	Ennis	59.60	333	P	P	15 05 24.9	+0.9
	baz=150						
Z38A	Mt. Pleasant	59.62	334	P	P	15 05 25.3	+1.1
	baz=152						
Y40A	Okolona	59.63	336	P	P	15 05 24.5	+0.3
	baz=153						
333A	Richland Sprin	59.72	330	P	P	15 05 25.0	+0.1
	baz=147						
V45A	Humboldt	59.73	341	P	P	15 05 24.2	-0.6
	baz=158						
HPIG		59.74	321	eP	P	15 05 25.8	+0.4
	comp=Z,10.0nm,0.7s						
WVT	Waverly	59.75	342	eP	P	15 05 24.1	-0.9
WVT				pmax	pmax		
	comp=Z,82nm,0.6s						
WVT	Waverly	59.75	342	eP	P	15 05 24.1	-0.9
	comp=Z,82nm,0.6s						
X41A	Kaden, Bauxite	59.78	337	P	P	15 05 24.9	-0.4
	baz=154						
Z37A	Pogue Cattle C	59.84	334	P	P	15 05 26.6	+0.9
	baz=151						
Y39A	Lockesburg	59.88	336	P	P	15 05 27.0	+1.1
	baz=153						
X40A	Basin Creek Fa	59.89	337	P	P	15 05 26.1	+0.1
	baz=154						
234A	Clairette	59.90	331	P	P	15 05 26.6	+0.5
	baz=148						
UALR	University of	59.97	337	eP	P	15 05 26.0	-0.6
	comp=Z,29nm,0.8s						
135A	Vickery Place,	60.05	332	P	P	15 05 27.0	-0.1
	baz=149						
V44A	Blytheville	60.10	340	P	P	15 05 27.2	-0.2
	baz=157						
Y38A	Idabel	60.12	335	P	P	15 05 28.1	+0.5
	baz=152						
MIAR	Mount Ida	60.22	336	P	P	15 05 28.8	+0.5
	baz=153,SNR=44						
MIAR	Mount Ida	60.22	336	eP	P	15 05 28.3	0.0
MIAR				pmax	pmax		
	comp=Z,54nm,0.7s						
MIAR	Mount Ida	60.22	336	eP	P	15 05 28.3	0.0
	comp=Z,54nm,0.7s						
Z36A	Blue Ridge	60.24	333	P	P	15 05 29.2	+0.8
	baz=150						
233A	Rising Star	60.26	330	P	P	15 05 29.0	+0.3
	baz=148						
W41A	Tony Mavity, V	60.30	338	P	P	15 05 28.8	0.0
	baz=155						
W41B	Gary Mavity, V	60.30	338	P	P	15 05 28.8	0.0
	baz=155						
134A	White-Moore Ra	60.36	331	P	P	15 05 29.9	+0.6
	baz=148						
X39A	Fountain Ranch	60.39	336	P	P	15 05 30.2	+0.7
	baz=153						
X301	Greenbrier Sit	60.41	338	eP	P	15 05 29.4	-0.1
	comp=Z,35nm,0.8s						
WHAR	Wooly Hollow	60.42	338	eP	P	15 05 29.0	-0.6
	comp=Z,30nm,0.9s						
X201	Greenbrier Sit	60.44	338	eP	P	15 05 29.6	-0.2
	comp=Z,40nm,0.8s						
TX31	Lajitas Ar. Si	60.47	325	eP	P	15 05 30.6	+0.4
TXAR	Lajitas Array	60.47	325	P	P	15 05 30.5	+0.2
	comp=Z,2.2nm,0.6s,baz=151,slow=9.0,SNR=38						
TXAR				pP	pP	15 06 00.0	+1.2
	comp=Z,5.6nm,0.8s,baz=146,slow=7.6,SNR=12						
Y37A	Hugo	60.52	334	P	P	15 05 31.3	+1.0
	baz=151						
VNA1	Neumayer--Stat	60.57	161	P	P	15 05 30.9	+0.8
V42A	Cord	60.57	339	P	P	15 05 30.3	-0.3
	baz=156						
W40A	Ferguson Farm,	60.61	337	P	P	15 05 31.8	+0.9
	baz=154						
Z35A	Perchaven, San	60.64	333	P	P	15 05 31.9	+0.8
	baz=149						
SDMD	Soldier's Deli	60.68	353	eP	P	15 05 31.3	0.0
	comp=Z,17nm,1.2s						
Y36A	Durant	60.72	334	P	P	15 05 32.4	+0.8
	baz=150						
133A	Hamilton Ranch	60.77	331	P	P	15 05 32.5	+0.5
	baz=148						
X38A	Whitesboro	60.81	335	P	P	15 05 32.9	+0.6
	baz=152						
V41A	Mountainview	60.81	338	P	P	15 05 31.9	-0.4
	baz=155						
W39A	Magazine	60.88	336	P	P	15 05 33.1	+0.4
	baz=153						
X37A	Clayton	60.95	335	P	P	15 05 34.0	+0.8
	baz=152						
Z34A	Collier Ranch,	60.96	332	P	P	15 05 33.9	+0.5
	baz=149						
U42A	Revenden	61.02	339	P	P	15 05 33.4	-0.2
	baz=156						
W38A	Poteau	61.04	336	P	P	15 05 34.5	+0.7
	baz=152						
Y35A	Marietta	61.04	333	P	P	15 05 34.9	+1.0
	baz=150						
V40A	Witts Springs	61.07	338	P	P	15 05 34.1	+0.1
	baz=154						
ABTX	Abilene, Hawle	61.11	330	P	P	15 05 34.6	+0.2
	baz=147						
ABTX	Abilene, Hawle	61.11	330	eP	P	15 05 34.7	+0.3
	comp=Z,39nm,0.9s						
PBMO	Poplar Bluff	61.14	340	eP	P	15 05 34.1	-0.3
	comp=Z,79nm,0.6s						
MVL	Millersville	61.20	353	eP	P	15 05 35.8	+1.0
	comp=Z,19nm,0.8s						
U41A	Viola	61.24	339	P	P	15 05 34.4	-0.7
	baz=155						
Z33A	Whitaker Ranch	61.27	331	P	P	15 05 35.9	+0.5
	baz=148						
WCI	Wyandotte Cave	61.31	344	eP	P	15 05 34.8	-0.8
WCI				pmax	pmax		
	comp=Z,61nm,0.6s						
WCI	Wyandotte Cave	61.31	344	eP	P	15 05 34.8	-0.8
	comp=Z,61nm,0.6s						
X36A	Centrahoma	61.33	334	P	P	15 05 35.8	0.0
	baz=151						
Y34A	Reagan Ranch,	61.39	333	P	P	15 05 36.6	+0.4
	baz=149						
V39A	Pettigrew	61.40	337	P	P	15 05 36.3	+0.1
	baz=154						
S45A	Carrier Mills	61.41	342	P	P	15 05 35.9	-0.3
	baz=159						
X35A	Drake	61.44	333	P	P	15 05 36.4	-0.1
	baz=150						
W37B	Quinton	61.46	335	P	P	15 05 37.1	+0.5
	baz=152						
U40A	Yellville	61.57	338	P	P	15 05 37.0	-0.4
	baz=154						
S44A	Carbondale	61.62	341	P	P	15 05 37.0	-0.7
	baz=158						
SIUC	Southern Illin	61.63	341	eP	P	15 05 37.9	+0.1
	comp=Z,73nm,0.6s						
V38A	Canehill	61.70	336	P	P	15 05 38.4	+0.1
	baz=153						
O56A	Blue Knob Stat	61.75	351	P	P	15 05 39.3	+0.8
	baz=170						
S43A	Fulton Ridge,	61.76	341	P	P	15 05 37.9	-0.7
	baz=158						
W36A	Wetumka	61.77	334	P	P	15 05 38.7	-0.1
	baz=151						
Y33A	Hilltop Ranch,	61.81	332	P	P	15 05 39.2	+0.2
	baz=148						
T41A	Mountain View	61.82	339	P	P	15 05 38.6	-0.5
	baz=156						
U39A	Green Forest	61.82	337	P	P	15 05 38.8	-0.2
	baz=154						
HHAR	Hobbs	61.90	337	eP	P	15 05 39.7	+0.2
	comp=Z,35nm,0.8s						
X34A	Smith Ranch, M	61.98	333	P	P	15 05 40.5	+0.4
	baz=149						
V37A	Hulbert	61.99	336	P	P	15 05 40.6	+0.4
	baz=152						
W35A	Tecumseh	62.05	334	P	P	15 05 40.3	-0.3
	baz=150						
N59A	State Game Lan	62.05	354	P	P	15 05 40.9	+0.4
	baz=173						
R44A	Waltonville	62.09	342	P	P	15 05 40.1	-0.7
	baz=159						
ODNJ	Ogdensburg	62.11	355	eP	P	15 05 41.1	+0.3
	comp=Z,8.3nm,0.7s						
T40A	Mansfield	62.17	338	P	P	15 05 41.3	-0.1
	baz=155						
U38A	Gravette	62.20	337	P	P	15 05 41.3	-0.3
	baz=153						
X33A	Lawton	62.21	332	P	P	15 05 41.5	-0.2
	baz=149						
V36A	Jenks	62.22	335	P	P	15 05 41.8	+0.1
	baz=151						
BLO	Bloomington	62.26	344	eP	P	15 05 41.2	-0.7
BLO				pmax	pmax		
	comp=Z,72nm,0.7s						
BLO	Bloomington	62.26	344	eP	P	15 05 41.2	-0.7
	comp=Z,72nm,0.7s						
OLIL	Olney	62.26	343	eP	P	15 05 40.9	-1.0
	comp=Z,42nm,0.8s						
TUL1	Leonard	62.27	335	P	P	15 05 42.1	+0.1
	baz=155						
TUL1	Leonard	62.27	335	eP	P	15 05 41.1	-1.0
	comp=Z,37nm,0.9s						
S41A	Jillco Farms,	62.31	339	P	P	15 05 42.1	-0.2
	baz=156						
T39A	Clever	62.36	338	P	P	15 05 42.7	0.0
	baz=154						
U37A	Salina	62.45	336	P	P	15 05 43.5	+0.3
	baz=152						
X32A	Elmer	62.45	332	P	P	15 05 43.5	+0.2
	baz=148						
ACSO	Alum Creek Sta	62.47	348	eP	P	15 05 43.1	-0.1
	comp=Z,65nm,0.8s						
W34A	Bridge Creek,	62.49	333	P	P	15 05 43.5	-0.1
	baz=149						
WMOK	Wichita Mounta	62.50	332	P	P	15 05 43.4	-0.2
	baz=148,SNR=9.3						
WMOK	Wichita Mounta	62.50	332	eP	P	15 05 42.7	-1.0
WMOK				pmax	pmax		
	comp=Z,6.0nm,0.8s						
WMOK	Wichita Mounta	62.50	332	eP	P	15 05 42.7	-1.0
	comp=Z,5.7nm,0.8s						
V35A	Meyer Ranch, C	62.56	334	P	P	15 05 44.0	+0.1
	baz=150						
SNAA	Sanae	62.56	161	P	P	15 05 43.6	-0.1
SNAA	Sanae	62.56	161	P	P	15 05 43.3	-0.4
	comp=Z,35nm,0.6s,baz=282,slow=6.5,SNR=265						
S40A	Lebanon	62.57	339	P	P	15 05 44.1	0.0
	baz=155						
N54A	Moraine State	62.64	350	P	P	15 05 45.2	+0.8
	baz=168						
U36A	Oologah	62.67	336	P	P	15 05 44.9	+0.2
	baz=152						
Q44A	Meyer Farm, Va	62.68	342	P	P	15 05 43.7	-0.9
	baz=159						
T38A	Diamond	62.70	337	P	P	15 05 44.8	-0.1
	baz=153						
W33A	Caddo, Fort Co	62.72	333	P	P	15 05 45.7	+0.7
	baz=149						
BRYW	Bryant College	62.75	358	eP	P	15 05 45.4	+0.3
	comp=Z,99nm,0.8s						
V34A	Guthrie	62.90	334	P	P	15 05 46.3	+0.1
	baz=150						
V34A	Guthrie	62.90	334	eP	P	15 05 44.8	-1.4
	comp=Z,32nm,0.6s						
Q43A	New Douglas	62.91	342	P	P	15 05 45.7	-0.6
	baz=158						
S39A	Bolivar	62.94	338	P	P	15 05 46.6	+0.2
	baz=154						
T37A	Cheneyville 18	63.00	337	P	P	15 05 47.2	+0.3
	baz=153						
W32A	Sentinel	63.03	332	P	P	15 05 47.4	+0.3
	baz=148						
U35A	Pawnee	63.04	335	P	P	15 05 47.9	+0.7
	baz=151						
S38A	Stockton	63.09	338	P	P	15 05 47.4	-0.1
	baz=154						
R40A	Maddies Statio	63.12	339	P	P	15 05 47.5	-0.2
	baz=155						
M54A	Oil Creek Stat	63.12	351	P	P	15 05 47.9	+0.3
	baz=169						
Q42A	Golden Eagle	63.13	341	P	P	15 05 47.5	-0.2
	baz=157						
V33A	Lossen Ranch,	63.21	333	P	P	15 05 48.6	+0.3
	baz=149						
MNTX	Cornudas Mount	63.24	325	P	P	15 05 48.6	0.0
	baz=142,SNR=19						
T36A	Boggs Farm, Ca	63.31	336	P	P	15 05 48.9	0.0
	baz=152						
ALLY	Alegheny Colle	63.34	350	eP	P	15 05 48.7	-0.3
	comp=Z,122nm,0.8s						
HRV	Adam Dziewonsk	63.34	358	eP	P	15 05 48.6	-0.4
HRV				pmax	pmax		
	comp=Z,28nm,0.8s						
HRV	Adam Dziewonsk	63.34	358	eP	P	15 05 48.6	-0.4
	comp=Z,28nm,0.8s						
BINY	Binghamton	63.34	354	eP	P	15 05 48.7	-0.4
	comp=Z,60nm,0.9s						
R39A	Chumby, Stover	63.40	339	P	P	15 05 49.5	+0.1
	baz=155						
U34A	Anderson Ranch	63.42	334	P	P	15 05 49.8	+0.1
	baz=150						
T35A	Sooner Cattle	63.43	335	P	P	15 05 49.9	+0.2
	baz=151						
V32A	Arapaho	63.45	333	P	P	15 05 50.1	+0.2
	baz=148						
S37A	Fort Scott	63.53	337	P	P	15 05 50.5	+0.1
	baz=153						
SFIN	Lafayette	63.54	344	P	P	15 05 49.4	-0.9
	baz=161						
SFIN	Lafayette	63.54	344	eP	P	15 05 48.8	-1.5
	comp=Z,52nm,0.8s						
R38A	Fenwick Farm,	63.58	338	P	P	15 05 50.8	+0.1
	baz=154						
U33A	Lingo Farm, Me	63.66	334	P	P	15 05 51.2	-0.1
	baz=149						
Q40A	Laux Farm, Aux	63.69	340	P	P	15 05 51.1	-0.3
	baz=156						
P42A	Winchester	63.70	341	P	P	15 05 50.7	-0.7
	baz=158						
MSTX	Muleshoe	63.71	329	P	P	15 05 51.9	+0.2
	baz=144						
MSTX	Muleshoe	63.71	329	eP	P	15 05 52.1	+0.3
	comp=Z,62nm,0.9s						
ERPA	Erie	63.77	351	eP	P	15 05 51.9	0.0
	comp=Z,145nm,0.8s						
S36A	Lake Cedric, C	63.79	336	P	P	15 05 52.0	0.0
	baz=152						
T34A	McClaskey Farm	63.79	335	P	P	15 05 52.2	+0.1
	baz=150						
AMTX	Amarillo	63.93	330	P	P	15 05 53.1	0.0
	baz=146						
U32A	Winter Ranch,	63.99	333	P	P	15 05 53.6	+0.2
	baz=149						
P41A	Barry, Barry	64.00	341	P	P	15 05 52.7	-0.7
	baz=157						
S35A	Otter Creek Ra	64.03	336	P	P	15 05 53.8	+0.2
	baz=151						
R37A	Teagarden Farm	64.03	337	P	P	15 05 53.6	0.0
	baz=153						
Q39A	Willow Grove F	64.04	339	P	P	15 05 53.5	-0.1
	baz=155						
MMNY	Mt. Morris Dam	64.08	352	eP	P	15 05 54.0	+0.1
P40A	Paris	64.17	340	P	P	15 05 54.4	-0.2
	baz=156						
Q38A	Cooks Store, C	64.18	338	P	P	15 05 54.9	+0.4
	baz=154						
O42A	Bath	64.18	342	P	P	15 05 53.8	-0.8
	baz=158						
T33A	Patterson Ranc	64.27	334	P	P	15 05 55.8	+0.6
	baz=150						
R36A	Gordon, Harris	64.28	337	P	P	15 05 55.6	+0.3
	baz=152						
HDIL	Hopedale	64.29	343	P	P	15 05 54.5	-0.8
	baz=159,SNR=6.1						
HDIL	Hopedale	64.29	343	eP	P	15 05 53.8	-1.5
	comp=Z,72nm,0.8s						
O41A	Passleys Farm,	64.34	341	P	P	15 05 55.2	-0.4
	baz=157						
S34A	Willow Spring	64.35	335	P	P	15 05 55.7	0.0
	baz=151						
P39B	Salisbury	64.36	339	P	P	15 05 55.6	-0.1
	baz=155						
Q37A	Longview Farm,	64.39	338	P	P	15 05 56.1	+0.1
	baz=153						
R35A	Emporia Munici	64.54	336	P	P	15 05 57.6	+0.6
	baz=152						
S33A	Kaszmaul Farm,	64.61	334	P	P	15 05 57.8	+0.3
	baz=150						
T32A	Huddler Ranch,	64.63	333	P	P	15 05 58.6	+0.9
	baz=149						
O40A	La Belle	64.66	340	P	P	15 05 57.3	-0.4
	baz=156						
P38A	Dawn	64.74	339	P	P	15 05 58.1	-0.1
	baz=154						
Q36A	Arnold C. Orve	64.83	337	P	P	15 05 58.4	-0.4
	baz=152						
R34A	Isabella, Hill	64.92	335	P	P	15 05 59.7	+0.2
	baz=151						
NCB	Newcomb	64.95	356	eP	P	15 06 00.1	+0.6
	comp=Z,0.3nm,1.0s						
Q35A	Mercer Eighty,	64.95	337	P	P	15 05 59.7	+0.1
	baz=152						
O39A	Kirksville	64.99	340	P	P	15 05 59.7	-0.1
	baz=156						
P37A	Lathrop	64.99	338	P	P	15 05 59.5	-0.4
	baz=154						
S32A	Newby Ranch, P	65.08	334	P	P	15 06 01.1	+0.6
	baz=149						
319A	Douglas	65.15	322	eP	P	15 06 02.5	+1.3
	comp=Z,30nm,0.8s						
O38A	Galt	65.17	339	P	P	15 06 00.6	-0.4
	baz=155						
121A	Cookes Peak, D	65.18	324	P	P	15 06 03.2	+1.7
	baz=140						
R33A	Olander Ranch,	65.22	335	P	P	15 06 01.8	+0.5
	baz=150						
P36A	Good Intent, A	65.32	338	P	P	15 06 01.8	-0.1
	baz=153						
Q34A	Chapman	65.34	336	P	P	15 06 02.3	+0.1
	baz=151						
KSU1	Kansas State U	65.38	336	P	P	15 06 02.3	0.0
	baz=151						
KSU1	Kansas State U	65.38	336	eP	P	15 06 02.6	+0.3
	comp=Z,30nm,0.8s						
O37A	Wolven Farm, M	65.44	339	P	P	15 06 02.5	-0.3
	baz=154						
P35A	Duane Minner,	65.53	337	P	P	15 06 03.2	-0.1
	baz=152						
N39A	Derby Farms, D	65.54	340	P	P	15 06 03.1	-0.3
	baz=156						
R32A	Long Quarter,	65.61	334	P	P	15 06 04.1	+0.2
	baz=149						
LONY	Lake Ozonia	65.62	355	eP	P	15 06 04.2	+0.3
	comp=Z,21nm,0.9s						
O36A	Bolckow	65.69	338	P	P	15 06 04.1	-0.3
	baz=153						
N38A	Joes South For	65.70	340	P	P	15 06 04.1	-0.3
	baz=155						
Q33A	Connelly Farm,	65.75	335	P	P	15 06 04.9	+0.1
	baz=150						
FRNY	Flat Rock	65.77	356	eP	P	15 06 04.0	-0.7
	comp=Z,9.3nm,0.7s						
BNM	Barren Site	65.80	326	eP	P	15 06 06.4	+0.9
P34A	Walnut Farm, R	65.85	336	P	P	15 06 05.7	+0.4
	baz=151						
Y22D	IRIS PASSCAL I	65.89	326	P	P	15 06 07.4	+1.4
	baz=141						
LPM	Los Pinos Moun	65.92	326	eP	P	15 06 07.3	+1.0
M39A	Webster	65.98	341	P	P	15 06 05.8	-0.4
	baz=156						
N37A	Lee Faris, Mou	65.99	339	P	P	15 06 06.1	-0.1
	baz=154						
Q32A	Meitler Ranch,	66.03	335	P	P	15 06 07.1	+0.5
	baz=150						
L41A	Preston	66.04	342	P	P	15 06 05.9	-0.6
	baz=158						
P33A	Williams Farm,	66.08	336	P	P	15 06 07.1	+0.2
	baz=150						
O35A	Humboldt	66.14	337	P	P	15 06 06.5	-0.7
	baz=152						
L40A	Anamosa	66.23	342	P	P	15 06 07.4	-0.4
	baz=157						
SADO	Sadowa	66.25	352	eP	P	15 06 07.4	-0.4
	comp=Z,25nm,0.8s						
M38A	Pleasantville	66.25	340	P	P	15 06 07.4	-0.5
	baz=155						
LAZ	Ladron	66.26	326	eP	P	15 06 09.4	+1.0
PLVO	Plevna	66.27	353	eP	P	15 06 08.0	+0.1
N36A	Muff Farm, Cla	66.30	338	P	P	15 06 08.2	0.0
	baz=153						
ANMO	Albuquerque	66.33	327	P	P	15 06 09.5	+0.7
	baz=142						
ANMO	Albuquerque	66.33	327	eP	P	15 06 09.9	+1.1
ANMO				pmax	pmax		
	comp=Z,28nm,2.0s						
ANMO	Albuquerque	66.33	327	eP	P	15 06 09.5	+0.7
	comp=Z,13nm,0.8s						
O34A	Beatrice	66.35	337	P	P	15 06 08.5	-0.1
	baz=152						
CBKS	Cedar Bluff	66.36	334	P	P	15 06 09.4	+0.7
	baz=148						
K41A	Shullsburg	66.47	343	P	P	15 06 08.8	-0.5
	baz=158						
M37A	Trindle Farm,	66.52	339	P	P	15 06 09.9	+0.3
	baz=154						
L39A	Vinton	66.52	341	P	P	15 06 09.0	-0.6
	baz=156						
N35A	Tabor	66.57	338	P	P	15 06 10.0	0.0
	baz=153						
O33A	Hebron	66.59	336	P	P	15 06 10.5	+0.4
	baz=151						
P32A	Huiting Farm,	66.59	335	P	P	15 06 10.1	0.0
	baz=150						
TUC	Tucson	66.70	322	P	P	15 06 12.7	+1.6
	baz=137						
LMN	Caledonia Moun	66.71	3	eP	P	15 06 10.8	+0.1
	comp=Z,31nm,0.7s						
JFWS	Jewell Farm	66.74	343	eP	P	15 06 10.4	-0.6
JFWS				pmax	pmax		
	comp=Z,56nm,0.9s						
JFWS	Jewell Farm	66.74	343	eP	P	15 06 10.4	-0.6
	comp=Z,56nm,0.9s						
K40A	Colesburg	66.80	342	P	P	15 06 10.5	-0.9
	baz=157						
M36A	Felix, Anita	66.81	339	P	P	15 06 11.4	-0.1
	baz=154						
L38A	Oak Wood Farm,	66.83	340	P	P	15 06 11.3	-0.2
	baz=156						
N34A	Lincoln	66.86	337	P	P	15 06 11.4	-0.4
	baz=152						
O32A	Brockman Farm,	67.02	336	P	P	15 06 13.2	+0.3
	baz=150						
K39A	Oelwein	67.02	342	P	P	15 06 12.3	-0.5
	baz=157						
T25A	Trinidad	67.05	329	P	P	15 06 14.3	+1.0
	baz=144						
T25A	Trinidad	67.05	329	eP	P	15 06 12.8	-0.5
	comp=Z,14nm,0.8s						
L37A	Phoenix Point,	67.07	340	P	P	15 06 12.9	-0.2
	baz=155						
J41A	Loganville	67.10	343	P	P	15 06 13.1	-0.1
	baz=158						
NVL	N'lazarevskaya	67.10	159	eP	P	15 06 13.6	+0.6
N33A	J Bar K, Exete	67.12	337	P	P	15 06 13.5	0.0
	baz=151						
M35A	Neola	67.13	338	P	P	15 06 13.5	0.0
	baz=153						
TRQ	Mont Tremblant	67.21	356	eP	P	15 06 13.2	-0.8
K38A	Parkersburg	67.23	341	P	P	15 06 14.1	0.0
	baz=156						
J40A	Soldiers Grove	67.33	343	P	P	15 06 14.4	-0.2
	baz=158						
O31A	Woolen Ranch,	67.33	335	P	P	15 06 15.5	+0.6
	baz=149						
L36A	Harm Buss Farm	67.34	339	P	P	15 06 15.0	+0.1
	baz=154						
N32A	Stulken Farm,	67.46	336	P	P	15 06 16.0	+0.4
	baz=150						
M34A	Aspy Farms, Fr	67.47	338	P	P	15 06 15.9	+0.3
	baz=152						
J39A	Decorah	67.55	342	P	P	15 06 15.7	-0.4
	baz=157						
K37A	Belmond	67.61	340	P	P	15 06 15.9	-0.6
	baz=155						
214A	Organ Pipe Nat	67.64	320	P	P	15 06 19.0	+2.0
	baz=136						
L35A	Bielow Farm, R	67.65	339	P	P	15 06 16.8	0.0
	baz=153						
M33A	Taylor Creek F	67.75	337	P	P	15 06 17.4	0.0

	baz=151							
J38A	**Wedel Dairy, R**	67.76	341	P		P	15 06 16.9	-0.5
	baz=156							
KSCO	**Kaye Shedlock'**	67.76	332	P		P	15 06 18.5	+0.8
	baz=146							
N31A	**Bailey Ranch,**	67.76	336	P		P	15 06 17.9	+0.3
	baz=150							
L34A	**Svendsen Farm,**	67.81	338	P		P	15 06 17.8	0.0
	baz=152							
X18A	**Snowflake**	67.87	324	eP		P	15 06 20.0	+1.4
BGNE	**Belgrade**	67.96	336	P		P	15 06 19.1	+0.4
	baz=150							
BGNE	**Belgrade**	67.96	336	eP		P	15 06 17.7	-1.0
	comp=Z,248nm,0.8s							
LIC	**Lamto**	67.98	74	eP		P	15 06 18.6	-0.9
	comp=Z,32nm,0.6s							
SDCO	**Great Sand Dun**	68.05	329	P		P	15 06 21.0	+1.3
	baz=143,SNR=40							
SDCO	**Great Sand Dun**	68.05	329	eP		P	15 06 21.0	+1.3
	comp=Z,25nm,0.9s							
J37A	**Redenius Farm,**	68.08	341	P		P	15 06 19.2	-0.2
	baz=155							
K35A	**Storm Lake**	68.09	339	P		P	15 06 19.1	-0.4
	baz=154							
TIC	**Toumodi**	68.17	73	eP		P	15 06 19.9	-0.8
W18A	**Petrified Fore**	68.19	324	P		P	15 06 21.9	+1.4
	baz=139							
M31A	**Lambtecht Ranc**	68.22	336	P		P	15 06 21.2	+0.8
	baz=150							
KIC	**Kosan Boka**	68.30	74	eP		P	15 06 20.8	-0.7
	comp=Z,134nm,0.8s							
L33A	**Hoskins**	68.30	337	P		P	15 06 20.6	-0.2
	baz=151							
DBIC	**Dimbokro**	68.33	73	P		P	15 06 21.2	-0.4
	comp=Z,38nm,0.6s,baz=220,slow=6.5,SNR=69							
DBIC	**Dimbokro**	68.33	73	eP		P	15 06 20.8	-0.8
	comp=Z,47nm,0.6s							
LMQ	**La Malbaie**	68.34	359	eP		P	15 06 21.5	+0.6
	comp=Z,54nm,1.6s							
J36A	**Seneca 1, Swea**	68.34	340	P		P	15 06 21.1	0.0
	baz=154							
K34A	**Le Mars**	68.35	339	P		P	15 06 21.3	+0.1
	baz=153							
I38A	**Scanlan Farm,**	68.37	342	P		P	15 06 21.2	0.0
	baz=156							
L32A	**Elgin**	68.43	337	P		P	15 06 21.7	0.0
	baz=151							
K33A	**Hardington**	68.59	338	P		P	15 06 22.8	+0.1
	baz=152							
X16A	**Lo Mia Camp, P**	68.62	323	eP		P	15 06 25.5	+2.3
	comp=Z,12nm,0.9s							
J35A	**Milford**	68.65	339	P		P	15 06 22.9	-0.1
	baz=154							
I37A	**Lemond, Waseca**	68.67	341	P		P	15 06 23.0	-0.1
	baz=155							
S22A	**4UR Ranch, Cre**	68.70	328	P		P	15 06 24.0	+0.3
	baz=142							
S22A	**4UR Ranch, Cre**	68.70	328	eP		P	15 06 24.7	+0.9
	comp=Z,8.2nm,0.8s							
113A	**Mohawk Valley,**	68.79	320	eP		P	15 06 26.4	+2.4
J34A	**George**	68.83	339	P		P	15 06 24.1	0.0
	baz=153							
I36A	**Fitzsimmons Fa**	68.86	341	P		P	15 06 24.0	-0.2
	baz=155							
Q24A	**Divide**	68.86	330	P		P	15 06 25.8	+1.0
	baz=144							
Q24A	**Divide**	68.86	330	eP		P	15 06 26.3	+1.5
	comp=Z,30nm,0.8s							
L31A	**Butterfield Fa**	68.88	336	P		P	15 06 25.2	+0.7
	baz=150							
K32A	**Verdigre**	68.98	337	P		P	15 06 25.4	+0.3
	baz=151							
I35A	**Creekview Farm**	69.02	340	P		P	15 06 25.2	-0.1
	baz=154							
H37A	**Dierke Farm, C**	69.04	342	P		P	15 06 25.3	-0.1
	baz=156							
OGNE	**Ogallala**	69.11	333	P		P	15 06 27.0	+1.0
	baz=147							
OGNE	**Ogallala**	69.11	333	eP		P	15 06 27.6	+1.6
	comp=Z,42nm,0.8s							
MVCO	**Mesa Verde**	69.12	327	P		P	15 06 27.7	+1.3
	baz=140,SNR=13							
MVCO	**Mesa Verde**	69.12	327	eP		P	15 06 28.0	+1.7
	comp=Z,24nm,0.8s							
Y14A	**Wickenburg**	69.17	321	eP		P	15 06 28.1	+1.6
J33A	**Davis**	69.20	338	P		P	15 06 26.2	-0.2
	baz=152							
K31A	**O'Neill**	69.24	337	P		P	15 06 27.2	+0.5
	baz=150							
H36A	**Jessenland, He**	69.34	341	P		P	15 06 27.4	+0.2
	baz=155							
VLDQ	**Val d'Or**	69.34	354	eP		P	15 06 27.9	+0.7
	comp=Z,49nm,0.6s							
WUAZ	**Wupatki**	69.38	324	P		P	15 06 29.7	+1.8
	baz=138,SNR=12							
WUAZ	**Wupatki**	69.38	324	eP		P	15 06 30.2	+2.3
	comp=Z,35nm,0.8s							
COWI	**Conover**	69.42	345	eP		P	15 06 27.7	0.0
	comp=Z,21nm,1.0s							
ECSD	**EROS Data Cent**	69.45	339	P		P	15 06 28.2	+0.3
	baz=152							
ECSD	**EROS Data Cent**	69.45	339	eP		P	15 06 27.6	-0.3
	comp=Z,22nm,0.9s							
I34A	**Hadley**	69.47	339	P		P	15 06 27.9	-0.1
	baz=153							
J32A	**Parkston**	69.56	338	P		P	15 06 28.5	-0.1
	baz=151							
SPMN	**Marine on St.**	69.59	342	P		P	15 06 28.5	-0.2
	baz=156							
SPMN	**Marine on St.**	69.59	342	eP		P	15 06 29.0	+0.2
	comp=Z,31nm,1.0s							
K30A	**Basset**	69.60	336	P		P	15 06 29.7	+0.7
	baz=149							
GLA	**Glamis**	69.62	320	P		P	15 06 31.2	+1.9
	baz=134							
H35A	**Sunnyside Ranc**	69.73	340	P		P	15 06 29.5	-0.1
	baz=154							
ISCO	**Idaho Springs**	69.74	330	P		P	15 06 31.3	+1.1
	baz=144,SNR=9.6							
ISCO	**Idaho Springs**	69.74	330	eP		P	15 06 31.8	+1.6
ISCO				pmax		pmax		
	comp=Z,14nm,0.8s							
ISCO	**Idaho Springs**	69.74	330	eP		P	15 06 31.8	+1.6
	comp=Z,14nm,0.8s							
I33A	**Coleman**	69.79	339	P		P	15 06 30.2	+0.1
	baz=152							
J31A	**Geddes**	69.81	337	P		P	15 06 30.2	0.0
	baz=150							
PV01	**Paradox Valley**	69.87	327	eP		P	15 06 33.1	+2.2
G36A	**St. Michael**	69.88	341	P		P	15 06 30.5	+0.1
	baz=155							
Y12C	**Blythe**	69.93	320	P		P	15 06 31.6	+0.6
	baz=135							
Y12C	**Blythe**	69.93	320	eP		P	15 06 33.2	+2.1
	comp=Z,18nm,0.9s							
I32A	**Karley and Nic**	70.00	338	P		P	15 06 31.6	+0.3
	baz=152							
H34A	**Spellman Lake,**	70.00	340	P		P	15 06 31.3	+0.1
	baz=153							
G35A	**Watkins**	70.09	341	P		P	15 06 31.7	-0.1
	baz=155							
PDMCI	**Parker Dam,Lak**	70.09	321	P		P	15 06 33.7	+1.7
	baz=135							
PV05	**Paradox Valley**	70.09	327	eP		P	15 06 33.9	+1.6
J30A	**Dallas**	70.12	337	P		P	15 06 32.7	+0.6
	baz=150							
IKP	**In-Ko-Pah, Jac**	70.13	319	P		P	15 06 34.3	+1.8
	baz=133							
SWSC	**Sam W. Stewart**	70.14	319	P		P	15 06 34.1	+1.7
	baz=134							
PV10	**Paradox Valley**	70.29	327	eP		P	15 06 35.2	+1.7
H33A	**Prehn Over Nor**	70.33	339	P		P	15 06 33.6	+0.3
	baz=152							
I31A	**Royce, Wessing**	70.38	338	P		P	15 06 34.0	+0.4
	baz=151							
F36A	**Milaca**	70.38	342	P		P	15 06 33.1	-0.4
	baz=156							
H32A	**Carlson Farm,**	70.41	338	P		P	15 06 34.2	+0.4
	baz=152							
BC3	**Big Chuckawall**	70.42	320	P		P	15 06 36.1	+1.9
	baz=134,SNR=17							
PV09	**Paradox Valley**	70.43	327	eP		P	15 06 36.5	+2.1
G34A	**Benson**	70.47	340	P		P	15 06 34.2	+0.1
	baz=154							
MONP2	**Monument Peak**	70.49	319	P		P	15 06 36.4	+1.6
	baz=133,SNR=6.3							
BAR	**Barrett**	70.50	318	eP		P	15 06 36.8	+2.2
	comp=Z,18nm,0.7s							
U15A	**North Rim**	70.56	324	eP		P	15 06 37.4	+2.2
IRM	**Iron Mountain**	70.58	320	P		P	15 06 36.7	+1.6
	baz=134,SNR=12							
G33A	**Ortonville**	70.68	340	P		P	15 06 35.3	-0.1
	baz=153							
F35A	**Swanville**	70.69	341	P		P	15 06 35.2	-0.2
	baz=155							
NEE2	**Needles Airpor**	70.69	321	P		P	15 06 37.4	+1.7
	baz=135							
E37A	**Wrenshall**	70.70	343	P		P	15 06 35.7	+0.2
	baz=157							
H31A	**Wolsey**	70.75	338	P		P	15 06 35.9	+0.1
	baz=151							
N23A	**Red Feather La**	70.77	331	P		P	15 06 37.7	+1.3
	baz=143							
N23A	**Red Feather La**	70.77	331	eP		P	15 06 37.9	+1.5
	comp=Z,23nm,0.9s							
F34A	**Alexandria**	70.84	341	P		P	15 06 36.8	+0.4
	baz=154							
PHWY	**Pilot Hill**	70.88	331	eP		P	15 06 38.1	+1.0
	comp=Z,37nm,1.4s							
SUSD	**Miller**	70.89	337	P		P	15 06 37.1	+0.4
	baz=150							
E36A	**McGregor**	70.90	342	P		P	15 06 36.7	0.0
	baz=156							
109C	**Camp Elliot, M**	70.91	318	P		P	15 06 38.9	+1.8
	baz=133							
BELC	**Belle Mtn. Jos**	70.98	320	P		P	15 06 39.4	+1.8
	baz=134,SNR=8.9							
TPFO	**Pinon Flats**	70.99	319	P		P	15 06 39.7	+2.0
	baz=133							
PFO	**Pinyon Flats O**	71.00	319	P		P	15 06 39.7	+1.9
	baz=133,SNR=6.1							
G32A	**Webster**	71.09	339	P		P	15 06 37.4	-0.5
	baz=152							
LDFC	**Landfair**	71.20	321	eP		P	15 06 41.4	+2.5
	comp=Z,23nm,0.8s							
F33A	**5 Mile Ranch,**	71.21	340	P		P	15 06 38.0	-0.6
	baz=153							
O20A	**White River Ci**	71.25	329	P		P	15 06 40.9	+1.6
	baz=141							
O20A	**White River Ci**	71.25	329	eP		P	15 06 41.0	+1.8
	comp=Z,34nm,0.9s							
E35A	**Pequot Lakes**	71.27	341	P		P	15 06 38.7	-0.2
	baz=155							
G31A	**Conde**	71.31	338	P		P	15 06 39.0	-0.2
	baz=151							
GMRC	**Granite Mounta**	71.32	320	P		P	15 06 41.5	+1.8
	baz=134,SNR=21							
E34A	**Wadena**	71.46	341	P		P	15 06 40.3	+0.2
	baz=154							
C38A	**Sawbill Land.**	71.47	344	P		P	15 06 39.6	-0.5
	baz=158							
D36A	**Goodland**	71.47	343	P		P	15 06 39.9	-0.2
	baz=156							
LCMT	**Little Creek M**	71.50	324	eP		P	15 06 42.7	+2.0
	comp=Z,21nm,0.9s							
F32A	**Veblen**	71.51	339	P		P	15 06 40.2	-0.2
	baz=152							
SRU	**San Rafael Swe**	71.60	327	eP		P	15 06 42.7	+1.4
SRU				pmax		pmax		
	comp=Z,56nm,0.8s							
SRU	**San Rafael Swe**	71.60	327	eP		P	15 06 42.7	+1.4
	comp=Z,56nm,0.8s							
D35A	**Remer**	71.64	342	P		P	15 06 41.1	-0.1
	baz=155							
MTPU	**Mount Pierson**	71.68	325	eP		P	15 06 43.7	+1.6
	comp=Z,18nm,0.7s							
E33A	**Westby DABS, E**	71.71	340	P		P	15 06 41.4	-0.2
	baz=153							
C37A	**Embarrass**	71.71	343	P		P	15 06 41.4	-0.2
	baz=157							
BBRC	**Big Bear Solar**	71.72	319	P		P	15 06 44.2	+2.0
	baz=133							
EYMN	**Ely**	71.73	344	P		P	15 06 41.3	-0.3
	baz=158							
EYMN	**Ely**	71.73	344	eP		P	15 06 41.5	-0.2
	comp=Z,30nm,0.8s							
HEC	**Hector,Ludlow**	71.75	320	P		P	15 06 43.9	+1.7
	baz=134,SNR=6.2							
F31A	**Hecla**	71.87	339	P		P	15 06 42.9	+0.3
	baz=151							
C36A	**Pine Crest Far**	71.92	343	P		P	15 06 42.6	-0.2
	baz=156							
TUQ	**Turquoise Moun**	71.93	321	P		P	15 06 44.6	+1.3
	baz=134,SNR=9.3							
CCUT	**Cedar City**	71.96	324	eP		P	15 06 45.1	+1.5
	comp=Z,49nm,0.9s							
D34A	**Park Rapids**	71.98	341	P		P	15 06 42.9	-0.3
	baz=154							
P17A	**Butcher Ranch,**	71.98	327	eP		P	15 06 45.5	+1.9
	comp=Z,52nm,0.9s							
MSU	**Marysvale**	72.02	325	eP		P	15 06 45.8	+1.9
MSU	**Marysvale**	72.02	325	eP		P	15 06 45.8	+1.9
CIS	**Catalina Islan**	72.07	318	P		P	15 06 46.1	+2.0
	baz=132							
TMUT	**Trail Mountain**	72.09	326	eP		P	15 06 46.2	+1.8
	comp=Z,24nm,0.7s							
F30A	**Leola**	72.12	338	P		P	15 06 44.2	+0.2
	baz=150							
E32A	**Braaten, Kindr**	72.13	340	P		P	15 06 43.8	-0.3
	baz=152							
BFSC	**Mount Baldy Ra**	72.16	319	P		P	15 06 46.1	+1.4
	baz=132,SNR=9.6							
C35A	**Jirik Farms, M**	72.18	342	P		P	15 06 43.9	-0.4
	baz=155							
RRX	**Edison Barstow**	72.18	320	P		P	15 06 46.4	+1.7
	baz=133							
SHPR	**Sheep Range**	72.23	322	eP		P	15 06 47.4	+2.3
	comp=Z,20nm,0.8s							
D33A	**AnSam, Waubun**	72.23	341	P		P	15 06 44.1	-0.6
	baz=154							
GSC	**Goldstone, Bar**	72.36	320	P		P	15 06 47.8	+2.0
	baz=133,SNR=7.5							
GSC	**Goldstone, Bar**	72.36	320	eP		P	15 06 48.2	+2.4
GSC				pmax		pmax		
	comp=Z,13nm,0.8s							
GSC	**Goldstone, Bar**	72.36	320	eP		P	15 06 48.2	+2.4
	comp=Z,13nm,0.8s							
E31A	**Nome**	72.36	339	P		P	15 06 45.4	-0.1
	baz=152							
MWC	**Mount Wilson**	72.39	319	eP		P	15 06 48.3	+2.1
MWC				pmax		pmax		
	comp=Z,20nm,0.7s							
MWC	**Mount Wilson**	72.39	319	eP		P	15 06 48.3	+2.1
	comp=Z,20nm,0.7s							
F29A	**Eureka**	72.40	338	P		P	15 06 46.0	+0.3
	baz=150							
C34A	**RKJ Ranch, Bem**	72.41	342	P		P	15 06 45.3	-0.4
	baz=154							
K22A	**Casper**	72.43	332	P		P	15 06 46.9	+0.7
	baz=143							
K22A	**Casper**	72.43	332	eP		P	15 06 47.3	+1.1
	comp=Z,20nm,0.9s							
SHOC	**Shoshone, Teco**	72.45	321	P		P	15 06 48.0	+1.7
	baz=134							
RSSD	**Black Hills**	72.56	334	P		P	15 06 47.7	+0.7
	baz=146							
RSSD	**Black Hills**	72.56	334	eP		P	15 06 48.0	+1.0
RSSD				pmax		pmax		
	comp=Z,20nm,0.8s							
RSSD	**Black Hills**	72.56	334	eP		P	15 06 48.0	+1.0
	comp=Z,20nm,0.8s							
DECC	**Green Verdugo**	72.58	319	P		P	15 06 48.7	+1.6
	baz=132							
D32A	**Dogwood Acres,**	72.59	340	P		P	15 06 46.6	-0.2
	baz=152							
SNCC	**San Nicolas Is**	72.67	317	P		P	15 06 49.0	+1.4
	baz=131							
B35A	**Bob, Littlefor**	72.71	343	P		P	15 06 47.0	-0.4
	baz=156							
D31A	**Mcclaflin, Tow**	72.74	340	P		P	15 06 47.8	+0.1
	baz=152							
C33A	**Trail**	72.76	341	P		P	15 06 48.1	+0.3
	baz=154							
EDW2	**Edwards Air Fo**	72.79	319	P		P	15 06 49.8	+1.5
	baz=132,SNR=6.6							
H25A	**Fruitdale**	72.80	335	P		P	15 06 49.2	+1.0
	baz=146							
BLG	**Laguna Peak, P**	72.94	318	P		P	15 06 50.0	+0.8
	baz=131							
LRMC	**Laurel Mtn Rad**	73.00	320	P		P	15 06 51.3	+1.7
	baz=133							
C32A	**Crookston**	73.05	341	P		P	15 06 49.6	+0.1
	baz=153							
OSI	**Osito Audit: C**	73.06	319	P		P	15 06 51.8	+1.9
	baz=132							
B34A	**Aery, Baudette**	73.08	342	P		P	15 06 49.9	+0.2
	baz=155							
TPNV	**Topopah Spring**	73.16	322	P		P	15 06 52.4	+1.8
	baz=134,SNR=23							
TPNV	**Topopah Spring**	73.16	322	eP		P	15 06 52.8	+2.1
TPNV				pmax		pmax		
	comp=Z,24nm,0.8s							
TPNV	**Topopah Spring**	73.16	322	eP		P	15 06 52.8	+2.1
	comp=Z,24nm,0.8s							
B33A	**Robert and Kas**	73.16	342	P		P	15 06 50.1	-0.1
	baz=154							
FURC	**Furnace Creek,**	73.19	321	P		P	15 06 52.5	+2.0
	baz=134,SNR=6.2							
JLU	**Jordanelle**	73.19	327	eP		P	15 06 52.6	+1.7
	comp=Z,34nm,0.9s							
SCZ2	**Santa Cruz Isl**	73.22	318	P		P	15 06 53.2	+2.3
	baz=131							
AGMN	**Agassiz Nation**	73.27	341	P		P	15 06 50.8	+0.1
	baz=154							
AGMN	**Agassiz Nation**	73.27	341	eP		P	15 06 51.0	+0.2
	comp=Z,32nm,0.8s							
MPMC	**Manual Prospec**	73.28	320	P		P	15 06 52.5	+1.1
	baz=133,SNR=12							
C31A	**Landman Farms,**	73.40	340	P		P	15 06 51.9	+0.3
	baz=152							
CTU	**Camp Tracy**	73.41	327	eP		P	15 06 54.3	+2.3
	comp=Z,329nm,0.4s							
ARVC	**Arvin**	73.47	319	P		P	15 06 53.7	+1.4
	baz=132							
DAC	**Darwin (Calif)**	73.49	320	eP		P	15 06 54.4	+1.8
DAC				pmax		pmax		
	comp=Z,15nm,0.7s							
DAC	**Darwin (Calif)**	73.49	320	eP		P	15 06 54.4	+1.8
	comp=Z,15nm,0.7s							
TCUT	**Toone Canyon**	73.56	328	eP		P	15 06 55.3	+2.3
	comp=Z,40nm,0.8s							
B32A	**Ashes, Strandq**	73.56	341	P		P	15 06 52.4	0.0
	baz=153							
DUG	**Dugway, Tooele**	73.59	326	P		P	15 06 54.5	+1.5
	baz=138,SNR=14							
DUG	**Dugway, Tooele**	73.59	326	eP		P	15 06 54.7	+1.7
DUG				pmax		pmax		
	comp=Z,26nm,1.0s							
DUG	**Dugway, Tooele**	73.59	326	eP		P	15 06 54.7	+1.7
	comp=Z,26nm,1.0s							
ISA	**Isabella, Lake**	73.61	320	P		P	15 06 54.7	+1.6
	baz=132,SNR=8.6							
ISA	**Isabella, Lake**	73.61	320	eP		P	15 06 55.5	+2.3
ISA				pmax		pmax		
	comp=Z,19nm,0.7s							
ISA	**Isabella, Lake**	73.61	320	eP		P	15 06 55.5	+2.3
	comp=Z,19nm,0.7s							
A33A	**Warroad**	73.70	342	P		P	15 06 53.5	+0.2
	baz=154							
R11A	**Troy Canyon, C**	73.76	323	P		P	15 06 56.1	+2.0
	baz=135							
R11A	**Troy Canyon, C**	73.76	323	eP		P	15 06 56.1	+2.0
	comp=Z,12nm,1.0s							
GRAC	**Grapevine Rang**	73.84	321	P		P	15 06 56.1	+1.7
	baz=133,SNR=5.3							
MCU	**Monte Cristo P**	73.86	328	eP		P	15 06 55.9	+1.1
CWC	**Cottonwood Cre**	73.89	320	P		P	15 06 57.1	+2.2
	baz=133							
BW06	**Boulder Array**	73.91	330	P		P	15 06 55.6	+0.6
	baz=141							
BW06	**Boulder Array**	73.91	330	eP		P	15 06 56.3	+1.3
	comp=Z,41nm,1.8s							
PD31	**Pinedale Array**	73.91	330	eP		P	15 06 56.3	+1.4
PDAR	**Pinedale Array**	73.91	330	P		P	15 06 55.6	+0.7
	comp=Z,3.0nm,0.6s,baz=133,slow=6.5,SNR=22							
PDAR				pP		pP	15 07 26.0	+1.3
	comp=Z,5.1nm,0.8s,baz=126,slow=7.5,SNR=5.7							
PKM	**Mcpherson Peak**	73.92	318	P		P	15 06 56.8	+1.7
	baz=131,SNR=8.2							
RSUT	**Red Spur Mount**	73.95	328	eP		P	15 06 56.3	+1.0
HWUT	**Hardware Ranch**	74.00	328	eP		P	15 06 56.5	+1.0
	comp=Z,47nm,0.8s							
A32A	**Rocking H Ranc**	74.01	341	P		P	15 06 54.7	-0.4
	baz=153							
MDND	**Maddock**	74.06	339	P		P	15 06 56.2	+0.8
	baz=150							
VES	**Vestal, Richgr**	74.09	319	P		P	15 06 57.8	+2.0
	baz=132,SNR=7.0							
BMUT	**Black Mountain**	74.10	328	eP		P	15 06 57.0	+0.9
B30A	**Myrvik Farm, E**	74.17	340	P		P	15 06 56.3	+0.3
	baz=152							
SPUT	**South Promonto**	74.22	327	eP		P	15 06 58.9	+2.1
	comp=Z,41nm,0.9s							
BGU	**Big Grassy Mou**	74.23	327	eP		P	15 06 58.4	+1.6
	comp=Z,19nm,0.9s							
SMMC	**Simmler**	74.31	318	P		P	15 06 57.6	+0.4
	baz=131							
D26A	**Manning**	74.36	337	P		P	15 06 58.6	+1.4
	baz=148							
TIN	**Tinemaha, Big**	74.39	321	P		P	15 06 59.4	+1.7
	baz=133							
RCTC	**Rector, Farmer**	74.50	320	P		P	15 06 58.8	+0.6
	baz=132							
B29A	**Wagenman Farm,**	74.51	339	P		P	15 06 58.7	+0.7
	baz=151							
MTUT	**Morton Thiokol**	74.52	327	eP		P	15 06 59.4	+1.0
A30A	**Hoffart Farm,**	74.59	340	P		P	15 06 59.1	+0.7
	baz=152							
HVU	**Hansel Valley**	74.73	327	eP		P	15 07 01.0	+1.3
HVU				pmax		pmax		
	comp=Z,29nm,0.9s							
HVU	**Hansel Valley**	74.73	327	eP		P	15 07 01.0	+1.3
	comp=Z,29nm,0.9s							
B28A	**Dugan Ranch, T**	74.84	339	P		P	15 07 00.7	+0.8
	baz=150							
A29A	**Manning Farm,**	74.87	340	P		P	15 07 00.4	+0.3
	baz=151							
ULM	**Lac du Bonnet**	75.02	342	P		P	15 07 00.6	-0.3
	comp=Z,28nm,0.6s,baz=154,slow=5.7,SNR=31							
ULM				pP		pP	15 07 30.7	+0.1
	comp=Z,26nm,0.7s,baz=153,slow=5.6,SNR=7.5							
LOHW	**Long Hollow**	75.05	330	eP		P	15 07 03.6	+2.1
	comp=Z,18nm,0.9s							
TPAW	**Teton Pass**	75.12	330	eP		P	15 07 03.7	+1.7
	comp=Z,23nm,0.8s							
MLAC	**Mammoth, Mammo**	75.14	321	P		P	15 07 03.8	+1.7
	baz=132							
A28A	**Rude Farm, Bot**	75.20	339	P		P	15 07 02.3	+0.3
	baz=150							
MOOW	**Moose Ponds**	75.22	330	eP		P	15 07 03.9	+1.4
	comp=Z,13nm,0.9s							
C25A	**Freed Ranch, W**	75.24	337	P		P	15 07 03.8	+1.5
	baz=147							
LAO	**LASA Array**	75.55	334	P		P	15 07 05.2	+1.1
	baz=144							
A27A	**Ledoux Ranch,**	75.57	338	P		P	15 07 05.4	+1.3
	baz=149							
RLMT	**Red Lodge**	75.60	332	P		P	15 07 06.2	+1.5
	baz=141							
RLMT	**Red Lodge**	75.60	332	eP		P	15 07 05.8	+1.2
	comp=Z,25

GCMT **Greycliff** 76.30 332 *e*P P 15 07 09.6 +1.1
CMB **Columbia Colle** 76.32 320 *e*P P 15 07 10.7 +2.0
CMB pmax pmax
comp=Z,5.0nm,0.9s
CMB **Columbia Colle** 76.32 320 *e*P P 15 07 10.7 +2.0
comp=Z,4.8nm,0.9s
QLMT **Earthquake Lak** 76.36 330 *e*P P 15 07 11.7 +2.8
SYO **Syowa Base** 76.78 159 *e*X P 15 07 03.2 -7.5
SYO **Syowa Base** 76.78 159 *i*X P 15 07 11.2 +0.5
PAHR **Pah Rah Range** 76.84 322 *e*P P 15 07 13.6 +1.9
comp=Z,38nm,0.8s
HLID **Hailey** 76.86 328 P P 15 07 13.7 +1.9
baz=137
HLID **Hailey** 76.86 328 *e*P P 15 07 14.1 +2.3
comp=Z,27nm,0.8s
TOA0 **Torodi Ar. Sit** 76.93 70 *e*P P 15 07 11.8 -0.8
TORD **Torodi Ar. Bea** 76.93 70 P P 15 07 11.7 -0.8
comp=Z,88nm,0.6s,baz=249,slow=5.4,SNR=525
TORD pP pP 15 07 43.7 +1.3
comp=Z,13nm,0.6s,baz=250,slow=5.4,SNR=2.5
MCMT **McKenzie Canyo** 77.03 329 P P 15 07 14.4 +1.7
BOZ **Bozeman (W)** 77.07 331 P P 15 07 13.6 +0.7
baz=139
AFDM **Forest Hills D** 77.27 321 *e*P P 15 07 15.5 +1.6
comp=Z,12nm,0.9s
VNDA **Vanda** 77.30 190 P P 15 07 15.1 +1.5
comp=Z,5.8nm,1.0s,baz=123,slow=4.4,SNR=19
VNDA pP pP 15 07 45.8 +2.4
comp=Z,2.8nm,0.7s,baz=296,slow=6.3,SNR=3.3
VNDA **Vanda** 77.30 190 *e*P P 15 07 15.2 +1.6
VNDA pmax pmax
comp=Z,17nm,1.3s
VNDA **Vanda** 77.30 190 *e*P P 15 07 15.2 +1.6
comp=Z,17nm,1.3s
VNDA pP pP 15 07 45.8 +2.4
DLMT **Dillon** 77.31 330 *e*P P 15 07 16.1 +1.9
comp=Z,30nm,1.1s
HRY **Holter Researc** 77.97 331 *e*P P 15 07 20.0 +2.2
ORV **Oroville** 77.97 321 *e*P P 15 07 19.5 +1.7
ORV pmax pmax
comp=Z,34nm,1.0s
ORV **Oroville** 77.97 321 *e*P P 15 07 19.5 +1.7
comp=Z,34nm,1.0s
EGMT **Eagleton** 78.07 333 P P 15 07 19.5 +1.2
baz=141
WVOR **Wild Horse Val** 78.27 325 *e*P P 15 07 20.9 +1.4
WVOR pmax pmax
comp=Z,16nm,1.6s
WVOR **Wild Horse Val** 78.27 325 *e*P P 15 07 20.9 +1.4
comp=Z,16nm,1.6s
SUR **Sutherland** 78.52 120 P P 15 07 22.2 +0.8
comp=Z,1.1nm,0.6s,baz=232,slow=6.0,SNR=41
SUR pP pP 15 07 53.4 +2.1
comp=Z,0.9nm,0.9s,baz=224,slow=8.9,SNR=3.3
SUR **Sutherland** 78.52 120 *e*P P 15 07 22.3 +0.9
comp=Z,163nm,1.8s
O03D **Paynes Creek** 78.63 321 P P 15 07 21.9 +0.4
baz=131,SNR=11
CHMT **Chamberlain Mo** 78.77 331 *e*P P 15 07 24.2 +1.9
MSO **Missoula** 79.02 330 P P 15 07 25.2 +1.6
baz=138
MSO **Missoula** 79.02 330 *e*P P 15 07 25.4 +1.8
comp=Z,30nm,1.3s
SLMT **Seeley Lake** 79.12 331 *e*P P 15 07 26.1 +1.9
WDC **Whiskeytown Da** 79.24 321 *e*P P 15 07 24.7 0.0
WDC pmax pmax
comp=Z,21nm,0.6s
WDC **Whiskeytown Da** 79.24 321 *e*P P 15 07 24.7 0.0
comp=Z,21nm,0.6s
SWMT **Swartz Lake** 79.55 331 *e*P P 15 07 28.3 +1.9
N02D **Trinity Center** 79.59 321 P P 15 07 26.5 -0.3
baz=130,SNR=16
M04C **Macdoel** 79.61 322 P P 15 07 28.2 +1.3
baz=131
K05A **Summer Lake** 79.70 324 *e*P P 15 07 29.2 +1.8
comp=Z,42nm,0.8s
KMRM **Mail Ridge** 79.70 320 *e*P P 15 07 30.4 +3.1
comp=Z,24nm,1.0s
YBMT **Yellow Bay** 79.82 331 *e*P P 15 07 29.5 +1.7
JTMT **Jette** 79.85 331 *e*P P 15 07 30.1 +2.0
TSUM **Tsumeb** 79.87 107 P P 15 07 29.1 +0.3
comp=Z,22nm,0.8s,baz=238,slow=6.0,SNR=50
TSUM pP pP 15 08 00.0 +1.1
comp=Z,12nm,0.7s,baz=237,slow=4.1,SNR=5.0
M02C **Callahan** 79.94 322 P P 15 07 29.1 +0.5
baz=130,SNR=11
F10A **Beach Ranch, E** 79.99 328 P P 15 07 29.9 +1.2
YBH **Yreka Blue Hor** 80.08 322 *e*P P 15 07 29.7 +0.4
YBH pmax pmax
comp=Z,15nm,0.8s
YBH **Yreka Blue Hor** 80.08 322 *e*P P 15 07 29.7 +0.4
comp=Z,15nm,0.8s
BLMT **Blacktail Moun** 80.08 331 *e*P P 15 07 31.3 +1.9
K04D **Chiloquin, OR** 80.11 323 P P 15 07 30.4 +0.8
baz=131
KHMM **Horse Mountain** 80.13 321 *e*P P 15 07 31.7 +2.0
comp=Z,20nm,1.0s
BSMT **Bassoo Peak** 80.16 330 *e*P P 15 07 31.2 +1.4
J05D **Fort Rock, OR** 80.25 324 P P 15 07 31.9 +1.5
baz=131
JCC **Jacoby Creek,** 80.27 321 *e*P P 15 07 32.8 +2.5
comp=Z,33nm,1.0s
G08A **Pilot Rock** 80.39 327 *e*P P 15 07 32.6 +1.6
comp=Z,13nm,0.6s
WALA **Waterton Lakes** 80.66 332 *e*P P 15 07 34.0 +1.7
comp=Z,39nm,0.9s
FFC **Flin Flon** 80.74 341 *e*P P 15 07 32.4 -0.1
FFC pmax pmax
comp=Z,16nm,0.9s
FFC **Flin Flon** 80.74 341 *e*P P 15 07 32.4 -0.1
comp=Z,16nm,0.9s
L02D **Cave Junction,** 80.86 322 P P 15 07 34.6 +1.2
baz=130,SNR=12
MORF **Marmelete** 80.96 44 *e*P P 15 07 33.5 -0.6
MORF AMb AMB 15 07 36.3
comp=Z,59nm,2.1s
MORF *e*S S 15 17 34.3 +0.8
MORF **Marmelete** 80.96 44 *e*P P 15 07 36.2 +2.1
comp=Z,85nm,1.8s
I05D **Terrebonne, OR** 81.00 325 P P 15 07 35.7 +1.5
baz=132,SNR=19
G06A **Carlson Farm,** 81.22 326 *e*P P 15 07 37.8 +2.5
comp=Z,41nm,1.4s
I04A **Tendick Farm,** 81.23 324 P P 15 07 36.2 +0.8
baz=131,SNR=7.2
PBDV **Barranco-do-Ve** 81.39 45 *e*P P 15 07 37.8 +1.4
comp=Z,44nm,1.5s
HAWA **Hanford** 81.43 327 *e*P P 15 07 38.6 +2.3
comp=Z,21nm,0.8s
PNCL **Nicolau / Gran** 81.50 44 *e*P P 15 07 38.1 +1.2
comp=Z,28nm,1.6s
PMAFR **Mafra** 81.51 43 *e*P P 15 07 39.0 +2.1
comp=Z,87nm,1.5s
PCVE **Castro Verde** 81.55 44 *e*P P 15 07 38.1 +1.0
comp=Z,39nm,1.9s
MESJ **Messejana** 81.55 44 *e*P P 15 07 36.6 -0.5
MESJ AMb AMB 15 07 39.1
comp=Z,38nm,1.6s
MESJ **Messejana** 81.55 44 *e*P P 15 07 38.5 +1.4
comp=Z,26nm,0.9s
NEW **Newport** 81.55 330 P P 15 07 37.7 +0.7
baz=135
D08A **Wollman Farm,** 81.58 328 *e*P P 15 07 39.1 +2.0
comp=Z,30nm,1.1s
G05D **Wamic, OR** 81.59 325 P P 15 07 38.9 +1.7
baz=132
PVAQ **Vaqueiros** 81.63 45 *e*P P 15 07 39.1 +1.5
comp=Z,48nm,1.8s
I03D **Drain, OR** 81.69 323 P P 15 07 38.8 +1.1
baz=130
C09A **Chrisman Ranch** 81.78 329 *e*P P 15 07 39.4 +1.3
comp=Z,44nm,0.7s
PBEJ **Beja** 81.88 44 *e*P P 15 07 40.0 +1.1
comp=Z,37nm,1.8s
EVO **Evora** 82.07 44 *e*P P 15 07 41.1 +1.2
comp=Z,20nm,1.6s
PMTG **Montargil** 82.25 43 *e*P P 15 07 41.8 +1.0
comp=Z,30nm,2.0s
FCC **Fort Churchill** 82.31 347 *e*P P 15 07 41.2 +0.7
FCC pmax pmax
comp=Z,39nm,0.6s
FCC **Fort Churchill** 82.31 347 *e*P P 15 07 41.2 +0.7
comp=Z,39nm,0.6s
PBAR **Barrancos** 82.50 44 *e*P P 15 07 42.8 +0.7
comp=Z,30nm,2.1s
PESTR **Estremoz** 82.54 44 *e*P P 15 07 43.4 +1.1
comp=Z,22nm,1.6s
B08A **Colville Reser** 82.67 329 *e*P P 15 07 43.6 +0.8
comp=Z,16nm,1.0s
LON **Longmire** 82.84 326 *e*P P 15 07 45.0 +1.2
LON pmax pmax
comp=Z,9.0nm,1.1s
LON **Longmire** 82.84 326 *e*P P 15 07 45.0 +1.2
comp=Z,8.8nm,1.1s
PMRV **Marv??o** 82.98 43 *e*P P 15 07 45.3 +0.7
comp=Z,10nm,1.7s
F04D **Rainier, OR** 83.04 325 P P 15 07 46.0 +1.3
baz=130
C06D **Leavenworth** 83.15 328 P P 15 07 45.8 +0.6
baz=132
PCBR **Castelo Branco** 83.16 43 *e*P P 15 07 46.0 +0.5
comp=Z,25nm,1.7s
BOSA **Boshof** 83.37 118 P P 15 07 46.5 -0.6
comp=Z,19nm,0.7s,baz=265,slow=5.1,SNR=35
BOSA pP pP 15 08 18.8 +1.4
comp=Z,13nm,0.8s,baz=235,slow=4.7,SNR=5.0
BOSA **Boshof** 83.37 118 *e*P P 15 07 46.9 -0.2
comp=Z,105nm,1.6s
BOSA pP pP 15 08 18.8 +1.4
MTE **Manteigas** 83.44 42 *e*P P 15 07 46.5 -0.5
comp=Z,28nm,1.7s
POLO **Lamas de Olo** 83.83 41 *e*P P 15 07 50.0 +1.0
comp=Z,14nm,1.8s
B05A **Bryant** 83.98 327 P P 15 07 50.2 +0.7
baz=131
MVO **Moncorvo** 84.19 42 *e*P P 15 07 51.8 +1.0
comp=Z,45nm,1.9s
A04D **Lummi Island** 84.59 327 P P 15 07 53.3 +0.9
baz=131
MAW **Mawson** 84.63 163 P P 15 07 53.0 +0.5
comp=Z,37nm,0.5s,baz=212,slow=5.8,SNR=183
MAW **Mawson** 84.63 163 P P 15 07 53.0 +0.5
MAW pmax pmax
comp=Z,37nm,0.5s
PBRG **Braganca** 84.73 41 *e*P P 15 07 54.1 +0.6
comp=Z,23nm,2.1s
ESDC **Sonseca Array** 85.33 44 P P 15 07 57.6 +1.0
comp=Z,4.9nm,0.7s,baz=248,slow=4.8,SNR=25
ESDC pP pP 15 08 27.7 +0.7
comp=Z,2.0nm,0.7s,baz=246,slow=4.6,SNR=2.5
LSZ **Lusaka** 90.72 107 P P 15 08 24.4 +1.5
comp=Z,6.4nm,0.6s,baz=241,slow=3.4,SNR=14
YKA **Yellowknife Ar** 90.91 340 P P 15 08 22.8 +0.4
comp=Z,17nm,0.6s,baz=134,slow=4.5,SNR=56
YKA pP pP 15 08 53.9 +0.8
comp=Z,11nm,0.7s,baz=134,slow=4.6,SNR=7.8
YKA LR LR 15 56 02.4
comp=Z,16nm,18.2s,baz=180,slow=40
KEST **Kesra** 92.82 53 P P 15 08 31.7 -0.4
comp=Z,4.1nm,0.6s,baz=199,slow=9.4,SNR=4.9
GERES **GERESS Array B** 100.71 42 P Pdif 15 09 07.3 -0.2
comp=Z,0.3nm,0.5s,baz=251,slow=3.0,SNR=3.1
ILAR **Eielson Array** 104.01 334 Pdiff Pdif 15 09 21.2 -0.5
comp=Z,0.2nm,0.7s,baz=108,slow=2.9,SNR=3.3
ILAR PKKPbc PKKPbc 15 25 10.5 -2.7
comp=Z,0.3nm,0.6s,baz=295,slow=4.3,SNR=4.5
MLR **Muntele Rosu** 107.83 47 Pdiff Pdif 15 09 39.5 +0.2
baz=257,slow=18
KIEV **Kiev** 110.89 42 *i*PKIKP PKiKP 15 13 51.2 -0.4
AKASG **Malin Array Be** 110.90 42 PKiKP PKiKP 15 13 51.0 -0.6
comp=Z,0.9nm,0.4s,baz=270,slow=2.4,SNR=6.3
BRTR **Keskin Array B** 112.35 55 PKiKP PKiKP 15 13 54.6 -0.3
comp=Z,1.2nm,0.6s,baz=190,slow=3.0,SNR=6.2
MMAI **Mount Meron Ar** 112.56 62 PKiKP PKiKP 15 13 56.0 +0.6
comp=Z,1.5nm,0.6s,baz=203,slow=6.2,SNR=3.9
ASF **Jabal al Asfar** 113.64 63 PKiKP PKiKP 15 13 58.3 +0.8
comp=Z,0.4nm,0.3s,baz=176,slow=8.0,SNR=3.8
KIV **Kislovodsk** 119.48 51 *i*PKIKP PKPdf 15 14 09.1 +0.7
KIV pmax pmax
comp=Z,4.0nm,0.9s
KBZ **Khabaz** 119.63 51 PKP PKPdf 15 14 09.5 +1.0
comp=Z,3.6nm,0.7s,baz=202,slow=5.4,SNR=8.0
STKA **Stephens Creek** 119.92 210 PKP PKPdf 15 14 09.8 +0.2
comp=Z,2.0nm,0.7s,baz=91,slow=4.6,SNR=8.2
NWAO **Narrogin (SRO)** 126.00 186 PKP PKPdf 15 14 21.9 +0.7
comp=Z,11nm,0.7s,baz=32,slow=2.1,SNR=8.8
CTA **Charters Tower** 126.74 222 PKP PKPdf 15 14 24.1 +1.1
comp=Z,2.9nm,0.6s,baz=190,slow=3.6,SNR=5.4
ARU **Arti** 127.64 34 PKP PKPdf 15 14 24.5 +1.0
comp=Z,12nm,0.6s,baz=294,slow=3.0,SNR=31
ARU **Arti** 127.64 34 *i*PKIKP PKPdf 15 14 24.2 +0.7
ARU 15 16 24.1
AKTO **Aktyubinsk** 129.13 41 PKP PKPdf 15 14 28.4 +1.8
comp=Z,2.5nm,0.7s,baz=168,slow=1.1,SNR=9.7
AKTO **Aktyubinsk** 129.13 41 PKIKP PKPdf 15 14 26.1 -0.5
AKTO pmax pmax
comp=Z,5.0nm,0.9s
SEY **Seymchan** 129.84 337 PKP PKPdf 15 14 28.4 +0.8
comp=Z,5.5nm,0.7s,baz=103,slow=3.2,SNR=10.0
SEY pPKP pPKPdf 15 15 01.3 +1.8
comp=Z,20nm,0.8s,baz=96,slow=2.3,SNR=17
ASAR **Alice Springs** 130.41 207 PKP PKPdf 15 14 29.8 -0.2
comp=Z,4.3nm,0.5s,baz=138,slow=2.0,SNR=64
ASAR pPKP pPKPdf 15 15 02.1 +0.2
comp=Z,3.6nm,0.8s,baz=150,slow=2.2,SNR=5.2
ASAR SKPbc SKPbc 15 17 45.9 +3.2
comp=Z,0.6nm,0.8s,baz=139,slow=3.6,SNR=2.8
ASAR SKP 15 17 56.6
comp=Z,0.4nm,0.8s,baz=166,slow=3.1,SNR=4.9
ASAR PKKP PKKPdf 15 24 30.1 -0.2
comp=Z,0.5nm,0.6s,baz=335,slow=1.3,SNR=10
AB31 **Akbulak array** 130.65 42 *i*PKIKP PKPdf 15 14 30.1 +0.6
AB31 pmax pmax
comp=Z,3.0nm,0.6s
WSAR **Wadi Sarin** 131.29 77 PKP PKPdf 15 14 31.4 -0.1
comp=Z,6.0nm,0.9s,baz=274,slow=4.2,SNR=3.0
GEYT **Alibeck** 131.32 58 PKP PKPdf 15 14 31.8 +0.6
comp=Z,2.7nm,0.5s,baz=258,slow=4.4,SNR=7.1
PETK **Petropavlovsk-** 132.42 324 PKP PKPdf 15 14 32.5 -0.2
comp=Z,3.3nm,0.6s,baz=57,slow=3.8,SNR=12
PETK pPKP pPKPdf 15 15 04.5 -0.3
comp=Z,8.7nm,0.8s,baz=104,slow=5.3,SNR=9.6
WRA **Warramunga Arr** 133.46 210 PKP PKPdf 15 14 36.0 +0.3
comp=Z,11nm,0.6s,baz=155,slow=1.8,SNR=86
WRA pPKP pPKPdf 15 15 09.2 +1.4
comp=Z,2.3nm,0.8s,baz=189,slow=2.4,SNR=2.5
WRA SKPbc SKPbc 15 17 53.8 +0.3
comp=Z,1.3nm,1.1s,baz=187,slow=6.5,SNR=3.3
WRAB **Tennant Creek** 133.46 210 *d*iPKIKP PKPdf 15 14 36.4 +0.6
ZRNK **Zerenda** 134.59 35 PKIKP PKPdf 15 14 37.4 +0.6
ZRNK pmax pmax
comp=Z,16nm,0.7s
BRVK **Borovoye** 135.22 34 *d*iPKIKP PKPdf 15 14 38.8 +0.8
BVA0 **Borovoye Array** 135.29 34 PKIKP PKPdf 15 14 36.3 -1.8
BVA0 pmax pmax
comp=Z,6.0nm,0.8s
BVAR **Borovoye Array** 135.29 34 PKP PKPdf 15 14 37.2 -0.9
comp=Z,4.2nm,0.7s,baz=258,slow=4.4,SNR=18
VOSK **Vostochnaya** 135.75 34 PKIKP PKPdf 15 14 38.3 -0.7
VOSK pmax pmax
comp=Z,7.0nm,0.9s
KURK **Kurchatov** 140.82 33 PKPpre PKPpre 15 14 43.2
KURK PKP PKPdf 15 14 48.2 -0.1
KURK pPKP pPKPdf 15 15 22.3 +1.9
KURBB **Kurchatov Arra** 140.83 33 PKhKP PKPpre 15 14 43.2
comp=Z,2.1nm,0.6s,baz=303,slow=3.1,SNR=25
KURBB PKP PKPdf 15 14 48.2 -0.2
comp=Z,4.2nm,0.6s,baz=299,slow=2.7,SNR=20
KURBB pPKP pPKPdf 15 15 22.3 +1.9
comp=Z,2.4nm,0.9s,baz=303,slow=2.4,SNR=2.2
ZALV **Zalesovo Beam** 141.46 25 PKhKP PKPpre 15 14 43.6
comp=Z,18nm,0.6s,baz=309,slow=4.1,SNR=16
ZALV PKP PKPdf 15 14 50.3 +0.9
comp=Z,25nm,0.5s,baz=290,slow=2.5,SNR=34
ZALV pPKP pPKPdf 15 15 22.1 +0.7
comp=Z,8.4nm,0.6s,baz=290,slow=3.2,SNR=3.3
AAK **Ala-Archa** 142.41 47 PKhKP PKPpre 15 14 48.6
comp=Z,4.0nm,0.5s,baz=214,slow=8.1,SNR=4.3
AAK PKP PKPdf 15 14 51.4 -0.2
comp=Z,4.8nm,0.6s,baz=162,slow=2.7,SNR=4.6
AAK **Ala-Archa** 142.41 47 *e*PKIKP PKPdf 15 14 49.0 -2.7
TKM2 **Tokmak 2** 143.03 46 PKIKP PKPbc 15 14 49.6 -0.4
TKM2 pmax pmax
comp=Z,15nm,1.4s
YUK **Yuzh-Kuril'sk** 143.44 317 *e*PKIKP PKPbc 15 14 51.4 +0.7
YSS **Yuzh-Sakhalins** 143.80 323 *e*PKIKP PKPbc 15 14 51.8 +0.1
COCO **West Island** 143.96 155 *i*PKIKP PKPdf 15 14 55.5 +0.5
KSH **Kashi** 144.61 51 *e*PKPbc PKPbc 15 14 55.0 +0.4
KSH *e*pPKP pPKPdf 15 15 21.4 -6.3
KSH *e*sPKP 15 15 31.0
KSH *e*PP PP 15 18 16.4 +3.1
KSH PKS PKSdf 15 18 29.6 -1.6
KSH SKS SKSdf 15 21 52.6 -1.6
KSH SKKS SKKSac 15 24 55.3 +0.7
KSH AMB AMB
comp=Z,63nm,5.9s
KSH LR LR
comp=Z,170nm,6.5s
KSH LR LR
comp=Z,120nm,5.8s
KSH LR LR
comp=Z,110nm,6.5s
MAKZ **Makanchi** 144.95 36 PKIKP PKPbc 15 14 55.2 -0.1
MAKZ pmax pmax
comp=Z,61nm,0.7s
MK31 **Makanchi Array** 145.13 36 *i*PKIKP PKPdf 15 14 56.2 +0.1
MK31 pmax pmax
comp=Z,51nm,0.7s
MKAR **Makanchi Array** 145.13 36 PKPbc PKPdf 15 14 56.5 +0.4
comp=Z,62nm,0.7s,baz=325,slow=4.2,SNR=226
MKAR pPKPbc pPKPbc 15 15 28.6 +1.0
comp=Z,24nm,0.8s,baz=320,slow=3.6,SNR=4.8
MKAR SKPbc SKiKP 15 18 27.9 +2.6
comp=Z,1.3nm,0.6s,baz=270,slow=6.9,SNR=4.5
PDGK **Podgornoye** 145.38 43 PKIKP PKPab 15 14 57.7 +0.7
PDGK pmax pmax
comp=Z,88nm,0.8s
ASAJ **Asahikawa** 145.45 319 PKPbc PKPab 15 14 58.1 +0.9
baz=67,slow=7.7
ASAJ pPKPbc pPKPbc 15 15 29.8 +1.3
comp=Z,51nm,0.7s,baz=115,slow=1.4,SNR=12
ERM **Erimo** 146.14 315 *i*PKP2 PKPab 15 15 00.8 +0.9
THN **Thein Dam** 146.33 63 *e*P PKPbc 15 15 00.0 +0.1
KLR **Kul'dur** 147.58 335 *de*PKIKP PKPdf 15 14 59.8 -0.3
HYB **Hyderabad** 148.79 91 *i*PKP PKPbc 15 15 09.0 +1.9
TLY **Talaya** 148.87 9 PKP PKPdf 15 15 01.8 -0.4
comp=Z,2.1nm,0.5s,baz=204,slow=4.5,SNR=3.5
TLY PKPbc PKiKP 15 15 07.3 -0.3
comp=Z,12nm,0.6s,baz=209,slow=3.4,SNR=16
TLY pPKPbc pPKPbc 15 15 40.1 +2.0
comp=Z,7.8nm,0.8s,baz=272,slow=4.0,SNR=2.9
TLY **Talaya** 148.87 9 *e*PKP2 PKPbc 15 15 07.1 +0.8
TLY pmax pmax
comp=Z,35nm,1.6s
WMQ **Urumqi** 149.96 36 *e*PKPbc PKPdf 15 15 03.4 -0.9
WMQ LR LR
comp=Z,240nm,20.0s
WMQ LR LR
comp=Z,230nm,21.0s
WMQ LR LR
comp=Z,250nm,20.0s
USRK **Ussuriysk Ar.** 151.33 328 PKPbc PKPbc 15 15 12.8 +0.4
comp=Z,15nm,0.6s,baz=341,slow=0.9,SNR=29
USRK pPKPbc pPKPbc 15 15 45.4 +1.1
comp=Z,29nm,0.7s,baz=3.0,slow=0.6,SNR=16
MJAR **Matsushiro Arr** 152.05 309 PKPbc PKPbc 15 15 14.4 +0.1
comp=Z,5.8nm,0.6s,baz=112,slow=1.1,SNR=24
MJAR pPKPbc pPKPbc 15 15 46.5 +0.3
comp=Z,12nm,0.8s,baz=94,slow=1.1,SNR=11
MAJO **Matsushiro** 152.05 309 *d*iPKIKP PKPbc 15 15 14.8 +0.5
MAT **Matsushiro** 152.05 309 PKP PKPbc 15 15 14.6 +0.3
MDJ **Mudanjiang** 152.14 332 PKPbc PKPdf 15 15 07.0 -0.5
SONM **Songino Array** 153.01 7 PKP PKPdf 15 15 09.2 +0.4
comp=Z,4.3nm,0.8s,baz=279,slow=1.0,SNR=6.7
SONM PKPbc PKiKP 15 15 16.7 +0.3
comp=Z,8.4nm,0.6s,baz=305,slow=1.0,SNR=17
SONM PKPab PKPab 15 15 29.2 +1.3
comp=Z,3.1nm,0.6s,baz=320,slow=3.4,SNR=3.7
SONM pPKPbc pPKPbc 15 15 48.6 +0.4
comp=Z,9.0nm,0.8s,baz=314,slow=2.1,SNR=6.3
GTA **Gaotai** 159.21 26 *e*PKP PKPdf 15 15 19.0 +1.8
HHC **Hu-ho-hao-te** 160.30 360 *e*PKP PKPdf 15 15 17.3 -1.1
HHC SS SS 15 39 44.1 +2.9
HHC LR LR
comp=Z,77nm,13.6s
HHC LR LR
comp=Z,69nm,11.1s
HHC LR LR
comp=Z,63nm,14.8s
BJI **Beijing** 160.68 349 PKP PKPdf 15 15 20.0 +1.4
LZH **Lanzhou** 163.66 22 *e*PKP PKPdf 15 15 20.0 -2.0
LZH pPKP pPKPdf 15 15 45.3 -9.0
LZH sPKP 15 15 57.4
LZH PP PP 15 20 01.8 +2.7
LZH SKKS 15 26 36.0
LZH AMB AMB
comp=Z,120nm,4.1s
XAN **Xi'an** 166.91 9 PKP PKPdf 15 15 23.1 -1.6
CMAR **Chiang Mai Arr** 167.97 100 PKP PKPdf 15 15 25.6 -0.1
comp=Z,1.1nm,0.7s,baz=235,slow=3.2,SNR=5.0
CMAR pPKP pPKPdf 15 15 59.0 +1.0
comp=Z,1.8nm,1.1s,baz=294,slow=1.8,SNR=4.1
CMAR PKPab PKPab 15 16 33.9 0.0
comp=Z,3.2nm,0.6s,baz=260,slow=6.3,SNR=20
CD2 **Chengdu** 168.05 34 PKP PKPdf 15 15 25.8 +0.2
CD2 pPKP pPKPdf 15 15 50.3 -7.5
CD2 sPKP 15 15 59.8
CD2 PP PP 15 20 22.1 0.0
CD2 SKS SKSdf 15 22 21.8 +3.1
CD2 SKKS SKKSac 15 27 00.6 +1.7
CD2 SS SS 15 41 04.3 +2.5
CD2 AMB AMB
comp=Z,220nm,6.6s
KMI **Kunming** 171.06 62 PKP PKPdf 15 15 27.3 -0.5
GYA **Guiyang** 173.11 38 PKP PKPdf 15 15 27.9 -0.6
GYA pPKP pPKPdf 15 15 53.0 -7.8
GYA PKPab PKPab 15 16 56.8 +0.4
GYA PKS PKSdf 15 18 59.3 -1.7
GYA PP PP 15 20 48.6 +1.0
GYA AMB AMB
comp=Z,120nm,7.8s

IDC ***15*** *15:00:43.2±0.4, 17°.30S×167°.53E, h0km, mb5.0/29, mb1 5.0/30, mb1mx5.0/35, mbtmp5.0/30, ML5.7/2, MS4.6/19, Ms1 4.6/19, ms1mx4.4/30, Error ellipse: s-maj=15.5km s-min=12.1km az=104.0*

ISCJB ***15*** *15:00:47.4±1.5, 17°.22S±0°.04×167°.32E±0°.03, h33km±13km, mb5.3/153, MS4.8/174, Error ellipse: s-maj=6.1km s-min=5.0km az=11.4*

MOS ***15*** *15:00:49.9±1.0, 17°.13S×167°.22E, h48km, mb5.4/63, MS4.8/29, Error ellipse: s-maj=8.6km s-min=7.6km az=129.2*

GCMT ***15*** *15:00:49.0±0.3, 17°.26S×167°.32E, h34km, MW5.3/81, Moment Tensor Solution. s51,c72; s81,c129; Duration: 1s1 Moment tensor: Scale 10^17Nm; Mrr0.99±.06; Mθθ-1.16±.03; Mϕϕ0.17±.04; Mrθ0.56±.04; Mrϕ-0.14±.03; Mθϕ0.41±.04; Best double couple: Mw1.29300×10^17 NP1:ϕs67.00000°, δ62.00000°, λ72.00000°. NP2: ϕs282.00000°, δ33.00000°, λ120.00000°. Principal axes: T 1.2490, Plg68.0000°, Azm301.0000°; N 0.0880, Plg16.0000°, Azm76.0000°; P -1.3360, Plg15.0000°, Azm171.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***15*** *15:00:49.0±0.1, 17°.27S×167°.35E, h35km, mb5.4/97, MS4.8/139 Error ellipse: s-maj=4.9km s-min=4.2km az=146.0*

NEIC Felt at Port-Vila.

BJI ***15*** *15:00:52.4, 16°.60S×167°.31E, h54km, mb5.2/65, mB5.4/37, Ms5.0/33, Ms7 4.8/33*

ISC 15 15:00:50.9±0.5, 17°.31S±0°.04×167°.31E±0°.05, h52km±4km, n631, σ1°35/540, mb5.4/151, MS4.8/175, 11C-7D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.81**	**190**	Pn	**Pn**	**15 01 58.9**	**-1.9**
	215nm,0.3s,baz=45,slow=14,SNR=1464						
DZM				Sn	**Sn**	**15 02 51.4**	**-3.9**
	108nm,0.3s,baz=300,slow=20,SNR=4.3						
DZM				LR	LR	15 03 34.5	
	comp=Z,7μm,21.5s,baz=37,slow=35						
DZM	**Mont Dzumac**	**4.81**	**190**	*e*Pn	**Pn**	**15 01 58.0**	**-2.8**
	902nm,0.2s						
DZM				*e*Sn	**Sn**	**15 02 50.5**	**-4.8**
	440nm,0.2s						
DZM				*e*LR	LR	15 03 02.7	
	15μm,23.4s						
DZM	**Mont Dzumac**	**4.81**	**190**	*e*Pn	**Pn**	**15 01 57.8**	**-3.1**
DZM				*e*Sn	**Sn**	**15 02 49.3**	**-6.0**
DZM				Sn	Sn	15 02 51.4	-3.9
MSVF	**Nonsavu**	**10.26**	**94**	*e*P	**Pn**	**15 03 19.7**	**+4.1**
MSVF				pmax	pmax		
	comp=Z,213nm,1.0s						

MSVF Nonsavu 10.26 94 ePn **Pn** **15 03 19.6 +4.1**
HNR Honiara 10.61 317 Pn **Pn** **15 03 19.9 -0.3**
comp=Z,76nm,0.3s,baz=184,slow=2.0,SNR=72
HNR Sn **Sn** **15 05 13.1 -4.5**
comp=Z,13nm,0.3s,baz=0.6,slow=17,SNR=3.4
HNR LR LR 15 06 55.6
comp=Z,4μm,20.0s,baz=146,slow=35
HNR Honiara 10.61 317 eP **Pn** **15 03 19.0 -1.2**
HNR eS Sn 15 05 07.0 -11
HNR Honiara 10.61 317 ePn **Pn** **15 03 18.9 -1.4**
HNR eSn **Sn** **15 05 16.7 -0.9**
NFK Norfolk Island 11.70 177 P **Pn** **15 03 36.7 +1.6**
baz=12,SNR=3.5
EIDS Eidsvold 17.10 239 P **P** **15 04 49.0 +1.6**
baz=17,SNR=6.8
EIDS Eidsvold 17.10 239 ePn **P** **15 04 48.7 +1.3**
comp=Z,72nm,1.1s
RAO Raoul Island 18.02 134 LR LR 15 10 28.0
comp=Z,3μm,21.6s,baz=308,slow=33
OUZ Omahuta 18.70 164 eP **P** **15 05 03.8 -1.2**
comp=Z,128nm,1.0s
ARMA Armidale 19.36 225 eP **P** **15 05 11.2 -1.2**
comp=Z,49nm,1.0s
RMQ Roma 19.46 239 P **Pn** **15 05 17.2 +2.1**
baz=20
CTA Charters Tower 20.13 259 P Pn 15 05 22.6 -0.4
comp=Z,78nm,0.8s,baz=81,slow=12,SNR=62
CTA LR LR 15 12 30.9
comp=Z,2μm,18.6s,baz=66,slow=35
CTAO Charters Tower 20.13 259 eP **P** **15 05 20.2 -0.6**
CTAO pmax pmax
comp=Z,105nm,0.8s
CTAO MLR MLR
comp=Z,3μm,19.0s
CTAO Charters Tower 20.13 259 eP **P** **15 05 20.2 -0.6**
comp=Z,105nm,0.8s
CTAO LR LR
comp=Z,3μm,19.0s
AFI Afiamalu 20.43 83 P **P** **15 05 20.9 -3.2**
comp=Z,36nm,1.0s,baz=312,slow=19,SNR=3.7
AFI Afiamalu 20.43 83 P **P** **15 05 20.9 -3.2**
AFI LR LR
comp=Z,2μm,19.0s
PMG Port Moresby 21.10 289 P **P** **15 05 31.9 +0.6**
comp=Z,39nm,1.0s,baz=92,slow=16,SNR=6.8
PMG LR LR 15 13 00.5
comp=Z,3μm,18.3s,baz=114,slow=35
PMG Port Moresby 21.10 289 deP **P** **15 05 32.4 +1.1**
PMG pmax pmax
comp=Z,614nm,1.7s
PMG Port Moresby 21.10 289 eP **P** **15 05 29.1 -2.1**
MGCD Mangrove Creek 21.52 220 P **P** **15 05 40.4 +4.7**
baz=22,SNR=5.3
MTSU Mount Surprise 21.91 264 P **P** **15 05 42.0 +2.0**
baz=22,SNR=55
HIZ Hauiti 22.14 164 eP **P** **15 05 44.8 +2.6**
comp=Z,494nm,1.3s
URZ Urewera 22.57 160 P **P** **15 05 47.8 +1.0**
comp=Z,124nm,0.9s,baz=18,slow=3.6,SNR=31
URZ LR LR 15 13 57.7
comp=Z,4μm,18.8s,baz=334,slow=35
URZ Urewera 22.57 160 P **P** **15 05 46.9 0.0**
comp=Z,428nm,1.4s
BKZ Black Stump Fm 23.21 162 eP **P** **15 05 54.4 +1.0**
comp=Z,184nm,1.2s
QLP Quilpie 23.27 243 P **P** **15 05 55.1 +1.0**
baz=24,SNR=85
COEN Coen 23.47 275 P **P** **15 05 57.2 +1.1**
baz=24,SNR=6.8
COEN Coen 23.47 275 eP **P** **15 05 54.1 -1.9**
comp=Z,210nm,1.4s
YNG Young 23.93 221 P **P** **15 06 02.3 +2.1**
baz=24,SNR=6.8
CNB Canberra Magne 24.02 218 P **P** **15 06 03.2 +2.1**
baz=24,SNR=12
CMSA Cobar Meteorol 24.18 230 P **P** **15 06 03.9 +1.4**
baz=24,SNR=68
CAN Canberra 24.24 219 P **P** **15 06 04.9 +1.9**
baz=24
CAN Canberra 24.24 219 PFAKE 15 06 10.0 +6.9
CAN LR LR
comp=Z,1μm,20.0s
BFZ Birch Farm 24.54 163 eP **P** **15 06 06.4 +0.7**
comp=Z,83nm,0.7s
SNZO South Karori 24.75 167 PFAKE 15 06 20.0 +12
SNZO LR LR
comp=Z,2μm,20.0s
PATS Pohnpei 25.58 339 P **P** **15 06 17.5 +2.2**
baz=26
KHZ Kahutara 25.59 169 eP **P** **15 06 14.9 -0.2**
comp=Z,542nm,1.8s
LTZ Lake Taylor 25.74 172 eP **P** **15 06 17.2 +0.6**
comp=Z,218nm,1.1s
OXZ Oxford 26.25 172 eP **P** **15 06 25.1 +4.0**
comp=Z,142nm,1.0s
QIS Mount Isa 26.39 259 P **P** **15 06 23.8 +1.2**
baz=27,SNR=31
RPZ Rata Peaks 26.52 174 P **P** **15 06 22.0 -1.5**
comp=Z,15nm,0.8s,baz=236,slow=7.3,SNR=3.3
RPZ LR LR 15 16 44.0
comp=Z,3μm,18.6s,baz=348,slow=36
RPZ Rata Peaks 26.52 174 P **P** **15 06 22.0 -1.5**
STKA Stephens Creek 27.42 233 P **P** **15 06 33.3 +1.5**
comp=Z,42nm,0.9s,baz=60,slow=7.7,SNR=55
STKA PcP **PcP** **15 09 50.4 +0.7**
comp=Z,13nm,0.9s,baz=24,slow=3.6,SNR=5.0
STKA LR LR 15 17 47.0
comp=Z,1μm,18.1s,baz=53,slow=37
STKA Stephens Creek 27.42 233 P **P** **15 06 33.2 +1.4**
baz=28,SNR=29
HTT Hallett 30.12 232 P **P** **15 06 57.2 +1.3**
baz=30,SNR=7.0
GENI Genyem 30.39 296 P **P** **15 07 00.1 +1.7**
comp=Z,188nm,1.5s,comp=Z,3μm
TAU Tasmania Unive 30.66 209 PFAKE 15 07 10.0 +10
TAU LR LR
comp=Z,2μm,21.0s
WB2 Warramunga Arr 31.31 260 eP **P** **15 07 06.3 -0.2**
comp=Z,41nm,1.1s
WRAB Tennant Creek 31.31 260 c iP **P** **15 07 06.2 -0.3**
WRAB pmax pmax
comp=Z,198nm,1.7s
WRAB Tennant Creek 31.31 260 eP **P** **15 07 04.4 -2.1**
comp=Z,132nm,1.6s
WRAB ePcP **PcP** **15 10 00.0 +0.2**
WRAB LR LR
comp=Z,1μm,21.0s
WRA Warramunga Ar 31.32 260 P **P** **15 07 06.0 -0.6**
comp=Z,13nm,0.9s,baz=80,slow=5.7,SNR=95
WRA PcP **PcP** **15 10 00.1 +0.3**
comp=Z,12nm,1.0s,baz=90,slow=3.0,SNR=11
WRA LR LR 15 18 52.1
comp=Z,1μm,20.8s,baz=85,slow=34
WRA Warramunga Arr 31.32 260 P **P** **15 07 06.0 -0.6**
WRA 15 10 00.2
WRA pmax pmax
comp=Z,14nm,0.8s
WRA MLR MLR
comp=Z,1μm,20.8s
AS01 Alice Springs 31.83 253 eP **P** **15 07 10.7 -0.3**
AS31 Alice Springs 31.87 253 eP **P** **15 07 11.4 +0.1**
comp=Z,20nm,0.6s
ASAR Alice Springs 31.87 253 P **P** **15 07 11.7 +0.3**
comp=Z,46nm,0.7s,baz=78,slow=8.7,SNR=436
ASAR PcP **PcP** **15 10 01.6 +0.3**
comp=Z,7.4nm,0.9s,baz=103,slow=2.6,SNR=8.8
ASAR LR LR 15 19 35.7
comp=Z,2μm,19.7s,baz=87,slow=35
BBOO Buckleboo 32.09 235 P **P** **15 07 14.2 +1.0**
baz=32,SNR=8.0
BBOO Buckleboo 32.09 235 eP **P** **15 07 12.0 -1.2**
comp=Z,56nm,0.9s
KDU Kakadu 33.93 273 P **P** **15 07 29.3 0.0**
baz=34
MTN Manton Dam 35.17 272 P **P** **15 07 40.3 +0.2**
baz=35,SNR=9.1
MTN Manton Dam 35.17 272 eP **P** **15 07 40.5 +0.4**
comp=Z,34nm,1.0s
MTN ePcP **PcP** **15 10 11.8 +1.1**
KNRA Kununurra 36.95 267 P **P** **15 07 55.6 +0.2**
baz=37
GUMO Guam 37.86 323 P **P** **15 08 01.9 -1.0**
GUMO Guam 37.86 323 P **P** **15 08 01.9 -1.0**
FORT Forrest 38.07 242 P **P** **15 08 05.4 +0.7**
baz=38
FITZ Fitzroy Crossi 39.64 262 P **P** **15 08 18.8 +0.8**
baz=40,SNR=112
FITZ Fitzroy Crossi 39.64 262 eP **P** **15 08 18.8 +0.8**
comp=Z,133nm,0.9s
FITZ ePcP **PcP** **15 10 24.3 +0.1**
XMAS Kiritimati 39.72 64 PFAKE 15 08 30.0 +11
XMAS LR LR
comp=Z,2.0nm,21.0s
PALU Palau 40.65 304 P **P** **15 08 27.7 +1.3**
baz=41,SNR=12
JOHN Johnston Islan 40.81 35 PFAKE 15 08 40.0 +13
JOHN LR LR
comp=Z,102nm,21.0s
TBI Tubuai 40.87 106 eLQ LQ 15 18 13.1
comp=Z,2μm,30.2s
TBI eLR LR 15 20 00.0
comp=Z,2μm,26.2s,baz=271
PPT2 Papeete2 41.07 97 eLQ LQ 15 18 18.6
comp=Z,1μm,28.8s
PPT2 eLR LR 15 20 03.9
comp=Z,2μm,25.5s,baz=257
PPT Papeete 41.07 97 LR LR 15 21 40.8
comp=Z,787nm,18.1s,baz=262,slow=31
SOEI Soe 42.44 274 P **P** **15 08 42.4 +1.3**
comp=Z,82nm,1.5s
SOEI Soe 42.44 274 eP **P** **15 08 37.9 -3.2**
comp=Z,174nm,1.4s
SOEI ePcP **PcP** **15 10 36.5 +2.9**
LBMI Labuha 42.51 289 P **P** **15 08 43.5 +1.9**
comp=Z,90nm,1.6s,comp=Z,1μm
BATI Baumata 42.90 274 P **P** **15 08 46.2 +1.4**
comp=Z,40nm,1.3s
SANI Sanana 43.32 286 P **P** **15 08 48.9 +0.8**
comp=Z,105nm,1.1s,comp=Z,1μm
KMBL Kambalda 43.39 242 P **P** **15 08 48.8 +0.2**
baz=44,SNR=6.3
MMRI Maumere 44.66 275 eP **P** **15 08 58.8 -0.1**
comp=Z,82nm,1.1s
MMRI ePcP **PcP** **15 10 41.6 +0.6**
MBWA Marble Bar 44.95 257 eP **P** **15 09 02.2 +1.0**
comp=Z,175nm,1.0s
MBWA LR LR
comp=Z,699nm,19.0s
MEEK Meekatharra 45.87 250 P **P** **15 09 09.4 +1.0**
baz=46,SNR=24
KLBR Kellerberrin 46.92 243 P **P** **15 09 16.5 -0.1**
baz=47,SNR=12
NWAO Narrogin (SRO) 47.50 241 P **P** **15 09 21.3 +0.3**
comp=Z,31nm,0.8s,baz=317,slow=6.5,SNR=9.0
NWAO LR LR 15 28 45.0
comp=Z,608nm,21.4s,slow=35
NWAO Narrogin (SRO) 47.50 241 P **P** **15 09 21.3 +0.3**
baz=48,SNR=6.4
NWAO P **P** **15 09 21.3 +0.3**
baz=48,SNR=6.4
MIDW Midway 47.62 18 PFAKE 15 09 30.0 +8.1
MIDW LR LR
comp=Z,887nm,21.0s
BLDU Ballidu 47.73 244 P **P** **15 09 23.1 +0.2**
baz=48
MRSI Marisa 48.03 287 P **P** **15 09 25.2 -0.2**
comp=Z,28nm,1.3s,comp=Z,5μm
KAPI Kappang 48.09 279 eP **P** **15 09 24.7 -1.1**
comp=Z,81nm,0.9s
KAPI LR LR
comp=Z,341nm,20.0s
MORW Morawa 48.23 246 P **P** **15 09 27.2 +0.5**
baz=48,SNR=5.0
SPSI Sidrap Palu 48.41 280 P **P** **15 09 27.8 -0.5**
comp=Z,57nm,1.0s,comp=Z,744nm
TTSI Tana Toraja 48.68 281 P **P** **15 09 31.4 +1.0**
comp=Z,34nm,0.9s,comp=Z,578nm
PLAI Plampang 48.86 273 P **P** **15 09 32.0 +0.2**
comp=Z,88nm,1.4s,comp=Z,1μm
PCI Palu 49.43 284 P **P** **15 09 37.6 +1.4**
comp=Z,215nm,1.1s,comp=Z,2μm
TWSI Taliwang, Sumb 49.74 273 P **P** **15 09 39.3 +0.8**
comp=Z,147nm,1.2s,comp=Z,2μm
GIRL Giralia 49.95 255 P **P** **15 09 42.1 +2.1**
baz=50,SNR=5.8
KIP Kipapa 51.35 43 PFAKE 15 10 00.0 +10
KIP LR LR
comp=Z,672nm,19.0s
TAOE Nuku Hiva Isla 51.73 88 eLR LR 15 25 01.0
comp=Z,1μm,24.7s
POHA Pohakuloa 51.85 46 PFAKE 15 10 10.0 +15
POHA LR LR
comp=Z,851nm,19.0s
MYLDM Lahad Datu 53.12 290 eP **P** **15 10 05.0 +1.2**
comp=Z,129nm,1.4s
RKT Rikitea 54.19 106 eLR LR 15 26 10.4
comp=Z,1μm,27.8s,baz=268
KKM Kota Kinabalu 55.54 290 eP **P** **15 10 20.8 -0.7**
comp=Z,239nm,1.6s
KKM LR LR
comp=Z,334nm,22.0s
WOJI Wonogiri, Jawa 55.66 272 P **P** **15 10 22.8 +0.6**
comp=Z,91nm,1.2s,comp=Z,4μm
STKI Sintang 57.57 281 P **P** **15 10 37.3 +1.5**
SBUM Sibu 57.74 284 eP **P** **15 10 37.7 +0.7**
comp=Z,23nm,1.1s
JOW Kunigami 57.97 318 eP **P** **15 10 36.6 -1.7**
comp=Z,67nm,0.9s
CISI Cisompet, Garu 58.70 272 eP **P** **15 10 43.8 -0.1**
comp=Z,216nm,1.6s
KSM Kuching 59.16 282 eP **P** **15 10 46.2 -0.8**
comp=Z,63nm,0.9s
KSM LR LR
comp=Z,383nm,21.0s
INU Inuyama 59.73 331 eP **P** **15 10 50.6 +0.2**
comp=Z,66nm,1.4s
DBJI Dramaga 59.99 272 P **P** **15 10 53.4 +0.7**
comp=Z,148nm,1.3s,comp=Z,3μm
TNG Tangerang 60.20 273 P **P** **15 10 55.7 +1.6**
MJAR Matsushiro Arr 60.20 333 P **P** **15 10 53.0 -0.6**
comp=Z,23nm,1.0s,baz=164,slow=6.9,SNR=59
MJAR PcP **PcP** **15 11 39.3 +0.6**
comp=Z,6.3nm,0.9s,baz=158,slow=4.0,SNR=2.6
MJAR Matsushiro Arr 60.20 333 P **P** **15 10 53.0 -0.6**
MJAR 15 11 39.3
MJAR pmax pmax
comp=Z,24nm,1.0s
MAJO Matsushiro 60.20 333 eP **P** **15 10 51.8 -1.8**
MAJO pmax pmax
comp=Z,62nm,1.2s
MAJO MLR MLR
comp=Z,483nm,19.0s
MAJO Matsushiro 60.20 333 eP **P** **15 10 51.8 -1.8**
comp=Z,62nm,1.2s
MAJO LR LR
comp=Z,483nm,19.0s
MAT Matsushiro 60.20 333 P **P** **15 10 53.1 -0.5**
MJB9 Matsu-Tunnel 60.21 333 eP **P** **15 10 53.3 -0.3**
comp=Z,16nm,1.2s
VNDA Vanda 60.30 181 P **P** **15 10 53.9 +0.1**
comp=Z,3.2nm,1.0s,baz=344,slow=5.2,SNR=5.1
VNDA LR LR 15 34 19.4
comp=Z,170nm,18.7s,baz=356,slow=33
VNDA Vanda 60.30 181 eP **P** **15 10 54.8 +1.0**
VNDA pmax pmax
comp=Z,36nm,1.8s
VNDA Vanda 60.30 181 eP **P** **15 10 54.8 +1.0**
comp=Z,36nm,1.8s
SBA Scott Base 60.57 180 eP **P** **15 10 55.2 -0.4**
SBA pmax pmax
comp=Z,57nm,1.6s
SBA MLR MLR
comp=Z,575nm,20.0s
SBA Scott Base 60.57 180 eP **P** **15 10 55.2 -0.4**
comp=Z,57nm,1.6s
SBA LR LR
comp=Z,575nm,20.0s
CGJI Cibinong 60.99 272 P **P** **15 10 59.4 0.0**
comp=Z,149nm,1.3s,comp=Z,2μm
JNU Nakatsue 61.04 325 P **P** **15 10 58.6 -0.8**
comp=Z,19nm,1.2s,baz=126,slow=9.3,SNR=11
JNU Nakatsue 61.04 325 P **P** **15 10 58.6 -0.8**
comp=Z,47nm,1.5s
CASY Casey 61.17 203 eP **P** **15 10 59.3 -0.5**
comp=Z,8.7nm,1.5s
CASY LR LR
comp=Z,131nm,20.0s
YHNB Yeheng 61.20 312 PFAKE 15 11 10.0 +9.3
YHNB LR LR
comp=Z,758nm,21.0s
TATO Taipei 61.31 312 PFAKE 15 11 10.0 +8.7
TATO LR LR
comp=Z,679nm,19.0s
PPBI Pangkal Pinang 61.87 277 P **P** **15 11 06.2 +0.8**
comp=Z,31nm,1.2s,comp=Z,670nm
KASI Kota Agung 62.43 273 P **P** **15 11 08.6 -0.6**
comp=Z,90nm,1.2s
ERM Erimo 63.10 340 i P **P** **15 11 13.6 +0.6**
ERM Erimo 63.10 340 PFAKE 15 11 30.0 +17
ERM LR LR
comp=Z,677nm,20.0s
YUK Yuzh-Kuril'sk 64.12 343 i P **P** **15 11 20.4 +0.8**
KUR Kuril'sk 64.70 345 P **P** **15 11 22.3 -1.1**
KUR pmax pmax
comp=E,18nm,1.6s
KUR pmax pmax
comp=Z,39nm,1.6s
KUR MLR MLR
comp=N,337nm,17.0s
KUR MLR MLR
comp=E,216nm,17.0s
KUR MLR MLR
comp=Z,458nm,17.0s
KSI Kapahiang 64.79 274 P **P** **15 11 25.9 +1.1**
comp=Z,38nm,1.0s
ASAJ Asahikawa 65.17 341 eP **P** **15 11 27.4 +0.9**
comp=Z,85nm,1.3s
INCN Inchon 66.60 326 eP **P** **15 11 37.0 +1.1**
comp=Z,83nm,1.3s
INCN LR LR
comp=Z,385nm,22.0s
QIZ Qiongzhong 67.03 300 P **P** **15 11 40.5 +1.5**
QIZ S **S** **15 20 30.1 +0.9**
QIZ pmax pmax
comp=Z,44nm,1.5s
QIZ LR LR
comp=Z,440nm,15.0s
QIZ LR LR
comp=Z,540nm,30.8s
QIZ Qiongzhong 67.03 300 PFAKE 15 11 50.0 +11
QIZ LR LR
comp=Z,591nm,22.0s
BKNI Bangkinang 67.49 278 P **P** **15 11 43.3 +1.2**
comp=Z,155nm,1.1s
NJ2 Nanjing 67.55 317 eP **P** **15 11 42.3 +0.3**
NJ2 pmax pmax
comp=Z,49nm,1.2s
YSS Yuzh-Sakhalins 67.68 342 ⇑ i P **P** **15 11 43.5 +1.0**
YSS pmax pmax
comp=Z,50nm,0.9s
YSS Yuzh-Sakhalins 67.68 342 eP **P** **15 11 43.7 +1.2**
comp=Z,54nm,0.9s
YSS LR LR
comp=Z,335nm,20.0s
IPM Ipoh 68.89 282 eP **P** **15 11 51.6 +0.8**
comp=Z,159nm,1.7s
MNSI Mandailing Nat 69.02 278 P **P** **15 11 49.1 -2.6**
USRK Ussuriysk Ar. 69.19 334 P **P** **15 11 53.1 +1.1**
comp=Z,6.8nm,0.9s,baz=116,slow=4.4,SNR=11
KULM Kulim 69.52 283 eP **P** **15 11 55.5 +0.7**
comp=Z,79nm,1.3s
KULM LR LR
comp=Z,423nm,19.0s
WHN Wuhan 69.70 313 ⇓ i P **P** **15 11 56.3 +0.9**
WHN pmax pmax
comp=Z,140nm,1.3s
SMY Shemya 69.99 4 eP **P** **15 11 56.6 -0.1**
SMY pmax pmax
comp=Z,88nm,1.1s
SMY Shemya 69.99 4 eP **P** **15 11 56.6 -0.1**
comp=Z,88nm,1.1s
PSI Prapat 70.29 279 P **P** **15 11 59.4 -0.2**
comp=Z,46nm,1.0s,baz=143,slow=3.6,SNR=26
PSI Prapat 70.29 279 eP **P** **15 11 59.5 -0.2**
PSI pmax pmax
comp=Z,79nm,1.1s
PSI Prapat 70.29 279 eP **P** **15 11 59.5 -0.2**
comp=Z,79nm,1.1s
DL2 Dalian 70.38 324 P **P** **15 11 59.9 +0.5**
DL2 pP **pP** **15 12 14.6 +0.6**
DL2 S **S** **15 21 07.1 -1.0**
DL2 pmax pmax
comp=Z,100nm,0.8s
DL2 pmax pmax
comp=Z,200nm,4.3s
DL2 LR LR
comp=Z,530nm,20.4s
DL2 LR LR
comp=Z,610nm,23.3s
PET Petropavlovsk 70.44 354 eP **P** **15 11 59.3 -0.1**
PET pmax pmax
comp=Z,44nm,1.4s
PET Petropavlovsk 70.44 354 eP **P** **15 11 59.4 -0.1**
comp=Z,83nm,1.4s
PET LR LR
comp=Z,657nm,21.0s
MDJ Mudanjiang 70.56 332 P **P** **15 12 00.8 +0.4**
MDJ pP pP 15 12 14.9 -0.1
MDJ sP sP 15 12 20.8 0.0
MDJ S **S** **15 21 10.6 +0.5**
MDJ sS sS 15 21 34.6 0.0
MDJ pmax pmax
comp=Z,19nm,1.4s
MDJ LR LR
comp=Z,250nm,17.5s
MDJ LR LR
comp=Z,170nm,19.9s
MDJ LR LR
comp=Z,460nm,23.2s
MDJ Mudanjiang 70.56 332 PFAKE 15 12 10.0 +10
MDJ LR LR
comp=Z,395nm,20.0s
PEA0 Petropavlovsk- 70.61 354 eP **P** **15 12 00.1 -0.5**
PEA0B Petropavlovsk- 70.61 354 eP **P** **15 12 00.9 +0.4**
comp=Z,164nm,1.4s
PETK Petropavlovsk- 70.61 354 P **P** **15 12 00.8 +0.2**
comp=Z,36nm,0.9s,baz=137,slow=7.4,SNR=56
PETK LR LR 15 40 07.5
comp=Z,221nm,19.1s,baz=173,slow=34
TSI Tuntungan 70.86 280 P **P** **15 12 01.5 -1.5**
GSI Gunungsitoli 71.08 278 P **P** **15 12 03.5 -0.8**
GSI Gunungsitoli 71.08 278 eP **P** **15 12 04.5 +0.2**
comp=Z,113nm,1.0s
TYV Tymovskoe 71.25 344 eP **P** **15 12 04.5 +0.1**
TYV pmax pmax
comp=Z,26nm,1.0s
TIA Tai'an 71.29 319 ⇑ P **P** **15 12 05.3 +0.3**
TIA pmax pmax
comp=Z,50nm,0.9s
HABR Khabarovsk 71.52 338 c eP **P** **15 12 04.7 -1.4**
HABR e*PP **pP** **15 12 18.8 -1.9**
HABR e 15 12 24.0
HABR e*SP **PcP** **15 12 24.8 -0.5**
HABR ePPP PPP 15 16 26.3
HABR eS **S** **15 21 19.2 -1.8**
HABR e*SS **sS** **15 21 43.6 -2.0**
HABR e 15 22 04.9
HABR eSS **SS** **15 25 54.8 -2.6**
HABR pmax pmax
comp=N,3.0nm,0.7s
HABR pmax pmax
comp=Z,54nm,1.5s
HABR pmax pmax
comp=E,14nm,0.7s
HABR MLR MLR
comp=Z,276nm,17.0s
CN2 Changchun 71.87 329 ⇑ P **P** **15 12 08.8 +0.5**
CN2 ePP pP 15 12 24.0 +1.1
CN2 eS **S** **15 21 24.9 -0.3**
CN2 pmax pmax
comp=Z,20nm,1.0s
CN2 pmax pmax
comp=Z,300nm,4.0s
CN2 LR LR
comp=Z,600nm,17.0s
CN2 LR LR
comp=Z,500nm,17.0s
CN2 LR LR
comp=Z,800nm,18.0s
QSPA South Pole Qui 72.73 180 PFAKE 15 12 30.0 +17
QSPA LR LR
comp=Z,568nm,19.0s
ENH Enshi 73.03 310 PFAKE 15 12 30.0 +14
ENH LR LR
comp=Z,530nm,22.0s
MLSI Meulaboh, Aceh 73.15 280 P **P** **15 12 16.2 -0.5**
GYA Guiyang 73.21 305 P **P** **15 12 18.9 +2.0**
GYA pP sP 15 12 35.4 -1.9
GYA PP **PP** **15 15 05.8 +5.1**
GYA S **S** **15 21 42.8 +1.2**

GYA sS sS 15 22 09.0 +2.8
GYA SKS **SKSac** **15 22 14.5 -4.5**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,5.4s
KLR Kul'dur 73.37 337 P **P** **15 12 18.1 +0.9**
comp=Z,13nm,1.1s,baz=134,slow=6.5,SNR=29
KLR LR LR 15 42 39.5
comp=Z,285nm,20.3s,slow=34
BJT Baijiatuau 74.28 322 PFAKE 15 12 30.0 +7.3
BJT LR LR
comp=Z,488nm,20.0s
BJI Beijing 74.29 322 P **P** **15 12 23.5 +0.8**
BJI pmax pmax
comp=Z,57nm,1.0s
BJI pmax pmax
comp=Z,350nm,4.0s
TIY Taiyuan 75.18 318 *eP* **P** **15 12 29.4 +1.4**
TIY pmax pmax
comp=Z,54nm,0.9s
TIY pmax pmax
comp=Z,260nm,4.6s
XAN Xi'an 75.46 313 P **P** **15 12 30.4 +0.7**
XAN pmax pmax
comp=Z,29nm,1.4s
XAN pmax pmax
comp=Z,170nm,8.2s
KMI Kunming 75.70 302 P **P** **15 12 33.1 +1.6**
KMI pP pP 15 12 48.9 +2.7
KMI sP sP 15 12 55.8 +3.8
KMI PP **PP** **15 15 21.9 -0.1**
KMI S **S** **15 22 03.3 -6.3**
KMI pmax pmax
comp=Z,66nm,1.2s
KMI pmax pmax
comp=Z,300nm,8.2s
KMI LR LR
comp=Z,250nm,19.7s
KMI LR LR
comp=Z,310nm,23.9s
KMI LR LR
comp=Z,580nm,21.8s
CM01 Chiang Mai Arr 76.01 295 *eP* **P** **15 12 33.7 +0.6**
CM31 Chiang Mai Arr 76.04 295 *eP* **P** **15 12 35.5 +2.2**
CMAR Chiang Mai Arr 76.04 295 P **P** **15 12 35.0 +1.8**
comp=Z,25nm,1.0s,baz=124,slow=4.2,SNR=95
CHTO Chiang Mai 76.18 295 *eP* **P** **15 12 35.6 +1.5**
CHTO pmax pmax
comp=Z,102nm,1.4s
CHTO MLR MLR
comp=Z,366nm,22.0s
CHTO Chiang Mai 76.18 295 *eP* **P** **15 12 35.6 +1.5**
comp=Z,102nm,1.4s
CHTO LR LR
comp=Z,366nm,22.0s
HHC Hu-ho-hao-te 77.57 320 *eP* **P** **15 12 42.4 +0.8**
HHC S **S** **15 22 28.3 -0.9**
HHC pmax pmax
comp=Z,43nm,1.0s
HHC pmax pmax
comp=Z,330nm,10.2s
HHC LR LR
comp=Z,190nm,14.5s
HHC LR LR
comp=Z,270nm,15.3s
HHC LR LR
comp=Z,380nm,16.0s
CD2 Chengdu 77.61 308 P **P** **15 12 42.0 +0.1**
CD2 pP pP 15 12 58.0 +1.3
CD2 PP **PP** **15 15 37.8 0.0**
CD2 S **S** **15 22 30.4 +0.5**
CD2 SKS **SKSac** **15 22 49.6 -1.8**
CD2 sS ScS 15 22 57.9 +1.3
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,220nm,5.4s
MA2 Magadan 77.79 351 P **P** **15 12 42.3 +0.1**
comp=Z,5.6nm,0.9s,baz=144,slow=19,SNR=3.5
MA2 Magadan 77.79 351 P **P** **15 12 42.3 +0.1**
MA2 LR LR
comp=Z,1μm,21.0s
HIA Hailar 78.53 330*c i* P **P** **15 12 46.9 +0.3**
HIA pmax pmax
comp=Z,44nm,1.3s
HIA Hailar 78.53 330 PFAKE 15 13 00.0 +13
HIA LR LR
comp=Z,376nm,19.0s
MAW Mawson 79.52 202 P **P** **15 12 52.0 +0.2**
comp=Z,7.1nm,1.1s,baz=99,slow=4.9,SNR=6.8
MAW Mawson 79.52 202 *eP* **P** **15 12 53.3 +1.5**
MAW pmax pmax
comp=Z,7.0nm,1.4s
MAW Mawson 79.52 202 *eP* **P** **15 12 53.3 +1.5**
comp=Z,7.4nm,1.4s
LZH Lanzhou 80.08 313 *eP* **P** **15 12 57.4 +1.9**
LZH pP pP 15 13 12.8 +2.5
LZH sP sP 15 13 18.9 +2.8
LZH PP **PP** **15 15 56.5 -1.9**
LZH *eS* **S** **15 22 56.0 -0.3**
LZH SKS **SKSac** **15 23 03.5 -5.4**
LZH pmax pmax
comp=Z,96nm,1.4s
LZH pmax pmax
comp=Z,210nm,4.4s
LZH LR LR
comp=Z,130nm,12.1s
LZH LR LR
comp=Z,600nm,17.8s
LZH LR LR
comp=Z,1μm,19.2s
SEY Seymchan 80.83 353 P **P** **15 12 58.9 +0.2**
comp=Z,19nm,1.0s,baz=158,slow=5.2,SNR=27
KDAK Kodiak Island 81.85 20 PFAKE 15 13 20.0 +16
KDAK LR LR
comp=Z,194nm,20.0s
YAK Yakutsk 84.49 343 P **P** **15 13 18.1 +0.4**
comp=Z,28nm,0.7s,baz=51,slow=1.3,SNR=34
YAK Yakutsk 84.49 343 *i* P **P** **15 13 17.7 0.0**
YAK pmax pmax
comp=Z,167nm,1.7s
YAK Yakutsk 84.49 343 *eP* **P** **15 13 17.8 0.0**
comp=Z,100nm,1.1s
YAK LR LR
comp=Z,599nm,19.0s
SONM Songino Array 84.58 324 P **P** **15 13 19.3 +0.5**
comp=Z,16nm,0.8s,baz=141,slow=5.6,SNR=80
SONA1 Songino Array 84.58 324 *eP* **P** **15 13 18.6 -0.1**
TT01 Tatalina 84.95 16 *eP* **P** **15 13 19.4 -0.6**
BILL Bilibino 85.11 360*c i* P **P** **15 13 20.7 0.0**
BILL pmax pmax
comp=Z,83nm,1.2s
BILL Bilibino 85.11 360 PFAKE 15 13 30.0 +9.3
BILL LR LR
comp=Z,366nm,21.0s
KMRM Mail Ridge 85.87 46 *eP* **P** **15 13 25.7 +0.5**
comp=Z,33nm,0.9s
SAO San Andreas Ge 85.96 50 *eP* **P** **15 13 25.9 +0.1**
SAO pmax pmax
comp=Z,16nm,1.0s
SAO San Andreas Ge 85.96 50 *eP* **P** **15 13 25.9 +0.1**
comp=Z,16nm,1.0s
KHMM Horse Mountain 86.14 45 *eP* **P** **15 13 27.3 +0.5**
comp=Z,23nm,1.0s
SYO Syowa Base 86.26 197*ll eP* **P** **15 13 25.6 -1.0**
PKM Mcpherson Peak 86.40 52 P **P** **15 13 27.9 -0.3**
baz=246
CAST Castle Rocks 86.44 17 *eP* **P** **15 13 26.0 -1.4**
comp=Z,6.9nm,0.8s
L02D Cave Junction, 86.80 44 P **P** **15 13 29.1 -0.6**
baz=243
BOD Bodaibo 86.81 335 *eP* **P** **15 13 27.9 -1.4**
BOD pmax pmax
comp=Z,34nm,1.6s
WDC Whiskeytown Da 86.82 46 *eP* **P** **15 13 30.0 +0.1**
WDC pmax pmax
comp=Z,29nm,1.4s
WDC Whiskeytown Da 86.82 46 *eP* **P** **15 13 30.0 +0.1**
comp=Z,29nm,1.4s
N02D Trinity Center 86.88 45 P **P** **15 13 30.3 0.0**
baz=244,SNR=14
LSA Lhasa 86.95 302 PFAKE 15 13 40.0 +8.6
LSA LR LR
comp=Z,359nm,20.0s
M02C Callahan 86.97 45 P **P** **15 13 30.7 0.0**
baz=244,SNR=14
ORV Oroville 87.10 47 *eP* **P** **15 13 30.7 -0.6**
ORV pmax pmax
comp=Z,17nm,1.0s
ORV Oroville 87.10 47 *eP* **P** **15 13 30.7 -0.6**
comp=Z,17nm,1.0s
O03D Paynes Creek 87.21 46 P **P** **15 13 31.1 -0.8**
baz=245,SNR=9.9
YBH Yreka Blue Hor 87.21 45 *eP* **P** **15 13 32.1 +0.3**
YBH pmax pmax
comp=Z,26nm,1.3s
YBH Yreka Blue Hor 87.21 45 *eP* **P** **15 13 32.1 +0.3**
comp=Z,26nm,1.3s
AFDM Forest Hills D 87.22 48 *eP* **P** **15 13 31.5 -0.4**
comp=Z,24nm,1.0s
CMB Columbia Colle 87.26 49 *eP* **P** **15 13 31.6 -0.5**
CMB pmax pmax
comp=Z,27nm,1.0s
CMB Columbia Colle 87.26 49 *eP* **P** **15 13 31.6 -0.5**
comp=Z,27nm,1.0s
ZAK Zakamensk 87.67 325 *eP* **P** **15 13 33.3 -0.5**
ZAK pmax pmax
comp=Z,19nm,1.4s
ZAK pmax pmax
comp=Z,12nm,1.4s
ISA Isabella, Lake 87.71 52 P **P** **15 13 34.1 -0.3**
baz=247
ISA Isabella, Lake 87.71 52 *eP* **P** **15 13 34.5 +0.1**
ISA pmax pmax
comp=Z,19nm,1.0s
ISA Isabella, Lake 87.71 52 *eP* **P** **15 13 34.5 +0.1**
comp=Z,19nm,1.0s
EDW2 Edwards Air Fo 87.77 53 P **P** **15 13 34.1 -0.6**
baz=247,SNR=7.7
BFSC Mount Baldy Ra 87.78 53 P **P** **15 13 33.2 -1.6**
baz=247
M04C Macdoel 87.82 45 P **P** **15 13 34.7 -0.2**
baz=244
IRK Irkutsk 88.10 327 *eP* **P** **15 13 33.8 -1.9**
IRK pmax pmax
comp=Z,36nm,2.3s
WAKR Walker 88.13 49 *eP* **P** **15 13 36.9 +0.4**
comp=Z,40nm,1.2s
TLY Talaya 88.14 326 P **P** **15 13 35.8 -0.2**
comp=Z,2.8nm,0.7s,baz=146,slow=5.9,SNR=7.3
TLY Talaya 88.14 326 *eP* **P** **15 13 36.0 +0.1**
TLY pmax pmax
comp=Z,26nm,1.9s
TLY Talaya 88.14 326 *eP* **P** **15 13 36.0 +0.1**
comp=Z,15nm,0.6s
TLY LR LR
comp=Z,212nm,19.0s
MONP2 Monument Peak 88.23 55 P **P** **15 13 36.6 -0.5**
baz=248
LRMC Laurel Mtn Rad 88.24 52 P **P** **15 13 36.5 -0.4**
baz=247
K04D Chiloquin, OR 88.24 44 P **P** **15 13 36.5 -0.3**
baz=244
CWC Cottonwood Cre 88.31 51 P **P** **15 13 36.2 -1.1**
baz=247
I04A Tendick Farm, 88.31 43 P **P** **15 13 37.8 +0.8**
baz=244
WRH Wood River Hil 88.38 18 *eP* **P** **15 13 35.9 -0.8**
comp=Z,4.2nm,0.9s
IKP In-Ko-Pah, Jac 88.38 55 P **P** **15 13 37.7 0.0**
baz=248
G03D McMinnville, O 88.39 41 P **P** **15 13 37.2 0.0**
baz=243
TIN Tinemaha, Big 88.44 50 P **P** **15 13 37.7 -0.2**
baz=247
PFO Pinyon Flats O 88.47 54 *eP* **P** **15 13 37.8 -0.3**
PFO pmax pmax
comp=Z,12nm,1.4s
PFO MLR MLR
comp=Z,745nm,19.0s
PFO Pinyon Flats O 88.47 54 *eP* **P** **15 13 37.8 -0.3**
comp=Z,12nm,1.4s
PFO LR LR
comp=Z,745nm,19.0s
TPFO Pinon Flats 88.47 54 P **P** **15 13 37.9 -0.2**
baz=248
RRX Edison Barstow 88.53 53 P **P** **15 13 37.9 -0.3**
baz=248
CCB Clear Creek Bu 88.59 18 *eP* **P** **15 13 37.1 -0.7**
MPMC Manual Prospec 88.60 52 P **P** **15 13 38.3 -0.4**
baz=247,SNR=6.3
DAC Darwin (Calif) 88.61 51 *eP* **P** **15 13 38.7 -0.1**
DAC pmax pmax
comp=Z,21nm,1.4s
DAC Darwin (Calif) 88.61 51 *eP* **P** **15 13 38.7 -0.1**
comp=Z,21nm,1.4s
PAHR Pah Rah Range 88.65 48 *eP* **P** **15 13 39.0 +0.1**
comp=Z,39nm,1.3s
HDA Harding Lake 88.67 18 *eP* **P** **15 13 38.1 0.0**
comp=Z,7.4nm,0.9s
MDM Murphy Dome 88.70 17 *eP* **P** **15 13 36.1 -2.2**
comp=Z,4.6nm,0.9s
SWSC Sam W. Stewart 88.73 55 P **P** **15 13 39.2 0.0**
baz=248
COLA College 88.75 18 PFAKE 15 13 50.0 +12
COLA LR LR
comp=Z,368nm,21.0s
GSC Goldstone, Bar 88.83 53 P **P** **15 13 39.3 -0.4**
baz=248,SNR=5.7
GSC Goldstone, Bar 88.83 53 *eP* **P** **15 13 39.8 +0.1**
GSC pmax pmax
comp=Z,14nm,0.4s
GSC Goldstone, Bar 88.83 53 *eP* **P** **15 13 39.8 +0.1**
comp=Z,14nm,0.4s
K05A Summer Lake 88.86 44 *eP* **P** **15 13 40.1 +0.3**
comp=Z,32nm,1.4s
J05D Fort Rock, OR 88.86 44 P **P** **15 13 39.7 0.0**
baz=245
MOD Modoc Plateau 88.91 45 *eP* **P** **15 13 39.4 -0.6**
comp=Z,33nm,1.5s
PALK Pallekele 88.91 278 P **P** **15 13 39.8 -0.7**
comp=Z,13nm,0.8s,baz=116,slow=5.8,SNR=3.9
IL1 Eielson Array 88.95 18 *eP* **P** **15 13 37.6 -1.8**
ILAR Eielson Array 88.95 18 P **P** **15 13 37.3 -2.2**
comp=Z,0.6nm,0.8s,baz=94,slow=7.2,SNR=4.7
ILAR LR LR 15 50 30.3
comp=Z,367nm,19.1s,baz=248,slow=34
ILAR Eielson Array 88.95 18 P **P** **15 13 37.3 -2.2**
ILAR pmax pmax
comp=Z,3.0nm,0.7s
ILB Eielson Array 88.95 18 *eP* **P** **15 13 38.4 -1.1**
BELC Belle Mtn. Jos 88.97 54 P **P** **15 13 40.1 -0.4**
baz=248,SNR=10
NLWA Neilton Lookou 89.00 39 PFAKE 15 13 50.0 +10
NLWA LR LR
comp=Z,450nm,20.0s
HEC Hector,Ludlow 89.01 53 P **P** **15 13 40.0 -0.6**
baz=248
WRAK Wrangell Islan 89.04 29 PFAKE 15 13 50.0 +10
WRAK LR LR
comp=Z,558nm,21.0s
GRAC Grapevine Rang 89.05 51 P **P** **15 13 40.4 -0.3**
baz=248,SNR=5.6
FURC Furnace Creek, 89.23 51 P **P** **15 13 41.2 -0.2**
baz=248
I05D Terrebonne, OR 89.24 43 P **P** **15 13 41.0 -0.4**
baz=245
BC3 Big Chuckawall 89.26 54 P **P** **15 13 41.8 0.0**
baz=249
TDH Tom, Dick, Har 89.36 42 P **P** **15 13 41.7 -0.3**
SHOC Shoshone, Teco 89.46 52 P **P** **15 13 42.1 -0.5**
baz=248
GMRC Granite Mounta 89.51 53 P **P** **15 13 41.7 -1.3**
baz=248
GLA Glamis 89.53 55 P **P** **15 13 41.6 -1.4**
baz=249
GLA Glamis 89.53 55 *eP* **P** **15 13 43.5 +0.5**
GLA pmax pmax
comp=Z,25nm,1.4s
GLA Glamis 89.53 55 *eP* **P** **15 13 43.5 +0.5**
comp=Z,25nm,1.4s
TDL Tradedollar La 89.55 41 P **P** **15 13 43.1 +0.2**
TUQ Turquoise Moun 89.55 53 P **P** **15 13 42.7 -0.5**
baz=248,SNR=5.7
G05D Wamic, OR 89.64 42 P **P** **15 13 42.7 -0.5**
baz=245
IRM Iron Mountain 89.68 54 P **P** **15 13 43.3 -0.4**
baz=249,SNR=7.2
TPNV Topopah Spring 89.86 51 P **P** **15 13 44.2 -0.4**
baz=248,SNR=17
TPNV Topopah Spring 89.86 51 *eP* **P** **15 13 44.7 +0.1**
TPNV pmax pmax
comp=Z,15nm,1.0s
TPNV Topopah Spring 89.86 51 *eP* **P** **15 13 44.7 +0.1**
comp=Z,15nm,1.0s
COLD Coldfoot 89.89 15 *eP* **P** **15 13 44.9 +1.1**
comp=Z,6.0nm,1.0s
Y12C Blythe 90.02 55 P **P** **15 13 44.8 -0.3**
baz=249
Y12C Blythe 90.02 55 *eP* **P** **15 13 45.6 +0.4**
comp=Z,26nm,1.4s
LDFC Landfair 90.04 53 *eP* **P** **15 13 45.8 +0.4**
comp=Z,31nm,1.2s
D05A Enumclaw 90.06 40 *eP* **P** **15 13 46.1 +1.1**
comp=Z,97nm,1.5s
WVOR Wild Horse Val 90.26 45 *eP* **P** **15 13 46.5 +0.2**
WVOR pmax pmax
comp=Z,31nm,1.3s
WVOR MLR MLR
comp=Z,319nm,20.0s
WVOR Wild Horse Val 90.26 45 *eP* **P** **15 13 46.5 +0.2**
comp=Z,31nm,1.3s
WVOR LR LR
comp=Z,319nm,20.0s
A04D Lummi Island 90.29 38 P **P** **15 13 45.8 -0.3**
baz=244
NEE2 Needles Airpor 90.31 54 P **P** **15 13 46.2 -0.3**
baz=249
B05A Bryant 90.46 39 P **P** **15 13 46.7 -0.1**
baz=244
BMN Battle Mountai 90.47 48 *eP* **P** **15 13 47.6 +0.3**
BMN pmax pmax
comp=Z,24nm,1.0s
BMN Battle Mountai 90.47 48 *eP* **P** **15 13 47.6 +0.3**
comp=Z,24nm,1.0s
PDMCI Parker Dam,Lak 90.51 54 P **P** **15 13 47.5 0.0**
baz=249,SNR=9.1
SHPR Sheep Range 90.52 52 *eP* **P** **15 13 48.0 +0.3**
comp=Z,15nm,1.2s
NVL N'lazarevskaya 90.52 188 *eP* **P** **15 13 47.3 +0.4**
EGAK Eagle 90.72 20 PFAKE 15 14 00.0 +12
EGAK LR LR
comp=Z,319nm,20.0s
214A Organ Pipe Nat 90.75 57 P **P** **15 13 48.7 0.0**
baz=250
R11A Troy Canyon, C 90.87 50 P **P** **15 13 49.2 -0.1**
baz=249
R11A Troy Canyon, C 90.87 50 *eP* **P** **15 13 48.6 -0.7**
comp=Z,17nm,1.7s
W13A Hualapai Mount 90.99 54 *eP* **P** **15 13 50.0 +0.1**
comp=Z,10nm,1.1s
SNAA Sanae 90.99 183 *eP* **P** **15 13 49.5 +0.3**
SNAA pmax pmax
comp=Z,28nm,1.2s
SNAA Sanae 90.99 183 *eP* **P** **15 13 49.5 +0.3**
comp=Z,28nm,1.2s
C06D Leavenworth 91.04 40 P **P** **15 13 49.4 -0.2**
baz=245
G08A Pilot Rock 91.18 43 *eP* **P** **15 13 50.5 0.0**
comp=Z,19nm,1.0s
HAWA Hanford 91.25 42 *eP* **P** **15 13 51.0 +0.3**
comp=Z,65nm,1.8s
HAWA LR LR
comp=Z,414nm,21.0s
Y14A Wickenburg 91.27 55 *eP* **P** **15 13 51.1 +0.1**
comp=Z,15nm,0.6s
D08A Wollman Farm, 91.91 41 *eP* **P** **15 13 53.9 +0.3**
comp=Z,27nm,1.6s
BMO Blue Mountains 92.09 44 *eP* **P** **15 13 54.3 -0.4**
BMO pmax pmax
comp=Z,15nm,1.4s
BMO Blue Mountains 92.09 44 *eP* **P** **15 13 54.3 -0.4**
comp=Z,15nm,1.4s
LCMT Little Creek M 92.14 52 *eP* **P** **15 13 55.3 +0.2**
comp=Z,9.9nm,1.1s
B08A Colville Reser 92.17 40 *eP* **P** **15 13 54.5 -0.4**
comp=Z,13nm,1.4s
CCUT Cedar City 92.23 51 *eP* **P** **15 13 55.2 -0.5**
comp=Z,10nm,1.5s
TIXI Tiksi 92.49 349 P **P** **15 13 54.8 -0.9**
comp=Z,8.0nm,0.8s,baz=133,slow=8.4,SNR=4.6
TIXI Tiksi 92.49 349*ce* P **P** **15 13 54.9 -0.9**
TIXI pmax pmax
comp=Z,15nm,1.2s
TIXI Tiksi 92.49 349 P **P** **15 13 54.8 -0.9**
TIXI LR LR
comp=Z,404nm,20.0s
TUC Tucson 92.49 57 P **P** **15 13 56.1 -0.7**
baz=251
TUC Tucson 92.49 57 PFAKE 15 14 10.0 +13
TUC LR LR
comp=Z,360nm,20.0s
F10A Beach Ranch, E 92.56 43 *eP* **P** **15 13 55.9 -1.0**
comp=Z,18nm,1.4s
X16A Lo Mia Camp, P 92.65 55 *eP* **P** **15 13 58.0 +0.4**
comp=Z,11nm,1.1s
U15A North Rim 92.66 53 *eP* **P** **15 13 57.5 -0.2**
comp=Z,29nm,1.7s
WUAZ Wupatki 93.06 54 P **P** **15 13 59.2 -0.3**
baz=251
WUAZ Wupatki 93.06 54 PFAKE 15 14 10.0 +11
WUAZ LR LR
comp=Z,485nm,19.0s
MTPU Mount Pierson 93.27 51 *eP* **P** **15 14 01.4 +0.8**
comp=Z,4.1nm,1.0s
319A Douglas 93.41 58 *eP* **P** **15 14 01.5 +0.4**
NEW Newport 93.49 40 P **P** **15 13 60.0 -1.0**
baz=248
NEW Newport 93.49 40 PFAKE 15 14 10.0 +9.0
NEW LR LR
comp=Z,335nm,21.0s
DUG Dugway, Tooele 93.53 49 P **P** **15 14 00.7 -0.8**
baz=250
DUG Dugway, Tooele 93.53 49 PFAKE 15 14 10.0 +8.5
DUG LR LR
comp=Z,577nm,19.0s
HLID Hailey 93.56 45 P **P** **15 14 00.2 -1.4**
baz=250
HLID Hailey 93.56 45 *eP* **P** **15 14 01.2 -0.4**
comp=Z,3.0nm,1.1s
HLID LR LR
comp=Z,433nm,19.0s
X18A Snowflake 93.86 55 *eP* **P** **15 14 03.3 +0.1**
comp=Z,6.9nm,1.2s
HVU Hansel Valley 94.08 48 *eP* **P** **15 14 04.4 +0.4**
HVU pmax pmax
comp=Z,5.0nm,1.0s
HVU Hansel Valley 94.08 48 *eP* **P** **15 14 04.4 +0.4**
comp=Z,5.4nm,1.0s
WMQ Urumqi 94.55 314 P **P** **15 14 06.3 +0.3**
WMQ pP pP 15 14 18.9 -2.2
WMQ sP sP 15 14 29.4 +2.6
WMQ PP **PP** **15 17 55.9 +1.3**
WMQ pmax pmax
comp=Z,18nm,1.0s
WMQ LR LR
comp=Z,270nm,21.0s
WMQ LR LR
comp=Z,310nm,22.6s
WMQ LR LR
comp=Z,270nm,22.0s
HWUT Hardware Ranch 94.88 48 PFAKE 15 14 20.0 +12
HWUT LR LR
comp=Z,343nm,19.0s
AHID Auburn Hatcher 95.58 47 PFAKE 15 14 20.0 +9.1
AHID LR LR
comp=Z,348nm,20.0s
MVCO Mesa Verde 95.79 53 PFAKE 15 14 20.0 +7.9
MVCO LR LR
comp=Z,543nm,19.0s
BOZ Bozeman (W) 96.12 44 PFAKE 15 14 20.0 +6.8
BOZ LR LR
comp=Z,293nm,20.0s
LKWY Lake 96.62 45 PFAKE 15 14 30.0 +14
LKWY LR LR
comp=Z,810nm,19.0s
BW06 Boulder Array 96.66 47 P **P** **15 14 14.8 -1.1**
baz=253
BW06 Boulder Array 96.66 47 *eP* **P** **15 14 13.9 -1.9**
BW06 LR LR
comp=Z,329nm,20.0s
PDAR Pinedale Array 96.66 47 P **P** **15 14 14.3 -1.6**
comp=Z,0.2nm,0.5s,baz=251,slow=7.7,SNR=4.4
PDAR PKKPbc **PKKPbc** **15 30 59.0 -1.4**
comp=Z,0.6nm,0.8s,baz=100,slow=6.2,SNR=3.7
PDAR LR LR 15 50 57.0
comp=Z,170nm,20.7s,baz=307,slow=31
MNTX Cornudas Mount 96.69 59 P **P** **15 14 15.1 -0.8**
baz=254

MNTX Cornudas Mount 96.69 59 PFAKE 15 14 30.0 +14
MNTX LR LR
comp=Z,289nm,22.0s
ANMO Albuquerque 96.73 56 P **P** **15 14 14.8 -1.5**
baz=254
ANMO Albuquerque 96.73 56 PFAKE 15 14 30.0 +14
ANMO LR LR
comp=Z,273nm,19.0s
S22A 4UR Ranch, Cre 97.22 53 P **P** **15 14 18.2 -0.4**
baz=254
TXAR Lajitas Array 97.47 62 P **P** **15 14 18.1 -1.6**
comp=Z,0.6nm,1.0s,baz=212,slow=4.4,SNR=4.6
RLMT Red Lodge 97.55 45 PFAKE 15 14 30.0 +10
RLMT LR LR
comp=Z,586nm,21.0s
SDCO Great Sand Dun 98.23 53 PFAKE 15 14 30.0 +6.8
SDCO LR LR
comp=Z,405nm,19.0s
ISCO Idaho Springs 98.69 51 PFAKE 15 14 40.0 +15
ISCO LR LR
comp=Z,516nm,20.0s
N23A Red Feather La 98.73 50 Pdiff Pdif 15 14 25.4 +0.2
baz=255
MK01 Makanchi Array 99.07 316 *e*P **Pdif** **15 14 25.6 -0.8**
MK31 Makanchi Array 99.08 316 *e*P **Pdif** **15 14 26.8 +0.4**
MK31 Makanchi Array 99.08 316 *e*P **Pdif** **15 14 26.8 +0.4**
MKAR Makanchi Array 99.08 316 P **Pdif** **15 14 26.4 0.0**
comp=Z,1.4nm,0.6s,baz=96,slow=5.9,SNR=14
MKAR PKKPbc **PKKPbc** **15 30 51.0 -2.5**
comp=Z,0.2nm,0.3s,baz=250,slow=3.2,SNR=4.2
MKAR LR LR 15 59 36.7
comp=Z,62nm,21.3s,baz=73,slow=36
MKAR Makanchi Array 99.08 316 *e*P **Pdif** **15 14 26.8 +0.4**
MKAR PKKPbc **PKKPbc** **15 30 51.0 -2.5**
ZAA0 Zalesovo Array 99.48 324 *e*P **Pdif** **15 14 27.0 -0.9**
ZALV Zalesovo Beam 99.48 324 P **Pdif** **15 14 27.3 -0.6**
comp=Z,1.6nm,0.7s,baz=124,slow=4.3,SNR=5.4
ZALV LR LR 15 57 44.1
comp=Z,192nm,21.8s,baz=70,slow=34
LAO LASA Array 100.02 44 PFAKE 15 14 40.0 +9.4
LAO LR LR
comp=Z,324nm,20.0s
AMTX Amarillo 100.50 57 Pdiff **Pdif** **15 14 32.6 -0.5**
baz=256
JCT Junction City 101.00 61 PFAKE 15 14 50.0 +15
JCT LR LR
comp=Z,304nm,20.0s
OGNE Ogallala 101.62 51 PFAKE 15 14 50.0 +12
OGNE LR LR
comp=Z,374nm,20.0s
DGMT Dagmar 101.77 43 PFAKE 15 14 50.0 +12
DGMT LR LR
comp=Z,255nm,19.0s
KSH Kashi 101.80 308 *e*P **Pdif** **15 14 40.9 +2.1**
KSH *e*PP **PP** **15 18 55.0 +4.6**
KSH SKS 15 25 13.1
KSH S **Sdif** **15 26 13.9 -2.8**
KSH SS **SS** **15 33 24.5 +3.3**
KSH pmax pmax
comp=Z,66nm,6.7s
KSH LR LR
comp=Z,210nm,7.2s
KSH LR LR
comp=Z,120nm,6.8s
KSH LR LR
comp=Z,170nm,10.0s
KVTX Kingsville 101.95 65 PFAKE 15 14 50.0 +10
KVTX LR LR
comp=Z,415nm,20.0s
KURK Kurchatov 102.37 319⇑ *e*P **Pdif** **15 14 44.4 +3.5**
KURK pmax pmax
comp=Z,6.0nm,0.7s
KURK Kurchatov 102.37 319 PP PP 15 18 51.3 -2.9
KURK LR LR
comp=Z,309nm,19.0s
KURBB Kurchatov Arra 102.41 319 PP PP 15 18 51.3 -3.1
comp=Z,2.3nm,1.1s,baz=102,slow=7.1,SNR=5.3
NRIK Noril'sk 102.48 339 P **Pdif** **15 14 41.1 +0.1**
comp=Z,20nm,1.0s,baz=107,slow=4.6,SNR=20
WMOK Wichita Mounta 102.79 57 PFAKE 15 14 50.0 +6.8
WMOK LR LR
comp=Z,233nm,20.0s
AAK Ala-Archa 103.54 311 PFAKE 15 15 00.0 +13
AAK LR LR
comp=Z,228nm,21.0s
FFC Flin Flon 104.35 37 PFAKE 15 15 00.0 +10
FFC LR LR
comp=Z,354nm,20.0s
KSU1 Kansas State U 105.34 53 PFAKE 15 19 20.0
KSU1 LR LR
comp=Z,513nm,21.0s
NATX Nacogdoches 105.58 61 PFAKE 15 19 20.0
NATX LR LR
comp=Z,323nm,19.0s
ECSD EROS Data Cent 106.08 49 PFAKE 15 19 20.0
ECSD LR LR
comp=Z,336nm,19.0s
MIAR Mount Ida 106.97 58 PFAKE 15 19 20.0
MIAR LR LR
comp=Z,253nm,20.0s
AGMN Agassiz Nation 107.22 44 PFAKE 15 19 20.0
AGMN LR LR
comp=Z,374nm,20.0s
BVAR Borovoye Array 107.77 321 PKiKP **PKiKP** **15 19 13.6 +1.4**
comp=Z,1.4nm,0.9s,baz=126,slow=3.7,SNR=4.0
BRVK Borovoye 107.83 321 PFAKE 15 19 20.0
BRVK LR LR
comp=Z,218nm,21.0s
WHAR Wooly Hollow 108.13 58 *e*Pdif **Pdif** **15 15 01.4 -5.5**
ZRNK Zerenda 108.59 321 *e*P **Pdif** **15 15 10.8 +2.3**
ZRNK Zerenda 108.59 321 *e*Pdif **Pdif** **15 15 10.8 +2.3**
EYMN Ely 110.10 45 PFAKE 15 19 30.0
EYMN LR LR
comp=Z,384nm,19.0s
NNA Nana 110.28 110 PFAKE 15 19 30.0
NNA LR LR
comp=Z,168nm,21.0s
JFWS Jewell Farm 110.60 50 PFAKE 15 19 30.0
JFWS LR LR
comp=Z,607nm,20.0s
ABPO Ambohimpanom 110.93 241 PFAKE 15 19 30.0
ABPO LR LR
comp=Z,168nm,20.0s
HDIL Hopedale 111.11 53 PFAKE 15 19 30.0
HDIL LR LR
comp=Z,264nm,19.0s
COWI Conover 111.60 47 PFAKE 15 19 30.0
COWI LR LR
comp=Z,511nm,20.0s
BRAL Brewton 111.91 63 PFAKE 15 19 30.0
BRAL LR LR
comp=Z,253nm,20.0s
OTAV Otavalo 113.17 97 PFAKE 15 19 40.0
OTAV LR LR
comp=Z,288nm,22.0s
ARU Arti 114.61 325 PKP PKPdf 15 19 24.4 -0.6
comp=Z,1.0nm,0.3s,baz=33,slow=4.1,SNR=3.6
ARU Arti 114.61 325 *i* PKIKP PKPdf 15 19 24.7 -0.3
ARU 15 20 20.6
ARU 15 26 32.4
ARU Arti 114.61 325 PKP PKPdf 15 19 24.4 -0.6
ARU LR LR
comp=Z,296nm,21.0s
GOGA Godfrey 115.16 61 PFAKE 15 19 40.0 +13
GOGA LR LR
comp=Z,276nm,21.0s
AKTO Aktyubinsk 115.41 318 PKP **PKPdf** **15 19 26.6 -0.2**
comp=Z,2.1nm,0.8s,baz=226,slow=0.5,SNR=6.1
GEYT Alibeck 115.42 304 PKP **PKPdf** **15 19 26.9 -0.3**
comp=Z,3.6nm,0.9s,baz=289,slow=4.5,SNR=6.6
AAM Ann Arbor 115.43 51 PFAKE 15 19 40.0 +13
AAM LR LR
comp=Z,354nm,20.0s
ACSO Alum Creek Sta 115.91 53 PFAKE 15 19 40.0 +12
ACSO LR LR
comp=Z,293nm,19.0s
LPAZ La Paz 115.98 118 PKP **PKPdf** **15 19 28.7 -1.0**
comp=Z,0.8nm,0.8s,baz=346,slow=4.2,SNR=2.8
SPITS Spitsbergen Ar 117.48 354 PKP **PKPdf** **15 19 29.6 -0.5**
comp=Z,4.9nm,0.9s,baz=99,slow=8.9,SNR=3.5
BLA Blacksburg 117.85 57 PFAKE 15 19 40.0 +8.0
BLA LR LR
comp=Z,264nm,19.0s
NHSC New Hope 117.89 61 PFAKE 15 19 40.0 +7.9
NHSC LR LR
comp=Z,269nm,19.0s
MTDJ Mount Denham 118.55 78 PFAKE 15 19 50.0 +16
MTDJ LR LR
comp=Z,236nm,21.0s
CNNC Cliffs of the 119.86 59 PFAKE 15 19 50.0 +14
CNNC LR LR
comp=Z,538nm,19.0s
CBN Corbin Frederi 120.27 56 PFAKE 15 19 50.0 +14
CBN LR LR
comp=Z,255nm,20.0s
GTBY Guantanamo Bay 121.09 77 PFAKE 15 19 50.0 +11
GTBY LR LR
comp=Z,233nm,19.0s
BINY Binghamton 121.13 51 PFAKE 15 19 50.0 +12
BINY LR LR
comp=Z,306nm,21.0s
BOSA Boshof 121.43 219 PKP **PKPdf** **15 19 39.9 +0.6**
comp=Z,6.9nm,1.0s,baz=132,slow=6.6,SNR=5.3
LONY Lake Ozonia 121.90 48 PFAKE 15 19 50.0 +11
LONY LR LR
comp=Z,367nm,21.0s
ARCES ARCESS Array B 122.74 345 PKP **PKPdf** **15 19 40.1 -0.2**
comp=Z,6.9nm,0.8s,baz=60,slow=1.3,SNR=14
KLMR Klimovskoe 122.98 333 *e*PKIKP **PKPdf** **15 19 39.2 -1.8**
KLMR pmax pmax
comp=Z,30nm,1.5s
SDV Santo Domingo 123.12 91 PFAKE 15 19 50.0 +7.0
SDV LR LR
comp=Z,177nm,20.0s
SAML Samuel 123.70 114 PFAKE 15 20 00.0 +16
SAML LR LR
comp=Z,271nm,22.0s
LBTB Lobatse 123.77 223 PKP **PKPdf** **15 19 44.3 +0.4**
comp=Z,4.1nm,0.9s,baz=172,slow=6.2,SNR=4.2
LBTB Lobatse 123.77 223 PKIKP **PKPdf** **15 19 44.3 +0.4**
LBTB pmax pmax
comp=Z,1.0nm,0.6s
SCHQ Schefferville 124.40 35 PKP **PKPdf** **15 19 43.0 -0.9**
comp=Z,2.4nm,0.5s,baz=300,slow=8.1,SNR=2.1
SDDR Presa de Saban 124.52 79 PFAKE 15 20 00.0 +15
SDDR LR LR
comp=Z,194nm,21.0s
SFJD Kangerlussuaq 124.61 17 PFAKE 15 20 00.0 +16
SFJD LR LR
comp=Z,278nm,19.0s
MATP Matopo 124.86 229 PKP **PKPdf** **15 19 46.4 +0.3**
comp=Z,7.3nm,0.9s,baz=132,slow=3.5,SNR=7.2
GRTK Grand Turk 124.99 76 PFAKE 15 20 00.0 +14
GRTK LR LR
comp=Z,292nm,20.0s
PKME Peaks-Kenny Pk 125.50 46 PFAKE 15 20 00.0 +14
PKME LR LR
comp=Z,490nm,19.0s
GNI Garni 125.73 307 PKP **PKPdf** **15 19 48.4 +1.2**
comp=Z,4.8nm,0.5s,baz=174,slow=11,SNR=5.1
GNI Garni 125.73 307 PKP **PKPdf** **15 19 48.4 +1.2**
GNI LR LR
comp=Z,250nm,20.0s
ATD Arta Tunnel 126.05 272 PKP **PKPdf** **15 19 47.4 -0.9**
comp=Z,3.3nm,0.5s,baz=270,slow=20,SNR=1.6
NCK Nalchik 126.06 312⇓ *e*PKIKP **PKPdf** **15 19 47.5 0.0**
GOF Gofitskoye 126.14 314⇓ *e*PKIKP **PKPdf** **15 19 47.9 +0.3**
KBZ Khabaz 126.51 312 PKP **PKPdf** **15 19 48.2 -0.1**
comp=Z,4.3nm,1.0s,baz=234,slow=3.3,SNR=6.2
KVAR Kislovodsk Arr 126.61 312 PKP **PKPdf** **15 19 48.2 -0.4**
comp=Z,12nm,0.9s,baz=270,slow=4.0,SNR=12
KVAR PP **PP** **15 21 46.7 +1.1**
comp=Z,6.7nm,0.9s,baz=38,slow=4.0,SNR=4.3
KIV Kislovodsk 126.62 312 *d i* PKIKP **PKPdf** **15 19 49.7 +1.0**
KIV *i* 15 21 45.5
KIV pmax pmax
comp=Z,22nm,1.2s
KIV Kislovodsk 126.62 312 *e*PKPdf **PKPdf** **15 19 50.1 +1.5**
KIV LR LR
comp=Z,187nm,20.0s
NEY Neytrino 126.73 311⇑ *i* PKIKP **PKPdf** **15 19 51.1 +2.1**
OBN Obninsk 126.88 327 PKP **PKPdf** **15 19 48.7 +0.1**
comp=Z,14nm,0.4s,baz=336,slow=22,SNR=6.2
OBN Obninsk 126.88 327 *i* PKIKP **PKPdf** **15 19 48.5 -0.1**
OBN *i* 15 20 05.6
OBN pmax pmax
comp=Z,21nm,1.4s
OBN MLR MLR
comp=Z,277nm,20.0s
OBN Obninsk 126.88 327 PKP **PKPdf** **15 19 48.7 +0.1**
OBN LR LR
comp=Z,299nm,20.0s
SPB Sao Paulo 127.05 139 PFAKE 15 20 00.0 +10
SPB LR LR
comp=Z,312nm,22.0s
KMBO Kilima Mbogo 127.50 255 PKP **PKPdf** **15 19 52.4 +1.0**
comp=Z,3.9nm,0.7s,baz=292,slow=3.5,SNR=6.4
KMBO Kilima Mbogo 127.50 255 *e*PKPdf **PKPdf** **15 19 53.5 +2.1**
KMBO LR LR
comp=Z,265nm,19.0s
FINES FINESS Array B 128.11 338 PKP **PKPdf** **15 19 51.0 +0.2**
comp=Z,5.8nm,1.0s,baz=0.0,slow=3.8,SNR=6.3
FINES FINESS Array B 128.11 338 PKIKP **PKPdf** **15 19 51.0 +0.2**
FINES pmax pmax
comp=Z,6.0nm,1.0s
LSZ Lusaka 128.29 234 PKP **PKPdf** **15 19 52.9 +0.2**
comp=Z,6.2nm,0.8s,baz=138,slow=2.3,SNR=9.5
LSZ Lusaka 128.29 234 PKIKP **PKPdf** **15 19 52.9 +0.2**
LSZ pmax pmax
comp=Z,5.0nm,0.7s
LSZ Lusaka 128.29 234 PKP **PKPdf** **15 19 52.9 +0.2**
LSZ LR LR
comp=Z,336nm,19.0s
SJG San Juan 129.22 81 *e*PKIKP **PKPdf** **15 19 53.6 -0.6**
SJG MLR MLR
comp=Z,148nm,20.0s
SJG San Juan 129.22 81 *e*PKPdf **PKPdf** **15 19 53.6 -0.6**
SJG LR LR
comp=Z,148nm,20.0s
HUMP Col San Antoni 129.51 81 *e*PKPdf **PKPdf** **15 19 53.6 -1.1**
ANN Anapa 130.06 314 *i* PKIKP **PKPdf** **15 19 52.5 -2.5**
ANN *e* 15 20 09.5
ANN *e* 15 26 54.6
ANN pmax pmax
comp=Z,38nm,1.2s
PTGA Pitinga 130.12 106 *e*PKPdf **PKPdf** **15 19 55.9 -0.3**
PTGA LR LR
comp=Z,42μm,22.0s
BORG Borgarnes 132.24 5 PKP **PKPdf** **15 19 55.9 -2.7**
comp=Z,7.2nm,0.8s,baz=49,slow=11,SNR=1.9
BORG Borgarnes 132.24 5 PKP **PKPdf** **15 19 55.9 -2.7**
BORG LR LR
comp=Z,311nm,21.0s
GRGR Grenville 132.47 89 PFAKE 15 20 10.0 +10
GRGR LR LR
comp=Z,149nm,19.0s
AKASG Malin Array Be 132.86 325 PKP **PKPdf** **15 19 59.1 -1.1**
comp=Z,2.3nm,0.7s,baz=61,slow=2.2,SNR=4.6
AKASG PP **PP** **15 22 25.9 +0.2**
comp=Z,0.2nm,0.2s,baz=50,slow=5.4,SNR=4.7
KIEV Kiev 132.87 325 *e*PKIKP **PKPdf** **15 20 01.3 +1.1**
KIEV MLR MLR
comp=Z,219nm,20.0s
KIEV Kiev 132.87 325 *e*PKPdf **PKPdf** **15 20 01.3 +1.1**
KIEV LR LR
comp=Z,219nm,20.0s
TSUM Tsumeb 133.08 221 PKP **PKPdf** **15 20 01.5 -0.2**
comp=Z,0.7nm,0.3s,baz=147,slow=16,SNR=4.1
TSUM Tsumeb 133.08 221 PKP **PKPdf** **15 20 01.5 -0.2**
TSUM LR LR
comp=Z,325nm,19.0s
NB2 NORSAR Subarra 133.10 344 PKPdf PKPpre 15 19 51.8
comp=Z,3.1nm,0.9s,baz=31,slow=1.9
NOA NORSAR Array B 133.10 344 PKP **PKPdf** **15 20 00.2 -0.2**
comp=Z,2.9nm,0.9s,baz=35,slow=1.9,SNR=8.0
HFS Hagfors 133.18 342 PKP **PKPdf** **15 20 00.6 +0.1**
comp=Z,3.6nm,0.8s,baz=67,slow=8.8,SNR=5.2
ANWB Willy Bob 133.29 82 PFAKE 15 20 10.0 +8.1
ANWB LR LR
comp=Z,156nm,19.0s
FDF Fort de France 133.45 86 PFAKE 15 20 10.0 +7.6
FDF LR LR
comp=Z,166nm,22.0s
MBAR Mbarara 133.68 252 *e*PKIKP **PKPdf** **15 20 03.8 +0.7**
MBAR MLR MLR
comp=Z,775nm,21.0s
MBAR Mbarara 133.68 252 *e*PKPdf **PKPdf** **15 20 03.8 +0.7**
MBAR LR LR
comp=Z,775nm,21.0s
MMAI Mount Meron Ar 134.14 299 PKP **PKPdf** **15 20 04.1 +0.9**
comp=Z,4.9nm,0.7s,baz=32,slow=3.3,SNR=6.9
BR131 Keskin Array S 134.18 309 *e*PKPdf **PKPdf** **15 20 05.0 +1.7**
BRTR Keskin Array B 134.18 309 PKP **PKPdf** **15 20 02.8 -0.4**
comp=Z,4.0nm,1.0s,baz=110,slow=1.4,SNR=15
KONO Kongsberg 134.71 344 PFAKE 15 20 20.0 +17
KONO LR LR
comp=Z,302nm,22.0s
ANTO Ankara 134.77 309 *e*PKIKP **PKPdf** **15 20 05.6 +1.4**
ANTO MLR MLR
comp=Z,138nm,22.0s
ANTO Ankara 134.77 309 *e*PKPdf **PKPdf** **15 20 05.6 +1.4**
ANTO LR LR
comp=Z,138nm,22.0s
BR231 Keskin MP Arra 134.79 309 *e*PKPdf **PKPdf** **15 20 03.6 -0.7**
KIS Kishinev 134.84 320 *e*L L 15 23 20.0
KIS LRM MLR 15 38 36.0
comp=Z,400nm,20.0s
EIL Elat 134.89 295 PKP **PKPdf** **15 20 05.6 +0.9**
comp=Z,11nm,1.0s,baz=312,slow=0.7,SNR=5.7
CSS Mathiatis 135.52 302 PFAKE 15 20 20.0 +14
CSS LR LR
comp=Z,50nm,22.0s
ISP Isparta 137.04 307 PFAKE 15 20 20.0 +11
ISP LR LR
comp=Z,240nm,22.0s
MLR Muntele Rosu 137.31 320 PKP **PKPdf** **15 20 08.5 -0.3**
comp=Z,1.4nm,1.0s,baz=311,slow=2.8,SNR=7.5
MLR Muntele Rosu 137.31 320 *e*PKPdf **PKPdf** **15 20 09.8 +0.9**
KOLS Kolonicke sedl 137.60 326 *e*PKIKP **PKPdf** **15 20 10.1 +0.9**
KOLS Kolonicke sedl 137.60 326 *e*PKP **PKPdf** **15 20 10.0 +0.9**
UZH Uzhgorod 137.77 326 *e*PKIKP **PKPdf** **15 20 11.2 +1.8**
UZH *i* 15 20 25.2
LANS Liptovska Anna 138.94 328 *e*PKIKP **PKPdf** **15 20 12.1 +0.5**
LANS Liptovska Anna 138.94 328 *e*PKP **PKPdf** **15 20 12.1 +0.5**
OKC Ustrava-Krasne 139.15 330 AMS AMS 16 20 20.0
comp=Z,400nm,18.8s
MORC Moravsky Berou 139.48 330 *e*PKIKP **PKPdf** **15 20 14.6 +2.0**
MORC Moravsky Berou 139.48 330 *e*PKPdf **PKPdf** **15 20 14.6 +2.0**
PSZ Piszkesteto 139.48 326 PFAKE 15 20 20.0 +7.3
PSZ LR LR
comp=Z,434nm,22.0s
DPC Dobruska-Polom 139.66 331 *e*PKPpre PKPpre 15 20 07.7
DPC *e*PKPDF **PKiKP** **15 20 16.3 +1.0**
DPC AMS AMS 16 22 30.0
comp=Z,500nm,20.2s
VYHS Vyhne 139.68 327 *e*PKIKP **PKPdf** **15 20 13.7 +0.8**
VYHS Vyhne 139.68 327 *e*PKP **PKPdf** **15 20 13.7 +0.8**
UPC Upice 139.69 332 AMS AMS 16 22 10.0
comp=Z,600nm,21.6s
VRAC Vranov 140.25 330 PKP **PKPdf** **15 20 15.2 +1.3**
comp=Z,1.6nm,0.4s,baz=295,slow=11,SNR=3.5
PVCC Panska Ves 140.32 333 AMS AMS 16 21 40.0
comp=Z,400nm,20.3s
BRG Berggiesshubel 140.33 334 *e*PKP PKPpre 15 20 08.2
comp=Z,3.5nm,0.8s
BRG *e* 15 20 31.0
comp=Z,7.6nm,1.3s
BRG Berggiesshubel 140.33 334 *e*PKHKP PKPpre 15 20 08.2
BRG pmax pmax
comp=Z,8.0nm,1.3s
CLL Collm 140.40 335 *i* Pdif **Pdif** **15 17 28.3 -1.7**
CLL *e*PKPdf **PKiKP** **15 20 16.0 -0.7**
CLL *ep*PKPdf **pPKPdf** **15 20 32.0 +2.3**
CLL Lm MLR 16 23 00.0
comp=Z,300nm,21.7s
CLL LmV 17 54 00.0
comp=Z,100nm,18.0s
CLL Collm 140.40 335 *i* P **Pdif** **15 17 28.3 -1.7**
CLL *e* 15 20 16.0
CLL *e* 15 20 32.0
CLL MLR MLR
comp=Z,300nm,21.7s
VTS Vitosha 140.43 317 *e*PKIKP **PKPdf** **15 20 14.3 -0.4**
VTS Vitosha 140.43 317 *e*PKPdf **PKPdf** **15 20 14.3 -0.4**
GOPC GO Pecny, Ondr 140.67 332 AMS AMS 16 24 40.0
comp=Z,300nm,17.1s
PRU Pruhonice 140.72 332 *e*PKPpre PKPpre 15 20 10.0
PRU *e*PKPDF **PKiKP** **15 20 17.6 +0.2**
PRU AMS AMS 16 25 10.0
comp=Z,300nm,19.5s
PRU Pruhonice 140.72 332 *e*PKIKP PKPpre 15 20 10.0
PRU MLR MLR
comp=Z,300nm,19.5s
SANT Santorini 141.34 307 PFAKE 15 20 30.0 +14
SANT LR LR
comp=Z,141nm,19.0s
ESK Eskdalemuir 141.37 351 PFAKE 15 20 30.0 +14
ESK LR LR
comp=Z,354nm,20.0s
NKC Novy Kostel 141.44 334 *e*PKPpre PKPpre 15 20 11.1
NKC AMS AMS 16 24 00.0
comp=Z,400nm,20.6s
NKC Novy Kostel 141.44 334 *e*PKHKP PKPpre 15 20 11.1
NKC MLR MLR
comp=Z,400nm,20.6s
CONA Conrad Observa 141.55 329 *i* PKPdf PKPpre 15 20 12.6
comp=Z,11nm,1.3s
KHC Kasperske Hory 141.78 332 *e*PKPpre PKPpre 15 20 13.2
KHC *ex* x 15 20 24.5
KHC AMS AMS 16 21 50.0
comp=Z,400nm,20.4s
KHC Kasperske Hory 141.78 332 *e*PKIKP PKPpre 15 20 13.2
KHC *e* 15 20 24.5
KHC MLR MLR
comp=Z,400nm,20.4s
KHC Kasperske Hory 141.78 332 *e*PKPdf **PKPdf** **15 20 14.0 -2.7**
GERES GERESS Array B 141.93 332 PKhKP PKPpre 15 20 11.5
comp=Z,1.9nm,0.8s,baz=45,slow=0.4,SNR=11
ARSA Arzberg 142.18 328 *i* PKPdf PKPpre 15 20 12.7
comp=Z,6.2nm,1.2s
MOA Molln 142.38 330 *i* PKPdf PKPpre 15 20 14.5
comp=Z,14nm,1.1s,SNR=5.4
AGG Agios Georgios 142.63 313 *e*PKIKP **PKPdf** **15 20 18.8 +0.2**
AGG Agios Georgios 142.63 313 *e*PKPdf **PKPdf** **15 20 18.8 +0.2**
SOKA Soboth 142.81 328 *i* PKPdf **PKPdf** **15 20 17.5 -1.2**
comp=Z,4.8nm,0.8s
TIR Tirane 143.21 317 PFAKE 15 20 30.0 +11
TIR LR LR
comp=Z,332nm,22.0s
KBA Koelnbreinsper 143.37 330 *i* PKPdf PKPbc 15 20 16.7 -0.3
comp=Z,22nm,1.1s,SNR=9.2
BOJS Bojanci 143.48 326 *e*PKPdf PKPbc 15 20 18.5 +1.3
LJU Ljubljana 143.50 328 *e*PKPdf PKPbc 15 20 17.9 +0.6
MYKA Terra Mystica 143.54 329 *i* PKPdf PKPbc 15 20 17.2 -0.2
comp=Z,13nm,0.8s,SNR=6.4
MEM Membach 143.55 340 PKP PKPbc 15 20 18.4 +1.2
CRNS Crni Vrh 143.61 328 *i* PKPdf PKPbc 15 20 17.6 +0.1
JAVS Javornik 143.84 328 *e*PKPdf PKPbc 15 20 18.7 +0.4
BCLA Clavier 143.95 340 PKP PKPbc 15 20 18.9 +0.5
ABTA Abfaltersbach 144.00 330 *i* PKPdf PKPbc 15 20 18.6 -0.2
comp=Z,44nm,0.8s,SNR=22
WATA Walderalm 144.00 332 *i* PKPdf PKPbc 15 20 19.7 +0.9
comp=Z,13nm,0.7s
WTTA Wattenberg 144.03 331 *i* PKPdf PKPbc 15 20 19.6 +0.6
comp=Z,43nm,1.4s,SNR=10
SNF Seneffe 144.19 341 PKP **PKPdf** **15 20 20.0 -0.8**
MOTA Moosalm 144.21 332 *i* PKPdf PKPbc 15 20 20.3 +0.8
comp=Z,56nm,1.0s,SNR=27
RETA Reutte 144.26 332 *i* PKPdf PKPbc 15 20 20.0 +0.5
comp=Z,47nm,1.4s,SNR=14
LANF Langenberg 144.29 337 PKP PKPbc 15 20 20.3 +0.8
WLF Walferdange 144.31 339 PKP **PKPdf** **15 20 21.1 0.0**
WLF Walferdange 144.31 339 *e*PKIKP **PKPdf** **15 20 20.8 -0.3**
WLF MLR MLR
comp=Z,412nm,22.0s
WLF Walferdange 144.31 339 *e*PKPdf **PKPdf** **15 20 20.8 -0.3**
WLF LR LR
comp=Z,412nm,22.0s
DOU Dourbes 144.45 341 PKP **PKPdf** **15 20 20.9 -0.5**
BFO Black Forest 144.61 336 *e*PKIKP PKPbc 15 20 21.1 +0.5
BFO MLR MLR
comp=Z,212nm,21.0s
BFO Black Forest 144.61 336 *e*PKPdf PKPbc 15 20 21.1 +0.6
BFO LR LR
comp=Z,212nm,21.0s
FETA Feichten 144.62 332 *i* PKPdf **PKPdf** **15 20 21.5 -0.5**
comp=Z,113nm,1.0s,SNR=53
STR Strasbourg 144.63 336 PKP **PKPdf** **15 20 21.6 -0.1**
DAVA Damuels 144.79 333 *i* PKPdf **PKPdf** **15 20 22.1 -0.2**
comp=Z,169nm,1.2s,SNR=49
WLS Welschbruch 144.92 337 PKP **PKPdf** **15 20 22.2 -0.1**
FUORN Ofenpass-Fuorn 145.14 332 *e*PKPbc **PKPdf** **15 20 23.9 +0.9**
ECH Echery 145.16 337 PKP **PKPdf** **15 20 22.9 +0.2**
DAVOX Davos/Dischmat 145.19 332 PKPbc **PKPdf** **15 20 23.7 +0.7**
comp=Z,112nm,0.7s,baz=29,slow=1.2,SNR=129
VAL Valentia 145.39 357⇓ *i*P **PKPab** **15 20 23.7 +0.7**

MOF	**Molkenrain**	**145.47**	**336**	PKP	**PKPab**	**15**	**20**	**24.1 +0.5**
THEF	**They Montfort**	**145.59**	**338**	PKP	**PKPab**	**15**	**20**	**24.5 +0.5**
TUE	**Stuetta**	**145.66**	**333**	*e*PKPdf	**PKPab**	**15**	**20**	**24.9 +0.4**
TUE				LR	LR			
	comp=Z,314nm,20.0s							
TIP	**Timpagrande**	**146.36**	**316**	*e*PKPdf	**PKPab**	**15**	**20**	**27.4 +0.1**
TIP				LR	LR			
	comp=Z,195nm,20.0s							
CUC	**Castrocucco**	**146.53**	**318**	PFAKE		15	20	40.0 +12
CUC				LR	LR			
	comp=Z,212nm,21.0s							
AQU	**L'Aquila**	**146.55**	**324**	*e*PKP2	**PKPab**	**15**	**20**	**27.6 -0.3**
AQU				MLR	MLR			
	comp=Z,295nm,20.0s							
AQU	**L'Aquila**	**146.55**	**324**	*e*PKPdf	**PKPab**	**15**	**20**	**27.6 -0.3**
AQU				LR	LR			
	comp=Z,295nm,20.0s							
SENIN	**Lac Senin/Sane**	**146.61**	**335**	*e*PKPdf	**PKPab**	**15**	**20**	**27.9 -0.3**
OG01	**Vacheresse**	**146.89**	**335**	PKP	**PKPab**	**15**	**20**	**28.7 -0.4**
VLC	**Villacollemand**	**146.91**	**329**	PFAKE		15	20	40.0 +11
VLC				LR	LR			
	comp=Z,133nm,19.0s							
CEL	**Celeste**	**147.42**	**316**	PFAKE		15	20	40.0 +8.6
CEL				LR	LR			
	comp=Z,184nm,20.0s							
RCBR	**Riachuelo**	**147.53**	**133**	PFAKE		15	20	40.0 +7.5
RCBR				LR	LR			
	comp=Z,311nm,22.0s							
BNI	**Bardonecchia**	**147.93**	**334**	PFAKE		15	20	40.0 +6.7
BNI				LR	LR			
	comp=Z,331nm,21.0s							
GDM	**Grand'Maison**	**148.04**	**334**	PKP	**PKPbc**	**15**	**20**	**32.0 +1.0**
GRN	**Grenoble**	**148.16**	**335**	PKP	**PKPbc**	**15**	**20**	**32.3 +1.1**
PLDF	**La Plantade**	**148.36**	**338**	PKP	**PKPbc**	**15**	**20**	**32.9 +1.2**
AGO	**Saint Agoulin**	**148.46**	**339**	PKP	**PKPbc**	**15**	**20**	**32.8 +0.9**
LUCF	**Luceram**	**148.55**	**332**	PKP	**PKPbc**	**15**	**20**	**32.4 +0.1**
SSB	**Saint Sauveur**	**148.60**	**336**	PKP	**PKPbc**	**15**	**20**	**33.1 +0.7**
SSB	**Saint Sauveur**	**148.60**	**336**	*e*PKP2	**PKPbc**	**15**	**20**	**33.0 +0.7**
SSB				MLR	MLR			
	comp=Z,268nm,22.0s							
SSB	**Saint Sauveur**	**148.60**	**336**	*e*PKPbc	**PKPbc**	**15**	**20**	**33.0 +0.7**
SSB				LR	LR			
	comp=Z,268nm,22.0s							
MVIF	**Mont Vial**	**148.63**	**332**	PKP	**PKPbc**	**15**	**20**	**32.9 +0.3**
REVF	**Revere**	**148.66**	**331**	PKP	**PKPbc**	**15**	**20**	**32.7 +0.2**
VAE	**Valguarnera**	**148.83**	**316**	PKPbc	**PKPbc**	**15**	**20**	**32.1 -1.1**
	comp=Z,111nm,0.5s,baz=40,slow=7.9,SNR=3.1							
VERF	**Verneugheol**	**148.94**	**339**	PKP	**PKPbc**	**15**	**20**	**33.8 +0.6**
LBL	**Lubilhac**	**149.12**	**338**	PKP	**PKPbc**	**15**	**20**	**35.0 +1.3**
FRNF	**Fournols**	**149.23**	**339**	PKP	**PKPbc**	**15**	**20**	**36.0 +2.1**
WDD	**Wied Dalam**	**149.61**	**313**	PFAKE		15	20	40.0 -0.2
WDD				LR	LR			
	comp=Z,193nm,19.0s							
VSL	**Villasalto**	**150.73**	**324**	*e*PKPbc	**PKPbc**	**15**	**20**	**37.6 -0.1**
VSL				LR	LR			
	comp=Z,253nm,22.0s							
VALF	**Valcebollere**	**152.01**	**336**	PKP	**PKPbc**	**15**	**20**	**41.4 +0.7**
MELF	**Melles**	**152.06**	**339**	PKP	**PKPab**	**15**	**20**	**45.9 -4.3**
REVF	**Ens**	**152.26**	**339**	PKP	**PKPbc**	**15**	**20**	**42.7 +1.5**
REVF	**Montagne du Re**	**152.27**	**340**	PKP	**PKPbc**	**15**	**20**	**42.4 +1.2**
VIEF	**Viey**	**152.30**	**340**	PKP	**PKPbc**	**15**	**20**	**42.5 +1.2**
ATE	**Arette**	**152.35**	**341**	PKP	**PKPbc**	**15**	**20**	**41.3 0.0**
LARF	**Larrau**	**152.49**	**341**	PKP	**PKPbc**	**15**	**20**	**42.4 +0.8**
KEST	**Kesra**	**153.17**	**317**	PKPbc	**PKPbc**	**15**	**20**	**44.7 +1.3**
	comp=Z,13nm,1.0s,baz=317,slow=2.3,SNR=6.8							
ASCN	**Ascension**	**154.87**	**176**	PFAKE		15	20	50.0 +2.4
ASCN				LR	LR			
	comp=Z,500nm,22.0s							
PBRG	**Braganca**	**155.06**	**349**	*e*PKPab	**PKPab**	**15**	**21**	**03.4 +0.5**
PGAV	**Gavieira, Arco**	**155.13**	**352**	*e*PKPab	**PKPab**	**15**	**21**	**04.1 +0.9**
PCAB	**Cabril**	**155.35**	**352**	*e*PKPab	**PKPab**	**15**	**21**	**05.1 +1.0**
POLO	**Lamas de Olo**	**155.65**	**351**	*e*PKPab	**PKPab**	**15**	**21**	**06.4 +0.9**
MVO	**Moncorvo**	**155.73**	**350**	*e*PKPab	**PKPab**	**15**	**21**	**06.4 +0.6**
PVRL	**Vila Real**	**155.73**	**351**	*e*PKPab	**PKPab**	**15**	**21**	**06.9 +1.2**
PVIS	**Viseu**	**156.31**	**351**	*e*PKPab	**PKPab**	**15**	**21**	**08.6 +0.4**
ESDC	**Sonseca Array**	**156.46**	**343**	PKPab	**PKPab**	**15**	**21**	**08.3 -0.6**
	comp=Z,111nm,1.0s,baz=17,slow=3.5,SNR=20							
ESDC				PP	**PP**	**15**	**24**	**41.8 -4.1**
	comp=Z,0.2nm,0.2s,baz=4.6,slow=6.4,SNR=4.0							
ESLA	**Sonseca Array**	**156.46**	**343**	*e*PKPab	**PKPab**	**15**	**21**	**09.9 +1.0**
MTE	**Manteigas**	**156.56**	**350**	*e*PKPab	**PKPab**	**15**	**21**	**10.4 +1.0**
MTE	**Manteigas**	**156.56**	**350**	*e*PKPab	**PKPab**	**15**	**21**	**10.4 +1.0**
MTE				LR	LR			
	comp=Z,242nm,20.0s							
PAB	**San Pablo**	**156.68**	**344**	*e*PKP2	**PKPab**	**15**	**21**	**11.4 +1.4**
PAB				MLR	MLR			
	comp=Z,200nm,19.0s							
PAB	**San Pablo**	**156.68**	**344**	*e*PKPab	**PKPab**	**15**	**21**	**11.4 +1.4**
PAB				LR	LR			
	comp=Z,200nm,19.0s							
PCAS	**Casmilo, Conde**	**157.04**	**352**	*e*PKPab	**PKPab**	**15**	**21**	**12.3 +0.9**
PCBR	**Castelo Branco**	**157.09**	**350**	*e*PKPab	**PKPab**	**15**	**21**	**12.4 +0.8**
PTOM	**Tomar**	**157.46**	**351**	*e*PKPab	**PKPab**	**15**	**21**	**14.2 +1.1**
PMRV	**Marv??o**	**157.48**	**349**	*e*PKPab	**PKPab**	**15**	**21**	**14.3 +1.0**
PMTG	**Montargil**	**157.97**	**351**	*e*PKPab	**PKPab**	**15**	**21**	**16.6 +1.2**
PESTR	**Estremoz**	**158.06**	**349**	*e*PKPab	**PKPab**	**15**	**21**	**16.4 +0.6**
EVO	**Evora**	**158.46**	**350**	*e*PKPab	**PKPab**	**15**	**21**	**18.2 +0.7**
PBAR	**Barrancos**	**158.63**	**348**	*e*PKPab	**PKPab**	**15**	**21**	**19.3 +1.1**
PBEJ	**Beja**	**158.93**	**349**	*e*PKPab	**PKPab**	**15**	**21**	**20.9 +1.4**
PNCL	**Nicolau / Gran**	**158.95**	**351**	*e*PKPab	**PKPab**	**15**	**21**	**20.9 +1.3**
MESJ	**Messejana**	**159.17**	**350**	*e*PKPab	**PKPab**	**15**	**21**	**21.8 +1.2**
PCVE	**Castro Verde**	**159.34**	**349**	*e*PKPab	**PKPab**	**15**	**21**	**22.2 +0.8**
PVAQ	**Vaqueiros**	**159.50**	**349**	*e*PKPab	**PKPab**	**15**	**21**	**23.3 +1.2**
PBDV	**Barranco-do-Ve**	**159.70**	**349**	*e*PKPab	**PKPab**	**15**	**21**	**23.2 +0.2**
MORF	**Marmelete**	**159.76**	**351**	*e*PKPab	**PKPab**	**15**	**21**	**24.6 +1.4**
TAM	**Tamanrasset**	**162.04**	**291**	*e*PKP2	**PKPab**	**15**	**21**	**35.2 +1.2**
TAM				MLR	MLR			
	comp=Z,270nm,20.0s							
TAM	**Tamanrasset**	**162.04**	**291**	*e*PKPab	**PKPab**	**15**	**21**	**35.2 +1.2**
TAM				LR	LR			
	comp=Z,270nm,20.0s							
RTC	**Rabat Centre**	**162.58**	**344**	PFAKE		15	21	00.0 +13
RTC				LR	LR			
	comp=Z,916nm,19.0s							
MDT	**Midelt**	**162.92**	**336**	PKPab	**PKPab**	**15**	**21**	**38.7 +1.4**
	comp=Z,20nm,1.1s,baz=41,slow=4.6,SNR=11							
TORD	**Torodi Ar. Bea**	**165.51**	**255**	PKP	**PKPdf**	**15**	**20**	**50.3 -0.3**
	comp=Z,3.8nm,0.9s,baz=28,slow=0.9,SNR=14							
TORD				PKPab	**PKPab**	**15**	**21**	**48.9 -0.4**
	comp=Z,2.7nm,0.9s,baz=100,slow=3.9,SNR=6.1							
TORD				PP	**PP**	**15**	**25**	**33.2 -3.3**
	comp=Z,0.2nm,0.4s,baz=148,slow=37,SNR=2.9							
DBIC	**Dimbokro**	**166.95**	**217**	PKP	**PKPdf**	**15**	**20**	**51.9 +0.1**
	comp=Z,5.9nm,1.1s,baz=157,slow=7.7,SNR=2.6							
DBIC				PKPab	**PKPab**	**15**	**21**	**56.1 +0.7**
	comp=Z,3.1nm,0.7s,baz=139,slow=7.9,SNR=3.7							
SACV	**Santiago Islan**	**169.26**	**101**	PFAKE		15	21	00.0 +6.7
SACV				LR	LR			
	comp=Z,102nm,22.0s							

*IDC **15** 15:27:34.4±22.0, 43.˝44N×142.˝05E, h0km, mb3.7/4, mb1 3.7/4, mb1mx3.4/37, mbtmp3.7/4, Error ellipse: s-maj=485.7km s-min=76.1km az=155.0*
*ISCJB **15** 15:28:01.9±0.5, 43.˝60N±0.˝06×140.˝95E±0.˝08, h217km±5km, mb3.4/4, Error ellipse: s-maj=10.8km s-min=8.6km az=155.0*
*JMA **15** 15:28:02.8±0.1, 43.˝67N×140.˝80E, h208km±2km, M2.9*
ISC 15 15:28:02.7±0.9, **43.˝60N**±0.˝07×**140.˝93E**±0.˝06, **h213**km±7km, **n22**,σ0**s71**/32, **mb3.5**/4, **Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSK	**Shakotan**	**0.41**	**234**	P	**Pn**	**15 28 30.5**	**-0.5**
JHR	**Hokuryu**	**0.60**	**76**	P	**Pn**	**15 28 32.0**	**+0.4**
JHR				*e*S	**Sn**	**15 28 54.1**	**0.0**
JEW	**Eniwo**	**0.85**	**153**	P	**Pn**	**15 28 33.5**	**+0.6**
JYG	**Yagishiri**	**0.90**	**23**	P	**Pn**	**15 28 32.4**	**-0.7**
JAB	**Ashibetsu**	**0.95**	**95**	P	**Pn**	**15 28 34.0**	**+0.6**
JAB				*e*S	**Sn**	**15 28 58.1**	**+0.8**
JSS	**Shosan**	**1.04**	**39**	P	**Pn**	**15 28 34.1**	**+0.1**
JSS				*e*S	**Sn**	**15 28 58.3**	**-0.2**
JFR	**Furan**	**1.29**	**109**	P	**Pn**	**15 28 35.9**	**0.0**
JFR				*e*S	**Sn**	**15 29 01.5**	**-0.1**
JKK2	**Kamakawa 2**	**1.35**	**78**	P	**Pn**	**15 28 36.6**	**+0.3**
JKK2				*e*S	**Sn**	**15 29 01.8**	**+0.6**
JKB	**Kayabe**	**1.71**	**177**	P	**Pn**	**15 28 39.6**	**+0.2**
JSE	**Soyaes**	**1.81**	**41**	P	**Pn**	**15 28 39.9**	**-0.3**
JOSM	**Okushiri--Mats**	**1.85**	**216**	P	**Pn**	**15 28 40.6**	**-0.2**
JOSM				*e*S	**Sn**	**15 29 10.1**	**-0.3**
JWK2	**Keihoku**	**1.85**	**22**	P	**Pn**	**15 28 40.8**	**+0.1**
JNBK	**Urakawa-nobuka**	**1.88**	**134**	P	**Pn**	**15 28 41.7**	**+0.7**
JCH	**Churui**	**2.04**	**118**	P	**Pn**	**15 28 41.9**	**-0.6**
JCH				*e*S	**Sn**	**15 29 11.6**	**-1.9**
JAR	**Ashorobuto**	**2.09**	**97**	P	**Pn**	**15 28 43.8**	**+0.7**
JAR				*e*S	**Sn**	**15 29 15.7**	**+1.1**
JTKR	**Abashiri--Toko**	**2.19**	**79**	P	**Pn**	**15 28 44.6**	**+0.6**
JTKR				*e*S	**Sn**	**15 29 16.9**	**+0.6**
JOT	**Ohata**	**2.22**	**178**	P	**Pn**	**15 28 44.8**	**+0.4**
JAK	**Akkeshi**	**2.82**	**101**	P	**Pn**	**15 28 50.4**	**-0.5**
JAK				*e*S	**Sn**	**15 29 26.8**	**-1.8**
SONM	**Songino Array**	**24.35**	**292**	P	**P**	**15 33 01.5**	**+0.3**
	0.4nm,0.6s,baz=85,slow=8.8,SNR=3.3						
ZALV	**Zalesovo Beam**	**37.47**	**306**	P	**P**	**15 34 55.5**	**0.0**
	0.8nm,0.3s,baz=87,slow=10,SNR=3.8						
MKAR	**Makanchi Array**	**40.62**	**296**	P	**P**	**15 35 22.2**	**+0.5**
	0.4nm,0.4s,baz=79,slow=8.4,SNR=4.8						
FINES	**FINESS Array B**	**62.88**	**331**	P	**P**	**15 38 05.3**	**-0.3**
	0.8nm,0.6s,baz=42,slow=5.9,SNR=6.7						

*DDA **15** 15:46:35.9, 40.˝13N×39.˝38E, h9km, Md2.6*
*ISCJB **15** 15:46:36.9±0.6, 40.˝25N±0.˝03×39.˝28E±0.˝06, h4km±8km, Error ellipse: s-maj=7.4km s-min=5.6km az=8.1*
*CSEM **15** 15:46:36.9±0.3, 40.˝23N×39.˝29E, h2km, MD2.6, Error ellipse: s-maj=7.5km s-min=5.8km az=128.0*
*ISK **15** 15:46:36.4, 40.˝29N×39.˝34E, h7km, MD2.6*
ISC 15 15:46:36.8±1.0, **40.˝24N**±0.˝03×**39.˝31E**±0.˝04, **h6**km±10km, **n14**,σ0**s39**/21, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELT	**Kelkit**	**0.10**	**203**	*i* P	**Pg**	**15 46 39.1**	**0.0**
KELT				*i* S	**Sg**	**15 46 40.7**	**0.0**
KELT	**Kelkit**	**0.10**	**203**	P	**Pg**	**15 46 39.1**	**0.0**
KELT				S	**Sg**	**15 46 40.7**	**0.0**
ERZN	**Erzincan**	**0.73**	**154**	*e*PG	**Pb**	**15 46 51.4**	**-0.5**
MACK	**Trabzon**	**0.79**	**26**	*i* P	**Pb**	**15 46 53.2**	**+0.3**
MACK				*i* S	**Sb**	**15 47 04.3**	**+0.5**
MACK	**Trabzon**	**0.79**	**26**	P	**Pb**	**15 46 53.2**	**+0.3**
MACK				S	**Sb**	**15 47 04.3**	**+0.5**
ESPY	**Espiye-Giresun**	**0.81**	**327**	*e*PG	**Pg**	**15 46 52.2**	**-0.1**
ESPY				*e*SG	**Sg**	**15 47 03.1**	**+0.3**
KTUT	**Trabzon**	**0.82**	**25**	*e*PG	**Pg**	**15 46 51.9**	**-0.7**
KTUT	**Trabzon**	**0.82**	**25**	*e*Pg	**Pg**	**15 46 51.9**	**-0.7**
SUSE	**Susehri**	**0.85**	**268**	*i* P	**Pg**	**15 46 53.0**	**0.0**
SUSE				*i* S	**Sb**	**15 47 05.2**	**-0.4**
SUSE	**Susehri**	**0.85**	**268**	P	**Pg**	**15 46 53.0**	**0.0**
SUSE				S	**Sb**	**15 47 05.2**	**-0.4**
GRSN	**GIRESUNGRSN**	**1.05**	**311**	*i* P	**Pg**	**15 46 56.8**	**-0.1**
GRSN	**GIRESUNGRSN**	**1.05**	**311**	P	**Pg**	**15 46 56.8**	**-0.1**
PTK	**Pertek**	**1.35**	**177**	*e*PN	**Pg**	**15 47 02.9**	**+0.3**
PTK	**Pertek**	**1.35**	**177**	*e*Pn	**Pg**	**15 47 02.9**	**+0.3**

*ISCJB **15** 16:08:44.6±1.2, 37.˝88N±0.˝07×143.˝37E±0.˝09, h24km, mb3.6/5, Error ellipse: s-maj=11.2km s-min=9.2km az=34.5*
*JMA **15** 16:08:45.9±0.3, 37.˝95N×143.˝25E, h23km, M3.6*
*IDC **15** 16:08:49.1±1.9, 36.˝87N×143.˝20E, h0km, mb3.7/5, mb1 3.8/6, mb1mx3.5/41, mbtmp3.6/6, ML3.0/1, Error ellipse: s-maj=50.3km s-min=22.6km az=59.0*
ISC 15 16:08:45.2±1.8, **37.˝97N**±0.˝09×**143.˝4E**±0.˝1, **h24**km, **n18**, σ0**s86**/17, **mb3.6**/5, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.68**	**287**	P	**Pn**	**16 09 15.1**	**+0.1**
JIO				S	**Sn**	**16 09 33.2**	**-0.5**
OFUJ	**Ofunato**	**1.75**	**310**	P	**Pb**	**16 09 15.4**	**-1.1**
JMM	**Marumori**	**2.06**	**268**	P	**Pn**	**16 09 18.3**	**+0.1**
JMM				S	**Sn**	**16 09 42.4**	**-0.7**
JFK	**Kawauchi**	**2.08**	**254**	P	**Pn**	**16 09 18.2**	**-0.5**
JOU	**Okura**	**2.18**	**281**	P	**Pn**	**16 09 21.0**	**+1.0**
JOM	**Ohasama**	**2.22**	**313**	S	**Sn**	**16 09 47.6**	**+0.4**
JFT	**Otama**	**2.46**	**260**	P	**Pn**	**16 09 25.0**	**+1.2**
JFT				S	**Sn**	**16 09 53.7**	**+0.6**
JYK	**Kaneyama**	**2.56**	**293**	P	**Pn**	**16 09 26.4**	**+1.2**
JYS	**Shirataka**	**2.63**	**276**	P	**Pn**	**16 09 27.6**	**+1.4**
JYS				S	**Sn**	**16 09 57.7**	**+0.3**
MJAR	**Matsushiro Arr**	**4.37**	**253**	Pn	**Pn**	**16 09 51.1**	**+1.0**
	1.1nm,0.3s,baz=85,slow=15,SNR=8.2						
MJAR				Sn	**Sn**	**16 10 40.2**	**-0.1**
	0.7nm,0.3s,baz=89,slow=27,SNR=6.5						
H11N2	**WAKE ISLAND Hy**	**27.34**	**125**	T	T	16 43 09.4	
	baz=317,slow=75,SNR=8.4						
H11N1	**WAKE ISLAND Hy**	**27.35**	**125**	T	T	16 43 14.5	
	baz=317,slow=75,SNR=3.7						
H11N3	**WAKE ISLAND Hy**	**27.36**	**125**	T	T	16 43 16.6	
	baz=317,slow=75,SNR=5.6						
SONM	**Songino Array**	**28.59**	**302**	P	P	16 14 51.0	+12
	0.6nm,0.8s,baz=96,slow=9.1,SNR=3.8						
ZALV	**Zalesovo Beam**	**42.45**	**312**	P	P	16 16 49.6	+12
	0.5nm,0.4s,baz=99,slow=7.4,SNR=3.4						
MKAR	**Makanchi Array**	**44.96**	**302**	P	P	16 17 10.5	+12
	0.3nm,0.4s,baz=83,slow=9.9,SNR=4.4						
WRA	**Warramunga Arr**	**58.23**	**190**	P	**P**	**16 18 38.0**	**+0.4**
	1.4nm,0.6s,baz=8.2,slow=7.2,SNR=14						
ASAR	**Alice Springs**	**61.95**	**190**	P	**P**	**16 19 02.5**	**-0.6**
	0.4nm,0.7s,baz=3.6,slow=6.8,SNR=6.9						

IDC 15 16:13:40.7±2.5, **28.˝27S**×**176.˝57W**, **h0**km, **mb4.0**/3, **mb1 4.1**/3, **mb1mx3.6**/32, **mbtmp4.0**/3, **MS3.0**/1, **Ms1 3.0**/1, **ms1mx2.9**/9, **Error ellipse: s-maj=91.6km s-min=25.0km az=137.0, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.54**	**230**	Pn	Pb	16 14 09.8	-0.2
	153nm,0.3s,baz=73,slow=19,SNR=7.3						
RAO				Sn	Sb	16 14 30.1	0.0
	192nm,0.3s,baz=105,slow=22,SNR=6.8						
AFI	**Afiamalu**	**14.97**	**18**	LR	LR	16 25 15.2	
	comp=Z,52nm,18.2s,baz=178,slow=46						
STKA	**Stephens Creek**	**36.23**	**254**	P	P	16 20 45.0	-0.5
	1.4nm,0.5s,baz=101,slow=12,SNR=5.3						
ASAR	**Alice Springs**	**44.52**	**264**	P	P	16 21 54.4	+0.1
	0.9nm,0.6s,baz=101,slow=8.0,SNR=22						
WRA	**Warramunga Arr**	**45.32**	**269**	P	P	16 22 00.6	-0.1
	1.8nm,0.7s,baz=109,slow=7.8,SNR=11						
FINES	**FINESS Array B**	**143.55**	**342**	PKP	PKPdf	16 33 15.4	-1.3
	0.7nm,0.5s,baz=146,slow=0.5,SNR=6.5						
NOA	**NORSAR Array B**	**146.82**	**353**	PKPbc	PKPdf	16 33 23.0	+0.6
	0.6nm,0.6s,baz=12,slow=4.5,SNR=2.6						
AKASG	**Malin Array Be**	**150.30**	**326**	PKPbc	PKPbc	16 33 33.7	+0.2
	0.2nm,0.3s,baz=50,slow=2.7,SNR=4.0						

*IDC **15** 16:14:10.6±0.6, 29.˝34S×176.˝23W, h0km, mb4.5/17, mb1 4.7/18, mb1mx4.5/33, mbtmp4.5/18, ML3.4/1, MS3.7/4, Ms1 3.8/4, ms1mx3.6/9, Error ellipse: s-maj=20.6km s-min=15.0km az=166.0*
*GCMT **15** 16:14:12.0±0.5, 29.˝37S×175.˝91W, h15km±1km, MW4.9/70, Moment Tensor Solution. s14,c14; s70,c94; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.76±.34; $M_{\theta\theta}$0.13±.18; $M_{\phi\phi}$2.63±.22; $M_{r\theta}$0.35±.50; $M_{\theta\phi}$0.31±.12; $M_{\phi r}$-0.16±.37; Best double couple: M_o2.74000×10^{16} NP1:ϕ_s360.00000°, δ47.00000°, λ-100.00000°. NP2: ϕ_s194.00000°, δ44.00000°, λ-80.00000°. Principal axes: T 2.6700, Plg1.0000°, Azm97.0000°; N 0.1360, Plg7.0000°, Azm7.0000°; P -2.8100, Plg83.0000°, Azm197.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **15** 16:14:12.0±0.2, 29.˝51S×176.˝27W, h10km, mb5.1/55 Error ellipse: s-maj=8.2km s-min=4.6km az=142.0*
*ISCJB **15** 16:14:12.8±0.2, 29.˝49S±0.˝07×176.˝27W±0.˝05, h21km, mb5.0/78, MS4.5/6, Error ellipse: s-maj=10.6km s-min=5.6km az=165.8*
*MOS **15** 16:14:14.9±0.9, 29.˝36S×176.˝26W, h33km, mb5.3/15, Error ellipse: s-maj=14.3km s-min=11.2km az=146.6*
*BJI **15** 16:14:15.9, 29.˝70S×176.˝62W, h36km, mb5.1/17, mB5.6/17, Ms5.3/12, Ms7 4.9/12*
ISC 15 16:14:14.0±0.4, **29.˝50S**±0.˝07×**176.˝25W**±0.˝05, **h21**km, **n218**, σ1**s38**/230, **mb5.1**/77, **MS4.6**/6, **3C-7D, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.48**	**279**	Pn	**Pb**	**16 14 40.1**	**-0.5**
	609nm,0.3s,baz=85,slow=23,SNR=9.3						
RAO				Sn	**Sb**	**16 15 00.5**	**+1.6**
	466nm,0.3s,baz=114,slow=23,SNR=6.6						
RAO	**Raoul Island**	**1.48**	**279**	*e*P	**Pn**	**16 14 39.3**	**0.0**
RAO				*e*		16 14 55.9	
RAO	**Raoul Island**	**1.48**	**279**	*e*Pn	**Pn**	**16 14 39.3**	**0.0**
RAO				*e*Sn	**Sn**	**16 14 55.9**	**-2.0**
URZ	**Urewera**	**10.32**	**211**	*e*Pn	Pn	16 16 34.5	-6.3
URZ				*e*Sn	**Sn**	**16 18 31.4**	**-4.4**
BKZ	**Black Stump Fm**	**11.35**	**210**	*e*Sn	**Sn**	**16 18 58.6**	**-2.4**
RAR	**Rarotonga**	**17.02**	**65**	Pn	**Pn**	**16 18 09.0**	**-1.7**
	1.4nm,0.3s,baz=148,slow=3.7,SNR=3.3						
DZM	**Mont Dzumac**	**17.24**	**291**	Pn	**P**	**16 18 16.4**	**+1.4**
	0.4nm,0.3s,baz=119,slow=16,SNR=4.7						
DZM				LR	LR	16 23 36.3	
	comp=Z,847nm,19.8s,baz=98,slow=33						
DZM	**Mont Dzumac**	**17.24**	**291**	*e*P	**P**	**16 18 19.0**	**+4.0**
	68nm,1.2s						
DZM				*e*LR	LR	16 22 27.0	
	2µm,27.8s						
RPZ	**Rata Peaks**	**17.43**	**212**	LR	LR	16 25 56.7	
	comp=Z,126nm,19.5s,baz=36,slow=40						
TBI	**Tubuai**	**24.73**	**82**	*e*LR	LR	16 25 22.9	
	1µm,27.8s,baz=250						
PPT2	**Papeete2**	**27.11**	**70**	*e*LQ	LQ	16 25 08.4	
	406nm,23.5s						
PPT2				*e*LR	LR	16 26 22.9	
	1µm,27.0s,baz=234						
STKA	**Stephens Creek**	**36.16**	**255**	P	**P**	**16 21 16.5**	**+1.5**
	12nm,0.7s,baz=100,slow=10,SNR=34						
STKA	**Stephens Creek**	**36.16**	**255**	*e*P	**P**	**16 21 16.3**	**+1.3**
STKA	**Stephens Creek**	**36.16**	**255**	*e*P	**P**	**16 21 16.3**	**+1.3**
RKT	**Rikitea**	**37.40**	**90**	*e*LR	LR	16 31 16.0	
	674nm,27.5s						
TAOE	**Nuku Hiva Isla**	**39.56**	**66**	*e*LR	LR	16 32 07.6	
	641nm,27.5s						
AS01	**Alice Springs**	**44.64**	**265**	*e*P	**P**	**16 22 24.4**	**-0.9**
AS31	**Alice Springs**	**44.68**	**265**	*e*P	**P**	**16 22 25.4**	**-0.2**
	1.4nm,0.8s						
ASAR	**Alice Springs**	**44.68**	**265**	P	**P**	**16 22 25.1**	**-0.5**
	3.0nm,0.7s,baz=106,slow=7.2,SNR=26						
WB2	**Warramunga Arr**	**45.58**	**270**	*e*P	**P**	**16 22 31.3**	**-1.4**
	13nm,0.7s						
WRAB	**Tennant Creek**	**45.59**	**270**	*de*P	**P**	**16 22 32.3**	**-0.5**
WRAB				pmax	pmax		
	comp=Z,31nm,0.9s						
WRAB	**Tennant Creek**	**45.59**	**270**	*e*P	**P**	**16 22 31.6**	**-1.2**
	comp=Z,65nm,1.9s						
WRA	**Warramunga Arr**	**45.59**	**270**	P	**P**	**16 22 31.9**	**-1.0**
	comp=Z,7.9nm,0.6s,baz=109,slow=7.8,SNR=41						
SBA	**Scott Base**	**49.05**	**185**	*e*P	**P**	**16 23 02.5**	**+3.6**
SBA				pmax	pmax		
	comp=Z,21nm,1.4s						
SBA	**Scott Base**	**49.05**	**185**	*e*P	**P**	**16 23 02.5**	**+3.6**
	comp=Z,21nm,1.4s						
VNDA	**Vanda**	**49.14**	**186**	P	**P**	**16 23 01.3**	**+1.6**
	comp=Z,2.6nm,1.0s,baz=6.1,slow=6.1,SNR=8.9						
VNDA	**Vanda**	**49.14**	**186**	*e*P	**P**	**16 23 01.6**	**+1.9**
VNDA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
VNDA	**Vanda**	**49.14**	**186**	*e*P	**P**	**16 23 01.6**	**+1.9**
	comp=Z,4.9nm,1.1s						
FITZ	**Fitzroy Crossi**	**53.89**	**268**	P	**P**	**16 23 34.4**	**-1.6**
	comp=Z,8.8nm,0.8s,baz=146,slow=5.9,SNR=14						
FITZ	**Fit

PSI	**Prapat**	**86.86**	**275**	P		**P**	**16 26 57.5**	**-0.2**
	comp=Z,6.2nm,1.0s,baz=162,slow=5.7,SNR=4.1							
HUMO	**Hull Mountain**	**86.89**	**36**	*e*P		**P**	**16 26 56.1**	**-1.0**
	comp=Z,18nm,1.5s							
Y14A	**Wickenburg**	**86.91**	**48**	*e*P		**P**	**16 26 56.7**	**-0.7**
	comp=Z,42nm,1.1s							
SHPR	**Sheep Range**	**87.17**	**45**	*e*P		**P**	**16 26 59.3**	**+0.6**
	comp=Z,21nm,1.6s							
USRK	**Ussuriysk Ar.**	**87.27**	**326**	P		**P**	**16 26 58.6**	**-0.1**
	comp=Z,4.5nm,0.9s,baz=57,slow=4.3,SNR=5.7							
TUC	**Tucson**	**87.37**	**50**	P		**P**	**16 26 59.9**	**+0.2**
	baz=232							
MOD	**Modoc Plateau**	**87.80**	**38**	*e*P		**P**	**16 27 00.1**	**-1.5**
	comp=Z,11nm,1.4s							
319A	**Douglas**	**87.83**	**52**	*e*P		**P**	**16 27 01.6**	**-0.4**
	comp=Z,11nm,1.0s							
K05A	**Summer Lake**	**88.06**	**37**	*e*P		**P**	**16 27 02.6**	**-0.2**
	comp=Z,24nm,1.4s							
X16A	**Lo Mia Camp, P**	**88.22**	**48**	*e*P		**P**	**16 27 04.1**	**+0.3**
	comp=Z,9.2nm,1.0s							
MDJ	**Mudanjiang**	**88.76**	**325**	P		P	16 27 11.9	+6.0
MDJ				pmax	pmax			
	comp=Z,8.0nm,0.9s							
MDJ				pmax	pmax			
	comp=Z,110nm,3.3s							
U15A	**North Rim**	**88.92**	**46**	*e*P		**P**	**16 27 07.8**	**+0.7**
	comp=Z,12nm,1.0s							
WUAZ	**Wupatki**	**88.94**	**48**	P		**P**	**16 27 08.0**	**+0.9**
	baz=232							
WUAZ	**Wupatki**	**88.94**	**48**	*e*P		**P**	**16 27 08.7**	**+0.7**
	comp=Z,17nm,1.3s							
CCUT	**Cedar City**	**88.95**	**45**	*e*P		**P**	**16 27 06.9**	**-0.3**
	comp=Z,7.1nm,1.2s							
KNB	**Kanab**	**88.95**	**46**	*e*P		**P**	**16 27 07.5**	**+0.3**
KNB				pmax	pmax			
	comp=Z,11nm,1.0s							
KNB	**Kanab**	**88.95**	**46**	*e*P		**P**	**16 27 07.5**	**+0.3**
	comp=Z,11nm,1.0s							
WVOR	**Wild Horse Val**	**89.07**	**39**	*e*P		**P**	**16 27 05.9**	**-1.6**
WVOR				pmax	pmax			
	comp=Z,18nm,1.6s							
WVOR	**Wild Horse Val**	**89.07**	**39**	*e*P		**P**	**16 27 05.9**	**-1.6**
	comp=Z,18nm,1.6s							
G05D	**Wamic, OR**	**89.60**	**35**	P		**P**	**16 27 10.0**	**+0.2**
	baz=225							
W18A	**Petrified Fore**	**89.76**	**49**	P		**P**	**16 27 11.5**	**+0.4**
	baz=233							
NLWA	**Neilton Lookou**	**89.89**	**33**	*e*P		**P**	**16 27 11.2**	**+0.1**
	comp=Z,48nm,1.7s							
G06A	**Carlson Farm,**	**89.94**	**36**	*e*P		**P**	**16 27 11.3**	**-0.2**
	comp=Z,24nm,1.3s							
MTPU	**Mount Pierson**	**89.98**	**45**	*e*P		**P**	**16 27 13.3**	**+1.0**
	comp=Z,7.6nm,1.0s							
CN2	**Changchun**	**90.36**	**322**	*e*P		**P**	**16 27 14.5**	**+1.1**
CN2				*es*P		sP	16 27 30.4	+7.6
CN2				*e*S		**S**	**16 38 03.8**	**-2.8**
CN2				pmax	pmax			
	comp=Z,10.0nm,0.9s							
CN2				pmax	pmax			
	comp=Z,200nm,3.0s							
CN2				LR	LR			
	comp=Z,500nm,18.0s							
CN2				LR	LR			
	comp=Z,400nm,18.0s							
CN2				LR	LR			
	comp=Z,700nm,19.0s							
LON	**Longmire**	**90.41**	**34**	*e*P		**P**	**16 27 13.8**	**+0.2**
LON				pmax	pmax			
	comp=Z,19nm,1.7s							
LON	**Longmire**	**90.41**	**34**	*e*P		**P**	**16 27 13.8**	**+0.2**
	comp=Z,19nm,1.7s							
TX31	**Lajitas Ar. Si**	**90.63**	**56**	*e*P		**P**	**16 27 15.4**	**+0.3**
TXAR	**Lajitas Array**	**90.63**	**56**	P		**P**	**16 27 15.0**	**-0.1**
	comp=Z,2.6nm,1.0s,baz=213,slow=6.7,SNR=17							
TXAR	**Lajitas Array**	**90.63**	**56**	P		**P**	**16 27 15.0**	**-0.1**
MNTX	**Cornudas Mount**	**90.73**	**54**	P		**P**	**16 27 15.1**	**-0.3**
	baz=235							
MNTX	**Cornudas Mount**	**90.73**	**54**	*e*P		**P**	**16 27 15.1**	**-0.3**
	comp=Z,5.3nm,1.2s							
G08A	**Pilot Rock**	**90.83**	**36**	*e*P		**P**	**16 27 16.2**	**+0.5**
	comp=Z,18nm,1.2s							
LAZ	**Ladron**	**91.06**	**51**	*e*P		**P**	**16 27 18.0**	**+0.8**
HAWA	**Hanford**	**91.29**	**35**	*e*P		**P**	**16 27 18.9**	**+1.2**
	comp=Z,17nm,1.0s							
B05A	**Bryant**	**91.34**	**33**	P		**P**	**16 27 18.8**	**+1.0**
	baz=225							
TMUT	**Trail Mountain**	**91.36**	**45**	*e*P		**P**	**16 27 19.5**	**+1.0**
	comp=Z,7.4nm,1.0s							
BMO	**Blue Mountains**	**91.41**	**38**	*e*P		**P**	**16 27 18.2**	**-0.1**
	comp=Z,14nm,1.6s							
SRU	**San Rafael Swe**	**91.67**	**45**	*e*P		**P**	**16 27 20.2**	**+0.4**
SRU				pmax	pmax			
	comp=Z,9.0nm,1.0s							
SRU	**San Rafael Swe**	**91.67**	**45**	*e*P		**P**	**16 27 20.1**	**+0.4**
	comp=Z,9.1nm,1.0s							
ANMO	**Albuquerque**	**91.84**	**50**	P		**P**	**16 27 20.4**	**-0.3**
	baz=235							
ANMO	**Albuquerque**	**91.84**	**50**	*de*P		**P**	**16 27 20.8**	**+0.1**
ANMO				pmax	pmax			
	comp=Z,7.0nm,1.4s							
ANMO	**Albuquerque**	**91.84**	**50**	*e*P		**P**	**16 27 21.1**	**+0.4**
	comp=Z,4.5nm,1.0s							
PV05	**Paradox Valley**	**91.94**	**47**	*e*P		**P**	**16 27 21.8**	**+0.7**
HVU	**Hansel Valley**	**91.95**	**42**	*e*P		**P**	**16 27 21.4**	**+0.4**
HVU				pmax	pmax			
	comp=Z,15nm,1.4s							
HVU	**Hansel Valley**	**91.95**	**42**	*e*P		**P**	**16 27 21.4**	**+0.4**
	comp=Z,15nm,1.4s							
D08A	**Wollman Farm,**	**92.05**	**35**	*e*P		**P**	**16 27 21.4**	**+0.2**
	comp=Z,18nm,1.0s							
HLID	**Hailey**	**92.14**	**40**	P		**P**	**16 27 22.2**	**+0.3**
	baz=230							
HLID	**Hailey**	**92.14**	**40**	*e*P		**P**	**16 27 22.5**	**+0.6**
	comp=Z,6.4nm,1.1s							
F10A	**Beach Ranch, E**	**92.19**	**37**	*e*P		**P**	**16 27 21.6**	**-0.3**
	comp=Z,20nm,1.3s							
GYA	**Guiyang**	**92.43**	**299**	P		**P**	**16 27 24.5**	**+0.9**
GYA				pP		sP	16 27 37.3	+4.2
GYA				PP		**PP**	**16 31 09.0**	**+3.9**
GYA				SKS		**SKSac**	**16 37 54.8**	**-1.3**
GYA				S		**S**	**16 38 23.6**	**-2.9**
GYA				sS		sS	16 38 42.1	+4.0
GYA				SS		**SS**	**16 44 39.5**	**+1.0**
GYA				pmax	pmax			
	comp=Z,20nm,0.8s							
GYA				pmax	pmax			
	comp=Z,120nm,7.2s							
GYA				LR	LR			
	comp=Z,540nm,20.2s							
GYA				LR	LR			
	comp=Z,500nm,20.5s							
GYA				LR	LR			
	comp=Z,520nm,20.6s							
SUA	**Susitna One**	**92.98**	**12**	*e*P		**P**	**16 27 27.4**	**+2.1**
	comp=Z,9.4nm,1.0s							
034A	**Hebbronville**	**93.12**	**61**	P		**P**	**16 27 26.6**	**+0.1**
	baz=238							
EYAK	**Cordova Ski Ar**	**93.14**	**15**	*e*P		**P**	**16 27 26.7**	**+0.9**
	comp=Z,9.8nm,1.0s							
S22A	**4UR Ranch, Cre**	**93.20**	**48**	P		**P**	**16 27 27.0**	**-0.1**
	baz=235							
BJI	**Beijing**	**93.36**	**315**	P		**P**	**16 27 28.3**	**+1.0**
BJI				pmax	pmax			
	comp=Z,6.0nm,0.7s							
BJI				pmax	pmax			
	comp=Z,68nm,3.4s							
MCMT	**McKenzie Canyo**	**93.81**	**40**	*e*P		**P**	**16 27 30.1**	**+0.4**
DLMT	**Dillon**	**94.29**	**39**	*e*P		**P**	**16 27 32.0**	**+0.3**
	comp=Z,13nm,1.4s							
BW06	**Boulder Array**	**94.45**	**43**	P		**P**	**16 27 32.4**	**-0.2**
	baz=233							
BW06	**Boulder Array**	**94.45**	**43**	*e*P		**P**	**16 27 32.0**	**-0.6**
PDAR	**Pinedale Array**	**94.45**	**43**	P		**P**	**16 27 32.0**	**-0.6**
	comp=Z,1.1nm,0.9s,baz=164,slow=2.8,SNR=5.1							
CM01	**Chiang Mai Arr**	**94.52**	**288**	*e*P		**P**	**16 27 34.9**	**+1.7**
CMAR	**Chiang Mai Arr**	**94.55**	**289**	P		**P**	**16 27 34.3**	**+1.0**
	comp=Z,0.8nm,0.8s,baz=137,slow=3.2,SNR=5.5							
CMAR				LR		LR	17 12 17.5	
	comp=Z,13nm,18.1s,baz=185,slow=37							
FLWY	**Flagg Ranch**	**94.57**	**41**	*e*P		**P**	**16 27 33.8**	**+0.7**
	comp=Z,12nm,1.1s							
CAST	**Castle Rocks**	**94.58**	**11**	*e*P		**P**	**16 27 31.9**	**-0.6**
	comp=Z,4.7nm,1.0s							
KMI	**Kunming**	**94.78**	**296**	P		**P**	**16 27 36.1**	**+1.5**
KMI				pmax	pmax			
	comp=Z,13nm,0.5s							
KMI				pmax	pmax			
	comp=Z,120nm,4.4s							
KTH	**Kantishna Hill**	**94.89**	**11**	*e*P		**P**	**16 27 33.6**	**-0.3**
	comp=Z,7.2nm,1.1s							
CHMT	**Chamberlain Mo**	**94.90**	**38**	*e*P		**P**	**16 27 34.1**	**-0.5**
BOZ	**Bozeman (W)**	**95.00**	**40**	P		**P**	**16 27 34.6**	**-0.3**
	baz=232							
BOZ	**Bozeman (W)**	**95.00**	**40**	*e*P		**P**	**16 27 35.1**	**+0.1**
BOZ				pmax	pmax			
	comp=Z,9.0nm,1.1s							
BOZ	**Bozeman (W)**	**95.00**	**40**	*e*P		**P**	**16 27 35.1**	**+0.1**
	comp=Z,8.9nm,1.1s							
RND	**Reindeer**	**95.12**	**12**	*e*P		**P**	**16 27 35.2**	**+0.2**
RND				pmax	pmax			
	comp=Z,9.0nm,1.0s							
RND	**Reindeer**	**95.12**	**12**	*e*P		**P**	**16 27 35.2**	**+0.2**
	comp=Z,9.1nm,1.0s							
SEY	**Seymchan**	**95.46**	**346**	*e*P		**P**	**16 27 36.4**	**0.0**
WRH	**Wood River Hil**	**96.23**	**12**	*e*P		**P**	**16 27 39.8**	**-0.1**
	comp=Z,8.7nm,1.0s							
MLY	**Manley**	**96.30**	**11**	*e*P		**P**	**16 27 40.7**	**+0.4**
	comp=Z,3.3nm,1.0s							
HDA	**Harding Lake**	**96.39**	**12**	*e*P		**P**	**16 27 40.9**	**+0.3**
	comp=Z,38nm,1.3s							
CCB	**Clear Creek Bu**	**96.44**	**12**	*e*P		**P**	**16 27 40.4**	**-0.4**
	comp=Z,5.6nm,1.0s							
MDM	**Murphy Dome**	**96.65**	**12**	*e*P		**P**	**16 27 41.4**	**-0.5**
	comp=Z,6.1nm,1.0s							
HHC	**Hu-ho-hao-te**	**96.71**	**313**	*e*P		**P**	**16 27 45.5**	**+2.7**
HHC				PP		**PP**	**16 31 40.5**	**+2.3**
HHC				SKS		**SKSac**	**16 38 16.3**	**-2.2**
HHC				S		**S**	**16 38 57.0**	**-6.3**
HHC				pmax	pmax			
	comp=Z,19nm,1.3s							
HHC				pmax	pmax			
	comp=Z,110nm,4.3s							
HHC				LR	LR			
	comp=Z,110nm,12.3s							
HHC				LR	LR			
	comp=Z,80nm,14.8s							
HHC				LR	LR			
	comp=Z,91nm,14.8s							
IL1	**Eielson Array**	**96.72**	**12**	*e*P		**P**	**16 27 41.2**	**-0.9**
ILAR	**Eielson Array**	**96.72**	**12**	P		**P**	**16 27 41.6**	**-0.5**
	comp=Z,2.3nm,0.9s,baz=221,slow=5.8,SNR=17							
ILB	**Eielson Array**	**96.72**	**12**	*e*P		**P**	**16 27 41.8**	**-0.4**
CD2	**Chengdu**	**96.91**	**302**	*e*P		**P**	**16 27 44.0**	**+0.1**
CD2				pP		sP	16 27 55.8	+2.4
CD2				sP		pP	16 28 00.3	+9.4
CD2				SKS		**SKSac**	**16 38 17.6**	**-2.3**
CD2				S		**S**	**16 39 03.6**	**-1.6**
CD2				sS		sS	16 39 23.8	+6.9
CD2				SS		**SS**	**16 45 42.0**	**+0.1**
CD2				pmax	pmax			
	comp=Z,10.0nm,0.5s							
CD2				pmax	pmax			
	comp=Z,160nm,5.2s							
LPAZ	**La Paz**	**97.11**	**113**	P		Pdif	16 27 46.3	+0.3
	comp=Z,1.0nm,0.8s,baz=212,slow=4.7,SNR=3.8							
CPUP	**Villa Florida**	**99.33**	**127**	LR		LR	17 07 40.3	
	comp=Z,63nm,18.6s,baz=102,slow=32							
LZH	**Lanzhou**	**99.41**	**306**	*e*P		**Pdif**	**16 27 57.8**	**+2.6**
LZH				pP		sP	16 28 07.8	+3.1
LZH				sP		pP	16 28 11.3	+9.1
LZH				pmax	pmax			
	comp=Z,17nm,1.0s							
WMQ	**Urumqi**	**113.87**	**308**	*e*PKP		**PKiKP**	**16 32 51.3**	**+0.2**
WMQ				LR	LR			
	comp=Z,140nm,18.0s							
WMQ				LR	LR			
	comp=Z,160nm,21.0s							
WMQ				LR	LR			
	comp=Z,230nm,20.0s							
MKAR	**Makanchi Array**	**118.36**	**310**	PKP		**PKPdf**	**16 32 58.7**	**-0.9**
	comp=Z,0.9nm,0.7s,baz=64,slow=2.8,SNR=7.5							
ZALV	**Zalesovo Beam**	**118.37**	**318**	PKP		**PKPdf**	**16 32 58.4**	**-0.9**
	comp=Z,0.6nm,0.6s,baz=163,slow=5.7,SNR=4.2							
KSH	**Kashi**	**121.09**	**301**	*e*PKP		**PKPdf**	**16 33 06.3**	**+1.1**
KSH				*es*PKP			16 33 22.0	
KSH				*e*PP		**PP**	**16 34 40.9**	**+5.3**
KSH				PKS		**PKSdf**	**16 36 42.3**	**+0.4**
KSH				SKS		**SKSdf**	**16 40 13.4**	**-2.7**
KSH				SKKS		**SKKSac**	**16 41 27.9**	**-5.8**
KSH				SS		**SS**	**16 51 07.4**	**-0.3**
KSH				AMB	AMB			
	comp=Z,76nm,3.8s							
KSH				LR	LR			
	comp=Z,51nm,5.8s							
KSH				LR	LR			
	comp=Z,99nm,5.2s							
KSH				LR	LR			
	comp=Z,110nm,6.6s							
BRVK	**Borovoye**	**126.88**	**316**	*c i*PKIKP		**PKPdf**	**16 33 15.2**	**-0.5**
ZRNK	**Zerenda**	**127.65**	**316**	*e*PKIKP		**PKPdf**	**16 33 17.3**	**+0.1**
ARU	**Arti**	**133.35**	**321**	*i* PKIKP		**PKPdf**	**16 33 27.5**	**-0.4**
ARU							16 35 55.5	
ARU				SS		SS	16 53 35.8	-3.1
ARCES	**ARCESS Array B**	**138.02**	**349**	PKP		**PKPdf**	**16 33 35.7**	**-0.6**
	comp=Z,4.0nm,0.8s,baz=90,slow=0.5,SNR=3.7							
KLMR	**Klimovskoe**	**140.67**	**333**	*e*PKIKP		**PKPdf**	**16 33 39.8**	**-1.4**
KLMR				pmax	pmax			
	comp=Z,10.0nm,1.4s							
DGRG	**David-gareji**	**144.39**	**301**	P		**PKPdf**	**16 33 48.2**	**-0.4**
DGRG	**David-gareji**	**144.39**	**301**	PKIKP		**PKPdf**	**16 33 48.1**	**-0.4**
FINES	**FINESS Array B**	**144.80**	**342**	PKP		**PKPab**	**16 33 47.0**	**-0.5**
	comp=Z,9.5nm,0.8s,baz=67,slow=2.8,SNR=16							
TBLG	**Delisi**	**144.83**	**302**	P		**PKPab**	**16 33 44.5**	**-3.8**
GUDG	**Gudauri**	**144.93**	**303**	P		**PKPdf**	**16 33 50.3**	**+0.6**
OBN	**Obninsk**	**145.28**	**327**	*d*PKIKP		**PKPbc**	**16 33 48.9**	**-0.4**
OBN				*i*			16 34 00.7	
OBN				*i*			16 37 09.0	
OBN				pmax	pmax			
	comp=Z,23nm,0.9s							
ZEI	**Tsey**	**145.30**	**304**	*i* PKIKP		**PKPbc**	**16 33 50.1**	**0.0**
GOF	**Gofitskoye**	**145.47**	**308**	*e*PKHKP		PKPpre	16 33 46.7	
ONI	**Oni**	**145.66**	**303**	P		**PKPab**	**16 33 52.5**	**+1.1**
ONI	**Oni**	**145.66**	**303**	PKP2		**PKPab**	**16 33 52.5**	**+1.1**
KBZ	**Khabaz**	**145.85**	**305**	PKPbc		**PKPab**	**16 33 52.4**	**+0.4**
	comp=Z,2.7nm,0.8s,baz=148,slow=6.4,SNR=4.1							
VSR	**Storozhevoye**	**145.87**	**319**	*e*PKP2		**PKPdf**	**16 33 50.7**	**0.0**
VSR				pmax	pmax			
	comp=Z,50nm,1.4s							
KIV	**Kislovodsk**	**145.96**	**306**	*i* PKP2		**PKPdf**	**16 33 51.5**	**+0.2**
KIV				pmax	pmax			
	comp=Z,4.0nm,0.7s							
KIV	**Kislovodsk**	**145.96**	**306**	*e*PKPdf		**PKPab**	**16 33 54.9**	**+2.4**
NC303	**NORSAR Array S**	**147.87**	**353**	*e*PKPbc		**PKPbc**	**16 33 56.6**	**-0.2**
NC405	**NORSAR Array S**	**147.95**	**353**	*e*PKPbc		**PKPbc**	**16 33 57.1**	**+0.2**
NB2	**NORSAR Subarra**	**148.07**	**353**	PKP		**PKPbc**	**16 33 56.8**	**-0.6**
	comp=Z,18nm,1.1s,baz=7.7,slow=2.9							
NOA	**NORSAR Array B**	**148.07**	**353**	PKPbc		**PKPbc**	**16 33 57.0**	**-0.4**
	comp=Z,7.5nm,0.9s,baz=12,slow=4.4,SNR=14							
NBO02	**NORSAR Array S**	**148.10**	**353**	*e*PKPbc		**PKPbc**	**16 33 56.8**	**-0.6**
NBO00	**NORSAR Array S**	**148.12**	**354**	*e*PKPbc		**PKPbc**	**16 33 57.5**	**0.0**
AKASG	**Malin Array Be**	**151.47**	**325**	PKPbc		**PKPbc**	**16 34 05.6**	**-0.3**
	comp=Z,9.1nm,0.7s,baz=46,slow=2.9,SNR=21							
AKASG				PKPab		**PKPab**	**16 34 12.9**	**-1.4**
	comp=Z,3.1nm,0.6s,baz=44,slow=3.5,SNR=7.0							
AKBB	**Malin Array Si**	**151.47**	**325**	*e*PKIKP		**PKPbc**	**16 34 05.9**	**-0.1**
AKBB	**Malin Array Si**	**151.47**	**325**	*e*PKPbc		**PKPbc**	**16 34 05.9**	**-0.1**
KIEV	**Kiev**	**151.49**	**325**	*d i*PKIKP		**PKPbc**	**16 34 05.4**	**-0.5**
KIEV	**Kiev**	**151.49**	**325**	*d*PKPbc		**PKPbc**	**16 34 05.5**	**-0.5**
AK11	**Malin Array Si**	**151.51**	**325**	*e*PKPbc		**PKPbc**	**16 34 05.7**	**-0.4**
BRTR	**Keskin Array B**	**153.48**	**301**	PKPbc		**PKPbc**	**16 34 09.8**	**-1.2**
	comp=Z,1.0nm,0.9s,baz=151,slow=2.8,SNR=5.5							
BRTR				PKPab		**PKPab**	**16 34 22.4**	**-1.0**
	comp=Z,1.4nm,1.0s,baz=90,slow=3.7,SNR=4.7							
BR231	**Keskin MP Arra**	**154.10**	**301**	*e*PKPbc		**PKPbc**	**16 34 10.9**	**-1.4**
BR231				*e*PKPab		**PKPab**	**16 34 23.7**	**-2.2**
DPC	**Dobruska-Polom**	**157.12**	**339**	*e*PKPAB		**PKPab**	**16 34 38.2**	**-0.2**
DPC	**Dobruska-Polom**	**157.12**	**339**	*e*PKP2		**PKPab**	**16 34 38.2**	**-0.2**
BRG	**Berggiesshubel**	**157.32**	**343**	*e*PKP		PKPdf	16 34 22.8	+15
	comp=Z,3.2nm,0.7s							
KHC	**Kasperske Hory**	**159.01**	**342**	*e*PKPAB		**PKPab**	**16 34 46.8**	**+0.2**
KHC	**Kasperske Hory**	**159.01**	**342**	*e*PKP2		**PKPab**	**16 34 46.8**	**+0.2**
VTS	**Vitosha**	**159.61**	**315**	*e*PKP2		**PKPab**	**16 34 50.6**	**+0.9**
VTS	**Vitosha**	**159.61**	**315**	*e*PKPab		**PKPab**	**16 34 50.5**	**+0.9**
TOA0	**Torodi Ar. Sit**	**163.61**	**173**	*e*PKPab		**PKPab**	**16 35 07.2**	**-0.2**
TORD	**Torodi Ar. Bea**	**163.61**	**173**	PKPab		**PKPab**	**16 35 07.4**	**0.0**
	comp=Z,4.3nm,0.9s,baz=189,slow=4.7,SNR=17							
ESDC	**Sonseca Array**	**168.04**	**30**	PKPab		**PKPab**	**16 35 26.2**	**-0.3**
	comp=Z,0.3nm,0.5s,baz=329,slow=5.2,SNR=5.6							

IDC 15 16:21:12.3±6.7, 2°.86N×97°.54E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.2/42, mbtmp3.3/3, Error ellipse: s-maj=349.9km s-min=30.5km az=56.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**42.65**	**124**	P	P	16 29 10.9	0.0
	0.4nm,0.6s,baz=303,slow=9.1,SNR=3.5						
ASAR	**Alice Springs**	**44.14**	**129**	P	P	16 29 22.8	-0.2
	0.3nm,0.8s,baz=294,slow=7.2,SNR=4.6						
MKAR	**Makanchi Array**	**45.73**	**345**	P	P	16 29 35.1	-0.1
	0.1nm,0.3s,baz=163,slow=10,SNR=3.7						

*IDC **15** 16:23:27.7±1.8, 29°.25S×176°.05W, h0km, mb3.8/4, mb1 4.1/4, mb1mx3.7/26, mbtmp3.8/4, MS3.6/2, Ms1 3.6/2, ms1mx3.0/28, Error ellipse: s-maj=100.7km s-min=21.8km az=166.0*

ISC 15 16:23:33.8±1.5, 28°.4S±0°.4×176°.4W±0°.3, h29km, n10, σ0s97/10, mb3.8/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.57**	**236**	Pn	**Pn**	**16 23 59.6**	**-0.1**
	141nm,0.3s,baz=108,slow=16,SNR=6.1						
RAO				Sn	**Sn**	**16 24 19.7**	**+0.6**
	185nm,0.3s,baz=89,slow=21,SNR=4.2						
RAR	**Rarotonga**	**16.71**	**68**	LR	LR	16 33 25.8	
	comp=Z,115nm,18.1s,baz=224,slow=36						
STKA	**Stephens Creek**	**36.31**	**254**	P	**P**	**16 30 34.6**	**-0.4**
	1.4nm,0.6s,baz=88,slow=10,SNR=4.9						
PMG	**Port Moresby**	**39.06**	**292**	LR	LR	16 45 27.8	
	comp=Z,99nm,18.6s,baz=4.0,slow=33						
ASAR	**Alice Springs**	**44.63**	**264**	P	**P**	**16 31 43.9**	**-0.1**
	0.6nm,0.7s,baz=101,slow=6.1,SNR=18						
WRA	**Warramunga Arr**	**45.44**	**269**	P	**P**	**16 31 49.7**	**-0.7**
	0.9nm,0.7s,baz=109,slow=7.8,SNR=6.0						
TXAR	**Lajitas Array**	**90.14**	**57**	P	**P**	**16 36 31.7**	**+0.2**
	0.7nm,1.1s,baz=232,slow=7.8,SNR=4.2						
FINES	**FINESS Array B**	**143.69**	**342**	PKP	**PKPdf**	**16 43 04.2**	**-1.0**
	1.4nm,0.8s,baz=130,slow=3.0,SNR=4.7						
NOA	**NORSAR Array B**	**146.94**	**353**	PKPbc	**PKPab**	**16 43 13.8**	**-0.5**
	1.0nm,0.8s,baz=13,slow=4.7,SNR=3.3						
AKASG	**Malin Array Be**	**150.46**	**326**	PKPbc	**PKPbc**	**16 43 22.5**	**+0.3**
	0.9nm,0.6s,baz=48,slow=3.4,SNR=3.6						
AKASG				PKPab	**PKPab**	**16 43 30.8**	**+2.0**
	0.8nm,0.5s,baz=48,slow=3.4,SNR=3.3						

IDC 15 16:32:33.3±2.2, 29°.13S×176°.42W, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.6/19, mbtmp3.7/3, ML3.2/1, Error ellipse: s-maj=45.3km s-min=30.8km az=156.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.32**	**264**	Pn	Pn	16 33 00.5	+1.6
	291nm,0.3s,baz=101,slow=6.2,SNR=16						
RAO				Sn	Sn	16 33 16.9	-0.2
	546nm,0.3s,baz=49,slow=20,SNR=13						
URZ	**Urewera**	**10.57**	**209**	Pn	Pn	16 35 06.2	+0.1
	0.2nm,0.3s,baz=86,slow=16,SNR=4.1						
URZ				Sn	Sn	16 37 04.2	-1.0
	0.6nm,0.3s,baz=109,slow=21,SNR=5.6						
ASAR	**Alice Springs**	**44.57**	**265**	P	P	16 40 47.4	0.0
	0.5nm,0.5s,baz=106,slow=7.1,SNR=18						
WRA	**Warramunga Arr**	**45.45**	**270**	P	P	16 40 52.9	-1.5
	1.0nm,0.9s,baz=109,slow=8.0,SNR=8.1						
AKASG	**Malin Array Be**	**151.09**	**325**	PKPbc	PKPbc	16 52 28.1	+0.1
	0.3nm,0.3s,baz=48,slow=2.2,SNR=4.2						

*ISCJB **15** 16:35:10.3±0.5, 40°.11N±0°.04×30°.08E±0°.04, h12km, Error ellipse: s-maj=5.5km s-min=4.9km az=11.7*
*CSEM **15** 16:35:10.4±0.1, 40°.09N×30°.07E, h10km, MD2.5, Error ellipse: s-maj=2.7km s-min=2.3km az=7.0*
*ISK **15** 16:35:10.2, 40°.12N×30°.06E, h15km, MD2.5*
*DDA **15** 16:35:10.9, 39°.93N×30°.33E, h32km, Md2.1*

ISC 15 16:35:10.4±0.9, 40°.08N±0°.03×30°.07E±0°.02, h12km, n28, σ0s53/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAVI	**Cavuskoy**	**0.21**	**304**	*e*PG	**Pg**	**16 35 15.0**	**-0.1**
CAVI				*e*SG	**Sg**	**16 35 18.3**

	0.6nm,0.9s,baz=218,slow=5.4,SNR=4.6							
FINES	**FINESS Array B**	**145.15**	**342**	PKPbc	**PKPdf**	**16 58 31.0**	**-1.0**
	2.3nm,0.8s,baz=82,slow=4.0,SNR=6.2							
NB2	**NORSAR Subarra1**	**148.39**	**353**	PKP	**PKPbc**	**16 58 41.2**	**+0.1**
	comp=Z,3.1nm,1.2s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**148.39**	**353**	PKPbc	**PKPbc**	**16 58 41.8**	**+0.7**
	comp=Z,1.6nm,0.9s,baz=12,slow=3.0,SNR=4.4							
AKASG	**Malin Array Be**	**151.83**	**325**	PKPbc	**PKPbc**	**16 58 50.0**	**+0.4**
	comp=Z,2.4nm,0.6s,baz=44,slow=2.9,SNR=11							

MEX 15 16:57:07.3±0.3, 15.45N×93.04W, h103km±11km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.20**	**46**	*i* P	Pn	16 57 30.1	-0.3
CCIG				*i* S	Sn	16 57 46.1	-1.6
HUIG	**Huatulco**	**2.98**	**277**	*i* P	Pn	16 57 51.1	-1.7
HUIG				*i* S	Sn	16 58 27.0	-0.9

IDC ***15*** *17:11:28.1±1.2, 18.52S×175.93E, h0km, mb4.0/7, mb1 4.3/7, mb1mx3.9/32, mbtmp4.0/7, MS3.6/5, Ms1 3.6/5, ms1mx3.2/30, Error ellipse: s-maj=43.5km s-min=26.8km az=146.0*
NEIC ***15*** *17:11:29.9±0.4, 18.30S×175.82E, h10km, mb4.9/10, Error ellipse: s-maj=10.8km s-min=9.4km az=146.0*
ISCJB ***15*** *17:11:30.2±0.5, 18.34S±0.08×175.85E±0.08, h26km, mb4.3/14, MS3.6/2, Error ellipse: s-maj=11.5km s-min=10.5km az=143.4*

ISC 15 17:11:31.7±0.6, 18.4S±0.1×175.87E±0.10, h26km, n42, σ0.94/27, mb4.1/14, 1C, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**2.18**	**72**	*e*Pn	Pn	17 11 58.8	-7.6
MSVF				*e*Sn	Sn	17 12 22.8	-10
DZM	**Mont Dzumac**	**9.57**	**246**	*e*LR	LR	17 16 13.9	
	484nm,25.8s						
DZM	**Mont Dzumac**	**9.57**	**246**	*e*Pn	**Pn**	**17 13 47.4**	**-0.6**
RAO	**Raoul Island**	**12.19**	**153**	LR	LR	17 17 57.9	
	comp=Z,264nm,21.3s,baz=354,slow=32						
AFI	**Afiamalu**	**12.68**	**71**	LR	LR	17 18 26.7	
	comp=Z,186nm,20.7s,baz=194,slow=33						
AFI	**Afiamalu**	**12.68**	**71**	*e*Pn	**Pn**	**17 14 29.9**	**-0.7**
OUZ	**Omahuta**	**16.86**	**186**	*e*Pn	**P**	**17 15 27.9**	**0.0**
	132nm,1.7s						
HNR	**Honiara**	**17.84**	**298**	LR	LR	17 21 22.2	
	comp=Z,193nm,19.7s,baz=147,slow=33						
URZ	**Urewera**	**19.81**	**177**	*e*P	**Pn**	**17 16 03.5**	**+1.6**
	47nm,1.3s						
BKZ	**Black Stump Fm**	**20.69**	**179**	*e*P	Pn	17 16 12.2	-0.2
	138nm,1.8s						
COEN	**Coen**	**31.68**	**273**	*e*P	**P**	**17 17 53.5**	**0.0**
	51nm,1.5s						
TBI	**Tubuai**	**32.71**	**105**	*e*LR	LR	17 26 40.3	
	154nm,32.2s						
PPT2	**Papeete2**	**32.84**	**94**	*e*LR	LR	17 26 54.2	
	201nm,26.0s						
PPT	**Papeete**	**32.84**	**94**	LR	LR	17 30 52.9	
	comp=Z,87nm,18.1s,baz=150,slow=36						
H11S2	**WAKE ISLAND Hy**	**37.76**	**346**	T	T	17 58 55.9	
	baz=162,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**37.77**	**346**	T	T	17 58 57.2	
	baz=162,slow=76,SNR=14						
H11S1	**WAKE ISLAND Hy**	**37.78**	**346**	T	T	17 58 58.5	
	baz=162,slow=76,SNR=13						
H11N1	**WAKE ISLAND Hy**	**38.90**	**346**	T	T	18 00 27.0	
	baz=166,slow=76,SNR=5.0						
H11N3	**WAKE ISLAND Hy**	**38.90**	**346**	T	T	18 00 22.9	
	baz=166,slow=76,SNR=6.0						
H11N2	**WAKE ISLAND Hy**	**38.91**	**346**	T	T	18 00 24.3	
	baz=166,slow=76,SNR=3.7						
WR1	**Warramunga Arr**	**39.19**	**261**	*e*P	**P**	**17 18 58.3**	**+0.4**
	40nm,1.8s						
WRA	**Warramunga Arr**	**39.19**	**261**	P	**P**	**17 18 58.3**	**+0.4**
	1.8nm,0.9s,baz=91,slow=8.9,SNR=8.5						
AS01	**Alice Springs**	**39.37**	**255**	*e*P	**P**	**17 18 60.0**	**+0.5**
AS31	**Alice Springs**	**39.41**	**255**	*e*P	**P**	**17 18 59.3**	**-0.5**
	3.4nm,1.5s						
ASAR	**Alice Springs**	**39.42**	**255**	P	**P**	**17 18 59.5**	**-0.4**
	1.3nm,0.7s,baz=87,slow=8.8,SNR=14						
ASAR				LR	LR	17 34 24.2	
	comp=Z,96nm,18.7s,baz=108,slow=35						
MTN	**Manton Dam**	**43.36**	**271**	*e*P	**P**	**17 19 33.4**	**+1.2**
	33nm,1.4s						
MJAR	**Matsushiro Arr**	**65.22**	**327**	P	**P**	**17 22 12.2**	**+1.2**
	1.1nm,0.8s,baz=149,slow=6.6,SNR=4.6						
MAJO	**Matsushiro**	**65.22**	**327**	*e*P	**P**	**17 22 11.1**	**+0.1**
	20nm,1.9s						
MJB9	**Matsu-Tunnel**	**65.22**	**327**	*e*P	**P**	**17 22 11.1**	**0.0**
	1.4nm,1.1s						
CISI	**Cisompet, Garu**	**66.87**	**270**	*e*P	**P**	**17 22 20.5**	**-1.7**
	43nm,1.1s						
QSPA	**South Pole Qui**	**71.64**	**180**	*e*P	**P**	**17 22 50.1**	**-0.9**
MAW	**Mawson**	**81.50**	**201**	P	**P**	**17 23 46.8**	**+0.4**
	2.2nm,0.8s,baz=96,slow=8.5,SNR=5.1						
MAW	**Mawson**	**81.50**	**201**	*e*P	**P**	**17 23 47.0**	**+0.5**
	1.5nm,1.2s						
CM01	**Chiang Mai Arr**	**83.94**	**292**	*e*P	**P**	**17 24 00.2**	**+0.1**
CMAR	**Chiang Mai Arr**	**83.97**	**292**	P	**P**	**17 24 02.6**	**+2.4**
	1.7nm,0.9s,baz=128,slow=4.1,SNR=9.6						
SYO	**Syowa Base**	**87.39**	**194**↑	*e*P	**P**	**17 24 15.0**	**-1.3**
ILAR	**Eielson Array**	**87.69**	**15**	P	**P**	**17 24 17.1**	**-0.5**
	0.6nm,0.8s,baz=241,slow=5.0,SNR=5.1						
TXAR	**Lajitas Array**	**90.89**	**59**	P	**P**	**17 24 34.6**	**+1.0**
	0.4nm,0.8s,baz=230,slow=5.9,SNR=6.0						
LTX	**Lajitas**	**90.89**	**59**	*e*P	**P**	**17 24 34.6**	**+1.0**
BRG	**Berggiesshubel**	**144.56**	**340**	*e*(P)	**PKPdf**	**17 31 05.3**	**-0.5**
	1.7nm,0.8s						
KHC	**Kasperske Hory**	**146.18**	**339**	*e*PKP	**PKPbc**	**17 31 10.0**	**+0.3**
GERES	**GERESS Array B**	**146.38**	**339**	PKPbc	**PKPab**	**17 31 11.0**	**-0.3**
	1.9nm,0.8s,baz=29,slow=3.0,SNR=13						

MAN 15 17:30:54, 9.49N×122.13E, h8km, mb4.4, ML3.3, MS3.1, 4C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.10**	**98**↑	*i* P	Pg	17 31 10.0	-5.2
SNPH				*i* S	Sg	17 31 26.6	-3.0
DCPH	**Dipolog City**	**1.51**	**127**↑	*e*P	Pn	17 31 21.7	+0.4
TBP	**Tagbilaran**	**1.72**	**83**	*i* P	Pb	17 31 25.6	-0.3
TBP				*i* S	Sb	17 31 47.5	-0.2
LLP	**Lapu-Lapu**	**1.99**	**66**	*e*P	Pn	17 31 28.3	+0.4
LLP				*e*S	Sb	17 31 55.0	-0.4
RCP	**Roxas**	**2.14**	**16**↑	*e*P	Pn	17 31 30.9	+0.9
RCP				*e*S	Sb	17 31 58.6	-1.2
CGP	**Cagayan de Oro**	**2.74**	**112**↑	*e*P	Pb	17 31 41.1	-2.1
CGP				*e*S	Sb	17 32 15.8	-1.2
PLP	**Palo**	**3.26**	**59**‖	*e*P	Pn	17 31 46.7	+1.2
PLP				*e*S	Sn	17 32 21.9	-2.6

ATH ***15*** *17:31:26.6, 34.08N×26.71E, h24km±5km, ML2.7/1, Error ellipse: s-maj=9.9km s-min=2.6km az=340.0*
ISCJB ***15*** *17:31:29.6±0.4, 34.16N±0.04×26.76E±0.06, h35km, Error ellipse: s-maj=7.8km s-min=4.7km az=151.7*
CSEM ***15*** *17:31:30.8±0.1, 34.21N×26.70E, h30km, ML2.7, Error ellipse: s-maj=5.5km s-min=3.5km az=60.0*
HLW ***15*** *17:31:30.3, 34.23N×26.78E, h25km±11km, Md3.5, Ml3.4*

ISC 15 17:31:30.5±1.2, 34.17N±0.05×26.80E±0.05, h35km, n42, σ1.52/44, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	**Zakros**	**1.05**	**333**	P	**Pn**	**17 31 47.8**	**-1.0**
ZKR				S	**Sn**	**17 32 03.1**	**+0.8**
ZKR	**Zakros**	**1.05**	**333**	P	**Pn**	**17 31 47.8**	**-1.0**
ZKR				S	**Sn**	**17 32 03.1**	**+0.8**
ZKR				AML	AML	17 32 11.8	
	comp=N,526μm,0.4s						
ZKR				AML	AML	17 32 14.2	
	comp=E,884μm,0.7s						
KARP	**Karpathos**	**1.40**	**12**	P	**Pn**	**17 31 54.1**	**+0.5**
KARP	**Karpathos**	**1.40**	**12**	P	**Pn**	**17 31 54.1**	**+0.5**
NPS	**Neapolis**	**1.46**	**318**	P	**Pn**	**17 31 54.2**	**-0.2**
NPS	**Neapolis**	**1.46**	**318**	P	**Pn**	**17 31 54.2**	**-0.2**
LAST	**Lasithi**	**1.47**	**312**	P	**Pn**	**17 31 53.5**	**-1.1**
LAST	**Lasithi**	**1.47**	**312**	P	**Pn**	**17 31 53.5**	**-1.1**
IDI	**Anoyia**	**1.93**	**306**	P	**Pn**	**17 32 00.3**	**-0.6**
IDI	**Anoyia**	**1.93**	**306**	P	**Pn**	**17 32 00.3**	**-0.6**

VAM	**Vamos**	**2.47**	**301**	P	**Pn**	**17 32 06.9**	**-1.4**
IMMV	**Iera Moni Meta**	**2.65**	**300**	P	**Pn**	**17 32 10.7**	**-0.1**
IMMV	**Iera Moni Meta**	**2.65**	**300**	P	**Pn**	**17 32 10.7**	**-0.1**
SLUM	**Salum**	**2.99**	**207**	P	**Pn**	**17 32 16.3**	**+0.9**
	baz=207						
SLUM				AMP		17 32 00.0	
	comp=N,180μm,0.2s,logA/T=5.9,baz=207						
SLUM	**Salum**	**2.99**	**207**	P	**Pn**	**17 32 16.3**	**+0.9**
APE	**Apeiranthos**	**3.07**	**341**	P	**Pn**	**17 32 17.4**	**+0.9**
APE	**Apeiranthos**	**3.07**	**341**	P	**Pn**	**17 32 17.4**	**+0.9**
TURN	**Turunc**	**3.07**	**28**	*i* P	**Pn**	**17 32 14.1**	**-2.4**
AKAS	**Kas**	**3.08**	**47**	*i* P	**Pn**	**17 32 17.3**	**+0.5**
AKAS	**Kas**	**3.08**	**47**	P	**Pn**	**17 32 17.3**	**+0.5**
ANKY	**Antikythira Is**	**3.33**	**301**	P	**Pn**	**17 32 19.4**	**-0.7**
ANKY	**Antikythira Is**	**3.33**	**301**	P	**Pn**	**17 32 19.4**	**-0.7**
GOLH	**Golhisar**	**3.79**	**36**	*i* P	**Pn**	**17 32 28.8**	**+2.2**
GOLH	**Golhisar**	**3.79**	**36**	P	**Pn**	**17 32 28.8**	**+2.2**
KORT	**Korkueli**	**4.04**	**45**	*i* P	Pn	17 32 35.1	+5.1
KORT	**Korkueli**	**4.04**	**45**	P	Pn	17 32 35.1	+5.1
GAZI	**Gazipasa**	**4.96**	**64**	*i* P	**Pn**	**17 32 43.7**	**+1.1**
GAZI				*i* S	**Sn**	**17 33 34.2**	**-4.4**
GAZI	**Gazipasa**	**4.96**	**64**	P	**Pn**	**17 32 43.7**	**+1.1**
SWA2		**5.05**	**193**	P	**Pn**	**17 32 45.0**	**+1.3**
	baz=194						
SWA2		**5.05**	**193**	P	**Pn**	**17 32 45.0**	**+1.3**
KOT	**Kottamia**	**6.01**	**133**	P	**Pn**	**17 32 58.2**	**+1.2**
	baz=133						
KOT	**Kottamia**	**6.01**	**133**	P	**Pn**	**17 32 58.2**	**+1.2**
AWBH		**6.11**	**162**	P	**Pn**	**17 33 00.3**	**+2.0**
	baz=162						
AWBH		**6.11**	**162**	P	**Pn**	**17 33 00.3**	**+2.0**
GLL	**Jalalah**	**6.20**	**136**	P	**Pn**	**17 33 01.2**	**+1.6**
	baz=136						
GLL	**Jalalah**	**6.20**	**136**	P	**Pn**	**17 33 01.2**	**+1.6**
SUZ	**Suez**	**6.70**	**129**	P	**Pn**	**17 33 08.2**	**+1.8**
	baz=128						
SUZ	**Suez**	**6.70**	**129**	P	**Pn**	**17 33 08.2**	**+1.8**
HFRF	**Wahat Farafira**	**7.12**	**169**	P	**Pn**	**17 33 13.7**	**+1.4**
	baz=169						
HFRF				S	**Sn**	**17 34 29.6**	**-2.3**
	baz=169						
HFRF	**Wahat Farafira**	**7.12**	**169**	P	**Pn**	**17 33 13.7**	**+1.4**
HDK1	**Dakhla**	**8.89**	**165**	P	**Pn**	**17 33 38.6**	**+2.0**
	baz=164						
HDK1	**Dakhla**	**8.89**	**165**	P	**Pn**	**17 33 38.6**	**+2.0**

IDC ***15*** *17:39:51.9±1.1, 26.31N×144.45E, h0km, mb3.8/11, mb1 4.0/14, mb1mx3.8/40, mbtmp3.9/14, ML4.1/3, Error ellipse: s-maj=33.7km s-min=18.4km az=85.0*
NEIC ***15*** *17:39:53.4±0.4, 26.35N×144.49E, h10km, mb4.6/19, Error ellipse: s-maj=8.2km s-min=6.5km az=101.0*
ISCJB ***15*** *17:39:55.1±0.5, 26.43N±0.06×144.42E±0.09, h33km, mb4.5/27, Error ellipse: s-maj=11.8km s-min=8.5km az=3.4*

ISC 15 17:39:58.0±0.8, 26.48N±0.08×144.2E±0.1, h35km, n54, σ1.974/55, mb4.4/27, 1D, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**7.63**	**331**	*e*Pn	**Pn**	**17 41 47.5**	**+0.7**
JHJ2				*e*Sn	**Sn**	**17 43 04.4**	**-7.6**
JHJ	**Hachijo jima 2**	**7.65**	**331**	Pn	**Pn**	**17 41 47.2**	**+0.2**
	7.4nm,0.3s,baz=123,slow=22,SNR=4.3						
JHJ				Sn	**Sn**	**17 43 09.6**	**-2.9**
	17nm,0.3s,baz=67,slow=22,SNR=6.6						
MJAR	**Matsushiro Arr**	**11.26**	**334**	Pn	**Pn**	**17 42 36.3**	**-0.2**
	1.5nm,0.3s,baz=154,slow=11,SNR=16						
MJAR				Sn	**Sn**	**17 44 41.4**	**+0.3**
	0.9nm,0.3s,baz=278,slow=29,SNR=7.2						
MAJO	**Matsushiro**	**11.26**	**334**	*e*Pn	**Pn**	**17 42 37.3**	**+0.8**
MJB9	**Matsu-Tunnel**	**11.27**	**334**	*e*Pn	**Pn**	**17 42 37.4**	**+0.8**
ERM	**Erimo**	**15.52**	**357**	*e*Pn	**Pn**	**17 43 33.8**	**-0.4**
	52nm,1.6s						
ASAJ	**Asahikawa**	**17.64**	**356**	Pn	**Pn**	**17 44 01.4**	**+0.4**
	1.0nm,0.3s,baz=229,slow=7.0,SNR=13						
ASAJ	**Asahikawa**	**17.64**	**356**	*e*Pn	**P**	**17 44 01.6**	**-0.1**
	33nm,1.6s						
NACB	**Ninganchiao**	**20.58**	**269**	*e*P	**P**	**17 44 30.1**	**-3.8**
	16nm,0.9s						
YHNB	**Yeheng**	**20.68**	**270**	*e*P	**P**	**17 44 35.4**	**+0.2**
	86nm,1.6s						
YULB	**Yu-li**	**21.01**	**267**	*e*P	**P**	**17 44 41.6**	**+3.0**
	50nm,1.8s						
SSLB	**Suanglung**	**21.23**	**268**	*e*P	**P**	**17 44 43.7**	**+2.6**
	51nm,1.7s						
H11N2	**WAKE ISLAND Hy**	**21.90**	**103**	T	T	18 07 04.8	
	baz=295,slow=75,SNR=7.4						
H11N1	**WAKE ISLAND Hy**	**21.90**	**103**	T	T	18 07 04.0	
	baz=295,slow=75,SNR=9.0						
H11N3	**WAKE ISLAND Hy**	**21.91**	**103**	T	T	18 07 05.8	
	baz=295,slow=75,SNR=7.6						
H11S3	**WAKE ISLAND Hy**	**22.21**	**106**	T	T	18 07 41.2	
	baz=294,slow=75,SNR=33						
H11S1	**WAKE ISLAND Hy**	**22.21**	**106**	T	T	18 07 43.1	
	baz=294,slow=75,SNR=15						
H11S2	**WAKE ISLAND Hy**	**22.22**	**106**	T	T	18 07 44.0	
	baz=294,slow=75,SNR=15						
KLR	**Kul'dur**	**24.69**	**340**	P	**P**	**17 45 16.5**	**+0.9**
	1.0nm,0.5s,baz=141,slow=7.4,SNR=4.5						
DCPH	**Dipolog City**	**26.62**	**232**‖	*e*P	**P**	**17 45 30.6**	**-2.8**
SONA0	**Songino Array**	**36.41**	**316**	*e*P	**P**	**17 47 01.6**	**+2.3**
	1.8nm,0.7s						
SONA1	**Songino Array**	**36.41**	**316**	*e*P	**P**	**17 47 01.6**	**+2.3**
SONM	**Songino Array**	**36.41**	**316**	P	**P**	**17 47 01.6**	**+2.3**
	1.2nm,0.4s,baz=122,slow=7.8,SNR=13						
CMAR	**Chiang Mai Arr**	**42.42**	**269**	P	**P**	**17 47 50.0**	**+0.4**
	0.5nm,0.4s,baz=67,slow=8.0,SNR=5.4						
WR1	**Warramunga Arr**	**47.13**	**193**	*e*P	**P**	**17 48 25.0**	**-2.0**
	53nm,1.9s						
WRA	**Warramunga Arr**	**47.13**	**193**	P	**P**	**17 48 25.0**	**-2.0**
	0.4nm,0.5s,baz=12,slow=8.6,SNR=4.7						
ASAR	**Alice Springs**	**50.84**	**192**	P	**P**	**17 48 53.3**	**-2.1**
	0.2nm,0.8s,baz=3.5,slow=7.6,SNR=4.0						
ZAA0	**Zalesovo Array**	**51.14**	**319**	*e*P	**P**	**17 48 57.4**	**+0.1**
ZALV	**Zalesovo Beam**	**51.14**	**319**	P	**P**	**17 48 58.0**	**+0.7**
	0.7nm,0.5s,baz=109,slow=8.0,SNR=4.7						
ZALV				PcP	**PcP**	**17 50 12.3**	**-0.2**
	0.3nm,0.3s,baz=130,slow=2.3,SNR=3.7						
ZAA1	**Zalesovo Array**	**51.14**	**319**	*e*P	**P**	**17 48 58.0**	**+0.6**
ZAA1				*e*PcP	**PcP**	**17 50 12.3**	**-0.2**
MK01	**Makanchi Array**	**52.26**	**310**	*e*P	**P**	**17 49 06.8**	**+0.9**
MK31	**Makanchi Array**	**52.26**	**310**	*e*P	**P**	**17 49 07.1**	**+1.2**
MK32	**Makanchi Array**	**52.26**	**310**	*e*P	**P**	**17 49 07.4**	**+1.5**
MK32				*e*PcP	**PcP**	**17 50 17.2**	**+0.3**
MKAR	**Makanchi Array**	**52.26**	**310**	P	**P**	**17 49 07.4**	**+1.5**
	0.9nm,0.5s,baz=89,slow=9.2,SNR=16						
MKAR				PcP	**PcP**	**17 50 17.2**	**+0.3**
	0.5nm,0.7s,baz=90,slow=3.4,SNR=3.6						
MKAR	**Makanchi Array**	**52.26**	**310**	*e*P	**P**	**17 49 07.2**	**+1.3**
	13nm,0.4s						
MKAR				PcP	**PcP**	**17 50 17.2**	**+0.3**
MAKZ	**Makanchi**	**52.48**	**310**	*e*P	**P**	**17 49 08.1**	**+0.7**
	1.8nm,0.8s						
KURK	**Kurchatov**	**54.71**	**315**	*e*P	**P**	**17 49 25.0**	**+1.4**
ILAR	**Eielson Array**	**57.38**	**28**	P	**P**	**17 49 42.6**	**+0.1**
	0.3nm,0.6s,baz=268,slow=6.2,SNR=3.7						
ILB	**Eielson Array**	**57.38**	**28**	*e*P	**P**	**17 49 41.2**	**-1.3**
VOSK	**Vostochnaya**	**59.38**	**317**	*e*P	**P**	**17 49 57.3**	**+0.6**
	2.2nm,0.8s						
PCA	**Pinnacle**	**60.26**	**34**	*e*P	**P**	**17 50 01.6**	**-1.1**
	75nm,1.8s						
ZRNK	**Zerenda**	**60.56**	**318**	*e*P	**P**	**17 50 05.1**	**+0.3**
	1.9nm,0.6s						
YKU2	**Yakutat**	**60.58**	**35**	*e*P	**P**	**17 50 03.9**	**-0.9**
	492nm,1.0s						
KKAR	**Karatay Array**	**60.91**	**306**	*e*P	**P**	**17 50 08.6**	**+1.1**
	43nm,0.4s						
DHAK	**Deception Hill**	**61.35**	**35**	*e*P	**P**	**17 50 09.4**	**-0.7**
	106nm,1.8s						
SKAG	**Skagway**	**62.79**	**34**	*e*P	**P**	**17 50 20.0**	**+0.3**
	4.6nm,0.7s						
KBL	**Kabul**	**63.92**	**297**	*e*P	**P**	**17 50 28.3**	**+0.4**
	5.4nm,1.1s						
ARU	**Arti**	**66.02**	**323**	*e*P	**P**	**17 50 41.0**	**+0.1**
	21nm,1.9s						
ABKAR	**Akbulak array**	**66.82**	**315**	*e*P	**P**	**17 50 46.4**	**+0.3**
	16nm,0.8s						
FIA0	**FINESS Array S**	**79.29**	**334**	*e*P	**P**	**17 51 59.2**	**-0.4**
FINES	**FINESS Array B**	**79.29**	**334**	P	**P**	**17 51 59.2**	**-0.4**
	1.9nm,0.8s,baz=44,slow=5.8,SNR=4.0						
KBZ	**Khabaz**	**79.75**	**314**	P	**P**	**17 52 04.3**	**+1.8**
	3.2nm,0.8s,baz=85,slow=2.6,SNR=6.7						
DAC	**Darwin (Calif)**	**80.90**	**54**	*e*P	P	17 51 59.5	-10
	2.6nm,0.8s						
AKASG	**Malin Array Be**	**84.17**	**325**	P	**P**	**17 52 25.4**	**-0.2**
	0.3nm,0.4s,baz=54,slow=4.7,SNR=3.8						

MAN 15 17:44:47, 9.67N×122.30E, h8km, mb4.4, ML3.2, MS3.0, 2C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.97**	**109**↑	*i* P	Pg	17 45 00.7	-5.1
SNPH				*i* S	Sg	17 45 16.0	-2.5
TBP	**Tagbilaran**	**1.54**	**89**	*e*P	Pn	17 45 14.6	-0.2
LLP	**Lapu-Lapu**	**1.76**	**68**	*e*P	Pb	17 45 19.1	-0.5
LLP				*e*S	Sg	17 45 44.0	+0.3
RCP	**Roxas**	**1.93**	**13**↑	*e*P	Pn	17 45 20.4	+0.2
CGP	**Cagayan de Oro**	**2.65**	**117**	*e*P	Pn	17 45 31.2	+1.1
CGP				*i* S	Sb	17 46 05.4	-2.1
PLP	**Palo**	**3.02**	**60**‖	*e*P	Pn	17 45 35.6	+0.4
PLP				*e*S	Sn	17 46 03.3	-8.4

ISCJB ***15*** *17:49:40.9±1.6, 13.1S±0.2×66.9E±0.3, h10km, mb4.4/11, MS3.5/3, Error ellipse: s-maj=51.0km s-min=17.3km az=144.1*
IDC ***15*** *17:49:41.6±2.2, 13.18S×66.87E, h0km, mb3.8/4, mb1 3.9/4, mb1mx3.5/61, mbtmp3.8/4, MS3.5/3, Ms1 3.5/3, ms1mx2.9/39, Error ellipse: s-maj=82.8km s-min=29.4km az=52.0*
NEIC ***15*** *17:49:42.6±0.6, 13.20S×66.77E, h10km, mb4.8/8, Error ellipse: s-maj=21.4km s-min=11.1km az=53.0*

ISC 15 17:49:42.8±1.6, 13.2S±0.3×66.8E±0.3, h10km, n34, σ0.56/23, mb4.5/11, MS3.5/3, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Carcia H**	**7.83**	**46**	T	T	17 59 46.6	
	baz=225,slow=75,SNR=194						
H08S2	**Diego Garcia H**	**7.84**	**46**	T	T	17 59 49.4	
	baz=225,slow=75,SNR=254						
H08S3	**Diego Garcia H**	**7.85**	**46**	T	T	17 59 58.6	
	baz=225,slow=75,SNR=178						
H08N3	**Diego Garcia H**	**7.95**	**32**	T	T	18 00 09.3	
	baz=211,slow=76,SNR=433						
H08N1	**Diego Garcia H**	**7.96**	**32**	T	T	18 00 12.0	
	baz=211,slow=76,SNR=506						
H08N2	**Diego Garcia H**	**7.97**	**32**	T	T	18 00 10.9	
	baz=211,slow=76,SNR=476						
LBTB	**Lobatse**	**40.53**	**247**	LR	LR	18 12 11.4	
	comp=Z,67nm,18.3s,baz=104,slow=33						
KBL	**Kabul**	**47.51**	**3**	*e*P	**P**	**17 58 18.1**	**-0.3**
	17nm,1.8s						
TSUM	**Tsumeb**	**47.52**	**256**	LR	LR	18 16 40.5	
	comp=Z,46nm,21.3s,baz=32,slow=34						
H01W3	**Cape Leeuwin H**	**47.80**	**125**	T	T	18 49 36.8	
	baz=286						
H01W2	**Cape Leeuwin H**	**47.80**	**125**	T	T	18 49 30.6	
	baz=286						
H01W1	**Cape Leeuwin H**	**47.82**	**125**	T	T	18 49 36.8	
	baz=286						
MAKZ	**Makanchi**	**61.25**	**12**	*e*P	**P**	**17 59 57.7**	**-0.3**
	1.6nm,0.8s						
MK01	**Makanchi Array**	**61.28**	**12**	*e*P	**P**	**17 59 58.2**	**-0.1**
MK31	**Makanchi Array**	**61.30**	**12**	*e*P	**P**	**17 59 58.6**	**+0.2**
MK32	**Makanchi Array**	**61.30**	**12**	*e*P	**P**	**17 59 58.7**	**+0.3**
MKAR	**Makanchi Array**	**61.30**	**12**	P	**P**	**17 59 58.7**	**+0.3**
	1.1nm,0.8s,baz=207,slow=8.4,SNR=7.6						
MKAR				LR	LR	18 24 10.8	
	comp=Z,34nm,18.2s,baz=106,slow=34						
MKAR	**Makanchi Array**	**61.30**	**12**	*e*P	**P**	**17 59 58.8**	**+0.3**
	12nm,0.9s						
ABKAR	**Akbulak array**	**62.46**	**355**	*e*P	**P**	**18 00 06.1**	**0.0**
	16nm,0.6s						
ASAR	**Alice Springs**	**64.03**	**110**	P	**P**	**18 00 16.9**	**-0.3**
	0.4nm,0.9s,baz=272,slow=5.8,SNR=4.5						
WRA	**Warramunga Arr**	**64.72**	**106**	P	**P**	**18 00 22.0**	**+0.2**
	0.8nm,0.8s,baz=262,slow=6.0,SNR=4.2						
WR1	**Warramunga Arr**	**64.72**	**106**	*e*P	**P**	**18 00 22.1**	**+0.3**
	13nm,1.3s						
VOSK	**Vostochnaya**	**65.73**	**3**	*e*P	**P**	**18 00 26.2**	**-1.4**
	6.9nm,1.8s						
ZRNK	**Zerenda**	**65.89**	**1**	*e*P	**P**	**18 00 28.1**	**-0.4**
	5.9nm,1.7s						
ZAA0	**Zalesovo Array**	**68.61**	**11**	*e*P	**P**	**18 00 45.6**	**-0.2**
ZALV	**Zalesovo Beam**	**68.61**	**11**	P	**P**	**18 00 46.0**	**+0.2**
	1.7nm,0.6s,baz=202,slow=6.3,SNR=9.1						
ZAA1	**Zalesovo Array**	**68.61**	**11**	*e*P	**P**	**18 00 46.0**	**+0.2**
CEL	**Celeste**	**69.90**	**319**	*e*P	**P**	**18 00 54.8**	**+0.6**
	21nm,1.0s						
SONA1	**Songino Array**	**70.24**	**27**	*e*P	**P**	**18 00 57.0**	**+0.8**
BW06	**Boulder

JAO Obara 8.57 344 P **P** **18 02 27.7 +1.3**
JTO Tosashimizu 8.64 314 P **P** **18 02 29.6 +2.4**
JTO *eS* **S** **18 04 09.2 +1.2**
INU Inuyama 8.71 343 *eP* **P** **18 02 29.5 +1.7**
INU *eS* **S** **18 04 07.0 -2.1**
JRY Ryogami san 9.00 353 P **P** **18 02 31.1 +0.1**
JRY *eS* **S** **18 04 12.4 -2.6**
MJAR Matsushiro Arr 9.61 350 P **P** **18 02 36.9 -0.5**
17nm,0.3s,baz=167,slow=11,SNR=80
MJAR S **S** **18 04 29.8 +3.0**
5.7nm,0.3s,baz=169,slow=20,SNR=5.9
MJAR ScP **ScP** **18 10 48.4 -0.5**
baz=183,slow=1.5,SNR=4.1
MAJO Matsushiro 9.61 350*d* *iP* **P** **18 02 37.5 0.0**
MAJO Matsushiro 9.61 350 *eP* **P** **18 02 37.3 -0.2**
MAT Matsushiro 9.61 350 P **P** **18 02 37.1 -0.4**
MAT S **S** **18 04 24.2 -2.6**
MJB9 Matsu-Tunnel 9.62 350 *eP* **P** **18 02 37.5 0.0**
JAMN Amaminishikomi 9.86 279 P **P** **18 02 42.7 +2.5**
JAMN *eS* **S** **18 04 30.9 -0.9**
JHS Saijyo 9.98 324 P **P** **18 02 43.3 +1.8**
JHS S **S** **18 04 35.8 +1.6**
JNU Nakatsue 10.09 309 P **P** **18 02 45.4 +2.7**
24nm,0.3s,baz=106,slow=5.0,SNR=266
JNU S **S** **18 04 39.8 +3.5**
baz=217,slow=20,SNR=4.7
JNU Nakatsue 10.09 309 *eP* **P** **18 02 44.7 +2.0**
JNU *eS* **S** **18 04 36.5 +0.2**
JSJ Shimokoshiki 10.24 299 P **P** **18 02 45.9 +1.6**
JSJ *eS* **S** **18 04 41.0 +1.6**
JOW Kunigami 10.65 272 P **P** **18 02 50.7 +2.0**
JOW *eS* **S** **18 04 49.3 +1.8**
JOW Kunigami 10.65 272 *eP* **P** **18 02 50.3 +1.5**
JOW *eS* **S** **18 04 43.7 -3.7**
JOI OKI 10.95 329 P **P** **18 02 53.0 +1.3**
JOI *eS* **S** **18 04 52.6 -0.4**
JJT2 Tamagusuku 2 11.19 268 P **P** **18 02 56.6 +2.1**
JAGN Aguni-jima 11.59 271 S **S** **18 05 07.2 +1.3**
JMK Ichinoseki 11.89 4 P **P** **18 03 03.1 +1.3**
JTU Tsushima 11.90 311 P **P** **18 03 02.9 +0.9**
JKE Kume jima 2 12.02 270 P **P** **18 03 04.5 +1.1**
JKE *eS* **S** **18 05 14.8 +0.4**
JRG Rokugo 12.31 2 P **P** **18 03 08.4 +2.1**
JIW Iwasaki 13.51 359 P **P** **18 03 20.8 +1.8**
JOGS Gusukube 13.52 264 P **P** **18 03 21.2 +1.8**
JMJ Miyako jima 2 13.61 264 P P 18 03 27.9 +7.6
JIKM Ikemajima 13.62 264 P **P** **18 03 21.9 +1.4**
JIKM S **S** **18 05 48.3 +2.7**
JIRB Irabujima 13.71 264 P **P** **18 03 22.4 +1.0**
GUMO Guam 14.09 161 *eP* **P** **18 03 24.9 -0.6**
GUMO Guam 14.09 161 *eP* **P** **18 03 24.9 -0.6**
JTJ Tarama 14.17 264 P **P** **18 03 27.0 +0.7**
JTJ S **S** **18 05 56.7 +0.5**
JOT Ohata 14.31 3 P **P** **18 03 28.6 +1.1**
JISG Ishigakijimahi 14.53 264 P **P** **18 03 30.2 +0.1**
KSRS Korea Array 14.67 318 P **P** **18 03 30.7 -0.6**
4.2nm,0.3s,baz=125,slow=11,SNR=50
KSRS ScP **ScP** **18 10 57.0 +0.5**
0.1nm,0.3s,baz=138,slow=1.8,SNR=6.0
KS15 Wonju Array Si 14.68 318 *eP* **P** **18 03 30.7 -0.8**
KS15 *eScP* **ScP** **18 10 57.0 +0.4**
KSAR Wonju Array Be 14.68 318 P **P** **18 03 30.7 -0.8**
KSAR Wonju Array Be 14.68 318 P **P** **18 03 30.7 -0.8**
KSAR ScP **ScP** **18 10 57.0 +0.4**
JIJ Ishigaki jima 14.73 263 P **P** **18 03 32.2 0.0**
JKB Kayabe 14.81 2 P **P** **18 03 33.9 +1.1**
JKRS Kuro-shima 14.88 263 P **P** **18 03 34.3 +0.6**
JOSM Okushiri--Mats 15.00 358 P **P** **18 03 35.8 +1.0**
IRIF Iriomote-Funau 15.10 263 P **P** **18 03 35.9 -0.2**
ERM Erimo 15.12 8 *eP* **P** **18 03 37.7 +1.7**
ERM pmax pmax
comp=Z,40nm,0.8s
ERM Erimo 15.12 8 *eP* **P** **18 03 37.7 +1.7**
comp=Z,40nm,0.8s
INCN Inchon 15.47 316 P **P** **18 03 38.5 -1.4**
SNR=7.0
INCN Inchon 15.47 316 *eP* **P** **18 03 38.4 -1.5**
comp=Z,169nm,0.7s
YOJ Yonaguni jima 15.71 264 P **P** **18 03 41.8 -0.7**
YOJ Yonaguni jima 15.71 264 *eP* **P** **18 03 41.8 -0.7**
YOJ pmax pmax
comp=Z,139nm,0.6s
YOJ Yonaguni jima 15.71 264 *eP* **P** **18 03 41.8 -0.7**
comp=Z,139nm,0.6s
NEM2 Nemuro 2 16.88 14 P **P** **18 03 55.0 +0.4**
TATO Taipei 16.96 267 *eP* **P** **18 03 54.3 -1.3**
comp=Z,601nm,2.0s
NACB Ninganchiao 17.03 264 *eP* **P** **18 03 54.5 -1.9**
comp=Z,64nm,0.9s
SSE Sheshan 17.11 288 P **P** **18 03 53.9 -3.1**
SSE S **S** **18 06 47.6 -3.9**
SSE pmax pmax
comp=Z,14nm,0.8s
SSE pmax pmax
comp=Z,130nm,2.6s
YHNB Yeheng 17.12 266 *eP* **P** **18 03 55.9 -1.4**
comp=Z,83nm,0.4s
ASAJ Asahikawa 17.13 6 *eP* **P** **18 03 58.1 +1.0**
comp=Z,29nm,0.9s
ASAJ *eScP* **ScP** **18 11 00.8 -0.4**
MSHR Mys Shultsa 17.16 337⇑ *iP* **P** **18 03 58.0 +0.6**
VLA Vladivostok 17.40 339*d* *iP* **P** **18 04 00.8 +1.1**
YULB Yu-li 17.49 262 *eP* **P** **18 03 59.9 -1.1**
comp=Z,510nm,2.0s
SSLB Suanglung 17.69 264 *eP* **P** **18 04 02.4 -0.6**
comp=Z,263nm,0.8s
SSLB *eS* **S** **18 07 03.1 +1.5**
TWG Pinlang 17.86 261 *eP* **P** **18 04 03.3 -1.1**
comp=Z,543nm,0.9s
TPUB Ta-pu 18.11 262 *eP* **P** **18 04 06.4 -0.5**
comp=Z,96nm,1.0s
USRK Ussuriysk Ar. 18.35 341 P **P** **18 04 10.0 +1.2**
comp=Z,6.5nm,0.3s,baz=156,slow=8.7,SNR=187
KUR Kuril'sk 19.15 17*c* *iP* **P** **18 04 17.3 +1.3**
KUR *i* S **S** **18 07 24.9 +0.2**
KUR pmax pmax
comp=Z,106nm,1.2s
KUR pmax pmax
comp=Z,273nm,4.7s
KUR smax smax
comp=N,342nm,8.7s
KUR smax smax
comp=E,449nm,8.7s
NJ2 Nanjing 19.22 290 *eP* **P** **18 04 16.5 -0.4**
NJ2 S **S** **18 07 26.9 +0.6**
NJ2 ScP **ScP** **18 11 06.0 0.0**
NJ2 pmax pmax
comp=E,150nm,0.8s
MDJ Mudanjiang 19.49 337 P **P** **18 04 20.5 +1.3**
MDJ sP sP 18 06 24.6 -1.4
MDJ S **S** **18 07 31.8 +1.5**
MDJ ScP **ScP** **18 11 04.6 -1.7**
MDJ PcS **PcS** **18 11 52.3 -1.5**
MDJ pmax pmax
comp=E,120nm,1.1s
MDJ pmax pmax
comp=E,630nm,4.5s
MDJ Mudanjiang 19.49 337 *eP* **P** **18 04 19.9 +0.7**
comp=E,115nm,0.9s
DL2 Dalian 19.52 312⇓ *iP* **P** **18 04 18.4 -1.1**
DL2 sP **sP** **18 06 29.6 +3.3**
DL2 S **S** **18 07 30.1 -0.8**
DL2 ScP **ScP** **18 11 06.6 +0.1**
DL2 pmax pmax
comp=E,330nm,0.7s
YSS Yuzh-Sakhalins 19.96 5 *eP* **P** **18 04 24.6 +1.2**
YSS *eS* **S** **18 07 33.0 -4.8**
YSS pmax pmax
comp=Z,20nm,0.6s
YSS pmax pmax
comp=Z,100nm,2.5s
YSS Yuzh-Sakhalins 19.96 5 *eP* **P** **18 04 25.0 +1.5**
comp=Z,35nm,0.6s
YSS *eScP* **ScP** **18 11 07.4 0.0**
SNY Shenyang 20.08 321⇓ P **P** **18 04 24.0 -0.6**
SNY sP **sP** **18 06 36.3 +3.8**
SNY S **S** **18 07 42.0 +2.2**
SNY ScS **ScS** **18 14 49.8 -1.0**
SNY pmax pmax
comp=Z,140nm,0.6s
SNY pmax pmax
comp=Z,1μm,6.1s
CN2 Changchun 20.53 328⇓ P **P** **18 04 28.5 -0.2**
CN2 *eSP* **sP** 18 06 37.5 0.0
CN2 *eS* **S** **18 07 46.6 -0.5**
CN2 pmax pmax
comp=Z,20nm,1.0s
CN2 pmax pmax
comp=Z,400nm,5.0s
TIA Tai'an 21.63 301⇓ P **P** **18 04 38.9 +0.1**
TIA S **S** **18 08 13.8 +9.0**
TIA pmax pmax
comp=Z,210nm,0.7s
TIA pmax pmax
comp=Z,1μm,3.5s
HABR Khabarovsk 21.76 351*ce* P **P** **18 04 39.4 -0.3**
HABR *e**SP **sP** **18 06 52.0 +1.1**
HABR *eS* **S** **18 08 06.9 +0.5**
HABR *e* 18 08 19.4
HABR *e* 18 14 54.9
HABR pmax pmax
comp=N,39nm,1.1s
HABR pmax pmax
comp=Z,92nm,1.1s
HABR pmax pmax
comp=E,4.0nm,0.6s
HABR MLR MLR
comp=Z,106nm,15.0s
TGY Tagaytay City 22.13 238 P **P** **18 04 44.5 +0.9**
comp=Z,265nm,0.4s,baz=288,slow=9.9,SNR=4.4
WHN Wuhan 22.91 285⇓ *iP* **P** **18 04 51.0 +0.7**
WHN sP **sP** **18 07 03.0 -0.6**
WHN S **S** **18 08 23.5 -1.6**
WHN pmax pmax
comp=Z,170nm,0.8s
WHN pmax pmax
comp=Z,860nm,8.4s
KLR Kul'dur 23.09 346 P **P** **18 04 52.9 +1.2**
comp=Z,48nm,0.7s,baz=153,slow=7.7,SNR=127
KLR ScP **ScP** **18 11 15.5 +0.2**
comp=Z,30nm,1.0s,baz=184,slow=1.5,SNR=33
BJT Baijiatuan 23.76 309 *eP* **P** **18 04 56.9 -0.9**
BJT pmax pmax
comp=Z,5.0nm,0.7s
BJT Baijiatuan 23.76 309 *eP* **P** **18 04 56.9 -0.9**
comp=Z,53nm,0.7s
BJT *eScP* **ScP** **18 11 16.8 -0.5**
BJI Beijing 23.77 309 P **P** **18 04 57.1 -0.7**
BJI sP **sP** **18 07 13.0 +0.2**
BJI S **S** **18 08 35.5 -2.8**
BJI ScS **ScS** **18 15 03.8 -1.0**
BJI pmax pmax
comp=Z,75nm,1.3s
BJI pmax pmax
comp=Z,270nm,3.1s
TYV Tymovskoe 23.85 4 *eP* **P** **18 05 00.5 +2.1**
TYV pmax pmax
comp=Z,18nm,0.8s
TIY Taiyuan 25.66 301 *eP* **P** **18 05 15.3 +0.5**
TIY sP **sP** **18 07 32.5 -0.5**
TIY S **S** **18 09 12.1 +3.7**
TIY pmax pmax
comp=Z,39nm,0.5s
TIY pmax pmax
comp=Z,420nm,6.1s
NKL Nikolayevsk 26.07 1 *eP* **P** **18 05 15.0 -3.0**
NKL *eS* **S** **18 09 15.0 +0.9**
NKL pmax pmax
comp=Z,300nm,3.0s
NKL pmax pmax
comp=Z,52nm,0.8s
NKL smax smax
comp=Z,700nm,8.0s
NKL MLR MLR
comp=Z,400nm,12.0s
SKR Severo-Kuril's 26.53 23⇓ *eP* **P** **18 05 23.8 +1.6**
ENH Enshi 27.11 284 *eP* **P** **18 05 27.2 -0.5**
comp=Z,136nm,0.5s
ENH *eS* **S** **18 09 27.8 -3.3**
ENH *eScP* **ScP** **18 11 26.8 -0.6**
HIA Hailar 27.23 330 *eP* **P** **18 05 28.7 +0.2**
HIA pmax pmax
comp=Z,71nm,0.7s
HIA Hailar 27.23 330 *eP* **P** **18 05 28.7 +0.2**
comp=Z,70nm,0.7s
HIA *eScP* **ScP** **18 11 27.1 -0.2**
HHC Hu-ho-hao-te 27.31 308 *eP* **P** **18 05 29.5 +0.1**
HHC sP sP 18 07 43.8 -4.5
HHC S **S** **18 09 35.6 +1.3**
HHC PcS **PcS** **18 12 08.8 -7.0**
HHC ScS **ScS** **18 15 18.9 -1.5**
HHC pmax pmax
comp=Z,90nm,0.7s
HHC pmax pmax
comp=Z,140nm,6.5s
XAN Xi'an 27.76 292 P **P** **18 05 33.3 0.0**
XAN sP sP 18 07 49.0 -3.3
XAN S **S** **18 09 39.3 -2.0**
XAN PcS **PcS** **18 12 12.6 -4.7**
XAN pmax pmax
comp=Z,60nm,0.5s
XAN pmax pmax
comp=Z,230nm,3.8s
BTO Baotou 28.33 306 *eP* **P** **18 05 38.1 -0.2**
QIZ Qiongzhong 29.01 260 P **P** **18 05 44.4 0.0**
QIZ sP **sP** **18 08 02.8 -0.8**
QIZ S **S** **18 10 01.3 +0.3**
QIZ pmax pmax
comp=Z,40nm,1.2s
PEA0 Petropavlovsk- 29.10 22 *eP* **P** **18 05 45.8 +1.1**
PEA0 *eScP* **ScP** **18 11 31.2 -1.8**
PEA0B Petropavlovsk- 29.10 22 *eP* **P** **18 05 46.1 +1.4**
comp=Z,16nm,1.1s
PEA0B *eScP* **ScP** **18 11 31.8 -1.3**
PETK Petropavlovsk- 29.10 22 P **P** **18 05 46.1 +1.3**
comp=Z,4.3nm,0.6s,baz=192,slow=4.4,SNR=22
PETK ScP **ScP** **18 11 31.9 -1.2**
comp=Z,8.8nm,0.8s,baz=177,slow=3.3,SNR=16
PEA1 Petropavlovsk- 29.11 22 *eP* **P** **18 05 46.1 +1.3**
PEA1 *eScP* **ScP** **18 11 31.9 -1.2**
PET Petropavlovsk 29.36 23⇑ *iP* **P** **18 05 48.2 +1.2**
PET *e**SP **sP** **18 08 07.4 +0.9**
PET *eS* **S** **18 10 03.5 -2.0**
PET pmax pmax
comp=Z,100nm,8.4s
PET pmax pmax
comp=Z,47nm,0.9s
PET pmax pmax
comp=Z,100nm,8.2s
PET Petropavlovsk 29.36 23 *eP* **P** **18 05 48.1 +1.2**
comp=Z,31nm,0.8s
PET *eScP* **ScP** **18 11 32.6 -1.3**
KDM Kudat 29.91 232⇓ P **P** **18 05 53.3 +1.1**
GYA Guiyang 29.91 277 P **P** **18 05 52.0 -0.3**
GYA pP pP 18 07 16.8 +1.2
GYA sP sP 18 08 12.4 +0.6
GYA PcP **PcP** **18 08 41.0 +0.6**
GYA S **S** **18 10 15.6 +0.5**
GYA ScP **ScP** **18 11 37.3 +0.9**
GYA SS SS 18 12 46.5 -25
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.4s
MYLDM Lahad Datu 30.03 227 *eP* **P** **18 05 55.2 +1.9**
comp=Z,14nm,0.9s
MYLDM *epP* **pP** **18 07 17.2 +0.6**
SDKM Sandakan 30.56 230⇓ P **P** **18 05 58.9 +0.9**
KKM Kota Kinabalu 30.95 232 *eP* **P** **18 06 02.5 +1.1**
KKM *epP* **pP** **18 07 25.4 +0.2**
KKM *eP* **P** **18 07 35.5 -0.5**
TSM Tawau 31.10 227⇑ P **P** **18 06 03.1 +0.5**
CLNS Chul'man 31.71 344 *eP* **P** **18 06 08.5 +1.2**
CLNS *e* 18 08 48.9
CLNS *eS* **S** **18 10 42.1 +0.2**
CLNS *eSS* **SS** **18 13 28.4 -14**
CLNS pmax pmax
comp=Z,73nm,0.9s
CLNS pmax pmax
comp=N,40nm,1.0s
CLNS pmax pmax
comp=E,18nm,1.1s
CLNS smax smax
comp=E,14nm,1.2s
CLNS smax smax
comp=N,20nm,1.4s
MRSI Marisa 31.73 217 P **P** **18 06 09.0 +1.1**
comp=N,54nm,0.6s,comp=N,4μm
CIT Chita 31.98 328 *eP* **P** **18 06 10.6 +0.9**
CIT *e* 18 07 37.4
CIT pmax pmax
comp=Z,108nm,1.2s
CD2 Chengdu 32.03 286⇓ *iP* **P** **18 06 10.5 +0.1**
CD2 pP pP 18 07 34.8 +0.2
CD2 sP sP 18 08 31.3 +0.8
CD2 S **S** **18 10 47.4 0.0**
CD2 sS sS 18 13 24.4 +1.2
CD2 pmax pmax
comp=Z,300nm,0.4s
CD2 pmax pmax
comp=Z,220nm,3.3s
LZH Lanzhou 32.11 295 *eP* **P** **18 06 11.8 +0.6**
LZH pP pP 18 07 37.3 +1.9
LZH PP **PP** **18 07 41.3 -5.7**
LZH sP sP 18 08 29.8 -1.6
LZH PcP **PcP** **18 08 48.1 +1.8**
LZH *eS* **S** **18 10 47.0 -1.8**
LZH sS sS 18 13 23.8 -0.9
LZH SS SS 18 13 33.6 -17
LZH pmax pmax
comp=Z,95nm,1.0s
LZH pmax pmax
comp=Z,310nm,6.0s
LUWI Luwuk 32.59 214 *eP* **P** **18 06 14.3 -1.1**
comp=Z,64nm,1.1s
MA2 Magadan 33.32 10 P **P** **18 06 21.9 +1.0**
comp=Z,12nm,0.6s,baz=180,slow=7.5,SNR=14
SONA0 Songino Array 33.53 317 *eP* **P** **18 06 23.6 +0.5**
comp=Z,38nm,0.7s
SONA0 *e*ScP **ScP** **18 11 48.9 +0.5**
SONM Songino Array 33.53 317 P **P** **18 06 23.6 +0.5**
comp=Z,28nm,0.5s,baz=125,slow=8.0,SNR=226
SONM ScP **ScP** **18 11 48.9 +0.5**
comp=Z,8.8nm,0.7s,baz=142,slow=3.4,SNR=19
SONA1 Songino Array 33.54 317 *eP* **P** **18 06 23.4 +0.2**
SONA1 *e*ScP **ScP** **18 11 48.0 -0.4**
KMI Kunming 33.63 275 P **P** **18 06 24.6 +0.3**
KMI pP pP 18 07 51.3 +2.2
KMI PP **PP** **18 07 57.9 -4.7**
KMI sP sP 18 08 46.3 +1.4
KMI S **S** **18 11 11.0 -1.3**
KMI sS sS 18 13 47.6 -1.3
KMI SS **SS** **18 13 58.8 -11**
KMI pmax pmax
comp=Z,88nm,0.8s
KMI pmax pmax
comp=Z,330nm,3.9s
PCI Palu 34.02 218 P **P** **18 06 27.3 -0.2**
comp=Z,66nm,1.2s,comp=Z,674nm
PCI Palu 34.02 218 P **P** **18 06 27.8 +0.3**
PCI pmax pmax
comp=Z,66nm,1.2s
BTM Bintulu 35.16 232⇑ P **P** **18 06 37.5 +0.5**
YAK Yakutsk 35.67 352 P **P** **18 06 40.7 +0.1**
comp=Z,84nm,0.7s,baz=165,slow=1.8,SNR=62
YAK S **S** **18 11 40.2 -1.5**
comp=Z,5.1nm,0.3s,baz=246,slow=22,SNR=12
YAK Yakutsk 35.67 352 *i* P **P** **18 06 40.4 -0.2**
YAK pmax pmax
comp=Z,112nm,0.8s
YAK Yakutsk 35.67 352 *eP* **P** **18 06 40.2 -0.4**
comp=Z,119nm,0.9s
YAK *eS* **S** **18 11 40.2 -1.5**
GTA Gaotai 35.68 301⇓ P **P** **18 06 41.3 0.0**
GTA pP pP 18 08 06.6 -0.4
GTA S **S** **18 11 44.3 +1.5**
GTA ScP **ScP** **18 11 57.3 +0.9**
GTA sS sS 18 14 16.8 -3.8
GTA SS **SS** **18 14 40.0 -6.2**
GTA ScS **ScS** **18 16 00.8 -2.2**
GTA pmax pmax
comp=Z,80nm,0.9s
GTA pmax pmax
comp=Z,420nm,6.7s
BOD Bodaibo 35.87 336*c* *iP* **P** **18 06 42.6 +0.3**
BOD pmax pmax
comp=Z,99nm,1.3s
SMY Shemya 35.97 35 *eP* **P** **18 06 44.3 +1.1**
SMY pmax pmax
comp=Z,59nm,0.7s
SMY Shemya 35.97 35 *eP* **P** **18 06 44.3 +1.1**
comp=Z,59nm,0.7s
SBUM Sibu 36.29 232 *eP* **P** **18 06 46.7 +0.2**
comp=Z,37nm,1.3s
ZAK Zakamensk 36.49 320 *eP* **P** **18 06 47.7 -0.1**
ZAK *e* 18 11 58.7
ZAK pmax pmax
comp=Z,83nm,1.2s
ZAK pmax pmax
comp=Z,14nm,1.9s
SPSI Sidrap Palu 36.62 216 P **P** **18 06 48.7 -0.4**
SEY Seymchan 36.77 9 P **P** **18 06 51.0 +1.3**
comp=Z,22nm,0.6s,baz=190,slow=7.8,SNR=79
SEY ScP **ScP** **18 11 59.1 -0.6**
comp=Z,4.8nm,0.8s,baz=180,slow=1.0,SNR=5.5
IRK Irkutsk 36.80 323 *eP* **P** **18 06 50.2 0.0**
IRK pmax pmax
comp=Z,160nm,1.8s
TLY Talaya 36.87 322 P **P** **18 06 52.1 +1.3**
comp=Z,25nm,0.4s,baz=157,slow=8.9,SNR=22
TLY ScP **ScP** **18 12 00.9 +0.5**
comp=Z,8.2nm,0.8s,baz=156,slow=2.6,SNR=6.8
TLY Talaya 36.87 322*d* *iP* **P** **18 06 51.5 +0.7**
TLY pmax pmax
comp=Z,97nm,1.5s
TLY Talaya 36.87 322 *eP* **P** **18 06 51.5 +0.7**
comp=Z,41nm,0.5s
TLY *eS* **S** **18 12 00.2 +0.1**
MIDW Midway 37.46 78 *eP* **P** **18 06 56.8 +0.9**
comp=Z,191nm,0.7s
KAPI Kappang 37.52 215 *eP* **P** **18 06 56.4 -0.2**
comp=Z,22nm,1.1s
KSM Kuching 38.33 233 *eP* **P** **18 07 03.4 +0.1**
comp=Z,12nm,0.6s
MOY Mondy 38.34 321 *eP* **P** **18 07 03.5 +0.5**
MOY pmax pmax
comp=Z,123nm,2.2s
STKI Sintang 38.51 231 P **P** **18 07 05.2 +0.5**
comp=Z,61nm,0.9s
CHTO Chiang Mai 38.74 267 *eP* **P** **18 07 06.6 0.0**
CHTO *e* 18 09 07.2
CHTO pmax pmax
comp=Z,46nm,0.8s
CHTO Chiang Mai 38.74 267 P **P** **18 07 07.0 +0.4**
SNR=11
CHTO Chiang Mai 38.74 267 *eP* **P** **18 07 06.6 0.0**
comp=Z,46nm,0.8s
CHTO *e*PcP **PcP** **18 09 07.2 +0.9**
CHTO *e*ScP **ScP** **18 12 08.5 +0.4**
CM01 Chiang Mai Arr 38.86 266 *eP* **P** **18 07 07.7 +0.1**
CM01 *e*PcP **PcP** **18 09 07.3 +0.7**
CM01 *e*ScP **ScP** **18 12 08.6 0.0**
CM31 Chiang Mai Arr 38.86 266 *eP* **P** **18 07 08.2 +0.7**
CM31 *e*PcP **PcP** **18 09 08.2 +1.6**
CM31 *e*ScP **ScP** **18 12 09.6 +1.0**
CMAR Chiang Mai Arr 38.86 266 P **P** **18 07 08.2 +0.6**
comp=Z,21nm,0.6s,baz=72,slow=5.6,SNR=119
CMAR PcP **PcP** **18 09 08.2 +1.6**
comp=Z,5.8nm,0.9s,baz=113,slow=0.6,SNR=8.6
CMAR ScP **ScP** **18 12 09.6 +1.0**
comp=Z,5.9nm,1.1s,baz=72,slow=2.1,SNR=12
MMRI Maumere 39.53 209 *eP* **P** **18 07 12.8 -0.1**
comp=Z,36nm,0.8s
SOEI Soe 39.73 205 P **P** **18 07 15.0 +0.4**
SOEI Soe 39.73 205 *eP* **P** **18 07 14.5 -0.2**
comp=Z,82nm,1.1s
TARA Tarawa 40.47 124 *eP* **P** **18 07 18.3 -2.2**
comp=Z,261nm,1.4s
MTN Manton Dam 40.63 194 *eP* **P** **18 07 21.4 -0.3**
comp=Z,20nm,0.9s
GSTR Great Sitkin T 41.10 40 *eP* **P** **18 07 26.2 +1.1**
KTGM Kuala Trenggan 41.39 245⇓ P **P** **18 07 28.4 +0.5**
MYKOM Kota Tinggi 42.95 240 *eP* **P** **18 07 40.4 +0.1**
comp=Z,46nm,0.9s
LSA Lhasa 42.99 285 *eP* **P** **18 07 42.4 +1.4**
LSA pmax pmax
comp=Z,41nm,0.6s
LSA Lhasa 42.99 285 *eP* **P** **18 07 42.4 +1.4**
comp=Z,41nm,0.6s
SHL Shillong 43.13 279 *i* P **P** **18 07 44.0 +2.2**
SHL *eS* **S** **18 13 32.0 -0.6**
KGM Kluang 43.23 241⇑ P **P** **18 07 42.9 +0.5**

JAGI Jajag, Banyuwa 43.42 219 P P 18 07 43.7 -0.2
JAGI Jajag, Banyuwa 43.42 219 eP P 18 07 43.0 -0.8
comp=Z,45nm,0.9s
KULM Kulim 43.44 247 eP P 18 07 44.6 +0.6
comp=Z,60nm,0.8s
IPM Ipoh 43.59 246 ⇓P P 18 07 45.5 +0.2
IPM Ipoh 43.59 246 eP P 18 07 44.8 -0.5
comp=Z,52nm,0.8s
BILL Bilibino 43.90 14 *d* iP **P 18 07 48.0 +1.1**
BILL *i* 18 09 23.8
BILL *i* S **S 18 13 40.2 -1.8**
BILL pmax pmax
comp=Z,36nm,0.8s
BILL Bilibino 43.90 14 *eP* **P 18 07 47.7 +0.8**
comp=Z,42nm,0.7s
PWJI Pagerwojo 44.43 222 P P 18 07 51.2 -0.5
KRAR Krasnoyarsk 44.46 324 *d* iP **P 18 07 51.6 +0.2**
TIXI Tiksi 45.08 355 P P 18 07 56.4 +0.5
comp=Z,21nm,0.7s,baz=145,slow=7.2,SNR=23
TIXI Tiksi 45.08 355 *d* iP **P 18 07 56.2 +0.2**
TIXI pmax pmax
comp=Z,36nm,1.0s
TIXI Tiksi 45.08 355 *eP* **P 18 07 56.1 +0.2**
comp=Z,26nm,0.8s
WMQ Urumqi 45.17 306 P P 18 07 58.1 +0.9
WMQ PcP **pP 18 09 28.6 +0.6**
WMQ PP **PP 18 09 52.4 +1.5**
WMQ ScP **ScP 18 12 35.3 +1.6**
WMQ S **S 18 13 58.8 -2.0**
WMQ sS sS 18 16 42.1 -3.2
WMQ pmax pmax
comp=Z,250nm,2.5s
NIKH Nikolski High 45.56 41 eP P 18 08 00.2 +0.2
comp=Z,76nm,0.7s
SPIA Saint Paul Isl 46.01 35 eP P 18 08 04.7 +1.5
comp=Z,288nm,1.6s
BKNI Bangkinang 46.06 241 eP P 18 08 04.7 +0.4
comp=Z,44nm,0.7s
PSI Prapat 46.27 246 P P 18 08 06.5 +0.4
comp=Z,67nm,0.8s,baz=30,slow=4.6,SNR=45
PSI PcP **PcP 18 09 32.2 +0.3**
comp=Z,11nm,0.6s,baz=276,slow=2.0,SNR=4.7
PSI Prapat 46.27 246 eP P 18 08 06.2 +0.1
PSI *e* 18 09 32.5
PSI pmax pmax
comp=Z,71nm,0.8s
PSI Prapat 46.27 246 eP P 18 08 06.2 +0.1
comp=Z,70nm,0.8s
PSI *e*PcP **PcP 18 09 32.5 +0.6**
LHMI Lhok Sumawe 46.55 250 eP P 18 08 09.6 +1.6
comp=Z,198nm,1.2s
MNSI Mandailing Nat 46.92 243 P P 18 08 09.0 -1.9
WRAB Tennant Creek 47.05 188 *i* P **P 18 08 11.5 -0.2**
WRAB pmax pmax
comp=Z,39nm,1.3s
WRAB Tennant Creek 47.05 188 eP P 18 08 11.3 -0.4
WRAB *e*pP **pP 18 09 42.6 -1.0**
FITZ Fitzroy Crossi 47.06 199 eP P 18 08 12.3 +0.5
comp=Z,18nm,1.1s
WB2 Warramunga Arr 47.06 188 eP P 18 08 11.5 -0.3
WB2 *e*pP **pP 18 09 43.6 -0.1**
WR1 Warramunga Arr 47.06 188 eP P 18 08 11.6 -0.2
WR1 *e*pP **pP 18 09 44.5 +0.9**
WR1 *e*ScP **ScP 18 12 41.0 -0.7**
WR1 *e*S **S 18 14 23.9 -3.7**
WRA Warramunga Arr 47.06 188 P P 18 08 11.6 -0.2
comp=Z,4.0nm,0.4s,baz=5.2,slow=7.6,SNR=108
WRA pP **pP 18 09 44.5 +0.8**
comp=Z,5.9nm,0.7s,baz=3.4,slow=8.4,SNR=3.4
WRA ScP **ScP 18 12 41.0 -0.7**
comp=Z,14nm,1.0s,baz=5.0,slow=4.6,SNR=12
WRA S **S 18 14 23.9 -3.7**
comp=Z,2.2nm,0.8s,baz=6.3,slow=14,SNR=5.6
UNV Unalaska Valle 47.13 40 eP P 18 08 12.4 +0.5
comp=Z,45nm,1.2s
TPTI 47.43 248 P P 18 08 16.2 +1.5
KSI Kapahiang 47.44 236 P P 18 08 13.9 -0.9
RAMN Ramite 47.45 283 eP P 18 08 16.0 +1.0
comp=Z,277nm,0.7s
AKUT Akutan 47.62 40 eP P 18 08 16.3 +0.8
comp=Z,91nm,0.8s
GUN Gumba 47.86 284 eP P 18 08 19.4 +1.1
comp=Z,312nm,0.5s
GSI Gunungsitoli 48.23 245 eP P 18 08 20.8 0.0
comp=Z,151nm,1.1s
GSI *e*pP **pP 18 09 52.1 -1.1**
PKIN Phulchoki 48.35 284 eP P 18 08 22.2 +0.3
comp=Z,98nm,0.6s
ZAA0 Zalesovo Array 48.37 319 eP P 18 08 20.9 -0.3
ZAA0 *e*PcP **PcP 18 09 38.1 -0.6**
ZALV Zalesovo Beam 48.37 319 P P 18 08 21.0 -0.1
comp=Z,39nm,0.4s,baz=104,slow=7.1,SNR=218
ZALV PcP **PcP 18 09 38.5 -0.2**
comp=Z,20nm,0.5s,baz=113,slow=3.4,SNR=10
ZALV ScP **ScP 18 12 46.0 -0.8**
comp=Z,6.5nm,0.7s,baz=118,slow=4.2,SNR=6.1
ZALV S **S 18 14 44.0 -0.9**
comp=Z,1.5nm,0.8s,baz=126,slow=14,SNR=4.6
ZAA1 Zalesovo Array 48.37 319 eP P 18 08 21.0 -0.2
ZAA1 *e*PcP **PcP 18 09 38.5 -0.2**
ZAA1 *e*ScP **ScP 18 12 46.0 -0.8**
ZAA1 *e*S **S 18 14 44.0 -0.9**
KKN Kakani 48.41 284 eP P 18 08 22.9 +0.7
DMN Daman 48.60 284 eP P 18 08 24.4 +0.7
comp=Z,147nm,0.6s
GKN Gorkha 48.92 285 eP P 18 08 26.7 +0.8
comp=Z,331nm,1.0s
MK01 Makanchi Array 49.13 310 eP P 18 08 27.3 +0.3
MK01 *e*PcP **PcP 18 09 41.9 +0.1**
MK31 Makanchi Array 49.14 310 eP P 18 08 27.6 +0.5
MK31 pmax pmax
comp=Z,18nm,0.5s
MK31 Makanchi Array 49.14 310 eP P 18 08 27.4 +0.3
MK31 *e*PcP **PcP 18 09 41.5 -0.2**
MK32 Makanchi Array 49.14 310 eP P 18 08 27.6 +0.4
MK32 *e*PcP **PcP 18 09 42.0 +0.2**
MK32 *e*ScP **ScP 18 12 50.1 -0.3**
MKAR Makanchi Array 49.14 310 P P 18 08 27.6 +0.4
comp=Z,27nm,0.4s,baz=88,slow=10,SNR=502
MKAR PcP **PcP 18 09 42.0 +0.2**
comp=Z,12nm,0.7s,baz=84,slow=5.4,SNR=6.9
MKAR ScP **ScP 18 12 50.1 -0.3**
comp=Z,5.7nm,0.5s,baz=80,slow=4.9,SNR=21
MKAR Makanchi Array 49.14 310 eP P 18 08 27.4 +0.3
comp=Z,405nm,0.4s
MKAR *e*PcP **PcP 18 09 41.9 +0.2**
MKAR ScP **ScP 18 12 50.1 -0.3**
MAKZ Makanchi 49.36 310 P P 18 08 29.0 +0.3
MAKZ pmax pmax
comp=Z,76nm,0.9s
MAKZ Makanchi 49.36 310 eP P 18 08 29.0 +0.3
comp=Z,138nm,1.3s
MAKZ *e*PcP **PcP 18 09 42.8 +0.3**
NVS Novosibirsk 49.44 320 ⇑ iP **P 18 08 29.8 +0.7**
NVS *i* 18 09 43.3
NVS *e* 18 10 32.3
NVS *i* S **S 18 14 55.3 -4.3**
NVS pmax pmax
comp=N,39nm,1.6s
NVS pmax pmax
comp=E,110nm,1.6s
NVS pmax pmax
comp=Z,138nm,1.6s
NVS smax smax
comp=N,46nm,2.8s
NVS smax smax
comp=E,59nm,2.6s
KOLN Koldanda 49.86 285 eP P 18 08 33.8 +0.8
PYUN Piuthan 50.31 285 eP P 18 08 37.4 +1.1
comp=E,298nm,0.4s
AS01 Alice Springs 50.78 187 eP P 18 08 39.2 -0.2
AS01 *e*PcP **PcP 18 09 48.9 +0.8**
AS01 *e*pP **pP 18 10 12.3 -0.9**
AS31 Alice Springs 50.79 187 eP P 18 08 39.3 -0.2
comp=E,1.6nm,0.6s
AS31 *e*ScP **ScP 18 12 57.0 -0.7**
AS31 *e*S **S 18 15 19.2 +0.6**
ASAR Alice Springs 50.79 187 P P 18 08 39.2 -0.3
comp=E,1.8nm,0.4s,baz=0.9,slow=5.0,SNR=76
ASAR PcP **PcP 18 09 48.1 +0.1**
comp=E,2.3nm,0.9s,baz=354,slow=3.4,SNR=4.6
ASAR pP **pP 18 10 15.5 +2.2**
comp=E,1.4nm,0.6s,baz=7.7,slow=10,SNR=3.3
ASAR ScP **ScP 18 12 57.0 -0.7**
comp=E,2.7nm,0.7s,baz=7.0,slow=4.4,SNR=7.7
ASAR S **S 18 15 19.2 +0.5**
comp=E,0.6nm,0.8s,baz=15,slow=20,SNR=4.1
SDPT Sand Point 50.85 39 eP P 18 08 39.4 -0.1
comp=E,121nm,0.6s
PDGK Podgornoye 51.13 305 P P 18 08 41.8 +0.1
PDGK pmax pmax
comp=Z,109nm,0.8s
KURK Kurchatov 51.76 315 P P 18 08 47.0 +0.8
KURK 18 09 51.3
KURK pmax pmax
comp=Z,81nm,0.5s
KURK pmax pmax
comp=Z,10.0nm,0.6s
KURK Kurchatov 51.76 315 *eP* **P 18 08 46.3 +0.2**
KURK *e*PcP **PcP 18 09 51.3 -0.1**
KURK *e*S **S 18 15 30.8 -0.2**
KURBB Kurchatov Arra 51.81 314 P P 18 08 47.0 +0.4
comp=Z,80nm,0.5s,baz=91,slow=7.9,SNR=660
KURBB PcP **PcP 18 09 51.3 -0.3**
comp=Z,10nm,0.6s,baz=96,slow=3.6,SNR=5.8
MBWA Marble Bar 51.87 205 *eP* **P 18 08 47.2 -0.2**
comp=Z,30nm,1.4s
MBWA *e*pP **pP 18 10 22.1 +0.5**
NRIK Noril'sk 52.05 339 P P 18 08 48.6 +0.7
comp=Z,90nm,0.6s,baz=115,slow=8.3,SNR=72
NRIK ScP **ScP 18 13 01.9 -0.4**
comp=Z,14nm,0.8s,baz=117,slow=4.5,SNR=6.7
NRIK S **S 18 15 33.8 -0.7**
comp=Z,9.3nm,0.9s,baz=222,slow=23,SNR=20
KSH Kashi 54.09 301 ⇓ iP **P 18 09 07.4 +4.2**
KSH *e*PcP **PcP 18 10 03.5 +2.8**
KSH *e*pP pP 18 10 41.0 +2.5
KSH *e*sP sP 18 11 33.8 +2.4
KSH PcS **PcS 18 14 02.5 +1.5**
KSH S **S 18 16 08.1 +5.4**
KSH ScS **ScS 18 18 04.1 +2.2**
KSH SS **SS 18 20 00.8 +7.9**
KSH pmax pmax
comp=Z,120nm,0.9s
SVW2 Sparrevohn 54.27 33 *eP* **P 18 09 05.5 +1.5**
comp=Z,26nm,0.9s
TT01 Tatalina 54.36 30 *eP* **P 18 09 05.8 +1.2**
TTA Tatalina 54.37 30 *eP* **P 18 09 05.9 +1.1**
TTA pmax pmax
comp=Z,19nm,1.0s
TTA Tatalina 54.37 30 *eP* **P 18 09 05.8 +1.1**
comp=Z,19nm,1.0s
TTA *e*pP **pP 18 10 37.4 -2.7**
KEKH Kekaha 54.46 81 eP P 18 09 06.3 +0.4
comp=Z,167nm,1.1s
SDNR Sundarnagar 54.67 291 *ex* **P 18 09 07.0 -0.4**
FRU Bishkek 54.72 305 ⇓ iP **P 18 09 08.0 +0.5**
FRU pmax pmax
comp=Z,230nm,2.1s
AAK Ala-Archa 54.83 305 P P 18 09 09.6 +1.1
comp=Z,26nm,0.4s,baz=94,slow=5.8,SNR=43
AAK Ala-Archa 54.83 305 *i* P **P 18 09 09.0 +0.5**
AAK pmax pmax
comp=Z,87nm,0.6s
AAK Ala-Archa 54.83 305 P P 18 09 09.3 +0.8
SNR=20
AAK Ala-Archa 54.83 305 eP P 18 09 09.3 +0.8
comp=Z,44nm,0.6s
AAK *e*PcP **PcP 18 10 04.0 +0.4**
OHAK Old Harbor 55.04 37 eP P 18 09 09.8 +0.4
comp=Z,130nm,1.8s
DZM Mont Dzumac 55.04 150 P P 18 09 11.5 +1.5
comp=Z,9.2nm,0.8s,baz=338,slow=8.9,SNR=4.2
DZM Mont Dzumac 55.04 150 eP P 18 09 11.1 +1.0
comp=Z,30nm,1.3s
NDI New Delhi 55.12 287 *ex* P 18 09 03.5 -7.0
KDAK Kodiak Island 55.45 37 eP P 18 09 12.9 +0.6
KDAK pmax pmax
comp=Z,58nm,1.1s
KDAK Kodiak Island 55.45 37 eP P 18 09 12.8 +0.6
comp=Z,58nm,1.1s
RSO Redoubt South 55.57 34 eP P 18 09 14.3 +0.9
OTUK Ortayu 55.87 312 P P 18 09 15.6 +0.1
OTUK pmax pmax
comp=Z,97nm,0.8s
SPU Mount Spurr 55.98 33 eP P 18 09 17.2 +1.2
OPA Opana 56.05 81 eP P 18 09 18.5 +1.4
OPA pmax pmax
comp=Z,76nm,0.9s
OPA Opana 56.05 81 eP P 18 09 18.5 +1.4
comp=Z,76nm,0.9s
HOM Homer 56.06 35 eP P 18 09 17.6 +1.1
comp=Z,362nm,1.2s
PPLA Purkeypile 56.10 31 eP P 18 09 18.4 +1.5
comp=Z,18nm,0.7s
PPLA *e*pP **pP 18 10 51.2 -1.9**
CAST Castle Rocks 56.20 30 eP P 18 09 18.8 +1.3
comp=Z,28nm,0.8s
CNPM China Poot 56.26 35 eP P 18 09 18.2 +0.3
comp=Z,23nm,0.6s
MNAS Manas 56.31 305 P P 18 09 19.3 +0.5
MNAS pmax pmax
comp=Z,33nm,0.9s
BRLK Bradley Lake 56.45 35 eP P 18 09 19.6 +0.3
comp=Z,29nm,0.8s
VOSK Vostochnaya 56.53 317 eP P 18 09 19.9 0.0
VOSK *e* 18 10 09.4
VOSK *e*S **S 18 16 35.8 +1.9**
VOSK pmax pmax
comp=Z,110nm,1.2s
VOSK Vostochnaya 56.53 317 eP P 18 09 19.9 0.0
comp=Z,110nm,1.2s
VOSK *e*PcP **PcP 18 10 09.4 -0.4**
VOSK *e*S **S 18 16 35.8 +1.9**
SUA Susitna One 56.63 32 eP P 18 09 21.2 +0.6
comp=Z,20nm,0.5s
SUA *e*S **S 18 16 36.9 +1.7**
KTH Kantishna Hill 56.74 30 eP P 18 09 22.4 +1.2
comp=Z,12nm,0.6s
BPAW Bear Paw Mtn. 56.77 29 eP P 18 09 22.5 +1.1
comp=Z,19nm,0.9s
BRVK Borovoye 56.94 317 *d* iP **P 18 09 23.1 +0.4**
BRVK pmax pmax
comp=Z,214nm,0.6s
BRVK Borovoye 56.94 317 eP P 18 09 22.3 -0.4
comp=Z,159nm,1.1s
BRVK *e*S **S 18 16 40.5 +1.3**
MLY Manley 56.98 28 eP P 18 09 24.1 +1.3
comp=Z,20nm,0.8s
RC01 Rabbit Creek A 57.10 33 eP P 18 09 23.6 -0.1
comp=Z,33nm,0.6s
PMR Palmer 57.41 32 eP P 18 09 26.0 +0.2
PMR pmax pmax
comp=Z,42nm,1.0s
PMR Palmer 57.41 32 eP P 18 09 26.0 +0.2
comp=Z,42nm,1.0s
BWN Browne 57.44 29 eP P 18 09 27.6 +1.7
comp=Z,67nm,0.7s
COLD Coldfoot 57.47 26 eP P 18 09 27.7 +1.6
comp=Z,22nm,0.8s
RND Reindeer 57.65 30 eP P 18 09 27.8 +0.3
RND pmax pmax
comp=Z,39nm,0.6s
RND Reindeer 57.65 30 eP P 18 09 27.8 +0.3
comp=Z,39nm,0.6s
KK31 Karatay Array 57.68 306 *i* P **P 18 09 28.6 +0.6**
KK31 pmax pmax
comp=Z,42nm,0.4s
KKAR Karatay Array 57.68 306 eP P 18 09 28.8 +0.8
KKAR Karatay Array 57.68 306 eP P 18 09 28.8 +0.8
comp=Z,2μm,0.4s
ZRNK Zerenda 57.72 317 eP P 18 09 28.1 0.0
ZRNK *e* 18 10 14.6
ZRNK pmax pmax
comp=Z,100nm,1.1s
ZRNK Zerenda 57.72 317 eP P 18 09 28.1 0.0
comp=Z,100nm,1.1s
ZRNK *e*PcP **PcP 18 10 14.6 +0.1**
SML Sawmill 57.80 32 eP P 18 09 29.1 +0.5
SML pmax pmax
comp=Z,55nm,0.8s
SML Sawmill 57.80 32 eP P 18 09 29.1 +0.5
comp=Z,55nm,0.8s
MDM Murphy Dome 58.03 28 eP P 18 09 31.2 +1.1
comp=Z,74nm,1.7s
WRH Wood River Hil 58.06 29 eP P 18 09 30.4 +0.2
comp=Z,16nm,1.4s
COLA College 58.19 29 *i* P **P 18 09 32.3 +1.3**
COLA pmax pmax
comp=Z,11nm,0.8s
CCB Clear Creek Bu 58.19 29 eP P 18 09 31.5 +0.4
comp=Z,14nm,1.0s
SCM Sheep Creek Mo 58.28 32 eP P 18 09 32.9 +1.0
SCM pmax pmax
comp=Z,51nm,0.8s
SCM Sheep Creek Mo 58.28 32 eP P 18 09 32.9 +1.0
comp=Z,51nm,0.8s
DHY Denali Highway 58.30 31 eP P 18 09 32.5 +0.4
comp=Z,12nm,0.7s
DHY *e*S **S 18 16 58.6 +2.0**
GLI Glacier Island 58.38 33 eP P 18 09 32.8 +0.4
comp=Z,54nm,0.7s
GLI *e*pP **pP 18 11 08.5 -1.2**
GLI *e*S **S 18 16 59.9 +2.6**
HDA Harding Lake 58.55 29 eP P 18 09 33.2 -0.3
comp=Z,57nm,1.4s
IL1 Eielson Array 58.59 29 eP P 18 09 33.4 -0.4
ILAR Eielson Array 58.59 29 P P 18 09 33.7 -0.1
comp=Z,14nm,0.9s,baz=259,slow=5.6,SNR=92
ILAR S **S 18 16 58.5 -1.4**
comp=Z,1.9nm,1.1s,baz=255,slow=11,SNR=9.1
ILB Eielson Array 58.59 29 eP P 18 09 33.5 -0.3
ILB *e*S **S 18 16 58.5 -1.4**
STKA Stephens Creek 58.62 179 P P 18 09 34.0 -0.4
comp=Z,3.0nm,0.7s,baz=346,slow=8.7,SNR=5.5
STKA pP **pP 18 11 11.5 -0.4**
comp=Z,5.7nm,0.7s,baz=354,slow=7.1,SNR=5.2
STKA Stephens Creek 58.62 179 eP P 18 09 34.3 -0.1
STKA *e*pP **pP 18 11 11.4 -0.4**
FID Port Fidalgo 58.68 33 eP P 18 09 35.2 +0.8
comp=Z,30nm,0.8s
POHA Pohakuloa 58.88 82 eP P 18 09 38.2 +1.5
comp=Z,124nm,0.8s
KLU Klutina 58.95 33 eP P 18 09 37.3 +0.9
comp=Z,40nm,0.7s
KLU *e*S **S 18 17 07.9 +3.2**
DIV Divide 59.02 33 eP P 18 09 37.8 +0.9
comp=Z,23nm,0.9s
EYAK Cordova Ski Ar 59.04 34 eP P 18 09 37.1 +0.2
comp=Z,20nm,0.7s
PAX Paxson 59.17 31 eP P 18 09 38.6 +0.8
PAX pmax pmax
comp=Z,46nm,1.4s
PAX Paxson 59.17 31 eP P 18 09 38.6 +0.8
comp=Z,46nm,1.4s
FYU Fort Yukon 59.36 27 eP P 18 09 39.9 +1.0
comp=Z,32nm,1.0s
RAGM Ragged Mountai 59.57 34 eP P 18 09 41.9 +1.3
comp=Z,120nm,1.9s
BMRM Bremner River 59.59 33 eP P 18 09 41.6 +0.9
comp=Z,67nm,0.7s
PALK Pallekele 59.61 262 eP P 18 09 41.7 +0.2
PALK pmax pmax
comp=Z,41nm,0.8s
PALK Pallekele 59.61 262 eP P 18 09 41.7 +0.2
comp=Z,41nm,0.8s
DOT Dot Lake 59.80 30 eP P 18 09 42.5 +0.5
comp=Z,91nm,0.9s
MENT Mentasta 59.97 31 eP P 18 09 44.2 +1.1
comp=Z,20nm,0.6s
MENT *e*S **S 18 17 21.0 +3.7**
CRQM Cirque 60.32 33 eP P 18 09 46.9 +1.2
comp=Z,40nm,0.9s
KBL Kabul 60.46 296 eP P 18 09 47.0 -0.1
KBL pmax pmax
comp=Z,140nm,0.9s
KBL Kabul 60.46 296 eP P 18 09 47.0 -0.1
comp=Z,140nm,0.9s
BALM Baldy 60.69 33 eP P 18 09 48.5 +0.5
BALM pmax pmax
comp=Z,21nm,0.8s
BALM Baldy 60.69 33 eP P 18 09 48.5 +0.5
comp=Z,21nm,0.8s
EGAK Eagle 61.05 29 eP P 18 09 50.7 +0.5
comp=Z,8.9nm,0.8s
PCA Pinnacle 61.79 34 eP P 18 09 56.3 +1.0
comp=Z,47nm,0.8s
DAWY Dawson 61.85 29 eP P 18 09 56.5 +1.0
comp=Z,24nm,1.4s
SVE Sverdlovsk 62.18 322 *c* iP **P 18 09 58.4 +0.7**
SVE pmax pmax
comp=Z,63nm,0.8s
DHAK Deception Hill 62.94 35 eP P 18 10 03.9 +1.2
comp=Z,77nm,0.8s
ARU Arti 63.37 322 *d* iP **P 18 10 05.4 -0.1**
ARU 18 10 36.9
ARU *PP **pP 18 11 44.8 0.0**
ARU S **S 18 17 59.2 -0.3**
ARU 18 19 04.1
ARU pmax pmax
comp=Z,101nm,0.7s
ARU Arti 63.37 322 eP P 18 10 05.7 +0.3
comp=Z,102nm,0.6s
INK Inuvik 63.80 24 P P 18 10 08.6 +0.7
comp=Z,8.6nm,0.6s,baz=290,slow=6.0,SNR=13
INK Inuvik 63.80 24 eP P 18 10 08.2 +0.2
comp=Z,8.4nm,0.6s
SOKR Solikamsk 63.80 326 *d* iP **P 18 10 06.2 -1.9**
SOKR pmax pmax
comp=Z,73nm,1.0s
AB31 Akbulak array 63.86 314 *i* P **P 18 10 08.9 +0.2**
AB31 pmax pmax
comp=Z,75nm,0.6s
ABKAR Akbulak array 63.86 314 eP P 18 10 08.9 +0.2
comp=Z,1μm,0.6s
SKAG Skagway 64.35 34 eP P 18 10 10.0 -1.6
comp=Z,16nm,1.0s
CRAG Craig 66.33 38 eP P 18 10 25.6 +1.4
comp=Z,18nm,0.7s
DLBC Dease Lake 67.25 35 eP P 18 10 30.5 +0.5
comp=Z,20nm,1.1s
DIB Dawson Inlet, 67.26 41 eP P 18 10 31.0 +1.0
comp=Z,27nm,0.7s
GEYT Alibeck 68.04 302 P P 18 10 36.0 +0.8
comp=Z,30nm,0.8s,baz=29,slow=3.4,SNR=62
SPA0 Spitsbergen Ar 70.11 350 ⇓ iP **P 18 10 47.7 +0.8**
SPA0 IAmb IAmb 18 10 55.9
comp=Z,37nm,1.0s
KBS Kingsbay 70.30 351 eP P 18 10 49.3 +1.3
KBS IAmb IAmb 18 10 50.3
comp=Z,34nm,0.8s
HSPB Hornsund (broa 70.98 349 ⇓ iP **P 18 10 53.2 +1.2**
HSPB IAmb IAmb 18 10 53.9
comp=Z,75nm,0.8s
KLMR Klimovskoe 71.73 330 eP P 18 10 54.1 -2.6
KLMR *e*PP **pP 18 12 34.5 -4.7**
KLMR *e* 18 13 40.6
KLMR pmax pmax
comp=Z,61nm,0.9s
RES Resolute Bay 72.51 13 eP P 18 11 01.7 +0.8
RES *e*PP **pP 18 12 43.9 +0.1**
RES pmax pmax
comp=Z,54nm,2.0s
RES Resolute Bay 72.51 13 eP P 18 11 01.7 +0.8
comp=Z,54nm,2.0s
RES *e*pP **pP 18 12 43.9 +0.1**
HAMF Hammerfest 72.92 342 eP P 18 11 03.9 +0.5
HAMF IAmb IAmb 18 11 05.1
comp=Z,95nm,1.1s
ARA0 ARCESS Array S 73.00 340 eP P 18 11 04.7 +0.8
ARCES ARCESS Array B 73.00 340 P P 18 11 04.6 +0.7
comp=Z,50nm,0.8s,baz=72,slow=8.1,SNR=105
ARE0 ARCESS Array S 73.00 340 eP P 18 11 04.9 +1.0
ARE0 IAmb IAmb 18 11 05.5
comp=Z,73nm,1.0s
ARE0 ARCESS Array S 73.00 340 eP P 18 11 04.9 +1.0
comp=Z,67nm,0.9s
BIDO Bidbid 73.00 288 P P 18 11 04.4 -0.4
SNR=5.7
YKA Yellowknife Ar 73.01 28 P P 18 11 04.4 +0.4
comp=Z,11nm,0.6s,baz=298,slow=6.0,SNR=15
YKB5 Yellowknife Ar 73.01 28 eP P 18 11 04.1 0.0
BANOM Banah 73.62 291 *i* P **P 18 11 09.2 +0.9**
SNR=14
HOQ Hoqain 73.67 288 P P 18 11 09.0 +0.4
SNR=12
UOSS Minazif 74.08 290 eP P 18 11 11.3 +0.4
comp=Z,60nm,1.1s
UOSS *e*pP **pP 18 12 54.0 -0.4**
PGC Sidney 74.14 43 eP P 18 11 12.2 +1.5
comp=Z,22nm,0.8s
PGC *e*pP **pP 18 12 48.9 -5.3**
HEF Hetta 74.17 340 eP P 18 11 11.3 +0.7
HATD Hatta, Dubai 74.18 290 *i* P **P 18 11 12.1 +0.5**
SNR=23
ASHO Ashiyiah 74.30 290 *i* P **P 18 11 12.7 +0.5**
SNR=15

ASHO **Ashiyiah** 74.30 290 P P 18 11 12.6 +0.3
SNR=9.0
LLLB **Lillooet** 74.31 41 eP P 18 11 13.5 +1.7
comp=Z,16nm,0.9s
NLWA **Neilton Lookou** 74.37 45 eP P 18 11 14.5 +2.3
comp=Z,23nm,0.8s
VRH **Novokhopyorsk** 74.40 320 eP P 18 11 12.7 +0.5
VRH pmax pmax
comp=Z,170nm,0.6s
ARQ **Araqi** 74.43 288 P P 18 11 13.6 +0.6
SNR=11
NAZ **Nazwa, Dubai** 74.52 290 *i* P P 18 11 13.8 +0.4
SNR=7.1
A04D **Lummi Island** 74.56 43 P P 18 11 15.3 +2.1
baz=293
FAQ **Al Faqa, Dubai** 74.67 290 *i* P P 18 11 14.6 +0.3
SNR=9.6
KIF **Kilpisjarvi** 74.68 341 ⇓*i* P P 18 11 13.9 +0.5
MOS **Moscow** 74.74 325 eP P 18 11 13.9 -0.1
MOS pmax pmax
comp=Z,154nm,1.1s
TRO **Tromso** 74.83 342 ⇓*i* P P 18 11 14.9 +0.6
TRO lAmb lAmb 18 11 15.5
comp=Z,34nm,0.8s
E03A **Lebam** 74.89 45 eP P 18 11 17.2 +2.1
comp=Z,52nm,1.1s
B05A **Bryant** 75.12 43 P P 18 11 18.2 +1.9
baz=294
F04D **Rainier, OR** 75.43 46 P P 18 11 20.2 +2.1
baz=294
OBN **Obninsk** 75.55 325 P P 18 11 18.9 +0.3
comp=Z,43nm,0.7s,baz=19,slow=3.2,SNR=25
OBN **Obninsk** 75.55 325*d* P P 18 11 18.7 +0.2
OBN *i* 18 11 29.0
OBN *i* *PP pP 18 13 07.3 +4.8
OBN pmax pmax
comp=Z,75nm,1.0s
OBN **Obninsk** 75.55 325 eP P 18 11 18.8 +0.2
comp=Z,75nm,0.9s
DAG **Danmarks Havn** 75.60 355 ⇓*i* P P 18 11 18.4 -0.1
comp=Z,10.0nm,0.9s
DAG **Danmarks Havn** 75.60 355 ⇓*i* P P 18 11 18.4 -0.1
DAG pmax pmax
comp=Z,8.0nm,0.9s
G03D **McMinnville, O** 75.62 46 P P 18 11 21.3 +2.1
baz=294
VSR **Storozhevoye** 75.86 320 eP P 18 11 20.9 +0.5
VSR pmax pmax
comp=Z,160nm,1.0s
LON **Longmire** 75.92 45 eP P 18 11 21.7 +0.8
LON pmax pmax
comp=Z,8.0nm,1.0s
LON **Longmire** 75.92 45 eP P 18 11 21.7 +0.8
comp=Z,8.2nm,1.0s
C06D **Leavenworth** 76.00 43 P P 18 11 22.8 +1.5
baz=295
GOF **Gofitskoye** 76.09 314 ⇓*i* P P 18 11 22.5 +0.7
GOF pmax pmax
comp=Z,100nm,1.4s
I03D **Drain, OR** 76.18 48 P P 18 11 24.5 +2.2
baz=294
GUDG **Gudauri** 76.21 311 P P 18 11 24.3 +1.5
TBLG **Delisi** 76.33 310 P P 18 11 23.6 +0.4
ZEI **Tsey** 76.46 311 eP P 18 11 22.3 -1.9
ZEI pmax pmax
comp=Z,101nm,0.6s
L02D **Cave Junction,** 76.64 49 P P 18 11 26.8 +1.8
baz=294,SNR=16
KBZ **Khabaz** 76.74 312 P P 18 11 26.2 +0.9
comp=Z,79nm,0.7s,baz=86,slow=3.7,SNR=149
B08A **Colville Reser** 76.75 42 eP P 18 11 26.4 +1.0
comp=Z,26nm,0.8s
I04A **Tendick Farm,** 76.76 48 P P 18 11 27.2 +1.6
baz=295
KVAR **Kislovodsk Arr** 76.78 313 P P 18 11 26.7 +0.9
comp=Z,41nm,0.9s,baz=238,slow=2.8,SNR=38
KIV **Kislovodsk** 76.78 313 *i* P P 18 11 26.6 +0.8
SNR=18
KIV **Kislovodsk** 76.78 313*d* *i* P P 18 11 26.0 +0.2
KIV pmax pmax
comp=Z,123nm,1.6s
KIV **Kislovodsk** 76.78 313 P P 18 11 26.7 +0.9
SNR=24
KIV **Kislovodsk** 76.78 313 eP P 18 11 26.4 +0.6
comp=Z,213nm,1.7s
ONI **Oni** 76.84 311 P P 18 11 27.3 +1.1
ONI **Oni** 76.84 311 P P 18 11 27.2 +1.1
G05D **Wamic, OR** 76.86 46 P P 18 11 27.7 +1.6
baz=295
HUMO **Hull Mountain** 76.89 49 eP P 18 11 27.7 +1.4
comp=Z,12nm,1.1s
JCC **Jacoby Creek,** 76.90 51 eP P 18 11 28.3 +2.0
comp=Z,69nm,1.4s
STEI **Steigen** 76.95 341 eP P 18 11 26.5 +0.5
STEI lAmb lAmb 18 11 27.2
comp=Z,127nm,1.4s
GNI **Garni** 76.97 308 P P 18 11 28.2 +1.3
comp=Z,22nm,1.0s,baz=269,slow=6.3,SNR=6.1
GNI **Garni** 76.97 308*d* *i* P P 18 11 28.0 +1.0
GNI pmax pmax
comp=Z,236nm,1.5s
KHMM **Horse Mountain** 77.08 51 eP P 18 11 29.7 +2.1
comp=Z,40nm,1.1s
FIA0 **FINESS Array S** 77.20 333 eP P 18 11 27.6 0.0
FIA0 **FINESS Array S** 77.20 333 eP P 18 11 27.6 0.0
FINES **FINESS Array B** 77.20 333 P P 18 11 27.6 0.0
comp=Z,95nm,0.5s,baz=64,slow=5.1,SNR=852
I05D **Terrebonne, OR** 77.23 47 P P 18 11 29.7 +1.5
baz=295
LOF **Lofoten** 77.29 342 eP P 18 11 27.7 -0.3
LOF lAmb lAmb 18 11 29.7
comp=Z,278nm,2.3s
BGD **Bogdanovka** 77.30 310 P P 18 11 30.3 +1.5
G06A **Carlson Farm,** 77.30 46 eP P 18 11 30.2 +1.7
comp=Z,15nm,0.9s
AKH **Akhalkalaki** 77.31 310 ⇑*i* P P 18 11 29.5 +0.7
AKH **Akhalkalaki** 77.31 310 P P 18 11 29.6 +0.7
AKH **Akhalkalaki** 77.31 310 P P 18 11 29.5 +0.7
KMRM **Mail Ridge** 77.37 51 eP P 18 11 31.0 +2.0
comp=Z,22nm,0.9s
YBH **Yreka Blue Hor** 77.42 50 eP P 18 11 30.9 +1.5
YBH pmax pmax
comp=Z,35nm,0.8s
YBH **Yreka Blue Hor** 77.42 50 eP P 18 11 30.9 +1.5
comp=Z,35nm,0.8s
M02C **Callahan** 77.47 50 P P 18 11 31.5 +1.9
baz=295,SNR=24
D08A **Wollman Farm,** 77.58 43 eP P 18 11 30.9 +1.0
comp=Z,23nm,0.9s
C09A **Chrisman Ranch** 77.64 43 eP P 18 11 31.5 +1.2
comp=Z,18nm,0.6s
K04D **Chiloquin, OR** 77.69 48 P P 18 11 32.5 +1.7
baz=295
CHVG **Ch'k'valeri** 77.71 312 P P 18 11 31.9 +1.1
N02D **Trinity Center** 77.75 50 P P 18 11 32.7 +1.6
baz=295,SNR=13
J05D **Fort Rock, OR** 77.75 48 P P 18 11 33.1 +2.0
baz=296
EDM **Edmonton** 77.89 36 eP P 18 11 32.3 +0.7
EDM pmax pmax
comp=Z,24nm,1.0s
EDM **Edmonton** 77.89 36 eP P 18 11 32.2 +0.7
comp=Z,24nm,1.0s
KULLO **Kullorsuaq** 77.98 5 *i* P P 18 11 31.9 +0.3
comp=Z,33nm,1.0s
KULLO **Kullorsuaq** 77.98 5 *i* P P 18 11 31.9 +0.3
KULLO pmax pmax
comp=Z,33nm,1.0s
M04C **Macdoel** 77.99 49 P P 18 11 34.1 +1.6
baz=296,SNR=19
WDC **Whiskeytown Da** 78.03 51 eP P 18 11 33.6 +1.1
WDC pmax pmax
comp=Z,19nm,1.1s
WDC **Whiskeytown Da** 78.03 51 eP P 18 11 33.6 +1.1
comp=Z,19nm,1.1s
NEW **Newport** 78.12 42 P P 18 11 34.1 +1.2
baz=297
NEW **Newport** 78.12 42 eP P 18 11 34.3 +1.4
NEW pmax pmax
comp=Z,23nm,0.9s
NEW **Newport** 78.12 42 eP P 18 11 34.3 +1.4
comp=Z,23nm,0.9s
K05A **Summer Lake** 78.22 48 eP P 18 11 35.2 +1.4
comp=Z,34nm,0.8s
E09A **Wood Farm, Sta** 78.30 44 eP P 18 11 35.2 +1.4
comp=Z,20nm,0.8s
G08A **Pilot Rock** 78.34 45 eP P 18 11 35.7 +1.4
comp=Z,20nm,1.2s
ARTV **Artvin** 78.47 310 *i* P P 18 11 35.9 +0.8
DAGI **Agillar** 78.53 310 *i* P P 18 11 35.8 +0.4
VSU **Vasula** 78.57 331*d* *i* P P 18 11 35.2 +0.2
VSU pmax pmax
comp=Z,242nm,1.1s
DBOC **Borcka** 78.58 311 *i* P P 18 11 36.4 +0.8
TUTA **Tutak** 78.63 308 *i* P P 18 11 36.4 +0.3
O03D **Paynes Creek** 78.66 51 P P 18 11 36.6 +0.5
baz=296,SNR=15
STOK **Stokkvaagen** 78.68 341 ⇓*i* P P 18 11 35.5 0.0
STOK lAmb lAmb 18 11 35.8
comp=Z,32nm,0.7s
HAKT **HAKKARI** 78.79 306 *i* P P 18 11 37.5 +0.5
SOC **Sochi** 78.88 313 eP P 18 11 36.8 -0.2
SOC *e*PP pP 18 13 24.6 +2.6
SOC *e*PPP PPP 18 16 35.6
SOC *e*S S 18 20 56.9 +1.7
SOC *e*SS SS 18 26 11.3 -1.3
SOC pmax pmax
comp=Z,37nm,0.5s
MOD **Modoc Plateau** 78.97 49 eP P 18 11 38.7 +0.9
comp=Z,21nm,0.9s
F10A **Beach Ranch, E** 79.11 44 eP P 18 11 39.4 +1.1
comp=Z,7.8nm,0.8s
ORV **Oroville** 79.19 51 eP P 18 11 39.3 +0.5
ORV pmax pmax
comp=Z,19nm,0.9s
ORV **Oroville** 79.19 51 eP P 18 11 39.3 +0.5
comp=Z,19nm,0.9s
BMO **Blue Mountains** 79.58 45 eP P 18 11 42.1 +1.2
comp=Z,24nm,1.0s
WALA **Werton Lakes** 79.62 40 eP P 18 11 42.5 +1.5
comp=Z,14nm,0.8s
BSMT **Bassoo Peak** 79.69 41 eP P 18 11 42.7 +1.1
ANN **Anapa** 79.79 315 eP P 18 11 40.8 -1.0
ANN *e*PP pP 18 13 25.6 -1.5
ANN *e*S S 18 21 02.8 -1.6
ANN pmax pmax
comp=Z,145nm,1.4s
AFDM **Forest Hills D** 79.83 52 eP P 18 11 42.9 +0.7
comp=Z,8.4nm,1.0s
WVOR **Wild Horse Val** 79.84 48 eP P 18 11 43.0 +0.7
WVOR pmax pmax
comp=Z,10.0nm,0.9s
WVOR **Wild Horse Val** 79.84 48 eP P 18 11 43.0 +0.7
comp=Z,10nm,0.9s
JTMT **Jette** 80.04 41 eP P 18 11 44.4 +1.1
YBMT **Yellow Bay** 80.14 41 eP P 18 11 45.0 +1.2
IZAR **Zarasai** 80.31 328 eP P 18 11 45.0 +0.7
IZAR lAmb lAmb 18 11 45.6
comp=Z,35nm,0.9s
IDID **Didziasalis** 80.32 328 lAmb lAmb 18 11 46.6
comp=Z,24nm,0.7s
SWMT **Swartz Lake** 80.33 41 eP P 18 11 46.0 +1.2
ISAL **Salakas** 80.46 328 eP P 18 11 45.8 +0.7
ISAL lAmb lAmb 18 11 46.5
comp=Z,23nm,0.8s
SAO **San Andreas Ge** 80.46 54 eP P 18 11 46.7 +1.1
SAO pmax pmax
comp=Z,15nm,1.1s
SAO **San Andreas Ge** 80.46 54 eP P 18 11 46.6 +1.1
comp=Z,15nm,1.1s
NACGM **Naroch** 80.53 328 *e* P 18 11 44.0 -1.5
PAHR **Pah Rah Range** 80.58 50 eP P 18 11 47.4 +1.1
comp=Z,20nm,0.9s
SUMG **Summit** 80.63 360 ⇓*i* P P 18 11 47.4 +1.2
comp=Z,11nm,0.8s
SUMG **Summit** 80.63 360 ⇓*i* P P 18 11 47.4 +1.2
SUMG pmax pmax
comp=Z,11nm,0.8s
SUMG **Summit** 80.63 360 eP P 18 11 46.6 +0.4
comp=Z,11nm,0.6s
CMB **Columbia Colle** 80.65 52 eP P 18 11 47.1 +0.6
CMB *e*PP pP 18 13 32.8 +0.7
CMB pmax pmax
comp=Z,19nm,0.9s
CMB **Columbia Colle** 80.65 52 eP P 18 11 47.1 +0.6
comp=Z,19nm,0.9s
CMB epP pP 18 13 32.8 +0.7
MSO **Missoula** 80.70 42 P P 18 11 47.2 +0.5
baz=300
MSO **Missoula** 80.70 42 eP P 18 11 47.6 +0.9
comp=Z,5.5nm,0.8s
PNTR **Pine Nut** 80.72 51 eP P 18 11 48.9 +1.8
comp=Z,25nm,0.8s
KELT **Kelkit** 80.75 310 *i* P P 18 11 48.3 +1.1
SLMT **Seeley Lake** 80.76 41 eP P 18 11 47.7 +0.6
MARD **Mardin** 80.99 307 *i* P P 18 11 49.4 +1.0
YERR **Yerington** 81.01 51 eP P 18 11 49.5 +0.9
comp=Z,19nm,0.8s
CHMT **Chamberlain Mo** 81.06 42 eP P 18 11 49.1 +0.4
WAKR **Walker** 81.10 51 eP P 18 11 50.0 +0.9
comp=Z,14nm,0.7s
PMPB **Monarch Peak** 81.17 54 eP P 18 11 50.6 +1.3
comp=Z,17nm,0.9s
PMPB epP pP 18 13 32.9 -2.2
MFID **Camas Ranch** 81.20 46 eP P 18 11 50.5 +1.1
comp=Z,20nm,0.8s
CCRB **Cholame Creek** 81.47 54 eP P 18 11 49.1 -1.6
TVH1 **TV Hill, Hawth** 81.59 51 eP P 18 11 52.7 +0.9
comp=Z,14nm,0.7s
TVH3 **East Aurora ar** 81.60 51 eP P 18 11 52.8 +1.1
comp=Z,16nm,0.8s
AKASG **Malin Array Be** 81.60 323 P P 18 11 50.8 -0.3
comp=Z,52nm,0.6s,baz=52,slow=5.3,SNR=267
AKBB **Malin Array Si** 81.60 323 eP P 18 11 50.9 -0.2
AKBB pmax pmax
comp=Z,87nm,0.7s
AKBB **Malin Array Si** 81.60 323 eP P 18 11 50.9 -0.2
comp=Z,87nm,0.7s
KIEV **Kiev** 81.61 323*d* *i* P P 18 11 50.6 -0.6
KIEV pmax pmax
comp=Z,83nm,0.7s
KIEV **Kiev** 81.61 323 eP P 18 11 50.9 -0.3
comp=Z,86nm,0.7s
AK11 **Malin Array Si** 81.64 323 eP P 18 11 50.7 -0.6
KEMA **Kemaiye** 81.68 310 *i* P P 18 11 53.0 +1.1
BMN **Battle Mountai** 81.71 49 eP P 18 11 53.4 +1.3
BMN pmax pmax
comp=Z,10.0nm,0.9s
BMN **Battle Mountai** 81.71 49 eP P 18 11 53.4 +1.3
comp=Z,9.9nm,0.9s
MZRK **Al-Mazaregh** 81.76 306 eP P 18 11 54.2 +1.9
SIM **Simferopol'** 81.78 316 eP P 18 11 52.8 +0.6
SIM *e*S S 18 21 23.0 -1.8
SIM pmax pmax
comp=Z,285nm,0.9s
PAGB **Antelope Grade** 81.79 54 eP P 18 11 53.8 +1.3
comp=Z,24nm,0.9s
SFNV **Sufian** 81.88 307 eP P 18 11 53.6 +0.6
SCO **Scoresbysund** 81.91 354 ⇓*i* P P 18 11 52.9 +0.6
comp=Z,24nm,1.1s
SCO **Scoresbysund** 81.91 354 ⇓*i* P P 18 11 52.9 +0.6
SCO pmax pmax
comp=Z,24nm,1.1s
MLAC **Mammoth, Mammo** 81.92 52 P P 18 11 54.9 +1.6
baz=298
HRY **Holter Researc** 82.01 41 eP P 18 11 54.6 +1.2
HLID **Hailey** 82.02 45 P P 18 11 55.4 +1.7
baz=300
HLID **Hailey** 82.02 45 eP P 18 11 55.3 +1.6
comp=Z,10nm,0.8s
LRM **Limekiln Ridge** 82.09 42 eP P 18 11 55.5 +1.4
SMMC **Simmler** 82.17 54 P P 18 11 55.8 +1.4
baz=298
ERBA **Erbaa** 82.18 312 *i* P P 18 11 54.9 +0.5
DLMT **Dillon** 82.24 43 eP P 18 11 55.7 +1.0
comp=Z,24nm,1.2s
RCTC **Rector, Farmer** 82.25 53 P P 18 11 55.6 +0.9
baz=298
SCER **sogukcermik** 82.33 311 *i* P P 18 11 56.4 +1.1
CUKAN **kangal_SIVAS** 82.36 310 *i* P P 18 11 56.2 +0.8
MCMT **McKenzie Canyo** 82.36 43 eP P 18 11 56.0 +0.6
PKM **Mcpherson Peak** 82.50 55 P P 18 11 57.9 +1.6
baz=298
EGMT **Eagleton** 82.52 40 P P 18 11 57.0 +1.0
baz=302
EGMT **Eagleton** 82.52 40 epP pP 18 13 45.0 +2.9
VES **Vestal, Richgr** 82.58 54 P P 18 11 56.8 +0.3
baz=298,SNR=5.5
TIN **Tinemaha, Big** 82.62 52 P P 18 11 58.3 +1.6
baz=298
BOZ **Bozeman (W)** 82.68 42 P P 18 11 58.3 +1.3
baz=301
BOZ **Bozeman (W)** 82.68 42 eP P 18 11 58.3 +1.3
BOZ pmax pmax
comp=Z,7.0nm,0.8s
BOZ **Bozeman (W)** 82.68 42 eP P 18 11 58.2 +1.3
comp=Z,7.3nm,0.8s
FFC **Flin Flon** 82.70 31 eP P 18 11 57.2 +0.6
FFC pmax pmax
comp=Z,10.0nm,0.9s
FFC **Flin Flon** 82.70 31 eP P 18 11 57.2 +0.6
comp=Z,9.7nm,0.9s
HFS **Hagfors** 82.76 336 P P 18 11 56.1 -0.7
comp=Z,32nm,0.6s,baz=146,slow=2.5,SNR=180
SUW **Suwalki** 82.76 328 eP P 18 11 56.4 -0.5
SUW **Suwalki** 82.76 328 ⇓eP P 18 11 56.4 -0.5
NC405 **NORSAR Array S** 82.76 337 eP P 18 11 56.3 -0.6
SBC **Santa Barbara** 82.78 55 P P 18 11 58.8 +1.4
baz=298
NC303 **NORSAR Array S** 82.80 338 eP P 18 11 56.8 -0.3
KSRV **Kasrt alli** 82.93 307 eP P 18 11 58.6 +0.4
NB201 **NORSAR Array S** 82.95 338 eP P 18 11 57.4 -0.4
DOMB **Dombas** 82.96 339 ⇓*i* P P 18 11 57.7 -0.1
DOMB lAmb lAmb 18 11 58.4
comp=Z,43nm,0.9s
NC204 **NORSAR Array S** 82.97 338 eP P 18 11 57.6 -0.3
NB2 **NORSAR Subarra** 82.99 338 P P 18 11 57.3 -0.7
comp=Z,44nm,0.7s,baz=46,slow=4.8
NB2 **NORSAR Subarra** 82.99 338 P P 18 11 57.3 -0.7
baz=46,slow=4.8
NB2 **NORSAR Subarra** 82.99 338 P P 18 11 57.2 -0.7
NB2 pmax pmax
comp=Z,38nm,0.7s
NB200 **NORSAR Array S** 82.99 338 eP P 18 11 57.3 -0.7
NB200 ePP PP 18 15 15.7 -0.8
NOA **NORSAR Array B** 82.99 338 P P 18 11 57.3 -0.7
comp=Z,39nm,0.5s,baz=46,slow=4.9,SNR=156
NOA PP PP 18 15 15.7 -0.8
comp=Z,8.0nm,0.9s,baz=46,slow=8.3,SNR=8.6
CWC **Cottonwood Cre** 83.02 53 P P 18 11 59.6 +0.7
baz=298
BOYT **Boyabat** 83.04 313 *i* P P 18 11 59.0 +0.3
MOL **Molde** 83.04 340 ⇓*i* P P 18 11 58.1 0.0
MOL lAmb lAmb 18 11 59.0
comp=Z,89nm,1.4s
NC602 **NORSAR Array S** 83.09 337 eP P 18 11 57.6 -0.9
NC602 lAmb lAmb 18 11 57.8
comp=Z,16nm,0.8s
NC602 **NORSAR Array S** 83.09 337 eP P 18 11 57.4 -1.1
ARVC **Arvin** 83.10 54 P P 18 11 60.0 +0.9
baz=298
NBO02 **NORSAR Array S** 83.10 338 eP P 18 11 58.3 -0.3
ISA **Isabella, Lake** 83.10 54 P P 18 11 59.6 +0.4
baz=298
ISA **Isabella, Lake** 83.10 54 eP P 18 11 58.9 -0.3
ISA pmax pmax
comp=Z,11nm,0.8s
ISA **Isabella, Lake** 83.10 54 eP P 18 11 58.9 -0.3
comp=Z,10nm,0.8s
NBO00 **NORSAR Array S** 83.14 338 eP P 18 11 58.2 -0.6
QLMT **Earthquake Lak** 83.22 43 eP P 18 12 01.5 +1.7
GZT **Gaziantep** 83.23 308 *i* P P 18 12 00.1 +0.2
NAO01 **NORSAR Array S** 83.24 338 eP P 18 11 58.3 -1.0
GRAC **Grapevine Rang** 83.25 52 P P 18 12 01.1 +1.2
baz=299
BLG **Laguna Peak, P** 83.41 55 P P 18 12 01.5 +0.8
baz=298
YHB **Horse Butte** 83.41 43 eP P 18 12 02.5 +1.8
comp=Z,22nm,0.8s
YHB epP pP 18 13 46.9 -0.2
SNCC **San Nicolas Is** 83.47 56 P P 18 12 01.9 +0.9
baz=298
SORM **Soroca** 83.48 321 ⇑*i* P P 18 12 00.4 -0.3
AKN **Aaknes** 83.51 340 ⇓*i* P P 18 12 00.9 +0.3
AKN lAmb lAmb 18 12 01.6
comp=Z,53nm,1.0s
COAL **Corum-Alaca** 83.57 312 *i* P P 18 12 01.8 +0.4
MPMC **Manual Prospec** 83.62 53 P P 18 12 02.9 +1.0
baz=299,SNR=18
LRMC **Laurel Mtn Rad** 83.76 53 P P 18 12 03.5 +1.0
baz=299,SNR=8.9
GCMT **Greycliff** 83.77 41 eP P 18 12 03.5 +1.1
YFT **Old Faithful** 83.78 43 eP P 18 12 02.5 -0.1
comp=Z,17nm,0.7s
EDW2 **Edwards Air Fo** 83.82 54 P P 18 12 04.0 +1.2
baz=299,SNR=23
R11A **Troy Canyon, C** 83.83 50 P P 18 12 04.1 +1.2
baz=300
R11A **Troy Canyon, C** 83.83 50 eP P 18 12 03.7 +0.8
comp=Z,15nm,0.9s
KIS **Kishinev** 83.85 320 eP P 18 12 00.0 -2.5
KIS XM 18 12 02.5
comp=Z,100nm,2.0s
FURC **Furnace Creek,** 83.86 52 P P 18 12 04.0 +1.2
baz=299,SNR=13
DECC **Green Verdugo** 83.87 55 P P 18 12 03.9 +0.9
baz=299
OSL **Oslo** 83.95 337 eP P 18 12 02.5 -0.2
OSL lAmb lAmb 18 12 03.1
comp=Z,37nm,0.7s
HVU **Hansel Valley** 83.97 46 eP P 18 12 04.7 +1.2
HVU pmax pmax
comp=Z,10.0nm,0.7s
HVU **Hansel Valley** 83.97 46 eP P 18 12 04.7 +1.2
comp=Z,10nm,0.7s
H17A **Grant Village** 83.97 43 P P 18 12 06.2 +2.6
baz=302
H17A **Grant Village** 83.97 43 eP P 18 12 05.3 +1.7
comp=Z,24nm,1.0s
IMW **Indian Meadow** 84.02 43 eP P 18 12 05.4 +1.5
comp=Z,14nm,0.8s
TPNV **Topopah Spring** 84.06 52 P P 18 12 05.1 +1.0
baz=300,SNR=34
TPNV **Topopah Spring** 84.06 52 eP P 18 12 04.8 +0.7
TPNV *e*PP pP 18 13 49.9 -0.8
TPNV pmax pmax
comp=Z,24nm,0.8s
TPNV **Topopah Spring** 84.06 52 eP P 18 12 04.8 +0.7
comp=Z,24nm,0.8s
TPNV epP pP 18 13 49.9 -0.8
FLWY **Flagg Ranch** 84.06 43 eP P 18 12 05.6 +1.6
comp=Z,16nm,0.9s
MWC **Mount Wilson** 84.09 55 eP P 18 12 04.8 +0.5
MWC pmax pmax
comp=Z,25nm,0.8s
MWC **Mount Wilson** 84.09 55 eP P 18 12 04.8 +0.5
comp=Z,25nm,0.8s
FMP **Fort Macarthur** 84.16 55 P P 18 12 05.5 +1.1
baz=299
CIS **Catalina Islan** 84.22 56 P P 18 12 05.4 +0.7
baz=299
DRWC **Darouich** 84.22 308 eP P 18 12 05.0 +0.3
TPAW **Teton Pass** 84.22 44 eP P 18 12 05.7 +0.9
comp=Z,13nm,0.9s
BGU **Big Grassy Mou** 84.24 47 eP P 18 12 05.3 +0.4
comp=Z,4.4nm,0.8s
RLMT **Red Lodge** 84.37 42 P P 18 12 07.2 +1.7
baz=303
RLMT **Red Lodge** 84.37 42 eP P 18 12 07.4 +1.9
comp=Z,9.9nm,0.7s
GSC **Goldstone, Bar** 84.47 53 P P 18 12 07.2 +1.2
baz=299,SNR=21
GSC **Goldstone, Bar** 84.47 53 eP P 18 12 06.7 +0.7
GSC *e*PP pP 18 13 52.2 -0.6
GSC pmax pmax
comp=Z,27nm,0.8s
GSC **Goldstone, Bar** 84.47 53 eP P 18 12 06.7 +0.7
comp=Z,27nm,0.8s
GSC epP pP 18 13 52.2 -0.6
HYA **Hoyanger** 84.53 340 ⇑*i* P P 18 12 05.9 +0.3
HYA lAmb lAmb 18 12 06.3
comp=Z,66nm,1.0s
FOO **Floro** 84.55 340 eP P 18 12 05.8 +0.1
FOO lAmb lAmb 18 12 06.4
comp=Z,26nm,0.8s
KONO **Kongsberg** 84.55 337 eP P 18 12 05.3 -0.4
SHOC **Shoshone, Teco** 84.56 52 P P 18 12 07.4 +1.0
baz=300,SNR=5.5
BR101 **Keskin Array S** 84.73 312 eP P 18 12 06.8 -0.4
BR101 epP pP 18 13 56.9 +2.8
BR131 **Keskin Array S** 84.73 312 eP P 18 12 06.8 -0.4
BRTR **Keskin Array B** 84.73 312 P P 18 12 06.8 -0.4
comp=Z,12nm,0.6s,baz=87,slow=3.2,SNR=65
BRTR pP pP 18 13 56.9 +2.8
comp=Z,2.6nm,0.8s,baz=79,slow=3.1,SNR=3.7
DUG **Dugway, Tooele** 84.76 47 P P 18 12 08.4 +1.0
baz=301
DUG **Dugway, Tooele** 84.76 47 eP P 18 12 09.0 +1.6

DUG *e*PP **pP** 18 13 56.5 +2.2
DUG pmax pmax
comp=Z,10.0nm,0.8s
DUG Dugway, Tooele 84.76 47 *e*P **P** 18 12 09.0 +1.6
comp=Z,10nm,0.8s
DUG *ep*P **pP** 18 13 56.5 +2.2
HWUT Hardware Ranch 84.83 46 *e*P **P** 18 12 08.2 +0.4
comp=Z,13nm,0.9s
HWUT *ep*P **pP** 18 13 55.1 +0.5
LVV L'vov 84.84 324 *e*P **P** 18 12 06.9 -0.5
TLCR 84.85 319⇓*i*P **P** 18 12 07.8 +0.3
RABH Abou Rabah 84.90 306 *e*P **P** 18 12 05.8 -2.3
MURC Murrieta 85.02 55 P **P** 18 12 09.6 +0.9
baz=299
TUQ Turquoise Moun 85.03 53 P **P** 18 12 09.8 +1.0
baz=300,SNR=17
HEC Hector,Ludlow 85.04 53 P **P** 18 12 09.9 +1.1
baz=300,SNR=23
SHPR Sheep Range 85.04 51 *e*P **P** 18 12 10.7 +1.8
comp=Z,13nm,0.9s
SUE Sulen 85.06 340 *e*P **P** 18 12 08.4 +0.2
SUE IAmb IAmb 18 12 09.0
comp=Z,24nm,0.8s
ANTO Ankara 85.21 313 *e*P **P** 18 12 09.3 -0.2
ANTO *e**PP **pP** 18 13 57.5 +1.0
ANTO pmax pmax
comp=Z,17nm,0.6s
ANTO Ankara 85.21 313 *e*P **P** 18 12 09.3 -0.2
comp=Z,17nm,0.6s
ANTO *ep*P **pP** 18 13 57.5 +1.0
BR231 Keskin MP Arra 85.24 313 *e*P **P** 18 12 07.5 -2.2
BR231 *ep*P **pP** 18 13 56.8 +0.1
BEL Belsk 85.24 327 *e*P **P** 18 12 09.2 0.0
BEL Belsk 85.24 327 *e*P **P** 18 12 09.3 0.0
LAO LASA Array 85.26 39 P **P** 18 12 10.7 +1.1
baz=305
LAO LASA Array 85.26 39 *e*P **P** 18 12 10.9 +1.3
comp=Z,14nm,0.9s
DGMT Dagmar 85.34 37 P **P** 18 12 10.6 +0.7
baz=306
ODD1 Odda 85.35 339⇑*i*P **P** 18 12 09.8 +0.1
ODD1 IAmb IAmb 18 12 10.3
comp=Z,41nm,1.2s
TESR Tescani 85.35 321⇑*i*P **P** 18 12 10.0 0.0
ASK Askoy 85.37 339 IAmb IAmb 18 12 10.1
comp=Z,16nm,0.8s
ASK *e*P **P** 18 12 10.6 +0.9
BER Bergen 85.40 339 *e*P **P** 18 12 10.1 +0.2
BER IAmb IAmb 18 12 10.1
comp=Z,22nm,0.8s
JLU Jordanelle 85.43 46 *e*P **P** 18 12 11.4 +0.6
comp=Z,8.3nm,1.0s
JLU *ep*P **pP** 18 13 56.7 -1.1
BW06 Boulder Array 85.47 44 P **P** 18 12 11.5 +0.6
baz=303
BW06 Boulder Array 85.47 44 *e*P **P** 18 12 10.9 0.0
BW06 *ep*P **pP** 18 13 58.5 +0.5
PD31 Pinedale Array 85.47 44 *e*P **P** 18 12 11.7 +0.8
PD31 *ep*P **pP** 18 13 59.3 +1.2
PDAR Pinedale Array 85.47 44 P **P** 18 12 11.8 +0.9
comp=Z,2.5nm,0.7s,baz=270,slow=2.8,SNR=20
PDAR pP **pP** 18 14 01.0 +3.0
comp=Z,0.2nm,0.5s,baz=45,slow=46,SNR=4.1
TIRR Tirgusor 85.49 318 *e*P **P** 18 12 09.7 -0.9
TIRR pmax pmax
comp=Z,15nm,1.0s
TIRR Tirgusor 85.49 318 *e*P **P** 18 12 09.7 -0.9
comp=Z,15nm,1.0s
BUR08 Bucovina Ar. S 85.50 322 *e*P **P** 18 12 11.0 +0.2
BURAR Bucovina Array 85.51 322⇓*i*P **P** 18 12 11.1 +0.3
BURAR Bucovina Array 85.51 322 P **P** 18 12 11.1 +0.3
GMRC Granite Mounta 85.54 53 P **P** 18 12 12.3 +1.0
baz=300,SNR=14
PFO Pinyon Flats O 85.55 55 P **P** 18 12 12.8 +1.4
comp=Z,27nm,0.8s,baz=312,slow=4.4,SNR=32
PFO Pinyon Flats O 85.55 55 P **P** 18 12 12.1 +0.8
baz=300,SNR=17
PFO Pinyon Flats O 85.55 55 *e*P **P** 18 12 12.0 +0.7
comp=Z,29nm,0.8s
TPFO Pinon Flats 85.55 55 P **P** 18 12 12.1 +0.7
baz=300,SNR=14
MARH Ras Al Marh 85.63 306 *e*P **P** 18 12 12.2 +0.3
TLB Topalu 85.64 318⇑*i*P **P** 18 12 11.7 +0.4
KWP Kalwaria Pacla 85.64 325 *e*P **P** 18 12 11.3 0.0
KWP Kalwaria Pacla 85.64 325 *e*P **P** 18 12 11.3 0.0
BELC Belle Mtn. Jos 85.69 54 P **P** 18 12 12.7 +0.6
baz=300,SNR=14
BSD Bornholm Skovb 85.74 332 *e*P **P** 18 12 10.9 -0.7
CCUT Cedar City 85.75 50 *e*P **P** 18 12 12.4 +0.1
comp=Z,5.8nm,1.0s
CCUT *ep*P **pP** 18 13 56.2 -3.4
BLS5 Blasjo 85.78 338 *e*P **P** 18 12 11.9 +0.1
BLS5 IAmb IAmb 18 12 12.5
comp=Z,40nm,1.1s
BAR Barrett 85.85 55 *e*P **P** 18 12 13.4 +0.8
comp=Z,20nm,1.1s
BAR *ep*P **pP** 18 13 56.9 -3.0
MONP2 Monument Peak 85.93 55 P **P** 18 12 14.1 +0.8
baz=300,SNR=7.9
HOMB Homborsund 85.95 337 *e*P **P** 18 12 12.5 0.0
GKP Gorka Klasztor 85.97 330 *e*P **P** 18 12 11.8 -1.0
GKP Gorka Klasztor 85.97 330 *e*P **P** 18 12 11.8 -1.0
TOTH TOTAH 85.99 305 *e*P **P** 18 12 12.6 -0.8
B25A Knox Farm, Ray 86.01 37 P **P** 18 12 13.7 +0.6
baz=307
MSU Marysvale 86.05 49 *e*P **P** 18 12 15.1 +1.3
MSU *e**PP **pP** 18 14 00.9 -0.2
MSU Marysvale 86.05 49 *e*P **P** 18 12 15.1 +1.3
MSU *ep*P **pP** 18 14 00.9 -0.2
SALA Sala 86.09 305 *e*P **P** 18 12 13.8 -0.2
LCMT Little Creek M 86.11 50 *e*P **P** 18 12 15.4 +1.4
comp=Z,8.1nm,0.9s
LCMT *ep*P **pP** 18 14 00.5 -0.8
IRM Iron Mountain 86.22 54 P **P** 18 12 15.5 +1.0
baz=300,SNR=10.0
ASF Jabal al Asfar 86.24 304 P **P** 18 12 14.7 +0.1
comp=Z,9.5nm,0.9s,baz=16,slow=2.1,SNR=14
BC3 Big Chuckawall 86.25 54 P **P** 18 12 15.6 +1.0
baz=300,SNR=13
IKP In-Ko-Pah, Jac 86.28 55 P **P** 18 12 15.9 +1.1
baz=300,SNR=5.7
MTPU Mount Pierson 86.29 49 *e*P **P** 18 12 16.7 +1.5
comp=Z,13nm,1.5s
MTPU *ep*P **pP** 18 14 00.3 -2.2
KOLS Kolonicke sedl 86.30 324 *e*P **P** 18 12 14.3 -0.1
KOLS pmax pmax
comp=Z,10.0nm,1.0s
KOLS Kolonicke sedl 86.30 324 *e*P **P** 18 12 14.3 -0.1
BRBR Barbar 86.32 306 *e*P **P** 18 12 13.9 -1.2
MLR Muntele Rosu 86.34 320⇑*i*P **P** 18 12 14.7 -0.2
MLR Muntele Rosu 86.34 320 *e*P **P** 18 12 14.0 -0.9
MLR *e**PP **pP** 18 13 59.8 -2.5
MLR pmax pmax
comp=Z,12nm,0.9s
MLR Muntele Rosu 86.34 320 *e*P **P** 18 12 14.0 -0.9
comp=Z,12nm,0.9s
MLR *ep*P **pP** 18 13 59.8 -2.5
SNART Snartemo 86.36 337 *e*P **P** 18 12 14.2 -0.3
SNART IAmb IAmb 18 12 14.8
comp=Z,24nm,0.9s
SWSC Sam W. Stewart 86.36 55 P **P** 18 12 16.0 +0.9
baz=300
DOPR Dopca 86.38 321⇓*i*P **P** 18 12 15.5 +0.6
KNB Kanab 86.39 50 *e*P **P** 18 12 16.5 +1.1
KNB *e**PP **pP** 18 14 00.9 -1.9
KNB pmax pmax
comp=Z,15nm,0.9s
KNB Kanab 86.39 50 *e*P **P** 18 12 16.5 +1.1
comp=Z,15nm,0.9s
KNB *ep*P **pP** 18 14 00.9 -1.9
STAV Stavanger 86.41 338 IAmb IAmb 18 12 14.6
comp=Z,40nm,1.0s
STAV *e*P **P** 18 12 14.6 -0.1
UZH Uzhgorod 86.47 324 *e*P **P** 18 12 14.4 -0.8
P17A Butcher Ranch, 86.50 47 *e*P **P** 18 12 16.8 +1.0
comp=Z,10nm,1.2s
TCHB Talchebab 86.67 305 *e*P **P** 18 12 15.1 -1.4
CRVS Cervenica-Dubn 86.74 325 *e*P **P** 18 12 16.3 -0.2
CRVS Cervenica-Dubn 86.74 325 *e*P **P** 18 12 16.3 -0.2
OJC Ojcow 86.75 326 *e*P **P** 18 12 16.2 -0.3
OJC Ojcow 86.75 326 *e*P **P** 18 12 16.1 -0.5
OJC pmax pmax
comp=Z,36nm,1.1s
OJC Ojcow 86.75 326 *e*P **P** 18 12 16.1 -0.5
comp=Z,36nm,1.1s

SRU San Rafael Swe 86.83 47 *e*P **P** 18 12 16.6 -0.8
SRU *e**PP **pP** 18 14 04.0 -1.0
SRU pmax pmax
comp=Z,4.0nm,0.6s
SRU San Rafael Swe 86.83 47 *e*P **P** 18 12 16.6 -0.8
comp=Z,4.4nm,0.6s
SRU *ep*P **pP** 18 14 04.0 -1.0
PDMCI Parker Dam,Lak 86.87 53 P **P** 18 12 18.3 +0.9
baz=301
Y12C Blythe 86.88 54 P **P** 18 12 18.4 +0.9
baz=301
Y12C Blythe 86.88 54 *e*P **P** 18 12 19.0 +1.5
comp=Z,12nm,1.0s
VOIR 86.89 320⇑*i*P **P** 18 12 17.2 -0.2
VOIR 86.89 320 P **P** 18 12 17.2 -0.2
MMAI Mount Meron Ar 86.91 306 P **P** 18 12 17.7 -0.1
comp=Z,17nm,0.7s,baz=63,slow=5.7,SNR=33
GLA Glamis 87.01 54 P **P** 18 12 19.5 +1.3
baz=300,SNR=6.8
GLA Glamis 87.01 54 *e*P **P** 18 12 19.6 +1.4
GLA pmax pmax
comp=Z,15nm,0.8s
GLA Glamis 87.01 54 *e*P **P** 18 12 19.6 +1.4
comp=Z,15nm,0.8s
MUD Monsted U'grnd 87.06 335 *i*P **P** 18 12 17.3 -0.5
comp=Z,31nm,1.2s
MUD Monsted U'grnd 87.06 335 *i*P **P** 18 12 17.3 -0.5
MUD pmax pmax
comp=Z,31nm,1.2s
U15A North Rim 87.06 50 *e*P **P** 18 12 20.0 +1.3
comp=Z,3.9nm,0.8s
A28A Rude Farm, Bot 87.13 35 P **P** 18 12 19.0 +0.5
baz=309
ARR Arges 87.16 320⇑*i*P **P** 18 12 19.5 +0.8
B28A Dugan Ranch, T 87.37 35 P **P** 18 12 20.3 +0.7
baz=309
DRGR 87.37 322⇑*i*P **P** 18 12 19.8 +0.1
K22A Casper 87.39 43 P **P** 18 12 20.5 +0.5
baz=305
CSS Mathiatis 87.40 308 *e*P **P** 18 12 19.3 -0.6
comp=Z,16nm,1.5s
KECS Kecovo 87.50 325 *e*P **P** 18 12 19.7 -0.4
KECS pmax pmax
comp=Z,20nm,1.6s
KECS Kecovo 87.50 325 *e*P **P** 18 12 19.7 -0.4
LRW Lerwick 87.54 342 *e*P **P** 18 12 20.5 +0.5
LRW IAmb IAmb 18 12 20.9
comp=Z,86nm,1.4s
LANS Liptovska Anna 87.60 326 *e*P **P** 18 12 21.4 +0.8
LANS Liptovska Anna 87.60 326 *e*P **P** 18 12 21.4 +0.8
LOT Lotru 87.60 321⇑*i*P **P** 18 12 20.9 +0.1
A29A Manning Farm, 87.65 35 P **P** 18 12 22.0 +1.1
baz=310
O20A White River Ci 87.75 46 P **P** 18 12 22.4 +0.7
baz=304
O20A White River Ci 87.75 46 *e*P **P** 18 12 21.6 -0.1
comp=Z,6.2nm,0.8s
OKC Ostrava-Krasne 87.81 327⇓*i*P **P** 18 12 21.5 0.0
OKC Ostrava-Krasne 87.81 327⇓*i*P **P** 18 12 21.5 0.0
Y14A Wickenburg 87.86 53 *e*P **P** 18 12 22.8 +0.6
comp=Z,48nm,0.8s
Y14A *ep*P **pP** 18 14 09.7 -0.4
B29A Wagenman Farm, 87.88 35 P **P** 18 12 22.3 +0.4
baz=310
113A Mohawk Valley, 87.92 54 *e*P **P** 18 12 23.5 +1.1
comp=Z,7.5nm,0.8s
RSSD Black Hills 88.01 40 P **P** 18 12 23.5 +0.6
baz=307
RSSD Black Hills 88.01 40 *e*P **P** 18 12 22.8 -0.1
RSSD pmax pmax
comp=Z,6.0nm,0.8s
RSSD Black Hills 88.01 40 *e*P **P** 18 12 22.8 -0.1
comp=Z,6.0nm,0.8s
KSP Ksiaz 88.03 328 *e*P **P** 18 12 22.5 -0.1
KSP Ksiaz 88.03 328⇓*e*P **P** 18 12 22.5 -0.1
PV09 Paradox Valley 88.08 47 *e*P **P** 18 12 23.1 -0.3
PV09 *e*S **S** 18 22 26.9 +0.4
MORC Moravsky Berou 88.14 327 *e*P **P** 18 12 22.5 -0.7
MORC pmax pmax
comp=Z,60nm,0.8s
MORC Moravsky Berou 88.14 327 *e*P **P** 18 12 22.5 -0.7
comp=Z,60nm,0.8s
PSZ Piszkesteto 88.17 324⇑*i*P **P** 18 12 23.0 -0.3
PSZ Piszkesteto 88.17 324 *e*P **P** 18 12 23.5 +0.2
PSZ pmax pmax
comp=Z,43nm,1.0s
PSZ Piszkesteto 88.17 324 *e*P **P** 18 12 23.5 +0.2
comp=Z,43nm,1.0s
PSZ Piszkesteto 88.17 324⇓*e*x **P** 18 12 23.2 -0.1
WUAZ Wupatki 88.18 51 P **P** 18 12 25.3 +1.5
baz=302
KRLC Kraliky 88.31 327⇓*i*P **P** 18 12 23.7 -0.2
KRLC Kraliky 88.31 327⇓*i*P **P** 18 12 23.7 -0.2
PV05 Paradox Valley 88.33 48 *e*P **P** 18 12 25.4 +0.9
VYHS Vyhne 88.34 325 *e*P **P** 18 12 24.2 +0.1
VYHS pmax pmax
comp=Z,34nm,1.2s
VYHS Vyhne 88.34 325 *e*P **P** 18 12 24.2 +0.1
DPC Dobruska-Polom 88.35 328⇓*i*P **P** 18 12 24.0 -0.1
DPC Dobruska-Polom 88.35 328⇓*i*P **P** 18 12 24.0 -0.1
UPC Upice 88.39 328⇓*i*P **P** 18 12 24.3 +0.1
UPC Upice 88.39 328⇓*i*P **P** 18 12 24.3 +0.1
B30A Myrvik Farm, E 88.41 35 P **P** 18 12 25.5 +1.1
baz=311
PV01 Paradox Valley 88.64 47 *e*P **P** 18 12 26.9 +0.9
N23A Red Feather La 88.76 44 P **P** 18 12 28.0 +1.5
baz=306
N23A Red Feather La 88.76 44 *e*P **P** 18 12 28.2 +1.7
comp=Z,10nm,0.9s
BUD Budapest 88.90 325 P **P** 18 12 26.3 -0.3
VRAC Vranov 88.92 327⇑*i*P **P** 18 12 27.0 +0.3
EIL Elat 88.94 303 P **P** 18 12 26.5 -0.7
comp=Z,15nm,1.1s,baz=350,slow=10,SNR=5.0
214A Organ Pipe Nat 89.03 54 P **P** 18 12 29.1 +1.5
baz=302
SMOL Smolenice 89.03 326 *e*P **P** 18 12 28.1 +0.8
SMOL Smolenice 89.03 326 *e*P **P** 18 12 28.1 +0.8
PVCC Panska Ves 89.05 329⇓*i*P **P** 18 12 27.5 +0.2
PVCC Panska Ves 89.05 329⇓*i*P **P** 18 12 27.5 +0.2
BRG Berggiesshubel 89.09 329 *i*P **P** 18 12 27.2 -0.3
comp=Z,19nm,1.0s
BRG *e*PP **PP** 18 16 03.9 -1.4
comp=Z,21nm,1.6s
BRG Berggiesshubel 89.09 329 *i*P **P** 18 12 27.2 -0.3
BRG *e* 18 16 03.9
BRG pmax pmax
comp=Z,19nm,1.0s
C31A Landman Farms, 89.14 35 P **P** 18 12 28.7 +0.9
baz=311
MDVR Moldovita 89.16 321⇑*i*P **P** 18 12 27.7 -0.3
CLL Collm 89.22 330⇓*i*P **P** 18 12 27.4 -0.6
comp=Z,35nm,1.1s
CLL *e*PP **PP** 18 16 06.0 -0.2
comp=Z,13nm,1.1s
CLL *e*SKSac **SKSac** 18 22 12.0 +0.7
CLL *e*SS **SS** 18 28 37.0 -5.6
CLL *e*SSSS 18 36 18.0
CLL LmV 18 55 00.0
comp=Z,100nm,18.3s
CLL Collm 89.22 330⇓*i*P **P** 18 12 27.4 -0.6
CLL *e* 18 22 12.0
CLL pmax pmax
comp=Z,35nm,1.1s
CLL Collm 89.22 330 *e*P **P** 18 12 27.5 -0.6
comp=Z,32nm,1.1s
F29A Eureka 89.31 37 P **P** 18 12 29.6 +0.9
baz=310
B32A Ashes, Strandq 89.35 34 P **P** 18 12 29.3 +0.5
baz=312
PRU Pruhonice 89.43 328⇓*i*P **P** 18 12 28.9 -0.2
PRU *e*SKS **SKSac** 18 22 06.9 -5.8
PRU Pruhonice 89.43 328⇓*i*P **P** 18 12 28.9 -0.2
PRU *e* 18 22 06.9
ISCO Idaho Springs 89.60 45 P **P** 18 12 31.7 +1.3
baz=306
ISCO Idaho Springs 89.60 45 *e*P **P** 18 12 32.3 +1.8
ISCO pmax pmax
comp=Z,5.0nm,0.8s
ISCO Idaho Springs 89.60 45 *e*P **P** 18 12 32.2 +1.8
comp=Z,5.5nm,0.8s
D31A Mcclaflin, Tow 89.64 35 P **P** 18 12 30.8 +0.7
baz=311
VTS Vitosha 89.65 319⇑*i*P **P** 18 12 30.8 +0.3
VTS Vitosha 89.65 319 *e*P **P** 18 12 30.1 -0.4
VTS pmax pmax
comp=Z,25nm,1.0s
VTS Vitosha 89.65 319 *e*P **P** 18 12 30.1 -0.4
comp=Z,25nm,1.0s
F30A Leola 89.74 37 P **P** 18 12 31.0 +0.3
baz=310
E31A Nome 89.87 36 P **P** 18 12 32.0 +0.8
baz=311
S22A 4UR Ranch, Cre 90.00 47 P **P** 18 12 33.6 +1.3
baz=305
S22A 4UR Ranch, Cre 90.00 47 *e*P **P** 18 12 34.0 +1.6
comp=Z,7.5nm,1.1s
SOP Sopron 90.02 326 P **P** 18 12 32.4 +0.5
SOP Sopron 90.02 326⇓*e*x **P** 18 12 31.7 -0.2
CONA Conrad Observa 90.20 326 *i* PcP **P** 18 12 32.9 +0.1
comp=Z,33nm,1.1s,SNR=22
NKC Novy Kostel 90.22 329⇓*e*P **P** 18 12 32.7 -0.1
NKC Novy Kostel 90.22 329 *e*P **P** 18 12 32.7 -0.1
MOX Moxa 90.30 330 P **P** 18 12 33.1 0.0
TUC Tucson 90.30 53 P **P** 18 12 35.2 +1.5
baz=303
TUC Tucson 90.30 53 *e*P **P** 18 12 35.1 +1.5
TUC pmax pmax
comp=Z,6.0nm,0.9s
TUC Tucson 90.30 53 *e*P **P** 18 12 35.1 +1.5
comp=Z,6.3nm,0.9s
Q24A Divide 90.38 45 P **P** 18 12 35.3 +1.2
baz=306
KHC Kasperske Hory 90.48 328⇓*i*P **P** 18 12 33.7 -0.3
KHC *e*PP **PP** 18 16 16.5 +0.3
KHC *e*SKS **SKSac** 18 22 14.1 -4.7
KHC Kasperske Hory 90.48 328⇓*i*P **P** 18 12 33.7 -0.3
KHC *e* 18 16 16.5
KHC *e* 18 22 14.1
KHC Kasperske Hory 90.48 328 *e*P **P** 18 12 33.7 -0.3
comp=Z,10nm,0.8s
GEC2 GERESS Array S 90.62 328 *e*P **P** 18 12 34.1 -0.6
GEC2 *e* 18 16 15.6
GEC2 pmax pmax
comp=Z,26nm,1.0s
GEC2 GERESS Array S 90.62 328 *e*P **P** 18 12 34.1 -0.6
comp=Z,26nm,1.0s
GEC2 *e*PP **PP** 18 16 15.6 -1.8
GERES GERESS Array B 90.62 328 P **P** 18 12 34.4 -0.4
comp=Z,13nm,0.8s,baz=46,slow=4.4,SNR=98
GERES PP **PP** 18 16 19.4 +2.0
comp=Z,2.5nm,0.9s,baz=47,slow=7.8,SNR=6.8
GEA0 GERESS Array S 90.63 328 *e*P **P** 18 12 34.1 -0.6
GEA0 *e*PP **PP** 18 16 16.5 -0.9
F32A Veblen 90.72 36 P **P** 18 12 35.5 +0.4
baz=312
WET Wettzell 90.80 329 P **P** 18 12 35.6 +0.1
ARSA Arzberg 90.83 326 *i* PcP **P** 18 12 35.3 -0.4
comp=Z,22nm,1.2s,SNR=10
SDCO Great Sand Dun 90.86 46 P **P** 18 12 37.7 +1.4
baz=306
SDCO Great Sand Dun 90.86 46 *e*P **P** 18 12 37.7 +1.4
comp=Z,7.6nm,0.9s
D34A Park Rapids 90.90 34 P **P** 18 12 37.0 +1.0
baz=313
MOA Molln 91.04 327 *i* PcP **P** 18 12 36.4 -0.2
comp=Z,17nm,0.8s,SNR=8.4
C35A Jirik Farms, M 91.08 33 P **P** 18 12 37.3 +0.5
baz=314
J30A Dallas 91.09 39 P **P** 18 12 37.3 +0.3
baz=310
KPL Plockton 91.15 342 *e*P **P** 18 12 37.1 +0.2
F33A 5 Mile Ranch, 91.18 36 P **P** 18 12 37.6 +0.3
baz=312
GROS Grobnik 91.38 325 *i* P **P** 18 12 37.3 -1.0
GROS Grobnik 91.38 325 *i* P **P** 18 12 37.3 -1.0
H32A Carlson Farm, 91.46 37 P **P** 18 12 39.2 +0.6
baz=311
SOKA Soboth 91.47 326 *i* PcP **P** 18 12 38.2 -0.5
comp=Z,26nm,0.9s,SNR=15
LAZ Ladron 91.69 50 *e*P **P** 18 12 41.3 +1.2
H33A Prehn Over Nor 91.71 37 P **P** 18 12 40.4 +0.6
baz=312
I32A Karley and Nic 91.76 38 P **P** 18 12 40.0 0.0
baz=311
OBKA Obir 91.83 326 *i* P **P** 18 12 39.4 -1.0
comp=Z,12nm,0.8s
ANMO Albuquerque 91.85 49 P **P** 18 12 42.3 +1.5
baz=305
ANMO Albuquerque 91.85 49*c i*P **P** 18 12 42.1 +1.3
ANMO pmax pmax
comp=Z,12nm,0.9s
ANMO Albuquerque 91.85 49 *e*P **P** 18 12 42.4 +1.6
comp=Z,10nm,0.8s
319A Douglas 91.88 53 *e*P **P** 18 12 42.3 +1.3
comp=Z,9.0nm,0.8s
T25A Trinidad 91.92 46 P **P** 18 12 42.3 +1.2
baz=306
T25A Trinidad 91.92 46 *e*P **P** 18 12 42.5 +1.3
comp=Z,10nm,1.0s
C37A Embarrass 91.93 32 P **P** 18 12 41.0 +0.3
baz=315
KBA Koelnbreinsper 92.03 327 *i* PcP **P** 18 12 40.5 -0.9
comp=Z,9.1nm,0.6s
KBA Koelnbreinsper 92.03 327 P **P** 18 12 40.8 -0.6
EKA Eskdalemuir Ar 92.16 340 P **P** 18 12 41.2 -0.3
comp=Z,1.6nm,0.5s,baz=41,slow=5.4,SNR=7.4
LJU Ljubljana 92.16 326 *i* P **P** 18 12 41.0 -0.8
LJU Ljubljana 92.16 326 *i* P **P** 18 12 41.0 -0.8
BNM Barren Site 92.19 50 *e*P **P** 18 12 42.6 +0.2
MYKA Terra Mystica 92.19 326 *i* P **P** 18 12 40.9 -1.1
comp=Z,12nm,0.5s,SNR=6.7
121A Cookes Peak, D 92.30 52 P **P** 18 12 44.6 +1.7
baz=304
AGG Agios Georgios 92.36 316 *e*P **P** 18 12 40.9 -2.0
AGG pmax pmax
comp=Z,18nm,0.9s
AGG Agios Georgios 92.36 316 *e*P **P** 18 12 40.9 -2.0
comp=Z,18nm,0.9s
ECSD EROS Data Cent 92.41 37 P **P** 18 12 42.1 -0.9
baz=312
CADS Cadrg 92.43 326 *i* P **P** 18 12 41.3 -1.8
CADS Cadrg 92.43 326 *i* P **P** 18 12 41.3 -1.8
JAVS Javornik 92.50 326 *i* P **P** 18 12 41.8 -1.7
JAVS Javornik 92.50 326 *i* P **P** 18 12 41.8 -1.7
ABTA Abfaltersbach 92.67 327 *i* P **P** 18 12 42.6 -1.6
comp=Z,17nm,0.7s,SNR=8.6
WTTA Wattenberg 92.72 328 *i* PcP **P** 18 12 43.6 -1.0
comp=Z,10nm,1.0s
MOTA Moosalm 92.91 328 *i* PcP **P** 18 12 44.5 -0.9
comp=Z,6.9nm,0.7s
RETA Reutte 92.97 328 *i* PcP **P** 18 12 45.1 -0.5
comp=Z,13nm,1.1s,SNR=5.3
FETA Feichten 93.32 328 *i* PcP **P** 18 12 46.5 -0.8
comp=Z,14nm,0.8s,SNR=9.3
WLF Walferdange 93.39 332 *e*P **P** 18 12 46.9 -0.4
WLF pmax pmax
comp=Z,32nm,1.1s
WLF Walferdange 93.39 332 *e*P **P** 18 12 46.9 -0.4
comp=Z,32nm,1.1s
BFO Black Forest 93.46 330 *e*P **P** 18 12 47.1 -0.6
BFO pmax pmax
comp=Z,32nm,1.2s
BFO Black Forest 93.46 330 *e*P **P** 18 12 47.1 -0.6
comp=Z,32nm,1.2s
DAVA Damuels 93.53 329 *i* PcP **P** 18 12 47.4 -0.8
comp=Z,19nm,0.8s,SNR=7.9
FUORN Ofenpass-Fuorn 93.83 328 *e*P **P** 18 12 49.2 -0.6
comp=Z,34nm,0.9s
CDF Champ du Feu 93.86 331 *e*P **P** 18 12 48.3 -1.3
CDF pmax pmax
comp=Z,29nm,1.3s
BAIF Baives 93.87 333 *e*P **P** 18 12 48.0 -1.5
BAIF pmax pmax
comp=Z,8.0nm,1.0s
Q32A Meitler Ranch, 94.41 42 P **P** 18 12 51.9 -0.4
baz=310
MNTX Cornudas Mount 94.45 51 P **P** 18 12 53.1 +0.5
baz=306
HINF Hinteralfeld 94.50 331 *e*P **P** 18 12 50.7 -1.8
HINF pmax pmax
comp=Z,14nm,1.2s
SENIN Lac Senin/Sane 95.40 329 *e*P **P** 18 12 55.4 -1.5
comp=Z,38nm,1.9s
TIP Timpagrande 95.59 319 *e*P **P** 18 12 57.1 -0.5
comp=Z,37nm,1.4s
CABF La Chapelle 95.75 330 *e*P **P** 18 12 56.8 -1.5
CABF pmax pmax
comp=Z,4.0nm,0.7s
LPL La Plagne 96.30 329 *e*P **P** 18 12 59.4 -1.5
LPL pmax pmax
comp=Z,7.0nm,0.6s

LPG	**La Plagne**	**96.30**	**329**	*e*P	**P**	**18 12 59.5**	**-1.5**
LPG				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CEL	**Celeste**	**96.71**	**319**	*e*P	**P**	**18 13 02.4**	**-0.2**
	comp=Z,45nm,0.9s						
FLN	**La Foliniere**	**96.74**	**335**	*e*P	**P**	**18 13 05.2**	**+2.7**
FLN				pmax	pmax		
	comp=Z,10.0nm,1.0s						
AVF	**Avril sur Loir**	**96.80**	**332**	*e*P	**P**	**18 13 01.9**	**-0.9**
AVF				pmax	pmax		
	comp=Z,13nm,1.1s						
TX31	**Lajitas Ar. Si**	**97.03**	**52**	*e*P	Pdif	18 13 04.9	+0.5
TX31				*e*pP	pP	18 14 52.1	-1.0
LTX	**Lajitas**	**97.03**	**52**	*e*P	Pdif	18 13 05.8	+1.4
LTX				*e**PP	pP	18 14 53.1	-0.1
LTX				*e*		18 17 07.4	
LTX	**Lajitas**	**97.03**	**52**	*e*P	Pdif	18 13 05.8	+1.4
LTX				*e*pP	pP	18 14 53.1	-0.1
LTX				*e*PP	**PP**	**18 17 07.4**	**0.0**
TXAR	**Lajitas Array**	**97.03**	**52**	P	Pdif	18 13 05.8	+1.4
	comp=Z,2.9nm,0.7s,baz=309,slow=2.7,SNR=33						
TXAR				pP	pP	18 14 53.1	-0.1
	comp=Z,1.4nm,0.9s,baz=323,slow=1.9,SNR=3.8						
TXAR				PP	**PP**	**18 17 07.4**	**0.0**
	comp=Z,1.6nm,1.0s,baz=285,slow=4.8,SNR=4.6						
ORIF	**Oris-en-Rattie**	**97.14**	**329**	*e*P	Pdif	18 13 05.9	+1.3
ORIF				pmax	pmax		
	comp=Z,37nm,1.9s						
VIVF	**Saint-Julien-l**	**97.74**	**330**	*e*P	Pdif	18 13 05.6	-1.5
VIVF				pmax	pmax		
	comp=Z,6.0nm,0.9s						
MTLF	**Montolieu**	**100.02**	**330**	*e*P	**Pdif**	**18 13 18.2**	**+0.9**
MTLF				pmax	pmax		
	comp=Z,10.0nm,1.4s						
ES19	**SONSECA Array**	**105.64**	**332**	*e*PKiKP	**PKiKP**	**18 17 51.0**	**-1.5**
ES19				*e*		18 19 42.6	
LSZ	**Lusaka**	**116.18**	**266**	*e*PKIKP	**PKPdf**	**18 18 13.8**	**+0.7**
LSZ	**Lusaka**	**116.18**	**266**	*e*PKPdf	**PKPdf**	**18 18 13.8**	**+0.7**
QSPA	**South Pole Qui**	**116.83**	**180**	*e*PKPdf	**PKPdf**	**18 18 12.1**	**-0.7**
BOSA	**Boshof**	**123.11**	**252**	PKP	**PKPdf**	**18 18 26.3**	**+0.2**
	comp=Z,3.2nm,0.7s,baz=52,slow=1.2,SNR=7.4						
TOA1	**Torodi Ar. Sit**	**123.26**	**309**	*e*PKPdf	**PKPdf**	**18 18 26.6**	**-0.1**
TOA1				*e*PP	**PP**	**18 20 13.2**	**-0.9**
TOA1				*e*PKKPbc	**PKKPab**	**18 28 20.1**	**-0.6**
TOA0	**Torodi Ar. Sit**	**123.27**	**309**	*e*PKPdf	**PKPdf**	**18 18 26.0**	**-0.6**
TOA0				*e*PKPdf	**PKiKP**	**18 18 26.2**	**-0.8**
TORD	**Torodi Ar. Sit**	**123.27**	**309**	PKP	**PKPdf**	**18 18 26.6**	**-0.1**
	comp=Z,6.3nm,0.7s,baz=18,slow=2.9,SNR=30						
TORD				PP	**PP**	**18 20 13.2**	**-0.9**
	comp=Z,2.7nm,0.8s,baz=30,slow=6.1,SNR=6.0						
TORD				PKKPbc	**PKKPab**	**18 28 20.1**	**-0.6**
	comp=Z,0.9nm,0.7s,baz=211,slow=3.9,SNR=4.1						
TSUM	**Tsumeb**	**127.03**	**266**	*e*PKPdf	**PKPdf**	**18 18 34.1**	**+0.2**
SNAA	**Sanae**	**130.89**	**195**	P	**SKPbc**	**18 21 17.3**	**-1.1**
SNAA	**Sanae**	**130.89**	**195**	PKP	**PKPdf**	**18 18 39.2**	**-0.4**
	comp=Z,1.5nm,0.6s,baz=177,slow=4.9,SNR=17						
SNAA	**Sanae**	**130.89**	**195**	*e*PKPdf	**PKPdf**	**18 18 38.7**	**-0.9**
SNAA				*e*SKPbc	**SKPbc**	**18 21 16.6**	**-1.8**
DBIC	**Dimbokro**	**132.38**	**310**	PKP	**PKPdf**	**18 18 45.0**	**+1.0**
	comp=Z,5.7nm,0.7s,baz=79,slow=2.6,SNR=7.8						
DBIC				SKPbc	**SKPbc**	**18 21 25.2**	**-0.1**
	comp=Z,18nm,0.9s,baz=17,slow=5.3,SNR=14						
TIC	**Toumodi**	**132.51**	**310**	*e*PKIKP	**PKPdf**	**18 18 45.2**	**+0.9**
TIC	**Toumodi**	**132.51**	**310**	*e*PKP2	**SKPbc**	**18 21 24.9**	**-0.9**
KIC	**Kosan Boka**	**132.52**	**309**	*e*PKIKP	**PKPdf**	**18 18 45.3**	**+1.0**
	comp=Z,16nm,0.8s						
KIC	**Kosan Boka**	**132.52**	**309**	*e*PKP2	**SKPbc**	**18 21 25.6**	**-0.2**
	comp=Z,96nm,1.1s						
LIC	**Lamto**	**132.81**	**309**	*e*PKIKP	**PKPdf**	**18 18 45.1**	**+0.2**
LIC	**Lamto**	**132.81**	**309**	*e*PKP2	**SKPbc**	**18 21 26.5**	**-0.3**
	comp=Z,55nm,1.1s						
VNA1	**Neumayer--Stat**	**132.84**	**194**	P	**SKPbc**	**18 21 24.4**	**-0.6**
NORC	**Norcasia**	**133.07**	**52**	*e*P	**SKPbc**	**18 21 30.6**	**+2.9**
TOLC	**Tolima**	**133.44**	**53**	*e*P	**SKPbc**	**18 21 29.6**	**+0.3**
BARC	**Barichara**	**133.48**	**49**	*e*P	**SKPbc**	**18 21 28.6**	**-0.8**
POPC	**Popayan, Colom**	**133.84**	**56**	*e*P	**SKPbc**	**18 21 29.7**	**-0.8**
OTAV	**Otavalo**	**133.99**	**60**	*e*SKPbc	**SKPbc**	**18 21 30.3**	**-1.0**
RUSC	**La Rusia**	**134.06**	**49**	*e*P	**SKPbc**	**18 21 30.4**	**-1.2**
PRAC	**Prado**	**134.35**	**53**	*e*PKPdf	**PKPdf**	**18 18 43.5**	**-4.4**
PRAC				*e*SKPbc	**SKPbc**	**18 21 30.9**	**-1.1**
PTGA	**Pitinga**	**147.43**	**40**	*e*PKPdf	**PKPdf**	**18 19 11.9**	**+0.8**
PTGA				*e*PKPbc	**PKPbc**	**18 19 15.0**	**+0.6**
PLCA	**Paso Flores**	**151.22**	**126**	PKPbc	**PKPbc**	**18 19 23.9**	**+1.1**
	comp=Z,4.4nm,0.6s,baz=273,slow=1.8,SNR=18						
PLCA				PKPab	**PKPab**	**18 19 32.8**	**-0.2**
	comp=Z,2.7nm,0.8s,baz=275,slow=2.6,SNR=3.6						
PLCA				pPKPbc	**pPKPbc**	**18 21 16.9**	**-0.4**
	comp=Z,9.2nm,1.0s,baz=214,slow=4.5,SNR=7.8						
SAML	**Samuel**	**151.47**	**55**	*e*PKPbc	**PKPbc**	**18 19 23.8**	**-0.3**
LPAZ	**La Paz**	**151.63**	**74**	PKPbc	**PKPbc**	**18 19 26.4**	**+1.4**
	comp=Z,7.1nm,0.6s,baz=282,slow=2.5,SNR=28						
LPAZ				PKPab	**PKPab**	**18 19 35.8**	**-0.2**
	comp=Z,4.1nm,0.7s,baz=313,slow=5.7,SNR=7.6						
LPAZ				pPKPbc	**pPKPbc**	**18 21 19.2**	**-0.3**
	comp=Z,3.2nm,0.8s,baz=348,slow=5.7,SNR=8.3						
LPAZ	**La Paz**	**151.63**	**74**	*e*PKPbc	**PKPbc**	**18 19 25.9**	**+0.8**
LPAZ				*e*PKPab	**PKPab**	**18 19 35.8**	**-0.2**
LPAZ				*ep*PKPdf	**pPKPdf**	**18 21 18.7**	**+4.8**
PB11	**IPOC Station P**	**151.70**	**82**	*e*PKPbc	**PKPbc**	**18 19 25.0**	**+0.4**
PB11				*e*PKPab	**PKPab**	**18 19 37.1**	**+1.5**
CPUP	**Villa Florida**	**164.31**	**91**	PKPab	**PKPab**	**18 20 30.8**	**+0.7**
	comp=Z,1.7nm,0.5s,baz=14,slow=2.0,SNR=4.8						
CPUP	**Villa Florida**	**164.31**	**91**	*e*PKPab	**PKPab**	**18 20 29.5**	**-0.6**

*ISCJB **15** 18:03:39.8±0.5, 57°.84S±0°.09×25°.6W±0°.2, h49km, mb4.5/15, MS3.2/2, Error ellipse: s-maj=16.3km s-min=9.8km az=143.0*

*IDC **15** 18:03:42.6±5.3, 57°.92S×25°.62W, h57km±48km, mb4.0/8, mb1 4.1/10, mb1mx3.8/25, mbtmp4.3/10, ML4.6/2, MS3.2/4, Ms1 3.2/4, ms1mx2.9/22, Error ellipse: s-maj=25.0km s-min=16.6km az=55.0*

*NEIC **15** 18:03:45.1±2.2, 57°.94S×25°.64W, h80km±19km, mb4.6/14, Error ellipse: s-maj=21.6km s-min=10.7km az=51.0*

ISC 15 18:03:41.5±0.5, 57°.95S±0°.09×25°.58W±0°.10, h49km, n50, σ1§49/41, mb4.5/15, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HOPE	**Hope Point**	**7.12**	**296**	*e*Pn		**Pn**	**18 05 26.9**	**+4.1**
SNAA	**Sanae**	**16.64**	**155**	P		**Pn**	**18 07 31.9**	**+1.0**
	1.5nm,0.3s,baz=321,slow=16,SNR=35							
SNAA				S		Sn	18 10 24.3	-10
	0.1nm,0.3s,baz=252,slow=17,SNR=3.2							
SNAA				LR		LR	18 12 50.6	
	comp=Z,38nm,21.9s,baz=353,slow=33							
SNAA	**Sanae**	**16.64**	**155**	*e*Pn		**Pn**	**18 07 32.4**	**+1.4**
	3.8nm,0.8s							
SNAA				*e*Sn		Sn	18 10 22.5	-12
PMSA	**Palmer Station**	**19.39**	**233**	P		**Pn**	**18 08 04.5**	**+0.1**
	0.3nm,0.3s,baz=138,slow=3.7,SNR=3.7							
PMSA				LR		LR	18 14 24.5	
	comp=Z,104nm,18.1s,baz=40,slow=33							
PMSA	**Palmer Station**	**19.39**	**233**	*e*P		**P**	**18 07 57.8**	**-5.1**
	39nm,1.3s							
EFI	**East Falkland**	**19.61**	**275**	*e*P		**Pn**	**18 08 08.6**	**+1.6**
H09N1	**TRISTAN DA CUN**	**22.65**	**28**	T		T	18 32 05.4	
	SNR=11							
QSPA	**South Pole Qui**	**32.29**	**180**	*e*P		**P**	**18 10 06.9**	**+1.5**
PLCA	**Paso Flores**	**33.22**	**281**	P		**P**	**18 10 14.1**	**+0.5**
	4.3nm,1.1s,baz=190,slow=4.7,SNR=4.7							
PLCA				LR		LR	18 23 16.5	
	comp=Z,34nm,18.2s,baz=132,slow=35							
PLCA	**Paso Flores**	**33.22**	**281**	*e*P		**P**	**18 10 14.3**	**+0.7**
	36nm,1.9s							
MAW	**Mawson**	**38.10**	**142**	P		**P**	**18 10 54.5**	**-0.4**
	1.7nm,0.8s,baz=211,slow=5.9,SNR=2.7							
MAW	**Mawson**	**38.10**	**142**	*e*P		**P**	**18 10 54.0**	**-0.9**
	3.9nm,2.0s							
CPUP	**Villa Florida**	**38.73**	**311**	P		**P**	**18 10 59.4**	**-1.3**
	0.8nm,0.4s,baz=158,slow=11,SNR=2.7							
CPUP	**Villa Florida**	**38.73**	**311**	*e*P		**P**	**18 10 59.5**	**-1.1**
ROC1	**El Roble**	**39.40**	**289**	*e*P		**P**	**18 11 04.8**	**-1.7**
	25nm,1.1s							
VNDA	**Vanda**	**44.71**	**182**	P		**P**	**18 11 50.6**	**+1.7**
	2.1nm,0.8s,baz=183,slow=6.0,SNR=11							
VNDA	**Vanda**	**44.71**	**182**	*e*P		**P**	**18 11 50.2**	**+1.3**
	6.0nm,1.4s							
BOSA	**Boshof**	**45.64**	**72**	LR		LR	18 26 51.3	
	comp=Z,42nm,19.3s,baz=176,slow=30							
PB01	**IPOC Station P**	**48.64**	**300**	*e*P		**P**	**18 12 20.3**	**-0.1**
	15nm,0.9s							
H10S2	**ASCENSION HYDR**	**49.60**	**14**	T		T	19 06 12.7	
	baz=186,slow=74							
H10S3	**ASCENSION HYDR**	**49.60**	**14**	T		T	19 06 12.8	
	baz=186							
H10S1	**ASCENSION HYDR**	**49.62**	**14**	T		T	19 06 13.9	
	baz=186,slow=74							
H10N1	**ASCENSION HYDR**	**50.72**	**14**	T		T	19 07 37.3	
	baz=192,slow=72							
H10N3	**ASCENSION HYDR**	**50.72**	**14**	T		T	19 07 36.6	
	baz=192							
H10N2	**ASCENSION HYDR**	**50.74**	**14**	T		T	19 07 38.2	
	baz=192,slow=72							
LPAZ	**La Paz**	**52.19**	**305**	P		**P**	**18 12 47.7**	**-0.1**
	1.6nm,0.4s,baz=101,slow=6.4,SNR=9.6							
LPAZ	**La Paz**	**52.19**	**305**	*e*P		**P**	**18 12 46.3**	**-1.6**
	2.2nm,0.4s							
SAML	**Samuel**	**56.76**	**314**	*e*P		**P**	**18 13 18.1**	**-2.3**
	6.5nm,0.9s							
DBIC	**Dimbokro**	**66.56**	**23**	P		**P**	**18 14 26.8**	**+0.6**
	2.3nm,0.5s,baz=176,slow=6.5,SNR=7.8							
DBIC	**Dimbokro**	**66.56**	**23**	*e*P		**P**	**18 14 26.8**	**+0.6**
	52nm,1.9s							
PRAC	**Prado**	**72.99**	**308**	*e*P		**P**	**18 15 05.2**	**-0.7**
	4.4nm,0.6s							
RUSC	**La Rusia**	**74.21**	**310**	*e*P		**P**	**18 15 11.5**	**-2.0**
	7.4nm,1.8s							
TORD	**Torodi Ar. Bea**	**74.31**	**28**	P		**P**	**18 15 14.3**	**+0.9**
	2.1nm,0.4s,baz=198,slow=6.4,SNR=33							
TOA1	**Torodi Ar. Sit**	**74.31**	**28**	*e*P		**P**	**18 15 14.3**	**+0.8**
	16nm,1.6s							
ASAR	**Alice Springs**	**96.90**	**161**	P		**P**	**18 17 07.3**	**0.0**
	0.7nm,0.8s,baz=186,slow=3.9,SNR=5.9							
AS31	**Alice Springs**	**96.91**	**161**	*e*P		**P**	**18 17 06.6**	**-0.7**
	2.2nm,1.3s							
AS01	**Alice Springs**	**96.91**	**161**	*e*P		**P**	**18 17 07.1**	**-0.3**
WR1	**Warramunga Arr**	**100.62**	**161**	*e*Pdif		**Pdif**	**18 17 22.2**	**-1.8**
WRA	**Warramunga Arr**	**100.62**	**161**	P		**Pdif**	**18 17 22.2**	**-1.8**
	0.5nm,0.7s,baz=188,slow=4.1,SNR=3.1							
PDAR	**Pinedale Array**	**122.08**	**300**	PKP		**PKPdf**	**18 22 29.4**	**-0.5**
	0.4nm,0.4s,baz=122,slow=5.5,SNR=6.0							
CMAR	**Chiang Mai Arr**	**123.58**	**110**	PKP		**PKPdf**	**18 22 32.9**	**-0.3**
	0.6nm,0.7s,baz=183,slow=3.6,SNR=4.1							
FIA0	**FINESS Array S**	**125.66**	**28**	*e*PKPdf		**PKPdf**	**18 22 35.8**	**+0.1**
FINES	**FINESS Array B**	**125.66**	**28**	PKP		**PKPdf**	**18 22 35.8**	**+0.1**
	2.1nm,0.9s,baz=198,slow=1.8,SNR=8.2							
ABKAR	**Akbulak array**	**127.72**	**56**	*e*PKPpre		PKPpre	18 22 35.1	
YKA	**Yellowknife Ar**	**138.16**	**316**	PKP		**PKPdf**	**18 22 59.6**	**+0.3**
	0.9nm,0.3s,baz=132,slow=2.0,SNR=7.6							
PCA	**Pinnacle**	**147.53**	**302**	*e*PKPdf		**PKPbc**	**18 23 18.6**	**-0.1**
INK	**Inuvik**	**147.82**	**318**	*e*PKPdf		**PKPbc**	**18 23 18.7**	**-0.5**
SONA0	**Songino Array**	**149.93**	**89**	*e*PKPbc		**PKPbc**	**18 23 25.4**	**0.0**
SONM	**Songino Array**	**149.93**	**89**	PKPbc		**PKPbc**	**18 23 25.4**	**0.0**
	2.0nm,0.4s,baz=221,slow=3.7,SNR=17							
ILAR	**Eielson Array**	**152.02**	**309**	PKPbc		**PKPbc**	**18 23 29.6**	**+0.1**
	4.8nm,0.5s,baz=135,slow=3.9,SNR=52							

*CSEM **15** 18:12:01.2, 47°.11N×11°.36E, h3km, ML0.6/5*
VIE 15 18:12:01.2±0.3, 47°.11N×11°.36E, h3km, ML0.6/5, Error ellipse: s-maj=2.7km s-min=1.1km az=156.0, Austria

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SQTA	**Sankt Quirin**	**0.15**	**317**	Pg		Pg	18 12 04.6	+0.4
SQTA				Sg		Sg	18 12 06.8	+0.6
WTTA	**Wattenberg**	**0.24**	**51**	Pg		Pg	18 12 06.1	+0.2
	0.3nm,0.0s							
WTTA				Sg		Sg	18 12 09.5	+0.3
	0.6nm,0.1s							
WATA	**Walderalm**	**0.27**	**33**	Pg		Pg	18 12 06.7	+0.2
	1.5nm,0.1s							
WATA				Sg		Sg	18 12 10.4	+0.4
	4.4nm,0.1s							
MOTA	**Moosalm**	**0.29**	**324**	Pg		Pg	18 12 07.2	+0.3
	0.7nm,0.2s							
MOTA				Sg		Sg	18 12 11.0	+0.3
	0.9nm,0.1s							
FETA	**Feichten**	**0.44**	**259**	Pg		Pg	18 12 09.9	+0.2
	0.2nm,0.1s							
FETA				Sg		Sg	18 12 15.7	+0.3
	0.1nm,0.1s							

*ISCJB **15** 18:23:10.6±0.4, 37°.03N±0°.02×2°.09W±0°.02, h13km±2km, Error ellipse: s-maj=4.3km s-min=2.8km az=158.1*

*CSEM **15** 18:23:10.7±0.2, 36°.99N×2°.04W, h2km, ML3.5/15, Error ellipse: s-maj=3.7km s-min=2.4km az=156.0*

*MDD **15** 18:23:12.0±0.4, 36°.93N×2°.01W, h11km, mbLg2.8/27, Error ellipse: s-maj=4.3km s-min=2.4km az=156.0, PRXIMO*

MDD EMS: III INTENSIDAD MAXIMA.

*SFS **15** 18:23:12.0, 36°.93N×1°.99W, h11km, ML2.8*

*IGIL **15** 18:23:12.5, 36°.94N×2°.00W, h11km*

*INMG **15** 18:23:12.6±1.4, 36°.84N×1°.96W, h23km±3km, ML2.9, Error ellipse: s-maj=2.6km s-min=2.5km az=166.0*

*CRAAG **15** 18:23:12.0, 36°.94N×1°.99W, Mb2.8*

*LDG **15** 18:23:13.1±0.2, 36°.95N×2°.02W, h10km, Ml2.4/3, Error ellipse: s-maj=4.6km s-min=3.1km az=148.0*

ISC 15 18:23:10.6±1.0, 36°.93N±0°.02×2°.00W±0°.02, h17km±7km, n137, σ1§69/206, 5C-1D, Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ENIJ	**Nijar**	**0.17**	**284**	⇑Pg		**Pg**	**18 23 15.4**	**+0.3**
	4μm,0.1s,SNR=18							
ENIJ				Lg		Lg	18 23 17.5	
	6μm,0.2s,SNR=7.9							
ENIJ	**Nijar**	**0.17**	**284**	Pg		**Pg**	**18 23 15.4**	**+0.3**
	4μm,0.1s,SNR=18							
ENIJ				Lg		Lg	18 23 17.5	
	6μm,0.2s,SNR=7.9							
EBER	**Berja**	**0.72**	**268**	⇑Pg		**Pb**	**18 23 25.0**	**+0.3**
	177nm,0.3s,SNR=18							
EBER				Lg		Lg	18 23 35.0	
	289nm,0.2s,SNR=14							
EBER	**Berja**	**0.72**	**268**	Pg		**Pb**	**18 23 25.0**	**+0.3**
	177nm,0.3s,SNR=18							
EBER				Lg		Lg	18 23 35.0	
	289nm,0.2s,SNR=14							
GORA	**Gorafe**	**1.00**	**304**	Pg		**Pg**	**18 23 29.2**	**-0.8**
	62nm,0.1s,SNR=7.9							
GORA				Lg		Lg	18 23 40.7	
	246nm,0.2s,SNR=7.9							
GORA	**Gorafe**	**1.00**	**304**	Pg		**Pg**	**18 23 29.2**	**-0.8**
	62nm,0.1s,SNR=7.9							
GORA				Lg		Lg	18 23 40.7	
	246nm,0.2s,SNR=7.9							
CART	**Cartagena**	**1.03**	**50**	⇑Pg		**Pg**	**18 23 29.4**	**-1.1**
CART				Lg		Lg	18 23 41.3	
CART	**Cartagena**	**1.03**	**50**	*i* P		**Pg**	**18 23 29.4**	**-1.1**
CART				*e*S		**Sg**	**18 23 41.3**	**-2.7**
EMUR	**La Murta**	**1.09**	**33**	⇑Pg		**Pg**	**18 23 31.3**	**-0.4**
	120nm,0.3s,SNR=18							
EMUR				Lg		Lg	18 23 45.1	
	300nm,0.3s							
EMUR	**La Murta**	**1.09**	**33**	Pg		**Pg**	**18 23 31.3**	**-0.4**
	120nm,0.3s,SNR=18							
EMUR				Lg		Lg	18 23 45.1	
	300nm,0.3s							
EQUE	**Quentar**	**1.19**	**284**	Pg		**Pb**	**18 23 33.1**	**+0.4**
	45nm,0.3s,SNR=37							
EQUE				Lg		Lg	18 23 49.5	
	109nm,0.5s,SNR=14							
EQUE	**Quentar**	**1.19**	**284**	Pg		**Pb**	**18 23 33.1**	**+0.4**
	45nm,0.3s,SNR=37							
EQUE				Lg		Lg	18 23 49.5	
	109nm,0.5s,SNR=14							
EQES	**Quesada**	**1.22**	**316**	Pg		**Pg**	**18 23 34.0**	**-0.2**
	29nm,0.4s,SNR=71							
EQES				Lg		Lg	18 23 50.8	
	92nm,0.5s							
EQES	**Quesada**	**1.22**	**316**	Pg		**Pg**	**18 23 34.0**	**-0.2**
	29nm,0.4s,SNR=71							
EQES				Lg		Lg	18 23 50.8	
	92nm,0.5s							
SESP	**Santiago Espad**	**1.27**	**340**	⇓Pg		**Pn**	**18 23 33.9**	**+0.2**
	30nm,0.2s,SNR=18							
SESP				Lg		Lg	18 23 52.0	
	45nm,0.1s,SNR=7.9							
SESP	**Santiago Espad**	**1.27**	**340**	Pg		**Pn**	**18 23 33.9**	**+0.2**
	30nm,0.2s,SNR=18							
SESP				Lg		Lg	18 23 52.0	
	45nm,0.1s,SNR=7.9							
EALB	**Alboran**	**1.29**	**221**	Pg		**Pg**	**18 23 34.9**	**-0.6**
	50nm,0.3s,SNR=5.6							
EALB				Lg		Lg	18 23 52.5	
	49nm,0.3s,SNR=6.5							
EALB	**Alboran**	**1.29**	**221**	Pg		**Pg**	**18 23 34.9**	**-0.6**
	50nm,0.3s,SNR=5.6							
EALB				Lg		Lg	18 23 52.5	
	49nm,0.3s,SNR=6.5							
SELV	**Sierra Elvira**	**1.42**	**283**	Pg		**Pb**	**18 23 37.2**	**+0.6**
	9.3nm,0.2s,SNR=7.9							
SELV				Lg		Lg	18 23 56.5	
	8.8nm,0.2s,SNR=7.9							
SELV	**Sierra Elvira**	**1.42**	**283**	Pg		**Pb**	**18 23 37.2**	**+0.6**
	9.3nm,0.2s,SNR=7.9							
SELV				Lg		Lg	18 23 56.5	
	8.8nm,0.2s,SNR=7.9							
EGOR	**Sierra Gorda,**	**1.70**	**277**	Pg		**Pb**	**18 23 42.1**	**+0.6**
	6.8nm,0.1s,SNR=7.9							
EGOR				Lg		Lg	18 24 06.1	
	7.9nm,0.2s,SNR=7.9							
EGOR	**Sierra Gorda,**	**1.70**	**277**	Pg		**Pb**	**18 23 42.1**	**+0.6**
	6.8nm,0.1s,SNR=7.9							
EGOR				Lg		Lg	18 24 06.1	
	7.9nm,0.2s,SNR=7.9							
OLHC	**Oulhaca**	**1.74**	**164**	P		**Pb**	**18 23 42.6**	**+0.5**
OLHC	**Oulhaca**	**1.74**	**164**	Pn		**Pb**	**18 23 42.6**	**+0.5**
OLHC	**Oulhaca**	**1.74**	**164**	P		**Pb**	**18 23 42.6**	**+0.5**
ETOB	**Tobarra**	**1.75**	**12**	Pn		**Pn**	**18 23 41.8**	**+1.6**
	44nm,0.4s,SNR=48							
ETOB				Sn		**Sn**	**18 24 03.8**	**+1.7**
	142nm,0.5s,SNR=51							
ETOB	**Tobarra**	**1.75**	**12**	Pn		**Pn**	**18 23 41.8**	**+1.6**
	44nm,0.4s,SNR=48							
ETOB				Sn		**Sn**	**18 24 03.8**	**+1.7**
	142nm,0.5s,SNR=51							
EVIA	**Vianos**	**1.75**	**347**	Pn		**Pn**	**18 23 42.4**	**+2.1**
	22nm,0.2s,SNR=7.9							
EVIA				Pg		**Pg**	**18 23 44.2**	**-0.1**
	139nm,0.3s,SNR=7.9							
EVIA				Sn		**Sn**	**18 24 03.9**	**+1.6**
	144nm,0.3s,SNR=7.9							
EVIA				Lg		Lg	18 24 08.1	
	320nm,0.4s,SNR=7.9							
EVIA	**Vianos**	**1.75**	**347**	Pn		**Pn**	**18 23 42.4**	**+2.1**
	22nm,0.2s,SNR=7.9							
EMLI	**Melilla**	**1.80**	**206**	Sn		**Sb**	**18 24 04.9**	**-0.4**
	60nm,0.1s,SNR=7.9							
EMEL	**Melilla**	**1.80**	**206**	Sn		**Sb**	**18 24 04.9**	**-0.5**
	60nm,0.1s,SNR=7.9							
OTSS	**Djebel Tessala**	**1.91**	**149**	P		**Pb**	**18 23 45.9**	**+0.9**
OTSS	**Djebel Tessala**	**1.91**	**149**	Pg		**Pb**	**18 23 45.9**	**+0.9**
OTSS	**Djebel Tessala**	**1.91**	**149**	P		**Pb**	**18 23 45.9**	**+0.9**
EMAL	**Malaga-Limoner**	**1.96**	**266**	Pn		**Pn**	**18 23 43.8**	**+0.8**
EMAL				Sn		**Sn**	**18 24 09.1**	**+1.9**
EMAL	**Malaga-Limoner**	**1.96**	**266**	*e*P		**Pn**	**18 23 43.8**	**+0.8**
EMAL				*e*S		**Sn**	**18 24 09.1**	**+1.9**
AFON	**Font Roja**	**2.08**	**33**	Pn		**Pn**	**18 23 45.8**	**+1.0**
	3.7nm,0.4s,SNR=8.0							
AFON				Sn		**Sn**	**18 24 11.7**	**+1.4**
	12nm,0.5s							
AFON	**Font Roja**	**2.08**	**33**	Pn		**Pn**	**18 23 45.8**	**+1.0**
	3.7nm,0.4s,SNR=8.0							
AFON				Sn		**Sn**	**18 24 11.7**	**+1.4**
	12nm,0.5s							
EMIJ	**Mijas**	**2.26**	**262**	Pn		**Pn**	**18 23 47.4**	**+0.2**
	7.3nm,0.3s,SNR=42							
EMIJ				Sn		**Sn**	**18 24 15.0**	**+0.3**
	9.7nm,0.3s,SNR=5.0							
EMIJ	**Mijas**	**2.26**	**262**	Pn		**Pn**	**18 23 47.4**	**+0.2**
	7.3nm,0.3s,SNR=42							
EMIJ				Sn		**Sn**	**18 24 15.0**	**+0.3**
	9.7nm,0.3s,SNR=5.0							
OKGL	**Djebel Kef Gue**	**2.31**	**112**	Pn		**Pn**	**18 23 50.

PBAR				*e*Sg		**Sg**	**18 25 22.5**	**-2.8**		
	22nm,0.6s									
EBAD	**Badajoz**	**4.37**	**296**	Pn		**Pn**	**18 24 17.5**	**+1.3**		
	2.0nm,0.3s,SNR=8.1									
EBAD				Sn		**Sn**	**18 25 06.7**	**0.0**		
	17nm,0.7s,SNR=6.8									
EBAD	**Badajoz**	**4.37**	**296**	Pn		**Pn**	**18 24 17.5**	**+1.3**		
	2.0nm,0.3s,SNR=8.1									
EBAD				Sn		**Sn**	**18 25 06.7**	**0.0**		
	17nm,0.7s,SNR=6.8									
ERTA	**Horta de San J**	**4.41**	**24**	Pn		**Pn**	**18 24 18.3**	**+1.5**		
	0.6nm,0.1s,SNR=7.9									
ERTA	**Horta de San J**	**4.41**	**24**	Pn		**Pn**	**18 24 18.3**	**+1.5**		
	0.6nm,0.1s,SNR=7.9									
EGRO	**El Granado**	**4.42**	**279**	Pn		**Pn**	**18 24 18.1**	**+1.2**		
	2.9nm,0.3s,SNR=8.3									
EGRO				Sn		**Sn**	**18 25 06.2**	**-1.7**		
	1.2nm,0.3s,SNR=7.9									
EGRO				Lg		Lg	18 25 31.1			
	8.5nm,0.5s									
EGRO	**El Granado**	**4.42**	**279**	Pn		**Pn**	**18 24 18.1**	**+1.2**		
	2.9nm,0.3s,SNR=8.3									
EGRO				Lg		Lg	18 25 31.1			
	8.5nm,0.5s									
EPLA	**Plasencia**	**4.48**	**316**	Pn		**Pn**	**18 24 19.3**	**+1.6**		
	0.7nm,0.1s,SNR=7.4									
EPLA				Pg		**Pb**	**18 24 33.0**	**+4.3**		
	3.1nm,0.2s,SNR=7.9									
EPLA				Lg		Lg	18 25 33.4			
	25nm,0.7s,SNR=8.2									
EPLA	**Plasencia**	**4.48**	**316**	Pn		**Pn**	**18 24 19.3**	**+1.6**		
	0.7nm,0.1s,SNR=7.4									
EPLA				Lg		Lg	18 25 33.4			
	25nm,0.7s,SNR=8.2									
PVAQ	**Vaqueiros**	**4.59**	**278**	*e*Pn		**Pn**	**18 24 20.4**	**+1.2**		
PVAQ				*e*Sn		**Sn**	**18 25 11.4**	**-0.8**		
PVAQ				A		A	18 25 55.5			
	7.5nm,0.6s									
PVAQ	**Vaqueiros**	**4.59**	**278**	Pn		**Pn**	**18 24 20.4**	**+1.2**		
PVAQ				Sn		**Sn**	**18 25 11.4**	**-0.8**		
	7.5nm,0.6s									
PVAQ	**Vaqueiros**	**4.59**	**278**	Pn		**Pn**	**18 24 20.4**	**+1.2**		
PVAQ				*e*Sn		**Sn**	**18 25 11.4**	**-0.8**		
	7.5nm,0.6s									
ETOS	**Mallorca**	**4.72**	**52**	Pn		**Pn**	**18 24 22.6**	**+1.6**		
	5.0nm,0.4s,SNR=18									
ETOS				Sn		**Sn**	**18 25 13.5**	**-1.9**		
	76nm,1.7s									
ETOS	**Mallorca**	**4.72**	**52**	Pn		**Pn**	**18 24 22.6**	**+1.6**		
	5.0nm,0.4s,SNR=18									
PBEJ	**Beja**	**4.80**	**285**	*e*Pn		**Pn**	**18 24 23.6**	**+1.6**		
PBEJ				*e*Sg		**Sg**	**18 25 45.2**	**+0.7**		
PBEJ				A		A	18 25 55.5			
	6.3nm,0.5s									
PBEJ	**Beja**	**4.80**	**285**	Pn		**Pn**	**18 24 23.6**	**+1.6**		
PBEJ				Lg		Lg	18 25 45.2			
	3.2nm,0.5s									
PBEJ	**Beja**	**4.80**	**285**	Pn		**Pn**	**18 24 23.6**	**+1.6**		
PBEJ				*e*Sg		**Sg**	**18 25 45.2**	**+0.7**		
	6.3nm,0.5s									
PESTR	**Estremoz**	**4.83**	**295**	*e*Pn		**Pn**	**18 24 24.4**	**+1.9**		
PESTR				*e*Sn		**Sn**	**18 25 18.6**	**+0.6**		
PESTR				*e*Sg		**Sg**	**18 25 42.8**	**-2.8**		
PESTR				A		A	18 25 53.0			
	15nm,0.7s									
PESTR	**Estremoz**	**4.83**	**295**	*e*Pn		**Pn**	**18 24 24.4**	**+1.9**		
PESTR				*e*Sn		**Sn**	**18 25 18.6**	**+0.6**		
PESTR				*e*Sg		**Sg**	**18 25 42.8**	**-2.8**		
	15nm,0.7s									
PCVE	**Castro Verde**	**4.87**	**280**	*e*Pn		**Pn**	**18 24 24.7**	**+1.7**		
PCVE				*e*Sn		**Sn**	**18 25 18.8**	**-0.2**		
PCVE				*e*Sg		**Sg**	**18 25 45.2**	**-1.7**		
PCVE				A		A	18 25 57.2			
	5.3nm,0.8s									
PCVE	**Castro Verde**	**4.87**	**280**	Pn		**Pn**	**18 24 24.7**	**+1.7**		
PCVE				Sn		**Sn**	**18 25 18.8**	**-0.2**		
PCVE				Lg		Lg	18 25 45.2			
	5.3nm,0.8s									
PCVE	**Castro Verde**	**4.87**	**280**	Pn		**Pn**	**18 24 24.7**	**+1.7**		
PCVE				Sn		**Sn**	**18 25 18.8**	**-0.2**		
PCVE				*e*Sg		**Sg**	**18 25 45.2**	**-1.7**		
	5.3nm,0.8s									
PMRV	**Marv??o**	**4.93**	**302**	*e*Pn		**Pn**	**18 24 25.1**	**+1.2**		
PMRV				*e*Sn		**Sn**	**18 25 18.7**	**-1.8**		
PMRV				*e*Sg		**Sg**	**18 25 46.1**	**-2.7**		
PMRV				A		A	18 25 57.7			
	26nm,0.7s									
PMRV	**Marv??o**	**4.93**	**302**	Pn		**Pn**	**18 24 25.1**	**+1.2**		
PMRV				Sn		**Sn**	**18 25 18.7**	**-1.8**		
PMRV				Lg		Lg	18 25 46.1			
	26nm,0.7s									
PMRV	**Marv??o**	**4.93**	**302**	Pn		**Pn**	**18 24 25.1**	**+1.2**		
PMRV				*e*Sn		**Sn**	**18 25 18.7**	**-1.8**		
PMRV				*e*Sg		**Sg**	**18 25 46.1**	**-2.7**		
	26nm,0.7s									
EPOB	**Poblet**	**5.02**	**27**	Pn		**Pn**	**18 24 26.1**	**+0.9**		
	1.2nm,0.2s,SNR=7.9									
EPOB				Sn		**Sn**	**18 25 22.0**	**-0.8**		
	0.5nm,0.3s,SNR=7.9									
EPOB	**Poblet**	**5.02**	**27**	Pn		**Pn**	**18 24 26.1**	**+0.9**		
	1.2nm,0.2s,SNR=7.9									
EVO	**Evora**	**5.03**	**290**	*e*Pn		**Pn**	**18 24 27.1**	**+1.9**		
EVO	**Evora**	**5.03**	**290**	Pn		**Pn**	**18 24 27.1**	**+1.9**		
EVO	**Evora**	**5.03**	**290**	Pn		**Pn**	**18 24 27.1**	**+1.9**		
MESJ	**Messejana**	**5.04**	**282**	*e*P		**Pn**	**18 24 25.9**	**+0.6**		
MESJ	**Messejana**	**5.04**	**282**	*e*Pn		**Pn**	**18 24 26.6**	**+1.3**		
MESJ				*e*Sg		**Sg**	**18 25 22.2**	**-0.1**		
MESJ				A		A	18 26 08.3			
	5.5nm,0.6s									
MESJ	**Messejana**	**5.04**	**282**	Pn		**Pn**	**18 24 26.6**	**+1.3**		
MESJ				Lg		Lg	18 25 52.2			
	5.5nm,0.6s									
MESJ	**Messejana**	**5.04**	**282**	Pn		**Pn**	**18 24 26.6**	**+1.3**		
MESJ				*e*Sg		**Sg**	**18 25 52.2**	**-0.1**		
	5.5nm,0.6s									
PCBR	**Castelo Branco**	**5.20**	**306**	*e*Pn		**Pn**	**18 24 29.6**	**+2.1**		
PCBR				*e*Sn		**Sn**	**18 25 27.1**	**+0.1**		
PCBR				*e*Sg		**Sg**	**18 25 53.7**	**-3.6**		
PCBR				A		A	18 26 00.4			
	18nm,0.6s									
PCBR	**Castelo Branco**	**5.20**	**306**	Pn		**Pn**	**18 24 29.6**	**+2.1**		
PCBR				Sn		**Sn**	**18 25 27.1**	**+0.1**		
PCBR				Lg		Lg	18 25 53.7			
	8.9nm,0.6s									
PCBR	**Castelo Branco**	**5.20**	**306**	Pn		**Pn**	**18 24 29.6**	**+2.1**		
PCBR				Sn		**Sn**	**18 25 27.1**	**+0.1**		
PCBR				*e*Sg		**Sg**	**18 25 53.7**	**-3.6**		
	18nm,0.6s									
PNCL	**Nicolau / Gran**	**5.33**	**285**	*e*Pn		**Pn**	**18 24 31.2**	**+1.9**		
PNCL	**Nicolau / Gran**	**5.33**	**285**	*e*Pn		**Pn**	**18 24 31.2**	**+1.9**		
PMTG	**Montargil**	**5.36**	**295**	*e*Pn		**Pn**	**18 24 32.5**	**+2.7**		
PMTG				*e*Sn		**Sn**	**18 25 28.8**	**-2.3**		
PMTG				A		A	18 26 04.9			
	12nm,0.4s									
PMTG	**Montargil**	**5.36**	**295**	*e*Pn		**Pn**	**18 24 32.5**	**+2.7**		
PMTG				*e*Sn		**Sn**	**18 25 28.8**	**-2.3**		
	12nm,0.4s									
PFVI	**Vila Bisbo**	**5.47**	**274**	*e*Pn		**Pn**	**18 24 33.2**	**+1.9**		
PFVI	**Vila Bisbo**	**5.47**	**274**	*e*Pn		**Pn**	**18 24 33.2**	**+1.9**		
IEPA	**Eparoz**	**5.87**	**5**	Pn		**Pn**	**18 24 40.1**	**+3.3**		
	1.0nm,0.2s,SNR=7.9									
IEPA	**Eparoz**	**5.87**	**5**	Pn		**Pn**	**18 24 40.1**	**+3.3**		
	1.0nm,0.2s,SNR=7.9									
IELO	**Elcoad**	**5.94**	**5**	Pn		**Pn**	**18 24 40.4**	**+2.7**		
	0.7nm,0.3s,SNR=7.9									
IELO	**Elcoad**	**5.94**	**5**	Pn		**Pn**	**18 24 40.4**	**+2.7**		
	0.7nm,0.3s,SNR=7.9									
CSOR	**Sort**	**5.95**	**23**	Pn		**Pn**	**18 24 39.6**	**+1.6**		
	0.3nm,0.2s,SNR=7.9									
CSOR	**Sort**	**5.95**	**23**	Pn		**Pn**	**18 24 39.6**	**+1.6**		
	0.3nm,0.2s,SNR=7.9									
EORO	**Oroz-Betelu**	**5.98**	**5**	Pn		**Pn**	**18 24 40.4**	**+2.1**		
	2.8nm,0.6s,SNR=5.6									
EORO				Pg		**Pg**	**18 25 02.8**	**-2.2**		
	4.7nm,0.6s,SNR=7.9									
EORO	**Oroz-Betelu**	**5.98**	**5**	Pn		**Pn**	**18 24 40.4**	**+2.1**		
	2.8nm,0.6s,SNR=5.6									
ETSF	**Etsaut**	**6.06**	**10**	*e*Pn		**Pn**	**18 24 41.1**	**+1.6**		
ETSF				*e*Sn		**Sn**	**18 25 45.5**	**-3.0**		
	0.3nm,0.2s									
ETSF	**Etsaut**	**6.06**	**10**	Pn		**Pn**	**18 24 41.1**	**+1.6**		
ETSF				Sn		**Sn**	**18 25 45.5**	**-3.0**		
	0.2nm,0.2s									
ETSF	**Etsaut**	**6.06**	**10**	Pn		**Pn**	**18 24 41.1**	**+1.6**		
SJPF	**Ste Jean**	**6.21**	**5**	*e*Pn		**Pn**	**18 24 42.2**	**+0.8**		
SJPF				*e*Sn		**Sn**	**18 25 49.4**	**-2.5**		
	0.5nm,0.3s									
SJPF	**Ste Jean**	**6.21**	**5**	Pn		**Pn**	**18 24 42.2**	**+0.8**		
SJPF				Sn		**Sn**	**18 25 49.4**	**-2.5**		
	0.2nm,0.3s									
SJPF	**Ste Jean**	**6.21**	**5**	Pn		**Pn**	**18 24 42.2**	**+0.8**		
EPF	**Esparros**	**6.35**	**16**	*e*Pn		**Pn**	**18 24 45.6**	**+2.2**		
EPF				*e*Sn		**Sn**	**18 25 52.7**	**-2.9**		
	0.8nm,0.3s									
EPF	**Esparros**	**6.35**	**16**	Pn		**Pn**	**18 24 45.6**	**+2.2**		
EPF				Sn		**Sn**	**18 25 52.7**	**-2.9**		
	0.4nm,0.3s									
EPF	**Esparros**	**6.35**	**16**	Pn		**Pn**	**18 24 45.6**	**+2.2**		
ELAN	**Lanestosa**	**6.39**	**351**	Pn		**Pn**	**18 24 45.4**	**+1.5**		
	0.4nm,0.2s,SNR=7.9									
ELAN				Lg		Lg	18 26 32.6			
	19nm,0.8s,SNR=7.9									
ELAN	**Lanestosa**	**6.39**	**351**	Pn		**Pn**	**18 24 45.4**	**+1.5**		
	0.4nm,0.2s,SNR=7.9									
ELAN				Lg		Lg	18 26 32.6			
	19nm,0.8s,SNR=7.9									
EARI	**Arriondas**	**6.82**	**340**	Pn		**Pn**	**18 24 51.5**	**+1.6**		
	1.2nm,0.3s,SNR=8.6									
EARI	**Arriondas**	**6.82**	**340**	Pn		**Pn**	**18 24 51.5**	**+1.6**		
	1.2nm,0.3s,SNR=8.6									
QUIF	**Quistinic**	**11.01**	**356**	*e*Pn		**Pn**	**18 25 47.7**	**+0.5**		
QUIF	**Quistinic**	**11.01**	**356**	Pn		**Pn**	**18 25 47.7**	**+0.5**		
QUIF	**Quistinic**	**11.01**	**356**	Pn		**Pn**	**18 25 47.7**	**+0.5**		
SGMF	**Saint Gilles**	**11.32**	**358**	*e*Pn		**Pn**	**18 25 51.8**	**+0.3**		
SGMF	**Saint Gilles**	**11.32**	**358**	Pn		**Pn**	**18 25 51.8**	**+0.3**		
SGMF	**Saint Gilles**	**11.32**	**358**	Pn		**Pn**	**18 25 51.8**	**+0.3**		
ROSF	**Rostrenen**	**11.44**	**356**	*e*Pn		**Pn**	**18 25 53.2**	**+0.1**		
ROSF	**Rostrenen**	**11.44**	**356**	Pn		**Pn**	**18 25 53.2**	**+0.1**		
ROSF	**Rostrenen**	**11.44**	**356**	Pn		**Pn**	**18 25 53.2**	**+0.1**		

*SCB **15** 18:32:51.1±1.4,24°.10S×67°.54W,h130km,MI3.5/1, Error ellipse: s-maj=35.5km s-min=14.5km az=179.0*
*ISCJB **15** 18:32:52.4±0.2,24°.25S±0°.03×66°.91W±0°.04,h181km, mb4.3/49, Error ellipse: s-maj=5.8km s-min=3.2km az=158.3*
*SJA **15** 18:32:52.1±0.3,24°.19S×66°.94W,h216km±8km,ML3.7, MW3.6*
*NEIC **15** 18:32:53.6±0.7,24°.20S×66°.82W,h179km±6km,mb4.3/44, Error ellipse: s-maj=12.1km s-min=8.4km az=69.0*
*IDC **15** 18:32:54.5±1.1,24°.14S×66°.85W,h183km±9km,mb3.5/6, mb1 3.8/11,mb1mx3.6/26,mbtmp4.1/11, Error ellipse: s-maj=15.9km s-min=13.5km az=23.0*
*GUC **15** 18:32:56.3±0.3,23°.95S×67°.49W,h236km±6km,ML5.3*
ISC 15 18:32:53.5±0.4,24°26S±0°.04×66°99W±0°.05,h181km, n104,σ1§83/123,mb4.2/49,9C-5D,Salta Province

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.41**	**313**	P			**Pn**	**18 33 37.9**	**+2.4**
	4µm,0.3s,baz=135,slow=9.8,SNR=275								
LVC				S			**Sn**	**18 34 10.0**	**+1.8**
	14µm,0.3s,baz=270,slow=21,SNR=73								
LVC	**Limon Verde**	**2.41**	**313**	*i* P			**Pn**	**18 33 38.2**	**+2.7**
LVC				*i* S			**Sn**	**18 34 10.0**	**+1.8**
PB06	**IPOC Station P**	**2.83**	**303**	↑*i* P			**Pn**	**18 33 42.4**	**+2.1**
PB06				*i* S			**Sn**	**18 34 17.2**	**+0.5**
PB06				IAML				18 34 19.8	
	comp=E,6µm,0.3s								
AHML	**Horco Molle**	**2.93**	**150**	*i* P			**Pn**	**18 33 42.8**	**+1.4**
AHML				IAML				18 33 44.5	
	comp=Z,94nm,0.5s								
AHML				*i* S			**Sn**	**18 34 20.2**	**+1.5**
PB09	**IPOC Station P**	**3.21**	**319**	↑*i* P			**Pn**	**18 33 46.9**	**+1.9**
PB09				*i* S			**Sn**	**18 34 25.1**	**+0.1**
PB09				IAML				18 34 28.3	
	comp=N,4µm,0.3s								
MOCB	**Mochara**	**3.24**	**23**	↓*i* Pn			**Pn**	**18 33 47.4**	**+1.8**
MOCB				*e*Sn			**Sn**	**18 34 28.1**	**+1.8**
	comp=N,84nm,0.8s								
PB10	**IPOC Station P**	**3.34**	**282**	↑*i* P			**Pn**	**18 33 48.0**	**+1.6**
PB10				*i* S			**Sn**	**18 34 27.5**	**-0.2**
PB10				IAML				18 34 34.1	
	comp=N,5µm,0.6s								
PB10	**IPOC Station P**	**3.34**	**282**	*e*Pn			**Pn**	**18 33 48.3**	**+1.9**
PB10				*e*Sn			**Sn**	**18 34 26.6**	**-1.1**
PB04	**IPOC Station P**	**3.48**	**303**	↑*i* P			**Pn**	**18 33 49.6**	**+1.3**
PB04				*i* S			**Sn**	**18 34 29.9**	**-1.2**
PB04	**IPOC Station P**	**3.48**	**303**	*e*Pn			**Pn**	**18 33 49.5**	**+1.3**
PB04				*e*Sn			**Sn**	**18 34 29.8**	**-1.2**
PB01	**IPOC Station P**	**3.94**	**324**	↑*i* P			**Pn**	**18 33 54.7**	**+0.6**
PB01				*i* S			**Sn**	**18 34 39.8**	**-1.6**
PB01	**IPOC Station P**	**3.94**	**324**	*e*Pn			**Pn**	**18 33 54.7**	**+0.6**
PB01				*e*Sn			**Sn**	**18 34 39.3**	**-2.1**
PB08	**IPOC Station P**	**4.56**	**334**	↑*i* P			**Pn**	**18 34 03.2**	**+1.0**
PB08				*i* S			**Sn**	**18 34 55.4**	**-0.6**
PB11	**IPOC Station P**	**5.11**	**331**	*e*Pn			**Pn**	**18 34 08.5**	**-0.7**
PB11				*e*Sn			**Sn**	**18 35 01.2**	**-7.3**
LCO	**Las Campanas**	**5.78**	**214**	*e*Pn			**Pn**	**18 34 18.7**	**+0.9**
LCO				*e*Sn			**Sn**	**18 35 18.9**	**-5.3**
AVFE	**Valle Fertil**	**6.39**	**184**	*i* P			**Pn**	**18 34 26.1**	**+0.4**
AVFE				IAML				18 34 29.9	
	comp=Z,14nm,0.2s								
AVFE				*i* S			**Sn**	**18 35 35.8**	**-2.5**
AMOG	**MOGNA**	**6.79**	**191**	*i* P			**Pn**	**18 34 31.5**	**+0.7**
ACHE	**Chepes**	**6.88**	**178**	*i* P			**Pn**	**18 34 32.6**	**+0.4**
ACHE				*i* S			**Sn**	**18 35 47.1**	**-3.0**
BBOJ	**La Paz, Jacaqu**	**7.33**	**351**	↑*e*Pn			**Pn**	**18 34 38.9**	**+0.3**
TCA	**Tanti**	**7.36**	**164**	*i* P			**Pn**	**18 34 38.5**	**0.0**
TCA				IAML				18 34 39.8	
	comp=Z,18nm,0.4s								
TCA				*i* S			**Sn**	**18 35 57.2**	**-4.2**
BBOE	**La Paz, Chanca**	**7.47**	**353**	↓*e*Pn			**Pn**	**18 34 41.4**	**+1.1**
BBOD	**La Paz, Gloria**	**7.73**	**348**	↓*e*Pn			**Pn**	**18 34 43.7**	**-0.1**
LPAZ	**La Paz**	**8.00**	**352**	P			**Pn**	**18 34 47.9**	**+0.4**
	comp=Z,2.7nm,0.3s,baz=159,slow=8.7,SNR=33								
LPAZ				S			**Sn**	**18 36 15.4**	**-2.1**
	comp=Z,0.9nm,0.3s,baz=62,slow=18,SNR=3.0								
LPAZ	**La Paz**	**8.00**	**352**	*e*Pn			**Pn**	**18 34 47.7**	**+0.3**
LPAZ				*e*Sn			**Sn**	**18 36 14.6**	**-3.0**
LPAZ	**La Paz**	**8.00**	**352**	↓*i* Pn			**Pn**	**18 34 47.5**	**+0.1**
BBOB	**La Paz, Bander**	**8.15**	**352**	↑*i* Pn			**Pn**	**18 34 49.1**	**-0.1**
CPUP	**Villa Florida**	**8.98**	**105**	P			**Pn**	**18 34 59.1**	**-0.6**
	comp=Z,0.3nm,0.3s,baz=304,slow=13,SNR=11								
CPUP	**Villa Florida**	**8.98**	**105**	*e*Pn			**Pn**	**18 34 58.9**	**-0.8**
SIV	**San Ignacio**	**9.93**	**35**	P			**Pn**	**18 35 10.2**	**-1.9**
	comp=Z,1.0nm,0.3s,baz=278,slow=23,SNR=13								
SIV				S			**Sn**	**18 36 55.8**	**-7.0**
	comp=Z,0.1nm,0.3s,baz=226,slow=16,SNR=3.8								
TRQA	**Tornquist**	**14.40**	**164**	*e*Pn			**Pn**	**18 36 08.4**	**-0.7**
PLCA	**Paso Flores**	**16.70**	**189**	P			**Pn**	**18 36 37.8**	**+0.8**
	comp=Z,2.2nm,0.3s,baz=29,slow=9.8,SNR=5.9								
PLCA	**Paso Flores**	**16.70**	**189**	*e*P			**P**	**18 36 35.3**	**-1.0**
	comp=Z,7.8nm,0.6s								
BDFB	**Brasilia**	**19.77**	**68**	P			**P**	**18 37 10.6**	**+0.5**
	baz=258,slow=9.1								
BDFB	**Brasilia**	**19.77**	**68**	*e*P			**P**	**18 37 10.5**	**+0.5**
	comp=Z,28nm,1.1s								
PTGA	**Pitinga**	**24.36**	**17**	*e*P			**P**	**18 37 54.4**	**-0.5**
	comp=Z,15nm,1.7s								
RUSC	**La Rusia**	**30.55**	**348**	*e*P			**P**	**18 38 50.0**	**-0.7**
	comp=Z,3.7nm,1.2s								
HELC	**Santa Helena**	**31.39**	**344**	*e*P			**P**	**18 38 59.2**	**+1.3**
	comp=Z,8.4nm,0.6s								
GDHS	**Morne Mazeau,**	**40.61**	**8**	*e*P			**P**	**18 40 14.5**	**-1.2**
	comp=Z,29nm,0.7s								
CELP	**Cerrillos**	**42.08**	**1**	*e*P			**P**	**18 40 25.5**	**-2.2**
PTCN	**Pitcairn Islan**	**56.87**	**255**	*e*P			**P**	**18 42 23.8**	**+4.2**
	comp=Z,424nm,0.5s								
SNAA	**Sanae**	**59.10**	**161**	*e*P			**P**	**18 42 35.0**	**+0.5**
SWET	**Senanee**	**61.81**	**342**	*e*P			**P**	**18 42 52.8**	**-0.4**
	comp=Z,2.5nm,0.8s								
JCT	**Junction City**	**62.87**	**328**	*e*P			**P**	**18 43 01.0**	**+0.7**
	comp=Z,6.2nm,0.6s								
WVT	**Waverly**	**63.21**	**341**	*e*P			**P**	**18 43 01.8**	**-0.5**
	comp=Z,9.5nm,0.7s								
TXAR	**Lajitas Array**	**63.89**	**324**	P			**P**	**18 43 08.1**	**+0.9**
	comp=Z,0.9nm,0.8s,baz=149,slow=8.7,SNR=12								
TX31	**Lajitas Ar. Si**	**63.89**	**324**	*e*P			**P**	**18 43 07.8**	**+0.7**
ABTX	**Abilene, Hawle**	**64.58**	**330**	*e*P			**P**	**18 43 10.6**	**-0.9**
	comp=Z,6.5nm,0.5s								
PBMO	**Poplar Bluff**	**64.61**	**339**	*e*P			**P**	**18 43 11.2**	**-0.3**
	comp=Z,6.6nm,0.8s								
WCI	**Wyandotte Cave**	**64.75**	**343**	*e*P			**P**	**18 43 10.7**	**-1.7**
	comp=Z,38nm,1.5s								
HHAR	**Hobbs**	**65.37**	**336**	*e*P			**P**	**18 43 15.7**	**-0.8**
	comp=Z,8.1nm,1.4s								
BLO	**Bloomington**	**65.69**	**343**	*e*P			**P**	**18 43 17.1**	**-1.3**
	comp=Z,20nm,1.2s								
MNTX	**Cornudas Mount**	**66.66**	**325**	*e*P			**P**	**18 43 24.3**	**-0.4**
	comp=Z,2.3nm,0.8s								
MSTX	**Muleshoe**	**67.16**	**328**	*e*P			**P**	**18 43 28.5**	**+0.5**
	comp=Z,7.1nm,0.8s								
BUF	**Buffalo**	**67.74**	**351**	*e*P			**P**	**18 43 30.4**	**-0.9**
HDIL	**Hopedale**	**67.74**	**342**	*e*P			**P**	**18 43 29.1**	**-2.2**
	comp=Z,19nm,0.5s								
319A	**Douglas**	**68.54**	**322**	*e*P			**P**	**18 43 37.6**	**+0.9**
	comp=Z,4.3nm,0.6s								
BNM	**Barren Site**	**69.23**	**326**	*e*P			**P**	**18 43 42.8**	**+1.8**
LPM	**Los Pinos Moun**	**69.36**	**326**	*e*P			**P**	**18 43 43.6**	**+1.9**
LAZ	**Ladron**	**69.69**	**325**	*e*P			**P**	**18 43 45.7**	**+1.9**
ANMO	**Albuquerque**	**69.76**	**326**	*e*P			**P**	**18 43 45.5**	**+1.2**
	comp=Z,3.3nm,0.8s								
JFWS	**Jewell Farm**	**70.19**	**342**	*e*P			**P**	**18 43 46.4**	**0.0**
	comp=Z,10nm,0.6s								
T25A	**Trinidad**	**70.51**	**329**	*e*P			**P**	**18 43 49.8**	**+1.1**
	comp=Z,3.3nm,0.8s								
BGNE	**Belgrade**	**71.44**	**336**	*e*P			**P**	**18 43 54.1**	**+0.1**
	comp=Z,32nm,0.6s								
SDCO	**Great Sand Dun**	**71.51**	**329**	*e*P			**P**	**18 43 56.0**	**+1.2**
	comp=Z,2.3nm,0.9s								
X16A	**Lo Mia Camp, P**	**72.01**	**323**	*e*P			**P**	**18 43 59.7**	**+1.9**
	comp=Z,2.1nm,0.9s								
OGNE	**Ogallala**	**72.58**	**333**	*e*P			**P**	**18 43 56.7**	**-4.2**
	comp=Z,8.8nm,0.9s								
WUAZ	**Wupatki**	**72.79**	**323**	*e*P			**P**	**18 44 04.4**	**+2.0**
	comp=Z,5.0nm,0.8s								
ECSD	**EROS Data Cent**	**72.92**	**338**	*e*P			**P**	**18 44 02.2**	**-0.5**
	comp=Z,5.8nm,1.1s								
SPMN	**Marine on St.**	**73.05**	**341**	*e*P			**P**	**18 44 02.8**	**-0.6**
	comp=Z,5.8nm,1.0s								
SYO	**Syowa Base**	**73.31**	**159**	↑*e*P			**P**	**18 44 04.2**	**-0.5**
SYO	**Syowa Base**	**73.31**	**159**	↓*e*P			P	18 44 12.0	+7.3
PV09	**Paradox Valley**	**73.87**	**327**	*e*P			**P**	**18 44 06.8**	**-2.0**
W13A	**Hualapai Mount**	**73.89**	**321**	*e*P			**P**	**18 44 07.5**	**-1.3**
	comp=Z,2.1nm,0.9s								
U15A	**North Rim**	**73.97**	**323**	*e*P			**P**	**18 44 11.2**	**+1.9**
	comp=Z,3.2nm,0.8s								
N23A	**Red Feather La**	**74.24**	**330**	*e*P			**P**	**18 44 12.4**	**+1.6**
	comp=Z,3.4nm,0.8s								
PFO	**Pinyon Flats O**	**74.34**	**319**	*e*P			**P**	**18 44 12.8**	**+1.4**
	comp=Z,3.7nm,0.8s								
PHWY	**Pilot Hill**	**74.35**	**331**	*e*P			**P**	**18 44 14.4**	**+3.0**
	comp=Z,5.7nm,1

68nm,1.5s
COEN eSn Sn 18 42 01.8 -15
WRAB Tennant Creek 16.82 168 *e*P **Pn 18 39 24.5 -1.6**
WRAB pmax pmax
comp=Z,39nm,0.9s
WRAB Tennant Creek 16.82 168 *e*Pn **Pn 18 39 24.5 -1.6**
comp=Z,39nm,0.9s
WRAB eSn Sn 18 42 20.6 -11
WR1 Warramunga Arr 16.83 168 *e*Pn **Pn 18 39 20.8 -5.4**
comp=Z,341nm,2.0s
WR1 eSn **Sn 18 42 23.8 -8.5**
WRA Warramunga Arr 16.83 168 Pn **Pn 18 39 20.8 -5.4**
comp=Z,0.4nm,0.3s,baz=350,slow=13,SNR=31
WRA Sn **Sn 18 42 23.8 -8.5**
comp=Z,1.0nm,0.3s,baz=356,slow=23,SNR=3.9
WB2 Warramunga Arr 16.83 168 *e*Pn **Pn 18 39 23.6 -2.6**
comp=Z,47nm,0.9s
WB2 eSn Sn 18 42 22.2 -10
JAGI Jajag, Banyuwa 17.22 252 *e*Pn **Pn 18 39 29.9 -1.1**
comp=Z,56nm,1.2s
KKM Kota Kinabalu 17.24 303 *e*Pn **Pn 18 39 31.5 0.0**
comp=Z,21nm,1.0s
PMG Port Moresby 17.40 111 LR LR 18 49 06.2
comp=Z,572nm,19.4s,baz=288,slow=47
PMG Port Moresby 17.40 111 *e*P **P 18 39 34.7 +0.3**
PMG pmax pmax
comp=Z,39nm,1.0s
PMG Port Moresby 17.40 111 *e*Pn **P 18 39 34.7 +0.3**
comp=Z,39nm,1.0s
BLJI Banyuglugur 17.57 255 P **P 18 39 39.3 +3.0**
comp=Z,117nm,0.7s
SBUM Sibu 19.37 287 *e*P **Pn 18 39 56.9 -0.4**
comp=Z,79nm,1.6s
STKI Sintang 19.52 280 P **Pn 18 40 00.8 +1.6**
AS31 Alice Springs 20.39 172 *e*P **P 18 40 08.4 +1.3**
comp=Z,30nm,0.6s
ASAR Alice Springs 20.39 172 P **P 18 40 08.1 +0.9**
comp=Z,31nm,0.5s,baz=351,slow=10,SNR=455
ASAR S **S 18 43 53.7 -0.4**
comp=Z,6.2nm,1.0s,baz=355,slow=21,SNR=7.6
AS01 Alice Springs 20.40 171 *e*P **P 18 40 08.2 +1.0**
UGM Wanagama 20.58 257 *e*P **P 18 40 08.1 -1.2**
comp=Z,270nm,1.4s
MBWA Marble Bar 20.64 210 *e*P **P 18 40 07.5 -2.3**
comp=Z,59nm,1.8s
KSM Kuching 20.95 283 *e*P **P 18 40 13.1 -0.3**
comp=Z,30nm,0.8s
GUMO Guam 21.96 40 LR LR 18 48 22.5
comp=Z,282nm,18.6s,baz=228,slow=36
CTA Charters Tower 22.48 139 P **P 18 40 31.3 +1.6**
comp=Z,7.1nm,0.8s,baz=342,slow=11,SNR=7.6
CTAO Charters Tower 22.48 139 *e*P **P 18 40 30.4 +0.7**
CTAO pmax pmax
comp=Z,109nm,1.9s
CTAO Charters Tower 22.48 139 *e*P **P 18 40 30.4 +0.7**
comp=Z,109nm,1.9s
CISI Cisompet, Garu 23.16 259 P **P 18 40 38.8 +2.0**
CISI Cisompet, Garu 23.16 259 *e*P **P 18 40 35.7 -1.1**
comp=Z,67nm,0.7s
MYKOM Kota Tinggi 27.34 280 *e*P **P 18 41 17.8 +2.7**
comp=Z,75nm,1.5s
FORT Forrest 27.36 185 *e*P **P 18 41 16.7 +1.6**
comp=Z,391nm,0.9s
BKNI Bangkinang 29.88 277 *e*P **P 18 41 37.8 -0.1**
comp=Z,56nm,1.2s
STKA Stephens Creek 30.13 161 P **P 18 41 40.8 +1.0**
comp=Z,3.0nm,0.6s,baz=337,slow=8.2,SNR=9.2
STKA LR LR 18 55 00.1
comp=Z,410nm,20.5s,baz=325,slow=39
STKA Stephens Creek 30.13 161 *e*P **P 18 41 43.2 +3.4**
STKA pmax pmax
comp=Z,3.0nm,0.6s
STKA Stephens Creek 30.13 161 *e*P **P 18 41 41.2 +1.4**
comp=Z,3.8nm,1.2s
JOW Kunigami 30.14 356 *e*P **P 18 41 37.7 -2.3**
comp=Z,37nm,1.1s
QIZ Qiongzhong 30.30 318 P **P 18 41 41.9 +0.4**
QIZ S **S 18 46 39.8 +0.1**
QIZ LR LR
comp=Z,220nm,16.3s
IPM Ipoh 30.67 285 *e*P **P 18 41 44.6 -0.3**
comp=Z,47nm,1.4s
KULM Kulim 31.24 286 *e*P **P 18 41 51.6 +1.7**
comp=Z,99nm,2.0s
MNSI Mandailing Nat 31.39 277 P P 18 41 56.2 +5.0
NWAO Narrogin (SRO) 31.98 202 P **P 18 41 55.6 -0.5**
comp=Z,6.2nm,0.5s,baz=358,slow=5.7,SNR=7.9
PSI Prapat 32.36 281 P **P 18 42 00.1 +0.3**
comp=Z,3.9nm,0.4s,baz=149,slow=8.5,SNR=4.3
PSI Prapat 32.36 281 *e*P **P 18 41 59.6 -0.2**
PSI pmax pmax
comp=Z,10.0nm,0.9s
PSI Prapat 32.36 281 *e*P **P 18 41 59.6 -0.2**
comp=Z,10nm,0.9s
ARMA Armidale 33.38 146 *e*P **P 18 42 07.6 -0.9**
comp=Z,28nm,1.4s
GSI Gunungsitoli 33.44 277 *e*P **P 18 42 08.7 -0.5**
comp=Z,140nm,2.0s
CAN Canberra 36.01 154 *e*P **P 18 42 34.4 +3.2**
CAN pmax pmax
comp=Z,73nm,1.7s
CAN Canberra 36.01 154 *e*P **P 18 42 34.4 +3.2**
comp=Z,73nm,1.7s
JNU Nakatsue 36.31 0 P **P 18 42 32.8 -0.9**
comp=Z,4.0nm,0.8s,baz=254,slow=4.7,SNR=6.9
JNU Nakatsue 36.31 0 *e*P **P 18 42 32.1 -1.6**
comp=Z,13nm,1.2s
NJ2 Nanjing 37.01 343 *e*P **P 18 42 38.6 -1.0**
NJ2 pmax pmax
comp=Z,8.0nm,0.5s
WHN Wuhan 37.19 336↓ *i*P **P 18 42 41.8 +0.7**
WHN S **S 18 48 24.8 -1.2**
WHN pmax pmax
comp=Z,40nm,0.9s
WHN LR LR
comp=Z,470nm,21.6s
GYA Guiyang 37.70 323 *e*P **P 18 42 47.3 +1.6**
CM01 Chiang Mai Arr 38.05 306 *e*P **P 18 42 48.3 -0.4**
CM31 Chiang Mai Arr 38.08 306 *e*P **P 18 42 49.2 +0.3**
CMAR Chiang Mai Arr 38.08 306 P **P 18 42 50.4 +1.4**
comp=Z,3.3nm,1.0s,baz=135,slow=6.7,SNR=13
CMAR Chiang Mai Arr 38.08 306 *e*P **P 18 42 50.3 +1.4**
CMAR pmax pmax
comp=Z,4.0nm,1.0s
CHTO Chiang Mai 38.27 306 *e*P **P 18 42 51.4 +0.9**
CHTO pmax pmax
comp=Z,9.0nm,1.0s
CHTO Chiang Mai 38.27 306 *e*P **P 18 42 51.4 +0.9**
comp=Z,8.8nm,1.0s
ENH Enshi 39.14 330 *e*P **P 18 42 56.4 -1.3**
comp=Z,47nm,1.8s
KMI Kunming 39.25 318 P **P 18 43 00.0 +1.1**
KMI pmax pmax
comp=Z,10.0nm,0.8s
KMI pmax pmax
comp=Z,150nm,4.0s
DZM Mont Dzumac 39.32 121 *e*P **P 18 43 00.5 +1.0**
comp=Z,37nm,1.5s
MJAR Matsushiro Arr 40.34 9 P **P 18 43 05.4 -2.1**
comp=Z,2.2nm,0.8s,baz=188,slow=9.7,SNR=9.1
MJAR LR LR 18 58 28.8
comp=Z,190nm,21.0s,baz=180,slow=34
MAJO Matsushiro 40.34 9↑↑ *e*P **P 18 43 06.3 -1.2**
MAJO pmax pmax
comp=Z,28nm,0.8s
MAJO Matsushiro 40.34 9 *e*P **P 18 43 05.0 -2.5**
comp=Z,5.4nm,0.8s
MJB9 Matsu-Tunnel 40.34 9 *e*P **P 18 43 04.6 -2.9**
comp=Z,1.4nm,0.8s
MJA0 Matsu Arr-Jizo 40.35 9 *e*P **P 18 43 11.0 +3.4**
MJA0 pmax pmax
comp=Z,1.0nm,0.6s
KSAR Wonju Array Be 40.71 357 P **P 18 43 09.7 -0.8**
KSAR Wonju Array Be 40.71 357 P **P 18 43 09.7 -0.8**
KSRS Korea Array 40.72 357 P **P 18 43 09.7 -0.9**
comp=Z,3.9nm,0.6s,baz=174,slow=9.6,SNR=18
KSRS LR LR 18 59 21.3
comp=Z,202nm,20.5s,baz=174,slow=35
KS01 Wonju Array Si 40.74 357 *e*P P 18 43 05.7 -5.1
XAN Xi'an 42.52 333 P **P 18 43 23.3 -2.2**
XAN S **S 18 49 44.3 -1.7**
XAN pmax pmax
comp=Z,14nm,1.5s
XAN pmax pmax
comp=Z,57nm,4.3s
XAN LR LR
comp=Z,500nm,13.2s
XAN LR LR
comp=Z,160nm,18.7s
CD2 Chengdu 42.71 325 *e*P **P 18 43 27.4 +0.3**
CD2 pP sP 18 43 40.1 0.0
CD2 sP pP 18 43 45.9 +10
CD2 PP **PP 18 45 07.5 +0.9**
CD2 S **S 18 49 48.8 -0.1**
CD2 sS sS 18 50 10.8 +6.7
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.0s
BJT Baijiatuau 45.22 344 *e*P **P 18 43 45.3 -1.7**
BJT pmax pmax
comp=Z,14nm,1.1s
BJT Baijiatuau 45.22 344 *e*P **P 18 43 45.3 -1.7**
comp=Z,14nm,1.1s
BJI Beijing 45.23 344 P **P 18 43 46.3 -0.8**
BJI S **S 18 50 26.8 +1.5**
BJI pmax pmax
comp=Z,8.0nm,1.2s
BJI pmax pmax
comp=Z,96nm,4.7s
LZH Lanzhou 46.62 330 *e*P **P 18 44 00.5 +2.1**
LZH pP sP 18 44 10.9 -0.5
LZH sP pP 18 44 16.1 +8.4
LZH pmax pmax
comp=Z,22nm,1.0s
LZH pmax pmax
comp=Z,120nm,4.7s
CN2 Changchun 47.22 355 *e*P **P 18 44 05.0 +2.3**
CN2 pmax pmax
comp=Z,10.0nm,0.8s
HHC Hu-ho-hao-te 47.38 340 *e*P **P 18 44 06.8 +2.6**
HHC PP **PP 18 45 57.6 +1.8**
HHC S **S 18 50 54.8 -1.5**
HHC sS sS 18 51 17.9 +6.2
HHC SS **SS 18 54 18.3 -6.1**
HHC pmax pmax
comp=Z,18nm,1.2s
HHC pmax pmax
comp=Z,60nm,3.7s
HHC LR LR
comp=Z,77nm,13.6s
HHC LR LR
comp=Z,94nm,13.6s
USRK Ussuriysk Ar. 47.39 1 P **P 18 44 03.1 -0.9**
comp=Z,3.0nm,0.6s,baz=165,slow=7.9,SNR=6.5
MDJ Mudanjiang 47.80 359 P **P 18 44 07.8 +0.6**
MDJ pmax pmax
comp=Z,6.0nm,1.2s
LSA Lhasa 50.16 314 *e*P **P 18 44 27.2 +1.0**
LSA pmax pmax
comp=Z,11nm,1.2s
LSA Lhasa 50.16 314 *e*P **P 18 44 27.2 +1.0**
comp=Z,11nm,1.2s
GTA Gaotai 51.21 329 *e*P **P 18 44 33.9 +0.4**
GTA pP sP 18 44 46.3 -0.3
GTA sP pP 18 44 51.6 +8.7
GTA pmax pmax
comp=Z,4.0nm,1.3s
YSS Yuzh-Sakhalins 51.25 11 *e*P **P 18 44 33.1 -0.3**
YSS pmax pmax
comp=Z,20nm,1.4s
YSS Yuzh-Sakhalins 51.25 11 *e*P **P 18 44 33.1 -0.3**
comp=Z,20nm,1.4s
RAMN Ramite 52.17 308 *e*P **P 18 44 40.5 -0.5**
KLR Kul'dur 52.42 1 P **P 18 44 42.1 0.0**
comp=Z,4.9nm,0.9s,baz=233,slow=2.1,SNR=14
KLR Kul'dur 52.42 1↑↑ *e*P **P 18 44 42.8 +0.7**
PKIN Phulchoki 53.41 308 *e*P **P 18 44 50.4 +0.2**
comp=Z,16nm,0.8s
DMN Daman 53.65 308 *e*P **P 18 44 52.1 +0.1**
comp=Z,22nm,0.8s
GKN Gorkha 54.20 308 *e*P **P 18 44 55.7 -0.2**
KOLN Koldanda 54.91 307 *e*P **P 18 45 00.2 -0.9**
comp=Z,44nm,0.9s
SONA0 Songino Array 55.28 340 *e*P **P 18 45 03.5 +0.2**
comp=Z,11nm,1.2s
SONM Songino Array 55.28 340 P **P 18 45 03.5 +0.2**
comp=Z,5.2nm,1.1s,baz=152,slow=7.9,SNR=15
SONM LR LR 19 11 12.1
comp=Z,76nm,19.7s,baz=154,slow=39
SONM Songino Array 55.28 340 *e*P **P 18 45 03.9 +0.6**
SONM pmax pmax
comp=Z,5.0nm,1.0s
SONA1 Songino Array 55.29 340 *e*P **P 18 45 03.0 -0.4**
PYUN Piuthan 55.54 308 *e*P **P 18 45 04.9 -0.8**
ZAK Zakamensk 58.52 340 *e*P **P 18 45 24.2 -2.0**
ZAK pmax pmax
comp=Z,4.0nm,1.4s
TLY Talaya 59.50 341 P **P 18 45 32.3 -0.5**
comp=Z,0.5nm,0.3s,baz=260,slow=2.3,SNR=3.2
TLY Talaya 59.50 341 *e*P **P 18 45 35.9 +3.0**
TLY *e*S S 18 53 50.5 +10
TLY pmax pmax
comp=Z,7.0nm,2.0s
TLY MLR MLR
comp=Z,59nm,15.0s
MOY Mondy 60.40 339 *e*P **P 18 45 41.5 +2.4**
PEA0 Petropavlovsk- 60.70 18 *e*P **P 18 45 40.4 -0.7**
PEA0B Petropavlovsk- 60.70 18 *e*P **P 18 45 40.9 -0.1**
comp=Z,19nm,1.2s
PETK Petropavlovsk- 60.70 18 P **P 18 45 41.4 +0.4**
comp=Z,3.6nm,0.9s,baz=167,slow=5.4,SNR=6.4
PETK LR LR 19 09 37.3
comp=Z,70nm,21.7s,baz=198,slow=34
PEA1 Petropavlovsk- 60.70 18 *e*P **P 18 45 41.4 +0.3**
WMQ Urumqi 60.80 326 *e*P **P 18 45 43.4 +1.4**
WMQ pP sP 18 45 55.8 +0.6
WMQ pmax pmax
comp=Z,7.0nm,1.0s
WMQ LR LR
comp=Z,80nm,25.0s
WMQ LR LR
comp=Z,76nm,26.0s
PET Petropavlovsk 60.93 19 *e*P **P 18 45 43.3 +0.8**
PET pmax pmax
comp=Z,19nm,1.2s
PET Petropavlovsk 60.93 19 *e*P **P 18 45 43.3 +0.8**
comp=Z,19nm,1.2s
BOD Bodaibo 62.48 350 *e*P **P 18 45 51.9 -1.0**
BOD pmax pmax
comp=Z,16nm,1.6s
CASY Casey 64.35 189 *e*P **P 18 46 06.5 +1.4**
comp=Z,14nm,1.3s
YAK Yakutsk 65.25 359 P **P 18 46 10.4 -0.6**
comp=Z,3.3nm,0.3s,baz=47,slow=1.3,SNR=4.3
YAK Yakutsk 65.25 359 *e*P **P 18 46 11.5 +0.5**
YAK pmax pmax
comp=Z,12nm,1.0s
YAK Yakutsk 65.25 359 *e*P **P 18 46 10.8 -0.2**
comp=Z,9.4nm,0.7s
MK01 Makanchi Array 65.62 326 *e*P **P 18 46 13.5 -0.3**
MK31 Makanchi Array 65.64 326 *e*P **P 18 46 13.8 -0.2**
MK31 Makanchi Array 65.64 326 *e*P **P 18 46 13.8 -0.2**
MK32 Makanchi Array 65.64 326 *e*P **P 18 46 13.7 -0.2**
MKAR Makanchi Array 65.64 326 P **P 18 46 13.7 -0.2**
comp=Z,3.4nm,0.7s,baz=112,slow=7.8,SNR=27
MKAR Makanchi Array 65.64 326 *e*P **P 18 46 13.1 -0.9**
MKAR pmax pmax
comp=Z,88nm,1.3s
MKAR Makanchi Array 65.64 326 *e*P **P 18 46 13.1 -0.9**
comp=Z,88nm,1.3s
MAKZ Makanchi 65.82 326 *e*P **P 18 46 15.0 -0.2**
MAKZ pmax pmax
comp=Z,20nm,1.3s
MAKZ Makanchi 65.82 326 *e*P **P 18 46 15.0 -0.2**
comp=Z,20nm,1.3s
KSH Kashi 65.88 316 *e*P **P 18 46 17.5 +1.7**
KSH *e*pP sP 18 46 30.6 +1.5
KSH *e*sP pP 18 46 35.5 +10
KSH *e*ScP 18 50 45.6
KSH PcS 18 50 49.8
KSH S **S 18 55 00.1 -1.1**
KSH pmax pmax
comp=Z,43nm,3.7s
KSH LR LR
comp=Z,71nm,7.7s
KSH LR LR
comp=Z,72nm,6.2s
KSH LR LR
comp=Z,110nm,6.0s
SEY Seymchan 68.15 10 P **P 18 46 30.0 +0.4**
comp=Z,9.7nm,1.0s,baz=222,slow=3.5,SNR=18
SEY Seymchan 68.15 10↓ *i*P **P 18 46 30.7 +1.1**
AAK Ala-Archa 68.28 319↓ *e*P **P 18 46 33.7 +2.6**
AAK pmax pmax
comp=Z,17nm,1.4s
AAK Ala-Archa 68.28 319 *e*P **P 18 46 31.0 -0.1**
comp=Z,11nm,1.4s
ZAA0 Zalesovo Array 68.69 333 *e*P **P 18 46 31.9 -1.3**
ZALV Zalesovo Beam 68.69 333 P **P 18 46 32.2 -1.0**
comp=Z,2.7nm,0.8s,baz=133,slow=6.3,SNR=14
ZAA1 Zalesovo Array 68.70 333 *e*P **P 18 46 32.2 -1.0**
KURBB Kurchatov Arra 69.84 328 P **P 18 46 40.3 0.0**
comp=Z,5.7nm,0.8s,baz=126,slow=5.7,SNR=38
KURK Kurchatov 69.84 328 *e*P **P 18 46 40.3 0.0**
KURK Kurchatov 69.84 328 *e*P **P 18 46 40.3 0.0**
NVS Novosibirsk 69.98 333↓ *i*P **P 18 46 41.8 +0.8**
NVS pmax pmax
comp=Z,11nm,1.4s
NVS pmax pmax
comp=N,5.0nm,1.2s
NVS pmax pmax
comp=E,7.0nm,1.2s
KKAR Karatay Array 71.13 318 *e*P **P 18 46 46.8 -1.6**
KKAR pmax pmax
comp=Z,30nm,1.1s
KKAR Karatay Array 71.13 318 *e*P **P 18 46 46.8 -1.6**
comp=Z,30nm,1.1s
TIXI Tiksi 74.91 359 P **P 18 47 10.7 +0.5**
comp=Z,2.2nm,0.7s,baz=183,slow=4.1,SNR=3.2
TIXI Tiksi 74.91 359↓ *e*P **P 18 47 12.9 +2.8**
TIXI pmax pmax
comp=Z,13nm,2.0s
TIXI Tiksi 74.91 359 *e*P **P 18 47 09.8 -0.3**
comp=Z,7.2nm,1.3s
VOSK Vostochnaya 74.96 327 *e*P **P 18 47 10.0 -0.8**
VOSK pmax pmax
comp=Z,10.0nm,1.3s
VOSK Vostochnaya 74.96 327 *e*P **P 18 47 10.0 -0.8**
comp=Z,10nm,1.3s
BVAR Borovoye Array 75.42 327 P **P 18 47 14.9 +1.4**
comp=Z,7.6nm,1.0s,baz=103,slow=6.5,SNR=23
BRVK Borovoye 75.49 327↓ *i*P **P 18 47 14.7 +0.8**
BRVK pmax pmax
comp=Z,22nm,0.9s
BRVK Borovoye 75.49 327 *e*P **P 18 47 12.7 -1.2**
comp=Z,7.7nm,0.8s
VNDA Vanda 75.92 173 LR LR 19 22 16.6
comp=Z,123nm,18.5s,baz=340,slow=37
VNDA Vanda 75.92 173 *e*P **P 18 47 16.5 +0.6**
VNDA pmax pmax
comp=Z,16nm,1.9s
VNDA Vanda 75.92 173 *e*P **P 18 47 16.5 +0.6**
comp=Z,16nm,1.9s
ZRNK Zerenda 76.14 327 *e*P **P 18 47 17.1 -0.5**
ZRNK pmax pmax
comp=Z,10.0nm,1.1s
ZRNK Zerenda 76.14 327 *e*P **P 18 47 17.1 -0.5**
comp=Z,10nm,1.1s
NRIK Noril'sk 78.26 346 P **P 18 47 30.2 +1.1**
comp=Z,3.4nm,0.6s,baz=137,slow=6.2,SNR=2.9
NRIK LR LR 19 23 32.4
comp=Z,122nm,21.3s,baz=153,slow=37
NRIK Noril'sk 78.26 346 *e*P P 18 47 34.3 +5.2
NRIK pmax pmax
comp=Z,3.0nm,0.6s
GEYT Alibeck 78.45 310 P **P 18 47 32.1 +1.2**
comp=Z,3.7nm,0.7s,baz=103,slow=3.2,SNR=10
MAW Mawson 78.55 201 P **P 18 47 31.9 +1.2**
comp=Z,1.9nm,0.8s,baz=120,slow=8.1,SNR=3.6
MAW LR LR 19 19 13.3
comp=Z,84nm,21.9s,baz=61,slow=33
MAW Mawson 78.55 201 *e*P **P 18 47 31.6 +0.8**
MAW pmax pmax
comp=Z,17nm,0.5s
MAW Mawson 78.55 201 *e*P **P 18 47 31.6 +0.8**
comp=Z,17nm,0.5s
PPT Papeete 79.19 107 LR LR 19 24 25.5
comp=Z,51nm,18.1s,baz=354,slow=37
ABKAR Akbulak array 80.15 321 *e*P **P 18 47 41.0 +1.1**
comp=Z,23nm,0.7s
AKTO Aktyubinsk 81.68 322 P **P 18 47 50.2 +2.1**
comp=Z,1.9nm,0.8s,baz=97,slow=11,SNR=5.9
SVE Sverdlovsk 82.07 329 *e*P **P 18 47 52.3 +2.4**
SVE pmax pmax
comp=Z,12nm,1.1s
ARU Arti 83.04 328 *c i*P **P 18 47 56.8 +1.8**
ARU 18 51 06.0
ARU S **S 18 58 14.4 +2.2**
ARU SS **SS 19 03 36.5 +0.1**
ARU pmax pmax
comp=Z,5.0nm,1.2s
TT01 Tatalina 85.45 26 *e*P **P 18 48 06.7 -0.4**
TTA Tatalina 85.46 26 *e*P **P 18 48 06.8 -0.5**
TTA pmax pmax
comp=Z,12nm,1.0s
TTA Tatalina 85.46 26 *e*P **P 18 48 06.8 -0.5**
comp=Z,12nm,1.0s
QSPA South Pole Qui 86.56 180 *e*P **P 18 48 13.8 +1.0**
MLY Manley 88.23 25 *e*P **P 18 48 21.9 +1.2**
comp=Z,3.3nm,1.0s
WRH Wood River Hil 89.24 25 *e*P **P 18 48 26.8 +1.4**
comp=Z,6.4nm,1.2s
CCB Clear Creek Bu 89.39 25 *e*P **P 18 48 25.6 -0.5**
comp=Z,5.3nm,1.2s
ILAR Eielson Array 89.80 25 P **P 18 48 28.5 +0.5**
comp=Z,0.7nm,0.9s,baz=248,slow=4.3,SNR=6.4
ILAR LR LR 19 22 40.7
comp=Z,23nm,20.5s,baz=254,slow=32
ILAR Eielson Array 89.80 25 *e*P **P 18 48 30.0 +2.0**
ILAR pmax pmax
comp=Z,1.0nm,0.9s
ILB Eielson Array 89.80 25 *e*P **P 18 48 27.5 -0.5**
IL1 Eielson Array 89.80 25 *e*P **P 18 48 28.3 +0.3**
PAX Paxson 90.18 27 *e*P **P 18 48 33.0 +3.0**
PAX pmax pmax
comp=Z,11nm,1.1s
PAX Paxson 90.18 27 *e*P **P 18 48 33.0 +3.0**
comp=Z,11nm,1.1s
DAWY Dawson 92.98 26 *e*P **P 18 48 42.8 0.0**
comp=Z,4.4nm,1.1s
KMBO Kilima Mbogo 93.38 269 LR LR 19 27 25.6
comp=Z,146nm,21.0s,baz=96,slow=33
ARCES ARCESS Array B 98.46 340 LR LR 19 39 10.7
comp=Z,48nm,21.0s,baz=77,slow=39
TORD Torodi Ar. Bea 128.71 284 PKP **PKPdf 18 54 38.8 +0.8**
comp=Z,0.7nm,0.7s,baz=50,slow=1.2,SNR=4.8
TOA1 Torodi Ar. Sit 128.72 284 *e*PKPdf **PKPdf 18 54 38.8 +0.8**
CPUP Villa Florida 149.45 166 PKPbc **PKPab 18 55 22.8 -1.5**
comp=Z,4.0nm,0.9s,baz=152,slow=1.5,SNR=3.4
LPAZ La Paz 153.00 137 PKPbc **PKPbc 18 55 31.4 +2.5**
comp=Z,2.3nm,0.9s,baz=45,slow=3.2,SNR=6.6
LPAZ La Paz 153.00 137 *e*PKIKP **PKPbc 18 55 31.0 +2.1**
LPAZ La Paz 153.00 137 *e*PKPbc **PKPbc 18 55 30.9 +2.1**

IDC 15 18:36:31.2±999.0, 25.60N×16.92E, h0km, Error ellipse: s-maj=472.7km s-min=144.0km az=133.0, Libya

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
I48TN	**KESRA INFRASON**	**12.09**	**329**	*i*			19 45 50.0	
	baz=139,slow=316,SNR=2.5							
I26DE	**FREYUNG INFRAS**	**23.35**	**355**	*i*			21 00 00.0	
	baz=177,slow=325,SNR=0.5							
I42PT	**GRACIOSA ISLAN**	**39.88**	**301**	*i*			22 42 40.0	
	baz=96,slow=312,SNR=0.7							

IDC ***15*** *18:39:42.9±4.0, 3.19S×130.82E, h0km, mb4.0/2, mb1 4.4/3, mb1mx3.6/46, mbtmp4.1/3, ML3.8/1, Error ellipse: s-maj=294.5km s-min=27.9km az=72.0*

ISCJB ***15*** *18:39:43.9±0.6, 3.24S±0.07×130.80E±0.07, h24km, mb4.3/3, Error ellipse: s-maj=10.6km s-min=9.7km az=179.0*

NEIC ***15*** *18:39:44.3±0.5, 3.28S×130.61E, h10km, mb4.2/6, Error ellipse: s-maj=14.7km s-min=8.1km az=76.0*

ISC 15 18:39:45.9±0.9, 3.3S±0.1×130.83E±0.1, h24km, n15, σ1s05/15, mb4.4/3, Seram

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FAKI	**Fak Fak**	**1.46**	**75**	*e*Pn		**Pb**	**18 40 13.3**	**+0.8**
FAKI				*e*Sn		**Sn**	**18 40 27.7**	**-1.6**
WRAB	**Tennant Creek**	**16.89**	**169**	*e*Pn		**Pn**	**18 43 39.8**	**-1.1**
	21nm,1.1s							
WR1	**Warramunga Arr**	**16.89**	**169**	*e*Pn		**P**	**18 43 42.7**	**-0.1**
	13nm,0.9s							

WRA	**Warramunga Arr**	**16.89**	**169**	P		**P**	**18 43 42.7**	**-0.1**
	0.4nm,0.3s,baz=348,slow=11,SNR=2.1							
AS31	**Alice Springs**	**20.46**	**172**	*e*P		Pn	18 44 23.9	-0.4
	22nm,1.5s							
ASAR	**Alice Springs**	**20.46**	**172**	P		**P**	**18 44 23.3**	**+1.3**
	9.8nm,0.4s,baz=351,slow=10,SNR=20							
AS01	**Alice Springs**	**20.47**	**172**	*e*P		**P**	**18 44 22.5**	**+0.4**
MBWA	**Marble Bar**	**20.78**	**210**	*e*P		**P**	**18 44 23.9**	**-1.6**
	52nm,1.8s							
MK01	**Makanchi Array**	**65.61**	**326**	*e*P		**P**	**18 50 27.7**	**-0.4**
MK31	**Makanchi Array**	**65.63**	**326**	*e*P		**P**	**18 50 27.2**	**-0.9**
MK32	**Makanchi Array**	**65.63**	**326**	*e*P		**P**	**18 50 28.4**	**+0.2**
MKAR	**Makanchi Array**	**65.63**	**326**	P		**P**	**18 50 28.4**	**+0.3**
	0.3nm,0.5s,baz=111,slow=7.8,SNR=7.5							
MKAR	**Makanchi Array**	**65.63**	**326**	*e*P		**P**	**18 50 27.6**	**-0.5**
	45nm,0.6s							
VOSK	**Vostochnaya**	**74.95**	**327**	*e*P		**P**	**18 51 25.0**	**0.0**
	1.2nm,0.8s							
VNDA	**Vanda**	**76.00**	**173**	*e*P		**P**	**18 51 32.5**	**+1.8**
	5.8nm,1.5s							

*SJA **15** 18:46:22.3±0.6,24°.18S×66°.89W,h214km±7km,ML3.4, MW3.2*
*ISCJB **15** 18:46:23.2±0.6,24°.19S±0°.05×67°.01W±0°.07,h181km, mb3.4/2, Error ellipse: s-maj=9.0km s-min=6.6km az=174.2*
*IDC **15** 18:46:24.1±1.2,24°.05S×66°.83W,h198km±14km,mb3.4/2, mb1 3.5/8,mb1mx3.3/25,mbtmp3.9/8, Error ellipse: s-maj=20.1km s-min=17.0km az=155.0*

ISC 15 18:46:23.2±0.8,24°.16S±0°.07×66°.89W±0°.07,h181km,n21, σ1°86/24,Salta Province

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SLA	**San Lorenzo**	**1.39**	**114**	*i* P		**Pn**	**18 46 57.3**	**+2.9**
SLA				*i* S		**Sn**	**18 47 22.2**	**+3.6**
HJA	**Humahuaca**	**1.66**	**56**	*i* P		**Pn**	**18 47 00.0**	**+2.8**
HJA				IAML			18 47 01.0	
	comp=Z,139nm,0.3s							
FSA	**Cafayete**	**2.12**	**157**	*i* P		**Pn**	**18 47 03.6**	**+1.8**
ASTB	**Santa Barbara**	**2.24**	**85**	*i* P		**Pn**	**18 47 04.8**	**+1.6**
ASTB				*i* S		**Sn**	**18 47 36.9**	**+2.7**
LVC	**Limon Verde**	**2.41**	**309**	P		**Pn**	**18 47 07.7**	**+2.5**
	comp=Z,676nm,0.3s,baz=125,slow=3.8,SNR=152							
LVC				S		**Sn**	**18 47 40.6**	**+2.7**
	comp=Z,2μm,0.3s,baz=330,slow=20,SNR=58							
ALOL	**LOMAS DE OLMED**	**2.69**	**83**	*i* P		**Pn**	**18 47 09.5**	**+1.3**
AHML	**Horco Molle**	**2.97**	**152**	*i* P		**Pn**	**18 47 12.7**	**+1.1**
CYA	**Choya**	**4.38**	**167**	*i* P		**Pn**	**18 47 29.8**	**+0.5**
CYA				IAML			18 47 32.5	
	comp=Z,200nm,0.4s							
AVFE	**Valle Fertil**	**6.50**	**184**	*i* P		**Pn**	**18 47 56.3**	**-0.5**
AVFE				IAML			18 49 14.1	
	comp=Z,16nm,0.2s							
AMOG	**MOGNA**	**6.91**	**192**	*i* P		**Pn**	**18 48 01.6**	**-0.6**
LPAZ	**La Paz**	**7.91**	**351**	P		**Pn**	**18 48 16.3**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=128,slow=5.3,SNR=14							
LPAZ				S		**Sn**	**18 49 44.2**	**-1.0**
	comp=Z,0.1nm,0.3s,baz=30,slow=23,SNR=4.9							
CPUP	**Villa Florida**	**8.93**	**106**	P		**Pn**	**18 48 28.0**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=280,slow=10,SNR=3.8							
SIV	**San Ignacio**	**9.79**	**35**	P		**Pn**	**18 48 38.6**	**-1.5**
	comp=Z,1.1nm,0.3s,baz=232,slow=13,SNR=9.6							
PLCA	**Paso Flores**	**16.81**	**190**	P		**Pn**	**18 50 07.8**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=7.8,slow=9.0,SNR=5.1							
BDFB	**Brasilia**	**19.65**	**68**	P		**P**	**18 50 38.1**	**-0.4**
	baz=258,slow=7.0							
TORD	**Torodi Ar. Bea**	**76.53**	**69**	P		**P**	**18 57 51.9**	**-1.9**
	comp=Z,0.2nm,0.5s,baz=256,slow=6.8,SNR=5.5							
MAW	**Mawson**	**81.26**	**163**	P		**P**	**18 58 18.5**	**-0.2**
	comp=Z,1.2nm,0.6s,baz=220,slow=10,SNR=5.0							
ASAR	**Alice Springs**	**128.36**	**205**	PKP		**PKPdf**	**19 05 07.1**	**-1.9**
	comp=Z,0.4nm,0.7s,baz=130,slow=1.4,SNR=6.7							
WRA	**Warramunga Arr**	**131.53**	**207**	PKP		**PKPdf**	**19 05 14.1**	**-1.0**
	comp=Z,0.4nm,0.5s,baz=152,slow=1.8,SNR=8.3							
ZALV	**Zalesovo Beam**	**143.48**	**28**	PKP		PKPbc	19 05 33.2	-0.5
	comp=Z,0.3nm,0.3s,baz=274,slow=3.8,SNR=3.4							
MKAR	**Makanchi Array**	**146.58**	**40**	PKPbc		**PKPdf**	**19 05 41.0**	**-0.4**
	comp=Z,0.6nm,0.7s,baz=304,slow=3.2,SNR=5.6							

IDC 15 18:52:30.7±4.0,3°.17S×130°.70E,h0km,mb3.5/2, mb1 3.7/3,mb1mx3.4/29,mbtmp3.5/3,ML3.3/1,Error ellipse: s-maj=293.6km s-min=27.8km az=71.0,Seram

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
WRA	**Warramunga Arr**	**17.05**	**168**	P		Pn	18 56 31.1	+0.4
	0.1nm,0.3s,baz=349,slow=12,SNR=5.9							
ASAR	**Alice Springs**	**20.61**	**172**	P		P	18 57 11.5	-0.2
	1.7nm,0.5s,baz=351,slow=10,SNR=50							
MKAR	**Makanchi Array**	**65.45**	**326**	P		P	19 03 15.6	0.0
	0.2nm,0.6s,baz=106,slow=5.1,SNR=3.0							

*LJU **15** 18:59:27.6,46°.39N×15°.07E,h0km,ML0.9 Rockburst*
CSEM 15 18:59:27.6±99.0,46°.39N×15°.07E,h0km,Mining explosion.,Northwestern Balkan Peninsula

MAN 15 19:03:53,9°.48N×122°.00E,h10km,mb4.5,ML3.4,MS3.3, 1C-2D,Sulu Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SNPH	**Sibulan**	**1.23**	**96**	*i* P		Pn	19 04 10.5	-5.8
SNPH				*i* S		Sb	19 04 29.4	-3.0
DCPH	**Dipolog City**	**1.61**	**124**	*e*P		Pn	19 04 21.9	+0.4
TBP	**Tagbilaran**	**1.85**	**83**	*i* P		Pb	19 04 26.3	-0.6
LLP	**Lapu-Lapu**	**2.11**	**67**	*e*P		Pn	19 04 29.5	+1.1
LLP				*e*S		Sb	19 04 56.4	-1.3
RCP	**Roxas**	**2.19**	**20**	*e*P		Pn	19 04 30.9	+1.3

*DDA **15** 19:08:08.3,37°.88N×27°.51E,h7km,Md2.6*
*ISK **15** 19:08:09.7,37°.86N×27°.32E,h9km,MD2.7*
*ISCJB **15** 19:08:10.2±0.7,37°.84N±0°.04×27°.38E±0°.05,h14km±7km, Error ellipse: s-maj=7.2km s-min=6.1km az=173.3*
*CSEM **15** 19:08:10.2±0.2,37°.85N×27°.36E,h15km,MD2.7, Error ellipse: s-maj=5.6km s-min=4.1km az=63.0*

ISC 15 19:08:09.4±1.3,37°.87N±0°.03×27°.39E±0°.03,h4km±17km, n19,σ1°00/26,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
AYDB	**Zeytinkoy-Aydi**	**0.40**	**79**	*e*PG		**Pb**	**19 08 19.0**	**-0.1**
AYDB				*e*SG		**Sb**	**19 08 26.3**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**0.40**	**79**	*e*Pg		**Pb**	**19 08 19.0**	**-0.1**
AYDB				*e*Sg		**Sb**	**19 08 26.3**	**+0.6**
IZM	**Izmir**	**0.54**	**349**	*e*PG		**Pg**	**19 08 20.5**	**+0.8**
IZM	**Izmir**	**0.54**	**349**	*e*Pg		**Pg**	**19 08 20.5**	**+0.7**
MLSB	**Milas**	**0.65**	**152**	*e*PG		**Pb**	**19 08 23.1**	**-0.2**
MLSB	**Milas**	**0.65**	**152**	*e*Pg		**Pb**	**19 08 23.1**	**-0.2**
URLA	**Izmir**	**0.80**	**308**	*i* P		**Pb**	**19 08 25.9**	**+0.1**
URLA				*i* S		**Sb**	**19 08 36.8**	**-0.2**
URLA	**Izmir**	**0.80**	**308**	P		**Pb**	**19 08 25.9**	**+0.1**
URLA				S		**Sb**	**19 08 36.8**	**-0.2**
BDRM	**Kayabasi**	**0.80**	**177**	*i* P		**Pg**	**19 08 24.9**	**+0.1**
BDRM				*i* S		**Sg**	**19 08 35.3**	**0.0**
BDRM	**Kayabasi**	**0.80**	**177**	P		**Pg**	**19 08 25.0**	**+0.1**
BDRM				S		**Sg**	**19 08 35.3**	**0.0**
BODT	**Bodrum**	**0.81**	**185**	*e*PG		**Pb**	**19 08 25.6**	**-0.3**
BODT	**Bodrum**	**0.81**	**185**	*e*Pg		**Pb**	**19 08 25.7**	**-0.3**
YER	**Yerkesik**	**1.02**	**136**	*e*PG		**Pb**	**19 08 29.9**	**+0.3**
YER	**Yerkesik**	**1.02**	**136**	*e*Pg		**Pb**	**19 08 29.9**	**+0.3**
MANT	**Manisa**	**1.11**	**56**	*i* P		**Pg**	**19 08 27.1**	**-3.5**
MANT				*i* S		**Sg**	**19 08 44.0**	**-1.1**
CHOS	**Chios island**	**1.18**	**296**	*e*PN		**Pb**	**19 08 31.9**	**-0.4**
CHOS	**Chios island**	**1.18**	**296**	*e*Pn		**Pb**	**19 08 31.9**	**-0.4**
KULA	**Kula-Manisa**	**1.19**	**57**	*e*PN		**Pg**	**19 08 33.9**	**+1.7**
KULA	**Kula-Manisa**	**1.19**	**57**	*e*Pn		**Pg**	**19 08 33.9**	**+1.7**

*ISCJB **15** 19:20:29.0±0.5,9°.55N±0°.04×122°.00E±0°.05,h10km, mb4.2/7,Error ellipse: s-maj=7.0km s-min=6.0km az=3.3*
*IDC **15** 19:20:29.1±1.0,9°.69N×122°.49E,h0km,mb4.0/5, mb1 4.1/5,mb1mx3.6/42,mbtmp4.0/5, Error ellipse: s-maj=173.9km s-min=20.7km az=67.0*
*NEIC **15** 19:20:30.5±0.5,9°.64N×122°.34E,h10km,mb4.3/2,Error ellipse: s-maj=13.3km s-min=8.0km az=76.0*

*MAN **15** 19:20:30,9°.65N×122°.11E,h6km,mb4.6,ML3.5,MS3.5*

ISC 15 19:20:30.0±0.6,9°.64N±0°.04×122°.11E±0°.05,h10km,n25, σ1°99/32,mb4.2/7,3C-3D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JAP	**San Jose, Anti**	**1.11**	**352**	*i* P		**Pn**	**19 20 51.7**	**+0.1**
SNPH	**Sibulan**	**1.15**	**105**	*i* P		Pb	19 20 47.2	-4.8
SNPH				*i* S		**Sb**	**19 21 03.7**	**-3.3**
DCPH	**Dipolog City**	**1.62**	**130**	*e*P		**Pb**	**19 20 60.0**	**+0.1**
TBP	**Tagbilaran**	**1.73**	**88**	*e*P		**Pb**	**19 21 02.2**	**+0.3**
LLP	**Lapu-Lapu**	**1.95**	**70**	*e*P		**Pb**	**19 21 04.5**	**-1.1**
LLP				*e*S		**Sb**	**19 21 30.8**	**+0.8**
RCP	**Roxas**	**2.01**	**18**	*e*P		**Pb**	**19 21 05.6**	**-1.0**
RCP				*e*S		**Sb**	**19 21 31.6**	**-0.1**
CGP	**Cagayan de Oro**	**2.81**	**115**	*e*P		**Pn**	**19 21 17.6**	**+2.5**
CGP				*e*S		**Sb**	**19 21 53.4**	**-1.5**
PLP	**Palo**	**3.20**	**62**	*e*P		**Pn**	**19 21 21.8**	**+1.4**
MYLDM	**Lahad Datu**	**5.70**	**219**	*e*Pn		**Pn**	**19 21 58.9**	**+4.2**
KKM	**Kota Kinabalu**	**6.85**	**239**	*e*Pn		**Pn**	**19 22 12.7**	**+2.1**
KKM				*e*Sn		**Sn**	**19 23 21.7**	**-7.0**
LUWI	**Luwuk**	**10.63**	**176**	*e*Pn		**Pn**	**19 23 02.2**	**-0.3**
KS01	**Wonju Array Si**	**28.20**	**10**	*e*P		**P**	**19 26 23.3**	**+0.5**
WRA	**Warramunga Arr**	**31.77**	**158**	P		**P**	**19 26 53.8**	**-0.9**
	0.8nm,0.5s,baz=340,slow=9.3,SNR=9.7							
WRA				PcP		**PcP**	**19 29 45.7**	**-0.4**
	0.4nm,0.6s,baz=346,slow=3.1,SNR=4.5							
WR1	**Warramunga Arr**	**31.77**	**158**	*e*P		**P**	**19 26 53.8**	**-0.9**
	22nm,1.5s							
WR1				*e*PcP		**PcP**	**19 29 45.7**	**-0.4**
AS31	**Alice Springs**	**35.05**	**161**	*e*P		**P**	**19 27 23.8**	**+0.5**
	1.4nm,0.9s							
ASAR	**Alice Springs**	**35.05**	**161**	P		**P**	**19 27 24.2**	**+0.9**
	2.5nm,0.5s,baz=340,slow=7.0,SNR=45							
ASAR				PcP		**PcP**	**19 29 55.5**	**+0.2**
	0.5nm,0.9s,baz=340,slow=2.4,SNR=5.8							
AS01	**Alice Springs**	**35.07**	**161**	*e*P		**P**	**19 27 24.2**	**+0.8**
STKA	**Stephens Creek**	**45.30**	**156**	P		**P**	**19 28 47.1**	**-1.0**
	0.9nm,0.7s,baz=337,slow=7.7,SNR=3.6							
MK01	**Makanchi Array**	**50.09**	**325**	*e*P		**P**	**19 29 26.7**	**+1.4**
MK31	**Makanchi Array**	**50.11**	**325**	*e*P		**P**	**19 29 26.4**	**+1.0**
MK32	**Makanchi Array**	**50.11**	**325**	*e*P		**P**	**19 29 27.1**	**+1.6**
MKAR	**Makanchi Array**	**50.11**	**325**	P		**P**	**19 29 27.1**	**+1.6**
	0.1nm,0.3s,baz=131,slow=9.4,SNR=5.1							
MKAR	**Makanchi Array**	**50.11**	**325**	*e*P		**P**	**19 29 27.4**	**+1.9**
	35nm,1.6s							
NRIK	**Noril'sk**	**63.66**	**347**	P		**P**	**19 31 02.3**	**+1.2**
	3.5nm,0.5s,baz=113,slow=6.2,SNR=4.1							
PLCA	**Paso Flores**	**147.06**	**162**	PKPbc		**PKPbc**	**19 40 14.1**	**+0.5**
	2.4nm,0.8s,baz=221,slow=5.1,SNR=4.1							

IDC 15 19:38:36.7±1.8,2°.42N×126°.73E,h0km,mb3.6/5, mb1 3.8/5,mb1mx3.5/35,mbtmp3.7/5,Error ellipse: s-maj=107.6km s-min=23.8km az=68.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FITZ	**Fitzroy Crossi**	**20.42**	**183**	P		Pn	19 43 17.4	-0.3
	1.7nm,0.8s,baz=15,slow=12,SNR=5.6							
WRA	**Warramunga Arr**	**23.45**	**162**	P		P	19 43 47.1	-0.8
	0.6nm,0.3s,baz=338,slow=8.7,SNR=18							
ASAR	**Alice Springs**	**26.86**	**165**	P		P	19 44 18.9	-0.3
	0.4nm,0.3s,baz=348,slow=7.4,SNR=12							
STKA	**Stephens Creek**	**36.92**	**159**	P		P	19 45 47.2	-0.2
	2.0nm,0.8s,baz=324,slow=8.7,SNR=3.2							
MKAR	**Makanchi Array**	**58.62**	**326**	P		P	19 48 35.7	0.0
	0.3nm,0.4s,baz=110,slow=8.7,SNR=5.2							

*IDC **15** 20:03:52.0±0.8,2°.04N×126°.20E,h0km,mb4.0/8, mb1 4.2/8,mb1mx3.8/49,mbtmp4.0/8,MS2.7/1,Ms1 2.9/1, ms1mx2.2/38,Error ellipse: s-maj=57.0km s-min=15.6km az=77.0*
*ISCJB **15** 20:03:56.2±0.4,2°.18N±0°.05×126°.53E±0°.06,h47km, mb4.5/19,MS2.6/1,Error ellipse: s-maj=8.7km s-min=6.2km az=162.5*
*NEIC **15** 20:03:57.1±1.6,2°.19N×126°.66E,h39km±15km,mb4.6/16, Error ellipse: s-maj=17.0km s-min=5.9km az=61.0*

ISC 15 20:03:58.0±0.6,2°.15N±0°.07×126°.57E±0°.09,h47km,n38, σ1°11/39,mb4.4/19,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LUWI	**Luwuk**	**4.95**	**230**	*e*Pn		**Pn**	**20 05 10.9**	**+1.1**
LUWI				*e*Sn		**Sn**	**20 06 05.4**	**-0.4**
MYLDM	**Lahad Datu**	**8.60**	**291**	*e*Pn		**Pn**	**20 05 58.7**	**-1.3**
KKM	**Kota Kinabalu**	**11.03**	**291**	*e*Pn		**Pn**	**20 06 33.7**	**+0.3**
MMRI	**Maumere**	**11.55**	**202**	*e*Pn		**Pn**	**20 06 42.4**	**+2.0**
MTN	**Manton Dam**	**15.57**	**163**	*e*Pn		**Pn**	**20 07 33.1**	**-1.4**
	53nm,1.6s							
JAGI	**Jajag, Banyuwa**	**16.27**	**229**	*e*Pn		**P**	**20 07 44.5**	**-1.3**
	81nm,1.6s							
FITZ	**Fitzroy Crossi**	**20.14**	**183**	P		**P**	**20 08 26.0**	**-2.4**
	1.2nm,0.3s,baz=11,slow=11,SNR=16							
FITZ	**Fitzroy Crossi**	**20.14**	**183**	*e*P		**P**	**20 08 27.8**	**-0.6**
	26nm,1.8s							
WRAB	**Tennant Creek**	**23.24**	**161**	*e*P		**P**	**20 09 00.8**	**-0.6**
	8.1nm,0.6s							
WR1	**Warramunga Arr**	**23.24**	**161**	*e*P		**P**	**20 09 00.9**	**-0.5**
	8.3nm,0.6s							
WRA	**Warramunga Arr**	**23.24**	**161**	P		**P**	**20 09 00.9**	**-0.5**
	4.8nm,0.4s,baz=338,slow=11,SNR=81							
WB2	**Warramunga Arr**	**23.25**	**161**	*e*P		**P**	**20 08 59.4**	**-2.0**
MBWA	**Marble Bar**	**24.11**	**196**	*e*P		**P**	**20 09 09.8**	**+0.2**
	28nm,1.7s							
AS31	**Alice Springs**	**26.63**	**165**	*e*P		**P**	**20 09 32.5**	**+0.1**
	3.2nm,0.4s							
ASAR	**Alice Springs**	**26.63**	**165**	P		**P**	**20 09 32.5**	**+0.1**
	2.8nm,0.5s,baz=345,slow=9.1,SNR=77							
ASAR				PcP		**PcP**	**20 12 56.5**	**+0.8**
	0.5nm,0.5s,baz=349,slow=1.8,SNR=5.4							
AS01	**Alice Springs**	**26.64**	**165**	*e*P		**P**	**20 09 32.6**	**+0.1**
CMAR	**Chiang Mai Arr**	**31.56**	**303**	LR		LR	20 23 10.0	
	comp=Z,12nm,19.7s,baz=105,slow=37							
HNR	**Honiara**	**35.19**	**110**	*e*P		**P**	**20 10 45.5**	**-2.4**
	172nm,1.1s							
MJAR	**Matsushiro Arr**	**35.88**	**16**	P		**P**	**20 10 55.4**	**+1.8**
	0.6nm,0.6s,baz=188,slow=9.4,SNR=4.0							
BBOO	**Buckleboo**	**35.91**	**166**	*e*P		**P**	**20 10 54.1**	**+0.2**
	117nm,1.9s							
STKA	**Stephens Creek**	**36.72**	**158**	P		**P**	**20 11 01.6**	**+0.7**
	2.4nm,0.4s,baz=343,slow=8.0,SNR=12							
STKA	**Stephens Creek**	**36.72**	**158**	*e*P		**P**	**20 11 01.5**	**+0.7**
	5.5nm,1.8s							
ARMA	**Armidale**	**40.25**	**146**	*e*P		**P**	**20 11 31.9**	**+1.2**
	50nm,1.5s							
CAN	**Canberra**	**42.78**	**153**	*e*P		**P**	**20 11 53.0**	**+1.7**
	63nm,1.7s							
SONA0	**Songino Array**	**48.74**	**342**	*e*P		**P**	**20 12 38.5**	**+0.3**
	4.4nm,1.6s							
SONM	**Songino Array**	**48.74**	**342**	P		**P**	**20 12 38.5**	**+0.3**
	0.3nm,0.5s,baz=161,slow=9.6,SNR=2.7							
MK01	**Makanchi Array**	**58.74**	**326**	*e*P		**P**	**20 13 51.5**	**+0.3**
MK31	**Makanchi Array**	**58.76**	**326**	*e*P		**P**	**20 13 51.2**	**-0.2**
MK32	**Makanchi Array**	**58.76**	**326**	*e*P		**P**	**20 13 50.9**	**-0.5**
MKAR	**Makanchi Array**	**58.76**	**326**	P		**P**	**20 13 50.9**	**-0.5**
	0.7nm,0.5s,baz=123,slow=8.2,SNR=7.3							
MKAR	**Makanchi Array**	**58.76**	**326**	*e*P		**P**	**20 13 51.5**	**+0.1**
	9.9nm,0.6s							
MAKZ	**Makanchi**	**58.94**	**326**	*e*P		**P**	**20 13 52.3**	**-0.3**
	5.5nm,1.5s							
KURK	**Kurchatov**	**62.98**	**328**	*e*P		**P**	**20 14 20.6**	**+0.7**
KKAR	**Karatay Array**	**64.28**	**318**	*e*P		**P**	**20 14 26.7**	**-1.9**
	12nm,0.8s							
ABKAR	**Akbulak array**	**73.27**	**321**	*e*P		**P**	**20 15 23.5**	**-1.0**
	10.0nm,1.2s							
VNDA	**Vanda**	**81.89**	**173**	P		**P**	**20 16 13.1**	**+1.1**
	0.8nm,0.5s,baz=317,slow=6.9,SNR=7.9							
TORD	**Torodi Ar. Bea**	**123.24**	**287**	PKP		**PKPdf**	**20 22 51.4**	**+0.5**
	0.3nm,0.7s,baz=116,slow=3.4,SNR=3.0							
TOA1	**Torodi Ar. Sit**	**123.24**	**287**	*e*PKPdf		**PKPdf**	**20 22 51.4**	**+0.5**

*CSEM **15** 20:10:17.6,38°.25N×27°.23E,h11km,MD2.7*

ISK 15 20:10:17.6,38°.25N×27°.23E,h11km,MD2.7,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
AYDB	**Zeytinkoy-Aydi**	**0.61**	**120**	*e*PG		Pb	20 10 29.9	-0.4
AYDB				*e*SG		Sb	20 10 38.7	-0.2
AYDB	**Zeytinkoy-Aydi**	**0.61**	**120**	*e*Pg		Pb	20 10 29.9	-0.4
AYDB				*e*Sg		Sb	20 10 38.7	-0.2
DKL	**Dikili**	**0.86**	**343**	*e*PG		Pb	20 10 34.4	-0.1
DKL	**Dikili**	**0.86**	**343**	*e*Pg		Pb	20 10 34.4	-0.1
CHOS	**Chios island**	**0.93**	**279**	*e*PG		Pb	20 10 36.0	+0.2
CHOS	**Chios island**	**0.93**	**279**	*e*Pg		Pb	20 10 36.0	+0.2
MLSB	**Milas**	**1.05**	**155**	*e*PG		Pb	20 10 37.6	-0.1
MLSB	**Milas**	**1.05**	**155**	*e*Pg		Pb	20 10 37.7	-0.1
SIGR	**SIGRI**	**1.44**	**312**	*e*PN		Pb	20 10 44.3	-0.1
SIGR	**SIGRI**	**1.44**	**312**	*e*Pn		Pb	20 10 44.3	-0.1

*CSEM **15** 20:10:38.8±0.1,39°.09N×29°.02E,h2km,MD2.6,Error ellipse: s-maj=2.2km s-min=1.9km az=169.0*
*ISK **15** 20:10:38.5,39°.10N×29°.03E,h5km,MD2.9*
*DDA **15** 20:10:38.4,39°.08N×29°.01E,h7km,Md2.6*

ISC 15 20:10:39.0±1.0,39°.09N±0°.03×29°.02E±0°.02,h6km±11km, n61,σ0°45/70,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DEMI	**Demirci**	**0.24**	**258**	*i* P		**Pg**	**20 10 43.6**	**-0.1**
DEMI				*i* S		**Sg**	**20 10 47.0**	**0.0**
DEMI	**Demirci**	**0.24**	**258**	P		**Pg**	**20 10 43.6**	**-0.1**
DEMI				S		**Sg**	**20 10 47.0**	**0.0**
GEDZ	**Gediz**	**0.31**	**99**	*e*PG		**Pg**	**20 10 45.1**	**+0.1**
GEDZ	**Gediz**	**0.31**	**99**	*e*Pg		**Pg**	**20 10 45.1**	**+0.1**
GDZ	**Gediz**	**0.36**	**90**	*i* P		**Pg**	**20 10 46.1**	**+0.1**
GDZ				*i* S		**Sg**	**20 10 51.5**	**+0.7**
GDZ	**Gediz**	**0.36**	**90**	P		**Pg**	**20 10 46.1**	**+0.1**
GDZ				S		**Sg**	**20 10 51.5**	**+0.7**
TVSB	**Tavsanli**	**0.50**	**44**	*e*PG		**Pg**	**20 10 48.2**	**-0.4**
TVSB				*e*SG		**Sg**	**20 10 54.9**	**-0.2**
TVSB	**Tavsanli**	**0.50**	**44**	*e*Pg		**Pg**	**20 10 48.2**	**-0.4**
TVSB				*e*Sg		**Sg**	**20 10 54.9**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*PG		**Pg**	**20 10 51.6**	**+0.3**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*Pg		**Pg**	**20 10 51.6**	**+0.3**
MANT	**Manisa**	**0.70**	**211**	*i* P		**Pg**	**20 10 51.5**	**-0.9**
MANT	**Manisa**	**0.70**	**211**	P		**Pg**	**20 10 51.5**	**-0.9**
KHL	**Karahalli**	**0.86**	**153**	*e*PG		**Pg**	**20 10 55.5**	**0.0**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg		**Pg**	**20 10 55.5**	**0.0**
AKS	**Akhisar**	**0.96**	**258**	*e*PG		**Pb**	**20 10 57.7**	**-0.4**
AKS	**Akhisar**	**0.96**	**258**	*e*Pg		**Pb**	**20 10 57.7**	**-0.4**
BALB	**Balikesir**	**1.04**	**302**	*e*PG		**Pg**	**20 10 58.9**	**0.0**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg		**Pg**	**20 10 58.9**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*PN		**Pb**	**20 11 03.4**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*Pn		**Pb**	**20 11 03.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN		**Pn**	**20 11 02.8**	**-0.6**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*Pn		**Pn**	**20 11 02.8**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN		**Pg**	**20 11 03.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn		**Pg**	**20 11 03.5**	**0.0**
IZI	**Iznik**	**1.29**	**16**	*e*PN		**Pn**	**20 11 03.2**	**-0.4**
IZI	**Iznik**	**1.29**	**16**	*e*Pn		**Pn**	**20 11 03.2**	**-0.4**
SHUT	**Suhut-Afyon**	**1.31**	**114**	*e*PN		**Pg**	**20 11 04.2**	**+0.1**
SHUT	**Suhut-Afyon**	**1.31**	**114**	*e*Pn		**Pg**	**20 11 04.2**	**+0.1**
BORA	**Eskisehir**	**1.36**	**54**	*i* P		**Pn**	**20 11 04.2**	**-0.4**
BORA				*i* S		**Sb**	**20 11 22.2**	**-0.4**
BORA	**Eskisehir**	**1.36**	**54**	P		**Pn**	**20 11 04.2**	**-0.4**
BORA				S		**Sb**	**20 11 22.2**	**-

CMIG				Sn	Sn	20 16 33.4	+11	
	comp=N,0.1nm,0.3s,baz=176,slow=6.6,SNR=2.2							
SJG	**San Juan**	**22.13**	**71**	LR	LR	20 25 18.8		
	comp=N,56nm,21.9s,baz=94,slow=35							
TXAR	**Lajitas Array**	**22.45**	**322**	P	**P**	**20 17 49.5**	**-0.6**	
	comp=N,1.7nm,0.8s,baz=143,slow=10,SNR=13							
ULM	**Lac du Bonnet**	**38.63**	**352**	P	**P**	**20 20 10.5**	**-3.6**	
	comp=N,2.7nm,0.5s,baz=183,slow=6.9,SNR=4.6							
ILAR	**Eielson Array**	**66.11**	**336**	P	**P**	**20 23 36.4**	**-1.5**	
	comp=N,0.6nm,1.1s,baz=101,slow=4.7,SNR=4.1							
ASAR	**Alice Springs**	**138.43**	**248**	PKP	**PKPdf**	**20 32 23.4**	**+5.9**	
	comp=N,0.3nm,0.8s,baz=98,slow=2.4,SNR=3.0							
WRA	**Warramunga Arr**	**138.44**	**254**	PKP	**PKPdf**	**20 32 23.4**	**+5.8**	
	comp=N,0.1nm,0.6s,baz=72,slow=2.7,SNR=3.2							
CMAR	**Chiang Mai Arr**	**148.90**	**347**	PKPbc	**PKPbc**	**20 32 38.3**	**-1.5**	
	comp=N,0.8nm,0.9s,baz=308,slow=3.0,SNR=3.9							

*ISCJB **15** 20:38:47.7±0.5, 37°23N±0.03×22°00E±0.04, h8km±4km, Error ellipse: s-maj=5.2km s-min=4.5km az=149.7*
*THE **15** 20:38:47.9, 37°24N×22°03E, h1km±2km, ML2.1/9, Error ellipse: s-maj=2.5km s-min=0.6km az=163.0*
*CSEM **15** 20:38:47.5±0.2, 37°23N×22°00E, h10km, ML2.0, Error ellipse: s-maj=4.4km s-min=4.2km az=62.0*
*ATH **15** 20:38:47.7, 37°24N×21°99E, h10km±3km, ML2.0/8, Error ellipse: s-maj=3.2km s-min=0.8km az=187.0*
ISC 15 20:38:47.5±0.8, 37°24N±0.02×22°00E±0.02, h9km±6km, n46, σ0§61/72, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ITM	**Ithomi**	**0.08**	**226**	P	**Pg**	**20 38 49.9**	**+0.1**
ITM				S	**Sg**	**20 38 51.0**	**-0.5**
ITM	**Ithomi**	**0.08**	**226**	P	**Pg**	**20 38 49.9**	**+0.1**
ITM				S	**Sg**	**20 38 51.6**	**+0.2**
ITM	**Ithomi**	**0.08**	**226**	P	**Pg**	**20 38 49.7**	**-0.1**
ITM				S	**Sg**	**20 38 51.6**	**+0.2**
ITM				AML	AML	20 38 52.0	
	comp=N,5160μm,0.2s						
ITM				AML	AML	20 38 52.1	
	comp=E,4555μm,0.2s						
VLX	**Vlachokerasia**	**0.33**	**66**	P	**Pg**	**20 38 54.4**	**+0.3**
VLX				S	**Sg**	**20 38 58.7**	**+0.2**
VLX	**Vlachokerasia**	**0.33**	**66**	P	**Pg**	**20 38 54.6**	**+0.5**
VLX				S	**Sg**	**20 38 59.7**	**+1.2**
VLX	**Vlachokerasia**	**0.33**	**66**	P	**Pg**	**20 38 54.6**	**+0.5**
VLX				S	**Sg**	**20 38 59.7**	**+1.2**
VLX				AML	AML	20 39 00.2	
	comp=E,1216μm,0.2s						
VLX				AML	AML	20 39 00.5	
	comp=N,856μm,0.3s						
TRIP	**Tripoli**	**0.36**	**36**	P	**Pg**	**20 38 55.3**	**+0.6**
TRIP				S	**Sg**	**20 39 00.2**	**+0.7**
TRIP	**Tripoli**	**0.36**	**36**	P	**Pg**	**20 38 55.3**	**+0.6**
TRIP				S	**Sg**	**20 39 00.2**	**+0.7**
TRIP				AML	AML	20 39 02.2	
	comp=E,252μm,0.4s						
TRIP				AML	AML	20 39 02.4	
	comp=N,201μm,0.3s						
AMT	**Artemida-Makis**	**0.38**	**322**	P	**Pg**	**20 38 54.8**	**-0.1**
AMT				S	**Sg**	**20 39 01.1**	**+1.1**
AMT	**Artemida-Makis**	**0.38**	**322**	P	**Pg**	**20 38 54.9**	**0.0**
AMT				S	**Sg**	**20 39 01.0**	**+1.1**
AMT	**Artemida-Makis**	**0.38**	**322**	P	**Pg**	**20 38 54.9**	**0.0**
AMT				S	**Sg**	**20 39 01.0**	**+1.1**
AMT				AML	AML	20 39 02.0	
	comp=N,1545μm,0.2s						
AMT				AML	AML	20 39 05.5	
	comp=E,1180μm,0.8s						
PYL	**PYLOS**	**0.40**	**211**	P	**Pg**	**20 38 55.4**	**+0.1**
PYL				S	**Sb**	**20 39 02.4**	**-0.5**
PYL	**PYLOS**	**0.40**	**211**	P	**Pg**	**20 38 55.4**	**+0.1**
PYL				S	**Sg**	**20 39 01.5**	**+0.9**
PYL	**PYLOS**	**0.40**	**211**	P	**Pg**	**20 38 55.4**	**+0.1**
PYL				S	**Sg**	**20 39 01.4**	**+0.9**
PYL				AML	AML	20 39 03.7	
	comp=E,540μm,0.2s						
PYL				AML	AML	20 39 03.9	
	comp=N,482μm,0.3s						
GUR	**Goura**	**0.75**	**21**	P	**Pg**	**20 39 01.6**	**-0.4**
GUR				S	**Sg**	**20 39 12.2**	**+0.4**
GUR	**Goura**	**0.75**	**21**	P	**Pg**	**20 39 01.6**	**-0.4**
GUR				S	**Sg**	**20 39 12.2**	**+0.4**
GUR	**Goura**	**0.75**	**21**	P	**Pg**	**20 39 00.8**	**-1.1**
GUR				S	**Sb**	**20 39 13.0**	**-0.1**
GUR				AML	AML	20 39 18.7	
	comp=N,241μm,0.4s						
GUR				AML	AML	20 39 20.2	
	comp=E,205μm,0.4s						
DRO	**Drossia**	**0.75**	**342**	P	**Pg**	**20 39 02.5**	**+0.5**
DRO				S	**Sb**	**20 39 14.0**	**+0.9**
DRO	**Drossia**	**0.75**	**342**	P	**Pg**	**20 39 02.5**	**+0.5**
DRO				S	**Sb**	**20 39 14.0**	**+0.9**
DRO	**Drossia**	**0.75**	**342**	P	**Pg**	**20 39 02.6**	**+0.5**
DRO				AML	AML	20 39 18.4	
	comp=N,251μm,0.4s						
DRO				AML	AML	20 39 18.5	
	comp=E,311μm,0.4s						
KLV	**Kalavryta, Ach**	**0.81**	**8**	P	**Pg**	**20 39 02.7**	**-0.5**
KLV				S	**Sb**	**20 39 14.9**	**-0.1**
KLV	**Kalavryta, Ach**	**0.81**	**8**	P	**Pg**	**20 39 02.7**	**-0.5**
KLV				S	**Sg**	**20 39 14.2**	**+0.4**
KLV	**Kalavryta, Ach**	**0.81**	**8**	P	**Pg**	**20 39 02.7**	**-0.6**
KLV				S	**Sg**	**20 39 14.2**	**+0.4**
KLV				AML	AML	20 39 17.4	
	comp=E,101μm,0.5s						
KLV				AML	AML	20 39 18.5	
	comp=N,69μm,0.6s						
VLI	**Veliai**	**0.91**	**124**	P	**Pg**	**20 39 05.3**	**+0.3**
VLI	**Veliai**	**0.91**	**124**	P	**Pg**	**20 39 05.3**	**+0.3**
RLS	**Riolos of Patr**	**0.92**	**333**	P	**Pb**	**20 39 06.0**	**+0.3**
LAKA	**Lakka**	**1.00**	**359**	P	**Pg**	**20 39 06.2**	**-0.6**
LAKA				S	**Sn**	**20 39 21.7**	**-0.3**
LAKA	**Lakka**	**1.00**	**359**	P	**Pg**	**20 39 06.2**	**-0.6**
LAKA				S	**Sn**	**20 39 21.7**	**-0.3**
LAKA	**Lakka**	**1.00**	**359**	P	**Pg**	**20 39 05.6**	**-1.1**
DID	**Didima**	**1.02**	**74**	P	**Pg**	**20 39 07.2**	**+0.1**
DID				S	**Sg**	**20 39 20.5**	**+0.1**
DID	**Didima**	**1.02**	**74**	P	**Pg**	**20 39 07.3**	**+0.1**
DID				S	**Sg**	**20 39 20.5**	**+0.1**
DID	**Didima**	**1.02**	**74**	P	**Pg**	**20 39 07.3**	**+0.1**
ZKS	**Zakynthos**	**1.07**	**296**	P	**Pg**	**20 39 08.1**	**0.0**
ZKS	**Zakynthos**	**1.07**	**296**	P	**Pg**	**20 39 08.2**	**+0.1**
ZKS	**Zakynthos**	**1.07**	**296**	P	**Pg**	**20 39 08.2**	**+0.1**
AXS	**Araxos**	**1.08**	**333**	P	**Pn**	**20 39 09.4**	**+0.7**
AXS	**Araxos**	**1.08**	**333**	P	**Pn**	**20 39 09.4**	**+0.7**
LTK	**Loutraki**	**1.10**	**44**	P	**Pn**	**20 39 09.1**	**0.0**
LTK	**Loutraki**	**1.10**	**44**	P	**Pn**	**20 39 09.1**	**0.0**
TRIZ	**Trizonia**	**1.13**	**3**	P	**Pb**	**20 39 07.5**	**-1.7**
KALE	**Kalithea**	**1.16**	**5**	P	**Pb**	**20 39 08.8**	**-0.9**
KALE	**Kalithea**	**1.16**	**5**	P	**Pb**	**20 39 08.8**	**-0.9**
ANX	**Ano Chora**	**1.35**	**357**	P	**Pn**	**20 39 12.0**	**-0.7**
ANX	**Ano Chora**	**1.35**	**357**	P	**Pn**	**20 39 12.0**	**-0.7**
VILL	**Villia**	**1.39**	**48**	P	**Pg**	**20 39 14.6**	**+0.4**
VIL2	**Platees**	**1.40**	**46**	P	**Pg**	**20 39 14.6**	**+0.2**

*ISK **15** 20:41:49.4, 38°82N×40°20E, h5km, ML3.2*
*DDA **15** 20:41:49.5, 38°78N×40°15E, h5km, Md3.1*
*CSEM **15** 20:41:51.1±0.2, 38°81N×40°23E, h2km, ML3.2, Error ellipse: s-maj=5.2km s-min=4.3km az=27.0*
ISC 15 20:41:49.9±1.1, 38°80N±0.02×40°22E±0.02, h3km±10km, n72, σ1§04/95, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BNGB	**Bing¯¶l**	**0.41**	**62**	*e*PG	**Pb**	**20 41 58.5**	**-1.3**
BNGB				*e*SG	**Sb**	**20 42 05.0**	**-1.5**
TNCL	**Tunceli-Merkez**	**0.61**	**301**	*i* P	**Pg**	**20 42 01.6**	**0.0**
TNCL				*i* S	**Sb**	**20 42 10.8**	**-1.5**
TNCL	**Tunceli-Merkez**	**0.61**	**301**	P	**Pg**	**20 42 01.6**	**0.0**
TNCL				S	**Sb**	**20 42 10.8**	**-1.5**
PTK	**Pertek**	**0.65**	**278**	*e*PG	**Pg**	**20 42 02.4**	**+0.1**
PTK				*e*SG	**Sb**	**20 42 12.5**	**-1.0**
PTK	**Pertek**	**0.65**	**278**	*e*Pg	**Pg**	**20 42 02.4**	**+0.1**
PTK				*e*Sg	**Sb**	**20 42 12.5**	**-1.0**
YEDI	**Yedisu-Bingol**	**0.69**	**22**	*e*PG	**Pg**	**20 42 03.3**	**+0.2**
YEDI	**Yedisu-Bingol**	**0.69**	**22**	*e*Pg	**Pg**	**20 42 03.3**	**+0.2**
BNGL	**BINGOL**	**0.75**	**78**	*i* P	**Pb**	**20 42 05.7**	**+0.1**
BNGL				*i* S	**Sb**	**20 42 17.4**	**+1.1**
SVRC	**Sivrice-ELAZID**	**0.83**	**240**	*e*PG	**Pb**	**20 42 06.3**	**-0.6**
SVRC	**Sivrice-ELAZID**	**0.83**	**240**	*e*Pg	**Pb**	**20 42 06.3**	**-0.7**
ERZN	**Erzincan**	**0.87**	**334**	*e*PG	**Pb**	**20 42 06.6**	**-1.2**
DIYA	**Diyarbakir**	**0.88**	**185**	*i* P	**Pn**	**20 42 08.9**	**-0.3**
DIYA				*i* S	**Sn**	**20 42 22.2**	**-0.2**
DIYA	**Diyarbakir**	**0.88**	**185**	P	**Pn**	**20 42 08.9**	**-0.3**
DIYA				S	**Sn**	**20 42 22.2**	**-0.2**
EUZM	**Uzumlu**	**0.99**	**336**	*i* P	**Pb**	**20 42 09.3**	**-0.4**
EUZM				*i* S	**Sn**	**20 42 23.5**	**-1.8**
EUZM	**Uzumlu**	**0.99**	**336**	P	**Pb**	**20 42 09.3**	**-0.4**
SVAN	**Silvan-Diyarba**	**1.01**	**130**	*e*PG	**Pn**	**20 42 10.3**	**-0.6**
SVAN	**Silvan-Diyarba**	**1.01**	**130**	*e*Pg	**Pn**	**20 42 10.3**	**-0.6**
VRTB	**Varto-Mus**	**1.03**	**69**	*e*PG	**Pb**	**20 42 10.5**	**0.0**
VRTB	**Varto-Mus**	**1.03**	**69**	*e*Pg	**Pb**	**20 42 10.5**	**0.0**
BTMN	**Batman**	**1.23**	**137**	*i* P	**Pn**	**20 42 14.4**	**+0.4**
BTMN				*i* S	**Sn**	**20 42 32.7**	**+1.1**
BTMN	**Batman**	**1.23**	**137**	P	**Pn**	**20 42 14.4**	**+0.4**
BTMN				S	**Sn**	**20 42 32.2**	**+1.1**
KOPT	**Kop Dagi**	**1.24**	**10**	*i* P	**Pn**	**20 42 14.1**	**-0.2**
KOPT				*i* S	**Sn**	**20 42 33.3**	**+1.7**
KOPT	**Kop Dagi**	**1.24**	**10**	P	**Pn**	**20 42 14.1**	**-0.2**
KOPT				S	**Sn**	**20 42 33.3**	**+1.7**
REFA	**Refahiye_ERZ¯**	**1.27**	**298**	*i* P	Pn	20 42 19.3	+4.6
REFA				*i* S	Sn	20 42 41.4	+9.0
MAZI	**Mazidag**	**1.35**	**172**	*e*PN	**Pg**	**20 42 15.9**	**+0.2**
MAZI	**Mazidag**	**1.35**	**172**	*e*Pn	**Pg**	**20 42 15.9**	**+0.2**
EZM	**Erzurum**	**1.42**	**39**	*e*PN	**Pg**	**20 42 17.4**	**+0.3**
KEMA	**Kemaliye**	**1.42**	**290**	*i* P	**Pn**	**20 42 15.8**	**-0.9**
KEMA				*i* S	**Sn**	**20 42 37.1**	**+1.2**
KELT	**Kelkit**	**1.54**	**331**	*i* P	**Pg**	**20 42 19.2**	**-0.1**
KELT				*i* S	**Sg**	**20 42 41.1**	**+1.8**
MARD	**Mardin**	**1.55**	**163**	*i* P	**Pb**	**20 42 19.1**	**-0.1**
MARD				*i* S	**Sg**	**20 42 40.8**	**+1.1**
SUSE	**Susehri**	**2.10**	**313**	*i* P	**Pg**	**20 42 29.2**	**-0.9**
SUSE				*i* S	**Sg**	**20 42 58.0**	**+0.7**
SUSE	**Susehri**	**2.10**	**313**	P	**Pg**	**20 42 29.2**	**-0.9**
SUSE				S	**Sg**	**20 42 58.0**	**+0.7**
TUTA	**Tutak**	**2.11**	**73**	*i* P	**Pg**	**20 42 29.6**	**-0.8**
TUTA				*i* S	**Sg**	**20 42 58.2**	**+0.6**
TUTA	**Tutak**	**2.11**	**73**	P	**Pg**	**20 42 29.5**	**-0.8**
TUTA				S	**Sg**	**20 42 58.2**	**+0.6**
DARE	**Darende-Malaty**	**2.15**	**265**	*e*PN	**Pb**	**20 42 27.7**	**-1.8**
DARE	**Darende-Malaty**	**2.15**	**265**	*e*Pn	**Pb**	**20 42 27.7**	**-1.8**
SIRN	**S¯¯rnak**	**2.17**	**126**	*i* P	**Pn**	**20 42 27.9**	**+1.0**
SIRN				*i* S	**Sg**	**20 42 58.5**	**-1.0**
SIRN	**S¯¯rnak**	**2.17**	**126**	P	**Pn**	**20 42 27.9**	**+1.0**
SIRN				S	**Sg**	**20 42 58.5**	**-1.0**
SIRT	**Sirnak**	**2.18**	**126**	*e*PN	**Pb**	**20 42 28.5**	**-1.5**
SIRT	**Sirnak**	**2.18**	**126**	*e*Pn	**Pb**	**20 42 28.5**	**-1.5**
CUKAN	**kangal_SIVAS**	**2.20**	**284**	*i* P	**Pb**	**20 42 30.2**	**-0.2**
CUKAN				*i* S	**Sg**	**20 43 02.7**	**+2.1**
CUKAN	**kangal_SIVAS**	**2.20**	**284**	P	**Pb**	**20 42 30.2**	**-0.2**
KTUT	**Trabzon**	**2.21**	**351**	*e*PN	**Pn**	**20 42 28.0**	**+0.6**
KTUT	**Trabzon**	**2.21**	**351**	*e*Pn	**Pn**	**20 42 28.0**	**+0.6**
GEVA	**Gevas**	**2.28**	**101**	*i* P	**Pg**	**20 42 32.9**	**-0.7**
GEVA				*i* S	**Sg**	**20 43 03.9**	**+0.7**
GEVA	**Gevas**	**2.28**	**101**	P	**Pg**	**20 42 32.9**	**-0.7**
AGRB	**Hanur-Agry**	**2.29**	**69**	*e*PN	**Pn**	**20 42 29.9**	**+1.2**
AGRB	**Hanur-Agry**	**2.29**	**69**	*e*Pn	**Pn**	**20 42 29.9**	**+1.2**
DDEM	**Demirkent**	**2.40**	**29**	*i* P	**Pb**	**20 42 31.9**	**-1.8**
DDEM	**Demirkent**	**2.40**	**29**	P	**Pb**	**20 42 31.9**	**-1.9**
ESPY	**Espiye-Giresun**	**2.40**	**332**	*e*PN	**Pn**	**20 42 30.7**	**+0.6**
ESPY	**Espiye-Giresun**	**2.40**	**332**	*e*Pn	**Pn**	**20 42 30.7**	**+0.6**
SENK	**Senkaya-Erzuru**	**2.41**	**42**	*e*PN	**Pn**	**20 42 30.9**	**+0.5**
SENK	**Senkaya-Erzuru**	**2.41**	**42**	*e*Pn	**Pn**	**20 42 30.9**	**+0.5**
VANB	**Van**	**2.49**	**94**	*e*PN	**Pn**	**20 42 32.9**	**+1.5**
VANB	**Van**	**2.49**	**94**	*e*Pn	**Pn**	**20 42 32.9**	**+1.5**
GZT	**Gaziantep**	**2.54**	**236**	*i* P	**Pn**	**20 42 31.9**	**-0.2**
DAG	**Agillar**	**2.62**	**29**	*i* P	**Pn**	**20 42 34.1**	**+1.6**
ARTV	**Artvin**	**2.72**	**28**	*i* P	**Pn**	**20 42 35.6**	**+0.9**
CUALT	**Altinyayla-SIV**	**2.73**	**281**	*i* P	**Pb**	**20 42 38.2**	**-1.2**
CUALT	**Altinyayla-SIV**	**2.73**	**281**	P	**Pb**	**20 42 38.2**	**-1.2**
GAZ	**Gaziantep**	**2.88**	**237**	*e*PN	**Pn**	**20 42 37.6**	**+1.0**
GAZ	**Gaziantep**	**2.88**	**237**	*e*Pn	**Pn**	**20 42 37.6**	**+1.0**
KMRS	**Kahramanmaras**	**2.92**	**245**	*e*PN	**Pn**	**20 42 38.6**	**+1.4**
KMRS	**Kahramanmaras**	**2.92**	**245**	*e*Pn	**Pn**	**20 42 38.6**	**+1.4**
SARI	**SarD1z-Kayseri**	**3.00**	**264**	*e*PN	**Pn**	**20 42 39.5**	**+1.1**
HAKT	**HAKKARI**	**3.02**	**113**	*i* P	**Pn**	**20 42 39.5**	**+0.7**
HAKT	**HAKKARI**	**3.02**	**113**	P	**Pn**	**20 42 39.5**	**+0.7**
CUSAR	**Sarkisla-SIVAS**	**3.15**	**283**	*i* P	**Pb**	**20 42 44.7**	**-1.8**
CUSAR	**Sarkisla-SIVAS**	**3.15**	**283**	P	**Pb**	**20 42 44.7**	**-1.8**
KUZU	**Kuzuini**	**3.21**	**232**	*i* P	**Pg**	**20 42 52.6**	**+1.3**
ANDN	**Andirin**	**3.28**	**249**	*i* P	**Pg**	**20 42 53.6**	**+0.8**

*ISCJB **15** 20:42:33.5±1.0, 33°10S±0.06×70°44W±0.06, h108km±7km, Error ellipse: s-maj=10.7km s-min=7.0km az=152.0*
*SJA **15** 20:42:33.0±0.4, 33°06S×70°44W, h106km±2km, ML2.6, MW3.0*
*GUC **15** 20:42:34.4±0.5, 33°00S×70°38W, h99km±3km, ML3.4*
ISC 15 20:42:34.4±2.6, 33°09S±0.08×70°44W±0°07, h102km±17km, n19, σ0§30/35, 5C-2D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PEL	**Peldehue**	**0.22**	**254**	*i* P	**Pn**	**20 42 48.3**	**-0.6**
PEL				*i* S	**Sn**	**20 42 59.4**	**-0.4**
FCH	**Farellones**	**0.27**	**153**	*i* P	**Pn**	**20 42 49.3**	**-0.3**
FCH				*i* S	**Sn**	**20 43 00.6**	**-0.2**
CLCH	**Cerro Calan**	**0.32**	**195**	*i* P	**Pn**	**20 42 49.4**	**-0.1**
CLCH				*i* S	**Sn**	**20 43 00.7**	**+0.1**
CLCH				IAML		20 43 01.8	
	comp=E,2μm,0.5s						
FSR	**Penalolen**	**0.40**	**191**	*i* P	**Pn**	**20 42 49.6**	**-0.2**
FSR				*i* P	**Pn**	**20 42 50.0**	**+0.1**
FSR				*i* S	**Sn**	**20 43 01.5**	**+0.1**
FSR				*i* S	**Sn**	**20 43 01.5**	**+0.1**
ROCH	**El Roble**	**0.49**	**283**	*i* P	**Pn**	**20 42 50.8**	**+0.2**
ROCH				*i* S	**Sn**	**20 43 02.8**	**+0.1**
ROCH				IAML		20 43 03.9	
	comp=N,2μm,0.1s						
ROC1	**El Roble**	**0.50**	**282**	*i* P	**Pn**	**20 42 50.5**	**-0.1**
ROC1				*i* S	**Sn**	**20 43 03.0**	**+0.1**
RCDM	**Rinconada Maip**	**0.51**	**217**	*i* P	**Pn**	**20 42 50.7**	**+0.2**
RCDM				*i* S	**Sn**	**20 43 02.8**	**+0.3**
ANTU	**Antumapu**	**0.51**	**199**	*i* P	**Pn**	**20 42 50.6**	**+0.1**
ANTU				*i* S	**Sn**	**20 43 02.8**	**+0.2**
ANTU				IAML		20 43 03.4	
	comp=E,3μm,0.3s						
AUSP	**Uspallata**	**1.23**	**46**	*i* P	**Pn**	**20 42 57.9**	**0.0**
AUSP				*i* S	**Sn**	**20 43 16.3**	**+0.7**
ARCO	**CERRO ARCO**	**1.29**	**80**	*i* P	**Pn**	**20 42 58.2**	**-0.1**
ARCO				*i* S	**Sn**	**20 43 16.7**	**+0.2**
AAGR	**Agrelo**	**1.35**	**90**	*i* P	**Pn**	**20 42 59.1**	**0.0**
AAGR				*i* S	**Sn**	**20 43 18.1**	**+0.4**
ASAL	**Salagasta**	**1.44**	**70**	*i* P	**Pn**	**20 42 60.0**	**-0.1**
ASAL				*i* S	**Sn**	**20 43 19.8**	**+0.3**
RTLS	**Leoncito**	**1.60**	**37**	*i* P	**Pn**	**20 43 02.5**	**+0.2**
RTLS				*i* S	**Sn**	**20 43 24.0**	**+0.5**
RTCV	**Cerro Valdivia**	**2.02**	**53**	*i* P	**Pn**	**20 43 07.1**	**-0.2**
AMOG	**MOGNA**	**2.70**	**38**	*i* P	**Pn**	**20 43 16.0**	**-0.3**
AMOG				*i* S	**Sn**	**20 43 47.9**	**-0.6**
ACCO	**Cerro Coronel**	**2.75**	**26**	*i* P	**Pn**	**20 43 17.4**	**+0.3**
ACAN	**Cantantal**	**2.86**	**74**	*i* P	**Pn**	**20 43 18.2**	**-0.1**
AVFE	**Valle Fertil**	**3.50**	**47**	*i* P	**Pn**	**20 43 26.7**	**-0.3**
AVFE				IAML		20 44 08.2	
	comp=Z,12nm,0.2s						
ACHE	**Chepes**	**3.73**	**60**	*i* P	**Pn**	**20 43 29.7**	**-0.4**

MEX 15 20:48:21.8±0.6, 17°21N×100°29W, h23km±11km, MD3.7, Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAIG	**El Cayaco**	**0.17**	**173**	*i* P	Pb	20 48 25.6	-1.3
CAIG				*e*S	Sb	20 48 29.1	-1.2
MEIG	**Mezcala**	**0.95**	**42**	*i* P	Pb	20 48 36.2	-3.6
MEIG				*i* S	Sb	20 48 48.3	-3.7
ARIG	**Puente Sto Nin**	**1.06**	**357**	*e*P	Pn	20 48 38.7	-2.7
ARIG				*i* S	Sb	20 48 51.5	-3.5
ZIIG	**Zihuatanejo**	**1.19**	**289**	*i* P	Pn	20 48 40.5	-2.6
ZIIG				*i* S	Sn	20 48 54.7	-3.8
PLIG	**Platanillo**	**1.39**	**33**	*e*P	Pn	20 48 43.0	-3.0
PLIG				*i* S	Sn	20 48 59.8	-3.9
TLIG	**Tlapa**	**1.68**	**78**	*i* P	Pn	20 48 47.3	-2.6
TLIG				*i* S	Sn	20 49 07.8	-3.1
YAIG	**Yautepec**	**2.01**	**35**	*i* P	Pn	20 48 52.0	-2.5
YAIG				*i* S	Sn	20 49 16.2	-2.8
PNIG	**Pinotepa**	**2.23**	**111**	*i* P	Pn	20 48 55.0	-2.3
PNIG				*i* S	Sn	20 49 21.4	-2.7

*ISCJB **15** 20:51:04.5±0.7, 6°80N±0.05×73°04W±0.06, h159km±6km, Error ellipse: s-maj=11.4km s-min=4.5km az=38.3*
*FUNV **15** 20:51:04.1, 6°66N×73°08W, h170km, MW2.5*
*RSNC **15** 20:51:06.9±0.6, 6°78N×73°08W, h144km±4km, ML2.4*
ISC 15 20:51:04.6±1.5, 6°79N±0.05×73°03W±0.06, h160km±9km, n17, σ0§93/30, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.25**	**218**	*i* P	**Pn**	**20 51 26.4**	**-0.1**
BARC				*e*S	**Sn**	**20 51 41.4**	**-1.7**
BARC				*i*		20 51 44.4	
	comp=Z,67nm,0.3s						
PAMC	**Pamplona, Colo**	**0.64**	**31**	*e*P	**Pn**	**20 51 29.3**	**+0.9**
PAMC				*e*S	**Sn**	**20 51 45.8**	**-0.8**
BRRC	**Barranca, Sant**	**0.75**	**295**	*e*P	**Pn**	**20 51 28.3**	**-0.1**
BRRC				*e*S	**Sn**	**20 51 45.2**	**-1.4**
BRRC				*i*		20 51 47.7	
	comp=Z,55nm,0.2s						
RUSC	**La Rusia**	**0.89**	**184**	*e*P	**Pn**	**20 51 30.4**	**+0.3**
RUSC				*e*S	**Sn**	**20 51 48.7**	**-0.8**
RUSC				*i*		20 51 51.1	
	comp=Z,39nm,0.5s						
GRMC	**Gramalote, San**	**0.95**	**13**	*e*P	**Pn**	**20 51 32.1**	**+2.0**
GRMC				*e*S	**Sn**	**20 51 51.0**	**+1.3**
GRMC				*i*		20 51 53.3	
	comp=Z,24nm,0.1s						
CBRI	**Barrientos, No**	**0.95**	**14**	*e*P	**Pn**	**20 51 29.9**	**-0.2**
CAPV	**Capacho**	**1.28**	**33**	*e*P	**Pn**	**20 51 34.4**	**+1.4**
CAPV				*e*S	**Sn**	**20 51 55.6**	**+0.8**
NORC	**Norcasia**	**2.20**	**237**	*e*P	**Pn**	**20 51 43.4**	**+0.7**
NORC				*e*S	**Sn**	**20 52 11.7**	**-0.4**
CHIC	**Chingaza**	**2.26**	**198**	*e*P	**Pn**	**20 51 44.5**	**+0.8**
CHIC				*e*S	**Sn**	**20 52 13.5**	**-0.4**
CHIC				*i*		20 52 23.6	
	comp=Z,12nm,0.5s						
HELC	**Santa Helena**	**2.56**	**257**	*e*P	**Pn**	**20 51 47.0**	**-0.2**
SOCV	**Socops**	**2.62**	**55**	*e*P	**Pn**	**20 51 48.6**	**+1.0**
SOCV				*e*S	**Sn**	**20 52 20.6**	**-0.3**
VIGV	**El Vigia**	**2.62**	**39**	*e*P	**Pn**	**20 51 48.0**	**+0.3**
VIGV				*e*S	**Sn**	**20 52 20.8**	**-0.3**
GUYC	**Guyana, Colomb**	**2.82**	**237**	*e*P	**Pn**	**20 51 51.4**	**+0.9**
GUYC				*e*S	**Sn**	**20 52 26.2**	**+0.2**
GUYC				*i*		20 52 32.7	
	comp=Z,26nm,0.3s						
DBBC	**Dabeiba**	**3.17**	**274**	*e*P	**Pn**	**20 51 55.1**	**+0.6**
PRAC	**Prado**	**3.57**	**211**	*e*P	**Pn**	**20 52 00.2**	**+0.5**
PRAC				*e*S	**Sn**	**20 52 42.4**	**-0.1**
VIRV	**Villa del Rosa**	**3.74**	**9**	*e*P	**Pn**	**20 52 01.5**	**-0.3**
VIRV				*e*S	**Sn**	**20 52 45.4**	**-1.0**
BAUV	**El Baul**	**5.38**	**66**	*e*P	**Pn**	**20 52 22.2**	**-1.1**

*ISCJB **15** 20:52:36.5±0.5, 50°10N±0.03×18°31E±0.03, h0km, Error ellipse: s-maj=4.3km s-min=2.7km az=16.6*
*WAR **15** 20:52:37.5, 50°06N×18°41E, h1km, Mw2.9*
*IDC **15** 20:52:37.6±1.9, 49°97N×18°39E, h0km, mb1 3.3/3, mb1mx3.0/48, mbtmp3.1/3, ML2.6/3, Error ellipse: s-maj=29.5km s-min=9.9km az=132.0*
*IPEC **15** 20:52:37.4±0.2, 50°07N×18°46E, h0km±2km, ML2.6/3, Error ellipse: s-maj=2.0km s-min=1.1km az=160.0*
*CSEM **15** 20:52:37.0±0.2, 50°11N×18°38E, h2

BRG				SG	**Sg**	**20 54 11.4**	**-0.4**
	20nm,0.5s							
KHC	**Kasperske Hory**	**3.29**	**255**	*e*PN	**Pn**	**20 53 29.6**	**+0.5**
KHC				*e*PG	**Pb**	**20 53 37.1**	**+1.5**
KHC				*e*SG	**Sg**	**20 54 21.3**	**-0.7**
	comp=Z,21nm,0.3s							
KHC	**Kasperske Hory**	**3.29**	**255**	Pn	**Pn**	**20 53 29.6**	**+0.5**
KHC				Sg	**Sg**	**20 54 21.3**	**-0.7**
	21nm,0.3s							
GEC2	**GERESS Array S**	**3.32**	**250**	*e*Sg	**Sg**	**20 54 23.5**	**+0.7**
GEC2	**GERESS Array S**	**3.32**	**250**	Sg	**Sg**	**20 54 23.5**	**+0.7**
GERES	**GERESS Array B**	**3.32**	**250**	Pn	**Pn**	**20 53 29.4**	**-0.2**
	0.1nm,0.3s,baz=71,slow=15,SNR=3.2							
GERES				Pg	**Pb**	**20 53 35.8**	**-0.3**
	0.9nm,0.3s,baz=65,slow=17,SNR=11							
GERES				Sn	**Sn**	**20 54 10.4**	**+0.7**
	1.7nm,0.3s,baz=67,slow=21,SNR=8.6							
GERES				Lg	Lg	20 54 22.2		
	3.5nm,0.3s,baz=69,slow=28,SNR=12							
ARSA	**Arzberg**	**3.42**	**215**	Pn	**Pn**	**20 53 32.4**	**+1.6**
	0.8nm,0.2s							
ARSA				Sg	**Sg**	**20 54 27.5**	**+1.4**
	2.8nm,0.4s							
MOA	**Molln**	**3.53**	**233**	Pn	**Pn**	**20 53 34.4**	**+2.0**
	0.6nm,0.2s							
MOA				Sg	**Sg**	**20 54 27.1**	**-2.6**
	8.8nm,0.4s							
CLL	**Collm**	**3.66**	**292**	*e*Pg	**Pg**	**20 53 48.0**	**+1.5**
CLL				*e*Sg	**Sg**	**20 54 33.0**	**-0.9**
	comp=Z,13nm,0.6s							
CLL	**Collm**	**3.66**	**292**	*e*Sg	**Sg**	**20 54 34.1**	**+0.2**
CLL	**Collm**	**3.66**	**292**	Sg	**Sg**	**20 54 34.1**	**+0.2**
WET	**Wettzell**	**3.73**	**258**	*e*Sg	**Sg**	**20 54 34.5**	**-1.4**
WET	**Wettzell**	**3.73**	**258**	Sg	**Sg**	**20 54 34.5**	**-1.4**
WERD	**Werda**	**3.94**	**278**	*e*Sg	**Sg**	**20 54 41.2**	**-1.7**
WERD	**Werda**	**3.94**	**278**	Sg	**Sg**	**20 54 41.2**	**-1.7**
MOX	**Moxa**	**4.40**	**280**	*e*Sg	**Sg**	**20 54 57.3**	**-0.2**
MOX	**Moxa**	**4.40**	**280**	Sg	**Sg**	**20 54 57.3**	**-0.2**
CLZ	**Clausthal**	**5.39**	**292**	*e*Sg	**Sg**	**20 55 28.5**	**-0.8**
CLZ	**Clausthal**	**5.39**	**292**	Sg	**Sg**	**20 55 28.5**	**-0.8**
DAVOX	**Davos/Dischmat**	**6.57**	**243**	Lg	Lg	20 56 06.9		
	comp=Z,0.6nm,0.3s,baz=60,slow=20,SNR=4.1							
NOA	**NORSAR Array B**	**11.71**	**342**	Pn	**Pn**	**20 55 21.6**	**-2.9**
	comp=Z,0.1nm,0.3s,baz=165,slow=12,SNR=2.7							
FINES	**FINESS Array B**	**12.17**	**18**	Pn	**Pn**	**20 55 28.9**	**-1.8**
	comp=Z,0.1nm,0.3s,baz=200,slow=12,SNR=4.6							

*ISCJB **15** 20:56:27.7±0.5,39.09N±0.04×29.00E±0.04, h6km±7km, Error ellipse: s-maj=7.9km s-min=4.5km az=152.2*
*CSEM **15** 20:56:27.8±0.1,39.09N×28.99E, h8km, MD2.6, Error ellipse: s-maj=2.7km s-min=1.9km az=130.0*
*DDA **15** 20:56:27.6, 39.05N×29.01E, h7km, Md2.6*
*ISK **15** 20:56:27.5, 39.12N×29.03E, h7km, MD2.8*
ISC 15 20:56:27.9±0.9, 39.09N±0.03×29.00E±0.03, h12km±8km, n24, σ0.42/34, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
DEMI	**Demirci**	**0.23**	**259**	*i*	P	**Pg**		**20 56 33.0**	**+0.2**
DEMI				*i*	S	**Sg**		**20 56 36.1**	**0.0**
DEMI	**Demirci**	**0.23**	**259**	P		**Pg**		**20 56 33.0**	**+0.2**
DEMI				S		**Sg**		**20 56 36.1**	**0.0**
GEDZ	**Gediz**	**0.32**	**97**	*e*PG		**Pg**		**20 56 34.3**	**-0.1**
GEDZ	**Gediz**	**0.32**	**97**	*e*Pg		**Pg**		**20 56 34.3**	**-0.1**
GDZ	**Gediz**	**0.37**	**89**	*i*	P	**Pg**		**20 56 35.5**	**+0.1**
GDZ				*i*	S	**Sg**		**20 56 40.8**	**+0.4**
GDZ	**Gediz**	**0.37**	**89**	P		**Pg**		**20 56 35.5**	**+0.1**
GDZ				S		**Sg**		**20 56 40.8**	**+0.4**
TVSB	**Tavsanli**	**0.51**	**44**	*e*PG		**Pg**		**20 56 37.3**	**-0.6**
TVSB				*e*SG		**Sg**		**20 56 44.0**	**-0.7**
TVSB	**Tavsanli**	**0.51**	**44**	*e*Pg		**Pg**		**20 56 37.3**	**-0.6**
TVSB				*e*Sg		**Sg**		**20 56 44.0**	**-0.7**
KULA	**Kula-Manisa**	**0.63**	**205**	*e*PG		**Pb**		**20 56 40.8**	**-0.1**
KULA	**Kula-Manisa**	**0.63**	**205**	*e*Pg		**Pb**		**20 56 40.8**	**-0.1**
MANT	**Manisa**	**0.69**	**211**	*i*	P	**Pg**		**20 56 49.8**	**-0.6**
MANT				*i*	S	**Sg**		**20 56 49.8**	**-0.6**
MANT	**Manisa**	**0.69**	**211**	P		**Pg**		**20 56 40.8**	**-0.5**
MANT				S		**Sg**		**20 56 49.8**	**-0.6**
KHL	**Karahalli**	**0.86**	**152**	*e*PG		**Pb**		**20 56 44.8**	**-0.1**
KHL	**Karahalli**	**0.86**	**152**	*e*Pg		**Pb**		**20 56 44.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN		**Pb**		**20 56 52.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*Pn		**Pb**		**20 56 52.0**	**0.0**
IZI	**Iznik**	**1.30**	**16**	*e*PN		**Pg**		**20 56 52.5**	**-0.4**
IZI	**Iznik**	**1.30**	**16**	*e*Pn		**Pg**		**20 56 52.5**	**-0.4**
SHUT	**Suhut-Afyon**	**1.32**	**113**	*e*PN		**Pg**		**20 56 52.9**	**-0.4**
SHUT	**Suhut-Afyon**	**1.32**	**113**	*e*Pn		**Pg**		**20 56 52.9**	**-0.4**
BORA	**Eskisehir**	**1.38**	**54**	*i*	P	**Pn**		**20 56 53.3**	**+0.3**
BORA				*i*	S	**Sn**		**20 57 11.9**	**+0.7**
BORA	**Eskisehir**	**1.38**	**54**	P		**Pn**		**20 56 53.3**	**+0.3**
BORA				S		**Sn**		**20 57 11.9**	**+0.7**
ARMT	**Armutlu**	**1.48**	**356**	*e*PN		**Pn**		**20 56 54.7**	**+0.2**
ARMT	**Armutlu**	**1.48**	**356**	*e*Pn		**Pn**		**20 56 54.7**	**+0.2**

*NIED **15** 21:00:00, 39.20N×144.50E, h5km, Mw3.6 Best double couple: M0 2.90000×10^14 NP1:φs1.00000°, δ20.00000°, λ-80.00000°. NP2:φs171.00000°, δ70.00000°, λ-94.00000°.*
*ISCJB **15** 21:00:24.7±1.1, 39.30N±0.06×144.55E±0.08, h33km, mb3.5/4, Error ellipse: s-maj=10.9km s-min=6.0km az=36.3*
*JMA **15** 21:00:25.5±0.2, 39.23N×144.46E, h49km, M3.5*
*IDC **15** 21:00:38.7±6.8, 38.97N×143.11E, h0km, mb3.6/4, mb1 3.6/6, mb1mx3.4/49, mbtmp3.6/6, ML2.9/2, Error ellipse: s-maj=118.6km s-min=48.8km az=109.0*
ISC 15 21:00:23.7±2.0, 39.16N±0.08×144.7E±0.1, h35km, n21, σ1s82/23, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
MIYJ	**Miyakonagasawa**	**2.27**	**282**	P		**Pn**		**21 00 59.0**	**+0.4**
MIYJ				*e*S		**Sn**		**21 01 23.1**	**-2.2**
JTH	**Tanohata**	**2.32**	**291**	P		**Pn**		**21 00 59.5**	**+0.1**
JTH				*e*S		**Sn**		**21 01 25.3**	**-1.4**
OFUJ	**Ofunato**	**2.35**	**269**	P		**Pn**		**21 01 00.2**	**+0.4**
JOM	**Ohasama**	**2.66**	**278**	P		**Pn**		**21 01 04.8**	**+0.8**
JOM				*e*S		**Sn**		**21 01 33.9**	**-1.0**
JMK	**Ichinoseki**	**2.71**	**267**	P		**Pn**		**21 01 05.4**	**+0.7**
JANG	**Nango**	**2.73**	**297**	P		**Pn**		**21 01 05.0**	**0.0**
JYK	**Kaneyama**	**3.38**	**267**	P		**Pn**		**21 01 15.0**	**+1.0**
JNBK	**Urakawa-nobuka**	**3.45**	**335**	P		**Pn**		**21 01 16.6**	**+1.7**
JCH	**Churui**	**3.60**	**344**	P		**Pn**		**21 01 17.9**	**+1.0**
JCH				*e*S		**Sn**		**21 01 56.7**	**-1.5**
JFT	**Otama**	**3.79**	**246**	*e*S		**Sn**		**21 02 01.2**	**-1.9**
JKB	**Kayabe**	**3.90**	**316**	*e*S		**Sn**		**21 02 04.8**	**-0.8**
NEM2	**Nemuro 2**	**4.28**	**10**	P		**Pn**		**21 01 26.6**	**+0.4**
NEM2				*e*S		**Sn**		**21 02 12.8**	**-2.1**
JTKR	**Abashiri--Toko**	**4.85**	**353**	P		**Pn**		**21 01 35.7**	**+1.7**
JTKR				*e*S		**Sn**		**21 02 27.4**	**-1.5**
JRY	**Ryogami san**	**5.56**	**238**	*e*S		**Sn**		**21 02 44.3**	**-2.4**
MJAR	**Matsushiro Arr**	**5.76**	**245**	Pn		**Pn**		**21 01 48.6**	**+2.0**
	2.7nm,0.3s,baz=58,slow=11,SNR=37								
MAT	**Matsushiro**	**5.76**	**245**	P		**Pn**		**21 01 48.8**	**+2.2**
USRK	**Ussuriysk Ar.**	**10.75**	**302**	Pn		**Pn**		**21 02 59.7**	**+4.7**
	0.2nm,0.3s,baz=108,slow=14,SNR=4.0								
SONM	**Songino Array**	**28.86**	**300**	P		P		21 06 32.1	+13
	0.2nm,0.5s,baz=98,slow=10,SNR=2.5								
ZALV	**Zalesovo Beam**	**42.45**	**311**	P		P		21 08 27.6	+13
	0.5nm,0.6s,baz=96,slow=10,SNR=3.1								
MKAR	**Makanchi Array**	**45.22**	**301**	P		P		21 08 49.4	+12
	0.2nm,0.2s,baz=83,slow=12,SNR=2.8								
KURBB	**Kurchatov Arra**	**46.77**	**307**	P		P		21 09 02.2	+13
	1.7nm,0.6s,baz=81,slow=8.5,SNR=12								

SJA 15 21:03:16.5±0.5, 32.72S×68.91W, h137km±2km, ML2.8, MW3.7, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
ARCO	**CERRO ARCO**	**0.12**	**188**	*i*	P	Pn		21 03 35.7	+0.5
ARCO				*i*	S	Sn		21 03 49.9	+0.4
ARCO				IAML				21 03 52.2	
	comp=Z,164nm,0.2s								
ASAL	**Salagasta**	**0.14**	**27**	*i*	P	Pn		21 03 35.8	+0.6
ASAL				*i*	S	Sn		21 03 50.0	+0.7
AAGR	**Agrelo**	**0.37**	**169**	*i*	P	Pn		21 03 36.5	+0.6
AAGR				*i*	S	Sn		21 03 51.0	+0.4
AUSP	**Uspallata**	**0.64**	**321**	*i*	P	Pn		21 03 38.3	+0.8
RTCV	**Cerro Valdivia**	**0.91**	**20**	*i*	P	Pn		21 03 40.0	+0.6
RTCV				*i*	S	Sn		21 03 57.1	+0.6
RTLS	**Leoncito**	**0.97**	**340**	*i*	P	Pn		21 03 41.2	+1.1
RTLL	**Cerro Villicun**	**1.43**	**15**	*i*	P	Pn		21 03 45.1	+0.7
ACAN	**Cantantal**	**1.52**	**74**	*i*	P	Pn		21 03 46.0	+0.7
ACCO	**Cerro Coronel**	**2.13**	**356**	*i*	P	Pn		21 03 54.0	+1.2
ACCO				*i*	S	Sn		21 04 21.8	+1.4
AVFE	**Valle Fertil**	**2.40**	**32**	*i*	P	Pn		21 03 56.5	+0.7
AVFE				*e*PG		Pn		21 03 57.3	+1.5
ACHE	**Chepes**	**2.46**	**52**	*i*	P	Pn		21 03 57.7	+1.0
ACHE				*i*	S	Sn		21 04 28.2	+0.7

*DDA **15** 21:03:41.7, 41.57N×43.59E, h7km, Md2.8*
*TIF **15** 21:03:41.9, 41.30N×43.64E, h12km*
*ISCJB **15** 21:03:42.7±0.5, 41.28N±0.03×43.61E±0.04, h6km±4km, Error ellipse: s-maj=5.6km s-min=4.7km az=166.5*
*CSEM **15** 21:03:42.7±0.2, 41.30N×43.60E, h3km±2km, ML1.9, Error ellipse: s-maj=8.4km s-min=4.0km az=165.0*
ISC 15 21:03:42.3±0.9, 41.30N±0.03×43.60E±0.03, h8km±5km, n19, σ0.42/33, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
BGD	**Bogdanovka**	**0.03**	**188**	P		**Pg**		**21 03 44.1**	**0.0**
BGD				S		**Sg**		**21 03 45.1**	**-0.3**
BGD	**Bogdanovka**	**0.03**	**188**	P		**Pg**		**21 03 44.1**	**0.0**
BGD				S		**Sg**		**21 03 45.5**	**+0.1**
AKH	**Akhalkalaki**	**0.14**	**324**	P		**Pg**		**21 03 45.7**	**+0.2**
AKH				S		**Sg**		**21 03 47.9**	**+0.2**
AKH	**Akhalkalaki**	**0.14**	**324**	P		**Pg**		**21 03 45.7**	**+0.2**
AKH				S		**Sg**		**21 03 47.9**	**+0.2**
EAK	**Akyaka**	**0.61**	**180**	*i*	P	**Pg**		**21 03 53.9**	**-0.2**
EAK				*i*	S	**Sg**		**21 04 02.2**	**+0.1**
EAK	**Akyaka**	**0.61**	**180**	P		**Pg**		**21 03 53.9**	**-0.2**
EAK				S		**Sg**		**21 04 02.2**	**+0.1**
TBLG	**Delisi**	**0.96**	**63**	P		**Pn**		**21 04 01.4**	**-0.6**
TBLG				S		**Sb**		**21 04 13.9**	**0.0**
TBLG	**Delisi**	**0.96**	**63**	P		**Pn**		**21 04 01.4**	**-0.6**
TBLG				S		**Sb**		**21 04 14.1**	**+0.2**
SEAG	**Tbilisi Sea**	**1.01**	**62**	P		**Pg**		**21 04 01.6**	**-0.2**
SEAG				S		**Sb**		**21 04 15.8**	**+0.2**
ARTV	**Artvin**	**1.27**	**266**	*i*	P	**Pg**		**21 04 06.1**	**-0.5**
ARTV				*i*	S	**Sb**		**21 04 23.1**	**0.0**
ARTV	**Artvin**	**1.27**	**266**	P		**Pg**		**21 04 06.1**	**-0.5**
ARTV				S		**Sb**		**21 04 23.1**	**0.0**
DAGI	**Agillar**	**1.29**	**261**	*i*	P	**Pg**		**21 04 07.1**	**0.0**
ONI	**Oni**	**1.30**	**355**	P		**Pg**		**21 04 06.8**	**-0.3**
ONI				S		**Sn**		**21 04 24.6**	**+0.3**
ONI	**Oni**	**1.30**	**355**	P		**Pg**		**21 04 06.9**	**-0.3**
ONI				S		**Sn**		**21 04 24.7**	**+0.4**
DGRG	**David-gareji**	**1.34**	**83**	P		**Pn**		**21 04 07.1**	**-0.2**
DGRG				S		**Sn**		**21 04 26.5**	**+1.2**
DDEM	**Demirkent**	**1.46**	**255**	*i*	P	**Pg**		**21 04 10.9**	**+0.7**
DDEM	**Demirkent**	**1.46**	**255**	P		**Pg**		**21 04 10.9**	**+0.7**
DBOC	**Borcka**	**1.46**	**273**	*i*	P	**Pg**		**21 04 09.8**	**-0.5**
DBOC	**Borcka**	**1.46**	**273**	P		**Pg**		**21 04 09.8**	**-0.5**

IDC 15 21:04:19.0±6.1, 35.69N×141.50E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/47, mbtmp3.6/4, ML2.4/2, Error ellipse: s-maj=116.5km s-min=86.8km az=2.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
MJAR	**Matsushiro Arr**	**2.79**	**289**	Pn		Pn		21 05 04.3	-0.6
	1.0nm,0.3s,baz=86,slow=15,SNR=8.5								
MAT	**Matsushiro**	**2.79**	**289**	P		Pn		21 05 04.6	-0.4
USRK	**Ussuriysk Ar.**	**11.19**	**322**	Pn		Pn		21 07 00.6	+0.5
	0.2nm,0.3s,baz=108,slow=14,SNR=5.8								
ZALV	**Zalesovo Beam**	**42.87**	**313**	P		P		21 12 17.1	-1.7
	0.4nm,0.4s,baz=97,slow=7.4,SNR=2.6								
MKAR	**Makanchi Array**	**44.90**	**303**	P		P		21 12 34.9	-0.4
	0.2nm,0.2s,baz=72,slow=5.2,SNR=1.8								
KURBB	**Kurchatov Arra**	**46.89**	**309**	P		P		21 12 52.0	+1.2
	0.4nm,0.6s,baz=80,slow=7.9,SNR=3.8								

*NIED **15** 21:04:00, 38.00N×143.80E, h5km, Mw3.8 Best double couple: M0 5.77000×10^14 NP1:φs332.00000°, δ48.00000°, λ-175.00000°. NP2:φs238.00000°, δ86.00000°, λ-42.00000°.*
*ISCJB **15** 21:04:21.6±1.1, 37.97N±0.05×143.85E±0.09, h33km, mb3.6/6, MS2.7/2, Error ellipse: s-maj=10.2km s-min=6.9km az=163.1*
*IDC **15** 21:04:21.7±2.0, 37.47N×144.10E, h0km, mb3.6/6, mb1 3.8/9, mb1mx3.5/48, mbtmp3.7/9, ML3.5/3, MS2.6/5, Ms1 2.7/5, ms1mx2.4/43, Error ellipse: s-maj=53.0km s-min=21.4km az=71.0*
*JMA **15** 21:04:22.5±0.2, 37.98N×143.77E, h43km, M3.7*
ISC 15 21:04:22.7±1.3, 37.95N±0.05×143.96E±0.09, h35km, n25, σ2.5s42/21, mb3.5/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
JIO	**Ouri**	**2.12**	**285**	P		**Pn**		**21 04 54.4**	**-1.1**
OFUJ	**Ofunato**	**2.12**	**303**	P		**Pn**		**21 04 54.9**	**-0.7**
MIYJ	**Miyakonagasawa**	**2.33**	**315**	P		**Pn**		**21 04 57.4**	**-1.1**
MIYJ				*e*S		**Sn**		**21 05 23.0**	**-3.0**
JMK	**Ichinoseki**	**2.37**	**296**	P		**Pn**		**21 04 58.4**	**-0.6**
JOM	**Ohasama**	**2.58**	**307**	P		**Pn**		**21 05 01.7**	**-0.2**
JOM				*e*S		**Sn**		**21 05 29.9**	**-2.2**
JFT	**Otama**	**2.90**	**263**	P		**Pn**		**21 05 06.3**	**0.0**
JFT				*e*S		**Sn**		**21 05 38.3**	**-1.7**
JYK	**Kaneyama**	**2.99**	**290**	P		**Pn**		**21 05 07.1**	**-0.4**
JYK				*e*S		**Sn**		**21 05 40.9**	**-1.2**
JANG	**Nango**	**3.08**	**323**	*e*S		**Sn**		**21 05 41.9**	**-2.5**
JRY	**Ryogami san**	**4.48**	**246**	*e*S		**Sn**		**21 06 15.6**	**-3.4**
JCH	**Churui**	**4.69**	**355**	*e*S		**Sn**		**21 06 20.9**	**-3.0**
MJAR	**Matsushiro Arr**	**4.79**	**255**	Pn		**Pn**		**21 05 34.5**	**+2.1**
	2.4nm,0.3s,baz=90,slow=15,SNR=13								
MJAR						Sn		**21 06 27.0**	**+0.2**
	0.7nm,0.3s,baz=118,slow=13,SNR=4.5								
MJAR						LR	LR	21 07 57.7	
	comp=Z,54nm,18.7s,baz=75,slow=45								
JHJ	**Hachijo jima 2**	**5.89**	**216**	Pn		**Pn**		**21 05 47.0**	**-0.5**
	8.9nm,0.3s,baz=108,slow=23,SNR=4.8								
JHJ						Sn		**21 06 47.6**	**-6.2**
	5.3nm,0.3s,baz=83,slow=23,SNR=2.5								
JHJ						LR	LR	21 08 00.5	
	comp=Z,46nm,19.7s,baz=96,slow=39								
USRK	**Ussuriysk Ar.**	**10.98**	**308**	Pn		Pn		21 07 10.7	+14
	0.2nm,0.3s,baz=109,slow=15,SNR=5.0								
KSRS	**Korea Array**	**12.71**	**273**	LR		LR		21 11 39.3	
	comp=Z,36nm,22.0s,baz=33,slow=34								
KLR	**Kul'dur**	**14.31**	**326**	Pn		**P**		**21 07 52.6**	**+3.3**
	0.1nm,0.3s,baz=127,slow=17,SNR=3.1								
H11N2	**WAKE ISLAND Hy**	**26.96**	**126**	T		T		21 38 19.8	
	baz=317,slow=76,SNR=7.7								
H11N1	**WAKE ISLAND Hy**	**26.97**	**126**	T		T		21 38 20.4	
	baz=317,slow=76,SNR=3.9								
H11N3	**WAKE ISLAND Hy**	**26.98**	**126**	T		T		21 38 15.2	
	baz=317,slow=76,SNR=6.5								
SONM	**Songino Array**	**28.99**	**302**	P		P		21 10 25.3	+6.3
	0.2nm,0.5s,baz=115,slow=9.7,SNR=3.0								
SONM						LR	LR	21 21 56.8	
	comp=Z,19nm,18.1s,baz=88,slow=36								
ZALV	**Zalesovo Beam**	**42.81**	**312**	P		P		21 12 24.0	+7.2
	0.4nm,0.4s,baz=327,slow=34,SNR=2.6								
CMAR	**Chiang Mai Arr**	**43.68**	**256**	LR		LR		21 30 36.9	
	comp=Z,8.0nm,19.1s,baz=115,slow=36								
MKAR	**Makanchi Array**	**45.35**	**302**	P		P		21 12 44.4	+7.1
	0.2nm,0.3s,baz=80,slow=10,SNR=4.3								
KURBB	**Kurchatov Arra**	**47.04**	**308**	P		P		21 12 58.0	+7.5
	1.2nm,0.5s,baz=81,slow=8.4,SNR=11								
WRA	**Warramunga Arr**	**58.28**	**191**	P		**P**		**21 14 14.6**	**+0.7**
	0.9nm,0.7s,baz=9.7,slow=7.1,SNR=5.9								
ASAR	**Alice Springs**	**62.01**	**190**	P		**P**		**21 14 40.9**	**+1.6**
	0.3nm,0.7s,baz=3.2,slow=6.7,SNR=4.4								

*CASC **15** 21:09:31.5±1.8, 11.92N×88.08W, h18km±17km, MD3.6, ML3.5, mb4.1(NEIC)*
*ISCJB **15** 21:09:32.3±0.5, 12.01N±0.06×88.05W±0.04, h35km, mb4.1/22, MS3.0/4, Error ellipse: s-maj=10.0km s-min=4.3km az=26.8*
*IDC **15** 21:09:34.5±7.5, 12.15N×87.86W, h33km±55km, mb3.8/7, mb1 4.1/8, mb1mx3.7/35, mbtmp4.0/8, ML3.2/1, MS3.2/4, Ms1 3.1/4, ms1mx2.7/33, Error ellipse: s-maj=55.8km s-min=24.1km az=26.0*

*NEIC **15** 21:09:35.9±1.4, 12.12N×87.90W, h48km±14km, mb4.1/18, Error ellipse: s-maj=16.4km s-min=8.2km az=51.0*
ISC 15 21:09:34.2±0.8, 12.02N±0.09×88.02W±0.07, h35km, n178, σ0.97/177, mb4.2/22, MS2.9/4, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
CNCH	**Conchagua**	**1.26**	**8**	*e*P		**Pn**		**21 09 56.0**	**+0.6**
TEL3	**Telica 3**	**1.27**	**64**	*e*P		**Pn**		**21 09 55.3**	**-0.2**
CNGN	**Cerro Negro**	**1.38**	**70**	*e*P		**Pn**		**21 09 56.3**	**-0.7**
CNGN				AML		AML		21 10 29.6	
	comp=N,710nm,0.4s								
COPN	**Copaltepe**	**1.41**	**84**	*e*P		**Pn**		**21 09 57.2**	**-0.1**
LCY	**Lacayo**	**1.42**	**349**	*e*P		**Pn**		**21 09 58.3**	**+0.7**
VSM	**San Miguel**	**1.42**	**350**	*e*P		**Pn**		**21 09 58.4**	**+0.6**
MOMN	**Momotombo**	**1.50**	**75**	*e*P		**Pn**		**21 09 58.1**	**-0.5**
APYN	**Apoyeque**	**1.65**	**83**	*e*P		**Pn**		**21 10 00.3**	**-0.3**
TISN	**Laguna Tiscapa**	**1.72**	**86**	*e*P		**Pn**		**21 10 01.8**	**+0.2**
MGAN	**Managua**	**1.74**	**86**	*e*P		**Pn**		**21 10 01.9**	**0.0**
CAHU	**Cacacuatique**	**1.75**	**354**	*e*P		**Pn**		**21 10 03.2**	**+0.9**
LFRS	**El Faro**	**1.89**	**328**	*e*P		**Pn**		**21 10 02.3**	**-1.7**
ESTN	**Estel**	**1.94**	**56**	*e*P		**Pn**		**21 10 03.0**	**-1.7**
LBRS	**Las Brisas**	**1.98**	**330**	*e*P		**Pn**		**21 10 04.4**	**-0.8**
LFU	**La Fuente**	**2.02**	**328**	*e*P		**Pn**		**21 10 05.0**	**-0.8**
LFU				*e*S		**Sn**		**21 10 32.5**	**+2.5**
BOQS	**Boqueron**	**2.10**	**324**	*e*P		**Pn**		**21 10 05.9**	**-1.1**
CONN	**Concepcion**	**2.39**	**101**	*e*P		**Pn**		**21 10 10.7**	**-0.2**
CMIG	**Matias Romero**	**8.34**	**308**	Pn		**Pn**		**21 11 34.3**	**+1.6**
	comp=N,0.3nm,0.3s,baz=118,slow=7.0,SNR=4.9								
OTAV	**Otavalo**	**15.08**	**140**	*e*Pn		**Pn**		**21 13 06.5**	**+1.3**
	comp=N,1.2nm,0.4s								
DWPF	**Disney Wildern**	**17.15**	**20**	Pn		**Pn**		**21 13 30.6**	**-0.6**
	comp=N,31nm,0.8s								
034A	**Hebbronville**	**18.01**	**328**	P		**Pn**		**21 13 43.1**	**+1.3**
	baz=144								
546A	**Slidell**	**18.19**	**355**	P		**Pn**		**21 13 44.5**	**+0.5**
	baz=174								
934A	**Benavides**	**18.36**	**329**	P		**P**		**21 13 47.1**	**+1.2**
	baz=145								
447A	**Lucedale**	**18.69**	**358**	P		**P**		**21 13 50.3**	**+0.8**
	baz=178								
933A	**Laredo**	**18.76**	**327**	P		**P**		**21 13 51.0**	**+0.7**
	baz=143								
834A	**Tilden**	**18.81**	**330**	P		**P**		**21 13 51.8**	**+1.0**
	baz=146								
636A	**Smothers Creek**	**19.30**	**336**	P		**P**		**21 13 57.9**	**+1.7**
	baz=152								
833A	**Chaparral WMA,**	**19.39**	**328**	P		**P**		**21 13 58.1**	**+0.8**
	baz=144,SNR=8.6								
832A	**Faith Ranch, C**	**19.66**	**327**	P		**P**		**21 14 01.2**	**+1.0**
	baz=143								
733A	**Divot King Ran**	**19.66**	**329**	P		**P**		**21 14 00.9**	**+0.7**
	baz=145,SNR=9.5								
633A	**Saathoff Ranch**	**20.22**	**331**	P		**P**		**21 14 06.3**	**0.0**
	baz=146								
534A	**Blanco**	**20.38**	**333**	P		**P**		**21 14 07.3**	**-0.7**
	baz=149,SNR=5.2								
435B	**Jarrell**	**20.66**	**336**	P		**P**		**21 14 11.5**	**+0.5**
	baz=152								
533A	**Kerrville**	**20.67**	**332**	P		**P**		**21 14 11.5**	**+0.4**
	baz=148,SNR=14								
LRAL	**Lakeview Retre**	**20.93**	**2**	P		**P**		**21 14 15.2**	**+1.3**
	comp=N,4.1nm,0.7s								
434A	**Burnet**	**20.97**	**335**	P		**P**		**21 14 14.3**	**-0.1**
	baz=151								
433A	**Art**	**21.27**	**333**	P		**P**		**21 14 16.7**	**-0.9**
	baz=148,SNR=5.3								

	baz=168							
WMOK	**Wichita Mounta**	**24.64**	**338**	P		**P**	**21 14 50.2**	**-1.4**
	baz=154							
WMOK	**Wichita Mounta**	**24.64**	**338**	*e*P		**P**	**21 14 48.3**	**-3.3**
	comp=N,5.0nm,0.7s							
V36A	**Jenks**	**24.72**	**344**	P		**P**	**21 14 53.6**	**+1.3**
	baz=161							
W34A	**Bridge Creek,**	**24.74**	**341**	P		**P**	**21 14 52.9**	**+0.4**
	baz=156							
W34A	**Bridge Creek,**	**24.74**	**341**	*e*P		**P**	**21 14 52.7**	**+0.2**
	comp=N,16nm,0.6s							
U39A	**Green Forest**	**24.75**	**349**	P		**P**	**21 14 52.5**	**-0.1**
	baz=167							
TUL1	**Leonard**	**24.80**	**345**	P		**P**	**21 14 52.9**	**-0.1**
	baz=161							
V35A	**Meyer Ranch, C**	**24.95**	**343**	P		**P**	**21 14 54.1**	**-0.2**
	baz=159							
U38A	**Gravette**	**24.98**	**348**	P		**P**	**21 14 54.9**	**+0.3**
	baz=165							
U37A	**Salina**	**25.11**	**346**	P		**P**	**21 14 56.5**	**+0.8**
	baz=163							
T41A	**Mountain View**	**25.14**	**353**	P		**P**	**21 14 55.8**	**-0.3**
	baz=171							
W32A	**Sentinel**	**25.15**	**338**	P		**P**	**21 14 56.4**	**+0.2**
	baz=153,SNR=6.3							
V34A	**Guthrie**	**25.21**	**342**	P		**P**	**21 14 56.3**	**-0.4**
	baz=158							
V34A	**Guthrie**	**25.21**	**342**	*e*P		**P**	**21 14 56.3**	**-0.4**
	comp=N,14nm,0.6s							
MNTX	**Cornudas Mount**	**25.29**	**323**	P		**P**	**21 14 58.8**	**+1.3**
	baz=137							
T40A	**Mansfield**	**25.34**	**352**	P		**P**	**21 14 57.7**	**-0.2**
	baz=169							
T39A	**Clever**	**25.36**	**350**	P		**P**	**21 14 57.7**	**-0.3**
	baz=167							
V33A	**Lossen Ranch,**	**25.45**	**340**	P		**P**	**21 14 58.4**	**-0.4**
	baz=156							
U35A	**Pawnee**	**25.48**	**343**	P		**P**	**21 14 58.7**	**-0.4**
	baz=160							
S43A	**Fulton Ridge,**	**25.51**	**356**	P		**P**	**21 14 58.4**	**-1.0**
	baz=175							
T38A	**Diamond**	**25.54**	**348**	P		**P**	**21 14 59.4**	**-0.2**
	baz=165							
S44A	**Carbondale**	**25.59**	**358**	P		**P**	**21 14 59.3**	**-0.8**
	baz=177							
MSTX	**Muleshoe**	**25.66**	**331**	P		**P**	**21 15 01.1**	**+0.2**
	baz=145,SNR=6.1							
MSTX	**Muleshoe**	**25.66**	**331**	*e*P		**P**	**21 15 01.4**	**+0.5**
	comp=N,6.8nm,0.6s							
S41A	**Jillco Farms,**	**25.68**	**353**	P		**P**	**21 15 00.0**	**-0.9**
	baz=171							
T37A	**Cheneyville 18**	**25.75**	**347**	P		**P**	**21 15 02.9**	**+1.3**
	baz=164,SNR=7.4							
U34A	**Anderson Ranch**	**25.78**	**342**	P		**P**	**21 15 01.1**	**-0.7**
	baz=158							
S40A	**Lebanon**	**25.78**	**352**	P		**P**	**21 15 01.5**	**-0.3**
	baz=170							
T36A	**Boggs Farm, Ca**	**25.91**	**346**	P		**P**	**21 15 03.0**	**0.0**
	baz=162							
AMTX	**Amarillo**	**25.92**	**334**	P		**P**	**21 15 04.0**	**+0.7**
	baz=148							
S39A	**Bolivar**	**26.00**	**350**	P		**P**	**21 15 03.1**	**-0.7**
	baz=168,SNR=11							
S38A	**Stockton**	**26.04**	**349**	P		**P**	**21 15 03.7**	**-0.5**
	baz=166							
T34A	**McClaskey Farm**	**26.22**	**343**	P		**P**	**21 15 05.8**	**-0.1**
	baz=159							
S37A	**Fort Scott**	**26.34**	**348**	P		**P**	**21 15 06.5**	**-0.4**
	baz=165							
R40A	**Maddies Statio**	**26.43**	**352**	P		**P**	**21 15 06.9**	**-0.8**
	baz=170							
S36A	**Lake Cedric, C**	**26.48**	**346**	P		**P**	**21 15 07.6**	**-0.5**
	baz=163							
R39A	**Chumby, Stover**	**26.56**	**351**	P		**P**	**21 15 08.2**	**-0.7**
	baz=169							
R38A	**Fenwick Farm,**	**26.58**	**350**	P		**P**	**21 15 08.4**	**-0.6**
	baz=167							
S35A	**Otter Creek Ra**	**26.61**	**345**	P		**P**	**21 15 09.1**	**-0.3**
	baz=161							
R37A	**Teagarden Farm**	**26.88**	**348**	P		**P**	**21 15 10.6**	**-1.2**
	baz=165							
Q39A	**Willow Grove F**	**27.27**	**352**	P		**P**	**21 15 14.6**	**-0.7**
	baz=169							
Q38A	**Cooks Store, C**	**27.29**	**350**	P		**P**	**21 15 14.6**	**-0.8**
	baz=168							
121A	**Cookes Peak, D**	**27.31**	**321**	P		**P**	**21 15 15.2**	**-0.8**
	baz=134							
P42A	**Winchester**	**27.53**	**356**	P		**P**	**21 15 16.4**	**-1.2**
	baz=175							
P39B	**Salisbury**	**27.67**	**352**	P		**P**	**21 15 17.6**	**-1.3**
	baz=170							
P38A	**Dawn**	**27.92**	**351**	P		**P**	**21 15 20.2**	**-0.9**
	baz=168							
O41A	**Passleys Farm,**	**28.09**	**355**	P		**P**	**21 15 20.8**	**-1.9**
	baz=165							
ANMO	**Albuquerque**	**28.30**	**327**	*e*P		**P**	**21 15 25.3**	**+0.5**
	comp=N,0.9nm,0.6s							
P34A	**Walnut Farm, R**	**28.50**	**346**	P		**P**	**21 15 25.7**	**-0.6**
	baz=162							
O33A	**Hebron**	**29.19**	**345**	P		**P**	**21 15 31.7**	**-0.7**
	baz=160							
SDCO	**Great Sand Dun**	**30.01**	**332**	*e*P		**P**	**21 15 40.7**	**+0.6**
	comp=N,0.5nm,0.6s							
L41A	**Preston**	**30.02**	**356**	P		**P**	**21 15 38.0**	**-1.7**
	baz=175							
L40A	**Anamosa**	**30.06**	**355**	P		**P**	**21 15 38.4**	**-1.6**
	baz=174							
S22A	**4UR Ranch, Cre**	**30.65**	**330**	P		**P**	**21 15 44.2**	**-1.5**
	baz=142							
L35A	**Bielow Farm, R**	**30.69**	**349**	P		**P**	**21 15 44.2**	**-1.4**
	baz=165							
K37A	**Belmond**	**31.02**	**352**	P		**P**	**21 15 47.2**	**-1.3**
	baz=169,SNR=5.3							
J40A	**Soldiers Grove**	**31.35**	**356**	P		**P**	**21 15 50.3**	**-1.1**
	baz=175							
J36A	**Seneca 1, Swea**	**31.67**	**351**	P		**P**	**21 15 53.1**	**-1.1**
	baz=168,SNR=5.5							
ECSD	**EROS Data Cent**	**32.46**	**348**	P		**P**	**21 15 59.4**	**-1.8**
	baz=164							
H35A	**Sunnyside Ranc**	**33.08**	**351**	P		**P**	**21 16 05.3**	**-1.3**
	baz=168,SNR=7.1							
SPMN	**Marine on St.**	**33.34**	**354**	P		**P**	**21 16 07.2**	**-1.7**
	baz=171							
H32A	**Carlson Farm,**	**33.36**	**348**	P		**P**	**21 16 08.3**	**-0.8**
	baz=163							
SADO	**Sadowa**	**33.51**	**11**	P		**P**	**21 16 09.8**	**-0.5**
	comp=N,4.0nm,0.7s,baz=209,slow=10,SNR=4.2							
G34A	**Benson**	**33.74**	**350**	P		**P**	**21 16 11.2**	**-1.1**
	baz=166							
GMRC	**Granite Mounta**	**33.81**	**317**	P		**P**	**21 16 11.6**	**-1.6**
	baz=125							
G33A	**Ortonville**	**33.83**	**349**	P		**P**	**21 16 11.8**	**-1.3**
	baz=165							
F36A	**Milaca**	**34.05**	**353**	P		**P**	**21 16 13.4**	**-1.6**
	baz=170							
G32A	**Webster**	**34.09**	**348**	P		**P**	**21 16 14.9**	**-0.5**
	baz=163							
F35A	**Swanville**	**34.18**	**352**	P		**P**	**21 16 14.8**	**-1.3**
	baz=168							
F33A	**5 Mile Ranch,**	**34.43**	**350**	P		**P**	**21 16 16.8**	**-1.5**
	baz=165,SNR=12							
E36A	**McGregor**	**34.66**	**354**	P		**P**	**21 16 19.1**	**-1.2**
	baz=171							
RSSD	**Black Hills**	**34.83**	**340**	*e*P		**P**	**21 16 22.7**	**+0.6**
	comp=N,0.7nm,0.6s							
BFSC	**Mount Baldy Ra**	**34.88**	**314**	P		**P**	**21 16 20.2**	**-2.3**
	baz=122							
E33A	**Westby DABS, E**	**35.02**	**350**	P		**P**	**21 16 22.3**	**-1.1**
	baz=166							
D37A	**Cotton**	**35.22**	**355**	P		**P**	**21 16 23.8**	**-1.3**
	baz=172							
PDAR	**Pinedale Array**	**35.89**	**333**	P		**P**	**21 16 30.8**	**-0.4**
	comp=N,0.2nm,0.4s,baz=132,slow=5.0,SNR=2.5							
C35A	**Jirik Farms, M**	**35.91**	**353**	P		**P**	**21 16 29.3**	**-1.7**
	baz=170							
R11A	**Troy Canyon, C**	**35.92**	**322**	*e*P		**P**	**21 16 34.3**	**+2.8**
	comp=N,1.0nm,0.3s							
HWUT	**Hardware Ranch**	**35.95**	**329**	P		**P**	**21 16 32.4**	**+0.7**
	comp=N,0.8nm,0.5s							
AGMN	**Agassiz Nation**	**36.75**	**351**	P		**P**	**21 16 37.0**	**-1.2**
	baz=167							
B34A	**Aery, Baudette**	**36.77**	**353**	P		**P**	**21 16 36.9**	**-1.4**
	baz=169							
B32A	**Ashes, Strandq**	**36.95**	**351**	P		**P**	**21 16 38.8**	**-1.1**
	baz=166,SNR=8.2							
D26A	**Manning**	**36.95**	**344**	P		**P**	**21 16 39.2**	**-0.8**
	baz=156							
A33A	**Warroad**	**37.31**	**352**	P		**P**	**21 16 42.0**	**-1.0**
	baz=168							
B29A	**Wagenman Farm,**	**37.54**	**348**	P		**P**	**21 16 44.3**	**-0.6**
	baz=161							
ULM	**Lac du Bonnet**	**38.66**	**352**	P		**P**	**21 16 52.6**	**-1.7**
	comp=N,4.5nm,0.6s,baz=166,slow=6.8,SNR=7.4							
NEW	**Newport**	**43.52**	**332**	*e*P		**P**	**21 17 34.6**	**+0.2**
	comp=N,1.0nm,0.7s							
LCO	**Las Campanas**	**44.09**	**158**	*e*P		**P**	**21 17 40.1**	**+0.6**
	comp=N,3.0nm,0.4s							
SCHQ	**Schefferville**	**45.85**	**17**	LR		LR	21 38 17.6	
	comp=N,46nm,18.1s,baz=294,slow=38							
FCC	**Fort Churchill**	**46.87**	**356**	*e*P		**P**	**21 17 59.1**	**-1.6**
	comp=N,14nm,1.0s							
ILAR	**Eielson Array**	**66.18**	**336**	P		**P**	**21 20 18.0**	**0.0**
	comp=N,0.3nm,0.7s,baz=139,slow=5.9,SNR=4.1							
MBAR	**Mbarara**	**118.22**	**84**	*e*PKPdf		**PKPdf**	**21 28 19.1**	**+0.1**
CMAR	**Chiang Mai Arr**	**148.94**	**347**	PKPbc		**PKPbc**	**21 29 19.6**	**+0.2**
	comp=N,1.0nm,0.8s,baz=351,slow=3.5,SNR=7.2							

JMA 15 21:11:55.4, 36°.52N×140°.62E, h12km±1km, M3.5, 3C-1D Broadband fault plane solution: P waves. NP1: ϕ_s326.00000°, δ49.00000°, λ-111.00000°. NP2: ϕ_s177.00000°, δ45.00000°, λ-67.00000°. Principal axes: T Plg2.0000°, Azm71.0000°; N Plg16.0000°, Azm340.0000°; P Plg74.0000°, Azm168.0000°; Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.10**	**336**	⇓P	Pg	21 11 58.2	-0.1
JHO				S	Sg	21 11 59.9	-0.4
JYT	**Yasato**	**0.45**	**230**	⇑P	Pg	21 12 04.2	-0.1
JYT				S	Sg	21 12 10.4	+0.1
ONAJ	**Iwakimizuishiy**	**0.60**	**14**	⇑P	Pg	21 12 06.7	-0.4
ONAJ				S	Sg	21 12 15.3	+0.3
JSA	**Shiboa**	**0.72**	**309**	⇑P	Pg	21 12 09.5	+0.1
JFK	**Kawauchi**	**0.87**	**13**	P	Pg	21 12 11.5	-0.7
JFK				S	Sg	21 12 23.8	+0.2
MAT	**Matsushiro**	**1.94**	**271**	P	Pn	21 12 28.8	+0.5
MAT				S	Sb	21 12 54.0	-1.0

IDC 15 21:14:21.6±8.2, 27°.47S×175°.16W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/33, mbtmp3.5/2 Error ellipse: s-maj=314.4km s-min=48.8km az=24.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**45.85**	**263**	P	P	21 22 45.4	-0.4
	0.5nm,0.8s,baz=97,slow=7.6,SNR=2.8						
WRA	**Warramunga Arr**	**46.58**	**268**	P	P	21 22 51.7	+0.1
	0.6nm,0.5s,baz=109,slow=8.0,SNR=8.5						
TORD	**Torodi Ar. Bea**	**165.45**	**168**	PKPab	PKPab	21 35 26.2	-0.4
	0.9nm,0.9s,baz=196,slow=3.9,SNR=4.5						

*ISCJB **15** 21:19:03.9±0.8, 0°.8S±0°.1×136°.30E±0°.08, h25km, mb3.7/6, Error ellipse: s-maj=15.0km s-min=10.3km az=20.8*
*IDC **15** 21:19:08.4±4.0, 0°.82S×136°.36E, h48km±42km, mb3.5/7, mb1 3.7/9, mb1mx3.5/28, mbtmp3.7/9, ML3.2/2, Error ellipse: s-maj=29.7km s-min=19.2km az=109.0*
ISC 15 21:19:05.7±1.0, 0°.9S±0°.1×136°.2E±0°.1, h25km, n15, σ0s65/9, mb3.8/6, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**4.76**	**110**	P	**Pn**	**21 20 16.7**	**+0.8**
	0.1nm,0.3s,baz=268,slow=23,SNR=6.9						
JAY				S	**Sn**	**21 21 09.3**	**-1.0**
	0.1nm,0.3s,baz=91,slow=23,SNR=3.4						
WRA	**Warramunga Arr**	**19.07**	**185**	P	**Pn**	**21 23 27.1**	**-0.3**
	0.2nm,0.3s,baz=8.0,slow=11,SNR=13						
FITZ	**Fitzroy Crossi**	**20.06**	**211**	P	Pn	21 23 40.4	+1.2
	0.7nm,0.3s,baz=10,slow=8.4,SNR=6.7						
ASAR	**Alice Springs**	**22.80**	**186**	P	**P**	**21 24 07.0**	**+0.3**
	5.3nm,0.7s,baz=15,slow=11,SNR=66						
STKA	**Stephens Creek**	**31.28**	**171**	P	**P**	**21 25 24.0**	**+0.3**
	0.8nm,0.6s,baz=327,slow=17,SNR=2.9						
H11S3	**WAKE ISLAND Hy**	**35.57**	**56**	T	T	22 03 49.4	
	baz=240,slow=75,SNR=16						
H11S2	**WAKE ISLAND Hy**	**35.58**	**56**	T	T	22 03 48.8	
	baz=240,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**35.59**	**56**	T	T	22 03 49.2	
	baz=240,slow=75,SNR=8.8						
H11N1	**WAKE ISLAND Hy**	**36.34**	**54**	T	T	22 04 54.6	
	baz=243,slow=75,SNR=8.2						
H11N2	**WAKE ISLAND Hy**	**36.36**	**54**	T	T	22 04 58.7	
	baz=243,slow=75,SNR=10						
H11N3	**WAKE ISLAND Hy**	**36.36**	**54**	T	T	22 05 01.5	
	baz=243,slow=75,SNR=6.2						
MKAR	**Makanchi Array**	**66.82**	**323**	P	**P**	**21 29 55.2**	**-0.2**
	0.5nm,0.6s,baz=113,slow=7.3,SNR=5.9						
ZALV	**Zalesovo Beam**	**69.10**	**330**	P	**P**	**21 30 09.0**	**-0.5**
	0.2nm,0.3s,baz=60,slow=5.8,SNR=2.7						
VNDA	**Vanda**	**77.85**	**174**	P	**P**	**21 31 00.2**	**-0.4**
	0.6nm,0.6s,baz=6.7,slow=5.9,SNR=3.6						
ILAR	**Eielson Array**	**85.18**	**25**	P	**P**	**21 31 40.0**	**+0.3**
	0.4nm,0.7s,baz=253,slow=6.3,SNR=4.8						

*ISCJB **15** 21:29:22.1±0.7, 50°.26N±0°.05×19°.21E±0°.03, h0km, Error ellipse: s-maj=7.3km s-min=2.9km az=8.5*
*CSEM **15** 21:29:23.2±0.3, 50°.27N×19°.25E, h2km, ML2.8/6, Error ellipse: s-maj=8.0km s-min=3.0km az=7.0*
*PRU **15** 21:29:24.1, 50°.21N×19°.24E, h0km*
ISC 15 21:29:23.3±0.9, 50°.22N±0°.05×19°.24E±0°.03, h0km, n24, σ0s61/40, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OJC	**Ojcow**	**0.36**	**90**	*e*Pg	**Pg**	**21 29 30.2**	**0.0**
OJC				*e*Sg	**Sg**	**21 29 34.6**	**-0.2**
OJC	**Ojcow**	**0.36**	**90**	*e*Pg	**Pg**	**21 29 30.2**	**0.0**
OJC				*e*Sg	**Sg**	**21 29 34.6**	**-0.2**
OKC	**Ostrava-Krasne**	**0.80**	**242**	*e*PG	**Pb**	**21 29 40.2**	**+0.1**
OKC				*e*SG	**Sg**	**21 29 50.0**	**+1.0**
	comp=Z,10nm,0.3s						
OKC	**Ostrava-Krasne**	**0.80**	**242**	Pg	**Pb**	**21 29 40.2**	**+0.1**
OKC				Sg	**Sg**	**21 29 50.0**	**+1.0**
	10nm,0.3s						
LANS	**Liptovska Anna**	**1.08**	**172**	*e*Pg	**Pb**	**21 29 44.7**	**-0.2**
LANS				*e*Sg	**Sg**	**21 29 58.6**	**+0.5**
LANS	**Liptovska Anna**	**1.08**	**172**	*e*PG	**Pb**	**21 29 44.7**	**-0.2**
LANS				*e*SG	**Sg**	**21 29 58.6**	**+0.5**
MORC	**Moravsky Berou**	**1.18**	**248**	*e*Pg	**Pn**	**21 29 47.0**	**-0.1**
MORC				*e*Sg	**Sn**	**21 30 03.3**	**-0.6**
STHS	**Stebnicka Huta**	**1.53**	**121**	*e*Pg	**Pg**	**21 29 53.1**	**+0.5**
STHS				*e*Sg	**Sn**	**21 30 13.1**	**+0.6**
STHS	**Stebnicka Huta**	**1.53**	**121**	*e*PG	**Pg**	**21 29 53.0**	**+0.5**
STHS				*e*SG	**Sn**	**21 30 13.1**	**+0.6**
STHS				eLG	Lg	21 30 14.8	
KRLC	**Kraliky**	**1.58**	**266**	*e*PG	**Pb**	**21 29 53.3**	**-0.2**
KRLC				*e*SG	**Sg**	**21 30 14.5**	**+0.3**
KRLC	**Kraliky**	**1.58**	**266**	Pg	**Pb**	**21 29 53.3**	**-0.2**
KRLC				Sg	**Sg**	**21 30 14.5**	**+0.3**
VYHS	**Vyhne**	**1.75**	**189**	*e*Pn	**Pn**	**21 29 54.6**	**-0.3**
VYHS				*e*Sg	**Sn**	**21 30 17.4**	**-0.5**
VYHS	**Vyhne**	**1.75**	**189**	*e*PN	**Pn**	**21 29 54.6**	**-0.3**
VYHS				*e*SG	**Sn**	**21 30 17.4**	**-0.5**
VYHS				eLG	Lg	21 30 19.7	
DPC	**Dobruska-Polom**	**1.87**	**275**	*e*PG	**Pb**	**21 29 58.3**	**-0.1**
DPC				*e*SG	**Sg**	**21 30 23.9**	**+0.5**
	comp=Z,13nm,0.5s						
DPC	**Dobruska-Polom**	**1.87**	**275**	Pg	**Pb**	**21 29 58.3**	**-0.1**
DPC				Sg	**Sg**	**21 30 23.9**	**+0.5**
	13nm,0.5s						
VRAC	**Vranov**	**1.94**	**243**	*e*Pn	**Pb**	**21 29 58.9**	**-0.6**
VRAC				*e*Sg	**Sg**	**21 30 25.9**	**+0.3**
GOPC	**GO Pecny, Ondr**	**2.88**	**266**	*e*SG	**Sg**	**21 30 55.1**	**-0.7**
	comp=Z,4.0nm,0.4s						
GOPC	**GO Pecny, Ondr**	**2.88**	**266**	Sg	**Sg**	**21 30 55.1**	**-0.7**
	4.0nm,0.4s						
PVCC	**Panska Ves**	**3.00**	**278**	*e*SG	**Sg**	**21 31 01.0**	**+1.3**
	comp=Z,8.0nm,0.4s						
PVCC	**Panska Ves**	**3.00**	**278**	Sg	**Sg**	**21 31 01.0**	**+1.3**
	8.0nm,0.4s						
PRU	**Pruhonice**	**3.03**	**267**	*e*SG	**Sg**	**21 31 00.9**	**+0.3**
	comp=Z,3.4nm,0.4s						
PRU	**Pruhonice**	**3.03**	**267**	Sg	**Sg**	**21 31 00.9**	**+0.3**
	3.4nm,0.4s						
KHC	**Kasperske Hory**	**3.83**	**256**	*e*SG	**Sg**	**21 31 25.2**	**-1.2**
	comp=Z,3.3nm,0.4s						
KHC	**Kasperske Hory**	**3.83**	**256**	Sg	**Sg**	**21 31 25.2**	**-1.2**
	3.3nm,0.4s						

*ISCJB **15** 21:39:23.1±0.5, 4°.79N±0°.06×95°.50E±0°.07, h89km, mb3.9/17, Error ellipse: s-maj=11.4km s-min=5.7km az=139.7*
*IDC **15** 21:39:26.5±3.1, 4°.88N×95°.78E, h107km±27km, mb3.7/16, mb1 3.8/18, mb1mx3.7/42, mbtmp4.0/18, Error ellipse: s-maj=29.9km s-min=12.3km az=53.0*
*DJA **15** 21:39:27.9±1.0, 5°.1N±3°.9×9°.6E±1°.2, h93km±11km, M4.2/6, mB5.3/2, mb4.4/4, MLv4.1/6, Mw(mB)4.8/2*
ISC 15 21:39:24.8±0.6, 4°.75N±0°.06×95°.69E±0°.08, h89km, n29, σ2s34/33, mb4.1/17, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LHMI	**Lhok Sumawe**	**1.34**	**69**	P	**Pn**	**21 39 51.4**	**+2.8**
LHMI				S	**Sn**	**21 40 09.0**	**+2.5**
TPTI		**2.10**	**135**	P	**Pn**	**21 40 01.1**	**+2.7**
TPTI				S	**Sn**	**21 40 24.7**	**+0.7**
PSI	**Prapat**	**3.77**	**121**	P	**Pn**	**21 40 23.8**	**+2.9**
	9.5nm,0.3s,baz=309,slow=11,SNR=43						
PSI				S	**Sn**	**21 40 55.7**	**-8.5**
	2.4nm,0.3s,baz=307,slow=18,SNR=3.1						
GSI	**Gunungsitoli**	**3.91**	**151**	P	**Pn**	**21 40 25.0**	**+2.3**
GSI				S	**Sn**	**21 41 06.5**	**-1.0**
MNSI	**Mandailing Nat**	**5.53**	**135**	P	**Pn**	**21 40 47.0**	**+2.3**
CMAR	**Chiang Mai Arr**	**13.99**	**13**	P	**Pn**	**21 42 40.3**	**+1.2**
	0.2nm,0.3s,baz=213,slow=15,SNR=2.5						
DBJI	**Dramaga**	**15.75**	**135**	P	**P**	**21 43 05.6**	**+1.7**
SKJI	**Sukabumi**	**15.94**	**137**	P	**P**	**21 43 08.1**	**+2.2**
CISI	**Cisompet, Garu**	**17.20**	**135**	P	**P**	**21 43 22.6**	**+2.6**
H08S2	**Diego Garcia H**	**26.21**	**242**	T	T	22 12 06.7	
	baz=62,slow=76,SNR=60						
H08S3	**Diego Garcia H**	**26.21**	**242**	T	T	22 12 06.5	
	baz=62,slow=76,SNR=47						
H08S1	**Diego Carcia H**	**26.23**	**242**	T	T	22 12 08.6	
	baz=62,slow=76,SNR=5.8						
MKAR	**Makanchi Array**	**43.46**	**347**	P	**P**	**21 47 17.4**	**-1.6**
	1.8nm,0.5s,baz=164,slow=7.9,SNR=25						
SONM	**Songino Array**	**43.90**	**10**	P	**P**	**21 47 21.1**	**-1.6**
	1.0nm,0.5s,baz=189,slow=8.8,SNR=11						
SONM				PcP	**PP**	**21 49 06.6**	**0.0**
	0.8nm,0.5s,baz=184,slow=3.8,SNR=5.9						
WRA	**Warramunga Arr**	**45.23**	**124**	P	**P**	**21 47 32.9**	**-0.7**
	2.4nm,0.7s,baz=302,slow=9.3,SNR=20						
WRA				PcP	**PcP**	**21 49 12.1**	**-0.3**
	0.2nm,0.4s,baz=315,slow=2.7,SNR=3.0						
ASAR	**Alice Springs**	**46.76**	**129**	P	**P**	**21 47 45.4**	**-0.2**
	5.2nm,0.5s,baz=299,slow=8.0,SNR=87						
ASAR				PcP	**PcP**	**21 49 17.8**	**+0.1**
	0.8nm,0.9s,baz=193,slow=20,SNR=2.4						
GEYT	**Alibeck**	**47.54**	**319**	P	**P**	**21 47 51.7**	**+0.2**
	1.9nm,0.6s,baz=149,slow=12,SNR=6.9						
ZALV	**Zalesovo Beam**	**49.84**	**352**	P	**P**	**21 48 06.8**	**-1.9**
	2.6nm,0.5s,baz=176,slow=7.7,SNR=15						
MJAR	**Matsushiro Arr**	**50.19**	**45**	P	**P**	**21 48 10.8**	**-0.9**
	0.4nm,0.5s,baz=226,slow=4.9,SNR=3.1						
USRK	**Usuriysk Ar.**	**50.59**	**33**	P	**P**	**21 48 13.7**	**-0.9**
	1.6nm,0.7s,baz=124,slow=37,SNR=2.8						
STKA	**Stephens Creek**	**56.86**	**133**	P	**P**	**21 48 59.7**	**-0.9**
	1.2nm,0.7s,baz=272,slow=8.0,SNR=3.4						
KBZ	**Khabaz**	**60.42**	**318**	P	**P**	**21 49 24.9**	**-0.2**
	1.2nm,0.6s,baz=168,slow=3.8,SNR=3.7						
BRTR	**Keskin Array B**	**65.63**	**312**	P	**P**	**21 49 59.0**	**-0.8**
	1.3nm,1.0s,baz=126,slow=6.4,SNR=4.5						
AKASG	**Malin Array Be**	**71.54**	**322**	P	**P**	**21 50 34.9**	**-1.4**
	2.0nm,0.2s,baz=90,slow=5.1,SNR=3.5						
FINES	**FINESS Array B**	**76.17**	**332**	P	**P**	**21 51 01.6**	**-1.5**
	1.3nm,0.5s,baz=102,slow=4.8,SNR=9.1						
ARCES	**ARCESS Array B**	**78.70**	**340**	P	**P**	**21 51 16.2**	**-0.8**
	4.6nm,1.0s,baz=101,slow=6.4,SNR=8.5						
GERES	**GERESS Array B**	**81.17**	**319**	P	**P**	**21 51 31.2**	**+0.3**
	0.6nm,0.6s,baz=115,slow=6.3,SNR=5.0						
NOA	**NORSAR Array B**	**83.19**	**331**	P	**P**	**21 51 42.3**	**+1.2**
	0.4nm,0.7s,baz=62,slow=6.6,SNR=2.8						
TORD	**Torodi Ar. Bea**	**92.81**	**283**	P	**P**	**21 52 32.1**	**+3.8**
	0.2nm,0.6s,baz=79,slow=6.0,SNR=3.5						

*IDC **15** 21:44:59.0±0.6, 29°.66S×176°.06W, h0km, mb4.8/17, mb1 4.9/19, mb1mx4.8/31, mbtmp4.8/19, ML4.1/2, MS4.0/21, Ms1 4.0/21, ms1mx3.9/26, Error ellipse: s-maj=24.1km s-min=15.6km az=171.0*
*GCMT **15** 21:45:01.5±0.2, 29°.35S×175°.93W, h12km, MW5.0/91, Moment Tensor Solution. s34,c39; s91,c128; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.06±.08; $M_{\theta\theta}$0.06±.09; $M_{\phi\phi}$3.00±.07; $M_{r\theta}$-0.90±.35; $M_{\theta\phi}$-0.28±.07; $M_{\phi r}$-1.46±.25; Best double couple: $M_0$3.48500×10^{16} NP1:ϕ_s11.00000°, δ59.00000°, λ-73.00000

RPZ LR LR 21 56 07.5
comp=Z,532nm,21.6s,baz=32,slow=38
ODZ Otahua Downs 18.61 210 *e*P **P 21 49 18.8 -0.4**
comp=Z,38nm,0.8s
TBI Tubuai 24.71 82 *e*LR LR 21 56 15.7
comp=Z,2µm,29.0s,baz=248
PAE Paea 27.07 70 *e*T T 22 19 02.9
comp=Z,2.8nm,0.3s
PPT2 Papeete2 27.11 70 *e*LR LR 21 57 16.4
comp=Z,2µm,28.2s,baz=236
PPT Papeete 27.12 70 LR LR 21 58 23.7
comp=Z,252nm,20.4s,baz=200,slow=30
ARMA Armidale 27.81 260 P **P 21 50 54.2 +3.1**
baz=28,SNR=7.0
RIV Riverview 28.01 253 P **P 21 50 54.0 +1.3**
baz=28
EIDS Eidsvold 29.25 270 P **P 21 51 05.9 +2.1**
baz=29,SNR=4.3
HNR Honiara 29.98 307 LR LR 22 03 03.9
comp=Z,175nm,18.1s,baz=144,slow=36
CMSA Cobar Meteorol 32.75 257 P **P 21 51 35.8 +1.2**
baz=33,SNR=12
QLP Quilpie 34.90 265 P **P 21 51 54.0 +0.6**
baz=35,SNR=5.4
ARPS Mount Arapiles 35.61 247 P **P 21 52 01.2 +1.8**
baz=36
STKA Stephens Creek 36.17 255 P **P 21 52 04.7 +0.5**
comp=Z,29nm,0.8s,baz=93,slow=10.0,SNR=40
STKA LR LR 22 06 18.6
comp=Z,865nm,18.2s,baz=78,slow=35
STKA Stephens Creek 36.17 255 P **P 21 52 05.1 +0.9**
baz=36,SNR=18
STKA Stephens Creek 36.17 255 *e*P **P 21 52 04.5 +0.2**
STKA pmax pmax
comp=Z,6.0nm,0.8s
STKA Stephens Creek 36.17 255 *e*P **P 21 52 04.5 +0.2**
comp=Z,6.0nm,0.8s
RKT Rikitea 37.37 90 *e*LR LR 22 02 07.7
comp=Z,851nm,28.8s,baz=255
MTSU Mount Surprise 37.67 279 P **P 21 52 17.1 0.0**
baz=38,SNR=20
HTT Hallett 38.22 252 P **P 21 52 22.6 +0.9**
baz=38,SNR=33
TAOE Nuku Hiva Isla 39.56 66 *e*LR LR 22 02 59.2
comp=Z,81nm,27.1s
BBOO Buckleboo 40.68 253 P **P 21 52 42.3 +0.2**
baz=41,SNR=17
BBOO Buckleboo 40.68 253 *e*P **P 21 52 42.5 +0.4**
comp=Z,35nm,0.8s
AS01 Alice Springs 44.66 265 *e*P **P 21 53 13.4 -1.2**
AS31 Alice Springs 44.70 265 *e*P **P 21 53 14.4 -0.5**
comp=Z,2.9nm,0.7s
ASAR Alice Springs 44.70 265 P **P 21 53 14.1 -0.8**
comp=Z,7.6nm,0.7s,baz=99,slow=7.9,SNR=88
ASAR LR LR 22 11 39.1
comp=Z,970nm,18.2s,baz=109,slow=36
WB2 Warramunga Arr 45.61 270 *e*P **P 21 53 21.4 -0.8**
comp=Z,29nm,0.8s
WRAB Tennant Creek 45.61 270 *d i*P **P 21 53 21.7 -0.4**
WRAB pmax pmax
comp=Z,64nm,0.8s
WRAB Tennant Creek 45.61 270 *e*P **P 21 53 21.8 -0.3**
comp=Z,27nm,0.8s
WRA Warramunga Arr 45.62 270 P **P 21 53 21.0 -1.2**
comp=Z,24nm,0.7s,baz=109,slow=7.8,SNR=80
WRA LR LR 22 11 44.6
comp=Z,269nm,18.2s,baz=135,slow=35
VNDA Vanda 49.08 186 P **P 21 53 50.5 +2.2**
comp=Z,2.8nm,0.9s,baz=5.0,slow=5.9,SNR=11
VNDA LR LR 22 10 22.9
comp=Z,60nm,21.2s,baz=6.5,slow=31
VNDA Vanda 49.08 186 *e*P **P 21 53 48.3 0.0**
VNDA pmax pmax
comp=Z,8.0nm,1.4s
VNDA Vanda 49.08 186 *e*P **P 21 53 48.3 0.0**
comp=Z,8.4nm,1.4s
WRKA Warakurna 49.12 261 P **P 21 53 48.8 -0.7**
baz=49,SNR=15
FITZ Fitzroy Crossi 53.91 268 P **P 21 54 24.6 -0.7**
baz=54,SNR=20
FITZ Fitzroy Crossi 53.91 268 *e*P **P 21 54 24.9 -0.4**
comp=Z,17nm,0.8s
KLBR Kellerberrin 56.08 250 P **P 21 54 40.0 -0.8**
baz=56,SNR=10
MEEK Meekatharra 56.88 256 P **P 21 54 46.2 -0.4**
baz=57,SNR=4.4
BLDU Ballidu 57.22 251 P **P 21 54 48.6 -0.3**
baz=57,SNR=5.6
MUN Mundaring 57.23 249 P **P 21 54 49.1 +0.1**
baz=57
MBWA Marble Bar 57.85 262 *e*P **P 21 54 52.0 -1.5**
comp=Z,15nm,0.8s
MORW Morawa 58.25 252 P **P 21 54 56.0 -0.2**
baz=58,SNR=5.8
QSPA South Pole Qui 60.54 180 *e*P **P 21 55 13.5 +2.0**
comp=Z,57nm,0.7s
MAW Mawson 73.62 200 P **P 21 56 36.8 +2.4**
comp=Z,5.4nm,0.8s,baz=120,slow=8.6,SNR=12
MAW LR LR 22 30 30.9
comp=Z,79nm,19.0s,baz=61,slow=37
MAW Mawson 73.62 200 *e*P **P 21 56 34.7 +0.4**
MAW pmax pmax
comp=Z,5.0nm,1.4s
MAW Mawson 73.62 200 *e*P **P 21 56 34.7 +0.4**
comp=Z,4.6nm,1.4s
JOW Kunigami 77.26 311 *e*P **P 21 56 55.0 -0.8**
comp=Z,50nm,0.9s
INU Inuyama 78.17 323 *e*P **P 21 57 00.8 +0.2**
comp=Z,11nm,0.9s
SYO Syowa Base 78.26 192‖ *e*P **P 21 57 00.4 -0.4**
MJAR Matsushiro Arr 78.46 324 P **P 21 57 01.5 -0.8**
comp=Z,4.0nm,0.8s,baz=158,slow=5.3,SNR=13
MAJO Matsushiro 78.46 324‖ *e*P **P 21 57 01.9 -0.4**
MAJO pmax pmax
comp=Z,56nm,0.9s
MAJO Matsushiro 78.46 324 *e*P **P 21 57 01.8 -0.4**
comp=Z,9.6nm,0.9s
MAT Matsushiro 78.46 324 P **P 21 57 01.6 -0.7**
MJB9 Matsu-Tunnel 78.46 324 *e*P **P 21 57 02.2 -0.1**
comp=Z,2.5nm,0.9s
SNAA Sanae 78.93 178 P **P 21 57 05.4 +0.8**
SNAA Sanae 78.93 178‖ *e*P **P 21 57 05.8 +1.2**
SNAA Sanae 78.93 178 *e*P **P 21 57 05.6 +1.0**
comp=Z,5.5nm,0.9s
VNA1 Neumayer--Stat 79.69 176 P P 21 57 02.1 -6.5
JNU Nakatsue 79.98 317 P **P 21 57 10.5 -0.1**
comp=Z,8.0nm,0.7s,baz=334,slow=3.3,SNR=11
JNU Nakatsue 79.98 317 *e*P **P 21 57 10.6 -0.1**
comp=Z,11nm,0.9s
TPUB Ta-pu 80.29 304 *e*P **P 21 57 11.7 -0.9**
comp=Z,36nm,0.9s
SSLB Suanglung 80.35 304 *e*P **P 21 57 11.1 -1.9**
comp=Z,31nm,0.8s
PLCA Paso Flores 81.94 132 LR LR 22 27 45.6
comp=Z,74nm,18.4s,baz=313,slow=31
ASAJ Asahikawa 82.43 331 P **P 21 57 23.4 +0.1**
comp=Z,7.7nm,0.8s
YSS Yuzh-Sakhalins 84.69 333 *e*P **P 21 57 35.9 +1.0**
KSRS Korea Array 84.73 319 P **P 21 57 36.6 +1.3**
comp=Z,7.4nm,0.8s,baz=136,slow=5.7,SNR=18
KSRS LR LR 22 33 48.1
comp=Z,66nm,18.1s,baz=132,slow=34
KSAR Wonju Array Be 84.74 319 P **P 21 57 36.6 +1.2**
KSAR Wonju Array Be 84.74 319 P **P 21 57 36.6 +1.2**
KS01 Wonju Array Si 84.76 319 *e*P **P 21 57 36.1 +0.6**
CMB Columbia Colle 85.12 41 *e*P **P 21 57 37.7 +0.3**
CMB pmax pmax
comp=Z,7.0nm,0.6s
CMB Columbia Colle 85.12 41 *e*P **P 21 57 37.7 +0.3**
comp=Z,7.4nm,0.6s
PEA0 Petropavlovsk- 85.41 345 *e*P **P 21 57 37.9 -0.5**
PETK Petropavlovsk- 85.41 345 P **P 21 57 37.9 -0.4**
comp=Z,4.1nm,0.7s,baz=108,slow=6.3,SNR=7.3
PETK LR LR 22 31 44.5
comp=Z,68nm,19.1s,baz=140,slow=33
WDC Whiskeytown Da 85.71 38 *e*P **P 21 57 41.0 +0.9**
WDC pmax pmax
comp=Z,8.0nm,1.0s
WDC Whiskeytown Da 85.71 38 *e*P **P 21 57 41.0 +0.9**
comp=Z,8.2nm,1.0s
IPM Ipoh 85.90 277 *e*P **P 21 57 41.1 -0.7**
comp=Z,19nm,0.8s
WAKR Walker 85.98 41 *e*P **P 21 57 42.7 +0.8**
comp=Z,22nm,1.4s
QIZ Qiongzhong 86.05 294 P **P 21 57 41.8 -0.5**
QIZ sP **sP 21 58 02.5 +5.3**
QIZ S **S 22 08 12.3 -2.1**

TPNV Topopah Spring 86.83 44 *e*P **P 21 57 47.3 +1.3**
TPNV pmax pmax
comp=Z,10.0nm,1.3s
TPNV Topopah Spring 86.83 44 *e*P **P 21 57 47.2 +1.3**
comp=Z,9.7nm,1.3s
PAHR Pah Rah Range 86.83 40 *e*P **P 21 57 46.8 +0.8**
comp=Z,9.8nm,1.5s
CHGN Chignik 86.86 10 *e*P **P 21 57 46.0 +0.6**
NJ2 Nanjing 86.89 310 *e*P **P 21 57 47.9 +1.7**
NJ2 pmax pmax
comp=Z,17nm,0.7s
PSI Prapat 86.89 275 P **P 21 57 47.0 +0.1**
comp=Z,20nm,0.9s,baz=73,slow=3.3,SNR=11
PSI Prapat 86.89 275 *e*P **P 21 57 46.9 +0.1**
PSI *e**PP **sP 21 57 58.7 -3.0**
PSI pmax pmax
comp=Z,26nm,1.0s
PSI Prapat 86.89 275 *e*P **P 21 57 46.9 +0.1**
comp=Z,26nm,1.0s
PSI *ep*P **sP 21 57 58.7 -3.0**
HUMO Hull Mountain 86.93 36 *e*P **P 21 57 47.6 +1.5**
comp=Z,38nm,2.0s
SHPR Sheep Range 87.20 45 *e*P **P 21 57 48.5 +0.6**
comp=Z,21nm,1.8s
GSI Gunungsitoli 87.33 273 *e*P **P 21 57 50.0 +1.2**
comp=Z,36nm,0.8s
USRK Ussuriysk Ar. 87.33 326 P **P 21 57 48.8 +0.7**
comp=Z,10nm,0.9s,baz=142,slow=3.6,SNR=16
TUC Tucson 87.39 50 *e*P **P 21 57 49.7 +1.0**
TUC pmax pmax
comp=Z,36nm,1.4s
TUC Tucson 87.39 50 *e*P **P 21 57 49.7 +1.0**
comp=Z,36nm,1.4s
K05A Summer Lake 88.09 37 *e*P **P 21 57 52.4 +0.4**
comp=Z,20nm,1.4s
X16A Lo Mia Camp, P 88.25 48 *e*P **P 21 57 53.9 +1.0**
comp=Z,15nm,1.5s
LCMT Little Creek M 88.71 46 *e*P **P 21 57 56.2 +1.2**
comp=Z,3.9nm,0.9s
MDJ Mudanjiang 88.83 325 P **P 21 57 56.4 +1.3**
MDJ pP sP 21 58 11.8 +1.8
MDJ sP pP 21 58 17.3 +11
MDJ S **S 22 08 40.8 +0.8**
MDJ pmax pmax
comp=Z,8.0nm,1.1s
MDJ pmax pmax
comp=Z,60nm,3.1s
U15A North Rim 88.94 46 *e*P **P 21 57 56.4 +0.1**
WUAZ Wupatki 88.96 48 *e*P **P 21 57 57.5 +1.3**
comp=Z,19nm,1.4s
CCUT Cedar City 88.97 45 *e*P **P 21 57 56.5 +0.1**
comp=Z,6.7nm,1.2s
KNB Kanab 88.97 46 *e*P **P 21 57 57.2 +0.9**
KNB pmax pmax
comp=Z,18nm,1.5s
KNB Kanab 88.97 46 *e*P **P 21 57 57.2 +0.9**
comp=Z,18nm,1.5s
WHN Wuhan 89.09 306 P **P 21 57 59.6 +2.9**
MTPU Mount Pierson 90.01 45 *e*P **P 21 58 03.1 +1.8**
MTPU *ep*P **pP 21 58 10.9 -1.3**
LON Longmire 90.45 34 *e*P **P 21 58 03.0 +0.2**
LON pmax pmax
comp=Z,15nm,1.7s
LON Longmire 90.45 34 *e*P **P 21 58 03.0 +0.2**
comp=Z,15nm,1.7s
TIA Tai'an 90.55 312 *e*P **P 21 58 04.4 +1.0**
TIA pmax pmax
comp=Z,30nm,0.8s
TX31 Lajitas Ar. Si 90.64 56 *e*P **P 21 58 04.8 +0.6**
TXAR Lajitas Array 90.64 56 P **P 21 58 04.3 +0.1**
comp=Z,1.4nm,1.0s,baz=210,slow=7.2,SNR=8.1
TXAR LR LR 22 32 35.1
comp=Z,66nm,18.2s,baz=0.0,slow=32
D05A Enumclaw 90.67 34 *e*P **P 21 58 05.9 +2.2**
comp=Z,56nm,1.4s
G08A Pilot Rock 90.87 36 *e*P **P 21 58 05.5 +0.6**
comp=Z,19nm,1.4s
KLR Kul'dur 91.11 329 P **P 21 58 06.5 +0.8**
comp=Z,2.1nm,0.8s,baz=190,slow=1.0,SNR=8.3
KLR Kul'dur 91.11 329‖ *e*P **P 21 58 06.1 +0.4**
MFID Camas Ranch 91.30 39 *e*P **P 21 58 07.5 +0.6**
MFID *ep*P **sP 21 58 20.7 -1.1**
BRLK Bradley Lake 91.43 13 *e*P **P 21 58 08.2 +1.2**
comp=Z,32nm,1.1s
BMO Blue Mountains 91.44 38 *e*P **P 21 58 07.6 +0.1**
BMO *e**PP **sP 21 58 20.5 -1.8**
BMO Blue Mountains 91.44 38 *e*P **P 21 58 07.6 +0.1**
BMO *ep*P **sP 21 58 20.5 -1.8**
ANMO Albuquerque 91.86 50‖ *e*P **P 21 58 09.7 -0.1**
ANMO pmax pmax
comp=Z,7.0nm,2.4s
ANMO Albuquerque 91.86 50 *e*P **P 21 58 10.0 +0.2**
comp=Z,2.4nm,0.8s
D08A Wollman Farm, 92.09 35 *e*P **P 21 58 10.9 +0.6**
comp=Z,11nm,0.8s
HLID Hailey 92.18 40 *e*P **P 21 58 11.9 +0.9**
comp=Z,3.4nm,0.9s
HLID *ep*P **sP 21 58 24.9 -1.0**
PV10 Paradox Valley 92.18 46 *e*P **P 21 58 11.8 +0.5**
F10A Beach Ranch, E 92.23 37 *e*P **P 21 58 10.5 -0.6**
comp=Z,8.7nm,0.8s
ENH Enshi 92.42 304 *e*P **P 21 58 13.8 +1.5**
comp=Z,89nm,1.5s
GYA Guiyang 92.49 299 P **P 21 58 14.8 +2.0**
GYA pP sP 21 58 28.4 +0.7
GYA PP **PP 22 01 58.0 +3.4**
GYA SKS **SKSac 22 08 41.3 -2.7**
GYA S **S 22 09 11.6 -3.0**
GYA sS sS 22 09 35.4 +2.6
GYA SS **SS 22 15 27.0 -0.2**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,7.2s
GYA LR LR
comp=Z,540nm,20.6s
GYA LR LR
comp=Z,500nm,20.3s
GYA LR LR
comp=Z,490nm,20.4s
SPU Mount Spurr 92.54 11 *e*P **P 21 58 12.3 +0.2**
RC01 Rabbit Creek A 92.88 13 *e*P **P 21 58 13.8 +0.2**
comp=Z,14nm,1.2s
SUA Susitna One 93.04 12 *e*P **P 21 58 14.4 -0.1**
comp=Z,8.8nm,0.8s
S22A 4UR Ranch, Cre 93.22 48 *e*P **P 21 58 16.9 +0.8**
comp=Z,4.8nm,1.1s
BJI Beijing 93.43 315 P **P 21 58 17.8 +1.2**
BJI S **S 22 09 20.9 -1.1**
BJI pmax pmax
comp=Z,10.0nm,1.0s
BJI LR LR
comp=Z,74nm,30.2s
TT01 Tatalina 93.56 9 *e*P **P 21 58 16.8 +0.1**
BMRM Bremner River 93.83 15 *e*P **P 21 58 18.5 +0.5**
comp=Z,7.8nm,0.8s
SCM Sheep Creek Mo 94.03 13 *e*P **P 21 58 19.1 +0.1**
SCM pmax pmax
comp=Z,12nm,0.9s
SCM Sheep Creek Mo 94.03 13 *e*P **P 21 58 19.1 +0.1**
comp=Z,12nm,0.9s
PDAR Pinedale Array 94.48 43 P **P 21 58 22.4 +0.7**
comp=Z,0.4nm,0.6s,baz=182,slow=4.5,SNR=4.1
PDAR LR LR 22 36 08.7
comp=Z,158nm,18.6s,baz=246,slow=32
CM01 Chiang Mai Arr 94.56 288 *e*P **P 21 58 24.6 +2.2**
CMAR Chiang Mai Arr 94.59 288 P **P 21 58 23.9 +1.4**
comp=Z,2.0nm,0.7s,baz=134,slow=3.9,SNR=10
CMAR LR LR 22 44 00.8
comp=Z,25nm,18.5s,baz=155,slow=37
CHTO Chiang Mai 94.77 289 *e*P **P 21 58 24.3 +1.0**
CHTO pmax pmax
comp=Z,6.0nm,1.0s
CHTO Chiang Mai 94.77 289 *e*P **P 21 58 24.3 +1.0**
comp=Z,5.5nm,1.0s
KMI Kunming 94.83 296 P **P 21 58 24.8 +1.0**
KMI pmax pmax
comp=Z,6.0nm,0.8s
KMI pmax pmax
comp=Z,83nm,4.8s
XAN Xi'an 94.85 306 P **P 21 58 23.6 +0.2**
XAN pmax pmax
comp=Z,6.0nm,1.2s
KTH Kantishna Hill 94.95 11 *e*P **P 21 58 22.0 -1.2**
comp=Z,4.5nm,0.9s
TRF Thorofare Moun 94.97 11 *e*P **P 21 58 22.9 -0.5**
comp=Z,8.0nm,0.9s
BOZ Bozeman (W) 95.03 40 *e*P **P 21 58 24.3 +0.2**
BOZ pmax pmax
comp=Z,4.0nm,0.9s
BOZ Bozeman (W) 95.03 40 *e*P **P 21 58 24.2 +0.2**
comp=Z,3.6nm,0.9s
RND Reindeer 95.18 12 *e*P **P 21 58 24.2 0.0**
RND Reindeer 95.18 12 *e*P **P 21 58 24.2 0.0**
SEY Seymchan 95.53 346 P **P 21 58 25.7 0.0**
comp=Z,2.8nm,0.7s,baz=75,slow=3.2,SNR=8.7
SEY Seymchan 95.53 346‖ *e*P **P 21 58 25.6 -0.1**
WRH Wood River Hil 96.29 12 *e*P **P 21 58 28.5 -0.6**
comp=Z,8.8nm,0.9s
CCB Clear Creek Bu 96.50 12 *e*P **P 21 58 29.3 -0.8**
comp=Z,4.7nm,0.8s
COLA College 96.70 12 *e*P **P 21 58 30.0 -0.9**
COLA pmax pmax
comp=Z,8.0nm,0.9s
COLA College 96.70 12 *e*P **P 21 58 30.0 -0.9**
comp=Z,8.1nm,0.9s
MDM Murphy Dome 96.71 12 *e*P **P 21 58 30.5 -0.6**
comp=Z,7.7nm,1.1s
HHC Hu-ho-hao-te 96.78 313 *e*P **P 21 58 34.3 +2.2**
HHC S **S 22 09 50.8 -0.6**
HHC SS **SS 22 16 28.3 +0.5**
HHC pmax pmax
comp=Z,10.0nm,1.0s
HHC pmax pmax
comp=Z,56nm,4.1s
HHC LR LR
comp=Z,110nm,13.6s
HHC LR LR
comp=Z,160nm,12.3s
HHC LR LR
comp=Z,87nm,13.6s
ILAR Eielson Array 96.78 12 P **P 21 58 30.4 -0.9**
comp=Z,2.6nm,0.8s,baz=220,slow=5.4,SNR=25
ILAR LR LR 22 36 33.6
comp=Z,36nm,19.5s,baz=195,slow=32
ILB Eielson Array 96.78 12 *e*P **P 21 58 30.4 -0.9**
IL1 Eielson Array 96.78 12 *e*P **P 21 58 30.4 -0.9**
CD2 Chengdu 96.96 301 *e*P **P 21 58 33.4 +0.3**
CD2 sP sP 21 58 53.9 +5.9
CD2 PP **PP 22 02 29.3 0.0**
CD2 SKS **SKSac 22 09 05.8 -1.9**
CD2 S **S 22 09 51.9 -1.4**
CD2 sS sS 22 10 17.3 +5.7
CD2 SS **SS 22 16 30.5 -0.2**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,6.2s
LPAZ La Paz 97.06 113 P **P 21 58 33.3 -1.4**
comp=Z,1.1nm,0.8s,baz=253,slow=5.4,SNR=5.6
LPAZ LR LR 22 36 17.4
comp=Z,38nm,18.5s,baz=227,slow=32
BILL Bilibino 98.19 353 *i* P **P 21 58 35.4 -2.2**
BILL pmax pmax
comp=Z,3.0nm,0.9s
CPUP Villa Florida 99.28 127 LR LR 22 38 46.3
comp=Z,82nm,18.1s,baz=244,slow=33
LZH Lanzhou 99.47 306 *e*P **Pdif 21 58 48.1 +3.7**
LZH pP sP 21 59 00.9 +1.6
LZH sP pP 21 59 05.8 +10
LZH pmax pmax
comp=Z,14nm,1.1s
LZH pmax pmax
comp=Z,94nm,5.2s
SONM Songino Array 103.57 317 Pdiff **Pdif 21 59 03.9 +1.6**
comp=Z,0.4nm,0.7s,baz=106,slow=3.1,SNR=2.8
WMQ Urumqi 113.93 308 *e*PKP **PKiKP 22 03 40.1 0.0**
WMQ LR LR
comp=Z,39nm,17.5s
WMQ LR LR
comp=Z,37nm,18.8s
WMQ LR LR
comp=Z,35nm,20.4s
KRAR Krasnoyarsk 114.45 322‖ *i*PKIKP PKPdf 22 03 41.0 +0.4
MKAR Makanchi Array 118.42 310 PKP **PKPdf 22 03 47.8 -0.8**
comp=Z,2.6nm,0.8s,baz=70,slow=0.6,SNR=18
ZALV Zalesovo Beam 118.44 318 PKP **PKPdf 22 03 47.9 -0.4**
comp=Z,2.2nm,0.8s,baz=74,slow=1.2,SNR=10
NRIK Noril'sk 119.51 336 PKP **PKPdf 22 03 50.2 +0.2**
comp=Z,1.3nm,0.5s,baz=59,slow=6.2,SNR=3.8
KSH Kashi 121.14 301 *e*PKP **PKPdf 22 03 56.4 +2.2**
KSH *es*PKP 22 04 11.1
KSH *e*PP **PP 22 05 30.8 +5.8**
KSH PKS **PKSdf 22 07 31.8 +0.8**
KSH SKS **SKSdf 22 11 03.9 +0.2**
KSH SKKS **SKKSac 22 12 18.9 -2.7**
KSH AMB AMB
comp=Z,70nm,5.1s
KSH LR LR
comp=Z,94nm,7.6s
KSH LR LR
comp=Z,85nm,7.6s
KSH LR LR
comp=Z,110nm,6.0s
KURK Kurchatov 121.59 314 PKIKP **PKPdf 22 03 53.9 -0.6**
KURK Kurchatov 121.59 314 PKP **PKPdf 22 03 53.9 -0.6**
KURBB Kurchatov Arra 121.63 314 PKP **PKPdf 22 03 53.9 -0.7**
comp=Z,4.6nm,0.8s,baz=102,slow=1.9,SNR=20
AAK Ala-Archa 122.93 304‖ *i*PKIKP **PKPdf 22 03 58.3 +0.7**
KKAR Karatay Array 125.90 304 *e*PKIKP **PKPdf 22 04 03.1 0.0**
KKAR Karatay Array 125.90 304 *e*PKPdf **PKPdf 22 04 03.1 0.0**
BRVK Borovoye 126.95 316‖ *i*PKIKP **PKPdf 22 04 05.2 +0.5**
ARU Arti 133.42 321 *i* PKIKP **PKPdf 22 04 16.6 -0.3**
ARU 22 06 41.6
ABKAR Akbulak array 133.53 311 *e*PKPdf **PKPdf 22 04 17.8 +0.5**
GEYT Alibeck 134.60 296 PKP **PKPdf 22 04 21.1 +1.3**
comp=Z,2.9nm,0.8s,baz=101,slow=1.5,SNR=6.8
ARCES ARCESS Array B 138.09 349 PKP **PKPdf 22 04 24.2 -1.0**
comp=Z,3.5nm,0.7s,baz=15,slow=3.7,SNR=4.5
KLMR Klimovskoe 140.74 333 *e*PKIKP **PKPdf 22 04 30.6 +0.3**
KLMR pmax pmax
comp=Z,9.0nm,1.0s
FINES FINESS Array B 144.87 342 PKPbc PKPbc 22 04 35.9 -0.9
comp=Z,15nm,0.8s,baz=64,slow=4.4,SNR=31
TBLG Delisi 144.88 301 P **PKPdf 22 04 39.0 +0.6**
TBLG Delisi 144.88 301 PKIKP **PKPdf 22 04 38.9 +0.6**
GUDG Gudauri 144.98 303 P **PKPdf 22 04 40.3 +1.6**
GNI Garni 145.04 299 *de*PKIKP **PKPdf 22 04 38.7 -0.1**
OBN Obninsk 145.35 327 *d i*PKP2 **PKPbc 22 04 37.5 -1.0**
OBN pmax pmax
comp=Z,40nm,1.0s
OBN Obninsk 145.35 327 *e*PKPbc **PKPdf 22 04 38.3 -0.3**
ZEI Tsey 145.35 303 *i* PKIKP **PKPdf 22 04 38.6 -0.7**
ZEI pmax pmax
comp=Z,52nm,0.6s
GOF Gofitskoye 145.53 308‖ *e*PKIKP **PKPab 22 04 40.2 +0.5**
GOF pmax pmax
comp=Z,41nm,0.9s
ONI Oni 145.71 303 P **PKPab 22 04 41.9 +1.3**
ONI Oni 145.71 303 PKP2 **PKPab 22 04 41.9 +1.3**
BGD Bogdanovka 145.79 301 P **PKPab 22 04 41.5 +0.4**
AKH Akhalkalaki 145.85 301 P **PKPab 22 04 42.5 +1.2**
AKH Akhalkalaki 145.85 301 PKP2 **PKPab 22 04 42.5 +1.2**
KBZ Khabaz 145.91 305 PKPbc **PKPab 22 04 41.5 +0.4**
comp=Z,6.7nm,0.8s,baz=124,slow=4.1,SNR=12
VSR Storozhevoye 145.93 319 *e*PKP2 **PKPab 22 04 40.1 -0.9**
VSR pmax pmax
comp=Z,90nm,1.1s
KIV Kislovodsk 146.01 306 *i* PKP2 **PKPab 22 04 41.1 -0.6**
KIV *i* SS SS 22 26 56.2 -0.2
KIV pmax pmax
comp=Z,8.0nm,0.9s
VSU Vasula 147.07 338 *c i*PKP2 **PKPbc 22 04 43.1 -0.4**
NB2 NORSAR Subarra 148.14 353 PKP **PKPbc 22 04 45.5 -1.0**
comp=Z,15nm,0.9s,baz=8.7,slow=2.9
NOA NORSAR Array B 148.14 353 PKPbc **PKPbc 22 04 45.9 -0.6**
comp=Z,9.6nm,0.8s,baz=14,slow=4.4,SNR=34
KONO Kongsberg 149.66 354 *d i*PKP2 **PKPbc 22 04 50.1 -0.2**
NACGM Naroch 149.76 333 *e* **PKPbc 22 04 50.0 -0.7**
AKASG Malin Array Be 151.54 325 PKPbc **PKPbc 22 04 54.4 -0.6**
comp=Z,20nm,0.7s,baz=46,slow=2.9,SNR=70
KIEV Kiev 151.55 325 *c i*PKIKP **PKPbc 22 04 54.7 -0.3**
SUW Suwalki 151.80 335 *e*PKP **PKPbc 22 04 55.4 -0.1**
SUW Suwalki 151.80 335 *e*PKIKP **PKPbc 22 04 55.4 -0.1**
BRTR Keskin Array B 153.53 300 PKPbc **PKPbc 22 04 59.8 -0.2**
comp=Z,2.6nm,0.8s,baz=87,slow=1.6,SNR=14
BRTR PKPab **PKPab 22 05 11.8 -0.8**
comp=Z,2.3nm,0.7s,baz=123,slow=4.6,SNR=8.4
OJC Ojcow 156.09 334 *e*PKP PKPdf 22 05 07.6 +12
KSP Ksiaz 156.76 340 *e*PKP PKPdf 22 05 09.7 +14
OKC Ostrava-Krasne 157.01 336 *e*PKPAB **PKPab 22 05 26.7 -0.1**

OKC	**Ostrava-Krasne**	**157.01**	**336**	*e*PKP2	**PKPab**	**22 05 26.7**	**-0.1**
OKC				smax	smax		
	comp=N,15nm,0.6s						
DPC	**Dobruska-Polom**	**157.19**	**339**	*e*PKPAB	**PKPab**	**22 05 28.0**	**+0.4**
DPC	**Dobruska-Polom**	**157.19**	**339⇑**	*e*PKP2	**PKPab**	**22 05 28.0**	**+0.4**
CLL	**Collm**	**157.21**	**345**	*e*PKPdiff	PKPdf	22 05 10.0	+13
CLL				*i* PKPab	**PKPab**	**22 05 26.6**	**-1.0**
	comp=Z,5.0nm,0.8s						
CLL				LmV		23 27 00.0	
	comp=Z,100nm,18.7s						
CLL	**Collm**	**157.21**	**345**	*i* PKP2	**PKPab**	**22 05 26.6**	**-1.0**
CLL				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KRLC	**Kraliky**	**157.28**	**338**	*e*PKPAB	**PKPab**	**22 05 28.1**	**+0.1**
KRLC	**Kraliky**	**157.28**	**338**	*e*PKP2	**PKPab**	**22 05 28.1**	**+0.1**
BRG	**Berggiesshubel**	**157.39**	**343**	*e*PKP	**PKPab**	**22 05 27.9**	**-0.5**
	comp=Z,5.4nm,1.0s						
BRG	**Berggiesshubel**	**157.39**	**343**	*e*PKP2	**PKPab**	**22 05 27.9**	**-0.5**
BRG				pmax	pmax		
	comp=Z,5.0nm,1.0s						
PRU	**Pruhonice**	**158.04**	**341**	*e*PKPAB	**PKPab**	**22 05 31.3**	**+0.1**
PRU	**Pruhonice**	**158.04**	**341**	*e*PKP2	**PKPab**	**22 05 31.3**	**+0.1**
NKC	**Novy Kostel**	**158.34**	**345**	*e*PKPAB	**PKPab**	**22 05 32.4**	**-0.2**
NKC	**Novy Kostel**	**158.34**	**345**	*e*PKP2	**PKPab**	**22 05 32.4**	**-0.2**
KHC	**Kasperske Hory**	**159.08**	**342**	*e*PKPAB	**PKPab**	**22 05 35.9**	**+0.1**
KHC				*ex*	x	22 05 48.8	
KHC				AMS	AMS	23 25 20.0	
	comp=Z,100nm,19.8s						
KHC	**Kasperske Hory**	**159.08**	**342**	*e*PKP2	**PKPab**	**22 05 35.9**	**+0.1**
KHC				MLR	MLR		
	comp=Z,100nm,19.8s						
GERES	**GERESS Array B**	**159.31**	**341**	PKPab	**PKPab**	**22 05 36.4**	**-0.5**
	comp=Z,1.0nm,0.7s,baz=15,slow=5.5,SNR=6.6						
TORD	**Torodi Ar. Bea**	**162.54**	**173**	PKP	**PKPdf**	**22 05 05.6**	**+0.7**
	comp=Z,0.8nm,1.0s,baz=262,slow=5.5,SNR=3.6						
TORD				PKPab	**PKPab**	**22 05 55.0**	**-1.0**
	comp=Z,3.2nm,0.7s,baz=190,slow=4.0,SNR=18						
ESDC	**Sonseca Array**	**168.08**	**30**	PKP	**PKPdf**	**22 05 09.4**	**+1.5**
	comp=Z,0.2nm,0.4s,baz=315,slow=0.2,SNR=3.8						
ESDC				PKPab	**PKPab**	**22 06 14.6**	**-1.1**
	comp=Z,0.2nm,0.4s,baz=312,slow=4.3,SNR=4.0						

IDC 15 21:51:24.0±4.4, 16°57S×176°18W, h440km±57km, mb3.2/5, mb1 3.5/7, mb1mx3.1/39, mbtmp4.1/7, Error ellipse: s-maj=69.6km s-min=18.2km az=164.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**16.20**	**109**	P	P	21 54 48.1	-0.2
	1.6nm,0.3s,baz=299,slow=16,SNR=3.7						
DZM	**Mont Dzumac**	**17.28**	**249**	P	P	21 54 59.9	+0.1
	0.3nm,0.3s,baz=27,slow=20,SNR=2.5						
STKA	**Stephens Creek**	**41.14**	**240**	P	P	21 58 27.6	-0.7
	1.4nm,0.4s,baz=76,slow=8.3,SNR=3.0						
WRA	**Warramunga Arr**	**46.98**	**258**	P	P	21 59 13.7	-0.5
	1.0nm,0.5s,baz=96,slow=8.1,SNR=19						
ASAR	**Alice Springs**	**47.21**	**253**	P	P	21 59 16.3	+0.4
	6.4nm,0.5s,baz=88,slow=8.0,SNR=69						
TXAR	**Lajitas Array**	**83.48**	**57**	P	P	22 03 05.5	+0.6
	0.2nm,0.8s,baz=243,slow=4.0,SNR=2.9						
ILAR	**Eielson Array**	**84.12**	**12**	P	P	22 03 06.2	-0.9
	0.3nm,0.4s,baz=218,slow=6.1,SNR=4.9						

IDC 15 22:17:50.9±2.5, 7°26S×128°34E, h0km, mb3.7/1, mb1 3.9/3, mb1mx3.5/26, mbtmp3.7/3, ML3.8/2, Error ellipse: s-maj=283.6km s-min=31.0km az=65.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**13.88**	**156**	Pn	Pn	22 21 08.7	-0.4
	0.6nm,0.3s,baz=335,slow=14,SNR=22						
WRA				Sn	Sn	22 23 30.3	-14
	1.1nm,0.3s,baz=336,slow=22,SNR=5.4						
ASAR	**Alice Springs**	**17.16**	**162**	P	Pn	22 21 52.7	+0.4
	0.2nm,0.3s,baz=337,slow=10,SNR=11						
ASAR				S	Sn	22 24 51.8	-12
	0.4nm,0.3s,baz=342,slow=21,SNR=5.5						
MKAR	**Makanchi Array**	**67.55**	**328**	P	P	22 28 49.2	0.0
	0.4nm,0.3s,baz=116,slow=6.6,SNR=9.9						

IDC 15 22:42:24.0±3.4, 28°51S×176°38W, h0km, mb4.0/3, mb1 4.1/3, mb1mx3.8/18, mbtmp4.0/3, MS3.6/2, Ms1 3.7/2, ms1mx2.9/21, Error ellipse: s-maj=131.2km s-min=29.4km az=144.0

NEIC 15 22:42:26.1±0.6, 28°31S×176°64W, h10km, mb4.4/10, Error ellipse: s-maj=20.3km s-min=9.3km az=146.0

ISC 15 22:42:28.5±0.8, 28°4S±0°1×176°6W±0°1, h29km, n22, σ0°74/24, mb4.3/13, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.48**	**232**	Pn	**Pn**	**22 42 53.3**	**+0.1**
	241nm,0.3s,baz=97,slow=23,SNR=7.0						
RAO				Sn	**Sb**	**22 43 14.3**	**+0.5**
	473nm,0.3s,baz=91,slow=21,SNR=9.9						
RAO	**Raoul Island**	**1.48**	**232**	*e*Pn	**Pn**	**22 42 54.0**	**+0.7**
RAO				*e*Sn	**Sn**	**22 43 10.6**	**-1.0**
RAO				Sn	**Sb**	**22 43 14.3**	**+0.5**
AFI	**Afiamalu**	**15.05**	**18**	*e*Pn	**Pn**	**22 46 00.6**	**+1.3**
	27nm,0.9s						
RAR	**Rarotonga**	**16.82**	**69**	*e*Pn	**P**	**22 46 24.0**	**0.0**
	6.3nm,0.6s						
HNR	**Honiara**	**29.01**	**306**	*e*P	**P**	**22 48 25.3**	**-0.7**
	36nm,0.6s						
STKA	**Stephens Creek**	**36.20**	**254**	P	**P**	**22 49 28.9**	**+0.1**
	2.1nm,0.7s,baz=106,slow=15,SNR=5.1						
ASAR	**Alice Springs**	**44.51**	**264**	P	**P**	**22 50 37.7**	**0.0**
	0.6nm,0.6s,baz=101,slow=7.8,SNR=8.4						
ASAR				LR	LR	23 09 40.7	
	comp=Z,44nm,18.0s,baz=92,slow=37						
WRAB	**Tennant Creek**	**45.31**	**269**	*e*P	**P**	**22 50 44.0**	**-0.1**
	3.2nm,0.8s						
WRA	**Warramunga Arr**	**45.31**	**269**	P	**P**	**22 50 45.5**	**+1.4**
	1.5nm,0.5s,baz=109,slow=6.1,SNR=22						
POHA	**Pohakuloa**	**51.98**	**25**	*e*P	**P**	**22 51 35.1**	**-0.4**
	114nm,0.8s						
GUMO	**Guam**	**55.95**	**313**	*e*P	**P**	**22 52 04.4**	**0.0**
	138nm,0.9s						
MIDW	**Midway**	**56.25**	**359**	*e*P	**P**	**22 52 05.9**	**-0.3**
	21nm,0.5s						
MAJO	**Matsushiro**	**77.30**	**324**	*e*P	**P**	**22 54 20.1**	**-0.2**
	1.6nm,0.4s						
ANMO	**Albuquerque**	**91.33**	**51**	*e*P	**P**	**22 55 31.1**	**-0.6**
	0.4nm,0.5s						
PMR	**Palmer**	**92.34**	**13**	P	**P**	**22 55 35.5**	**0.0**
	1.2nm,0.5s						
SDCO	**Great Sand Dun**	**93.52**	**49**	P	**P**	**22 55 42.1**	**+0.2**
	0.1nm,0.3s						
CMAR	**Chiang Mai Arr**	**93.91**	**289**	LR	LR	23 36 34.5	
	comp=Z,34nm,19.5s,baz=354,slow=34						
CHTO	**Chiang Mai**	**94.08**	**289**	*e*P	**P**	**22 55 44.2**	**-0.4**
	0.6nm,0.6s						
KBS	**Kingsbay**	**129.20**	**358**	*e*PKPdf	**PKPdf**	**23 01 33.4**	**+0.5**
FINES	**FINESS Array B**	**143.62**	**342**	PKP	**PKPdf**	**23 01 59.0**	**-0.9**
	2.5nm,0.8s,baz=67,slow=5.0,SNR=5.0						
AKASG	**Malin Array Be**	**150.37**	**326**	PKPbc	**PKPbc**	**23 02 18.4**	**+1.7**
	0.3nm,0.3s,baz=42,slow=2.9,SNR=4.6						
CSS	**Mathiatis**	**153.77**	**292**	*e*PKPdf	**PKPdf**	**23 02 16.3**	**-0.9**

SJA 15 22:44:03.7±0.3, 31°39S×68°36W, h106km±1km, ML3.1, MW3.7, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RTLL	**Cerro Villicun**	**0.11**	**302**	*i* P	Pn	22 44 19.1	+0.7
RTLL				*i* S	Sn	22 44 30.4	+0.9
AMOG	**MOGNA**	**0.46**	**346**	*i* P	Pn	22 44 20.6	+0.6
AMOG				*i* S	Sn	22 44 33.0	+0.9
RTCV	**Cerro Valdivia**	**0.49**	**198**	*i* P	Pn	22 44 20.8	+0.6
RTCV				*i* S	Sn	22 44 33.4	+0.9
RTLS	**Leoncito**	**0.90**	**243**	*i* P	Pn	22 44 25.2	+1.4
RTLS				*i* S	Sn	22 44 40.7	+1.8
AVFE	**Valle Fertil**	**1.07**	**47**	*i* P	Pn	22 44 26.1	+0.7
AVFE				IAML		22 44 43.3	
	comp=Z,188nm,0.2s						
AUSP	**Uspallata**	**1.21**	**226**	*i* P	Pn	22 44 28.2	+1.1
AUSP				*i* S	Sn	22 44 46.6	+1.9
ASAL	**Salagasta**	**1.26**	**198**	*i* P	Pn	22 44 28.6	+1.1
ASAL				*i* S	Sn	22 44 46.9	+1.2
ACAN	**Cantantal**	**1.33**	**132**	*i* P	Pn	22 44 29.2	+0.9
ACHE	**Chepes**	**1.47**	**82**	*i* P	Pn	22 44 31.3	+1.2
ARCO	**CERRO ARCO**	**1.53**	**198**	*i* P	Pn	22 44 31.8	+1.1
ARCO				IAML		22 44 55.5	
	comp=Z,248nm,0.2s						
AAGR	**Agrelo**	**1.74**	**193**	*i* P	Pn	22 44 34.6	+1.3
AAGR				*i* S	Sn	22 44 57.2	+1.4
AGUA	**GUANDACOL**	**1.90**	**357**	*i* P	Pn	22 44 36.5	+1.1
AGUA				*i* S	Sn	22 45 00.6	+1.2

NIED 15 22:51:00, 39°70N×143°30E, h23km, Mw3.4 Best double couple: M₀1.62000×10¹⁴ NP1:φ₈176.00000°, δ18.00000°, λ53.00000°. NP2:φ₈34.00000°, δ76.00000°, λ101.00000°.

JMA 15 22:51:05.4±0.2, 39°69N×143°33E, h15km±3km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.16**	**283**	P	Pn	22 51 26.8	-0.2
JTH				*e*S	Sb	22 51 41.6	-0.3
MIYJ	**Miyakonagasawa**	**1.17**	**265**	P	Pn	22 51 26.9	-0.3
MIYJ				S	Sb	22 51 42.1	-0.2
JANG	**Nango**	**1.55**	**297**	P	Pn	22 51 32.4	-0.1
JOM	**Ohasama**	**1.59**	**263**	P	Pn	22 51 33.5	+0.5
JOM				*e*S	Sn	22 51 53.6	+0.3
JMK	**Ichinoseki**	**1.79**	**246**	P	Pn	22 51 36.1	+0.3
JTM	**Tenmabayashi**	**2.05**	**303**	P	Pn	22 51 40.2	+0.9
JTM				*e*S	Sn	22 52 05.8	+1.2
JRG	**Rokugo**	**2.10**	**263**	P	Pn	22 51 41.2	+1.1
JRG				*e*S	Sb	22 52 09.3	+0.1
JAH	**Hinai**	**2.13**	**284**	P	Pn	22 51 41.5	+1.1
JAH				*e*S	Sb	22 52 09.2	-0.7
JEM	**Erimo**	**2.33**	**357**	P	Pn	22 51 44.7	+1.6
JEM				*e*S	Sn	22 52 12.5	+1.1
JYK	**Kaneyama**	**2.43**	**252**	P	Pn	22 51 45.6	+1.0
JNBK	**Urakawa-nobuka**	**2.62**	**351**	P	Pn	22 51 49.3	+2.1
JNBK				S	Sb	22 52 21.6	-2.5

ISCJB 15 23:11:38.9±0.8, 43°60S±0°05×172°87E±0°08, h17km±6km, mb3.4/3, Error ellipse: s-maj=11.8km s-min=4.3km az=41.7

NEIC 15 23:11:40.6, 43°56S×172°77E, h11km, ML4.3(WEL), After WEL.

WEL 15 23:11:40.7±0.1, 43°56S×172°77E, h11km, ML4.3/21, Mw3.9, Error ellipse: s-maj=0.9km s-min=0.4km az=90.0

WEL Felt in the Canterbury region, maximum reported intensity MM 6.

IDC 15 23:11:44.0±2.2, 43°05S×172°13E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.6/20, mbtmp3.5/3, Error ellipse: s-maj=37.2km s-min=15.9km az=125.0

ISC 15 23:11:39.8±1.0, 43°55S±0°05×172°80E±0°05, h12km±6km, n52, σ0°66/52, mb3.4/3, 5C-3D, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.13**	**258**	⇑Pg	**Pg**	**23 11 43.4**	**+0.3**
CRLZ				Sg	**Sg**	**23 11 45.2**	**-0.3**
CRLZ	**Canterbury Las**	**0.13**	**258**	⇑PG	**Pg**	**23 11 43.4**	**+0.3**
CRLZ				SG	**Sg**	**23 11 45.2**	**-0.3**
CRLZ				AML	AML	23 11 45.4	
CRLZ				AML	AML	23 11 45.4	
CRLZ				AML	AML	23 11 46.0	
MQZ	**McQueen's Vall**	**0.19**	**213⇑**	*e*Pg	**Pg**	**23 11 44.5**	**+0.5**
MQZ	**McQueen's Vall**	**0.19**	**213⇑**	*e*PG	**Pg**	**23 11 44.5**	**+0.5**
MQZ				SG	**Sg**	**23 11 47.2**	**+0.2**
MQZ				AML	AML	23 11 47.3	
OXZ	**Oxford**	**0.60**	**292**	⇓P*	**Pb**	**23 11 51.8**	**-0.3**
OXZ				AML	AML	23 12 01.3	
OXZ				AML	AML	23 12 01.3	
OXZ				AML	AML	23 12 01.4	
OXZ				AML	AML	23 12 01.4	
LTZ	**Lake Taylor**	**0.86**	**333**	P*	**Pn**	**23 11 56.6**	**-1.1**
LTZ				AML	AML	23 12 09.9	
KHZ	**Kahutara**	**1.25**	**26**	P*	**Pb**	**23 12 02.9**	**-0.5**
KHZ	**Kahutara**	**1.25**	**26**	P*	**Pb**	**23 12 02.9**	**-0.5**
KHZ				AML	AML	23 12 35.9	
KHZ				AML	AML	23 12 44.0	
RPZ	**Rata Peaks**	**1.28**	**262**	Pg	**Pn**	**23 12 03.0**	**-0.5**
	113nm,0.3s,baz=136,slow=2.3,SNR=45						
RPZ				Lg	Lg	23 12 18.7	
	516nm,0.3s,baz=20,slow=17,SNR=19						
RPZ	**Rata Peaks**	**1.28**	**262**	⇓P*	**Pn**	**23 12 03.0**	**-0.5**
RPZ				AML	AML	23 12 23.5	
RPZ				AML	AML	23 12 23.7	
INZ	**Inchbonnie**	**1.29**	**309**	P*	**Pn**	**23 12 03.1**	**-0.5**
DSZ	**Denniston Nort**	**1.94**	**338**	PN	**Pn**	**23 12 13.5**	**-1.7**
DSZ				AML	AML	23 12 40.5	
DSZ				AML	AML	23 12 40.5	
DSZ				AML	AML	23 12 40.5	
DSZ				AML	AML	23 12 42.8	
BSWZ	**Blackbirch Sta**	**2.00**	**24**	Pn	**Pn**	**23 12 13.6**	**+0.3**
BSWZ	**Blackbirch Sta**	**2.00**	**24**	PN	**Pn**	**23 12 13.6**	**+0.3**
BSWZ				AML	AML	23 12 56.3	
BSWZ				AML	AML	23 12 59.0	
LBZ	**Lake Benmore**	**2.06**	**245**	PN	**Pn**	**23 12 14.1**	**-0.2**
LBZ				AML	AML	23 12 49.9	
LBZ				AML	AML	23 12 49.9	
LBZ				AML	AML	23 12 52.9	
LBZ				AML	AML	23 12 52.9	
ODZ	**Otahua Downs**	**2.15**	**225**	*e*Pn	**Pn**	**23 12 15.4**	**-0.1**
ODZ	**Otahua Downs**	**2.15**	**225**	PN	**Pn**	**23 12 14.8**	**-0.7**
ODZ				AML	AML	23 12 50.5	
ODZ				AML	AML	23 12 51.8	
ODZ				AML	AML	23 12 59.2	
ODZ				AML	AML	23 12 59.6	
FOZ	**Fox Glacier**	**2.17**	**269**	⇑PN	**Pn**	**23 12 16.7**	**+1.0**
FOZ				AML	AML	23 12 42.8	
FOZ				AML	AML	23 12 42.8	
FOZ				AML	AML	23 12 59.1	
FOZ				AML	AML	23 12 59.1	
TUWZ	**Tuamarina**	**2.28**	**22**	Pn	**Pn**	**23 12 17.1**	**-0.1**
TUWZ	**Tuamarina**	**2.28**	**22**	PN	**Pn**	**23 12 17.1**	**-0.1**
TUWZ				AML	AML	23 12 57.7	
TUWZ				AML	AML	23 13 08.9	
NNZ	**Nelson**	**2.37**	**11**	PN	**Pn**	**23 12 19.1**	**+0.6**
TCW	**Tory Channel**	**2.58**	**26**	Pn	**Pn**	**23 12 21.0**	**-0.3**
TCW	**Tory Channel**	**2.58**	**26**	PN	**Pn**	**23 12 21.0**	**-0.3**
PLWZ	**Palliser**	**2.68**	**43**	Pn	**Pn**	**23 12 21.9**	**-1.0**
PLWZ	**Palliser**	**2.68**	**43**	PN	**Pn**	**23 12 21.9**	**-1.0**
QRZ	**Quartz Range**	**2.73**	**356**	AML	AML	23 13 11.7	
QRZ				AML	AML	23 13 15.5	
QRZ				AML	AML	23 13 15.5	
HHSZ	**Highcliff Hill**	**2.81**	**213**	PN	**Pn**	**23 12 24.1**	**-0.5**
HHSZ				AML	AML	23 13 16.7	
HHSZ				AML	AML	23 13 17.0	
DUWZ	**D'Urville Isla**	**2.87**	**17**	Pn	**Pn**	**23 12 25.8**	**+0.5**
DUWZ	**D'Urville Isla**	**2.87**	**17**	PN	**Pn**	**23 12 25.8**	**+0.5**
JCZ	**Jackson Bay**	**2.95**	**258**	⇓PN	**Pn**	**23 12 26.6**	**+0.1**
JCZ				AML	AML	23 13 20.1	
JCZ				AML	AML	23 13 25.3	
CAW	**Cannon Point**	**2.96**	**35**	PN	**Pn**	**23 12 26.0**	**-0.7**
WKZ	**Wanaka**	**3.00**	**244**	PN	**Pn**	**23 12 27.1**	**-0.1**
WKZ				AML	AML	23 13 25.5	
WKZ				AML	AML	23 13 25.6	
WKZ				AML	AML	23 13 31.8	
WKZ				AML	AML	23 13 31.8	
EAZ	**Earnscleugh**	**3.02**	**235**	PN	**Pn**	**23 12 26.8**	**-0.6**
EAZ				AML	AML	23 13 18.5	
EAZ				AML	AML	23 13 20.1	
EAZ				AML	AML	23 13 20.1	
EAZ				AML	AML	23 13 21.3	
KIW	**Kapiti Island**	**3.11**	**31**	Pn	**Pn**	**23 12 28.3**	**-0.4**
KIW	**Kapiti Island**	**3.11**	**31**	PN	**Pn**	**23 12 28.3**	**-0.4**
KIW				AML	AML	23 13 42.5	
KIW				AML	AML	23 14 07.9	
OGWZ	**Otaki Gorge**	**3.25**	**34**	Pn	**Pn**	**23 12 30.0**	**-0.5**
OGWZ	**Otaki Gorge**	**3.25**	**34**	PN	**Pn**	**23 12 30.0**	**-0.5**
TUZ	**Tuapeka**	**3.30**	**222**	PN	**Pn**	**23 12 30.9**	**-0.3**
HOWZ	**Holdsworth Sta**	**3.33**	**38**	Pn	**Pn**	**23 12 31.1**	**-0.6**
HOWZ	**Holdsworth Sta**	**3.33**	**38**	PN	**Pn**	**23 12 31.1**	**-0.6**
MRZ	**Mangatainoka R**	**3.55**	**37**	Pn	**Pn**	**23 12 33.8**	**-0.9**
MRZ	**Mangatainoka R**	**3.55**	**37**	PN	**Pn**	**23 12 33.8**	**-0.9**
MRZ				AML	AML	23 13 17.5	
TIWZ	**Tintock**	**3.60**	**41**	AML	AML	23 13 19.5	
MSZ	**Milford Sound**	**3.68**	**251**	PN	**Pn**	**23 12 36.1**	**-0.4**
MSZ				AML	AML	23 13 21.2	
MSZ				AML	AML	23 13 22.0	
MLZ	**Mavora Lakes**	**3.81**	**240**	PN	**Pn**	**23 12 37.6**	**-0.7**
SYZ	**Scrubby Hill**	**3.96**	**220**	PN	**Pn**	**23 12 40.2**	**-0.1**
WNVZ	**Wahianoa**	**4.71**	**27**	Pn	**Pn**	**23 12 52.2**	**+1.4**
TUVZ	**Tukino**	**4.79**	**28**	Pn	**Pn**	**23 12 53.1**	**+1.3**
HIZ	**Hauiti**	**5.26**	**18**	Pn	**Pn**	**23 12 58.7**	**+0.4**
VNDA	**Vanda**	**34.37**	**184**	P	P	23 18 36.4	+10
	0.2nm,0.3s,baz=12,slow=6.9,SNR=1.8						
ASAR	**Alice Springs**	**37.54**	**289**	P	**P**	**23 18 54.9**	**+1.0**
	0.5nm,0.9s,baz=130,slow=8.6,SNR=4.2						
WRA	**Warramunga Arr**	**39.79**	**294**	P	**P**	**23 19 13.1**	**+0.4**
	0.5nm,0.6s,baz=135,slow=7.6,SNR=8.0						

WEL 15 23:12:51.7±0.4, 38°40S×176°00E, h166km±3km, ML3.8/34, 26C-3D, Error ellipse: s-maj=2.3km s-min=2.1km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MRHZ	**Matea Rd**	**0.54**	**143**	⇑PN	Pn	23 13 14.8	-0.3
MRHZ				AML	AML	23 13 33.0	
MRHZ				AML	AML	23 13 33.4	
RITZ	**Rihia Road**	**0.58**	**191**	PN	Pn	23 13 15.6	+0.4
KRVZ	**Karewarewa**	**0.74**	**202**	⇓PN	Pn	23 13 16.2	0.0
WTVZ	**West Tongariro**	**0.78**	**204**	⇑PN	Pn	23 13 16.4	-0.1
TWVZ	**Taurewa**	**0.80**	**213**	⇑PN	Pn	23 13 16.6	0.0
OTVZ	**Oturere**	**0.80**	**199**	⇑PN	Pn	23 13 17.0	+0.3
NGZ	**Ngauruhoe**	**0.83**	**202**	⇑PN	Pn	23 13 17.0	+0.1
BKZ	**Black Stump Fm**	**0.86**	**153**	⇑PN	Pn	23 13 16.7	-0.2
BKZ				AML	AML	23 13 36.5	
BKZ				AML	AML	23 13 36.7	
URZ	**Urewera**	**0.89**	**81**	Pn	Pn	23 13 16.4	-0.6
URZ	**Urewera**	**0.89**	**81**	⇑PN	Pn	23 13 16.4	-0.6
URZ				AML	AML	23 13 35.4	
URZ				AML	AML	23 13 35.7	
TUVZ	**Tukino**	**0.90**	**197**	PN	Pn	23 13 17.5	+0.1
FWVZ	**Far West T-bar**	**0.92**	**202**	⇑PN	Pn	23 13 17.5	0.0
WHVZ	**Whangaehu Hut**	**0.93**	**200**	⇑PN	Pn	23 13 17.7	0.0
NMHZ	**Naumai**	**0.94**	**138**	⇑PN	Pn	23 13 18.2	+0.6
NMHZ				AML	AML	23 13 38.5	
NMHZ				AML	AML	23 13 38.5	
WNVZ	**Wahianoa**	**0.97**	**198**	PN	Pn	23 13 17.9	-0.1
PKVZ	**Pokaka**	**1.02**	**210**	PN	Pn	23 13 18.1	-0.1
PKVZ				SN	Sn	23 13 38.1	-0.5
MOVZ	**Moawhango**	**1.02**	**191**	PN	Pn	23 13 17.7	-0.4
KWHZ	**Kaweka Forest**	**1.07**	**162**	⇓PN	Pn	23 13 18.7	+0.1
KWHZ				AML	AML	23 13 19.6	
KWHZ				SN	Sn	23 13 38.4	-1.1
RAGZ	**Rawiri**	**1.12**	**95**	⇑PN	Pn	23 13 18.8	-0.2
RAGZ				AML	AML	23 13 39.9	
RAGZ				AML	AML	23 13 40.7	
SNGZ	**Shannon Statio**	**1.12**	**110**	⇑PN	Pn	23 13 19.1	+0.1
SNGZ				AML	AML	23 13 39.0	
SNGZ				AML	AML	23 13 41.4	
ARHZ	**Aropaoanui**	**1.16**	**138**	⇑PN	Pn	23 13 19.6	+0.4
ARHZ				SN	Sn	23 13 39.9	-0.6
ARHZ				AML	AML	23 13 40.6	
MCHZ	**McNeill Hill**	**1.18**	**152**	⇑PN	Pn	23 13 19.9	+0.6
MCHZ				AML	AML	23 13 40.9	
MCHZ				AML	AML	23 13 46.2	
WHHZ	**Waihua**	**1.18**	**125**	PN	Pn	23 13 19.6	+0.2
WHHZ				AML	AML	23 13 40.9	
WHHZ				AML	AML	23 13 43.4	
MWZ	**Matawai**	**1.21**	**87**	Pn	Pn	23 13 19.4	-0.3
MWZ	**Matawai**	**1.21**	**87**	⇑PN	Pn	23 13 19.4	-0.3
MWZ				AML	AML	23 13 39.5	
MWZ				AML	AML	23 13 40.4	
MWZ				AML	AML	23 13 41.6	
KRHZ	**Kereru**	**1.27**	**167**	⇑PN	Pn	23 13 20.2	-0.1
KRHZ				AML	AML	23 13 20.5	
KRHZ				AML	AML	23 13 21.8	
RUQZ	**Raukumara Rang**	**1.40**	**72**	PN	Pn	23 13 18.0	-3.6
RIGZ	**Rimuhau**	**1.42**	**103**	⇑PN	Pn	23 13 21.6	0.0
RIGZ				AML	AML	23 13 43.7	
RIGZ				AML	AML	23 13 44.3	
KNZ	**Kokohu**	**1.45**	**116**	PN	Pn	23 13 21.7	-0.2
KNZ				AML	AML	23 13 48.9	
MKAZ	**Moumakai**	**1.46**	**333**	Pn	Pn	23 13 18.6	-3.4
TKGZ	**Te Karaka**	**1.46**	**92**	PN	Pn	23 13 22.3	+0.3
TKGZ				AML	AML	23 13 44.6	
TKGZ				AML	AML	23 13 48.3	
CKHZ	**Cape Kidnapper**	**1.51**	**146**	⇑PN	Pn	23 13 22.7	+0.2
CKHZ				SN	Sn	23 13 45.2	-1.2
CKHZ				AML	AML	23 13 47.7	
PNHZ	**Pukenui**	**1.52**	**174**	⇑PN	Pn	23 13 22.1	-0.5
KAHZ	**Kahuranaki**	**1.55**	**154**	⇑PN	Pn	23 13 23.1	+0.1
KAHZ				AML	AML	23 13 23.5	
KAHZ				AML	AML	23 13 23.8	
HAZ	**Te Kaha**	**1.55**	**66**	PN	Pn	23 13 21.9	-1.0
HAZ				AML	AML	23 13 45.3	
HAZ				AML	AML	23 13 45.4	
HAZ				AML

σ1♦42/46, **mb3.9**/11, **Fox Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	**2.04**	**16**	P	**Pn**	**23 15 19.6**	**-1.5**
NIKH				S	**Sn**	**23 15 43.7**	**-1.5**
OKTU	**Okmok Mt. Tuli**	**2.59**	**23**	P	**Pn**	**23 15 28.5**	**-0.3**
OKWR	**Okmok West Rim**	**2.60**	**21**	P	**Pn**	**23 15 29.0**	**0.0**
OKWR				S	**Sn**	**23 16 00.7**	**+1.4**
OKER	**Okmok East Rim**	**2.66**	**23**	P	**Pn**	**23 15 29.6**	**0.0**
OKAK	**Okmok**	**2.70**	**18**	P	**Pn**	**23 15 28.0**	**-2.3**
KOFP	**Korovin Flat P**	**2.98**	**297**	P	**Pn**	**23 15 33.0**	**-1.0**
KOSE	**Korovin Southe**	**2.98**	**298**	P	**Pn**	**23 15 33.7**	**-0.4**
KONE	**Korovin Northe**	**3.04**	**299**	P	**Pn**	**23 15 34.7**	**-0.2**
KOKL	**Mount Kliuchef**	**3.05**	**297**	P	**Pn**	**23 15 35.0**	**-0.1**
KOWE	**Korovin West**	**3.10**	**298**	P	**Pn**	**23 15 35.1**	**-0.7**
MSOM	**Makushin Julie**	**3.29**	**31**	P	**Pn**	**23 15 37.9**	**-0.4**
UNV	**Unalaska Valle**	**3.46**	**34**	P	**Pn**	**23 15 39.9**	**-0.8**
UNV				S	**Sn**	**23 16 21.0**	**+0.6**
MTBL	**Makushin Table**	**3.50**	**31**	P	**Pn**	**23 15 41.0**	**-0.3**
AKRB	**Akutan Reef Bi**	**3.84**	**34**	P	**Pn**	**23 15 46.0**	**+0.1**
AKRB				S	**Sn**	**23 16 30.7**	**+0.8**
AKGG	**Akutan Green G**	**3.93**	**34**	P	**Pn**	**23 15 47.2**	**+0.1**
AKUT	**Akutan**	**3.96**	**36**	P	**Pn**	**23 15 47.2**	**-0.2**
GSTD	**Great Sitkin T**	**4.12**	**287**	P	**Pn**	**23 15 48.4**	**-1.3**
ADAG	**Mount Adagdak**	**4.38**	**285**	P	**Pn**	**23 15 52.1**	**-1.2**
WESE	**West Dahl East**	**4.67**	**40**	P	**Pn**	**23 15 58.3**	**+0.9**
SSLW	**Shishaldin Wes**	**5.08**	**40**	P	**Pn**	**23 16 03.2**	**+0.3**
DT1	**Dutton Round H**	**6.09**	**45**	P	**Pn**	**23 16 18.1**	**+1.3**
DTNA	**Dutton South F**	**6.13**	**45**	P	**Pn**	**23 16 18.1**	**+0.8**
SPIA	**Saint Paul Isl**	**6.18**	**358**	P	**Pn**	**23 16 18.3**	**+0.4**
SDPT	**Sand Point** 22nm,0.5s	**7.07**	**49**	*e*Pn	**Pn**	**23 16 29.9**	**-0.2**
CHGN	**Chignik**	**8.56**	**47**	*e*Pn	**Pn**	**23 16 50.7**	**0.0**
KTH	**Kantishna Hill** 16nm,0.5s	**16.08**	**31**	*e*Pn	**Pn**	**23 18 32.4**	**0.0**
BPAW	**Bear Paw Mtn.** 0.9nm,0.5s	**16.43**	**30**	*e*Pn	**Pn**	**23 18 36.7**	**-0.3**
ILAR	**Eielson Array** 0.2nm,0.3s,baz=228,slow=10,SNR=8.9	**18.22**	**32**	P	**P**	**23 18 56.6**	**-2.4**
ILAR	comp=Z,28nm,19.5s,baz=98,slow=40			LR	LR	23 26 56.5	
COLD	**Coldfoot** 3.6nm,0.8s	**18.95**	**24**	*e*P	**P**	**23 19 06.8**	**-0.3**
PETK	**Petropavlovsk-** 0.7nm,0.6s,baz=74,slow=14,SNR=2.3	**20.02**	**289**	P	**P**	**23 19 17.9**	**-1.0**
EGAK	**Eagle** 3.2nm,0.5s	**20.26**	**36**	*e*P	Pn	23 19 22.6	-0.9
DAWY	**Dawson** 3.0nm,0.6s	**20.62**	**39**	*e*P	Pn	23 19 26.9	-0.9
DLBC	**Dease Lake** 2.2nm,0.4s,baz=71,slow=14,SNR=6.0	**23.82**	**56**	P	**P**	**23 19 52.7**	**-6.1**
INK	**Inuvik** 2.0nm,0.5s,baz=260,slow=11,SNR=5.7	**24.62**	**32**	P	**P**	**23 20 06.9**	**+1.0**
INK	comp=Z,29nm,18.5s,baz=344,slow=39			LR	LR	23 30 46.9	
INK	**Inuvik** 2.3nm,0.5s	**24.62**	**32**	*e*P	**P**	**23 20 06.8**	**+0.9**
PDAR	**Pinedale Array** 0.3nm,0.6s,baz=289,slow=8.5,SNR=2.5	**40.92**	**77**	P	**P**	**23 22 29.0**	**+0.6**
TXAR	**Lajitas Array** 0.6nm,0.5s,baz=299,slow=8.5,SNR=8.6	**53.03**	**88**	P	**P**	**23 24 02.8**	**0.0**
KURBB	**Kurchatov Arra** 0.9nm,0.9s,baz=41,slow=7.4,SNR=7.7	**63.33**	**319**	P	**P**	**23 25 15.8**	**+1.4**
MKAR	**Makanchi Array** 0.1nm,0.3s,baz=115,slow=6.5,SNR=2.4	**64.56**	**314**	P	**P**	**23 25 25.2**	**+2.7**
BVAR	**Borovoye Array** 0.6nm,0.5s,baz=38,slow=7.3,SNR=4.2	**64.66**	**325**	P	**P**	**23 25 24.7**	**+1.6**
FINES	**FINESS Array B** 1.1nm,0.7s,baz=359,slow=6.3,SNR=2.6	**67.17**	**352**	P	**P**	**23 25 40.4**	**+1.4**
NOA	**NORSAR Array B** 0.6nm,0.7s,baz=322,slow=3.8,SNR=3.5	**68.29**	**359**	P	**P**	**23 25 47.8**	**+1.6**
AKTO	**Aktyubinsk** 1.0nm,0.7s,baz=62,slow=6.9,SNR=5.3	**71.06**	**330**	P	**P**	**23 26 04.4**	**+1.0**
ASAR	**Alice Springs** 0.7nm,0.6s,baz=26,slow=4.2,SNR=8.8	**89.34**	**230**	P	**P**	**23 27 40.6**	**-1.3**

IDC 15 23:16:46.4±999.0, 46.45N×63.07E, h0km, Error ellipse: s-maj=403.0km s-min=186.6km az=141.0, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF** baz=131,slow=314,SNR=5.9	**5.18**	**322**	*i*		23 48 40.0	
I46RU	**ZALESOVO INFRA** baz=250,slow=319,SNR=2.5	**15.77**	**54**	*i*		01 14 00.0	
I43RU	**DUBNA INFRASON** baz=116,slow=320,SNR=0.4	**68.23**	**312**	*i*		01 09 40.0	
I18DK	**QAANAAQ INFRAS** baz=38,slow=322,SNR=4.9	**52.88**	**348**	*i*		04 44 00.0	

IDC 15 23:26:30.4±3.1, 30.14N×176.32W, h0km, mb3.5/2, mb1 3.7/2, mb1mx3.5/23, mbtmp3.5/2, MS3.2/1, Ms1 3.2/1, ms1mx2.5/22, Error ellipse: s-maj=74.9km s-min=57.4km az=14.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 69nm,0.3s,baz=76,slow=21,SNR=1.9	**1.65**	**302**	Pn	Pn	23 27 00.9	+0.3
RAO	102nm,0.3s,baz=228,slow=12,SNR=2.7			Sn	Sn	23 27 14.8	-7.8
DZM	**Mont Dzumac** comp=Z,69nm,18.9s,baz=200,slow=31	**17.43**	**293**	LR	LR	23 35 31.2	
ASAR	**Alice Springs** 0.2nm,0.6s,baz=102,slow=7.2,SNR=2.2	**44.58**	**266**	P	P	23 34 45.1	+0.6
WRA	**Warramunga Arr** 0.9nm,0.7s,baz=110,slow=8.0,SNR=4.3	**45.54**	**271**	P	P	23 34 51.1	-1.1
FINES	**FINESS Array B** 1.4nm,0.9s,baz=157,slow=25,SNR=1.4	**145.39**	**341**	PKPbc	PKPbc	23 46 08.8	-0.7

IDC 15 23:30:51.6±2.0, 37.01N×140.79E, h0km, mb3.5/4, mb1 3.6/5, mb1mx3.4/34, mbtmp3.5/5, ML3.1/1, MS2.3/1, Ms1 2.3/1, ms1mx2.1/37, Error ellipse: s-maj=43.0km s-min=26.0km az=44.0
ISCJB 15 23:30:52.9±0.6, 37.02N±0.03×140.77E±0.05, h17km±5km, mb3.4/4, Error ellipse: s-maj=7.6km s-min=5.1km az=20.6
JMA 15 23:30:53.6, 37.03N×140.66E, h6km±1km, M3.4
Broadband fault plane solution: P waves. NP1: φ=216.00000°, δ77.00000°, λ-86.00000°. NP2: φ=19.00000°, δ14.00000°, λ-107.00000°. Principal axes: T Plg32.0000°, Azm303.0000°; N Plg4.0000°, Azm36.0000°; P Plg58.0000°, Azm132.0000°;
JMA Felt I J1.

ISC 15 23:30:53.0±0.9, 37.02N±0.04×140.71E±0.04, h13km±6km, n21, σ0♦84/23, mb3.5/4, 5C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**44**	P	**Pg**	**23 30 56.5**	**+0.3**
ONAJ				S	**Sg**	**23 30 58.6**	**+0.2**
JFK	**Kawauchi**	**0.37**	**22**	↑P	**Pb**	**23 31 00.9**	**-0.5**
JFK				S	**Sb**	**23 31 06.1**	**-1.0**
JHO	**Hitachi**	**0.43**	**195**	↓P	**Pb**	**23 31 01.8**	**-0.6**
JHO				S	**Sb**	**23 31 07.8**	**-0.9**
JFT	**Otama**	**0.57**	**329**	↑P	**Pg**	**23 31 04.4**	**+0.1**
JFT				S	**Sb**	**23 31 12.1**	**-0.9**
JSB	**Shiboa**	**0.63**	**265**	↑P	**Pg**	**23 31 05.9**	**+0.6**
JSB				S	**Sg**	**23 31 14.3**	**+0.6**
JMM	**Marumori**	**0.84**	**5**	↑P	**Pg**	**23 31 09.2**	**-0.2**
JMM				S	**Sg**	**23 31 20.7**	**+0.3**
JFY	**Yanaizu**	**0.89**	**296**	↑P	**Pb**	**23 31 09.9**	**-0.3**
JFY				S	**Sb**	**23 31 20.9**	**-1.1**
JYT	**Yasato**	**0.89**	**208**	P	**Pn**	**23 31 10.2**	**-1.0**
MJAR	**Matsushiro Arr** 6.3nm,0.3s,baz=100,slow=15,SNR=5.4	**2.06**	**257**	Pn	**Pb**	**23 31 28.7**	**-1.5**
MJAR	13nm,0.3s,baz=112,slow=13,SNR=2.1			Sn	**Sb**	**23 31 54.8**	**-1.0**
MAT	**Matsushiro**	**2.06**	**257**	P	**Pb**	**23 31 29.4**	**-0.9**
MAT				S	**Sb**	**23 31 55.8**	**0.0**
KSRS	**Korea Array** comp=Z,18nm,20.4s,baz=162,slow=34	**10.20**	**276**	LR	LR	23 36 44.9	
SONM	**Songino Array** 0.3nm,0.6s,baz=86,slow=9.2,SNR=2.3	**27.32**	**304**	P	**P**	**23 36 38.7**	**+1.2**
H11N2	**WAKE ISLAND Hy** baz=312,slow=75,SNR=9.6	**28.63**	**120**	T	T	00 06 37.6	
H11N1	**WAKE ISLAND Hy** baz=312,slow=75,SNR=9.6	**28.64**	**120**	T	T	00 06 39.0	
H11N3	**WAKE ISLAND Hy** baz=312,slow=75,SNR=7.9	**28.65**	**120**	T	T	00 06 41.4	
H11S1	**WAKE ISLAND Hy** baz=314,slow=75,SNR=8.7	**29.33**	**122**	T	T	00 07 30.6	
H11S3	**WAKE ISLAND Hy** baz=314,slow=75,SNR=6.1	**29.33**	**122**	T	T	00 07 30.7	
H11S2	**WAKE ISLAND Hy** baz=314,slow=75,SNR=4.8	**29.35**	**122**	T	T	00 07 34.9	
MKAR	**Makanchi Array** 0.2nm,0.2s,baz=83,slow=7.5,SNR=1.3	**43.64**	**302**	P	**P**	**23 38 58.1**	**+1.0**
WRA	**Warramunga Arr** 0.6nm,0.9s,baz=4.9,slow=7.4,SNR=12	**56.98**	**187**	P	**P**	**23 40 38.9**	**+0.7**
ASAR	**Alice Springs** 0.2nm,0.6s,baz=10,slow=7.6,SNR=4.1	**60.70**	**187**	P	**P**	**23 41 04.5**	**+0.5**

ISCJB 15 23:34:56.9±0.6, 11.08N±0.03×61.73W±0.04, h71km±9km, Error ellipse: s-maj=6.7km s-min=4.1km az=26.0
FUNV 15 23:34:58.1, 11.08N×61.59W, h35km, MW2.9
TRN 15 23:34:58.4, 11.10N×61.71W, h54km, MD3.1

ISC 15 23:34:57.1±1.4, 11.07N±0.04×61.72W±0.04, h72km±12km, n19, σ1♦21/32, 1C, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRN	**Trinidad (W)**	**0.52**	**143**	↑*i*P	**Pn**	**23 35 10.8**	**+0.5**
TRN				*e*S	**Sn**	**23 35 19.6**	**-0.4**
GUIV	**Guiria**	**0.65**	**230**	*e*P	**Pn**	**23 35 11.7**	**+0.1**
GUIV				*e*S	**Sn**	**23 35 22.2**	**-0.1**
TBH	**Brigand Hill**	**0.86**	**132**	*e*P	**Pn**	**23 35 14.4**	**+0.4**
BOT	**Bacolet**	**0.99**	**84**	*e*P	**Pn**	**23 35 16.4**	**+0.8**
BOT				*e*S	**Sn**	**23 35 28.3**	**-1.0**
GRGR	**Grenville**	**1.06**	**3**	*e*P	**Pn**	**23 35 15.7**	**-0.8**
GRGR				*e*S	**Sn**	**23 35 30.1**	**-0.9**
GRGR	**Grenville**	**1.06**	**3**	*e*P	**Pn**	**23 35 15.8**	**-0.8**
GRW	**Mount Saint Ca**	**1.09**	**3**	*e*P	**Pn**	**23 35 17.6**	**+0.7**
GRW				*e*S	**Sn**	**23 35 30.6**	**-1.1**
GRHS	**Sauteurs**	**1.16**	**4**	*e*S	**Sn**	**23 35 32.5**	**-0.6**
TOSP	**Speyside**	**1.19**	**79**	*e*P	**Pn**	**23 35 18.6**	**+0.5**
TOSP				*e*S	**Sn**	**23 35 34.3**	**+0.6**
GRSS	**Sisters**	**1.23**	**5**	*e*P	**Pn**	**23 35 19.5**	**+0.9**
GRSS				*e*S	**Sn**	**23 35 35.0**	**+0.2**
GUNV	**Guanoco**	**1.50**	**233**	*e*P	**Pn**	**23 35 23.2**	**+1.0**
GUNV				*e*S	**Sn**	**23 35 42.3**	**+1.3**
FCV	**Fort Charlotte**	**2.13**	**13**	*e*P	**Pn**	**23 35 31.4**	**+0.8**
FCV				*e*S	**Sn**	**23 35 55.8**	**-0.4**
SVB	**Belmont**	**2.24**	**12**	*e*P	**Pn**	**23 35 33.4**	**+1.3**
SVB				*e*S	**Sn**	**23 35 58.5**	**-0.4**
SVV	**Soufriere Volc**	**2.29**	**12**	*e*P	**Pn**	**23 35 33.6**	**+0.8**
SVV				*e*S	**Sn**	**23 35 59.3**	**-0.8**
RIOV	**Rio Grande**	**2.98**	**182**	*e*P	**Pn**	**23 35 42.9**	**+0.8**
PCRV	**Puerto La Cruz**	**3.00**	**253**	*e*P	**Pn**	**23 35 43.5**	**+1.0**
CUPV	**Cœpira**	**4.12**	**256**	*e*P	**Pn**	**23 35 59.7**	**+1.9**
CUPV				*e*S	**Sn**	**23 36 44.8**	**0.0**
LUEV	**Luepa**	**5.19**	**177**	*e*P	**Pn**	**23 36 11.7**	**-0.8**
BAUV	**El Baul**	**6.57**	**252**	*e*P	**Pn**	**23 36 31.8**	**+0.6**
BAUV				*e*S	**Sn**	**23 37 40.3**	**-4.5**

ISCJB 15 23:36:23.2±0.5, 39.03N±0.04×29.08E±0.04, h9km, Error ellipse: s-maj=7.0km s-min=3.9km az=150.1
DDA 15 23:36:23.6, 39.02N×29.04E, h7km, Md2.1
ISK 15 23:36:23.0, 39.03N×29.19E, h7km, MD2.6
CSEM 15 23:36:23.3±0.3, 39.02N×29.12E, h9km±3km, MD2.6, Error ellipse: s-maj=9.3km s-min=5.5km az=145.0

ISC 15 23:36:23.2±0.9, 39.02N±0.04×29.13E±0.03, h9km, n20, σ0♦56/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.22**	**82**	*e*PG	**Pg**	**23 36 26.9**	**-0.8**
GEDZ	**Gediz**	**0.22**	**82**	*e*Pg	**Pg**	**23 36 26.9**	**-0.8**
GDZ	**Gediz**	**0.28**	**75**	*i* P	**Pb**	**23 36 30.9**	**+0.5**
GDZ				*i* S	**Sb**	**23 36 35.8**	**+0.4**
GDZ	**Gediz**	**0.28**	**75**	P	**Pb**	**23 36 31.0**	**+0.5**
GDZ				S	**Sb**	**23 36 35.8**	**+0.4**
DEMI	**Demirci**	**0.32**	**275**	*i* P	**Pg**	**23 36 29.2**	**-0.4**
DEMI				*i* S	**Sg**	**23 36 32.7**	**-1.3**
DEMI	**Demirci**	**0.32**	**275**	P	**Pg**	**23 36 29.2**	**-0.4**
DEMI				S	**Sg**	**23 36 32.7**	**-1.3**
TVSB	**Tavsanli**	**0.51**	**31**	*e*PG	**Pg**	**23 36 33.0**	**0.0**
TVSB				*e*SG	**Sg**	**23 36 39.3**	**-0.4**
TVSB	**Tavsanli**	**0.51**	**31**	*e*Pg	**Pg**	**23 36 33.0**	**0.0**
TVSB				*e*Sg	**Sg**	**23 36 39.3**	**-0.4**
KULA	**Kula-Manisa**	**0.62**	**216**	*e*PG	**Pb**	**23 36 36.2**	**0.0**
KULA	**Kula-Manisa**	**0.62**	**216**	*e*Pg	**Pb**	**23 36 36.2**	**0.0**
MANT	**Manisa**	**0.69**	**221**	*i* P	**Pg**	**23 36 36.6**	**+0.1**
MANT				*i* S	**Sg**	**23 36 45.6**	**+0.1**
MANT	**Manisa**	**0.69**	**221**	P	**Pg**	**23 36 36.6**	**+0.1**
MANT				S	**Sg**	**23 36 45.7**	**+0.1**
BALB	**Balikesir**	**1.15**	**303**	*e*PN	**Pn**	**23 36 46.2**	**+0.7**
BALB	**Balikesir**	**1.15**	**303**	*e*Pn	**Pn**	**23 36 46.2**	**+0.7**
SHUT	**Suhut-Afyon**	**1.20**	**112**	*e*PN	**Pb**	**23 36 45.7**	**-0.5**
SHUT	**Suhut-Afyon**	**1.20**	**112**	*e*Pn	**Pb**	**23 36 45.7**	**-0.5**
ARMT	**Armutlu**	**1.56**	**352**	*e*PN	**Pn**	**23 36 51.4**	**+0.3**
ARMT	**Armutlu**	**1.56**	**352**	*e*Pn	**Pn**	**23 36 51.4**	**+0.3**
GULT	**Gulveren**	**1.77**	**37**	*e*PN	**Pn**	**23 36 54.6**	**+0.5**
GULT	**Gulveren**	**1.77**	**37**	*e*Pn	**Pn**	**23 36 54.6**	**+0.5**

ISK 15 23:38:33.4, 39.32N×39.84E, h28km, MD2.6
ISCJB 15 23:38:34.7±0.6, 39.26N±0.04×39.86E±0.04, h8km, Error ellipse: s-maj=5.6km s-min=4.3km az=165.8
CSEM 15 23:38:34.7±0.2, 39.28N×39.83E, h5km, MD2.5, Error ellipse: s-maj=4.7km s-min=4.1km az=176.0
DDA 15 23:38:35.8, 39.30N×39.70E, h7km, Md2.5

ISC 15 23:38:34.9±0.9, 39.30N±0.03×39.83E±0.03, h8km, n18, σ0♦54/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNCL	**Tunceli-Merkez**	**0.29**	**231**	*i* P	**Pg**	**23 38 40.1**	**-0.6**
TNCL				*i* S	**Sg**	**23 38 44.5**	**0.0**
TNCL	**Tunceli-Merkez**	**0.29**	**231**	P	**Pg**	**23 38 40.1**	**-0.6**
TNCL				S	**Sg**	**23 38 44.5**	**0.0**
ERZN	**Erzincan**	**0.30**	**344**	*e*PG	**Pg**	**23 38 40.9**	**-0.1**
EUZM	**Uzumlu**	**0.42**	**346**	*i* P	**Pg**	**23 38 43.3**	**+0.1**
EUZM				*i* S	**Sb**	**23 38 50.8**	**-0.6**
EUZM	**Uzumlu**	**0.42**	**346**	P	**Pg**	**23 38 43.3**	**+0.1**
EUZM				S	**Sb**	**23 38 50.8**	**-0.6**
PTK	**Pertek**	**0.53**	**220**	*e*PG	**Pg**	**23 38 45.4**	**+0.2**
PTK	**Pertek**	**0.53**	**220**	*e*Pg	**Pg**	**23 38 45.4**	**+0.2**
YEDI	**Yedisu-Bingol**	**0.57**	**75**	*e*PG	**Pg**	**23 38 45.4**	**-0.6**
YEDI				*e*SG	**Sg**	**23 38 54.1**	**+0.6**
YEDI	**Yedisu-Bingol**	**0.57**	**75**	*e*Pg	**Pg**	**23 38 45.4**	**-0.6**
YEDI				*e*Sg	**Sg**	**23 38 54.1**	**+0.6**
BINT	**Bingol**	**0.66**	**129**	*e*Pg	**Pg**	**23 38 47.9**	**+0.2**
BNGB	**Bing¶ll**	**0.73**	**114**	*e*PG	**Pg**	**23 38 47.9**	**-1.0**
REFA	**Refahiye_ERZ~**	**0.83**	**277**	*i* P	**Pn**	**23 38 54.2**	**+1.1**
KELT	**Kelkit**	**0.96**	**333**	*i* P	**Pg**	**23 38 53.1**	**-0.2**
KELT	**Kelkit**	**0.96**	**333**	P	**Pg**	**23 38 53.2**	**-0.2**
KEMA	**Kemaliye**	**1.04**	**269**	*i* P	**Pg**	**23 38 54.0**	**-0.8**
KEMA				*i* S	**Sb**	**23 39 09.0**	**0.0**
KEMA	**Kemaliye**	**1.04**	**269**	P	**Pg**	**23 38 54.0**	**-0.8**
KEMA				S	**Sb**	**23 39 09.0**	**0.0**
SUSE	**Susehri**	**1.55**	**307**	*i* P	**Pb**	**23 39 03.6**	**-0.4**
SUSE	**Susehri**	**1.55**	**307**	P	**Pb**	**23 39 03.6**	**-0.4**

IDC 15 23:43:03.3±4.2, 14.10N×91.66W, h0km, mb3.8/1, mb1 4.2/3, mb1mx3.7/37, mbtmp3.8/3, ML3.7/2, MS3.0/6, Ms1 3.0/6, ms1mx2.8/40, Error ellipse: s-maj=214.2km s-min=53.3km az=42.0
MEX 15 23:43:07.4±0.4, 14.11N×92.08W, h96km±35km, MD3.9
NEIC 15 23:43:07.8±0.6, 14.00N×91.74W, h35km, mb4.0/14, MD3.9(MEX), Error ellipse: s-maj=18.9km s-min=8.3km az=60.0

ISC 15 23:43:04.0±2.0, 14.11N±0.08×91.82W±0.07, h5km±12km, n33, σ1♦00/38, mb4.1/14, MS2.9/5, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUS1	**Cusmapa**	**1.83**	**96**	*e*P	**Pb**	**23 43 39.1**	**+1.1**
CUS1				*e*S	**Sg**	**23 44 04.4**	**+1.6**
RBDL	**Robledal**	**2.07**	**90**	*e*P	**Pg**	**23 43 44.0**	**+0.2**
RBDL				*e*S	**Sg**	**23 44 11.3**	**+0.8**
RTR	**El Retiro**	**2.12**	**95**	*e*P	**Pg**	**23 43 44.7**	**0.0**
RTR				*e*S	**Sg**	**23 44 12.7**	**+0.5**
MONT	**Ecomontaæa**	**2.12**	**96**	*e*P	**Pg**	**23 43 44.8**	**0.0**
MONT				*e*S	**Sg**	**23 44 12.5**	**+0.2**
SBLS	**San Blas**	**2.15**	**97**	*e*P	**Pb**	**23 43 44.7**	**+1.1**
SBLS				*e*S	**Sg**	**23 44 12.3**	**-0.8**
CCIG	**Comitan**	**2.19**	**352**	*e*P	**Pg**	**23 43 46.1**	**+0.2**
CCIG				*i* S	**Sg**	**23 44 12.4**	**-2.0**
CCIG	**Comitan**	**2.19**	**352**	*e*P	**Pg**	**23 43 46.1**	**+0.2**
CCIG				*i* S	**Sb**	**23 44 10.8**	**-1.0**
BOQS	**Boqueron**	**2.49**	**98**	*e*P	**Pb**	**23 43 49.0**	**-0.5**
BOQS				*e*S	**Sb**	**23 44 21.0**	**+0.5**
LFRS	**El Faro**	**2.72**	**100**	*e*P	**Pb**	**23 43 51.7**	**-1.6**
LFRS				*e*S	**Sb**	**23 44 25.4**	**-1.6**
CMIG	**Matias Romero** 2.3nm,0.3s,baz=146,slow=9.6,SNR=19	**4.19**	**316**	Pn	**Pn**	**23 44 08.8**	**+0.1**
CMIG	8.7nm,0.3s,baz=97,slow=7.7,SNR=7.7			Sn	**Sn**	**23 44 58.0**	**0.0**
CMIG	comp=Z,128nm,21.8s,baz=112,slow=42			LR	LR	23 46 05.1	
PAYG	**Puerto Ayora**	**14.76**	**174**	Pn	**Pn**	**23 46 32.9**	**-0.8**
TXAR	**Lajitas Array** 0.1nm,0.3s,baz=153,slow=12,SNR=21	**18.71**	**326**	P	**Pn**	**23 47 25.9**	**+2.0**
LPIG	**La Paz** comp=Z,42nm,18.8s,baz=226,slow=35	**20.08**	**302**	LR	LR	23 54 54.9	
MIAR	**Mount Ida** 0.9nm,0.7s	**20.41**	**356**	*e*P	**P**	**23 47 42.2**	**+0.1**
SDV	**Santo Domingo** 4.4nm,0.4s	**21.39**	**102**	P	**P**	**23 47 50.8**	**-2.2**
MNTX	**Cornudas Mount** 3.7nm,0.8s	**21.47**	**327**	*e*P	**P**	**23 47 54.7**	**+1.1**
WMOK	**Wichita Mounta** 0.9nm,0.7s	**21.48**	**344**	*e*P	**P**	**23 47 54.2**	**+0.5**
AMTX	**Amarillo** 6.8nm,0.6s	**22.52**	**338**	*e*P	**P**	**23 48 05.2**	**+0.3**
TKL	**Tuckaleechee C** comp=Z,47nm,19.7s,baz=127,slow=41	**22.65**	**17**	LR	LR	23 58 21.7	
121A	**Cookes Peak, D** 7.0nm,1.0s	**23.43**	**324**	*e*P	**P**	**23 48 15.8**	**+1.3**
WCI	**Wyandotte Cave** 25nm,0.8s	**24.52**	**11**	*e*P	**P**	**23 48 23.8**	**-0.8**
ANMO	**Albuquerque** 3.1nm,0.9s	**24.60**	**330**	*e*P	**P**	**23 48 26.3**	**+0.8**
SJG	**San Juan** comp=Z,30nm,19.4s,baz=244,slow=37	**24.97**	**77**	LR	LR	23 58 29.7	
KSU1	**Kansas State U** 3.6nm,0.6s	**25.25**	**351**	*e*P	**P**	**23 48 31.6**	**+0.5**
SDCO	**Great Sand Dun** 0.6nm,0.9s	**26.50**	**335**	*e*P	**P**	**23 48 43.5**	**+0.6**
HLID	**Hailey** 0.4nm,0.5s	**35.17**	**331**	*e*P	**P**	**23 50 00.0**	**+0.9**
ULM	**Lac du Bonnet** comp=Z,30nm,18.0s,baz=236,slow=43	**36.20**	**356**	LR	LR	00 09 00.8	
SAML	**Samuel** 9.3nm,1.1s	**36.49**	**127**	*e*P	**P**	**23 50 09.7**	**-0.9**
SCHQ	**Schefferville** comp=Z,30nm,18.2s,baz=284,slow=36	**45.06**	**20**	LR	LR	00 10 24.2	
DLBC	**Dease Lake** 0.9nm,0.5s	**52.63**	**336**	*e*P	**P**	**23 52 19.7**	**+0.7**
INK	**Inuvik** 1.5nm,0.8s	**60.39**	**343**	*e*P	**P**	**23 53 13.9**	**0.0**
ILAR	**Eielson Array** 1.0nm,0.9s,baz=116,slow=4.7,SNR=9.5	**62.81**	**337**	P	**P**	**23 53 30.4**	**0.0**
CMAR	**Chiang Mai Arr** 2.9nm,0.7s,baz=335,slow=3.6,SNR=16	**145.95**	**342**	PKPbc	**PKPdf**	**00 02 45.5**	**+0.3**

WEL 15 23:51:11.2±0.4, 38.02S×176.29E, h148km±3km, ML3.6/29, 16C-2D, Error ellipse: s-maj=2.4km s-min=2.2km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUGZ	**Murupara**	**0.60**	**141**	↑PN	Pn	23 51 32.8	0.0
MUGZ				SN	Sn	23 51 49.4	0.0
URZ	**Urewera**	**0.69**	**111**	PN	Pn	23 51 33.2	-0.2
URZ				SN	Sn	23 51 49.7	-0.6
URZ				AML	AML	23 51 50.8	
MRHZ	**Matea Rd**	**0.82**	**173**	↑PN	Pn	23 51 34.5	+0.1
MRHZ				AML	AML	23 51 35.1	
MRHZ				AML	AML	23 51 35.7	
RAGZ	**Rawiri**	**1.01**	**119**	↑PN	Pn	23 51 36.1	+0.1
RAGZ				SN	Sn	23 51 54.4	-0.4
RAGZ				AML	AML	23 51 56.6	
MWZ	**Matawai**	**1.03**	**108**	↑PN	Pn	23 51 36.0	-0.1
MWZ				AML	AML	23 51 54.8	
MWZ				AML	AML	23 51 54.8	
MWZ				AML	AML	23 51 55.4	
RUAZ	**Raukumara Rang**	**1.10**	**88**	PN	Pn	23 51 36.0	-0.7
SNGZ	**Shannon Statio**	**1.13**	**133**	↑PN	Pn	23 51 37.2	+0.3
SNGZ				AML	AML	23 52 01.2	
SNGZ				AML	AML	23 52 04.7	
NMHZ	**Naumai**	**1.16**	**159**	PN	Pn	23 51 37.7	+0.5
NMHZ				AML	AML	23 52 01.4	
NMHZ				AML	AML	23 52 02.2	
BKZ	**Black Stump Fm**	**1.16**	**172**	↑PN	Pn	23 51 37.0	-0.3
HAZ	**Te Kaha**	**1.21**	**78**	PN	Pn	23 51 37.2	-0.5
HAZ				AML	AML	23 51 57.4	
HAZ				AML	AML	23 51 57.5	
HAZ				AML	AML	23 51 58.7	
HAZ				AML	AML	23 51 59.3	
OTVZ	**

MRZ				AML	AML	23 52 26.0	
MRZ				AML	AML	23 52 26.3	
TIWZ	**Tintock**	**2.77**	**186**	⇑PN	Pn	23 51 53.6	-2.0
TIWZ				AML	AML	23 52 27.0	
TIWZ				AML	AML	23 52 27.0	
OGWZ	**Otaki Gorge**	**2.93**	**197**	PN	Pn	23 51 55.3	-2.2
OGWZ				AML	AML	23 52 30.3	
OGWZ				AML	AML	23 52 31.4	
HOWZ	**Holdsworth Sta**	**2.94**	**191**	⇑PN	Pn	23 51 55.2	-2.5
KIW	**Kapiti Island**	**3.04**	**200**	PN	Pn	23 51 56.3	-2.6
TMWZ	**Te Maipa**	**3.10**	**186**	PN	Pn	23 51 57.2	-2.6
TMWZ				AML	AML	23 52 34.6	
TMWZ				AML	AML	23 52 34.9	
MTW	**Mount Morrison**	**3.20**	**191**	PN	Pn	23 51 58.0	-3.0
CAW	**Cannon Point**	**3.23**	**197**	PN	Pn	23 51 58.6	-2.8
CAW				AML	AML	23 52 38.0	
TRWZ	**Traveller**	**3.41**	**188**	PN	Pn	23 52 00.8	-2.9
PAWZ	**Paruwai Farm**	**3.43**	**191**	PN	Pn	23 52 00.7	-3.3
MSWZ	**Moikau Station**	**3.49**	**193**	PN	Pn	23 52 01.3	-3.5
MSWZ				AML	AML	23 52 41.7	
TCW	**Tory Channel**	**3.55**	**205**	PN	Pn	23 52 02.3	-3.1
PLWZ	**Palliser**	**3.64**	**192**	PN	Pn	23 52 03.2	-3.5
TUWZ	**Tuamarina**	**3.86**	**207**	PN	Pn	23 52 06.1	-3.4
NNZ	**Nelson**	**3.91**	**214**	PN	Pn	23 52 07.4	-2.8
BSWZ	**Blackbirch Sta**	**4.13**	**206**	PN	Pn	23 52 10.0	-3.2
KHZ	**Kahutara**	**4.87**	**205**	PN	Pn	23 52 18.9	-3.9
MQZ	**McQueen's Vall**	**6.32**	**205**	⇓PN	Pn	23 52 36.5	-5.5

NIED ***15*** *23:53:00, 38.2°N× 142.3°E, h32km, Mw4.0 Best double couple: M₀1.07000×10¹⁵ NP1:φ₈182.00000°, δ37.00000°, λ-118.00000°. NP2:φ₈35.00000°, δ58.00000°, λ-71.00000°.*

ISCJB ***15*** *23:53:10.5±0.8, 38.2°1N±0.04°× 142.2°3E±0.08, h44km±7km, mb4.2/21, MS2.9/1, Error ellipse: s-maj=10.7km s-min=5.1km az=25.4*

JMA ***15*** *23:53:10.2±0.1, 38.2°5N× 142.2°5E, h40km±2km, M4.1*

JMA Felt I J1.

NEIC ***15*** *23:53:13.0±0.8, 38.2°7N× 142.2°5E, h51km±7km, mb4.4/4, Error ellipse: s-maj=11.6km s-min=6.0km az=130.0*

NEIC Recorded [1 JMA] in Iwate and Miyagi.

IDC ***15*** *23:53:13.9±2.1, 38.2°3N× 142.2°6E, h65km±20km, mb3.8/16, mb1 3.9/22, mb1mx3.8/52, mbtmp4.0/22, MS3.0/5, Ms1 3.0/5, ms1mx2.7/47, Error ellipse: s-maj=16.8km s-min=12.5km az=100.0*

ISC 15 23:53:12.2±1.4, 38°20N±0.05° × 142°20E±0.08, h44km±12km, n50, σ1°61/53, mb4.1/21, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
JIO	**Ouri**	**0.72**	**291**	P		**Pn**	**23**	**53**	**24.4**	**-1.6**
JIO				S		**Sn**	**23**	**53**	**34.2**	**-1.7**
OFUJ	**Ofunato**	**0.97**	**335**	P		**Pn**	**23**	**53**	**27.3**	**-2.1**
OFUJ				S		**Sn**	**23**	**53**	**39.5**	**-2.6**
JMK	**Ichinoseki**	**1.07**	**314**	P		**Pn**	**23**	**53**	**29.4**	**-1.4**
JMK				*e*S		**Sn**	**23**	**53**	**42.9**	**-1.6**
JMM	**Marumori**	**1.16**	**254**	P		**Pn**	**23**	**53**	**30.6**	**-1.4**
JMM				*e*S		**Sn**	**23**	**53**	**45.2**	**-1.5**
JOU	**Okura**	**1.22**	**278**	P		**Pn**	**23**	**53**	**32.2**	**-0.6**
JFK	**Kawauchi**	**1.34**	**232**	P		**Pn**	**23**	**53**	**32.8**	**-1.7**
JFK				*e*S		**Sn**	**23**	**53**	**49.0**	**-2.2**
JOM	**Ohasama**	**1.46**	**331**	P		**Pn**	**23**	**53**	**34.8**	**-1.2**
JYK	**Kaneyama**	**1.61**	**297**	P		**Pn**	**23**	**53**	**37.5**	**-0.7**
JFT	**Otama**	**1.63**	**246**	P		**Pn**	**23**	**53**	**38.2**	**-0.2**
JFT				*e*S		**Sn**	**23**	**53**	**58.7**	**+0.5**
JYS	**Shirataka**	**1.69**	**271**	P		**Pn**	**23**	**53**	**38.7**	**-0.5**
MJAR	**Matsushiro Arr**	**3.59**	**244**	P		**Pn**	**23**	**54**	**07.2**	**+1.9**
	3.6nm,0.3s,baz=62,slow=10,SNR=31									
MJAR				S		**Sn**	**23**	**54**	**50.5**	**+4.0**
	3.2nm,0.3s,baz=202,slow=23,SNR=5.0									
MJAR				LR		LR	23	55	48.6	
	comp=Z,243nm,18.1s,baz=55,slow=43									
MAJO	**Matsushiro**	**3.59**	**244**	*e*Pn		**Pn**	**23**	**54**	**07.3**	**+2.0**
ERM	**Erimo**	**3.88**	**11**	*e*Pn		**Pn**	**23**	**54**	**07.5**	**-1.7**
ERM				Sn		**Sn**	**23**	**54**	**57.1**	**+3.6**
JHJ	**Hachijo jima 2**	**5.44**	**202**	P		**Pn**	**23**	**54**	**31.2**	**+0.4**
	9.5nm,0.3s,baz=24,slow=22,SNR=1.2									
JHJ				S		**Sn**	**23**	**55**	**28.9**	**-3.1**
	12nm,0.3s,baz=84,slow=22,SNR=1.2									
JHJ				LR		LR	23	56	52.2	
	comp=Z,123nm,19.0s,baz=82,slow=40									
ASAJ	**Asahikawa**	**5.92**	**3**	*e*Pn		**Pn**	**23**	**54**	**36.1**	**-1.1**
	4.1nm,0.4s									
ASAJ				*e*Sn		**Sn**	**23**	**55**	**46.5**	**+2.9**
USRK	**Ussuriysk Ar.**	**9.75**	**311**	P		**Pn**	**23**	**55**	**32.9**	**+3.2**
	1.0nm,0.3s,baz=113,slow=15,SNR=21									
USRK				LR		LR	23	59	00.7	
	comp=Z,84nm,19.0s,baz=149,slow=35									
JNU	**Nakatsue**	**10.31**	**245**	P		**Pn**	**23**	**55**	**42.4**	**+2.1**
	0.2nm,0.3s,baz=131,slow=9.3,SNR=4.0									
KSRS	**Korea Array**	**11.32**	**271**	P		**Pn**	**23**	**55**	**53.8**	**+2.5**
	0.2nm,0.3s,baz=81,slow=15,SNR=2.1									
KSRS				LR		LR	23	59	37.2	
	comp=Z,70nm,19.0s,baz=74,slow=34									
KSAR	**Wonju Array Be**	**11.35**	**271**	P		**Pn**	**23**	**55**	**53.8**	**+2.0**
PETK	**Petropavlovsk-**	**18.36**	**31**	P		**P**	**23**	**57**	**23.1**	**+0.1**
	0.9nm,0.3s,baz=174,slow=4.5,SNR=3.6									
MA2	**Magadan**	**22.08**	**12**	P		**P**	**23**	**58**	**03.6**	**+0.4**
	4.2nm,0.5s,baz=177,slow=11,SNR=3.8									
SEY	**Seymchan**	**25.53**	**11**	P		**P**	**23**	**58**	**36.9**	**+0.7**
	2.4nm,0.2s,baz=203,slow=9.0,SNR=9.7									
SONM	**Songino Array**	**27.68**	**302**	P		**P**	**23**	**58**	**56.3**	**+0.3**
	1.0nm,0.6s,baz=95,slow=8.8,SNR=7.4									
ENH	**Enshi**	**28.07**	**264**	*e*P		**P**	**23**	**58**	**60.0**	**+0.4**
	6.1nm,0.6s									
H11N2	**WAKE ISLAND Hy**	**28.24**	**124**	T		T	00	29	24.3	
	baz=316,slow=75,SNR=494									
H11N1	**WAKE ISLAND Hy**	**28.25**	**124**	T		T	00	29	25.1	
	baz=316,slow=75,SNR=668									
H11N3	**WAKE ISLAND Hy**	**28.26**	**124**	T		T	00	29	25.8	
	baz=316,slow=75,SNR=329									
H11S1	**WAKE ISLAND Hy**	**29.00**	**126**	T		T	00	30	19.5	
	baz=318,slow=76,SNR=102									
H11S3	**WAKE ISLAND Hy**	**29.00**	**126**	T		T	00	30	20.1	
	baz=318,slow=76,SNR=129									
H11S2	**WAKE ISLAND Hy**	**29.02**	**126**	T		T	00	30	21.2	
	baz=318,slow=76,SNR=96									
ZALV	**Zalesovo Beam**	**41.60**	**311**	P		**P**	**00**	**00**	**55.6**	**0.0**
	2.0nm,0.5s,baz=91,slow=8.6,SNR=10									
CMAR	**Chiang Mai Arr**	**42.41**	**255**	LR		LR	00	18	55.3	
	comp=Z,15nm,20.5s,baz=260,slow=36									
MKAR	**Makanchi Array**	**44.04**	**301**	P		**P**	**00**	**01**	**15.8**	**+0.3**
	1.5nm,0.5s,baz=85,slow=10,SNR=15									
KURK	**Kurchatov**	**45.72**	**307**	*e*P		**P**	**00**	**01**	**28.8**	**+0.1**
	52nm,0.6s									
COLA	**College**	**47.76**	**33**	P		**P**	**00**	**01**	**44.7**	**+0.3**
	1.2nm,0.3s									
ILAR	**Eielson Array**	**48.17**	**33**	P		**P**	**00**	**01**	**47.5**	**-0.2**
	1.7nm,0.7s,baz=267,slow=6.3,SNR=20									
ABKAR	**Akbulak array**	**57.67**	**310**	*e*P		**P**	**00**	**02**	**57.6**	**-0.2**
	2.9nm,0.6s									
WRA	**Warramunga Arr**	**58.31**	**189**	P		**P**	**00**	**03**	**01.6**	**-0.9**
	1.5nm,0.8s,baz=6.9,slow=7.2,SNR=8.9									
ASAR	**Alice Springs**	**62.03**	**189**	P		**P**	**00**	**03**	**28.1**	**0.0**
	0.6nm,0.6s,baz=9.3,slow=5.4,SNR=6.0									
ARCES	**ARCESS Array B**	**63.13**	**339**	P		**P**	**00**	**03**	**34.4**	**-0.4**
	3.1nm,0.8s,baz=22,slow=8.2,SNR=3.5									
GEYT	**Alibeck**	**63.82**	**299**	P		**P**	**00**	**03**	**39.9**	**0.0**
	0.5nm,0.4s,baz=86,slow=12,SNR=4.4									
FINES	**FINESS Array B**	**68.07**	**332**	P		**P**	**00**	**04**	**06.4**	**-0.4**
	1.6nm,0.4s,baz=29,slow=10,SNR=14									
NB2	**NORSAR Subarra**	**73.35**	**337**	P		**P**	**00**	**04**	**38.6**	**-0.4**
	comp=Z,1.2nm,0.5s,baz=39,slow=6.2									
NOA	**NORSAR Array B**	**73.35**	**337**	P		**P**	**00**	**04**	**38.6**	**-0.4**
	comp=Z,1.9nm,0.7s,baz=39,slow=5.0,SNR=9.4									
AKASG	**Malin Array Be**	**73.76**	**322**	P		**P**	**00**	**04**	**39.6**	**-1.9**
	comp=Z,0.8nm,0.3s,baz=46,slow=7.3,SNR=5.2									
PDAR	**Pinedale Array**	**76.40**	**46**	P		**P**	**00**	**04**	**57.6**	**+0.4**
	comp=Z,0.6nm,0.5s,baz=258,slow=4.5,SNR=4.7									
MVCO	**Mesa Verde**	**80.62**	**50**	P		**P**	**00**	**05**	**20.9**	**+0.4**
	comp=Z,1.4nm,0.7s									
GERES	**GERESS Array B**	**82.05**	**329**	P		**P**	**00**	**05**	**26.8**	**-0.9**
	comp=Z,0.2nm,0.4s,baz=51,slow=7.0,SNR=3.5									
TXAR	**Lajitas Array**	**88.91**	**53**	P		**P**	**00**	**06**	**02.4**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=289,slow=4.0,SNR=8.0									
LPAZ	**La Paz**	**145.56**	**59**	PKPbc		**PKPdf**	**00**	**12**	**46.2**	**-0.5**
	comp=Z,1.8nm,0.8s,baz=31,slow=6.4,SNR=6.3									

IDC ***15*** *23:58:20.7±0.8, 10.4°4N× 127.2°5E, h0km, mb3.8/9, mb1 3.9/9, mb1mx3.7/43, mbtmp3.8/9, Error ellipse: s-maj=56.9km s-min=15.7km az=75.0*

ISCJB ***15*** *23:58:25.9±0.4, 10.1°4N±0.05° × 126.4°2E±0.04, h42km, mb4.1/20, Error ellipse: s-maj=7.1km s-min=5.4km az=157.3*

NEIC ***15*** *23:58:27.2±0.3, 10.2°1N× 126.7°4E, h35km, mb4.3/11, Error ellipse: s-maj=9.5km s-min=6.0km az=84.0*

MAN ***15*** *23:58:28, 10.0°7N× 126.1°8E, h14km, mb4.7, ML3.6, MS3.5*

ISC 15 23:58:27.7±0.6, 10°24N±0.06° × 126°38E±0.07, h42km, n35, σ2°01/34, mb4.2/20, 1C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
PLP	**Palo**	**1.65**	**304**	⇓*e*P		**Pn**	**23**	**58**	**55.2**	**+1.0**
PLP				*e*S		**Sn**	**23**	**59**	**14.0**	**-0.2**
LLP	**Lapu-Lapu**	**2.38**	**272**	*e*P		**Pn**	**23**	**59**	**04.8**	**+0.6**
LLP				*e*S		**Sn**	**23**	**59**	**33.0**	**+0.9**
CGP	**Cagayan de Oro**	**2.43**	**223**	⇑*e*P		**Pn**	**23**	**59**	**03.7**	**-1.2**
CGP				*i* S		**Sn**	**23**	**59**	**31.9**	**-1.6**
TBP	**Tagbilaran**	**2.54**	**258**	*e*P		**Pn**	**23**	**59**	**06.6**	**+0.2**
TBP				*e*S		**Sn**	**23**	**59**	**34.4**	**-1.7**
SNPH	**Sibulan**	**3.22**	**254**	*i* P		**Pn**	**23**	**59**	**11.8**	**-4.1**
SNPH				*i* S		**Sn**	**23**	**59**	**51.1**	**-2.0**
DAV	**Davao City (W)**	**3.25**	**194**	Sn		**Sn**	**23**	**59**	**59.1**	**+5.4**
	81nm,0.3s,baz=300,slow=24,SNR=6.4									
KKM	**Kota Kinabalu**	**10.89**	**248**	*e*Pn		**Pn**	**00**	**01**	**05.0**	**+3.8**
TATO	**Taipei**	**15.37**	**343**	*e*Pn		**Pn**	**00**	**02**	**02.9**	**+1.1**
	8.3nm,0.3s									
FITZ	**Fitzroy Crossi**	**28.18**	**181**	P		**P**	**00**	**04**	**16.1**	**-0.3**
	1.2nm,0.5s,baz=357,slow=5.3,SNR=6.9									
MAJO	**Matsushiro**	**28.29**	**20**	P		**P**	**00**	**04**	**16.7**	**-0.5**
	1.1nm,0.3s									
WRA	**Warramunga Arr**	**31.00**	**165**	P		**P**	**00**	**04**	**40.5**	**-0.9**
	0.9nm,0.7s,baz=344,slow=9.5,SNR=4.0									
BJT	**Baijiatuau**	**31.01**	**345**	*e*P		**P**	**00**	**04**	**42.6**	**+1.3**
	3.3nm,0.5s									
ASAR	**Alice Springs**	**34.50**	**168**	P		**P**	**00**	**05**	**11.2**	**-0.8**
	0.5nm,0.4s,baz=346,slow=6.5,SNR=9.1									
H11S3	**WAKE ISLAND Hy**	**39.83**	**73**	T		T	00	48	55.6	
H11S1	**WAKE ISLAND Hy**	**39.84**	**73**	T		T	00	48	55.6	
H11S2	**WAKE ISLAND Hy**	**39.84**	**73**	T		T	00	48	55.6	
H11N1	**WAKE ISLAND Hy**	**40.16**	**72**	T		T	00	49	24.4	
	baz=260,slow=74,SNR=24									
H11N2	**WAKE ISLAND Hy**	**40.17**	**72**	T		T	00	49	23.5	
H11N3	**WAKE ISLAND Hy**	**40.18**	**72**	T		T	00	49	25.2	
	baz=252,slow=74,SNR=20									
SONM	**Songino Array**	**41.08**	**339**	P		**P**	**00**	**06**	**08.6**	**+1.1**
	0.2nm,0.5s,baz=134,slow=8.2,SNR=2.1									
STKA	**Stephens Creek**	**44.34**	**161**	P		**P**	**00**	**06**	**33.3**	**-0.6**
	5.0nm,1.1s,baz=344,slow=8.8,SNR=4.0									
TLY	**Talaya**	**45.29**	**340**	*e*P		**P**	**00**	**06**	**43.4**	**+2.2**
	0.8nm,0.4s									
MKAR	**Makanchi Array**	**52.11**	**323**	P		**P**	**00**	**07**	**36.1**	**+2.3**
	0.5nm,0.7s,baz=123,slow=8.1,SNR=4.4									
ZALV	**Zalesovo Beam**	**54.70**	**331**	P		**P**	**00**	**07**	**53.2**	**+0.7**
	0.3nm,0.3s,baz=134,slow=6.2,SNR=2.7									
KURK	**Kurchatov**	**56.15**	**325**	*e*P		**P**	**00**	**08**	**04.8**	**+1.8**
	0.6nm,0.2s									
BRVK	**Borovoye**	**61.82**	**325**	*e*P		**P**	**00**	**08**	**44.7**	**+2.4**
	1.9nm,0.8s									
POHA	**Pohakuloa**	**75.48**	**72**	*e*P		**P**	**00**	**10**	**05.9**	**-2.5**
	224nm,0.9s									
PMR	**Palmer**	**78.44**	**29**	P		**P**	**00**	**10**	**23.4**	**-0.6**
	2.0nm,0.7s									
MCK	**McKinley**	**78.53**	**27**	*e*P		**P**	**00**	**10**	**24.9**	**+0.4**
	1.7nm,0.4s									
COLA	**College**	**79.00**	**26**	*e*P		**P**	**00**	**10**	**26.6**	**-0.4**
	1.3nm,0.4s									
ILAR	**Eielson Array**	**79.42**	**26**	P		**P**	**00**	**10**	**25.1**	**-4.2**
	0.2nm,0.8s,baz=242,slow=5.8,SNR=2.6									
INK	**Inuvik**	**84.27**	**22**	*e*P		**P**	**00**	**10**	**54.4**	**-0.3**
	0.8nm,0.5s									
FINES	**FINESS Array B**	**85.96**	**332**	P		**P**	**00**	**11**	**03.1**	**-0.2**
	2.2nm,1.1s,baz=57,slow=5.1,SNR=2.8									
DLBC	**Dease Lake**	**88.36**	**31**	*e*P		**P**	**00**	**11**	**14.8**	**-0.3**
	1.1nm,0.5s									
TORD	**Torodi Ar. Bea**	**120.38**	**292**	PKP		**PKPdf**	**00**	**17**	**14.5**	**-1.0**
	0.3nm,0.6s,baz=27,slow=1.3,SNR=4.2									

NEIC ***16*** *00:00:12.9±0.6, 15.8°1S× 175.3°1E, h10km, mb4.5/6, Error ellipse: s-maj=20.5km s-min=10.2km az=134.0*

IDC ***16*** *00:00:12.8±3.4, 15.8°5S× 175.1°0E, h0km, mb4.1/4, mb1 4.3/4, mb1mx3.8/38, mbtmp4.1/4, MS4.0/6, Ms1 4.0/6, ms1mx3.4/37, Error ellipse: s-maj=149.4km s-min=32.9km az=138.0*

ISCJB ***16*** *00:00:14.5±0.9, 15.7°S±0.2° × 175.3°E±0.2, h33km, mb4.2/10, MS4.2/4, Error ellipse: s-maj=29.0km s-min=13.1km az=44.7*

ISC 16 00:00:16.6±0.9, 15°8S±0.2° × 175°3E±0.2, h35km, n23, σ0°89/13, mb4.3/10, MS4.2/4, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
FUNA	**Funafuti**	**8.15**	**28**	Pn		**Pn**	**00**	**02**	**11.5**	**-0.9**
DZM	**Mont Dzumac**	**10.46**	**232**	*e*LR		LR	00	05	20.2	
	289nm,26.6s									
AFI	**Afiamalu**	**12.62**	**83**	LR		LR	00	06	29.4	
	comp=Z,234nm,21.7s,baz=138,slow=29									
HNR	**Honiara**	**16.27**	**291**	LR		LR	00	10	17.5	
	comp=Z,222nm,18.2s,baz=150,slow=38									
RAR	**Rarotonga**	**24.22**	**107**	LR		LR	00	12	29.0	
	comp=Z,108nm,20.8s,baz=286,slow=30									
PMG	**Port Moresby**	**28.18**	**280**	*e*P		**P**	**00**	**06**	**05.2**	**-0.8**
	1.2nm,0.3s									
PPT2	**Papeete2**	**33.65**	**98**	*e*LQ		LQ	00	14	12.4	
	267nm,25.5s									
PPT2				*e*LR		LR	00	15	30.0	
	257nm,29.8s									
TBI	**Tubuai**	**33.96**	**108**	*e*LR		LR	00	15	37.8	
	251nm,32.2s									
STKA	**Stephens Creek**	**34.58**	**236**	P		**P**	**00**	**07**	**02.3**	**+0.1**
	4.5nm,0.8s,baz=60,slow=8.2,SNR=5.5									
WRA	**Warramunga Arr**	**39.15**	**258**	P		**P**	**00**	**07**	**41.3**	**+0.1**
	1.7nm,0.8s,baz=88,slow=8.9,SNR=7.8									
ASAR	**Alice Springs**	**39.65**	**252**	P		**P**	**00**	**07**	**45.9**	**+0.4**
	4.4nm,0.8s,baz=84,slow=9.0,SNR=23									
ASAR				LR		LR	00	23	02.2	
	comp=Z,141nm,19.9s,baz=91,slow=35									
TAOE	**Nuku Hiva Isla**	**43.98**	**86**	*e*LR		LR	00	20	27.5	
	345nm,30.0s									
RKT	**Rikitea**	**47.26**	**107**	*e*LR		LR	00	21	51.0	
	185nm,27.2s									
SBA	**Scott Base**	**62.23**	**182**	*e*P		**P**	**00**	**13**	**33.0**	**-1.3**
	2.2nm,0.7s									
KKM	**Kota Kinabalu**	**62.39**	**286**	*e*P		**P**	**00**	**16**	**36.2**	**-0.3**
	1.5nm,0.4s									
YSS	**Yuzh-Sakhalins**	**68.97**	**337**	*e*P		**P**	**00**	**11**	**17.4**	**-0.7**
	5.9nm,0.8s									
MDJ	**Mudanjiang**	**73.10**	**328**	*e*P		**P**	**00**	**11**	**43.6**	**+0.4**
	2.4nm,0.4s									
COCO	**West Island**	**75.84**	**261**	*e*P		**P**	**00**	**12**	**00.5**	**+0.7**
ILAR	**Eielson Array**	**85.31**	**15**	P		**P**	**00**	**12**	**50.5**	**+1.0**
	0.3nm,0.8s,baz=227,slow=4.6,SNR=5.3									
HWUT	**Hardware Ranch**	**88.23**	**46**	*e*P		**P**	**00**	**13**	**05.4**	**+0.8**
	0.5nm,0.5s									
INK	**Inuvik**	**91.52**	**17**	LR		LR	00	48	56.1	
	comp=Z,286nm,21.9s,baz=290,slow=32									
CMIG	**Matias Romero**	**94.34**	**74**	LR		LR	00	45	29.8	
	comp=Z,477nm,21.1s,baz=330,slow=29									
GNI	**Garni**	**130.82**	**310**	*e*PKPdf		**PKPdf**	**00**	**19**	**25.9**	**+1.2**

MEX 16 00:06:58.5±0.6, 16°36N× 97°65W, h26km±17km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
PNIG	**Pinotepa**	**0.46**	**275**	*i* P		Pb	00	07	05.9	-2.1
PNIG				*i* S		Sb	00	07	13.2	-1.4
VHO	**Vista Hermosa**	**1.13**	**51**	*e*P		Pn	00	07	16.2	-2.8
VHO				*i* S		Sn	00	07	29.9	-3.8
TLIG	**Tlapa**	**1.48**	**324**	*e*P		Pn	00	07	21.3	-2.4
TLIG				*i* S		Sn	00	07	39.2	-3.1
HUIG	**Huatulco**	**1.60**	**111**	*i* P		Pn	00	07	22.9	-2.2
HUIG				*i* S		Sn	00	07	41.8	-3.1
CAIG	**El Cayaco**	**2.60**	**286**	*i* P		Pn	00	07	36.1	-2.8
CAIG				*i* S		Sn	00	08	07.4	-2.2
YAIG	**Yautepec**	**2.83**	**332**	*e*P		Pn	00	07	40.9	-1.4
YAIG				*i* S		Sn	00	08	12.6	-3.1

NIED ***16*** *00:07:00, 39.3°0N× 143.1°0E, h17km, Mw3.9 Best double couple: M₀9.00000×10¹⁴ NP1:φ₈95.00000°, δ21.00000°, λ-40.00000°. NP2:φ₈223.00000°, δ77.00000°, λ-106.00000°.*

JMA ***16*** *00:07:38.8±0.2, 39.3°1N× 143.1°3E, h17km±2km, M4.1*

ISCJB ***16*** *00:07:39.9±1.7, 39.2°9N±0.04° × 143.1°7E±0.05, h28km±13km, mb3.9/14, MS3.1/1, Error ellipse: s-maj=7.2km s-min=6.6km az=146.0*

IDC ***16*** *00:07:45.1±2.8, 39.2°1N× 143.0°5E, h61km±25km, mb3.6/14, mb1 3.8/18, mb1mx3.6/50, mbtmp3.9/18, ML3.4/4, MS3.1/3, Ms1 3.1/3, ms1mx2.7/50, Error ellipse: s-maj=21.4km s-min=16.0km az=82.0*

ISC 16 00:07:38.8±3.5, 39°29N±0.04° × 143°10E±0.06, h9km±22km, n37, σ1°52/42, mb4.0/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
MIYJ	**Miyakonagasawa**	**1.03**	**286**	P		**Pb**	**00**	**07**	**58.1**	**-0.6**
MIYJ				S		**Sb**	**00**	**08**	**11.9**	**-0.4**
OFUJ	**Ofunato**	**1.13**	**260**	P		**Pn**	**00**	**07**	**59.8**	**-0.9**
JTH	**Tanohata**	**1.15**	**304**	P		**Pn**	**00**	**07**	**59.9**	**-1.1**
JTH				S		**Sb**	**00**	**08**	**15.2**	**-0.6**
JOM	**Ohasama**	**1.41**	**278**	P		**Pn**	**00**	**08**	**04.4**	**-0.2**
JOM				S		**Sn**	**00**	**08**	**22.7**	**-0.6**
JMK	**Ichinoseki**	**1.50**	**257**	P		**Pn**	**00**	**08**	**05.9**	**+0.1**
JMK				*e*S		**Sb**	**00**	**08**	**25.6**	**-0.2**
JIO	**Ouri**	**1.60**	**239**	P		**Pn**	**00**	**08**	**07.1**	**-0.1**
JIO				*e*S		**Sn**	**00**	**08**	**27.1**	**-0.8**
JANG	**Nango**	**1.63**	**312**	P		**Pn**	**00**	**08**	**06.7**	**-0.9**
JRG	**Rokugo**	**1.91**	**274**	P		**Pb**	**00**	**08**	**12.9**	**-0.9**
JAH	**Hinai**	**2.10**	**296**	P		**Pn**	**00**	**08**	**14.9**	**+0.9**
JAH				*e*S		**Sb**	**00**	**08**	**42.4**	**-0.7**
JOU	**Okura**	**2.11**	**245**	P		**Pb**	**00**	**08**	**15.7**	**-1.5**
JOU				*e*S		**Sb**	**00**	**08**	**42.9**	**-0.7**
JTM	**Tenmabayashi**	**2.16**	**314**	P		**Pn**	**00**	**08**	**15.1**	**+0.3**
JTM				*e*S		**Sb**	**00**	**08**	**43.4**	**-1.4**
JYK	**Kaneyama**	**2.16**	**261**	P		**Pb**	**00**	**08**	**16.4**	**-1.7**
JMM	**Marumori**	**2.30**	**232**	P		**Pn**	**00**	**08**	**17.5**	**+0.7**
MAT	**Matsushiro**	**4.74**	**236**	P		**Pn**	**00**	**08**	**53.7**	**+3.3**
MAT				*e*S		**Sn**	**00**	**09**	**48.6**	**+3.1**
MJAR	**Matsushiro Arr**	**4.74**	**236**	P		**Pn**	**00**	**08**	**53.4**	**+3.0**
	3.1nm,0.3s,baz=37,slow=13,SNR=43									
JHJ	**Hachijo jima 2**	**6.72**	**204**	P		**Pn**	**00**	**09**	**18.1**	**+0.6**
	7.5nm,0.3s,baz=90,slow=20,SNR=3.3									
JHJ				S		**Sn**	**00**	**10**	**29.2**	**-5.0**
	7.8nm,0.3s,baz=49,slow=19,SNR=3.3									
USRK	**Ussuriysk Ar.**	**9.64**	**304**	P		Pn	00	10	01.9	+4.3
	0.7nm,0.3s,baz=102,slow=13,SNR=8.9									
**KS

MANT				S		Sg	00 14 57.3	-1.7	
KULA	Kula-Manisa	1.03	147	*e*PG		Pg	00 14 46.3	0.0	
KULA	Kula-Manisa	1.03	147	*e*Pg		Pg	00 14 46.3	0.0	
IZM	Izmir	1.11	209	*e*PN		Pg	00 14 47.9	0.0	
IZM	Izmir	1.11	209	*e*Pn		Pg	00 14 47.9	0.0	
KRBG	Karabiga-Canak	1.13	334	*e*Pn		Pg	00 14 47.7	-0.6	
KRBG	Karabiga-Canak	1.13	334	*e*Pn		Pg	00 14 47.7	-0.6	
TVSB	Tavsanli	1.18	86	*e*Pn		Pg	00 14 48.7	-0.5	
TVSB	Tavsanli	1.18	86	*e*Pn		Pg	00 14 48.7	-0.5	
GEDZ	Gediz	1.19	106	*e*Pn		Pg	00 14 49.0	-0.3	
GEDZ	Gediz	1.19	106	*e*Pn		Pg	00 14 49.0	-0.3	
GDZ	Gediz	1.23	103	*i* P		Pg	00 14 50.0	-0.1	
GDZ				*i* S		Sb	00 15 06.4	+0.3	
GDZ	Gediz	1.23	103	P		Pg	00 14 50.0	-0.1	
GDZ				S		Sb	00 15 06.4	+0.3	
MDNY	Mudanya-Bursa	1.23	36	*e*PN		Pb	00 14 50.0	0.0	
MDNY	Mudanya-Bursa	1.23	36	*e*Pn		Pb	00 14 50.0	0.0	
MRMT	Marmara Adasi	1.25	348	*e*Pn		Pn	00 14 49.8	-0.6	
MRMT	Marmara Adasi	1.25	348	*e*Pn		Pn	00 14 49.8	-0.6	
EZN	Ezine	1.33	290	*e*PN		Pn	00 14 51.6	+0.3	
EZN	Ezine	1.33	290	*e*Pn		Pn	00 14 51.6	+0.3	
ARMT	Armutlu	1.38	30	*e*PN		Pb	00 14 52.7	+0.1	
ARMT	Armutlu	1.38	30	*e*Pn		Pb	00 14 52.7	+0.1	
AYDB	Zeytinkoy-Aydi	1.43	182	*e*PN		Pn	00 14 52.9	+0.1	
AYDB	Zeytinkoy-Aydi	1.43	182	*e*Pn		Pn	00 14 52.9	+0.1	
RKY	Sarkoy-Tekirda	1.44	336	*e*PN		Pn	00 14 52.7	-0.2	
RKY	Sarkoy-Tekirda	1.44	336	*e*Pn		Pn	00 14 52.7	-0.2	
IZI	Iznik	1.52	50	*e*PN		Pn	00 14 54.1	+0.1	
IZI	Iznik	1.52	50	*e*Pn		Pn	00 14 54.1	+0.1	
GELI	Tayfur-Gelibol	1.52	313	*e*PN		Pn	00 14 54.1	+0.1	
GELI	Tayfur-Gelibol	1.52	313	*e*Pn		Pn	00 14 54.1	+0.1	
SIGR	SIGRI	1.63	265	*e*PN		Pn	00 14 55.3	-0.1	
SIGR	SIGRI	1.63	265	*e*Pn		Pn	00 14 55.3	-0.1	
ERIK	Erikli-Kesan	1.70	320	*e*PN		Pn	00 14 56.8	+0.4	
ERIK	Erikli-Kesan	1.70	320	*e*Pn		Pn	00 14 56.8	+0.4	
ADVT	Abdulvahap	1.74	52	*e*PN		Pn	00 14 57.4	+0.4	
ADVT	Abdulvahap	1.74	52	*e*Pn		Pn	00 14 57.4	+0.4	
CHOS	Chios island	1.77	237	*e*PN		Pn	00 14 57.9	+0.4	
CHOS	Chios island	1.77	237	*e*Pn		Pn	00 14 57.9	+0.4	
CTKS	Kestanelik-??a	1.91	13	*e*PN		Pn	00 14 59.6	+0.3	
CTKS	Kestanelik-??a	1.91	13	*e*Pn		Pn	00 14 59.6	+0.3	
ENEZ	Enez	1.93	315	*e*PN		Pn	00 15 00.1	+0.5	
ENEZ	Enez	1.93	315	*e*Pn		Pn	00 15 00.1	+0.5	
HRT	Hereke	1.96	42	*e*PN		Pn	00 14 59.6	-0.5	
HRT	Hereke	1.96	42	*e*Pn		Pn	00 14 59.6	-0.5	
BORA	Eskisehir	2.00	75	*i* P		Pg	00 15 04.3	-0.7	
BORA				*i* S		Sg	00 15 32.0	+1.0	
BORA	Eskisehir	2.00	75	P		Pg	00 15 04.3	-0.7	
KLYT	Kilyos	2.06	24	*e*PN		Pn	00 15 02.0	+0.7	
KLYT	Kilyos	2.06	24	*e*Pn		Pn	00 15 02.0	+0.7	
ALN	Alexandroupoli	2.10	317	*e*PN		Pn	00 15 02.9	+0.9	
ALN	Alexandroupoli	2.10	317	*e*Pn		Pn	00 15 02.9	+0.9	
GULT	Gulveren	2.24	61	*e*PN		Pn	00 15 04.6	+0.6	
GULT	Gulveren	2.24	61	*e*Pn		Pn	00 15 04.6	+0.6	

CSEM ***16*** *00:20:12.9±0.4,38.78N×40.30E,h8km,MD2.7,Error ellipse: s-maj=10.3km s-min=7.2km az=35.0*
ISK ***16*** *00:20:12.1,38.81N×40.36E,h5km,MD2.7*
DDA ***16*** *00:20:13.3,38.82N×40.26E,h7km,Md2.8*
ISC 16 00:20:13.4±1.0,38.82N±0.03×40.30E±0.03,h17km±9km**, n19,σ1.509/29,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BINT	**Bingol**	**0.16**	**70**	*e*Pg	**Pg**	**00 20 18.8**	**+1.0**
BNGB	**Bing¶ll**	**0.34**	**60**	*e*PG	**Pg**	**00 20 18.8**	**-1.9**
YEDI	**Yedisu-Bingol**	**0.64**	**17**	*e*PG	**Pg**	**00 20 24.9**	**-1.3**
YEDI	**Yedisu-Bingol**	**0.64**	**17**	*e*Pg	**Pg**	**00 20 24.9**	**-1.3**
TNCL	**Tunceli-Merkez**	**0.66**	**296**	*i* P	**Pg**	**00 20 25.3**	**-1.1**
TNCL				*i* S	**Sg**	**00 20 34.7**	**-0.6**
TNCL	**Tunceli-Merkez**	**0.66**	**296**	P	**Pg**	**00 20 25.3**	**-1.1**
TNCL				S	**Sg**	**00 20 34.7**	**-0.6**
BNGL	**BINGOL**	**0.68**	**79**	*i* P	**Pb**	**00 20 26.8**	**0.0**
BNGL				*i* S	**Sb**	**00 20 37.2**	**+1.3**
PTK	**Pertek**	**0.71**	**276**	*e*PG	**Pb**	**00 20 27.2**	**-0.3**
PTK				*e*SG	**Sb**	**00 20 38.0**	**+1.0**
PTK	**Pertek**	**0.71**	**276**	*e*Pg	**Pb**	**00 20 27.2**	**-0.3**
PTK				*e*Sg	**Sb**	**00 20 38.0**	**+1.0**
ERZN	**Erzincan**	**0.89**	**330**	*e*PG	**Pg**	**00 20 30.1**	**-0.5**
SVAN	**Silvan-Diyarba**	**0.97**	**133**	*e*PG	**Pg**	**00 20 30.1**	**-2.2**
SVAN	**Silvan-Diyarba**	**0.97**	**133**	*e*Pg	**Pg**	**00 20 30.1**	**-2.2**
EUZM	**Uzumlu**	**1.00**	**332**	*i* P	**Pn**	**00 20 33.3**	**+0.6**
EUZM				*i* S	**Sb**	**00 20 46.1**	**+1.0**
EUZM	**Uzumlu**	**1.00**	**332**	P	**Pn**	**00 20 33.3**	**+0.6**
EUZM				S	**Sb**	**00 20 46.2**	**+1.0**
MAZI	**Mazidag**	**1.37**	**175**	*e*PN	**Pn**	**00 20 38.2**	**+0.5**
MAZI	**Mazidag**	**1.37**	**175**	*e*Pn	**Pn**	**00 20 38.2**	**+0.5**
KELT	**Kelkit**	**1.55**	**329**	*i* P	**Pb**	**00 20 42.1**	**+0.4**
KELT				*i* S	**Sg**	**00 21 02.8**	**-0.7**
KELT	**Kelkit**	**1.55**	**329**	P	**Pb**	**00 20 42.1**	**+0.4**
KELT				S	**Sg**	**00 21 02.8**	**-0.7**
MARD	**Mardin**	**1.55**	**166**	*i* P	**Pg**	**00 20 43.0**	**-0.4**
MARD				*i* S	**Sg**	**00 21 04.5**	**+0.9**

IDC ***16*** *00:26:09.0±0.3,33.90S×71.97W,h0km,mb5.2/21, mb1 5.3/23,mb1mx5.2/31,mbtmp5.2/23,ML5.6/2,MS5.9/17, Ms1 5.9/17,ms1mx5.8/21,Error ellipse: s-maj=18.0km s-min=11.0km az=80.0*
ISCJB ***16*** *00:26:11.4±0.8,33.85S±0.02×72.14W±0.03,h23km±5km, mb5.6/109,MS5.8/194,Error ellipse: s-maj=4.2km s-min=3.3km az=10.7*
GUC ***16*** *00:26:11.3±0.7,33.90S×72.10W,h26km±4km,ML5.7*
GCMT ***16*** *00:26:12.6±0.1,33.96S×72.19W,h24km,MW6.0/127, Moment Tensor Solution. s125,c259; s127,c395; Duration: 2s3 Moment tensor: Scale 10¹⁸Nm; Mrr0.67±.01; Mθθ0.02±.01; Mϕϕ-0.69±.01; Mrθ0.12±.01; Mθϕ-0.05±.00; Mϕr-0.80±.01; Best double couple: Mo1.06000×10¹⁸ NP1:ϕs174.00000°,δ70.00000°, λ83.00000°. NP2:ϕs14.00000°,δ21.00000°,λ108.00000°. Principal axes: T 1.0570, Plg64.0000°, Azm73.0000°; N 0.0060, Plg6.0000°, Azm177.0000°; P -1.0620, Plg25.0000°, Azm269.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
NEIC ***16*** *00:26:12.6±0.1,33.82S×71.83W,h20km,mb5.8/61, ME5.6,MS5.8/153,MW6.0,MW5.9,ML5.7(GUC) Error ellipse: s-maj=4.7km s-min=3.1km az=76.0,Moment Tensor Solution. s72 Moment tensor: Scale 10¹⁷Nm; Mrr4.17; Mθθ1.86; Mϕϕ-6.03; Mrθ1.26; Mθϕ-0.65; Mϕr-5.25; Best double couple: Mo7.60000×10¹⁷ NP1:ϕs168.00000°, δ69.00000°,λ74.00000°. NP2:ϕs28.00000°,δ26.00000°, λ126.00000°. Principal axes: T 6.8000, Plg62.0000°, Azm54.0000°; N 1.4500, Plg15.0000°, Azm174.0000°; P -8.2500, Plg23.0000°, Azm271.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Felt [VI] at Colbun and Linares; [V] at Constitucion, Curico, El Quisco, Iloca, La Estrella, Longavi, Maule, Navidad, Parral, Pelarco, Pichilemu, Romeral, San Antonio and Santo Domingo. Felt in central Chile from Ovalle to Concepcion. Also felt at Mendoza, San Juan and San Rafael, Argentina.
NEIC ***16*** *00:26:13.0±0.0,33.80S×72.07W,h21km Best double couple: NP1:ϕs169.00000°,δ70.00000°,λ77.00000°. NP2:ϕs23.00000°,δ24.00000°,λ121.00000°. Principal axes: T 1.1300, Plg63.0000°, Azm58.0000°; N 0.0700, Plg12.0000°, Azm173.0000°; P -1.1900, Plg23.0000°, Azm269.0000°;*
MOS ***16*** *00:26:13.8±0.8,33.81S×72.09W,h33km,mb5.7/35, MS5.7/33 Error ellipse: s-maj=19.4km s-min=10.0km az=109.9*
BJI ***16*** *00:26:13.8,33.80S×71.80W,h30km,mB5.7/55,Ms6.0/64, Ms7 5.9/64*
ISC 16 00:26:12.4±0.3,33.88S±0.02×72.10W±0.04,h20km±2km**, n1369,σ1.957/1365,mb5.7**/109**,MS5.8**/196**,35C-32D,Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.52**	**171**	⇑*i*P	**Pb**	**00 26 21.6**	**-1.2**
CHPI				*i* S	**Sb**	**00 26 29.4**	**-0.5**
CHPI	**Pichilemu**	**0.52**	**171**	⇓*i*P	**Pb**	**00 26 21.7**	**-1.1**

ANTU	**Antumapu**	**1.26**	**76**	⇓*i*P		**Pn**	**00 26 34.9**	**0.0**	
ANTU				IAML			00 26 54.5		
	comp=N,219μm,0.7s								
ANTU	**Antumapu**	**1.26**	**76**	IAML			00 26 54.5		
	comp=N,219μm,0.7s								
ROC1	**El Roble**	**1.28**	**46**	⇓*e*P		**Pb**	**00 26 35.7**	**-0.1**	
ROC1				*e*S		**Sb**	**00 26 56.1**	**+4.2**	
ROC1	**El Roble**	**1.28**	**46**	*e*Pn		**Pn**	**00 26 35.2**	**-0.1**	
ROCH	**El Roble**	**1.28**	**46**	⇓*i*P		**Pn**	**00 26 35.4**	**+0.1**	
ROCH				*i* S		**Sb**	**00 26 54.4**	**+2.3**	
ROCH				IAML			00 27 04.4		
	comp=N,186μm,0.8s								
ROCH	**El Roble**	**1.28**	**46**	*i* P		**Pn**	**00 26 35.5**	**+0.1**	
ROCH				*i* S		**Sb**	**00 26 53.0**	**+1.0**	
ROCH				IAML			00 27 04.4		
	comp=N,186μm,0.8s								
NICH	**Los Niches**	**1.33**	**148**	*e*P		**Pn**	**00 26 34.9**	**-0.9**	
NICH				*i* S		**Sb**	**00 26 53.6**	**+0.3**	
NICH	**Los Niches**	**1.33**	**148**	*i* P		**Pn**	**00 26 34.2**	**-1.6**	
NICH				*i* S		**Sn**	**00 26 50.9**	**-2.1**	
FSR	**Penalolen**	**1.37**	**74**	⇑*i*P		**Pb**	**00 26 36.9**	**-0.5**	
FSR				*i* S		**Sb**	**00 26 55.2**	**+0.8**	
FSR	**Penalolen**	**1.37**	**74**	*i* P		**Pn**	**00 26 34.9**	**-1.4**	
FSR				*i* S		**Sn**	**00 26 51.7**	**-2.2**	
CLCH	**Cerro Calan**	**1.39**	**70**	*e*P		**Pn**	**00 26 36.8**	**+0.1**	
CLCH				*i* S		**Sb**	**00 26 56.0**	**+1.0**	
CLCH				IAML			00 27 07.4		
	comp=E,273μm,0.5s								
CLCH	**Cerro Calan**	**1.39**	**70**	*i* P		**Pn**	**00 26 35.4**	**-1.2**	
CLCH				*i* S		**Sn**	**00 26 52.9**	**-1.5**	
CLCH				IAML			00 27 07.4		
	comp=E,273μm,0.5s								
PEL	**Peldehue**	**1.39**	**59**	*e*P		**Pn**	**00 26 36.8**	**+0.2**	
PEL				*e*S		**Sb**	**00 26 55.7**	**+0.8**	
PEL				IAML			00 27 05.2		
	comp=E,238μm,0.3s								
PEL	**Peldehue**	**1.39**	**59**	*i* P		**Pn**	**00 26 36.3**	**-0.3**	
PEL				*i* S		**Sn**	**00 26 53.9**	**-0.5**	
PEL				IAML			00 27 05.2		
	comp=E,238μm,0.3s								
PEL	**Peldehue**	**1.39**	**59**	P		**Pn**	**00 26 36.8**	**+0.2**	
TALC	**Talca**	**1.57**	**166**	⇑*i*P		**Pn**	**00 26 38.7**	**-0.3**	
TALC	**Talca**	**1.57**	**166**	*i* P		**Pn**	**00 26 39.0**	**0.0**	
TALC				*i* S		**Sn**	**00 26 58.9**	**+0.2**	
FCH	**Farellones**	**1.61**	**71**	⇓*i*P		**Pn**	**00 26 40.6**	**+0.7**	
FCH				*i* S		**Sb**	**00 27 03.2**	**+1.7**	
FCH				IAML			00 27 06.2		
	comp=N,94μm,1.0s								
FCH	**Farellones**	**1.61**	**71**	*i* S		**Sn**	**00 27 00.1**	**-0.1**	
COCH	**Cobquecura**	**2.32**	**194**	⇓*i*P		**Pn**	**00 26 48.0**	**-1.3**	
COCH				*i* S		**Sn**	**00 27 17.8**	**+0.5**	
CCHI	**Chillan**	**2.72**	**180**	*e*P		**Pn**	**00 26 55.7**	**+0.8**	
CCHI				*e*S		**Sn**	**00 27 29.6**	**+2.4**	
CCHI				IAML			00 27 49.1		
	comp=E,83μm,0.5s								
CCHI	**Chillan**	**2.72**	**180**	*i* P		**Pn**	**00 26 56.3**	**+1.4**	
CCHI				*i* S		**Sb**	**00 27 31.2**	**-2.1**	
ARCO	**CERRO ARCO**	**2.84**	**70**	*e*P		**Pb**	**00 27 00.5**	**-2.1**	
ARCO				IAML			00 27 09.6		
	comp=Z,20μm,0.5s								
AAGR	**Agrelo**	**2.85**	**75**	*e*P		**Pb**	**00 27 00.3**	**-2.3**	
RTLS	**Leoncito**	**3.14**	**50**	⇓*e*P		**Pn**	**00 27 04.0**	**+3.1**	
RTCV	**Cerro Valdivia**	**3.61**	**57**	*e*P		**Pn**	**00 27 09.9**	**+2.8**	
SJA	**San Juan**	**3.79**	**53**	⇓*e*P		**Pn**	**00 27 13.0**	**+3.3**	
SJA				IAML			00 28 26.9		
	comp=Z,6μm,0.7s								
RTLL	**Cerro Villicun**	**3.98**	**51**	⇓*e*P		**Pn**	**00 27 14.4**	**+2.2**	
CANA	**Caviahue**	**4.09**	**168**	⇓*e*P		Pb	00 27 19.1	-4.7	
ACCO	**Cerro Coronel**	**4.17**	**39**	⇓*e*P		**Pn**	**00 27 18.6**	**+3.6**	
ACCO				IAML			00 28 25.8		
	comp=Z,6μm,0.4s								
AMOG	**MOGNA**	**4.23**	**47**	*e*P		**Pn**	**00 27 18.2**	**+2.5**	
ACAN	**Cantantal**	**4.42**	**70**	*e*P		**Pn**	**00 27 20.9**	**+2.6**	
ACDV	**Cuesta del Vie**	**4.48**	**35**	*e*P		**Pn**	**00 27 21.8**	**+2.6**	
LCO	**Las Campanas**	**5.00**	**14**	*e*P		**Pn**	**00 27 26.1**	**-0.3**	
LCO	**Las Campanas**	**5.00**	**14**	*e*Pn		**Pn**	**00 27 25.6**	**-0.8**	
LCO				*e*Sn		**Sn**	**00 28 20.2**	**-3.5**	
AVFE	**Valle Fertil**	**5.08**	**52**	*e*P		**Pn**	**00 27 28.9**	**+1.5**	
AVFE				*e*S		**Sb**	**00 28 35.7**	**-5.4**	
AVFE				IAML			00 28 45.0		
	comp=Z,5μm,0.6s								
ACHE	**Chepes**	**5.33**	**61**	*e*P		**Pn**	**00 27 31.9**	**+1.0**	
SUCO	**SUCO**	**6.04**	**87**	IAML			00 27 58.8		
	comp=Z,1μm,0.5s								
VCA	**Vinchina**	**6.11**	**34**	IAML			00 29 24.4		
	comp=Z,5μm,0.6s								
TCA	**Tanti**	**6.82**	**70**	IAML			00 29 53.5		
	comp=Z,2μm,0.7s								
PLCA	**Paso Flores**	**6.96**	**170**	*e*P		**Pn**	**00 27 55.2**	**+2.0**	
PLCA	**Paso Flores**	**6.96**	**170**	Pn		**Pn**	**00 27 53.8**	**+0.6**	
	comp=Z,24nm,0.3s,baz=358,slow=12,SNR=201								
PLCA				Lg		Lg	00 29 48.5		
	comp=Z,12nm,0.3s,baz=293,slow=22,SNR=4.5								
PLCA				LR		LR	00 30 56.8		
	comp=Z,73μm,20.4s,baz=12,slow=42								
CYA	**Choya**	**7.64**	**47**	IAML			00 29 45.1		
	comp=Z,1μm,0.7s								
AHML	**Horco Molle**	**9.17**	**41**	IAML			00 30 22.5		
	comp=Z,502nm,0.7s								
TRQA	**Tornquist**	**9.20**	**120**	*e*P		**Pn**	**00 28 25.1**	**+1.1**	
TRQA				IAML			00 31 18.9		
	comp=Z,3μm,0.7s								
TRQA	**Tornquist**	**9.20**	**120**	*e*Pn		**Pn**	**00 28 24.2**	**+0.3**	
FSA	**Cafayete**	**9.38**	**36**	IAML			00 30 36.5		
	comp=Z,420nm,0.8s								
PB10	**IPOC Station P**	**10.41**	**8**	*e*Pn		**Pn**	**00 28 38.2**	**-2.3**	
AZAP	**Zapla**	**11.41**	**34**	*e*P		**Pn**	**00 28 55.4**	**+0.9**	
LVC	**Limon Verde**	**11.57**	**15**	Pn		Pn	00 28 51.7	-5.0	
	comp=Z,141nm,0.3s,baz=200,slow=8.0,SNR=58								
LVC				LR		LR	00 33 41.5		
	comp=Z,350μm,18.3s,baz=208,slow=39								
HJA	**Humahuaca**	**12.14**	**31**	IAML			00 30 12.4		
	comp=Z,65nm,0.7s								
CHRN	**Cochrane**	**13.37**	**181**	*e*Pn		**Pn**	**00 29 20.3**	**-0.5**	
PB11	**IPOC Station P**	**14.23**	**9**	*e*Pn		**Pn**	**00 29 30.0**	**-2.9**	
CPUP	**Villa Florida**	**14.82**	**63**	*e*P		Pn	00 29 35.3	-5.5	
CPUP	**Villa Florida**	**14.82**	**63**	Pn		Pn	00 29 35.6	-5.2	
	comp=Z,0.8nm,0.3s,baz=228,slow=11,SNR=12								
CPUP				LR		LR	00 35 48.4		
	comp=Z,83μm,20.2s,baz=240,slow=39								
CPUP	**Villa Florida**	**14.82**	**63**	*e*Pn		Pn	00 29 35.7	-5.1	
LPAZ	**La Paz**	**17.88**	**13**	*e*P		**P**	**00 30 20.9**	**-0.1**	
LPAZ	**La Paz**	**17.88**	**13**	P		**P**	**00 30 21.0**	**-0.1**	
	comp=Z,8.1nm,0.3s,baz=194,slow=7.4,SNR=343								
LPAZ	**La Paz**	**17.88**	**13**	*e*P		**Pn**	**00 30 20.0**	**-0.5**	
LPAZ				*e*Pn		**Pn**	**00 30 19.9**	**-0.5**	
	comp=Z,220nm,0.9s			pmax		pmax			
LPAZ	**La Paz**	**17.88**	**13**	*e*Pn		**Pn**	**00 30 19.9**	**-0.5**	
	comp=Z,221nm,0.9s								
SIV	**San Ignacio**	**20.40**	**32**	P		**P**	**00 30 47.4**	**-0.7**	
	comp=Z,65nm,1.0s,baz=223,slow=9.5,SNR=115								
SIV				LR		LR	00 40 07.9		
	comp=Z,63μm,19.5s,baz=227,slow=41								
EFI	**East Falkland**	**20.49**	**154**	*ce*P		**P**	**00 30 48.6**	**-0.2**	
EFI				pmax		pmax			
	comp=Z,151nm,0.7s								
EFI	**East Falkland**	**20.49**	**154**	*e*P		**P**	**00 30 47.9**	**-0.9**	
	comp=Z,408nm,0.7s								
EFI				LR		LR			
	comp=Z,21μm,20.0s								
USHA	**Ushuaia**	**21.11**	**174**	P		**P**	**00 30 56.4**	**+0.9**	
	comp=Z,461nm,0.9s,baz=343,slow=9.4,SNR=19								
USHA				LR		LR	00 40 03.9		
	comp=Z,239μm,18.3s,baz=330,slow=40								
NNA	**Nana**	**22.21**	**348**	P		**P**	**00 31 08.4**	**+0.8**	
	comp=Z,36nm,0.9s,baz=190,slow=11,SNR=14								
NNA				LR		LR	00 37 56.2		
	comp=Z,8μm,18.7s,baz=170,slow=32								
NNA	**Nana**	**22.21**	**348**	*e*P		**P**	**00 31 08.2**	**+0.5**	
	comp=Z,171nm,1.2s								
SPB	**Sao Paulo**	**23.88**	**71**	*e*P		**P**	**00 31 23.3**	**-1.3**	
	comp=Z,501nm,0.9s								
SPB				LR		LR			
	comp=Z,165μm,19.0s								
SAML	**Samuel**	**26.13**	**20**	*e*P		**P**	**00 31 44.6**	**-0.5**	
	comp=Z,89nm,0.8s								
SAML				LR		LR			
	comp=Z,24μm,20.0s								
ATAH	**Atahualpa**	**27.24**	**346**	P		**P**	**00 31 57.4**	**+1.8**	
	comp=Z,7.3nm,0.7s,baz=192,slow=10,SNR=4.5								
ATAH				LR		LR	00 41 08.3		
	comp=Z,6μm,19.0s,baz=182,slow=33								
BDFB	**Brasilia**	**28.31**	**56**	P		**P**	**00 32 04.8**	**0.0**	
	comp=Z,73nm,0.8s,baz=258,slow=6.7								
BDFB				LR		LR	00 44 36.6		

	comp=Z,70μm,18.5s,baz=169,slow=39								
BDFB	**Brasilia**	**28.31**	**56**	*e*P		**P**	**00 32 04.9**	**+0.1**	
	comp=Z,234nm,1.0s								
HOPE	**Hope Point**	**32.22**	**140**	*e*P		**P**	**00 32 40.3**	**+1.4**	
	comp=Z,324nm,1.1s								
HOPE				LR		LR			
	comp=Z,10μm,20.0s								
RPN	**Rapa Nui**	**32.65**	**272**	PFAKE			00 33 00.0	+17	
RPN				LR		LR			
	comp=Z,9μm,20.0s								
OTAV	**Otavalo**	**34.45**	**349**	*e*P		**P**	**00 33 00.8**	**+1.6**	
	comp=Z,117nm,1.5s								
OTAV				*e*ScP		**ScP**	**00 39 18.7**	**+0.2**	
OTAV				LR		LR			
	comp=Z,9μm,20.0s								
PTGA	**Pitinga**	**34.88**	**22**	*e*P		**P**	**00 33 01.9**	**-0.5**	
	comp=Z,141nm,0.9s								
PTGA				LR		LR			
	comp=Z,34μm,20.0s								
CMBC	**Cumbal**	**35.05**	**350**	*e*P		**P**	**00 33 06.8**	**+2.5**	
CRUC	**La Cruz**	**35.55**	**352**	*e*P		**P**	**00 33 11.3**	**+2.7**	
POPC	**Popayan, Colom**	**36.48**	**352**	*e*P		**P**	**00 33 17.8**	**+1.4**	
SJAC	**San Juan de Ar**	**36.99**	**357**	*e*P		**P**	**00 33 21.9**	**+1.3**	
PAYG	**Puerto Ayora**	**37.17**	**329**	*es*P		**sP**	**00 33 33.3**	**+2.4**	
PAYG				LR		LR			
	comp=Z,11μm,20.0s								
PRAC	**Prado**	**37.48**	**355**	*e*P		**P**	**00 33 26.6**	**+1.9**	
PRAC	**Prado**	**37.48**	**355**	*e*P		**P**	**00 33 26.6**	**+1.9**	
	comp=Z,367nm,1.6s								
VILC	**Villavicencio,**	**37.81**	**357**	*e*P		**P**	**00 33 29.4**	**+1.7**	
CHIC	**Chingaza**	**38.33**	**357**	*e*P		**P**	**00 33 33.4**	**+1.1**	
TOLC	**Tolima**	**38.37**	**355**	*e*P		**P**	**00 33 37.0**	**+4.4**	
ROSC	**El Rosal**	**38.56**	**356**	P		**P**	**00 33 36.0**	**+1.7**	
	comp=Z,14nm,0.6s,baz=157,slow=5.9,SNR=13								
ROSC	**El Rosal**	**38.56**	**356**	*e*P		**P**	**00 33 36.2**	**+2.0**	
ROSC	**El Rosal**	**38.56**	**356**	*e*P		**P**	**00 33 35.0**	**+0.8**	
	comp=Z,33nm,0.8s								
GUYC	**Guyana, Colomb**	**39.01**	**355**	*e*P		**P**	**00 33 39.6**	**+1.6**	
NORC	**Norcasia**	**39.31**	**356**	*e*P		**P**	**00 33 42.2**	**+2.1**	
RUSC	**La Rusia**	**39.56**	**358**	*e*P		**P**	**00 33 44.0**	**+1.2**	
RUSC	**La Rusia**	**39.56**	**358**	*e*P		**P**	**00 33 43.1**	**+0.4**	
	comp=Z,393nm,1.7s								
HELC	**Santa Helena**	**39.98**	**355**	*e*P		**P**	**00 33 46.7**	**+0.7**	
HELC	**Santa Helena**	**39.98**	**355**	*e*P		**P**	**00 33 46.9**	**+0.9**	
	comp=Z,441nm,1.3s								
BARC	**Barichara**	**40.26**	**358**	*e*P		**P**	**00 33 47.2**	**-1.1**	
BRRC	**Barranca, Sant**	**40.79**	**358**	*e*P		**P**	**00 33 50.9**	**-1.4**	
DBBC	**Dabeiba**	**40.85**	**354**	*e*P		**P**	**00 33 55.3**	**+2.4**	
CBRI	**Barrientos, No**	**41.37**	**359**	*e*P		**P**	**00 33 56.5**	**-0.8**	
GRMC	**Gramalote, San**	**41.37**	**359**	*e*P		**P**	**00 33 55.4**	**-1.9**	
OCAC	**Ocana**	**41.90**	**358**	*e*P		**P**	**00 34 00.5**	**-1.1**	
SDV	**Santo Domingo**	**42.55**	**2**	*e*P		**P**	**00 34 06.7**	**-0.2**	
	comp=Z,63nm,0.9s								
SDV				LR		LR			
	comp=Z,10μm,19.0s								
RCBR	**Riachuelo**	**43.62**	**58**	*e*P		**P**	**00 34 14.5**	**-1.0**	
	comp=Z,356nm,1.8s								
RCBR				LR		LR			
	comp=Z,35μm,22.0s								
SJCC	**San Jacinto, C**	**43.63**	**356**	*e*P		**P**	**00 34 15.7**	**+0.1**	
URIC	**Uribia, Colomb**	**45.32**	**0**	*e*P		**P**	**00 34 26.3

SHEL Horse Pasture 61.80 91 eP P 00 36 29.2 -0.9
SHEL pmax pmax
comp=Z,102nm,0.9s
SHEL MLR MLR
comp=Z,3μm,20.0s
SHEL Horse Pasture 61.80 91 eP P 00 36 29.2 -0.9
comp=Z,102nm,0.9s
SHEL LR LR
comp=Z,3μm,20.0s
SBA Scott Base 63.19 192 eP P 00 36 39.7 +1.3
SBA pmax pmax
comp=Z,38nm,1.1s
SBA MLR MLR
comp=Z,2μm,20.0s
SBA Scott Base 63.19 192 eP P 00 36 39.7 +1.3
comp=Z,38nm,1.1s
SBA LR LR
comp=Z,2μm,20.0s
VNDA Vanda 64.21 191 P P 00 36 46.3 +1.2
comp=Z,4.2nm,0.8s,baz=124,slow=6.6,SNR=17
VNDA LR LR 00 59 07.7
comp=Z,2μm,21.8s,baz=134,slow=31
VNDA PKP2bc 01 05 35.8
comp=Z,3.7nm,1.1s,baz=316,slow=5.2,SNR=6.2
VNDA Vanda 64.21 191 eP P 00 36 46.5 +1.4
comp=Z,28nm,1.1s
VNDA ⇑e 01 05 35.8
035Z Hargill 64.88 334 P P 00 36 52.0 +2.0
baz=156
035A Encino 65.32 334 P P 00 36 54.7 +1.8
baz=156,SNR=11
034A Hebbronville 65.65 334 P P 00 36 56.7 +1.6
baz=156,SNR=15
KVTX Kingsville 65.80 335 eP P 00 36 56.7 +0.7
comp=Z,57nm,0.6s
KVTX LR LR
comp=Z,3μm,19.0s
TIGA Tifton 65.86 349 P P 00 36 56.0 -0.3
baz=169,SNR=8.3
TIGA Tifton 65.86 349 eP P 00 36 56.0 -0.3
comp=Z,68nm,0.8s
SYO Syowa Base 66.00 159 eP P 00 36 55.0 -1.8
447A Lucedale 66.20 344 P P 00 36 59.4 +0.9
baz=165
BRAL Brewton 66.22 346 eP P 00 36 58.8 +0.2
comp=Z,77nm,1.0s
BRAL LR LR
comp=Z,1μm,19.0s
BBSR BB Station 66.26 7 PFAKE 00 37 10.0 +11
BBSR LR LR
comp=Z,2μm,20.0s
446A Poplarville 66.35 344 P P 00 37 01.0 +1.5
baz=164,SNR=5.3
933A Laredo 66.36 334 P P 00 37 01.1 +1.4
baz=155,SNR=11
737A Port Lavaca 66.43 337 P P 00 37 01.7 +1.8
baz=158
835A Beeville 66.46 335 P P 00 37 02.2 +2.0
baz=157
445A Amite 66.53 343 P P 00 37 02.2 +1.7
baz=163
834A Tilden 66.56 335 P P 00 37 02.8 +1.9
baz=156,SNR=16
444A Pine Grove 66.61 343 P P 00 37 02.5 +1.3
baz=163
541A Lake Charles 66.64 340 P P 00 37 03.2 +1.8
baz=161
638A Rosharon 66.72 338 P P 00 37 04.2 +2.4
baz=159
347A Saraland 66.75 345 P P 00 37 02.8 +0.8
baz=165,SNR=11
736A Circle Diamond 66.81 336 P P 00 37 04.6 +2.2
baz=157,SNR=15
TAOE Nuku Hiva Isla 66.91 275 eS S 00 45 53.6 -2.3
comp=Z,9μm,24.9s
TAOE Nuku Hiva Isla 66.91 275 eLR LR 00 57 15.7
comp=Z,9μm,21.6s,baz=131
346A Big Creek Wild 66.95 344 P P 00 37 04.0 +0.7
baz=164,SNR=7.3
735A Kenedy 66.97 336 P P 00 37 05.1 +1.6
baz=157,SNR=6.3
345A Thompson Farm, 67.01 343 P P 00 37 04.6 +1.0
baz=164
637A Eagle Lake 67.02 337 P P 00 37 05.4 +1.7
baz=158
SACV Santiago Islan 67.02 52 PFAKE 00 37 20.0 +16
SACV LR LR
comp=Z,3μm,19.0s
833A Chaparral WMA, 67.05 334 P P 00 37 05.0 +1.0
baz=155,SNR=19
NHSC New Hope 67.06 353 eP P 00 37 04.1 +0.2
comp=Z,230nm,1.2s
NHSC LR LR
comp=Z,2μm,19.0s
539A Cross D Ranch, 67.14 339 P P 00 37 06.4 +1.9
baz=160
734A La Parita Cree 67.22 335 P P 00 37 06.2 +1.1
baz=156
832A Faith Ranch, C 67.23 333 P P 00 37 06.0 +0.8
baz=155,SNR=14
248A Dixon Mills 67.25 346 P P 00 37 05.6 +0.4
baz=166,SNR=7.7
636A Smothers Creek 67.29 336 P P 00 37 07.3 +1.8
baz=158,SNR=18
441A DeRidder 67.29 340 P P 00 37 06.9 +1.4
baz=161
TBI Tubuai 67.30 256 eP P 00 37 07.9 +2.0
comp=Z,196nm,1.2s
TBI eS S 00 45 57.6 -2.6
comp=Z,9μm,28.8s
TBI Tubuai 67.30 256 eLR LR 00 57 28.8
comp=Z,22μm,26.2s,baz=121
TBI Tubuai 67.30 256 eT T 01 50 20.0
comp=Z,9.1nm,0.3s
344A Westbrook Farm 67.31 343 P P 00 37 07.0 +1.4
baz=163
733A Divot King Ran 67.37 334 P P 00 37 06.7 +0.7
baz=156,SNR=6.9
247A Quitman 67.40 345 P P 00 37 06.7 +0.6
baz=165,SNR=7.2
635A Leesville 67.45 336 P P 00 37 07.2 +0.7
baz=157
246A Jackson Lee, B 67.47 344 P P 00 37 07.3 +0.7
baz=164
538A Harpers Horsep 67.48 338 P P 00 37 08.3 +1.7
baz=159
440A Kirbyville 67.51 340 P P 00 37 08.3 +1.5
baz=160
SLBS Sierra La Lagu 67.62 323 eP P 00 37 07.0 -0.8
comp=Z,61nm,1.2s
634A China Grove, S 67.64 335 P P 00 37 08.2 +0.5
baz=156
342A Flagon Creek P 67.65 341 P P 00 37 09.0 +1.3
baz=162,SNR=10
245A Little AP, Sta 67.67 344 P P 00 37 08.7 +0.8
baz=164,SNR=8.6
GOGA Godfrey 67.78 350 eP P 00 37 08.0 -0.5
GOGA pmax pmax
comp=Z,65nm,1.2s
GOGA Godfrey 67.78 350 eP P 00 37 08.0 -0.5
comp=Z,65nm,1.2s
GOGA LR LR
comp=Z,3μm,22.0s
439A Center Grove, 67.79 339 P P 00 37 09.8 +1.2
baz=160,SNR=5.9
341A Kurthwood 67.84 341 P P 00 37 10.0 +1.1
baz=161,SNR=12
536A Bastrop 67.84 337 P P 00 37 10.1 +1.1
baz=158
244A Avery, Jackson 67.86 343 P P 00 37 10.1 +1.1
baz=163,SNR=12
243A Waterproof 67.91 342 P P 00 37 10.4 +1.1
baz=162
147A Livingston 67.92 345 P P 00 37 09.6 +0.2
baz=165,SNR=5.9
438A Sam Houston St 67.96 338 P P 00 37 11.2 +1.5
baz=159
535A Dale 67.97 336 P P 00 37 10.5 +0.7
baz=157,SNR=8.1
VBMS Vicksburg 67.99 343 P P 00 37 10.8 +0.9
baz=163
633A Saathoff Ranch 68.00 335 P P 00 37 11.0 +1.0
baz=156,SNR=17
LRAL Lakeview Retre 68.02 347 eP P 00 37 09.9 -0.1
comp=Z,40nm,1.1s
146A Union 68.06 345 P P 00 37 11.2 +0.9
baz=165,SNR=9.4
340A Bronson 68.12 340 P P 00 37 11.6 +0.9
baz=160
145A Houston Renfro 68.22 344 P P 00 37 12.4 +1.1
baz=164
339A Huntington 68.23 339 P P 00 37 12.5 +1.1
baz=160,SNR=7.6
437A Phantom Ranch, 68.24 338 P P 00 37 12.6 +1.2
baz=158
242A 68.25 342 P P 00 37 12.9 +1.4
baz=162,SNR=12
534A Blanco 68.27 335 P P 00 37 11.9 +0.2
baz=156,SNR=8.3
HPIG 68.35 328 eP P 00 37 13.1 +0.6
Z47A Carrollton 68.39 346 P P 00 37 12.5 +0.2
baz=166,SNR=18
436A Wall Ranch, Ga 68.40 337 P P 00 37 13.4 +1.0
baz=158
241A Mo Tay, Goldon 68.42 341 P P 00 37 13.8 +1.2
baz=161
Z48A Northport 68.46 346 P P 00 37 12.7 -0.1
baz=166,SNR=16
338A Crockett 68.48 339 P P 00 37 14.6 +1.6
baz=159,SNR=10
533A Kerrville 68.51 335 P P 00 37 14.0 +0.8
baz=156,SNR=17
Z46A Louisville 68.57 345 P P 00 37 14.5 +1.1
baz=165,SNR=22
337A Centerville 68.62 338 P P 00 37 15.3 +1.5
baz=159
NATX Nacogdoches 68.66 339 P P 00 37 15.2 +1.1
baz=160,SNR=5.9
NATX Nacogdoches 68.66 339 eP P 00 37 15.6 +1.5
NATX LR LR
comp=Z,2μm,19.0s
435B Jarrell 68.67 337 P P 00 37 14.8 +0.7
baz=157,SNR=5.3
240A Hunter Patters 68.67 340 P P 00 37 15.4 +1.4
baz=161,SNR=6.4
143A Socs Landing, 68.67 343 P P 00 37 14.9 +0.8
baz=163,SNR=12
MEH Mehetia 68.81 262 eT T 01 52 14.6
comp=Z,40nm,0.2s
239A Gary 68.85 340 P P 00 37 16.1 +0.9
baz=160,SNR=9.6
Z45A Winona 68.91 344 P P 00 37 16.3 +0.7
baz=164,SNR=8.0
434A Burnet 68.92 336 P P 00 37 16.2 +0.4
baz=157,SNR=24
141A Papa Simpson, 68.97 341 P P 00 37 16.8 +0.8
baz=161,SNR=5.2
CNNC Cliffs of the 68.97 355 eP P 00 37 16.5 +0.6
CNNC LR LR
comp=Z,3μm,19.0s
336A Riesel 68.98 337 P P 00 37 16.7 +0.6
baz=158,SNR=11
Z44A Pea Ridge, Bel 68.99 344 P P 00 37 16.9 +0.8
baz=164,SNR=8.1
238A Jacksonville 69.03 339 P P 00 37 17.3 +1.0
baz=159
Y47A UCPARC, Winfie 69.03 346 P P 00 37 16.5 +0.2
baz=166,SNR=45
335A Moody 69.07 337 P P 00 37 17.2 +0.5
baz=158,SNR=6.9
Z43A Armstrong Fami 69.12 343 P P 00 37 17.1 +0.3
baz=163
433A Art 69.15 335 P P 00 37 17.8 +0.6
baz=156,SNR=39
JCT Junction City 69.15 335 P P 00 37 18.0 +0.7
baz=155,SNR=25
JCT Junction City 69.15 335 eP P 00 37 17.9 +0.7
JCT Junction City 69.15 335 eP P 00 37 17.9 +0.7
JCT LR LR
comp=Z,1μm,20.0s
140A Cam and Jess, 69.18 341 P P 00 37 18.4 +1.1
baz=161,SNR=5.7
KMSC Kings Mountain 69.20 352 P P 00 37 17.1 -0.2
baz=172,SNR=12
KMSC Kings Mountain 69.20 352 eP P 00 37 17.2 -0.1
Y46A Houston 69.22 345 P P 00 37 17.6 +0.1
baz=165,SNR=24
237A Washetta, Mont 69.23 339 P P 00 37 18.8 +1.2
baz=159,SNR=8.8
Y45A Yeager Farm, C 69.35 345 P P 00 37 19.1 +0.8
baz=164,SNR=18
Z42A Norrel Spur, H 69.35 342 P P 00 37 18.8 +0.5
baz=162
334A Lometa 69.39 336 P P 00 37 19.2 +0.6
baz=157,SNR=13
139A Bunkhouse Ranc 69.45 340 P P 00 37 19.7 +0.8
baz=160
Z41A Richland Creek 69.56 342 P P 00 37 20.1 +0.5
baz=162,SNR=9.8
Y44A Strider, Charl 69.59 344 P P 00 37 20.0 +0.3
baz=164
TX31 Lajitas Ar. Si 69.60 331 eP P 00 37 20.9 +0.8
TXAR Lajitas Array 69.60 331 P P 00 37 21.0 +0.9
comp=Z,4.8nm,0.5s,baz=156,slow=8.5,SNR=102
TXAR LR LR 01 03 46.6
comp=Z,9μm,18.2s,baz=0.0,slow=32
TXAR PKP2bc 01 05 26.3
comp=Z,1.1nm,1.0s,baz=238,slow=1.7,SNR=4.7
138A Matatall Enter 69.63 339 P P 00 37 21.2 +1.1
baz=160,SNR=1.9
333A Richland Sprin 69.63 336 P P 00 37 20.4 +0.3
baz=156,SNR=11
Y43A Makayla and Ka 69.71 343 P P 00 37 21.2 +0.6
baz=163,SNR=7.8
Z40A Long Farm, Mag 69.72 341 P P 00 37 21.5 +0.9
baz=161
WHTX Lake Whitney, 69.74 337 P P 00 37 21.1 +0.4
baz=158,SNR=16
WHTX Lake Whitney, 69.74 337 eP P 00 37 21.3 +0.6
137A Heron Place, G 69.77 339 P P 00 37 21.9 +1.0
baz=155,SNR=9.9
TVO Taravao 69.84 262 eT T 01 53 30.1
comp=Z,1.7nm,0.3s
Y42A Garnett, Star 69.85 343 P P 00 37 21.8 +0.4
baz=162
X45A UM Field Stati 69.85 345 P P 00 37 21.2 -0.2
baz=165,SNR=21
136A Ennis 69.89 338 P P 00 37 22.2 +0.5
baz=158,SNR=5.1
Z39A Irene McRaven, 69.92 340 P P 00 37 22.7 +0.9
baz=160
CCAR Cane Creek 69.92 343 eP P 00 37 23.1 +1.3
CPCT Cooper Cave 69.94 349 eP P 00 37 21.7 -0.2
OXF Oxford 69.94 345 eP P 00 37 21.7 -0.2
OXF pmax pmax
comp=Z,194nm,1.0s
OXF Oxford 69.94 345 eP P 00 37 21.7 -0.2
comp=Z,194nm,1.0s
SWET Sewanee 69.94 348 eP P 00 37 22.1 +0.1
234A Lairette 69.97 337 P P 00 37 22.6 +0.4
baz=157,SNR=13
TKL Tuckaleechee C 70.03 350 P P 00 37 22.0 -0.5
comp=Z,37nm,1.0s,baz=165,slow=7.1,SNR=22
TKL Tuckaleechee C 70.03 350 eP P 00 37 22.1 -0.4
WLAR White Oak Lake 70.05 341 eP P 00 37 24.1 +1.5
X44A Crenshaw 70.09 344 P P 00 37 22.7 -0.1
baz=164,SNR=7.3
Y41A Eaglette Beard 70.10 342 P P 00 37 23.7 +0.8
baz=162,SNR=14
Z38A Mt. Pleasant 70.15 340 P P 00 37 24.0 +0.8
baz=160
PAE Paea 70.17 262 eP P 00 37 25.2 +1.4
comp=Z,23nm,1.0s
PPT2 Papeete2 70.20 262 eP P 00 37 25.7 +1.6
comp=Z,125nm,1.2s
PPT2 eS S 00 46 33.0 -1.9
comp=Z,8μm,24.2s
PPT2 Papeete2 70.20 262 eLR LR 00 58 45.3
comp=Z,15μm,27.5s,baz=120
PPT Papeete 70.21 262 P P 00 37 24.9 +0.8
comp=Z,16nm,0.5s,baz=76,slow=23,SNR=3.6
PPT LR LR 01 01 10.0
comp=Z,8μm,18.4s,baz=144,slow=30
PPT Papeete 70.21 262 P P 00 37 24.9 +0.8
PPT pmax pmax
comp=Z,32nm,0.6s
233A Rising Star 70.24 336 P P 00 37 24.1 +0.2
baz=156,SNR=17
135A Vickery Place, 70.24 337 P P 00 37 24.2 +0.3
baz=158
X43A Marvell 70.28 344 P P 00 37 24.3 +0.4
baz=163
Z37A Pogue Cattle C 70.29 339 P P 00 37 24.8 +0.7
baz=159
Y40A Okolona 70.40 341 P P 00 37 25.0 +0.3
baz=161,SNR=5.7
134A White-Moore Ra 70.47 337 P P 00 37 25.4 +0.2
baz=157,SNR=10
W45A Hickory Valley 70.51 345 P P 00 37 25.2 -0.2
baz=165,SNR=8.5
Y39A Lockesburg 70.55 341 P P 00 37 25.7 +0.1
baz=161,SNR=6.4
Z36A Blue Ridge 70.60 339 P P 00 37 26.7 +0.6
baz=158,SNR=24
X41A Kaden, Bauxite 70.66 342 P P 00 37 26.4 +0.1
baz=162
Y38A Idabel 70.72 340 P P 00 37 27.1 +0.4
baz=160
X40A Basin Creek Fa 70.73 342 P P 00 37 26.3 -0.4
baz=162,SNR=8.9
133A Hamilton Ranch 70.78 336 P P 00 37 27.4 +0.2
baz=156,SNR=17
TZTN Tazewell 70.87 350 eP P 00 37 27.1 -0.5
UALR University of 70.88 342 eP P 00 37 27.6 0.0
Z35A Perchaven, San 70.91 338 P P 00 37 28.1 +0.2
baz=158,SNR=20
MIAR Mount Ida 70.98 341 P P 00 37 28.2 -0.1
baz=161,SNR=24
MIAR Mount Ida 70.98 341 eP P 00 37 28.4 +0.1
MIAR Mount Ida 70.98 341 eP P 00 37 28.4 +0.1
MIAR LR LR
comp=Z,1μm,19.0s
Y37A Hugo 71.02 339 P P 00 37 29.1 +0.5
baz=159,SNR=7.5
V45A Humboldt 71.03 346 P P 00 37 28.4 -0.2
baz=165,SNR=6.7
ABTX Abilene, Hawle 71.05 336 P P 00 37 29.2 +0.4
baz=156,SNR=22
ABTX Abilene, Hawle 71.05 336 eP P 00 37 29.2 +0.4
X39A Fountain Ranch 71.09 341 P P 00 37 29.5 +0.5
baz=161,SNR=25
VWCC Virginia Weste 71.14 353 eP P 00 37 29.4 +0.1
Y36A Durant 71.14 339 P P 00 37 29.2 -0.1
baz=159
BLA Blacksburg 71.15 353 eP P 00 37 29.3 0.0
BLA Blacksburg 71.15 353 eP P 00 37 29.3 0.0
BLA LR LR
comp=Z,2μm,21.0s
Z34A Collier Ranch, 71.16 337 P P 00 37 29.6 +0.2
baz=157,SNR=11
WVT Waverly 71.18 347 eP P 00 37 29.3 -0.1
WVT Waverly 71.18 347 eP P 00 37 29.3 -0.1
W41B Gary Mavity, V 71.23 343 P P 00 37 29.9 +0.1
baz=162,SNR=21
HALT Halls 71.27 345 eP P 00 37 31.0 +1.0
V44A Blytheville 71.31 345 P P 00 37 30.3 +0.1
baz=164
Z33A Whitaker Ranch 71.36 337 P P 00 37 31.0 +0.4
baz=157,SNR=16
Y35A Marietta 71.38 338 P P 00 37 31.1 +0.4
baz=158,SNR=18
X38A Whitesboro 71.44 340 P P 00 37 31.5 +0.5
baz=160,SNR=26
W40A Ferguson Farm, 71.46 342 P P 00 37 31.6 +0.5
baz=162,SNR=10
GNAR Gosnell 71.47 345 eP P 00 37 32.0 +0.8
X37A Clayton 71.52 340 P P 00 37 31.4 -0.1
baz=160,SNR=12
UTMT University of 71.59 346 eP P 00 37 32.5 +0.6
V42A Cord 71.63 344 P P 00 37 31.7 -0.5
baz=163,SNR=14
Y34A Reagan Ranch, 71.65 338 P P 00 37 32.6 +0.2
baz=158,SNR=18
W39A Magazine 71.65 341 P P 00 37 33.0 +0.7
baz=161,SNR=55
W38A Poteau 71.73 341 P P 00 37 33.4 +0.6
baz=160,SNR=14
X36A Centrahoma 71.78 339 P P 00 37 32.7 -0.5
baz=159,SNR=20
V41A Mountainview 71.79 343 P P 00 37 32.8 -0.4
baz=162,SNR=50
X35A Drake 71.81 339 P P 00 37 33.1 -0.3
baz=158,SNR=19
CBN Corbin Frederi 71.88 356 PFAKE 00 37 50.0 +16
CBN LR LR
comp=Z,2μm,19.0s
Y33A Hilltop Ranch, 71.97 337 P P 00 37 34.4 +0.1
baz=157,SNR=11
V40A Witts Springs 71.98 342 P P 00 37 34.0 -0.4
baz=162,SNR=16
W37B Quinton 72.05 340 P P 00 37 34.5 -0.2
baz=160,SNR=11
PARMO Parma 72.08 345 eP P 00 37 35.7 +0.8
U42A Revenden 72.11 344 P P 00 37 34.9 -0.1
baz=163,SNR=25
V39A Pettigrew 72.22 342 P P 00 37 35.9 +0.1
baz=161,SNR=32
X34A Smith Ranch, M 72.27 338 P P 00 37 36.3 +0.3
baz=158,SNR=14
U41A Viola 72.27 343 P P 00 37 35.8 -0.2
baz=163,SNR=6.5
W36A Wetumka 72.28 339 P P 00 37 35.5 -0.6
baz=159,SNR=11
PBMO Poplar Bluff 72.34 345 eP P 00 37 36.1 -0.3
MNTX Cornudas Mount 72.38 331 P P 00 37 36.4 -0.4
baz=151,SNR=51
MNTX Cornudas Mount 72.38 331 eP P 00 37 36.1 -0.7
MNTX LR LR
comp=Z,8μm,19.0s
X33A Lawton 72.42 337 P P 00 37 36.6 -0.4
baz=157
V38A Canehill 72.44 341 P P 00 37 36.7 -0.4
baz=160,SNR=16
W35A Tecumseh 72.48 339 P P 00 37 36.6 -0.7
baz=158,SNR=8.1
U40A Yellville 72.51 343 P P 00 37 37.3 -0.2
baz=162,SNR=43
HSIG 72.56 325 eP P 00 37 39.1 +1.1
X32A Elmer 72.57 337 P P 00 37 37.9 0.0
baz=156,SNR=9.8
V37A Hulbert 72.66 341 P P 00 37 38.0 -0.3
baz=160,SNR=18
U39A Green Forest 72.69 342 P P 00 37 38.5 -0.1
baz=161,SNR=30
WMOK Wichita Mounta 72.69 337 P P 00 37 38.4 -0.2
baz=157,SNR=22
WMOK Wichita Mounta 72.69 337 eP P 00 37 38.4 -0.2
WMOK Wichita Mounta 72.69 337 eP P 00 37 38.4 -0.2
WMOK LR LR
comp=Z,1μm,20.0s
HHAR Hobbs 72.72 342 eP P 00 37 38.7 0.0
V36A Jenks 72.80 340 P P 00 37 38.9 -0.3
baz=159,SNR=18
S45A Carrier Mills 72.82 346 P P 00 37 38.7 -0.6
baz=166,SNR=7.4
W34A Bridge Creek, 72.83 338 P P 00 37 39.4 -0.1
baz=158,SNR=9.7
W34A Bridge Creek, 72.83 338 eP P 00 37 39.5 +0.1
TUL1 Leonard 72.87 340 P P 00 37 39.4 -0.2
baz=159,SNR=17
TUL1 Leonard 72.87 340 eP P 00 37 39.7 0.0
T41A Mountain View 72.90 344 P P 00 37 39.7 -0.1
baz=163,SNR=39
USIN University of 72.93 347 eP P 00 37 39.6 -0.3
WCI Wyandotte Cave 72.94 348 eP P 00 37 39.2 -0.8
WCI Wyandotte Cave 72.94 348 eP P 00 37 39.2 -0.8
W33A Caddo, Fort Co 72.97 338 P P 00 37 40.8 +0.6
baz=157,SNR=13
S44A Carbondale 72.97 346 P P 00 37 39.9 -0.3
baz=165,SNR=18
U38A Gravette 72.98 341 P P 00 37 40.1 -0.2
baz=161,SNR=7.9
SIUC Southern Illin 72.99 346 eP P 00 37 39.9 -0.4
S43A Fulton Ridge, 73.03 345 P P 00 37 40.2 -0.3
baz=164,SNR=56
V35A Meyer Ranch, C 73.04 339 P P 00 37 40.5 -0.1
baz=158,SNR=16
SDMD Soldier's Deli 73.05 356 eP P 00 37 41.6 +1.1
U37A Salina 73.15 341 P P 00 37 41.0 -0.2
baz=160,SNR=12
T40A Mansfield 73.18 343 P P 00 37 41.1 -0.3
baz=162,SNR=17
W32A Sentinel 73.20 337 P P 00 37 42.0 +0.4
baz=156,SNR=41
T39A Clever 73.27 342 P P 00 37 41.8 -0.2
baz=162
U36A Oologah 73.31 340 P P 00 37 41.9 -0.2
baz=160
V34A Guthrie 73.31 339 P P 00 37 42.0 -0.2
baz=158,SNR=17
V34A Guthrie 73.31 339 eP P 00 37 42.3 0.0
MAW Mawson 73.31 164 P P 00 37 42.0 +0.1
comp=Z,52nm,1.0s,baz=212,slow=6.6,SNR=67

MAW LR LR 01 12 45.5
comp=Z,12µm,18.6s,baz=228,slow=38
MAW Mawson 73.31 164 P P 00 37 42.0 +0.1
MAW pmax pmax
comp=Z,52nm,1.0s
MAW MLR MLR
comp=Z,12µm,18.6s
MAW Mawson 73.31 164 eP P 00 37 42.2 +0.3
MSTX Muleshoe 73.37 334 P P 00 37 43.0 +0.2
baz=154,SNR=17
MSTX Muleshoe 73.37 334 eP P 00 37 43.1 +0.3
S41A Jillco Farms, 73.41 344 P P 00 37 42.6 -0.2
baz=163,SNR=56
R44A Waltonville 73.47 346 P P 00 37 42.4 -0.7
baz=165,SNR=7.7
MCWV Mont Chateau 73.52 354 eP P 00 37 43.8 +0.4
T38A Diamond 73.52 342 P P 00 37 43.3 -0.1
baz=161,SNR=29
V33A Lossen Ranch, 73.53 338 P P 00 37 43.7 +0.2
baz=157,SNR=16
U35A Pawnee 73.57 339 P P 00 37 44.0 +0.2
baz=159,SNR=20
S40A Lebanon 73.60 343 P P 00 37 43.9 0.0
baz=162,SNR=34
MVL Millersville 73.61 357 eP P 00 37 45.0 +1.1
V32A Arapaho 73.68 337 P P 00 37 45.1 +0.6
baz=157
OLIL Olney 73.75 347 eP P 00 37 44.0 -0.7
T37A Cheneyville 18 73.77 341 P P 00 37 44.6 -0.3
baz=160,SNR=23
AMTX Amarillo 73.80 335 P P 00 37 45.6 +0.4
baz=155
AMTX Amarillo 73.80 335 eP P 00 37 45.8 +0.5
U34A Anderson Ranch 73.87 339 P P 00 37 45.6 +0.1
baz=158,SNR=9.8
U34A Anderson Ranch 73.87 339 eP P 00 37 45.7 +0.2
S39A Bolivar 73.89 343 P P 00 37 45.5 -0.1
baz=162,SNR=26
BLO Bloomington 73.90 348 eP P 00 37 44.9 -0.7
BLO Bloomington 73.90 348 eP P 00 37 44.9 -0.7
T36A Boggs Farm, Ca 73.97 340 P P 00 37 46.0 -0.1
baz=159,SNR=15
S38A Stockton 73.98 342 P P 00 37 45.9 -0.2
baz=161,SNR=42
T35A Sooner Cattle 74.02 340 P P 00 37 46.5 +0.1
baz=159,SNR=18
O56A Blue Knob Stat 74.02 355 P P 00 37 46.4 +0.1
baz=174,SNR=11
U33A Lingo Farm, Me 74.04 338 P P 00 37 46.6 +0.1
baz=156
Q44A Meyer Farm, Va 74.09 346 P P 00 37 45.9 -0.8
baz=165,SNR=8.1
121A Cookes Peak, D 74.10 329 P P 00 37 48.5 +1.3
baz=150,SNR=19
121A Cookes Peak, D 74.10 329 eP P 00 37 48.2 +1.0
LUPA Lehigh Univers 74.17 357 eP P 00 37 47.9 +0.8
R40A Maddies Statio 74.21 344 P P 00 37 47.1 -0.3
baz=162,SNR=53
BRNJ Basking Ridge 74.22 358 eP P 00 37 48.1 +0.7
Q43A New Douglas 74.27 346 P P 00 37 47.3 -0.4
baz=165,SNR=6.8
U32A Winter Ranch, 74.27 338 P P 00 37 48.3 +0.4
baz=157,SNR=5.9
T34A McClaskey Farm 74.31 339 P P 00 37 48.4 +0.3
baz=158,SNR=23
SSPA Standing Stone 74.33 355 eP P 00 37 48.4 +0.3
S37A Fort Scott 74.34 341 P P 00 37 47.9 -0.3
baz=160
R39A Chumby, Stover 74.41 343 P P 00 37 48.6 -0.1
baz=162,SNR=29
Q42A Golden Eagle 74.41 345 P P 00 37 48.4 -0.2
baz=164,SNR=26
ACSO Alum Creek Sta 74.42 351 eP P 00 37 48.4 -0.3
ACSO LR LR
comp=Z,2µm,19.0s
N59A State Game Lan 74.50 357 P P 00 37 49.6 +0.5
baz=177,SNR=16
R38A Fenwick Farm, 74.51 342 P P 00 37 48.7 -0.5
baz=161,SNR=14
S36A Lake Cedric, C 74.51 341 P P 00 37 49.0 -0.2
baz=160,SNR=19
ODNJ Ogdensburg 74.63 358 eP P 00 37 50.4 +0.6
S35A Otter Creek Ra 74.68 340 P P 00 37 50.2 0.0
baz=159,SNR=14
T33A Patterson Ranc 74.68 339 P P 00 37 50.6 +0.4
baz=158,SNR=23
LIC Lamto 74.78 72 eP P 00 37 51.0 -0.4
comp=Z,142nm,1.5s
N54A Moraine State 74.82 354 P P 00 37 51.0 0.0
baz=173,SNR=12
YLE Yale 74.83 359 eP P 00 37 52.3 +1.4
Q40A Laux Farm, Aux 74.83 344 P P 00 37 51.0 0.0
baz=163,SNR=36
R37A Teagarden Farm 74.86 342 P P 00 37 50.9 -0.4
baz=160,SNR=11
S34A Willow Spring 74.92 340 P P 00 37 51.4 -0.2
baz=158
SUR Sutherland 74.93 119 eP P 00 37 53.2 +0.9
SUR LR LR
comp=Z,5µm,21.0s
T32A Huddler Ranch, 74.98 338 P P 00 37 52.5 +0.5
baz=157
P42A Winchester 75.02 345 P P 00 37 51.5 -0.6
baz=164,SNR=11
BNM Barren Site 75.02 331 eP P 00 37 53.9 +1.3
TIC Toumodi 75.04 71 eP P 00 37 52.4 -0.5
R36A Gordon, Harris 75.05 341 P P 00 37 51.8 -0.5
baz=160,SNR=7.1
S33A Kaszmaul Farm, 75.08 339 P P 00 37 52.9 +0.4
baz=158,SNR=7.4
KIC Kosan Boka 75.09 72 eP P 00 37 53.0 -0.2
comp=Z,161nm,0.9s
Q39A Willow Grove F 75.09 343 P P 00 37 52.1 -0.4
baz=162,SNR=20
LPM Los Pinos Moun 75.17 331 eP P 00 37 54.5 +1.2
Q38A Cooks Store, C 75.17 343 P P 00 37 52.7 -0.3
baz=161,SNR=19
SFIN Lafayette 75.17 348 P P 00 37 51.6 -1.3
baz=167,SNR=12
SFIN Lafayette 75.17 348 eP P 00 37 51.9 -1.1
DBIC Dimbokro 75.19 71 P P 00 37 53.4 -0.3
comp=Z,63nm,0.9s,baz=209,slow=6.3,SNR=63
DBIC LR LR 01 09 38.0
comp=Z,9µm,18.8s,baz=216,slow=35
DBIC Dimbokro 75.19 71 eP P 00 37 53.6 -0.1
TUC Tucson 75.24 327 P P 00 37 54.7 +1.0
baz=147
TUC Tucson 75.24 327 eP P 00 37 54.8 +1.1
TUC Tucson 75.24 327 eP P 00 37 54.8 +1.1
TUC LR LR
comp=Z,5µm,20.0s
R35A Emporia Munici 75.24 341 P P 00 37 53.5 0.0
baz=159
P41A Barry, Barry 75.26 345 P P 00 37 53.1 -0.3
baz=164,SNR=8.7
Q37A Longview Farm, 75.30 342 P P 00 37 53.0 -0.7
baz=161
M54A Oil Creek Stat 75.34 354 P P 00 37 53.6 -0.3
baz=173,SNR=11
P40A Paris 75.34 344 P P 00 37 53.9 0.0
baz=163,SNR=50
BRYW Bryant College 75.43 0 eP P 00 37 55.1 +0.7
LAZ Ladron 75.45 331 eP P 00 37 56.4 +1.4
P39B Salisbury 75.46 344 P P 00 37 54.2 -0.5
baz=162,SNR=22
S32A Newby Ranch, P 75.46 338 P P 00 37 55.1 +0.4
baz=157
R34A Isabella, Hill 75.52 340 P P 00 37 55.4 +0.4
baz=158,SNR=9.3
ALLY Alegheny Colle 75.52 354 eP P 00 37 55.1 +0.1
O42A Bath 75.55 346 P P 00 37 54.9 -0.2
baz=164,SNR=11
Q36A Arnold C. Orve 75.64 341 P P 00 37 55.0 -0.7
baz=160
O41A Passleys Farm, 75.64 345 P P 00 37 55.1 -0.6
baz=164,SNR=19
ANMO Albuquerque 75.65 331 P P 00 37 57.1 +1.0
baz=151
ANMO Albuquerque 75.65 331 eP P 00 37 57.1 +1.0
ANMO Albuquerque 75.65 331 eP P 00 37 57.1 +1.0
ANMO LR LR
comp=Z,7µm,20.0s
Q35A Mercer Eighty, 75.70 341 P P 00 37 55.4 -0.6
baz=159
R33A Olander Ranch, 75.74 339 P P 00 37 56.4 +0.1
baz=158
HDIL Hopedale 75.75 347 P P 00 37 55.9 -0.4
baz=165,SNR=13
HDIL Hopedale 75.75 347 eP P 00 37 56.0 -0.2
HDIL LR LR
comp=Z,2µm,19.0s
P38A Dawn 75.78 343 P P 00 37 56.0 -0.4
baz=162,SNR=26
QUA2 Belchertown 75.78 360 eP P 00 37 57.2 +0.8
BINY Binghamton 75.79 357 eP P 00 37 56.9 +0.4
BINY LR LR
comp=Z,4µm,19.0s
O40A La Belle 75.86 344 P P 00 37 56.6 -0.3
baz=163,SNR=19
214A Organ Pipe Nat 75.89 325 P P 00 37 58.9 +1.6
baz=146,SNR=12
214A Organ Pipe Nat 75.89 325 eP P 00 37 58.2 +0.9
comp=Z,824nm,1.2s
WES Weston 75.89 1 eP P 00 37 57.9 +0.9
WES Weston 75.89 1 eP P 00 37 57.9 +0.9
P37A Lathrop 75.94 342 P P 00 37 56.6 -0.8
baz=161,SNR=7.4
ERPA Erie 75.97 354 eP P 00 37 57.4 -0.1
Q34A Chapman 76.01 340 P P 00 37 57.8 0.0
baz=159,SNR=9.6
HRV Adam Dziewonsk 76.01 0 eP P 00 37 58.7 +1.0
HRV Adam Dziewonsk 76.01 0 eP P 00 37 58.7 +1.0
R32A Long Quarter, 76.06 339 P P 00 37 58.3 +0.1
baz=157,SNR=9.6
KSU1 Kansas State U 76.08 341 P P 00 37 57.8 -0.4
baz=159
KSU1 Kansas State U 76.08 341 eP P 00 37 58.0 -0.3
comp=Z,26nm,0.7s
KSU1 LR LR
comp=Z,2µm,20.0s
O39A Kirksville 76.14 344 P P 00 37 58.5 0.0
baz=162
P36A Good Intent, A 76.19 342 P P 00 37 58.0 -0.8
baz=160,SNR=9.8
O38A Galt 76.23 343 P P 00 37 58.6 -0.5
baz=162
TRY Troy 76.25 359 eP P 00 38 00.0 +1.0
P35A Duane Minner, 76.32 341 P P 00 37 59.2 -0.4
baz=160,SNR=12
Q33A Connelly Farm, 76.33 340 P P 00 37 59.7 0.0
baz=158,SNR=7.4
MMNY Mt. Morris Dam 76.42 356 eP P 00 38 00.2 +0.1
O37A Wolven Farm, M 76.44 343 P P 00 37 59.9 -0.3
baz=161,SNR=7.0
Q32A Meitler Ranch, 76.54 339 P P 00 38 00.9 0.0
baz=157,SNR=6.1
AAM Ann Arbor 76.55 351 eP P 00 38 00.6 -0.1
AAM Ann Arbor 76.55 351 eP P 00 38 00.6 -0.1
AAM LR LR
comp=Z,3µm,21.0s
P34A Walnut Farm, R 76.56 341 P P 00 38 01.1 +0.2
baz=159,SNR=11
O36A Bolckow 76.61 342 P P 00 38 00.5 -0.7
baz=160,SNR=7.7
RAR Rarotonga 76.64 253 PFAKE 00 38 20.0 +18
RAR LR LR
comp=Z,6µm,21.0s
BUF Buffalo 76.68 355 eP P 00 38 01.9 +0.4
P33A Williams Farm, 76.70 340 P P 00 38 01.7 -0.1
baz=158
N39A Derby Farms, D 76.73 344 P P 00 38 01.6 -0.2
baz=162,SNR=17
CBKS Cedar Bluff 76.73 338 P P 00 38 02.6 +0.7
baz=156,SNR=7.5
CBKS Cedar Bluff 76.73 338 eP P 00 38 03.0 +1.0
CBKS Cedar Bluff 76.73 338 eP P 00 38 03.0 +1.0
CBKS LR LR
comp=Z,2µm,19.0s
T25A Trinidad 76.80 334 P P 00 38 04.0 +1.4
baz=153,SNR=48
T25A Trinidad 76.80 334 eP P 00 38 04.0 +1.4
N38A Joes South For 76.81 344 P P 00 38 02.0 -0.3
baz=162,SNR=15
ACCN Adirondack Com 76.90 359 eP P 00 38 03.4 +0.6
O35A Humboldt 76.98 342 P P 00 38 02.4 -0.9
baz=160
N37A Lee Faris, Mou 77.01 343 P P 00 38 03.0 -0.5
O34A Beatrice 77.11 341 P P 00 38 04.0 -0.1
baz=159,SNR=17
P32A Huiting Farm, 77.13 339 P P 00 38 04.1 -0.1
baz=158
W18A Petrified Fore 77.15 329 P P 00 38 05.8 +1.2
baz=148
M39A Webster 77.23 345 P P 00 38 03.9 -0.7
baz=163,SNR=9.4
N36A Muff Marn, Cla 77.25 342 P P 00 38 04.3 -0.5
baz=160,SNR=10
O33A Hebron 77.26 340 P P 00 38 05.0 +0.1
baz=158,SNR=9.3
M38A Pleasantville 77.40 344 P P 00 38 05.2 -0.4
baz=162,SNR=14
L41A Preston 77.45 346 P P 00 38 05.2 -0.6
baz=164,SNR=16
N35A Tabor 77.47 342 P P 00 38 05.7 -0.3
baz=160
NCB Newcomb 77.50 358 eP P 00 38 05.5 -0.6
MDV Middlebury 77.51 359 eP P 00 38 06.5 +0.4
L40A Anamosa 77.58 346 P P 00 38 06.1 -0.5
baz=164,SNR=33
M37A Trindle Farm, 77.59 343 P P 00 38 06.7 0.0
baz=161,SNR=19
O32A Brockman Farm, 77.63 340 P P 00 38 07.0 0.0
baz=158
N34A Lincoln 77.67 341 P P 00 38 06.7 -0.5
baz=159
SDCO Great Sand Dun 77.74 333 P P 00 38 08.8 +0.9
baz=152,SNR=30
SDCO Great Sand Dun 77.74 333 eP P 00 38 08.9 +0.9
SDCO LR LR
comp=Z,4µm,19.0s
GLA Glamis 77.75 324 P P 00 38 09.1 +1.2
baz=145,SNR=8.4
GLA Glamis 77.75 324 eP P 00 38 09.4 +1.5
GLA Glamis 77.75 324 eP P 00 38 09.4 +1.5
L39A Vinton 77.81 345 P P 00 38 07.1 -0.7
baz=163,SNR=10
M36A Felix, Anita 77.82 343 P P 00 38 07.5 -0.5
baz=161
O31A Woolen Ranch, 77.84 339 P P 00 38 08.5 +0.4
baz=157
N33A J Bar K, Exete 77.84 341 P P 00 38 08.0 -0.1
baz=158
KSCO Kaye Shedlock' 77.85 336 P P 00 38 09.2 +0.8
baz=154
KSCO Kaye Shedlock' 77.85 336 eP P 00 38 09.3 +1.0
comp=Z,46nm,0.8s
K41A Shullsburg 77.92 346 P P 00 38 08.2 -0.3
baz=164,SNR=28
L38A Oak Wood Farm, 78.03 344 P P 00 38 08.7 -0.4
baz=162,SNR=10
M35A Neola 78.05 342 P P 00 38 09.0 -0.3
baz=160
IKP In-Ko-Pah, Jac 78.06 323 P P 00 38 09.7 +0.1
baz=144
N32A Stulken Farm, 78.10 340 P P 00 38 10.0 +0.5
baz=158
WVL Waterville 78.10 2 eP P 00 38 10.4 +1.1
SWSC Sam W. Stewart 78.14 324 P P 00 38 11.3 +1.4
baz=144
LONY Lake Ozonia 78.16 358 eP P 00 38 10.1 +0.3
LONY LR LR
comp=Z,3µm,19.0s
K40A Colesburg 78.18 346 P P 00 38 09.3 -0.5
baz=164,SNR=20
Y12C Blythe 78.18 325 P P 00 38 11.8 +1.7
baz=145
Y12C Blythe 78.18 325 eP P 00 38 11.5 +1.4
WUAZ Wupatki 78.20 328 P P 00 38 11.8 +1.4
baz=147,SNR=11
WUAZ Wupatki 78.20 328 eP P 00 38 11.9 +1.4
WUAZ LR LR
comp=Z,2µm,19.0s
L37A Phoenix Point, 78.20 344 P P 00 38 09.7 -0.4
baz=162
JFWS Jewell Farm 78.21 346 eP P 00 38 09.8 -0.2
JFWS Jewell Farm 78.21 346 eP P 00 38 09.8 -0.2
JFWS LR LR
comp=Z,2µm,19.0s
S22A 4UR Ranch, Cre 78.24 333 P P 00 38 11.9 +1.1
baz=151,SNR=16
S22A 4UR Ranch, Cre 78.24 333 eP P 00 38 11.8 +1.1
M34A Aspy Farms, Fr 78.32 341 P P 00 38 10.5 -0.2
baz=159
EMMW East Machias 78.33 3 eP P 00 38 11.9 +1.3
K39A Oelwein 78.34 345 P P 00 38 09.9 -0.8
baz=163,SNR=8.8
N31A Bailey Ranch, 78.35 340 P P 00 38 10.9 -0.1
baz=157
FRNY Flat Rock 78.35 359 eP P 00 38 11.2 +0.4
BAR Barrett 78.36 323 eP P 00 38 13.0 +1.8
L36A Harm Buss Farm 78.39 343 P P 00 38 10.8 -0.3
baz=161
MONP2 Monument Peak 78.41 323 P P 00 38 13.1 +1.4
baz=144
MVCO Mesa Verde 78.43 331 P P 00 38 12.7 +1.0
baz=150,SNR=12
MVCO Mesa Verde 78.43 331 eP P 00 38 12.8 +1.0
MVCO LR LR
comp=Z,9µm,19.0s
K38A Parkersburg 78.47 345 P P 00 38 11.1 -0.5
baz=162
SADO Sadowa 78.54 355 eP P 00 38 11.5 -0.3
BC3 Big Chuckawall 78.55 324 P P 00 38 13.8 +1.5
baz=144,SNR=14
M33A Taylor Creek F 78.55 341 P P 00 38 11.8 -0.2
baz=159
J41A Loganville 78.60 347 P P 00 38 11.8 -0.4
baz=165,SNR=19
L35A Bielow Farm, R 78.62 342 P P 00 38 12.3 -0.1
baz=160,SNR=9.0
BGNE Belgrade 78.66 340 P P 00 38 12.7 0.0
baz=158
BGNE Belgrade 78.66 340 eP P 00 38 13.3 +0.6
comp=Z,171nm,1.1s
PLVO Plevna 78.67 356 eP P 00 38 12.8 +0.2
Q24A Divide 78.69 334 P P 00 38 14.0 +0.8
baz=152,SNR=16
Q24A Divide 78.69 334 eP P 00 38 14.3 +1.1
L34A Svendsen Farm, 78.70 342 P P 00 38 12.3 -0.5
baz=159
109C Camp Elliot, M 78.75 323 P P 00 38 13.9 +0.6
baz=143
J40A Soldiers Grove 78.77 346 P P 00 38 12.5 -0.6
baz=164,SNR=42
GGN Saint George 78.77 4 eP P 00 38 14.2 +1.1
K37A Belmond 78.78 344 P P 00 38 12.5 -0.7
baz=162,SNR=6.4
IRM Iron Mountain 78.81 325 P P 00 38 14.9 +1.2
baz=144,SNR=11
PKME Peaks-Kenny Pk 78.81 2 eP P 00 38 14.1 +0.8
PKME LR LR
comp=Z,3µm,20.0s
M31A Lambtecht Ranc 78.83 340 P P 00 38 14.1 +0.5
baz=157,SNR=9.1
K36A Gilmore City 78.85 343 P P 00 38 13.5 -0.2
baz=161,SNR=14
J39A Decorah 78.90 346 P P 00 38 13.2 -0.7
baz=163,SNR=15
PFO Pinyon Flats O 79.00 324 P P 00 38 16.9 +2.0
comp=Z,15nm,0.9s,baz=139,slow=5.3,SNR=12
PFO Pinyon Flats O 79.00 324 P P 00 38 16.1 +1.2
baz=144,SNR=9.0
PFO Pinyon Flats O 79.00 324 eP P 00 38 16.6 +1.7
PFO LR LR
comp=Z,4µm,21.0s
BELC Belle Mtn. Jos 79.09 324 P P 00 38 16.3 +0.9
baz=144
K35A Storm Lake 79.12 343 P P 00 38 14.6 -0.5
baz=160
L33A Hoskins 79.12 341 P P 00 38 14.5 -0.7
baz=159
L32A Elgin 79.17 341 P P 00 38 14.9 -0.6
baz=158
MIR Mirnyy 79.24 174 eP P 00 38 16.0 +0.4
MIR pmax pmax
comp=Z,4.0nm,1.4s
PV01 Paradox Valley 79.26 332 eP P 00 38 17.4 +1.2
J37A Redenius Farm, 79.28 344 P P 00 38 15.5 -0.4
baz=162
TSUM Tsumeb 79.30 106 eP P 00 38 17.1 +0.2
TSUM LR LR
comp=Z,11µm,21.0s
K34A Le Mars 79.30 342 P P 00 38 15.7 -0.4
baz=160
MURC Murrieta 79.36 323 P P 00 38 17.9 +1.2
baz=143
OGNE Ogallala 79.40 337 P P 00 38 16.9 +0.1
baz=155
OGNE Ogallala 79.40 337 PFAKE 00 38 30.0 +13
OGNE LR LR
comp=Z,2µm,19.0s
PV05 Paradox Valley 79.42 331 eP P 00 38 18.1 +0.9
J36A Seneca 1, Swea 79.48 344 P P 00 38 16.7 -0.4
baz=161,SNR=14
SMCO Snowmass 79.55 333 eP P 00 38 19.3 +1.3
L31A Butterfield Fa 79.56 340 P P 00 38 18.0 +0.4
baz=158,SNR=8.4
GMRC Granite Mounta 79.56 325 P P 00 38 19.6 +1.7
baz=144,SNR=25
ISCO Idaho Springs 79.59 334 P P 00 38 18.9 +0.8
baz=152,SNR=16
ISCO Idaho Springs 79.59 334 eP P 00 38 19.0 +0.8
ISCO Idaho Springs 79.59 334 eP P 00 38 19.0 +0.8
ISCO LR LR
comp=Z,2µm,20.0s
PV04 Paradox Valley 79.61 331 eP P 00 38 19.1 +1.0
LMN Caledonia Moun 79.63 5 eP P 00 38 18.5 +0.7
PV10 Paradox Valley 79.65 331 eP P 00 38 19.6 +1.1
I38A Scanlan Farm, 79.71 345 P P 00 38 17.7 -0.5
baz=163,SNR=28
TRQ Mont Tremblant 79.76 358 eP P 00 38 18.5 0.0
PV09 Paradox Valley 79.79 331 eP P 00 38 20.7 +1.5
J34A George 79.83 343 P P 00 38 19.0 +0.1
baz=160
I37A Lemond, Waseca 79.92 345 P P 00 38 19.1 -0.3
baz=162,SNR=21
HEC Hector,Ludlow 79.92 324 P P 00 38 20.9 +1.2
baz=144,SNR=12
K31A O'Neill 79.95 340 P P 00 38 20.1 +0.4
baz=158,SNR=6.5
I36A Fitzsimmons Fa 80.06 344 P P 00 38 19.7 -0.5
baz=161,SNR=6.6
KNB Kanab 80.09 328 eP P 00 38 22.4 +1.6
KNB Kanab 80.09 328 eP P 00 38 22.4 +1.6
J33A Davis 80.12 342 P P 00 38 20.3 -0.2
baz=159
I35A Creekview Farm 80.13 343 P P 00 38 20.6 0.0
baz=161,SNR=12
BOSA Boshof 80.17 118 P P 00 38 21.5 -0.1
comp=Z,38nm,0.8s,baz=243,slow=3.9,SNR=44
BOSA LR LR 01 11 19.2
comp=Z,2µm,18.0s,baz=236,slow=34
BOSA Boshof 80.17 118 eP P 00 38 21.4 -0.2
TUQ Turquoise Moun 80.22 325 P P 00 38 23.3 +1.8
baz=144
PKCU Pink Cliffs 80.22 329 epP pP 00 38 27.8 -0.6
K30A Basset 80.24 340 P P 00 38 21.7 +0.4
baz=157
LCMT Little Creek M 80.27 328 eP P 00 38 23.3 +1.6
MWC Mount Wilson 80.29 323 eP P 00 38 23.7 +1.8
MWC Mount Wilson 80.29 323 eP P 00 38 23.7 +1.8
PASC Pasadena Art C 80.31 323 eP P 00 38 23.7 +1.9
H37A Dierke Farm, C 80.35 345 P P 00 38 21.0 -0.7
baz=162,SNR=9.4
J32A Parkston 80.40 341 P P 00 38 21.9 -0.1
baz=158
ECSD EROS Data Cent 80.41 342 P P 00 38 22.3 +0.1
baz=159,SNR=61
ECSD EROS Data Cent 80.41 342 eP P 00 38 22.0 -0.1
ECSD LR LR
comp=Z,2µm,21.0s
I34A Hadley 80.51 343 P P 00 38 22.2 -0.4
baz=160
GSC Goldstone, Bar 80.53 324 P P 00 38 24.1 +1.1
baz=144,SNR=12
GSC Goldstone, Bar 80.53 324 eP P 00 38 24.6 +1.5
GSC Goldstone, Bar 80.53 324 eP P 00 38 24.6 +1.5
J31A Geddes 80.57 341 P P 00 38 22.5 -0.4
baz=158,SNR=10
H36A Jessenland, He 80.57 344 P P 00 38 22.6 -0.3
baz=162,SNR=15
MTPU Mount Pierson 80.67 329 eP P 00 38 25.1 +1.1
N23A Red Feather La 80.68 335 P P 00 38 24.8 +0.9
baz=152,SNR=12
N23A Red Feather La 80.68 335 eP P 00 38 24.8 +0.9
BLG Laguna Peak, P 80.71 322 P P 00 38 25.0 +1.1
baz=142
SHPR Sheep Range 80.73 326 eP P 00 38 25.8 +1.6
I33A Coleman 80.75 342 P P 00 38 23.7 -0.3

baz=159
CCUT Cedar City 80.77 328 eP P 00 38 25.3 +0.8
EDW2 Edwards Air Fo 80.78 323 P P 00 38 25.2 +0.8
baz=143
J30A Dallas 80.81 340 P P 00 38 24.2 0.0
baz=157
O20A White River Ci 80.86 333 P P 00 38 25.7 +0.9
baz=150,SNR=13
O20A White River Ci 80.86 333 eP P 00 38 25.7 +0.9
PHWY Pilot Hill 80.86 335 eP P 00 38 25.7 +0.7
SRU San Rafael Swe 80.88 331 eP P 00 38 26.0 +1.0
SRU San Rafael Swe 80.88 331 eP P 00 38 26.0 +1.0
H35A Sunnyside Ranc 80.89 344 P P 00 38 24.4 -0.2
baz=161,SNR=60
I32A Karley and Nic 80.91 342 P P 00 38 24.6 -0.1
baz=159
SCZ2 Santa Cruz Isl 80.91 322 P P 00 38 25.3 +0.2
baz=142
OSI Osito Audit: C 80.94 323 P P 00 38 26.2 +1.0
baz=142
OSI Osito Audit: C 80.94 323 eP P 00 38 28.8 +3.6
SPMN Marine on St. 80.94 345 P P 00 38 24.0 -0.8
baz=162,SNR=6.7
SPMN Marine on St. 80.94 345 eP P 00 38 24.3 -0.5
comp=Z,22nm,0.6s
MSU Marysvale 81.06 329 eP P 00 38 27.3 +1.3
MSU Marysvale 81.06 329 eP P 00 38 27.3 +1.3
LMQ La Malbaie 81.07 1 eP P 00 38 25.9 +0.4
COWI Conover 81.08 348 eP P 00 38 25.4 -0.2
COWI LR LR
comp=Z,2µm,20.0s
H34A Spellman Lake, 81.08 343 P P 00 38 25.7 0.0
baz=160,SNR=10
LRMC Laurel Mtn Rad 81.10 324 P P 00 38 26.0 -0.2
baz=143
G36A St. Michael 81.15 345 P P 00 38 25.8 -0.2
baz=162,SNR=10
I31A Royce, Wessing 81.19 341 P P 00 38 26.0 -0.3
baz=158,SNR=6.9
P17A Butcher Ranch, 81.27 331 eP P 00 38 28.1 +1.1
G35A Watkins 81.30 344 P P 00 38 26.7 -0.1
baz=161,SNR=5.6
TMUT Trail Mountain 81.32 330 eP P 00 38 28.8 +1.3
H33A Prehn Over Nor 81.33 342 P P 00 38 26.9 -0.1
baz=159,SNR=21
H32A Carlson Farm, 81.34 342 P P 00 38 26.9 -0.2
baz=159,SNR=10
ARVC Arvin 81.39 323 P P 00 38 28.6 +1.1
baz=142
MPMC Manual Prospec 81.47 324 P P 00 38 29.4 +1.2
baz=143,SNR=15
FURC Furnace Creek, 81.50 325 P P 00 38 29.4 +1.4
baz=144
G34A Benson 81.59 343 P P 00 38 27.7 -0.6
baz=160,SNR=7.0
H31A Wolsey 81.59 341 P P 00 38 28.1 -0.3
baz=158,SNR=8.4
TPNV Topopah Spring 81.59 326 P P 00 38 30.5 +1.6
baz=144,SNR=15
TPNV Topopah Spring 81.59 326 eP P 00 38 30.4 +1.6
TPNV Topopah Spring 81.59 326 eP P 00 38 30.4 +1.6
ISA Isabella, Lake 81.64 323 P P 00 38 30.3 +1.3
baz=142
ISA Isabella, Lake 81.64 323 eP P 00 38 30.7 +1.8
ISA Isabella, Lake 81.64 323 eP P 00 38 30.7 +1.8
SUSD Miller 81.69 341 P P 00 38 28.8 -0.1
baz=158
DAC Darwin (Calif) 81.70 324 eP P 00 38 30.8 +1.4
DAC Darwin (Calif) 81.70 324 eP P 00 38 30.8 +1.4
F36A Milaca 81.70 345 P P 00 38 28.5 -0.4
baz=162,SNR=36
PKM Mcpherson Peak 81.70 322 P P 00 38 30.5 +1.0
baz=141,SNR=9.7
G33A Ortonville 81.74 343 P P 00 38 28.8 -0.3
baz=160
VLDQ Val d'Or 81.76 356 eP P 00 38 29.3 +0.2
F35A Swanville 81.93 344 P P 00 38 29.7 -0.4
baz=161,SNR=9.2
F34A Alexandria 82.02 344 P P 00 38 30.2 -0.4
baz=160,SNR=7.6
G32A Webster 82.06 342 P P 00 38 30.0 -0.8
baz=159
VES Vestal, Richgr 82.08 323 P P 00 38 32.2 +1.1
baz=142,SNR=13
SMMC Simmler 82.13 322 P P 00 38 33.3 +1.8
baz=141
H07S1 FLORES T-PHASE 82.13 31 eP P 00 38 33.2 +1.8
H07S1 FLORES T-PHASE 82.13 31 eS S 00 48 47.5 +2.5
H07S1 FLORES T-PHASE 82.13 31 eLR LR 01 05 52.0
E37A Wrenshall 82.14 346 P P 00 38 30.6 -0.6
baz=163
GRAC Grapevine Rang 82.16 325 P P 00 38 33.2 +1.6
baz=143
E36A McGregor 82.27 345 P P 00 38 31.5 -0.4
baz=162,SNR=40
F33A 5 Mile Ranch, 82.31 343 P P 00 38 31.5 -0.6
baz=160,SNR=10
LBTB Lobatse 82.40 115 eP P 00 38 33.1 -0.4
LBTB Lobatse 82.40 115 eP P 00 38 33.1 -0.4
R11A Troy Canyon, C 82.42 327 P P 00 38 34.0 +0.8
baz=145,SNR=10.0
R11A Troy Canyon, C 82.42 327 eP P 00 38 32.2 -0.9
K22A Casper 82.43 335 P P 00 38 33.8 +0.8
baz=152,SNR=16
K22A Casper 82.43 335 eP P 00 38 33.8 +0.8
H07N1 FLORES T-PHASE 82.43 31 eP P 00 38 34.7 +1.8
JLU Jordanelle 82.52 331 eP P 00 38 34.5 +0.8
E35A Pequot Lakes 82.55 345 P P 00 38 33.0 -0.4
baz=161
PCAN Candelaria 82.58 33 eP P 00 38 35.5 +1.8
comp=Z,247nm,1.8s
FSU Fish Springs 82.59 329 eP P 00 38 35.2 +1.3
PCED Cedros 82.61 33 eP P 00 38 35.7 +1.8
comp=Z,86nm,0.9s
E34A Wadena 82.68 344 P P 00 38 33.7 -0.3
baz=161
D37A Cotton 82.71 346 P P 00 38 33.9 -0.2
baz=163,SNR=10
CTU Camp Tracy 82.72 331 eP P 00 38 35.4 +0.8
DUG Dugway, Tooele 82.74 330 P P 00 38 35.1 +0.4
baz=147,SNR=26
DUG Dugway, Tooele 82.74 330 eP P 00 38 35.6 +0.9
DUG Dugway, Tooele 82.74 330 eP P 00 38 35.6 +0.9
DUG LR LR
comp=Z,4µm,19.0s
F31A Hecla 82.82 342 P P 00 38 34.2 -0.6
baz=158,SNR=6.4
E33A Westby DABS, E 82.87 344 P P 00 38 34.1 -0.9
baz=160
PMAN Manadas 82.90 33 eP P 00 38 34.5 -0.8
comp=Z,148nm,1.2s
ROSA Rosais 82.90 33 eP P 00 38 35.0 -0.3
comp=Z,82nm,1.1s
ROSA Rosais 82.90 33 eS S 00 48 55.3 +2.5
ROSA Rosais 82.90 33 eLR LR 01 06 48.3
comp=Z,4µm,21.5s
RSSD Black Hills 82.90 337 P P 00 38 35.4 -0.1
baz=154
RSSD Black Hills 82.90 337 eP P 00 38 35.8 +0.3
RSSD Black Hills 82.90 337 eP P 00 38 35.8 +0.3
C39A Grand Marais 82.92 348 P P 00 38 34.6 -0.6
baz=165
TCUT Toone Canyon 82.94 331 eP P 00 38 37.1 +1.3
D35A Remer 82.97 345 P P 00 38 35.4 -0.2
baz=162,SNR=24
PSMA Santa Maria 82.99 36 eP P 00 38 36.1 +0.3
comp=Z,158nm,1.1s
F30A Leola 83.00 341 P P 00 38 35.5 -0.2
baz=158
PSMN Pico do Norte, 83.03 36 eP P 00 38 35.6 -0.4
comp=Z,204nm,1.6s
PSMN Pico do Norte, 83.03 36 eS S 00 48 56.9 +2.7
PSMN Pico do Norte, 83.03 36 eLR LR 01 06 59.4
comp=Z,3µm,20.0s
C38A Sawbill Land. 83.03 347 P P 00 38 34.9 -0.9
baz=164,SNR=12
E32A Braaten, Kindr 83.20 343 P P 00 38 36.6 -0.1
baz=159
C37A Embarrass 83.21 346 P P 00 38 36.1 -0.6
baz=163,SNR=10.0
F29A Eureka 83.21 341 P P 00 38 36.8 0.0
baz=157,SNR=11
H25A Fruitdale 83.21 338 P P 00 38 37.2 +0.3
baz=154
SNZO South Karori 83.22 224 PFAKE 00 38 50.0 +13
SNZO LR LR
comp=Z,3µm,21.0s
D34A Park Rapids 83.23 344 P P 00 38 36.3 -0.6
baz=161
PGRA Graciosa 83.27 33 eP P 00 38 38.8 +1.6
comp=Z,93nm,1.9s
PGRA Graciosa 83.27 33 eS S 00 49 00.1 +3.6
PGRA Graciosa 83.27 33 eLR LR 01 06 36.3
comp=Z,4µm,22.7s
MCU Monte Cristo P 83.27 331 eP P 00 38 38.1 +0.5
EYMN Ely 83.29 347 P P 00 38 36.4 -0.7
baz=164,SNR=13
EYMN Ely 83.29 347 eP P 00 38 36.5 -0.6
EYMN LR LR
comp=Z,2µm,20.0s
ADH Angra Heroismo 83.31 34 eP P 00 38 37.8 +0.4
comp=Z,69nm,1.1s
PSET Sete Cidades 83.36 35 eP P 00 38 39.3 +1.5
comp=Z,232nm,1.2s
C36A Pine Crest Far 83.37 346 P P 00 38 37.2 -0.4
baz=163,SNR=9.8
MLAC Mammoth, Mammo 83.37 324 P P 00 38 39.4 +1.3
baz=142
E31A Nome 83.37 342 P P 00 38 37.5 -0.1
baz=158,SNR=18
CMLA Cha da Macela 83.40 35 eP P 00 38 39.7 +1.7
CMLA Cha da Macela 83.40 35 eS S 00 49 00.6 +2.6
CMLA Cha da Macela 83.40 35 eLR LR 01 06 07.4
comp=Z,1µm,20.0s
CMLA Cha da Macela 83.40 35 PFAKE 00 38 50.0 +12
CMLA LR LR
comp=Z,4µm,20.0s
HWUT Hardware Ranch 83.42 331 eP P 00 38 38.5 +0.3
HWUT LR LR
comp=Z,7µm,19.0s
D33A AnnSam, Waubun 83.43 344 P P 00 38 37.3 -0.6
baz=160,SNR=7.3
BGU Big Grassy Mou 83.44 330 eP P 00 38 40.0 +1.7
SPUT South Promonto 83.52 331 eP P 00 38 39.5 +0.8
C35A Jirik Farms, M 83.55 345 P P 00 38 38.0 -0.5
baz=162,SNR=9.0
BART Pico Bartolome 83.58 36 eP P 00 38 40.9 +1.9
comp=Z,252nm,1.3s
PD31 Pinedale Array 83.63 333 eP P 00 38 39.2 0.0
PDAR Pinedale Array 83.63 333 P P 00 38 39.3 0.0
comp=Z,9.2nm,0.9s,baz=156,slow=4.4,SNR=35
PDAR PKKPbc PKKPbc 00 56 56.2 -2.1
comp=Z,0.4nm,0.7s,baz=357,slow=1.9,SNR=3.4
BW06 Boulder Array 83.63 333 P P 00 38 39.0 -0.3
baz=149,SNR=24
BW06 Boulder Array 83.63 333 eP P 00 38 39.2 -0.1
BW06 LR LR
comp=Z,7µm,19.0s
LTZ Lake Taylor 83.65 222 eP P 00 38 43.4 +3.8
LTU Little Mountai 83.68 331 eP P 00 38 39.8 +0.3
C34A RKJ Ranch, Bem 83.70 345 P P 00 38 38.6 -0.7
baz=161
D32A Dogwood Acres, 83.70 343 P P 00 38 39.2 -0.1
baz=159,SNR=12
RPZ Rata Peaks 83.71 221 eP P 00 38 38.7 -1.1
comp=Z,79nm,1.0s
D31A Mcclaflin, Tow 83.79 343 P P 00 38 39.8 +0.1
baz=159,SNR=18
MTUT Morton Thiokol 83.86 331 eP P 00 38 40.6 +0.2
C33A Trail 83.99 344 P P 00 38 40.2 -0.6
baz=160,SNR=5.8
SAO San Andreas Ge 84.00 322 eP P 00 38 42.8 +1.8
SAO San Andreas Ge 84.00 322 eP P 00 38 42.8 +1.8
HVU Hansel Valley 84.05 331 eP P 00 38 41.8 +0.4
HVU Hansel Valley 84.05 331 eP P 00 38 41.8 +0.4
PMOZ Porto Moniz, M 84.06 44 eP P 00 38 41.2 -0.4
PMOZ Porto Moniz, M 84.06 44 eLR LR 01 06 04.0
comp=Z,2µm,18.0s
B35A Bob, Littlefor 84.12 346 P P 00 38 41.1 -0.3
baz=162,SNR=25
AHID Auburn Hatcher 84.22 332 eP P 00 38 42.5 +0.3
AHID LR LR
comp=Z,5µm,19.0s
TORD Torodi Ar. Bea 84.22 70 P P 00 38 42.3 -0.4
comp=Z,111nm,0.9s,baz=249,slow=4.4,SNR=435
TORD PKKPbc PKKPbc 00 56 55.0 0.0
comp=Z,0.4nm,0.7s,baz=37,slow=2.4,SNR=3.5
TORD LR LR 01 15 21.5
comp=Z,7µm,18.4s,baz=285,slow=35
C32A Crookston 84.23 344 P P 00 38 42.0 +0.1
baz=160
WAKR Walker 84.35 325 eP P 00 38 45.2 +2.1
B34A Aery, Baudette 84.43 345 P P 00 38 42.6 -0.4
baz=161,SNR=13
B33A Robert and Kas 84.44 344 P P 00 38 42.7 -0.3
baz=160
CMB Columbia Colle 84.45 324 eP P 00 38 44.7 +1.3
CMB Columbia Colle 84.45 324 eP P 00 38 44.7 +1.3
C31A Landman Farms, 84.49 343 P P 00 38 43.4 +0.1
baz=159,SNR=16
AGMN Agassiz Nation 84.52 344 P P 00 38 43.1 -0.3
baz=160,SNR=19
AGMN Agassiz Nation 84.52 344 eP P 00 38 43.2 -0.3
AGMN LR LR
comp=Z,2µm,19.0s
REDW Red Top Meadow 84.63 333 eP P 00 38 44.8 +0.4
SNOW Snow King Moun 84.68 333 eP P 00 38 45.5 +0.8
LOHW Long Hollow 84.75 333 eP P 00 38 45.3 +0.3
B32A Ashes, Strandq 84.77 344 P P 00 38 44.3 -0.3
baz=160,SNR=20
TPAW Teton Pass 84.77 333 eP P 00 38 45.6 +0.4
BMN Battle Mountai 84.85 327 eP P 00 38 45.6 +0.1
BMN pmax pmax
comp=Z,6.0nm,0.9s
BMN Battle Mountai 84.85 327 eP P 00 38 45.6 +0.1
comp=Z,5.7nm,0.9s
MOOW Moose Ponds 84.92 333 eP P 00 38 46.3 +0.5
MDND Maddock 85.01 342 P P 00 38 46.0 +0.1
baz=157,SNR=7.3
MDND Maddock 85.01 342 eP P 00 38 46.6 +0.7
A33A Warroad 85.02 345 P P 00 38 45.5 -0.4
baz=160,SNR=19
D26A Manning 85.04 340 P P 00 38 46.4 +0.3
baz=155,SNR=14
B31A Greenbush Farm 85.06 343 P P 00 38 45.5 -0.6
baz=159,SNR=7.9
IMW Indian Meadow 85.12 333 eP P 00 38 47.7 +0.8
FLWY Flagg Ranch 85.18 333 eP P 00 38 47.9 +0.7
B30A Myrvik Farm, E 85.25 343 P P 00 38 47.2 +0.1
baz=158,SNR=55
A32A Rocking H Ranc 85.25 344 P P 00 38 46.3 -0.8
baz=160,SNR=5.2
PAHR Pah Rah Range 85.28 325 eP P 00 38 49.0 +1.4
YPP Pitchstone Pla 85.38 333 eP P 00 38 53.1 +4.8
H17A Grant Village 85.41 333 eP P 00 38 49.3 +1.0
comp=Z,44nm,1.3s
AFDM Forest Hills D 85.45 324 eP P 00 38 49.3 +1.0
MCID Moose Creek 85.46 333 eP P 00 38 49.3 +0.8
LKWY Lake 85.48 334 PFAKE 00 39 00.0 +11
LKWY LR LR
comp=Z,5µm,19.0s
B29A Wagenman Farm, 85.52 342 P P 00 38 48.4 0.0
baz=157,SNR=18
YFT Old Faithful 85.55 333 eP P 00 38 51.2 +2.2
RLMT Red Lodge 85.55 335 P P 00 38 49.5 +0.5
baz=150,SNR=19
RLMT Red Lodge 85.55 335 eP P 00 38 49.4 +0.5
RLMT LR LR
comp=Z,2µm,19.0s
B28A Dugan Ranch, T 85.76 342 P P 00 38 49.9 +0.3
baz=157,SNR=5.3
YHH Holmes Hill 85.84 333 eP P 00 38 51.9 +1.3
LAO LASA Array 85.89 337 P P 00 38 50.2 -0.2
baz=152,SNR=17
LAO LASA Array 85.89 337 eP P 00 38 50.6 +0.2
LAO LR LR
comp=Z,2µm,19.0s
C25A Freed Ranch, W 85.89 339 P P 00 38 50.5 +0.1
baz=154
RAO Raoul Island 85.90 237 PFAKE 00 39 00.0 +9.0
RAO LR LR
comp=Z,4µm,21.0s
A29A Manning Farm, 85.91 342 P P 00 38 49.9 -0.5
baz=158,SNR=27
QLMT Earthquake Lak 86.09 333 eP P 00 38 52.8 +1.2
A28A Rude Farm, Bot 86.16 342 P P 00 38 51.4 -0.3
baz=157
ORV Oroville 86.18 324 eP P 00 38 53.3 +1.4
ORV Oroville 86.18 324 eP P 00 38 53.3 +1.4
B26A Jensen Ranch, 86.20 340 P P 00 38 51.7 -0.2
baz=155
HLID Hailey 86.20 331 P P 00 38 52.9 +0.7
baz=146,SNR=16
HLID Hailey 86.20 331 eP P 00 38 53.3 +1.1
HLID LR LR
comp=Z,2µm,19.0s
GCMT Greycliff 86.27 335 eP P 00 38 52.4 0.0
ULM Lac du Bonnet 86.36 345 P P 00 38 51.9 -0.6
comp=Z,28nm,0.9s,baz=165,slow=4.3,SNR=33
B25A Knox Farm, Ray 86.37 340 P P 00 38 53.5 +0.8
baz=154,SNR=8.4
A27A Ledoux Ranch, 86.46 341 P P 00 38 53.3 +0.2
baz=156
HOPS Hopland Field 86.53 323 eP P 00 38 55.0 +1.3
comp=Z,30nm,1.2s
A26A Wade Farm, Ken 86.62 341 P P 00 38 53.8 0.0
baz=155,SNR=6.7
MCMT McKenzie Canyo 86.63 332 eP P 00 38 55.3 +1.0
MFID Camas Ranch 86.67 330 eP P 00 38 55.0 +0.6
DGMT Dagmar 86.85 339 P P 00 38 55.2 +0.2
baz=154,SNR=22
DGMT Dagmar 86.85 339 eP P 00 38 55.6 +0.6
DGMT LR LR
comp=Z,1µm,19.0s
BOZ Bozeman (W) 86.86 333 P P 00 38 54.9 -0.4
baz=148,SNR=14
BOZ Bozeman (W) 86.86 333 eP P 00 38 55.4 +0.1
BOZ Bozeman (W) 86.86 333 eP P 00 38 55.4 +0.1
BOZ LR LR
comp=Z,4µm,20.0s
O03D Paynes Creek 86.89 324 P P 00 38 55.7 +0.1
baz=140,SNR=17
A25A Svangstu Ranch 86.96 340 P P 00 38 56.0 +0.5
baz=154
DLMT Dillon 86.99 333 eP P 00 38 56.7 +0.8
WVOR Wild Horse Val 87.09 327 eP P 00 38 57.7 +1.2
WVOR Wild Horse Val 87.09 327 eP P 00 38 57.7 +1.2
WVOR LR LR
comp=Z,3µm,19.0s
LRM Limekiln Ridge 87.32 333 eP P 00 38 58.3 +0.6
MOD Modoc Plateau 87.43 326 eP P 00 38 59.3 +1.1
WDC Whiskeytown Da 87.47 324 eP P 00 38 58.2 0.0
WDC Whiskeytown Da 87.47 324 eP P 00 38 58.2 0.0
KMRM Mail Ridge 87.78 323 eP P 00 39 02.1 +2.3
N02D Trinity Center 87.86 324 P P 00 39 00.6 +0.5
baz=140,SNR=8.6
M04C Macdoel 88.06 325 P P 00 39 02.1 +0.9
baz=140,SNR=17
EGMT Eagleton 88.23 336 P P 00 39 01.5 -0.2
baz=149
EGMT Eagleton 88.23 336 PFAKE 00 39 10.0 +8.3
EGMT LR LR
comp=Z,1µm,22.0s
M02C Callahan 88.25 324 P P 00 39 02.9 +0.9
baz=140,SNR=18
KHMM Horse Mountain 88.28 324 eP P 00 39 04.3 +2.0
K05A Summer Lake 88.35 326 eP P 00 39 03.9 +1.3
JCC Jacoby Creek, 88.39 323 eP P 00 39 04.9 +2.4
BMO Blue Mountains 88.45 330 eP P 00 39 03.3 +0.4
comp=Z,7.6nm,0.9s
BMO LR LR
comp=Z,3µm,19.0s
SCHQ Schefferville 88.47 3 P P 00 39 02.0 -0.6
comp=Z,26nm,1.1s,baz=154,slow=3.7,SNR=9.6
SCHQ LR LR 01 19 28.8
comp=Z,2µm,21.3s,baz=178,slow=36
CHMT Chamberlain Mo 88.54 333 eP P 00 39 03.8 +0.4
K04D Chiloquin, OR 88.67 326 P P 00 39 05.0 +1.0
baz=140
MSO Missoula 88.73 333 P P 00 39 04.6 +0.4
baz=146
MSO Missoula 88.73 333 eP P 00 39 05.3 +1.1
SLMT Seeley Lake 88.90 333 eP P 00 39 05.5 +0.5
J05D Fort Rock, OR 88.94 326 P P 00 39 06.3 +1.0
baz=141,SNR=8.8
L02D Cave Junction, 89.19 324 P P 00 39 07.4 +1.1
baz=139,SNR=6.8
HUMO Hull Mountain 89.22 325 eP P 00 39 07.2 +0.7
SWMT Swartz Lake 89.31 333 eP P 00 39 07.7 +0.7
F10A Beach Ranch, E 89.33 330 eP P 00 39 08.3 +1.4
G08A Pilot Rock 89.51 329 eP P 00 39 09.0 +1.1
YBMT Yellow Bay 89.61 333 eP P 00 39 09.1 +0.8
JTMT Jette 89.62 333 eP P 00 39 09.2 +0.8
I05D Terrebonne, OR 89.81 327 P P 00 39 10.3 +1.1
baz=141
BLMT Blacktail Moun 89.87 333 eP P 00 39 10.0 +0.4
I04A Tendick Farm, 89.88 326 P P 00 39 10.3 +0.8
baz=140
LSZ Lusaka 89.89 108 eP P 00 39 12.0 +1.5
LSZ Lusaka 89.89 108 eP P 00 39 12.0 +1.5
LSZ LR LR
comp=Z,10µm,20.0s
BSMT Bassoo Peak 89.90 333 eP P 00 39 09.9 +0.2
AFI Afiamalu 90.19 253 PFAKE 00 39 20.0 +8.2
AFI LR LR
comp=Z,7µm,20.0s
G06A Carlson Farm, 90.19 328 eP P 00 39 12.7 +1.7
WALA Waterton Lakes 90.57 334 eP P 00 39 13.2 +0.5
comp=Z,43nm,1.2s
PAF Port-aux-Franc 90.62 156 PFAKE 00 39 20.0 +6.9
PAF LR LR
comp=Z,6µm,19.0s
HAWA Hanford 90.62 329 eP P 00 39 14.3 +1.4
HAWA LR LR
comp=Z,3µm,20.0s
D08A Wollman Farm, 90.89 330 eP P 00 39 15.1 +0.9
RTC Rabat Centre 91.10 49 PFAKE 00 39 30.0 +15
RTC LR LR
comp=Z,27µm,19.0s
NEW Newport 91.14 332 P P 00 39 14.9 -0.3
comp=Z,4.8nm,1.0s,baz=138,slow=4.8,SNR=7.2
NEW Newport 91.14 332 P P 00 39 15.2 -0.1
baz=144,SNR=7.4
NEW Newport 91.14 332 P P 00 39 15.0 -0.3
NEW pmax pmax
comp=Z,5.0nm,1.0s
NEW Newport 91.14 332 eP P 00 39 15.1 -0.1
NEW LR LR
comp=Z,3µm,19.0s
C09A Chrisman Ranch 91.22 331 eP P 00 39 16.5 +0.8
LON Longmire 91.88 328 eP P 00 39 19.2 +0.4
LON Longmire 91.88 328 eP P 00 39 19.2 +0.4
FFC Flin Flon 91.92 343 PFAKE 00 39 30.0 +11
FFC LR LR
comp=Z,2µm,19.0s
PFVI Vila Bisbo 91.97 46 eP P 00 39 21.9 +2.5
comp=Z,127nm,1.6s
PFVI Vila Bisbo 91.97 46 eS SKSac 00 49 45.4 -5.7
B08A Colville Reser 92.10 331 eP P 00 39 19.8 +0.1
MORF Marmelete 92.19 46 eP P 00 39 21.4 +0.9
MORF ePP PP 00 43 01.1 -0.3
MORF eS SKSac 00 49 52.9 +0.4
MORF AMS AMS 01 20 04.1
comp=Z,8µm,18.9s
MORF Marmelete 92.19 46 eP P 00 39 25.9 +5.4
comp=Z,58nm,1.9s
MORF Marmelete 92.19 46 ePP PP 00 43 02.2 +0.9
MORF eSKS SKSac 00 49 58.8 +6.3
PBDV Barranco-do-Ve 92.58 46 eP P 00 39 24.6 +2.3
comp=Z,69nm,2.2s
PBDV Barranco-do-Ve 92.58 46 ePP PP 00 43 05.4 +1.1
PBDV eSKS SKSac 00 49 56.5 +1.9
PCVE Castro Verde 92.78 46 eP P 00 39 24.9 +1.8
comp=Z,55nm,1.9s
PCVE Castro Verde 92.78 46 ePP PP 00 42 53.7 -12
PCVE eSKS SKSac 00 50 01.3 +5.7
PNCL Nicolau / Gran 92.80 45 eP P 00 39 24.1 +0.9
comp=Z,43nm,1.7s
PNCL Nicolau / Gran 92.80 45 ePP PP 00 43 06.1 +0.1
PNCL eSKS SKSac 00 49 57.8 +2.1
MESJ Messejana 92.81 45 eP P 00 39 24.2 +1.0
MESJ ePP PP 00 43 06.1 +0.1
MESJ eS SKSac 00 49 56.0 +0.3
MESJ AMS AMS 01 20 13.1
comp=Z,7µm,17.1s
MESJ Messejana 92.81 45 eP P 00 39 25.0 +1.8
comp=Z,43nm,1.7s
MESJ Messejana 92.81 45 ePP PP 00 43 07.6 +1.6
PVAQ Vaqueiros 92.82 46 eP P 00 39 24.6 +1.3
comp=Z,62nm,1.8s
PVAQ Vaqueiros 92.82 46 ePP PP 00 43 01.5 -4.6
PVAQ eSKS SKSac 00 49 57.8 +2.0
TAM Tamanrasset 92.82 64 eP P 00 39 23.4 -0.4
TAM Tamanrasset 92.82 64 eP P 00 39 23.4 -0.4
TAM LR LR
comp=Z,11µm,21.0s
LIS Lisbon 92.84 44 eP P 00 39 24.4 +1.0

LIS eS SKSac 00 49 56.2 +0.4
LIS AMS AMS 01 19 18.7
comp=Z,4µm,17.3s
PMAFR Mafra 92.93 44 eP P 00 39 26.2 +2.4
comp=Z,118nm,1.8s
PMAFR Mafra 92.93 44 ePP PP 00 43 08.1 +1.1
PMAFR eSKS SKSac 00 50 00.9 +4.5
NLWA Neilton Lookou 93.28 328 PFAKE 00 39 40.0 +15
NLWA LR LR
comp=Z,2µm,19.0s
EVO Evora 93.39 45 eP P 00 39 26.3 +0.4
comp=Z,27nm,1.5s
EVO Evora 93.39 45 ePP PP 00 43 11.1 +0.5
PMTG Montargil 93.62 44 eP P 00 39 29.7 +2.8
comp=Z,42nm,1.7s
PMTG Montargil 93.62 44 ePP PP 00 43 12.5 +0.1
PMTG eSKS SKSac 00 50 08.5 +8.4
PBAR Barrancos 93.73 46 eP P 00 39 29.3 +1.8
comp=Z,87nm,1.6s
PBAR Barrancos 93.73 46 ePP PP 00 43 14.2 +0.9
PBAR eSKS SKSac 00 50 03.2 +2.4
EDM Edmonton 93.85 337 eP P 00 39 26.3 -1.4
EDM pmax pmax
comp=Z,32nm,1.0s
EDM Edmonton 93.85 337 eP P 00 39 26.3 -1.4
comp=Z,32nm,1.0s
PESTR Estremoz 93.86 45 eP P 00 39 29.9 +1.8
comp=Z,38nm,1.7s
PESTR Estremoz 93.86 45 ePP PP 00 43 14.8 +0.5
PESTR eSKS SKSac 00 50 01.7 +0.2
PCAS Casmilo, Conde 94.11 44 eP P 00 39 30.9 +1.7
comp=Z,40nm,1.8s
PCAS Casmilo, Conde 94.11 44 ePP PP 00 43 13.3 -2.9
PCAS eSKS SKSac 00 49 59.3 -3.5
MTE Manteigas 94.89 44 eP P 00 39 35.0 +2.2
comp=Z,36nm,1.7s
MTE Manteigas 94.89 44 ePP PP 00 43 21.6 -0.8
MTE eSKS SKSac 00 50 07.4 +0.3
MTE Manteigas 94.89 44 eLR LR 01 11 29.4
comp=Z,6µm,20.0s
MTE Manteigas 94.89 44 PFAKE 00 39 40.0 +7.2
MTE LR LR
comp=Z,6µm,20.0s
PVIS Viseu 94.89 43 ePP PP 00 43 24.6 +2.2
PVRL Vila Real 95.36 43 ePP PP 00 43 24.6 -1.4
POLO Lamas de Olo 95.39 43 eP P 00 39 37.0 +1.9
comp=Z,16nm,2.1s
POLO Lamas de Olo 95.39 43 ePP PP 00 43 24.2 -2.1
POLO eSKS SKSac 00 50 09.4 -0.4
TAU Tasmania Unive 95.50 208 PFAKE 00 39 50.0 +14
TAU LR LR
comp=Z,3µm,19.0s
PGAV Gavieira, Arco 95.51 42 eP P 00 39 37.5 +1.8
comp=Z,24nm,1.6s
PGAV Gavieira, Arco 95.51 42 ePP PP 00 43 27.1 -0.1
PGAV eSKS SKSac 00 50 22.9 +12
PGAV Gavieira, Arco 95.51 42 eLR LR 01 11 43.6
comp=Z,3µm,20.0s
POHA Pohakuloa 95.56 290 PFAKE 00 39 50.0 +13
POHA LR LR
comp=Z,3µm,20.0s
MVO Moncorvo 95.68 43 eP P 00 39 36.2 -0.3
comp=Z,32nm,1.6s
MVO Moncorvo 95.68 43 ePP PP 00 43 27.4 -1.1
MVO eSKS SKSac 00 50 11.6 +0.2
MVO Moncorvo 95.68 43 eLR LR 01 11 53.7
comp=Z,5µm,18.0s
MSVF Nonsavu 95.81 244 PFAKE 00 39 50.0 +12
MSVF LR LR
comp=Z,5µm,21.0s
PAB San Pablo 96.22 46 PFAKE 00 39 50.0 +11
PAB LR LR
comp=Z,5µm,19.0s
PBRG Braganca 96.26 43 eP P 00 39 40.7 +1.6
comp=Z,21nm,1.7s
PBRG Braganca 96.26 43 ePP PP 00 43 32.5 -0.5
PBRG eSKS SKSac 00 50 15.5 +1.2
ESDC Sonseca Array 96.53 46 P P 00 39 39.9 -0.4
comp=Z,3.6nm,0.9s,baz=241,slow=3.9,SNR=16
ESDC LR LR 01 22 41.0
comp=Z,4µm,18.5s,baz=235,slow=35
KIP Kipapa 98.41 290 PFAKE 00 40 00.0 +11
KIP LR LR
comp=Z,4µm,20.0s
MBAR Mbarara 100.32 98 PFAKE 00 40 10.0 +12
MBAR LR LR
comp=Z,555nm,21.0s
FUNA Funafuti 100.50 252 PFAKE 00 40 10.0 +11
FUNA LR LR
comp=Z,8µm,20.0s
VAL Valentia 101.11 34 eP Pdif 00 40 01.0 +0.6
VAL ePP PP 00 44 08.0 -1.8
CAN Canberra 101.15 213 PFAKE 00 40 10.0 +8.6
CAN LR LR
comp=Z,2µm,19.0s
DZM Mont Dzumac 101.27 234 ePP PP 00 44 09.6 -1.2
comp=Z,246nm,25.4s
DZM eSKSac SKSac 00 50 36.9 -3.9
comp=Z,2µm,26.1s
DZM eSP SP 00 53 09.8 -1.7
comp=Z,1µm,25.9s
DZM eSS SS 00 58 40.6 +0.3
comp=Z,4µm,25.6s
DZM Mont Dzumac 101.27 234 eLQ LQ 01 08 58.7
comp=Z,4µm,34.4s
DZM eLR LR 01 13 15.5
comp=Z,8µm,28.6s
ABPO Ambohimpanom 101.88 123 PFAKE 00 40 20.0 +15
ABPO LR LR
comp=Z,907nm,20.0s
SFJD Kangerlussuaq 101.88 8 i P PP 00 44 13.3 -1.9
comp=Z,2µm,19.0s
SFJD Kangerlussuaq 101.88 8 PFAKE 00 40 10.0 +6.5
SFJD LR LR
comp=Z,3µm,19.0s
YKA Yellowknife Ar 101.92 341 P Pdif 00 40 03.4 -0.4
comp=Z,1.8nm,0.6s,baz=143,slow=3.8,SNR=4.2
WRAK Wrangell Islan 103.40 330 PFAKE 00 40 20.0 +9.5
WRAK LR LR
comp=Z,2µm,19.0s
VSL Villasalto 104.84 52 PFAKE 00 40 30.0 +13
VSL LR LR
comp=Z,7µm,19.0s
SSB Saint Sauveur 104.90 45 PFAKE 00 40 30.0 +12
SSB LR LR
comp=Z,5µm,19.0s
KMBO Kilima Mbogo 105.36 102 PFAKE 00 44 50.0
KMBO LR LR
comp=Z,5µm,19.0s
BORG Borgarnes 105.99 20 PFAKE 00 44 50.0
BORG LR LR
comp=Z,3µm,20.0s
BNI Bardonecchia 106.06 46 PFAKE 00 44 50.0
BNI LR LR
comp=Z,7µm,20.0s
RER Riviere de l'E 106.10 130 PFAKE 00 44 50.0
RER LR LR
comp=Z,4µm,19.0s
WDD Wied Dalam 106.47 58 PFAKE 00 44 50.0
WDD LR LR
comp=Z,23µm,19.0s
ESK Eskdalemuir 106.50 34 PFAKE 00 44 50.0
ESK LR LR
comp=Z,6µm,20.0s
VLC Villacollemand 107.87 49 PFAKE 00 44 50.0
VLC LR LR
comp=Z,2µm,19.0s
WLF Walferdange 108.16 42 PFAKE 00 44 50.0
WLF LR LR
comp=Z,8µm,19.0s
TUE Stuetta 108.39 46 PFAKE 00 44 50.0
TUE LR LR
comp=Z,4µm,19.0s
CEL Celeste 108.61 56 PFAKE 00 44 50.0
CEL LR LR
comp=Z,14µm,19.0s
KULLO Kullorsuaq 108.63 4 i P PP 00 45 01.0 -4.0
SUMG Summit 108.69 10 i P PP 00 45 04.8 -1.2
comp=Z,3µm,21.0s
BFO Black Forest 108.72 44 ePKP PKiKP 00 44 39.6 +0.1
BFO LR LR
comp=Z,3µm,22.0s
AQU L'Aquila 108.91 51 PFAKE 00 44 50.0
AQU LR LR
comp=Z,5µm,20.0s
DAVA Damuels 109.11 46 i PKiKP PKiKP 00 44 40.1 -0.3
comp=Z,5.9nm,1.2s
CUC Castrocucco 109.39 54 PFAKE 00 44 50.0
CUC LR LR
comp=Z,4µm,20.0s
TIP Timpagrande 109.65 56 PFAKE 00 44 50.0
TIP LR LR
comp=Z,14µm,20.0s
SCO Scoresbysund 110.08 16 i P PP 00 45 14.1 -1.5
comp=Z,2µm,19.0s
KBA Koelnbreinsper 111.09 47 i PKiKP PKiKP 00 44 43.5 -0.7
comp=Z,3.4nm,0.7s
LJU Ljubljana 111.35 48 ePdiff Pdif 00 40 47.0 +0.9
LJU eSP SP 00 54 52.2 -1.9
TARA Tarawa 111.36 257 PFAKE 00 45 00.0
TARA LR LR
comp=Z,208nm,20.0s
MOZS Mozjanca 111.41 48 ePdiff Pdif 00 40 47.9 +1.5
MOZS e 00 44 37.9
MOZS ePP PP 00 45 23.5 -2.3
OBKA Obir 111.57 48 i PKiKP PKiKP 00 44 44.6 -0.4
comp=Z,3.6nm,0.8s
SOKA Soboth 111.94 48 i PKiKP PKiKP 00 44 43.6 -2.1
comp=Z,1.9nm,0.8s
GCIS Gornji Cirnik 111.95 49 e 00 44 37.0
GCIS ePP PP 00 45 28.1 -1.7
GCIS e 00 47 48.4
EGAK Eagle 111.95 334 PFAKE 00 45 00.0
EGAK LR LR
comp=Z,2µm,19.0s
PERS Pernice 111.98 48 eSKSac SKSac 00 51 24.5 -2.0
NKC Novy Kostel 112.00 44 ePDIFF Pdif 00 40 50.9 +1.9
NKC ePKP PKiKP 00 44 45.8 +0.2
NKC ePP PP 00 45 28.2 -1.8
NKC eXS 00 53 16.7
NKC eSP SP 00 55 01.7 +1.8
NKC eSS SS 01 00 58.6 -8.0
NKC AMS AMS 01 32 30.0
comp=Z,4µm,18.4s
NKC Novy Kostel 112.00 44 eP Pdif 00 40 50.9 +1.9
NKC e 00 44 45.8
NKC e 00 45 28.2
NKC eSP SP 00 55 01.7 +1.8
NKC eSS SS 01 00 58.6 -8.0
NKC MLR MLR
comp=Z,4µm,18.4s
MOA Molln 112.00 46 i PKiKP PKiKP 00 44 44.0 -1.7
comp=Z,6.9nm,1.2s
GERES GERESS Array B 112.10 45 PKiKP PKiKP 00 44 45.5 -0.5
comp=Z,3.4nm,0.9s,baz=160,slow=1.3,SNR=14
GERES PKKPbc PKKPbc 00 55 36.7 -1.4
comp=Z,0.2nm,0.4s,baz=72,slow=3.2,SNR=4.3
GERES PKKP PKKPdf 00 55 55.2 -3.0
comp=Z,1.7nm,1.0s,baz=69,slow=3.4,SNR=5.9
KHC Kasperske Hory 112.16 45 ePDIFF Pdif 00 40 51.7 +2.0
KHC ePKP PKiKP 00 44 45.7 -0.3
KHC epPKP pPKP 00 44 52.1
KHC ePP PP 00 45 28.3 -2.9
KHC eSKS SKSac 00 51 25.9 -1.2
KHC eSDIF Sdif 00 53 16.0 +5.6
KHC eSP SP 00 55 02.7 +1.3
KHC eSS SS 01 01 03.2 -5.7
KHC AMS AMS 01 34 40.0
comp=Z,4µm,19.2s
KHC Kasperske Hory 112.16 45 eP Pdif 00 40 51.7 +2.0
KHC e 00 44 45.7
KHC e 00 44 52.1
KHC e 00 45 28.3
KHC e 00 51 25.9
KHC eSP SP 00 55 02.7 +1.3
KHC eSS SS 01 01 03.2 -5.7
KHC MLR MLR
comp=Z,4µm,19.2s
ARSA Arzberg 112.50 47 i PKiKP PKiKP 00 44 46.0 -0.7
comp=Z,4.1nm,0.8s
STAV Stavanger 112.53 33 eP Pdif 00 40 52.3 +1.2
STAV ePP PP 00 45 34.5 +1.0
STAV IVMs_BB IVMs_BB 01 31 56.8
comp=Z,1µm,18.8s
TIR Tirane 112.74 55 PFAKE 00 45 00.0
TIR LR LR
comp=Z,11µm,20.0s
CLL Collm 112.79 43 ePdif Pdif 00 40 52.0 -0.4
CLL i PKiKP PKiKP 00 44 46.4 -0.6
comp=Z,13nm,1.5s
CLL i 00 44 51.2
CLL e 00 44 55.0
CLL ePP PP 00 45 30.0 -5.5
CLL ePPlp 00 45 36.0
comp=Z,400nm,23.7s
CLL i 00 45 40.8
CLL ePPP PPP 00 47 58.0
CLL eSKSac SKSac 00 51 32.0 +2.6
CLL eSKKSac SKKSac 00 52 38.0 +2.2
CLL eSdif Sdif 00 53 14.0 -1.4
CLL ePS PS 00 55 13.0 +3.0
CLL ePPS PPS 00 56 28.0
CLL e 00 59 51.0
CLL eSS SS 01 01 17.0 0.0
CLL eSSS SSS 01 05 27.0
CLL eSSSS 01 09 12.0
CLL Lm MLR 01 30 00.0
comp=N,1µm,21.8s
CLL Lm MLR 01 30 00.0
comp=E,4µm,20.4s
CLL Lm MLR 01 30 00.0
comp=Z,5µm,21.0s
CLL Collm 112.79 43 i PKiKP PKiKP 00 44 46.4 -0.6
CLL i 00 44 51.2
CLL e 00 51 32.0
CLL pmax pmax
comp=Z,13nm,1.5s
CLL MLR MLR
comp=Z,5µm,21.0s
NWAO Narrogin (SRO) 112.97 189 PFAKE 00 45 00.0
NWAO LR LR
comp=Z,2µm,19.0s
CONA Conrad Observa 113.00 47 i PKiKP PKiKP 00 44 45.9 -1.8
comp=Z,3.6nm,0.8s
MUD Monsted U'grnd 113.04 37 i P PP 00 45 35.2 -2.0
BER Bergen 113.06 32 eP Pdif 00 40 51.3 -2.0
BER ePP PP 00 45 36.6 -0.6
BER IVMs_BB IVMs_BB 01 32 39.7
comp=Z,1µm,19.6s
PRU Pruhonice 113.10 44 ePDIFF Pdif 00 40 55.8 +2.0
PRU ePP PP 00 45 30.9 -6.9
PRU eSKS SKSac 00 51 30.5 -0.2
PRU eXS Sdif 00 53 25.1 +7.1
PRU eSP SP 00 55 10.5 +0.5
PRU eSS SS 01 01 18.3 -2.9
PRU AMS AMS 01 34 40.0
comp=Z,5µm,19.2s
PRU Pruhonice 113.10 44 eP Pdif 00 40 55.8 +2.0
PRU e 00 51 30.5
PRU eSP SP 00 55 10.5 +0.5
PRU eSS SS 01 01 18.3 -2.9
PRU MLR MLR
comp=Z,5µm,19.2s
BLS5 Blasjo 113.11 33 ePP PP 00 45 38.0 +0.3
BLS5 IVMs_BB IVMs_BB 01 32 02.6
comp=Z,1µm,23.0s
SUE Sulen 113.13 31 eP Pdif 00 40 57.2 +3.6
SUE ePP PP 00 45 34.7 -3.0
SUE IVMs_BB IVMs_BB 01 30 36.4
comp=Z,1µm,26.2s
BRG Berggiesshubel 113.13 43 ePKP PKiKP 00 44 47.7 0.0
comp=Z,5.9nm,1.1s
BRG ePP PP 00 45 29.3 -8.7
comp=Z,6.9nm,1.3s
BRG SKS SKSac 00 51 35.0 +4.2
BRG S Sdif 00 53 23.0 +4.7
BRG e 00 55 16.0
BRG SS SS 01 01 24.0 +2.4
comp=N,2µm,18.2s
comp=E,2µm,18.6s
comp=Z,4µm,19.2s
BRG Berggiesshubel 113.13 43 ePKIKP PKiKP 00 44 47.7 0.0
BRG 00 51 35.0
BRG e 00 55 16.0
BRG SS SS 01 01 24.0 +2.4
BRG pmax pmax
comp=Z,6.0nm,1.1s
BRG MLR MLR
comp=N,2µm,18.2s
BRG MLR MLR
comp=E,2µm,18.6s
BRG MLR MLR
comp=Z,4µm,19.2s
GOPC GO Pecny, Ondr 113.21 45 ePDIFF Pdif 00 40 52.5 -1.9
GOPC ePP PP 00 45 37.2 -1.4
GOPC eSKS SKSac 00 51 31.0 -0.2
GOPC eSDIF Sdif 00 53 25.5 +6.5
GOPC eSP SP 00 55 12.4 +1.4
GOPC eSS SS 01 01 21.5 -1.2
GOPC AMS AMS 01 35 00.0
comp=Z,4µm,18.9s
GOPC GO Pecny, Ondr 113.21 45 eP Pdif 00 40 52.5 -1.9
GOPC e 00 45 37.2
GOPC e 00 51 31.0
GOPC eSP SP 00 55 12.4 +1.4
GOPC eSS SS 01 01 21.5 -1.2
GOPC MLR MLR
comp=Z,4µm,18.9s
KDAK Kodiak Island 113.25 325 PFAKE 00 45 00.0
KDAK LR LR
comp=Z,889nm,20.0s
PVCC Panska Ves 113.34 44 ePKP PKiKP 00 44 48.4 +0.3
PVCC ePP PP 00 45 38.0 -1.6
PVCC eSP SP 00 55 15.4 +3.2
PVCC AMS AMS 01 35 30.0
comp=Z,4µm,17.8s
PVCC Panska Ves 113.34 44 ePKIKP PKiKP 00 44 48.4 +0.3
PVCC e 00 45 38.0
PVCC eSP SP 00 55 15.4 +3.2
PVCC MLR MLR
comp=Z,4µm,17.8s
ODD1 Odda 113.41 33 IVMs_BB IVMs_BB 01 38 05.4
comp=Z,4µm,43.9s
FOO Floro 113.50 31 ePP PP 00 45 42.0 +1.6
FOO IVMs_BB IVMs_BB 01 36 14.5
comp=Z,1µm,16.6s
HOMB Homborsund 113.53 35 ePP PP 00 45 40.0 -0.6
HOMB IVMs_BB IVMs_BB 01 30 22.5
comp=Z,1µm,20.9s
JMIC Jan Mayen 113.76 19 ePP PP 00 45 41.3 -0.7
JMIC IVMs_BB IVMs_BB 01 32 59.5
comp=Z,1µm,4.1s
HYA Hoyanger 113.79 31 IVMs_BB IVMs_BB 01 37 11.1
comp=Z,1µm,18.2s
VRAC Vranov 114.02 46 ⇑iP PKiKP 00 44 50.8 +1.3
VRAC Vranov 114.02 46 ⇑PKIKP PKiKP 00 44 50.8 +1.3
ILAR Eielson Array 114.06 333 PKP PKPdf 00 44 48.4 -0.7
comp=Z,2.1nm,1.1s,baz=205,slow=1.3,SNR=9.4
ILAR PKKPbc PKKPbc 00 55 25.5 -6.2
comp=Z,0.3nm,0.8s,baz=320,slow=3.8,SNR=4.0
LLD Lille Linde 114.09 39 i P PKPdf 00 44 49.3 0.0
LLD Lille Linde 114.09 39 i PKIKP PKPdf 00 44 49.3 0.0
UPC Upice 114.17 44 ePDIFF Pdif 00 41 02.4 +3.8
UPC ePKP PKiKP 00 44 50.0 +0.3
UPC ePP PP 00 45 43.9 -1.5
UPC eSS SS 01 01 28.7 -6.7
UPC AMS AMS 01 33 20.0
comp=Z,4µm,19.6s
UPC Upice 114.17 44 eP Pdif 00 41 02.4 +3.8
UPC e 00 44 50.0
UPC e 00 45 43.9
UPC eSS SS 01 01 28.7 -6.7
UPC MLR MLR
comp=Z,4µm,19.6s
DPC Dobruska-Polom 114.29 45 ePDIFF Pdif 00 40 59.5 +0.3
DPC ePKP PKiKP 00 44 50.1 +0.1
DPC epPKP PKPdf 00 44 59.0 +9.0
DPC eSKS SKSac 00 51 37.0 +1.6
DPC eXS Sdif 00 53 40.5 +12
DPC eSP SP 00 55 20.2 -0.7
DPC AMS AMS 01 35 50.0
comp=Z,4µm,17.8s
DPC Dobruska-Polom 114.29 45 eP Pdif 00 40 59.5 +0.3
DPC e 00 44 50.1
DPC e 00 44 59.0
DPC e 00 51 37.0
DPC eSP SP 00 55 20.2 -0.7
DPC MLR MLR
comp=Z,4µm,17.8s
COP Copenhagen 114.35 38 i P PP 00 45 44.5 -2.0
comp=Z,2µm,22.0s
KRLC Kraliky 114.45 45 ePKP PKPdf 00 44 50.7 +0.4
KRLC Kraliky 114.45 45 ePKIKP PKPdf 00 44 50.7 +0.4
COLA College 114.47 333 PFAKE 00 45 00.0 +10
COLA LR LR
comp=Z,2µm,21.0s
KSP Ksiaz 114.47 44 ePdiff Pdif 00 41 02.2 +2.3
KSP ePP PP 00 45 43.2 -4.3
KSP eSP SP 00 55 32.3 +10
KSP LMZ LR 01 30 54.1
comp=Z,4µm,21.3s
KSP Ksiaz 114.47 44 eP Pdif 00 41 02.2 +2.3
KSP eSP SP 00 55 32.3 +10
KSP MLR MLR
comp=Z,4µm,21.3s
HNR Honiara 114.49 239 PFAKE 00 45 00.0 +8.5
HNR LR LR
comp=Z,2µm,20.0s
SANT Santorini 114.58 62 PFAKE 00 45 00.0 +9.0
SANT LR LR
comp=Z,2µm,19.0s
AKN Aaknes 114.59 30 ePP PP 00 45 45.0 -3.1
AKN eSS SS 01 01 39.3 -1.0
AKN IVMs_BB IVMs_BB 01 37 21.3
comp=Z,2µm,16.1s
KONO Kongsberg 114.64 34 ePP PP 00 45 49.0 +0.6
KONO IVMs_BB IVMs_BB 01 31 13.9
comp=Z,1µm,21.2s
KONO Kongsberg 114.64 34 PFAKE 00 45 00.0 +10
KONO LR LR
comp=Z,3µm,21.0s
MORC Moravsky Berou 114.78 46 ⇓iP PKPdf 00 44 51.2 +0.2
MORC Moravsky Berou 114.78 46 ⇓PKIKP PKPdf 00 44 51.2 +0.2
MOL Molde 114.99 30 IVMs_BB IVMs_BB 01 36 06.3
comp=Z,1µm,19.8s
CTAO Charters Tower 115.07 220 PFAKE 00 45 00.0 +7.5
CTAO LR LR
comp=Z,3µm,19.0s
KKB Krupnik 115.15 55 i P PP 00 45 51.2 -1.4
OKC Ostrava-Krasne 115.16 46 ePKP PKPdf 00 44 51.8 +0.2
OKC eSKS SKSac 00 51 38.9 +0.2
OKC eXS Sdif 00 53 48.3 +13
OKC eSS SS 01 01 46.4 -2.0
OKC AMS AMS 01 38 00.0
comp=Z,4µm,19.4s
OKC Ostrava-Krasne 115.16 46 ePKIKP PKPdf 00 44 51.8 +0.2
OKC e 00 51 38.9
OKC eSS SS 01 01 46.4 -2.0
OKC MLR MLR
comp=Z,4µm,19.4s
DAG Danmarks Havn 115.20 12 i P PP 00 45 46.9 -5.1
comp=Z,3µm,18.0s
BANR Banloc 115.26 51 ⇑iP PKPdf 00 44 55.2 +3.3
OSL Oslo 115.28 34 ePP PP 00 45 53.4 +0.5
OSL IVMs_BB IVMs_BB 01 39 33.8
comp=Z,814nm,16.8s
BPAW Bear Paw Mtn. 115.34 332 ePKPdf PKPdf 00 44 50.8 -0.8
DOMB Dombas 115.41 31 eP Pdif 00 41 03.8 0.0
DOMB eP PP 00 45 52.1 -1.8
DOMB eSS SS 01 01 52.2 +1.0
DOMB IVMs_BB IVMs_BB 01 33 43.5
comp=Z,1µm,22.7s
BSD Bornholm Skovb 115.42 39 i P PP 00 45 51.9 -2.1
comp=Z,4µm,19.0s
PSZ Piszkesteto 115.47 48 PFAKE 00 45 00.0 +7.6
PSZ LR LR
comp=Z,6µm,19.0s
MMB Musomiste 115.48 56 i P PP 00 45 54.0 -1.0
VTS Vitosha 115.53 55 ⇑iP PKPdf 00 44 52.3 -0.5
VTS Vitosha 115.53 55 ⇑PKIKP PKPdf 00 44 52.3 -0.5
VTS Vitosha 115.53 55 i P PP 00 45 55.2 -0.2
BZS Buzias 115.66 51 ⇓iP PKPdf 00 44 52.8 +0.1
BZS Buzias 115.66 51 ⇓PKIKP PKPdf 00 44 52.8 +0.1
SIRR Siria 115.94 50 ⇓iP PKPdf 00 44 53.2 -0.1
NB2 NORSAR Subarra 115.95 33 PKPdf PKPdf 00 44 52.3 -0.6
comp=Z,4.8nm,1.1s,baz=248,slow=1.9
NB2 NORSAR Subarra 115.95 33 PKPdf PKPdf 00 44 52.3 -0.6
baz=248,slow=1.9
NOA NORSAR Array B 115.95 33 PKP PKPdf 00 44 52.7 -0.2
comp=Z,2.1nm,0.9s,baz=255,slow=2.3,SNR=5.4
GKP Gorka Klasztor 115.96 42 ePKPdf PKPdf 00 44 52.9 -0.1
GKP eP PP 00 45 55.8 -2.2

GKP LMZ LR 01 34 49.1
comp=Z,6µm,19.5s
GKP Gorka Klasztor 115.96 42 *e*PKIKP **PKPdf 00 44 52.9 -0.1**
GKP *e* 00 45 55.8
GKP MLR MLR
comp=Z,6µm,19.5s
NC602 NORSAR Array S 115.97 33 *e*PP PP 00 45 57.0 -0.8
NC602 IVMs_BB IVMs_BB 01 35 31.4
comp=Z,1µm,15.9s
RZN Rozhen 116.20 56 *i* P **PP 00 45 58.0 -2.2**
OJC Ojcow 116.29 46 *e*PKPdf **PKPdf 00 44 53.7 -0.1**
OJC *e*PP **PP 00 45 58.2 -2.1**
OJC *e*SKSac **SKSac 00 51 43.7 +0.8**
OJC *e*SP **SP 00 55 48.2 +9.1**
OJC *e*PSP PSP 00 57 05.3
OJC *e*SS **SS 01 02 03.9 +0.7**
OJC LMZ LR 01 32 15.9
comp=Z,2µm,21.8s
OJC Ojcow 116.29 46 *e*PKIKP **PKPdf 00 44 53.7 -0.1**
OJC *e* 00 45 58.2
OJC *e* 00 51 43.7
OJC *e*SP SP 00 55 48.2 +9.1
OJC *e* 00 57 05.3
OJC *e*SS SS 01 02 03.9 +0.7
OJC MLR MLR
comp=Z,2µm,21.8s
KDZ Kurdzhali 116.67 56 *i* P **PP 00 45 59.2 -4.1**
DRGR 116.81 50⇑*i*P **PKPdf 00 44 53.8 -1.2**
DRGR 116.81 50 ⇑PKIKP **PKPdf 00 44 53.8 -1.2**
MIDW Midway 117.02 287 PFAKE 00 45 10.0 +14
MIDW LR LR
comp=Z,2µm,21.0s
PVL Pavlikeni 117.21 55 *i* P **PP 00 46 04.0 -2.9**
UZH Uzhgorod 117.22 48 *e*PKIKP **PKPdf 00 44 55.0 -0.6**
UZH *i* 00 44 59.5
UZH *e* 00 45 11.5
BEL Belsk 117.46 44 *e*PKPdf **PKPdf 00 44 56.8 +0.8**
BEL LMZ LR 01 36 59.6
comp=Z,3µm,19.4s
BEL Belsk 117.46 44 *e*PKIKP **PKPdf 00 44 56.8 +0.8**
BEL MLR MLR
comp=Z,3µm,19.4s
ARR Arges 117.53 52⇓*i*P **PKPdf 00 44 56.1 -0.3**
SZH Strazhica 117.64 55 *i* P **PP 00 46 08.8 -1.1**
ASAR Alice Springs 117.66 207 PKP **PKPdf 00 44 56.1 -1.3**
comp=Z,1.9nm,0.8s,baz=147,slow=2.4,SNR=13
ASAR PKKPbc **PKKPbc 00 55 17.8 -0.6**
comp=Z,1.3nm,0.7s,baz=337,slow=3.0,SNR=6.3
KWP Kalwaria Pacla 117.83 47 *e*PKPdf **PKPdf 00 44 57.3 +0.5**
KWP *e*PP **PP 00 46 07.3 -3.8**
KWP *e*PSP PSP 00 57 28.9
KWP LMZ LR 01 37 46.2
comp=Z,4µm,21.8s
KWP Kalwaria Pacla 117.83 47 *e*PKIKP **PKPdf 00 44 57.3 +0.5**
KWP MLR MLR
comp=Z,4µm,21.8s
VOIR 117.83 52⇓*i*P **PKPdf 00 44 56.8 -0.2**
VOIR 117.83 52 ⇓PKIKP **PKPdf 00 44 56.9 -0.1**
DOPR Dopca 118.24 52⇑*i*P **PKPdf 00 44 56.5 -1.2**
MLR Muntele Rosu 118.44 52⇓*i*P **PKPdf 00 44 57.7 -0.6**
MLR Muntele Rosu 118.44 52 ⇓PKIKP **PKPdf 00 44 57.7 -0.6**
BURAR Bucovina Array 118.70 50⇓*i*P **PKPdf 00 44 55.1 -3.6**
BURAR Bucovina Array 118.70 50 ⇓PKIKP **PKPdf 00 44 55.1 -3.6**
LVV L'vov 118.70 47 *e*PKIKP **PKPdf 00 44 57.7 -0.7**
ISP Isparta 118.87 62 PFAKE 00 45 10.0 +11
ISP LR LR
comp=Z,5µm,21.0s
PLOR Plostina 119.03 52⇑*i*P **PKPdf 00 44 58.5 -0.7**
PLOR Plostina 119.03 52 ⇑PKIKP **PKPdf 00 44 58.6 -0.7**
TESR Tescani 119.25 51⇑*i*P **PKPdf 00 45 00.7 +1.1**
PSN Preselentsi 119.31 55 *i* P **PP 00 46 18.8 -2.7**
LOF Lofoten 119.39 25 *e*PP PP 00 46 22.4 +1.0
LOF IVMs_BB IVMs_BB 01 30 32.3
comp=Z,1µm,4.1s
TLB Topalu 119.53 54⇑*i*P **PKPdf 00 45 00.3 +0.1**
TLB Topalu 119.53 54 ⇑PKIKP **PKPdf 00 45 00.3 +0.1**
SUW Suwalki 119.54 42 *e*PKPdf **PKPdf 00 44 59.3 -0.6**
SUW *e*PP PP 00 46 14.8 -8.0
SUW LMZ LR 01 36 36.2
comp=Z,4µm,19.8s
SUW Suwalki 119.54 42 *e*PKIKP **PKPdf 00 44 59.3 -0.6**
SUW MLR MLR
comp=Z,4µm,19.8s
TIRR Tirgusor 119.73 54⇓*i*P **PKPdf 00 45 00.4 -0.2**
TIRR Tirgusor 119.73 54 *e*PKIKP **PKPdf 00 44 59.9 -0.7**
TIRR Tirgusor 119.73 54 *e*PKPdf **PKPdf 00 44 59.9 -0.7**
CFR Carcaliu 119.79 53⇑*i*P **PKPdf 00 45 00.4 -0.2**
CFR Carcaliu 119.79 53 ⇑PKIKP **PKPdf 00 45 00.4 -0.2**
CSS Mathiatis 119.89 66 *e*PKPdf **PKPdf 00 45 01.8 +0.5**
CSS LR LR
comp=Z,1µm,22.0s
TLCR 120.24 53⇑*i*P **PKPdf 00 45 01.4 -0.1**
TLCR 120.24 53 ⇑PKIKP **PKPdf 00 45 01.4 -0.1**
KIS Kishinev 120.82 51 *e*PKP **PKPdf 00 45 02.0 -0.6**
KIS Kishinev 120.82 51 *i* PP PP 00 46 28.0 -3.8
KIS Kishinev 120.82 51 *e*PPS PPS 00 58 46.0
KIS *e*SS SS 01 03 24.0 +22
KIS *e*SSS SSS 01 08 20.0
KIS *e*L L 01 24 40.0
KIS LRM MLR 01 41 16.0
comp=Z,9µm,19.0s
KIS Kishinev 120.82 51 *e*PKIKP **PKPdf 00 45 02.0 -0.6**
KIS *e* 00 45 12.0
KIS *i* 00 46 28.0
KIS *e*PPP PPP 00 49 08.0
KIS *e*PS **PS 00 56 24.0 +0.9**
KIS *e*SS SS 01 03 24.0 +22
WRA Warramunga Arr 120.84 209 PKP **PKPdf 00 45 02.5 -1.1**
comp=Z,4.2nm,0.6s,baz=168,slow=1.5,SNR=37
WRA PKKPbc **PKKPbc 00 55 05.9 -0.9**
comp=Z,1.0nm,0.8s,baz=339,slow=4.6,SNR=4.1
WRAB Tennant Creek 120.85 209 *e*PKIKP **PKPdf 00 45 02.9 -0.8**
WRAB MLR MLR
comp=Z,2µm,21.0s
WRAB Tennant Creek 120.85 209 *e*PKPdf **PKPdf 00 45 02.9 -0.8**
WRAB LR LR
comp=Z,2µm,21.0s
SORM Soroca 120.87 50⇓*i*P **PKPdf 00 45 01.5 -1.1**
SORM Soroca 120.87 50 ⇓PKIKP **PKPdf 00 45 01.5 -1.1**
ANTO Ankara 121.25 60 *e*PKIKP **PKPdf 00 45 03.4 -0.4**
ANTO MLR MLR
comp=Z,3µm,22.0s
ANTO Ankara 121.25 60 *e*PKPdf **PKPdf 00 45 03.4 -0.4**
ANTO LR LR
comp=Z,3µm,22.0s
TRO Tromso 121.66 24 *e*PP PP 00 46 34.1 -2.8
TRO *e*SS SS 01 03 12.6 +1.1
TRO IVMsBB 01 54 24.1
comp=Z,2µm,4.3s
NACGM Naroch 121.81 42 *e* **PKPdf 00 45 03.0 -1.2**
NACGM eLR LR 01 30 08.0
BRTR Keskin Array B 121.82 61 PKP **PKPdf 00 45 04.3 -0.7**
comp=Z,6.8nm,0.9s,baz=191,slow=3.1,SNR=34
KBS Kingsbay 121.85 13 *e*PP PP 00 46 36.1 -1.8
KBS IVMsBB 01 33 16.6
comp=Z,772nm,21.6s
KBS Kingsbay 121.85 13 PFAKE 00 45 20.0 +16
KBS LR LR
comp=Z,2µm,19.0s
KIEV Kiev 122.13 47 *e*PKIKP **PKPdf 00 45 03.9 -1.1**
KIEV MLR MLR
comp=Z,3µm,20.0s
KIEV Kiev 122.13 47 *e*PKPdf **PKPdf 00 45 03.9 -1.1**
KIEV LR LR
comp=Z,3µm,20.0s
AKASG Malin Array Be 122.15 47 PKP **PKPdf 00 45 03.6 -1.4**
comp=Z,15nm,0.9s,baz=262,slow=2.7,SNR=37
AKASG PP **PP 00 46 36.8 -3.9**
comp=Z,0.2nm,0.3s,baz=253,slow=7.2,SNR=4.6
AKASG PKKP **PKKPdf 00 55 39.3 +0.6**
comp=Z,0.6nm,0.4s,baz=60,slow=4.1,SNR=6.1
HSPB Hornsund (broa 122.18 15 *e*PP PP 00 46 42.0 +1.7
HSPB IVMs_BB IVMs_BB 01 39 30.8
comp=Z,699nm,3.6s
MICGM Minsk 122.33 43 *e*PKP **PKPdf 00 45 05.0 -0.2**
MICGM *e*PP PP 00 46 34.0 -7.8
MICGM *e*PKS **PKSdf 00 48 44.0 +2.4**
MICGM *e*PPP PPP 00 49 26.0
MICGM *e*SKS **SKSdf 00 52 16.0 +0.3**
MICGM *e*PS **PS 00 56 44.0 +7.7**
MICGM *e*SS **SS 01 03 16.0 -4.9**
MICGM *e*LR LR 01 29 30.0
MICGM LRM MLR 01 37 20.0
comp=Z,5.1nm,20.0s
MNK Minsk 122.33 43 *e*PKIKP **PKPdf 00 45 05.0 -0.2**
MNK *e*PPP PPP 00 49 26.0
MNK *e* 00 52 16.0
MNK *e*SS SS 01 03 16.0 -4.9
MNK MLR MLR
comp=Z,5µm,20.0s
SPA0 Spitsbergen Ar 122.57 14 *e*PP PP 00 46 42.1 -0.8
SPA0 IVMsBB 01 36 59.0
comp=Z,2µm,17.8s
VSU Vasula 122.63 38⇓*e*PKIKP **PKPdf 00 45 05.5 -0.2**
BJO Bjornoya 122.64 19 IVMs_BB IVMs_BB 01 33 36.6
comp=Z,3µm,3.5s
FINES FINESS Array B 122.92 35 PKP **PKPdf 00 45 05.7 -0.4**
comp=Z,10nm,1.0s,baz=230,slow=1.5,SNR=11
FINES PKKPbc **PKKPbc 00 54 58.8 -0.5**
comp=Z,2.2nm,1.0s,baz=90,slow=0.1,SNR=3.7
PMG Port Moresby 123.06 228⇑*e*PKIKP **PKPdf 00 45 04.2 -3.8**
PMG Port Moresby 123.06 228 PFAKE 00 45 20.0 +12
PMG LR LR
comp=Z,3µm,20.0s
HAMF Hammerfest 123.44 23 *e*PP PP 00 46 40.2 -8.6
HAMF IVMs_BB IVMs_BB 01 42 29.9
comp=Z,2µm,3.6s
SIM Simferopol' 123.75 55 *e*PKIKP **PKPdf 00 45 08.1 -0.2**
SIM *e* 00 45 18.2
SIM *e*SS SS 01 03 51.0 +12
SIM pmax pmax
comp=Z,62nm,1.0s
ARCES ARCESS Array B 123.92 25 PKP **PKPdf 00 45 07.5 -0.4**
comp=Z,5.3nm,0.7s,baz=245,slow=3.4,SNR=16
ARE0 ARCESS Array S 123.92 25 *e*PP PP 00 46 49.4 -2.8
ARE0 IVMs_BB IVMs_BB 01 37 04.6
comp=Z,1µm,3.9s
MBWA Marble Bar 124.12 193 *e*PKPdf **PKPdf 00 45 08.7 -1.2**
MBWA LR LR
comp=Z,3µm,19.0s
HOPEN Hopen 124.30 16 *e*PP PP 00 46 41.3 -13
HOPEN IVMs_BB IVMs_BB 01 38 43.9
comp=Z,2µm,3.4s
FITZ Fitzroy Crossi 125.61 201 *e*PKPdf **PKPdf 00 45 12.3 -0.5**
H11S2 WAKE ISLAND Hyd 125.72 269 T T 03 04 14.6
baz=118,slow=74,SNR=144
H11S1 WAKE ISLAND Hyd 125.73 269 T T 03 04 14.8
baz=118,slow=74,SNR=144
H11S3 WAKE ISLAND Hyd 125.74 269 T T 03 04 19.1
baz=118,slow=74,SNR=133
ANN Anapa 125.99 56 *i* PKIKP **PKPdf 00 45 08.2 -4.4**
ANN *e* 00 47 02.8
ANN *e* 00 52 09.1
ANN *e*SS SS 01 04 12.5 +4.9
ANN pmax pmax
comp=Z,75nm,1.3s
APA Apatity 126.70 27⇓*i*PKIKP **PKPdf 00 45 12.8 -0.5**
APA *i* 00 47 11.0
APA *i* SS SS 01 04 18.0 +2.8
APA pmax pmax
comp=Z,16nm,0.8s
APA MLR MLR
comp=Z,3µm,19.0s
DGAR Diego Garcia 126.95 134 PFAKE 00 45 30.0 +15
DGAR LR LR
comp=Z,4µm,22.0s
LVZ Lovozero 127.18 27⇑*i*PKIKP **PKPdf 00 45 14.8 +0.6**
SOC Sochi 127.29 58 *i* PKIKP **PKPdf 00 45 15.3 +0.2**
SOC *e* 00 47 11.9
SOC *e* 00 52 17.5
SOC *e*PS **PS 00 57 18.6 -1.8**
OBN Obninsk 127.38 43*c i*PKIKP **PKPdf 00 45 14.2 -0.7**
OBN *i* 00 52 28.4
OBN pmax pmax
comp=Z,37nm,1.1s
OBN Obninsk 127.38 43 *e*PKPdf **PKPdf 00 45 14.6 -0.2**
OBN LR LR
comp=Z,6µm,19.0s
MOS Moscow 128.05 43 *e*PKIKP **PKPdf 00 45 15.6 -0.6**
MOS *e* 00 47 25.4
MOS *e*PPP PPP 00 50 04.7
MOS pmax pmax
comp=Z,100nm,1.4s
MOS pmax pmax
comp=Z,59nm,1.2s
VSR Storozhevoye 128.40 48 *e*PKIKP **PKPdf 00 45 16.7 -0.3**
VSR *e* 00 47 21.1
VSR pmax pmax
comp=Z,40nm,1.8s
KLMR Klimovskoe 129.33 36 *e*PKIKP **PKPdf 00 45 15.7 -2.8**
KLMR *e* 00 47 25.4
KLMR pmax pmax
comp=Z,118nm,1.3s
KIV Kislovodsk 129.47 58 *i* PKIKP **PKPdf 00 45 18.2 -1.2**
KIV *i* 00 47 26.4
KIV pmax pmax
comp=Z,34nm,1.1s
KIV MLR MLR
comp=Z,3µm,22.0s
KIV Kislovodsk 129.47 58 *e*PKPdf **PKPdf 00 45 18.9 -0.5**
KIV LR LR
comp=Z,2µm,22.0s
AKH Akhalkalaki 129.49 62⇓*i*P **PKPdf 00 45 17.9 -1.7**
AKH Akhalkalaki 129.49 62 P **PKPdf 00 45 21.8 +2.2**
AKH Akhalkalaki 129.49 62 PKIKP **PKPdf 00 45 21.8 +2.2**
BGD Bogdanovka 129.53 62 P **PKPdf 00 45 20.4 +0.6**
KBZ Khabaz 129.57 58 PKP **PKPdf 00 45 19.4 -0.1**
comp=Z,11nm,1.0s,baz=269,slow=4.9,SNR=12
ONI Oni 129.73 60 P **PKPdf 00 45 19.5 -0.5**
ONI Oni 129.73 60 PKIKP **PKPdf 00 45 19.4 -0.5**
GOF Gofitskoye 129.94 57⇑*e*PKIKP **PKPdf 00 45 21.1 +1.0**
GOF pmax pmax
comp=Z,66nm,1.3s
VRH Novokhopyorsk 129.99 49 *e*PKIKP **PKPdf 00 45 14.3 -5.7**
VRH pmax pmax
comp=Z,10.0nm,0.8s
GNI Garni 130.11 63 *e*PKIKP **PKPdf 00 45 21.4 +0.6**
GNI MLR MLR
comp=Z,4µm,21.0s
GNI Garni 130.11 63 *e*PKPdf **PKPdf 00 45 21.4 +0.6**
GNI LR LR
comp=Z,4µm,21.0s
GUDG Gudauri 130.44 60 P **PKPdf 00 45 24.1 +2.6**
TBLG Delisi 130.47 61 P **PKPdf 00 45 21.9 +0.6**
TBLG Delisi 130.47 61 PKIKP **PKPdf 00 45 21.9 +0.6**
DGRG David-gareji 130.88 62 P **PKPdf 00 45 23.2 +1.0**
DGRG David-gareji 130.88 62 PKIKP **PKPdf 00 45 23.1 +1.0**
GROC Groznyy 131.54 60 *i* PKIKP **PKPdf 00 45 23.8 +0.6**
GROC *e* 00 47 42.0
GROC pmax pmax
comp=Z,63nm,1.6s
BILL Bilibino 132.70 334 *i* PKIKP **PKPdf 00 45 24.7 0.0**
BILL *i* 00 47 49.0
BILL pmax pmax
comp=Z,15nm,1.3s
BILL MLR MLR
comp=Z,2µm,20.0s
BILL Bilibino 132.70 334 PFAKE 00 45 40.0 +15
BILL LR LR
comp=Z,2µm,20.0s
COCO West Island 133.00 165 PFAKE 00 45 40.0 +13
COCO LR LR
comp=Z,3µm,21.0s
SOKR Solikamsk 138.02 36*c i*PKIKP **PKPdf 00 45 32.9 -1.8**
SOKR SS SS 01 06 32.9 -0.1
SOKR SSS SSS 01 11 48.6
SOKR pmax pmax
comp=Z,45nm,1.3s
PET Petropavlovsk 139.47 314 *i* PKIKP **PKPdf 00 45 36.4 -1.2**
PET *e* 00 48 41.9
PET *e*SS SS 01 06 52.3 +1.6
PET *e*SSS SSS 01 11 55.9
PET pmax pmax
comp=Z,300nm,10.5s
PET pmax pmax
comp=Z,200nm,11.2s
PET pmax pmax
comp=Z,300nm,20.5s
PET pmax pmax
comp=Z,300nm,16.0s
PET Petropavlovsk 139.47 314 PFAKE 00 45 50.0 +12
PET LR LR
comp=Z,1µm,20.0s
ARU Arti 139.68 41 *i* PKIKP **PKPdf 00 45 38.1 +0.1**
ARU MLR MLR
comp=Z,4µm,20.0s
KAPI Kappang 139.73 198 PFAKE 00 45 50.0 +11
KAPI LR LR
comp=Z,2µm,22.0s
GEYT Alibeck 139.85 69 PKhKP PKPpre 00 45 28.8
comp=Z,2.8nm,0.7s,baz=258,slow=4.4,SNR=6.3
GEYT PKP **PKPdf 00 45 39.0 0.0**
comp=Z,7.2nm,0.7s,baz=253,slow=1.5,SNR=8.2
SEY Seymchan 139.90 330 PKhKP PKPpre 00 45 31.4
comp=Z,1.9nm,0.2s,baz=221,slow=18,SNR=1.2
SEY Seymchan 139.90 330*c e*PKIKP **PKPdf 00 45 39.0 +0.9**
PETK Petropavlovsk- 140.03 314 PKhKP PKPpre 00 45 31.9
comp=Z,3.7nm,0.9s,baz=52,slow=5.1,SNR=4.8
PETK PKP **PKPdf 00 45 37.5 -1.2**
comp=Z,6.6nm,0.8s,baz=58,slow=3.6,SNR=5.9
AKTO Aktyubinsk 140.30 50 PKHKP PKPpre 00 45 30.6
AKTO pmax pmax
comp=Z,21nm,1.0s
TIXI Tiksi 140.56 350*c i*PKIKP **PKPdf 00 45 38.4 -0.7**
TIXI Tiksi 140.56 350 PFAKE 00 45 50.0 +11
TIXI LR LR
comp=Z,2µm,19.0s
SVE Sverdlovsk 140.70 40⇓*i*PKIKP **PKPdf 00 45 35.2 -4.6**
SVE *e* 00 48 38.8
SVE pmax pmax
comp=Z,18nm,1.6s
SVE MLR MLR
comp=Z,3µm,20.0s
SVE MLR MLR
comp=E,2µm,20.0s
SKR Severo-Kuril's 141.33 311 *e*PKHKP PKPpre 00 45 33.2
SKR *e* 00 48 50.6
SKR *e*SS SS 01 07 15.2 +2.7
SKR pmax pmax
comp=Z,32nm,1.8s
SKR pmax pmax
comp=Z,400nm,4.3s
SKR pmax pmax
comp=Z,200nm,5.9s
SKR pmax pmax
comp=Z,400nm,5.0s
SKR MLR MLR
comp=Z,1µm,19.0s
SKR MLR MLR
comp=Z,1µm,20.0s
AB31 Akbulak array 141.65 52 PKHKP PKPpre 00 45 34.8
AB31 pmax pmax
comp=Z,9.0nm,0.7s
TRD Trivandrum 141.94 124⇓*e*P **PKPdf 00 45 42.2 -1.2**
MA2 Magadan 141.99 326 PKhKP PKPpre 00 45 35.9
comp=Z,12nm,0.8s,baz=76,slow=5.9,SNR=5.6
NRIK Noril'sk 142.71 12 PKP **PKPdf 00 45 41.1 -1.9**
comp=Z,4.3nm,0.7s,baz=345,slow=2.3,SNR=10
NRIK Noril'sk 142.71 12 PKIKP **PKPdf 00 45 41.1 -1.9**
NRIK pmax pmax
comp=Z,3.0nm,0.5s
PALK Pallekele 143.50 130 PKhKP PKPpre 00 45 40.0
comp=Z,50nm,1.1s,baz=128,slow=0.7,SNR=6.3
PALK Pallekele 143.50 130 *e*PKPdf PKPab 00 45 42.2 -0.3
BHJ Bhuj 144.96 97 *e*P **PKPab 00 45 47.6 0.0**
POO Poona 146.03 108⇑*i*P **PKPdf 00 45 49.0 -1.4**
comp=Z,37nm,1.0s
POO *e*P **PKPbc 00 45 50.0 -1.2**
GSI Gunungsitoli 146.19 161 *e*PKPdf **PKPbc 00 45 51.6 -0.2**
ZRNK Zerenda 146.46 43 PKIKP **PKPdf 00 45 49.4 -0.6**
ZRNK pmax pmax
comp=Z,129nm,1.1s
URV Uravakonda 146.52 117 *e*PKPbc **PKPdf 00 45 51.2 -0.1**
BRVK Borovoye 147.15 43 PKIKP **PKPdf 00 45 51.6 +0.4**
BRVK pmax pmax
comp=Z,75nm,1.2s
BRVK Borovoye 147.15 43 *e*PKPdf **PKPdf 00 45 51.5 +0.4**
BRVK LR LR
comp=Z,3µm,20.0s
BVA0 Borovoye Array 147.22 43 *i* PKIKP **PKPdf 00 45 50.7 -0.6**
BVA0 pmax pmax
comp=Z,63nm,1.0s
MDRS Chennai 147.43 123 *e*P **PKPdf 00 45 53.0 +0.2**
MDRS *ex* x 01 08 29.8
KUR Kuril'sk 147.47 302 *i* PKHKP PKPpre 00 45 50.4
KUR *e* 00 52 59.8
KUR *e*SS SS 01 08 26.8 +3.4
KUR *e*SSS SSS 01 13 58.0
SKHT Srikalahasti 147.51 121 *e*PKPbc **PKPbc 00 45 54.5 -0.9**
VOSK Vostochnaya 147.67 43 PKIKP **PKPdf 00 45 51.8 -0.3**
VOSK pmax pmax
comp=Z,48nm,0.8s
KSM Kuching 147.69 185 *e*PKPbc **PKPbc 00 45 56.1 +0.1**
KSM LR LR
comp=Z,2µm,20.0s
KLRI Killari 147.92 111 *e*PKPbc **PKPdf 00 45 55.0 +1.4**
PSI Prapat 147.97 163 PKPbc **PKPbc 00 45 55.8 -1.1**
comp=Z,49nm,1.0s,baz=172,slow=3.6,SNR=22
RCLA Racherla 148.10 118 *e*PKPbc **PKPbc 00 45 55.8 -1.3**
SRLM Srisailam 148.47 117 *e*PKPbc **PKPbc 00 45 56.5 -1.5**
YAK Yakutsk 148.60 340 PKPbc **PKPbc 00 45 56.2 -0.7**
comp=Z,80nm,0.8s,baz=4.8,slow=0.2,SNR=17
YAK Yakutsk 148.60 340 *e*PKIKP **PKPbc 00 45 55.7 -1.3**
YAK *e* 00 49 27.3
YAK *e*PPP PPP 00 52 46.2
YAK pmax pmax
comp=Z,115nm,1.0s
YAK pmax pmax
comp=E,17nm,1.3s
YAK pmax pmax
comp=N,19nm,1.5s
YAK pmax pmax
comp=Z,9.0nm,0.6s
YAK pmax pmax
comp=E,12nm,0.9s
YAK pmax pmax
comp=N,55nm,1.6s
YAK Yakutsk 148.60 340 *e*PKPbc **PKPbc 00 45 56.8 -0.2**
YAK LR LR
comp=Z,2µm,20.0s
DAV Davao City (W) 148.71 215 PFAKE 00 46 10.0 +7.6
DAV LR LR
comp=Z,5µm,20.0s
HYB Hyderabad 149.03 115 *i* PKP **PKPbc 00 45 59.0 -0.5**
HYB *e* 00 46 04.0
HYB *e*PP **PP 00 49 32.0 +1.5**
HYB Hyderabad 149.03 115 *e*P **PKPdf 00 45 56.8 +1.4**
HYBB Hyderabad (bro 149.03 115 *e*PKPbc **PKPbc 00 45 58.1 -1.4**
NJS Nagarjunasagar 149.06 117 *e*PKPbc **PKPbc 00 45 58.4 -1.1**
ADKI Addanki 149.10 119 *e*PKPbc **PKPbc 00 45 58.8 -0.8**
KK31 Karatay Array 149.53 61 *i* PKHKP PKPpre 00 45 59.1
KK31 pmax pmax
comp=Z,27nm,0.9s
KKAR Karatay Array 149.53 61 *e*PKHKP **PKPdf 00 45 55.9 +0.4**
KKAR Karatay Array 149.53 61 *e*PKPdf **PKPdf 00 45 55.9 +0.4**
KKAR *e*PKPbc **PKPbc 00 45 59.9 -0.1**
TYV Tymovskoe 149.58 314 *e*PKIKP **PKPdf 00 45 54.0 -1.2**
TYV pmax pmax
comp=Z,88nm,1.2s
TYV pmax pmax
comp=Z,1µm,3.0s
LHMI Lhok Sumawe 149.73 158 *e*PKPbc **PKPbc 00 46 01.4 0.0**
SRSP Sriramsagar 149.76 112 *e*PKPbc **PKPbc 00 45 59.7 -1.5**
NKL Nikolayevsk 149.79 320 *e*PKIKP **PKPdf 00 45 54.5 -0.9**
NKL pmax pmax
comp=Z,210nm,1.4s
NKL pmax pmax
comp=Z,900nm,5.0s
NKL MLR MLR
comp=E,800nm,20.0s
NKL MLR MLR
comp=N,400nm,18.0s
NKL MLR MLR
comp=Z,2µm,18.0s
OTUK Ortayu 149.89 51 PKHKP PKPpre 00 45 56.2
OTUK pmax pmax
comp=Z,120nm,1.3s
IPM Ipoh 150.06 166 *e*PKPdf **PKPdf 00 45 57.3 +0.1**
IPM *e*PKPbc **PKPbc 00 46 01.9 -0.2**
RPR Rampur 150.45 113 *e*PKPbc **PKPbc 00 46 01.4 -1.5**
YSS Yuzh-Sakhalins 150.68 307⇑*i*PKIKP **PKPdf 00 45 57.6 +0.6**
YSS *e* 00 46 03.0
YSS pmax pmax
comp=Z,20nm,0.5s
YSS Yuzh-Sakhalins 150.68 307 PFAKE 00 46 10.0 +0.4
YSS LR LR
comp=Z,860nm,20.0s
KULM Kulim 150.77 165 *e*PKPdf **PKPdf 00 45 58.2 0.0**
KULM *e*PKPbc **PKPbc 00 46 02.1 -1.8**
KULM LR LR
comp=Z,3µm,19.0s
MNAS Manas 151.05 62 PKIKP **PKPdf 00 45 57.6 -0.4**

MNAS pmax pmax
comp=Z,62nm,1.1s
ERM Erimo 151.19 297 *i* PKIKP **PKPdf 00 45 58.5 +0.5**
PVM Polavaram 151.21 119 *e*PKPbc **PKPbc 00 46 03.7 -1.0**
KKM Kota Kinabalu 151.25 197 *e*PKPbc **PKPbc 00 46 04.7 -0.4**
KKM *e*PKPab **PKPab 00 46 13.8 +1.0**
KKM LR LR
comp=Z,1μm,19.0s
BHPL Bhopal 151.31 104 *e*P **PKPdf 00 46 00.5 +1.7**
BHPL IAMs_20 IAMs_20 02 11 02.8
comp=Z,1μm,14.0s
ASAJ Asahikawa 151.35 301 PKPbc **PKPbc 00 46 04.0 -0.2**
comp=Z,48nm,1.1s,baz=233,slow=1.3,SNR=19
ASAJ Asahikawa 151.35 301 *e*PKPdf **PKPdf 00 45 58.3 +0.1**
ASAJ *e*PKPbc **PKPbc 00 46 03.7 -0.6**
ASAJ *e*PKPab **PKPab 00 46 13.5 +1.0**
NGP Nagpur 151.55 109 *e*P **PKPdf 00 45 58.8 -0.5**
AAK Ala-Archa 152.49 62 *c i*PKIKP **PKPdf 00 46 01.5 +1.3**
AAK Ala-Archa 152.49 62 *e*PKPdf **PKPdf 00 46 01.2 +1.0**
AAK *e*PKPbc **PKiKP 00 46 07.5 +0.1**
AAK LR LR
comp=Z,2μm,21.0s
FRU Bishkek 152.56 61 *e*PKIKP **PKPdf 00 45 58.0 -2.1**
FRU *i* 00 46 06.0
FRU *e* 00 49 54.0
SKLT Songkhla 152.59 164 PKP **PKPbc 00 46 08.3 +0.4**
VIS Vishakhapatnam 152.75 120 *e*P **PKPdf 00 46 00.4 -0.7**
KURBB **Kurchatov Arra 152.81 43** PKP **PKPdf 00 45 59.8 -0.3**
comp=Z,6.3nm,0.8s,baz=302,slow=1.8,SNR=1.8
KURBB PKPbc **PKPbc 00 46 07.2 -0.1**
comp=Z,23nm,0.8s,baz=306,slow=2.9,SNR=4.2
KURK Kurchatov 152.82 43 PKIKP **PKPdf 00 45 59.8 -0.4**
KURK 00 46 07.2
KURK pmax pmax
comp=Z,6.0nm,0.8s
KURK Kurchatov 152.82 43 *e*PKPdf **PKPdf 00 46 00.0 -0.1**
KURK PKPbc **PKPbc 00 46 07.2 -0.1**
KURK *ep*PKPdf **PiKiKP 00 46 07.5 0.0**
NVS Novosibirsk 152.86 32⇑ *i*PKIKP **PKPdf 00 46 00.6 +0.5**
NVS *e* 00 52 55.6
NVS pmax pmax
comp=Z,152nm,1.0s
NVS pmax pmax
comp=N,25nm,1.2s
NVS pmax pmax
comp=E,34nm,1.4s
TRTT Trang 153.00 162 PKP **PKPbc 00 46 08.8 -0.1**
THN Thein Dam 153.07 84 *e*P **PKPdf 00 46 00.8 -0.3**
KRAB Krabi 153.24 161 PKP **PKPbc 00 46 11.7 +2.3**
TKM2 Tokmak 2 153.25 61 PKIKP **PKPdf 00 46 00.6 -0.8**
TKM2 pmax pmax
comp=Z,74nm,1.3s
NDI New Delhi 153.33 93 *ex* **PKPdf 00 45 55.0 -6.6**
BHK Bhakra 153.43 87 *ex* **PKPab 00 46 21.1 -0.6**
CHLP Challavanipeta 153.79 120 *e*PKPdf **PKPdf 00 46 02.6 +0.1**
KSH Kashi 153.87 68 *e*PKPbc **PKPdf 00 46 02.4 +0.1**
KSH *ep*PKP PKiKP 00 46 12.8 +2.5
KSH *es*PKP 00 46 16.4
KSH *e*PP **PP 00 50 02.3 +3.9**
KSH SKS **SKSdf 00 53 04.3 -3.8**
KSH SKKS **SKKSac 00 56 46.8 -0.3**
KSH AMB AMB
comp=Z,920nm,6.9s
KSH LR LR
comp=Z,990nm,17.4s
KSH LR LR
comp=Z,2μm,19.1s
KSH LR LR
comp=Z,4μm,20.8s
SDNR Sundarnagar 153.91 87 *e*P **PKPdf 00 46 03.0 +0.6**
SMLA Simla 153.98 88 *e*P **PKPdf 00 46 00.8 -1.7**
ZALV Zalesovo Beam 154.15 32 PKP **PKPdf 00 46 01.3 -0.7**
comp=Z,20nm,1.0s,baz=282,slow=2.9,SNR=60
ZALV PKPbc **PKPbc 00 46 09.8 -0.3**
comp=Z,38nm,0.7s,baz=305,slow=3.1,SNR=48
CLNS Chul'man 154.26 338 *e*PKIKP **PKPbc 00 46 07.4 -3.0**
CLNS pmax pmax
comp=Z,28nm,1.1s
CLNS pmax pmax
comp=E,8.0nm,1.2s
CLNS pmax pmax
comp=N,8.0nm,1.1s
DDI Dehra Dun 154.51 90 *e*P **PKPdf 00 46 00.8 -2.5**
HABR Khabarovsk 155.06 314 *e*PKIKP **PKPdf 00 46 02.7 -0.7**
HABR *e* 00 46 09.3
HABR *e* 00 46 27.9
HABR *e* 00 50 04.6
HABR *e* 00 53 08.2
HABR *e*PPP PPP 00 53 35.6
HABR *e*SS SS 01 09 48.9 +2.2
HABR *e*SSS SSS 01 15 43.9
HABR pmax pmax
comp=E,10.0nm,1.1s
HABR pmax pmax
comp=N,14nm,1.1s
HABR pmax pmax
comp=Z,15nm,1.1s
MJAR Matsushiro Arr 155.14 285 PKP **PKPdf 00 46 03.2 -0.7**
comp=Z,0.7nm,0.3s,baz=268,slow=0.3,SNR=7.3
MAJO Matsushiro 155.14 285 PFAKE 00 46 20.0 -8.8
MAJO LR LR
comp=Z,2μm,20.0s
DGPR DIGLIPUR 155.30 143 *e*P **PKPdf 00 46 04.0 -0.8**
BOD Bodaibo 155.70 352 *e*PKIKP **PKPdf 00 46 02.7 -1.3**
BOD pmax pmax
comp=Z,58nm,1.3s
PDGK Podgornoye 155.97 59 PKP2 **PKPab 00 46 30.3 -1.7**
PDGK pmax pmax
comp=Z,135nm,1.3s
BWNR Bhubaneshwar 156.19 119 *e*P **PKPdf 00 46 04.2 -1.5**
MAKZ Makanchi 156.52 49 PKIKP **PKPdf 00 46 04.0 -1.5**
MAKZ pmax pmax
comp=Z,22nm,1.1s
KLR Kul'dur 156.60 318 PKP **PKPdf 00 46 04.7 -0.8**
comp=Z,6.0nm,1.0s,baz=6.1,slow=3.6,SNR=11
MK31 Makanchi Array 156.72 49 PKIKP **PKPdf 00 46 04.8 -0.9**
MK31 pmax pmax
comp=Z,16nm,0.7s
MKAR Makanchi Array 156.72 49 PKP **PKPdf 00 46 05.2 -0.6**
comp=Z,9.5nm,1.0s,baz=304,slow=2.2,SNR=44
MKAR PKPbc PKPbc 00 46 15.1
comp=Z,17nm,1.0s,baz=305,slow=2.2,SNR=17
MKAR PKPab **PKPab 00 46 34.7 -0.5**
comp=Z,14nm,0.7s,baz=296,slow=4.7,SNR=20
MKAR PP **PP 00 50 10.6 -3.1**
comp=Z,7.1nm,1.1s,baz=287,slow=3.6,SNR=3.4
PYUN Piuthan 157.91 98 *e*P **PKPdf 00 46 07.6 -0.5**
BOK Bokaro 158.30 112 *e*P **PKPdf 00 46 09.3 +0.9**
USRK Ussuriysk Ar. 158.71 306 PKPab **PKPab 00 46 44.4 +0.5**
comp=Z,1.5nm,0.6s,baz=74,slow=5.1,SNR=3.7
GKN Gorkha 159.22 100 *e*P **PKPdf 00 46 08.9 -0.7**
comp=Z,74nm,1.2s
KKN Kakani 159.67 101 *e*P **PKPdf 00 46 09.5 -0.7**
PKIN Phulchoki 159.68 102 *e*P **PKPdf 00 46 09.4 -0.9**
MDJ Mudanjiang 160.13 309 PFAKE 00 46 20.0 +10
MDJ LR LR
comp=Z,2μm,20.0s
WMQ Urumqi 161.43 52 PKP **PKPdf 00 46 10.4 -1.0**
WMQ pPKP pPKPdf 00 46 22.8 +4.3
WMQ PKPab **PKPab 00 46 56.9 +1.0**
WMQ PP **PP 00 50 44.8 +5.3**
WMQ SKKS 00 57 25.5
WMQ AMB AMB
comp=Z,670nm,6.8s
WMQ LR LR
comp=Z,2μm,20.8s
WMQ LR LR
comp=Z,2μm,18.4s
WMQ LR LR
comp=Z,3μm,22.3s
IRK Irkutsk 161.46 7 *e*PKP2 **PKPab 00 46 55.1 -0.4**
IRK *e* 00 50 40.5
IRK pmax pmax
comp=Z,71nm,2.6s
MOY Mondy 161.53 14 *e*PKIKP **PKPdf 00 46 13.8 +2.5**
PBKT Sadao Pong 161.67 158 PKP **PKPdf 00 46 13.3 +1.0**
TLY Talaya 161.94 9 PKPab **PKPab 00 46 57.2 -0.4**
comp=Z,7.1nm,0.7s,baz=342,slow=2.7,SNR=6.9
TLY Talaya 161.94 9 *e*PKIKP **PKPdf 00 46 10.9 -0.7**
TLY *e* 00 50 42.7
TLY *e*SS SS 01 11 00.3 +2.0
TLY pmax pmax
comp=Z,10.0nm,1.4s
SUKH Sukhothai 162.07 154 PKP **PKPdf 00 46 14.1 +1.4**
HIA Hailar 162.29 334 PFAKE 00 46 20.0 +7.9
HIA LR LR
comp=Z,2μm,20.0s
UTTA Uttaradit 162.64 156 PKP **PKPdf 00 46 13.4 +0.1**
LOEI Loei 162.65 158 PKP **PKPdf 00 46 15.1 +1.8**
CMAR Chiang Mai Arr 162.68 150 PKP **PKPdf 00 46 13.0 -0.4**
comp=Z,7.8nm,1.0s,baz=248,slow=2.5,SNR=32
CMAR PKPab **PKPab 00 47 00.7 -1.1**
comp=Z,12nm,1.2s,baz=227,slow=4.7,SNR=7.1
SKNT Sakolnakorn 162.81 167 PKP **PKPdf 00 46 20.6 +7.1**
CHTO Chiang Mai 163.00 150 PKP **PKPdf 00 46 13.8 +0.1**
CHTO Chiang Mai 163.00 150 *e*PKIKP **PKPdf 00 46 13.5 -0.2**
CHTO MLR MLR
comp=Z,2μm,20.0s
CHTO Chiang Mai 163.00 150 *e*PKPdf **PKPdf 00 46 13.5 -0.2**
CHTO LR LR
comp=Z,2μm,20.0s
CMMT Chiang Mai 163.00 150 PKP **PKPdf 00 46 13.7 0.0**
LAMP Lampang 163.02 152 PKP **PKPdf 00 46 14.3 +0.6**
CN2 Changchun 163.15 311 *e*PKP **PKPdf 00 46 12.0 -1.0**
CN2 PP **PP 00 50 47.6 -0.8**
CN2 SKKS 00 57 32.4
CN2 SS SS 01 11 08.6 -3.9
CN2 AMB AMB
comp=Z,400nm,8.0s
CN2 LR LR
comp=Z,900nm,22.0s
CN2 LR LR
comp=Z,2μm,22.0s
CN2 LR LR
comp=Z,1μm,22.0s
ZAK Zakamensk 163.16 10 *e*PKIKP **PKPdf 00 46 10.9 -2.1**
ZAK pmax pmax
comp=Z,4.0nm,2.2s
KSRS Korea Array 163.34 288 PKP **PKPdf 00 46 12.1 -1.3**
comp=Z,11nm,1.2s,baz=152,slow=0.3,SNR=14
KSRS PKPab **PKPab 00 47 05.3 +1.0**
comp=Z,3.6nm,0.8s,baz=108,slow=3.8,SNR=5.5
KSRS Korea Array 163.34 288 PKIKP **PKPdf 00 46 12.1 -1.3**
KSRS 00 47 05.3
KSRS pmax pmax
comp=Z,6.0nm,1.0s
KSRS pmax pmax
comp=Z,4.0nm,0.8s
KSAR Wonju Array Be 163.37 288 PKIKP **PKPdf 00 46 12.1 -1.3**
KSAR 00 47 05.3
KSAR Wonju Array Be 163.37 288 PKP **PKPdf 00 46 12.1 -1.3**
KSAR PKPab **PKPab 00 47 05.3 +0.8**
NONG Nongkai 163.69 164 PKP **PKPdf 00 46 15.2 +0.9**
SHL Shillong 163.82 117 *e*P **PKPdf 00 46 13.8 -0.7**
PAYA Payao 163.87 152 PKP **PKPdf 00 46 14.6 +0.1**
CMAI Chiengmai2 164.04 148 PKP **PKPdf 00 46 15.3 +0.5**
INCN Inchon 164.36 289 PFAKE 00 46 30.0 +16
INCN LR LR
comp=Z,2μm,19.0s
YHNB Yeheng 165.10 236 PFAKE 00 46 30.0 +15
YHNB LR LR
comp=Z,2μm,21.0s
QIZ Qiongzhong 165.11 187 PKP **PKPdf 00 46 16.1 +0.5**
QIZ sPKP 00 46 24.9
QIZ PP **PP 00 51 01.0 +3.3**
QIZ SS SS 01 11 30.6 -0.3
QIZ LR LR
comp=Z,950nm,19.5s
QIZ LR LR
comp=Z,590nm,17.7s
QIZ LR LR
comp=Z,2μm,20.0s
QIZ Qiongzhong 165.11 187 PFAKE 00 46 30.0 +14
QIZ LR LR
comp=Z,2μm,20.0s
LSA Lhasa 165.16 102 PKP **PKPdf 00 46 15.8 -0.1**
LSA Lhasa 165.16 102 *e*PKIKP **PKPdf 00 46 16.8 +0.9**
LSA MLR MLR
comp=Z,4μm,22.0s
LSA Lhasa 165.16 102 *e*PKPdf **PKPdf 00 46 16.8 +0.9**
LSA LR LR
comp=Z,4μm,22.0s
TATO Taipei 165.22 237 PFAKE 00 46 30.0 +15
TATO LR LR
comp=Z,2μm,20.0s
SNY Shenyang 165.30 307⇑ PKP **PKPdf 00 46 12.3 -2.7**
SNY PP **PP 00 51 03.3 +3.5**
SNY SKKS 00 57 47.3
SNY SS SS 01 11 37.3 +2.4
SNY AMB AMB
comp=Z,560nm,7.8s
SNY LR LR
comp=Z,2μm,19.4s
SNY LR LR
comp=Z,1μm,18.2s
SNY LR LR
comp=Z,3μm,19.6s
SONM Songino Array 166.01 4 PKP **PKPdf 00 46 14.8 -0.8**
comp=Z,1.9nm,0.7s,baz=191,slow=0.8,SNR=10
SONM PKPab **PKPab 00 47 15.7 0.0**
comp=Z,14nm,1.1s,baz=337,slow=4.2,SNR=14
SONM PP **PP 00 51 01.4 -1.1**
comp=Z,7.3nm,1.1s,baz=320,slow=3.9,SNR=7.4
DL2 Dalian 167.85 298⇑ PKP **PKPdf 00 46 16.9 -0.2**
DL2 PKPab **PKPab 00 47 31.0 +6.8**
DL2 PP **PP 00 51 18.8 +5.6**
DL2 AMB AMB
comp=Z,610nm,9.0s
DL2 LR LR
comp=Z,1μm,19.1s
DL2 LR LR
comp=Z,720nm,18.4s
DL2 LR LR
comp=Z,2μm,18.2s
GZH Guangzhou 168.24 205 PKP **PKPdf 00 46 19.0 +1.2**
GZH LR LR
comp=Z,3μm,15.7s
SSE Sheshan 168.44 260 PKP **PKPdf 00 46 17.0 -0.7**
SSE PP **PP 00 51 17.6 +1.0**
SSE SS SS 01 12 06.8 -1.0
SSE AMB AMB
comp=Z,340nm,6.2s
SSE LR LR
comp=Z,2μm,18.9s
SSE LR LR
comp=Z,1μm,18.9s
SSE LR LR
comp=Z,2μm,21.5s
KMI Kunming 170.19 151 PKP **PKPdf 00 46 19.6 +0.3**
KMI pPKP pPKPdf 00 46 27.3 +1.0
KMI sPKP 00 46 30.0
NJ2 Nanjing 170.62 262 *e*PKP **PKPdf 00 46 20.8 +1.8**
NJ2 PP **PP 00 51 34.8 +7.2**
NJ2 SKKS 00 58 13.4
NJ2 AMB AMB
comp=Z,1μm,5.4s
NJ2 LR LR
comp=Z,770nm,16.8s
NJ2 LR LR
comp=Z,700nm,15.7s
NJ2 LR LR
comp=Z,2μm,19.0s
BJI Beijing 170.96 315 PKP **PKPdf 00 46 18.9 0.0**
BJT Baijiatuan 170.98 315 PFAKE 00 46 30.0 +11
BJT LR LR
comp=Z,3μm,20.0s
GTA Gaotai 171.47 47 PKP **PKPdf 00 46 19.4 0.0**
GTA pPKP pPKPdf 00 46 29.8 +3.3
GTA sPKP 00 46 34.3
GTA PKPab **PKPab 00 47 39.8 -0.5**
GTA PP **PP 00 51 32.3 +1.1**
GTA SKKS 00 58 15.6
GTA SS SS 01 12 32.4 -4.4
GTA AMB AMB
comp=Z,980nm,11.4s
GTA LR LR
comp=Z,430nm,29.5s
GTA LR LR
comp=Z,600nm,27.3s
GTA LR LR
comp=Z,630nm,32.6s
TIA Tai'an 172.08 290 PKP **PKPdf 00 46 19.3 -0.3**
TIA PP **PP 00 51 40.0 +5.3**
TIA SKKS 00 58 19.3
TIA SS SS 01 12 47.3 +3.6
TIA AMB AMB
comp=Z,1μm,8.0s
TIA LR LR
comp=Z,2μm,20.0s
TIA LR LR
comp=Z,1μm,17.0s
TIA LR LR
comp=Z,2μm,20.0s
HHC Hu-ho-hao-te 172.45 338 *e*PKP **PKPdf 00 46 18.6 -1.2**
HHC PP **PP 00 51 35.0 -0.3**
HHC SKKS 00 58 21.0
HHC SS SS 01 12 45.5 +0.6
HHC LR LR
comp=Z,3μm,19.2s
HHC LR LR
comp=Z,1μm,20.2s
HHC LR LR
comp=Z,2μm,19.2s
GYA Guiyang 172.53 171 PKP **PKPdf 00 46 19.5 -0.8**
GYA PKPab **PKPab 00 47 48.0 +2.9**
GYA PKS **PKSdf 00 49 51.3 -1.5**
GYA PP **PP 00 51 40.5 +5.1**
GYA SKKS 00 58 23.3
GYA SS SS 01 12 47.0 +1.7
GYA AMB AMB
comp=Z,410nm,9.2s
GYA LR LR
comp=Z,250nm,21.8s
GYA LR LR
comp=Z,180nm,22.0s
GYA LR LR
comp=Z,220nm,22.4s
WHN Wuhan 173.60 240 PKP **PKPdf 00 46 20.8 +0.4**
WHN PP **PP 00 51 48.8 +6.9**
WHN SKKS 00 58 27.5
WHN LR LR
comp=Z,6μm,21.8s
WHN LR LR
comp=Z,2μm,14.8s
WHN LR LR
comp=Z,5μm,20.0s
TIY Taiyuan 174.69 317 *e*PKP **PKPdf 00 46 22.1 +1.4**
TIY PKPab **PKPab 00 47 56.9 +2.4**
TIY PP **PP 00 51 49.9 +3.2**
TIY SKKS 00 58 36.6
TIY SS SS 01 13 09.3 +1.7
TIY AMB AMB
comp=Z,560nm,6.0s
TIY LR LR
comp=Z,1μm,16.5s
TIY LR LR
comp=Z,2μm,20.7s
TIY LR LR
comp=Z,2μm,19.1s
CD2 Chengdu 175.42 129 PKP **PKPdf 00 46 20.6 -0.5**
CD2 pPKP pPKPdf 00 46 28.4 +0.3
CD2 sPKP 00 46 31.3
CD2 PP **PP 00 51 48.4 -2.1**
CD2 SKS **SKSdf 00 53 22.3 -0.8**
CD2 SKKS **SKKSac 00 58 35.0 -0.9**
CD2 SS **SS 01 13 15.5 +0.5**
CD2 AMB AMB
comp=Z,1μm,4.9s
CD2 LR LR
comp=Z,930nm,27.8s
CD2 LR LR
comp=Z,2μm,21.9s
CD2 LR LR
comp=Z,2μm,23.8s
LZH Lanzhou 176.01 55 *e*PKP **PKPdf 00 46 22.8 +1.6**
LZH pPKP pPKPdf 00 46 29.3 +1.0
LZH sPKP 00 46 32.4
LZH PKPab **PKPab 00 48 01.5 +0.9**
LZH PP **PP 00 51 51.3 -2.3**
LZH SKS **SKSdf 00 53 18.5 -4.7**
LZH SKKS **SKKSac 00 58 39.4 +0.6**
LZH AMB AMB
comp=Z,900nm,5.1s
LZH LR LR
comp=Z,480nm,14.2s
LZH LR LR
comp=Z,2μm,16.8s
LZH LR LR
comp=Z,3μm,20.0s
ENH Enshi 176.16 201 *e*PKPdf **PKPdf 00 46 21.1 -0.2**
ENH LR LR
comp=Z,2μm,20.0s
XAN Xi'an 179.13 281 PKP **PKPdf 00 46 20.6 -0.9**
XAN sPKP 00 46 30.8
XAN PKPab 00 48 13.9
XAN PKS **PKSdf 00 49 51.3 -2.4**
XAN SKS **SKSdf 00 53 18.3 -5.1**
XAN AMB AMB
comp=Z,2μm,9.9s
XAN LR LR
comp=Z,1μm,21.9s
XAN LR LR
comp=Z,1μm,18.5s
XAN LR LR
comp=Z,2μm,21.2s

*ISCJB **16** 00:29:20.2±0.5,32.°11N±0.°03×115.°06W±0.°04,h30km±4km, Error ellipse: s-maj=5.4km s-min=4.7km az=44.7*
*ECX **16** 00:29:21.4±0.6,32.°10N×115.°11W,h20km±3km, MD3.6, ML3.8*
*MEX **16** 00:29:22.2±0.4,32.°12N×114.°99W,h17km±59km, MD3.8*
ISC 16 00:29:20.0±1.2,**32.°08N**±0.°04×**115.°09W**±0.°03, **h24**km±13km,**n31**,**σ0s57**/41,**2C-5D,California-Baja California border region**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.38**	**332**	*e*P		**Pb**	**00 29 28.1**	**-0.1**
CPBX				*e*S		**Sb**	**00 29 33.6**	**-0.1**
CPBX				IAML			00 29 43.4	
	comp=N,20μm,0.3s							
ECBX	**El Chinero**	**0.61**	**177**‖	*e*P		**Pn**	**00 29 32.7**	**-0.5**
ECBX				*e*S		**Sn**	**00 29 41.5**	**-0.7**
EMSC	**East Mesa**	**0.66**	**8**‖	*i*P		**Pb**	**00 29 33.2**	**+0.3**
YMD	**Yuma Desert**	**0.66**	**44**‖	*i*P		**Pb**	**00 29 33.2**	**+0.3**
SGL	**Mount Signal**	**0.78**	**317**‖	*i*P		**Pb**	**00 29 34.5**	**-0.3**
COA	**Coachella**	**0.78**	**358**‖	*i*P		**Pb**	**00 29 34.7**	**-0.2**
DREC	**Desert Rsrch C**	**0.78**	**338**	*e*P		**Pn**	**00 29 35.2**	**-0.3**
YUH	**Yuha Desert**	**0.90**	**309**‖	*i*P		**Pb**	**00 29 36.5**	**-0.5**
RMX	**La Rumorosa**	**0.98**	**302**	*e*P		**Pn**	**00 29 37.6**	**-0.9**
RMX				*e*S		**Sb**	**00 29 50.7**	**-0.3**
GLA	**Glamis**	**0.99**	**13**	P		**Pn**	**00 29 37.8**	**-0.7**
	baz=194,SNR=642							
GLA				S		**Sb**	**00 29 50.7**	**-0.5**
	baz=194							
IKP	**In-Ko-Pah, Jac**	**1.03**	**304**	P		**Pn**	**00 29 38.8**	**-0.3**
	baz=120,SNR=268							
IKP				S		**Sb**	**00 29 52.5**	**+0.1**
	baz=120							
SWSC	**Sam W. Stewart**	**1.05**	**325**	P		**Pn**	**00 29 38.2**	**-1.0**
	baz=143,SNR=65							
SPX	**San Pedro Mart**	**1.08**	**197**	*e*P		**Pn**	**00 29 40.0**	**0.0**
SPX				IAML			00 29 57.3	
	comp=N,1μm,0.8s							
ZAX	**El Zacaton**	**1.15**	**241**⇑	*e*P		**Pb**	**00 29 41.3**	**-0.1**
ECNX	**Esteban Cantu**	**1.35**	**252**	*e*P		**Pb**	**00 29 44.2**	**-0.5**
ECNX				*e*P		**Pn**	**00 29 43.9**	**+0.4**
CBX	**Cerro Bola**	**1.35**	**280**	*e*P		**Pb**	**00 29 44.3**	**-0.4**
CBX				*i* S		**Sn**	**00 30 00.9**	**+0.1**
CBX	**Cerro Bola**	**1.35**	**280**	*e*P		**Pb**	**00 29 44.3**	**-0.4**
CBX				IAML			00 30 05.2	
	comp=E,3μm,0.6s							
MONP2	**Monument Peak**	**1.38**	**306**	P		**Pn**	**00 29 44.0**	**-0.1**
	baz=124,SNR=147							
MONP2				S		**Sb**	**00 30 03.0**	**+0.3**
	baz=124							
TJIG	**Tijuana**	**1.39**	**285**	*i* P		**Pn**	**00 29 44.3**	**+0.4**
TJIG				*i* S		**Sn**	**00 30 01.8**	**+0.3**
TJIG	**Tijuana**	**1.39**	**285**	*e*P		**Pn**	**00 29 44.4**	**+0.6**
PBX	**Punta Banda**	**1.43**	**257**	*e*P		**Pb**	**00 29 45.4**	**-0.6**
BC3	**Big Chuckawall**	**1.60**	**349**	P		**Pn**	**00 29 46.6**	**-0.3**
	baz=169,SNR=69							
Y12C	**Blythe**	**1.73**	**16**	P		**Pn**	**00 29 48.7**	**+0.1**
	baz=197,SNR=62							
109C	**Camp Elliot, M**	**1.88**	**296**	P		**Pn**	**00 29 51.7**	**+1.0**
	baz=113,SNR=48							
109C				Sb		**Sb**	**00 30 17.1**	**+0.3**
	baz=113							
PFO	**Pinyon Flats O**	**1.91**	**323**	P		**Pn**	**00 29 50.8**	**-0.4**
	baz=142,SNR=27							
214A	**Organ Pipe Nat**	**1.94**	**93**	P		**Pn**	**00 29 51.8**	**+0.3**
	baz=276							

IRM	**Iron Mountain** baz=179,SNR=80	**2.07**	**359**	P	**Pn**	**00 29 53.3 -0.1**
MURC	**Murrieta** baz=129	**2.33**	**311**	Sb	**Sb**	**00 30 31.1 +1.4**
GMRC	**Granite Mounta** baz=170,SNR=10	**2.74**	**350**	P	**Pn**	**00 30 02.6 0.0**
CIS	**Catalina Islan** baz=113	**3.09**	**296**	Sb	**Sb**	**00 30 53.2 +1.5**
TUC	**Tucson** baz=268	**3.66**	**85**	P	**Pn**	**00 30 15.4 +0.2**

IDC 16 00:43:17.9±2.8, 14°.98S×176°.12W, h292$^{km}_{\pm 55}$km, mb3.7/3, mb1 3.9/4, mb1mx3.3/32, mbtmp4.3/4, Error ellipse: s-maj=147.6km s-min=21.0km az=147.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu** 9.6nm,0.3s,baz=47,slow=3.3,SNR=9.2	**4.34**	**76**	P		Pn	00 44 27.8	+0.2
AFI	4.4nm,0.3s,baz=30,slow=20,SNR=3.9			S		S	00 45 23.8	+0.3
WRA	**Warramunga Arr** 2.0nm,0.5s,baz=90,slow=7.2,SNR=37	**47.38**	**257**	P		P	00 51 23.8	+0.2
ASAR	**Alice Springs** 12nm,0.6s,baz=87,slow=7.9,SNR=128	**47.75**	**252**	P		P	00 51 25.9	-0.5
ILAR	**Eielson Array** 0.5nm,0.6s,baz=216,slow=5.5,SNR=7.4	**82.56**	**12**	P		P	00 55 08.0	0.0
BRTR	**Keskin Array B** 0.4nm,0.8s,baz=46,slow=4.2,SNR=3.0	**144.15**	**319**	PKP		PKPbc	01 02 18.8	+0.5

*ISK **16** 00:52:58.0, 38°.85N×35°.04E, h5^{km}, MD2.8*
*ISCJB **16** 00:53:00.3±0.8, 38°.95N±0°.05×35°.42E±0°.07, h6^{km}, Error ellipse: s-maj=8.0km s-min=6.7km az=159.7*
*CSEM **16** 00:53:00.3±0.4, 38°.96N×35°.46E, h10^{km}, MD2.8, Error ellipse: s-maj=9.6km s-min=9.0km az=88.0*
*DDA **16** 00:53:00.4, 38°.99N×35°.41E, h7^{km}, Md2.9*
ISC 16 00:52:56.7±1.4, 38°.76N±0°.06×35°.47E±0°.07, h6^{km}, n14, σ0^{s}.79/17, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
AVNS	**Nevsehir-Avano**	**0.49**	**276**	*i* P		**Pn**	**00 53 10.5**	**+0.2**
AVNS	**Nevsehir-Avano**	**0.49**	**276**	P		**Pn**	**00 53 10.5**	**+0.2**
SARI	**SarD1z-Kayseri**	**0.82**	**115**	*e*PN		Pn	00 53 21.5	+6.5
YOZ	**Yozgat**	**0.89**	**353**	*e*PG		**Pg**	**00 53 14.6**	**+0.8**
YOZ	**Yozgat**	**0.89**	**353**	*e*Pg		**Pg**	**00 53 14.6**	**+0.8**
CUSAR	**Sarkisla-SIVAS**	**0.90**	**42**	*i* P		**Pg**	**00 53 14.0**	**+0.1**
CUSAR				*i* S		**Sb**	**00 53 27.9**	**+0.9**
CUSAR	**Sarkisla-SIVAS**	**0.90**	**42**	P		**Pg**	**00 53 14.0**	**+0.1**
CUSAR				S		**Sb**	**00 53 27.9**	**+0.9**
NIG	**Nigde**	**0.93**	**226**	*e*PG		**Pg**	**00 53 14.8**	**+0.2**
KOZT	**Kozan**	**1.30**	**167**	*e*PN		Pg	00 53 27.1	+5.5
KOZT	**Kozan**	**1.30**	**167**	*e*Pn		Pg	00 53 27.2	+5.5
COAL	**Corum-Alaca**	**1.54**	**346**	*i* P		**Pn**	**00 53 24.3**	**-0.6**
COAL				*i* S		**Sn**	**00 53 44.0**	**-1.3**
COAL	**Corum-Alaca**	**1.54**	**346**	P		**Pn**	**00 53 24.3**	**-0.6**
COAL				S		**Sn**	**00 53 44.0**	**-1.3**
CORM	**Corum**	**1.56**	**336**	*e*PN		**Pn**	**00 53 25.3**	**+0.2**
CORM				*e*SN		**Sn**	**00 53 44.8**	**-0.9**
CORM	**Corum**	**1.56**	**336**	*e*Pn		**Pn**	**00 53 25.3**	**+0.2**
CORM				*e*Sn		**Sn**	**00 53 44.8**	**-0.9**

*CSEM **16** 00:56:30.6, 40°.12N×24°.55E, h18^{km}, ML1.4/5*
ATH 16 00:56:30.6, 40°.12N×24°.55E, h18$^{km}_{\pm 8}$km, ML1.4/3, Error ellipse: s-maj=8.5km s-min=0.9km az=199.0, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OUR	**Ouranopolis**	**0.49**	**296**	P		Pb	00 56 41.1	+0.5
OUR				S		Sb	00 56 48.5	+1.1
OUR	**Ouranopolis**	**0.49**	**296**	P		Pb	00 56 41.1	+0.4
OUR				S		Sb	00 56 48.5	+1.1
OUR	comp=E,139μm,0.3s			AML	AML		00 56 50.8	
OUR	comp=N,87μm,0.2s			AML	AML		00 56 51.2	
LIA	**Limnos Island**	**0.53**	**114**	P		Pb	00 56 41.6	+0.2
LIA				S		Sg	00 56 48.3	-0.1
PAIG	**Paliouri**	**0.70**	**254**	P		Pg	00 56 44.7	+0.4
PAIG				S		Sb	00 56 52.9	-0.5
PAIG	**Paliouri**	**0.70**	**254**	P		Pg	00 56 44.6	+0.3
PAIG				S		Sb	00 56 52.9	-0.6
PAIG	comp=N,86μm,0.5s			AML	AML		00 56 55.7	
PAIG	comp=E,38μm,0.2s			AML	AML		00 56 56.4	
SMTH	**Samothraki Isl**	**0.83**	**65**	P		Pb	00 56 46.5	+0.1
SMTH	**Samothraki Isl**	**0.83**	**65**	P		Pb	00 56 46.5	0.0
KAVA	**Kavala**	**0.88**	**358**	P		Pn	00 56 48.0	0.0
KAVA				S		Sb	00 56 58.9	+0.2
KAVA	**Kavala**	**0.88**	**358**	P		Pn	00 56 48.0	0.0
PLG	**Polygyros**	**0.88**	**287**	P		Pn	00 56 48.8	+0.6
PLG				S		Sb	00 56 59.1	+0.2
PLG	**Polygyros**	**0.88**	**287**	P		Pn	00 56 48.8	+0.6
PLG				S		Sb	00 56 59.1	+0.2
PLG	comp=E,42μm,0.3s			AML	AML		00 57 01.1	
PLG	comp=N,44μm,0.3s			AML	AML		00 57 01.4	
SRS	**Serrai**	**1.24**	**324**	P		Pn	00 56 52.7	-0.3
SRS	**Serrai**	**1.24**	**324**	P		Pn	00 56 52.7	-0.3
SKIA	**Skiathos**	**1.27**	**222**	P		Pg	00 56 55.4	+0.3
SKIA	**Skiathos**	**1.27**	**222**	P		Pg	00 56 55.4	+0.3
ALN	**Alexandroupoli**	**1.38**	**55**	P		Pg	00 56 56.7	-0.5
ALN	**Alexandroupoli**	**1.38**	**55**	P		Pg	00 56 56.7	-0.5

MEX 16 01:08:49.7±0.5, 16°.60N×100°.34W, h5^{km}, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.45**	**9**	*i* P		Pg	01 08 57.7	-0.8
CAIG				*i* S		Sg	01 09 04.6	+0.2
ZIIG	**Zihuatanejo**	**1.47**	**313**	*e*P		Pn	01 09 13.4	-3.5
ZIIG				*i* S		Sn	01 09 32.4	-4.2
MEIG	**Mezcala**	**1.49**	**27**	*e*P		Pn	01 09 13.7	-3.6
MEIG				*i* S		Sn	01 09 32.5	-4.6
ARIG	**Puente Sto Nin**	**1.67**	**360**	*e*P		Pn	01 09 16.0	-3.7
ARIG				*i* S		Sn	01 09 36.6	-5.0
TLIG	**Tlapa**	**1.95**	**60**	*e*P		Pn	01 09 20.3	-3.3
TLIG				*i* S		Sn	01 09 44.7	-3.9
PLIG	**Platanillo**	**1.96**	**24**	*i* P		Pn	01 09 20.1	-3.6
PLIG				*i* S		Sn	01 09 44.5	-4.2
PNIG	**Pinotepa**	**2.13**	**95**	*i* P		Pn	01 09 22.4	-3.6
PNIG				*i* S		Sn	01 09 48.9	-4.0

*TAP **16** 01:16:24.0, 24°.79N×121°.23E, h12^{km}, ML3.8, B*
*ISCJB **16** 01:16:25.1±0.3, 24°.80N±0°.02×121°.26E±0°.02, h11$^{km}_{\pm 2}$km, Error ellipse: s-maj=3.3km s-min=2.2km az=142.2*
*JMA **16** 01:16:25.1±0.1, 24°.79N×121°.27E, h13$^{km}_{\pm 1}$km, M3.2*
ISC 16 01:16:24.8±0.8, 24°.80N±0°.02×121°.25E±0°.02, h13$^{km}_{\pm 6}$km, n58, σ0^{s}.59/93, 11C-5D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
NSK	**Sanguang** baz=126	**0.16**	**139**	⇑*i* P		**Pg**	**01 16 28.4**	**-0.3**
NSK				*i* S		**Sg**	**01 16 31.5**	**+0.1**
NCU	**National Centr** baz=349	**0.18**	**343**	⇑*i* P		**Pg**	**01 16 29.0**	**-0.1**
NCU				*e*S		**Sg**	**01 16 32.8**	**+0.9**
HSN	**Hsinchu** baz=293	**0.25**	**272**	P		**Pg**	**01 16 29.7**	**-0.5**
HSN				S		**Sg**	**01 16 33.4**	**-0.4**
NSTT	**Nanjuang** baz=236	**0.28**	**234**	⇑*i* P		**Pg**	**01 16 30.6**	**0.0**
NSTT				*i* S		**Sb**	**01 16 35.5**	**-0.7**
ENTT	**Nioudou** baz=114	**0.33**	**118**	⇑*i* P		**Pg**	**01 16 31.8**	**+0.2**
ENTT				S		**Sg**	**01 16 36.1**	**0.0**
TWS1	**Kuangyinshan** baz=17	**0.34**	**27**	⇑*i* P		**Pb**	**01 16 32.5**	**-0.3**
TWS1				*e*S		**Sb**	**01 16 38.2**	**+0.1**
TAP1	**Taipei** baz=44	**0.35**	**46**	*e*P		**Pg**	**01 16 31.6**	**-0.4**
TAP1				*e*S		**Sg**	**01 16 36.9**	**+0.2**
NNS	**Nan Shan** baz=149	**0.37**	**162**	⇑*i* P		**Pg**	**01 16 32.5**	**+0.1**
NNS				S		**Sg**	**01 16 38.0**	**+0.5**
TWE	**Neicheng** baz=105	**0.39**	**101**	*i* P		**Pg**	**01 16 33.0**	**+0.3**
TWE				S		**Sb**	**01 16 39.1**	**-0.4**
ILA	**Ilan** baz=92	**0.46**	**94**	*e*P		**Pb**	**01 16 34.5**	**-0.2**
ILA				*e*S		**Sb**	**01 16 40.9**	**-0.5**
TWT	**Tachien** baz=188	**0.54**	**187**	⇑*i* P		**Pg**	**01 16 35.4**	**-0.2**
TWT				*i* S		**Sg**	**01 16 42.9**	**+0.1**
NWF	**Wu-fen Shan** baz=59	**0.56**	**60**	P		**Pb**	**01 16 36.2**	**-0.3**
NWF				S		**Sb**	**01 16 44.6**	**+0.1**
TWY	**Chenhua** baz=24	**0.58**	**34**	P		**Pb**	**01 16 36.6**	**-0.2**
TWY				*e*S		**Sb**	**01 16 46.1**	**+1.2**
NSY	**Sanyi** baz=221	**0.58**	**229**	⇓*i* P		**Pb**	**01 16 37.5**	**+0.7**
NSY				*i* S		**Sb**	**01 16 46.0**	**+1.0**
TWC	**Suao** baz=106	**0.58**	**108**	⇑*i* P		**Pg**	**01 16 36.2**	**0.0**
ENA	**Nanau** baz=125	**0.58**	**129**	*e*P		**Pg**	**01 16 36.1**	**-0.1**
ENA				S		**Sg**	**01 16 44.0**	**+0.1**
TWQ1	**Liyutan** baz=214	**0.62**	**224**	P		**Pb**	**01 16 37.6**	**+0.1**
TWQ1				*e*S		**Sb**	**01 16 46.6**	**+0.5**
EGS	baz=84	**0.63**	**85**	⇓*i* P		**Pb**	**01 16 37.7**	**+0.1**
EGS				*e*S		**Sb**	**01 16 46.0**	**-0.3**
WHF	**Hehuan Shan** baz=176	**0.65**	**178**	⇑*i* P		**Pb**	**01 16 38.0**	**-0.3**
WHF				*i* S		**Sg**	**01 16 46.5**	**+0.3**
EHP	**Heping Village** baz=133	**0.66**	**137**	*e*P		**Pb**	**01 16 38.2**	**0.0**
TWB1	**Santiao Chiao** baz=79	**0.71**	**72**	⇓*e*P		**Pb**	**01 16 39.0**	**0.0**
TWB1				*e*S		**Sb**	**01 16 49.0**	**+0.4**
TWD	**Chiawan** baz=152	**0.78**	**156**	P		**Pb**	**01 16 40.0**	**-0.2**
TWD				S		**Sg**	**01 16 49.8**	**-0.4**
TCU	**Taichung** baz=212	**0.83**	**219**	*e*P		**Pn**	**01 16 41.8**	**-0.3**
TCU				*e*S		**Sn**	**01 16 54.5**	**+0.3**
HWA	**Hwalien** baz=146	**0.88**	**158**	*e*P		**Pb**	**01 16 41.9**	**0.0**
TYC	**Yuchr** baz=197	**0.95**	**202**	*e*P		**Pn**	**01 16 43.5**	**-0.4**
TYC				*e*S		**Sn**	**01 16 56.9**	**-0.5**
SMLT	**Sun Moon Lake** baz=195	**0.96**	**199**	*e*P		**Pg**	**01 16 43.6**	**+0.2**
SMLT				*e*S		**Sn**	**01 16 57.4**	**-0.3**
ESL	**Shilin** baz=166	**0.99**	**170**	P		**Pb**	**01 16 43.7**	**-0.1**
ESL				*e*S		**Sn**	**01 16 57.4**	**-0.9**
WDT	**Danda** baz=186	**1.04**	**186**	⇑*i* P		**Pb**	**01 16 44.0**	**-0.8**
WDT				*e*S		**Sn**	**01 16 59.6**	**-0.3**
WNT	**Mingjian** baz=214	**1.05**	**209**	*e*P		**Pg**	**01 16 45.0**	**-0.1**
WNT				*e*S		**Sn**	**01 17 00.0**	**+0.4**
PCYT	**Pengchaiyu** baz=39	**1.12**	**42**	*e*P		**Pb**	**01 16 45.4**	**-0.6**
WGK	**Gukeng** baz=213	**1.27**	**210**	*e*P		**Pn**	**01 16 46.4**	**-1.8**
EHY	**Hungye** baz=163	**1.28**	**177**	*e*P		**Pb**	**01 16 48.6**	**-0.2**
CHN5	**Tsauling** baz=208	**1.30**	**204**	⇓*i* P		**Pn**	**01 16 48.5**	**-0.3**
CHN5				*e*S		**Sg**	**01 17 06.6**	**-0.2**
YUS	**Yu-Shan** baz=196	**1.33**	**192**	P		**Pb**	**01 16 49.7**	**-0.2**
YUS				*e*S		**Sg**	**01 17 08.6**	**+0.8**
ALS	**Alishan** baz=218	**1.34**	**198**	P		**Pb**	**01 16 49.6**	**-0.3**
ALS				*e*S		**Sg**	**01 17 08.4**	**+0.3**
TWF1	**Yuli** baz=165	**1.44**	**178**	*e*P		**Pb**	**01 16 51.2**	**-0.3**
TWF1				*e*S		**Sb**	**01 17 09.6**	**0.0**
CHN4	**Tsaushan** baz=223	**1.56**	**203**	⇓*i* P		**Pn**	**01 16 52.4**	**+0.2**
JYNG	**Yonagunijimaku**	**1.58**	**102**	P		**Pb**	**01 16 53.2**	**-0.8**
ELDTW	**Lidau** baz=191	**1.61**	**187**	*e*P		**Pn**	**01 16 53.6**	**+0.5**
ELDTW				*e*S		**Sg**	**01 17 16.3**	**-0.5**
YOJ	**Yonaguni jima**	**1.64**	**101**	P		**Pn**	**01 16 52.5**	**-0.8**
YOJ				*e*S		**Sn**	**01 17 14.5**	**+0.2**
YOJ	**Yonaguni jima** baz=82	**1.64**	**101**	⇑*e*P		**Pn**	**01 16 52.3**	**-1.0**
WTP	**Ta-pu** baz=222	**1.65**	**201**	*e*P		**Pn**	**01 16 53.4**	**0.0**
TWK	**Hsinying** baz=225	**1.67**	**205**	*e*P		**Pn**	**01 16 53.1**	**-0.8**
STYT	**Tauyuan** baz=218	**1.69**	**195**	*e*P		**Pn**	**01 16 54.3**	**+0.3**
CHKT	**Chengkung** baz=154	**1.69**	**176**	*e*P		**Pn**	**01 16 54.4**	**+0.3**
CHN1	**Nanshi** baz=223	**1.73**	**202**	*e*P		**Pn**	**01 16 54.7**	**+0.1**
CHN1				*e*S		**Sg**	**01 17 20.0**	**-0.6**
SGST	**Jiashian** baz=221	**1.81**	**200**	*e*P		**Pn**	**01 16 55.9**	**+0.2**
SGST				*e*S		**Sb**	**01 17 20.6**	**+0.3**
PNG	**Penghu** baz=238	**1.97**	**232**	*e*P		**Pn**	**01 16 56.6**	**-1.2**
TWG	**Pinlang** baz=184	**1.97**	**185**	*e*P		**Pn**	**01 16 58.5**	**+0.6**
TWM1	**Shoushan** baz=205	**2.10**	**201**	*e*P		**Pb**	**01 17 03.3**	**+0.5**
SSD	**Sandimen** baz=200	**2.12**	**196**	*e*P		**Pb**	**01 17 02.2**	**-0.8**
IRIF	**Iriomote-Funau**	**2.31**	**101**	P		**Pn**	**01 17 03.9**	**+1.4**
EAST	**Anshuo** baz=193	**2.43**	**189**	*e*P		**Pn**	**01 17 06.0**	**+1.8**
SCZT	**Fangliau** baz=198	**2.48**	**193**	*e*P		**Pn**	**01 17 06.8**	**+2.0**
JKRS	**Kuro-shima**	**2.58**	**102**	P		**Pn**	**01 17 06.5**	**+0.3**
JKRS				S		**Sn**	**01 17 37.2**	**-0.2**
KNM	**Kinmen** baz=269	**2.59**	**262**	*e*P		**Pn**	**01 17 06.9**	**+0.5**
JIJ	**Ishigaki jima**	**2.67**	**99**	P		**Pn**	**01 17 08.0**	**+0.5**
JISG	**Ishigakijimahi**	**2.80**	**94**	P		**Pn**	**01 17 09.8**	**+0.6**

SJA 16 01:33:31.7±0.5, 31°.34S×68°.66W, h105$^{km}_{\pm 2}$km, ML3.2, MW3.8, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.16**	**88**	*i* P		Pn	01 33 47.2	+0.7
RTLL				*i* S		Sn	01 33 58.4	+0.8
SJA	**San Juan**	**0.21**	**156**	*i* P		Pn	01 33 47.2	+0.5
AMOG	**MOGNA**	**0.42**	**20**	*i* P		Pn	01 33 48.4	+0.7
AMOG				*i* S		Sn	01 34 00.7	+1.1
RTCV	**Cerro Valdivia**	**0.53**	**169**	*i* P		Pn	01 33 48.7	+0.3
RTCV				*i* S		Sn	01 34 01.7	+0.8
RTLS	**Leoncito**	**0.71**	**230**	*i* P		Pn	01 33 51.3	+1.2
ACCO	**Cerro Coronel**	**0.82**	**335**	*i* P		Pn	01 33 52.4	+1.2
AUSP	**Uspallata**	**1.08**	**215**	*i* P		Pn	01 33 55.1	+1.3
AVFE	**Valle Fertil**	**1.23**	**57**	*i* P		Pn	01 33 56.4	+1.2
AVFE	comp=Z,192nm,0.2s			IAML			01 34 15.2	
ASAL	**Salagasta**	**1.26**	**187**	*i* P		Pn	01 33 56.4	+0.9
AROD	**Rodeo**	**1.36**	**329**	*i* P		Pn	01 33 58.6	+1.7
ARCO	**CERRO ARCO**	**1.52**	**189**	*i* P		Pn	01 33 59.7	+1.1
ARCO				*i* S		Sn	01 34 20.4	+1.3
ARCO	comp=Z,436nm,0.5s			IAML			01 34 23.7	
ACAN	**Cantantal**	**1.56**	**127**	*i* P		Pn	01 34 00.1	+1.0
ACAN				*i* S		Sn	01 34 20.9	+1.1
ACHE	**Chepes**	**1.72**	**85**	*i* P		Pn	01 34 02.5	+1.4
ACHE				*i* S		Sn	01 34 25.1	+1.7
AAGR	**Agrelo**	**1.75**	**185**	*i* P		Pn	01 34 02.7	+1.3
AAGR				*i* S		Sn	01 34 25.4	+1.3
AGUA	**GUANDACOL**	**1.85**	**5**	*i* P		Pn	01 34 04.0	+1.3
VCA	**Vinchina**	**2.62**	**9**	*i* P		Pn	01 34 13.8	+1.0
VCA				*i* S		Sn	01 34 44.8	+0.5
VCA	comp=Z,91nm,0.4s			IAML			01 34 50.0	

*CASC **16** 01:56:59.7±1.8, 11°.92N×87°.96W, h27$^{km}_{\pm 23}$km, MD4.5, ML3.8, mb4.8(NEIC)*
*ISCJB **16** 01:57:01.1±0.5, 11°.97N±0°.04×87°.90W±0°.03, h56$^{km}_{\pm 3}$km, mb4.8/113, MS4.3/12, Error ellipse: s-maj=7.1km s-min=3.2km az=38.4*
*IDC **16** 01:57:03.4±2.7, 12°.34N×87°.71W, h44$^{km}_{\pm 26}$km, mb4.1/14, mb1 4.4/17, mb1mx4.1/38, mbtmp4.4/17, ML3.1/3, MS4.3/12, Ms1 4.3/12, ms1mx4.1/34, Error ellipse: s-maj=26.7km s-min=12.8km az=48.0*
*NEIC **16** 01:57:05.3±0.5, 12°.16N×87°.85W, h68$^{km}_{\pm 8}$km, mb4.8/115, Error ellipse: s-maj=8.1km s-min=4.2km az=224.0*
*GCMT **16** 01:57:05.3±0.5, 12°.26N×87°.96W, h78$^{km}_{\pm 4}$km, MW5.1/69, Moment Tensor Solution. s12,c13; s69,c93; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_r=-3.89±.36; $M_{\theta\theta}$=0.59±.37; $M_{\phi\phi}$=4.49±.38; $M_{r\theta}$=-1.75±.15; $M_{r\phi}$=1.91±.40; $M_{\theta\phi}$=0.64±.22; Best double couple: M_w4.98800×10^{16} NP1:ϕ_s174.00000°, δ51.00000°, λ-126.00000°. NP2: ϕ_s43.00000°, δ51.00000°, λ-54.00000°. Principal axes: T 5.1280, Plg0.0000°, Azm288.0000°; N -0.2710, Plg27.0000°, Azm198.0000°; P -4.8490, Plg63.0000°, Azm19.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **16** 01:57:06.8, 12°.10N×87°.80W, h88^{km}, mB5.1/2, Ms5.3/6, Ms7 5.0/6*
ISC 16 01:57:04.1±0.9, 12°.06N±0°.06×87°.85W±0°.06, h66$^{km}_{\pm 7}$km, n552, σ1^{s}26/546, mb4.8/113, 3C, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**1.21**		1⇑*e*P		**Pn**	**01 57 23.3**	**-1.9**
CNCH				*e*S		**Sn**	**01 57 42.9**	**+1.9**
CNGN	**Cerro Negro**	**1.21**	**69**	*e*P		**Pn**	**01 57 23.2**	**-1.9**
CNGN				*e*S		**Sn**	**01 57 39.2**	**-1.7**
CNGN	comp=N,2μm,0.6s			AML	AML		01 57 46.1	
MOMN	**Momotombo**	**1.33**	**75**	*e*P		**Pn**	**01 57 24.4**	**-2.3**
VSM	**San Miguel**	**1.42**	**343**	⇑*e*P		**Pn**	**01 57 25.6**	**-2.6**
LCY	**Lacayo**	**1.42**	**342**	⇑*e*P		**Pn**	**01 57 25.4**	**-2.6**
LCY				*e*S		**Sn**	**01 57 45.0**	**-1.0**
BLLM	**Bellamira**	**1.42**	**345**	*e*P		**Pn**	**01 57 25.3**	**-2.7**
PACA	**Pacayal**	**1.47**	**342**	*e*P		**Pn**	**01 57 25.9**	**-2.8**
CAHU	**Cacacuatique**	**1.73**	**348**	*e*P		**Pn**	**01 57 30.4**	**-1.9**
LFRS	**El Faro**	**1.95**	**323**	*e*P		Pn	01 57 31.5	-3.6
LBRS	**Las Brisas**	**2.03**	**325**	*e*P		**Pn**	**01 57 33.2**	**-2.9**
LFU	**La Fuente**	**2.08**	**324**	*e*P		**Pn**	**01 57 33.7**	**-3.1**
BOQS	**Boqueron**	**2.17**	**320**	*e*P		**Pn**	**01 57 35.5**	**-2.7**
CONN	**Concepcion**	**2.24**	**103**	*e*P		**Pn**	**01 57 35.8**	**-3.1**
SBLS	**San Blas**	**2.47**	**316**	*e*P		Pn	01 57 38.7	-3.6
MONT	**Ecomontaæa**	**2.50**	**316**	*e*P		Pn	01 57 38.8	-3.9
RTR	**El Retiro**	**2.53**	**316**	*e*P		**Pn**	**01 57 39.8**	**-3.2**
RBDL	**Robledal**	**2.71**	**319**	*e*P		**Pn**	**01 57 42.5**	**-3.0**
JCR	**Jicaral**	**3.47**	**129**	*e*P		**Pn**	**01 57 52.6**	**-3.2**
HDC	**Heredia**	**4.20**	**119**	*e*Pn		**Pn**	**01 58 06.6**	**+0.8**
URSC	**Urasca**	**4.57**	**119**	*e*P		**Pn**	**01 58 10.0**	**-0.9**
URSC				*e*S		**Sn**	**01 59 01.7**	**-1.2**
CMIG	**Matias Romero** comp=N,1.7nm,0.3s,baz=105,slow=9.7,SNR=14	**8.45**	**307**	P		**Pn**	**01 59 01.6**	**-2.2**
TLIG	**Tlapa**	**11.71**	**299**	*e*Pn		**Pn**	**01 59 47.5**	**-1.0**
DBBC	**Dabeiba**	**12.53**	**113**	*e*P		**Pn**	**01 59 56.0**	**-3.7**
GUYC	**Guyana, Colomb**	**14.06**	**118**	*e*P		**Pn**	**02 00 19.1**	**-1.6**
NORC	**Norcasia**	**14.36**	**116**	*e*P		**Pn**	**02 00 20.2**	**-4.0**
TOLC	**Tolima**	**14.45**	**120**	*e*P		**P**	**02 00 33.6**	**+3.0**
POPC	**Popayan, Colom**	**14.56**	**130**	*e*P		**P**	**02 00 32.8**	**+1.0**
CMBC	**Cumbal**	**14.87**	**137**	*e*P		**P**	**02 00 38.7**	**+3.4**
OTAV	**Otavalo** comp=N,10nm,0.9s	**15.00**	**141**	*e*Pn		**P**	**02 00 37.0**	**+0.1**
CRUC	**La Cruz**	**15.02**	**133**	*e*P		**P**	**02 00 37.0**	**+0.1**
ROSC	**El Rosal** comp=N,0.3nm,0.3s,baz=318,slow=4.4,SNR=8.5	**15.18**	**117**	P		**Pn**	**02 00 35.9**	**+0.8**
ROSC	**El Rosal**	**15.18**	**117**	*e*P		**P**	**02 00 40.0**	**+1.2**
ROSC	**El Rosal** comp=N,22nm,0.9s	**15.18**	**117**	*e*Pn		**P**	**02 00 37.1**	**-1.7**
PRAC	**Prado**	**15.28**	**122**	*e*P		**Pn**	**02 00 37.0**	**+1.0**
PRAC	**Prado** comp=N,40nm,0.9s	**15.28**	**122**	*e*Pn		**P**	**02 00 40.0**	**+0.5**
GRMC	**Gramalote, San**	**15.44**	**105**	*e*P		**Pn**	**02 00 37.9**	**-0.3**
CBRI	**Barrientos, No**	**15.45**	**105**	*e*P		**Pn**	**02 00 39.1**	**+0.8**
PAMC	**Pamplona, Colo**	**15.65**	**106**	*e*P		**Pn**	**02 00 40.2**	**-1.1**
CHIC	**Chingaza**	**15.79**	**117**	*e*P		**Pn**	**02 00 41.1**	**-1.8**
RUSC	**La Rusia**	**15.82**	**112**	*e*P		**Pn**	**02 00 43.3**	**0.0**
RUSC	**La Rusia** comp=N,9.9nm,1.0s	**15.82**	**112**	*e*Pn		**P**	**02 00 46.2**	**+0.2**
SJAC	**San Juan de Ar**	**16.30**	**121**	*e*P		**Pn**	**02 00 48.6**	**-0.5**
SDV	**Santo Domingo** comp=N,0.8nm,0.3s,baz=277,slow=6.7,SNR=7.7	**17.22**	**99**	P		**Pn**	**02 00 59.6**	**-1.0**
SDV	comp=N,581nm,18.9s,baz=260,slow=43			LR		LR	02 09 22.9	
SDV	**Santo Domingo**	**17.22**	**99**	*e*P		**Pn**	**02 00 59.4**	**-1.2**
SDV	**Santo Domingo** comp=N,54nm,1.4s	**17.22**	**99**	*e*Pn		**Pn**	**02 01 00.3**	**-0.3**
035Z	**Hargill** baz=144,SNR=7.6	**17.25**	**328**	P		**P**	**02 01 02.4**	**+1.1**
035Z	baz=144			S		**S**	**02 04 18.5**	**+1.2**
ZAIG	**Zacatecas** comp=N,23nm,1.4s	**17.61**	**309**	*e*P		**P**	**02 01 06.8**	**+1.3**
035A	**Encino** baz=145,SNR=5.7	**17.66**	**328**	P		**Pn**	**02 01 07.0**	**+1.4**
034A	**Hebbronville** baz=144,SNR=17	**18.06**	**327**	P		**Pn**	**02 01 11.5**	**+0.9**
544A	**White Castle** baz=170	**18.22**	**351**	P		Pn	02 01 20.1	+7.6
934A	**Benavides** baz=145,SNR=11	**18.41**	**329**	P		**P**	**02 01 14.7**	**+0.7**
835A	**Beeville** baz=148	**18.64**	**331**	P		**P**	**02 01 17.0**	**+0.4**
446A	**Poplarville** baz=175	**18.69**	**356**	P		**Pn**	**02 01 20.3**	**+2.2**
933A	**Laredo** baz=143,SNR=9.6	**18.82**	**327**	P		**P**	**02 01 19.3**	**+0.9**
834A

baz=152,SNR=17

538A **Harpers Horsep** 19.41 340 P Pn 02 01 27.2 +0.5
baz=157

440A **Kirbyville** 19.43 344 P Pn 02 01 27.7 +0.7
baz=162

833A **Chaparral WMA,** 19.45 328 P P 02 01 25.6 +0.3
baz=144,SNR=60

734A **La Parita Cree** 19.46 331 P P 02 01 26.1 +0.6
baz=147

344A **Westbrook Farm** 19.48 353 P Pn 02 01 28.7 +1.2
baz=172,SNR=7.9

635A **Leesville** 19.56 333 P P 02 01 27.0 +0.5
baz=150,SNR=5.2

537A **Green Hill Far** 19.58 338 P P 02 01 27.8 +1.1
baz=155,SNR=8.5

342A **Flagon Creek P** 19.66 349 P Pn 02 01 30.4 +0.9
baz=167,SNR=7.7

TIGA **Tifton** 19.68 11 P Pn 02 01 30.4 +0.5
baz=192,SNR=6.9

TIGA **Tifton** 19.68 11 *e*P Pn 02 01 29.7 -0.1
comp=N,125nm,1.1s

439A **Center Grove,** 19.71 342 P Pn 02 01 30.3 +0.1
baz=160,SNR=9.7

733A **Divot King Ran** 19.72 329 P P 02 01 28.8 +0.5
baz=145,SNR=42

832A **Faith Ranch, C** 19.72 327 P P 02 01 28.5 +0.2
baz=142,SNR=27

341A **Kurthwood** 19.80 346 P Pn 02 01 31.3 0.0
baz=164

634A **China Grove, S** 19.81 332 P P 02 01 29.8 +0.5
baz=148

536A **Bastrop** 19.86 336 P P 02 01 31.2 +1.3
baz=153

438A **Sam Houston St** 19.89 340 P Pn 02 01 32.2 -0.1
baz=158

247A **Quitman** 19.91 358 P Pn 02 01 32.2 -0.3
baz=178,SNR=6.5

248A **Dixon Mills** 19.94 0 P Pn 02 01 32.5 -0.4
baz=180,SNR=7.8

245A **Little AP, Sta** 19.97 355 P Pn 02 01 33.1 -0.1
baz=174,SNR=5.5

243A **Waterproof** 20.01 351 P Pn 02 01 33.7 0.0
baz=170,SNR=5.8

535A **Dale** 20.03 335 P P 02 01 32.4 +0.7
baz=151,SNR=9.1

340A **Bronson** 20.05 345 P Pn 02 01 33.7 -0.5
baz=162,SNR=15

244A **Avery, Jackson** 20.06 353 P Pn 02 01 34.5 +0.2
baz=172,SNR=13

339A **Huntington** 20.15 343 P Pn 02 01 34.7 -0.7
baz=161,SNR=9.1

437A **Phantom Ranch,** 20.19 339 P Pn 02 01 37.8 +2.0
baz=156

VBMS **Vicksburg** 20.21 353 P Pn 02 01 36.3 +0.2
baz=172

633A **Saathoff Ranch** 20.27 330 P P 02 01 33.9 -0.4
baz=146,SNR=36

242A **Grayson** 20.30 349 P Pn 02 01 37.1 0.0
baz=168,SNR=7.6

436A **Wall Ranch, Ga** 20.38 337 P P 02 01 37.1 +1.7
baz=154

338A **Crockett** 20.40 341 P Pn 02 01 37.6 -0.7
baz=159,SNR=6.3

241A **Mo Tay, Goldon** 20.41 348 P Pn 02 01 38.0 -0.4
baz=166,SNR=6.3

534A **Blanco** 20.42 333 P P 02 01 35.3 -0.7
baz=149,SNR=22

147A **Livingston** 20.52 359 P Pn 02 01 39.4 -0.3
baz=179,SNR=6.1

145A **Houston Renfro** 20.54 355 P Pn 02 01 39.5 -0.3
baz=174

337A **Centerville** 20.55 340 P Pn 02 01 39.2 -0.9
baz=157

NATX **Nacogdoches** 20.59 343 P P 02 01 39.3 +1.6
baz=161,SNR=9.2

NATX **Nacogdoches** 20.59 343 *e*P P 02 01 39.2 +1.6
comp=N,65nm,0.8s

240A **Hunter Patters** 20.61 346 P Pn 02 01 40.1 -0.7
baz=163

435B **Jarrell** 20.70 336 P P 02 01 39.2 +0.3
baz=152

533A **Kerrville** 20.71 332 P P 02 01 38.7 -0.4
baz=148,SNR=78

142A **Monroe** 20.74 350 P Pn 02 01 41.5 -0.7
baz=169

239A **Gary** 20.78 344 P P 02 01 41.5 +1.8
baz=162

143A **Socs Landing,** 20.80 352 P Pn 02 01 42.1 -0.9
baz=170

LRAL **Lakeview Retre** 20.89 2 *e*P P 02 01 42.0 +1.1
comp=N,45nm,1.3s

238A **Jacksonville** 20.95 343 P P 02 01 43.4 +1.9
baz=160

336A **Riesel** 20.95 338 P P 02 01 43.2 +1.6
baz=155

141A **Papa Simpson,** 20.97 348 P Pn 02 01 43.8 -1.2
baz=166

434A **Burnet** 21.00 334 P P 02 01 42.0 -0.3
baz=150,SNR=18

Z47A **Carrollton** 21.04 359 P P 02 01 45.3 +2.7
baz=179,SNR=9.1

Z46A **Louisville** 21.06 357 P P 02 01 44.8 +2.0
baz=177

335A **Moody** 21.07 337 P P 02 01 43.5 +0.5
baz=153

140A **Cam and Jess,** 21.15 347 P P 02 01 45.7 +2.0
baz=164

237A **Washetta, Mont** 21.16 341 P P 02 01 46.7 +2.9
baz=158

Z48A **Northport** 21.22 1 P P 02 01 46.7 +2.3
baz=181,SNR=11

Z44A **Pea Ridge, Bel** 21.25 354 P P 02 01 46.9 +2.1
baz=173

ATAH **Atahualpa** 21.26 153 P P 02 01 48.4 +2.9
comp=N,8.0nm,0.8s,baz=357,slow=6.4,SNR=5.0

ATAH LR LR 02 08 52.8
comp=N,686nm,19.0s,baz=337,slow=33

Z45A **Winona** 21.28 356 P P 02 01 46.5 +1.4
baz=175

Z43A **Armstrong Fami** 21.28 352 P P 02 01 47.6 +2.6
baz=171

433A **Art** 21.31 333 P P 02 01 45.2 -0.4
baz=148,SNR=18

139A **Bunkhouse Ranc** 21.38 345 P P 02 01 48.0 +1.8
baz=162

JCT **Junction City** 21.41 331 P P 02 01 46.7 +0.1
baz=146

JCT **Junction City** 21.41 331 *e*P P 02 01 46.3 -0.3
comp=N,18nm,0.5s

334A **Lometa** 21.44 335 P P 02 01 47.0 +0.1
baz=151,SNR=14

Z42A **Norrel Spur, H** 21.45 351 P P 02 01 47.9 +1.0
baz=169

138A **Matatall Enter** 21.55 343 P P 02 01 49.1 +1.1
baz=160,SNR=7.6

Z41A **Richland Creek** 21.58 349 P P 02 01 49.6 +1.3
baz=167,SNR=9.6

GOGA **Godfrey** 21.63 10 *e*P P 02 01 50.6 +1.8
comp=N,135nm,1.4s

137A **Heron Place, G** 21.69 342 P P 02 01 51.9 +2.4
baz=159

Z40A **Long Farm, Mag** 21.70 347 P P 02 01 51.8 +2.2
baz=165,SNR=13

WHTX **Lake Whitney,** 21.72 337 P P 02 01 51.3 +1.5
baz=154

WHTX **Lake Whitney,** 21.72 337 *e*P P 02 01 48.0 -1.8
comp=N,128nm,1.9s

Y46A **Houston** 21.74 358 P P 02 01 51.1 +1.0
baz=177,SNR=15

Y47A **UCPARC, Winfie** 21.74 0 P P 02 01 51.0 +1.0
baz=180,SNR=14

333A **Richland Sprin** 21.75 334 P P 02 01 50.3 0.0
baz=149,SNR=34

Y45A **Yeager Farm, C** 21.76 356 P P 02 01 51.5 +1.3
baz=176

SJG **San Juan** 21.79 71 P P 02 01 49.7 -1.0
comp=N,3.6nm,0.4s,baz=244,slow=13,SNR=3.3

SJG **San Juan** 21.79 71 *e*P P 02 01 49.8 -1.0
comp=N,33nm,1.3s

136A **Ennis** 21.83 340 P P 02 01 52.1 +1.2
baz=157,SNR=14

Z39A **Irene McRaven,** 21.86 346 P P 02 01 53.1 +1.8
baz=163

Y44A **Strider, Charl** 21.91 355 P P 02 01 52.4 +0.6
baz=174

234A **Clairette** 21.99 336 P P 02 01 52.3 -0.5
baz=152,SNR=6.6

WLAR **White Oak Lake** 22.06 348 *e*P P 02 01 55.5 +2.0
comp=N,214nm,1.3s

Z38A **Mt. Pleasant** 22.08 344 P P 02 01 55.0 +1.3
baz=161

CBYP **Canovanas** 22.10 71 *e*P P 02 01 53.7 -0.4
comp=N,31nm,1.3s

Y41A **Eaglette Beard** 22.15 349 P P 02 01 55.9 +1.5
baz=168,SNR=8.4

135A **Vickery Place,** 22.21 338 P P 02 01 56.1 +1.0
baz=155

Z37A **Pogue Cattle C** 22.21 343 P P 02 01 56.2 +1.1
baz=160

X45A **UM Field Stati** 22.31 357 P P 02 01 56.9 +0.8
baz=176

233A **Rising Star** 22.32 335 P P 02 01 55.5 -0.8
baz=150,SNR=13

OXF **Oxford** 22.39 357 *e*P P 02 01 57.2 +0.1
comp=N,130nm,1.2s

Y40A **Okolona** 22.41 348 P P 02 01 58.4 +1.2
baz=166,SNR=13

134A **White-Moore Ra** 22.47 337 P P 02 01 58.2 +0.2
baz=153,SNR=9.4

Y39A **Lockesburg** 22.51 346 P P 02 01 59.3 +1.0
baz=164,SNR=14

X43A **Marvell** 22.52 353 P P 02 01 59.8 +1.3
baz=172

Z36A **Blue Ridge** 22.53 341 P P 02 01 58.9 +0.4
baz=158,SNR=10

TXAR **Lajitas Array** 22.63 322 P P 02 01 59.9 +0.1
comp=N,8.1nm,0.6s,baz=136,slow=9.5,SNR=96

TXAR PcP PcP 02 05 53.5 +2.9
comp=N,0.5nm,0.9s,baz=141,slow=3.0,SNR=3.5

TXAR LR LR 02 12 22.3
comp=N,371nm,19.6s,baz=0.0,slow=41

TX31 **Lajitas Ar. Si** 22.63 322 *e*P P 02 01 59.6 -0.1

Y38A **Idabel** 22.66 345 P P 02 02 00.3 +0.4
baz=162,SNR=7.0

X41A **Kaden, Bauxite** 22.73 350 P P 02 02 01.0 +0.4
baz=168

X40A **Basin Creek Fa** 22.78 349 P P 02 02 01.5 +0.4
baz=167,SNR=9.5

133A **Hamilton Ranch** 22.84 335 P P 02 02 01.3 -0.4
baz=151,SNR=10

Z35A **Perchaven, San** 22.85 339 P P 02 02 03.2 +1.2
baz=156,SNR=13

PCRV **Puerto La Cruz** 22.86 92 P P 02 02 02.0 -0.2
comp=N,13nm,0.6s,baz=236,slow=3.7,SNR=7.9

PCRV LR LR 02 13 52.5
comp=N,527nm,18.4s,baz=278,slow=44

JSC **Jenkinsville** 22.92 14 *e*P P 02 02 04.5 +1.9
comp=N,67nm,1.2s

Y37A **Hugo** 22.94 343 P P 02 02 03.3 +0.4
baz=160,SNR=7.0

UALR **University of** 22.98 350 *e*P P 02 02 03.4 +0.2
comp=N,74nm,1.3s

MIAR **Mount Ida** 22.98 348 P P 02 02 03.4 +0.1
baz=166,SNR=44

MIAR **Mount Ida** 22.98 348 *e*P P 02 02 03.3 +0.1
comp=N,65nm,0.8s

W45A **Hickory Valley** 23.02 357 P P 02 02 03.9 +0.2
baz=177,SNR=8.7

Y36A **Durant** 23.06 342 P P 02 02 04.7 +0.7
baz=158,SNR=9.6

X39A **Fountain Ranch** 23.06 347 P P 02 02 04.7 +0.7
baz=164,SNR=12

SWET **Sewee** 23.12 4 *e*P P 02 02 04.9 +0.3
comp=N,13nm,1.2s

Z34A **Collier Ranch,** 23.12 338 P P 02 02 05.6 +1.0
baz=154

ABTX **Abilene, Hawle** 23.15 334 P P 02 02 04.7 -0.2
baz=150,SNR=25

ABTX **Abilene, Hawle** 23.15 334 *e*P P 02 02 04.0 -1.0
comp=N,55nm,1.0s

Y35A **Marietta** 23.31 340 P P 02 02 07.3 +1.0
baz=157,SNR=34

W41A **Tony Mavity, V** 23.35 351 P P 02 02 06.9 +0.1
baz=169,SNR=21

W41B **Gary Mavity, V** 23.35 351 P P 02 02 07.0 +0.3
baz=169,SNR=21

Z33A **Whitaker Ranch** 23.37 336 P P 02 02 06.2 -0.8
baz=152,SNR=11

X38A **Whitesboro** 23.38 345 P P 02 02 08.5 +1.4
baz=163,SNR=24

X37A **Clayton** 23.45 344 P P 02 02 08.6 +0.9
baz=161,SNR=23

WHAR **Wooly Hollow** 23.47 351 *e*P P 02 02 07.9 0.0
comp=N,66nm,1.3s

CPCT **Cooper Cave** 23.48 7 *e*P P 02 02 09.4 +1.5
comp=N,38nm,1.4s

W40A **Ferguson Farm,** 23.51 349 P P 02 02 09.5 +1.3
baz=167,SNR=13

HBAR **Harrisburg** 23.53 354 *e*P P 02 02 09.4 +1.1

Y34A **Reagan Ranch,** 23.60 339 P P 02 02 09.9 +0.8
baz=155,SNR=7.7

V45A **Humboldt** 23.60 358 P P 02 02 09.7 +0.7
baz=177

W39A **Magazine** 23.65 348 P P 02 02 10.5 +0.9
baz=165,SNR=23

W38A **Poteau** 23.69 346 P P 02 02 11.4 +1.6
baz=164,SNR=41

X36A **Centrahoma** 23.70 342 P P 02 02 10.8 +0.8
baz=159,SNR=28

KMSC **Kings Mountain** 23.73 13 P P 02 02 11.6 +1.4
baz=196,SNR=7.7

KMSC **Kings Mountain** 23.73 13 *e*P P 02 02 10.8 +0.6
comp=N,20nm,0.8s

X35A **Drake** 23.74 341 P P 02 02 10.7 +0.4
baz=157,SNR=20

TKL **Tuckaleechee C** 23.78 8 P P 02 02 10.9 +0.2
comp=N,85nm,1.1s,baz=182,slow=10,SNR=32

TKL LR LR 02 12 04.2
comp=N,560nm,18.8s,baz=176,slow=38

TKL **Tuckaleechee C** 23.78 8 *e*P P 02 02 11.9 +1.2
comp=N,101nm,1.1s

V42A **Cord** 23.86 353 P P 02 02 10.9 -0.5
baz=171,SNR=10

V41A **Mountainview** 23.94 351 P P 02 02 12.3 +0.2
baz=170,SNR=14

Y33A **Hilltop Ranch,** 23.96 338 P P 02 02 12.9 +0.7
baz=153,SNR=11

WVT **Waverly** 23.96 0 *e*P P 02 02 12.8 +0.5
comp=N,5.2nm,0.8s

W37B **Quinton** 23.98 345 P P 02 02 13.3 +0.8
baz=162,SNR=20

V40A **Witts Springs** 24.06 350 P P 02 02 13.6 +0.4
baz=168,SNR=23

W36A **Wetumka** 24.20 343 P P 02 02 15.0 +0.5
baz=160,SNR=12

X34A **Smith Ranch, M** 24.21 340 P P 02 02 15.4 +0.9
baz=156,SNR=13

V39A **Pettigrew** 24.25 348 P P 02 02 15.5 +0.6
baz=166,SNR=44

U42A **Revenden** 24.38 353 P P 02 02 15.6 -0.4
baz=172,SNR=9.8

X33A **Lawton** 24.39 338 P P 02 02 16.8 +0.6
baz=154,SNR=29

W35A **Tecumseh** 24.40 342 P P 02 02 16.8 +0.5
baz=158,SNR=16

V38A **Canehill** 24.43 347 P P 02 02 17.3 +0.8
baz=164,SNR=30

LPIG **La Paz** 24.43 302 LR LR 02 12 58.6
comp=N,1µm,18.1s,baz=92,slow=39

X32A **Elmer** 24.57 337 P P 02 02 18.4 +0.5
baz=152,SNR=31

U40A **Yellville** 24.61 350 P P 02 02 18.6 +0.4
baz=168,SNR=22

V37A **Hulbert** 24.62 346 P P 02 02 18.5 +0.3
baz=163,SNR=39

WMOK **Wichita Mounta** 24.66 338 P P 02 02 18.5 -0.3
baz=154,SNR=26

WMOK **Wichita Mounta** 24.66 338 *e*P P 02 02 18.4 -0.3
comp=N,38nm,1.3s

TZTN **Tazewell** 24.68 8 *e*P P 02 02 18.6 -0.3
comp=N,38nm,1.1s

PBMO **Poplar Bluff** 24.72 355 *e*P P 02 02 18.7 -0.5
comp=N,44nm,1.4s

V36A **Jenks** 24.73 344 P P 02 02 19.6 +0.3
baz=161,SNR=12

HHAR **Hobbs** 24.73 348 *e*P P 02 02 19.5 +0.1
comp=N,24nm,0.7s

U39A **Green Forest** 24.74 349 P P 02 02 19.8 +0.4
baz=167,SNR=18

W34A **Bridge Creek,** 24.76 340 P P 02 02 20.0 +0.4
baz=156,SNR=20

W34A **Bridge Creek,** 24.76 340 *e*P P 02 02 19.7 0.0
comp=N,260nm,1.4s

TUL1 **Leonard** 24.81 344 P P 02 02 20.4 +0.4
baz=161,SNR=15

TUL1 **Leonard** 24.81 344 *e*P P 02 02 19.9 -0.1
comp=N,110nm,1.5s

W33A **Caddo, Fort Co** 24.92 339 P P 02 02 21.6 +0.5
baz=155

V35A **Meyer Ranch, C** 24.96 342 P P 02 02 21.7 +0.3
baz=159,SNR=8.0

U38A **Gravette** 24.98 347 P P 02 02 21.9 +0.3
baz=165,SNR=27

U37A **Salina** 25.11 346 P P 02 02 24.4 +1.6
baz=163,SNR=20

T41A **Mountain View** 25.12 353 P P 02 02 23.2 +0.3
baz=171,SNR=13

W32A **Sentinel** 25.18 338 P P 02 02 23.5 0.0
baz=153,SNR=21

V34A **Guthrie** 25.23 341 P P 02 02 23.8 0.0
baz=157,SNR=19

V34A **Guthrie** 25.23 341 *e*P P 02 02 22.7 -1.1
comp=N,69nm,0.9s

U36A **Oologah** 25.25 345 P P 02 02 25.7 +1.7
baz=162

T40A **Mansfield** 25.33 351 P P 02 02 25.4 +0.7
baz=169,SNR=6.2

T39A **Clever** 25.35 350 P P 02 02 24.7 -0.2
baz=167,SNR=18

MNTX **Cornudas Mount** 25.36 323 P P 02 02 26.1 +1.0
baz=136,SNR=23

MNTX **Cornudas Mount** 25.36 323 *e*P P 02 02 25.2 +0.1
comp=N,24nm,1.2s

V33A **Lossen Ranch,** 25.47 340 P P 02 02 26.4 +0.4
baz=156,SNR=9.1

S43A **Fulton Ridge,** 25.48 356 P P 02 02 25.7 -0.4
baz=175,SNR=8.8

U35A **Pawnee** 25.50 343 P P 02 02 26.6 +0.3
baz=160,SNR=9.4

S45A **Carrier Mills** 25.52 359 P P 02 02 26.3 -0.1
baz=178

T38A **Diamond** 25.53 348 P P 02 02 26.8 +0.2
baz=165,SNR=22

S44A **Carbondale** 25.56 357 P P 02 02 27.5 +0.7
baz=177

V32A **Arapaho** 25.64 339 P P 02 02 28.3 +0.7
baz=154,SNR=6.5

S41A **Jillco Farms,** 25.66 353 P P 02 02 27.4 -0.3
baz=171,SNR=8.3

MSTX **Muleshoe** 25.71 330 P P 02 02 28.8 +0.5
baz=144,SNR=17

MSTX **Muleshoe** 25.71 330 *e*P P 02 02 28.1 -0.2
comp=N,53nm,1.0s

T37A **Cheneyville 18** 25.75 347 P P 02 02 28.8 +0.2
baz=164,SNR=22

S40A **Lebanon** 25.77 351 P P 02 02 29.2 +0.5
baz=170,SNR=10

U34A **Anderson Ranch** 25.79 342 P P 02 02 28.8 -0.2
baz=158

U34A **Anderson Ranch** 25.79 342 *e*P P 02 02 28.6 -0.4
comp=N,106nm,1.5s

T36A **Boggs Farm, Ca** 25.92 345 P P 02 02 31.2 +1.2
baz=162

T35A **Sooner Cattle** 25.95 344 P P 02 02 31.6 +1.3
baz=160,SNR=6.7

AMTX **Amarillo** 25.96 333 P P 02 02 31.4 +0.8
baz=148

AMTX **Amarillo** 25.96 333 *e*P P 02 02 31.1 +0.5
comp=N,60nm,1.1s

U33A **Lingo Farm, Me** 25.97 341 P P 02 02 31.1 +0.5
baz=157

S39A **Bolivar** 25.99 350 P P 02 02 30.6 -0.1
baz=168,SNR=41

S38A **Stockton** 26.03 349 P P 02 02 31.4 +0.3
baz=166,SNR=14

WCI **Wyandotte Cave** 26.10 3 *e*P P 02 02 28.9 -2.8
comp=N,45nm,1.5s

R44A **Waltonville** 26.10 358 P P 02 02 31.8 +0.1
baz=177,SNR=5.2

U32A **Winter Ranch,** 26.22 339 P P 02 02 33.1 +0.2
baz=155

T34A **McClaskey Farm** 26.23 343 P P 02 02 33.2 +0.3
baz=159,SNR=9.8

S37A **Fort Scott** 26.34 347 P P 02 02 34.3 +0.4
baz=164,SNR=14

R40A **Maddies Statio** 26.42 352 P P 02 02 34.5 -0.1
baz=170,SNR=7.8

S36A **Lake Cedric, C** 26.48 346 P P 02 02 35.0 -0.2
baz=163,SNR=25

R39A **Chumby, Stover** 26.55 351 P P 02 02 35.5 -0.3
baz=169,SNR=15

OLIL **Olney** 26.57 360 *e*P P 02 02 36.1 +0.2
comp=N,54nm,1.5s

R38A **Fenwick Farm,** 26.57 349 P P 02 02 35.8 -0.1
baz=167,SNR=13

T33A **Patterson Ranc** 26.61 341 P P 02 02 36.2 -0.1
baz=157

S35A **Otter Creek Ra** 26.62 345 P P 02 02 37.5 +1.1
baz=161,SNR=14

Q44A **Meyer Farm, Va** 26.75 358 P P 02 02 37.5 0.0
baz=178,SNR=5.0

Q43A **New Douglas** 26.82 357 P P 02 02 38.1 -0.1
baz=176

Q42A **Golden Eagle** 26.85 355 P P 02 02 39.1 +0.7
baz=174

R37A **Teagarden Farm** 26.88 348 P P 02 02 38.9 +0.3
baz=172

T32A **Huddler Ranch,** 26.91 340 P P 02 02 39.5 +0.4
baz=156

S33A **Kaszmaul Farm,** 27.00 342 P P 02 02 40.4 +0.5
baz=158

R36A **Gordon, Harris** 27.03 347 P P 02 02 40.5 +0.4
baz=163

Q40A **Laux Farm, Aux** 27.09 353 P P 02 02 40.1 -0.4
baz=171

Q39A **Willow Grove F** 27.26 351 P P 02 02 41.7 -0.4
baz=169

Q38A **Cooks Store, C** 27.28 350 P P 02 02 42.3 +0.1
baz=168,SNR=7.7

Q37A **Longview Farm,** 27.34 349 P P 02 02 43.1 +0.3
baz=166

121A **Cookes Peak, D** 27.39 321 P P 02 02 47.2 +3.7
baz=134

121A **Cookes Peak, D** 27.39 321 *e*P P 02 02 42.9 -0.6
comp=N,12nm,1.1s

S32A **Newby Ranch, P** 27.39 341 P P 02 02 43.5 +0.1
baz=156

R34A **Isabella, Hill** 27.44 344 P P 02 02 44.6 +0.8
baz=160

P42A **Winchester** 27.50 356 P P 02 02 43.8 -0.5
baz=175

P40A **Paris** 27.61 353 P P 02 02 45.1 -0.2
baz=171

P41A **Barry, Barry** 27.65 355 P P 02 02 45.0 -0.6
baz=173,SNR=5.1

R33A **Olander Ranch,** 27.66 343 P P 02 02 45.9 +0.2
baz=158

P39B **Salisbury** 27.66 352 P P 02 02 45.4 -0.3
baz=170,SNR=6.7

Q35A **Mercer Eighty,** 27.66 346 P P 02 02 45.3 -0.4
baz=163

BNM **Barren Site** 27.86 325 *e*P P 02 02 51.0 +3.2

P38A **Dawn** 27.91 351 P P 02 02 47.8 -0.1
baz=168,SNR=18

Q34A **Chapman** 27.95 345 P P 02 02 48.4 +0.1
baz=161

R32A **Long Quarter,** 27.98 342 P P 02 02 48.8 +0.2
baz=157

P37A **Lathrop** 28.02 349 P P 02 02 48.5 -0.4
baz=166,SNR=5.9

KSU1 **Kansas State U** 28.03 345 P P 02 02 49.0 0.0
baz=162

KSU1 **Kansas State U** 28.03 345 *e*P P 02 02 48.6 -0.4
comp=N,22nm,1.1s

O40A **La Belle** 28.17 353 P P 02 02 50.0 -0.3
baz=172

P36A **Good Intent, A** 28.21 348 P P 02 02 50.6 -0.1
baz=165,SNR=6.8

SFIN **Lafayette** 28.21 1 P P 02 02 50.1 -0.5
baz=182

Q33A **Connelly Farm,** 28.26 343 P P 02 02 51.1 0.0
baz=159

P35A **Duane Minner,** 28.30 347 P P 02 02 51.4 0.0
baz=163

LAZ **Ladron** 28.33 325 *e*P P 02 02 55.9 +3.9

ANMO **Albuquerque** 28.36 327 P P 02 02 54.1 +1.9
baz=139

ANMO **Albuquerque** 28.36 327 *e*P P 02 02 54.0 +1.9
comp=N,6.3nm,1.1s

O39A **Kirksville** 28.39 352 P P 02 02 52.2 +0.1
baz=170

ACSO **Alum Creek Sta** 28.39 8 *e*P P 02 02 52.7 +0.6
comp=N,15nm,0.8s

HDIL **Hopedale** 28.41 358 P P 02 02 51.9 -0.4
baz=177

HDIL	Hopedale comp=N,30nm,1.3s	28.41	358	*e*P		P	02 02 52.1	-0.3
Q32A	Meitler Ranch, baz=158	28.46	342	P		P	02 02 52.8	0.0
P34A	Walnut Farm, R baz=161	28.51	345	P		P	02 02 53.2	-0.1
O37A	Wolven Farm, M baz=167	28.54	350	P		P	02 02 53.7	+0.2
CBKS	Cedar Bluff baz=155	28.67	340	P		P	02 02 54.2	-0.6
N38A	Joes South For baz=169	29.01	352	P		P	02 02 58.2	+0.5
P32A	Huiting Farm, baz=158	29.05	343	P		P	02 02 58.9	+0.8
T25A	Trinidad baz=145	29.06	332	P		P	02 02 58.7	+0.2
T25A	Trinidad comp=N,30nm,1.6s	29.06	332	*e*P		P	02 03 00.4	+2.0
O34A	Beatrice baz=162	29.08	346	P		P	02 02 58.5	+0.2
TUC	Tucson baz=128	29.16	317	P		P	02 02 59.1	-0.1
TUC	Tucson comp=N,10nm,1.4s	29.16	317	*e*P		P	02 02 59.8	+0.6
O33A	Hebron baz=160	29.20	345	P		P	02 03 00.4	+1.0
O56A	Blue Knob Stat baz=199	29.27	15	P		P	02 03 00.5	+0.5
N36A	Muff Farm, Cla baz=166	29.32	349	P		P	02 03 00.4	0.0
N35A	Tabor baz=164	29.50	348	P		P	02 03 02.5	+0.5
M39A	Webster baz=171	29.55	353	P		P	02 03 02.5	0.0
N54A	Moraine State baz=196	29.61	12	P		P	02 03 03.5	+0.5
M38A	Pleasantville baz=169	29.62	352	P		P	02 03 02.9	-0.1
N34A	Lincoln baz=163	29.66	347	P		P	02 03 03.9	+0.4
M37A	Trindle Farm, baz=168	29.73	351	P		P	02 03 04.4	+0.3
SSPA	Standing Stone comp=N,12nm,0.9s	29.79	15	*e*P		P	02 03 05.4	+0.9
N33A	J Bar K, Exete baz=161	29.79	345	P		P	02 03 05.1	+0.5
M36A	Felix, Anita baz=166	29.91	349	P		P	02 03 05.6	0.0
L41A	Preston baz=175	29.99	356	P		P	02 03 06.2	-0.2
L40A	Anamosa baz=173	30.03	355	P		P	02 03 06.2	-0.5
SDCO	Great Sand Dun baz=144,SNR=7.4	30.06	331	P		P	02 03 08.7	+1.3
SDCO	Great Sand Dun comp=N,14nm,1.3s	30.06	331	*e*P		P	02 03 08.8	+1.3
M35A	Neola baz=165	30.09	348	P		P	02 03 07.6	+0.4
L39A	Vinton baz=172	30.17	354	P		P	02 03 08.0	+0.1
M54A	Oil Creek Stat baz=196,SNR=5.1	30.20	12	P		P	02 03 08.2	-0.1
L38A	Oak Wood Farm, baz=170	30.30	352	P		P	02 03 08.8	-0.2
M34A	Aspy Farms, Fr baz=163	30.31	347	P		P	02 03 10.5	+1.3
L37A	Phoenix Point, baz=168	30.39	351	P		P	02 03 10.2	+0.3
K41A	Shullsburg baz=175	30.51	356	P		P	02 03 11.0	+0.1
L36A	Harm Buss Farm baz=167	30.51	350	P		P	02 03 11.1	+0.1
M33A	Taylor Creek F baz=162	30.52	346	P		P	02 03 11.4	+0.4
N59A	State Game Lan baz=204	30.64	18	P		P	02 03 12.8	+0.6
K40A	Colesburg baz=174	30.66	355	P		P	02 03 12.8	+0.5
L35A	Bielow Farm, R baz=165	30.68	349	P		P	02 03 12.5	0.0
S22A	4UR Ranch, Cre baz=142	30.70	330	P		P	02 03 12.8	-0.3
S22A	4UR Ranch, Cre comp=N,7.7nm,1.2s	30.70	330	*e*P		P	02 03 16.2	+3.2
L34A	Svendsen Farm, baz=164	30.71	348	P		P	02 03 13.0	+0.3
K39A	Oelwein baz=172	30.73	354	P		P	02 03 12.6	-0.3
M31A	Lambtecht Ranc baz=158	30.76	343	P		P	02 03 13.6	+0.4
K38A	Parkersburg baz=171	30.77	353	P		P	02 03 13.0	-0.2
JFWS	Jewell Farm comp=N,9.3nm,0.9s	30.81	357	*e*P		P	02 03 13.3	-0.3
K36A	Gilmore City baz=167	31.00	351	P		P	02 03 15.4	+0.1
K37A	Belmond baz=169,SNR=13	31.00	352	P		P	02 03 15.2	-0.1
MVCO	Mesa Verde baz=138	31.15	327	P		P	02 03 16.6	-0.4
MVCO	Mesa Verde comp=N,13nm,1.4s	31.15	327	*e*P		P	02 03 20.3	+3.4
K35A	Storm Lake baz=166	31.21	349	P		P	02 03 16.6	-0.6
J41A	Loganville baz=176,SNR=6.6	31.25	357	P		P	02 03 17.1	-0.4
J40A	Soldiers Grove baz=175	31.32	356	P		P	02 03 18.0	-0.1
J39A	Decorah baz=173	31.34	355	P		P	02 03 18.3	+0.1
K34A	Le Mars baz=164	31.34	348	P		P	02 03 18.3	0.0
J38A	Wedel Dairy, R baz=171	31.40	354	P		P	02 03 19.2	+0.4
K33A	Hardington baz=163	31.45	347	P		P	02 03 19.8	+0.5
L31A	Butterfield Fa baz=159	31.50	344	P		P	02 03 20.0	+0.3
J37A	Redenius Farm, baz=169,SNR=6.4	31.52	352	P		P	02 03 20.1	+0.2
WUAZ	Wupatki baz=132	31.59	322	P		P	02 03 20.6	-0.2
J36A	Seneca 1, Swea baz=168,SNR=6.1	31.66	351	P		P	02 03 20.9	-0.2
K32A	Verdigre baz=161	31.73	346	P		P	02 03 21.9	+0.2
MMNY	Mt. Morris Dam	31.76	14	*e*P		P	02 03 23.0	+1.1
BINY	Binghamton comp=N,17nm,1.1s	31.76	17	*e*P		P	02 03 22.9	+0.9
ISCO	Idaho Springs baz=146	31.78	334	P		P	02 03 22.1	-0.5
ISCO	Idaho Springs comp=N,22nm,1.7s	31.78	334	*e*P		P	02 03 23.8	+1.2
PV01	Paradox Valley	31.88	328	*e*P		P	02 03 24.5	+1.1
K31A	O'Neill baz=160	31.89	345	P		P	02 03 23.5	+0.4
J34A	George baz=165	31.89	349	P		P	02 03 22.9	-0.2
SMCO	Snowmass comp=N,27nm,1.7s	31.90	331	*e*P		P	02 03 24.7	+1.0
PV05	Paradox Valley	32.11	327	*e*P		P	02 03 25.5	+0.1
K30A	Basset baz=158	32.17	344	P		P	02 03 26.0	+0.4
I37A	Lemond, Waseca baz=170	32.20	352	P		P	02 03 25.8	0.0
SAML	Samuel comp=N,17nm,0.8s	32.20	129	*e*P		P	02 03 25.7	-0.5
I36A	Fitzsimmons Fa baz=169	32.28	352	P		P	02 03 27.0	+0.4
ECSD	EROS Data Cent baz=164,SNR=17	32.45	348	P		P	02 03 27.4	-0.6
ECSD	EROS Data Cent comp=N,29nm,1.3s	32.45	348	*e*P		P	02 03 26.1	-2.0
ECSD				*e*PcP		PcP	02 06 13.9	0.0
I34A	Hadley baz=165	32.60	349	P		P	02 03 29.4	0.0
H37A	Dierke Farm, C baz=171	32.70	353	P		P	02 03 30.2	+0.1
J30A	Dallas baz=159	32.74	344	P		P	02 03 30.8	+0.2
I33A	Coleman baz=164	32.79	348	P		P	02 03 30.6	-0.4
H36A	Jessenland, He baz=169	32.82	352	P		P	02 03 31.5	+0.3
N23A	Red Feather La baz=146	32.83	334	P		P	02 03 31.4	-0.3
TRY	Troy comp=N,63nm,1.2s	32.95	19	*e*P		P	02 03 33.8	+1.4
H35A	Sunnyside Ranc baz=167,SNR=15	33.07	351	P		P	02 03 32.8	-0.6
H34A	Spellman Lake, baz=166	33.20	350	P		P	02 03 34.2	-0.3
O20A	White River Ci baz=142,SNR=6.9	33.25	331	P		P	02 03 38.9	+3.6
O20A	White River Ci comp=N,28nm,1.3s	33.25	331	*e*P		P	02 03 35.8	+0.5
SPMN	Marine on St. baz=171,SNR=11	33.32	354	P		P	02 03 34.9	-0.7
SPMN	Marine on St. comp=N,47nm,1.3s	33.32	354	*e*P		P	02 03 34.4	-1.1
H32A	Carlson Farm, baz=163,SNR=5.6	33.36	347	P		P	02 03 35.5	-0.5
H33A	Prehn Over Nor baz=164	33.39	348	P		P	02 03 35.9	-0.4
SADO	Sadowa comp=N,44nm,1.5s	33.44	11	*e*P		P	02 03 36.4	-0.2
G36A	St. Michael baz=170,SNR=7.1	33.44	352	P		P	02 03 36.3	-0.3
SRU	San Rafael Swe comp=N,21nm,1.8s	33.62	327	*e*P		P	02 03 41.0	+2.4
SRU				*e*PcP		PcP	02 06 16.6	-0.9
SUSD	Miller baz=160	33.65	346	P		P	02 03 38.8	+0.3
BELC	Belle Mtn. Jos baz=124	33.68	315	P		P	02 03 38.4	-0.6
G34A	Benson baz=166,SNR=5.6	33.73	350	P		P	02 03 38.9	-0.2
G33A	Ortonville baz=165,SNR=7.3	33.83	349	P		P	02 03 39.2	-0.7
COWI	Conover comp=N,22nm,1.4s	33.94	358	*e*P		P	02 03 40.0	-1.0
F36A	Milaca baz=170,SNR=10	34.03	353	P		P	02 03 41.2	-0.6
G32A	Webster baz=163,SNR=13	34.09	348	P		P	02 03 42.0	-0.3
F35A	Swanville baz=168	34.16	352	P		P	02 03 42.6	-0.3
LPAZ	La Paz comp=N,14nm,1.7s	34.26	145	*e*P		P	02 03 45.9	+1.2
LONY	Lake Ozonia comp=N,48nm,1.4s	34.38	17	*e*P		P	02 03 44.3	-0.5
F33A	5 Mile Ranch, baz=165,SNR=11	34.42	350	P		P	02 03 44.2	-0.9
K22A	Casper baz=146	34.53	335	P		P	02 03 46.2	-0.1
K22A	Casper comp=N,17nm,1.3s	34.53	335	*e*P		P	02 03 47.5	+1.2
E36A	McGregor baz=171,SNR=7.1	34.65	353	P		P	02 03 46.3	-0.8
E35A	Pequot Lakes baz=169	34.83	352	P		P	02 03 48.5	-0.1
RSSD	Black Hills baz=152	34.85	339	P		P	02 03 49.3	+0.1
RSSD	Black Hills comp=N,14nm,1.3s	34.85	339	*e*P		P	02 03 50.4	+1.3
FRNY	Flat Rock comp=N,18nm,1.1s	34.87	18	*e*P		P	02 03 49.5	+0.5
E34A	Wadena baz=167	34.89	351	P		P	02 03 49.5	+0.3
E33A	Westby DABS, E baz=166	35.02	350	P		P	02 03 50.4	+0.1
D37A	Coon baz=172	35.20	355	P		P	02 03 50.9	-0.9
D36A	Goodland baz=171,SNR=6.7	35.29	354	P		P	02 03 51.5	-1.1
E32A	Braaten, Kindr baz=164	35.29	349	P		P	02 03 52.3	-0.3
D35A	Remer baz=170	35.30	353	P		P	02 03 51.5	-1.1
E31A	Nome baz=163	35.42	348	P		P	02 03 53.9	+0.2
D34A	Park Rapids baz=168	35.46	351	P		P	02 03 53.2	-0.8
TPNV	Topopah Spring baz=127	35.55	319	P		P	02 03 54.1	-1.0
TCUT	Toone Canyon comp=N,52nm,1.6s	35.56	329	*e*P		P	02 03 54.2	-1.1
D33A	AnnSam, Waubun baz=166,SNR=5.9	35.61	351	P		P	02 03 54.4	-0.9
C38A	Sawbill Land. baz=174	35.66	356	P		P	02 03 55.0	-0.8
C37A	Embarrass baz=173	35.74	355	P		P	02 03 55.7	-0.7
D32A	Dogwood Acres, baz=165	35.80	349	P		P	02 03 56.2	-0.8
C36A	Pine Crest Far baz=172,SNR=5.0	35.83	354	P		P	02 03 56.5	-0.7
D31A	Mcclaflin, Tow baz=163	35.85	348	P		P	02 03 56.7	-0.7
TRQ	Mont Tremblant	35.87	16	*e*P		P	02 03 57.0	-0.6
C35A	Jirik Farms, M baz=170,SNR=12	35.90	353	P		P	02 03 56.8	-1.0
BLG	Laguna Peak, P baz=120	35.90	313	P		P	02 03 56.6	-1.4
EYMN	Ely baz=174	35.90	356	P		P	02 03 56.8	-1.0
BW06	Boulder Array baz=142	35.93	332	P		P	02 03 57.4	-1.0
BW06	Boulder Array comp=N,5.3nm,0.9s	35.93	332	*e*P		P	02 03 58.6	+0.2
BW06				*e*PcP		PcP	02 06 24.3	+0.1
PD31	Pinedale Array	35.93	332	*e*P		P	02 03 57.6	-0.8
PDAR	Pinedale Array comp=N,0.9nm,0.6s,baz=126,slow=9.1,SNR=4.5	35.93	332	P		P	02 03 58.7	+0.3
PDAR	comp=N,0.8nm,0.7s,baz=177,slow=2.8,SNR=5.2			PcP		PcP	02 06 25.4	+1.2
WVL	Waterville comp=N,96nm,1.4s	35.96	22	*e*P		P	02 04 00.5	+2.2
R11A	Troy Canyon, C baz=129	35.99	321	P		P	02 03 57.8	-1.2
HWUT	Hardware Ranch comp=N,18nm,1.3s	36.00	329	*e*P		P	02 03 59.3	+0.3
DAC	Darwin (Calif) comp=N,2.6nm,0.8s	36.04	317	*e*P		P	02 04 00.1	+0.7
B35A	Bob, Littlefor baz=170,SNR=6.0	36.52	353	P		P	02 04 02.5	-0.5
C31A	Landman Farms, baz=164,SNR=8.3	36.57	349	P		P	02 04 02.7	-0.8
AHID	Auburn Hatcher comp=N,14nm,0.9s	36.65	331	*e*P		P	02 04 05.8	+1.3
PKME	Peaks-Kenny Pk comp=N,44nm,1.3s	36.69	22	*e*P		P	02 04 04.2	-0.3
AGMN	Agassiz Nation baz=167,SNR=15	36.74	351	P		P	02 04 04.3	-0.6
AGMN	Agassiz Nation comp=N,29nm,1.0s	36.74	351	*e*P		P	02 04 04.1	-0.9
HVU	Hansel Valley comp=N,7.4nm,1.1s	36.74	328	*e*P		P	02 04 08.5	+3.2
B34A	Aery, Baudette baz=169,SNR=10.0	36.75	352	P		P	02 04 04.4	-0.7
VES	Vestal, Richgr baz=122	36.81	315	P		P	02 04 05.3	-0.4
B32A	Ashes, Strandq baz=166,SNR=6.0	36.94	350	P		P	02 04 06.4	-0.3
D26A	Manning baz=156	36.96	343	P		P	02 04 06.5	-0.4
VLDQ	Val d'Or comp=N,16nm,1.1s	36.98	12	*e*P		P	02 04 06.9	-0.1
REDW	Red Top Meadow comp=N,111nm,1.6s	36.99	332	*e*P		P	02 04 08.2	+0.8
MDND	Maddock baz=161	37.01	347	P		P	02 04 07.7	+0.4
MDND	Maddock comp=N,142nm,1.6s	37.01	347	*e*P		P	02 04 07.1	-0.2
SNOW	Snow King Moun comp=N,77nm,1.4s	37.02	332	*e*P		P	02 04 08.1	+0.4
LOHW	Long Hollow comp=N,37nm,1.5s	37.07	332	*e*P		P	02 04 08.9	+0.8
TPAW	Teton Pass comp=N,50nm,1.3s	37.13	332	*e*P		P	02 04 09.3	+0.6
MOOW	Moose Ponds comp=N,10nm,1.1s	37.24	332	*e*P		P	02 04 10.4	+0.9
MOOW				*e*PcP		PcP	02 06 28.8	+0.7
A33A	Warroad baz=168,SNR=15	37.29	352	P		P	02 04 09.2	-0.5
B30A	Myrvik Farm, E baz=163	37.31	348	P		P	02 04 10.0	+0.2
A32A	Rocking H Ranc baz=166,SNR=6.9	37.44	351	P		P	02 04 10.3	-0.6
IMW	Indian Meadow comp=N,16nm,1.4s	37.44	332	*e*P		P	02 04 11.0	-0.4
IMW				*e*PcP		PcP	02 06 28.3	-0.5
FLWY	Flagg Ranch comp=N,24nm,1.3s	37.48	333	*e*P		P	02 04 10.3	-1.3
B29A	Wagenman Farm, baz=161,SNR=14	37.54	347	P		P	02 04 12.1	+0.3
YPP	Pitchstone Pla comp=N,22nm,1.6s	37.67	333	*e*P		P	02 04 15.6	+2.3
RLMT	Red Lodge baz=144	37.69	335	P		P	02 04 13.5	+0.2
RLMT	Red Lodge comp=N,28nm,1.5s	37.69	335	*e*P		P	02 04 12.7	-0.6
B28A	Dugan Ranch, T baz=160	37.75	346	P		P	02 04 14.0	+0.5
YFT	Old Faithful comp=N,21nm,1.0s	37.83	333	*e*P		P	02 04 14.7	+0.2
LAO	LASA Array baz=150	37.84	339	P		P	02 04 14.5	+0.1
A29A	Manning Farm, baz=162,SNR=6.7	37.95	348	P		P	02 04 15.2	0.0
BMN	Battle Mountai comp=N,19nm,1.8s	38.29	323	*e*P		P	02 04 18.7	+0.3
B25A	Knox Farm, Ray baz=155	38.30	343	P		P	02 04 18.5	+0.4
LMQ	La Malbaie	38.31	19	*e*P		P	02 04 17.9	-0.3
GCMT	Greycliff	38.40	335	*e*P		P	02 04 18.3	-0.8
A26A	Wade Farm, Ken baz=157	38.57	345	P		P	02 04 20.8	+0.4
ULM	Lac du Bonnet comp=N,15nm,0.8s,baz=165,slow=8.3,SNR=16	38.65	352	P		P	02 04 19.5	-1.5
ULM				LR		LR	02 21 00.2	
ULM	comp=N,403nm,20.8s,baz=132,slow=37 Lac du Bonnet comp=N,21nm,0.9s	38.65	352	*e*P		P	02 04 19.5	-1.5
DGMT	Dagmar baz=154	38.77	343	P		P	02 04 22.4	+0.3
DGMT	Dagmar comp=N,31nm,0.6s	38.77	343	*e*P		P	02 04 22.9	+0.8
HLID	Hailey baz=136	38.87	329	P		P	02 04 23.3	+0.1
MCMT	McKenzie Canyo	39.04	331	*e*P		P	02 04 26.0	+1.4
BOZ	Bozeman (W) baz=141,SNR=12	39.11	333	P		P	02 04 25.4	+0.2
BOZ	Bozeman (W) comp=N,27nm,1.4s	39.11	333	*e*P		P	02 04 25.7	+0.5
LVC	Limon Verde comp=N,3.9nm,0.9s	39.14	152	*e*P		P	02 04 26.5	+0.6
DLMT	Dillon comp=N,12nm,0.9s	39.33	332	*e*P		P	02 04 28.3	+1.3
MFID	Camas Ranch comp=N,7.0nm,1.3s	39.49	327	*e*P		P	02 04 27.3	-1.1
LRM	Limekiln Ridge	39.61	333	*e*P		P	02 04 30.5	+1.0
CHMT	Chamberlain Mo	40.81	333	*e*P		P	02 04 40.5	+1.2
MSO	Missoula baz=139,SNR=11	41.05	333	P		P	02 04 41.8	+0.7
MSO	Missoula comp=N,24nm,1.1s	41.05	333	*e*P		P	02 04 42.4	+1.2
M04C	Macdoel baz=125	41.89	321	P		P	02 04 47.7	-0.4
WALA	Waterton Lakes comp=N,45nm,1.8s	42.74	335	*e*P		P	02 04 56.0	+1.1
NEW	Newport comp=N,493nm,19.4s,baz=46,slow=40	43.56	332	LR		LR	02 25 53.8	
NEW	Newport baz=136	43.56	332	P		P	02 05 01.3	-0.1
I03D	Drain, OR baz=125	43.90	323	P		P	02 05 03.9	-0.3
FFC	Flin Flon comp=N,30nm,1.4s	43.99	348	*e*P		P	02 05 04.2	-0.5
B08A	Colville Reser comp=N,12nm,1.3s	44.68	330	*e*P		P	02 05 10.1	-0.3
G03D	McMinnville, O baz=126	44.73	324	P		P	02 05 10.4	-0.4
SCHQ	Schefferville comp=N,14nm,0.9s,baz=212,slow=5.8,SNR=8.5	45.76	17	P		P	02 05 17.6	-1.3
SCHQ				LR		LR	02 25 53.2	
SCHQ	comp=N,1μm,18.4s,baz=204,slow=38 Schefferville comp=N,31nm,1.1s	45.76	17	*e*P		P	02 05 18.1	-0.7
EDM	Edmonton comp=N,36nm,1.3s	45.83	339	*e*P		P	02 05 19.4	0.0
FCC	Fort Churchill comp=N,29nm,0.9s	46.85	356	*e*P		P	02 05 26.8	-0.4
LLLB	Lillooet comp=N,17nm,1.1s	47.42	331	*e*P		P	02 05 33.5	+1.5
BDFB	Brasilia comp=N,15nm,1.0s,baz=163,slow=20	48.09	124	P		P	02 05 39.1	+1.5
BDFB	Brasilia comp=N,35nm,1.1s	48.09	124	*e*P		P	02 05 39.6	+2.0
CPUP	Villa Florida comp=N,2.4nm,0.9s,baz=310,slow=7.8,SNR=3.8	48.35	142	P		P	02 05 42.0	+2.7
YKA	Yellowknife Ar comp=N,3.3nm,0.9s,baz=136,slow=7.8,SNR=4.5	53.88	345	P		P	02 06 20.1	-0.2
DLBC	Dease Lake comp=N,8.4nm,0.9s	56.09	335	*e*P		P	02 06 37.5	+1.1
RES	Resolute Bay comp=N,7.6nm,0.8s	62.73	358	*e*P		P	02 07 21.4	-0.4
INK	Inuvik comp=N,4.5nm,1.0s,baz=80,slow=3.2,SNR=6.7	63.46	343	P		P	02 07 26.4	-0.3
INK	Inuvik comp=N,12nm,1.3s	63.46	343	*e*P		P	02 07 26.1	-0.6
BMRM	Bremner River comp=N,6.5nm,0.5s	63.71	333	*e*P		P	02 07 25.7	-2.9
DOT	Dot Lake comp=N,24nm,1.4s	64.62	336	*e*P		P	02 07 30.3	-4.2
IL1	Eielson Array	66.22	336	*e*P		P	02 07 44.0	-0.8
ILAR	Eielson Array comp=N,3.4nm,1.2s,baz=143,slow=4.1,SNR=16	66.22	336	P		P	02 07 44.9	+0.2
ILB	Eielson Array	66.22	336	*e*P		P	02 07 45.3	+0.6
RND	Reindeer comp=N,26nm,1.4s	66.49	335	*e*P		P	02 07 47.0	+0.4
MCK	McKinley comp=N,3.5nm,0.4s	66.65	335	*e*P		P	02 07 47.0	-0.5
SUMG	Summit comp=N,3.8nm,0.9s	67.06	14	*e*P		P	02 07 49.7	-0.8
PPLA	Purkeypile comp=N,8.0nm,0.7s	67.75	334	*e*P		P	02 07 54.4	-0.3
MLY	Manley comp=N,9.1nm,1.4s	67.84	336	*e*P		P	02 07 55.5	+0.4
ESDC	Sonseca Array comp=N,0.3nm,0.6s,baz=285,slow=4.5,SNR=3.7	77.74	52	P		P	02 08 53.7	-0.5
ESDC				LR		LR	02 40 11.5	
NOA	comp=N,236nm,19.1s,baz=105,slow=33 NORSAR Array B comp=N,105nm,19.1s,baz=75,slow=35	83.90	29	LR		LR	02 45 31.1	
GERES	GERESS Array B comp=N,317nm,19.9s,baz=42,slow=33	88.48	40	LR		LR	02 45 59.0	
WMQ	Urumqi	124.24	4	*e*PKP		PKPdf	02 15 55.6	-0.1
WMQ	comp=N,180nm,24.8s			LR		LR		
WMQ	comp=N,200nm,29.2s			LR		LR		
WMQ	comp=N,150nm,20.2s			LR		LR		
HHC	Hu-ho-hao-te	124.37	342	*e*PKP		PKPdf	02 15 54.3	-1.8
KSH	Kashi	126.52	16	*e*PKP		PKPdf	02 15 58.5	-1.8
KSH				*es*PKP			02 16 36.1	
KSH				*e*PP		PP	02 18 00.8	+5.4
KSH				PKS		PKSdf	02 19 33.9	-3.1
KSH				SKS		SKSdf	02 22 58.0	-8.7
KSH				SKKS		SKKSac	02 24 42.4	-6.5
KSH				SS		SS	02 34 57.1	+2.5
KSH	comp=N,190nm,8.1s			AMB		AMB		
KSH	comp=N,120nm,7.6s			LR		LR		
KSH	comp=N,65nm,9.0s			LR		LR		
KSH	comp=N,130nm,6.8s			LR		LR		
LZH	Lanzhou	130.85	347	*e*PKP		PKPdf	02 16 12.8	+4.1
CD2	Chengdu	135.84	346	PKP		PKPdf	02 16 16.5	-1.5
ASAR	Alice Springs comp=N,0.5nm,0.7s,baz=104,slow=2.1,SNR=3.3	138.76	248	PKP		PKPdf	02 16 24.5	+0.9
WRA	Warramunga Arr comp=N,0.4nm,0.6s,baz=89,slow=2.5,SNR=5.6	138.78	254	PKP		PKPdf	02 16 24.7	+1.0
CHTO	Chiang Mai	148.60	348	*e*PKPbc		PKPbc	02 16 44.8	+0.3
CMAR	Chiang Mai Arr comp=N,7.8nm,1.0s,baz=333,slow=2.9,SNR=26	148.94	347	PKPbc		PKPbc	02 16 46.5	+1.1

WEL 16 02:01:41.3±1.4,36°.18S×178°.80E,h33km,ML4.0/14,
Error ellipse: s-maj=27.4km s-min=9.0km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	1.43	196	*e*P*		Pn	02 02 00.6	-4.3
MXZ				*e*S*		Sn	02 02 20.2	-2.4
MXZ				AML		AML	02 03 01.8	
MXZ				T		T	02 03 44.7	
WMGZ	Waiomatatini S	1.66	191	*e*PN		Pn	02 02 07.0	-1.1
WMGZ				*e*SN		Sn	02 02 29.3	+1.0

WMGZ				AML	AML	02 02 46.9		
HAZ	**Te Kaha**	**1.77**	**207**	*eP**	Pn	02 02 09.8	+0.2	
HAZ					AML	AML	02 02 39.5	
HAZ					AML	AML	02 02 42.9	
PKGZ	**Pakihiroa**	**1.80**	**199**	*e*PN	Pn	02 02 10.1	+0.1	
PUZ	**Puketiti**	**1.93**	**193**	*e*PN	Pn	02 02 11.0	-0.9	
PUZ					AML	AML	02 02 42.8	
PUZ					AML	AML	02 02 46.3	
RUGZ	**Raukumara Rang**	**1.99**	**207**	*eP**	Pn	02 02 11.1	-1.7	
TWGZ	**Tauwhareparae**	**2.10**	**198**	*e*PN	Pn	02 02 13.8	-0.3	
TWGZ					AML	AML	02 02 31.4	
TWGZ					AML	AML	02 02 34.8	
CNGZ	**Carnagh Statio**	**2.34**	**192**	AML	AML	02 02 55.1		
CNGZ					AML	AML	02 03 31.2	
MWZ	**Matawai**	**2.38**	**205**	*eP**	Pn	02 02 17.2	-0.8	
MWZ					AML	AML	02 03 03.3	
MWZ					AML	AML	02 03 10.9	
URZ	**Urewera**	**2.47**	**213**	AML	AML	02 03 00.4		
URZ					AML	AML	02 03 34.2	
RAGZ	**Rawiri**	**2.56**	**205**	*eP**	Pn	02 02 21.1	+0.5	
RAGZ					AML	AML	02 02 48.6	
RAGZ					AML	AML	02 03 13.1	
RIGZ	**Rimuhau**	**2.65**	**198**	AML	AML	02 03 03.5		
RIGZ					AML	AML	02 03 26.8	
SNGZ	**Shannon Statio**	**2.84**	**204**	*e*PN	Pn	02 02 23.0	-1.3	
SNGZ					AML	AML	02 03 05.3	
SNGZ					AML	AML	02 03 36.0	
KNZ	**Kokohu**	**2.97**	**197**	*e*PN	Pn	02 02 24.6	-1.5	
KNZ					AML	AML	02 03 43.8	
KNZ					AML	AML	02 03 50.0	
MKAZ	**Moumakai**	**3.07**	**252**	*e*PN	Pn	02 02 18.0	-9.5	
MKAZ					AML	AML	02 03 12.3	
NMHZ	**Naumai**	**3.31**	**208**	*e*PN	Pn	02 02 29.5	-1.3	
NMHZ					AML	AML	02 02 50.0	
NMHZ					AML	AML	02 03 33.2	

JMA 16 02:05:20.9±0.2, 28°29N×129°44E, h32km±2km, M3.5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAM	**Amami Oshima**	**0.19**	**50**	P	Pb	02 05 26.9	-0.4
JAM				*e*S	Sb	02 05 31.2	-0.4
JAMN	**Amaminishikomi**	**0.24**	**259**	P	Pb	02 05 27.9	+0.1
JAMN				*e*S	Sn	02 05 33.1	+0.2
JZK	**Kikaishima**	**0.47**	**87**	P	Pb	02 05 30.8	-0.2
JZK				*e*S	Sn	02 05 39.0	+0.4
JTK	**Tokunoshima**	**0.66**	**221**	P	Pn	02 05 33.0	-1.1
JTK				*e*S	Sb	02 05 42.0	-1.1
JTAJ	**Takarajima**	**0.89**	**346**	P	Pn	02 05 36.9	-0.2
JTAJ				*e*S	Sn	02 05 48.9	0.0
JOKE	**Okinoerabujima**	**1.20**	**220**	P	Pn	02 05 42.0	+0.5
JOW	**Kunigami**	**1.78**	**216**	P	Pn	02 05 50.1	+0.6
JIH	**Iheya**	**1.81**	**227**	P	Pn	02 05 50.5	+0.7
JIH				*e*S	Sn	02 06 12.1	+0.4
JYAK	**Yakushimahirau**	**2.15**	**25**	P	Pn	02 05 55.7	+1.1
JYAK				*e*S	Sn	02 06 21.0	+0.8
JNTH	**Nagotoyohara**	**2.17**	**216**	P	Pn	02 05 55.6	+0.8
JNTH				*e*S	Sn	02 06 21.7	+1.1
JKC	**Kuchinoerabu**	**2.26**	**17**	P	Pn	02 05 57.5	+1.4
JKC				*e*S	Sn	02 06 23.3	+0.4
JAGN	**Aguni-jima**	**2.59**	**230**	P	Pn	02 06 01.3	+0.8
JKE	**Kume jima 2**	**3.07**	**231**	P	Pn	02 06 07.9	+0.8

MEX 16 02:08:10.1±0.3, 15°03N×92°86W, h76km±20km, MD3.5, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.43**	**29**	*i* P	Pn	02 08 33.2	-1.4
CCIG				*i* S	Sn	02 08 51.2	-1.8

*NIED **16** 02:09:00, 39°20N×144°50E, h5km, Mw4.6 Best double couple: M0 7.60000×10^15 NP1:φs 23.00000°, δ 16.00000°, λ -70.00000°. NP2:φs 182.00000°, δ 75.00000°, λ -96.00000°.*
*IDC **16** 02:09:05.1±0.7, 39°03N×144°61E, h0km, mb4.2/20, mb1 4.4/28, mb1mx4.3/57, mbtmp4.3/28, ML3.5/7, Error ellipse: s-maj=17.7km s-min=13.3km az=132.0*
*ISCJB **16** 02:09:07.7±1.1, 39°20N±0°03×144°41E±0°03, h15km±7km, mb4.4/67, Error ellipse: s-maj=5.2km s-min=3.4km az=163.9*
*BJI **16** 02:09:08.9, 39°36N×144°43E, h27km, mb4.5/33, mB4.8/5, Ms4.4/6, Ms7 4.3/6*
*JMA **16** 02:09:08.5±0.2, 39°23N×144°48E, h44km, M4.6*
*NEIC **16** 02:09:09.9±0.7, 39°12N×144°48E, h27km±4km, mb4.5/38, Error ellipse: s-maj=6.2km s-min=3.4km az=151.0*

ISC 16 02:09:10.0±1.4, 39°19N±0°05×144°49E±0°06, h28km±9km, n131, σ1°65/143, mb4.5/67, 1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**2.10**	**281**	P	**Pn**	**02 09 42.2**	**-1.1**
MIYJ				*e*S	**Sn**	**02 10 06.8**	**-1.7**
JTH	**Tanohata**	**2.16**	**291**	P	**Pn**	**02 09 42.7**	**-1.4**
JTH				*e*S	**Sn**	**02 10 08.6**	**-1.4**
OFUJ	**Ofunato**	**2.19**	**268**	P	**Pn**	**02 09 43.4**	**-1.2**
OFUJ				*e*S	**Sn**	**02 10 09.2**	**-1.6**
JOM	**Ohasama**	**2.49**	**278**	P	**Pn**	**02 09 48.0**	**-0.7**
JOM				S	**Sn**	**02 10 16.8**	**-1.4**
JMK	**Ichinoseki**	**2.55**	**266**	P	**Pn**	**02 09 48.6**	**-0.9**
JMK				*e*S	**Sn**	**02 10 18.5**	**-1.1**
JANG	**Nango**	**2.58**	**298**	P	**Pn**	**02 09 48.2**	**-1.7**
JANG				*e*S	**Sn**	**02 10 17.0**	**-3.3**
ERM	**Erimo**	**3.00**	**341**	*e*Pn	**Pn**	**02 09 55.3**	**-0.3**
ERM				*e*Sn	**Sn**	**02 10 27.6**	**-3.0**
JYK	**Kaneyama**	**3.22**	**267**	P	**Pn**	**02 09 58.3**	**-0.4**
JNBK	**Urakawa-nobuka**	**3.36**	**337**	P	**Pn**	**02 10 00.0**	**-0.6**
JNBK				S	**Sn**	**02 10 39.0**	**-0.5**
JOT	**Ohata**	**3.42**	**311**	P	**Pn**	**02 10 00.6**	**-0.9**
JOT				*e*S	**Sn**	**02 10 38.9**	**-2.2**
JCH	**Churui**	**3.53**	**346**	P	**Pn**	**02 10 01.3**	**-1.6**
JCH				*e*S	**Sn**	**02 10 39.7**	**-4.0**
JFT	**Otama**	**3.66**	**244**	P	**Pn**	**02 10 03.8**	**-1.0**
JFT				*e*S	**Sn**	**02 10 44.4**	**-2.7**
JKB	**Kayabe**	**3.77**	**317**	*e*S	**Sn**	**02 10 47.3**	**-2.3**
JAK	**Akkeshi**	**3.81**	**2**	P	**Pn**	**02 10 04.0**	**-2.8**
JAK				*e*S	**Sn**	**02 10 47.0**	**-3.6**
NEM2	**Nemuro 2**	**4.28**	**12**	P	**Pn**	**02 10 09.5**	**-3.7**
NEM2				*e*S	**Sn**	**02 10 55.9**	**-6.3**
JOSM	**Okushiri--Mats**	**4.78**	**309**	P	**Pn**	**02 10 20.8**	**+0.6**
JTKR	**Abashiri--Toko**	**4.80**	**355**	P	**Pn**	**02 10 18.6**	**-1.8**
JTKR				S	**Sn**	**02 11 10.8**	**-4.2**
JHR	**Hokuryu**	**5.00**	**336**	*e*S	**Sn**	**02 11 19.9**	**-0.1**
ASAJ	**Asahikawa** baz=208,slow=9.0	**5.12**	**345**	Pn	**Pn**	**02 10 24.5**	**-0.4**
ASAJ	**Asahikawa**	**5.12**	**345**	*e*Pn	**Pn**	**02 10 24.8**	**0.0**
ASAJ				*e*Sn	**Sn**	**02 11 20.2**	**-2.8**
BSO1	**Boso 1**	**5.33**	**213**	P	**Pn**	**02 10 23.7**	**-3.5**
BSO1				*e*S	**Sn**	**02 11 23.3**	**-4.0**
JRY	**Ryogami san**	**5.45**	**236**	P	**Pn**	**02 10 27.5**	**-1.8**
JRY				*e*S	**Sn**	**02 11 26.7**	**-4.4**
MJAR	**Matsushiro Arr** 9.1nm,0.3s,baz=68,slow=12,SNR=176	**5.62**	**244**	Pn	**Pn**	**02 10 31.1**	**-0.7**
MAJO	**Matsushiro**	**5.62**	**244**	*e*Pn	**Pn**	**02 10 31.9**	**+0.1**
MAT	**Matsushiro**	**5.62**	**244**	P	**Pn**	**02 10 31.8**	**0.0**
MAT				*e*S	**Sn**	**02 11 33.0**	**-2.5**
MJB9	**Matsu-Tunnel**	**5.62**	**244**	*e*Pn	**Pn**	**02 10 31.9**	**+0.1**
JOD2	**Odawara 2**	**5.82**	**229**	P	**Pn**	**02 10 32.5**	**-2.0**
JOD2				*e*S	**Sn**	**02 11 34.7**	**-5.6**
INU	**Inuyama**	**7.08**	**240**	*e*Pn	**Pn**	**02 10 51.2**	**-0.6**
JHJ	**Hachijo jima 2** 7.1nm,0.3s,baz=65,slow=17,SNR=7.4	**7.15**	**214**	Pn	**Pn**	**02 10 49.7**	**-3.0**
JHJ				Sn	Sn	02 12 04.5	-8.5
USRK	**Ussuriysk Ar.** 9.7nm,0.3s,baz=72,slow=20,SNR=3.5	**10.60**	**302**	Pn	**Pn**	**02 11 41.0**	**+1.1**
MDJ	**Mudanjiang** 0.8nm,0.3s,baz=108,slow=14,SNR=26	**12.35**	**301**	P	**Pn**	**02 12 04.0**	**+0.2**
MDJ				pmax	pmax		
MDJ	**Mudanjiang** 30nm,1.0s comp=Z,24nm,1.1s	**12.35**	**301**	*e*P	**Pn**	**02 12 03.7**	**-0.1**
JNU	**Nakatsue** 0.3nm,0.3s,baz=50,slow=13,SNR=9.9	**12.55**	**245**	Pn	**Pn**	**02 12 05.2**	**-1.5**
JNU	**Nakatsue** 4.2nm,0.9s	**12.55**	**245**	*e*Pn	**Pn**	**02 12 04.9**	**-1.8**
KSRS	**Korea Array**	**13.12**	**268**	Pn	**Pn**	**02 12 14.8**	**+0.3**
KSAR	**Wonju Array Be** 0.2nm,0.3s,baz=91,slow=13,SNR=12	**13.16**	**268**	Pn	**Pn**	**02 12 14.8**	**-0.1**
KLR	**Kul'dur** 0.1nm,0.3s,baz=132,slow=12,SNR=5.8	**13.55**	**322**	Pn	**Pn**	**02 12 20.9**	**+0.7**
PEA0	**Petropavlovsk-**	**16.62**	**29**	*e*Pn	**Pn**	**02 13 01.5**	**+0.7**
PEA0B	**Petropavlovsk-** 25nm,1.0s	**16.62**	**29**	*e*Pn	**P**	**02 13 02.1**	**-0.9**
PETK	**Petropavlovsk-** 0.2nm,0.3s,baz=184,slow=10,SNR=17	**16.62**	**29**	Pn	**Pn**	**02 13 00.9**	**+0.1**
DL2	**Dalian**	**17.75**	**276**	P	P	02 13 26.3	+11
DL2	comp=Z,34nm,1.2s			pmax	pmax		
MA2	**Magadan** comp=Z,17nm,0.8s,baz=194,slow=12,SNR=7.6	**20.80**	**9**	P	**P**	**02 13 49.0**	**+0.3**
BJI	**Beijing**	**21.79**	**281**	P	**P**	**02 13 58.4**	**-1.2**
BJI	comp=Z,6.0nm,1.0s			pmax	pmax		
TIA	**Tai'an**	**21.82**	**271**	*e*P	**P**	**02 13 58.6**	**-1.4**
TIA	comp=Z,10.0nm,1.2s			pmax	pmax		
NJ2	**Nanjing**	**21.98**	**259**	*e*P	**P**	**02 14 06.1**	**+4.5**
NJ2	comp=Z,14nm,0.5s			pmax	pmax		
SEY	**Seymchan** comp=Z,16nm,1.0s,baz=182,slow=9.7,SNR=26	**24.25**	**9**	P	**P**	**02 14 24.6**	**+0.3**
HHC	**Hu-ho-hao-te**	**25.19**	**284**	*e*P	**P**	**02 14 33.3**	**+0.1**
HHC	comp=Z,22nm,0.9s			pmax	pmax		
H11N2	**WAKE ISLAND Hy** baz=320,slow=75,SNR=4.9	**27.38**	**129**	T	T	02 43 22.7	
H11N1	**WAKE ISLAND Hy** baz=320,slow=75,SNR=4.9	**27.39**	**129**	T	T	02 43 24.4	
H11N3	**WAKE ISLAND Hy** baz=320,slow=75,SNR=5.8	**27.40**	**129**	T	T	02 43 25.8	
H11S1	**WAKE ISLAND Hy** baz=322,slow=76,SNR=5.7	**28.20**	**131**	T	T	02 44 25.9	
H11S3	**WAKE ISLAND Hy** baz=322,slow=76,SNR=4.7	**28.21**	**131**	T	T	02 44 26.0	
H11S2	**WAKE ISLAND Hy** baz=322,slow=76,SNR=4.6	**28.22**	**131**	T	T	02 44 25.1	
SONA1	**Songino Array**	**28.70**	**300**	*e*P	**P**	**02 15 04.5**	**-0.2**
SONM	**Songino Array** comp=Z,0.4nm,0.4s,baz=104,slow=9.2,SNR=2.8	**28.70**	**300**	P	**P**	**02 15 05.5**	**+0.8**
ENH	**Enshi** comp=Z,25nm,0.9s	**29.96**	**264**	*e*P	**P**	**02 15 15.6**	**-0.3**
LZH	**Lanzhou**	**32.14**	**277**	*e*P	**P**	**02 15 32.3**	**-3.0**
LZH				pP	pP	02 15 42.3	-1.3
LZH				sP	sP	02 15 46.3	-0.7
LZH	comp=Z,18nm,1.0s			pmax	pmax		
GTA	**Gaotai**	**34.30**	**285**	*e*P	**P**	**02 15 56.0**	**+2.0**
GTA				pP	sP	02 16 05.3	-0.5
GTA				sP	pP	02 16 09.4	+7.1
GTA	comp=Z,8.0nm,1.0s			pmax	pmax		
KMI	**Kunming**	**37.69**	**261**	P	**P**	**02 16 24.8**	**+1.5**
KMI	comp=Z,9.0nm,0.6s			pmax	pmax		
WMQ	**Urumqi**	**42.07**	**295**	*e*P	**P**	**02 17 00.3**	**+1.0**
WMQ	comp=Z,6.0nm,0.5s			pmax	pmax		
ZAA0	**Zalesovo Array**	**42.30**	**311**	*e*pP	**pP**	**02 17 10.3**	**+0.9**
ZAA0				*e*pP	sP	02 17 10.6	-2.2
ZALV	**Zalesovo Beam** comp=Z,0.9nm,0.5s,baz=82,slow=6.8,SNR=4.3	**42.30**	**311**	P	**P**	**02 17 01.9**	**+0.9**
SVW2	**Sparrevohn** comp=Z,7.4nm,1.0s	**42.34**	**39**	*e*P	**P**	**02 17 02.4**	**+1.3**
RSO	**Redoubt South**	**43.71**	**40**	*e*P	**P**	**02 17 13.4**	**+0.9**
CAST	**Castle Rocks** comp=Z,6.3nm,0.9s	**44.08**	**35**	*e*P	**P**	**02 17 15.9**	**+0.7**
BPAW	**Bear Paw Mtn.** comp=Z,3.6nm,0.8s	**44.59**	**34**	*e*P	**P**	**02 17 20.1**	**+0.8**
SUA	**Susitna Ons** comp=Z,6.1nm,0.8s	**44.68**	**38**	*e*P	**P**	**02 17 20.3**	**+0.2**
MK01	**Makanchi Array**	**45.06**	**301**	*e*P	**P**	**02 17 23.4**	**+0.1**
MKAR	**Makanchi Array** comp=Z,1.4nm,0.9s,baz=82,slow=9.9,SNR=7.3	**45.06**	**301**	P	**P**	**02 17 23.9**	**+0.6**
PMR	**Palmer** comp=Z,11nm,1.1s	**45.45**	**38**	*e*P	**P**	**02 17 25.8**	**-0.2**
RND	**Reindeer** comp=Z,6.6nm,0.8s	**45.53**	**35**	*e*P	**P**	**02 17 26.8**	**0.0**
SML	**Sawmill** comp=Z,1.6nm,0.8s	**45.82**	**38**	*e*P	**P**	**02 17 28.6**	**-0.5**
WRH	**Wood River Hil** comp=Z,5.8nm,0.7s	**45.86**	**34**	*e*P	**P**	**02 17 29.6**	**+0.3**
COLA	**College** comp=Z,3.7nm,0.8s	**45.96**	**33**	*e*P	**P**	**02 17 30.0**	**0.0**
CCB	**Clear Creek Bu** comp=Z,3.2nm,0.9s	**45.98**	**34**	*e*P	**P**	**02 17 30.5**	**+0.2**
ILAR	**Eielson Array** comp=Z,8.0nm,0.7s,baz=262,slow=6.7,SNR=108	**46.37**	**33**	P	**P**	**02 17 33.2**	**-0.2**
KURK	**Kurchatov** comp=Z,136nm,0.7s	**46.54**	**307**	*e*P	**P**	**02 17 36.2**	**+1.3**
DIV	**Divide** comp=Z,9.3nm,0.6s	**47.09**	**38**	*e*P	**P**	**02 17 39.7**	**+0.6**
DOT	**Dot Lake** comp=Z,8.3nm,0.8s	**47.66**	**35**	*e*P	**P**	**02 17 42.9**	**-0.6**
EGAK	**Eagle** comp=Z,9.6nm,1.0s	**48.82**	**33**	*e*P	**P**	**02 17 52.1**	**-0.2**
VOSK	**Vostochnaya** comp=Z,4.3nm,0.8s	**50.67**	**311**	*e*P	**P**	**02 18 07.0**	**+0.3**
BRVK	**Borovoye** comp=Z,8.6nm,0.8s	**50.99**	**312**	*e*P	**P**	**02 18 09.3**	**+0.3**
HYT	**Haines Junctio** comp=Z,26nm,0.9s	**51.12**	**38**	*e*P	**P**	**02 18 11.9**	**+1.8**
INK	**Inuvik** comp=Z,5.1nm,0.7s,baz=304,slow=7.0,SNR=12	**51.36**	**28**	P	**P**	**02 18 11.8**	**+0.3**
INK	**Inuvik** comp=Z,4.5nm,0.8s	**51.36**	**28**	*e*P	**P**	**02 18 11.5**	**0.0**
ZRNK	**Zerenda** comp=Z,6.3nm,0.8s	**51.76**	**312**	*e*P	**P**	**02 18 16.7**	**+1.9**
KKAR	**Karatay Array**	**54.15**	**300**	*e*P	**P**	**02 18 31.7**	**-0.9**
DLBC	**Dease Lake** comp=Z,2.3nm,0.6s,baz=312,slow=6.7,SNR=8.2	**55.43**	**40**	P	**P**	**02 18 42.4**	**+0.7**
DLBC	**Dease Lake** comp=Z,4.9nm,0.9s	**55.43**	**40**	*e*P	**P**	**02 18 43.5**	**+1.8**
ARU	**Arti** comp=Z,1.9nm,0.5s	**56.36**	**318**	*e*P	**P**	**02 18 47.8**	**-0.5**
ABKAR	**Akbulak array** comp=Z,2.1nm,0.6s	**58.41**	**310**	*e*P	**P**	**02 19 03.7**	**+0.9**
WRA	**Warramunga Arr** comp=Z,1.6nm,0.7s,baz=12,slow=7.3,SNR=8.3	**59.58**	**191**	P	**P**	**02 19 09.3**	**-1.8**
RES	**Resolute Bay** comp=Z,9.9nm,0.8s,baz=311,slow=5.9,SNR=6.2	**59.90**	**15**	P	**P**	**02 19 13.0**	**+0.3**
YKA	**Yellowknife Ar** comp=Z,1.8nm,0.6s,baz=305,slow=7.1,SNR=4.5	**60.72**	**32**	P	**P**	**02 19 18.0**	**-0.5**
ASAR	**Alice Springs** comp=Z,0.9nm,0.7s,baz=16,slow=6.5,SNR=6.9	**63.30**	**191**	P	**P**	**02 19 34.6**	**-1.7**
DAG	**Danmarks Havn** comp=Z,7.6nm,0.9s	**63.83**	**356**	*i* P	**P**	**02 19 39.0**	**-0.1**
YA2	**Yakima**	**65.88**	**49**	*e*P	**P**	**02 19 55.3**	**+2.3**
K05A	**Summer Lake** comp=Z,5.5nm,0.9s	**67.71**	**53**	*e*P	**P**	**02 20 06.3**	**+1.4**
FINES	**FINESS Array B** comp=Z,5.8nm,0.7s,baz=48,slow=7.9,SNR=20	**68.02**	**333**	P	**P**	**02 20 06.9**	**+0.6**
SUMG	**Summit** comp=Z,7.1nm,0.9s	**68.52**	**1**	*i* P	**P**	**02 20 10.7**	**+1.0**
SUMG	**Summit** comp=Z,6.3nm,0.7s	**68.52**	**1**	*e*P	**P**	**02 20 10.4**	**+0.6**
FFC	**Flin Flon** comp=Z,7.1nm,0.9s	**70.58**	**34**	*e*P	**P**	**02 20 21.7**	**-0.6**
LRM	**Limekiln Ridge**	**70.91**	**46**	*e*P	**P**	**02 20 25.3**	**+0.5**
KBZ	**Khabaz** comp=Z,2.0nm,0.7s,baz=31,slow=5.8,SNR=4.1	**71.32**	**311**	P	**P**	**02 20 27.9**	**+1.0**
BOZ	**Bozeman (W)** comp=Z,3.2nm,0.8s	**71.48**	**46**	*e*P	**P**	**02 20 28.7**	**+0.6**
NB2	**NORSAR Subarra** comp=Z,1.6nm,0.8s,baz=38,slow=6.2	**73.11**	**338**	P	**P**	**02 20 37.5**	**+0.1**
NOA	**NORSAR Array B** comp=Z,2.4nm,0.8s,baz=37,slow=6.1,SNR=10	**73.11**	**338**	P	**P**	**02 20 37.8**	**+0.4**
R11A	**Troy Canyon, C** comp=Z,1.6nm,0.8s	**73.53**	**54**	*e*P	**P**	**02 20 40.1**	**-0.4**
AKASG	**Malin Array Be** comp=Z,1.4nm,0.5s,baz=44,slow=6.4,SNR=10	**74.05**	**323**	P	**P**	**02 20 43.3**	**+0.3**
BW06	**Boulder Array**	**74.43**	**47**	*e*P	**P**	**02 20 45.5**	**-0.2**
PDAR	**Pinedale Array** comp=Z,1.1nm,0.6s,baz=294,slow=1.2,SNR=11	**74.43**	**47**	P	**P**	**02 20 45.4**	**-0.3**
LCMT	**Little Creek M** comp=Z,4.1nm,1.0s	**75.82**	**54**	*e*P	**P**	**02 20 54.8**	**+1.1**
MTPU	**Mount Pierson** comp=Z,2.6nm,0.8s	**75.84**	**52**	*e*P	**P**	**02 20 55.4**	**+1.3**
KNB	**Kanab** comp=Z,3.9nm,1.0s	**76.08**	**54**	*e*P	**P**	**02 20 56.4**	**+1.2**
SRU	**San Rafael Swe** comp=Z,6.9nm,0.9s	**76.17**	**51**	*e*P	**P**	**02 20 56.4**	**+0.6**
N23A	**Red Feather La** comp=Z,5.4nm,0.8s	**77.70**	**47**	*e*P	**P**	**02 21 05.0**	**+0.6**
PV01	**Paradox Valley** comp=Z,144nm,0.7s	**77.97**	**50**	*e*P	**P**	**02 21 06.4**	**+0.5**
BUR08	**Bucovina Ar. S**	**78.08**	**323**	*e*P	**P**	**02 21 07.3**	**+1.1**
ISCO	**Idaho Springs** comp=Z,2.4nm,0.9s	**78.61**	**48**	*e*P	**P**	**02 21 10.1**	**+0.5**
BRTR	**Keskin Array B** comp=Z,0.5nm,0.6s,baz=40,slow=5.6,SNR=3.6	**79.20**	**313**	P	**P**	**02 21 13.4**	**+0.8**
MORC	**Moravsky Berou** comp=Z,1.9nm,0.9s	**79.84**	**328**	*e*P	**P**	**02 21 17.1**	**+1.4**
SDCO	**Great Sand Dun** comp=Z,2.0nm,0.9s	**80.05**	**49**	*e*P	**P**	**02 21 17.5**	**+0.1**
PSZ	**Piszkesteto** comp=Z,4.0nm,0.8s	**80.28**	**326**	*e*P	**P**	**02 21 18.6**	**+0.4**
BRG	**Berggiesshubel** comp=Z,2.9nm,0.9s	**80.40**	**331**	*e*P	**P**	**02 21 19.1**	**+0.5**
CLL	**Collm** comp=Z,5.0nm,0.9s	**80.40**	**332**	*e*P	**P**	**02 21 19.0**	**+0.4**
KHC	**Kasperske Hory**	**81.94**	**330**	*e*P	**P**	**02 21 27.5**	**+0.6**
GERES	**GERESS Array B** comp=Z,0.8nm,0.7s,baz=34,slow=5.0,SNR=7.3	**82.12**	**330**	P	**P**	**02 21 28.4**	**+0.4**
MNTX	**Cornudas Mount** comp=Z,2.2nm,0.8s	**84.20**	**54**	*e*P	**P**	**02 21 38.9**	**0.0**
FUORN	**Ofenpass-Fuorn**	**85.28**	**330**	*e*P	**P**	**02 21 45.2**	**+0.8**
TX31	**Lajitas Ar. Si**	**86.89**	**54**	*e*P	**P**	**02 21 52.5**	**+0.1**
TXAR	**Lajitas Array** comp=Z,1.2nm,0.7s,baz=301,slow=3.4,SNR=14	**86.89**	**54**	P	**P**	**02 21 52.1**	**-0.4**

*CSEM **16** 02:10:28.9±0.1, 39°09N×29°10E, h8km, MD2.7, Error ellipse: s-maj=5.4km s-min=2.7km az=133.0*
*ISK **16** 02:10:28.3, 39°08N×29°19E, h9km, MD2.7*
*ISCJB **16** 02:10:29.0±0.6, 39°09N±0°05×29°09E±0°05, h9km±5km, Error ellipse: s-maj=9.0km s-min=4.4km az=146.3*
*DDA **16** 02:10:29.1, 39°04N×29°10E, h7km, Md2.7*

ISC 16 02:10:29.1±0.9, 39°08N±0°04×29°12E±0°03, h13km±10km, n20, σ0°57/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**88**	*i* P	**Pg**	**02 10 35.5**	**+0.5**
GDZ				*i* S	**Sb**	**02 10 40.1**	**-0.7**
GDZ	**Gediz**	**0.28**	**88**	P	**Pg**	**02 10 35.5**	**+0.5**
GDZ				S	**Sb**	**02 10 40.1**	**-0.7**
DEMI	**Demirci**	**0.32**	**263**	*i* P	**Pg**	**02 10 35.7**	**+0.1**
DEMI				*i* S	**Sg**	**02 10 40.0**	**-0.1**
DEMI	**Demirci**	**0.32**	**263**	P	**Pg**	**02 10 35.7**	**+0.1**
DEMI				S	**Sg**	**02 10 40.0**	**-0.1**
TVSB	**Tavsanli**	**0.45**	**35**	*e*PG	**Pg**	**02 10 37.4**	**-0.7**
TVSB				*e*SG	**Sg**	**02 10 43.4**	**-0.9**
TVSB	**Tavsanli**	**0.45**	**35**	*e*Pg	**Pg**	**02 10 37.4**	**-0.7**
TVSB				*e*Sg	**Sg**	**02 10 43.4**	**-0.9**
KULA	**Kula-Manisa**	**0.67**	**213**	*e*PG	**Pg**	**02 10 42.1**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**213**	*e*Pg	**Pg**	**02 10 42.1**	**-0.1**
MANT	**Manisa**	**0.73**	**217**	*i* P	**Pg**	**02 10 42.7**	**-0.7**
MANT				*i* S	**Sg**	**02 10 52.6**	**-0.5**
MANT	**Manisa**	**0.73**	**217**	P	**Pg**	**02 10 42.7**	**-0.7**
MANT				S	**Sg**	**02 10 52.6**	**-0.5**
IZI	**Iznik**	**1.28**	**12**	*e*PN	**Pn**	**02 10 52.7**	**-0.1**
IZI	**Iznik**	**1.28**	**12**	*e*Pn	**Pn**	**02 10 52.7**	**-0.1**
BORA	**Eskisehir**	**1.30**	**52**	*i* P	**Pb**	**02 10 54.1**	**+0.6**
BORA				*i* S	**Sg**	**02 11 11.6**	**+0.4**
BORA	**Eskisehir**	**1.30**	**52**	P	**Pb**	**02 10 54.1**	**+0.6**
BORA				S	**Sg**	**02 11 11.6**	**+0.4**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*PN	**Pn**	**02 10 54.0**	**+0.7**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*Pn	**Pn**	**02 10 54.0**	**+0.7**
ARMT	**Armutlu**	**1.50**	**352**	*e*PN	**Pn**	**02 10 56.2**	**+0.5**
ARMT	**Armutlu**	**1.50**	**352**	*e*Pn	**Pn**	**02 10 56.2**	**+0.5**
GULT	**Gulveren**	**1.73**	**38**	*e*PN	**Pn**	**02 10 58.9**	**0.0**
GULT	**Gulveren**	**1.73**	**38**	*e*Pn	**Pn**	**02 10 58.9**	**0.0**

JMA 16 02:24:28.5±0.1, 39°16N×144°41E, h45km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**2.05**	**283**	P	Pn	02 25 01.5	+1.0
MIYJ				*e*S	Sn	02 25 25.9	+1.1
JTH	**Tanohata**	**2.12**	**292**	*e*S	Sn	02 25 27.8	+1.3
OFUJ	**Ofunato**	**2.13**	**269**	P	Pn	02 25 02.7	+1.1
JOM	**Ohasama**	**2.44**	**278**	P	Pn	02 25 07.3	+1.5
JOM				S	Sn	02 25 36.0	+1.6
JMK	**Ichinoseki**	**2.49**	**266**	P	Pn	02 25 07.9	+1.4
JMK				*e*S	Sn	02 25 37.5	+1.8
JRG	**Rokugo**	**2.94**	**276**	*e*S	Sn	02 25 49.5	+2.7
JOU	**Okura**	**3.03**	**256**	P	Pn	02 25 15.4	+1.4
JOU				S	Sn	02 25 50.3	+1.2
JTM	**Tenmabayashi**	**3.04**	**303**	P	Pn	02 25 15.8	+1.8
JTM				*e*S	Sn	02 25 50.1	+0.9
JNBK	**Urakawa-nobuka**	**3.36**	**339**	*e*S	Sn	02 25 57.7	+0.6
JCH	**Churui**	**3.54**	**347**	P	Pn	02 25 21.3	+0.4
**

JKG	**Kaga**	**1.33**	**220**	P	**Pn**	**02 51 05.3**	**-0.3**
JNS	**Sasagawa**	**1.61**	**71**	P	**Pn**	**02 51 08.4**	**+0.9**
JRY	**Ryogami san**	**1.77**	**136**	P	**Pn**	**02 51 08.4**	**-0.5**
JAG	**Ashikaga**	**1.87**	**117**	P	**Pn**	**02 51 09.7**	**0.0**
JYN	**Shimob**	**2.03**	**152**	P	**Pn**	**02 51 10.9**	**-0.3**
JYN				*e*S	**S**	**02 51 45.3**	**-0.6**
JFT	**Otama**	**2.36**	**84**	P	**Pn**	**02 51 15.0**	**+1.0**
JOD2	**Odawara 2**	**2.46**	**146**	P	**Pn**	**02 51 15.0**	**-0.1**
JOD2				*e*S	**S**	**02 51 52.1**	**-0.8**
JWT	**Wachi**	**2.58**	**219**	P	**Pn**	**02 51 15.3**	**-1.0**
JWT				*e*S	**S**	**02 51 52.0**	**-3.1**
JIE	**Ise**	**2.96**	**191**	P	**Pn**	**02 51 20.0**	**-0.2**
ASAJ	**Asahikawa**	**7.87**	**29**	P	**Pn**	**02 52 18.1**	**-0.7**
	5.5nm,0.3s,baz=216,slow=12,SNR=18						
ASAJ				S	**S**	**02 53 43.8**	**-5.0**
	0.5nm,0.3s,baz=270,slow=20,SNR=3.1						
KLR	**Kul'dur**	**12.60**	**343**	P	**Pn**	**02 53 17.9**	**+0.1**
	0.3nm,0.3s,baz=154,slow=12,SNR=4.4						
SONM	**Songino Array**	**24.98**	**305**	P	**P**	**02 55 29.5**	**+2.3**
	0.5nm,0.4s,baz=99,slow=8.9,SNR=4.1						
MKAR	**Makanchi Array**	**41.24**	**301**	P	**P**	**02 57 46.7**	**-0.1**
	0.4nm,0.6s,baz=87,slow=7.5,SNR=4.8						
KURBB	**Kurchatov Arra**	**43.29**	**307**	P	**P**	**02 58 03.3**	**+0.1**
	1.5nm,0.4s,baz=79,slow=7.2,SNR=22						
BVAR	**Borovoye Array**	**48.00**	**312**	P	**P**	**02 58 40.2**	**+0.3**
	0.6nm,0.4s,baz=90,slow=8.6,SNR=3.8						
WRA	**Warramunga Arr**	**57.01**	**183**	P	**P**	**02 59 46.2**	**+0.1**
	0.2nm,0.3s,baz=0.3,slow=7.7,SNR=5.5						
FINES	**FINESS Array B**	**67.04**	**331**	P	**P**	**03 00 52.3**	**+0.3**
	0.4nm,0.4s,baz=66,slow=3.8,SNR=4.8						
BRTR	**Keskin Array B**	**76.23**	**310**	P	**P**	**03 01 47.9**	**+0.7**
	0.2nm,0.3s,baz=70,slow=4.0,SNR=3.7						

MEX 16 02:52:22.5±0.3, 15°94N×93°82W, h85km±11km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.65**	**78**	*e*P	Pn	02 52 49.0	-1.1
CCIG				*i* S	Sn	02 53 09.4	-1.6
HUIG	**Huatulco**	**2.21**	**266**	*i* P	Pn	02 52 57.1	-0.3
HUIG				*i* S	Sn	02 53 22.5	-1.6
VHO	**Vista Hermosa**	**3.02**	**292**	*i* P	Pn	02 53 07.2	-1.2
VHO				*i* S	Sn	02 53 41.5	-2.1

WEL 16 02:58:45.8±0.6, 36°56S×177°01E, h224km±9km, ML3.5/7, 1C, Error ellipse: s-maj=11.0km s-min=10.3km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HAZ	**Te Kaha**	**1.35**	**153**	PN	Pn	02 59 20.9	+0.5
HAZ				*e*SN	S	02 59 47.9	+0.4
HAZ				AML	AML	02 59 57.2	
RUGZ	**Raukumara Rang**	**1.50**	**159**	PN	Pn	02 59 21.7	-0.1
PKGZ	**Pakihiroa**	**1.58**	**148**	PN	Pn	02 59 22.5	+0.2
WMGZ	**Waiomatatini S**	**1.69**	**139**	PN	Pn	02 59 23.3	+0.1
WMGZ				AML	AML	03 00 05.2	
WMGZ				AML	AML	03 00 06.3	
TWGZ	**Tauwhareparae**	**1.79**	**155**	PN	Pn	02 59 24.9	+0.7
TWGZ				AML	AML	02 59 58.9	
TWGZ				AML	AML	02 59 59.3	
PUZ	**Puketiti**	**1.81**	**147**	⇑PN	Pn	02 59 24.2	-0.1
PUZ				*e*SN	S	02 59 53.7	-0.8
MWZ	**Matawai**	**1.82**	**167**	PN	Pn	02 59 24.9	+0.4
MWZ				SN	S	02 59 54.4	-0.3
RAGZ	**Rawiri**	**1.96**	**171**	PN	Pn	02 59 26.4	+0.6
RAGZ				AML	AML	03 00 04.4	
RAGZ				AML	AML	03 00 10.0	
CNGZ	**Carnagh Statio**	**2.15**	**154**	PN	Pn	02 59 28.1	+0.6
RIGZ	**Rimuhau**	**2.23**	**165**	PN	Pn	02 59 28.6	+0.2
RIGZ				AML	AML	03 00 08.4	
RIGZ				AML	AML	03 00 10.4	
SNGZ	**Shannon Statio**	**2.23**	**173**	PN	Pn	02 59 28.8	+0.3
SNGZ				AML	AML	03 00 08.7	
SNGZ				AML	AML	03 00 08.9	
KNZ	**Kokohu**	**2.52**	**168**	PN	Pn	02 59 30.9	-0.4
BKZ	**Black Stump Fm**	**2.63**	**189**	PN	Pn	02 59 32.2	-0.5
ARHZ	**Aropaoanui**	**2.70**	**180**	AML	AML	03 00 17.7	
MCHZ	**McNeill Hill**	**2.89**	**185**	PN	Pn	02 59 35.6	+0.2
KRHZ	**Kereru**	**3.12**	**189**	PN	Pn	02 59 37.6	-0.5
OGWZ	**Otaki Gorge**	**4.49**	**198**	PN	Pn	02 59 52.8	-1.6

IDC 16 02:59:36.4±7.0, 2°74S×141°51E, h34km±58km, mb3.2/3, mb1 3.5/4, mb1mx3.3/32, mbtmp3.4/4, ML3.8/1, Error ellipse: s-maj=71.7km s-min=28.3km az=103.0, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**0.84**	**286**	Pg	Pn	02 59 52.0	+0.1
	2.7nm,0.3s,baz=90,slow=20,SNR=52						
JAY				Lg	Lg	03 00 05.4	
	6.0nm,0.3s,baz=270,slow=20,SNR=12						
WRA	**Warramunga Arr**	**18.48**	**202**	P	Pn	03 03 50.0	+0.1
	0.3nm,0.3s,baz=24,slow=12,SNR=19						
FITZ	**Fitzroy Crossi**	**21.80**	**224**	P	P	03 04 25.1	-0.6
	1.8nm,0.8s,baz=49,slow=9.3,SNR=3.7						
ASAR	**Alice Springs**	**22.07**	**199**	P	P	03 04 28.4	-0.1
	0.5nm,0.7s,baz=29,slow=8.6,SNR=3.5						
H11S3	**WAKE ISLAND Hy 32.55**	**49**		T	T	03 40 24.2	
	baz=232,slow=76,SNR=49						
H11S2	**WAKE ISLAND Hy 32.56**	**49**		T	T	03 40 16.5	
	baz=232,slow=76,SNR=52						
H11S1	**WAKE ISLAND Hy 32.57**	**49**		T	T	03 40 19.7	
	baz=232,slow=76,SNR=47						
H11N1	**WAKE ISLAND Hy 33.46**	**47**		T	T	03 41 25.8	
	baz=230,slow=75,SNR=42						
H11N2	**WAKE ISLAND Hy 33.47**	**47**		T	T	03 41 24.0	
	baz=230,slow=75,SNR=62						
H11N3	**WAKE ISLAND Hy 33.47**	**47**		T	T	03 41 27.4	
	baz=230,slow=75,SNR=33						
ILAR	**Eielson Array**	**84.71**	**24**	P	P	03 12 07.1	+0.5
	0.2nm,0.6s,baz=258,slow=4.4,SNR=3.1						

*IDC **16** 03:12:08.6±1.4, 52°.14N×171°.87W, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.4/40, mbtmp3.4/5, ML3.2/1, MS3.6/1, Ms1 3.6/1, ms1mx2.6/33, Error ellipse: s-maj=81.3km s-min=26.4km az=150.0*
*ISCJB **16** 03:12:13.5±0.7, 51°.9N±0°.1×171°.53W±0°.06, h44km, mb3.5/4, MS3.5/1, Error ellipse: s-maj=16.1km s-min=4.1km az=167.3*
*NEIC **16** 03:12:14.6, 51°.76N×171°.49W, h47km, ML3.0(AEIC), After AEIC.*

ISC 16 03:12:15.0±1.0, 51°.9N±0°.2×171°.55W±0°.05, h44km, n25, σ0s99/22, mb3.5/4, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KOSE	**Korovin Southe**	**1.60**	**286**	P	**Pn**	**03 12 41.1**	**+0.3**
KOSE				S	**Sn**	**03 13 01.6**	**+1.4**
KOFP	**Korovin Flat P**	**1.61**	**284**	P	**Pn**	**03 12 40.7**	**-0.3**
KONE	**Korovin Northe**	**1.65**	**288**	P	**Pn**	**03 12 41.2**	**-0.3**
KOKL	**Mount Kliuchef**	**1.68**	**285**	P	**Pn**	**03 12 42.5**	**+0.4**
NIKH	**Nikolski High**	**1.96**	**56**	P	**Pn**	**03 12 44.0**	**-1.7**
NIKH				S	**Sn**	**03 13 09.0**	**0.0**
OKWE	**Okmok W'ng Wal**	**2.54**	**51**	P	**Pn**	**03 12 53.0**	**-0.7**
OKTU	**Okmok Mt. Tuli**	**2.59**	**54**	P	**Pn**	**03 12 53.6**	**-0.8**
GSMY	**Great Sitkin M**	**2.79**	**274**	P	**Pn**	**03 12 56.7**	**-0.4**
GSTD	**Great Sitkin T**	**2.84**	**274**	P	**Pn**	**03 12 57.1**	**-0.8**
GSTD				S	**Sn**	**03 13 29.8**	**-1.2**
GSCK	**Great Sitkin C**	**2.85**	**274**	P	**Pn**	**03 12 57.4**	**-0.6**
ETKA	**Kagalaska Isla**	**3.01**	**271**	P	**Pn**	**03 12 59.2**	**-0.9**
MSOM	**Makushin Julie**	**3.37**	**54**	P	**Pn**	**03 13 05.8**	**+0.7**
UNV	**Unalaska Valle**	**3.61**	**56**	P	**Pn**	**03 13 08.3**	**-0.1**
UNV				S	**Sn**	**03 13 51.3**	**+1.6**
ILAR	**Eielson Array**	**18.08**	**35**	P	**P**	**03 16 20.6**	**-2.0**
	0.0nm,0.3s,baz=241,slow=11,SNR=3.7						
KLR	**Kul'dur**	**35.33**	**289**	LR	LR	03 34 33.1	
	comp=Z,84nm,18.4s,baz=206,slow=38						
H11N2	**WAKE ISLAND Hy 36.29**	**216**		T	T	03 57 44.2	
	baz=22,slow=76,SNR=17						
H11N3	**WAKE ISLAND Hy 36.29**	**216**		T	T	03 57 42.3	
	baz=22,slow=76,SNR=12						
H11N1	**WAKE ISLAND Hy 36.30**	**216**		T	T	03 57 50.0	
	baz=22,slow=76,SNR=15						
H11S1	**WAKE ISLAND Hy 37.48**	**215**		T	T	03 59 11.3	
	baz=22,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy 37.50**	**215**		T	T	03 59 13.3	
	baz=22,slow=76,SNR=12						
H11S3	**WAKE ISLAND Hy 37.50**	**215**		T	T	03 59 12.3	
	baz=22,slow=76,SNR=11						
PDAR	**Pinedale Array**	**41.81**	**77**	P	**P**	**03 20 01.1**	**+0.7**
	0.3nm,0.5s,baz=298,slow=3.2,SNR=3.7						
TXAR	**Lajitas Array**	**54.11**	**87**	P	**P**	**03 21 36.1**	**+0.7**
	0.4nm,0.7s,baz=316,slow=7.5,SNR=4.4						
WRA	**Warramunga Arr**	**85.68**	**230**	P	**P**	**03 24 48.8**	**-0.2**
	0.2nm,0.7s,baz=34,slow=6.1,SNR=2.8						
ASAR	**Alice Springs**	**89.09**	**228**	P	**P**	**03 25 06.0**	**+0.6**
	0.5nm,0.6s,baz=29,slow=4.2,SNR=7.2						

*IDC **16** 03:23:10.5±1.5, 38°.92N×144°.83E, h0km, mb3.3/2, mb1 3.7/3, mb1mx3.3/34, mbtmp3.4/3, ML3.7/1, Error ellipse: s-maj=67.3km s-min=28.5km az=126.0*
*ISCJB **16** 03:23:12.2±1.1, 39°.22N±0°.06×144°.48E±0°.08, h19km, mb3.4/2, Error ellipse: s-maj=9.7km s-min=7.9km az=135.3*
*JMA **16** 03:23:14.4±0.1, 39°.14N×144°.42E, h44km, M3.4*

ISC 16 03:23:13.1±1.3, 39°.18N±0°.07×144°.47E±0°.09, h19km, n13, σ1s23/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**2.09**	**282**	P	**Pn**	**03 23 47.6**	**+0.5**
MIYJ				*e*S	**Sn**	**03 24 12.5**	**-0.2**
JTH	**Tanohata**	**2.15**	**291**	P	**Pn**	**03 23 48.8**	**+0.8**
JTH				*e*S	**Sn**	**03 24 14.4**	**+0.2**
OFUJ	**Ofunato**	**2.18**	**268**	P	**Pn**	**03 23 48.8**	**+0.4**
OFUJ				*e*S	**Sn**	**03 24 14.3**	**-0.6**
JOM	**Ohasama**	**2.48**	**278**	P	**Pn**	**03 23 53.6**	**+1.1**
JOM				S	**Sn**	**03 24 21.9**	**-0.4**
JMK	**Ichinoseki**	**2.54**	**266**	P	**Pn**	**03 23 54.0**	**+0.7**
JMK				*e*S	**Sn**	**03 24 23.4**	**-0.3**
JANG	**Nango**	**2.57**	**298**	P	**Pn**	**03 23 53.7**	**0.0**
JYK	**Kaneyama**	**3.21**	**267**	P	**Pn**	**03 24 03.0**	**+0.4**
JNBK	**Urakawa-nobuka**	**3.36**	**338**	S	**Sn**	**03 24 44.4**	**+0.6**
JCH	**Churui**	**3.53**	**347**	*e*S	**Sn**	**03 24 45.7**	**-2.4**
MAT	**Matsushiro**	**5.62**	**244**	P	**Pn**	**03 24 37.4**	**+1.8**
MAT				*e*S	**Sn**	**03 25 36.8**	**-2.8**
MJAR	**Matsushiro Arr**	**5.62**	**244**	Pn	**Pn**	**03 24 37.0**	**+1.5**
	1.9nm,0.3s,baz=59,slow=11,SNR=17						
ILAR	**Eielson Array**	**46.38**	**33**	P	**P**	**03 31 38.6**	**+0.8**
	0.4nm,0.7s,baz=258,slow=5.4,SNR=6.5						
WRA	**Warramunga Arr**	**59.58**	**191**	P	**P**	**03 33 14.5**	**-1.1**
	0.2nm,0.7s,baz=8.6,slow=6.8,SNR=3.4						

*ROM **16** 03:30:41.7±0.4, 42°.27N×15°.95E, h10km, Md2.8/21, Ml2.6/16, Error ellipse: s-maj=4.9km s-min=2.7km az=23.0*
*CSEM **16** 03:30:44.0±0.2, 42°.13N×15°.72E, h10km, MD2.8, Error ellipse: s-maj=4.1km s-min=3.4km az=73.0*

ISC 16 03:30:43.9±1.1, 42°.19N±0°.02×15°.77E±0°.02, h13km±10km, n62, σ1s09/78, Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SGRT	**San Giovanni R**	**0.44**	**183**	Pg	**Pg**	**03 30 51.9**	**-0.7**
SGRT				Sg	**Sb**	**03 30 58.9**	**-1.1**
	172nm,0.3s						
SGRT	**San Giovanni R**	**0.44**	**183**	Pg	**Pg**	**03 30 51.9**	**-0.7**
SGRT				Sg	**Sb**	**03 30 58.9**	**-1.1**
	172nm,0.3s						
MSAG	**Monte S. Angel**	**0.49**	**168**	Pg	**Pg**	**03 30 53.0**	**-0.5**
MSAG				Sg	**Sb**	**03 31 00.6**	**-0.9**
	301nm,0.3s						
MSAG	**Monte S. Angel**	**0.49**	**168**	Pg	**Pg**	**03 30 53.0**	**-0.5**
MSAG				Sg	**Sb**	**03 31 00.6**	**-0.9**
	301nm,0.3s						
MS1	**Monte Sant'Ang**	**0.50**	**165**	*e*Pg	**Pb**	**03 30 53.8**	**-0.8**
MS1				Sg	**Sb**	**03 31 00.6**	**-1.3**
CIGN	**Sant'Elia a Pi**	**0.84**	**231**	Pg	**Pg**	**03 30 59.5**	**-0.6**
CIGN				Sg	**Sn**	**03 31 14.7**	**+1.0**
	46nm,0.5s						
CIGN	**Sant'Elia a Pi**	**0.84**	**231**	Pg	**Pg**	**03 30 59.5**	**-0.6**
FRES	**Fresagrandinar**	**0.85**	**255**	Pg	**Pg**	**03 30 59.0**	**-1.3**
	164nm,0.7s						
FRES	**Fresagrandinar**	**0.85**	**255**	Pg	**Pg**	**03 30 59.0**	**-1.3**
	164nm,0.7s						
GATE	**Gambatesa**	**0.93**	**224**	Pg	**Pb**	**03 31 02.1**	**+0.1**
	146nm,0.5s						
GATE	**Gambatesa**	**0.93**	**224**	Pg	**Pb**	**03 31 02.1**	**+0.1**
	146nm,0.5s						
MOCO	**Biccari - m.te**	**0.94**	**209**	Pg	**Pb**	**03 31 02.2**	**+0.1**
	103nm,0.8s						
TRIV	**Trivento**	**1.00**	**245**	Pg	**Pg**	**03 31 02.9**	**-0.3**
TRIV				Sg	**Sn**	**03 31 19.1**	**+1.3**
	145nm,0.8s						
TRIV	**Trivento**	**1.00**	**245**	Pg	**Pg**	**03 31 02.9**	**-0.3**
BSSO	**Busso**	**1.09**	**234**	Pg	**Pb**	**03 31 04.2**	**-0.5**
BSSO				Sg	**Sn**	**03 31 21.8**	**+1.8**
BSSO	**Busso**	**1.09**	**234**	Pg	**Pb**	**03 31 04.2**	**-0.5**
SGTA	**Sant Agata di**	**1.10**	**196**	Pg	**Pn**	**03 31 04.8**	**-0.3**
	77nm,0.4s						
SGTA	**Sant Agata di**	**1.10**	**196**	Pg	**Pn**	**03 31 04.8**	**-0.3**
	77nm,0.4s						
CDT	**Castel del Mon**	**1.17**	**161**	*e*Pg	**Pn**	**03 31 06.0**	**0.0**
MRVN	**Minervino Murg**	**1.17**	**164**	Pg	**Pb**	**03 31 05.1**	**-1.0**
	45nm,0.3s						
MRVN	**Minervino Murg**	**1.17**	**164**	Pg	**Pb**	**03 31 05.1**	**-1.0**
	45nm,0.3s						
CAFE	**Carife**	**1.23**	**199**	Pg	**Pg**	**03 31 06.8**	**-0.7**
CAFE	**Carife**	**1.23**	**199**	Pg	**Pg**	**03 31 06.8**	**-0.7**
VULT	**Monte Vulture**	**1.24**	**185**	Pg	**Pg**	**03 31 07.0**	**-0.8**
	176nm,0.3s						
VULT	**Monte Vulture**	**1.24**	**185**	Pg	**Pg**	**03 31 07.0**	**-0.8**
	176nm,0.3s						
PTRJ	**Pietraroja**	**1.24**	**229**	Pg	**Pn**	**03 31 06.8**	**-0.3**
PTRJ	**Pietraroja**	**1.24**	**229**	Pg	**Pn**	**03 31 06.8**	**-0.3**
MIDA	**Miranda**	**1.26**	**245**	Pg	**Pn**	**03 31 06.6**	**-0.7**
MIDA				Sg	**Sg**	**03 31 25.8**	**+1.4**
	59nm,0.5s						
MIDA	**Miranda**	**1.26**	**245**	Pg	**Pn**	**03 31 06.6**	**-0.7**
SNAL	**S. Angelo Dei**	**1.33**	**199**	Pg	**Pn**	**03 31 07.6**	**-0.7**
SNAL	**S. Angelo Dei**	**1.33**	**199**	Pg	**Pn**	**03 31 07.6**	**-0.7**
BAI	**Bari**	**1.36**	**142**	*e*Pg	**Pg**	**03 31 08.7**	**-1.4**
BAI				Sg	**Sg**	**03 31 30.3**	**+2.5**
VAGA	**Valle Agricola**	**1.39**	**236**	Pg	**Pb**	**03 31 09.4**	**-0.3**
VAGA				Sg	**Sg**	**03 31 30.7**	**+2.2**
	50nm,0.3s						
VAGA	**Valle Agricola**	**1.39**	**236**	Pg	**Pb**	**03 31 09.4**	**-0.3**
INTR	**Introdacqua**	**1.40**	**263**	Pg	**Pn**	**03 31 09.1**	**-0.1**
INTR				Sg	**Sg**	**03 31 30.1**	**+1.1**
	207nm,0.7s						
INTR	**Introdacqua**	**1.40**	**263**	Pg	**Pn**	**03 31 09.1**	**-0.1**
ACER	**Acerenza**	**1.41**	**175**	Pg	**Pg**	**03 31 10.2**	**-0.8**
	138nm,0.4s						
ACER	**Acerenza**	**1.41**	**175**	Pg	**Pg**	**03 31 10.2**	**-0.8**
	138nm,0.4s						
AMUR	**Altamura**	**1.43**	**154**	Pg	**Pn**	**03 31 08.9**	**-0.6**
	47nm,0.3s						
AMUR	**Altamura**	**1.43**	**154**	Pg	**Pn**	**03 31 08.9**	**-0.6**
	47nm,0.3s						
CERA	**Filignano**	**1.44**	**246**	Pg	**Pg**	**03 31 11.1**	**-0.4**
CERA	**Filignano**	**1.44**	**246**	Pg	**Pg**	**03 31 11.1**	**-0.4**
MRLC	**Muro Lucano**	**1.45**	**188**	Pg	**Pn**	**03 31 09.4**	**-0.5**
	62nm,0.7s						
MRLC	**Muro Lucano**	**1.45**	**188**	Pg	**Pn**	**03 31 09.4**	**-0.5**
	62nm,0.7s						
SG1	**Sgolgore (BA)**	**1.51**	**153**	*e*Pg	**Pg**	**03 31 11.9**	**-1.0**
VVLD	**Villa Vallelon**	**1.63**	**259**	Pg	**Pb**	**03 31 13.5**	**-0.4**
VVLD	**Villa Vallelon**	**1.63**	**259**	Pg	**Pb**	**03 31 13.5**	**-0.4**
CDRU	**Civita di Ruta**	**1.74**	**192**	Pg	**Pn**	**03 31 13.9**	**0.0**
CDRU	**Civita di Ruta**	**1.74**	**192**	Pg	**Pn**	**03 31 13.9**	**0.0**
UDBI	**Udbina**	**2.33**	**360**	*e*Pn	**Pb**	**03 31 24.3**	**-1.6**
UDBI				Sn	**Sb**	**03 31 53.4**	**-1.3**
UDBI	**Udbina**	**2.33**	**360**	*e*Pn	**Pb**	**03 31 24.2**	**-1.6**
UDBI				Sn	**Sb**	**03 31 53.4**	**-1.3**
NVLJ	**Novalja**	**2.46**	**345**	*e*Pn	**Pn**	**03 31 24.4**	**+0.7**
NVLJ				Sn	**Sb**	**03 31 55.5**	**-2.6**
NVLJ	**Novalja**	**2.46**	**345**	*e*Pn	**Pn**	**03 31 24.3**	**+0.7**
NVLJ				Sn	**Sb**	**03 31 55.5**	**-2.6**
BBLS	**Lazići**	**3.15**	**57**	*e*Pn	**Pb**	**03 31 39.4**	**-0.3**
IVAS	**Ivanjica**	**3.50**	**65**	*e*Pn	**Pn**	**03 31 39.4**	**+1.3**
OBKA	**Obir**	**4.41**	**349**	*i* Pn	**Pn**	**03 31 51.6**	**+1.1**
	1.7nm,0.4s						
OBKA	**Obir**	**4.41**	**349**	Pn	**Pn**	**03 31 51.6**	**+1.1**
	1.7nm,0.4s						
BARS	**Barje**	**4.51**	**80**	*e*Pn	**Pn**	**03 31 54.1**	**+2.2**
SOKA	**Soboth**	**4.52**	**354**	*i* Pn	**Pn**	**03 31 53.3**	**+1.3**
	0.1nm,0.1s						
SOKA	**Soboth**	**4.52**	**354**	Pn	**Pn**	**03 31 53.3**	**+1.3**
	0.1nm,0.1s						
MOA	**Molln**	**5.76**	**350**	*i* Pn	**Pn**	**03 32 10.9**	**+1.9**
	0.6nm,0.2s						
MOA	**Molln**	**5.76**	**350**	Pn	**Pn**	**03 32 10.9**	**+1.9**
	0.6nm,0.2s						

*IDC **16** 03:42:55.8±5.8, 23°.47S×179°.94E, h501km±63km, mb3.3/6, mb1 3.6/7, mb1mx3.2/26, mbtmp4.2/7, Error ellipse: s-maj=31.5km s-min=23.1km az=48.0*
*ISCJB **16** 03:42:57.4±1.0, 23°.6S±0°.2×179°.9E±0°.2, h535km, mb3.6/6, Error ellipse: s-maj=26.3km s-min=20.7km az=169.9*

ISC 16 03:42:58.3±1.0, 23°.6S±0°.1×179°.9E±0°.2, h535km, n10, σ1s12/10, mb3.7/6, 1C, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**14.78**	**189**	P	**Pn**	**03 46 04.4**	**-1.1**
	7.1nm,0.3s,baz=26,slow=3.0,SNR=40						
ASAR	**Alice Springs**	**41.99**	**260**	P	**P**	**03 50 03.2**	**+0.4**
	1.8nm,0.8s,baz=93,slow=8.3,SNR=14						
WRA	**Warramunga Arr**	**42.33**	**266**	P	**P**	**03 50 05.6**	**0.0**
	3.4nm,0.7s,baz=104,slow=8.7,SNR=39						
VNDA	**Vanda**	**54.65**	**185**	P	**P**	**03 51 37.6**	**+1.4**
	1.0nm,0.8s,baz=6.1,slow=7.3,SNR=4.1						
MJAR	**Matsushiro Arr**	**71.62**	**326**	P	**P**	**03 53 25.3**	**-0.4**
	1.2nm,0.6s,baz=161,slow=6.9,SNR=4.0						
MAW	**Mawson**	**77.97**	**200**	P	**P**	**03 54 02.1**	**+1.3**
	1.8nm,0.6s,baz=102,slow=9.0,SNR=6.7						
SYO	**Syowa Base**	**83.26**	**193**	⇑*e*P	**P**	**03 54 26.6**	**-1.6**
TXAR	**Lajitas Array**	**90.36**	**58**	P	**P**	**03 55 03.1**	**+0.3**
	0.8nm,0.7s,baz=213,slow=7.3,SNR=11						
FINES	**FINESS Array B**	**138.16**	**341**	PKP	**PKPdf**	**04 01 22.3**	**+0.4**
	2.6nm,1.0s,baz=64,slow=3.2,SNR=3.5						
AKASG	**Malin Array Be**	**144.69**	**327**	PKP	**PKPdf**	**04 01 33.1**	**-0.8**
	0.6nm,0.5s,baz=47,slow=3.0,SNR=4.7						

*ISCJB **16** 03:54:28.5±0.3, 27°.64N±0°.05×127°.07E±0°.06, h169km±4km, mb4.0/14, Error ellipse: s-maj=11.0km s-min=3.5km az=41.7*
*JMA **16** 03:54:31.0±0.2, 27°.69N×127°.11E, h152km±5km, M4.3*
*IDC **16** 03:54:31.4±2.0, 27°.77N×127°.06E, h180km±19km, mb3.6/13, mb1 3.7/15, mb1mx3.6/33, mbtmp4.1/15, Error ellipse: s-maj=19.9km s-min=11.0km az=72.0*

ISC 16 03:54:29.4±0.7, 27°.69N±0°.06×127°.02E±0°.07, h163km±7km, n37, σ1s04/60, mb4.0/14, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIH	**Iheya**	**1.07**	**128**	P	**Pn**	**03 54 56.5**	**+0.6**
JIH				*e*S	**Sn**	**03 55 15.4**	**-0.9**
JAGN	**Aguni-jima**	**1.12**	**170**	P	**Pn**	**03 54 57.1**	**+0.7**
JAGN				*e*S	**Sn**	**03 55 17.4**	**+0.3**
JKE	**Kume jima 2**	**1.38**	**189**	P	**Pn**	**03 54 59.4**	**+0.7**
JKE				*e*S	**Sn**	**03 55 22.3**	**+1.0**
JOW	**Kunigami**	**1.41**	**127**	P	**Pn**	**03 54 59.5**	**+0.5**
JOW				*e*S	**Sn**	**03 55 19.8**	**-2.0**
JOKE	**Okinoerabujima**	**1.42**	**103**	P	**Pn**	**03 54 59.4**	**+0.3**
JOKE				*e*S	**Sn**	**03 55 20.1**	**-1.8**
JNTH	**Nagotoyohara**	**1.47**	**142**	P	**Pn**	**03 55 00.4**	**+0.8**
JNTH				*e*S	**Sn**	**03 55 21.9**	**-1.0**
JJT2	**Tamagusuku 2**	**1.67**	**157**	P	**Pn**	**03 55 03.1**	**+1.3**
JJT2				*e*S	**Sn**	**03 55 26.8**	**+0.1**
JTK	**Tokunoshima**	**1.71**	**86**	P	**Pn**	**03 55 02.2**	**+0.1**
JTK				*e*S	**Sn**	**03 55 25.5**	**-1.9**
JAMN	**Amaminishikomi**	**1.98**	**73**	P	**Pn**	**03 55 05.1**	**0.0**
JAMN				*e*S	**Sn**	**03 55 31.3**	**-1.3**
JAM	**Amami Oshima**	**2.40**	**72**	P	**Pn**	**03 55 09.9**	**+0.1**
JAM				*e*S	**Sn**	**03 55 39.5**	**-1.6**
JTAJ	**Takarajima**	**2.41**	**52**	P	**Pn**	**03 55 11.0**	**+1.0**
JTAJ				*e*S	**Sn**	**03 55 41.3**	**-0.2**
JZK	**Kikaishima**	**2.68**	**76**	P	**Pn**	**03 55 14.4**	**+1.1**
JZK				*e*S	**Sn**	**03 55 46.8**	**-0.6**
JIKM	**Ikemajima**	**3.18**	**210**	P	**Pn**	**03 55 19.8**	**+0.

baz=121,SNR=44
MONP2 S **Sg** **04 20 25.4 0.0**
baz=121
BAR Barrett 0.83 277 *eP* **Pg** **04 20 18.8 -0.1**
TJIG Tijuana 0.84 260 *eP* **Pg** **04 20 18.6 -0.5**
TJIG *iS* **Sg** **04 20 29.2 -1.0**
TJIG Tijuana 0.84 260 *eP* **Pg** **04 20 18.7 -0.4**
CBX Cerro Bola 0.86 252 *iP* **Pg** **04 20 19.2 -0.4**
CBX *iS* **Sg** **04 20 30.7 -0.2**
CBX Cerro Bola 0.86 252 *eP* **Pg** **04 20 19.3 -0.2**
CBX *eS* **Sg** **04 20 30.6 -0.3**
CBX IAML 04 20 33.1
comp=N,317nm,0.3s
GLA Glamis 0.87 57 P **Pg** **04 20 18.7 -1.1**
baz=236,SNR=7.5
GLA S **Sg** **04 20 30.2 -1.2**
baz=236
SDRC San Diego Road 1.06 279 *eP* **Pb** **04 20 22.8 +0.2**
SDRC *eS* **Sg** **04 20 36.4 -0.9**
BC3 Big Chuckawall 1.09 11 S **Sg** **04 20 36.8 -1.5**
baz=192
PFO Pinyon Flats O 1.21 328 P **Pb** **04 20 24.1 -1.1**
baz=150,SNR=9.4
PFO S **Sb** **04 20 39.7 -0.9**
baz=150
109C Camp Elliot, M 1.22 285 P **Pn** **04 20 25.1 +0.1**
baz=106,SNR=21
109C S **Sb** **04 20 41.3 +0.4**
baz=106
BELC Belle Mtn. Jos 1.44 350 S **Sn** **04 20 46.4 -0.2**
baz=171
MURC Murrieta 1.61 309 Sg **Sn** **04 20 54.0 +3.1**
baz=130

TRN ***16*** *04:29:13.4, 11°.03N×62°.29W, h61km, MD3.4*
ISCJB ***16*** *04:29:16.2±1.2, 11°.28N±0°.05×62°.02W±0°.07, h108km±11km, Error ellipse: s-maj=13.2km s-min=5.4km az=31.2*
FUNV ***16*** *04:29:18.2, 11°.59N×62°.36W, h21km, MW2.3*
ISC 16 04:29:18.2±1.9, 11°.31N±0°.05×62°.03W±0°.07, h90km±17km, n12, σ1§60/23, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GUIV	**Guiria**	**0.69**	**196**	*eP*	**Pn**	**04 29 35.0**	**+0.4**
GUIV				*eS*	**Sn**	**04 29 49.8**	**+3.0**
GRGR	**Grenville**	**0.90**	**24**	*eP*	**Pn**	**04 29 34.8**	**-2.0**
GRGR				*eS*	**Sn**	**04 29 51.0**	**+0.3**
GRGR	**Grenville**	**0.90**	**24**	*eP*	**Pn**	**04 29 34.8**	**-2.0**
GRW	**Mount Saint Ca**	**0.92**	**23**	*eP*	**Pn**	**04 29 35.5**	**-1.7**
GRW				*eS*	**Sn**	**04 29 51.7**	**+0.5**
GRHS	**Sauteurs**	**0.98**	**23**	*eP*	**Pn**	**04 29 36.8**	**-1.0**
GRHS				*eS*	**Sn**	**04 29 53.4**	**+1.0**
GRSS	**Sisters**	**1.06**	**22**	*eP*	**Pn**	**04 29 37.5**	**-1.2**
GRSS				*eS*	**Sn**	**04 29 54.9**	**+0.9**
CRUV	**Carupano**	**1.34**	**242**	*eP*	**Pn**	**04 29 40.9**	**-1.1**
CRUV				*eS*	**Sn**	**04 29 57.7**	**-2.3**
GUNV	**Guanoco**	**1.45**	**218**	*eP*	**Pn**	**04 29 43.2**	**-0.2**
GUNV				*eS*	**Sn**	**04 30 03.3**	**+1.0**
TOSP	**Speyside**	**1.46**	**90**	*eP*	**Pn**	**04 29 41.8**	**-1.8**
TOSP				*eS*	**Sn**	**04 30 02.5**	**-0.1**
FCV	**Fort Charlotte**	**1.99**	**23**	*eP*	**Pn**	**04 29 49.8**	**-0.6**
FCV				*eS*	**Sn**	**04 30 17.1**	**+2.3**
SVB	**Belmont**	**2.09**	**21**	*eP*	**Pn**	**04 29 51.6**	**-0.1**
SVB				*eS*	**Sn**	**04 30 19.5**	**+2.2**
SVV	**Soufriere Volc**	**2.15**	**22**	*eP*	**Pn**	**04 29 52.4**	**-0.1**
SVV				*eS*	**Sn**	**04 30 20.4**	**+1.9**

ISCJB ***16*** *04:37:51.1±0.5, 16°.3S±0°.1×175°.1W±0°.1, h10km, mb4.4/18, MS4.1/23, Error ellipse: s-maj=19.2km s-min=11.6km az=38.2*
IDC ***16*** *04:37:51.3±0.8, 16°.32S×175°.02W, h0km, mb4.1/9, mb1 4.4/9, mb1mx4.1/33, mbtmp4.1/9, MS4.0/24, Ms1 4.0/24, ms1mx3.9/35, Error ellipse: s-maj=35.2km s-min=20.7km az=119.0*
NEIC ***16*** *04:37:52.5±0.4, 16°.31S×175°.06W, h10km, mb4.6/7, Error ellipse: s-maj=17.7km s-min=10.7km az=128.0*
ISC 16 04:37:53.0±0.6, 16°.3S±0°.1×175°.1W±0°.2, h10km, n73, σ2§26/46, mb4.5/18, MS4.1/23, 5C-3D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**15.35**	**111**	LR	LR	04 45 41.1	
	comp=Z,466nm,20.9s,baz=312,slow=31						
DZM	**Mont Dzumac**	**18.31**	**249**	LR	LR	04 48 09.8	
	comp=Z,1μm,20.2s,baz=54,slow=34						
DZM	**Mont Dzumac**	**18.31**	**249**	*eLR*	LR	04 46 37.6	
	2μm,25.3s						
URZ	**Urewera**	**22.91**	**196**	P	**P**	**04 42 56.3**	**-0.7**
	18nm,1.0s,baz=23,slow=10,SNR=3.7						
URZ				LR	LR	04 50 04.1	
	comp=Z,402nm,20.7s,baz=32,slow=32						
PAE	**Paea**	**24.48**	**97**	*eT*	T	05 07 37.7	
	3.3nm,0.2s						
PPT2	**Papeete2**	**24.49**	**97**	*eLR*	LR	04 48 47.0	
	1μm,26.2s						
PPT2	**Papeete2**	**24.49**	**97**	*eT*	T	05 07 24.0	
	5.7nm,0.3s						
PPT	**Papeete**	**24.49**	**97**	LR	LR	04 49 52.4	
	comp=Z,338nm,21.1s,baz=292,slow=30						
TVO	**Taravao**	**24.79**	**97**	*eT*	T	05 07 55.0	
	1.6nm,0.3s						
TBI	**Tubuai**	**25.13**	**110**	*eLQ*	LQ	04 48 04.4	
	501nm,27.0s						
TBI				*eLR*	LR	04 49 09.7	
	2μm,28.5s						
TBI	**Tubuai**	**25.13**	**110**	*eT*	T	05 08 24.9	
	7.5nm,0.3s						
HNR	**Honiara**	**25.21**	**283**	LR	LR	04 51 54.8	
	comp=Z,2μm,19.4s,baz=126,slow=33						
VAH	**Vaihoa**	**26.50**	**92**	*eT*	T	05 10 07.5	
	15nm,0.2s						
RPZ	**Rata Peaks**	**29.74**	**200**	LR	LR	04 56 09.2	
	comp=Z,290nm,18.2s,baz=37,slow=37						
TAOE	**Nuku Hiva Isla**	**34.91**	**82**	*eLR*	LR	04 53 30.9	
	850nm,27.9s						
CTA	**Charters Tower**	**36.81**	**258**	LR	LR	04 59 37.6	
	comp=Z,397nm,18.6s,baz=74,slow=35						
PMG	**Port Moresby**	**37.34**	**276**	*eP*	**P**	**04 45 06.7**	**+0.7**
	55nm,1.1s						
RKT	**Rikitea**	**38.33**	**107**	*eLR*	LR	04 55 13.8	
	869nm,27.8s						
RKT	**Rikitea**	**38.33**	**107**	*eT*	T	05 24 54.4	
	3.6nm,0.2s						
H11N3	**WAKE ISLAND Hy**	**39.91**	**333**	T	T	05 28 40.2	
	baz=151,slow=76,SNR=7.1						
H11N1	**WAKE ISLAND Hy**	**39.91**	**333**	T	T	05 28 37.9	
	baz=151,slow=76,SNR=15						
H11N2	**WAKE ISLAND Hy**	**39.92**	**333**	T	T	05 28 38.9	
	baz=151,slow=76,SNR=8.7						
STKA	**Stephens Creek**	**42.13**	**240**	LR	LR	05 01 42.1	
	comp=Z,185nm,18.6s,baz=47,slow=34						
WRA	**Warramunga Arr**	**48.01**	**258**	P	**P**	**04 46 32.9**	**+0.2**
	0.9nm,1.0s,baz=96,slow=10,SNR=2.7						
WRA				LR	LR	05 05 45.2	
	comp=Z,236nm,19.7s,baz=100,slow=35						
ASAR	**Alice Springs**	**48.24**	**253**	P	**P**	**04 46 34.9**	**+0.5**
	9.9nm,0.9s,baz=85,slow=8.5,SNR=57						
ASAR				LR	LR	05 06 17.8	
	comp=Z,527nm,18.2s,baz=94,slow=35						
SOEI	**Soe**	**59.22**	**268**	*eP*	**P**	**04 47 55.1**	**0.0**
MBWA	**Marble Bar**	**61.50**	**254**	*eP*	**P**	**04 48 08.1**	**-2.4**
	16nm,0.6s						
VNDA	**Vanda**	**62.32**	**186**	P	**P**	**04 48 16.4**	**+1.4**
	2.5nm,1.0s,baz=29,slow=6.4,SNR=6.1						
VNDA				LR	LR	05 08 32.1	
	comp=Z,25nm,21.6s,baz=358,slow=30						
TGY	**Tagaytay City**	**70.00**	**292**	LR	LR	05 15 52.8	
	comp=Z,205nm,20.7s,baz=112,slow=32						
PETK	**Petropavlovsk-**	**72.99**	**343**	P	**P**	**04 49 22.6**	**0.0**
	1.5nm,0.6s,baz=161,slow=14,SNR=2.4						
PETK				LR	LR	05 18 41.3	
	comp=Z,55nm,19.5s,baz=161,slow=34						
QSPA	**South Pole Qui**	**73.75**	**180**	*eP*	**P**	**04 49 27.6**	**+0.4**
BBB	**Bella Bella**	**79.44**	**27**	LR	LR	05 18 30.9	
	comp=Z,56nm,19.0s,baz=253,slow=31						
MCK	**McKinley**	**82.33**	**11**	*eP*	**P**	**04 50 14.8**	**+0.2**
	3.4nm,0.7s						
NEW	**Newport**	**82.40**	**35**	LR	LR	05 19 33.0	
	comp=Z,61nm,19.8s,baz=273,slow=30						
TXAR	**Lajitas Array**	**82.51**	**57**	P	**P**	**04 50 15.5**	**-0.9**
	0.5nm,1.0s,baz=216,slow=7.6,SNR=4.8						
TXAR				LR	LR	05 18 23.2	
	comp=Z,106nm,21.9s,baz=0.0,slow=30						
PV01	**Paradox Valley**	**82.56**	**47**	*eP*	**P**	**04 50 14.7**	**-2.0**
ANMO	**Albuquerque**	**82.67**	**50**	*eP*	**P**	**04 50 15.9**	**-1.3**
	1.9nm,1.0s						
DLBC	**Dease Lake**	**83.16**	**22**	LR	LR	05 18 42.3	
	comp=Z,53nm,21.1s,baz=209,slow=30						
DOT	**Dot Lake**	**83.26**	**13**	*eP*	**P**	**04 50 18.9**	**-0.5**
	5.4nm,0.9s						
COLA	**College**	**83.56**	**11**	*eP*	**P**	**04 50 20.5**	**-0.3**
	7.9nm,1.1s						
ILAR	**Eielson Array**	**83.66**	**12**	P	**P**	**04 50 21.9**	**+0.6**
	4.6nm,1.2s,baz=227,slow=4.5,SNR=9.0						
ILAR				LR	LR	05 21 19.9	
	comp=Z,24nm,20.9s,baz=174,slow=31						
BW06	**Boulder Array**	**84.06**	**42**	*eP*	**P**	**04 50 22.7**	**-1.6**
	2.5nm,1.1s						
PDAR	**Pinedale Array**	**84.06**	**42**	P	**P**	**04 50 22.3**	**-1.9**
	0.4nm,0.6s,baz=245,slow=5.6,SNR=4.2						
PDAR				LR	LR	05 22 32.3	
	comp=Z,94nm,18.7s,baz=246,slow=32						
DAWY	**Dawson**	**84.71**	**15**	*eP*	**P**	**04 50 25.9**	**-0.9**
	2.5nm,1.0s						
EGAK	**Eagle**	**84.89**	**14**	*eP*	**P**	**04 50 28.1**	**+0.6**
	9.1nm,1.5s						
MAW	**Mawson**	**86.40**	**199**	P	**P**	**04 50 34.1**	**-1.1**
	4.1nm,1.0s,baz=112,slow=3.8,SNR=6.2						
MAW				LR	LR	05 27 08.7	
	comp=Z,34nm,18.2s,baz=60,slow=34						
PSI	**Prapat**	**86.88**	**274**	LR	LR	05 31 16.6	
	comp=Z,68nm,18.3s,baz=126,slow=37						
PLCA	**Paso Flores**	**90.15**	**133**	LR	LR	05 22 59.7	
	comp=Z,88nm,21.6s,baz=325,slow=30						
CMAR	**Chiang Mai Arr**	**91.31**	**289**	LR	LR	05 28 11.8	
	comp=Z,77nm,21.1s,baz=124,slow=33						
ULM	**Lac du Bonnet**	**95.69**	**39**	LR	LR	05 30 25.8	
	comp=Z,98nm,18.2s,baz=306,slow=33						
AKASG	**Malin Array Be**	**140.49**	**336**	PKP	**PKPdf**	**04 57 20.7**	**-1.8**
	0.2nm,0.3s,baz=46,slow=1.8,SNR=4.2						
UPC	**Upice**	**144.71**	**348**	*e*PKP	**PKPdf**	**04 57 33.8**	**+3.8**
DPC	**Dobruska-Polom**	**144.80**	**347**	*e*PKP	**PKPdf**	**04 57 31.9**	**+1.7**
DPC				*ep*PKP	**PKiKP**	**04 57 34.1**	**+0.1**
OKC	**Ostrava-Krasne**	**144.86**	**345**	*e*PKP	**PKPdf**	**04 57 34.2**	**+3.9**
KRLC	**Kraliky**	**144.96**	**347**	*e*PKP	**PKPdf**	**04 57 34.6**	**+4.1**
PVCC	**Panska Ves**	**144.97**	**349**	*e*PKP	**PKPdf**	**04 57 34.7**	**+4.3**
MORC	**Moravsky Berou**	**145.06**	**346**	↑*i*P	**PKPdf**	**04 57 34.5**	**+3.8**
CFR	**Carcaliu**	**145.20**	**331**	↑*i*P	**PKPdf**	**04 57 36.0**	**+5.0**
PLOR	**Plostina**	**145.36**	**333**	↓*i*P	**PKPbc**	**04 57 27.7**	**-3.4**
PRU	**Pruhonice**	**145.50**	**349**	*e*PKP	**PKPab**	**04 57 33.9**	**+2.3**
PRU				*ep*PKP	**PKiKP**	**04 57 36.1**	**+0.8**
GOPC	**GO Pecny, Ondr**	**145.52**	**349**	*e*PKP	**PKPab**	**04 57 36.2**	**+4.5**
NKC	**Novy Kostel**	**145.60**	**351**	*e*PKP	**PKPab**	**04 57 35.9**	**+3.9**
BRTR	**Keskin Array B**	**145.76**	**319**	PKPbc	**PKPab**	**04 57 33.0**	**-0.1**
	1.6nm,1.1s,baz=304,slow=0.5,SNR=3.4						
MLR	**Muntele Rosu**	**145.95**	**333**	↑*i*P	**PKPab**	**04 57 34.3**	**+0.7**
DRGR		**146.17**	**338**	↓*i*P	**PKPdf**	**04 57 27.5**	**-5.2**
VOIR		**146.37**	**334**	↓*i*P	**PKPab**	**04 57 35.4**	**+0.3**
KHC	**Kasperske Hory**	**146.49**	**350**	*e*PKP	**PKPab**	**04 57 36.0**	**+0.6**
KHC				AMS	AMS	06 06 40.0	
	comp=Z,100nm,16.0s						
KHC	**Kasperske Hory**	**146.49**	**350**	*e*PKPbc	**PKPab**	**04 57 35.3**	**-0.1**
ARR	**Arges**	**146.60**	**334**	↑*i*P	**PKPab**	**04 57 37.1**	**+1.1**
GERES	**GERESS Array B**	**146.75**	**349**	PKPbc	**PKPab**	**04 57 36.5**	**0.0**
	0.9nm,0.9s,baz=50,slow=3.1,SNR=4.6						
BZS	**Buzias**	**147.57**	**338**	↑*i*P	**PKPab**	**04 57 39.8**	**+0.1**
CSS	**Mathiatis**	**148.48**	**311**	*e*PKPbc	**PKPbc**	**04 57 39.3**	**-1.1**
TORD	**Torodi Ar. Bea**	**175.62**	**135**	PKP	**PKPdf**	**04 58 05.3**	**+1.0**
	1.7nm,1.1s,baz=202,slow=1.6,SNR=4.4						

NNC ***16*** *04:40:13.3±7.8, 43°.64N×83°.82E, h0km, mb3.1, mpv2.8, Error ellipse: s-maj=66.1km s-min=23.6km az=122.0*
SOME ***16*** *04:40:16.4, 43°.68N×84°.00E, h30km*
ISC 16 04:40:14.9±2.9, 43°.74N±0°.09×83°.7E±0°.1, h10km, n11, σ1§48/19, 5C-1D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KTMS	**Ketmen**	**2.44**	**264**	*eP*	**Pg**	**04 41 01.2**	**-0.4**
	11nm,0.5s						
KTMS				*eS*	**Sg**	**04 41 33.8**	**+0.4**
	49nm,0.5s						
SHLS	**Shalkode**	**2.83**	**259**	*eP*	**Pg**	**04 41 08.3**	**-0.9**
	11nm,0.3s						
SHLS				*eS*	**Sg**	**04 41 45.7**	**-0.1**
	53nm,0.5s						
DJR	**Jarkent**	**2.87**	**283**	*eP*	**Pg**	**04 41 09.2**	**-0.7**
	6.0nm,0.4s						
DJR				*eS*	**Sg**	**04 41 47.4**	**+0.3**
	22nm,0.6s						
PDGK	**Podgornoye**	**3.08**	**264**	↓*Pg*	**Pb**	**04 41 11.6**	**+1.8**
	2.2nm,0.5s						
PDGK				↑*Lg*	Lg	04 41 53.3	
	13nm,0.5s						
MK31	**Makanchi Array**	**3.21**	**343**	↑*Pg*	**Pg**	**04 41 16.2**	**-0.1**
	0.4nm,0.3s,baz=154,slow=15,SNR=5.7						
MK31				↑*Lg*	Lg	04 41 59.8	
	5.0nm,0.5s,baz=158,slow=28,SNR=11						
MAKZ	**Makanchi**	**3.29**	**339**	↑*Pg*	**Pb**	**04 41 13.1**	**-0.3**
	2.0nm,0.5s						
MAKZ				↑*Lg*	Lg	04 42 02.6	
	4.9nm,0.4s						
UZB	**Uzynbulak**	**3.45**	**262**	*eP*	**Pg**	**04 41 19.4**	**-1.6**
	1.4nm,0.3s						
UZB				*eS*	**Sg**	**04 42 04.6**	**-1.1**
	13nm,0.4s						
KAPS	**Kapalarasan**	**3.46**	**298**	*eP*	**Pg**	**04 41 21.2**	**0.0**
	3.1nm,0.6s						
KAPS				*eS*	**Sg**	**04 42 08.1**	**+2.1**
	10nm,0.5s						
KPKS	**Kokpek**	**3.65**	**267**	*eP*	**Pg**	**04 41 23.7**	**-1.0**
	4.9nm,0.4s						
KPKS				*eS*	**Sg**	**04 42 11.7**	**-0.2**
	26nm,0.6s						
ZHN	**Zhinishke**	**3.87**	**263**	*eP*	**Pg**	**04 41 29.5**	**+0.6**
	2.7nm,0.2s						
ZHN				*eS*	**Sg**	**04 42 21.8**	**+2.8**
	15nm,0.2s						
ARXS	**Arharly**	**4.26**	**278**	*eP*	**Pg**	**04 41 33.7**	**-2.7**
	5.7nm,0.6s						
ARXS				*eS*	**Sg**	**04 42 29.1**	**-2.4**
	13nm,0.5s						

MEX 16 04:46:03.3±0.3, 16°.31N×98°.05W, h8km±3km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.11**	**316**	*i*P	Pg	04 46 05.6	-0.3
PNIG				*eS*	Sg	04 46 07.2	-0.5
TLIG	**Tlapa**	**1.34**	**338**	*i*P	Pn	04 46 24.6	-3.8
TLIG				*i*S	Sb	04 46 41.7	-4.5
VHO	**Vista Hermosa**	**1.47**	**59**	*i*P	Pn	04 46 26.8	-3.5
VHO				*i*S	Sn	04 46 44.8	-5.0
HUIG	**Huatulco**	**1.94**	**106**	*i*P	Pn	04 46 33.0	-3.6
HUIG				*i*S	Sn	04 46 56.9	-4.3

IDC ***16*** *04:50:17.1±1.5, 1°.37S×120°.69E, h0km, mb3.2/3, mb1 3.4/4, mb1mx3.3/39, mbtmp3.3/4, ML3.3/1, Error ellipse: s-maj=52.7km s-min=22.8km az=71.0*
ISCJB ***16*** *04:50:19.2±1.1, 1°.33S±0°.08×120°.20E±0°.09, h23km, mb3.2/3, Error ellipse: s-maj=15.1km s-min=7.9km az=37.5*
DJA ***16*** *04:50:19.2±0.6, 1°.3S±8°×12°.0E±°, h10km, M3.9/4, MLv3.9/4*
ISC 16 04:50:20.8±1.2, 1°.40S±0°.08×120°.35E±0°.10, h23km, n7, σ1§85/9, mb3.2/3, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TTSI	**Tana Toraja**	**1.72**	**198**	P	**Pn**	**04 50 49.0**	**-0.4**
LUWI	**Luwuk**	**2.45**	**82**	P	**Pn**	**04 51 01.3**	**+2.0**
LUWI				S	**Sb**	**04 51 32.4**	**-1.4**
MRSI	**Marisa**	**2.45**	**41**	P	**Pn**	**04 50 58.9**	**-0.4**
KAPI	**Kappang**	**3.64**	**189**	Pn	**Pn**	**04 51 15.7**	**-0.1**
	2.1nm,0.3s,baz=328,slow=5.1,SNR=6.7						
KAPI				Sn	**Sn**	**04 52 00.4**	**+2.3**
	2.3nm,0.3s,baz=195,slow=20,SNR=3.6						
WRA	**Warramunga Arr**	**22.96**	**144**	P	**P**	**04 55 21.0**	**-2.8**
	0.7nm,0.8s,baz=324,slow=12,SNR=2.8						
ASAR	**Alice Springs**	**25.74**	**150**	P	**P**	**04 55 49.2**	**-0.6**
	0.3nm,0.6s,baz=332,slow=10.0,SNR=4.4						
MKAR	**Makanchi Array**	**58.45**	**330**	P	**P**	**05 00 15.8**	**+0.9**
	0.2nm,0.4s,baz=123,slow=8.6,SNR=2.5						

MEX 16 05:05:24.6±0.3, 16°.12N×94°.03W, h45km±39km, MD3.6, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.83**	**85**	*i*P	Pn	05 05 52.2	-1.5
CCIG				*i*S	Sn	05 06 13.8	-2.0
HUIG	**Huatulco**	**2.03**	**260**	*i*P	Pn	05 05 55.3	-1.0
HUIG				*i*S	Sn	05 06 18.4	-2.0
VHO	**Vista Hermosa**	**2.76**	**291**	*i*P	Pn	05 06 05.7	-0.9
VHO				*i*S	Sn	05 06 36.7	-2.1

IDC 16 05:11:24.2±1.5, 4°.96N×127°.31E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/41, mbtmp3.5/4, Error ellipse: s-maj=114.7km s-min=23.4km az=76.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**22.98**	**184**	P	P	05 16 31.1	+0.6
	1.0nm,1.0s,baz=5.7,slow=10,SNR=3.6						
WRA	**Warramunga Arr**	**25.70**	**165**	P	P	05 16 55.7	-0.5
	0.3nm,0.3s,baz=344,slow=10,SNR=17						
ASAR	**Alice Springs**	**29.17**	**168**	P	P	05 17 27.6	+0.2
	0.5nm,0.4s,baz=354,slow=7.9,SNR=11						
SONM	**Songino Array**	**46.33**	**341**	P	P	05 19 51.9	-0.1
	0.3nm,0.6s,baz=154,slow=11,SNR=3.3						

NIED ***16*** *05:17:00, 37°.10N×141°.20E, h53km, Mw4.3 Best double couple: Mo3.37000×1015 NP1:φ=214.00000°, δ3.00000°, λ-90.00000°. NP2:φ=34.00000°, δ87.00000°, λ-90.00000°.*
ISCJB ***16*** *05:17:39.7±0.4, 37°.03N±0°.03×141°.20E±0°.04, h57km±3km, mb4.5/68, MS3.5/6, Error ellipse: s-maj=5.8km s-min=4.0km az=23.6*
BJI ***16*** *05:17:39.0, 36°.80N×141°.10E, h57km, mb4.7/41, mB4.8/23, Ms4.3/12, Ms7 3.9/13*
MOS ***16*** *05:17:40.6±1.2, 37°.05N×141°.18E, h67km, mb4.6/36, Error ellipse: s-maj=9.2km s-min=6.2km az=113.3*
JMA ***16*** *05:17:40.2±0.1, 37°.07N×141°.20E, h52km±1km, M4.3*
JMA Felt III J1.
IDC ***16*** *05:17:40.7±0.6, 37°.08N×141°.09E, h47km±5km, mb3.9/21, mb1 4.1/24, mb1mx4.0/45, mbtmp4.2/24, MS3.4/6, Ms1 3.5/6, ms1mx3.0/46, Error ellipse: s-maj=15.4km s-min=11.0km az=100.0*
NEIC ***16*** *05:17:42.2±0.6, 37°.07N×141°.12E, h61km±5km, mb4.7/25, Error ellipse: s-maj=6.5km s-min=4.5km az=123.0*
NEIC Felt at Yokosuka. Recorded [3 JMA] in Fukushima.
ISC 16 05:17:40.8±0.5, 37°.09N±0°.04×141°.20E±0°.05, h52km±4km, h52km:pP-P, n149, σ1§47/169, mb4.5/68, MS3.5/6, 4C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.32**	**272**	P	**Pn**	**05 17 49.6**	**-0.8**
ONAJ				S	**Sn**	**05 17 56.1**	**-1.1**
JFK	**Kawauchi**	**0.38**	**317**	P	**Pn**	**05 17 50.2**	**-0.7**
JFK				S	**Sn**	**05 17 57.1**	**-1.1**
JHO	**Hitachi**	**0.69**	**227**	P	**Pn**	**05 17 53.4**	**-1.2**
JHO				S	**Sn**	**05 18 02.8**	**-1.7**
JFT	**Otama**	**0.81**	**302**	P	**Pn**	**05 17 56.4**	**+0.3**
JFT				S	**Sn**	**05 18 07.6**	**+0.4**
JMM	**Marumori**	**0.84**	**338**	P	**Pn**	**05 17 56.0**	**-0.4**
JMM				S	**Sn**	**05 18 07.6**	**-0.3**
JFY	**Yanaizu**	**1.23**	**285**	P	**Pn**	**05 18 01.7**	**0.0**
JFY				*eS*	**Sn**	**05 18 17.7**	**+0.4**
JOU	**Okura**	**1.34**	**342**	P	**Pn**	**05 18 03.3**	**+0.1**
JOU				S	**Sn**	**05 18 20.7**	**+0.7**
JIO	**Ouri**	**1.37**	**5**	P	**Pn**	**05 18 02.9**	**-0.6**
JYS	**Shirataka**	**1.44**	**322**	P	**Pn**	**05 18 05.1**	**+0.5**
JYS				S	**Sn**	**05 18 23.7**	**+1.3**
JAG	**Ashikaga**	**1.55**	**245**	P	**Pn**	**05 18 05.5**	**-0.5**
JAG				*eS*	**Sn**	**05 18 24.6**	**-0.4**
JKT	**Katashina**	**1.59**	**259**	P	**Pn**	**05 18 07.4**	**+0.7**
JKT				*eS*	**Sn**	**05 18 26.7**	**+0.5**
MJAR	**Matsushiro Arr**	**2.46**	**258**	P	**Pn**	**05 18 18.4**	**-0.1**
	28nm,0.3s,baz=82,slow=16,SNR=81						
MJAR				S	**Sn**	**05 18 51.5**	**+4.1**
	59nm,0.3s,baz=89,slow=27,SNR=9.0						
MAJO	**Matsushiro**	**2.46**	**258**	*d*P	**Pn**	**05 18 19.5**	**+1.1**
MAJO	**Matsushiro**	**2.46**	**258**	*e*Pn	**Pn**	**05 18 19.5**	**+1.1**
MAT	**Matsushiro**	**2.46**	**258**	P	**Pn**	**05 18 19.2**	**+0.7**
MAT				S	**Sn**	**05 18 50.2**	**+2.9**
MJB9	**Matsu-Tunnel**	**2.46**	**258**	*e*Pn	**Pn**	**05 18 19.9**	**+1.4**
INU	**Inuyama**	**3.80**	**244**	*e*Pn	**Pn**	**05 18 38.3**	**+1.5**
JHJ	**Hachijo jima 2**	**4.13**	**197**	P	**Pn**	**05 18 40.9**	**-0.4**
	100nm,0.3s,baz=324,slow=20,SNR=25						
JHJ				S	**Sn**	**05 19 25.5**	**-2.8**
	133nm,0.3s,baz=86,slow=23,SNR=8.5						
JHJ2	**Mitsune**	**4.13**	**196**	*e*Pn	**Pn**	**05 18 40.9**	**-0.4**
ERM	**Erimo**	**5.15**	**16**	*de*P	**Pn**	**05 18 56.6**	**+1.4**
ERM				pmax	pmax		
	comp=Z,31nm,1.2s						
ERM	**Erimo**	**5.15**	**16**	*e*Pn	**Pn**	**05 18 55.4**	**+0.2**
ASAJ	**Asahikawa**	**7.10**	**8**	P	**Pn**	**05 19 21.4**	**-0.6**
	baz=198,slow=0.2						
ASAJ				S	**Sn**	**05 20 41.2**	**-0.1**
	baz=280,slow=0.8						
JNU	**Nakatsue**	**9.33**	**248**	P	**Pn**	**05 19 55.0**	**+2.3**
	comp=Z,0.7nm,0.3s,baz=2.2,slow=13,SNR=3.9						
JNU	**Nakatsue**	**9.33**	**248**	*e*Pn	**Pn**	**05 19 54.6**	**+1.9**
MSHR	**Mys Shultsa**	**9.47**	**308**	*ce*P	**Pn**	**05 19 57.8**

H11N3	**WAKE ISLAND Hy**	**28.34**	**121**	T		T	05 53 26.6	
	baz=313,slow=75,SNR=618							
H11S1	**WAKE ISLAND Hy**	**29.03**	**123**	T		T	05 54 14.8	
	baz=314,slow=75,SNR=240							
H11S3	**WAKE ISLAND Hy**	**29.04**	**123**	T		T	05 54 26.8	
	baz=314,slow=75,SNR=242							
H11S2	**WAKE ISLAND Hy**	**29.05**	**123**	T		T	05 54 15.9	
	baz=314,slow=75,SNR=176							
LZH	**Lanzhou**	**29.89**	**280**	*e*P		**P**	**05 23 42.9**	**-0.7**
LZH				pP		pP	05 23 56.1	-0.9
LZH				sP		sP	05 24 03.0	-0.2
LZH				pmax		pmax		
	comp=Z,25nm,1.2s							
GYA	**Guiyang**	**31.06**	**260**	*e*P		**P**	**05 23 53.8**	**-0.2**
GYA				pmax		pmax		
	comp=Z,10.0nm,0.8s							
CD2	**Chengdu**	**31.50**	**270**	*e*P		**P**	**05 23 56.0**	**-1.8**
CD2				pP		pP	05 24 12.0	+0.9
CD2				sP		sP	05 24 20.1	+2.8
CD2				S		**S**	**05 28 59.0**	**-3.4**
CD2				sS		sS	05 29 27.0	+2.0
CD2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
CD2				pmax		pmax		
	comp=Z,120nm,5.2s							
GTA	**Gaotai**	**32.38**	**287**	*e*P		**P**	**05 24 04.3**	**-1.2**
GTA				pmax		pmax		
	comp=Z,2.0nm,0.9s							
BILL	**Bilibino**	**34.02**	**17**	*i* P		**P**	**05 24 18.9**	**-0.4**
BILL				pmax		pmax		
	comp=Z,4.0nm,1.1s							
KMI	**Kunming**	**34.80**	**261**	P		**P**	**05 24 27.6**	**+0.8**
KMI				pmax		pmax		
	comp=Z,17nm,0.6s							
KMI				pmax		pmax		
	comp=Z,72nm,3.9s							
TIXI	**Tiksi**	**35.21**	**353**	*e*P		**P**	**05 24 29.3**	**-0.2**
TIXI				pmax		pmax		
	comp=Z,9.0nm,0.9s							
WMQ	**Urumqi**	**40.66**	**297**	P		**P**	**05 25 16.9**	**+1.0**
WMQ				pP		pP	05 25 32.0	+2.4
WMQ				pmax		pmax		
	comp=Z,15nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,140nm,5.4s							
WMQ				LR		LR		
	comp=Z,190nm,21.5s							
CMAR	**Chiang Mai Arr**	**41.34**	**255**	P		**P**	**05 25 22.6**	**+0.9**
	comp=Z,0.7nm,0.3s,baz=40,slow=9.3,SNR=4.0							
CMAR				LR		LR	05 43 14.8	
	comp=Z,39nm,19.7s,baz=5.0,slow=37							
ZAA0	**Zalesovo Array**	**41.75**	**312**	*e*P		**P**	**05 25 24.8**	**+0.2**
ZALV	**Zalesovo Beam**	**41.75**	**312**	P		**P**	**05 25 24.7**	**+0.1**
	comp=Z,8.7nm,0.5s,baz=92,slow=7.0,SNR=42							
NVS	**Novosibirsk**	**42.68**	**314**	*e*P		**P**	**05 25 31.7**	**-0.4**
MK01	**Makanchi Array**	**43.94**	**302**	*e*P		**P**	**05 25 43.1**	**+0.6**
MK31	**Makanchi Array**	**43.94**	**302**	*i* P		**P**	**05 25 42.4**	**0.0**
MK31				pmax		pmax		
	comp=Z,3.0nm,0.7s							
MK31	**Makanchi Array**	**43.94**	**302**	*e*P		**P**	**05 25 42.5**	**0.0**
MKAR	**Makanchi Array**	**43.94**	**302**	P		**P**	**05 25 42.3**	**-0.2**
	comp=Z,2.4nm,0.6s,baz=89,slow=9.8,SNR=24							
MKAR	**Makanchi Array**	**43.94**	**302**	*e*P		**P**	**05 25 42.4**	**-0.1**
MAKZ	**Makanchi**	**44.15**	**302**	*e*P		**P**	**05 25 44.2**	**+0.1**
MAKZ				pmax		pmax		
	comp=Z,6.0nm,1.1s							
MAKZ	**Makanchi**	**44.15**	**302**	*e*P		**P**	**05 25 44.2**	**+0.1**
	comp=Z,6.3nm,1.1s							
TT01	**Tatalina**	**45.47**	**35**	*e*P		**P**	**05 25 56.2**	**+1.8**
SVW2	**Sparrevohn**	**45.58**	**37**	*e*P		**P**	**05 25 56.7**	**+1.4**
	comp=Z,5.1nm,1.1s							
KDAK	**Kodiak Island**	**47.17**	**42**	*i* P		**P**	**05 26 09.0**	**+1.3**
KDAK	**Kodiak Island**	**47.17**	**42**	*e*P		**P**	**05 26 08.0**	**+0.3**
	comp=Z,82nm,1.9s							
CAST	**Castle Rocks**	**47.28**	**34**	*e*P		**P**	**05 26 10.6**	**+2.0**
	comp=Z,3.0nm,1.1s							
BPAW	**Bear Paw Mtn.**	**47.77**	**33**	*e*P		**P**	**05 26 14.2**	**+1.7**
	comp=Z,14nm,2.0s							
KTH	**Kantishna Hill**	**47.80**	**34**	*e*P		**P**	**05 26 14.1**	**+1.5**
	comp=Z,5.3nm,1.1s							
MLY	**Manley**	**47.89**	**32**	*e*P		**P**	**05 26 15.6**	**+2.3**
	comp=Z,10.0nm,1.7s							
TRF	**Thorofare Moun**	**48.08**	**34**	*e*P		**P**	**05 26 14.9**	**-0.1**
	comp=Z,17nm,1.8s							
WRH	**Wood River Hil**	**49.03**	**33**	*e*P		**P**	**05 26 23.7**	**+1.7**
	comp=Z,4.7nm,1.3s							
DHY	**Denali Highway**	**49.41**	**35**	*e*P		**P**	**05 26 27.4**	**+2.3**
	comp=Z,12nm,1.8s							
SCM	**Sheep Creek Mo**	**49.52**	**36**	*e*P		**P**	**05 26 27.2**	**+1.3**
SCM				pmax		pmax		
	comp=Z,23nm,1.6s							
SCM	**Sheep Creek Mo**	**49.52**	**36**	*e*P		**P**	**05 26 27.2**	**+1.3**
	comp=Z,23nm,1.6s							
IL1	**Eielson Array**	**49.54**	**32**	*e*P		**P**	**05 26 26.8**	**+0.8**
ILAR	**Eielson Array**	**49.54**	**32**	P		**P**	**05 26 26.8**	**+0.8**
	comp=Z,1.1nm,0.7s,baz=267,slow=6.6,SNR=21							
ILAR				pP		**pP**	**05 26 40.0**	**+0.1**
	comp=Z,1.1nm,0.6s,baz=262,slow=5.8,SNR=8.2							
ILAR	**Eielson Array**	**49.54**	**32**	P		**P**	**05 26 26.8**	**+0.8**
ILAR				*PP		**pP**	**05 26 40.1**	**+0.1**
ILAR				pmax		pmax		
	comp=Z,1.0nm,0.7s							
ILAR				pmax		pmax		
	comp=Z,1.0nm,0.6s							
ILB	**Eielson Array**	**49.54**	**32**	*e*P		**P**	**05 26 26.7**	**+0.8**
VOSK	**Vostochnaya**	**50.12**	**312**	*e*P		**P**	**05 26 30.5**	**0.0**
VOSK				pmax		pmax		
	comp=Z,6.0nm,0.8s							
VOSK	**Vostochnaya**	**50.12**	**312**	*e*P		**P**	**05 26 30.5**	**0.0**
	comp=Z,6.3nm,0.8s							
KSH	**Kashi**	**50.23**	**294**	*e*P		**P**	**05 26 35.3**	**+3.6**
KSH				*e*pP		sP	05 26 52.1	+0.4
KSH				*e*sP		pP	05 26 58.8	+13
KSH				*e*PP		**PP**	**05 28 31.8**	**+4.7**
KSH				*e*ScP		**ScP**	**05 31 43.4**	**+1.9**
KSH				S		**S**	**05 33 41.3**	**+1.1**
KSH				SS		**SS**	**05 37 12.5**	**-1.3**
KSH				pmax		pmax		
	comp=Z,39nm,4.4s							
KSH				LR		LR		
	comp=Z,110nm,6.4s							
KSH				LR		LR		
	comp=Z,89nm,8.4s							
KSH				LR		LR		
	comp=Z,110nm,6.8s							
OTUK	**Ortayu**	**50.25**	**306**	P		**P**	**05 26 30.9**	**-0.7**
OTUK				pmax		pmax		
	comp=Z,4.0nm,0.6s							
AAK	**Ala-Archa**	**50.31**	**298**	*e*P		**P**	**05 26 34.3**	**+2.0**
AAK				pmax		pmax		
	comp=Z,4.0nm,0.9s							
BVA0	**Borovoye Array**	**50.41**	**312**	P		**P**	**05 26 32.0**	**-0.7**
BVA0				pmax		pmax		
	comp=Z,4.0nm,0.9s							
BRVK	**Borovoye**	**50.46**	**312**	*ce*P		**P**	**05 26 33.3**	**+0.2**
BRVK				pmax		pmax		
	comp=Z,19nm,1.2s							
BRVK	**Borovoye**	**50.46**	**312**	*e*P		**P**	**05 26 32.7**	**-0.4**
	comp=Z,4.7nm,0.8s							
MTN	**Manton Dam**	**50.56**	**193**	*e*P		**P**	**05 26 34.5**	**+0.4**
	comp=Z,43nm,1.5s							
DOT	**Dot Lake**	**50.85**	**34**	*e*P		**P**	**05 26 37.5**	**+1.6**
	comp=Z,7.5nm,1.0s							
ZRNK	**Zerenda**	**51.24**	**312**	*e*P		**P**	**05 26 39.0**	**0.0**
ZRNK				pmax		pmax		
	comp=Z,5.0nm,0.8s							
ZRNK	**Zerenda**	**51.24**	**312**	*e*P		**P**	**05 26 39.0**	**0.0**
	comp=Z,5.4nm,0.8s							
MNAS	**Manas**	**51.76**	**299**	P		**P**	**05 26 42.8**	**-0.3**
MNAS				pmax		pmax		
	comp=Z,4.0nm,0.7s							
EGAK	**Eagle**	**51.98**	**32**	*e*P		**P**	**05 26 45.8**	**+1.5**
	comp=Z,12nm,1.7s							
KK31	**Karatay Array**	**52.95**	**300**	*i* P		**P**	**05 26 50.7**	**-1.1**
KK31				pmax		pmax		
	comp=Z,2.0nm,0.6s							
KKAR	**Karatay Array**	**52.95**	**300**	*e*P		**P**	**05 26 52.4**	**+0.6**
KKAR	**Karatay Array**	**52.95**	**300**	*e*P		**P**	**05 26 52.4**	**+0.6**
SVE	**Sverdlovsk**	**54.99**	**319**	*i* P		**P**	**05 27 07.2**	**+0.8**
SVE				pmax		pmax		
	comp=Z,15nm,0.8s							
ARU	**Arti**	**56.20**	**318**	*d i*P		**P**	**05 27 14.9**	**-0.2**
ARU				*PP		**pP**	**05 27 32.4**	**+3.0**
ARU							05 28 13.0	
ARU							05 29 18.1	
ARU				S		**S**	**05 35 01.0**	**+0.4**
ARU				SS		**SS**	**05 38 41.1**	**-6.0**
ARU				pmax		pmax		
	comp=Z,14nm,1.0s							
ARU	**Arti**	**56.20**	**318**	*e*P		**P**	**05 27 15.0**	**-0.1**
	comp=Z,12nm,0.9s							
FITZ	**Fitzroy Crossi**	**56.82**	**198**	P		**P**	**05 27 20.1**	**+0.3**
	comp=Z,1.5nm,0.6s,baz=9.3,slow=4.4,SNR=5.5							
FITZ	**Fitzroy Crossi**	**56.82**	**198**	*e*P		**P**	**05 27 20.7**	**+0.8**
	comp=Z,28nm,1.9s							
CTAO	**Charters Tower**	**57.07**	**174**	*e*P		**P**	**05 27 21.5**	**-0.1**
CTAO				pmax		pmax		
	comp=Z,53nm,1.7s							
CTAO	**Charters Tower**	**57.07**	**174**	*e*P		**P**	**05 27 21.5**	**-0.1**
	comp=Z,53nm,1.7s							
WRAB	**Tennant Creek**	**57.08**	**188**	*e*P		**P**	**05 27 21.6**	**-0.1**
WRAB				pmax		pmax		
	comp=Z,32nm,1.7s							
WRAB	**Tennant Creek**	**57.08**	**188**	*e*P		**P**	**05 27 21.6**	**-0.1**
	comp=Z,32nm,1.7s							
WB2	**Warramunga Arr**	**57.09**	**188**	*e*P		**P**	**05 27 21.1**	**-0.6**
	comp=Z,40nm,1.9s							
WRA	**Warramunga Arr**	**57.09**	**188**	P		**P**	**05 27 20.9**	**-0.9**
	comp=Z,2.5nm,0.6s,baz=5.8,slow=7.2,SNR=42							
KBL	**Kabul**	**57.23**	**291**	P		**P**	**05 27 20.9**	**-2.2**
KBL				pmax		pmax		
	comp=Z,8.0nm,1.1s							
AB31	**Akbulak array**	**57.77**	**310**	*i* P		**P**	**05 27 25.7**	**-0.6**
AB31				pmax		pmax		
	comp=Z,3.0nm,0.5s							
ABKAR	**Akbulak array**	**57.77**	**310**	*e*P		**P**	**05 27 26.0**	**-0.3**
ASAR	**Alice Springs**	**60.82**	**188**	P		**P**	**05 27 47.2**	**-0.4**
	comp=Z,1.0nm,0.7s,baz=11,slow=6.6,SNR=10							
MBWA	**Marble Bar**	**61.37**	**203**	*e*P		**P**	**05 27 51.5**	**+0.2**
	comp=Z,53nm,1.8s							
KLMR	**Klimovskoe**	**63.62**	**328**	*e*P		**P**	**05 28 05.2**	**-0.7**
KLMR				*e*			05 28 40.5	
KLMR				pmax		pmax		
	comp=Z,6.0nm,1.3s							
GEYT	**Alibeck**	**63.66**	**299**	P		**P**	**05 28 07.0**	**+0.4**
	comp=Z,3.0nm,0.6s,baz=318,slow=4.2,SNR=4.7							
ARCES	**ARCESS Array B**	**63.88**	**339**	P		**P**	**05 28 07.3**	**-0.2**
	comp=Z,3.5nm,1.0s,baz=352,slow=5.5,SNR=4.1							
OBN	**Obninsk**	**67.95**	**323**	*e*P		**P**	**05 28 34.8**	**+1.0**
OBN				pmax		pmax		
	comp=Z,5.0nm,0.9s							
STKA	**Stephens Creek**	**68.61**	**180**	P		**P**	**05 28 38.2**	**+0.1**
	comp=Z,4.0nm,1.1s,baz=360,slow=6.1,SNR=3.3							
FORT	**Forrest**	**68.63**	**192**	*e*P		**P**	**05 28 39.3**	**+1.1**
	comp=Z,1µm,1.9s							
FIA1	**FINESS Array S**	**68.68**	**332**	*e*P		**P**	**05 28 39.1**	**+0.8**
FINES	**FINESS Array B**	**68.69**	**332**	P		**P**	**05 28 38.6**	**+0.2**
	comp=Z,2.4nm,0.8s,baz=29,slow=8.7,SNR=6.4							
FINES				pP		**pP**	**05 28 50.9**	**-2.1**
	comp=Z,3.6nm,0.7s,baz=51,slow=6.9,SNR=4.4							
KBZ	**Khabaz**	**70.73**	**311**	P		**P**	**05 28 51.8**	**+0.5**
	comp=Z,3.4nm,0.8s,baz=44,slow=2.7,SNR=4.5							
KIV	**Kislovodsk**	**70.74**	**311**	*e*P		**P**	**05 28 50.3**	**-1.1**
KIV				pmax		pmax		
	comp=Z,6.0nm,0.9s							
NB2	**NORSAR Subarra**	**74.07**	**337**	P		**P**	**05 29 10.8**	**-0.1**
	comp=Z,0.7nm,0.7s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**74.07**	**337**	P		**P**	**05 29 11.1**	**+0.2**
	comp=Z,1.5nm,0.8s,baz=40,slow=5.9,SNR=6.5							
NOA				pP		**PcP**	**05 29 23.7**	**-2.1**
	comp=Z,1.2nm,0.9s,baz=43,slow=5.5,SNR=3.6							
NOA				LR		LR	06 04 58.8	
	comp=Z,30nm,18.8s,baz=35,slow=38							
AKASG	**Malin Array Be**	**74.15**	**322**	P		**P**	**05 29 11.3**	**-0.2**
	comp=Z,0.7nm,0.4s,baz=46,slow=6.2,SNR=6.9							
KIEV	**Kiev**	**74.16**	**322**	*i* P		**P**	**05 29 10.1**	**-1.4**
KIEV				pmax		pmax		
	comp=Z,3.0nm,1.0s							
DLMT	**Dillon**	**74.42**	**45**	*e*P		**P**	**05 29 15.1**	**+1.7**
BW06	**Boulder Array**	**77.75**	**45**	*e*P		**P**	**05 29 33.2**	**+0.7**
PDAR	**Pinedale Array**	**77.75**	**45**	P		**P**	**05 29 33.4**	**+0.9**
	comp=Z,0.5nm,0.7s,baz=308,slow=4.9,SNR=4.5							
PDAR				pP		**pP**	**05 29 47.7**	**+0.4**
	comp=Z,1.0nm,0.6s,baz=278,slow=2.9,SNR=7.0							
BRTR	**Keskin Array B**	**78.69**	**311**	P		**P**	**05 29 38.4**	**+0.9**
	comp=Z,0.6nm,0.7s,baz=29,slow=3.3,SNR=3.0							
BR231	**Keskin MP Arra**	**79.13**	**312**	*e*P		**P**	**05 29 38.7**	**-1.2**
KHC	**Kasperske Hory**	**82.41**	**328**	*e*P		**P**	**05 29 57.4**	**+0.2**
KHC	**Kasperske Hory**	**82.41**	**328**	*e*P		**P**	**05 29 57.4**	**+0.2**
GERES	**GERESS Array B**	**82.57**	**328**	P		**P**	**05 29 58.0**	**-0.2**
	comp=Z,0.5nm,0.7s,baz=32,slow=9.3,SNR=3.6							
GERES	**GERESS Array B**	**82.57**	**328**	P		**P**	**05 29 58.0**	**-0.2**
GEA0	**GERESS Array S**	**82.58**	**328**	*e*P		**P**	**05 29 58.5**	**+0.4**
ANMO	**Albuquerque**	**84.68**	**50**	*ce*P		**P**	**05 30 10.5**	**+1.2**
ANMO				pmax		pmax		
	comp=Z,4.0nm,2.5s							
PPT	**Papeete**	**84.81**	**116**	LR		LR	05 59 36.3	
	comp=Z,30nm,21.2s,baz=357,slow=30							
TX31	**Lajitas Ar. Si**	**90.22**	**52**	*e*P		**P**	**05 30 36.8**	**+0.8**
TXAR	**Lajitas Array**	**90.22**	**52**	P		**P**	**05 30 37.0**	**+1.0**
	comp=Z,0.7nm,0.7s,baz=298,slow=3.0,SNR=8.4							
TXAR				pP		**pP**	**05 30 51.7**	**+0.5**
	comp=Z,0.8nm,0.6s,baz=313,slow=3.3,SNR=9.3							
LPAZ	**La Paz**	**146.81**	**59**	PKPbc		**PKPab**	**05 37 18.8**	**-0.9**
	comp=Z,2.6nm,0.7s,baz=324,slow=1.8,SNR=18							
ROC1	**El Roble**	**153.38**	**91**	*e*PKPbc		**PKPbc**	**05 37 34.7**	**+1.2**

MAN 16 06:05:27.7±17.7N×126.2±27.6E, h209km, mb4.9, ML3.8, MS3.8, Mindanao

MEX 16 06:06:10.7±0.3, 16.04±0.04N×93.72±0.72W, h29km±25km, MD3.8, Chiapas

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.54**	**81**	*i* P			Pn	06 06 34.2	-2.2
CCIG				*i* S			Sn	06 06 52.6	-2.9
HUIG	**Huatulco**	**2.31**	**264**	*i* P			Pn	06 06 45.2	-1.7
HUIG				*i* S			Sn	06 07 11.5	-2.8
VHO	**Vista Hermosa**	**3.07**	**290**	*i* P			Pn	06 06 55.4	-2.0
VHO				*i* S			Sn	06 07 30.7	-2.6

*ISCJB **16** 06:06:34.6±1.6, 33.3±0.1×177.6W±0.3, h33km, mb3.6/2, Error ellipse: s-maj=36.5km s-min=12.5km az=24.1*
*IDC **16** 06:06:37.3±3.1, 32.99S×178.47W, h0km, mb3.7/2, mb1 4.0/3, mb1mx3.7/22, mbtmp3.8/3, ML3.7/1, Error ellipse: s-maj=72.2km s-min=45.7km az=122.0*
ISC 16 06:06:36.6±1.8, 33.3S±0.2×177.5W±0.3, h35km, n11, σ1.9s38/14, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PKGZ	**Pakihiroa**	**5.80**	**217**	*e*PN			**Pn**	**06 08 00.3**	**+0.2**
HAZ	**Te Kaha**	**5.85**	**220**	*e*PN			**Pn**	**06 08 03.0**	**+2.1**
HAZ				*e*SN			**Sn**	**06 09 08.2**	**+1.5**
PUZ	**Puketiti**	**5.86**	**215**	*e*PN			**Pn**	**06 08 01.3**	**+0.4**
PUZ				*e*SN			**Sn**	**06 09 06.8**	**0.0**
RUGZ	**Raukumara Rang**	**6.06**	**219**	*e*PN			**Pn**	**06 08 05.3**	**+1.4**
MWZ	**Matawai**	**6.42**	**218**	*e*PN			**Pn**	**06 08 09.2**	**+0.5**
URZ	**Urewera**	**6.58**	**220**	Pn			**Pn**	**06 08 11.8**	**+1.0**
	1.8nm,0.3s,baz=265,slow=4.2,SNR=11								
URZ					Sn		**Sn**	**06 09 22.1**	**-2.5**
	3.1nm,0.3s,baz=136,slow=23,SNR=11								
URZ	**Urewera**	**6.58**	**220**	*e*PN			**Pn**	**06 08 11.9**	**+1.0**
ASAR	**Alice Springs**	**43.45**	**270**	P			**P**	**06 14 35.7**	**-0.8**
	0.6nm,0.6s,baz=108,slow=7.5,SNR=6.8								
WRA	**Warramunga Arr**	**44.70**	**275**	P			**P**	**06 14 45.6**	**-0.8**
	0.6nm,0.5s,baz=114,slow=7.7,SNR=18								
SYO	**Syowa Base**	**74.37**	**193**	*e*P			**P**	**06 18 09.4**	**-0.8**
FINES	**FINESS Array B**	**148.02**	**339**	PKPbc			**PKPab**	**06 26 21.6**	**+1.2**
	0.6nm,0.5s,baz=46,slow=4.2,SNR=5.9								

IDC 16 06:16:22.4±3.2, 53.44N×87.43E, h0km, mb1 2.8/2, mb1mx2.8/46, mbtmp2.8/2, ML2.4/2, Error ellipse: s-maj=29.3km s-min=16.2km az=60.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.63**	**289**	*i*				06 26 35.0	
	baz=105,slow=320,SNR=12								
ZALV	**Zalesovo Beam**	**1.63**	**289**	Pg			Pn	06 16 52.1	-0.3
	1.3nm,0.3s,baz=107,slow=15,SNR=8.3								
ZALV				Lg			Lg	06 17 13.8	
	1.3nm,0.3s,baz=116,slow=29,SNR=8.1								
KURBB	**Kurchatov Arra**	**6.17**	**246**	Pn			Pn	06 17 55.6	+0.8
	0.1nm,0.3s,baz=62,slow=14,SNR=5.6								
KURBB				Lg			Lg	06 19 37.2	
	0.0nm,0.3s,baz=64,slow=33,SNR=5.2								
MKAR	**Makanchi Array**	**7.43**	**208**	Pn			Pn	06 18 13.2	+1.1
	0.1nm,0.3s,baz=24,slow=11,SNR=3.1								
MKAR				Lg			Lg	06 20 16.9	
	0.1nm,0.3s,baz=30,slow=29,SNR=2.2								

MEX 16 06:17:42.7±0.3, 16.23N×98.00W, h3km±3km, MD3.5, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.20**	**323**	*i* P			Pg	06 17 46.5	-0.2
PNIG				*i* S			Sg	06 17 49.5	+0.1
TLIG	**Tlapa**	**1.43**	**338**	*i* P			Pn	06 18 06.0	-3.7
TLIG				*i* S			Sg	06 18 24.2	-4.6
VHO	**Vista Hermosa**	**1.48**	**55**	*e*P			Pn	06 18 06.8	-3.6
VHO				*i* S			Sb	06 18 25.3	-4.9
HUIG	**Huatulco**	**1.88**	**104**	*e*P			Pn	06 18 11.9	-3.7
HUIG				*i* S			Sn	06 18 35.1	-4.8
CAIG	**El Cayaco**	**2.32**	**291**	*i* P			Pn	06 18 18.8	-3.0
PLIG	**Platanillo**	**2.59**	**326**	*i* P			Pn	06 18 23.3	-2.3
PLIG				*i* S			Sn	06 18 53.3	-4.3
YAIG	**Yautepec**	**2.81**	**339**	*i* P			Pn	06 18 25.5	-3.2
YAIG				*i* S			Sn	06 18 59.3	-3.9

*ISCJB **16** 06:22:58.9±0.8, 21.54N±0.09×143.3E±0.2, h311km, mb3.5/11, Error ellipse: s-maj=25.7km s-min=12.8km az=178.5*
*IDC **16** 06:23:01.5±3.7, 21.58N×143.11E, h317km±36km, mb3.3/12, mb1 3.5/14, mb1mx3.2/51, mbtmp4.1/14, Error ellipse: s-maj=25.2km s-min=12.4km az=88.0*
ISC 16 06:23:00.6±0.8, 21.6N±0.1×143.2E±0.2, h311km, n17, σ0.63/17, mb3.5/11, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**11.89**	**346**	P			**P**	**06 25 42.8**	**0.0**
	20nm,0.3s,baz=218,slow=19,SNR=4.6								
MJAR	**Matsushiro Arr**	**15.53**	**345**	P			**P**	**06 26 22.9**	**0.0**
	1.0nm,0.3s,baz=161,slow=9.0,SNR=8.8								
KSRS	**Korea Array**	**20.61**	**324**	P			**P**	**06 27 17.2**	**+0.4**
	2.2nm,0.6s,baz=142,slow=8.6,SNR=9.7								
USRK	**Ussuriysk Ar.**	**24.40**	**340**	P			**P**	**06 27 52.4**	**+1.0**
	1.2nm,0.6s,baz=176,slow=6.5,SNR=4.0								
KLR	**Kul'dur**	**29.06**	**344**	P			**P**	**06 28 32.9**	**+0.2**
	3.7nm,0.7s,baz=165,slow=4.1,SNR=9.0								
CMAR	**Chiang Mai Arr**	**41.58**	**274**	P			**P**	**06 30 19.1**	**+0.1**
	0.7nm,0.4s,baz=86,slow=7.3,SNR=2.9								
WRA	**Warramunga Arr**	**42.15**	**192**	P			**P**	**06 30 23.6**	**0.0**
	1.8nm,0.6s,baz=13,slow=9.4,SNR=25								
ASAR	**Alice Springs**	**45.86**	**192**	P			**P**	**06 30 52.5**	**-0.3**
	0.2nm,0.3s,baz=16,slow=13,SNR=6.6								
ZALV	**Zalesovo Beam**	**54.31**	**322**	PcP			**PcP**	**06 32 54.1**	**-1.0**
	0.5nm,0.5s,baz=117,slow=5.7,SNR=3.6								
MKAR	**Makanchi Array**	**54.78**	**313**	P			**P**	**06 31 59.2**	**+0.3**
	0.1nm,0.3s,baz=88,slow=10,SNR=2.3								
ILAR	**Eielson Array**	**62.15**	**27**	P			**P**	**06 32 48.6**	**-0.5**
	0.3nm,0.6s,baz=260,slow=6.5,SNR=5.1								
BVAR	**Borovoye Array**	**62.76**	**320**	P			**P**	**06 32 53.5**	**+0.2**
	1.9nm,0.3s,baz=91,slow=9.0,SNR=10								
YKA	**Yellowknife Ar**	**76.57**	**28**	P			**P**	**06 34 16.9**	**+0.1**
	0.7nm,0.5s,baz=296,slow=6.4,SNR=3.8								
ARCES	**ARCESS Array B**	**79.04**	**342**	P			**P**	**06 34 30.1**	**-0.2**
	3.6nm,0.9s,baz=69,slow=10.0,SNR=4.0								
FINES	**FINESS Array B**	**83.29**	**334**	P			**P**	**06 34 51.4**	**-1.2**
	1.2nm,0.5s,baz=42,slow=4.9,SNR=12								
PLCA	**Paso Flores**	**145.68**	**132**	PKPbc			**PKPbc**	**06 42 04.0**	**+0.6**
	2.4nm,0.6s,baz=306,slow=2.8,SNR=7.6								
LPAZ	**La Paz**	**149.96**	**85**	PKPbc			**PKPbc**	**06 42 16.9**	**+1.0**
	1.5nm,0.6s,baz=273,slow=1.2,SNR=13								

*DDA **16** 06:23:11.6, 40.15N×29.95E, h7km, Md2.7*
*ISCJB **16** 06:23:12.1±0.5, 40.17N±0.02×29.96E±0.03, h2km±6km, Error ellipse: s-maj=4.6km s-min=3.4km az=43.0*
*CSEM **16** 06:23:12.5±0.1, 40.17N×29.96E, h5km, MD2.8, Error ellipse: s-maj=2.8km s-min=2.4km az=34.0*
*ISK **16** 06:23:12.4, 40.21N×29.98E, h7km, MD2.8*
ISC 16 06:23:12.3±1.0, 40.17N±0.02×29.96E±0.02, h5km±10km, n52, σ0.945/72, Turkey

| Code | Station Name | Δ° | AZ° | Phase | Op | ID | ISC |

*ISCJB **16** 06:25:52.5±1.2,30.˚70S±0.˚08×178.˚2W±0.˚3, h124km, mb3.9/2, Error ellipse: s-maj=37.2km s-min=6.3km az=16.2*

*IDC **16** 06:25:54.7±1.5,30.˚56S×178.˚43W, h106km±13km, mb3.7/2, mb1 3.9/3, mb1mx3.4/22, mbtmp4.0/3, Error ellipse: s-maj=48.5km s-min=15.2km az=114.0*

ISC 16 06:25:54.6±1.2, 30.˚6S±0.˚1×178.˚4W±0.˚3, h124km, n20, σ3$18/17, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.39**	**16**	P		**Pn**	**06 26 20.6**	**-0.4**
	130nm,0.3s,baz=96,slow=8.4,SNR=8.8							
RAO				S		**Sn**	**06 26 38.5**	**-2.5**
	180nm,0.3s,baz=247,slow=23,SNR=5.9							
HAZ	**Te Kaha**	**7.83**	**203**	*e*PN		**Pn**	**06 27 46.3**	**+0.7**
HAZ				*e*SN		**Sn**	**06 29 18.7**	**+6.1**
RUGZ	**Raukumara Rang**	**8.05**	**203**	*e*PN		**Pn**	**06 27 49.6**	**+0.8**
TWGZ	**Tauwhareparae**	**8.15**	**201**	*e*SN		**Sn**	**06 29 24.2**	**+3.7**
URZ	**Urewera**	**8.52**	**205**	P		**Pn**	**06 27 53.8**	**-1.1**
	0.2nm,0.3s,baz=192,slow=20,SNR=3.7							
URZ				S		**Sn**	**06 29 30.8**	**+1.5**
	1.9nm,0.3s,baz=161,slow=22,SNR=13							
BFZ	**Birch Farm**	**10.98**	**202**	*e*SN		**Sn**	**06 30 26.2**	**-2.8**
TIWZ	**Tintock**	**11.19**	**203**	SN		**Sn**	**06 30 30.5**	**-3.5**
MRZ	**Mangatainoka R**	**11.19**	**204**	*e*PN		**Pn**	**06 28 28.5**	**-2.4**
MRZ				*e*SN		**Sn**	**06 30 29.0**	**-5.1**
NNZ	**Nelson**	**12.54**	**210**	*e*SN		**Sn**	**06 31 02.1**	**-4.4**
MQZ	**McQueen's Vall**	**14.91**	**206**	*e*SN		Sn	06 31 51.6	-12
ASAR	**Alice Springs**	**42.80**	**267**	P		**P**	**06 33 41.6**	**+1.4**
	0.5nm,0.3s,baz=105,slow=7.6,SNR=6.5							
WRA	**Warramunga Arr**	**43.80**	**273**	P		**P**	**06 33 49.5**	**+1.2**
	1.4nm,0.3s,baz=110,slow=8.1,SNR=39							
H10S2	**ASCENSION HYDR**	**137.68**	**156**	T		T	09 18 31.1	
	baz=208							
H10S3	**ASCENSION HYDR**	**137.68**	**156**	T		T	09 18 33.9	
	baz=208							
H10S1	**ASCENSION HYDR**	**137.69**	**156**	T		T	09 18 27.3	
	baz=208							
H10N3	**ASCENSION HYDR**	**138.77**	**155**	T		T	09 19 56.5	
	baz=205,slow=75,SNR=6.2							
H10N1	**ASCENSION HYDR**	**138.77**	**155**	T		T	09 19 54.5	
	baz=205,slow=75,SNR=12							
H10N2	**ASCENSION HYDR**	**138.78**	**155**	T		T	09 19 48.8	
	baz=205,slow=75,SNR=12							
FINES	**FINESS Array B**	**145.22**	**340**	PKPbc		**PKPab**	**06 45 17.4**	**+0.6**
	0.9nm,0.3s,baz=55,slow=4.2,SNR=11							
AKASG	**Malin Array Be**	**151.27**	**322**	PKPbc		**PKPbc**	**06 45 35.3**	**+2.3**
	0.9nm,0.6s,baz=46,slow=2.6,SNR=4.9							

*ISCJB **16** 06:42:21.7±0.3,74.˚22N±0.˚05×134.˚6E±0.˚2, h10km, mb4.3/46, MS2.9/2, Error ellipse: s-maj=8.1km s-min=4.3km az=137.6*

*MOS **16** 06:42:21.6±0.9,74.˚32N×134.˚61E, h10km, mb4.3/20, Error ellipse: s-maj=30.6km s-min=10.2km az=87.9*

*IDC **16** 06:42:21.9±0.5,74.˚29N×134.˚74E, h0km, mb4.0/23, mb1 4.2/26, mb1mx4.0/56, mbtmp4.0/26, ML5.3/2, MS2.9/4, Ms1 2.9/4, ms1mx2.6/50, Error ellipse: s-maj=14.7km s-min=10.8km az=148.0*

*NEIC **16** 06:42:23.6±0.2,74.˚28N×134.˚59E, h10km, mb4.4/23, Error ellipse: s-maj=7.2km s-min=4.8km az=156.0*

ISC 16 06:42:23.8±0.5, 74.˚32N±0.˚06×134.˚59E±0.˚07, h10km, n70, σ1$66/75, mb4.2/46, Laptev Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
TIXI	**Tiksi**	**3.17**	**215**	Pn		**Pn**	**06 43 12.4**	**-1.2**
	5.3nm,0.3s,baz=9.5,slow=11,SNR=27							
TIXI				Sn		**Sn**	**06 43 47.7**	**-3.7**
	13nm,0.3s,baz=38,slow=19,SNR=3.9							
TIXI				Lg		Lg	06 44 01.8	
	20nm,0.3s,baz=323,slow=10,SNR=3.4							
TIXI	**Tiksi**	**3.17**	**215**	*e*P		**Pn**	**06 43 12.0**	**-1.6**
TIXI				*e*			06 43 49.6	
TIXI	**Tiksi**	**3.17**	**215**	*e*Pn		**Pn**	**06 43 12.0**	**-1.6**
TIXI				*e*Pg		**Pb**	**06 43 22.1**	**+2.0**
TIXI				*e*Sn		**Sn**	**06 43 49.6**	**-1.8**
TIXI				Lg		Lg	06 44 01.9	
TIXI				*e*Sg		**Sb**	**06 44 03.0**	**+4.2**
NRIK	**Noril'sk**	**15.10**	**275**	Pn		**Pn**	**06 45 56.6**	**-0.2**
	0.3nm,0.3s,baz=52,slow=17,SNR=4.5							
NRIK				LR		LR	06 52 54.4	
	comp=Z,55nm,19.2s,baz=65,slow=42							
MA2	**Magadan**	**16.00**	**149**	Pn		**Pn**	**06 46 08.7**	**+0.1**
	0.5nm,0.3s,baz=212,slow=19,SNR=2.3							
MA2				LR		LR	06 52 02.8	
	comp=Z,25nm,19.3s,baz=282,slow=36							
PETK	**Petropavlovsk-**	**23.29**	**143**	P		**P**	**06 47 32.1**	**+0.9**
	2.1nm,0.7s,baz=19,slow=9.9,SNR=4.2							
PETK	**Petropavlovsk-**	**23.29**	**143**	P		**P**	**06 47 32.1**	**+0.9**
PETK				pmax		pmax		
	comp=Z,3.0nm,0.8s							
SPITS	**Spitsbergen Ar**	**23.77**	**333**	P		**P**	**06 47 35.5**	**-0.4**
	comp=Z,4.6nm,0.7s,baz=61,slow=3.6,SNR=3.4							
KLR	**Kul'dur**	**25.21**	**184**	P		**P**	**06 47 48.6**	**-0.7**
	comp=Z,1.0nm,0.6s,baz=359,slow=10,SNR=4.9							
ILAR	**Eielson Array**	**26.79**	**69**	P		**P**	**06 48 04.4**	**+1.0**
	comp=Z,1.8nm,0.7s,baz=320,slow=8.6,SNR=11							
ILAR				PcP		**PcP**	**06 51 24.3**	**-1.4**
	comp=Z,0.9nm,0.6s,baz=303,slow=2.8,SNR=4.9							
INK	**Inuvik**	**27.13**	**55**	*e*P		**P**	**06 48 13.4**	**+7.1**
INK				pmax		pmax		
	comp=Z,1.0nm,0.4s							
INK	**Inuvik**	**27.13**	**55**	*e*P		**P**	**06 48 13.4**	**+7.1**
	comp=Z,1.2nm,0.4s							
ZALV	**Zalesovo Beam**	**28.36**	**252**	P		**P**	**06 48 17.6**	**+0.2**
	comp=Z,0.9nm,0.5s,baz=19,slow=7.5,SNR=5.4							
ZALV				LR		LR	07 00 58.2	
	comp=Z,31nm,18.9s,baz=63,slow=39							
DAWY	**Dawson**	**29.24**	**64**	*e*P		**P**	**06 48 25.8**	**+0.5**
	comp=Z,3.6nm,1.1s							
SONM	**Songino Array**	**29.24**	**221**	P		**P**	**06 48 25.3**	**-0.2**
	comp=Z,1.0nm,0.8s,baz=11,slow=9.7,SNR=4.0							
KURK	**Kurchatov**	**32.90**	**256**	*e*P		**P**	**06 48 57.6**	**0.0**
KURK				pmax		pmax		
	comp=Z,28nm,0.8s							
KURK	**Kurchatov**	**32.90**	**256**	*e*P		**P**	**06 48 57.5**	**0.0**
	comp=Z,28nm,0.8s							
BRVK	**Borovoye**	**33.03**	**266**	*e*P		**P**	**06 48 59.3**	**+0.6**
BRVK				pmax		pmax		
	comp=Z,9.0nm,0.8s							
BRVK	**Borovoye**	**33.03**	**266**	*e*P		**P**	**06 48 59.3**	**+0.6**
	comp=Z,9.1nm,0.8s							
BVAR	**Borovoye Array**	**33.03**	**266**	P		**P**	**06 48 59.3**	**+0.6**
	comp=Z,1.8nm,0.5s,baz=41,slow=7.9,SNR=11							
MKAR	**Makanchi Array**	**35.56**	**249**	P		**P**	**06 49 20.5**	**-0.2**
	comp=Z,1.6nm,0.6s,baz=45,slow=6.1,SNR=22							
MKAR	**Makanchi Array**	**35.56**	**249**	P		**P**	**06 49 20.5**	**-0.2**
MKAR				pmax		pmax		
	comp=Z,1.0nm,0.4s							
YKA	**Yellowknife Ar**	**36.15**	**47**	P		**P**	**06 49 24.4**	**-1.1**
	comp=Z,1.9nm,0.9s,baz=339,slow=8.8,SNR=3.3							
FINES	**FINESS Array B**	**36.63**	**310**	P		**P**	**06 49 30.1**	**+0.4**
	comp=Z,1.0nm,0.7s,baz=58,slow=8.5,SNR=3.3							
FINES				LR		LR	07 08 55.7	
	comp=Z,22nm,19.3s,baz=24,slow=43							
ABKAR	**Akbulak array**	**39.27**	**273**	*e*P		**P**	**06 49 52.4**	**+0.3**
	comp=Z,4.6nm,0.7s							
NB2	**NORSAR Subarra**	**39.84**	**321**	P		**P**	**06 49 56.6**	**-0.1**
	comp=Z,4.6nm,0.9s,baz=20,slow=8.6							
NOA	**NORSAR Array B**	**39.84**	**321**	P		**P**	**06 49 56.5**	**-0.1**
	comp=Z,1.9nm,0.7s,baz=20,slow=8.2,SNR=6.1							
AAK	**Ala-Archa**	**41.46**	**255**	P		**P**	**06 50 11.0**	**+0.6**
	comp=Z,3.2nm,0.6s,baz=48,slow=2.8,SNR=6.1							
AAK	**Ala-Archa**	**41.46**	**255**	*e*P		**P**	**06 50 10.2**	**-0.3**
AAK				pmax		pmax		
	comp=Z,6.0nm,0.8s							
AAK	**Ala-Archa**	**41.46**	**255**	*e*P		**P**	**06 50 10.2**	**-0.3**
	comp=Z,5.9nm,0.8s							
AKASG	**Malin Array Be**	**45.82**	**301**	P		**P**	**06 50 44.7**	**-0.5**
	comp=Z,1.2nm,0.6s,baz=24,slow=8.7,SNR=2.8							
WALA	**Waterton Lakes**	**48.76**	**54**	*e*P		**P**	**06 51 08.5**	**+0.2**
	comp=Z,10.0nm,1.1s							
KIV	**Kislovodsk**	**48.77**	**286**	*e*P		**P**	**06 51 09.1**	**+0.7**
KIV				pmax		pmax		
	comp=Z,15nm,0.8s							
KIV	**Kislovodsk**	**48.77**	**286**	*e*P		**P**	**06 51 09.1**	**+0.7**
	comp=Z,15nm,0.8s							
NEW	**Newport**	**48.78**	**58**	P		**P**	**06 51 08.2**	**-0.2**
	comp=Z,1.2nm,0.6s,baz=316,slow=2.1,SNR=3.0							
NEW	**Newport**	**48.78**	**58**	*e*P		**P**	**06 51 08.7**	**+0.3**
NEW				pmax		pmax		
	comp=Z,1.0nm,0.7s							
NEW	**Newport**	**48.78**	**58**	*e*P		**P**	**06 51 08.7**	**+0.3**
	comp=Z,1.4nm,0.7s							
KBZ	**Khabaz**	**48.92**	**286**	P		**P**	**06 51 10.9**	**+1.5**
	comp=Z,7.3nm,0.8s,baz=42,slow=6.7,SNR=15							
GEYT	**Alibeck**	**50.26**	**269**	P		**P**	**06 51 20.1**	**+0.3**
	comp=Z,1.2nm,0.4s,baz=40,slow=51,SNR=2.7							
GERES	**GERESS Array B**	**50.93**	**313**	P		**P**	**06 51 25.0**	**+0.2**
	comp=Z,0.4nm,0.5s,baz=27,slow=8.8,SNR=3.9							
GERES	**GERESS Array B**	**50.93**	**313**	P		**P**	**06 51 25.0**	**+0.2**
ULM	**Lac du Bonnet**	**51.19**	**39**	P		**P**	**06 51 25.2**	**-1.4**
	comp=Z,3.3nm,0.9s,baz=340,slow=8.1,SNR=5.5							
BOZ	**Bozeman (W)**	**52.49**	**54**	*e*P		**P**	**06 51 37.4**	**+0.9**
BOZ				pmax		pmax		
	comp=Z,3.0nm,0.8s							
BOZ	**Bozeman (W)**	**52.49**	**54**	*e*P		**P**	**06 51 37.4**	**+0.9**
	comp=Z,2.8nm,0.8s							
DLMT	**Dillon**	**52.54**	**55**	*e*P		**P**	**06 51 37.7**	**+0.7**
	comp=Z,2.0nm,0.8s							
RLMT	**Red Lodge**	**53.50**	**52**	*e*P		**P**	**06 51 45.0**	**+0.9**
	comp=Z,2.9nm,0.6s							
MFID	**Camas Ranch**	**53.66**	**58**	*e*P		**P**	**06 51 45.4**	**+0.3**
	comp=Z,3.0nm,0.8s							
HLID	**Hailey**	**53.84**	**57**	*e*P		**P**	**06 51 46.6**	**0.0**
	comp=Z,1.7nm,0.7s							
MOOW	**Moose Ponds**	**54.49**	**54**	*e*P		**P**	**06 51 52.3**	**+1.0**
	comp=Z,4.7nm,0.8s							
BRTR	**Keskin Array B**	**55.06**	**293**	P		**P**	**06 51 55.6**	**+0.2**
	comp=Z,1.0nm,0.8s,baz=40,slow=4.7,SNR=3.4							
BW06	**Boulder Array**	**55.69**	**53**	*e*P		**P**	**06 51 59.9**	**-0.1**
	comp=Z,3.0nm,0.8s							
PDAR	**Pinedale Array**	**55.69**	**53**	P		**P**	**06 52 00.0**	**0.0**
	comp=Z,1.6nm,0.5s,baz=8.1,slow=3.3,SNR=19							
HWUT	**Hardware Ranch**	**56.35**	**55**	*e*P		**P**	**06 52 05.0**	**+0.4**
	comp=Z,2.6nm,0.9s							
DUG	**Dugway, Tooele**	**57.41**	**57**	*e*P		**P**	**06 52 12.5**	**+0.3**
DUG				pmax		pmax		
	comp=Z,5.0nm,1.0s							
DUG	**Dugway, Tooele**	**57.41**	**57**	*e*P		**P**	**06 52 12.5**	**+0.3**
	comp=Z,5.5nm,1.0s							
R11A	**Troy Canyon, C**	**58.53**	**60**	*e*P		**P**	**06 52 20.5**	**+0.4**
	comp=Z,1.9nm,0.9s							
PV01	**Paradox Valley**	**60.33**	**54**	*e*P		**P**	**06 52 32.6**	**0.0**
	comp=Z,370nm,0.9s							
SDCO	**Great Sand Dun**	**61.37**	**52**	*e*P		**P**	**06 52 39.4**	**-0.4**
	comp=Z,3.9nm,0.8s							
ANMO	**Albuquerque**	**63.86**	**53**	*e*P		**P**	**06 52 54.8**	**-1.5**
ANMO				pmax		pmax		
	comp=Z,1.0nm,0.9s							
ANMO	**Albuquerque**	**63.86**	**53**	*e*P		**P**	**06 52 54.8**	**-1.5**
	comp=Z,1.3nm,0.9s							
WMOK	**Wichita Mounta**	**65.65**	**47**	*e*P		**P**	**06 53 06.9**	**-0.9**
WMOK				pmax		pmax		
	comp=Z,3.0nm,0.9s							
WMOK	**Wichita Mounta**	**65.65**	**47**	*e*P		**P**	**06 53 06.8**	**-0.9**
	comp=Z,3.0nm,0.9s							
TXAR	**Lajitas Array**	**69.87**	**52**	P		**P**	**06 53 34.0**	**-0.5**
	comp=Z,1.6nm,0.7s,baz=0.3,slow=4.1,SNR=24							
TXAR	**Lajitas Array**	**69.87**	**52**	P		**P**	**06 53 34.0**	**-0.5**
TXAR				pmax		pmax		
	comp=Z,2.0nm,0.7s							
TORD	**Torodi Ar. Bea**	**87.87**	**314**	P		**P**	**06 55 11.6**	**-1.6**
	comp=Z,0.6nm,0.8s,baz=38,slow=3.9,SNR=2.9							
WRAB	**Tennant Creek**	**94.03**	**180**	*e*P		**P**	**06 55 39.8**	**-1.8**
WRAB				pmax		pmax		
	comp=Z,2.0nm,0.5s							
WRAB	**Tennant Creek**	**94.03**	**180**	*e*P		**P**	**06 55 39.8**	**-1.8**
	comp=Z,1.8nm,0.5s							
WRA	**Warramunga Arr**	**94.04**	**180**	P		**P**	**06 55 39.5**	**-2.1**
	comp=Z,239nm,1.0s,baz=360,slow=5.5,SNR=14							
ASAR	**Alice Springs**	**97.75**	**181**	P		**P**	**06 55 56.3**	**-2.2**
	comp=Z,0.3nm,0.6s,baz=344,slow=3.1,SNR=3.0							
MAW	**Mawson**	**148.89**	**225**	PKPbc		**PKPdf**	**07 02 08.8**	**+3.3**
	comp=Z,1.7nm,0.5s,baz=47,slow=1.7,SNR=16							

*ISCJB **16** 06:44:51.5±0.5,9.˚56N±0.˚05×122.˚02E±0.˚05, h10km, mb3.9/9, MS3.2/1, Error ellipse: s-maj=7.3km s-min=7.2km az=138.2*

*IDC **16** 06:44:51.0±0.8,9.˚57N×122.˚09E, h0km, mb3.9/8, mb1 4.0/8, mb1mx3.7/51, mbtmp3.9/8, MS3.1/2, Ms1 3.1/2, ms1mx2.6/50, Error ellipse: s-maj=47.6km s-min=15.6km az=68.0*

*NEIC **16** 06:44:52.9±0.7,9.˚64N×122.˚10E, h10km, mb4.5/1, Error ellipse: s-maj=20.9km s-min=12.9km az=69.0*

*MAN **16** 06:44:53,9.˚67N×122.˚14E, h8km, mb4.7, ML3.6, MS3.6*

ISC 16 06:44:52.7±0.7, 9.˚64N±0.˚05×122.˚11E±0.˚05, h10km, n21, σ1$58/22, mb3.9/9, 3C-4D, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**1.11**	**352**	*i*P		**Pb**	**06 45 13.7**	**-0.2**
SNPH	**Sibulan**	**1.15**	**105**	*i*P		Pb	06 45 09.2	-5.5
SNPH				*i* S		**Sg**	**06 45 26.3**	**-3.5**
DCPH	**Dipolog City**	**1.62**	**130**	*e*P		**Pn**	**06 45 21.8**	**+0.5**
TBP	**Tagbilaran**	**1.73**	**88**	*i* P		**Pb**	**06 45 24.1**	**-0.4**
RCP	**Roxas**	**2.01**	**18**	*e*P		**Pb**	**06 45 28.0**	**-1.3**
RCP				*i* S		**Sg**	**06 45 56.7**	**-0.5**
CGP	**Cagayan de Oro**	**2.81**	**115**	*i*P		**Pn**	**06 45 39.0**	**+1.3**
CTBH	**Cotabato--PC H**	**3.20**	**138**	*i*P		**Pn**	**06 45 45.9**	**+2.8**
PLP	**Palo**	**3.21**	**62**	*e*P		**Pn**	**06 45 44.1**	**+1.0**
PLP				*i* S		**Sn**	**06 46 23.8**	**+2.3**
KKM	**Kota Kinabalu**	**6.84**	**239**	*e*Pn		**Pn**	**06 46 33.6**	**+0.3**
KAPI	**Kappang**	**14.75**	**189**	LR		LR	06 53 59.4	
	comp=Z,49nm,19.4s,baz=357,slow=37							
PSI	**Prapat**	**24.01**	**255**	LR		LR	07 00 15.1	
	comp=Z,72nm,18.3s,baz=17,slow=38							
CMAR	**Chiang Mai Arr**	**24.10**	**294**	P		**P**	**06 50 07.8**	**-0.9**
	1.4nm,0.3s,baz=126,slow=8.6,SNR=4.2							
WRAB	**Tennant Creek**	**31.77**	**158**	*e*P		**P**	**06 51 20.4**	**+3.1**
	6.0nm,1.0s							
WRA	**Warramunga Arr**	**31.77**	**158**	P		**P**	**06 51 16.1**	**-1.2**
	1.4nm,1.0s,baz=332,slow=11,SNR=3.5							
ASAR	**Alice Springs**	**35.06**	**161**	P		**P**	**06 51 45.9**	**-0.1**
	2.2nm,0.6s,baz=342,slow=7.4,SNR=25							
ASAR				PcP		**PcP**	**06 54 17.0**	**-1.0**
	0.6nm,0.6s,baz=351,slow=3.4,SNR=5.0							
KLR	**Kul'dur**	**40.28**	**10**	P		**P**	**06 52 29.7**	**-0.1**
	0.7nm,0.5s,baz=53,slow=20,SNR=2.6							
SONM	**Songino Array**	**40.32**	**344**	P		**P**	**06 52 31.2**	**+0.9**
	0.6nm,0.7s,baz=162,slow=6.1,SNR=3.2							
STKA	**Stephens Creek**	**45.30**	**156**	P		**P**	**06 53 09.7**	**-1.2**
	1.9nm,0.9s,baz=333,slow=10,SNR=5.1							
MKAR	**Makanchi Array**	**50.11**	**325**	P		**P**	**06 53 49.2**	**+1.1**
	1.0nm,0.7s,baz=120,slow=9.1,SNR=6.2							
ZALV	**Zalesovo Beam**	**53.28**	**333**	P		**P**	**06 54 11.4**	**-0.2**
	0.6nm,0.4s,baz=114,slow=6.5,SNR=2.6							
PLCA	**Paso Flores**	**147.06**	**162**	PKPbc		**PKPbc**	**07 04 36.5**	**+0.2**
	2.3nm,0.8s,baz=310,slow=2.6,SNR=4.4							

*IDC **16** 07:03:31.5±0.4,22.˚41S×175.˚02W, h0km, mb5.2/28, mb1 5.2/29, mb1mx5.2/35, mbtmp5.1/29, ML4.8/1, MS5.4/26, Ms1 5.4/26, ms1mx5.2/33, Error ellipse: s-maj=16.9km s-min=13.8km az=104.0*

*NEIC **16** 07:03:32.6±0.1,22.˚43S×175.˚00W, h6km, mb5.7/232, ME5.9, MS5.6/204, MW5.8, MW5.8, Error ellipse: s-maj=4.4km s-min=2.6km az=135.0, Moment Tensor Solution. s12 Moment tensor: Scale 10^{17}Nm; M_{rr}4.63; $M_{\theta\theta}$-4.08; $M_{\phi\phi}$-0.55; $M_{r\theta}$-0.15; $M_{\theta\phi}$-3.14; $M_{r\phi}$1.01; Best double couple: $M_0$5.50000×10^{17} NP1:ϕ_s46.00000°, δ49.00000°, λ70.00000°. NP2:ϕ_s254.00000°, δ45.00000°, λ111.00000°. Principal axes: T 4.8900, Plg75.0000°, Azm247.0000°; N 1.0300, Plg15.0000°, Azm59.0000°; P -5.9300, Plg2.0000°, Azm149.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*

*GCMT **16** 07:03:32.7±0.1,22.˚69S×174.˚28W, h13km, MW5.7/139, Moment Tensor Solution. s114,c229; s139,c406; Duration: 1s8 Moment tensor: Scale 10^{17}Nm; M_{rr}3.92±.05; $M_{\theta\theta}$-0.71±.04; $M_{\phi\phi}$-3.21±.04; $M_{r\theta}$1.15±.09; $M_{\theta\phi}$-2.16±.03; $M_{r\phi}$2.44±.10; Best double couple: $M_0$4.98200×10^{17} NP1:ϕ_s27.00000°, δ61.00000°, λ87.00000°. NP2:ϕ_s213.00000°, δ29.00000°, λ95.00000°. Principal axes: T 4.7190, Plg73.0000°, Azm290.0000°; N 0.5260, Plg3.0000°, Azm29.0000°; P -5.2450, Plg16.0000°, Azm119.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*BJI **16** 07:03:34.7,22.˚29S×174.˚45W, h35km, mb5.6/52, mB6.2/49, Ms5.6/74, Ms7 5.4/69*

*ISCJB **16** 07:03:35.3±0.1,22.˚49S±0.˚03×174.˚96W±0.˚02, h33km, mb5.6/297, MS5.6/274, Error ellipse: s-maj=4.6km s-min=2.5km az=148.2*

*MOS **16** 07:03:36.0±0.9,22.˚28S×174.˚99W, h33km, mb5.6/64, MS5.6/43, Error ellipse: s-maj=10.8km s-min=7.2km az=76.9*

*NEIC **16** 07:03:37.0±0.0,22.˚43S×175.˚02W, h15km, Moment Tensor Solution. s12 Moment tensor: Scale 10^{17}Nm; M_{rr}4.58; $M_{\theta\theta}$-2.24; $M_{\phi\phi}$-2.34; $M_{r\theta}$1.28; $M_{\theta\phi}$-0.34; $M_{r\phi}$4.45; Best double couple: $M_0$6.10000×10^{17} NP1:ϕ_s19.00000°, δ71.00000°, λ87.00000°. NP2:ϕ_s208.00000°, δ19.00000°, λ99.00000°. Principal axes: T 6.8700, Plg63.0000°, Azm284.0000°; N -2.0500, Plg2.0000°, Azm20.0000°; P -4.8200, Plg26.0000°, Azm111.0000°;*

ISC 16 07:03:36.8±0.5, 22.˚48S±0.˚04×174.˚88W±0.˚04, h35km±1km, h35km:pP-P, n1202, σ1$83/1140, mb5.7/293, MS5.6/285, 62C-13D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
NIUE	**Niue**	**5.73**	**55**	P		Pn	07 04 49.2	-10
	baz=5.3,SNR=57							
RAO	**Raoul Island**	**7.28**	**201**	Pn		Pn	07 05 11.1	-10
	102nm,0.3s,baz=18,slow=20,SNR=4.0							
RAO				Sn		**Sn**	**07 06 39.0**	**-3.2**
	184nm,0.3s,baz=272,slow=23,SNR=2.9							
RAO	**Raoul Island**	**7.28**	**201**	*e*P		**Pn**	**07 05 18.4**	**-2.3**
RAO							07 06 39.0	
RAO	**Raoul Island**	**7.28**	**201**	*e*Pn		**Pn**	**07 05 18.4**	**-2.3**
RAO				Sn		**Sn**	**07 06 39.0**	**-3.2**
MSVF	**Nonsavu**	**8.15**	**304**	*c i*P		**Pn**	**07 05 37.0**	**+4.2**
MSVF	**Nonsavu**	**8.15**	**304**	*e*Pn		Pn	07 05 38.5	+5.7
AFI	**Afiamalu**	**9.01**	**20**	Pn		Pn	07 05 36.6	-8.1
	27nm,0.3s,baz=147,slow=17,SNR=31							
AFI				Sn		Sn	07 07 09.7	-15
	37nm,0.3s,baz=118,slow=21,SNR=7.3							
AFI				LR		LR	07 09 17.8	
	comp=Z,12μm,18.8s,baz=197,slow=38							
AFI	**Afiamalu**	**9.01**	**20**	*e*P		Pn	07 05 37.7	-7.0
AFI	**Afiamalu**	**9.01**	**20**	*e*Pn		Pn	07 05 37.7	-7.0
AFI				Sn		Sn	07 07 09.7	-15
RAR	**Rarotonga**	**14.08**	**88**	Pn		Pn	07 06 42.8	-11
	27nm,0.3s,baz=257,slow=7.3,SNR=48							
RAR				Sn		Sn	07 09 02.5	-26
	8.7nm,0.3s,baz=102,slow=19,SNR=2.0							
RAR				LR		LR	07 11 51.4	
	comp=Z,20μm,19.1s,baz=263,slow=35							
RAR	**Rarotonga**	**14.08**	**88**	P		Pn	07 06 42.8	-11
RAR				pmax		pmax		
	comp=Z,27nm,0.3s							
RAR				MLR		MLR		
	comp=Z,20μm,19.2s							
RAR	**Rarotonga**	**14.08**	**88**	*e*Pn		Pn	07 06 43.3	-11
RAR				Sn		Sn	07 09 02.5	-26
FUNA	**Funafuti**	**14.99**	**337**	*e*Pn		**Pn**	**07 07 05.3**	**-0.9**
URZ	**Urewera**	**17.17**	**202**	P		**P**	**07 07 34.7**	**-0.6**
	comp=Z,3.5nm,0.3s,baz=351,slow=15,SNR=12							
URZ				S		Sn	07 10 27.5	-16
	comp=Z,1.7nm,0.3s,baz=186,slow=20,SNR=1.9							
URZ	**Urewera**	**17.17**	**202**	*e*Pn		**Pn**	**07 07 34.5**	**+0.5**
	comp=Z,133nm,1.5s							
URZ				S		Sn	07 10 27.5	-16
DZM	**Mont Dzumac**	**17.30**	**268**	P		**P**	**07 07 38.4**	**+1.5**
	comp=Z,1.7nm,0.3s,baz=92,slow=18,SNR=18							
DZM				LR		LR	07 12 30.5	
	comp=Z,6μm,20.3s,baz=104,slow=31							
DZM	**Mont Dzumac**	**17.30**	**268**	*e*P		**Pn**	**07 07 35.9**	**+0.1**
	comp=Z,249nm,1.1s							
DZM				*e*LR		LR	07 12 13.9	
	comp=Z,17μm,21.2s							
DZM	**Mont Dzumac**	**17.30**	**268**	*e*P		**Pn**	**07 07 34.0**	**-1.8**
	comp=Z,162nm,1.2s							
BKZ	**Black Stump Fm**	**18.20**	**202**	*e*Pn		**Pn**	**07 07 45.0**	**-1.7**
	comp=Z,56nm,1.1s							
HIZ	**Hauiti**	**18.25**	**207**	*e*Pn		**Pn**	**07 07 48.8**	**

TARA Tarawa 26.51 332 PFAKE 07 09 20.0 +8.8
TARA LR LR
comp=Z,10μm,20.0s
MLZ Mavora Lakes 26.73 207 *e*P **P** **07 09 15.1 +2.0**
comp=Z,115nm,1.4s
MLZ LR LR
comp=Z,13μm,18.0s
DCZ Deep Cove 27.23 208 *e*P **P** **07 09 18.1 +0.7**
comp=Z,49nm,1.0s
DCZ LR LR
comp=Z,10μm,18.0s
WHZ Wether Hill Ro 27.23 207 *e*P **P** **07 09 17.3 -0.1**
comp=Z,308nm,1.8s
WHZ LR LR
comp=Z,12μm,18.0s
HNR Honiara 27.40 294 PFAKE 07 09 30.0 +11
HNR LR LR
comp=Z,6μm,18.0s
XMAS Kiritimati 29.72 37 PFAKE 07 09 50.0 +10
XMAS LR LR
comp=Z,11μm,18.0s
ARMA Armidale 30.93 248 P **P** **07 09 52.2 +1.5**
baz=31,SNR=10
ARMA Armidale 30.93 248 *e*P **P** **07 09 50.9 +0.2**
comp=Z,38nm,0.9s
ARMA LR LR
comp=Z,11μm,19.0s
EIDS Eidsvold 31.20 258 P **P** **07 09 52.8 -0.2**
baz=32,SNR=5.3
EIDS Eidsvold 31.20 258 *e*P **P** **07 09 52.5 -0.5**
comp=Z,41nm,1.0s
EIDS LR LR
comp=Z,13μm,19.0s
MGCD Mangrove Creek 31.79 243 P **P** **07 09 59.3 +1.2**
baz=32,SNR=9.6
RMQ Roma 33.27 256 P **P** **07 10 11.7 +0.6**
baz=34,SNR=16
CNB Canberra Magne 33.64 240 P **P** **07 10 16.0 +1.7**
baz=34,SNR=11
CAN Canberra 33.93 240 *e*P **P** **07 10 17.5 +0.6**
CAN pmax pmax
comp=Z,19nm,0.9s
CAN Canberra 33.93 240 *e*P **P** **07 10 17.4 +0.6**
comp=Z,19nm,0.9s
CAN LR LR
comp=Z,10μm,20.0s
YNG Young 34.21 242 P **P** **07 10 20.0 +0.7**
baz=35,SNR=14
KWAJ Kwajalein Atol 35.51 329 PFAKE 07 10 40.0 +9.5
KWAJ LR LR
comp=Z,7μm,20.0s
TAOE Nuku Hiva Isla 35.97 73 *e*LR LR 07 19 35.5
comp=Z,8μm,28.3s
CMSA Cobar Meteorol 36.11 247 P **P** **07 10 35.2 -0.5**
baz=37,SNR=61
CTAO Charters Tower 36.23 266 *e*P **P** **07 10 35.9 -0.9**
CTAO pmax pmax
comp=Z,55nm,1.2s
CTAO Charters Tower 36.23 266 *e*P **P** **07 10 35.9 -0.9**
comp=Z,55nm,1.2s
CTAO LR LR
comp=Z,3μm,18.0s
RKT Rikitea 36.71 99 *e*LR LR 07 19 58.6
comp=Z,15μm,30.5s
RKT Rikitea 36.71 99 *e*T T 07 50 02.5
comp=Z,2.4nm,0.3s
TOO Toolangi 37.17 237 P **P** **07 10 45.6 +0.9**
baz=38,SNR=6.5
MOO Moorlands 37.29 229 P **P** **07 10 47.3 +1.7**
baz=38,SNR=4.7
QLP Quilpie 37.31 255 P **P** **07 10 46.6 +0.7**
baz=38,SNR=4.3
TAU Tasmania Unive 37.37 228 PFAKE 07 11 00.0 +14
TAU LR LR
comp=Z,7μm,20.0s
MTSU Mount Surprise 38.43 269 P **P** **07 10 55.2 -0.3**
baz=39,SNR=24
PMG Port Moresby 38.62 283 *ce*P **P** **07 10 55.5 -1.6**
PMG pmax pmax
comp=Z,383nm,1.1s
PMG Port Moresby 38.62 283 *e*P **P** **07 10 56.1 -1.0**
comp=Z,131nm,1.0s
PMG LR LR
comp=Z,10μm,18.0s
PATS Pohnpei 39.22 315 PFAKE 07 11 10.0 +8.0
PATS LR LR
comp=Z,13μm,18.0s
JOHN Johnston Islan 39.32 8 PFAKE 07 11 10.0 +7.3
JOHN LR LR
comp=Z,8μm,20.0s
STKA Stephens Creek 39.62 247 P **P** **07 11 02.9 -2.3**
comp=Z,17nm,0.8s,baz=95,slow=9.3,SNR=24
STKA LR LR 07 26 08.2
comp=Z,8μm,19.9s,baz=84,slow=34
STKA Stephens Creek 39.62 247 P **P** **07 11 04.5 -0.8**
baz=40,SNR=22
STKA Stephens Creek 39.62 247 *e*P **P** **07 11 05.3 0.0**
comp=Z,12nm,1.4s
COEN Coen 40.63 275 P **P** **07 11 13.8 0.0**
baz=41,SNR=22
COEN Coen 40.63 275 *e*P **P** **07 11 12.5 -1.3**
comp=Z,99nm,0.9s
COEN LR LR
comp=Z,7μm,19.0s
PTCN Pitcairn Islan 40.92 103 PFAKE 07 11 30.0 +14
PTCN LR LR
comp=Z,8μm,19.0s
MANU Manus Island 41.90 294 PFAKE 07 11 30.0 +5.7
MANU LR LR
comp=Z,6μm,18.0s
HTT Hallett 41.95 245 P **P** **07 11 23.8 -0.7**
baz=42,SNR=12
QIS Mount Isa 42.27 264 P **P** **07 11 26.2 -1.0**
baz=43
BBOO Buckleboo 44.33 246 P **P** **07 11 42.9 -0.9**
baz=45,SNR=14
BBOO Buckleboo 44.33 246 *e*P **P** **07 11 42.7 -1.0**
comp=Z,58nm,1.2s
BBOO LR LR
comp=Z,12μm,19.0s
UWE Uwekahuna 45.83 26 PFAKE 07 12 10.0 +14
UWE LR LR
comp=Z,4μm,20.0s
POHA Pohakuloa 46.03 26 PFAKE 07 12 10.0 +12
POHA LR LR
comp=Z,4μm,19.0s
HPAH Hawaii Prepara 46.21 25 PFAKE 07 12 10.0 +11
HPAH LR LR
comp=Z,4μm,19.0s
KIP Kipapa 46.63 22 P **P** **07 12 01.1 -0.8**
KIP Kipapa 46.63 22 PFAKE 07 12 10.0 +8.1
KIP LR LR
comp=Z,4μm,22.0s
AS01 Alice Springs 46.89 258 *e*P **P** **07 12 03.2 -0.9**
AS31 Alice Springs 46.93 258 *e*P **P** **07 12 02.9 -1.5**
comp=Z,17nm,0.8s
ASAR Alice Springs 46.93 258 P **P** **07 12 02.3 -2.2**
comp=Z,63nm,0.9s,baz=93,slow=7.9,SNR=205
ASAR S **S** **07 18 49.9 -3.6**
comp=Z,1.7nm,0.8s,baz=100,slow=15,SNR=5.3
ASAR LR LR 07 32 21.6
comp=Z,8μm,18.7s,baz=104,slow=37
WR0 Warramunga Arr 47.04 263 PFAKE 07 12 10.0 +4.7
WR0 LR LR
comp=Z,5μm,21.0s
WR9 Warramunga Arr 47.07 263 PFAKE 07 12 10.0 +4.5
WR9 LR LR
comp=Z,5μm,21.0s
WR8 Warramunga Arr 47.08 263 PFAKE 07 12 10.0 +4.3
WR8 LR LR
comp=Z,6μm,21.0s
WR7 Warramunga Arr 47.10 263 PFAKE 07 12 10.0 +4.2
WR7 LR LR
comp=Z,6μm,21.0s
WR6 Warramunga Arr 47.12 263 PFAKE 07 12 20.0 +14
WR6 LR LR
comp=Z,6μm,20.0s
WR5 Warramunga Arr 47.15 263 PFAKE 07 12 20.0 +14
WR5 LR LR
comp=Z,5μm,21.0s
WR3 Warramunga Arr 47.19 263 PFAKE 07 12 20.0 +14
WR3 LR LR
comp=Z,6μm,21.0s
WC3 Warramunga Arr 47.20 263 PFAKE 07 12 20.0 +13
WC3 LR LR
comp=Z,6μm,22.0s
WR2 Warramunga Arr 47.21 263 PFAKE 07 12 20.0 +13
WR2 LR LR
comp=Z,5μm,21.0s
WC2 Warramunga Arr 47.21 263 PFAKE 07 12 20.0 +13
WC2 LR LR
comp=Z,7μm,22.0s
WB2 Warramunga Arr 47.22 263 *e*P **P** **07 12 04.8 -2.0**
comp=Z,39nm,0.8s
WB2 LR LR
comp=Z,6μm,21.0s
WB5 Warramunga Arr 47.22 263 PFAKE 07 12 20.0 +13
WB5 LR LR
comp=Z,5μm,21.0s
WB3 Warramunga Arr 47.22 263 PFAKE 07 12 20.0 +13
WB3 LR LR
comp=Z,5μm,21.0s
WB8 Warramunga Arr 47.22 263 PFAKE 07 12 20.0 +13
WB8 LR LR
comp=Z,5μm,19.0s
WB4 Warramunga Arr 47.22 263 PFAKE 07 12 20.0 +13
WB4 LR LR
comp=Z,5μm,21.0s
WB9 Warramunga Arr 47.22 263 PFAKE 07 12 20.0 +13
WB9 LR LR
comp=Z,11μm,22.0s
WRAB Tennant Creek 47.22 263 *ce*P **P** **07 12 04.2 -2.6**
WRAB pmax pmax
comp=Z,105nm,1.0s
WRAB Tennant Creek 47.22 263 *e*P **P** **07 12 04.7 -2.0**
comp=Z,46nm,1.0s
WRAB LR LR
comp=Z,6μm,21.0s
WB6 Warramunga Arr 47.23 263 PFAKE 07 12 20.0 +13
WB6 LR LR
comp=Z,5μm,21.0s
WC4 Warramunga Arr 47.23 263 PFAKE 07 12 20.0 +13
WC4 LR LR
comp=Z,5μm,20.0s
WR1 Warramunga Arr 47.23 263 PFAKE 07 12 20.0 +13
WR1 LR LR
comp=Z,5μm,21.0s
WRA Warramunga Arr 47.23 263 P **P** **07 12 04.0 -2.8**
comp=Z,34nm,0.9s,baz=96,slow=8.5,SNR=103
WRA S **S** **07 18 54.2 -3.7**
comp=Z,2.4nm,1.1s,baz=107,slow=14,SNR=3.1
WRA LR LR 07 31 28.4
comp=Z,5μm,21.6s,baz=100,slow=36
WC1 Warramunga Arr 47.24 263 PFAKE 07 12 20.0 +13
WC1 LR LR
comp=Z,4μm,21.0s
JAY Jayapura 47.42 288 P **P** **07 12 06.4 -2.0**
comp=Z,127nm,1.0s,comp=Z,2μm
GENI Genyem 47.86 288 P **P** **07 12 11.0 -0.7**
MIDW Midway 50.45 357 PFAKE 07 12 40.0 +8.8
MIDW LR LR
comp=Z,5μm,18.0s
KDU Kakadu 50.91 272 P **P** **07 12 33.7 -1.3**
baz=51,SNR=4.3
FORT Forrest 51.22 248 P **P** **07 12 35.7 -1.4**
baz=52,SNR=12
FORT Forrest 51.22 248 *e*P **P** **07 12 36.0 -1.2**
comp=Z,698nm,0.8s
WRKA Warakurna 51.75 255 P **P** **07 12 39.5 -1.8**
baz=52,SNR=48
MTN Manton Dam 52.10 271 P **P** **07 12 42.7 -1.2**
baz=52,SNR=4.2
MTN Manton Dam 52.10 271 *e*P **P** **07 12 42.4 -1.5**
comp=Z,29nm,0.8s
MTN LR LR
comp=Z,12μm,20.0s
GUMO Guam 53.30 308 LR LR 07 35 10.5
comp=Z,1μm,19.0s,baz=129,slow=36
KNRA Kununurra 53.44 267 P **P** **07 12 53.3 -0.5**
baz=54
FAKI Fak Fak 54.78 283 PFAKE 07 13 10.0 +6.4
FAKI LR LR
comp=Z,6μm,20.0s
FITZ Fitzroy Crossi 55.66 263 P **P** **07 13 08.0 -1.9**
baz=56,SNR=28
FITZ Fitzroy Crossi 55.66 263 *e*P **P** **07 13 09.0 -1.0**
comp=Z,39nm,1.0s
FITZ LR LR
comp=Z,6μm,19.0s
SBA Scott Base 56.12 185 *e*P **P** **07 13 14.3 +2.0**
SBA pmax pmax
comp=Z,323nm,2.0s
SBA MLR MLR
comp=Z,4μm,20.0s
SBA Scott Base 56.12 185 *e*P **P** **07 13 14.2 +2.0**
comp=Z,323nm,2.0s
SBA LR LR
comp=Z,4μm,20.0s
VNDA Vanda 56.23 186 P **P** **07 13 14.5 +1.4**
comp=Z,4.4nm,1.1s,baz=21,slow=5.5,SNR=15
VNDA LR LR 07 33 07.6
comp=Z,3μm,20.2s,baz=26,slow=32
VNDA Vanda 56.23 186 P **P** **07 13 14.5 +1.4**
VNDA pmax pmax
comp=Z,3.0nm,0.8s
VNDA Vanda 56.23 186 *e*P **P** **07 13 15.0 +1.9**
comp=Z,115nm,1.9s
BNDI Bandanaira 56.24 280 P **P** **07 13 13.5 -0.6**
KMBL Kambalda 56.42 246 P **P** **07 13 14.7 -0.5**
baz=57
RPN Rapa Nui 59.09 109 PFAKE 07 13 40.0 +6.0
RPN LR LR
comp=Z,8μm,18.0s
NLAI Namlea 59.31 280 P **P** **07 13 36.5 +0.8**
SOEI Soe 59.47 272 P **P** **07 13 36.3 -0.6**
comp=Z,256nm,0.9s,comp=Z,4μm
SOEI Soe 59.47 272 *e*P **P** **07 13 36.8 -0.1**
comp=Z,338nm,1.1s
SOEI LR LR
comp=Z,6μm,20.0s
KLBR Kellerberrin 59.88 246 P **P** **07 13 39.3 -0.1**
baz=60,SNR=5.4
MEEK Meekatharra 60.03 251 P **P** **07 13 40.0 -0.6**
baz=60,SNR=4.0
LBMI Labuha 60.03 283 P **P** **07 13 40.8 +0.1**
NWAO Narrogin (SRO) 60.10 244 LR LR 07 38 24.7
comp=Z,3μm,20.1s,slow=35
MBWA Marble Bar 60.27 258 *e*P **P** **07 13 40.8 -1.5**
comp=Z,40nm,1.0s
MBWA LR LR
comp=Z,5μm,18.0s
SANI Sanana 60.81 281 P **P** **07 13 45.0 -1.0**
BLDU Ballidu 60.92 247 P **P** **07 13 46.6 0.0**
baz=61,SNR=9.9
MMRI Maumere 61.74 272 PFAKE 07 14 00.0 +7.7
MMRI LR LR
comp=Z,2μm,18.0s
MORW Morawa 61.78 248 P **P** **07 13 52.2 -0.3**
baz=62,SNR=7.2
GIRL Giralia 64.83 255 P **P** **07 14 13.8 +1.2**
baz=65,SNR=4.3
DAV Davao City (W) 65.24 290 PFAKE 07 14 20.0 +4.6
DAV LR LR
comp=Z,2μm,19.0s
KAPI Kappang 65.36 275 P **P** **07 14 14.9 -1.3**
comp=Z,14nm,0.9s,baz=128,slow=3.4,SNR=4.4
KAPI Kappang 65.36 275 P **P** **07 14 14.9 -1.3**
KAPI LR LR
comp=Z,2μm,20.0s
MRSI Marisa 65.54 281 P **P** **07 14 15.7 -1.6**
PLAI Plampang 65.79 270 P **P** **07 14 17.5 -1.5**
comp=Z,166nm,1.0s,comp=Z,3μm
TTSI Tana Toraja 66.05 277 P **P** **07 14 24.3 +3.7**
comp=Z,49nm,1.3s,comp=Z,2μm
TWSI Taliwang, Sumb 66.65 270 P **P** **07 14 23.5 -1.0**
PCI Palu 66.88 279 P **P** **07 14 27.6 +1.6**
QSPA South Pole Qui 67.61 180 *e*P **P** **07 14 30.1 +0.2**
comp=Z,270nm,1.9s
QSPA LR LR
comp=Z,5μm,19.0s
IGBI Denpasar 68.23 269 P **P** **07 14 33.7 -0.8**
JAGI Jajag, Banyuwa 69.27 269 P **P** **07 14 39.0 -2.0**
JAGI Jajag, Banyuwa 69.27 269 *e*P **P** **07 14 39.2 -1.8**
comp=Z,89nm,1.0s
GMJI Gumukmas 70.00 269 P **P** **07 14 45.5 0.0**
comp=Z,73nm,1.1s,comp=Z,2μm
BLJI Banyuglugur 70.04 270 P **P** **07 14 45.2 -0.6**
JHJ Hachijo jima 2 70.19 321 LR LR 07 45 35.4
comp=Z,1μm,18.1s,baz=114,slow=36
MIR Mirnyy 70.44 205 ⇑*i*P **P** **07 14 49.0 +1.7**
MIR *i* S **S** **07 24 02.0 +4.5**
MIR pmax pmax
comp=Z,1μm,5.0s
MIR smax smax
comp=N,3μm,7.0s
MIR MLR MLR
comp=Z,4μm,17.0s
BBKI Banjar Baru 70.47 274 P **P** **07 14 52.7 +4.3**
MYLDM Lahad Datu 70.64 284 *e*P **P** **07 14 48.5 -0.9**
comp=Z,266nm,1.9s
TSM Tawau 70.83 283 ⇑P **P** **07 14 53.1 +2.6**
GRJI Gresik 71.37 270 P **P** **07 14 54.3 +0.4**
PWJI Pagerwojo 71.60 269 P **P** **07 14 55.2 0.0**
comp=Z,57nm,0.8s,comp=Z,2μm
SDKM Sandakan 72.01 284 ⇓P **P** **07 14 58.8 +1.1**
PCJI Pacitan 72.12 268 P **P** **07 14 57.8 -0.5**
NGJI Ngawi 72.15 269 P **P** **07 15 00.4 +1.9**
KDM Kudat 72.89 285 ⇑P **P** **07 15 04.0 +1.1**
KKM Kota Kinabalu 73.07 284 *e*P **P** **07 15 04.0 -0.1**
comp=Z,58nm,1.0s
KKM LR LR
comp=Z,1μm,22.0s
INU Inuyama 73.38 321 *e*P **P** **07 15 05.6 +0.3**
comp=Z,178nm,1.9s
MJAR Matsushiro Arr 73.53 322 P **P** **07 15 05.6 -0.7**
comp=Z,8.2nm,0.7s,baz=158,slow=5.8,SNR=18
MJAR LR LR 07 43 17.1
comp=Z,825nm,20.8s,baz=120,slow=32
MAJO Matsushiro 73.53 322 *i* P **P** **07 15 05.7 -0.5**
MAJO pmax pmax
comp=Z,131nm,1.1s
MAJO Matsushiro 73.53 322 *e*P **P** **07 15 06.6 +0.4**
comp=Z,70nm,1.4s
MAJO LR LR
comp=Z,1μm,19.0s
MAT Matsushiro 73.53 322 P **P** **07 15 05.4 -0.8**
MAT S **SKiKP** **07 24 37.4 +3.2**
MJB9 Matsu-Tunnel 73.54 322 *e*P **P** **07 15 06.7 +0.4**
comp=Z,20nm,1.4s
BTM Bintulu 74.71 280 ⇑P **P** **07 15 14.9 +1.3**
STKI Sintang 74.93 276 P **P** **07 15 16.8 +1.9**
ERM Erimo 74.99 329 *i* P **P** **07 15 15.0 +0.5**
ERM pmax pmax
comp=Z,183nm,2.6s
ERM Erimo 74.99 329 *e*P **P** **07 15 13.8 -0.7**
comp=Z,138nm,1.7s
ERM LR LR
comp=Z,5μm,20.0s
SBUM Sibu 75.19 279 ⇑P **P** **07 15 17.5 +1.1**
SBUM Sibu 75.19 279 *e*P **P** **07 15 15.4 -1.0**
comp=Z,29nm,1.3s
NIKH Nikolski High 75.31 4 *e*P **P** **07 15 17.2 +1.1**
comp=Z,88nm,1.0s
KUR Kuril'sk 75.45 334 *e*P **P** **07 15 16.9 -0.2**
KUR *e*S **S** **07 25 01.8 +7.1**
KUR pmax pmax
comp=N,45nm,1.8s
KUR pmax pmax
comp=E,38nm,1.8s
KUR pmax pmax
comp=Z,162nm,1.8s
KUR pmax pmax
comp=Z,2μm,4.4s
KUR MLR MLR
comp=E,587nm,19.0s
KUR MLR MLR
comp=Z,2μm,19.0s
CISI Cisompet, Garu 75.46 268 P **P** **07 15 17.5 -0.5**
JNU Nakatsue 75.71 315 P **P** **07 15 18.5 -0.5**
comp=Z,6.2nm,0.7s,baz=146,slow=3.6,SNR=8.9
JNU Nakatsue 75.71 315 *e*P **P** **07 15 19.1 +0.1**
comp=Z,16nm,1.0s
LEM Lembang 75.90 268 P **P** **07 15 19.8 -0.9**
UNV Unalaska Valle 76.35 5 *e*P **P** **07 15 21.3 -0.7**
comp=Z,100nm,1.2s
KSM Kuching 76.56 277 ⇓P **P** **07 15 24.9 +0.7**
KSM Kuching 76.56 277 *e*P **P** **07 15 22.9 -1.3**
comp=Z,69nm,1.2s
KSM LR LR
comp=Z,1μm,20.0s
ASAJ Asahikawa 76.86 330 *e*P **P** **07 15 25.6 +0.5**
comp=Z,122nm,1.2s
YULB Yu-li 77.01 302 *e*P **P** **07 15 26.1 -0.4**
comp=Z,22nm,1.0s
NACB Ninganchiao 77.19 303 *e*P **P** **07 15 26.4 -1.0**
comp=Z,47nm,1.0s
SKR Severo-Kuril's 77.21 342 *c i*P **P** **07 15 24.9 -2.0**
SKR *e* 07 15 35.7
SKR *e* 07 18 19.7
SKR *e*PPP PPP 07 20 07.0
SKR *e*S **S** **07 25 17.2 +3.4**
SKR *e*PS **PnS** **07 25 51.9 -4.8**
SKR *e*SS **SS** **07 30 06.2 -6.6**
SKR pmax pmax
comp=Z,54nm,2.4s
SKR pmax pmax
comp=Z,2μm,4.2s
SKR MLR MLR
comp=Z,2μm,19.0s
SSLB Suanglung 77.48 302 *e*P **P** **07 15 29.2 +0.1**
comp=Z,30nm,0.9s
TPUB Ta-pu 77.48 302 *e*P **P** **07 15 28.4 -0.8**
comp=Z,83nm,0.9s
SAO San Andreas Ge 77.52 41 *e*P **P** **07 15 30.4 +1.3**
SAO pmax pmax
comp=Z,87nm,1.8s
SAO San Andreas Ge 77.52 41 *e*P **P** **07 15 30.4 +1.3**
comp=Z,87nm,1.8s
YHNB Yeheng 77.62 303 *e*P **P** **07 15 30.8 +0.8**
comp=Z,55nm,1.1s
YHNB LR LR
comp=Z,3μm,19.0s
TATO Taipei 77.69 304 PFAKE 07 15 40.0 +10
TATO LR LR
comp=Z,3μm,20.0s
CGJI Cibinong 77.76 268 P **P** **07 15 31.4 +0.5**
HOPS Hopland Field 78.02 39 *e*P **P** **07 15 32.6 +0.7**
comp=Z,126nm,1.8s
BAR Barrett 78.07 47 *e*P **P** **07 15 33.3 +1.0**
comp=Z,46nm,1.7s
MWC Mount Wilson 78.07 45 *e*P **P** **07 15 33.8 +1.3**
MWC pmax pmax
comp=Z,46nm,1.5s
MWC Mount Wilson 78.07 45 *e*P **P** **07 15 33.8 +1.3**
comp=Z,46nm,1.5s
MURC Murrieta 78.27 46 P **P** **07 15 34.2 +0.8**
baz=233,SNR=6.3
PMSA Palmer Station 78.32 156 P **P** **07 15 32.9 -0.2**
comp=Z,20nm,1.1s,baz=12,slow=11,SNR=2.3
PMSA Palmer Station 78.32 156 P **P** **07 15 32.9 -0.2**
PMSA LR LR
comp=Z,2μm,19.0s
BFSC Mount Baldy Ra 78.34 45 P **P** **07 15 34.5 +0.7**
baz=233
MONP2 Monument Peak 78.36 47 P **P** **07 15 34.6 +0.5**
baz=234,SNR=6.6
VES Vestal, Richgr 78.41 43 P **P** **07 15 35.0 +1.0**
baz=231,SNR=12
IKP In-Ko-Pah, Jac 78.43 47 P **P** **07 15 35.1 +0.7**
baz=234
SDPT Sand Point 78.48 8 *e*P **P** **07 15 34.2 +0.3**
comp=Z,106nm,1.2s
KMRM Mail Ridge 78.49 37 *e*P **P** **07 15 35.4 +1.0**
comp=Z,126nm,1.7s
EDW2 Edwards Air Fo 78.52 45 P **P** **07 15 35.4 +0.7**
baz=232,SNR=6.1
PET Petropavlovsk 78.62 344 *c i*P **P** **07 15 34.2 -0.5**
PET *e*S **S** **07 25 26.7 -2.3**
PET pmax pmax
comp=Z,49nm,1.4s
PET pmax pmax
comp=Z,700nm,12.8s
PET MLR MLR
comp=Z,3μm,18.0s
PET MLR MLR
comp=Z,3μm,19.0s
PET Petropavlovsk 78.62 344 PFAKE 07 15 40.0 +5.3
PET LR LR
comp=Z,3μm,19.0s
ISA Isabella, Lake 78.69 44 P **P** **07 15 36.2 +0.5**
baz=232,SNR=6.4
ISA Isabella, Lake 78.69 44 *e*P **P** **07 15 36.7 +1.0**
ISA pmax pmax
comp=Z,113nm,1.8s
ISA Isabella, Lake 78.69 44 *e*P **P** **07 15 36.7 +1.0**
comp=Z,113nm,1.8s
PFO Pinyon Flats O 78.77 46 LR LR 07 43 32.6
comp=Z,3μm,19.3s,baz=248,slow=30
PFO Pinyon Flats O 78.77 46 P **P** **07 15 37.1 +0.9**
baz=233,SNR=6.4

PFO	**Pinyon Flats O**	**78.77**	**46**	*e*P		**P**	**07 15 37.6**	**+1.4**
PFO	comp=Z,73nm,1.8s			pmax		pmax			
PFO	**Pinyon Flats O**	**78.77**	**46**	*e*P		**P**	**07 15 37.6**	**+1.4**
	comp=Z,73nm,1.8s								
TPFO	**Pinon Flats**	**78.77**	**46**	P		**P**	**07 15 37.1**	**+0.9**
	baz=233,SNR=5.4								
SWSC	**Sam W. Stewart**	**78.82**	**47**	P		**P**	**07 15 37.1**	**+0.8**
	baz=234								
BBRC	**Big Bear Solar**	**78.85**	**46**	P		**P**	**07 15 37.4**	**+0.7**
	baz=233								
KHMM	**Horse Mountain**	**78.92**	**37**	*e*P		**P**	**07 15 38.2**	**+1.3**
	comp=Z,38nm,1.3s								
PEA0	**Petropavlovsk-**	**78.95**	**344**	*e*P		**P**	**07 15 35.9**	**-0.7**
PEA0B	**Petropavlovsk-**	**78.95**	**344**	*e*P		**P**	**07 15 36.2**	**-0.4**
	comp=Z,139nm,1.1s								
PETK	**Petropavlovsk-**	**78.95**	**344**	P		**P**	**07 15 36.2**	**-0.4**
	comp=Z,53nm,0.9s,baz=110,slow=7.1,SNR=25								
PETK				LR		LR	07 46 15.2		
	comp=Z,2µm,20.2s,baz=147,slow=32								
PETK	**Petropavlovsk-**	**78.95**	**344**	P		**P**	**07 15 36.2**	**-0.4**
PETK				pmax		pmax			
	comp=Z,55nm,0.9s								
YSS	**Yuzh-Sakhalins**	**78.98**	**332**⇑	*e*P		**P**	**07 15 37.8**	**+1.0**
YSS				*e**SP		**sP**	**07 15 54.5**	**+2.8**
YSS				*e*			07 18 33.7		
YSS				*e*S		**S**	**07 25 37.8**	**+4.8**
YSS				pmax		pmax			
	comp=Z,90nm,2.0s								
YSS				pmax		pmax			
	comp=Z,3µm,4.0s								
YSS				MLR		MLR			
	comp=N,1µm,20.0s								
YSS				MLR		MLR			
	comp=E,1µm,20.0s								
YSS				MLR		MLR			
	comp=Z,2µm,20.0s								
YSS	**Yuzh-Sakhalins**	**78.98**	**332**	*e*P		**P**	**07 15 37.1**	**+0.3**
	comp=Z,114nm,1.1s								
YSS				LR		LR			
	comp=Z,826nm,20.0s								
CMB	**Columbia Colle**	**78.99**	**41**	*e*P		**P**	**07 15 36.8**	**-0.4**
CMB				pmax		pmax			
	comp=Z,81nm,1.9s								
CMB	**Columbia Colle**	**78.99**	**41**	*e*P		**P**	**07 15 36.8**	**-0.4**
	comp=Z,81nm,1.9s								
LRMC	**Laurel Mtn Rad**	**79.08**	**44**	P		**P**	**07 15 38.9**	**+0.9**
	baz=232								
AFDM	**Forest Hills D**	**79.23**	**40**	*e*P		**P**	**07 15 39.6**	**+1.1**
	comp=Z,22nm,1.3s								
KRMB	**Red Mountain**	**79.26**	**36**	*e*P		**P**	**07 15 38.9**	**+0.1**
	comp=Z,102nm,1.8s								
KASI	**Kota Agung**	**79.26**	**268**	P		**P**	**07 15 38.0**	**-1.2**
BELC	**Belle Mtn. Jos**	**79.31**	**46**	P		**P**	**07 15 40.0**	**+0.8**
	baz=234,SNR=5.8								
ORV	**Oroville**	**79.31**	**39**	*e*P		**P**	**07 15 38.5**	**-0.4**
ORV				pmax		pmax			
	comp=Z,83nm,1.9s								
ORV	**Oroville**	**79.31**	**39**	*e*P		**P**	**07 15 39.1**	**+0.2**
	comp=Z,83nm,1.9s								
WDC	**Whiskeytown Da**	**79.39**	**38**	*e*P		**P**	**07 15 39.2**	**-0.1**
WDC				pmax		pmax			
	comp=Z,77nm,1.6s								
WDC	**Whiskeytown Da**	**79.39**	**38**	*e*P		**P**	**07 15 39.2**	**-0.1**
	comp=Z,77nm,1.6s								
CWC	**Cottonwood Cre**	**79.42**	**43**	P		**P**	**07 15 40.8**	**+1.0**
	baz=232								
BC3	**Big Chuckawall**	**79.47**	**47**	P		**P**	**07 15 40.8**	**+0.8**
	baz=234,SNR=12								
GLA	**Glamis**	**79.54**	**48**	P		**P**	**07 15 41.2**	**+0.8**
	baz=235,SNR=6.4								
GLA	**Glamis**	**79.54**	**48**	*e*P		**P**	**07 15 41.2**	**+0.8**
GLA				pmax		pmax			
	comp=Z,100nm,1.7s								
GLA	**Glamis**	**79.54**	**48**	*e*P		**P**	**07 15 41.2**	**+0.8**
	comp=Z,100nm,1.8s								
GSC	**Goldstone, Bar**	**79.55**	**45**	P		**P**	**07 15 41.3**	**+0.9**
	baz=233,SNR=8.3								
GSC	**Goldstone, Bar**	**79.55**	**45**	*e*P		**P**	**07 15 40.8**	**+0.4**
GSC				pmax		pmax			
	comp=Z,37nm,1.5s								
GSC	**Goldstone, Bar**	**79.55**	**45**	*e*P		**P**	**07 15 40.8**	**+0.4**
	comp=Z,37nm,1.5s								
N02D	**Trinity Center**	**79.56**	**37**	P		**P**	**07 15 41.5**	**+1.2**
	baz=228,SNR=13								
MPMC	**Manual Prospec**	**79.56**	**44**	P		**P**	**07 15 41.4**	**+0.8**
	baz=232								
HEC	**Hector Ludlow**	**79.57**	**46**	P		**P**	**07 15 41.5**	**+1.0**
	baz=233								
O03D	**Paynes Creek**	**79.62**	**38**	P		**P**	**07 15 42.1**	**+1.4**
	baz=229,SNR=17								
DAC	**Darwin (Calif)**	**79.63**	**44**	*e*P		**P**	**07 15 41.2**	**+0.2**
DAC				pmax		pmax			
	comp=Z,82nm,1.9s								
DAC	**Darwin (Calif)**	**79.63**	**44**	*e*P		**P**	**07 15 41.2**	**+0.2**
	comp=Z,82nm,1.9s								
CHGN	**Chignik**	**79.70**	**9**	*e*P		**P**	**07 15 41.3**	**+0.8**
M02C	**Callahan**	**79.75**	**37**	P		**P**	**07 15 42.4**	**+1.1**
	baz=228,SNR=12								
L02D	**Cave Junction,**	**79.86**	**36**	P		**P**	**07 15 43.1**	**+1.2**
	baz=227								
WAKR	**Walker**	**79.86**	**41**	*e*P		**P**	**07 15 43.0**	**+0.8**
	comp=Z,152nm,1.9s								
IRM	**Iron Mountain**	**79.97**	**47**	P		**P**	**07 15 43.7**	**+1.1**
	baz=234,SNR=14								
GMRC	**Granite Mounta**	**79.99**	**46**	P		**P**	**07 15 43.7**	**+0.8**
	baz=234,SNR=9.5								
YBH	**Yreka Blue Hor**	**80.06**	**37**	*e*P		**P**	**07 15 42.9**	**-0.1**
YBH				pmax		pmax			
	comp=Z,170nm,1.9s								
YBH	**Yreka Blue Hor**	**80.06**	**37**	*e*P		**P**	**07 15 42.9**	**-0.1**
	comp=Z,167nm,1.9s								
113A	**Mohawk Valley,**	**80.11**	**48**	*e*P		**P**	**07 15 44.9**	**+1.5**
	comp=Z,57nm,1.6s								
Y12C	**Blythe**	**80.15**	**47**	P		**P**	**07 15 44.3**	**+0.7**
	baz=235								
Y12C	**Blythe**	**80.15**	**47**	*e*P		**P**	**07 15 44.8**	**+1.2**
	comp=Z,52nm,1.5s								
TUQ	**Turquoise Moun**	**80.20**	**45**	P		**P**	**07 15 44.7**	**+0.7**
	baz=234								
FURC	**Furnace Creek,**	**80.21**	**44**	P		**P**	**07 15 44.6**	**+0.8**
	baz=233,SNR=8.5								
GRAC	**Grapevine Rang**	**80.21**	**43**	P		**P**	**07 15 44.2**	**+0.3**
	baz=232,SNR=23								
SHOC	**Shoshone, Teco**	**80.25**	**45**	P		**P**	**07 15 44.4**	**+0.2**
	baz=233,SNR=5.7								
KSRS	**Korea Array**	**80.30**	**317**	P		**P**	**07 15 45.0**	**+0.7**
	comp=Z,20nm,1.0s,baz=139,slow=6.4,SNR=17								
KSRS				LR		LR	07 48 39.7		
	comp=Z,1µm,19.6s,baz=126,slow=34								
KSRS	**Korea Array**	**80.30**	**317**	P		**P**	**07 15 45.0**	**+0.7**
KSRS				pmax		pmax			
	comp=Z,20nm,1.0s								
KS15	**Wonju Array Si**	**80.31**	**317**	*e*P		**P**	**07 15 44.6**	**+0.3**
KSAR	**Wonju Array Be**	**80.31**	**317**	P		**P**	**07 15 45.0**	**+0.6**
KSAR	**Wonju Array Be**	**80.31**	**317**	P		**P**	**07 15 45.0**	**+0.6**
214A	**Organ Pipe Nat**	**80.32**	**50**	P		**P**	**07 15 44.5**	**-0.1**
	baz=236,SNR=6.9								
214A	**Organ Pipe Nat**	**80.32**	**50**	*e*P		**P**	**07 15 44.6**	**0.0**
	comp=Z,437nm,1.9s								
KS01	**Wonju Array Si**	**80.33**	**317**	*e*P		**P**	**07 15 44.3**	**-0.1**
HUMO	**Hull Mountain**	**80.52**	**36**	*e*P		**P**	**07 15 45.8**	**+0.4**
	comp=Z,104nm,1.8s								
LDFC	**Landfair**	**80.53**	**46**	*e*P		**P**	**07 15 46.6**	**+0.9**
	comp=Z,147nm,1.8s								
M04C	**Macdoel**	**80.58**	**37**	P		**P**	**07 15 46.2**	**+0.3**
	baz=228,SNR=6.5								
PAHR	**Pah Rah Range**	**80.66**	**40**	*e*P		**P**	**07 15 47.7**	**+1.3**
	comp=Z,66nm,1.8s								
MAW	**Mawson**	**80.68**	**199**	P		**P**	**07 15 45.8**	**-0.1**
	comp=Z,18nm,0.8s,baz=145,slow=5.1,SNR=47								
MAW				LR		LR	07 50 10.3		
	comp=Z,5µm,18.8s,baz=112,slow=35								
MAW	**Mawson**	**80.68**	**199**	*e*P		**P**	**07 15 46.2**	**+0.3**
	comp=Z,32nm,1.8s								
PDMCI	**Parker Dam,Lak**	**80.73**	**47**	P		**P**	**07 15 47.3**	**+0.7**
	baz=235,SNR=7.0								
LHSI	**Lahat**	**80.79**	**270**	P		**P**	**07 15 46.3**	**-1.2**
TPNV	**Topopah Spring**	**80.89**	**44**	P		**P**	**07 15 47.9**	**+0.1**
	baz=233,SNR=9.3								
TPNV	**Topopah Spring**	**80.89**	**44**	*e*P		**P**	**07 15 48.4**	**+0.7**
TPNV				pmax		pmax			
	comp=Z,36nm,1.3s								
TPNV	**Topopah Spring**	**80.89**	**44**	*e*P		**P**	**07 15 48.4**	**+0.7**
	comp=Z,36nm,1.4s								
I03D	**Drain, OR**	**81.04**	**35**	P		**P**	**07 15 49.1**	**+1.0**
	baz=227								
INCN	**Inchon**	**81.13**	**317**	*e*P		**P**	**07 15 48.7**	**0.0**
	comp=Z,94nm,1.1s								
INCN				LR		LR			
	comp=Z,1µm,19.0s								
SSE	**Sheshan**	**81.18**	**309**	P		**P**	**07 15 48.9**	**-0.2**
SSE				S		**S**	**07 25 53.5**	**-3.4**
SSE				pmax		pmax			
	comp=Z,28nm,1.2s								
SSE				pmax		pmax			
	comp=Z,860nm,6.0s								
SSE				LR		LR			
	comp=Z,740nm,34.5s								
SSE				LR		LR			
	comp=Z,890nm,34.5s								
SSE				LR		LR			
	comp=Z,1µm,33.9s								
Y14A	**Wickenburg**	**81.30**	**48**	*e*P		**P**	**07 15 50.0**	**+0.2**
	comp=Z,358nm,1.9s								
SHPR	**Sheep Range**	**81.33**	**45**	*e*P		**P**	**07 15 50.2**	**+0.2**
	comp=Z,56nm,1.9s								
W13A	**Hualapai Mount**	**81.36**	**46**	*e*P		**P**	**07 15 51.0**	**+0.7**
	comp=Z,62nm,1.8s								
OHAK	**Old Harbor**	**81.44**	**12**	*e*P		**P**	**07 15 51.0**	**+1.2**
	comp=Z,77nm,1.3s								
MOD	**Modoc Plateau**	**81.53**	**38**	*e*P		**P**	**07 15 51.8**	**+0.8**
	comp=Z,119nm,1.9s								
VLA	**Vladivostok**	**81.58**	**324**	*c i*P		**P**	**07 15 51.8**	**+0.9**
VLA				pmax		pmax			
	comp=Z,117nm,1.4s								
I04A	**Tendick Farm,**	**81.61**	**35**	P		**P**	**07 15 51.8**	**+0.6**
	baz=228								
MSHR	**Mys Shultsa**	**81.63**	**323**	*ce*P		**P**	**07 15 52.5**	**+1.3**
K05A	**Summer Lake**	**81.73**	**37**	*e*P		**P**	**07 15 52.8**	**+0.7**
	comp=Z,239nm,1.8s								
J05D	**Fort Rock, OR**	**81.91**	**36**	P		**P**	**07 15 53.0**	**+0.1**
	baz=229,SNR=12								
TUC	**Tucson**	**81.95**	**50**	P		**P**	**07 15 53.5**	**+0.2**
	baz=237								
TUC	**Tucson**	**81.95**	**50**	*e*P		**P**	**07 15 53.8**	**+0.5**
TUC				pmax		pmax			
	comp=Z,82nm,1.8s								
TUC	**Tucson**	**81.95**	**50**	*e*P		**P**	**07 15 53.8**	**+0.5**
	comp=Z,82nm,1.8s								
TUC				LR		LR			
	comp=Z,8µm,19.0s								
TYV	**Tymovskoe**	**82.05**	**334**	*e*P		**P**	**07 15 51.2**	**-2.0**
TYV				*e*S		**S**	**07 26 09.0**	**+4.0**
TYV				pmax		pmax			
	comp=Z,26nm,1.6s								
TYV				pmax		pmax			
	comp=N,1µm,4.0s								
TYV				pmax		pmax			
	comp=Z,2µm,4.0s								
TYV				smax		smax			
	comp=N,4µm,12.0s								
TYV				MLR		MLR			
	comp=E,2µm,20.0s								
TYV				MLR		MLR			
	comp=Z,4µm,17.0s								
KDAK	**Kodiak Island**	**82.10**	**12**	*e*P		**P**	**07 15 53.6**	**+0.3**
KDAK				pmax		pmax			
	comp=Z,120nm,1.4s								
KDAK	**Kodiak Island**	**82.10**	**12**	*e*P		**P**	**07 15 53.6**	**+0.3**
	comp=Z,116nm,1.4s								
KDAK				LR		LR			
	comp=Z,2µm,19.0s								
G03D	**McMinnville, O**	**82.12**	**34**	P		**P**	**07 15 54.2**	**+0.5**
	baz=227								
R11A	**Troy Canyon, C**	**82.15**	**43**	P		**P**	**07 15 54.6**	**+0.2**
	baz=233,SNR=12								
R11A	**Troy Canyon, C**	**82.15**	**43**	*e*P		**P**	**07 15 55.7**	**+1.4**
	comp=Z,39nm,1.9s								
USRK	**Ussuriysk Ar.**	**82.24**	**324**	P		**P**	**07 15 55.0**	**+0.6**
	comp=Z,92nm,1.0s,baz=116,slow=4.4,SNR=41								
USRK				LR		LR	07 49 20.8		
	comp=Z,2µm,19.7s,baz=126,slow=34								
BMN	**Battle Mountai**	**82.40**	**41**	*e*P		**P**	**07 15 55.4**	**-0.2**
BMN				pmax		pmax			
	comp=Z,140nm,1.9s								
BMN	**Battle Mountai**	**82.40**	**41**	*e*P		**P**	**07 15 55.4**	**-0.2**
	comp=Z,137nm,1.9s								
319A	**Douglas**	**82.53**	**52**	*e*P		**P**	**07 15 58.2**	**+1.8**
	comp=Z,113nm,2.0s								
I05D	**Terrebonne, OR**	**82.55**	**36**	P		**P**	**07 15 56.9**	**+0.8**
	baz=229,SNR=12								
MYKOM	**Kota Tinggi**	**82.62**	**275**	*e*P		**P**	**07 15 56.4**	**-0.7**
	comp=Z,148nm,1.3s								
X16A	**Lo Mia Camp, P**	**82.64**	**48**	*e*P		**P**	**07 15 56.4**	**-0.7**
	comp=Z,84nm,1.8s								
WVOR	**Wild Horse Val**	**82.82**	**38**	*e*P		**P**	**07 15 57.6**	**-0.1**
WVOR				pmax		pmax			
	comp=Z,134nm,1.9s								
WVOR				MLR		MLR			
	comp=Z,5µm,20.0s								
WVOR	**Wild Horse Val**	**82.82**	**38**	*e*P		**P**	**07 15 57.6**	**-0.1**
	comp=Z,134nm,1.9s								
WVOR				LR		LR			
	comp=Z,5µm,20.0s								
E03A	**Lebam**	**82.88**	**33**	*e*P		**P**	**07 15 58.1**	**+0.4**
	comp=Z,47nm,1.1s								
LCMT	**Little Creek M**	**82.88**	**45**	*e*P		**P**	**07 15 58.3**	**+0.2**
	comp=Z,113nm,1.9s								
HPIG		**83.00**	**57**	*e*P		**P**	**07 15 59.1**	**0.0**
	comp=Z,72nm,1.8s								
CCUT	**Cedar City**	**83.11**	**45**	*e*P		**P**	**07 15 58.8**	**-0.7**
	comp=Z,142nm,1.9s								
VFP	**Flag Point**	**83.13**	**35**	P		**P**	**07 16 00.0**	**+0.7**
G05D	**Wamic, OR**	**83.16**	**35**	P		**P**	**07 15 59.7**	**+0.5**
	baz=229								
KNB	**Kanab**	**83.16**	**45**	*e*P		**P**	**07 15 59.9**	**+0.3**
KNB				pmax		pmax			
	comp=Z,180nm,1.7s								
KNB	**Kanab**	**83.16**	**45**	*e*P		**P**	**07 15 59.9**	**+0.3**
	comp=Z,178nm,1.7s								
U15A	**North Rim**	**83.18**	**46**	*e*P		**P**	**07 16 00.2**	**+0.3**
	comp=Z,148nm,1.8s								
GZH	**Guangzhou**	**83.22**	**298**	P		**P**	**07 16 00.8**	**+0.8**
GZH				S		**S**	**07 26 26.8**	**+8.7**
GZH				pmax		pmax			
	comp=Z,2µm,5.0s								
WUAZ	**Wupatki**	**83.29**	**47**	P		**P**	**07 16 00.0**	**-0.3**
	baz=236								
WUAZ	**Wupatki**	**83.29**	**47**	*e*P		**P**	**07 16 00.5**	**+0.1**
	comp=Z,108nm,1.8s								
WUAZ				LR		LR			
	comp=Z,3µm,20.0s								
NLWA	**Neilton Lookou**	**83.31**	**32**	*e*P		**P**	**07 16 00.8**	**+0.8**
	comp=Z,103nm,1.6s								
NLWA				LR		LR			
	comp=Z,3µm,20.0s								
OSR	**Olympics--Salm**	**83.34**	**32**	P		**P**	**07 16 02.5**	**+2.3**
NJ2	**Nanjing**	**83.38**	**309**	*e*P		**P**	**07 16 01.3**	**+0.7**
NJ2				pmax		pmax			
	comp=Z,90nm,1.4s								
TDL	**Tradedollar La**	**83.43**	**34**	P		**P**	**07 16 00.4**	**-0.3**
ZAIG	**Zacatecas**	**83.50**	**62**	*e*P		**P**	**07 16 02.8**	**+1.0**
	comp=Z,68nm,1.8s								
G06A	**Carlson Farm,**	**83.52**	**35**	*e*P		**P**	**07 16 02.0**	**+0.9**
	comp=Z,234nm,2.0s								
VTHM	**Trough**	**83.52**	**35**	P		**P**	**07 16 00.4**	**-0.7**
HABR	**Khabarovsk**	**83.61**	**329**	*de*P		**P**	**07 15 59.9**	**-1.5**
HABR				*e*			07 19 13.0		
HABR				*e*PPP		PPP	07 21 04.6		
HABR				*e*S		S	07 26 10.9	-10	
HABR				*e*			07 26 24.2		
HABR				*e*SS		**SS**	**07 31 40.6**	**-8.0**
HABR				*e*SSS		SSS	07 35 10.4		
HABR				MLR		MLR			
	comp=Z,1µm,18.0s								
X18A	**Snowflake**	**83.73**	**49**	*e*P		**P**	**07 16 04.0**	**+1.4**
	comp=Z,74nm,1.8s								
PKCU	**Pink Cliffs**	**83.74**	**45**	*e*P		**P**	**07 16 03.6**	**+0.8**
	comp=Z,247nm,1.9s								
MDJ	**Mudanjiang**	**83.81**	**324**	P		**P**	**07 16 04.1**	**+1.6**
MDJ				pP		pP	07 16 13.6	+0.1	
MDJ				sP		sP	07 16 17.4	0.0	
MDJ				PP		**PP**	**07 19 17.1**	**+0.7**
MDJ				S		**S**	**07 26 25.8**	**+2.5**
MDJ				pmax		pmax			
	comp=Z,98nm,1.8s								
MDJ				pmax		pmax			
	comp=Z,2µm,6.1s								
MDJ				LR		LR			
	comp=Z,1µm,21.0s								
MDJ				LR		LR			
	comp=Z,1µm,20.3s								
MDJ				LR		LR			
	comp=Z,3µm,19.6s								
MDJ	**Mudanjiang**	**83.81**	**324**	*e*P		**P**	**07 16 04.0**	**+1.4**
	comp=Z,198nm,1.1s								
MDJ				LR		LR			
	comp=Z,3µm,20.0s								
COCO	**West Island**	**83.87**	**259**	PFAKE			07 16 10.0	+6.4	
COCO				LR		LR			
	comp=Z,2µm,20.0s								
LON	**Longmire**	**83.90**	**34**	*e*P		**P**	**07 16 03.3**	**+0.2**
LON				pmax		pmax			
	comp=Z,53nm,1.6s								
LON	**Longmire**	**83.90**	**34**	P		**P**	**07 16 02.3**	**-0.7**
CNPM	**China Poot**	**83.98**	**12**	*e*P		**P**	**07 16 03.7**	**+0.6**
	comp=Z,105nm,1.5s								
D05A	**Enumclaw**	**84.11**	**33**	*e*P		**P**	**07 16 04.8**	**+0.8**
	comp=Z,260nm,1.6s								
MTPU	**Mount Pierson**	**84.16**	**45**	*e*P		**P**	**07 16 05.4**	**+0.4**
	comp=Z,215nm,1.8s								
W18A	**Petrified Fore**	**84.20**	**48**	P		**P**	**07 16 05.3**	**+0.2**
	baz=238								
W18A	**Petrified Fore**	**84.20**	**48**	*e*P		**P**	**07 16 07.0**	**+2.0**
	comp=Z,152nm,1.9s								
121A	**Cookes Peak, D**	**84.22**	**51**	P		**P**	**07 16 05.4**	**+0.3**
	baz=239								
121A	**Cookes Peak, D**	**84.22**	**51**	*e*P		**P**	**07 16 06.7**	**+1.6**
	comp=Z,73nm,1.8s								
BRLK	**Bradley Lake**	**84.27**	**12**	*e*P		**P**	**07 16 05.7**	**+1.1**
	comp=Z,117nm,1.4s								
QIZ	**Qiongzhong**	**84.31**	**293**	P		**P**	**07 16 05.8**	**+0.1**
QIZ				sP		**sP**	**07 16 18.8**	**-1.8**
QIZ				PP		**PP**	**07 19 19.5**	**-1.5**
QIZ				S		**S**	**07 26 29.8**	**+0.5**
QIZ				ScS		**ScS**	**07 26 39.8**	**-1.3**
QIZ				sS		**sS**	**07 26 45.8**	**-1.6**
QIZ				SS		**SS**	**07 32 00.5**	**+0.5**
QIZ				pmax		pmax			
	comp=Z,1µm,8.0s								
QIZ				LR		LR			
	comp=Z,1µm,20.0s								
QIZ				LR		LR			
	comp=Z,1µm,19.7s								
QIZ	**Qiongzhong**	**84.31**	**293**	PFAKE			07 16 20.0	+14	
QIZ				LR		LR			
	comp=Z,2µm,19.0s								
PGC	**Sidney**	**84.38**	**31**	*e*P		**P**	**07 16 06.0**	**+0.7**
	comp=Z,41nm,1.1s								
MSU	**Marysvale**	**84.43**	**44**	*e*P		**P**	**07 16 06.2**	**+0.1**
MSU	**Marysvale**	**84.43**	**44**	*e*P		**P**	**07 16 06.2**	**+0.1**
G08A	**Pilot Rock**	**84.45**	**36**	*e*P		**P**	**07 16 05.9**	**-0.1**
	comp=Z,151nm,1.8s								
TLIG	**Tlapa**	**84.56**	**69**	*e*P		**P**	**07 16 08.1**	**+1.0**
	comp=Z,119nm,1.7s								
RSO	**Redoubt South**	**84.58**	**11**	*e*P		**P**	**07 16 07.8**	**+1.5**
NKL	**Nikolayevsk**	**84.59**	**335**	*i*P		**P**	**07 16 06.0**	**-0.2**
NKL				*i*S		**S**	**07 26 30.0**	**-0.6**
NKL				pmax		pmax			
	comp=Z,220nm,1.8s								
NKL				pmax		pmax			
	comp=N,500nm,4.0s								
NKL				pmax		pmax			
	comp=E,600nm,4.0s								
NKL				pmax		pmax			
	comp=Z,2µm,4.0s								
NKL				smax		smax			
	comp=N,2µm,14.0s								
NKL				smax		smax			
	comp=E,800nm,14.0s								
NKL				smax		smax			
	comp=Z,800nm,14.0s								
NKL				MLR		MLR			
	comp=E,900nm,20.0s								
NKL				MLR		MLR			
	comp=N,2µm,18.0s								
NKL				MLR		MLR			
	comp=Z,2µm,18.0s								
SVW2	**Sparrevohn**	**84.73**	**9**	*e*P		**P**	**07 16 05.7**	**-1.1**
	comp=Z,15nm,1.0s								
PAYG	**Puerto Ayora**	**84.74**	**89**	PFAKE			07 16 20.0	+12	
PAYG				LR		LR			
	comp=Z,2µm,20.0s								
B05A	**Bryant**	**84.78**	**32**	P		**P**	**07 16 07.4**	**+0.1**
	baz=228,SNR=9.3								
A04D	**Lummi Island**	**84.79**	**32**	P		**P**	**07 16 07.4**	**0.0**
	baz=227,SNR=5.8								
BBB	**Bella Bella**	**84.80**	**27**	*e*P		**P**	**07 16 08.8**	**+1.5**
	comp=Z,189nm,2.0s								
HAWA	**Hanford**	**84.85**	**35**	*e*P		**P**	**07 16 09.4**	**+1.6**
	comp=Z,145nm,1.9s								
HAWA				LR		LR			
	comp=Z,7µm,20.0s								
DUG	**Dugway, Tooele**	**84.98**	**43**	P		**P**	**07 16 09.2**	**+0.5**
	baz=235								
DUG	**Dugway, Tooele**	**84.98**	**43**	*e*P		**P**	**07 16 10.3**	**+1.5**
DUG				pmax		pmax			
	comp=Z,59nm,1.8s								
DUG	**Dugway, Tooele**	**84.98**	**43**	*e*P		**P**	**07 16 10.3**	**+1.5**
	comp=Z,59nm,1.8s								
DUG				LR		LR			
	comp=Z,3µm,19.0s								
MFID	**Camas Ranch**	**85.05**	**39**	*e*P		**P**	**07 16 08.2**	**-0.8**
	comp=Z,82nm,1.8s								
BMO	**Blue Mountains**	**85.09**	**37**	*e*P		**P**	**07 16 08.6**	**-0.6**
	comp=Z,89nm,1.8s								
BMO				LR		LR			
	comp=Z,5µm,20.0s								
DL2	**Dalian**	**85.16**	**316**⇑	*i*P		**P**	**07 16 10.1**	**+0.6**
DL2				S		**S**	**07 26 40.8**	**+3.8**
DL2				pmax		pmax			
	comp=Z,96nm,0.7s								
DL2				pmax		pmax			
	comp=Z,2µm,4.5s								
DL2				LR		LR			
	comp=Z,1µm,14.9s								
DL2				LR		LR			
	comp=Z,690nm,17.7s								
DL2				LR		LR			
	comp=Z,2µm,26.6s								
BGU	**Big Grassy Mou**	**85.26**	**42**	*e*P		**P**	**07 16 10.8**	**+0.6**
	comp=Z,61nm,1.9s

KLR LR LR 07 47 15.3
comp=Z,2µm,22.0s,baz=133,slow=31
RC01 Rabbit Creek A 85.72 12 *e*P **P 07 16 11.7 -0.1**
comp=Z,113nm,1.6s
PLCA Paso Flores 85.81 132 P **P 07 16 11.2 -1.8**
comp=Z,7.6nm,1.2s,baz=270,slow=10,SNR=3.0
PLCA LR LR 07 48 41.9
comp=Z,4µm,18.5s,baz=262,slow=32
F10A Beach Ranch, E 85.83 36 *e*P **P 07 16 11.9 -0.9**
comp=Z,129nm,1.9s
SRU San Rafael Swe 85.83 45 *e*P **P 07 16 12.7 -0.4**
SRU San Rafael Swe 85.83 45 *e*P **P 07 16 12.7 -0.4**
comp=Z,78nm,1.5s
SUA Susitna One 85.88 11 *e*P **P 07 16 13.2 +0.5**
comp=Z,200nm,1.9s
BNM Barren Site 85.88 51 *e*P **P 07 16 13.5 0.0**
P17A Butcher Ranch, 85.89 44 *e*P **P 07 16 13.6 +0.2**
comp=Z,104nm,1.7s
HVU Hansel Valley 85.91 42 *e*P **P 07 16 14.2 +0.8**
HVU pmax pmax
comp=Z,70nm,1.9s
HVU Hansel Valley 85.91 42 *e*P **P 07 16 14.2 +0.8**
comp=Z,70nm,1.9s
CTU Camp Tracy 85.93 43 *e*P **P 07 16 14.5 +0.9**
comp=Z,207nm,1.9s
SNAA Sanae 85.94 177 P **P 07 16 12.3 -0.8**
SNAA Sanae 85.94 177 *d i*P **P 07 16 13.0 -0.1**
SNAA Sanae 85.94 177 *e*P **P 07 16 12.1 -1.0**
comp=Z,61nm,1.3s
WHN Wuhan 85.95 305 ⇑P **P 07 16 14.9 +1.3**
WHN S **S 07 26 40.5 -4.6**
WHN sS **sS 07 27 08.3 +5.0**
WHN pmax pmax
comp=Z,840nm,2.2s
WHN LR LR
comp=Z,2µm,13.4s
WHN LR LR
comp=Z,3µm,17.9s
WHN LR LR
comp=Z,5µm,19.8s
LPM Los Pinos Moun 85.96 50 *e*P **P 07 16 14.4 +0.5**
HLID Hailey 85.96 39 P **P 07 16 13.3 -0.3**
baz=234
HLID Hailey 85.96 39 *e*P **P 07 16 14.2 +0.6**
comp=Z,47nm,1.7s
HLID LR LR
comp=Z,2µm,20.0s
GAMB Gambell 86.00 1 *e*P **P 07 16 15.2 +2.2**
comp=Z,90nm,1.1s
EYAK Cordova Ski Ar 86.05 14 *e*P **P 07 16 14.1 +0.7**
comp=Z,66nm,1.4s
JLU Jordanelle 86.06 43 *e*P **P 07 16 14.4 +0.1**
comp=Z,94nm,1.9s
RAGM Ragged Mountai 86.15 15 *e*P **P 07 16 14.1 +0.1**
comp=Z,176nm,2.0s
MVCO Mesa Verde 86.16 47 P **P 07 16 15.2 +0.3**
baz=238
MVCO Mesa Verde 86.16 47 *e*P **P 07 16 15.7 +0.9**
comp=Z,61nm,1.9s
MVCO LR LR
comp=Z,4µm,20.0s
PV05 Paradox Valley 86.21 46 *e*P **P 07 16 15.7 +0.6**
B08A Colville Reser 86.23 33 *e*P **P 07 16 16.0 +1.4**
comp=Z,48nm,1.8s
IPM Ipoh 86.25 276 *e*P **P 07 16 14.8 -0.7**
comp=Z,89nm,1.0s
PMR Palmer 86.30 12 *e*P **P 07 16 13.9 -0.7**
PMR Palmer 86.30 12 *e*P **P 07 16 13.9 -0.7**
comp=Z,132nm,1.7s
TCUT Toone Canyon 86.38 43 *e*P **P 07 16 15.6 -0.2**
comp=Z,111nm,1.4s
TT01 Tatalina 86.40 9 *e*P **P 07 16 14.5 -0.6**
WRAK Wrangell Islan 86.40 22 *e*P **P 07 16 15.4 +0.2**
comp=Z,106nm,1.8s
WRAK LR LR
comp=Z,2µm,21.0s
ANMO Albuquerque 86.40 50 P **P 07 16 15.4 -0.6**
baz=240
ANMO Albuquerque 86.40 50 *c e*P **P 07 16 15.4 -0.6**
ANMO pmax pmax
comp=Z,70nm,1.9s
ANMO Albuquerque 86.40 50 *e*P **P 07 16 15.7 -0.3**
comp=Z,144nm,1.9s
ANMO LR LR
comp=Z,5µm,19.0s
C09A Chrisman Ranch 86.42 34 *e*P **P 07 16 16.1 +0.5**
comp=Z,158nm,2.0s
PV09 Paradox Valley 86.42 46 *e*P **P 07 16 16.4 +0.2**
TTA Tatalina 86.42 9 *e*P **P 07 16 14.7 -0.6**
TTA Tatalina 86.42 9 *e*P **P 07 16 14.7 -0.6**
comp=Z,88nm,1.3s
LLLB Lillooet 86.46 31 *e*P **P 07 16 15.7 0.0**
comp=Z,108nm,2.0s
MA2 Magadan 86.48 343 P **P 07 16 14.0 -1.6**
comp=Z,13nm,0.9s,baz=156,slow=5.8,SNR=14
MA2 LR LR 07 51 19.0
comp=Z,3µm,20.1s,baz=164,slow=33
MA2 Magadan 86.48 343 P **P 07 16 14.0 -1.6**
MA2 pmax pmax
comp=Z,13nm,0.9s
PV04 Paradox Valley 86.51 46 *e*P **P 07 16 17.4 +0.9**
UBPT Khong Chiam 86.52 288 P **P 07 16 18.5 +1.8**
comp=Z,271nm,0.9s,comp=Z,4µm
HWUT Hardware Ranch 86.56 42 *e*P **P 07 16 17.0 +0.4**
comp=Z,45nm,1.8s
HWUT LR LR
comp=Z,4µm,20.0s
DIV Divide 86.57 14 *e*P **P 07 16 16.1 0.0**
comp=Z,96nm,1.4s
PV01 Paradox Valley 86.60 46 *e*P **P 07 16 17.4 +0.4**
SML Sawmill 86.65 12 *e*P **P 07 16 16.8 +0.4**
SML pmax pmax
comp=Z,101nm,1.6s
SML Sawmill 86.65 12 *e*P **P 07 16 16.8 +0.4**
comp=Z,101nm,1.6s
VNA1 Neumayer--Stat 86.65 176 P **P 07 16 16.1 -0.4**
BMRM Bremner River 86.68 14 *e*P **P 07 16 17.0 +0.4**
comp=Z,226nm,1.8s
TIA Tai'an 86.75 311 ⇑P **P 07 16 17.9 +0.4**
TIA S **S 07 26 46.1 -6.6**
TIA pmax pmax
comp=Z,130nm,1.2s
TIA pmax pmax
comp=Z,3µm,7.0s
TIA LR LR
comp=Z,410nm,17.0s
TIA LR LR
comp=Z,1µm,17.0s
TIA LR LR
comp=Z,1µm,19.0s
CRQM Cirque 86.84 15 *e*P **P 07 16 18.0 +0.5**
comp=Z,135nm,1.8s
KLU Klutina 86.86 13 *e*P **P 07 16 17.8 +0.3**
comp=Z,97nm,1.6s
SCM Sheep Creek Mo 86.87 13 *e*P **P 07 16 17.6 +0.1**
SCM Sheep Creek Mo 86.87 13 *e*P **P 07 16 17.6 +0.1**
comp=Z,255nm,1.8s
NVL N'lazarevskaya 86.89 182 *e*P **P 07 16 20.1 +2.5**
NVL eS S 07 26 43.6 -9.5
NVL eSS **SS 07 32 43.5 +9.0**
NVL eSSS SSS 07 36 13.8
NVL MLR MLR
comp=Z,5µm,22.0s
KULM Kulim 86.91 277 *e*P **P 07 16 17.7 -1.1**
comp=Z,106nm,1.3s
KULM LR LR
comp=Z,1µm,20.0s
PPLA Purkeypile 86.96 10 *e*P **P 07 16 17.7 -0.3**
comp=Z,20nm,1.1s
BALM Baldy 87.28 15 *e*P **P 07 16 19.9 +0.3**
BALM Baldy 87.28 15 *e*P **P 07 16 19.9 +0.3**
comp=Z,111nm,1.6s
NEW Newport 87.31 34 P **P 07 16 20.1 +0.2**
baz=232,SNR=5.6
NEW Newport 87.31 34 *e*P **P 07 16 20.0 +0.1**
NEW pmax pmax
comp=Z,37nm,1.8s
NEW MLR MLR
comp=Z,7µm,20.0s
NEW Newport 87.31 34 *e*P **P 07 16 20.0 +0.1**
comp=Z,37nm,1.8s
NEW LR LR
comp=Z,7µm,20.0s
CAST Castle Rocks 87.47 10 *e*P **P 07 16 19.2 -1.1**
comp=Z,73nm,1.4s
AHID Auburn Hatcher 87.49 41 *e*P **P 07 16 21.5 +0.3**
comp=Z,32nm,1.4s

AHID LR LR
comp=Z,3µm,20.0s
PSI Prapat 87.55 274 P **P 07 16 21.0 -1.0**
comp=Z,96nm,1.1s,baz=141,slow=4.0,SNR=27
PSI Prapat 87.55 274 *e*P **P 07 16 21.2 -0.8**
comp=Z,152nm,1.1s
S22A 4UR Ranch, Cre 87.57 47 P **P 07 16 22.0 +0.2**
baz=239
S22A 4UR Ranch, Cre 87.57 47 *e*P **P 07 16 21.4 -0.3**
comp=Z,79nm,1.9s
MCMT McKenzie Canyo 87.61 39 *e*P **P 07 16 21.8 +0.1**
SKLT Songkhla 87.66 279 P **P 07 16 24.2 +1.8**
comp=Z,148nm,1.6s,comp=Z,4µm
KTH Kantishna Hill 87.79 10 *e*P **P 07 16 21.1 -0.8**
comp=Z,157nm,1.8s
TRF Thorofare Moun 87.80 11 *e*P **P 07 16 21.6 -0.5**
comp=Z,184nm,1.6s
EFI East Falkland 87.84 146 PFAKE 07 16 30.0 +7.4
EFI LR LR
comp=Z,2µm,19.0s
SKAG Skagway 87.86 19 *e*P **P 07 16 23.4 +1.2**
comp=Z,214nm,1.8s
O20A White River Ci 87.87 45 P **P 07 16 22.7 -0.3**
baz=238
O20A White River Ci 87.87 45 *e*P **P 07 16 24.0 +1.0**
comp=Z,39nm,1.8s
REDW Red Top Meadow 87.97 41 *e*P **P 07 16 24.2 +0.7**
comp=Z,76nm,1.9s
TPAW Teton Pass 87.98 41 *e*P **P 07 16 24.2 +0.6**
comp=Z,24nm,1.8s
DHY Denali Highway 87.99 12 *e*P **P 07 16 22.8 -0.2**
comp=Z,113nm,1.8s
RND Reindeer 88.01 11 *e*P **P 07 16 22.5 -0.5**
RND Reindeer 88.01 11 *e*P **P 07 16 22.5 -0.5**
comp=Z,166nm,1.4s
DLMT Dillon 88.07 39 *e*P **P 07 16 25.1 +1.3**
comp=Z,47nm,1.8s
SNOW Snow King Moun 88.08 41 *e*P **P 07 16 25.7 +1.6**
832A Faith Ranch, C 88.09 58 P **P 07 16 23.3 -0.8**
baz=243,SNR=17
MSO Missoula 88.16 37 P **P 07 16 23.7 -0.4**
baz=234,SNR=5.1
MSO Missoula 88.16 37 *e*P **P 07 16 25.0 +0.9**
comp=Z,16nm,1.5s
SMCO Snowmass 88.21 46 *e*P **P 07 16 25.7 +0.8**
comp=Z,20nm,1.4s
IMW Indian Meadow 88.22 41 *e*P **P 07 16 25.8 +1.1**
comp=Z,37nm,1.7s
GSI Gunungsitoli 88.22 272 *e*P **P 07 16 26.4 +1.3**
comp=Z,289nm,0.9s
MOOW Moose Ponds 88.25 41 *e*P **P 07 16 25.7 +0.9**
comp=Z,37nm,2.0s
LOHW Long Hollow 88.26 41 *e*P **P 07 16 25.4 +0.5**
comp=Z,72nm,2.0s
PAX Paxson 88.28 13 *e*P **P**
PAX pmax pmax
comp=Z,523nm,2.7s
PAX Paxson 88.28 13 *e*P **P 07 16 22.9 -1.4**
comp=Z,523nm,2.7s
BPAW Bear Paw Mtn. 88.28 10 *e*P **P 07 16 23.3 -0.9**
comp=Z,103nm,2.0s
MCK McKinley 88.30 11 *e*P **P 07 16 23.8 -0.5**
MCK McKinley 88.30 11 *e*P **P 07 16 23.8 -0.5**
comp=Z,231nm,1.8s
BSMT Bassoo Peak 88.30 36 *e*P **P 07 16 25.9 +1.0**
933A Laredo 88.35 59 P **P 07 16 24.6 -0.7**
baz=244,SNR=7.4
HYT Haines Junctio 88.35 17 *e*P **P 07 16 25.5 +0.8**
comp=Z,70nm,1.7s
LRM Limekiln Ridge 88.41 38 *e*P **P 07 16 26.5 +0.9**
BW06 Boulder Array 88.44 42 P **P 07 16 25.3 -0.4**
baz=237
BW06 Boulder Array 88.44 42 *e*P **P 07 16 26.2 +0.5**
comp=Z,39nm,1.9s
BW06 LR LR
comp=Z,2µm,20.0s
PD31 Pinedale Array 88.44 42 *e*P **P 07 16 27.0 +1.3**
PDAR Pinedale Array 88.44 42 P **P 07 16 24.2 -1.5**
comp=Z,2.8nm,0.8s,baz=200,slow=3.9,SNR=15
PDAR LR LR 07 49 05.7
comp=Z,2µm,19.9s,baz=244,slow=31
QLMT Earthquake Lak 88.44 40 *e*P **P 07 16 27.9 +2.2**
FLWY Flagg Ranch 88.46 40 *e*P **P 07 16 27.5 +1.8**
comp=Z,73nm,1.8s
SDCO Great Sand Dun 88.48 48 P **P 07 16 25.9 -0.2**
baz=240
SDCO Great Sand Dun 88.48 48 *e*P **P 07 16 27.1 +1.0**
comp=Z,34nm,1.9s
SDCO LR LR
comp=Z,3µm,20.0s
SKNT Sakolnakorn 88.51 289 P **P 07 16 27.4 +1.1**
comp=Z,219nm,1.0s,comp=Z,4µm
SWMT Swartz Lake 88.53 36 *e*P **P 07 16 26.0 +0.1**
833A Chaparral WMA, 88.57 59 P **P 07 16 25.7 -0.7**
baz=244
034A Hebronville 88.58 60 P **P 07 16 26.3 -0.2**
baz=244,SNR=9.6
MSTX Muleshoe 88.58 52 P **P 07 16 25.9 -0.5**
baz=242
MSTX Muleshoe 88.58 52 *e*P **P 07 16 26.4 0.0**
comp=Z,202nm,2.0s
CHMT Chamberlain Mo 88.59 37 *e*P **P 07 16 27.2 +0.9**
MENT Mentasta 88.62 14 *e*P **P 07 16 26.6 +0.7**
comp=Z,106nm,1.6s
SLMT Seeley Lake 88.65 37 *e*P **P 07 16 27.2 +0.7**
DLBC Dease Lake 88.76 22 P **P 07 16 26.4 -0.2**
comp=Z,8.4nm,1.2s,baz=205,slow=3.7,SNR=12
DLBC Dease Lake 88.76 22 *e*P **P 07 16 27.2 +0.5**
comp=Z,65nm,1.8s
TRTT Trang 88.77 279 P **P 07 16 29.7 +2.1**
comp=Z,401nm,1.8s,comp=Z,4µm
BOZ Bozeman (W) 88.79 39 P **P 07 16 27.6 +0.4**
baz=236,SNR=11
BOZ Bozeman (W) 88.79 39 *e*P **P 07 16 27.8 +0.6**
BOZ Bozeman (W) 88.79 39 *e*P **P 07 16 27.8 +0.6**
comp=Z,72nm,1.9s
BOZ LR LR
comp=Z,4µm,20.0s
733A Divot King Ran 88.82 58 P **P 07 16 27.2 -0.3**
baz=244,SNR=6.4
LKWY Lake 88.91 40 PFAKE 07 16 40.0 +12
LKWY LR LR
comp=Z,3µm,19.0s
T25A Trinidad 88.93 49 P **P 07 16 28.0 -0.2**
baz=241
T25A Trinidad 88.93 49 *e*P **P 07 16 28.2 +0.1**
comp=Z,46nm,1.9s
934A Benavides 88.94 60 P **P 07 16 29.2 +1.1**
baz=244,SNR=8.8
SEY Seymchan 88.97 346 P **P 07 16 27.3 -0.1**
comp=Z,23nm,0.9s,baz=136,slow=4.4,SNR=33
035A Encino 88.99 60 P **P 07 16 27.9 -0.4**
baz=244
SRAK Srakaew 89.04 285 P **P 07 16 28.7 -0.2**
comp=Z,112nm,0.9s,comp=Z,2µm
WRH Wood River Hil 89.13 11 *e*P **P 07 16 27.5 -0.6**
comp=Z,157nm,1.4s
834A Tilden 89.15 59 P **P 07 16 28.6 -0.4**
baz=244,SNR=9.5
DOT Dot Lake 89.18 13 *e*P **P 07 16 28.2 -0.3**
comp=Z,268nm,1.6s
MLY Manley 89.19 10 *e*P **P 07 16 27.8 -0.7**
comp=Z,75nm,1.6s
JCT Junction City 89.21 57 P **P 07 16 28.7 -0.7**
baz=243,SNR=9.0
JCT Junction City 89.21 57 *e*P **P 07 16 30.1 +0.7**
JCT Junction City 89.21 57 *e*P **P 07 16 30.1 +0.7**
comp=Z,134nm,2.0s
JCT LR LR
comp=Z,4µm,19.0s
633A Saathoff Ranch 89.24 58 P **P 07 16 28.4 -1.1**
baz=244,SNR=9.1
BJT Baijiatuau 89.33 314 *e*P **P 07 16 30.2 +0.5**
BJT pmax pmax
comp=Z,262nm,1.7s
BJT MLR MLR
comp=Z,2µm,19.0s
BJT Baijiatuau 89.33 314 *e*P **P 07 16 30.2 +0.5**
comp=Z,262nm,1.7s
BJT LR LR
comp=Z,2µm,19.0s
SURA Surathani 89.33 280 P **P 07 16 33.2 +2.9**
comp=Z,96nm,1.1s
CCB Clear Creek Bu 89.34 11 *e*P **P 07 16 28.2 -0.8**
comp=Z,102nm,1.4s
BJI Beijing 89.34 314 P **P 07 16 29.9 +0.2**
BJI S **S 07 27 17.0 -0.1**

BJI SS **SS 07 33 16.3 +3.3**
BJI LR LR
comp=Z,1µm,18.8s
BJI LR LR
comp=Z,990nm,16.5s
BJI LR LR
comp=Z,1µm,30.9s
KRAB Krabi 89.37 279 P **P 07 16 33.2 +2.8**
comp=Z,118nm,0.9s,comp=Z,1µm
KVTX Kingsville 89.42 60 PFAKE 07 16 40.0 +10
KVTX LR LR
comp=Z,2µm,19.0s
ISCO Idaho Springs 89.43 46 *e*P **P 07 16 32.0 +1.5**
ISCO Idaho Springs 89.43 46 *e*P **P 07 16 32.0 +1.5**
comp=Z,7.5nm,1.4s
ISCO LR LR
comp=Z,2µm,19.0s
WALA Waterton Lakes 89.48 35 *e*P **P 07 16 31.1 +0.8**
comp=Z,14nm,1.1s
COLA College 89.54 11 *e*P **P 07 16 29.8 -0.2**
COLA College 89.54 11 *e*P **P 07 16 29.8 -0.2**
comp=Z,128nm,1.5s
COLA LR LR
comp=Z,3µm,20.0s
MDM Murphy Dome 89.55 11 *e*P **P 07 16 29.1 -1.0**
comp=Z,96nm,1.4s
ENH Enshi 89.55 303 *e*P **P 07 16 32.0 +1.1**
comp=Z,179nm,1.1s
ENH LR LR
comp=Z,1µm,19.0s
IL1 Eielson Array 89.62 12 *e*P **P 07 16 30.2 -0.2**
ILAR Eielson Array 89.62 12 P **P 07 16 29.6 -0.8**
comp=Z,23nm,1.1s,baz=217,slow=4.3,SNR=35
ILB Eielson Array 89.62 12 *e*P **P 07 16 29.6 -0.8**
CCIG Comitan 89.64 72 *e*P **P 07 16 33.9 +2.0**
comp=Z,76nm,1.7s
NONG Nongkai 89.68 290 P **P 07 16 33.1 +1.3**
comp=Z,198nm,1.4s,comp=Z,3µm
N23A Red Feather La 89.76 45 *e*P **P 07 16 34.0 +2.0**
comp=Z,32nm,1.8s
AMTX Amarillo 89.80 52 *e*P **P 07 16 33.2 +1.1**
comp=Z,97nm,1.9s
CHAI Chaiyaphum 89.84 287 P **P 07 16 34.1 +1.5**
comp=Z,17nm,1.0s,comp=Z,178nm
433A Art 89.88 57 P **P 07 16 31.3 -1.2**
baz=244,SNR=27
RLMT Red Lodge 89.89 40 *e*P **P 07 16 33.5 +1.0**
comp=Z,34nm,1.8s
RLMT LR LR
comp=Z,2µm,20.0s
GCMT Greycliff 90.01 39 *e*P **P 07 16 34.9 +1.9**
SURT Suratani 90.02 280 P **P 07 16 36.4 +2.9**
comp=Z,43nm,1.0s,comp=Z,1µm
534A Blanco 90.04 57 P **P 07 16 32.2 -1.1**
baz=244,SNR=9.1
GYA Guiyang 90.15 299 P **P 07 16 34.0 0.0**
GYA pP pP 07 16 46.4 +1.4
GYA PP **PP 07 20 10.0 +1.9**
GYA SKS **SKSac 07 27 00.3 -2.5**
GYA S **S 07 27 22.8 -2.7**
GYA sS sS 07 27 41.4 -2.4
GYA SS **SS 07 33 26.0 +0.5**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,150nm,6.8s
GYA LR LR
comp=Z,820nm,20.8s
GYA LR LR
comp=Z,720nm,21.2s
GYA LR LR
comp=Z,790nm,20.6s
333A Richland Sprin 90.21 56 P **P 07 16 32.9 -1.1**
baz=244,SNR=11
K22A Casper 90.28 43 *e*P **P 07 16 34.6 +0.4**
comp=Z,34nm,1.7s
ABTX Abilene, Hawle 90.29 55 P **P 07 16 33.7 -0.7**
baz=243,SNR=6.5
ABTX Abilene, Hawle 90.29 55 *e*P **P 07 16 35.4 +1.0**
comp=Z,98nm,1.7s
434A Burnet 90.54 57 P **P 07 16 34.8 -0.8**
baz=244,SNR=16
DAWY Dawson 90.58 15 *e*P **P 07 16 35.1 +0.1**
comp=Z,81nm,1.5s
736A Circle Diamond 90.68 59 P **P 07 16 36.9 +0.7**
baz=245,SNR=5.6
PHET Kaeng Krachan 90.77 284 P **P 07 16 40.3 +3.3**
comp=Z,22nm,1.1s
334A Lometa 90.79 56 P **P 07 16 36.0 -0.7**
baz=244,SNR=14
EGAK Eagle 90.79 14 *e*P **P 07 16 36.3 +0.4**
comp=Z,61nm,1.4s
EGAK LR LR
comp=Z,3µm,19.0s
133A Hamilton Ranch 90.83 55 P **P 07 16 37.3 +0.4**
baz=244,SNR=6.6
LCO Las Campanas 90.86 122 *e*P **P 07 16 37.8 +0.2**
comp=Z,70nm,1.5s
LCO LR LR
comp=Z,4µm,19.0s
PBKT Sadao Pong 91.00 287 P **P 07 16 39.8 +1.9**
comp=Z,120nm,1.5s,comp=Z,3µm
LOEI Loei 91.10 288 P **P 07 16 38.3 -0.2**
comp=Z,100nm,0.8s,comp=Z,1µm
234A Clairette 91.16 56 P **P 07 16 37.6 -0.8**
baz=244,SNR=12
EGMT Eagleton 91.18 38 PFAKE 07 16 50.0 +12
EGMT LR LR
comp=Z,6µm,21.0s
Z33A Whitaker Ranch 91.24 54 P **P 07 16 38.0 -0.7**
baz=244,SNR=5.4
COLD Coldfoot 91.31 9 *e*P **P 07 16 39.1 +0.8**
comp=Z,38nm,1.4s
BILL Bilibino 91.31 353 *c i*P **P 07 16 38.1 -0.1**
BILL pmax pmax
comp=Z,17nm,1.2s
BILL MLR MLR
comp=Z,2µm,19.0s
BILL Bilibino 91.31 353 PFAKE 07 16 50.0 +12
BILL LR LR
comp=Z,5µm,20.0s
X32A Elmer 91.35 53 P **P 07 16 38.5 -0.8**
baz=244
134A White-Moore Ra 91.45 55 P **P 07 16 39.1 -0.7**
baz=244,SNR=6.6
XAN Xi'an 91.64 306 P **P 07 16 41.6 +1.0**
XAN pP pP 07 16 52.3 +0.6
XAN sP sP 07 16 56.5 +0.9
XAN SKS **SKSac 07 27 12.8 +1.9**
XAN pmax pmax
comp=Z,48nm,1.4s
XAN pmax pmax
comp=Z,980nm,6.1s
XAN LR LR
comp=Z,700nm,21.3s
XAN LR LR
comp=Z,770nm,20.0s
XAN LR LR
comp=Z,1µm,20.7s
W32A Sentinel 91.69 53 P **P 07 16 40.2 -0.7**
baz=244,SNR=11
SRDT SRDT 91.78 285 P **P 07 16 45.6 +4.0**
comp=Z,485nm,0.9s
UTTA Uttaradit 91.82 288 P **P 07 16 43.8 +2.1**
comp=Z,18nm,1.1s,comp=Z,162nm
WMOK Wichita Mounta 91.87 53 *e*P **P 07 16 42.0 +0.3**
WMOK Wichita Mounta 91.87 53 *e*P **P 07 16 42.0 +0.3**
comp=Z,19nm,1.6s
WMOK LR LR
comp=Z,3µm,20.0s
336A Riesel 91.89 57 P **P 07 16 40.7 -1.0**
baz=245
X33A Lawton 91.99 53 P **P 07 16 42.3 +0.1**
baz=244
HIA Hailar 91.99 323 PFAKE 07 16 50.0 +8.1
HIA LR LR
comp=Z,3µm,20.0s
V32A Arapaho 92.10 52 P **P 07 16 42.0 -0.7**
baz=244
EDM Edmonton 92.21 32 *e*P **P 07 16 44.8 +2.0**
EDM Edmonton 92.21 32 *e*P **P 07 16 44.8 +2.0**
comp=Z,107nm,1.8s
W33A Caddo, Fort Co 92.28 53 P **P 07 16 44.0 +0.5**
baz=244,SNR=7.3
OGNE Ogallala 92.38 46 PFAKE 07 16 50.0 +6.1
OGNE LR LR
comp=Z,3µm,20.0s

X34A	**Smith Ranch, M**	**92.51**	**54**	P		**P**		**07 16 45.0**	**+0.4**
	baz=244								
LAO	**LASA Array**	**92.52**	**40**	P		**P**		**07 16 45.0**	**+0.6**
	baz=240,SNR=10.0								
LAO	**LASA Array**	**92.52**	**40**	*e*P		**P**		**07 16 44.7**	**+0.3**
	comp=Z,74nm,1.4s								
SUKH	**Sukhothai**	**92.53**	**288**	P		**P**		**07 16 47.2**	**+2.2**
	comp=Z,20nm,1.1s,comp=Z,183nm								
RSSD	**Black Hills**	**92.58**	**43**	P		**P**		**07 16 45.1**	**+0.1**
	baz=241								
RSSD	**Black Hills**	**92.58**	**43**	*e*P		**P**		**07 16 45.4**	**+0.4**
RSSD	**Black Hills**	**92.58**	**43**	*e*P		**P**		**07 16 45.4**	**+0.4**
	comp=Z,84nm,1.8s								
V33A	**Lossen Ranch,**	**92.70**	**52**	P		**P**		**07 16 45.1**	**-0.4**
	baz=244								
UMPA	**Umpang Tak**	**92.72**	**286**	P		P		07 16 51.4	+5.4
	comp=Z,9.3nm,1.0s,comp=Z,752nm								
NNA	**Nana**	**92.75**	**104**	PFAKE				07 17 00.0	+14
NNA				LR		LR			
	comp=Z,3μm,19.0s								
HHC	**Hu-ho-hao-te**	**92.81**	**313**	*e*P		**P**		**07 16 47.1**	**+1.1**
HHC				SKS		**SKSac**		**07 27 17.6**	**+0.3**
HHC				S		**ScS**		**07 27 55.0**	**+4.0**
HHC				SS		**SS**		**07 34 02.1**	**-1.3**
HHC				pmax		pmax			
	comp=Z,42nm,1.2s								
HHC				pmax		pmax			
	comp=Z,1μm,7.1s								
HHC				LR		LR			
	comp=Z,590nm,17.7s								
HHC				LR		LR			
	comp=Z,750nm,18.0s								
HHC				LR		LR			
	comp=Z,970nm,20.0s								
W34A	**Bridge Creek,**	**92.83**	**53**	P		**P**		**07 16 46.4**	**+0.4**
	baz=244								
W34A	**Bridge Creek,**	**92.83**	**53**	*e*P		**P**		**07 16 47.5**	**+1.4**
	comp=Z,71nm,1.5s								
KMI	**Kunming**	**92.83**	**296**	P		**P**		**07 16 47.6**	**+1.0**
KMI				pP		pP		07 16 58.3	+0.7
KMI				sP		sP		07 17 02.3	+0.8
KMI				PP		**PP**		**07 20 31.5**	**+2.1**
KMI				S		**S**		**07 27 44.1**	**-6.0**
KMI				sS		sS		07 28 05.3	-3.1
KMI				SS		**SS**		**07 34 04.3**	**-0.1**
KMI				pmax		pmax			
	comp=Z,62nm,1.2s								
KMI				pmax		pmax			
	comp=Z,1μm,4.0s								
KMI				LR		LR			
	comp=Z,850nm,20.2s								
KMI				LR		LR			
	comp=Z,900nm,18.8s								
KMI				LR		LR			
	comp=Z,1μm,22.8s								
T32A	**Huddler Ranch,**	**92.83**	**51**	P		**P**		**07 16 45.4**	**-0.7**
	baz=244								
TRQA	**Tornquist**	**92.91**	**133**	PFAKE				07 17 00.0	+13
TRQA				LR		LR			
	comp=Z,4μm,19.0s								
LAMP	**Lampang**	**92.92**	**289**	P		**P**		**07 16 49.2**	**+2.3**
	comp=Z,31nm,1.0s,comp=Z,259nm								
CBKS	**Cedar Bluff**	**92.98**	**49**	PFAKE				07 17 00.0	+13
CBKS				LR		LR			
	comp=Z,5μm,20.0s								
Z36A	**Blue Ridge**	**93.00**	**55**	P		**P**		**07 16 47.2**	**+0.3**
	baz=245,SNR=7.1								
PAYA	**Payao**	**93.04**	**290**	P		**P**		**07 16 49.2**	**+1.8**
	comp=Z,23nm,1.0s,comp=Z,193nm								
S32A	**Newby Ranch, P**	**93.05**	**50**	P		**P**		**07 16 47.1**	**0.0**
	baz=244								
X35A	**Drake**	**93.07**	**54**	P		**P**		**07 16 46.2**	**-1.0**
	baz=245								
137A	**Heron Place, G**	**93.23**	**56**	P		**P**		**07 16 47.7**	**-0.2**
	baz=246								
Y36A	**Durant**	**93.37**	**55**	P		**P**		**07 16 48.2**	**-0.4**
	baz=245,SNR=7.3								
W35A	**Tecumseh**	**93.46**	**53**	P		**P**		**07 16 48.6**	**-0.3**
	baz=245,SNR=8.8								
CM01	**Chiang Mai Arr**	**93.48**	**288**	*e*P		**P**		**07 16 50.1**	**+0.7**
CMAR	**Chiang Mai Arr**	**93.50**	**288**	P		**P**		**07 16 50.6**	**+1.1**
	comp=Z,40nm,1.0s,baz=125,slow=2.7,SNR=37								
CMAR				PP		**PP**		**07 20 35.4**	**+0.8**
	comp=Z,0.7nm,0.3s,baz=124,slow=7.1,SNR=4.2								
CMAR				LR		LR		07 58 24.9	
	comp=Z,772nm,19.2s,baz=148,slow=35								
X36A	**Centrahoma**	**93.60**	**54**	P		**P**		**07 16 48.8**	**-0.8**
	baz=245								
CMMT	**Chiang Mai**	**93.64**	**289**	P		**P**		**07 16 51.7**	**+1.5**
	comp=Z,56nm,1.7s,comp=Z,2μm								
CHTO	**Chiang Mai**	**93.64**	**289**	P		**P**		**07 16 51.8**	**+1.6**
	comp=Z,518nm,1.0s,comp=Z,7μm								
CHTO	**Chiang Mai**	**93.64**	**289**	*e*P		**P**		**07 16 51.0**	**+0.8**
CHTO				pmax		pmax			
	comp=Z,43nm,1.0s								
CHTO				MLR		MLR			
	comp=Z,966nm,20.0s								
CHTO	**Chiang Mai**	**93.64**	**289**	*e*P		**P**		**07 16 51.0**	**+0.8**
	comp=Z,42nm,1.0s								
CHTO				LR		LR			
	comp=Z,966nm,20.0s								
NATX	**Nacogdoches**	**93.74**	**57**	PFAKE				07 17 00.0	+10
NATX				LR		LR			
	comp=Z,5μm,19.0s								
V35A	**Meyer Ranch, C**	**93.74**	**53**	P		**P**		**07 16 50.5**	**+0.3**
	baz=245								
BTO	**Baotou**	**93.75**	**312**	*e*P		**P**		**07 16 50.8**	**+0.5**
Y37A	**Hugo**	**93.91**	**55**	P		**P**		**07 16 50.5**	**-0.6**
	baz=246,SNR=6.1								
W36A	**Wetumka**	**93.93**	**54**	P		**P**		**07 16 50.9**	**-0.2**
	baz=245,SNR=6.0								
CMAI	**Chiengmai2**	**93.97**	**290**	P		**P**		**07 16 53.4**	**+1.5**
R33A	**Olander Ranch,**	**93.99**	**50**	P		**P**		**07 16 51.5**	**+0.2**
	baz=245								
T34A	**McClaskey Farm**	**94.02**	**52**	P		**P**		**07 16 51.8**	**+0.3**
	baz=245								
U35A	**Pawnee**	**94.08**	**52**	P		**P**		**07 16 52.1**	**+0.3**
	baz=245								
CD2	**Chengdu**	**94.30**	**302**	P		**P**		**07 16 53.0**	**0.0**
CD2				SKS		**SKSac**		**07 27 18.3**	**-7.5**
CD2				S		**ScS**		**07 28 06.3**	**+2.7**
CD2				pmax		pmax			
	comp=Z,1μm,4.8s								
CD2				LR		LR			
	comp=Z,1μm,18.5s								
CD2				LR		LR			
	comp=Z,2μm,18.7s								
CD2				LR		LR			
	comp=Z,2μm,18.5s								
X37A	**Clayton**	**94.35**	**54**	P		**P**		**07 16 53.2**	**+0.1**
	baz=246								
V36A	**Jenks**	**94.41**	**53**	P		**P**		**07 16 53.4**	**+0.1**
	baz=246								
T35A	**Sooner Cattle**	**94.46**	**52**	P		**P**		**07 16 53.3**	**-0.3**
	baz=245								
R34A	**Isabella, Hill**	**94.51**	**50**	P		**P**		**07 16 54.2**	**+0.4**
	baz=245								
W37B	**Quinton**	**94.53**	**54**	P		**P**		**07 16 53.9**	**0.0**
	baz=246								
TUL1	**Leonard**	**94.58**	**53**	P		**P**		**07 16 53.9**	**-0.2**
	baz=246								
TUL1	**Leonard**	**94.58**	**53**	*e*P		**P**		**07 16 55.0**	**+1.0**
	comp=Z,38nm,1.6s								
DGMT	**Dagmar**	**94.59**	**39**	P		**P**		**07 16 53.8**	**0.0**
	baz=241								
DGMT	**Dagmar**	**94.59**	**39**	*e*P		**P**		**07 16 56.5**	**+2.6**
	comp=Z,129nm,1.7s								
DGMT				LR		LR			
	comp=Z,4μm,19.0s								
X38A	**Whitesboro**	**94.79**	**55**	P		**P**		**07 16 54.2**	**-0.9**
	baz=246								
D26A	**Manning**	**94.95**	**41**	P		**P**		**07 16 55.8**	**+0.2**
	baz=242								
YAK	**Yakutsk**	**95.04**	**337**	P		**P**		**07 16 54.6**	**-0.9**
	comp=Z,15nm,0.4s,baz=133,slow=1.5,SNR=2.8								
YAK	**Yakutsk**	**95.04**	**337**	*e*P		**P**		**07 16 54.5**	**-1.0**
YAK				*e*				07 20 40.0	
YAK				*e*S		**SKSac**		**07 27 27.1**	**-1.0**
YAK				*e*				07 28 08.8	
YAK				pmax		pmax			
	comp=Z,8.0nm,0.8s								
YAK				pmax		pmax			
	comp=N,4.0nm,1.6s								
YAK				pmax		pmax			
	comp=E,5.0nm,1.2s								
YAK				pmax		pmax			
	comp=Z,11nm,0.6s								
YAK				pmax		pmax			
	comp=N,163nm,3.2s								
YAK				smax		smax			
	comp=E,65nm,2.5s								
YAK				smax		smax			
	comp=N,353nm,4.4s								
YAK				MLR		MLR			
	comp=E,949nm,19.0s								
YAK	**Yakutsk**	**95.04**	**337**	P		**P**		**07 16 54.6**	**-0.9**
YAK				LR		LR			
	comp=Z,1μm,20.0s								
V37A	**Hulbert**	**95.05**	**53**	P		**P**		**07 16 56.5**	**+0.3**
	baz=246								
J30A	**Dallas**	**95.14**	**45**	P		**P**		**07 16 55.7**	**-0.9**
	baz=244								
LVC	**Limon Verde**	**95.15**	**117**	P		**P**		**07 16 59.6**	**+2.0**
	comp=Z,33nm,1.1s,baz=198,slow=5.3,SNR=7.5								
LVC	**Limon Verde**	**95.15**	**117**	*e*P		**P**		**07 16 58.3**	**+0.7**
	comp=Z,82nm,1.8s								
LVC				LR		LR			
	comp=Z,4μm,19.0s								
W38A	**Poteau**	**95.18**	**54**	P		**P**		**07 16 56.9**	**0.0**
	baz=246								
X39A	**Fountain Ranch**	**95.27**	**55**	P		**P**		**07 16 56.1**	**-1.2**
	baz=246								
U37A	**Salina**	**95.28**	**53**	P		**P**		**07 16 57.0**	**-0.3**
	baz=246								
KSU1	**Kansas State U**	**95.30**	**50**	PFAKE				07 17 10.0	+13
KSU1				LR		LR			
	comp=Z,5μm,19.0s								
PB01	**IPOC Station P**	**95.37**	**115**	*e*P		**P**		**07 16 59.4**	**+1.1**
	comp=Z,67nm,1.6s								
INK	**Inuvik**	**95.44**	**14**	P		**P**		**07 16 56.8**	**-0.4**
	comp=Z,5.0nm,1.1s,baz=236,slow=5.3,SNR=9.0								
INK				LR		LR		07 53 04.8	
	comp=Z,833nm,21.9s,baz=228,slow=31								
INK	**Inuvik**	**95.44**	**14**	*e*P		**P**		**07 16 58.1**	**+0.9**
	comp=Z,54nm,1.8s								
V38A	**Canehill**	**95.58**	**54**	P		**P**		**07 16 58.8**	**+0.1**
	baz=246								
HOPE	**Hope Point**	**95.60**	**157**	PFAKE				07 17 10.0	+12
HOPE				LR		LR			
	comp=Z,3μm,20.0s								
Q35A	**Mercer Eighty,**	**95.61**	**50**	P		**P**		**07 16 58.9**	**+0.2**
	baz=246								
J31A	**Geddes**	**95.62**	**45**	P		**P**		**07 16 58.3**	**-0.4**
	baz=244								
MIAR	**Mount Ida**	**95.69**	**55**	P		**P**		**07 16 58.5**	**-0.6**
	baz=247								
MIAR	**Mount Ida**	**95.69**	**55**	*e*P		**P**		**07 16 59.9**	**+0.7**
MIAR	**Mount Ida**	**95.69**	**55**	*e*P		**P**		**07 16 59.9**	**+0.7**
	comp=Z,19nm,1.5s								
MIAR				LR		LR			
	comp=Z,4μm,20.0s								
T37A	**Cheneyville 18**	**95.71**	**52**	P		**P**		**07 16 59.2**	**0.0**
	baz=246								
Z41A	**Richland Creek**	**95.77**	**57**	P		**P**		**07 16 59.8**	**+0.2**
	baz=247								
W39A	**Magazine**	**95.79**	**54**	P		**P**		**07 16 59.4**	**-0.2**
	baz=247								
F29A	**Eureka**	**96.02**	**43**	P		**P**		**07 17 00.8**	**+0.4**
	baz=244								
OTAV	**Otavalo**	**96.03**	**92**	PFAKE				07 17 10.0	+8.2
OTAV				LR		LR			
	comp=Z,2μm,19.0s								
HHAR	**Hobbs**	**96.10**	**53**	*e*P		**P**		**07 17 01.0**	**0.0**
	comp=Z,21nm,1.7s								
T38A	**Diamond**	**96.14**	**53**	P		**P**		**07 17 01.2**	**0.0**
	baz=247								
V39A	**Pettigrew**	**96.14**	**54**	P		**P**		**07 17 01.4**	**+0.1**
	baz=247								
LZH	**Lanzhou**	**96.28**	**306**	*e*P		**P**		**07 17 04.0**	**+1.9**
LZH				pP		pP		07 17 13.6	+0.5
LZH				sP		sP		07 17 17.0	0.0
LZH				PP		**PP**		**07 20 54.3**	**-1.7**
LZH				*e*S		**S**		**07 28 18.0**	**-1.6**
LZH				sS		sS		07 28 33.4	-4.6
LZH				SS		**SS**		**07 34 58.3**	**+5.3**
LZH				pmax		pmax			
	comp=Z,31nm,1.1s								
LZH				pmax		pmax			
	comp=Z,180nm,6.8s								
LZH				LR		LR			
	comp=Z,2μm,17.8s								
LZH				LR		LR			
	comp=Z,1μm,16.9s								
LZH				LR		LR			
	comp=Z,2μm,19.1s								
U39A	**Green Forest**	**96.48**	**53**	P		**P**		**07 17 02.8**	**+0.1**
	baz=247								
YKA	**Yellowknife Ar**	**97.11**	**24**	P		**P**		**07 17 03.8**	**-1.1**
	comp=Z,2.4nm,0.8s,baz=238,slow=3.8,SNR=5.6								
YKA				LR		LR		07 55 46.2	
	comp=Z,125nm,19.6s,baz=180,slow=32								
ECSD	**EROS Data Cent**	**97.21**	**46**	P		**P**		**07 17 04.4**	**-1.5**
	baz=246								
ECSD	**EROS Data Cent**	**97.21**	**46**	*e*P		Pdif		07 17 06.8	+0.9
	comp=Z,81nm,1.8s								
ECSD				LR		LR			
	comp=Z,2μm,19.0s								
A29A	**Manning Farm,**	**97.73**	**40**	P		**P**		**07 17 07.3**	**-0.8**
	baz=245								
T41A	**Mountain View**	**98.00**	**53**	P		**P**		**07 17 09.7**	**+0.1**
	baz=248								
R40A	**Maddies Statio**	**98.10**	**52**	P		Pdif		07 17 10.6	+0.6
	baz=248								
LPAZ	**La Paz**	**98.63**	**112**	P		Pdif		07 17 15.7	+2.0
	comp=Z,1.3nm,0.9s,baz=192,slow=4.6,SNR=6.2								
LPAZ				PP		**PP**		**07 21 12.8**	**-1.8**
	comp=Z,3.2nm,1.1s,baz=210,slow=7.0,SNR=5.0								
LPAZ				LR		LR		07 55 35.7	
	comp=Z,2μm,18.1s,baz=252,slow=32								
LPAZ	**La Paz**	**98.63**	**112**	*e*P		Pdif		07 17 14.0	+0.3
LPAZ								07 21 12.8	
LPAZ				pmax		pmax			
	comp=Z,25nm,1.8s								
LPAZ	**La Paz**	**98.63**	**112**	*e*P		Pdif		07 17 14.0	+0.3
	comp=Z,25nm,1.8s								
LPAZ				PP		**PP**		**07 21 12.8**	**-1.8**
FFC	**Flin Flon**	**98.73**	**34**	PFAKE				07 17 20.0	+7.5
FFC				LR		LR			
	comp=Z,4μm,20.0s								
SONA1	**Songino Array**	**99.15**	**318**	*e*P		**Pdif**		**07 17 14.6**	**-0.1**
SONM	**Songino Array**	**99.15**	**318**	P		**Pdif**		**07 17 14.3**	**-0.3**
	comp=Z,1.0nm,1.0s,baz=176,slow=0.6,SNR=7.5								
SONM				PP		**PP**		**07 21 12.0**	**-5.8**
	comp=Z,0.9nm,0.4s,baz=119,slow=12,SNR=5.0								
SONM				LR		LR		07 58 14.1	
	comp=Z,558nm,21.5s,baz=96,slow=33								
AGMN	**Agassiz Nation**	**99.51**	**42**	*e*P		**Pdif**		**07 17 16.4**	**+0.3**
	comp=Z,33nm,1.8s								
AGMN				LR		LR			
	comp=Z,1μm,19.0s								
BRAL	**Brewton**	**99.54**	**60**	PFAKE				07 17 30.0	+13
BRAL				LR		LR			
	comp=Z,1μm,19.0s								
GTA	**Gaotai**	**100.47**	**308**	*e*P		**Pdif**		**07 17 22.1**	**+1.3**
GTA				pP		pP		07 17 32.9	+1.0
GTA				sP		sP		07 17 36.8	+1.0
GTA				SKS				07 27 59.8	
GTA				S		**Sdif**		**07 28 52.5**	**-2.5**
GTA				sS		sS		07 29 10.8	-2.6
GTA				SS		**SS**		**07 35 53.0**	**+1.2**
GTA				pmax		pmax			
	comp=Z,8.0nm,1.5s								
GTA				pmax		pmax			
	comp=Z,310nm,8.6s								
GTA				LR		LR			
	comp=Z,420nm,17.8s								
GTA				LR		LR			
	comp=Z,680nm,20.0s								
GTA				LR		LR			
	comp=Z,710nm,19.2s								
HDIL	**Hopedale**	**101.06**	**51**	PFAKE				07 17 30.0	+6.8
HDIL				LR		LR			
	comp=Z,6μm,19.0s								
JFWS	**Jewell Farm**	**101.20**	**48**	PFAKE				07 17 30.0	+6.2
JFWS				LR		LR			
	comp=Z,2μm,20.0s								
TIXI	**Tiksi**	**101.41**	**344**	PFAKE				07 17 30.0	+6.1
TIXI				LR		LR			
	comp=Z,2μm,20.0s								
ZAK	**Zakamensk**	**102.00**	**320**	*e*P		**Pdif**		**07 17 25.5**	**-1.8**
ZAK				*e*				07 21 37.1	
ZAK				pmax		pmax			
	comp=Z,4.0nm,2.4s								
EYMN	**Ely**	**102.11**	**43**	PFAKE				07 17 40.0	+12
EYMN				LR		LR			
	comp=Z,3μm,20.0s								
TLY	**Talaya**	**102.25**	**321**	*e*P		**Pdif**		**07 17 27.8**	**-0.4**
TLY				*e*				07 21 36.4	
TLY				*e*S		**SKSac**		**07 28 07.5**	**+2.5**
TLY				*e*SS		**SS**		**07 36 16.5**	**+0.9**
TLY				pmax		pmax			
	comp=Z,4.0nm,0.8s								
TLY				MLR		MLR			
	comp=Z,1μm,17.0s								
TLY	**Talaya**	**102.25**	**321**	PFAKE				07 17 40.0	+12
TLY				LR		LR			
	comp=Z,1μm,19.0s								
COWI	**Conover**	**103.01**	**45**	PFAKE				07 17 40.0	+8.2
COWI				LR		LR			
	comp=Z,2μm,21.0s								
GOGA	**Godfrey**	**103.14**	**59**	PFAKE				07 17 40.0	+7.4
GOGA				LR		LR			
	comp=Z,3μm,19.0s								
MTDJ	**Mount Denham**	**103.33**	**76**	PFAKE				07 17 40.0	+6.1
MTDJ				LR		LR			
	comp=Z,894nm,21.0s								
LSA	**Lhasa**	**104.07**	**297**	PFAKE				07 17 50.0	+13
LSA				LR		LR			
	comp=Z,683nm,22.0s								
ACSO	**Alum Creek Sta**	**105.54**	**53**	PFAKE				07 22 10.0	
ACSO				LR		LR			
	comp=Z,4μm,20.0s								
AAM	**Ann Arbor**	**105.63**	**50**	PFAKE				07 22 10.0	
AAM				LR		LR			
	comp=Z,4μm,19.0s								
NHSC	**New Hope**	**105.68**	**60**	PFAKE				07 22 10.0	
NHSC				LR		LR			
	comp=Z,2μm,20.0s								
GTBY	**Guantanamo Bay**	**106.05**	**75**	PFAKE				07 22 10.0	
GTBY				LR		LR			
	comp=Z,716nm,19.0s								
SAML	**Samuel**	**106.20**	**107**	PFAKE				07 22 10.0	
SAML				LR		LR			
	comp=Z,2μm,20.0s								
SDV	**Santo Domingo**	**106.45**	**87**	PFAKE				07 22 10.0	
SDV				LR		LR			
	comp=Z,2μm,20.0s								
BLA	**Blacksburg**	**106.63**	**56**	PFAKE				07 22 10.0	
BLA				LR		LR			
	comp=Z,2μm,19.0s								
DGAR	**Diego Garcia**	**107.75**	**254**	PFAKE				07 22 10.0	
DGAR				LR		LR			
	comp=Z,3μm,20.0s								
CNNC	**Cliffs of the**	**108.08**	**59**	PFAKE				07 22 10.0	
CNNC				LR		LR			
	comp=Z,2μm,19.0s								
SDDR	**Presa de Saban**	**109.18**	**77**	PFAKE				07 22 10.0	
SDDR				LR		LR			
	comp=Z,856nm,20.0s								
CBN	**Corbin Frederi**	**109.22**	**56**	PFAKE				07 22 10.0	
CBN				LR		LR			
	comp=Z,2μm,20.0s								
GRTK	**Grand Turk**	**110.07**	**74**	PFAKE				07 22 20.0	
GRTK				LR		LR			
	comp=Z,1μm,19.0s								
WMQ	**Urumqi**	**110.42**	**310**	*e*PKP		**PKiKP**		**07 22 05.4**	**-0.1**
WMQ				PP		**PP**		**07 22 43.0**	**+1.6**
WMQ				PKS		**PKSdf**		**07 25 37.1**	**-5.0**
WMQ				SS		SS		07 38 04.6	-2.7
WMQ				AMB		AMB			
	comp=Z,220nm,3.6s								
WMQ				LR		LR			
	comp=Z,590nm,17.3s								
WMQ				LR		LR			
	comp=Z,980nm,21.4s								
WMQ				LR		LR			
	comp=Z,2μm,25.8s								
BINY	**Binghamton**	**111.14**	**52**	PFAKE				07 22 20.0	
BINY				LR		LR			
	comp=Z,4μm,19.0s								
SPB	**Sao Paulo**	**111.39**	**129**	PFAKE				07 22 20.0	
SPB				LR		LR			
	comp=Z,8μm,19.0s								
LONY	**Lake Ozonia**	**112.59**	**50**	PFAKE				07 22 20.0	
LONY				LR		LR			
	comp=Z,4μm,20.0s								
PTGA	**Pitinga**	**112.63**	**101**	PFAKE				07 22 20.0	
PTGA				LR		LR			
	comp=Z,33μm,21.0s								
NRIK	**Noril'sk**	**113.49**	**337**	PP		PP		07 22 58.8	-3.7
	comp=Z,1.4nm,0.4s,baz=95,slow=9.0,SNR=5.2								
SJG	**San Juan**	**113.57**	**79**	PFAKE				07 22 20.0	
SJG				LR		LR			
	comp=Z,774nm,20.0s								
ZAA0	**Zalesovo Array**	**113.85**	**321**	*e*PKiKP		**PKiKP**		**07 22 13.3**	**+1.7**
ZALV	**Zalesovo Beam**	**113.85**	**321**	PKiKP		**PKiKP**		**07 22 13.1**	**+1.5**
	comp=Z,1.0nm,0.6s,baz=135,slow=2.6,SNR=6.6								
ZALV				PP		**PP**		**07 23 02.6**	**-2.9**
	comp=Z,1.2nm,0.8s,baz=90,slow=1.4,SNR=2.5								
RER	**Riviere de l'E**	**114.29**	**232**	PFAKE				07 22 20.0	+6.4
RER				LR		LR			
	comp=Z,3μm,20.0s								
MK01	**Makanchi Array**	**114.66**	**312**	*e*PKiKP		PKPdf		07 22 12.7	-0.7
MK31	**Makanchi Array**	**114.67**	**313**	*e*PKiKP		PKPdf		07 22 14.5	+1.0
MK31	**Makanchi Array**	**114.67**	**313**	*e*PKiKP		**PKiKP**		**07 22 14.5**	**+1.1**
MKAR	**Makanchi Array**	**114.67**	**313**	Pdiff		**Pdif**		**07 18 28.9**	**+5.3**
	comp=Z,1.4nm,1.0s,baz=99,slow=6.3,SNR=6.8								
MKAR				PKP		PKPdf		07 22 11.9	-1.5
	comp=Z,0.8nm,0.5s,baz=139,slow=2.2,SNR=8.9								
MKAR	**Makanchi Array**	**114.67**	**313**	Pdif		**Pdif**		**07 18 28.9**	**+5.3**
MKAR				*e*PKiKP		**PKiKP**		**07 22 14.5**	**+1.0**
GRGR	**Grenville**	**115.85**	**87**	PFAKE				07 22 30.0	+13
GRGR				LR		LR			
	comp=Z,1μm,19.0s								
PKME	**Peaks-Kenny Pk**	**116.40**	**49**	PFAKE				07 22 30.0	+13
PKME				LR		LR			
	comp=Z,3μm,19.0s								
FDF	**Fort de France**	**117.14**	**84**	PFAKE				07 22 30.0	+11
FDF				LR		LR			
	comp=Z,868nm,19.0s								
KURK	**Kurchatov**	**117.42**	**317**	PKiKP		**PKPdf**		**07 22 17.8**	**-0.8**
KURK				pmax		pmax			
	comp=Z,3.0nm,1.0s								
KURK	**Kurchatov**	**117.42**	**317**	PKP		**PKPdf**		**07 22 17.8**	**-0.8**
KURK				PP		**PP**		**07 23 25.9**	**-4.8**
KURK				PKKPbc		**PKKPbc**		**07 32 41.5**	**-1.4**
KURK				LR		LR			
	comp=Z,2μm,20.0s								
ANWB	**Willy Bob**	**117.42**	**81**	PFAKE				07 22 30.0	+10
ANWB				LR		LR			
	comp=Z,508nm,20.0s								
KURBB	**Kurchatov Arra**	**117.47**	**317**	PKP		**PKPdf**		**07 22 17.8**	**-0.9**
	comp=Z,3.2nm,1.0s,baz=95,slow=1.9,SNR=17								
KURBB				PP		**PP**		**07 23 25.9**	**-5.2**
	comp=Z,3.

VOSK Vostochnaya 122.13 319 ePKPdf PKPdf 07 22 27.3 -0.3
BVAR Borovoye Array 122.46 319 PKP PKPdf 07 22 27.6 -0.7
comp=Z,5.7nm,0.9s,baz=105,slow=3.3,SNR=15
BRVK Borovoye 122.52 319c iPKIKP PKPdf 07 22 27.2 -1.1
BRVK pmax pmax
comp=Z,23nm,1.0s
BRVK Borovoye 122.52 319 ePKPdf PKPdf 07 22 27.4 -0.9
BRVK LR LR
comp=Z,721nm,19.0s
KKAR Karatay Array 122.75 308 ePKIKP PKPdf 07 22 28.5 -0.6
KKAR Karatay Array 122.75 308 ePKPdf PKPdf 07 22 28.5 -0.6
ZRNK Zerenda 123.30 319 ePKIKP PKPdf 07 22 29.0 -0.8
ZRNK Zerenda 123.30 319 ePKPdf PKPdf 07 22 29.0 -0.8
KBL Kabul 123.38 297 ePKIKP PKPdf 07 22 30.3 -0.6
KBL Kabul 123.38 297 ePKPdf PKPdf 07 22 30.3 -0.6
KBS Kingsbay 123.40 358 ePP PP 07 24 10.2 -0.4
KBS Kingsbay 123.40 358 PFAKE 07 22 40.0 +11
KBS LR LR
comp=Z,956nm,20.0s
SUR Sutherland 123.43 196 PFAKE 07 22 40.0 +8.9
SUR LR LR
comp=Z,6μm,19.0s
SFJD Kangerlussuaq 123.65 23 PFAKE 07 22 40.0 +10
SFJD LR LR
comp=Z,2μm,20.0s
SPA0 Spitsbergen Ar 123.99 357 ePKPdf PKPdf 07 22 32.3 +1.8
SPA0 ePP PP 07 24 12.7 -1.9
SPA0 eSS SS 07 41 10.1 +8.5
SPA0 IAMs_20 IAMs_20 08 22 09.0
comp=Z,1μm,19.6s
SUMG Summit 124.36 15 iP PKPdf 07 22 30.5 -1.3
comp=Z,140nm,2.1s
comp=Z,2μm,20.0s
SUMG Summit 124.36 15 iPKIKP PKPdf 07 22 30.5 -1.3
SUMG pmax pmax
comp=Z,140nm,2.1s
SUMG MLR MLR
comp=Z,2μm,20.0s
SUMG Summit 124.36 15 ePKPdf PKPdf 07 22 31.4 -0.4
DAG Danmarks Havn 124.39 6 iP PKPdf 07 22 32.6 +1.3
DAG Danmarks Havn 124.39 6 iPKIKP PKPdf 07 22 32.6 +1.3
HOPEN Hopen 125.01 354 ePP PP 07 24 20.1 -1.4
HOPEN IAMs_20 IAMs_20 08 19 44.7
comp=Z,2μm,18.9s
HSPB Hornsund (broa 125.18 357 ePKPdf PKPdf 07 22 35.8 +3.0
HSPB ePP PP 07 24 20.7 -1.9
HSPB eSS SS 07 41 23.7 +7.2
HSPB IAMs_20 IAMs_20 08 12 56.7
comp=Z,2μm,22.0s
BOSA Boshof 125.62 202 PKP PKPdf 07 22 37.2 +1.9
comp=Z,5.1nm,1.0s,baz=140,slow=1.2,SNR=4.6
SVE Sverdlovsk 127.26 325 ePKIKP PKPdf 07 22 40.4 +3.1
SVE pmax pmax
comp=Z,45nm,1.9s
SOKR Solikamsk 128.25 329c iPKIKP PKPdf 07 22 42.2 +3.2
SOKR 07 29 51.4
SOKR PS PS 07 34 52.2 +1.3
SOKR SS SS 07 41 53.7 -1.9
SOKR pmax pmax
comp=Z,31nm,1.2s
ARU Arti 128.47 325 PKP PKPdf 07 22 39.4 -0.2
comp=Z,2.6nm,0.4s,baz=97,slow=1.1,SNR=8.9
ARU Arti 128.47 325 iPKIKP PKPdf 07 22 38.8 -0.8
ARU 07 24 42.4
ARU 07 29 39.3
ARU SP SP 07 34 52.9 +5.1
ARU Arti 128.47 325 ePKPdf PKPdf 07 22 39.1 -0.5
ARU LR LR
comp=Z,2μm,19.0s
SCO Scoresbysund 129.40 11 iP PKPdf 07 22 40.1 -0.9
comp=Z,76nm,2.1s
SCO Scoresbysund 129.40 11 iPKIKP PKPdf 07 22 40.1 -0.9
SCO pmax pmax
comp=Z,76nm,2.1s
ABKAR Akbulak array 129.52 316 ePKPdf PKPdf 07 22 41.5 -0.3
AKTO Aktyubinsk 130.47 318 PKP PKPdf 07 22 42.9 -0.7
comp=Z,2.4nm,1.0s,baz=69,slow=5.3
AKTO SKPbc SKPbc 07 26 08.5 +3.9
comp=Z,1.0nm,0.6s,baz=168,slow=3.0,SNR=9.0
HAMF Hammerfest 130.60 352 ePKPdf PKPdf 07 22 44.4 +1.2
HAMF ePP PP 07 24 57.0 -1.2
HAMF IAMs_20 IAMs_20 08 22 06.4
comp=Z,2μm,20.4s
JMIC Jan Mayen 130.82 6 ePKPdf PKPdf 07 22 44.0 +0.3
JMIC IAMs_20 IAMs_20 08 19 25.8
comp=Z,1μm,21.1s
WSAR Wadi Sarin 130.93 282 SKPbc SKPab 07 26 11.9 +4.6
comp=Z,4.2nm,0.8s,baz=131,slow=4.7,SNR=2.4
RCBR Riachuelo 130.99 120 PFAKE 07 23 00.0 +14
RCBR LR LR
comp=Z,5μm,19.0s
LVZ Lovozero 131.03 346 PFAKE 07 22 50.0 +5.8
LVZ LR LR
comp=Z,2μm,21.0s
ARCES ARCESS Array B 131.36 351 PKP PKPdf 07 22 45.2 +0.5
comp=Z,5.4nm,0.8s,baz=29,slow=2.8,SNR=15
ARE0 ARCESS Array S 131.36 351 ePKPdf PKPdf 07 22 47.0 +2.2
ARE0 ePP PP 07 25 02.9 -0.3
ARE0 IAMs_20 IAMs_20 08 24 34.8
comp=Z,2μm,19.4s
APA Apatity 131.57 346 iPKIKP PKPdf 07 22 37.8 -7.4
APA iSS SS 07 42 32.0 -3.8
APA pmax pmax
comp=Z,4.0nm,0.8s
TRO Tromso 132.11 354 ePKPdf PKPdf 07 22 47.4 +1.2
TRO ePP PP 07 25 06.3 -1.6
TRO eSS SS 07 42 35.2 -6.9
GEYT Alibeck 132.29 301 PKhKP PKPpre 07 22 39.5
comp=Z,1.4nm,0.2s,baz=126,slow=3.7,SNR=2.9
GEYT PKP PKPdf 07 22 46.8 -0.8
comp=Z,1.2nm,0.3s,baz=354,slow=1.4,SNR=2.8
GEYT PP PP 07 25 07.5 -3.2
comp=Z,1.8nm,0.5s,baz=131,slow=4.6,SNR=3.9
LOF Lofoten 134.04 356 ePKPdf PKPdf 07 22 50.5 +0.7
LOF ePP PP 07 25 18.7 -1.6
BORG Borgarnes 134.31 15 PFAKE 07 23 00.0 +10
BORG LR LR
comp=Z,1μm,20.0s
KLMR Klimovskoe 134.84 337 ePKIKP PKPdf 07 22 53.1 +1.6
KLMR pmax pmax
comp=Z,28nm,1.4s
LSZ Lusaka 136.20 213 ePKIKP PKPdf 07 22 55.6 0.0
LSZ MLR MLR
comp=Z,2μm,19.0s
LSZ Lusaka 136.20 213 ePKPdf PKPdf 07 22 55.6 0.0
LSZ LR LR
comp=Z,2μm,19.0s
TSUM Tsumeb 136.82 197 PFAKE 07 23 10.0 +13
TSUM LR LR
comp=Z,2μm,20.0s
FIA1 FINESS Array S 138.45 345 ePKPdf PKPdf 07 22 59.5 +1.3
FINES FINESS Array B 138.45 345 PKhKP PKPpre 07 22 48.3
comp=Z,1.4nm,0.7s,baz=12,slow=9.8,SNR=4.5
FINES PKP PKPdf 07 22 58.3 +0.1
comp=Z,5.9nm,0.9s,baz=49,slow=2.7,SNR=8.1
MOS Moscow 139.00 332 ePKIKP PKPdf 07 23 04.0 +4.7
MOS e 07 25 51.3
MOS pmax pmax
comp=Z,30nm,1.3s
OBN Obninsk 139.86 332 iPKIKP PKPdf 07 23 01.2 +0.3
OBN i 07 23 13.2
OBN i 07 25 52.8
OBN pmax pmax
comp=Z,9.0nm,0.8s
OBN Obninsk 139.86 332 PFAKE 07 23 10.0 +9.1
OBN LR LR
comp=Z,2μm,19.0s
AKN Aaknes 140.30 359 ePKPdf PKPdf 07 23 01.0 -0.6
AKN ePP PP 07 25 59.0 -0.3
SHEL Horse Pasture 140.35 163 PFAKE 07 23 10.0 +6.9
SHEL LR LR
comp=Z,2μm,19.0s
DOMB Dombas 140.37 357 ePKPdf PKPdf 07 23 00.2 -1.5
DOMB ePP PP 07 25 59.0 -0.8
KMBO Kilima Mbogo 140.87 237 PKP PKPdf 07 23 02.6 -1.8
comp=Z,2.2nm,0.9s,baz=57,slow=2.4,SNR=3.8
KMBO Kilima Mbogo 140.87 237 PKP PKPdf 07 23 02.6 -1.8
KMBO LR LR
comp=Z,2μm,19.0s
FOO Floro 140.90 0 ePKPdf PKPdf 07 22 59.0 -3.6
FOO ePP PP 07 26 03.5 +0.5
NC303 NORSAR Array S 141.03 355 ePKPdf PKPdf 07 23 02.9 -0.1
VSR Storozhevoye 141.04 326 ePKIKP PKPdf 07 23 01.8 -1.4
VSR pmax pmax
comp=Z,10.0nm,1.1s
NB201 NORSAR Array S 141.22 355 ePKPdf PKPdf 07 23 00.9 -2.4
NB2 NORSAR Subarra 141.23 355 PKP PKPpre 07 22 56.7
comp=Z,12nm,1.4s,baz=10,slow=3.2
NB2 NORSAR Subarra 141.23 355 PKP PKPpre 07 22 56.7
baz=10,slow=3.2
NOA NORSAR Array B 141.23 355 PKhKP PKPpre 07 22 58.7
comp=Z,2.5nm,0.9s,baz=6.5,slow=2.4,SNR=7.1
SUE Sulen 141.44 0 ePP PP 07 26 08.4 +2.1
NC602 NORSAR Array S 141.51 355 ePKPdf PKPdf 07 23 01.9 -1.8
NC602 ePP PP 07 26 03.8 -2.9
NC602 IAMs_20 IAMs_20 08 26 10.2
comp=Z,1μm,19.8s
GOF Gofitskoye 141.75 315 ePKIKP PKPdf 07 23 11.2 +6.5
TBLG Delisi 141.76 310 P PKPdf 07 22 59.7 -5.2
TBLG Delisi 141.76 310 PKHKP PKPpre 07 22 59.6
BER Bergen 142.12 360 ePKPdf PKPdf 07 22 59.9 -5.0
BER ePP PP 07 26 10.3 -0.1
GNI Garni 142.21 307 PFAKE 07 23 20.0 +14
GNI LR LR
comp=Z,969nm,21.0s
KBZ Khabaz 142.36 313 PKP PKPdf 07 23 03.9 -1.9
comp=Z,4.9nm,1.1s,baz=79,slow=3.1,SNR=3.7
OSL Oslo 142.36 355 ePKPdf PKPdf 07 23 03.4 -1.9
ONI Oni 142.38 311 P PKPdf 07 23 02.2 -3.8
ONI Oni 142.38 311 PKIKP PKPdf 07 23 02.2 -3.8
KIV Kislovodsk 142.41 314 iPKIKP PKPdf 07 23 02.3 -3.8
KIV i 07 23 11.5
KIV pmax pmax
comp=Z,9.0nm,1.0s
KIV Kislovodsk 142.41 314 PFAKE 07 23 20.0 +14
KIV LR LR
comp=Z,1μm,19.0s
KONO Kongsberg 142.72 356 ePKPdf PKPpre 07 22 59.0
KONO ePP PP 07 26 14.0 -0.1
KONO IAMs_20 IAMs_20 08 28 39.9
comp=Z,1μm,21.5s
KONO Kongsberg 142.72 356 ePKIKP PKPdf 07 23 04.4 -1.5
KONO MLR MLR
comp=Z,1μm,20.0s
KONO Kongsberg 142.72 356 ePKPdf PKPdf 07 23 04.4 -1.5
KONO LR LR
comp=Z,1μm,20.0s
BLS5 Blasjo 143.07 359 ePKPdf PKPab 07 23 00.8 -1.2
BLS5 ePP PP 07 26 16.5 +0.3
BLS5 IAMs_20 IAMs_20 08 34 23.2
comp=Z,2μm,18.9s
STAV Stavanger 143.57 359 ePKPdf PKPab 07 23 03.5 -0.4
STAV ePP PP 07 26 18.8 -0.4
STAV IAMs_20 IAMs_20 08 31 10.8
comp=Z,2μm,19.0s
MICGM Minsk 143.73 338 ePKP1 PKPbc 07 23 06.0 +0.5
MICGM PKPM 07 23 08.0
comp=Z,0.2nm,3.0s
MICGM PKPM 07 23 09.0
comp=Z,1.8nm,3.0s
MICGM epPKP1 07 23 32.0
MICGM ePP PP 07 25 20.0 -60
MICGM ePKS PP 07 26 15.0 -5.4
MICGM ePPP PPP 07 28 12.0
MICGM eSKKS 07 31 34.0
MICGM eSP 07 36 10.0
MICGM ePPS PPS 07 37 44.0
MICGM eLR LR 08 26 40.0
MICGM LRM MLR 08 34 00.0
comp=Z,2.5nm,18.0s
MNK Minsk 143.73 338 ePKIKP PKPbc 07 23 06.0 +0.5
NACGM Naroch 143.78 339 e PKPab 07 23 02.0 -2.9
NACGM eLQ LQ 08 25 10.0
NACGM eLR LR 08 26 36.0
HOMB Homborsund 144.16 357 ePKPdf PKPab 07 23 06.1 -0.1
HOMB ePP PP 07 26 21.5 -1.1
HOMB eSS SS 07 45 00.1 -4.4
HOMB IAMs_20 IAMs_20 08 28 59.9
comp=Z,2μm,20.7s
ASCN Ascension 144.26 146 PFAKE 07 23 20.0 +10
ASCN LR LR
comp=Z,2μm,19.0s
MDO Dochfour 144.40 9 eP PKPab 07 23 06.0 -1.1
MCD Coleburn Disti 144.41 8 eP PKPbc 07 23 08.1 +0.7
ANN Anapa 145.43 318c iPKP2 PKPbc 07 23 09.5 -1.6
ANN e 07 26 27.3
ANN pmax pmax
comp=Z,236nm,1.1s
SUW Suwalki 145.68 341 ePKPc PKPdf 07 23 11.2 -0.1
SUW ePP PP 07 26 28.3 -3.6
SUW Suwalki 145.68 341 ePKIKP PKPdf 07 23 11.2 -0.1
SUW e 07 26 28.3
MUD Monsted U'grnd 145.93 356 iP PKPdf 07 23 10.5 -1.1
comp=Z,385nm,1.6s
comp=Z,2μm,24.0s
MUD Monsted U'grnd 145.93 356 iPKIKP PKPdf 07 23 10.5 -1.1
MUD pmax pmax
comp=Z,380nm,1.6s
MUD MLR MLR
comp=Z,2μm,24.0s
EDI Edinburgh 146.03 8 eP PKPdf 07 23 11.7 -0.1
EDI AMS AMS 08 25 29.9
comp=Z,820nm,20.0s
MBAR Mbarara 146.10 231 ePKIKP PKPdf 07 23 12.8 -0.7
MBAR MLR MLR
comp=Z,948nm,19.0s
MBAR Mbarara 146.10 231 ePKPdf PKPdf 07 23 12.8 -0.7
MBAR LR LR
comp=Z,948nm,19.0s
AKASG Malin Array Be 146.12 332 PKPbc PKPdf 07 23 12.2 +0.1
comp=Z,18nm,0.6s,baz=40,slow=4.1,SNR=69
AKBB Malin Array Si 146.12 332 ePKP2 PKPdf 07 23 12.2 0.0
AKBD Malin Array Si 146.12 332 ePKPdf PKPdf 07 23 12.2 0.0
KIEV Kiev 146.14 332 ePKP2 PKPdf 07 23 11.9 -0.3
KIEV MLR MLR
comp=Z,1μm,21.0s
KIEV Kiev 146.14 332 ePKPdf PKPdf 07 23 11.9 -0.3
KIEV LR LR
comp=Z,1μm,21.0s
AK11 Malin Array Si 146.17 332 ePKPdf PKPdf 07 23 11.6 -0.7
KBSD Kabsdagh 146.22 303 eP PKPdf 07 23 12.7 -0.2
COP Copenhagen 146.39 353 iP PKPdf 07 23 12.4 0.0
comp=Z,548nm,2.5s
comp=Z,770nm,21.0s
COP Copenhagen 146.39 353 iPKP2 PKPdf 07 23 12.4 0.0
COP pmax pmax
comp=Z,550nm,2.5s
COP MLR MLR
comp=Z,770nm,21.0s
MZRK Al-Mazaregh 146.43 301 eP PKPdf 07 23 09.9 -3.3
BSD Bornholm Skovb 146.59 350 iP PKPdf 07 23 12.4 -0.4
comp=Z,153nm,1.4s
BSD Bornholm Skovb 146.59 350 iPKIKP PKPdf 07 23 12.4 -0.4
BSD pmax pmax
comp=Z,150nm,1.4s
ESK Eskdalemuir 146.62 9 eP PKPbc 07 23 13.7 -0.7
ESK AMS AMS 08 36 14.7
comp=Z,984nm,18.5s
ESK Eskdalemuir 146.62 9 ePKP2 PKPdf 07 23 13.3 +0.4
ESK MLR MLR
comp=Z,1μm,19.0s
ESK Eskdalemuir 146.62 9 ePKPdf PKPdf 07 23 13.2 +0.4
ESK LR LR
comp=Z,1μm,19.0s
SFNV Sufian 146.71 303 eP PKPbc 07 23 15.6 +0.1
ECK Cauldkaine Hil 146.76 9 eP PKPbc 07 23 14.9 0.0
BHH Howats Hill 146.83 9 eP PKPdf 07 23 12.9 -0.3
SIM Simferopol' 147.37 320 ePKP2 PKPab 07 23 20.2 +1.4
SIM pmax pmax
comp=Z,587nm,1.0s
KSRV Kasrt alli 147.72 302 eP PKPdf 07 23 12.0 -3.3
CUKAN kangal_SIVAS 147.79 309 iP PKPbc 07 23 19.5 +1.0
SCER sogukcermik 147.82 310 iP PKPab 07 23 22.3 +1.3
GKP Gorka Klasztor 147.90 346 ePKP PKPdf 07 23 14.7 -0.3
GKP Gorka Klasztor 147.90 346 ePKIKP PKPdf 07 23 14.7 -0.3
DSB Dublin 148.05 13 ePKPbc PKPbc 07 23 18.5 0.0
VAL Valentia 148.28 18 eP PKPbc 07 23 18.0 -1.1
BEL Belsk 148.29 341 ePKP PKPbc 07 23 19.7 +0.6
BEL Belsk 148.29 341 ePKP2 PKPbc 07 23 19.7 +0.6
CUALT Altinyayla-SIV 148.31 309 iP PKPbc 07 23 20.8 +1.0
SORM Soroca 148.38 330 iP PKPbc 07 23 19.2 -0.3
SORM Soroca 148.38 330 PKP2 PKPbc 07 23 19.2 -0.3
WLF1 Llynfaes 148.39 11 eP PKPdf 07 23 17.4 +1.6
WLF1 AMS AMS 08 32 00.4
comp=Z,3μm,18.7s
SLMH Al Salmeh 148.46 303 eP PKPdf 07 23 16.7 +0.1
CUSAR Sarkisla-SIVAS 148.62 310 iP PKPdf 07 23 18.1 +1.2
BOYT Boyabat 148.68 314 iP PKPab 07 23 22.5 -1.8
STNC Stoke 148.92 9 eP PKPdf 07 23 18.5 +1.8
STNC AMS AMS 08 34 24.1
comp=Z,1μm,17.4s
KIS Kishinev 148.96 328 PKP PKPbc 07 23 20.0 -1.0
KIS M M 07 23 21.0
comp=Z,1μm,3.0s
KIS pPKP pPKP 07 23 50.0
KIS Kishinev 148.96 328 iPKS 07 26 50.0
KIS eSKS SKSdf 07 30 29.0 +6.5
KIS eSKKS SKKSac 07 33 46.0 +5.4
KIS Kishinev 148.96 328 iPKP2 PKPbc 07 23 20.0 -1.0
KIS i 07 26 50.0
KIS pmax pmax
comp=Z,1μm,3.0s
KIS pmax pmax
comp=Z,1μm,4.0s
FOEL Foel Wylfa 148.97 10 eP PKPdf 07 23 16.0 -0.9
FOEL AMS AMS 08 33 18.6
comp=Z,1μm,18.2s
CTAK Corum_Osmancik 149.11 313 iP PKPbc 07 23 22.3 +0.5
COAL Corum-Alaca 149.15 312 iP PKPab 07 23 24.8 -1.5
ANDN Andirin 149.23 306 iP PKPab 07 23 24.5 -2.2
DRWC Darouich 149.31 304 eP PKPbc 07 23 21.4 -0.9
HLM1 Long Mynd 149.38 10 eP PKPbc 07 23 20.7 -1.2
HLM1 AMS AMS 08 33 48.8
comp=Z,1μm,18.3s
CWF Charnwood Fore 149.39 8 eP PKPbc 07 23 20.9 -1.0
CWF AMS AMS 08 34 43.1
comp=Z,1μm,16.9s
CWF Charnwood Fore 149.39 8 ePKPbc PKPbc 07 23 20.9 -1.0
ROOS tl_alroos 149.51 300 eP PKPbc 07 23 21.0 -1.9
RABH Abou Rabah 149.51 300 eP PKPab 07 23 34.5 +6.6
KWP Kalwaria Pacla 149.55 337 ePKP PKPbc 07 23 22.4 0.0
KWP Kalwaria Pacla 149.55 337 ePKP2 PKPbc 07 23 22.4 0.0
LPW Lampeter 149.57 11 eP PKPdf 07 23 16.6 -1.2
LPW AMS AMS 08 32 21.9
comp=Z,1μm,15.1s
CMLA Cha da Macela 149.59 53 PFAKE 07 23 30.0 +1.9
CMLA LR LR
comp=Z,2μm,20.0s
LEOM Leova 149.61 328 iP PKPbc 07 23 24.2 +1.6
LEOM Leova 149.61 328 PKP2 PKPbc 07 23 24.2 +1.6
ILGA Ilgaz 149.64 314 iP PKPab 07 23 26.4 -2.0
ZALF Zalf 149.75 297 eP PKPdf 07 23 11.8 -6.9
YAHY KAYSERI_Yahyal 149.77 308 iP PKPbc 07 23 26.0 +2.5
CDAG Cicekdag 149.85 311 iP PKPdf 07 23 19.7 +0.9
MCH1 Michaelchurch 149.87 10 eP PKPbc 07 23 22.4 -0.6
MCH1 AMS AMS 08 30 02.1
comp=Z,1μm,17.8s
OJC Ojcow 150.01 341 ePKP PKPdf 07 23 18.3 -0.3
OJC ePP PP 07 26 54.9 -2.4
OJC e 07 29 10.5
OJC eSKSdf SKSdf 07 30 20.6 -3.2
OJC eSS SS 07 46 20.1 +9.0
OJC Ojcow 150.01 341 ePKHKP PKPdf 07 23 18.3 -0.3
OJC e 07 26 54.9
OJC e 07 30 20.6
OJC Ojcow 150.01 341 ePKPbc PKPbc 07 23 23.0 -0.5
ELDT Eldivan 150.10 313 iP PKPbc 07 23 24.0 -0.3
BUR08 Bucovina Ar. S 150.17 332 ePKPbc PKPbc 07 23 23.1 -1.1
BURAR Bucovina Array 150.18 332 iP PKPbc 07 23 22.6 -1.6
MARH Ras Al Marh 150.19 300 eP PKPbc 07 23 24.7 -0.2
OLDB Oldbury-Upon-S 150.26 10 eP PKPdf 07 23 17.9 -0.9
SALA Sala 150.29 297 eP PKPdf 07 23 18.2 -1.6
BR131 Keskin Array S 150.31 312 ePKPbc PKPbc 07 23 24.2 -0.6
BRTR Keskin Array B 150.31 312 PKPbc PKPbc 07 23 23.9 -0.9
comp=Z,24nm,1.0s,baz=137,slow=3.7,SNR=30
TESR Tescani 150.36 329 iP PKPbc 07 23 23.7 -0.8
KSP Ksiaz 150.37 346 ePKP PKPdf 07 23 19.1 0.0
KSP ePP PP 07 26 56.4 -2.9
KSP e 07 28 40.4
KSP eSS SS 07 46 18.5 +3.6
KSP Ksiaz 150.37 346 ePKIKP PKPdf 07 23 19.1 0.0
KSP e 07 26 56.4
KSP eSS SS 07 46 18.5 +3.6
TOTH TOTAH 150.39 298 eP PKPbc 07 23 23.7 -1.4
QASN Qassioun 150.48 299 eP PKPbc 07 23 24.8 -0.5
UZH Uzhgorod 150.54 337 ePKIKP PKPdf 07 23 19.5 +0.1
UZH e 07 23 22.1
UZH i 07 23 25.3
UZH e 07 23 29.5
CFR Carcaliu 150.56 326 iP PKPbc 07 23 25.8 +0.8
CFR Carcaliu 150.56 326 PKIKP PKPbc 07 23 25.8 +0.8
HTL Hartland 150.56 12 eP PKPbc 07 23 23.7 -1.0
HTL AMS AMS 08 32 25.0
comp=Z,967nm,17.3s
CLL Collm 150.57 350 ePKPdf PKPdf 07 23 19.0 -0.4
comp=Z,209nm,3.1s
CLL ePKPlp 07 23 18.0
comp=Z,400nm,25.8s
CLL i 07 23 24.6
comp=Z,156nm,2.0s
CLL iPKPbc PKiKP 07 23 27.2 +1.7
comp=Z,115nm,1.4s
CLL e 07 23 32.0
CLL i 07 23 44.5
CLL ePP PP 07 26 55.0 -5.4
CLL ePPP PPP 07 30 30.0
CLL eSKKSac SKKSac 07 33 51.0 +1.8
CLL ePSKS 07 37 15.0
CLL e 07 38 27.0
CLL e 07 38 47.0
CLL ePPS PPS 07 40 12.0
CLL e 07 42 30.0
CLL eSS SS 07 46 11.0 -6.0
CLL ePSPS 07 46 58.0
CLL eSSS SSS 07 51 52.0
CLL e 07 53 00.0
CLL eSSSS 07 55 48.0
CLL LmH 08 39 00.0
comp=N,800nm,18.2s
CLL LmH 08 39 00.0
comp=E,700nm,20.1s
CLL LmV 08 41 00.0
comp=Z,1μm,19.5s
CLL Lm MLR 10 01 00.0
comp=Z,300nm,21.0s
CLL Collm 150.57 350 ePKIKP PKPdf 07 23 19.0 -0.4
CLL i 07 23 24.6
CLL i 07 23 27.2
CLL e 07 23 32.0
CLL pmax pmax
comp=Z,209nm,3.1s
CLL pmax pmax
comp=Z,115nm,1.4s
CLL MLR MLR
comp=Z,1μm,19.5s
CLL Collm 150.57 350 ePKPdf PKPdf 07 23 19.4 0.0
CLL ePKPbc PKPbc 07 23 24.7 -0.1
AKSY AKSARAY - Alti 150.70 310 iP PKPbc 07 23 27.5 +1.8
UPC Upice 150.75 346 ePKPDF PKPdf 07 23 19.8 +0.1
UPC epPKP pPKPdf 07 23 29.0 -2.1
UPC ePP PP 07 26 58.7 -2.8
UPC eSKKS 07 33 58.1
UPC eSS SS 07 46 23.5 +4.3
UPC AMS AMS 08 36 40.0
comp=Z,2μm,19.4s
UPC Upice 150.75 346 ePKIKP PKPdf 07 23 19.8 +0.1
UPC e 07 23 29.0
UPC e 07 26 58.7
UPC eSS SS 07 46 23.5 +4.3
UPC MLR MLR
comp=Z,2μm,19.4s
BBAL Bala 150.75 312 iP PKPbc 07 23 27.3 +1.5
BRBR Barbar 150.77 299 eP PKPbc 07 23 24.3 -1.9
DPC Dobruska-Polom 150.82 345 ePKPDF PKPdf 07 23 18.9 +1.0
DPC ePKPAB PKiKP 07 23 29.4 +3.2
DPC ePP PP 07 27 00.5 -1.5
DPC eSKKS 07 33 59.0
DPC eSS SS 07 46 23.4 +3.3
DPC AMS AMS 08 31 30.0
comp=Z,2μm,20.4s
DPC Dobruska-Polom 150.82 345 ePKIKP PKPdf 07 23 18.9 -1.0
DPC e 07 23 29.4
DPC e 07 27 00.5
DPC eSS SS 07 46 23.4 +3.3
DPC MLR MLR
comp=Z,2μm,20.4s
ANTO Ankara 150.83 313 ePKIKP PKPbc 07 23 26.6 +0.7
ANTO MLR MLR
comp=Z,929nm,19.0s
ANTO Ankara 150.83 313 ePKPbc PKPbc 07 23 26.6 +0.7

ANTO LR LR
comp=Z,929nm,19.0s
OKC Ostrava-Krasne 150.83 343 *e*PKPDF PKPpre 07 23 15.2
OKC *e*PP **PP** **07 27 00.3 -1.7**
OKC *e*SS SS 07 46 21.3 +1.2
OKC AMS AMS 08 36 00.0
comp=Z,1μm,18.6s
OKC Ostrava-Krasne 150.83 343 *e*PKIKP PKPpre 07 23 15.2
OKC *e* 07 27 00.3
OKC *e*SS SS 07 46 21.3 +1.2
OKC MLR MLR
comp=Z,1μm,18.6s
BRG Berggiesshubel 150.83 349 *e*PKP **PKPdf** **07 23 19.6 -0.2**
comp=Z,67nm,2.0s
BRG *e* 07 26 42.0
BRG *e* 07 30 32.0
BRG SS SS 07 46 28.0 +8.1
comp=N,880nm,18.2s
comp=E,670nm,17.9s
comp=Z,2μm,18.2s
BRG Berggiesshubel 150.83 349 *e*PKIKP **PKPdf** **07 23 19.6 -0.2**
BRG *e* 07 30 32.0
BRG pmax pmax
comp=Z,67nm,2.0s
BRG MLR MLR
comp=N,880nm,18.2s
BRG MLR MLR
comp=E,670nm,17.9s
BRG MLR MLR
comp=Z,2μm,18.2s
PLOR Plostina 150.84 328⇑*i*P **PKPbc** **07 23 27.8 +2.1**
PLOR Plostina 150.84 328⇑⇑PKIKP **PKPbc** **07 23 27.8 +2.1**
BR231 Keskin MP Arra 150.85 313 *e*PKPbc **PKPbc** **07 23 25.3 -0.8**
TIRR Tirgusor 150.89 324⇑*i*P **PKPbc** **07 23 26.5 +0.7**
TIRR Tirgusor 150.89 324 *e*PKIKP **PKPbc** **07 23 26.2 +0.4**
TIRR Tirgusor 150.89 324 *e*PKPbc **PKPbc** **07 23 26.1 +0.4**
TCHB Talchebab 150.93 297 *e*P **PKPbc** **07 23 25.4 -0.9**
KERG Konya-Eregli 150.94 307 *i*P **PKPbc** **07 23 26.0 -0.3**
KRLC Kraliky 150.97 344⇑⇑*e*PKP **PKPbc** **07 23 26.7 +0.8**
KRLC Kraliky 150.97 344 *e*PKIKP **PKPbc** **07 23 26.7 +0.8**
HARR Harsova 150.99 325⇑*i*P **PKPbc** **07 23 27.0 +1.0**
HARR Harsova 150.99 325 ⇑⇑PKIKP **PKPbc** **07 23 27.0 +1.0**
TLB Topalu 151.00 325⇑*i*P **PKPbc** **07 23 28.9 +2.9**
TLB Topalu 151.00 325 ⇑⇑PKIKP **PKPbc** **07 23 28.9 +2.9**
PVCC Panska Ves 151.04 348 *e*PKPDF **PKPdf** **07 23 19.2 -1.0**
PVCC *ex* x 07 23 39.2
PVCC AMS AMS 08 39 00.0
comp=Z,1μm,16.7s
PVCC Panska Ves 151.04 348 *e*PKIKP **PKPdf** **07 23 19.2 -1.0**
PVCC MLR MLR
comp=Z,1μm,16.7s
MORC Moravsky Berou 151.05 343⇑*i*P **PKPbc** **07 23 25.4 -0.7**
MORC Moravsky Berou 151.05 343 *e*PKIKP **PKPdf** **07 23 20.2 -0.1**
MORC *e* 07 23 27.1
MORC Moravsky Berou 151.05 343 *e*PKPdf **PKPdf** **07 23 20.2 -0.1**
MORC *e*PKPbc **PKiKP** **07 23 27.1 +0.5**
DYA Yadsworthy 151.21 12 *e*P **PKPbc** **07 23 25.2 -1.1**
DYA AMS AMS 08 33 18.7
comp=Z,2μm,17.5s
KIZK Mersin 151.27 306 *i*P **PKPbc** **07 23 29.1 +2.2**
DOPR Dopca 151.35 330⇑*i*P **PKPbc** **07 23 27.1 +0.2**
MLR Muntele Rosu 151.44 328⇑*i*P **PKPbc** **07 23 26.4 -0.8**
MLR Muntele Rosu 151.44 328⇑⇑PKIKP **PKPbc** **07 23 26.4 -0.8**
MLR Muntele Rosu 151.44 328 *e*PKPbc **PKPbc** **07 23 26.5 -0.7**
PSN Preselentsi 151.52 323 *i*P **PKPdf** **07 23 22.0 +0.9**
PRU Pruhonice 151.56 347 *e*PKPDF **PKPdf** **07 23 21.1 +0.1**
PRU *ep*PKP **pPKPdf** **07 23 30.6 -1.7**
PRU *e*PP **PP** **07 27 04.3 -1.8**
PRU *e*SKKS 07 34 01.2
PRU *e*SS **SS** **07 46 31.3 +3.3**
PRU AMS AMS 08 37 30.0
comp=Z,2μm,20.1s
PRU Pruhonice 151.56 347 *e*PKIKP **PKPdf** **07 23 21.1 +0.1**
PRU *e* 07 23 30.6
PRU *e* 07 27 04.3
PRU *e*SS SS 07 46 31.3 +3.3
PRU MLR MLR
comp=Z,2μm,20.1s
GOPC GO Pecny, Ondr 151.58 347 *e*PKPDF **PKPdf** **07 23 18.9 -2.1**
GOPC *e*PKPAB **PKPab** **07 23 38.4 +2.6**
GOPC *e*SS SS 07 46 32.0 +3.7
GOPC AMS AMS 08 39 40.0
comp=Z,2μm,18.7s
GOPC GO Pecny, Ondr 151.58 347 *e*PKIKP **PKPdf** **07 23 18.9 -2.1**
GOPC *e*SS SS 07 46 32.0 +3.7
GOPC MLR MLR
comp=Z,2μm,18.7s
NKC Novy Kostel 151.71 350 *e*PKPDF **PKPdf** **07 23 20.7 -0.5**
NKC *ep*PKP **pPKPdf** **07 23 31.1 -1.5**
NKC AMS AMS 08 39 00.0
comp=Z,2μm,18.8s
NKC Novy Kostel 151.71 350 *e*PKIKP **PKPdf** **07 23 20.7 -0.5**
NKC *e* 07 23 31.1
NKC MLR MLR
comp=Z,2μm,18.8s
BEBN Eben Emael 151.73 359 PKPbc **PKPbc** **07 23 28.5 +1.0**
SACV Santiago Islan 151.82 100 PFAKE 07 23 30.0 +1.2
SACV LR LR
comp=Z,882nm,19.0s
DRGR 151.88 334⇑*i*P **PKPbc** **07 23 27.9 -0.2**
DRGR 151.88 334 ⇑⇑PKIKP **PKPbc** **07 23 27.9 -0.2**
VOIR 151.91 329⇓*i*P **PKPbc** **07 23 32.1 +3.9**
VOIR 151.91 329 ⇓⇓PKIKP **PKPbc** **07 23 32.1 +3.9**
MEM Membach 151.91 359 PKPbc **PKPbc** **07 23 29.6 +1.7**
KDHN Kadinhani 151.91 311 *i*P **PKPbc** **07 23 28.2 -0.3**
PSZ Piszkesteto 151.99 339⇑*i*P **PKPdf** **07 23 23.5 +1.7**
PSZ Piszkesteto 151.99 339 *e*PKIKP **PKPdf** **07 23 22.0 +0.2**
PSZ *e* 07 23 28.7
PSZ MLR MLR
comp=Z,2μm,19.0s
PSZ Piszkesteto 151.99 339 *e*PKPdf **PKPdf** **07 23 22.0 +0.2**
PSZ *e*PKPbc **PKiKP** **07 23 28.7 0.0**
PSZ LR LR
comp=Z,2μm,19.0s
PSZ Piszkesteto 151.99 339⇑⇑*e*PKPPKPab **PKPdf** **07 23 21.1 -0.7**
SNF Seneffe 152.01 1 PKPbc **PKPbc** **07 23 30.4 +2.2**
BCLA Clavier 152.11 360 PKPbc **PKPbc** **07 23 30.9 +2.5**
ERMK Ermenek 152.13 307 *i*P **PKPbc** **07 23 30.1 +0.9**
ARR Arges 152.15 330⇑*i*P **PKPbc** **07 23 27.0 -1.8**
PRD Provadia 152.27 323 *i*P **PKPdf** **07 23 22.3 +0.1**
CSS Mathiatis 152.41 303 P **PKPbc** **07 23 27.9 -1.7**
CSS Mathiatis 152.41 303 *e*PKPbc **PKPbc** **07 23 29.3 -0.3**
CSS LR LR
comp=Z,251nm,20.0s
DOU Dourbes 152.43 1 PKPbc **PKPbc** **07 23 28.8 -0.3**
LOT Lotru 152.49 331⇑*i*P **PKPbc** **07 23 27.6 -2.0**
KHC Kasperske Hory 152.57 348 *e*PKPDF **PKPdf** **07 23 22.6 0.0**
KHC ⇑⇑*e*PKP **PKPbc** **07 23 29.7 +0.2**
KHC *e*PP **PP** **07 27 09.7 -2.2**
KHC *e*SKKS 07 34 09.6
KHC *e*SS **SS** **07 46 37.0 -2.2**
KHC AMS AMS 08 35 10.0
comp=Z,2μm,18.7s
KHC Kasperske Hory 152.57 348 *e*PKIKP **PKPdf** **07 23 22.6 0.0**
KHC *e* 07 23 29.7
KHC *e* 07 27 09.7
KHC *e*SS SS 07 46 37.0 -2.2
KHC MLR MLR
comp=Z,2μm,18.7s
KHC Kasperske Hory 152.57 348 *e*PKPdf **PKPdf** **07 23 22.3 -0.3**
KHC *e*PKPbc **PKiKP** **07 23 30.6 +0.9**
SIRR Siria 152.73 334⇑*i*P **PKPbc** **07 23 31.0 +1.0**
GEC2 GERESS Array S 152.81 348 *e*PKIKP **PKPdf** **07 23 22.6 -0.4**
GEC2 GERESS Array S 152.81 348 *e*PKPdf **PKPdf** **07 23 22.6 -0.4**
GERES GERESS Array B 152.81 348 PKP **PKPdf** **07 23 23.2 +0.2**
comp=Z,0.4nm,0.2s,baz=32,slow=3.0,SNR=7.4
GERES PKPbc **PKiKP** **07 23 31.4 +1.1**
comp=Z,6.9nm,1.0s,baz=28,slow=3.2,SNR=19
GEA0 GERESS Array S 152.82 348 *e*PKPdf **PKPdf** **07 23 23.6 +0.6**
GEA0 *e*PKPbc **PKiKP** **07 23 32.0 +1.6**
WLF Walferdange 152.85 359 PKPbc **PKPbc** **07 23 31.1 +1.1**
WLF Walferdange 152.85 359 *e*PKIKP **PKPbc** **07 23 29.8 -0.3**
WLF MLR MLR
comp=Z,3μm,20.0s
WLF Walferdange 152.85 359 *e*PKPbc **PKPbc** **07 23 29.8 -0.3**
WLF LR LR
comp=Z,3μm,20.0s
SZH Strazhica 153.02 325 *i*P **PKPdf** **07 23 22.4 -1.0**
CONA Conrad Observa 153.19 344 *i*PKPdf **PKPdf** **07 23 22.9 -0.7**
comp=Z,274nm,3.8s
CONA *i*pPKPab **PKPab** **07 23 43.4 +0.7**
comp=Z,403nm,2.4s
BZS Buzias 153.28 334⇓*i*P **PKPdf** **07 23 27.1 +3.4**
BZS Buzias 153.28 334 ⇓⇓PKIKP **PKPdf** **07 23 27.1 +3.4**
MOA Molln 153.64 346 *i*PKPdf **PKPdf** **07 23 23.2 -1.0**
comp=Z,274nm,4.3s
MOA *i*PKPab **PKPab** **07 23 44.5 0.0**
comp=Z,598nm,3.2s
ARSA Arzberg 153.90 344 *i*PKPdf **PKPdf** **07 23 23.3 -1.2**
comp=Z,197nm,3.4s
ARSA *i*PKPab **PKPab** **07 23 45.3 -0.4**
comp=Z,619nm,3.3s
MDVR Moldovita 153.91 332⇑*i*P **PKPbc** **07 23 30.5 -2.1**
BFO Black Forest 154.07 355 *e*PKPbc **PKPbc** **07 23 34.0 +1.1**
BFO LR LR
comp=Z,950nm,20.0s
KDZ Kurdzhali 154.40 323 *i*P **PKPdf** **07 23 24.0 -1.4**
ALN Alexandroupoli 154.53 321 P **PKPab** **07 23 47.5 -1.0**
SOKA Soboth 154.56 344 *i*PKPdf **PKPdf** **07 23 24.4 -1.2**
comp=Z,218nm,3.8s
SOKA *i*PKPab **PKPab** **07 23 48.4 -0.1**
comp=Z,314nm,2.6s
KBA Koelnbreinsper 154.57 347 *i*PKPdf **PKPdf** **07 23 24.0 -1.7**
comp=Z,205nm,3.4s
KBA *i*PKPab **PKPab** **07 23 47.9 -0.8**
PERS Pernice 154.57 344 *e*PKPdf **PKPdf** **07 23 23.9 -1.7**
PERS *e*PKPab **PKPab** **07 23 48.2 -0.4**
PERS *e*PP **PP** **07 27 21.0 -2.3**
PERS *e*SS SS 07 47 03.0 +1.7
RETA Reutte 154.63 351 *i*PKPdf **PKPdf** **07 23 24.7 -0.9**
comp=Z,250nm,3.3s
RETA *i*PKPab **PKPab** **07 23 48.2 -0.6**
comp=Z,303nm,3.1s
WTTA Wattenberg 154.72 350 *i*PKPdf **PKPdf** **07 23 24.9 -1.0**
comp=Z,176nm,6.5s
WTTA *i*PKPab **PKPab** **07 23 49.0 -0.3**
comp=Z,139nm,2.1s
OBKA Obir 154.84 345 *i*PKPdf **PKPdf** **07 23 24.5 -1.4**
comp=Z,214nm,3.7s
OBKA *i*PKPab **PKPab** **07 23 48.7 -1.0**
comp=Z,335nm,3.4s
VTS Vitosha 154.90 327 P **PKPab** **07 23 49.3 -1.0**
VTS Vitosha 154.90 327 *i*P **PKPdf** **07 23 25.8 -0.5**
MYKA Terra Mystica 154.93 346 *i*PKPdf **PKPdf** **07 23 24.5 -1.5**
comp=Z,195nm,3.1s
MYKA *i*PKPab **PKPab** **07 23 48.7 -1.5**
comp=Z,264nm,3.2s
DAVA Damuels 154.95 352 *i*PKPdf **PKPdf** **07 23 25.0 -1.2**
comp=Z,322nm,3.8s
DAVA *i*PKPab **PKPab** **07 23 49.1 -1.2**
comp=Z,210nm,2.9s
ABTA Abfaltersbach 155.06 348 *i*PKPdf **PKPdf** **07 23 24.7 -1.6**
comp=Z,166nm,3.0s
ABTA *i*PKPab **PKPab** **07 23 50.1 -0.6**
comp=Z,244nm,2.7s
FETA Feichten 155.10 351 *i*PKPdf **PKPdf** **07 23 24.9 -1.5**
comp=Z,216nm,3.5s
FETA *i*PKPab **PKPab** **07 23 50.0 -0.9**
comp=Z,360nm,3.4s
SMTH Samothraki Isl 155.11 321 P **PKPab** **07 23 49.2 -1.8**
YER Yerkesik 155.24 311 P **PKPab** **07 23 50.8 -1.0**
LJU Ljubljana 155.27 344 *e*PKPdf **PKPdf** **07 23 25.4 -1.0**
LJU *e*PKPab **PKPab** **07 23 52.0 +0.5**
LJU *e*PP **PP** **07 27 25.1 -2.0**
LJU *i* 07 27 49.6
MMB Musomiste 155.36 325 *i*P **PKPdf** **07 23 25.7 -1.1**
PRK Paraskevi 155.42 318 P **PKPab** **07 23 52.5 +0.1**
NVR Nevrokopi 155.45 324 P **PKPab** **07 23 52.1 -0.4**
JAVS Javornik 155.53 345 *e*PKPdf **PKPdf** **07 23 26.3 -0.6**
JAVS *e*PKPab **PKPab** **07 23 51.1 -1.6**
FUORN Ofenpass-Fuorn 155.55 351 *e*PKPdf **PKPdf** **07 23 26.5 -0.7**
SIGR SIGRI 155.70 318 P **PKPab** **07 23 52.4 -1.2**
SRS Serrai 155.76 324 P **PKPab** **07 23 52.2 -1.6**
TUE Stuetta 155.82 353 PFAKE 07 23 40.0 +13
TUE LR LR
comp=Z,2μm,19.0s
BODT Bodrum 155.95 312 P **PKPab** **07 23 55.0 +0.2**
CHOS Chios island 156.06 316 P **PKPab** **07 23 55.4 +0.1**
OUR Ouranopolis 156.09 322 P **PKPab** **07 23 54.9 -0.3**
KNT Kendrikon 156.10 325 P **PKPab** **07 23 55.0 -0.3**
SENIN Lac Senin/Sane 156.10 356 *e*PKPab **PKPab** **07 23 55.0 -0.3**
VAY Valandovo 156.16 326 P **PKPab** **07 23 55.2 -0.3**
PLG Polygyros 156.36 323 P **PKPab** **07 23 55.5 -0.9**
PAIG Paliouri 156.53 322 P **PKPab** **07 23 56.6 -0.5**
PDG Podgorica 156.86 333 P **PKPab** **07 23 56.5 -1.9**
AOS Alonnisos 156.92 320 P **PKPab** **07 23 57.1 -1.7**
LIT Litokhoron 157.07 324 P **PKPab** **07 23 57.7 -1.8**
XOR Xorichti 157.19 322 P **PKPab** **07 23 58.4 -1.6**
SSB Saint Sauveur 157.25 1 *e*PKP2 **PKPab** **07 24 00.0 0.0**
SSB MLR MLR
comp=Z,1μm,19.0s
SSB Saint Sauveur 157.25 1 *e*PKPab **PKPab** **07 23 60.0 0.0**
SSB LR LR
comp=Z,1μm,19.0s
BNI Bardonecchia 157.44 357 PFAKE 07 23 40.0 +11
BNI LR LR
comp=Z,2μm,19.0s
TIR Tirane 157.46 330 PFAKE 07 23 40.0 +11
TIR LR LR
comp=Z,2μm,22.0s
PGAV Gavieira, Arco 157.56 27 *e*PKPdf **PKPdf** **07 23 30.9 +1.2**
PGAV Gavieira, Arco 157.56 27 *e*PKPab **PKPab** **07 24 04.6 +3.0**
PGAV Gavieira, Arco 157.56 27 *e*LR LR 08 29 01.9
comp=Z,2μm,20.0s
SANT Santorini 157.58 313 PFAKE 07 23 40.0 +10
SANT LR LR
comp=Z,974nm,20.0s
NEST Nestorio 157.60 327 P **PKPab** **07 24 00.6 -1.3**
ATAL Atalanti 157.73 321 P **PKPab** **07 24 01.7 -0.7**
ATHU Athens Univers 157.74 318 P **PKPab** **07 24 01.1 -1.3**
PMOZ Porto Moniz, M 157.75 58 *e*PKPdf **PKPdf** **07 23 37.3 +7.1**
PMOZ Porto Moniz, M 157.75 58 *e*PKPab **PKPab** **07 24 05.2 +2.4**
PMOZ Porto Moniz, M 157.75 58 *e*LR LR 08 25 41.0
comp=Z,1μm,20.0s
ATH Athens Observa 157.78 318 P **PKPab** **07 24 02.2 -0.4**
PCAB Cabril 157.87 27 *e*PKPab **PKPab** **07 24 07.7 +4.8**
VLC Villacollemand 157.94 350 PFAKE 07 23 40.0 +10
VLC LR LR
comp=Z,782nm,19.0s
PMAR Madeira 158.00 58 *e*PKPdf **PKPdf** **07 23 33.9 +3.3**
PMAR Madeira 158.00 58 *e*PKPab PKPab 07 24 15.6 +12
FUL Funchal 158.05 58 *e*PKPab **PKPab** **07 24 08.8 +4.8**
POLO Lamas de Olo 158.25 27 *e*PKPdf **PKPdf** **07 23 31.9 +1.3**
POLO Lamas de Olo 158.25 27 *e*PKPab **PKPab** **07 24 06.1 +1.5**
POLO Lamas de Olo 158.25 27 *e*PP PP 07 28 07.6 +24
POLO Lamas de Olo 158.25 27 *e*SS SS 07 47 48.8 +7.4
PBRG Braganca 158.31 25 *e*PKPdf **PKPdf** **07 23 32.3 +1.8**
PBRG Braganca 158.31 25 *e*PKPab **PKPab** **07 24 06.0 +1.2**
PBRG Braganca 158.31 25 *e*PP PP 07 27 43.8 -0.4
PMPS Porto Santo 158.32 56 *e*PKPab **PKPab** **07 24 09.8 +4.7**
PVRL Vila Real 158.36 27 *e*PKPdf **PKPdf** **07 23 33.7 +3.1**
PVRL Vila Real 158.36 27 *e*PKPab **PKPab** **07 24 09.8 +4.8**
ANX Ano Chora 158.44 322 P **PKPab** **07 24 03.4 -2.1**
DSL Palaion Diasel 158.52 324 P **PKPab** **07 24 04.2 -1.6**
LAKA Lakka 158.65 321 P **PKPab** **07 24 05.3 -1.1**
KLV Kalavryta, Ach 158.68 321 P **PKPab** **07 24 04.3 -2.3**
MVO Moncorvo 158.74 26 *e*PKPdf **PKPdf** **07 23 33.5 +2.4**
MVO Moncorvo 158.74 26 *e*PKPab **PKPab** **07 24 06.0 -0.7**
MVO Moncorvo 158.74 26 *e*PP PP 07 28 10.1 +24
MVO Moncorvo 158.74 26 *e*SS SS 07 47 54.3 +7.8
MVO Moncorvo 158.74 26 *e*LR LR 08 27 25.4
comp=Z,3μm,20.0s
PVIS Viseu 158.75 28 *e*PKPdf **PKPdf** **07 23 26.0 -5.1**
PVIS Viseu 158.75 28 *e*PKPab **PKPab** **07 24 12.3 +5.6**
PDO Prodromos 158.85 323 P **PKPab** **07 24 06.7 -0.5**
VLX Vlachokerasia 158.98 319 P **PKPab** **07 24 04.8 -3.1**
DRO Drossia 159.00 321 P **PKPab** **07 24 07.6 -0.3**
AQU L'Aquila 159.00 343 PFAKE 07 23 40.0 +8.6
AQU LR LR
comp=Z,2μm,20.0s
PCAS Casmilo, Conde 159.01 30 *e*PKPdf **PKPdf** **07 23 32.6 +1.2**
PCAS Casmilo, Conde 159.01 30 *e*PKPab **PKPab** **07 24 05.0 -2.8**
PCAS Casmilo, Conde 159.01 30 *e*PP PP 07 28 06.2 +18
PCAS Casmilo, Conde 159.01 30 *e*SS SS 07 47 59.1 +10
VLI Veliai 159.04 317 P **PKPab** **07 24 06.3 -1.8**
RLS Riolos of Patr 159.06 322 P **PKPab** **07 24 08.2 +0.1**
MTE Manteigas 159.16 28 *e*PKPdf **PKPdf** **07 23 32.3 +0.7**
MTE Manteigas 159.16 28 *e*PKPab **PKPab** **07 24 06.9 -1.6**
MTE Manteigas 159.16 28 *e*PP PP 07 28 11.4 +22
MTE Manteigas 159.16 28 *e*SS SS 07 47 59.0 +8.0
MTE Manteigas 159.16 28 *e*LR LR 08 27 51.8
comp=Z,2μm,20.0s
MTE Manteigas 159.16 28 PFAKE 07 23 40.0 +8.4
MTE LR LR
comp=Z,2μm,21.0s
ANKY Antikythira Is 159.31 314 P **PKPab** **07 24 08.5 -0.8**
ITM Ithomi 159.38 319 P **PKPab** **07 24 08.3 -1.3**
PTOM Tomar 159.39 31 *e*PKPdf **PKPdf** **07 23 32.3 +0.5**
PMAFR Mafra 159.47 34 *e*PKPdf **PKPdf** **07 23 36.0 +4.0**
PMAFR Mafra 159.47 34 *e*PKPab **PKPab** **07 24 06.9 -3.0**
PMAFR Mafra 159.47 34 *e*PP PP 07 28 20.9 +30
PMAFR Mafra 159.47 34 *e*LR LR 08 25 39.8
comp=Z,2μm,16.0s
PCBR Castelo Branco 159.64 29 *e*PKPdf **PKPdf** **07 23 31.0 -1.1**
PCBR Castelo Branco 159.64 29 *e*PKPab **PKPab** **07 24 08.1 -2.5**
PYL PYLOS 159.68 319 P **PKPab** **07 24 08.9 -1.9**
PMST Lisbon--Monsan 159.69 34 *e*PKPdf **PKPdf** **07 23 33.6 +1.4**
PMST Lisbon--Monsan 159.69 34 *e*PKPab **PKPab** **07 24 06.1 -4.7**
PMST Lisbon--Monsan 159.69 34 *e*PP PP 07 28 23.2 +31
ZKS Zakynthos 159.70 322 P **PKPab** **07 24 09.3 -1.6**
PMTG Montargil 159.91 32 *e*PKPdf **PKPdf** **07 23 33.5 +1.1**
PMTG Montargil 159.91 32 *e*PKPab **PKPab** **07 24 08.1 -3.7**
PMTG Montargil 159.91 32 *e*PP PP 07 28 16.8 +24
PMTG Montargil 159.91 32 *e*SS SS 07 48 00.0 +1.0
CUC Castrocucco 160.32 335 PFAKE 07 23 40.0 +7.1
CUC LR LR
comp=Z,1μm,20.0s
PESTR Estremoz 160.38 31 *e*PKPdf **PKPdf** **07 23 34.8 +1.8**
PESTR Estremoz 160.38 31 *e*PKPab **PKPab** **07 24 07.7 -6.1**
PESTR Estremoz 160.38 31 *e*PP PP 07 28 21.0 +25
PESTR Estremoz 160.38 31 *e*SS SS 07 48 14.0 +10
EVO Evora 160.43 32 *e*PKPdf **PKPdf** **07 23 35.0 +2.0**
EVO Evora 160.43 32 *e*PKPab **PKPab** **07 24 08.5 -5.6**
EVO Evora 160.43 32 *e*PP PP 07 28 22.3 +26
PNCL Nicolau / Gran 160.50 34 *e*PKPdf **PKPdf** **07 23 34.4 +1.3**
PNCL Nicolau / Gran 160.50 34 *e*PKPab **PKPab** **07 24 08.0 -6.3**
PNCL Nicolau / Gran 160.50 34 *e*PP PP 07 28 22.5 +26
PNCL Nicolau / Gran 160.50 34 *e*SS SS 07 48 20.2 +15
TIP Timpagrande 160.61 332 PFAKE 07 23 40.0 +6.7
TIP LR LR
comp=Z,2μm,20.0s
PTEO Sao Teotonio 160.82 35 *e*PKPab **PKPab** **07 24 10.6 -5.1**
MESJ Messejana 160.86 34 *e*P **PKPdf** **07 23 32.4 -1.1**
MESJ AMS AMS 08 33 06.3
comp=Z,2μm,16.6s
MESJ Messejana 160.86 34 *e*PKPdf **PKPdf** **07 23 35.3 +1.8**
MESJ Messejana 160.86 34 *e*PKPab **PKPab** **07 24 09.3 -6.6**
MESJ Messejana 160.86 34 *e*PP PP 07 28 28.0 +30
PBEJ Beja 160.90 33 *e*PKPab **PKPab** **07 24 11.0 -5.1**
MORF Marmelete 161.03 36 *e*P **PKPdf** **07 23 32.8 -1.0**
MORF AMS AMS 08 33 51.8
comp=Z,3μm,18.3s
MORF Marmelete 161.03 36 *e*PKPdf **PKPdf** **07 23 38.5 +4.7**
MORF Marmelete 161.03 36 *e*PKPab PKPab 07 24 08.2 -8.6
MORF Marmelete 161.03 36 *e*SS SS 07 48 54.0 +43
PFVI Vila Bisbo 161.06 36 *e*PKPdf **PKPdf** **07 23 35.6 +1.8**
PFVI Vila Bisbo 161.06 36 *e*PKPab **PKPab** **07 24 09.4 -7.5**
PFVI Vila Bisbo 161.06 36 *e*PP PP 07 28 07.2 +7.8
PCVE Castro Verde 161.11 34 *e*PKPdf **PKPdf** **07 23 34.8 +1.0**
PCVE Castro Verde 161.11 34 *e*PKPab PKPab 07 24 08.4 -8.6
PCVE Castro Verde 161.11 34 *e*PP PP 07 28 06.2 +6.6
PCVE Castro Verde 161.11 34 *e*SS SS 07 48 29.7 +18
PAB San Pablo 161.17 23 PFAKE 07 23 40.0 +6.1
PAB LR LR
comp=Z,2μm,20.0s
PBAR Barrancos 161.19 31 *e*PKPdf **PKPdf** **07 23 35.6 +1.7**
PBAR Barrancos 161.19 31 *e*PKPab PKPab 07 24 08.5 -8.8
PBAR Barrancos 161.19 31 *e*SS SS 07 48 22.1 +10
ES19 SONSECA Array 161.19 22 *e*PKPdf **PKPdf** **07 23 34.0 +0.2**
ES19 *e*PKPab **PKPab** **07 24 17.6 +0.2**
ESDC Sonseca Array 161.19 22 PKP **PKPdf** **07 23 33.6 -0.3**
comp=Z,0.2nm,0.4s,baz=344,slow=3.4,SNR=7.9
ESDC PKPab **PKPab** **07 24 16.8 -0.6**
comp=Z,1.3nm,0.7s,baz=312,slow=4.5,SNR=7.1
ESDC PP **PP** **07 28 00.9 +1.2**
comp=Z,0.1nm,0.2s,baz=316,slow=0.6,SNR=4.2
PVAQ Vaqueiros 161.45 34 *e*PKPdf **PKPdf** **07 23 36.0 +1.8**
PVAQ Vaqueiros 161.45 34 *e*PKPab PKPab 07 24 09.4 -9.1
PVAQ Vaqueiros 161.45 34 *e*PP PP 07 28 31.0 +30
PVAQ Vaqueiros 161.45 34 *e*SS SS 07 48 26.0 +11
PVAQ Vaqueiros 161.45 34 *e*LR LR 08 29 07.4
comp=Z,2μm,20.0s
PBDV Barranco-do-Ve 161.46 35 *e*PKPdf **PKPdf** **07 23 35.6 +1.4**
PBDV Barranco-do-Ve 161.46 35 *e*PKPab PKPab 07 24 09.4 -9.2
PBDV Barranco-do-Ve 161.46 35 *e*PP PP 07 28 32.2 +31
PBDV Barranco-do-Ve 161.46 35 *e*SS SS 07 48 24.1 +8.5
DBIC Dimbokro 161.57 147 PKP **PKPdf** **07 23 37.1 +2.1**
comp=Z,5.9nm,1.0s,baz=138,slow=2.8,SNR=3.8
CEL Celeste 161.75 332 PFAKE 07 23 40.0 +5.5
CEL LR LR
comp=Z,2μm,20.0s
VSL Villasalto 162.65 349 PFAKE 07 23 50.0 +15
VSL LR LR
comp=Z,2μm,19.0s
WDD Wied Dalam 164.37 330 PFAKE 07 23 50.0 +13
WDD LR LR
comp=Z,2μm,19.0s
RTC Rabat Centre 164.43 40 PFAKE 07 23 50.0 +13
RTC LR LR
comp=Z,9μm,19.0s
KEST Kesra 166.29 345 PKPab **PKPab** **07 24 40.2 +0.4**
comp=Z,9.4nm,1.0s,baz=19,slow=5.0,SNR=5.3
TOA0 Torodi Ar. Sit 170.17 160 *e*PKPdf **PKPdf** **07 23 41.7 -0.1**
TOA0 *e*PKPdf PKPdf 07 23 42.3 +0.5
TORD Torodi Ar. Bea 170.17 160 PKP **PKPdf** **07 23 40.6 -1.3**
comp=Z,5.5nm,1.3s,baz=230,slow=1.0,SNR=10
TORD PKPab **PKPab** **07 24 58.2 +0.8**
comp=Z,1.9nm,0.9s,baz=204,slow=5.4,SNR=4.4
TORD PP **PP** **07 28 50.6 +4.4**
comp=Z,1.6nm,1.1s,baz=181,slow=5.8,SNR=3.8
TORD SKKPbc 07 32 59.9
comp=Z,1.0nm,1.1s,baz=325,slow=1.8,SNR=3.6
TAM Tamanrasset 179.51 310 PFAKE 07 24 00.0 +15
TAM LR LR
comp=Z,2μm,19.0s

NIED ***16*** *07:04:00.36˝60N×141˝00E,h5km,Mw4.0 Best double couple: M₀1.05000×10¹⁵ NP1:φs40.00000°,δ60.00000°, λ-3.00000°. NP2:φs131.00000°,δ88.00000°, λ-150.00000°.*

ISCJB ***16*** *07:04:55.6±1.1,36˝55N±0˝03×141˝09E±0˝06,h9km±6km, mb3.6/5,MS3.8/1,Error ellipse: s-maj=7.7km s-min=5.5km az=19.4*

IDC ***16*** *07:04:57.0±1.4,36˝68N×140˝76E,h0km,mb3.7/5, mb1 3.7/8,mb1mx3.5/45,mbtmp3.7/8,ML3.5/2,MS3.2/3, Ms1 3.2/3,ms1mx2.9/51,Error ellipse: s-maj=30.9km s-min=22.7km az=100.0*

JMA ***16*** *07:04:57.6,36˝56N×140˝96E,h19km±1km,M4.2*

JMA Felt II J1.

ISC 16 07:04:56.6±2.8,36˝61N±0˝04×140˝89E±0˝07,h2km±17km, n23,σ0˚70/25,mb3.6/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.26**	**270**	P	P	**Pb**	**07 05 04.2**	**+0.2**
JHO					S	**Sb**	**07 05 09.1**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.49**	**352**	P	P	**Pb**	**07 05 08.3**	**+0.2**
ONAJ					S	**Sb**	**07 05 16.3**	**+0.5**
JYT	**Yasato**	**0.68**	**236**	P	P	**Pb**	**07 05 10.9**	**-0.3**
JYT					S	**Sb**	**07 05 20.6**	**-0.5**
JFK	**Kawauchi**	**0.75**	**359**	P	P	**Pb**	**07 05 12.2**	**-0.3**
JFK					S	**Sb**	**07 05 22.9**	**-0.4**
JSB	**Shiboa**	**0.85**	**295**	P	P	**Pn**	**07 05 15.5**	**-0.3**
JSB					S	**Sn**	**07 05 28.6**	**-0.3**
JFT	**Otama**	**1.01**	**334**	P	P	**Pn**	**07 05 17.5**	**-0.3**
JFT					S	**Sn**	**07 05 32.0**	**-0.6**
MJAR	**Matsushiro Arr**	**2.16**	**269**	Pn	Pn	**Pn**	**07 05 33.6**	**0.0**
	12nm,0.3s,baz=89,slow=9.6,SNR=64							
MJAR					Sn	**Sb**	**07 06 04.3**	**+0.6**
	21nm,0.3s,baz=148,slow=19,SNR=4.5							
MJAR					LR	LR	07 06 40.7	
	comp=Z,293nm,20.8s,baz=100,slow=51							
MAT	**Matsushiro**	**2.16**	**269**	P	P	**Pn**	**07 05 34.5**	**+0.8**
MAT					S	**Sg**	**07 06 05.8**	**-0.2**
JHJ	**Hachijo jima 2**	**3.60**	**195**	Pn	Pn	**Pn**	**07 05 54.6**	**+1.1**
	14nm,0.3s,baz=323,slow=20,SNR=7.4							
JHJ					Sn	**Sn**	**07 06 35.1**	**-1.5**
	23nm,0.3s,baz=230,slow=22,SNR=2.2							
JHJ					LR	LR	07 07 14.9	
	comp=Z,129nm,18.9s,baz=143,slow=38							
ASAJ	**Asahikawa**	**7.61**	**9**	Pn	Pn	**Pn**	**07 06 48.4**	**-0.1**
	baz=177,slow=18							
PETK	**Petropavlovsk-**	**20.26**	**30**	LR	LR		07 17 01.2	
	comp=Z,389nm,19.4s,baz=74,slow=36							
H11N2	**WAKE ISLAND Hy**

baz=312,slow=75,SNR=540
H11N1 WAKE ISLAND Hy 28.31 119 T T 07 40 19.6
baz=312,slow=75,SNR=482
H11N3 WAKE ISLAND Hy 28.32 119 T T 07 40 19.8
baz=312,slow=75,SNR=441
H11S1 WAKE ISLAND Hy 28.99 122 T T 07 41 07.0
baz=314,slow=76,SNR=3210
H11S3 WAKE ISLAND Hy 28.99 122 T T 07 41 07.0
baz=314,slow=76,SNR=2218
H11S2 WAKE ISLAND Hy 29.01 122 T T 07 41 07.2
baz=314,slow=76,SNR=1112
ZALV Zalesovo Beam 41.89 313 P **P 07 12 47.3 -0.8**
0.5nm,0.4s,baz=95,slow=4.9,SNR=4.0
MKAR Makanchi Array 43.99 302 P **P 07 13 04.6 -0.8**
0.5nm,0.9s,baz=90,slow=12,SNR=2.6
KURBB Kurchatov Arra 45.93 308 P **P 07 13 19.6 -1.1**
1.4nm,0.8s,baz=85,slow=7.8,SNR=8.9
ILAR Eielson Array 50.07 32 P **P 07 13 53.6 +1.1**
0.5nm,0.9s,baz=254,slow=5.5,SNR=1.9
WRA Warramunga Arr 56.59 187 P **P 07 14 41.6 +0.7**
baz=2.5,slow=7.6,SNR=2.8
FINES FINESS Array B 68.99 332 P **P 07 16 03.5 +0.4**
1.4nm,0.8s,baz=64,slow=5.5,SNR=2.2

*GUC **16** 07:08:36.4±0.6,33.89S×72.00W,h24km±5km, ML3.4*
*ISCJB **16** 07:08:37.1±1.1,33.91S±0.03×72.09W±0.09,h12km±9km, Error ellipse: s-maj=13.1km s-min=5.4km az=8.8*
ISC 16 07:08:35.4±1.8,33.86S±0.04×72.15W±0.08,h4km±11km, n20,σ1s81/31,3C-4D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.54**	**167**	⇑*iP*			**Pg**	**07 08 47.0**	**+1.1**
CHPI				*i* S			**Sg**	**07 08 54.3**	**+1.4**
ANTU	**Antumapu**	**1.30**	**78**	*eP*			**Pg**	**07 08 59.3**	**-1.0**
ANTU				*i* S			**Sg**	**07 09 16.0**	**-1.1**
ANTU				IAML				07 09 21.2	
	comp=N,1μm,0.2s								
ROCH	**El Roble**	**1.30**	**47**	⇓*iP*			**Pg**	**07 08 59.9**	**-0.5**
ROCH				*i* S			**Sg**	**07 09 17.1**	**-0.1**
ROCH				IAML				07 09 20.8	
	comp=N,1μm,0.2s								
NICH	**Los Niches**	**1.37**	**147**	⇑*iP*			**Pn**	**07 09 00.0**	**-1.4**
NICH				*i* S			**Sg**	**07 09 17.7**	**-1.9**
PEL	**Peldehue**	**1.42**	**60**	⇓*iP*			**Pn**	**07 09 01.6**	**-0.5**
PEL				*i* S			**Sg**	**07 09 20.1**	**-0.9**
PEL				IAML				07 09 24.0	
	comp=N,1μm,0.5s								
CLCH	**Cerro Calan**	**1.42**	**71**	⇓*iP*			**Pn**	**07 09 01.6**	**-0.5**
CLCH				*i* S			**Sg**	**07 09 20.4**	**-0.8**
TALC	**Talca**	**1.59**	**165**	⇓*iP*			**Pn**	**07 09 03.8**	**-0.7**
TALC				*i* S			**Sn**	**07 09 24.8**	**-0.7**
FCH	**Farellones**	**1.64**	**72**	⇑*iP*			**Pn**	**07 09 04.9**	**-0.5**
FCH				*i* S			**Sn**	**07 09 26.4**	**-0.7**
FCH				IAML				07 09 29.3	
	comp=E,1μm,0.3s								
FCH				IAML				07 09 31.9	
	comp=N,1μm,0.4s								
AUSP	**Uspallata**	**2.84**	**56**	*iP*			**Pn**	**07 09 24.0**	**+2.2**
AUSP				*i* S			**Sb**	**07 10 05.1**	**+3.1**
ARCO	**CERRO ARCO**	**2.88**	**70**	*iP*			**Pn**	**07 09 23.9**	**+1.6**
ARCO				IAML				07 09 32.7	
	comp=Z,125nm,0.4s								
ARCO				*i* S			**Sb**	**07 10 04.4**	**+1.2**
AAGR	**Agrelo**	**2.88**	**75**	*iP*			**Pn**	**07 09 23.5**	**+1.2**
ASAL	**Salagasta**	**3.05**	**66**	*iP*			**Pn**	**07 09 26.3**	**+1.7**
RTLS	**Leoncito**	**3.16**	**50**	*iP*			**Pn**	**07 09 29.0**	**+2.8**
RTCV	**Cerro Valdivia**	**3.63**	**58**	*iP*			**Pn**	**07 09 34.7**	**+2.2**
TLL	**Tololo Astrono**	**3.85**	**18**	*eP*			**Pn**	**07 09 34.7**	**-1.1**
TLL				*i* S			**Sn**	**07 10 19.5**	**-2.1**
RTLL	**Cerro Villicun**	**4.00**	**52**	*iP*			**Pn**	**07 09 39.7**	**+2.2**
ACCO	**Cerro Coronel**	**4.18**	**40**	*iP*			**Pn**	**07 09 43.3**	**+2.9**
AROD	**Rodeo**	**4.33**	**32**	*iS*			**Sb**	**07 10 42.4**	**-2.6**
ACAN	**Cantantal**	**4.46**	**71**	*iP*			**Pn**	**07 09 45.9**	**+2.0**
ACDV	**Cuesta del Vie**	**4.49**	**36**	*iP*			**Pn**	**07 09 47.3**	**+2.9**

*IDC **16** 07:11:04.9±7.3,31.12S×179.78W,h0km, mb3.7/2, mb1 4.0/2,mb1mx3.6/34,mbtmp3.7/2, Error ellipse: s-maj=298.2km s-min=59.8km az=157.0*
ISC 16 07:11:26.2±2.1,33.6S±0.1×179.7E±0.3,h200km,n28, σ2s05/30,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**4.09**	**196**	*e*PN			**Pn**	**07 12 27.1**	**-1.9**
MXZ				SN			**Sn**	**07 13 21.9**	**+3.3**
WMGZ	**Waiomatatini S**	**4.32**	**194**	*e*PN			**Pn**	**07 12 31.7**	**-0.2**
WMGZ				SN			Sn	07 13 29.3	+5.6
HAZ	**Te Kaha**	**4.41**	**200**	*e*PN			**Pn**	**07 12 32.6**	**-0.4**
HAZ				SN			Sn	07 13 33.0	+7.2
PKGZ	**Pakihiroa**	**4.46**	**197**	PN			**Pn**	**07 12 32.1**	**-1.6**
PUZ	**Puketiti**	**4.59**	**194**	*e*PN			**Pn**	**07 12 33.4**	**-1.9**
PUZ				SN			**Sn**	**07 13 33.3**	**+3.4**
RUGZ	**Raukumara Rang**	**4.64**	**200**	*e*PN			**Pn**	**07 12 35.5**	**-0.5**
TWGZ	**Tauwhareparae**	**4.76**	**197**	PN			**Pn**	**07 12 36.3**	**-1.2**
CNGZ	**Carnagh Statio**	**5.00**	**194**	*e*PN			**Pn**	**07 12 38.5**	**-2.0**
MWZ	**Matawai**	**5.02**	**200**	PN			**Pn**	**07 12 39.5**	**-1.4**
TKGZ	**Te Karaka**	**5.04**	**197**	*e*PN			**Pn**	**07 12 40.4**	**-0.6**
URZ	**Urewera**	**5.08**	**204**	*e*PN			**Pn**	**07 12 40.4**	**-1.1**
RIGZ	**Rimuhau**	**5.31**	**197**	PN			**Pn**	**07 12 45.5**	**+1.0**
MUGZ	**Murupara**	**5.40**	**205**	PN			**Pn**	**07 12 45.0**	**-0.6**
SNGZ	**Shannon Statio**	**5.49**	**200**	PN			**Pn**	**07 12 47.4**	**+0.6**
KNZ	**Kokohu**	**5.63**	**196**	*e*PN			**Pn**	**07 12 48.2**	**-0.4**
MHGZ	**Mahia Peninsul**	**5.71**	**194**	PN			**Pn**	**07 12 50.2**	**+0.6**
NMHZ	**Naumai**	**5.94**	**202**	PN			**Pn**	**07 12 52.0**	**-0.7**
ARHZ	**Aropaoanui**	**6.04**	**200**	PN			**Pn**	**07 12 53.7**	**-0.1**
BKZ	**Black Stump Fm**	**6.11**	**204**	PN			**Pn**	**07 12 54.0**	**-0.8**
KIW	**Kapiti Island**	**8.17**	**206**	*e*PN			**Pn**	**07 13 18.0**	**-3.5**
CAW	**Cannon Point**	**8.33**	**205**	*e*PN			**Pn**	**07 13 21.2**	**-2.5**
TUWZ	**Tuamarina**	**9.04**	**209**	*e*PN			**Pn**	**07 13 30.9**	**-1.8**
NNZ	**Nelson**	**9.10**	**212**	*e*PN			**Pn**	**07 13 31.6**	**-2.0**
LTZ	**Lake Taylor**	**10.85**	**210**	*e*PN			**Pn**	**07 13 53.8**	**-2.5**
ODZ	**Otahua Downs**	**13.38**	**209**	*e*PN			**P**	**07 14 27.2**	**-3.7**
ASAR	**Alice Springs**	**41.12**	**272**	P			**P**	**07 18 55.5**	**+4.7**
	0.7nm,0.8s,baz=108,slow=7.5,SNR=5.8								
WRA	**Warramunga Arr**	**42.41**	**277**	P			**P**	**07 19 01.8**	**+0.5**
	0.6nm,0.4s,baz=115,slow=7.8,SNR=7.0								
FINES	**FINESS Array B**	**147.41**	**337**	PKPbc			**PKPdf**	**07 30 42.7**	**0.0**
	0.7nm,0.4s,baz=60,slow=3.4,SNR=5.3								

GUC 16 07:17:18.2±0.6,17.72S×70.73W,h97km±5km,ML3.6, 5C-1D,Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ARCH	**Arica**	**0.87**	**152**	⇑*iP*			Pn	07 17 37.3	+0.2
ARCH				*i* S			Sn	07 17 51.5	+0.3
PB12	**IPOC Station P**	**0.97**	**157**	⇑*iP*			Pn	07 17 38.3	0.0
PB12				*i* S			Sn	07 17 54.3	+1.0
PB12				IAML				07 17 58.7	
	comp=E,3μm,0.1s								
PB13	**IPOC Station P**	**1.32**	**118**	⇑*iP*			Pn	07 17 43.5	+0.8
PB13				*i* S			Sn	07 18 03.4	+2.1
MNMC	**Minye Minye**	**1.77**	**143**	⇓*iP*			Pn	07 17 49.0	+1.0
MNMC				*i* S			Sn	07 18 11.8	+1.2
PSGC	**Pisagua**	**1.96**	**163**	⇑*iP*			Pn	07 17 51.0	+0.7
PSGC				*e*S			Sn	07 18 15.6	+1.0
PB08	**IPOC Station P**	**2.83**	**148**	⇑*iP*			Pn	07 18 03.7	+1.7
PB08				*i* S			Sn	07 18 37.9	+2.2
PB08				IAML				07 18 48.7	
	comp=E,132nm,0.2s								
PB01	**IPOC Station P**	**3.51**	**161**	*eP*			Pn	07 18 11.3	+0.4

*ISCJB **16** 07:17:18.1±0.7,9.55N±0.08×121.99E±0.07,h10km, mb3.6/6,Error ellipse: s-maj=11.4km s-min=9.1km az=16.6*
*IDC **16** 07:17:18.1±1.3,9.62N×122.16E,h0km,mb3.6/6, mb1 3.8/6,mb1mx3.5/50,mbtmp3.6/6,Error ellipse: s-maj=74.7km s-min=19.8km az=62.0*
*MAN **16** 07:17:19,9.54N×121.92E,h33km,mb4.7,ML3.6,MS3.6*
ISC 16 07:17:19.4±0.9,9.61N±0.09×122.09E±0.07,h10km,n11, σ1s93/12,mb3.6/6,1C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**1.14**	**353**	⇓*iP*			**Pn**	**07 17 40.1**	**-1.4**
SNPH	**Sibulan**	**1.16**	**103**	⇑*iP*			Pn	07 17 35.0	-6.8
SNPH				*i* S			**Sb**	**07 17 52.2**	**-4.6**
DCPH	**Dipolog City**		**1.61**	**129**	⇓*eP*		**Pn**	**07 17 47.6**	**-0.3**
TBP	**Tagbilaran**		**1.75**	**87**	*iP*		**Pn**	**07 17 51.8**	**+2.0**
LLP	**Lapu-Lapu**		**1.98**	**69**	*eP*		**Pn**	**07 17 53.2**	**+0.2**
LLP					*e*S		**Sn**	**07 18 20.1**	**+2.1**
CMAR	**Chiang Mai Arr**		**24.09**	**294**	P		**P**	**07 22 36.6**	**+1.1**
	0.4nm,0.3s,baz=91,slow=8.1,SNR=3.5								
WRA	**Warramunga Arr**		**31.74**	**158**	P		**P**	**07 23 43.8**	**-0.1**
	0.9nm,0.9s,baz=328,slow=11,SNR=4.8								
ASAR	**Alice Springs**		**35.03**	**161**	P		**P**	**07 24 12.7**	**+0.1**
	1.2nm,0.8s,baz=347,slow=7.5,SNR=12								
SONM	**Songino Array**		**40.34**	**344**	P		**P**	**07 24 57.6**	**+0.2**
	0.4nm,0.6s,baz=134,slow=6.2,SNR=2.3								
MKAR	**Makanchi Array**		**50.13**	**325**	P		**P**	**07 26 15.2**	**+0.2**
	1.2nm,1.0s,baz=115,slow=6.8,SNR=3.5								
KURBB	**Kurchatov Arra**		**54.34**	**327**	P		**P**	**07 26 46.3**	**+0.2**
	0.4nm,0.6s,baz=127,slow=7.8,SNR=3.7								

IDC 16 07:18:29.6±6.0,26.59S×177.35W,h0km,mb3.6/2, mb1 3.9/2,mb1mx3.5/31,mbtmp3.6/2,Error ellipse: s-maj=277.8km s-min=62.6km az=155.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.02**	**263**	P			P	07 26 38.6	-0.7
	0.6nm,0.7s,baz=107,slow=8.7,SNR=6.7								
WRA	**Warramunga Arr**	**44.66**	**268**	P			P	07 26 44.9	+0.4
	0.5nm,0.5s,baz=108,slow=7.9,SNR=7.0								
FINES	**FINESS Array B**	**141.74**	**342**	PKhKP		PKPpre		07 37 58.3	
	1.1nm,0.6s,baz=50,slow=2.2,SNR=5.3								
AKASG	**Malin Array Be**	**148.52**	**327**	PKPbc		PKPbc		07 38 17.4	-0.7
	0.3nm,0.3s,baz=42,slow=3.1,SNR=4.1								

*IDC **16** 07:25:10.6±0.5,36.20N×141.77E,h0km,mb3.3/3, mb1 3.5/5,mb1mx3.3/54,mbtmp3.4/5,ML3.3/2,MS3.8/2, Ms1 3.8/2,ms1mx3.4/23,Error ellipse: s-maj=7.6km s-min=6.0km az=9.0*
*ISCJB **16** 07:25:13.7±1.1,36.35N±0.04×141.70E±0.08, h35km±13km,mb3.5/3,MS4.0/1,Error ellipse: s-maj=10.9km s-min=6.8km az=2.1*
*JMA **16** 07:25:14.4±0.1,36.41N×141.61E,h57km±3km,M3.1*
ISC 16 07:25:12.9±2.4,36.37N±0.05×141.69E±0.07,h17km±14km, n17,σ0s98/23,mb3.6/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.93**	**285**	P			**Pb**	**07 25 30.3**	**-0.3**
JHO				*e*S			**Sb**	**07 25 42.8**	**+0.1**
CHOJ	**Chosi**	**0.95**	**225**	P			**Pn**	**07 25 31.7**	**+0.3**
CHOJ				S			**Sg**	**07 25 43.9**	**+0.2**
ONAJ	**Iwakimizuishiy**	**1.02**	**316**	P			**Pb**	**07 25 31.5**	**-0.7**
JFK	**Kawauchi**	**1.19**	**327**	P			**Pn**	**07 25 34.2**	**-0.6**
JFK				*e*S			**Sb**	**07 25 49.0**	**-1.1**
JFT	**Otama**	**1.57**	**317**	P			**Pn**	**07 25 40.4**	**+0.3**
JFT				*e*S			**Sn**	**07 25 59.3**	**-0.8**
JMM	**Marumori**	**1.65**	**335**	P			**Pn**	**07 25 41.1**	**-0.1**
JAG	**Ashikaga**	**1.80**	**272**	P			**Pn**	**07 25 43.1**	**-0.1**
JFY	**Yanaizu**	**1.90**	**304**	P			**Pn**	**07 25 44.7**	**+0.2**
JKT	**Katashina**	**2.00**	**282**	P			**Pn**	**07 25 45.9**	**-0.1**
JKT				*e*S			**Sn**	**07 26 08.6**	**-2.1**
MJAR	**Matsushiro Arr**	**2.81**	**275**	Pn			**Pn**	**07 25 57.5**	**+0.5**
	3.6nm,0.3s,baz=99,slow=8.7,SNR=20								
MJAR				Sn			**Sn**	**07 26 31.3**	**+0.8**
	1.9nm,0.3s,baz=134,slow=28,SNR=2.7								
MAT	**Matsushiro**	**2.81**	**275**	P			**Pn**	**07 25 57.7**	**+0.6**
MAT				*e*S			**Sn**	**07 26 31.0**	**+0.4**
JHJ	**Hachijo jima 2**	**3.60**	**206**	Pn			**Pn**	**07 26 08.0**	**0.0**
	8.1nm,0.3s,baz=66,slow=20,SNR=1.7								
JHJ				Sn			**Sn**	**07 26 48.0**	**-2.1**
	13nm,0.3s,baz=254,slow=22,SNR=2.1								
KSRS	**Korea Array**	**11.07**	**280**	LR			LR	07 31 03.9	
	comp=Z,201nm,20.6s,baz=284,slow=32								
TLY	**Talaya**	**30.93**	**312**	LR			LR	07 44 08.5	
	comp=Z,370nm,19.4s,baz=175,slow=37								
KURBB	**Kurchatov Arra**	**46.58**	**309**	P			**P**	**07 33 41.5**	**+1.8**
	0.3nm,0.5s,baz=82,slow=7.9,SNR=4.1								
ILAR	**Eielson Array**	**49.94**	**32**	P			**P**	**07 34 06.3**	**+0.9**
	0.2nm,0.7s,baz=260,slow=5.4,SNR=3.3								
WRA	**Warramunga Arr**	**56.44**	**188**	P			**P**	**07 34 52.8**	**-0.9**
	0.8nm,1.1s,baz=5.1,slow=7.4,SNR=3.2								

IDC 16 07:28:36.8±4.5,15.94S×175.34W,h0km,mb4.3/2, mb1 4.6/2,mb1mx3.8/36,mbtmp4.3/2,MS4.2/1,Ms1 4.2/1, ms1mx3.7/25,Error ellipse: s-maj=232.2km s-min=35.6km az=138.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**13.46**	**190**	LR			LR	07 35 57.6	
	comp=Z,1μm,20.3s,baz=152,slow=33								
H11N3	**WAKE ISLAND Hy**	**39.50**	**333**	T			T	08 19 15.3	
	baz=151,slow=76,SNR=10								
H11N1	**WAKE ISLAND Hy**	**39.51**	**333**	T			T	08 19 15.6	
	baz=151,slow=76,SNR=9.3								
H11N2	**WAKE ISLAND Hy**	**39.52**	**333**	T			T	08 19 16.8	
	baz=151,slow=76,SNR=10								
ASAR	**Alice Springs**	**48.17**	**252**	P			P	07 37 19.1	-0.1
	6.8nm,0.9s,baz=85,slow=8.6,SNR=47								
ASAR				PcP			PcP	07 38 45.4	-1.5
	0.3nm,0.8s,baz=96,slow=4.8,SNR=2.9								
ILAR	**Eielson Array**	**83.35**	**12**	P			P	07 41 04.4	-0.9
	1.9nm,1.1s,baz=218,slow=6.3,SNR=11								
UPC	**Upice**	**144.32**	**348**	*eP*			PKPbc	07 48 13.1	-0.1
DPC	**Dobruska-Polom**	**144.41**	**347**	*eP*			PKPbc	07 48 13.7	+0.2
PRU	**Pruhonice**	**145.11**	**349**	*eP*			PKPbc	07 48 15.6	-0.1
BRTR	**Keskin Array B**	**145.37**	**319**	PKPbc			PKPab	07 48 17.2	0.0
	2.5nm,1.1s,baz=75,slow=1.4,SNR=5.5								
KHC	**Kasperske Hory**	**146.11**	**349**	*eP*			PKPdf	07 48 18.3	+0.2
GERES	**GERESS Array B**	**146.36**	**349**	PKPbc			PKPdf	07 48 19.1	+0.5
	0.2nm,0.3s,baz=29,slow=3.0,SNR=6.0								
DAVOX	**Davos/Dischmat**	**148.95**	**353**	PKPbc			PKPbc	07 48 27.7	+0.7
	0.8nm,0.4s,baz=281,slow=11,SNR=3.6								

*ISCJB **16** 07:38:59.3±0.4,32.79N±0.03×115.44W±0.03,h23km±3km, Error ellipse: s-maj=5.2km s-min=3.9km az=169.7*
*NEIC **16** 07:39:00.2,32.79N×115.45W,h15km,ML3.0(PAS),After PAS.*
*ECX **16** 07:39:00.4±0.7,32.85N×115.48W,h14km±2km,MD2.9, ML3.0*
*MEX **16** 07:39:01.3±0.6,32.84N×115.36W,h16km±999km,MD3.6*
ISC 16 07:38:59.6±0.9,32.80N±0.02×115.48W±0.02,h18km±4km, n34,σ1s03/54,10C-3D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DREC	**Desert Rsrch C**	**0.03**	**79**	⇑*eP*			**Pg**	**07 39 02.2**	**-0.5**
DREC				*e*S			**Sg**	**07 39 04.8**	**-0.1**
SNR	**Schaffner Ranc**	**0.07**	**32**	⇓*iP*			**Pg**	**07 39 02.6**	**-0.5**
ERPC	**Ernies Place**	**0.16**	**250**	⇑*iP*			**Pg**	**07 39 04.8**	**+0.8**
WESC	**Westside Schoo**	**0.21**	**259**	⇑*eP*			**Pg**	**07 39 05.4**	**+0.7**
SGL	**Mount Signal**	**0.25**	**234**	⇑*iP*			**Pg**	**07 39 05.6**	**+0.3**
SWSC	**Sam W. Stewart**	**0.30**	**299**	P			**Pg**	**07 39 06.6**	**+0.3**
	baz=120,SNR=148								
COA	**Coachella**	**0.31**	**78**	⇑*iP*			**Pg**	**07 39 06.4**	**+0.1**
YUH	**Yuha Desert**	**0.40**	**248**	⇑*iP*			**Pg**	**07 39 08.1**	**+0.1**
CPBX	**Cerro Prieto**	**0.41**	**158**	⇓*eP*			**Pg**	**07 39 08.3**	**+0.2**
CPBX				*e*S			**Sg**	**07 39 15.4**	**+1.6**
CPBX				⇑*e*				07 39 18.9	
CPBX				IAML				07 39 18.9	
	comp=E,4μm,0.4s								
CPBX	**Cerro Prieto**	**0.41**	**158**	*eP*			**Pg**	**07 39 08.1**	**0.0**
CPBX				*e*S			**Sg**	**07 39 15.4**	**+1.6**
RMX	**La Rumorosa**	**0.54**	**249**	*eP*			**Pg**	**07 39 10.0**	**-0.5**
RMX				*e*S			**Sg**	**07 39 17.8**	**0.0**
IKP	**In-Ko-Pah, Jac**	**0.55**	**254**	P			**Pg**	**07 39 10.8**	**+0.2**
	baz=78,SNR=44								
IKP				S			**Sg**	**07 39 18.5**	**+0.4**
	baz=78								
IKP	**In-Ko-Pah, Jac**	**0.55**	**254**	⇑*eP*			**Pg**	**07 39 10.8**	**+0.2**
IKP				*e*S			**Sg**	**07 39 18.4**	**+0.4**
GLA	**Glamis**	**0.61**	**65**	P			**Pg**	**07 39 10.9**	**-0.8**
	baz=242,SNR=42								
GLA				S			**Sg**	**07 39 18.7**	**-1.2**
	baz=242								
MONP2	**Monument Peak**	**0.80**	**277**	P			**Pg**	**07 39 14.8**	**-0.4**
	baz=98,SNR=44								
MONP2				S			**Sg**	**07 39 26.2**	**+0.3**
	baz=98								
BC3	**Big Chuckawall**	**0.85**	**2**	P			**Pg**	**07 39 15.3**	**-1.0**
	baz=179,SNR=163								
BAR	**Barrett**	**1.01**	**264**	⇑*eP*			**Pb**	**07 39 18.1**	**-0.6**
BAR				*e*S			**Sb**	**07 39 32.0**	**+0.4**
TJIG	**Tijuana**	**1.07**	**250**	*eP*			**Pb**	**07 39 19.8**	**+0.2**
TJIG				*e*S			**Sb**	**07 39 33.0**	**-0.3**
TJIG	**Tijuana**	**1.07**	**250**	⇓*eP*			**Pb**	**07 39 19.7**	**0.0**
CBX	**Cerro Bola**	**1.11**	**244**	*eP*			**Pb**	**07 39 20.1**	**-0.2**
CBX				*e*S			**Sb**	**07 39 34.4**	**-0.1**
CBX	**Cerro Bola**	**1.11**	**244**	⇑*eP*			**Pb**	**07 39 20.3**	**-0.1**
CBX				IAML				07 39 36.6	
	comp=E,495nm,0.5s								
CBX	**Cerro Bola**	**1.11**	**244**	*eP*			**Pb**	**07 39 20.1**	**-0.2**
CBX				*e*S			**Sb**	**07 39 34.4**	**-0.1**
PFO	**Pinyon Flats O**	**1.15**	**315**	P			**Pb**	**07 39 19.4**	**-1.7**
	baz=134,SNR=76								
PFO				S			**Sg**	**07 39 37.0**	**-0.1**
	baz=134								
PFO	**Pinyon Flats O**	**1.15**	**315**	*e*Pn			**Pb**	**07 39 19.9**	**-1.2**
PFO				*e*Sn			**Sb**	**07 39 36.5**	**+0.7**
SDRC	**San Diego Road**	**1.23**	**267**	*eP*			**Pn**	**07 39 21.4**	**-0.5**
109C	**Camp Elliot, M**	**1.37**	**274**	P			**Pn**	**07 39 23.5**	**-0.3**
	baz=94,SNR=22								
109C				Sb			**Sn**	**07 39 42.8**	**+1.3**
	baz=94								
IRM	**Iron Mountain**	**1.38**	**12**	Pb			**Pn**	**07 39 24.6**	**+0.4**
	baz=190								
SPX	**San Pedro Mart**	**1.75**	**179**	*eP*			**Pn**	**07 39 28.1**	**-1.3**
SPX				*e*S			**Sn**	**07 39 49.1**	**-2.3**
214A	**Organ Pipe Nat**	**2.41**	**110**	P			**Pn**	**07 39 36.8**	**-1.4**
	baz=291								
214A	**Organ Pipe Nat**	**2.41**	**110**	*e*Pn			**Pn**	**07 39 36.7**	**-1.6**
214A				*e*Pg			**Pg**	**07 39 47.5**	**+1.6**
DAC	**Darwin (Calif)**	**3.88**	**334**	*e*Pn			**Pn**	**07 39 59.6**	**+1.0**
TUC	**Tucson**	**4.00**	**96**	*e*Pn			**Pn**	**07 40 01.1**	**+1.0**
TUC				*e*Pg			**Pg**	**07 40 15.1**	**-1.1**
TUC				*e*Sg			**Sg**	**07 41 07.7**	**-0.4**
WUAZ	**Wupatki**	**4.35**	**50**	*e*Pg			**Pg**	**07 40 24.2**	**+1.2**
WUAZ				*e*S			**Sb**	**07 41 11.9**	**+3.9**
R11A	**Troy Canyon, C**	**5.54**	**359**	*e*Pg			**Pg**	**07 40 45.9**	**+0.2**
	comp=E,2.8nm,0.7s								

*JMA **16** 07:54:03.4±0.1,24.23N×121.74E,h12km±2km,M2.6*
*TAP **16** 07:54:03.4,24.24N×121.76E,h14km,ML3.5,B*
ISC 16 07:54:03.7±0.8,24.24N±0.02×121.76E±0.02,h14km±5km, n51,σ0s64/82,7C-2D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.07**	**345**	*eP*			**Pg**	**07 54 06.9**	**+0.2**
	baz=353								
EHP				*e*S			**Sg**	**07 54 09.1**	**+0.5**
	baz=353								
ENA	**Nanau**	**0.19**	**354**	⇑*iP*			**Pg**	**07 54 07.9**	**-0.3**
	baz=357								
ENA				*e*S			**Sg**	**07 54 10.8**	**-0.3**
	baz=357								
TWD	**Chiawan**	**0.22**	**223**	P			**Pg**	**07 54 08.3**	**-0.4**
	baz=228								
TWD				*i* S			**Sg**	**07 54 11.8**	**-0.1**
	baz=228								
HWA	**Hwalien**	**0.30**	**208**	*eP*			**Pb**	**07 54 10.4**	**-0.5**
	baz=216								
TWC	**Suao**	**0.38**	**12**	*iP*			**Pg**	**07 54 11.2**	**-0.1**
	baz=6.0								
TWC				*i* S			**Sg**	**07 54 16.4**	**-0.1**
	baz=6.0								
NNS	**Nan Shan**	**0.41**	**299**	⇑*iP*			**Pg**	**07 54 11.8**	**-0.1**
	baz=300								
NNS				S			**Sg**	**07 54 17.4**	**-0.1**
	baz=300								
ENTT	**Nioudou**	**0.43**	**336**	⇑*iP*			**Pg**	**07 54 12.5**	**0.0**
	baz=336								
ENTT				S			**Sg**	**07 54 18.5**	**+0.2**
	baz=336								
WHF	**Hehuan Shan**	**0.46**	**258**	⇑*iP*			**Pg**	**07 54 12.7**	**-0.4**
	baz=259								
WHF				S			**Sg**	**07 54 19.1**	**-0.3**
	baz=259					

CHN5				*e*S		**Sn**	07 54 42.9	**+1.1**
	baz=240							
CHKT	**Chengkung**	**1.19**	**198**	*e*P		**Pg**	07 54 27.0	**+0.2**
	baz=186							
ELDTW	**Lidau**	**1.25**	**213**	*e*P		**Pn**	07 54 26.2	**-0.6**
	baz=215							
CHN4	**Tsaushan**	**1.39**	**231**	*e*P		**Pg**	07 54 29.8	**-0.7**
	baz=234							
CHN4				*e*S		**Sg**	07 54 50.1	**+1.5**
	baz=234							
PCYT	**Pengchaiyu**	**1.41**	**11**	*e*P		**Pb**	07 54 29.6	**-0.2**
	baz=9.0							
STYT	**Tauyuan**	**1.41**	**221**	*e*P		**Pg**	07 54 30.1	**-0.8**
	baz=223							
STYT				*e*S		**Sg**	07 54 49.2	**-0.2**
	baz=223							
CHY	**Chiayi**	**1.43**	**239**	*e*P		**Pg**	07 54 31.3	**+0.1**
	baz=228							
WTP	**Ta-pu**	**1.45**	**227**	*e*P		**Pg**	07 54 30.5	**-1.0**
	baz=230							
WTP				*e*S		**Sg**	07 54 51.9	**+1.6**
	baz=230							
TWK	**Hsinying**	**1.52**	**230**	*e*P		**Pg**	07 54 33.3	**+0.3**
	baz=233							
CHN1	**Nanshi**	**1.54**	**227**	*e*P		**Pg**	07 54 32.3	**-1.1**
	baz=232							
CHN1				*e*S		**Sg**	07 54 53.5	**0.0**
	baz=232							
TWG	**Pinlang**	**1.55**	**204**	*e*P		**Pb**	07 54 31.6	**-0.6**
	baz=191							
SGST	**Jiashian**	**1.58**	**223**	*e*P		**Pg**	07 54 34.0	**-0.1**
	baz=226							
SGST				*e*S		**Sg**	07 54 56.3	**+1.6**
	baz=226							
SSD	**Sandimen**	**1.81**	**215**	*e*P		**Pb**	07 54 36.5	**-0.2**
	baz=230							
EAST	**Anshuo**	**2.03**	**205**	*e*P		**Pn**	07 54 37.9	**+0.4**
	baz=195							
JKRS	**Kuro-shima**	**2.05**	**90**	*e*S		**Sn**	07 55 04.8	**+1.7**
JIJ	**Ishigaki jima**	**2.18**	**86**	P		**Pn**	07 54 40.9	**+1.4**
JIJ				S		**Sn**	07 55 05.8	**-0.4**
JISG	**Ishigakijimahi**	**2.35**	**81**	*e*S		**Sn**	07 55 09.6	**-0.9**

ISK **16** *07:59:18.3, 41.47N×35.96E, h12km, MD2.6*
ISCJB **16** *07:59:19.9±0.7, 41.38N±0.04×35.80E±0.05, h8km±6km, Error ellipse: s-maj=7.9km s-min=5.5km az=24.3*
CSEM **16** *07:59:19.9±0.2, 41.38N×35.83E, h10km, ML3.0, Error ellipse: s-maj=6.5km s-min=4.0km az=32.0*
DDA **16** *07:59:20.2, 41.32N×35.83E, h7km, Ml3.0*
ISC 16 07:59:19.3±1.1, 41.37N±0.04×35.82E±0.03, h17km±8km, n26, σ0.942/35, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.28**	**93**	*i* P		**Pb**		**07 59 25.9**	**0.0**
SAMS				*i* S		**Sb**		**07 59 30.7**	**+0.4**
SAMS	**Samsun-Alacam**	**0.28**	**93**	P		**Pb**		**07 59 25.9**	**0.0**
SAMS				S		**Sb**		**07 59 30.7**	**+0.4**
HAVZ	**Havza**	**0.31**	**194**	*i* P		**Pg**		**07 59 25.9**	**0.0**
HAVZ				*i* S		**Sg**		**07 59 30.5**	**+0.1**
HAVZ	**Havza**	**0.31**	**194**	P		**Pg**		**07 59 26.0**	**0.0**
HAVZ				S		**Sg**		**07 59 30.5**	**+0.1**
KVT	**Kavak**	**0.34**	**150**	*e*PG		**Pg**		**07 59 26.5**	**0.0**
KVT				*e*SG		**Sb**		**07 59 32.7**	**+0.5**
KVT	**Kavak**	**0.34**	**150**	*e*Pg		**Pg**		**07 59 26.5**	**0.0**
KVT				*e*Sg		**Sb**		**07 59 32.7**	**+0.5**
BOYT	**Boyabat**	**0.69**	**274**	*i* P		**Pn**		**07 59 33.9**	**-0.5**
BOYT				*i* S		**Sn**		**07 59 46.3**	**+1.5**
BOYT	**Boyabat**	**0.69**	**274**	P		**Pn**		**07 59 33.9**	**-0.5**
SNOP	**Sinop**	**0.79**	**325**	*e*PG		**Pb**		**07 59 34.4**	**-0.3**
SNOP	**Sinop**	**0.79**	**325**	*e*Pg		**Pb**		**07 59 34.4**	**-0.3**
BYBT	**Boyabat**	**0.80**	**277**	*e*PG		**Pn**		**07 59 35.9**	**+0.1**
BYBT	**Boyabat**	**0.80**	**277**	*e*Pg		**Pn**		**07 59 35.9**	**+0.1**
ERBA	**Erbaa**	**0.99**	**134**	*i* P		**Pb**		**07 59 38.1**	**0.0**
ERBA				*i* S		**Sn**		**07 59 51.8**	**-0.4**
ERBA	**Erbaa**	**0.99**	**134**	P		**Pb**		**07 59 38.1**	**0.0**
ERBA				S		**Sn**		**07 59 51.8**	**-0.4**
CTAK	**Corum_Osmancik**	**1.06**	**227**	*i* P		**Pg**		**07 59 40.1**	**+0.2**
CTAK	**Corum_Osmancik**	**1.06**	**227**	P		**Pg**		**07 59 40.1**	**+0.2**
COAL	**Corum-Alaca**	**1.28**	**210**	*i* P		**Pb**		**07 59 43.2**	**+0.1**
COAL	**Corum-Alaca**	**1.28**	**210**	P		**Pb**		**07 59 43.2**	**+0.1**
TOS	**Tosya**	**1.40**	**257**	*e*PN		**Pg**		**07 59 46.0**	**-0.2**
TOS	**Tosya**	**1.40**	**257**	*e*Pn		**Pg**		**07 59 46.0**	**-0.2**
CORM	**Corum**	**1.50**	**217**	*e*PN		**Pg**		**07 59 47.6**	**-0.6**
CORM	**Corum**	**1.50**	**217**	*e*Pn		**Pg**		**07 59 47.6**	**-0.6**
YOZ	**Yozgat**	**1.77**	**193**	*e*PN		**Pb**		**07 59 51.1**	**-0.4**
YOZ	**Yozgat**	**1.77**	**193**	*e*Pn		**Pb**		**07 59 51.1**	**-0.4**
CUSAR	**Sarkisla-SIVAS**	**1.98**	**170**	*i* P		**Pb**		**07 59 54.9**	**-0.2**
CUSAR	**Sarkisla-SIVAS**	**1.98**	**170**	P		**Pb**		**07 59 54.9**	**-0.2**

IDC **16** *08:24:24.4±0.9, 35.61N×141.89E, h0km, mb3.4/3, mb1 3.5/5, mb1mx3.3/53, mbtmp3.4/5, ML3.2/2, Error ellipse: s-maj=12.3km s-min=6.1km az=56.0*
JMA **16** *08:24:26.2±0.2, 35.82N×141.82E, h21km±2km, M3.3*
ISC 16 08:24:27.1±1.6, 35.70N±0.07×141.8E±0.1, h22km, n16, σ1.941/14, mb3.3/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.80**	**270**	P		**Pb**		**08 24 41.0**	**-1.3**
CHOJ				S		**Sb**		**08 24 51.4**	**-1.3**
BSO1	**Boso 1**	**1.26**	**214**	P		**Pb**		**08 24 49.2**	**-0.7**
BSO3	**Boso 3**	**1.41**	**231**	*e*S		**Sb**		**08 25 12.0**	**+2.0**
JAG	**Ashikaga**	**2.06**	**291**	*e*S		**Sn**		**08 25 24.1**	**-1.4**
MJAR	**Matsushiro Arr**	**3.06**	**287**	Pn		**Pn**		**08 25 14.4**	**+0.3**
	1.5nm,0.3s,baz=107,slow=8.8,SNR=12								
MJAR				Sn		**Sn**		**08 25 53.4**	**+3.3**
	1.1nm,0.3s,baz=167,slow=17,SNR=4.8								
MAT	**Matsushiro**	**3.06**	**287**	P		**Pn**		**08 25 14.6**	**+0.4**
MAT				*e*S		**Sn**		**08 25 50.0**	**-0.1**
JHJ	**Hachijo jima 2**	**3.09**	**214**	Pn		**Pn**		**08 25 14.0**	**-0.5**
	17nm,0.3s,baz=66,slow=20,SNR=6.8								
JHJ				Sn		**Sn**		**08 25 50.5**	**-0.2**
	16nm,0.3s,baz=259,slow=22,SNR=1.7								
H11N2	**WAKE ISLAND Hy 27.18**	**119**		T		T		08 58 44.8	
	baz=311,slow=75,SNR=4.2								
H11N1	**WAKE ISLAND Hy 27.19**	**119**		T		T		08 58 38.8	
	baz=311,slow=75,SNR=3.3								
H11N3	**WAKE ISLAND Hy 27.20**	**119**		T		T		08 58 37.7	
	baz=311,slow=75,SNR=3.2								
H11S1	**WAKE ISLAND Hy 27.86**	**121**		T		T		08 59 38.8	
	baz=319								
H11S3	**WAKE ISLAND Hy 27.86**	**121**		T		T		08 59 29.2	
	baz=313,SNR=4.0								
H11S2	**WAKE ISLAND Hy 27.88**	**121**		T		T		08 59 28.4	
	baz=313								
MKAR	**Makanchi Array**	**45.13**	**303**	P		**P**		**08 32 42.4**	**+0.6**
	0.3nm,0.7s,baz=90,slow=8.9,SNR=2.9								
WRA	**Warramunga Arr**	**55.79**	**189**	P		**P**		**08 34 02.6**	**0.0**
	0.2nm,0.7s,baz=6.4,slow=7.0,SNR=7.1								
ASAR	**Alice Springs**	**59.52**	**188**	P		**P**		**08 34 28.7**	**0.0**
	0.1nm,0.5s,baz=354,slow=6.7,SNR=4.6								

IDC 16 08:25:05.0±1.3, 56.30S×27.94W, h0km, mb3.8/1, mb1 3.8/1, mb1mx3.5/20, mbtmp3.8/1, Error ellipse: s-maj=72.6km s-min=36.3km az=148.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TORD	**Torodi Ar. Bea**	**73.48**	**30**	P		P		08 36 39.1	0.0
	0.4nm,0.4s,baz=200,slow=5.9,SNR=5.7								
ILAR	**Eielson Array**	**149.96**	**311**	PKPbc		PKPbc		08 44 55.2	-0.4
	0.7nm,0.7s,baz=124,slow=2.6,SNR=8.0								
SONM	**Songino Array**	**151.16**	**88**	PKPbc		PKPbc		08 44 59.0	-0.3
	0.3nm,0.4s,baz=228,slow=2.4,SNR=2.9								

IDC 16 08:25:38.0±49.0, 16.26S×178.36W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.6/33, mbtmp3.9/3, Error ellipse: s-maj=897.2km s-min=145.2km az=77.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.48**	**239**	P		P		08 33 10.7	+0.2
	1.0nm,0.4s,baz=94,slow=11,SNR=11								
WRA	**Warramunga Arr**	**45.00**	**258**	P		P		08 33 55.4	-0.3
	0.2nm,0.2s,baz=93,slow=7.9,SNR=18								
ASAR	**Alice Springs**	**45.30**	**253**	P		P		08 33 57.7	-0.4
	2.7nm,0.6s,baz=88,slow=8.1,SNR=36								

NEIC **16** *08:31:02.5±0.8, 29.98S×176.77W, h10km, mb4.7/5, Error ellipse: s-maj=19.2km s-min=12.5km az=102.0*
ISCJB **16** *08:31:04.4±0.9, 29.95S±0.08×177.0W±0.1, h24km, mb4.2/9, Error ellipse: s-maj=17.8km s-min=9.4km az=152.1*
IDC **16** *08:31:07.1±7.9, 29.56S×176.84W, h33km±55km, mb3.8/6, mb1 3.9/6, mb1mx3.7/27, mbtmp4.0/6, Error ellipse: s-maj=32.9km s-min=30.7km az=144.0*
ISC 16 08:31:05.7±0.8, 29.86S±0.09×176.9W±0.1, h24km, n23, σ1.979/26, mb4.3/9, 1C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.05**	**305**	Pn		**Pn**		**08 31 24.7**	**-0.3**
	79nm,0.3s,baz=142,slow=23,SNR=3.3								
RAO				Sn		**Sb**		**08 31 37.7**	**-0.9**
	416nm,0.3s,baz=88,slow=23,SNR=8.6								
RAO				LR		LR		08 32 04.9	
	comp=Z,484nm,18.9s,baz=162,slow=58								
RAO	**Raoul Island**	**1.05**	**305**	*e*Pn		**Pb**		**08 31 25.7**	**+0.5**
RAO				*e*Sn		**Sb**		**08 31 38.0**	**-0.6**
URZ	**Urewera**	**9.73**	**209**	Pn		**Pn**		**08 33 20.5**	**-3.6**
	0.7nm,0.3s,baz=47,slow=19,SNR=2.0								
URZ	**Urewera**	**9.73**	**209**	*e*Pn		**Pn**		**08 33 20.4**	**-3.6**
OXZ	**Oxford**	**16.08**	**210**	*e*P		**Pn**		**08 34 47.1**	**-3.0**
RPZ	**Rata Peaks**	**16.82**	**211**	Pn		**Pn**		**08 34 57.2**	**-2.4**
	1.2nm,0.3s,baz=17,slow=15,SNR=5.8								
RPZ	**Rata Peaks**	**16.82**	**211**	*e*P		**Pn**		**08 34 57.2**	**-2.4**
	20nm,1.0s								
WHZ	**Wether Hill Ro**	**19.91**	**212**	*e*P		**P**		**08 35 36.2**	**+0.7**
	108nm,1.8s								
CTAO	**Charters Tower**	**34.64**	**278**	*e*P		**P**		**08 37 55.1**	**+1.8**
	107nm,1.4s								
STKA	**Stephens Creek**	**35.51**	**256**	P		**P**		**08 38 02.6**	**+1.9**
	3.3nm,0.8s,baz=105,slow=13,SNR=6.1								
ASAR	**Alice Springs**	**44.07**	**266**	P		**P**		**08 39 13.5**	**+1.4**
	0.6nm,0.7s,baz=105,slow=7.1,SNR=10.0								
ASAR				PcP		**PcP**		**08 40 57.9**	**+0.7**
	0.2nm,0.5s,baz=96,slow=4.7,SNR=2.5								
WRAB	**Tennant Creek**	**45.01**	**271**	*e*P		**P**		**08 39 19.2**	**-0.3**
	3.1nm,0.8s								
WRA	**Warramunga Arr**	**45.01**	**271**	P		**P**		**08 39 19.2**	**-0.4**
	2.0nm,0.6s,baz=110,slow=7.6,SNR=22								
QSPA	**South Pole Qui**	**60.25**	**180**	*e*P		**P**		**08 41 14.2**	**+2.4**
	5.2nm,0.7s								
MAW	**Mawson**	**73.14**	**200**	P		**P**		**08 42 35.7**	**+1.9**
	1.3nm,0.7s,baz=136,slow=8.8,SNR=6.1								
SYO	**Syowa Base**	**77.85**	**193**	*e*pP		**P**		**08 43 01.2**	**+0.5**
PETK	**Petropavlovsk-**	**85.53**	**345**	P		**P**		**08 43 39.8**	**-1.4**
	2.0nm,0.9s,baz=131,slow=4.0,SNR=3.6								
TXAR	**Lajitas Array**	**91.31**	**57**	P		**P**		**08 44 08.9**	**-0.7**
	0.2nm,0.9s,baz=216,slow=9.0,SNR=2.7								
FINES	**FINESS Array B**	**144.95**	**341**	PKP		**PKPab**		**08 50 38.3**	**-1.0**
	4.8nm,0.6s,baz=66,slow=3.4,SNR=27								
NB2	**NORSAR Subarra**	**148.35**	**352**	PKP		**PKPbc**		**08 50 48.3**	**-1.1**
	comp=Z,0.9nm,0.6s,baz=7.4,slow=2.9								
NOA	**NORSAR Array B**	**148.35**	**352**	PKPbc		**PKPbc**		**08 50 48.4**	**-0.9**
	comp=Z,1.0nm,0.7s,baz=12,slow=4.4,SNR=4.8								
AKASG	**Malin Array Be**	**151.42**	**324**	PKPbc		**PKPbc**		**08 50 56.2**	**-0.9**
	comp=Z,1.3nm,0.5s,baz=44,slow=3.0,SNR=8.3								
TORD	**Torodi Ar. Bea**	**163.32**	**175**	PKPab		**PKPab**		**08 51 57.8**	**+0.4**
	comp=Z,0.5nm,0.8s,baz=188,slow=2.9,SNR=3.2								

IDC **16** *08:32:44.0±1.1, 28.77S×178.96W, h371km±10km, mb3.5/4, mb1 3.7/5, mb1mx3.3/26, mbtmp4.4/5, Error ellipse: s-maj=39.1km s-min=26.7km az=23.0*
ISC 16 08:32:46.1±1.1, 29.13S±0.08×179.4W±0.1, h350km, n23, σ1.945/29, mb3.7/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.27**	**96**	P		**Pn**		**08 33 33.6**	**+0.5**
	48nm,0.3s,baz=73,slow=19,SNR=0.7								
RAO				S		**S**		**08 34 10.8**	**+0.1**
	211nm,0.3s,baz=77,slow=19,SNR=2.6								
MXZ	**Matakaoa Point**	**8.63**	**192**	*e*PN		**Pn**		**08 34 50.2**	**+2.6**
MXZ				*e*SN		**S**		**08 36 26.7**	**-0.2**
WMGZ	**Waiomatatini S**	**8.86**	**191**	*e*PN		**Pn**		**08 34 52.8**	**+2.4**
HAZ	**Te Kaha**	**8.93**	**195**	*e*PN		**Pn**		**08 34 50.9**	**-0.2**
HAZ				SN		**S**		**08 36 33.9**	**+0.6**
PUZ	**Puketiti**	**9.13**	**192**	*e*PN		**Pn**		**08 34 56.0**	**+2.3**
PUZ				*e*SN		**S**		**08 36 38.4**	**+0.4**
RUGZ	**Raukumara Rang**	**9.15**	**195**	*e*PN		**Pn**		**08 34 55.6**	**+1.7**
TWGZ	**Tauwhareparae**	**9.29**	**193**	*e*PN		**Pn**		**08 34 58.0**	**+2.5**
MWZ	**Matawai**	**9.54**	**195**	*e*PN		**Pn**		**08 34 57.8**	**-0.7**
MWZ				*e*SN		**S**		**08 36 46.5**	**-0.3**
URZ	**Urewera**	**9.56**	**197**	P		**Pn**		**08 35 00.3**	**+1.5**
	3.8nm,0.3s,baz=0.0,slow=4.0,SNR=25								
URZ				S		**S**		**08 36 48.5**	**+1.1**
	1.3nm,0.3s,baz=32,slow=22,SNR=2.3								
URZ	**Urewera**	**9.56**	**197**	*e*PN		**Pn**		**08 34 60.0**	**+1.2**
URZ				*e*SN		**S**		**08 36 48.1**	**+0.7**
URZ	**Urewera**	**9.56**	**197**	*e*Sn		**P**		**08 34 59.9**	**-0.7**
KRHZ	**Kereru**	**11.06**	**197**	*e*PN		**Pn**		**08 35 16.6**	**-0.1**
PXZ	**Pawanui**	**11.31**	**195**	*e*PN		**Pn**		**08 35 19.1**	**-0.4**
PXZ				*e*SN		S		08 37 22.9	-2.9
TSZ	**Takapari Road**	**11.56**	**198**	*e*PN		**P**		**08 35 22.4**	**-0.4**
MRZ	**Mangatainoka R**	**12.22**	**198**	*e*PN		**P**		**08 35 28.6**	**-1.5**
OGWZ	**Otaki Gorge**	**12.48**	**200**	PN		**P**		**08 35 31.9**	**-1.1**
DZM	**Mont Dzumac**	**14.60**	**296**	P		**Pn**		**08 36 00.8**	**+2.3**
	0.9nm,0.3s,baz=173,slow=14,SNR=6.5								
CTA	**Charters Tower**	**32.43**	**278**	P		**P**		**08 38 44.5**	**-0.5**
	4.9nm,0.5s,baz=99,slow=11,SNR=9.1								
STKA	**Stephens Creek**	**33.63**	**255**	P		**P**		**08 38 55.5**	**+0.4**
	1.6nm,0.9s,baz=114,slow=8.1,SNR=8.1								
ASAR	**Alice Springs**	**42.00**	**266**	P		**P**		**08 40 03.1**	**-1.5**
	1.9nm,0.7s,baz=102,slow=6.9,SNR=8.1								
WRA	**Warramunga Arr**	**42.87**	**272**	P		**P**		**08 40 09.8**	**-1.8**
	2.9nm,0.3s,baz=108,slow=7.5,SNR=27								
FINES	**FINESS Array B**	**143.55**	**340**	PKP		PKPab		08 51 32.2	-4.1
	1.6nm,0.7s,baz=42,slow=3.7,SNR=5.9								
TORD	**Torodi Ar. Bea**	**164.06**	**184**	PKPab		**PKPab**		**08 53 01.5**	**-2.3**
	0.4nm,0.8s,baz=198,slow=2.7,SNR=2.6								

ISCJB **16** *08:34:35.8±1.0, 60.85S±0.2×27.21W±0.3, h10km, mb3.6/3, Error ellipse: s-maj=54.5km s-min=14.6km az=146.8*
IDC **16** *08:34:36.9±2.7, 60.62S×27.09W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/22, mbtmp3.7/3, Error ellipse: s-maj=96.2km s-min=41.9km az=18.0*
ISC 16 08:34:37.8±1.0, 60.85±0.2×27.2W±0.3, h10km, n6, σ1.918/6, mb3.6/3, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**12.50**	**150**	P		**Pn**		**08 37 35.7**	**+0.2**
SNAA	**Sanae**	**14.51**	**149**	P		**Pn**		**08 38 02.6**	**-0.3**
CPUP	**Villa Florida**	**40.09**	**316**	P		**P**		**08 42 14.4**	**+1.2**
	1.3nm,0.9s,baz=160,slow=12,SNR=2.9								
LPAZ	**La Paz**	**53.23**	**308**	P		**P**		**08 43 55.6**	**-1.3**
	0.4nm,0.6s,baz=149,slow=5.9,SNR=2.6								
TORD	**Torodi Ar. Bea**	**77.21**	**29**	P		**P**		**08 46 31.3**	**-0.4**
	0.6nm,0.6s,baz=198,slow=6.1,SNR=6.4								
SONM	**Songino Array**	**150.66**	**95**	PKPbc		**PKPbc**		**08 54 29.8**	**+0.8**
	0.3nm,0.7s,baz=349,slow=2.9,SNR=3.2								

ISCJB **16** *08:38:43.9±0.6, 39.32N±0.04×30.05E±0.03, h2km±6km, Error ellipse: s-maj=6.0km s-min=4.2km az=167.3*
DDA **16** *08:38:43.5, 39.35N×30.03E, h7km, Md2.6*
ISK **16** *08:38:43.0, 39.20N×30.00E, h8km, MD2.8*
CSEM **16** *08:38:44.0±0.2, 39.30N×30.05E, h5km, MD2.8, Error ellipse: s-maj=4.6km s-min=3.2km az=165.0*
ISC 16 08:38:43.2±1.3, 39.28N±0.04×30.03E±0.02, h6km±11km, n30, σ0.967/42, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.47**	**246**	*i* P		**Pb**		**08 38 53.6**	**-0.3**
GDZ				*i* S		**Sb**		**08 39 00.9**	**-0.4**
GDZ	**Gediz**	**0.47**	**246**	P		**Pb**		**08 38 53.7**	**-0.3**
GDZ				S		**Sb**		**08 39 00.9**	**-0.4**
TVSB	**Tavsanli**	**0.47**	**291**	PG		**Pg**		**08 38 53.0**	**+0.7**
TVSB				*e*SG		**Sb**		**08 39 00.1**	**-1.2**
TVSB	**Tavsanli**	**0.47**	**291**	*i* Pg		**Pg**		**08 38 53.0**	**+0.7**
TVSB				*e*Sg		**Sb**		**08 39 00.1**	**-1.2**
ESKT	**Eskisehir**	**0.68**	**69**	*i* P		**Pg**		**08 38 55.9**	**-0.5**
SEYT	**Eskypehyr**	**0.68**	**69**	P		**Pg**		**08 38 55.8**	**-0.5**
BORA	**Eskisehir**	**0.68**	**29**	*i* P		**Pg**		**08 38 56.2**	**-0.1**
BORA				*i* S		**Sg**		**08 39 04.9**	**-0.3**
BORA	**Eskisehir**	**0.68**	**29**	P		**Pg**		**08 38 56.2**	**-0.1**
BORA				S		**Sg**		**08 39 04.9**	**-0.3**
BOLV	**Bolvadin**	**0.91**	**128**	*i* P		**Pb**		**08 39 02.0**	**+0.4**
BOLV				*i* S		**Sn**		**08 39 15.9**	**-0.5**
BOLV	**Bolvadin**	**0.91**	**128**	P		**Pb**		**08 39 02.0**	**+0.4**
BOLV				S		**Sn**		**08 39 15.9**	**-0.5**
CAVI	**Cavuskoy**	**0.93**	**351**	*e*PG		**Pn**		**08 39 02.9**	**0.0**
CAVI	**Cavuskoy**	**0.93**	**351**	*e*Pg		**Pn**		**08 39 02.9**	**0.0**
DEMI	**Demirci**	**1.05**	**257**	*i* P		**Pb**		**08 39 04.3**	**+0.4**
DEMI				*i* S		**Sn**		**08 39 19.1**	**-0.5**
DEMI	**Demirci**	**1.05**	**257**	P		**Pb**		**08 39 04.3**	**+0.4**
DEMI				S		**Sn**		**08 39 19.1**	**-0.5**
IZI	**Iznik**	**1.14**	**338**	*e*PN		**Pn**		**08 39 06.7**	**+0.9**
IZI	**Iznik**	**1.14**	**338**	*e*Pn		**Pn**		**08 39 06.7**	**+0.9**
ADVT	**Abdulvahap**	**1.17**	**349**	*e*PN		**Pn**		**08 39 07.5**	**+1.3**
ADVT	**Abdulvahap**	**1.17**	**349**	*e*Pn		**Pn**		**08 39 07.5**	**+1.3**
SVRH	**Sivrihisar-ESK**	**1.17**	**82**	*e*PN		**Pn**		**08 39 06.3**	**0.0**
SVRH				*e*SN		**Sn**		**08 39 23.7**	**+1.1**
SVRH	**Sivrihisar-ESK**	**1.17**	**82**	*e*Pn		**Pn**		**08 39 06.3**	**0.0**
SVRH				*e*Sn		**Sn**		**08 39 23.7**	**+1.1**
GULT	**Gulveren**	**1.21**	**18**	*e*PN		**Pn**		**08 39 07.9**	**+1.1**
GULT	**Gulveren**	**1.21**	**18**	*e*Pn		**Pn**		**08 39 07.9**	**+1.1**
MANT	**Manisa**	**1.39**	**236**	*i* P		**Pn**		**08 39 09.9**	**+0.4**
MANT	**Manisa**	**1.39**	**236**	P		**Pn**		**08 39 09.9**	**+0.4**
MDUB	**Mudurnu**	**1.49**	**37**	*e*PN		**Pg**		**08 39 12.0**	**+0.2**
MDUB	**Mudurnu**	**1.49**	**37**	*e*Pn		**Pg**		**08 39 12.0**	**+0.2**
ARMT	**Armutlu**	**1.56**	**325**	*e*PN		**Pb**		**08 39 12.2**	**-0.4**
ARMT	**Armutlu**	**1.56**	**325**	*e*Pn		**Pb**		**08 39 12.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.62**	**308**	*e*PN		**Pb**		**08 39 13.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.62**	**308**	*e*Pn		**Pb**		**08 39 13.4**	**-0.2**

ISCJB **16** *08:56:37.3±0.5, 36.45N±0.04×140.70E±0.05, h62km±4km, mb3.8/10, Error ellipse: s-maj=7.7km s-min=5.5km az=28.3*
JMA **16** *08:56:38.6±0.1, 36.46N×140.60E, h57km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φs17.00000°, δ74.00000°, λ76.00000°. NP2:φs241.00000°, δ21.00000°, λ132.00000°. Principal axes: T Plg58.0000°, Azm268.0000°; N Plg14.0000°, Azm21.0000°; P Plg28.0000°, Azm119.0000°;*
JMA Felt II J1.
IDC **16** *08:56:38.4±2.2, 36.49N×140.70E, h56km±19km, mb3.6/10, mb1 3.7/12, mb1mx3.5/45, mbtmp3.9/12, ML3.6/1 Error ellipse: s-maj=19.5km s-min=10.7km az=67.0*
ISC 16 08:56:38.6±0.9, 36.47N±0.05×140.67E±0.06, h56km±6km, n31, σ0.991/36, mb3.8/10, 3C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.16**	**329**	↑P		**Pn**		**08 56 47.5**	**0.0**
JHO				S		**Sn**		**08 56 53.4**	**-0.4**
JYT	**Yasato**	**0.46**	**238**	P		**Pn**		**08 56 49.4**	**-0.4**
JYT				S		**Sn**		**08 56 56.7**	**-1.2**
ONAJ	**Iwakimizuishiy**	**0.64**	**9**	↑P		**Pn**		**08 56 51.9**	**-0.1**
ONAJ				S		**Sn**		**08 57 01.4**	**-0.3**
JFK	**Kawauchi**	**0.91**	**10**	↑P		**Pn**		**08 56 55.1**	**-0.3**
JFK				S		**Sn**		**08 57 07.2**	**-0.5**
JAG	**Ashikaga**	**0.98**	**268**	↓P		**Pn**		**08 56 55.8**	**-0.5**
JAG				S		**Sn**		**08 57 07.7**	**-1.7**
JFT	**Otama**	**1.08**	**346**	↓P		**Pn**		**08 56 57.8**	**+0.2**
JFT				S		**S

MAT				*e*S		**Sn**	**08 58 31.3**	**-0.6**
JHJ	**Hachijo jima 2**	**2.93**	**182**	P		**Pn**	**08 58 33.6**	**-0.3**
	193nm,0.3s,baz=27,slow=9.7,SNR=14							
JHJ				S		**Sn**	**08 59 07.1**	**-0.8**
	88nm,0.3s,baz=50,slow=20,SNR=4.1							
JHJ2	**Mitsune**	**2.94**	**182**	*e*Pn		**Pn**	**08 58 33.7**	**-0.2**
JHJ2				*e*Sn		**Sn**	**08 59 08.7**	**+0.6**
JNU	**Nakatsue**	**8.01**	**251**	P		**Pn**	**08 59 42.8**	**-0.6**
	0.2nm,0.3s,baz=28,slow=4.5,SNR=2.5							
ASAJ	**Asahikawa**	**8.31**	**13**	P		**Pn**	**08 59 47.8**	**+0.3**
ASAJ	**Asahikawa**	**8.31**	**13**	*e*Pn		**Pn**	**08 59 49.1**	**+1.6**
	2.3nm,0.6s							
KSRS	**Korea Array**	**9.72**	**282**	P		**Pn**	**09 00 09.9**	**+3.0**
	0.5nm,0.3s,baz=93,slow=14,SNR=4.6							
KSRS				LR		LR	09 03 44.1	
	comp=Z,95nm,18.4s,baz=50,slow=36							
KSAR	**Wonju Array Be**	**9.75**	**282**	P		**Pn**	**09 00 09.9**	**+2.6**
USRK	**Ussuriysk Ar.**	**10.14**	**326**	P		**Pn**	**09 00 16.6**	**+4.1**
	0.4nm,0.3s,baz=132,slow=13,SNR=5.1							
SONM	**Songino Array**	**27.35**	**306**	P		**P**	**09 03 30.1**	**+0.5**
	0.5nm,0.4s,baz=99,slow=7.4,SNR=3.2							
ZALV	**Zalesovo Beam**	**41.69**	**313**	P		**P**	**09 05 32.5**	**-0.2**
	5.1nm,0.5s,baz=92,slow=6.1,SNR=18							
MKAR	**Makanchi Array**	**43.62**	**303**	P		**P**	**09 05 48.2**	**-0.3**
	1.9nm,0.6s,baz=86,slow=9.2,SNR=5.9							
KURK	**Kurchatov**	**45.59**	**309**	*e*P		**P**	**09 06 03.0**	**-1.1**
KURBB	**Kurchatov Array**	**45.66**	**309**	P		**P**	**09 06 04.1**	**-0.5**
	4.6nm,0.4s,baz=82,slow=7.6,SNR=15							
BVAR	**Borovoye Array**	**50.34**	**313**	P		**P**	**09 06 40.0**	**-0.8**
	1.1nm,0.4s,baz=107,slow=10,SNR=5.9							
ILAR	**Eielson Array**	**50.96**	**32**	P		**P**	**09 06 45.7**	**+0.4**
	0.5nm,0.6s,baz=262,slow=5.5,SNR=8.7							
INK	**Inuvik**	**55.80**	**27**	*e*P		**P**	**09 07 19.9**	**-0.8**
	2.3nm,1.0s							
WRAB	**Tennant Creek**	**55.93**	**186**	*e*P		**P**	**09 07 20.9**	**-1.2**
	1.4nm,0.6s							
WRA	**Warramunga Arr**	**55.95**	**186**	P		**P**	**09 07 22.0**	**-0.3**
	1.4nm,0.5s,baz=1.8,slow=7.6,SNR=11							
ARU	**Arti**	**56.29**	**319**	P		**P**	**09 07 24.1**	**-0.3**
	3.7nm,0.4s,baz=75,slow=3.9,SNR=7.1							
ABKAR	**Akbulak array**	**57.65**	**310**	*e*P		**P**	**09 07 33.5**	**-0.6**
	2.4nm,0.4s							
AKTO	**Aktyubinsk**	**58.43**	**312**	P		**P**	**09 07 39.5**	**0.0**
	1.4nm,0.6s,baz=67,slow=12,SNR=5.4							
ASAR	**Alice Springs**	**59.67**	**186**	P		**P**	**09 07 48.8**	**+0.4**
	0.5nm,0.5s,baz=19,slow=11,SNR=9.3							
ARCES	**ARCESS Array B**	**64.48**	**339**	P		**P**	**09 08 20.2**	**+0.2**
	2.8nm,0.9s,baz=39,slow=7.8,SNR=3.8							
FINES	**FINESS Array B**	**69.11**	**332**	P		**P**	**09 08 49.5**	**-0.1**
	2.2nm,0.7s,baz=93,slow=5.4,SNR=6.7							
SUMG	**Summit**	**71.65**	**359**	*e*P		**P**	**09 09 05.6**	**+0.2**
	4.5nm,0.8s							
AKSG	**Malin Array Be**	**74.32**	**322**	P		**P**	**09 09 20.4**	**-0.6**
	1.3nm,0.6s,baz=49,slow=6.0,SNR=6.4							
NB2	**NORSAR Subarra**	**74.61**	**337**	P		**P**	**09 09 22.1**	**-0.5**
	comp=Z,0.6nm,0.4s,baz=41,slow=5.9							
NOA	**NORSAR Array B**	**74.61**	**337**	P		**P**	**09 09 22.5**	**-0.1**
	comp=Z,0.3nm,0.5s,baz=54,slow=7.7,SNR=5.6							
PDAR	**Pinedale Array**	**79.21**	**45**	P		**P**	**09 09 50.2**	**+1.2**
	comp=Z,0.2nm,0.5s,baz=168,slow=1.4,SNR=3.5							
URZ	**Urewera**	**81.56**	**151**	*e*P		**P**	**09 09 59.0**	**-2.1**
	comp=Z,8.8nm,0.4s							
GERES	**GERESS Array B**	**82.89**	**328**	P		**P**	**09 10 08.3**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=80,slow=2.2,SNR=3.6							
TXAR	**Lajitas Array**	**91.67**	**51**	P		**P**	**09 10 51.5**	**+0.2**
	comp=Z,0.4nm,0.5s,baz=275,slow=2.9,SNR=6.0							

IDC **16** *08:58:20.8±0.5, 60.˚35S×26.˚96W, h0km, mb4.8/14, mb1 4.9/15, mb1mx4.8/20, mbtmp4.8/15, ML5.8/1, MS5.0/20, Ms1 5.0/20, ms1mx4.8/23, Error ellipse: s-maj=18.3km s-min=13.3km az=30.0*

BJI **16** *08:58:21.0, 60.˚60S×26.˚70W, h9km, mB5.4/11, Ms5.4/14, Ms7 5.2/15*

MOS **16** *08:58:21.8±1.9, 60.˚52S×26.˚75W, h10km, mb5.2/25, MS4.7/5, Error ellipse: s-maj=23.5km s-min=10.8km az=102.4*

ISCJB **16** *08:58:22.1±0.3, 60.˚54S±0.˚06×26.˚92W±0.˚10, h19km, mb5.1/46, MS5.0/20, Error ellipse: s-maj=8.9km s-min=5.8km az=32.9*

GCMT **16** *08:58:23.3±0.2, 60.˚83S×26.˚72W, h12km, MW5.3/110, Moment Tensor Solution. s66,c85; s110,c180; Duration: 1s1 Moment tensor: Scale 10^17 Nm; Mrr 0.09±.02; Mθθ-0.56±.02; Mϕϕ 0.47±.02; Mrθ-0.36±.04; Mθϕ-0.75±.01; Mϕr 0.27±.05; Best double couple: Mo 1.02100×10^17 NP1:ϕ286.00000°, δ82.00000°, λ155.00000°. NP2:ϕ19.00000°, δ66.00000°, λ9.00000°. Principal axes: T 1.0470, Plg23.0000°, Azm240.0000°; N -0.0520, Plg64.0000°, Azm88.0000°; P -0.9960, Plg11.0000°, Azm335.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC **16** *08:58:23.3±0.2, 60.˚55S×26.˚66W, h10km, mb5.2/37 Error ellipse: s-maj=9.6km s-min=7.1km az=210.0*

ISC 16 08:58:24.4±0.3, 60.˚67S±0.˚06×26.˚86W±0.˚06, h19km, n245, σ2s 01/238, mb5.2/46, MS5.0/20, 1C-2D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HOPE	**Hope Point**	**8.23**	**317**	*e*Pn		**Pn**	**09 00 25.6**	**+3.0**
VNA1	**Neumayer--Stat**	**12.53**	**151**	P		**Pn**	**09 01 20.8**	**-0.5**
SNAA	**Sanae**	**14.54**	**149**	P		**Pn**	**09 01 46.9**	**-1.9**
SNAA	**Sanae**	**14.54**	**149**	Pn		**Pn**	**09 01 46.9**	**-1.9**
	10nm,0.3s,baz=309,slow=14,SNR=140							
SNAA				Sn		**Sn**	**09 04 23.2**	**-6.0**
	2.0nm,0.3s,baz=202,slow=23,SNR=4.4							
SNAA				LR		LR	09 06 34.1	
	comp=Z,4μm,18.3s,baz=306,slow=33							
PMSA	**Palmer Station**	**17.35**	**240**	P		**P**	**09 02 26.4**	**+0.1**
	3.6nm,0.3s,baz=113,slow=6.7,SNR=13							
PMSA				LR		LR	09 08 34.1	
	comp=Z,5μm,18.2s,baz=90,slow=35							
PMSA	**Palmer Station**	**17.35**	**240**	*e*Pn		**P**	**09 02 26.7**	**+0.5**
	238nm,1.4s							
NVL	**N'lazarevskaya**	**18.46**	**139**	*e*P		**Pn**	**09 02 39.9**	**+1.3**
NVL				*e*S		**S**	**09 06 09.4**	**+1.3**
NVL				MLR		MLR		
	comp=Z,2μm,13.0s							
EFI	**East Falkland**	**19.39**	**284**	*e*P		**P**	**09 02 48.4**	**-0.4**
EFI				pmax		pmax		
	comp=Z,490nm,1.9s							
EFI	**East Falkland**	**19.39**	**284**	*e*P		**P**	**09 02 48.4**	**-0.4**
	comp=Z,490nm,1.9s							
USHA	**Ushuaia**	**22.62**	**266**	P		**P**	**09 03 23.3**	**-0.4**
	comp=Z,31nm,0.7s,baz=85,slow=11,SNR=4.3							
USHA				LR		LR	09 09 59.9	
	comp=Z,26μm,21.5s,baz=112,slow=31							
H09W1	**TRISTAN DA CUN**	**25.34**	**28**	T		T	09 30 36.1	
	SNR=6.0							
SYO	**Syowa Base**	**28.02**	**135**	*e*P		**P**	**09 04 12.8**	**-0.8**
SYO	**Syowa Base**	**28.02**	**135**	*e*pP		pP	09 04 19.2	-0.1
QSPA	**South Pole Qui**	**29.57**	**180**	*e*P		**P**	**09 04 29.7**	**+2.0**
	comp=Z,1μm,1.7s							
TRQA	**Tornquist**	**31.55**	**300**	*e*P		**P**	**09 04 45.5**	**+0.4**
	comp=Z,100nm,1.9s							
PLCA	**Paso Flores**	**33.25**	**287**	P		**P**	**09 04 59.9**	**-0.2**
	comp=Z,5.0nm,0.7s,baz=166,slow=7.7,SNR=12							
PLCA				LR		LR	09 18 37.7	
	comp=Z,2μm,18.1s,baz=158,slow=37							
PLCA	**Paso Flores**	**33.25**	**287**	P		**P**	**09 04 59.9**	**-0.2**
PLCA				pmax		pmax		
	comp=Z,5.0nm,0.7s							
PLCA				MLR		MLR		
	comp=Z,2μm,18.1s							
PLCA	**Paso Flores**	**33.25**	**287**	*e*P		**P**	**09 05 01.5**	**+1.4**
	comp=Z,41nm,1.6s							
MAW	**Mawson**	**36.40**	**140**	P		**P**	**09 05 28.5**	**+1.6**
	comp=Z,20nm,1.0s,baz=228,slow=10,SNR=24							
MAW				LR		LR	09 19 17.9	
	comp=Z,2μm,19.3s,baz=246,slow=34							
MAW	**Mawson**	**36.40**	**140**	*e*P		**P**	**09 05 28.7**	**+1.7**
	comp=Z,10nm,1.3s							
MRA	**San Martin**	**37.94**	**300**	*i* P		**P**	**09 05 37.3**	**-3.2**
TCA	**Tanti**	**38.41**	**303**	*i* P		**P**	**09 05 41.3**	**-3.1**
AAGR	**Agrelo**	**38.72**	**296**	*i* P		**P**	**09 05 43.7**	**-3.3**
ASAL	**Salagasta**	**39.14**	**297**	*i* P		**P**	**09 05 47.7**	**-2.8**
PEL	**Peldehue**	**39.50**	**294**	P		**P**	**09 05 54.5**	**+1.0**
PEL				pmax		pmax		
	comp=Z,84nm,0.9s							
AUSP	**Uspallata**	**39.70**	**296**	*i* P		**P**	**09 05 52.9**	**-2.5**
SPB	**Sao Paulo**	**39.71**	**330**	*e*P		**P**	**09 05 55.9**	**+0.7**
	comp=Z,97nm,1.6s							
ROC1	**El Roble**	**39.79**	**294**	*e*P		**P**	**09 05 57.1**	**+0.9**
	comp=Z,30nm,0.6s							
RTLL	**Cerro Villicun**	**40.06**	**298**	*i* P		**P**	**09 05 54.9**	**-3.3**
CPUP	**Villa Florida**	**40.11**	**315**	P		**P**	**09 05 55.1**	**-3.4**
	comp=Z,30nm,1.0s,baz=157,slow=7.9,SNR=30							
CPUP				LR		LR	09 20 50.7	
	comp=Z,2μm,21.3s,baz=158,slow=34							
CPUP	**Villa Florida**	**40.11**	**315**	P		**P**	**09 05 55.1**	**-3.4**
CPUP				pmax		pmax		
	comp=Z,18nm,0.8s							
CPUP	**Villa Florida**	**40.11**	**315**	*e*P		**P**	**09 05 59.0**	**+0.5**
AMOG	**MOGNA**	**40.41**	**298**	*i* P		**P**	**09 05 57.7**	**-3.4**
CYA	**Choya**	**41.44**	**303**	*i* P		**P**	**09 06 05.9**	**-3.7**
SBA	**Scott Base**	**41.47**	**184**	*e*P		**P**	**09 06 11.4**	**+2.2**
SBA				pmax		pmax		
	comp=Z,64nm,1.4s							
SBA	**Scott Base**	**41.47**	**184**	*e*P		**P**	**09 06 11.4**	**+2.2**
	comp=Z,64nm,1.4s							
AGUA	**GUANDACOL**	**41.66**	**299**	*i* P		**P**	**09 06 08.3**	**-3.2**
SUR	**Sutherland**	**41.89**	**70**	P		**P**	**09 06 13.6**	**+0.2**
	comp=Z,0.5nm,0.8s,baz=207,slow=8.2,SNR=9.1							
SUR	**Sutherland**	**41.89**	**70**	*e*P		**P**	**09 06 14.7**	**+1.2**
	comp=Z,103nm,1.9s							
VNDA	**Vanda**	**41.95**	**183**	P		**P**	**09 06 15.7**	**+2.6**
	comp=Z,16nm,1.0s,baz=196,slow=7.2,SNR=23							
VNDA				LR		LR	09 22 13.5	
	comp=Z,619nm,21.4s,baz=174,slow=34							
VNDA	**Vanda**	**41.95**	**183**	*e*P		**P**	**09 06 15.0**	**+1.8**
	comp=Z,117nm,1.9s							
VCA	**Vinchina**	**42.19**	**300**	*i* P		**P**	**09 06 13.1**	**-2.8**
LCO	**Las Campanas**	**43.03**	**297**	*e*P		**P**	**09 06 22.6**	**-0.2**
	comp=Z,25nm,1.0s							
MIR	**Mirnyy**	**45.61**	**151**	*e*P		P	09 06 37.0	-5.6
MIR				pmax		pmax		
	comp=Z,4.0nm,1.2s							
BOSA	**Boshof**	**47.12**	**71**	P		**P**	**09 06 54.5**	**-0.6**
	comp=Z,5.5nm,0.7s,baz=189,slow=6.5,SNR=9.3							
BOSA				LR		LR	09 22 39.1	
	comp=Z,1μm,20.1s,baz=221,slow=31							
BOSA	**Boshof**	**47.12**	**71**	*e*P		**P**	**09 06 54.7**	**-0.5**
	comp=Z,16nm,1.0s							
SHEL	**Horse Pasture**	**47.19**	**28**	*e*P		**P**	**09 06 55.0**	**-0.6**
SHEL				pmax		pmax		
	comp=Z,85nm,1.2s							
SHEL	**Horse Pasture**	**47.19**	**28**	*e*P		**P**	**09 06 55.0**	**-0.6**
	comp=Z,84nm,1.2s							
BDFB	**Brasilia**	**47.50**	**332**	P		**P**	**09 06 56.8**	**-1.4**
	comp=Z,24nm,1.0s,baz=135,slow=1.4							
BDFB				LR		LR	09 27 19.8	
	comp=Z,994nm,18.1s,baz=168,slow=37							
BDFB	**Brasilia**	**47.50**	**332**	*e*P		**P**	**09 06 58.7**	**+0.6**
	comp=Z,40nm,1.0s							
LVC	**Limon Verde**	**47.89**	**303**	P		**P**	**09 06 58.7**	**-2.7**
	comp=Z,29nm,0.7s,baz=162,slow=3.2,SNR=6.3							
LVC	**Limon Verde**	**47.89**	**303**	*e*P		**P**	**09 07 00.7**	**-0.8**
	comp=Z,17nm,0.9s							
PB04	**IPOC Station P**	**48.65**	**302**	*e*P		**P**	**09 07 07.3**	**+0.3**
	comp=Z,40nm,0.9s							
PB01	**IPOC Station P**	**49.53**	**304**	*e*P		**P**	**09 07 13.1**	**-0.6**
	comp=Z,31nm,0.9s							
LBTB	**Lobatse**	**50.34**	**69**	*e*P		**P**	**09 07 19.3**	**-0.6**
LBTB				pmax		pmax		
	comp=Z,39nm,1.4s							
LBTB	**Lobatse**	**50.34**	**69**	*e*P		**P**	**09 07 19.3**	**-0.6**
	comp=Z,39nm,1.4s							
SIV	**San Ignacio**	**50.96**	**316**	P		**P**	**09 07 20.5**	**-4.0**
	comp=Z,6.0nm,0.5s,baz=199,slow=9.0,SNR=19							
TSUM	**Tsumeb**	**51.92**	**57**	*e*P		**P**	**09 07 31.2**	**-0.6**
	comp=Z,16nm,1.0s							
H10S2	**ASCENSION HYDR**	**52.41**	**15**	T		T	10 04 17.2	
	baz=187,slow=75,SNR=60							
H10S3	**ASCENSION HYDR**	**52.41**	**15**	T		T	10 04 17.8	
	baz=187,slow=75,SNR=40							
H10S1	**ASCENSION HYDR**	**52.42**	**15**	T		T	10 04 18.9	
	baz=187,slow=75,SNR=71							
LPAZ	**La Paz**	**53.27**	**308**	P		**P**	**09 07 38.7**	**-3.7**
	comp=Z,5.3nm,0.5s,baz=136,slow=4.7,SNR=21							
LPAZ				LR		LR	09 32 05.5	
	comp=Z,783nm,19.4s,baz=148,slow=38							
LPAZ	**La Paz**	**53.27**	**308**	*e*P		**P**	**09 07 41.1**	**-1.3**
LPAZ				pmax		pmax		
	comp=Z,13nm,0.8s							
LPAZ	**La Paz**	**53.27**	**308**	*e*P		**P**	**09 07 41.1**	**-1.3**
	comp=Z,13nm,0.8s							
H10N1	**ASCENSION HYDR**	**53.53**	**15**	T		T	10 05 42.7	
	baz=181,slow=72,SNR=18							
H10N3	**ASCENSION HYDR**	**53.53**	**15**	T		T	10 05 44.0	
	baz=181,slow=72,SNR=57							
H10N2	**ASCENSION HYDR**	**53.54**	**15**	T		T	10 05 42.1	
	baz=181,slow=72,SNR=29							
SAML	**Samuel**	**58.24**	**317**	*e*P		**P**	**09 08 16.7**	**-0.6**
	comp=Z,166nm,2.0s							
LSZ	**Lusaka**	**59.99**	**66**	*e*P		**P**	**09 08 28.7**	**-0.9**
LSZ				pmax		pmax		
	comp=Z,36nm,1.4s							
LSZ	**Lusaka**	**59.99**	**66**	*e*P		**P**	**09 08 28.7**	**-0.9**
	comp=Z,36nm,1.4s							
NNA	**Nana**	**60.70**	**301**	P		**P**	**09 08 34.1**	**-0.3**
	comp=Z,17nm,0.8s,baz=227,slow=11,SNR=3.2							
PTGA	**Pitinga**	**64.95**	**323**	*e*P		**P**	**09 09 00.6**	**-2.0**
	comp=Z,7.6nm,0.8s							
DBIC	**Dimbokro**	**69.33**	**23**	P		**P**	**09 09 27.2**	**-3.0**
	comp=Z,6.6nm,0.7s,baz=156,slow=7.8,SNR=8.3							
DBIC				LR		LR	09 34 32.6	
	comp=Z,577nm,18.0s,baz=174,slow=32							
DBIC	**Dimbokro**	**69.33**	**23**	*e*P		**P**	**09 09 30.9**	**+0.6**
	comp=Z,14nm,1.0s							
OTAV	**Otavalo**	**72.40**	**305**	*e*P		**P**	**09 09 48.9**	**-0.7**
	comp=Z,47nm,1.8s							
CMBC	**Cumbal**	**72.79**	**306**	*e*P		**P**	**09 09 48.1**	**-3.8**
SJAC	**San Juan de Ar**	**73.42**	**310**	*e*P		P	09 09 50.1	-5.2
POPC	**Popayan, Colom**	**73.80**	**307**	*e*P		**P**	**09 09 55.4**	**-2.2**
MBAR	**Mbarara**	**74.17**	**61**	*e*P		**P**	**09 09 59.4**	**-0.3**
MBAR				pmax		pmax		
	comp=Z,43nm,1.7s							
MBAR	**Mbarara**	**74.17**	**61**	*e*P		**P**	**09 09 59.4**	**-0.3**
	comp=Z,43nm,1.7s							
PRAC	**Prado**	**74.18**	**310**	*e*P		**P**	**09 09 59.6**	**+0.1**
	comp=Z,55nm,1.3s							
CHIC	**Chingaza**	**74.59**	**311**	*e*P		P	09 09 56.7	-5.7
PTCN	**Pitcairn Islan**	**74.66**	**246**	*e*P		**P**	**09 10 02.8**	**+0.5**
	comp=Z,298nm,1.0s							
ROSC	**El Rosal**	**75.00**	**311**	LR		LR	09 43 14.2	
	comp=Z,498nm,21.6s,baz=192,slow=36							
ROSC	**El Rosal**	**75.00**	**311**	*e*P		**P**	**09 10 03.5**	**-1.3**
	comp=Z,6.5nm,0.9s							
RUSC	**La Rusia**	**75.52**	**312**	*e*P		**P**	**09 10 06.0**	**-1.8**
RUSC	**La Rusia**	**75.52**	**312**	*e*P		**P**	**09 10 07.0**	**-0.8**
	comp=Z,21nm,1.3s							
NORC	**Norcasia**	**75.88**	**310**	*e*P		**P**	**09 10 04.7**	**-4.6**
BARC	**Barichara**	**76.20**	**312**	*e*P		**P**	**09 10 11.8**	**+0.4**
KMBO	**Kilima Mbogo**	**76.59**	**68**	LR		LR	09 41 11.9	
	comp=Z,1μm,19.4s,baz=205,slow=34							
HELC	**Santa Helena**	**76.70**	**310**	*e*P		P	09 10 09.4	-5.0
HELC	**Santa Helena**	**76.70**	**310**	*e*P		**P**	**09 10 11.5**	**-2.9**
	comp=Z,14nm,0.8s							
BRRC	**Barranca, Sant**	**76.87**	**312**	*e*P		P	09 10 06.5	-8.4
TOA0	**Torodi Ar. Sit**	**77.03**	**29**	*e*P		**P**	**09 10 14.6**	**-1.2**
	comp=Z,23nm,0.7s							
TORD	**Torodi Ar. Bea**	**77.03**	**29**	P		**P**	**09 10 14.3**	**-1.4**
	comp=Z,15nm,0.5s,baz=198,slow=6.1,SNR=83							
TORD				LR		LR	09 39 00.4	
	comp=Z,783nm,19.0s,baz=215,slow=32							
CBRI	**Barrientos, No**	**77.10**	**313**	*e*P		**P**	**09 10 15.8**	**-0.6**
GRMC	**Gramalote, San**	**77.11**	**313**	*e*P		**P**	**09 10 14.7**	**-1.7**
SDV	**Santo Domingo**	**77.42**	**316**	*e*P		**P**	**09 10 16.9**	**-1.3**
	comp=Z,25nm,0.8s							
RKT	**Rikitea**	**78.53**	**243**	*e*LR		LR	09 34 52.1	
	comp=Z,1μm,31.8s							
SJCC	**San Jacinto, C**	**79.98**	**312**	*e*P		P	09 10 27.2	-4.9
TBI	**Tubuai**	**84.30**	**231**	*e*S		**S**	**09 21 16.5**	**-2.8**
	comp=Z,358nm,24.8s							
TBI	**Tubuai**	**84.30**	**231**	*e*LQ		LQ	09 33 36.8	
	comp=Z,934nm,32.2s							
TBI				*e*LR		LR	09 37 31.6	
	comp=Z,380nm,25.5s							
STVI	**Saint Thomas**	**84.51**	**324**	*e*P		**P**	**09 10 54.2**	**-1.4**
	comp=Z,37nm,1.2s							
HUMP	**Col San Antoni**	**84.58**	**323**	*e*P		**P**	**09 10 54.4**	**-1.6**
	comp=Z,9.7nm,0.9s							
SJG	**San Juan**	**84.64**	**323**	*e*P		**P**	**09 10 55.4**	**-0.9**
SJG				pmax		pmax		
	comp=Z,12nm,0.9s							
SJG	**San Juan**	**84.64**	**323**	*e*P		**P**	**09 10 55.4**	**-0.9**
	comp=Z,12nm,0.9s							
CBYP	**Canovanas**	**84.70**	**323**	*e*P		**P**	**09 10 57.8**	**+1.1**
	comp=Z,42nm,1.3s							
CELP	**Cerrillos**	**84.73**	**322**	*e*P		**P**	**09 10 57.2**	**+0.5**
MPR	**Mayaguez**	**85.03**	**322**	*e*P		**P**	**09 10 58.7**	**+0.5**
	comp=Z,13nm,1.1s							
TAM	**Tamanrasset**	**87.23**	**30**	*e*P		**P**	**09 11 08.2**	**-1.0**
TAM	**Tamanrasset**	**87.23**	**30**	*e*P		**P**	**09 11 08.2**	**-1.0**
STKA	**Stephens Creek**	**87.30**	**170**	LR		LR	09 49 34.9	
	comp=Z,1μm,18.3s,baz=192,slow=35							
DGAR	**Diego Garcia**	**88.14**	**102**	*e*P		**P**	**09 11 14.0**	**+0.3**
PPT2	**Papeete2**	**89.56**	**233**	*e*S		**S**	**09 22 06.0**	**-4.4**
	comp=Z,282nm,23.2s							
PPT2	**Papeete2**	**89.56**	**233**	*e*LR		LR	09 39 58.8	
	comp=Z,690nm,20.8s							
PPT	**Papeete**	**89.58**	**233**	LR		LR	09 44 23.2	
	comp=Z,831nm,18.4s,baz=149,slow=31							
ATD	**Arta Tunnel**	**90.32**	**67**	LR		LR	09 50 18.4	
	comp=Z,1μm,18.8s,slow=35							
TAOE	**Nuku Hiva Isla**	**93.39**	**245**	*e*LR		LR	09 41 50.8	
	comp=Z,1μm,29.8s							
ASAR	**Alice Springs**	**94.52**	**162**	P		**P**	**09 11 42.8**	**-0.5**
	comp=Z,1.1nm,0.7s,baz=185,slow=4.2,SNR=8.5							
ASAR				PP		**PP**	**09 15 26.8**	**-3.4**
	comp=Z,1.7nm,1.1s,baz=195,slow=8.5,SNR=4.3							
ASAR				LR		LR	09 53 08.7	
	comp=Z,2μm,18.2s,baz=202,slow=35							
AS01	**Alice Springs**	**94.53**	**162**	*e*P		**P**	**09 11 42.3**	**-1.1**
DZM	**Mont Dzumac**	**96.85**	**192**	*e*LR		LR	09 43 26.2	
	comp=Z,259nm,24.3s							
WRA	**Warramunga Arr**	**98.24**	**162**	LR		LR	09 54 55.7	
	comp=Z,1μm,18.7s,baz=180,slow=34							
WRAB	**Tennant Creek**	**98.25**	**162**	*e*P		**P**	**09 11 57.3**	**-3.0**
WRAB				pmax		pmax		
	comp=Z,9.0nm,1.2s							
FITZ	**Fitzroy Crossi**	**98.43**	**154**	LR		LR	09 52 42.5	
	comp=Z,296nm,21.8s,slow=33							
TXAR	**Lajitas Array**	**109.03**	**296**	PKKPbc		PKKPbc	09 27 59.8	+2.4
	comp=Z,0.2nm,0.8s,baz=70,slow=3.0,SNR=3.1							
BRTR	**Keskin Array B**	**111.54**	**46**	PP		PP	09 17 35.5	-3.2
	comp=Z,0.8nm,0.7s,baz=193,slow=5.9,SNR=3.5							
PV10	**Paradox Valley**	**119.04**	**297**	*e*PKPdf		**PKPdf**	**09 17 11.7**	**+0.5**
KIEV	**Kiev**	**119.80**	**37**	*e*PKIKP		**PKPdf**	**09 17 14.3**	**+2.5**
SRU	**San Rafael Swe**	**120.30**	**296**	*e*PKIKP		**PKPdf**	**09 17 13.8**	**+0.3**
SRU	**San Rafael Swe**	**120.30**	**296**	*e*PKPdf		**PKPdf**	**09 17 13.8**	**+0.3**
MSU	**Marysvale**	**120.55**	**295**	*e*PKIKP		**PKPdf**	**09 17 15.0**	**+1.0**
MSU	**Marysvale**	**120.55**	**295**	*e*PKPdf		**PKPdf**	**09 17 15.0**	**+1.0**
HWUT	**Hardware Ranch**	**122.80**	**297**	*e*PKPdf		**PKPdf**	**09 17 19.2**	**+1.0**
BW06	**Boulder Array**	**122.87**	**300**	*e*PKPdf		**PKPdf**	**09 17 18.3**	**-0.1**
PDAR	**Pinedale Array**	**122.87**	**300**	PKP		**PKPdf**	**09 17 18.2**	**-0.1**
	comp=Z,0.6nm,0.6s,baz=120,slow=3.9,SNR=6.4							
CM01	**Chiang Mai Arr**	**123.16**	**113**	*e*PKPdf		**PKPdf**	**09 17 18.6**	**-0.7**
CMAR	**Chiang Mai Arr**	**123.18**	**113**	PKP		**PKPdf**	**09 17 18.2**	**-1.2**
	comp=Z,2.9nm,1.0s,baz=212,slow=3.2,SNR=7.0							
KONO	**Kongsberg**	**123.28**	**21**	*e*PKIKP		**PKPdf**	**09 17 16.6**	**-1.6**
ULM	**Lac du Bonnet**	**123.65**	**314**	PKP		**PKPdf**	**09 17 18.0**	**-1.3**
	comp=Z,2.9nm,0.8s,baz=138,slow=2.8,SNR=3.8							
MOOW	**Moose Ponds**	**124.18**	**299**	*e*PKPdf		**PKPdf**

GTA	**Gaotai**	**141.10**	**98**	PKP	**PKPdf**	09 17 50.0	-2.6		
NVS	**Novosibirsk**	**143.89**	**67**	⇓*i* PKIKP	PKPbc	09 17 54.5	-0.2		
NVS				pmax	pmax				
	comp=Z,63nm,1.2s								
NVS				pmax	pmax				
	comp=N,25nm,1.4s								
NVS				pmax	pmax				
	comp=E,29nm,1.6s								
ZAA0	**Zalesovo Array**	**144.06**	**69**	*e*PKPpre	PKPpre	09 17 53.1			
ZAA0				*e*PKPpre	PKPpre	09 17 53.7			
ZALV	**Zalesovo Beam**	**144.06**	**69**	PKhKP	PKPpre	09 17 53.6			
	comp=E,7.3nm,0.6s,baz=238,slow=4.2,SNR=17								
ZALV				PKP	**PKPdf**	**09 17 56.6**	**-0.6**		
	comp=E,7.3nm,0.6s,baz=243,slow=4.2,SNR=17								
SKAG	**Skagway**	**145.89**	**300**	*e*PKPdf	**PKPab**	**09 18 02.8**	**+1.4**		
TIA	**Tai'an**	**146.51**	**120**	*e*PKPbc	**PKPbc**	**09 18 03.3**	**-0.2**		
BTO	**Baotou**	**146.92**	**108**	*e*PKPbc	**PKPdf**	**09 18 00.3**	**-2.4**		
HYT	**Haines Junctio**	**147.54**	**301**	*e*PKPdf	**PKPbc**	**09 18 04.5**	**-1.3**		
HHC	**Hu-ho-hao-te**	**147.84**	**109**	*e*P	**PKPab**	**09 18 17.5**	**+7.8**		
HHC				pmax	pmax				
	comp=Z,30nm,1.0s								
HHC				pmax	pmax				
	comp=Z,120nm,8.0s								
PCA	**Pinnacle**	**148.34**	**299**	*e*PKPbc	**PKPab**	**09 18 10.3**	**-0.8**		
BJT	**Baijiatuau**	**149.27**	**115**	*e*PKP2	**PKPbc**	**09 18 11.0**	**+0.3**		
BJT	**Baijiatuau**	**149.27**	**115**	*e*PKPbc	**PKPbc**	**09 18 11.0**	**+0.3**		
BJI	**Beijing**	**149.29**	**115**	PKPbc	**PKPbc**	**09 18 09.8**	**-1.0**		
INK	**Inuvik**	**149.37**	**316**	*e*PKIKP	**PKPdf**	**09 18 05.9**	**+0.2**		
INK				*e*		09 18 12.2			
INK	**Inuvik**	**149.37**	**316**	*e*PKPdf	**PKPdf**	**09 18 05.9**	**+0.2**		
INK				*e*PKPbc	**PKiKP**	**09 18 12.2**	**+1.0**		
BALM	**Baldy**	**149.71**	**299**	*e*PKP2	**PKPbc**	**09 18 13.1**	**+1.8**		
BALM	**Baldy**	**149.71**	**299**	*e*PKPbc	**PKPbc**	**09 18 13.1**	**+1.8**		
DAWY	**Dawson**	**149.85**	**306**	*e*PKPdf	**PKPdf**	**09 18 08.4**	**+1.8**		
DAWY				*e*PKPbc	**PKiKP**	**09 18 14.3**	**+1.9**		
MOY	**Mondy**	**150.36**	**84**	*e*PKIKP	**PKPbc**	**09 18 13.4**	**+0.2**		
MOY				pmax	pmax				
	comp=Z,76nm,1.8s								
SONM	**Songino Array**	**150.52**	**94**	PKPbc	**PKPbc**	**09 18 13.3**	**-0.4**		
	comp=Z,6.5nm,0.8s,baz=214,slow=2.4,SNR=31								
SONA1	**Songino Array**	**150.53**	**94**	*e*PKPbc	**PKPbc**	**09 18 13.1**	**-0.7**		
BMRM	**Bremner River**	**150.65**	**298**	*e*PKPdf	**PKPdf**	**09 18 09.2**	**+1.2**		
ZAK	**Zakamensk**	**150.68**	**88**	*e*PKIKP	**PKPdf**	**09 18 10.5**	**+2.1**		
ZAK				pmax	pmax				
	comp=Z,29nm,1.2s								
EGAK	**Eagle**	**150.84**	**307**	*e*PKPdf	**PKPdf**	**09 18 10.3**	**+2.2**		
EYAK	**Cordova Ski Ar**	**150.95**	**297**	*e*PKPbc	**PKPbc**	**09 18 15.7**	**+1.6**		
MENT	**Mentasta**	**151.13**	**302**	*e*PKPbc	**PKPbc**	**09 18 14.6**	**0.0**		
DOT	**Dot Lake**	**151.56**	**304**	*e*PKPdf	**PKPdf**	**09 18 11.6**	**+2.3**		
TLY	**Talaya**	**151.67**	**86**	*e*PKIKP	**PKPbc**	**09 18 15.7**	**-0.4**		
TLY				pmax	pmax				
	comp=Z,22nm,1.5s								
TLY	**Talaya**	**151.67**	**86**	*e*PKPbc	**PKPbc**	**09 18 16.2**	**0.0**		
KSAR	**Wonju Array Be**	**151.81**	**134**	PKIKP	**PKPbc**	**09 18 16.7**	**-0.1**		
KSAR	**Wonju Array Be**	**151.81**	**134**	PKPbc	**PKPbc**	**09 18 16.7**	**-0.1**		
KSRS	**Korea Array**	**151.83**	**134**	PKPbc	**PKPbc**	**09 18 16.7**	**-0.2**		
	comp=Z,2.2nm,0.8s,baz=226,slow=2.2,SNR=7.0								
KS01	**Wonju Array Si**	**151.84**	**134**	*e*PKPbc	**PKPbc**	**09 18 16.5**	**-0.4**		
PAX	**Paxson**	**151.88**	**302**	*e*PKIKP	**PKPbc**	**09 18 16.9**	**+0.6**		
PAX	**Paxson**	**151.88**	**302**	*e*PKPbc	**PKPbc**	**09 18 16.9**	**+0.6**		
SCM	**Sheep Creek Mo**	**152.21**	**299**	*e*PKIKP	**PKPbc**	**09 18 17.8**	**+0.7**		
SCM	**Sheep Creek Mo**	**152.21**	**299**	*e*PKPbc	**PKPbc**	**09 18 17.8**	**+0.7**		
IRK	**Irkutsk**	**152.32**	**86**	*e*PKIKP	**PKPdf**	**09 18 13.3**	**+2.5**		
IRK				pmax	pmax				
	comp=Z,36nm,2.1s								
SML	**Sawmill**	**152.63**	**298**	*e*PKIKP	**PKPbc**	**09 18 18.9**	**+0.9**		
SML	**Sawmill**	**152.63**	**298**	*e*PKPbc	**PKPbc**	**09 18 18.9**	**+0.9**		
DHY	**Denali Highway**	**152.72**	**301**	*e*PKPbc	**PKPbc**	**09 18 18.8**	**+0.5**		
KDAK	**Kodiak Island**	**152.74**	**288**	*i* PKIKP	**PKPbc**	**09 18 18.1**	**-0.2**		
PMR	**Palmer**	**152.89**	**297**	*e*PKIKP	**PKPbc**	**09 18 19.5**	**+1.0**		
PMR	**Palmer**	**152.89**	**297**	*e*PKPbc	**PKPbc**	**09 18 19.5**	**+1.0**		
RC01	**Rabbit Creek A**	**152.95**	**296**	*e*PKPbc	**PKPbc**	**09 18 19.2**	**+0.6**		
IL1	**Eielson Array**	**153.12**	**305**	*e*PKPdf	**PKPdf**	**09 18 12.0**	**+0.5**		
IL1				*e*PKPbc	**PKiKP**	**09 18 20.2**	**+1.1**		
ILAR	**Eielson Array**	**153.12**	**305**	PKPbc	**PKPbc**	**09 18 16.4**	**-2.5**		
	comp=Z,2.3nm,0.7s,baz=204,slow=0.3,SNR=8.9								
ILB	**Eielson Array**	**153.12**	**305**	*e*PKPbc	**PKPbc**	**09 18 20.2**	**+1.2**		
CCB	**Clear Creek Bu**	**153.46**	**304**	*e*PKPbc	**PKPbc**	**09 18 20.4**	**+0.8**		
WRH	**Wood River Hil**	**153.51**	**304**	*e*PKPdf	**PKPdf**	**09 18 12.9**	**+0.8**		
COLA	**College**	**153.55**	**305**	*e*PKIKP	**PKPbc**	**09 18 23.0**	**+3.2**		
COLA	**College**	**153.55**	**305**	*e*PKPbc	**PKPbc**	**09 18 22.9**	**+3.2**		
MCK	**McKinley**	**153.61**	**302**	*e*PKIKP	**PKPdf**	**09 18 14.6**	**+2.3**		
MCK	**McKinley**	**153.61**	**302**	*e*PKPdf	**PKPdf**	**09 18 14.6**	**+2.3**		
MCK				*e*PKPbc	**PKiKP**	**09 18 23.4**	**+3.2**		
MDM	**Murphy Dome**	**153.73**	**305**	*e*PKPbc	**PKPbc**	**09 18 23.4**	**+3.1**		
MJAR	**Matsushiro Arr**	**154.04**	**152**	PKPbc	**PKPbc**	**09 18 22.7**	**+0.8**		
	comp=Z,0.5nm,0.5s,baz=185,slow=2.0,SNR=5.2								
TRF	**Thorofare Moun**	**154.09**	**301**	*e*PKPbc	**PKPbc**	**09 18 20.6**	**-0.7**		
KTH	**Kantishna Hill**	**154.39**	**301**	*e*PKPbc	**PKPbc**	**09 18 22.2**	**+0.4**		
BPAW	**Bear Paw Mtn.**	**154.59**	**302**	*e*PKPdf	**PKPdf**	**09 18 14.3**	**+0.7**		
BPAW				*e*PKPbc	**PKiKP**	**09 18 23.0**	**+0.9**		
PPLA	**Purkeypile**	**154.71**	**299**	*e*PKPdf	**PKPdf**	**09 18 14.4**	**+0.4**		
CN2	**Changchun**	**156.35**	**123**	*e*PKP	**PKPdf**	**09 18 17.3**	**+0.7**		
TT01	**Tatalina**	**156.37**	**298**	*e*PKPdf	**PKPdf**	**09 18 17.3**	**+1.2**		
USRK	**Ussuriysk Ar.**	**159.22**	**133**	PKPab	**PKPab**	**09 18 57.2**	**-0.3**		
	comp=Z,0.6nm,0.5s,baz=220,slow=3.8,SNR=2.7								
PETK	**Petropavlovsk-**	**172.02**	**200**	PKPab	**PKPab**	**09 19 57.6**	**+4.0**		
	comp=Z,3.9nm,0.9s,baz=101,slow=6.2,SNR=4.9								

JMA 16 09:02:19.6±0.2, 37.96N×143.25E, h44km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.58**	**289**	P	Pn	09 02 45.9	+0.8
JIO				*e*S	Sn	09 03 04.7	+0.4
OFUJ	**Ofunato**	**1.67**	**313**	P	Pn	09 02 47.0	+0.6
OFUJ				S	Sn	09 03 07.2	+0.6
JMK	**Ichinoseki**	**1.88**	**302**	P	Pn	09 02 50.3	+1.1
JMK				*e*S	Sn	09 03 13.0	+1.4
JMM	**Marumori**	**1.95**	**268**	P	Pn	09 02 50.9	+0.8
JMM				*e*S	Sn	09 03 14.0	+0.7
JFK	**Kawauchi**	**1.98**	**253**	P	Pn	09 02 50.7	+0.1
JFK				*e*S	Sn	09 03 13.8	-0.4
JOM	**Ohasama**	**2.15**	**315**	P	Pn	09 02 54.3	+1.3
JOM				*e*S	Sn	09 03 19.7	+1.3
JFT	**Otama**	**2.35**	**260**	P	Pn	09 02 57.3	+1.6
JFT				S	Sn	09 03 25.0	+1.6
JYK	**Kaneyama**	**2.46**	**294**	P	Pn	09 02 58.9	+1.6
JYK				*e*S	Sn	09 03 28.0	+1.9
JAW	**Awa shima**	**3.19**	**280**	P	Pn	09 03 09.5	+2.3
JAG	**Ashikaga**	**3.40**	**244**	P	Pn	09 03 10.8	+0.7
JAG				*e*S	Sn	09 03 49.4	+0.3
JOT	**Ohata**	**3.82**	**334**	*e*S	Sn	09 03 59.1	-0.3
MAT	**Matsushiro**	**4.26**	**252**	P	Pn	09 03 24.7	+2.7
MAT				S	Sn	09 04 13.7	+3.2

*ISCJB **16** 09:03:01.9±1.0, 48.67N±0.07×77.78E±0.1, h0km, Error ellipse: s-maj=13.4km s-min=10.1km az=17.9*
*NNC **16** 09:03:02.8±2.5, 48.64N×78.42E, h0km, mb3.2, mpv2.8, Error ellipse: s-maj=23.6km s-min=18.5km az=113.0, Suspected Mining explosion.*
*IDC **16** 09:03:03.2±1.3, 48.72N×77.93E, h0km, mb1 3.2/4, mb1mx3.1/34, mbtmp3.2/4, ML2.4/3, Error ellipse: s-maj=17.6km s-min=10.2km az=53.0*

ISC 16 09:03:02.9±1.2, 48.68N±0.09×77.78E±0.06, h0km, n8, σ1s17/12, 4C-2D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KURBB	**Kurchatov Arra**	**2.00**	**14**	**Pn**	**Pn**	**09 03 37.8**	**-0.2**
	0.9nm,0.3s,baz=200,slow=16,SNR=40						
KURBB				Lg	Lg	09 04 04.2	
	0.5nm,0.3s,baz=203,slow=26,SNR=10						
KURBB	**Kurchatov Arra**	**2.00**	**14**	⇓Pn	**Pn**	**09 03 37.7**	**-0.2**
	19nm,0.8s						
KURBB				⇑Sn	**Sn**	**09 04 04.5**	**+0.8**
	25nm,0.8s						
MK31	**Makanchi Array**	**3.58**	**120**	⇑Pg	**Pn**	**09 04 00.1**	**+0.4**
	0.2nm,0.3s,baz=318,slow=17,SNR=6.8						
MK31				⇑Lg	Lg	09 04 46.1	
	3.0nm,0.8s,baz=309,slow=26,SNR=7.8						
MKAR	**Makanchi Array**	**3.58**	**120**	Pn	**Pn**	**09 03 59.9**	**+0.3**
	0.2nm,0.3s,baz=305,slow=12,SNR=8.2						
MKAR				Lg	Lg	09 04 53.1	
	0.5nm,0.3s,baz=317,slow=22,SNR=8.9						
OTUK	**Ortayu**	**3.65**	**265**	⇓Pn	**Pb**	**09 04 07.3**	**-0.9**
	3.5nm,0.8s						
OTUK				⇑Sn	**Sb**	**09 04 54.5**	**+1.5**
	7.7nm,1.0s						

BVAR	**Borovoye Array**	**6.39**	**316**	Pn	**Pn**	**09 04 39.6**	**+1.4**		
	0.2nm,0.3s,baz=93,slow=14,SNR=2.9								
BVAR				Sn	**Sn**	**09 05 50.3**	**-1.4**		
	0.1nm,0.3s,baz=123,slow=21,SNR=3.6								
BVAR				Lg	Lg	09 06 21.0			
	0.3nm,0.3s,baz=134,slow=22,SNR=3.8								
ZALV	**Zalesovo Beam**	**6.87**	**37**	Pn	**Pn**	**09 04 46.0**	**+1.2**		
	0.2nm,0.3s,baz=228,slow=15,SNR=4.1								
ZALV				Sn	**Sn**	**09 06 02.0**	**-1.7**		
	0.2nm,0.3s,baz=218,slow=35,SNR=3.7								
GEYT	**Alibeck**	**17.84**	**240**	Pn	**P**	**09 07 13.0**	**-0.2**		
	1.8nm,0.3s,baz=46,slow=19,SNR=3.6								

*ISK **16** 09:06:25.4, 36.81N×34.59E, h17km, ML2.0*
*ISCJB **16** 09:06:26.3±0.7, 36.96N±0.04×34.66E±0.06, h7km±6km, Error ellipse: s-maj=8.1km s-min=6.6km az=41.7*
*CSEM **16** 09:06:26.5±0.4, 36.96N×34.66E, h8km, ML2.0, Error ellipse: s-maj=11.2km s-min=7.3km az=140.0*
*DDA **16** 09:06:30.0, 36.95N×34.05E, h7km, Md2.8*

ISC 16 09:06:26.3±0.9, 36.92N±0.04×34.64E±0.03, h11km±7km, n18, σ1s05/25, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MERS	**Mersin**	**0.11**	**239**	PG	**Pg**	**09 06 29.2**	**-0.1**
MERS				SG	**Sg**	**09 06 31.5**	**+0.2**
MERS	**Mersin**	**0.11**	**239**	*i* Pg	**Pg**	**09 06 29.2**	**-0.1**
MERS				*i* Sg	**Sg**	**09 06 31.5**	**+0.2**
KARA	**Karaisali**	**0.47**	**45**	*e*PG	**Pb**	**09 06 37.2**	**+0.5**
KARA				*e*SG	**Sb**	**09 06 46.3**	**+2.6**
KARA	**Karaisali**	**0.47**	**45**	*e*Pg	**Pb**	**09 06 37.2**	**+0.5**
KIZK	**Mersin**	**0.59**	**222**	*i* P	**Pb**	**09 06 39.0**	**+0.3**
KIZK				*i* S	**Sb**	**09 06 47.0**	**-0.1**
KIZK	**Mersin**	**0.59**	**222**	P	**Pb**	**09 06 39.0**	**+0.3**
KIZK				S	**Sb**	**09 06 47.0**	**-0.1**
KERG	**Konya-Eregli**	**0.64**	**320**	*i* P	**Pb**	**09 06 39.0**	**-0.6**
KERG				*i* S	**Sg**	**09 06 46.6**	**-0.6**
KRTS	**Karatas**	**0.69**	**120**	*e*PG	**Pg**	**09 06 39.1**	**-0.6**
KRTS	**Karatas**	**0.69**	**120**	*e*Pg	**Pg**	**09 06 39.1**	**-0.6**
KOZT	**Kozan**	**1.10**	**59**	*e*PN	**Pg**	**09 06 47.9**	**+0.4**
KOZT	**Kozan**	**1.10**	**59**	*e*Pn	**Pg**	**09 06 47.9**	**+0.4**
NIG	**Nigde**	**1.19**	**359**	*e*PN	**Pb**	**09 06 48.9**	**-0.1**
NIG	**Nigde**	**1.19**	**359**	*e*Pn	**Pb**	**09 06 48.9**	**-0.1**
ERMK	**Ermenek**	**1.41**	**259**	*i* P	**Pg**	**09 06 53.8**	**+0.3**
ERMK				*i* S	**Sg**	**09 07 13.9**	**+2.1**
ERMK	**Ermenek**	**1.41**	**259**	P	**Pg**	**09 06 53.8**	**+0.3**
ERMK				S	**Sg**	**09 07 13.9**	**+2.1**
CDAG	**Cicekdag**	**2.71**	**356**	*i* P	Pn	09 07 02.4	-7.5
CDAG				*i* S	Sn	09 07 10.4	-32
COAL	**Corum-Alaca**	**3.34**	**5**	*i* P	**Pn**	**09 07 16.9**	**-1.6**
COAL				*i* S	Sn	09 07 34.8	-23
COAL	**Corum-Alaca**	**3.34**	**5**	P	**Pn**	**09 07 16.9**	**-1.6**

*DDA **16** 09:31:05.8, 39.73N×30.76E, h7km, Ml2.6*
*ISCJB **16** 09:31:06.8±0.4, 39.71N±0.03×30.77E±0.05, h11km, Error ellipse: s-maj=5.7km s-min=4.0km az=165.3*
*CSEM **16** 09:31:06.2±0.1, 39.72N×30.78E, h2km, MD2.7, Error ellipse: s-maj=3.5km s-min=2.6km az=67.0*
*ISK **16** 09:31:06.3, 39.73N×30.83E, h8km, MD2.7*

ISC 16 09:31:06.7±0.9, 39.73N±0.02×30.78E±0.03, h11km, n40, σ0s53/46, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ESKT	**Eskisehir**	**0.21**	**166**	PG	**Pg**	**09 31 10.5**	**-0.8**
ESKT				*e*SG	**Sg**	**09 31 14.7**	**+0.3**
ESKT	**Eskisehir**	**0.21**	**166**	*i* P	**Pg**	**09 31 10.5**	**-0.8**
ESKT	**Eskisehir**	**0.21**	**166**	*i* Pg	**Pg**	**09 31 10.5**	**-0.8**
ESKT				*e*Sg	**Sg**	**09 31 14.7**	**+0.3**
SEYT	**Eskypehyr**	**0.21**	**166**	P	**Pg**	**09 31 10.5**	**-0.8**
BORA	**Eskisehir**	**0.30**	**301**	*i* P	**Pg**	**09 31 11.5**	**-1.3**
BORA	**Eskisehir**	**0.30**	**301**	P	**Pg**	**09 31 11.5**	**-1.3**
SVRH	**Sivrihisar-ESK**	**0.64**	**116**	*e*PG	**Pg**	**09 31 18.2**	**-0.8**
SVRH	**Sivrihisar-ESK**	**0.64**	**116**	*e*Pg	**Pg**	**09 31 18.3**	**-0.8**
GULT	**Gulveren**	**0.73**	**344**	*e*PG	**Pg**	**09 31 21.0**	**+0.1**
GULT	**Gulveren**	**0.73**	**344**	*e*Pg	**Pg**	**09 31 21.0**	**+0.1**
MDUB	**Mudurnu**	**0.81**	**23**	*e*PG	**Pg**	**09 31 22.2**	**-0.1**
MDUB	**Mudurnu**	**0.81**	**23**	*e*Pg	**Pg**	**09 31 22.2**	**-0.1**
BTAS	**Taskesti**	**0.86**	**11**	*i* P	**Pg**	**09 31 23.0**	**-0.3**
BTAS	**Taskesti**	**0.86**	**11**	P	**Pg**	**09 31 23.0**	**-0.3**
CAVI	**Cavuskoy**	**0.86**	**303**	*e*PG	**Pb**	**09 31 23.8**	**0.0**
CAVI	**Cavuskoy**	**0.86**	**303**	*e*Pg	**Pb**	**09 31 23.8**	**0.0**
TVSB	**Tavsanli**	**1.06**	**255**	*e*PN	**Pn**	**09 31 27.7**	**+0.1**
TVSB	**Tavsanli**	**1.06**	**255**	*e*Pn	**Pn**	**09 31 27.7**	**+0.1**
ADVT	**Abdulvahap**	**1.07**	**312**	*e*PN	**Pn**	**09 31 27.4**	**-0.2**
ADVT	**Abdulvahap**	**1.07**	**312**	*e*Pn	**Pn**	**09 31 27.4**	**-0.2**
SAHE	**Sakarya_HENDEK**	**1.12**	**3**	*i* S	**Sg**	**09 31 43.3**	**+0.3**
SAHE	**Sakarya_HENDEK**	**1.12**	**3**	S	**Sg**	**09 31 43.3**	**+0.3**
IZI	**Iznik**	**1.18**	**302**	*e*PN	**Pg**	**09 31 30.0**	**+0.7**
IZI	**Iznik**	**1.18**	**302**	*e*Pn	**Pg**	**09 31 30.0**	**+0.7**
SHUT	**Suhut-Afyon**	**1.19**	**189**	*e*PN	**Pg**	**09 31 29.8**	**+0.2**
SHUT	**Suhut-Afyon**	**1.19**	**189**	*e*Pn	**Pg**	**09 31 29.8**	**+0.2**
KIZT	**Kizilcal**	**1.20**	**135**	*e*PN	**Pg**	**09 31 30.0**	**+0.2**
KIZT	**Kizilcal**	**1.20**	**135**	*e*Pn	**Pg**	**09 31 30.0**	**+0.2**
GEDZ	**Gediz**	**1.27**	**238**	*e*PN	**Pg**	**09 31 31.0**	**0.0**
GEDZ	**Gediz**	**1.27**	**238**	*e*Pn	**Pg**	**09 31 31.0**	**0.0**
HRT	**Hereke**	**1.39**	**322**	*e*PN	**Pb**	**09 31 32.8**	**+0.1**
HRT	**Hereke**	**1.39**	**322**	*e*Pn	**Pb**	**09 31 32.8**	**+0.1**
GEMT	**Gemlik**	**1.41**	**300**	*e*PN	**Pg**	**09 31 33.3**	**-0.5**
GEMT	**Gemlik**	**1.41**	**300**	*e*Pn	**Pg**	**09 31 33.3**	**-0.5**
KAND	**Kocaeli-Kandir**	**1.44**	**342**	*i* P	**Pn**	**09 31 32.1**	**-0.6**
KAND				*i* S	**Sg**	**09 31 53.2**	**+0.2**
KAND	**Kocaeli-Kandir**	**1.44**	**342**	P	**Pn**	**09 31 32.1**	**-0.6**
KAND				S	**Sg**	**09 31 53.2**	**+0.2**
BCAM	**Yenicaga**	**1.46**	**42**	*i* P	**Pb**	**09 31 33.6**	**-0.4**
BCAM				*i* S	**Sg**	**09 31 54.7**	**+0.8**
BCAM	**Yenicaga**	**1.46**	**42**	P	**Pb**	**09 31 33.6**	**-0.4**
BCAM				S	**Sg**	**09 31 54.7**	**+0.8**
LOD	**Lodumlu**	**1.53**	**83**	*e*PN	**Pn**	**09 31 34.5**	**+0.4**
LOD	**Lodumlu**	**1.53**	**83**	*e*Pn	**Pn**	**09 31 34.5**	**+0.4**

DDA 16 09:31:26.4, 39.04N×29.09E, h7km, Md2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.29**	**270**	*i* P	Pg	09 31 32.8	+0.6
DEMI				*i* S	Sg	09 31 36.9	+0.7
GDZ	**Gediz**	**0.31**	**81**	*i* S	Sg	09 31 37.4	+0.8
GDZ	**Gediz**	**0.31**	**81**	*i* P	Pg	09 31 29.6	-2.9
GDZ				*i* S	Sg	09 31 37.5	+0.8
GDZ	**Gediz**	**0.31**	**81**	S	Sg	09 31 37.4	+0.8
MANT	**Manisa**	**0.69**	**217**	*i* P	Pg	09 31 40.3	+0.6
MANT				*i* S	Sg	09 31 49.7	+0.9

*BJI **16** 09:36:43.5, 9.25N×92.72E, h38km, mb4.7/40, mB4.8/29, Ms4.3/12, Ms7 4.0/15*
*MOS **16** 09:36:46.0±0.9, 9.75N×92.75E, h33km, mb4.7/10, Error ellipse: s-maj=10.5km s-min=6.8km az=98.6*
*NEIC **16** 09:36:48.0±0.3, 9.69N×92.62E, h35km, mb4.6/13, Error ellipse: s-maj=8.8km s-min=4.6km az=55.0*
*ISCJB **16** 09:36:49.0±0.6, 9.70N±0.03×92.72E±0.03, h61km±5km, mb4.4/58, Error ellipse: s-maj=5.7km s-min=3.6km az=40.0*
*IDC **16** 09:36:50.1±1.4, 9.82N×92.89E, h46km±11km, mb4.0/27, mb1 4.1/28, mb1mx3.9/44, mbtmp4.2/28, ML4.0/1, MS3.9/5, Ms1 3.9/5, ms1mx3.4/47, Error ellipse: s-maj=17.2km s-min=10.1km az=53.0*
*DJA **16** 09:36:59.9±1.3, 10.01N±4.4×9.03E±1.4, h85km±13km, M4.5/11, mb4.4/11, mB4.8/5, MLv4.7/4, Mw(mB)4.1/5*
*BKK **16** 09:37:22.1±2.1, 11.01N±9.9×9.05E±1.9, h10km, M4.6/14, mB4.3/1, mb4.6/14, Mw(mB)3.4/1*

ISC 16 09:36:50.8±0.8, 9.77N±0.05×92.73E±0.05, h56km±6km, n163, σ1s56/176, mb4.4/58, MS4.0/4, 6C-1D, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PBA	**Port Blair**	**1.88**	**0**	*e*P	Pn	09 37 20.2	-0.3
PBA				*e*S	Sn	09 37 43.6	+0.5
PBA				IAML		09 37 52.6	
	comp=E,7μm,0.0s						
PBA				IAML		09 37 55.9	
	comp=N,8μm,0.1s						
DGPR	**DIGLIPUR**	**3.40**	**3**	*e*P	**Pn**	**09 37 42.2**	**+0.9**
DGPR				*e*S	**Sn**	**09 38 21.4**	**+1.0**

LHMI	**Lhok Sumawe**	**6.15**	**137**	*e*Pn	**Pn**	**09 38 17.0**	**-2.1**		
PHET	**Kaeng Krachan**	**7.45**	**65**	P	**Pn**	**09 38 37.8**	**+0.9**		
	comp=N,29nm,0.8s,comp=N,304nm								
SRDT	**SRDT**	**7.73**	**53**	P	**Pn**	**09 38 42.5**	**+1.7**		
	comp=N,334nm,1.1s								
TPTI		**7.83**	**145**	P	Pn	09 38 49.2	+7.1		
UMPA	**Umpang Tak**	**8.75**	**42**	P	**Pn**	**09 38 56.4**	**+1.6**		
	comp=N,34nm,0.8s								
KULM	**Kulim**	**9.02**	**119**	*e*Pn	**Pn**	**09 38 58.0**	**-0.4**		
KULM				*e*Sn	**Sn**	**09 40 38.2**	**-0.4**		
PSI	**Prapat**	**9.26**	**138**	*e*P	**Pn**	**09 39 01.7**	**-0.1**		
PSI	**Prapat**	**9.26**	**138**	*e*Pn	**Pn**	**09 39 01.7**	**-0.1**		
IPM	**Ipoh**	**9.76**	**122**	*e*Pn	**Pn**	**09 39 04.5**	**-4.1**		
IPM				*e*Sn	**Sn**	**09 40 56.8**	**0.0**		
SUKH	**Sukhothai**	**10.18**	**40**	P	**Pn**	**09 39 17.1**	**+2.8**		
	comp=N,11nm,1.1s								
PBKT	**Sadao Pong**	**10.49**	**49**	P	**Pn**	**09 39 19.7**	**+1.2**		
	comp=N,43nm,1.2s								
CM01	**Chiang Mai Arr**	**10.51**	**34**	*e*Pn	**Pn**	**09 39 19.2**	**+0.4**		
CM31	**Chiang Mai Arr**	**10.53**	**34**	*e*Pn	**Pn**	**09 39 20.0**	**+1.0**		
CMAR	**Chiang Mai Arr**	**10.53**	**34**	P	**Pn**	**09 39 19.9**	**+0.9**		
	comp=N,2.5nm,0.3s,baz=226,slow=15,SNR=28								
CMAR				LR	LR	09 43 14.6			
	comp=N,364nm,21.6s,baz=208,slow=37								
CHTO	**Chiang Mai**	**10.82**	**33**	P	**Pn**	**09 39 26.5**	**+3.5**		
	comp=N,112nm,1.1s								
CHTO	**Chiang Mai**	**10.82**	**33**	*e*P	**Pn**	**09 39 23.2**	**+0.1**		
CHTO	**Chiang Mai**	**10.82**	**33**	*e*Pn	**Pn**	**09 39 23.1**	**+0.1**		
CMMT	**Chiang Mai**	**10.82**	**33**	P	**Pn**	**09 39 26.5**	**+3.4**		
	comp=N,31nm,0.8s								
UTTA	**Uttaradit**	**10.98**	**43**	P	**Pn**	**09 39 28.0**	**+2.8**		
	comp=N,4.3nm,1.1s								
LOEI	**Loei**	**11.31**	**46**	P	Pn	09 39 34.9	+5.2		
	comp=N,20nm,0.9s								
PAYA	**Payao**	**11.77**	**35**	P	**Pn**	**09 39 39.2**	**+3.1**		
	comp=N,13nm,0.8s								
CMAI	**Chiengmai2**	**11.80**	**30**	P	Pn	09 39 41.9	+5.3		
VIS	**Vishakhapatnam**	**12.08**	**312**	*e*P	**Pn**	**09 39 37.6**	**-2.6**		
VIS				*i* P	**Pn**	**09 39 38.9**	**-1.3**		
VIS				*i* x	Sn	09 41 42.5	-11		
CHLP	**Challavanipeta**	**12.09**	**317**	*e*Pn	**Pn**	**09

comp=Z,7.0nm,0.5s
WMQ pmax pmax
comp=Z,82nm,3.7s
WMQ LR LR
comp=Z,270nm,20.6s
HHC Hu-ho-hao-te 35.16 25 *e*P **P 09 43 42.5 +3.1**
HHC pmax pmax
comp=Z,11nm,1.0s
HHC pmax pmax
comp=Z,120nm,7.4s
AAK Ala-Archa 36.43 337 P **P 09 43 51.5 +1.2**
comp=Z,2.1nm,0.4s,baz=163,slow=7.1,SNR=5.2
AAK ScP **ScP 09 49 57.6 +2.1**
comp=Z,1.2nm,0.3s,baz=161,slow=3.0,SNR=4.0
AAK Ala-Archa 36.43 337 *e*P **P 09 43 50.4 +0.1**
AAK pmax pmax
comp=Z,7.0nm,1.1s
FRU Bishkek 36.55 337 *e*P P 09 44 05.0 +14
BJI Beijing 36.65 31 P **P 09 43 52.1 +0.1**
BJI pmax pmax
comp=Z,13nm,0.7s
MK01 Makanchi Array 37.93 348 *e*P **P 09 44 02.6 -0.2**
MK31 Makanchi Array 37.96 348 *e*P **P 09 44 02.1 -0.9**
MK31 Makanchi Array 37.96 348 *e*P **P 09 44 02.1 -0.9**
MKAR Makanchi Array 37.96 348 P **P 09 44 02.6 -0.4**
comp=Z,2.2nm,0.6s,baz=171,slow=7.9,SNR=25
MKAR PcP **PcP 09 46 18.3 +0.4**
comp=Z,0.5nm,0.5s,baz=196,slow=6.1,SNR=2.7
KKAR Karatay Array 38.46 334 *e*P **P 09 44 06.1 -1.2**
KKAR Karatay Array 38.46 334 *e*P **P 09 44 06.0 -1.2**
SONM Songino Array 39.66 14 P **P 09 44 16.9 -0.4**
comp=Z,3.2nm,0.7s,baz=198,slow=7.4,SNR=16
SONM PcP **PcP 09 46 24.9 +1.5**
comp=Z,0.9nm,0.5s,baz=214,slow=4.9,SNR=4.4
SONA1 Songino Array 39.67 14 *e*P **P 09 44 16.9 -0.6**
ZAK Zakamensk 41.42 10 *e*P **P 09 44 27.2 -4.6**
ZAK pmax pmax
comp=Z,3.0nm,1.4s
GEYT Alibeck 41.87 318 P **P 09 44 37.8 +2.1**
comp=Z,5.7nm,0.5s,baz=156,slow=7.8,SNR=8.7
KSAR Wonju Array Be 41.97 43 P **P 09 44 35.1 -1.3**
KSAR Wonju Array Be 41.97 43 P **P 09 44 35.1 -1.3**
KSRS Korea Array 42.00 43 P **P 09 44 35.1 -1.5**
comp=Z,1.9nm,0.4s,baz=238,slow=9.0,SNR=12
JNU Nakatsue 42.08 51 P **P 09 44 37.1 -0.3**
comp=Z,3.4nm,0.7s,baz=229,slow=11,SNR=3.3
KURBB Kurchatov Arra 42.39 347 P **P 09 44 39.5 -0.1**
comp=Z,1.5nm,0.6s,baz=168,slow=7.7,SNR=26
KURBB PcP **PcP 09 46 32.8 +0.8**
comp=Z,0.7nm,0.6s,baz=164,slow=2.9,SNR=6.2
KURBB ScP **ScP 09 50 20.0 +1.9**
comp=Z,1.2nm,0.9s,baz=165,slow=3.6,SNR=10.0
KURK Kurchatov 42.45 347 P **P 09 44 39.5 -0.6**
KURK 09 46 32.8
KURK Kurchatov 42.45 347 P **P 09 44 39.5 -0.6**
KURK PcP **PcP 09 46 32.8 +0.6**
KURK ScP **ScP 09 50 20.0 +1.6**
FITZ Fitzroy Crossi 42.69 130 P **P 09 44 41.4 -1.0**
comp=Z,2.6nm,0.4s,baz=347,slow=7.2,SNR=17
FITZ PcP **PcP 09 46 34.6 +1.0**
comp=Z,1.3nm,0.4s,baz=335,slow=4.7,SNR=6.1
FITZ Fitzroy Crossi 42.69 130 P **P 09 44 41.5 -0.9**
baz=43,SNR=8.8
FITZ Fitzroy Crossi 42.69 130 *e*P **P 09 44 41.8 -0.7**
comp=Z,2.7nm,0.5s
FITZ PcP **PcP 09 46 34.6 +1.0**
CN2 Changchun 44.21 34 *e*P **P 09 44 54.1 -0.3**
CN2 pmax pmax
comp=Z,20nm,0.6s
ZAA0 Zalesovo Array 44.52 353 *e*P **P 09 44 56.4 -0.3**
ZALV Zalesovo Beam 44.52 353 P **P 09 44 56.5 -0.2**
comp=Z,1.6nm,0.4s,baz=178,slow=7.8,SNR=10
VOSK Vostochnaya 46.32 342 *e*P **P 09 45 10.1 -0.9**
VOSK pmax pmax
comp=Z,4.0nm,0.8s
VOSK Vostochnaya 46.32 342 *e*P **P 09 45 10.1 -0.9**
comp=Z,4.4nm,0.8s
BVAR Borovoye Array 46.76 342 P **P 09 45 14.7 +0.2**
comp=Z,0.9nm,0.4s,baz=150,slow=6.7,SNR=6.6
BVAR ScP **ScP 09 50 37.7 +1.6**
comp=Z,0.9nm,0.8s,baz=162,slow=6.8,SNR=4.2
BRVK Borovoye 46.83 342 *e*P **P 09 45 14.3 -0.6**
BRVK pmax pmax
comp=Z,4.0nm,1.0s
ZRNK Zerenda 47.14 341 *e*P **P 09 45 16.3 -1.1**
ZRNK pmax pmax
comp=Z,3.0nm,0.8s
ZRNK Zerenda 47.14 341 *e*P **P 09 45 16.3 -1.1**
comp=Z,2.9nm,0.8s
ABKAR Akbulak array 47.91 331 *e*P **P 09 45 22.2 -1.3**
USRK Ussuriysk Ar. 48.24 38 P **P 09 45 25.4 -0.6**
comp=Z,4.0nm,0.9s,baz=240,slow=11,SNR=6.5
NWAO Narrogin (SRO) 48.46 152 P **P 09 45 27.7 -0.1**
comp=Z,13nm,1.1s,baz=329,slow=8.9,SNR=3.6
MJAR Matsushiro Arr 48.96 50 P **P 09 45 31.7 0.0**
comp=Z,0.9nm,0.6s,baz=253,slow=7.9,SNR=4.4
MJAR PcP **PcP 09 46 55.8 +0.5**
comp=Z,2.3nm,0.7s,baz=243,slow=3.9,SNR=10
WRKA Warakurna 48.97 136 P **P 09 45 31.7 -0.3**
baz=49,SNR=5.4
AKTO Aktyubinsk 49.63 331 P **P 09 45 37.6 +1.0**
comp=Z,1.0nm,0.5s,baz=108,slow=9.5,SNR=3.6
AKTO ScP **ScP 09 50 49.4 +1.1**
comp=Z,0.7nm,0.6s,baz=108,slow=5.4,SNR=3.6
WRA Warramunga Arr 50.49 126 P **P 09 45 42.3 -1.3**
comp=Z,6.6nm,0.4s,baz=301,slow=10.0,SNR=172
WRA PcP **PcP 09 47 01.6 +0.5**
comp=Z,0.9nm,0.4s,baz=313,slow=3.2,SNR=6.8
WRA ScP **ScP 09 50 51.1 -1.4**
comp=Z,0.7nm,0.8s,baz=320,slow=4.4,SNR=4.1
WRAB Tennant Creek 50.49 126 *ce*P **P 09 45 42.4 -1.2**
WRAB pmax pmax
comp=Z,129nm,2.5s
WRAB Tennant Creek 50.49 126 *e*P **P 09 45 42.9 -0.7**
comp=Z,23nm,1.0s
WB2 Warramunga Arr 50.50 126 *e*P **P 09 45 42.9 -0.8**
comp=Z,20nm,1.0s
BOD Bodaibo 50.66 15 *e*P **P 09 45 43.4 -0.8**
BOD pmax pmax
comp=Z,32nm,1.1s
KLR Kul'dur 51.00 32 *d*iP **P 09 45 46.5 -0.5**
ASAR Alice Springs 52.19 130 P **P 09 45 55.3 -1.0**
comp=Z,8.4nm,0.7s,baz=304,slow=7.1,SNR=105
ASAR PcP **PcP 09 47 07.8 +0.4**
comp=Z,2.4nm,0.8s,baz=304,slow=3.4,SNR=8.7
ASAR ScP **ScP 09 50 59.0 -0.8**
comp=Z,0.8nm,0.8s,baz=299,slow=4.7,SNR=5.6
ASAR S **S 09 53 13.3 -3.8**
comp=Z,0.9nm,1.0s,baz=298,slow=13,SNR=5.7
AS31 Alice Springs 52.19 130 *e*P **P 09 45 55.6 -0.7**
comp=Z,2.7nm,0.8s
AS01 Alice Springs 52.23 130 *e*P **P 09 45 56.1 -0.4**
ARU Arti 53.62 337 *c i*P P 09 46 14.0 +7.8
ARU 09 47 13.0
ARU 09 48 15.9
ARU S S 09 53 56.1 +21
ARU pmax pmax
comp=Z,7.0nm,1.7s
DDEM Demirkent 54.52 314 *i*P P 09 46 03.8 -10
ASAJ Asahikawa 54.93 42 *e*P **P 09 46 15.9 -0.1**
comp=Z,16nm,1.3s
KIV Kislovodsk 54.99 317 *e*P **P 09 46 16.2 -0.4**
KIV pmax pmax
comp=Z,6.0nm,1.1s
QIS Mount Isa 55.07 123 P **P 09 46 17.1 -0.3**
baz=55,SNR=6.9
YSS Yuzh-Sakhalins 56.18 39⇑ *e*P **P 09 46 25.7 +0.8**
YSS pmax pmax
comp=Z,17nm,1.7s
MTSU Mount Surprise 57.97 118 P **P 09 46 38.5 +0.4**
baz=58
YAK Yakutsk 58.67 19 LR LR 10 11 46.6
comp=Z,77nm,19.9s,baz=240,slow=36
YAK Yakutsk 58.67 19⇑ *e*P **P 09 46 41.3 -0.8**
YAK pmax pmax
comp=Z,16nm,0.5s
BBOO Buckleboo 59.14 138 P **P 09 46 45.2 -0.8**
baz=59
BRTR Keskin Array B 60.15 310 P **P 09 46 52.4 -0.7**
comp=Z,1.4nm,0.8s,baz=118,slow=7.1,SNR=5.4
BR231 Keskin MP Arra 60.82 310 *e*P **P 09 46 53.4 -4.2**
HTT Hallett 61.43 137 P **P 09 47 02.7 +1.1**
baz=61,SNR=4.9
QLP Quilpie 61.68 127 P **P 09 47 04.0 +0.6**
baz=62,SNR=7.1
STKA Stephens Creek 62.41 134 P **P 09 47 08.2 +0.1**
comp=Z,1.9nm,0.3s,baz=314,slow=4.8,SNR=14
STKA Stephens Creek 62.41 134 P **P 09 47 09.1 +0.9**
baz=62,SNR=12
OBN Obninsk 63.05 328 *e*P **P 09 47 11.2 -0.8**
OBN pmax pmax
comp=Z,4.0nm,0.7s
CMSA Cobar Meteorol 65.21 131 P **P 09 47 26.9 +0.3**
baz=65,SNR=17
RMQ Roma 65.23 125 P **P 09 47 29.2 +2.3**
baz=65,SNR=6.4
TIXI Tiksi 65.67 12 *ce*P **P 09 47 28.5 -0.4**
TIXI pmax pmax
comp=Z,23nm,0.7s
TIXI Tiksi 65.67 12 *e*P **P 09 47 28.3 -0.6**
comp=Z,24nm,0.7s
AKASG Malin Array Be 65.82 321 P **P 09 47 29.6 -0.6**
comp=Z,0.2nm,0.3s,baz=91,slow=4.7,SNR=5.6
KIEV Kiev 65.82 321 *i*P **P 09 47 28.8 -1.4**
KIEV pmax pmax
comp=Z,1.0nm,1.0s
PETK Petropavlovsk- 67.30 36 P **P 09 47 38.6 -1.1**
comp=Z,0.7nm,0.5s,baz=255,slow=4.3,SNR=3.6
FINES FINESS Array B 70.40 332 P **P 09 47 58.5 -0.2**
comp=Z,1.7nm,0.8s,baz=106,slow=5.9,SNR=8.6
ARCES ARCESS Array B 73.03 340 P **P 09 48 14.5 +0.1**
comp=Z,1.4nm,0.7s,baz=60,slow=7.2,SNR=4.7
LBTB Lobatse 73.94 240 LR LR 10 15 28.6
comp=Z,99nm,21.5s,baz=102,slow=31
BILL Bilibino 74.86 22 *i*P **P 09 48 23.7 -1.4**
BILL pmax pmax
comp=Z,3.0nm,0.8s
BOSA Boshof 75.42 237 P **P 09 48 31.9 +2.7**
comp=Z,2.6nm,1.1s,baz=108,slow=6.4,SNR=3.4
GEA0 GERESS Array S 75.50 318 *e*P **P 09 48 27.6 -1.7**
GERES GERESS Array B 75.50 318 P **P 09 48 29.9 +0.6**
comp=Z,0.8nm,0.5s,baz=85,slow=7.2,SNR=9.5
NOA NORSAR Array B 77.41 330 P **P 09 48 39.7 -0.1**
comp=Z,0.4nm,0.7s,baz=127,slow=3.9,SNR=3.2
TORD Torodi Ar. Bea 88.81 283 P **P 09 49 41.0 +1.6**
comp=Z,0.6nm,0.9s,baz=86,slow=5.1,SNR=2.9
CAST Castle Rocks 92.19 24 *e*P **P 09 49 54.9 +0.7**
IL1 Eielson Array 93.52 22 *e*P **P 09 49 59.1 -1.2**
ILAR Eielson Array 93.52 22 P **P 09 49 59.5 -0.8**
comp=Z,0.9nm,0.7s,baz=304,slow=4.1,SNR=12
KDAK Kodiak Island 94.48 29 *ce*P **P 09 50 05.2 +0.4**
INK Inuvik 95.56 16 *e*P **P 09 50 09.8 +0.2**
INK pmax pmax
comp=Z,1.0nm,0.4s
INK Inuvik 95.56 16 *e*P **P 09 50 09.8 +0.2**
comp=Z,1.0nm,0.4s
PDAR Pinedale Array 123.89 20 PKP **PKPdf 09 55 44.3 +1.0**
comp=Z,0.3nm,0.4s,baz=211,slow=1.7,SNR=6.4
TXAR Lajitas Array 138.03 22 PKP **PKPdf 09 56 12.3 +2.1**
comp=Z,0.4nm,0.5s,baz=180,slow=0.6,SNR=9.4
TXAR SKP 09 59 40.8
comp=Z,0.7nm,0.8s,baz=349,slow=0.9,SNR=7.0

FUNV ***16*** *09:44:51.4, 10°.79N×61°.34W, h18km, MW2.9*
ISCJB ***16*** *09:44:53.0±0.6, 10°.84N±0°.03×61°.49W±0°.03, h60km±7km, Error ellipse: s-maj=6.3km s-min=3.8km az=42.4*
TRN ***16*** *09:44:54.6, 10°.91N×61°.44W, h30km, MD3.6*
ISC 16 09:44:54.0±1.5,**10°.85N**±0°.03×**61°.52W**±0°.03,**h36**km±1km,
n24,σ**1s34/44,1C-1D,Trinidad**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TRN	**Trinidad (W)**	**0.23**	**151**	⇑*i*P		**Pn**		**09 45 01.8**	**-0.1**
TRN				*e*S		**Sn**		**09 45 06.8**	**-1.7**
TCE	**Chacachacare**	**0.28**	**236**	*e*P		**Pn**		**09 45 03.6**	**+1.6**
TCE				*e*S		**Sn**		**09 45 09.5**	**+1.1**
TPP	**Pointe-a-Pierr**	**0.54**	**173**	*e*P		**Pn**		**09 45 06.0**	**+0.8**
TPP				*e*S		**Sn**		**09 45 15.5**	**+2.5**
TBH	**Brigand Hill**	**0.58**	**130**	*e*P		**Pn**		**09 45 06.2**	**+0.4**
TBH				*e*S		**Sn**		**09 45 15.1**	**+1.1**
GUIV	**Guiria**	**0.72**	**254**	⇓*i*P		**Pn**		**09 45 08.2**	**+0.5**
GUIV				*e*S		**Sn**		**09 45 18.9**	**+1.4**
TPR	**Prospect**	**0.80**	**65**	*e*P		**Pn**		**09 45 09.6**	**+0.8**
TPR				*e*S		**Sn**		**09 45 18.1**	**-1.4**
BOT	**Bacolet**	**0.85**	**68**	*e*P		**Pn**		**09 45 10.0**	**+0.7**
BOT				*e*S		**Sn**		**09 45 19.8**	**-0.8**
TOSP	**Speyside**	**1.06**	**65**	*e*P		**Pn**		**09 45 11.8**	**-0.6**
TOSP				*e*S		**Sn**		**09 45 25.9**	**0.0**
GRGR	**Grenville**	**1.28**	**354**	*e*P		**Pn**		**09 45 15.4**	**+0.1**
GRGR				*e*S		**Sn**		**09 45 31.8**	**+0.5**
GRGR	**Grenville**	**1.28**	**354**	*e*P		**Pn**		**09 45 15.5**	**+0.1**
GRGR				*e*S		**Sn**		**09 45 32.6**	**+1.3**
GRW	**Mount Saint Ca**	**1.31**	**354**	*e*P		**Pn**		**09 45 16.3**	**+0.5**
GRW				*e*S		**Sn**		**09 45 31.8**	**-0.3**
GRHS	**Sauteurs**	**1.37**	**355**	*e*P		**Pn**		**09 45 17.0**	**+0.4**
GRHS				*e*S		**Sn**		**09 45 34.1**	**+0.6**
GRSS	**Sisters**	**1.44**	**356**	*e*P		**Pn**		**09 45 17.8**	**+0.3**
GRSS				*e*S		**Sn**		**09 45 35.7**	**+0.5**
GUNV	**Guanoco**	**1.56**	**244**	*e*P		**Pn**		**09 45 20.1**	**+0.8**
GUNV				*e*S		**Sn**		**09 45 40.7**	**+2.5**
CRUV	**Carupano**	**1.70**	**264**	*e*P		**Pn**		**09 45 20.9**	**-0.2**
CRUV				*e*S		**Sn**		**09 45 43.9**	**+2.3**
FCV	**Fort Charlotte**	**2.31**	**7**	*e*P		**Pn**		**09 45 30.2**	**+0.7**
FCV				*e*S		**Sn**		**09 45 57.1**	**+0.4**
SVB	**Belmont**	**2.42**	**6**	*e*P		**Pn**		**09 45 32.6**	**+1.6**
SVB				*e*S		**Sn**		**09 45 59.4**	**-0.1**
SVV	**Soufriere Volc**	**2.47**	**7**	*e*P		**Pn**		**09 45 32.4**	**+0.6**
SVV				*e*S		**Sn**		**09 46 00.4**	**-0.2**
ORIV	**Oritupano**	**2.57**	**227**	*e*P		**Pn**		**09 45 33.2**	**+0.1**
RIOV	**Rio Grande**	**2.78**	**186**	*e*P		**Pn**		**09 45 33.5**	**-2.6**
PCRV	**Puerto La Cruz**	**3.14**	**258**	*e*P		**Pn**		**09 45 40.8**	**-0.2**
CUPV	**Cœpira**	**4.27**	**260**	*e*P		**Pn**		**09 45 56.3**	**-0.3**
CUPV				*e*S		**Sn**		**09 46 45.7**	**+0.4**
TURV	**Turiamo**	**6.23**	**267**	*e*P		**Pn**		**09 46 23.4**	**0.0**
BAUV	**El Baul**	**6.70**	**254**	*e*P		**Pn**		**09 46 28.4**	**-1.6**
BAUV				*e*S		**Sn**		**09 47 40.5**	**-4.6**

JMA 16 09:46:13.1±0.2,**37°.41N**×**142°.64E,h13**km±3km,**M3.6,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.41**	**269**	P		Pn		09 46 38.4	-0.1
JFK				*e*S		Sn		09 46 56.8	-0.1
JIO	**Ouri**	**1.46**	**316**	P		Pn		09 46 39.5	+0.4
JIO				*e*S		Sn		09 46 57.6	-0.5
ONAJ	**Iwakimizuishiy**	**1.50**	**259**	P		Pn		09 46 40.0	+0.2
JMM	**Marumori**	**1.54**	**288**	P		Pn		09 46 40.5	+0.3
JMM				*e*S		Sn		09 47 00.0	0.0
JOU	**Okura**	**1.83**	**302**	P		Pb		09 46 45.4	-1.1
JOU				*e*S		Sb		09 47 08.6	-0.7
JFT	**Otama**	**1.84**	**274**	P		Pb		09 46 45.6	-0.9
JMK	**Ichinoseki**	**1.90**	**324**	P		Pn		09 46 46.1	+0.9
JOM	**Ohasama**	**2.32**	**333**	P		Pn		09 46 51.8	+0.9
JYK	**Kaneyama**	**2.34**	**311**	P		Pn		09 46 52.9	+1.6
MAT	**Matsushiro**	**3.65**	**258**	P		Pb		09 47 13.5	-4.0
MAT				*e*S		Sn		09 47 56.5	+4.2

GUC ***16*** *09:55:06.0±0.5, 31°.40S×71°.86W, h34km±3km, ML3.1*
ISC 16 09:55:04.6±2.7,**31°.20S**±0°.08×**71°.9W**±0°.1,**h86**km±54km,
n17,σ**0°.47/27,1C-2D,Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ROCH	**El Roble**	**1.91**	**157**	⇓*i*P		**Pn**		**09 55 35.9**	**+0.1**
ROCH				*i* S		**Sn**		**09 55 59.4**	**-0.1**
ROCH				IAML				09 56 02.8	
	comp=N,273nm,0.5s								
ROC1	**El Roble**	**1.92**	**157**	*i* P		**Pn**		**09 55 34.9**	**-0.9**
ROC1				*i* S		**Sn**		**09 55 59.2**	**-0.3**
PEL	**Peldehue**	**2.19**	**153**	⇓*i*P		**Pn**		**09 55 39.6**	**+0.4**
PEL				*i* S		**Sn**		**09 56 05.2**	**-0.4**
PEL				IAML				09 56 09.9	
	comp=E,241nm,0.7s								
RTLS	**Leoncito**	**2.29**	**106**	*i* P		**Pn**		**09 55 40.9**	**+0.1**
RTLS				*i* S		**Sn**		**09 56 09.2**	**+0.7**
AUSP	**Uspallata**	**2.36**	**116**	*i* P		**Pn**		**09 55 41.8**	**+0.1**
AUSP				*i* S		**Sn**		**09 56 10.8**	**+0.7**
RCDM	**Rinconada Maip**	**2.46**	**158**	*e*P		**Pn**		**09 55 43.2**	**+0.5**
RCDM				*i* S		**Sn**		**09 56 11.5**	**-0.5**
CLCH	**Cerro Calan**	**2.47**	**153**	⇑*i*P		**Pn**		**09 55 43.7**	**+0.7**
CLCH				*i* S		**Sn**		**09 56 12.1**	**-0.3**
CLCH				IAML				09 56 14.9	
	comp=E,135nm,0.4s								
ANTU	**Antumapu**	**2.59**	**156**	*e*P		**Pn**		**09 55 45.5**	**+1.0**
ANTU				*i* S		**Sn**		**09 56 14.8**	**-0.4**
ANTU				IAML				09 56 17.7	
	comp=N,163nm,0.2s								
AMOG	**MOGNA**	**2.92**	**86**	*i* P		**Pn**		**09 55 49.0**	**0.0**
RTLL	**Cerro Villicun**	**2.92**	**93**	*i* P		**Pn**		**09 55 49.0**	**-0.1**
RTLL				*i* S		**Sn**		**09 56 22.8**	**-0.5**
RTCV	**Cerro Valdivia**	**2.93**	**104**	*i* P		**Pn**		**09 55 49.4**	**+0.2**
ASAL	**Salagasta**	**2.94**	**119**	*i* P		**Pn**		**09 55 49.2**	**-0.1**
AAGR	**Agrelo**	**3.20**	**127**	*i* P		**Pn**		**09 55 53.1**	**+0.3**
AGUA	**GÜANDACOL**	**3.40**	**61**	*i* P		**Pn**		**09 55 55.6**	**+0.1**
AGUA				*i* S		**Sn**		**09 56 34.8**	**0.0**
VCA	**Vinchina**	**4.03**	**53**	*i* P		**Pn**		**09 56 04.3**	**+0.1**
VCA				IAML				09 56 53.1	
	comp=Z,47nm,0.3s								
ACAN	**Cantantal**	**4.14**	**106**	*i* P		**Pn**		**09 56 05.6**	**+0.1**
MRA	**San Martin**	**5.39**	**105**	*i* P		**Pn**		**09 56 22.1**	**-0.5**
MRA				IAML				09 57 59.0	
	comp=Z,17nm,0.5s								

ISK ***16*** *09:57:08.8, 39°.37N×40°.34E, h4km, MD2.3*
CSEM ***16*** *09:57:09.1±0.3, 39°.32N×40°.40E, h15km, MD2.3, Error ellipse: s-maj=9.9km s-min=5.6km az=133.0*
DDA ***16*** *09:57:10.5, 39°.43N×40°.33E, h7km, Md2.6*
ISC 16 09:57:09.6±1.0,**39°.34N**±0°.04×**40°.37E**±0°.03,**h9**km±9km,
n13,σ**0°.52/22,Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YEDI	**Yedisu-Bingol**	**0.17**	**52**	*e*PG		**Pg**		**09 57 13.1**	**-0.2**
YEDI				*e*SG		**Sg**		**09 57 16.2**	**+0.3**
YEDI	**Yedisu-Bingol**	**0.17**	**52**	*e*Pg		**Pg**		**09 57 13.1**	**-0.2**
YEDI				*e*Sg		**Sg**		**09 57 16.2**	**+0.3**
BNGB	**Bing˝¶l**	**0.42**	**145**	*e*PG		**Pg**		**09 57 17.7**	**-0.1**
BNGB				*e*SG		**Sb**		**09 57 25.6**	**-0.1**
BINT	**Bingol**	**0.47**	**169**	*e*Pg		**Pg**		**09 57 17.7**	**-1.1**
BINT				*e*Sg		**Sg**		**09 57 25.6**	**+0.7**
TNCL	**Tunceli-Merkez**	**0.68**	**251**	*i* P		**Pb**		**09 57 23.4**	**-0.3**
TNCL				*i* S		**Sb**		**09 57 34.1**	**+0.9**
TNCL	**Tunceli-Merkez**	**0.68**	**251**	P		**Pb**		**09 57 23.4**	**-0.3**
TNCL				S		**Sb**		**09 57 34.1**	**+0.9**
KOPT	**Kop Dagi**	**0.69**	**8**	*i* P		**Pg**		**09 57 22.4**	**-0.6**
KOPT	**Kop Dagi**	**0.69**	**8**	P		**Pg**		**09 57 22.4**	**-0.6**
BNGL	**BINGOL**	**0.71**	**122**	*i* P		**Pb**		**09 57 24.5**	**+0.2**
BNGL				*i* S		**Sn**		**09 57 37.4**	**+0.2**
PTK	**Pertek**	**0.88**	**240**	*e*PG		**Pg**		**09 57 26.2**	**-0.4**
PTK				*e*SG		**Sb**		**09 57 39.0**	**-0.1**
PTK	**Pertek**	**0.88**	**240**	*e*Pg		**Pg**		**09 57 26.2**	**-0.4**
PTK				*e*Sg		**Sb**		**09 57 39.0**	**-0.1**
EZM	**Erzurum**	**0.95**	**53**	*e*PG		**Pg**		**09 57 27.4**	**-0.6**
KEMA	**Kemaliye**	**1.46**	**268**	*i* P		**Pg**		**09 57 37.6**	**0.0**

ISCJB ***16*** *10:07:05.4±0.4, 60°.69S±0°.07×26°.9W±0°.1, h19km, mb4.7/20, MS4.1/16, Error ellipse: s-maj=12.4km s-min=8.3km az=43.5*
IDC ***16*** *10:07:05.5±0.6, 60°.36S×27°.00W, h0km, mb4.3/8, mb1 4.3/9, mb1mx4.1/24, mbtmp4.3/9, ML5.4/1, MS4.2/17, Ms1 4.2/17, ms1mx4.1/25, Error ellipse: s-maj=24.8km s-min=18.9km az=71.0*
NEIC ***16*** *10:07:06.1±0.2, 60°.63S×27°.14W, h10km, mb5.0/15, Error ellipse: s-maj=10.1km s-min=7.5km az=224.0*
GCMT ***16*** *10:07:06.1±0.4, 60°.67S×26°.43W, h12km, MW4.9/72, Moment Tensor Solution. s15,c16; s72,c97; Duration: 0 Moment Tensor: Scale 10¹⁶Nm; Mrr0.95±.10; Mθθ-2.01±.09; Mφφ 1.06±.09; Mrθ-1.35±.28; Mθφ-1.24±.08; Mφr-1.42±.30; Best double couple: Mo2.82000×10¹⁶ NP1:φ218.00000°, δ78.00000°, λ53.00000°. NP2: φ112.00000°, δ39.00000°, λ160.00000°. Principal axes: T 2.4290, Plg44.0000°, Azm91.0000°; N 0.7860, Plg36.0000°, Azm227.0000°; P -3.2110, Plg24.0000°, Azm336.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***16*** *10:07:10.7, 60°.70S×27°.20W, h35km, mB5.3/5, Ms5.3/5, Ms7 5.0/5*
ISC 16 10:07:07.7±0.3,**60°.73S**±0°.07×**26°.84W**±0°.08,**h19**km,**n88,**
σ**2s17/90,mb4.8/20,MS4.2/16,1D,South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**12.48**	**151**	P		**Pn**		**10 10 03.4**	**-0.5**
SNAA	**Sanae**	**14.48**	**149**	P		**Pn**		**10 10 30.1**	**-1.4**
SNAA	**Sanae**	**14.48**	**149**	Pn		**Pn**		**10 10 29.7**	**-1.7**
	1.4nm,0.3s,baz=307,slow=13,SNR=48								
SNAA				Sn		**Sn**		**10 13 05.4**	**-5.8**
	0.2nm,0.3s,baz=324,slow=19,SNR=2.6								
SNAA				LR		LR		10 14 57.1	
	comp=Z,898nm,19.9s,baz=273,slow=32								
SNAA	**Sanae**	**14.48**	**149**	*e*Pn		**Pn**		**10 10 30.6**	**-0.8**
SNAA				*e*Sn		**Sn**		**10 13 05.2**	**-6.0**
SNAA				Sn		**Sn**		**10 13 05.4**	**-5.8**
PMSA	**Palmer Station**	**17.33**	**240**	P		**P**		**10 11 10.2**	**+0.8**
	1.2nm,0.3s,baz=65,slow=8.9,SNR=8.7								
PMSA				LR		LR		10 17 17.7	
	comp=Z,763nm,18.0s,baz=46,slow=35								
PMSA	**Palmer Station**	**17.33**	**240**	*e*Pn		**Pn**		**10 11 07.2**	**-0.9**
	246nm,2.0s								
SYO	**Syowa Base**	**27.97**	**135**	⇓*e*pP		pP		10 13 02.0	-0.3
QSPA	**South Pole Qui**	**29.51**	**180**	*e*P		**P**		**10 13 10.9**	**+0.4**
	25nm,1.1s								
TRQA	**Tornquist**	**31.58**	**300**	*e*P		**P**		**10 13 27.4**	**-1.5**
	50nm,1.6s								
PLCA	**Paso Flores**	**33.27**	**287**	LR		LR		10 26 44.4	
	comp=Z,224nm,18.6s,baz=158,slow=36								
MAW	**Mawson**	**36.35**	**140**	P		**P**		**10 14 12.3**	**+2.5**
	3.0nm,0.9s,baz=242,slow=11,SNR=6.4								
MAW				LR		LR		10 27 49.3	
	comp=Z,273nm,19.5s,baz=242,slow=34								
MAW	**Mawson**	**36.35**	**140**	*e*P		**P**		**10 14 11.7**	**+1.9**
	2.1nm,1.3s								
MAW				*e*PP		**PP**		**10 15 32.3**	**0.0**
ASAL	**Salagasta**	**39.18**	**297**	*i* P		**P**		**10 14 34.4**	**+0.2**
AUSP	**Uspallata**	**39.73**	**296**	*i* P		**P**		**10 14 39.6**	**+0.5**
RTLL	**Cerro Villicun**	**40.10**	**298**	*i* P		**P**		**10 14 42.0**	**+0.2**
CPUP	**Villa Florida**	**40.16**	**315**	*i* P		**P**		**10 14 42.3**	**0.0**
CPUP	**Villa Florida**	**40.16**	**315**	P		**P**		**10 14 39.4**	**-2.9**
	12nm,0.8s,baz=151,slow=5.9,SNR=11								
CPUP				LR		LR		10 29 24.7	
	comp=Z,356nm,21.6s,baz=160,slow=34								
CPUP	**Villa Florida**	**40.16**	**315**	*e*P		**P**		**10 14 40.2**	**-2.0**
AMOG	**MOGNA**	**40.44**	**298**	*i* P		**P**		**10 14 44.8**	**+0.1**
VNDA	**Vanda**	**41.89**	**183**	P		**P**		**10 14 59.6**	**+3.5**
	1.5nm,0.8s,baz=188,slow=7.3,SNR=7.4								
VNDA				LR		LR		10 30 54.4	
	comp=Z,194nm,21.8s,baz=171,sl

H10N2	**ASCENSION HYDR**	**53.60**	**15**	T	T	11 14 22.1			
	baz=180,slow=71,SNR=10								
SAML	**Samuel**	**58.29**	**317**	*e*P	**P**	**10 16 57.4**	**-3.5**		
	28nm,1.4s								
SAML				*e*PcP	**PcP**	**10 17 50.5**	**-1.5**		
LSZ	**Lusaka**	**60.01**	**66**	*e*P	**P**	**10 17 13.2**	**+0.2**		
	5.5nm,0.8s								
PTGA	**Pitinga**	**65.00**	**323**	*e*P	**P**	**10 17 44.4**	**-1.8**		
	25nm,1.8s								
DBIC	**Dimbokro**	**69.38**	**23**	P	**P**	**10 18 13.8**	**-0.2**		
	1.9nm,0.6s,baz=198,slow=9.6,SNR=3.3								
DBIC				LR	LR	10 40 21.3			
	comp=Z,134nm,22.0s,baz=154,slow=29								
OTAV	**Otavalo**	**72.45**	**305**	*e*P	**P**	**10 18 31.2**	**-2.0**		
	12nm,1.4s								
ROSC	**El Rosal**	**75.05**	**311**	LR	LR	10 54 24.0			
	comp=Z,80nm,18.6s,baz=168,slow=38								
RUSC	**La Rusia**	**75.56**	**312**	*e*P	**P**	**10 18 49.9**	**-1.5**		
	13nm,1.4s								
KMBO	**Kilima Mbogo**	**76.60**	**68**	LR	LR	10 48 55.5			
	comp=Z,280nm,20.7s,baz=262,slow=33								
TOA0	**Torodi Ar. Sit**	**77.07**	**29**	*e*P	**P**	**10 19 00.2**	**+0.9**		
TORD	**Torodi Ar. Bea**	**77.07**	**29**	P	**P**	**10 18 58.0**	**-1.3**		
	5.4nm,0.6s,baz=195,slow=6.2,SNR=44								
TORD				LR	LR	10 47 23.0			
	comp=Z,104nm,19.0s,baz=155,slow=32								
SDV	**Santo Domingo**	**77.47**	**316**	*e*P	**P**	**10 19 01.2**	**-0.7**		
	17nm,1.0s								
STKA	**Stephens Creek**	**87.24**	**170**	LR	LR	10 58 07.7			
	comp=Z,199nm,18.4s,baz=201,slow=35								
PPT	**Papeete**	**89.56**	**233**	LR	LR	10 53 50.8			
	comp=Z,144nm,18.9s,baz=154,slow=31								
ASAR	**Alice Springs**	**94.46**	**162**	P	**P**	**10 20 30.2**	**+3.8**		
	0.7nm,0.9s,baz=179,slow=4.1,SNR=5.3								
ASAR				LR	LR	11 00 45.5			
	comp=Z,272nm,19.8s,baz=176,slow=34								
AKASG	**Malin Array Be**	**119.85**	**37**	PKP	**PKPdf**	**10 25 56.1**	**+0.8**		
	0.3nm,0.3s,baz=230,slow=1.4,SNR=3.0								
PDAR	**Pinedale Array**	**122.91**	**300**	PKP	**PKPdf**	**10 26 03.4**	**+1.6**		
	0.2nm,0.5s,baz=166,slow=4.2,SNR=3.7								
CM01	**Chiang Mai Arr**	**123.12**	**113**	*e*PKPdf	**PKPdf**	**10 26 03.0**	**+0.4**		
CMAR	**Chiang Mai Arr**	**123.15**	**113**	PKP	**PKPdf**	**10 26 03.6**	**+0.9**		
	0.4nm,0.3s,baz=224,slow=3.8,SNR=2.9								
NB2	**NORSAR Subarra**	**124.92**	**21**	PKPdf	**PKPdf**	**10 26 08.3**	**+3.5**		
	comp=Z,3.9nm,1.2s,baz=202,slow=1.9								
NOA	**NORSAR Array B**	**124.92**	**21**	PKP	**PKPdf**	**10 26 06.3**	**+1.5**		
	comp=Z,2.2nm,0.9s,baz=187,slow=1.5,SNR=4.9								
MSO	**Missoula**	**128.03**	**299**	*e*PKPdf	**PKPdf**	**10 26 16.0**	**+4.7**		
FINES	**FINESS Array B**	**128.42**	**29**	PKP	**PKPdf**	**10 26 11.0**	**-0.3**		
	comp=Z,3.8nm,0.6s,baz=201,slow=7.4,SNR=7.5								
FIA1	**FINESS Array S**	**128.42**	**29**	*e*PKPdf	**PKPdf**	**10 26 14.9**	**+3.5**		
FIA1				*ep*PKPdf	**pPKPdf**	**10 26 17.5**	**-0.4**		
KSH	**Kashi**	**129.51**	**78**	*e*PKP	**PKPdf**	**10 26 15.0**	**+0.6**		
KSH				*es*ScP		10 26 29.4			
KSH				*e*PP	**PP**	**10 28 28.6**	**+3.5**		
KSH				PKS	**PKSdf**	**10 29 50.4**	**-0.5**		
KSH				SKS	**SKSdf**	**10 33 21.8**	**-2.8**		
KSH				SKKS	**SKKSac**	**10 35 15.5**	**-4.7**		
KSH				SS	**SS**	**10 45 42.4**	**-4.1**		
KSH				AMB	AMB				
	comp=Z,55nm,6.9s								
KSH				LR	LR				
	comp=Z,180nm,9.2s								
KSH				LR	LR				
	comp=Z,130nm,6.4s								
KSH				LR	LR				
	comp=Z,100nm,6.5s								
ABKAR	**Akbulak array**	**129.78**	**58**	*e*PKPdf	**PKPdf**	**10 26 14.8**	**+0.4**		
KMI	**Kunming**	**130.66**	**113**	PKP	**PKPdf**	**10 26 18.3**	**+1.1**		
GYA	**Guiyang**	**133.57**	**116**	*e*Pdif	**Pdif**	**10 23 22.1**	**+1.6**		
GYA				PKP	**PKiKP**	**10 26 23.6**	**-0.1**		
GYA				PP	**PP**	**10 28 55.8**	**+4.7**		
GYA				AMB	AMB				
	comp=Z,120nm,7.6s								
ARCES	**ARCESS Array B**	**135.21**	**23**	PKP	**PKPdf**	**10 26 25.1**	**+1.0**		
	comp=Z,3.9nm,0.9s,baz=191,slow=0.6,SNR=11								
CD2	**Chengdu**	**136.06**	**110**	PKP	**PKPdf**	**10 26 28.0**	**+1.1**		
MK01	**Makanchi Array**	**138.01**	**76**	*e*PKPdf	**PKPdf**	**10 26 31.4**	**+1.5**		
MKAR	**Makanchi Array**	**138.03**	**76**	PKhKP	PKPpre	10 26 25.1			
	comp=Z,0.2nm,0.2s,baz=222,slow=1.9,SNR=2.3								
WMQ	**Urumqi**	**138.47**	**83**	*e*PKP	**PKPdf**	**10 26 30.9**	**-0.1**		
YKA	**Yellowknife Ar**	**139.68**	**314**	PKP	**PKPdf**	**10 26 33.4**	**+1.0**		
	comp=Z,1.5nm,0.7s,baz=140,slow=2.1,SNR=4.6								
ZAA0	**Zalesovo Array**	**144.07**	**69**	*e*PKPdf	**PKPdf**	**10 26 39.9**	**-0.6**		
ZAA0				*e*PKPdf	**PKiKP**	**10 26 44.3**	**+0.2**		
ZALV	**Zalesovo Beam**	**144.07**	**69**	PKP	**PKPdf**	**10 26 40.1**	**-0.5**		
	comp=Z,2.0nm,0.6s,baz=242,slow=3.8,SNR=7.3								
SKAG	**Skagway**	**145.93**	**300**	*e*PKPbc	**PKPab**	**10 26 46.9**	**+2.0**		
HYT	**Haines Junctio**	**147.58**	**301**	*e*PKPab	**PKPab**	**10 26 53.2**	**+1.7**		
HHC	**Hu-ho-hao-te**	**147.81**	**109**	*e*PKPbc	**PKPbc**	**10 26 49.1**	**-1.4**		
BJI	**Beijing**	**149.25**	**115**	PKPbc	**PKPdf**	**10 26 47.8**	**-1.9**		
INK	**Inuvik**	**149.42**	**316**	*e*PKPdf	**PKPdf**	**10 26 48.6**	**-0.5**		
INK				*e*PKPbc	**PKPbc**	**10 26 52.9**	**-0.7**		
INK				*e*PKPab	**PKPab**	**10 26 56.7**	**-1.9**		
DAWY	**Dawson**	**149.89**	**306**	*e*PKPdf	**PKPdf**	**10 26 49.3**	**-0.8**		
DAWY				*e*PKPbc	**PKPbc**	**10 26 54.5**	**-0.4**		
DAWY				*e*PKPab	**PKiKP**	**10 26 58.0**	**+2.1**		
SONM	**Songino Array**	**150.50**	**95**	PKPbc	**PKPbc**	**10 26 57.9**	**+0.8**		
	comp=Z,5.1nm,0.8s,baz=213,slow=1.6,SNR=19								
SONA1	**Songino Array**	**150.51**	**95**	*e*PKPbc	**PKPbc**	**10 26 58.2**	**+1.2**		
BMRM	**Bremner River**	**150.68**	**298**	*e*PKPdf	**PKPdf**	**10 26 51.7**	**+0.3**		
EGAK	**Eagle**	**150.88**	**307**	*e*PKPdf	**PKPdf**	**10 26 47.4**	**-4.1**		
DOT	**Dot Lake**	**151.61**	**303**	*e*PKPdf	**PKPdf**	**10 26 51.4**	**-1.3**		
KSAR	**Wonju Array Be**	**151.76**	**134**	PKPbc	**PKPbc**	**10 27 01.3**	**+1.2**		
KSRS	**Korea Array**	**151.78**	**134**	PKPbc	**PKPbc**	**10 27 01.3**	**+1.1**		
	comp=Z,0.8nm,0.6s,baz=183,slow=2.1,SNR=2.6								
ILAR	**Eielson Array**	**153.17**	**305**	PKPbc	**PKPbc**	**10 27 02.5**	**+0.1**		
	comp=Z,6.2nm,0.9s,baz=147,slow=3.6,SNR=15								
CCB	**Clear Creek Bu**	**153.50**	**304**	*e*PKPbc	**PKPbc**	**10 27 05.9**	**+2.8**		
WRH	**Wood River Hil**	**153.56**	**304**	*e*PKPbc	**PKPbc**	**10 27 04.8**	**+1.6**		

IDC 16 10:19:27.9±1.7, 30°03S×176°37W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.6/33, mbtmp3.5/2, Error ellipse: s-maj=60.2km s-min=35.8km az=24.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.55**	**299**	Pn	Pb	10 19 57.4	-0.2
	53nm,0.3s,baz=84,slow=19,SNR=2.4						
RAO				Sn	Sg	10 20 22.6	+4.7
	165nm,0.3s,baz=56,slow=23,SNR=6.4						
ASAR	**Alice Springs**	**44.54**	**266**	P	P	10 27 41.5	-0.2
	0.5nm,0.8s,baz=114,slow=7.9,SNR=4.9						
WRA	**Warramunga Arr**	**45.50**	**271**	P	P	10 27 49.0	-0.4
	0.6nm,0.6s,baz=109,slow=7.8,SNR=7.7						
FINES	**FINESS Array B**	**145.26**	**341**	PKPbc	PKPbc	10 39 06.1	-0.5
	2.2nm,1.1s,baz=57,slow=5.1,SNR=5.0						
AKASG	**Malin Array Be**	**151.84**	**324**	PKPbc	PKPbc	10 39 24.0	-0.3
	0.2nm,0.2s,baz=30,slow=2.2,SNR=2.6						
TORD	**Torodi Ar. Bea**	**163.11**	**173**	PKPab	PKPab	10 40 22.2	-0.4
	0.4nm,0.8s,baz=198,slow=3.8,SNR=2.2						

*ISCJB **16** 10:26:10.2±0.5, 60°49S±0°09×26°.8W±0°.2, h10km, mb4.5/18, MS3.9/11, Error ellipse: s-maj=12.8km s-min=11.9km az=44.3*

*NEIC **16** 10:26:11.6±0.3, 60°.59S×26°.77W, h10km, mb4.7/11, Error ellipse: s-maj=11.8km s-min=9.3km az=51.0*

*IDC **16** 10:26:11.5±0.6, 60°.57S×26°.43W, h0km, mb4.5/10, mb1 4.5/11, mb1mx4.3/27, mbtmp4.5/11, ML5.0/1, MS3.9/13, Ms1 3.9/13, ms1mx3.7/26, Error ellipse: s-maj=23.9km s-min=17.0km az=50.0*

*BJI **16** 10:26:15.8, 60°.70S×27°.10W, h35km, mB5.2/4, Ms5.3/6, Ms7 5.0/6*

ISC 16 10:26:11.8±0.4, 60°.72S±0°.08×26°.68W±0°.09, h10km, n71, σ1°93/73, mb4.6/18, MS3.8/11, 1D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VNA1	**Neumayer--Stat**	**12.45**	**151**	P	Pn	10 28 58.6	-10
SNAA	**Sanae**	**14.46**	**149**	P	Pn	10 29 25.1	-11
SNAA	**Sanae**	**14.46**	**149**	Pn	Pn	10 29 25.0	-11
	0.5nm,0.3s,baz=79,slow=3.6,SNR=28						
SNAA				Sn	Sn	10 32 00.8	-16
	0.1nm,0.3s,baz=349,slow=16,SNR=2.0						
SNAA				LR	LR	10 34 00.6	
	comp=Z,574nm,18.2s,baz=284,slow=32						
SNAA	**Sanae**	**14.46**	**149**	*e*Pn	**Pn**	**10 29 34.2**	**-2.0**
	725nm,0.6s						
SNAA				*e*Sn	**Sn**	**10 32 11.9**	**-4.4**
PMSA	**Palmer Station**	**17.40**	**240**	P	**Pn**	**10 30 16.1**	**+1.8**
	0.5nm,0.3s,baz=79,slow=14,SNR=4.3						
PMSA				LR	LR	10 36 23.7	
	comp=Z,289nm,18.2s,baz=84,slow=35						
USHA	**Ushuaia**	**22.71**	**266**	LR	LR	10 37 59.6	
	comp=Z,3μm,20.5s,baz=113,slow=31						
SYO	**Syowa Base**	**27.92**	**135**	*e*X	**P**	**10 31 55.0**	**-6.5**
QSPA	**South Pole Qui**	**29.52**	**180**	*e*P	**P**	**10 32 17.7**	**+1.7**
	80nm,1.2s						
TRQA	**Tornquist**	**31.65**	**300**	*e*P	**P**	**10 32 33.2**	**-1.6**
	2.5nm,0.7s						
PLCA	**Paso Flores**	**33.35**	**287**	LR	LR	10 45 40.8	
	comp=Z,121nm,19.5s,baz=168,slow=35						
MAW	**Mawson**	**36.31**	**140**	P	**P**	**10 33 16.4**	**+1.4**
	6.3nm,1.0s,baz=245,slow=8.7,SNR=8.1						
MAW				LR	LR	10 46 53.7	
	comp=Z,102nm,20.0s,baz=243,slow=34						
MAW	**Mawson**	**36.31**	**140**	*e*P	**P**	**10 33 16.8**	**+1.8**
	2.9nm,1.3s						
CPUP	**Villa Florida**	**40.20**	**315**	P	**P**	**10 33 47.7**	**-0.5**
	12nm,0.9s,baz=145,slow=8.0,SNR=17						
CPUP				LR	LR	10 48 29.4	
	comp=Z,171nm,21.8s,baz=159,slow=33						
CPUP	**Villa Florida**	**40.20**	**315**	*e*P	**P**	**10 33 45.5**	**-2.7**
VNDA	**Vanda**	**41.91**	**183**	P	**P**	**10 34 03.9**	**+2.2**
	2.6nm,0.7s,baz=197,slow=6.4,SNR=8.6						
VNDA				LR	LR	10 49 59.1	
	comp=Z,138nm,22.0s,baz=179,slow=34						
VNDA	**Vanda**	**41.91**	**183**	*e*P	**P**	**10 34 02.7**	**+1.0**
	3.2nm,0.8s						
BOSA	**Boshof**	**47.05**	**71**	P	**P**	**10 34 43.5**	**0.0**
	1.3nm,0.7s,baz=219,slow=6.5,SNR=2.5						
BOSA				LR	LR	10 49 56.4	
	comp=Z,87nm,21.5s,baz=192,slow=30						
BDFB	**Brasilia**	**47.58**	**332**	P	**P**	**10 34 49.7**	**+2.0**
	6.6nm,0.9s,baz=163,slow=20						
BDFB				LR	LR	10 55 08.2	
	comp=Z,83nm,18.2s,baz=168,slow=37						
BDFB	**Brasilia**	**47.58**	**332**	*e*P	**P**	**10 34 45.2**	**-2.5**
	11nm,0.9s						
LVC	**Limon Verde**	**47.99**	**303**	P	**P**	**10 34 53.4**	**+2.3**
	25nm,0.7s,baz=188,slow=2.5,SNR=7.3						
LVC	**Limon Verde**	**47.99**	**303**	*e*P	**P**	**10 34 49.9**	**-1.1**
	2.7nm,0.6s						
TSUM	**Tsumeb**	**51.87**	**57**	*e*P	**P**	**10 35 20.9**	**+0.6**
	5.2nm,0.8s						
H10S2	**ASCENSION HYDR**	**52.43**	**15**	T	T	11 32 05.6	
	baz=188,slow=75,SNR=18						
H10S3	**ASCENSION HYDR**	**52.43**	**15**	T	T	11 32 09.9	
	baz=188,slow=75,SNR=12						
H10S1	**ASCENSION HYDR**	**52.44**	**15**	T	T	11 32 05.4	
	baz=188,slow=75,SNR=14						
LPAZ	**La Paz**	**53.37**	**308**	P	**P**	**10 35 32.6**	**+0.6**
	3.1nm,0.6s,baz=140,slow=5.4,SNR=11						
LPAZ				LR	LR	11 00 13.6	
	comp=Z,66nm,20.1s,baz=124,slow=38						
H10N1	**ASCENSION HYDR**	**53.54**	**15**	T	T	11 33 27.0	
	baz=181,slow=72,SNR=6.2						
H10N3	**ASCENSION HYDR**	**53.55**	**15**	T	T	11 33 28.6	
	baz=181,slow=72,SNR=13						
H10N2	**ASCENSION HYDR**	**53.56**	**15**	T	T	11 33 31.4	
	baz=181,slow=72,SNR=13						
LSZ	**Lusaka**	**59.93**	**66**	*e*P	**P**	**10 36 19.0**	**+0.9**
	8.9nm,0.8s						
PTGA	**Pitinga**	**65.04**	**323**	*e*P	**P**	**10 36 50.7**	**-1.4**
	3.7nm,0.8s						
DBIC	**Dimbokro**	**69.33**	**23**	P	**P**	**10 37 19.1**	**-0.1**
	2.6nm,0.7s,baz=193,slow=8.4,SNR=3.6						
RUSC	**La Rusia**	**75.61**	**312**	*e*P	**P**	**10 37 55.0**	**-2.3**
	6.9nm,1.4s						
TOA0	**Torodi Ar. Sit**	**77.02**	**28**	*e*P	**P**	**10 38 02.9**	**-1.7**
	7.6nm,0.6s						
TORD	**Torodi Ar. Bea**	**77.02**	**28**	P	**P**	**10 38 04.4**	**-0.2**
	6.1nm,0.7s,baz=196,slow=5.8,SNR=17						
TORD				LR	LR	11 07 24.2	
	comp=Z,53nm,18.4s,baz=135,slow=32						
SDV	**Santo Domingo**	**77.52**	**315**	P	**P**	**10 38 05.2**	**-2.5**
	12nm,0.8s						
STKA	**Stephens Creek**	**87.24**	**170**	LR	LR	11 16 25.6	
	comp=Z,102nm,19.2s,baz=185,slow=34						
PPT	**Papeete**	**89.63**	**233**	LR	LR	11 11 05.0	
	comp=Z,47nm,20.4s,baz=347,slow=30						
ASAR	**Alice Springs**	**94.45**	**162**	P	**P**	**10 39 33.5**	**+1.4**
	0.5nm,0.7s,baz=184,slow=4.6,SNR=4.1						
HWUT	**Hardware Ranch**	**122.90**	**297**	*e*PKPdf	**PKPdf**	**10 45 07.7**	**+0.3**
CMAR	**Chiang Mai Arr**	**123.08**	**113**	PKP	**PKPdf**	**10 45 09.8**	**+1.6**
	0.8nm,0.6s,baz=231,slow=5.2,SNR=4.9						
MOOW	**Moose Ponds**	**124.28**	**299**	*e*PKPdf	**PKPdf**	**10 45 10.1**	**0.0**
NB2	**NORSAR Subarra**	**124.88**	**21**	PKPdf	**PKPdf**	**10 45 09.3**	**-1.1**
	comp=Z,1.5nm,0.9s,baz=202,slow=1.9						
NOA	**NORSAR Array B**	**124.88**	**21**	PKP	**PKPdf**	**10 45 10.0**	**-0.4**
	comp=Z,1.8nm,0.9s,baz=200,slow=2.0,SNR=6.5						
FINES	**FINESS Array B**	**128.37**	**29**	PKP	**PKPdf**	**10 45 17.3**	**+0.4**
	comp=Z,6.4nm,0.7s,baz=85,slow=2.3,SNR=14						
FIA1	**FINESS Array S**	**128.37**	**29**	*e*PKPdf	**PKPdf**	**10 45 16.7**	**-0.2**
KSH	**Kashi**	**129.43**	**78**	*e*PKP	**PKPdf**	**10 45 20.8**	**+0.9**
KSH				*es*PKP		10 45 35.8	
KSH				*e*PP	**PP**	**10 47 36.3**	**+6.1**
KSH				PKS	**PKSdf**	**10 48 55.1**	**-1.3**
KSH				SKS	**SKSdf**	**10 52 27.6**	**-3.6**
KSH				SKKS	**SKKSac**	**10 54 22.4**	**-3.9**
KSH				AMB	AMB		
	comp=Z,32nm,3.1s						
KSH				LR	LR		
	comp=Z,89nm,8.2s						
KSH				LR	LR		
	comp=Z,140nm,6.3s						
KSH				LR	LR		
	comp=Z,120nm,6.8s						
ABKAR	**Akbulak array**	**129.71**	**58**	*e*PKPdf	**PKPdf**	**10 45 19.8**	**-0.1**
ARCES	**ARCESS Array B**	**135.16**	**23**	PKP	**PKPdf**	**10 45 31.2**	**+1.7**
	comp=Z,4.4nm,0.8s,baz=201,slow=2.3,SNR=7.9						
MKAR	**Makanchi Array**	**137.95**	**76**	PKhKP	PKPpre	10 45 23.4	
	comp=Z,0.1nm,0.2s,baz=222,slow=4.6,SNR=3.1						
WMQ	**Urumqi**	**138.39**	**83**	*e*PKP	**PKPdf**	**10 45 38.3**	**+1.8**
YKA	**Yellowknife Ar**	**139.73**	**314**	PKP	**PKPdf**	**10 45 40.3**	**+2.2**
	comp=Z,1.5nm,0.7s,baz=128,slow=2.1,SNR=4.3						
ZAA0	**Zalesovo Array**	**143.99**	**69**	*e*PKPdf	**PKPdf**	**10 45 46.1**	**+0.1**
ZALV	**Zalesovo Beam**	**143.99**	**69**	PKP	**PKPdf**	**10 45 46.0**	**0.0**
	comp=Z,1.9nm,0.6s,baz=259,slow=3.9,SNR=7.3						
HHC	**Hu-ho-hao-te**	**147.74**	**109**	*e*PKPbc	**PKPdf**	**10 45 54.0**	**+0.9**
BJI	**Beijing**	**149.19**	**115**	PKPbc	**PKPdf**	**10 45 54.5**	**-0.8**
INK	**Inuvik**	**149.47**	**316**	PKPbc	**PKPbc**	**10 46 00.8**	**+1.5**
	comp=Z,7.1nm,0.8s,baz=59,slow=2.4,SNR=4.7						
INK	**Inuvik**	**149.47**	**316**	*e*PKPbc	**PKPdf**	**10 45 56.4**	**+1.6**
INK				*e*PKPab	**PKiKP**	**10 46 01.6**	**+1.2**
DAWY	**Dawson**	**149.95**	**306**	*e*PKPdf	**PKPdf**	**10 45 54.0**	**-1.8**
DAWY				*e*PKPbc	**PKPbc**	**10 45 58.8**	**-1.9**
DAWY				*e*PKPab	**PKiKP**	**10 46 02.6**	**+1.0**
SONM	**Songino Array**	**150.42**	**94**	PKP	**PKPdf**	**10 45 55.8**	**-1.4**
	comp=Z,1.1nm,0.8s,baz=204,slow=2.0,SNR=4.6						
SONM				PKPbc	**PKiKP**	**10 46 03.7**	**+0.5**
	comp=Z,5.1nm,0.7s,baz=234,slow=2.7,SNR=14						
SONA1	**Songino Array**	**150.44**	**94**	*e*PKPdf	**PKPdf**	**10 45 56.7**	**-0.5**
SONA1				*e*PKPbc	**PKiKP**	**10 46 03.8**	**+0.5**
EGAK	**Eagle**	**150.94**	**307**	*e*PKPdf	**PKPdf**	**10 45 56.1**	**-1.1**
EGAK				*e*PKPab	**PKPab**	**10 46 08.8**	**-1.8**
MENT	**Mentasta**	**151.24**	**302**	*e*PKPbc	**PKPbc**	**10 46 02.4**	**-1.4**
TLY	**Talaya**	**151.58**	**86**	PKPbc	**PKPbc**	**10 46 02.6**	**+1.2**
	comp=Z,0.6nm,0.3s,baz=187,slow=1.6,SNR=4.0						
TLY	**Talaya**	**151.58**	**86**	*e*PKPdf	**PKPdf**	**10 45 58.8**	**+0.1**
TLY				*e*PKPbc	**PKiKP**	**10 46 06.4**	**+1.1**
TLY				*ep*PKPdf	**PKPbc**	**10 46 07.5**	**+2.6**
DOT	**Dot Lake**	**151.66**	**303**	*e*PKPdf	**PKPdf**	**10 45 57.2**	**-1.3**
ILAR	**Eielson Array**	**153.22**	**305**	PKP	**PKPdf**	**10 46 01.1**	**+0.4**
	comp=Z,1.3nm,0.9s,baz=160,slow=3.5,SNR=12						
ILAR				PKPbc	**PKiKP**	**10 46 10.8**	**+2.5**
	comp=Z,5.3nm,0.8s,baz=158,slow=2.1,SNR=27						
CCB	**Clear Creek Bu**	**153.56**	**304**	*e*PKPbc	**PKPbc**	**10 46 08.3**	**-0.5**
CCB				*ep*PKPdf	**PKiKP**	**10 46 09.3**	**+0.4**
WRH	**Wood River Hil**	**153.62**	**304**	*e*PKPbc	**PKPbc**	**10 46 08.2**	**-0.8**
MCK	**McKinley**	**153.71**	**302**	*e*PKPbc	**PKPbc**	**10 46 09.3**	**0.0**
CAST	**Castle Rocks**	**154.94**	**300**	*e*PKPdf	**PKPdf**	**10 46 04.1**	**+1.0**
CAST				*e*PKPbc	**PKiKP**	**10 46 13.4**	**+1.5**

IDC 16 10:27:01.8±30.0, 9°.53N×104°.00W, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.7/29, mbtmp3.4/3, ML3.1/1, MS3.7/4, Ms1 3.7/4, ms1mx3.3/20, Error ellipse: s-maj=895.1km s-min=109.0km az=117.0, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**11.62**	**49**	LR	LR	10 33 14.7	
	comp=Z,276nm,19.9s,baz=208,slow=32						
LPIG	**La Paz**	**15.69**	**338**	LR	LR	10 35 00.5	
	comp=Z,336nm,18.6s,baz=191,slow=30						
TXAR	**Lajitas Array**	**19.70**	**1**	P	Pn	10 31 33.6	-0.6
	0.0nm,0.3s,baz=181,slow=12,SNR=6.0						
PFO	**Pinyon Flats O**	**26.57**	**336**	LR	LR	10 41 16.7	
	comp=Z,109nm,18.3s,baz=134,slow=32						
PDAR	**Pinedale Array**	**33.46**	**353**	P	P	10 33 42.0	-0.9
	0.5nm,0.7s,baz=145,slow=9.9,SNR=4.0						
PLCA	**Paso Flores**	**58.77**	**151**	LR	LR	10 56 22.4	
	comp=Z,101nm,19.9s,baz=242,slow=30						
ILAR	**Eielson Array**	**62.72**	**341**	P	P	10 37 28.5	+0.2
	0.9nm,0.8s,baz=157,slow=4.8,SNR=9.3						

MAN 16 10:34:20, 9°.68N×122°.35E, h4km, mb4.5, ML3.4, MS3.3, 2C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.93**	**111**	⇓*i*P	Pg	10 34 34.0	-3.9
SNPH				*i* S	Sg	10 34 49.2	-0.7
DCPH	**Dipolog City**	**1.47**	**138**	⇑*e*P	Pb	10 34 47.6	-0.2
TBP	**Tagbilaran**	**1.49**	**89**	*i* P	Pn	10 34 47.2	-0.3
LLP	**Lapu-Lapu**	**1.71**	**68**	*e*P	Pn	10 34 51.3	+0.7
LLP				*e*S	Sg	10 35 18.3	+3.3
RCP	**Roxas**	**1.91**	**12**	⇑*e*P	Pn	10 34 53.5	+0.2
RCP				*e*S	Sb	10 35 19.7	0.0

*ISCJB **16** 10:34:34.7±0.8, 40°.97N±0°.05×30°.58E±0°.06, h11km, Error ellipse: s-maj=8.9km s-min=4.6km az=35.2*

*DDA **16** 10:34:34.9, 41°.01N×30°.60E, h7km, Md2.7*

*CSEM **16** 10:34:34.7±0.3, 40°.97N×30°.61E, h8km, MD2.7, Error ellipse: s-maj=8.1km s-min=4.8km az=27.0*

*ISK **16** 10:34:35.8, 40°.92N×30°.48E, h12km, MD2.3*

ISC 16 10:34:35.0±1.0, 40°.96N±0°.04×30°.59E±0°.03, h11km, n18, σ0°65/24, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAHE	**Sakarya_HENDEK**	**0.23**	**119**	*i* P	**Pg**	**10 34 39.7**	**0.0**
SAHE	**Sakarya_HENDEK**	**0.23**	**119**	P	**Pg**	**10 34 39.7**	**0.0**
KAND	**Kocaeli-Kandir**	**0.33**	**293**	*i* P	**Pg**	**10 34 41.6**	**0.0**
KAND				*i* S	**Sg**	**10 34 46.3**	**+0.3**
KAND	**Kocaeli-Kandir**	**0.33**	**293**	P	**Pg**	**10 34 41.6**	**0.0**
KAND				S	**Sg**	**10 34 46.3**	**+0.3**
BTAS	**Taskesti**	**0.50**	**142**	*i* P	**Pg**	**10 34 43.2**	**-1.5**
BTAS	**Taskesti**	**0.50**	**142**	P	**Pg**	**10 34 43.2**	**-1.5**
GULT	**Gulveren**	**0.54**	**186**	*e*PG	**Pg**	**10 34 45.8**	**+0.4**
GULT				*e*SG	**Sg**	**10 34 53.4**	**+0.9**
GULT	**Gulveren**	**0.54**	**186**	*e*Pg	**Pg**	**10 34 45.8**	**+0.4**
GULT				*e*Sg	**Sg**	**10 34 53.4**	**+0.9**
SILT	**Sile**	**0.74**	**285**	*e*PG	**Pg**	**10 34 49.3**	**0.0**
SILT				*e*SG	**Sg**

DVHZ				AML	AML	10 37 07.0		
DVHZ				AML	AML	10 37 35.5		
PRHZ	**Porangahau**	**1.94**	**164**	PN	Pn	10 37 07.5	-0.7	
PRHZ				AML	AML	10 37 34.4		
PRHZ				AML	AML	10 37 35.8		
POWZ	**Post Office Ro**	**1.99**	**184**	⇑PN	Pn	10 37 07.5	-1.2	
POWZ				AML	AML	10 37 09.4		
POWZ				AML	AML	10 37 42.3		
WMGZ	**Waiomatatini S**	**2.04**	**74**	PN	Pn	10 37 08.9	-0.3	
WMGZ				AML	AML	10 37 36.4		
WMGZ				AML	AML	10 37 37.8		
MXZ	**Matakaoa Point**	**2.06**	**67**	PN	Pn	10 37 09.4	0.0	
MRZ	**Mangatainoka R**	**2.27**	**187**	⇑PN	Pn	10 37 10.3	-1.7	
MRZ				AML	AML	10 37 11.2		
MRZ				AML	AML	10 37 40.5		
BFZ	**Birch Farm**	**2.29**	**174**	PN	Pn	10 37 10.7	-1.5	
TIWZ	**Tintock**	**2.38**	**181**	PN	Pn	10 37 11.5	-1.7	
TIWZ				AML	AML	10 37 44.9		
OGWZ	**Otaki Gorge**	**2.48**	**193**	⇑PN	Pn	10 37 12.7	-1.7	
OGWZ				AML	AML	10 37 44.7		
OGWZ				AML	AML	10 37 46.8		
HOWZ	**Holdsworth Sta**	**2.52**	**187**	⇑PN	Pn	10 37 12.8	-2.1	
KIW	**Kapiti Island**	**2.58**	**197**	PN	Pn	10 37 13.4	-2.2	
TMWZ	**Te Maipa**	**2.71**	**181**	PN	Pn	10 37 15.1	-2.1	
TMWZ				AML	AML	10 37 51.7		
MTW	**Mount Morrison**	**2.77**	**187**	PN	Pn	10 37 15.5	-2.5	
CAW	**Cannon Point**	**2.79**	**194**	PN	Pn	10 37 15.7	-2.4	
CAW				AML	AML	10 37 50.4		
CAW				AML	AML	10 37 52.6		
DUWZ	**D'Urville Isla**	**2.86**	**212**	*e*PN	Pn	10 37 16.3	-2.7	
TRWZ	**Traveller**	**3.00**	**183**	PN	Pn	10 37 18.5	-2.4	
TRWZ				AML	AML	10 38 00.4		
TRWZ				AML	AML	10 38 10.1		
PAWZ	**Paruwai Farm**	**3.00**	**187**	⇓PN	Pn	10 37 18.3	-2.6	
WEL	**Wellington**	**3.02**	**197**	PN	Pn	10 37 18.4	-2.6	
MSWZ	**Moikau Station**	**3.06**	**190**	PN	Pn	10 37 18.8	-2.8	
MSWZ				AML	AML	10 37 19.5		
MSWZ				AML	AML	10 37 19.7		
TCW	**Tory Channel**	**3.08**	**204**	PN	Pn	10 37 19.2	-2.6	
TCW				AML	AML	10 37 55.9		
TCW				AML	AML	10 37 57.3		
PLWZ	**Palliser**	**3.21**	**189**	⇓PN	Pn	10 37 20.5	-3.0	
PLWZ				AML	AML	10 37 22.9		
TUWZ	**Tuamarina**	**3.39**	**206**	PN	Pn	10 37 22.7	-3.0	
TUWZ				AML	AML	10 38 04.5		
NNZ	**Nelson**	**3.43**	**214**	PN	Pn	10 37 23.2	-3.0	
QRZ	**Quartz Range**	**3.57**	**226**	PN	Pn	10 37 24.7	-3.4	
BSWZ	**Blackbirch Sta**	**3.67**	**205**	PN	Pn	10 37 26.5	-2.9	
DSZ	**Denniston Hort**	**4.60**	**222**	*e*PN	Pn	10 37 37.4	-4.1	

IDC ***16*** *10:37:25.0±1.0, 21.°07S×174.°56W, h0km, mb4.1/10, mb1 4.3/11, mb1mx4.1/30, mbtmp4.1/11, ML3.9/1, MS3.6/4, Ms1 3.6/4, ms1mx3.1/33, Error ellipse: s-maj=38.3km s-min=20.8km az=136.0*

ISCJB ***16*** *10:37:27.7±0.8, 21.°1S±0.°1×174.°7W±0.°2, h27km, mb4.0/10, MS4.0/2, Error ellipse: s-maj=26.2km s-min=15.1km az=35.0*

ISC 16 10:37:29.1±0.9**, 21.°1S**±0.°2×**174.°5W**±0.°2**, h27**km**, n18,** σ0**.°93/16, mb4.0/10, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.64**	**21**	Pn	Pn	10 39 12.5	-6.3
	5.4nm,0.3s,baz=288,slow=23,SNR=7.7						
AFI				Sn	Sn	10 40 30.3	-14
	2.4nm,0.3s,baz=198,slow=20,SNR=2.7						
AFI				LR	LR	10 42 01.2	
	comp=Z,174nm,18.5s,baz=210,slow=36						
RAR	**Rarotonga**	**13.77**	**93**	Pn	Pn	10 40 30.4	-12
	2.5nm,0.3s,baz=258,slow=8.9,SNR=6.8						
RAR				LR	LR	10 44 39.8	
	comp=Z,84nm,19.6s,baz=260,slow=32						
URZ	**Urewera**	**18.54**	**201**	P	**P**	**10 41 43.6**	**0.0**
	0.4nm,0.3s,baz=315,slow=1.4,SNR=2.9						
RPZ	**Rata Peaks**	**25.53**	**205**	P	**P**	**10 42 57.2**	**+1.7**
	13nm,1.0s,baz=127,slow=20,SNR=1.7						
STKA	**Stephens Creek**	**40.46**	**245**	P	**P**	**10 45 05.2**	**-0.4**
	2.1nm,0.8s,baz=116,slow=14,SNR=3.5						
ASAR	**Alice Springs**	**47.54**	**257**	P	**P**	**10 46 01.6**	**-0.9**
	3.8nm,0.8s,baz=102,slow=7.5,SNR=35						
ASAR				PcP	**PcP**	**10 47 31.4**	**-1.0**
	0.7nm,0.8s,baz=102,slow=4.2,SNR=4.0						
WRA	**Warramunga Arr**	**47.73**	**262**	P	**P**	**10 46 03.1**	**-0.9**
	1.2nm,0.7s,baz=91,slow=6.0,SNR=14						
WRA				PcP	**PcP**	**10 47 32.6**	**-0.5**
	0.6nm,0.8s,baz=91,slow=4.1,SNR=3.5						
FITZ	**Fitzroy Crossi**	**56.16**	**262**	P	**P**	**10 47 06.7**	**-0.2**
	0.7nm,0.4s,baz=106,slow=6.8,SNR=4.4						
NWAO	**Narrogin (SRO)**	**60.99**	**243**	LR	LR	11 14 37.1	
	comp=Z,60nm,18.3s,slow=37						
MJAR	**Matsushiro Arr**	**72.67**	**322**	P	**P**	**10 48 54.9**	**+0.4**
	2.0nm,0.8s,baz=156,slow=4.4,SNR=5.3						
JNU	**Nakatsue**	**74.98**	**315**	LR	LR	11 15 45.0	
	comp=Z,129nm,20.0s,baz=280,slow=31						
TXAR	**Lajitas Array**	**84.69**	**56**	P	**P**	**10 50 00.7**	**-0.3**
	0.5nm,1.0s,baz=212,slow=6.4,SNR=3.8						
PDAR	**Pinedale Array**	**87.22**	**42**	P	**P**	**10 50 12.6**	**-0.7**
	0.4nm,0.8s,baz=235,slow=4.3,SNR=2.9						
ILAR	**Eielson Array**	**88.24**	**11**	P	**P**	**10 50 18.1**	**+0.7**
	0.3nm,0.8s,baz=185,slow=5.1,SNR=3.5						
CMAR	**Chiang Mai Arr**	**93.39**	**288**	P	**P**	**10 50 44.4**	**+1.9**
	0.8nm,0.3s,baz=119,slow=3.3,SNR=4.4						
AKASG	**Malin Array Be**	**145.08**	**333**	PKPbc	**PKPbc**	**10 57 02.5**	**-0.8**
	0.5nm,0.3s,baz=34,slow=4.1,SNR=4.1						
BRTR	**Keskin Array B**	**149.63**	**314**	PKPbc	**PKPbc**	**10 57 16.8**	**+0.2**
	0.3nm,0.4s,baz=355,slow=7.7,SNR=3.4						
GERES	**GERESS Array B**	**151.57**	**349**	PKPbc	**PKPbc**	**10 57 20.8**	**0.0**
	0.4nm,0.6s,baz=129,slow=1.4,SNR=4.1						

DDA ***16*** *10:40:13.5, 40.°14N×29.°78E, h7km, Md2.7*

ISCJB ***16*** *10:40:21.2±0.6, 39.°65N±0.°04×30.°13E±0.°04, h11km±7km, Error ellipse: s-maj=7.6km s-min=5.0km az=162.0*

CSEM ***16*** *10:40:21.1±0.2, 39.°64N×30.°14E, h10km, ML2.1, Error ellipse: s-maj=6.1km s-min=4.8km az=163.0*

ISK ***16*** *10:40:21.0, 39.°68N×30.°16E, h10km, ML2.1*

ISC 16 10:40:21.0±1.1**, 39.°65N**±0.°03×**30.°13E**±0.°03**, h11**km±13**km, n18,** σ0**.°57/28, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BORA	**Eskisehir**	**0.34**	**47**	*i* P	**Pg**	**10 40 27.9**	**0.0**
BORA				*i* S	**Sb**	**10 40 33.9**	**-0.8**
BORA	**Eskisehir**	**0.34**	**47**	P	**Pg**	**10 40 27.9**	**0.0**
BORA				S	**Sb**	**10 40 33.9**	**-0.8**
TVSB	**Tavsanli**	**0.55**	**249**	*e*PG	**Pb**	**10 40 32.6**	**0.0**
TVSB				*e*SG	**Sb**	**10 40 41.4**	**+0.7**
TVSB	**Tavsanli**	**0.55**	**249**	*e*Pg	**Pb**	**10 40 32.7**	**0.0**
TVSB				*e*Sg	**Sb**	**10 40 41.4**	**+0.7**
ESKT	**Eskisehir**	**0.57**	**103**	*e*PG	**Pg**	**10 40 32.3**	**+0.1**
ESKT	**Eskisehir**	**0.57**	**103**	*i* P	**Pg**	**10 40 32.1**	**0.0**
ESKT				*i* S	**Sb**	**10 40 41.6**	**+0.3**
ESKT	**Eskisehir**	**0.57**	**103**	*e*Pg	**Pg**	**10 40 32.3**	**+0.1**
SEYT	**Eskypehyr**	**0.57**	**103**	P	**Pg**	**10 40 32.1**	**0.0**
SEYT				S	**Sb**	**10 40 41.7**	**+0.3**
CAVI	**Cavuskoy**	**0.59**	**339**	*e*PG	**Pg**	**10 40 31.9**	**-0.6**
CAVI				*e*SG	**Sb**	**10 40 41.4**	**-0.5**
CAVI	**Cavuskoy**	**0.59**	**339**	*e*Pg	**Pg**	**10 40 31.9**	**-0.6**
CAVI				*e*Sg	**Sb**	**10 40 41.4**	**-0.5**
GDZ	**Gediz**	**0.75**	**222**	*i* P	**Pg**	**10 40 34.4**	**-1.1**
GDZ				*i* S	**Sg**	**10 40 45.7**	**+0.4**
GDZ	**Gediz**	**0.75**	**222**	P	**Pg**	**10 40 34.4**	**-1.1**
GDZ				S	**Sg**	**10 40 45.7**	**+0.4**
GULT	**Gulveren**	**0.84**	**21**	*e*PG	**Pg**	**10 40 37.2**	**0.0**
GULT	**Gulveren**	**0.84**	**21**	*e*Pg	**Pg**	**10 40 37.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.20**	**307**	*e*PN	**Pg**	**10 40 44.8**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.20**	**307**	*e*Pn	**Pg**	**10 40 44.8**	**+0.8**
ARMT	**Armutlu**	**1.33**	**314**	*e*PN	**Pb**	**10 40 46.0**	**-0.1**
ARMT	**Armutlu**	**1.33**	**314**	*e*Pn	**Pb**	**10 40 46.0**	**-0.1**

ISCJB ***16*** *10:51:24.6±0.9, 27.°98N±0.°03×130.°25E±0.°05, h30km±5km, mb3.9/10, Error ellipse: s-maj=7.6km s-min=5.3km az=23.2*

JMA ***16*** *10:51:24.1±0.1, 27.°98N×130.°29E, h31km±2km, M3.4*

JMA Felt I J1.

IDC ***16*** *10:51:29.5±5.0, 28.°07N×130.°13E, h56km±43km, mb3.5/9, mb1 3.6/10, mb1mx3.4/46, mbtmp3.8/10, ML3.0/1, Error ellipse: s-maj=60.6km s-min=27.5km az=74.0*

ISC 16 10:51:25.6±1.4**, 27.°99N**±0.°05×**130.°17E**±0.°06**, h27**km±9**km, n30,** σ0**.°95/37, mb3.8/10, Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JZK	**Kikaishima**	**0.37**	**331**	P	**Pb**	**10 51 33.3**	**-0.6**
JZK				*e*S	**Sb**	**10 51 40.2**	**+0.8**
JAM	**Amami Oshima**	**0.65**	**310**	P	**Pb**	**10 51 38.0**	**-0.5**
JAM				*e*S	**Sb**	**10 51 47.4**	**+0.2**
JAMN	**Amaminishikomi**	**0.92**	**286**	P	**Pn**	**10 51 42.3**	**-0.4**
JAMN				*e*S	**Sn**	**10 51 55.3**	**+0.2**
JTK	**Tokunoshima**	**1.10**	**260**	P	**Pn**	**10 51 45.5**	**+0.2**
JTK				*e*S	**Sb**	**10 52 00.6**	**+0.6**
JTAJ	**Takarajima**	**1.44**	**324**	P	**Pn**	**10 51 49.5**	**-0.5**
JTAJ				*e*S	**Sb**	**10 52 09.3**	**-0.4**
JOKE	**Okinoerabujima**	**1.55**	**247**	P	**Pn**	**10 51 52.1**	**+0.6**
JNN	**Nakanoshima**	**1.86**	**352**	P	**Pn**	**10 51 55.8**	**0.0**
JOW	**Kunigami**	**2.04**	**236**	P	**Pn**	**10 51 58.6**	**+0.3**
JIH	**Iheya**	**2.18**	**245**	P	**Pn**	**10 52 00.4**	**+0.3**
JIH				*e*S	**Sn**	**10 52 27.0**	**+0.8**
JYAK	**Yakushimahirau**	**2.26**	**7**	P	**Pn**	**10 52 01.4**	**+0.2**
JYAK				S	**Sn**	**10 52 28.2**	**0.0**
JMZ	**Minamidaito 2**	**2.35**	**156**	*e*S	**Sn**	**10 52 29.8**	**-0.8**
JNTH	**Nagotoyohara**	**2.41**	**233**	P	**Pn**	**10 52 03.4**	**+0.1**
JTN	**Tanegashima 3**	**2.75**	**15**	P	**Pn**	**10 52 08.0**	**0.0**
JTN				*e*S	**Sn**	**10 52 40.2**	**-0.1**
JKE	**Kume jima 2**	**3.44**	**242**	P	**Pn**	**10 52 17.4**	**-0.1**
KSRS	**Korea Array**	**9.63**	**349**	P	**Pn**	**10 53 45.9**	**+3.5**
	0.1nm,0.3s,baz=166,slow=12,SNR=2.6						
YAK	**Yakutsk**	**34.04**	**360**	P	**P**	**10 58 05.6**	**-1.5**
	20nm,0.5s,baz=132,slow=8.2,SNR=4.4						
H11N2	**WAKE ISLAND Hy**	**34.47**	**96**	T	T	11 34 39.4	
	baz=290,slow=74,SNR=10						
H11N1	**WAKE ISLAND Hy**	**34.48**	**96**	T	T	11 34 39.9	
	baz=290,slow=74,SNR=7.8						
H11N3	**WAKE ISLAND Hy**	**34.49**	**96**	T	T	11 34 40.4	
	baz=290,slow=74,SNR=14						
MKAR	**Makanchi Array**	**41.70**	**310**	P	**P**	**10 59 11.3**	**-0.8**
	0.2nm,0.3s,baz=90,slow=9.1,SNR=2.4						
MKAR				PcP	**PcP**	**11 01 08.9**	**+0.5**
	0.2nm,0.3s,baz=90,slow=3.8,SNR=4.5						
ZALV	**Zalesovo Beam**	**41.94**	**321**	PcP	**PcP**	**11 01 09.8**	**+0.9**
	0.5nm,0.4s,baz=66,slow=7.3,SNR=3.6						
KURBB	**Kurchatov Arra**	**44.81**	**315**	P	**P**	**10 59 35.6**	**-1.5**
	0.4nm,0.6s,baz=102,slow=8.7,SNR=4.2						
WRA	**Warramunga Arr**	**47.82**	**175**	P	**P**	**11 00 01.7**	**+0.7**
	0.9nm,1.0s,baz=355,slow=8.1,SNR=3.0						
BVAR	**Borovoye Array**	**50.14**	**317**	P	**P**	**11 00 17.6**	**-0.9**
	0.5nm,0.6s,baz=78,slow=13,SNR=3.2						
BVAR				PcP	**PcP**	**11 01 36.1**	**-1.6**
	1.2nm,0.7s,baz=99,slow=4.7,SNR=5.0						
FINES	**FINESS Array B**	**72.19**	**331**	P	**P**	**11 02 47.7**	**-0.1**
	1.4nm,0.5s,baz=75,slow=6.6,SNR=17						
AKASG	**Malin Array Be**	**75.32**	**320**	P	**P**	**11 03 07.4**	**+1.0**
	1.7nm,0.7s,baz=57,slow=5.9,SNR=4.2						
BRTR	**Keskin Array B**	**77.32**	**308**	P	**P**	**11 03 18.1**	**0.0**
	0.7nm,0.8s,baz=56,slow=5.9,SNR=2.7						
NB2	**NORSAR Subarra**	**78.50**	**334**	P	**P**	**11 03 24.2**	**+0.1**
	comp=Z,0.6nm,0.7s,baz=50,slow=5.6						
NOA	**NORSAR Array B**	**78.50**	**334**	P	**P**	**11 03 23.9**	**-0.2**
	comp=Z,0.8nm,0.7s,baz=50,slow=5.6,SNR=4.5						
GERES	**GERESS Array B**	**84.83**	**324**	P	**P**	**11 03 59.3**	**+1.4**
	comp=Z,0.7nm,0.8s,baz=54,slow=6.8,SNR=4.7						

ISCJB ***16*** *11:05:25.1±0.6, 7.°07N±0.°08×126.°56E±0.°07, h200km, mb3.6/13, Error ellipse: s-maj=10.7km s-min=9.9km az=150.0*

IDC ***16*** *11:05:26.1±0.9, 7.°09N×126.°64E, h191km±8km, mb3.5/13, mb1 3.6/13, mb1mx3.4/34, mbtmp4.0/13, Error ellipse: s-maj=27.9km s-min=10.8km az=81.0*

ISC 16 11:05:26.9±0.7**, 7.°06N**±0.°09×**126.°4E**±0.°1**, h200**km**, n18,** σ0**.°90/24, mb3.8/13, 2C-2D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DAV	**Davao City (W)**	**0.85**	**271**	P	**Pn**	**11 05 55.7**	**0.0**
	92nm,0.3s,baz=168,slow=19,SNR=8.2						
DAV				S	**Sn**	**11 06 18.1**	**+0.1**
	141nm,0.3s,baz=149,slow=19,SNR=31						
DMPH	**Davao City--Mi**	**0.92**	**271**	⇑*e*P	**Pn**	**11 05 58.6**	**+2.4**
DMPH				*e*S	**Sn**	**11 06 20.5**	**+1.7**
GSPH	**General Santos**	**1.77**	**237**	⇓*e*P	**Pn**	**11 06 02.1**	**-1.1**
GSPH				*e*S	Sn	11 06 09.3	-22
CTBH	**Cotabato--PC H**	**2.18**	**274**	⇓*i* P	**Pn**	**11 06 07.2**	**-0.1**
CTBH				*i* S	**Sn**	**11 06 38.0**	**-0.7**
CGP	**Cagayan de Oro**	**2.21**	**309**	⇑*e*P	**Pn**	**11 06 06.9**	**-0.8**
CGP				*e*S	Sn	11 06 30.1	-9.3
FITZ	**Fitzroy Crossi**	**25.02**	**182**	P	**P**	**11 10 33.0**	**+0.4**
	1.4nm,0.8s,baz=3.2,slow=7.9,SNR=5.0						
WRA	**Warramunga Arr**	**27.94**	**164**	P	**P**	**11 10 58.2**	**-0.6**
	0.3nm,0.9s,baz=342,slow=8.2,SNR=4.3						
WRA				PcP	**PcP**	**11 14 09.3**	**+0.1**
	0.5nm,0.9s,baz=344,slow=2.4,SNR=3.4						
KSRS	**Korea Array**	**30.28**	**2**	P	**P**	**11 11 19.0**	**-0.3**
	0.6nm,0.5s,baz=186,slow=10,SNR=3.1						
ASAR	**Alice Springs**	**31.40**	**167**	P	**P**	**11 11 28.9**	**-0.4**
	0.2nm,0.5s,baz=340,slow=7.2,SNR=4.9						
ASAR				PcP	**PcP**	**11 14 18.2**	**+0.2**
	0.3nm,0.5s,baz=352,slow=2.5,SNR=5.9						
USRK	**Ussuriysk Ar.**	**37.31**	**7**	P	**P**	**11 12 19.2**	**-0.5**
	1.1nm,0.5s,baz=186,slow=6.3,SNR=4.1						
KLR	**Kul'dur**	**42.26**	**5**	P	**P**	**11 12 59.7**	**-0.7**
	1.3nm,0.4s,baz=192,slow=7.7,SNR=7.6						
SONM	**Songino Array**	**44.07**	**341**	P	**P**	**11 13 15.3**	**+0.2**
	0.4nm,0.4s,baz=151,slow=8.6,SNR=3.8						
PETK	**Petropavlovsk-**	**52.49**	**23**	P	**P**	**11 14 19.5**	**+0.3**
	2.0nm,0.7s,baz=193,slow=3.8,SNR=5.8						
MKAR	**Makanchi Array**	**54.69**	**324**	P	**P**	**11 14 36.7**	**+1.4**
	2.7nm,0.5s,baz=122,slow=8.1,SNR=28						
MKAR				PcP	**PcP**	**11 15 36.3**	**+0.8**
	0.6nm,0.5s,baz=124,slow=4.3,SNR=4.5						
ZALV	**Zalesovo Beam**	**57.51**	**332**	P	**P**	**11 14 55.4**	**+0.3**
	2.9nm,0.4s,baz=122,slow=7.5,SNR=14						
ILAR	**Eielson Array**	**82.24**	**26**	P	**P**	**11 17 24.6**	**-1.0**
	0.8nm,0.6s,baz=239,slow=5.1,SNR=22						
ARCES	**ARCESS Array B**	**87.24**	**340**	P	**P**	**11 17 49.9**	**-0.5**
	4.6nm,1.0s,baz=92,slow=4.8,SNR=8.0						
FINES	**FINESS Array B**	**88.78**	**332**	P	**P**	**11 17 57.5**	**-0.3**
	1.3nm,0.9s,baz=92,slow=8.6,SNR=5.4						

IDC 16 11:19:10.4±5.7**, 5.°83S×151.°25E, h47**km±48**km, mb3.5/4, mb1 3.8/5, mb1mx3.4/37, mbtmp3.8/5, ML1.6/1, MS3.1/1, Ms1 3.1/1, ms1mx2.5/32, Error ellipse: s-maj=98.3km s-min=34.9km az=130.0, New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**5.39**	**229**	P	Pn	11 20 29.6	+1.3
	1.2nm,0.3s,baz=56,slow=15,SNR=4.1						
PMG				S	Sn	11 21 29.3	+0.3
	1.2nm,0.3s,baz=110,slow=18,SNR=3.2						
WRA	**Warramunga Arr**	**21.61**	**228**	P	P	11 23 55.9	-0.8
	1.5nm,0.5s,baz=54,slow=10,SNR=23						
ASAR	**Alice Springs**	**24.35**	**222**	P	P	11 24 24.6	+0.4
	2.4nm,0.8s,baz=58,slow=8.8,SNR=34						
ASAR				LR	LR	11 33 35.3	
	comp=Z,41nm,18.2s,baz=86,slow=36						
FITZ	**Fitzroy Crossi**	**27.81**	**242**	P	P	11 24 55.3	-0.1
	1.3nm,0.6s,baz=58,slow=9.5,SNR=6.0						
ILAR	**Eielson Array**	**83.69**	**22**	P	P	11 31 33.4	-0.5
	0.2nm,0.6s,baz=232,slow=5.6,SNR=4.4						
TORD	**Torodi Ar. Bea**	**149.13**	**286**	PKPbc	PKPbc	11 38 54.8	+0.1
	0.8nm,0.8s,baz=76,slow=3.4,SNR=3.9						

SOME ***16*** *11:21:59.5, 42.°00N×72.°08E, h0km*

KRNET 16 11:21:58.5±0.1**, 41.°95N×71.°97E, h27**km**, mb2.0, 6C-9D, Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ARK	**Arkit**	**0.15**	**181**	⇑*e*P	Pb	11 22 03.9	-0.2
	baz=176						
ARK				⇑*e*S	Sb	11 22 07.9	+0.1
	baz=176						
MNAS	**Manas**	**0.67**	**37**	⇑P	Pb	11 22 10.6	-1.2
	1.0nm,0.3s						
MNAS				⇑S	Sb	11 22 18.6	-2.2
	12nm,0.3s						
ARSB	**Arslanbob**	**0.99**	**129**	⇓*e*P	Pn	11 22 16.5	-0.3
	baz=129						
ARSB				⇓*e*S	Sn	11 22 30.4	+0.5
	baz=129						
MRKS	**Merke**	**1.23**	**49**	*e*P	Pb	11 22 21.0	-0.2
	2.2nm,0.1s						
MRKS				*e*S	Sn	11 22 35.4	-0.4
	14nm,0.2s						
IUG	**Iuzhnay**	**1.45**	**278**	*e*P	Pb	11 22 28.3	+3.3
	12nm,0.4s						
IUG				*e*S	Sb	11 22 48.0	+4.9
	31nm,0.4s						
OHH	**Osh**	**1.55**	**156**	⇓*e*P	Pb	11 22 27.1	+0.4
	baz=156						
OHH				⇓*e*S	Sb	11 22 45.8	-0.1
	baz=156						
KK31	**Karatay Array**	**1.58**	**317**	⇓P	Pb	11 22 27.6	+0.6
	0.7nm,0.3s,baz=127,slow=16,SNR=17						
KK31				⇑S	Sb	11 22 49.0	+2.5
	2.1nm,0.5s,baz=130,slow=28,SNR=5.2						
ARLS	**Aral**	**1.76**	**92**	⇓*e*P	Pb	11 22 29.4	-0.9
	baz=92						
ARLS				⇓*e*S	Sb	11 22 52.2	+0.2
	baz=92						
ARLS	**Aral**	**1.76**	**92**	⇑*i*S	Sb	11 22 52.4	+0.4
	baz=91						
BRLS	**Boroldaу**	**1.91**	**305**	*e*P	Pb	11 22 35.4	+2.7
	1.4nm,0.5s						
BRLS				*e*S	Sb	11 22 59.9	+3.8
	7.6nm,0.5s						
BTK	**Batken**	**2.08**	**205**	⇓*e*P	Pb	11 22 34.2	-1.5
	baz=205						
BTK				⇓*e*S	Sb	11 23 01.4	+0.3
	baz=205						

KRNET 16 11:22:01.1±0.1**, 41.°92N×72.°26E, h6**km**, mb1.8, 7C, Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AML	**Almayashu**	**1.09**	**78**	⇑*i*P	Pg	11 22 21.9	-0.1
	baz=78						
AML				⇑*i*S	Sb	11 22 37.5	+0.3
	baz=78						
ARLS	**Aral**	**1.54**	**91**	⇑*i*P	Pg	11 22 30.8	+0.2
	baz=91						
UCH	**Uchtor**	**1.71**	**79**	⇑*i*P	Pg	11 22 33.7	-0.1
	baz=79						
UCH				⇑*i*S	Sg	11 22 58.4	+2.5
	baz=79						
KZA	**Kyzart**	**2.23**	**85**	⇑*i*P	Pg	11 22 43.5	-0.4
	baz=85						
KZA				⇑*i*S	Sg	11 23 13.5	+0.6
	baz=85						

IDC 16 11:27:10.6±2.0**, 28.°74S×175.°94W, h0**km**, mb3.6**/2**, mb1 3.8**/2**, mb1mx3.6**/28**, mbtmp3.6**/2**, Error ellipse: s-maj=70.3km s-min=30.8km az=177.0, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.80**	**253**	Pn	Pb	11 27 43.9	-0.6
	78nm,0.3s,baz=81,slow=19,SNR=4.1						
RAO				Sn	Sn	11 28 05.7	-0.8
	415nm,0.3s,baz=131,slow=22,SNR=14						
RAO				LR	LR	11 28 34.2	
	comp=Z,144nm,21.2s,baz=116,slow=46						
ASAR	**Alice Springs**	**45.02**	**264**	P	P	11 35 28.0	-0.2
	0.4nm,0.6s,baz=104,slow=7.9,SNR=9.7						
WRA	**Warramunga Arr**	**45.87**	**269**	P	P	11 35 34.7	-0.2
	0.6nm,0.6s,baz=109,slow=7.7,SNR=7.0						
FINES	**FINESS Array B**	**144.17**	**342**	PKP	PKPdf	11 46 47.6	0.0
	1.6nm,0.8s,baz=56,slow=3.5,SNR=5.4						
TORD	**Torodi Ar. Bea**	**164.33**	**171**	PKPab	PKPab	11 48 10.0	-0.7
	0.4nm,0.8s,baz=213,slow=4.3,SNR=2.2						

ISK ***16*** *11:29:22.6, 38.°43N×31.°89E, h6km, MD2.6*

ISCJB ***16*** *11:29:23.3±0.5, 38.°43N±0.°04×31.°86E±0.°04, h11km, Error ellipse: s-maj=5.8km s-min=4.1km az=34.1*

CSEM ***16*** *11:29:23.2±0.2, 38.°44N×31.°85E, h2km, ML2.8, Error ellipse: s-maj=5.6km s-min=4.0km az=43.0*

DDA ***16*** *11:29:23.1, 38.°45N×31.°81E, h7km, Ml2.8*

ISC 16 11:29:23.0±0.9**, 38.°41N**±0.°03×**31.°84E**±0.°02**, h11**km**, n32,** σ0**.°43/40, Turkey**

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

ARMT	**Armutlu**	**0.93 292**	*e*PG	**Pg**	**11 33 39.2**	**-0.6**
ARMT	**Armutlu**	**0.93 292**	*e*Pg	**Pg**	**11 33 39.2**	**-0.6**
MDUB	**Mudurnu**	**0.96 74**	*e*PG	**Pb**	**11 33 41.8**	**+0.4**
MDUB	**Mudurnu**	**0.96 74**	*e*Pg	**Pb**	**11 33 41.8**	**+0.4**
ESKT	**Eskisehir**	**0.96 136**	*e*PG	**Pb**	**11 33 42.0**	**+0.6**
ESKT	**Eskisehir**	**0.96 136**	*i* P	**Pg**	**11 33 40.3**	**-0.3**
ESKT	**Eskisehir**	**0.96 136**	*e*Pg	**Pb**	**11 33 42.0**	**+0.6**
SEYT	**Eskypehyr**	**0.96 136**	P	**Pg**	**11 33 40.3**	**-0.3**
SILT	**Sile**	**0.97 345**	*e*PG	**Pg**	**11 33 39.6**	**-1.1**
SILT	**Sile**	**0.97 345**	*e*Pg	**Pg**	**11 33 39.6**	**-1.1**
ISK	**Istanbul-Kandi**	**1.10 320**	*e*PG	**Pg**	**11 33 42.8**	**-0.4**
ISK	**Istanbul-Kandi**	**1.10 320**	*e*Pg	**Pg**	**11 33 42.8**	**-0.4**
GDZ	**Gediz**	**1.19 199**	*i* P	**Pn**	**11 33 45.6**	**0.0**
GDZ			*i* S	**Sn**	**11 34 03.2**	**+0.8**
GDZ	**Gediz**	**1.19 199**	P	**Pn**	**11 33 45.7**	**0.0**
GDZ			S	**Sn**	**11 34 03.2**	**+0.8**

IDC ***16*** *11:39:39.1±1.9,37°.45N×143°.89E,h0km,mb3.6/3, mb1 3.8/6,mb1mx3.5/41,mbtmp3.8/6,ML3.7/2,MS3.2/1, Ms1 3.2/1,ms1mx2.4/45,Error ellipse: s-maj=46.9km s-min=25.6km az=82.0*

ISCJB ***16*** *11:39:41.9±0.7,37°.47N±0°.03×143°.70E±0°.06,h33km, mb3.7/3,MS3.0/1,Error ellipse: s-maj=6.6km s-min=4.4km az=4.6*

JMA ***16*** *11:39:43.3±0.2,37°.50N×143°.65E,h55km,M3.7*

ISC 16 11:39:43.3±1.3,**37°.51N**±0°.05×**143°.75E**±0°.09,**h35**km,**n25, σ1§85/42,mb3.7/3,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.12 297**		P	**Pn**	**11 40 16.5**	**+0.3**
JIO				S	**Sn**	**11 40 41.1**	**-0.2**
OFUJ	**Ofunato**	**2.27 314**		P	**Pn**	**11 40 18.3**	**0.0**
OFUJ				*e*S	**Sn**	**11 40 44.1**	**-0.9**
JFK	**Kawauchi**	**2.29 267**		P	**Pn**	**11 40 18.6**	**-0.1**
JFK				*e*S	**Sn**	**11 40 44.1**	**-1.6**
JMK	**Ichinoseki**	**2.46 307**		P	**Pn**	**11 40 21.2**	**+0.3**
JMK				*e*S	**Sn**	**11 40 49.3**	**-0.4**
JFT	**Otama**	**2.71 271**		P	**Pn**	**11 40 25.5**	**+1.1**
JFT				*e*S	**Sn**	**11 40 56.0**	**0.0**
JOM	**Ohasama**	**2.75 316**		P	**Pn**	**11 40 25.5**	**+0.6**
JOM				S	**Sn**	**11 40 57.1**	**+0.2**
JYK	**Kaneyama**	**3.02 299**		P	**Pn**	**11 40 29.6**	**+1.0**
JYK				*e*S	**Sn**	**11 41 04.1**	**+0.6**
JANG	**Nango**	**3.35 329**		P	**Pn**	**11 40 33.7**	**+0.5**
JANG				S	**Sn**	**11 41 11.0**	**-0.7**
JAG	**Ashikaga**	**3.60 254**		P	**Pn**	**11 40 37.1**	**+0.4**
JAG				*e*S	**Sn**	**11 41 17.0**	**-1.0**
BSO1	**Boso 1**	**3.62 219**		P	**Pn**	**11 40 36.3**	**-0.2**
BSO1				*e*S	**Sn**	**11 41 16.9**	**-0.9**
JRY	**Ryogami san**	**4.17 251**		P	**Pn**	**11 40 44.6**	**+0.2**
JRY				S	**Sn**	**11 41 29.0**	**-2.9**
JOD2	**Odawara 2**	**4.38 241**		P	**Pn**	**11 40 47.6**	**+0.3**
JOD2				S	**Sn**	**11 41 34.1**	**-3.0**
JOT	**Ohata**	**4.40 332**		P	**Pn**	**11 40 48.2**	**+0.6**
JOT				*e*S	**Sn**	**11 41 36.0**	**-1.5**
MJAR	**Matsushiro Arr**	**4.54 259**		Pn	**Pn**	**11 40 51.3**	**+1.8**
	2.8nm,0.3s,baz=90,slow=15,SNR=34						
MAT	**Matsushiro**	**4.54 259**		P	**Pn**	**11 40 51.6**	**+2.1**
MAT				S	**Sn**	**11 41 39.5**	**-1.5**
JKB	**Kayabe**	**4.85 335**		P	**Pn**	**11 40 54.8**	**+1.0**
JKB				*e*S	**Sn**	**11 41 46.4**	**-2.2**
JCH	**Churui**	**5.11 357**		P	**Pn**	**11 40 56.8**	**-0.5**
JCH				*e*S	**Sn**	**11 41 52.0**	**-3.1**
JHJ2	**Mitsune**	**5.44 217**		P	**Pn**	**11 41 01.1**	**-0.8**
JHJ	**Hachijo jima 2**	**5.45 218**		Pn	**Pn**	**11 41 00.9**	**-1.1**
	10.0nm,0.3s,baz=305,slow=23,SNR=8.7						
JHJ				Sn	**Sn**	**11 41 57.4**	**-6.1**
	9.2nm,0.3s,baz=73,slow=19,SNR=3.3						
NEM2	**Nemuro 2**	**6.04 14**		S	**Sn**	**11 42 13.0**	**-5.1**
ASAJ	**Asahikawa**	**6.66 353**		Pn	**Pn**	**11 41 19.8**	**+1.2**
	baz=180,slow=0.0						
ASAJ				Sn	**Sn**	**11 42 30.2**	**-3.0**
	0.1nm,0.3s,baz=238,slow=19,SNR=1.9						
YAK	**Yakutsk**	**26.06 345**		LR	LR	11 55 44.1	
	comp=Z,47nm,19.9s,baz=28,slow=37						
ZALV	**Zalesovo Beam**	**42.98 312**		P	**P**	**11 47 40.4**	**+1.6**
	0.3nm,0.3s,baz=90,slow=6.9,SNR=2.5						
WRA	**Warramunga Arr**	**57.83 190**		P	**P**	**11 49 31.7**	**+0.3**
	0.6nm,0.6s,baz=10.0,slow=7.5,SNR=8.7						
ASAR	**Alice Springs**	**61.55 190**		P	**P**	**11 49 57.7**	**+0.7**
	0.5nm,0.8s,baz=7.8,slow=7.5,SNR=3.9						

IDC 16 11:40:58.2±12.0,**36°.86N**×**141°.40E**,**h0**km,**mb3.3/2, mb1 3.4/3,mb1mx3.2/39,mbtmp3.1/3,ML2.4/1,Error ellipse: s-maj=266.9km s-min=43.1km az=24.0,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.58 264**		Pn	Pn	11 41 41.0	-0.3
	0.7nm,0.3s,baz=82,slow=7.6,SNR=8.1						
WRA	**Warramunga Arr**	**56.88 188**		P	P	11 50 44.6	-0.3
	0.2nm,0.5s,baz=7.3,slow=6.8,SNR=3.1						
ASAR	**Alice Springs**	**60.61 188**		P	P	11 51 11.0	+0.2
	0.2nm,0.7s,baz=7.0,slow=8.4,SNR=2.9						

IDC ***16*** *11:41:14.2±2.6,37°.45N×141°.41E,h0km,mb3.5/2, mb1 3.6/3,mb1mx3.4/39,mbtmp3.4/3,ML3.3/1,Error ellipse: s-maj=46.8km s-min=38.2km az=33.0*

ISCJB ***16*** *11:41:16.8±1.0,37°.38N±0°.03×141°.12E±0°.06,h10km±4km, mb3.5/2,Error ellipse: s-maj=8.5km s-min=4.4km az=14.7*

JMA ***16*** *11:41:18.2,37°.39N×141°.03E,h13km±1km,M3.7*

JMA Felt II J1.

ISC 16 11:41:16.2±1.9,**37°.38N**±0°.03×**141°.15E**±0°.07,**h11**km±11km, **n21,σ1§01/27,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.22 265**		P	**Pb**	**11 41 21.5**	**-0.7**
JFK				*e*S	**Sg**	**11 41 23.7**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.40 225**		P	**Pb**	**11 41 24.9**	**-0.3**
ONAJ				*e*S	**Sg**	**11 41 29.8**	**+0.5**
JMM	**Marumori**	**0.56 330**		P	**Pb**	**11 41 27.9**	**-0.1**
JMM				S	**Sg**	**11 41 35.0**	**+0.6**
JFT	**Otama**	**0.66 282**		P	**Pb**	**11 41 29.5**	**-0.2**
JFT				S	**Sg**	**11 41 37.2**	**-0.4**
JHO	**Hitachi**	**0.90 211**		P	**Pb**	**11 41 33.9**	**+0.1**
JHO				S	**Sg**	**11 41 45.1**	**-0.1**
JOU	**Okura**	**1.05 339**		P	**Pn**	**11 41 36.8**	**-0.1**
JOU				*e*S	**Sb**	**11 41 50.3**	**+0.1**
JSB	**Shiboa**	**1.06 247**		P	**Pn**	**11 41 37.1**	**0.0**
JSB				S	**Sg**	**11 41 50.5**	**0.0**
JIO	**Ouri**	**1.08 8**		P	**Pn**	**11 41 37.3**	**+0.1**
JIO				S	**Sn**	**11 41 51.6**	**-0.6**
JFY	**Yanaizu**	**1.15 272**		P	**Pb**	**11 41 38.1**	**0.0**
JFY				S	**Sg**	**11 41 52.1**	**-1.1**
JYS	**Shirataka**	**1.20 315**		P	**Pn**	**11 41 39.1**	**+0.2**
JYS				S	**Sg**	**11 41 54.1**	**-0.7**
MJAR	**Matsushiro Arr**	**2.50 251**		Pn	**Pb**	**11 41 59.2**	**-1.9**
	4.7nm,0.3s,baz=73,slow=13,SNR=14						
MJAR				Sn	**Sb**	**11 42 33.0**	**+1.1**
	6.8nm,0.3s,baz=83,slow=30,SNR=7.9						
MAT	**Matsushiro**	**2.50 251**		P	**Pn**	**11 41 58.9**	**+2.1**
MAT				S	**Sb**	**11 42 32.9**	**+1.0**
JHJ	**Hachijo jima 2**	**4.40 195**		Sn	**Sn**	**11 43 11.1**	**-3.0**
	12nm,0.3s,baz=72,slow=20,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.51 121**		T	T	12 17 06.2	
	baz=314,slow=75,SNR=266						
H11N1	**WAKE ISLAND Hy**	**28.52 121**		T	T	12 17 06.2	
	baz=314,slow=75,SNR=299						
H11N3	**WAKE ISLAND Hy**	**28.53 121**		T	T	12 17 07.9	
	baz=314,slow=75,SNR=337						
H11S1	**WAKE ISLAND Hy**	**29.23 123**		T	T	12 18 00.5	
	baz=315,slow=76,SNR=76						
H11S3	**WAKE ISLAND Hy**	**29.23 123**		T	T	12 18 01.4	
	baz=315,slow=76,SNR=55						
H11S2	**WAKE ISLAND Hy**	**29.24 123**		T	T	12 18 00.2	
	baz=315,slow=76,SNR=30						
MKAR	**Makanchi Array**	**43.75 302**		P	**P**	**11 49 22.2**	**+0.6**
	0.2nm,0.3s,baz=89,slow=7.5,SNR=2.6						
WRA	**Warramunga Arr**	**57.38 188**		P	**P**	**11 51 05.0**	**+0.4**
	0.5nm,0.9s,baz=3.9,slow=7.3,SNR=4.1						

DJA 16 11:52:27.2±1.4,**1°S**±9°×**12°1E**±°,**h14**km±15km,**M3.8/5, MLv3.8/5,Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCI	**Palu**	**0.70 281**		P	Pb	11 52 41.3	+0.2
MRSI	**Marisa**	**2.07 43**		P	Pn	11 53 01.0	-0.6
TTSI	**Tana Toraja**	**2.11 199**		P	Pn	11 53 01.2	-0.9
LUWI	**Luwuk**	**2.25 90**		P	Pn	11 53 04.7	+0.6
SPSI	**Sidrap Palu**	**3.00 194**		P	Pn	11 53 13.9	-0.5

ISCJB ***16*** *11:53:58.4±0.4,7°.25S±0°.05×126°.10E±0°.08,h488km, mb3.6/10,Error ellipse: s-maj=10.9km s-min=5.8km az=163.0*

IDC ***16*** *11:53:58.8±2.1,7°.16S×126°.18E,h462km±28km,mb3.2/10, mb1 3.5/13,mb1mx3.4/29,mbtmp4.2/13,Error ellipse: s-maj=28.2km s-min=9.7km az=69.0*

DJA ***16*** *11:53:58.5±0.6,7°.5S×12°.6E±°,h465km±12km,M4.7/7, mb4.8/6,mB4.9/4,MLv4.7/7,Mw(mB)4.2/4*

ISC 16 11:53:59.7±0.6,**7°.28S**±0°.07×**126°.2E**±0°.1,**h488**km,**n31, σ1§98/34,mb3.7/10,Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SOEI	**Soe**	**3.10 218**		P	**P**	**11 55 08.2**	**-2.4**
BATI	**Baumata**	**3.83 220**		P	**P**	**11 55 14.2**	**-1.8**
NLAI	**Namlea**	**4.12 13**		P	**P**	**11 55 16.1**	**-2.3**
MMRI	**Maumere**	**4.13 251**		P	**P**	**11 55 14.5**	**-4.0**
KDI	**Kendari**	**4.85 313**		P	**P**	**11 55 22.2**	**-2.6**
SANI	**Sanana**	**5.20 358**		P	**P**	**11 55 24.2**	**-3.8**
LUWI	**Luwuk**	**7.07 331**		P	**P**	**11 55 44.8**	**-1.6**
SPSI	**Sidrap Palu**	**7.19 297**		P	**P**	**11 55 46.4**	**-1.1**
FAKI	**Fak Fak**	**7.43 55**		P	**P**	**11 55 47.3**	**-2.8**
	126nm,0.8s						
KMSI	**Cibinong**	**8.11 344**		P	**P**	**11 55 55.8**	**-1.3**
PLAI	**Plampang**	**8.47 259**		P	**P**	**11 55 57.2**	**-3.6**
	52nm,0.5s,1µm						
FITZ	**Fitzroy Crossi**	**10.77 183**		P	**P**	**11 56 25.6**	**+0.5**
	2.0nm,0.3s,baz=360,slow=7.9,SNR=202						
FITZ				S	**S**	**11 58 22.6**	**-2.3**
	0.6nm,0.3s,baz=277,slow=16,SNR=10						
BBKI	**Banjar Baru**	**11.91 288**		P	**P**	**11 56 38.4**	**+0.9**
WRA	**Warramunga Arr**	**14.86 149**		P	**P**	**11 57 08.9**	**+0.1**
	5.5nm,0.3s,baz=325,slow=12,SNR=302						
WRA				S	**S**	**11 59 42.7**	**-2.0**
	0.0nm,0.3s,baz=330,slow=21,SNR=4.2						
ASAR	**Alice Springs**	**17.90 156**		P	**P**	**11 57 41.3**	**+1.5**
	3.8nm,0.3s,baz=333,slow=11,SNR=244						
ASAR				S	**S**	**12 00 44.1**	**+4.5**
	baz=342,slow=20,SNR=11						
STKA	**Stephens Creek**	**28.38 152**		P	**P**	**11 59 15.1**	**+1.4**
	2.3nm,0.4s,baz=321,slow=12,SNR=8.0						
CMAR	**Chiang Mai Arr**	**37.10 314**		P	**P**	**12 00 28.1**	**0.0**
	2.3nm,0.6s,baz=141,slow=6.8,SNR=11						
KSRS	**Korea Array**	**44.53 2**		P	**P**	**12 01 27.8**	**+0.7**
	0.8nm,0.8s,baz=182,slow=10,SNR=4.0						
MJAR	**Matsushiro Arr**	**45.03 14**		P	**P**	**12 01 30.4**	**-0.6**
	3.4nm,0.7s,baz=192,slow=8.9,SNR=13						
RAMN	**Ramite**	**51.27 313**		*e*P	**P**	**12 02 18.9**	**+0.7**
	37nm,0.6s						
USRK	**Ussuriysk Ar.**	**51.51 5**		P	**P**	**12 02 18.7**	**-0.6**
	1.5nm,0.5s,baz=172,slow=8.3,SNR=4.3						
GUN	**Gumba**	**52.35 314**		*e*P	**P**	**12 02 26.3**	**+0.1**
PKIN	**Phulchoki**	**52.50 313**		*e*P	**P**	**12 02 27.2**	**0.0**
	9.4nm,0.4s						
GKN	**Gorkha**	**53.30 313**		*e*P	**P**	**12 02 33.0**	**+0.3**
	23nm,0.3s						
PYUN	**Piuthan**	**54.56 312**		*e*P	**P**	**12 02 42.4**	**+0.7**
SONM	**Songino Array**	**57.60 344**		P	**P**	**12 03 02.9**	**+0.6**
	0.5nm,0.4s,baz=142,slow=7.2,SNR=3.8						
PETK	**Petropavlovsk-**	**65.83 20**		P	**P**	**12 03 57.4**	**+1.5**
	2.2nm,0.5s,baz=183,slow=6.2,SNR=5.7						
MKAR	**Makanchi Array**	**66.44 329**		P	**P**	**12 04 00.6**	**+0.7**
	0.6nm,0.4s,baz=121,slow=8.1,SNR=7.5						
ZALV	**Zalesovo Beam**	**70.22 335**		P	**P**	**12 04 22.6**	**0.0**
	1.2nm,0.4s,baz=143,slow=5.4,SNR=5.4						
ILAR	**Eielson Array**	**95.22 25**		P	**P**	**12 06 29.8**	**-0.4**
	0.2nm,0.7s,baz=270,slow=7.2,SNR=2.5						
TXAR	**Lajitas Array**	**128.31 58**		PKP	**PKPdf**	**12 12 13.0**	**+2.0**
	0.1nm,0.5s,baz=220,slow=2.4,SNR=2.6						

ISCJB ***16*** *11:56:06.7±0.5,39°.00N±0°.03×31°.10E±0°.04,h9km±6km, Error ellipse: s-maj=5.5km s-min=4.6km az=148.1*

CSEM ***16*** *11:56:06.5±0.3,38°.99N×31°.09E,h10km,MD2.7,Error ellipse: s-maj=6.7km s-min=5.1km az=46.0*

ISK ***16*** *11:56:06.5,38°.99N×31°.12E,h9km,MD2.4*

DDA ***16*** *11:56:06.1,39°.02N×31°.16E,h7km,Md2.7*

ISC 16 11:56:06.4±1.0,**38°.99N**±0°.02×**31°.10E**±0°.03,**h14**km±10km, **n22,σ0§71/33,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BOLV	**Bolvadin**	**0.29 204**		*i* P	**Pg**	**11 56 13.0**	**+0.4**
BOLV				*i* S	**Sb**	**11 56 18.4**	**+0.1**
BOLV	**Bolvadin**	**0.29 204**		P	**Pg**	**11 56 13.0**	**+0.4**
BOLV				S	**Sb**	**11 56 18.4**	**+0.1**
SVRH	**Sivrihisar-ESK**	**0.56 35**		*e*PG	**Pg**	**11 56 17.5**	**-0.1**
SVRH				*e*SG	**Sb**	**11 56 26.2**	**+0.1**
ESKT	**Eskisehir**	**0.57 340**		*e*PG	**Pb**	**11 56 18.4**	**+0.2**
ESKT	**Eskisehir**	**0.57 340**		*i* P	**Pg**	**11 56 16.9**	**-0.7**
ESKT				*i* S	**Sg**	**11 56 24.9**	**-0.3**
ESKT	**Eskisehir**	**0.57 340**		*e*Pg	**Pb**	**11 56 18.4**	**+0.2**
SEYT	**Eskypehyr**	**0.57 340**		P	**Pg**	**11 56 16.9**	**-0.7**
SEYT				S	**Sg**	**11 56 24.9**	**-0.3**
SHUT	**Suhut-Afyon**	**0.61 225**		*e*PG	**Pb**	**11 56 19.1**	**+0.2**
SHUT	**Suhut-Afyon**	**0.61 225**		*e*Pg	**Pb**	**11 56 19.1**	**+0.2**
KIZT	**Kizilcal**	**0.62 100**		*e*PG	**Pg**	**11 56 18.1**	**-0.5**
KIZT				*e*SG	**Sb**	**11 56 27.8**	**+0.2**
KIZT	**Kizilcal**	**0.62 100**		*e*Pg	**Pg**	**11 56 18.1**	**-0.5**
KIZT				*e*Sg	**Sb**	**11 56 27.8**	**+0.2**
KDHN	**Kadinhani**	**0.92 120**		*i* P	**Pb**	**11 56 24.4**	**+0.2**
KDHN				*i* S	**Sg**	**11 56 36.3**	**0.0**
KDHN	**Kadinhani**	**0.92 120**		P	**Pb**	**11 56 24.4**	**+0.2**
KDHN				S	**Sg**	**11 56 36.3**	**0.0**
BORA	**Eskisehir**	**1.02 331**		*i* P	**Pg**	**11 56 25.8**	**-0.4**
BORA				*i* S	**Sb**	**11 56 40.3**	**+1.0**
BORA	**Eskisehir**	**1.02 331**		P	**Pg**	**11 56 25.8**	**-0.4**
BORA				S	**Sb**	**11 56 40.3**	**+1.0**
GDZ	**Gediz**	**1.27 275**		*i* P	**Pn**	**11 56 28.0**	**-1.8**
GDZ	**Gediz**	**1.27 275**		P	**Pn**	**11 56 28.0**	**-1.8**
TVSB	**Tavsanli**	**1.35 290**		*e*PN	**Pb**	**11 56 32.1**	**+0.5**
TVSB	**Tavsanli**	**1.35 290**		*e*Pn	**Pb**	**11 56 32.1**	**+0.5**
KONT	**Konya--Tatoy**	**1.44 136**		*e*PN	**Pb**	**11 56 33.4**	**+0.4**
CAVI	**Cavuskoy**	**1.56 322**		*e*PN	**Pn**	**11 56 35.0**	**+1.3**
CAVI	**Cavuskoy**	**1.56 322**		*e*Pn	**Pn**	**11 56 35.0**	**+1.3**

IDC ***16*** *12:14:05.8±6.9,36°.02N×71°.58E,h0km,mb3.9/1, mb1 3.8/7,mb1mx3.5/58,mbtmp3.8/7,ML3.9/5,MS4.7/1, Ms1 4.7/1,ms1mx2.5/39,Error ellipse: s-maj=96.0km s-min=31.5km az=161.0*

ISCJB ***16*** *12:14:19.3±0.8,36°.89N±0°.05×71°.26E±0°.08,h100km, Error ellipse: s-maj=9.8km s-min=6.1km az=153.5*

NNC ***16*** *12:14:25.4±3.6,37°.18N×71°.11E,h86km±179km,mb3.6, mpv4.0,Error ellipse: s-maj=44.2km s-min=25.2km az=102.0*

ISC 16 12:14:18.8±1.0,**36°.81N**±0°.07×**71°.07E**±0°.06,**h100**km,**n14, σ1§98/21,6C-3D,Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZET	**Dzherino**	**2.67 319**		⇑P	**Pn**	**12 15 02.6**	**+2.3**
	53nm,0.4s						
DZET				⇑S	**Sn**	**12 15 33.0**	**+0.9**
	87nm,0.5s						
MNAS	**Manas**	**5.78 11**		⇑P	**Pn**	**12 15 45.0**	**+2.8**
	6.3nm,0.4s						
MNAS				⇓S	**Sn**	**12 16 44.7**	**-2.5**
	7.9nm,0.5s						
THN	**Thein Dam**	**5.81 137**		*e*P	**Pn**	**12 15 41.8**	**-0.7**
THN				*e*S	**Sn**	**12 16 49.0**	**+1.3**
KK31	**Karatay Array**	**6.30 356**		⇓P	**Pn**	**12 15 51.3**	**+2.1**
	2.2nm,0.3s,baz=195,slow=15,SNR=76						
KK31				⇓S	**Sn**	**12 16 58.3**	**-1.5**
	3.4nm,0.3s,baz=188,slow=29,SNR=4.9						
AAK	**Ala-Archa**	**6.39 23**		Pn	**Pn**	**12 15 53.3**	**+2.8**
	7.2nm,0.3s,baz=190,slow=6.3,SNR=18						
AAK				Sn	**Sn**	**12 17 01.3**	**-0.8**
	1.2nm,0.3s,baz=149,slow=23,SNR=6.5						
AAK	**Ala-Archa**	**6.39 23**		P	**Pn**	**12 15 53.1**	**+2.5**
	10nm,0.3s						
AAK				⇑S	**Sn**	**12 17 00.3**	**-1.9**
	6.3nm,0.4s						

TKM2	**Tokmak 2**	**7.03 28**		⇑P	**Pn**	**12 16 01.1**	**+1.8**
	9.3nm,0.6s						
TKM2				⇑S	**Sn**	**12 17 15.5**	**-2.2**
	1.9nm,0.5s						
GEYT	**Alibeck**	**10.37 280**		Pn	**Pn**	**12 16 43.3**	**-1.3**
	0.8nm,0.3s,baz=93,slow=15,SNR=4.9						
GEYT				Sn	**Sn**	**12 18 36.1**	**-2.6**
	3.8nm,0.3s,baz=116,slow=16,SNR=9.0						
MKAR	**Makanchi Array**	**13.01 36**		Pn	**Pn**	**12 17 19.3**	**-0.4**
	0.1nm,0.3s,baz=220,slow=13,SNR=15						
KURBB	**Kurchatov Arra**	**14.81 19**		Pn	**Pn**	**12 17 42.3**	**-0.7**
	0.0nm,0.3s,baz=208,slow=11,SNR=3.1						
BVAR	**Borovoye Array**	**16.23 359**		Pn	**P**	**12 18 02.7**	**+0.8**
	0.3nm,0.3s,baz=173,slow=10.0,SNR=4.5						
AKTO	**Aktyubinsk**	**16.54 330**		Pn	**P**	**12 18 07.8**	**+2.3**
	0.5nm,0.3s,baz=139,slow=8.2,SNR=8.2						
ZALV	**Zalesovo Beam**	**19.61 25**		P	**Pn**	**12 18 40.4**	**-0.9**
	2.0nm,0.3s,baz=219,slow=12,SNR=13						
TIXI	**Tiksi**	**45.47 22**		LR	LR	12 42 03.7	
	comp=Z,1µm,21.2s,baz=315,slow=36						

ISK ***16*** *12:20:56.6,39°.74N×30°.20E,h5km,MD2.8*

DDA ***16*** *12:20:57.3,39°.75N×30°.17E,h7km,Md2.8*

CSEM ***16*** *12:20:57.8±0.1,39°.73N×30°.22E,h8km,MD2.8,Error ellipse: s-maj=3.2km s-min=3.0km az=24.0*

ISC 16 12:20:57.6±1.0,**39°.74N**±0°.02×**30°.21E**±0°.02,**h6**km±9km, **n46,σ0§62/63,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BORA	**Eskisehir**	**0.23 54**		*i* P	**Pg**	**12 21 02.3**	**0.0**
BORA				*i* S	**Sg**	**12 21 06.3**	**+0.9**
BORA	**Eskisehir**	**0.23 54**		P	**Pg**	**12 21 02.3**	**0.0**
BORA				S	**Sg**	**12 21 06.3**	**+0.9**
CAVI	**Cavuskoy**	**0.54 329**		*e*PG	**Pg**	**12 21 07.9**	**-0.1**
CAVI	**Cavuskoy**	**0.54 329**		*e*Pg	**Pg**	**12 21 07.9**	**-0.1**
ESKT	**Eskisehir**	**0.54 114**		*e*PG	**Pg**	**12 21 08.3**	**+0.3**
ESKT				*e*SG	**Sb**	**12 21 17.3**	**-0.3**
ESKT	**Eskisehir**	**0.54 114**		*i* P	**Pg**	**12 21 08.2**	**+0.1**
ESKT				*i* S	**Sb**	**12 21 16.4**	**-1.2**
ESKT	**Eskisehir**	**0.54 114**		*e*Pg	**Pg**	**12 21 08.3**	**+0.3**
ESKT				*e*Sg	**Sb**	**12 21 17.3**	**-0.3**
SEYT	**Eskypehyr**	**0.54 114**		P	**Pg**	**12 21 08.2**	**+0.1**
SEYT				S	**Sb**	**12 21 16.4**	**-1.2**
TVSB	**Tavsanli**	**0.65 243**		*e*PG	**Pg**	**12 21 10.1**	**+0.1**
TVSB				*e*SG	**Sb**	**12 21 20.0**	**-0.4**
TVSB	**Tavsanli**	**0.65 243**		*e*Pg	**Pg**	**12 21 10.1**	**+0.1**
TVSB				*e*Sg	**Sb**	**12 21 20.2**	**-0.4**
GULT	**Gulveren**	**0.73 19**		*e*PG	**Pg**	**12 21 11.8**	**+0.2**
GULT	**Gulveren**	**0.73 19**		*e*Pg	**Pg**	**12 21 11.9**	**+0.2**
IZI	**Iznik**	**0.82 317**		*e*PG	**Pb**	**12 21 13.9**	**-0.4**
IZI	**Iznik**	**0.82 317**		*e*Pg	**Pb**	**12 21 13.9**	**-0.4**
GDZ	**Gediz**	**0.86 221**		*i* P	**Pg**	**12 21 14.0**	**-0.1**
GDZ				*i* S	**Sg**	**12 21 25.4**	**+0.1**
GDZ	**Gediz**	**0.86 221**		P	**Pg**	**12 21 14.0**	**-0.1**
GDZ				S	**Sg**	**12 21 25.4**	**+0.1**
BTAS	**Taskesti**	**1.03 36**		*i* P	**Pb**	**12 21 17.4**	**-0.4**
BTAS	**Taskesti**	**1.03 36**		P	**Pb**	**12 21 17.4**	**-0.4**
GEMT	**Gemlik**	**1.04 312**		*e*PG	**Pn**	**12 21 18.4**	**-0.3**
GEMT	**Gemlik**	**1.04 312**		*e*Pg	**Pn**	**12 21 18.4**	**-0.3**
MDUB	**Mudurnu**	**1.05 46**		*e*PG	**Pb**	**12 21 18.0**	**-0.3**
MDUB	**Mudurnu**	**1.05 46**		*e*Pg	**Pb**	**12 21 18.0**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.06 106**		*e*PG	**Pg**	**12 21 17.8**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.06 106**		*e*Pg	**Pg**	**12 21 17.8**	**-0.1**
HRT	**Hereke**	**1.16 339**		*e*PN	**Pg**	**12 21 19.2**	**-0.6**
HRT	**Hereke**	**1.16 339**		*e*Pn	**Pg**	**12 21 19.2**	**-0.6**
BOLV	**Bolvadin**	**1.17 150**		*i* P	**Pg**	**12 21 19.6

ONAJ				S	Sb	12 44 55.4	-0.6
JHO	Hitachi	0.96	271	P	Pb	12 44 43.9	-0.9
JHO				S	Sb	12 44 55.4	-1.7
JFK	Kawauchi	1.04	317	P	Pn	12 44 45.9	-0.5
JFT	Otama	1.46	309	P	Pn	12 44 51.8	-0.4
JMM	Marumori	1.48	329	P	Pb	12 44 52.6	-1.0
JFY	Yanaizu	1.83	297	P	Pn	12 44 57.1	-0.2
JAG	Ashikaga	1.87	265	P	Pn	12 44 57.2	-0.5
MJAR	Matsushiro Arr	2.86	270	Pn	Pn	12 45 12.4	+1.0
	6.5nm,0.3s,baz=87,slow=9.2,SNR=90						
MAT	Matsushiro	2.86	270	P	Pn	12 45 12.7	+1.3
MAT				eS	Sn	12 45 48.0	+2.6
JHJ	Hachijo jima 2	3.84	206	Pn	Pn	12 45 26.0	+1.2
	5.8nm,0.3s,baz=72,slow=20,SNR=6.7						
JHJ				Sn	Sn	12 46 06.4	-3.0
	7.1nm,0.3s,baz=90,slow=20,SNR=3.5						
H11N2	WAKE ISLAND Hy	27.69	121	T	T	13 19 17.6	
	baz=313,slow=75,SNR=20						
H11N1	WAKE ISLAND Hy	27.70	121	T	T	13 19 17.1	
	baz=313,slow=75,SNR=14						
H11N3	WAKE ISLAND Hy	27.71	121	T	T	13 19 16.5	
	baz=313,slow=75,SNR=15						
SONM	Songino Array	28.26	305	P	P	12 50 20.0	+1.2
	0.3nm,0.4s,baz=108,slow=9.3,SNR=3.6						
H11S1	WAKE ISLAND Hy	28.39	123	T	T	13 20 11.6	
	baz=315						
H11S3	WAKE ISLAND Hy	28.39	123	T	T	13 20 12.2	
	baz=315						
H11S2	WAKE ISLAND Hy	28.41	123	T	T	13 20 11.6	
	baz=315						
MKAR	Makanchi Array	44.59	303	P	P	12 52 38.1	+0.5
	0.2nm,0.6s,baz=98,slow=10,SNR=2.8						

IDC 16 12:48:45.8±11.0, 4°29S×151°41E, h76km±104km, mb3.5/6, mb1 3.6/6, mb1mx3.4/23, mbtmp3.8/6, Error ellipse: s-maj=72.0km s-min=32.2km az=116.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	Warramunga Arr	22.78	226	P	P	12 53 43.5	+1.2
	1.3nm,0.3s,baz=50,slow=10.0,SNR=20						
ASAR	Alice Springs	25.63	220	P	P	12 54 08.8	+0.3
	0.6nm,0.4s,baz=56,slow=9.1,SNR=9.1						
SONM	Songino Array	65.16	328	P	P	12 59 20.7	+1.7
	0.4nm,0.5s,baz=133,slow=6.1,SNR=2.3						
MKAR	Makanchi Array	79.03	319	P	P	13 00 43.0	+1.2
	0.4nm,0.6s,baz=111,slow=6.6,SNR=4.2						
KURBB	Kurchatov Arra	82.54	322	P	P	13 01 00.5	+0.1
	0.4nm,0.6s,baz=110,slow=4.0,SNR=3.0						
BVAR	Borovoye Array	88.00	323	P	P	13 01 26.5	-1.1
	1.8nm,0.6s,baz=97,slow=6.0,SNR=8.0						
TORD	Torodi Ar. Bea	148.83	288	PKPbc	PKPdf	13 08 23.1	+1.1
	1.5nm,0.8s,baz=60,slow=2.5,SNR=8.5						

AZER 16 13:01:43.4±0.0, 37°57N×48°67E, h14km, Error ellipse: s-maj=8.6km s-min=1.1km az=274.0
ISCJB 16 13:01:46.1±0.8, 37°54N±0°04×48°71E±0°06, h10km, Error ellipse: s-maj=7.1km s-min=5.8km az=173.9
CSEM 16 13:01:46.1±0.3, 37°58N×48°70E, h10km, ML2.8, Error ellipse: s-maj=7.2km s-min=5.3km az=72.0
TEH 16 13:01:47.1, 37°58N×48°71E, h16km, ML2.8
ISC 16 13:01:46.1±1.1, 37°57N±0°05×48°73E±0°05, h10km, n16, σ0s90/23, 3C-3D, Northwestern Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ISRB	Sarab	0.88	287	eAMB	AMB	13 02 07.3	
	comp=Z,3μm,0.1s						
ISRB				ePg	Pg	13 02 02.1	-1.0
ISRB				eSg	Sg	13 02 15.1	+0.5
ASTR	Astara	0.99	3	⇑P	Pg	13 02 04.2	-0.9
	SNR=16						
ASTR				⇑S	Sb	13 02 19.2	+0.8
ASTR	Astara	0.99	3	P	Pg	13 02 04.2	-0.9
	SNR=16						
ASTR				S	Sb	13 02 19.2	+0.8
LRK	Lerik	1.11	344	⇓P	Pg	13 02 07.1	-0.4
	SNR=6.7						
LRK				⇑S	Sb	13 02 23.1	+0.9
LRK	Lerik	1.11	344	P	Pg	13 02 07.1	-0.4
	SNR=6.7						
LRK				S	Sb	13 02 23.1	+0.9
LKRN	Lenkeran, Azer	1.14	2	⇓P	Pb	13 02 06.9	-0.9
	SNR=7.2						
LKRN				⇓S	Sb	13 02 23.0	+0.3
LKRN	Lenkeran, Azer	1.14	2	P	Pb	13 02 06.9	-0.9
	SNR=7.2						
LKRN				S	Sb	13 02 23.0	+0.3
IBST	Bostanabad	1.47	276	ePn	Pn	13 02 12.6	-0.2
IBST				eAMB	AMB	13 02 13.5	
	comp=Z,1μm,0.1s						
IBST	Bostanabad	1.47	276	ePn	Pn	13 02 12.6	-0.2
IHRS	Heris	1.53	300	ePn	Pn	13 02 13.9	+0.2
IHRS				eAMB	AMB	13 02 15.2	
	comp=Z,2μm,0.1s						
IHRS	Heris	1.53	300	ePn	Pn	13 02 13.9	+0.2
IRAZ	Razeghan	2.37	156	ePn	Pn	13 02 25.3	+0.1
IRAZ				eAMB	AMB	13 02 59.7	
	comp=Z,634nm,0.1s						
IRAZ	Razeghan	2.37	156	ePn	Pn	13 02 25.3	+0.1
IMHD	Mahdasht	2.44	140	ePn	Pn	13 02 27.2	+1.1
IMHD				eAMB	AMB	13 03 03.4	
	comp=E,2μm,0.1s						
IMHD	Mahdasht	2.44	140	ePn	Pn	13 02 27.2	+1.1
ISHB	Shabestar	2.56	287	ePn	Pn	13 02 30.2	+2.3
ISHB				eAMB	AMB	13 02 33.5	
	comp=Z,294nm,0.2s						

IDC 16 13:05:22.6±1.4, 28°72S×176°04W, h0km, mb3.9/4, mb1 4.0/4, mb1mx3.8/31, mbtmp3.9/4, MS3.2/3, Ms1 3.2/3, ms1mx2.7/32, Error ellipse: s-maj=59.9km s-min=25.0km az=162.0
ISCJB 16 13:05:23.1±1.6, 29°37S±0°10×175°7W±0°1, h36km, mb3.9/4, MS3.1/2, Error ellipse: s-maj=17.5km s-min=13.4km az=165.1
ISC 16 13:05:27.4±1.2, 29°3S±0°1×175°9W±0°1, h36km, n16, σ1s39/13, mb3.9/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.79	270	Pn	Pn	13 05 56.0	+0.3
	116nm,0.3s,baz=56,slow=14,SNR=10						
RAO				Sn	Sn	13 06 18.3	+1.1
	479nm,0.3s,baz=139,slow=19,SNR=8.3						
RAO				LR	LR	13 06 36.9	
	comp=Z,144nm,21.3s,baz=140,slow=43						
URZ	Urewera	10.70	211	Pn	Pn	13 07 56.6	-1.4
	0.2nm,0.3s,baz=90,slow=4.0,SNR=2.6						
URZ				Sn	Sn	13 09 57.1	+0.6
	1.0nm,0.3s,baz=181,slow=16,SNR=8.6						
DZM	Mont Dzumac	17.47	290	LR	LR	13 13 47.5	
	comp=Z,69nm,19.6s,baz=47,slow=29						
DZM	Mont Dzumac	17.47	290	eLR	LR	13 13 33.7	
	175nm,27.4s						
TBI	Tubuai	24.37	82	eLR	LR	13 16 32.0	
	114nm,31.0s						
PPT2	Papeete2	26.71	70	eLR	LR	13 17 29.8	
	109nm,26.5s						
PPT	Papeete	26.72	70	LR	LR	13 21 33.2	
	comp=Z,48nm,18.4s,baz=176,slow=36						
STKA	Stephens Creek	36.55	255	P	P	13 12 31.0	+1.3
	1.5nm,0.8s,baz=108,slow=16,SNR=3.1						
STKA				LR	LR	13 26 11.9	
	comp=Z,40nm,18.9s,baz=26,slow=34						
ASAR	Alice Springs	45.04	265	P	P	13 13 38.6	-1.2
	1.1nm,0.7s,baz=102,slow=7.3,SNR=11						
WRA	Warramunga Arr	45.93	270	P	P	13 13 45.4	-1.5
	1.0nm,0.7s,baz=110,slow=8.0,SNR=10						
FITZ	Fitzroy Crossi	54.23	268	P	P	13 14 48.1	-1.7
	1.4nm,0.7s,baz=92,slow=4.4,SNR=3.9						
FINES	FINESS Array B	144.69	342	PKP	PKPab	13 24 57.8	-0.4
	1.1nm,0.7s,baz=66,slow=6.5,SNR=4.9						
NB2	NORSAR Subarra	147.88	354	PKP	PKPbc	13 25 08.2	+0.2
	comp=Z,0.9nm,0.6s,baz=8.2,slow=3.0						
NOA	NORSAR Array B	147.88	354	PKPbc	PKPbc	13 25 08.1	+0.1
	comp=Z,1.2nm,0.6s,baz=12,slow=4.5,SNR=4.3						
AKASG	Malin Array Be	151.47	326	PKPbc	PKPbc	13 25 17.5	+0.4
	comp=Z,0.3nm,0.2s,baz=45,slow=2.9,SNR=6.3						
TORD	Torodi Ar. Bea	163.80	171	PKPab	PKPab	13 26 22.0	+2.6
	comp=Z,0.9nm,0.7s,baz=194,slow=4.0,SNR=5.5						

NNC 16 13:05:27.7±0.4, 47°14N×82°02E, h0km, mb4.1, mpv3.8, Error ellipse: s-maj=2.4km s-min=1.9km az=57.0
IDC 16 13:05:27.1±0.7, 47°15N×81°98E, h0km, mb3.7/5, mb1 3.8/9, mb1mx3.5/54, mbtmp3.8/9, ML3.6/4, Error ellipse: s-maj=13.4km s-min=5.4km az=57.0
SOME 16 13:05:27.1, 47°18N×82°35E, h25km
MOS 16 13:05:27.4±1.1, 47°18N×81°85E, h17km, mb4.1/5, Error ellipse: s-maj=11.1km s-min=6.6km az=99.5
BJI 16 13:05:27.2, 47°19N×82°08E, h10km, ML3.6/6
ISC 16 13:05:28.9±0.6, 47°12N±0°03×81°88E±0°03, h10km, n61, σ2s06/92, mb3.8/7, 19C-13D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MAKZ	Makanchi	0.32	168	⇑P	Pg	13 05 34.9	-0.5
	350nm,0.3s						
MAKZ				⇑S	Sg	13 05 38.7	-0.9
	332nm,0.2s						
MAKZ	Makanchi	0.32	168	PG	Pg	13 05 34.9	-0.5
MAKZ				pmax	pmax		
	comp=Z,103nm,0.2s						
MK31	Makanchi Array	0.44	139	P	Pg	13 05 35.3	-2.1
	comp=Z,103nm,0.2s,baz=289,slow=5.0						
MK31				⇑S	Sg	13 05 40.9	-2.3
	comp=Z,519nm,0.2s,baz=296,slow=42,SNR=4.6						
MKAR	Makanchi Array	0.44	139	Pg	Pg	13 05 35.4	-2.0
	comp=Z,191nm,0.3s,baz=350,slow=16,SNR=3.9						
MKAR				Lg	Lg	13 05 40.8	
	comp=Z,3μm,0.3s,baz=357,slow=28,SNR=27						
ZSN	Zaisan	1.75	78	eP	Pg	13 06 03.6	+1.1
	comp=Z,90nm,0.2s						
ZSN				eS	Sg	13 06 28.1	+3.0
	comp=Z,276nm,0.2s						
KAPS	Kapalarasan	2.54	224	eP	Pb	13 06 13.8	-0.8
	comp=Z,27nm,0.2s						
KAPS				eS	Sb	13 06 45.1	-0.8
	comp=Z,172nm,0.3s						
DJR	Jarkent	3.15	208	eP	Pb	13 06 26.2	+1.2
	comp=Z,29nm,0.3s						
DJR				eS	Sb	13 07 06.6	+3.1
	comp=Z,129nm,0.4s						
TDK	Taldyqorghan	3.21	230	eP	Pg	13 06 29.9	-0.5
	comp=Z,35nm,0.2s						
TDK				eS	Sg	13 07 12.7	+0.6
	comp=Z,61nm,0.4s						
SEM	Semipalatinsk	3.46	342	eP	Pb	13 06 28.8	-1.4
	comp=Z,32nm,0.3s						
SEM				eS	Sb	13 07 11.3	-0.9
	comp=Z,226nm,0.2s						
KTMS	Ketmen	3.83	197	eP	Pb	13 06 35.7	-1.0
	comp=Z,19nm,0.5s						
KTMS				eS	Sb	13 07 23.3	+0.2
	comp=Z,62nm,0.5s						
ARXS	Arharly	4.07	226	eP	Pg	13 06 45.2	-1.6
	comp=Z,19nm,0.2s						
ARXS				eS	Sg	13 07 39.0	-0.4
	comp=Z,202nm,0.7s						
KURBB	Kurchatov Arra	4.14	329	Pn	Pn	13 06 31.9	-0.1
	comp=Z,1.6nm,0.3s,baz=152,slow=11,SNR=38						
KURBB				Lg	Lg	13 07 39.8	
	comp=Z,10nm,0.3s,baz=152,slow=32,SNR=22						
KURBB	Kurchatov Arra	4.14	329	⇑Pn	Pn	13 06 32.2	+0.1
	comp=Z,5.5nm,0.2s						
KURBB				⇑Pg	Pb	13 06 43.4	+1.7
	comp=Z,19nm,0.3s						
KURBB				⇑Sn	Sn	13 07 23.2	+2.7
	comp=Z,64nm,0.6s						
KURBB				⇓Lg	Lg	13 07 38.2	
	comp=Z,351nm,0.5s						
PDGK	Podgornoye	4.16	205	⇑Pn	Pn	13 06 34.4	+2.1
	comp=Z,4.5nm,0.3s						
PDGK				⇓Lg	Lg	13 07 38.7	
	comp=Z,103nm,0.7s						
PDGK	Podgornoye	4.16	205	PN	Pn	13 06 34.4	+2.1
PDGK				pmax	pmax		
	comp=Z,5.0nm,0.3s						
KURK	Kurchatov	4.19	330	PN	Pn	13 06 32.0	-0.7
KURK				pmax	pmax		
	comp=Z,2.0nm,0.3s						
SHLS	Shalkode	4.21	200	eP	Pb	13 06 45.2	+2.0
	comp=Z,24nm,0.5s						
SHLS				eS	Sg	13 07 39.5	-4.6
	comp=Z,102nm,0.6s						
UKR	Ust'-Kan	4.27	25	ePN	Pn	13 06 34.2	+0.3
UKR				e		13 06 41.5	
UKR				e		13 07 23.5	
UKR				e		13 07 37.8	
KPKS	Kokpek	4.29	213	eP	Pg	13 06 49.0	-2.2
	comp=Z,47nm,0.2s						
KPKS				eS	Sg	13 07 45.0	-1.7
	comp=Z,146nm,0.7s						
UZB	Uzynbulak	4.46	208	eP	Pb	13 06 49.8	+2.4
	comp=Z,8.3nm,0.3s						
UZB				eS	Sg	13 07 47.3	-4.7
	comp=Z,38nm,0.5s						
KURS	Kuram	4.48	217	eP	Pg	13 06 52.9	-1.8
	comp=Z,2.9nm,0.3s						
KURS				eS	Sg	13 07 52.2	-0.4
	comp=Z,53nm,0.9s						
CHKK	Chushkaly	4.73	228	eP	Pb	13 06 54.1	+2.3
	comp=Z,6.5nm,0.2s						
CHKK				eS	Sb	13 07 55.1	+6.3
	comp=Z,59nm,0.7s						
SATY	Saty	4.75	212	eP	Pg	13 06 57.3	-2.5
	comp=Z,41nm,0.2s						
SATY				eS	Sg	13 07 59.1	-2.2
	comp=Z,136nm,0.3s						
KUU	Kurty	5.06	232	eP	Pg	13 07 02.6	-3.1
	comp=Z,18nm,0.6s						
KUU				eS	Sg	13 08 08.8	-2.4
	comp=Z,132nm,0.5s						
AAA	Alma-Ata	5.19	224	ePG	Pg	13 07 13.9	+5.6
AAA				pmax	pmax		
	comp=Z,51nm,0.2s						
TNSS	Tian-Shan	5.37	222	eP	Pg	13 07 08.9	-2.8
	comp=Z,6.9nm,0.2s						
TNSS				eS	Sg	13 08 18.6	-2.7
	comp=Z,39nm,0.6s						
OTUK	Ortayu	6.54	283	⇓Pn	Pn	13 07 05.1	0.0
	comp=Z,1.5nm,0.2s						
OTUK				⇓Lg	Lg	13 08 56.9	
	comp=Z,54nm,0.7s						
OTUK	Ortayu	6.54	283	PN	Pn	13 07 05.1	0.0
OTUK				pmax	pmax		
	comp=Z,2.0nm,0.2s						
ELT	Eltsovka	6.75	23	ePN	Pn	13 07 07.7	-0.3
TASR	Tashtagol	6.84	32	ePN	Pn	13 07 08.6	-0.6
TASR				e		13 08 56.8	
AAK	Ala-Archa	6.90	232	Pn	Pn	13 07 11.9	+1.7
	comp=Z,1.4nm,0.3s,baz=42,slow=5.3,SNR=3.5						
AAK				Sn	Sn	13 08 30.6	+1.8
	comp=Z,1.2nm,0.3s,baz=312,slow=14,SNR=6.3						
AAK				Lg	Lg	13 09 05.6	
	comp=Z,1.5nm,0.3s,baz=345,slow=20,SNR=3.2						
AAK	Ala-Archa	6.90	232	⇓Pn	Pn	13 07 11.8	+1.7
	comp=Z,1.2nm,0.3s						
AAK				⇓Lg	Lg	13 09 10.9	
	comp=Z,23nm,0.7s						
ZALV	Zalesovo Beam	7.08	14	Pn	Pn	13 07 10.9	-1.6
	comp=Z,2.8nm,0.3s,baz=200,slow=15,SNR=24						
ZALV				Sn	Sn	13 08 29.8	-3.3
	comp=Z,2.6nm,0.3s,baz=195,slow=24,SNR=6.6						
ZALV				Lg	Lg	13 09 07.6	
	comp=Z,3.0nm,0.3s,baz=193,slow=28,SNR=7.9						
ZALV	Zalesovo Beam	7.08	14	PN	Pn	13 07 11.0	-1.6
ZALV				pmax	pmax		
	comp=Z,3.0nm,0.3s						
NVS	Novosibirsk	7.77	6	eP	Pn	13 07 15.7	-6.3
NVS				e		13 08 43.7	
MNAS	Manas	8.12	239	⇑Pn	Pn	13 07 26.7	-0.2
	comp=Z,1.4nm,0.6s						
MNAS				⇓Sn	Sn	13 09 02.2	+3.5
	comp=Z,2.7nm,0.5s						
MNAS				⇓Lg	Lg	13 09 48.9	
	comp=Z,11nm,1.0s						
MNAS	Manas	8.12	239	P	Pn	13 07 26.6	-0.2
MNAS				S	Sn	13 09 02.2	+3.5
MNAS				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MNAS				smax	smax		
	comp=N,3.0nm,0.5s						
KK31	Karatay Array	8.98	248	⇓Pn	Pn	13 07 38.9	+0.3
	comp=N,2.0nm,0.2s,baz=66,slow=12,SNR=64						
KK31				⇓Sn	Sn	13 09 24.6	+4.8
	comp=N,2.7nm,0.6s,baz=51,slow=21,SNR=8.1						
KK31				⇓Lg	Lg	13 10 15.2	
	comp=N,7.7nm,0.6s,baz=56,slow=28,SNR=5.1						
KK31	Karatay Array	8.98	248	P	Pn	13 07 38.9	+0.3
KK31				S	Sn	13 09 24.6	+4.8
KK31				pmax	pmax		
	comp=Z,2.0nm,0.3s						
KK31				smax	smax		
	comp=N,3.0nm,0.6s						
VOSK	Vostochnaya	8.98	313	⇑Pn	Pn	13 07 39.3	+0.7
	comp=N,1.4nm,0.3s						
VOSK				⇑Sn	Sn	13 09 21.1	+1.3
	comp=N,4.9nm,0.4s						
VOSK				⇓Lg	Lg	13 10 14.4	
VOSK	Vostochnaya	8.98	313	P	Pn	13 07 39.3	+0.7
VOSK				S	Sn	13 09 21.1	+1.3
VOSK				pmax	pmax		
	comp=Z,1.0nm,0.4s						
VOSK				smax	smax		
	comp=N,5.0nm,0.4s						
BVA0	Borovoye Array	9.45	313	⇑Pn	Pn	13 07 45.0	+0.1
	comp=N,1.6nm,0.5s,baz=130,slow=14,SNR=13						
BVA0				⇓Sn	Sn	13 09 32.7	+1.5
	comp=N,3.9nm,0.6s,baz=98,slow=20,SNR=8.1						
BVA0				⇑Lg	Lg	13 10 28.6	
	comp=N,20nm,1.0s,baz=139,slow=22,SNR=4.2						
BVA0	Borovoye Array	9.45	313	P	Pn	13 07 45.1	+0.1
BVA0				S	Sn	13 09 32.7	+1.5
BVA0				pmax	pmax		
	comp=Z,2.0nm,0.5s						
BVA0				smax	smax		
	comp=N,4.0nm,0.6s						
BVAR	Borovoye Array	9.45	313	Pn	Pn	13 07 45.0	0.0
	comp=N,1.2nm,0.3s,baz=115,slow=14,SNR=16						
BVAR				Sn	Sn	13 09 29.1	-2.2
	comp=N,3.1nm,0.3s,baz=110,slow=24,SNR=10						
BVAR				Lg	Lg	13 10 25.9	
	comp=N,1.2nm,0.3s,baz=122,slow=24,SNR=5.3						
BRVK	Borovoye	9.52	313	⇑Pn	Pn	13 07 46.4	+0.5
	comp=N,2.8nm,0.9s						
BRVK				⇑Sn	Sn	13 09 33.4	+0.4
	comp=N,7.1nm,0.9s						
BRVK				⇑Lg	Lg	13 10 30.6	
	comp=N,13nm,0.8s						
BRVK	Borovoye	9.52	313	*d* iP	Pn	13 07 46.4	+0.5
ZRNK	Zerenda	10.12	310	⇑Pn	Pn	13 07 54.0	-0.2
	comp=N,2.7nm,0.6s						
ZRNK				⇑Sn	Sn	13 09 50.5	+2.8
	comp=N,2.5nm,0.6s						
ZRNK				⇑Lg	Lg	13 10 50.6	
	comp=N,19nm,0.8s						
ZRNK	Zerenda	10.12	310	P	Pn	13 07 54.0	-0.2
ZRNK				S	Sn	13 09 50.5	+2.8
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ZRNK				smax	smax		
	comp=N,3.0nm,0.6s						
KRAR	Krasnoyarsk	11.21	33	eP	Pn	13 08 05.8	-3.2
AKTO	Aktyubinsk	16.05	291	Pn	Pn	13 09 13.3	-1.3
	comp=N,0.2nm,0.3s,baz=90,slow=10,SNR=2.7						
ARU	Arti	17.09	312	P	Pn	13 09 17.7	-10
ARU				SS	Sn	13 12 35.0	-2.6
OBN	Obninsk	29.09	303	*i* P	P	13 11 28.4	-0.9
OBN				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KIEV	Kiev	34.20	296	eP	P	13 12 14.5	+0.3
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.9s						
FINES	FINESS Array B	34.40	315	P	P	13 12 14.1	-1.8
	comp=Z,1.4nm,0.8s,baz=70,slow=6.7,SNR=7.8						
FINES	FINESS Array B	34.40	315	eP	P	13 12 15.4	-0.4
FINES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
HFS	Hagfors	40.58	314	P	P	13 13 06.5	-1.7
	comp=Z,1.3nm,0.6s,baz=90,slow=12,SNR=5.8						
NB2	NORSAR Subarra	41.56	316	P	P	13 13 14.4	-1.9
	comp=Z,0.5nm,0.5s,baz=75,slow=7.9						
NOA	NORSAR Array B	41.56	316	P	P	13 13 14.6	-1.8
	comp=Z,0.7nm,0.6s,baz=76,slow=8.1,SNR=4.1						
WRA	Warramunga Arr	81.74	131	P	P	13 17 49.0	+1.3
	comp=Z,0.5nm,1.0s,baz=339,slow=5.4,SNR=3.8						
WRA	Warramunga Arr	81.74	131	P	P	13 17 49.0	+1.3
ASAR	Alice Springs	84.63	133	P	P	13 18 03.1	+0.6
	comp=Z,0.2nm,0.8s,baz=320,slow=4.6,SNR=3.0						

GUC 16 13:06:11.6±0.6, 33°90S×72°09W, h22km±6km, ML3.3
ISC 16 13:06:09.7±2.5, 33°88S±0°07×72°3W±0°1, h27km±14km, n16, σ1s60/26, 4C-3D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	Pichilemu	0.56	156	⇑*i*P	Pb	13 06 20.6	-0.4
CHPI				*i* S	Sb	13 06 27.8	-1.1
ROCH	El Roble	1.40	50	⇑*i*P	Pn	13 06 33.6	+0.1
ROCH				*i* S	Sn	13 06 50.3	-0.9
ROCH				IAML		13 06 58.1	
	comp=N,1μm,0.5s						
ANTU	Antumapu	1.41	78	⇓*i*P	Pn	13 06 33.5	-0.1
ANTU				*i* S	Sn	13 06 48.7	-2.6
ANTU				IAML		13 06 55.0	
	comp=N,967nm,0.5s						
PEL	Peldehue	1.52	62	⇑*i*P	Pn	13 06 35.2	0.0
PEL				*i* S	Sn	13 06 52.8	-1.3
PEL				IAML		13 07 00.5	
	comp=N,1μm,0.4s						
CLCH	Cerro Calan	1.54	72	⇓*i*P	Pn	13 06 35.0	-0.4
CLCH				*i* S	Sn	13 06 52.8	-1.6
CLCH				IAML		13 07 07.9	
	comp=N,807nm,0.7s						
TALC	Talca	1.61	161	⇑*i*P	Pn	13 06 37.1	+0.8
TALC				*i* S	Sn	13 06 56.9	+0.7
FCH	Farellones	1.75	72	⇓*i*P	Pn	13 06 38.8	+0.2
FCH				*i* S	Sn	13 06 59.9	-0.3
FCH				IAML		13 07 00.9	
	comp=N,692nm,0.3s						
AUSP	Uspallata	2.94	57	*i* P	Pn	13 06 56.8	+2.0
AUSP				*i* S	Sb	13 07 39.3	+2.1
ARCO	CERRO ARCO	2.99	71	*i* P	Pn	13 06 58.0	+2.5
ARCO				IAML		13 07 06.5	
	comp=Z,103nm,0.4s						
ARCO				*i* S	Sb	13 07 41.5	+2.9
AAGR	Agrelo	3.00	76	*i* P	Pn	13 06 58.4	+3.0
ASAL	Salagasta	3.16	67	*i* P	Pn	13 06 59.7	+2.0
ASAL				*i* S	Sb	13 07 44.4	+1.0
RTLS	Leoncito	3.26	51	*i* P	Pn	13 06 59.9	+0.7
RTLS				*i* S	Sb	13 07 44.7	-1.6
RTCV	Cerro Valdivia	3.74	59	*i* P	Pn	13 07 05.7	+0.1
ACAN	Cantantal	4.57	71	*i* P	Pn	13 07 16.7	-0.3
AGUA	GUANDACOL	5.44	37	*i* P	Pn	13 07 23.9	-5.1

KOZ	**Kozyrevsk**	**3.43 282**	*e*S	**Sn**	**13 21 43.0 +2.2**
ESO	**Esso**	**4.07 279**	*e*S	**Sn**	**13 21 58.3 +1.6**
SPN	**Mys Shipunski**	**4.19 237**	*e*P	**Pn**	**13 21 10.3 -1.0**
SPN			*e*S	**Sn**	**13 21 58.3 -1.3**
SDLR	**Sedlovina**	**4.66 244**	*e*P	**Pn**	**13 21 18.5 +0.8**
SDLR			*e*S	**Sn**	**13 22 12.5 +1.3**
SMAR	**Somma**	**4.71 244**	*e*P	**Pn**	**13 21 19.4 +0.9**
KRER	**Koryakskii**	**4.71 245**	*e*P	**Pn**	**13 21 19.5 +0.9**
KRER			*e*S	**Sn**	**13 22 14.1 +1.4**
UGLR	**Uglovaya**	**4.72 244**	*e*P	**Pn**	**13 21 19.5 +0.9**
UGLR			*e*S	**Sn**	**13 22 14.7 +1.9**
KRX	**Arik**	**4.74 246**	*e*P	**Pn**	**13 21 19.7 +0.9**
KRX			*e*S	**Sn**	**13 22 14.2 +1.0**
AVH	**Avacha**	**4.74 245**	*e*P	**Pn**	**13 21 19.5 +0.7**
KOK	**Koryaka**	**4.78 245**	*e*P	**Pn**	**13 21 20.4 +1.0**
KOK			*e*S	**Sn**	**13 22 15.9 +1.8**
DALK	**Dalny**	**4.86 242**	*e*P	**Pn**	**13 21 20.5 +0.2**
DALK			*e*S	**Sn**	**13 22 15.4 -0.5**
GNL	**Ganaly**	**4.96 252**	*e*P	**Pn**	**13 21 22.8 +1.0**
RUS	**Russkaya**	**5.33 238**	*e*P	**Pn**	**13 21 26.8 0.0**
PETK	**Petropavlovsk-**	**5.36 247**	Pn	**Pn**	**13 21 28.2 +0.9**
	1.6nm,0.3s,baz=70,slow=17,SNR=35				
PETK			Sn	**Sn**	**13 22 32.0 +3.8**
	0.7nm,0.3s,baz=81,slow=19,SNR=6.2				
ASAK	**Asacha**	**5.65 240**	*e*P	**Pn**	**13 21 32.3 +0.9**
ILAR	**Eielson Array**	**24.69 49**	P	**P**	**13 25 29.1 +1.4**
	0.3nm,0.7s,baz=258,slow=9.3,SNR=4.2				
H11N2	**WAKE ISLAND Hy 35.73 178**		T	T	14 04 42.7
	baz=2.4				
H11N3	**WAKE ISLAND Hy 35.75 178**		T	T	14 04 42.7
	baz=2.4				
H11N1	**WAKE ISLAND Hy 35.75 178**		T	T	14 04 43.8
	baz=2.4				
TXAR	**Lajitas Array**	**66.62 72**	P	**P**	**13 30 59.7 +2.2**
	0.1nm,0.5s,baz=284,slow=3.6,SNR=3.6				

NIED ***16*** *13:23:00,38˚.90N×141˚.90E,h56km,Mw4.0 Best double couple: M₀1.17000×10¹⁵ NP1:φ₀177.00000°,δ18.00000°, λ69.00000°. NP2:φ₀19.00000°,δ74.00000°,λ96.00000°.*
ISCJB ***16*** *13:23:02.2±0.7,38˚.91N±0˚.04×141˚.94E±0˚.09,h59km±4km, mb4.1/22,MS3.2/6,Error ellipse: s-maj=11.5km s-min=5.4km az=13.6*
JMA ***16*** *13:23:03.2±0.1,38˚.92N×141˚.94E,h52km±1km,M4.0*
JMA Felt II J1.
NEIC ***16*** *13:23:04.6±1.2,38˚.94N×141˚.95E,h66km±9km,mb4.7/1, Error ellipse: s-maj=15.4km s-min=9.2km az=110.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
IDC ***16*** *13:23:04.4±1.8,38˚.91N×141˚.87E,h62km±15km,mb3.8/21, mb1 3.9/25,mb1mx3.8/57,mbtmp4.1/25,MS3.0/10, Ms1 3.0/10,ms1mx2.8/55,Error ellipse: s-maj=19.2km s-min=11.5km az=96.0*

ISC 16 13:23:02.9±1.1,38˚.89N±0˚.05×141˚.98E±0˚.08,h50km±8km, n51,σ1ϕ22/52,mb4.2/22,MS3.2/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.30**	**308**	P	**Pn**	**13 23 12.3**	**+0.2**
OFUJ				S	**Sn**	**13 23 18.5**	**-0.1**
JMK	**Ichinoseki**	**0.59**	**276**	P	**Pn**	**13 23 15.3**	**0.0**
JMK				S	**Sn**	**13 23 23.8**	**-0.4**
JIO	**Ouri**	**0.66**	**228**	P	**Pn**	**13 23 16.2**	**+0.1**
JIO				S	**Sn**	**13 23 25.1**	**-0.5**
JOM	**Ohasama**	**0.79**	**318**	P	**Pn**	**13 23 17.8**	**0.0**
JOM				S	**Sn**	**13 23 28.2**	**-0.4**
JOU	**Okura**	**1.15**	**243**	P	**Pn**	**13 23 22.7**	**0.0**
JOU				S	**Sn**	**13 23 37.0**	**-0.4**
JRG	**Rokugo**	**1.16**	**296**	P	**Pn**	**13 23 22.6**	**-0.1**
JRG				*e*S	**Sn**	**13 23 37.0**	**-0.5**
JYK	**Kaneyama**	**1.26**	**272**	P	**Pn**	**13 23 24.2**	**+0.1**
JMM	**Marumori**	**1.38**	**223**	P	**Pn**	**13 23 25.6**	**-0.2**
JMM				S	**Sn**	**13 23 42.5**	**-0.5**
JANG	**Nango**	**1.52**	**347**	P	**Pn**	**13 23 27.5**	**-0.2**
MJAR	**Matsushiro Arr**	**3.80**	**233**	P	**Pn**	**13 24 01.2**	**+2.3**
	3.6nm,0.3s,baz=35,slow=12,SNR=55						
MJAR				LR	LR	13 25 49.5	
	comp=Z,74nm,19.2s,baz=100,slow=44						
MAJO	**Matsushiro**	**3.80**	**233**	*e*Pn	**Pn**	**13 23 59.4**	**+0.5**
MAT	**Matsushiro**	**3.80**	**233**	P	**Pn**	**13 24 01.3**	**+2.4**
MAT				*e*S	**Sn**	**13 24 47.8**	**+5.5**
ASAJ	**Asahikawa**	**5.24**	**5**	P	**Pn**	**13 24 19.1**	**+0.5**
	baz=270,slow=20						
ASAJ				S	**Sn**	**13 25 19.3**	**+1.7**
	baz=130,slow=17						
ASAJ	**Asahikawa**	**5.24**	**5**	*e*Pn	**Pn**	**13 24 18.6**	**-0.1**
	6.0nm,0.8s						
ASAJ				*e*Sn	**Sn**	**13 25 19.5**	**+1.8**
JHJ	**Hachijo jima 2**	**6.03**	**198**	P	**Pn**	**13 24 29.8**	**+0.3**
	6.6nm,0.3s,baz=88,slow=18,SNR=3.3						
JHJ				S	**Sn**	**13 25 34.6**	**-2.6**
	5.4nm,0.3s,baz=73,slow=19,SNR=3.1						
USRK	**Ussuriysk Ar.**	**9.17**	**309**	P	**Pn**	**13 25 12.9**	**+0.4**
	1.1nm,0.3s,baz=124,slow=13,SNR=23						
KSRS	**Korea Array**	**11.16**	**267**	P	Pn	13 25 44.4	+4.8
	0.3nm,0.3s,baz=79,slow=14,SNR=8.6						
KSRS				LR	LR	13 29 13.9	
	comp=Z,52nm,21.7s,baz=72,slow=33						
KSAR	**Wonju Array Be**	**11.19**	**267**	P	Pn	13 25 44.4	+4.3
KLR	**Kul'dur**	**12.67**	**328**	P	**Pn**	**13 26 00.8**	**+0.6**
	0.1nm,0.3s,baz=126,slow=18,SNR=3.2						
KLR				LR	LR	13 30 40.6	
	comp=Z,58nm,19.5s,baz=14,slow=36						
PETK	**Petropavlovsk-**	**17.87**	**32**	LR	LR	13 33 53.6	
	comp=Z,17nm,19.2s,baz=222,slow=36						
YAK	**Yakutsk**	**24.36**	**346**	P	**P**	**13 28 15.2**	**-0.6**
	6.5nm,0.3s,baz=42,slow=1.2,SNR=4.3						
SEY	**Seymchan**	**24.88**	**11**	P	**P**	**13 28 21.5**	**+0.9**
	1.8nm,0.8s,baz=253,slow=20,SNR=4.5						
SONM	**Songino Array**	**27.16**	**301**	P	**P**	**13 28 41.4**	**-0.2**
	1.0nm,0.8s,baz=111,slow=8.1,SNR=4.3						
SONM				LR	LR	13 38 45.6	
	comp=Z,32nm,19.5s,baz=70,slow=35						
H11N2	**WAKE ISLAND Hy 28.77 124**			T	T	13 59 15.9	
	baz=317,slow=75,SNR=363						
H11N1	**WAKE ISLAND Hy 28.78 124**			T	T	13 59 17.4	
	baz=317,slow=75,SNR=365						
H11N3	**WAKE ISLAND Hy 28.79 124**			T	T	13 59 16.3	
	baz=317,slow=75,SNR=224						
H11S1	**WAKE ISLAND Hy 29.55 126**			T	T	14 00 14.3	
	baz=319,slow=76,SNR=68						
H11S3	**WAKE ISLAND Hy 29.55 126**			T	T	14 00 15.5	
	baz=319,slow=76,SNR=117						
H11S2	**WAKE ISLAND Hy 29.57 126**			T	T	14 00 14.3	
	baz=319,slow=76,SNR=61						
ZALV	**Zalesovo Beam**	**41.01**	**311**	P	**P**	**13 30 40.2**	**-0.6**
	5.6nm,0.7s,baz=92,slow=8.2,SNR=11						
ZALV				PcP	**PcP**	**13 32 38.9**	**-1.0**
	0.6nm,0.4s,baz=94,slow=4.1,SNR=3.3						
ZALV				LR	LR	13 48 27.5	
	comp=Z,18nm,20.3s,baz=70,slow=37						
MKAR	**Makanchi Array**	**43.53**	**301**	P	**P**	**13 31 01.4**	**-0.1**
	5.6nm,0.7s,baz=83,slow=10.0,SNR=11						
KURK	**Kurchatov**	**45.16**	**307**	P	**P**	**13 31 14.6**	**+0.3**
KURBB	**Kurchatov Arra**	**45.23**	**307**	P	**P**	**13 31 14.6**	**-0.3**
	5.9nm,0.6s,baz=79,slow=9.5,SNR=3.2						
ILAR	**Eielson Array**	**47.69**	**33**	P	**P**	**13 31 35.2**	**+1.2**
	0.5nm,0.7s,baz=273,slow=6.6,SNR=5.6						
BVAR	**Borovoye Array**	**49.67**	**311**	P	**P**	**13 31 49.4**	**+0.1**
	2.9nm,0.5s,baz=69,slow=7.8,SNR=12						
ARU	**Arti**	**55.27**	**318**	P	**P**	**13 32 30.8**	**+0.1**
	4.2nm,0.5s,baz=59,slow=2.5,SNR=9.7						
DLBC	**Dease Lake**	**56.90**	**39**	LR	LR	14 01 38.1	
	comp=Z,32nm,18.1s,baz=146,slow=41						
ABKAR	**Akbulak array**	**57.09**	**309**	*e*P	**P**	**13 32 41.2**	**-2.6**
	3.5nm,0.6s						
AKTO	**Aktyubinsk**	**57.77**	**311**	P	**P**	**13 32 48.1**	**-0.5**
	2.3nm,0.6s,baz=70,slow=12,SNR=6.7						
WRA	**Warramunga Arr**	**58.96**	**188**	P	**P**	**13 32 56.9**	**-0.3**
	1.2nm,0.6s,baz=5.7,slow=7.0,SNR=20						
ARCES	**ARCESS Array B**	**62.42**	**339**	P	**P**	**13 33 21.0**	**+0.9**
	1.9nm,1.0s,baz=22,slow=7.8,SNR=3.6						
ASAR	**Alice Springs**	**62.69**	**188**	P	**P**	**13 33 22.8**	**+0.3**
	0.5nm,0.7s,baz=6.7,slow=4.9,SNR=8.0						
GEYT	**Alibeck**	**63.33**	**298**	P	**P**	**13 33 26.6**	**-0.2**
	1.2nm,0.5s,baz=5.5,slow=4.5,SNR=3.4						
FINES	**FINESS Array B**	**67.38**	**332**	P	**P**	**13 33 52.3**	**-0.1**
	2.7nm,0.6s,baz=40,slow=10.0,SNR=12						
KBZ	**Khabaz**	**70.03**	**310**	P	**P**	**13 34 08.7**	**-0.6**
	2.6nm,0.8s,baz=80,slow=3.5,SNR=4.7						
NOA	**NORSAR Array B**	**72.64**	**337**	P	**P**	**13 34 24.8**	**0.0**
	0.9nm,0.8s,baz=41,slow=5.7,SNR=3.2						
NOA				LR	LR	14 10 47.9	
	comp=Z,8.1nm,18.4s,baz=50,slow=39						
AKASG	**Malin Array Be**	**73.10**	**322**	P	**P**	**13 34 26.6**	**-1.0**
	1.4nm,0.5s,baz=44,slow=6.0,SNR=7.9						
BRTR	**Keskin Array B**	**77.95**	**312**	P	**P**	**13 34 55.0**	**-0.8**
	0.6nm,0.4s,baz=115,slow=4.3,SNR=4.0						
BRTR				LR	LR	14 12 12.9	
	comp=Z,17nm,19.2s,baz=304,slow=38						
VRAC	**Vranov**	**79.80**	**327**	LR	LR	14 13 34.2	
	comp=Z,16nm,18.3s,baz=49,slow=38						
GERES	**GERESS Array B**	**81.36**	**328**	P	**P**	**13 35 14.0**	**-0.1**
	0.3nm,0.2s,baz=30,slow=6.2,SNR=2.4						
TXAR	**Lajitas Array**	**88.64**	**53**	P	**P**	**13 35 51.6**	**+0.7**
	0.2nm,0.6s,baz=353,slow=6.6,SNR=2.8						

IDC ***16*** *13:31:25.0±1.0,17˚.70S×167˚.50E,h0km,mb4.5/15, mb1 4.7/17,mb1mx4.4/37,mbtmp4.6/17,ML5.3/2,MS3.8/16, Ms1 3.8/16,ms1mx3.6/34,Error ellipse: s-maj=30.8km s-min=16.8km az=129.0*
ISCJB ***16*** *13:31:28.0±0.3,17˚.50S±0˚.06×167˚.26E±0˚.06,h19km, mb4.6/37,MS3.8/15,Error ellipse: s-maj=10.4km s-min=6.3km az=145.1*
BJI ***16*** *13:31:29.9,17˚.70S×167˚.20E,h35km,mb4.7/10,mB4.9/8*
NEIC ***16*** *13:31:31.5±0.3,17˚.65S×167˚.21E,h35km,mb4.8/22,Error ellipse: s-maj=11.1km s-min=8.5km az=146.0*

ISC 16 13:31:30.1±0.4,17˚.41S±0˚.08×167˚.22E±0˚.07,h19km,n95, σ1ϕ81/81,mb4.7/36,MS3.7/15,1C,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.70**	**189**	Pn	Pn	13 32 35.1	-5.0
	68nm,0.3s,baz=44,slow=9.8,SNR=409						
DZM				Sn	Sn	13 33 24.2	-10
	36nm,0.3s,baz=88,slow=14,SNR=3.1						
DZM				LR	LR	13 34 11.9	
	comp=Z,2μm,19.7s,baz=66,slow=37						
DZM	**Mont Dzumac**	**4.70**	**189**	*e*Pn	Pn	13 32 33.8	-6.3
	143nm,0.2s						
DZM				*e*Sn	Sn	13 33 23.4	-11
	135nm,0.2s						
DZM	**Mont Dzumac**	**4.70**	**189**	*e*Pn	Pn	13 32 33.4	-6.7
DZM				Sn	Sn	13 33 24.2	-10
MSVF	**Nonsavu**	**10.34**	**93**	*e*Pn	**Pn**	**13 33 56.4**	**-1.2**
HNR	**Honiara**	**10.62**	**317**	Pn	**Pn**	**13 34 02.6**	**+1.4**
	44nm,0.3s,baz=161,slow=5.8,SNR=12						
HNR	**Honiara**	**10.62**	**317**	*e*P	**Pn**	**13 34 03.0**	**+1.7**
HNR	**Honiara**	**10.62**	**317**	*e*Pn	**Pn**	**13 34 03.0**	**+1.7**
EIDS	**Eidsvold**	**16.98**	**239**	P	**Pn**	**13 35 26.8**	**+0.2**
	baz=17,SNR=4.5						
ARMA	**Armidale**	**19.23**	**225**	P	**Pn**	**13 35 57.9**	**+3.6**
	baz=19,SNR=5.6						
RMQ	**Roma**	**19.34**	**239**	P	**P**	**13 35 55.8**	**+1.3**
	baz=19,SNR=5.8						
CTA	**Charters Tower**	**20.03**	**259**	P	**P**	**13 36 03.5**	**+1.5**
	7.2nm,0.6s,baz=88,slow=13,SNR=15						
CTA				LR	LR	13 42 17.6	
	comp=Z,205nm,21.5s,baz=86,slow=32						
CTAO	**Charters Tower**	**20.03**	**259**	*e*P	**P**	**13 35 58.5**	**-3.6**
	99nm,1.6s						
PMG	**Port Moresby**	**21.05**	**290**	LR	LR	13 43 12.2	
	comp=Z,172nm,21.0s,baz=90,slow=33						
MTSU	**Mount Surprise**	**21.82**	**265**	P	**P**	**13 36 22.5**	**+1.1**
	baz=22,SNR=10						
URZ	**Urewera**	**22.51**	**159**	P	**P**	**13 36 26.9**	**-1.7**
	12nm,0.8s,baz=18,slow=7.0,SNR=3.5						
URZ				LR	LR	13 44 16.0	
	comp=Z,366nm,18.6s,baz=350,slow=35						
QLP	**Quilpie**	**23.15**	**243**	P	**P**	**13 36 34.8**	**-0.7**
	baz=23,SNR=8.8						
YNG	**Young**	**23.80**	**221**	P	**P**	**13 36 44.0**	**+2.2**
	baz=24,SNR=8.0						
CNB	**Canberra Magne**	**23.89**	**218**	P	**P**	**13 36 44.5**	**+1.8**
	baz=24,SNR=7.5						
CMSA	**Cobar Meteorol**	**24.06**	**230**	P	**P**	**13 36 43.9**	**-0.3**
	baz=24,SNR=12						
CAN	**Canberra**	**24.11**	**219**	*e*P	**P**	**13 36 42.7**	**-2.1**
	37nm,1.2s						
STKA	**Stephens Creek**	**27.29**	**233**	P	**P**	**13 37 13.0**	**-0.5**
	18nm,0.8s,baz=79,slow=11,SNR=21						
STKA				LR	LR	13 47 04.3	
	comp=Z,293nm,20.3s,baz=54,slow=34						
STKA	**Stephens Creek**	**27.29**	**233**	P	**P**	**13 37 13.2**	**-0.4**
	baz=27,SNR=19						
STKA	**Stephens Creek**	**27.29**	**233**	*e*P	**P**	**13 37 13.0**	**-0.5**
	8.1nm,1.1s						
WB2	**Warramunga Arr**	**31.21**	**260**	*e*P	**P**	**13 37 48.4**	**-0.1**
	44nm,1.9s						
WRAB	**Tennant Creek**	**31.21**	**260**	*e*P	**P**	**13 37 46.2**	**-2.3**
	1.9nm,0.9s						
WRA	**Warramunga Arr**	**31.22**	**260**	P	**P**	**13 37 47.0**	**-1.6**
	1.6nm,0.7s,baz=82,slow=5.9,SNR=15						
AS01	**Alice Springs**	**31.72**	**253**	*e*P	**P**	**13 37 51.0**	**-2.0**
AS31	**Alice Springs**	**31.76**	**253**	*e*P	**P**	**13 37 51.8**	**-1.5**
	3.1nm,0.5s						
ASAR	**Alice Springs**	**31.76**	**253**	P	**P**	**13 37 51.3**	**-2.0**
	3.2nm,0.6s,baz=80,slow=8.3,SNR=57						
ASAR				LR	LR	13 49 27.7	
	comp=Z,360nm,20.8s,baz=90,slow=34						
BBOO	**Buckleboo**	**31.96**	**235**	P	**P**	**13 37 57.0**	**+2.1**
	baz=32						
BBOO	**Buckleboo**	**31.96**	**235**	P	P	13 37 48.8	-6.2
FITZ	**Fitzroy Crossi**	**39.54**	**262**	P	**P**	**13 38 59.6**	**-0.6**
	5.9nm,0.9s,baz=96,slow=5.9,SNR=7.6						
FITZ	**Fitzroy Crossi**	**39.54**	**262**	P	**P**	**13 39 00.3**	**+0.2**
	baz=39						
TBI	**Tubuai**	**40.93**	**106**	*e*S	**S**	**13 45 29.1**	**+6.5**
	102nm,28.5s						
TBI				*e*LR	LR	13 50 45.7	
	388nm,30.2s						
PPT2	**Papeete2**	**41.14**	**97**	*e*S	**S**	**13 45 32.1**	**+6.0**
	111nm,25.0s						
PPT2				*e*LR	LR	13 50 52.3	
	558nm,30.2s						
KMBL	**Kambalda**	**43.27**	**243**	P	**P**	**13 39 31.7**	**+1.1**
	baz=43						
MEEK	**Meekatharra**	**45.76**	**250**	P	**P**	**13 39 49.7**	**-0.9**
	baz=46,SNR=4.6						
KLBR	**Kellerberrin**	**46.80**	**243**	P	**P**	**13 39 59.7**	**+1.0**
	baz=47,SNR=5.5						
RKT	**Rikitea**	**54.24**	**106**	*e*LR	LR	13 56 56.4	
	269nm,27.5s						
JHJ	**Hachijo jima 2**	**56.67**	**332**	LR	LR	14 00 49.4	
	comp=Z,70nm,22.0s,baz=270,slow=31						
VNDA	**Vanda**	**60.20**	**181**	LR	LR	14 04 25.2	
	comp=Z,57nm,19.0s,baz=3.5,slow=33						
MJAR	**Matsushiro Arr**	**60.25**	**333**	P	**P**	**13 41 36.5**	**-0.7**
	3.0nm,0.8s,baz=166,slow=8.2,SNR=7.9						
KSRS	**Korea Array**	**65.92**	**326**	LR	LR	14 06 55.4	
	comp=Z,40nm,20.9s,baz=156,slow=32						
USRK	**Ussuriysk Ar.**	**69.24**	**334**	P	**P**	**13 42 37.3**	**+1.6**
	1.2nm,0.7s,baz=123,slow=7.0,SNR=5.3						
PEA0	**Petropavlovsk-**	**70.70**	**354**	*e*P	**P**	**13 42 45.2**	**+0.7**
PETK	**Petropavlovsk-**	**70.70**	**354**	P	**P**	**13 42 45.3**	**+0.9**
	3.2nm,0.5s,baz=135,slow=4.4,SNR=5.1						
PETK				LR	LR	14 07 39.3	
	comp=Z,57nm,21.7s,baz=153,slow=31						
QSPA	**South Pole Qui**	**72.64**	**180**	*e*P	**P**	**13 42 54.0**	**-2.3**
	11nm,0.9s						
KLR	**Kul'dur**	**73.43**	**337**	P	**P**	**13 43 02.0**	**+1.2**
	1.3nm,0.6s,baz=170,slow=5.5,SNR=6.6						
XAN	**Xi'an**	**75.46**	**313**	P	**P**	**13 43 14.0**	**+0.9**
XAN				pmax	pmax		
	comp=Z,8.0nm,0.7s						
XAN				pmax	pmax		
	comp=Z,47nm,6.0s						
CM01	**Chiang Mai Arr**	**75.97**	**295**	*e*P	P	13 43 12.6	-3.7
CMAR	**Chiang Mai Arr**	**76.00**	**295**	P	**P**	**13 43 17.7**	**+1.2**
	0.8nm,0.3s,baz=126,slow=4.6,SNR=5.0						
MAW	**Mawson**	**79.40**	**202**	LR	LR	14 13 53.5	
	comp=Z,100nm,20.4s,baz=62,slow=32						
SEY	**Seymchan**	**80.92**	**353**	P	**P**	**13 43 43.0**	**+0.4**
	2.8nm,0.8s,baz=153,slow=4.9,SNR=6.8						
GTA	**Gaotai**	**84.48**	**314**	*e*P	**P**	**13 44 03.1**	**+1.2**
GTA				pP	pP	13 44 09.6	+1.4
GTA				sP	sP	13 44 12.8	+2.3
GTA				pmax	pmax		
	comp=Z,7.0nm,1.1s						
YAK	**Yakutsk**	**84.56**	**343**	P	**P**	**13 44 01.7**	**+0.1**
	6.2nm,0.3s,baz=183,slow=0.3,SNR=13						
YAK	**Yakutsk**	**84.56**	**343**	*e*P	**P**	**13 44 00.1**	**-1.4**
	44nm,1.0s						
SONM	**Songino Array**	**84.61**	**324**	P	**P**	**13 44 02.8**	**+0.4**
	2.4nm,1.0s,baz=139,slow=5.6,SNR=9.7						
SONM				LR	LR	14 23 07.7	
	comp=Z,23nm,18.2s,baz=108,slow=36						
SONA1	**Songino Array**	**84.61**	**324**	*e*P	**P**	**13 44 00.1**	**-2.3**
TT01	**Tatalina**	**85.07**	**16**	*e*P	**P**	**13 44 04.9**	**+0.7**
TTA	**Tatalina**	**85.09**	**16**	*e*P	**P**	**13 44 05.1**	**+0.7**
	17nm,1.3s						
SYO	**Syowa Base**	**86.14**	**197**⇑	*e*P	**P**	**13 44 11.4**	**+1.8**
WDC	**Whiskeytown Da**	**86.95**	**46**	*e*P	**P**	**13 44 14.0**	**0.0**
	13nm,1.4s						
ORV	**Oroville**	**87.23**	**47**	*e*P	**P**	**13 44 15.5**	**+0.1**
	8.6nm,1.4s						
YBH	**Yreka Blue Hor**	**87.34**	**45**	*e*P	**P**	**13 44 16.3**	**+0.3**
	9.2nm,1.1s						
AFDM	**Forest Hills D**	**87.35**	**48**	*e*P	**P**	**13 44 15.6**	**-0.4**
	7.1nm,1.2s						
CMB	**Columbia Colle**	**87.39**	**49**	*e*P	**P**	**13 44 15.8**	**-0.4**
	4.4nm,0.9s						
HUMO	**Hull Mountain**	**87.56**	**44**	*e*P	**P**	**13 44 17.6**	**+0.6**
	5.2nm,0.9s						
WAKR	**Walker**	**88.26**	**49**	*e*P	**P**	**13 44 20.6**	**0.0**
	6.3nm,1.2s						
WRH	**Wood River Hil**	**88.50**	**18**	*e*P	**P**	**13 44 19.6**	**-1.3**
	3.6nm,0.8s						
CCB	**Clear Creek Bu**	**88.71**	**18**	*e*P	**P**	**13 44 20.4**	**-1.5**
	3.3nm,1.0s						
PAHR	**Pah Rah Range**	**88.78**	**48**	*e*P	**P**	**13 44 22.5**	**-0.5**
	20nm,1.8s						
MDM	**Murphy Dome**	**88.82**	**17**	*e*P	**P**	**13 44 20.8**	**-1.6**
	8.3nm,1.1s						
PALK	**Pallekele**	**88.84**	**278**	LR	LR	14 27 50.4	
	comp=Z,39nm,18.4s,baz=116,slow=38						
ILAR	**Eielson Array**	**89.07**	**18**	P	**P**	**13 44 22.0**	**-1.5**
	2.9nm,0.8s,baz=236,slow=5.6,SNR=28						
ILAR				LR	LR	14 18 09.5	
	comp=Z,69nm,20.6s,baz=260,slow=31						
ILB	**Eielson Array**	**89.07**	**18**	*e*P	**P**	**13 44 22.3**	**-1.3**
IL1	**Eielson Array**	**89.08**	**18**	*e*P	**P**	**13 44 21.8**	**-1.8**
COLD	**Coldfoot**	**90.01**	**15**	*e*P	**P**	**13 44 28.9**	**+1.1**
	3.9nm,1.0s						
G08A	**Pilot Rock**	**91.31**	**43**	*e*P	**P**	**13 44 34.0**	**-0.6**
	6.8nm,1.0s						
PDAR	**Pinedale Array**	**96.79**	**47**	LR	LR	14 24 23.2	
	comp=Z,21nm,18.0s,baz=258,slow=33						
TXAR	**Lajitas Array**	**97.59**	**62**	P	**P**	**13 45 00.6**	**-3.1**
	0.9nm,1.1s,baz=221,slow=9.5,SNR=4.2						
TXAR				LR	LR	14 23 29.4	
	comp=Z,24nm,18.1s,baz=0.0,slow=32						
MKAR	**Makanchi Array**	**99.09**	**316**	P	**Pdif**	**13 45 12.4**	**+2.4**
	0.2nm,0.7s,baz=137,slow=4.9,SNR=2.3						
NOA	**NORSAR Array B**	**133.18**	**344**	PKP	**PKPdf**	**13 50 42.6**	**-1.6**
	0.9nm,0.8s,baz=44,slow=4.3,SNR=3.4						
GERES	**GERESS Array B**	**141.97**	**331**	PKP	**PKPdf**	**13 50 57.4**	**-3.5**
	0.2nm,0.2s,baz=250,slow=2.7,SNR=4.6						
MEM	**Membach**	**143.62**	**340**	PKP	PKPab	13 51 00.7	+0.5
BCLA	**Clavier**	**144.01**	**340**	PKP	**PKPab**	**13 51 00.5**	**-1.2**
ABTA	**Abfaltersbach**	**144.04**	**330**	*i* PKPdf	**PKPab**	**13 51 02.4**	**+0.4**
	7.9nm,0.9s,SNR=5.1						
WTTA	**Wattenberg**	**144.08**	**331**	*i* PKPdf	**PKPab**	**13 51 01.4**	**-0.8**
	3.6nm,0.4s						
MOTA	**Moosalm**	**144.26**	**332**	*i* PKPdf	**PKPab**	**13 51 03.7**	**+0.8**
	10nm,1.1s						
RETA	**Reutte**	**144.30**	**332**	*i* PKPdf	**PKPab**	**13 51 03.4**	**+0.5**
	8.2nm,1.2s						
WLF	**Walferdange**	**144.37**	**339**	PKP	**PKPab**	**13 51 04.3**	**+1.3**
DOU	**Dourbes**	**144.52**	**341**	PKP	**PKPab**	**13 51 04.3**	**+0.8**
FETA	**Feichten**	**144.67**	**332**	*i* PKPdf	**PKPab**	**13 51 04.8**	**+0.4**
	21nm,1.0s,SNR=8.6						
DAVA	**Damuels**	**144.84**	**333**	*i* PKPdf	**PKPab**	**13 51 05.2**	**+0.1**
	31nm,1.3s,SNR=7.4						
ESDC	**Sonseca Array**	**156.52**	**343**	PKPab	**PKPab**	**13 51 50.9**	**-1.9**
	0.7nm,0.5s,baz=20,slow=3.3,SNR=8.8						
TORD	**Torodi Ar. Bea**	**165.41**	**255**	PKP	**PKPdf**	**13 51 30.7**	**-3.6**
	1.3nm,1.0s,baz=29,slow=3.3,SNR=5.5						

ISCJB ***16*** *13:57:08.5±1.1,19˚.2N±0˚.1×146˚.0E±0˚.4,h100km,mb3.7/7, Error ellipse: s-maj=56.7km s-min=16.5km az=3.9*
IDC

ODZ	Otahua Downs	1.90	217	*e*Pn	Pn	14 00 57.5	+0.2
ODZ				*e*Sn	Sg	14 01 29.3	+3.4
ODZ	Otahua Downs	1.90	217	PN	Pn	14 00 56.0	-1.3
ODZ				AML	AML	14 01 30.2	
ODZ				AML	AML	14 01 30.2	
ODZ				AML	AML	14 01 34.5	
ODZ				AML	AML	14 01 34.5	
BSWZ	Blackbirch Sta	2.18	34	Pn	Pn	14 01 00.2	-1.1
BSWZ	Blackbirch Sta	2.18	34	PN	Pn	14 01 00.2	-1.1
BSWZ				AML	AML	14 01 32.0	
BSWZ				AML	AML	14 01 43.8	
CMWZ	Cape Campbell	2.30	39	AML	AML	14 01 40.0	
TUWZ	Tuamarina	2.45	31	Pn	Pn	14 01 03.8	-1.1
TUWZ	Tuamarina	2.45	31	PN	Pn	14 01 03.8	-1.1
TUWZ				AML	AML	14 01 36.6	
TUWZ				AML	AML	14 01 54.4	
NNZ	Nelson	2.47	20	Pn	Pn	14 00 56.6	-8.6
NNZ	Nelson	2.47	20	PN	Pn	14 01 04.4	-0.7
NNZ				AML	AML	14 01 54.2	
NNZ				AML	AML	14 01 54.8	
JCZ	Jackson Bay	2.57	257	Pn	Pn	14 01 05.9	-0.8
JCZ	Jackson Bay	2.57	257	PN	Pn	14 01 05.9	-0.8
JCZ				AML	AML	14 01 52.6	
JCZ				AML	AML	14 01 55.5	
HHSZ	Highcliff Hill	2.62	206	AML	AML	14 01 53.4	
HHSZ				AML	AML	14 01 57.9	
WKZ	Wanaka	2.66	240	Pn	Pn	14 01 06.5	-1.3
WKZ	Wanaka	2.66	240	PN	Pn	14 01 06.5	-1.3
WKZ				AML	AML	14 01 56.2	
WKZ				AML	AML	14 01 56.2	
WKZ				AML	AML	14 01 58.9	
WKZ				AML	AML	14 01 58.9	
EAZ	Earnscleugh	2.71	230	Pn	Pn	14 01 07.6	-0.9
EAZ	Earnscleugh	2.71	230	PN	Pn	14 01 07.6	-0.9
EAZ				AML	AML	14 01 55.3	
EAZ				AML	AML	14 01 55.4	
EAZ				AML	AML	14 02 02.5	
EAZ				AML	AML	14 02 02.5	
QRZ	Quartz Range	2.73	4	Pn	Pn	14 01 07.4	-1.3
QRZ	Quartz Range	2.73	4	PN	Pn	14 01 07.4	-1.3
QRZ				AML	AML	14 01 17.5	
QRZ				AML	AML	14 01 17.6	
QRZ				AML	AML	14 01 52.9	
QRZ				AML	AML	14 01 52.9	
TCW	Tory Channel	2.77	33	Pn	Pn	14 01 08.1	-1.2
TCW	Tory Channel	2.77	33	PN	Pn	14 01 08.1	-1.2
TCW				AML	AML	14 01 44.4	
TCW				AML	AML	14 01 47.7	
SNZO	South Karori	2.87	40	*e*Pn	Pn	14 01 07.0	-3.7
WEL	Wellington	2.92	40	Pn	Pn	14 01 09.8	-1.6
WEL	Wellington	2.92	40	PN	Pn	14 01 09.8	-1.6
WEL				AML	AML	14 01 44.2	
WEL				AML	AML	14 01 44.2	
WEL				AML	AML	14 01 44.9	
WEL				AML	AML	14 01 44.9	
PLWZ	Palliser	2.96	49	Pn	Pn	14 01 09.9	-2.1
PLWZ	Palliser	2.96	49	PN	Pn	14 01 09.9	-2.1
DUWZ	D'Urville Isla	3.01	25	Pn	Pn	14 01 11.8	-0.8
DUWZ	D'Urville Isla	3.01	25	PN	Pn	14 01 11.7	-0.8
TUZ	Tuapeka	3.05	217	Pn	Pn	14 01 11.9	-1.2
TUZ	Tuapeka	3.05	217	PN	Pn	14 01 11.9	-1.2
TUZ				AML	AML	14 02 10.2	
TUZ				AML	AML	14 02 10.2	
TUZ				AML	AML	14 02 17.1	
TUZ				AML	AML	14 02 17.1	
MSWZ	Moikau Station	3.07	47	Pn	Pn	14 01 11.1	-2.3
MSWZ	Moikau Station	3.07	47	PN	Pn	14 01 11.1	-2.3
CAW	Cannon Point	3.20	41	Pn	Pn	14 01 13.2	-2.1
CAW	Cannon Point	3.20	41	PN	Pn	14 01 13.1	-2.1
CAW				AML	AML	14 01 50.7	
CAW				AML	AML	14 01 54.6	
MSZ	Milford Sound	3.32	249	Pn	Pn	14 01 15.5	-1.4
MSZ	Milford Sound	3.32	249	PN	Pn	14 01 15.5	-1.4
MSZ				AML	AML	14 02 14.7	
MSZ				AML	AML	14 02 14.9	
MSZ				AML	AML	14 02 16.3	
OGWZ	Otaki Gorge	3.48	39	AML	AML	14 01 56.8	
MLZ	Mavora Lakes	3.48	237	Pn	Pn	14 01 17.9	-1.2
MLZ	Mavora Lakes	3.48	237	PN	Pn	14 01 17.9	-1.2
MLZ				AML	AML	14 02 23.0	
MLZ				AML	AML	14 02 23.7	
SYZ	Scrubby Hill	3.72	215	Pn	Pn	14 01 21.7	-0.7
SYZ	Scrubby Hill	3.72	215	PN	Pn	14 01 21.7	-0.7
SYZ				AML	AML	14 02 37.6	
SYZ				AML	AML	14 02 37.7	
MRZ	Mangatainoka R	3.79	42	Pn	Pn	14 01 20.8	-2.6
MRZ	Mangatainoka R	3.79	42	PN	Pn	14 01 20.8	-2.6
MRZ				AML	AML	14 02 04.3	
MRZ				AML	AML	14 02 09.1	
TIWZ	Tintock	3.86	45	AML	AML	14 02 11.6	
TIWZ				AML	AML	14 02 13.4	
WHZ	Wether Hill Ro	3.87	231	*e*Pn	Pn	14 01 22.7	-1.7
WHZ	Wether Hill Ro	3.87	231	PN	Pn	14 01 22.4	-2.0
WHZ				AML	AML	14 02 35.1	
BFZ	Birch Farm	4.12	47	Pn	Pn	14 01 25.8	-2.1
BFZ	Birch Farm	4.12	47	PN	Pn	14 01 25.8	-2.1
DCZ	Deep Cove	4.13	241	AML	AML	14 02 40.9	
DCZ				AML	AML	14 02 46.7	
KHEZ	Kahui Hut	4.45	18	Pn	Pn	14 01 32.6	+0.2
KHEZ	Kahui Hut	4.45	18	PN	Pn	14 01 32.6	+0.2
PKE	Pukeiti	4.54	17	Pn	Pn	14 01 33.8	+0.2
PKE	Pukeiti	4.54	17	PN	Pn	14 01 33.8	+0.2
HIZ	Hauiti	5.40	22	Pn	Pn	14 01 42.2	-3.2
HIZ	Hauiti	5.40	22	PN	Pn	14 01 42.2	-3.2
HIZ				AML	AML	14 03 04.0	

IDC 16 14:00:43.1±3.7, 67°82.N×64°.10E, h0km, mb3.3/2, mb1 3.5/5, mb1mx3.2/54, mbtmp3.5/5, ML3.0/3, Error ellipse: s-maj=104.2km s-min=18.4km az=35.0, Ural Mountains region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARCES	**ARCESS Array B**	**13.98**	**295**	Pn	Pn	14 03 57.7	-4.4
	0.1nm,0.3s,baz=83,slow=16,SNR=4.1						
FINES	**FINESS Array B**	**17.25**	**267**	Pn	Pn	14 04 39.5	-5.5
	0.1nm,0.3s,baz=57,slow=14,SNR=7.0						
KURBB	**Kurchatov Arra**	**18.66**	**150**	Pn	P	14 04 57.7	-4.5
	0.0nm,0.3s,baz=344,slow=12,SNR=3.4						
HFS	**Hagfors**	**22.78**	**275**	P	P	14 05 46.1	-0.6
	1.4nm,0.7s,baz=78,slow=15,SNR=2.9						
MKAR	**Makanchi Array**	**23.07**	**147**	P	P	14 05 50.8	+1.0
	0.1nm,0.2s,baz=0.7,slow=12,SNR=2.8						
NOA	**NORSAR Array B**	**23.12**	**279**	P	P	14 05 53.6	+3.3
	2.3nm,0.8s,baz=50,slow=11,SNR=5.5						

*TAP **16** 14:01:48.6, 24°.96N×122°.25E, h4km, ML3.1, D*
*JMA **16** 14:01:49.8±0.1, 24°.93N×122°.27E, h26km±5km, M2.7*
ISC 16 14:01:48.4±1.2, 24°.93N±0°.03×122°.35E±0°.03, h2km±11km, n36, σ0°54/63, 4D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.34**	**283**	⇓*i*P	**Pg**	**14 01 54.8**	**0.0**
	baz=283						
TWB1				S	**Sg**	**14 01 58.5**	**-0.7**
	baz=283						
EGS		**0.39**	**257**	⇓P	**Pg**	**14 01 56.3**	**+0.4**
	baz=249						
EGS				S	**Sg**	**14 02 01.2**	**+0.3**
	baz=249						
NWF	**Wu-fen Shan**	**0.53**	**285**	⇓*i*P	**Pg**	**14 01 58.9**	**+0.3**
	baz=286						
NWF				S	**Sg**	**14 02 04.9**	**-0.7**
	baz=286						
TWC	**Suao**	**0.56**	**235**	P	**Pg**	**14 01 59.1**	**+0.1**
	baz=228						
TWE	**Neicheng**	**0.66**	**251**	*e*P	**Pg**	**14 02 01.1**	**+0.1**
	baz=248						
TWE				*e*S	**Sg**	**14 02 08.7**	**-0.8**
	baz=248						
JYNG	**Yonagunijimaku**	**0.72**	**131**	P	**Pb**	**14 02 04.3**	**+0.6**
PCYT	**Pengchaiyu**	**0.74**	**340**	⇓*i*P	**Pb**	**14 02 04.1**	**+0.1**
	baz=347						
PCYT				*e*S	**Sb**	**14 02 14.6**	**0.0**
	baz=347						
ENA	**Nanau**	**0.75**	**228**	*i* P	**Pg**	**14 02 02.9**	**+0.2**
	baz=222						
ENA				*e*S	**Sg**	**14 02 12.9**	**+0.5**
	baz=222						
TAP1	**Taipei**	**0.76**	**278**	*e*P	**Pg**	**14 02 03.5**	**+0.5**
	baz=279						
TWY	**Chenhua**	**0.76**	**297**	P	**Pg**	**14 02 03.4**	**+0.4**
	baz=299						
TWY				*e*S	**Sg**	**14 02 13.1**	**+0.2**
	baz=299						
YOJ	**Yonaguni jima**	**0.76**	**128**	P	**Pb**	**14 02 04.9**	**+0.5**
ENTT	**Nioudou**	**0.77**	**248**	P	**Pg**	**14 02 03.5**	**+0.3**
	baz=244						
ENTT				*e*S	**Sg**	**14 02 13.2**	**+0.1**
	baz=244						
TWS1	**Kuangyinshan**	**0.86**	**281**	P	**Pg**	**14 02 05.2**	**+0.3**
	baz=282						
TWS1				*e*S	**Sg**	**14 02 15.8**	**-0.3**
	baz=282						
NSK	**Sanguang**	**0.94**	**254**	P	**Pg**	**14 02 06.3**	**-0.1**
	baz=252						
NSK				*e*S	**Sg**	**14 02 17.8**	**-0.7**
	baz=252						
NNS	**Nan Shan**	**1.01**	**241**	P	**Pg**	**14 02 08.0**	**+0.2**
	baz=238						
NNS				S	**Sg**	**14 02 20.9**	**-0.1**
	baz=238						
TWD	**Chiawan**	**1.09**	**219**	*e*P	**Pg**	**14 02 09.3**	**0.0**
	baz=216						
TWD				*e*S	**Sb**	**14 02 24.4**	**-0.3**
	baz=216						
NSTT	**Nanjuang**	**1.26**	**256**	*e*P	**Pg**	**14 02 11.4**	**-1.2**
	baz=257						
NSTT				*e*S	**Sg**	**14 02 29.2**	**+0.2**
	baz=257						
WHF	**Hehuan Shan**	**1.26**	**232**	*e*P	**Pg**	**14 02 12.5**	**-0.1**
	baz=231						
WHF				*e*S	**Sg**	**14 02 28.1**	**-0.9**
	baz=231						
TWT	**Tachien**	**1.27**	**238**	P	**Pg**	**14 02 12.5**	**-0.1**
	baz=227						
TWT				*e*S	**Sg**	**14 02 29.0**	**0.0**
	baz=227						
IRIF	**Iriomote-Funau**	**1.39**	**115**	P	**Pg**	**14 02 14.7**	**-0.3**
ESL	**Shilin**	**1.39**	**217**	*e*P	**Pn**	**14 02 14.2**	**-0.6**
	baz=224						
ESL				*e*S	**Sn**	**14 02 33.8**	**-0.1**
	baz=224						
TWQ1	**Liyutan**	**1.55**	**248**	*e*P	**Pn**	**14 02 16.5**	**-0.5**
	baz=264						
TWQ1				*e*S	**Sg**	**14 02 39.1**	**+1.0**
	baz=264						
JKRS	**Kuro-shima**	**1.66**	**114**	P	**Pb**	**14 02 19.4**	**-0.3**
SMLT	**Sun Moon Lake**	**1.69**	**232**	*e*P	**Pb**	**14 02 20.0**	**-0.2**
	baz=232						
SMLT				*e*S	**Sg**	**14 02 42.7**	**+0.1**
	baz=232						
EHY	**Hungye**	**1.70**	**214**	*e*P	**Pn**	**14 02 19.8**	**+0.6**
	baz=222						
EHY				*e*S	**Sn**	**14 02 40.8**	**-0.7**
	baz=222						
TYC	**Yuchr**	**1.70**	**233**	*e*P	**Pb**	**14 02 20.3**	**-0.1**
	baz=233						
TYC				*e*S	**Sg**	**14 02 43.3**	**+0.2**
	baz=233						
JIJ	**Ishigaki jima**	**1.73**	**109**	P	**Pb**	**14 02 20.3**	**-0.5**
TWF1	**Yuli**	**1.84**	**212**	*e*P	**Pn**	**14 02 22.0**	**+0.9**
	baz=220						
TWF1				*e*S	**Sg**	**14 02 47.0**	**-0.7**
	baz=220						
YUS	**Yu-Shan**	**1.92**	**222**	*e*P	**Pn**	**14 02 23.1**	**+0.5**
	baz=234						
YUS				*e*S	**Sb**	**14 02 48.8**	**-0.3**
	baz=234						
ALS	**Alishan**	**2.00**	**225**	*e*P	**Pb**	**14 02 25.2**	**-0.4**
	baz=216						
ALS				*e*S	**Sg**	**14 02 53.6**	**+1.0**
	baz=216						
CHN5	**Tsauling**	**2.02**	**229**	*e*P	**Pn**	**14 02 23.8**	**+0.2**
	baz=236						
ELDTW	**Lidau**	**2.12**	**215**	*e*P	**Pn**	**14 02 25.4**	**+0.5**
	baz=203						
CHN4	**Tsaushan**	**2.25**	**226**	*e*P	**Pn**	**14 02 28.0**	**+1.4**
	baz=235						
CHN4				*e*S	**Sb**	**14 02 58.7**	**+0.7**
	baz=235						
STYT	**Tauyuan**	**2.29**	**220**	*e*P	**Pn**	**14 02 27.6**	**+0.4**
	baz=221						
STYT				*e*S	**Sb**	**14 03 00.1**	**+0.9**
	baz=221						
WTP	**Ta-pu**	**2.31**	**224**	*e*P	**Pn**	**14 02 28.2**	**+0.7**
	baz=217						
WTP				*e*S	**Sb**	**14 02 59.3**	**-0.6**
	baz=217						
CHN1	**Nanshi**	**2.41**	**224**	*e*P	**Pn**	**14 02 29.2**	**+0.3**
	baz=235						
CHN1				*e*S	**Sb**	**14 03 02.4**	**-0.3**
	baz=235						

IDC 16 14:10:48.7±1.5, 2°.29S×122°.35E, h0km, mb3.1/3, mb1 3.4/3, mb1mx3.2/32, mbtmp3.2/3, Error ellipse: s-maj=268.4km s-min=25.1km az=60.0, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.09**	**147**	P	P	14 15 35.0	0.0
	0.5nm,0.6s,baz=324,slow=11,SNR=6.5						
ASAR	**Alice Springs**	**24.01**	**153**	P	P	14 16 05.6	+0.1
	0.2nm,0.6s,baz=342,slow=15,SNR=7.2						
MKAR	**Makanchi Array**	**60.23**	**329**	P	P	14 20 58.7	-0.1
	0.1nm,0.3s,baz=123,slow=7.6,SNR=2.5						

*IDC **16** 14:23:18.8±2.6, 53°.32N×165°.89W, h0km, mb3.7/4, mb1 3.9/5, mb1mx3.4/53, mbtmp3.6/5, ML3.6/1, Error ellipse: s-maj=50.1km s-min=33.7km az=61.0*
*ISCJB **16** 14:23:25.8±0.7, 53°.50N±0°.07×165°.23W±0°.07, h48km±11km, mb3.7/4, Error ellipse: s-maj=12.7km s-min=4.9km az=155.8*
*NEIC **16** 14:23:25.6, 53°.49N×165°.24W, h31km, ML3.4(AEIC), After AEIC.*
ISC 16 14:23:26.8±1.5, 53°.52N±0°.07×165°.27W±0°.04, h38km±2km, n39, σ0°71/41, mb3.7/4, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKSA	**Akutan Strait**	**0.67**	**338**	P	**Pn**	**14 23 39.1**	**-0.8**
AKSA				S	**Sn**	**14 23 49.5**	**+0.5**
AKUT	**Akutan**	**0.69**	**334**	P	**Pn**	**14 23 39.6**	**-0.4**
AKUT				S	**Sn**	**14 23 50.6**	**+1.2**
ZRO	**Akutan Zero**	**0.71**	**324**	P	**Pn**	**14 23 40.0**	**-0.4**
AKMO	**Akutan Morgan**	**0.72**	**323**	P	**Pn**	**14 23 40.1**	**-0.4**
AKMO				S	**Sn**	**14 23 51.0**	**+0.7**
HSB	**Akutan Spr's B**	**0.77**	**330**	P	**Pn**	**14 23 40.8**	**-0.4**
AKRB	**Akutan Reef Bi**	**0.78**	**322**	P	**Pn**	**14 23 40.8**	**-0.4**
AKRB				S	**Sn**	**14 23 52.8**	**+1.2**
UNV	**Unalaska Valle**	**0.81**	**295**	P	**Pn**	**14 23 40.7**	**-0.9**
UNV				S	**Sn**	**14 23 52.2**	**-0.1**
MTBL	**Makushin Table**	**0.95**	**299**	P	**Pn**	**14 23 43.4**	**-0.3**
MSW	**Makushin Switc**	**0.98**	**294**	P	**Pn**	**14 23 43.8**	**-0.3**
MGOD	**Makushin Gods**	**0.99**	**287**	P	**Pn**	**14 23 43.5**	**-0.7**
WESP	**Westdahl Peak**	**1.03**	**18**	P	**Pn**	**14 23 44.6**	**-0.2**
WESP				S	**Sn**	**14 23 57.9**	**0.0**
WESE	**West Dahl East**	**1.04**	**23**	P	**Pn**	**14 23 44.4**	**-0.4**
MCIR	**Makushin Cirqu**	**1.06**	**295**	P	**Pn**	**14 23 45.1**	**0.0**
WESN	**West Dahl Nort**	**1.13**	**21**	P	**Pn**	**14 23 46.4**	**+0.4**
SSLS	**Shishaldin Sou**	**1.41**	**31**	P	**Pn**	**14 23 49.2**	**-0.8**
SSLS				S	**Sn**	**14 24 05.9**	**-1.4**
SSLW	**Shishaldin Wes**	**1.43**	**28**	P	**Pn**	**14 23 49.7**	**-0.5**
SSLN	**Shishaldin Nor**	**1.50**	**29**	P	**Pn**	**14 23 50.8**	**-0.3**
OKTU	**Okmok Mt. Tuli**	**1.67**	**266**	P	**Pn**	**14 23 53.4**	**0.0**
OKER	**Okmok East Rim**	**1.67**	**269**	P	**Pn**	**14 23 54.0**	**+0.5**
OKAK	**Okmok**	**1.85**	**273**	P	**Pn**	**14 23 56.1**	**+0.3**
NIKH	**Nikolski High**	**2.22**	**257**	P	**Pn**	**14 24 00.4**	**-0.6**
NIKH				S	**Sn**	**14 24 27.8**	**+0.5**
DT1	**Dutton Round H**	**2.37**	**46**	P	**Pn**	**14 24 03.6**	**+0.6**
DTNA	**Dutton South F**	**2.41**	**46**	P	**Pn**	**14 24 03.3**	**-0.3**
DOL	**Dolgoi Island**	**2.58**	**49**	P	**Pn**	**14 24 06.5**	**+0.6**
SDPT	**Sand Point**	**3.34**	**55**	P	**Pn**	**14 24 16.6**	**+0.2**
VNSS	**Veniaminof 8**	**4.32**	**49**	P	**Pn**	**14 24 31.0**	**+1.1**
SPIA	**Saint Paul Isl**	**4.64**	**324**	P	**Pn**	**14 24 35.7**	**+1.5**
CHGN	**Chignik**	**4.84**	**52**	*e*Pn	**Pn**	**14 24 37.6**	**+0.7**
ILAR	**Eielson Array**	**14.62**	**32**	Pn	**Pn**	**14 26 50.2**	**-0.5**
	0.1nm,0.3s,baz=226,slow=14,SNR=4.0						
INK	**Inuvik**	**21.02**	**33**	P	**P**	**14 28 07.9**	**+1.1**
	1.2nm,0.5s,baz=242,slow=7.3,SNR=5.6						
PDAR	**Pinedale Array**	**37.77**	**83**	P	**P**	**14 30 39.2**	**-0.1**
	0.3nm,0.6s,baz=316,slow=6.2,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**39.95**	**223**	T	T	15 13 36.3	
	baz=25,slow=76,SNR=38						
H11N3	**WAKE ISLAND Hy**	**39.96**	**223**	T	T	15 13 36.8	
	baz=25,slow=76,SNR=56						
H11N1	**WAKE ISLAND Hy**	**39.97**	**223**	T	T	15 13 36.3	
	baz=25,slow=76,SNR=25						
H11S1	**WAKE ISLAND Hy**	**41.13**	**223**	T	T	15 15 01.9	
	baz=25,slow=76,SNR=78						
H11S2	**WAKE ISLAND Hy**	**41.14**	**223**	T	T	15 15 03.0	
	baz=25,slow=76,SNR=32						
H11S3	**WAKE ISLAND Hy**	**41.15**	**223**	T	T	15 15 02.5	
	baz=25,slow=76,SNR=25						
TXAR	**Lajitas Array**	**50.28**	**93**	P	**P**	**14 32 20.1**	**+0.6**
	0.8nm,0.6s,baz=304,slow=5.6,SNR=12						
HFS	**Hagfors**	**66.69**	**1**	P	**P**	**14 34 12.1**	**-1.1**
	0.7nm,0.3s,baz=0.0,slow=3.6,SNR=12						

*IDC **16** 14:25:30.5±0.7, 8°.87S×111°.27E, h0km, mb4.1/11, mb1 4.2/12, mb1mx4.0/39, mbtmp4.1/12, ML3.9/1, MS3.3/13, Ms1 3.4/13, ms1mx3.2/28, Error ellipse: s-maj=26.9km s-min=16.1km az=63.0*
*DJA **16** 14:25:35.5±0.3, 9°.5±3°×111°.1E±°, h10km, M4.8/19, mb5.0/5, mB5.2/5, MLv4.9/19, Mw(mB)4.7/5*
*ISCJB **16** 14:25:36.8±0.6, 9°.08S±0°.06×111°.22E±0°.03, h72km±5km, mb4.1/15, Error ellipse: s-maj=9.7km s-min=5.2km az=16.9*
*NEIC **16** 14:25:37.4±0.8, 9°.02S×111°.22E, h58km±8km, mb4.4/4, Error ellipse: s-maj=14.0km s-min=7.7km az=206.0*
ISC 16 14:25:36.0±1.1, 9°.26S±0°.06×111°.18E±0°.05, h48km±10km, n62, σ2s°01/55, mb4.2/15, MS3.3/12, 1D, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCJI	**Pacitan**	**1.06**	**0**	P	**Pn**	**14 25 53.1**	**-1.3**
PCJI				S	**Sn**	**14 26 05.5**	**-2.6**
WOJI	**Wonogiri, Jawa**	**1.43**	**350**	P	**Pn**	**14 25 59.1**	**-0.5**
WOJI				S	**Sn**	**14 26 15.6**	**-1.7**
UGM	**Wanagama**	**1.48**	**334**	P	**Pn**	**14 26 00.4**	**+0.1**
UGM				S	**Sn**	**14 26 18.7**	**+0.1**
UGM	**Wanagama**	**1.48**	**334**	*e*Pn	**Pn**	**14 26 00.8**	**+0.5**
NGJI	**Ngawi**	**1.90**	**9**	P	**Pn**	**14 26 08.9**	**+3.0**
NGJI				S	**Sn**	**14 26 35.9**	**+7.2**
GMJI	**Gumukmas**	**2.44**	**67**	P	**Pn**	**14 26 13.3**	**-0.1**
TBJI	**Tambak Boyo**	**2.51**	**15**	P	**Pn**	**14 26 15.8**	**+1.4**
BLJI	**Banyuglugur**	**2.83**	**58**	P	**Pn**	**14 26 20.0**	**+1.4**
UWJI	**Ujung Watu**	**2.83**	**355**	P	**Pn**	**14 26 20.1**	**+1.4**
JAGI	**Jajag, Banyuwa**	**3.04**	**75**	P	**Pn**	**14 26 21.9**	**+0.3**
JAGI				S	**Sn**	**14 26 55.7**	**-1.2**
JAGI	**Jajag, Banyuwa**	**3.04**	**75**	*e*Pn	**Pn**	**14 26 22.2**	**+0.6**
CMJI	**Cimerak**	**3.07**	**298**	P	**Pn**	**14 26 23.2**	**+1.2**
ABJI	**Asem Bagus**	**3.35**	**65**	P	**Pn**	**14 26 27.6**	**+1.7**
BWJI	**Bawean**	**3.69**	**24**	P	**Pn**	**14 26 32.0**	**+1.5**
CISI	**Cisompet, Garu**	**3.73**	**297**	P	**Pn**	**14 26 32.5**	**+1.4**
CISI	**Cisompet, Garu**	**3.73**	**297**	*e*Pn	**Pn**	**14 26 32.6**	**+1.4**
JCJI	**Jatiwangi**	**3.98**	**313**	P	**Pn**	**14 26 38.7**	**+4.2**
LEM	**Lembang**	**4.27**	**304**	P	Pn	14 26 48.2	+10
CNJI	**Cibinong**	**4.45**	**296**	P	**Pn**	**14 26 42.3**	**+1.4**
SKJI	**Sukabumi**	**5.09**	**296**	P	**Pn**	**14 26 52.4**	**+2.6**
XMIS	**Christmas Isla**	**5.58**	**257**	*e*Pn	**Pn**	**14 26 57.6**	**+1.1**
TWSI	**Taliwang, Sumb**	**5.66**	**85**	P	**Pn**	**14 26 59.1**	**+1.5**
CGJI	**Cibinong**	**6.03**	**295**	P	**Pn**	**14 27 05.0**	**+2.3**
	83nm,0.5s,2µm0.6nm						
PBKI	**Pangkalan Bun**	**6.53**	**4**	P	**Pn**	**14 27 10.4**	**+0.9**
PLAI	**Plampang**	**6.53**	**87**	P	**Pn**	**14 27 10.9**	**+1.3**
BBKI	**Banjar Baru**	**6.81**	**33**	P	**Pn**	**14 27 15.0**	**+1.6**
KAPI	**Kappang**	**9.49**	**64**	LR	LR	14 31 57.8	
	comp=Z,195nm,19.9s,baz=275,slow=42						
SOEI	**Soe**	**12.92**	**93**	*e*Pn	**Pn**	**14 28 37.0**	**-0.1**
MBWA	**Marble Bar**	**14.42**	**146**	*e*Pn	**Pn**	**14 28 54.6**	**-2.7**
FITZ	**Fitzroy Crossi**	**16.56**	**124**	Pn	**Pn**	**14 29 25.0**	**0.0**
	0.4nm,0.3s,baz=311,slow=13,SNR=18						
FITZ				Sn	Sn	14 32 14.9	-13
	0.2nm,0.3s,baz=307,slow=10,SNR=3.6						
MTN	**Manton Dam**	**19.91**	**102**	*e*P	**Pn**	**14 30 06.7**	**+1.0**
	14nm,0.4s						
DAV	**Davao City (W)**	**21.66**	**42**	LR	LR	14 41 06.2	
	comp=Z,54nm,18.7s,baz=47,slow=44						
WRA	**Warramunga Arr**	**24.77**	**118**	P	**P**	**14 30 55.2**	**+1.8**
	2.1nm,0.9s,baz=298,slow=11,SNR=31						
WRA				PcP	**PcP**	**14 34 31.3**	**+2.0**
	0.5nm,0.6s,baz=280,slow=1.6,SNR=4.2						
WRAB	**Tennant Creek**	**24.77**	**118**	*e*P	**P**	**14 30 55.4**	**+1.9**
	2.0nm,0.7s						
ASAR	**Alice Springs**	**26.02**	**126**	P	**P**	**14 31 07.0**	**+2.2**
	1.3nm,0.5s,baz=302,slow=8.8,SNR=19						
ASAR				PcP	**PcP**	**14 34 34.6**	**+2.5**
	0.9nm,0.5s,baz=306,slow=2.7,SNR=7.1						
ASAR				LR	LR	14 42 19.9	
	comp=Z,60nm,19.1s,baz=293,slow=39						
CMAR	**Chiang Mai Arr**	**30.07**	**336**	LR	LR	14 44 17.9	
	comp=Z,154nm,19.7s,baz=141,slow=38						
STKA	**Stephens Creek**	**36.08**	**133**	LR	LR	14 48 28.1	
	comp=Z,46nm,19.2s,baz=310,slow=38						
H08S2	**Diego Garcia H**	**38.28**	**269**	T	T	15 13 26.9	
	baz=95,slow=75,SNR=9.2						
H08S3	**Diego Garcia H**	**38.30**	**269**	T	T	15 13 26.9	
	baz=95,slow=75,SNR=12						
H08S1	**Diego Garcia H**	**38.30**	**269**	T	T	15 13 25.8	
	baz=95,slow=75,SNR=9.8						
H08N1	**Diego Garcia H**	**39.88**	**271**	T	T	15 15 59.2	
	baz=215						
H08N2	**Diego Garcia H**	**39.90**	**271**	T	T	15 15 56.4	
	baz=215						
H08N3	**Diego Garcia H**	**39.90**	**271**	T	T	15 15 56.4	
	baz=215						
KSRS	**Korea Array**	**49.05**	**18**	LR	LR	14 57 26.5	
	comp=Z,22nm,18.1s,baz=65,slow=39						
MJAR	**Matsushiro Arr**	**52.17**	**28**	P	**P**	**14 34 40.0**	**-1.9**
	1.0

TPIG	**Tehuac#an**	**2.38**	**304**	*i* P	Pn	14 40 16.9	-1.0
TPIG				*i* S	S	14 40 48.9	-3.2
PNIG	**Pinotepa**	**2.82**	**256**	*e*P	Pn	14 40 22.9	+0.3
PNIG				*e*S	S	14 40 57.7	-2.7

*NSSC **16** 14:46:14.6±1.2,33˚78N×35˚63E, h4km±5km, ML1.7*
*ISCJB **16** 14:46:16.5±0.5,33˚77N±0˚03×35˚75E±0˚05, h6km±7km, Error ellipse: s-maj=6.6km s-min=4.7km az=174.8*
*CSEM **16** 14:46:16.8,33˚78N×35˚77E, h5km, ML2.9*
*GRAL **16** 14:46:16.8±0.3,33˚78N×35˚77E, h6km±3km, MD2.9*
ISC 16 14:46:16.5±1.0,**33˚78N**±0˚03×**35˚78E**±0˚04,**h6km**±11km, **n15**,σ0**s42/26,Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.16**	**321**		*e*P	**Pg**		**14 46 19.9**	**0.0**
BHL					*e*S	**Sg**		**14 46 22.2**	**+0.1**
BHL	**Bhannes**	**0.16**	**321**		*e*P	**Pg**		**14 46 19.9**	**0.0**
BHL					*e*S	**Sg**		**14 46 22.2**	**+0.1**
DQRL	**Deir Qamar**	**0.19**	**247**		*e*P	**Pg**		**14 46 20.3**	**0.0**
DQRL					*e*S	**Sg**		**14 46 22.9**	**+0.1**
DQRL	**Deir Qamar**	**0.19**	**247**		*e*P	**Pg**		**14 46 20.3**	**0.0**
DQRL					*e*S	**Sg**		**14 46 22.9**	**+0.1**
BEYL	**Beirut**	**0.25**	**292**		*e*P	**Pg**		**14 46 21.4**	**-0.1**
BEYL	**Beirut**	**0.25**	**292**		*e*P	**Pg**		**14 46 21.4**	**-0.1**
RCY	**Rachaya**	**0.29**	**170**		*e*P	**Pg**		**14 46 22.0**	**-0.1**
RCY					*e*S	**Sg**		**14 46 26.0**	**0.0**
RCY	**Rachaya**	**0.29**	**170**		*e*P	**Pg**		**14 46 22.0**	**-0.1**
RCY					*e*S	**Sg**		**14 46 26.0**	**0.0**
BRBR	**Barbar**	**0.39**	**158**		*e*P	**Pg**		**14 46 24.2**	**0.0**
BRBR					*e*S	**Sg**		**14 46 30.1**	**+0.7**
BRBR	comp=N,67nm,0.4s			AML	AML			14 46 38.4	
HWQ	**Hawqa**	**0.52**	**16**		*e*P	**Pg**		**14 46 26.2**	**-0.3**
HWQ	**Hawqa**	**0.52**	**16**		*e*P	**Pg**		**14 46 26.2**	**-0.3**
MARH	**Ras Al Marh**	**0.64**	**67**		*e*P	**Pg**		**14 46 28.7**	**-0.1**
MARH					*e*S	**Sb**		**14 46 39.8**	**+0.2**
MARH	comp=E,59nm,0.4s			AML	AML			14 46 46.5	
MARH	comp=N,33nm,0.4s			AML	AML			14 46 49.7	
ROOS	**tl_alroos**	**1.32**	**72**		*e*P	**Pn**		**14 46 41.1**	**-0.4**
ROOS	comp=N,14nm,0.5s			AML	AML			14 46 50.1	
ROOS	comp=E,202nm,0.3s				*e*S	**Sn**		**14 47 00.4**	**+0.9**
ROOS				AML	AML			14 47 10.4	
SALA	**Sala**	**1.33**	**143**		*e*P	**Pn**		**14 46 40.6**	**-1.3**
SALA					*e*S	**Sg**		**14 46 59.3**	**0.0**
SALA	comp=N,15nm,0.3s			AML	AML			14 47 06.9	
SALA	comp=E,1.9nm,0.3s			AML	AML			14 47 11.0	
ZALF	**Zalf**	**1.56**	**123**		*e*P	**Pn**		**14 46 45.3**	**+0.5**
ZALF	comp=N,6.5nm,0.8s			AML	AML			14 46 49.6	
ZALF					*e*S	**Sn**		**14 47 05.6**	**+0.2**
ZALF	comp=E,11nm,0.4s			AML	AML			14 47 10.3	

*NIED **16** 14:52:00,37˚70N×144˚20E, h5km, Mw3.7 Best double couple: M₀4.03000×10¹⁴ NP1:φs357.00000°,δ16.00000°, λ-58.00000°. NP2:φs145.00000°,δ76.00000°, λ-99.00000°.*
*IDC **16** 14:52:15.5±1.1,37˚48N×144˚49E, h0km, mb3.6/4, mb1 3.9/7, mb1mx3.6/39, mbtmp3.7/7, ML3.7/2, MS3.3/1, Ms1 3.3/1, ms1mx2.2/37, Error ellipse: s-maj=33.2km s-min=21.1km az=104.0*
*ISCJB **16** 14:52:17.7±0.7,37˚60N±0˚04×144˚35E±0˚06, h33km, mb3.8/4, MS3.2/1, Error ellipse: s-maj=6.7km s-min=5.6km az=10.4*
*JMA **16** 14:52:20.2±0.2,37˚67N×144˚21E, h48km, M3.8*
ISC 16 14:52:19.8±1.1,**37˚65N**±0˚05×**144˚35E**±0˚08,**h35km**,**n25**, σ2**s23/35**,**mb3.6/4,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.50**	**290**			P	**Pn**	**14 52 58.3**	**+0.3**
JIO						S	**Sn**	**14 53 26.3**	**-1.0**
OFUJ	**Ofunato**	**2.55**	**305**			P	**Pn**	**14 52 58.8**	**+0.2**
OFUJ						*e*S	**Sn**	**14 53 27.3**	**-1.1**
JMK	**Ichinoseki**	**2.79**	**299**			P	**Pn**	**14 53 02.4**	**+0.5**
JOM	**Ohasama**	**3.01**	**308**			P	**Pn**	**14 53 05.8**	**+0.8**
JOM						S	**Sn**	**14 53 39.9**	**+0.1**
JFT	**Otama**	**3.19**	**269**			P	**Pn**	**14 53 08.2**	**+0.7**
JFT						*e*S	**Sn**	**14 53 43.7**	**-0.7**
JYK	**Kaneyama**	**3.39**	**293**			P	**Pn**	**14 53 11.3**	**+1.1**
JYK						S	**Sn**	**14 53 49.5**	**+0.4**
JANG	**Nango**	**3.50**	**322**			P	**Pn**	**14 53 12.4**	**+0.6**
JANG						*e*S	**Sn**	**14 53 50.3**	**-1.7**
BSO1	**Boso 1**	**4.05**	**223**			P	**Pn**	**14 53 17.5**	**-1.3**
BSO1						*e*S	**Sn**	**14 54 02.9**	**-1.8**
JOT	**Ohata**	**4.52**	**327**			P	**Pn**	**14 53 27.4**	**+1.7**
JRY	**Ryogami san**	**4.67**	**251**			P	**Pn**	**14 53 27.3**	**-0.5**
JRY						S	**Sn**	**14 54 17.2**	**-3.6**
JOD2	**Odawara 2**	**4.87**	**242**			P	**Pn**	**14 53 30.1**	**-0.4**
JOD2						*e*S	**Sn**	**14 54 21.4**	**-4.3**
JCH	**Churui**	**5.01**	**352**			P	**Pn**	**14 53 31.8**	**-0.7**
JCH						*e*S	**Sn**	**14 54 25.6**	**-3.6**
MJAR	**Matsushiro Arr** 3.7nm,0.3s,baz=90,slow=15,SNR=50	**5.04**	**259**		Pn	**Pn**		**14 53 34.0**	**+1.2**
MAT	**Matsushiro**	**5.04**	**259**		P	**Pn**		**14 53 34.4**	**+1.5**
MAT					S	**Sn**		**14 54 30.1**	**+0.3**
NEM2	**Nemuro 2**	**5.80**	**10**		P	**Pn**		**14 53 41.0**	**-2.3**
NEM2					S	**Sn**		**14 54 42.6**	**-6.0**
JHJ	**Hachijo jima 2** 5.4nm,0.3s,baz=309,slow=23,SNR=6.5	**5.86**	**221**		Pn	**Pn**		**14 53 41.9**	**-2.4**
JHJ	28nm,0.3s,baz=40,slow=22,SNR=6.7				Sn	**Sn**		**14 54 44.1**	**-6.1**
JTKR	**Abashiri--Toko**	**6.32**	**357**		P	**Pn**		**14 53 49.9**	**-0.5**
ASAJ	**Asahikawa** baz=193,slow=12	**6.59**	**349**		Pn	**Pn**		**14 53 54.8**	**+0.6**
H11N2	**WAKE ISLAND Hy** baz=330	**26.53**	**126**		T	T		15 25 26.4	
H11N1	**WAKE ISLAND Hy** baz=330	**26.54**	**126**		T	T		15 25 25.6	
H11N3	**WAKE ISLAND Hy** baz=330	**26.55**	**126**		T	T		15 25 24.9	
MKAR	**Makanchi Array** 0.2nm,0.2s,baz=82,slow=8.7,SNR=4.3	**45.78**	**302**		P	**P**		**15 00 40.3**	**+2.5**
MKAR	comp=Z,34nm,21.6s,baz=156,slow=36				LR	LR		15 19 32.7	
ILAR	**Eielson Array** 0.5nm,0.7s,baz=261,slow=6.5,SNR=8.7	**47.71**	**33**		P	**P**		**15 00 54.4**	**+1.6**
WRA	**Warramunga Arr** 1.4nm,0.6s,baz=13,slow=7.5,SNR=12	**58.06**	**191**		P	**P**		**15 02 09.0**	**-0.5**
ASAR	**Alice Springs** 0.3nm,0.6s,baz=12,slow=14,SNR=8.4	**61.78**	**191**		P	**P**		**15 02 35.1**	**+0.2**

*NEIC **16** 14:52:40.0,37˚57S×176˚42E, h209km, MG4.2(WEL), After WEL.*
WEL 16 14:52:39.2±0.5,**37˚55S×176˚43E, h216km**±3km,**ML4.3**/51, **10C-13D,Error ellipse: s-maj=2.8km s-min=2.5km az=0.0,North Island**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TGRZ	**Tauranga**	**0.23**	**216**			Pn	Pn	14 53 07.4	0.0
TGRZ	**Tauranga**	**0.23**	**216**			Pn	Pn	14 53 07.4	0.0
OPRZ	**Ohinepanea**	**0.31**	**162**			Pn	Pn	14 53 07.4	-0.2
OPRZ	**Ohinepanea**	**0.31**	**162**			⇑PN	Pn	14 53 09.4	-0.5
OPRZ						SN	S	14 53 29.4	-0.5
TARZ	**Mount Tarawera**	**0.69**	**175**			Pn	Pn	14 53 09.7	+0.7
TARZ	**Mount Tarawera**	**0.69**	**175**			PN	Pn	14 53 09.7	+0.7
TOZ	**Tahuroa Road**	**0.76**	**256**			PN	Pn	14 53 09.4	+0.2
RRRZ	**Republican Roa**	**0.80**	**175**			Pn	Pn	14 53 09.6	+0.2
RRRZ	**Republican Roa**	**0.80**	**175**			⇑PN	Pn	14 53 09.6	+0.2
URZ	**Urewera**	**0.89**	**143**			Pn	Pn	14 53 09.5	-0.4
URZ	**Urewera**	**0.89**	**143**			⇓PN	Pn	14 53 09.5	-0.4
URZ						SN	S	14 53 34.3	+0.4
URZ						AML	AML	14 53 37.7	
PRRZ	**Plateau Road**	**0.95**	**182**			Pn	Pn	14 53 10.5	+0.2
PRRZ	**Plateau Road**	**0.95**	**182**			PN	Pn	14 53 10.5	+0.2
MUGZ	**Murupara**	**0.97**	**164**			PN	Pn	14 53 10.2	-0.2
KUZ	**Kuaotunu**	**0.98**	**324**			Pn	Pn	14 53 10.0	-0.5
KUZ	**Kuaotunu**	**0.98**	**324**			PN	Pn	14 53 10.0	-0.5
WPRZ	**Whakapapatarin**	**1.00**	**192**		*e*PN	Pn	Pn	14 53 10.9	+0.3
ALRZ	**Allen Road**	**1.02**	**184**			Pn	Pn	14 53 10.9	+0.2
ALRZ	**Allen Road**	**1.02**	**184**			PN	Pn	14 53 10.9	+0.2
TLZ	**Tolley Road**	**1.05**	**222**			Pn	Pn	14 53 11.2	+0.2
TLZ	**Tolley Road**	**1.05**	**222**			⇑PN	Pn	14 53 11.2	+0.2
KUTZ	**Kaahu Road**	**1.06**	**207**			Pn	Pn	14 53 11.4	+0.4
KUTZ	**Kaahu Road**	**1.06**	**207**			PN	Pn	14 53 11.4	+0.4
RUGZ	**Raukumara Rang**	**1.07**	**113**			PN	Pn	14 53 10.3	-0.9
HAZ	**Te Kaha**	**1.09**	**102**			PN	Pn	14 53 10.7	-0.5
HAZ						AML	AML	14 53 39.9	
HAZ						AML	AML	14 53 40.7	
HAZ						AML	AML	14 53 41.3	
HAZ						AML	AML	14 53 41.4	
MKAZ	**Moumakai**	**1.10**	**293**			Pn	Pn	14 53 11.4	+0.1
MKAZ	**Moumakai**	**1.10**	**293**			PN	Pn	14 53 11.4	+0.1
MWZ	**Matawai**	**1.17**	**133**			Pn	Pn	14 53 11.5	-0.3
MWZ	**Matawai**	**1.17**	**133**			PN	Pn	14 53 11.5	-0.3
MWZ						AML	AML	14 53 42.9	
MWZ						AML	AML	14 53 44.5	
RAGZ	**Rawiri**	**1.23**	**141**			Pn	Pn	14 53 12.6	+0.4
RAGZ	**Rawiri**	**1.23**	**141**			PN	Pn	14 53 12.6	+0.4
RAGZ						AML	AML	14 53 39.7	
RAGZ						AML	AML	14 53 48.2	
MRHZ	**Matea Rd**	**1.29**	**180**		⇓PN	Pn	Pn	14 53 12.3	-0.3
MRHZ						SN	S	14 53 36.9	-1.9
MRHZ						AML	AML	14 53 40.5	
PKGZ	**Pakihiroa**	**1.35**	**105**		⇓PN	Pn	Pn	14 53 13.3	+0.2
TWGZ	**Tauwhareparae**	**1.38**	**118**			Pn	Pn	14 53 13.9	+0.5
TWGZ	**Tauwhareparae**	**1.38**	**118**			PN	Pn	14 53 13.9	+0.5
TWGZ						AML	AML	14 53 42.8	
TWGZ						AML	AML	14 53 44.2	
RATZ	**Rangitukua**	**1.42**	**201**			Pn	Pn	14 53 13.6	0.0
RATZ	**Rangitukua**	**1.42**	**201**		⇓PN	Pn	Pn	14 53 13.6	0.0
SNGZ	**Shannon Statio**	**1.43**	**150**			Pn	Pn	14 53 14.0	+0.3
SNGZ	**Shannon Statio**	**1.43**	**150**		⇓PN	Pn	Pn	14 53 14.0	+0.3
SNGZ						AML	AML	14 53 42.3	
SNGZ						AML	AML	14 53 44.5	
TKGZ	**Te Karaka**	**1.43**	**129**			Pn	Pn	14 53 14.0	+0.3
TKGZ	**Te Karaka**	**1.43**	**129**			PN	Pn	14 53 14.0	+0.3
TKGZ						AML	AML	14 53 43.3	
TKGZ						AML	AML	14 53 43.4	
MXZ	**Matakaoa Point**	**1.49**	**91**			Pn	Pn	14 53 14.3	+0.1
MXZ	**Matakaoa Point**	**1.49**	**91**			PN	Pn	14 53 14.3	+0.1
MXZ						AML	AML	14 53 47.7	
MXZ						AML	AML	14 53 51.2	
RITZ	**Rihia Road**	**1.50**	**197**			Pn	Pn	14 53 14.6	+0.2
RITZ	**Rihia Road**	**1.50**	**197**		⇑PN	Pn	Pn	14 53 14.6	+0.2
PUZ	**Puketiti**	**1.54**	**111**			Pn	Pn	14 53 14.8	+0.1
PUZ	**Puketiti**	**1.54**	**111**			PN	Pn	14 53 14.8	+0.1
PUZ						AML	AML	14 53 41.7	
PUZ						AML	AML	14 53 43.5	
RIGZ	**Rimuhau**	**1.56**	**138**			PN	Pn	14 53 15.1	+0.6
RIGZ						AML	AML	14 53 44.7	
RIGZ						AML	AML	14 53 45.6	
NMHZ	**Naumai**	**1.58**	**169**			Pn	Pn	14 53 15.6	+0.5
NMHZ	**Naumai**	**1.58**	**169**			PN	Pn	14 53 15.6	+0.5
NMHZ						AML	AML	14 53 53.0	
NMHZ						AML	AML	14 53 53.9	
WMGZ	**Waiomatatini S**	**1.60**	**100**			AML	AML	14 53 44.1	
WMGZ						AML	AML	14 53 44.6	
BKZ	**Black Stump Fm**	**1.62**	**178**			Pn	Pn	14 53 14.7	-0.7
BKZ	**Black Stump Fm**	**1.62**	**178**			PN	Pn	14 53 14.7	-0.7
BKZ						AML	AML	14 53 44.6	
BKZ						AML	AML	14 53 52.9	
WHHZ	**Waihua**	**1.65**	**158**			PN	Pn	14 53 15.9	+0.3
WHHZ						AML	AML	14 53 46.2	
WHHZ						AML	AML	14 53 48.0	
KRVZ	**Karewarewa**	**1.67**	**202**			Pn	Pn	14 53 15.5	-0.4
KRVZ	**Karewarewa**	**1.67**	**202**			PN	Pn	14 53 15.5	-0.4
CNGZ	**Carnagh Statio**	**1.69**	**124**			Pn	Pn	14 53 16.9	+1.0
CNGZ	**Carnagh Statio**	**1.69**	**124**		⇓PN	Pn	Pn	14 53 16.9	+1.0
CNGZ						AML	AML	14 53 47.0	
CNGZ						AML	AML	14 53 48.0	
WTVZ	**West Tongariro**	**1.70**	**203**			Pn	Pn	14 53 15.9	-0.3
WTVZ	**West Tongariro**	**1.70**	**203**			PN	Pn	14 53 15.9	-0.3
TWVZ	**Taurewa**	**1.71**	**207**			Pn	Pn	14 53 16.0	-0.2
TWVZ	**Taurewa**	**1.71**	**207**			PN	Pn	14 53 16.0	-0.2
NGZ	**Ngauruhoe**	**1.75**	**202**			Pn	Pn	14 53 16.7	0.0
NGZ	**Ngauruhoe**	**1.75**	**202**			PN	Pn	14 53 16.7	0.0
KNZ	**Kokohu**	**1.77**	**147**			Pn	Pn	14 53 16.7	+0.1
KNZ	**Kokohu**	**1.77**	**147**		⇓PN	Pn	Pn	14 53 16.7	+0.1
KNZ						AML	AML	14 53 46.5	
KNZ						AML	AML	14 53 46.7	
ARHZ	**Aropaoanui**	**1.77**	**166**			Pn	Pn	14 53 17.0	+0.3
ARHZ	**Aropaoanui**	**1.77**	**166**			PN	Pn	14 53 17.0	+0.3
ARHZ						AML	AML	14 53 47.6	
ARHZ						AML	AML	14 53 48.7	
PRGZ	**Paritu Road**	**1.79**	**141**			Pn	Pn	14 53 17.2	+0.4
PRGZ	**Paritu Road**	**1.79**	**141**			PN	Pn	14 53 17.2	+0.4
PRGZ						AML	AML	14 53 48.1	
PRGZ						AML	AML	14 53 48.9	
FWVZ	**Far West T-bar**	**1.84**	**202**			Pn	Pn	14 53 17.0	-0.6
FWVZ	**Far West T-bar**	**1.84**	**202**			PN	Pn	14 53 17.0	-0.7
WHVZ	**Whangaehu Hut**	**1.86**	**201**			Pn	Pn	14 53 17.3	-0.5
WHVZ	**Whangaehu Hut**	**1.86**	**201**			PN	Pn	14 53 17.3	-0.5
KWHZ	**Kaweka Forest**	**1.88**	**180**			PN	Pn	14 53 17.5	-0.2
KWHZ						AML	AML	14 53 57.9	
KWHZ						AML	AML	14 53 58.7	
WNVZ	**Wahianoa**	**1.90**	**200**			Pn	Pn	14 53 17.5	-0.5
WNVZ	**Wahianoa**	**1.90**	**200**		⇓PN	Pn	Pn	14 53 17.5	-0.5
MCHZ	**McNeill Hill**	**1.91**	**174**			Pn	Pn	14 53 18.2	+0.2
MCHZ	**McNeill Hill**	**1.91**	**174**		⇓PN	Pn	Pn	14 53 18.2	+0.2
MCHZ						AML	AML	14 53 50.6	
MCHZ						AML	AML	14 53 54.7	
MOVZ	**Moawhango**	**1.93**	**196**			Pn	Pn	14 53 17.3	-1.0
MOVZ	**Moawhango**	**1.93**	**196**		⇓PN	Pn	Pn	14 53 17.3	-1.0
PKVZ	**Pokaka**	**1.94**	**206**			Pn	Pn	14 53 18.1	-0.2
PKVZ	**Pokaka**	**1.94**	**206**			PN	Pn	14 53 18.1	-0.3
MHGZ	**Mahia Peninsul**	**1.98**	**145**			Pn	Pn	14 53 19.0	+0.3
MHGZ	**Mahia Peninsul**	**1.98**	**145**			PN	Pn	14 53 19.0	+0.3
MHGZ						AML	AML	14 53 49.2	
MHGZ						AML	AML	14 53 49.2	
VRZ	**Vera Road**	**2.05**	**219**			Pn	Pn	14 53 19.2	-0.2
VRZ	**Vera Road**	**2.05**	**219**			PN	Pn	14 53 19.2	-0.2
KRHZ	**Kereru**	**2.10**	**181**			PN	Pn	14 53 19.2	-0.6
KRHZ						AML	AML	14 53 50.9	
KRHZ						AML	AML	14 53 51.8	
CKHZ	**Cape Kidnapper**	**2.17**	**167**			Pn	Pn	14 53 20.6	+0.1
CKHZ	**Cape Kidnapper**	**2.17**	**167**		⇑PN	Pn	Pn	14 53 20.6	+0.1
CKHZ						AML	AML	14 53 53.5	
CKHZ						AML	AML	14 54 00.3	
KAHZ	**Kahuranaki**	**2.27**	**171**			Pn	Pn	14 53 21.4	-0.3
KAHZ	**Kahuranaki**	**2.27**	**171**			PN	Pn	14 53 21.4	-0.3
KAHZ						AML	AML	14 53 55.6	
KAHZ						AML	AML	14 54 00.4	
PNHZ	**Pukenui**	**2.37**	**184**			Pn	Pn	14 53 21.7	-1.1
PNHZ	**Pukenui**	**2.37**	**184**			PN	Pn	14 53 21.7	-1.1
PNHZ						AML	AML	14 53 56.3	
PNHZ						AML	AML	14 53 57.0	
WAZ	**Wanganui**	**2.48**	**207**			Pn	Pn	14 53 23.2	-0.7
WAZ	**Wanganui**	**2.48**	**207**		⇑PN	Pn	Pn	14 53 23.2	-0.7
PXZ	**Pawanui**	**2.50**	**172**			Pn	Pn	14 53 23.3	-0.8
PXZ	**Pawanui**	**2.50**	**172**			PN	Pn	14 53 23.3	-0.8
PXZ						AML	AML	14 53 59.8	
PXZ						AML	AML	14 53 59.8	
PXZ						AML	AML	14 54 00.5	
PXZ						AML	AML	14 54 00.5	
WPHZ	**Waipukurau**	**2.52**	**180**			Pn	Pn	14 53 23.3	-0.9
WPHZ	**Waipukurau**	**2.52**	**180**			PN	Pn	14 53 23.3	-0.9
WPHZ						AML	AML	14 54 04.7	
WPHZ						AML	AML	14 54 05.3	
PKE	**Pukeiti**	**2.53**	**229**			Pn	Pn	14 53 25.1	+0.7
PKE	**Pukeiti**	**2.53**	**229**			PN	Pn	14 53 25.1	+0.7
TSZ	**Takapari Road**	**2.54**	**188**			Pn	Pn	14 53 23.3	-1.2
TSZ	**Takapari Road**	**2.54**	**188**		⇓PN	Pn	Pn	14 53 23.3	-1.2
TSZ						AML	AML	14 53 59.7	
TSZ						AML	AML	14 54 00.2	
PRHZ	**Porangahau**	**2.72**	**177**			Pn	Pn	14 53 25.3	-1.2
PRHZ	**Porangahau**	**2.72**	**177**			PN	Pn	14 53 25.3	-1.2
PRHZ						AML	AML	14 54 02.2	
PRHZ						AML	AML	14 54 05.7	
DVHZ	**Dannevirke**	**2.76**	**184**			Pn	Pn	14 53 25.4	-1.5
DVHZ	**Dannevirke**	**2.76**	**184**		⇓PN	Pn	Pn	14 53 25.4	-1.6
DVHZ						AML	AML	14 54 02.0	
DVHZ						AML	AML	14 54 17.3	
OHWZ	**Ohakea**	**2.80**	**198**			PN	Pn	14 53 26.7	-0.6
POWZ	**Post Office Ro**	**2.89**	**190**			Pn	Pn	14 53 26.8	-1.6
POWZ	**Post Office Ro**	**2.89**	**190**			PN	Pn	14 53 26.8	-1.6
POWZ						AML	AML	14 54 07.7	
POWZ						AML	AML	14 54 10.5	
ANWZ	**Angora Road**	**2.91**	**179**		⇑PN	Pn	Pn	14 53 27.5	-1.1
ANWZ						AML	AML	14 54 07.4	
ANWZ						AML	AML	14 54 08.0	
BFZ	**Birch Farm**	**3.13**	**183**			Pn	Pn	14 53 29.3	-1.9
BFZ	**Birch Farm**	**3.13**	**183**			PN	Pn	14 53 29.3	-1.9
BFZ						AML	AML	14 54 09.9	
BFZ						AML	AML	14 54 09.9	
BFZ						AML	AML	14 54 11.8	
BFZ						AML	AML	14 54 11.8	
MRZ	**Mangatainoka R**	**3.18**	**192**			Pn	Pn	14 53 29.5	-2.2
MRZ	**Mangatainoka R**	**3.18**	**192**		⇓PN	Pn	Pn	14 53 29.5	-2.2
MRZ						AML	AML	14 54 11.5	
MRZ						AML	AML	14 54 12.6	
TIWZ	**Tintock**	**3.25**	**187**			Pn	Pn	14 53 30.7	-1.9
TIWZ	**Tintock**	**3.25**	**187**			PN	Pn	14 53 30.7	-1.9
TIWZ						AML	AML	14 54 11.6	
TIWZ						AML	AML	14 54 14.4	
CPWZ	**Castlepoint**	**3.37**	**183**			AML	AML	14 54 17.0	
CPWZ						AML	AML	14 54 19.0	
OGWZ	**Otaki Gorge**	**3.41**	**196**			Pn	Pn	14 53 32.2	-2.2
OGWZ	**Otaki Gorge**	**3.41**	**196**			PN	Pn	14 53 32.2	-2.2
OGWZ						AML	AML	14 54 16.6	
OGWZ						AML	AML	14 54 18.5	
HOWZ	**Holdsworth Sta**	**3.42**	**192**			Pn	Pn	14 53 32.1	-2.5
HOWZ	**Holdsworth Sta**	**3.42**	**192**			PN	Pn	14 53 32.1	-2.5
HOWZ						AML	AML	14 54 15.7	
HOWZ						AML	AML	14 54 17.0	
KIW	**Kapiti Island**	**3.52**	**199**			Pn	Pn	14 53 33.1	-2.6
KIW	**Kapiti Island**	**3.52**	**199**			PN	Pn	14 53 33.1	-2.6
KIW						AML	AML	14 54 17.6	
KIW						AML	AML	14 54 17.7	
TMWZ	**Te Maipa**	**3.58**	**187**			Pn	Pn	14 53 34.5	-1.9
TMWZ	**Te Maipa**	**3.58**	**187**			PN	Pn	14 53 34.5	-1.9
TMWZ						AML	AML	14 54 19.2	
TMWZ						AML	AML	14 54 21.2	
MTW	**Mount Morrison**	**3.68**	**191**			Pn	Pn	14 53 34.8	-2.8
MTW	**Mount Morrison**	**3.68**	**191**			PN	Pn	14 53 34.8	-2.8
MTW						AML	AML	14 54 21.7	
MTW						AML	AML	14 54 23.1	
CAW	**Cannon Point**	**3.71**	**196**			Pn	Pn	14 53 35.3	-2.7
CAW	**Cannon Point**	**3.71**	**196**			PN	Pn	14 53 35.3	-2.7
CAW						AML	AML	14 54 21.2	
CAW						AML	AML	14 54 25.4	
DUWZ	**D'Urville Isla**	**3.79**	**210**			Pn	Pn	14 53 36.0	-3.0
DUWZ	**D'Urville Isla**	**3.79**	**210**			PN	Pn	14 53 36.0	-3.0
TRWZ	**Traveller**	**3.89**	**188**			Pn	Pn	14 53 37.8	-2.4
TRWZ	**Traveller**	**3.89**	**188**			PN	Pn	14 53 37.7	-2.4
TRWZ						AML	AML	14 54 26.2	
TRWZ						AML	AML	14 54 26.8	
PAWZ	**Paruwai Farm**	**3.91**	**191**			Pn	Pn	14 53 37.7	-2.7
PAWZ	**Paruwai Farm**	**3.91**	**191**			PN	Pn	14 53 37.7	-2.7
PAWZ						AML	AML	14 54 25.6	
PAWZ						AML	AML	14 54 31.3	
WEL	**Wellington**	**3.95**	**199**			Pn	Pn	14 53 38.1	-2.8
WEL	**Wellington**	**3.95**	**199**			PN	Pn	14 53 38.1	-2.8
WEL						AML	AML	14 54 26.9	
WEL						AML	AML	14 54 27.8	
MSWZ	**Moikau Station**	**3.97**	**193**			Pn	Pn	14 53 38.2	-3.0
MSWZ	**Moikau Station**	**3.97**	**193**			PN	Pn	14 53 38.2	-3.0
MSWZ						AML	AML	14 54 26.4	
MSWZ						AML	AML	14 54 29.2	
SNZO	**South Karori**	**3.99**	**199**		*e*Pn	Pn	Pn	14 53 39.2	-2.2
TCW	**Tory Channel**	**4.02**	**204**			Pn	Pn	14 53 39.0	-2.8
**T

comp=Z,260nm,0.1s
CLRN Clyde River 4.95 206 PN **Pn** 15 37 50.9 +3.6
CLRN SN **Sn** 15 38 43.1 -1.3
CLRN Trac 15 38 50.2
comp=Z,5.7nm,0.1s
ILULI Ilulissat 6.74 144 SN **Sn** 15 39 24.8 -3.7
SUMG Summit 7.04 99 *i* P **Pn** 15 38 17.1 +0.8
SUMG *i* 15 38 19.2
SUMG *e*S **Sn** 15 39 30.2 -6.2
EUNU Eureka 7.21 325 PN **Pn** 15 38 21.4 +3.1
EUNU SN **Sn** 15 39 37.7 -2.4
EUNU Trac 15 39 42.9
comp=Z,4.3nm,0.2s
GIFN Gifford Fjord, 7.70 239 PN **Pn** 15 38 28.4 +3.5
GIFN SN **Sn** 15 39 49.9 -2.1
GIFN Trac 15 39 52.5
comp=Z,2.9nm,0.2s
ILON Igloolik, Nuna 8.22 236 PN **Pn** 15 38 35.5 +3.4
ILON SN **Sn** 15 40 02.4 -2.6
ILON Trac 15 40 08.5
comp=Z,1.2nm,0.1s
RES Resolute Bay 8.51 284 PN **Pn** 15 38 38.7 +2.7
RES SN **Sn** 15 40 09.5 -2.4
RES Trac 15 40 27.9
comp=Z,33nm,1.0s
LAIN Lailor River, 8.81 239 PN **Pn** 15 38 43.1 +2.9
LAIN SN **Sn** 15 40 16.2 -3.1
LAIN Trac 15 40 25.6
comp=Z,3.0nm,0.2s
DAG Danmarks Havn 10.56 60 *i* P **Pn** 15 39 07.4 +3.3
DAG *e*S **Sn** 15 40 55.1 -7.1
KUGN Kugaaruk Camp, 11.11 246 PN **Pn** 15 39 11.8 +0.1
KUGN SN **Sn** 15 41 10.2 -5.5
KUGN Trac 15 41 17.3
comp=Z,3.0nm,0.5s

IDC ***16*** *15:41:07.7±2.0, 35°.40N×141°.43E, h0km, mb3.5/5, mb1 3.5/8, mb1mx3.4/35, mbtmp3.5/8, ML3.0/3, Error ellipse: s-maj=49.7km s-min=19.8km az=66.0*
ISCJB ***16*** *15:41:11.5±0.9, 35°.37N±0°.04×141°.21E±0°.10, h33km, mb3.5/5, Error ellipse: s-maj=11.6km s-min=6.2km az=176.7*
JMA ***16*** *15:41:11.0±0.1, 35°.38N×141°.22E, h26km±2km, M3.1*

ISC 16 15:41:12.9±1.1, 35°.37N±0°.05×141°.13E±0°.09, h33km, n23, σ1§31/21, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.40**	**326**	P	**Pb**	**15 41 20.1**	**-1.9**
CHOJ				S	**Sb**	**15 41 26.4**	**-1.8**
KTR	**Katsuura**	**0.70**	**252**	P	**Pn**	**15 41 25.7**	**-0.8**
KTR				S	**Sn**	**15 41 36.0**	**-0.2**
BSO1	**Boso 1**	**0.73**	**190**	P	**Pn**	**15 41 25.0**	**-1.4**
BSO4	**Boso 4**	**0.75**	**240**	P	**Pn**	**15 41 26.5**	**-0.6**
JCN	**Nagara**	**0.76**	**274**	P	**Pn**	**15 41 27.4**	**+0.1**
BSO3	**Boso 3**	**0.76**	**222**	P	**Pn**	**15 41 26.4**	**-0.7**
JYT	**Yasato**	**1.15**	**319**	P	**Pn**	**15 41 32.0**	**-0.6**
JHO	**Hitachi**	**1.32**	**340**	P	**Pn**	**15 41 35.0**	**0.0**
JHJ	**Hachijo jima 2**	**2.51**	**207**	Pn	**Pn**	**15 41 51.7**	**+0.3**
	7.8nm,0.3s,baz=113,slow=24,SNR=7.1						
JHJ				Sn	**Sn**	**15 42 21.9**	**+1.1**
	32nm,0.3s,baz=65,slow=22,SNR=2.5						
MJAR	**Matsushiro Arr**	**2.64**	**297**	Pn	**Pn**	**15 41 54.4**	**+1.1**
	1.6nm,0.3s,baz=111,slow=6.8,SNR=23						
MAT	**Matsushiro**	**2.64**	**297**	P	**Pn**	**15 41 54.8**	**+1.5**
MAT				*e*S	**Sb**	**15 42 29.4**	**-2.3**
JNU	**Nakatsue**	**8.78**	**258**	Pn	**Pn**	**15 43 18.7**	**+1.1**
	0.1nm,0.3s,baz=68,slow=19,SNR=4.2						
H11N2	**WAKE ISLAND Hy 27.54**	**118**		T	T	16 16 06.2	
	baz=310,slow=75,SNR=32						
H11N1	**WAKE ISLAND Hy 27.54**	**118**		T	T	16 16 05.5	
	baz=310,slow=75,SNR=31						
H11N3	**WAKE ISLAND Hy 27.55**	**118**		T	T	16 15 56.1	
	baz=310,slow=75,SNR=24						
H11S3	**WAKE ISLAND Hy 28.19**	**120**		T	T	16 16 37.2	
	baz=312,slow=75,SNR=75						
H11S1	**WAKE ISLAND Hy 28.19**	**120**		T	T	16 16 34.6	
	baz=312,slow=75,SNR=95						
H11S2	**WAKE ISLAND Hy 28.21**	**120**		T	T	16 16 36.8	
	baz=312,slow=75,SNR=43						
SONM	**Songino Array**	**28.56**	**307**	P	**P**	**15 47 07.1**	**+1.4**
	0.3nm,0.5s,baz=90,slow=4.3,SNR=2.7						
ZALV	**Zalesovo Beam**	**42.88**	**314**	P	**P**	**15 49 08.3**	**+0.3**
	0.4nm,0.5s,baz=92,slow=13,SNR=2.9						
MKAR	**Makanchi Array**	**44.83**	**303**	P	**P**	**15 49 24.7**	**+1.0**
	0.2nm,0.2s,baz=82,slow=11,SNR=2.8						
WRA	**Warramunga AR**	**55.38**	**188**	P	**P**	**15 50 42.6**	**-1.2**
	0.6nm,0.4s,baz=3.6,slow=7.7,SNR=18						
ASAR	**Alice Springs**	**59.11**	**188**	P	**P**	**15 51 12.2**	**+2.1**
	0.2nm,0.7s,baz=9.3,slow=7.8,SNR=5.0						

IDC 16 15:47:41.4±1.4, 26°.53N×143°.07E, h0km, mb3.7/3, mb1 3.8/3, mb1mx3.4/33, mbtmp3.7/3, Error ellipse: s-maj=89.0km s-min=31.0km az=92.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**46.97**	**191**	P	P	15 56 14.4	+0.1
	0.5nm,0.4s,baz=12,slow=8.7,SNR=10.0						
ASAR	**Alice Springs**	**50.68**	**191**	P	P	15 56 42.5	-0.3
	0.3nm,0.8s,baz=8.6,slow=6.8,SNR=3.3						
FINES	**FINESS Array B**	**78.80**	**334**	P	P	15 59 45.8	0.0
	1.7nm,0.9s,baz=97,slow=4.6,SNR=4.4						
LPAZ	**La Paz**	**149.29**	**77**	PKPbc	PKPbc	16 07 33.1	-0.5
	0.6nm,0.3s,baz=293,slow=4.3,SNR=4.8						

MAN 16 15:48:34, 9°.56N×122°.17E, h8km, mb4.4, ML3.3, MS3.1, 1C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.08**	**101**	*i* P	Pg	15 48 50.1	-4.6
SNPH				*i* S	Sg	15 49 05.0	-3.7
DCPH	**Dipolog City**	**1.52**	**130**	*e*P	Pn	15 49 01.8	+0.4
TBP	**Tagbilaran**	**1.68**	**85**	*i* P	Pn	15 49 01.9	-1.7
LLP	**Lapu-Lapu**	**1.93**	**67**	*e*P	Pn	15 49 07.1	0.0
LLP				*e*S	Sb	15 49 33.6	0.0
RCP	**Roxas**	**2.07**	**16**	*e*P	Pn	15 49 09.5	+0.4
RCP				*e*S	Sn	15 49 36.2	+1.1

ISCJB ***16*** *16:03:30.7±0.7, 14°.75S±0°.06×167°.6E±0°.1, h35km, mb4.2/16, MS3.3/3, Error ellipse: s-maj=18.3km s-min=8.1km az=0.9*
IDC ***16*** *16:03:32.8±5.1, 14°.74S×167°.69E, h38km±44km, mb3.9/16, mb1 4.0/17, mb1mx3.8/34, mbtmp4.1/17, ML4.0/1, MS3.4/3, Ms1 3.4/3, ms1mx2.8/34, Error ellipse: s-maj=24.1km s-min=17.9km az=82.0*

ISC 16 16:03:32.2±0.8, 14°.71S±0°.08×167°.7E±0°.2, h35km, n20, σ1§08/21, mb4.2/16, MS3.3/3, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**7.42**	**189**	Pn	**Pn**	**16 05 17.8**	**-0.3**
	2.7nm,0.3s,baz=184,slow=23,SNR=20						
DZM				Sn	**Sn**	**16 06 41.4**	**+0.2**
	1.0nm,0.3s,baz=145,slow=20,SNR=2.3						
PMG	**Port Moresby**	**20.78**	**282**	P	**P**	**16 08 09.4**	**-1.1**
	9.9nm,0.7s,baz=90,slow=17,SNR=3.8						
PMG				LR	LR	16 15 05.3	
	comp=Z,115nm,18.2s,baz=50,slow=33						
CTA	**Charters Tower**	**21.17**	**252**	P	**P**	**16 08 15.4**	**+0.8**
	2.7nm,0.7s,baz=84,slow=18,SNR=3.5						
URZ	**Urewera**	**24.88**	**162**	P	**P**	**16 08 52.9**	**+1.2**
	8.1nm,0.8s,baz=336,slow=7.3,SNR=3.0						
STKA	**Stephens Creek**	**29.34**	**230**	P	**P**	**16 09 33.2**	**+1.3**
	2.6nm,0.6s,baz=40,slow=9.2,SNR=12						
WRA	**Warramunga AR**	**32.26**	**256**	P	**P**	**16 09 56.6**	**-1.1**
	0.6nm,0.5s,baz=86,slow=9.3,SNR=9.4						
ASAR	**Alice Springs**	**33.09**	**249**	P	**P**	**16 10 04.2**	**-0.9**
	1.4nm,0.7s,baz=81,slow=9.0,SNR=32						
ASAR				LR	LR	16 22 57.3	
	comp=Z,73nm,19.3s,baz=132,slow=35						
FITZ	**Fitzroy Crossi**	**40.45**	**259**	P	**P**	**16 11 07.3**	**-0.4**
	1.2nm,0.7s,baz=117,slow=6.8,SNR=3.5						
FITZ				LR	LR	16 26 23.9	
	comp=Z,42nm,19.6s,baz=80,slow=34						
JHJ	**Hachijo jima 2**	**54.54**	**331**	P	**P**	**16 12 56.8**	**-0.1**
	124nm,1.0s,baz=226,slow=15,SNR=2.2						
JNU	**Nakatsue**	**59.16**	**324**	P	**P**	**16 13 29.6**	**-0.2**
	3.2nm,0.8s,baz=151,slow=19,SNR=2.6						
ASAJ	**Asahikawa**	**62.87**	**340**	P	**P**	**16 13 55.8**	**+1.1**
	2.6nm,0.6s,baz=137,slow=19						
USRK	**Ussuriysk Ar.**	**67.07**	**333**	P	**P**	**16 14 24.1**	**+2.1**
	3.5nm,0.8s,baz=142,slow=40,SNR=2.9						
PETK	**Petropavlovsk-**	**68.09**	**354**	P	**P**	**16 14 29.1**	**+0.9**
	1.4nm,0.8s,baz=158,slow=4.2,SNR=2.9						
MAW	**Mawson**	**82.07**	**202**	P	**P**	**16 15 48.2**	**-0.5**
	0.7nm,0.7s,baz=218,slow=16,SNR=4.2						
SONM	**Songino Array**	**82.74**	**323**	P	**P**	**16 15 53.4**	**+0.8**
	0.4nm,0.4s,baz=154,slow=8.4,SNR=2.9						
ILAR	**Eielson Array**	**86.37**	**18**	P	**P**	**16 16 09.0**	**-1.4**
	1.0nm,0.7s,baz=236,slow=5.4,SNR=12						
MKAR	**Makanchi Array**	**97.49**	**316**	P	**P**	**16 17 02.7**	**+0.1**
	1.1nm,0.7s,baz=100,slow=6.2,SNR=9.5						
ZALV	**Zalesovo Beam**	**97.64**	**324**	P	**P**	**16 17 02.0**	**-1.0**
	1.3nm,0.7s,baz=107,slow=5.0,SNR=4.0						
ARCES	**ARCESS Array B**	**120.34**	**346**	PKP	**PKPdf**	**16 22 18.2**	**-1.0**
	0.8nm,0.6s,baz=219,slow=1.6,SNR=6.4						
DBIC	**Dimbokro**	**169.19**	**223**	PKP	**PKPdf**	**16 23 35.5**	**-1.3**
	2.2nm,0.6s,baz=246,slow=1.9,SNR=4.2						

IDC 16 16:04:46.7±4.5, 29°.77N×141°.97E, h0km, mb3.6/3, mb1 3.7/5, mb1mx3.4/61, mbtmp3.6/5, ML3.2/2, MS3.7/1, Ms1 3.7/1, ms1mx2.5/32, Error ellipse: s-maj=184.8km s-min=20.5km az=73.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**3.83**	**331**	Pn	Pn	16 05 46.4	-0.6
	2.4nm,0.3s,baz=261,slow=21,SNR=1.4						
JHJ				Sn	Sn	16 06 30.9	-1.8
	7.6nm,0.3s,baz=241,slow=18,SNR=1.3						
MJAR	**Matsushiro Arr**	**7.46**	**336**	Pn	Pn	16 06 36.4	-0.5
	0.6nm,0.3s,baz=158,slow=11,SNR=13						
MJAR				Sn	Sn	16 08 01.5	-0.6
	0.2nm,0.3s,baz=144,slow=22,SNR=3.7						
MKAR	**Makanchi Array**	**48.66**	**308**	P	P	16 13 32.9	+0.3
	0.4nm,0.3s,baz=87,slow=10,SNR=6.8						
WRA	**Warramunga Arr**	**49.96**	**189**	P	P	16 13 43.1	+0.4
	0.5nm,0.5s,baz=7.0,slow=7.8,SNR=7.7						
ASAR	**Alice Springs**	**53.69**	**189**	P	P	16 14 09.7	-0.8
	0.3nm,0.8s,baz=8.0,slow=8.0,SNR=3.8						
ASAR				LR	LR	16 35 51.9	
	comp=Z,66nm,18.7s,baz=199,slow=35						

CSEM ***16*** *16:06:22.9±0.2, 39°.56N×30°.56E, h5km, MD2.6, Error ellipse: s-maj=4.6km s-min=3.5km az=39.0*
DDA ***16*** *16:06:22.2, 39°.57N×30°.54E, h7km, Md2.6*
ISK ***16*** *16:06:22.2, 39°.51N×30°.51E, h5km, MD2.7*

ISC 16 16:06:22.7±1.1, 39°.54N±0°.03×30°.52E±0°.03, h6km±12km, n32, σ0§76/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ESKT	**Eskisehir**	**0.26**	**95**	*e*PG	**Pg**	**16 06 27.6**	**-0.3**
ESKT	**Eskisehir**	**0.26**	**95**	*i* P	**Pg**	**16 06 27.5**	**-0.3**
ESKT				*i* S	**Sg**	**16 06 31.9**	**+0.7**
ESKT	**Eskisehir**	**0.26**	**95**	*e*Pg	**Pg**	**16 06 27.6**	**-0.3**
SEYT	**Eskypehyr**	**0.26**	**95**	P	**Pg**	**16 06 27.5**	**-0.3**
SEYT				S	**Sg**	**16 06 31.9**	**+0.7**
BORA	**Eskisehir**	**0.34**	**352**	*i* P	**Pg**	**16 06 28.6**	**-0.8**
BORA				*i* S	**Sg**	**16 06 34.0**	**0.0**
BORA	**Eskisehir**	**0.34**	**352**	P	**Pg**	**16 06 28.6**	**-0.8**
BORA				S	**Sg**	**16 06 34.0**	**0.0**
SVRH	**Sivrihisar-ESK**	**0.78**	**97**	*e*PG	**Pg**	**16 06 37.9**	**+0.1**
SVRH	**Sivrihisar-ESK**	**0.78**	**97**	*e*Pg	**Pg**	**16 06 37.9**	**+0.1**
TVSB	**Tavsanli**	**0.82**	**264**	*e*PG	**Pg**	**16 06 38.3**	**-0.2**
TVSB	**Tavsanli**	**0.82**	**264**	*e*Pg	**Pg**	**16 06 38.3**	**-0.2**
CAVI	**Cavuskoy**	**0.84**	**322**	*e*PG	**Pg**	**16 06 38.8**	**-0.1**
CAVI				*e*SG	**Sb**	**16 06 51.7**	**+0.3**
CAVI	**Cavuskoy**	**0.84**	**322**	*e*Pg	**Pg**	**16 06 38.8**	**-0.1**
CAVI				*e*Sg	**Sb**	**16 06 51.7**	**+0.3**
BOLV	**Bolvadin**	**0.89**	**158**	*i* P	**Pg**	**16 06 39.8**	**0.0**
BOLV				*i* S	**Sb**	**16 06 52.9**	**0.0**
BOLV	**Bolvadin**	**0.89**	**158**	P	**Pg**	**16 06 39.8**	**0.0**
BOLV				S	**Sb**	**16 06 52.9**	**0.0**
GULT	**Gulveren**	**0.89**	**360**	*e*PG	**Pb**	**16 06 40.2**	**-0.5**
GULT	**Gulveren**	**0.89**	**360**	*e*Pg	**Pb**	**16 06 40.2**	**-0.5**
GDZ	**Gediz**	**0.92**	**241**	*i* P	**Pn**	**16 06 43.1**	**+0.7**
GDZ				*i* S	**Sb**	**16 06 54.2**	**+0.4**
GDZ	**Gediz**	**0.92**	**241**	P	**Pn**	**16 06 43.2**	**+0.7**
GDZ				S	**Sb**	**16 06 54.2**	**+0.4**
MDUB	**Mudurnu**	**1.06**	**29**	*e*PN	**Pn**	**16 06 44.0**	**-0.4**
MDUB	**Mudurnu**	**1.06**	**29**	*e*Pn	**Pn**	**16 06 44.0**	**-0.4**
IZI	**Iznik**	**1.13**	**315**	*e*PN	**Pn**	**16 06 45.0**	**-0.2**
IZI	**Iznik**	**1.13**	**315**	*e*Pn	**Pn**	**16 06 45.0**	**-0.2**
KIZT	**Kizilcal**	**1.25**	**122**	*e*PN	**Pn**	**16 06 46.1**	**-0.7**
KIZT	**Kizilcal**	**1.25**	**122**	*e*Pn	**Pn**	**16 06 46.2**	**-0.7**
SAHE	**Sakarya_HENDEK**	**1.33**	**11**	*i* P	**Pg**	**16 06 48.2**	**-0.1**
SAHE				*i* S	**Sg**	**16 07 08.1**	**+2.5**
SAHE	**Sakarya_HENDEK**	**1.33**	**11**	P	**Pg**	**16 06 48.2**	**-0.1**
SAHE				S	**Sg**	**16 07 08.1**	**+2.5**
HRT	**Hereke**	**1.43**	**333**	*e*PN	**Pb**	**16 06 49.8**	**-0.1**
HRT	**Hereke**	**1.43**	**333**	*e*Pn	**Pb**	**16 06 49.8**	**-0.1**
ARMT	**Armutlu**	**1.63**	**309**	*e*PN	**Pb**	**16 06 52.5**	**-0.7**
ARMT	**Armutlu**	**1.63**	**309**	*e*Pn	**Pb**	**16 06 52.6**	**-0.7**
KCTX	**Karacabey (Bur**	**1.81**	**294**	*e*PN	**Pb**	**16 06 55.0**	**-1.4**
KCTX	**Karacabey (Bur**	**1.81**	**294**	*e*Pn	**Pb**	**16 06 55.0**	**-1.4**

IDC 16 16:08:56.1±3.9, 10°.92S×166°.21E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.5/36, mbtmp3.6/4, Error ellipse: s-maj=166.5km s-min=30.9km az=137.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**31.95**	**250**	P	P	16 15 24.5	+0.4
	0.5nm,1.0s,baz=76,slow=9.7,SNR=3.8						
ASAR	**Alice Springs**	**33.25**	**243**	P	P	16 15 34.3	-1.2
	0.5nm,0.8s,baz=71,slow=9.8,SNR=5.2						
ILAR	**Eielson Array**	**83.25**	**18**	P	P	16 21 23.6	-0.6
	0.7nm,0.6s,baz=241,slow=5.2,SNR=9.3						
MKAR	**Makanchi Array**	**93.74**	**317**	P	P	16 22 16.3	+1.2
	0.2nm,0.4s,baz=85,slow=8.2,SNR=2.6						

ISCJB ***16*** *16:09:15.8±0.3, 43°.27N±0°.01×21°.53E±0°.01, h10km±1km, mb4.0/23, MS3.2/4, Error ellipse: s-maj=1.7km s-min=1.5km az=22.5*
IDC ***16*** *16:09:15.4±0.6, 43°.21N×21°.48E, h0km, mb4.0/18, mb1 4.1/28, mb1mx4.0/49, mbtmp4.0/28, ML3.7/10, MS3.1/17, Ms1 3.2/17, ms1mx2.9/49, Error ellipse: s-maj=10.4km s-min=7.6km az=16.0*
MOS ***16*** *16:09:15.8±0.8, 43°.26N×21°.54E, h13km, mb4.2/16, Error ellipse: s-maj=4.9km s-min=3.0km az=104.3*
SOF ***16*** *16:09:15.7, 43°.25N×21°.47E, h10km, MD4.0*
BJI ***16*** *16:09:16.4, 43°.30N×21°.60E, h10km, mb4.6/5, mB4.7/3, Ms4.4/2, Ms7 4.3/2*
LDG ***16*** *16:09:16.6±0.1, 43°.25N×21°.53E, h10km, Ml4.0/8, Error ellipse: s-maj=4.0km s-min=3.2km az=31.0*
PDG ***16*** *16:09:16.3±0.6, 43°.24N×21°.56E, h12km±1km, MD4.0/6, ML4.0/13, Error ellipse: s-maj=0.5km s-min=0.6km az=0.0*
BEO ***16*** *16:09:16.5±0.2, 43°.21N×21°.58E, h6km±2km, M4.1/1*
CSEM ***16*** *16:09:16.5±0.1, 43°.23N×21°.57E, h5km, mb4.1/8, ML4.2/6, Error ellipse: s-maj=1.7km s-min=1.6km az=27.0*
NEIC ***16*** *16:09:16.6, 43°.21N×21°.63E, h0km, mb4.4/4, ML4.3(BEO), ML4.0(THE), After BEO.*
NEIC Felt at Nis and Prokuplje.
SKO ***16*** *16:09:16.8, 43°.19N×21°.56E, h5km, M3.8, ML4.2*
PRU ***16*** *16:09:17.6, 43°.31N×21°.59E, h0km, M4.4*
THE ***16*** *16:09:18.2, 43°.27N×21°.68E, h26km±4km, ML4.0/3, Error ellipse: s-maj=4.6km s-min=0.9km az=56.0*

ISC 16 16:09:16.6±0.9, 43°.24N±0°.01×21°.58E±0°.02, h7km±6km, n552, σ1§42/680, mb4.1/23, MS3.2/4, 73C-52D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NISS		**0.31**	**59**	*e*Pg	**Pg**	**16 09 23.2**	**+0.4**
NISS		**0.31**	**59**	*e*Pg	**Pg**	**16 09 23.2**	**+0.4**
SELS	**Selova**	**0.34**	**266**	*i* Pg	**Pg**	**16 09 22.5**	**-0.7**
SELS				*e*Sg	**Sg**	**16 09 27.2**	**-0.5**
SELS	**Selova**	**0.34**	**266**	*i* Pg	**Pg**	**16 09 22.5**	**-0.7**
SELS				*e*Sg	**Sg**	**16 09 27.2**	**-0.5**
SELS	**Selova**	**0.34**	**266**	*e*Pg	**Pg**	**16 09 22.5**	**-0.7**
SELS				*e*Sg	**Sg**	**16 09 27.1**	**-0.6**

BOVS	**Bovan**	**0.40**	**13**	*e*Pg	**Pg**	**16 09 24.6**	**+0.1**
BOVS				*e*Sg	**Sg**	**16 09 30.7**	**+0.9**
BOVS	**Bovan**	**0.40**	**13**	*e*Pg	**Pg**	**16 09 24.6**	**+0.1**
BOVS				*e*Sg	**Sg**	**16 09 30.7**	**+0.9**
BARS	**Barje**	**0.46**	**158**	*i* Pg	**Pg**	**16 09 24.2**	**-1.3**
BARS	**Barje**	**0.46**	**158**	*i* Pg	**Pg**	**16 09 24.2**	**-1.3**
BARS				*e*Sg	**Sg**	**16 09 30.3**	**-1.2**
BARS	**Barje**	**0.46**	**158**	*e*Pg	**Pg**	**16 09 24.5**	**-1.0**
BARS				*e*Sg	**Sg**	**16 09 30.3**	**-1.2**
BOLS	**Boljevac**	**0.65**	**25**	*i* Pg	**Pg**	**16 09 27.8**	**-1.3**
BOLS				*e*Sg	**Sg**	**16 09 37.4**	**-0.1**
BOLS	**Boljevac**	**0.65**	**25**	*i* Pg	**Pg**	**16 09 27.8**	**-1.3**
BOLS				*e*Sg	**Sg**	**16 09 37.0**	**-0.5**
BOLS	**Boljevac**	**0.65**	**25**	*e*Pg	**Pg**	**16 09 27.8**	**-1.3**
BOLS				*e*Sg	**Sg**	**16 09 37.0**	**-0.5**
ZAPS	**Zavoj**	**0.77**	**87**	*i* Pg	**Pg**	**16 09 31.4**	**0.0**
ZAPS				*e*Sg	**Sg**	**16 09 42.0**	**+0.6**
GRUS	**Gruza**	**0.90**	**316**	*i* Pg	**Pg**	**16 09 33.5**	**-0.5**
GRUS				*e*Sg	**Sn**	**16 09 48.4**	**-0.7**
GRUS	**Gruza**	**0.90**	**316**	*i* Pg	**Pg**	**16 09 33.5**	**-0.5**
GRUS				*e*Sg	**Sn**	**16 09 48.0**	**-1.1**
GRUS	**Gruza**	**0.90**	**316**	*e*Pg	**Pg**	**16 09 33.4**	**-0.5**
GRUS				*e*Sg	**Sn**	**16 09 48.0**	**-1.1**
IVAS	**Ivanjica**	**1.09**	**288**	*e*Pg	**Pg**	**16 09 36.7**	**-0.9**
IVAS				*e*Sg	**Sb**	**16 09 52.5**	**+0.1**
IVAS	**Ivanjica**	**1.09**	**288**	*e*Pg	**Pg**	**16 09 36.7**	**-0.9**
IVAS				*e*Sg	**Sb**	**16 09 52.5**	**+0.1**
SKO	**Skopje**	**1.27**	**185**	P	**Pn**	**16 09 39.7**	**-1.2**
SKO				S	**Sb**	**16 09 56.7**	**-0.9**
SKO	**Skopje**	**1.27**	**185**	*e*Pn	**Pn**	**16 09 40.1**	**-0.9**
SKO	**Skopje**	**1.27**	**185**	*i* Pg	**Pn**	**16 09 39.8**	**-1.2**
SKO	**Skopje**	**1.27**	**185**	P	**Pn**	**16 09 39.7**	**-1.2**
SKO				S	**Sb**	**16 09 56.7**	**-0.9**
SKO	**Skopje**	**1.27**	**185**	P	**Pn**	**16 09 40.0**	**-0.9**
SKO				S	**Sb**	**16 09 56.7**	**-0.9**
SKO	**Skopje**	**1.27**	**185**	P	**Pn**	**16 09 39.7**	**-1.2**
SKO				S	**Sb**	**16 09 56.7**	**-0.9**
BEY	**Berane**	**1.29**	**254**	*i* Pg	**Pn**	**16 09 40.4**	**-0.8**
BEY				*e*Sg	**Sn**	**16 09 59.7**	**+0.9**
IVA	**Berane**	**1.29**	**254**	*i* Pg	**Pn**	**16 09 40.4**	**-0.8**
IVA				*e*Sg	**Sn**	**16 09 59.7**	**+0.9**
TRUS	**Trudelj**	**1.30**	**319**	*i* Pg	**Pn**	**16 09 40.8**	**-0.4**
TRUS				*e*Sg	**Sn**	**16 10 00.2**	**+1.3**
TRUS	**Trudelj**	**1.30**	**319**	*i* Pg	**Pn**	**16 09 40.8**	**-0.4**
TRUS				*e*Sg	**Sn**	**16 10 00.2**	**+1.3**
PVY	**Plav**	**1.36**	**242**	*i* Pg	**Pn**	**16 09 41.4**	**-0.8**
PVY				*e*Sg	**Sn**	**16 10 02.0**	**+1.5**
PVY	**Plav**	**1.36**	**242**	*i* Pg	**Pn**	**16 09 41.5**	**-0.8**
PVY				*e*Sg	**Sn**	**16 10 02.0**	**+1.5**
SOF	**Sofiya**	**1.40**	**113**	P	**Pg**	**16 09 43.4**	**-0.1**
SOF				S	**Sn**	**16 10 01.6**	**+0.1**
SOF	**Sofiya**	**1.40**	**113**	P	**Pg**	**16 09 43.4**	**-0.1**
SOF				S	**Sn**	**16 10 01.6**	**+0.1**
DIVS	**Divibare**	**1.44**	**307**	P	**Pn**	**16 09 42.8**	**-0.4**
DIVS				S	**Sb**	**16 10 01.6**	**-0.7**
DIVS	**Divibare**	**1.44**	**307**	*i* Pg	**Pn**	**16 09 42.8**	**-0.4**
DIVS				*e*Sg	**Sb**	**16 10 01.8**	**-0.5**
DIVS	**Divibare**	**1.44**	**307**	P	**Pn**	**16 09 42.8**	**-0.4**
DIVS				S	**Sb**	**16 10 01.6**	**-0.7**
MDVR	**Moldovita**	**1.54**	**4**	*i* P	**Pn**	**16 09 44.1**	**-0.5**
MDVR	**Moldovita**	**1.54**	**4**	*i* P	**Pn**	**16 09 44.1**	**-0.5**
MDVR				S	**Sg**	**16 10 05.9**	**-0.3**
DJES	**Djerdap**	**1.58**	**25**	*e*Pg	**Pn**	**16 09 45.4**	**+0.3**
DJES				*e*Sg	**Sg**	**16 10 07.1**	**-0.2**
MPEP	**Malo Peshtene**	**1.58**	**85**	*i* P	**Pn**	**16 09 45.6**	**+0.5**
PLE	**Pljevlja**	**1.60**	**274**	*i* Pn	**Pn**	**16 09 45.5**	**0.0**
PLE				*e*Sn	**Sg**	**16 10 08.1**	**0.0**
PLE	**Pljevlja**	**1.60**	**274**	P	**Pn**	**16 09 45.9**	**+0.4**
PLE	**Pljevlja**	**1.60**	**274**	*i* Pn	**Pn**	**16 09 45.5**	**0.0**
PLE	**Pljevlja**	**1.60**	**274**	P	**Pn**	**16 09 45.9**	**+0.4**
PLE				*e*Sn	**Sg**	**16 10 08.1**	**0.0**
BBLS	**Lazići**	**1.70**	**292**	*i* Pg	**Pn**	**16 09 46.7**	**-0.1**
BBLS				*e*Sg	**Sb**	**16 10 10.0**	**+0.1**
BEO	**Beograd**	**1.76**	**333**	*i* Pg	**Pg**	**16 09 50.2**	**-0.1**
BEO	**Beograd**	**1.76**	**333**	P	**Pn**	**16 09 47.5**	**-0.1**
KKB	**Krupnik**	**1.77**	**141**	*i* P	**Pb**	**16 09 49.0**	**-0.4**
SRE	**Strehaia**	**1.84**

BRY	Bratogost	2.25	262⇑	iPn	Pn	16 09 54.9	+0.4
BRY				eSn	Sn	16 10 22.9	+0.2
BLJ	Bijeljina	2.27	313	ePn	Pn	16 09 54.0	-0.6
TIR	Tirane	2.28	214⇑	iP	Pb	16 09 57.2	-0.9
TIR	Tirane	2.28	214	S	Sb	16 10 27.4	+0.7
TIR	Tirane	2.28	214	eP	Pb	16 09 57.3	-0.9
TIR	Tirane	2.28	214⇑	iP	Pb	16 09 57.2	-0.9
TIR	Tirane	2.28	214	ePn	Pb	16 09 57.3	-0.9
MMB	Musomiste	2.29	135	iP	Pn	16 09 55.0	+0.1
FGSL	Fruska Gora	2.30	327⇑	iPn	Pn	16 09 54.2	-0.8
KNT	Kendrikon	2.30	154	P	Pn	16 09 53.8	-1.2
KNT	Kendrikon	2.30	154	P	Pn	16 09 53.8	-1.2
KNT	Kendrikon	2.30	154	P	Pn	16 09 53.8	-1.2
KNT	Kendrikon	2.30	154	P	Pn	16 09 53.8	-1.2
FRGS	Fruska Gora	2.30	327⇑	iPn	Pn	16 09 54.2	-0.8
GRG	Griva	2.37	165	P	Pn	16 09 55.5	-0.4
GRG	Griva	2.37	165	P	Pn	16 09 55.5	-0.4
GRG	Griva	2.37	165	P	Pn	16 09 55.5	-0.4
GRG	Griva	2.37	165	P	Pn	16 09 55.5	-0.4
BZS	Buzias	2.37	1⇓	iP	Pn	16 09 55.1	-1.0
BZS	Buzias	2.37	1⇑	iPn	Pn	16 09 55.0	-1.0
BZS	Buzias	2.37	1⇓	iP	Pn	16 09 55.1	-1.0
HCY	Herceg Novi	2.41	252⇑	iP	Pn	16 09 56.7	+0.2
HCY				eSn	Sn	16 10 27.6	+1.4
HCY	Herceg Novi	2.41	252⇓	iPn	Pn	16 09 56.7	+0.2
HCY				eSn	Sn	16 10 26.7	+0.5
TREB	Trebinje	2.43	259⇑	iPn	Pn	16 09 57.7	+0.9
TREB				eSn	Sn	16 10 27.2	+0.4
FNA	Florina	2.46	184	P	Pn	16 09 56.9	-0.4
FNA				S	Sn	16 10 27.1	-0.6
FNA	Florina	2.46	184	P	Pn	16 09 56.9	-0.4
FNA				S	Sn	16 10 27.1	-0.6
FNA	Florina	2.46	184	P	Pn	16 09 56.9	-0.4
FNA				S	Sn	16 10 27.1	-0.6
FNA	Florina	2.46	184	P	Pn	16 09 56.9	-0.4
FNA				S	Sn	16 10 27.1	-0.6
TIM	Timisoara	2.51	354⇑	iP	Pb	16 10 03.0	+1.0
NVR	Nevrokopi	2.54	137	P	Pn	16 09 57.8	-0.5
NVR	Nevrokopi	2.54	137	P	Pn	16 09 57.8	-0.5
NVR	Nevrokopi	2.54	137	P	Pn	16 09 57.8	-0.5
PLD	Plovdiv	2.57	115⇑	iPn	Pn	16 09 58.7	0.0
PLD	Plovdiv	2.57	115	P	Pn	16 09 59.6	+0.9
PLD	Plovdiv	2.57	115	iP	Pn	16 09 59.2	+0.5
PLD	Plovdiv	2.57	115⇑	iPn	Pn	16 09 58.7	0.0
PLD	Plovdiv	2.57	115	P	Pn	16 09 59.6	+0.9
SRS	Serrai	2.60	144	P	Pn	16 09 57.9	-1.2
SRS	Serrai	2.60	144	P	Pn	16 09 57.9	-1.2
SRS	Serrai	2.60	144	P	Pn	16 09 57.9	-1.2
SRS	Serrai	2.60	144	P	Pn	16 09 57.9	-1.2
LOT	Lotru	2.71	35⇓	iP	Pn	16 10 00.7	0.0
LOT	Lotru	2.71	35⇓	iP	Pn	16 10 00.7	0.0
LOT				S	Sn	16 10 34.2	+0.4
PVL	Pavlikeni	2.74	89	P	Pn	16 10 00.6	-0.5
SOH	Sokhos	2.76	151	P	Pn	16 10 01.6	+0.3
SOH	Sokhos	2.76	151	P	Pn	16 10 01.6	+0.3
HUMR	Humele	2.77	61⇑	iP	Pn	16 10 02.3	+0.8
HUMR	Humele	2.77	61⇑	iP	Pn	16 10 02.3	+0.8
ZIMR		2.79	80⇑	iP	Pn	16 10 04.0	+2.3
ZIMR		2.79	80⇑	iP	Pn	16 10 04.0	+2.3
RZN	Rozhen	2.79	123	iP	Pn	16 10 02.8	+0.9
DEV	Deva	2.80	19⇑	iP	Pn	16 10 02.2	+0.3
DEV	Deva	2.80	19⇑	iP	Pn	16 10 02.2	+0.3
DEV				S	Sb	16 10 39.0	-2.6
NEST	Nestorio	2.85	188	P	Pn	16 10 02.9	+0.2
NEST				S	Sn	16 10 37.2	-0.2
NEST	Nestorio	2.85	188	P	Pn	16 10 02.9	+0.2
NEST				S	Sn	16 10 37.2	-0.2
HORT	Hortiatis	2.88	156	P	Pn	16 10 02.3	-0.7
HORT	Hortiatis	2.88	156	P	Pn	16 10 02.3	-0.7
HORT	Hortiatis	2.88	156	P	Pn	16 10 02.3	-0.7
DOB	Doboj	2.92	302⇑	iPn	Pn	16 10 03.1	-0.4
DOB				eSn	Sn	16 10 38.6	-0.3
KZN	Kozani	2.94	177	P	Pn	16 10 03.5	-0.3
KZN	Kozani	2.94	177	P	Pn	16 10 03.5	-0.3
KZN	Kozani	2.94	177	P	Pn	16 10 03.5	-0.3
KZN	Kozani	2.94	177	P	Pn	16 10 03.5	-0.3
SIRR	Siria	3.02	1⇑	iP	Pn	16 10 04.0	-1.0
SIRR	Siria	3.02	1⇑	iP	Pn	16 10 04.0	-1.0
SIRR				S	Sn	16 10 40.4	-1.1
ARR	Arges	3.05	45⇑	iP	Pn	16 10 06.5	+1.1
ARR	Arges	3.05	45⇑	iP	Pn	16 10 06.5	+1.1
PENT	Pentalofos	3.06	186	P	Pn	16 10 05.7	+0.1
PENT	Pentalofos	3.06	186	P	Pn	16 10 05.7	+0.1
KAVA	Kavala	3.13	135	P	Pn	16 10 06.1	-0.3
KAVA	Kavala	3.13	135	P	Pn	16 10 06.1	-0.3
KAVA	Kavala	3.13	135	P	Pn	16 10 06.1	-0.3
DIM	Dimitrovgrad	3.15	111	iP	Pn	16 10 07.5	+0.8
SZH	Strazhica	3.18	88	iP	Pn	16 10 08.3	+1.2
PLG	Polygyros	3.19	153	P	Pn	16 10 06.4	-0.8
PLG	Polygyros	3.19	153	P	Pn	16 10 06.4	-0.8
PLG	Polygyros	3.19	153	P	Pn	16 10 06.4	-0.8
PLG	Polygyros	3.19	153	P	Pn	16 10 06.4	-0.8
MTUR	Matau	3.19	50⇓	iP	Pn	16 10 08.8	+1.4
MTUR	Matau	3.19	50⇓	iP	Pn	16 10 08.8	+1.4
LIT	Litokhoron	3.21	167	P	Pn	16 10 06.8	-0.8
LIT	Litokhoron	3.21	167	P	Pn	16 10 06.8	-0.8
LIT	Litokhoron	3.21	167	P	Pn	16 10 06.8	-0.8
LIT	Litokhoron	3.21	167	P	Pn	16 10 06.8	-0.8
KDZ	Kurdzhali	3.25	118	iP	Pn	16 10 07.8	-0.3
VOIR		3.32	47⇓	iP	Pn	16 10 10.1	+1.0
VOIR		3.32	47	P	Pn	16 10 10.0	+1.0
VOIR		3.32	47	P	Pn	16 10 10.0	+1.0
OUR	Ouranopolis	3.42	147	P	Pn	16 10 09.2	-1.1
OUR	Ouranopolis	3.42	147	P	Pn	16 10 09.2	-1.1
OUR	Ouranopolis	3.42	147	P	Pn	16 10 09.2	-1.1
OUR	Ouranopolis	3.42	147	P	Pn	16 10 09.2	-1.1
BLY	Banja Luka	3.51	297⇓	iPn	Pn	16 10 12.4	+0.7
BLY				eSn	Sn	16 10 52.2	-1.3
JAN	Janina	3.62	189	P	Pn	16 10 13.8	+0.5
JAN				S	Sn	16 10 56.4	+0.1
JAN	Janina	3.62	189	P	Pn	16 10 13.8	+0.5
JAN				S	Sn	16 10 56.4	+0.1
JAN	Janina	3.62	189	P	Pn	16 10 13.8	+0.5
JAN				S	Sn	16 10 56.4	+0.1
JAN	Janina	3.62	189	P	Pn	16 10 13.8	+0.5
JAN				S	Sn	16 10 56.4	+0.1
DRGR		3.64	12⇑	iP	Pn	16 10 12.9	-0.6
DRGR		3.64	12⇑	iP	Pn	16 10 12.9	-0.6
SULR		3.67	65⇓	iP	Pn	16 10 14.9	+1.1
SULR		3.67	65⇓	iP	Pn	16 10 14.9	+1.1
PAIG	Paliouri	3.67	154	P	Pn	16 10 12.6	-1.2
PAIG	Paliouri	3.67	154	P	Pn	16 10 12.6	-1.2
PAIG	Paliouri	3.67	154	P	Pn	16 10 12.6	-1.2
PAIG	Paliouri	3.67	154	P	Pn	16 10 12.6	-1.2
THL	Klokotos Trika	3.69	175	P	Pn	16 10 13.6	-0.5
THL	Klokotos Trika	3.69	175	P	Pn	16 10 13.6	-0.5
CJR	Cluj-Napoca	3.75	22⇑	iP	Pn	16 10 16.3	+1.3
CJR	Cluj-Napoca	3.75	22⇑	iP	Pn	16 10 16.3	+1.3
JMB	Yambol	3.76	100	iP	Pn	16 10 15.2	+0.1
SGD	Sagiada	3.77	196	P	Pn	16 10 15.6	+0.5
SGD	Sagiada	3.77	196	P	Pn	16 10 15.6	+0.5
IGT	Igoumenitsa	3.82	195	P	Pn	16 10 16.4	+0.4
IGT	Igoumenitsa	3.82	195	P	Pn	16 10 16.4	+0.4
IGT	Igoumenitsa	3.82	195	P	Pn	16 10 16.4	+0.4
IGT	Igoumenitsa	3.82	195	P	Pn	16 10 16.4	+0.4
DOPR	Dopca	3.85	44⇑	iP	Pn	16 10 17.5	+1.2
DOPR	Dopca	3.85	44⇑	iP	Pn	16 10 17.5	+1.2
MLR	Muntele Rosu	3.85	53	Pn	Pn	16 10 18.0	+1.6
	comp=N,1.4nm,0.3s,baz=262,slow=3.4,SNR=29						
MLR				Sn	Sn	16 11 05.8	+3.7
	comp=N,3.5nm,0.3s,baz=152,slow=17,SNR=4.9						
MLR				Lg	Lg	16 11 18.8	
	comp=N,3.8nm,0.3s,baz=131,slow=5.6,SNR=4.2						
MLR	Muntele Rosu	3.85	53⇑	iP	Pn	16 10 18.0	+1.6
MLR	Muntele Rosu	3.85	53	ePn	Pn	16 10 17.6	+1.1
MLR	Muntele Rosu	3.85	53	ePn	Pn	16 10 17.6	+1.1
MLR				Sn	Sn	16 11 05.8	+3.7
ISR	Istrita	4.03	61⇓	iP	Pn	16 10 20.1	+1.2
ISR	Istrita	4.03	61⇓	iP	Pn	16 10 20.1	+1.2
SMTH	Samothraki Isl	4.05	132	P	Pn	16 10 18.2	-0.8
SMTH	Samothraki Isl	4.05	132	P	Pn	16 10 18.2	-0.8
SMTH	Samothraki Isl	4.05	132	P	Pn	16 10 18.2	-0.8
XOR	Xorichti	4.06	162	P	Pn	16 10 17.9	-1.3
XOR	Xorichti	4.06	162	P	Pn	16 10 17.9	-1.3
XOR	Xorichti	4.06	162	P	Pn	16 10 17.9	-1.3
ALN	Alexandroupoli	4.07	124	P	Pn	16 10 20.8	+1.5
ALN	Alexandroupoli	4.07	124	P	Pn	16 10 20.8	+1.5
BAI	Bari	4.09	240	ePn	Pn	16 10 19.1	-0.5
TAR1	Taranto	4.20	231	ePn	Pn	16 10 20.9	-0.2
ROIA	ROIAK	4.24	90	iP	Pn	16 10 22.9	+1.2
PRD	Provadia	4.25	89	P	Pn	16 10 23.1	+1.3
AGG	Agios Georgios	4.25	172	P	Pn	16 10 21.2	-0.7
AGG	Agios Georgios	4.25	172	P	Pn	16 10 21.2	-0.7
AGG	Agios Georgios	4.25	172	P	Pn	16 10 21.2	-0.7
AGG	Agios Georgios	4.25	172	P	Pn	16 10 21.2	-0.7
LIA	Limnos Island	4.30	140	P	Pn	16 10 21.4	-1.0
LIA	Limnos Island	4.30	140	P	Pn	16 10 21.4	-1.0
LIA	Limnos Island	4.30	140	P	Pn	16 10 21.4	-1.0
ARCR	ARCALIA	4.31	26⇑	iP	Pn	16 10 24.8	+2.1
ARCR	ARCALIA	4.31	26⇑	iP	Pn	16 10 24.8	+2.1
ARCR				S	Sn	16 11 17.9	+4.6
SG1	Sgolgore (BA)	4.37	238	ePn	Pn	16 10 24.7	+1.2
UDBI	Udbina	4.40	289	ePn	Pn	16 10 24.6	+0.7
UDBI				Sn	Sn	16 11 13.1	-2.3
UDBI	Udbina	4.40	289	ePn	Pn	16 10 24.6	+0.7
UDBI				Sn	Sn	16 11 13.0	-2.3
GRER		4.42	59⇓	iP	Pn	16 10 26.7	+2.5
GRER		4.42	59⇓	iP	Pn	16 10 26.7	+2.5
AOS	Alonnisos	4.42	156	P	Pn	16 10 23.0	-1.2
AOS	Alonnisos	4.42	156	P	Pn	16 10 23.0	-1.2
AOS	Alonnisos	4.42	156	P	Pn	16 10 23.0	-1.2
MS1	Monte Sant'Ang	4.45	252	ePn	Pn	16 10 24.2	-0.4
PLOR	Plostina	4.46	53⇓	iP	Pn	16 10 26.5	+1.7
PLOR	Plostina	4.46	53⇓	iP	Pn	16 10 26.5	+1.7
CDT	Castel del Mon	4.50	243	ePn	Pn	16 10 24.8	-0.4
BUD	Budapest	4.61	338	P	Pn	16 10 26.5	-0.2
BUD	Budapest	4.61	338⇑	ePn	Pn	16 10 26.1	-0.6
BUD	Budapest	4.61	338	P	Pn	16 10 26.5	-0.2
BUD				eSn	Sn	16 11 20.0	-0.5
BUD	Budapest	4.61	338⇑	ePKKPbc	Pn	16 10 26.1	-0.6
BUD				eSn	Sn	16 11 20.0	-0.5
BMR	Baia Mare	4.63	16⇓	iP	Pn	16 10 27.5	+0.5
BMR	Baia Mare	4.63	16⇓	iP	Pn	16 10 27.5	+0.5
BEHE	Becsehely	4.70	315⇑	ePn	Pn	16 10 28.1	+0.1
BEHE				eSn	Sn	16 11 20.7	-2.0
BEHE	Becsehely	4.70	315⇑	ePn	Pn	16 10 28.1	+0.1
BEHE				eSn	Sn	16 11 25.0	+2.3
CSKK	Csˆ‡kako	4.74	332	ePn	Pn	16 10 28.2	-0.3
CSKK				eSn	Sn	16 11 24.6	+0.9
CSKK	Csˆ‡kako	4.74	332	ePn	Pn	16 10 28.2	-0.3
CSKK				eSn	Sn	16 11 24.6	+0.9
ZAG	Zagreb	4.76	305	ePn	Pn	16 10 28.9	+0.1
ZAG				eSn	Sn	16 11 22.6	-1.6
CVDA	Cernavoda	4.80	75⇑	iP	Pn	16 10 30.9	+1.6
CVDA	Cernavoda	4.80	75⇑	iP	Pn	16 10 30.9	+1.6
PSZ	Piszkesteto	4.82	346⇑	iP	Pn	16 10 28.8	-1.0
PSZ	Piszkesteto	4.82	346	eP	Pn	16 10 28.8	-1.0
PSZ	Piszkesteto	4.82	346⇑	iP	Pn	16 10 28.8	-1.0
PSZ				eSn	Sn	16 11 23.0	-2.9
PSZ	Piszkesteto	4.82	346	ePn	Pn	16 10 28.8	-1.0
PSZ	Piszkesteto	4.82	346⇑	ePn	Pn	16 10 28.7	-1.0
PSZ				eSn	Sn	16 11 23.0	-2.9
TLB	Topalu	4.86	72⇑	iP	Pn	16 10 30.6	+0.5
TLB	Topalu	4.86	72⇑	iP	Pn	16 10 30.6	+0.5
NVLJ	Novalja	5.03	288	iPn	Pn	16 10 33.9	+1.5
NVLJ				Sn	Sn	16 11 30.4	-0.4
NVLJ	Novalja	5.03	288	iPn	Pn	16 10 33.9	+1.5
NVLJ				Sn	Sn	16 11 30.3	-0.4
BURAR	Bucovina Array	5.07	29⇑	iP	Pn	16 10 33.8	+0.7
BURAR	Bucovina Array	5.07	29	P	Pn	16 10 33.8	+0.7
BURAR	Bucovina Array	5.07	29⇑	iP	Pn	16 10 33.8	+0.7
CRES	Cresnjev	5.08	303⇑	iPn	Pn	16 10 33.4	+0.1
CRES				eSn	Sn	16 11 29.0	-3.2
BUR08	Bucovina Ar. S	5.08	29	ePn	Pn	16 10 35.0	+1.6
BUR08	Bucovina Ar. S	5.08	29	ePn	Pn	16 10 35.0	+1.6
TIRR	Tirgusor	5.09	74⇓	iP	Pn	16 10 34.1	+0.7
TIRR	Tirgusor	5.09	74	eP	Pn	16 10 34.0	+0.7
TIRR	Tirgusor	5.09	74	ePn	Pn	16 10 34.0	+0.7
TIRR	Tirgusor	5.09	74	ePn	Pn	16 10 34.0	+0.7
CFR	Carcaliu	5.09	65⇑	iP	Pn	16 10 34.2	+0.8
CFR	Carcaliu	5.09	65⇑	iP	Pn	16 10 34.2	+0.8
KECS	Kecovo	5.30	352	eP	Pn	16 10 36.3	+0.1
KECS	Kecovo	5.30	352	eP	Pn	16 10 36.3	+0.1
KECS	Kecovo	5.30	352	eP	Pn	16 10 36.3	+0.1
CUC	Castrocucco	5.40	235	ePn	Pn	16 10 38.1	+0.4
CUC	Castrocucco	5.40	235	ePn	Pn	16 10 38.1	+0.4
UZH	Uzhgorod	5.41	5	eP	Pn	16 10 40.5	+2.8
UZH				eS	Sn	16 11 43.1	+2.8
UZH	Uzhgorod	5.41	5	eP	Pn	16 10 40.5	+2.8
UZH				eS	Sn	16 11 43.1	+2.8
TIP	Timpagrande	5.45	223	ePn	Pn	16 10 38.1	-0.3
TIP	Timpagrande	5.45	223	ePn	Pn	16 10 38.1	-0.3
TLCR		5.55	67⇑	iP	Pn	16 10 40.4	+0.8
TLCR		5.55	67⇑	iP	Pn	16 10 40.4	+0.8
VYHS	Vyhne	5.59	341	eP	Pn	16 10 39.3	-0.9
VYHS				e		16 11 41.3	
VYHS				pmax	pmax		
	comp=N,224nm,2.3s						
VYHS	Vyhne	5.59	341	ePn	Pn	16 10 39.3	-0.9
VYHS	Vyhne	5.59	341	ePg	Pg	16 11 03.8	+0.1
VYHS				eS	Sn	16 11 41.3	-3.4
	comp=N,224nm,2.3s						
VYHS	Vyhne	5.59	341	ePN	Pn	16 10 39.3	-0.9
VYHS				ePG	Pg	16 11 03.8	+0.1
VYHS				eSN	Sn	16 11 41.3	-3.4
VYHS				eLG	Lg	16 11 43.9	
SOP	Sopron	5.67	323	P	Pn	16 10 41.1	-0.2
SOP				pmax	pmax		
	comp=Z,77nm,0.8s						
SOP	Sopron	5.67	323	P	Pn	16 10 41.1	-0.2
	comp=Z,77nm,0.8s						
SOP	Sopron	5.67	323⇑	ePn	Pn	16 10 40.9	-0.4
SOP				eSn	Sn	16 11 43.9	-2.8
CEY	Cerknica	5.69	298⇑	iPn	Pn	16 10 42.0	+0.3
CEY				eSn	Sn	16 11 44.5	-2.8
PERS	Pernice	5.71	309	iPn	Pn	16 10 41.6	-0.3
PERS				eSn	Sn	16 11 44.3	-3.3
PERS	Pernice	5.71	309	iPn	Pn	16 10 41.6	-0.3
PERS				eSn	Sn	16 11 44.3	-3.3
KOLS	Kolonicke sedl	5.71	5	eP	Pn	16 10 42.4	+0.5
KOLS	Kolonicke sedl	5.71	5	ePn	Pn	16 10 42.4	+0.5
KOLS	Kolonicke sedl	5.71	5	ePN	Pn	16 10 42.4	+0.5
KOLS				eSG	Sg	16 12 24.8	+4.9
LJU	Ljubljana	5.76	302	ePn	Pn	16 10 42.0	-0.5
LJU				eSn	Sn	16 11 46.5	-2.4
SOKA	Soboth	5.78	309	Pn	Pn	16 10 42.6	-0.3
	comp=Z,11nm,0.3s,SNR=18						
SOKA				Sn	Sn	16 11 48.2	-1.2
	comp=Z,42nm,0.5s						
ARSA	Arzberg	5.86	315	Pn	Pn	16 10 43.8	-0.1
	comp=Z,32nm,0.4s,SNR=39						
ARSA				Sn	Sn	16 11 48.2	-3.2
	comp=Z,31nm,0.3s						
OBKA	Obir	5.97	306	Pn	Pn	16 10 45.9	+0.4
	comp=Z,16nm,0.3s,SNR=11						
OBKA				Sn	Sn	16 11 51.2	-2.9
	comp=Z,90nm,0.7s						
JAVS	Javornik	5.99	299	iPn	Pn	16 10 46.2	+0.4
JAVS				eSn	Sn	16 11 50.6	-4.0
JAVS	Javornik	5.99	299	iPn	Pn	16 10 46.2	+0.4
AQU	L'Aquila	6.08	264	eP	Pn	16 10 48.6	+1.6
AQU	L'Aquila	6.08	264	ePn	Pn	16 10 48.6	+1.6
AQU	L'Aquila	6.08	264	ePn	Pn	16 10 48.6	+1.6
CONA	Conrad Observa	6.17	321	Pn	Pn	16 10 47.7	-0.5
	comp=Z,17nm,0.3s,SNR=37						
STHS	Stebnicka Huta	6.18	358	eP	Pn	16 10 48.8	+0.5
STHS	Stebnicka Huta	6.18	358	ePn	Pn	16 10 48.8	+0.5
STHS	Stebnicka Huta	6.18	358	ePN	Pn	16 10 48.8	+0.5
STHS				ePG	Pg	16 11 14.0	-0.9
STHS				eLG	Lg	16 12 47.3	
KIS	Kishinev	6.35	51	eP	Pn	16 10 55.0	+4.4
KIS				LRM	MLR	16 14 42.0	
	comp=Z,500nm,6.0s						
KIS	Kishinev	6.35	51	eP	Pn	16 10 55.0	+4.4
KIS				MLR	MLR		
	comp=Z,500nm,6.0s						
KIS	Kishinev	6.35	51	eP	Pn	16 10 55.0	+4.4
	comp=Z,500nm,6.0s						
MYKA	Terra Mystica	6.57	304	Pn	Pn	16 10 54.5	+0.7
	comp=Z,37nm,0.6s,SNR=26						
MYKA				Sn	Sn	16 12 06.3	-2.7
	comp=Z,40nm,0.7s						
APE	Apeiranthos	6.87	153	d iP	Pn	16 10 58.6	+0.8
APE	Apeiranthos	6.87	153	iPn	Pn	16 10 58.6	+0.8
MOA	Molln	6.90	314	Pn	Pn	16 10 58.9	+0.7
	comp=Z,4.9nm,0.2s,SNR=8.7						
MOA				Sn	Sn	16 12 15.6	-1.3
	comp=Z,31nm,0.4s						
KBA	Koelnbreinsper	6.97	306	Pn	Pn	16 11 00.0	+0.7
	comp=Z,17nm,0.6s						
KBA				Sn	Sn	16 12 18.8	-0.1
	comp=Z,21nm,0.5s						
VRAC	Vranov	6.98	332	Pn	Pn	16 10 58.3	-1.0
	comp=Z,1.0nm,0.3s,baz=158,slow=12,SNR=5.9						
VRAC				Sn	Sn	16 12 17.7	-1.2
	comp=Z,2.4nm,0.3s,baz=71,slow=11,SNR=4.2						
VRAC				Lg	Lg	16 12 59.5	
	comp=Z,0.6nm,0.3s,baz=245,slow=6.2,SNR=3.1						
VRAC				LR	LR	16 14 25.0	
	comp=Z,252nm,20.4s,baz=148,slow=44						
VRAC	Vranov	6.98	332⇑	iP	Pn	16 10 59.2	-0.1
VRAC	Vranov	6.98	332⇑	iP	Pn	16 10 59.2	-0.1
VRAC				Sn	Sn	16 12 17.7	-1.2
OKC	Ostrava-Krasne	7.01	341	ePN	Pn	16 10 59.8	+0.1
OKC				eSN	Sn	16 12 17.0	-2.6
OKC				AMS	AMS	16 14 20.0	
	comp=Z,500nm,11.4s						
OKC	Ostrava-Krasne	7.01	341	eP	Pn	16 10 59.8	+0.1
OKC				e		16 12 17.0	
OKC				MLR	MLR		
	comp=Z,500nm,11.4s						
OKC	Ostrava-Krasne	7.01	341	Pn	Pn	16 10 59.8	+0.1
OKC				eS	Sn	16 12 17.0	-2.6
OJC	Ojcow	7.08	351	ePn	Pn	16 11 00.9	+0.3
OJC				eSn	Sn	16 12 18.8	-2.7
OJC	Ojcow	7.08	351	eP	Pn	16 11 01.0	+0.3
OJC				e		16 12 18.8	
OJC	Ojcow	7.08	351	ePn	Pn	16 11 00.3	-0.4
OJC	Ojcow	7.08	351	eP	Pn	16 11 01.0	+0.3
OJC				eS	Sn	16 12 18.8	-2.7
OJC	Ojcow	7.08	351	ePn	Pn	16 11 00.3	-0.4
MORC	Moravsky Berou	7.10	338⇑	iP	Pn	16 11 00.3	-0.7
MORC	Moravsky Berou	7.10	338	eP	Pn	16 10 59.8	-1.2
MORC	Moravsky Berou	7.10	338	ePn	Pn	16 10 59.8	-1.2
MORC	Moravsky Berou	7.10	338⇑	iP	Pn	16 11 00.3	-0.7
MORC	Moravsky Berou	7.10	338	ePn	Pn	16 10 59.8	-1.2
ABTA	Abfaltersbach	7.32	302	Pn	Pn	16 11 05.3	+1.3
	comp=Z,20nm,0.5s,SNR=13						
ABTA				Sn	Sn	16 12 25.0	-2.4
	comp=Z,25nm,0.6s						
SANT	Santorini	7.48	155	ePn	Pn	16 11 03.8	-2.5
SANT	Santorini	7.48	155	ePn	Pn	16 11 03.8	-2.5
KRLC	Kraliky	7.59	336	ePN	Pn	16 11 07.8	+0.1
KRLC	Kraliky	7.59	336	eP	Pn	16 11 07.8	+0.1
KRLC	Kraliky	7.59	336	Pn	Pn	16 11 07.8	+0.1
GEA0	GERESS Array S	7.83	318	ePn	Pn	16 11 11.0	0.0
GEA0	GERESS Array S	7.83	318	ePn	Pn	16 11 11.0	0.0
GEC2	GERESS Array S	7.83	318	eP	Pn	16 11 11.4	+0.3
GEC2	GERESS Array S	7.83	318	ePn	Pn	16 11 11.4	+0.3
GEC2	GERESS Array S	7.83	318	ePn	Pn	16 11 11.4	+0.3
GERES	GERESS Array B	7.83	318	Pn	Pn	16 11 11.3	+0.2
	comp=Z,0.9nm,0.3s,baz=142,slow=14,SNR=20						
GERES				Sn	Sn	16 12 40.3	+0.2
	comp=Z,0.9nm,0.3s,baz=128,slow=23,SNR=3.3						
GERES				LR	LR	16 14 40.6	
	comp=Z,306nm,21.2s,baz=114,slow=42						
GERES	GERESS Array B	7.83	318	P	Pn	16 11 11.3	+0.2
GERES						16 12 40.3	
GERES				pmax	pmax		
	comp=Z,1.0nm,0.3s						
GERES				smax	smax		
	comp=N,1.0nm,0.3s						
GERES				MLR	MLR		
	comp=Z,306nm,21.2s						
VAE	Valguarnera	7.94	226	Pn	Pn	16 11 21.3	+8.7
	comp=Z,0.4nm,0.3s,baz=288,slow=3.4,SNR=4.5						
DPC	Dobruska-Polom	7.97	335	ePN	Pn	16 11 13.0	+0.1
DPC				AMS	AMS	16 15 00.0	
	comp=Z,400nm,12.9s						
DPC	Dobruska-Polom	7.97	335	eP	Pn	16 11 13.0	+0.1
DPC				MLR	MLR		
	comp=Z,400nm,12.9s						
DPC	Dobruska-Polom	7.97	335	Pn	Pn	16 11 13.0	+0.1
WTTA	Wattenberg	8.09	303	Pn	Pn	16 11 17.2	+2.6
	comp=Z,22nm,0.4s,SNR=15						
WTTA				Sn	Sn	16 12 44.8	-1.6
	comp=Z,26nm,0.6s						
KHC	Kasperske Hory	8.09	319	ePN	Pn	16 11 14.9	+0.3
KHC				ex	x	16 11 22.0	
KHC				eSN	Sn	16 12 44.7	-1.6
KHC				AMS	AMS	16 14 40.0	
	comp=Z,700nm,9.9s						
KHC	Kasperske Hory	8.09	319	eP	Pn	16 11 14.9	+0.3
KHC				e		16 12 44.7	
KHC				MLR	MLR		
	comp=Z,700nm,9.9s						
KHC	Kasperske Hory	8.09	319	Pn	Pn	16 11 14.9	+0.3
KHC				Sn	Sn	16 12 44.7	-1.6
KHC	Kasperske Hory	8.09	319	ePn	Pn	16 11 13.8	-0.7
GOPC	GO Pecny, Ondr	8.15	327	AMS	AMS	16 14 40.0	
	comp=Z,400nm,11.3s						
WATA	Walderalm	8.15	304	Pn	Pn	16 11 17.3	+1.8
	comp=Z,25nm,0.4s,SNR=33						
UPC	Upice	8.21	334	ePN	Pn	16 11 16.3	+0.2
UPC				AMS	AMS	16 15 00.0	
	comp=Z,400nm,13.3s						
UPC	Upice	8.21	334	eP	Pn	16 11 16.3	+0.2
UPC				MLR	MLR		
	comp=Z,400nm,13.3s						
UPC	Upice	8.21	334	Pn	Pn	16 11 16.3	+0.2
PRU	Pruhonice	8.30	327	ePN	Pn	16 11 18.2	+0.8
PRU				AMS	AMS	16 14 50.0	
	comp=Z,400nm,10.5s						
PRU	Pruhonice	8.30	327	eP	Pn	16 11 18.2	+0.8
PRU				MLR	MLR		
	comp=Z,400nm,10.5s						
PRU	Pruhonice	8.30	327	Pn	Pn	16 11 18.2	+0.8
IDI	Anoyia	8.35	161	Pn	Pn	16 11 20.8	+2.7
	comp=Z,1.0nm,0.3s,baz=331,slow=18,SNR=7.1						
IDI				LR	LR	16 14 44.9	
	comp=Z,198nm,20.8s,baz=289,slow=40						
KSP	Ksiaz	8.41	336	ePn	Pn	16 11 21.9	+2.9
KSP	Ksiaz	8.41	336	eP	Pn	16 11 21.9	+2.9
KSP	Ksiaz	8.41	336	eP	Pn	16 11 21.9	+2.9
WET	Wettzell	8.44	317	P	Pn	16 11 21.1	+1.8
WET				pmax	pmax		
	comp=Z,15nm,0.9s						
WET	Wettzell	8.44	317	P	Pn	16 11 21.1	+1.8
	comp=Z,15nm,0.9s						
MOTA	Moosalm	8.45	303	Pn	Pn	16 11 21.4	+1.8
	comp=Z,29nm,0.4s,SNR=40						
FETA	Feichten	8.55	300	Sn	Sn	16 12 56.9	-0.9
	comp=Z,13nm,0.6s						
FUORN	Ofenpass-Fuorn	8.71	297	ePn	Pn	16 11 24.5	+1.3
FUORN	Ofenpass-Fuorn	8.71	297	ePn	Pn	16 11 24.5	+1.3
PVCC	Panska Ves	8.72	329	AMS	AMS	16 15 10.0	
	comp=Z,400nm,9.3s						
SEV	Sevastopol'	8.83	77⇑	eP	Pn	16 11 24.0	-0.6
SEV				eS	Sn	16 12 55.8	-8.5
SEV				pmax	pmax		
	comp=Z,6.0nm,0.3s						
SEV				smax	smax		
	comp=N,19nm,0.3s						
SEV				smax	smax		
	comp=E,2.0nm,0.3s						
SEV	Sevastopol'	8.83	77	eP	Pn	16 11 24.0	-0.6
	comp=E,6.0nm,0.3s						
SEV				eS	Sn	16 12 55.8	-8.5
DAVOX	Davos/Dischmat	9.01	297	Pn	Pn	16 11 27.9	+0.6
	comp=E,4.4nm,0.3s,baz=101,slow=16,SNR=28						
DAVOX				Sn	Sn	16 13 10.5	+1.4
	comp=E,1.0nm,0.3s,baz=221,slow=21,SNR=5.6						
DAVOX				LR	LR	16 15 34.6	
	comp=E,194nm,19.3s,baz=86,slow=42						
KIEV	Kiev	9.09	32	eP	Pn	16 11 29.5	+1.3
KIEV	Kiev	9.09	32	eP	Pn	16 11 29.5	+1.3
AKASG	Malin Array Be	9.10	32	Pn	Pn	16 11 29.2	+0.8
	comp=E,0.6nm,0.3s,baz=221,slow=13,SNR=5.6						
AKASG				Lg	Lg	16 14 05.6	
	comp=E,0.5nm,0.3s,baz=226,slow=28,SNR=6.6						
YAL	Yalta	9.17	78	eP	Pn	16 11 30.2	+0.9
YAL				eS	Sn	16 13 10.0	-2.7
YAL				pmax	pmax		
	comp=Z,29nm,0.4s						
YAL				smax	smax		
	comp=N,27nm,0.3s						
YAL				smax	smax		
	comp=E,30nm,0.3s						
YAL	Yalta	9.17	78	eP	Pn	16 11 30.2	+0.9
	comp=E,29nm,0.4s						
YAL				eS	Sn	16 13 10.0	-2.7
	comp=E,27nm,0.3s						
SIM	Simferopol'	9.18	75	eP	Pn	16 11 33.7	+4.2
SIM				eS	Sn	16 13 17.5	+4.5
SIM				pmax	pmax		

	comp=Z,46nm,0.2s								
SIM					smax	smax			
	comp=N,10.0nm,0.4s								
SIM					smax	smax			
	comp=E,16nm,0.4s								
SIM	**Simferopol'**	**9.18**	**75**	*e*P		**Pn**	**16 11 33.7**	**+4.2**	
	comp=E,46nm,0.2s								
SIM					eS	**Sn**	**16 13 17.5**	**+4.5**	
DAVA	**Damuels**	**9.19**	**300**	Pn		**Pn**	**16 11 31.6**	**+1.9**	
	comp=E,14nm,0.3s								
DAVA					Sn	**Sn**	**16 13 10.2**	**-3.2**	
	comp=E,9.5nm,0.6s								
BRG	**Berggiesshubel**	**9.24**	**328**	PN		Pn	16 11 37.9	+7.6	
BRG				*e*			16 13 01.0		
BRG				*e*			16 14 19.6		
	comp=E,34nm,1.7s								
	comp=N,244nm,12.3s								
	comp=E,148nm,13.4s								
	comp=Z,347nm,12.2s								
BRG	**Berggiesshubel**	**9.24**	**328**	P		Pn	16 11 37.8	+7.6	
BRG				MLR		MLR			
	comp=N,244nm,12.3s								
BRG				MLR		MLR			
	comp=E,148nm,13.4s								
BRG				MLR		MLR			
	comp=Z,347nm,12.2s								
BRG	**Berggiesshubel**	**9.24**	**328**	P		Pn	16 11 37.8	+7.6	
	comp=Z,347nm,12.2s								
PGF	**Pioggiola**	**9.26**	**270**	*e*P		**Pn**	**16 11 30.5**	**-0.2**	
PGF	**Pioggiola**	**9.26**	**270**	*e*P		**Pn**	**16 11 30.5**	**-0.2**	
PGF	**Pioggiola**	**9.26**	**270**	*e*P		**Pn**	**16 11 30.5**	**-0.2**	
PGF	**Pioggiola**	**9.26**	**270**	*e*P		**Pn**	**16 11 30.5**	**-0.2**	
TUE	**Stuetta**	**9.27**	**295**	*e*Pn		**Pn**	**16 11 31.8**	**+0.9**	
TUE	**Stuetta**	**9.27**	**295**	*e*Pn		**Pn**	**16 11 31.8**	**+0.9**	
NKC	**Novy Kostel**	**9.39**	**321**	AMS		AMS	16 15 30.0		
	comp=Z,500nm,11.1s								
BRTR	**Keskin Array B**	**9.71**	**107**	Pn		**Pn**	**16 11 38.4**	**+1.6**	
	comp=Z,0.1nm,0.3s,baz=306,slow=10,SNR=4.1								
BRTR				LR		LR	16 15 41.9		
	comp=Z,161nm,19.6s,baz=290,slow=40								
SUDU	**Sudak**	**9.80**	**76**	*e*P		**Pn**	**16 11 39.3**	**+1.4**	
SUDU				*e*S		**Sn**	**16 13 26.7**	**-1.5**	
SUDU				pmax		pmax			
	comp=Z,6.0nm,0.3s								
SUDU				smax		smax			
	comp=N,7.0nm,0.5s								
SUDU				smax		smax			
	comp=E,29nm,0.5s								
SUDU	**Sudak**	**9.80**	**76**	*e*P		**Pn**	**16 11 39.3**	**+1.4**	
	comp=E,6.0nm,0.3s								
SUDU				*e*S		**Sn**	**16 13 26.7**	**-1.5**	
	comp=E,7.0nm,0.5s								
CLL	**Collm**	**9.95**	**327**	*e*Pn		**Pn**	**16 11 40.0**	**+0.1**	
CLL				*e*Pg			16 12 25.0		
CLL				*e*Sn		Sn	16 13 08.0	-24	
CLL				*e*Sb			16 14 11.0		
CLL				*e*Sg			16 14 32.0		
CLL				Lm		MLR	16 15 00.0		
	comp=Z,100nm,19.2s								
CLL				Lmax			16 15 00.0		
CLL	**Collm**	**9.95**	**327**	*e*P		**Pn**	**16 11 40.0**	**+0.1**	
CLL	**Collm**	**9.95**	**327**	*e*P		**Pn**	**16 11 40.0**	**+0.1**	
SPAK	**Spaichingen-Ko**	**10.19**	**303**	P		**Pn**	**16 11 44.1**	**+0.8**	
BFO	**Black Forest**	**10.56**	**303**	*e*P		**Pn**	**16 11 47.8**	**-0.5**	
BFO	**Black Forest**	**10.56**	**303**	*e*Pn		**Pn**	**16 11 47.8**	**-0.5**	
BFO	**Black Forest**	**10.56**	**303**	*e*Pn		**Pn**	**16 11 47.8**	**-0.5**	
FELD	**Feldberg im Sc**	**10.59**	**301**	P		**Pn**	**16 11 49.5**	**+0.7**	
SENIN	**Lac Senin/Sane**	**10.62**	**292**	*e*Pn		**Pn**	**16 11 50.3**	**+1.0**	
SENIN	**Lac Senin/Sane**	**10.62**	**292**	*e*Pn		**Pn**	**16 11 50.3**	**+1.0**	
MBDF	**Montbardon**	**10.78**	**283**	*e*Pn		**Pn**	**16 11 47.3**	**-4.2**	
MBDF				*e*Sn		Sn	16 13 38.9	-14	
	comp=Z,7.9nm,0.7s								
MBDF	**Montbardon**	**10.78**	**283**	*e*P		**Pn**	**16 11 47.3**	**-4.2**	
MBDF	**Montbardon**	**10.78**	**283**	*e*P		**Pn**	**16 11 47.3**	**-4.2**	
MBDF	**Montbardon**	**10.78**	**283**	*e*Pn		**Pn**	**16 11 47.3**	**-4.2**	
MBDF				*e*Sn		Sn	16 13 38.9	-14	
LPG	**La Plagne**	**10.86**	**287**	*e*P		**Pn**	**16 11 54.5**	**+1.8**	
LPG	**La Plagne**	**10.86**	**287**	*e*P		**Pn**	**16 11 54.5**	**+1.8**	
LPG	**La Plagne**	**10.86**	**287**	*e*P		**Pn**	**16 11 54.5**	**+1.8**	
LPG	**La Plagne**	**10.86**	**287**	*e*P		**Pn**	**16 11 54.5**	**+1.8**	
TOD	**Tromm**	**10.87**	**310**	P		**Pn**	**16 11 53.7**	**+1.1**	
LPL	**La Plagne**	**10.87**	**287**	*e*P		**Pn**	**16 11 54.8**	**+2.0**	
LPL				*e*Sn		Sn	16 13 42.9	-12	
	comp=Z,12nm,0.7s								
LPL	**La Plagne**	**10.87**	**287**	*e*P		**Pn**	**16 11 54.8**	**+2.0**	
LPL	**La Plagne**	**10.87**	**287**	*e*P		**Pn**	**16 11 54.8**	**+2.0**	
LPL	**La Plagne**	**10.87**	**287**	*e*P		**Pn**	**16 11 54.8**	**+2.0**	
LPL				*e*Sn		Sn	16 13 42.9	-12	
FRF	**La Foret Royal**	**10.88**	**277**	*e*P		**Pn**	**16 11 53.0**	**+0.3**	
FRF	**La Foret Royal**	**10.88**	**277**	*e*P		**Pn**	**16 11 53.0**	**+0.3**	
FRF	**La Foret Royal**	**10.88**	**277**	*e*P		**Pn**	**16 11 53.0**	**+0.3**	
FRF	**La Foret Royal**	**10.88**	**277**	*e*P		**Pn**	**16 11 53.0**	**+0.3**	
LMR	**La Mourre**	**10.99**	**276**	*e*P		**Pn**	**16 11 55.3**	**+1.0**	
LMR	**La Mourre**	**10.99**	**276**	*e*P		**Pn**	**16 11 55.3**	**+1.0**	
LMR	**La Mourre**	**10.99**	**276**	*e*P		**Pn**	**16 11 55.3**	**+1.0**	
LMR	**La Mourre**	**10.99**	**276**	*e*P		**Pn**	**16 11 55.3**	**+1.0**	
MOF	**Molkenrain**	**11.13**	**299**	P		**Pn**	**16 11 56.9**	**+0.7**	
MOF	**Molkenrain**	**11.13**	**299**	P		**Pn**	**16 11 56.9**	**+0.7**	
CDF	**Champ du Feu**	**11.23**	**302**	*e*P		**Pn**	**16 11 59.1**	**+1.4**	
CDF				*e*Sn		Sn	16 13 52.0	-12	
	comp=Z,6.4nm,0.7s								
CDF	**Champ du Feu**	**11.23**	**302**	*e*P		**Pn**	**16 11 59.1**	**+1.4**	
CDF	**Champ du Feu**	**11.23**	**302**	*e*P		**Pn**	**16 11 59.1**	**+1.4**	
CDF	**Champ du Feu**	**11.23**	**302**	*e*P		**Pn**	**16 11 59.1**	**+1.4**	
CDF				*e*Sn		Sn	16 13 52.0	-12	
ECH	**Echery**	**11.24**	**301**	P		**Pn**	**16 11 57.9**	**+0.3**	
ECH	**Echery**	**11.24**	**301**	P		**Pn**	**16 11 57.9**	**+0.3**	
HINF	**Hinteralfeld**	**11.29**	**299**	*e*P		**Pn**	**16 11 58.8**	**+0.4**	
HINF	**Hinteralfeld**	**11.29**	**299**	*e*Pg		Sn	16 13 54.2	-11	
	comp=Z,11nm,0.6s								
HINF	**Hinteralfeld**	**11.29**	**299**	*e*P		**Pn**	**16 11 58.8**	**+0.4**	
HINF	**Hinteralfeld**	**11.29**	**299**	*e*P		**Pn**	**16 11 58.8**	**+0.4**	
HINF	**Hinteralfeld**	**11.29**	**299**	*e*P		**Pn**	**16 11 58.8**	**+0.4**	
ORIF	**Oris-en-Rattie**	**11.42**	**284**	*e*Pn		**Pn**	**16 11 55.8**	**-4.4**	
ORIF	**Oris-en-Rattie**	**11.42**	**284**	*e*P		**Pn**	**16 12 02.3**	**+2.1**	
ORIF				*e*Sn		Sn	16 13 56.2	-12	
	comp=Z,11nm,0.7s								
ORIF	**Oris-en-Rattie**	**11.42**	**284**	*e*P		**Pn**	**16 12 02.3**	**+2.1**	
ORIF	**Oris-en-Rattie**	**11.42**	**284**	*e*P		**Pn**	**16 12 02.3**	**+2.1**	
ORIF	**Oris-en-Rattie**	**11.42**	**284**	*e*P		**Pn**	**16 12 02.3**	**+2.1**	
ORIF				*e*Sn		Sn	16 13 56.2	-12	
CABF	**La Chapelle**	**11.49**	**292**	*e*P		**Pn**	**16 12 02.6**	**+1.5**	
CABF	**La Chapelle**	**11.49**	**292**	*e*P		**Pn**	**16 12 02.6**	**+1.5**	
CABF	**La Chapelle**	**11.49**	**292**	*e*P		**Pn**	**16 12 02.6**	**+1.5**	
CABF	**La Chapelle**	**11.49**	**292**	*e*P		**Pn**	**16 12 02.6**	**+1.5**	
HAU	**Haudompre**	**11.68**	**299**	*e*P		**Pn**	**16 12 04.3**	**+0.6**	
HAU				*e*Sn		Sn	16 14 03.4	-11	
	comp=Z,10nm,0.5s								
HAU	**Haudompre**	**11.68**	**299**	*e*P		**Pn**	**16 12 04.3**	**+0.6**	
HAU	**Haudompre**	**11.68**	**299**	*e*P		**Pn**	**16 12 04.3**	**+0.6**	
HAU	**Haudompre**	**11.68**	**299**	*e*P		**Pn**	**16 12 04.3**	**+0.6**	
HAU				*e*Sn		Sn	16 14 03.4	-11	
THEF	**They Montfort**	**11.98**	**300**	P		**Pn**	**16 12 08.2**	**+0.5**	
THEF	**They Montfort**	**11.98**	**300**	P		**Pn**	**16 12 08.2**	**+0.5**	
KEST	**Kesra**	**12.06**	**236**	Pn		**Pn**	**16 12 12.9**	**+3.9**	
	comp=Z,0.1nm,0.3s,baz=338,slow=17,SNR=3.0								
PAGF	**Fort de Pagny**	**12.25**	**301**	*e*P		**Pn**	**16 12 11.6**	**+0.1**	
PAGF	**Fort de Pagny**	**12.25**	**301**	*e*P		**Pn**	**16 12 11.6**	**+0.1**	
PAGF	**Fort de Pagny**	**12.25**	**301**	*e*P		**Pn**	**16 12 11.6**	**+0.1**	
VIVF	**Saint-Julien-l**	**12.28**	**283**	*e*P		**Pn**	**16 12 11.9**	**0.0**	
VIVF	**Saint-Julien-l**	**12.28**	**283**	*e*P		**Pn**	**16 12 11.9**	**0.0**	
VIVF	**Saint-Julien-l**	**12.28**	**283**	*e*P		**Pn**	**16 12 11.9**	**0.0**	
VIVF	**Saint-Julien-l**	**12.28**	**283**	*e*P		**Pn**	**16 12 11.9**	**0.0**	
SFTF	**Sexfontaines**	**12.57**	**299**	*e*P		**Pn**	**16 12 16.7**	**+0.8**	
SFTF	**Sexfontaines**	**12.57**	**299**	*e*P		**Pn**	**16 12 16.7**	**+0.8**	
SFTF	**Sexfontaines**	**12.57**	**299**	*e*P		**Pn**	**16 12 16.7**	**+0.8**	
SMF	**Signal de Mont**	**13.02**	**291**	*e*P		**Pn**	**16 12 21.8**	**-0.2**	
SMF	**Signal de Mont**	**13.02**	**291**	*e*P		**Pn**	**16 12 21.8**	**-0.2**	
SMF	**Signal de Mont**	**13.02**	**291**	*e*P		**Pn**	**16 12 21.8**	**-0.2**	
SMF	**Signal de Mont**	**13.02**	**291**	*e*P		**Pn**	**16 12 21.8**	**-0.2**	
LOR	**Lormes**	**13.12**	**294**	*e*Pn		**Pn**	**16 12 18.9**	**-4.4**	
LOR	**Lormes**	**13.12**	**294**	*e*P		**Pn**	**16 12 18.9**	**-4.4**	
LOR	**Lormes**	**13.12**	**294**	*e*P		**Pn**	**16 12 18.9**	**-4.4**	
LOR	**Lormes**	**13.12**	**294**	*e*Pn		**Pn**	**16 12 18.9**	**-4.4**	
GIVF	**Givet**	**13.38**	**307**	*e*S		**Sn**	**16 14 58.4**	**+2.6**	
GIVF	**Givet**	**13.38**	**307**	*e*S		**Sn**	**16 14 58.4**	**+2.6**	
MMAI	**Mount Meron Ar**	**14.90**	**129**	Pn		**Pn**	**16 12 49.9**	**+2.1**	
	comp=Z,1.1nm,0.3s,baz=318,slow=9.4,SNR=9.0								
MMAI				LR		LR	16 19 17.6		
	comp=Z,53nm,20.2s,baz=80,slow=40								
LFF	**La Frestale**	**15.07**	**284**	*e*Sn		Sn	16 15 23.8	-13	
	comp=Z,4.0nm,0.4s								
KIV	**Kislovodsk**	**15.31**	**80**	*e*P		**Pn**	**16 12 53.2**	**0.0**	
KIV				pmax		pmax			
	comp=Z,4.0nm,1.1s								
KIV	**Kislovodsk**	**15.31**	**80**	*e*P		**Pn**	**16 12 53.2**	**0.0**	
	comp=Z,4.0nm,1.1s								
KVAR	**Kislovodsk Arr**	**15.31**	**80**	LR		LR	16 20 35.9		
	comp=Z,20nm,19.9s,baz=296,slow=44								
OBN	**Obninsk**	**15.36**	**34**	Pn		**P**	**16 12 56.5**	**-1.9**	
	comp=Z,3.9nm,0.3s,baz=148,slow=22,SNR=4.0								
OBN	**Obninsk**	**15.36**	**34**	*i* P		**Pn**	**16 12 54.0**	**+0.4**	
OBN				pmax		pmax			
	comp=Z,10.0nm,1.0s								
OBN				MLR		MLR			
	comp=Z,45nm,17.0s								
KBZ	**Khabaz**	**15.48**	**81**	Pn		**P**	**16 13 02.4**	**+2.6**	
	comp=Z,0.1nm,0.3s,baz=270,slow=6.4,SNR=3.6								
KBZ				LR		LR	16 21 00.2		
	comp=Z,33nm,18.3s,baz=250,slow=45								
NCK	**Nalchik**	**16.01**	**82**	*e*P		**Pn**	**16 13 03.1**	**+0.8**	
NCK				pmax		pmax			
	comp=Z,3.0nm,0.6s								
NCK	**Nalchik**	**16.01**	**82**	*e*P		**Pn**	**16 13 03.1**	**+0.8**	
	comp=Z,3.0nm,0.6s								
FLN	**La Foliniere**	**16.27**	**297**	*e*Sn		Sn	16 15 52.3	-14	
	comp=Z,0.8nm,0.2s								
ASF	**Jabal al Asfar**	**16.37**	**127**	Pn		**P**	**16 13 10.9**	**+0.9**	
	comp=Z,0.2nm,0.3s,baz=200,slow=5.7,SNR=2.5								
EIL	**Elat**	**17.27**	**137**	P		**P**	**16 13 22.4**	**+2.6**	
	comp=Z,0.2nm,0.3s,baz=343,slow=13,SNR=3.0								
GNI	**Garni**	**17.56**	**92**	LR		LR	16 20 32.1		
	comp=Z,29nm,18.7s,baz=140,slow=38								
HFS	**Hagfors**	**17.58**	**347**	P		**Pn**	**16 13 20.2**	**-1.8**	
	comp=Z,0.1nm,0.3s,baz=181,slow=15,SNR=3.0								
HFS				LR		LR	16 20 48.4		
	comp=Z,103nm,20.4s,baz=160,slow=39								
FINES	**FINESS Array B**	**18.43**	**7**	P		**P**	**16 13 31.1**	**-1.2**	
	comp=Z,0.1nm,0.3s,baz=173,slow=13,SNR=4.9								
FINES				LR		LR	16 21 26.0		
	comp=Z,76nm,18.4s,baz=183,slow=40								
NB2	**NORSAR Subarra**	**18.88**	**344**	P		**P**	**16 13 37.3**	**-0.1**	
	comp=Z,4.0nm,1.2s,baz=156,slow=11								
NB2	**NORSAR Subarra**	**18.88**	**344**	P		**P**	**16 13 37.3**	**-0.1**	
	comp=Z,4.0nm,1.2s,SNR=6.5								
NOA	**NORSAR Array B**	**18.88**	**344**	P		**P**	**16 13 36.3**	**-1.1**	
	comp=Z,0.2nm,0.3s,baz=151,slow=11,SNR=9.3								
NOA				LR		LR	16 21 34.8		
	comp=Z,71nm,19.2s,baz=165,slow=39								
ESDC	**Sonseca Array**	**19.45**	**268**	P		**P**	**16 13 44.1**	**+0.3**	
	comp=Z,0.1nm,0.3s,baz=73,slow=11,SNR=9.6								
ESDC				LR		LR	16 21 22.4		
	comp=Z,62nm,18.4s,baz=55,slow=38								
EKA	**Eskdalemuir Ar**	**20.04**	**316**	P		Pn	16 13 51.1	-0.7	
	comp=Z,4.9nm,0.7s,baz=116,slow=12,SNR=14								
TAM	**Tamanrasset**	**24.36**	**218**	*e*P		**P**	**16 14 36.5**	**+1.0**	
TAM				pmax		pmax			
	comp=Z,4.0nm,0.7s								
TAM	**Tamanrasset**	**24.36**	**218**	*e*P		**P**	**16 14 36.5**	**+1.0**	
	comp=Z,4.3nm,0.7s								
TAM	**Tamanrasset**	**24.36**	**218**	*e*P		**P**	**16 14 36.5**	**+1.0**	
	comp=Z,4.3nm,0.7s								
AKTK	**Aktyubinsk**	**25.74**	**61**	P		**P**	**16 14 48.3**	**+0.7**	
	comp=Z,1.0nm,0.8s								
AKTO	**Aktyubinsk**	**25.74**	**61**	P		**P**	**16 14 48.2**	**+0.6**	
	comp=Z,1.4nm,0.8s,baz=270,slow=14,SNR=5.4								
ARCES	**ARCESS Array B**	**26.43**	**3**	P		**P**	**16 14 53.2**	**-0.5**	
	comp=Z,1.8nm,0.8s,baz=186,slow=7.9,SNR=5.3								
ARCES				LR		LR	16 25 08.7		
	comp=Z,39nm,19.4s,baz=207,slow=36								
ARU	**Arti**	**26.89**	**48**	P		**P**	**16 14 58.9**	**+1.1**	
	comp=Z,1.3nm,0.3s,baz=255,slow=7.2,SNR=5.4								
ARU	**Arti**	**26.89**	**48**	*d* P		**P**	**16 14 58.6**	**+0.7**	
ARU				PPP		PPP	16 15 48.4		
ARU				S		**S**	**16 19 35.5**	**+0.8**	
ARU				pmax		pmax			
	comp=Z,9.0nm,1.2s								
ARU	**Arti**	**26.89**	**48**	*i* P		**P**	**16 14 58.6**	**+0.7**	
	comp=Z,9.0nm,1.2s								
ARU				S		**S**	**16 19 35.5**	**+0.8**	
ARU	**Arti**	**26.89**	**48**	*e*P		**P**	**16 14 59.0**	**+1.1**	
	comp=Z,8.1nm,1.1s								
ABKAR	**Akbulak array**	**26.98**	**64**	*e*P		**P**	**16 14 58.8**	**-0.1**	
ABKAR	**Akbulak array**	**26.98**	**64**	*e*P		**P**	**16 14 58.8**	**-0.1**	
GEYT	**Alibeck**	**28.10**	**88**	P		**P**	**16 15 09.9**	**+0.9**	
	comp=Z,0.6nm,0.4s,baz=298,slow=6.1,SNR=2.8								
GEYT				LR		LR	16 29 21.0		
	comp=Z,16nm,18.3s,baz=180,slow=43								
BRVK	**Borovoye**	**33.35**	**56**	*e*P		**P**	**16 15 55.9**	**+0.8**	
BRVK				pmax		pmax			
	comp=Z,8.0nm,1.0s								
BRVK	**Borovoye**	**33.35**	**56**	*e*P		**P**	**16 15 55.4**	**+0.3**	
	comp=Z,5.8nm,1.2s								
BRVK	**Borovoye**	**33.35**	**56**	*e*P		**P**	**16 15 55.4**	**+0.3**	
	comp=Z,5.8nm,1.2s								
BVAR	**Borovoye Array**	**33.41**	**56**	P		**P**	**16 15 56.3**	**+0.6**	
	comp=Z,1.4nm,0.8s,baz=281,slow=8.8,SNR=8.2								
TOA0	**Torodi Ar. Sit**	**34.55**	**216**	*e*P		**P**	**16 16 05.4**	**-0.4**	
	comp=Z,7.7nm,1.3s								
TOA0	**Torodi Ar. Sit**	**34.55**	**216**	*e*P		**P**	**16 16 05.4**	**-0.4**	
	comp=Z,7.7nm,1.3s								
TORD	**Torodi Ar. Bea**	**34.55**	**216**	P		**P**	**16 16 06.1**	**+0.3**	
	comp=Z,3.3nm,1.0s,baz=20,slow=8.9,SNR=12								
AAK	**Ala-Archa**	**38.20**	**72**	P		**P**	**16 16 38.9**	**+1.9**	
	comp=Z,1.1nm,0.3s,baz=266,slow=6.0,SNR=4.3								
AAK	**Ala-Archa**	**38.20**	**72**	*e*P		**P**	**16 16 38.1**	**+1.0**	
AAK				pmax		pmax			
	comp=Z,3.0nm,0.9s								
AAK	**Ala-Archa**	**38.20**	**72**	*e*P		**P**	**16 16 38.1**	**+1.0**	
	comp=Z,3.0nm,0.9s								
ZAA0	**Zalesovo Array**	**41.83**	**52**	*e*P		**P**	**16 17 06.7**	**-0.2**	
ZAA0	**Zalesovo Array**	**41.83**	**52**	*e*P		**P**	**16 17 06.7**	**-0.2**	
ZALV	**Zalesovo Beam**	**41.83**	**52**	P		**P**	**16 17 06.8**	**0.0**	
	comp=Z,2.1nm,0.5s,baz=278,slow=7.7,SNR=13								
NRIK	**Noril'sk**	**41.94**	**29**	P		**P**	**16 17 06.2**	**-1.4**	
	comp=Z,1.0nm,0.3s,baz=225,slow=2.9,SNR=2.6								
MKAR	**Makanchi Array**	**42.13**	**63**	P		**P**	**16 17 09.6**	**+0.1**	
	comp=Z,1.5nm,0.7s,baz=276,slow=9.3,SNR=12								
MKAR	**Makanchi Array**	**42.13**	**63**	P		**P**	**16 17 09.6**	**+0.1**	
MKAR				pmax		pmax			
	comp=Z,1.0nm,0.7s								
DBIC	**Dimbokro**	**43.22**	**220**	P		**P**	**16 17 17.5**	**-1.0**	
	comp=Z,2.0nm,0.6s,baz=346,slow=5.7,SNR=3.8								
WMQ	**Urumqi**	**46.75**	**65**	*e*P		**P**	**16 17 47.3**	**+0.8**	
WMQ				pP		sP	16 17 55.3	+5.9	
WMQ				pmax		pmax			
	comp=Z,10.0nm,0.5s								
SCHQ	**Schefferville**	**55.35**	**315**	P		**P**	**16 18 51.0**	**+0.1**	
	comp=Z,2.6nm,0.6s,baz=80,slow=14,SNR=3.5								
SONM	**Songino Array**	**56.70**	**53**	P		**P**	**16 19 00.4**	**-0.5**	
	comp=Z,1.5nm,0.9s,baz=289,slow=8.6,SNR=5.1								
SONM	**Songino Array**	**56.70**	**53**	P		**P**	**16 19 00.4**	**-0.5**	
SONM				pmax		pmax			
	comp=Z,1.0nm,0.8s								
HHC	**Hu-ho-hao-te**	**63.58**	**58**	*e*P		**P**	**16 19 49.3**	**+1.2**	
HHC				pmax		pmax			
	comp=Z,14nm,0.9s								
HHC				pmax		pmax			
	comp=Z,81nm,7.4s								
YKA	**Yellowknife Ar**	**68.91**	**340**	P		**P**	**16 20 20.9**	**-0.9**	
	comp=Z,0.7nm,0.6s,baz=25,slow=6.3,SNR=2.6								
MA2	**Magadan**	**69.35**	**25**	LR		LR	16 54 46.6		
	comp=Z,24nm,18.3s,baz=288,slow=39								
ULM	**Lac du Bonnet**	**72.11**	**323**	P		**P**	**16 20 41.4**	**-0.2**	
	comp=Z,2.5nm,0.7s,baz=53,slow=6.3,SNR=5.0								
ULM				LR		LR	16 51 54.0		
	comp=Z,38nm,18.7s,baz=260,slow=36								
PDAR	**Pinedale Array**	**83.81**	**326**	P		**P**	**16 21 46.5**	**-0.5**	
	comp=Z,0.9nm,0.7s,baz=45,slow=4.0,SNR=7.0								
TXAR	**Lajitas Array**	**92.03**	**314**	P		**P**	**16 22 26.2**	**-0.5**	
	comp=Z,0.1nm,0.4s,baz=39,slow=7.4,SNR=3.2								
WRA	**Warramunga Arr**	**119.83**	**90**	PKP		**PKPdf**	**16 28 06.6**	**-1.3**	
	comp=Z,0.3nm,0.6s,baz=308,slow=1.9,SNR=3.5								
ASAR	**Alice Springs**	**121.80**	**94**	PKP		**PKPdf**	**16 28 09.7**	**-1.9**	
	comp=Z,0.5nm,0.8s,baz=304,slow=1.6,SNR=7.1								

GUC 16 16:22:37.6±0.3, 19°53.S×69°76.W, h88km±3km, ML3.5, 1C, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PSGC	**Pisagua**	**0.35**	**259**	*i* P		P	Pn	16 22 51.3	+0.2
PSGC				*i* S		S	Sn	16 23 01.9	+0.6
PSGC				IAML				16 23 02.5	
	comp=N,2μm,0.3s								
PB12	**IPOC Station P**	**1.06**	**329**	*i* P		P	Pn	16 22 58.4	+0.5
PB12				*i* S		S	Sn	16 23 14.1	+1.0
PB12				IAML				16 23 19.2	
	comp=N,2μm,0.9s								
ARCH	**Arica**	**1.15**	**334**	*i* P		P	Pn	16 22 59.1	+0.2
ARCH				*i* S		S	Sn	16 23 15.6	+0.6
PB01	**IPOC Station P**	**1.53**	**170**	*i* P		P	Pn	16 23 04.2	+0.4
PB01				*i* S		S	Sn	16 23 24.4	+1.0
PB01				IAML				16 23 25.8	
	comp=E,589nm,0.2s								
PB07	**IPOC Station P**	**2.19**	**183**	*i* P		P	Pn	16 23 13.5	+1.1
PB07				*i* S		S	Sn	16 23 40.6	+1.5
PB07				IAML				16 23 49.1	
	comp=E,736nm,0.4s								
PB09	**IPOC Station P**	**2.31**	**168**	*i* P		P	Pn	16 23 15.0	+1.0
PB09				*i* S		S	Sn	16 23 43.8	+2.0
PB04	**IPOC Station P**	**2.82**	**187**	*i* P		P	Pn	16 23 22.3	+1.5
PB04				*i* S		S	Sn	16 23 55.9	+2.0
PB06	**IPOC Station P**	**3.17**	**177**	*i* P		P	Pn	16 23 27.3	+1.8
PB06				*i* S		S	Sn	16 24 04.6	+2.2

NIED ***16*** *16:27:00.36°.60N×141°.00E, h8km, Mw3.7 Best double couple: M₀3.99000×10¹⁴ NP1:φ₀43.00000°, δ80.00000°, λ7.00000°. NP2:φ₀311.00000°, δ83.00000°, λ170.00000°.*
IDC ***16*** *16:27:16.9±1.7, 36°.52N×141°.31E, h0km, mb3.5/4, mb1 3.7/7, mb1mx3.5/41, mbtmp3.6/7, ML3.4/3, MS2.5/1, Ms1 2.5/1, ms1mx2.1/34, Error ellipse: s-maj=36.7km s-min=20.5km az=61.0*
ISCJB ***16*** *16:27:18.2±1.3, 36°.54N±0°.04×141°.06E±0°.07, h9km±6km, mb3.5/4, Error ellipse: s-maj=9.8km s-min=5.7km az=13.7*
JMA ***16*** *16:27:19.7, 36°.55N×140°.97E, h19km±1km, M4.0*
JMA Felt II J1.

ISC 16 16:27:19.6±1.7, 36°.60N±0°.04×140°.90E±0°.06, h9km±11km, n20, σ1°.07/21, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.27**	**272**	P		P	**Pb**	**16 27 26.4**	**-0.2**
JHO				S		S	**Sb**	**16 27 31.3**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.50**	**351**	P		P	**Pb**	**16 27 30.6**	**-0.1**
ONAJ				S		S	**Sb**	**16 27 38.7**	**+0.5**
JYT	**Yasato**	**0.68**	**237**	P		P	**Pg**	**16 27 33.0**	**+0.3**
JYT				S		S	**Sb**	**16 27 42.9**	**

6.7nm,0.3s,baz=82,slow=10,SNR=63
MJAR Sn **Sb** **16 43 05.4 -1.1**
19nm,0.3s,baz=119,slow=16,SNR=10
MJAR LR LR 16 43 38.9
comp=Z,83nm,19.8s,baz=65,slow=44
MAT Matsushiro 2.25 270 P **Pn** **16 42 34.7 -0.5**
MAT S **Sb** **16 43 04.8 -1.7**
JHJ Hachijo jima 2 3.59 197 Pn **Pn** **16 42 52.6 -0.9**
7.7nm,0.3s,baz=325,slow=23,SNR=6.2
JHJ Sn **Sn** **16 43 37.4 +1.1**
25nm,0.3s,baz=232,slow=23,SNR=6.1
KSRS Korea Array 10.49 279 Pn **Pn** **16 44 31.9 +3.5**
0.1nm,0.3s,baz=112,slow=12,SNR=3.2
KSRS LR LR 16 48 37.2
comp=Z,27nm,18.4s,baz=120,slow=38
H11N2 WAKE ISLAND Hy 28.20 119 T T 17 17 19.4
baz=312,slow=75,SNR=231
H11N1 WAKE ISLAND Hy 28.21 120 T T 17 17 22.2
baz=312,slow=75,SNR=188
H11N3 WAKE ISLAND Hy 28.22 119 T T 17 17 24.0
baz=312,slow=75,SNR=208
H11S1 WAKE ISLAND Hy 28.89 122 T T 17 18 07.4
baz=314,slow=76,SNR=445
H11S3 WAKE ISLAND Hy 28.89 122 T T 17 18 08.5
baz=314,slow=76,SNR=286
H11S2 WAKE ISLAND Hy 28.91 122 T T 17 18 07.3
baz=314,slow=76,SNR=280
ZALV Zalesovo Beam 41.98 313 P **P** **16 49 47.7 -1.3**
0.5nm,0.4s,baz=101,slow=7.5,SNR=2.6
MKAR Makanchi Array 44.08 302 P **P** **16 50 09.2 +2.9**
0.2nm,0.3s,baz=87,slow=11,SNR=3.3
WRA Warramunga Arr 56.56 188 P **P** **16 51 38.5 -2.3**
0.5nm,0.7s,baz=4.7,slow=7.4,SNR=6.8
ASAR Alice Springs 60.29 187 P **P** **16 52 05.6 -1.3**
0.4nm,0.8s,baz=10,slow=8.3,SNR=3.6

IDC ***16*** *16:54:58.1±1.3,3.76S×144.63E,h0km,mb3.7/4, mb1 4.0/6,mb1mx3.7/29,mbtmp3.8/6,ML3.2/2,Error ellipse: s-maj=35.3km s-min=21.0km az=98.0*
ISCJB ***16*** *16:55:01.5±1.1,3.8S±0.1×144.6E±0.1,h33km,mb3.6/4, Error ellipse: s-maj=23.2km s-min=11.9km az=153.5*
ISC 16 16:55:03.3±1.2,3.8S±0.1×144.6E±0.2,h35km,n6,σ1§35/7, mb3.5/4,Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**6.13**	**155**	Pn		**Pn**	**16 56 30.3**	**-1.2**
	4.5nm,0.3s,baz=314,slow=10,SNR=17							
PMG				Sn		**Sn**	**16 57 42.2**	**+1.8**
	0.7nm,0.3s,baz=192,slow=15,SNR=1.3							
WRA	**Warramunga Arr**	**18.89**	**211**	P		**Pn**	**16 59 21.1**	**-0.6**
	0.3nm,0.3s,baz=31,slow=11,SNR=19							
ASAR	**Alice Springs**	**22.27**	**207**	P		**P**	**16 59 58.0**	**+0.4**
	1.4nm,0.6s,baz=35,slow=8.9,SNR=32							
FITZ	**Fitzroy Crossi**	**23.35**	**231**	P		**P**	**17 00 08.4**	**-0.4**
	6.4nm,0.6s,baz=42,slow=8.6,SNR=35							
MKAR	**Makanchi Array**	**74.27**	**321**	P		**P**	**17 06 38.4**	**+1.3**
	0.1nm,0.2s,baz=101,slow=7.5,SNR=3.0							
ILAR	**Eielson Array**	**84.44**	**24**	P		**P**	**17 07 31.4**	**-0.7**
	0.2nm,0.7s,baz=251,slow=5.6,SNR=3.0							

JMA 16 17:02:38.0±0.2,38.77N×143.93E,h44km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**1.79**	**281**	P		Pn	17 03 07.6	+1.2
MIYJ	**Miyakonagasawa**	**1.83**	**297**	P		Pn	17 03 07.9	+1.0
MIYJ				*e*S		Sn	17 03 29.3	+0.4
JTH	**Tanohata**	**1.98**	**307**	P		Pn	17 03 09.9	+0.9
JTH				*e*S		Sn	17 03 33.9	+1.2
JMK	**Ichinoseki**	**2.12**	**276**	P		Pn	17 03 12.6	+1.6
JMK				*e*S		Sn	17 03 38.4	+2.3
JOM	**Ohasama**	**2.17**	**290**	P		Pn	17 03 13.1	+1.5
JOM				*e*S		Sn	17 03 39.1	+1.9
JANG	**Nango**	**2.46**	**311**	P		Pn	17 03 16.3	+0.7
JYK	**Kaneyama**	**2.79**	**274**	P		Pn	17 03 22.4	+2.2
JYK				*e*S		Sn	17 03 55.3	+2.7
JFT	**Otama**	**3.10**	**247**	P		Pn	17 03 26.2	+1.8
JFT				*e*S		Sn	17 04 01.6	+1.5
JNBK	**Urakawa-nobuka**	**3.62**	**346**	P		Pn	17 03 32.8	+1.3
JNBK				*e*S		Sn	17 04 13.4	+0.5
JCH	**Churui**	**3.87**	**354**	P		Pn	17 03 35.0	+0.1
JCH				*e*S		Sn	17 04 17.1	-1.9
NEM2	**Nemuro 2**	**4.79**	**16**	P		Pn	17 03 45.8	-1.8
NEM2				*e*S		Sn	17 04 35.8	-6.0

BJI ***16*** *17:06:33.2,7.62S×128.02E,h248km,mb5.5/90,mB5.2/63*
MOS ***16*** *17:06:37.7±1.0,7.07S×127.55E,h250km,mb5.7/76, MS5.0/35,Error ellipse: s-maj=7.8km s-min=4.8km az=107.6*
GCMT ***16*** *17:06:39.6±0.1,7.18S×127.58E,h260km,MW5.9/141, Moment Tensor Solution. s135,c269; s141,c434; Duration: 2s2 Moment tensor: Scale 1018Nm; Mrr0.29±.01; Mθθ-0.40±.01; Mϕϕ0.11±.01; Mrθ-0.45±.01; Mθϕ0.30±.01; Mrϕ0.73±.01; Best double couple: M08.97800×1018 NP1:ϕs326.00000°,δ80.00000°, λ111.00000°. NP2:ϕs80.00000°,δ23.00000°,λ26.00000°. Principal axes: T 0.9550, Plg50.0000°, Azm260.0000°; N 0.0460, Plg21.0000°, Azm142.0000°; P -1.0010, Plg32.0000°, Azm39.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
NEIC ***16*** *17:06:39.0±0.0,7.31S×127.55E,h270km,Moment Tensor Solution. s34 Moment tensor: Scale 1017Nm; Mrr2.44; Mθθ-4.07; Mϕϕ1.63; Mrθ-3.40; Mϕθ1.78; Mrϕ6.91; Best double couple: M08.70000×1017 NP1:ϕs326.00000°, δ82.00000°,λ113.00000°. NP2:ϕs74.00000°,δ25.00000°, λ20.00000°. Principal axes: T 9.0800, Plg47.0000°, Azm261.0000°; N -0.9200, Plg23.0000°, Azm143.0000°; P -8.1700, Plg32.0000°, Azm36.0000°;*
NEIC ***16*** *17:06:39.0±0.1,7.09S×127.59E,h249km,mb5.8/165, MW5.9,MW5.9 Error ellipse: s-maj=3.7km s-min=2.8km az=55.0,Moment Tensor Solution. s37 Moment tensor: Scale 1017Nm; Mrr1.66; Mθθ-2.78; Mϕϕ1.12; Mrθ-4.55; Mθϕ2.52; Mrϕ6.81; Best double couple: M08.90000×1017 NP1:ϕs76.00000°,δ19.00000°,λ21.00000°. NP2: ϕs327.00000°,δ83.00000°,λ108.00000°. Principal axes: T 8.4500, Plg49.0000°, Azm256.0000°; N 0.8400, Plg18.0000°, Azm144.0000°; P -9.2900, Plg36.0000°, Azm41.0000°; Broadband fault plane solution: P waves. NP1:ϕs100.00000°,δ14.00000°,λ45.00000°. NP2: ϕs325.00000°,δ80.00000°,λ100.00000°. Principal axes: T Plg54.0000°, Azm247.0000°; N Plg0.0000°, Azm0.0000°; P Plg34.0000°, Azm46.0000°; Depth from broadband displacement seismograms.*
NEIC Felt [II] at Darwin, Australia.
ISCJB ***16*** *17:06:39.8±0.2,7.18S±0.02×127.55E±0.02,h271km±2km, mb5.6/263 Error ellipse: s-maj=2.8km s-min=2.3km az=143.3*
DJA ***16*** *17:06:40.5±0.1,7.3S±2.2×12.8E±.,h267km±2km,M5.8/84, mb5.9/84,mB6.1/78,MLv6.3/13,Mw(mB)5.8/78,Mwp5.7/13*
IDC ***16*** *17:06:42.5±0.6,7.13S×127.55E,h275km±4km,mb5.2/36, mb1 5.2/40,mb1mx5.2/41,mbtmp5.9/40,Error ellipse: s-maj=6.5km s-min=3.9km az=62.0*
ISC 16 17:06:39.1±0.2,7.18S±0.02×127.57E±0.02,h257km±1km, h258km:pP-P,n1516,σ1§82/1891,mb5.7/275,54C-43D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
BNDI	**Bandanaira**	**3.51**	**41**	P		Pn	**17 07 40.0**	**+2.3**
BNDI				S		**S**	**17 08 28.1**	**+3.8**
SAUI	**Saumlaki**	**3.78**	**102**	P		Pn	**17 07 41.8**	**+1.1**
SAUI				S		**S**	**17 08 29.1**	**-0.6**
SAUI	**Saumlaki**	**3.78**	**102**	*e*Pn		**Pn**	**17 07 41.6**	**+0.9**
SAUI				*e*S		**S**	**17 08 23.4**	**-6.3**
NLAI	**Namlea**	**3.94**	**353**	P		**Pn**	**17 07 47.1**	**+4.5**
NLAI				S		**S**	**17 08 38.4**	**+5.2**
MSAI	**Masohi**	**4.04**	**20**	P		**Pn**	**17 07 46.7**	**+2.9**
MSAI				S		**S**	**17 08 38.7**	**+3.4**
SOEI	**Soe**	**4.15**	**232**	P		**Pn**	**17 07 47.0**	**+1.8**
SOEI				S		**S**	**17 08 37.8**	**+0.1**
SOEI	**Soe**	**4.15**	**232**	*e*Pn		**Pn**	**17 07 46.9**	**+1.8**
SOEI				*e*S		**S**	**17 08 37.2**	**-0.5**
BATI	**Baumata**	**4.90**	**232**	P		**Pn**	**17 07 55.9**	**+2.0**
SANI	**Sanana**	**5.34**	**343**	P		**Pn**	**17 08 02.5**	**+3.2**
SANI				S		**S**	**17 09 06.6**	**+3.2**
MMRI	**Maumere**	**5.48**	**254**	P		**Pn**	**17 08 02.6**	**+1.6**
MMRI				*S*		**S**	**17 09 05.8**	**-0.7**
MMRI	**Maumere**	**5.48**	**254**	*e*Pn		**Pn**	**17 08 02.4**	**+1.4**
MMRI				*e*S		**S**	**17 09 00.2**	**-6.3**
KDI	**Kendari**	**5.88**	**303**	P		**Pn**	**17 08 08.5**	**+2.6**
	194nm,1.1s,4μm15μm1.9nm							
FAKI	**Fak Fak**	**6.29**	**48**	P		**Pn**	**17 08 10.1**	**-1.0**
FAKI				S		**S**	**17 09 19.5**	**-5.4**
FAKI	**Fak Fak**	**6.29**	**48**	*e*Pn		**Pn**	**17 08 10.1**	**-1.0**
FAKI				*e*S		**S**	**17 09 17.7**	**-7.1**
LBMI	**Labuha**	**6.50**	**359**	P		**Pn**	**17 08 17.0**	**+3.3**
MTN	**Manton Dam**	**6.63**	**148**	P		**Pn**	**17 08 15.9**	**+0.6**
	baz=6.7,SNR=1000							
MTN	**Manton Dam**	**6.63**	**148**	*e*Pn		**Pn**	**17 08 15.8**	**+0.5**
KDU	**Kakadu**	**7.29**	**139**	P		**Pn**	**17 08 23.8**	**+0.2**
	baz=7.4,SNR=684							
WSI	**Waingapu**	**7.61**	**251**	P		**Pn**	**17 08 27.0**	**-0.6**
LUWI	**Luwuk**	**7.75**	**322**	P		**Pn**	**17 08 33.4**	**+4.0**
	686nm,1.2s,10μm4.1nm							
LUWI	**Luwuk**	**7.75**	**322**	*e*Pn		**Pn**	**17 08 33.3**	**+3.9**
KAPI	**Kappang**	**8.07**	**285**	P		**Pn**	**17 08 36.5**	**+3.1**
	8.6nm,0.3s,baz=125,slow=8.0,SNR=36							
KAPI				S		**S**	**17 10 08.9**	**+3.4**
	4.5nm,0.3s,baz=54,slow=20,SNR=2.4							
KAPI	**Kappang**	**8.07**	**285**	*e*Pn		**Pn**	**17 08 33.3**	**-0.1**
KAPI				S		**S**	**17 10 08.9**	**+3.4**
SPSI	**Sidrap Palu**	**8.40**	**292**	P		**Pn**	**17 08 40.4**	**+2.9**
	322nm,1.1s,6μm							
KMSI	**Cibinong**	**8.50**	**335**	P		**Pn**	**17 08 42.7**	**+3.9**
	2μm,0.9s,30μm							
KNRA	**Kununurra**	**8.52**	**172**	P		**Pn**	**17 08 39.3**	**+0.3**
	baz=8.6							
TTSI	**Tana Toraja**	**8.75**	**298**	P		**P**	**17 08 45.6**	**-3.3**
MRSI	**Marisa**	**9.46**	**323**	P		**P**	**17 08 54.8**	**-2.3**
PLAI	**Plampang**	**9.84**	**260**	P		**Pn**	**17 08 55.5**	**-0.2**
PCI	**Palu**	**9.92**	**309**	P		**P**	**17 09 00.9**	**-1.4**
	804nm,1.0s,11μm14μm							
TWSI	**Taliwang, Sumb**	**10.70**	**261**	P		**Pn**	**17 09 06.4**	**-0.1**
FITZ	**Fitzroy Crossi**	**11.02**	**190**	P		**Pn**	**17 09 09.6**	**-0.8**
	37nm,0.3s,baz=21,slow=12,SNR=1083							
FITZ				S		**S**	**17 11 08.2**	**-5.5**
	69nm,0.3s,baz=261,slow=21,SNR=4.9							
FITZ	**Fitzroy Crossi**	**11.02**	**190**	P		**Pn**	**17 09 09.8**	**-0.5**
	baz=11,SNR=1000							
FITZ	**Fitzroy Crossi**	**11.02**	**190**	*e*Pn		**Pn**	**17 09 09.6**	**-0.8**
FITZ				*e*S		**S**	**17 11 07.6**	**-6.1**
DNP	**Denpasar**	**12.34**	**262**	P		**P**	**17 09 28.6**	**-0.5**
	2μm,1.0s,23μm							
IGBI	**Denpasar**	**12.41**	**262**	P		**P**	**17 09 29.2**	**-0.8**
BBKI	**Banjar Baru**	**13.20**	**286**	P		**P**	**17 09 40.2**	**+1.4**
ABJI	**Asem Bagus**	**13.24**	**267**	P		**P**	**17 09 39.7**	**+0.5**
GENI	**Genyem**	**13.35**	**71**	P		**P**	**17 09 41.7**	**+1.3**
JAGI	**Jajag, Banyuwa**	**13.36**	**264**	P		**P**	**17 09 40.3**	**-0.2**
JAGI	**Jajag, Banyuwa**	**13.36**	**264**	*e*Pn		**Pn**	**17 09 37.3**	**-2.0**
GSPH	**General Santos**	**13.44**	**349**‖	*e*P		**P**	**17 09 41.4**	**0.0**
GSPH				*e*S		**S**	**17 12 14.6**	**+5.0**
BLJI	**Banyuglugur**	**13.87**	**267**	P		**P**	**17 09 47.4**	**+1.2**
JAY	**Jayapura**	**13.88**	**71**	P		**P**	**17 09 47.2**	**+0.9**
	4μm,1.4s,37μm							
GMJI	**Gumukmas**	**14.04**	**265**	P		**Pn**	**17 09 47.5**	**-0.1**
	944nm,1.0s,9μm							
MTKI	**Muara Teweh, K**	**14.08**	**296**	P		**P**	**17 09 52.4**	**+3.9**
I07AU	**WARRAMUNGA INF**	**14.27**	**153**	P		**Pn**	**17 09 48.8**	**-1.6**
	baz=337,slow=17,SNR=0.3							
WRAB	**Tennant Creek**	**14.28**	**153**	*de*P		**Pn**		
WRAB				pmax		pmax	**17 09 49.9**	**-0.5**
	comp=Z,2μm,1.7s							
WRAB	**Tennant Creek**	**14.28**	**153**	*e*Pn		**Pn**	**17 09 50.0**	**-0.5**
WR1	**Warramunga Arr**	**14.28**	**153**	*e*Pn		**Pn**	**17 09 49.9**	**-0.7**
WR1				*e*S		**S**	**17 12 20.1**	**-8.5**
WR1				*e*			17 53 40.3	
WRA	**Warramunga Arr**	**14.28**	**153**	P		**Pn**	**17 09 49.9**	**-0.7**
	comp=Z,50nm,0.3s,baz=329,slow=12,SNR=530							
WRA				S		**S**	**17 12 20.1**	**-8.5**
	comp=Z,30nm,0.3s,baz=332,slow=22,SNR=8.0							
WRA				P4KP			17 53 40.3	
	comp=Z,0.1nm,0.3s,baz=339,slow=4.5,SNR=16							
WB2	**Warramunga Arr**	**14.29**	**153**	*e*Pn		**Pn**	**17 09 49.9**	**-0.7**
DAV	**Davao City (W)**	**14.30**	**352**	P		**P**	**17 09 52.9**	**+2.1**
	comp=Z,58nm,0.3s,baz=124,slow=1.1,SNR=23							
DAV				S		**S**	**17 12 28.2**	**-0.7**
	baz=258,slow=17,SNR=2.3							
DAV	**Davao City (W)**	**14.30**	**352**	P		**P**	**17 09 53.0**	**+2.1**
	SNR=37							
DAV	**Davao City (W)**	**14.30**	**352**	*e*Pn		**P**	**17 09 52.5**	**+1.6**
DAV				*e*S		**S**	**17 12 28.2**	**-0.7**
KCP	**Kidapawan**	**14.31**	**350**‖	*e*P		**P**	**17 09 52.8**	**+1.7**
CTBH	**Cotabato--PC H**	**14.69**	**347**‖	*i*P		**Pn**	**17 09 57.6**	**+2.2**
BWJI	**Bawean**	**14.88**	**274**	P		Pn	17 10 02.7	+5.0
MYLDM	**Lahad Datu**	**15.26**	**323**	*e*P		**Pn**	**17 10 05.1**	**+2.9**
	comp=Z,678nm,1.1s							
TBJI	**Tambak Boyo**	**15.61**	**270**	P		**Pn**	**17 10 09.6**	**+3.1**
PWJI	**Pagerwojo**	**15.65**	**266**	P		**Pn**	**17 10 06.7**	**-0.2**
	comp=Z,1μm,1.2s,comp=Z,11μm							
CGP	**Cagayan de Oro**	**15.79**	**349**‖	*e*P		**Pn**	**17 10 10.3**	**+1.7**
MBWA	**Marble Bar**	**15.83**	**208**	P		**Pn**	**17 10 09.6**	**+0.6**
	SNR=110							
MBWA	**Marble Bar**	**15.83**	**208**	*e*P		**Pn**	**17 10 09.4**	**+0.4**
	comp=Z,931nm,1.0s							
NGJI	**Ngawi**	**15.98**	**268**	P		**Pn**	**17 10 12.4**	**+1.5**
PALU	**Palau**	**15.99**	**26**	P		**Pn**	**17 10 11.0**	**+0.2**
	baz=16,SNR=178							
DCPH	**Dipolog City**	**16.21**	**345**‖	*e*P		**Pn**	**17 10 16.9**	**+3.4**
PBKI	**Pangkalan Bun**	**16.45**	**285**	P		**Pn**	**17 10 17.0**	**+0.6**
WOJI	**Wonogiri, Jawa**	**16.52**	**267**	P		**P**	**17 10 16.0**	**+0.7**
UWJI	**Ujung Watu**	**16.53**	**272**	P		**Pn**	**17 10 17.8**	**+0.6**
	comp=Z,1μm,2.0s,comp=Z,14μm							
COEN	**Coen**	**16.74**	**115**	P		**Pn**	**17 10 19.7**	**-0.1**
	baz=17,SNR=1000							
COEN	**Coen**	**16.74**	**115**	*e*P		**Pn**	**17 10 19.4**	**-0.3**
	comp=Z,2μm,0.8s							
UGM	**Wanagama**	**16.92**	**266**	P		**P**	**17 10 20.6**	**+0.9**
	comp=Z,965nm,1.1s,comp=Z,12μm							
UGM	**Wanagama**	**16.92**	**266**	*e*P		**P**	**17 10 19.7**	**0.0**
	comp=Z,1μm,1.1s							
SNPH	**Sibulan**	**16.97**	**345**	*e*P		**P**	**17 10 17.8**	**-2.6**
TBP	**Tagbilaran**	**17.16**	**348**	*e*P		**Pn**	**17 10 24.3**	**-0.4**
KKM	**Kota Kinabalu**	**17.35**	**319**	*e*P		**Pn**	**17 10 27.1**	**+0.1**
	comp=Z,694nm,0.9s							
KKM				*e*ScP		**ScP**	**17 18 02.3**	**-1.1**
AS31	**Alice Springs**	**17.48**	**160**	*e*P		**Pn**	**17 10 27.8**	**-0.6**
	comp=Z,336nm,0.7s							
ASAR	**Alice Springs**	**17.48**	**160**	P		**Pn**	**17 10 28.0**	**-0.4**
	comp=Z,70nm,0.3s,baz=344,slow=12,SNR=3529							
ASAR				S		**S**	**17 13 32.3**	**-1.8**
	comp=Z,30nm,0.3s,baz=346,slow=24,SNR=13							
ASAR				ScP		**ScP**	**17 18 03.0**	**-0.4**
	comp=Z,4.6nm,0.3s,baz=339,slow=1.9,SNR=4.8							
ASAR				ScS		**ScS**	**17 21 39.0**	**-5.0**
	baz=304,slow=2.3,SNR=4.1							
ASAR				P3KPbc			17 44 59.0	
	comp=Z,0.0nm,0.3s,baz=137,slow=1.7,SNR=4.3							
ASAR				P4KPbc			17 50 00.9	
	comp=Z,0.0nm,0.3s,baz=335,slow=3.2,SNR=5.1							
ASAR				P4KP			17 53 54.6	
	comp=Z,0.2nm,0.3s,baz=336,slow=3.9,SNR=43							
AS01	**Alice Springs**	**17.50**	**160**	*e*P		**Pn**	**17 10 27.9**	**-0.6**
STKI	**Sintang**	**17.59**	**293**	P		**P**	**17 10 27.9**	**+0.8**
QIS	**Mount Isa**	**17.68**	**140**	P		**Pn**	**17 10 30.2**	**-0.6**
	baz=18,SNR=387							
LLP	**Lapu-Lapu**	**17.75**	**348**	*e*P		**Pn**	**17 10 30.8**	**-0.8**
LLP				*e*S		**S**	**17 13 49.0**	**+10**
WRKA	**Warakurna**	**17.77**	**178**	P		**Pn**	**17 10 31.3**	**-0.4**
	baz=18,SNR=1000							
SBUM	**Sibu**	**18.06**	**301**	*e*P		**Pn**	**17 10 35.1**	**-0.2**
	comp=Z,3μm,1.4s							
SBUM				*e*ScP		**ScP**	**17 18 03.6**	**-1.3**
JAP	**San Jose, Anti**	**18.67**	**342**‖	*i*P		**Pn**	**17 10 41.5**	**-0.9**
CMJI	**Cimerak**	**18.97**	**267**	P		**P**	**17 10 40.4**	**-1.5**
JCJI	**Jatiwangi**	**19.18**	**271**	P		**Pn**	**17 10 50.3**	**+2.0**
RCP	**Roxas**	**19.23**	**345**‖	*e*P		**P**	**17 10 45.8**	**+1.2**
KSM	**Kuching**	**19.25**	**296**	*e*P		**P**	**17 10 45.7**	**+0.8**
	comp=Z,2μm,0.9s							
KSM				*e*ScP		**ScP**	**17 18 05.9**	**-1.6**
PMG	**Port Moresby**	**19.51**	**98**	P		**Pn**	**17 10 50.5**	**-1.7**
	comp=Z,59nm,0.3s,baz=280,slow=1.4,SNR=222							
PMG				S		**S**	**17 14 17.7**	**+3.6**
	baz=210,slow=20,SNR=2.8							
PMG				ScP		**ScP**	**17 18 10.0**	**+1.9**
	comp=Z,1.2nm,0.3s,baz=8.6,slow=23,SNR=5.6							
PMG	**Port Moresby**	**19.51**	**98**	*e*P		**P**	**17 10 48.2**	**+0.6**
	comp=Z,1μm,0.8s							
PMG				S		**S**	**17 14 17.7**	**+3.6**
PMG				ScP		**ScP**	**17 18 10.0**	**+1.9**
CISI	**Cisompet, Garu**	**19.60**	**268**	P		**P**	**17 10 46.8**	**-1.8**
CISI	**Cisompet, Garu**	**19.60**	**268**	*e*P		**P**	**17 10 46.1**	**-2.5**
	comp=Z,9μm,1.5s							
CISI				*e*ScP		**ScP**	**17 18 05.3**	**-3.1**
MTSU	**Mount Surprise**	**19.61**	**125**	P		**P**	**17 10 50.2**	**+1.5**
	baz=20,SNR=259							
GIRL	**Giralia**	**20.03**	**218**	P		**P**	**17 10 55.0**	**+1.9**
	baz=20,SNR=146							
CNJI	**Cibinong**	**20.28**	**268**	P		**P**	**17 10 54.3**	**-1.6**
	comp=Z,5μm,1.1s,comp=Z,48μm							
MANU	**Manus Island**	**20.37**	**76**	*e*P		**P**	**17 10 57.9**	**+1.1**
	comp=Z,3μm,1.1s							
DBJI	**Dramaga**	**20.68**	**270**	P		**P**	**17 10 59.4**	**-0.7**
	comp=Z,1μm,1.2s,comp=Z,16μm							
SKJI	**Sukabumi**	**20.86**	**269**	P		**P**	**17 11 00.8**	**-1.1**
	comp=Z,3μm,0.9s,comp=Z,28μm							
MEEK	**Meekatharra**	**21.14**	**203**	P		**P**	**17 11 05.3**	**+0.7**
	baz=21,SNR=947							
SBJI	**Serang**	**21.32**	**272**	P		**P**	**17 11 04.8**	**-1.7**
GQP	**Guinayangan**	**21.56**	**346**‖	*e*P		**P**	**17 11 09.4**	**+0.8**
CGJI	**Cibinong**	**21.73**	**270**	P		**P**	**17 11 08.6**	**-1.6**
	comp=Z,3μm,1.1s,comp=Z,27μm							
XMIS	**Christmas Isla**	**21.91**	**260**	*e*P		**P**	**17 11 10.1**	**-1.8**
	comp=Z,2μm,1.4s							
XMIS				*e*ScP		**ScP**	**17 18 11.1**	**-2.8**
PPBI	**Pangkal Pinang**	**21.93**	**282**	P		**P**	**17 11 14.4**	**+2.3**
LQP	**Lukban**	**21.99**	**344**‖	*e*P		**P**	**17 11 14.5**	**+1.7**
TGY	**Tagaytay City**	**22.15**	**343**	P		**P**	**17 11 15.8**	**+1.8**
	comp=Z,3μm,0.8s,baz=230,slow=3.1,SNR=38							
TGY				S		**S**	**17 14 58.9**	**-0.2**
	comp=Z,2μm,1.0s,baz=322,slow=16,SNR=12							
TGY	**Tagaytay City**	**22.15**	**343**‖	*e*P		P	17 11 23.4	+9.4
CTA	**Charters Tower**	**22.20**	**127**	P		**P**	**17 11 17.1**	**+2.7**
	comp=Z,148nm,1.1s,baz=301,slow=9.9,SNR=37							
CTA				S		**S**	**17 15 01.8**	**+1.9**
	comp=Z,49nm,0.8s,baz=42,slow=23,SNR=7.4							
CTAO	**Charters Tower**	**22.20**	**127**	*e*P		**P**	**17 11 16.9**	**+2.5**
CTAO				pmax		pmax		
	comp=Z,460nm,1.2s							
CTAO	**Charters Tower**	**22.20**	**127**	*e*P		**P**	**17 11 16.9**	**+2.5**
	comp=Z,461nm,1.3s							
CTAO				LR		LR		
	comp=Z,5μm,20.0s							
BLSI	**Bandar Lampung**	**22.27**	**273**	P		**P**	**17 11 15.4**	**+0.2**
KASI	**Kota Agung**	**22.99**	**273**	P		**P**	**17 11 20.1**	**-1.7**
	comp=Z,1μm,1.0s,comp=Z,9μm							
LWLI	**Liwa**	**23.48**	**274**	P		**P**	**17 11 25.2**	**-1.1**
	comp=Z,457nm,0.8s,comp=Z,7μm							
FORT	**Forrest**	**23.48**	**179**	P		**P**	**17 11 27.6**	**+1.6**
	baz=24,SNR=378							
FORT	**Forrest**	**23.48**	**179**	*e*P		**P**	**17 11 27.4**	**+1.4**
	comp=Z,11μm,0.7s							
LHSI	**Lahat**	**24.17**	**277**	P		**P**	**17 11 32.8**	**+0.4**
	comp=Z,1μm,1.2s,comp=Z,12μm							
MORW	**Morawa**	**24.34**	**205**	P		**P**	**17 11 34.5**	**+0.7**
	baz=24,SNR=299							
TPRI	**Tanjung Pinang**	**24.36**	**288**	P		**P**	**17 11 35.1**	**+0.9**
	comp=Z,593nm,1.0s,comp=Z,9μm							
JMBI	**JAMBI**	**24.48**	**282**	P		**P**	**17 11 35.5**	**+0.2**
	comp=Z,3μm,1.2s,comp=Z,44μm							
KMBL	**Kambalda**	**24.64**	**192**	P		**P**	**17 11 37.7**	**+1.1**
	baz=25,SNR=227							
RABL	**Rabaul**	**24.65**	**84**	*e*P		**P**	**17 11 37.6**	**+0.8**
	comp=Z,2μm,1.0s							
MNAI	**Manna**	**24.65**	**275**	P		**P**	**17 11 37.0**	**+0.2**
	comp=Z,563nm,0.8s,comp=Z,8μm							
MNAI	**Manna**	**24.65**	**275**	*e*P		**P**	**17 11 34.9**	**-1.9**
	comp=Z,471nm,0.9s							
QLP	**Quilpie**	**24.97**	**143**	P		**P**	**17 11 41.1**	**+1.6**
	baz=25,SNR=46							
KSI	**Kapahiang**	**25.11**	**277**	P		**P**	**17 11 40.0**	**-1.0**
	comp=Z,358nm,0.9s,comp=Z,6μm							
MYKOM	**Kota Tinggi**	**25.30**	**290**	*e*P		**P**	**17 11 44.4**	**+1.8**
	comp=Z,506nm,1.1s							
BLDU	**Balidu**	**25.44**	**202**	P		**P**	**17 11 44.4**	**+0.7**
	baz=26,SNR=24							
KLBR	**Kellerberrin**	**25.96**	**199**	P		**P**	**17 11 49.3**	**+0.9**
	baz=26,SNR=254							
BBOO	**Buckleboo**	**26.69**	**164**	P		**P**	**17 11 56.5**

TWG eS S 17 17 04.0 -6.5
COCO West Island 30.69 258 eP P 17 12 27.7 -2.7
COCO pmax pmax
comp=Z,250nm,1.2s
COCO West Island 30.69 258 eP P 17 12 27.7 -2.7
comp=Z,254nm,1.2s
COCO eScP ScP 17 18 40.5 +0.7
COCO LR LR
comp=Z,1μm,20.0s
TSI Tuntungan 30.84 289 P P 17 12 32.6 +0.9
comp=Z,698nm,1.4s,comp=Z,12μm
YULB Yu-li 31.00 349 eP P 17 12 31.1 -1.8
comp=Z,50nm,1.0s
YULB eScP ScP 17 18 37.8 -2.8
TPUB Ta-pu 31.05 348 eP P 17 12 32.9 -0.6
comp=Z,206nm,0.7s
TPUB eScP ScP 17 18 40.8 0.0
GSI Gunungsitoli 31.09 285 P P 17 12 34.0 0.0
GSI Gunungsitoli 31.09 285 eP P 17 12 33.4 -0.6
comp=Z,321nm,0.6s
QIZ Qiongzhong 31.37 326 P P 17 12 37.8 +1.6
QIZ S S 17 17 21.5 -2.8
QIZ sS sS 17 18 55.3 -0.7
QIZ SS SS 17 19 46.3 +2.8
QIZ pmax pmax
comp=Z,79nm,0.7s
QIZ Qiongzhong 31.37 326 eP P 17 12 37.3 +1.1
comp=Z,80nm,0.9s
QIZ LR LR
comp=Z,2μm,21.0s
SSLB Suanglung 31.45 348 eP P 17 12 35.1 -1.8
comp=Z,89nm,0.8s
TRTT Trang 31.55 298 P P 17 12 39.0 +1.0
comp=Z,553nm,1.6s,comp=Z,9μm
KCSI Kotacane, Aceh 31.59 289 P P 17 12 37.8 -0.5
NACB Ninganchiao 31.70 350 eP P 17 12 37.5 -1.6
comp=Z,110nm,1.0s
YOJ Yonaguni jima 31.76 352 eP P 17 12 39.7 +0.1
YOJ pmax pmax
comp=Z,320nm,0.8s
YOJ Yonaguni jima 31.76 352 eP P 17 12 39.6 +0.1
comp=Z,324nm,0.8s
TPTI 32.06 288 P P 17 12 43.0 +0.6
comp=Z,292nm,0.8s,comp=Z,4μm
HNR Honiara 32.10 96 P P 17 12 43.8 +1.0
comp=Z,371nm,0.7s,baz=198,slow=5.4,SNR=13
HNR S S 17 17 35.9 0.0
comp=Z,191nm,1.1s,baz=204,slow=20,SNR=4.5
HNR Honiara 32.10 96 eP P 17 12 42.0 -0.8
HNR eS pP 17 13 31.0 -2.8
HNR Honiara 32.10 96 eP P 17 12 43.3 +0.5
comp=Z,4μm,1.8s
HNR epP pP 17 13 31.0 -2.8
HNR eS S 17 17 35.9 0.0
HNR LR LR
comp=Z,2μm,20.0s
KRAB Krabi 32.16 298 P P 17 12 44.2 +0.9
comp=Z,543nm,0.6s,comp=Z,5μm
ARPS Mount Arapiles 32.20 158 P P 17 12 45.9 +2.6
baz=32,SNR=180
MCO Taipa Grande 32.20 335 P P 17 12 46.0 +2.6
YHNB Yeheng 32.23 349 eP P 17 12 43.1 -0.7
comp=Z,145nm,0.9s
YHNB LR LR
comp=Z,3μm,21.0s
SURA Surathani 32.23 300 P P 17 12 45.2 +1.3
comp=Z,343nm,0.9s
ARMA Armidale 32.30 139 P P 17 12 46.0 +1.5
baz=32,SNR=52
ARMA Armidale 32.30 139 eP P 17 12 46.3 +1.9
comp=Z,124nm,0.8s
TATO Taipei 32.51 350 eP P 17 12 44.4 -1.7
comp=Z,128nm,1.1s
TATO LR LR
comp=Z,2μm,22.0s
PKDT Phuket 32.77 297 P P 17 12 50.0 +1.4
comp=Z,487nm,1.1s,comp=Z,7μm
SURT Suratani 32.86 299 P P 17 12 50.3 +1.0
comp=Z,118nm,1.2s,comp=Z,2μm
SRAK Srakaew 32.95 310 P P 17 12 47.2 -2.8
comp=Z,256nm,0.9s,comp=Z,2μm
LHMI Lhok Sumawe 32.95 291 P P 17 12 50.9 +0.8
comp=Z,2μm,0.7s,comp=Z,24μm
LHMI Lhok Sumawe 32.95 291 eP P 17 12 50.3 +0.1
comp=Z,1μm,0.7s
LHMI eScP ScP 17 18 46.4 -1.1
YNG Young 33.13 147 P P 17 12 54.2 +2.8
baz=33,SNR=124
GZH Guangzhou 33.15 336 P P 17 12 56.3 +4.7
GZH sP PP 17 14 07.6 -5.0
GZH PP PnPn 17 14 14.8 +1.9
GZH S S 17 17 55.8 +4.1
GZH pmax pmax
comp=Z,260nm,1.0s
SKNT Sakolnakorn 33.47 316 P P 17 12 55.5 +1.0
comp=Z,194nm,0.9s,comp=Z,3μm
PATS Pohnpei 33.68 66 P P 17 12 57.6 +1.2
baz=34,SNR=31
PATS Pohnpei 33.68 66 eP P 17 12 57.1 +0.8
comp=Z,1μm,1.1s
JOW Kunigami 33.82 1 eP P 17 12 58.8 +1.4
comp=Z,853nm,1.0s
JOW eScP ScP 17 18 50.5 +0.2
MGCD Mangrove Creek 33.87 143 P P 17 13 01.2 +3.5
baz=34,SNR=15
CAN Canberra 34.23 148 eP P 17 13 03.9 +3.0
CAN pmax pmax
comp=Z,150nm,0.7s
CAN Canberra 34.23 148 eP P 17 13 03.9 +3.0
comp=Z,153nm,0.7s
CAN epP pP 17 13 48.2 -4.1
CAN LR LR
comp=Z,3μm,21.0s
CNB Canberra Magne 34.41 148 P P 17 13 05.2 +2.7
baz=34,SNR=41
NONG Nongkai 34.80 316 P P 17 13 07.0 +1.1
comp=Z,118nm,1.2s
PBKT Sadao Pong 35.35 312 P P 17 13 11.4 +0.8
comp=Z,76nm,0.8s,comp=Z,2μm
SRDT SRDT 35.42 307 P P 17 13 12.9 +1.7
comp=Z,1μm,1.0s,comp=Z,9μm
LOEI Loei 35.74 314 P P 17 13 12.3 -1.7
comp=Z,57nm,0.8s,comp=Z,6μm
UTTA Uttaradit 36.41 313 P P 17 13 20.7 +1.2
comp=Z,87nm,0.6s,comp=Z,833nm
UMPA Umpang Tak 36.71 309 P P 17 13 22.8 +0.6
comp=Z,74nm,1.0s,comp=Z,545nm
SUKH Sukhothai 36.92 312 P P 17 13 25.3 +1.5
comp=Z,75nm,1.0s,comp=Z,527nm
LAMP Lampang 37.58 313 P P 17 13 31.0 +1.6
comp=Z,82nm,0.8s,comp=Z,762nm
PAYA Payao 37.95 314 P P 17 13 33.7 +1.2
comp=Z,46nm,0.8s,comp=Z,437nm
CM01 Chiang Mai Arr 38.00 312 eP P 17 13 33.9 +0.9
CM01 epP pP 17 14 18.5 -6.8
CM31 Chiang Mai Arr 38.04 312 eP P 17 13 34.3 +1.1
CM31 epP pP 17 14 18.2 -7.4
CM31 ePcP PcP 17 15 44.9 +1.9
CM31 eS S 17 19 06.7 +0.3
CMAR Chiang Mai Arr 38.04 312 P P 17 13 34.8 +1.6
comp=Z,67nm,0.5s,baz=141,slow=7.0,SNR=152
CMAR PcP PcP 17 15 45.4 +2.4
comp=Z,54nm,0.7s,baz=168,slow=2.7,SNR=24
CMAR ScP S 17 19 06.8 +0.4
comp=Z,55nm,0.9s,baz=160,slow=3.1,SNR=19
CMAR P3KPbc 17 43 45.0
comp=Z,0.7nm,0.8s,baz=314,slow=6.4,SNR=4.1
CMAR Chiang Mai Arr 38.04 312 P P 17 13 34.8 +1.6
CMAR 17 15 45.4
CMAR 17 19 06.8
CMAR pmax pmax
comp=Z,90nm,0.5s
CMMT Chiang Mai 38.26 313 P P 17 13 36.2 +1.1
comp=Z,238nm,1.0s,comp=Z,2μm
CHTO Chiang Mai 38.26 313 P P 17 13 36.2 +1.1
comp=Z,1μm,1.1s,comp=Z,9μm
CHTO Chiang Mai 38.26 313 eP P 17 13 36.3 +1.1
CHTO pmax pmax
comp=Z,160nm,0.7s
CHTO Chiang Mai 38.26 313 P P 17 13 36.5 +1.4
SNR=36
CHTO Chiang Mai 38.26 313 eP P 17 13 36.3 +1.1
comp=Z,161nm,0.7s
CHTO epP pP 17 14 21.4 -6.1
CHTO LR LR
comp=Z,1μm,21.0s

SSE Sheshan 38.55 351 P P 17 13 38.0 +0.8
SSE sP sP 17 14 57.9 -1.2
SSE PP PP 17 15 11.1 -0.5
SSE S S 17 19 15.0 +1.5
SSE sS sS 17 20 46.1 -1.2
SSE pmax pmax
comp=Z,180nm,1.1s
SSE pmax pmax
comp=Z,580nm,4.4s
SSE LR LR
comp=Z,460nm,11.8s
SSE LR LR
comp=Z,2μm,11.8s
SSE LR LR
comp=Z,980nm,23.8s
CMAI Chiengmai2 38.91 314 P P 17 13 41.8 +1.1
comp=Z,804nm,0.7s
GYA Guiyang 39.11 330⇑ iP P 17 13 43.8 +1.6
GYA pP pP 17 14 36.4 +1.6
GYA sP sP 17 15 04.0 -0.1
GYA PP PnPn 17 15 23.6 +0.1
GYA PcP PcP 17 15 48.3 +1.9
GYA ScP ScP 17 19 11.3 +1.2
GYA S S 17 19 21.8 -0.6
GYA sS sS 17 20 54.9 -1.4
GYA ScS ScS 17 23 24.0 +1.4
GYA pmax pmax
comp=Z,80nm,1.0s
GYA pmax pmax
comp=Z,160nm,6.5s
GYA LR LR
comp=Z,2μm,17.1s
GYA LR LR
comp=Z,3μm,17.1s
GYA LR LR
comp=Z,830nm,16.5s
MOO Moorlands 39.16 157 P P 17 13 45.4 +3.2
baz=39,SNR=12
WHN Wuhan 39.60 342⇓ P P 17 13 48.0 +2.1
WHN S S 17 19 27.8 -1.4
WHN pmax pmax
comp=Z,2μm,1.6s
WHN LR LR
comp=Z,3μm,5.2s
WHN LR LR
comp=Z,6μm,10.6s
WHN LR LR
comp=Z,3μm,17.6s
TAU Tasmania Unive 39.61 157 eP P 17 13 48.3 +2.4
TAU pmax pmax
comp=Z,74nm,0.8s
TAU Tasmania Unive 39.61 157 eP P 17 13 48.3 +2.4
comp=Z,74nm,0.8s
TAU epP pP 17 14 31.3 -7.3
TAU LR LR
comp=Z,2μm,19.0s
NJ2 Nanjing 39.89 348 eP P 17 13 49.9 +1.6
NJ2 ScP ScP 17 19 12.8 0.0
NJ2 S S 17 19 33.6 +0.1
NJ2 pmax pmax
comp=Z,330nm,0.9s
DGPR DIGLIPUR 39.92 300 eP P 17 13 48.2 -0.5
DGPR IAmb IAmb 17 13 51.1
comp=Z,135nm,1.0s
KMI Kunming 40.19 324 P P 17 13 54.0 +2.8
KMI pP pP 17 14 44.6 +0.5
KMI sP sP 17 15 12.5 -0.8
KMI PP PnPn 17 15 33.8 -2.3
KMI S S 17 19 39.8 +1.1
KMI sS sS 17 21 13.1 +0.1
KMI pmax pmax
comp=Z,220nm,1.2s
KMI pmax pmax
comp=Z,600nm,4.4s
KMI LR LR
comp=Z,2μm,15.0s
KMI LR LR
comp=Z,1μm,13.8s
KMI LR LR
comp=Z,1μm,19.8s
JNU Nakatsue 40.20 4 P P 17 13 51.3 +0.4
comp=Z,77nm,0.8s,baz=203,slow=3.6,SNR=59
JNU S S 17 19 36.8 -1.5
comp=Z,5.6nm,0.8s,baz=85,slow=23,SNR=7.9
JNU Nakatsue 40.20 4 eP P 17 13 51.2 +0.4
comp=Z,136nm,1.0s
JNU eS S 17 19 36.8 -1.5
DZM Mont Dzumac 40.27 116 P P 17 13 53.7 +1.9
comp=Z,104nm,1.0s,baz=150,slow=18,SNR=24
DZM ScP ScP 17 19 15.7 +0.9
comp=Z,37nm,0.9s,baz=279,slow=21,SNR=6.5
DZM S S 17 19 39.9 +0.1
comp=Z,18nm,1.0s,baz=47,slow=24,SNR=3.5
DZM Mont Dzumac 40.27 116 eP P 17 13 51.0 -0.8
comp=Z,369nm,1.3s
DZM Mont Dzumac 40.27 116 eP P 17 13 51.3 -0.4
comp=Z,360nm,1.5s
DZM eScP ScP 17 19 14.2 -0.5
DZM S S 17 19 39.9 +0.1
ENH Enshi 41.09 336 eP P 17 13 58.9 +0.7
comp=Z,88nm,0.8s
ENH eS S 17 19 51.0 -0.4
ENH LR LR
comp=Z,2μm,22.0s
JHJ Hachijo jima 2 41.73 15 P P 17 14 01.8 -1.4
comp=Z,86nm,0.8s,baz=104,slow=10.0,SNR=3.1
JHJ ScP ScP 17 19 19.7 -0.4
comp=Z,139nm,0.8s,baz=335,slow=7.5,SNR=3.5
JHJ S S 17 20 03.4 +2.9
comp=Z,106nm,0.9s,baz=93,slow=16,SNR=2.0
KWAJ Kwajalein Atol 42.95 69 eP P 17 14 13.1 -0.3
KWAJ pmax pmax
comp=Z,2μm,1.2s
KWAJ Kwajalein Atol 42.95 69 eP P 17 14 13.1 -0.3
comp=Z,2μm,1.3s
INU Inuyama 43.23 11 eP P 17 14 15.7 +0.5
comp=Z,146nm,1.1s
INU eScP ScP 17 19 25.9 -0.1
CD2 Chengdu 44.21 330 P P 17 14 24.3 +1.1
CD2 pP pP 17 15 16.0 -1.1
CD2 sP sP 17 15 44.0 -2.1
CD2 PcS PcS 17 19 57.4 +0.6
CD2 S S 17 20 39.9 +3.0
CD2 sS sS 17 22 12.3 -0.3
CD2 SS SS 17 24 06.5 +4.3
CD2 pmax pmax
comp=Z,120nm,0.6s
CD2 pmax pmax
comp=Z,330nm,4.0s
CD2 LR LR
comp=Z,2μm,11.9s
CD2 LR LR
comp=Z,3μm,13.7s
CD2 LR LR
comp=Z,2μm,13.7s
TIA Tai'an 44.27 348⇓ P P 17 14 24.0 +0.5
TIA sP sP 17 15 45.8 -0.6
TIA PP PP 17 16 14.3 +1.7
TIA ScP ScP 17 19 30.6 +0.3
TIA S S 17 20 34.9 -2.5
TIA sS sS 17 22 12.0 -1.1
TIA ScS ScS 17 23 54.1 +0.5
TIA pmax pmax
comp=Z,200nm,1.0s
TIA pmax pmax
comp=Z,820nm,8.0s
TIA LR LR
comp=Z,740nm,17.0s
TIA LR LR
comp=Z,1μm,14.0s
TIA LR LR
comp=Z,1μm,18.0s
KS15 Wonju Array Si 44.39 0 eP P 17 14 25.9 +1.5
KS15 eScP ScP 17 19 31.5 +0.7
KS15 eS S 17 20 41.1 +2.0
KSAR Wonju Array Be 44.39 0 P P 17 14 26.1 +1.7
KSAR 17 16 04.7
KSAR S S 17 20 39.6 +0.5
KSAR Wonju Array Be 44.39 0 P P 17 14 26.1 +1.7
KSAR PcP PcP 17 16 04.7 +1.2
KSAR ScP ScP 17 19 31.0 +0.2
KSAR S S 17 20 39.6 +0.5
KSRS Korea Array 44.40 0 P P 17 14 26.1 +1.6
comp=Z,111nm,0.8s,baz=178,slow=9.9,SNR=230
KSRS PcP PcP 17 16 04.7 +1.2
comp=Z,18nm,0.9s,baz=179,slow=5.2,SNR=5.3
KSRS ScP ScP 17 19 31.0 +0.2
comp=Z,25nm,0.8s,baz=184,slow=3.1,SNR=13
KSRS S S 17 20 39.6 +0.4
comp=Z,22nm,1.2s,baz=177,slow=14,SNR=5.4
KS01 Wonju Array Si 44.42 0 eP P 17 14 25.4 +0.7
KS01 ePcP PcP 17 16 04.2 +0.7
KS01 eScP ScP 17 19 30.2 -0.7
INCN Inchon 44.44 359 P P 17 14 26.2 +1.3
SNR=13
INCN Inchon 44.44 359 eP P 17 14 26.1 +1.3
comp=Z,228nm,1.1s
INCN eScP ScP 17 19 31.2 +0.2
INCN LR LR
comp=Z,1μm,21.0s
MJAR Matsushiro Arr 44.62 12 P P 17 14 25.6 -0.7
comp=Z,175nm,0.8s,baz=189,slow=9.3,SNR=561
MJAR PcP PcP 17 16 04.4 +0.1
comp=Z,16nm,1.0s,baz=194,slow=3.6,SNR=4.7
MJAR ScP ScP 17 19 31.6 -0.2
comp=Z,56nm,1.1s,baz=202,slow=5.4,SNR=18
MJAR PKP2ab 17 47 10.9
comp=Z,0.7nm,0.9s,baz=313,slow=5.0,SNR=5.1
MAJO Matsushiro 44.62 12 *d* iP P 17 14 25.6 -0.8
MAJO pmax pmax
comp=Z,1μm,0.9s
MAJO Matsushiro 44.62 12 eP P 17 14 25.5 -0.8
comp=Z,291nm,1.0s
MAJO LR LR
comp=Z,2μm,21.0s
MAT Matsushiro 44.62 12 P P 17 14 25.5 -0.8
MAT S S 17 20 37.8 -4.8
MJB9 Matsu-Tunnel 44.62 12 eP P 17 14 25.7 -0.7
comp=Z,71nm,1.0s
XAN Xi'an 44.64 338 P P 17 14 27.0 +0.4
XAN pP pP 17 15 18.0 -2.5
XAN sP sP 17 15 46.5 -3.0
XAN PP PP 17 16 12.0 -4.5
XAN S S 17 20 38.0 -5.0
XAN pmax pmax
comp=Z,200nm,0.9s
XAN pmax pmax
comp=Z,180nm,7.9s
TARA Tarawa 46.03 81 eP P 17 14 39.3 +1.6
comp=Z,848nm,1.4s
TARA LR LR
comp=Z,73nm,20.0s
DL2 Dalian 46.18 354⇓ *i* P P 17 14 39.1 +0.7
DL2 sP sP 17 15 58.6 -3.0
DL2 PP PP 17 16 32.5 +1.8
DL2 ScP ScP 17 19 39.1 +0.9
DL2 S S 17 21 02.6 -2.1
DL2 ScS ScS 17 24 05.8 0.0
DL2 pmax pmax
comp=Z,250nm,1.0s
DL2 pmax pmax
comp=Z,910nm,5.8s
H11S3 WAKE ISLAND Hy 46.25 56 P P 17 14 40.2 +1.1
H11S2 WAKE ISLAND Hy 46.27 56 P P 17 14 40.4 +1.2
H11S1 WAKE ISLAND Hy 46.27 56 P P 17 14 40.6 +1.3
TIY Taiyuan 46.84 344 eP P 17 14 44.3 +0.6
TIY pP pP 17 15 41.8 +3.6
TIY S S 17 21 15.4 +1.1
TIY ScS ScS 17 24 10.3 -0.2
TIY pmax pmax
comp=Z,91nm,1.0s
TIY pmax pmax
comp=Z,330nm,10.5s
TIY LR LR
comp=Z,350nm,11.4s
TIY LR LR
comp=Z,450nm,7.2s
TIY LR LR
comp=Z,810nm,17.6s
H11N1 WAKE ISLAND Hy 47.03 55 P P 17 14 46.4 +1.3
H11N2 WAKE ISLAND Hy 47.05 55 P P 17 14 46.0 +0.8
H11N3 WAKE ISLAND Hy 47.05 55 P P 17 14 46.5 +1.3
SHL Shillong 47.58 314 eP P 17 14 50.5 +0.8
SHL ex x 17 21 21.0
BJT Baijiatuao 48.13 348 eP P 17 14 54.0 +0.6
BJT pmax pmax
comp=Z,647nm,1.6s
BJT MLR MLR
comp=Z,1μm,21.0s
BJT Baijiatuao 48.13 348 eP P 17 14 54.0 +0.6
comp=Z,647nm,1.6s
BJT LR LR
comp=Z,1μm,21.0s
BJI Beijing 48.15 348 P P 17 14 54.3 +0.8
BJI pP pP 17 15 47.6 -0.7
BJI sP PcP 17 16 14.1 -2.6
BJI PcP sP 17 16 18.5 +1.4
BJI ScP ScP 17 19 47.4 +1.0
BJI S S 17 21 29.0 -3.4
BJI sS sS 17 23 08.0 -1.4
BJI ScS ScS 17 24 18.8 0.0
BJI pmax pmax
comp=Z,220nm,1.3s
BJI pmax pmax
comp=Z,1μm,3.0s
LZH Lanzhou 48.47 334 eP P 17 14 58.6 +2.3
LZH ScP ScP 17 19 49.5 +1.3
LZH eS S 17 21 36.5 -0.9
LZH sS sS 17 23 15.8 +1.2
LZH ScS ScS 17 24 21.8 +0.2
LZH SS SS 17 25 11.0 -0.2
LZH pmax pmax
comp=Z,300nm,1.0s
LZH pmax pmax
comp=Z,350nm,4.6s
PALK Pallekele 48.90 286 P P 17 14 59.8 0.0
comp=Z,117nm,0.7s,baz=115,slow=8.2,SNR=57
PALK PcP sP 17 16 22.1 -1.4
comp=Z,39nm,0.8s,baz=115,slow=1.7,SNR=2.6
PALK ScP ScP 17 19 49.5 -0.8
comp=Z,10.0nm,0.7s,baz=113,slow=1.2,SNR=5.8
PALK Pallekele 48.90 286 *i* P P 17 15 00.4 +0.6
SNR=17
PALK Pallekele 48.90 286 eP P 17 15 00.2 +0.4
PALK pmax pmax
comp=Z,250nm,1.0s
PALK Pallekele 48.90 286 eP P 17 15 00.2 +0.4
comp=Z,254nm,1.0s
PALK PcP sP 17 16 22.1 -1.4
PALK eScP ScP 17 19 49.5 -0.8
SNY Shenyang 48.91 356⇓ P P 17 15 00.0 +0.8
SNY sP PcP 17 16 18.6 -0.8
SNY ScP ScP 17 19 47.0 -2.6
SNY S S 17 21 42.3 -0.6
SNY ScS ScS 17 24 22.1 -1.7
SNY pmax pmax
comp=Z,180nm,1.4s
SNY pmax pmax
comp=Z,1μm,3.5s
SNY LR LR
comp=Z,870nm,15.7s
SNY LR LR
comp=Z,1μm,19.6s
SNY LR LR
comp=Z,2μm,19.8s
BWNR Bhubaneshwar 49.32 304 eP P 17 15 03.5 +0.7
BWNR IAmb IAmb 17 15 05.2
comp=Z,121nm,0.8s
MSHR Mys Shultsa 49.63 3 *de* P P 17 15 06.0 +1.3
CHLP Challavanipeta 49.94 301 eP P 17 15 08.5 +1.1
CHLP IAmb IAmb 17 15 10.8
comp=Z,519nm,1.3s
HHC Hu-ho-hao-te 50.01 344 eP P 17 15 08.6 +0.8
HHC pP pP 17 16 01.3 -1.7
HHC sP PcP 17 16 26.5 +2.9
HHC S S 17 21 56.8 -1.7
HHC sS sS 17 23 34.5 -1.7
HHC pmax pmax
comp=Z,76nm,1.1s
HHC pmax pmax
comp=Z,530nm,8.5s
VIS Vishakhapatnam 50.21 300 eP P 17 15 09.8 +0.3
VLA Vladivostok 50.21 4 *d* iP P 17 15 10.1 +1.1
VLA pmax pmax
comp=Z,458nm,1.7s
BTO Baotou 50.22 343 eP P 17 15 07.8 -1.5
MSVF Nonsavu 50.25 107 *d* iP P 17 15 11.3 +1.4
MSVF pmax pmax
comp=Z,82nm,1.0s
MSVF Nonsavu 50.25 107 eP P 17 15 11.7 +1.7

	comp=Z,161nm,1.2s								
OUZ	**Omahuta**	**50.55**	**130**	*e*P		**P**	**17 15 13.5**	**+1.7**	
	comp=Z,191nm,1.5s								
OUZ	**Omahuta**	**50.55**	**130**	*e*PN		**P**	**17 15 15.3**	**+3.5**	
LSA	**Lhasa**	**50.69**	**318**	P		**P**	**17 15 15.6**	**+2.1**	
LSA				pmax	pmax				
	comp=Z,360nm,0.8s								
LSA	**Lhasa**	**50.69**	**318**	*e*P		**P**	**17 15 15.2**	**+1.7**	
LSA				*e*S		**S**	**17 22 09.0**	**0.0**	
LSA				pmax	pmax				
	comp=Z,250nm,0.7s								
LSA				MLR	MLR				
	comp=Z,699nm,19.0s								
LSA	**Lhasa**	**50.69**	**318**	*e*P		**P**	**17 15 15.2**	**+1.7**	
	comp=Z,250nm,0.7s								
LSA				*e*S		**S**	**17 22 09.0**	**0.0**	
LSA				LR	LR				
	comp=Z,699nm,19.0s								
CN2	**Changchun**	**50.78**	**358**⇓	*i*P		**P**	**17 15 13.6**	**+0.3**	
CN2				PcP		**PcP**	**17 16 27.1**	**+0.8**	
CN2				sP		sP	17 16 36.4	-0.9	
CN2				ScP		**ScP**	**17 19 57.6**	**0.0**	
CN2				*e*S		**S**	**17 22 06.0**	**-2.7**	
CN2				ScS		**ScS**	**17 24 35.8**	**-0.8**	
CN2				pmax	pmax				
	comp=Z,40nm,0.6s								
CN2				pmax	pmax				
	comp=Z,800nm,6.0s								
ERM	**Erimo**	**50.99**	**15***c*	*e*P		**P**	**17 15 15.7**	**+0.9**	
ERM				pmax	pmax				
	comp=Z,72nm,1.0s								
ERM	**Erimo**	**50.99**	**15**	*e*P		**P**	**17 15 14.9**	**+0.1**	
	comp=Z,62nm,1.0s								
ERM				LR	LR				
	comp=Z,2μm,22.0s								
BOK	**Bokaro**	**51.03**	**308**	*e*P		**P**	**17 15 15.9**	**+0.4**	
FUNA	**Funafuti**	**51.13**	**95**	*e*P		**P**	**17 15 18.4**	**+2.0**	
	comp=Z,879nm,1.1s								
FUNA				LR	LR				
	comp=Z,8μm,21.0s								
MDRS	**Chennai**	**51.14**	**293**	*e*P		**P**	**17 15 17.0**	**+0.6**	
MDRS				*ex*		x	17 21 13.8		
MDRS				*ex*		x	17 27 05.8		
MDRS				*ex*		x	17 32 09.8		
MDRS				*ex*		x	17 37 43.8		
DCZ	**Deep Cove**	**51.21**	**145**	*e*P		**P**	**17 15 18.1**	**+1.6**	
	comp=Z,56nm,0.9s								
USRK	**Ussuriysk Ar.**	**51.30**	**4**	P		**P**	**17 15 18.2**	**+1.1**	
	comp=Z,86nm,0.8s,baz=188,slow=7.1,SNR=158								
USRK				PcP		**PcP**	**17 16 30.8**	**+2.6**	
	comp=Z,18nm,0.9s,baz=195,slow=5.3,SNR=2.0								
USRK				ScP		**ScP**	**17 20 00.2**	**+0.4**	
	comp=Z,33nm,1.1s,baz=212,slow=3.9,SNR=8.4								
USRK				S		**S**	**17 22 15.9**	**+0.2**	
	comp=Z,5.3nm,0.8s,baz=144,slow=40,SNR=5.0								
USRK				PKP2bc			17 46 22.1		
	comp=Z,9.1nm,0.7s,baz=7.6,slow=5.2,SNR=14								
JCZ	**Jackson Bay**	**51.38**	**143**	*e*PN		**P**	**17 15 20.7**	**+2.7**	
PVM	**Polavaram**	**51.49**	**299**	*e*P		**P**	**17 15 19.1**	**+0.1**	
PVM				IAmb	IAmb		17 15 21.3		
	comp=Z,518nm,0.9s								
MDJ	**Mudanjiang**	**51.59**	**2**	P		**P**	**17 15 20.6**	**+1.3**	
MDJ				pP	pP		17 16 12.8	-2.1	
MDJ				sP	sP		17 16 39.5	-3.9	
MDJ				PP	PP		**17 17 20.3**	**+0.6**	
MDJ				S	S		**17 22 21.1**	**+1.4**	
MDJ				sS	sS		17 23 54.4	-3.6	
MDJ				ScS	ScS		**17 24 43.5**	**+1.3**	
MDJ				SS	SS		**17 26 04.5**	**+4.6**	
MDJ				pmax	pmax				
	comp=Z,220nm,1.4s								
MDJ				pmax	pmax				
	comp=Z,930nm,4.5s								
MDJ	**Mudanjiang**	**51.59**	**2**	*e*P		**P**	**17 15 20.2**	**+1.0**	
	comp=Z,540nm,1.4s								
MDJ				*e*S		**S**	**17 22 22.1**	**+2.4**	
MDJ				LR	LR				
	comp=Z,819nm,20.0s								
MLZ	**Mavora Lakes**	**51.71**	**144**	*e*P		**P**	**17 15 21.8**	**+1.5**	
	comp=Z,67nm,0.9s								
FOZ	**Fox Glacier**	**51.72**	**141**	*e*P		**P**	**17 15 21.6**	**+1.3**	
	comp=Z,65nm,0.8s								
SKHT	**Srikalahasti**	**51.86**	**294**	*e*P		**P**	**17 15 22.5**	**+0.7**	
SKHT				IAmb	IAmb		17 15 24.3		
	comp=Z,1μm,1.6s								
WHZ	**Wether Hill Ro**	**51.91**	**145**	*e*P		**P**	**17 15 23.1**	**+1.4**	
	comp=Z,131nm,0.7s								
QRZ	**Quartz Range**	**52.14**	**137**	PN		**P**	**17 15 26.5**	**+3.0**	
QRZ				ScS	ScS		17 24 46.3	-0.2	
RAMN	**Ramite**	**52.21**	**312**	*e*P		**P**	**17 15 25.9**	**+1.4**	
	comp=Z,1μm,0.7s								
INZ	**Inchbonnie**	**52.33**	**140**	*e*PN		**P**	**17 15 26.5**	**+1.7**	
LBZ	**Lake Benmore**	**52.40**	**142**	*e*P		**P**	**17 15 26.8**	**+1.5**	
	comp=Z,57nm,0.7s								
LBZ	**Lake Benmore**	**52.40**	**142**	*e*PN		**P**	**17 15 26.8**	**+1.5**	
MKAZ	**Moumakai**	**52.44**	**132**	*e*PN		**P**	**17 15 29.1**	**+3.4**	
RPZ	**Rata Peaks**	**52.59**	**141**	P		**P**	**17 15 28.5**	**+1.8**	
	comp=Z,361nm,0.8s,baz=276,slow=2.1,SNR=128								
RPZ	**Rata Peaks**	**52.59**	**141**	*e*PN		**P**	**17 15 28.8**	**+2.1**	
TRD	**Trivandrum**	**52.80**	**286**	*e*P		**P**	**17 15 29.3**	**+0.5**	
ASAJ	**Asahikawa**	**52.84**	**14**	P		**P**	**17 15 29.4**	**+1.1**	
	comp=Z,81nm,0.6s								
ASAJ				ScP		**ScP**	**17 20 06.2**	**-0.3**	
	comp=Z,29nm,1.1s,baz=236,slow=14,SNR=5.7								
ASAJ	**Asahikawa**	**52.84**	**14**	*e*P		**P**	**17 15 28.8**	**+0.4**	
	comp=Z,98nm,0.7s								
ASAJ				*e*ScP		**ScP**	**17 20 05.9**	**-0.6**	
ASAJ				*e*S		**S**	**17 22 35.1**	**-1.6**	
NNZ	**Nelson**	**52.89**	**137**	*e*PN		**P**	**17 15 30.3**	**+1.3**	
LTZ	**Lake Taylor**	**52.89**	**140**	*e*P		**P**	**17 15 30.1**	**+1.1**	
	comp=Z,118nm,1.5s								
TUZ	**Tuapeka**	**52.92**	**144**	*e*PN		**P**	**17 15 30.5**	**+1.5**	
VRZ	**Vera Road**	**52.94**	**134**	*e*PN		**P**	**17 15 32.6**	**+3.3**	
GTA	**Gaotai**	**53.01**	**333**	P		**P**	**17 15 31.5**	**+1.6**	
GTA				pP		pP	17 16 27.4	+1.6	
GTA				sP		sP	17 16 55.3	+1.0	
GTA				ScP		**ScP**	**17 20 08.4**	**+0.8**	
GTA				S		**S**	**17 22 37.8**	**-1.6**	
GTA				sS		sS	17 24 17.5	-0.7	
GTA				ScS		**ScS**	**17 24 50.6**	**-2.1**	
GTA				SS		**SS**	**17 26 22.3**	**-0.5**	
GTA				pmax	pmax				
	comp=Z,150nm,0.6s								
GTA				pmax	pmax				
	comp=Z,240nm,5.0s								
GTA				LR	LR				
	comp=Z,630nm,15.9s								
GTA				LR	LR				
	comp=Z,760nm,17.1s								
GTA				LR	LR				
	comp=Z,1μm,19.0s								
OXZ	**Oxford**	**53.01**	**140**	*e*P		**P**	**17 15 31.1**	**+1.3**	
	comp=Z,87nm,0.7s								
OXZ	**Oxford**	**53.01**	**140**	*e*PN		**P**	**17 15 30.2**	**+0.4**	
ODZ	**Otahua Downs**	**53.03**	**143**	*e*PN		**P**	**17 15 31.3**	**+1.5**	
DUWZ	**D'Urville Isla**	**53.07**	**137**	PN		**P**	**17 15 32.2**	**+1.8**	
RCLA	**Racherla**	**53.16**	**295**	*e*P		**P**	**17 15 30.2**	**-1.0**	
RCLA				IAmb	IAmb		17 15 32.4		
	comp=Z,313nm,0.8s								
NJS	**Nagarjunasagar**	**53.25**	**297**	*e*P		**P**	**17 15 32.3**	**+0.3**	
NJS				IAmb	IAmb		17 15 33.9		
	comp=Z,438nm,0.9s								
GUN	**Gumba**	**53.28**	**313**	*e*P		**P**	**17 15 33.6**	**+1.2**	
	comp=Z,716nm,0.7s								
TUWZ	**Tuamarina**	**53.37**	**137**	*e*PN		**P**	**17 15 33.9**	**+1.6**	
PKIN	**Phulchoki**	**53.45**	**312**	*e*P		**P**	**17 15 34.3**	**+0.8**	
	comp=Z,350nm,0.8s								
SRLM	**Srisailam**	**53.45**	**296**	*e*P		**P**	**17 15 32.7**	**-0.7**	
SRLM				IAmb	IAmb		17 15 34.7		
	comp=Z,514nm,1.1s								
KHZ	**Kahutara**	**53.54**	**139**	*e*P		**P**	**17 15 35.1**	**+1.5**	
	comp=Z,189nm,0.7s								
MQZ	**McQueen's Vall**	**53.59**	**140**	PN		**P**	**17 15 36.0**	**+2.1**	
YUK	**Yuzh-Kuril'sk**	**53.59**	**16**	*i* P		**P**	**17 15 34.1**	**+0.2**	
KKN	**Kakani**	**53.65**	**312**	*e*P		**P**	**17 15 35.9**	**+1.0**	
	comp=Z,768nm,1.0s								
DMN	**Daman**	**53.68**	**312**	*e*P		**P**	**17 15 36.3**	**+1.1**	
	comp=Z,706nm,0.9s								
SNZO	**South Karori**	**53.83**	**137**	*e*P		**P**	**17 15 36.1**	**+0.4**	
	comp=Z,141nm,0.7s								
SNZO				LR	LR				
	comp=Z,2μm,19.0s								
RPR	**Rampur**	**54.17**	**299**	*e*P		**P**	**17 15 38.1**	**-0.4**	
RPR				IAmb	IAmb		17 15 40.7		
	comp=Z,787nm,1.1s								
TSZ	**Takapari Road**	**54.17**	**135**	*e*PN		**P**	**17 15 39.8**	**+1.5**	
BKZ	**Black Stump Fm**	**54.20**	**134**	*e*P		**P**	**17 15 39.9**	**+1.4**	
	comp=Z,174nm,1.4s								
BKZ	**Black Stump Fm**	**54.20**	**134**	*e*PN		**P**	**17 15 40.3**	**+1.7**	
GKN	**Gorkha**	**54.24**	**312**	*e*P		**P**	**17 15 40.2**	**+1.1**	
	comp=Z,419nm,0.5s								
HYB	**Hyderabad**	**54.25**	**297**⇑	*i*P		**P**	**17 15 39.5**	**+0.3**	
	comp=Z,325nm,1.0s								
HYB				*e*PcP		**PcP**	**17 16 40.0**	**0.0**	
HYB				*e*S		**S**	**17 22 52.0**	**-4.6**	
HYB				*e*ScS		**ScS**	**17 25 02.0**	**-0.2**	
HYB				*e*SS		**SS**	**17 26 46.0**	**+3.3**	
HYB	**Hyderabad**	**54.25**	**297**	*e*P		**P**	**17 15 38.0**	**-1.2**	
HYBB	**Hyderabad (bro**	**54.25**	**297**	*e*P		**P**	**17 15 39.1**	**-0.1**	
HYBB				IAmb	IAmb		17 15 40.9		
	comp=Z,722nm,1.2s								
URZ	**Urewera**	**54.30**	**132**	P		**P**	**17 15 40.6**	**+1.4**	
	comp=Z,67nm,0.6s,baz=282,slow=4.0,SNR=34								
URZ				S		**S**	**17 22 55.6**	**-1.1**	
URZ	**Urewera**	**54.30**	**132**	*e*P		**P**	**17 15 40.5**	**+1.4**	
	comp=Z,73nm,0.6s								
URZ				*e*S		**S**	**17 22 55.6**	**-1.1**	
URZ	**Urewera**	**54.30**	**132**	*e*PN		**P**	**17 15 40.4**	**+1.2**	
URV	**Uravakonda**	**54.50**	**294**	*e*P		**P**	**17 15 40.5**	**-0.5**	
URV				IAmb	IAmb		17 15 42.6		
	comp=Z,281nm,1.0s								
H08S2	**Diego Garcia H**	**54.59**	**266**	P		**P**	**17 15 38.3**	**-3.1**	
	baz=50,slow=9.0,SNR=10.0								
H08S3	**Diego Garcia H**	**54.60**	**266**	P		**P**	**17 15 38.0**	**-3.4**	
	baz=50,slow=9.0,SNR=6.3								
H08S1	**Diego Garcia H**	**54.61**	**266**	P		**P**	**17 15 38.8**	**-2.7**	
	baz=50,slow=9.0,SNR=6.9								
HAZ	**Te Kaha**	**54.62**	**132**	*e*PN		**P**	**17 15 43.0**	**+1.6**	
MWZ	**Matawai**	**54.63**	**132**	*e*PN		**P**	**17 15 43.2**	**+1.5**	
DGAR	**Diego Garcia**	**54.64**	**266**	*e*P		**P**	**17 15 43.1**	**+1.0**	
DGAR				pmax	pmax				
	comp=Z,1μm,1.0s								
DGAR	**Diego Garcia**	**54.64**	**266**	*e*P		**P**	**17 15 42.6**	**+0.5**	
	comp=Z,1μm,1.0s								
KOLN	**Koldanda**	**54.89**	**311**	*e*P		**P**	**17 15 45.1**	**+1.3**	
	comp=Z,727nm,0.8s								
TWGZ	**Tauwhareparae**	**54.91**	**132**	*e*PN		**P**	**17 15 46.1**	**+2.4**	
MXZ	**Matakaoa Point**	**54.94**	**131**	*e*P		**P**	**17 15 45.9**	**+2.1**	
	comp=Z,179nm,0.8s								
MXZ	**Matakaoa Point**	**54.94**	**131**	PN		**P**	**17 15 45.8**	**+2.0**	
SRSP	**Sriramsagar**	**55.02**	**299**	*e*P		**P**	**17 15 43.5**	**-1.1**	
SRSP				IAmb	IAmb		17 15 45.7		
	comp=Z,582nm,1.1s								
KUR	**Kuril'sk**	**55.27**	**17**⇓	*i*P		**P**	**17 15 45.6**	**-0.3**	
KUR				*e*			17 16 45.2		
KUR				*e*PPP		PPP	17 19 10.7		
KUR				*i* S		**S**	**17 23 08.1**	**-1.0**	
KUR				*e*SS		**SS**	**17 26 59.6**	**+1.8**	
KUR				*e*SSS		SSS	17 29 24.5		
KUR				pmax	pmax				
	comp=Z,96nm,1.3s								
KUR				pmax	pmax				
	comp=Z,605nm,3.8s								
KUR				MLR	MLR				
	comp=N,785nm,18.0s								
KUR				MLR	MLR				
	comp=Z,598nm,18.0s								
NGP	**Nagpur**	**55.33**	**302**	*e*P		**P**	**17 15 47.1**	**+0.3**	
PYUN	**Piuthan**	**55.52**	**311**	*e*P		**P**	**17 15 49.5**	**+1.2**	
	comp=Z,2μm,1.0s								
YSS	**Yuzh-Sakhalins**	**55.56**	**13**⇓	*i*P		**P**	**17 15 48.6**	**+0.7**	
YSS				*i*			17 19 16.0		
YSS				*i* S		**S**	**17 23 11.6**	**-1.3**	
YSS				*i*			17 25 10.0		
YSS				pmax	pmax				
	comp=Z,1μm,5.0s								
YSS				MLR	MLR				
	comp=Z,600nm,17.0s								
YSS				MLR	MLR				
	comp=E,600nm,20.0s								
YSS	**Yuzh-Sakhalins**	**55.56**	**13**	*e*P		**P**	**17 15 48.3**	**+0.4**	
	comp=E,94nm,0.7s								
YSS				LR	LR				
	comp=Z,466nm,21.0s								
HABR	**Khabarovsk**	**55.80**	**6***d*	*i*P		**P**	**17 15 48.2**	**-1.4**	
HABR				*e**PP		**PcP**	**17 16 43.4**	**-1.9**	
HABR				*e*			17 16 44.4		
HABR				*e**SP		**sP**	**17 17 11.1**	**-3.3**	
HABR				*e*			17 17 55.6		
HABR				*e*S		**S**	**17 23 15.0**	**-1.1**	
HABR				*e*			17 25 11.3		
HABR				*e*SS		**SS**	**17 27 06.0**	**-0.2**	
HABR				pmax	pmax				
	comp=Z,229nm,1.3s								
HABR				pmax	pmax				
	comp=N,68nm,1.3s								
HABR				pmax	pmax				
	comp=E,42nm,1.3s								
HABR				MLR	MLR				
	comp=Z,812nm,18.0s								
H08N1	**Diego Garcia H**	**56.14**	**267**	P		P	17 16 01.8	+9.5	
	baz=124,slow=3.8,SNR=14								
H08N2	**Diego Garcia H**	**56.16**	**267**	P		P	17 16 02.1	+10	
	baz=124,slow=3.8,SNR=17								
H08N3	**Diego Garcia H**	**56.16**	**267**	P		P	17 16 02.2	+10	
	baz=124,slow=3.8,SNR=12								
KLRI	**Killari**	**56.22**	**297**	*e*P		**P**	**17 15 51.4**	**-1.8**	
KLRI				IAmb	IAmb		17 15 53.9		
	comp=Z,316nm,1.0s								
KLR	**Kul'dur**	**56.29**	**3**	P		**P**	**17 15 54.0**	**+0.9**	
	comp=Z,34nm,0.9s,baz=191,slow=5.4,SNR=75								
KLR				PcP		**pP**	**17 16 48.5**	**-1.2**	
	comp=Z,30nm,1.1s,baz=306,slow=4.4,SNR=4.2								
KLR				ScP		**ScP**	**17 20 21.1**	**-0.4**	
	comp=Z,7.9nm,0.7s,baz=188,slow=2.9,SNR=6.8								
KLR				S		**S**	**17 23 22.6**	**+0.1**	
	comp=Z,6.6nm,1.0s,baz=33,slow=18,SNR=13								
KLR				PKP2bc			17 45 59.1		
	comp=Z,5.9nm,0.8s,baz=348,slow=4.2,SNR=21								
HIA	**Hailar**	**56.63**	**354**	*e*P		**P**	**17 15 56.8**	**+1.3**	
HIA				*e*S		**S**	**17 23 29.9**	**+3.0**	
HIA				pmax	pmax				
	comp=Z,188nm,1.4s								
HIA				MLR	MLR				
	comp=Z,1μm,20.0s								
HIA	**Hailar**	**56.63**	**354**	*e*P		**P**	**17 15 56.8**	**+1.3**	
	comp=Z,188nm,1.4s								
HIA				*e*S		**S**	**17 23 29.9**	**+3.0**	
HIA				LR	LR				
	comp=Z,1μm,20.0s								
BHPL	**Bhopal**	**57.58**	**303**	*e*P		**P**	**17 16 02.6**	**0.0**	
BHPL				IAmb	IAmb		17 16 04.5		
	comp=Z,1μm,1.8s								
GOA	**Goa**	**57.81**	**293**	*e*P		**P**	**17 16 04.9**	**+0.6**	
SONA0	**Songino Array**	**57.88**	**343**	*e*P		**P**	**17 16 06.2**	**+1.8**	
	comp=Z,138nm,1.1s								
SONA0				*e*ScP		**ScP**	**17 20 29.2**	**+0.4**	
SONA0				*e*S		**S**	**17 23 43.4**	**-0.2**	
SONA0				*e*P'P'df		**P'P'df**	**17 45 45.2**	**-1.6**	
SONA0				⇑*e*			17 45 55.9		
SONA0				*e*P'P'ab		**P'P'ab**	**17 46 11.4**	**-3.4**	
SONM	**Songino Array**	**57.88**	**343**	P		**P**	**17 16 06.2**	**+1.8**	
	comp=Z,72nm,0.9s,baz=164,slow=7.6,SNR=229								
SONM				ScP		**ScP**	**17 20 29.2**	**+0.4**	
	comp=Z,9.7nm,0.8s,baz=164,slow=5.4,SNR=4.1								
SONM				S		**S**	**17 23 43.4**	**-0.2**	
	comp=Z,7.6nm,1.1s,baz=163,slow=11,SNR=6.0								
SONM				PKPPKP		**P'P'df**	**17 45 45.2**	**-1.6**	
	comp=Z,2.7nm,1.0s,baz=285,slow=2.5,SNR=9.1								
SONM				PKP2bc			17 45 55.9		
	comp=Z,2.8nm,0.9s,baz=314,slow=3.8,SNR=6.5								
SONM				PKP2ab			17 46 11.4		
	comp=Z,1.8nm,0.8s,baz=60,slow=0.5,SNR=4.3								
SONA1	**Songino Array**	**57.89**	**343**	*e*P		**P**	**17 16 05.9**	**+1.4**	
POO	**Poona**	**58.81**	**297**	*e*P		**P**	**17 16 10.7**	**-0.6**	
TYV	**Tymovskoe**	**59.26**	**11**	*e*P		**P**	**17 16 13.5**	**-0.1**	
TYV				*e*S		**S**	**17 23 52.0**	**-8.9**	
TYV				pmax	pmax				
	comp=Z,180nm,1.0s								
TYV				pmax	pmax				
	comp=N,2μm,3.0s								
TYV				pmax	pmax				
	comp=Z,2μm,3.0s								
TYV				smax	smax				
	comp=N,4μm,10.0s								
TYV				MLR	MLR				
	comp=E,1μm,18.0s								
TYV				MLR	MLR				
	comp=Z,1μm,17.0s								
AFI	**Afiamalu**	**59.87**	**102**	P		**P**	**17 16 19.8**	**+1.2**	
	comp=Z,165nm,1.0s,baz=224,slow=5.5,SNR=15								
AFI	**Afiamalu**	**59.87**	**102**	*e*P		**P**	**17 16 21.1**	**+2.5**	
AFI				pmax	pmax				
	comp=Z,400nm,1.2s								
AFI	**Afiamalu**	**59.87**	**102**	*e*P		**P**	**17 16 20.3**	**+1.7**	
	comp=Z,397nm,1.2s								
CIT	**Chita**	**60.18**	**350**	*e*P		**P**	**17 16 21.9**	**+2.0**	
CIT				*e*			17 17 01.3		
CIT				*e*			17 17 18.2		
CIT				*e*S		**S**	**17 24 13.4**	**+0.7**	
CIT				pmax	pmax				
	comp=Z,182nm,1.3s								
DDI	**Dehra Dun**	**60.35**	**311**	*e*P		**P**	**17 16 21.8**	**+0.3**	
DDI				IAmb	IAmb		17 16 22.2		
	comp=Z,177nm,1.1s								
ZAK	**Zakamensk**	**61.08**	**342**	*e*P		**P**	**17 16 26.6**	**+0.5**	
ZAK				pmax	pmax				
	comp=Z,39nm,1.1s								
NKL	**Nikolayevsk**	**61.12**	**9**	*i* P		**P**	**17 16 28.0**	**+1.9**	
NKL				*e*			17 17 23.0		
NKL				*e*			17 17 52.0		
NKL				*i* S		**S**	**17 24 26.0**	**+1.6**	
NKL				*e*			17 25 51.0		
NKL				pmax	pmax				
	comp=N,900nm,0.9s								
NKL				pmax	pmax				
	comp=Z,170nm,0.9s								
NKL				pmax	pmax				
	comp=N,600nm,4.0s								
NKL				pmax	pmax				
	comp=Z,2μm,4.0s								
NKL				smax	smax				
	comp=E,2μm,6.0s								
NKL				smax	smax				
	comp=N,3μm,8.0s								
NKL				MLR	MLR				
	comp=Z,1μm,17.0s								
SMLA	**Simla**	**61.42**	**311**	*e*P		**P**	**17 16 29.7**	**+1.1**	
NIUE	**Niue**	**61.73**	**108**	P		**P**	**17 16 33.0**	**+2.1**	
	baz=62								
SDNR	**Sundarnagar**	**61.75**	**311**	*e*P		**P**	**17 16 32.0**	**+1.2**	
BHK	**Bhakra**	**62.12**	**311**	*e*P		**P**	**17 16 33.6**	**+0.3**	
TLY	**Talaya**	**62.13**	**343**	P		**P**	**17 16 34.9**	**+2.0**	
	comp=Z,18nm,0.6s,baz=181,slow=6.3,SNR=17								
TLY				S		**S**	**17 24 39.0**	**+1.9**	
	comp=Z,9.2nm,0.8s,baz=333,slow=18,SNR=8.8								
TLY				PKPPKP		**P'P'df**	**17 45 33.6**	**-6.4**	
	comp=Z,1.0nm,0.5s,baz=305,slow=4.4,SNR=5.2								
TLY				PKP2bc			17 45 46.7		
	comp=Z,0.7nm,0.4s,baz=206,slow=1.6,SNR=4.1								
TLY	**Talaya**	**62.13**	**343**	*d* *i*P		**P**	**17 16 34.4**	**+1.5**	
TLY				*e*			17 17 57.4		
TLY				*e*			17 18 49.1		
TLY				*e*PPP		PPP	17 20 30.9		
TLY				*e*S		**S**	**17 24 38.6**	**+1.4**	
TLY				*e*			17 25 58.7		
TLY				*e*SS		**SS**	**17 28 45.9**	**+0.6**	
TLY				pmax	pmax				
	comp=Z,51nm,1.1s								
TLY	**Talaya**	**62.13**	**343**	*e*P		**P**	**17 16 34.3**	**+1.4**	
	comp=Z,32nm,0.9s								
TLY				*e*S		**S**	**17 24 38.9**	**+1.8**	
TLY				*e*			17 45 33.6		
TLY				*e*P'P'ab		P'P'ab	17 45 46.7	-10	
TLY				LR	LR				
	comp=Z,533nm,22.0s								
WMQ	**Urumqi**	**62.26**	**328**	P		**P**	**17 16 35.3**	**+1.3**	
WMQ				PcP		**PcP**	**17 17 13.1**	**+1.8**	
WMQ				pP		pP	17 17 28.6	-3.3	
WMQ				sP		sP	17 17 57.8	-2.0	
WMQ				ScP		**ScP**	**17 20 48.5**	**+0.2**	
WMQ				S		**S**	**17 24 38.9**	**-0.3**	
WMQ				ScS		**SKKSac**	**17 25 58.4**	**-2.0**	
WMQ				sS		sS	17 26 22.6	+1.7	
WMQ				SS		**SS**	**17 28 57.0**	**+9.2**	
WMQ				pmax	pmax				
	comp=Z,99nm,0.9s								
WMQ				pmax	pmax				
	comp=Z,330nm,3.7s								
WMQ				LR	LR				
	comp=Z,2μm,16.0s								
WMQ				LR	LR				
	comp=Z,990nm,14.3s								
WMQ				LR	LR				
	comp=Z,1μm,22.6s								
IRK	**Irkutsk**	**62.46**	**344**	*e*P		**P**	**17 16 35.5**	**+0.4**	
IRK				*e*S		**S**	**17 24 43.2**	**+2.0**	
IRK				*e*			17 25 58.8		
IRK				pmax	pmax				
	comp=Z,184nm,1.6s								
SKR	**Severo-Kuril's**	**62.70**	**20***d*	*i*P		**P**	**17 16 37.1**	**+0.5**	
SKR				*e**PP		**sP**	**17 17 58.3**	**-4.2**	
SKR				*e*PPP		PPP	17 20 34.0		
SKR				*i* S		**S**	**17 24 39.4**	**-4.7**	
SKR				*i* *SS		**SKSac**	**17 26 01.8**	**-1.4**	
SKR				pmax	pmax				
	comp=Z,102nm,0.8s								
SKR				pmax	pmax				
	comp=Z,1μm,4.0s								
SKR				MLR	MLR				
	comp=Z,700nm,17.0s								
PONG	**Pong**	**62.73**	**311**	*e*P		**P**	**17 16 35.0**	**-2.2**	
MOY	**Mondy**	**62.90**	**342**	*e*P		**P**	**17 16 40.1**	**+1.9**	
MOY				pmax	pmax				
	comp=Z,144nm,2.1s								
**TH

comp=Z,700nm,21.0s
PET Petropavlovsk 65.52 20 *e*P **P 17 16 55.7 +0.8**
comp=Z,436nm,1.3s
PET LR LR
comp=Z,636nm,19.0s
KSH Kashi 66.54 319⇑*i*P **P 17 17 03.6 +1.7**
KSH *e*PcP **PcP 17 17 31.6 +2.4**
KSH *es*P sP 17 18 27.9 -0.4
KSH *e*PP **PP 17 19 35.3 +3.1**
KSH *e*ScP 17 21 08.4
KSH S ScS **ScS 17 25 32.9 +1.0**
KSH pmax pmax
comp=Z,110nm,1.1s
KSH LR LR
comp=Z,350nm,11.6s
KSH LR LR
comp=Z,500nm,14.3s
KSH LR LR
comp=Z,620nm,16.8s
MK01 Makanchi Array 67.06 328 *e*P **P 17 17 05.7 +0.9**
MK31 Makanchi Array 67.08 328 *e*P **P 17 17 05.9 +0.9**
MK31 *e*S **S 17 25 36.3 -1.5**
MK31 Makanchi Array 67.08 328 *e*P **P 17 17 05.9 +0.9**
MK31 *e*S **S 17 25 36.3 -1.5**
MK32 Makanchi Array 67.08 328 *e*P **P 17 17 06.3 +1.4**
MK32 *e*PcP **PcP 17 17 32.1 +1.0**
MK32 *e* 17 21 09.4
MK32 *e*S **S 17 25 36.2 -1.6**
MK32 *e*P'P'df **P'P'df 17 45 26.4 -5.3**
MK32 ⇑*e* 17 45 32.5
MK32 *e*P'P'ab **P'P'ab 17 45 38.1 +0.9**
MK32 *e* 17 53 54.6
MKAR Makanchi Array 67.08 328 P **P 17 17 06.3 +1.4**
comp=Z,58nm,0.7s,baz=128,slow=7.8,SNR=584
MKAR PcP **PcP 17 17 32.1 +1.0**
comp=Z,42nm,0.7s,baz=127,slow=4.6,SNR=8.0
MKAR ScP 17 21 09.4
comp=Z,12nm,0.8s,baz=128,slow=5.1,SNR=3.3
MKAR S **S 17 25 36.2 -1.6**
comp=Z,6.9nm,0.9s,baz=128,slow=9.3,SNR=5.0
MKAR PKPPKP **P'P'df 17 45 26.4 -5.3**
comp=Z,0.2nm,0.3s,baz=321,slow=3.1,SNR=3.6
MKAR PKP2bc 17 45 32.5
comp=Z,0.7nm,0.6s,baz=304,slow=2.8,SNR=4.5
MKAR PKP2ab 17 45 38.1
comp=Z,0.4nm,0.5s,baz=325,slow=1.9,SNR=4.2
MKAR P4KPbc 17 53 54.6
comp=Z,1.3nm,0.8s,baz=120,slow=4.9,SNR=11
MKAR Makanchi Array 67.08 328 P **P 17 17 06.4 +1.4**
MKAR 17 17 32.2
MKAR S **S 17 25 36.2 -1.6**
MKAR pmax pmax
comp=Z,62nm,0.7s
MKAR smax smax
comp=N,7.0nm,0.9s
MKAR Makanchi Array 67.08 328 *e*P **P 17 17 06.1 +1.2**
comp=N,493nm,0.8s
MKAR PcP **PcP 17 17 32.1 +1.0**
MKAR ScP 17 21 09.4
MKAR *e*S **S 17 25 36.6 -1.2**
MKAR P'P' 17 45 26.4
MKAR ⇑*e* 17 45 32.5
MKAR P'P'ab **P'P'ab 17 45 38.1 +0.9**
MKAR *e* 17 53 54.6
MAKZ Makanchi 67.25 328 *e*P **P 17 17 07.1 +1.0**
MAKZ pmax pmax
comp=Z,43nm,0.7s
MAKZ Makanchi 67.25 328 *e*P **P 17 17 07.1 +1.0**
comp=Z,43nm,0.7s
YAK Yakutsk 69.02 1 P **P 17 17 17.5 +0.9**
comp=Z,328nm,0.8s,baz=188,slow=1.6,SNR=280
YAK S **S 17 26 00.3 +0.2**
comp=Z,27nm,0.9s,baz=5.5,slow=2.5,SNR=7.8
YAK PKP2bc 17 45 26.5
comp=Z,4.7nm,0.4s,baz=144,slow=0.4,SNR=4.4
YAK Yakutsk 69.02 1 *e*P **P 17 17 17.3 +0.7**
YAK pmax pmax
comp=Z,434nm,0.9s
YAK Yakutsk 69.02 1 *e*P **P 17 17 17.3 +0.7**
comp=Z,476nm,0.9s
YAK *e*S **S 17 25 58.4 -1.6**
YAK ⇑*e* 17 45 26.5
YAK LR LR
comp=Z,1μm,20.0s
KBL Kabul 69.05 311 *e*P **P 17 17 18.4 +0.7**
KBL *e*S **S 17 26 00.1 -1.9**
KBL pmax pmax
comp=Z,76nm,0.8s
KBL Kabul 69.05 311 *e*P **P 17 17 18.4 +0.7**
comp=Z,76nm,0.8s
KBL *e*S **S 17 26 00.1 -1.9**
MA2 Magadan 69.07 12 PFAKE 17 17 30.0 +13
MA2 LR LR
comp=Z,1μm,19.0s
AAK Ala-Archa 69.14 321 P **P 17 17 19.9 +1.9**
comp=Z,38nm,0.7s,baz=120,slow=5.2,SNR=86
AAK ScP 17 21 18.5
comp=Z,19nm,1.1s,baz=94,slow=6.4,SNR=2.9
AAK S **S 17 26 02.9 +0.3**
comp=Z,1.1nm,0.3s,baz=256,slow=20,SNR=18
AAK PKP2bc 17 45 27.0
comp=Z,1.6nm,0.4s,baz=273,slow=2.6,SNR=8.1
AAK Ala-Archa 69.14 321 P **P 17 17 19.8 +1.8**
SNR=55
AAK Ala-Archa 69.14 321 *e*P **P 17 17 19.4 +1.3**
comp=Z,206nm,1.5s
AAK *e*S **S 17 26 01.2 -1.4**
AAK *e*P'P'df **P'P'df 17 45 27.0 -1.3**
AAK LR LR
comp=Z,945nm,22.0s
FRU Bishkek 69.17 321⇑*i*P **P 17 17 18.0 0.0**
FRU *i*S **S 17 26 02.0 -0.6**
FRU *e* 17 26 54.0
FRU pmax pmax
comp=Z,140nm,2.0s
FRU smax smax
comp=E,600μm,3.0s
KRAR Krasnoyarsk 69.18 340 *e*P **P 17 17 16.7 -1.0**
KRAR pmax pmax
comp=Z,1μm,1.1s
RER Riviere de l'E 70.52 250 *e*P **P 17 17 28.5 +1.7**
comp=Z,598nm,1.0s
ZAA0 Zalesovo Array 70.70 335 *e*P **P 17 17 27.1 0.0**
ZALV Zalesovo Beam 70.70 335 P **P 17 17 27.6 +0.6**
comp=Z,107nm,0.7s,baz=122,slow=4.4,SNR=321
ZALV S **S 17 26 16.1 -3.7**
comp=Z,17nm,0.7s,baz=136,slow=12,SNR=20
ZALV PKP2bc 17 45 21.3
comp=Z,1.5nm,0.7s,baz=310,slow=5.6,SNR=5.7
ZAA1 Zalesovo Array 70.70 335 *e*P **P 17 17 27.6 +0.6**
ZAA1 *e*S **S 17 26 16.1 -3.7**
ZAA1 *e*P'P'df **P'P'df 17 45 21.3 -4.1**
RAR Rarotonga 71.29 110 *e*P **P 17 17 32.9 +1.6**
RAR pmax pmax
comp=Z,198nm,1.4s
RAR Rarotonga 71.29 110 *e*P **P 17 17 32.9 +1.6**
comp=Z,198nm,1.4s
KURBB Kurchatov Arra 71.42 330 P **P 17 17 32.6 +1.2**
comp=Z,140nm,0.7s,baz=133,slow=5.0,SNR=1649
KURBB S **S 17 26 26.3 -1.9**
comp=Z,7.6nm,1.1s,baz=130,slow=12,SNR=10
KURBB PKPPKP **P'P'df 17 45 22.6 -1.5**
comp=Z,1.2nm,0.8s,baz=302,slow=3.2,SNR=5.2
KURBB P4KPbc 17 54 12.6
comp=Z,0.4nm,0.7s,baz=128,slow=3.3,SNR=6.4
KURK Kurchatov 71.44 330 P **P 17 17 32.6 +1.1**
KURK S **S 17 26 26.3 -2.1**
KURK pmax pmax
comp=Z,140nm,0.7s
KURK smax smax
comp=N,8.0nm,1.1s
KURK Kurchatov 71.44 330 *e*P **P 17 17 32.6 +1.1**
KURK *e*P'P'df **P'P'df 17 45 22.6 -1.4**
KURK *e* 17 54 12.6
KURK LR LR
comp=Z,986nm,19.0s
SMY Shemya 71.54 28 *e*P **P 17 17 32.5 +0.5**
SMY pmax pmax
comp=Z,1μm,1.8s
SMY Shemya 71.54 28 *e*P **P 17 17 32.5 +0.5**
comp=Z,1μm,1.8s
KKAR Karatay Array 71.91 320 *e*P **P 17 17 35.1 +0.6**
KKAR pmax pmax
comp=Z,519nm,1.3s
KKAR Karatay Array 71.91 320⇑*i*P **P 17 17 35.1 +0.6**
comp=Z,519nm,1.3s
NVS Novosibirsk 71.99 335⇑*i*P **P 17 17 35.2 +0.5**
NVS *i* 17 17 50.7
NVS *e*S **S 17 26 26.9 -7.6**
NVS *i* 17 27 10.4
NVS pmax pmax
comp=Z,80nm,0.9s
NVS smax smax
comp=N,150nm,1.3s
NVS smax smax
comp=E,390nm,1.3s
SEY Seymchan 72.45 12 S **S 17 26 41.1 +1.8**
comp=E,7.6nm,1.2s,baz=346,slow=23,SNR=22
SEY Seymchan 72.45 12*de*P **P 17 17 38.5 +1.3**
VNDA Vanda 72.57 173 P **P 17 17 39.2 +1.4**
comp=E,52nm,0.8s,baz=320,slow=6.2,SNR=215
VNDA S **S 17 26 40.0 -0.5**
comp=E,4.5nm,1.1s,baz=112,slow=16,SNR=14
VNDA Vanda 72.57 173 *e*P **P 17 17 38.7 +0.9**
comp=E,70nm,0.8s
VNDA *e*S **S 17 26 41.2 +0.7**
SBA Scott Base 73.48 172 *e*P **P 17 17 45.4 +2.3**
SBA pmax pmax
comp=Z,89nm,0.9s
SBA MLR MLR
comp=Z,1μm,20.0s
SBA Scott Base 73.48 172 *e*P **P 17 17 45.4 +2.3**
comp=Z,89nm,0.9s
SBA LR LR
comp=Z,1μm,20.0s
WSAR Wadi Sarin 73.79 297 P **P 17 17 47.1 +1.2**
comp=Z,236nm,1.0s,baz=130,slow=6.4,SNR=76
WSAR S **S 17 26 53.0 -3.1**
comp=Z,9.9nm,1.3s,baz=14,slow=20,SNR=2.3
MAW Mawson 73.91 201 P **P 17 17 47.7 +2.0**
comp=Z,175nm,0.8s,baz=76,slow=5.9,SNR=298
MAW S **S 17 26 55.9 +0.2**
comp=Z,3.4nm,1.1s,baz=288,slow=20,SNR=2.3
MAW Mawson 73.91 201 *e*P **P 17 17 47.4 +1.7**
comp=Z,167nm,1.6s
MAW S **S 17 26 55.9 +0.2**
JMDO Jabal Madar 74.03 296 P **P 17 17 48.1 +0.8**
SNR=20
SMDO Samad 74.26 296 P **P 17 17 49.7 +0.9**
SNR=28
BIDO Bidbid 74.31 297 P **P 17 17 50.3 +1.4**
SNR=47
HOQ Hoqain 75.05 297 P **P 17 17 54.2 +1.1**
SNR=66
XMAS Kiritimati 75.37 86 *e*P **P 17 17 57.5 +2.4**
comp=Z,430nm,1.1s
ARQ Araqi 75.69 296 P **P 17 17 57.6 +0.8**
SNR=26
UOSS Minazif 76.37 298 *e*P **P 17 18 00.4 -0.2**
comp=Z,442nm,1.4s
HATD Hatta, Dubai 76.40 298 *i*P **P 17 18 01.9 +1.1**
SNR=47
HATD Hatta, Dubai 76.40 298 P **P 17 18 01.8 +1.1**
SNR=35
ASHO Ashiyiah 76.43 297 *i*P **P 17 18 01.9 +0.9**
SNR=61
ASHO Ashiyiah 76.43 297 P **P 17 18 01.9 +0.9**
SNR=26
RBK Rabkut 76.47 290 P **P 17 18 02.6 +1.2**
SNR=8.3
VOSK Vostochnaya 76.48 329 *e*P **P 17 18 01.1 +0.4**
VOSK *e*S **S 17 27 23.6 -0.9**
VOSK pmax pmax
comp=Z,113nm,0.6s
VOSK Vostochnaya 76.48 329 *e*P **P 17 18 01.1 +0.4**
comp=Z,112nm,0.6s
VOSK *e*S **S 17 27 23.6 -0.9**
BANOM Banah 76.53 299 *i*P **P 17 18 02.9 +1.3**
SNR=42
BANOM Banah 76.53 299 P **P 17 18 03.0 +1.4**
SNR=19
NAZ Nazwa, Dubai 76.86 298 *i*P **P 17 18 04.2 +0.9**
SNR=26
NAZ Nazwa, Dubai 76.86 298 P **P 17 18 04.1 +0.8**
SNR=24
FAQ Al Faqa, Dubai 76.86 297 *i*P **P 17 18 04.2 +0.9**
SNR=97
FAQ Al Faqa, Dubai 76.86 297 P **P 17 18 04.3 +0.9**
SNR=21
BVAR Borovoye Array 76.95 329 S **S 17 27 27.0 -2.5**
comp=Z,3.0nm,0.9s,baz=46,slow=8.5,SNR=3.0
BRVK Borovoye 77.02 329*ce*P **P 17 18 04.6 +1.0**
BRVK pmax pmax
comp=Z,185nm,0.8s
BRVK Borovoye 77.02 329 *e*P **P 17 18 04.9 +1.3**
comp=Z,79nm,0.9s
BRVK *e*S **S 17 27 30.3 +0.1**
BRVK LR LR
comp=Z,278nm,20.0s
ZRNK Zerenda 77.63 328 *e*P **P 17 18 07.7 +0.7**
ZRNK pmax pmax
comp=Z,110nm,0.7s
ZRNK Zerenda 77.63 328 *e*P **P 17 18 07.7 +0.7**
comp=Z,110nm,0.7s
KIP Kipapa 78.27 66⇑*e*P **P 17 18 12.9 +1.8**
KIP Kipapa 78.27 66 *e*P **P 17 18 10.6 -0.6**
comp=Z,562nm,1.8s
GEYT Alibeck 78.50 311 P **P 17 18 13.5 +1.4**
comp=Z,44nm,0.7s,baz=157,slow=4.2,SNR=142
GEYT PP **PP 17 21 15.2 +1.4**
comp=Z,10.0nm,1.0s,baz=130,slow=53,SNR=3.1
GEYT S **S 17 27 45.8 -1.0**
comp=Z,0.9nm,0.7s,baz=158,slow=20,SNR=3.3
ABPO Ambohimpanom 78.60 252 *e*P **P 17 18 13.8 +0.5**
ABPO pmax pmax
comp=Z,113nm,1.3s
ABPO MLR MLR
comp=Z,150nm,21.0s
ABPO Ambohimpanom 78.60 252 *e*P **P 17 18 13.8 +0.5**
comp=Z,114nm,1.3s
ABPO LR LR
comp=Z,150nm,21.0s
OPO Ambohidratompo 78.67 253 P **P 17 18 14.9 +1.2**
comp=Z,42nm,0.6s,baz=79,slow=3.8,SNR=92
TIXI Tiksi 78.67 0 S **S 17 27 44.3 -2.9**
comp=Z,9.2nm,0.7s,baz=60,slow=22,SNR=24
TIXI Tiksi 78.67 0*de*P **P 17 18 12.2 -0.1**
TIXI pmax pmax
comp=Z,138nm,1.1s
TIXI Tiksi 78.67 0 *e*P **P 17 18 12.0 -0.3**
comp=Z,135nm,0.9s
TIXI *e*S **S 17 27 44.3 -2.9**
TIXI LR LR
comp=Z,1μm,19.0s
BILL Bilibino 79.85 14*d i*P **P 17 18 18.8 +0.1**
BILL *i* 17 18 24.9
BILL *i*S **S 17 27 53.9 -5.8**
BILL pmax pmax
comp=Z,23nm,1.1s
BILL Bilibino 79.85 14 PFAKE 17 18 30.0 +11
BILL LR LR
comp=Z,994nm,22.0s
HPAH Hawaii Prepara 80.10 68 *e*P **P 17 18 22.1 +0.9**
comp=Z,616nm,1.6s
MLOA Mauna Loa Obse 80.12 69 *e*P **P 17 18 23.0 +1.3**
POHA Pohakuloa 80.20 69 *e*P **P 17 18 23.1 +1.2**
comp=Z,139nm,0.9s
POHA LR LR
comp=Z,1μm,20.0s
NIKH Nikolski High 80.32 33 *e*P **P 17 18 21.6 +0.1**
comp=Z,116nm,0.9s
TBI Tubuai 80.76 112 *e*S **S 17 28 07.7 -3.2**
comp=Z,1μm,26.5s
PAE Paea 81.07 107 *e*P **P 17 18 29.0 +2.8**
comp=Z,28nm,1.1s
PPT2 Papeete2 81.08 107 *e*P **P 17 18 29.5 +3.1**
comp=Z,234nm,1.2s
PPT2 *e*S **S 17 28 09.1 -5.5**
comp=Z,1μm,24.0s
PPT Papeete 81.08 107 P **P 17 18 29.4 +3.1**
comp=Z,177nm,1.0s,baz=321,slow=8.2,SNR=7.7
PPT Papeete 81.08 107 *e*P **P 17 18 28.9 +2.5**
ABKAR Akbulak array 81.16 322 *e*P **P 17 18 26.6 +0.5**
comp=Z,518nm,0.6s
ABKAR *e*S **S 17 28 12.8 -1.2**
NRIK Noril'sk 81.16 347 P **P 17 18 27.2 +1.5**
comp=Z,77nm,0.8s,baz=138,slow=5.6,SNR=52
NRIK S **S 17 28 13.0 -0.3**
comp=Z,18nm,1.0s,baz=334,slow=22,SNR=19
TIAR Tiarei 81.30 107 *e*P **P 17 18 30.6 +3.1**
comp=Z,49nm,1.1s
TVO Taravao 81.37 107 *e*P **P 17 18 31.0 +3.1**
comp=Z,39nm,1.1s
SPIA Saint Paul Isl 81.49 29 *e*P **P 17 18 28.9 +1.3**
comp=Z,670nm,1.4s
UNV Unalaska Valle 81.96 33 *e*P **P 17 18 30.0 -0.1**
comp=Z,84nm,1.0s
AKUT Akutan 82.47 33 *e*P **P 17 18 32.8 +0.1**
comp=Z,673nm,1.4s
MEH Mehetia 82.49 107 *e*P **P 17 18 36.4 +2.7**
comp=Z,65nm,1.0s
SYO Syowa Base 82.62 201⇓*i*P **P 17 18 33.4 +0.1**
SYO Syowa Base 82.62 201⇓*i*X **P 17 18 35.6 +2.3**
AKTO Aktyubinsk 82.75 323 S **S 17 28 28.3 -1.9**
comp=Z,17nm,1.1s,baz=224,slow=23,SNR=41
AKTO SKKPbc **SKKPbc 17 40 09.9 -3.0**
comp=Z,1.2nm,0.8s,baz=302,slow=1.5,SNR=4.1
QSPA South Pole Qui 82.80 180 *e*P **P 17 18 34.8 +0.4**
QSPA *e*PcP **PcP 17 18 35.0 -3.6**
QSPA LR LR
comp=Z,1μm,19.0s
SVE Sverdlovsk 83.69 329*d i*P **P 17 18 39.9 +1.0**
SVE *e*S **S 17 28 32.8 -6.4**
SVE pmax pmax
comp=Z,138nm,1.2s
GAMB Gambell 84.01 23 *e*P **P 17 18 41.5 +1.2**
comp=Z,227nm,1.1s
ARU Arti 84.60 329 S **SKSac 17 28 38.1 -4.3**
comp=Z,1.0nm,0.3s,baz=249,slow=22,SNR=15
ARU SKKPbc **SKKPbc 17 40 05.4 -3.8**
comp=Z,1.6nm,0.4s,baz=296,slow=2.2,SNR=5.0
ARU Arti 84.60 329*c i*P **P 17 18 43.6 +0.1**
ARU *PP **pP 17 19 45.0 0.0**
ARU 17 22 00.1
ARU S **S 17 28 42.1 -6.2**
ARU pmax pmax
comp=Z,131nm,1.2s
ARU Arti 84.60 329 *e*P **P 17 18 43.5 +0.1**
comp=Z,206nm,1.4s
ARU S **SKSac 17 28 38.1 -4.3**
ARU SKKPbc **SKKPbc 17 40 05.4 -3.8**
ARU LR LR
comp=Z,626nm,20.0s
DAMY Dhamar 85.24 285 *e*P **P 17 18 49.4 +1.5**
comp=Z,87nm,0.9s
SDPT Sand Point 85.78 33 *e*P **P 17 18 49.1 -0.2**
comp=Z,1μm,1.5s
ATD Arta Tunnel 86.29 282 P **P 17 18 55.0 +2.2**
ATD PP **PP 17 22 17.0 -0.9**
comp=Z,12nm,1.0s,baz=310,slow=17,SNR=3.2
SOKR Solikamsk 86.61 331*c i*P **P 17 18 51.2 -2.0**
SOKR S **S 17 29 06.7 -0.9**
SOKR *SS sS 17 30 44.4 -12
SOKR pmax pmax
comp=Z,92nm,1.2s
SOKR MLR MLR
comp=Z,555nm,23.0s
GNI Garni 89.13 310 P **P 17 19 07.2 +1.2**
GNI Garni 89.13 310*ce*P **P 17 19 07.1 +1.2**
GNI pmax pmax
comp=Z,229nm,1.6s
GNI Garni 89.13 310 *e*P **P 17 19 07.2 +1.2**
comp=Z,52nm,0.8s
GNI LR LR
comp=Z,413nm,22.0s
SEAG Tbilisi Sea 89.37 312 P **P 17 19 08.7 +1.9**
TBLG Delisi 89.41 312 P **P 17 19 08.7 +1.7**
TBLG Delisi 89.41 312 P **P 17 19 08.6 +1.7**
HAKT HAKKARI 89.49 308 *i*P **P 17 19 08.7 +1.0**
GUDG Gudauri 89.73 313 P **P 17 19 11.1 +2.4**
DYDN Diyadin 89.83 310 *i*P **P 17 19 11.3 +2.1**
VMUR Van-Muradiye 89.83 309 *i*P **P 17 19 10.5 +1.3**
SVW2 Sparrevohn 89.93 28 *e*P **P 17 19 09.0 +0.1**
comp=Z,115nm,1.6s
EAK Akyaka 90.08 311 *i*P **P 17 19 12.4 +2.1**
GEVA Gevas 90.12 308 *i*P **P 17 19 12.4 +1.8**
OHAK Old Harbor 90.14 32 *e*P **P 17 19 10.1 +0.1**
comp=Z,57nm,0.9s
BGD Bogdanovka 90.18 311 P **P 17 19 13.0 +2.2**
KMBO Kilima Mbogo 90.18 269 P **P 17 19 12.5 +1.0**
comp=Z,22nm,0.8s,baz=66,slow=6.4,SNR=46
KMBO PP **PP 17 22 53.2 +4.1**
comp=Z,1.7nm,0.7s,baz=76,slow=9.3,SNR=3.7
KMBO Kilima Mbogo 90.18 269 P **P 17 19 12.8 +1.3**
SNR=13
KMBO Kilima Mbogo 90.18 269 *e*P **P 17 19 11.8 +0.4**
comp=Z,36nm,1.0s
KMBO *ePP **PP 17 22 53.2 +4.1**
KMBO LR LR
comp=Z,427nm,20.0s
ZEI Tsey 90.20 313 *e*P **P 17 19 10.1 -0.8**
ZEI pmax pmax
comp=Z,156nm,0.7s
TT01 Tatalina 90.21 26 *e*P **P 17 19 10.3 +0.2**
TTA Tatalina 90.22 26 *e*P **P 17 19 10.3 0.0**
TTA pmax pmax
comp=Z,104nm,1.2s
TTA Tatalina 90.22 26 *e*P **P 17 19 10.3 0.0**
comp=Z,104nm,1.2s
AKH Akhalkalaki 90.28 312 P **P 17 19 13.3 +2.0**
AKH Akhalkalaki 90.28 312 P **P 17 19 13.2 +2.0**
ONI Oni 90.50 313 P **P 17 19 13.6 +1.5**
ONI Oni 90.50 313 P **P 17 19 13.6 +1.5**
SIRN S¨–rnak 90.50 308 *i*P **P 17 19 13.4 +1.2**
NCK Nalchik 90.54 314*c i*P **P 17 19 12.9 +0.7**
NCK pmax pmax
comp=Z,60nm,0.9s
KDAK Kodiak Island 90.64 32 *e*P **P 17 19 12.1 -0.1**
KDAK pmax pmax
comp=Z,40nm,0.9s
KDAK MLR MLR
comp=Z,376nm,22.0s
KDAK Kodiak Island 90.64 32 *e*P **P 17 19 12.1 -0.1**
comp=Z,40nm,0.9s
KDAK LR LR
comp=Z,376nm,22.0s
KBZ Khabaz 91.08 314 P **P 17 19 15.1 +0.5**
comp=Z,32nm,0.8s,baz=97,slow=3.5,SNR=62
KBZ ScS **S 17 29 51.1 +1.2**
comp=Z,2.2nm,0.6s,baz=282,slow=18,SNR=6.7
NEY Neytrino 91.13 313*c i*P **P 17 19 15.9 +0.8**
NEY pmax pmax
comp=Z,6.0nm,1.2s
RSO Redoubt South 91.13 29 *e*P **P 17 19 13.9 -0.8**
TAOE Nuku Hiva Isla 91.14 99 *e*P **P 17 19 18.9 +3.2**
comp=Z,370nm,1.1s
GOF Gofitskoye 91.18 315⇑*i*P **P 17 19 15.8 +0.7**
GOF *i*S **SKSac 17 29 22.2 -0.1**
GOF pmax pmax
comp=Z,69nm,0.8s
GOF smax smax
comp=N,129nm,1.4s
GOF smax smax
comp=E,158nm,1.6s
KVAR Kislovodsk Arr 91.26 314 S **SKSac 17 29 23.0 -0.1**
comp=E,1.8nm,0.5s,baz=75,slow=17,SNR=6.0
KIV Kislovodsk 91.26 314 P **P 17 19 15.9 +0.3**
KIV Kislovodsk 91.26 314*c i*P **P 17 19 15.8 +0.2**
KIV *i* 17 22 53.0
KIV *i*S **SKSac 17 29 25.8 +2.7**
KIV pmax pmax
comp=Z,19nm,0.9s
KIV Kislovodsk 91.26 314 *e*P **P 17 19 16.1 +0.5**
comp=Z,28nm,0.8s
KIV LR LR
comp=Z,389nm,22.0s
DAGI Agillar 91.40 311 *i*P **P 17 19 17.3 +0.9**
ARTV Artvin 91.41 311 *i*P **P 17 19 17.9 +1.4**
BTMN Batman 91.45 308 *i*P **P 17 19 17.7 +1.1**
NVL N'lazarevskaya 91.47 197 *e*P **P 17 19 18.3 +2.4**
NVL *e* 17 22 58.0
NVL *e*S **SKSac 17 29 20.5 -2.6**
DDEM Demirkent 91.50 311 *i*P **P 17 19 18.3 +1.5**
SPU Mount Spurr 91.62 29 *e*P **P 17 19 15.7 -1.1**
DBOC Borcka 91.63 311 *i*P **P 17 19 18.5 +1.2**
CNPM China Poot 91.68 30 *e*P **P 17 19 16.8 -0.3**
comp=Z,132nm,1.4s
MARD Mardin 91.76 307 *i*P **P 17 19 19.0 +0.8**
BRLK Bradley Lake 91.90 30 *e*P **P 17 19 17.6 -0.5**
comp=Z,91nm,1.2s
PPLA Purkeypile 91.91 27 *e*P **P 17 19 18.0 -0.3**
comp=Z,124nm,1.2s
SUA Susitna One 92.29 28 *e*P **P 17 19 19.4 -0.6**
comp=Z,118nm,0.9s
KOPT Kop Dagi 92.33 310 *i*P **P 17 19 22.9 +2.1**
KTH Kantishna Hill 92.60 26 *e*P **P 17 19 20.4 -1.0**

KTH ePKKPdf **PKKPdf** 17 36 33.3 +0.4
comp=Z,96nm,1.1s
BPAW Bear Paw Mtn. 92.68 26 eP **P** 17 19 21.2 -0.4
comp=Z,65nm,1.4s
RC01 Rabbit Creek A 92.70 29 eP **P** 17 19 21.2 -0.5
comp=Z,93nm,1.0s
TRF Thorofare Moun 92.86 26 eP **P** 17 19 21.7 -1.0
comp=Z,113nm,1.4s
VRH Novokhopyorsk 92.94 321 eP **P** 17 19 22.5 -0.5
VRH e 17 29 29.3
VRH pmax pmax
comp=Z,120nm,0.6s
TNCL Tunceli-Merkez 92.95 309 *i* P **P** 17 19 25.2 +1.6
MLY Manley 92.95 25 eP **P** 17 19 22.5 -0.4
comp=Z,42nm,1.0s
PMR Palmer 93.08 28 eP **P** 17 19 22.4 -1.0
PMR pmax pmax
comp=Z,103nm,1.2s
PMR Palmer 93.08 28 eP **P** 17 19 22.4 -1.0
comp=Z,103nm,1.2s
KELT Kelkit 93.29 310 *i* P **P** 17 19 26.6 +1.3
BWN Browne 93.35 26 eP **P** 17 19 24.7 0.0
comp=Z,148nm,1.1s
SML Sawmill 93.48 28 eP **P** 17 19 25.0 -0.4
SML pmax pmax
comp=Z,176nm,0.9s
SML Sawmill 93.48 28 eP **P** 17 19 25.0 -0.4
comp=Z,176nm,0.9s
RND Reindeer 93.49 27 eP **P** 17 19 24.3 -1.1
RND pmax pmax
comp=Z,155nm,1.0s
RND Reindeer 93.49 27 eP **P** 17 19 24.3 -1.1
comp=Z,155nm,1.0s
MCK McKinley 93.51 26 eP **P** 17 19 24.1 -1.3
MCK pmax pmax
comp=Z,139nm,1.2s
MCK McKinley 93.51 26 eP **P** 17 19 24.1 -1.3
comp=Z,139nm,1.2s
COLD Coldfoot 93.56 23 eP **P** 17 19 25.6 0.0
comp=Z,68nm,1.1s
KEMA Kemaliye 93.78 309 *i* P **P** 17 19 28.8 +1.4
SCM Sheep Creek Mo 93.96 28 eP **P** 17 19 27.0 -0.6
SCM pmax pmax
comp=Z,168nm,1.1s
SCM Sheep Creek Mo 93.96 28 eP **P** 17 19 27.0 -0.6
comp=Z,168nm,1.1s
WRH Wood River Hil 93.98 26 eP **P** 17 19 26.4 -1.1
comp=Z,156nm,1.3s
WRH ePKKPdf **PKKPdf** 17 36 29.7 -0.7
RKT Rikitea 94.02 114 eSKSac **SKSac** 17 29 39.5 +0.5
comp=Z,1µm,28.2s
SUSE Susehri 94.10 310 *i* P **P** 17 19 29.9 +1.1
DHY Denali Highway 94.11 27 eP **P** 17 19 27.8 -0.5
comp=Z,146nm,1.2s
CCB Clear Creek Bu 94.13 25 eP **P** 17 19 26.7 -1.5
comp=Z,138nm,1.3s
CCB ePKKPdf **PKKPdf** 17 36 28.8 -1.3
COLA College 94.14 25 eP **P** 17 19 27.1 -1.1
COLA pmax pmax
comp=Z,70nm,1.5s
COLA MLR MLR
comp=Z,653nm,21.0s
COLA College 94.14 25 eP **P** 17 19 27.1 -1.1
comp=Z,70nm,1.5s
COLA LR LR
comp=Z,653nm,21.0s
FID Port Fidalgo 94.23 29 eP **P** 17 19 27.8 -0.9
comp=Z,68nm,1.2s
GZT Gaziantep 94.31 307 *i* P **P** 17 19 30.7 +0.8
HDA Harding Lake 94.47 26 eP **P** 17 19 28.5 -1.3
comp=Z,43nm,1.0s
ILAR Eielson Array 94.54 25 P **P** 17 19 28.2 -1.9
comp=Z,21nm,1.1s,baz=267,slow=4.2,SNR=100
ILAR PP **PP** 17 23 15.4 -6.2
comp=Z,3.7nm,0.9s,baz=258,slow=6.0,SNR=4.4
ILAR S **SKSac** 17 29 36.0 -4.0
comp=Z,0.6nm,0.9s,baz=265,slow=1.4,SNR=3.5
ILAR PKKP **PKKPdf** 17 36 28.3 -1.1
comp=Z,3.4nm,0.7s,baz=38,slow=1.6,SNR=19
ILAR SKKP 17 39 41.2
comp=Z,1.4nm,0.8s,baz=1.5,slow=1.4,SNR=5.9
ILAR P3KP 17 43 07.9
comp=Z,0.4nm,0.8s,baz=53,slow=2.2,SNR=4.3
ILAR PKPPKP **P'P'df** 17 44 41.5 -0.1
comp=Z,0.5nm,0.7s,baz=352,slow=3.0,SNR=4.6
ILB Eielson Array 94.54 25 ePP PP 17 23 14.6 -7.0
ILB ePKKPdf **PKKPdf** 17 36 28.5 -0.9
VSR Storozhevoye 94.54 321 eP **P** 17 19 28.8 -1.6
VSR e 17 29 37.5
VSR pmax pmax
comp=Z,70nm,0.8s
EYAK Cordova Ski Ar 94.56 30 eP **P** 17 19 30.1 -0.2
comp=Z,26nm,1.1s
KLU Klutina 94.59 29 eP **P** 17 19 30.4 -0.1
comp=Z,42nm,1.0s
DIV Divide 94.62 29 eP **P** 17 19 30.4 -0.2
comp=Z,211nm,1.3s
SNAA Sanae 94.92 194 P **P** 17 19 33.6 +1.8
SNAA Sanae 94.92 194 S **SKSac** 17 29 38.9 -3.2
comp=Z,2.9nm,0.9s,baz=140,slow=12,SNR=6.6
SNAA PKKP 17 36 26.3
comp=Z,1.7nm,0.9s,baz=218,slow=18,SNR=7.3
SNAA SKKPbc **SKKPbc** 17 39 39.5 -4.0
comp=Z,1.6nm,0.9s,baz=284,slow=1.8,SNR=3.5
SNAA Sanae 94.92 194 eP **P** 17 19 33.2 +1.3
SNAA S **SKSac** 17 29 38.9 -3.2
SNAA pmax pmax
comp=Z,196nm,1.2s
SNAA Sanae 94.92 194 eP **P** 17 19 33.1 +1.3
comp=Z,196nm,1.2s
SNAA S **SKSac** 17 29 38.9 -3.2
SNAA PKKP **PKKPdf** 17 36 26.3 -1.6
SNAA SKKPbc **SKKPbc** 17 39 39.5 -4.0
PAX Paxson 94.96 27 eP **P** 17 19 31.9 -0.3
PAX pmax pmax
comp=Z,84nm,1.1s
PAX Paxson 94.96 27 eP **P** 17 19 31.9 -0.3
comp=Z,84nm,1.1s
RAGM Ragged Mountai 95.07 30 eP **P** 17 19 32.6 -0.1
comp=Z,91nm,1.2s
ANN Anapa 95.10 314*c* *i*P **P** 17 19 32.3 -0.8
ANN *i* S **SKSac** 17 29 42.4 -1.4
ANN eSS **SS** 17 36 54.9 -2.9
ANN pmax pmax
comp=Z,142nm,0.9s
BMRM Bremner River 95.17 29 eP **P** 17 19 32.6 -0.5
comp=Z,112nm,1.2s
KLMR Klimovskoe 95.27 331 eP **P** 17 19 31.4 -2.1
KLMR e*PP **pP** 17 20 33.0 -2.8
KLMR e 17 23 24.6
KLMR eS **SKSac** 17 29 41.7 -2.3
KLMR pmax pmax
comp=Z,26nm,0.6s
FYU Fort Yukon 95.42 24 eP **P** 17 19 34.5 +0.5
comp=Z,131nm,1.2s
MENT Mentasta 95.75 27 eP **P** 17 19 35.4 -0.3
comp=Z,90nm,1.5s
MOS Moscow 95.85 325 eP **P** 17 19 33.0 -3.2
MOS e 17 23 28.2
MOS e 17 25 45.4
MOS e 17 30 22.4
MOS e 17 31 54.0
MOS eSS SS 17 37 09.5 +1.7
MOS pmax pmax
comp=Z,51nm,0.8s
CRQM Cirque 95.86 30 eP **P** 17 19 37.0 +0.6
comp=Z,87nm,1.1s
BALM Baldy 96.27 29 eP **P** 17 19 38.2 0.0
BALM pmax pmax
comp=Z,72nm,1.3s
BALM Baldy 96.27 29 eP **P** 17 19 38.2 0.0
comp=Z,72nm,1.3s
OBN Obninsk 96.41 325 S **SKSac** 17 29 49.8 -0.3
comp=Z,6.5nm,0.4s,baz=320,slow=23,SNR=13
OBN Obninsk 96.41 325*c* *i*P **P** 17 19 38.3 -0.4
OBN *i* *PP **pP** 17 20 39.7 -1.5
OBN *i* S S 17 30 23.9 -12
OBN *i* *SS sS 17 32 03.5 -23
OBN pmax pmax
comp=Z,52nm,1.0s
OBN Obninsk 96.41 325 eP **P** 17 19 38.0 -0.7
comp=Z,51nm,1.0s
OBN S **SKSac** 17 29 49.8 -0.3
OBN LR LR
comp=Z,459nm,21.0s
BOYT Boyabat 96.70 311 *i* P **P** 17 19 40.9 +0.4

MBAR Mbarara 96.71 269 eP **P** 17 19 40.1 -1.2
MBAR pmax pmax
comp=Z,10.0nm,0.9s
MBAR Mbarara 96.71 269 eP **P** 17 19 40.1 -1.2
comp=Z,10nm,0.9s
VNA1 Neumayer--Stat 96.90 194 P **P** 17 19 42.5 +1.8
EGAK Eagle 96.98 26 eP **P** 17 19 41.0 -0.2
comp=Z,43nm,1.3s
EGAK LR LR
comp=Z,373nm,22.0s
LSZ Lusaka 97.10 254 eP Pdif 17 19 43.2 +0.2
LSZ e 17 23 39.1
LSZ pmax pmax
comp=Z,18nm,0.8s
LSZ MLR MLR
comp=Z,324nm,20.0s
LSZ Lusaka 97.10 254 P Pdif 17 19 43.6 +0.5
SNR=5.1
LSZ Lusaka 97.10 254 eP Pdif 17 19 43.1 +0.1
comp=Z,18nm,0.8s
LSZ ePP **PP** 17 23 39.1 -3.6
LSZ LR LR
comp=Z,324nm,20.0s
PCA Pinnacle 97.25 30 eP Pdif 17 19 43.3 +0.6
comp=Z,42nm,1.0s
BOSA Boshof 97.29 240 P Pdif 17 19 44.5 +0.8
comp=Z,48nm,0.9s,baz=105,slow=4.3,SNR=68
BOSA S **SKSac** 17 29 55.1 -1.2
comp=Z,6.9nm,1.2s,baz=252,slow=21,SNR=4.6
BOSA Boshof 97.29 240 eP Pdif 17 19 43.7 0.0
BOSA pmax pmax
comp=Z,86nm,1.1s
BOSA Boshof 97.29 240 eP Pdif 17 19 43.7 0.0
comp=Z,86nm,1.1s
SIM Simferopol' 97.47 314*de*P Pdif 17 19 43.9 +0.1
SIM *e* 17 29 56.0
SIM eS **S** 17 30 40.0 -5.5
SIM pmax pmax
comp=Z,27nm,1.2s
SIM MLR MLR
comp=N,200nm,17.0s
CSS Mathiatis 97.53 304 eP **P** 17 19 43.8 -0.6
comp=N,6.3nm,0.9s
CSS LR LR
comp=Z,85nm,19.0s
BR101 Keskin Array S 97.56 309 eP **P** 17 19 43.7 -0.8
BR101 ePP **PP** 17 23 40.8 -4.9
BR101 ePKKPbc **PKKPdf** 17 36 22.9 -0.6
BR131 Keskin Array S 97.56 309 eP **P** 17 19 43.9 -0.6
BRTR Keskin Array B 97.56 309 P **P** 17 19 43.7 -0.8
comp=Z,11nm,0.9s,baz=139,slow=6.1,SNR=43
BRTR PP **PP** 17 23 40.8 -4.9
comp=Z,4.3nm,0.9s,baz=100,slow=6.4,SNR=3.9
BRTR PKKP **PKKPdf** 17 36 22.9 -0.6
comp=Z,1.1nm,0.9s,baz=197,slow=3.9,SNR=3.8
LVZ Lovozero 97.71 338*ce*P **P** 17 19 44.0 -0.4
LVZ pmax pmax
comp=Z,17nm,1.0s
LVZ Lovozero 97.71 338 PFAKE 17 19 50.0 +5.6
LVZ LR LR
comp=Z,550nm,20.0s
LBTB Lobatse 97.73 244 eP Pdif 17 19 46.0 +0.3
LBTB pmax pmax
comp=Z,94nm,1.2s
LBTB Lobatse 97.73 244 eP Pdif 17 19 46.0 +0.4
comp=Z,94nm,1.2s
DAWY Dawson 97.74 26 eP Pdif 17 19 44.8 +0.1
comp=Z,49nm,1.1s
APA Apatity 98.18 337⇑ *i*P **P** 17 19 45.7 -0.8
APA *i* 17 23 57.0
APA *i* S **S** 17 30 48.0 -2.6
APA pmax pmax
comp=Z,9.0nm,1.0s
APA MLR MLR
comp=Z,400nm,16.0s
HYT Haines Junctio 98.62 30 eP **P** 17 19 49.5 +0.7
comp=Z,13nm,0.9s
SKAG Skagway 99.75 31 ePdif **Pdif** 17 19 53.9 +0.2
comp=Z,25nm,1.1s
HOPEN Hopen 99.87 347 ePP PP 17 24 06.9 +5.0
INK Inuvik 99.93 22 S **SKSac** 17 30 05.8 -1.5
comp=Z,4.6nm,1.0s,baz=345,slow=8.9,SNR=16
INK PKKPbc PKKPbc 17 36 13.8 -2.2
comp=Z,7.6nm,0.5s,baz=67,slow=3.9,SNR=8.8
INK Inuvik 99.93 22 eP **Pdif** 17 19 54.1 -0.1
INK S **SKSac** 17 30 05.8 -1.5
INK pmax pmax
comp=Z,48nm,1.2s
INK Inuvik 99.93 22 ePdif **Pdif** 17 19 54.1 -0.1
comp=Z,48nm,1.2s
INK S **SKSac** 17 30 05.8 -1.5
INK ePKKPbc **PKKPbc** 17 36 13.0 -3.0
SUR Sutherland 100.13 235 ePdif **Pdif** 17 19 58.4 +2.1
AKASG Malin Array Be 100.81 320 P **Pdif** 17 19 58.0 -0.5
comp=Z,6.8nm,0.8s,baz=73,slow=4.5,SNR=29
AKASG PP **PP** 17 24 10.6 +0.9
comp=Z,4.2nm,0.9s,baz=77,slow=6.9,SNR=4.4
AKASG S **SKSac** 17 30 10.6 -1.8
comp=Z,1.4nm,0.7s,baz=76,slow=5.6,SNR=3.9
AKASG SKKP 17 39 25.3
comp=Z,0.5nm,0.3s,baz=275,slow=3.1,SNR=7.9
AKBB Malin Array Si 100.81 320 eP **Pdif** 17 19 58.1 -0.4
AKBB *e* 17 24 13.6
AKBB Malin Array Si 100.81 320 ePdif **Pdif** 17 19 58.0 -0.4
AKBB ePP **PP** 17 24 13.6 +3.9
KIEV Kiev 100.81 320 eP **Pdif** 17 19 57.5 -1.0
KIEV *e* 17 24 12.8
KIEV MLR MLR
comp=Z,379nm,21.0s
KIEV Kiev 100.81 320 ePdif **Pdif** 17 19 57.5 -1.0
KIEV ePP **PP** 17 24 12.8 +3.0
KIEV LR LR
comp=Z,379nm,21.0s
AK11 Malin Array Si 100.84 320 ePdif **Pdif** 17 19 58.0 -0.7
AK11 ePP **PP** 17 24 07.8 -2.2
ARA0 ARCESS Array S 100.91 339 ePdif **Pdif** 17 19 57.9 -0.8
ARCES ARCESS Array B 100.91 339 P **Pdif** 17 19 58.0 -0.6
comp=Z,13nm,0.8s,baz=67,slow=6.7,SNR=25
ARCES PP **PP** 17 24 12.1 +2.1
comp=Z,3.8nm,1.0s,baz=46,slow=12,SNR=3.1
ARCES PKiKP **PKiKP** 17 24 23.8 +1.1
comp=Z,5.0nm,0.8s,baz=107,slow=1.0,SNR=6.4
ARCES S **SKSac** 17 30 11.1 -1.0
comp=Z,4.7nm,0.6s,baz=227,slow=26,SNR=9.4
ARCES PKKPbc **PKKPbc** 17 36 10.4 -2.9
comp=Z,2.1nm,0.8s,baz=268,slow=3.5,SNR=7.0
ARCES PKKP **PKKPdf** 17 36 20.8 +2.9
comp=Z,2.1nm,0.8s,baz=275,slow=3.2,SNR=5.7
ARCES SKKP 17 39 24.6
comp=Z,2.3nm,0.8s,baz=228,slow=1.5,SNR=5.4
ARE0 ARCESS Array S 100.91 339 ePP PP 17 24 15.4 +5.5
KIS Kishinev 101.18 316 ePP PP 17 24 15.0 +2.3
KIS *i* SKS 17 30 13.0
KIS *i* SKKS SKKSac 17 31 10.0 +18
TLCR 101.22 315⇑ *i*P **Pdif** 17 20 01.2 +0.7
TLCR 101.22 315⇑ P **Pdif** 17 20 01.2 +0.7
SPA0 Spitsbergen Ar 101.28 349 ePP PP 17 24 14.2 +1.7
SPA0 IAMs_20 IAMs_20 18 09 40.5
comp=Z,704nm,20.8s
SPA0 Spitsbergen Ar 101.28 349 ePdif **Pdif** 17 20 00.8 +0.7
MICGM Minsk 101.44 324 eP **Pdif** 17 20 02.0 +0.8
MNK Minsk 101.44 324 eP **Pdif** 17 20 02.0 +0.8
SORM Soroca 101.46 318⇑ *i*P **Pdif** 17 20 01.4 -0.1
SORM Soroca 101.46 318⇑ P **Pdif** 17 20 01.4 -0.1
WRAK Wrangell Islan 101.52 34 ePdif **Pdif** 17 20 02.4 +0.8
WRAK LR LR
comp=Z,600nm,21.0s
TIRR Tirgusor 101.53 314⇑ *i*P **Pdif** 17 20 02.0 +0.2
TIRR Tirgusor 101.53 314⇑ P **Pdif** 17 20 02.1 +0.2
TIRR Tirgusor 101.53 314 ePdif **Pdif** 17 20 01.7 -0.2
H02S1 DAWSON INLET T101.67 37 P **Pdif** 17 20 03.2 +0.9
CFR Carcaliu 101.70 315⇓ *i*P **Pdif** 17 20 02.7 +0.1
CFR Carcaliu 101.70 315⇑ P **Pdif** 17 24 18.0 +1.4
CFR Carcaliu 101.70 315⇓ P **Pdif** 17 20 02.7 +0.1
FIA1 FINESS Array S 101.77 331 ePdif **Pdif** 17 20 01.4 -1.1
FIA0 FINESS Array S 101.77 331 eP **Pdif** 17 20 01.7 -0.8
FIA0 *e* 17 24 18.1
FIA0 *e* 17 30 14.5
FIA0 FINESS Array S 101.77 331 ePdif **Pdif** 17 20 01.7 -0.8
FIA0 ePP **PP** 17 24 18.1 +1.5
FIA0 ePKiKP **PKiKP** 17 24 25.8 +1.4
FIA0 eSKSac **SKSac** 17 30 14.4 -2.0
FINES FINESS Array B 101.77 331 P **Pdif** 17 20 01.7 -0.8
comp=Z,6.5nm,0.7s,baz=67,slow=5.0,SNR=16
FINES PP **PP** 17 24 18.1 +1.5
comp=Z,3.6nm,0.9s,baz=87,slow=14,SNR=2.8
FINES PKiKP **PKiKP** 17 24 25.8 +1.4
comp=Z,3.1nm,0.7s,baz=91,slow=2.7,SNR=7.3
FINES S **SKSac** 17 30 14.4 -2.0
comp=Z,5.0nm,0.9s,baz=90,slow=9.5,SNR=4.6
TLB Topalu 101.79 314⇓ *i*P **Pdif** 17 20 03.5 +0.5
TLB Topalu 101.79 314⇓ *i*P **PP** 17 24 16.4 -0.9
TLB Topalu 101.79 314 ⇓P **Pdif** 17 20 03.5 +0.5
KBS Kingsbay 101.82 350 ePP PP 17 24 19.7 +3.1
KBS IAMs_20 IAMs_20 18 07 23.7
comp=Z,861nm,19.9s
KBS Kingsbay 101.82 350 PFAKE 17 20 10.0 +7.5
KBS LR LR
comp=Z,833nm,20.0s
HSPB Hornsund (broa 101.84 348 ePP PP 17 24 19.7 +2.9
HARR Harsova 101.86 314⇑ *i*P **Pdif** 17 20 04.4 +1.0
HARR Harsova 101.86 314⇑ P **Pdif** 17 20 04.4 +1.0
NACGM Naroch 102.04 325 *e* **Pdif** 17 20 04.0 +0.1
NACGM eLR LR 18 00 45.0
DLBC Dease Lake 102.57 32 S **SKSac** 17 30 23.0 +2.4
comp=Z,0.5nm,0.4s,baz=77,slow=24,SNR=7.2
DLBC Dease Lake 102.57 32 ePdif **Pdif** 17 20 06.6 +0.3
DLBC S **SKSac** 17 30 23.0 +2.4
KARP Karpathos 102.60 305 ePdif **Pdif** 17 20 07.3 +0.4
TESR Tescani 102.69 316⇓ *i*P **Pdif** 17 20 07.9 +0.8
PLOR Plostina 102.72 315⇑ *i*P **Pdif** 17 20 07.7 +0.4
PLOR Plostina 102.72 315⇑ *i*P PP 17 24 15.3 -9.0
PLOR Plostina 102.72 315 ⇑P **Pdif** 17 20 07.7 +0.4
MLR Muntele Rosu 103.23 315 S **SKSac** 17 30 23.8 -0.6
comp=Z,1.0nm,0.9s,baz=163,slow=21,SNR=7.9
MLR PKKPbc PKKPbc 17 36 06.7 +0.9
comp=Z,0.4nm,0.7s,baz=137,slow=5.9,SNR=3.4
MLR PKKP **PKKPdf** 17 36 17.4 +4.2
comp=Z,0.2nm,0.3s,baz=5.0,slow=1.2,SNR=3.4
MLR Muntele Rosu 103.23 315⇓ *i*P **Pdif** 17 20 09.8 +0.1
MLR Muntele Rosu 103.23 315⇑ *i*P **PP** 17 24 22.7 -5.5
MLR Muntele Rosu 103.23 315 eP **Pdif** 17 20 09.7 +0.1
MLR *e* 17 30 25.1
MLR Muntele Rosu 103.23 315 ePdif **Pdif** 17 20 09.7 +0.1
MLR eSKSac **SKSac** 17 30 25.1 +0.7
MLR PKKPbc **PKKPbc** 17 36 06.7 +0.9
MLR PKKP **PKKPdf** 17 36 17.4 +4.2
DOPR Dopca 103.59 315⇑ *i*P **Pdif** 17 20 11.3 +0.2
DOPR Dopca 103.59 315⇑ *i*P **PP** 17 24 29.9 -0.8
BURAR Bucovina Array 103.60 317⇑ *i*P **Pdif** 17 20 12.2 +1.0
BURAR Bucovina Array 103.60 317⇑ *i*P **PP** 17 24 31.0 +0.2
BURAR Bucovina Array 103.60 317 ⇑P **Pdif** 17 20 12.2 +1.0
BUR08 Bucovina Ar. S 103.61 317 ePdif **Pdif** 17 20 11.8 +0.5
KDZ Kurdzhali 103.82 311 P PP 17 24 23.0 -10
VOIR 103.87 315⇓ *i*P **Pdif** 17 20 12.3 -0.1
VOIR 103.87 315⇓ *i*P **PP** 17 24 31.4 -1.4
VOIR 103.87 315 ⇑P **Pdif** 17 20 12.3 -0.1
SANT Santorini 103.97 306 PFAKE 17 20 20.0 +7.0
SANT LR LR
comp=Z,219nm,22.0s
LAST Lasithi 103.98 304 ePdif **Pdif** 17 20 13.6 +0.4
SUW Suwalki 104.23 324 eP **Pdif** 17 20 14.1 +0.4
SUW Suwalki 104.23 324 eP **Pdif** 17 20 14.1 +0.4
PLD Plovdiv 104.33 312 P PP 17 24 28.0 -8.2
RZN Rozhen 104.34 311 P PP 17 24 26.1 -10
IDI Anoyia 104.46 304 S **SKSac** 17 30 29.2 -1.1
comp=Z,3.8nm,0.7s,baz=154,slow=18,SNR=3.3
IDI PKKP 17 36 06.8
comp=Z,9.1nm,0.9s,baz=302,slow=8.1,SNR=3.6
IDI PKKPab **PKKPab** 17 36 15.7 -4.2
comp=Z,10nm,0.9s,baz=18,slow=6.0,SNR=3.5
CJR Cluj-Napoca 104.77 316⇓ *i*P **Pdif** 17 20 18.0 +1.6
CJR Cluj-Napoca 104.77 316 ⇓P **Pdif** 17 20 18.0 +1.6
MPEP Malo Peshtene 104.95 313 P **PP** 17 24 37.0 -3.8
KWP Kalwaria Pacla 105.06 319 eP **Pdif** 17 20 14.2 -3.4
KWP Kalwaria Pacla 105.06 319 eP **Pdif** 17 20 14.1 -3.4
DEV Deva 105.33 316⇑ *i*P **Pdif** 17 20 20.5 +1.7
DEV Deva 105.33 316 ⇑P **Pdif** 17 20 20.5 +1.7
DRGR 105.37 316⇓ *i*P **Pdif** 17 20 19.3 +0.2
DRGR 105.37 316 ⇓P **Pdif** 17 20 19.3 +0.2
KKB Krupnik 105.55 311 P PP 17 24 32.2 -13
SIRR Siria 106.15 316⇑ *i*P **Pdif** 17 20 23.2 +0.7
BZS Buzias 106.25 315⇑ *i*P **Pdif** 17 20 22.8 -0.1
BZS Buzias 106.25 315 ⇑P **Pdif** 17 20 22.8 -0.1
TSUM Tsumeb 106.26 248 ePdif **Pdif** 17 20 24.7 +1.0
TSUM LR LR
comp=Z,353nm,20.0s
MDVR Moldovita 106.28 314⇓ *i*P **Pdif** 17 20 24.7 +1.6
OJC Ojcow 106.84 320 eP **Pdif** 17 20 26.8 +1.4
OJC Ojcow 106.84 320 eP **Pdif** 17 20 26.8 +1.4
PSZ Piszkesteto 107.13 318⇑ *i*P **PP** 17 24 52.7 -4.0
PSZ Piszkesteto 107.13 318 eP **Pdif** 17 20 27.7 +0.8
PSZ *e* 17 24 58.6
PSZ MLR MLR
comp=Z,347nm,20.0s
PSZ Piszkesteto 107.13 318 ePdif **Pdif** 17 20 27.7 +0.8
PSZ ePP **PP** 17 24 58.6 +1.9
PSZ LR LR
comp=Z,347nm,20.0s
PMSA Palmer Station 107.72 175 PFAKE 17 24 50.0
PMSA LR LR
comp=Z,513nm,20.0s
NLWA Neilton Lookou 107.80 43 PFAKE 17 24 50.0
NLWA LR LR
comp=Z,546nm,22.0s
OKC Ostrava-Krasne 107.96 320 ePP PP 17 25 04.3 +1.8
OKC *ex* x 17 33 57.2
OKC *ex* x 17 39 44.0
OKC AMS AMS 18 09 00.0
comp=Z,300nm,20.3s
OKC Ostrava-Krasne 107.96 320 eSDIF **Sdif** 17 32 11.8 -1.2
TIR Tirane 108.00 311 PFAKE 17 24 50.0
TIR LR LR
comp=Z,307nm,20.0s
NC405 NORSAR Array S 108.58 333 ePdif **Pdif** 17 20 32.4 -0.5
I03D Drain, OR 108.71 46 P **PKiKP** 17 24 39.1 +1.4
baz=278
L02D Cave Junction, 108.73 48 P **PKiKP** 17 24 39.0 +1.2
baz=278
KRLC Kraliky 108.78 320 ePKP **PKiKP** 17 24 38.8 +1.1
KRLC ePP **PP** 17 25 11.9 +3.4
B05A Bryant 108.83 41 P **PKiKP** 17 24 38.8 +1.0
baz=281
NB2 NORSAR Subarra108.84 333 P **Pdif** 17 20 33.3 -0.9
comp=Z,3.2nm,0.8s,baz=73,slow=4.4
NB2 NORSAR Subarra108.84 333 P **Pdif** 17 20 33.3 -0.9
baz=73,slow=4.4
NB2 NORSAR Subarra108.84 333 P **Pdif** 17 20 33.2 -0.9
NB2 pmax pmax
comp=Z,1.0nm,0.6s
NB200 NORSAR Array S 108.84 333 ePdif **Pdif** 17 20 33.2 -0.9
NB200 ePKiKP **PKiKP** 17 24 38.7 +1.2
NB200 *e* 17 27 46.8
NB200 ePKKPab **PKKPdf** 17 36 01.6 -1.3
NB200 *e* 17 39 04.8
NOA NORSAR Array B 108.84 333 Pdiff **Pdif** 17 20 33.2 -0.9
comp=Z,2.9nm,0.8s,baz=70,slow=4.5,SNR=11
NOA PKiKP **PKiKP** 17 24 38.7 +1.2
comp=Z,1.9nm,0.7s,baz=262,slow=3.1,SNR=7.2
NOA SKiKP **SKiKP** 17 27 46.8 -1.4
comp=Z,5.2nm,0.9s,baz=260,slow=3.2,SNR=7.1
NOA PKKPab **PKKPdf** 17 36 01.6 -1.3
comp=Z,0.9nm,0.7s,baz=252,slow=4.3,SNR=3.7
NOA SKKPbc **SKKPbc** 17 39 04.8 -3.5
comp=Z,1.3nm,0.9s,baz=67,slow=3.1,SNR=3.3
KMRM Mail Ridge 108.89 50 ePP PP 17 25 04.7 -5.0
KSP Ksiaz 108.93 321 eP **Pdif** 17 20 37.1 +2.4
KSP Ksiaz 108.93 321 eP **Pdif** 17 20 37.1 +2.4
NC204 NORSAR Array S 108.96 333 ePdif **Pdif** 17 20 34.2 -0.4
YKA Yellowknife Ar 108.97 26 Pdiff **Pdif** 17 20 34.4 -0.1
comp=Z,4.8nm,1.1s,baz=291,slow=4.6,SNR=5.6
YKA PKiKP **PKiKP** 17 24 38.1 +0.5
comp=Z,6.0nm,0.7s,baz=294,slow=2.0,SNR=19
YKA SKiKP **SKiKP** 17 27 47.1 -1.2
comp=Z,2.9nm,0.9s,baz=270,slow=1.6,SNR=4.9
YKA PKKPbc **PKKPbc** 17 35 46.0 -2.6
comp=Z,9.9nm,0.8s,baz=108,slow=3.0,SNR=15
YKA PKKPab **PKKPab** 17 35 58.2 -1.1
comp=Z,1.7nm,0.5s,baz=104,slow=5.6,SNR=6.1
YKB5 Yellowknife Ar 108.97 26 ePdif **Pdif** 17 20 34.2 -0.3
YKB5 *e* 17 27 43.9
YKB5 ePKKPbc **PKKPbc** 17 35 42.3 -6.3
YKB5 ePKKPab **PKKPab** 17 35 57.8 -1.5
DPC Dobruska-Polom 109.01 321 ePKP **PKiKP** 17 24 39.4 +1.2
DPC ePP **PP** 17 25 11.8 +1.6
DPC eSDIF 17 32 20.2
DPC eXS 17 34 08.6
DPC eSS **SS** 17 40 03.4 -5.5

UPC	**Upice**	**109.17**	**321**	*e*PKP	**PKiKP**	**17 24 39.8**	**+1.4**			
UPC				*e*PP	**PP**	**17 25 13.5**	**+2.2**			
UPC				*e*SDIF		17 32 22.0				
UPC				*e*XS		17 34 09.6				
UPC				AMS	AMS	18 07 10.0				
	comp=Z,400nm,22.1s									
I04A	**Tendick Farm,**	**109.36**	**46**	P	**PKiKP**	**17 24 40.1**	**+1.0**			
	baz=279									
M02C	**Callahan**	**109.38**	**49**	P	**PKiKP**	**17 24 39.9**	**+0.7**			
	baz=278									
N02D	**Trinity Center**	**109.55**	**49**	P	**PKiKP**	**17 24 40.5**	**+1.0**			
	baz=278									
WDC	**Whiskeytown Da**	**109.73**	**50**	*e*P	**Pdif**	**17 20 40.9**	**+2.4**			
WDC				*e*		17 25 11.2				
WDC				*e*		17 35 55.5				
WDC	**Whiskeytown Da**	**109.73**	**50**	*e*Pdif	**Pdif**	**17 20 40.9**	**+2.4**			
WDC				*e*PP	**PP**	**17 25 11.2**	**-4.4**			
WDC				*e*PKKPab	**PKKPab**	**17 35 55.5**	**-0.9**			
PVCC	**Panska Ves**	**110.07**	**321**	*e*PKP	**PKiKP**	**17 24 41.7**	**+1.6**			
GOPC	**GO Pecny, Ondr**	**110.07**	**321**	*e*PKP	**PKiKP**	**17 24 41.3**	**+1.2**			
GOPC				*e*PP	**PP**	**17 25 23.1**	**+5.3**			
GOPC				*e*SKP		17 27 51.0				
GOPC				*e*SDIF		17 32 29.1				
GOPC				*e*XS		17 34 19.1				
GOPC				AMS	AMS	18 11 40.0				
	comp=Z,300nm,18.1s									
KONO	**Kongsberg**	**110.08**	**331**	PFAKE		17 24 50.0				
KONO				LR	LR					
	comp=Z,564nm,21.0s									
M04C	**Macdoel**	**110.08**	**48**	P	**PKiKP**	**17 24 41.8**	**+1.3**			
	baz=279									
ARSA	**Arzberg**	**110.16**	**318**	*e*PKiKP	**PKiKP**	**17 24 40.5**	**+0.1**			
	comp=Z,2.4nm,0.7s									
PRU	**Pruhonice**	**110.21**	**321**	*e*PKP	**PKiKP**	**17 24 41.0**	**+0.7**			
PRU				*e*PP	**PP**	**17 25 23.2**	**+4.5**			
PRU				*e*SDIF		17 32 30.3				
PRU				*e*XS		17 34 20.1				
PRU				*e*SS	**SS**	**17 40 20.8**	**-4.0**			
PRU				AMS	AMS	18 05 00.0				
	comp=Z,300nm,20.0s									
PRU	**Pruhonice**	**110.21**	**321**	*e*PKiKP	**PKiKP**	**17 24 41.0**	**+0.7**			
PRU				*e*		17 25 23.2				
PRU				*e*		17 34 20.1				
PRU				*e*		17 40 20.8				
PRU				MLR	MLR					
	comp=Z,300nm,20.0s									
AKN	**Aaknes**	**110.27**	**334**	IAMs_20	IAMs_20	18 11 10.8				
	comp=Z,656nm,20.4s									
J05D	**Fort Rock, OR**	**110.29**	**47**	P	**PKiKP**	**17 24 42.4**	**+1.5**			
	baz=280									
O03D	**Paynes Creek**	**110.32**	**50**	P	**PKiKP**	**17 24 41.9**	**+0.9**			
	baz=278									
GCIS	**Gornji Cirnik**	**110.36**	**316**	*e*PKiKP	**PKiKP**	**17 24 42.1**	**+1.3**			
GCIS				*e*		17 25 06.1				
GCIS				*i* PP	**PP**	**17 25 23.2**	**+3.2**			
GCIS				*e*		17 26 26.7				
GCIS				*e*SKSac	**SKSac**	**17 30 55.4**	**+0.2**			
GCIS				*i*		17 31 53.0				
GCIS				*e*Sdiff	**Sdif**	**17 32 32.5**	**-0.7**			
GCIS				*e*		17 34 19.9				
GCIS				*e*SS	**SS**	**17 40 18.9**	**-8.3**			
BRG	**Berggiesshubel**	**110.37**	**322**	*e*P	**PKiKP**	**17 24 41.4**	**+0.8**			
	comp=Z,5.7nm,1.0s									
BRG				*e*		17 25 24.5				
	comp=Z,57nm,2.3s									
BRG				sP		17 26 44.0				
BRG	**Berggiesshubel**	**110.37**	**322**	*e*PKiKP	**PKiKP**	**17 24 41.4**	**+0.8**			
BRG				*e*		17 25 24.5				
BRG				pmax	pmax					
	comp=Z,6.0nm,1.0s									
BRG				pmax	pmax					
	comp=Z,57nm,2.3s									
JMIC	**Jan Mayen**	**110.58**	**346**	*e*PP	PP	17 25 26.4	+5.7			
SOKA	**Soboth**	**110.61**	**317**	*e*PKiKP	**PKiKP**	**17 24 42.6**	**+1.2**			
	comp=Z,6.2nm,1.0s									
B08A	**Colville Reser**	**110.62**	**41**	*e*Pdif	**Pdif**	**17 20 43.5**	**+1.2**			
TIP	**Timpagrande**	**110.62**	**309**	PFAKE		17 24 50.0				
TIP				LR	LR					
	comp=Z,371nm,22.0s									
ORV	**Oroville**	**110.66**	**51**	*e*P	**Pdif**	**17 20 43.2**	**+0.6**			
ORV				*e*		17 35 42.3				
ORV	**Oroville**	**110.66**	**51**	*e*Pdif	**Pdif**	**17 20 43.2**	**+0.6**			
ORV				*e*PP	**PP**	**17 25 17.1**	**-5.2**			
ORV				*e*PKKPbc	**PKKPbc**	**17 35 42.3**	**0.0**			
ORV				*e*PKKPab	**PKKPab**	**17 35 53.1**	**+0.9**			
CLL	**Collm**	**110.83**	**322**	*e*Pdif	**Pdif**	**17 20 44.0**	**+0.9**			
CLL				*i* PKiKP	**PKiKP**	**17 24 42.3**	**+0.8**			
	comp=Z,6.0nm,0.7s									
CLL				*e*pPKiKP	pPKiKP	17 24 56.0	-51			
CLL				*e*PP	**PP**	**17 25 23.0**	**-0.1**			
CLL				*e*sPP		17 26 44.0				
CLL				*e*Sdif	Sdif	17 32 34.0	-2.9			
CLL				*e*sSdiff	**sSdif**	**17 34 25.0**	**-2.9**			
CLL				*e*		17 37 42.0				
CLL				*e*SS	**SS**	**17 40 30.0**	**-3.0**			
CLL				*e*PSS	PSS	17 41 36.0				
CLL				*e*sSS		17 42 13.0				
CLL				*e*SSS	SSS	17 44 40.0				
CLL				*e*sSSS		17 46 20.0				
CLL				*e*		17 51 26.0				
CLL				LmV		18 15 00.0				
	comp=Z,300nm,20.1s									
CLL	**Collm**	**110.83**	**322**	*i* PKiKP	**PKiKP**	**17 24 42.3**	**+0.8**			
CLL				pmax	pmax					
	comp=Z,6.0nm,0.7s									
CLL	**Collm**	**110.83**	**322**	*e*PKiKP	**PKiKP**	**17 24 41.0**	**-0.5**			
HAWA	**Hanford**	**110.90**	**43**	PFAKE		17 24 50.0				
HAWA				LR	LR					
	comp=Z,536nm,20.0s									
OBKA	**Obir**	**110.97**	**317**	*e*PKiKP	**PKiKP**	**17 24 43.2**	**+1.1**			
	comp=Z,4.6nm,0.9s									
GERES	**GERESS Array B**	**111.01**	**320**	Pdiff	**Pdif**	**17 20 45.3**	**+1.1**			
	comp=Z,0.5nm,0.6s,baz=86,slow=6.0,SNR=4.0									
GERES				PKiKP	**PKiKP**	**17 24 42.8**	**+0.7**			
	comp=Z,5.6nm,0.7s,baz=70,slow=1.6,SNR=28									
GERES				SKiKP	**SKiKP**	**17 27 50.9**	**-2.0**			
	comp=Z,4.0nm,1.0s,baz=90,slow=1.3,SNR=6.0									
GERES				S	**SKSac**	**17 30 57.4**	**-0.5**			
	comp=Z,0.2nm,0.3s,baz=190,slow=41,SNR=2.0									
GERES				PKKPbc	**PKKPbc**	**17 35 42.1**	**+0.4**			
	comp=Z,1.0nm,0.8s,baz=262,slow=6.6,SNR=4.2									
GERES				PKKPab	**PKKPab**	**17 35 51.6**	**+1.0**			
	comp=Z,1.3nm,0.8s,baz=243,slow=2.7,SNR=5.7									
GERES				SKKPbc	**SKKPbc**	**17 38 57.4**	**-4.0**			
	comp=Z,1.0nm,0.8s,baz=239,slow=2.3,SNR=5.6									
GEA0	**GERESS Array S**	**111.01**	**320**	*e*Pdif	**Pdif**	**17 20 43.2**	**-0.9**			
GEA0				*e*PKiKP	**PKiKP**	**17 24 42.5**	**+0.5**			
KHC	**Kasperske Hory**	**111.02**	**320**	*e*PKP	**PKiKP**	**17 24 42.8**	**+0.8**			
KHC				*e*PP	**PP**	**17 25 27.4**	**+2.8**			
KHC				*e*SDIF		17 32 38.2				
KHC				*e*XS		17 34 25.4				
KHC				AMS	AMS	18 06 50.0				
	comp=Z,400nm,21.3s									
KHC	**Kasperske Hory**	**111.02**	**320**	*e*Pdif	**Pdif**	**17 20 44.3**	**+0.3**			
KHC				*e*PKiKP	**PKiKP**	**17 24 42.8**	**+0.8**			
LJU	**Ljubljana**	**111.08**	**317**	*e*		17 24 16.2				
LJU				*e*PKiKP	**PKiKP**	**17 24 43.5**	**+1.4**			
LJU				*e*		17 25 10.1				
LJU				*e*PP	**PP**	**17 25 29.0**	**+3.8**			
LJU				*e*SKP		17 27 52.1				
LJU				*e*Sdiff		17 32 37.9				
AFDM	**Forest Hills D**	**111.15**	**51**	*e*Pdif	**Pdif**	**17 20 46.7**	**+1.9**			
AFDM				*e*PKiKP	**PKiKP**	**17 24 42.2**	**-0.3**			
AFDM				*e*PKKPbc	**PKKPbc**	**17 35 41.4**	**+0.7**			
AFDM				*e*PKKPab	**PKKPab**	**17 35 50.7**	**+0.6**			
MOD	**Modoc Plateau**	**111.20**	**48**	*e*PP	PP	17 25 23.7	-2.6			
MOD				*e*PKKPbc	**PKKPbc**	**17 35 39.9**	**-1.0**			
MOD				*e*PKKPab	**PKKPab**	**17 35 50.8**	**+0.8**			
CUC	**Castrocucco**	**111.23**	**310**	PFAKE		17 24 50.0				
CUC				LR	LR					
	comp=Z,227nm,20.0s									
CEL	**Celeste**	**111.42**	**308**	PFAKE		17 24 50.0				
CEL				LR	LR					
	comp=Z,251nm,21.0s									
NKC	**Novy Kostel**	**111.45**	**321**	AMS	AMS	18 10 50.0				
	comp=Z,400nm,21.4s									
G08A	**Pilot Rock**	**111.52**	**44**	*e*PKiKP	**PKiKP**	**17 24 44.1**	**+1.0**			
PMPB	**Monarch Peak**	**111.64**	**54**	*e*PKKPab	PKKPab	17 35 49.0	+1.0			
CMB	**Columbia Colle**	**111.73**	**52**	*e*PKiKP	**PKiKP**	**17 24 44.0**	**+0.3**			
CMB				*e*		17 35 48.5				
CMB	**Columbia Colle**	**111.73**	**52**	*e*PKiKP	**PKiKP**	**17 24 44.0**	**+0.3**			
CMB				*e*PKKPab	**PKKPab**	**17 35 48.5**	**+0.9**			
NEW	**Newport**	**112.07**	**41**	P	**PKiKP**	**17 24 45.7**	**+1.6**			
	baz=285									
NEW	**Newport**	**112.07**	**41**	PFAKE		17 24 50.0				
NEW				LR	LR					
	comp=Z,640nm,22.0s									
ABTA	**Abfaltersbach**	**112.28**	**318**	*i* PKiKP	**PKiKP**	**17 24 44.6**	**+0.1**			
	comp=Z,7.7nm,0.8s									
ABTA				*e*SKSac	**SKSac**	**17 31 01.5**	**-1.7**			
	comp=Z,7.8nm,1.1s									
WVOR	**Wild Horse Val**	**112.32**	**47**	*e*PP	PP	17 25 27.6	-6.6			
WVOR				*e*PKKPab	**PKKPab**	**17 35 46.2**	**+1.3**			
WVOR				LR	LR					
	comp=Z,481nm,19.0s									
WAKR	**Walker**	**112.40**	**51**	*e*PKiKP	**PKiKP**	**17 24 46.8**	**+1.6**			
WAKR				*e*PP	**PP**	**17 25 33.2**	**-1.8**			
WAKR				*e*PKKPbc	**PKKPbc**	**17 35 37.8**	**+0.9**			
WAKR				*e*PKKPab	**PKKPab**	**17 35 44.9**	**+0.2**			
PKM	**Mcpherson Peak**	**112.60**	**55**	P	**PKiKP**	**17 24 47.3**	**+1.7**			
	baz=277									
AQU	**L'Aquila**	**112.61**	**313**	PFAKE		17 25 00.0				
AQU				LR	LR					
	comp=Z,287nm,20.0s									
WTTA	**Wattenberg**	**112.74**	**318**	*i* PKiKP	**PKiKP**	**17 24 46.2**	**+0.7**			
	comp=Z,16nm,0.6s									
WTTA				*e*SKSac	**SKSac**	**17 31 02.8**	**-2.4**			
	comp=Z,18nm,0.9s									
WATA	**Walderalm**	**112.76**	**318**	*i* PKiKP	**PKiKP**	**17 24 45.8**	**+0.4**			
	comp=Z,4.5nm,0.3s									
BMO	**Blue Mountains**	**112.76**	**44**	PFAKE		17 25 00.0				
BMO				LR	LR					
	comp=Z,803nm,22.0s									
WDD	**Wied Dalam**	**112.83**	**306**	PFAKE		17 25 00.0				
WDD				LR	LR					
	comp=Z,229nm,21.0s									
EDM	**Edmonton**	**112.90**	**35**	*e*PKiKP	**PKiKP**	**17 24 45.9**	**+0.5**			
EDM	**Edmonton**	**112.90**	**35**	*e*PKiKP	**PKiKP**	**17 24 45.9**	**+0.5**			
EDM				*e*PP	**PP**	**17 25 31.3**	**-6.5**			
EDM				*e*PKKPab	**PKKPab**	**17 35 41.2**	**-0.9**			
MOTA	**Moosalm**	**113.07**	**319**	*i* PKiKP	**PKiKP**	**17 24 46.4**	**+0.4**			
	comp=Z,4.4nm,0.4s									
VES	**Vestal, Richgr**	**113.07**	**54**	P	**PKiKP**	**17 24 47.3**	**+1.1**			
	baz=278									
RETA	**Reutte**	**113.25**	**319**	*i* PKiKP	**PKiKP**	**17 24 47.4**	**+1.0**			
	comp=Z,3.6nm,0.7s									
FETA	**Feichten**	**113.40**	**318**	*i* PKiKP	**PKiKP**	**17 24 47.4**	**+0.7**			
	comp=Z,16nm,1.6s									
ISA	**Isabella, Lake**	**113.58**	**54**	*e*PKKPab	PKKPab	17 35 40.6	+1.2			
BMN	**Battle Mountai**	**113.75**	**49**	*e*PP	PP	17 25 42.0	-2.5			
BMN				*e*PKKPbc	**PKKPbc**	**17 35 31.9**	**-0.4**			
CWC	**Cottonwood Cre**	**113.78**	**53**	P	**PKiKP**	**17 24 49.0**	**+1.2**			
	baz=279									
FUORN	**Ofenpass-Fuorn**	**113.81**	**318**	*e*PKiKP	**PKiKP**	**17 24 47.8**	**+0.2**			
DAVA	**Damuels**	**113.89**	**319**	*e*PKiKP	**PKiKP**	**17 24 48.3**	**+0.6**			
	comp=Z,14nm,0.6s									
WALA	**Waterton Lakes**	**113.90**	**39**	*e*PP	PP	17 25 42.6	-2.5			
CIS	**Catalina Islan**	**113.94**	**57**	P	**PKiKP**	**17 24 49.6**	**+1.6**			
	baz=278									
DAVOX	**Davos/Dischmat**	**114.03**	**318**	PKiKP	**PKiKP**	**17 24 48.7**	**+0.7**			
	comp=Z,6.3nm,0.6s,baz=224,slow=2.2,SNR=7.8									
DAVOX				SKiKP	**SKiKP**	**17 27 58.1**	**-0.7**			
	comp=Z,5.8nm,0.9s,baz=162,slow=4.0,SNR=3.9									
DAVOX				PKKPbc	**PKKPbc**	**17 35 32.2**	**+0.5**			
	comp=Z,3.2nm,0.8s,baz=3.6,slow=13,SNR=4.3									
DAVOX				PKKPab	**PKKPab**	**17 35 40.7**	**+3.3**			
	comp=Z,5.3nm,0.8s,baz=311,slow=12,SNR=6.6									
EDW2	**Edwards Air Fo**	**114.09**	**55**	P	PKPdf	17 24 49.5	+1.2			
	baz=278									
SUMG	**Summit**	**114.11**	**355**	*e*PKKPbc	PKKPbc	17 35 30.0	-2.5			
SUMG				*e*PKKPab	**PKKPab**	**17 35 37.2**	**+0.3**			
MFID	**Camas Ranch**	**114.13**	**46**	*e*PKiKP	**PKiKP**	**17 24 49.6**	**+1.4**			
MFID				*e*PKKPab	**PKKPab**	**17 35 38.4**	**+1.5**			
LRMC	**Laurel Mtn Rad**	**114.25**	**54**	P	PKPdf	17 24 50.2	+1.5			
	baz=279									
GRAC	**Grapevine Rang**	**114.26**	**53**	P	PKPdf	17 24 49.9	+1.4			
	baz=280									
SWMT	**Swartz Lake**	**114.30**	**41**	*e*PKiKP	**PKiKP**	**17 24 48.9**	**+0.5**			
SWMT				*e*PKKPab	**PKKPab**	**17 35 36.7**	**+0.6**			
MPMC	**Manual Prospec**	**114.32**	**54**	P	PKPdf	17 24 50.2	+1.3			
	baz=279									
VLC	**Villacollemand**	**114.36**	**315**	PFAKE		17 25 00.0	+12			
VLC				LR	LR					
	comp=Z,230nm,21.0s									
BFSC	**Mount Baldy Ra**	**114.45**	**56**	P	PKPdf	17 24 50.4	+1.3			
	baz=278									
TUE	**Stuetta**	**114.46**	**318**	*e*PKiKP	PKPdf	17 24 48.3	-0.6			
TUE				LR	LR					
	comp=Z,529nm,21.0s									
MSO	**Missoula**	**114.53**	**42**	P	PKPdf	17 24 49.7	+0.8			
	baz=287									
BFO	**Black Forest**	**114.58**	**320**	*e*PKiKP	PKPdf	17 24 48.2	-0.6			
BFO				MLR	MLR					
	comp=Z,285nm,20.0s									
BFO	**Black Forest**	**114.58**	**320**	*e*PKiKP	PKPdf	17 24 48.2	-0.6			
BFO				LR	LR					
	comp=Z,285nm,20.0s									
LANF	**Langenberg**	**114.71**	**321**	PKP	PKPdf	17 24 50.0	+1.0			
FURC	**Furnace Creek,**	**114.75**	**53**	P	PKPdf	17 24 51.2	+1.8			
	baz=280									
MURC	**Murrieta**	**114.92**	**56**	P	PKPdf	17 24 51.1	+1.2			
	baz=278									
GSC	**Goldstone, Bar**	**114.99**	**54**	P	PKPdf	17 24 51.8	+1.7			
	baz=279									
GSC	**Goldstone, Bar**	**114.99**	**54**	*e*PKiKP	PKPdf	17 24 51.8	+1.7			
GSC				*e*		17 35 34.6				
GSC	**Goldstone, Bar**	**114.99**	**54**	*e*PKiKP	PKPdf	17 24 51.8	+1.7			
GSC				*e*PKKPab	**PKKPab**	**17 35 34.6**	**+1.4**			
HLID	**Hailey**	**115.09**	**45**	P	**PKPdf**	**17 24 51.8**	**+1.7**			
	baz=285									
HLID	**Hailey**	**115.09**	**45**	*e*PKPdf	**PKPdf**	**17 24 51.9**	**+1.7**			
HLID				LR	LR					
	comp=Z,573nm,22.0s									
TPNV	**Topopah Spring**	**115.15**	**53**	P	**PKPdf**	**17 24 51.8**	**+1.3**			
	baz=280									
TPNV	**Topopah Spring**	**115.15**	**53**	*e*PKiKP	**PKPdf**	**17 24 51.5**	**+1.1**			
TPNV				*e*		17 35 34.7				
TPNV	**Topopah Spring**	**115.15**	**53**	*e*PKPdf	**PKPdf**	**17 24 51.5**	**+1.1**			
TPNV				*e*PP	PP	17 25 46.4	-8.1			
TPNV				*e*PKKPbc	**PKKPbc**	**17 35 27.6**	**+0.1**			
TPNV				*e*PKKPab	**PKKPab**	**17 35 34.7**	**+2.2**			
MEM	**Membach**	**115.26**	**323**	PKP	**PKPdf**	**17 24 51.2**	**+1.3**			
SHOC	**Shoshone, Teco**	**115.31**	**54**	P	**PKPdf**	**17 24 52.6**	**+2.0**			
	baz=280									
R11A	**Troy Canyon, C**	**115.40**	**51**	P	**PKPdf**	**17 24 52.6**	**+1.7**			
	baz=282									
R11A	**Troy Canyon, C**	**115.40**	**51**	*e*PKPdf	**PKPdf**	**17 24 52.5**	**+1.7**			
R11A				*e*		17 25 49.9				
R11A				*e*PKKPbc	**PKKPbc**	**17 35 27.0**	**+0.3**			
R11A				*e*PKKPab	**PKKPab**	**17 35 33.5**	**+2.0**			
HEC	**Hector,Ludlow**	**115.44**	**55**	P	**PKPdf**	**17 24 52.7**	**+1.8**			
	baz=279									
BAR	**Barrett**	**115.49**	**57**	*e*PKPdf	**PKPdf**	**17 24 52.0**	**+1.0**			
MOF	**Molkenrain**	**115.49**	**320**	PKP	**PKPdf**	**17 24 49.0**	**-1.6**			
WLF	**Walferdange**	**115.50**	**322**	PFAKE		17 25 00.0	+10			
WLF				LR	LR					
	comp=Z,486nm,21.0s									
PFO	**Pinyon Flats O**	**115.53**	**56**	P	**PKPdf**	**17 24 52.4**	**+1.2**			
	baz=279									
PFO	**Pinyon Flats O**	**115.53**	**56**	*e*PKiKP	**PKPdf**	**17 24 52.7**	**+1.5**			
PFO				MLR	MLR					
	comp=Z,598nm,22.0s									
PFO	**Pinyon Flats O**	**115.53**	**56**	*e*PKPdf	**PKPdf**	**17 24 52.7**	**+1.5**			
PFO				*e*PKKPab	**PKKPab**	**17 35 30.2**	**-0.7**			
PFO				LR	LR					
	comp=Z,598nm,22.0s									
TPFO	**Pinon Flats**	**115.53**	**56**	P	**PKPdf**	**17 24 52.7**	**+1.5**			
	baz=279									
MONP2	**Monument Peak**	**115.67**	**57**	P	**PKPdf**	**17 24 53.2**	**+1.6**			
	baz=278									
TUQ	**Turquoise Moun**	**115.67**	**54**	P	**PKPdf**	**17 24 53.1**	**+1.7**			
	baz=280									
BCLA	**Clavier**	**115.74**	**323**	PKP	**PKPdf**	**17 24 52.2**	**+1.3**			
LRM	**Limekiln Ridge**	**115.81**	**42**	*e*PKPdf	**PKPdf**	**17 24 52.1**	**+0.6**			
MCMT	**McKenzie Canyo**	**115.83**	**43**	*e*PKPdf	**PKPdf**	**17 24 53.2**	**+1.6**			
MCMT				*e*PKKPab	**PKKPab**	**17 35 30.5**	**+1.0**			
SENIN	**Lac Senin/Sane**	**115.85**	**318**	*e*PKPdf	**PKPdf**	**17 24 52.0**	**+0.4**			
BELC	**Belle Mtn. Jos**	**115.85**	**56**	P	**PKPdf**	**17 24 53.6**	**+1.8**			
	baz=279									
DLMT	**Dillon**	**115.85**	**43**	*e*PKPdf	**PKPdf**	**17 24 52.8**	**+1.3**			
DLMT				*e*PKKPab	**PKKPab**	**17 35 30.9**	**+1.6**			
IKP	**In-Ko-Pah, Jac**	**115.96**	**57**	P	**PKPdf**	**17 24 53.7**	**+1.7**			
	baz=278									
GMRC	**Granite Mounta**	**116.00**	**55**	P	**PKPdf**	**17 24 53.9**	**+1.8**			
	baz=280									
SHPR	**Sheep Range**	**116.09**	**53**	*e*PKPdf	**PKPdf**	**17 24 54.8**	**+2.5**			
SWSC	**Sam W. Stewart**	**116.18**	**57**	P	**PKPdf**	**17 24 53.7**	**+1.5**			
	baz=279									
VSL	**Villasalto**	**116.19**	**311**	PFAKE		17 25 00.0	+7.9			
VSL				LR	LR					
	comp=Z,230nm,20.0s									
SNF	**Seneffe**	**116.32**	**323**	PKP	**PKPdf**	**17 24 53.1**	**+1.1**			
BC3	**Big Chuckawall**	**116.35**	**56**	P	**PKPdf**	**17 24 54.5**	**+1.7**			
	baz=279									
BOZ	**Bozeman (W)**	**116.42**	**42**	P	**PKPdf**	**17 24 54.1**	**+1.6**			
	baz=288									
BOZ	**Bozeman (W)**	**116.42**	**42**	*e*PKiKP	**PKPdf**	**17 24 53.2**	**+0.6**			
BOZ				MLR	MLR					
	comp=Z,518nm,22.0s									
BOZ	**Bozeman (W)**	**116.42**	**42**	*e*PKPdf	**PKPdf**	**17 24 53.2**	**+0.6**			
BOZ				LR	LR					
	comp=Z,518nm,22.0s									
IRM	**Iron Mountain**	**116.52**	**55**	P	**PKPdf**	**17 24 54.6**	**+1.6**			
	baz=280									
BNI	**Bardonecchia**	**116.66**	**317**	PFAKE		17 25 00.0	+7.0			
BNI				LR	LR					
	comp=Z,550nm,20.0s									
HVU	**Hansel Valley**	**116.72**	**47**	*e*PKiKP	**PKPdf**	**17 24 54.5**	**+1.2**			
HVU				*e*		17 35 25.7				
HVU	**Hansel Valley**	**116.72**	**47**	*e*PKPdf	**PKPdf**	**17 24 54.5**	**+1.2**			
HVU				*e*PKKPbc	**PKKPab**	**17 35 25.7**	**+0.1**			
USHA	**Ushuaia**	**116.78**	**170**	SKP	**SKPdf**	**17 28 04.2**	**+0.6**			
	comp=Z,63nm,0.7s,baz=285,slow=2.4,SNR=4.2									
EGMT	**Eagleton**	**116.85**	**39**	P	**PKPdf**	**17 24 54.2**	**+1.0**			
	baz=291									
EGMT	**Eagleton**	**116.85**	**39**	*e*PKPdf	**PKPdf**	**17 24 53.8**	**+0.5**			
EGMT				LR	LR					
	comp=Z,807nm,22.0s									
GLA	**Glamis**	**116.97**	**57**	P	**PKPdf**	**17 24 55.3**	**+1.5**			
	baz=280									
KEST	**Kesra**	**117.00**	**306**	PKP	**PKPdf**	**17 24 55.3**	**+1.4**			
	comp=Z,14nm,0.8s,baz=309,slow=4.0,SNR=19									
KEST				PP	**PP**	**17 26 04.3**	**-2.9**			
	comp=Z,54nm,1.0s,baz=356,slow=2.3,SNR=13									
KEST				PKKPbc	**PKKPbc**	**17 35 21.5**	**+0.6**			
	comp=Z,4.6nm,0.9s,baz=105,slow=16,SNR=5.2									
KEST	**Kesra**	**117.00**	**306**	*e*PKPdf	**PKPdf**	**17 24 55.1**	**+1.2**			
KEST				*e*PP	**PP**	**17 26 03.7**	**-3.6**			
KEST				PKKPbc	**PKKPbc**	**17 35 21.5**	**+0.6**			
DUG	**Dugway, Tooele**	**117.09**	**48**	P	**PKPdf**	**17 24 55.6**	**+1.5**			
	baz=284									
DUG	**Dugway, Tooele**	**117.09**	**48**	*e*PKiKP	**PKPdf**	**17 24 55.5**	**+1.5**			
DUG				MLR	MLR					
	comp=Z,425nm,20.0s									
DUG	**Dugway, Tooele**	**117.09**	**48**	*e*PKPdf	**PKPdf**	**17 24 55.5**	**+1.5**			
DUG				LR	LR					
	comp=Z,425nm,20.0s									
Y12C	**Blythe**	**117.10**	**56**	P	**PKPdf**	**17 24 55.5**	**+1.4**			
	baz=280									
Y12C	**Blythe**	**117.10**	**56**	*e*PKPdf	**PKPdf**	**17 24 55.4**	**+1.4**			
Y12C				*e*PP	**PP**	**17 26 02.9**	**-5.0**			
Y12C			

X16A	**Lo Mia Camp, P**	**119.48**	**55**	*e*PKPdf	**PKPdf**	17 25 00.7	+1.8		
X16A				*e*PP	**PP**	17 26 18.9	-5.6		
X16A				*e*PKKPbc	**PKKPab**	17 35 15.5	+1.9		
DFRA	**Djebel Bou Aff**	**119.57**	**308**	P	**PKPdf**	17 24 58.5	-0.4		
LAO	**LASA Array**	**119.57**	**40**	P	**PKPdf**	17 25 00.1	+1.6		
	baz=293								
LAO	**LASA Array**	**119.57**	**40**	*e*PKPdf	**PKPdf**	17 24 60.0	+1.4		
LAO				LR	LR				
	comp=Z,510nm,21.0s								
DGMT	**Dagmar**	**120.09**	**37**	P	**PKPdf**	17 25 00.6	+1.2		
	baz=296								
DGMT	**Dagmar**	**120.09**	**37**	*e*PKPdf	**PKPdf**	17 25 00.6	+1.2		
DGMT				LR	LR				
	comp=Z,558nm,21.0s								
SFJD	**Kangerlussuaq**	**120.26**	**359**	PFAKE		17 25 10.0	+11		
SFJD				LR	LR				
	comp=Z,357nm,20.0s								
FILF	**Fillols**	**120.29**	**316**	PKP	**PKPdf**	17 25 00.8	+0.8		
PV09	**Paradox Valley**	**120.29**	**49**	*e*PKPdf	**PKPdf**	17 25 01.8	+1.4		
PV10	**Paradox Valley**	**120.39**	**50**	*e*PKPdf	**PKPdf**	17 25 02.3	+1.7		
PV05	**Paradox Valley**	**120.43**	**50**	*e*PKPdf	**PKPdf**	17 25 02.2	+1.6		
TUC	**Tucson**	**120.45**	**57**	P	**PKPdf**	17 25 02.3	+1.6		
	baz=282								
TUC	**Tucson**	**120.45**	**57**	*e*PKIKP	**PKPdf**	17 25 02.3	+1.6		
TUC				MLR	MLR				
	comp=Z,977nm,21.0s								
TUC	**Tucson**	**120.45**	**57**	*e*PKPdf	**PKPdf**	17 25 02.3	+1.6		
TUC				*e*PKKPbc	**PKKPab**	17 35 10.2	+0.9		
TUC				LR	LR				
	comp=Z,977nm,21.0s								
O20A	**White River Ci**	**120.47**	**47**	P	**PKPdf**	17 25 02.3	+1.7		
	baz=288								
O20A	**White River Ci**	**120.47**	**47**	*e*PKPdf	**PKPdf**	17 25 01.6	+1.0		
A25A	**Svangstu Ranch**	**120.52**	**36**	P	**PKPdf**	17 25 01.7	+1.5		
	baz=257								
X18A	**Snowflake**	**120.66**	**54**	*e*PKPdf	**PKPdf**	17 25 02.7	+1.5		
X18A				*e*PP	**PP**	17 26 29.7	-2.8		
X18A				*e*PKKPbc	**PKKPab**	17 35 08.8	+0.3		
W18A	**Petrified Fore**	**120.69**	**53**	P	**PKPdf**	17 25 02.7	+1.5		
	baz=284								
VALF	**Valcebollere**	**120.72**	**315**	PKP	**PKPdf**	17 25 02.2	+1.2		
PV01	**Paradox Valley**	**120.82**	**50**	*e*PKPdf	**PKPdf**	17 25 03.0	+1.6		
PV01				*e*PP	**PP**	17 26 31.6	-1.9		
PV01				*e*PKKPbc	**PKKPbc**	17 35 07.3	-0.1		
K22A	**Casper**	**120.87**	**44**	P	**PKPdf**	17 25 02.1	+0.7		
	baz=291								
K22A	**Casper**	**120.87**	**44**	*e*PKPdf	**PKPdf**	17 25 02.0	+0.7		
K22A				*e*PP	**PP**	17 26 31.0	-2.5		
K22A				*e*PKKPbc	**PKKPab**	17 35 07.3	0.0		
HSIG		**120.91**	**61**	*e*PKPdf	**PKPdf**	17 25 02.6	+1.1		
HSIG				*e*PKKPbc	**PKKPab**	17 35 09.4	+2.1		
MVCO	**Mesa Verde**	**121.13**	**51**	P	**PKPdf**	17 25 03.6	+1.6		
	baz=286								
MVCO	**Mesa Verde**	**121.13**	**51**	*e*PKPdf	**PKPdf**	17 25 03.4	+1.3		
MVCO				LR	LR				
	comp=Z,568nm,21.0s								
A26A	**Wade Farm, Ken**	**121.17**	**36**	P	**PKPdf**	17 25 02.6	+1.2		
	baz=298								
SMCO	**Snowmass**	**121.70**	**48**	*e*PKPdf	**PKPdf**	17 25 04.5	+1.2		
N23A	**Red Feather La**	**121.89**	**46**	P	**PKPdf**	17 25 04.5	+1.1		
	baz=290								
N23A	**Red Feather La**	**121.89**	**46**	*e*PKPdf	**PKPdf**	17 25 04.0	+0.6		
N23A				*e*PKKPbc	**PKKPbc**	17 35 04.1	+0.5		
319A	**Douglas**	**121.90**	**58**	*e*PKPdf	**PKPdf**	17 25 04.6	+1.1		
VIEF	**Viey**	**121.92**	**317**	PKP	**PKPdf**	17 25 04.5	+1.3		
RSSD	**Black Hills**	**122.00**	**42**	P	**PKPdf**	17 25 03.9	+0.4		
	baz=294								
RSSD	**Black Hills**	**122.00**	**42**	*e*PKIKP	**PKPdf**	17 25 03.7	+0.2		
RSSD	**Black Hills**	**122.00**	**42**	*e*PKPdf	**PKPdf**	17 25 03.7	+0.2		
RSSD				*e*PKKPbc	**PKKPbc**	17 35 03.1	0.0		
PHWY	**Pilot Hill**	**122.09**	**45**	*e*PKPdf	**PKPdf**	17 25 04.2	+0.4		
PHWY				*e*PKKPbc	**PKKPbc**	17 35 02.5	-0.3		
A28A	**Rude Farm, Bot**	**122.19**	**35**	P	**PKPdf**	17 25 04.5	+1.1		
	baz=300								
S22A	**4UR Ranch, Cre**	**122.25**	**50**	P	**PKPdf**	17 25 06.0	+1.7		
	baz=288								
S22A	**4UR Ranch, Cre**	**122.25**	**50**	*e*PKPdf	**PKPdf**	17 25 06.2	+1.9		
S22A				*e*PP	**PP**	17 26 40.3	-2.9		
TAM	**Tamanrasset**	**122.26**	**292**	*e*PKIKP	**PKPdf**	17 25 06.1	+1.6		
TAM				*e*		17 26 40.2			
TAM				MLR	MLR				
	comp=Z,231nm,19.0s								
TAM	**Tamanrasset**	**122.26**	**292**	*e*PKPdf	**PKPdf**	17 25 06.1	+1.6		
TAM				*e*PP	**PP**	17 26 40.2	-3.6		
TAM				LR	LR				
	comp=Z,231nm,19.0s								
ISCO	**Idaho Springs**	**122.50**	**47**	P	**PKPdf**	17 25 06.0	+1.4		
	baz=290								
ISCO	**Idaho Springs**	**122.50**	**47**	*e*PKIKP	**PKPdf**	17 25 05.8	+1.2		
ISCO				MLR	MLR				
	comp=Z,630nm,19.0s								
ISCO	**Idaho Springs**	**122.50**	**47**	*e*PKPdf	**PKPdf**	17 25 05.8	+1.2		
ISCO				LR	LR				
	comp=Z,630nm,19.0s								
LARF	**Larrau**	**122.54**	**317**	PKP	**PKPdf**	17 25 06.1	+1.8		
A29A	**Manning Farm,**	**122.77**	**35**	P	**PKPdf**	17 25 05.2	+0.7		
	baz=301								
121A	**Cookes Peak, D**	**122.88**	**56**	P	**PKPdf**	17 25 06.4	+0.9		
	baz=284								
B29A	**Wagenman Farm,**	**122.94**	**35**	P	**PKPdf**	17 25 05.9	+1.0		
	baz=300								
LAZ	**Ladron**	**122.94**	**54**	*e*PKPdf	**PKPdf**	17 25 07.4	+1.8		
MDND	**Maddock**	**123.10**	**36**	P	**PKPdf**	17 25 06.0	+0.8		
	baz=300								
Q24A	**Divide**	**123.11**	**48**	P	**PKPdf**	17 25 06.9	+1.0		
	baz=290								
SDCO	**Great Sand Dun**	**123.25**	**49**	P	**PKPdf**	17 25 07.8	+1.7		
	baz=289								
SDCO	**Great Sand Dun**	**123.25**	**49**	*e*PKPdf	**PKPdf**	17 25 07.4	+1.3		
SDCO				LR	LR				
	comp=Z,451nm,20.0s								
ANMO	**Albuquerque**	**123.34**	**53**	P	**PKPdf**	17 25 07.5	+1.2		
	baz=286								
ANMO	**Albuquerque**	**123.34**	**53**	*d i*PKIKP	**PKPdf**	17 25 07.8	+1.5		
ANMO				pmax	pmax				
	comp=Z,32nm,1.2s								
ANMO	**Albuquerque**	**123.34**	**53**	*e*PKPdf	**PKPdf**	17 25 08.2	+2.0		
ANMO				LR	LR				
	comp=Z,542nm,21.0s								
LPM	**Los Pinos Moun**	**123.37**	**54**	*e*PKPdf	**PKPdf**	17 25 07.9	+1.6		
LPM				*e*PKKPbc	**PKKPbc**	17 34 58.3	+0.8		
BNM	**Barren Site**	**123.42**	**54**	*e*PKPdf	**PKPdf**	17 25 07.9	+1.4		
BNM				*e*PKKPbc	**PKKPbc**	17 34 58.0	+0.6		
B30A	**Myrvik Farm, E**	**123.53**	**35**	P	**PKPdf**	17 25 06.5	+0.6		
	baz=301								
ULM	**Lac du Bonnet**	**123.89**	**32**	PKP	**PKPdf**	17 25 06.7	+0.1		
	comp=Z,26nm,0.9s,baz=310,slow=2.8,SNR=30								
ULM				SKP		17 28 17.0			
	comp=Z,11nm,1.0s,baz=309,slow=2.3,SNR=7.5								
ULM				PKKPab	**PKKPab**	17 34 53.3	-0.6		
	comp=Z,3.2nm,0.7s,baz=184,slow=6.7,SNR=3.0								
B31A	**Greenbush Farm**	**123.93**	**35**	P	**PKPdf**	17 25 07.2	+0.5		
	baz=302								
F29A	**Eureka**	**123.94**	**38**	P	**PKPdf**	17 25 07.3	+0.4		
	baz=298								
C31A	**Landman Farms,**	**124.21**	**35**	P	**PKPdf**	17 25 07.8	+0.5		
	baz=302								
T25A	**Trinidad**	**124.26**	**50**	P	**PKPdf**	17 25 09.4	+1.3		
	baz=289								
T25A	**Trinidad**	**124.26**	**50**	*e*PKPdf	**PKPdf**	17 25 09.6	+1.6		
T25A				*e*PP	**PP**	17 26 55.9	-0.7		
A32A	**Rocking H Ranc**	**124.31**	**34**	P	**PKPdf**	17 25 07.7	+0.3		
	baz=304								
F30A	**Leola**	**124.43**	**38**	P	**PKPdf**	17 25 08.2	+0.4		
	baz=299								
B32A	**Ashes, Strandq**	**124.57**	**34**	P	**PKPdf**	17 25 08.4	+0.4		
	baz=303								
D31A	**Mcclaflin, Tow**	**124.61**	**36**	P	**PKPdf**	17 25 08.7	+0.7		
	baz=301								
OGNE	**Ogallala**	**124.62**	**45**	P	**PKPdf**	17 25 09.4	+1.0		
	baz=294								
OGNE	**Ogallala**	**124.62**	**45**	PFAKE		17 25 20.0	+12		
OGNE				LR	LR				
	comp=Z,476nm,19.0s								
E31A	**Nome**	**124.76**	**37**	P	**PKPdf**	17 25 09.0	+0.6		
	baz=301								
C32A	**Crookston**	**124.88**	**35**	P	**PKPdf**	17 25 08.9	+0.3		
	baz=303								
A33A	**Warroad**	**124.90**	**33**	P	**PKPdf**	17 25 09.0	+0.4		
	baz=305								
D32A	**Dogwood Acres,**	**124.97**	**36**	P	**PKPdf**	17 25 09.2	+0.5		
	baz=302								
AGMN	**Agassiz Nation**	**125.00**	**34**	P	**PKPdf**	17 25 09.0	+0.3		
	baz=304								
AGMN	**Agassiz Nation**	**125.00**	**34**	*e*PKPdf	**PKPdf**	17 25 08.5	-0.3		
AGMN				LR	LR				
	comp=Z,797nm,21.0s								
MNTX	**Cornudas Mount**	**125.06**	**56**	P	**PKPdf**	17 25 10.8	+1.3		
	baz=285								
MNTX	**Cornudas Mount**	**125.06**	**56**	*e*PKPdf	**PKPdf**	17 25 10.4	+1.0		
MNTX				LR	LR				
	comp=Z,526nm,21.0s								
SUSD	**Miller**	**125.14**	**39**	P	**PKPdf**	17 25 10.1	+0.9		
	baz=298								
B33A	**Robert and Kas**	**125.17**	**34**	P	**PKPdf**	17 25 09.4	+0.3		
	baz=304								
J30A	**Dallas**	**125.32**	**41**	P	**PKPdf**	17 25 10.3	+0.7		
	baz=297								
C33A	**Trail**	**125.35**	**35**	P	**PKPdf**	17 25 09.9	+0.4		
	baz=304								
H31A	**Wolsey**	**125.43**	**39**	P	**PKPdf**	17 25 10.2	+0.4		
	baz=299								
K30A	**Basset**	**125.53**	**42**	P	**PKPdf**	17 25 11.0	+1.0		
	baz=297								
B34A	**Aery, Baudette**	**125.56**	**33**	P	**PKPdf**	17 25 10.4	+0.5		
	baz=305								
F32A	**Veblen**	**125.56**	**37**	P	**PKPdf**	17 25 10.9	+0.9		
	baz=301								
I31A	**Royce, Wessing**	**125.61**	**40**	P	**PKPdf**	17 25 11.1	+1.0		
	baz=299								
D33A	**AnnSam, Waubun**	**125.64**	**35**	P	**PKPdf**	17 25 10.6	+0.5		
G32A	**Webster**	**125.65**	**38**	P	**PKPdf**	17 25 11.0	+0.8		
	baz=300								
J31A	**Geddes**	**125.82**	**41**	P	**PKPdf**	17 25 11.0	+0.5		
	baz=298								
ES19	**SONSECA Array**	**125.87**	**314**	*e*PKPpre	PKPpre	17 25 06.8			
ES19				*e*PKPdf	**PKiKP**	17 25 12.2	+1.0		
HPIG		**125.88**	**62**	*e*PKPdf	**PKPdf**	17 25 12.6	+1.3		
E33A	**Westby DABS, E**	**125.90**	**36**	P	**PKPdf**	17 25 11.4	+0.8		
	baz=302								
ESDC	**Sonseca Array**	**125.93**	**314**	PKP	**PKPdf**	17 25 12.2	+1.3		
	comp=Z,4.7nm,0.8s,baz=18,slow=1.9,SNR=8.3								
ESDC				PP	**PP**	17 27 07.8	+0.4		
	comp=Z,8.0nm,1.1s,baz=57,slow=6.9,SNR=9.9								
ESDC				SKPbc	SKPbc	17 28 00.8			
	comp=Z,6.3nm,0.9s,baz=45,slow=3.1,SNR=4.8								
ESDC				SKP		17 28 19.3			
	comp=Z,2.4nm,0.8s,baz=68,slow=2.3,SNR=4.1								
ESLA	**Sonseca Array**	**125.93**	**314**	*e*PKPdf	**PKPdf**	17 25 12.0	+1.1		
D34A	**Park Rapids**	**126.05**	**35**	P	**PKPdf**	17 25 11.8	+0.9		
	baz=304								
H32A	**Carlson Farm,**	**126.07**	**39**	P	**PKPdf**	17 25 12.1	+1.1		
	baz=300								
F33A	**5 Mile Ranch,**	**126.08**	**37**	P	**PKPdf**	17 25 11.9	+1.0		
	baz=302								
K31A	**O'Neill**	**126.12**	**41**	P	**PKPdf**	17 25 12.1	+1.0		
	baz=298								
B35A	**Bob, Littlefor**	**126.14**	**33**	P	**PKPdf**	17 25 11.2	+0.3		
	baz=306								
PAB	**San Pablo**	**126.25**	**314**	*e*PKIKP	**PKPdf**	17 25 13.1	+1.5		
PAB				*e*		17 27 08.0			
PAB				MLR	MLR				
	comp=Z,286nm,19.0s								
PAB	**San Pablo**	**126.25**	**314**	*e*PKPdf	**PKPdf**	17 25 13.1	+1.5		
PAB				*e*PP	**PP**	17 27 08.0	-1.5		
PAB				LR	LR				
	comp=Z,286nm,19.0s								
L31A	**Butterfield Fa**	**126.27**	**42**	P	**PKPdf**	17 25 12.3	+0.8		
	baz=297								
G33A	**Ortonville**	**126.33**	**38**	P	**PKPdf**	17 25 12.5	+1.1		
	baz=301								
E34A	**Wadena**	**126.38**	**36**	P	**PKPdf**	17 25 12.5	+1.0		
	baz=303								
C35A	**Jirik Farms, M**	**126.38**	**34**	P	**PKPdf**	17 25 11.6	+0.2		
	baz=305								
H33A	**Prehn Over Nor**	**126.41**	**38**	P	**PKPdf**	17 25 12.6	+1.0		
	baz=301								
TORD	**Torodi Ar. Bea**	**126.48**	**281**	PKP	**PKPdf**	17 25 12.9	+0.4		
	comp=Z,53nm,0.9s,baz=62,slow=1.9,SNR=4.0								
TORD				SKPab	SKPab	17 28 03.6			
	comp=Z,24nm,1.1s,baz=87,slow=3.8,SNR=9.5								
TORD				PKKPab	**PKKPbc**	17 34 46.1	+1.4		
	comp=Z,2.9nm,1.0s,baz=236,slow=3.0,SNR=5.1								
TORD				SKKPbc	SKKPbc	17 37 58.6	-12		
	comp=Z,1.5nm,0.9s,baz=252,slow=3.3,SNR=3.7								
TOA1	**Torodi Ar. Sit**	**126.48**	**281**	*e*PKPdf	**PKPdf**	17 25 12.9	+0.4		
TOA1				*e*		17 28 03.6			
TOA1				*e*Sdif	Sdif	17 34 46.1	-2.8		
TOA1				*e*		17 37 58.6			
MSTX	**Muleshoe**	**126.53**	**53**	P	**PKPdf**	17 25 13.7	+1.4		
	baz=288								
MSTX	**Muleshoe**	**126.53**	**53**	*e*PKPdf	**PKPdf**	17 25 13.6	+1.2		
M31A	**Lambtecht Ranc**	**126.55**	**43**	P	**PKPdf**	17 25 13.0	+1.0		
	baz=296								
K32A	**Verdigre**	**126.62**	**41**	P	**PKPdf**	17 25 13.1	+1.0		
	baz=298								
D35A	**Remer**	**126.69**	**34**	P	**PKPdf**	17 25 12.4	+0.3		
	baz=305								
F34A	**Alexandria**	**126.72**	**36**	P	**PKPdf**	17 25 13.0	+0.9		
	baz=303								
G34A	**Benson**	**126.78**	**37**	P	**PKPdf**	17 25 13.8	+1.5		
	baz=304								
E35A	**Pequot Lakes**	**126.79**	**35**	P	**PKPdf**	17 25 13.2	+1.0		
	baz=304								
L32A	**Elgin**	**126.90**	**42**	P	**PKPdf**	17 25 14.0	+1.3		
	baz=298								
PBRG	**Braganca**	**126.92**	**318**	*e*PKPdf	**PKPdf**	17 25 14.1	+1.4		
PBRG	**Braganca**	**126.92**	**318**	*e*PP	PP	17 27 18.2	+4.5		
ECSD	**EROS Data Cent**	**126.96**	**39**	P	**PKPdf**	17 25 13.4	+0.7		
	baz=300								
ECSD	**EROS Data Cent**	**126.96**	**39**	*e*PKPdf	**PKPdf**	17 25 13.2	+0.5		
ECSD				LR	LR				
	comp=Z,453nm,20.0s								
C36A	**Pine Crest Far**	**126.97**	**33**	P	**PKPdf**	17 25 13.1	+0.5		
	baz=306								
H34A	**Spellman Lake,**	**127.00**	**38**	P	**PKPdf**	17 25 13.9	+1.2		
	baz=302								
BGNE	**Belgrade**	**127.08**	**42**	P	**PKPdf**	17 25 13.9	+0.9		
	baz=297								
BGNE	**Belgrade**	**127.08**	**42**	*e*PKPdf	**PKPdf**	17 25 13.2	+0.2		
LTX	**Lajitas**	**127.08**	**59**	*e*PKIKP	**PKPdf**	17 25 14.2	+0.7		
LTX				*e*		17 27 12.3			
LTX	**Lajitas**	**127.08**	**59**	*e*PKPdf	**PKPdf**	17 25 14.2	+0.7		
LTX				*e*PP	**PP**	17 27 12.3	-3.2		
LTX				*e*		17 28 06.4			
LTX				*e*Sdif	Sdif	17 34 43.5	-10		
TX31	**Lajitas Ar. Si**	**127.08**	**59**	*e*PKPdf	**PKPdf**	17 25 14.6	+1.1		
TX31				*e*PKPdf	**PKiKP**	17 25 14.8	+0.8		
TXAR	**Lajitas Array**	**127.08**	**59**	PKP	**PKPdf**	17 25 14.2	+0.7		
	comp=Z,6.9nm,0.9s,baz=253,slow=1.3,SNR=29								
TXAR				PP	**PP**	17 27 12.3	-3.2		
	comp=Z,5.0nm,1.1s,baz=258,slow=3.7,SNR=5.4								
TXAR				SKPbc	SKPbc	17 28 06.4			
	comp=Z,6.3nm,0.9s,baz=274,slow=2.9,SNR=6.3								
TXAR				PKKPab	PKKPab	17 34 43.5			
	comp=Z,1.4nm,0.5s,baz=105,slow=6.2,SNR=23								
F35A	**Swanville**	**127.08**	**36**	P	**PKPdf**	17 25 13.8	+0.9		
	baz=304								
CBKS	**Cedar Bluff**	**127.09**	**46**	P	**PKPdf**	17 25 14.9	+1.7		
	baz=294								
CBKS	**Cedar Bluff**	**127.09**	**46**	*e*PKIKP	**PKPdf**	17 25 15.1	+2.0		
CBKS	**Cedar Bluff**	**127.09**	**46**	*e*PKPdf	**PKPdf**	17 25 15.1	+2.0		
AMTX	**Amarillo**	**127.09**	**51**	P	**PKPdf**	17 25 14.6	+1.3		
	baz=290								
AMTX	**Amarillo**	**127.09**	**51**	*e*PKPdf	**PKPdf**	17 25 14.4	+1.1		
D36A	**Goodland**	**127.14**	**34**	P	**PKPdf**	17 25 13.4	+0.4		
	baz=306								
K33A	**Hardington**	**127.27**	**41**	P	**PKPdf**	17 25 15.1	+1.8		
	baz=299								
I34A	**Hadley**	**127.28**	**39**	P	**PKPdf**	17 25 14.8	+1.5		
	baz=301								
C37A	**Embarrass**	**127.34**	**33**	P	**PKPdf**	17 25 13.7	+0.4		
	baz=307								
MVO	**Moncorvo**	**127.41**	**317**	*e*PKPdf	**PKPdf**	17 25 15.1	+1.4		
MVO	**Moncorvo**	**127.41**	**317**	*e*PP	PP	17 27 20.8	+3.8		
MVO	**Moncorvo**	**127.41**	**317**	*e*SS	SS	17 44 08.6	+2.5		
E36A	**McGregor**	**127.47**	**35**	P	**PKPdf**	17 25 14.3	+0.7		
	baz=305								
G35A	**Watkins**	**127.48**	**37**	P	**PKPdf**	17 25 15.2	+1.6		
	baz=303								
O32A	**Brockman Farm,**	**127.50**	**44**	P	**PKPdf**	17 25 14.8	+0.9		
	baz=296								
D37A	**Cotton**	**127.55**	**34**	P	**PKPdf**	17 25 14.3	+0.6		
	baz=307								
P32A	**Huiting Farm,**	**127.56**	**45**	P	**PKPdf**	17 25 15.6	+1.6		
	baz=296								
H35A	**Sunnyside Ranc**	**127.56**	**37**	P	**PKPdf**	17 25 15.0	+1.3		
	baz=303								
EYMN	**Ely**	**127.58**	**32**	P	**PKPdf**	17 25 14.5	+0.8		
	baz=308								
EYMN	**Ely**	**127.58**	**32**	*e*PKPpre	PKPpre	17 25 09.6			
EYMN				LR	LR				
	comp=Z,516nm,20.0s								
J34A	**George**	**127.60**	**39**	P	**PKPdf**	17 25 14.9	+0.9		
	baz=300								
M33A	**Taylor Creek F**	**127.64**	**42**	P	**PKPdf**	17 25 15.0	+0.9		
	baz=298								
F36A	**Milaca**	**127.69**	**35**	P	**PKPdf**	17 25 14.8	+0.8		
	baz=305								
PVRL	**Vila Real**	**127.82**	**318**	*e*PKPdf	**PKPdf**	17 25 16.7	+2.3		
POLO	**Lamas de Olo**	**127.82**	**318**	*e*PKPdf	**PKPdf**	17 25 16.8	+2.3		
POLO	**Lamas de Olo**	**127.82**	**318**	*e*PP	PP	17 27 24.9	+5.2		
C38A	**Sawbill Land.**	**127.84**	**32**	P	**PKPdf**	17 25 14.5	+0.2		
	baz=308								
N33A	**J Bar K, Exete**	**127.85**	**43**	P	**PKPdf**	17 25 15.3	+0.8		
	baz=297								
PGAV	**Gavieira, Arco**	**127.85**	**319**	*e*PKPdf	**PKPdf**	17 25 16.2	+1.6		
PGAV	**Gavieira, Arco**	**127.85**	**319**	*e*PP	PP	17 27 23.7	+3.9		
PGAV	**Gavieira, Arco**	**127.85**	**319**	*e*SS	SS	17 44 17.1	+5.5		
Q32A	**Meitler Ranch,**	**127.86**	**45**	P	**PKPdf**	17 25 15.8	+1.3		
	baz=295								
G36A	**St. Michael**	**127.91**	**36**	P	**PKPdf**	17 25 15.9	+1.5		
	baz=304								
I35A	**Creekview Farm**	**127.91**	**38**	P	**PKPdf**	17 25 15.4	+0.9		
	baz=302								
E37A	**Wrenshall**	**127.92**	**34**	P	**PKPdf**	17 25 15.7	+1.3		
	baz=306								
R32A	**Long Quarter,**	**127.99**	**46**	P	**PKPdf**	17 25 16.3	+1.5		
	baz=295								
L34A	**Svendsen Farm,**	**127.99**	**41**	P	**PKPdf**	17 25 16.1	+1.3		
	baz=299								
O33A	**Hebron**	**128.06**	**44**	P	**PKPdf**	17 25 16.3	+1.4		
	baz=297								
M34A	**Aspy Farms, Fr**	**128.07**	**42**	P	**PKPdf**	17 25 15.9	+1.0		
	baz=299								
MTE	**Manteigas**	**128.10**	**317**	*e*PKPdf	**PKPdf**	17 25 17.3	+2.2		
MTE	**Manteigas**	**128.10**	**317**	*e*PP	PP	17 27 27.1	+5.6		
MTE	**Manteigas**	**128.10**	**317**	*e*SS	SS	17 44 19.1	+4.3		
MTE	**Manteigas**	**128.10**	**317**	PFAKE		17 25 30.0	+15		
MTE				LR	LR				
	comp=Z,305nm,20.0s								
S32A	**Newby Ranch, P**	**128.12**	**47**	P	**PKPdf**	17 25 16.8	+1.7		
	baz=294								
H36A	**Jessenland, He**	**128.17**	**37**	P	**PKPdf**	17 25 16.7	+1.8		
	baz=303								
PVIS	**Viseu**	**128.20**	**317**	*e*PKPdf	**PKPdf**	17 25 16.9	+1.7		
P33A	**Williams Farm,**	**128.27**	**44**	P	**PKPdf**	17 25 16.9	+1.6		
	baz=296								
PCBR	**Castelo Branco**	**128.31**	**316**	*e*PKPdf	**PKPdf**	17 25 16.8	+1.4		
T32A	**Huddler Ranch,**	**128.34**	**48**	P	**PKPdf**	17 25 17.2	+1.7		
	baz=294								
K35A	**Storm Lake**	**128.35**	**40**	P	**PKPdf**	17 25 16.5	+1.1		
	baz=301								
Q33A	**Connelly Farm,**	**128.37**	**45**	P	**PKPdf**	17 25 16.7	+1.1		
	baz=296								
C39A	**Grand Marais**	**128.38**	**32**	P	**PKPdf**	17 25 16.1	+0.9		
	baz=309								
SHEL	**Horse Pasture**	**128.38**	**243**	*i* PKIKP	**PKPdf**	17 25 19.6	+3.4		
I36A	**Fitzsimmons Fa**	**128.42**	**38**	P	**PKPdf**	17 25 17.1	+1.6		
	baz=303								
SPMN	**Marine on St.**	**128.47**	**36**	P	**PKPdf**	17 25 16.6	+1.1		
	baz=305								
SPMN	**Marine on St.**	**128.47**	**36**	*e*PKPdf	**PKPd

MESJ	**Messejana**	**129.72**	**314**	*e*PKPdf	**PKPdf**	**17 25 19.9**	**+1.8**		
J38A	**Wedel Dairy, R**	**129.74**	**38**	P	**PKPdf**	**17 25 19.4**	**+1.4**		
	baz=304								
Y33A	**Hilltop Ranch,**	**129.77**	**51**	P	**PKPdf**	**17 25 20.0**	**+1.7**		
	baz=292								
PBDV	**Barranco-do-Ve**	**129.77**	**313**	*e*PP	PP	17 27 40.6	+8.2		
M37A	**Trindle Farm,**	**129.77**	**41**	P	**PKPdf**	**17 25 19.5**	**+1.4**		
	baz=301								
R35A	**Emporia Munici**	**129.81**	**45**	P	**PKPdf**	**17 25 20.2**	**+1.9**		
	baz=297								
O36A	**Bolckow**	**129.81**	**42**	P	**PKPdf**	**17 25 19.3**	**+1.0**		
	baz=299								
PNCL	**Nicolau / Gran**	**129.82**	**315**	*e*PKPdf	**PKPdf**	**17 25 20.6**	**+2.3**		
PNCL	**Nicolau / Gran**	**129.82**	**315**	*e*PP	PP	17 27 36.9	+4.3		
P36A	**Good Intent, A**	**129.90**	**43**	P	**PKPdf**	**17 25 19.3**	**+0.9**		
	baz=299								
V34A	**Guthrie**	**129.91**	**49**	P	**PKPdf**	**17 25 20.5**	**+1.9**		
	baz=294								
V34A	**Guthrie**	**129.91**	**49**	*e*PKPdf	**PKPdf**	**17 25 19.7**	**+1.2**		
Z33A	**Whitaker Ranch**	**129.91**	**52**	P	**PKPdf**	**17 25 20.8**	**+2.1**		
	baz=291								
W34A	**Bridge Creek,**	**129.96**	**49**	P	**PKPdf**	**17 25 20.7**	**+2.0**		
	baz=293								
W34A	**Bridge Creek,**	**129.96**	**49**	*e*PKPdf	**PKPdf**	**17 25 19.7**	**+1.0**		
PMAFR	**Mafra**	**129.96**	**316**	*e*PP	PP	17 27 39.2	+5.7		
LIS	**Lisbon**	**129.98**	**316**	*i* P	SKPbc	17 28 17.3	+0.5		
COWI	**Conover**	**129.99**	**33**	PFAKE		17 25 30.0	+12		
COWI				LR	LR				
	comp=Z,595nm,21.0s								
PMST	**Lisbon--Monsan**	**129.99**	**316**	*e*PKPdf	**PKPdf**	**17 25 20.5**	**+1.9**		
PMST				*i* P	SKPbc	17 28 16.9	+0.1		
JCT	**Junction City**	**130.00**	**56**	P	**PKPdf**	**17 25 20.0**	**+1.1**		
	baz=288								
JCT	**Junction City**	**130.00**	**56**	*e*PKIKP	**PKPdf**	**17 25 20.1**	**+1.1**		
JCT				MLR	MLR				
	comp=Z,418nm,19.0s								
JCT	**Junction City**	**130.00**	**56**	*e*PKPdf	**PKPdf**	**17 25 20.1**	**+1.1**		
JCT				LR	LR				
	comp=Z,418nm,19.0s								
N37A	**Lee Faris, Mou**	**130.00**	**41**	P	**PKPdf**	**17 25 19.9**	**+1.3**		
	baz=300								
S35A	**Otter Creek Ra**	**130.01**	**46**	P	**PKPdf**	**17 25 20.5**	**+1.8**		
	baz=296								
133A	**Hamilton Ranch**	**130.03**	**53**	P	**PKPdf**	**17 25 20.5**	**+1.6**		
	baz=290								
Q36A	**Arnold C. Orve**	**130.03**	**44**	P	**PKPdf**	**17 25 20.3**	**+1.6**		
	baz=298								
L38A	**Oak Wood Farm,**	**130.08**	**39**	P	**PKPdf**	**17 25 20.0**	**+1.3**		
	baz=303								
X34A	**Smith Ranch, M**	**130.16**	**50**	P	**PKPdf**	**17 25 20.8**	**+1.8**		
	baz=293								
J39A	**Decorah**	**130.19**	**37**	P	**PKPdf**	**17 25 19.6**	**+0.7**		
	baz=305								
T35A	**Sooner Cattle**	**130.20**	**47**	P	**PKPdf**	**17 25 20.4**	**+1.4**		
	baz=296								
PTEO	**Sao Teotonio**	**130.21**	**314**	*e*PKPdf	**PKPdf**	**17 25 21.5**	**+2.5**		
233A	**Rising Star**	**130.24**	**54**	P	**PKPdf**	**17 25 21.2**	**+1.8**		
	baz=290								
MORF	**Marmelete**	**130.26**	**314**	*i* P	**SKPbc**	**17 28 18.0**	**0.0**		
RTC	**Rabat Centre**	**130.26**	**309**	*e*SKPbc	**SKPbc**	**17 28 18.0**	**0.0**		
RTC				LR	LR				
	comp=Z,977nm,20.0s								
R36A	**Gordon, Harris**	**130.30**	**45**	P	**PKPdf**	**17 25 19.9**	**+0.7**		
	baz=298								
M38A	**Pleasantville**	**130.32**	**40**	P	**PKPdf**	**17 25 20.5**	**+1.4**		
	baz=302								
333A	**Richland Sprin**	**130.40**	**55**	P	**PKPdf**	**17 25 21.5**	**+1.9**		
	baz=289								
K39A	**Oelwein**	**130.44**	**38**	P	**PKPdf**	**17 25 20.1**	**+0.7**		
	baz=304								
V35A	**Meyer Ranch, C**	**130.44**	**48**	P	**PKPdf**	**17 25 21.4**	**+1.9**		
	baz=294								
Y34A	**Reagan Ranch,**	**130.46**	**51**	P	**PKPdf**	**17 25 21.5**	**+1.9**		
	baz=292								
PFVI	**Vila Bisbo**	**130.46**	**314**	*e*PP	**SKPbc**	**17 28 15.0**	**-3.7**		
PFVI				*i* P	**SKPab**	**17 28 18.3**	**-0.5**		
PFVI	**Vila Bisbo**	**130.46**	**314**	*e*SKPbc	**SKPab**	**17 28 18.8**	**-0.1**		
832A	**Faith Ranch, C**	**130.48**	**59**	P	**PKPdf**	**17 25 22.2**	**+2.4**		
	baz=286								
P37A	**Lathrop**	**130.49**	**43**	P	**PKPdf**	**17 25 20.5**	**+1.0**		
	baz=300								
433A	**Art**	**130.50**	**55**	P	**PKPdf**	**17 25 21.5**	**+1.6**		
	baz=288								
S36A	**Lake Cedric, C**	**130.51**	**46**	P	**PKPdf**	**17 25 20.6**	**+1.0**		
	baz=297								
Z34A	**Collier Ranch,**	**130.55**	**52**	P	**PKPdf**	**17 25 21.9**	**+2.1**		
	baz=292								
T36A	**Boggs Farm, Ca**	**130.60**	**46**	P	**PKPdf**	**17 25 21.7**	**+1.9**		
	baz=296								
W35A	**Tecumseh**	**130.66**	**49**	P	**PKPdf**	**17 25 21.2**	**+1.2**		
	baz=294								
L39A	**Vinton**	**130.69**	**39**	P	**PKPdf**	**17 25 21.1**	**+1.3**		
	baz=304								
134A	**White-Moore Ra**	**130.71**	**53**	P	**PKPdf**	**17 25 21.3**	**+1.2**		
	baz=291								
J40A	**Soldiers Grove**	**130.73**	**37**	P	**PKPdf**	**17 25 21.0**	**+1.2**		
	baz=306								
533A	**Kerrville**	**130.75**	**56**	P	**PKPdf**	**17 25 22.3**	**+1.9**		
	baz=288								
Q37A	**Longview Farm,**	**130.77**	**44**	P	**PKPdf**	**17 25 21.2**	**+1.1**		
	baz=299								
R37A	**Teagarden Farm**	**130.77**	**44**	P	**PKPdf**	**17 25 21.3**	**+1.2**		
	baz=298								
633A	**Saathoff Ranch**	**130.82**	**57**	P	**PKPdf**	**17 25 22.1**	**+1.6**		
	baz=287								
234A	**Clairette**	**130.86**	**54**	P	**PKPdf**	**17 25 22.4**	**+1.9**		
	baz=290								
X35A	**Drake**	**130.89**	**50**	P	**PKPdf**	**17 25 20.2**	**-0.2**		
	baz=293								
K40A	**Colesburg**	**130.90**	**38**	P	**PKPdf**	**17 25 21.1**	**+0.9**		
	baz=305								
M39A	**Webster**	**130.94**	**39**	P	**PKPdf**	**17 25 21.5**	**+1.2**		
	baz=303								
U36A	**Oologah**	**130.99**	**47**	P	**PKPdf**	**17 25 22.3**	**+1.8**		
	baz=296								
334A	**Lometa**	**131.00**	**54**	P	**PKPdf**	**17 25 22.9**	**+2.1**		
	baz=290								
P38A	**Dawn**	**131.02**	**42**	P	**PKPdf**	**17 25 22.1**	**+1.5**		
	baz=300								
Y35A	**Marietta**	**131.03**	**51**	P	**PKPdf**	**17 25 21.6**	**+0.9**		
	baz=293								
S37A	**Fort Scott**	**131.03**	**45**	P	**PKPdf**	**17 25 21.6**	**+1.0**		
	baz=298								
N39A	**Derby Farms, D**	**131.05**	**40**	P	**PKPdf**	**17 25 21.9**	**+1.4**		
	baz=302								
Z35A	**Perchaven, San**	**131.08**	**52**	P	**PKPdf**	**17 25 23.1**	**+2.2**		
	baz=292								
SCHQ	**Schefferville**	**131.09**	**11**	PKhKP	PKPpre	17 25 07.5			
	comp=Z,3.4nm,0.5s,baz=268,slow=18,SNR=2.4								
SCHQ				PKP	**PKiKP**	**17 25 21.7**	**+0.5**		
	comp=Z,7.7nm,0.5s,baz=290,slow=3.0,SNR=4.6								
SCHQ				SKPbc	**SKPbc**	**17 28 20.4**	**-0.1**		
	comp=Z,250nm,1.0s,baz=359,slow=4.4,SNR=57								
SCHQ				SKKPbc	**SKKPbc**	**17 37 50.9**	**-5.7**		
	comp=Z,8.1nm,0.8s,baz=147,slow=4.7,SNR=4.4								
SCHQ	**Schefferville**	**131.09**	**11**	*e*PKPpre	PKPpre	17 25 07.2			
SCHQ				*e*PKPdf	**PKiKP**	**17 25 21.2**	**0.0**		
SCHQ				*e*SKPbc	**SKPbc**	**17 28 19.9**	**-0.6**		
SCHQ				SKKPbc	**SKKPbc**	**17 37 50.9**	**-5.7**		
V36A	**Jenks**	**131.10**	**48**	P	**PKPdf**	**17 25 22.1**	**+1.3**		
	baz=295								
434A	**Burnet**	**131.15**	**55**	P	**PKPdf**	**17 25 22.0**	**+0.9**		
	baz=289								
TUL1	**Leonard**	**131.16**	**48**	P	**PKPdf**	**17 25 22.3**	**+1.4**		
	baz=295								
TUL1	**Leonard**	**131.16**	**48**	*e*PKPdf	**PKPdf**	**17 25 21.8**	**+0.9**		
TUL1				*e*SKPbc	**SKPab**	**17 28 22.2**	**+0.4**		
W36A	**Wetumka**	**131.16**	**49**	P	**PKPdf**	**17 25 22.5**	**+1.6**		
	baz=294								
L40A	**Anamosa**	**131.21**	**38**	P	**PKPdf**	**17 25 20.9**	**+0.2**		
	baz=304								
534A	**Blanco**	**131.23**	**56**	P	**PKPdf**	**17 25 22.3**	**+1.1**		
	baz=288								
135A	**Vickery Place,**	**131.24**	**53**	P	**PKPdf**	**17 25 22.8**	**+1.7**		
	baz=291								
T37A	**Cheneyville 18**	**131.26**	**46**	P	**PKPdf**	**17 25 22.0**	**+1.0**		
	baz=297								
933A	**Laredo**	**131.26**	**59**	P	**PKPdf**	**17 25 23.5**	**+2.1**		
	baz=286								
X36A	**Centrahoma**	**131.29**	**50**	P	**PKPdf**	**17 25 22.3**	**+1.2**		
	baz=294								
Q38A	**Cooks Store, C**	**131.29**	**43**	P	**PKPdf**	**17 25 21.8**	**+0.7**		
	baz=300								
JFWS	**Jewell Farm**	**131.31**	**37**	*e*PKHKP	PKPpre	17 25 10.9			
JFWS				*e*		17 25 20.6			
JFWS				MLR	MLR				
	comp=Z,607nm,20.0s								
JFWS	**Jewell Farm**	**131.31**	**37**	*e*PKPpre	PKPpre	17 25 10.9			
JFWS				*e*PKPdf	**PKPdf**	**17 25 20.6**	**-0.4**		
JFWS				LR	LR				
	comp=Z,607nm,20.0s								
WHTX	**Lake Whitney,**	**131.40**	**53**	P	**PKPdf**	**17 25 22.8**	**+1.4**		
	baz=291								
WHTX	**Lake Whitney,**	**131.40**	**53**	*e*PKPdf	**PKPdf**	**17 25 23.0**	**+1.5**		
WHTX				*e*SKPbc	**SKPab**	**17 28 23.6**	**+0.6**		
U37A	**Salina**	**131.44**	**47**	P	**PKPdf**	**17 25 22.1**	**+0.7**		
	baz=296								
K41A	**Shullsburg**	**131.45**	**37**	P	**PKPdf**	**17 25 22.1**	**+0.9**		
	baz=306								
R38A	**Fenwick Farm,**	**131.47**	**44**	P	**PKPdf**	**17 25 21.5**	**+0.1**		
	baz=299								
P39B	**Salisbury**	**131.61**	**42**	P	**PKPdf**	**17 25 22.2**	**+0.5**		
	baz=301								
Y36A	**Durant**	**131.61**	**50**	P	**PKPdf**	**17 25 21.7**	**-0.1**		
	baz=293								
V37A	**Hulbert**	**131.65**	**47**	P	**PKPdf**	**17 25 22.7**	**+0.9**		
	baz=296								
335A	**Moody**	**131.67**	**54**	P	**PKPdf**	**17 25 23.4**	**+1.4**		
	baz=290								
Q39A	**Willow Grove F**	**131.68**	**43**	P	**PKPdf**	**17 25 22.6**	**+0.8**		
	baz=300								
834A	**Tilden**	**131.73**	**59**	P	**PKPdf**	**17 25 23.8**	**+1.6**		
	baz=287								
S38A	**Stockton**	**131.74**	**45**	P	**PKPdf**	**17 25 22.1**	**+0.2**		
	baz=298								
Z36A	**Blue Ridge**	**131.74**	**51**	P	**PKPdf**	**17 25 23.0**	**+1.0**		
	baz=293								
T38A	**Diamond**	**131.74**	**46**	P	**PKPdf**	**17 25 22.4**	**+0.4**		
	baz=298								
W37B	**Quinton**	**131.75**	**49**	P	**PKPdf**	**17 25 23.4**	**+1.4**		
	baz=295								
O40A	**La Belle**	**131.86**	**41**	P	**PKPdf**	**17 25 23.0**	**+0.9**		
	baz=302								
034A	**Hebbronville**	**131.91**	**60**	P	**PKPdf**	**17 25 25.0**	**+2.5**		
	baz=286								
U38A	**Gravette**	**131.95**	**46**	P	**PKPdf**	**17 25 23.2**	**+0.8**		
	baz=297								
R39A	**Chumby, Stover**	**132.01**	**44**	P	**PKPdf**	**17 25 23.1**	**+0.7**		
	baz=300								
X37A	**Clayton**	**132.02**	**49**	P	**PKPdf**	**17 25 23.7**	**+1.1**		
	baz=295								
P40A	**Paris**	**132.05**	**42**	P	**PKPdf**	**17 25 23.3**	**+0.8**		
	baz=302								
Y37A	**Hugo**	**132.08**	**50**	P	**PKPdf**	**17 25 24.9**	**+2.2**		
	baz=294								
S39A	**Bolivar**	**132.12**	**44**	P	**PKPdf**	**17 25 23.4**	**+0.8**		
	baz=299								
V38A	**Canehill**	**132.19**	**47**	P	**PKPdf**	**17 25 23.7**	**+0.8**		
	baz=297								
Q40A	**Laux Farm, Aux**	**132.31**	**42**	P	**PKPdf**	**17 25 24.2**	**+1.2**		
	baz=301								
HHAR	**Hobbs**	**132.34**	**46**	*e*PKPpre	PKPpre	17 25 16.8			
HHAR				*e*PKPdf	**PKPdf**	**17 25 23.2**	**+0.1**		
HHAR				*e*PP	PP	17 27 41.0	-8.0		
HHAR				*e*SKPbc	**SKPbc**	**17 28 25.2**	**-0.3**		
536A	**Bastrop**	**132.37**	**56**	P	**PKPdf**	**17 25 25.5**	**+2.1**		
	baz=290								
Z37A	**Pogue Cattle C**	**132.39**	**51**	P	**PKPdf**	**17 25 25.0**	**+1.7**		
	baz=293								
T39A	**Clever**	**132.40**	**45**	P	**PKPdf**	**17 25 24.4**	**+1.2**		
	baz=298								
X38A	**Whitesboro**	**132.40**	**49**	P	**PKPdf**	**17 25 24.7**	**+1.4**		
	baz=295								
W38A	**Poteau**	**132.46**	**48**	P	**PKPdf**	**17 25 25.0**	**+1.6**		
	baz=296								
KVTX	**Kingsville**	**132.46**	**59**	PFAKE		17 25 30.0	+6.4		
KVTX				LR	LR				
	comp=Z,415nm,20.0s								
O41A	**Passleys Farm,**	**132.50**	**40**	P	**PKPdf**	**17 25 24.6**	**+1.3**		
	baz=303								
R40A	**Maddies Statio**	**132.54**	**43**	P	**PKPdf**	**17 25 24.7**	**+1.3**		
	baz=300								
636A	**Smothers Creek**	**132.57**	**56**	P	**PKPdf**	**17 25 25.6**	**+1.9**		
	baz=288								
035Z	**Hargill**	**132.60**	**61**	P	**PKPdf**	**17 25 24.8**	**+1.0**		
	baz=286								
U39A	**Green Forest**	**132.62**	**46**	P	**PKPdf**	**17 25 24.4**	**+0.7**		
	baz=298								
KIC	**Kosan Boka**	**132.66**	**272**	*e*PKP1	**SKPbc**	**17 28 25.6**	**-1.6**		
	comp=Z,672nm,1.2s								
KIC	**Kosan Boka**	**132.66**	**272**	*e*P	PKPpre	17 25 15.0			
	comp=Z,129nm,1.1s								
237A	**Washetta, Mont**	**132.70**	**53**	P	**PKPdf**	**17 25 25.5**	**+1.5**		
	baz=292								
S40A	**Lebanon**	**132.73**	**44**	P	**PKPdf**	**17 25 25.0**	**+1.2**		
	baz=300								
736A	**Circle Diamond**	**132.73**	**57**	P	**PKPdf**	**17 25 25.4**	**+1.4**		
	baz=288								
V39A	**Pettigrew**	**132.75**	**47**	P	**PKPdf**	**17 25 24.2**	**+0.3**		
	baz=297								
Y38A	**Idabel**	**132.78**	**50**	P	**PKPdf**	**17 25 25.3**	**+1.3**		
	baz=295								
DBIC	**Dimbokro**	**132.79**	**272**	PKhKP	PKPpre	17 25 07.2			
	comp=Z,3.4nm,0.8s,baz=136,slow=5.8,SNR=4.0								
DBIC				PKP	**PKPdf**	**17 25 25.0**	**+0.5**		
	comp=Z,34nm,0.7s,baz=84,slow=2.3,SNR=24								
DBIC				PP	**PP**	**17 27 51.7**	**-1.2**		
	comp=Z,5.9nm,0.8s,baz=66,slow=9.2,SNR=2.9								
DBIC				SKPbc	**SKPbc**	**17 28 26.8**	**-0.8**		
	comp=Z,131nm,1.0s,baz=85,slow=3.8,SNR=28								
DBIC	**Dimbokro**	**132.79**	**272**	PKPpre	PKPpre	17 25 07.2			
DBIC				*e*PKPpre	PKPpre	17 25 18.8			
DBIC				*e*PKPdf	**PKPdf**	**17 25 25.0**	**+0.5**		
DBIC				*e*PP	**PP**	**17 27 51.4**	**-1.5**		
DBIC				*e*SKPbc	**SKPbc**	**17 28 26.6**	**-1.1**		
LIC	**Lamto**	**132.93**	**272**	*e*PKP1	**SKPbc**	**17 28 26.5**	**-1.7**		
	comp=Z,380nm,1.5s								
LIC	**Lamto**	**132.93**	**272**	*e*P	PKPpre	17 25 13.5			
	comp=Z,57nm,0.9s								
T40A	**Mansfield**	**132.94**	**45**	P	**PKPdf**	**17 25 24.6**	**+0.4**		
	baz=299								
W39A	**Magazine**	**132.94**	**48**	P	**PKPdf**	**17 25 25.0**	**+0.7**		
	baz=297								
TIC	**Toumodi**	**132.95**	**272**	*e*PKP1	**SKPbc**	**17 28 26.6**	**-1.6**		
TIC	**Toumodi**	**132.95**	**272**	*e*P	PKPpre	17 25 15.4			
X39A	**Fountain Ranch**	**133.00**	**49**	P	**PKPdf**	**17 25 25.0**	**+0.6**		
	baz=296								
138A	**Matatall Enter**	**133.01**	**51**	P	**PKPdf**	**17 25 25.5**	**+1.0**		
	baz=293								
U40A	**Yellville**	**133.08**	**46**	P	**PKPdf**	**17 25 25.2**	**+0.6**		
	baz=298								
P42A	**Winchester**	**133.14**	**41**	P	**PKPdf**	**17 25 25.3**	**+0.8**		
	baz=304								
S41A	**Jillco Farms,**	**133.25**	**44**	P	**PKPdf**	**17 25 24.4**	**-0.4**		
	baz=300								
Y39A	**Lockesburg**	**133.25**	**49**	P	**PKPdf**	**17 25 26.2**	**+1.3**		
	baz=295								
HDIL	**Hopedale**	**133.26**	**39**	P	**PKPdf**	**17 25 25.1**	**+0.4**		
	baz=305								
HDIL	**Hopedale**	**133.26**	**39**	*e*PKPdf	**PKPdf**	**17 25 26.5**	**+1.8**		
HDIL				LR	LR				
	comp=Z,553nm,21.0s								
V40A	**Witts Springs**	**133.36**	**46**	P	**PKPdf**	**17 25 26.5**	**+1.4**		
	baz=298								
MIAR	**Mount Ida**	**133.38**	**48**	P	**PKPdf**	**17 25 27.2**	**+2.1**		
	baz=296								
MIAR	**Mount Ida**	**133.38**	**48**	*e*PKIKP	**PKPdf**	**17 25 25.8**	**+0.7**		
MIAR				MLR	MLR				
	comp=Z,597nm,20.0s								
MIAR	**Mount Ida**	**133.38**	**48**	*e*PKPdf	**PKPdf**	**17 25 25.8**	**+0.7**		
MIAR				LR	LR				
	comp=Z,597nm,20.0s								
T41A	**Mountain View**	**133.51**	**44**	P	**PKPdf**	**17 25 26.7**	**+1.3**		
	baz=300								
NATX	**Nacogdoches**	**133.70**	**52**	*e*PKPdf	**PKPdf**	**17 25 26.3**	**+0.5**		
NATX				LR	LR				
	comp=Z,709nm,21.0s								
U41A	**Viola**	**133.75**	**45**	P	**PKPdf**	**17 25 27.2**	**+1.4**		
	baz=299								
Y40A	**Okolona**	**133.83**	**49**	P	**PKPdf**	**17 25 27.3**	**+1.3**		
	baz=296								
V41A	**Mountainview**	**133.85**	**46**	P	**PKPdf**	**17 25 27.1**	**+1.1**		
	baz=299								
TLIG	**Tlapa**	**133.88**	**73**	*e*SKPbc	**SKPbc**	**17 28 32.4**	**+1.1**		
Q43A	**New Douglas**	**133.91**	**41**	P	**PKPdf**	**17 25 27.3**	**+1.3**		
	baz=304								
X301	**Greenbrier Sit**	**133.93**	**47**	*e*PKPdf	**PKPdf**	**17 25 25.3**	**-0.8**		
X201	**Greenbrier Sit**	**133.93**	**47**	*e*PKPdf	**PKPdf**	**17 25 26.0**	**-0.2**		
WHAR	**Wooly Hollow**	**133.99**	**47**	*e*PKPdf	**PKPdf**	**17 25 24.6**	**-1.7**		
WHAR				*e*SKPbc	**SKPbc**	**17 28 31.1**	**+0.1**		
VLDQ	**Val d'Or**	**134.00**	**23**	*e*PKPpre	PKPpre	17 25 12.5			
VLDQ				*e*PKPdf	**PKPdf**	**17 25 25.0**	**-0.8**		
VLDQ				*e*PP	**PP**	**17 27 58.9**	**+0.3**		
VLDQ				*e*SKPbc	**SKPbc**	**17 28 28.7**	**-1.9**		
W41B	**Gary Mavity, V**	**134.07**	**47**	P	**PKPdf**	**17 25 26.1**	**-0.2**		
	baz=298								
WLAR	**White Oak Lake**	**134.10**	**49**	*e*PKPdf	**PKPdf**	**17 25 28.0**	**+1.6**		
WLAR				*e*SKPbc	**SKPbc**	**17 28 32.4**	**+1.0**		
TRQA	**Tornquist**	**134.12**	**169**	*e*PKPdf	**PKPdf**	**17 25 27.6**	**+1.1**		
TRQA				*e*SKPbc	**SKPbc**	**17 28 30.4**	**-1.1**		
TRQA				LR	LR				
	comp=Z,599nm,19.0s								
UALR	**University of**	**134.19**	**47**	*e*PKPdf	**PKPdf**	**17 25 28.2**	**+1.6**		
UALR				*e*SKPbc	**SKPbc**	**17 28 32.0**	**+0.4**		
U42A	**Revenden**	**134.22**	**45**	P	**PKPdf**	**17 25 26.9**	**+0.3**		
	baz=300								
V42A	**Cord**	**134.38**	**46**	P	**PKPdf**	**17 25 27.4**	**+0.5**		
	baz=299								
Y41A	**Eaglette Beard**	**134.39**	**49**	P	**PKPdf**	**17 25 28.3**	**+1.2**		
	baz=297								
PBMO	**Poplar Bluff**	**134.57**	**44**	*e*PKPpre	PKPpre	17 25 11.2			
PBMO				*e*PKPdf	**PKPdf**	**17 25 27.4**	**+0.1**		
SFIN	**Lafayette**	**134.71**	**38**	*e*PKPpre	PKPpre	17 25 14.5			
SFIN				*e*PKPdf	**PKPdf**	**17 25 27.7**	**+0.2**		
SFIN				*e*PP	**PP**	**17 27 57.2**	**-6.3**		
SFIN				*e*SKPbc	**SKPbc**	**17 28 32.3**	**-0.9**		
SIUC	**Southern Illin**	**134.90**	**42**	*e*PKPpre	PKPpre	17 25 12.3			
SIUC				*e*PKPdf	**PKiKP**	**17 25 28.8**	**-0.5**		
OLIL	**Olney**	**135.06**	**40**	*e*PKPpre	PKPpre	17 25 13.4			
OLIL				*e*PKPdf	**PKiKP**	**17 25 28.9**	**-0.8**		
OLIL				*e*SKPbc	**SKPbc**	**17 28 34.0**	**-0.4**		
AAM	**Ann Arbor**	**135.46**	**33**	PFAKE		17 25 40.0	+11		
AAM				LR	LR				
	comp=Z,663nm,20.0s								
BLO	**Bloomington**	**135.79**	**39**	*e*PKHKP	PKPpre	17 25 15.3			
BLO				*e*		17 25 30.8			
BLO	**Bloomington**	**135.79**	**39**	*e*PKPpre	PKPpre	17 25 15.3			
BLO				*e*PKPdf	**PKiKP**	**17 25 30.8**	**-0.4**		
SADO	**Sadowa**	**135.93**	**27**	PP	PP	17 28 08.9	-1.9		
	comp=Z,6.2nm,1.1s,baz=320,slow=7.6,SNR=3.4								
SADO				SKPbc	**SKPbc**	**17 28 36.5**	**-0.3**		
	comp=Z,131nm,1.1s,baz=327,slow=4.6,SNR=38								
SADO				SKPab	**SKPab**	**17 28 41.9**	**-0.3**		
	comp=Z,17nm,0.7s,baz=318,slow=7.6,SNR=3.4								
SADO				SKKPbc	**SKKPbc**	**17 37 34.5**	**-3.8**		
	comp=Z,2.5nm,0.5s,baz=92,slow=9.3,SNR=3.3								
SADO	**Sadowa**	**135.93**	**27**	*e*PKPpre	PKPpre	17 25 18.1			
SADO				*e*PKPdf	**PKPdf**	**17 25 30.1**	**+0.5**		
SADO				*e*PP	**PP**	**17 28 08.3**	**-2.5**		
SADO				*e*SKPbc	**SKPbc**	**17 28 36.2**	**-0.7**		
SADO				SKPab	**SKPab**	**17 28 41.9**	**-0.3**		
SADO				SKKPbc	**SKKPbc**	**17 37 34.5**	**-3.8**		
Y44A	**Strider, Charl**	**136.12**	**47**	P	**PKPdf**	**17 25 31.2**	**+1.0**		
	baz=299								
ROC1	**El Roble**	**136.32**	**157**	*e*PKPpre	PKPpre	17 25 18.0			
ROC1				*e*SKPbc	**SKPbc**	**17 28 37.9**	**-0.9**		
OXF	**Oxford**	**136.43**	**46**	*e*PKHKP	PKPpre	17 25 20.8			
OXF	**Oxford**	**136.43**	**46**	*e*PKPpre	PKPpre	17 25 20.8			
WCI	**Wyandotte Cave**	**136.50**	**40**	*e*PKHKP	PKPpre	17 25 18.2			
WCI				*e*		17 25 33.0			
WCI	**Wyandotte Cave**	**136.50**	**40**	*e*PKPpre	PKPpre	17 25 18.2			
WCI				*e*PKPdf	**PKiKP**	**17 25 33.0**	**+0.4**		
WCI				*e*SKPbc	**SKPbc**	**17 28 38.3**	**-0.5**		
PLVO	**Plevna**	**136.63**	**26**	*e*PKPpre	PKPpre	17 25 21.7			
PLVO				*e*SKPbc	**SKPbc**	**17 28 38.8**	**-0.1**		
TRQ	**Mont Tremblant**	**136.68**	**22**	*e*PKPpre	PKPpre	17 25 22.0			
TRQ				*e*PKPdf	**PKiKP**	**17 25 33.6**	**+0.8**		
TRQ

ODNJ	**Ogdensburg**	**140.88**	**27**	*e*PKPpre	PKPpre	17 25 29.2			
ODNJ				*e*SKPbc	**SKPbc**	**17 28 48.9**	**-2.0**		
MVL	**Millersville**	**140.92**	**30**	*e*PKPpre	PKPpre	17 25 33.0			
LUPA	**Lehigh Univers**	**140.92**	**28**	*e*PKPpre	PKPpre	17 25 32.6			
HRV	**Adam Dziewonsk**	**140.97**	**23**	*e*PKIKP	**PKPdf**	**17 25 37.0**	**-1.9**		
HRV	**Adam Dziewonsk**	**140.97**	**23**	*e*PKPdf	**PKPdf**	**17 25 37.0**	**-1.9**		
SDMD	**Soldier's Deli**	**141.12**	**31**	*e*PKPpre	PKPpre	17 25 31.4			
GOGA	**Godfrey**	**141.19**	**43**	*e*PKHKP	PKPpre	17 25 33.6			
GOGA				MLR	MLR				
	comp=Z,404nm,20.0s								
GOGA	**Godfrey**	**141.19**	**43**	*e*PKPpre	PKPpre	17 25 33.6			
GOGA				LR	LR				
	comp=Z,404nm,20.0s								
BRNJ	**Basking Ridge**	**141.22**	**27**	*e*PKPpre	PKPpre	17 25 33.8			
PAL	**Palisades**	**141.26**	**26**	*e*PKHKP	PKPpre	17 25 33.0			
PAL	**Palisades**	**141.26**	**26**	*e*PKPpre	PKPpre	17 25 33.0			
PAYG	**Puerto Ayora**	**141.44**	**100**	PFAKE		17 25 50.0	+9.4		
PAYG				LR	LR				
	comp=Z,367nm,20.0s								
KMSC	**Kings Mountain**	**141.54**	**40**	P	PKPpre	17 25 34.4			
	baz=310								
KMSC	**Kings Mountain**	**141.54**	**40**	*e*PKPpre	PKPpre	17 25 33.1			
CBN	**Corbin Frederi**	**141.75**	**32**	PFAKE		17 25 50.0	+10		
CBN				LR	LR				
	comp=Z,755nm,21.0s								
JSC	**Jenkinsville**	**142.13**	**41**	*e*PKIKP	**PKPdf**	**17 25 37.7**	**-3.5**		
JSC	**Jenkinsville**	**142.13**	**41**	*e*PKPpre	PKPpre	17 25 37.7			
TIGA	**Tifton**	**142.20**	**46**	P	PKPpre	17 25 37.6			
	baz=303								
NHSC	**New Hope**	**143.57**	**41**	*e*PKPdf	PKPbc	17 25 42.5	+0.7		
NHSC				LR	LR				
	comp=Z,612nm,22.0s								
CNNC	**Cliffs of the**	**143.58**	**36**	PFAKE		17 25 50.0	+6.3		
CNNC				LR	LR				
	comp=Z,526nm,20.0s								
RGRS	**Roger Stewart**	**143.68**	**41**	*e*PKPdf	**PKPdf**	**17 25 43.4**	**-0.5**		
PB10	**IPOC Station P**	**144.72**	**150**	*e*PKPbc	**PKPab**	**17 25 44.9**	**-0.7**		
DWPF	**Disney Wildern**	**145.57**	**49**	*e*PKPdf	**PKPab**	**17 25 48.5**	**-0.2**		
PB04	**IPOC Station P**	**145.91**	**150**	*e*PKPdf	**PKPab**	**17 25 50.9**	**+0.6**		
LVC	**Limon Verde**	**146.28**	**152**	PKP	**PKPbc**	**17 25 51.2**	**+0.4**		
	comp=Z,194nm,0.6s,baz=266,slow=3.9,SNR=36								
LVC				PKPbc	**PKiKP**	**17 25 53.0**	**-0.6**		
	comp=Z,194nm,0.6s,baz=263,slow=3.6,SNR=52								
LVC				SKPbc	**SKiKP**	**17 29 05.7**	**+0.5**		
	comp=Z,134nm,0.8s,baz=255,slow=2.4,SNR=9.4								
LVC	**Limon Verde**	**146.28**	**152**	*e*PKPdf	**PKPab**	**17 25 52.3**	**+0.3**		
LVC				*e*SKPbc	**SKiKP**	**17 29 05.4**	**+0.2**		
LVC				*e*SKPbc	**SKiKP**	**17 29 05.7**	**+0.5**		
CPUP	**Villa Florida**	**146.35**	**172**	PKP	**PKPbc**	**17 25 50.0**	**-0.4**		
	comp=Z,104nm,0.9s,baz=185,slow=2.0,SNR=124								
CPUP				PKPbc	**PKiKP**	**17 25 51.8**	**+0.1**		
	comp=Z,104nm,0.9s,baz=185,slow=1.9,SNR=124								
CPUP				SKPbc	**SKiKP**	**17 29 04.9**	**+0.2**		
	comp=Z,39nm,0.9s,baz=172,slow=1.7,SNR=6.8								
CPUP	**Villa Florida**	**146.35**	**172**	PKIKP	**PKPbc**	**17 25 50.0**	**-0.4**		
CPUP						17 25 51.8			
CPUP				pmax	pmax				
	comp=Z,104nm,0.9s								
CPUP				pmax	pmax				
	comp=Z,104nm,0.9s								
CPUP	**Villa Florida**	**146.35**	**172**	*e*PKPdf	**PKPbc**	**17 25 49.6**	**-0.8**		
CPUP				*e*SKPbc	**SKPbc**	**17 29 03.9**	**-0.5**		
PB01	**IPOC Station P**	**147.33**	**149**	*e*PKPdf	**PKPdf**	**17 25 51.4**	**+0.7**		
PB01				*e*SKPbc	**SKPbc**	**17 29 06.7**	**-0.1**		
PB11	**IPOC Station P**	**148.31**	**148**	*e*PKPbc	**PKPbc**	**17 25 57.4**	**+1.4**		
SPB	**Sao Paulo**	**149.03**	**189**	*e*PKPbc	**PKPbc**	**17 25 58.9**	**+1.3**		
SPB				LR	LR				
	comp=Z,318nm,20.0s								
NNA	**Nana**	**149.14**	**128**	PKPbc	**PKPbc**	**17 26 00.6**	**+2.5**		
	comp=Z,79nm,0.9s,baz=251,slow=7.0,SNR=12								
NNA	**Nana**	**149.14**	**128**	*e*PKP2	**PKPbc**	**17 25 58.4**	**+0.2**		
NNA	**Nana**	**149.14**	**128**	*e*PKPbc	**PKPbc**	**17 25 58.4**	**+0.2**		
ATAH	**Atahualpa**	**150.45**	**118**	PKPbc	**PKPbc**	**17 26 04.8**	**+3.0**		
	comp=Z,45nm,0.7s,baz=234,slow=0.7,SNR=17								
SACV	**Santiago Islan**	**150.71**	**288**	*e*PKPbc	**PKPbc**	**17 26 03.4**	**+1.5**		
SACV				LR	LR				
	comp=Z,175nm,22.0s								
MAPC	**Malpelo**	**150.79**	**95**	*e*P	**PKPbc**	**17 26 01.8**	**-0.4**		
LPAZ	**La Paz**	**151.98**	**146**	PKP	**PKPdf**	**17 26 00.6**	**+1.9**		
	comp=Z,3.9nm,0.8s,baz=121,slow=1.6,SNR=9.5								
LPAZ				PKPbc	**PKiKP**	**17 26 07.0**	**+1.2**		
	comp=Z,13nm,0.6s,baz=70,slow=1.8,SNR=34								
LPAZ				PKPab	**PKPab**	**17 26 17.8**	**+2.1**		
	comp=Z,114nm,0.7s,baz=210,slow=3.5,SNR=64								
LPAZ	**La Paz**	**151.98**	**146**	*e*PKPdf	**PKPdf**	**17 25 59.9**	**+1.2**		
LPAZ				*e*PKPbc	**PKiKP**	**17 26 08.0**	**+2.2**		
LPAZ				*e*PKPab	**PKPab**	**17 26 18.4**	**+2.7**		
BBSR	**BB Station**	**152.46**	**23**	*e*PKPbc	**PKPbc**	**17 26 06.5**	**+1.1**		
OTAV	**Otavalo**	**153.15**	**104**	*e*PKPdf	**PKPdf**	**17 26 00.3**	**0.0**		
OTAV				LR	LR				
	comp=Z,265nm,21.0s								
MTDJ	**Mount Denham**	**153.20**	**63**	*e*PKPdf	**PKPdf**	**17 26 00.8**	**+0.9**		
MTDJ				*e*PKPab	**PKPab**	**17 26 20.4**	**+0.1**		
MTDJ				LR	LR				
	comp=Z,329nm,20.0s								
GTBY	**Guantanamo Bay**	**154.61**	**58**	*e*PKPdf	**PKPdf**	**17 26 01.7**	**0.0**		
GTBY				*e*PKPbc	**PKiKP**	**17 26 11.5**	**+1.2**		
GTBY				LR	LR				
	comp=Z,397nm,21.0s								
SIV	**San Ignacio**	**155.44**	**160**	PKP	**PKPdf**	**17 26 04.6**	**+1.6**		
	comp=Z,4.9nm,0.7s,baz=190,slow=1.8,SNR=11								
SIV				PKPab	**PKPab**	**17 26 31.3**	**+1.7**		
	comp=Z,39nm,0.6s,baz=220,slow=4.4,SNR=40								
SIV				PP	**PP**	**17 30 09.5**	**+3.9**		
	comp=Z,9.1nm,0.8s,baz=191,slow=7.4,SNR=2.9								
BDFB	**Brasilia**	**156.91**	**191**	PKP	**PKPdf**	**17 26 07.5**	**+2.6**		
	comp=Z,4.6nm,0.7s								
BDFB				PKPab	**PKPab**	**17 26 38.5**	**+2.6**		
BDFB				PP	**PP**	**17 30 16.1**	**+2.5**		
BDFB	**Brasilia**	**156.91**	**191**	*e*PKPdf	**PKPdf**	**17 26 06.0**	**+1.1**		
BDFB				*e*PKPdf	**PKPdf**	**17 26 07.5**	**+2.6**		
BDFB				*e*PKPab	**PKPab**	**17 26 38.3**	**+2.4**		
BDFB				*e*PKPab	PKPab	17 26 38.5	+2.6		
BDFB				*e*PP	**PP**	**17 30 16.1**	**+2.5**		
GRTK	**Grand Turk**	**156.99**	**50**	*e*PKPdf	**PKPdf**	**17 26 04.5**	**-0.2**		
GRTK				*e*PKPab	**PKPab**	**17 26 37.1**	**+0.9**		
GRTK				LR	LR				
	comp=Z,431nm,20.0s								
SJCC	**San Jacinto, C**	**157.34**	**82**	*e*P	**PKPdf**	**17 26 04.9**	**-0.6**		
PRAC	**Prado**	**157.38**	**98**	*e*PKPdf	**PKPdf**	**17 26 06.1**	**+0.6**		
PRAC				*e*PKPab	**PKPab**	**17 26 40.8**	**+2.4**		
ROSC	**El Rosal**	**158.10**	**95**	PKP	**PKPdf**	**17 26 09.8**	**+2.9**		
	comp=Z,5.0nm,0.3s,baz=156,slow=12,SNR=5.7								
ROSC				PKPab	**PKPab**	**17 26 45.1**	**+3.2**		
	comp=Z,9.0nm,0.5s,baz=120,slow=5.7,SNR=10								
ROSC	**El Rosal**	**158.10**	**95**	*e*PKPdf	**PKPdf**	**17 26 08.1**	**+1.2**		
ROSC				*e*PKPab	**PKPab**	**17 26 42.7**	**+0.7**		
SDDR	**Presa de Saban**	**158.23**	**56**	*e*PKPdf	**PKPdf**	**17 26 07.0**	**+0.6**		
SDDR				*e*PKPab	**PKPab**	**17 26 42.0**	**+0.2**		
SDDR				LR	LR				
	comp=Z,347nm,22.0s								
CHIC	**Chingaza**	**158.66**	**96**	*e*P	**PKPdf**	**17 26 07.7**	**+0.1**		
RCBR	**Riachuelo**	**159.05**	**232**	PKPab	**PKPab**	**17 26 46.8**	**+1.4**		
RCBR	**Riachuelo**	**159.05**	**232**	*e*PKPdf	**PKPdf**	**17 26 07.9**	**+0.3**		
RCBR				*e*PKPab	**PKPab**	**17 26 47.5**	**+2.0**		
RCBR				LR	LR				
	comp=Z,363nm,21.0s								
BARC	**Barichara**	**159.38**	**90**	*e*P	**PKPdf**	**17 26 07.4**	**-0.8**		
RUSC	**La Rusia**	**159.44**	**92**	*e*P	**PKPdf**	**17 26 08.2**	**-0.4**		
RUSC	**La Rusia**	**159.44**	**92**	*e*PKPdf	**PKPdf**	**17 26 07.2**	**-1.4**		
GRMC	**Gramalote, San**	**159.79**	**87**	*e*P	**PKPdf**	**17 26 07.9**	**-0.6**		
SAML	**Samuel**	**160.72**	**146**	*e*PKPab	**PKPab**	**17 26 53.7**	**+1.2**		
SAML				LR	LR				
	comp=Z,705nm,21.0s								
AGP	**Aguadilla**	**161.84**	**51**	*e*PKPab	**PKPab**	**17 26 58.3**	**+0.8**		
SDV	**Santo Domingo**	**161.89**	**83**	PKP	**PKPdf**	**17 26 11.6**	**+0.8**		
	comp=Z,24nm,0.9s,baz=72,slow=1.0,SNR=13								
SDV				PKPab	**PKPab**	**17 26 59.1**	**+0.9**		
	comp=Z,21nm,0.9s,baz=266,slow=2.7,SNR=8.0								
SDV	**Santo Domingo**	**161.89**	**83**	*e*PKPdf	**PKPdf**	**17 26 11.4**	**+0.5**		
SDV				*e*PKPab	**PKPab**	**17 26 58.8**	**+0.6**		
SDV				LR	LR				
	comp=Z,523nm,21.0s								
MPR	**Mayaguez**	**161.96**	**51**	*e*PKPab	**PKPab**	**17 26 57.7**	**-0.2**		
CELP	**Cerrillos**	**162.47**	**51**	*e*PKPdf	**PKPdf**	**17 26 11.6**	**+0.6**		
CELP				*e*PKPab	**PKPab**	**17 27 00.8**	**+0.6**		
SJG	**San Juan**	**162.77**	**50**	PKP	**PKPdf**	**17 26 11.7**	**+0.5**		
	comp=Z,29nm,0.8s,baz=358,slow=7.0,SNR=8.8								
SJG				PKPab	**PKPab**	**17 27 02.0**	**+0.4**		
	comp=Z,81nm,0.9s,baz=332,slow=2.1,SNR=20								
SJG	**San Juan**	**162.77**	**50**	*e*PKPdf	**PKPdf**	**17 26 10.8**	**-0.5**		
SJG				*e*PKPdf	**PKPdf**	**17 26 11.8**	**+0.5**		
SJG				*e*PKPab	**PKPab**	**17 27 01.9**	**+0.4**		
SJG				LR	LR				
	comp=Z,372nm,22.0s								
HUMP	**Col San Antoni**	**162.98**	**49**	*e*PKPdf	**PKPdf**	**17 26 11.7**	**+0.2**		
HUMP				*e*PKPab	**PKPab**	**17 27 02.9**	**+0.5**		
STVI	**Saint Thomas**	**163.50**	**47**	*e*PKPdf	**PKPdf**	**17 26 13.7**	**+1.7**		
STVI				*e*PKPab	**PKPab**	**17 27 04.8**	**0.0**		
ABVI	**Anegada Island**	**163.69**	**44**	*e*PKPab	**PKPab**	**17 27 05.7**	**+0.2**		
SMRT	**St. Maarten**	**165.02**	**43**	*e*PKPdf	**PKPdf**	**17 26 14.6**	**+1.3**		
SMRT				*e*PKPab	**PKPab**	**17 27 10.8**	**-0.6**		
ANWB	**Willy Bob**	**166.14**	**40**	PFAKE		17 26 30.0	+16		
ANWB				LR	LR				
	comp=Z,486nm,21.0s								
PCRV	**Puerto La Cruz**	**167.57**	**75**	PKPab	**PKPab**	**17 27 22.6**	**-0.5**		
	comp=Z,8.7nm,0.8s,baz=2.9,slow=9.4,SNR=4.8								
FDF	**Fort de France**	**168.62**	**48**	PFAKE		17 26 30.0	+14		
FDF				LR	LR				
	comp=Z,428nm,22.0s								
PTGA	**Pitinga**	**169.12**	**136**	PKP	**PKPdf**	**17 26 17.1**	**+0.6**		
	comp=Z,3.5nm,0.5s,baz=86,slow=20,SNR=6.4								
PTGA				PKPab	**PKPab**	**17 27 30.6**	**+1.0**		
	comp=Z,4.5nm,0.3s,baz=314,slow=0.8,SNR=4.9								
PTGA	**Pitinga**	**169.12**	**136**	*e*PKPdf	**PKPdf**	**17 26 20.5**	**+3.9**		
PTGA				*e*PKPab	**PKPab**	**17 27 30.6**	**+1.0**		
PTGA				LR	LR				
	comp=Z,34μm,21.0s								
SVB	**Belmont**	**169.42**	**54**	*e*PKPab	**PKPab**	**17 27 29.0**	**-2.0**		
GRGR	**Grenville**	**169.66**	**61**	PFAKE		17 26 30.0	+13		
GRGR				LR	LR				
	comp=Z,424nm,20.0s								
BBGH	**Gun Hill**	**170.81**	**49**	PFAKE		17 26 30.0	+13		
BBGH				LR	LR				
	comp=Z,1μm,21.0s								

ISCJB ***16*** *18:09:40.7±0.6, 18°.88S±0°.03×169°.33E±0°.02, h252km±6km, mb5.3/278, Error ellipse: s-maj=4.4km s-min=3.3km az=166.4*

NEIC ***16*** *18:09:40.8±0.1, 18°.87S×169°.36E, mb5.5/236, MW5.6, Error ellipse: s-maj=3.9km s-min=3.1km az=142.0, Moment Tensor Solution. s14 Moment tensor: Scale 10^{17}Nm; M_{rr}2.08; $M_{\theta\theta}$0.20; $M_{\phi\phi}$-2.28; $M_{r\theta}$0.93; $M_{\theta\phi}$-1.25; $M_{\phi r}$-2.52; Best double couple: M○3.70000×10^{17} NP1: ϕs173.00000°, δ71.00000°, λ64.00000°. NP2:ϕs50.00000°, δ32.00000°, λ142.00000°. Principal axes: T 3.7600, Plg56.0000°, Azm49.0000°; N -0.1700, Plg25.0000°, Azm182.0000°; P -3.5900, Plg22.0000°, Azm283.0000°;*

GCMT ***16*** *18:09:40.8±0.1, 18°.90S×169°.27E, h254km, MW5.7/125, Moment Tensor Solution. s100,c182; s125,c305; Duration: 18?7 Moment tensor: Scale 10^{17}Nm; M_{rr}1.81±.04; $M_{\theta\theta}$-0.45±.05; $M_{\phi\phi}$-1.36±.05; $M_{r\theta}$0.70±.05; $M_{\theta\phi}$-2.37±.04; $M_{\phi r}$-2.60±.04; Best double couple: M○3.93700×10^{17} NP1:ϕs184.00000°, δ72.00000°, λ52.00000°. NP2:ϕs73.00000°, δ42.00000°, λ152.00000°. Principal axes: T 4.0440, Plg48.0000°, Azm53.0000°; N -0.2140, Plg36.0000°, Azm198.0000°; P -3.8300, Plg18.0000°, Azm302.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

IDC ***16*** *18:09:41.1±0.4, 18°.92S×169°.37E, h246km±2km, mb4.7/22, mb1 4.8/25, mb1mx4.8/27, mbtmp5.3/25 Error ellipse: s-maj=7.1km s-min=6.9km az=127.0*

MOS ***16*** *18:09:41.2±1.1, 18°.90S×169°.38E, h260km, mb5.4/42, Error ellipse: s-maj=7.0km s-min=6.7km az=77.5*

BJI ***16*** *18:09:42.2, 18°.40S×169°.48E, h251km, mb5.0/36, mB5.0/49*

ISC 16 18:09:40.6±0.2, 18°.92S±0°.03×169°.44E±0°.03, h248km±1km, h248km; pP-P, n935, σ1?45/1121, mb5.4/277, 44C-16D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.21**	**221**	P			**Pn**	**18 10 48.0**	**+1.1**
	77nm,0.3s,baz=52,slow=11,SNR=303								
DZM				S			**S**	18 11 40.1	+0.5
	46nm,0.3s,baz=234,slow=14,SNR=3.8								
DZM	**Mont Dzumac**	**4.21**	**221**	*e*Pn			**Pn**	**18 10 47.0**	**+0.1**
DZM				*e*Sn			**S**	18 11 35.5	-4.0
	7μm,1.2s								
DZM	**Mont Dzumac**	**4.21**	**221**	*e*Pn			**Pn**	**18 10 46.6**	**-0.3**
DZM				*e*S			**S**	18 11 37.6	-1.9
MSVF	**Nonsavu**	**8.26**	**83**	*d i*P			**Pn**	**18 11 41.4**	**+4.1**
MSVF	**Nonsavu**	**8.26**	**83**	*e*Pn			**Pn**	**18 11 41.2**	**+3.8**
HNR	**Honiara**	**13.17**	**314**	P			**Pn**	**18 12 39.5**	**+0.7**
	174nm,0.3s,baz=166,slow=3.8,SNR=197								
HNR				S			**S**	18 15 09.3	+4.1
	baz=171,slow=16,SNR=2.2								
HNR	**Honiara**	**13.17**	**314**	*e*P			**Pn**	**18 12 39.0**	**+0.2**
HNR				*e*S			S	18 14 40.0	-25
HNR	**Honiara**	**13.17**	**314**	*e*Pn			**P**	**18 12 39.7**	**-0.8**
FUNA	**Funafuti**	**14.01**	**44**	*e*Pn			**P**	**18 12 49.7**	**-0.1**
RAO	**Raoul Island**	**15.45**	**134**	P			**Pn**	**18 13 06.5**	**+0.3**
	38nm,0.3s,baz=223,slow=15,SNR=5.1								
OUZ	**Omahuta**	**16.65**	**168**	*e*P			**Pn**	**18 13 21.6**	**+1.3**
	428nm,1.2s								
OUZ	**Omahuta**	**16.65**	**168**	*e*PN			**Pn**	**18 13 21.5**	**+1.1**
WCZ	**Waipu Caves**	**17.50**	**167**	*e*PN			**Pn**	**18 13 31.4**	**+1.1**
GRZ	**Great Barrier**	**18.06**	**164**	PN			**Pn**	**18 13 36.6**	**-0.3**
EIDS	**Eidsvold**	**18.17**	**246**	P			**Pn**	**18 13 37.4**	**-0.9**
	baz=18,SNR=54								
EIDS	**Eidsvold**	**18.17**	**246**	*e*P			**Pn**	**18 13 37.0**	**-1.3**
	369nm,1.8s								
AFI	**Afiamalu**	**18.69**	**77**	P			**P**	**18 13 42.6**	**+1.6**
	8.8nm,0.3s,baz=263,slow=3.1,SNR=9.0								
AFI	**Afiamalu**	**18.69**	**77**	*e*P			**Pn**	**18 13 43.9**	**-0.8**
	106nm,1.1s								
MKAZ	**Moumakai**	**18.80**	**166**	PN			**Pn**	**18 13 44.3**	**-1.3**
NIUE	**Niue**	**19.51**	**94**	P			**P**	**18 13 51.6**	**+2.0**
	baz=20,SNR=4.3								
ARMA	**Armidale**	**19.80**	**231**	*e*P			**P**	**18 13 54.7**	**+1.9**
	476nm,1.9s								
HIZ	**Hauiti**	**20.09**	**168**	*e*P			Pn	18 13 58.3	-2.4
	517nm,1.5s								
HIZ	**Hauiti**	**20.09**	**168**	*e*PN			**P**	**18 13 58.0**	**+2.4**
MXZ	**Matakaoa Point**	**20.13**	**159**	*e*P			**P**	**18 13 57.9**	**+1.8**
	574nm,1.8s								
HAZ	**Te Kaha**	**20.14**	**160**	PN			**P**	**18 13 58.4**	**+2.3**
HAZ				pP			sP	18 14 53.5	-14
URZ	**Urewera**	**20.40**	**162**	P			**P**	**18 13 58.7**	**-0.3**
	38nm,0.7s,baz=341,slow=5.0,SNR=29								
URZ				S			**S**	18 17 38.4	+5.7
	11nm,0.7s,baz=134,slow=20,SNR=8.1								
TARA	**Tarawa**	**20.43**	**10**	*e*P			**P**	**18 13 59.2**	**-0.4**
	6445nm,0.9s								
RMQ	**Roma**	**20.50**	**245**	P			**P**	**18 14 01.9**	**+1.7**
	baz=20,SNR=96								
MWZ	**Matawai**	**20.59**	**162**	*e*PN			**P**	**18 14 03.1**	**+2.0**
BKZ	**Black Stump Fm**	**21.08**	**165**	*e*P			**P**	**18 14 07.1**	**+1.0**
	266nm,1.6s								
BKZ	**Black Stump Fm**	**21.08**	**165**	*e*PN			**P**	**18 14 07.5**	**+1.4**
CTA	**Charters Tower**	**21.89**	**263**	P			**P**	**18 14 14.4**	**+0.5**
	63nm,0.4s,baz=88,slow=10,SNR=140								
CTA				pP			**pP**	**18 14 56.0**	**+0.9**
	50nm,1.0s,baz=91,slow=15,SNR=2.8								
CTA				S			**S**	**18 18 00.1**	**+2.2**
	20nm,1.1s,baz=227,slow=15,SNR=6.2								
CTA	**Charters Tower**	**21.89**	**263**	P			**P**	**18 14 14.8**	**+0.9**
CTA				pmax	pmax				
	comp=Z,236nm,1.9s								
CTAO	**Charters Tower**	**21.89**	**263**	*e*P			**P**	**18 14 14.4**	**+0.5**
CTAO				pmax	pmax				
	comp=Z,260nm,1.3s								
CTAO	**Charters Tower**	**21.89**	**263**	*e*P			**P**	**18 14 14.4**	**+0.5**
	comp=Z,259nm,1.3s								
MRZ	**Mangatainoka R**	**22.30**	**168**	*e*PN			**P**	**18 14 18.4**	**+1.0**
RABL	**Rabaul**	**22.34**	**309**	*e*P			**P**	**18 14 18.1**	**0.0**
	comp=Z,102nm,0.6s								
BFZ	**Birch Farm**	**22.46**	**166**	*e*P			**P**	**18 14 20.1**	**+1.2**
	comp=Z,122nm,1.2s								
BFZ	**Birch Farm**	**22.46**	**166**	*e*PN			**P**	**18 14 19.9**	**+1.0**
NNZ	**Nelson**	**22.48**	**172**	*e*PN			**P**	**18 14 21.4**	**+2.4**
SNZO	**South Karori**	**22.77**	**170**	*e*P			**P**	**18 14 22.6**	**+0.9**
	comp=Z,277nm,1.3s								
PMG	**Port Moresby**	**23.56**	**291**	P			**P**	**18 14 29.9**	**+0.8**
	comp=Z,247nm,0.7s,baz=84,slow=6.4,SNR=75								
PMG	**Port Moresby**	**23.56**	**291**	*e*P			**P**	**18 14 29.8**	**+0.7**
	comp=Z,291nm,0.8s								
KHZ	**Kahutara**	**23.68**	**172**	*e*P			**P**	**18 14 31.0**	**+1.1**
	comp=Z,202nm,1.7s								
INZ	**Inchbonnie**	**23.79**	**176**	*e*PN			**P**	**18 14 32.5**	**+1.5**
MTSU	**Mount Surprise**	**23.83**	**268**	P			**P**	**18 14 33.3**	**+1.6**
	baz=24,SNR=502								
LTZ	**Lake Taylor**	**23.91**	**175**	*e*P			**P**	**18 14 33.6**	**+1.5**
	comp=Z,220nm,1.8s								
CNB	**Canberra Magne**	**24.13**	**223**	P			**P**	**18 14 36.0**	**+1.7**
	baz=24,SNR=40								
CAN	**Canberra**	**24.38**	**224**	*e*P			**P**	**18 14 37.6**	**+1.1**
CAN				pmax	pmax				
	comp=Z,216nm,1.4s								
CAN	**Canberra**	**24.38**	**224**	*e*P			**P**	**18 14 37.6**	**+1.1**
	comp=Z,216nm,1.4s								
OXZ	**Oxford**	**24.43**	**175**	*e*P			**P**	**18 14 37.7**	**+0.9**
	comp=Z,42nm,0.6s								
OXZ	**Oxford**	**24.43**	**175**	*e*PN			**P**	**18 14 37.6**	**+0.9**
QLP	**Quilpie**	**24.44**	**247**	P			**P**	**18 14 37.5**	**+0.5**
	baz=24,SNR=96								
FOZ	**Fox Glacier**	**24.54**	**179**	*e*P			**P**	**18 14 39.4**	**+1.7**
	comp=Z,99nm,1.1s								
CRLZ	**Canterbury Las**	**24.73**	**174**	*e*P			**P**	**18 14 40.5**	**+1.0**
	comp=Z,283nm,1.6s								
RPZ	**Rata Peaks**	**24.76**	**177**	P			**P**	**18 14 41.3**	**+1.5**
	comp=Z,11nm,0.5s,baz=350,slow=3.4,SNR=8.7								
CMSA	**Cobar Meteorol**	**24.82**	**235**	P			**P**	**18 14 41.2**	**+0.7**
	baz=25,SNR=36								
MQZ	**McQueen's Vall**	**24.86**	**174**	*e*P			**P**	**18 14 42.3**	**+1.7**
	comp=Z,147nm,1.4s								
LBZ	**Lake Benmore**	**25.40**	**179**	*e*P			**P**	**18 14 46.9**	**+1.3**
	comp=Z,170nm,1.8s								
COEN	**Coen**	**25.66**	**277**	P			**P**	**18 14 48.9**	**+0.8**
	baz=26,SNR=13								
COEN	**Coen**	**25.66**	**277**	*e*P			**P**	**18 14 49.1**	**+1.0**
	comp=Z,248nm,1.8s								
WKZ	**Wanaka**	**25.84**	**181**	*e*P			**P**	**18 14 50.3**	**+0.9**
	comp=Z,269nm,1.5s								
ODZ	**Otahua Downs**	**26.07**	**178**	*e*P			**P**	**18 14 52.3**	**+0.8**
	comp=Z,79nm,1.5s								
MLZ	**Mavora Lakes**	**26.40**	**182**	*e*P			**P**	**18 14 56.6**	**+2.2**
	comp=Z,69nm,1.3s								
DCZ	**Deep Cove**	**26.54**	**184**	*e*P			**P**	**18 14 57.4**	**+1.7**
	comp=Z,71nm,1.3s								
WHZ	**Wether Hill Ro**	**26.93**	**182**	*e*P			**P**	**18 14 58.5**	**-0.6**
	comp=Z,94nm,1.5s								
MANU	**Manus Island**	**27.36**	**305**	*e*P			**P**	**18 15 03.8**	**+0.4**
	comp=Z,148nm,1.3s								
PATS	**Pohnpei**	**27.84**	**336**	*e*P			**P**	**18 15 07.5**	**0.0**
	comp=Z,123nm,1.2s								
TOO	**Toolangi**	**27.98**	**223**	P			**P**	**18 15 09.9**	**+1.3**
	baz=28,SNR=12								
QIS	**Mount Isa**	**28.11**	**262**	P			**P**	**18 15 10.5**	**+0.5**
	baz=28,SNR=30								
STKA	**Stephens Creek**	**28.18**	**237**	P			**P**	**18 15 11.6**	**+1.2**
	comp=Z

KLBR Kellerberrin 48.02 244 P **P** **18 17 54.8 -0.5**
baz=48,SNR=25
NWAO Narrogin (SRO) 48.53 242 P **P** **18 17 58.9 -0.2**
comp=Z,24nm,0.8s,baz=326,slow=6.6,SNR=17
NWAO pP **pP** **18 18 50.7 -1.4**
comp=Z,18nm,1.1s,baz=6.0,slow=5.8,SNR=2.9
NWAO Narrogin (SRO) 48.53 242 P **P** **18 17 59.0 0.0**
baz=48,SNR=11
NWAO P **P** **18 17 59.0 0.0**
baz=48,SNR=11
NWAO Narrogin (SRO) 48.53 242 P **P** **18 17 59.0 0.0**
baz=27,SNR=11
NWAO P **P** **18 17 59.0 0.0**
baz=27,SNR=11
NWAO Narrogin (SRO) 48.53 242 *e*P **P** **18 17 58.5 -0.5**
comp=Z,183nm,1.9s
NWAO epP **pP** **18 18 50.7 -1.4**
MIDW Midway 48.56 16 *e*P **P** **18 17 58.9 -0.2**
comp=Z,65nm,0.7s
RKGY Rocky Gully 48.86 240 P **P** **18 18 01.8 +0.3**
baz=49,SNR=33
BLDU Ballidu 48.89 246 P **P** **18 18 01.4 -0.4**
baz=49,SNR=22
LUWI Luwuk 49.06 286 *e*P **P** **18 18 03.7 +0.4**
comp=Z,94nm,1.0s
MORW Morawa 49.47 248 P **P** **18 18 06.2 -0.1**
baz=49,SNR=18
KAPI Kappang 50.35 279 pP pP 18 19 07.0 +0.6
KAPI Kappang 50.35 279 *e*P **P** **18 18 13.2 +0.2**
comp=Z,66nm,1.0s
KAPI epP **pP** **18 19 06.7 +0.2**
DAV Davao City (W) 50.36 297 *e*P **P** **18 18 13.1 +0.1**
comp=Z,119nm,0.4s
KEKH Kekaha 50.62 38 *e*P **P** **18 18 14.8 0.0**
comp=Z,549nm,1.1s
HPO Honuapo 51.06 44 *e*P **P** **18 18 19.2 +1.1**
KKH Kailua Kona 51.16 43 *e*P **P** **18 18 18.8 -0.1**
KKH Kailua Kona 51.16 43 *e*P **P** **18 18 18.8 -0.1**
KIP Kipapa 51.21 40 ⇑*i*P **P** **18 18 19.6 +0.4**
KIP pmax pmax
comp=Z,634nm,0.9s
KIP Kipapa 51.21 40 *e*P **P** **18 18 18.6 -0.5**
comp=Z,208nm,1.1s
MLOA Mauna Loa Obse 51.36 44 *e*P **P** **18 18 21.7 +0.8**
OPA Opana 51.41 40 *e*P **P** **18 18 20.8 +0.1**
OPA pmax pmax
comp=Z,280nm,0.9s
OPA Opana 51.41 40 *e*P **P** **18 18 20.8 +0.1**
comp=Z,283nm,0.9s
HPAH Hawaii Prepara 51.64 43 *e*P **P** **18 18 22.9 +0.4**
comp=Z,435nm,1.0s
PCI Palu 51.80 284 P **P** **18 18 25.6 +1.8**
PCI pmax pmax
comp=Z,146nm,1.8s
RKT Rikitea 51.80 105 *e*S **S** **18 25 20.8 -5.8**
comp=Z,314nm,31.2s
JAGI Jajag, Banyuwa 54.52 273 *e*P **P** **18 18 42.6 -0.9**
comp=Z,42nm,0.7s
BBKI Banjar Baru 55.48 279 P **P** **18 18 51.0 +0.6**
MYLDM Lahad Datu 55.59 290 *e*P **P** **18 18 52.9 +1.8**
comp=Z,100nm,1.4s
TSM Tawau 55.75 289 ⇓P **P** **18 18 53.8 +1.5**
KDM Kudat 57.85 291 ⇓P **P** **18 19 08.3 +1.3**
KKM Kota Kinabalu 58.00 290 ⇑P **P** **18 19 09.7 +1.5**
KKM Kota Kinabalu 58.00 290 *e*P **P** **18 19 08.6 +0.4**
comp=Z,327nm,1.9s
VNDA Vanda 58.76 182 P **P** **18 19 12.9 +0.6**
comp=Z,3.8nm,0.5s,baz=358,slow=8.4,SNR=26
VNDA pP **pP** **18 20 07.0 -0.4**
comp=Z,2.5nm,0.8s,baz=345,slow=7.5,SNR=2.1
SBA Scott Base 58.98 181 *e*P **P** **18 19 15.8 +1.9**
SBA pmax pmax
comp=Z,100nm,1.6s
SBA Scott Base 58.98 181 *e*P **P** **18 19 15.8 +1.9**
comp=Z,102nm,1.6s
SBA epP **pP** **18 20 09.1 +0.1**
SBUM Sibu 60.11 284 ⇑P **P** **18 19 24.0 +1.5**
SBUM Sibu 60.11 284 *e*P **P** **18 19 23.1 +0.6**
comp=Z,29nm,1.2s
LEM Lembang 61.19 273 P P 18 19 36.3 +6.3
KSM Kuching 61.49 282 *e*P **P** **18 19 31.7 -0.1**
comp=Z,51nm,0.7s
CNJI Cibinong 61.51 272 P **P** **18 19 31.7 -0.2**
INU Inuyama 62.12 330 *e*P **P** **18 19 38.6 +3.0**
comp=Z,48nm,1.7s
MJAR Matsushiro Arr 62.56 332 P **P** **18 19 38.7 +0.3**
comp=Z,15nm,0.9s,baz=166,slow=7.9,SNR=40
MJAR pP **pP** **18 20 33.9 -0.5**
comp=Z,5.1nm,1.2s,baz=156,slow=7.7,SNR=1.3
MJAR Matsushiro Arr 62.56 332 P **P** **18 19 38.7 +0.3**
MJAR *PP **pP** **18 20 33.9 -0.5**
MJAR pmax pmax
comp=Z,13nm,0.7s
MAJO Matsushiro 62.56 332 *e*P **P** **18 19 39.4 +0.9**
MAJO pmax pmax
comp=Z,30nm,1.0s
MAJO Matsushiro 62.56 332 *e*P **P** **18 19 39.0 +0.5**
comp=Z,30nm,1.0s
MJB9 Matsu-Tunnel 62.56 332 *e*P **P** **18 19 39.3 +0.8**
comp=Z,8.0nm,1.1s
TPUB Ta-pu 63.49 309 *e*P **P** **18 19 44.3 -0.5**
comp=Z,37nm,1.0s
JNU Nakatsue 63.52 324 *e*P **P** **18 19 46.2 +1.4**
comp=Z,12nm,0.9s
SSLB Suanglung 63.55 310 *e*P **P** **18 19 44.4 -0.8**
comp=Z,16nm,0.7s
KUR Kuril'sk 66.80 344 ⇑*i*P **P** **18 20 06.6 +1.1**
KUR *i* S **S** **18 28 32.6 -4.8**
KUR pmax pmax
comp=Z,75nm,1.5s
KUR MLR MLR
comp=E,704nm,17.0s
KUR MLR MLR
comp=Z,441nm,17.0s
ASAJ Asahikawa 67.37 339 *e*P **P** **18 20 10.9 +1.7**
comp=Z,27nm,0.8s
ASAJ epP **pP** **18 21 06.5 +0.6**
MYKOM Kota Tinggi 67.60 280 ⇑P **P** **18 20 12.5 +1.2**
KGM Kluang 68.18 280 ⇑P **P** **18 20 16.1 +1.2**
KSRS Korea Array 68.35 325 P **P** **18 20 16.9 +1.5**
comp=Z,3.2nm,0.9s,baz=138,slow=6.2,SNR=7.9
KSRS pP **pP** **18 21 12.7 +0.4**
comp=Z,1.4nm,0.8s,baz=123,slow=7.1,SNR=1.1
KSRS Korea Array 68.35 325 P **P** **18 20 16.9 +1.5**
KSRS *PP **pP** **18 21 12.7 +0.4**
KSRS pmax pmax
comp=Z,5.0nm,1.0s
KS15 Wonju Array Si 68.36 325 *e*P **P** **18 20 16.4 +0.9**
KS15 epP **pP** **18 21 12.3 -0.1**
KSAR Wonju Array Be 68.36 325 P **P** **18 20 16.9 +1.4**
KSAR *PP **pP** **18 21 12.7 +0.3**
KSAR Wonju Array Be 68.36 325 P **P** **18 20 16.9 +1.4**
KSAR pP **pP** **18 21 12.7 +0.3**
KS01 Wonju Array Si 68.38 325 *e*P **P** **18 20 16.8 +1.2**
KS01 epP **pP** **18 21 12.2 -0.3**
KTGM Kuala Trenggan 69.57 283 ⇓P **P** **18 20 24.8 +1.4**
QIZ Qiongzhong 69.59 299 P **P** **18 20 25.8 +2.4**
QIZ S **S** **18 29 14.0 +2.6**
QIZ sS **sS** **18 30 52.1 +0.4**
QIZ pmax pmax
comp=Z,180nm,4.3s
BKNI Bangkinang 69.72 278 *e*P **P** **18 20 25.2 +0.8**
BKNI epP **pP** **18 21 22.2 +0.7**
YSS Yuzh-Sakhalins 69.84 341 *e*P **P** **18 20 26.4 +2.1**
YSS pmax pmax
comp=Z,50nm,1.1s
YSS Yuzh-Sakhalins 69.84 341 *e*P **P** **18 20 26.4 +2.1**
comp=Z,50nm,1.1s
NJ2 Nanjing 70.11 316 *e*P **P** **18 20 26.8 +0.5**
NJ2 S **S** **18 29 17.9 +0.9**
NJ2 pmax pmax
comp=Z,17nm,0.9s
SKR Severo-Kuril's 70.28 351 *e*P **P** **18 20 26.6 -0.3**
SKR *e* 18 20 48.3
SKR *e*S **S** **18 29 21.3 +3.2**
SKR smax smax
comp=E,1μm,11.9s
MSHR Mys Shultsa 70.64 331 ⇑*i*P **P** **18 20 31.4 +2.2**
VLA Vladivostok 70.73 332 *c i*P **P** **18 20 31.3 +1.5**
VLA pmax pmax
comp=Z,13nm,1.0s
QSPA South Pole Qui 71.13 180 *e*P **P** **18 20 32.4 +0.3**
comp=Z,122nm,1.3s
IPM Ipoh 71.20 282 *e*P **P** **18 20 33.6 +0.3**
comp=Z,29nm,1.1s

SMY Shemya 71.46 3 *e*P **P** **18 20 34.4 +0.5**
SMY pmax pmax
comp=Z,450nm,1.6s
SMY Shemya 71.46 3 *e*P **P** **18 20 34.2 +0.3**
comp=Z,454nm,1.6s
USRK Ussuriysk Ar. 71.54 333 P **P** **18 20 35.8 +1.2**
comp=Z,10nm,0.9s,baz=138,slow=5.1,SNR=14
USRK pP **pP** **18 21 33.1 +1.0**
comp=Z,6.2nm,0.9s,baz=149,slow=4.0,SNR=2.7
USRK S **S** **18 29 36.4 +3.5**
comp=Z,1.8nm,0.7s,baz=147,slow=31,SNR=2.2
UBPT Khong Chiam 71.55 294 P pP 18 21 34.4 +1.7
KULM Kulim 71.85 282 *e*P **P** **18 20 36.8 -0.4**
comp=Z,17nm,0.9s
PET Petropavlovsk 72.25 353 ⇑*i*P **P** **18 20 39.5 +0.9**
PET *e**SP **sP** **18 22 03.8 +1.2**
PET *e*S **S** **18 29 42.9 +2.4**
PET *e*SS **SS** **18 34 20.6 -3.9**
PET pmax pmax
comp=Z,70nm,1.4s
PET pmax pmax
comp=Z,200nm,18.4s
PET pmax pmax
comp=Z,200nm,11.2s
PET MLR MLR
comp=Z,900nm,22.0s
PET MLR MLR
comp=Z,700nm,16.0s
PET Petropavlovsk 72.25 353 *e*P **P** **18 20 39.3 +0.7**
comp=Z,43nm,0.6s
PEA0 Petropavlovsk- 72.44 353 *e*P **P** **18 20 40.6 +0.8**
PEA0B Petropavlovsk- 72.44 353 *e*P **P** **18 20 40.9 +1.1**
comp=Z,196nm,1.4s
PETK Petropavlovsk- 72.44 353 P **P** **18 20 41.1 +1.4**
comp=Z,62nm,0.8s,baz=143,slow=7.3,SNR=120
PETK Petropavlovsk- 72.44 353 P **P** **18 20 41.2 +1.4**
PETK pmax pmax
comp=Z,64nm,0.8s
PEA1 Petropavlovsk- 72.45 353 *e*P **P** **18 20 41.1 +1.3**
PSI Prapat 72.56 279 *e*P **P** **18 20 40.8 -0.7**
PSI *e**PP **pP** **18 21 37.4 -1.7**
PSI pmax pmax
comp=Z,20nm,1.0s
PSI Prapat 72.56 279 *e*P **P** **18 20 40.8 -0.7**
comp=Z,20nm,1.0s
PSI epP **pP** **18 21 37.4 -1.7**
DL2 Dalian 72.88 323 P **P** **18 20 44.3 +1.7**
DL2 pP **pP** **18 21 44.1 +3.8**
DL2 S **SKiKP** **18 29 50.8 +1.1**
DL2 pmax pmax
comp=Z,47nm,0.9s
MDJ Mudanjiang 72.93 331 P **P** **18 20 44.0 +1.2**
MDJ pP pP 18 21 39.6 -0.9
MDJ sP sP 18 22 07.9 +0.9
MDJ PP **PP** **18 23 24.6 -4.5**
MDJ S **SKiKP** **18 29 51.9 +2.2**
MDJ sS sS 18 31 27.4 -2.6
MDJ SS **SS** **18 34 29.0 -6.3**
MDJ pmax pmax
comp=Z,120nm,5.7s
MDJ Mudanjiang 72.93 331 *e*P **P** **18 20 44.0 +1.2**
MDJ epP **pP** **18 21 39.2 -1.3**
GSI Gunungsitoli 73.31 277 *e*P **P** **18 20 46.2 +0.4**
comp=Z,43nm,1.0s
GSI epP **pP** **18 21 42.3 -1.1**
TYV Tymovskoe 73.37 343 *e*P **P** **18 20 46.5 +1.3**
TYV pmax pmax
comp=Z,11nm,0.8s
TRTT Trang 73.68 284 P pP 18 21 50.9 +5.2
comp=Z,25nm,1.4s
HABR Khabarovsk 73.78 337 *ce*P **P** **18 20 47.1 -0.6**
HABR *e* 18 21 01.3
HABR *e**PP **pP** **18 21 45.1 -0.4**
HABR *e**SP **sP** **18 22 12.1 +0.2**
HABR *e* 18 23 34.6
HABR *e*PPP PPP 18 25 21.1
HABR *e*S **S** **18 29 57.6 -0.4**
HABR *e* 18 30 32.2
HABR *e*S **pS** **18 31 06.6 +0.1**
HABR *e*SS **SS** **18 34 47.5 -0.5**
HABR *e*SSS SSS 18 38 10.6
HABR pmax pmax
comp=N,7.0nm,1.3s
HABR pmax pmax
comp=E,17nm,1.3s
HABR pmax pmax
comp=Z,38nm,1.3s
HABR MLR MLR
comp=Z,472nm,17.0s
SNY Shenyang 73.83 326 ⇑P P 18 20 53.5 +5.4
SNY sP sP 18 22 13.3 +1.0
SNY S **S** **18 30 00.3 +1.5**
SNY ScS **ScS** **18 30 34.8 +0.7**
SNY sS sS 18 31 39.3 -1.0
SNY SS **SS** **18 34 49.8 +0.9**
SNY pmax pmax
comp=Z,14nm,0.5s
SNY pmax pmax
comp=Z,190nm,5.9s
SNY LR LR
comp=Z,490nm,13.2s
SNY LR LR
comp=Z,730nm,13.7s
TIA Tai'an 73.83 318 *e*P **P** **18 20 48.4 +0.1**
TIA pmax pmax
comp=Z,20nm,1.1s
SRAK Srakaew 74.00 291 P pP 18 21 49.9 +2.4
comp=Z,30nm,1.5s
NIKH Nikolski High 74.02 13 *e*P **P** **18 20 49.0 +0.1**
comp=Z,315nm,0.7s
NIKH epP **pP** **18 21 47.6 +0.8**
SURA Surathani 74.24 286 P pP 18 21 54.3 +5.3
comp=Z,89nm,0.8s
CN2 Changchun 74.29 329 *e*P **P** **18 20 51.8 +1.1**
CN2 epP pP 18 21 49.3 +0.7
CN2 esP sP 18 22 14.0 -1.0
CN2 *e*S **S** **18 30 03.6 -0.2**
CN2 SS **SS** **18 34 54.1 -1.8**
CN2 pmax pmax
comp=Z,20nm,0.7s
CN2 pmax pmax
comp=Z,200nm,5.0s
NONG Nongkai 74.77 295 P **P** **18 20 55.0 +1.0**
comp=Z,37nm,1.2s
NONG Nongkai 74.77 295 P pP 18 21 53.3 +1.3
comp=Z,273nm,1.1s
UNV Unalaska Valle 75.37 14 *e*P **P** **18 20 55.8 -0.8**
comp=Z,101nm,0.8s
ENH Enshi 75.62 309 *e*P **P** **18 20 58.8 +0.1**
ENH epP **pP** **18 21 55.8 -1.0**
ENH *e*S **S** **18 30 17.2 -2.0**
KLR Kul'dur 75.66 336 *c i*P **P** **18 20 59.8 +1.4**
KLR *i* *PP **pP** **18 21 57.9 +1.4**
GYA Guiyang 75.80 305 P **P** **18 21 02.5 +2.6**
GYA PcP **PcP** **18 21 14.3 +3.0**
GYA pP pP 18 22 01.0 +3.0
GYA sP sP 18 22 27.8 +3.5
GYA PP **PP** **18 23 58.5 +4.7**
GYA S **S** **18 30 23.9 +2.4**
GYA SKS **SKSac** **18 30 44.0 -2.7**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,6.2s
PBKT Sadao Pong 76.01 293 P **P** **18 21 04.3 +3.2**
comp=Z,11nm,1.6s
PBKT Sadao Pong 76.01 293 P pP 18 22 01.1 +1.9
comp=Z,23nm,1.3s
LOEI Loei 76.15 294 P **P** **18 21 02.7 +0.8**
comp=Z,45nm,1.8s,comp=Z,3μm
LOEI Loei 76.15 294 P pP 18 21 59.0 -1.1
comp=Z,74nm,1.5s
SRDT SRDT 76.73 290 P pP 18 22 07.5 +4.1
comp=Z,120nm,1.9s
BJT Baijiatuao 76.80 321 *e*P **P** **18 21 05.9 +0.9**
BJT *e**PP **pP** **18 22 04.7 +1.4**
BJT Baijiatuao 76.80 321 *e*P **P** **18 21 05.9 +0.9**
BJT epP **pP** **18 22 04.7 +1.4**
BJI Beijing 76.81 321 P **P** **18 21 06.3 +1.2**
BJI pP **pP** **18 22 05.8 +2.4**
BJI sP **sP** **18 22 29.3 -0.3**
BJI S **S** **18 30 34.3 +2.7**
BJI sS **sS** **18 32 09.4 -4.5**
BJI pmax pmax
comp=Z,22nm,0.9s
BJI pmax pmax
comp=Z,160nm,5.8s
UTTA Uttaradit 76.86 294 P **P** **18 21 07.8 +2.0**
comp=Z,2.9nm,1.0s,comp=Z,51nm
UTTA Uttaradit 76.86 294 P pP 18 22 07.3 +3.2
comp=Z,5.2nm,1.1s
SUKH Sukhothai 77.55 293 P **P** **18 21 12.3 +2.6**
comp=Z,4.4nm,0.8s
LAMP Lampang 77.98 294 P **P** **18 21 14.3 +2.2**
comp=Z,8.0nm,0.8s,comp=Z,162nm
LAMP Lampang 77.98 294 P pP 18 22 13.9 +3.4
comp=Z,15nm,1.1s
XAN Xi'an 78.04 312 P **P** **18 21 12.8 +0.7**
XAN pP pP 18 22 12.3 +1.7
XAN sP sP 18 22 36.5 -0.3
XAN PP **PP** **18 24 11.9 -0.4**
XAN S **S** **18 30 43.8 -1.4**
XAN sS sS 18 32 25.8 -2.0
XAN SS **SS** **18 35 50.3 -2.6**
XAN pmax pmax
comp=Z,16nm,1.0s
XAN pmax pmax
comp=Z,160nm,8.4s
PAYA Payao 78.13 295 P **P** **18 21 14.8 +1.9**
comp=Z,4.7nm,0.9s,comp=Z,132nm
PAYA Payao 78.13 295 P pP 18 22 14.0 +2.7
comp=Z,13nm,1.1s
KMI Kunming 78.27 302 P **P** **18 21 15.6 +1.8**
KMI pP pP 18 22 14.3 +2.0
KMI sP sP 18 22 41.0 +2.5
KMI PP **PP** **18 24 17.5 +2.9**
KMI S **S** **18 30 47.5 -0.9**
KMI sS sS 18 32 33.3 +2.2
KMI SS **SS** **18 35 59.3 +2.3**
KMI pmax pmax
comp=Z,27nm,0.9s
KMI pmax pmax
comp=Z,310nm,7.3s
KMI LR LR
comp=Z,1μm,13.5s
KMI LR LR
comp=Z,420nm,14.2s
KMI LR LR
comp=Z,440nm,17.1s
SDPT Sand Point 78.27 17 *e*P **P** **18 21 12.1 -0.6**
comp=Z,73nm,0.9s
CM01 Chiang Mai Arr 78.52 294 *e*P **P** **18 21 16.2 +1.2**
CM01 epP **pP** **18 22 13.6 +0.1**
CM31 Chiang Mai Arr 78.55 294 *e*P **P** **18 21 16.9 +1.7**
CM31 epP **pP** **18 22 13.9 +0.2**
CMAR Chiang Mai Arr 78.55 294 P **P** **18 21 16.7 +1.6**
comp=Z,7.9nm,0.8s,baz=132,slow=4.2,SNR=44
CMAR pP **pP** **18 22 14.4 +0.8**
comp=Z,27nm,1.1s,baz=126,slow=4.0,SNR=13
CMMT Chiang Mai 78.69 294 P **P** **18 21 17.4 +1.4**
comp=Z,19nm,1.0s,comp=Z,693nm
CMMT Chiang Mai 78.69 294 P pP 18 22 15.3 +0.8
comp=Z,40nm,1.2s
CHTO Chiang Mai 78.69 294 P **P** **18 21 17.6 +1.6**
comp=Z,84nm,1.0s,comp=Z,3μm
CHTO Chiang Mai 78.69 294 P pP 18 22 15.4 +0.9
comp=Z,181nm,1.2s
CHTO Chiang Mai 78.69 294 *e*P **P** **18 21 17.5 +1.6**
CHTO pmax pmax
comp=Z,46nm,1.1s
CHTO Chiang Mai 78.69 294 *e*P **P** **18 21 17.5 +1.5**
comp=Z,46nm,1.1s
MAW Mawson 78.80 202 P **P** **18 21 16.5 +0.9**
comp=Z,4.2nm,0.6s,baz=125,slow=5.3,SNR=26
MAW pP **pP** **18 22 14.2 0.0**
comp=Z,24nm,1.0s,baz=98,slow=8.2,SNR=9.3
MAW Mawson 78.80 202 *e*P **P** **18 21 16.5 +0.9**
MAW epP **pP** **18 22 13.8 -0.4**
CMAI Chiengmai2 79.07 295 P **P** **18 21 20.8 +2.6**
comp=Z,126nm,0.9s
CMAI Chiengmai2 79.07 295 P pP 18 22 17.9 +1.1
CHGN Chignik 79.68 18 *e*P **P** **18 21 19.8 -0.6**
MA2 Magadan 79.69 350 S **S** **18 31 01.6 +0.2**
comp=Z,1.3nm,0.7s,baz=141,slow=22,SNR=2.1
MA2 Magadan 79.69 350 *i* P **P** **18 21 20.3 -0.1**
HHC Hu-ho-hao-te 80.10 319 *e*P **P** **18 21 24.4 +1.2**
HHC pP pP 18 22 22.9 +0.9
HHC S **S** **18 31 08.0 +1.2**
HHC pmax pmax
comp=Z,140nm,7.4s
CD2 Chengdu 80.19 307 *e*P **P** **18 21 24.8 +1.0**
CD2 pP pP 18 22 23.3 +0.7
CD2 sP sP 18 22 49.8 +1.0
CD2 S **S** **18 31 09.5 +1.5**
CD2 SKS **SKSac** **18 31 17.3 -0.5**
CD2 sS sS 18 32 53.0 +1.8
CD2 SS **SS** **18 36 27.3 +2.0**
CD2 pmax pmax
comp=Z,30nm,0.5s
CD2 pmax pmax
comp=Z,320nm,5.4s
HIA Hailar 80.93 330 *e*P **P** **18 21 27.2 -0.1**
HIA *e**PP **pP** **18 22 24.3 -1.9**
HIA Hailar 80.93 330 *e*P **P** **18 21 27.2 -0.1**
HIA epP **pP** **18 22 24.3 -1.9**
OHAK Old Harbor 81.99 19 *e*P **P** **18 21 33.2 +0.7**
comp=Z,159nm,0.9s
LZH Lanzhou 82.66 312 *e*P **P** **18 21 39.9 +3.1**
LZH pP pP 18 22 40.5 +4.6
LZH sP sP 18 23 08.0 +6.0
LZH PP **PP** **18 24 52.0 +1.5**
LZH *e*S **S** **18 31 35.0 +1.7**
LZH sS sS 18 33 17.3 +0.1
LZH SS **SS** **18 36 56.4 -5.5**
LZH pmax pmax
comp=Z,51nm,1.2s
LZH pmax pmax
comp=Z,110nm,4.4s
KDAK Kodiak Island 82.67 19 *e*P **P** **18 21 36.7 +0.7**
KDAK pmax pmax
comp=Z,665nm,1.9s
KDAK Kodiak Island 82.67 19 *e*P **P** **18 21 36.7 +0.7**
comp=Z,665nm,1.9s
SEY Seymchan 82.68 352 *c i*P **P** **18 21 36.9 +0.9**
GAMB Gambell 83.73 8 *e*P **P** **18 21 42.3 +1.0**
comp=Z,52nm,0.7s
CNPM China Poot 84.49 19 *e*P **P** **18 21 46.1 +0.8**
comp=Z,187nm,1.1s
CNPM epP **pP** **18 22 46.3 +1.6**
SVW2 Sparrevohn 84.54 16 *e*P **P** **18 21 46.1 +0.6**
comp=Z,137nm,1.4s
SVW2 epP **pP** **18 22 47.9 +2.9**
BRLK Bradley Lake 84.79 19 *e*P **P** **18 21 47.1 +0.3**
comp=Z,90nm,1.1s
RSO Redoubt South 84.80 18 *e*P **P** **18 21 46.6 -0.5**
MCCM Marconi Confer 85.11 47 *e*P **P** **18 21 49.4 +0.6**
comp=Z,67nm,0.8s
SYO Syowa Base 85.29 196 ⇓*e*P **P** **18 21 47.0 -2.3**
SYO Syowa Base 85.29 196 ⇑*e*PcP **PcP** **18 21 52.2 +0.3**
SNCC San Nicolas Is 85.30 53 P **P** **18 21 51.5 +1.5**
baz=244
SNCC San Nicolas Is 85.30 53 *e*P **P** **18 21 51.5 +1.5**
comp=Z,121nm,0.9s
HOPS Hopland Field 85.38 46 *e*P **P** **18 21 51.3 +1.1**
comp=Z,76nm,1.0s
CSR Chase Ranch 85.46 49 *e*P **P** **18 21 52.5 +1.8**
SAO San Andreas Ge 85.47 49 *e*P **P** **18 21 51.8 +1.1**
SAO pmax pmax
comp=Z,75nm,1.0s
SAO San Andreas Ge 85.47 49 *e*P **P** **18 21 51.8 +1.1**
comp=Z,75nm,1.0s
GDXM Geysers 85.48 47 *e*P **P** **18 21 52.3 +1.5**
comp=Z,173nm,1.8s
GDXM epP **pP** **18 22 50.8 +0.4**
KMRM Mail Ridge 85.55 45 *e*P **P** **18 21 53.0 +1.9**
comp=Z,135nm,0.9s
KMRM epP **pP** **18 22 53.5 +2.8**
SCZ2 Santa Cruz Isl 85.55 52 P **P** **18 21 52.9 +1.7**
baz=244
SPU Mount Spurr 85.58 18 *e*P **P** **18 21 50.5 -0.2**
JCC Jacoby Creek, 85.62 44 *e*P **P** **18 21 52.7 +1.4**
comp=Z,74nm,0.9s
PMPB Monarch Peak 85.68 50 *e*P **P** **18 21 53.3 +1.5**
comp=Z,589nm,2.0s
SBC Santa Barbara 85.68 52 P **P** **18 21 53.5 +1.7**
baz=244
PKM Mcpherson Peak 85.81 51 P **P** **18 21 54.2 +1.6**
baz=244
KHMM Horse Mountain 85.85 44 *e*P **P** **18 21 54.4 +1.7**

comp=Z,102nm,0.8s
SMMC Simmler 85.86 51 P P 18 21 54.5 +1.8
baz=244
PAGB Antelope Grade 85.86 50 eP P 18 21 53.8 +1.1
comp=Z,45nm,0.7s
SCI2 San Clemente I 85.92 53 P P 18 21 54.4 +1.4
baz=244,SNR=5.7
TT01 Tatalina 85.95 15 eP P 18 21 53.3 +0.8
TT01 epP pP 18 22 54.8 +2.8
TTA Tatalina 85.98 15 eP P 18 21 53.1 +0.5
TTA e*PP pP 18 22 54.3 +2.0
TTA pmax pmax
comp=Z,24nm,0.8s
TTA Tatalina 85.98 15 eP P 18 21 53.1 +0.5
comp=Z,24nm,0.8s
TTA epP pP 18 22 54.3 +2.0
BLG Laguna Peak, P 86.02 52 P P 18 21 54.6 +1.2
baz=244
KRMB Red Mountain 86.05 44 eP P 18 21 55.7 +2.1
comp=Z,188nm,1.5s
SUA Susitna One 86.19 18 eP P 18 21 53.4 -0.4
comp=Z,29nm,0.8s
RC01 Rabbit Creek A 86.19 19 eP P 18 21 52.8 -0.8
comp=Z,66nm,1.4s
CIS Catalina Islan 86.20 53 P P 18 21 55.6 +1.2
baz=244
FMP Fort Macarthur 86.43 53 P P 18 21 56.7 +1.3
baz=245
OSI Osito Audit: C 86.49 52 eP P 18 21 56.9 +1.0
comp=Z,210nm,1.6s
WDC Whiskeytown Da 86.50 45 eP P 18 21 56.9 +1.2
WDC e*PP pP 18 22 57.2 +1.9
WDC pmax pmax
comp=Z,388nm,1.8s
WDC Whiskeytown Da 86.50 45 eP P 18 21 56.9 +1.2
comp=Z,388nm,1.8s
WDC epP pP 18 22 57.2 +1.9
L02D Cave Junction, 86.56 43 P P 18 21 57.8 +1.9
baz=241,SNR=9.8
N02D Trinity Center 86.58 45 P P 18 21 58.0 +1.9
baz=241,SNR=55
YAK Yakutsk 86.62 342 ceP P 18 21 55.6 -0.1
YAK i *PP pP 18 22 55.3 -0.1
YAK e 18 25 21.8
YAK eS SKSac 18 31 54.4 -3.5
YAK e 18 32 10.5
YAK pmax pmax
comp=E,5.0nm,1.2s
YAK pmax pmax
comp=Z,29nm,1.0s
YAK pmax pmax
comp=N,10.0nm,1.4s
YAK pmax pmax
comp=Z,12nm,1.4s
YAK pmax pmax
comp=N,27nm,1.9s
YAK pmax pmax
comp=E,21nm,2.2s
YAK smax smax
comp=E,58nm,2.3s
YAK smax smax
comp=N,87nm,2.0s
YAK Yakutsk 86.62 342 eP P 18 21 55.4 -0.3
YAK epP pP 18 22 55.3 -0.1
ARVC Arvin 86.64 51 P P 18 21 57.9 +1.5
baz=244,SNR=6.2
M02C Callahan 86.68 44 P P 18 21 58.5 +1.9
baz=241,SNR=77
PASC Pasadena Art C 86.70 52 eP P 18 21 57.5 +0.7
comp=N,48nm,0.7s
ORV Oroville 86.72 46 eP P 18 21 57.4 +0.7
ORV pmax pmax
comp=Z,69nm,1.0s
ORV Oroville 86.72 46 eP P 18 21 57.4 +0.7
comp=Z,69nm,1.0s
BILL Bilibino 86.74 359 ci P P 18 21 56.4 +0.3
BILL i *PP pP 18 22 58.3 +2.5
BILL pmax pmax
comp=Z,36nm,0.9s
VES Vestal, Richgr 86.76 51 P P 18 21 58.1 +1.2
baz=244,SNR=12
PMR Palmer 86.77 18 eP P 18 21 55.4 -1.0
PMR pmax pmax
comp=Z,16nm,0.8s
PMR Palmer 86.77 18 eP P 18 21 55.4 -1.0
comp=Z,16nm,0.8s
CMB Columbia Colle 86.80 48 eP P 18 21 57.9 +0.7
CMB e*PP pP 18 22 59.1 +2.2
CMB e 18 25 23.0
CMB pmax pmax
comp=Z,64nm,0.9s
CMB Columbia Colle 86.80 48 eP P 18 21 57.9 +0.7
comp=Z,64nm,0.9s
CMB epP pP 18 22 59.1 +2.2
CMB ePP PP 18 25 23.0 -0.9
AFDM Forest Hills D 86.81 47 eP P 18 21 58.0 +0.8
comp=Z,107nm,1.1s
AFDM epP pP 18 22 58.6 +1.7
MWC Mount Wilson 86.82 52 eP P 18 21 58.5 +0.9
MWC pmax pmax
comp=Z,67nm,0.6s
MWC Mount Wilson 86.82 52 eP P 18 21 58.5 +0.9
comp=Z,67nm,0.6s
RCTC Rector, Farmer 86.85 50 P P 18 21 58.6 +1.2
baz=244
O03D Paynes Creek 86.86 46 P P 18 21 58.9 +1.4
baz=242,SNR=78
O03D Paynes Creek 86.86 46 eP P 18 21 58.6 +1.1
FID Port Fidalgo 86.95 20 eP P 18 21 56.5 -0.8
comp=Z,34nm,1.0s
109C Camp Elliot, M 86.98 54 P P 18 21 59.6 +1.5
baz=245,SNR=8.1
EYAK Cordova Ski Ar 87.04 20 eP P 18 21 57.1 -0.6
comp=Z,20nm,0.9s
GTA Gaotai 87.05 313 eP P 18 21 59.8 +1.3
GTA pP pP 18 22 58.6 +0.4
GTA sP sP 18 23 28.3 +4.2
GTA SKS SKSac 18 32 01.4 -0.5
GTA S S 18 32 14.0 -2.2
GTA sS sS 18 34 02.1 +0.9
GTA SS SS 18 38 06.3 +0.2
GTA pmax pmax
comp=Z,160nm,5.9s
GTA LR LR
comp=Z,750nm,8.3s
GTA LR LR
comp=Z,660nm,10.2s
GTA LR LR
comp=Z,420nm,9.7s
SONA0 Songino Array 87.08 323 eP P 18 21 58.8 +0.4
SONA0 epP pP 18 22 58.2 0.0
SONA0 eSKSac SKSac 18 32 00.9 -0.8
SONA0 ePKKPdf PKKPbc 18 39 49.5 -2.0
SONM Songino Array 87.08 323 P P 18 21 58.8 +0.4
comp=Z,11nm,0.9s,baz=139,slow=5.0,SNR=56
SONM pP pP 18 22 58.2 0.0
comp=Z,22nm,1.1s,baz=145,slow=2.9,SNR=11
SONM S SKSac 18 32 00.9 -0.8
comp=Z,0.1nm,0.3s,baz=66,slow=41,SNR=3.4
SONM PKKPbc PKKPbc 18 39 49.5 -2.0
comp=Z,0.5nm,0.5s,baz=272,slow=3.1,SNR=4.3
SONA1 Songino Array 87.08 323 eP P 18 21 58.7 +0.2
SONA1 epP pP 18 22 57.7 -0.5
BFSC Mount Baldy Ra 87.13 52 P P 18 22 00.2 +1.2
baz=245,SNR=21
ISA Isabella, Lake 87.13 51 P P 18 22 00.3 +1.4
baz=244,SNR=22
ISA Isabella, Lake 87.13 51 eP P 18 22 00.1 +1.2
ISA pmax pmax
comp=Z,65nm,0.9s
ISA Isabella, Lake 87.13 51 eP P 18 22 00.1 +1.2
comp=Z,65nm,0.9s
PMSA Palmer Station 87.14 160 eP P 18 21 58.4 +0.1
PMSA epP pP 18 22 56.6 -1.4
EDW2 Edwards Air Fo 87.15 52 P P 18 22 00.4 +1.4
baz=245,SNR=34
HUMO Hull Mountain 87.19 43 eP P 18 22 00.6 +1.6
comp=Z,83nm,1.0s
MURC Murrieta 87.21 53 P P 18 22 00.6 +1.4
baz=245,SNR=13
BAR Barrett 87.23 54 eP P 18 22 00.3 +0.9
comp=Z,39nm,1.0s
CAST Castle Rocks 87.39 16 eP P 18 21 57.9 -1.5
comp=Z,29nm,0.8s
CAST epP pP 18 22 57.0 -2.2
DIV Divide 87.46 20 eP P 18 21 59.2 -0.6
comp=Z,59nm,1.4s
I03D Drain, OR 87.47 42 P P 18 22 01.9 +1.7
baz=241,SNR=9.6
DIB Dawson Inlet, 87.50 31 eP P 18 22 01.7 +1.7
comp=Z,324nm,1.9s
BUOR Burton Butte 87.50 44 eP P 18 22 02.2 +1.5
SCM Sheep Creek Mo 87.50 19 eP P 18 21 59.3 -0.7
SCM pmax pmax
comp=Z,26nm,0.8s
SCM Sheep Creek Mo 87.50 19 eP P 18 21 59.3 -0.7
comp=Z,26nm,0.8s
MONP2 Monument Peak 87.50 54 P P 18 22 01.8 +0.8
baz=246,SNR=43
M04C Macdoel 87.53 44 P P 18 22 02.4 +1.7
baz=242,SNR=22
LRMC Laurel Mtn Rad 87.64 51 P P 18 22 02.8 +1.4
baz=245,SNR=32
IKP In-Ko-Pah, Jac 87.65 54 P P 18 22 02.9 +1.5
baz=246,SNR=18
WAKR Walker 87.68 48 eP P 18 22 02.9 +1.3
comp=Z,467nm,1.9s
WAKR ePP PP 18 25 31.0 -0.1
KLU Klutina 87.69 20 eP P 18 22 00.0 -0.9
comp=Z,26nm,1.2s
KLU epP pP 18 23 02.9 +2.2
MLAC Mammoth, Mammo 87.72 49 P P 18 22 03.5 +1.7
baz=244
BMRM Bremner River 87.72 21 eP P 18 22 00.6 -0.5
comp=Z,22nm,0.9s
BMRM epP pP 18 23 03.2 +2.3
CWC Cottonwood Cre 87.75 50 P P 18 22 03.7 +1.7
baz=245
PFO Pinyon Flats O 87.77 53 P P 18 22 03.5 +1.5
comp=Z,27nm,0.9s,baz=270,slow=3.5,SNR=29
PFO Pinyon Flats O 87.77 53 P P 18 22 03.5 +1.5
baz=246,SNR=17
PFO Pinyon Flats O 87.77 53 eP P 18 22 02.8 +0.8
comp=Z,49nm,1.0s
TPFO Pinon Flats 87.77 53 P P 18 22 03.6 +1.6
baz=246,SNR=17
KTH Kantishna Hill 87.81 17 eP P 18 21 59.7 -1.7
comp=Z,32nm,1.0s
PNTR Pine Nut 87.82 47 eP P 18 22 03.9 +1.6
comp=Z,394nm,1.8s
RRX Edison Barstow 87.89 52 P P 18 22 04.0 +1.6
baz=245
TRF Thorofare Moun 87.90 17 eP P 18 22 00.4 -1.5
comp=Z,28nm,0.8s
TIN Tinemaha, Big 87.91 50 P P 18 22 04.2 +1.6
baz=244
COR Corvallis 87.93 41 eP P 18 22 04.3 +2.0
COR pmax pmax
comp=Z,528nm,1.8s
COR Corvallis 87.93 41 eP P 18 22 04.3 +2.0
comp=Z,528nm,1.8s
K04D Chiloquin, OR 87.98 44 P P 18 22 04.6 +1.8
baz=242,SNR=9.2
SWSC Sam W. Stewart 88.00 54 P P 18 22 04.6 +1.6
baz=246,SNR=15
MPMC Manual Prospec 88.02 51 P P 18 22 04.7 +1.5
baz=245,SNR=58
YERR Yerington 88.03 48 eP P 18 22 04.1 +0.9
comp=Z,293nm,1.8s
TVH3 East Aurora ar 88.05 48 eP P 18 22 04.6 +1.3
comp=Z,152nm,1.7s
CRQM Cirque 88.06 21 eP P 18 22 02.7 -0.1
comp=Z,33nm,1.0s
I04A Tendick Farm, 88.11 42 P P 18 22 04.6 +1.3
baz=242,SNR=17
TVH1 TV Hill, Hawth 88.13 48 eP P 18 22 04.5 +0.6
comp=Z,301nm,1.8s
GSC Goldstone, Bar 88.21 52 P P 18 22 05.3 +1.3
baz=245,SNR=44
GSC Goldstone, Bar 88.21 52 eP P 18 22 04.8 +0.8
GSC e 18 25 32.1
GSC pmax pmax
comp=Z,244nm,1.8s
GSC Goldstone, Bar 88.21 52 eP P 18 22 04.8 +0.8
comp=Z,244nm,1.8s
GSC ePP PP 18 25 32.1 -3.2
BPAW Bear Paw Mtn. 88.23 16 eP P 18 22 01.7 -1.6
comp=Z,10nm,1.1s
PAHR Pah Rah Range 88.25 47 eP P 18 22 05.5 +1.3
comp=Z,228nm,1.5s
G03D McMinnville, O 88.26 41 P P 18 22 05.6 +1.8
baz=241
RND Reindeer 88.26 17 eP P 18 22 02.4 -1.2
RND pmax pmax
comp=Z,60nm,1.2s
RND Reindeer 88.26 17 eP P 18 22 02.4 -1.2
comp=Z,60nm,1.2s
BELC Belle Mtn. Jos 88.28 53 P P 18 22 06.0 +1.5
baz=246,SNR=68
HEC Hector,Ludlow 88.37 52 P P 18 22 06.1 +1.3
baz=246,SNR=42
F03A Seaside 88.43 40 eP P 18 22 05.2 +0.5
comp=Z,248nm,1.4s
DHY Denali Highway 88.44 18 eP P 18 22 03.1 -1.4
comp=Z,23nm,1.3s
MCK McKinley 88.50 17 eP P 18 22 03.1 -1.5
MCK pmax pmax
comp=Z,20nm,0.9s
MCK McKinley 88.50 17 eP P 18 22 03.1 -1.5
comp=Z,20nm,0.9s
GRAC Grapevine Rang 88.51 50 P P 18 22 07.1 +1.8
baz=245,SNR=14
BALM Baldy 88.54 21 eP P 18 22 03.7 -1.2
BALM pmax pmax
comp=Z,21nm,0.9s
BALM Baldy 88.54 21 eP P 18 22 03.7 -1.2
comp=Z,21nm,0.9s
CRAG Craig 88.55 29 eP P 18 22 05.2 +0.3
comp=Z,72nm,1.6s
BC3 Big Chuckawall 88.56 54 P P 18 22 07.2 +1.5
baz=246,SNR=49
K05A Summer Lake 88.59 44 eP P 18 22 07.3 +1.5
comp=Z,92nm,0.8s
MOD Modoc Plateau 88.61 45 eP P 18 22 06.5 +0.7
comp=Z,137nm,1.3s
MOD ePP PP 18 25 37.3 -1.1
PCA Pinnacle 88.62 23 eP P 18 22 05.0 -0.3
comp=Z,36nm,0.8s
J05D Fort Rock, OR 88.63 43 P P 18 22 07.6 +1.8
baz=242,SNR=67
FURC Furnace Creek, 88.65 51 P P 18 22 07.4 +1.5
baz=245,SNR=28
BWN Browne 88.69 17 eP P 18 22 04.4 -1.1
comp=Z,93nm,1.0s
DHAK Deception Hill 88.71 24 eP P 18 22 05.6 -0.1
comp=Z,183nm,1.6s
E03A Lebam 88.73 39 eP P 18 22 07.5 +1.5
comp=Z,249nm,1.2s
GLA Glamis 88.80 54 P P 18 22 08.4 +1.7
baz=247,SNR=41
GLA Glamis 88.80 54 eP P 18 22 08.1 +1.3
GLA pmax pmax
comp=Z,403nm,1.8s
GLA Glamis 88.80 54 eP P 18 22 08.1 +1.3
comp=Z,403nm,1.8s
F04D Rainier, OR 88.84 40 P P 18 22 08.7 +2.1
baz=241
SHOC Shoshone, Teco 88.85 51 P P 18 22 08.4 +1.5
baz=246,SNR=38
GMRC Granite Mounta 88.86 53 P P 18 22 08.5 +1.4
baz=246,SNR=43
PGO Gresham 88.89 41 P P 18 22 08.5 +1.7
TUQ Turquoise Moun 88.92 52 P P 18 22 08.9 +1.5
baz=246,SNR=36
NLWA Neilton Lookou 88.97 39 eP P 18 22 08.4 +1.2
comp=Z,166nm,1.4s
OSR Olympics--Salm 88.97 38 P P 18 22 09.1 +1.8
IRM Iron Mountain 88.99 53 P P 18 22 09.3 +1.7
baz=246,SNR=73
MLY Manley 89.04 16 eP P 18 22 05.5 -1.6
comp=Z,8.4nm,0.9s
I05D Terrebonne, OR 89.05 42 P P 18 22 09.4 +1.7
baz=242,SNR=23
BBB Bella Bella 89.10 33 eP P 18 22 09.0 +1.4
comp=Z,71nm,1.0s
LPIG La Paz 89.11 64 P P 18 22 10.4 +2.1
comp=Z,38nm,0.3s,baz=331,slow=2.2,SNR=11
F04A Amboy 89.13 40 eP P 18 22 08.9 +1.0
comp=Z,173nm,1.1s
BOD Bodaibo 89.13 334 eP P 18 22 06.7 -0.9
BOD pmax pmax
comp=Z,29nm,1.5s
SLBS Sierra La Lagu 89.27 65 eP P 18 22 11.1 +1.9
comp=Z,395nm,1.6s
TPNV Topopah Spring 89.30 50 P P 18 22 10.7 +1.5
baz=246,SNR=65
TPNV Topopah Spring 89.30 50 eP P 18 22 10.2 +1.0
TPNV e 18 25 41.6
TPNV pmax pmax
comp=Z,72nm,0.9s
TPNV Topopah Spring 89.30 50 eP P 18 22 10.2 +1.0
comp=Z,72nm,0.9s
TPNV ePP PP 18 25 41.6 -2.4
WRH Wood River Hil 89.30 17 eP P 18 22 06.2 -2.1
comp=Z,16nm,0.7s
WRH ePP PP 18 25 36.6 -6.6
Y12C Blythe 89.31 54 P P 18 22 10.8 +1.7
baz=247,SNR=27
Y12C Blythe 89.31 54 eP P 18 22 09.8 +0.7
comp=Z,219nm,1.4s
SHW Mount Saint He 89.36 40 eP P 18 22 11.2 +2.0
SHW Mount Saint He 89.36 40 eP P 18 22 11.2 +2.0
LDFC Landfair 89.39 53 eP P 18 22 11.2 +1.6
comp=Z,424nm,1.5s
LDFC ePP PP 18 25 41.0 -3.7
VFP Flag Point 89.43 41 P P 18 22 10.7 +1.1
MENT Mentasta 89.45 19 eP P 18 22 08.3 -0.8
comp=Z,16nm,0.8s
MENT epP pP 18 23 10.2 +1.1
TDL Tradedollar La 89.45 40 eP P 18 22 11.4 +1.8
WRAK Wrangell Islan 89.47 28 eP P 18 22 09.9 +0.7
comp=Z,121nm,1.4s
G05D Wamic, OR 89.49 41 P P 18 22 11.3 +1.7
baz=242,SNR=9.1
SNAA Sanae 89.49 182 P P 18 22 08.8 -0.6
SNAA Sanae 89.49 182 ci P P 18 22 08.8 -0.6
SNAA i *PP pP 18 23 08.5 -0.9
SNAA Sanae 89.49 182 eP P 18 22 08.7 -0.7
SNAA epP pP 18 23 07.8 -1.6
113A Mohawk Valley, 89.50 55 eP P 18 22 11.2 +1.2
comp=Z,160nm,1.5s
113A ePP PP 18 25 44.8 -0.7
CCB Clear Creek Bu 89.52 17 eP P 18 22 08.2 -1.1
comp=Z,15nm,0.8s
CCB epP pP 18 23 09.5 +0.1
LSA Lhasa 89.53 302 eP P 18 22 11.4 +0.6
LSA Lhasa 89.53 302 eP P 18 22 11.4 +0.6
LSA epP pP 18 23 09.2 -1.6
HDA Harding Lake 89.58 17 eP P 18 22 08.7 -0.9
comp=Z,30nm,0.8s
NEE2 Needles Airpor 89.63 53 P P 18 22 12.5 +2.0
baz=247,SNR=9.8
MDM Murphy Dome 89.64 17 eP P 18 22 08.5 -1.5
comp=Z,23nm,0.9s
MDM epP pP 18 23 09.1 -0.9
COLA College 89.68 17 eP P 18 22 08.5 -1.5
COLA pmax pmax
comp=Z,39nm,0.8s
COLA College 89.68 17 eP P 18 22 08.5 -1.5
comp=Z,39nm,0.8s
BLN Blyn Mountain 89.80 38 eP P 18 22 12.9 +1.8
PDMCI Parker Dam,Lak 89.81 54 P P 18 22 13.1 +1.7
baz=247,SNR=31
PGC Sidney 89.83 38 eP P 18 22 12.1 +1.0
comp=Z,132nm,1.0s
PGC epP pP 18 23 13.1 +1.9
DOT Dot Lake 89.86 19 eP P 18 22 10.3 -0.7
comp=Z,71nm,0.8s
ILAR Eielson Array 89.87 17 P P 18 22 09.9 -1.1
comp=Z,20nm,0.8s,baz=236,slow=5.7,SNR=144
ILAR pP pP 18 23 10.8 -0.2
comp=Z,4.2nm,0.8s,baz=229,slow=6.3,SNR=2.7
ILB Eielson Array 89.87 17 eP P 18 22 09.4 -1.6
ILB epP pP 18 23 11.8 +0.7
LON Longmire 89.89 40 eP P 18 22 11.9 +0.4
LON pmax pmax
comp=Z,161nm,1.8s
LON Longmire 89.89 40 eP P 18 22 11.9 +0.4
comp=Z,161nm,1.8s
G06A Carlson Farm, 89.91 42 eP P 18 22 12.5 +0.8
comp=Z,57nm,1.0s
SHPR Sheep Range 89.92 51 eP P 18 22 13.6 +1.5
comp=Z,316nm,1.9s
VTHM Trough 89.93 42 P P 18 22 12.9 +1.1
214A Organ Pipe Nat 89.94 56 P P 18 22 13.9 +1.8
baz=248
WVOR Wild Horse Val 89.95 45 eP P 18 22 13.2 +1.2
WVOR e*PP pP 18 23 15.1 +3.0
WVOR pmax pmax
comp=Z,122nm,1.1s
WVOR Wild Horse Val 89.95 45 eP P 18 22 13.2 +1.2
comp=Z,122nm,1.1s
WVOR epP pP 18 23 15.1 +3.0
OBSR Observation Ro 89.96 40 eP P 18 22 13.5 +1.4
RCM Mount Rainier- 89.98 40 P P 18 22 13.7 +1.3
D05A Enumclaw 89.99 39 eP P 18 22 13.5 +1.6
comp=Z,508nm,1.4s
D05A epP pP 18 23 15.2 +3.2
BMN Battle Mountai 90.06 47 eP P 18 22 13.7 +1.1
BMN e*PP pP 18 23 16.5 +3.8
BMN pmax pmax
comp=Z,156nm,1.5s
BMN Battle Mountai 90.06 47 eP P 18 22 13.7 +1.1
comp=Z,156nm,1.5s
BMN epP pP 18 23 16.5 +3.8
SKAG Skagway 90.08 25 eP P 18 22 12.6 +0.6
comp=Z,89nm,1.0s
SKAG epP pP 18 23 15.0 +2.9
HYT Haines Junctio 90.12 23 eP P 18 22 12.5 +0.1
comp=Z,28nm,1.0s
ZAK Zakamensk 90.15 324 eP P 18 22 11.5 -1.2
ZAK e 18 23 12.7
ZAK pmax pmax
comp=Z,12nm,1.5s
ZAK pmax pmax
comp=Z,17nm,1.5s
A04D Lummi Island 90.29 38 P P 18 22 15.5 +2.3
baz=241,SNR=6.7
W13A Hualapai Mount 90.32 53 eP P 18 22 15.0 +1.0
comp=Z,153nm,1.5s
HSIG 90.34 59 eP P 18 22 14.5 +0.5
comp=Z,190nm,1.3s
R11A Troy Canyon, C 90.35 49 P P 18 22 15.1 +1.0
baz=246,SNR=35
R11A Troy Canyon, C 90.35 49 eP P 18 22 14.6 +0.5
comp=Z,26nm,1.0s
R11A ePP PP 18 25 51.3 -1.0
HTW Haystack Looko 90.41 39 P P 18 22 15.1 +1.1
B05A Bryant 90.43 38 P P 18 22 15.8 +1.9
baz=242
TRW Toppenish Ridg 90.45 41 P P 18 22 15.7 +1.5
Y14A Wickenburg 90.54 54 eP P 18 22 15.6 +0.7
comp=Z,504nm,1.6s
VNA1 Neumayer--Stat 90.66 181 P P 18 22 14.4 -0.3
COLD Coldfoot 90.92 15 eP P 18 22 16.2 +0.5
comp=Z,23nm,0.8s
WRW Wenatchee Ridg 90.96 39 P P 18 22 17.6 +1.0
G08A Pilot Rock 90.99 42 eP P 18 22 17.0 +0.2
comp=Z,90nm,1.0s
G08A epP pP 18 23 19.3 +2.4
G08A ePP PP 18 25 54.6 -2.5
E07A Sunnyside 91.00 41 eP P 18 22 17.8 +1.1
comp=Z,85nm,0.9s
HAWA Hanford 91.12 41 eP P 18 22 18.8 +1.6
comp=Z,104nm,1.0s
WTV Waterville 91.45 40 eP P 18 22 19.6 +0.8
LCMT Little Creek M 91.53 51 eP P 18 22 20.5 +0.9
comp=Z,84nm,1.1s
EGAK Eagle 91.56 19 eP P 18 22 18.5 -0.3
comp=Z,37nm,0.8s
ELK Elko 91.56 47 ePKKPdf PKKPdf 18 39 35.7 -1.3
DAWY Dawson 91.63 20 eP P 18 22 18.8 -0.4
comp=Z,30nm,1.3s
DAWY epP pP 18 23 20.6 +1.2
DAWY ePP PP 18 25 55.6 -6.0
CCUT Cedar City 91.65 51 eP P 18 22 20.6 +0.4
comp=Z,124nm,1.5s
LLLB Lillooet 91.67 36 eP P 18 22 20.8 +1.1
comp=Z,59nm,1.1s
TUC Tucson 91.67 56 P P 18 22 22.2 +2.0
baz=249
TUC Tucson 91.67 56 eP P 18 22 21.4 +1.2
TUC e 18 26 00.7
TUC pmax pmax
comp=Z,109nm,1.3s
TUC Tucson 91.67 56 eP P 18 22 21.4 +1.2
comp=Z,109nm,1.3s
TUC ePP PP 18 26 00.7 -2.0
DLBC Dease Lake 91.67 27 eP P 18 22 19.9 +0.4

DLBC **D08A** **Wollman Farm,** 91.79 40 *e*P **P** 18 22 21.3 +1.0
comp=Z,27nm,1.0s
D08A *e*PP **PP** 18 26 01.3 -2.0
KNB **Kanab** 91.85 51 *e*P **P** 18 22 22.2 +1.2
KNB pmax pmax
comp=Z,311nm,1.8s
KNB **Kanab** 91.85 51 *e*P **P** 18 22 22.2 +1.2
comp=Z,311nm,1.8s
BMO **Blue Mountains** 91.86 43 *e*P **P** 18 22 21.1 +0.3
comp=Z,130nm,2.0s
SZCU **Shurtz Canyon** 91.87 51 *e*P **P** 18 22 22.3 +1.1
comp=Z,349nm,1.9s
X16A **Lo Mia Camp, P** 91.92 54 *e*P **P** 18 22 22.6 +1.1
comp=Z,86nm,1.0s
X16A *e*pP **pP** 18 23 24.5 +3.0
U15A **North Rim** 92.02 52 *e*P **P** 18 22 23.3 +1.3
comp=Z,413nm,1.9s
U15A *e*pP **pP** 18 23 25.2 +3.1
E09A **Wood Farm, Sta** 92.04 41 *e*P **P** 18 22 21.6 +0.2
comp=Z,101nm,1.6s
MOY **Mondy** 92.04 325 *e*P **P** 18 22 22.4 +0.9
MOY pmax pmax
comp=Z,33nm,3.6s
B08A **Colville Reser** 92.12 39 *e*P **P** 18 22 21.7 -0.1
comp=Z,166nm,2.0s
B08A *e*pP **pP** 18 23 22.5 +0.5
B08A *e*PP **PP** 18 26 03.4 -2.3
MFID **Camas Ranch** 92.24 45 *e*P **P** 18 22 23.0 +0.4
comp=Z,26nm,0.9s
WUAZ **Wupatki** 92.38 53 P **P** 18 22 25.1 +1.6
baz=248
WUAZ **Wupatki** 92.38 53 *e*P **P** 18 22 24.6 +1.1
comp=Z,136nm,1.4s
WUAZ *e*pP **pP** 18 23 25.1 +1.5
F10A **Beach Ranch, E** 92.38 42 *e*P **P** 18 22 23.2 +0.1
comp=Z,202nm,2.0s
PKCU **Pink Cliffs** 92.39 51 *e*P **P** 18 22 25.9 +2.2
comp=Z,90nm,1.5s
C09A **Chrisman Ranch** 92.51 40 *e*P **P** 18 22 24.4 +0.7
comp=Z,120nm,2.0s
C09A *e*PP **PP** 18 26 06.7 -2.2
319A **Douglas** 92.53 58 *e*P **P** 18 22 25.8 +1.6
comp=Z,109nm,0.9s
MTPU **Mount Pierson** 92.70 51 *e*P **P** 18 22 26.9 +1.8
comp=Z,156nm,1.8s
MSU **Marysvale** 92.88 50 *e*P **P** 18 22 27.2 +1.4
MSU **Marysvale** 92.88 50 *e*P **P** 18 22 27.2 +1.4
DUG **Dugway, Tooele** 93.05 49 P **P** 18 22 27.4 +1.0
baz=248
DUG **Dugway, Tooele** 93.05 49 *e*P **P** 18 22 26.9 +0.4
DUG pmax pmax
comp=Z,28nm,1.4s
DUG **Dugway, Tooele** 93.05 49 *e*P **P** 18 22 26.9 +0.4
comp=Z,28nm,1.4s
X18A **Snowflake** 93.11 55 *e*P **P** 18 22 27.9 +1.0
comp=Z,47nm,1.1s
BGU **Big Grassy Mou** 93.18 48 *e*P **P** 18 22 27.3 +0.3
comp=Z,58nm,1.9s
HLID **Hailey** 93.24 45 P **P** 18 22 28.5 +1.2
baz=247
HLID **Hailey** 93.24 45 *e*P **P** 18 22 27.9 +0.7
comp=Z,17nm,0.9s
NEW **Newport** 93.41 40 P **P** 18 22 28.9 +1.1
baz=245
NEW **Newport** 93.41 40 *e*P **P** 18 22 27.6 -0.2
NEW pmax pmax
comp=Z,12nm,0.9s
NEW **Newport** 93.41 40 *e*P **P** 18 22 27.6 -0.2
comp=Z,12nm,0.9s
W18A **Petrified Fore** 93.48 54 P **P** 18 22 30.4 +1.7
baz=249
W18A **Petrified Fore** 93.48 54 *e*P **P** 18 22 29.8 +1.1
comp=Z,76nm,1.4s
NLU **North Lily Min** 93.49 49 *e*P **P** 18 22 29.4 +0.8
comp=Z,15nm,1.2s
HVU **Hansel Valley** 93.67 47 *e*P **P** 18 22 30.0 +0.7
HVU pmax pmax
comp=Z,49nm,1.5s
HVU **Hansel Valley** 93.67 47 *e*P **P** 18 22 30.0 +0.7
comp=Z,49nm,1.5s
SPUT **South Promonto** 93.73 48 *e*P **P** 18 22 30.5 +1.0
comp=Z,37nm,1.4s
MPU **Maple Canyon** 93.83 49 *e*P **P** 18 22 31.1 +1.0
comp=Z,20nm,1.2s
TMUT **Trail Mountain** 93.87 50 *e*P **P** 18 22 31.4 +0.9
comp=Z,35nm,1.4s
CTU **Camp Tracy** 93.99 48 *e*P **P** 18 22 31.1 +0.3
comp=Z,264nm,2.0s
HPIG 94.01 63 *e*P **P** 18 22 32.1 +0.8
comp=Z,68nm,2.0s
121A **Cookes Peak, D** 94.12 57 P **P** 18 22 33.2 +1.6
baz=250
JLU **Jordanelle** 94.17 49 *e*P **P** 18 22 32.5 +0.7
comp=Z,20nm,1.2s
P17A **Butcher Ranch,** 94.27 50 *e*P **P** 18 22 32.4 +0.3
comp=Z,51nm,1.7s
SRU **San Rafael Swe** 94.30 50 *e*P **P** 18 22 32.3 0.0
SRU pmax pmax
comp=Z,20nm,1.1s
SRU **San Rafael Swe** 94.30 50 *e*P **P** 18 22 32.2 0.0
comp=Z,20nm,1.1s
TCUT **Toone Canyon** 94.39 48 *e*P **P** 18 22 33.2 +0.5
comp=Z,36nm,1.0s
HWUT **Hardware Ranch** 94.45 48 *e*P **P** 18 22 32.9 0.0
comp=Z,8.4nm,0.8s
HWUT *e*PP **PP** 18 26 22.8 -1.5
TIXI **Tiksi** 94.47 348 *d*P **P** 18 22 34.3 +2.3
TIXI pmax pmax
comp=Z,4.0nm,1.0s
BSMT **Bassoo Peak** 94.67 41 *e*P **P** 18 22 33.6 -0.2
MCMT **McKenzie Canyo** 94.76 44 *e*P **P** 18 22 34.4 +0.1
MSO **Missoula** 94.81 42 *e*P **P** 18 22 35.9 +1.6
comp=Z,3.7nm,0.6s
PV05 **Paradox Valley** 94.99 52 *e*P **P** 18 22 36.8 +1.2
PV09 **Paradox Valley** 95.11 51 *e*P **P** 18 22 37.0 +0.9
DLMT **Dillon** 95.13 44 *e*P **P** 18 22 36.2 +0.4
comp=Z,26nm,1.4s
PV10 **Paradox Valley** 95.14 51 *e*P **P** 18 22 37.3 +1.1
LAZ **Ladron** 95.25 56 *e*P **P** 18 22 35.8 -1.0
CHMT **Chamberlain Mo** 95.28 42 *e*P **P** 18 22 36.5 -0.1
ZAIG **Zacatecas** 95.36 68 *e*P **P** 18 22 39.1 +1.5
comp=Z,33nm,1.7s
LRM **Limekiln Ridge** 95.39 43 *e*P **P** 18 22 36.4 -0.8
PV01 **Paradox Valley** 95.40 52 *e*P **P** 18 22 38.0 +0.6
TPAW **Teton Pass** 95.55 46 *e*P **P** 18 22 38.7 +0.7
comp=Z,6.9nm,0.9s
BNM **Barren Site** 95.57 56 *e*P **P** 18 22 38.3 +0.1
BNM *e*PP **PP** 18 26 30.1 -3.1
REDW **Red Top Meadow** 95.57 46 *e*P **P** 18 22 38.4 +0.4
comp=Z,37nm,1.4s
LPM **Los Pinos Moun** 95.62 56 *e*P **P** 18 22 39.1 +0.7
WALA **Waterton Lakes** 95.68 40 *e*P **P** 18 22 38.3 +0.1
WALA *e*PP **PP** 18 26 29.9 -3.6
IMW **Indian Meadow** 95.70 46 *e*P **P** 18 22 39.1 +0.4
comp=Z,50nm,1.8s
MNTX **Cornudas Mount** 95.78 59 P **P** 18 22 39.8 +0.8
baz=252
MNTX **Cornudas Mount** 95.78 59 *e*P **P** 18 22 39.2 +0.3
comp=Z,53nm,1.5s
MOOW **Moose Ponds** 95.78 46 *e*P **P** 18 22 39.0 0.0
comp=Z,33nm,2.0s
LOHW **Long Hollow** 95.83 46 *e*P **P** 18 22 39.5 +0.3
comp=Z,6.8nm,1.0s
BOZ **Bozeman (W)** 95.86 44 P **P** 18 22 40.3 +1.1
baz=249
BOZ **Bozeman (W)** 95.86 44 *e*P **P** 18 22 39.8 +0.6
BOZ pmax pmax
comp=Z,16nm,1.2s
BOZ **Bozeman (W)** 95.86 44 *e*P **P** 18 22 39.8 +0.6
comp=Z,16nm,1.2s
FLWY **Flagg Ranch** 95.93 45 *e*P **P** 18 22 40.6 +0.9
comp=Z,20nm,1.2s
ANMO **Albuquerque** 95.96 55 P **P** 18 22 40.4 +0.5
baz=251
ANMO **Albuquerque** 95.96 55⇑ *i*P **P** 18 22 40.7 +0.8
ANMO *i* *PP **pP** 18 23 40.2 0.0
ANMO pmax pmax
comp=Z,10.0nm,1.1s
ANMO **Albuquerque** 95.96 55 *e*P **P** 18 22 40.2 +0.3
comp=Z,30nm,1.5s
ANMO *e*pP **pP** 18 23 40.0 -0.1
INK **Inuvik** 96.18 18 *e*P **P** 18 22 38.8 -1.0
INK pmax pmax
comp=Z,66nm,1.3s
INK **Inuvik** 96.18 18 *e*P **P** 18 22 38.8 -1.0
comp=Z,66nm,1.3s
BW06 **Boulder Array** 96.26 47 P **P** 18 22 41.8 +0.6
baz=250
BW06 **Boulder Array** 96.26 47 *e*P **P** 18 22 40.2 -1.0
comp=Z,20nm,1.5s
BW06 *e*pP **pP** 18 23 38.4 -3.0
BW06 *e*pP **pP** 18 23 42.0 +0.6
PD31 **Pinedale Array** 96.26 47 *e*P **P** 18 22 40.4 -0.7
PD31 *e*PP **PP** 18 26 34.2 -4.1
PDAR **Pinedale Array** 96.26 47 P **P** 18 22 41.0 -0.2
comp=Z,2.6nm,0.8s,baz=222,slow=2.0,SNR=18
PDAR PP **PP** 18 26 35.9 -2.4
comp=Z,0.9nm,0.8s,baz=230,slow=6.7,SNR=6.1
O20A **White River Ci** 96.31 50 P **P** 18 22 42.4 +1.0
baz=251
O20A **White River Ci** 96.31 50 *e*P **P** 18 22 41.8 +0.4
comp=Z,14nm,1.1s
LTX **Lajitas** 96.44 61 *e*P **P** 18 22 43.2 +1.1
LTX *e* 18 26 40.1
LTX **Lajitas** 96.44 61 *e*P **P** 18 22 43.2 +1.1
LTX *e*PP **PP** 18 26 40.0 +0.2
TX31 **Lajitas Ar. Si** 96.44 61 *e*P **P** 18 22 42.2 +0.1
TXAR **Lajitas Array** 96.44 61 P **P** 18 22 43.2 +1.1
comp=Z,3.7nm,0.8s,baz=222,slow=4.4,SNR=28
TXAR PP **PP** 18 26 40.0 +0.2
comp=Z,0.8nm,0.7s,baz=125,slow=28,SNR=4.3
S22A **4UR Ranch, Cre** 96.57 52 *e*P **P** 18 22 43.9 +1.1
comp=Z,12nm,1.1s
WMQ **Urumqi** 97.12 314 *e*P Pdif 18 22 45.5 +0.6
WMQ pP pP 18 23 45.8 +0.7
WMQ PP **PP** 18 26 41.1 -3.6
WMQ SKS **SKSac** 18 32 56.8 -1.0
WMQ S **ScS** 18 33 46.3 +0.1
WMQ pmax pmax
comp=Z,15nm,0.6s
WMQ pmax pmax
comp=Z,96nm,4.6s
WMQ LR LR
comp=Z,660nm,21.2s
WMQ LR LR
comp=Z,680nm,20.2s
WMQ LR LR
comp=Z,490nm,16.7s
GCMT **Greyclift** 97.20 44 *e*P **P** 18 22 44.3 -0.9
SDCO **Great Sand Dun** 97.57 53 P Pdif 18 22 48.1 +0.8
baz=252
SDCO **Great Sand Dun** 97.57 53 *e*P Pdif 18 22 47.7 +0.4
comp=Z,9.8nm,1.4s
N23A **Red Feather La** 98.21 50 P Pdif 18 22 51.6 +1.5
baz=252
N23A **Red Feather La** 98.21 50 *e*P **P** 18 22 49.5 -0.5
comp=Z,9.8nm,1.0s
N23A *e*PP **PP** 18 26 49.6 -3.7
T25A **Trinidad** 98.22 54 *e*PP PP 18 26 52.3 -1.1
K22A **Casper** 98.33 48 *e*P Pdif 18 22 51.5 +1.1
K22A *e*PP **PP** 18 26 49.0 -5.1
MSTX **Muleshoe** 98.56 57 P **P** 18 22 51.8 +0.3
baz=253
PLCA **Paso Flores** 98.64 138 P **P** 18 22 53.6 +1.7
comp=Z,5.1nm,1.2s,baz=265,slow=4.4,SNR=4.1
PHWY **Pilot Hill** 98.68 49 *e*P **P** 18 22 52.4 +0.2
PHWY *e*PP **PP** 18 26 55.5 -1.4
AMTX **Amarillo** 99.69 56 P **Pdif** 18 22 56.8 +0.3
baz=254
YKA **Yellowknife Ar** 100.30 27 P **Pdif** 18 22 59.8 +1.4
comp=Z,11nm,0.8s,baz=256,slow=4.7,SNR=23
YKA PP **PP** 18 27 06.9 -1.2
comp=Z,4.3nm,1.1s,baz=252,slow=7.5,SNR=4.2
YKB5 **Yellowknife Ar** 100.30 27 *e*Pdif **Pdif** 18 22 58.7 +0.3
YKW3 **Yellowknife Ar** 100.32 27 *e*Pdif **Pdif** 18 22 59.6 +1.1
RSSD **Black Hills** 100.50 47 P **Pdif** 18 23 00.6 +0.5
baz=254
433A **Art** 100.65 61 P **Pdif** 18 23 02.0 +1.1
baz=254
ABTX **Abilene, Hawle** 100.70 59 P **Pdif** 18 23 01.8 +0.8
baz=254
ABTX **Abilene, Hawle** 100.70 59 *e*Pdif **Pdif** 18 23 00.5 -0.5
X32A **Elmer** 101.46 57 P **Pdif** 18 23 05.0 +0.6
baz=255
MK01 **Makanchi Array** 101.63 316 *e*Pdif **Pdif** 18 23 06.0 +1.2
MK31 **Makanchi Array** 101.64 316 *e*P **Pdif** 18 23 07.7 +2.9
MK31 **Makanchi Array** 101.64 316 *e*Pdif **Pdif** 18 23 05.2 +0.4
MK31 *e* 18 24 04.8
MK32 **Makanchi Array** 101.64 316 *e*Pdif **Pdif** 18 23 06.5 +1.6
MK32 *e* 18 24 05.5
MK32 *e*PP **PP** 18 27 20.4 +1.7
MK32 *e*PKiKP **PKiKP** 18 27 27.4 +0.4
MK32 *e*SKSac **SKSac** 18 33 18.1 -1.8
MK32 *e*PKKPbc **PKKPbc** 18 39 09.7 -2.8
MKAR **Makanchi Array** 101.64 316 P **Pdif** 18 23 06.5 +1.6
comp=Z,2.2nm,0.7s,baz=81,slow=5.7,SNR=13
MKAR pP pP 18 24 05.5 +0.1
comp=Z,0.1nm,0.5s,baz=142,slow=28,SNR=1.4
MKAR PP **PP** 18 27 20.4 +1.7
comp=Z,0.8nm,0.8s,baz=109,slow=9.5,SNR=4.0
MKAR PKiKP **PKiKP** 18 27 27.4 +0.4
comp=Z,0.8nm,0.8s,baz=166,slow=1.6,SNR=4.7
MKAR S **SKSac** 18 33 18.1 -1.8
comp=Z,0.6nm,0.9s,baz=116,slow=2.8,SNR=3.5
MKAR PKKPbc **PKKPbc** 18 39 09.7 -2.8
comp=Z,0.6nm,0.5s,baz=262,slow=3.3,SNR=12
MKAR **Makanchi Array** 101.64 316 *e*Pdif **Pdif** 18 23 04.4 -0.4
MKAR pP pP 18 24 05.5 +0.1
MKAR PP **PP** 18 27 20.4 +1.7
MKAR PKiKP **PKiKP** 18 27 27.4 +0.4
MKAR S **SKSac** 18 33 18.1 -1.8
MKAR PKKPbc **PKKPbc** 18 39 09.7 -2.8
W32A **Sentinel** 101.67 57 P **Pdif** 18 23 06.0 +0.8
baz=255
WMOK **Wichita Mounta** 101.95 57 P **Pdif** 18 23 06.7 +0.2
baz=255
ZAA0 **Zalesovo Array** 101.98 323 *e*Pdif **Pdif** 18 23 05.4 -0.7
ZAA0 *e* 18 24 06.2
ZALV **Zalesovo Beam** 101.98 323 P **Pdif** 18 23 05.8 -0.3
comp=Z,0.8nm,0.5s,baz=100,slow=3.5,SNR=5.7
ZALV pP pP 18 24 06.3 -0.3
comp=Z,0.7nm,0.8s,baz=276,slow=1.3,SNR=2.1
ZALV PKKPbc **PKKPbc** 18 39 09.2 -2.6
comp=Z,0.8nm,0.5s,baz=293,slow=2.2,SNR=3.9
ZAA1 **Zalesovo Array** 101.98 323 *e*Pdif **Pdif** 18 23 05.8 -0.3
ZAA1 *e* 18 24 06.3
ZAA1 *e*PKKPbc **PKKPbc** 18 39 09.2 -2.6
KURK **Kurchatov** 104.92 319 P **Pdif** 18 23 19.6 +0.4
KURK pmax pmax
comp=Z,1.0nm,0.6s
KURK **Kurchatov** 104.92 319 *e*Pdif **Pdif** 18 23 19.6 +0.4
KURK *e*PKKPab **PKKPab** 18 39 19.3 +0.7
KURBB **Kurchatov Arra** 104.95 319 Pdiff **Pdif** 18 23 19.6 +0.2
comp=Z,0.4nm,0.7s,baz=105,slow=3.6,SNR=5.6
KURBB PKKPbc **PKKPbc** 18 39 00.4 -2.3
comp=Z,0.6nm,0.6s,baz=282,slow=3.5,SNR=7.2
KURBB PKKPab **PKKPab** 18 39 19.3 +0.9
comp=Z,0.3nm,0.7s,baz=282,slow=4.8,SNR=4.2
HHAR **Hobbs** 106.14 57 *e*PP PP 18 27 49.7 -2.6
U40A **Yellville** 107.02 57 P **PKiKP** 18 27 37.5 +0.2
baz=259
T40A **Mansfield** 107.43 56 P **PKiKP** 18 27 38.3 +0.3
baz=259
V42A **Cord** 108.08 58 P **PKiKP** 18 27 39.5 +0.3
baz=260
BVAR **Borovoye Array** 110.29 321 PKiKP **PKiKP** 18 27 42.2 -0.7
comp=Z,1.1nm,0.4s,baz=138,slow=2.4,SNR=14
SFIN **Lafayette** 112.11 53 *e*PP PP 18 28 33.1 -2.1
LPAZ **La Paz** 113.43 118 *e*PP PP 18 28 45.2 -0.1
CPUP **Villa Florida** 116.08 133 PKP **PKPdf** 18 27 54.0 -0.8
comp=Z,1.4nm,0.7s,baz=89,slow=9.8,SNR=2.2
ABKAR **Akbulak array** 116.78 316 *e*PKPdf **PKPdf** 18 27 54.3 -1.0
ABKAR *e*pPKPdf pPKPdf 18 28 56.9 -1.6
ARU **Arti** 117.09 324 PKP **PKPdf** 18 27 55.2 -0.5
comp=Z,7.7nm,0.4s,baz=115,slow=2.6,SNR=21
ARU pPKP **pPKPdf** 18 28 58.5 -0.4
comp=Z,0.7nm,0.3s,baz=87,slow=2.2,SNR=1.2
ARU **Arti** 117.09 324 *i* PKIKP **PKPdf** 18 27 55.1 -0.6
ARU 18 29 08.3
ARU 18 34 42.7
ARU SP SP 18 38 24.0 -3.0
ARU SS **SS** 18 44 57.1 -1.2
ARU **Arti** 117.09 324 *e*PKPdf **PKPdf** 18 27 54.7 -1.1
ARU *e*pPKPdf **pPKPdf** 18 28 57.3 -1.6
AKTO **Aktyubinsk** 117.96 318 PKP **PKPdf** 18 27 57.3 -0.3
comp=Z,3.6nm,0.7s,baz=122,slow=2.4,SNR=13
AKTO pPKP **pPKPdf** 18 29 00.3 -0.5
comp=Z,2.2nm,0.9s,baz=77,slow=6.3,SNR=3.0
GEYT **Alibeck** 118.00 303 PKP **PKPdf** 18 27 58.1 0.0
comp=Z,4.4nm,0.7s,baz=241,slow=3.1,SNR=13
GEYT pPKP **pPKPdf** 18 29 01.2 -0.1
comp=Z,3.2nm,0.9s,baz=356,slow=6.1,SNR=3.9
SPA0 **Spitsbergen Ar** 119.30 354 *e*PKPdf **PKPdf** 18 27 58.7 -0.8
FRB **Frobisher Bay** 120.78 26 PKP **PKPdf** 18 28 03.9 +1.3
comp=Z,6.6nm,0.6s,baz=315,slow=5.7,SNR=3.1
BOSA **Boshof** 121.43 217 PKP **PKPdf** 18 28 05.6 +0.4
comp=Z,2.1nm,0.4s,baz=172,slow=2.0,SNR=16
BOSA PKKPbc **PKKPbc** 18 38 05.8 -1.3
comp=Z,2.9nm,0.9s,baz=285,slow=5.2,SNR=4.8
SDDR **Presa de Saban** 122.83 79 *e*PKPdf **PKPdf** 18 28 06.3 -1.7
SUMG **Summit** 124.01 10 *e*PKIKP **PKPdf** 18 28 08.7 -0.4
SUMG **Summit** 124.01 10 *e*PKPdf **PKPdf** 18 28 08.7 -0.4
HAMF **Hammerfest** 124.39 347 *e*PKPdf **PKPdf** 18 28 08.4 -0.9
SCHQ **Schefferville** 124.54 36 PKP **PKPdf** 18 28 09.6 -0.6
comp=Z,3.0nm,0.4s,baz=293,slow=8.3,SNR=2.6
SCHQ **Schefferville** 124.54 36 *e*PKPdf **PKPdf** 18 28 09.0 -1.2
ARA0 **ARCESS Array S** 124.81 345 *e*PKPdf **PKPdf** 18 28 09.4 -0.9
ARCES **ARCESS Array B** 124.81 345 PKP **PKPdf** 18 28 09.6 -0.6
comp=Z,7.0nm,0.4s,baz=82,slow=1.6,SNR=106
ARCES PKKPab **PKKPab** 18 37 51.3 +0.6
comp=Z,1.0nm,0.7s,baz=209,slow=2.2,SNR=3.6
ARE0 **ARCESS Array S** 124.81 345 *e*PKPdf **PKPdf** 18 28 09.9 -0.3
PKME **Peaks-Kenny Pk** 125.11 48 *e*PKPdf **PKPdf** 18 28 11.0 -0.5
KLMR **Klimovskoe** 125.34 333 *e*PKIKP **PKPdf** 18 28 09.2 -2.2
KLMR *e* 18 29 11.7
KLMR pmax pmax
comp=Z,20nm,1.4s
TRO **Tromso** 126.18 348 *e*PKPdf **PKPdf** 18 28 12.3 -0.5
SJG **San Juan** 127.47 81 *e*PKIKP **PKPdf** 18 28 15.9 -0.9
SJG *e* 18 29 19.6
SJG **San Juan** 127.47 81 *e*PKPdf **PKPdf** 18 28 15.9 -0.9
SJG *e*pPKPdf **pPKPdf** 18 29 19.6 -0.3
PTGA **Pitinga** 127.72 106 *e*PKPdf **PKPdf** 18 28 16.6 -0.9
PTGA *e*pPKPdf **pPKPdf** 18 29 19.5 -1.1
HUMP **Col San Antoni** 127.76 81 *e*PKPdf **PKPdf** 18 28 16.4 -0.9
HUMP *e*pPKPdf **pPKPdf** 18 29 20.7 +0.2
CBYP **Canovanas** 127.77 81 *e*PKPdf **PKPdf** 18 28 16.4 -1.0
STEI **Steigen** 128.35 348 *e*PKPdf **PKPdf** 18 28 16.7 -0.3
LSZ **Lusaka** 128.91 231 *e*PKIKP **PKPdf** 18 28 20.0 +0.2
LSZ *e* 18 29 20.5
LSZ **Lusaka** 128.91 231 *e*PKPdf **PKPdf** 18 28 20.0 +0.2
LSZ *e*pPKPdf **pPKPdf** 18 29 20.5 -2.5
KMBO **Kilima Mbogo** 129.00 252 PKP pPKPdf 18 29 22.0 -1.4
comp=Z,2.1nm,0.7s,baz=56,slow=23,SNR=3.2
KBZ **Khabaz** 129.09 311 PKP pPKPdf 18 29 22.1 -0.2
comp=Z,5.1nm,1.1s,baz=138,slow=1.7,SNR=3.3
OBN **Obninsk** 129.33 327 PKP **PKPdf** 18 28 19.6 +0.4
comp=Z,4.5nm,0.4s,baz=83,slow=2.0,SNR=6.5
OBN pPKP **pPKPdf** 18 29 22.6 +0.2
comp=Z,5.9nm,0.4s,baz=58,slow=0.5,SNR=1.8
OBN **Obninsk** 129.33 327 *i* PKIKP **PKPdf** 18 28 18.6 -0.6
OBN *i* 18 29 21.9
OBN pmax pmax
comp=Z,14nm,1.2s
OBN **Obninsk** 129.33 327 *e*PKPdf **PKPdf** 18 28 19.2 0.0
OBN *e*pPKPdf **pPKPdf** 18 29 21.8 -0.6
BDFB **Brasilia** 129.62 130 PKP **PKPdf** 18 28 22.1 +0.9
comp=Z,4.4nm,0.7s,baz=259,slow=3.2
BDFB pPKP **pPKPdf** 18 29 26.1 +1.8
BDFB **Brasilia** 129.62 130 *e*PKPdf **PKPdf** 18 28 21.7 +0.6
BDFB *e*pPKPdf **pPKPdf** 18 29 26.1 +1.8
STOK **Stokkvaagen** 130.17 348 *e*PKPdf **PKPdf** 18 28 20.7 +0.2
FIA1 **FINESS Array S** 130.36 338 *e*PKPdf **PKPdf** 18 28 18.6 -2.4
FIA1 *e*pPKPdf **pPKPdf** 18 29 23.1 -1.0
FIA1 *e*SKPbc **SKPbc** 18 31 18.8 -2.0
FIA0 **FINESS Array S** 130.36 338 *e*PKHKP PKPpre 18 28 07.6
FIA0 *e* 18 28 21.2
FIA0 *e* 18 29 23.8
FIA0 **FINESS Array S** 130.36 338 *e*PKPpre PKPpre 18 28 07.5
FIA0 *e*PKPdf **PKPdf** 18 28 21.1 +0.1
FIA0 *e*pPKPdf pPKPdf 18 29 23.8 -0.4
FIA0 *e*SKPbc **SKPbc** 18 31 20.1 -0.7
FINES **FINESS Array B** 130.36 338 PKHKP PKPpre 18 28 07.5
comp=Z,1.1nm,0.7s,baz=122,slow=2.7,SNR=3.9
FINES PKP **PKPdf** 18 28 21.1 +0.1
comp=Z,1.2nm,0.4s,baz=57,slow=1.3,SNR=14
FINES pPKP pPKPdf 18 29 23.8 -0.3
comp=Z,1.9nm,0.8s,baz=123,slow=14,SNR=1.8
FINES SKPbc **SKPbc** 18 31 20.1 -0.7
comp=Z,9.0nm,0.8s,baz=90,slow=5.7,SNR=14
BORG **Borgarnes** 133.63 6 PKP **PKPdf** 18 28 25.6 -1.4
comp=Z,17nm,1.2s,baz=4.9,slow=4.6,SNR=3.4
BORG **Borgarnes** 133.63 6 *e*PKPdf **PKPdf** 18 28 25.5 -1.6
AKN **Aaknes** 135.08 348 *e*PKPdf **PKPdf** 18 28 29.8 -0.1
NB2 **NORSAR Subarra** 135.19 345 PKPdf PKPpre 18 28 19.8
comp=Z,1.9nm,0.6s,baz=30,slow=1.9
NB2 **NORSAR Subarra** 135.19 345 PKPdf PKPpre 18 28 19.8
baz=30,slow=1.9
NB200 **NORSAR Array S** 135.19 345 *e*PKPdf **PKPdf** 18 28 30.3 +0.1
NOA **NORSAR Array B** 135.19 345 PKP **PKPdf** 18 28 30.3 +0.1
comp=Z,1.2nm,0.5s,baz=33,slow=2.1,SNR=7.3
HFS **Hagfors** 135.31 343 PKHKP PKPpre 18 28 19.5
comp=Z,0.5nm,0.4s,baz=86,slow=4.5,SNR=4.3
HFS PKP **PKPdf** 18 28 30.7 +0.3
comp=Z,1.2nm,0.4s,baz=123,slow=5.5,SNR=11
HFS SKPbc **SKPbc** 18 31 36.9 -0.9
comp=Z,0.8nm,0.5s,baz=64,slow=3.4,SNR=6.0
AKASG **Malin Array Be** 135.34 325 PKP **PKPdf** 18 28 30.3 -0.4
comp=Z,1.0nm,0.4s,baz=57,slow=2.3,SNR=9.7
AKASG pPKP **pPKPdf** 18 29 33.0 -0.9
comp=Z,2.3nm,0.9s,baz=56,slow=2.1,SNR=2.3
AKASG SKPbc **SKPbc** 18 31 37.0 -1.2
comp=Z,2.8nm,0.5s,baz=47,slow=4.1,SNR=15
AKBB **Malin Array Si** 135.34 325 *e*PKIKP **PKPdf** 18 28 29.3 -1.4
AKBB *e* 18 29 33.0
AKBB **Malin Array Si** 135.34 325 *e*PKPdf **PKPdf** 18 28 29.3 -1.4
AKBB *e*pPKPdf **pPKPdf** 18 29 33.0 -0.9
AK11 **Malin Array Si** 135.39 325 *e*PKPdf **PKPdf** 18 28 29.6 -1.2
AK11 *e*pPKPdf **pPKPdf** 18 29 32.0 -1.9
BR101 **Keskin Array S** 136.77 308 *e*PKPdf **PKPdf** 18 28 35.4 +1.4
BR101 *e*pPKPdf **pPKPdf** 18 29 36.5 -0.6
BR101 *e*SKPbc **SKPab** 18 31 50.3 +0.6
BRTR **Keskin Array B** 136.77 308 PKP **PKPdf** 18 28 35.4 +1.4
comp=Z,1.0nm,0.4s,baz=156,slow=4.2,SNR=6.8
BRTR pPKP **pPKPdf** 18 29 36.5 -0.6
comp=Z,1.6nm,0.9s,baz=132,slow=1.8,SNR=2.9
BRTR SKPab **SKPab** 18 31 50.3 +0.6
comp=Z,1.3nm,0.8s,baz=108,slow=4.0,SNR=3.6
SORM **Soroca** 137.12 322 ||*i*P **PKPdf** 18 28 33.7 -0.4
BR231 **Keskin MP Arra** 137.37 309 *e*PKPdf **PKPdf** 18 28 34.5 -0.5
BR231 *e*pPKPdf **pPKPdf** 18 29 36.9 -1.3
BUR08 **Bucovina Ar. S** 139.19 323 *e*PKPdf **PKPdf** 18 28 36.5 -1.5
BUR08 *e*pPKPdf **pPKPdf** 18 29 41.4 +0.1
BURAR **Bucovina Array** 139.20 323 ||*i*P PKPpre 18 28 31.7
MLR **Muntele Rosu** 139.85 320 ||*i*P PKPpre 18 28 22.1
MLR **Muntele Rosu** 139.85 320 *e*PKIKP **PKPdf** 18 28 37.9 -1.5
MLR *e* 18 29 42.0
MLR **Muntele Rosu** 139.85 320 *e*PKPdf **PKPdf** 18 28 37.9 -1.5
MLR *e*pPKPdf **pPKPdf** 18 29 42.0 -0.6
DRGR 141.08 323 ||*i*P PKPpre 18 28 36.3
OKC **Ostrava-Krasne** 141.56 330 ⇑*i*PKP PKPpre 18 28 37.8
OKC **Ostrava-Krasne** 141.56 330 ⇑*i*PKHKP PKPpre 18 28 37.8
PSZ **Piszkesteto** 141.94 326 *e*PKPdf **PKPdf** 18 28 39.8 -3.2
SIRR **Siria** 141.97 323 ⇑*i*P PKPpre 18 28 35.5
DPC **Dobruska-Polom** 142.03 332 ⇑*i*PKP PKPpre 18 28 38.8
DPC *e*pPKP pPKPdf 18 29 46.4 +0.1
DPC **Dobruska-Polom** 142.03 332 ⇑*i*PKHKP PKPpre 18 28 38.8
UPC **Upice** 142.06 332 ⇑*i*PKP PKPpre 18 28 39.2
UPC *e*pPKP pPKPdf 18 29 45.5 -0.8
UPC **Upice** 142.06 332 ⇑*i*PKIKP PKPpre 18 28 39.2
UPC *e* 18 29 45.5
MPEP **Malo Peshtene** 142.27 318 *i* P **PKPdf** 18 28 44.5 +0.9
BZS **Buzias** 142.37 322 ||*i*P PKPpre 18 28 40.3
PGB **Panagyurishte** 142.38 316 *i* P PKPpre 18 28 38.9
VRAC **Vranov** 142.65 331 ||*i*P PKPpre 18 28 41.1
BRG **Berggiesshubel** 142.66 334 *e*PKP PKPpre 18 28 40.2
comp=Z,14nm,1.2s
BRG *e*pPKP pPKPdf 18 29 43.9 -3.4
comp=Z,47nm,1.7s
BRG **Berggiesshubel** 142.66 334 *e*(P) **PP** 18 31 58.4 +3.8
comp=Z,5.8nm,0.9s
BRG **Berggiesshubel** 142.66 334 *e*PKHKP PKPpre 18 28 40.2
BRG pmax pmax
comp=Z,47nm,1.7s
PVCC **Panska Ves** 142.67 333⇑ *e*pPKP pPKPdf 18 29 49.9 +2.6
CLL **Collm** 142.71 336 *i* PKPdf **PKPdf** 18 28 40.5 -3.6
comp=Z,17nm,1.3s
CLL *e*PKiKP **PKiKP** 18 28 45.0 -2.3
CLL *e*pPKPdf **pPKPdf** 18 29 48.0 +0.6
CLL *e*SS SS 18 50 18.0 +7.3
CLL *e*sSS 18 51 54.0
CLL *e*SSS SSS 18 55 24.0

CLL				*e*		18 57 00.0		
CLL				*es*SSS		18 57 36.0		
CLL	**Collm**	**142.71 336**	*i* PKIKP	**PKPdf**		**18 28 40.5**	**-3.6**	
CLL				*e*		18 29 48.0		
CLL				pmax	pmax			
	comp=Z,17nm,1.3s							
CLL	**Collm**	**142.71 336**	*e*PKPpre	PKPpre		18 28 40.1		
CLL				*ep*PKPdf	pPKPdf	18 29 44.7	-2.7	
LIA	**Limnos Island**	**142.84 312**	P	PKPpre		18 28 40.3		
LIA	**Limnos Island**	**142.84 312**	P	PKPpre		18 28 40.3		
GOPC	**GO Pecny, Ondr**	**143.03 333**	⇑*i*PKP	PKPbc		18 28 42.2	-0.2	
GOPC				*ep*PKP		pPKPdf	18 29 49.8	+1.8
GOPC	**GO Pecny, Ondr**	**143.03 333**	⇑PKIKP	PKPbc		18 28 42.2	-0.2	
GOPC				*e*		18 29 49.8		
PRU	**Pruhonice**	**143.08 333**	⇑*i*PKP	PKPbc		18 28 42.0	-0.5	
PRU				*ep*PKP		pPKPdf	18 29 47.0	-1.1
PRU	**Pruhonice**	**143.08 333**	⇑*i*PKIKP	PKPbc		18 28 42.0	-0.5	
PRU				*e*		18 29 47.0		
MMB	**Musomiste**	**143.11 315**	*i* P	PKPab		18 28 41.7	+0.3	
NVR	**Nevrokopi**	**143.13 315**	P	PKPab		18 28 41.7	+0.3	
NVR	**Nevrokopi**	**143.13 315**	P	PKPab		18 28 41.7	+0.3	
CSKK	**Cs˘tkako**	**143.15 327**	⇓*e*PKPdf	PKPbc		18 28 42.8	+0.1	
EKA	**Eskdalemuir Ar**	**143.21 353**	PKhKP	PKPpre		18 28 41.6		
	comp=Z,2.4nm,0.5s,baz=350,slow=2.7,SNR=17							
KKB	**Krupnik**	**143.41 316**	*i* P	PKPbc		18 28 43.2	-0.5	
SRS	**Serrai**	**143.42 315**	P	PKPab		18 28 42.5	-0.1	
SRS	**Serrai**	**143.42 315**	PKIKP	PKPab		18 28 42.5	-0.1	
SRS	**Serrai**	**143.42 315**	P	PKPab		18 28 42.5	-0.1	
OUR	**Ouranopolis**	**143.50 313**	P	PKPab		18 28 43.1	+0.2	
OUR	**Ouranopolis**	**143.50 313**	*e*PKIKP	PKPab		18 28 43.1	+0.2	
OUR	**Ouranopolis**	**143.50 313**	*e*PKPpre	PKPab		18 28 43.1	+0.2	
SOH	**Sokhos**	**143.71 314**	P	PKPab		18 28 43.5	-0.3	
SOH	**Sokhos**	**143.71 314**	PKIKP	PKPab		18 28 43.5	-0.3	
SOH	**Sokhos**	**143.71 314**	P	PKPab		18 28 43.5	-0.3	
NKC	**Novy Kostel**	**143.77 335**	⇑*i*PKP	PKPbc		18 28 44.8	+0.4	
NKC				*ep*PKP		pPKPdf	18 29 49.2	-0.1
NKC	**Novy Kostel**	**143.77 335**	⇑*i*PKIKP	PKPbc		18 28 44.8	+0.4	
NKC				*e*		18 29 49.2		
SOP	**Sopron**	**143.79 329**	⇑*e*PKPdf	PKPbc		18 28 44.9	+0.4	
PLG	**Polygyros**	**143.85 314**	P	PKPab		18 28 44.0	-0.3	
PLG	**Polygyros**	**143.85 314**	PKIKP	PKPab		18 28 44.0	-0.3	
PLG	**Polygyros**	**143.85 314**	P	PKPab		18 28 44.0	-0.3	
KNT	**Kendrikon**	**143.87 315**	P	PKPab		18 28 44.4	+0.1	
KNT	**Kendrikon**	**143.87 315**	PKIKP	PKPab		18 28 44.4	+0.1	
KNT	**Kendrikon**	**143.87 315**	P	PKPab		18 28 44.4	+0.1	
PAIG	**Paliouri**	**143.88 313**	P	PKPab		18 28 43.9	-0.5	
PAIG	**Paliouri**	**143.88 313**	PKIKP	PKPab		18 28 43.9	-0.5	
PAIG	**Paliouri**	**143.88 313**	P	PKPab		18 28 43.9	-0.5	
CONA	**Conrad Observa**	**143.97 329**	*e*PKPdf	PKPbc		18 28 45.0	-0.1	
	comp=Z,52nm,1.6s,SNR=28							
CONA				*ep*PKPdf	pPKPdf	18 29 48.0	-1.9	
	comp=Z,36nm,1.3s							
VAY	**Valandovo**	**144.01 316**	P	**PKPab**		**18 28 44.6**	**-0.2**	
VAY	**Valandovo**	**144.01 316**	⇑*e*P	**PKPab**		**18 28 45.0**	**+0.2**	
VAY	**Valandovo**	**144.01 316**	*e*PKIKP	**PKPab**		**18 28 44.6**	**-0.2**	
VAY	**Valandovo**	**144.01 316**	*e*PKPdf	**PKPab**		**18 28 44.6**	**-0.2**	
THE	**Thessaloniki**	**144.06 314**	P	**PKPab**		**18 28 44.5**	**-0.5**	
THE	**Thessaloniki**	**144.06 314**	PKIKP	**PKPab**		**18 28 44.5**	**-0.5**	
THE	**Thessaloniki**	**144.06 314**	P	**PKPab**		**18 28 44.5**	**-0.5**	
KHC	**Kasperske Hory**	**144.14 333**	⇑*i*PKP	PKPbc		18 28 45.8	+0.2	
KHC				*ep*PKP		pPKPdf	18 29 50.1	+0.1
KHC	**Kasperske Hory**	**144.14 333**	⇑*i*PKIKP	PKPbc		18 28 45.8	+0.2	
KHC				*e*		18 29 50.1		
KHC	**Kasperske Hory**	**144.14 333**	*e*PKPdf	**PKPab**		**18 28 45.2**	**+0.1**	
KHC				*ep*PKPdf		**pPKPdf**	**18 29 48.2**	**-1.9**
DIVS	**Divibare**	**144.18 321**	P	PKPbc		18 28 46.0	+0.1	
LAST	**Lasithi**	**144.29 304**	P	**PKPab**		**18 28 46.1**	**-0.1**	
LAST	**Lasithi**	**144.29 304**	*e*PKPdf	PKPbc		18 28 46.7	+0.2	
GEC2	**GERESS Array S**	**144.30 332**	*e*PKIKP	**PKPab**		**18 28 45.7**	**-0.2**	
GEC2	**GERESS Array S**	**144.30 332**	*e*PKPdf	**PKPab**		**18 28 45.7**	**-0.2**	
GERES	**GERESS Array B**	**144.30 332**	PKP	PKPbc		18 28 46.2	+0.1	
	comp=Z,11nm,0.7s,baz=36,slow=3.2,SNR=99							
GERES				pPKP		pPKPdf	18 29 48.9	-1.6
	comp=Z,3.4nm,0.8s,baz=35,slow=4.9,SNR=2.9							
GEA0	**GERESS Array S**	**144.31 332**	*e*PKPdf	**PKPab**		**18 28 45.7**	**-0.2**	
WTSB	**Winterswijk**	**144.31 342**	*e*P	**PKPab**		**18 28 45.3**	**-0.3**	
	comp=Z,50nm,1.4s							
WTSB				*e*PKP	PKPbc	18 28 45.6	-0.3	
	comp=Z,21nm,0.8s							
SKO	**Skopje**	**144.43 317**	P	**PKPab**		**18 28 46.2**	**-0.2**	
SKO	**Skopje**	**144.43 317**	*e*P	**PKPdf**		**18 28 47.4**	**-0.1**	
SKO	**Skopje**	**144.43 317**	PKIKP	**PKPab**		**18 28 46.2**	**-0.2**	
SKO	**Skopje**	**144.43 317**	P	**PKPab**		**18 28 46.2**	**-0.2**	
XOR	**Xorichti**	**144.46 312**	P	**PKPab**		**18 28 44.9**	**-1.8**	
XOR	**Xorichti**	**144.46 312**	P	**PKPab**		**18 28 44.9**	**-1.8**	
BEHE	**Becsehely**	**144.50 327**	⇑*e*PKPdf	**PKPdf**		**18 28 47.3**	**-0.1**	
PTL	**Penteli**	**144.52 310**	P	**PKPab**		**18 28 45.6**	**-1.3**	
PTL	**Penteli**	**144.52 310**	*e*PKPbc	**PKPab**		**18 28 45.6**	**-1.3**	
ARSA	**Arzberg**	**144.60 329**	*e*PKPdf	PKPbc		18 28 47.3	+0.3	
	comp=Z,47nm,1.3s,SNR=29							
ARSA				*ep*PKPdf	pPKPdf	18 29 49.5	-1.4	
	comp=Z,26nm,1.3s							
ATHU	**Athens Univers**	**144.61 310**	P	**PKPab**		**18 28 45.7**	**-1.6**	
ATHU	**Athens Univers**	**144.61 310**	P	**PKPab**		**18 28 45.7**	**-1.6**	
LIT	**Litokhoron**	**144.63 314**	P	**PKPab**		**18 28 46.5**	**-0.8**	
LIT	**Litokhoron**	**144.63 314**	PKIKP	**PKPab**		**18 28 46.5**	**-0.8**	
LIT	**Litokhoron**	**144.63 314**	P	**PKPab**		**18 28 46.5**	**-0.8**	
VLY	**Voula,Athens**	**144.64 309**	P	**PKPab**		**18 28 46.3**	**-1.1**	
VLY	**Voula,Athens**	**144.64 309**	*e*PKPbc	**PKPab**		**18 28 46.3**	**-1.1**	
ATH	**Athens Observa**	**144.66 310**	P	**PKPab**		**18 28 46.1**	**-1.3**	
ATH	**Athens Observa**	**144.66 310**	PKIKP	**PKPab**		**18 28 46.1**	**-1.3**	
ATH	**Athens Observa**	**144.66 310**	P	**PKPab**		**18 28 46.1**	**-1.3**	
SMIA	**Simia**	**144.66 311**	P	**PKPab**		**18 28 46.0**	**-1.4**	
GRFO	**Grafenberg**	**144.68 335**	*e*PKIKP	PKPbc		18 28 47.3	+0.2	
GRFO				*e*		18 29 49.3		
GRFO	**Grafenberg**	**144.68 335**	*e*PKPbc	PKPbc		18 28 47.3	+0.1	
GRFO				*ep*PKPdf	pPKPdf	18 29 49.3	-1.7	
IDI	**Anoyia**	**144.71 305**	P	PKPbc		18 28 47.4	-0.4	
IDI	**Anoyia**	**144.71 305**	*e*PKPbc	**PKPdf**		**18 28 48.3**	**0.0**	
MOA	**Molln**	**144.78 331**	*e*PKPdf	**PKPdf**		**18 28 48.0**	**+0.1**	
	comp=Z,89nm,1.1s,SNR=51							
MOA				*ep*PKPdf		**pPKPdf**	**18 29 50.3**	**-0.9**
	comp=Z,33nm,1.1s,SNR=5.3							
SIVA	**Sivas**	**144.85 304**	P	**PKPdf**		**18 28 48.4**	**0.0**	
SIVA	**Sivas**	**144.85 304**	P	**PKPdf**		**18 28 48.4**	**0.0**	
ATAL	**Atalanti**	**144.87 311**	P	PKPbc		18 28 47.0	-1.1	
ATAL	**Atalanti**	**144.87 311**	P	PKPbc		18 28 47.0	-1.1	
VILL	**Villia**	**144.87 310**	P	PKPbc		18 28 46.6	-1.6	
LKR	**Lokris**	**144.90 311**	P	PKPbc		18 28 46.7	-1.5	
LKR	**Lokris**	**144.90 311**	P	PKPbc		18 28 46.7	-1.5	
IVA	**Berane**	**144.93 320**	⇑*i*P	**PKPdf**		**18 28 48.5**	**+0.1**	
RCBR	**Riachuelo**	**144.95 132**	*e*PKPbc	PKPbc		18 28 47.8	-1.3	
PLE	**Pljevlja**	**144.97 321**	⇑*i*P	**PKPab**		**18 28 48.6**	**0.0**	
SHEL	**Horse Pasture**	**145.02 188**	*e*PKP2	**PKPab**		**18 28 50.1**	**+0.8**	
SHEL	**Horse Pasture**	**145.02 188**	*e*PKPbc	**PKPab**		**18 28 50.1**	**+0.8**	
SHEL				*ep*PKPdf		**pPKPdf**	**18 29 50.0**	**-2.5**
KZN	**Kozani**	**145.02 314**	P	**PKPbc**		**18 28 46.9**	**-1.7**	
KZN	**Kozani**	**145.02 314**	PKIKP	**PKPbc**		**18 28 46.9**	**-1.7**	
KZN	**Kozani**	**145.02 314**	P	**PKPbc**		**18 28 46.9**	**-1.7**	
PVY	**Plav**	**145.04 319**	⇑*i*P	**PKPbc**		**18 28 48.5**	**-0.1**	
FNA	**Florina**	**145.06 315**	P	**PKPbc**		**18 28 47.0**	**-1.7**	
LTK	**Loutraki**	**145.18 310**	P	**PKPdf**		**18 28 47.5**	**-1.4**	
LTK	**Loutraki**	**145.18 310**	P	**PKPdf**		**18 28 47.5**	**-1.4**	
DID	**Didima**	**145.19 309**	P	**PKPdf**		**18 28 47.1**	**-1.9**	
DID	**Didima**	**145.19 309**	*e*PKPdf	**PKPdf**		**18 28 47.1**	**-1.9**	
THL	**Klokotos Trika**	**145.20 313**	P	**PKPdf**		**18 28 47.2**	**-1.6**	
VAM	**Vamos**	**145.21 305**	P	**PKPab**		**18 28 49.5**	**-0.1**	
VAM	**Vamos**	**145.21 305**	PKP2	**PKPab**		**18 28 49.5**	**-0.1**	
VAM	**Vamos**	**145.21 305**	P	**PKPab**		**18 28 49.5**	**-0.1**	
AGG	**Agios Georgios**	**145.22 312**	P	**PKPdf**		**18 28 47.6**	**-1.4**	
AGG	**Agios Georgios**	**145.22 312**	*e*PKIKP	**PKPdf**		**18 28 47.6**	**-1.4**	
AGG	**Agios Georgios**	**145.22 312**	*e*PKPdf	**PKPdf**		**18 28 47.6**	**-1.4**	
AGG				*e*PKPdf		**PKPbc**	**18 28 47.8**	**-1.4**
SOKA	**Soboth**	**145.24 329**	*e*PKPab	**PKPbc**		**18 28 49.1**	**0.0**	
	comp=Z,54nm,1.4s,SNR=30							
SOKA				*ep*PKPdf		**pPKPdf**	**18 29 51.2**	**-0.9**
	comp=Z,66nm,1.3s,SNR=11							
OHR	**Ohrid**	**145.28 316**	*e*P	**PKPbc**		**18 28 49.4**	**+0.1**	
DSF	**Desfina**	**145.34 311**	P	**PKPdf**		**18 28 47.7**	**-1.5**	
DSF	**Desfina**	**145.34 311**	P	**PKPdf**		**18 28 47.7**	**-1.5**	
UPM	**Unac-Piva**	**145.34 321**	⇑*i*P	**PKPdf**		**18 28 49.2**	**0.0**	
SISC	**Sisak**	**145.37 326**	P	**PKPab**		**18 28 50.2**	**+0.3**	
THAL	**Thalero**	**145.39 310**	P	**PKPdf**		**18 28 48.5**	**-0.7**	
NEST	**Nestorio**	**145.46 315**	P	**PKPdf**		**18 28 48.5**	**-0.9**	
CWF	**Charnwood Fore**	**145.48 350**	*e*PKPdf	**PKPdf**		**18 28 48.7**	**-0.2**	
CWF				*ep*PKPdf		**pPKPdf**	**18 29 51.5**	**-0.7**
NKY	**Niksic**	**145.51 320**	⇑*i*P	**PKPbc**		**18 28 50.2**	**+0.2**	
NKME	**Niksic**	**145.56 320**	⇑*i*P	**PKPbc**		**18 28 50.2**	**+0.1**	
PDG	**Podgorica**	**145.56 319**	P	**PKPdf**		**18 28 49.7**	**+0.3**	
PDG	**Podgorica**	**145.56 319**	⇓*i*P	**PKPdf**		**18 28 47.8**	**-1.6**	
TTG	**Podgorica**	**145.56 319**	*e*P	**PKPbc**		**18 28 50.1**	**+0.1**	
TTG	**Podgorica**	**145.56 319**	PKIP2	**PKPdf**		**18 28 49.7**	**+0.3**	
TTG	**Podgorica**	**145.56 319**	P	**PKPdf**		**18 28 49.7**	**+0.3**	
OBKA	**Obir**	**145.60 329**	*e*PKPab	**PKPbc**		**18 28 49.8**	**-0.3**	
	comp=Z,18nm,0.8s,SNR=11							
OBKA				*ep*PKPdf		**pPKPdf**	**18 29 51.7**	**-1.0**
	comp=Z,40nm,1.2s							
EVR	**Evrytania**	**145.63 312**	P	**PKPdf**		**18 28 49.4**	**-0.4**	
EVR	**Evrytania**	**145.63 312**	P	**PKPdf**		**18 28 49.4**	**-0.4**	
HGN	**Heimansgroeve**	**145.63 341**	*e*PKP	**PKPbc**		**18 28 50.1**	**+0.2**	
	comp=Z,325nm,2.1s							
HGN				*ea*PKP			18 29 52.4	
GUR	**Goura**	**145.66 310**	P	**PKPdf**		**18 28 50.0**	**+0.1**	
GUR	**Goura**	**145.66 310**	P	**PKPdf**		**18 28 50.0**	**+0.1**	
SERG	**Sergoula**	**145.67 311**	P	**PKPdf**		**18 28 50.1**	**+0.3**	
BEBN	**Eben Emael**	**145.68 342**	PKP	**PKPab**		**18 28 51.1**	**+0.3**	
BEBN				APKP		**pPKPdf**	**18 29 52.9**	**+0.4**
ANX	**Ano Chora**	**145.69 312**	P	**PKPdf**		**18 28 49.9**	**0.0**	
CEME	**Cevo**	**145.70 320**	*e*P	**PKPbc**		**18 28 50.5**	**-0.1**	
VLI	**Veliai**	**145.71 308**	P	**PKPdf**		**18 28 49.5**	**-0.3**	
VLI	**Veliai**	**145.71 308**	*e*PKPdf	**PKPdf**		**18 28 49.5**	**-0.3**	
BRY	**Bratogost**	**145.73 321**	⇑*i*P	**PKPbc**		**18 28 50.6**	**-0.2**	
DRME	**Dracevica, Mon**	**145.74 319**	*e*P	**PKPbc**		**18 28 50.7**	**+0.1**	
ANKY	**Antikythira Is**	**145.74 306**	P	**PKPbc**		**18 28 51.1**	**+0.3**	
ANKY	**Antikythira Is**	**145.74 306**	*e*PKPdf	**PKPbc**		**18 28 51.1**	**+0.3**	
MEM	**Membach**	**145.74 341**	PKP	**PKPbc**		**18 28 50.7**	**+0.3**	
MEM				APKP		**pPKPdf**	**18 29 53.0**	**+0.3**
OZLJ	**Ozalj**	**145.75 327**	P	**PKPbc**		**18 28 50.8**	**+0.3**	
KLV	**Kalavryta, Ach**	**145.76 311**	P	**PKPbc**		**18 28 50.7**	**-0.2**	
KLV	**Kalavryta, Ach**	**145.76 311**	P	**PKPbc**		**18 28 50.7**	**-0.2**	
TIR	**Tirane**	**145.76 317**	⇓*i*P	**PKPbc**		**18 28 51.0**	**+0.3**	
TIR	**Tirane**	**145.76 317**	*e*PKP2	**PKPbc**		**18 28 50.6**	**-0.1**	
TIR	**Tirane**	**145.76 317**	*e*PKPdf	**PKPbc**		**18 28 50.6**	**-0.1**	
TIR				*ep*PKPab	pPKPab	18 29 52.2	-0.7	
KBA	**Koelnbreinsper**	**145.77 331**	*e*PKPab	**PKPdf**		**18 28 50.3**	**+0.5**	
	comp=Z,12nm,0.5s,SNR=13							
KBA				*ep*PKPdf		**pPKPdf**	**18 29 52.6**	**-0.5**
	comp=Z,42nm,1.2s,SNR=6.6							
KBA	**Koelnbreinsper**	**145.77 331**	PKP2	**PKPbc**		**18 28 50.4**	**-0.4**	
LAKA	**Lakka**	**145.80 311**	P	**PKPab**		**18 28 51.4**	**-0.4**	
LAKA	**Lakka**	**145.80 311**	P	**PKPab**		**18 28 51.4**	**-0.4**	
ULC	**Ulcinj**	**145.82 319**	*e*P	**PKPbc**		**18 28 50.9**	**0.0**	
VLX	**Vlachokerasia**	**145.87 309**	P	**PKPbc**		**18 28 51.2**	**-0.1**	
VLX	**Vlachokerasia**	**145.87 309**	P	**PKPbc**		**18 28 51.2**	**-0.1**	
LJU	**Ljubljana**	**145.94 328**	*e*PKPdf	**PKPdf**		**18 28 49.5**	**-0.5**	
LJU				*i*		18 28 51.3		
LJU				*ep*PKPdf		**pPKPdf**	**18 29 53.5**	**+0.3**
BOJS	**Bojanci**	**145.94 327**	*e*PKPdf	**PKPdf**		**18 28 49.7**	**-0.2**	
BOJS				*e*		18 28 51.6		
BOJS				*ep*PKPdf		**pPKPdf**	**18 29 54.1**	**+0.9**
MYKA	**Terra Mystica**	**145.95 330**	*e*PKPbc	**PKPbc**		**18 28 50.6**	**-0.6**	
	comp=Z,24nm,1.0s,SNR=12							
MYKA				*ep*PKPdf		**pPKPdf**	**18 29 52.5**	**-0.8**
	comp=Z,46nm,1.2s,SNR=8.4							
PVO	**Paravola**	**145.96 312**	P	**PKPbc**		**18 28 51.5**	**+0.1**	
HCY	**Herceg Novi**	**146.02 320**	*e*P	**PKPbc**		**18 28 51.2**	**-0.3**	
UCC	**Uccle**	**146.05 343**	PKP	**PKPab**		**18 28 52.2**	**0.0**	
UCC				APKP		**pPKPdf**	**18 29 54.6**	**+1.4**
DRO	**Drossia**	**146.11 311**	P	**PKPbc**		**18 28 52.2**	**+0.3**	
BCLA	**Clavier**	**146.12 342**	PKP	**PKPbc**		**18 28 51.5**	**0.0**	
BCLA				APKP		**pPKPdf**	**18 29 54.0**	**+0.7**
PDO	**Prodromos**	**146.21 312**	P	**PKPbc**		**18 28 52.4**	**+0.3**	
STU	**Stuttgart**	**146.21 336**	*e*PKP2	**PKPbc**		**18 28 51.8**	**0.0**	
STU	**Stuttgart**	**146.21 336**	*e*PKPdf	**PKPbc**		**18 28 51.8**	**0.0**	
STU				*ep*PKPdf		**pPKPdf**	**18 29 53.5**	**-0.1**
RLS	**Riolos of Patr**	**146.24 311**	P	**PKPbc**		**18 28 52.7**	**+0.5**	
RLS	**Riolos of Patr**	**146.24 311**	P	**PKPbc**		**18 28 52.7**	**+0.5**	
ITM	**Ithomi**	**146.27 309**	P	**PKPbc**		**18 28 52.0**	**-0.4**	
ITM	**Ithomi**	**146.27 309**	P	**PKPbc**		**18 28 52.0**	**-0.4**	
UDBI	**Udbina**	**146.32 325**	P	**PKPbc**		**18 28 52.4**	**+0.1**	
SNF	**Seneffe**	**146.34 343**	PKP	**PKPbc**		**18 28 52.4**	**+0.3**	
SNF				APKP		**pPKPdf**	**18 29 55.8**	**+2.1**
WATA	**Walderalm**	**146.37 332**	*e*PKPab	**PKPbc**		**18 28 52.3**	**-0.2**	
	comp=Z,12nm,0.5s,SNR=14							
WATA				*ep*PKPab	pPKPab	18 29 54.7	-0.5	
	comp=Z,51nm,1.2s,SNR=6.8							
SGD	**Sagiada**	**146.39 314**	P	**PKPbc**		**18 28 52.5**	**-0.1**	
ABTA	**Abfaltersbach**	**146.40 331**	*e*PKPbc	**PKPbc**		**18 28 51.8**	**-0.7**	
	comp=Z,12nm,0.5s,SNR=15							
ABTA				*ep*PKPab	pPKPab	18 29 53.7	-1.5	
	comp=Z,80nm,1.5s,SNR=11							
WTTA	**Wattenberg**	**146.40 332**	*e*PKPab	**PKPbc**		**18 28 52.7**	**0.0**	
	comp=Z,54nm,1.5s,SNR=13							
WTTA				*ep*PKPbc	pPKPbc	18 29 53.3	-1.7	
	comp=Z,90nm,1.4s,SNR=9.2							
PYL	**PYLOS**	**146.52 309**	P	**PKPdf**		**18 28 52.1**	**+0.9**	
PYL	**PYLOS**	**146.52 309**	*e*PKPdf	**PKPdf**		**18 28 52.1**	**+0.9**	
WLF	**Walferdange**	**146.52 340**	PKP	**PKPab**		**18 28 53.6**	**-0.6**	
WLF				APKP		**pPKPdf**	**18 29 56.2**	**+2.1**
WLF	**Walferdange**	**146.52 340**	*e*PKP2	**PKPbc**		**18 28 53.0**	**+0.3**	
WLF	**Walferdange**	**146.52 340**	*e*PKPdf	**PKPbc**		**18 28 53.0**	**+0.3**	
WLF				*ep*PKPdf		**pPKPdf**	**18 29 54.8**	**+0.8**
SKDS	**Skadanscina**	**146.54 328**	*e*PKPdf	**PKPdf**		**18 28 50.3**	**-0.7**	
LANF	**Langenberg**	**146.55 338**	PKP	**PKPbc**		**18 28 53.2**	**+0.4**	
LANF	**Langenberg**	**146.55 338**	*e*PKIKP	**PKPdf**		**18 28 51.6**	**+0.7**	
MOTA	**Moosalm**	**146.57 333**	*e*PKPab	**PKPbc**		**18 28 53.0**	**-0.1**	
	comp=Z,40nm,0.9s,SNR=24							
MOTA				*ep*PKPab	pPKPab	18 29 54.8	-1.1	
	comp=Z,61nm,1.1s,SNR=8.2							
RETA	**Reutte**	**146.61 333**	*e*PKPab	**PKPbc**		**18 28 53.1**	**0.0**	
	comp=Z,23nm,1.1s,SNR=9.3							
RETA				*ep*PKPab	pPKPab	18 29 55.2	-0.8	
	comp=Z,47nm,1.3s,SNR=8.2							
DOU	**Dourbes**	**146.62 342**	PKP	**PKPbc**		**18 28 53.2**	**+0.3**	
DOU				APKP		**pPKPdf**	**18 29 55.1**	**+0.9**
NVLJ	**Novalja**	**146.77 326**	P	**PKPdf**		**18 28 52.0**	**+0.7**	
VLS	**Valsamata**	**146.81 312**	P	**PKPbc**		**18 28 52.9**	**-1.0**	
VLS	**Valsamata**	**146.81 312**	PKP2	**PKPbc**		**18 28 52.9**	**-1.0**	
VLS	**Valsamata**	**146.81 312**	P	**PKPbc**		**18 28 52.9**	**-1.0**	
BFO	**Black Forest**	**146.90 337**	*e*PKP2	**PKPbc**		**18 28 53.0**	**-0.8**	
BFO	**Black Forest**	**146.90 337**	*e*PKPdf	**PKPbc**		**18 28 53.0**	**-0.8**	
BFO				*ep*PKPdf		**pPKPdf**	**18 29 56.1**	**+1.3**
FETA	**Feichten**	**146.98 333**	*i* PKPab	**PKPbc**		**18 28 54.5**	**+0.2**	
	comp=Z,50nm,1.1s,SNR=18							
FETA				*ep*PKPab	pPKPab	18 29 56.6	-0.9	
	comp=Z,55nm,1.2s							
DAVA	**Damuels**	**147.13 334**	*e*PKPbc	**PKPbc**		**18 28 54.7**	**0.0**	
	comp=Z,21nm,0.6s,SNR=8.9							
DAVA				*ep*PKPab		**pPKPab**	**18 29 57.3**	**-0.8**
	comp=Z,52nm,1.6s							
ECH	**Echery**	**147.43 338**	PKP	**PKPbc**		**18 28 55.1**	**-0.1**	
FUORN	**Ofenpass-Fuorn**	**147.50 333**	*e*PKPdf	**PKPdf**		**18 28 51.6**	**-1.2**	
FUORN				*e*PKPbc		**PKPbc**	**18 28 56.0**	**+0.2**
FUORN				*ep*PKPdf		**pPKPdf**	**18 29 57.9**	**+1.8**
DAVOX	**Davos/Dischmat**	**147.54 333**	pPKPbc	pPKPbc		18 29 58.3	0.0	
	comp=Z,32nm,1.0s,baz=54,slow=2.2,SNR=3.8							
MOF	**Molkenrain**	**147.74 337**	PKP	**PKPbc**		**18 28 56.0**	**-0.2**	
MOF	**Molkenrain**	**147.74 337**	*e*PKP2	**PKPbc**		**18 28 56.3**	**+0.1**	
THEF	**They Montfort**	**147.82 339**	PKP	**PKPbc**		**18 28 56.3**	**0.0**	
TUE	**Stuetta**	**148.00 334**	*e*PKPbc	**PKPbc**		**18 28 56.9**	**-0.1**	
TUE				*ep*PKPdf		**pPKPdf**	**18 29 59.2**	**+2.2**
SENIN	**Lac Senin/Sane**	**148.92 336**	*e*PKPbc	**PKPbc**		**18 28 59.1**	**-0.3**	
SENIN				*ep*PKPdf		**pPKPdf**	**18 30 02.1**	**+3.7**
TIP	**Timpagrande**	**148.93 316**	P	**PKPbc**		**18 28 59.8**	**+0.3**	
TIP	**Timpagrande**	**148.93 316**	*e*PKPbc	**PKPbc**		**18 28 59.8**	**+0.3**	
TIP				*ep*PKPdf		**pPKPdf**	**18 30 02.0**	**+3.5**
AQU	**L'Aquila**	**149.04 324**	*e*PKP2	**PKPbc**		**18 28 59.7**	**+0.1**	
AQU	**L'Aquila**	**149.04 324**	*e*PKPbc	**PKPbc**		**18 28 59.7**	**+0.1**	
OG01	**Vacheresse**	**149.19 336**	PKP	**PKPbc**		**18 29 00.2**	**+0.3**	
CEL	**Celeste**	**149.99 315**	*e*PKPbc	**PKPbc**		**18 29 00.5**	**-1.6**	
CEL				*ep*PKPdf		**pPKPdf**	**18 30 03.5**	**+3.3**
PLDF	**La Plantade**	**150.58 340**	PKP	**PKPbc**		**18 29 04.2**	**+0.9**	
AGO	**Saint Agoulin**	**150.67 340**	PKP	**PKPbc**		**18 29 03.9**	**+0.5**	
SSB	**Saint Sauveur**	**150.87 338**	PKP	**PKPbc**		**18 29 04.1**	**+0.2**	
SSB	**Saint Sauveur**	**150.87 338**	*e*PKIKP	**PKPbc**		**18 29 03.5**	**-0.4**	
SSB				*e*		18 30 06.6		
SSB	**Saint Sauveur**	**150.87 338**	*e*PKPbc	**PKPbc**		**18 29 03.5**	**-0.4**	
SSB				*ep*PKPdf		**pPKPdf**	**18 30 06.6**	**+5.2**
LBL	**Lubilhac**	**151.36 339**	PKP	**PKPbc**		**18 29 05.1**	**0.0**	
KEST	**Kesra**	**155.72 318**	PKPab	**PKPab**		**18 29 31.9**	**-1.1**	
	comp=Z,2.7nm,0.3s,baz=42,slow=6.7,SNR=11							
KEST				pPKPab		**pPKPab**	**18 30 32.8**	**-0.9**
	comp=Z,8.4nm,1.0s,baz=339,slow=10,SNR=2.9							
POLO	**Lamas de Olo**	**157.49 355**	*e*PKPab	**PKPab**		**18 29 40.7**	**+0.3**	
PVRL	**Vila Real**	**157.58 354**	*e*PKPab	**PKPab**		**18 29 41.2**	**+0.5**	
PVIS	**Viseu**	**158.16 355**	*e*PKPab	**PKPab**		**18 29 43.9**	**+0.7**	
MTE	**Manteigas**	**158.43 354**	*e*PKPab	**PKPab**		**18 29 45.1**	**+0.

BGT *e* 18 39 29.8
BGT *e* 18 39 57.2
BGT pmax pmax
comp=Z,8μm,0.8s
BGT smax smax
comp=N,80μm,0.7s
YLYR Ulyunkhan 2.50 36⇓ *i*Pn **Pn 18 39 32.9 +0.8**
YLYR *e*Pg **Pb 18 39 37.3 +0.7**
YLYR *e* 18 39 39.9
YLYR max 18 39 45.6
comp=N,15μm,1.5s
YLYR *i*Sg **Sg 18 40 10.8 -1.5**
YLYR Smax 18 40 20.6
comp=N,57μm,2.0s
YLYR Ulyunkhan 2.50 36⇓ *i*PN **Pn 18 39 33.0 +0.8**
YLYR *e* 18 39 39.6
YLYR *e* 18 40 10.2
YLYR pmax pmax
comp=Z,15μm,1.4s
YLYR smax smax
comp=N,57μm,1.9s
YLYR Ulyunkhan 2.50 36⇓ *i*P **Pn 18 39 33.0 +0.8**
LSTR Listvyanka 2.52 247⇑ *i*Pn **Pn 18 39 31.5 -0.9**
LSTR *e*Pg **Pb 18 39 35.3 -1.6**
LSTR Pmax 18 39 43.9
comp=N,7μm,1.2s
LSTR *e*Sn **Sn 18 40 01.2 -1.7**
LSTR *i*Sg **Sb 18 40 07.8 0.0**
LSTR Smax 18 40 12.7
comp=N,43μm,0.9s
LSTR Listvyanka 2.52 247⇑ *i*PN **Pn 18 39 31.7 -0.7**
LSTR *e* 18 39 35.7
LSTR *e*S **Sn 18 40 01.2 -1.7**
LSTR *e* 18 40 07.7
LSTR pmax pmax
comp=Z,9μm,1.4s
LSTR smax smax
comp=N,7μm,0.7s
IRK Irkutsk 2.71 258 *e*Pn **Pn 18 39 34.1 -1.0**
IRK *e* 18 39 37.3
IRK *e*Pg **Pb 18 39 39.7 -0.5**
IRK Pmax 18 39 40.7
comp=N,12μm,0.9s
IRK *e*Sg **Sb 18 40 13.7 +0.4**
IRK Smax 18 40 16.8
comp=N,271μm,0.8s
IRK Irkutsk 2.71 258 *e*PN **Pn 18 39 34.5 -0.6**
IRK *e* 18 39 39.8
IRK *e* 18 40 14.3
IRK pmax pmax
comp=Z,12μm,1.0s
IRK smax smax
comp=N,269μm,1.4s
IRK Irkutsk 2.71 258 *e*P **Pn 18 39 34.5 -0.6**
IVK Ivanovka 2.79 249⇑ *i*Pn **Pn 18 39 35.4 -0.6**
IVK ⇑*i*Pg **Pb 18 39 41.0 -0.4**
IVK Pmax 18 39 53.8
comp=N,7μm,1.0s
IVK *e*Sn **Sn 18 40 08.0 -1.4**
IVK *i*Sg **Sb 18 40 16.2 +0.9**
IVK Smax 18 40 17.9
comp=N,50μm,1.6s
IVK Ivanovka 2.79 249⇑ *i*PN **Pn 18 39 35.5 -0.6**
IVK *e* 18 39 41.0
IVK *e* 18 40 16.2
IVK pmax pmax
comp=Z,4μm,0.7s
IVK smax smax
comp=N,50μm,1.7s
NIZ Nizh Angarsk 2.94 11⇓ *i*Pn **Pn 18 39 39.1 +0.9**
NIZ *e*Pg **Pb 18 39 43.1 -1.0**
NIZ Pmax 18 40 02.8
comp=N,16μm,2.0s
NIZ *e*Sn **Sn 18 40 12.9 -0.3**
NIZ *e*Sg **Sb 18 40 21.1 +1.3**
NIZ Smax 18 40 32.2
comp=N,42μm,2.7s
NIZ Nizh Angarsk 2.94 11 *e*PN **Pn 18 39 39.0 +0.9**
NIZ *e* 18 39 44.7
NIZ *e*S **Sn 18 40 13.4 +0.2**
NIZ *e* 18 40 21.6
NIZ pmax pmax
comp=Z,16μm,0.8s
NIZ smax smax
comp=N,670nm,1.8s
CIT Chita 3.16 104 *e*Pn **Pn 18 39 41.5 +0.3**
CIT *e*Pg **Pb 18 39 49.7 +1.9**
CIT Pmax 18 39 51.2
comp=N,8μm,1.0s
CIT *e* 18 40 10.7
CIT *e*Sg **Sg 18 40 32.3 -1.1**
CIT Smax 18 40 39.0
comp=N,57μm,1.8s
CIT Chita 3.16 104 *e*PN **Pn 18 39 41.7 +0.5**
CIT *e* 18 39 48.3
CIT *e*S **Sn 18 40 20.0 +1.3**
CIT *e* 18 40 30.4
CIT pmax pmax
comp=Z,18μm,1.1s
CIT smax smax
comp=N,56μm,1.0s
KMO Kumora 3.37 26⇓ *i*Pn **Pn 18 39 45.0 +1.0**
KMO *e*Pg **Pb 18 39 52.4 +1.1**
KMO Pmax 18 40 00.1
comp=N,14μm,1.5s
KMO *e*Sg **Sg 18 40 37.0 -2.9**
KMO *e* 18 40 52.8
KMO max 18 40 55.3
comp=N,91μm,1.3s
KMO Kumora 3.37 26 *e*PN **Pn 18 39 45.2 +1.2**
KMO *e* 18 39 51.6
KMO *e*S **Sn 18 40 25.2 +1.5**
KMO *e* 18 40 36.9
KMO pmax pmax
comp=Z,7μm,0.7s
KMO smax smax
comp=N,91μm,1.3s
YOA Uoyan 3.72 28 *e*Pn **Pn 18 39 50.3 +1.4**
YOA *e*Pg **Pb 18 39 59.0 +1.6**
YOA *e* 18 40 07.4
YOA max 18 40 16.7
comp=N,54μm,1.3s
YOA *e*Sg **Sg 18 40 48.5 -2.9**
YOA *e* 18 41 05.6
YOA max 18 41 08.2
comp=N,492μm,3.2s
YOA Uoyan 3.72 28 *e*PN **Pn 18 39 50.1 +1.2**
YOA *e* 18 40 00.8
YOA *e* 18 40 48.5
YOA pmax pmax
comp=Z,51μm,1.2s
YOA smax smax
comp=N,298μm,1.8s
SVKR Severomuysk 4.34 40 *e*Pn **Pn 18 39 58.9 +1.5**
SVKR *e*Pg **Pg 18 40 12.1 -2.9**
SVKR ⇓*i* 18 40 18.4
SVKR max 18 40 19.9
comp=N,20μm,1.6s
SVKR *e*Sg **Sg 18 41 10.9 -0.2**
SVKR Smax 18 41 25.1
comp=N,54μm,1.3s
MOY Mondy 4.82 258⇑ *i*Pn **Pn 18 40 03.9 -0.2**
MOY *e*Pg **Pb 18 40 16.8 +0.6**
MOY *e* 18 40 30.5
MOY max 18 40 32.9
comp=N,6μm,1.1s
MOY *e* 18 40 59.9
MOY *e*Sg **Sb 18 41 19.4 +5.3**
MOY Smax 18 41 23.6
comp=N,47μm,1.5s
MOY Mondy 4.82 258 *e*PN **Pn 18 40 05.0 +0.9**
MOY *e* 18 40 18.0
MOY *e*S **Sn 18 41 00.7 +0.9**
MOY *i* 18 41 22.6
ARTM 5.02 190⇑ *i*Pn Pn 18 40 07.7 +0.8
ARTM *e*Sg Sg 18 41 30.2 -2.7
ALFM 5.03 194⇑ *i*Pn Pn 18 40 07.5 +0.6
ALFM *e*Sg Sg 18 41 29.9 -3.1
comp=N,14μm,0.5s
BLGM Bulgan 5.19 220 *e*Pn Pn 18 40 09.8 +0.7
BLGM Bulgan 5.19 220 *e*Pg Pb 18 40 25.6 +3.3
BLGM *e*Sg Sg 18 41 33.3 -5.0
comp=N,37μm,1.0s
SONB1 Songino Array 5.21 196 *e*Sg Sg 18 41 35.6 -3.3
comp=N,58μm,1.2s
SONB2 Songino Ár. Si 5.22 196 *e*Pn Pn 18 40 10.2 +0.6
SONB2 *e*Sg Sg 18 41 35.5 -3.7
comp=N,92μm,1.2s
SONA2 Songino Array 5.22 196 *e*Sg Sg 18 41 35.3 -4.0
comp=N,51μm,1.2s
SONB5 Songino Array 5.22 196 *e*Sg Sg 18 41 36.3 -3.0
comp=N,62μm,1.2s
SONA1 Songino Array 5.22 196 *e*Sg Sg 18 41 36.1 -3.3
comp=N,70μm,1.3s
SONA4 Songino Array 5.23 196 *e*Pn Pn 18 40 09.9 +0.2
SONA4 *e*Sg Sg 18 41 35.7 -3.9
SONB3 Songino Array 5.24 196 *e*Sg Sg 18 41 36.2 -3.5
comp=N,74μm,1.3s
SONA0 Songino Array 5.24 196 *e*Sg Sg 18 41 35.9 -3.9
comp=N,32μm,1.0s
SONA1 Songino Array 5.24 196 *e*Pn **Pn 18 40 10.3 +0.4**
SONA1 *e*Sn **Sn 18 41 08.9 -1.3**
SONB4 Songino Array 5.25 196 *e*Sg Sg 18 41 36.2 -3.8
comp=N,80μm,1.3s
SONA0 Songino Array 5.26 196 *e*Pn **Pn 18 40 10.5 +0.4**
SONA0 *e*Sn **Sn 18 41 07.4 -3.0**
SONA0 *e*Lg Lg 18 41 36.1
SONA0 *e* 18 42 32.6
SONM Songino Array 5.26 196 Pn **Pn 18 40 10.5 +0.4**
comp=N,62nm,0.3s,baz=12,slow=12,SNR=1027
SONM Sn **Sn 18 41 07.4 -3.0**
comp=N,221nm,0.3s,baz=4.4,slow=15,SNR=6.2
SONM Lg Lg 18 41 36.1
comp=N,841nm,0.3s,baz=15,slow=32,SNR=7.7
SONM LR LR 18 42 32.6
comp=N,14μm,20.7s,baz=11,slow=42
I34MN SONGINO INFRAS 5.29 196 Pg **Pg 18 40 30.0 -3.1**
baz=13,slow=27,SNR=4.7
I34MN *i* 19 03 50.0
baz=16,slow=308,SNR=0.1
UGDM 5.30 189⇑ *i*Pn Pn 18 40 11.5 +0.8
UGDM *e*Sg Sg 18 41 37.9 -3.8
comp=N,57μm,1.0s
SEMM 5.42 191 *e*Pn Pn 18 40 13.1 +0.7
SEMM *e*Sg Sg 18 41 41.1 -4.6
comp=N,43μm,0.7s
NLYR Nelyaty 5.48 46⇓ *i*Pn **Pn 18 40 13.7 +0.7**
NLYR *e*Pg **Pb 18 40 30.1 +2.8**
NLYR *e* 18 40 35.7
NLYR max 18 40 39.4
comp=N,3μm,1.5s
NLYR *e* 18 41 27.4
NLYR *e*Sg **Sg 18 41 42.0 -5.6**
NLYR Smax 18 41 56.7
comp=N,27μm,1.4s
NLYR Nelyaty 5.48 46 *e*PN **Pn 18 40 13.8 +0.7**
NLYR *e* 18 40 30.8
NLYR *e* 18 41 44.8
NLYR pmax pmax
comp=Z,3μm,1.3s
NLYR smax smax
comp=N,27μm,1.4s
HTG Hatgal 5.76 248 *e*Pn Pn 18 40 17.2 +0.2
HTG *e*Sg Sg 18 41 50.9 -5.6
BOD Bodaibo 5.82 30⇓ *i*Pn **Pn 18 40 17.8 +0.1**
BOD *e* 18 40 25.9
BOD *e*Pg **Pb 18 40 37.2 +4.1**
BOD Pmax 18 40 47.2
comp=N,2μm,1.1s
BOD *e* 18 41 27.9
BOD *e*Sg **Sg 18 41 54.7 -3.9**
BOD Smax 18 42 02.0
comp=N,19μm,2.0s
BOD Bodaibo 5.82 30 *e*PN **Pn 18 40 17.6 -0.1**
BOD *e* 18 40 36.6
BOD *e* 18 41 54.3
BOD pmax pmax
comp=Z,2μm,1.1s
BOD smax smax
comp=N,19μm,1.8s
CRS Chara 6.87 50⇓ *i*Pn **Pn 18 40 32.6 +0.4**
CRS *e* 18 40 46.5
CRS *e* 18 40 58.1
CRS max 18 41 04.5
comp=N,3μm,1.4s
CRS *e*Sg **Sg 18 42 27.2 -5.1**
CRS Smax 18 42 41.6
comp=N,29μm,2.2s
CRS Chara 6.87 50 *e*PN **Pn 18 40 33.5 +1.3**
CRS *e* 18 40 58.1
CRS *e* 18 42 27.4
CRS pmax pmax
comp=Z,2μm,1.4s
CRS smax smax
comp=N,30μm,2.3s
TUP Tupik 6.93 73⇓ *i*Pn **Pn 18 40 33.1 +0.2**
TUP *e* 18 40 41.2
TUP *e*Pg Pb 18 40 57.8 +5.8
TUP Pmax 18 41 05.4
comp=N,773nm,1.4s
TUP *e* 18 42 10.0
TUP *e*Sg **Sg 18 42 28.5 -5.6**
TUP Smax 18 42 38.8
comp=N,25μm,2.0s
TUP Tupik 6.93 73 *e*PN **Pn 18 40 33.2 +0.3**
TUP *e* 18 40 56.3
TUP *e*S **Sn 18 41 52.7 +1.3**
TUP *e* 18 42 28.4
TUP pmax pmax
comp=Z,780nm,0.7s
TUP smax smax
comp=N,1μm,1.3s
TTS Tsetserleg 7.08 223 *e*Pn Pn 18 40 35.5 +0.4
TTS *e*Sg Sg 18 42 32.4 -6.4
comp=N,13μm,0.8s
KHNR Khani 7.70 54 *e*Sg **Sg 18 42 52.2 -6.7**
HIA Hailar 7.91 113 *e*Pn **Pn 18 40 44.7 -1.6**
HIA ⇑*i* 18 40 51.9
HIA *e* 18 42 34.7
HIA *e*Sg **Sg 18 42 59.1 -6.3**
HIA Hailar 7.91 113 *e*PN **Pn 18 40 42.9 -3.4**
HIA Hailar 7.91 113 *e*Pn **Pn 18 40 42.9 -3.4**
YKLR Yuktali 8.42 59 *e*Sg **Sg 18 43 13.9 -7.8**
DZBM 9.46 198 *e*Sg Sn 18 43 46.5 +52
KRAR Krasnoyarsk 9.67 295 *d*iP **Pn 18 41 08.2 -2.2**
TNDR Tynda 9.76 70 *e*Pn **Pn 18 41 12.0 +0.3**
TNDR *e* 18 41 20.7
TNDR *e*Sn **Sn 18 42 58.0 -3.0**
TNDR *e*Sg 18 43 56.1
CLNS Chul'man 10.19 61⇑ *i*Pn **Pn 18 41 18.0 +0.4**
CLNS *e*Sg Sn 18 44 08.2 +57
CLNS Chul'man 10.19 61 *e*P **Pn 18 41 17.9 +0.4**
CLNS *e*S **Sn 18 43 14.3 +2.8**
CLNS pmax pmax
comp=E,10.0nm,0.8s
CLNS pmax pmax
comp=Z,14nm,0.7s
CLNS pmax pmax
comp=N,5.0nm,0.8s
CLNS smax smax
comp=N,369nm,1.1s
CLNS smax smax
comp=E,68nm,1.1s
CLNS MLR MLR
comp=N,2μm,13.0s
CLNS MLR MLR
comp=E,4μm,12.0s
CLNS MLR MLR
comp=Z,6μm,12.0s
ULG Ulaangom 10.71 261⇓ *i*Pn Pn 18 41 25.8 +1.0
ULG *e*Sg 18 44 23.4
comp=Z,10μm,1.3s
HBD Hovd 11.83 252 *e*Sg 18 44 58.5
HHC Hu-ho-hao-te 12.22 169 *e*P **Pn 18 41 45.1 -0.4**
HHC S **Sn 18 44 03.0 +1.6**
HHC pmax pmax
comp=Z,49nm,0.9s
HHC pmax pmax
comp=Z,160nm,5.2s
HHC LR LR
comp=Z,14μm,10.8s
HHC LR LR
comp=Z,27μm,11.8s
HHC LR LR
comp=Z,16μm,11.5s
BTO Baotou 12.33 175 *e*P **Pn 18 41 47.0 0.0**
BTO S **Sn 18 44 01.3 -2.9**
BTO LR LR
comp=Z,5μm,9.0s
BYO Bayan-Olgiy 12.37 259 *e*Sg 18 45 15.6
comp=Z,5μm,1.1s
BJI Beijing 13.87 155 P **Pn 18 42 08.0 +0.2**
BJI S **Sn 18 44 43.5 +2.0**
BJI pmax pmax
comp=Z,180nm,0.6s
BJI LR LR
comp=Z,8μm,9.1s
BJI LR LR
comp=Z,32μm,7.8s
BJI LR LR
comp=Z,10μm,18.6s
BJT Baijiatuan 13.89 155 *e*P **Pn 18 42 07.8 -0.3**
BJT Baijiatuan 13.89 155 *e*Pn **Pn 18 42 07.8 -0.3**
ZAA1 Zalesovo Array 14.20 284 *e*Pn **Pn 18 42 10.3 -2.0**
ZAA1 *e*Sn **Sn 18 44 53.2 +3.8**
ZAA1 *e* 18 46 07.9
ZAA0 Zalesovo Array 14.20 284 *e*Pn **Pn 18 42 10.1 -2.2**
ZALV Zalesovo Beam 14.20 284 Pn **Pn 18 42 10.3 -2.0**
comp=Z,1.0nm,0.3s,baz=76,slow=12,SNR=62
ZALV Sn **Sn 18 44 53.2 +3.8**
comp=Z,1.3nm,0.3s,baz=290,slow=22,SNR=2.5
ZALV Lg Lg 18 46 07.9
comp=Z,3.5nm,0.3s,baz=62,slow=19,SNR=6.4
ZALV LR LR 18 47 52.1
comp=Z,7μm,18.3s,baz=90,slow=38
CN2 Changchun 14.40 122 *e*P **Pn 18 42 14.3 -0.9**
CN2 *e*pP P 18 42 17.6 -4.5
CN2 *e*S **Sn 18 44 54.8 +0.2**
CN2 pmax pmax
comp=Z,50nm,0.5s
CN2 pmax pmax
comp=Z,300nm,3.0s
CN2 LR LR
comp=Z,14μm,8.0s
CN2 LR LR
comp=Z,8μm,8.0s
CN2 LR LR
comp=Z,16μm,9.0s
YAK Yakutsk 14.51 43 Pn **Pn 18 42 13.6 -2.9**
comp=Z,0.0nm,0.3s,baz=66,slow=20,SNR=50
YAK Lg Lg 18 46 23.7
comp=Z,0.0nm,0.3s,baz=316,slow=22,SNR=6.6
YAK LR LR 18 47 56.1
comp=Z,5μm,18.6s,baz=242,slow=38
YAK Yakutsk 14.51 43 *e*P **Pn 18 42 14.3 -2.2**
YAK *e*S **Sn 18 44 57.3 +0.4**
YAK pmax pmax
comp=Z,83nm,0.9s
YAK pmax pmax
comp=E,83nm,1.3s
YAK pmax pmax
comp=N,32nm,1.1s
YAK smax smax
comp=E,161nm,1.4s
YAK smax smax
comp=N,111nm,1.1s
YAK MLR MLR
comp=Z,5μm,17.0s
YAK MLR MLR
comp=E,3μm,16.0s
YAK MLR MLR
comp=N,2μm,18.0s
YAK Yakutsk 14.51 43 *e*Pn **Pn 18 42 14.3 -2.2**
GTA Gaotai 14.78 208 *e*P **Pn 18 42 20.0 -0.4**
GTA pP P 18 42 24.1 -2.3
GTA sP 18 42 27.6
GTA S **Sn 18 45 02.8 -1.1**
GTA SS **S 18 45 20.3 -2.1**
GTA pmax pmax
comp=N,160nm,6.2s
GTA LR LR
comp=N,14μm,9.3s
GTA LR LR
comp=N,13μm,11.2s
GTA LR LR
comp=N,14μm,14.3s
SNY Shenyang 14.99 132 ⇑P **P 18 42 27.4 -1.1**
SNY pmax pmax
comp=N,70nm,1.2s
SNY pmax pmax
comp=N,840nm,3.5s
SNY LR LR
comp=N,23μm,10.2s
SNY LR LR
comp=N,17μm,8.6s
SNY LR LR
comp=N,32μm,9.7s
KLR Kul'dur 15.00 95 Pn **Pn 18 42 21.3 -1.9**
comp=N,0.3nm,0.3s,baz=294,slow=12,SNR=19
KLR Sn **Sn 18 45 10.1 +1.1**
comp=N,1.2nm,0.3s,baz=15,slow=24,SNR=4.1
KLR Lg Lg 18 46 44.0
comp=N,3.1nm,0.3s,baz=138,slow=17,SNR=5.3
KLR LR LR 18 48 42.3
comp=N,7μm,18.8s,baz=288,slow=39
NVS Novosibirsk 15.06 288⇓ *i*P **Pn 18 42 21.8 -2.2**
NVS *e* 18 45 04.3
TIY Taiyuan 15.42 168 *e*P **P 18 42 37.8 +4.4**
TIY S **S 18 45 29.4 -6.0**
MDJ Mudanjiang 16.09 113 P **P 18 42 40.9 +0.1**
MDJ S **Sn 18 45 41.3 +5.7**
MDJ PcP **PcP 18 47 34.8 +1.9**
MDJ ScP **ScP 18 51 10.3 +3.8**
MDJ ScS **ScS 18 54 49.6 +4.3**
MDJ pmax pmax
comp=N,130nm,1.1s
MDJ pmax pmax
comp=N,330nm,4.5s
MDJ LR LR
comp=N,13μm,8.9s
MDJ LR LR
comp=N,14μm,11.1s
MDJ LR LR
comp=N,20μm,10.2s
MDJ Mudanjiang 16.09 113 *e*Pn **P 18 42 40.8 0.0**
WMQ Urumqi 16.54 245 *e*P **P 18 42 45.3 -0.5**
WMQ pP pP 18 42 48.0 -1.9
WMQ sP sP 18 42 51.4 -0.4
WMQ PP **PnPn 18 42 56.0 +3.7**
WMQ S **Sn 18 45 50.6 +4.1**
WMQ SS **SnSn 18 46 10.8 +11**
WMQ pmax pmax
comp=N,270nm,1.2s
WMQ pmax pmax
comp=N,770nm,4.0s
WMQ LR LR
comp=N,9μm,6.2s
WMQ LR LR
comp=N,6μm,5.8s
WMQ LR LR
comp=N,6μm,13.5s
DL2 Dalian 16.64 142 P **P 18 42 48.1 +1.3**
DL2 S **S 18 45 56.1 -4.0**
DL2 pmax pmax
comp=N,110nm,0.9s
DL2 pmax pmax
comp=N,570nm,4.5s
DL2 LR LR
comp=N,9μm,10.9s
DL2 LR LR
comp=N,5μm,10.2s
DL2 LR LR
comp=N,13μm,11.7s
LZH Lanzhou 17.14 193 *e*P **P 18 42 53.8 +1.2**
LZH pP pP 18 42 56.8 +0.1
LZH sP sP 18 42 59.0 +0.4
LZH *e*S **Sn 18 46 03.4 +2.2**
LZH sS S 18 46 10.0 -0.7
LZH pmax pmax
comp=N,310nm,1.1s
LZH pmax pmax
comp=N,1μm,5.2s
LZH LR LR
comp=N,13μm,10.3s
LZH LR LR
comp=N,14μm,10.6s
LZH LR LR
comp=N,15μm,10.8s
HABR Khabarovsk 17.30 94 *ce*P **Pn 18 42 51.8 -0.9**
HABR *e*S **Sn 18 46 05.2 +0.5**
HABR MLR MLR
comp=Z,7μm,14.0s
USRK Ussuriysk Ar. 17.70 110 P **Pn 18 42 58.1 +0.4**
comp=Z,0.5nm,0.3s,baz=310,slow=10,SNR=33

USRK S **S** **18 46 21.5 -0.3**
comp=Z,0.2nm,0.3s,baz=314,slow=15,SNR=2.3
USRK LR LR 18 50 46.3
comp=Z,4μm,20.2s,baz=301,slow=40
TIA Tai'an 17.73 157 ⇓P **P** **18 43 04.8 +5.8**
TIA S **Sn** **18 46 12.3 -3.1**
MK31 Makanchi Array 17.97 261 *e*P **Pn** **18 42 58.6 -2.5**
MK31 Makanchi Array 17.97 261 *e*Pn **Pn** **18 42 58.6 -2.5**
MK32 Makanchi Array 17.97 261 *e*Pn **Pn** **18 42 59.3 -1.8**
MK32 *e*S **S** **18 46 26.0 -1.2**
MK32 *e* 18 48 16.1
MKAR Makanchi Array 17.97 261 P **Pn** **18 42 59.3 -1.8**
comp=Z,1.4nm,0.3s,baz=66,slow=6.8,SNR=67
MKAR S **S** **18 46 26.0 -1.2**
baz=71,slow=7.8,SNR=1.7
MKAR Lg Lg 18 48 16.1
comp=Z,0.4nm,0.3s,baz=75,slow=29,SNR=6.6
MKAR LR LR 18 50 16.5
comp=Z,4μm,19.5s,baz=54,slow=38
MK01 Makanchi Array 17.97 261 *e*Pn **Pn** **18 42 58.3 -2.8**
MAKZ Makanchi 18.15 261 *e*P **Pn** **18 43 00.8 -2.5**
MAKZ pmax pmax
comp=Z,58nm,0.7s
MAKZ Makanchi 18.15 261 *e*Pn **Pn** **18 43 00.8 -2.5**
MSHR Mys Shultsa 18.28 115 *de*P **P** **18 43 06.5 +1.6**
VLA Vladivostok 18.32 113 *d i*P **P** **18 43 06.5 +1.1**
VLA pmax pmax
comp=Z,80nm,1.1s
KURK Kurchatov 18.60 275 P **P** **18 43 06.6 -1.8**
KURK pmax pmax
comp=Z,1.0nm,0.3s
KURK Kurchatov 18.60 275 *e*P **P** **18 43 05.3 -3.1**
KURBB Kurchatov Arra 18.68 275 P **P** **18 43 06.6 -2.8**
comp=Z,0.7nm,0.3s,baz=72,slow=12,SNR=58
KURBB Lg Lg 18 48 36.3
comp=Z,0.2nm,0.3s,baz=72,slow=28,SNR=5.2
XAN Xi'an 18.85 179 P **P** **18 43 08.8 -2.6**
XAN pP Pn 18 43 11.8 -0.1
XAN PP **PnPn** **18 43 24.1 0.0**
XAN S **Sn** **18 46 42.3 -0.2**
XAN sS S 18 46 45.3 +0.1
XAN SS **SnSn** **18 47 05.6 +9.2**
XAN pmax pmax
comp=Z,310nm,7.9s
XAN LR LR
comp=Z,8μm,12.0s
XAN LR LR
comp=Z,5μm,11.7s
XAN LR LR
comp=Z,10μm,12.0s
NRIK Noril'sk 19.18 337 P **P** **18 43 11.0 -3.7**
comp=Z,2.2nm,0.3s,baz=131,slow=9.7,SNR=10
NRIK Lg Lg 18 48 55.8
comp=Z,4.7nm,0.3s,baz=68,slow=14,SNR=4.5
NRIK LR LR 18 51 31.1
comp=Z,2μm,21.9s,baz=146,slow=40
NRIK Noril'sk 19.18 337 P **P** **18 43 11.0 -3.7**
NRIK pmax pmax
comp=Z,2.0nm,0.3s
NRIK MLR MLR
comp=Z,2μm,21.9s
NKL Nikolayevsk 19.23 76 *e*P **P** **18 43 15.0 -0.3**
NKL *e* 18 46 56.0
NKL pmax pmax
comp=E,80nm,1.3s
NKL pmax pmax
comp=Z,170nm,1.3s
NKL pmax pmax
comp=E,600nm,4.0s
NKL pmax pmax
comp=Z,800nm,4.0s
INCN Inchon 19.89 134 *e*P **P** **18 43 22.6 -0.1**
comp=Z,47nm,0.8s
KS01 Wonju Array Si 20.46 131 *e*P **P** **18 43 29.4 +0.5**
KS15 Wonju Array Si 20.48 131 *e*P **P** **18 43 30.0 +0.9**
KSAR Wonju Array Be 20.48 131 P **P** **18 43 30.2 +1.1**
KSAR Wonju Array Be 20.48 131 P **P** **18 43 30.2 +1.1**
KSRS Korea Array 20.49 131 P **P** **18 43 30.2 +1.0**
comp=Z,28nm,0.9s,baz=328,slow=11,SNR=76
KSRS LR LR 18 52 36.6
comp=Z,5μm,18.8s,baz=325,slow=40
TIXI Tiksi 20.83 18 P **P** **18 43 32.0 -0.6**
comp=Z,143nm,0.7s,baz=219,slow=7.0,SNR=192
TIXI S **S** **18 47 22.3 -2.0**
comp=Z,48nm,0.7s,baz=330,slow=17,SNR=2.8
TIXI LR LR 18 52 00.3
comp=Z,4μm,20.1s,baz=240,slow=38
TIXI Tiksi 20.83 18 *de*P **P** **18 43 31.7 -0.9**
TIXI pmax pmax
comp=Z,361nm,1.2s
TIXI MLR MLR
comp=Z,4μm,11.0s
TIXI Tiksi 20.83 18 *e*P **P** **18 43 31.3 -1.3**
comp=Z,496nm,1.1s
TIXI *e*S **S** **18 47 22.3 -2.0**
TYV Tymovskoe 21.02 82 *e*P **P** **18 43 35.2 +0.4**
TYV pmax pmax
comp=N,40nm,1.0s
TYV pmax pmax
comp=Z,131nm,1.4s
TYV pmax pmax
comp=Z,1μm,3.0s
UGL Uglegorsk 21.30 87 *e*P **P** **18 43 36.7 -1.1**
UGL *e**SP **sP** **18 43 43.1 -0.8**
UGL *e*PPP PPP 18 44 04.5
UGL *e*S **S** **18 47 34.1 +0.3**
UGL *e* 18 47 40.3
UGL *e**SS Sn 18 47 41.3 +0.1
UGL *e*SS **SnSn** **18 47 58.4 +2.4**
UGL *e*SSS SSS 18 48 11.5
UGL *e* 18 55 01.1
PDGK Podgornoye 21.52 255 P **P** **18 43 40.0 -0.4**
PDGK pmax pmax
comp=Z,114nm,1.2s
SHLS Shalkode 21.64 255 ⇑ *i*P **P** **18 43 39.2 -2.5**
comp=Z,3μm,0.9s
SHLS *e*S **S** **18 47 31.4 -9.5**
SHLS LR LR 18 51 48.8
comp=Z,790nm,11.2s
UZB Uzynbulak 21.91 255 ⇓ *i*P **P** **18 43 44.4 -0.2**
comp=Z,319nm,1.4s
UZB *e*S **S** **18 47 40.7 -5.4**
UZB LR LR 18 52 15.9
comp=Z,2μm,12.4s
KPKS Kokpek 21.91 257 *e*P **P** **18 43 44.3 -0.3**
comp=Z,1μm,1.1s
KPKS LR LR 18 52 10.0
comp=Z,4μm,12.1s
NJ2 Nanjing 22.12 156 *e*P **P** **18 43 47.9 +1.2**
NJ2 sP **sP** **18 43 55.0 +2.2**
NJ2 S **S** **18 47 50.6 +0.7**
NJ2 pmax pmax
comp=Z,42nm,0.9s
NJ2 pmax pmax
comp=Z,320nm,4.6s
NJ2 LR LR
comp=Z,7μm,15.7s
NJ2 LR LR
comp=Z,2μm,10.8s
NJ2 LR LR
comp=Z,9μm,15.7s
ZHN Zhinishke 22.24 256 *e*P **P** **18 43 47.7 -0.4**
comp=Z,464nm,1.3s
ZHN *e*S **S** **18 47 46.9 -5.5**
ZHN LR LR 18 52 17.3
comp=Z,2μm,11.9s
CD2 Chengdu 22.25 191 P **P** **18 43 48.0 -0.2**
CD2 pP pP 18 43 50.8 -1.6
CD2 sP sP 18 43 52.1 -2.2
CD2 PcP **PcP** **18 47 44.1 +0.1**
CD2 S **S** **18 47 54.9 +2.3**
CD2 sS sS 18 47 58.0 -1.4
CD2 pmax pmax
comp=Z,80nm,0.5s
CD2 pmax pmax
comp=Z,370nm,4.2s
CD2 LR LR
comp=Z,7μm,7.9s
CD2 LR LR
comp=Z,7μm,7.6s
CD2 LR LR
comp=Z,7μm,9.5s
SATY Saty 22.32 256 *e*P **P** **18 43 48.6 -0.4**
comp=Z,743nm,1.3s
SATY *e*S **S** **18 47 48.8 -5.2**

SATY LR LR 18 52 29.2
comp=Z,3μm,11.7s
VOSK Vostochnaya 22.57 285 *e*P **P** **18 43 48.8 -2.6**
VOSK Vostochnaya 22.57 285 *e*P **P** **18 43 48.8 -2.6**
ENH Enshi 22.61 178 *e*P **P** **18 43 51.3 -0.8**
comp=Z,200nm,1.4s
YSS Yuzh-Sakhalins 22.63 91 *de*P **P** **18 43 51.9 -0.2**
YSS *e*S **S** **18 48 01.5 +2.2**
YSS pmax pmax
comp=Z,600nm,4.0s
YSS pmax pmax
comp=Z,90nm,0.8s
YSS MLR MLR
comp=Z,7μm,15.0s
YSS MLR MLR
comp=N,4μm,13.0s
YSS MLR MLR
comp=E,6μm,17.0s
YSS Yuzh-Sakhalins 22.63 91 *e*P **P** **18 43 51.5 -0.6**
comp=E,88nm,0.8s
WHN Wuhan 22.73 167 ⇑P **P** **18 43 53.5 +0.3**
WHN S **S** **18 48 00.9 -0.3**
WHN pmax pmax
comp=E,54nm,1.1s
WHN LR LR
comp=E,9μm,14.2s
WHN LR LR
comp=E,8μm,10.3s
BVAR Borovoye Array 22.84 286 P **P** **18 43 51.5 -2.7**
comp=E,26nm,0.8s,baz=90,slow=11,SNR=79
BVAR S **S** **18 48 00.5 -2.4**
comp=E,10nm,0.8s,baz=68,slow=28,SNR=2.7
BVAR LR LR 18 53 30.8
comp=E,4μm,18.6s,baz=75,slow=38
BRVK Borovoye 22.89 286 *de*P **P** **18 43 52.9 -1.9**
BRVK pmax pmax
comp=Z,44nm,0.6s
BRVK MLR MLR
comp=Z,13μm,16.0s
BRVK Borovoye 22.89 286 *e*P **P** **18 43 52.2 -2.6**
comp=Z,333nm,0.7s
KUU Kurty 23.06 260 *e*P **P** **18 43 55.7 -1.0**
comp=Z,359nm,1.7s
KUU *e*S **S** **18 48 02.7 -4.2**
KUU LR LR 18 52 45.8
comp=Z,1μm,12.0s
AAA Alma-Ata 23.11 258 *e*P **P** **18 43 59.2 +1.9**
AAA *e*S **S** **18 48 09.9 +2.0**
AAA pmax pmax
comp=Z,1μm,2.8s
AAA smax smax
comp=E,2μm,12.5s
AAA MLR MLR
comp=Z,8μm,5.0s
AAA Alma-Ata 23.11 258 *e*P **P** **18 43 57.3 0.0**
comp=Z,476nm,1.1s
AAA *e*S **S** **18 48 04.7 -3.2**
AAA LR LR 18 52 50.1
comp=Z,2μm,13.8s
OTUK Ortayu 23.32 273 P **P** **18 43 58.1 -1.2**
OTUK pmax pmax
comp=Z,42nm,1.3s
SSE Sheshan 23.64 152 P **P** **18 44 02.3 -0.2**
SSE S **S** **18 48 19.8 +3.3**
SSE sS **sS** **18 48 24.9 +1.1**
SSE pmax pmax
comp=Z,45nm,0.7s
SSE pmax pmax
comp=Z,220nm,4.2s
SSE LR LR
comp=Z,10μm,13.9s
SSE LR LR
comp=Z,2μm,13.9s
SSE LR LR
comp=Z,13μm,13.9s
ZRNK Zerenda 23.66 286 *e*P **P** **18 44 00.0 -2.6**
ZRNK pmax pmax
comp=Z,140nm,0.8s
ZRNK Zerenda 23.66 286 *e*P **P** **18 43 60.0 -2.6**
BMNS Besmoynak 23.91 259 *e*P **P** **18 44 04.0 -1.3**
comp=Z,565nm,1.2s
BMNS LR LR 18 53 07.3
comp=Z,3μm,12.5s
ASAJ Asahikawa 23.99 98 P **P** **18 44 03.4 -2.4**
comp=Z,16nm,1.1s
ASAJ Asahikawa 23.99 98 *e*P **P** **18 44 03.0 -2.7**
comp=Z,10nm,1.0s
MA2 Magadan 24.03 57 P **P** **18 44 07.2 +1.1**
comp=Z,62nm,1.0s,baz=278,slow=12,SNR=52
MA2 LR LR 18 53 49.9
comp=Z,5μm,18.2s,baz=275,slow=37
FRU Bishkek 24.70 260 *e*P **P** **18 44 12.0 -0.3**
FRU *i* 18 44 17.0
FRU *e*S **S** **18 48 34.0 +0.5**
SEY Seymchan 24.84 49 P **P** **18 44 15.1 +1.7**
comp=Z,58nm,0.9s,baz=243,slow=11,SNR=60
AAK Ala-Archa 24.89 259 P **P** **18 44 14.5 +0.4**
comp=Z,9.8nm,0.7s,baz=76,slow=6.4,SNR=14
AAK LR LR 18 53 02.0
comp=Z,862nm,21.8s,baz=28,slow=34
AAK Ala-Archa 24.89 259 *e*P **P** **18 44 14.4 +0.2**
comp=Z,48nm,0.9s
JNU Nakatsue 25.43 132 P **P** **18 44 19.7 +0.7**
comp=Z,64nm,0.9s,baz=348,slow=4.1,SNR=49
JNU LR LR 18 55 33.2
comp=Z,50nm,18.3s,baz=318,slow=39
JNU Nakatsue 25.43 132 *e*P **P** **18 44 19.6 +0.7**
comp=Z,38nm,1.0s
ERM Erimo 25.54 101 *de*P **P** **18 44 19.7 -0.1**
ERM pmax pmax
comp=Z,63nm,1.1s
ERM MLR MLR
comp=Z,3μm,16.0s
ERM Erimo 25.54 101 *e*P **P** **18 44 19.5 -0.3**
comp=Z,48nm,0.9s
KSH Kashi 25.98 252 P **P** **18 44 29.4 +5.3**
KSH *e*sP sP 18 44 35.3 +5.0
KSH *e*PP PnPn 18 45 12.9 +11
KSH *e*PcP **PcP** **18 47 55.1 +3.0**
KSH S **S** **18 49 00.9 +6.8**
KSH SS SnSn 18 50 09.4 +18
KSH PcS **PcS** **18 51 35.4 +2.4**
KSH pmax pmax
comp=Z,17nm,0.6s
KSH LR LR
comp=Z,3μm,12.7s
KSH LR LR
comp=Z,2μm,11.6s
KSH LR LR
comp=Z,3μm,17.1s
YUK Yuzh-Kuril'sk 26.00 95 *e*P **P** **18 44 25.0 +1.0**
MNAS Manas 26.16 261 P **P** **18 44 26.4 +0.7**
MNAS pmax pmax
comp=Z,67nm,1.1s
MJB9 Matsu-Tunnel 26.38 116 *e*P **P** **18 44 29.5 +1.9**
MAJO Matsushiro 26.39 116 *e*P **P** **18 44 29.5 +1.8**
MAJO pmax pmax
comp=Z,21nm,0.8s
MAJO Matsushiro 26.39 116 *e*P **P** **18 44 29.5 +1.8**
comp=Z,21nm,0.8s
MJAR Matsushiro Arr 26.39 116 P **P** **18 44 25.7 -1.9**
comp=Z,5.1nm,0.8s,baz=322,slow=9.9,SNR=22
MJAR PcP **PcP** **18 47 51.9 -1.0**
comp=Z,6.2nm,1.0s,baz=316,slow=2.3,SNR=5.7
MJAR LR LR 18 55 29.8
comp=Z,3μm,18.5s,baz=315,slow=38
GYA Guiyang 26.44 184 ⇑ *i*P **P** **18 44 33.6 +5.3**
GYA PP **PnPn** **18 45 13.0 +4.9**
GYA PcP **PcP** **18 47 55.5 +2.2**
GYA S **S** **18 49 07.9 +6.4**
GYA SS **SnSn** **18 50 10.3 +7.7**
GYA ScP **ScP** **18 51 33.8 +1.4**
GYA pmax pmax
comp=Z,40nm,0.8s
GYA pmax pmax
comp=Z,230nm,14.0s
GYA LR LR
comp=Z,6μm,13.4s
GYA LR LR
comp=Z,4μm,11.2s
GYA LR LR
comp=Z,8μm,13.9s
LSA Lhasa 26.48 216 P **P** **18 44 29.8 +0.8**
LSA LR LR
comp=Z,1μm,13.4s
LSA LR LR
comp=Z,1μm,9.9s
LSA LR LR
comp=Z,3μm,12.1s
LSA Lhasa 26.48 216 *e*P **P** **18 44 28.8 -0.2**
LSA pmax pmax
comp=Z,35nm,1.2s
LSA Lhasa 26.48 216 *e*P **P** **18 44 28.8 -0.2**
comp=Z,34nm,1.2s
KUR Kuril'sk 26.58 91 *e*P **P** **18 44 27.9 -1.3**
INU Inuyama 26.65 120 *e*P **P** **18 44 31.2 +1.2**
KKAR Karatay Array 27.00 264 *e*P **P** **18 44 32.8 -0.4**
KKAR Karatay Array 27.00 264 *e*P **P** **18 44 32.8 -0.4**
comp=Z,22nm,0.8s
SVE Sverdlovsk 27.42 298 *ce*P **P** **18 44 36.5 -0.2**
SVE *e*S **S** **18 49 17.2 +0.9**
SVE pmax pmax
comp=Z,152nm,0.9s
SVE MLR MLR
comp=Z,6μm,14.0s
SVE MLR MLR
comp=E,5μm,14.0s
IUG Iuzhnay 27.85 263 *e*P **P** **18 44 40.9 +0.1**
comp=E,301nm,1.3s
IUG LR LR 18 55 41.9
comp=E,2μm,12.2s
KMI Kunming 28.08 191 P **P** **18 44 44.8 +1.6**
KMI pP pP 18 44 47.3 -0.3
KMI sP sP 18 44 48.3 -1.1
KMI PP **PnPn** **18 45 34.6 +4.0**
KMI S **S** **18 49 28.0 +0.4**
KMI sS sS 18 49 32.3 -2.6
KMI SS **SnSn** **18 50 49.1 +6.3**
KMI pmax pmax
comp=E,25nm,1.1s
KMI pmax pmax
comp=E,140nm,3.7s
KMI LR LR
comp=E,3μm,11.4s
KMI LR LR
comp=E,7μm,10.8s
KMI LR LR
comp=E,4μm,12.5s
ARU Arti 28.63 297 P **P** **18 44 47.5 0.0**
comp=E,6.6nm,0.6s,baz=82,slow=7.3,SNR=13
ARU Arti 28.63 297 *d i*P **P** **18 44 47.4 -0.1**
ARU 18 45 36.5
ARU 18 48 02.6
ARU S **S** **18 49 33.7 -1.6**
ARU SSS SSS 18 51 06.3
ARU pmax pmax
comp=Z,7.0nm,0.5s
ARU MLR MLR
comp=Z,4μm,18.0s
ARU Arti 28.63 297 *e*P **P** **18 44 47.1 -0.4**
SOKR Solikamsk 28.89 304 *d i*P **P** **18 44 48.4 -1.3**
SOKR S **S** **18 49 38.5 -0.7**
SOKR pmax pmax
comp=Z,58nm,1.1s
SOKR MLR MLR
comp=Z,7μm,14.0s
SKR Severo-Kuril's 29.06 75 *e*P **P** **18 44 51.7 +0.3**
PEA1 Petropavlovsk- 29.09 70 *e*P **P** **18 44 51.6 0.0**
PEA1 *e*PcP **PcP** **18 47 58.5 -0.6**
PEA0 Petropavlovsk- 29.09 70 *e*P **P** **18 44 51.4 -0.2**
PEA0B Petropavlovsk- 29.09 70 *e*P **P** **18 44 51.6 -0.1**
PETK Petropavlovsk- 29.09 70 P **P** **18 44 51.6 -0.1**
comp=Z,10nm,0.7s,baz=294,slow=3.5,SNR=25
PETK PcP **PcP** **18 47 58.5 -0.6**
comp=Z,8.3nm,0.7s,baz=55,slow=0.6,SNR=5.8
PETK LR LR 18 57 15.4
comp=Z,2μm,19.3s,baz=283,slow=38
PETK Petropavlovsk- 29.09 70 P **P** **18 44 51.6 -0.1**
PETK 18 47 58.5
PETK pmax pmax
comp=Z,12nm,0.7s
PETK MLR MLR
comp=Z,2μm,19.3s
PET Petropavlovsk 29.66 69 ⇓ *i*P **P** **18 44 56.7 0.0**
PET *e*S **S** **18 49 46.8 -4.7**
PET pmax pmax
comp=Z,300nm,11.7s
PET pmax pmax
comp=Z,67nm,1.1s
PET MLR MLR
comp=Z,4μm,15.0s
PET MLR MLR
comp=Z,3μm,16.0s
PET Petropavlovsk 29.66 69 *e*P **P** **18 44 56.3 -0.3**
comp=Z,55nm,1.0s
PET *e*PcP **PcP** **18 47 59.0 -1.6**
YHNB Yeheng 29.80 156 *e*P **P** **18 44 57.9 -0.4**
JHJ Hachijo jima 2 29.82 119 LR LR 18 57 38.7
comp=Z,1μm,18.6s,baz=306,slow=38
SHL Shillong 30.05 211 *e*P **P** **18 45 00.7 +0.1**
ABKAR Akbulak array 30.31 283 *e*P **P** **18 45 02.3 -0.2**
NACB Ninganchiao 30.33 156 *e*P **P** **18 45 04.6 +1.8**
KKN Kakani 30.47 224 *e*P **P** **18 45 04.9 +0.6**
comp=Z,60nm,0.5s
SSLB Suanglung 30.55 157 *e*P **P** **18 45 06.1 +1.3**
GKN Gorkha 30.55 225 *e*P **P** **18 45 05.5 +0.5**
comp=Z,111nm,0.7s
DMN Daman 30.70 224 *e*P **P** **18 45 07.1 +0.7**
comp=Z,51nm,0.6s
BILL Bilibino 30.80 38 *d i*P **P** **18 45 08.1 +1.5**
BILL *i* 18 45 13.1
BILL pmax pmax
comp=Z,73nm,1.0s
BILL MLR MLR
comp=Z,3μm,21.0s
BILL Bilibino 30.80 38 *e*P **P** **18 45 07.7 +1.1**
comp=Z,57nm,0.8s
AKTO Aktyubinsk 30.94 286 P **P** **18 45 07.5 -0.5**
comp=Z,16nm,0.8s,baz=77,slow=8.4,SNR=73
AKTO LR LR 18 58 09.4
comp=Z,3μm,18.8s,baz=63,slow=37
YULB Yu-li 31.01 157 *e*P **P** **18 45 09.8 +0.9**
PYUN Piuthan 31.19 227 *e*P **P** **18 45 11.3 +0.6**
comp=Z,173nm,0.9s
KOLN Koldanda 31.20 226 *e*P **P** **18 45 11.5 +0.7**
comp=Z,86nm,0.7s
THN Thein Dam 31.25 242 *e*P **P** **18 45 09.0 -1.9**
SMLA Simla 31.50 239 *e*P **P** **18 45 12.5 -0.7**
TWG Pinlang 31.50 158 *e*P **P** **18 45 14.1 +0.8**
DDI Dehra Dun 31.69 237 *e*P **P** **18 45 13.4 -1.5**
KBL Kabul 33.42 253 *e*P **P** **18 45 29.1 -1.1**
KBL pmax pmax
comp=Z,14nm,1.0s
KBL Kabul 33.42 253 *e*P **P** **18 45 29.1 -1.1**
CMAI Chiengmai2 33.72 196 P P 18 45 39.4 +6.6
BOK Bokaro 33.78 219 *e*P **P** **18 45 32.5 -0.6**
BOK IAmb IAmb 18 45 34.2
comp=Z,36nm,0.9s
QIZ Qiongzhong 33.81 178 P **P** **18 45 35.4 +2.0**
QIZ S **S** **18 51 00.6 +3.8**
QIZ LR LR
comp=Z,3μm,9.1s
QIZ LR LR
comp=Z,2μm,12.6s
QIZ LR LR
comp=Z,4μm,13.4s
PAYA Payao 34.15 195 P **P** **18 45 36.6 +0.2**
comp=Z,7.1nm,1.1s
CHTO Chiang Mai 34.83 196 P **P** **18 45 42.0 -0.3**
comp=Z,91nm,1.0s
CHTO Chiang Mai 34.83 196 *e*P **P** **18 45 41.7 -0.6**
CHTO pmax pmax
comp=Z,15nm,0.9s
CHTO Chiang Mai 34.83 196 *e*P **P** **18 45 41.7 -0.6**
comp=Z,13nm,0.8s
CMMT Chiang Mai 34.83 196 P **P** **18 45 41.9 -0.4**
comp=Z,20nm,1.0s,comp=Z,491nm
LAMP Lampang 35.01 195 P **P** **18 45 43.7 -0.1**
comp=Z,10nm,0.8s
NONG Nongkai 35.02 189 P **P** **18 45 46.6 +2.7**
comp=Z,17nm,0.9s,comp=Z,15μm
CM31 Chiang Mai Arr 35.18 196 *e*P **P** **18 45 44.6 -0.7**
CM31 *e*PcP **PcP** **18 48 15.3 -0.9**
CMAR Chiang Mai Arr 35.18 196 P **P** **18 45 44.7 -0.6**
comp=Z,4.6nm,0.7s,baz=0.0,slow=8.0,SNR=35
CMAR PcP **PcP** **18 48 16.1 -0.2**
comp=Z,4.9nm,0.8s,baz=334,slow=3.3,SNR=6.0
CMAR LR LR 18 59 51.9
comp=Z,641nm,18.2s,baz=50,slow=36
CM01 Chiang Mai Arr 35.22 196 *e*P **P** **18 45 44.9 -0.7**
UTTA Uttaradit 35.64 193 P **P** **18 45 48.7 -0.5**

comp=Z,5,7nm,0.9s,comp=Z,51nm
LOEI Loei 35.77 192 P **P** **18 45 48.9 -1.5**
comp=Z,39nm,0.7s,comp=Z,10µm
CBIJ Chichi jima 35.87 123 *e*P **P** **18 45 52.6 +1.5**
SKNT Sakolnakorn 36.02 188 P **P** **18 45 52.4 -0.1**
comp=Z,65nm,1.4s
SUKH Sukhothai 36.03 195 P **P** **18 45 52.5 0.0**
comp=Z,16nm,0.8s,comp=Z,142nm
PBKT Sadao Pong 36.74 192 P **P** **18 45 58.1 -0.5**
comp=Z,37nm,0.9s,comp=Z,1µm
LVZ Lovozero 36.88 323*c i*P **P** **18 46 00.0 +0.5**
LVZ pmax pmax
comp=Z,44nm,1.8s
LVZ MLR MLR
comp=Z,2µm,15.0s
LVZ Lovozero 36.88 323 *e*P **P** **18 46 00.5 +1.0**
comp=Z,51nm,1.1s
KLMR Klimovskoe 36.90 310 *e*P **P** **18 45 57.5 -2.1**
KLMR *e* 18 47 22.0
KLMR pmax pmax
comp=Z,132nm,1.4s
BWNR Bhubaneshwar 37.00 217 *e*P **P** **18 45 59.3 -1.5**
UMPA Umpang Tak 37.40 196 P P 18 46 12.2 +7.9
APA Apatity 37.43 322⇑ *i*P **P** **18 46 03.3 -0.7**
APA *i* 18 48 27.0
APA *i* S **S** **18 51 50.0 -1.4**
APA *i* SS **SnSn** **18 54 28.0 -0.2**
APA pmax pmax
comp=Z,16nm,1.0s
APA MLR MLR
comp=Z,4µm,14.0s
UBPT Khong Chiam 37.61 185 P P 18 46 12.5 +6.5
GEYT Alibeck 37.64 267 P **P** **18 46 07.0 +0.8**
comp=Z,9.5nm,0.7s,baz=35,slow=5.4,SNR=28
GEYT LR LR 19 02 46.5
comp=Z,2µm,18.4s,baz=35,slow=38
HOPEN Hopen 37.89 338 *e*P **P** **18 46 08.3 +0.6**
HOPEN IVmB_BB 18 46 17.3
comp=Z,1µm,3.0s
BHPL Bhopal 37.91 231 *e*P **P** **18 46 08.2 -0.4**
BHPL IAmb IAmb 18 46 08.7
comp=Z,190nm,1.3s
SMY Shemya 38.35 63 *e*P **P** **18 46 11.5 -0.4**
SMY pmax pmax
comp=Z,140nm,1.3s
SMY Shemya 38.35 63 *e*P **P** **18 46 11.5 -0.4**
NGP Nagpur 38.98 227 *e*P **P** **18 46 16.1 -1.4**
SPA0 Spitsbergen Ar 39.32 341⇓ *i*P **P** **18 46 19.9 0.0**
SPA0 *e*sP **sP** **18 46 27.1 +0.9**
SPA0 IVmB_BB 18 46 28.5
comp=Z,1µm,1.5s
SPA0 *e*PP **PnPn** **18 47 56.6 +4.1**
SPA0 *e*ScP **ScP** **18 52 15.7 -0.1**
SPA0 Spitsbergen Ar 39.32 341 *e*P **P** **18 46 19.7 -0.1**
MSF Maaselka 39.59 321 P **P** **18 46 22.1 -0.1**
MSF pmax pmax
comp=Z,23nm,1.2s
ARA0 ARCESS Array S 39.61 327 *e*P **P** **18 46 22.2 -0.2**
ARCES ARCESS Array B 39.61 327 P **P** **18 46 21.6 -0.7**
comp=Z,8.3nm,0.9s,baz=69,slow=9.7,SNR=17
ARCES PcP **PcP** **18 48 28.2 -0.8**
comp=Z,21nm,0.9s,baz=76,slow=5.1,SNR=4.6
ARE0 ARCESS Array S 39.61 327 *e*P **P** **18 46 22.4 0.0**
ARE0 IVmB_BB 18 46 30.2
comp=Z,566nm,3.2s
ARE0 *e*ScP **ScP** **18 52 16.6 -0.5**
ARE0 ARCESS Array S 39.61 327 *e*P **P** **18 46 22.2 -0.2**
ARE0 *e*PP **PP** **18 47 53.1 0.0**
JOF Joensuu 39.79 316 P **P** **18 46 23.5 -0.3**
JOF pmax pmax
comp=Z,38nm,1.1s
VRH Novokhopyorsk 39.81 295 *e*P **P** **18 46 23.7 -0.5**
VRH pmax pmax
comp=Z,40nm,0.6s
BJO Bjornoya 39.83 335 *e*P **P** **18 46 24.4 +0.4**
BJO *e*sP **sP** **18 46 32.0 +1.7**
HAMF Hammerfest 39.83 329 *e*P **P** **18 46 24.1 0.0**
HAMF *e*PP **PnPn** **18 47 57.9 -0.7**
HAMF *e*ScP **ScP** **18 52 18.3 +0.5**
MOS Moscow 39.84 303 *e*P **P** **18 46 22.0 -2.3**
MOS *e* 18 48 07.1
MOS *i* S **S** **18 52 25.3 -2.7**
MOS pmax pmax
comp=Z,300nm,2.0s
MOS pmax pmax
comp=Z,139nm,1.5s
MOS MLR MLR
comp=E,5µm,16.0s
MOS MLR MLR
comp=Z,7µm,16.0s
MOS MLR MLR
comp=N,3µm,15.0s
HSPB Hornsund (broa 39.86 339 *e*P **P** **18 46 24.7 +0.3**
HSPB IVmB_BB 18 46 33.3
comp=Z,1µm,1.5s
HSPB *e*S **S** **18 52 28.2 +0.4**
HSPB *e*SS **SnSn** **18 55 28.7 +2.1**
HSPB Hornsund (broa 39.86 339 *e*P **P** **18 46 24.6 +0.3**
HSPB *e* 18 46 32.2
KBS Kingsbay 39.91 343 *e*P **P** **18 46 24.9 +0.1**
KBS IVmB_BB 18 46 25.3
comp=Z,670nm,2.3s
KBS *e*sP **sP** **18 46 33.2 +2.1**
KBS *e*PP **PP** **18 47 56.6 +0.4**
KBS *e*S **S** **18 52 31.6 +2.9**
KBS *e*SS **SS** **18 55 25.8 +1.0**
KBS Kingsbay 39.91 343 *e*P **P** **18 46 24.4 -0.3**
KBS pmax pmax
comp=Z,27nm,0.8s
KBS Kingsbay 39.91 343 *e*P **P** **18 46 24.4 -0.3**
comp=Z,23nm,0.7s
TGY Tagaytay City 39.93 161 P **P** **18 46 24.9 -0.6**
comp=Z,93nm,0.4s,baz=159,slow=9.9,SNR=2.8
VIS Vishakhapatnam 40.28 219 *e*P **P** **18 46 27.2 -1.1**
GAMB Gambell 40.46 42 *e*P **P** **18 46 30.2 +0.8**
PHET Kaeng Krachan 40.52 194 P P 18 46 37.0 +6.6
comp=Z,13nm,0.8s,comp=Z,225nm
OBN Obninsk 40.66 303*d i*P **P** **18 46 30.4 -0.7**
OBN *i* 18 46 37.3
OBN *i* 18 48 08.5
OBN *i* 18 48 35.4
OBN pmax pmax
comp=Z,14nm,1.0s
OBN MLR MLR
comp=Z,6µm,17.0s
OBN Obninsk 40.66 303 *e*P **P** **18 46 30.8 -0.3**
OBN *e*PP **PP** **18 48 04.6 0.0**
VORR Voronezh 40.94 297 P **P** **18 46 33.0 -0.6**
VORR pmax pmax
comp=Z,250nm,1.2s
OUL Oulu 41.12 320 P **P** **18 46 35.0 +0.2**
OUL pmax pmax
comp=Z,27nm,0.9s
VSR Storozhevoye 41.20 297 *e*P **P** **18 46 35.0 -0.6**
VSR pmax pmax
comp=Z,30nm,1.0s
VSR MLR MLR
comp=Z,2µm,12.0s
SRSP Sriramsagar 41.24 226 *e*P **P** **18 46 34.7 -1.7**
PVM Polavaram 41.37 221 *e*P **P** **18 46 36.9 -0.5**
TRO Tromso 41.71 328 *e*P **P** **18 46 40.0 +0.3**
TRO *e*PP **PnPn** **18 48 22.2 +1.4**
TRO *e*S **S** **18 52 56.7 +1.1**
TRO *e* 18 55 55.5
BHJ Bhuj 41.77 240 *e*P **P** **18 46 40.7 0.0**
BHJ IAmb IAmb 18 46 42.2
comp=Z,113nm,1.3s
GOF Gofitskoye 42.35 287⇓ *i*P **P** **18 46 46.2 +1.0**
GOF pmax pmax
comp=Z,78nm,0.9s
HYB Hyderabad 42.49 225 *i* P **P** **18 46 46.0 -0.6**
HYB *e* 18 46 52.0
HYB *e* 18 46 57.0
HYB Hyderabad 42.49 225 *e*P **P** **18 46 45.0 -1.5**
FIA1 FINESS Array S 42.64 315 *e*P **P** **18 46 46.6 -0.7**
FIA0 FINESS Array S 42.64 315 *e*P **P** **18 46 47.0 -0.3**
FIA0 FINESS Array S 42.64 315 *e*P **P** **18 46 47.0 -0.3**
FINES FINESS Array B 42.64 315 P **P** **18 46 47.0 -0.3**
comp=Z,15nm,0.7s,baz=79,slow=9.9,SNR=40
FINES LR LR 19 06 20.5
comp=Z,4µm,18.5s,baz=62,slow=39
KLRI Killari 42.77 228 *e*P **P** **18 46 47.9 -0.9**
NCK Nalchik 42.94 285 *e*P **P** **18 46 50.1 +0.1**
NCK pmax pmax
comp=Z,11nm,1.0s
NCK MLR MLR
comp=Z,1µm,18.0s
DGRG David-gareji 43.12 281 P **P** **18 46 52.8 +1.3**
DGRG David-gareji 43.12 281 P **P** **18 46 52.8 +1.3**
ZEI Tsey 43.18 283 *e*P **P** **18 46 51.6 -0.6**
ZEI pmax pmax
comp=Z,34nm,0.5s
KIV Kislovodsk 43.20 286 *i* P **P** **18 46 53.4 +1.1**
SNR=11
KIV Kislovodsk 43.20 286*d i*P **P** **18 46 53.0 +0.8**
KIV *i* 18 47 04.2
KIV *i* S **S** **18 53 10.6 -7.8**
KIV *i* SS SS 18 56 19.2 -12
KIV pmax pmax
comp=Z,59nm,1.0s
KIV MLR MLR
comp=Z,1µm,17.0s
KIV Kislovodsk 43.20 286 *e*P **P** **18 46 52.8 +0.6**
comp=Z,45nm,0.9s
KBZ Khabaz 43.21 285 P **P** **18 46 53.1 +0.9**
comp=Z,6.2nm,0.8s,baz=35,slow=5.5,SNR=10
KBZ LR LR 19 06 46.8
comp=Z,1µm,18.2s,baz=64,slow=39
SEAG Tbilisi Sea 43.27 282 P **P** **18 46 54.5 +1.8**
VAF Ylistaro 43.30 318 P **P** **18 46 52.5 -0.1**
VAF pmax pmax
comp=Z,27nm,1.1s
TBLG Delisi 43.33 282 P **P** **18 46 54.4 +1.1**
TBLG Delisi 43.33 282 P **P** **18 46 54.3 +1.1**
SRLM Srisailam 43.52 224 *e*P **P** **18 46 52.7 -2.2**
ONI Oni 43.57 284 P **P** **18 46 56.3 +1.2**
ONI Oni 43.57 284 P **P** **18 46 56.3 +1.2**
NEY Neytrino 43.60 285 *e*P **P** **18 46 56.1 +0.5**
NEY pmax pmax
comp=Z,10.0nm,0.9s
NEY MLR MLR
comp=Z,513nm,15.0s
POO Poona 43.64 232 *e*P **P** **18 46 54.6 -1.3**
STEI Steigen 43.68 327 *e*P **P** **18 46 56.2 +0.6**
VSU Vasula 43.79 311*de*P **P** **18 46 56.4 -0.2**
VSU pmax pmax
comp=Z,125nm,1.0s
VSU MLR MLR
comp=Z,6µm,17.0s
RCLA Racherla 44.07 223 *e*P **P** **18 46 58.2 -1.1**
SPIA Saint Paul Isl 44.12 51 *e*P **P** **18 47 00.8 +1.6**
LOF Lofoten 44.14 328 *e*PP PP 18 48 44.9 +3.0
LOF *e*S **S** **18 53 33.0 +1.7**
AKH Akhalkalaki 44.26 282⇑ *i*P **P** **18 47 02.2 +1.3**
KRAB Krabi 45.19 193 P P 18 47 14.6 +6.3
MICGM Minsk 45.31 306⇓ *e*P **P** **18 47 09.0 +0.2**
MICGM PM 18 47 11.0
comp=Z,0.3nm,2.0s
MICGM *e*LR LR 19 07 32.0
MICGM LRM MLR 19 08 18.0
comp=N,5.6nm,12.0s
MICGM LRM MLR 19 08 20.0
comp=Z,9.9nm,14.0s
MICGM LRM MLR 19 08 24.0
comp=E,7.4nm,14.0s
MNK Minsk 45.31 306⇓ *e*P **P** **18 47 09.0 +0.2**
MNK pmax pmax
comp=Z,270nm,2.0s
MNK MLR MLR
comp=N,6µm,12.0s
MNK MLR MLR
comp=Z,10µm,14.0s
MNK MLR MLR
comp=E,7µm,14.0s
IDID Didziasalis 45.42 307 *e*P **P** **18 47 09.4 -0.3**
IDID IAmb IAmb 18 47 19.9
comp=Z,17nm,0.9s
IZAR Zarasai 45.42 308 *e*P **P** **18 47 09.3 -0.4**
IZAR IAmb IAmb 18 47 19.9
comp=Z,12nm,0.7s
ISAL Salakas 45.58 308 *e*P **P** **18 47 10.5 -0.4**
ISAL IAmb IAmb 18 47 21.2
comp=Z,26nm,0.9s
NACGM Naroch 45.63 307 *e*P **P** **18 47 11.0 -0.3**
NACGM *e*LQ LQ 19 00 50.0
NACGM *e*LR LR 19 04 52.0
NACGM LRM MLR 19 08 42.0
comp=Z,15nm,14.0s
MDRS Chennai 45.70 220 *e*P **P** **18 47 10.8 -1.5**
ANN Anapa 45.73 290 *e*P **P** **18 47 11.5 -0.8**
ANN *e* 18 49 00.8
ANN *e*S **S** **18 53 55.8 +1.0**
ANN *e*SSS SSS 18 58 08.3
ANN pmax pmax
comp=Z,80nm,1.6s
ANN MLR MLR
comp=Z,2µm,18.0s
GOA Goa 46.29 230 *e*P **P** **18 47 16.5 -0.4**
KDM Kudat 46.33 169⇓ *e*P **P** **18 47 17.9 +0.7**
DAG Danmarks Havn 46.39 345⇓ *i*P **P** **18 47 16.1 -1.0**
comp=Z,40nm,1.4s
DAG Danmarks Havn 46.39 345⇓ *i*P **P** **18 47 16.1 -1.0**
DAG *i* 18 47 24.1
DAG pmax pmax
comp=Z,93nm,1.4s
COLD Coldfoot 46.61 32 *e*P **P** **18 47 19.2 +0.2**
comp=Z,59nm,1.2s
AKASG Malin Array Be 46.76 301 P **P** **18 47 19.4 -0.9**
comp=Z,12nm,0.7s,baz=49,slow=8.8,SNR=76
AKASG LR LR 19 08 51.3
comp=Z,3µm,19.1s,baz=55,slow=38
AKBB Malin Array Si 46.76 301 *e*P **P** **18 47 19.3 -1.0**
AKBB Malin Array Si 46.76 301 *e*P **P** **18 47 19.3 -1.0**
KIEV Kiev 46.77 301*d i*P **P** **18 47 19.7 -0.6**
KIEV pmax pmax
comp=Z,17nm,0.8s
KIEV MLR MLR
comp=Z,4µm,16.0s
KIEV Kiev 46.77 301 *e*P **P** **18 47 19.5 -0.9**
comp=Z,11nm,0.7s
AK11 Malin Array Si 46.80 301 *e*P **P** **18 47 19.7 -0.9**
TTA Tatalina 47.05 38 *e*P **P** **18 47 22.9 +0.4**
TTA pmax pmax
comp=Z,50nm,1.0s
TTA Tatalina 47.05 38 *e*P **P** **18 47 22.9 +0.4**
TT01 Tatalina 47.06 39 *e*P **P** **18 47 23.4 +0.8**
NIKH Nikolski High 47.08 55 *e*P **P** **18 47 23.9 +1.2**
KKM Kota Kinabalu 47.12 170 *e*P **P** **18 47 25.0 +1.5**
BANOM Banah 47.18 256 P **P** **18 47 25.0 +1.1**
SIM Simferopol' 47.52 292 *e*P **P** **18 47 27.6 +1.3**
SIM *e*S **S** **18 54 28.0 +7.5**
SIM *e*SS **SS** **18 57 41.0 -6.8**
SIM pmax pmax
comp=Z,130nm,1.0s
SIM MLR MLR
comp=Z,500nm,12.0s
SDKM Sandakan 47.63 168⇑ *e*P **P** **18 47 27.9 +0.4**
MLY Manley 47.72 34 *e*P **P** **18 47 28.2 +0.5**
UNV Unalaska Valle 47.72 53 *e*P **P** **18 47 27.4 -0.3**
comp=Z,73nm,0.9s
DAV Davao City (W) 47.75 157 P **P** **18 47 26.9 -1.5**
comp=Z,53nm,0.3s,baz=76,slow=13,SNR=2.6
DAV Davao City (W) 47.75 157 *e*P **P** **18 47 27.9 -0.4**
SUW Suwalki 47.87 308 *e*P **P** **18 47 28.3 -0.5**
SUW *e*S **S** **18 54 27.1 +2.0**
SUW LMZ LR 19 09 59.1
comp=Z,6µm,14.6s
SUW Suwalki 47.87 308 *e*P **P** **18 47 28.3 -0.5**
SUW *e*S **S** **18 54 27.1 +2.0**
SUW MLR MLR
comp=Z,6µm,14.6s
KULM Kulim 47.90 191 *e*P **P** **18 47 31.8 +2.3**
AKUT Akutan 47.91 52 *e*P **P** **18 47 28.4 -0.7**
HATD Hatta, Dubai 48.11 255 P P **18 47 31.2 +0.1**
BPAW Bear Paw Mtn. 48.20 35 *e*P **P** **18 47 31.8 +0.5**
comp=Z,6.2nm,0.9s
CAST Castle Rocks 48.22 37 *e*P **P** **18 47 32.1 +0.7**
MYLDM Lahad Datu 48.26 167⇓ P **P** **18 47 33.8 +1.5**
MYLDM Lahad Datu 48.26 167 *e*P **P** **18 47 33.6 +1.4**
ASHO Ashiyiah 48.27 255 *i* P **P** **18 47 32.3 -0.1**
SNR=8.8
SVW2 Sparrevohn 48.28 40 *e*P **P** **18 47 33.2 +1.2**
LHMI Lhok Sumawe 48.47 196 *e*P **P** **18 47 35.3 +1.4**
PPLA Purkeypile 48.49 37 *e*P **P** **18 47 34.5 +0.8**
comp=Z,64nm,1.1s
KTH Kantishna Hill 48.55 36 *e*P **P** **18 47 35.1 +1.0**
comp=Z,179nm,1.1s
FYU Fort Yukon 48.57 31 *e*P **P** **18 47 35.5 +1.4**
JMIC Jan Mayen 48.61 337 *e*P **P** **18 47 34.0 -0.4**
JMIC *e*S **S** **18 54 35.3 +0.1**
JMIC *e*SS **SS** **18 58 08.1 +3.5**
MDM Murphy Dome 48.62 34 *e*P **P** **18 47 34.9 +0.4**
GUMO Guam 48.65 130 *e*P **P** **18 47 36.6 +1.3**
GUMO Guam 48.65 130 *e*P **P** **18 47 36.6 +1.3**
IPM Ipoh 48.66 190⇓ P **P** **18 47 35.3 0.0**
IPM Ipoh 48.66 190 *e*P **P** **18 47 34.5 -0.8**
NC405 NORSAR Array S 48.68 320 *e*P **P** **18 47 34.6 -0.4**
BWN Browne 48.68 35 *e*P **P** **18 47 36.7 +1.6**
SORM Soroca 48.74 299⇓ *i*P **P** **18 47 35.3 -0.3**
NC303 NORSAR Array S 48.75 320 *e*P **P** **18 47 35.3 -0.3**
COLA College 48.80 33 *e*P **P** **18 47 36.5 +0.7**
COLA pmax pmax
comp=Z,110nm,0.9s
COLA College 48.80 33 *e*P **P** **18 47 36.5 +0.7**
comp=Z,144nm,1.0s
TRF Thorofare Moun 48.84 36 *e*P **P** **18 47 37.2 +0.7**
comp=Z,132nm,1.3s
NB201 NORSAR Array S 48.88 320 *e*P **P** **18 47 36.3 -0.3**
NB2 NORSAR Subarra 48.92 320 P **P** **18 47 36.6 -0.4**
comp=Z,58nm,1.1s,baz=50,slow=6.9
NB2 NORSAR Subarra 48.92 320 P **P** **18 47 36.6 -0.4**
baz=50,slow=6.9
NB200 NORSAR Array S 48.92 320 *e*P **P** **18 47 36.5 -0.4**
NOA NORSAR Array B 48.92 320 P **P** **18 47 36.5 -0.4**
comp=Z,16nm,0.9s,baz=51,slow=7.2,SNR=28
NOA LR LR 19 09 18.5
comp=Z,511nm,20.7s,baz=45,slow=37
NC204 NORSAR Array S 48.95 321 *e*P **P** **18 47 36.3 -0.9**
CCB Clear Creek Bu 48.95 34 *e*P **P** **18 47 37.9 +0.8**
WRH Wood River Hil 48.97 34 *e*P **P** **18 47 37.5 +0.3**
NC602 NORSAR Array S 48.98 320 *e*P **P** **18 47 36.9 -0.4**
NC602 *e*sP **sP** **18 47 44.7 +1.0**
NC602 IVmB_BB 18 47 46.2
comp=Z,700nm,3.0s
NC602 *e*S **S** **18 54 44.9 +4.3**
NC602 *e* 18 58 28.0
NC602 NORSAR Array S 48.98 320 *e*P **P** **18 47 36.7 -0.6**
NBO02 NORSAR Array S 49.05 320 *e*P **P** **18 47 37.1 -0.8**
NBO02 *e*PcP **PcP** **18 48 60.0 -1.4**
NBO00 NORSAR Array S 49.09 320 *e*P **P** **18 47 37.6 -0.7**
NBO00 *e*PcP **PcP** **18 48 58.4 -3.2**
DOMB Dombas 49.12 322 *e*P **P** **18 47 38.2 -0.3**
DOMB *e*sP **sP** **18 47 45.8 +0.9**
DOMB IVmBBB 18 47 49.1
comp=Z,440nm,2.6s
DOMB *e*S **S** **18 54 48.2 +5.5**
DOMB *e*SS **SS** **18 58 15.9 +2.7**
MCK McKinley 49.14 35 *e*P **P** **18 47 39.4 +0.8**
MCK pmax pmax
comp=Z,59nm,1.0s
MCK McKinley 49.14 35 *e*P **P** **18 47 39.1 +0.5**
comp=Z,40nm,0.8s
NAO01 NORSAR Array S 49.16 320 *e*P **P** **18 47 37.9 -0.9**
NAO01 *e*PcP **PcP** **18 49 00.4 -1.4**
IL1 Eielson Array 49.18 33 *e*P **P** **18 47 39.2 +0.4**
ILAR Eielson Array 49.18 33 P **P** **18 47 39.4 +0.5**
comp=Z,122nm,1.0s,baz=300,slow=5.3,SNR=572
ILAR LR LR 19 10 19.8
comp=Z,701nm,18.4s,baz=334,slow=38
ILB Eielson Array 49.18 33 *e*P **P** **18 47 39.6 +0.8**
ILB *e*PcP **PcP** **18 49 02.5 +0.7**
KIS Kishinev 49.18 297 *e*P **P** **18 47 38.0 -1.1**
KIS Kishinev 49.18 297 *e*PP PP 18 49 40.0 +7.5
KIS *e*S **S** **18 54 38.0 -5.9**
KIS *e*SS **SS** **18 58 20.0 +5.4**
KIS *e*LQ LQ 19 04 55.0
KIS LRM MLR 19 09 58.0
comp=Z,3µm,16.0s
KIS Kishinev 49.18 297 *e*P **P** **18 47 38.0 -1.1**
KIS *e* 18 47 46.0
KIS *e* 18 49 40.0
KIS *e*S **S** **18 54 38.0 -5.9**
KIS *e* 18 54 55.0
KIS MLR MLR
comp=Z,3µm,14.0s
KIS MLR MLR
comp=N,2µm,13.0s
KIS MLR MLR
comp=E,2µm,15.0s
KIS MLR MLR
comp=Z,3µm,16.0s
MILM Milestii Mici 49.23 297⇑ *i*P **P** **18 47 39.6 +0.1**
MOL Molde 49.35 323⇓ *i*P **P** **18 47 40.4 +0.3**
MOL IVmB_BB 18 47 49.7
comp=Z,1µm,3.1s
RND Reindeer 49.37 35 *e*P **P** **18 47 40.6 +0.2**
RND pmax pmax
comp=Z,16nm,1.0s
RND Reindeer 49.37 35 *e*P **P** **18 47 40.0 -0.4**
HDA Harding Lake 49.39 34 *e*P **P** **18 47 40.5 0.0**
SPU Mount Spurr 49.59 39 *e*P **P** **18 47 43.4 +1.3**
RSO Redoubt South 49.77 40 *e*P **P** **18 47 45.0 +1.3**
OSL Oslo 49.79 319 *e*P **P** **18 47 43.5 0.0**
OSL IVmB_BB 18 47 52.5
comp=Z,890nm,2.6s
AKN Aaknes 49.80 323 *e*P **P** **18 47 44.0 +0.3**
AKN IVmB_BB 18 47 53.4
comp=Z,1µm,2.8s
AKN *e*S **S** **18 54 55.5 +3.3**
AKN *e*SS **SS** **18 58 34.5 +10**
FRIM Kepong 49.83 189⇑ *e*P **P** **18 47 44.8 +0.5**
SUA Susitna One 49.91 38 *e*P **P** **18 47 45.3 +0.7**
LVV L'vov 49.96 303 *e*P **P** **18 47 45.4 +0.4**
LVV *e*S **S** **18 54 54.2 -0.5**
LVV MLR MLR
comp=Z,3µm,15.0s
DHY Denali Highway 50.10 35 *e*P **P** **18 47 45.9 -0.2**
TLCR 50.32 295⇓ *i*P **P** **18 47 48.0 +0.3**
BEL Belsk 50.33 306 *e*P **P** **18 47 48.1 +0.3**
BEL *e*S **S** **18 55 04.0 +4.2**
BEL LMZ LR 19 11 23.0
comp=Z,11µm,15.0s
BEL Belsk 50.33 306 *e*P **P** **18 47 48.1 +0.3**
BEL *e*S **S** **18 55 04.0 +4.2**
BEL MLR MLR
comp=Z,11µm,15.0s
PRAR RASCA 50.34 299⇑ *i*P **P** **18 47 48.6 +0.7**
SBUM Sibu 50.37 175⇑ P **P** **18 47 49.7 +1.3**
KONO Kongsberg 50.41 319 *e*S **S** **18 55 04.2 +3.5**
KONO *e*SS **SS** **18 58 37.2 +3.5**
KONO Kongsberg 50.41 319 *e*P **P** **18 47 48.4 +0.2**
KONO pmax pmax
comp=Z,150nm,1.7s
KONO MLR MLR
comp=Z,15µm,16.0s
KONO Kongsberg 50.41 319 *e*P **P** **18 47 48.3 0.0**
PMR Palmer 50.43 37 *e*P **P** **18 47 48.7 +0.4**
PMR pmax pmax
comp=Z,75nm,1.0s
PMR Palmer 50.43 37 *e*P **P** **18 47 48.3 0.0**
comp=Z,70nm,0.9s
RC01 Rabbit Creek A 50.52 38 *e*P **P** **18 47 49.3 +0.2**
comp=Z,69nm,1.0s
PSI Prapat 50.57 193 *e*P **P** **18 47 49.2 -0.8**
PSI *e**PP **sP** **18 47 55.6 -0.8**
PSI Prapat 50.57 193 *e*P **P** **18 47 48.8 -1.2**
SML Sawmill 50.58 37 *e*P **P** **18 47 50.1 +0.5**
SML pmax pmax
comp=Z,97nm,1.0s
SML Sawmill 50.58 37 *e*P **P** **18 47 49.6 +0.1**
comp=Z,22nm,1.0s
TESR Tescani 50.65 298⇓ *i*P **P** **18 47 50.6 +0.3**
CFR Carcaliu 50.69 296⇓ *i*P **P** **18 47 51.0 +0.4**
BUR08 Bucovina Ar. S 50.71 300 *e*P **P** **18 47 50.7 -0.1**
INK Inuvik 50.72 25 LR LR 19 12 07.1
comp=Z,615nm,21.9s,baz=298,slow=39
INK Inuvik 50.72 25 *e*P **P** **18 47 50.1 -0.3**
INK *e* 18 49 06.5
INK pmax pmax
comp=Z,24nm,0.9s
INK Inuvik 50.72 25 *e*P **P** **18 47 50.0 -0.3**
comp=Z,24nm,0.9s
INK *e*PcP **PcP** **18 49 06.5 -0.9**
BURAR Bucovina Array 50.72 300⇓ *i*P **P** **18 47 51.5 +0.6**
BURAR Bucovina Array 50.72 300 P **P** **18 47 51.4 +0.6**
HYA Hoyanger 50.75 322⇓ *i*P **P** **18 47 50.8 +0.1**
HYA IVmB_BB 18 47 59.2
comp=Z,676nm,1.9s
KWP Kalwaria Pacla 50.75 303 *e*P **P** **18 47 51.8 +0.8**
KWP LMZ LR 19 11 28.0
comp=Z,5µm,17.7s

KWP	**Kalwaria Pacla**	**50.75**	**303**	*e*P		**P**	**18 47 51.8**	**+0.8**
KWP				MLR		MLR		
	comp=Z,5µm,17.7s							
PAX	**Paxson**	**50.83**	**35**	*e*P		**P**	**18 47 51.6**	**+0.1**
PAX				pmax		pmax		
	comp=Z,75nm,0.8s							
PAX	**Paxson**	**50.83**	**35**	*e*P		**P**	**18 47 51.2**	**-0.3**
	comp=Z,72nm,0.8s							
DOT	**Dot Lake**	**50.85**	**33**	*e*P		**P**	**18 47 50.9**	**-0.7**
	comp=Z,308nm,0.9s							
FOO	**Floro**	**50.88**	**323**	*e*P		**P**	**18 47 51.5**	**-0.3**
FOO				*ep*P		**pP**	**18 47 56.9**	**+0.5**
FOO				IVmBBB			18 48 01.5	
	comp=Z,845nm,2.6s							
FOO				*e*S		**S**	**18 55 11.8**	**+4.6**
KGM	**Kluang**	**50.90**	**187**	⇑P		**P**	**18 47 55.9**	**+3.5**
SCM	**Sheep Creek Mo**	**50.92**	**36**	*e*P		**P**	**18 47 52.8**	**+0.6**
SCM				pmax		pmax		
	comp=Z,100nm,1.1s							
SCM	**Sheep Creek Mo**	**50.92**	**36**	*e*P		**P**	**18 47 52.5**	**+0.3**
BRLK	**Bradley Lake**	**50.94**	**40**	*e*P		**P**	**18 47 52.5**	**+0.2**
CNPM	**China Poot**	**50.96**	**40**	*e*P		**P**	**18 47 52.4**	**0.0**
TIRR	**Tirgusor**	**51.00**	**295**	⇑*i*P		**P**	**18 47 53.7**	**+0.8**
TIRR	**Tirgusor**	**51.00**	**295**	*e*P		**P**	**18 47 53.0**	**+0.1**
TIRR				pmax		pmax		
	comp=Z,110nm,2.0s							
TIRR	**Tirgusor**	**51.00**	**295**	*e*P		**P**	**18 47 52.2**	**-0.7**
	comp=Z,12nm,0.8s							
EGAK	**Eagle**	**51.03**	**31**	*e*P		**P**	**18 47 53.5**	**+0.6**
	comp=Z,118nm,1.0s							
PLOR	**Plostina**	**51.07**	**297**	⇑*i*P		**P**	**18 47 53.9**	**+0.4**
PLOR	**Plostina**	**51.07**	**297**	P		**P**	**18 47 53.8**	**+0.3**
MYKOM	**Kota Tinggi**	**51.08**	**186**	⇑P		**P**	**18 47 54.8**	**+1.0**
BR101	**Keskin Array S**	**51.12**	**287**	*e*P		**P**	**18 47 54.5**	**+0.5**
BR131	**Keskin Array S**	**51.12**	**287**	*e*P		**P**	**18 47 53.8**	**-0.2**
BRTR	**Keskin Array B**	**51.12**	**287**	P		**P**	**18 47 54.5**	**+0.5**
	comp=Z,11nm,0.8s,baz=72,slow=5.3,SNR=29							
BRTR				LR		LR	19 12 47.0	
	comp=Z,466nm,18.8s,baz=49,slow=40							
HARR	**Harsova**	**51.12**	**295**	⇓*i*P		**P**	**18 47 54.2**	**+0.4**
TLB	**Topalu**	**51.12**	**295**	⇑*i*P		**P**	**18 47 54.2**	**+0.4**
GKP	**Gorka Klasztor**	**51.13**	**310**	*e*P		**P**	**18 47 54.5**	**+0.7**
GKP				*e*S		**S**	**18 55 14.3**	**+3.5**
GKP				LMZ		LR	19 11 37.0	
	comp=Z,3µm,16.8s							
GKP	**Gorka Klasztor**	**51.13**	**310**	*e*P		**P**	**18 47 54.5**	**+0.7**
GKP				*e*S		**S**	**18 55 14.3**	**+3.5**
GKP				MLR		MLR		
	comp=Z,3µm,16.8s							
SUE	**Sulen**	**51.34**	**323**	*e*S		**S**	**18 55 20.8**	**+7.3**
SUE				*e*SS		SS	18 59 04.6	+16
ODD1	**Odda**	**51.40**	**321**	IVmB_BB			18 48 05.3	
	comp=Z,407nm,2.3s							
MENT	**Mentasta**	**51.45**	**34**	*e*P		**P**	**18 47 56.1**	**+0.1**
ARCR	**ARCALIA**	**51.51**	**300**	⇓*i*P		**P**	**18 47 58.2**	**+1.5**
ANTO	**Ankara**	**51.51**	**288**	*e*P		**P**	**18 47 58.9**	**+2.0**
ANTO	**Ankara**	**51.51**	**288**	*e*P		**P**	**18 47 58.9**	**+2.0**
BR231	**Keskin MP Arra**	**51.54**	**288**	*e*P		**P**	**18 47 55.2**	**-1.9**
KDAK	**Kodiak Island**	**51.54**	**43**	*e*P		**P**	**18 47 57.2**	**+0.5**
KDAK				pmax		pmax		
	comp=Z,30nm,0.8s							
KDAK	**Kodiak Island**	**51.54**	**43**	*e*P		**P**	**18 47 56.9**	**+0.1**
	comp=Z,46nm,0.8s							
ASK	**Askoy**	**51.56**	**322**	*e*P		**P**	**18 47 56.6**	**-0.2**
ASK				IVmBBB			18 48 06.8	
	comp=Z,965nm,2.5s							
BER	**Bergen**	**51.58**	**322**	*e*P		**P**	**18 47 57.2**	**+0.3**
BER				*es*P		**sP**	**18 48 04.5**	**+1.1**
BER				IVmB_BB			18 48 05.0	
	comp=Z,623nm,1.6s							
BER				*e*S		**S**	**18 55 21.6**	**+4.9**
BMR	**Baia Mare**	**51.58**	**301**	⇑*i*P		**P**	**18 47 58.6**	**+1.4**
UZH	**Uzhgorod**	**51.59**	**302**	*e*P		**P**	**18 47 55.7**	**-1.6**
UZH				*e*			18 48 02.1	
UZH				*i*			18 49 06.9	
UZH				*e*			18 49 51.9	
UZH				*e*S		**S**	**18 55 10.5**	**-6.8**
UZH				*i* SS		**SS**	**18 58 52.1**	**-0.8**
UZH				MLR		MLR		
	comp=N,5µm,16.0s							
UZH				MLR		MLR		
	comp=E,5µm,16.0s							
UZH				MLR		MLR		
	comp=Z,700nm,16.0s							
ISR	**Istrita**	**51.60**	**297**	⇑*i*P		**P**	**18 47 58.8**	**+1.3**
OHAK	**Old Harbor**	**51.61**	**43**	*e*P		**P**	**18 47 57.1**	**-0.1**
	comp=Z,63nm,0.7s							
KLU	**Klutina**	**51.66**	**36**	*e*P		**P**	**18 47 58.8**	**+1.1**
DOPR	**Dopca**	**51.67**	**298**	⇓*i*P		**P**	**18 47 59.4**	**+1.4**
MLR	**Muntele Rosu**	**51.68**	**297**	⇓*i*P		**P**	**18 47 59.0**	**+0.8**
MLR	**Muntele Rosu**	**51.68**	**297**	*e*P		**P**	**18 47 58.8**	**+0.6**
MLR				pmax		pmax		
	comp=Z,19nm,1.0s							
MLR	**Muntele Rosu**	**51.68**	**297**	*e*P		**P**	**18 47 58.3**	**+0.1**
HOMB	**Homborsund**	**51.73**	**318**	*e*SS		**SS**	**18 59 01.2**	**+6.6**
RES	**Resolute Bay**	**51.74**	**8**	LR		LR	19 11 09.5	
	comp=Z,712nm,18.2s,baz=342,slow=37							
RES	**Resolute Bay**	**51.74**	**8**	*e*P		**P**	**18 47 58.3**	**+0.3**
RES				pmax		pmax		
	comp=Z,57nm,1.0s							
RES	**Resolute Bay**	**51.74**	**8**	*e*P		**P**	**18 47 57.8**	**-0.2**
	comp=Z,55nm,1.0s							
BLS5	**Blasjo**	**51.78**	**320**	*e*P		**P**	**18 47 58.8**	**+0.2**
BLS5				*e*S		**S**	**18 55 23.6**	**+3.8**
BLS5				*e*SS		**SS**	**18 58 58.7**	**+3.2**
OJC	**Ojcow**	**51.84**	**305**	*e*P		**P**	**18 47 59.4**	**+0.3**
OJC				*ep*P		**sP**	**18 48 06.9**	**+1.4**
OJC				*e*S		**S**	**18 55 24.5**	**+3.8**
OJC				*e*SS		**SKiKP**	**18 59 18.1**	**-6.1**
OJC				LMZ		LR	19 12 13.1	
	comp=Z,6µm,16.2s							
OJC	**Ojcow**	**51.84**	**305**	⇓*e*P		**P**	**18 47 59.4**	**+0.3**
OJC				*e**PP		**sP**	**18 48 06.9**	**+1.4**
OJC				*e*S		**S**	**18 55 24.5**	**+3.8**
OJC				MLR		MLR		
	comp=Z,6µm,16.2s							
OJC	**Ojcow**	**51.84**	**305**	*e*P		**P**	**18 47 59.0**	**-0.1**
SCO	**Scoresbysund**	**51.91**	**341**	*i* P		**P**	**18 47 59.2**	**-0.1**
	comp=Z,21nm,1.3s							
SCO	**Scoresbysund**	**51.91**	**341**	*i* P		**P**	**18 47 59.2**	**-0.1**
SCO				*i*			18 48 07.7	
SCO				pmax		pmax		
	comp=Z,21nm,1.3s							
SCO				MLR		MLR		
	comp=Z,1µm,16.0s							
FID	**Port Fidalgo**	**51.95**	**37**	*e*P		**P**	**18 48 00.4**	**+0.6**
DIV	**Divide**	**51.95**	**36**	*e*P		**P**	**18 48 00.7**	**+0.8**
	comp=Z,54nm,1.0s							
DAWY	**Dawson**	**52.08**	**31**	*e*P		**P**	**18 48 01.2**	**+0.5**
	comp=Z,55nm,1.0s							
VOIR		**52.20**	**298**	⇑*i*P		**P**	**18 48 03.3**	**+1.3**
VOIR		**52.20**	**298**	P		**P**	**18 48 02.7**	**+0.7**
VOIR				pmax		pmax		
	comp=Z,20nm,1.2s							
SNART	**Snartemo**	**52.20**	**319**	*e*P		**P**	**18 48 01.4**	**-0.3**
SNART				IVmBBB			18 48 11.1	
	comp=Z,681nm,2.2s							
GSI	**Gunungsitoli**	**52.23**	**194**	*e*P		**P**	**18 48 01.5**	**-0.8**
MTUR	**Matau**	**52.33**	**297**	⇑*i*P		**P**	**18 48 04.4**	**+1.5**
EYAK	**Cordova Ski Ar**	**52.35**	**37**	*e*P		**P**	**18 48 04.1**	**+1.4**
STAV	**Stavanger**	**52.40**	**320**	*e*P		**P**	**18 48 03.3**	**+0.2**
STAV				*e*S		**S**	**18 55 34.8**	**+6.8**
MNSI	**Mandailing Nat**	**52.46**	**191**	P		**P**	**18 48 02.7**	**-1.3**
ARR	**Arges**	**52.47**	**298**	⇑*i*P		**P**	**18 48 05.4**	**+1.5**
BMRM	**Bremner River**	**52.48**	**36**	*e*P		**P**	**18 48 04.4**	**+0.6**
	comp=Z,112nm,1.0s							
DRGR		**52.56**	**300**	⇓*i*P		**P**	**18 48 05.5**	**+0.9**
MUD	**Monsted U'grnd**	**52.65**	**316**	*i* P		**P**	**18 48 04.6**	**-0.4**
	comp=Z,36nm,0.9s							
MUD	**Monsted U'grnd**	**52.65**	**316**	*i* P		**P**	**18 48 04.6**	**-0.4**
MUD				*i*			18 48 12.6	
MUD				pmax		pmax		
	comp=Z,36nm,0.9s							
MUD				MLR		MLR		
	comp=Z,7µm,16.0s							
SUMG	**Summit**	**52.74**	**348**	⇓*i*P		**P**	**18 48 05.6**	**-0.4**
	comp=Z,26nm,1.2s							
SUMG	**Summit**	**52.74**	**348**	⇓*i*P		**P**	**18 48 05.6**	**-0.4**
SUMG				pmax		pmax		
	comp=Z,26nm,1.2s							
SUMG				MLR		MLR		
	comp=Z,770nm,18.0s							
SUMG	**Summit**	**52.74**	**348**	*e*P		**P**	**18 48 05.9**	**-0.1**
	comp=Z,24nm,0.9s							
BKNI	**Bangkinang**	**52.76**	**189**	*e*P		**P**	**18 48 06.2**	**-0.1**
RAGM	**Ragged Mountai**	**52.85**	**37**	*e*P		**P**	**18 48 07.8**	**+1.3**
RAGM				*ep*PcP		**PcP**	**18 49 14.7**	**-0.9**
OKC	**Ostrava-Krasne**	**52.90**	**306**	⇓*e*P		**P**	**18 48 07.5**	**+0.5**
OKC				*ex*		x	18 48 14.8	
OKC				*e*SS		**SKiKP**	**18 59 35.1**	**+10**
OKC				AMS		AMS	19 12 50.0	
	comp=Z,6µm,15.7s							
OKC	**Ostrava-Krasne**	**52.90**	**306**	*e*P		**P**	**18 48 07.5**	**+0.5**
OKC				*e*			18 48 14.8	
OKC				MLR		MLR		
	comp=Z,6µm,15.7s							
KSP	**Ksiaz**	**53.14**	**308**	*e*P		**P**	**18 48 09.3**	**+0.6**
KSP				*ep*P		**sP**	**18 48 17.0**	**+1.8**
KSP				*e*S		S	18 55 19.0	-19
KSP				*e*SS		SKiKP	18 59 42.0	+16
KSP				LMZ		LR	19 13 24.9	
	comp=Z,5µm,15.3s							
KSP	**Ksiaz**	**53.14**	**308**	⇓*e*P		**P**	**18 48 09.3**	**+0.6**
KSP				*e**PP		**sP**	**18 48 17.0**	**+1.8**
KSP				MLR		MLR		
	comp=Z,5µm,15.3s							
CRQM	**Cirque**	**53.15**	**36**	*e*P		**P**	**18 48 09.9**	**+1.1**
BALM	**Baldy**	**53.23**	**35**	*e*P		**P**	**18 48 10.6**	**+1.2**
BALM				pmax		pmax		
	comp=Z,77nm,0.9s							
BALM	**Baldy**	**53.23**	**35**	*e*P		**P**	**18 48 09.9**	**+0.5**
MORC	**Moravsky Berou**	**53.23**	**306**	⇑*i*P		**P**	**18 48 10.6**	**+1.1**
MORC	**Moravsky Berou**	**53.23**	**306**	*e*P		**P**	**18 48 10.2**	**+0.7**
MORC				pmax		pmax		
	comp=Z,130nm,0.9s							
MORC	**Moravsky Berou**	**53.23**	**306**	*e*P		**P**	**18 48 09.9**	**+0.4**
PSZ	**Piszkesteto**	**53.28**	**303**	⇑*i*P		**P**	**18 48 10.3**	**+0.4**
PSZ	**Piszkesteto**	**53.28**	**303**	*e*P		**P**	**18 48 10.3**	**+0.4**
PSZ				pmax		pmax		
	comp=Z,75nm,1.6s							
PSZ	**Piszkesteto**	**53.28**	**303**	*e*P		**P**	**18 48 10.3**	**+0.4**
	comp=Z,75nm,1.6s							
PSZ	**Piszkesteto**	**53.28**	**303**	⇓*e*P		**P**	**18 48 10.7**	**+0.8**
PSZ				*ex*		x	18 48 18.6	
KRLC	**Kraliky**	**53.41**	**307**	⇓*i*P		**P**	**18 48 11.4**	**+0.6**
KRLC				*ex*		x	18 48 19.3	
KRLC	**Kraliky**	**53.41**	**307**	⇓*i*P		**P**	**18 48 11.4**	**+0.6**
KRLC				*e*			18 48 19.3	
MRSI	**Marisa**	**53.41**	**163**	P		**P**	**18 48 11.9**	**+0.8**
DPC	**Dobruska-Polom**	**53.45**	**307**	⇓*i*P		**P**	**18 48 11.9**	**+0.8**
DPC				*ex*		x	18 48 20.2	
DPC				*e*SS		SKiKP	18 59 41.2	+15
DPC				AMS		AMS	19 13 20.0	
	comp=Z,7µm,14.0s							
DPC	**Dobruska-Polom**	**53.45**	**307**	⇓*i*P		**P**	**18 48 11.9**	**+0.8**
DPC				*e*			18 48 20.2	
DPC				MLR		MLR		
	comp=Z,7µm,14.0s							
SIRR	**Siria**	**53.45**	**300**	⇑*i*P		**P**	**18 48 12.4**	**+1.3**
UPC	**Upice**	**53.50**	**307**	⇓*i*P		**P**	**18 48 12.1**	**+0.7**
UPC				*e*SS		SKiKP	18 59 41.0	+15
UPC				AMS		AMS	19 13 30.0	
	comp=Z,6µm,14.1s							
UPC	**Upice**	**53.50**	**307**	⇓*i*P		**P**	**18 48 12.1**	**+0.7**
UPC				MLR		MLR		
	comp=Z,6µm,14.1s							
EDRB	**Edirne**	**53.63**	**293**	P		**P**	**18 48 12.4**	**-0.1**
EDRB	**Edirne**	**53.63**	**293**	P		**P**	**18 48 12.4**	**-0.1**
BZS	**Buzias**	**53.90**	**300**	⇓*i*P		**P**	**18 48 15.3**	**+0.9**
BUD	**Budapest**	**54.01**	**303**	⇓*e*P		**P**	**18 48 16.2**	**+1.1**
BUD				*ex*		x	18 48 24.5	
VRAC	**Vranov**	**54.01**	**306**	⇑*i*P		**P**	**18 48 16.6**	**+1.4**
VRAC	**Vranov**	**54.01**	**306**	P		**P**	**18 48 16.5**	**+1.4**
PVCC	**Panska Ves**	**54.17**	**308**	⇓*e*P		**P**	**18 48 17.6**	**+1.3**
PVCC				*ex*		x	18 48 24.7	
PVCC				AMS		AMS	19 14 10.0	
	comp=Z,4µm,14.1s							
PVCC	**Panska Ves**	**54.17**	**308**	*e*P		**P**	**18 48 17.6**	**+1.3**
PVCC				*e*			18 48 24.7	
PVCC				MLR		MLR		
	comp=Z,4µm,14.1s							
BRG	**Berggiesshubel**	**54.24**	**309**	*i* P		**P**	**18 48 17.3**	**+0.5**
	comp=Z,36nm,1.0s							
BRG				*ep*PP		PP	18 50 06.6	-12
	comp=Z,16nm,1.2s							
BRG				S		S	18 55 25.0	-28
BRG				SS		**SS**	**18 59 36.0**	**+1.5**
BRG	**Berggiesshubel**	**54.24**	**309**	*i* P		**P**	**18 48 17.3**	**+0.5**
BRG				*i*			18 48 24.9	
BRG				SS		**SS**	**18 59 36.0**	**+1.5**
BRG				pmax		pmax		
	comp=Z,36nm,1.0s							
BRG				MLR		MLR		
	comp=N,2µm,13.3s							
BRG				MLR		MLR		
	comp=E,3µm,13.3s							
BRG				MLR		MLR		
	comp=Z,4µm,13.8s							
CLL	**Collm**	**54.39**	**310**	⇓*i*P		**P**	**18 48 17.9**	**+0.1**
	comp=Z,33nm,1.0s							
CLL				*e*(S)		**S**	**18 55 49.0**	**-6.3**
CLL				*e*SS		SS	18 59 48.0	+11
CLL				Lmax			19 13 00.0	
CLL	**Collm**	**54.39**	**310**	*e*P		**P**	**18 48 18.0**	**+0.1**
CLL				pmax		pmax		
	comp=Z,220nm,2.0s							
CLL	**Collm**	**54.39**	**310**	*e*P		**P**	**18 48 17.6**	**-0.3**
CSKK	**Cs˘tkako**	**54.47**	**303**	⇓*e*P		**P**	**18 48 19.1**	**+0.6**
GOPC	**GO Pecny, Ondr**	**54.48**	**308**	⇓*e*P		**P**	**18 48 19.3**	**+0.7**
GOPC				*ex*		x	18 48 27.1	
GOPC				*ep*PP		**PP**	**18 50 25.7**	**+5.3**
GOPC				*ex*		x	18 55 31.8	
GOPC				*e*SS		SS	18 59 50.0	+12
GOPC				AMS		AMS	19 14 00.0	
	comp=Z,6µm,14.2s							
GOPC	**GO Pecny, Ondr**	**54.48**	**308**	*e*P		**P**	**18 48 19.3**	**+0.7**
GOPC				*e*			18 48 27.1	
GOPC				*e*			18 50 25.7	
GOPC				MLR		MLR		
	comp=Z,6µm,14.2s							
CSS	**Mathiatis**	**54.52**	**283**	P		**P**	**18 48 16.9**	**-2.2**
CSS	**Mathiatis**	**54.52**	**283**	*e*P		**P**	**18 48 18.0**	**-1.1**
	comp=Z,10nm,0.9s							
PRU	**Pruhonice**	**54.55**	**308**	⇓*i*P		**P**	**18 48 19.7**	**+0.7**
PRU				*ex*		x	18 48 27.5	
PRU				*ep*PP		**PP**	**18 50 26.7**	**+5.7**
PRU				*ex*		x	18 55 32.5	
PRU				*ex*		x	18 59 54.8	
PRU				AMS		AMS	19 14 10.0	
	comp=Z,6µm,14.3s							
PRU	**Pruhonice**	**54.55**	**308**	⇓*i*P		**P**	**18 48 19.7**	**+0.7**
PRU				*e*			18 48 27.5	
PRU				*e*			18 50 26.7	
PRU				MLR		MLR		
	comp=Z,6µm,14.3s							
PLD	**Plovdiv**	**54.59**	**295**	P		**P**	**18 48 20.1**	**+0.7**
PCA	**Pinnacle**	**54.62**	**35**	*e*P		**P**	**18 48 20.2**	**+0.7**
ALN	**Alexandroupoli**	**54.66**	**293**	P		**P**	**18 48 19.6**	**-0.4**
ALN	**Alexandroupoli**	**54.66**	**293**	P		**P**	**18 48 19.6**	**-0.4**
ALN	**Alexandroupoli**	**54.66**	**293**	P		**P**	**18 48 19.6**	**-0.4**
HYT	**Haines Junctio**	**55.02**	**33**	*e*P		**P**	**18 48 23.7**	**+1.1**
SOP	**Sopron**	**55.11**	**305**	P		**P**	**18 48 24.9**	**+1.7**
SOP				pmax		pmax		
	comp=Z,31nm,1.9s							
SOP	**Sopron**	**55.11**	**305**	⇓*e*P		**P**	**18 48 24.3**	**+1.1**
SOP				*ex*		x	18 48 32.4	
GADA	**Gvkgeada**	**55.22**	**292**	P		**P**	**18 48 24.6**	**+0.6**
GADA	**Gvkgeada**	**55.22**	**292**	*e*P		**P**	**18 48 24.6**	**+0.6**
SMTH	**Samothraki Isl**	**55.23**	**293**	P		**P**	**18 48 23.4**	**-0.8**
SMTH	**Samothraki Isl**	**55.23**	**293**	*e*P		**P**	**18 48 23.4**	**-0.8**
CONA	**Conrad Observa**	**55.29**	**305**	*es*P		**P**	**18 48 25.7**	**+1.1**
	comp=Z,21nm,0.9s,SNR=19							
NKC	**Novy Kostel**	**55.38**	**309**	⇓*i*P		**P**	**18 48 25.6**	**+0.5**
NKC				*ex*		x	18 48 33.3	
NKC				AMS		AMS	19 14 20.0	
	comp=Z,5µm,16.1s							
NKC	**Novy Kostel**	**55.38**	**309**	⇓*i*P		**P**	**18 48 25.6**	**+0.5**
NKC				*e*			18 48 33.3	
NKC				MLR		MLR		
	comp=Z,5µm,16.1s							
KAVA	**Kavala**	**55.44**	**294**	P		**P**	**18 48 26.3**	**+0.7**
KAVA	**Kavala**	**55.44**	**294**	*e*P		**P**	**18 48 26.3**	**+0.7**
MOX	**Moxa**	**55.48**	**310**	P		**P**	**18 48 26.3**	**+0.5**
MOX				pmax		pmax		
	comp=Z,53nm,1.1s							
KHC	**Kasperske Hory**	**55.59**	**308**	⇓*i*P		**P**	**18 48 27.3**	**+0.6**
KHC				*ex*		x	18 48 35.2	
KHC				*ep*PP		**PP**	**18 50 36.1**	**+5.7**
KHC				*ex*		x	18 55 45.9	
KHC				*e*SS		SS	19 00 07.9	+12
KHC				AMS		AMS	19 14 40.0	
	comp=Z,7µm,14.3s							
KHC	**Kasperske Hory**	**55.59**	**308**	⇓*i*P		**P**	**18 48 27.3**	**+0.6**
KHC				*e*			18 48 35.2	
KHC				*e*			18 50 36.1	
KHC				MLR		MLR		
	comp=Z,7µm,14.3s							
KHC	**Kasperske Hory**	**55.59**	**308**	*e*P		**P**	**18 48 27.0**	**+0.4**
	comp=Z,16nm,1.1s							
GEC2	**GERESS Array S**	**55.73**	**307**	*e*P		**P**	**18 48 28.5**	**+0.8**
GEC2	**GERESS Array S**	**55.73**	**307**	*e*P		**P**	**18 48 28.0**	**+0.3**
GERES	**GERESS Array B**	**55.73**	**307**	P		**P**	**18 48 27.9**	**+0.2**
	comp=Z,9.5nm,0.9s,baz=50,slow=7.1,SNR=61							
GERES				LR		LR	19 14 25.0	
	comp=Z,977nm,20.4s,baz=50,slow=38							
GEA0	**GERESS Array S**	**55.73**	**307**	*e*P		**P**	**18 48 27.4**	**-0.3**
DIVS	**Divibare**	**55.78**	**299**	P		**P**	**18 48 26.0**	**-2.1**
LIA	**Limnos Island**	**55.82**	**293**	P		**P**	**18 48 28.4**	**+0.1**
LIA	**Limnos Island**	**55.82**	**293**	P		**P**	**18 48 28.4**	**+0.1**
BEHE	**Becsehely**	**55.83**	**303**	*e*P		**P**	**18 48 29.3**	**+1.0**
SRS	**Serrai**	**55.87**	**295**	P		**P**	**18 48 28.7**	**0.0**
SRS	**Serrai**	**55.87**	**295**	*e*P		**P**	**18 48 28.7**	**0.0**
SRS	**Serrai**	**55.87**	**295**	*e*P		**P**	**18 48 28.7**	**0.0**
SIGR	**SIGRI**	**55.91**	**291**	P		**P**	**18 48 29.1**	**+0.1**
SIGR	**SIGRI**	**55.91**	**291**	*e*P		**P**	**18 48 29.1**	**+0.1**
WET	**Wettzell**	**55.92**	**308**	P		**P**	**18 48 29.7**	**+0.7**
ARSA	**Arzberg**	**55.92**	**305**	*ep*P		**P**	**18 48 30.1**	**+1.0**
	comp=Z,19nm,1.1s,SNR=11							
YER	**Yerkesik**	**55.96**	**288**	P		P	18 48 35.7	+6.2
DHAK	**Deception Hill**	**56.07**	**35**	*e*P		**P**	**18 48 31.3**	**+1.4**
MOA	**Molln**	**56.13**	**306**	*ep*P		**P**	**18 48 31.2**	**+0.6**
	comp=Z,16nm,0.9s,SNR=11							
OUR	**Ouranopolis**	**56.19**	**294**	P		**P**	**18 48 31.1**	**+0.1**
OUR	**Ouranopolis**	**56.19**	**294**	*e*P		**P**	**18 48 31.1**	**+0.1**
OUR	**Ouranopolis**	**56.19**	**294**	*e*P		**P**	**18 48 31.1**	**+0.1**
SOH	**Sokhos**	**56.20**	**294**	P		**P**	**18 48 31.9**	**+0.7**
SOH				pmax		pmax		
	comp=Z,19nm,1.9s							
KNT	**Kendrikon**	**56.22**	**295**	P		**P**	**18 48 31.6**	**+0.4**
BIGH	**Upper Bighouse**	**56.27**	**324**	*e*P		**P**	**18 48 31.2**	**-0.1**
BIGH				AMB		AMB	18 48 32.1	
	comp=Z,119nm,1.2s							
GRFO	**Grafenberg**	**56.32**	**309**	*e*P		**P**	**18 48 32.1**	**+0.2**
GRFO				pmax		pmax		
	comp=Z,109nm,1.4s							
GRFO	**Grafenberg**	**56.32**	**309**	*e*P		**P**	**18 48 32.0**	**+0.2**
	comp=Z,109nm,1.4s							
SMG	**Samos**	**56.39**	**290**	P		P	18 48 40.3	+7.8
GROS	**Grobnik**	**56.47**	**304**	*e*P		**P**	**18 48 32.5**	**-0.5**
GROS				*ep*P		**sP**	**18 48 40.9**	**+1.4**
PERS	**Pernice**	**56.55**	**304**	*e*P		**P**	**18 48 34.0**	**+0.5**
PERS				*ep*P		**sP**	**18 48 42.0**	**+2.1**
SOKA	**Soboth**	**56.56**	**305**	*ep*P		**P**	**18 48 34.2**	**+0.6**
	comp=Z,23nm,1.2s,SNR=15							
GRG	**Griva**	**56.63**	**295**	P		**P**	**18 48 34.7**	**+0.5**
GRG				pmax		pmax		
	comp=Z,51nm,1.9s							
DOBS	**Dobrina**	**56.70**	**304**	*e*P		**P**	**18 48 34.6**	**-0.1**
MCD	**Coleburn Disti**	**56.71**	**323**	*e*P		**P**	**18 48 34.0**	**-0.4**
SKAG	**Skagway**	**56.77**	**33**	*e*P		**P**	**18 48 35.4**	**+0.5**
	comp=Z,64nm,0.9s							
SKAG				*e*PcP		**PcP**	**18 49 30.9**	**+0.3**
MME1	**Meikle Cairn**	**56.80**	**323**	*e*P		**P**	**18 48 35.0**	**-0.2**
BUG	**Bochum--Univer**	**56.90**	**313**	P		**P**	**18 48 36.6**	**+0.7**
BUG				pmax		pmax		
	comp=Z,47nm,1.7s							
OBKA	**Obir**	**56.92**	**305**	*ep*P		**P**	**18 48 37.0**	**+0.8**
	comp=Z,45nm,0.9s,SNR=24							
DRUM	**Mains of Drumt**	**56.93**	**322**	*e*P		**P**	**18 48 36.1**	**+0.2**
DRUM				AMB		AMB	18 48 45.7	
	comp=Z,109nm,1.2s							
DRUM				AMS		AMS	19 15 48.6	
	comp=Z,2µm,13.5s							
AOS	**Alonnisos**	**57.05**	**293**	P		**P**	**18 48 36.5**	**-0.6**
AOS	**Alonnisos**	**57.05**	**293**	*e*P		**P**	**18 48 36.5**	**-0.6**
KBA	**Koelnbreinsper**	**57.12**	**306**	*ep*P		**P

HPK Haverah Park 58.80 320 eP P 18 48 48.8 -0.4
KLV Kalavryta, Ach 58.80 293 P P 18 48 46.2 -3.4
KLV Kalavryta, Ach 58.80 293 eP P 18 48 46.2 -3.4
FUORN Ofenpass-Fuorn 58.94 307 eP P 18 48 50.9 +0.2
GIVF Givet 58.95 313 eP P 18 48 49.8 -0.5
GIVF pmax pmax
comp=Z,27nm,1.1s
DAVOX Davos/Dischmat 59.01 308 P P 18 48 51.5 +0.4
comp=Z,21nm,1.0s,baz=58,slow=4.5,SNR=20
DOU Dourbes 59.05 313 P P 18 48 51.2 +0.2
CDF Champ du Feu 59.06 310 eP P 18 48 50.9 -0.3
CDF pmax pmax
comp=Z,23nm,0.9s
DRO Drossia 59.12 293 P P 18 48 51.4 -0.3
LHO Holmfirth 59.20 319 eP P 18 48 50.8 -1.2
IDI Anoyia 59.21 289 eP P 18 48 50.4 -2.0
comp=Z,40nm,0.9s
BAIF Baives 59.25 313 eP P 18 48 51.9 -0.5
BAIF pmax pmax
comp=Z,29nm,1.2s
ECH Echery 59.26 310 eP P 18 48 52.7 +0.2
DLBC Dease Lake 59.29 31 LR LR 19 19 02.7
comp=Z,629nm,19.0s,baz=338,slow=41
DLBC Dease Lake 59.29 31 eP P 18 48 53.0 +0.4
comp=Z,34nm,0.9s
GAL1 Galloway 59.29 322 eP P 18 48 52.6 0.0
GAL1 AMS AMS 19 16 52.1
comp=Z,581nm,14.6s
SFJD Kangerlussuaq 59.41 351 ||iP P 18 48 52.8 -0.4
comp=Z,46nm,1.0s
SFJD Kangerlussuaq 59.41 351 eP P 18 48 53.4 +0.2
SFJD pmax pmax
comp=Z,43nm,1.0s
SFJD Kangerlussuaq 59.41 351 eP P 18 48 53.2 0.0
TUE Stuetta 59.49 308 eP P 18 48 53.8 -0.5
comp=Z,20nm,0.8s
MOF Molkenrain 59.53 310 eP P 18 48 54.6 +0.1
CWF Charnwood Fore 59.59 318 eP P 18 48 53.9 -0.7
CWF AMS AMS 19 19 54.5
comp=Z,1µm,12.4s
CWF Charnwood Fore 59.59 318 eP P 18 48 54.1 -0.5
THEF They Montfort 59.79 311 eP P 18 48 56.3 +0.1
YKW3 Yellowknife Ar 59.97 21 eP P 18 48 56.7 -0.5
YKA Yellowknife Ar 60.03 22 P P 18 48 56.7 -0.9
comp=Z,22nm,0.8s,baz=330,slow=6.8,SNR=42
YKA PKPPKP P'P'df 19 18 23.9 -6.6
comp=Z,1.3nm,0.8s,baz=301,slow=24,SNR=2.8
YKA PKP2bc 19 18 33.7
comp=Z,2.0nm,0.9s,baz=148,slow=1.8,SNR=4.4
YKB5 Yellowknife Ar 60.03 22 eP P 18 48 57.1 -0.5
GMM Mts of Mourne 60.24 322 eP P 18 48 58.4 -0.7
HLM1 Long Mynd 60.38 319 eP P 18 48 58.8 -1.4
HLM1 AMS AMS 19 18 31.8
comp=Z,1µm,15.1s
AQU L'Aquila 60.44 302 eP P 18 49 00.7 0.0
AQU L'Aquila 60.44 302 eP P 18 49 00.7 0.0
comp=Z,97nm,1.1s
SENIN Lac Senin/Sane 60.54 309 eP P 18 49 01.1 -0.5
VLC Villacollemand 60.65 305 eP P 18 49 01.8 -0.3
comp=Z,48nm,1.5s
CUC Castrocucco 60.87 299 eP P 18 49 02.7 -1.0
comp=Z,39nm,1.2s
TIP Timpagrande 60.95 297 P P 18 49 04.3 0.0
TIP Timpagrande 60.95 297 eP P 18 49 04.3 0.0
LPW Lampeter 61.16 319 eP P 18 49 04.8 -0.6
LPW AMB AMB 18 49 14.1
comp=Z,91nm,1.4s
LPW AMS AMS 19 18 31.9
comp=Z,1µm,15.0s
LPL La Plagne 61.43 308 eP P 18 49 07.6 -0.1
LPL pmax pmax
comp=Z,24nm,0.9s
LPG La Plagne 61.44 308 eP P 18 49 07.8 0.0
LPG pmax pmax
comp=Z,20nm,0.9s
SSF Saint Saulge 61.78 311 eP P 18 49 08.9 -0.8
SSF pmax pmax
comp=Z,34nm,1.0s
GDM Grand'Maison 61.96 309 eP P 18 49 11.2 +0.1
AVF Avril sur Loir 62.05 311 eP P 18 49 10.7 -0.8
AVF pmax pmax
comp=Z,19nm,1.1s
CEL Celeste 62.09 297 eP P 18 49 11.4 -0.5
comp=Z,52nm,1.1s
GRN Grenoble 62.10 309 eP P 18 49 12.3 +0.3
LDF La Druitiere 62.23 315 eP P 18 49 11.3 -1.4
LDF pmax pmax
comp=Z,52nm,1.0s
SBF Sospel 62.32 307 eP P 18 49 12.6 -0.8
SBF pmax pmax
comp=Z,52nm,1.0s
LUCF Luceram 62.34 307 eP P 18 49 13.0 -0.6
MVIF Mont Vial 62.43 307 eP P 18 49 14.9 +0.6
REVF Revere 62.44 307 eP P 18 49 14.4 +0.1
PLDF La Plantade 62.55 311 eP P 18 49 15.7 +0.7
SSB Saint Sauveur 62.64 310 eP P 18 49 14.8 -0.8
SSB Saint Sauveur 62.64 310 eP P 18 49 14.8 -0.8
SSB Saint Sauveur 62.64 310 eP P 18 49 14.5 -1.1
DIB Dawson Inlet, 62.67 36 eP P 18 49 16.7 +1.2
AGO Saint Agoulin 62.71 311 eP P 18 49 17.3 +1.3
VIVF Saint-Julien-l 62.90 309 eP P 18 49 16.6 -0.7
VIVF pmax pmax
comp=Z,20nm,1.0s
DAMY Dhamar 62.98 258 eP P 18 49 18.3 -0.2
comp=Z,75nm,1.2s
LBL Lubilhac 63.28 310 eP P 18 49 21.5 +1.7
FRB Frobisher Bay 63.68 359 LR LR 19 18 12.2
comp=Z,211nm,18.6s,baz=338,slow=37
SOEI Soe 63.83 163 eP P 18 49 21.4 -2.3
QUIF Quistinic 64.05 316 eP P 18 49 23.7 -1.0
QUIF pmax pmax
comp=Z,26nm,0.8s
CAF Calviac 64.06 311 eP P 18 49 24.9 0.0
CAF pmax pmax
comp=Z,19nm,0.9s
BBB Bella Bella 65.03 35 LR LR 19 19 33.5
comp=Z,423nm,19.7s,baz=336,slow=38
BBB Bella Bella 65.03 35 eP P 18 49 31.9 +0.8
SJAF Saint Jean de 65.54 309 eP P 18 49 34.2 -0.4
VALF Valcebollere 66.01 309 eP P 18 49 38.1 +0.3
VIEF Viey 66.57 311 eP P 18 49 41.9 +0.6
KEST Kesra 67.46 300 P P 18 49 46.8 -0.3
comp=Z,12nm,0.7s,baz=300,slow=1.9,SNR=18
CMAH Djebel Manchou 67.78 302 P P 18 49 46.9 -2.2
CAEH 'Ain El Ouahch 67.96 302 P P 18 49 48.8 -1.3
ABSA Djebel Ababsia 68.02 301 P P 18 49 47.4 -3.2
MTN Manton Dam 68.28 156 eP P 18 49 50.8 -1.4
LLLB Lillooet 68.44 32 eP P 18 49 53.9 +0.9
EDM Edmonton 68.61 26 eP P 18 49 53.7 -0.3
EDM pmax pmax
comp=Z,87nm,0.8s
EDM Edmonton 68.61 26 eP P 18 49 53.7 -0.3
comp=Z,87nm,0.8s
DFRA Djebel Bou Aff 68.64 302 P P 18 49 52.8 -1.7
SET Setif 69.14 303 P P 18 49 59.0 +1.4
CKHR Kef el Ahmar 69.23 302 P P 18 49 56.3 -1.9
PGC Sidney 69.61 34 eP P 18 50 00.5 +0.3
comp=Z,19nm,0.8s
FFC Flin Flon 69.79 18 eP P 18 50 00.8 -0.4
FFC pmax pmax
comp=Z,30nm,1.1s
FFC Flin Flon 69.79 18 eP P 18 50 00.8 -0.4
comp=Z,30nm,1.1s
A04D Lummi Island 69.81 33 P P 18 50 02.2 +0.9
baz=330,SNR=7.3
PMG Port Moresby 70.23 139 P P 18 50 04.3 0.0
comp=Z,32nm,1.1s,baz=177,slow=1.0,SNR=3.1
PMG Port Moresby 70.23 139 eP P 18 50 04.8 +0.5
PMG pmax pmax
comp=Z,160nm,1.2s
B06A Marblemount 70.38 33 eP P 18 50 05.1 +0.2
B05A Bryant 70.40 33 P P 18 50 05.7 +0.7
baz=330,SNR=16
PBRG Braganca 70.45 314 eP P 18 50 06.1 +0.5
comp=Z,32nm,2.2s
JCW Jim Creek 70.52 33 eP P 18 50 06.2 +0.4
NLWA Neilton Lookou 70.56 35 eP P 18 50 06.1 0.0
comp=Z,59nm,1.2s
GNW Green Mountain 70.77 34 eP P 18 50 07.6 +0.3
ES19 SONSECA Array 70.89 311 eP P 18 50 08.0 -0.2
ESDC Sonseca Array 70.94 311 P P 18 50 08.6 +0.1
comp=Z,18nm,0.8s,baz=32,slow=6.3,SNR=107
ESDC LR LR 19 21 42.7
comp=Z,208nm,21.6s,baz=55,slow=36

ESLA Sonseca Array 70.94 311 eP P 18 50 08.5 -0.1
PGAV Gavieira, Arco 70.98 315 eP P 18 50 09.5 +0.7
comp=Z,66nm,1.8s
PGAV Gavieira, Arco 70.98 315 eLR LR 19 21 08.6
comp=Z,2µm,18.0s
PCAB Cabril 71.09 315 eP P 18 50 09.8 +0.4
comp=Z,82nm,1.4s
MVO Moncorvo 71.10 314 eP P 18 50 09.3 -0.2
comp=Z,32nm,1.6s
MVO Moncorvo 71.10 314 ePcP P 18 50 18.8 +9.3
MVO Moncorvo 71.10 314 eLR LR 19 21 45.6
comp=Z,2µm,18.0s
B08A Colville Reser 71.22 32 eP P 18 50 10.7 +0.6
PAB San Pablo 71.22 311 eP P 18 50 10.6 +0.3
PAB San Pablo 71.22 311 eP P 18 50 10.2 -0.1
POLO Lamas de Olo 71.26 315 eP P 18 50 10.9 +0.4
comp=Z,19nm,1.8s
POLO Lamas de Olo 71.26 315 ePcP P 18 50 17.4 +6.9
PVRL Vila Real 71.31 314 ePcP P 18 50 20.1 +9.4
D05A Enumclaw 71.37 34 eP P 18 50 12.0 +1.1
E03A Lebam 71.39 35 eP P 18 50 12.0 +1.0
WTV Waterville 71.60 32 eP P 18 50 13.1 +0.7
LON Longmire 71.82 34 eP P 18 50 14.6 +0.9
LON Longmire 71.82 34 eP P 18 50 14.2 +0.4
PVIS Viseu 71.84 314 eP P 18 50 14.3 +0.3
comp=Z,28nm,1.4s
PVIS Viseu 71.84 314 ePcP P 18 50 21.3 +7.3
TBM Table Mountain 71.85 33 eP P 18 50 14.4 +0.5
MTE Manteigas 71.95 314 eP P 18 50 15.1 +0.4
comp=Z,49nm,1.1s
MTE Manteigas 71.95 314 eLR LR 19 21 15.4
comp=Z,2µm,18.0s
MTE Manteigas 71.95 314 eP P 18 50 14.3 -0.3
comp=Z,22nm,0.8s
F04D Rainier, OR 71.98 35 P P 18 50 16.0 +1.4
baz=330
NEW Newport 71.99 30 P P 18 50 15.2 +0.6
comp=Z,13nm,0.7s,baz=338,slow=6.1,SNR=22
NEW Newport 71.99 30 P P 18 50 15.4 +0.6
baz=333,SNR=15
NEW Newport 71.99 30 eP P 18 50 15.3 +0.6
comp=Z,15nm,0.7s
TDL Tradedollar La 72.03 34 eP P 18 50 15.9 +0.8
C09A Chrisman Ranch 72.04 31 eP P 18 50 15.6 +0.6
WALA Waterton Lakes 72.22 28 eP P 18 50 16.4 +0.2
comp=Z,30nm,0.8s
FITZ Fitzroy Crossi 72.23 163 P P 18 50 15.6 -0.6
comp=Z,21nm,0.9s,baz=347,slow=5.4,SNR=22
FITZ Fitzroy Crossi 72.23 163 P P 18 50 15.6 -0.6
baz=41,SNR=10
FITZ Fitzroy Crossi 72.23 163 eP P 18 50 15.7 -0.6
comp=Z,31nm,1.0s
D08A Wollman Farm, 72.50 32 eP P 18 50 18.1 +0.4
SCHQ Schefferville 72.57 357 P P 18 50 17.2 -0.8
comp=Z,18nm,0.8s,baz=20,slow=5.6,SNR=9.1
SCHQ LR LR 19 22 37.4
comp=Z,321nm,20.6s,baz=332,slow=36
E07A Sunnyside 72.63 33 eP P 18 50 19.2 +0.6
G03D McMinnville, O 72.65 36 P P 18 50 19.8 +1.1
baz=330
PCAS Casmilo, Conde 72.65 314 eP P 18 50 19.3 +0.5
comp=Z,41nm,1.5s
PCAS Casmilo, Conde 72.65 314 ePcP P 18 50 25.3 +6.5
HAWA Hanford 72.89 33 eP P 18 50 20.9 +0.9
comp=Z,43nm,1.0s
COEN Coen 72.93 145 eP P 18 50 19.6 -0.9
comp=Z,22nm,0.8s
PTOM Tomar 72.97 314 eP P 18 50 20.8 +0.1
comp=Z,26nm,1.1s
BLMT Blacktail Moun 73.04 29 eP P 18 50 21.7 +0.5
BSMT Bassoo Peak 73.06 29 eP P 18 50 22.6 +1.3
E09A Wood Farm, Sta 73.23 32 eP P 18 50 22.5 +0.5
PESTR Estremoz 73.23 313 eP P 18 50 22.3 +0.1
comp=Z,30nm,1.1s
PESTR Estremoz 73.23 313 ePcP P 18 50 28.5 +6.3
YBMT Yellow Bay 73.27 28 eP P 18 50 23.3 +0.9
JTMT Jette 73.30 29 eP P 18 50 23.4 +0.7
G05D Wamic, OR 73.30 34 P P 18 50 23.3 +0.8
baz=331
PMTG Montargil 73.34 314 eP P 18 50 23.3 +0.4
comp=Z,42nm,1.8s
PMTG Montargil 73.34 314 ePcP P 18 50 30.1 +7.2
G06A Carlson Farm, 73.54 34 eP P 18 50 24.1 +0.1
PBAR Barrancos 73.55 312 eP P 18 50 24.8 +0.7
comp=Z,97nm,1.6s
PBAR Barrancos 73.55 312 ePcP P 18 50 30.6 +6.5
SWMT Swartz Lake 73.59 29 eP P 18 50 25.5 +1.1
EVO Evora 73.69 313 eP P 18 50 25.2 +0.3
comp=Z,32nm,1.7s
EVO Evora 73.69 313 ePcP PcP 18 50 34.3 -6.4
PMAFR Mafra 73.90 314 ePcP PcP 18 50 34.8 -6.8
I03D Drain, OR 73.93 36 P P 18 50 27.2 +1.0
baz=330,SNR=11
SLMT Seeley Lake 73.98 28 eP P 18 50 27.1 +0.4
F10A Beach Ranch, E 74.00 31 eP P 18 50 27.2 +0.5
LIS Lisbon 74.04 314 eP P 18 50 27.2 +0.3
PBEJ Beja 74.05 313 eP P 18 50 27.4 +0.4
comp=Z,33nm,1.4s
PBEJ Beja 74.05 313 ePcP P 18 50 33.9 +6.9
G08A Pilot Rock 74.05 33 eP P 18 50 27.8 +0.7
I05D Terrebonne, OR 74.08 35 P P 18 50 27.8 +0.6
baz=331
I04A Tendick Farm, 74.18 36 P P 18 50 28.3 +0.5
baz=331,SNR=7.4
MSO Missoula 74.23 29 P P 18 50 28.8 +0.8
baz=335,SNR=72
MSO Missoula 74.23 29 eP P 18 50 28.9 +0.8
PNCL Nicolau / Gran 74.27 313 eP P 18 50 28.9 +0.6
comp=Z,34nm,2.0s
EGMT Eagleton 74.30 26 P P 18 50 28.5 +0.1
baz=337,SNR=5.9
CHMT Chamberlain Mo 74.35 28 eP P 18 50 29.0 +0.1
MESJ Messejana 74.36 313 eP P 18 50 29.3 +0.5
MESJ AMb AMB 18 50 31.4
comp=Z,54nm,1.5s
MESJ Messejana 74.36 313 eP P 18 50 29.8 +1.0
comp=Z,54nm,1.6s
MESJ Messejana 74.36 313 ePcP P 18 50 36.0 +7.2
MBWA Marble Bar 74.37 169 eP P 18 50 27.4 -1.5
comp=Z,62nm,0.9s
PCVE Castro Verde 74.45 313 eP P 18 50 29.9 +0.6
comp=Z,80nm,1.8s
PCVE Castro Verde 74.45 313 ePcP P 18 50 36.0 +6.7
PVAQ Vaqueiros 74.49 312 eP P 18 50 30.1 +0.5
comp=Z,58nm,1.6s
PVAQ Vaqueiros 74.49 312 ePcP P 18 50 36.3 +6.7
PVAQ Vaqueiros 74.49 312 eLR LR 19 21 53.9
comp=Z,762nm,18.0s
PBDV Barranco-de-Ve 74.72 312 ePcP PcP 18 50 38.2 -6.9
HRY Holter Researc 74.94 28 eP P 18 50 32.9 +0.7
BMO Blue Mountains 74.97 32 eP P 18 50 33.0 +0.6
comp=Z,77nm,0.8s
MORF Marmelete 74.99 313 eP P 18 50 32.6 +0.1
MORF AMb AMB 18 50 34.5
comp=Z,66nm,1.2s
HUMO Hull Mountain 75.02 37 eP P 18 50 33.3 +0.7
comp=Z,144nm,1.2s
A25A Svangstu Ranch 75.03 21 P P 18 50 33.1 +0.5
baz=341,SNR=7.5
J05D Fort Rock, OR 75.04 35 P P 18 50 33.9 +1.0
baz=332,SNR=24
ULM Lac du Bonnet 75.17 16 P P 18 50 32.5 -0.8
comp=Z,18nm,1.0s,baz=342,slow=5.6,SNR=14
ULM LR LR 19 26 45.3
comp=Z,406nm,18.5s,baz=334,slow=38
ULM Lac du Bonnet 75.17 16 eP P 18 50 32.2 -1.2
L02D Cave Junction, 75.18 37 P P 18 50 34.6 +1.1
baz=330
DGMT Dagmar 75.24 22 P P 18 50 34.0 +0.2
baz=340,SNR=10
DGMT Dagmar 75.24 22 eP P 18 50 34.2 +0.4
comp=Z,92nm,1.1s
A26A Wade Farm, Ken 75.30 20 P P 18 50 34.3 +0.2
baz=342
K04D Chiloquin, OR 75.44 36 P P 18 50 36.0 +0.9
baz=331
LRM Limekiln Ridge 75.57 28 eP P 18 50 36.0 0.0
KRMB Red Mountain 75.61 38 eP P 18 50 37.6 +1.4
K05A Summer Lake 75.65 35 eP P 18 50 37.3 +0.8
A28A Rude Farm, Bot 75.66 19 P P 18 50 36.6 +0.4
baz=343
A29A Manning Farm, 75.84 19 P P 18 50 37.0 -0.3
baz=343,SNR=12
WRAB Tennant Creek 75.89 155 deP P 18 50 36.7 -1.0
WRAB pmax pmax
comp=Z,114nm,0.9s

WRAB MLR MLR
comp=Z,1µm,21.0s
WRAB Tennant Creek 75.89 155 eP P 18 50 36.7 -1.0
comp=Z,47nm,0.8s
WR1 Warramunga Arr 75.90 155 eP P 18 50 36.9 -0.9
WRA Warramunga Arr 75.90 155 P P 18 50 36.9 -0.9
comp=Z,35nm,0.8s,baz=347,slow=6.3,SNR=152
WB2 Warramunga Arr 75.90 155 eP P 18 50 36.6 -1.2
DLMT Dillon 75.95 29 eP P 18 50 38.6 +0.5
comp=Z,89nm,1.0s
BOZ Bozeman (W) 76.01 28 P P 18 50 38.8 +0.4
baz=336,SNR=40
BOZ Bozeman (W) 76.01 28 eP P 18 50 38.7 +0.3
BOZ Bozeman (W) 76.01 28 eP P 18 50 38.7 +0.3
comp=Z,58nm,1.4s
M02C Callahan 76.12 37 P P 18 50 40.3 +1.2
baz=331,SNR=21
M04C Macdoel 76.15 36 P P 18 50 39.9 +0.6
baz=331,SNR=11
C25A Freed Ranch, W 76.16 22 P P 18 50 39.9 +0.8
baz=341
JCC Jacoby Creek, 76.18 38 eP P 18 50 40.0 +0.7
KHMM Horse Mountain 76.24 38 eP P 18 50 40.8 +1.0
B29A Wagenman Farm, 76.26 19 P P 18 50 39.3 -0.3
baz=343,SNR=11
A32A Rocking H Ranc 76.35 17 P P 18 50 39.7 -0.4
baz=345
MCMT McKenzie Canyo 76.36 29 eP P 18 50 41.1 +0.5
GCMT Greycliff 76.38 26 eP P 18 50 41.0 +0.5
LAO LASA Array 76.43 24 P P 18 50 40.5 -0.2
baz=339,SNR=5.6
LAO LASA Array 76.43 24 eP P 18 50 40.2 -0.5
comp=Z,21nm,1.1s
B30A Myrvik Farm, E 76.47 18 P P 18 50 40.2 -0.6
baz=344,SNR=14
A33A Warroad 76.52 16 P P 18 50 40.2 -0.9
baz=346,SNR=14
N02D Trinity Center 76.54 37 P P 18 50 42.2 +0.8
baz=331,SNR=19
MOD Modoc Plateau 76.59 35 eP P 18 50 42.4 +0.6
comp=Z,58nm,1.1s
WVOR Wild Horse Val 76.69 34 eP P 18 50 42.7 +0.4
WVOR pmax pmax
comp=Z,42nm,1.0s
WVOR Wild Horse Val 76.69 34 eP P 18 50 42.7 +0.4
comp=Z,42nm,1.0s
MFID Camas Ranch 76.73 32 eP P 18 50 42.9 +0.4
comp=Z,27nm,0.8s
QLMT Earthquake Lak 76.77 28 eP P 18 50 43.2 +0.4
MDT Midelt 76.81 307 P P 18 50 43.2 +0.1
comp=Z,25nm,0.8s,baz=48,slow=6.1,SNR=32
MDT LR LR 19 28 55.6
comp=Z,520nm,18.5s,slow=39
KMRM Mail Ridge 76.82 38 eP P 18 50 43.8 +0.8
B32A Ashes, Strandq 76.85 17 P P 18 50 42.0 -0.9
baz=345,SNR=11
WDC Whiskeytown Da 76.94 37 eP P 18 50 43.8 +0.2
WDC Whiskeytown Da 76.94 37 eP P 18 50 43.6 0.0
YHH Holmes Hill 76.97 28 eP P 18 50 44.0 -0.1
D26A Manning 76.99 21 P P 18 50 44.3 +0.5
baz=341,SNR=5.9
HLID Hailey 77.04 31 P P 18 50 44.9 +0.6
baz=335,SNR=50
HLID Hailey 77.04 31 eP P 18 50 45.0 +0.6
comp=Z,24nm,0.9s
AGMN Agassiz Nation 77.06 16 P P 18 50 43.5 -0.7
baz=345,SNR=7.5
AGMN Agassiz Nation 77.06 16 eP P 18 50 41.6 -2.5
comp=Z,26nm,0.9s
B34A Aery, Baudette 77.08 16 P P 18 50 43.0 -1.2
baz=346
RLMT Red Lodge 77.10 26 P P 18 50 45.2 +0.6
baz=338,SNR=33
RLMT Red Lodge 77.10 26 eP P 18 50 45.3 +0.6
comp=Z,97nm,1.2s
C31A Landman Farms, 77.21 18 P P 18 50 44.3 -0.7
baz=344,SNR=5.4
YFT Old Faithful 77.29 28 eP P 18 50 46.1 +0.4
B35A Bob, Littlefor 77.35 15 P P 18 50 45.0 -0.8
baz=346,SNR=20
H17A Grant Village 77.41 28 P P 18 50 48.2 +1.7
baz=337
H17A Grant Village 77.41 28 eP P 18 50 48.0 +1.5
comp=Z,47nm,1.2s
YPP Pitchstone Pla 77.46 28 eP P 18 50 48.6 +1.8
O03D Paynes Creek 77.46 37 P P 18 50 46.3 -0.3
baz=332,SNR=15
DRLN Deer Lake 77.54 351 eP P 18 50 45.6 -1.2
FLWY Flagg Ranch 77.67 28 eP P 18 50 48.5 +0.6
comp=Z,67nm,1.0s
IMW Indian Meadow 77.77 28 eP P 18 50 49.6 +1.1
comp=Z,94nm,1.3s
D31A Mcclaflin, Tow 77.93 18 P P 18 50 48.3 -0.7
baz=344
C35A Jirik Farms, M 77.95 15 P P 18 50 48.1 -1.0
baz=346,SNR=12
MOOW Moose Ponds 77.96 28 eP P 18 50 50.3 +0.8
comp=Z,91nm,1.2s
D32A Dogwood Acres, 77.98 18 P P 18 50 48.4 -0.9
baz=345
C36A Pine Crest Far 78.08 15 P P 18 50 48.9 -0.9
baz=347,SNR=8.6
EYMN Ely 78.09 14 P P 18 50 48.9 -0.9
baz=348,SNR=13
EYMN Ely 78.09 14 eP P 18 50 49.2 -0.6
comp=Z,26nm,1.1s
LOHW Long Hollow 78.13 28 eP P 18 50 51.2 +0.8
comp=Z,30nm,0.8s
HOPS Hopland Field 78.13 39 eP P 18 50 50.5 +0.2
comp=Z,45nm,1.2s
TPAW Teton Pass 78.14 28 eP P 18 50 51.0 +0.4
C37A Embarrass 78.20 14 P P 18 50 49.8 -0.7
baz=347,SNR=7.8
SNOW Snow King Moun 78.22 28 eP P 18 50 51.9 +0.8
ORV Oroville 78.22 37 eP P 18 50 50.4 -0.4
ORV Oroville 78.22 37 eP P 18 50 50.3 -0.5
REDW Red Top Meadow 78.28 28 eP P 18 50 51.8 +0.5
C38A Sawbill Land. 78.35 14 P P 18 50 50.2 -1.1
baz=348,SNR=15
D34A Park Rapids 78.35 16 P P 18 50 50.5 -0.8
baz=346,SNR=11
E31A Nome 78.37 18 P P 18 50 51.0 -0.5
baz=344,SNR=8.1
C39A Grand Marais 78.41 13 P P 18 50 50.2 -1.4
baz=349
D35A Remer 78.54 16 P P 18 50 51.4 -1.0
baz=346,SNR=7.7
D36A Goodland 78.59 15 P P 18 50 51.7 -0.9
baz=347,SNR=11
D37A Cotton 78.72 14 P P 18 50 52.4 -1.0
baz=347,SNR=17
AHID Auburn Hatcher 78.76 29 eP P 18 50 54.3 +0.4
E33A Westby DABS, E 78.77 17 P P 18 50 53.2 -0.5
baz=345,SNR=8.2
F30A Leola 78.84 19 P P 18 50 53.7 -0.4
baz=344
PAHR Pah Rah Range 78.85 36 eP P 18 50 55.3 +0.9
E34A Wadena 78.91 16 P P 18 50 54.0 -0.4
baz=346
AFDM Forest Hills D 78.95 37 eP P 18 50 54.9 0.0
BMN Battle Mountai 78.95 34 eP P 18 50 56.0 +1.0
BMN Battle Mountai 78.95 34 eP P 18 50 55.5 +0.5
comp=Z,31nm,1.0s
F31A Hecla 78.97 19 P P 18 50 54.3 -0.5
baz=344
HVU Hansel Valley 79.17 30 eP P 18 50 56.5 +0.4
HVU Hansel Valley 79.17 30 eP P 18 50 56.5 +0.4
F32A Veblen 79.18 18 P P 18 50 55.1 -0.8
baz=345
BW06 Boulder Array 79.20 28 P P 18 50 56.1 -0.3
baz=338,SNR=23
BW06 Boulder Array 79.20 28 eP P 18 50 56.0 -0.3
PDAR Pinedale Array 79.20 28 P P 18 50 55.7 -0.7
comp=Z,13nm,0.8s,baz=11,slow=3.0,SNR=76
PDAR PKPPKP P'P'df 19 17 48.0 -9.2
comp=Z,0.3nm,0.7s,baz=90,slow=1.5,SNR=3.6
PDAR LR LR 19 29 53.2
comp=Z,690nm,19.6s,baz=344,slow=39
E36A McGregor 79.22 15 P P 18 50 55.4 -0.7
baz=347,SNR=23
VLDQ Val d'Or 79.24 4 eP P 18 50 55.2 -0.9
PNTR Pine Nut 79.32 36 eP P 18 50 58.3 +1.2
F33A 5 Mile Ranch, 79.36 17 P P 18 50 56.7 -0.2
baz=345
AS31 Alice Springs 79.36 156 eP P 18 50 55.9 -1.2
ASAR Alice Springs 79.36 156 P P 18 50 56.4 -0.6
comp=Z,24nm,0.8s,baz=348,slow=5.1,SNR=159

ASAR PKKPbc **PKKPbc** 19 09 45.8 -0.2
comp=Z,0.8nm,0.7s,baz=152,slow=1.9,SNR=12
ASAR LR LR 19 28 45.1
comp=Z,414nm,19.1s,baz=354,slow=38
AS01 Alice Springs 79.37 156 *eP* **P** 18 50 55.9 -1.2
RSSD Black Hills 79.37 23 P **P** 18 50 57.3 0.0
baz=341
RSSD Black Hills 79.37 23 *eP* **P** 18 50 56.7 -0.6
RSSD pmax pmax
comp=Z,44nm,1.1s
RSSD Black Hills 79.37 23 *eP* **P** 18 50 56.7 -0.6
comp=Z,44nm,1.1s
YERR Yerington 79.55 36 *eP* **P** 18 50 58.8 +0.5
F34A Alexandria 79.59 17 P **P** 18 50 57.9 -0.2
baz=346,SNR=8.3
TAM Tamanrasset 79.63 294 *eP* **P** 18 50 59.2 +0.3
TAM pmax pmax
comp=Z,12nm,1.2s
TAM Tamanrasset 79.63 294 *eP* **P** 18 50 59.1 +0.3
comp=Z,12nm,1.2s
F35A Swanville 79.64 16 P **P** 18 50 57.8 -0.7
baz=346,SNR=8.7
CTA Charters Tower 79.68 144 P **P** 18 50 59.1 +0.3
comp=Z,23nm,0.9s,baz=335,slow=9.4,SNR=13
CTAO Charters Tower 79.68 144 *eP* **P** 18 50 59.1 +0.3
CTAO Charters Tower 79.68 144 *eP* **P** 18 50 59.1 +0.3
comp=Z,212nm,1.0s
HWUT Hardware Ranch 79.69 29 *eP* **P** 18 50 59.5 +0.5
comp=Z,82nm,0.8s
G32A Webster 79.70 18 P **P** 18 50 58.6 -0.2
baz=344,SNR=8.7
KMBO Kilima Mbogo 79.73 254 P **P** 18 50 59.5 -0.1
comp=Z,13nm,1.0s,baz=25,slow=10,SNR=17
KMBO LR LR 19 30 33.4
comp=Z,607nm,18.4s,baz=77,slow=39
KMBO Kilima Mbogo 79.73 254 *eP* **P** 18 50 59.1 -0.4
comp=Z,40nm,1.0s
F36A Milaca 79.81 16 P **P** 18 50 58.5 -0.8
baz=347,SNR=26
BGU Big Grassy Mou 79.87 31 *eP* **P** 18 51 00.6 +0.7
WAKR Walker 79.90 36 *eP* **P** 18 51 00.6 +0.3
LMQ La Malbaie 79.93 359 *eP* **P** 18 50 59.5 -0.4
G33A Ortonville 79.96 18 P **P** 18 51 00.0 -0.1
baz=345
CMB Columbia Colle 79.97 37 *eP* **P** 18 51 00.4 0.0
CMB pmax pmax
comp=Z,112nm,1.2s
CMB Columbia Colle 79.97 37 *eP* **P** 18 51 00.4 0.0
comp=Z,112nm,1.2s
G34A Benson 80.06 17 P **P** 18 51 00.0 -0.6
baz=346,SNR=15
K22A Casper 80.13 26 P **P** 18 51 00.9 -0.4
baz=339,SNR=18
K22A Casper 80.13 26 *eP* **P** 18 51 00.8 -0.6
comp=Z,48nm,1.1s
TCUT Toone Canyon 80.18 30 *eP* **P** 18 51 02.0 +0.3
TVH1 TV Hill, Hawth 80.18 36 *eP* **P** 18 51 02.6 +0.7
SUSD Miller 80.19 20 P **P** 18 51 01.3 -0.1
baz=344,SNR=17
COWI Conover 80.22 12 *eP* **P** 18 51 00.6 -1.0
comp=Z,20nm,1.0s
H31A Wolsey 80.25 19 P **P** 18 51 01.5 -0.3
baz=344,SNR=6.3
TVH3 East Aurora ar 80.25 36 *eP* **P** 18 51 02.3 +0.2
G36A St. Michael 80.39 16 P **P** 18 51 01.9 -0.6
baz=347,SNR=6.0
H33A Prehn Over Nor 80.39 18 P **P** 18 51 02.0 -0.5
baz=345,SNR=22
H32A Carlson Farm, 80.43 19 P **P** 18 51 02.4 -0.3
baz=344,SNR=28
CTU Camp Tracy 80.47 30 *eP* **P** 18 51 03.2 0.0
SPMN Marine on St. 80.55 15 *eP* **P** 18 51 03.0 -0.3
H34A Spellman Lake, 80.59 17 P **P** 18 51 03.1 -0.5
baz=345,SNR=15
DUG Dugway, Tooele 80.60 31 P **P** 18 51 04.4 +0.5
baz=336,SNR=40
DUG Dugway, Tooele 80.60 31 *eP* **P** 18 51 04.6 +0.7
DUG Dugway, Tooele 80.60 31 *eP* **P** 18 51 04.6 +0.7
comp=Z,36nm,0.9s
JLU Jordanelle 80.64 30 *eP* **P** 18 51 04.7 +0.4
I31A Royce, Wessing 80.67 19 P **P** 18 51 03.7 -0.4
baz=344
SAO San Andreas Ge 80.70 39 *eP* **P** 18 51 04.7 +0.4
SAO pmax pmax
comp=Z,13nm,1.0s
SAO San Andreas Ge 80.70 39 *eP* **P** 18 51 04.7 +0.4
comp=Z,13nm,1.0s
H35A Sunnyside Ranc 80.72 17 P **P** 18 51 04.0 -0.3
baz=346,SNR=15
I32A Karley and Nic 80.89 19 P **P** 18 51 04.5 -0.7
baz=344,SNR=5.3
MLAC Mammoth, Mammo 80.89 36 P **P** 18 51 07.0 +1.3
baz=333
H36A Jessenland, He 81.00 16 P **P** 18 51 05.6 -0.1
baz=346,SNR=12
I33A Coleman 81.00 18 P **P** 18 51 05.1 -0.7
baz=345
NLU North Lily Min 81.05 30 *eP* **P** 18 51 06.6 +0.2
MPU Maple Canyon 81.13 30 *eP* **P** 18 51 07.2 +0.5
J30A Dallas 81.15 20 P **P** 18 51 06.5 -0.1
baz=343,SNR=8.6
I34A Hadley 81.18 18 P **P** 18 51 06.3 -0.4
baz=345
TRQ Mont Tremblant 81.22 2 *eP* **P** 18 51 06.3 -0.7
ECSD EROS Data Cent 81.33 18 P **P** 18 51 07.1 -0.5
baz=345,SNR=31
ECSD EROS Data Cent 81.33 18 *eP* **P** 18 51 07.1 -0.5
comp=Z,51nm,1.0s
J31A Geddes 81.34 20 P **P** 18 51 07.1 -0.5
baz=344
R11A Troy Canyon, C 81.38 34 P **P** 18 51 08.5 +0.4
baz=335,SNR=31
R11A Troy Canyon, C 81.38 34 *eP* **P** 18 51 08.2 +0.1
comp=Z,36nm,1.2s
PMPB Monarch Peak 81.43 38 *eP* **P** 18 51 09.7 +1.4
J32A Parkston 81.44 19 P **P** 18 51 07.9 -0.3
baz=344
LMN Caledonia Moun 81.47 355 *eP* **P** 18 51 07.6 -0.6
I35A Creekview Farm 81.51 17 P **P** 18 51 07.5 -1.1
baz=346
I36A Fitzsimmons Fa 81.52 16 P **P** 18 51 08.1 -0.4
baz=346
I37A Lemond, Waseca 81.63 16 P **P** 18 51 08.7 -0.4
baz=347,SNR=6.3
J33A Davis 81.67 19 P **P** 18 51 08.5 -0.8
baz=345
PHWY Pilot Hill 81.67 25 *eP* **P** 18 51 09.8 +0.1
comp=Z,58nm,1.2s
I38A Scanlan Farm, 81.78 15 P **P** 18 51 09.4 -0.5
baz=348,SNR=18
J34A George 81.89 18 P **P** 18 51 10.3 -0.2
baz=345,SNR=9.4
N23A Red Feather La 81.93 26 P **P** 18 51 11.5 +0.5
baz=340,SNR=32
N23A Red Feather La 81.93 26 *eP* **P** 18 51 11.6 +0.5
RCTC Rector, Farmer 81.93 37 P **P** 18 51 11.5 +0.7
baz=333,SNR=5.5
J35A Milford 81.95 17 P **P** 18 51 10.5 -0.4
baz=346
K31A O'Neill 81.98 20 P **P** 18 51 10.6 -0.4
baz=344
GLMI Grayling 82.00 9 *eP* **P** 18 51 11.4 +0.3
O20A White River Ci 82.01 28 P **P** 18 51 12.0 +0.5
baz=339,SNR=31
O20A White River Ci 82.01 28 *eP* **P** 18 51 11.3 -0.1
comp=Z,117nm,1.0s
PAGB Antelope Grade 82.06 38 *eP* **P** 18 51 11.8 +0.2
K32A Verdigre 82.10 19 P **P** 18 51 11.0 -0.7
baz=344
J36A Seneca 1, Swea 82.14 17 P **P** 18 51 11.6 -0.2
baz=346,SNR=6.5
PKME Peaks-Kenny Pk 82.20 358 *eP* **P** 18 51 12.6 +0.5
CWC Cottonwood Cre 82.23 36 P **P** 18 51 12.7 +0.1
baz=334
J37A Redenius Farm, 82.29 16 P **P** 18 51 12.1 -0.5
baz=347,SNR=10
PLVO Plevna 82.32 4 *eP* **P** 18 51 12.4 -0.3
MSU Marysvale 82.34 31 *eP* **P** 18 51 13.1 -0.1
MSU Marysvale 82.34 31 *eP* **P** 18 51 12.8 -0.4
VES Vestal, Richgr 82.40 37 P **P** 18 51 13.1 -0.1
baz=333
TPNV Topopah Spring 82.42 35 P **P** 18 51 13.7 +0.2
baz=335,SNR=12
TPNV Topopah Spring 82.42 35 *eP* **P** 18 51 14.1 +0.5
TPNV Topopah Spring 82.42 35 *eP* **P** 18 51 13.2 -0.3
J38A Wedel Dairy, R 82.46 15 P **P** 18 51 12.6 -0.8
baz=347,SNR=9.3

PMOZ Porto Moniz, M 82.48 316 *eLR* LR 19 27 54.7
comp=Z,604nm,18.0s
SADO Sadowa 82.49 6 *eP* **P** 18 51 12.8 -0.8
comp=Z,21nm,0.8s
SMMC Simmler 82.53 38 P **P** 18 51 14.9 +0.9
baz=333,SNR=6.1
DAC Darwin (Calif) 82.55 36 *eP* **P** 18 51 14.3 0.0
DAC pmax pmax
comp=Z,28nm,0.9s
DAC Darwin (Calif) 82.55 36 *eP* **P** 18 51 14.3 0.0
comp=Z,28nm,0.9s
J39A Decorah 82.56 15 P **P** 18 51 13.2 -0.9
baz=348,SNR=5.2
FRNY Flat Rock 82.63 2 *eP* **P** 18 51 13.4 -1.0
FURC Furnace Creek, 82.64 35 P **P** 18 51 15.6 +1.1
baz=334,SNR=20
J40A Soldiers Grove 82.65 14 P **P** 18 51 13.6 -0.9
baz=348,SNR=17
L32A Elgin 82.73 20 P **P** 18 51 14.9 -0.1
baz=344
MTPU Mount Pierson 82.77 31 *eP* **P** 18 51 16.1 +0.5
ISA Isabella, Lake 82.78 37 P **P** 18 51 15.2 -0.2
baz=334
ISA Isabella, Lake 82.78 37 *eP* **P** 18 51 15.7 +0.3
ISA Isabella, Lake 82.78 37 *eP* **P** 18 51 15.0 -0.4
MPMC Manual Prospec 82.78 36 P **P** 18 51 16.0 +0.5
baz=334,SNR=32
J41A Loganville 82.79 14 P **P** 18 51 14.5 -0.7
baz=349,SNR=14
K36A Gilmore City 82.79 17 P **P** 18 51 14.9 -0.4
baz=346
K37A Belmond 82.81 16 P **P** 18 51 14.6 -0.7
baz=347,SNR=12
LONY Lake Ozonia 82.83 2 *eP* **P** 18 51 15.1 -0.3
comp=Z,40nm,1.1s
CCUT Cedar City 82.84 32 *eP* **P** 18 51 15.4 -0.4
OGNE Ogallala 82.85 23 P **P** 18 51 15.6 -0.1
baz=342,SNR=8.2
OGNE Ogallala 82.85 23 *eP* **P** 18 51 16.1 +0.4
comp=Z,109nm,1.2s
SZCU Shurtz Canyon 82.89 32 *eP* **P** 18 51 16.5 +0.4
WVL Waterville 82.91 359 *eP* **P** 18 51 15.1 -0.7
PKM Mcpherson Peak 82.97 38 P **P** 18 51 16.4 -0.2
baz=333,SNR=5.5
ISCO Idaho Springs 83.04 26 P **P** 18 51 17.6 +0.6
baz=340,SNR=28
ISCO Idaho Springs 83.04 26 *eP* **P** 18 51 17.7 +0.7
ISCO Idaho Springs 83.04 26 *eP* **P** 18 51 17.7 +0.7
comp=Z,36nm,1.0s
K38A Parkersburg 83.07 16 P **P** 18 51 16.3 -0.3
baz=347,SNR=7.4
L34A Svendsen Farm, 83.08 18 P **P** 18 51 15.8 -0.9
baz=345,SNR=5.0
L35A Bielow Farm, R 83.10 18 P **P** 18 51 16.4 -0.4
baz=346
K39A Oelwein 83.15 15 P **P** 18 51 15.9 -1.2
baz=348,SNR=28
MBAR Mbarara 83.15 260 *eP* **P** 18 51 16.3 -1.4
MBAR Mbrara 83.15 260 *eP* **P** 18 51 16.3 -1.4
M31A Lambtecht Ranc 83.16 21 P **P** 18 51 16.9 -0.4
baz=344
SHPR Sheep Range 83.19 34 *eP* **P** 18 51 18.8 +1.2
JFWS Jewell Farm 83.19 14 *eP* **P** 18 51 16.5 -0.8
JFWS Jewell Farm 83.19 14 *eP* **P** 18 51 16.5 -0.8
comp=Z,49nm,0.9s
LRMC Laurel Mtn Rad 83.23 36 P **P** 18 51 18.6 +0.8
baz=334,SNR=19
SMCO Snowmass 83.25 27 *eP* **P** 18 51 18.1 -0.1
BGNE Belgrade 83.27 20 P **P** 18 51 17.6 -0.2
baz=344
BGNE Belgrade 83.27 20 *eP* **P** 18 51 17.3 -0.4
comp=Z,169nm,1.2s
L36A Harm Buss Farm 83.27 17 P **P** 18 51 17.3 -0.5
baz=346,SNR=11
PKCU Pink Cliffs 83.27 32 *eP* **P** 18 51 19.6 +1.3
PV09 Paradox Valley 83.27 29 *eP* **P** 18 51 18.6 +0.4
K40A Colesburg 83.27 15 P **P** 18 51 17.1 -0.6
baz=348,SNR=23
M33A Taylor Creek F 83.31 19 P **P** 18 51 17.7 -0.3
baz=345,SNR=9.6
SHOC Shoshone, Teco 83.35 35 P **P** 18 51 19.2 +1.0
baz=335,SNR=16
LCMT Little Creek M 83.37 33 *eP* **P** 18 51 18.7 +0.2
PV10 Paradox Valley 83.41 29 *eP* **P** 18 51 19.7 +0.9
BLDU Ballidu 83.46 173 P **P** 18 51 17.5 -1.0
baz=29,SNR=6.5
MDV Middlebury 83.47 1 *eP* **P** 18 51 18.1 -0.6
NCB Newcomb 83.48 2 *eP* **P** 18 51 19.0 +0.2
K41A Shullsburg 83.49 14 P **P** 18 51 18.0 -0.8
baz=349,SNR=16
M34A Aspy Farms, Fr 83.49 19 P **P** 18 51 18.2 -0.6
baz=345
KNB Kanab 83.50 32 *eP* **P** 18 51 19.8 +0.6
KNB Kanab 83.50 32 *eP* **P** 18 51 19.8 +0.6
L38A Oak Wood Farm, 83.53 16 P **P** 18 51 18.2 -0.8
baz=347,SNR=13
EDW2 Edwards Air Fo 83.65 37 P **P** 18 51 20.1 +0.2
baz=334,SNR=22
N31A Bailey Ranch, 83.66 21 P **P** 18 51 19.3 -0.5
baz=344
PV05 Paradox Valley 83.67 29 *eP* **P** 18 51 20.0 -0.2
M35A Neola 83.70 18 P **P** 18 51 19.5 -0.4
baz=346,SNR=8.0
L39A Vinton 83.70 15 P **P** 18 51 18.8 -1.1
baz=348,SNR=15
GSC Goldstone, Bar 83.70 36 P **P** 18 51 20.9 +0.7
baz=334,SNR=22
GSC Goldstone, Bar 83.70 36 *eP* **P** 18 51 21.0 +0.8
GSC Goldstone, Bar 83.70 36 *eP* **P** 18 51 20.6 +0.4
PV01 Paradox Valley 83.77 29 *eP* **P** 18 51 20.9 +0.2
N32A Stulken Farm, 83.86 20 P **P** 18 51 20.5 -0.3
baz=344
M36A Felix, Anita 83.88 17 P **P** 18 51 20.3 -0.5
baz=346,SNR=6.1
L40A Anamosa 83.88 15 P **P** 18 51 20.0 -0.8
baz=348,SNR=9.1
TUQ Turquoise Moun 83.89 35 P **P** 18 51 22.0 +0.8
baz=335,SNR=12
BLG Laguna Peak, P 83.95 38 P **P** 18 51 21.8 +0.4
baz=333
Q24A Divide 83.95 26 P **P** 18 51 21.5 -0.2
baz=340,SNR=14
Q24A Divide 83.95 26 *eP* **P** 18 51 21.4 -0.2
L41A Preston 83.98 14 P **P** 18 51 20.5 -0.9
baz=349,SNR=7.7
RRX Edison Barstow 84.02 36 P **P** 18 51 22.7 +1.0
baz=334
N33A J Bar K, Exete 84.06 20 P **P** 18 51 21.1 -0.7
baz=345
M37A Trindle Farm, 84.06 17 P **P** 18 51 21.5 -0.3
baz=347,SNR=8.9
ACCN Adirondack Com 84.08 2 *eP* **P** 18 51 21.8 -0.1
N34A Lincoln 84.15 19 P **P** 18 51 22.0 -0.2
baz=345
M38A Pleasantville 84.19 16 P **P** 18 51 21.7 -0.7
baz=347,SNR=15
MWC Mount Wilson 84.22 37 *eP* **P** 18 51 23.4 +0.5
MWC Mount Wilson 84.22 37 *eP* **P** 18 51 23.2 +0.3
PASC Pasadena Art C 84.22 37 *eP* **P** 18 51 22.8 +0.1
O31A Woolen Ranch, 84.22 21 P **P** 18 51 21.9 -0.8
baz=344
N35A Tabor 84.29 18 P **P** 18 51 23.3 +0.3
baz=346,SNR=10.0
HEC Hector,Ludlow 84.30 36 P **P** 18 51 24.1 +0.9
baz=335,SNR=18
M39A Webster 84.30 16 P **P** 18 51 22.3 -0.7
baz=348,SNR=10
O32A Brockman Farm, 84.34 20 P **P** 18 51 22.6 -0.7
baz=344
BFSC Mount Baldy Ra 84.35 37 P **P** 18 51 24.0 +0.5
baz=334,SNR=8.2
N36A Muff Farm, Cla 84.47 18 P **P** 18 51 24.1 +0.2
baz=346,SNR=11
KSCO Kaye Shedlock' 84.55 24 P **P** 18 51 24.7 +0.3
baz=342,SNR=6.8
KSCO Kaye Shedlock' 84.55 24 *eP* **P** 18 51 24.8 +0.3
comp=Z,178nm,1.2s
GMRC Granite Mounta 84.57 35 P **P** 18 51 25.3 +0.6
baz=335,SNR=21
MMNY Mt. Morris Dam 84.59 5 *eP* **P** 18 51 23.0 -1.4
S22A 4UR Ranch, Cre 84.63 27 P **P** 18 51 25.8 +0.6
baz=340,SNR=51
S22A 4UR Ranch, Cre 84.63 27 *eP* **P** 18 51 25.5 +0.4
MVCO Mesa Verde 84.65 29 P **P** 18 51 25.6 +0.5
baz=339,SNR=33
MVCO Mesa Verde 84.65 29 *eP* **P** 18 51 25.6 +0.5

N37A Lee Faris, Mou 84.66 17 P **P** 18 51 24.4 -0.4
baz=346,SNR=7.6
O33A Hebron 84.67 20 P **P** 18 51 24.7 -0.2
baz=345
TRY Troy 84.73 2 *eP* **P** 18 51 25.4 +0.2
O34A Beatrice 84.74 19 P **P** 18 51 24.7 -0.6
baz=345,SNR=13
N38A Joes South For 84.79 16 P **P** 18 51 25.0 -0.5
baz=347
O35A Humboldt 84.82 19 P **P** 18 51 25.1 -0.5
baz=346
N39A Derby Farms, D 84.84 16 P **P** 18 51 25.3 -0.4
baz=348,SNR=19
P32A Huiting Farm, 84.89 21 P **P** 18 51 25.2 -0.9
baz=344,SNR=5.8
W13A Hualapai Mount 84.90 34 *eP* **P** 18 51 26.6 +0.2
SDCO Great Sand Dun 85.00 26 P **P** 18 51 27.3 +0.3
baz=340,SNR=100
SDCO Great Sand Dun 85.00 26 *eP* **P** 18 51 27.3 +0.3
FORT Forrest 85.04 163 P **P** 18 51 26.0 -0.5
baz=29,SNR=15
FORT Forrest 85.04 163 *eP* **P** 18 51 26.1 -0.4
MURC Murrieta 85.09 37 P **P** 18 51 27.4 +0.2
baz=334,SNR=6.9
O36A Bolckow 85.13 18 P **P** 18 51 27.2 0.0
baz=346,SNR=11
BELC Belle Mtn. Jos 85.16 36 P **P** 18 51 28.1 +0.5
baz=335,SNR=15
BINY Binghamton 85.20 3 *eP* **P** 18 51 27.8 +0.2
QUA2 Belchertown 85.20 1 *eP* **P** 18 51 27.7 +0.2
O37A Wolven Farm, M 85.24 17 P **P** 18 51 27.5 -0.3
baz=346
P33A Williams Farm, 85.26 20 P **P** 18 51 27.5 -0.4
baz=344,SNR=7.3
IRM Iron Mountain 85.32 35 P **P** 18 51 29.2 +0.9
baz=335,SNR=45
P34A Walnut Farm, R 85.33 19 P **P** 18 51 28.3 +0.1
baz=345,SNR=36
WUAZ Wupatki 85.34 32 P **P** 18 51 29.4 +0.8
baz=337,SNR=31
WUAZ Wupatki 85.34 32 *eP* **P** 18 51 29.4 +0.8
PFO Pinyon Flats O 85.35 36 P **P** 18 51 29.1 +0.6
baz=335,SNR=17
PFO Pinyon Flats O 85.35 36 *eP* **P** 18 51 29.1 +0.6
PFO Pinyon Flats O 85.35 36 *eP* **P** 18 51 28.6 +0.1
TPFO Pinon Flats 85.35 36 P **P** 18 51 29.0 +0.4
baz=335,SNR=19
O38A Galt 85.41 17 P **P** 18 51 28.2 -0.4
baz=347,SNR=6.0
CBKS Cedar Bluff 85.41 22 P **P** 18 51 28.4 -0.3
baz=343,SNR=6.6
CBKS Cedar Bluff 85.41 22 *eP* **P** 18 51 28.8 +0.1
CBKS Cedar Bluff 85.41 22 *eP* **P** 18 51 28.8 +0.1
O39A Kirksville 85.44 16 P **P** 18 51 28.4 -0.3
baz=348
Q32A Meitler Ranch, 85.50 21 P **P** 18 51 28.4 -0.7
baz=344,SNR=7.8
P35A Duane Minner, 85.51 19 P **P** 18 51 28.8 -0.3
baz=345,SNR=5.8
P36A Good Intent, A 85.58 18 P **P** 18 51 29.2 -0.3
baz=346,SNR=15
HDIL Hopedale 85.64 14 P **P** 18 51 28.4 -1.4
baz=349
Q33A Connelly Farm, 85.65 20 P **P** 18 51 29.3 -0.5
baz=344,SNR=11
BC3 Big Chuckawall 85.67 36 P **P** 18 51 30.8 +0.7
baz=335,SNR=19
O40A La Belle 85.68 16 P **P** 18 51 29.7 -0.2
baz=348,SNR=20
M54A Oil Creek Stat 85.70 6 P **P** 18 51 29.1 -0.9
baz=355,SNR=6.3
109C Camp Elliot, M 85.76 37 P **P** 18 51 30.8 +0.4
baz=334
P37A Lathrop 85.77 18 P **P** 18 51 30.2 -0.2
baz=346,SNR=15
KSU1 Kansas State U 85.81 19 P **P** 18 51 30.1 -0.5
baz=345,SNR=7.5
KSU1 Kansas State U 85.81 19 *eP* **P** 18 51 30.6 +0.1
O41A Passleys Farm, 85.84 15 P **P** 18 51 29.9 -0.8
baz=348,SNR=7.3
T25A Trinidad 85.86 26 P **P** 18 51 31.1 -0.1
baz=341,SNR=32
T25A Trinidad 85.86 26 *eP* **P** 18 51 30.9 -0.3
P38A Dawn 85.88 17 P **P** 18 51 30.5 -0.4
baz=347,SNR=20
Y12C Blythe 85.90 35 P **P** 18 51 32.0 +0.8
baz=336,SNR=18
Y12C Blythe 85.90 35 *eP* **P** 18 51 31.8 +0.6
Q34A Chapman 85.91 20 P **P** 18 51 30.4 -0.7
baz=345,SNR=5.3
MONP2 Monument Peak 86.01 37 P **P** 18 51 31.9 -0.1
baz=335,SNR=12
R32A Long Quarter, 86.02 21 P **P** 18 51 31.4 -0.2
baz=344,SNR=24
BAR Barrett 86.11 37 *eP* **P** 18 51 32.7 +0.4
SFIN Lafayette 86.11 12 P **P** 18 51 31.3 -0.7
baz=351,SNR=8.4
SFIN Lafayette 86.11 12 *eP* **P** 18 51 31.6 -0.4
P39B Salisbury 86.15 16 P **P** 18 51 31.6 -0.6
baz=347,SNR=17
Q35A Mercer Eighty, 86.15 19 P **P** 18 51 31.9 -0.4
baz=346,SNR=15
Q36A Arnold C. Orve 86.17 19 P **P** 18 51 31.8 -0.6
baz=346,SNR=6.4
SWSC Sam W. Stewart 86.18 36 P **P** 18 51 33.1 +0.6
baz=335
W18A Petrified Fore 86.22 31 P **P** 18 51 33.6 +0.7
baz=338,SNR=16
W18A Petrified Fore 86.22 31 *eP* **P** 18 51 34.0 +1.1
N54A Moraine State 86.22 6 P **P** 18 51 32.0 -0.7
baz=355,SNR=6.5
P40A Paris 86.22 16 P **P** 18 51 32.0 -0.6
baz=348,SNR=12
P41A Barry, Barry 86.24 15 P **P** 18 51 32.1 -0.6
baz=348,SNR=8.9
Y14A Wickenburg 86.25 34 *eP* **P** 18 51 33.5 +0.5
R33A Olander Ranch, 86.28 21 P **P** 18 51 32.4 -0.5
baz=344,SNR=15
IKP In-Ko-Pah, Jac 86.34 36 P **P** 18 51 33.8 +0.3
baz=335,SNR=13
ODNJ Ogdensburg 86.36 2 *eP* **P** 18 51 33.0 -0.2
GLA Glamis 86.43 35 P **P** 18 51 34.7 +0.9
baz=336,SNR=17
GLA Glamis 86.43 35 *eP* **P** 18 51 34.3 +0.4
GLA Glamis 86.43 35 *eP* **P** 18 51 34.3 +0.4
Q37A Longview Farm, 86.44 18 P **P** 18 51 33.3 -0.4
baz=346,SNR=10.0
P42A Winchester 86.44 15 P **P** 18 51 32.9 -0.8
baz=349,SNR=11
R34A Isabella, Hill 86.44 20 P **P** 18 51 33.5 -0.2
baz=345,SNR=6.9
PAL Palisades 86.45 2 *eP* **P** 18 51 33.1 -0.6
PAL Palisades 86.45 2 *eP* **P** 18 51 33.1 -0.6
N59A State Game Lan 86.49 3 P **P** 18 51 33.7 -0.2
baz=357,SNR=12
Q38A Cooks Store, C 86.51 17 P **P** 18 51 33.8 -0.3
baz=347,SNR=18
Q39A Willow Grove F 86.54 17 P **P** 18 51 33.6 -0.6
baz=347,SNR=16
R35A Emporia Munici 86.64 19 P **P** 18 51 34.5 -0.2
baz=345
S32A Newby Ranch, P 86.66 22 P **P** 18 51 34.9 +0.1
baz=344,SNR=8.7
SSPA Standing Stone 86.68 5 *eP* **P** 18 51 33.8 -1.0
X18A Snowflake 86.70 31 *eP* **P** 18 51 34.9 -0.4
ACSO Alum Creek Sta 86.71 9 *eP* **P** 18 51 34.7 -0.3
Q40A Laux Farm, Aux 86.74 16 P **P** 18 51 34.9 -0.3
baz=348,SNR=17
R36A Gordon, Harris 86.78 19 P **P** 18 51 34.8 -0.5
baz=346,SNR=14
LUPA Lehigh Univers 86.82 3 *eP* **P** 18 51 35.0 -0.5
R37A Teagarden Farm 86.91 18 P **P** 18 51 35.1 -0.9
baz=346,SNR=9.3
S33A Kaszmaul Farm, 86.97 21 P **P** 18 51 36.7 +0.3
baz=344,SNR=8.7
O56A Blue Knob Stat 87.01 5 P **P** 18 51 35.9 -0.6
baz=356,SNR=8.0
S34A Willow Spring 87.05 20 P **P** 18 51 36.7 -0.1
baz=345,SNR=13
113A Mohawk Valley, 87.06 35 *eP* **P** 18 51 37.0 +0.2
Q42A Golden Eagle 87.07 15 P **P** 18 51 36.6 -0.2
baz=349,SNR=7.4
T32A Huddler Ranch, 87.16 22 P **P** 18 51 37.9 +0.6
baz=344,SNR=18
Q43A New Douglas 87.17 14 P **P** 18 51 36.8 -0.4
baz=349
R38A Fenwick Farm, 87.21 18 P **P** 18 51 36.3 -1.1

baz=347,SNR=14
S35A Otter Creek Ra 87.23 20 P P 18 51 37.3 -0.3
baz=345,SNR=12
R39A Chumby, Stover 87.24 17 P P 18 51 37.3 -0.3
baz=347,SNR=23
Q44A Meyer Farm, Va 87.31 14 P P 18 51 37.5 -0.4
baz=350
S36A Lake Cedric, C 87.34 19 P P 18 51 37.4 -0.7
baz=346,SNR=13
ANMO Albuquerque 87.35 28 P P 18 51 39.5 +1.0
baz=340
ANMO Albuquerque 87.35 28 *de*P P 18 51 39.3 +0.8
ANMO pmax pmax
comp=Z,82nm,1.2s
ANMO Albuquerque 87.35 28 *e*P P 18 51 39.1 +0.6
MVL Millersville 87.38 4 *e*P P 18 51 38.4 +0.1
R40A Maddies Statio 87.40 16 P P 18 51 37.7 -0.7
baz=348,SNR=7.1
T33A Patterson Ranc 87.40 21 P P 18 51 38.9 +0.4
baz=344,SNR=8.3
S37A Fort Scott 87.45 18 P P 18 51 38.0 -0.7
baz=346,SNR=21
OLIL Olney 87.60 13 *e*P P 18 51 39.2 -0.2
LAZ Ladron 87.67 29 *e*P P 18 51 41.4 +1.4
T34A McClaskey Farm 87.69 20 P P 18 51 40.0 +0.1
baz=345,SNR=15
S38A Stockton 87.75 18 P P 18 51 39.1 -1.0
baz=347,SNR=18
S39A Bolivar 87.80 17 P P 18 51 39.6 -0.7
baz=347,SNR=29
LPM Los Pinos Moun 87.90 29 *e*P P 18 51 41.7 +0.6
U32A Winter Ranch, 87.91 22 P P 18 51 41.8 +0.8
baz=344,SNR=6.7
T36A Boggs Farm, Ca 87.92 19 P P 18 51 40.8 -0.1
baz=346,SNR=16
T35A Sooner Cattle 87.93 20 P P 18 51 40.9 -0.1
baz=345,SNR=25
R44A Waltonville 87.94 14 P P 18 51 40.8 -0.2
baz=350,SNR=17
S40A Lebanon 88.03 17 P P 18 51 41.0 -0.4
baz=348,SNR=56
Y22D IRIS PASSCAL I 88.03 29 P P 18 51 43.3 +1.6
baz=340
Y22D IRIS PASSCAL I 88.03 29 *e*P P 18 51 42.8 +1.1
BNM Barren Site 88.05 29 *e*P P 18 51 42.5 +0.6
T37A Cheneyville 18 88.05 19 P P 18 51 40.7 -0.8
baz=346,SNR=20
U33A Lingo Farm, Me 88.06 21 P P 18 51 42.2 +0.6
baz=344,SNR=9.2
214A Organ Pipe Nat 88.12 34 P P 18 51 43.0 +0.9
baz=336,SNR=23
S41A Jillco Farms, 88.17 16 P P 18 51 41.7 -0.4
baz=348,SNR=50
U34A Anderson Ranch 88.18 21 P P 18 51 42.7 +0.6
baz=345,SNR=9.0
U34A Anderson Ranch 88.18 21 *e*P P 18 51 42.2 0.0
T38A Diamond 88.25 18 P P 18 51 41.7 -0.8
baz=346,SNR=5.8
WCI Wyandotte Cave 88.33 12 *e*P P 18 51 42.8 -0.1
WCI Wyandotte Cave 88.33 12 *e*P P 18 51 42.4 -0.5
U35A Pawnee 88.41 20 P P 18 51 43.8 +0.5
baz=345,SNR=9.7
USIN University of 88.42 13 *e*P P 18 51 43.2 -0.1
T39A Clever 88.44 17 P P 18 51 43.1 -0.3
baz=347,SNR=31
SIUC Southern Illin 88.44 14 *e*P P 18 51 43.2 -0.2
S43A Fulton Ridge, 88.45 15 P P 18 51 43.2 -0.2
baz=349,SNR=7.2
S44A Carbondale 88.46 14 P P 18 51 43.4 -0.1
baz=349,SNR=16
T40A Mansfield 88.47 17 P P 18 51 43.0 -0.5
baz=348
TUC Tucson 88.48 33 P P 18 51 44.5 +0.8
baz=338
TUC Tucson 88.48 33 *e*P P 18 51 43.5 -0.2
TUC Tucson 88.48 33 *e*P P 18 51 43.5 -0.2
V32A Arapaho 88.53 22 P P 18 51 45.0 +1.1
baz=344,SNR=6.4
S45A Carrier Mills 88.57 14 P P 18 51 44.2 +0.2
baz=350,SNR=5.7
U36A Oologah 88.60 19 P P 18 51 44.5 +0.4
baz=346,SNR=15
V33A Lossen Ranch, 88.61 22 P P 18 51 44.9 +0.7
baz=344,SNR=9.3
AMTX Amarillo 88.70 24 P P 18 51 45.5 +0.8
baz=342
AMTX Amarillo 88.70 24 *e*P P 18 51 45.6 +0.8
T41A Mountain View 88.70 16 P P 18 51 44.3 -0.3
baz=348,SNR=65
U37A Salina 88.71 19 P P 18 51 44.5 -0.1
baz=346,SNR=22
V34A Guthrie 88.76 21 P P 18 51 45.7 +0.7
baz=345,SNR=12
V34A Guthrie 88.76 21 *e*P P 18 51 45.5 +0.6
U38A Gravette 88.81 18 P P 18 51 44.5 -0.6
baz=346,SNR=29
V35A Meyer Ranch, C 88.98 20 P P 18 51 46.5 +0.6
baz=345,SNR=26
U39A Green Forest 89.04 18 P P 18 51 45.8 -0.5
baz=347,SNR=43
TUL1 Leonard 89.05 20 P P 18 51 46.7 +0.4
baz=346,SNR=12
TUL1 Leonard 89.05 20 *e*P P 18 51 46.6 +0.3
HHAR Hobbs 89.05 18 *e*P P 18 51 45.4 -0.9
W32A Sentinel 89.06 23 P P 18 51 47.4 +1.0
baz=344,SNR=38
CBN Corbin Frederi 89.13 5 *e*P P 18 51 46.8 +0.2
V36A Jenks 89.14 20 P P 18 51 46.8 +0.1
baz=346,SNR=25
PBMO Poplar Bluff 89.18 15 *e*P P 18 51 45.7 -1.2
U40A Yellville 89.18 17 P P 18 51 46.4 -0.4
baz=347,SNR=33
STKA Stephens Creek 89.19 152 P P 18 51 45.9 -0.7
comp=Z,12nm,0.7s,baz=344,slow=5.9,SNR=31
STKA Stephens Creek 89.19 152 *e*P P 18 51 45.2 -1.4
V37A Hulbert 89.21 19 P P 18 51 47.0 0.0
baz=346,SNR=47
W33A Caddo, Fort Co 89.21 22 P P 18 51 48.2 +1.1
baz=344,SNR=9.6
121A Cookes Peak, D 89.21 30 P P 18 51 48.6 +1.3
baz=339,SNR=11
W34A Bridge Creek, 89.28 21 P P 18 51 48.5 +1.1
baz=344,SNR=19
W34A Bridge Creek, 89.28 21 *e*P P 18 51 48.0 +0.6
MSTX Muleshoe 89.28 26 P P 18 51 47.8 +0.3
baz=342,SNR=21
MSTX Muleshoe 89.28 26 *e*P P 18 51 47.3 -0.3
U41A Viola 89.35 16 P P 18 51 47.4 -0.3
baz=348,SNR=30
V38A Canehill 89.37 19 P P 18 51 47.3 -0.5
baz=346,SNR=27
U42A Revenden 89.46 16 P P 18 51 47.8 -0.4
baz=348,SNR=23
TOA1 Torodi Ar. Sit 89.52 291 *e*P P 18 51 47.8 -1.0
TOA1 *e*PKKPdf **PKKPbc** 19 09 21.4 +1.0
TORD Torodi Ar. Bea 89.52 291 P P 18 51 47.8 -1.0
comp=Z,8.3nm,0.8s,baz=34,slow=4.4,SNR=45
TORD PKKPbc **PKKPbc** 19 09 21.4 +1.0
comp=Z,0.8nm,0.9s,baz=187,slow=2.5,SNR=3.9
WMOK Wichita Mounta 89.53 22 P P 18 51 49.3 +0.7
baz=344,SNR=133
WMOK Wichita Mounta 89.53 22 *e*P P 18 51 48.9 +0.3
WMOK pmax pmax
comp=Z,111nm,1.0s
WMOK Wichita Mounta 89.53 22 *e*P P 18 51 48.9 +0.3
comp=Z,111nm,1.0s
V39A Pettigrew 89.54 18 P P 18 51 48.2 -0.4
baz=347,SNR=62
W35A Tecumseh 89.56 21 P P 18 51 49.4 +0.7
baz=345,SNR=22
W36A Wetumka 89.70 20 P P 18 51 50.0 +0.7
baz=345,SNR=19
X32A Elmer 89.72 23 P P 18 51 50.1 +0.7
baz=344,SNR=20
V40A Witts Springs 89.72 17 P P 18 51 49.0 -0.5
baz=347,SNR=46
X33A Lawton 89.78 22 P P 18 51 50.4 +0.6
baz=344,SNR=15
319A Douglas 89.82 32 *e*P P 18 51 50.8 +0.7
GLAT Glass 89.85 14 *e*P P 18 51 50.0 0.0
V41A Mountainview 89.86 17 P P 18 51 49.4 -0.6
baz=348,SNR=41
W37B Quinton 89.87 19 P P 18 51 50.7 +0.6
baz=346,SNR=28
X34A Smith Ranch, M 89.88 22 P P 18 51 51.3 +1.1
baz=344,SNR=21
DZM Mont Dzumac 89.90 128 LR LR 19 29 40.2
comp=Z,384nm,21.9s,baz=22,slow=34
DZM Mont Dzumac 89.90 128 *e*LR LR 19 20 35.3
comp=Z,822nm,24.4s
V42A Cord 89.97 16 P P 18 51 50.4 -0.2
baz=348,SNR=52
GNAR Gosnell 90.04 15 *e*P P 18 51 50.8 -0.1
CMSA Cobar Meteorol 90.09 149 P P 18 51 50.8 0.0
baz=32,SNR=7.4
W38A Poteau 90.12 19 P P 18 51 51.5 +0.3
baz=346,SNR=14
W39A Magazine 90.14 18 P P 18 51 51.2 -0.2
baz=347,SNR=23
WVT Waverly 90.20 13 *e*P P 18 51 51.1 -0.5
WVT Waverly 90.20 13 *e*P P 18 51 51.1 -0.5
X36A Centrahoma 90.23 20 P P 18 51 52.4 +0.6
baz=345,SNR=38
X35A Drake 90.26 21 P P 18 51 52.4 +0.5
baz=345,SNR=22
Y33A Hilltop Ranch, 90.27 22 P P 18 51 52.6 +0.6
baz=344,SNR=15
W40A Ferguson Farm, 90.27 18 P P 18 51 52.1 +0.1
baz=347,SNR=23
X201 Greenbrier Sit 90.30 17 *e*P P 18 51 51.8 -0.4
TZTN Tazewell 90.31 10 *e*P P 18 51 51.9 -0.3
comp=Z,51nm,1.1s
WHAR Wooly Hollow 90.32 17 *e*P P 18 51 51.8 -0.4
X301 Greenbrier Sit 90.35 17 *e*P P 18 51 51.8 -0.5
X37A Clayton 90.41 20 P P 18 51 53.0 +0.4
baz=346,SNR=26
W41A Tony Mavity, V 90.44 17 P P 18 51 52.6 -0.2
baz=348,SNR=32
W41B Gary Mavity, V 90.44 17 P P 18 51 52.5 -0.3
baz=348,SNR=32
X38A Whitesboro 90.44 19 P P 18 51 53.4 +0.6
baz=346,SNR=40
Y34A Reagan Ranch, 90.51 22 P P 18 51 53.8 +0.7
baz=345,SNR=29
MNTX Cornudas Mount 90.70 28 P P 18 51 54.9 +0.8
baz=345,SNR=25
MNTX Cornudas Mount 90.70 28 *e*P P 18 51 55.0 +0.9
comp=Z,30nm,1.1s
Y35A Marietta 90.72 21 P P 18 51 54.6 +0.5
baz=345,SNR=13
X39A Fountain Ranch 90.74 19 P P 18 51 54.6 +0.4
baz=347,SNR=32
MIAR Mount Ida 90.81 18 P P 18 51 54.7 +0.2
baz=347,SNR=12
MIAR Mount Ida 90.81 18 *e*P P 18 51 54.7 +0.2
MIAR pmax pmax
comp=Z,14nm,0.8s
MIAR Mount Ida 90.81 18 *e*P P 18 51 54.7 +0.2
comp=Z,14nm,0.8s
UALR University of 90.81 17 *e*P P 18 51 53.9 -0.6
Y36A Durant 90.89 20 P P 18 51 55.4 +0.5
baz=345,SNR=13
Z33A Whitaker Ranch 90.93 23 P P 18 51 55.5 +0.4
baz=344,SNR=10.0
Y37A Hugo 90.95 20 P P 18 51 55.9 +0.7
baz=346,SNR=5.2
W45A Hickory Valley 90.96 14 P P 18 51 55.3 +0.2
baz=350,SNR=11
X40A Basin Creek Fa 91.00 18 P P 18 51 55.5 +0.1
baz=347,SNR=21
Z34A Collier Ranch, 91.04 22 P P 18 51 56.0 +0.3
baz=344,SNR=5.0
TKL Tuckaleechee C 91.16 10 *e*P P 18 51 55.2 -1.0
TKL Tuckaleechee C 91.16 10 *e*P P 18 51 55.2 -1.0
Y38A Idabel 91.18 19 P P 18 51 56.2 0.0
baz=346
Z35A Perchaven, San 91.23 21 P P 18 51 56.9 +0.4
baz=345,SNR=5.5
CPCT Cooper Cave 91.28 11 *e*P P 18 51 56.1 -0.6
Y39A Lockesburg 91.30 19 P P 18 51 57.0 +0.2
baz=347,SNR=13
X43A Marvell 91.31 16 P P 18 51 57.1 +0.3
baz=348,SNR=8.0
ABTX Abilene, Hawle 91.35 24 P P 18 51 57.5 +0.4
baz=344,SNR=10
ABTX Abilene, Hawle 91.35 24 *e*P P 18 51 57.5 +0.4
comp=Z,74nm,1.1s
Y40A Okolona 91.38 18 P P 18 51 57.3 +0.1
baz=347,SNR=6.2
HSIG 91.45 34 *e*P P 18 51 58.0 +0.4
X44A Crenshaw 91.45 15 P P 18 51 57.2 -0.3
baz=349
Z36A Blue Ridge 91.46 21 P P 18 51 57.9 +0.3
baz=345,SNR=11
133A Hamilton Ranch 91.54 23 P P 18 51 58.4 +0.5
baz=344,SNR=18
OXF Oxford 91.56 15 *e*P P 18 51 58.0 +0.1
OXF pmax pmax
comp=Z,67nm,1.0s
OXF Oxford 91.56 15 *e*P P 18 51 58.0 +0.1
comp=Z,67nm,1.0s
Y41A Eaglette Beard 91.63 18 P P 18 51 58.8 +0.5
baz=348,SNR=6.6
Z37A Pogue Cattle C 91.70 20 P P 18 51 59.0 +0.4
baz=346
WLAR White Oak Lake 91.73 18 *e*P P 18 51 59.2 +0.4
134A White-Moore Ra 91.77 22 P P 18 51 59.6 +0.6
baz=344,SNR=13
Z38A Mt. Pleasant 91.79 20 P P 18 51 59.6 +0.6
baz=346,SNR=5.6
Y42A Garnett, Star 91.82 17 P P 18 51 59.5 +0.3
baz=348
Y43A Makaya and Ka 91.90 16 P P 18 52 00.2 +0.6
baz=348,SNR=5.7
KMSC Kings Mountain 91.91 8 P P 18 51 59.3 -0.3
baz=354
KMSC Kings Mountain 91.91 8 *e*P P 18 51 59.1 -0.4
135A Vickery Place, 91.94 22 P P 18 52 00.4 +0.6
baz=345,SNR=12
Z39A Irene McRaven, 91.95 19 P P 18 52 00.7 +0.8
baz=347
Y44A Strider, Charl 91.97 16 P P 18 51 59.9 0.0
baz=349,SNR=10
Z40A Long Farm, Mag 92.09 18 P P 18 52 01.4 +0.9
baz=347,SNR=12
233A Rising Star 92.11 23 P P 18 52 01.5 +0.9
baz=344,SNR=23
Y45A Yeager Farm, C 92.17 15 P P 18 52 00.8 0.0
baz=349,SNR=6.1
Z41A Richland Creek 92.20 18 P P 18 52 01.6 +0.6
baz=347,SNR=5.6
136A Ennis 92.21 21 P P 18 52 01.4 +0.4
baz=345
Y46A Houston 92.26 14 P P 18 52 01.0 -0.2
baz=350,SNR=5.6
234A Clairette 92.30 22 P P 18 52 01.9 +0.4
baz=344,SNR=16
138A Matatall Enter 92.34 20 P P 18 52 02.7 +1.1
baz=346
Z42A Norrel Spur, H 92.34 17 P P 18 52 02.1 +0.5
baz=348
Y47A UCPARC, Winfie 92.39 14 P P 18 52 01.3 -0.5
baz=350,SNR=14
139A Bunkhouse Ranc 92.46 19 P P 18 52 03.1 +0.9
baz=346
WHTX Lake Whitney, 92.47 22 P P 18 52 02.5 +0.2
baz=345
WHTX Lake Whitney, 92.47 22 *e*P P 18 52 02.9 +0.7
comp=Z,47nm,1.3s
Z44A Pea Ridge, Bel 92.60 16 P P 18 52 03.1 +0.4
baz=349,SNR=5.8
140A Cam and Jess, 92.66 19 P P 18 52 04.0 +0.9
baz=347
333A Richland Sprin 92.75 23 P P 18 52 03.9 +0.3
baz=344,SNR=27
141A Papa Simpson, 92.82 18 P P 18 52 04.7 +0.8
baz=347,SNR=6.1
237A Washetta, Mont 92.82 21 P P 18 52 04.8 +1.0
baz=346
334A Lometa 92.92 23 P P 18 52 04.8 +0.4
baz=344,SNR=21
Z48A Northport 92.94 13 P P 18 52 03.3 -1.1
baz=350
Z47A Carrollton 93.04 14 P P 18 52 04.1 -0.7
baz=350,SNR=7.1
335A Moody 93.16 22 P P 18 52 05.8 +0.4
baz=345
336A Riesel 93.19 22 P P 18 52 06.4 +0.8
baz=345,SNR=7.8
433A Art 93.27 24 P P 18 52 06.1 +0.1
baz=344,SNR=14
NATX Nacogdoches 93.30 20 P P 18 52 07.0 +1.0
baz=346,SNR=5.0
NATX Nacogdoches 93.30 20 *e*P P 18 52 07.6 +1.5
comp=Z,49nm,0.9s
145A Houston Renfro 93.34 16 P P 18 52 06.3 +0.1
baz=349
LRAL Lakeview Retre 93.36 13 *e*P P 18 52 05.9 -0.4
comp=Z,14nm,0.9s
JCT Junction City 93.36 24 P P 18 52 06.6 +0.2
baz=343,SNR=10.0
JCT Junction City 93.36 24 *e*P P 18 52 06.9 +0.5
JCT pmax pmax
comp=Z,26nm,0.9s
JCT Junction City 93.36 24 *e*P P 18 52 06.9 +0.5
comp=Z,26nm,0.9s
434A Burnet 93.41 23 P P 18 52 06.6 0.0
baz=344,SNR=9.9
GOGA Godfrey 93.42 10 *e*P P 18 52 06.7 +0.1
GOGA pmax pmax
comp=Z,23nm,0.9s
GOGA Godfrey 93.42 10 *e*P P 18 52 06.7 +0.1
comp=Z,23nm,0.9s
TX31 Lajitas Ar. Si 93.42 28 *e*P P 18 52 06.9 +0.1
LTX Lajitas 93.42 28 *e*P P 18 52 06.5 -0.3
LTX Lajitas 93.42 28 *e*P P 18 52 06.5 -0.3
LTX *e*PKKPdf **PKKPbc** 19 09 11.6 +0.7
TXAR Lajitas Array 93.42 28 P P 18 52 06.5 -0.3
comp=Z,6.3nm,0.9s,baz=303,slow=1.8,SNR=36
TXAR PKKPbc **PKKPbc** 19 09 11.6 +0.7
comp=Z,0.7nm,0.7s,baz=160,slow=5.0,SNR=7.5
TXAR LR LR 19 39 37.0
comp=Z,426nm,18.3s,baz=0.0,slow=39
337A Centerville 93.47 21 P P 18 52 08.0 +1.1
baz=346
242A Grayson 93.49 18 P P 18 52 07.7 +0.8
baz=348
147A Livingston 93.53 14 P P 18 52 06.4 -0.6
baz=350
435B Jarrell 93.60 22 P P 18 52 08.3 +0.8
baz=345
244A Avery, Jackson 93.76 16 P P 18 52 08.6 +0.4
baz=349,SNR=5.3
340A Bronson 93.78 19 P P 18 52 08.8 +0.5
baz=347
533A Kerrville 93.94 24 P P 18 52 09.6 +0.5
baz=344,SNR=6.4
341A Kurthwood 94.00 19 P P 18 52 10.0 +0.7
baz=347
247A Quitman 94.09 15 P P 18 52 10.3 +0.6
baz=350
534A Blanco 94.12 23 P P 18 52 10.2 +0.3
baz=344,SNR=16
248A Dixon Mills 94.18 14 P P 18 52 09.9 -0.2
baz=350
439A Center Grove, 94.21 20 P P 18 52 10.4 +0.2
baz=346
535A Dale 94.33 23 P P 18 52 11.4 +0.6
baz=345
344A Westbrook Farm 94.33 16 P P 18 52 11.7 +0.9
baz=348
633A Saathoff Ranch 94.49 24 P P 18 52 11.7 +0.1
baz=344,SNR=7.1
CAN Canberra 94.63 148 *e*P P 18 52 11.9 +0.1
CAN Canberra 94.63 148 *e*P P 18 52 11.9 +0.1
347A Saraland 94.74 15 P P 18 52 13.0 +0.3
baz=350
636A Smothers Creek 94.97 22 P P 18 52 14.9 +1.1
baz=345
HPIG 95.08 30 *e*P P 18 52 15.5 +0.9
733A Divot King Ran 95.17 24 P P 18 52 15.1 +0.4
baz=344
832A Faith Ranch, C 95.41 25 P P 18 52 15.7 -0.1
baz=343
833A Chaparral WMA, 95.52 25 P P 18 52 16.8 +0.5
baz=344
835A Beeville 95.94 23 P P 18 52 19.0 +0.8
baz=344
933A Laredo 96.23 25 P P 18 52 20.3 +0.7
baz=344
934A Benavides 96.43 24 P P 18 52 20.8 +0.4
baz=344,SNR=6.8
034A Hebbronville 96.90 24 P P 18 52 23.7 +1.1
baz=344,SNR=8.4
TAOE Nuku Hiva Isla 109.80 78 *e*LR LR 19 29 53.0
comp=Z,685nm,27.5s
PPT2 Papeete2 110.94 92 *e*LR LR 19 30 23.0
comp=Z,741nm,23.5s,baz=318
TBI Tubuai 115.39 96 *e*LR LR 19 32 27.5
comp=Z,404nm,23.0s
RUSC La Rusia 121.42 2 *e*PKPdf **PKPdf** 18 57 44.5 -1.0
ROSC El Rosal 122.43 3 PKP **PKPdf** 18 57 45.5 -1.8
comp=Z,7.3nm,0.4s,baz=102,slow=23,SNR=2.9
MAW Mawson 124.94 200 PKP **PKPdf** 18 57 49.7 -0.1
comp=Z,15nm,0.8s,baz=0.0,slow=1.9,SNR=39
MAW Mawson 124.94 200 *e*PKPdf **PKPdf** 18 57 49.2 -0.6
OTAV Otavalo 126.73 9 *e*PKPdf **PKPdf** 18 57 54.7 -0.9
PTGA Pitinga 127.15 346 *e*PKPdf **PKPdf** 18 57 54.8 -1.0
VNDA Vanda 134.24 166 PKP **PKPdf** 18 58 06.8 -0.5
comp=Z,4.8nm,1.0s,baz=293,slow=4.3,SNR=12
VNDA Vanda 134.24 166 *e*PKPdf **PKPdf** 18 58 06.2 -1.1
NVL N'lazarevskaya 140.74 211 *e*PKHKP PKPpre 18 58 07.8
LPAZ La Paz 143.38 355 PKHKP PKPpre 18 58 22.1
comp=Z,5.9nm,0.8s,baz=13,slow=3.8,SNR=23
LPAZ La Paz 143.38 355 *e*PKIKP PKPab 18 58 21.9 -0.7
LPAZ La Paz 143.38 355 *e*PKPpre PKPab 18 58 21.9 -0.7
SPB Sao Paulo 145.53 319 *e*PKPdf **PKPdf** 18 58 28.6 -0.7
SNAA Sanae 145.56 211 *e*PKIKP **PKPdf** 18 58 26.9 -1.1
SNAA Sanae 145.56 211 *e*PKPdf **PKPdf** 18 58 26.9 -1.1
PB11 IPOC Station P 146.90 357 *e*PKPdf **PKPdf** 18 58 32.4 +0.4
PB01 IPOC Station P 148.17 357 *e*PKPbc **PKPbc** 18 58 37.2 0.0
PB04 IPOC Station P 149.47 358 *e*PKPbc **PKPbc** 18 58 40.4 -0.2
LVC Limon Verde 149.70 355 *e*PKPbc **PKPbc** 18 58 41.7 +0.3
CPUP Villa Florida 151.44 333 PKP **PKPdf** 18 58 38.2 -0.6
comp=Z,5.3nm,0.9s,baz=54,slow=2.7,SNR=8.3
CPUP PKPbc **PKPbc** 18 58 43.5 -1.5
comp=Z,23nm,0.8s,baz=5.7,slow=1.5,SNR=37
CPUP Villa Florida 151.44 333 *e*PKPdf **PKPdf** 18 58 37.8 -1.1
CPUP *e*PKPbc **PKPbc** 18 58 43.0 -2.0
CPUP *e*PKPab **PKPab** 18 58 49.9 -3.4
PLCA Paso Flores 167.82 357 PKP **PKPdf** 18 58 56.8 -0.3
comp=Z,3.5nm,1.0s,baz=75,slow=5.9,SNR=2.4
PLCA PKPab **PKPab** 19 00 04.1 +0.2
comp=Z,1.8nm,0.8s,baz=46,slow=9.5,SNR=3.1
PLCA Paso Flores 167.82 357 *e*PKPdf **PKPdf** 18 58 55.6 -1.5
PLCA PKPab **PKPab** 19 00 04.1 +0.2

JMA 16 18:43:22.8±0.1, 38.25N×141.86E, h63km±1km, M3.5,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.45**	**297**	P		Pn	18 43 34.6	+0.1
JIO				S		Sn	18 43 42.9	-0.1
OFUJ	**Ofunato**	**0.84**	**350**	P		Pn	18 43 39.0	0.0
OFUJ				S		Sn	18 43 50.6	-0.3
JMK	**Ichinoseki**	**0.86**	**325**	P		Pn	18 43 39.5	+0.3
JMK				S		Sn	18 43 51.5	+0.2
JMM	**Marumori**	**0.93**	**246**	P		Pn	18 43 39.7	-0.3
JMM				S		Sn	18 43 52.1	-0.6
JOU	**Okura**	**0.95**	**277**	P		Pn	18 43 40.5	+0.2
JOU				*e*S		Sn	18 43 53.5	+0.2
JFK	**Kawauchi**	**1.18**	**222**	P		Pn	18 43 43.1	-0.2
JOM	**Ohasama**	**1.30**	**340**	P		Pn	18 43 45.1	+0.2
JOM				*e*S		Sn	18 44 01.5	+0.1
JYK	**Kaneyama**	**1.35**	**300**	P		Pn	18 43 45.9	+0.3
JYK				*e*S		Sn	18 44 03.1	+0.4
JFT	**Otama**	**1.41**	**239**	P		Pn	18 43 46.8	+0.4
JFT				S		Sn	18 44 04.4	+0.4
JYS	**Shirataka**	**1.41**	**269**	P		Pn	18 43 46.8	+0.4
JRG	**Rokugo**	**1.49**	**320**	P		Pn	18 43 47.8	+0.4
JYA	**Atsumi**	**1.72**	**282**	P		Pn	18 43 50.9	+0.4
JFY	**Yanaizu**	**1.90**	**244**	P		Pn	18 43 53.7	+0.7
MAT	**Matsushiro**	**3.37**	**241**	P		Pn	18 44 14.6	+1.6

MEX 16 18:52:43.7±0.5, 30.33N×109.66W, h10km, MD3.5,
Sonora

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
319A	**Douglas**	**1.10**	**17**	*e*P		Pg	18 53 01.1	-3.8
319A				*e*S		Sg	18 53 15.6	-3.5
CGIG		**1.46**	**88**	*e*P		Pn	18 53 06.6	-3.6
CGIG				*e*S		Sn	18 53 24.4	-5.0
HSIG		**1.72**	**221**	*e*P		Pn	18 53 10.3	-3.4
HSIG				*e*S		Sn	18 53 31.3	-4.4

*ISCJB **16** 19:14:08.5±0.6,51°.46N±0°.03×16°.12E±0°.04,h0km, Error ellipse: s-maj=4.2km s-min=3.0km az=23.7*
*CSEM **16** 19:14:09.0±0.3,51°.53N×16°.12E,h2km,ML3.3/14, Error ellipse: s-maj=4.6km s-min=4.1km az=15.0*
*WAR **16** 19:14:10.0,51°.53N×16°.10E,h1km,Mw2.6*
*PRU **16** 19:14:10.4,51°.50N×16°.12E,h0km*
*VIE **16** 19:14:11.2±0.9,51°.37N×16°.02E,h0km,mb2.2/5,ML2.5/10, Error ellipse: s-maj=7.9km s-min=3.4km az=29.0, Suspected Mining induced.*

ISC 16 19:14:08.3±0.9,51°.58N±0°.03×16°.14E±0°.02,h0km,n37, σ0^{9}96/73,**1D,Poland**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.74**	**172**	*i* Pg		**Pg**	**19 14 23.1**	**+0.6**
KSP				*e*Sg		**Sg**	**19 14 32.4**	**+0.3**
KSP	**Ksiaz**	**0.74**	**172**	⇓*i* Pg		**Pg**	**19 14 23.1**	**+0.6**
KSP				*e*Sg		**Sg**	**19 14 32.4**	**+0.3**
UPC	**Upice**	**1.07**	**184**	*e*PG		**Pg**	**19 14 29.2**	**+0.3**
UPC				*e*SG		**Sg**	**19 14 42.8**	**0.0**
	comp=Z,97nm,0.4s							
UPC	**Upice**	**1.07**	**184**	Pg		**Pg**	**19 14 29.2**	**+0.3**
UPC				Sg		**Sg**	**19 14 42.8**	**0.0**
	97nm,0.4s							
DPC	**Dobruska-Polom**	**1.24**	**174**	*e*PG		**Pg**	**19 14 31.8**	**-0.2**
DPC				*e*SG		**Sg**	**19 14 47.3**	**-0.7**
	comp=Z,35nm,0.3s							
DPC	**Dobruska-Polom**	**1.24**	**174**	Pg		**Pg**	**19 14 31.8**	**-0.2**
DPC				Sg		**Sg**	**19 14 47.3**	**-0.7**
	35nm,0.3s							
PVCC	**Panska Ves**	**1.44**	**224**	*e*PG		**Pg**	**19 14 35.9**	**0.0**
PVCC				*e*SG		**Sn**	**19 14 55.3**	**0.0**
	comp=Z,200nm,0.4s							
PVCC	**Panska Ves**	**1.44**	**224**	Pg		**Pg**	**19 14 35.9**	**0.0**
PVCC				Sg		**Sn**	**19 14 55.3**	**0.0**
	200nm,0.4s							
BRG	**Berggiesshubel**	**1.55**	**244**	PN		**Pb**	**19 14 37.5**	**-0.3**
BRG				PG		**Pg**	**19 14 38.5**	**+0.6**
BRG				SG		**Sg**	**19 14 58.4**	**+0.3**
	86nm,0.5s							
KRLC	**Kraliky**	**1.56**	**165**	*e*PG		**Pn**	**19 14 37.6**	**+0.3**
KRLC				*e*SG		**Sn**	**19 14 57.3**	**-1.0**
KRLC	**Kraliky**	**1.56**	**165**	Pg		**Pn**	**19 14 37.6**	**+0.3**
KRLC				Sg		**Sn**	**19 14 57.3**	**-1.0**
GOPC	**GO Pecny, Ondr**	**1.87**	**208**	*e*PN		**Pn**	**19 14 41.6**	**0.0**
GOPC				*e*PG		**Pb**	**19 14 43.3**	**-0.1**
GOPC	**GO Pecny, Ondr**	**1.87**	**208**	Pn		**Pn**	**19 14 41.6**	**0.0**
PRU	**Pruhonice**	**1.89**	**213**	*e*PN		**Pn**	**19 14 41.5**	**-0.3**
PRU				*e*PG		**Pb**	**19 14 43.3**	**-0.3**
PRU				*e*SG		**Sb**	**19 15 07.3**	**-0.4**
	comp=Z,49nm,0.4s							
PRU	**Pruhonice**	**1.89**	**213**	Pn		**Pn**	**19 14 41.5**	**-0.3**
CLL	**Collm**	**1.98**	**263**	*e*Pn		**Pn**	**19 14 43.0**	**0.0**
CLL				*e*Pg		**Pg**	**19 14 47.0**	**+0.8**
CLL				*i*			19 14 51.0	
CLL				*e*Sg		**Sg**	**19 15 12.0**	**+0.1**
	comp=Z,31nm,0.5s							
MORC	**Moravsky Berou**	**2.01**	**153**	*e*Pn		**Pn**	**19 14 43.3**	**-0.3**
MORC				*e*Sg		**Sb**	**19 15 11.0**	**-0.4**
OKC	**Ostrava-Krasne**	**2.16**	**143**	*e*PG		**Pg**	**19 14 49.5**	**-0.2**
OKC				*e*SG		**Sg**	**19 15 16.9**	**-0.8**
	comp=Z,38nm,0.6s							
OKC	**Ostrava-Krasne**	**2.16**	**143**	Pg		**Pg**	**19 14 49.5**	**-0.2**
OKC				Sg		**Sg**	**19 15 16.9**	**-0.8**
	comp=Z,38nm,0.6s							
VRAC	**Vranov**	**2.29**	**172**	*e*Pn		**Pn**	**19 14 48.1**	**+0.7**
VRAC				*e*Sg		**Sb**	**19 15 19.6**	**+0.2**
OJC	**Ojcow**	**2.69**	**119**	*e*Pg		**Pg**	**19 15 00.4**	**+0.6**
OJC				*e*Sg		**Sg**	**19 15 35.4**	**+0.8**
OJC	**Ojcow**	**2.69**	**119**	*e*Pg		**Pg**	**19 15 00.4**	**+0.6**
OJC				*e*Sg		**Sg**	**19 15 35.4**	**+0.8**
OJC	**Ojcow**	**2.69**	**119**	*e*Pg		**Pg**	**19 15 00.4**	**+0.6**
OJC				*e*Sg		**Sg**	**19 15 35.4**	**+0.8**
NKC	**Novy Kostel**	**2.69**	**241**	*e*PN		**Pn**	**19 14 53.7**	**+0.8**
NKC				*e*PG		**Pg**	**19 15 00.2**	**+0.3**
NKC				*e*SG		**Sg**	**19 15 36.7**	**+1.9**
	comp=Z,76nm,0.4s							
NKC	**Novy Kostel**	**2.69**	**241**	Pn		**Pn**	**19 14 53.7**	**+0.8**
KHC	**Kasperske Hory**	**2.95**	**215**	*e*PN		**Pn**	**19 14 56.0**	**-0.4**
KHC				*e*PG		**Pb**	**19 15 02.8**	**+1.1**
KHC				*e*SG		**Sg**	**19 15 41.5**	**-1.4**
	comp=Z,15nm,0.6s							
KHC	**Kasperske Hory**	**2.95**	**215**	Pn		**Pn**	**19 14 56.0**	**-0.4**
BSD	**Bornholm Skovb**	**3.62**	**349**	*i* P		**Pn**	**19 15 05.8**	**+0.3**
BSD				*e*S		**Sn**	**19 15 47.1**	**-1.8**
BSD	**Bornholm Skovb**	**3.62**	**349**	*i* P		**Pn**	**19 15 05.8**	**+0.3**
BSD				*e*S		**Sn**	**19 15 47.1**	**-1.8**
CONA	**Conrad Observa**	**3.66**	**183**	Pn		**Pn**	**19 15 07.1**	**+0.9**
	comp=Z,1.0nm,0.2s							
CONA				Sg		**Sg**	**19 16 04.2**	**-1.6**
	comp=Z,15nm,0.5s							
MOA	**Molln**	**3.92**	**199**	Pn		**Pn**	**19 15 10.5**	**+0.7**
	comp=Z,1.5nm,0.2s							
MOA				Sg		**Sg**	**19 16 15.2**	**+0.9**
	comp=Z,21nm,0.6s							
ARSA	**Arzberg**	**4.35**	**186**	Pn		**Pn**	**19 15 19.2**	**+3.5**
	comp=Z,0.9nm,0.3s							
ARSA				Sg		**Sg**	**19 16 26.6**	**-1.4**
	comp=Z,15nm,0.9s							
KBA	**Koelnbreinsper**	**4.86**	**203**	Pn		**Pn**	**19 15 23.6**	**+0.8**
	comp=Z,0.8nm,0.2s							
KBA				Sg		**Sg**	**19 16 45.4**	**+1.1**
	comp=Z,5.0nm,0.4s							
SOKA	**Soboth**	**4.96**	**189**	Sg		**Sg**	**19 16 47.2**	**-0.3**
	comp=Z,0.7nm,0.2s							
OBKA	**Obir**	**5.18**	**192**	Sg		**Sg**	**19 16 57.0**	**+2.4**
	comp=Z,12nm,0.8s							
MYKA	**Terra Mystica**	**5.22**	**199**	Pn		**Pn**	**19 15 26.9**	**-0.7**
MYKA				Sg		**Sg**	**19 16 55.0**	**-0.8**
	comp=Z,2.6nm,0.4s							
ABTA	**Abfaltersbach**	**5.39**	**208**	Pn		**Pn**	**19 15 31.1**	**+1.1**
	comp=Z,0.9nm,0.3s							
ABTA				Sg		**Sg**	**19 16 58.0**	**-3.3**
	comp=Z,2.5nm,0.4s							

*ISCJB **16** 19:33:13.9±0.3,53°.32N±0°.05×157°.9E±0°.1,h216km±3km, mb3.4/9, Error ellipse: s-maj=12.0km s-min=5.2km az=31.3*
*MOS **16** 19:33:13.6±0.7,53°.31N×157°.82E,h215km,mb4.0/4, Error ellipse: s-maj=20.1km s-min=6.4km az=71.2*
*KRSC **16** 19:33:13.2±0.9,53°.35N×157°.86E,h216km±8km,ML3.9*
*IDC **16** 19:33:14.3±0.5,53°.37N×157°.69E,h206km±4km,mb3.2/9, mb1 3.4/10,mb1mx3.1/34,mbtmp3.7/10, Error ellipse: s-maj=20.2km s-min=11.9km az=140.0*

ISC 16 19:33:14.8±0.7,53°.34N±0°.05×157°.94E±0°.06,h213km±5km, n74,σ1^{9}06/111,**mb3.6/9,1C-1D,Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PETK	**Petropavlovsk-**	**0.28**	**212**	P		**Pn**	**19 33 41.9**	**-1.0**
	15nm,0.3s,baz=68,slow=6.8,SNR=147							
PETK				S		**S**	**19 34 03.4**	**-1.3**
	1.2nm,0.3s,baz=55,slow=18,SNR=6.6							
GNL	**Ganaly**	**0.35**	**360**	PN		**Pn**	**19 33 42.3**	**-0.8**
GNL				S		**S**	**19 34 04.1**	**-1.3**
GNL	**Ganaly**	**0.35**	**360**	*e*P		**Pn**	**19 33 42.3**	**-0.8**
GNL				*e*S		**S**	**19 34 04.1**	**-1.3**
KOK	**Koryaka**	**0.42**	**97**	PN		**Pn**	**19 33 43.4**	**+0.1**
KOK				S		**S**	**19 34 05.9**	**+0.5**
KOK	**Koryaka**	**0.42**	**97**	*e*P		**Pn**	**19 33 43.4**	**+0.1**
KOK				*e*S		**S**	**19 34 05.9**	**+0.5**
KRX	**Arik**	**0.42**	**88**	PN		**Pn**	**19 33 42.7**	**-0.6**
KRX				S		**S**	**19 34 05.1**	**-0.5**
KRX	**Arik**	**0.42**	**88**	*e*P		**Pn**	**19 33 42.7**	**-0.6**
KRX				*e*S		**S**	**19 34 05.1**	**-0.5**
AVH	**Avacha**	**0.48**	**99**	PN		**Pn**	**19 33 43.6**	**+0.1**
AVH				S		**S**	**19 34 08.1**	**+2.4**
AVH	**Avacha**	**0.48**	**99**	*e*P		**Pn**	**19 33 43.6**	**+0.1**
AVH				*e*S		**S**	**19 34 08.1**	**+2.4**
KRER	**Koryakskii**	**0.48**	**94**	PN		**Pn**	**19 33 42.3**	**-1.3**
KRER				S		**S**	**19 34 06.7**	**+0.7**
KRER	**Koryakskii**	**0.48**	**94**	*e*P		**Pn**	**19 33 42.3**	**-1.3**
KRER				*e*S		**S**	**19 34 06.7**	**+0.7**
SMAR	**Somma**	**0.52**	**99**	PN		**Pn**	**19 33 44.0**	**+0.2**
SMAR				S		**S**	**19 34 07.3**	**+1.0**
SMAR	**Somma**	**0.52**	**99**	*e*P		**Pn**	**19 33 44.0**	**+0.2**
SMAR				*e*S		**S**	**19 34 07.3**	**+1.0**
KRMR	**Karymshinskiy**	**0.53**	**168**	PN		**Pn**	**19 33 42.7**	**-0.8**
KRMR				S		**S**	**19 34 05.3**	**-0.5**
KRMR	**Karymshinskiy**	**0.53**	**168**	*e*P		**Pn**	**19 33 42.7**	**-0.8**
KRMR				*e*S		**S**	**19 34 05.3**	**-0.5**
PET	**Petropavlovsk**	**0.53**	**127**	⇓*i* PN		**Pn**	**19 33 43.3**	**-0.2**
PET				S		**S**	**19 34 05.8**	**0.0**
PET				pmax	pmax			
	comp=Z,39nm,0.6s							
PET				smax	smax			
	comp=E,103nm,0.6s							
PET				smax	smax			
	comp=N,106nm,0.8s							
UGLR	**Uglovaya**	**0.55**	**104**	PN		**Pn**	**19 33 44.0**	**+0.3**
UGLR				S		**S**	**19 34 06.5**	**+0.3**
UGLR	**Uglovaya**	**0.55**	**104**	*e*P		**Pn**	**19 33 44.0**	**+0.3**
UGLR				*e*S		**S**	**19 34 06.5**	**+0.3**
SDLR	**Sedlovina**	**0.57**	**96**	PN		**Pn**	**19 33 43.7**	**-0.1**
SDLR				S		**S**	**19 34 06.5**	**+0.1**
SDLR	**Sedlovina**	**0.57**	**96**	*e*P		**Pn**	**19 33 43.7**	**-0.1**
SDLR				*e*S		**S**	**19 34 06.5**	**+0.1**
DALK	**Dalny**	**0.58**	**122**	PN		**Pn**	**19 33 43.2**	**-0.5**
DALK				S		**S**	**19 34 06.1**	**0.0**
DALK	**Dalny**	**0.58**	**122**	*e*P		**Pn**	**19 33 43.2**	**-0.5**
DALK				*e*S		**S**	**19 34 06.1**	**0.0**
NLC	**Nalytchevo**	**0.86**	**101**	PN		**Pn**	**19 33 45.1**	**+0.1**
NLC				S		**S**	**19 34 09.0**	**+0.6**
NLC	**Nalytchevo**	**0.86**	**101**	*e*P		**Pn**	**19 33 45.1**	**+0.1**
NLC				*e*S		**S**	**19 34 09.0**	**+0.6**
ASAK	**Asacha**	**0.96**	**182**	PN		**Pn**	**19 33 45.5**	**-0.3**
ASAK	**Asacha**	**0.96**	**182**	*e*P		**Pn**	**19 33 45.5**	**-0.3**
RUS	**Russkaya**	**0.98**	**159**	PN		**Pn**	**19 33 44.9**	**-0.9**
RUS				S		**S**	**19 34 08.9**	**-0.8**
RUS	**Russkaya**	**0.98**	**159**	*e*P		**Pn**	**19 33 44.9**	**-0.9**
RUS				*e*S		**S**	**19 34 08.9**	**-0.8**
SPN	**Mys Shipunski**	**1.27**	**100**	PN		**Pn**	**19 33 47.2**	**-0.6**
SPN				S		**S**	**19 34 12.1**	**-1.2**
SPN	**Mys Shipunski**	**1.27**	**100**	*e*P		**Pn**	**19 33 47.2**	**-0.6**
SPN				*e*S		**S**	**19 34 12.1**	**-1.2**
PAU	**Pauzhetka**	**2.00**	**201**	PN		**Pn**	**19 33 53.6**	**-0.7**
PAU	**Pauzhetka**	**2.00**	**201**	*e*P		**Pn**	**19 33 53.6**	**-0.7**
MKZ	**Mys Kozlova**	**2.55**	**60**	PN		**Pn**	**19 33 59.7**	**-0.2**
MKZ				S		**S**	**19 34 33.4**	**-1.4**
MKZ	**Mys Kozlova**	**2.55**	**60**	*e*P		**Pn**	**19 33 59.7**	**-0.2**
MKZ				*e*S		**S**	**19 34 33.4**	**-1.4**
ESO	**Esso**	**2.62**	**9**	PN		**Pn**	**19 34 00.6**	**-0.2**
ESO	**Esso**	**2.62**	**9**	*e*P		**Pn**	**19 34 00.6**	**-0.2**
KMNR	**Kamenistaya**	**2.76**	**28**	PN		**Pn**	**19 34 03.2**	**+0.8**
KMNR	**Kamenistaya**	**2.76**	**28**	*e*P		**Pn**	**19 34 03.2**	**+0.8**
SKR	**Severo-Kuril's**	**2.89**	**204**	⇑*i* PN		**Pn**	**19 34 04.0**	**+0.1**
SKR				*i* S		**S**	**19 34 41.0**	**-0.9**
SKR				pmax	pmax			
	comp=Z,53nm,0.6s							
SKR				smax	smax			
	comp=N,117nm,0.3s							
SKR				smax	smax			
	comp=E,82nm,0.4s							
KOZ	**Kozyrevsk**	**2.94**	**22**	PN		**Pn**	**19 34 04.6**	**+0.3**
KOZ	**Kozyrevsk**	**2.94**	**22**	*e*P		**Pn**	**19 34 04.6**	**+0.3**
KPT	**Kopyto**	**2.94**	**26**	PN		**Pn**	**19 34 04.4**	**0.0**
KPT	**Kopyto**	**2.94**	**26**	*e*P		**Pn**	**19 34 04.4**	**0.0**
KIRR	**Kirishev**	**2.96**	**27**	PN		**Pn**	**19 34 04.8**	**+0.1**
KIRR	**Kirishev**	**2.96**	**27**	*e*P		**Pn**	**19 34 04.8**	**+0.1**
BZMR	**Bezymyannaya**	**2.99**	**29**	PN		**Pn**	**19 34 05.4**	**+0.4**
BZMR	**Bezymyannaya**	**2.99**	**29**	*e*P		**Pn**	**19 34 05.4**	**+0.4**
ZLN	**Zelenaya**	**3.15**	**31**	PN		**Pn**	**19 34 08.2**	**+1.3**
ZLN	**Zelenaya**	**3.15**	**31**	*e*P		**Pn**	**19 34 08.2**	**+1.3**
LGNR	**Loginova**	**3.17**	**29**	PN		**Pn**	**19 34 08.6**	**+1.3**
LGNR	**Loginova**	**3.17**	**29**	*e*P		**Pn**	**19 34 08.6**	**+1.3**
CIRR	**Tsirk**	**3.22**	**29**	PN		**Pn**	**19 34 09.4**	**+1.7**
CIRR	**Tsirk**	**3.22**	**29**	*e*P		**Pn**	**19 34 09.4**	**+1.7**
KRSR	**Krestovskiy**	**3.25**	**27**	PN		**Pn**	**19 34 08.1**	**0.0**
KRSR	**Krestovskiy**	**3.25**	**27**	*e*P		**Pn**	**19 34 08.1**	**0.0**
BDR	**Baidarnaya**	**3.74**	**29**	PN		**Pn**	**19 34 14.7**	**+0.9**
BDR	**Baidarnaya**	**3.74**	**29**	*e*P		**Pn**	**19 34 14.7**	**+0.9**
SRKR	**Sorokina**	**3.80**	**28**	PN		**Pn**	**19 34 14.0**	**-0.6**
SRKR				S		**S**	**19 34 58.0**	**-3.3**
SRKR	**Sorokina**	**3.80**	**28**	*e*P		**Pn**	**19 34 14.0**	**-0.6**
SRKR				*e*S		**S**	**19 34 58.0**	**-3.3**
SMKR	**Semkarok**	**3.83**	**31**	PN		**Pn**	**19 34 15.9**	**+1.0**
SMKR				S		**S**	**19 35 02.0**	**+0.1**
SMKR	**Semkarok**	**3.83**	**31**	*e*P		**Pn**	**19 34 15.9**	**+1.0**
SMKR				*e*S		**S**	**19 35 02.0**	**+0.1**
KBG	**Krutoberegovo**	**4.01**	**41**	*e*S		**S**	**19 35 05.4**	**-0.4**
BKI	**Bering**	**5.06**	**65**	PN		**Pn**	**19 34 29.8**	**-0.3**
BKI				S		**S**	**19 35 25.9**	**-3.5**
BKI	**Bering**	**5.06**	**65**	*e*P		**Pn**	**19 34 29.8**	**-0.3**
BKI				*e*S		**S**	**19 35 25.9**	**-3.5**
KLR	**Kul'dur**	**16.85**	**266**	P		**P**	**19 36 56.8**	**-0.3**
	comp=E,0.1nm,0.3s,baz=68,slow=13,SNR=3.9							
MJAR	**Matsushiro Arr**	**21.73**	**227**	P		**P**	**19 37 48.1**	**-1.1**
	comp=E,1.6nm,0.6s,baz=25,slow=9.3,SNR=15							
TIXI	**Tiksi**	**22.32**	**336**	P		**P**	**19 37 52.9**	**-1.4**
	comp=E,1.7nm,0.5s,baz=125,slow=6.6,SNR=4.3							
ILAR	**Eielson Array**	**29.56**	**45**	P		**P**	**19 38 59.9**	**+0.7**
	comp=E,1.9nm,0.7s,baz=269,slow=8.2,SNR=26							
YKA	**Yellowknife Ar**	**43.85**	**42**	P		**P**	**19 40 59.1**	**-0.2**
	comp=E,0.9nm,0.7s,baz=296,slow=8.9,SNR=3.2							
MKAR	**Makanchi Array**	**46.88**	**294**	P		**P**	**19 41 23.1**	**-0.3**
	comp=E,0.1nm,0.4s,baz=54,slow=6.8,SNR=2.6							
PDAR	**Pinedale Array**	**58.52**	**60**	P		**P**	**19 42 50.8**	**+2.0**
	comp=E,0.6nm,0.3s,baz=337,slow=3.9,SNR=5.2							
TXAR	**Lajitas Array**	**71.72**	**65**	P		**P**	**19 44 15.4**	**+1.7**
	comp=E,0.5nm,0.4s,baz=295,slow=5.0,SNR=14							
WRA	**Warramunga Arr**	**75.79**	**203**	P		**P**	**19 44 36.5**	**-0.6**
	comp=E,0.3nm,0.6s,baz=14,slow=5.6,SNR=3.1							
ASAR	**Alice Springs**	**79.48**	**202**	P		**P**	**19 44 57.7**	**+0.3**
	comp=E,0.2nm,0.7s,baz=16,slow=4.8,SNR=6.0							

*PRU **16** 19:39:23.9,43°.70N×12°.19E,h0km*
*ISCJB **16** 19:39:25.8±0.2,43°.91N±0°.02×11°.85E±0°.03,h18km±3km, Error ellipse: s-maj=3.9km s-min=3.2km az=1.3*
*IASPEI **16** 19:39:25.2±0.9,43°.91N±0°.03×11°.87E±0°.02,h10km±5km, Error ellipse: s-maj=5.0km s-min=2.9km az=31.8,GT5 selection from ISC bulletin GT5 identified by Bond¨¡r and McLaughlin (2009) selection criteria Bond¨¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ROM **16** 19:39:25.6±0.1,43°.92N×11°.88E,h8km±1km,Ml2.8/22, Error ellipse: s-maj=2.0km s-min=1.2km az=20.0*
*CSEM **16** 19:39:26.0±0.1,43°.91N×11°.89E,h10km,ML2.8, Error ellipse: s-maj=2.5km s-min=2.2km az=57.0*
*LDG **16** 19:39:26.3±0.2,43°.93N×11°.92E,h10km,Md2.8/1, Ml2.9/11, Error ellipse: s-maj=4.6km s-min=3.0km az=49.0*

ISC 16 19:39:25.3±0.8,43°.92N±0°.02×11°.88E±0°.02,h13km±4km, n134,σ1^{9}60/159,**2C-2D,Central Italy**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.03**	**243**	⇓*i* Pg		**Pg**	**19 39 27.3**	**-0.3**
SFI				Sg		**Sg**	**19 39 28.5**	**-0.8**
	26µm,0.4s							
SFI	**Santa Sofia**	**0.03**	**243**	⇓*i* Pg		**Pg**	**19 39 27.3**	**-0.3**
SFI				Sg		**Sg**	**19 39 28.5**	**-0.8**
	26µm,0.4s							
ASQU	**Asqua**	**0.14**	**209**	⇑*i* Pg		**Pg**	**19 39 29.4**	**+0.6**
ASQU				Sg		**Sg**	**19 39 32.3**	**+1.0**
	2µm,0.3s							
ASQU	**Asqua**	**0.14**	**209**	⇑*i* Pg		**Pg**	**19 39 29.4**	**+0.6**
ASQU				Sg		**Sg**	**19 39 32.3**	**+1.0**
	2µm,0.3s							
T0502	**Localit˜ San**	**0.18**	**95**	Pg		**Pg**	**19 39 30.0**	**+0.6**
T0502				Sg		**Sg**	**19 39 33.6**	**+1.3**
	154µm,8.5s							
VMG	**Vicchio**	**0.25**	**280**	Pg		**Pg**	**19 39 31.3**	**+0.8**
VMG	**Vicchio**	**0.25**	**280**	Pg		**Pg**	**19 39 31.3**	**+0.8**
CPGN	**Carpegna, Ital**	**0.34**	**110**	Pg		**Pb**	**19 39 33.7**	**+0.4**
	502µm,20.0s							
CPGN	**Carpegna, Ital**	**0.34**	**110**	Pg		**Pb**	**19 39 33.7**	**+0.4**
	502µm,20.0s							
PARC	**Parchiule**	**0.37**	**136**	Pg		**Pg**	**19 39 33.4**	**+0.6**
	613nm,0.5s							
PARC	**Parchiule**	**0.37**	**136**	Pg		**Pg**	**19 39 33.4**	**+0.6**
	613nm,0.5s							
SEI	**Scarperia**	**0.40**	**290**	Pg		**Pg**	**19 39 33.8**	**+0.5**
SEI				Sg		**Sg**	**19 39 39.8**	**+1.0**
SEI	**Scarperia**	**0.40**	**290**	Pg		**Pg**	**19 39 33.8**	**+0.5**
SEI				Sg		**Sg**	**19 39 39.8**	**+1.0**
IMOL	**Imola, Italy**	**0.45**	**347**	Pg		**Pb**	**19 39 35.7**	**+0.6**
	263nm,0.7s							
IMOL	**Imola, Italy**	**0.45**	**347**	Pg		**Pb**	**19 39 35.7**	**+0.6**
	263nm,0.7s							
BADI	**Badiali**	**0.48**	**147**	Pg		**Pg**	**19 39 35.4**	**+0.6**
BADI				Sg		**Sb**	**19 39 42.7**	**0.0**
	564nm,0.4s							
BADI	**Badiali**	**0.48**	**147**	Pg		**Pg**	**19 39 35.4**	**+0.6**
BADI				Sg		**Sb**	**19 39 42.7**	**0.0**
	564nm,0.4s							
ATMC	**Monte Cedrone**	**0.52**	**154**	Pg		**Pg**	**19 39 36.1**	**+0.6**
	709nm,0.4s							
ATMC	**Monte Cedrone**	**0.52**	**154**	Pg		**Pg**	**19 39 36.1**	**+0.6**
	709nm,0.4s							
MTRZ	**Monterenzio**	**0.55**	**327**	Pg		**Pg**	**19 39 37.1**	**+1.1**
	807nm,0.5s							
MTRZ	**Monterenzio**	**0.55**	**327**	Pg		**Pg**	**19 39 37.1**	**+1.1**
	807nm,0.5s							
PTF	**Prato**	**0.59**	**274**	Pg		**Pg**	**19 39 37.1**	**+0.3**
PTF	**Prato**	**0.59**	**274**	Pg		**Pg**	**19 39 37.1**	**+0.3**
CAFI	**Castiglion Fio**	**0.59**	**174**	Pg		**Pg**	**19 39 37.6**	**+0.8**
	400nm,0.5s							
CAFI	**Castiglion Fio**	**0.59**	**174**	Pg		**Pg**	**19 39 37.6**	**+0.8**
	400nm,0.5s							
FNVD	**Fontana Vidola**	**0.60**	**295**	Pg		**Pg**	**19 39 37.7**	**+0.6**
	605nm,0.5s							
FNVD	**Fontana Vidola**	**0.60**	**295**	Pg		**Pg**	**19 39 37.7**	**+0.6**
	605nm,0.5s							
ATPC	**Poggio Castell**	**0.60**	**136**	Pg		**Pb**	**19 39 38.4**	**+0.7**
	543nm,0.5s							
ATPC	**Poggio Castell**	**0.60**	**136**	Pg		**Pb**	**19 39 38.4**	**+0.7**
	543nm,0.5s							
CSNT	**Castellina Chi**	**0.62**	**224**	Pg		**Pg**	**19 39 38.2**	**+0.9**
	300nm,0.4s							
CSNT	**Castellina Chi**	**0.62**	**224**	Pg		**Pg**	**19 39 38.2**	**+0.9**
	300nm,0.4s							
ATVO	**AVT- Monte Val**	**0.66**	**145**	Pg		**Pg**	**19 39 38.5**	**+0.4**
	701nm,0.7s							
ATVO	**AVT- Monte Val**	**0.66**	**145**	Pg		**Pg**	**19 39 38.5**	**+0.4**
	701nm,0.7s							
CRMI	**Carmignano**	**0.67**	**259**	Pg		**Pg**	**19 39 38.8**	**+0.4**
	497nm,0.6s							
CRMI	**Carmignano**	**0.67**	**259**	Pg		**Pg**	**19 39 38.8**	**+0.4**
	497nm,0.6s							
FSSB	**Fossombrone**	**0.69**	**109**	Pg		**Pg**	**19 39 38.9**	**+0.3**
	342nm,0.3s							
FSSB	**Fossombrone**	**0.69**	**109**	Pg		**Pg**	**19 39 38.9**	**+0.3**
	342nm,0.3s							
MPAG	**Monte Paganucc**	**0.70**	**114**	Pg		**Pg**	**19 39 39.2**	**+0.4**
	192nm,0.6s							
MPAG	**Monte Paganucc**	**0.70**	**114**	Pg		**Pg**	**19 39 39.2**	**+0.4**
	192nm,0.6s							
PZZT	**Monte Pizzetto**	**0.77**	**286**	Pg		**Pg**	**19 39 41.4**	**+1.2**
	189nm,0.6s							
PZZT	**Monte Pizzetto**	**0.77**	**286**	Pg		**Pg**	**19 39 41.4**	**+1.2**
	189nm,0.6s							
ATTE	**AVT- Monte Tez**	**0.80**	**154**	Pg		**Pg**	**19 39 41.3**	**+0.6**
	405nm,0.7s							
ATTE	**AVT- Monte Tez**	**0.80**	**154**	Pg		**Pg**	**19 39 41.3**	**+0.6**
	405nm,0.7s							
FROS	**Frosini**	**0.88**	**217**	Pg		**Pg**	**19 39 43.3**	**+1.0**
	551nm,1.1s							
FROS	**Frosini**	**0.88**	**217**	Pg		**Pg**	**19 39 43.3**	**+1.0**
	551nm,1.1s							
ATCC	**AVT- Casa Cast**	**0.92**	**143**	Pg		**Pb**	**19 39 44.1**	**+1.0**
	350nm,0.4s							
ATCC	**AVT- Casa Cast**	**0.92**	**143**	Pg		**Pb**	**19 39 44.1**	**+1.0**
	350nm,0.4s							
MGAB	**Montegabbione**	**1.02**	**171**	Pg		**Pg**	**19 39 45.3**	**+0.4**
	410nm,0.7s							
MGAB	**Montegabbione**	**1.02**	**171**	Pg		**Pg**	**19 39 45.3**	**+0.4**
	410nm,0.7s							
ARCI	**Arcidosso**	**1.11

MOA	**Molln**	**4.27**	**22**	*e*Pn		**Pn**	**19 40 31.8**	**+1.8**
	1.6nm,0.3s							
MOA	**Molln**	**4.27**	**22**	Pn		**Pn**	**19 40 31.8**	**+1.8**
	1.6nm,0.3s							
ORIF	**Oris-en-Rattie**	**4.42**	**285**	*e*Pn		**Pn**	**19 40 33.5**	**+1.4**
ORIF				*e*Sn		**Sn**	**19 41 18.5**	**-4.9**
	4.1nm,0.5s							
ORIF	**Oris-en-Rattie**	**4.42**	**285**	*e*Pn		**Pn**	**19 40 33.5**	**+1.4**
CONA	**Conrad Observa**	**4.88**	**33**	*e*Pn		**Pn**	**19 40 39.9**	**+1.5**
	1.6nm,0.3s							
CONA	**Conrad Observa**	**4.88**	**33**	Pn		**Pn**	**19 40 39.9**	**+1.5**
	1.6nm,0.3s							
CABF	**La Chapelle**	**4.90**	**305**	*e*Pn		**Pn**	**19 40 40.3**	**+1.6**
CABF	**La Chapelle**	**4.90**	**305**	*e*Pn		**Pn**	**19 40 40.3**	**+1.6**
HINF	**Hinteralfeld**	**5.25**	**320**	*e*Pn		**Pn**	**19 40 45.1**	**+1.6**
HINF				*e*Sn		**Sn**	**19 41 39.3**	**-4.5**
	8.7nm,0.4s							
HINF	**Hinteralfeld**	**5.25**	**320**	*e*Pn		**Pn**	**19 40 45.1**	**+1.6**
KHC	**Kasperske Hory**	**5.34**	**12**	*e*PN		**Pn**	**19 40 45.8**	**+1.0**
KHC				*e*SN		**Sn**	**19 41 48.4**	**+2.2**
KHC	**Kasperske Hory**	**5.34**	**12**	Pn		**Pn**	**19 40 45.8**	**+1.0**
KHC				Sn		**Sn**	**19 41 48.4**	**+2.2**
CDF	**Champ du Feu**	**5.52**	**326**	*e*Pn		**Pn**	**19 40 48.6**	**+1.4**
CDF				*e*Sn		**Sn**	**19 41 46.4**	**-4.1**
	10nm,0.7s							
CDF	**Champ du Feu**	**5.52**	**326**	*e*Pn		**Pn**	**19 40 48.6**	**+1.4**
HAU	**Haudompre**	**5.62**	**319**	*e*Pn		**Pn**	**19 40 49.5**	**+0.9**
HAU				*e*Sn		**Sn**	**19 41 48.4**	**-4.6**
	30nm,0.6s							
HAU	**Haudompre**	**5.62**	**319**	*e*Pn		**Pn**	**19 40 49.5**	**+0.9**
LOR	**Lormes**	**6.55**	**304**	*e*P		**Pn**	**19 41 04.9**	**+3.6**
LOR	**Lormes**	**6.55**	**304**	*e*P		**Pn**	**19 41 04.9**	**+3.6**
MTLF	**Montolieu**	**7.04**	**269**	*e*Pn		**Pn**	**19 41 08.8**	**+0.8**
MTLF	**Montolieu**	**7.04**	**269**	*e*Pn		**Pn**	**19 41 08.8**	**+0.8**

CSEM ***16*** *19:39:30.6, 43.92N×11.88E, h8km±1km, ML2.7/9*
ROM 16 19:39:30.6±0.1, 43.92N×11.88E, h8km±1km, Ml2.7/9, 4C, Error ellipse: s-maj=2.1km s-min=1.4km az=13.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.03**	**229**	*i*Pg	Pg	19 39 32.3	+0.1
SFI				Sg	Sg	19 39 33.3	0.0
	26μm,0.4s						
SFI	**Santa Sofia**	**0.03**	**229**	*i*Pg	Pg	19 39 32.3	+0.1
SFI				Sg	Sg	19 39 33.3	0.0
	26μm,0.4s						
ASQU	**Asqua**	**0.14**	**206**	*i*Pg	Pg	19 39 34.3	+0.6
ASQU				Sg	Sg	19 39 37.3	+1.5
	2μm,0.3s						
ASQU	**Asqua**	**0.14**	**206**	*i*Pg	Pg	19 39 34.3	+0.6
ASQU				Sg	Sg	19 39 37.3	+1.5
	2μm,0.3s						
T0502	**Localit˜ San**	**0.19**	**97**	Pg	Pg	19 39 35.0	+0.5
T0502				Sg	Sg	19 39 38.5	+1.4
	154μm,8.5s						
VMG	**Vicchio**	**0.24**	**279**	Pg	Pg	19 39 35.8	+0.3
VMG	**Vicchio**	**0.24**	**279**	Pg	Pg	19 39 35.8	+0.3
CPGN	**Carpegna, Ital**	**0.34**	**111**	Pg	Pb	19 39 38.8	-0.3
	502μm,20.0s						
CPGN	**Carpegna, Ital**	**0.34**	**111**	Pg	Pb	19 39 38.8	-0.3
	502μm,20.0s						
PARC	**Parchiule**	**0.38**	**136**	Pg	Pg	19 39 38.5	+0.5
PARC				Sg	Sb	19 39 44.8	-0.9
	613nm,0.5s						
PARC	**Parchiule**	**0.38**	**136**	Pg	Pg	19 39 38.5	+0.5
PARC				Sg	Sb	19 39 44.8	-0.9
	613nm,0.5s						
SEI	**Scarperia**	**0.40**	**289**	Pg	Pg	19 39 38.8	+0.4
SEI	**Scarperia**	**0.40**	**289**	Pg	Pg	19 39 38.8	+0.4
IMOL	**Imola, Italy**	**0.45**	**348**	Pg	Pb	19 39 41.0	+0.3
	263nm,0.7s						
IMOL	**Imola, Italy**	**0.45**	**348**	Pg	Pb	19 39 41.0	+0.3
	263nm,0.7s						
BADI	**Badiali**	**0.49**	**147**	Pg	Pg	19 39 40.5	+0.4
	564nm,0.4s						
BADI	**Badiali**	**0.49**	**147**	Pg	Pg	19 39 40.5	+0.4
	564nm,0.4s						
ATMC	**Monte Cedrone**	**0.53**	**154**	Pg	Pg	19 39 41.3	+0.5
	709nm,0.4s						
ATMC	**Monte Cedrone**	**0.53**	**154**	Pg	Pg	19 39 41.3	+0.5
	709nm,0.4s						
PTF	**Prato**	**0.58**	**274**	Pg	Pg	19 39 42.2	+0.3
PTF	**Prato**	**0.58**	**274**	Pg	Pg	19 39 42.2	+0.3
FNVD	**Fontana Vidola**	**0.60**	**295**	Pg	Pg	19 39 42.6	+0.5
	605nm,0.5s						
FNVD	**Fontana Vidola**	**0.60**	**295**	Pg	Pg	19 39 42.6	+0.5
	605nm,0.5s						
CAFI	**Castiglion Fio**	**0.60**	**174**	Pg	Pb	19 39 42.8	-0.5
	400nm,0.5s						
CAFI	**Castiglion Fio**	**0.60**	**174**	Pg	Pb	19 39 42.8	-0.5
	400nm,0.5s						

CSEM ***16*** *19:40:00.1, 43.93N×11.89E, h8km, MD2.4/4*
ROM 16 19:40:00.1±0.1, 43.93N×11.89E, h8km, Md2.4/4, Ml1.2/2, Error ellipse: s-maj=1.8km s-min=0.9km az=14.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.04**	**228**	Pg	Pg	19 40 01.9	+0.1
SFI				Sg	Sg	19 40 03.0	0.0
	1μm,0.1s						
SFI	**Santa Sofia**	**0.04**	**228**	Pg	Pg	19 40 01.9	+0.1
SFI				Sg	Sg	19 40 03.0	0.0
	1μm,0.1s						
ASQU	**Asqua**	**0.15**	**208**	Pg	Pg	19 40 03.9	+0.5
ASQU				Sg	Sg	19 40 06.8	+1.2
	56nm,0.2s						
ASQU	**Asqua**	**0.15**	**208**	Pg	Pg	19 40 03.9	+0.5
ASQU				Sg	Sg	19 40 06.8	+1.2
	56nm,0.2s						
T0502	**Localit˜ San**	**0.18**	**99**	Pg	Pg	19 40 04.6	+0.7
T0502				Sg	Sg	19 40 08.0	+1.5
	786nm,3.2s						
VMG	**Vicchio**	**0.25**	**277**	Pg	Pg	19 40 05.9	+0.8
VMG				Sg	Sg	19 40 10.4	+1.9
VMG	**Vicchio**	**0.25**	**277**	Pg	Pg	19 40 05.9	+0.8
VMG				Sg	Sg	19 40 10.4	+1.9
PARC	**Parchiule**	**0.38**	**138**	Pg	Pg	19 40 08.1	+0.6
PARC				Sg	Sb	19 40 14.6	-0.5
PARC	**Parchiule**	**0.38**	**138**	Pg	Pg	19 40 08.1	+0.6
PARC				Sg	Sb	19 40 14.6	-0.5
SEI	**Scarperia**	**0.40**	**288**	Pg	Pg	19 40 08.4	+0.4
SEI				Sg	Sb	19 40 15.2	-0.6
SEI	**Scarperia**	**0.40**	**288**	Pg	Pg	19 40 08.4	+0.4
SEI				Sg	Sb	19 40 15.2	-0.6
BADI	**Badiali**	**0.49**	**148**	Pg	Pg	19 40 10.0	+0.3
BADI	**Badiali**	**0.49**	**148**	Pg	Pg	19 40 10.0	+0.3

MOS ***16*** *19:59:11.1±1.0, 54.85N×161.31W, h34km, mb6.4/140, MS5.9/113, Error ellipse: s-maj=6.6km s-min=4.9km az=71.6*

BJI ***16*** *19:59:11.0, 54.85N×161.30W, h50km, mb5.9/87, mB6.1/82, Ms6.2/97, Ms7 6.1/91*

NEIC ***16*** *19:59:12.9±0.1, 54.79N×161.29W, h36km, mb6.3/299, ME6.1, MS5.9/298, MW6.1, MW6.1, ML5.8(AEIC), Error ellipse: s-maj=2.8km s-min=2.0km az=172.0, Moment Tensor Solution. s99 Moment tensor: Scale 10¹⁸Nm; Mrr0.95; Mθθ-1.01; Mφφ0.06; Mrθ0.71; Mrφ-0.95; Mθφ0.33; Best double couple: M0 1.60000×10¹⁸ NP1:φs230.00000°, δ30.00000°, λ77.00000°. NP2:φs66.00000°, δ61.00000°, λ97.00000°. Principal axes: T 1.1900, Plg73.0000°, Azm354.0000°; N 0.6100, Plg7.0000°, Azm242.0000°; P -1.7900, Plg16.0000°, Azm150.0000°; Broadband fault plane solution: P waves. NP1:φs245.00000°, δ25.00000°, λ90.00000°. NP2:φs65.00000°, δ65.00000°, λ90.00000°. P3KPbc. Principal axes: T Plg70.0000°, Azm335.0000°; N Plg0.0000°, Azm0.0000°; P Plg20.0000°, Azm155.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Items knocked from shelves [V] at Cold Bay. Felt [IV] at King Cove and Sand Point. Also felt at Akutan.

GCMT ***16*** *19:59:12.9±0.1, 54.50N×161.07W, h46km, MW6.2/143, Moment Tensor Solution. s139,c333; s143,c506; Duration: 3ᵗ0 Moment tensor: Scale 10¹⁸Nm; Mrr1.72±.01; Mθθ-1.49±.01; Mφφ-0.22±.01; Mrθ1.11±.01; Mθφ-0.87±.01; Mrφ0.78±.01; Best double couple: M0 2.27600×10¹⁸ NP1:φs58.00000°, δ63.00000°, λ85.00000°. NP2:φs249.00000°, δ27.00000°, λ100.00000°. Principal axes: T 2.1790, Plg71.0000°, Azm316.0000°; N 0.1970, Plg5.0000°, Azm60.0000°; P -2.3740, Plg18.0000°, Azm152.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISCJB ***16*** *19:59:13.0±0.2, 54.81N±0.01×161.19W±0.01, h51km±1km, mb6.2/617, MS5.9/590 Error ellipse: s-maj=2.3km s-min=1.3km az=7.8*

IDC ***16*** *19:59:13.4±1.1, 54.81N×161.30W, h41km±9km, mb5.6/44, mb1 5.6/46, mb1mx5.6/48, mbtmp5.8/46, ML4.9/3, MS5.8/53, Ms1 5.8/53, ms1mx5.7/59, Error ellipse: s-maj=9.5km s-min=5.4km az=2.0*

NEIC ***16*** *19:59:14.0±0.0, 54.62N×161.09W, h35km, Moment Tensor Solution. s116 Moment tensor: Scale 10¹⁸Nm; Mrr1.50; Mθθ-1.19; Mφφ-0.30; Mrθ1.08; Mθφ-0.44; Mrφ1.05; Best double couple: M0 2.10000×10¹⁸ NP1:φs53.00000°, δ68.00000°, λ80.00000°. NP2:φs258.00000°, δ24.00000°, λ113.00000°. Principal axes: T 2.1800, Plg65.0000°, Azm305.0000°; N -0.2200, Plg9.0000°, Azm56.0000°; P -1.9700, Plg22.0000°, Azm150.0000°;*

ISC 16 19:59:12.9±0.2, 54.77N±0.03×161.32W±0.02, h41km±1km, h40km:pP-P, n2361, σ1.50/2689, mb6.2/639, MS5.9/595, 269C-25D, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DOL	**Dolgoi Island**	**0.49**	**320**	P	**Pn**	**19 59 25.6**	**+2.0**
PS4A	**Pavlof South-4**	**0.65**	**332**	P	**Pn**	**19 59 28.2**	**+2.4**
PVV	**Pavlof Volcano**	**0.66**	**336**	P	**Pn**	**19 59 28.3**	**+2.4**
SDPT	**Sand Point**	**0.75**	**39**	*e*Pn	**Pn**	**19 59 27.7**	**+0.6**
SDPT				*e*Sn	**Sn**	**19 59 37.0**	**-0.3**
PN6	**Pavlof North-6**	**0.77**	**333**	*e*Pn	**Pn**	**19 59 30.5**	**+3.1**
BRPK	**Brown Peak**	**1.41**	**266**	P	**Pn**	**19 59 39.4**	**+3.3**
SSLN	**Shishaldin Nor**	**1.55**	**273**	P	**Pn**	**19 59 41.4**	**+3.3**
SSLS	**Shishaldin Sou**	**1.56**	**269**	P	**Pn**	**19 59 41.0**	**+2.8**
SSLW	**Shishaldin Wes**	**1.62**	**271**	P	**Pn**	**19 59 41.9**	**+2.8**
VNWF	**Veniaminof 8**	**1.71**	**35**	P	**Pn**	**19 59 42.9**	**+2.6**
VNNF	**Veniaminof 3**	**1.90**	**36**	P	**Pn**	**19 59 45.6**	**+2.7**
VNHG	**Veniaminof 1**	**1.90**	**39**	P	**Pn**	**19 59 45.6**	**+2.7**
WESN	**West Dahl Nort**	**1.91**	**265**	*e*Pn	**Pn**	**19 59 46.1**	**+3.1**
WESE	**West Dahl East**	**1.93**	**262**	*e*Pn	**Pn**	**19 59 46.1**	**+2.9**
WESP	**Westdahl Peak**	**2.00**	**263**	P	**Pn**	**19 59 47.3**	**+3.1**
AKUT	**Akutan**	**2.68**	**258**	*e*Pn	**Pn**	**19 59 56.2**	**+2.7**
AKUT				*e*Sn	**Sn**	**20 00 28.6**	**+4.0**
ANNE	**Aniakchak Nort**	**2.83**	**39**	P	**Pn**	**19 59 58.4**	**+2.8**
AKMO	**Akutan Morgan**	**2.83**	**258**	*e*Sn	**Sn**	**20 00 34.6**	**+6.3**
AKRB	**Akutan Reef Bi**	**2.85**	**259**	P	**Pn**	**19 59 58.7**	**+2.8**
UNV	**Unalaska Valle**	**3.18**	**255**	*e*Pn	**Pn**	**20 00 02.5**	**+2.2**
UNV				*e*Sn	**Sn**	**20 00 40.9**	**+4.0**
MTBL	**Makushin Table**	**3.24**	**258**	*e*Pn	**Pn**	**20 00 03.8**	**+2.5**
MCIR	**Makushin Cirqu**	**3.36**	**258**	P	**Pn**	**20 00 05.7**	**+2.8**
PLK4	**Peulik 4**	**3.99**	**42**	P	**Pn**	**20 00 14.0**	**+2.5**
PLK1	**Peulik 1**	**4.01**	**39**	P	**Pn**	**20 00 13.9**	**+2.2**
PLK3	**Peulik 3**	**4.06**	**42**	P	**Pn**	**20 00 14.8**	**+2.4**
OKER	**Okmok East Rim**	**4.18**	**254**	P	**Pn**	**20 00 17.6**	**+3.4**
OKTU	**Okmok Mt. Tuli**	**4.20**	**253**	P	**Pn**	**20 00 17.8**	**+3.4**
OKWR	**Okmok West Rim**	**4.27**	**255**	P	**Pn**	**20 00 19.5**	**+4.1**
CAHL	**Cahill**	**4.69**	**43**	P	**Pn**	**20 00 22.8**	**+1.6**
KELA	**Mount Kelaz**	**4.80**	**38**	P	**Pn**	**20 00 24.4**	**+1.7**
NIKH	**Nikolski High**	**4.81**	**251**	*e*Pn	**Pn**	**20 00 24.7**	**+1.9**
NIKH				*e*Sn	**Sn**	**20 01 15.7**	**-1.5**
KABU	**Katmai Buttres**	**4.84**	**41**	P	**Pn**	**20 00 26.0**	**+2.7**
KABR	**Katmai Barrier**	**4.87**	**44**	P	**Pn**	**20 00 25.1**	**+1.4**
KVTA	**Katmai Vly 10**	**4.92**	**40**	P	**Pn**	**20 00 26.1**	**+1.9**
KAKN	**Katmai Knife C**	**4.95**	**42**	P	**Pn**	**20 00 26.8**	**+2.1**
KAWH	**Katmai**	**5.11**	**42**	P	**Pn**	**20 00 28.4**	**+1.5**
OHAK	**Old Harbor**	**5.13**	**58**	*e*Pn	**Pn**	**20 00 26.1**	**-1.0**
OHAK				*e*Sn	**Sn**	**20 01 25.2**	**+0.2**
OHAK				S	**Sn**	**20 01 27.2**	**+2.2**
KAHC	**Katmai Hardscr**	**5.21**	**39**	P	**Pn**	**20 00 30.0**	**+1.6**
SPIA	**Saint Paul Isl**	**5.56**	**299**	*e*Pn	**Pn**	**20 00 36.0**	**+3.0**
KDAK	**Kodiak Island**	**5.72**	**55**	*ce*P	**Pn**	**20 00 34.2**	**-1.1**
KDAK	**Kodiak Island**	**5.72**	**55**	*e*Pn	**Pn**	**20 00 34.4**	**-0.9**
KDAK				*e*Sn	**Sn**	**20 01 39.7**	**+0.2**
MCNL	**McNeil River**	**5.84**	**38**	P	**Pn**	**20 00 39.9**	**+3.0**
FOPK	**Fourpeaked Vol**	**5.88**	**44**	P	**Pn**	**20 00 38.5**	**+1.1**
CDD	**Cape Douglas**	**5.92**	**42**	P	**Pn**	**20 00 39.3**	**+1.3**
AUI	**Augustine Isla**	**6.28**	**40**	P	**Pn**	**20 00 45.2**	**+2.3**
AUW	**Augustine West**	**6.29**	**40**	P	**Pn**	**20 00 45.5**	**+2.6**
AUL	**Augustine Lava**	**6.31**	**40**	P	**Pn**	**20 00 45.9**	**+2.6**
AUE	**Augustine Isla**	**6.32**	**40**	*e*Pn	**Pn**	**20 00 46.1**	**+2.8**
OPT	**Oil Point**	**6.57**	**39**	*e*Pn	**Pn**	**20 00 49.3**	**+2.4**
ILIM	**Iliamna**	**6.97**	**37**	*e*Pn	**Pn**	**20 00 55.6**	**+3.1**
SVW2	**Sparrevohn**	**7.04**	**23**	*e*Pn	**Pn**	**20 00 54.5**	**+1.2**
HOM	**Homer**	**7.18**	**43**	*e*Pn	**Pn**	**20 00 55.9**	**+0.7**
CNPM	**China Poot**	**7.26**	**45**	*e*Pn	**Pn**	**20 00 57.0**	**+0.6**
RSO	**Redoubt South**	**7.32**	**35**	*e*Pn	**Pn**	**20 00 59.6**	**+2.3**
RDJH	**Redoubt Jeurge**	**7.40**	**35**	P	**Pn**	**20 01 01.1**	**+2.7**
BRLK	**Bradley Lake**	**7.55**	**44**	*e*Pn	**Pn**	**20 01 00.4**	**+0.1**
BGRM	**Barrier Glacie**	**7.65**	**35**	P	**Pn**	**20 01 04.6**	**+2.8**
KOSE	**Korovin Southe**	**7.96**	**257**	P	**Pn**	**20 01 09.9**	**+3.9**
KONE	**Korovin Northe**	**7.98**	**258**	P	**Pn**	**20 01 09.9**	**+3.6**
SPWE	**Spurr West**	**8.00**	**32**	P	**Pn**	**20 01 09.9**	**+3.3**
CKL	**Chakachamna La**	**8.01**	**33**	P	**Pn**	**20 01 09.9**	**+3.2**
SPCR	**Spurr Chakacha**	**8.05**	**33**	P	**Pn**	**20 01 10.2**	**+2.9**
SPU	**Mount Spurr**	**8.09**	**34**	*e*Pn	**Pn**	**20 01 10.3**	**+2.6**
SLKM	**Skilak Lake**	**8.27**	**41**	*e*P	**Pn**	**20 01 11.9**	**+1.7**
SLKM	**Skilak Lake**	**8.27**	**41**	*e*Pn	**Pn**	**20 01 11.9**	**+1.7**
STLK	**Strandline Lak**	**8.40**	**33**	P	**Pn**	**20 01 14.2**	**+2.2**
TT01	**Tatalina**	**8.61**	**16**	P	**Pn**	**20 01 16.0**	**+1.2**
TTA	**Tatalina**	**8.63**	**16**	*e*P	**Pn**	**20 01 16.1**	**+1.0**
TTA	**Tatalina**	**8.63**	**16**	*e*Pn	**Pn**	**20 01 16.1**	**+1.0**
FIB	**Fire Island**	**8.72**	**38**	*e*P	**Pn**	**20 01 17.3**	**+1.1**
FIB	**Fire Island**	**8.72**	**38**	*e*Pn	**Pn**	**20 01 17.3**	**+1.1**
SUA	**Susitna One**	**8.73**	**36**	*e*Pn	**Pn**	**20 01 16.7**	**+0.2**
RC01	**Rabbit Creek A**	**8.82**	**39**	*e*Pn	**Pn**	**20 01 18.4**	**+0.7**
SKT	**Skwentna**	**8.86**	**31**	*e*Pn	**Pn**	**20 01 20.9**	**+2.7**
GSTR	**Great Sitkin T**	**9.20**	**259**	*e*Pn	**Pn**	**20 01 26.2**	**+3.2**
PWL	**Port Wells**	**9.22**	**43**	*e*Pn	**Pn**	**20 01 23.8**	**+0.6**
GSTD	**Great Sitkin T**	**9.26**	**259**	*e*Pn	**Pn**	**20 01 26.5**	**+2.6**
GSCK	**Great Sitkin C**	**9.29**	**259**	*e*Pn	**Pn**	**20 01 26.5**	**+2.3**
PMR	**Palmer**	**9.38**	**38**	*e*P	**Pn**	**20 01 25.1**	**-0.2**
PMR	**Palmer**	**9.38**	**38**	*e*Pn	**Pn**	**20 01 25.1**	**-0.2**
MID	**Middleton Isla**	**9.38**	**54**	*e*P	**Pn**	**20 01 24.4**	**-1.0**
MID	**Middleton Isla**	**9.38**	**54**	*e*Pn	**Pn**	**20 01 24.4**	**-1.0**
PPLA	**Purkeypile**	**9.41**	**26**	*e*Pn	**Pn**	**20 01 28.8**	**+2.9**
ETKA	**Kagalaska Isla**	**9.49**	**258**	*e*Pn	**Pn**	**20 01 29.9**	**+3.1**
KNK	**Knik Glacier**	**9.51**	**40**	*e*Pn	**Pn**	**20 01 27.6**	**+0.4**
ADAG	**Mount Adagdak**	**9.55**	**259**	*e*Pn	**Pn**	**20 01 30.5**	**+2.7**
SML	**Sawmill**	**9.81**	**39**	*e*P	**Pn**	**20 01 30.0**	**-1.2**
SML	**Sawmill**	**9.81**	**39**	*e*Pn	**Pn**	**20 01 30.0**	**-1.2**
CAST	**Castle Rocks**	**9.88**	**25**	*e*Pn	**Pn**	**20 01 33.5**	**+1.3**
KICM	**Kanaga Island**	**9.92**	**260**	*e*Pn	**Pn**	**20 01 35.9**	**+3.1**
FID	**Port Fidalgo**	**9.92**	**47**	*e*Pn	**Pn**	**20 01 31.0**	**-1.8**
EYAK	**Cordova Ski Ar**	**10.14**	**49**	*e*Pn	**Pn**	**20 01 34.2**	**-1.5**
SCM	**Sheep Creek Mo**	**10.19**	**40**	*e*P	**Pn**	**20 01 35.9**	**-0.6**
SCM	**Sheep Creek Mo**	**10.19**	**40**	*e*Pn	**Pn**	**20 01 35.9**	**-0.6**
KTH	**Kantishna Hill**	**10.28**	**27**	*e*Pn	**Pn**	**20 01 39.5**	**+1.7**
TRF	**Thorofare Moun**	**10.37**	**29**	*e*Pn	**Pn**	**20 01 39.0**	**0.0**
DIV	**Divide**	**10.41**	**46**	*e*Pn	**Pn**	**20 01 38.3**	**-1.2**
GAMB	**Gambell**	**10.46**	**334**	*e*Pn	**Pn**	**20 01 42.6**	**+2.5**
RAGM	**Ragged Mountai**	**10.54**	**51**	*e*Pn	**Pn**	**20 01 40.5**	**-0.8**
KLU	**Klutina**	**10.54**	**44**	*e*Pn	**Pn**	**20 01 40.5**	**-0.9**
BPAW	**Bear Paw Mtn.**	**10.71**	**25**	*e*Pn	**Pn**	**20 01 44.6**	**+1.0**
RND	**Reindeer**	**10.75**	**31**	*e*P	**Pn**	**20 01 42.9**	**-1.3**
RND	**Reindeer**	**10.75**	**31**	*e*Pn	**Pn**	**20 01 42.9**	**-1.3**
BMRM	**Bremner River**	**10.83**	**48**	*e*Pn	**Pn**	**20 01 43.6**	**-1.6**
MCK	**McKinley**	**10.97**	**30**	*e*P	**Pn**	**20 01 46.1**	**-1.0**
MCK	**McKinley**	**10.97**	**30**	*e*Pn	**Pn**	**20 01 46.1**	**-1.0**
BWN	**Browne**	**11.16**	**28**	*e*Pn	**Pn**	**20 01 50.5**	**+0.8**
CRQM	**Cirque**	**11.39**	**51**	*e*Pn	**Pn**	**20 01 52.0**	**-1.0**
MLY	**Manley**	**11.56**	**23**	*e*Pn	**Pn**	**20 01 55.8**	**+0.6**
PAX	**Paxson**	**11.58**	**38**	*e*P	**Pn**	**20 01 54.0**	**-1.5**
PAX	**Paxson**	**11.58**	**38**	*e*Pn	**Pn**	**20 01 54.0**	**-1.5**
WRH	**Wood River Hil**	**11.78**	**29**	*e*Pn	**Pn**	**20 01 56.0**	**-2.0**
BALM	**Baldy**	**11.85**	**50**	*e*P	**Pn**	**20 01 58.1**	**-1.2**
BALM	**Baldy**	**11.85**	**50**	*e*Pn	**Pn**	**20 01 58.1**	**-1.2**
CCB	**Clear Creek Bu**	**11.99**	**29**	*e*Pn	**Pn**	**20 01 58.1**	**-2.8**
HDA	**Harding Lake**	**12.06**	**31**	*e*Pn	**Pn**	**20 01 59.5**	**-2.5**
MDM	**Murphy Dome**	**12.12**	**27**	*e*Pn	**Pn**	**20 02 00.2**	**-2.5**
COLA	**College**	**12.15**	**28**	*e*P	**Pn**	**20 02 00.4**	**-2.8**
COLA	**College**	**12.15**	**28**	*e*Pn	**Pn**	**20 02 00.4**	**-2.8**
MENT	**Mentasta**	**12.21**	**41**	*e*Pn	**Pn**	**20 02 02.6**	**-1.4**
IL1	**Eielson Array**	**12.35**	**30**	*e*Pn	**Pn**	**20 02 02.7**	**-3.1**
ILAR	**Eielson Array**	**12.35**	**30**	P	**Pn**	**20 02 02.6**	**-3.3**
	4.9nm,0.3s,baz=227,slow=13,SNR=134						
ILAR				S	**Sn**	**20 04 22.8**	**+0.9**
	3.7nm,0.3s,baz=205,slow=25,SNR=3.7						
ILAR				LR	LR	20 07 22.3	
	comp=Z,75μm,19.3s,baz=246,slow=40						
ILAR				P3KPbc		20 38 27.4	
	0.0nm,0.3s,baz=317,slow=1.3,SNR=5.8						
ILB	**Eielson Array**	**12.35**	**30**	*e*Pn	**Pn**	**20 02 03.0**	**-2.9**
DOT	**Dot Lake**	**12.50**	**38**	*e*Pn	**Pn**	**20 02 07.8**	**-0.2**
PCA	**Pinnacle**	**12.51**	**56**	*e*Pn	**Pn**	**20 02 07.3**	**-0.9**
YKU2	**Yakutat**	**12.65**	**59**	*e*Pn	**Pn**	**20 02 11.8**	**+1.8**
DHAK	**Deception Hill**	**13.31**	**62**	*e*Pn	**Pn**	**20 02 18.7**	**-0.3**
COLD	**Coldfoot**	**13.57**	**19**	*e*Pn	**Pn**	**20 02 23.8**	**+1.2**
FYU	**Fort Yukon**	**14.15**	**27**	*e*Pn	**Pn**	**20 02 31.6**	**+1.2**
EGAK	**Eagle**	**14.19**	**37**	*e*Pn	**Pn**	**20 02 28.9**	**-2.1**
DAWY	**Dawson**	**14.45**	**41**	*e*Pn	**Pn**	**20 02 33.4**	**-1.2**
SMY	**Shemya**	**14.67**	**272**	*e*P	**Pn**	**20 02 38.2**	**+0.8**
SMY	**Shemya**	**14.67**	**272**	*e*Pn	**Pn**	**20 02 38.2**	**+0.8**
SKAG	**Skagway**	**14.82**	**61**	*e*Pn	**Pn**	**20 02 39.4**	**-0.1**
CRAG	**Craig**	**16.10**	**76**	*e*Pn	**Pn**	**20 02 55.3**	**-0.7**
	1μm,1.5s						
WRAK	**Wrangell Islan**	**16.40**	**72**	*e*Pn	**Pn**	**20 03 00.3**	**+0.5**
	1μm,1.3s						
DIB	**Dawson Inlet,**	**16.98**	**83**	*e*Pn	**Pn**	**20 03 06.1**	**-1.0**
	675nm,1.2s						
DLBC	**Dease Lake**	**17.52**	**65**	P	**P**	**20 03 14.9**	**+0.3**
	1.9nm,0.3s,baz=281,slow=12,SNR=43						
DLBC				S	**Sn**	**20 06 28.9**	**+1.1**
	1.6nm,0.3s,baz=263,slow=18,SNR=3.8						
DLBC				LR	LR	20 09 09.3	
	comp=Z,22μm,20.4s,baz=285,slow=34						
DLBC	**Dease Lake**	**17.52**	**65**	*e*Pn	**P**	**20 03 15.0**	**+0.3**
	601nm,1.1s						
DLBC				S	**Sn**	**20 06 28.9**	**+1.1**
INK	**Inuvik**	**18.71**	**33**	P	**P**	**20 03 26.1**	**-1.4**
	7.2nm,0.3s,baz=231,slow=13,SNR=140						
INK				S	**Sn**	**20 06 55.4**	**-0.7**
	baz=59,slow=18,SNR=2.0						
INK				LR	LR	20 11 32.5	
	comp=Z,57μm,19.3s,baz=230,slow=40						
INK	**Inuvik**	**18.71**	**33**	*e*P	**P**	**20 03 25.1**	**-2.4**
INK				pmax	pmax		
	comp=Z,1μm,1.0s						
INK	**Inuvik**	**18.71**	**33**	*e*P	**P**	**20 03 25.1**	**-2.4**
	comp=Z,1μm,1.0s						
INK				S	**Sn**	**20 06 55.4**	**-0.7**
BBB	**Bella Bella**	**19.82**	**84**	P	**P**	**20 03 39.7**	**-0.1**
	comp=Z,1.3nm,0.3s,baz=293,slow=13,SNR=25						
BBB				S	**S**	**20 07 21

YKB5 Yellowknife Ar 25.00 53 *e*P **P** 20 04 31.0 -1.4
YKB5 *e*ScP **ScP** 20 11 40.5 -1.2
E03A Lebam 25.05 93 *e*P **P** 20 04 33.4 +0.4
comp=Z,1µm,1.5s
E03A LR LR
comp=Z,40µm,20.0s
B06A Marblemount 25.23 88 *e*P **P** 20 04 35.2 +0.6
comp=Z,755nm,1.2s
B06A LR LR
comp=Z,38µm,19.0s
RPW Rockport 25.24 88 *e*P **P** 20 04 36.6 +1.7
F03A Seaside 25.39 95 *e*P **P** 20 04 39.2 +3.0
comp=Z,2µm,1.4s
F03A LR LR
comp=Z,33µm,19.0s
D05A Enumclaw 25.61 91 *e*P **P** 20 04 40.3 +2.2
comp=Z,3µm,1.4s
D05A LR LR
comp=Z,24µm,20.0s
F04D Rainier, OR 25.62 94 P **P** 20 04 41.3 +3.1
baz=304
SKR Severo-Kuril's 25.80 279 *c i*P **P** 20 04 39.0 -0.8
SKR *e* 20 08 09.6
SKR *i* S **S** 20 08 59.6 -6.5
SKR pmax pmax
comp=Z,4µm,7.3s
SKR pmax pmax
comp=Z,280nm,0.8s
SKR MLR MLR
comp=Z,18µm,21.0s
C06D Leavenworth 25.87 88 P **P** 20 04 42.6 +2.1
baz=301
WRW Wenatchee Ridg 25.91 89 P **P** 20 04 43.8 +2.8
PNT Penticton 25.92 85 *e*P **P** 20 04 42.4 +1.4
PNT Penticton 25.92 85 *e*P **P** 20 04 42.4 +1.4
TDL Tradedollar La 25.93 93 *e*P **P** 20 04 40.4 -0.8
MA2 Magadan 25.94 300 P **P** 20 04 41.5 +0.4
comp=Z,170nm,0.8s,baz=81,slow=10,SNR=108
MA2 PcP **PcP** 20 08 08.8 +0.4
comp=Z,16nm,0.7s,baz=101,slow=2.4,SNR=4.2
MA2 LR LR 20 15 47.9
comp=Z,25µm,19.0s,baz=94,slow=38
MA2 Magadan 25.94 300 P **P** 20 04 41.5 +0.4
MA2 20 08 08.8
MA2 pmax pmax
comp=Z,170nm,0.8s
MA2 MLR MLR
comp=Z,25µm,19.0s
LON Longmire 25.95 92 *e*P **P** 20 04 43.2 +1.9
LON pmax pmax
comp=Z,440nm,1.2s
LON Longmire 25.95 92 *e*P **P** 20 04 43.2 +1.9
comp=Z,442nm,1.3s
LON LR LR
comp=Z,18µm,22.0s
G03D McMinnville, O 25.97 96 P **P** 20 04 43.7 +2.2
baz=306
LVP Lakeview Peak 25.98 93 *e*P **P** 20 04 42.3 +0.7
F04A Amboy 26.05 94 *e*P **P** 20 04 44.5 +2.4
comp=Z,669nm,1.4s
F04A LR LR
comp=Z,28µm,22.0s
TWW Teanaway 26.29 90 P **P** 20 04 46.2 +1.8
COR Corvallis 26.31 97 *e*P **P** 20 04 46.8 +2.3
COR pmax pmax
comp=Z,900nm,1.3s
COR Corvallis 26.31 97 *e*P **P** 20 04 46.8 +2.3
comp=Z,895nm,1.4s
COR LR LR
comp=Z,36µm,21.0s
LTY Liberty 26.34 90 *e*P **P** 20 04 45.9 +1.1
comp=Z,808nm,1.6s
LTY LR LR
comp=Z,42µm,20.0s
TBM Table Mountain 26.43 90 *e*P **P** 20 04 48.3 +2.6
WTV Waterville 26.53 88 *e*P **P** 20 04 48.9 +2.4
NAC Naches 26.53 91 P **P** 20 04 48.6 +2.0
B08A Colville Reser 26.55 86 *e*P **P** 20 04 47.8 +1.1
comp=Z,558nm,1.2s
B08A LR LR
comp=Z,22µm,19.0s
I03D Drain, OR 26.82 99 P **P** 20 04 51.7 +2.6
baz=308
SAW Saint Andrews 26.84 88 P **P** 20 04 51.9 +2.5
VFP Flag Point 26.95 94 P **P** 20 04 52.3 +1.9
G05D Wamic, OR 27.08 94 P **P** 20 04 54.4 +3.0
baz=305,SNR=15
E07A Sunnyside 27.19 90 *e*P **P** 20 04 53.7 +1.3
comp=Z,541nm,1.5s
E07A LR LR
comp=Z,33µm,20.0s
I04A Tendick Farm, 27.30 97 P **P** 20 04 55.2 +1.7
baz=308,SNR=28
I04A S **S** 20 09 33.9 +3.8
baz=308
C09A Chrisman Ranch 27.45 87 *e*P **P** 20 04 56.4 +1.7
comp=Z,383nm,1.3s
C09A LR LR
comp=Z,25µm,19.0s
D08A Wollman Farm, 27.46 89 *e*P **P** 20 04 55.6 +0.8
comp=Z,639nm,1.5s
D08A LR LR
comp=Z,22µm,20.0s
HAWA Hanford 27.46 90 *e*P **P** 20 04 56.1 +1.3
comp=Z,1µm,1.8s
HAWA LR LR
comp=Z,33µm,20.0s
G06A Carlson Farm, 27.47 93 *e*P **P** 20 04 56.6 +1.6
comp=Z,456nm,1.6s
G06A LR LR
comp=Z,35µm,20.0s
VTHM Trough 27.55 93 P **P** 20 04 57.7 +2.0
I05D Terrebonne, OR 27.59 96 P **P** 20 04 58.6 +2.5
baz=307,SNR=14
L02D Cave Junction, 27.65 101 P **P** 20 04 59.2 +2.6
baz=310,SNR=16
HUMO Hull Mountain 27.73 100 *e*P **P** 20 04 59.0 +1.7
comp=Z,231nm,1.3s
HUMO *e*ScP **ScP** 20 11 50.9 +0.8
HUMO LR LR
comp=Z,39µm,21.0s
EDM Edmonton 27.81 73 *e*P **P** 20 04 58.5 +0.6
EDM pmax pmax
comp=Z,1µm,1.5s
EDM Edmonton 27.81 73 *e*P **P** 20 04 58.5 +0.6
comp=Z,1µm,1.5s
EDM LR LR
comp=Z,17µm,19.0s
NEW Newport 27.88 85 P **P** 20 04 59.4 +0.8
comp=Z,60nm,1.0s,baz=301,slow=8.5,SNR=53
NEW PcP **PcP** 20 08 14.1 +0.8
comp=Z,13nm,0.7s,baz=314,slow=4.4,SNR=7.3
NEW S **S** 20 09 40.3 +1.3
comp=Z,5.6nm,1.0s,baz=72,slow=18,SNR=1.4
NEW LR LR 20 14 23.1
comp=Z,25µm,21.4s,baz=292,slow=33
NEW Newport 27.88 85 P **P** 20 04 59.5 +1.0
baz=300,SNR=51
NEW Newport 27.88 85 *e*P **P** 20 04 59.2 +0.7
comp=Z,356nm,1.2s
NEW PcP **PcP** 20 08 14.1 +0.8
NEW S **S** 20 09 40.3 +1.3
KRMB Red Mountain 27.89 103 *e*P **P** 20 05 00.3 +1.5
comp=Z,744nm,1.6s
KRMB LR LR
comp=Z,42µm,22.0s
E09A Wood Farm, Sta 28.20 89 *e*P **P** 20 05 02.3 +0.8
comp=Z,830nm,1.5s
E09A LR LR
comp=Z,30µm,20.0s
JCC Jacoby Creek, 28.29 104 *e*P **P** 20 05 03.9 +1.7
comp=Z,562nm,1.2s
JCC LR LR
comp=Z,26µm,20.0s
J05D Fort Rock, OR 28.29 97 P **P** 20 05 04.6 +2.2
baz=308,SNR=53
K04D Chiloquin, OR 28.41 99 P **P** 20 05 05.3 +1.9
baz=309
G08A Pilot Rock 28.41 92 *e*P **P** 20 05 04.4 +0.9
comp=Z,191nm,1.2s
G08A LR LR
comp=Z,21µm,21.0s
KHMM Horse Mountain 28.42 104 *e*P **P** 20 05 05.6 +2.0
comp=Z,511nm,1.2s
KHMM LR LR
comp=Z,40µm,20.0s
M02C Callahan 28.57 102 P **P** 20 05 07.2 +2.3
baz=311,SNR=38
K05A Summer Lake 28.83 98 *e*P **P** 20 05 08.3 +1.0
comp=Z,628nm,1.4s
K05A LR LR
comp=Z,27µm,22.0s
KMRM Mail Ridge 28.87 105 *e*P **P** 20 05 09.9 +2.4
comp=Z,244nm,1.1s
KMRM LR LR
comp=Z,35µm,22.0s
M04C Macdoel 28.89 100 P **P** 20 05 09.6 +1.8
baz=310,SNR=27
N02D Trinity Center 28.93 102 P **P** 20 05 10.4 +2.3
baz=312,SNR=27
MIDW Midway 28.99 210 PFAKE 20 05 20.0 +11
MIDW LR LR
comp=Z,18µm,20.0s
F10A Beach Ranch, E 29.03 89 *e*P **P** 20 05 09.9 +1.0
comp=Z,124nm,0.9s
F10A LR LR
comp=Z,25µm,20.0s
WDC Whiskeytown Da 29.29 103 *e*P **P** 20 05 12.5 +1.4
WDC pmax pmax
comp=Z,210nm,1.2s
WDC MLR MLR
comp=Z,26µm,20.0s
WDC Whiskeytown Da 29.29 103 *e*P **P** 20 05 12.5 +1.4
comp=Z,210nm,1.2s
WDC LR LR
comp=Z,26µm,20.0s
WALA Waterton Lakes 29.33 81 *e*P **P** 20 05 11.9 +0.3
comp=Z,532nm,1.6s
WALA LR LR
comp=Z,33µm,20.0s
BSMT Bassoo Peak 29.43 84 *e*P **P** 20 05 13.0 +0.4
BLMT Blacktail Moun 29.59 84 *e*P **P** 20 05 14.2 +0.1
BMO Blue Mountains 29.62 91 *e*P **P** 20 05 14.4 +0.2
comp=Z,400nm,1.6s
BMO LR LR
comp=Z,38µm,21.0s
MOD Modoc Plateau 29.70 99 *e*P **P** 20 05 17.0 +2.1
comp=Z,523nm,1.5s
MOD LR LR
comp=Z,25µm,18.0s
JTMT Jette 29.78 84 *e*P **P** 20 05 16.1 +0.5
YBMT Yellow Bay 29.87 84 *e*P **P** 20 05 16.8 +0.3
O03D Paynes Creek 29.90 102 P **P** 20 05 17.5 +0.9
baz=312,SNR=54
O03D Paynes Creek 29.90 102 *e*P **P** 20 05 16.1 -0.6
SWMT Swartz Lake 30.07 84 *e*P **P** 20 05 18.9 +0.8
HOPS Hopland Field 30.07 106 *e*P **P** 20 05 19.6 +1.4
comp=Z,620nm,1.3s
HOPS LR LR
comp=Z,25µm,21.0s
WVOR Wild Horse Val 30.32 96 *e*P **P** 20 05 22.5 +2.1
WVOR pmax pmax
comp=Z,427nm,1.4s
WVOR MLR MLR
comp=Z,23µm,18.0s
WVOR Wild Horse Val 30.32 96 *e*P **P** 20 05 22.5 +2.1
comp=Z,427nm,1.4s
WVOR LR LR
comp=Z,23µm,18.0s
GDXM Geysers 30.36 106 *e*P **P** 20 05 22.7 +2.0
comp=Z,489nm,1.2s
GDXM *e*PcP **PcP** 20 08 20.7 +0.9
GDXM *e*ScP **ScP** 20 11 58.9 +0.3
GDXM LR LR
comp=Z,29µm,19.0s
MSO Missoula 30.46 85 P **P** 20 05 22.0 +0.3
baz=303,SNR=26
MSO Missoula 30.46 85 *e*P **P** 20 05 22.4 +0.8
MSO LR LR
comp=Z,16µm,22.0s
SLMT Seeley Lake 30.50 84 *e*P **P** 20 05 23.0 +1.0
ORV Oroville 30.57 103 *e*P **P** 20 05 22.9 +0.4
ORV *e* 20 11 58.8
ORV pmax pmax
comp=Z,365nm,1.8s
ORV MLR MLR
comp=Z,23µm,21.0s
ORV Oroville 30.57 103 *e*P **P** 20 05 22.9 +0.4
comp=Z,364nm,1.8s
ORV *e*ScP **ScP** 20 11 58.8 -0.4
ORV LR LR
comp=Z,23µm,21.0s
MCCM Marconi Confer 30.78 107 *e*P **P** 20 05 25.1 +0.8
comp=Z,841nm,1.8s
MCCM LR LR
comp=Z,24µm,20.0s
CHMT Chamberlain Mo 30.82 85 *e*P **P** 20 05 24.6 -0.3
AFDM Forest Hills D 31.28 104 *e*P **P** 20 05 30.1 +1.3
comp=Z,292nm,1.3s
AFDM *e*ScP **ScP** 20 12 00.1 -1.5
AFDM LR LR
comp=Z,22µm,21.0s
MFID Camas Ranch 31.33 92 *e*P **P** 20 05 29.6 +0.3
comp=Z,758nm,1.9s
MFID LR LR
comp=Z,20µm,21.0s
PAHR Pah Rah Range 31.66 101 *e*P **P** 20 05 33.9 +1.6
PAHR LR LR
comp=Z,34µm,20.0s
HRY Holter Researc 31.74 84 *e*P **P** 20 05 33.4 +0.5
LRM Limekiln Ridge 31.88 86 *e*P **P** 20 05 34.2 -0.1
PNTR Pine Nut 31.96 102 *e*P **P** 20 05 36.9 +1.9
comp=Z,779nm,1.2s
PNTR LR LR
comp=Z,24µm,22.0s
DLMT Dillon 32.06 87 *e*P **P** 20 05 37.7 +2.0
comp=Z,614nm,1.8s
DLMT LR LR
comp=Z,7µm,20.0s
HLID Hailey 32.06 91 P **P** 20 05 36.9 +1.1
baz=307,SNR=70
HLID Hailey 32.06 91 *e*P **P** 20 05 36.6 +0.8
comp=Z,197nm,1.0s
HLID LR LR
comp=Z,34µm,20.0s
RES Resolute Bay 32.08 27 LR LR 20 20 00.1
comp=Z,22µm,20.8s,baz=264,slow=39
RES Resolute Bay 32.08 27 *e*P **P** 20 05 35.4 0.0
RES pmax pmax
comp=Z,830nm,1.9s
RES Resolute Bay 32.08 27 *e*P **P** 20 05 34.6 -0.7
comp=Z,834nm,1.9s
MCMT McKenzie Canyo 32.22 88 *e*P **P** 20 05 37.6 +0.4
EGMT Eagleton 32.23 80 P **P** 20 05 37.2 +0.1
baz=302,SNR=11
EGMT Eagleton 32.23 80 *e*P **P** 20 05 37.7 +0.5
comp=Z,1µm,2.0s
EGMT LR LR
comp=Z,21µm,20.0s
YERR Yerington 32.24 102 *e*P **P** 20 05 38.7 +1.3
comp=Z,553nm,1.2s
YERR LR LR
comp=Z,30µm,22.0s
CMB Columbia Colle 32.25 104 *e*P **P** 20 05 38.8 +1.5
CMB pmax pmax
comp=Z,280nm,1.2s
CMB Columbia Colle 32.25 104 *e*P **P** 20 05 38.0 +0.7
comp=Z,284nm,1.3s
CMB *e*ScP **ScP** 20 12 04.5 -0.4
CMB LR LR
comp=Z,29µm,21.0s
BMN Battle Mountai 32.42 98 *e*P **P** 20 05 40.9 +2.0
BMN pmax pmax
comp=Z,210nm,1.2s
BMN Battle Mountai 32.42 98 *e*P **P** 20 05 40.3 +1.4
comp=Z,210nm,1.3s
BMN LR LR
comp=Z,18µm,20.0s
BOZ Bozeman (W) 32.45 85 P **P** 20 05 40.2 +1.0
baz=305,SNR=28
BOZ Bozeman (W) 32.45 85 *e*P **P** 20 05 39.9 +0.7
BOZ pmax pmax
comp=Z,220nm,1.4s
BOZ MLR MLR
comp=Z,9µm,22.0s
BOZ Bozeman (W) 32.45 85 *e*P **P** 20 05 39.9 +0.7
comp=Z,220nm,1.4s
BOZ LR LR
comp=Z,9µm,22.0s
WAKR Walker 32.45 103 *e*P **P** 20 05 41.0 +1.7
comp=Z,823nm,1.7s
WAKR LR LR
comp=Z,24µm,22.0s
SAO San Andreas Ge 32.56 107 *e*P **P** 20 05 41.2 +1.2
SAO pmax pmax
comp=Z,160nm,1.1s
SAO MLR MLR
comp=Z,24µm,20.0s
SAO San Andreas Ge 32.56 107 *e*P **P** 20 05 41.2 +1.2
comp=Z,160nm,1.1s
SAO LR LR
comp=Z,24µm,20.0s
KEKH Kekaha 32.76 177 PFAKE 20 05 50.0 +8.2
KEKH LR LR
comp=Z,28µm,18.0s
TVH1 TV Hill, Hawth 32.87 102 *e*P **P** 20 05 44.3 +1.2
comp=Z,530nm,1.2s
TVH1 *e*ScP **ScP** 20 12 07.5 0.0
TVH1 LR LR
comp=Z,25µm,21.0s
TVH3 East Aurora ar 32.91 102 *e*P **P** 20 05 44.4 +1.1
comp=Z,272nm,1.1s
TVH3 *e*ScP **ScP** 20 12 06.9 -0.4
TVH3 LR LR
comp=Z,18µm,22.0s
TVH2 Borealis Mine 32.93 102 *e*P **P** 20 05 44.7 +1.2
comp=Z,555nm,1.8s
TVH2 LR LR
comp=Z,16µm,22.0s
QLMT Earthquake Lak 33.04 86 *e*P **P** 20 05 45.9 +1.5
OPA Opana 33.13 174 *e*P **P** 20 05 45.9 +0.8
OPA pmax pmax
comp=Z,359nm,1.2s
OPA MLR MLR
comp=Z,30µm,19.0s
OPA Opana 33.13 174 *e*P **P** 20 05 45.9 +0.8
comp=Z,359nm,1.2s
OPA LR LR
comp=Z,30µm,19.0s
YHB Horse Butte 33.22 86 *e*P **P** 20 05 48.1 +2.1
comp=Z,471nm,1.5s
YHB LR LR
comp=Z,10µm,22.0s
TIXI Tiksi 33.24 327 PcP **PcP** 20 08 27.4 +0.5
comp=Z,28nm,0.6s,baz=88,slow=5.5,SNR=6.8
TIXI ScP **ScP** 20 12 08.3 +0.7
comp=Z,6.4nm,0.7s,baz=117,slow=2.3,SNR=4.7
TIXI LR LR 20 21 08.7
comp=Z,35µm,18.3s,baz=117,slow=40
TIXI Tiksi 33.24 327 ⇑ *i*P **P** 20 05 45.3 -0.2
TIXI pmax pmax
comp=Z,49nm,1.0s
TIXI MLR MLR
comp=Z,34µm,17.0s
TIXI Tiksi 33.24 327 *e*P **P** 20 05 44.9 -0.7
comp=Z,97nm,1.0s
TIXI *e*PcP **PcP** 20 08 27.4 +0.5
TIXI *e*ScP **ScP** 20 12 08.3 +0.7
PMPB Monarch Peak 33.31 107 *e*P **P** 20 05 49.0 +2.3
comp=Z,639nm,1.3s
PMPB LR LR
comp=Z,26µm,21.0s
TYV Tymovskoe 33.32 287 *e*P **P** 20 05 43.8 -2.6
TYV pmax pmax
comp=Z,187nm,0.8s
TYV pmax pmax
comp=E,2µm,9.0s
TYV pmax pmax
comp=Z,2µm,11.0s
NKL Nikolayevsk 33.33 292 *i* P **P** 20 05 45.0 -1.5
NKL *e* 20 07 14.0
NKL *e*S **S** 20 11 04.0 0.0
NKL pmax pmax
comp=E,1µm,6.0s
NKL pmax pmax
comp=Z,2µm,6.0s
NKL pmax pmax
comp=N,80nm,1.1s
NKL pmax pmax
comp=E,130nm,1.1s
NKL pmax pmax
comp=Z,220nm,1.1s
NKL smax smax
comp=E,2µm,8.0s
NKL MLR MLR
comp=E,13µm,21.0s
NKL MLR MLR
comp=N,8µm,18.0s
NKL MLR MLR
comp=Z,15µm,18.0s
KUR Kuril'sk 33.34 275 *e*P **P** 20 05 45.2 -1.5
KUR *e* 20 07 00.6
KUR *e*PPP PPP 20 07 12.0
KUR *e*SSS SSS 20 13 35.5
KUR pmax pmax
comp=Z,719nm,4.2s
KUR pmax pmax
comp=Z,844nm,7.6s
KUR MLR MLR
comp=N,3µm,20.0s
KUR MLR MLR
comp=E,3µm,20.0s
KUR MLR MLR
comp=Z,5µm,20.0s
FFC Flin Flon 33.35 65 *e*P **P** 20 05 46.7 -0.1
FFC pmax pmax
comp=Z,369nm,1.8s
FFC MLR MLR
comp=Z,17µm,20.0s
FFC Flin Flon 33.35 65 *e*P **P** 20 05 46.7 -0.1
comp=Z,369nm,1.8s
FFC LR LR
comp=Z,17µm,20.0s
KIP Kipapa 33.39 174 ⇑ *i*P **P** 20 05 49.2 +1.9
KIP *i* *PP **pP** 20 06 00.3 +1.8
KIP pmax pmax
comp=Z,2µm,1.2s
KIP Kipapa 33.39 174 *e*P **P** 20 05 48.3 +1.0
KIP *e*PP **PnPn** 20 06 56.1 -2.9
KIP LR LR
comp=Z,31µm,19.0s
YHH Holmes Hill 33.40 86 *e*P **P** 20 05 48.3 +0.7
comp=Z,251nm,1.1s
YHH LR LR
comp=Z,8µm,20.0s
YMR Madison River 33.40 86 *e*P **P** 20 05 48.3 +0.8
comp=Z,428nm,1.2s
YMR LR LR
comp=Z,8µm,19.0s
MLAC Mammoth, Mammo 33.40 103 P **P** 20 05 50.1 +2.4
baz=315,SNR=7.8
GCMT Greycliff 33.50 84 *e*P **P** 20 05 49.1 +0.7
YNR Norris Junctio 33.54 86 *e*P **P** 20 05 50.6 +1.8
comp=Z,377nm,1.2s
YNR LR LR
comp=Z,13µm,22.0s
YFT Old Faithful 33.60 87 *e*P **P** 20 05 51.0 +1.7
comp=Z,207nm,1.1s
YPP Pitchstone Pla 33.73 87 *e*P **P** 20 05 51.7 +1.2
comp=Z,128nm,1.2s
YPP LR LR
comp=Z,10µm,22.0s
H17A Grant Village 33.79 86 P **P** 20 05 52.7 +1.7
baz=306,SNR=7.0
H17A Grant Village 33.79 86 *e*P **P** 20 05 52.5 +1.5
comp=Z,432nm,1.4s
H17A LR LR
comp=Z,8µm,18.0s
LKWY Lake 33.79 86 *e*P **P** 20 05 52.9 +1.9
LKWY pmax pmax
comp=Z,321nm,1.3s
LKWY MLR MLR
comp=Z,11µm,21.0s
LKWY Lake 33.79 86 *e*P **P** 20 05 52.9 +1.9
comp=Z,321nm,1.3s
LKWY LR LR
comp=Z,11µm,21.0s
IMW Indian Meadow 33.87 87 *e*P **P** 20 05 52.9 +1.1
comp=Z,194nm,1.1s
IMW LR LR
comp=Z,5µm,18.0s
FLWY Flagg Ranch 33.90 87 *e*P **P** 20 05 54.9 +3.0
comp=Z,473nm,1.4s
FLWY LR LR
comp=Z,4µm,20.0s
PAGB Antelope Grade 33.98 107 *e*P **P** 20 05 54.2 +1.8
comp=Z,1µm,1.8s
PAGB *e*ScP **ScP** 20 12 11.1 +0.2
PAGB LR LR
comp=Z,17µm,21.0s
MOOW Moose Ponds 34.08 88 *e*P **P** 20 05 55.4 +2.0

comp=Z,203nm,1.6s
MOOW LR LR
comp=Z,3µm,20.0s
TPAW Teton Pass 34.11 88 *e*P **P 20 05 54.8 +1.0**
comp=Z,355nm,1.6s
TPAW LR LR
comp=Z,7µm,19.0s
HVU Hansel Valley 34.11 92 *e*P **P 20 05 54.8 +1.1**
HVU pmax pmax
comp=Z,271nm,1.2s
HVU MLR MLR
comp=Z,18µm,22.0s
HVU Hansel Valley 34.11 92 *e*P **P 20 05 54.8 +1.1**
comp=Z,271nm,1.2s
HVU LR LR
comp=Z,18µm,22.0s
RCTC Rector, Farmer 34.12 105 P **P 20 05 55.1 +1.5**
baz=316,SNR=12
RLMT Red Lodge 34.12 84 P **P 20 05 54.8 +1.1**
baz=306,SNR=35
RLMT Red Lodge 34.12 84 *e*P **P 20 05 54.4 +0.6**
comp=Z,393nm,1.2s
RLMT LR LR
comp=Z,12µm,22.0s
TIN Tinemaha, Big 34.15 103 P **P 20 05 56.2 +2.2**
baz=315,SNR=6.3
HLK Haleakala 34.18 172 *e*P **P 20 05 55.5 +1.0**
comp=Z,551nm,1.2s
HLK LR LR
comp=Z,30µm,20.0s
LOHW Long Hollow 34.24 88 *e*P **P 20 05 55.6 +0.8**
comp=Z,182nm,1.5s
LOHW LR LR
comp=Z,4µm,22.0s
SNOW Snow King Moun 34.24 88 *e*P **P 20 05 56.2 +1.3**
comp=Z,160nm,1.2s
SNOW LR LR
comp=Z,7µm,19.0s
REDW Red Top Meadow 34.25 88 *e*P **P 20 05 56.9 +2.0**
comp=Z,477nm,1.6s
REDW LR LR
comp=Z,10µm,20.0s
SMMC Simmler 34.42 107 P **P 20 05 58.5 +2.3**
baz=318,SNR=8.1
AHID Auburn Hatcher 34.47 89 *e*P **P 20 05 57.8 +1.0**
comp=Z,265nm,1.0s
AHID LR LR
comp=Z,24µm,20.0s
BGU Big Grassy Mou 34.51 93 *e*P **P 20 05 58.3 +1.1**
comp=Z,515nm,1.5s
BGU LR LR
comp=Z,13µm,21.0s
VES Vestal, Richgr 34.54 106 P **P 20 05 58.7 +1.4**
baz=317,SNR=34
SPUT South Promonto 34.60 92 *e*P **P 20 05 59.0 +1.1**
comp=Z,572nm,1.8s
SPUT LR LR
comp=Z,18µm,22.0s
CWC Cottonwood Cre 34.67 104 P **P 20 06 00.6 +2.0**
baz=316
GRAC Grapevine Rang 34.68 102 P **P 20 06 00.6 +2.1**
baz=315,SNR=16
R11A Troy Canyon, C 34.75 99 P **P 20 06 00.6 +1.3**
baz=313,SNR=172
R11A Troy Canyon, C 34.75 99 *e*P **P 20 06 00.4 +1.1**
comp=Z,1µm,1.6s
R11A LR LR
comp=Z,33µm,20.0s
PKM Mcpherson Peak 34.84 108 P **P 20 06 02.2 +2.2**
baz=318,SNR=13
HWUT Hardware Ranch 34.92 91 *e*P **P 20 06 01.6 +0.9**
comp=Z,233nm,1.3s
HWUT LR LR
comp=Z,22µm,20.0s
HPAH Hawaii Prepara 34.95 171 *e*P **P 20 06 01.2 +0.3**
comp=Z,868nm,1.0s
HPAH LR LR
comp=Z,22µm,21.0s
LAO LASA Array 34.97 80 P **P 20 06 01.9 +1.0**
baz=304,SNR=28
LAO LASA Array 34.97 80 *e*P **P 20 06 01.9 +1.0**
comp=Z,420nm,1.4s
LAO LR LR
comp=Z,22µm,20.0s
ISA Isabella, Lake 35.01 105 P **P 20 06 02.6 +1.2**
baz=317,SNR=11
ISA Isabella, Lake 35.01 105 *e*P **P 20 06 02.3 +0.9**
ISA pmax pmax
comp=Z,722nm,1.8s
ISA MLR MLR
comp=Z,20µm,18.0s
ISA Isabella, Lake 35.01 105 *e*P **P 20 06 02.3 +0.9**
comp=Z,722nm,1.8s
ISA LR LR
comp=Z,20µm,18.0s
DAC Darwin (Calif) 35.06 104 *e*P **P 20 06 03.3 +1.3**
DAC pmax pmax
comp=Z,807nm,1.7s
DAC MLR MLR
comp=Z,25µm,22.0s
DAC Darwin (Calif) 35.06 104 *e*P **P 20 06 03.3 +1.3**
comp=Z,807nm,1.7s
DAC LR LR
comp=Z,25µm,22.0s
DUG Dugway, Tooele 35.11 94 P **P 20 06 03.0 +0.7**
baz=311,SNR=137
DUG Dugway, Tooele 35.11 94 *e*P **P 20 06 03.3 +1.0**
DUG pmax pmax
comp=Z,763nm,1.5s
DUG Dugway, Tooele 35.11 94 *e*P **P 20 06 03.3 +1.0**
comp=Z,763nm,1.5s
DGMT Dagmar 35.15 76 P **P 20 06 02.7 +0.3**
baz=302,SNR=19
DGMT Dagmar 35.15 76 *e*P **P 20 06 03.2 +0.8**
comp=Z,747nm,1.5s
DGMT LR LR
comp=Z,25µm,19.0s
ARVC Arvin 35.20 106 P **P 20 06 03.8 +0.8**
baz=317,SNR=10
SBC Santa Barbara 35.22 108 P **P 20 06 05.0 +1.9**
baz=318
POHA Pohakuloa 35.23 171 *e*P **P 20 06 04.4 +0.9**
comp=Z,1µm,1.3s
POHA LR LR
comp=Z,20µm,20.0s
YAK Yakutsk 35.25 310 P **P 20 06 02.6 -0.4**
comp=Z,221nm,0.6s,baz=326,slow=0.4,SNR=94
YAK PcP **PcP 20 08 32.9 +0.1**
comp=Z,73nm,0.7s,baz=335,slow=0.3,SNR=4.2
YAK S **S 20 11 32.4 -1.1**
comp=Z,4.9nm,0.5s,baz=171,slow=19,SNR=2.8
YAK LR LR 20 21 26.0
comp=Z,47µm,21.9s,baz=82,slow=38
YAK Yakutsk 35.25 310 *ce*P **P 20 06 01.9 -1.1**
YAK *e* 20 07 23.6
YAK *e* 20 08 32.2
YAK *e*S **S 20 11 36.9 +3.4**
YAK *e**SS **sS 20 11 49.6 -2.6**
YAK pmax pmax
comp=N,15nm,1.1s
YAK pmax pmax
comp=Z,188nm,0.9s
YAK pmax pmax
comp=E,94nm,1.4s
YAK pmax pmax
comp=Z,216nm,1.4s
YAK pmax pmax
comp=N,61nm,1.2s
YAK pmax pmax
comp=E,491nm,1.6s
YAK smax smax
comp=N,103nm,1.8s
YAK smax smax
comp=E,501nm,3.2s
YAK MLR MLR
comp=E,39µm,23.0s
YAK MLR MLR
comp=N,17µm,20.0s
YAK MLR MLR
comp=Z,53µm,21.0s
YAK Yakutsk 35.25 310 *e*P **P 20 06 01.5 -1.5**
comp=Z,660nm,0.8s
YAK PcP **PcP 20 08 33.0 +0.1**
YAK *e*S **S 20 11 31.5 -1.9**
MPMC Manual Prospec 35.28 104 P **P 20 06 05.2 +1.3**
baz=316,SNR=128
KKH Kailua Kona 35.29 171 *e*P **P 20 06 07.3 +3.6**
KKH Kailua Kona 35.29 171 *e*P **P 20 06 06.0 +2.3**

YSS Yuzh-Sakhalins 35.30 281 *ce*P **P 20 06 04.3 +0.7**
YSS *e**PP **sP 20 06 17.7 -2.1**
YSS *e* 20 07 25.0
YSS *e*S **S 20 11 30.0 -4.6**
YSS pmax pmax
comp=Z,2µm,7.0s
YSS pmax pmax
comp=Z,50nm,0.7s
YSS MLR MLR
comp=Z,12µm,20.0s
YSS MLR MLR
comp=N,7µm,18.0s
YSS MLR MLR
comp=E,10µm,19.0s
YSS Yuzh-Sakhalins 35.30 281 *e*P **P 20 06 05.2 +1.5**
comp=E,90nm,0.9s
YSS LR LR
comp=Z,8µm,22.0s
TCUT Toone Canyon 35.33 92 *e*P **P 20 06 04.3 0.0**
comp=Z,308nm,1.1s
TCUT LR LR
comp=Z,27µm,21.0s
FURC Furnace Creek, 35.34 103 P **P 20 06 05.8 +1.7**
baz=316,SNR=50
TPNV Topopah Spring 35.35 101 P **P 20 06 06.0 +1.7**
baz=315,SNR=182
TPNV Topopah Spring 35.35 101 *e*P **P 20 06 06.2 +1.8**
TPNV pmax pmax
comp=Z,3µm,2.0s
TPNV MLR MLR
comp=Z,32µm,20.0s
TPNV Topopah Spring 35.35 101 *e*P **P 20 06 06.2 +1.8**
comp=Z,3µm,2.0s
TPNV LR LR
comp=Z,32µm,20.0s
BW06 Boulder Array 35.36 88 P **P 20 06 05.0 +0.5**
baz=308,SNR=18
BW06 Boulder Array 35.36 88 *e*P **P 20 06 04.1 -0.4**
BW06 LR LR
comp=Z,9µm,20.0s
PD31 Pinedale Array 35.36 88 *e*P **P 20 06 04.8 +0.3**
PD31 *e*PcP **PcP 20 08 33.8 -0.1**
PDAR Pinedale Array 35.36 88 P **P 20 06 04.9 +0.4**
comp=Z,5.7nm,0.6s,baz=316,slow=4.1,SNR=38
PDAR PcP **PcP 20 08 33.8 -0.1**
comp=Z,3.5nm,0.5s,baz=5.2,slow=1.0,SNR=3.6
PDAR LR LR 20 19 40.4
comp=Z,8µm,19.0s,baz=307,slow=35
PDAR P3KPbc 20 36 51.1
comp=Z,3.0nm,1.1s,baz=124,slow=4.5,SNR=7.9
CTU Camp Tracy 35.40 93 *e*P **P 20 06 05.6 +0.8**
comp=Z,677nm,1.4s
MLOA Mauna Loa Obse 35.45 171 *e*P **P 20 06 07.0 +1.3**
A25A Svangstu Ranch 35.51 75 P **P 20 06 05.8 +0.4**
baz=302,SNR=31
UWE Uwekahuna 35.59 170 *e*P **P 20 06 07.8 +1.3**
comp=Z,1µm,1.3s
UWE LR LR
comp=Z,24µm,22.0s
LRMC Laurel Mtn Rad 35.59 105 P **P 20 06 07.4 +0.9**
baz=317,SNR=18
SCZ2 Santa Cruz Isl 35.60 108 P **P 20 06 07.2 +0.8**
baz=319
PSUT Pine Spring 35.62 97 *e*P **P 20 06 08.8 +2.0**
comp=Z,506nm,1.4s
PSUT LR LR
comp=Z,18µm,21.0s
JLU Jordanelle 35.64 92 *e*P **P 20 06 07.5 +0.6**
comp=Z,392nm,1.5s
JLU LR LR
comp=Z,16µm,21.0s
OSI Osito Audit: C 35.64 107 P **P 20 06 08.1 +1.4**
baz=318
OSI Osito Audit: C 35.64 107 *e*P **P 20 06 08.6 +1.8**
comp=Z,897nm,1.8s
OSI LR LR
comp=Z,20µm,20.0s
FCC Fort Churchill 35.66 56 *e*P **P 20 06 07.5 +0.9**
FCC pmax pmax
comp=Z,270nm,1.0s
FCC Fort Churchill 35.66 56 *e*P **P 20 06 06.9 +0.3**
comp=Z,269nm,1.0s
FCC LR LR
comp=Z,14µm,18.0s
NLU North Lily Min 35.70 94 *e*P **P 20 06 08.3 +0.9**
comp=Z,205nm,1.4s
NLU LR LR
comp=Z,9µm,20.0s
BLG Laguna Peak, P 35.83 108 P **P 20 06 09.3 +0.9**
baz=318,SNR=13
B25A Knox Farm, Ray 35.84 76 P **P 20 06 08.4 +0.1**
baz=303,SNR=17
EDW2 Edwards Air Fo 35.85 106 P **P 20 06 09.3 +0.7**
baz=317,SNR=14
MPU Maple Canyon 35.91 93 *e*P **P 20 06 10.3 +1.0**
comp=Z,140nm,1.1s
MPU LR LR
comp=Z,9µm,20.0s
SHOC Shoshone, Teco 36.08 103 P **P 20 06 11.6 +1.1**
baz=316,SNR=35
C25A Freed Ranch, W 36.09 77 P **P 20 06 11.2 +0.8**
baz=304,SNR=11
DECC Green Verdugo 36.12 107 P **P 20 06 12.0 +1.1**
baz=318
A26A Wade Farm, Ken 36.13 74 P **P 20 06 11.2 +0.5**
baz=302,SNR=40
GSC Goldstone, Bar 36.21 104 P **P 20 06 12.7 +0.9**
baz=317,SNR=73
GSC Goldstone, Bar 36.21 104 *e*P **P 20 06 13.1 +1.4**
GSC pmax pmax
comp=Z,1µm,1.7s
GSC Goldstone, Bar 36.21 104 *e*P **P 20 06 12.6 +0.9**
comp=Z,1µm,1.8s
SNCC San Nicolas Is 36.22 109 P **P 20 06 12.3 +0.7**
baz=319,SNR=9.5
SNCC San Nicolas Is 36.22 109 *e*P **P 20 06 12.3 +0.7**
comp=Z,475nm,1.1s
SNCC LR LR
comp=Z,21µm,22.0s
PASC Pasadena Art C 36.27 107 *e*P **P 20 06 14.1 +2.0**
comp=Z,849nm,1.8s
PASC LR LR
comp=Z,25µm,22.0s
SHPR Sheep Range 36.28 101 *e*P **P 20 06 14.1 +1.7**
B26A Jensen Ranch, 36.30 75 P **P 20 06 13.1 +0.8**
baz=303,SNR=11
MWC Mount Wilson 36.30 106 *e*P **P 20 06 14.2 +1.6**
MWC pmax pmax
comp=Z,616nm,1.4s
MWC MLR MLR
comp=Z,24µm,21.0s
MWC Mount Wilson 36.30 106 *e*P **P 20 06 14.2 +1.6**
comp=Z,616nm,1.4s
MWC LR LR
comp=Z,24µm,21.0s
TCRU Three Creeks R 36.38 96 PFAKE 20 06 30.0 +17
TCRU LR LR
comp=Z,19µm,18.0s
RRX Edison Barstow 36.41 105 P **P 20 06 14.7 +1.3**
baz=317
BFSC Mount Baldy Ra 36.51 106 P **P 20 06 15.4 +1.1**
baz=318,SNR=16
A27A Ledoux Ranch, 36.54 74 P **P 20 06 14.6 +0.3**
baz=303
FMP Fort Macarthur 36.55 107 P **P 20 06 15.7 +1.2**
baz=319
CCUT Cedar City 36.58 98 *e*P **P 20 06 15.6 +0.6**
comp=Z,1µm,1.8s
CCUT LR LR
comp=Z,31µm,22.0s
MSU Marysvale 36.60 96 *e*P **P 20 06 15.0 -0.2**
MSU Marysvale 36.60 96 *e*P **P 20 06 13.9 -1.3**
MSU *e*ScP **ScP 20 12 22.2 +1.6**
TUQ Turquoise Moun 36.61 103 P **P 20 06 16.6 +1.5**
baz=316,SNR=29
TMUT Trail Mountain 36.63 94 *e*P **P 20 06 16.0 +0.5**
comp=Z,933nm,1.6s
TMUT LR LR
comp=Z,14µm,21.0s
SZCU Shurtz Canyon 36.70 98 *e*P **P 20 06 16.7 +0.7**
comp=Z,986nm,1.8s
SZCU LR LR
comp=Z,34µm,21.0s
CIS Catalina Islan 36.71 108 P **P 20 06 16.7 +0.8**
baz=319,SNR=8.3
P17A Butcher Ranch, 36.79 93 *e*P **P 20 06 17.7 +1.1**
comp=Z,580nm,1.5s

P17A LR LR
comp=Z,10µm,22.0s
HEC Hector,Ludlow 36.82 104 P **P 20 06 18.2 +1.3**
baz=317,SNR=41
BBRC Big Bear Solar 36.91 105 P **P 20 06 19.4 +1.6**
baz=318
MTPU Mount Pierson 36.92 96 *e*P **P 20 06 19.4 +1.4**
comp=Z,716nm,1.7s
MTPU LR LR
comp=Z,16µm,20.0s
D26A Manning 36.93 77 P **P 20 06 18.0 +0.4**
baz=304
SCI2 San Clemente I 36.96 108 P **P 20 06 19.1 +1.1**
baz=319,SNR=7.7
P18A Preston Nutter 36.97 93 PFAKE 20 06 30.0 +12
P18A LR LR
comp=Z,10µm,19.0s
LCMT Little Creek M 37.02 98 *e*P **P 20 06 20.1 +1.4**
comp=Z,831nm,1.5s
LCMT LR LR
comp=Z,24µm,21.0s
ASAJ Asahikawa 37.04 277 P **P 20 06 19.6 +1.0**
baz=58,slow=8.9
ASAJ Asahikawa 37.04 277 *e*P **P 20 06 18.6 +0.1**
comp=Z,158nm,1.0s
ASAJ LR LR
comp=Z,16µm,22.0s
A28A Rude Farm, Bot 37.11 73 P **P 20 06 20.3 +1.1**
baz=303
SRU San Rafael Swe 37.15 93 *e*P **P 20 06 20.7 +0.9**
SRU pmax pmax
comp=Z,1µm,1.5s
SRU MLR MLR
comp=Z,13µm,22.0s
SRU San Rafael Swe 37.15 93 *e*P **P 20 06 20.7 +0.9**
comp=Z,1µm,1.5s
SRU LR LR
comp=Z,13µm,22.0s
K22A Casper 37.19 86 P **P 20 06 20.0 0.0**
baz=309,SNR=20
K22A Casper 37.19 86 *e*P **P 20 06 20.1 0.0**
comp=Z,389nm,1.3s
K22A LR LR
comp=Z,5µm,18.0s
GMRC Granite Mounta 37.23 103 P **P 20 06 21.6 +1.1**
baz=317,SNR=81
MURC Murrieta 37.24 106 P **P 20 06 21.4 +1.0**
baz=318,SNR=8.4
PKCU Pink Cliffs 37.26 97 *e*P **P 20 06 22.2 +1.3**
comp=Z,553nm,1.3s
PKCU LR LR
comp=Z,16µm,20.0s
KNB Kanab 37.26 98 *e*P **P 20 06 22.1 +1.4**
KNB pmax pmax
comp=Z,436nm,1.3s
KNB MLR MLR
comp=Z,27µm,21.0s
KNB Kanab 37.26 98 *e*P **P 20 06 22.1 +1.4**
comp=Z,436nm,1.3s
KNB LR LR
comp=Z,27µm,21.0s
LDFC Landfair 37.33 102 *e*P **P 20 06 22.3 +1.1**
comp=Z,710nm,1.0s
LDFC LR LR
comp=Z,12µm,19.0s
BELC Belle Mtn. Jos 37.61 105 P **P 20 06 24.6 +0.9**
baz=318,SNR=36
PFO Pinyon Flats O 37.64 105 P **P 20 06 24.9 +1.0**
comp=Z,34nm,1.0s,baz=330,slow=7.4,SNR=23
PFO PcP **PcP 20 08 41.6 +0.9**
comp=Z,17nm,0.9s,baz=109,slow=1.5,SNR=4.5
PFO S **S 20 12 12.4 +1.5**
comp=Z,1.3nm,0.5s,baz=70,slow=16,SNR=4.7
PFO ScP **ScP 20 12 23.9 -0.6**
comp=Z,4.6nm,0.7s,baz=341,slow=4.6,SNR=6.8
PFO LR LR 20 19 04.3
comp=Z,28µm,20.3s,baz=318,slow=32
PFO PKKP **PKKPdf 20 30 38.1 -3.9**
comp=Z,0.5nm,0.4s,baz=286,slow=6.9,SNR=3.6
PFO Pinyon Flats O 37.64 105 P **P 20 06 25.1 +1.2**
baz=318,SNR=27
PFO Pinyon Flats O 37.64 105 *e*P **P 20 06 24.8 +0.8**
comp=Z,926nm,1.8s
PFO *e*PcP **PcP 20 08 41.6 +0.9**
PFO *e*S **S 20 12 12.4 +1.5**
PFO *e*ScP **ScP 20 12 23.8 -0.6**
PFO PKKP **PKKPdf 20 30 38.1 -3.9**
TPFO Pinon Flats 37.65 105 P **P 20 06 25.1 +1.1**
baz=318,SNR=34
H25A Fruitdale 37.67 81 P **P 20 06 24.7 +0.7**
baz=307,SNR=26
A29A Manning Farm, 37.67 72 P **P 20 06 24.3 +0.4**
baz=303,SNR=124
RSSD Black Hills 37.72 82 P **P 20 06 25.1 +0.5**
baz=307
RSSD Black Hills 37.72 82 *e*P **P 20 06 24.5 -0.1**
RSSD pmax pmax
comp=Z,450nm,1.6s
RSSD MLR MLR
comp=Z,18µm,21.0s
RSSD Black Hills 37.72 82 *e*P **P 20 06 24.5 -0.1**
comp=Z,450nm,1.6s
RSSD LR LR
comp=Z,18µm,21.0s
O20A White River Ci 37.80 90 P **P 20 06 25.8 +0.6**
baz=311,SNR=24
O20A White River Ci 37.80 90 *e*P **P 20 06 25.3 0.0**
comp=Z,629nm,0.9s
O20A LR LR
comp=Z,20µm,21.0s
109C Camp Elliot, M 37.82 107 P **P 20 06 27.1 +1.8**
baz=319,SNR=7.2
NEE2 Needles Airpor 37.83 102 P **P 20 06 26.8 +1.5**
baz=317,SNR=12
B29A Wagenman Farm, 37.86 73 P **P 20 06 25.7 +0.3**
baz=304,SNR=80
U15A North Rim 37.97 98 *e*P **P 20 06 28.1 +1.2**
comp=Z,1µm,1.9s
U15A LR LR
comp=Z,23µm,21.0s
IRM Iron Mountain 37.98 104 P **P 20 06 28.3 +1.6**
baz=317,SNR=129
W13A Hualapai Mount 38.01 101 *e*P **P 20 06 28.4 +1.3**
comp=Z,775nm,1.5s
W13A LR LR
comp=Z,11µm,19.0s
ERM Erimo 38.01 274 *d i*P **P 20 06 28.4 +1.6**
ERM pmax pmax
comp=Z,267nm,1.2s
ERM MLR MLR
comp=Z,20µm,22.0s
ERM Erimo 38.01 274 *e*P **P 20 06 27.3 +0.5**
comp=Z,188nm,1.0s
ERM LR LR
comp=Z,5µm,20.0s
MDND Maddock 38.06 74 P **P 20 06 28.1 +0.9**
baz=304,SNR=33
MDND Maddock 38.06 74 *e*P **P 20 06 27.8 +0.6**
comp=Z,3µm,1.5s
MDND LR LR
comp=Z,13µm,20.0s
BC3 Big Chuckawall 38.17 104 P **P 20 06 29.1 +0.7**
baz=318,SNR=27
MONP2 Monument Peak 38.20 106 P **P 20 06 30.2 +1.5**
baz=319,SNR=18
BAR Barrett 38.22 107 *e*P **P 20 06 30.0 +1.4**
comp=Z,1µm,1.7s
BAR LR LR
comp=Z,14µm,22.0s
PV09 Paradox Valley 38.37 93 *e*P **P 20 06 30.5 +0.3**
B30A Myrvik Farm, E 38.43 73 P **P 20 06 30.7 +0.4**
baz=304,SNR=102
PDMCI Parker Dam,Lak 38.44 102 P **P 20 06 32.0 +1.5**
baz=317,SNR=20
JOHN Johnston Islan 38.49 193 PFAKE 20 06 40.0 +9.0
JOHN LR LR
comp=Z,22µm,20.0s
PV10 Paradox Valley 38.51 93 *e*P **P 20 06 32.5 +1.2**
SWSC Sam W. Stewart 38.51 106 P **P 20 06 32.8 +1.8**
baz=319,SNR=20
IKP In-Ko-Pah, Jac 38.55 106 P **P 20 06 32.8 +1.3**
baz=319,SNR=19
Y12C Blythe 38.63 103 P **P 20 06 33.6 +1.5**
baz=318,SNR=64
Y12C Blythe 38.63 103 *e*P **P 20 06 33.3 +1.2**
comp=Z,2µm,1.8s
Y12C LR LR
comp=Z,12µm,21.0s

N23A Red Feather La 38.64 88 P P 20 06 32.8 +0.4
baz=310,SNR=33
N23A Red Feather La 38.64 88 *e*P P 20 06 32.3 -0.1
comp=Z,490nm,1.4s
N23A LR LR
comp=Z,11µm,21.0s
PHWY Pilot Hill 38.66 87 *e*P P 20 06 33.0 +0.4
comp=Z,147nm,1.5s
PHWY LR LR
comp=Z,5µm,19.0s
PV05 Paradox Valley 38.67 94 *e*P P 20 06 32.7 0.0
HABR Khabarovsk 38.77 288*c i*P P 20 06 32.2 -0.9
HABR *e**PP **pP** 20 06 45.4 +0.9
HABR 20 08 02.0
HABR *e* 20 08 43.0
HABR *e*S **S** 20 12 26.2 -1.2
HABR *e*SSS SSS 20 15 37.9
HABR *e* 20 16 37.5
HABR pmax pmax
comp=N,23nm,1.0s
HABR pmax pmax
comp=E,73nm,1.0s
HABR pmax pmax
comp=Z,188nm,1.0s
HABR pmax pmax
comp=Z,555nm,1.0s
HABR MLR MLR
comp=Z,23µm,20.0s
ULM Lac du Bonnet 38.78 69 P P 20 06 33.5 +0.3
comp=Z,238nm,0.9s,baz=302,slow=8.8,SNR=78
ULM S **S** 20 12 27.5 -0.1
comp=Z,11nm,1.0s,baz=45,slow=20,SNR=3.4
ULM LR LR 20 22 39.1
comp=Z,23µm,19.4s,baz=306,slow=36
ULM Lac du Bonnet 38.78 69 *e*P P 20 06 33.6 +0.4
ULM pmax pmax
comp=Z,340nm,1.0s
ULM Lac du Bonnet 38.78 69 *e*P P 20 06 33.1 -0.1
comp=Z,339nm,0.9s
ULM S **S** 20 12 27.5 -0.1
A31A Linda, St. Vin 38.79 71 P P 20 06 33.4 +0.1
baz=304,SNR=7.4
B31A Greenbush Farm 38.82 72 P P 20 06 34.2 +0.6
baz=304,SNR=30
PV01 Paradox Valley 38.94 93 *e*P P 20 06 34.7 -0.3
GLA Glamis 38.97 104 P P 20 06 36.4 +1.4
baz=318,SNR=38
GLA Glamis 38.97 104 *e*P P 20 06 36.6 +1.6
GLA pmax pmax
comp=Z,1µm,1.7s
GLA MLR MLR
comp=Z,21µm,18.0s
GLA Glamis 38.97 104 *e*P P 20 06 36.6 +1.6
comp=Z,1µm,1.7s
GLA LR LR
comp=Z,21µm,18.0s
F29A Eureka 39.10 77 P P 20 06 35.9 0.0
baz=306,SNR=21
C31A Landman Farms, 39.13 73 P P 20 06 36.0 -0.1
baz=305,SNR=44
WUAZ Wupatki 39.14 98 P P 20 06 37.7 +1.1
baz=316,SNR=90
WUAZ Wupatki 39.14 98 *e*P P 20 06 38.0 +1.5
comp=Z,516nm,1.1s
WUAZ LR LR
comp=Z,22µm,22.0s
SMCO Snowmass 39.16 90 *e*P P 20 06 38.8 +1.8
comp=Z,238nm,1.2s
SMCO LR LR
comp=Z,26µm,20.0s
A32A Rocking H Ranc 39.18 71 P P 20 06 36.5 0.0
baz=304,SNR=44
Y14A Wickenburg 39.35 102 *e*P P 20 06 39.4 +1.3
comp=Z,1µm,1.1s
Y14A *e*S **S** 20 12 32.9 -3.6
Y14A LR LR
comp=Z,45µm,21.0s
B32A Ashes, Strandq 39.45 72 P P 20 06 38.7 -0.1
baz=304,SNR=75
ISCO Idaho Springs 39.54 89 P P 20 06 40.5 +0.5
baz=311
ISCO Idaho Springs 39.54 89 PFAKE 20 06 50.0 +10
ISCO LR LR
comp=Z,25µm,19.0s
F30A Leola 39.55 76 P P 20 06 39.5 -0.2
baz=306
D31A Mcclaflin, Tow 39.57 74 P P 20 06 39.9 +0.2
baz=306,SNR=11
MVCO Mesa Verde 39.62 94 P P 20 06 40.4 -0.1
baz=314,SNR=35
MVCO Mesa Verde 39.62 94 *e*P P 20 06 40.8 +0.2
comp=Z,224nm,1.1s
MVCO LR LR
comp=Z,9µm,19.0s
CLNS Chul'man 39.66 304 *e*P P 20 06 39.8 -0.7
CLNS *e**PP **pP** 20 06 52.7 +0.8
CLNS *e*PPP PPP 20 08 36.3
CLNS *e* 20 08 48.3
CLNS *e*S **S** 20 12 45.2 +4.5
CLNS *e*SS **SS** 20 15 35.3 -1.4
CLNS pmax pmax
comp=Z,92nm,0.9s
CLNS pmax pmax
comp=N,42nm,0.8s
CLNS pmax pmax
comp=E,68nm,0.8s
CLNS smax smax
comp=E,1µm,16.9s
CLNS smax smax
comp=N,807nm,14.1s
CLNS MLR MLR
comp=Z,16µm,16.0s
CLNS MLR MLR
comp=N,6µm,14.0s
CLNS MLR MLR
comp=E,10µm,15.0s
E31A Nome 39.76 75 P P 20 06 41.3 -0.1
baz=306,SNR=43
A33A Warroad 39.77 70 P P 20 06 41.7 +0.2
baz=304,SNR=89
113A Mohawk Valley, 39.78 104 *e*P P 20 06 43.2 +1.5
comp=E,1µm,1.7s
113A LR LR
comp=Z,16µm,22.0s
C32A Crookston 39.78 72 P P 20 06 41.7 +0.1
baz=305,SNR=11
AGMN Agassiz Nation 39.88 71 P P 20 06 42.4 +0.1
baz=305,SNR=107
AGMN Agassiz Nation 39.88 71 *e*P P 20 06 42.3 0.0
comp=Z,449nm,0.9s
X16A Lo Mia Camp, P 39.89 100 *e*P P 20 06 44.4 +1.6
comp=Z,807nm,1.4s
X16A LR LR
comp=Z,34µm,22.0s
D32A Dogwood Acres, 39.91 74 P P 20 06 42.1 -0.5
baz=306,SNR=8.6
F31A Hecla 39.97 76 P P 20 06 42.7 -0.4
baz=307,SNR=15
B33A Robert and Kas 40.04 71 P P 20 06 44.0 +0.3
baz=305,SNR=29
KLR Kul'dur 40.16 291 P P 20 06 44.8 +0.2
comp=Z,91nm,0.8s,baz=59,slow=8.5,SNR=234
KLR LR LR 20 24 47.5
comp=Z,16µm,20.0s,baz=60,slow=38
E32A Braaten, Kindr 40.20 74 P P 20 06 44.8 -0.2
baz=306,SNR=14
S22A 4UR Ranch, Cre 40.21 92 P P 20 06 46.2 +0.6
baz=313,SNR=76
S22A 4UR Ranch, Cre 40.21 92 *e*P P 20 06 47.1 +1.5
comp=Z,454nm,1.5s
S22A LR LR
comp=Z,19µm,22.0s
C33A Trail 40.23 72 P P 20 06 45.4 +0.1
baz=305,SNR=17
Q24A Divide 40.37 89 P P 20 06 47.2 +0.4
baz=312,SNR=17
Q24A Divide 40.37 89 *e*P P 20 06 47.2 +0.4
comp=Z,212nm,1.2s
Q24A LR LR
comp=Z,19µm,20.0s
W18A Petrified Fore 40.37 97 P P 20 06 47.6 +0.8
baz=316,SNR=20
W18A Petrified Fore 40.37 97 *e*P P 20 06 47.8 +1.0
comp=Z,715nm,1.5s
W18A LR LR
comp=Z,18µm,21.0s
G31A Conde 40.37 77 P P 20 06 46.1 -0.4
baz=307,SNR=8.0
SUSD Miller 40.42 78 P P 20 06 47.1 +0.1
baz=308,SNR=27
B34A Aery, Baudette 40.43 70 P P 20 06 46.9 -0.1
baz=305,SNR=70
D33A AnnSam, Waubun 40.55 73 P P 20 06 47.6 -0.4
baz=306,SNR=9.6
F32A Veblen 40.59 75 P P 20 06 48.0 -0.3
baz=307,SNR=46
X18A Snowflake 40.66 98 *e*P P 20 06 50.1 +0.9
comp=Z,839nm,1.4s
X18A LR LR
comp=Z,32µm,21.0s
H31A Wolsey 40.67 78 P P 20 06 49.0 0.0
baz=308,SNR=24
G32A Webster 40.75 76 P P 20 06 49.1 -0.6
baz=307,SNR=5.9
C34A RKJ Ranch, Bem 40.77 72 P P 20 06 49.6 -0.2
baz=306,SNR=23
J30A Dallas 40.81 80 P P 20 06 50.4 +0.3
baz=309,SNR=26
E33A Westby DABS, E 40.84 74 P P 20 06 50.1 -0.2
baz=306,SNR=13
OGNE Ogallala 40.86 84 P P 20 06 51.2 +0.4
baz=311,SNR=11
OGNE Ogallala 40.86 84 *e*P P 20 06 51.1 +0.4
comp=Z,636nm,1.4s
OGNE LR LR
comp=Z,11µm,21.0s
I31A Royce, Wessing 40.92 78 P P 20 06 51.1 +0.1
baz=308,SNR=16
214A Organ Pipe Nat 40.92 104 P P 20 06 52.8 +1.6
baz=319,SNR=93
D34A Park Rapids 40.95 72 P P 20 06 50.9 -0.3
baz=306,SNR=57
SDCO Great Sand Dun 40.98 91 P P 20 06 52.4 +0.4
baz=313,SNR=89
SDCO Great Sand Dun 40.98 91 *e*P P 20 06 51.9 0.0
comp=Z,183nm,1.1s
SDCO LR LR
comp=Z,16µm,20.0s
B35A Bob, Littlefor 41.01 70 P P 20 06 51.4 -0.3
baz=305,SNR=83
F33A 5 Mile Ranch, 41.08 75 P P 20 06 51.8 -0.4
baz=307,SNR=36
K30A Basset 41.15 81 P P 20 06 53.7 +0.8
baz=309,SNR=38
H32A Carlson Farm, 41.25 77 P P 20 06 53.4 -0.3
baz=308,SNR=56
C35A Jirik Farms, M 41.26 71 P P 20 06 53.4 -0.3
baz=306,SNR=93
J31A Geddes 41.26 79 P P 20 06 54.0 +0.1
baz=309,SNR=20
E34A Wadena 41.30 73 P P 20 06 53.8 -0.3
baz=307,SNR=13
G33A Ortonville 41.39 76 P P 20 06 54.3 -0.6
baz=308,SNR=13
I32A Karley and Nic 41.52 78 P P 20 06 55.5 -0.5
baz=308,SNR=13
H33A Prehn Over Nor 41.53 76 P P 20 06 55.6 -0.5
baz=308,SNR=58
D35A Remer 41.58 72 P P 20 06 56.3 -0.1
baz=306,SNR=61
KULLO Kullorsuaq 41.62 23⇑*i*P P 20 06 56.6 +0.3
KULLO *i* 20 07 11.3
comp=Z,20µm,20.0s
KULLO Kullorsuaq 41.62 23⇑*i*P P 20 06 56.6 +0.3
KULLO *i* 20 07 11.3
KULLO MLR MLR
comp=Z,20µm,20.0s
K31A O'Neill 41.67 80 P P 20 06 57.5 +0.3
baz=310
F34A Alexandria 41.68 74 P P 20 06 57.1 -0.1
baz=307,SNR=38
E35A Pequot Lakes 41.70 73 P P 20 06 57.6 +0.2
baz=307,SNR=36
J32A Parkston 41.72 79 P P 20 06 57.2 -0.4
baz=309,SNR=17
KSCO Kaye Shedlock' 41.79 87 P P 20 06 59.0 +0.6
baz=312
KSCO Kaye Shedlock' 41.79 87 PFAKE 20 07 10.0 +12
KSCO LR LR
comp=Z,13µm,20.0s
TUC Tucson 41.80 101 P P 20 06 59.3 +0.8
baz=318
TUC Tucson 41.80 101 *e*P P 20 06 59.8 +1.3
TUC pmax pmax
comp=Z,1µm,1.7s
TUC Tucson 41.80 101 *e*P P 20 06 59.5 +1.1
comp=Z,1µm,1.7s
G34A Benson 41.81 75 P P 20 06 58.0 -0.2
baz=308,SNR=34
C36A Pine Crest Far 41.84 70 P P 20 06 58.4 -0.1
baz=306,SNR=117
I33A Coleman 41.89 77 P P 20 06 58.5 -0.4
baz=308,SNR=11
L31A Butterfield Fa 41.91 81 P P 20 06 59.8 +0.7
baz=310
D36A Goodland 42.01 71 P P 20 06 60.0 +0.1
baz=307,SNR=80
F35A Swanville 42.02 74 P P 20 06 59.8 -0.3
baz=307,SNR=48
T25A Trinidad 42.03 91 P P 20 07 01.3 +0.9
baz=314,SNR=57
T25A Trinidad 42.03 91 *e*P P 20 07 00.6 +0.1
comp=Z,427nm,1.1s
T25A LR LR
comp=Z,18µm,22.0s
H34A Spellman Lake, 42.08 76 P P 20 07 00.2 -0.3
baz=308,SNR=37
K32A Verdigre 42.09 80 P P 20 07 00.4 -0.2
baz=310,SNR=13
ECSD EROS Data Cent 42.19 77 P P 20 07 00.6 -0.8
baz=309,SNR=74
ECSD EROS Data Cent 42.19 77 *e*P P 20 07 00.4 -1.0
comp=Z,202nm,1.2s
ECSD LR LR
comp=Z,24µm,20.0s
C37A Embarrass 42.22 70 P P 20 07 01.6 0.0
baz=306,SNR=135
J33A Davis 42.25 78 P P 20 07 01.3 -0.6
baz=309,SNR=13
E36A McGregor 42.35 72 P P 20 07 02.9 +0.2
baz=307,SNR=136
M31A Lambtecht Ranc 42.36 82 P P 20 07 02.5 -0.4
baz=310
LAZ Ladron 42.37 96 *e*P P 20 07 02.9 -0.3
ANMO Albuquerque 42.38 95 P P 20 07 03.7 +0.4
baz=316
ANMO Albuquerque 42.38 95⇑*i*P P 20 07 05.4 +2.1
ANMO pmax pmax
comp=Z,71nm,1.2s
ANMO Albuquerque 42.38 95 *e*P P 20 07 03.5 +0.2
comp=Z,407nm,1.5s
ANMO LR LR
comp=Z,6µm,19.0s
I34A Hadley 42.42 77 P P 20 07 02.8 -0.6
baz=309
D37A Cotton 42.42 71 P P 20 07 02.9 -0.3
baz=307,SNR=73
EYMN Ely 42.46 69 P P 20 07 03.7 +0.1
baz=306,SNR=234
EYMN Ely 42.46 69 *e*P P 20 07 02.9 -0.7
comp=Z,417nm,1.0s
EYMN LR LR
comp=Z,16µm,20.0s
G35A Watkins 42.46 74 P P 20 07 03.2 -0.4
baz=308,SNR=8.4
L32A Elgin 42.49 80 P P 20 07 04.2 +0.3
baz=310,SNR=22
H35A Sunnyside Ranc 42.59 75 P P 20 07 04.4 -0.2
baz=308,SNR=63
F36A Milaca 42.60 73 P P 20 07 04.7 0.0
baz=308,SNR=93
K33A Hardington 42.68 79 P P 20 07 05.2 -0.3
baz=310,SNR=14
N31A Bailey Ranch, 42.72 82 P P 20 07 05.7 -0.1
baz=311,SNR=6.9
C38A Sawbill Land. 42.72 69 P P 20 07 05.3 -0.4
baz=307,SNR=104
LPM Los Pinos Moun 42.73 95 *e*P P 20 07 06.6 +0.5
Y22D IRIS PASSCAL I 42.73 96 P P 20 07 06.6 +0.5
baz=316
Y22D IRIS PASSCAL I 42.73 96 *e*P P 20 07 07.6 +1.5
comp=Z,1µm,1.3s
Y22D LR LR
comp=Z,24µm,19.0s
BGNE Belgrade 42.80 81 P P 20 07 06.6 +0.1
baz=311,SNR=24
BGNE Belgrade 42.80 81 *e*P P 20 07 06.5 +0.1
comp=Z,1µm,1.4s
BGNE LR LR
comp=Z,20µm,21.0s
E37A Wrenshall 42.80 71 P P 20 07 06.5 +0.2
baz=307,SNR=9.6
L33A Hoskins 42.81 80 P P 20 07 06.2 -0.2
baz=310,SNR=22
J34A George 42.84 77 P P 20 07 06.2 -0.5
baz=309,SNR=13
BNM Barren Site 42.85 96 *e*P P 20 07 07.7 +0.6
G36A St. Michael 42.86 74 P P 20 07 07.1 +0.3
baz=308,SNR=34
O31A Woolen Ranch, 42.94 83 P P 20 07 07.3 -0.3
baz=312
USRK Ussuriysk Ar. 43.02 284 P P 20 07 07.1 -1.0
comp=Z,22nm,0.7s,baz=41,slow=7.4,SNR=24
USRK PcP PcP 20 08 58.7 +1.1
comp=Z,13nm,0.7s,baz=42,slow=6.9,SNR=6.5
USRK LR LR 20 25 09.6
comp=Z,11µm,21.9s,baz=49,slow=36
I35A Creekview Farm 43.03 76 P P 20 07 07.5 -0.7
baz=309,SNR=30
N32A Stulken Farm, 43.13 82 P P 20 07 08.8 -0.3
baz=311,SNR=12
K34A Le Mars 43.14 78 P P 20 07 09.0 -0.2
baz=310
H36A Jessenland, He 43.17 75 P P 20 07 09.7 +0.4
baz=309,SNR=50
J35A Milford 43.22 77 P P 20 07 09.3 -0.4
baz=309,SNR=5.7
M33A Taylor Creek F 43.23 80 P P 20 07 09.8 -0.1
baz=311,SNR=42
C39A Grand Marais 43.28 69 P P 20 07 09.8 -0.4
baz=307
121A Cookes Peak, D 43.35 98 P P 20 07 12.4 +1.2
baz=317,SNR=59
319A Douglas 43.35 101 *e*P P 20 07 12.1 +1.0
comp=Z,480nm,1.2s
SPMN Marine on St. 43.40 73 P P 20 07 11.1 0.0
baz=308,SNR=32
SPMN Marine on St. 43.40 73 *e*P P 20 07 11.0 -0.2
comp=Z,739nm,1.5s
SPMN LR LR
comp=Z,7µm,20.0s
L34A Svendsen Farm, 43.45 79 P P 20 07 11.3 -0.4
baz=310,SNR=15
I36A Fitzsimmons Fa 43.47 75 P P 20 07 11.3 -0.5
baz=309,SNR=9.1
O32A Brockman Farm, 43.47 82 P P 20 07 11.6 -0.3
baz=312,SNR=9.1
CBKS Cedar Bluff 43.60 85 P P 20 07 13.4 +0.6
baz=312,SNR=11
CBKS Cedar Bluff 43.60 85 *e*P P 20 07 13.5 +0.6
CBKS pmax pmax
comp=Z,840nm,1.3s
CBKS Cedar Bluff 43.60 85 *e*P P 20 07 13.5 +0.6
comp=Z,835nm,1.4s
K35A Storm Lake 43.61 78 P P 20 07 12.4 -0.5
baz=310,SNR=24
M34A Aspy Farms, Fr 43.63 80 P P 20 07 12.9 -0.2
baz=311,SNR=7.9
N33A J Bar K, Exete 43.63 81 P P 20 07 12.6 -0.6
baz=311
P32A Huiting Farm, 43.71 83 P P 20 07 13.5 -0.2
baz=312,SNR=9.5
J36A Seneca 1, Swea 43.73 76 P P 20 07 13.4 -0.4
baz=310,SNR=44
H37A Dierke Farm, C 43.73 74 P P 20 07 14.1 +0.2
baz=309,SNR=24
VLA Vladivostok 43.76 283*c i*P P 20 07 14.8 +0.7
VLA pmax pmax
comp=Z,112nm,1.0s
VLA MLR MLR
comp=Z,9µm,21.0s
I37A Lemond, Waseca 43.82 75 P P 20 07 14.7 +0.1
baz=309,SNR=100
L35A Bielow Farm, R 43.83 78 P P 20 07 13.9 -0.8
baz=310,SNR=18
O33A Hebron 43.99 82 P P 20 07 15.9 -0.2
baz=312,SNR=40
MDJ Mudanjiang 44.10 287 P P 20 07 15.3 -1.5
MDJ pP pP 20 07 26.4 -1.9
MDJ sP sP 20 07 31.3 -1.8
MDJ PP **PP** 20 08 57.3 -2.5
MDJ PcP **PcP** 20 09 01.9 +0.6
MDJ ScP **ScP** 20 12 50.0 +0.5
MDJ PcS **PcS** 20 12 53.6 -0.7
MDJ S **S** 20 13 46.1 -0.2
MDJ ScS **ScS** 20 17 11.3 -0.2
MDJ pmax pmax
comp=Z,63nm,0.9s
MDJ pmax pmax
comp=Z,2µm,11.0s
MDJ LR LR
comp=Z,4µm,16.0s
MDJ LR LR
comp=Z,15µm,22.9s
MDJ LR LR
comp=Z,18µm,22.0s
MDJ Mudanjiang 44.10 287 *e*P P 20 07 15.9 -0.8
comp=Z,54nm,0.8s
MDJ LR LR
comp=Z,24µm,20.0s
K36A Gilmore City 44.11 77 P P 20 07 16.8 -0.1
baz=310
N34A Lincoln 44.11 81 P P 20 07 16.4 -0.6
baz=311,SNR=12
Q32A Meitler Ranch, 44.16 84 P P 20 07 17.4 0.0
baz=312,SNR=21
M35A Neola 44.16 79 P P 20 07 17.4 0.0
baz=311,SNR=15
BOD Bodaibo 44.17 310 *e*P P 20 07 16.0 -1.2
BOD pmax pmax
comp=Z,236nm,1.5s
J37A Redenius Farm, 44.18 76 P P 20 07 17.3 -0.2
baz=310,SNR=182
HSIG 44.19 105 *e*P P 20 07 18.5 +0.8
comp=Z,1µm,1.8s
L36A Harm Buss Farm 44.33 78 P P 20 07 17.9 -0.8
baz=311,SNR=23
P33A Williams Farm, 44.36 83 P P 20 07 18.9 0.0
baz=312,SNR=22
I38A Scanlan Farm, 44.40 74 P P 20 07 19.1 -0.1
baz=310,SNR=69
O34A Beatrice 44.43 81 P P 20 07 19.2 -0.3
baz=312,SNR=54
R32A Long Quarter, 44.45 85 P P 20 07 19.9 +0.2
baz=313,SNR=22
K37A Belmond 44.48 76 P P 20 07 19.4 -0.4
baz=310,SNR=160
MJAR Matsushiro Arr 44.51 272 P P 20 07 20.8 +0.6
comp=Z,100nm,0.7s,baz=35,slow=6.0,SNR=351
MJAR ScP **ScP** 20 12 50.7 -0.7
comp=Z,5.6nm,1.0s,baz=17,slow=2.4,SNR=4.3
MJAR LR LR 20 25 02.5
comp=Z,9µm,21.9s,baz=60,slow=35
MJB9 Matsu-Tunnel 44.51 272 *e*P P 20 07 20.4 +0.2
comp=Z,128nm,0.9s
MJB9 LR LR
comp=Z,4µm,22.0s
MAJO Matsushiro 44.51 272*c i*P P 20 07 20.9 +0.7
MAJO pmax pmax
comp=Z,3µm,0.9s
MAJO Matsushiro 44.51 272 *e*P P 20 07 20.5 +0.3
comp=Z,504nm,0.9s
MAJO LR LR
comp=Z,16µm,22.0s
MAT Matsushiro 44.51 272 P P 20 07 20.8 +0.6
MAT S **S** 20 13 53.4 +0.9
MSHR Mys Shultsa 44.52 283*c i*P P 20 07 21.0 +0.9
Q33A Connelly Farm, 44.57 83 P P 20 07 20.5 -0.1
baz=312,SNR=44
N35A Tabor 44.59 80 P P 20 07 20.9 +0.2
baz=311,SNR=61
M36A Felix, Anita 44.68 79 P P 20 07 21.2 -0.3
baz=311,SNR=35
J38A Wedel Dairy, R 44.78 75 P P 20 07 22.0 -0.2
baz=310,SNR=87
P34A Walnut Farm, R 44.78 82 P P 20 07 21.8 -0.5
baz=312,SNR=27
S32A Newby Ranch, P 44.81 86 P P 20 07 22.5 -0.2
baz=313,SNR=18
O35A Humboldt 44.83 81 P P 20 07 21.6 -1.1
baz=312
L37A Phoenix Point, 44.83 77 P P 20 07 22.5 -0.2
baz=311,SNR=61

COWI **Conover** 44.87 70 *e*P P 20 07 22.5 -0.5
comp=Z,454nm,1.4s
COWI LR LR
comp=Z,9µm,20.0s
R33A **Olander Ranch,** 44.95 84 P P 20 07 23.9 +0.2
baz=313,SNR=26
N36A **Muff Farm, Cla** 45.01 79 P P 20 07 23.9 -0.2
baz=312,SNR=32
K38A **Parkersburg** 45.05 76 P P 20 07 24.1 -0.3
baz=310,SNR=19
M37A **Trindle Farm,** 45.13 78 P P 20 07 25.1 0.0
baz=311,SNR=53
Q34A **Chapman** 45.13 83 P P 20 07 24.8 -0.4
baz=313,SNR=37
T32A **Huddler Ranch,** 45.18 86 P P 20 07 25.1 -0.4
baz=314,SNR=18
AMTX **Amarillo** 45.19 91 P P 20 07 25.9 +0.2
baz=315
AMTX **Amarillo** 45.19 91 *e*P P 20 07 25.5 -0.2
comp=Z,730nm,1.7s
AMTX LR LR
comp=Z,19µm,21.0s
J39A **Decorah** 45.20 75 P P 20 07 24.8 -0.7
baz=310,SNR=112
MSTX **Muleshoe** 45.20 93 P P 20 07 25.7 -0.2
baz=316,SNR=29
MSTX **Muleshoe** 45.20 93 *e*P P 20 07 25.6 -0.3
comp=Z,314nm,1.1s
MSTX LR LR
comp=Z,11µm,18.0s
KSU1 **Kansas State U** 45.20 82 P P 20 07 24.9 -0.7
baz=313,SNR=15
KSU1 **Kansas State U** 45.20 82 *e*P P 20 07 25.3 -0.4
comp=Z,148nm,0.9s
KSU1 LR LR
comp=Z,13µm,22.0s
P35A **Duane Minner,** 45.26 82 P P 20 07 25.8 -0.3
baz=312,SNR=33
L38A **Oak Wood Farm,** 45.27 77 P P 20 07 25.5 -0.7
baz=311,SNR=45
MNTX **Cornudas Mount** 45.35 97 P P 20 07 28.0 +1.1
baz=318,SNR=183
MNTX **Cornudas Mount** 45.35 97 *e*P P 20 07 27.3 +0.4
comp=Z,386nm,1.1s
R34A **Isabella, Hill** 45.38 84 P P 20 07 26.9 -0.2
baz=313,SNR=33
S33A **Kaszmaul Farm,** 45.43 85 P P 20 07 27.4 -0.1
baz=314,SNR=56
O36A **Bolckow** 45.46 80 P P 20 07 27.3 -0.3
baz=312,SNR=34
N37A **Lee Faris, Mou** 45.47 79 P P 20 07 28.0 +0.3
baz=312,SNR=35
K39A **Oelwein** 45.51 75 P P 20 07 26.9 -1.1
baz=311,SNR=102
M38A **Pleasantville** 45.61 78 P P 20 07 28.5 -0.4
baz=311,SNR=29
T33A **Patterson Ranc** 45.64 86 P P 20 07 28.6 -0.5
baz=314
P36A **Good Intent, A** 45.66 81 P P 20 07 28.9 -0.4
baz=312,SNR=90
U32A **Winter Ranch,** 45.69 87 P P 20 07 29.3 -0.2
baz=314,SNR=7.1
Q35A **Mercer Eighty,** 45.70 82 P P 20 07 28.3 -1.3
baz=313,SNR=6.8
J40A **Soldiers Grove** 45.70 74 P P 20 07 28.9 -0.6
baz=310,SNR=90
L39A **Vinton** 45.82 76 P P 20 07 29.6 -0.9
baz=311,SNR=34
S34A **Willow Spring** 45.87 84 P P 20 07 30.5 -0.4
baz=314,SNR=30
O37A **Wolven Farm, M** 45.90 80 P P 20 07 30.8 -0.3
baz=312
K40A **Colesburg** 45.93 75 P P 20 07 30.4 -1.0
baz=311,SNR=30
Q36A **Arnold C. Orve** 45.96 82 P P 20 07 30.5 -1.1
baz=313,SNR=10
R35A **Emporia Munici** 45.97 83 P P 20 07 31.2 -0.5
baz=313
N38A **Joes South For** 46.00 78 P P 20 07 31.7 -0.3
baz=312,SNR=26
JHJ2 **Mitsune** 46.01 267 *e*P P 20 07 32.3 +0.3
comp=Z,684nm,1.0s
JHJ2 LR LR
comp=Z,7µm,22.0s
JHJ **Hachijo jima 2** 46.02 267 P P 20 07 32.8 +0.6
comp=Z,534nm,0.9s,baz=160,slow=11,SNR=7.6
JHJ LR LR 20 25 19.8
comp=Z,6µm,21.9s,baz=58,slow=34
INU **Inuyama** 46.03 271 *e*P P 20 07 32.0 -0.2
comp=Z,180nm,1.0s
INU LR LR
comp=Z,8µm,22.0s
J41A **Loganville** 46.12 73 P P 20 07 32.1 -0.8
baz=310,SNR=108
V32A **Arapaho** 46.12 88 P P 20 07 32.8 -0.2
baz=315,SNR=9.6
M39A **Webster** 46.15 77 P P 20 07 32.8 -0.3
baz=312,SNR=54
U33A **Lingo Farm, Me** 46.16 86 P P 20 07 32.8 -0.5
baz=314,SNR=12
P37A **Lathrop** 46.17 80 P P 20 07 32.5 -0.8
baz=312,SNR=38
JFWS **Jewell Farm** 46.29 74 *e*P P 20 07 33.0 -1.2
JFWS pmax pmax
comp=Z,314nm,0.9s
JFWS MLR MLR
comp=Z,31µm,18.0s
JFWS **Jewell Farm** 46.29 74 *e*P P 20 07 33.0 -1.2
comp=Z,314nm,0.9s
JFWS LR LR
comp=Z,31µm,18.0s
T34A **McClaskey Farm** 46.29 85 P P 20 07 33.9 -0.4
baz=314,SNR=72
L40A **Anamosa** 46.30 76 P P 20 07 33.3 -0.9
baz=311,SNR=67
O38A **Galt** 46.31 79 P P 20 07 33.8 -0.6
baz=312,SNR=16
S35A **Otter Creek Ra** 46.34 84 P P 20 07 34.3 -0.3
baz=314,SNR=78
N39A **Derby Farms, D** 46.36 78 P P 20 07 34.2 -0.5
baz=312,SNR=46
R36A **Gordon, Harris** 46.37 82 P P 20 07 34.4 -0.5
baz=313,SNR=16
ILULI **Ilulissat** 46.38 28 *i* P P 20 07 33.9 -0.6
ILULI *i* 20 07 49.2
comp=Z,11µm,18.0s
ILULI **Ilulissat** 46.38 28 *i* P P 20 07 33.9 -0.6
ILULI *i* 20 07 49.2
ILULI MLR MLR
comp=Z,11µm,18.0s
W32A **Sentinel** 46.43 89 P P 20 07 35.6 +0.2
baz=315,SNR=48
K41A **Shullsburg** 46.45 74 P P 20 07 34.6 -0.9
baz=311,SNR=109
HIA **Hailar** 46.48 298 *e*P P 20 07 35.1 -0.6
HIA pmax pmax
comp=Z,73nm,0.6s
HIA MLR MLR
comp=Z,19µm,20.0s
HIA **Hailar** 46.48 298 *e*P P 20 07 35.0 -0.6
comp=Z,73nm,0.6s
HIA LR LR
comp=Z,19µm,20.0s
V33A **Lossen Ranch,** 46.49 87 P P 20 07 35.0 -0.9
baz=315,SNR=9.9
KBS **Kingsbay** 46.50 2⇑ *i*P P 20 07 36.5 +1.2
KBS IVmB_BB 20 07 52.1
comp=Z,6µm,2.2s
KBS *e*PP PP 20 09 26.3 +1.6
KBS *e*SS SS 20 17 53.9 +8.4
KBS IVMs_BB IVMs_BB 20 27 47.0
comp=Z,4µm,16.3s
KBS **Kingsbay** 46.50 2 *e*P P 20 07 36.1 +0.7
KBS pmax pmax
comp=Z,442nm,1.0s
KBS MLR MLR
comp=Z,10µm,18.0s
KBS **Kingsbay** 46.50 2 *e*P P 20 07 36.1 +0.7
comp=Z,442nm,1.0s
KBS LR LR
comp=Z,10µm,18.0s
U34A **Anderson Ranch** 46.50 86 P P 20 07 35.4 -0.5
baz=314,SNR=33
U34A **Anderson Ranch** 46.50 86 *e*P P 20 07 35.3 -0.6
comp=Z,514nm,1.3s
NRIK **Noril'sk** 46.54 333 P P 20 07 35.9 +0.1
comp=Z,82nm,0.8s,baz=54,slow=8.0,SNR=42
NRIK PP PP 20 09 28.3 +3.1
comp=Z,118nm,1.1s,baz=74,slow=0.5,SNR=4.2
NRIK LR LR 20 30 16.3
Q37A **Longview Farm,** 46.59 81 P P 20 07 35.3 -1.3
baz=313,SNR=8.3
DAG **Danmarks Havn** 46.60 11⇑ *i*P P 20 07 36.3 +0.1
comp=Z,226nm,0.7s
DAG *i* 20 07 51.2
DAG **Danmarks Havn** 46.60 11⇑ *i*P P 20 07 36.3 +0.1
DAG *i* 20 07 51.2
DAG pmax pmax
comp=Z,150nm,0.7s
P38A **Dawn** 46.61 80 P P 20 07 36.3 -0.5
baz=313,SNR=66
L41A **Preston** 46.70 75 P P 20 07 36.2 -1.2
baz=311,SNR=43
S36A **Lake Cedric, C** 46.73 83 P P 20 07 37.1 -0.6
baz=314,SNR=20
O39A **Kirksville** 46.75 78 P P 20 07 37.2 -0.6
baz=312,SNR=7.2
T35A **Sooner Cattle** 46.75 85 P P 20 07 37.2 -0.7
baz=314,SNR=39
R37A **Teagarden Farm** 46.76 82 P P 20 07 36.9 -1.0
baz=313,SNR=14
W33A **Caddo, Fort Co** 46.86 88 P P 20 07 39.0 +0.3
baz=315,SNR=11
X32A **Elmer** 46.90 89 P P 20 07 38.8 -0.3
baz=316,SNR=31
CN2 **Changchun** 46.91 288⇑ *i*P P 20 07 38.8 -0.2
CN2 *ep*P pP 20 07 51.1 +0.5
CN2 *es*P sP 20 07 56.0 +0.6
CN2 PP **PP** 20 09 27.0 -2.5
CN2 *e*S **S** 20 14 23.0 -3.8
CN2 SS **SS** 20 17 42.8 -11
CN2 pmax pmax
comp=Z,170nm,0.7s
CN2 pmax pmax
comp=Z,2µm,6.0s
CN2 LR LR
comp=Z,7µm,20.0s
CN2 LR LR
comp=Z,12µm,20.0s
CN2 LR LR
comp=Z,13µm,21.0s
V34A **Guthrie** 46.93 86 P P 20 07 38.7 -0.6
baz=315,SNR=10
V34A **Guthrie** 46.93 86 *e*P P 20 07 38.5 -0.8
comp=Z,1µm,1.9s
SUMG **Summit** 46.97 20⇑ *i*P P 20 07 40.1 +0.5
SUMG *i* 20 07 55.5
SUMG *i* S S 20 14 26.9 -0.9
SUMG *i* 20 17 31.5
SUMG **Summit** 46.97 20⇑ *i*P P 20 07 40.1 +0.5
SUMG *i* 20 07 55.5
SUMG *i* S S 20 14 26.9 -0.9
SUMG *i* 20 17 31.5
SUMG **Summit** 46.97 20 *e*P P 20 07 39.8 +0.2
comp=Z,2µm,1.9s
SUMG LR LR
comp=Z,21µm,19.0s
WMOK **Wichita Mounta** 46.97 89 P P 20 07 39.6 0.0
baz=316,SNR=140
WMOK **Wichita Mounta** 46.97 89 *e*P P 20 07 39.6 0.0
WMOK pmax pmax
comp=Z,300nm,1.2s
WMOK **Wichita Mounta** 46.97 89 *e*P P 20 07 39.0 -0.6
comp=Z,300nm,1.3s
WMOK LR LR
comp=Z,14µm,22.0s
U35A **Pawnee** 47.01 85 P P 20 07 39.1 -0.8
baz=314,SNR=12
Q38A **Cooks Store, C** 47.01 80 P P 20 07 38.6 -1.3
baz=313,SNR=52
T36A **Boggs Farm, Ca** 47.02 84 P P 20 07 39.5 -0.4
baz=314,SNR=39
S37A **Fort Scott** 47.14 83 P P 20 07 40.1 -0.9
baz=314,SNR=78
P39B **Salisbury** 47.15 79 P P 20 07 40.1 -0.8
baz=313,SNR=62
W34A **Bridge Creek,** 47.20 87 P P 20 07 41.1 -0.4
baz=312,SNR=11
W34A **Bridge Creek,** 47.20 87 *e*P P 20 07 41.1 -0.4
comp=Z,266nm,1.3s
W34A LR LR
comp=Z,11µm,20.0s
O40A **La Belle** 47.22 78 P P 20 07 40.6 -0.9
baz=312,SNR=72
X33A **Lawton** 47.27 88 P P 20 07 41.7 -0.3
baz=316,SNR=20
SPA0 **Spitsbergen Ar** 47.30 1⇑ *i*P P 20 07 41.1 -0.6
SPA0 IVmB_BB 20 07 56.9
comp=Z,3µm,2.9s
SPA0 IVMsBB 20 24 09.6
comp=Z,4µm,29.8s
SPA0 **Spitsbergen Ar** 47.30 1 *e*P P 20 07 41.1 -0.6
Q39A **Willow Grove F** 47.32 80 P P 20 07 41.1 -1.2
baz=313,SNR=57
V35A **Meyer Ranch, C** 47.37 86 P P 20 07 42.0 -0.7
baz=315,SNR=31
R38A **Fenwick Farm,** 47.38 81 P P 20 07 41.0 -1.8
baz=314,SNR=38
P40A **Paris** 47.52 79 P P 20 07 42.7 -1.1
baz=313,SNR=99
T37A **Cheneyville 18** 47.53 83 P P 20 07 43.0 -1.0
baz=314,SNR=89
U36A **Oologah** 47.57 85 P P 20 07 43.7 -0.5
baz=314,SNR=28
Y33A **Hilltop Ranch,** 47.58 89 P P 20 07 43.7 -0.6
baz=316,SNR=16
X34A **Smith Ranch, M** 47.62 88 P P 20 07 45.1 +0.4
baz=316,SNR=18
S38A **Stockton** 47.76 82 P P 20 07 44.1 -1.6
baz=314,SNR=76
W35A **Tecumseh** 47.78 87 P P 20 07 45.7 -0.2
baz=315,SNR=31
O41A **Passleys Farm,** 47.79 77 P P 20 07 44.9 -1.0
baz=313,SNR=30
R39A **Chumby, Stover** 47.79 81 P P 20 07 44.4 -1.5
baz=314,SNR=19
CIT **Chita** 47.84 304 *e*P P 20 07 46.7 +0.5
CIT *e* 20 08 01.1
CIT pmax pmax
comp=Z,242nm,1.4s
Q40A **Laux Farm, Aux** 47.87 79 P P 20 07 45.6 -1.0
baz=313,SNR=64
TUL1 **Leonard** 47.87 85 P P 20 07 46.1 -0.5
baz=315,SNR=42
TUL1 **Leonard** 47.87 85 *e*P P 20 07 45.8 -0.8
comp=Z,199nm,0.9s
V36A **Jenks** 47.87 85 P P 20 07 46.2 -0.4
baz=315,SNR=35
U37A **Salina** 47.91 84 P P 20 07 46.2 -0.7
baz=315,SNR=65
T38A **Diamond** 47.95 83 P P 20 07 46.1 -1.1
baz=314,SNR=94
P41A **Barry, Barry** 47.98 78 P P 20 07 46.5 -0.9
baz=313,SNR=53
ABTX **Abilene, Hawle** 47.99 91 P P 20 07 47.5 -0.1
baz=317,SNR=34
ABTX **Abilene, Hawle** 47.99 91 *e*P P 20 07 47.6 0.0
comp=Z,1µm,1.6s
ABTX LR LR
comp=Z,18µm,21.0s
SFJD **Kangerlussuaq** 48.01 30 LR LR 20 29 27.8
comp=Z,8µm,20.2s,baz=313,slow=38
SFJD **Kangerlussuaq** 48.01 30⇑ *i*P P 20 07 47.9 +0.7
comp=Z,302nm,0.9s
SFJD *i* 20 08 00.3
SFJD *i* S S 20 14 39.7 -2.2
SFJD **Kangerlussuaq** 48.01 30⇑ *i*P P 20 07 47.9 +0.7
SFJD *i* 20 08 00.3
SFJD *i* S S 20 14 39.7 -2.2
SFJD pmax pmax
comp=Z,300nm,0.9s
SFJD **Kangerlussuaq** 48.01 30 *e*P P 20 07 47.6 +0.3
comp=Z,2µm,1.6s
Z33A **Whitaker Ranch** 48.02 90 P P 20 07 47.3 -0.5
baz=316,SNR=24
S39A **Bolivar** 48.05 81 P P 20 07 46.0 -2.0
baz=314,SNR=46
LTX **Lajitas** 48.09 98 *e*P P 20 07 48.9 +0.4
LTX *e* 20 09 16.1
LTX *e*S S 20 14 44.6 +0.5
LTX **Lajitas** 48.09 98 *e*P P 20 07 48.9 +0.4
LTX *e*PcP PcP 20 09 16.1 +0.4
LTX *e*S S 20 14 44.6 +0.5
TX31 **Lajitas Ar. Si** 48.09 98 *e*P P 20 07 48.4 -0.1
TXAR **Lajitas Array** 48.09 98 P P 20 07 48.9 +0.4
comp=Z,31nm,0.8s,baz=306,slow=5.4,SNR=139
TXAR PcP PcP 20 09 16.1 +0.4
comp=Z,19nm,0.6s,baz=297,slow=0.6,SNR=7.7
TXAR S S 20 14 44.6 +0.5
comp=Z,1.1nm,0.9s,baz=330,slow=12,SNR=2.5
TXAR LR LR 20 26 32.9
comp=Z,15µm,20.7s,baz=0.0,slow=34
TXAR PKPPKP P'P'df 20 39 00.9 +2.4
comp=Z,2.1nm,1.0s,baz=134,slow=3.6,SNR=6.2
Y34A **Reagan Ranch,** 48.12 88 P P 20 07 48.6 +0.1
baz=316,SNR=47
GLMI **Grayling** 48.13 68 *e*P P 20 07 48.5 0.0
comp=Z,2µm,1.8s
GLMI LR LR
comp=Z,11µm,19.0s
W36A **Wetumka** 48.16 86 P P 20 07 48.5 -0.4
baz=315,SNR=18
Q42A **Bath** 48.19 77 P P 20 07 47.4 -1.5
baz=313,SNR=6.9
R40A **Maddies Statio** 48.24 80 P P 20 07 47.9 -1.5
baz=314,SNR=47
X35A **Drake** 48.26 87 P P 20 07 49.3 -0.3
baz=316
V37A **Hulbert** 48.27 85 P P 20 07 49.0 -0.7
baz=315,SNR=64
U38A **Gravette** 48.31 83 P P 20 07 48.9 -1.1
baz=315,SNR=74
LPIG **La Paz** 48.38 108 P P 20 07 51.4 +0.8
comp=Z,23nm,0.3s,baz=140,slow=2.9,SNR=6.8
HDIL **Hopedale** 48.38 76 P P 20 07 50.2 -0.3
baz=313,SNR=115
HDIL **Hopedale** 48.38 76 *e*P P 20 07 50.0 -0.5
comp=Z,1µm,1.0s
HDIL LR LR
comp=Z,20µm,19.0s
133A **Hamilton Ranch** 48.42 91 P P 20 07 50.8 -0.1
baz=317,SNR=77
Z34A **Collier Ranch,** 48.45 89 P P 20 07 50.6 -0.5
baz=316,SNR=20
P42A **Winchester** 48.45 77 P P 20 07 49.9 -1.1
baz=313,SNR=54
HSPB **Hornsund (broa** 48.48 1⇑ *i*P P 20 07 49.9 -0.8
HSPB *ep*P pP 20 08 01.1 -1.2
HSPB IVmB_BB 20 08 07.5
comp=Z,3µm,1.8s
HSPB IVMs_BB IVMs_BB 20 29 14.9
comp=Z,4µm,18.7s
HSPB **Hornsund (broa** 48.48 1 *e*P P 20 07 50.6 -0.1
HSPB *e**PP sP 20 08 05.3 -1.9
HSPB *e*S S 20 14 45.5 -2.8
HSPB *e**SS sS 20 15 05.7 -1.9
HSPB MLR MLR
comp=Z,16µm,27.2s
T39A **Clever** 48.48 82 P P 20 07 49.7 -1.6
baz=314,SNR=111
X36A **Centrahoma** 48.49 87 P P 20 07 51.1 -0.3
baz=316,SNR=19
Y35A **Marietta** 48.57 88 P P 20 07 52.1 +0.1
baz=316,SNR=44
S40A **Lebanon** 48.59 81 P P 20 07 50.3 -1.8
baz=314,SNR=23
W37B **Quinton** 48.62 85 P P 20 07 52.0 -0.4
baz=315,SNR=37
HHAR **Hobbs** 48.68 83 *e*P P 20 07 51.1 -1.7
comp=Z,125nm,0.9s
HHAR LR LR
comp=Z,11µm,21.0s
V38A **Canehill** 48.70 84 P P 20 07 52.0 -1.1
baz=315,SNR=105
HPIG 48.77 101 *e*P P 20 07 55.0 +1.2
comp=Z,726nm,1.5s
HPIG LR LR
comp=Z,10µm,20.0s
Q42A **Golden Eagle** 48.80 78 P P 20 07 53.6 -0.1
baz=314
233A **Rising Star** 48.86 91 P P 20 07 54.0 -0.3
baz=317,SNR=66
Z35A **Perchaven, San** 48.86 89 P P 20 07 53.7 -0.5
baz=316,SNR=14
U39A **Green Forest** 48.87 83 P P 20 07 52.7 -1.6
baz=315,SNR=64
T40A **Mansfield** 48.89 81 P P 20 07 52.8 -1.7
baz=314,SNR=71
SLBS **Sierra La Lagu** 48.91 108 *e*P P 20 07 56.4 +1.5
comp=Z,694nm,1.5s
SLBS LR LR
comp=Z,8µm,22.0s
HOPEN **Hopen** 48.92 358 *e*P P 20 07 54.1 -0.1
HOPEN *ep*P pP 20 08 06.7 +0.9
HOPEN IVmB_BB 20 08 11.2
comp=Z,4µm,1.9s
HOPEN *e*S S 20 14 55.4 +0.8
HOPEN *e*SS SS 20 18 34.5 +10
HOPEN IVMs_BB IVMs_BB 20 25 21.4
comp=Z,4µm,25.2s
134A **White-Moore Ra** 48.93 90 P P 20 07 54.6 -0.2
baz=317,SNR=15
Y36A **Durant** 49.01 87 P P 20 07 55.6 +0.2
baz=316,SNR=54
S41A **Jillco Farms,** 49.03 80 P P 20 07 53.8 -1.7
baz=314,SNR=144
X37A **Clayton** 49.05 86 P P 20 07 55.4 -0.2
baz=316,SNR=81
V39A **Pettigrew** 49.16 83 P P 20 07 55.3 -1.3
baz=315,SNR=58
W38A **Poteau** 49.20 85 P P 20 07 56.4 -0.4
baz=315,SNR=41
SNY **Shenyang** 49.25 288 ⇑P P 20 07 58.1 +1.0
SNY S S 20 15 00.3 +0.4
SNY pmax pmax
comp=Z,1µm,1.2s
SNY pmax pmax
comp=Z,3µm,10.4s
SNY LR LR
comp=Z,7µm,23.5s
SNY LR LR
comp=Z,14µm,22.0s
SNY LR LR
comp=Z,24µm,22.7s
U40A **Yellville** 49.25 82 P P 20 07 55.7 -1.5
baz=315,SNR=89
Q43A **New Douglas** 49.26 78 P P 20 07 56.9 -0.3
baz=315,SNR=56
X38A **Whitesboro** 49.30 85 P P 20 07 57.5 -0.1
baz=316,SNR=35
234A **Clairette** 49.31 91 P P 20 07 57.5 -0.2
baz=317,SNR=44
333A **Richland Sprin** 49.31 92 P P 20 07 57.2 -0.5
baz=318,SNR=42
135A **Vickery Place,** 49.33 89 P P 20 07 57.5 -0.3
baz=317,SNR=15
Y37A **Hugo** 49.34 87 P P 20 07 58.1 +0.2
baz=316,SNR=21
Z36A **Blue Ridge** 49.38 88 P P 20 07 57.8 -0.4
baz=316,SNR=21
T41A **Mountain View** 49.39 81 P P 20 07 56.4 -1.9
baz=314,SNR=40
JCT **Junction City** 49.47 93 P P 20 07 58.7 -0.2
baz=318,SNR=51
JCT **Junction City** 49.47 93 *e*P P 20 07 58.5 -0.4
JCT pmax pmax
comp=Z,490nm,1.0s
JCT **Junction City** 49.47 93 *e*P P 20 07 58.5 -0.4
comp=Z,488nm,1.0s
JCT LR LR
comp=Z,11µm,22.0s
W39A **Magazine** 49.53 84 P P 20 07 58.6 -0.8
baz=315,SNR=96
V40A **Witts Springs** 49.66 83 P P 20 07 59.0 -1.4
baz=315,SNR=124
Q44A **Meyer Farm, Va** 49.67 77 P P 20 07 59.4 -0.9
baz=314,SNR=51
433A **Art** 49.67 92 P P 20 08 00.0 -0.5
baz=318,SNR=80
WHTX **Lake Whitney,** 49.71 90 P P 20 08 00.7 -0.1
baz=317,SNR=39
WHTX **Lake Whitney,** 49.71 90 *e*P P 20 08 00.5 -0.3
comp=Z,1µm,1.6s
WHTX LR LR
comp=Z,23µm,20.0s
VLDQ **Val d'Or** 49.73 61 *e*P P 20 07 58.4 -2.3
comp=Z,281nm,1.1s
VLDQ LR LR
comp=Z,13µm,19.0s
SFIN **Lafayette** 49.73 74 P P 20 08 00.2 -0.6
baz=313,SNR=82
SFIN **Lafayette** 49.73 74 *e*P P 20 08 00.0 -0.8

	comp=Z,2µm,1.8s								
SFIN				LR	LR				
	comp=Z,24µm,19.0s								
334A	**Lometa**	**49.74**	**91**	P	**P**	**20 08 01.1**	**+0.1**		
	baz=318,SNR=88								
U41A	**Viola**	**49.80**	**82**	P	**P**	**20 07 59.5**	**-1.9**		
	baz=315,SNR=47								
KSRS	**Korea Array**	**49.80**	**280**	P	**P**	**20 08 02.4**	**+1.1**		
	comp=Z,120nm,0.8s,baz=45,slow=7.2,SNR=244								
KSRS				PcP	**PcP**	**20 09 22.7**	**+1.1**		
	comp=Z,29nm,0.8s,baz=48,slow=3.9,SNR=6.7								
KSRS				S	**S**	**20 15 10.3**	**+2.6**		
	comp=Z,1.4nm,0.8s,baz=274,slow=39,SNR=2.5								
KSRS				LR	LR	20 30 32.6			
	comp=Z,5µm,19.6s,baz=40,slow=38								
KS01	**Wonju Array Si**	**49.80**	**280**	*e*P	**P**	**20 08 01.5**	**+0.1**		
KS15	**Wonju Array Si**	**49.83**	**280**	*e*P	**P**	**20 08 02.0**	**+0.4**		
KS15				*e*PcP	**PcP**	**20 09 22.7**	**+1.0**		
KS15				*e*S	**S**	**20 15 10.3**	**+2.2**		
KSAR	**Wonju Array Be**	**49.83**	**280**	P	**P**	**20 08 02.4**	**+0.8**		
KSAR						20 09 22.7			
KSAR				S	**S**	**20 15 10.3**	**+2.2**		
KSAR	**Wonju Array Be**	**49.83**	**280**	P	**P**	**20 08 02.4**	**+0.8**		
KSAR				PcP	**PcP**	**20 09 22.7**	**+1.0**		
KSAR				S	**S**	**20 15 10.3**	**+2.2**		
X39A	**Fountain Ranch**	**49.83**	**85**	P	**P**	**20 08 01.1**	**-0.5**		
	baz=316,SNR=57								
Y38A	**Idabel**	**49.89**	**86**	P	**P**	**20 08 01.1**	**-0.9**		
	baz=316,SNR=15								
136A	**Ennis**	**49.90**	**89**	P	**P**	**20 08 01.8**	**-0.3**		
	baz=317,SNR=19								
Z37A	**Pogue Cattle C**	**49.90**	**87**	P	**P**	**20 08 02.0**	**-0.1**		
	baz=316,SNR=9.6								
W40A	**Ferguson Farm,**	**49.95**	**84**	P	**P**	**20 08 01.7**	**-0.8**		
	baz=316,SNR=52								
S43A	**Fulton Ridge,**	**49.99**	**79**	P	**P**	**20 08 02.1**	**-0.7**		
	baz=314,SNR=305								
V41A	**Mountainview**	**50.05**	**82**	P	**P**	**20 08 01.6**	**-1.7**		
	baz=315,SNR=143								
R44A	**Waltonville**	**50.09**	**78**	P	**P**	**20 08 02.8**	**-0.7**		
	baz=314,SNR=28								
434A	**Burnet**	**50.10**	**92**	P	**P**	**20 08 03.8**	**0.0**		
	baz=318,SNR=93								
MIAR	**Mount Ida**	**50.12**	**85**	P	**P**	**20 08 03.4**	**-0.4**		
	baz=316,SNR=94								
MIAR	**Mount Ida**	**50.12**	**85**	*e*P	**P**	**20 08 03.0**	**-0.8**		
MIAR				pmax	pmax				
	comp=Z,260nm,1.0s								
MIAR	**Mount Ida**	**50.12**	**85**	*e*P	**P**	**20 08 02.5**	**-1.3**		
	comp=Z,260nm,1.0s								
U42A	**Revenden**	**50.18**	**81**	P	**P**	**20 08 02.1**	**-2.1**		
	baz=315,SNR=40								
533A	**Kerrville**	**50.21**	**93**	P	**P**	**20 08 04.0**	**-0.6**		
	baz=318,SNR=21								
Z38A	**Mt. Pleasant**	**50.23**	**87**	P	**P**	**20 08 04.3**	**-0.3**		
	baz=316								
335A	**Moody**	**50.25**	**91**	P	**P**	**20 08 04.8**	**0.0**		
	baz=316,SNR=28								
Y39A	**Lockesburg**	**50.25**	**86**	P	**P**	**20 08 04.2**	**-0.6**		
	baz=316,SNR=9.1								
137A	**Heron Place, G**	**50.26**	**88**	P	**P**	**20 08 04.9**	**0.0**		
	baz=317,SNR=9.0								
X201	**Greenbrier Sit**	**50.28**	**83**	*e*P	**P**	**20 08 03.2**	**-1.8**		
	comp=Z,713nm,1.8s								
X201				LR	LR				
	comp=Z,12µm,21.0s								
X301	**Greenbrier Sit**	**50.30**	**83**	*e*P	**P**	**20 08 03.5**	**-1.7**		
	comp=Z,329nm,1.3s								
X301				LR	LR				
	comp=Z,11µm,21.0s								
OLIL	**Olney**	**50.30**	**77**	*e*P	**P**	**20 08 03.9**	**-1.2**		
	comp=Z,3µm,1.5s								
OLIL				LR	LR				
	comp=Z,23µm,19.0s								
SCHQ	**Schefferville**	**50.31**	**49**	P	**P**	**20 08 05.0**	**-0.1**		
	comp=Z,107nm,0.6s,baz=320,slow=7.6,SNR=38								
SCHQ				S	**S**	**20 15 14.2**	**-0.3**		
	comp=Z,4.3nm,0.7s,baz=66,slow=19,SNR=1.9								
SCHQ				LR	LR	20 30 01.6			
	comp=Z,12µm,20.2s,baz=320,slow=37								
SCHQ	**Schefferville**	**50.31**	**49**	*e*P	**P**	**20 08 04.3**	**-0.8**		
	comp=Z,676nm,1.4s								
WHAR	**Wooly Hollow**	**50.33**	**83**	*e*P	**P**	**20 08 03.5**	**-1.8**		
	comp=Z,839nm,1.9s								
WHAR				LR	LR				
	comp=Z,12µm,21.0s								
AAM	**Ann Arbor**	**50.33**	**70**	*e*P	**P**	**20 08 05.2**	**-0.1**		
AAM				pmax	pmax				
	comp=Z,600nm,1.8s								
AAM	**Ann Arbor**	**50.33**	**70**	*e*P	**P**	**20 08 04.5**	**-0.8**		
	comp=Z,596nm,1.8s								
PBMO	**Poplar Bluff**	**50.34**	**80**	*e*P	**P**	**20 08 03.5**	**-2.0**		
	comp=Z,845nm,1.9s								
PBMO				LR	LR				
	comp=Z,13µm,20.0s								
S44A	**Carbondale**	**50.37**	**78**	P	**P**	**20 08 04.5**	**-1.2**		
	baz=314,SNR=62								
SIUC	**Southern Illin**	**50.38**	**78**	*e*P	**P**	**20 08 03.7**	**-2.0**		
	comp=Z,340nm,0.9s								
SIUC				LR	LR				
	comp=Z,22µm,20.0s								
W41B	**Gary Mavity, V**	**50.43**	**83**	P	**P**	**20 08 04.5**	**-1.7**		
	baz=316,SNR=43								
V42A	**Cord**	**50.48**	**82**	P	**P**	**20 08 04.7**	**-1.8**		
	baz=315,SNR=30								
336A	**Riesel**	**50.51**	**90**	P	**P**	**20 08 06.7**	**0.0**		
	baz=318,SNR=27								
INCN	**Inchon**	**50.51**	**281**	*e*P	**P**	**20 08 05.3**	**-1.5**		
	comp=Z,279nm,1.1s								
INCN				LR	LR				
	comp=Z,4µm,20.0s								
435B	**Jarrell**	**50.52**	**91**	P	**P**	**20 08 07.2**	**+0.2**		
	baz=318,SNR=10								
534A	**Blanco**	**50.57**	**93**	P	**P**	**20 08 06.9**	**-0.4**		
	baz=318,SNR=24								
633A	**Saathoff Ranch**	**50.58**	**94**	P	**P**	**20 08 06.4**	**-1.0**		
	baz=319,SNR=8.0								
X40A	**Basin Creek Fa**	**50.59**	**84**	P	**P**	**20 08 06.6**	**-0.8**		
	baz=316,SNR=33								
138A	**Matatall Enter**	**50.60**	**87**	P	**P**	**20 08 07.2**	**-0.3**		
	baz=317,SNR=11								
237A	**Washetta, Mont**	**50.66**	**89**	P	**P**	**20 08 07.2**	**-0.7**		
	baz=317,SNR=5.3								
UALR	**University of**	**50.66**	**83**	*e*P	**P**	**20 08 06.3**	**-1.6**		
	comp=Z,330nm,1.5s								
Y40A	**Okolona**	**50.67**	**85**	P	**P**	**20 08 07.0**	**-1.0**		
	baz=316,SNR=9.4								
Z39A	**Irene McRaven,**	**50.70**	**86**	P	**P**	**20 08 07.5**	**-0.7**		
	baz=316								
X41A	**Kaden, Bauxite**	**50.76**	**84**	P	**P**	**20 08 07.5**	**-1.1**		
	baz=316,SNR=7.0								
S45A	**Carrier Mills**	**50.77**	**78**	P	**P**	**20 08 07.7**	**-1.0**		
	baz=315,SNR=55								
PARMO	**Parma**	**50.81**	**80**	*e*P	**P**	**20 08 07.7**	**-1.3**		
BLO	**Bloomington**	**50.89**	**75**	*e*P	**P**	**20 08 08.2**	**-1.4**		
BLO				pmax	pmax				
	comp=Z,1µm,1.6s								
BLO				MLR	MLR				
	comp=Z,23µm,18.0s								
BLO	**Bloomington**	**50.89**	**75**	*e*P	**P**	**20 08 08.2**	**-1.4**		
	comp=Z,1µm,1.6s								
BLO				LR	LR				
	comp=Z,23µm,18.0s								
139A	**Bunkhouse Ranc**	**50.99**	**87**	P	**P**	**20 08 10.1**	**-0.3**		
	baz=317,SNR=12								
436A	**Wall Ranch, Ga**	**50.99**	**91**	P	**P**	**20 08 10.8**	**+0.4**		
	baz=318,SNR=9.9								
WLAR	**White Oak Lake**	**51.00**	**85**	*e*P	**P**	**20 08 09.4**	**-1.0**		
	comp=Z,519nm,1.1s								
BJO	**Bjornoya**	**51.00**	**360**	⇑*i*P	**P**	**20 08 10.4**	**+0.5**		
BJO				IVmB_BB		20 08 26.1			
	comp=Z,4µm,2.3s								
BJO				*e*PP	**PP**	**20 10 04.9**	**-1.2**		
BJO				IVMs_BB	IVMs_BB	20 27 37.1			
	comp=Z,3µm,23.3s								
832A	**Faith Ranch, C**	**51.00**	**95**	P	**P**	**20 08 10.7**	**+0.2**		
	baz=319,SNR=23								
PVMO	**Portageville**	**51.02**	**80**	*e*P	**P**	**20 08 10.6**	**0.0**		
	comp=Z,1µm,1.4s								
PVMO				LR	LR				
	comp=Z,14µm,19.0s								
238A	**Jacksonville**	**51.06**	**88**	P	**P**	**20 08 11.0**	**+0.1**		
	baz=317,SNR=19								
733A	**Divot King Ran**	**51.07**	**94**	P	**P**	**20 08 10.9**	**-0.1**		
	baz=319,SNR=9.1								
HBAR	**Harrisburg**	**51.08**	**81**	*e*P	**P**	**20 08 09.4**	**-1.6**		
SADO	**Sadowa**	**51.08**	**65**	LR	LR	20 30 34.9			
	comp=Z,7µm,18.5s,baz=348,slow=37								
SADO	**Sadowa**	**51.08**	**65**	*e*P	**P**	**20 08 10.1**	**-0.9**		
	comp=Z,225nm,1.1s								
USIN	**University of**	**51.08**	**77**	*e*P	**P**	**20 08 10.1**	**-0.9**		
	comp=Z,1µm,1.1s								
USIN				LR	LR				
	comp=Z,23µm,20.0s								
535A	**Dale**	**51.09**	**92**	P	**P**	**20 08 11.2**	**0.0**		
	baz=318,SNR=10								
337A	**Centerville**	**51.12**	**89**	P	**P**	**20 08 11.7**	**+0.3**		
	baz=318,SNR=6.3								
634A	**China Grove, S**	**51.12**	**93**	P	**P**	**20 08 10.9**	**-0.5**		
	baz=319								
Z40A	**Long Farm, Mag**	**51.14**	**86**	P	**P**	**20 08 11.6**	**+0.1**		
	baz=317,SNR=35								
Y41A	**Eaglette Beard**	**51.15**	**84**	P	**P**	**20 08 11.4**	**-0.1**		
	baz=316,SNR=93								
GNAR	**Gosnell**	**51.15**	**81**	*e*P	**P**	**20 08 10.4**	**-1.2**		
JNU	**Nakatsue**	**51.18**	**274**	P	**P**	**20 08 12.7**	**+0.8**		
	comp=Z,102nm,0.8s,baz=42,slow=6.3,SNR=41								
JNU				LR	LR	20 29 31.9			
	comp=Z,48nm,21.6s,baz=41,slow=36								
JNU	**Nakatsue**	**51.18**	**274**	*e*P	**P**	**20 08 12.1**	**+0.2**		
	comp=Z,158nm,0.9s								
833A	**Chaparral WMA,**	**51.31**	**95**	P	**P**	**20 08 13.0**	**+0.2**		
	baz=319,SNR=22								
V44A	**Blytheville**	**51.32**	**81**	P	**P**	**20 08 11.8**	**-1.0**		
	baz=315								
437A	**Phantom Ranch,**	**51.33**	**90**	P	**P**	**20 08 13.5**	**+0.6**		
	baz=318,SNR=6.8								
536A	**Bastrop**	**51.35**	**91**	P	**P**	**20 08 13.4**	**+0.3**		
	baz=318,SNR=7.9								
GLAT	**Glass**	**51.35**	**80**	*e*P	**P**	**20 08 12.2**	**-0.9**		
734A	**La Parita Cree**	**51.40**	**94**	P	**P**	**20 08 13.9**	**+0.4**		
	baz=319,SNR=13								
338A	**Crockett**	**51.42**	**89**	P	**P**	**20 08 13.8**	**+0.2**		
	baz=318,SNR=9.4								
239A	**Gary**	**51.42**	**88**	P	**P**	**20 08 13.4**	**-0.2**		
	baz=317,SNR=11								
635A	**Leesville**	**51.45**	**92**	P	**P**	**20 08 14.4**	**+0.6**		
	baz=319,SNR=8.8								
Z41A	**Richland Creek**	**51.49**	**85**	P	**P**	**20 08 13.9**	**-0.2**		
	baz=317,SNR=14								
140A	**Cam and Jess,**	**51.49**	**86**	P	**P**	**20 08 14.2**	**+0.1**		
	baz=317,SNR=24								
NATX	**Nacogdoches**	**51.50**	**88**	P	**P**	**20 08 14.4**	**+0.2**		
	baz=317,SNR=22								
NATX	**Nacogdoches**	**51.50**	**88**	*e*P	**P**	**20 08 14.4**	**+0.2**		
	comp=Z,610nm,1.1s								
NATX				LR	LR				
	comp=Z,20µm,19.0s								
UTMT	**University of**	**51.54**	**79**	*e*P	**P**	**20 08 13.8**	**-0.7**		
	comp=Z,1µm,1.0s								
HALT	**Halls**	**51.58**	**80**	*e*P	**P**	**20 08 13.7**	**-1.1**		
HALT				LR	LR				
	comp=Z,13952µm,20.0s								
CCAR	**Cane Creek**	**51.61**	**84**	*e*P	**P**	**20 08 14.4**	**-0.6**		
	comp=Z,603nm,0.9s								
CCAR				LR	LR				
	comp=Z,8µm,18.0s								
Y42A	**Garnett, Star**	**51.66**	**84**	P	**P**	**20 08 15.5**	**+0.1**		
	baz=316,SNR=7.1								
WCI	**Wyandotte Cave**	**51.67**	**76**	*e*P	**P**	**20 08 13.7**	**-1.8**		
WCI				pmax	pmax				
	comp=Z,688nm,1.8s								
WCI				MLR	MLR				
	comp=Z,21µm,21.0s								
WCI	**Wyandotte Cave**	**51.67**	**76**	*e*P	**P**	**20 08 13.7**	**-1.8**		
	comp=Z,688nm,1.8s								
WCI				LR	LR				
	comp=Z,21µm,21.0s								
X43A	**Marvell**	**51.69**	**83**	P	**P**	**20 08 14.7**	**-0.9**		
	baz=316,SNR=8.0								
SCO	**Scoresbysund**	**51.70**	**16**	⇑*i*P	**P**	**20 08 15.8**	**+0.7**		
SCO				*i*		20 08 28.6			
	comp=Z,10µm,17.0s								
SCO	**Scoresbysund**	**51.70**	**16**	⇑*i*P	**P**	**20 08 15.8**	**+0.7**		
SCO				*i*		20 08 28.6			
SCO				MLR	MLR				
	comp=Z,10µm,17.0s								
438A	**Sam Houston St**	**51.77**	**89**	P	**P**	**20 08 17.1**	**+0.8**		
	baz=318,SNR=11								
537A	**Green Hill Far**	**51.78**	**91**	P	**P**	**20 08 17.1**	**+0.8**		
	baz=318,SNR=12								
636A	**Smothers Creek**	**51.80**	**92**	P	**P**	**20 08 17.4**	**+0.9**		
	baz=318,SNR=32								
MET	**Memphis--Engin**	**51.80**	**81**	PFAKE		20 08 30.0	+14		
MET				LR	LR				
	comp=Z,13µm,22.0s								
240A	**Hunter Patters**	**51.82**	**87**	P	**P**	**20 08 16.4**	**-0.1**		
	baz=317,SNR=5.8								
735A	**Kenedy**	**51.83**	**93**	P	**P**	**20 08 17.7**	**+1.0**		
	baz=319,SNR=5.9								
W44A	**Shelby Farms P**	**51.85**	**81**	P	**P**	**20 08 16.3**	**-0.5**		
	baz=316								
339A	**Huntington**	**51.87**	**88**	P	**P**	**20 08 17.4**	**+0.4**		
	baz=318								
141A	**Papa Simpson,**	**51.90**	**86**	P	**P**	**20 08 17.5**	**+0.3**		
	baz=317,SNR=11								
933A	**Laredo**	**51.91**	**95**	P	**P**	**20 08 17.7**	**+0.3**		
	baz=320,SNR=23								
V45A	**Humboldt**	**51.91**	**80**	P	**P**	**20 08 16.5**	**-0.8**		
	baz=316,SNR=6.5								
834A	**Tilden**	**51.95**	**94**	P	**P**	**20 08 18.7**	**+1.1**		
	baz=319,SNR=8.4								
Z42A	**Norrel Spur, H**	**51.97**	**84**	P	**P**	**20 08 17.5**	**-0.2**		
	baz=317,SNR=20								
PLVO	**Plevna**	**51.98**	**64**	*e*P	**P**	**20 08 16.7**	**-0.9**		
	comp=Z,415nm,1.1s								
PLVO				LR	LR				
	comp=Z,12µm,19.0s								
IRK	**Irkutsk**	**52.02**	**309**	*e*P	**P**	**20 08 18.0**	**+0.1**		
IRK				pmax	pmax				
	comp=Z,304nm,1.5s								
KWAJ	**Kwajalein Atol**	**52.09**	**220**	PFAKE		20 08 30.0	+11		
KWAJ				LR	LR				
	comp=Z,10µm,22.0s								
Y43A	**Makayla and Ka**	**52.09**	**83**	P	**P**	**20 08 18.4**	**-0.3**		
	baz=316,SNR=13								
ACSO	**Alum Creek Sta**	**52.12**	**72**	PFAKE		20 08 30.0	+11		
ACSO				LR	LR				
	comp=Z,9µm,18.0s								
X44A	**Crenshaw**	**52.12**	**82**	P	**P**	**20 08 18.1**	**-0.7**		
	baz=316,SNR=8.1								
439A	**Center Grove,**	**52.15**	**89**	P	**P**	**20 08 19.5**	**+0.4**		
	baz=318								
538A	**Harpers Horsep**	**52.15**	**90**	P	**P**	**20 08 20.2**	**+1.1**		
	baz=318								
736A	**Circle Diamond**	**52.18**	**92**	P	**P**	**20 08 20.3**	**+1.0**		
	baz=319,SNR=12								
340A	**Bronson**	**52.20**	**88**	P	**P**	**20 08 19.3**	**-0.1**		
	baz=318,SNR=7.9								
W45A	**Hickory Valley**	**52.20**	**81**	P	**P**	**20 08 18.8**	**-0.6**		
	baz=316,SNR=15								
835A	**Beeville**	**52.24**	**93**	P	**P**	**20 08 20.7**	**+0.9**		
	baz=319,SNR=6.1								
637A	**Eagle Lake**	**52.25**	**91**	P	**P**	**20 08 21.2**	**+1.4**		
	baz=319								
WVT	**Waverly**	**52.28**	**79**	*e*P	**P**	**20 08 19.6**	**-0.4**		
WVT				pmax	pmax				
	comp=Z,540nm,0.8s								
WVT	**Waverly**	**52.28**	**79**	*e*P	**P**	**20 08 19.2**	**-0.8**		
	comp=Z,540nm,0.8s								
WVT				LR	LR				
	comp=Z,19µm,20.0s								
241A	**Mo Tay, Goldon**	**52.32**	**86**	P	**P**	**20 08 20.6**	**+0.3**		
	baz=317,SNR=29								
DL2	**Dalian**	**52.33**	**286**	⇑*i*P	**P**	**20 08 20.4**	**+0.1**		
DL2				sP	**sP**	**20 08 35.3**	**-1.5**		
DL2				PP	**PP**	**20 10 23.6**	**+4.7**		
DL2				S	**S**	**20 15 42.6**	**-0.1**		
DL2				pmax	pmax				
	comp=Z,250nm,0.8s								
DL2				pmax	pmax				
	comp=Z,2µm,7.5s								
DL2				LR	LR				
	comp=Z,6µm,21.2s								
DL2				LR	LR				
	comp=Z,9µm,23.4s								
DL2				LR	LR				
	comp=Z,15µm,25.0s								
934A	**Benavides**	**52.36**	**95**	P	**P**	**20 08 21.7**	**+1.0**		
	baz=320,SNR=7.3								
Z43A	**Armstrong Fami**	**52.42**	**84**	P	**P**	**20 08 20.7**	**-0.4**		
	baz=317								
ERPA	**Erie**	**52.44**	**68**	*e*P	**P**	**20 08 20.8**	**-0.3**		
	comp=Z,1µm,1.6s								
ERPA				LR	LR				
	comp=Z,13µm,19.0s								
TRQ	**Mont Tremblant**	**52.46**	**61**	*e*P	**P**	**20 08 19.9**	**-1.3**		
Y44A	**Strider, Charl**	**52.47**	**83**	P	**P**	**20 08 21.1**	**-0.3**		
	baz=316,SNR=48								
BUF	**Buffalo**	**52.49**	**67**	*e*P	**P**	**20 08 21.3**	**-0.2**		
142A	**Monroe**	**52.50**	**85**	P	**P**	**20 08 21.5**	**-0.1**		
	baz=317,SNR=8.5								
OXF	**Oxford**	**52.54**	**81**	*e*P	**P**	**20 08 21.3**	**-0.6**		
OXF				pmax	pmax				
	comp=Z,2µm,1.3s								
OXF	**Oxford**	**52.54**	**81**	*e*P	**P**	**20 08 21.0**	**-0.9**		
	comp=Z,2µm,1.3s								
OXF				LR	LR				
	comp=Z,13µm,21.0s								
X45A	**UM Field Stati**	**52.61**	**82**	P	**P**	**20 08 21.6**	**-0.8**		
	baz=316,SNR=17								
440A	**Kirbyville**	**52.65**	**88**	P	**P**	**20 08 23.2**	**+0.4**		
	baz=318,SNR=7.2								
XMAS	**Kiritimati**	**52.65**	**175**	*e*P	**P**	**20 08 25.3**	**+2.4**		
	comp=Z,701nm,1.4s								
XMAS				*e*		20 08 31.0			
XMAS				LR	LR				
	comp=Z,16µm,20.0s								
034A	**Hebbronville**	**52.67**	**95**	P	**P**	**20 08 23.8**	**+0.8**		
	baz=320,SNR=20								
341A	**Kurthwood**	**52.68**	**87**	P	**P**	**20 08 23.1**	**+0.1**		
	baz=318,SNR=29								
539A	**Cross D Ranch,**	**52.68**	**89**	P	**P**	**20 08 24.1**	**+1.1**		
	baz=318								
ALLY	**Alegheny Colle**	**52.68**	**69**	*e*P	**P**	**20 08 22.2**	**-0.8**		
	comp=Z,1µm,1.4s								
737A	**Port Lavaca**	**52.69**	**92**	P	**P**	**20 08 24.8**	**+1.7**		
	baz=319								
143A	**Socs Landing,**	**52.70**	**85**	P	**P**	**20 08 23.3**	**+0.2**		
	baz=317,SNR=43								
242A	**Grayson**	**52.73**	**86**	P	**P**	**20 08 23.3**	**0.0**		
	baz=317,SNR=6.2								
638A	**Rosharon**	**52.77**	**91**	P	**P**	**20 08 24.7**	**+1.0**		
	baz=319								
Z44A	**Pea Ridge, Bel**	**52.84**	**83**	P	**P**	**20 08 23.6**	**-0.5**		
	baz=317,SNR=13								
Y45A	**Yeager Farm, C**	**52.92**	**82**	P	**P**	**20 08 24.3**	**-0.4**		
	baz=316,SNR=22								
540A	**Vidor**	**53.04**	**89**	P	**P**	**20 08 27.0**	**+1.3**		
	baz=318								
M54A	**Oil Creek Stat**	**53.04**	**68**	P	**P**	**20 08 24.5**	**-1.0**		
	baz=314,SNR=62								
JMIC	**Jan Mayen**	**53.05**	**11**	LR	LR	20 30 35.9			
	comp=Z,8µm,21.4s,baz=338,slow=36								
JMIC	**Jan Mayen**	**53.05**	**11**	*e*P	**P**	**20 08 26.0**	**+0.8**		
JMIC				*ep*P	**pP**	**20 08 38.1**	**+1.1**		
JMIC				IVmB_BB		20 08 42.4			
	comp=Z,4µm,1.6s								
JMIC				*es*P	**sP**	**20 08 44.1**	**+2.4**		
JMIC				IVMsBB		20 29 48.0			
	comp=Z,4µm,24.1s								
738A	**Farr-Stevens R**	**53.09**	**91**	P	**P**	**20 08 27.7**	**+1.7**		
	baz=319								
441A	**DeRidder**	**53.09**	**88**	P	**P**	**20 08 26.6**	**+0.5**		
	baz=318,SNR=6.4								
035A	**Encino**	**53.10**	**95**	P	**P**	**20 08 27.1**	**+1.0**		
	baz=320,SNR=11								
MMNY	**Mt. Morris Dam**	**53.13**	**66**	*e*P	**P**	**20 08 25.0**	**-1.1**		
342A	**Flagon Creek P**	**53.13**	**86**	P	**P**	**20 08 26.8**	**+0.5**		
	baz=318,SNR=6.6								
936A	**North Padre Is**	**53.20**	**94**	P	**P**	**20 08 28.1**	**+1.3**		
	baz=320								
Z45A	**Winona**	**53.20**	**83**	P	**P**	**20 08 26.1**	**-0.7**		
	baz=317,SNR=16								
N54A	**Moraine State**	**53.24**	**69**	P	**P**	**20 08 26.1**	**-1.0**		
	baz=314,SNR=60								
243A	**Waterproof**	**53.25**	**85**	P	**P**	**20 08 27.0**	**-0.2**		
	baz=317,SNR=12								
Y46A	**Houston**	**53.30**	**82**	P	**P**	**20 08 26.9**	**-0.7**		
	baz=317,SNR=106								
144A	**Alexander Plac**	**53.31**	**84**	P	**P**	**20 08 27.4**	**-0.2**		
	baz=317,SNR=21								
035Z	**Hargill**	**53.48**	**95**	P	**P**	**20 08 29.7**	**+0.7**		
	baz=320,SNR=8.5								
LONY	**Lake Ozonia**	**53.55**	**62**	*e*P	**P**	**20 08 28.0**	**-1.3**		
	comp=Z,141nm,1.1s								
LONY				LR	LR				
	comp=Z,13µm,20.0s								
VBMS	**Vicksburg**	**53.56**	**84**	P	**P**	**20 08 29.4**	**-0.1**		
	baz=317,SNR=12								
VBMS	**Vicksburg**	**53.56**	**84**	*e*P	**P**	**20 08 29.3**	**-0.1**		
	comp=Z,1µm,1.4s								
VBMS				LR	LR				
	comp=Z,7µm,19.0s								
442A	**Mamou**	**53.56**	**87**	P	**P**	**20 08 30.0**	**+0.5**		
	baz=318								
244A	**Avery, Jackson**	**53.59**	**85**	P	**P**	**20 08 29.7**	**0.0**		
	baz=317,SNR=45								
541A	**Lake Charles**	**53.61**	**88**	P	**P**	**20 08 30.5**	**+0.7**		
	baz=318								
343A	**Vidalia**	**53.61**	**86**	P	**P**	**20 08 30.3**	**+0.5**		
	baz=318								
145A	**Houston Renfro**	**53.62**	**83**	P	**P**	**20 08 29.3**	**-0.6**		
	baz=317,SNR=11								
LMQ	**La Malbaie**	**53.65**	**57**	*e*P	**P**	**20 08 28.8**	**-1.2**		
LMQ				LR	LR				
	comp=Z,13µm,20.0s								
Z46A	**Louisville**	**53.76**	**82**	P	**P**	**20 08 30.2**	**-0.7**		
	baz=317,SNR=23								
ZAIG	**Zacatecas**	**53.77**	**102**	*e*P	**P**	**20 08 31.1**	**-0.3**		
	comp=Z,518nm,1.5s

NCB	**Newcomb**	**54.19**	**63**	*eP*		**P**	**20 08 33.2**	**-0.8**		
	comp=Z,4,8nm,1.3s									
NCB				LR		LR				
	comp=Z,200nm,19.0s									
MCWV	**Mont Chateau**	**54.24**	**70**	PFAKE			20 08 50.0	+16		
MCWV				LR		LR				
	comp=Z,9µm,19.0s									
Z47A	**Carrollton**	**54.25**	**82**	P		**P**	**20 08 33.5**	**-1.0**		
	baz=317,SNR=32									
543A	**St. Martinvill**	**54.36**	**87**	P		**P**	**20 08 36.2**	**+0.9**		
	baz=318									
TZTN	**Tazewell**	**54.40**	**75**	*eP*		**P**	**20 08 34.3**	**-1.3**		
	comp=Z,1µm,1.5s									
TZTN				LR		LR				
	comp=Z,26µm,20.0s									
Z48A	**Northport**	**54.42**	**81**	P		**P**	**20 08 34.3**	**-1.4**		
	baz=317,SNR=31									
O56A	**Blue Knob Stat**	**54.50**	**69**	P		**P**	**20 08 35.0**	**-1.3**		
	baz=315,SNR=57									
345A	**Thompson Farm,**	**54.51**	**85**	P		**P**	**20 08 36.2**	**-0.2**		
	baz=318									
246A	**Jackson Lee, B**	**54.51**	**83**	P		**P**	**20 08 35.9**	**-0.5**		
	baz=318,SNR=8.1									
BINY	**Binghamton**	**54.52**	**65**	*eP*		**P**	**20 08 36.1**	**-0.2**		
	comp=Z,715nm,1.4s									
BINY				LR		LR				
	comp=Z,12µm,22.0s									
147A	**Livingston**	**54.52**	**82**	P		**P**	**20 08 35.3**	**-1.1**		
	baz=317,SNR=52									
BJI	**Beijing**	**54.53**	**291**	P		**P**	**20 08 37.3**	**+0.9**		
BJI				sP		**sP**	**20 08 52.1**	**-0.9**		
BJI				PP		**PP**	**20 10 39.8**	**+1.2**		
BJI				S		**S**	**20 16 11.1**	**-1.4**		
BJI				sS		**sS**	**20 16 31.9**	**-0.1**		
BJI				pmax		pmax				
	comp=Z,86nm,1.2s									
BJI				pmax		pmax				
	comp=Z,3µm,9.5s									
BJI				LR		LR				
	comp=Z,13µm,19.2s									
BJI				LR		LR				
	comp=Z,11µm,19.2s									
BJI				LR		LR				
	comp=Z,15µm,25.9s									
BJT	**Baijiatuau**	**54.55**	**291**	*eP*		**P**	**20 08 36.4**	**-0.2**		
BJT				pmax		pmax				
	comp=Z,149nm,1.0s									
BJT				MLR		MLR				
	comp=Z,16µm,20.0s									
BJT	**Baijiatuau**	**54.55**	**291**	*eP*		**P**	**20 08 36.4**	**-0.2**		
	comp=Z,149nm,1.0s									
BJT				LR		LR				
	comp=Z,16µm,20.0s									
SSPA	**Standing Stone**	**54.61**	**68**	*eP*		**P**	**20 08 35.9**	**-1.2**		
	comp=Z,706nm,1.3s									
SSPA				LR		LR				
	comp=Z,13µm,19.0s									
CPCT	**Cooper Cave**	**54.64**	**77**	*eP*		**P**	**20 08 35.8**	**-1.5**		
	comp=Z,169nm,1.0s									
CPCT				LR		LR				
	comp=Z,15µm,20.0s									
MDV	**Middlebury**	**54.70**	**62**	*eP*		**P**	**20 08 35.8**	**-1.8**		
544A	**White Castle**	**54.74**	**87**	P		**P**	**20 08 38.7**	**+0.6**		
	baz=318,SNR=6.7									
445A	**Amite**	**54.76**	**85**	P		**P**	**20 08 38.3**	**+0.1**		
	baz=318									
346A	**Big Creek Wild**	**54.78**	**84**	P		**P**	**20 08 37.8**	**-0.6**		
	baz=318,SNR=14									
247A	**Quitman**	**54.78**	**83**	P		**P**	**20 08 38.2**	**-0.1**		
	baz=318,SNR=43									
HAMF	**Hammerfest**	**54.84**	**358**	⇑*iP*		**P**	**20 08 37.4**	**-0.8**		
HAMF				*ep*P		**pP**	**20 08 50.1**	**+0.1**		
HAMF				IVmB_BB			20 08 53.5			
	comp=Z,3µm,1.8s									
HAMF				*e*PP		**PP**	**20 10 42.2**	**+1.5**		
HAMF				*e*S		**S**	**20 16 13.9**	**-1.9**		
HAMF				IVMs_BB	IVMs_BB		20 34 03.0			
	comp=Z,2µm,16.7s									
ACCN	**Adirondack Com**	**54.89**	**63**	*eP*		**P**	**20 08 38.0**	**-1.0**		
	comp=Z,580nm,1.4s									
ACCN				LR		LR				
	comp=Z,13µm,20.0s									
TKL	**Tuckaleechee C**	**54.91**	**76**	LR		LR	20 31 44.7			
	comp=Z,18µm,19.4s,slow=36									
TKL	**Tuckaleechee C**	**54.91**	**76**	*eP*		**P**	**20 08 37.9**	**-1.4**		
TKL	**Tuckaleechee C**	**54.91**	**76**	*eP*		**P**	**20 08 37.6**	**-1.7**		
	comp=Z,842nm,1.4s									
LRAL	**Lakeview Retre**	**54.99**	**81**	*eP*		**P**	**20 08 37.9**	**-1.9**		
	comp=Z,237nm,1.3s									
LRAL				LR		LR				
	comp=Z,10µm,20.0s									
KSPA	**Keystone Colle**	**55.08**	**66**	PFAKE			20 08 50.0	+10		
KSPA				LR		LR				
	comp=Z,14µm,20.0s									
545A	**Edgard**	**55.18**	**86**	P		**P**	**20 08 41.5**	**+0.3**		
	baz=318									
248A	**Dixon Mills**	**55.25**	**82**	P		**P**	**20 08 40.9**	**-0.9**		
	baz=318,SNR=45									
446A	**Poplarville**	**55.27**	**85**	P		**P**	**20 08 41.1**	**-0.8**		
	baz=318,SNR=6.5									
347A	**Saraland**	**55.30**	**83**	P		**P**	**20 08 41.3**	**-0.8**		
	baz=318,SNR=31									
TRY	**Troy**	**55.35**	**63**	*eP*		**P**	**20 08 41.6**	**-0.7**		
	comp=Z,296nm,0.9s									
TRY				LR		LR				
	comp=Z,27µm,19.0s									
546A	**Slidell**	**55.48**	**85**	P		**P**	**20 08 43.8**	**+0.4**		
	baz=318									
N59A	**State Game Lan**	**55.54**	**66**	P		**P**	**20 08 42.9**	**-0.8**		
	baz=316,SNR=29									
645A	**Chauvin**	**55.55**	**87**	P		**P**	**20 08 45.2**	**+1.3**		
	baz=319									
348A	**Jackson**	**55.66**	**83**	P		**P**	**20 08 44.2**	**-0.5**		
	baz=318,SNR=23									
BLA	**Blacksburg**	**55.67**	**73**	*eP*		**P**	**20 08 44.1**	**-0.7**		
BLA				pmax		pmax				
	comp=Z,1µm,1.7s									
BLA	**Blacksburg**	**55.67**	**73**	*eP*		**P**	**20 08 44.1**	**-0.7**		
	comp=Z,1µm,1.8s									
BLA				LR		LR				
	comp=Z,16µm,18.0s									
447A	**Lucedale**	**55.68**	**84**	P		**P**	**20 08 44.4**	**-0.4**		
	baz=318,SNR=12									
PKME	**Peaks-Kenny Pk**	**55.77**	**59**	*eP*		**P**	**20 08 44.2**	**-1.1**		
	comp=Z,203nm,1.1s									
PKME				LR		LR				
	comp=Z,10µm,20.0s									
FFD	**Franklin Falls**	**55.86**	**62**	*eP*		**P**	**20 08 45.2**	**-0.7**		
	comp=Z,264nm,1.1s									
FFD				LR		LR				
	comp=Z,25µm,20.0s									
MVL	**Millersville**	**55.88**	**68**	*eP*		**P**	**20 08 45.5**	**-0.7**		
	comp=Z,254nm,1.3s									
MVL				LR		LR				
	comp=Z,14µm,18.0s									
VWCC	**Virginia Weste**	**55.89**	**72**	*eP*		**P**	**20 08 44.7**	**-1.6**		
ARA0	**ARCESS Array S**	**55.90**	**357**	*eP*		**P**	**20 08 45.2**	**-0.7**		
ARCES	**ARCESS Array B**	**55.90**	**357**	P		**P**	**20 08 45.5**	**-0.4**		
	comp=Z,48nm,0.7s,baz=25,slow=6.2,SNR=124									
ARCES				PcP		**PcP**	**20 09 45.3**	**+1.1**		
	comp=Z,82nm,1.0s,baz=17,slow=4.5,SNR=4.9									
ARCES				LR		LR	20 34 02.2			
	comp=Z,6µm,19.5s,baz=360,slow=37									
ARCES				PKPPKP		**P'P'df**	**20 38 46.9**	**-5.7**		
	comp=Z,3.7nm,1.1s,baz=286,slow=3.7,SNR=3.6									
ARCES				PKP2bc			20 38 58.1			
	comp=Z,3.5nm,0.9s,baz=201,slow=6.5,SNR=6.2									
ARE0	**ARCESS Array S**	**55.90**	**357**	⇑*iP*		**P**	**20 08 45.1**	**-0.8**		
ARE0				IVmB_BB			20 09 01.4			
	comp=Z,2µm,1.9s									
ARE0				*e*S		**S**	**20 16 28.0**	**-2.1**		
ARE0				IVMs_BB	IVMs_BB		20 31 03.4			
	comp=Z,3µm,19.1s									
ARE0	**ARCESS Array S**	**55.90**	**357**	*eP*		**P**	**20 08 44.9**	**-1.1**		
	comp=Z,175nm,1.0s									
ARE0				LR		LR				
	comp=Z,10µm,22.0s									
TRO	**Tromso**	**55.90**	**360**	⇑*iP*		**P**	**20 08 46.1**	**+0.3**		
TRO				*ep*P		**pP**	**20 08 58.7**	**+1.0**		
TRO				IVmB_BB			20 09 01.9			
	comp=Z,4µm,2.5s									
TRO				*e*S		**S**	**20 16 36.2**	**+6.1**		
TRO				IVMs_BB	IVMs_BB		20 29 54.3			
	comp=Z,3µm,27.8s									
646A	**Port Sulphur**	**55.91**	**86**	P		**P**	**20 08 47.1**	**+0.6**		
	baz=319									
LUPA	**Lehigh Univers**	**55.98**	**66**	*eP*		**P**	**20 08 45.7**	**-1.2**		
	comp=Z,497nm,1.2s									
LUPA				LR		LR				
	comp=Z,15µm,20.0s									
ODNJ	**Ogdensburg**	**56.03**	**65**	*eP*		**P**	**20 08 46.3**	**-1.0**		
	comp=Z,413nm,1.5s									
ODNJ				LR		LR				
	comp=Z,11µm,21.0s									
448A	**Bay Minette**	**56.04**	**83**	P		**P**	**20 08 47.1**	**-0.3**		
	baz=318,SNR=5.6									
SDMD	**Soldier's Deli**	**56.04**	**68**	*eP*		**P**	**20 08 45.8**	**-1.5**		
	comp=Z,119nm,1.1s									
SDMD				LR		LR				
	comp=Z,5µm,21.0s									
WVL	**Waterville**	**56.08**	**59**	*eP*		**P**	**20 08 46.3**	**-1.3**		
	comp=Z,248nm,1.0s									
WVL				LR		LR				
	comp=Z,17µm,21.0s									
BRAL	**Brewton**	**56.33**	**82**	*eP*		**P**	**20 08 49.1**	**-0.4**		
	comp=Z,709nm,1.1s									
BRAL				LR		LR				
	comp=Z,11µm,20.0s									
BRNJ	**Basking Ridge**	**56.34**	**66**	*eP*		**P**	**20 08 48.6**	**-0.9**		
	comp=Z,320nm,1.1s									
BRNJ				LR		LR				
	comp=Z,15µm,21.0s									
QUA2	**Belchertown**	**56.35**	**63**	*eP*		**P**	**20 08 48.5**	**-1.0**		
	comp=Z,219nm,1.3s									
QUA2				LR		LR				
	comp=Z,16µm,19.0s									
HHC	**Hu-ho-hao-te**	**56.42**	**295**	*eP*		**P**	**20 08 51.3**	**+1.1**		
HHC				S		**S**	**20 16 36.6**	**-1.3**		
HHC				sS		sS	20 16 56.3	-1.3		
HHC				pmax		pmax				
	comp=Z,71nm,0.9s									
HHC				pmax		pmax				
	comp=Z,2µm,9.9s									
HHC				LR		LR				
	comp=Z,9µm,17.1s									
HHC				LR		LR				
	comp=Z,9µm,14.8s									
HHC				LR		LR				
	comp=Z,14µm,17.2s									
PAL	**Palisades**	**56.46**	**65**	*eP*		**P**	**20 08 49.9**	**-0.4**		
PAL	**Palisades**	**56.46**	**65**	*eP*		**P**	**20 08 49.3**	**-1.0**		
	comp=Z,574nm,1.4s									
PAL				LR		LR				
	comp=Z,9µm,22.0s									
CPNY	**Central Park**	**56.59**	**65**	*eP*		**P**	**20 08 50.3**	**-0.8**		
	comp=Z,562nm,1.4s									
CPNY				LR		LR				
	comp=Z,14µm,22.0s									
HRV	**Adam Dziewonsk**	**56.60**	**62**	*eP*		**P**	**20 08 50.9**	**-0.4**		
HRV				pmax		pmax				
	comp=Z,280nm,1.4s									
HRV	**Adam Dziewonsk**	**56.60**	**62**	*eP*		**P**	**20 08 50.2**	**-1.0**		
	comp=Z,279nm,1.4s									
HRV				LR		LR				
	comp=Z,12µm,20.0s									
CBN	**Corbin Frederi**	**56.62**	**70**	*eP*		**P**	**20 08 51.1**	**-0.4**		
CBN				LR		LR				
	comp=Z,15µm,19.0s									
KMSC	**Kings Mountain**	**56.66**	**75**	P		**P**	**20 08 50.9**	**-0.9**		
	baz=317									
KMSC	**Kings Mountain**	**56.66**	**75**	*eP*		**P**	**20 08 49.7**	**-2.1**		
	comp=Z,401nm,1.1s									
KMSC				LR		LR				
	comp=Z,27µm,19.0s									
GOGA	**Godfrey**	**56.72**	**78**	*eP*		**P**	**20 08 50.5**	**-1.8**		
GOGA	**Godfrey**	**56.72**	**78**	*eP*		**P**	**20 08 50.1**	**-2.2**		
	comp=Z,160nm,0.9s									
GOGA				LR		LR				
	comp=Z,21µm,20.0s									
YLE	**Yale**	**56.74**	**64**	*eP*		**P**	**20 08 50.7**	**-1.6**		
YLE				LR		LR				
	comp=Z,14µm,20.0s									
TIA	**Tai'an**	**56.76**	**287**	⇑P		**P**	**20 08 52.5**	**0.0**		
TIA				sP		**sP**	**20 09 07.6**	**-1.5**		
TIA				PP		**PP**	**20 11 00.8**	**+2.1**		
TIA				S		**S**	**20 16 42.6**	**+0.3**		
TIA				pmax		pmax				
	comp=Z,130nm,1.2s									
TIA				pmax		pmax				
	comp=Z,3µm,5.5s									
TIA				LR		LR				
	comp=Z,8µm,23.0s									
TIA				LR		LR				
	comp=Z,6µm,20.0s									
TIA				LR		LR				
	comp=Z,11µm,24.0s									
WES	**Weston**	**56.81**	**62**	*eP*		**P**	**20 08 52.6**	**-0.1**		
WES	**Weston**	**56.81**	**62**	*eP*		**P**	**20 08 51.2**	**-1.5**		
	comp=Z,536nm,1.0s									
WES				LR		LR				
	comp=Z,21µm,21.0s									
BORG	**Borgarnes**	**56.92**	**19**	*eP*		**P**	**20 08 54.7**	**+1.5**		
BORG	**Borgarnes**	**56.92**	**19**	*eP*		**P**	**20 08 54.0**	**+0.8**		
	comp=Z,2µm,2.0s									
BORG				LR		LR				
	comp=Z,9µm,19.0s									
BCX	**Boston College**	**56.92**	**62**	PFAKE			20 09 10.0	+16		
BCX				LR		LR				
	comp=Z,32µm,20.0s									
MOIG	**Morelia**	**56.99**	**103**	*eP*		**P**	**20 08 55.3**	**+0.7**		
	comp=Z,456nm,1.0s									
MOIG				LR		LR				
	comp=Z,7µm,19.0s									
URVA	**University of**	**56.99**	**70**	*eP*		**P**	**20 08 53.1**	**-1.0**		
BRYW	**Bryant College**	**57.03**	**63**	*eP*		**P**	**20 08 53.2**	**-1.2**		
	comp=Z,355nm,1.1s									
BRYW				LR		LR				
	comp=Z,27µm,19.0s									
EMMW	**East Machias**	**57.07**	**58**	*eP*		**P**	**20 08 53.4**	**-1.1**		
	comp=Z,239nm,0.9s									
LVZ	**Lovozero**	**57.07**	**353**	*c iP*		**P**	**20 08 53.6**	**-0.7**		
LVZ				pmax		pmax				
	comp=Z,470nm,1.6s									
LVZ				MLR		MLR				
	comp=Z,11µm,21.0s									
LVZ	**Lovozero**	**57.07**	**353**	*eP*		**P**	**20 08 53.2**	**-1.1**		
	comp=Z,327nm,1.1s									
LVZ				LR		LR				
	comp=Z,10µm,20.0s									
GGN	**Saint George**	**57.07**	**57**	*eP*		**P**	**20 08 53.6**	**-0.9**		
	comp=Z,134nm,0.8s									
GGN				LR		LR				
	comp=Z,11µm,21.0s									
TARA	**Tarawa**	**57.26**	**211**	*eP*		**P**	**20 08 58.0**	**+1.8**		
	comp=Z,1µm,1.9s									
TARA				LR		LR				
	comp=Z,15µm,21.0s									
JOW	**Kunigami**	**57.35**	**271**	*eP*		**P**	**20 08 56.8**	**0.0**		
	comp=Z,1µm,1.3s									
JOW				LR		LR				
	comp=Z,5µm,21.0s									
LOF	**Lofoten**	**57.35**	**2**	⇑*iP*		**P**	**20 08 55.6**	**-0.6**		
LOF				*ep*P		**pP**	**20 09 08.7**	**+0.6**		
LOF				IVmBBB			20 09 14.7			
	comp=Z,3µm,2.4s									
LOF				*e*PP		**PP**	**20 11 04.7**	**+1.6**		
LOF				IVMs_BB	IVMs_BB		20 29 50.3			
	comp=Z,2µm,22.3s									
BTO	**Baotou**	**57.41**	**295**	*eP*		**P**	**20 08 57.5**	**+0.4**		
APA	**Apatity**	**57.48**	**353**	⇓*iP*		**P**	**20 08 55.6**	**-1.5**		
APA				*i* *PP		**pP**	**20 09 08.0**	**-1.0**		
APA				*i*			20 09 48.0			
APA				*i*			20 11 06.0			
APA				*i* PPP		PPP	20 12 27.0			
APA				*i* S		S	20 16 39.0	-12		
APA				pmax		pmax				
	comp=Z,46nm,1.2s									
APA				MLR		MLR				
	comp=Z,11µm,21.0s									
LMN	**Caledonia Moun**	**57.52**	**55**	*eP*		**P**	**20 08 56.8**	**-0.9**		
	comp=Z,412nm,0.9s									
LMN				LR		LR				
	comp=Z,9µm,19.0s									
STEI	**Steigen**	**57.59**	**2**	⇑*iP*		**P**	**20 08 57.6**	**-0.2**		
STEI				IVmB_BB			20 09 14.7			
	comp=Z,4µm,5.6s									
PATS	**Pohnpei**	**57.67**	**230**	*eP*		**P**	**20 08 58.9**	**-0.3**		
	comp=Z,432nm,1.4s									
TIGA	**Tifton**	**58.11**	**80**	P		**P**	**20 08 59.6**	**-2.4**		
	baz=318,SNR=7.8									
TIGA	**Tifton**	**58.11**	**80**	PFAKE			20 09 10.0	+8.0		
TIGA				LR		LR				
	comp=Z,11µm,22.0s									
TIY	**Taiyuan**	**58.23**	**291**	*eP*		**P**	**20 09 04.3**	**+1.4**		
TIY				pmax		pmax				
	comp=Z,160nm,1.0s									
TIY				pmax		pmax				
	comp=Z,2µm,8.2s									
TIY				LR		LR				
	comp=Z,9µm,16.0s									
TIY				LR		LR				
	comp=Z,2µm,14.5s									
TIY				LR		LR				
	comp=Z,10µm,19.2s									
SSE	**Sheshan**	**58.23**	**280**	P		**P**	**20 09 03.6**	**+0.7**		
SSE				pP		**pP**	**20 09 16.9**	**+2.1**		
SSE				sP		**sP**	**20 09 23.8**	**+4.3**		
SSE				S		**S**	**20 17 00.6**	**-1.1**		
SSE				pmax		pmax				
	comp=Z,110nm,1.2s									
SSE				pmax		pmax				
	comp=Z,2µm,6.7s									
SSE				LR		LR				
	comp=Z,4µm,23.1s									
SSE				LR		LR				
	comp=Z,4µm,23.0s									
SSE				LR		LR				
	comp=Z,4µm,35.1s									
DRLN	**Deer Lake**	**58.33**	**48**	*eP*		**P**	**20 09 02.5**	**-0.8**		
	comp=Z,432nm,1.1s									
DRLN				LR		LR				
	comp=Z,18µm,21.0s									
UNM	**Universidad Na**	**58.41**	**101**	PFAKE			20 09 20.0	+15		
UNM				LR		LR				
	comp=Z,11µm,20.0s									
GUMO	**Guam**	**58.47**	**247**	LR		LR	20 30 52.0			
	comp=Z,2µm,21.4s,baz=38,slow=32									
GUMO	**Guam**	**58.47**	**247**	*eP*		**P**	**20 09 04.0**	**-0.7**		
GUMO				pmax		pmax				
	comp=Z,1µm,1.4s									
GUMO	**Guam**	**58.47**	**247**	*eP*		**P**	**20 09 04.0**	**-0.7**		
	comp=Z,1µm,1.4s									
CNNC	**Cliffs of the**	**58.50**	**72**	*eP*		**P**	**20 09 04.6**	**-0.2**		
	comp=Z,1µm,2.0s									
CNNC				LR		LR				
	comp=Z,17µm,19.0s									
NVS	**Novosibirsk**	**58.61**	**322**	*eP*		**P**	**20 09 05.4**	**+0.2**		
NVS				*e*S		**S**	**20 17 02.4**	**-3.6**		
NVS				pmax		pmax				
	comp=Z,151nm,1.5s									
NVS				smax		smax				
	comp=E,57nm,2.3s									
ZAA1	**Zalesovo Array**	**58.74**	**321**	*eP*		**P**	**20 09 06.1**	**-0.1**		
ZAA1				*e*PcP		**PcP**	**20 09 56.3**	**+0.8**		
ZAA0	**Zalesovo Array**	**58.75**	**321**	*eP*		**P**	**20 09 05.6**	**-0.6**		
ZALV	**Zalesovo Beam**	**58.75**	**321**	P		**P**	**20 09 06.1**	**-0.1**		
	comp=E,61nm,0.7s,baz=37,slow=6.3,SNR=120									
ZALV				PcP		**PcP**	**20 09 56.3**	**+0.8**		
	comp=E,79nm,0.9s,baz=26,slow=4.7,SNR=6.7									
ZALV				LR		LR	20 36 49.9			
	comp=E,36µm,18.7s,baz=27,slow=38									
ZALV				PKPPKP		**P'P'df**	**20 38 42.0**	**-5.4**		
	comp=E,2.3nm,1.1s,baz=236,slow=1.6,SNR=5.6									
ZALV				P4KPbc			20 46 12.9			
	comp=E,0.7nm,0.7s,baz=21,slow=4.8,SNR=3.9									
NHSC	**New Hope**	**58.80**	**76**	*eP*		**P**	**20 09 06.2**	**-0.7**		
	comp=E,1µm,1.5s									
NHSC				LR		LR				
	comp=Z,25µm,20.0s									
NJ2	**Nanjing**	**58.85**	**282**	*eP*		**P**	**20 09 07.4**	**+0.2**		
NJ2				pP		**sP**	**20 09 22.4**	**-1.4**		
NJ2				S		**S**	**20 17 10.3**	**+0.6**		
NJ2				sS		**sS**	**20 17 28.6**	**-0.8**		
NJ2				pmax		pmax				
	comp=Z,140nm,1.3s									
NJ2				pmax		pmax				
	comp=Z,2µm,6.0s									
NJ2				LR		LR				
	comp=Z,4µm,19.5s									
NJ2				LR		LR				
	comp=Z,5µm,22.8s									
NJ2				LR		LR				
	comp=Z,6µm,19.5s									
STOK	**Stokkvaagen**	**59.14**	**3**	⇑*iP*		**P**	**20 09 08.8**	**+0.1**		
STOK				*ep*P		**pP**	**20 09 21.9**	**+1.3**		
STOK				IVmB_BB			20 09 24.7			
	comp=Z,4µm,2.2s									
TLIG	**Tlapa**	**60.16**	**102**	PFAKE			20 09 30.0	+13		
TLIG				LR		LR				
	comp=Z,9µm,22.0s									
SOFL	**Sornfelli, Far**	**61.77**	**13**	⇑*eP*		**P**	**20 09 27.3**	**+0.5**		
SOFL				AMB		AMB	20 09 30.6			
	comp=Z,380nm,0.9s									
SOFL				AMS		AMS	20 35 24.1			
	comp=Z,10µm,21.2s									
DWPF	**Disney Wildern**	**61.84**	**81**	*eP*		**P**	**20 09 26.5**	**-1.1**		
	comp=Z,1µm,1.7s									
DWPF				LR		LR				
	comp=Z,7µm,20.0s									
SOKR	**Solikamsk**	**61.98**	**339**	*c iP*		**P**	**20 09 26.3**	**-1.8**		
SOKR				*PP		**pP**	**20 09 41.0**	**+1.0**		
SOKR							20 11 47.6			
SOKR				PPP		PPP	20 13 21.0			
SOKR				S		S	20 18 02.0	+13		
SOKR				pmax		pmax				
	comp=Z,236nm,0.8s									
SOKR				MLR		MLR				
	comp=Z,17µm,18.0s									
YOJ	**Yonaguni jima**	**62.21**	**274**	*eP*		**P**	**20 09 29.4**	**-0.8**		
YOJ				pmax		pmax				
	comp=Z,637nm,0.9s									
YOJ				MLR		MLR				
	comp=Z,9µm,22.0s									
YOJ	**Yonaguni jima**	**62.21**	**274**	*eP*		**P**	**20 09 29.4**	**-0.8**		
	comp=Z,637nm,0.9s									
YOJ				LR		LR				
	comp=Z,9µm,22.0s									
WHN	**Wuhan**	**62.52**	**285**	⇑P		**P**	**20 09 32.5**	**+0.3**		
WHN				pP		**pP**	**20 09 45.3**	**+1.2**		
WHN				S		**S**	**20 17 56.0**	**-0.6**		
WHN				pmax		pmax				
	comp=Z,4µm,4.5s									
WHN				LR		LR				
	comp=Z,16µm,22.2s									
WHN				LR		LR				
	comp=Z,10µm,16.8s									
WHN				LR		LR				
	comp=Z,18µm,21.4s									
CMIG	**Matias Romero**	**62.64**	**99**	P		**P**	**20 09 32.7**	**-0.4**		
	comp=Z,39nm,1.1s,baz=320,slow=5.7,SNR=17									
CMIG				LR		LR	20 34 58.5			
	comp=Z,7µm,20.8s,baz=301,slow=34									
MOL	**Molde**	**62.67**	**6**	⇑*iP*		**P**	**20 09 32.8**	**+0.1**		
MOL				*ep*P		**pP**	**20 09 47

comp=Z,291nm,0.9s
NACB LR LR

comp=Z,5µm,22.0s
SEM Semipalatinsk 63.27 321⇑ iP P 20 09 35.2 -1.7
comp=Z,861nm,1.1s
SEM eS S 20 18 04.5 -1.0
SEM LR LR 20 37 18.6

comp=Z,19µm,18.1s
DOMB Dombas 63.28 5⇑ iP P 20 09 36.8 0.0
DOMB epP pP 20 09 49.7 +0.9
DOMB IVmB_BB 20 09 52.5

comp=Z,4µm,2.8s
DOMB eS S 20 18 04.9 -0.5
DOMB IVMs_BB IVMs_BB 20 33 56.9

comp=Z,2µm,23.4s
FOO Floro 63.47 7⇑ iP P 20 09 38.1 +0.1
FOO epP pP 20 09 51.1 +1.1
FOO IVmB_BB 20 09 54.0

comp=Z,4µm,2.2s
FOO eS S 20 18 09.8 +2.2
FOO IVMs_BB IVMs_BB 20 34 20.6

comp=Z,2µm,19.5s
GTA Gaotai 63.50 301 *eP* **P 20 09 38.4 -0.4**
GTA pP pP 20 09 50.5 -0.3
GTA sP sP 20 09 56.5 +1.0
GTA S S **20 18 06.8 -2.2**
GTA sS sS 20 18 28.1 -0.8
GTA pmax pmax

comp=Z,58nm,1.4s
GTA pmax pmax

comp=Z,2µm,7.6s
GTA LR LR

comp=Z,9µm,20.9s
GTA LR LR

comp=Z,8µm,21.4s
GTA LR LR

comp=Z,17µm,19.2s
KLMR Klimovskoe 63.54 349 *c iP* **P 20 09 38.2 -0.3**
KLMR *e* 20 11 56.7
KLMR pmax pmax

comp=Z,572nm,1.2s
KURK Kurchatov 63.60 322 P **P 20 09 39.5 +0.4**
KURK 20 10 15.6
KURK pmax pmax

comp=Z,95nm,1.0s
KURK Kurchatov 63.60 322 *eP* **P 20 09 39.0 0.0**
KURK *e*PcP **PcP 20 10 15.6 +0.5**
KURK LR LR

comp=Z,35µm,19.0s
SVE Sverdlovsk 63.65 336 *d iP* **P 20 09 39.5 +0.2**
SVE *e* 20 11 58.6
SVE *e*PPP PPP 20 13 33.5
SVE *e*S **S 20 18 07.1 -2.9**
SVE pmax pmax

comp=Z,323nm,1.3s
SVE MLR MLR

comp=Z,12µm,16.0s
KURBB Kurchatov Arra 63.71 322 P **P 20 09 39.5 -0.3**
comp=Z,70nm,1.0s,baz=24,slow=5.1,SNR=186
KURBB PcP **PcP 20 10 15.6 0.0**
comp=Z,51nm,1.0s,baz=36,slow=4.8,SNR=6.6
ZSN Zaisan 63.91 316 *i P* **P 20 09 39.0 -2.2**
comp=Z,3µm,0.8s
ZSN eS S **20 18 13.4 -0.2**
ZSN LR LR 20 38 25.4

comp=Z,3µm,13.9s
SSLB Suanglung 63.92 275 *eP* **P 20 09 41.5 -0.1**
comp=Z,577nm,1.0s
SSLB LR LR

comp=Z,5µm,22.0s
YEL1 Yell 63.95 11⇑ iP P 20 09 42.1 +0.8
FIA1 FINESS Array S 63.98 356 *eP* **P 20 09 40.6 -0.8**
comp=Z,310nm,1.0s
FIA0 FINESS Array S 63.98 356 *eP* **P 20 09 41.2 -0.2**
FIA0 FINESS Array S 63.98 356 *eP* **P 20 09 41.2 -0.2**
FINES FINESS Array B 63.98 356 P **P 20 09 41.2 -0.2**
comp=Z,153nm,0.8s,baz=18,slow=7.7,SNR=495
FINES LR LR 20 37 41.3

comp=Z,4µm,21.9s,baz=8.5,slow=36
FINES PKPPKP **P'P'df 20 38 33.7 -5.9**
comp=Z,8.2nm,1.2s,baz=267,slow=7.6,SNR=5.9
FINES PKP2ab 20 38 49.1
comp=Z,8.0nm,1.0s,baz=113,slow=4.4,SNR=6.2
FINES P4KPbc 20 46 37.7
comp=Z,1.7nm,0.8s,baz=324,slow=6.9,SNR=4.6
FINES FINESS Array B 63.98 356 P **P 20 09 41.2 -0.2**
FINES pmax pmax

comp=Z,154nm,0.8s
FINES MLR MLR

comp=Z,4µm,21.9s
HYA Hoyanger 63.98 7⇑ iP P 20 09 41.6 +0.2
HYA IVmB_BB 20 09 58.9

comp=Z,3µm,1.7s
HYA eS S **20 18 17.3 +3.3**
SUE Sulen 63.99 7⇑ iP P 20 09 41.5 +0.1
SUE IVmB_BB 20 09 44.5

comp=Z,3µm,3.3s
SUE epP **sP 20 09 56.6 -1.6**
SUE eS S **20 18 13.4 -0.6**
SUE IVMs_BB IVMs_BB 20 38 40.1

comp=Z,1µm,23.3s
LZH Lanzhou 64.00 296 *eP* **P 20 09 43.3 +1.1**
LZH pP sP 20 09 57.3 -1.6
LZH sP pP 20 10 02.5 +8.3
LZH PcP **PcP 20 10 16.5 -0.8**
LZH PP **PP 20 12 04.0 +1.2**
LZH eS S **20 18 14.4 -1.0**
LZH sS sS 20 18 34.3 -1.0
LZH SS **SS 20 22 22.4 -1.4**
LZH pmax pmax

comp=Z,350nm,1.0s
LZH pmax pmax

comp=Z,2µm,4.7s
LZH LR LR

comp=Z,14µm,16.6s
LZH LR LR

comp=Z,14µm,16.9s
LZH LR LR

comp=Z,20µm,17.7s
YULB Yu-li 64.02 274 *eP* **P 20 09 42.7 +0.4**
comp=Z,387nm,1.2s
YULB LR LR

comp=Z,5µm,22.0s
NC204 NORSAR Array S 64.13 4 *eP* **P 20 09 42.4 -0.1**
NC303 NORSAR Array S 64.20 4 *eP* **P 20 09 42.3 -0.6**
NC405 NORSAR Array S 64.33 4 *eP* **P 20 09 43.6 -0.2**
LRW Lerwick 64.35 11⇑ *eP* **P 20 09 44.4 +0.6**
LRW AMB AMB 20 09 47.6

comp=Z,349nm,0.9s
LRW AMS AMS 20 35 08.8

comp=Z,6µm,22.9s
NBO02 NORSAR Array S 64.36 4 *eP* **P 20 09 43.8 -0.2**
BVAR Borovoye Array 64.36 328 P **P 20 09 44.4 +0.3**
comp=Z,130nm,0.8s,baz=40,slow=5.8,SNR=246
BVAR P4KPbc 20 46 39.9
comp=Z,1.0nm,0.8s,baz=64,slow=3.4,SNR=6.3
BRVK Borovoye 64.37 328 *eP* **P 20 09 44.4 +0.3**
BRVK Borovoye 64.37 328 *eP* **P 20 09 44.4 +0.3**
comp=Z,292nm,1.2s
BRVK LR LR

comp=Z,18µm,19.0s
NBO00 NORSAR Array S 64.37 4 *eP* **P 20 09 44.1 +0.1**
NB201 NORSAR Array S 64.38 4 *eP* **P 20 09 44.1 +0.1**
NB2 NORSAR Subarra 64.38 4 P **P 20 09 44.4 +0.3**
comp=Z,1µm,1.7s,baz=354,slow=6.5
NB2 NORSAR Subarra 64.38 4 P **P 20 09 44.4 +0.3**
baz=354,slow=6.5
NB2 NORSAR Subarra 64.38 4 P **P 20 09 44.3 +0.2**
NB2 pmax pmax

comp=Z,1µm,1.8s
NB200 NORSAR Array S 64.38 4 *eP* **P 20 09 44.2 +0.1**
NOA NORSAR Array B 64.38 4 P **P 20 09 44.2 +0.1**
comp=Z,168nm,0.8s,baz=356,slow=6.6,SNR=467
NOA LR LR 20 36 33.5
comp=Z,2µm,21.6s,baz=355,slow=35
NOA PKPPKP **P'P'df 20 38 34.4 -4.7**
comp=Z,1.0nm,0.7s,baz=222,slow=4.0,SNR=4.4
NOA PKP2ab 20 38 48.1
comp=Z,8.3nm,1.0s,baz=169,slow=2.7,SNR=5.8
NOA NORSAR Array B 64.38 4 P **P 20 09 44.2 +0.1**
NOA pmax pmax

comp=Z,162nm,0.8s
NOA MLR MLR

comp=Z,2µm,21.6s
SAN1 Sandwick 64.46 11⇑ *eP* **P 20 09 45.2 +0.7**

TPUB Ta-pu 64.48 275 *eP* **P 20 09 44.6 -0.7**
comp=Z,180nm,1.1s
TPUB LR LR

comp=Z,5µm,22.0s
ARU Arti 64.49 337 *c iP* **P 20 09 44.5 -0.3**
ARU *PP **sP** 20 09 59.5 -2.0
ARU 20 10 19.5
ARU 20 12 05.4
ARU PPP PPP 20 13 36.4
ARU S S **20 18 20.3 -0.1**
ARU *SS **sS** 20 18 37.7 -2.7
ARU pmax pmax

comp=Z,306nm,1.0s
ARU MLR MLR

comp=Z,12µm,17.0s
ARU Arti 64.49 337 *eP* **P 20 09 44.3 -0.5**
comp=Z,471nm,1.3s
ARU LR LR

comp=Z,11µm,20.0s
NA001 NORSAR Array S 64.56 4 *eP* **P 20 09 45.4 +0.1**
ASK Askoy 64.59 7⇑ *iP* **P 20 09 45.8 +0.4**
ASK epP **pP** 20 09 58.5 +1.1
ASK IVmBBB 20 10 02.9

comp=Z,4µm,2.2s
TWG Pinlang 64.60 274 *eP* **P 20 09 46.5 +0.4**
comp=Z,514nm,0.9s
TWG LR LR

comp=Z,12µm,20.0s
NC602 NORSAR Array S 64.70 4 *eP* **P 20 09 46.0 -0.1**
NC602 NORSAR Array S 64.70 4 *eP* **P 20 09 45.7 -0.4**
BER Bergen 64.70 7⇑ *iP* **P 20 09 46.5 +0.4**
BER epP **pP** 20 09 59.4 +1.3
BER IVmB_BB 20 10 02.4

comp=Z,4µm,2.4s
BER eS S **20 18 23.7 +0.9**
BER IVMs_BB IVMs_BB 20 35 19.8

comp=Z,1µm,24.0s
ZRNK Zerenda 64.85 329 *eP* **P 20 09 47.5 +0.3**
ZRNK Zerenda 64.85 329 *eP* **P 20 09 47.2 0.0**
comp=Z,196nm,0.9s
ZRNK ⇑*e* 20 38 36.4
ZRNK LR LR

comp=Z,21µm,19.0s
CCIG Comitan 64.86 97 *eP* **P 20 09 47.9 0.0**
CCIG LR LR

comp=Z,5µm,21.0s
ODD1 Odda 65.26 7⇑ *iP* **P 20 09 50.2 +0.3**
ODD1 epP **pP** 20 10 03.9 +2.1
ODD1 IVmB_BB 20 10 06.2

comp=Z,5µm,2.4s
ENH Enshi 65.43 288 *eP* **P 20 09 51.4 0.0**
comp=Z,559nm,1.1s
ENH LR LR

comp=Z,4µm,20.0s
OSL Oslo 65.46 4⇑ *iP* **P 20 09 51.4 +0.4**
OSL epP **pP** 20 10 04.5 +1.5
OSL IVmB_BB 20 10 07.5

comp=Z,4µm,2.3s
OSL *e*PP **PP 20 12 11.5 -3.2**
OSL IVMs_BB IVMs_BB 20 42 15.4

comp=Z,2µm,17.8s
MK31 Makanchi Array 65.47 317 *eP* **P 20 09 51.4 0.0**
MK31 Makanchi Array 65.47 317 *eP* **P 20 09 51.4 0.0**
MK32 Makanchi Array 65.47 317 *eP* **P 20 09 51.2 -0.2**
MKAR Makanchi Array 65.47 317 P **P 20 09 51.2 -0.2**
comp=Z,108nm,0.6s,baz=46,slow=5.7,SNR=485
MKAR PKPPKP P'P'df 20 38 25.9 -10
comp=Z,0.9nm,0.9s,baz=235,slow=4.3,SNR=4.5
MKAR LR LR 20 40 23.3
comp=Z,22µm,20.6s,baz=30,slow=38
MKAR P4KPbc 20 46 42.3
comp=Z,0.2nm,0.7s,baz=85,slow=3.0,SNR=2.7
MKAR Makanchi Array 65.47 317 *eP* **P 20 09 51.2 -0.2**
comp=Z,956nm,0.8s
MKAR P'P' 20 38 25.9
MKAR *e* 20 46 42.3
MK01 Makanchi Array 65.48 317 *eP* **P 20 09 51.2 -0.3**
MAKZ Makanchi 65.58 318 *eP* **P 20 09 51.8 -0.3**
MAKZ pmax pmax

comp=Z,124nm,0.6s
MAKZ MLR MLR

comp=Z,22µm,20.0s
MAKZ Makanchi 65.58 318 *eP* **P 20 09 51.8 -0.3**
comp=Z,124nm,0.6s
MAKZ LR LR

comp=Z,22µm,20.0s
RSC Scourie 65.60 14 *eP* **P 20 09 52.6 +0.6**
BIGH Upper Bighouse 65.63 13⇑ *eP* **P 20 09 52.9 +0.7**
BIGH AMB AMB 20 09 55.8

comp=Z,684nm,1.4s
BIGH AMS AMS 20 37 02.6

comp=Z,12µm,23.5s
WMQ Urumqi 65.66 312⇑ *iP* **P 20 09 53.8 +1.1**
WMQ pP sP 20 10 08.8 -0.7
WMQ sP pP 20 10 12.3 +7.5
WMQ PP **PP 20 12 19.8 +2.8**
WMQ PcS 20 14 26.4
WMQ S S **20 18 33.5 -1.9**
WMQ pmax pmax

comp=Z,180nm,0.8s
WMQ pmax pmax

comp=Z,2µm,5.1s
WMQ LR LR

comp=Z,12µm,22.5s
WMQ LR LR

comp=Z,9µm,22.6s
WMQ LR LR

comp=Z,20µm,26.3s
KONO Kongsberg 65.70 5⇑ *iP* **P 20 09 53.3 +0.7**
KONO epP **pP** 20 10 06.2 +1.6
KONO IVmB_BB 20 10 09.2

comp=Z,6µm,2.4s
KONO *es*P **sP 20 10 12.8 +3.4**
KONO eS S **20 18 35.8 +0.7**
KONO IVMs_BB IVMs_BB 20 35 18.4

comp=Z,2µm,29.3s
KONO Kongsberg 65.70 5 *c iP* **P 20 09 53.3 +0.7**
KONO pmax pmax

comp=Z,3µm,1.7s
KONO Kongsberg 65.70 5 *eP* **P 20 09 53.0 +0.4**
comp=Z,486nm,1.0s
BLS5 Blasjo 65.73 7⇑ *iP* **P 20 09 53.5 +0.6**
BLS5 epP **pP** 20 10 04.9 -0.1
BLS5 IVmB_BB 20 10 09.1

comp=Z,4µm,2.7s
BLS5 eS S **20 18 34.8 -0.9**
BLS5 IVMsBB 20 37 37.3

comp=Z,1µm,28.7s
RRH Rhenigidale 65.80 15⇑ *eP* **P 20 09 53.8 +0.5**
TAOE Nuku Hiva Isla 65.84 157 *eP* **P 20 09 57.7 +3.6**
comp=Z,622nm,1.4s
TAOE eS S **20 18 40.3 +2.4**

comp=Z,18µm,30.2s
TAOE eSS **SS 20 22 57.6 +4.1**

comp=Z,7µm,29.5s
TAOE *e*LR LR 20 29 46.1

comp=Z,26µm,23.7s
TAOE Nuku Hiva Isla 65.84 157 *eT* T 21 20 55.9

comp=Z,442nm,0.3s
TAOE Nuku Hiva Isla 65.84 157 PFAKE 20 10 10.0 +16
TAOE LR LR

comp=Z,14µm,21.0s
KMY Karmoy 65.86 8 *eP* **P 20 09 54.0 +0.4**
KMY IVmB_BB 20 10 09.6

comp=Z,664nm,2.3s
MLA1 Latheron 65.88 13⇑ *iP* **P 20 09 54.4 +0.6**
RRR Rubha Reidh 65.99 14⇑ *iP* **P 20 09 55.1 +0.6**
STAV Stavanger 66.17 7 *eP* **P 20 09 56.0 +0.4**
STAV epP **pP** 20 10 08.8 +1.2
STAV IVmB_BB 20 10 12.0

comp=Z,5µm,2.4s
STAV eS S **20 18 39.7 -1.1**
STAV eSS **SS 20 22 55.2 -0.6**
STAV IVMs_BB IVMs_BB 20 38 35.2

comp=Z,2µm,21.2s
KAC Achnashellach 66.41 14⇑ *eP* **P 20 09 57.6 +0.4**
KPL Plockton 66.51 14⇑ *eP* **P 20 09 58.4 +0.6**
KPL AMB AMB 20 10 00.6

comp=Z,208nm,1.7s
KPL AMS AMS 20 38 04.6

comp=Z,8µm,23.0s
MDO Dochfour 66.59 13⇑ *iP* **P 20 09 58.9 +0.5**
MCD Coleburn Disti 66.60 13⇑ *iP* **P 20 09 59.3 +0.9**
SNART Snartemo 66.86 7⇑ *iP* **P 20 10 00.7 +0.6**
SNART *ep*P **pP 20 10 13.2 +1.1**
SNART IVmB_BB 20 10 16.8

comp=Z,4µm,2.1s
MME1 Meikle Cairn 66.90 13⇑ *iP* **P 20 10 00.5 +0.2**
VSU Vasula 66.93 355 *c iP* **P 20 10 00.7 +0.2**
VSU pmax pmax

comp=Z,879nm,0.7s
HOMB Homborsund 67.01 6 *eP* **P 20 10 01.9 +0.9**
DRUM Mains of Drumt 67.35 12⇑ *eP* **P 20 10 03.8 +0.6**
DRUM AMB AMB 20 10 07.1

comp=Z,747nm,0.8s
DRUM AMS AMS 20 37 39.5

comp=Z,6µm,22.1s
EDU Dundee 67.64 13⇑ *iP* **P 20 10 05.4 +0.4**
BBSR BB Station 67.81 65 *eP* **P 20 10 07.1 +0.7**
comp=Z,345nm,1.3s
BBSR LR LR

comp=Z,8µm,21.0s
EAB Aberfoyle 67.81 14⇑ *eP* **P 20 10 06.8 +0.7**
CD2 Chengdu 68.05 293⇑ *iP* **P 20 10 08.8 +0.7**
CD2 pP pP 20 10 22.5 +2.3
CD2 sP sP 20 10 28.3 +3.4
CD2 S S **20 19 04.0 -0.5**
CD2 sS sS 20 19 27.5 +3.0
CD2 SS **SS 20 23 27.3 +0.8**
CD2 pmax pmax

comp=Z,510nm,0.7s
CD2 pmax pmax

comp=Z,3µm,3.9s
CD2 LR LR

comp=Z,8µm,27.3s
CD2 LR LR

comp=Z,8µm,21.8s
CD2 LR LR

comp=Z,8µm,22.4s
PGBU Glenifferbraes 68.16 14⇑ *eP* **P 20 10 08.8 +0.5**
PGBU AMB AMB 20 10 11.9

comp=Z,418nm,1.1s
PGBU AMS AMS 20 38 39.6

comp=Z,10µm,22.5s
EDI Edinburgh 68.22 13⇑ *eP* **P 20 10 09.2 +0.6**
EDI AMS AMS 20 38 29.4

comp=Z,7µm,22.6s
ESY Stoneypath 68.30 13⇑ *iP* **P 20 10 09.6 +0.4**
IDGL Inch Island, C 68.42 16⇑ *eP* **P 20 10 10.4 +0.5**
GMK Mull of Kintyr 68.45 15⇑ *iP* **P 20 10 10.8 +0.6**
TDK Taldyqorghan 68.46 319 *eP* **P 20 10 09.0 -1.5**
comp=Z,393nm,1.1s
TDK eS S **20 19 08.2 -0.7**
TDK LR LR 20 40 46.0

comp=Z,3µm,18.1s
MOS Moscow 68.76 349 *α iP* **P 20 10 12.4 +0.3**
MOS *i* *PP **sP 20 10 27.6 -1.3**
MOS *i* PPP PPP 20 14 24.2
MOS eS S **20 19 12.6 +0.5**
MOS *e* 20 20 03.8
MOS pmax pmax

comp=Z,307nm,0.8s
MOS pmax pmax

comp=Z,900nm,1.5s
MOS MLR MLR

comp=N,12µm,25.0s
MOS MLR MLR

comp=E,5µm,25.0s
MOS MLR MLR

comp=Z,15µm,25.0s
EKA Eskdalemuir Ar 68.80 13 P **P 20 10 13.1 +0.7**
comp=Z,178nm,0.7s,baz=345,slow=4.4,SNR=249
EKA Eskdalemuir Ar 68.80 13 P **P 20 10 13.1 +0.7**
EKA pmax pmax

comp=Z,184nm,0.7s
ESK Eskdalemuir 68.81 13⇑ *eP* **P 20 10 12.9 +0.5**
ESK AMS AMS 20 38 47.8

comp=Z,8µm,23.7s
ESK Eskdalemuir 68.81 13 *eP* **P 20 10 12.8 +0.4**
ESK pmax pmax

comp=Z,492nm,0.8s
ESK MLR MLR

comp=Z,8µm,21.0s
ESK Eskdalemuir 68.81 13 *eP* **P 20 10 12.8 +0.4**
comp=Z,492nm,0.8s
ESK LR LR

comp=Z,8µm,21.0s
GZH Guangzhou 68.83 280 P **P 20 10 10.1 -2.9**
GZH PcP **PcP 20 10 35.8 -1.5**
GZH S S **20 19 09.3 -4.5**
GZH pmax pmax

comp=Z,5µm,7.5s
GZH LR LR

comp=Z,10µm,22.7s
MUD Monsted U'grnd 68.86 6⇑ *iP* **P 20 10 13.6 +1.0**
MUD *i* 20 10 27.3
MUD *i* S S **20 19 20.4 +7.2**

comp=Z,5µm,24.0s
MUD Monsted U'grnd 68.86 6⇑ *iP* **P 20 10 13.6 +1.0**
MUD *i* 20 10 27.3
MUD MLR MLR

comp=Z,5µm,24.0s
ECK Cauldkaine Hil 68.96 13⇑ *eP* **P 20 10 13.7 +0.4**
HKC Hong Kong Obse 68.97 279 ⇑ P **P 20 10 16.0 +2.2**
AFI Afiamalu 68.98 191 LR LR 20 34 18.5
comp=Z,11µm,20.7s,baz=334,slow=30
AFI Afiamalu 68.98 191 PFAKE 20 10 30.0 +16
AFI LR LR

comp=Z,10µm,20.0s
BHH Howats Hill 69.03 13⇑ *iP* **P 20 10 14.3 +0.6**
GAL1 Galloway 69.05 14⇑ *iP* **P 20 10 14.3 +0.5**
GAL1 AMB AMB 20 10 17.4

comp=Z,178nm,1.0s
GAL1 AMS AMS 20 39 28.9

comp=Z,4µm,24.0s
SHLS Shalkode 69.44 317 *i P* **P 20 10 15.1 -1.7**
comp=Z,3µm,0.8s
SHLS eS S **20 19 19.9 -1.0**
SHLS LR LR 20 41 16.2

comp=Z,3µm,16.4s
GMM Mts of Mourne 69.47 15⇑ *iP* **P 20 10 16.8 +0.4**
OBN Obninsk 69.50 349 *c iP* **P 20 10 16.1 -0.5**
OBN *i* 20 10 26.4
OBN *i* 20 10 40.4
OBN *i* SS SS 20 23 53.0 +5.6
OBN pmax pmax

comp=Z,342nm,1.0s
OBN MLR MLR

comp=Z,8µm,20.0s
OBN Obninsk 69.50 349 *eP* **P 20 10 15.8 -0.8**
comp=Z,340nm,0.9s
OBN LR LR

comp=Z,10µm,21.0s
KESW Keswick, Cumbr 69.54 13⇑ *eP* **P 20 10 17.4 +0.5**
KESW AMB AMB 20 10 20.6

comp=Z,343nm,1.1s
KESW AMS AMS 20 39 09.0

comp=Z,8µm,23.7s
LCP Cassop 69.60 12⇑ *eP* **P 20 10 17.9 +0.7**
KPKS Kokpek 69.65 318 *i P* **P 20 10 16.4 -1.5**
comp=Z,5µm,0.8s
KPKS eS S **20 19 22.6 -0.6**
KPKS LR LR 20 41 09.5

comp=Z,10µm,16.4s
IZAR Zarasai 69.67 355 *eP* **P 20 10 18.1 +0.5**
IZAR IAmb IAmb 20 10 19.4

comp=Z,103nm,0.8s
IGLA Glengowla, Co 69.70 17⇑ *eP* **P 20 10 18.5 +0.6**
WIM Isle of Man 69.75 14⇑ *eP* **P 20 10 18.4 +0.2**
COP Copenhagen 69.78 4⇑ *iP* **P 20 10 19.0 +0.7**
comp=Z,112nm,0.6s
COP *e* 20 10 32.8
COP *i* S S **20 19 27.0 +2.9**

comp=Z,5µm,21.0s
COP Copenhagen 69.78 4⇑ *iP* **P 20 10 19.0 +0.7**
COP *e* 20 10 32.8
COP *i* S S **20 19 27.0 +2.9**
COP pmax pmax

comp=Z,110nm,0.6s
UZB Uzynbulak 69.79 317 *i P* **P 20 10 17.2 -1.6**
comp=Z,598nm,0.9s
UZB eS S **20 19 24.1 -0.9**
UZB LR LR 20 41 26.9

comp=Z,7µm,16.4s
ISAL Salakas 69.85 356 *eP* **P 20 10 19.2 +0.5**
ISAL IAmb IAmb 20 10 20.6

comp=Z,80nm,0.8s
GYA Guiyang 69.95 288⇑ *iP* **P 20 10 20.3 +0.3**
GYA pP sP 20 10 36.0 -0.8
GYA PcP **PcP 20 10 44.3 +2.1**
GYA PP **PP 20 12 58.4 +3.7**

GYA S **S** **20 19 26.4 -0.8**
GYA sS sS 20 19 49.0 +1.7
GYA SKS **SKSac** **20 20 14.3 -3.5**
GYA SS **SS** **20 23 56.8 +0.6**
GYA pmax pmax
comp=Z,200nm,1.0s
GYA pmax pmax
comp=Z,2μm,9.9s
GYA LR LR
comp=Z,5μm,21.8s
GYA LR LR
comp=Z,7μm,24.6s
GYA LR LR
comp=Z,7μm,23.7s
ZHN **Zhinishke** **70.00 318** *i* P **P** **20 10 18.5 -1.6**
comp=Z,466nm,0.9s
ZHN *e*S **S** **20 19 26.3 -1.0**
ZHN LR LR 20 41 25.8
comp=Z,7μm,17.2s
IDID **Didziasalis** **70.08 355** *e*P **P** **20 10 20.5 +0.4**
IDID IAmb IAmb 20 10 22.7
comp=Z,104nm,0.8s
SATY **Saty** **70.10 318** *i* P **P** **20 10 19.1 -1.6**
comp=Z,1μm,0.9s
SATY *e*S **S** **20 19 27.8 -0.8**
SATY LR LR 20 41 28.2
comp=Z,7μm,14.8s
LLD **Lille Linde** **70.13 4** *i* P **P** **20 10 21.2 +0.7**
LLD *e* 20 10 33.8
LLD **Lille Linde** **70.13 4** *i* P **P** **20 10 21.2 +0.7**
LLD *e* 20 10 33.8
KUU **Kurty** **70.19 320** *i* P **P** **20 10 19.6 -1.5**
comp=Z,859nm,0.9s
KUU *e*S **S** **20 19 28.8 -0.5**
KUU LR LR 20 41 58.3
comp=Z,6μm,15.6s
RABL **Rabaul** **70.22 230** PFAKE 20 10 30.0 +8.4
RABL LR LR
comp=Z,5μm,20.0s
DSB **Dublin** **70.37 16** *e*P **P** **20 10 21.9 -0.1**
comp=Z,189nm,1.1s
DSB LR LR
comp=Z,5μm,22.0s
BSD **Bornholm Skovb** **70.43 2**⇑ *i*P **P** **20 10 22.5 +0.2**
comp=Z,84nm,0.8s
BSD *i* 20 10 37.7
BSD *i* S **S** **20 19 29.3 -2.4**
BSD **Bornholm Skovb** **70.43 2**⇑ *i*P **P** **20 10 22.5 +0.2**
BSD *i* 20 10 37.7
BSD *i* S **S** **20 19 29.3 -2.4**
BSD pmax pmax
comp=Z,84nm,0.8s
AAA **Alma-Ata** **70.48 319** *e*P **P** **20 10 23.8 +0.8**
AAA *e*S **S** **20 19 34.0 +1.1**
AAA pmax pmax
comp=Z,3μm,4.3s
AAA smax smax
comp=E,1μm,5.5s
AAA MLR MLR
comp=Z,23μm,18.0s
AAA **Alma-Ata** **70.48 319** *e*P **P** **20 10 23.0 0.0**
comp=Z,1μm,0.9s
AAA *e*S **S** **20 19 34.3 +1.4**
AAA LR LR 20 41 23.5
comp=Z,8μm,18.0s
NACGM **Naroch** **70.48 355** *e*P **P** **20 10 22.0 -0.7**
NACGM *e*P **P** **20 10 22.0 -0.7**
NACGM PM 20 10 23.0
comp=Z,0.7nm,0.8s
NACGM *e*PcP **sP** **20 10 39.0 -0.5**
NACGM *e*PP PP 20 12 38.0 -20
NACGM *e*PPP PPP 20 14 32.0
NACGM *e*S **S** **20 19 30.0 -2.3**
NACGM *e*PS PnS 20 19 48.0 -15
NACGM *e*ScS **SKSac** **20 20 15.0 -5.7**
NACGM *e*SS **SS** **20 24 00.0 -2.6**
NACGM *e*SSS SSS 20 27 49.0
NACGM *e*LR LR 20 34 12.0
NACGM LRM MLR 20 37 31.0
comp=Z,19nm,28.0s
WPS **Cemaes, Angles** **70.50 14**⇑ *e*P **P** **20 10 22.5 -0.3**
WPS AMB AMB 20 10 26.1
comp=Z,187nm,1.6s
WPS AMS AMS 20 40 35.4
comp=Z,7μm,24.2s
MANU **Manus Island** **70.55 236** *e*P **P** **20 10 23.9 +0.3**
comp=Z,168nm,0.7s
MANU LR LR
comp=Z,3μm,20.0s
WLF1 **Llynfaes** **70.62 14** AMS AMS 20 40 38.3
comp=Z,14μm,24.2s
VAH **Vaihoa** **70.70 166** *e*P **P** **20 10 26.6 +2.3**
comp=Z,346nm,1.3s
VAH **Vaihoa** **70.70 166** *e*T T 21 26 58.8
comp=Z,72nm,0.3s
ABKAR **Akbulak array** **70.71 333** *e*P **P** **20 10 24.3 +0.1**
comp=Z,2μm,0.7s
WPM1 **Pennaenmawr** **70.72 14**⇑ *e*P **P** **20 10 24.2 +0.1**
YLL **Llanberis** **70.80 14**⇑ *e*P **P** **20 10 25.8 +1.2**
GQP **Guinayangan** **70.82 267**⇑ *e*P **P** **20 10 25.8 +0.5**
MICGM **Minsk** **70.83 354**⇑ *i*P **P** **20 10 25.0 +0.2**
MICGM PM 20 10 26.0
comp=Z,0.5nm,1.0s
MICGM PM 20 10 26.0
comp=Z,3.7nm,4.0s
MICGM *e*pP **sP** **20 10 40.0 -1.6**
MICGM *e*sP PcP 20 11 00.0 +15
MICGM *e*PP PP 20 12 44.0 -17
MICGM *e*S **S** **20 19 34.0 -2.3**
MICGM *e*SP **SKSac** **20 20 14.0 -9.3**
MICGM *e*ScS **ScS** **20 20 28.0 +3.3**
MICGM *e*SS SS 20 25 20.0 +72
MICGM *e*SSS SSS 20 28 20.0
MICGM *e*LR LR 20 34 16.0
MICGM LRM MLR 20 38 54.0
comp=Z,10nm,20.0s
MICGM LRM MLR 20 39 00.0
comp=N,7.8nm,20.0s
MICGM LRM MLR 20 39 08.0
comp=E,5.1nm,20.0s
MICGM LRM MLR 20 39 28.0
comp=E,12nm,20.0s
MICGM LRM MLR 20 40 00.0
comp=Z,22nm,20.0s
MICGM LRM MLR 20 40 04.0
comp=N,12nm,20.0s
MNK **Minsk** **70.83 354**⇑ *i*P **P** **20 10 25.0 +0.2**
MNK *e**PP **sP** **20 10 40.0 -1.6**
MNK *e*S **S** **20 19 34.0 -2.3**
MNK *e*SP **SKSac** **20 20 14.0 -9.3**
MNK *e* 20 20 28.0
MNK pmax pmax
comp=Z,510nm,1.0s
MNK pmax pmax
comp=Z,4μm,4.0s
RGN **Rugen** **70.95 3** *e*P **P** **20 10 26.5 +1.0**
comp=Z,922nm,1.1s
RGN LR LR
comp=Z,5μm,21.0s
KLNR **Kaliningrad** **70.98 359***c* *i*P **P** **20 10 25.8 +0.1**
KLNR pmax pmax
comp=Z,546nm,1.1s
LMK **Market Rasen** **71.00 12**⇑ *e*P **P** **20 10 26.5 +0.7**
LMK AMB AMB 20 10 29.6
comp=Z,898nm,1.1s
LMK AMS AMS 20 42 01.6
comp=Z,4μm,22.1s
BMNS **Besmoynak** **71.11 320** *e*P **P** **20 10 25.2 -1.7**
comp=Z,3μm,0.9s
BMNS *e*S **S** **20 19 39.2 -1.1**
BMNS LR LR 20 42 06.1
comp=Z,10μm,18.9s
STNC **Stoke** **71.12 13**⇑ *e*P **P** **20 10 27.5 +0.9**
STNC AMB AMB 20 10 30.6
comp=Z,436nm,1.3s
STNC AMS AMS 20 40 06.7
comp=Z,8μm,23.4s
FOEL **Foel Wylfa** **71.18 14**⇑ *e*P **P** **20 10 27.9 +0.9**
FOEL AMB AMB 20 10 30.9
comp=Z,537nm,1.0s
FOEL AMS AMS 20 40 20.4
comp=Z,7μm,23.7s
LQP **Lukban** **71.18 268** *e*P **P** **20 10 29.4 +1.6**
SUW **Suwalki** **71.52 357** *e*P **P** **20 10 28.6 -0.3**
SUW *e*S **SKiKP** **20 20 02.4 -1.8**
SUW *e*SKS **ScS** **20 20 34.6 +4.4**
SUW LMZ LR 20 37 29.9
comp=Z,6μm,27.8s
SUW **Suwalki** **71.52 357**⇑ *e*P **P** **20 10 28.6 -0.3**
SUW *e* 20 20 34.6
SUW MLR MLR
comp=Z,6μm,27.8s
CWF **Charnwood Fore** **71.58 13**⇑ *e*P **P** **20 10 29.9 +0.5**
CWF AMB AMB 20 10 33.1
comp=Z,286nm,1.2s
CWF AMS AMS 20 40 08.4
comp=Z,7μm,24.5s
CWF **Charnwood Fore** **71.58 13** *e*P **P** **20 10 29.8 +0.5**
comp=Z,622nm,1.4s
CWF LR LR
comp=Z,7μm,22.0s
HLM1 **Long Mynd** **71.59 14**⇑ *e*P **P** **20 10 30.0 +0.6**
HLM1 AMB AMB 20 10 33.2
comp=Z,264nm,1.8s
HLM1 AMS AMS 20 40 32.4
comp=Z,8μm,22.9s
FRU **Bishkek** **71.74 320**⇑ *i*P **P** **20 10 31.0 +0.4**
FRU *i* 20 10 44.0
FRU *e*S **S** **20 19 45.0 -2.4**
FRU pmax pmax
comp=Z,1μm,2.0s
HNR **Honiara** **71.75 221** LR LR 20 38 50.9
comp=Z,4μm,19.3s,baz=355,slow=33
HNR **Honiara** **71.75 221** P P 20 10 39.0 +8.3
HNR **Honiara** **71.75 221** PFAKE 20 10 40.0 +9.3
HNR LR LR
comp=Z,5μm,22.0s
MTDJ **Mount Denham** **71.76 84** *e*P **P** **20 10 30.5 -0.6**
comp=Z,1μm,1.4s
MTDJ LR LR
comp=Z,3μm,20.0s
BBJ **Bamboo Saint A** **71.79 84**⇑ *i*P **P** **20 10 31.2 0.0**
GTBY **Guantanamo Bay** **71.81 81** *e*P **P** **20 10 30.2 -1.0**
comp=Z,425nm,1.1s
GTBY LR LR
comp=Z,12μm,21.0s
LPW **Lampeter** **71.81 15** *e*P **P** **20 10 30.6 -0.2**
LPW AMB AMB 20 10 33.1
comp=Z,103nm,1.9s
LPW AMS AMS 20 39 12.8
comp=Z,6μm,23.1s
MCJ **Malvern** **71.91 84**⇓ *i*P **P** **20 10 32.6 +0.7**
AAK **Ala-Archa** **71.95 320** P **P** **20 10 33.1 +1.1**
comp=Z,168nm,0.8s,baz=80,slow=2.2,SNR=136
AAK **Ala-Archa** **71.95 320***c* *i*P **P** **20 10 32.1 +0.1**
AAK pmax pmax
comp=Z,468nm,0.9s
AAK MLR MLR
comp=Z,54μm,17.0s
AAK **Ala-Archa** **71.95 320** P **P** **20 10 32.9 +0.9**
SNR=148
AAK **Ala-Archa** **71.95 320** P **P** **20 10 32.9 +0.9**
SNR=148
AAK P **P** **20 10 32.9 +0.9**
SNR=148
AAK **Ala-Archa** **71.95 320** *e*P **P** **20 10 32.8 +0.7**
comp=Z,329nm,1.1s
AAK LR LR
comp=Z,25μm,18.0s
MCH1 **Michaelchurch** **72.08 14**⇑ *e*P **P** **20 10 33.0 +0.6**
MCH1 AMB AMB 20 10 36.0
comp=Z,356nm,1.4s
MCH1 AMS AMS 20 40 58.5
comp=Z,7μm,23.0s
MONM **Monmouth** **72.26 14** *e*P **P** **20 10 33.9 +0.5**
MONM AMB AMB 20 10 37.2
comp=Z,296nm,1.8s
MONM AMS AMS 20 41 04.1
comp=Z,7μm,22.5s
SSW **Stow on the Wo** **72.27 13**⇑ *e*P **P** **20 10 34.1 +0.6**
STH **Stony Hill** **72.29 84** *i* P **P** **20 10 33.4 -0.8**
GKP **Gorka Klasztor** **72.32 1** *e*P **P** **20 10 34.2 +0.5**
GKP *e*S **S** **20 19 53.6 +0.1**
GKP *e*SKS **SKiKP** **20 20 12.6 +7.2**
GKP LMZ LR 20 37 45.4
comp=Z,8μm,29.0s
GKP **Gorka Klasztor** **72.32 1** *e*P **P** **20 10 34.2 +0.5**
GKP *e*S **S** **20 19 53.6 +0.1**
STRD **Stroud** **72.41 13**⇑ *e*P **P** **20 10 35.3 +1.0**
STRD AMB AMB 20 10 38.3
comp=Z,660nm,1.3s
STRD AMS AMS 20 40 57.1
comp=Z,8μm,23.5s
HGH **Gray Hill** **72.46 14**⇑ *e*P **P** **20 10 35.3 +0.7**
OLDB **Oldbury-Upon-S** **72.47 14**⇑ *e*P **P** **20 10 35.2 +0.5**
OLDB AMB AMB 20 10 38.4
comp=Z,290nm,1.5s
OLDB AMS AMS 20 41 09.5
comp=Z,8μm,23.7s
RCP **Roxas** **72.53 265**⇑ *e*P **P** **20 10 36.2 +0.7**
VORR **Voronezh** **72.56 347** *e*P **P** **20 10 33.0 -2.2**
VORR pmax pmax
comp=Z,750nm,1.4s
VRH **Novokhopyorsk** **72.66 345** *e*P **P** **20 10 35.2 -0.6**
VRH pmax pmax
comp=Z,330nm,0.7s
SWN1 **Swindon** **72.72 13** *e*P **P** **20 10 36.8 +0.7**
SWN1 AMB AMB 20 10 40.2
comp=Z,445nm,1.0s
SWN1 AMS AMS 20 41 06.2
comp=Z,8μm,24.1s
PPT **Papeete** **72.74 168** LR LR 20 35 25.1
comp=Z,10μm,21.8s,baz=357,slow=30
TIAR **Tiarei** **72.76 168** *e*P **P** **20 10 38.9 +2.2**
comp=Z,87nm,1.0s
TIAR **Tiarei** **72.76 168** *e*T T 21 29 47.6
comp=Z,97nm,0.2s
PPT2 **Papeete2** **72.76 168** *e*P **P** **20 10 39.1 +2.3**
comp=Z,113nm,1.2s
PPT2 *e*S **S** **20 19 59.0 -0.4**
comp=Z,27μm,30.8s
PPT2 *e*SS **SS** **20 24 41.0 +0.7**
comp=Z,5μm,32.0s
PPT2 *e*LQ LQ 20 29 17.0
comp=Z,8μm,29.2s
PPT2 *e*LR LR 20 32 52.6
comp=Z,27μm,24.2s
PPT2 **Papeete2** **72.76 168** *e*T T 21 29 48.2
comp=Z,57nm,0.4s
GRTK **Grand Turk** **72.82 77** *e*P **P** **20 10 36.9 -0.3**
comp=Z,1μm,1.6s
GRTK LR LR
comp=Z,12μm,20.0s
PAE **Paea** **72.83 168** *e*P **P** **20 10 38.9 +1.8**
comp=Z,24nm,1.1s
PAE **Paea** **72.83 168** *e*T T 21 29 52.8
comp=Z,14nm,0.3s
HTL **Hartland** **72.84 15** *e*P **P** **20 10 37.6 +0.8**
HTL AMB AMB 20 10 40.7
comp=Z,137nm,1.2s
HTL AMS AMS 20 40 08.9
comp=Z,4μm,23.6s
HEX **Exmoor** **72.87 15**⇑ *e*P **P** **20 10 37.9 +0.8**
KKAR **Karatay Array** **72.98 323** *e*P **P** **20 10 38.1 +0.1**
KKAR pmax pmax
comp=Z,1μm,0.8s
KKAR **Karatay Array** **72.98 323** *e*P **P** **20 10 38.0 +0.1**
comp=Z,1μm,0.8s
WOL **Wolverton** **72.99 13**⇑ *e*P **P** **20 10 38.2 +0.4**
WOL AMS AMS 20 41 01.8
comp=Z,7μm,23.4s
TVO **Taravao** **72.99 168** *e*P **P** **20 10 40.7 +2.6**
comp=Z,50nm,1.0s
TVO **Taravao** **72.99 168** *e*T T 21 30 04.4
comp=Z,22nm,0.3s
VSR **Storozhevoye** **73.01 347** *e*P **P** **20 10 37.0 -0.9**
VSR *e*PPP PPP 20 15 02.5
VSR *e*S **S** **20 19 53.7 -7.8**
VSR pmax pmax
comp=Z,210nm,0.5s
VSR MLR MLR
comp=Z,14μm,22.0s
KMI **Kunming** **73.16 290** P **P** **20 10 39.8 +0.3**
KMI pP PcP 20 10 55.3 -0.7
KMI sP sP 20 11 00.6 +4.3
KMI PP **PP** **20 13 25.8 +3.5**
KMI S **S** **20 19 59.3 -5.1**
KMI sS sS 20 20 26.3 +1.6
KMI SS **SS** **20 24 46.0 +0.4**
KMI pmax pmax
comp=Z,140nm,1.0s
KMI pmax pmax
comp=Z,2μm,5.8s
KMI LR LR
comp=Z,6μm,22.0s
KMI LR LR
comp=Z,6μm,22.0s
KMI LR LR
comp=Z,8μm,29.7s
WTSB **Winterswijk** **73.17 8** *e*P **P** **20 10 39.6 +0.8**
comp=Z,173nm,0.9s
WTSB *e*pP **pP** **20 10 51.9 +0.9**
MEH **Mehetia** **73.23 167** *e*T T 21 30 22.3
comp=Z,118nm,0.3s
DYA **Yadsworthy** **73.47 15**⇑ *e*P **P** **20 10 40.9 +0.3**
DYA AMB AMB 20 10 44.2
comp=Z,302nm,1.3s
DYA AMS AMS 20 40 25.5
comp=Z,6μm,24.7s
DYA **Yadsworthy** **73.47 15** *e*P **P** **20 10 41.4 +0.8**
comp=Z,457nm,1.0s
DYA LR LR
comp=Z,6μm,22.0s
CCA1 **Carnmenellis** **73.51 16**⇑ *e*P **P** **20 10 41.6 +0.7**
CCA1 AMB AMB 20 10 44.6
comp=Z,266nm,1.1s
CCA1 AMS AMS 20 40 52.2
comp=Z,6μm,25.6s
HMNX **Herstmonceux** **73.62 12** *e*P **P** **20 10 43.2 +1.8**
HMNX AMS AMS 20 44 16.6
comp=Z,6μm,19.0s
BEL **Belsk** **73.75 359** *e*P **P** **20 10 43.0 +0.8**
BEL *e*S S 20 20 18.8 +9.0
BEL *e*SKS **ScS** **20 20 54.0 +5.9**
BEL LMZ LR 20 39 51.0
comp=Z,10μm,25.7s
BEL **Belsk** **73.75 359** *e*P **P** **20 10 43.0 +0.8**
BEL *e* 20 20 54.0
BEL MLR MLR
comp=Z,10μm,25.7s
CGP **Cagayan de Oro** **73.91 262** *e*P **P** **20 10 45.4 +1.6**
IUG **Iuzhnay** **73.99 323** *i* P **P** **20 10 42.5 -1.5**
comp=Z,2μm,0.9s
IUG *e*S **S** **20 20 12.5 -0.7**
IUG LR LR 20 44 26.6
comp=Z,7μm,16.4s
QIZ **Qiongzhong** **74.02 280** P **P** **20 10 45.9 +1.5**
QIZ sP **sP** **20 11 02.8 +1.6**
QIZ PP **PP** **20 13 30.6 +1.0**
QIZ S **S** **20 20 14.3 +0.4**
QIZ pmax pmax
comp=Z,2μm,9.7s
QIZ LR LR
comp=Z,4μm,22.0s
QIZ LR LR
comp=Z,3μm,20.5s
QIZ LR LR
comp=Z,5μm,25.0s
QIZ **Qiongzhong** **74.02 280** *e*P **P** **20 10 45.0 +0.6**
comp=Z,336nm,1.1s
QIZ LR LR
comp=Z,5μm,21.0s
SNPH **Sibulan** **74.03 264** *e*P **P** **20 10 39.8 -4.7**
KSH **Kashi** **74.08 317**⇑ *i*P **P** **20 10 48.5 +3.9**
KSH *e*pP sP 20 11 02.3 +0.8
KSH *e*sP PcP 20 11 07.3 +7.7
KSH *e*PP **PP** **20 13 36.8 +7.2**
KSH S **S** **20 20 17.0 +2.7**
KSH ScS **ScS** **20 20 52.8 +1.3**
KSH SS **SS** **20 25 06.4 +7.8**
KSH pmax pmax
comp=Z,370nm,0.9s
KSH LR LR
comp=Z,15μm,20.4s
KSH LR LR
comp=Z,12μm,16.8s
KSH LR LR
comp=Z,16μm,28.1s
UCC **Uccle** **74.12 9** P **P** **20 10 45.0 +0.6**
comp=Z,142nm,1.8s
CLL **Collm** **74.18 4**⇑ *i*P **P** **20 10 45.0 +0.2**
comp=Z,257nm,1.1s
CLL *e*Pmax 20 10 46.0
CLL *i* Pmax 20 10 47.3
comp=Z,257nm,1.1s
CLL *e*Plp 20 10 49.0
comp=Z,1μm,24.7s
CLL *i* pP **pP** **20 10 57.0 0.0**
CLL *i* 20 11 01.8
comp=Z,680nm,1.6s
CLL *e*PP **PP** **20 13 32.0 +2.1**
CLL *e*S **S** **20 20 16.0 +1.2**
CLL *e*sS **sS** **20 20 33.0 -2.1**
CLL *e*PS **PnS** **20 20 58.0 +6.1**
CLL *e* 20 21 48.0
CLL *e*SS SS 20 25 24.0 +25
CLL *e*SSS SSS 20 28 30.0
CLL *e*SSSS 20 30 12.0
CLL *e*SKPPKPbc 20 40 27.0
CLL Lmax 20 46 00.0
CLL LmV 20 46 00.0
comp=Z,5μm,22.0s
CLL LmV(360 22 39 00.0
comp=Z,600nm,20.8s
CLL **Collm** **74.18 4**⇑ *i*P **P** **20 10 45.0 +0.2**
CLL *i* *PP **pP** **20 10 57.0 0.0**
CLL *e*S **S** **20 20 16.0 +1.2**
CLL pmax pmax
comp=Z,257nm,1.1s
CLL MLR MLR
comp=Z,5μm,22.0s
CLL **Collm** **74.18 4** *e*P **P** **20 10 44.9 +0.2**
comp=Z,735nm,1.6s
CLL LR LR
comp=Z,5μm,22.0s
BEBN **Eben Emael** **74.24 9** P **P** **20 10 45.6 +0.5**
comp=Z,92nm,1.9s
BEBN AP **pP** **20 10 58.3 +0.9**
JAY **Jayapura** **74.25 242** P **P** **20 10 46.9 +1.2**
comp=Z,127nm,1.2s,comp=Z,2μm
HGN **Heimansgroeve** **74.30 8** *e*P **P** **20 10 46.0 +0.6**
HGN *e*pP **pP** **20 10 58.4 +0.7**
HGN *e*S **S** **20 20 19.6 +3.6**
MSVF **Nonsavu** **74.33 200** *e*P **P** **20 10 46.3 +0.3**
MSVF pmax pmax
comp=Z,610nm,1.7s
MSVF MLR MLR
comp=Z,15μm,22.0s
MSVF **Nonsavu** **74.33 200** *e*P **P** **20 10 46.2 +0.3**
comp=Z,610nm,1.7s
MSVF LR LR
comp=Z,15μm,22.0s
SNF **Seneffe** **74.40 9** P **P** **20 10 46.7 +0.6**
SNF AP **pP** **20 10 58.5 +0.2**
MEM **Membach** **74.45 8** P **P** **20 10 47.0 +0.6**
comp=Z,152nm,1.4s
MEM AP **pP** **20 10 59.6 +1.0**
HDC **Heredia** **74.51 95** PFAKE 20 11 00.0 +13
HDC LR LR
comp=Z,4μm,22.0s
DAV **Davao City (W)** **74.53 260** P **P** **20 10 47.0 -0.3**
comp=Z,113nm,0.5s,baz=183,slow=8.5,SNR=5.3
DAV **Davao City (W)** **74.53 260** *e*P **P** **20 10 47.0 -0.3**
comp=Z,205nm,0.8s
DAV LR LR
comp=Z,3μm,20.0s
AKASG **Malin Array Be** **74.53 353** P **P** **20 10 46.6 -0.2**
comp=Z,149nm,0.5s,baz=9.7,slow=5.7,SNR=144
AKASG ScS **ScS** **20 20 48.3 -6.1**
comp=Z,0.4nm,0.2s,baz=7.2,slow=12,SNR=5.9
AKASG PKPPKP P'P'df 20 38 07.5 -14
comp=Z,0.3nm,0.3s,baz=227,slow=1.4,SNR=6.3
AKASG LR LR 20 43 42.4
comp=Z,9μm,21.9s,baz=10.0,slow=36
AKBB **Malin Array Si** **74.53 353** *e*P **P** **20 10 46.4 -0.4**
AKBB pmax pmax
comp=Z,391nm,0.8s
AKBB MLR MLR
comp=Z,10μm,20.0s
AKBB **Malin Array Si** **74.53 353** *e*P **P** **20 10 46.4 -0.4**
comp=Z,391nm,0.8s
AKBB LR LR
comp=Z,10μm,20.0s
KIEV **Kiev** **74.54 353** *i* P **P** **20 10 46.5 -0.3**
KIEV pmax pmax
comp=Z,433nm,1.0s
KIEV MLR MLR

comp=Z,8μm,21.0s
KIEV Kiev 74.54 353 *e*P **P** **20 10 46.1 -0.7**
comp=Z,413nm,0.9s
KIEV LR LR
comp=Z,10μm,19.0s
AK11 Malin Array Si 74.56 353 *e*P **P** **20 10 46.0 -0.9**
BCLA Clavier 74.58 9 P **P** **20 10 47.7 +0.5**
comp=Z,236nm,1.9s
BCLA AP **pP** **20 11 00.3 +1.0**
GENI Genyem 74.59 242 P **P** **20 10 49.2 +1.6**
BRG Berggiesshubel 74.65 3 *e*P **P** **20 10 48.1 +0.6**
comp=Z,105nm,1.0s
BRG *i* 20 11 00.8
comp=Z,431nm,1.3s
BRG PP **PP** **20 13 34.0 +0.1**
BRG Berggiesshubel 74.65 3 *e*P **P** **20 10 48.1 +0.6**
BRG *i* 20 11 00.8
BRG 20 13 34.0
BRG pmax pmax
comp=Z,105nm,1.0s
BRG MLR MLR
comp=N,4μm,19.3s
BRG MLR MLR
comp=E,6μm,16.8s
BRG MLR MLR
comp=Z,16μm,18.8s
KSP Ksiaz 74.74 2 *e*P **P** **20 10 48.7 +0.7**
KSP *e*pP **sP** **20 11 04.1 -0.8**
KSP *e*S **S** **20 20 19.5 -1.5**
KSP *e*SKS SKS 20 21 42.3
KSP LMZ LR 20 36 26.6
comp=Z,6μm,34.5s
KSP Ksiaz 74.74 2⇑ *e*P **P** **20 10 48.7 +0.7**
KSP *e**PP **sP** **20 11 04.1 -0.8**
KSP *e*S **S** **20 20 19.5 -1.5**
SDDR Presa de Saban 74.74 79 *e*P **P** **20 10 48.3 -0.3**
comp=Z,360nm,1.1s
SDDR LR LR
comp=Z,9μm,21.0s
BAIF Baives 74.84 10 *e*P **P** **20 10 48.7 +0.1**
BAIF pmax pmax
comp=Z,135nm,0.8s
DOU Dourbes 74.84 9 P **P** **20 10 49.2 +0.6**
comp=Z,175nm,2.0s
DOU AP **PcP** **20 11 02.5 0.0**
GIVF Givet 74.85 9 *e*P **P** **20 10 48.6 -0.1**
GIVF pmax pmax
comp=Z,355nm,1.3s
JSA Saint Aubin 74.94 14⇑ *e*P **P** **20 10 49.8 +0.6**
JSA AMB AMB 20 10 52.8
comp=Z,364nm,1.1s
JSA AMS AMS 20 40 57.0
comp=Z,7μm,26.8s
JQE Queens East 74.95 14⇑ *e*P **P** **20 10 49.8 +0.6**
PVCC Panska Ves 75.01 3⇑ *i*P **P** **20 10 50.5 +0.9**
PVCC *e*pP **sP** **20 11 06.2 -0.3**
PVCC AMS AMS 20 50 00.0
comp=Z,7μm,19.6s
PVCC Panska Ves 75.01 3⇑ *i*P **P** **20 10 50.5 +0.9**
PVCC *e**PP **sP** **20 11 06.2 -0.3**
PVCC MLR MLR
comp=Z,7μm,19.6s
UPC Upice 75.07 2⇑ *i*P **P** **20 10 50.7 +0.7**
UPC *e*pP **sP** **20 11 06.2 -0.7**
UPC *e*S **S** **20 20 25.6 +0.9**
UPC AMS AMS 20 53 30.0
comp=Z,7μm,18.4s
UPC Upice 75.07 2⇑ *i*P **P** **20 10 50.7 +0.7**
UPC *e**PP **sP** **20 11 06.2 -0.7**
UPC *e*S **S** **20 20 25.6 +0.9**
UPC MLR MLR
comp=Z,7μm,18.4s
CTBH Cotabato--PC H 75.17 261⇓ *i*P **P** **20 10 52.1 +1.1**
DPC Dobruska-Polom 75.23 2⇑ *i*P **P** **20 10 52.0 +1.0**
DPC *e*pP **sP** **20 11 07.7 -0.2**
DPC *e*S **S** **20 20 28.4 +1.8**
DPC *e*PKPPKP P'P'df 20 38 10.6 -9.5
DPC AMS AMS 20 50 30.0
comp=Z,6μm,19.8s
DPC Dobruska-Polom 75.23 2⇑ *i*P **P** **20 10 52.0 +1.0**
DPC *e**PP **sP** **20 11 07.7 -0.2**
DPC *e*S **S** **20 20 28.4 +1.8**
DPC MLR MLR
comp=Z,6μm,19.8s
NKC Novy Kostel 75.24 4⇑ *i*P **P** **20 10 51.9 +0.9**
NKC *e*pP **pP** **20 11 03.7 +0.5**
NKC *e*S **S** **20 20 27.4 +0.8**
NKC AMS AMS 20 53 30.0
comp=Z,3μm,18.7s
NKC Novy Kostel 75.24 4⇑ *i*P **P** **20 10 51.9 +0.9**
NKC *e**PP **pP** **20 11 03.7 +0.5**
NKC *e*S **S** **20 20 27.4 +0.8**
NKC MLR MLR
comp=Z,3μm,18.7s
OJC Ojcow 75.38 359 *e*P **P** **20 10 52.3 +0.6**
OJC *e*pP **sP** **20 11 07.8 -0.8**
OJC *e*S SKiKP 20 19 56.3 -14
OJC LMZ LR 20 40 52.4
comp=Z,10μm,25.3s
OJC Ojcow 75.38 359⇑ *e*P **P** **20 10 52.3 +0.6**
OJC *e**PP **sP** **20 11 07.8 -0.8**
OJC MLR MLR
comp=Z,10μm,25.3s
OJC Ojcow 75.38 359 *e*P **P** **20 10 51.7 0.0**
comp=Z,504nm,1.4s
WLF Walferdange 75.41 8 P **P** **20 10 53.0 +1.1**
comp=Z,370nm,1.9s
WLF AP **pP** **20 11 01.6 -2.6**
WLF Walferdange 75.41 8 *e*P **P** **20 10 52.7 +0.8**
WLF pmax pmax
comp=Z,678nm,1.4s
WLF MLR MLR
comp=Z,5μm,21.0s
WLF Walferdange 75.41 8 *e*P **P** **20 10 52.7 +0.8**
comp=Z,678nm,1.4s
WLF LR LR
comp=Z,5μm,21.0s
KRLC Kraliky 75.51 1⇑ *i*P **P** **20 10 53.3 +0.7**
KRLC *e*pP **PcP** **20 11 05.8 +0.3**
KRLC Kraliky 75.51 1⇑ *i*P **P** **20 10 53.3 +0.7**
KRLC *e**PP **PcP** **20 11 05.8 +0.3**
RAC Raciborz 75.52 0 *e*P **P** **20 10 53.4 +0.9**
RAC *e*S **S** **20 20 30.0 +0.4**
RAC MLR MLR
comp=Z,5μm,21.0s
LSA Lhasa 75.53 301 P **P** **20 10 55.0 +1.5**
LSA S **S** **20 20 26.0 -5.4**
LSA pmax pmax
comp=Z,220nm,1.0s
LSA LR LR
comp=Z,5μm,18.8s
LSA LR LR
comp=Z,5μm,17.7s
LSA LR LR
comp=Z,16μm,18.8s
LSA Lhasa 75.53 301 *e*P **P** **20 10 54.6 +1.1**
LSA pmax pmax
comp=Z,263nm,0.8s
LSA MLR MLR
comp=Z,15μm,20.0s
LSA Lhasa 75.53 301 *e*P **P** **20 10 54.6 +1.1**
comp=Z,263nm,0.8s
LSA LR LR
comp=Z,15μm,20.0s
PRU Pruhonice 75.55 3⇑ *i*P **P** **20 10 53.4 +0.7**
PRU *e*pP **sP** **20 11 09.1 -0.5**
PRU *e*S **S** **20 20 31.7 +1.6**
PRU *e*PKPPKP **P'P'df** **20 38 12.2 -7.2**
PRU AMS AMS 20 50 20.0
comp=Z,8μm,20.4s
PRU Pruhonice 75.55 3⇑ *i*P **P** **20 10 53.4 +0.7**
PRU *e**PP **sP** **20 11 09.1 -0.5**
PRU *e*S **S** **20 20 31.7 +1.6**
PRU MLR MLR
comp=Z,8μm,20.4s
GOPC GO Pecny, Ondr 75.63 3⇑ *i*P **P** **20 10 54.0 +0.8**
GOPC *e*pP **sP** **20 11 09.6 -0.6**
GOPC *e*S **S** **20 20 32.0 +1.0**
GOPC AMS AMS 20 50 30.0
comp=Z,8μm,20.5s
GOPC GO Pecny, Ondr 75.63 3⇑ *i*P **P** **20 10 54.0 +0.8**
GOPC *e**PP **sP** **20 11 09.6 -0.6**
GOPC *e*S **S** **20 20 32.0 +1.0**
GOPC MLR MLR
comp=Z,8μm,20.5s
LVV L'vov 75.68 356⇓ *i*P **P** **20 10 53.7 +0.2**
LVV *e*S **S** **20 20 28.1 -3.4**
RAR Rarotonga 75.69 179 LR LR 20 37 52.3
comp=Z,5μm,20.3s,baz=346,slow=31
RAR Rarotonga 75.69 179 *e*P **P** **20 10 53.7 +0.1**
RAR pmax pmax
comp=Z,489nm,1.8s
RAR Rarotonga 75.69 179 *e*P **P** **20 10 53.7 +0.1**
comp=Z,489nm,1.8s
GRFO Grafenberg 75.72 5 *e*P **P** **20 10 54.5 +0.8**
GRFO pmax pmax
comp=Z,1μm,1.6s
GRFO MLR MLR
comp=Z,2μm,22.0s
GRFO Grafenberg 75.72 5 *e*P **P** **20 10 54.5 +0.8**
comp=Z,1μm,1.6s
GRFO LR LR
comp=Z,2μm,22.0s
OKC Ostrava-Krasne 75.76 0⇑ *i*P **P** **20 10 54.7 +0.8**
OKC *e*pP **sP** **20 11 09.4 -1.4**
OKC *e*S **S** **20 20 32.9 +0.5**
OKC *e*x x 20 21 07.6
OKC AMS AMS 20 53 20.0
comp=Z,3μm,17.4s
OKC Ostrava-Krasne 75.76 0⇑ *i*P **P** **20 10 54.7 +0.8**
OKC *e**PP **sP** **20 11 09.4 -1.4**
OKC *e*S **S** **20 20 32.9 +0.5**
OKC *e* 20 21 07.6
OKC MLR MLR
comp=Z,3μm,17.4s
MORC Moravsky Berou 75.82 1⇑ *i*P **P** **20 10 55.0 +0.7**
MORC Moravsky Berou 75.82 1 *e*P **P** **20 10 54.5 +0.2**
MORC pmax pmax
comp=Z,4μm,1.8s
MORC MLR MLR
comp=Z,15μm,21.0s
MORC Moravsky Berou 75.82 1 *e*P **P** **20 10 54.5 +0.2**
comp=Z,4μm,1.8s
MORC LR LR
comp=Z,15μm,21.0s
KWP Kalwaria Pacla 75.91 357 *e*P **P** **20 10 55.8 +1.0**
KWP *e*pP **sP** **20 11 11.0 -0.7**
KWP *e*S S 20 20 53.0 +19
KWP *e*SKS ScS 20 21 26.2 +21
KWP LMZ LR 20 40 11.7
comp=Z,10μm,28.2s
KWP Kalwaria Pacla 75.91 357⇑ *e*P **P** **20 10 55.8 +1.0**
KWP *e**PP **sP** **20 11 11.0 -0.7**
KWP *e*S S 20 20 53.0 +19
KWP *e* 20 21 26.2
KWP MLR MLR
comp=Z,10μm,28.2s
SDD Santo Domingo 75.94 78 *e*P **P** **20 10 55.4 0.0**
comp=Z,555nm,1.2s
SDD LR LR
comp=Z,14μm,20.0s
QUIF Quistinic 76.04 15 *e*P **P** **20 10 55.4 -0.1**
QUIF pmax pmax
comp=Z,514nm,1.8s
STHS Stebnicka Huta 76.16 358 *e*P **P** **20 10 58.0 +1.7**
STHS pmax pmax
comp=Z,176nm,1.0s
STHS Stebnicka Huta 76.16 358 *e*P **P** **20 10 58.0 +1.7**
LANF Langenberg 76.22 7⇑ *e*P **P** **20 10 57.3 +0.7**
VRAC Vranov 76.28 1⇑ *i*P **P** **20 10 57.8 +0.9**
WET Wettzell 76.34 4 P **P** **20 10 58.2 +0.9**
KHC Kasperske Hory 76.38 3⇑ *i*P **P** **20 10 58.6 +1.1**
KHC *e*pP **sP** **20 11 14.5 +0.1**
KHC *e*S **S** **20 20 41.7 +2.4**
KHC *e*x x 20 20 59.0
KHC AMS AMS 20 51 00.0
comp=Z,8μm,20.3s
KHC Kasperske Hory 76.38 3⇑ *i*P **P** **20 10 58.6 +1.1**
KHC *e**PP **sP** **20 11 14.5 +0.1**
KHC *e*S **S** **20 20 41.7 +2.4**
KHC *e* 20 20 59.0
KHC MLR MLR
comp=Z,8μm,20.3s
KHC Kasperske Hory 76.38 3 *e*P **P** **20 10 58.0 +0.4**
comp=Z,412nm,1.6s
KHC LR LR
comp=Z,3μm,21.0s
LANS Liptovska Anna 76.45 359 *e*P **P** **20 10 59.6 +1.7**
LANS Liptovska Anna 76.45 359 *e*P **P** **20 10 59.6 +1.7**
STU Stuttgart 76.52 6 *e*P **P** **20 10 58.6 +0.3**
STU pmax pmax
comp=Z,752nm,1.6s
STU Stuttgart 76.52 6 *e*P **P** **20 10 58.6 +0.3**
comp=Z,752nm,1.6s
KOLS Kolonicke sedl 76.62 358 *e*P **P** **20 10 59.9 +1.0**
KOLS Kolonicke sedl 76.62 358 *e*P **P** **20 10 59.9 +1.0**
GEC2 GERESS Array S 76.67 3 *e*P **P** **20 10 59.5 +0.2**
GEC2 pmax pmax
comp=Z,720nm,1.8s
GEC2 MLR MLR
comp=Z,8μm,21.0s
GEC2 GERESS Array S 76.67 3 *e*P **P** **20 10 59.5 +0.2**
comp=Z,720nm,1.8s
GEC2 LR LR
comp=Z,8μm,21.0s
GERES GERESS Array B 76.67 3 P **P** **20 10 59.8 +0.6**
comp=Z,54nm,0.7s,baz=356,slow=4.1,SNR=393
GERES PKPPKP **P'P'df**
comp=Z,1.0nm,0.8s,baz=131,slow=3.7,SNR=6.4
GEA0 GERESS Array S 76.68 3 *e*P **P** **20 10 59.3 0.0**
CDF Champ du Feu 76.74 8 *e*P **P** **20 10 59.5 -0.1**
CDF pmax pmax
comp=Z,275nm,1.3s
WLS Welschbruch 76.75 8 *e*P **P** **20 11 00.3 +0.7**
THEF They Montfort 76.82 9⇑ *e*P **P** **20 11 00.7 +0.7**
BFO Black Forest 76.90 7 *e*P **P** **20 11 00.6 +0.2**
BFO pmax pmax
comp=Z,267nm,1.0s
BFO Black Forest 76.90 7 *e*P **P** **20 11 00.6 +0.2**
comp=Z,267nm,1.0s
UZH Uzhgorod 76.92 358⇑ *i*P **P** **20 11 00.9 +0.4**
UZH *i* 20 11 14.7
UZH *i* 20 11 20.3
UZH *e* 20 14 01.5
UZH *e*S **S** **20 20 51.9 +6.8**
UZH *e* 20 21 13.7
UZH *e*SS **SS** **20 25 36.0 -4.7**
ECH Echery 76.93 8⇑ *e*P **P** **20 11 01.3 +0.7**
SMOL Smolenice 77.08 1 *e*P **P** **20 11 02.9 +1.5**
SMOL Smolenice 77.08 1 *e*P **P** **20 11 02.8 +1.4**
PMG Port Moresby 77.09 232 P **P** **20 11 02.3 +0.5**
comp=Z,130nm,1.0s,baz=11,slow=7.2,SNR=15
PMG Port Moresby 77.09 232⇓ *i*P **P** **20 11 03.2 +1.4**
PMG pmax pmax
comp=Z,1μm,1.2s
PMG Port Moresby 77.09 232 *e*P **P** **20 11 02.6 +0.8**
comp=Z,373nm,1.2s
PMG LR LR
comp=Z,4μm,21.0s
KECS Kecovo 77.11 359 *e*P **P** **20 11 03.2 +1.6**
KECS pmax pmax
comp=Z,73nm,0.8s
KECS Kecovo 77.11 359 *e*P **P** **20 11 03.2 +1.6**
VYHS Vyhne 77.11 360 *e*P **P** **20 11 02.7 +1.1**
VYHS pmax pmax
comp=Z,66nm,0.9s
VYHS Vyhne 77.11 360 *e*P **P** **20 11 02.7 +1.1**
SORM Soroca 77.14 353⇑ *i*P **P** **20 11 01.6 -0.1**
MOF Molkenrain 77.29 8⇑ *e*P **P** **20 11 03.2 +0.5**
HINF Hinteralfeld 77.30 8 *e*P **P** **20 11 02.4 -0.3**
HINF pmax pmax
comp=Z,187nm,1.2s
AGP Aguadilla 77.54 76 *e*P **P** **20 11 04.2 -0.3**
comp=Z,2μm,1.2s
AGP LR LR
comp=Z,5μm,20.0s
LOR Lormes 77.56 10 *e*P **P** **20 11 04.0 -0.2**
CONA Conrad Observa 77.65 2 *i*P **P** **20 11 05.8 +1.1**
comp=Z,434nm,1.6s,SNR=200
PSZ Piszkesteto 77.68 359⇑ *i*P **P** **20 11 06.2 +1.3**
PSZ Piszkesteto 77.68 359 *e*P **P** **20 11 06.0 +1.1**
PSZ pmax pmax
comp=Z,523nm,1.2s
PSZ MLR MLR
comp=Z,4μm,20.0s
PSZ Piszkesteto 77.68 359 *e*P **P** **20 11 06.0 +1.1**
comp=Z,523nm,1.2s
PSZ LR LR
comp=Z,4μm,20.0s
PSZ Piszkesteto 77.68 359 *e*P **P** **20 11 06.2 +1.3**
PSZ *ex* x 20 11 21.8
MOA Molln 77.68 3 *i*P **P** **20 11 05.5 +0.6**
comp=Z,110nm,1.0s,SNR=74
MPR Mayaguez 77.70 76 *e*P **P** **20 11 05.5 +0.3**
comp=Z,402nm,1.7s
MPR LR LR
comp=Z,4μm,20.0s
BUR08 Bucovina Ar. S 77.81 355 *e*P **P** **20 11 05.9 +0.2**
BURAR Bucovina Array 77.84 355⇑ *i*P **P** **20 11 06.5 +0.6**
BURAR Bucovina Array 77.84 355 P **P** **20 11 06.4 +0.6**
BMR Baia Mare 77.85 357⇑ *i*P **P** **20 11 06.1 +0.4**
RETA Reutte 77.89 5 *i*P **P** **20 11 06.9 +0.8**
comp=Z,190nm,1.3s,SNR=73
SOP Sopron 77.90 1 P **P** **20 11 07.2 +1.2**
SOP Sopron 77.90 1 *e*P **P** **20 11 07.2 +1.2**
SOP *ex* x 20 11 22.7
AVF Avril sur Loir 77.98 11 *e*P **P** **20 11 06.2 -0.3**
AVF pmax pmax
comp=Z,105nm,0.8s
PRAR RASCA 78.04 355⇓ *i*P **P** **20 11 06.9 +0.1**
DAVA Damuels 78.04 6 *i*P **P** **20 11 07.7 +0.7**
comp=Z,192nm,1.3s,SNR=27
MOTA Moosalm 78.06 5 *i*P **P** **20 11 07.9 +0.8**
comp=Z,255nm,1.0s,SNR=158
WATA Walderalm 78.09 5 *i*P **P** **20 11 08.2 +0.9**
comp=Z,164nm,0.8s,SNR=73
BUD Budapest 78.12 360 P **P** **20 11 09.0 +1.8**
BUD Budapest 78.12 360 *e*P **P** **20 11 08.3 +1.1**
BUD *ex* x 20 11 22.2
CELP Cerrillos 78.12 76 *e*P **P** **20 11 07.7 0.0**
WTTA Wattenberg 78.16 5 *i*P **P** **20 11 08.9 +1.2**
comp=Z,229nm,0.8s,SNR=118
CSKK Cs*tkako 78.24 0 *e*P **P** **20 11 09.2 +1.3**
KIS Kishinev 78.24 353⇑ *i*P **P** **20 11 07.0 -0.9**
comp=Z,800nm,1.0s
KIS *i* pP **pP** **20 11 21.0 +0.8**
KIS Kishinev 78.24 353 *e*PP PP 20 14 02.0 -2.2
KIS Kishinev 78.24 353 *i* PS 20 22 08.0
KIS *e*LR LR 20 36 12.0
comp=Z,10μm,16.0s
KIS LQM 20 43 40.0
comp=Z,4μm,22.0s
KIS Kishinev 78.24 353⇓ *i*P **P** **20 11 07.8 -0.1**
KIS Kishinev 78.24 353α *i*P **P** **20 11 07.0 -0.9**
KIS *i* *PP **pP** **20 11 21.0 +0.8**
KIS *e* 20 14 02.0
KIS *e*PPP PPP 20 15 56.0
KIS *i* S **S** **20 20 56.0 -3.4**
KIS *i* 20 21 12.0
KIS *i* 20 21 17.0
KIS *i* *SS **ScS** **20 21 34.0 +10**
KIS *i* PS PnS 20 22 08.0 +24
KIS pmax pmax
comp=Z,800nm,1.0s
KIS pmax pmax
comp=Z,2μm,2.0s
KIS pmax pmax
comp=Z,5μm,4.0s
ARSA Arzberg 78.32 2 *i*P **P** **20 11 09.7 +1.3**
comp=Z,112nm,0.8s,SNR=113
SJG San Juan 78.33 75 *e*P **P** **20 11 08.1 -0.7**
SJG pmax pmax
comp=Z,222nm,1.0s
SJG MLR MLR
comp=Z,8μm,21.0s
SJG San Juan 78.33 75 *e*P **P** **20 11 08.9 0.0**
SJG San Juan 78.33 75 *e*P **P** **20 11 08.1 -0.7**
comp=Z,222nm,1.0s
SJG LR LR
comp=Z,8μm,21.0s
FETA Feichten 78.36 6 *i*P **P** **20 11 09.8 +1.1**
comp=Z,333nm,1.2s,SNR=126
CBYP Canovanas 78.37 75 *e*P **P** **20 11 08.0 -1.1**
comp=Z,210nm,1.1s
CBYP LR LR
comp=Z,10μm,20.0s
PGRA Graciosa 78.38 35 *e*P **P** **20 11 09.0 +0.2**
comp=Z,774nm,1.6s
ARCR ARCALIA 78.40 356⇓ *i*P **P** **20 11 10.4 +1.6**
GOF Gofitskoye 78.41 343⇑ *i*P **P** **20 11 09.7 +0.8**
GOF *e*S **SKSac** **20 21 22.3 +2.2**
GOF pmax pmax
comp=Z,1μm,0.8s
KBA Koelnbreinsper 78.42 4 *i*P **P** **20 11 10.6 +1.4**
comp=Z,637nm,1.1s,SNR=329
KBA Koelnbreinsper 78.42 4 P **P** **20 11 10.5 +1.4**
TBI Tubuai 78.46 169 *e*P **P** **20 11 11.3 +2.1**
comp=Z,432nm,1.3s
TBI *e*S **S** **20 21 01.9 -0.1**
comp=Z,12μm,32.2s
TBI *e*SS **SS** **20 26 04.5 -2.0**
comp=Z,3μm,30.0s
TBI *e*LR LR 20 35 23.6
comp=Z,22μm,29.0s
TBI Tubuai 78.46 169 *e*T T 21 36 55.1
comp=Z,452nm,0.3s
HUMP Col San Antoni 78.48 75 *e*P **P** **20 11 08.7 -0.9**
comp=Z,120nm,0.8s
HUMP LR LR
comp=Z,9μm,20.0s
CALA Caldeira 78.54 36 *e*P **P** **20 11 07.1 -2.7**
SHL Shillong 78.55 298 *e*P **P** **20 11 10.0 -0.2**
SHL IAmb IAmb 20 11 13.1
comp=Z,563nm,1.6s
SHL *ex* x 20 21 20.0
ROSA Rosais 78.57 36 *e*P **P** **20 11 09.6 -0.3**
comp=Z,265nm,1.0s
ROSA Rosais 78.57 36 *e*P **P** **20 11 10.7 +0.8**
comp=Z,209nm,0.9s
ROSA LR LR
comp=Z,6μm,22.0s
NONG Nongkai 78.58 285 P **P** **20 11 10.1 -0.1**
comp=Z,298nm,1.2s,comp=Z,6μm
AGO Saint Agoulin 78.69 11 *e*P **P** **20 11 11.5 +1.1**
PMAN Manadas 78.70 36 *e*P **P** **20 11 10.6 0.0**
comp=Z,184nm,1.0s
PICO Pico 78.70 36 *e*P **P** **20 11 10.9 +0.2**
comp=Z,199nm,1.1s
ABTA Abfaltersbach 78.72 4 *i*P **P** **20 11 11.2 +0.5**
comp=Z,93nm,0.9s,SNR=157
FUORN Ofenpass-Fuorn 78.73 6 *e*P **P** **20 11 12.1 +1.1**
comp=Z,317nm,1.0s
FUORN LR LR
comp=Z,3μm,19.0s
DRGR 78.75 357⇑ *i*P **P** **20 11 11.4 +0.6**
OG01 Vacheresse 78.76 8⇑ *e*P **P** **20 11 11.8 +0.9**
SENIN Lac Senin/Sane 78.78 8 *e*P **P** **20 11 11.8 +0.6**
comp=Z,89nm,0.8s
CJR Cluj-Napoca 78.80 357⇓ *i*P **P** **20 11 12.1 +1.0**
LEOM Leova 78.80 353⇓ *i*P **P** **20 11 11.3 +0.3**
STVI Saint Thomas 78.81 74 *e*P **P** **20 11 10.8 -0.7**
comp=Z,468nm,1.6s
STVI LR LR
comp=Z,6μm,22.0s
TUE Stuetta 78.82 7 *e*P **P** **20 11 12.0 +0.6**
comp=Z,743nm,1.9s
TUE LR LR
comp=Z,3μm,20.0s
PLDF La Plantade 78.82 11 *e*P **P** **20 11 12.2 +0.9**
ABVI Anegada Island 78.85 73 *e*P **P** **20 11 12.6 +1.0**
comp=Z,1μm,1.6s
ABVI LR LR
comp=Z,8μm,21.0s
TESR Tescani 78.86 354⇑ *i*P **P** **20 11 11.6 +0.2**
SOKA Soboth 78.88 3 *e*P **P** **20 11 12.5 +1.0**
comp=Z,483nm,1.1s,SNR=363
MYKA Terra Mystica 78.88 4 *i*P **P** **20 11 12.1 +0.5**
comp=Z,148nm,0.8s,SNR=85
VERF Verneugheol 78.91 11 *e*P **P** **20 11 12.3 +0.6**
PERS Pernice 78.92 3 *i*P **P** **20 11 12.7 +0.9**
PERS *e*S **S** **20 21 06.6 -0.2**
ADH Angra Heroismo 78.97 35 *e*P **P** **20 11 12.1 +0.1**
comp=Z,356nm,1.3s
PYM Petit Puy Mans 78.97 11 *e*P **P** **20 11 12.6 +0.5**
SKNT Sakolnakorn 78.99 284 P **P** **20 11 12.5 0.0**
comp=Z,536nm,1.7s,comp=Z,9μm
OBKA Obir 79.03 3 *i*P **P** **20 11 13.4 +1.0**
comp=Z,603nm,0.7s,SNR=400
FAKI Fak Fak 79.04 249 P **P** **20 11 13.3 +0.6**
FAKI Fak Fak 79.04 249 *e*P **P** **20 11 13.2 +0.4**
comp=Z,240nm,1.1s
FAKI LR LR
comp=Z,2μm,21.0s
BEHE Becsehely 79.12 1 *e*P **P** **20 11 14.1 +1.3**

BEHE ex x 20 11 29.9
KOGS Kog 79.13 2 *i*P **P 20 11 13.6 +0.8**
FRNF Fournols 79.28 11⇑*e*P **P 20 11 14.3 +0.6**
CADS Cadrg 79.29 3 *i*P **P 20 11 13.8 0.0**
SIRR Siria 79.30 358⇑*i*P **P 20 11 14.8 +1.0**
CMAI Chiengmai2 79.34 289 P **P 20 11 14.9 +0.3**
comp=Z,5µm,1.0s,comp=Z,64µm
PAYA Payao 79.35 288 P **P 20 11 15.0 +0.5**
comp=Z,299nm,1.1s,comp=Z,2µm
CDVI St. Croix 79.40 74 *e*P **P 20 11 13.6 -1.1**
comp=Z,219nm,0.6s
DOPR Dopca 79.47 355⇑*i*P **P 20 11 16.1 +1.4**
LJU Ljubljana 79.50 3 *i*P **P 20 11 15.2 +0.3**
LJU *i* 20 11 30.7
LJU *e*S **S 20 21 10.9 -2.0**
LJU SS **SS 20 26 27.9 +8.4**
UBPT Khong Chiam 79.51 281 P **P 20 11 15.7 +0.4**
comp=Z,596nm,1.8s,comp=Z,9µm
LBL Lubilhac 79.51 11 *e*P **P 20 11 15.9 +0.9**
PLOR Plostina 79.52 354⇑*i*P **P 20 11 15.9 +0.9**
ANN Anapa 79.53 347*c i*P **P 20 11 14.7 -0.3**
ANN *e**PP **pP 20 11 26.6 -0.7**
ANN *e*S **S 20 21 10.6 -2.6**
ANN *e* 20 21 27.6
ANN pmax pmax
comp=Z,193nm,1.3s
KIV Kislovodsk 79.55 343 *i*P **P 20 11 16.3 +1.0**
SNR=29
KIV Kislovodsk 79.55 343*c i*P **P 20 11 16.2 +1.0**
KIV *i* 20 11 24.7
KIV pmax pmax
comp=Z,436nm,1.0s
KIV MLR MLR
comp=Z,7µm,22.0s
KIV Kislovodsk 79.55 343 P **P 20 11 16.1 +0.9**
SNR=52
KIV Kislovodsk 79.55 343 P **P 20 11 16.1 +0.9**
SNR=52
KIV P **P 20 11 16.1 +0.9**
SNR=52
KIV Kislovodsk 79.55 343 *e*P **P 20 11 15.9 +0.6**
comp=Z,1µm,1.7s
KIV LR LR
comp=Z,4µm,21.0s
LPL La Plagne 79.57 9 *e*P **P 20 11 16.3 +0.8**
LPL pmax pmax
comp=Z,59nm,0.8s
GUN Gumba 79.59 304 *e*P **P 20 11 17.0 +0.9**
comp=Z,3µm,1.2s
ODBI Odobesti 79.59 354⇓*i*P **P 20 11 16.9 +1.6**
LPG La Plagne 79.59 9 *e*P **P 20 11 16.5 +0.8**
LPG pmax pmax
comp=Z,360nm,1.7s
SSB Saint Sauveur 79.60 10⇑*e*P **P 20 11 16.2 +0.7**
SSB Saint Sauveur 79.60 10 *e*P **P 20 11 15.9 +0.4**
SSB pmax pmax
comp=Z,213nm,1.2s
SSB MLR MLR
comp=Z,3µm,21.0s
SSB Saint Sauveur 79.60 10 *e*P **P 20 11 15.9 +0.4**
comp=Z,213nm,1.2s
SSB LR LR
comp=Z,3µm,21.0s
JAVS Javornik 79.63 3 *i*P **P 20 11 15.6 -0.1**
DEV Deva 79.66 357⇑*i*P **P 20 11 16.6 +0.9**
CAF Calviac 79.68 12 *e*P **P 20 11 15.7 -0.2**
KDM Kudat 79.69 267⇑P **P 20 11 17.4 +1.1**
GROC Groznyy 79.70 340 *e*P **P 20 11 16.5 +0.5**
GROC pmax pmax
comp=Z,343nm,1.7s
PAYG Puerto Ayora 79.70 106 *e*P **P 20 11 16.5 +0.2**
comp=Z,380nm,1.5s
PAYG LR LR
comp=Z,4µm,21.0s
KBZ Khabaz 79.73 342 P **P 20 11 17.4 +1.3**
comp=Z,263nm,0.9s,baz=15,slow=2.7,SNR=197
KBZ LR LR 20 52 19.6
comp=Z,5µm,20.5s,baz=4.5,slow=40
LBMI Labuha 79.75 254 P **P 20 11 17.5 +0.9**
GRN Grenoble 79.75 9⇑*e*P **P 20 11 17.2 +0.8**
SJCC San Jacinto, C 79.77 87 *e*P **P 20 11 16.2 -0.6**
SIM Simferopol' 79.79 349*de*P **P 20 11 17.4 +1.0**
SIM *e*S **S 20 21 18.0 +2.0**
SIM pmax pmax
comp=Z,147nm,0.8s
SIM MLR MLR
comp=N,9µm,21.0s
TRI Trieste 79.81 4 *e*P **P 20 11 16.2 -0.3**
TRI pmax pmax
comp=Z,128nm,0.9s
TRI MLR MLR
comp=Z,6µm,20.0s
TRI Trieste 79.81 4 *e*P **P 20 11 16.2 -0.3**
comp=Z,128nm,0.9s
TRI LR LR
comp=Z,6µm,20.0s
GDM Grand'Maison 79.83 9⇑*e*P **P 20 11 17.7 +0.9**
NCK Nalchik 79.83 342*c i*P **P 20 11 18.3 +1.6**
NCK pmax pmax
comp=Z,629nm,0.7s
NCK MLR MLR
comp=Z,6µm,23.0s
TIM Timisoara 79.84 358⇓*i*P **P 20 11 18.6 +1.9**
MLR Muntele Rosu 79.92 355⇑*i*P **P 20 11 18.0 +0.7**
MLR Muntele Rosu 79.92 355 *e*P **P 20 11 18.3 +1.0**
MLR pmax pmax
comp=Z,608nm,1.5s
MLR MLR MLR
comp=Z,9µm,20.0s
MLR Muntele Rosu 79.92 355 *e*P **P 20 11 18.3 +1.0**
comp=Z,608nm,1.5s
MLR LR LR
comp=Z,9µm,20.0s
OZLJ Ozalj 79.95 2 P **P 20 11 17.9 +0.6**
BZS Buzias 79.95 358⇑*i*P **P 20 11 18.1 +0.8**
GRER 79.97 354⇑*i*P **P 20 11 19.1 +1.7**
KKN Kakani 79.97 304 *e*P **P 20 11 18.8 +0.8**
comp=Z,704nm,0.6s
KNDS Knezji Dol 80.01 3 *i*P **P 20 11 18.0 +0.3**
VOIR 80.02 355⇓*i*P **P 20 11 18.7 +0.9**
BNI Bardonecchia 80.03 9 PFAKE 20 11 30.0 +12
BNI LR LR
comp=Z,3µm,20.0s
VIVF Saint-Julien-l 80.03 10 *e*P **P 20 11 17.9 +0.1**
VIVF pmax pmax
comp=Z,161nm,1.2s
TLCR 80.05 353⇑*i*P **P 20 11 18.4 +0.6**
BOJS Bojanci 80.06 2 *i*P **P 20 11 18.5 +0.6**
BOJS *e* 20 11 34.2
LOT Lotru 80.06 356⇑*i*P **P 20 11 18.0 0.0**
PKIN Phulchoki 80.10 304 *e*P **P 20 11 19.3 +0.6**
comp=Z,491nm,0.6s
SMRT St. Maarten 80.10 73 *e*P **P 20 11 17.8 -0.7**
comp=Z,179nm,1.0s
SMRT LR LR
comp=Z,5µm,20.0s
CFR Carcaliu 80.10 353⇑*i*P **P 20 11 18.5 +0.4**
GKN Gorkha 80.10 305 *e*P **P 20 11 19.3 +0.7**
comp=Z,2µm,1.2s
ARR Arges 80.11 356⇑*i*P **P 20 11 19.3 +1.1**
SISC Sisak 80.11 2 P **P 20 11 19.4 +1.2**
MYLDM Lahad Datu 80.13 265⇓P **P 20 11 20.1 +1.4**
MYLDM Lahad Datu 80.13 265 *e*P **P 20 11 19.9 +1.2**
comp=Z,372nm,1.2s
LAMP Lampang 80.16 288 P **P 20 11 19.0 +0.2**
comp=Z,117nm,1.0s,comp=Z,1µm
BANR Banloc 80.20 358⇑*i*P **P 20 11 20.2 +1.6**
DMN Daman 80.21 304 *e*P **P 20 11 20.2 +0.9**
comp=Z,497nm,0.5s
PSET Sete Cidades 80.22 34 *e*P **P 20 11 19.2 +0.3**
comp=Z,292nm,1.1s
NEY Neytrino 80.22 342⇓*i*P **P 20 11 21.7 +2.6**
NEY pmax pmax
comp=Z,19nm,0.8s
NEY MLR MLR
comp=Z,5µm,21.0s
MTUR Matau 80.23 355⇑*i*P **P 20 11 20.3 +1.4**
ISR Istrita 80.26 354⇑*i*P **P 20 11 19.6 +0.6**
CMMT Chiang Mai 80.30 289 P **P 20 11 19.4 -0.2**
comp=Z,268nm,1.6s,comp=Z,5µm
CHTO Chiang Mai 80.31 289 P **P 20 11 19.4 -0.2**
comp=Z,582nm,1.4s,comp=Z,20µm
CHTO Chiang Mai 80.31 289 *e*P **P 20 11 19.5 -0.2**
CHTO pmax pmax
comp=Z,491nm,1.5s
CHTO MLR MLR
comp=Z,5µm,20.0s
CHTO Chiang Mai 80.31 289 P **P 20 11 19.7 +0.1**
SNR=26
CHTO Chiang Mai 80.31 289 P **P 20 11 19.7 +0.1**
SNR=26
CHTO P **P 20 11 19.7 +0.1**
SNR=26
CHTO Chiang Mai 80.31 289 *e*P **P 20 11 19.5 -0.2**
comp=Z,491nm,1.5s
CHTO LR LR
comp=Z,5µm,20.0s
THN Thein Dam 80.31 314 *e*P **P 20 11 19.0 -0.4**
CMLA Cha da Macela 80.34 34 *e*P **P 20 11 19.1 -0.4**
CMLA Cha da Macela 80.34 34 PFAKE 20 11 30.0 +10
CMLA LR LR
comp=Z,4µm,19.0s
SABA Saba 80.35 73 PFAKE 20 11 30.0 +10
SABA LR LR
comp=Z,7µm,21.0s
MBDF Montbardon 80.36 9 *e*P **P 20 11 20.6 +0.9**
MBDF pmax pmax
comp=Z,110nm,0.7s
SOC Sochi 80.39 345*c i*P **P 20 11 20.2 +0.5**
SOC *e* 20 11 26.0
SOC *e**PP **pP 20 11 32.8 +0.8**
SOC *e* 20 14 22.1
SOC *e*S **S 20 21 23.4 +1.1**
SOC *e*SS **SS 20 26 33.2 +0.2**
SOC pmax pmax
comp=Z,251nm,0.8s
SOC MLR MLR
comp=Z,8µm,22.0s
BART Pico Bartolome 80.44 34 *e*P **P 20 11 20.3 +0.1**
comp=Z,381nm,1.0s
PGOR Pogoanele 80.44 354⇑*i*P **P 20 11 21.2 +1.3**
ZEI Tsey 80.46 341 *e*P **P 20 11 19.0 -1.4**
ZEI *e*S **S 20 21 24.3 +0.7**
ZEI pmax pmax
comp=Z,1µm,1.5s
ZEI pmax pmax
comp=N,562nm,1.0s
ZEI pmax pmax
comp=E,850nm,0.9s
ZEI MLR MLR
comp=Z,21µm,21.0s
ZEI MLR MLR
comp=N,6µm,16.0s
ZEI MLR MLR
comp=E,3µm,14.0s
SDKM Sandakan 80.51 266⇑P **P 20 11 20.9 +0.2**
SDNR Sundarnagar 80.58 313 *e*P **P 20 11 21.6 +0.6**
CM31 Chiang Mai Arr 80.59 289 *e*P **P 20 11 21.7 +0.6**
CMAR Chiang Mai Arr 80.59 289 P **P 20 11 21.9 +0.7**
comp=E,129nm,0.7s,baz=21,slow=5.7,SNR=529
CMAR PKKPbc **PKKPbc 20 29 59.6 +1.5**
comp=E,2.4nm,0.7s,baz=228,slow=3.7,SNR=11
CMAR PKPPKP **P'P'df 20 38 05.1 -2.7**
comp=E,0.7nm,0.8s,baz=230,slow=3.6,SNR=4.3
CMAR LR LR 20 48 54.5
comp=E,3µm,20.6s,baz=31,slow=37
CMAR Chiang Mai Arr 80.59 289 P **P 20 11 21.9 +0.7**
CMAR 20 29 59.7
CMAR pmax pmax
comp=Z,122nm,0.7s
CMAR MLR MLR
comp=Z,3µm,20.7s
SEUS St. Eustatius 80.60 73 PFAKE 20 11 30.0 +8.8
SEUS LR LR
comp=Z,7µm,21.0s
HARR Harsova 80.60 353⇑*i*P **P 20 11 21.3 +0.5**
CM01 Chiang Mai Arr 80.61 288 *e*P **P 20 11 21.7 +0.4**
GUDG Gudauri 80.67 341 P **P 20 11 23.2 +1.8**
TLB Topalu 80.70 353⇑*i*P **P 20 11 21.8 +0.5**
SULR 80.72 355⇑*i*P **P 20 11 21.4 0.0**
AMRR Amara 80.72 354⇑*i*P **P 20 11 22.1 +0.7**
ONI Oni 80.73 342 P P 20 11 29.7 +8.0
ONI Oni 80.73 342 P P 20 11 29.6 +8.0
KMSI Cibinong 80.74 258 P **P 20 11 23.7 +1.8**
comp=Z,558nm,1.1s,comp=Z,8µm
KKM Kota Kinabalu 80.75 267⇑P **P 20 11 22.9 +0.8**
KKM Kota Kinabalu 80.75 267 *e*P **P 20 11 22.5 +0.4**
comp=Z,150nm,1.1s
KKM LR LR
comp=Z,3µm,22.0s
MDVR Moldovita 80.79 358⇑*i*P **P 20 11 22.6 +0.7**
KOLN Koldanda 80.79 306 *e*P **P 20 11 23.1 +0.7**
comp=Z,516nm,0.5s
PYUN Piuthan 80.80 306 *e*P **P 20 11 23.1 +0.7**
comp=Z,1µm,0.9s
TIRR Tirgusor 80.80 353⇑*i*P **P 20 11 22.3 +0.5**
TIRR Tirgusor 80.80 353 *e*P **P 20 11 21.8 0.0**
TIRR pmax pmax
comp=Z,373nm,1.1s
TIRR MLR MLR
comp=Z,8µm,19.0s
TIRR Tirgusor 80.80 353 *e*P **P 20 11 21.8 0.0**
comp=Z,373nm,1.1s
TIRR LR LR
comp=Z,8µm,19.0s
RKT Rikitea 80.80 156 *e*P **P 20 11 24.4 +2.5**
comp=Z,207nm,1.2s
RKT Rikitea 80.80 156 *e*S **S 20 21 26.2 -0.5**
comp=Z,8µm,31.5s
RKT *e*SS **SS 20 26 42.0 +0.4**
comp=Z,3µm,29.8s
RKT *e*LR LR 20 36 35.9
comp=Z,22µm,30.5s
RKT Rikitea 80.80 156 *e*T T 21 39 41.5
comp=Z,22nm,0.3s
SMLA Simla 80.82 312 *e*P **P 20 11 22.2 0.0**
PTH Pithoragarh 80.84 309 *e*P **P 20 11 22.3 -0.3**
SRE Strehaia 80.87 357⇑*i*P **P 20 11 23.2 +1.0**
OSSF Osses 80.88 15 *e*P **P 20 11 22.5 +0.2**
BHK Bhakra 80.89 313 *e*P **P 20 11 23.0 +0.4**
BHK *e*x x 20 11 47.8
PGAV Gavieira, Arco 80.92 20⇑*e*P **P 20 11 24.0 +1.3**
comp=Z,578nm,1.6s
PGAV *e*pP **pP 20 11 36.8 +1.8**
PGAV *e*S **S 20 21 29.5 +1.3**
PGAV *e*SS **SS 20 26 46.2 +5.0**
PGAV Gavieira, Arco 80.92 20 *e*LR LR 20 38 53.4
comp=Z,5µm,22.0s
HUMR Humele 80.93 355⇓*i*P **P 20 11 22.8 +0.2**
CVDA Cernavoda 80.95 353⇑*i*P **P 20 11 24.1 +1.5**
ORDF Ordiarp 80.96 14 *e*P **P 20 11 22.7 -0.1**
NVLJ Novalja 80.99 3 P **P 20 11 23.3 +0.5**
PBKT Sadao Pong 81.00 286 P **P 20 11 23.3 0.0**
comp=Z,346nm,1.1s,comp=Z,4µm
SUKH Sukhothai 81.01 287 P **P 20 11 23.7 +0.4**
comp=Z,54nm,1.3s,comp=Z,578nm
UDBI Udbina 81.04 2 P **P 20 11 24.0 +0.7**
KBL Kabul 81.09 320 *e*P **P 20 11 23.0 -0.9**
KBL pmax pmax
comp=Z,349nm,0.9s
KBL MLR MLR
comp=Z,15µm,21.0s
KBL Kabul 81.09 320 *e*P **P 20 11 23.0 -0.9**
comp=Z,349nm,0.9s
KBL LR LR
comp=Z,15µm,21.0s
ANWB Willy Bob 81.12 72 *e*P **P 20 11 23.7 -0.2**
comp=Z,194nm,1.1s
ANWB LR LR
comp=Z,3µm,21.0s
ATE Arette 81.12 14 *e*P **P 20 11 23.5 -0.2**
LARF Larrau 81.13 14⇑*e*P **P 20 11 25.2 +1.5**
DDI Dehra Dun 81.13 311 *e*P **P 20 11 24.0 0.0**
EFOR EFORIE 81.16 353⇓*i*P **P 20 11 25.1 +1.3**
PSMA Santa Maria 81.17 34 *e*P **P 20 11 24.4 +0.5**
comp=Z,95nm,1.1s
PSMN Pico do Norte, 81.18 34 *e*P **P 20 11 24.2 +0.2**
comp=Z,316nm,1.9s
VLC Villacollemand 81.19 6 *e*P **P 20 11 24.6 +0.6**
comp=Z,221nm,1.2s
TSM Tawau 81.21 265⇓P **P 20 11 25.7 +1.3**
MVIF Mont Vial 81.22 8 *e*P **P 20 11 25.3 +1.0**
PCAB Cabril 81.22 20 *e*P **P 20 11 25.4 +1.2**
comp=Z,598nm,1.5s
PCAB *e*pP **pP 20 11 38.2 +1.7**
LUCF Luceram 81.24 8 *e*P **P 20 11 25.0 +0.7**
LABF Labassere 81.27 14 *e*P **P 20 11 24.4 -0.1**
SEAG Tbilisi Sea 81.28 341 P **P 20 11 26.1 +1.5**
TBLG Delisi 81.32 341 P **P 20 11 26.1 +1.4**
TBLG Delisi 81.32 341 P **P 20 11 26.1 +1.4**
DZM Mont Dzumac 81.37 210 LR LR 20 41 49.1
comp=Z,10µm,20.4s,baz=25,slow=31
DZM Mont Dzumac 81.37 210 *e*P **P 20 11 24.9 -0.2**
comp=Z,268nm,1.3s
DZM Mont Dzumac 81.37 210 *e*SS SS 20 26 45.2 -5.0
comp=Z,3µm,32.7s
DZM *e*LQ LQ 20 33 16.2
comp=Z,7µm,33.9s
DZM *e*LR LR 20 36 42.0
comp=Z,18µm,23.4s
DZM Mont Dzumac 81.37 210 *e*P **P 20 11 24.6 -0.5**
comp=Z,183nm,1.3s
PBRG Braganca 81.37 19⇑*e*P **P 20 11 26.1 +1.1**
comp=Z,406nm,1.7s
PBRG *e*pP **pP 20 11 38.9 +1.5**
PBRG Braganca 81.37 19 *e*PP PP 20 14 43.3 +13
PBRG *e*S S 20 21 42.4 +10
PBRG *e*SS SS 20 27 17.6 +30
REVF Revere 81.39 8 *e*P **P 20 11 25.7 +0.6**
VIEF Viey 81.42 14⇑*e*P **P 20 11 26.4 +1.1**
LEPF PUYLOUBIER 81.45 10 *e*P **P 20 11 26.6 +1.2**
DIVS Divibare 81.50 359 P **P 20 11 26.1 +0.4**
MELF Melles 81.53 13 *e*P **P 20 11 27.9 +2.0**
RESF Ens 81.54 14⇑*e*P **P 20 11 27.4 +1.4**
POLO Lamas de Olo 81.59 20⇑*e*P **P 20 11 27.5 +1.3**
comp=Z,283nm,1.5s
POLO *e*pP **pP 20 11 40.3 +1.7**
POLO Lamas de Olo 81.59 20 *e*PP PP 20 14 46.2 +14
POLO *e*S **S 20 21 33.1 -2.0**
POLO *e*SS **SS 20 26 56.8 +5.7**
PSN Preselentsi 81.59 353 *i*P **P 20 11 26.7 +0.7**
PTO Porto 81.65 20 *e*P **P 20 11 27.9 +1.5**
comp=Z,765nm,1.4s
GEYT Ailbeck 81.66 329 P **P 20 11 27.8 +1.2**
comp=Z,215nm,0.8s,baz=333,slow=5.0,SNR=333
GEYT LR LR 20 52 17.7
comp=Z,18µm,19.4s,baz=25,slow=39
LRDF Laroque-de-Fa 81.69 12⇑*e*P **P 20 11 27.9 +1.2**
PVRL Vila Real 81.70 20⇑*e*P **P 20 11 28.2 +1.4**
comp=Z,859nm,1.5s
PVRL *e*pP **pP 20 11 40.9 +1.8**
SANI Sanana 81.76 255 P **P 20 11 26.5 -0.8**
comp=Z,188nm,1.3s,comp=Z,4µm
ZIMR 81.78 355⇑*i*P **P 20 11 28.1 +1.1**
AKH Akhalkalaki 81.87 341⇑*i*P **P 20 11 29.4 +1.6**
AKH Akhalkalaki 81.87 341 P **P 20 11 29.1 +1.2**
AKH Akhalkalaki 81.87 341 P **P 20 11 29.0 +1.2**
MVO Moncorvo 81.94 19⇑*e*P **P 20 11 29.3 +1.2**
comp=Z,659nm,1.7s
MVO *e*pP **pP 20 11 41.9 +1.5**
MVO Moncorvo 81.94 19 *e*PP PP 20 14 29.8 -5.2
MVO *e*S **S 20 21 42.4 +3.7**
MVO *e*SS **SS 20 27 03.3 +7.1**
MVO *e*LQ LQ 20 33 16.3
MVO *e*LR LR 20 39 21.3
comp=Z,6µm,18.0s
MRSI Marisa 81.97 259 P **P 20 11 28.0 -0.5**
comp=Z,176nm,1.5s,comp=Z,3µm
KKR Kurukshetra 81.98 312 *e*P **P 20 11 29.0 +0.7**
KKR IAmb IAmb 20 11 30.1
comp=Z,397nm,0.6s
BGD Bogdanovka 81.99 341 P **P 20 11 30.5 +2.0**
FILF Fillols 82.07 12 *e*P **P 20 11 29.3 +0.6**
PRD Provadia 82.12 354 *i*P **P 20 11 29.7 +0.9**
NLAI Namlea 82.12 253 P **P 20 11 29.8 +0.6**
comp=Z,146nm,0.8s,comp=Z,3µm
SZH Strazhica 82.14 355 *i*P **P 20 11 28.8 -0.2**
MPEP Malo Peshtene 82.15 356 *i*P **P 20 11 28.8 -0.2**
VALF Valcebollere 82.16 12⇑*e*P **P 20 11 30.2 +0.9**
OCAC Ocana 82.18 87 *e*P **P 20 11 29.8 0.0**
SJAF Saint Jean de 82.18 12⇑*e*P **P 20 11 29.9 +0.7**
PVIS Viseu 82.20 20⇑*e*P **P 20 11 30.8 +1.4**
comp=Z,776nm,1.6s
PVIS *e*pP **pP 20 11 44.1 +2.3**
PVL Pavlikeni 82.22 355 *i*P **P 20 11 30.5 +1.1**
DBOC Borcka 82.26 343 *i*P **P 20 11 30.2 +0.5**
GDHS Morne Mazeau, 82.26 73 *e*P **P 20 11 28.4 -1.7**
comp=Z,910nm,1.4s
GDHS LR LR
comp=Z,5µm,22.0s
PLE Pljevlja 82.27 359⇑*i*P **P 20 11 30.7 +0.9**
ARTV Artvin 82.37 343 *i*P **P 20 11 31.3 +0.8**
UPM Unac-Piva 82.40 360⇑*i*P **P 20 11 30.9 +0.3**
UMPA Umpang Tak 82.47 287 P **P 20 11 32.4 +1.3**
comp=Z,189nm,1.1s,comp=Z,1µm
SRAK Srakaew 82.47 283 P **P 20 11 29.9 -1.2**
comp=Z,2µm,1.1s,comp=Z,12µm
DAGI Agillar 82.47 342 *i*P **P 20 11 32.1 +1.2**
EAK Akyaka 82.55 341 *i*P **P 20 11 33.3 +1.9**
HELC Santa Helena 82.55 90 *e*P **P 20 11 31.5 -0.5**
HELC Santa Helena 82.55 90 *e*P **P 20 11 30.6 -1.4**
comp=Z,700nm,1.6s
HELC LR LR
comp=Z,5µm,20.0s
MTE Manteigas 82.58 20⇑*e*P **P 20 11 32.8 +1.4**
comp=Z,932nm,1.6s
MTE *e*pP **pP 20 11 44.9 +1.1**
MTE Manteigas 82.58 20 *e*PP PP 20 14 41.4 +1.1
MTE *e*S **S 20 21 47.9 +2.7**
MTE *e*SS **SS 20 27 07.9 +2.2**
MTE *e*LQ LQ 20 33 34.8
MTE *e*LR LR 20 39 39.2
comp=Z,5µm,22.0s
MTE Manteigas 82.58 20 *e*P **P 20 11 32.1 +0.7**
comp=Z,529nm,1.1s
MTE LR LR
comp=Z,4µm,20.0s
DDEM Demirkent 82.68 343 *i*P **P 20 11 33.0 +1.0**
BRY Bratogost 82.70 0⇑*i*P **P 20 11 32.4 +0.3**
PCAS Casmilo, Conde 82.72 21⇑*e*P **P 20 11 33.4 +1.3**
comp=Z,1µm,1.5s
PCAS *e*pP **pP 20 11 44.3 -0.1**
PCAS Casmilo, Conde 82.72 21 *e*S **S 20 21 48.4 +1.9**
PCAS *e*SS SS 20 27 19.4 +12
IVA Berane 82.72 359⇑*i*P **P 20 11 32.9 +0.7**
LUWI Luwuk 82.74 258 P **P 20 11 31.7 -0.8**
comp=Z,453nm,1.0s,comp=Z,4µm
LUWI Luwuk 82.74 258 *e*P **P 20 11 31.1 -1.4**
comp=Z,360nm,0.9s
NKY Niksic 82.79 360⇑*i*P **P 20 11 32.9 +0.4**
NKME Niksic 82.83 360⇑*i*P **P 20 11 33.0 +0.3**
GNI Garni 82.85 340 P **P 20 11 34.9 +1.9**
GNI Garni 82.85 340*c i*P **P 20 11 34.6 +1.6**
GNI pmax pmax
comp=Z,413nm,0.8s
GNI MLR MLR
comp=Z,46µm,24.0s
GNI Garni 82.85 340 *e*P **P 20 11 33.9 +0.9**
comp=Z,227nm,0.8s
GNI LR LR
comp=Z,10µm,20.0s
DIGO Kars 82.86 341 *i*P **P 20 11 34.7 +1.6**
BRRC Barranca, Sant 82.86 88 *e*P **P 20 11 32.1 -1.1**
JMB Yambol 82.90 354 *i*P **P 20 11 33.1 +0.2**
CBRI Barrientos, No 82.90 87 *e*P **P 20 11 33.2 -0.4**
COEN Coen 82.92 234 *e*P **P 20 11 33.0 -0.3**
comp=Z,227nm,1.5s
COEN LR LR
comp=Z,4µm,22.0s
PGB Panagyurishte 82.94 356 *i*P **P 20 11 33.5 +0.3**
RTK Rohtak 82.96 312 *e*P **P 20 11 33.9 +0.5**
MACK Trabzon 82.96 344 *i*P **P 20 11 34.3 +0.9**
PVY Plav 83.00 359⇑*i*P **P 20 11 34.0 +0.4**
BHGR Bahadurgarh 83.03 311 *e*P **P 20 11 34.2 +0.4**
BHGR IAmb IAmb 20 11 35.1
comp=Z,1µm,0.2s
BOK Bokaro 83.03 302 *e*P **P 20 11 34.1 +0.1**
CEME Cevo 83.06 360⇑*i*P **P 20 11 34.0 +0.2**
SAMS Samsun-Alacam 83.08 347 *i*P **P 20 11 35.5 +1.6**
PCBR Castelo Branco 83.13 20⇑*e*P **P 20 11 35.2 +1.0**
comp=Z,569nm,1.4s
PCBR *e*pP **pP 20 11 47.9 +1.4**
AQU L'Aquila 83.14 4 *e*P **P 20 11 35.4 +1.1**
AQU pmax pmax
comp=Z,298nm,1.1s
AQU MLR MLR
comp=Z,5µm,21.0s
AQU L'Aquila 83.14 4 *e*P **P 20 11 35.4 +1.1**
comp=Z,298nm,1.1s
AQU LR LR
comp=Z,5µm,21.0s
HCY Herceg Novi 83.15 0⇑*i*P **P 20 11 34.3 0.0**
PTOM Tomar 83.15 21⇑*e*P **P 20 11 35.5 +1.2**
comp=Z,906nm,1.6s

PTOM ePP **pP** **20 11 47.4 +0.7**
PDG Podgorica 83.17 360 P **P** **20 11 34.7 +0.4**
PDG Podgorica 83.17 360⇑ iP **P** **20 11 34.9 +0.6**
TTG Podgorica 83.17 360⇑ iP **P** **20 11 34.9 +0.6**
TTG Podgorica 83.17 360 P **P** **20 11 34.7 +0.4**
TTG Podgorica 83.17 360 P **P** **20 11 34.7 +0.4**
BOYT Boyabat 83.18 348 *i* P **P** **20 11 36.5 +2.0**
ORDU Ordu-Boztepe 83.21 346 *i* P **P** **20 11 35.8 +1.2**
SDV Santo Domingo 83.21 84 *e*P **P** **20 11 34.0 -1.2**
comp=Z,296nm,1.2s
SDV LR LR
comp=Z,4µm,21.0s
GRSN GIRESUNGRSN 83.21 345 *i* P **P** **20 11 35.8 +1.1**
PAMC Pamplona, Colo 83.26 87 *e*P **P** **20 11 34.3 -1.5**
BTIN Bart¯–n 83.27 350 *i* P **P** **20 11 35.1 +0.3**
BUM Brajici-Budva 83.30 360⇑ iP **P** **20 11 35.2 +0.1**
CHBT CHBT 83.33 283 P **P** **20 11 39.4 +3.9**
comp=Z,370nm,0.8s
PLD Plovdiv 83.36 355 P **P** **20 11 35.6 +0.3**
DRME Dracevica, Mon 83.41 360⇑ iP **P** **20 11 35.8 +0.2**
HAVZ Havza 83.42 347 *i* P **P** **20 11 37.4 +1.7**
NORC Norcasia 83.44 90 *e*P **P** **20 11 35.5 -0.7**
HOMI Horasan 83.48 342 *i* P **P** **20 11 38.2 +1.9**
EDRB Edirne 83.51 354 P **P** **20 11 36.4 +0.3**
EDRB Edirne 83.51 354 P **P** **20 11 36.4 +0.3**
BARC Barichara 83.59 88 *e*P **P** **20 11 36.0 -1.1**
SKO Skopje 83.60 358 P **P** **20 11 37.5 +0.9**
SKO Skopje 83.60 358⇑ iP **P** **20 11 37.7 +1.1**
SKO Skopje 83.60 358 *e*P **P** **20 11 37.5 +0.9**
SKO Skopje 83.60 358 *e*P **P** **20 11 37.5 +0.9**
PMAFR Mafra 83.61 22⇑ *e*P **P** **20 11 38.0 +1.3**
comp=Z,1µm,1.3s
PMAFR ePP **pP** **20 11 50.1 +1.0**
PMAFR Mafra 83.61 22 *e*PP PP 20 14 51.0 +2.3
PMAFR eS **S** **20 21 58.4 +2.8**
ULC Ulcinj 83.64 360⇑ iP **P** **20 11 37.1 +0.3**
KKB Krupnik 83.66 357 *i* P **P** **20 11 37.8 +0.9**
ERBA Erbaa 83.67 346 *i* P **P** **20 11 39.1 +2.1**
KUDL Kundal 83.69 311 *e*P **P** **20 11 37.7 +0.5**
ERZM Erzurum 83.71 343 *i* P **P** **20 11 39.8 +2.3**
PMTG Montargil 83.72 21⇑ *e*P **P** **20 11 38.2 +1.0**
comp=Z,566nm,1.3s
PMTG ePP **pP** **20 11 51.0 +1.4**
PMTG Montargil 83.72 21 eS **S** **20 21 58.4 +1.7**
KOPT Kop Dagi 83.75 343 *i* P **P** **20 11 40.5 +2.7**
RZN Rozhen 83.78 355 *i* P **P** **20 11 38.2 +0.5**
KDZ Kurdzhali 83.78 355 *i* P **P** **20 11 36.9 -0.6**
KELT Kelkit 83.82 344 *i* P **P** **20 11 39.4 +1.4**
SRDT SRDT 83.83 286 P **P** **20 11 38.4 +0.3**
comp=Z,1µm,1.7s,comp=Z,14µm
PMST Lisbon--Monsan 83.84 22⇑ *e*P **P** **20 11 39.1 +1.3**
comp=Z,933nm,1.5s
PMST ePP **pP** **20 11 51.2 +1.0**
FDF Fort de France 83.86 73 *e*P **P** **20 11 37.5 -0.8**
FDF pmax pmax
comp=Z,331nm,1.3s
FDF MLR MLR
comp=Z,4µm,20.0s
FDF Fort de France 83.86 73 *e*P **P** **20 11 37.5 -0.8**
comp=Z,331nm,1.3s
FDF LR LR
comp=Z,4µm,20.0s
LIS Lisbon 83.87 22 *e*P **P** **20 11 38.5 +0.6**
LIS eS **S** **20 21 56.5 -1.7**
LIS AMS AMS 20 47 22.5
comp=Z,12µm,22.8s
MMB Musomiste 83.92 356 *i* P **P** **20 11 39.5 +1.3**
PTCN Pitcairn Islan 83.92 152 PFAKE 20 11 50.0 +12
PTCN LR LR
comp=Z,9µm,21.0s
ES19 SONSECA Array 83.93 17 *e*P **P** **20 11 38.6 +0.2**
ESDC Sonseca Array 83.94 17 P **P** **20 11 39.2 +0.8**
comp=Z,133nm,0.8s,baz=343,slow=4.8,SNR=402
ESDC PKKPbc **PKKPbc** **20 29 50.3 -0.4**
comp=Z,0.4nm,0.5s,baz=184,slow=2.9,SNR=4.9
ESDC PKPPKP **P'P'df** **20 37 57.1 -6.9**
comp=Z,1.9nm,1.0s,baz=132,slow=2.2,SNR=4.7
ESDC LR LR 20 50 51.2
comp=Z,3µm,20.2s,baz=355,slow=37
ESLA Sonseca Array 83.94 17 *e*P **P** **20 11 38.9 +0.5**
comp=Z,284nm,1.0s
ESLA LR LR
comp=Z,5µm,20.0s
CTAK Corum_Osmancik 83.96 348 *i* P **P** **20 11 40.3 +1.7**
TOLC Tolima 83.97 91 *e*P **P** **20 11 39.4 +0.2**
KAND Kocaeli-Kandir 84.00 351 *i* P **P** **20 11 39.8 +1.2**
PAB San Pablo 84.00 18 *e*P **P** **20 11 39.2 +0.4**
PAB pmax pmax
comp=Z,128nm,0.9s
PAB MLR MLR
comp=Z,5µm,20.0s
PAB San Pablo 84.00 18 *e*P **P** **20 11 39.2 +0.4**
comp=Z,128nm,0.9s
PAB LR LR
comp=Z,5µm,20.0s
PESTR Estremoz 84.04 20⇑ *e*P **P** **20 11 39.7 +0.8**
comp=Z,660nm,1.6s
PESTR ePP **pP** **20 11 52.9 +1.6**
PESTR Estremoz 84.04 20 eS **S** **20 22 01.1 +1.1**
PESTR eSS **SS** **20 27 37.9 +10**
KHET Khetri 84.05 312 *e*P **P** **20 11 38.9 -0.2**
KHET IAmb IAmb 20 11 40.1
comp=Z,238nm,1.0s
ELBA Catalca 84.09 353 *i* P **P** **20 11 40.1 +1.0**
BCAM Yenicaga 84.10 350 *i* P **P** **20 11 40.3 +1.0**
ISK Istanbul-Kandi 84.12 352 P **P** **20 11 39.3 +0.1**
ISK Istanbul-Kandi 84.12 352 P **P** **20 11 39.3 +0.1**
ISK Istanbul-Kandi 84.12 352 P **P** **20 11 39.3 +0.1**
NVR Nevrokopi 84.15 356 P **P** **20 11 40.5 +1.1**
NVR Nevrokopi 84.15 356 P **P** **20 11 40.5 +1.1**
SAHE Sakarya_HENDEK 84.18 351 *i* P **P** **20 11 40.2 +0.6**
RUSC La Rusia 84.21 88 *e*P **P** **20 11 38.8 -1.8**
RUSC La Rusia 84.21 88 *e*P **P** **20 11 39.1 -1.6**
VAY Valandovo 84.22 357 P **P** **20 11 40.6 +0.9**
VAY Valandovo 84.22 357⇑ iP **P** **20 11 40.9 +1.1**
VAY Valandovo 84.22 357 *e*P **P** **20 11 40.6 +0.9**
VAY Valandovo 84.22 357 *e*P **P** **20 11 40.6 +0.9**
TIR Tirane 84.25 359⇑ iP **P** **20 11 40.8 +0.9**
TIR Tirane 84.25 359 *e*P **P** **20 11 40.5 +0.6**
TIR pmax pmax
comp=Z,322nm,0.8s
TIR MLR MLR
comp=Z,6µm,22.0s
TIR Tirane 84.25 359 *e*P **P** **20 11 40.5 +0.6**
comp=Z,322nm,0.8s
TIR LR LR
comp=Z,6µm,22.0s
EVO Evora 84.28 21⇑ *e*P **P** **20 11 41.0 +0.9**
comp=Z,551nm,1.6s
EVO ePP **pP** **20 11 53.3 +0.8**
PCI Palu 84.30 260 P **P** **20 11 39.9 -0.6**
comp=Z,219nm,1.2s,comp=Z,3µm
COAL Corum-Alaca 84.32 348 *i* P **P** **20 11 42.5 +2.1**
ROSC El Rosal 84.34 90 P **P** **20 11 41.6 +0.4**
comp=Z,18nm,0.6s,baz=15,slow=2.6,SNR=22
ROSC LR LR 20 53 06.9
comp=Z,1µm,18.5s,baz=9.0,slow=38
ROSC El Rosal 84.34 90 *e*P **P** **20 11 41.2 0.0**
comp=Z,335nm,1.6s
KNT Kendrikon 84.37 357 P **P** **20 11 41.7 +1.2**
KNT Kendrikon 84.37 357 P **P** **20 11 41.7 +1.2**
KNT Kendrikon 84.37 357 P **P** **20 11 41.7 +1.2**
SRS Serrai 84.39 356 P **P** **20 11 41.2 +0.6**
SRS Serrai 84.39 356 *e*P **P** **20 11 41.2 +0.6**
SRS Serrai 84.39 356 *e*P **P** **20 11 41.2 +0.6**
SCR sogukcermik 84.42 348 *i* P **P** **20 11 43.3 +2.3**
BTAS Taskesti 84.44 351 *i* P **P** **20 11 42.2 +1.2**
OHR Ohrid 84.47 358⇑ iP **P** **20 11 41.6 +0.5**
KAVA Kavala 84.47 356 P **P** **20 11 41.9 +0.9**
KAVA Kavala 84.47 356 *e*P **P** **20 11 41.9 +0.9**
ALN Alexandroupoli 84.50 354 P **P** **20 11 41.5 +0.4**
ALN Alexandroupoli 84.50 354 P **P** **20 11 41.5 +0.4**
ALN Alexandroupoli 84.50 354 P **P** **20 11 41.5 +0.4**
PNCL Nicolau / Gran 84.58 21⇑ *e*P **P** **20 11 42.7 +1.1**
comp=Z,668nm,1.6s
PNCL ePP **pP** **20 11 56.0 +2.0**
PNCL Nicolau / Gran 84.58 21 *e*PP PP 20 15 03.2 +6.6
PNCL eS **S** **20 22 07.0 +1.7**
PNCL eSS SS 20 28 03.9 +29
GRG Griva 84.59 357 P **P** **20 11 42.8 +1.1**
GRG Griva 84.59 357 *e*P **P** **20 11 42.8 +1.1**
GRG Griva 84.59 357 *e*P **P** **20 11 42.8 +1.1**
REFA Refahiye_ERZ¯ 84.63 345 *i* P **P** **20 11 41.1 -1.0**

ENEZ Enez 84.65 354 P **P** **20 11 42.5 +0.6**
BNGL BINGOL 84.68 343 *i* P **P** **20 11 44.8 +2.4**
SOH Sokhos 84.69 356 P **P** **20 11 42.7 +0.5**
SOH Sokhos 84.69 356 *e*P **P** **20 11 42.7 +0.5**
SOH Sokhos 84.69 356 *e*P **P** **20 11 42.7 +0.5**
FNA Florina 84.79 358 P **P** **20 11 43.0 +0.3**
FNA Florina 84.79 358 P **P** **20 11 43.0 +0.3**
FNA Florina 84.79 358 P **P** **20 11 43.0 +0.3**
PBEJ Beja 84.80 21⇑ *e*P **P** **20 11 43.6 +0.9**
comp=Z,357nm,1.7s
PBEJ ePP **pP** **20 11 56.8 +1.7**
KEMA Kemaliye 84.80 345 *i* P **P** **20 11 44.4 +1.5**
PBAR Barrancos 84.82 20⇑ *e*P **P** **20 11 43.8 +1.0**
comp=Z,2µm,1.6s
PBAR ePP **pP** **20 11 55.9 +0.7**
PBAR Barrancos 84.82 20 *e*PP PP 20 15 01.9 +3.3
PBAR eS **S** **20 22 10.0 +2.3**
PBAR eSS SS 20 27 56.1 +17
CHIC Chingaza 84.85 89 *e*P **P** **20 11 43.4 -0.4**
BTM Bintulu 84.86 268 ⇑P **P** **20 11 44.5 +1.1**
RAO Raoul Island 84.89 195 PFAKE 20 11 50.0 +7.0
RAO LR LR
comp=Z,6µm,22.0s
MESJ Messejana 84.91 21 *e*P **P** **20 11 43.8 +0.6**
MESJ eS **S** **20 22 03.2 -5.4**
MESJ AMS AMS 20 48 17.5
comp=Z,8µm,24.2s
MESJ Messejana 84.91 21⇑ *e*P **P** **20 11 44.1 +0.8**
comp=Z,263nm,2.2s
MESJ ePP **pP** **20 11 55.7 0.0**
CUKAN kangal_SIVAS 84.91 345 *i* P **P** **20 11 45.5 +2.0**
PRAC Prado 84.93 91 *e*P **P** **20 11 42.8 -0.9**
PRAC Prado 84.93 91 *e*P **P** **20 11 42.5 -1.2**
comp=Z,274nm,1.0s
HORT Hortiatis 84.93 357 P **P** **20 11 43.4 0.0**
HORT Hortiatis 84.93 357 P **P** **20 11 43.4 0.0**
SMTH Samothraki Isl 84.95 355 P **P** **20 11 43.3 -0.2**
SMTH Samothraki Isl 84.95 355 *e*P **P** **20 11 43.3 -0.2**
ANTO Ankara 84.96 349 *e*P **P** **20 11 44.6 +1.0**
ANTO pmax pmax
comp=Z,749nm,1.4s
ANTO MLR MLR
comp=Z,6µm,22.0s
ANTO Ankara 84.96 349 *e*P **P** **20 11 44.6 +1.0**
comp=Z,749nm,1.4s
ANTO LR LR
comp=Z,6µm,22.0s
CUSAR Sarkisla-SIVAS 84.98 346 *i* P **P** **20 11 45.0 +1.2**
BR231 Keskin MP Arra 84.99 349 *e*P **P** **20 11 44.8 +1.0**
SVB Belmont 84.99 74 *e*P **P** **20 11 42.4 -1.6**
comp=Z,179nm,0.8s
SVB LR LR
comp=Z,7µm,20.0s
BR101 Keskin Array S 85.00 348 *e*P **P** **20 11 44.8 +0.8**
BR101 *e*PKKPbc **PKKPbc** **20 29 48.2 -0.2**
BR131 Keskin Array S 85.00 348 *e*P **P** **20 11 44.5 +0.5**
BRTR Keskin Array B 85.00 348 P **P** **20 11 44.8 +0.8**
comp=Z,153nm,0.7s,baz=34,slow=2.6,SNR=472
BRTR PKKPbc **PKKPbc** **20 29 48.2 -0.2**
comp=Z,2.2nm,0.8s,baz=180,slow=6.0,SNR=10
BRTR PKPPKP **P'P'df** **20 37 54.5 -7.6**
comp=Z,1.2nm,0.8s,baz=182,slow=4.4,SNR=6.1
BRTR LR LR 20 55 11.9
comp=Z,4µm,19.5s,baz=22,slow=40
CDAG Cicekdag 85.02 348 *i* P **P** **20 11 45.1 +1.1**
CUALT Altinyayla-SIV 85.05 346 *i* P **P** **20 11 46.0 +1.9**
PTEO Sao Teotonio 85.08 22⇑ *e*P **P** **20 11 45.1 +1.0**
comp=Z,478nm,1.7s
PTEO ePP **pP** **20 11 57.2 +0.6**
PLG Polygyros 85.14 356 P **P** **20 11 44.5 +0.1**
PLG Polygyros 85.14 356 P **P** **20 11 44.5 +0.1**
PLG Polygyros 85.14 356 P **P** **20 11 44.5 +0.1**
PCVE Castro Verde 85.14 21⇑ *e*P **P** **20 11 45.4 +0.9**
comp=Z,396nm,1.7s
PCVE ePP **pP** **20 11 57.9 +1.0**
PCVE Castro Verde 85.14 21 eS **S** **20 22 13.3 +2.4**
PCVE eSS SS 20 28 01.9 +18
OUR Ouranopolis 85.16 356 P **P** **20 11 44.8 +0.3**
OUR Ouranopolis 85.16 356 *e*P **P** **20 11 44.8 +0.3**
OUR Ouranopolis 85.16 356 *e*P **P** **20 11 44.8 +0.3**
KTI Kastanea 85.16 357 P **P** **20 11 45.3 +0.6**
NEST Nestorio 85.16 358 P **P** **20 11 45.1 +0.5**
BORA Eskisehir 85.18 351 *i* P **P** **20 11 45.5 +0.8**
GADA Gvkgeada 85.21 354 P **P** **20 11 44.8 +0.1**
GADA Gvkgeada 85.21 354 *e*P **P** **20 11 44.8 +0.1**
BBAL Bala 85.24 349 *i* P **P** **20 11 46.0 +0.9**
KZN Kozani 85.26 358 P **P** **20 11 45.3 +0.2**
KZN Kozani 85.26 358 P **P** **20 11 45.3 +0.2**
KZN Kozani 85.26 358 P **P** **20 11 45.3 +0.2**
MORF Marmelete 85.33 22 *e*P **P** **20 11 46.0 +0.6**
MORF eS **S** **20 22 06.0 -6.9**
MORF AMS AMS 20 48 15.9
comp=Z,13µm,24.1s
MORF Marmelete 85.33 22⇑ *e*P **P** **20 11 46.2 +0.7**
comp=Z,429nm,1.7s
MORF *e*pP **pP** **20 11 58.4 +0.5**
MORF Marmelete 85.33 22 *e*S **S** **20 22 17.7 +4.8**
PENT Pentalofos 85.38 358 P **P** **20 11 46.2 +0.5**
PVAQ Vaqueiros 85.43 21⇑ *e*P **P** **20 11 46.8 +0.9**
comp=Z,382nm,2.1s
PVAQ *e*pP **pP** **20 11 59.5 +1.2**
PVAQ Vaqueiros 85.43 21 *e*PP PP 20 14 52.1 -11
PVAQ eS **S** **20 22 15.3 +1.5**
PVAQ eSS **SS** **20 27 55.0 +7.2**
PVAQ eLQ LQ 20 34 24.9
PVAQ eLR LR 20 40 13.2
comp=Z,6µm,22.0s
LIT Litokhoron 85.44 357 P **P** **20 11 46.1 +0.1**
LIT Litokhoron 85.44 357 *e*P **P** **20 11 46.1 +0.1**
LIT Litokhoron 85.44 357 *e*P **P** **20 11 46.1 +0.1**
PFVI Vila Bisbo 85.46 22 *e*P **P** **20 11 46.8 +0.8**
comp=Z,468nm,1.5s
PFVI Vila Bisbo 85.46 22 *e*PP PP 20 15 12.4 +8.7
PFVI eS **S** **20 22 16.3 +2.3**
PFVI Vila Bisbo 85.46 22 *e*P **P** **20 11 46.2 +0.1**
comp=Z,253nm,1.1s
PFVI LR LR
comp=Z,14µm,22.0s
CMBC Cumbal 85.47 95 *e*P **P** **20 11 45.6 -1.3**
ESKT Eskisehir 85.50 351 *i* P **P** **20 11 47.2 +0.9**
LIA Limnos Island 85.54 355 P **P** **20 11 46.9 +0.5**
LIA Limnos Island 85.54 355 P **P** **20 11 46.9 +0.5**
PBDV Barranco-do-Ve 85.54 21⇑ *e*P **P** **20 11 47.7 +1.2**
comp=Z,511nm,1.8s
PBDV *e*pP **pP** **20 12 00.2 +1.3**
PBDV Barranco-do-Ve 85.54 21 eS **S** **20 22 18.0 +3.1**
PBDV eSS SS 20 28 18.4 +29
BOZC Bozcaada 85.55 354 *i* P **P** **20 11 46.6 +0.2**
HAKT HAKKARI 85.56 340 *i* P **P** **20 11 48.4 +1.5**
CUC Castrocucco 85.57 2 *e*P **P** **20 11 45.8 -0.8**
comp=Z,398nm,1.3s
CUC LR LR
comp=Z,2µm,21.0s
PAIG Paliouri 85.58 356 P **P** **20 11 46.3 -0.3**
PAIG Paliouri 85.58 356 *e*P **P** **20 11 46.3 -0.3**
PAIG Paliouri 85.58 356 *e*P **P** **20 11 46.3 -0.3**
KPRO Kipourio 85.62 358 P **P** **20 11 47.2 +0.3**
KKUL Konya-Kulu 85.63 349 *i* P **P** **20 11 48.4 +1.4**
OTAV Otavalo 85.68 96 *e*P **P** **20 11 47.8 -0.2**
comp=Z,364nm,1.8s
OTAV LR LR
comp=Z,2µm,22.0s
BTMN Batman 85.69 342 *i* P **P** **20 11 49.2 +1.9**
GRGR Grenville 85.69 75 PFAKE 20 12 00.0 +12
GRGR LR LR
comp=Z,5µm,20.0s
VSL Villasalto 85.76 7 *e*P **P** **20 11 47.1 -0.4**
comp=Z,301nm,0.9s
VSL LR LR
comp=Z,4µm,20.0s
DIYA Diyarbakir 85.85 343 *i* P **P** **20 11 50.0 +1.9**
KEK Kerkira 85.88 359 P **P** **20 11 48.8 +0.7**
KEK Kerkira 85.88 359 P **P** **20 11 48.8 +0.7**
JAN Janina 85.92 358 P **P** **20 11 49.4 +1.0**
JAN Janina 85.92 358 P **P** **20 11 49.4 +1.0**
JAN Janina 85.92 358 P **P** **20 11 49.4 +1.0**
SBUM Sibu 85.97 269 ⇓P **P** **20 11 50.2 +1.3**
SBUM Sibu 85.97 269 *e*P **P** **20 11 49.5 +0.6**
comp=Z,134nm,1.1s
SBUM LR LR
comp=Z,3µm,22.0s
SGD Sagiada 85.98 359 P **P** **20 11 49.2 +0.6**
THL Klokotos Trika 85.99 357 P **P** **20 11 48.4 -0.2**

BWNR Bhubaneshwar 86.01 300 *e*P **P** **20 11 49.5 +0.5**
BWNR IAmb IAmb 20 11 50.6
comp=Z,272nm,0.9s
BBGH Gun Hill 86.04 73 PFAKE 20 12 00.0 +11
BBGH LR LR
comp=Z,10µm,22.0s
AYVA Ayvalik 86.04 354 *i* P **P** **20 11 49.5 +0.7**
AKSY AKSARAY - Alti 86.05 348 *i* P **P** **20 11 50.6 +1.5**
GDZ Gediz 86.05 352 *i* P **P** **20 11 49.5 +0.4**
IGT Igoumenitsa 86.06 359 P **P** **20 11 49.4 +0.4**
IGT Igoumenitsa 86.06 359 *e*P **P** **20 11 49.4 +0.4**
IGT Igoumenitsa 86.06 359 *e*P **P** **20 11 49.4 +0.4**
TTSI Tana Toraja 86.06 259 P **P** **20 11 49.6 +0.4**
comp=Z,139nm,1.6s,comp=Z,3µm
FYTO Fytoko, Volos 86.12 357 P **P** **20 11 49.1 -0.2**
FYTO Fytoko, Volos 86.12 357 *e*P **P** **20 11 49.1 -0.2**
PRK Paraskevi 86.13 354 P **P** **20 11 49.3 0.0**
PRK Paraskevi 86.13 354 P **P** **20 11 49.3 0.0**
PRK Paraskevi 86.13 354 P **P** **20 11 49.3 0.0**
XOR Xorichti 86.15 356 P **P** **20 11 49.3 -0.2**
XOR Xorichti 86.15 356 P **P** **20 11 49.3 -0.2**
DEMI Demirci 86.16 352 *i* P **P** **20 11 49.8 +0.2**
SIGR SIGRI 86.19 354 P **P** **20 11 49.6 0.0**
SIGR SIGRI 86.19 354 *e*P **P** **20 11 49.6 0.0**
NEO Neokhori 86.21 356 P **P** **20 11 49.6 -0.2**
NEO Neokhori 86.21 356 P **P** **20 11 49.6 -0.2**
BOLV Bolvadin 86.28 350 *i* P **P** **20 11 51.3 +1.0**
AOS Alonnisos 86.32 356 P **P** **20 11 50.0 -0.3**
AOS Alonnisos 86.32 356 *e*P **P** **20 11 50.0 -0.3**
MARD Mardin 86.33 343 *i* P **P** **20 11 52.2 +1.6**
SKIA Skiathos 86.34 356 P **P** **20 11 50.2 -0.2**
KDHN Kadinhani 86.36 349 *i* P **P** **20 11 51.1 +0.5**
TIP Timpagrande 86.41 1 P **P** **20 11 51.2 +0.4**
TIP Timpagrande 86.41 1 *e*P **P** **20 11 51.1 +0.4**
comp=Z,443nm,1.1s
TIP LR LR
comp=Z,6µm,20.0s
DSL Palaion Diasel 86.44 358 P **P** **20 11 51.6 +0.7**
DSL Palaion Diasel 86.44 358 *e*P **P** **20 11 51.6 +0.7**
AGG Agios Georgios 86.52 357 P **P** **20 11 50.7 -0.6**
AGG Agios Georgios 86.52 357 *e*P **P** **20 11 50.7 -0.6**
AGG pmax pmax
comp=Z,632nm,1.0s
AGG MLR MLR
comp=Z,12µm,20.0s
AGG Agios Georgios 86.52 357 *e*P **P** **20 11 50.6 -0.6**
comp=Z,632nm,1.0s
AGG LR LR
comp=Z,12µm,20.0s
ATAB Bozova 86.59 344 *i* P **P** **20 11 54.0 +2.4**
SMIA Simia 86.64 356 P **P** **20 11 51.5 -0.4**
EVR Evrytania 86.64 358 P **P** **20 11 52.5 +0.5**
EVR Evrytania 86.64 358 P **P** **20 11 52.5 +0.5**
KULA Kula-Manisa 86.69 352 P **P** **20 11 52.6 +0.4**
KULA Kula-Manisa 86.69 352 P **P** **20 11 52.6 +0.4**
MANT Manisa 86.72 352 *i* P **P** **20 11 52.2 -0.4**
ANDN Andirin 86.77 346 *i* P **P** **20 11 54.2 +1.6**
GZT Gaziantep 86.81 345 *i* P **P** **20 11 54.7 +1.8**
ATAL Atalanti 86.83 357 P **P** **20 11 52.1 -0.7**
ATAL Atalanti 86.83 357 *e*P **P** **20 11 52.1 -0.7**
LKR Lokris 86.87 357 P **P** **20 11 52.3 -0.7**
LKR Lokris 86.87 357 P **P** **20 11 52.3 -0.7**
CTA Charters Tower 86.92 228 LR LR 20 44 37.8
comp=Z,2µm,21.7s,baz=30,slow=31
CTAO Charters Tower 86.92 228 *e*P **P** **20 11 53.9 +0.6**
CTAO pmax pmax
comp=Z,217nm,1.3s
CTAO MLR MLR
comp=Z,3µm,21.0s
CTAO Charters Tower 86.92 228 *e*P **P** **20 11 53.9 +0.6**
comp=Z,217nm,1.3s
CTAO LR LR
comp=Z,3µm,21.0s
PVO Paravola 86.95 358 P **P** **20 11 54.0 +0.6**
ANX Ano Chora 86.96 357 P **P** **20 11 53.9 +0.3**
PDO Prodromos 86.97 358 P **P** **20 11 54.0 +0.5**
CHOS Chios island 86.99 354 P **P** **20 11 53.8 +0.1**
CHOS Chios island 86.99 354 P **P** **20 11 53.8 +0.1**
EREA Eretria 87.07 356 P **P** **20 11 53.6 -0.4**
KMER Konya-Meram 87.08 349 *i* P **P** **20 11 55.0 +0.8**
DSF Desfina 87.13 357 P **P** **20 11 53.5 -0.8**
DSF Desfina 87.13 357 *e*P **P** **20 11 53.5 -0.8**
SERG Sergoula 87.14 357 P **P** **20 11 53.8 -0.5**
KALE Kalithea 87.16 357 P **P** **20 11 54.4 -0.1**
KALE Kalithea 87.16 357 *e*P **P** **20 11 54.4 -0.1**
MTKI Muara Teweh, K 87.17 264 P **P** **20 11 55.7 +1.0**
CEL Celeste 87.31 2 *e*P **P** **20 11 53.2 -1.9**
comp=Z,203nm,0.8s
CEL LR LR
comp=Z,3µm,20.0s
LAKA Lakka 87.31 357 P **P** **20 11 55.7 +0.5**
LAKA Lakka 87.31 357 *e*P **P** **20 11 55.7 +0.5**
SFNV Sufian 87.32 343 *i* P **P** **20 11 50.7 -4.7**
VILL Villia 87.35 356 P **P** **20 11 54.6 -0.8**
AXS Araxos 87.37 358 P **P** **20 11 55.9 +0.5**
VLS Valsamata 87.41 358 P **P** **20 11 55.9 +0.3**
VLS Valsamata 87.41 358 P **P** **20 11 55.9 +0.3**
VLS Valsamata 87.41 358 P **P** **20 11 55.9 +0.3**
PTL Penteli 87.44 356 P **P** **20 11 55.2 -0.6**
PTL Penteli 87.44 356 *e*P **P** **20 11 55.2 -0.6**
PMOZ Porto Moniz, M 87.46 30⇑ *e*P **P** **20 11 56.8 +0.8**
comp=Z,338nm,1.4s
PMOZ Porto Moniz, M 87.46 30 *e*PP PP 20 15 27.9 +7.8
PMOZ eS **S** **20 22 39.6 +5.8**
PMOZ Porto Moniz, M 87.46 30 eLR LR 20 42 39.0
comp=Z,3µm,22.0s
KUZU Kuzuini 87.46 345 *i* P **P** **20 11 57.1 +1.1**
KFL Anninata 87.47 358 P **P** **20 11 55.1 -0.8**
PMPS Porto Santo 87.48 29 *e*P **P** **20 11 57.1 +1.1**
comp=Z,351nm,1.5s
THAL Thalero 87.50 357 P **P** **20 11 55.4 -0.6**
LTK Loutraki 87.50 357 P **P** **20 11 55.1 -1.0**
LTK Loutraki 87.50 357 *e*P **P** **20 11 55.1 -1.0**
KLV Kalavryta, Ach 87.50 357 P **P** **20 11 56.4 +0.3**
KLV Kalavryta, Ach 87.50 357 *e*P **P** **20 11 56.4 +0.3**
RLS Riolos of Patr 87.51 358 P **P** **20 11 56.7 +0.7**
RLS Riolos of Patr 87.51 358 P **P** **20 11 56.7 +0.7**
BHPL Bhopal 87.52 308 *e*P **P** **20 11 56.7 +0.2**
ATHU Athens Univers 87.53 356 P **P** **20 11 55.2 -1.0**
ATHU Athens Univers 87.53 356 *e*P **P** **20 11 55.2 -1.0**
GUR Goura 87.61 357 P **P** **20 11 56.7 0.0**
GUR Goura 87.61 357 *e*P **P** **20 11 56.7 0.0**
DRO Drossia 87.61 358 P **P** **20 11 57.3 +0.7**
SMG Samos 87.62 354 P **P** **20 11 56.3 -0.3**
SMG Samos 87.62 354 P **P** **20 11 56.3 -0.3**
PMAR Madeira 87.63 29 *e*P **P** **20 11 58.6 +1.6**
comp=Z,593nm,1.3s
VLY Voula,Athens 87.64 356 P **P** **20 11 55.5 -1.2**
VLY Voula,Athens 87.64 356 *e*P **P** **20 11 55.5 -1.2**
KAPI Kappang 87.70 258 LR LR 20 46 54.3
comp=Z,1µm,21.9s,baz=55,slow=33
KAPI Kappang 87.70 258 *e*P **P** **20 11 57.5 +0.2**
comp=Z,246nm,1.3s
FUL Funchal 87.71 29 *e*P **P** **20 11 58.2 +1.1**
comp=Z,540nm,1.4s
SURA Surathani 87.77 283 P **P** **20 11 58.7 +1.1**
comp=Z,348nm,0.8s,comp=Z,8µm
MZRK Al-Mazaregh 87.81 342 *i* P **P** **20 11 53.5 -4.1**
KSM Kuching 87.87 270 ⇑P **P** **20 11 59.2 +1.1**
KSM Kuching 87.87 270 *e*P **P** **20 11 58.1 0.0**
comp=Z,67nm,0.9s
KSM LR LR
comp=Z,2µm,22.0s
SLMH Al Salmeh 87.88 345 *i* P P 20 11 52.0 -5.9
ZKS Zakynthos 87.88 358 P **P** **20 11 57.6 -0.3**
GOLH Golhisar 87.88 351 *i* P **P** **20 11 59.3 +1.3**
MTN Manton Dam 87.95 244 *e*P **P** **20 11 58.2 -0.1**
comp=Z,191nm,1.2s
MTN LR LR
comp=Z,3µm,20.0s
DID Didima 88.01 356 P **P** **20 11 57.1 -1.4**
DID Didima 88.01 356 *e*P **P** **20 11 57.1 -1.4**
KORT Korkueli 88.05 351 *i* P **P** **20 11 59.4 +0.5**
KSRV Kasrt alli 88.05 344 *i* P **P** **20 11 57.5 -1.2**
YER Yerkesik 88.09 352 P **P** **20 11 58.8 -0.1**
YER Yerkesik 88.09 352 *e*P **P** **20 11 58.8 -0.1**
YER Yerkesik 88.09 352 *e*P **P** **20 11 58.8 -0.1**
EBNR Beni Rached 88.11 14 P **P** **20 12 01.8 +2.8**
ERMK Ermenek 88.13 349 *i* P **P** **20 12 00.2 +0.9**
VLX Vlachokerasia 88.17 357 P **P** **20 11 58.7 -0.7**
VLX Vlachokerasia 88.17 357 *e*P **P** **20 11 58.7 -0.7**
DGPR DIGLIPUR 88.20 290 *e*P **P** **20 11 58.2 -1.4**

BDRM **Kayabasi** 88.22 353 *i* P **P** 20 11 59.7 +0.2
BODT **Bodrum** 88.23 353 P **P** 20 11 58.7 -0.9
BODT **Bodrum** 88.23 353 *eP* P **P** 20 11 58.7 -0.9
APE **Apeiranthos** 88.34 355 *d* *iP* **P** 20 12 00.7 +0.6
APE pmax pmax
comp=Z,67nm,1.0s
EANR **'Ain N'Sour** 88.38 14 P **P** 20 12 00.0 -0.4
EMHD **Djebel Mahouad** 88.39 13 P **P** 20 12 02.8 +2.3
CHLP **Challavanipeta** 88.39 300 *eP* **P** 20 12 00.5 -0.1
CHLP IAmb IAmb 20 12 04.5
comp=Z,223nm,1.3s
CHLP *es*P **sP** 20 12 16.4 -1.2
SURT **Suratani** 88.41 283 P **P** 20 12 01.8 +1.1
comp=Z,128nm,1.8s,comp=Z,3µm
FETY **Fethiye** 88.52 352 P **P** 20 11 59.9 -1.0
FETY **Fethiye** 88.52 352 *eP* **P** 20 11 59.9 -1.0
NGP **Nagpur** 88.57 306 *eP* **P** 20 12 00.6 -0.8
GAZI **Gazipasa** 88.60 349 *i* P **P** 20 12 01.6 +0.3
PYL **PYLOS** 88.66 358 P **P** 20 12 00.8 -0.8
PYL **PYLOS** 88.66 358 *eP* **P** 20 12 00.8 -0.8
KRAB **Krabi** 88.78 282 P **P** 20 12 03.3 +0.9
comp=Z,420nm,1.0s,comp=Z,3µm
VLI **Veliai** 88.80 357 P **P** 20 12 01.2 -1.0
VLI **Veliai** 88.80 357 *eP* **P** 20 12 01.2 -1.0
TRTT **Trang** 88.82 282 P **P** 20 12 03.4 +0.8
comp=Z,358nm,1.3s,comp=Z,5µm
SKLT **Songkhla** 88.83 281 P **P** 20 12 03.9 +1.3
comp=Z,323nm,1.3s,comp=Z,6µm
AKAS **Kas** 88.87 351 *i* P **P** 20 12 03.1 +0.4
KTGM **Kuala Trenggan** 88.89 278 ⇓P **P** 20 12 04.1 +1.2
RTC **Rabat Centre** 88.90 21 PFAKE 20 12 10.0 +7.3
RTC LR LR
comp=Z,16µm,22.0s
KSL **Kastellorizon** 88.96 351 P **P** 20 12 02.9 -0.1
KSL **Kastellorizon** 88.96 351 *eP* **P** 20 12 02.9 -0.1
ETRT **Tiaret** 88.96 14 P **P** 20 12 03.0 -0.2
ARG **Arkhangelos** 89.01 352 P **P** 20 12 01.9 -1.3
ARG **Arkhangelos** 89.01 352 P **P** 20 12 01.9 -1.3
ARG **Arkhangelos** 89.01 352 P **P** 20 12 01.9 -1.3
SANT **Santorini** 89.03 355 *eP* **P** 20 12 00.9 -2.5
comp=Z,603nm,1.6s
SANT LR LR
comp=Z,4µm,22.0s
SOEI **Soe** 89.07 252 P **P** 20 12 05.3 +1.5
SOEI **Soe** 89.07 252 *eP* **P** 20 12 03.8 0.0
comp=Z,130nm,1.0s
SOEI LR LR
comp=Z,2µm,21.0s
KYTH **Kithira** 89.25 356 P **P** 20 12 03.2 -1.2
KYTH **Kithira** 89.25 356 *eP* **P** 20 12 03.2 -1.2
MMRI **Maumere** 89.27 254 *eP* **P** 20 12 04.1 -0.6
comp=Z,86nm,1.0s
VIS **Vishakhapatnam** 89.42 301 *eP* **P** 20 12 04.6 -0.8
KEST **Kesra** 89.50 8 P **P** 20 12 06.2 +0.5
comp=Z,59nm,1.0s,baz=291,slow=1.7,SNR=40
KEST LR LR 20 56 55.7
comp=Z,1µm,18.7s,baz=309,slow=39
KEST **Kesra** 89.50 8 *eP* **P** 20 12 04.5 -1.2
comp=Z,127nm,0.9s
PKDT **Phuket** 89.54 283 P **P** 20 12 07.4 +1.4
comp=Z,283nm,1.9s,comp=Z,6µm
PBA **Port Blair** 89.56 290 *eP* P 20 12 05.6 -0.5
ANKY **Antikythira Is** 89.64 356 P **P** 20 12 05.2 -1.0
ANKY **Antikythira Is** 89.64 356 *eP* **P** 20 12 05.2 -1.0
EIDS **Eidsvold** 89.65 222 *eP* **P** 20 12 06.7 +0.6
comp=Z,198nm,1.7s
EIDS LR LR
comp=Z,9µm,20.0s
WDD **Wied Dalam** 89.68 3 *eP* **P** 20 12 05.2 -1.2
comp=Z,236nm,0.9s
WDD LR LR
comp=Z,2µm,19.0s
CSS **Mathiatis** 89.74 348 P **P** 20 12 06.6 -0.1
CSS **Mathiatis** 89.74 348 *eP* **P** 20 12 06.3 -0.4
comp=Z,74nm,1.2s
CSS LR LR
comp=Z,900nm,21.0s
KARP **Karpathos** 89.75 353 *eP* **P** 20 12 05.5 -1.2
comp=Z,130nm,1.2s
KARP LR LR
comp=Z,2µm,22.0s
ROOS **tl_alroos** 89.98 345 *i* P **P** 20 12 04.6 -3.3
IMMV **Iera Moni Meta** 90.02 356 P **P** 20 12 07.1 -0.8
VAM **Vamos** 90.06 355 P **P** 20 12 07.5 -0.6
VAM **Vamos** 90.06 355 P **P** 20 12 07.5 -0.6
VAM **Vamos** 90.06 355 P **P** 20 12 07.5 -0.6
IDI **Anoyia** 90.14 355 P **P** 20 12 06.1 -2.5
IDI **Anoyia** 90.14 355 *eP* **P** 20 12 07.5 -1.2
comp=Z,413nm,1.5s
IDI LR LR
comp=Z,2µm,22.0s
LAST **Lasithi** 90.24 354 P **P** 20 12 07.4 -1.7
LAST **Lasithi** 90.24 354 *eP* **P** 20 12 07.9 -1.2
comp=Z,581nm,1.2s
MARH **Ras Al Marh** 90.24 345 *i* P P 20 12 04.2 -5.2
KULM **Kulim** 90.34 280 ⇓P **P** 20 12 10.9 +1.2
KULM **Kulim** 90.34 280 *eP* **P** 20 12 09.8 +0.1
comp=Z,60nm,0.9s
KULM LR LR
comp=Z,2µm,20.0s
SIVA **Sivas** 90.42 355 P **P** 20 12 09.8 0.0
SIVA **Sivas** 90.42 355 P **P** 20 12 09.8 0.0
RPR **Rampur** 90.42 304 *eP* **P** 20 12 10.9 +0.9
RPR IAmb IAmb 20 12 13.6
comp=Z,252nm,1.5s
RPR *ep*P **pP** 20 12 21.6 -0.9
RPR *es*P **sP** 20 12 25.6 -1.6
PBKI **Pangkalan Bun** 90.46 266 P **P** 20 12 10.5 +0.3
GVD **Gavdhos** 90.63 356 P **P** 20 12 09.7 -1.1
GVD **Gavdhos** 90.63 356 *eP* **P** 20 12 09.7 -1.1
PVM **Polavaram** 90.67 302 *eP* **P** 20 12 11.4 +0.2
PVM IAmb IAmb 20 12 15.1
comp=Z,194nm,0.8s
PVM *es*P **sP** 20 12 26.9 -1.4
IPM **Ipoh** 90.79 279 ⇑P **P** 20 12 12.7 +0.8
IPM **Ipoh** 90.79 279 *eP* **P** 20 12 11.6 -0.2
comp=Z,58nm,0.9s
IPM LR LR
comp=Z,2µm,18.0s
SRSP **Sriramsagar** 90.82 305 *eP* **P** 20 12 11.1 -0.8
SRSP IAmb IAmb 20 12 14.8
comp=Z,56nm,0.8s
SRSP *ep*P **pP** 20 12 22.3 -2.1
SRSP *es*P **sP** 20 12 26.8 -2.2
BHJ **Bhuj** 90.89 314 *eP* **P** 20 12 10.9 -1.3
BHJ IAmb IAmb 20 12 13.9
comp=Z,61nm,0.9s
TOTH **TOTAH** 90.90 345 *i* P **P** 20 12 09.9 -2.3
ZALF **Zalf** 91.20 344 *i* P **P** 20 12 12.0 -1.6
MYKOM **Kota Tinggi** 91.35 275 ⇑P **P** 20 12 15.6 +1.2
MYKOM **Kota Tinggi** 91.35 275 PFAKE 20 12 30.0 +16
MYKOM LR LR
comp=Z,2µm,20.0s
FRIM **Kepong** 91.45 278 ⇑P **P** 20 12 15.4 +0.5
KGM **Kluang** 91.47 276 ⇑P **P** 20 12 16.2 +1.2
SALA **Sala** 91.50 345 *i* P **P** 20 12 14.2 -0.9
TCHB **Talchebab** 91.65 345 *i* P **P** 20 12 13.7 -1.9
HYBB **Hyderabad (bro** 92.02 304 *eP* **P** 20 12 17.1 -0.4
HYBB IAmb IAmb 20 12 20.8
comp=Z,179nm,1.2s
HYBB *ep*P **pP** 20 12 29.2 -0.8
HYBB *es*P **sP** 20 12 33.1 -1.6
HYB **Hyderabad** 92.02 304 ⇑*i*P **P** 20 12 18.5 +1.0
HYB *ep*P **pP** 20 12 30.0 0.0
HYB *eS* **S** 20 23 10.0 -6.4
HYB **Hyderabad** 92.02 304 *eP* **P** 20 12 17.3 -0.2
HYB IAmb IAmb 20 12 20.5
comp=Z,230nm,1.2s
WB0 **Warramunga Arr** 92.14 238 PFAKE 20 12 30.0 +12
WB0 LR LR
comp=Z,2µm,20.0s
WB8 **Warramunga Arr** 92.18 238 PFAKE 20 12 30.0 +12
WB8 LR LR
comp=Z,1µm,20.0s
OUZ **Omahuta** 92.19 200 *eP* **P** 20 12 20.5 +2.9
comp=Z,101nm,1.6s
OUZ LR LR
comp=Z,9µm,21.0s
WR0 **Warramunga Arr** 92.23 238 PFAKE 20 12 30.0 +12
WR0 LR LR
comp=Z,3µm,22.0s
WR9 **Warramunga Arr** 92.24 238 PFAKE 20 12 30.0 +12
WR9 LR LR
comp=Z,2µm,22.0s
WR8 **Warramunga Arr** 92.24 238 PFAKE 20 12 30.0 +12
WR8 LR LR
comp=Z,2µm,20.0s
WR7 **Warramunga Arr** 92.25 238 PFAKE 20 12 30.0 +12
WR7 LR LR
comp=Z,2µm,21.0s
WR6 **Warramunga Arr** 92.27 238 PFAKE 20 12 30.0 +12
WR6 LR LR
comp=Z,2µm,19.0s
WR5 **Warramunga Arr** 92.28 238 PFAKE 20 12 30.0 +12
WR5 LR LR
comp=Z,2µm,21.0s
WC2 **Warramunga Arr** 92.28 238 PFAKE 20 12 30.0 +12
WC2 LR LR
comp=Z,2µm,22.0s
WR4 **Warramunga Arr** 92.28 238 PFAKE 20 12 30.0 +12
WR4 LR LR
comp=Z,2µm,21.0s
WB3 **Warramunga Arr** 92.29 238 PFAKE 20 12 30.0 +12
WB3 LR LR
comp=Z,2µm,19.0s
WR3 **Warramunga Arr** 92.29 238 PFAKE 20 12 30.0 +11
WR3 LR LR
comp=Z,2µm,19.0s
WC1 **Warramunga Arr** 92.30 238 PFAKE 20 12 30.0 +11
WC1 LR LR
comp=Z,2µm,22.0s
WRAB **Tennant Creek** 92.30 238 *c* *iP* **P** 20 12 18.5 0.0
WRAB pmax pmax
comp=Z,288nm,1.7s
WRAB **Tennant Creek** 92.30 238 *eP* **P** 20 12 17.3 -1.3
comp=Z,81nm,1.1s
WRAB LR LR
comp=Z,2µm,21.0s
WR2 **Warramunga Arr** 92.30 238 PFAKE 20 12 30.0 +11
WR2 LR LR
comp=Z,2µm,21.0s
WB2 **Warramunga Arr** 92.31 238 *eP* **P** 20 12 17.5 -1.1
comp=Z,90nm,1.2s
WB2 LR LR
comp=Z,2µm,21.0s
WR1 **Warramunga Arr** 92.31 238 *eP* **P** 20 12 18.1 -0.5
comp=Z,96nm,1.2s
WR1 *ep*PP **PP** 20 16 03.6 +3.7
WR1 *ep*PKiKP **PKiKP** 20 17 07.8 0.0
WR1 *ep*PKKPdf **PKKPbc** 20 29 31.2 0.0
WR1 LR LR
comp=Z,2µm,20.0s
WRA **Warramunga Arr** 92.31 238 P **P** 20 12 18.1 -0.5
comp=Z,26nm,0.9s,baz=37,slow=5.5,SNR=73
WRA PP **PP** 20 16 03.6 +3.7
comp=Z,9.7nm,1.1s,baz=29,slow=8.6,SNR=5.0
WRA PKiKP **PKiKP** 20 17 07.8 0.0
comp=Z,2.0nm,0.7s,baz=8.9,slow=1.8,SNR=6.4
WRA PKKPbc **PKKPbc** 20 29 31.2 0.0
comp=Z,1.4nm,0.8s,baz=218,slow=2.6,SNR=7.6
WRA LR LR 20 51 06.5
comp=Z,1µm,20.4s,baz=20,slow=34
WC4 **Warramunga Arr** 92.33 238 PFAKE 20 12 30.0 +11
WC4 LR LR
comp=Z,2µm,21.0s
KLRI **Killari** 92.38 306 *eP* **P** 20 12 18.6 -0.6
KLRI IAmb IAmb 20 12 19.7
comp=Z,154nm,0.8s
KLRI *es*P **sP** 20 12 35.5 -0.8
NJS **Nagarjunasagar** 92.40 303 *eP* **P** 20 12 19.5 +0.2
NJS IAmb IAmb 20 12 21.9
comp=Z,75nm,1.2s
NJS *ep*P **pP** 20 12 30.6 -1.2
NJS *es*P **sP** 20 12 34.8 -1.5
LHI **Lord Howe Isla** 92.46 213 PFAKE 20 12 30.0 +11
LHI LR LR
comp=Z,8µm,21.0s
LHMI **Lhok Sumawe** 92.50 283 *eP* **P** 20 12 19.9 +0.2
comp=Z,92nm,0.7s
ADKI **Addanki** 92.68 302 *eP* **P** 20 12 20.8 +0.3
ADKI IAmb IAmb 20 12 23.8
comp=Z,80nm,1.0s
ADKI *es*P **sP** 20 12 36.5 -1.1
SRLM **Srisailam** 92.99 303 *eP* **P** 20 12 21.5 -0.5
SRLM IAmb IAmb 20 12 24.5
comp=Z,178nm,1.4s
SRLM *ep*P **pP** 20 12 33.5 -1.0
SRLM *es*P **sP** 20 12 37.3 -1.8
POO **Poona** 93.24 309 *eP* **P** 20 12 21.2 -1.9
PSI **Prapat** 93.36 280 *eP* **P** 20 12 23.2 -0.6
PSI pmax pmax
comp=Z,87nm,1.1s
PSI MLR MLR
comp=Z,2µm,20.0s
PSI **Prapat** 93.36 280 *eP* **P** 20 12 23.2 -0.6
comp=Z,87nm,1.1s
PSI LR LR
comp=Z,2µm,20.0s
BANOM **Banah** 93.38 327 P **P** 20 12 23.5 -0.2
RCLA **Racherla** 93.51 303 *eP* **P** 20 12 24.5 +0.1
RCLA IAmb IAmb 20 12 26.9
comp=Z,149nm,1.4s
RCLA *ep*P **pP** 20 12 35.9 -1.0
RCLA *es*P **sP** 20 12 39.9 -1.6
MXZ **Matakaoa Point** 93.62 196 PFAKE 20 12 40.0 +16
MXZ LR LR
comp=Z,7µm,21.0s
ARMA **Armidale** 93.99 219 *eP* **P** 20 12 26.1 -0.1
comp=Z,127nm,1.4s
ARMA LR LR
comp=Z,6µm,22.0s
BKNI **Bangkinang** 94.16 276 PFAKE 20 12 40.0 +13
BKNI LR LR
comp=Z,2µm,22.0s
UOSS **Minazif** 94.32 326 *eP* **P** 20 12 26.4 -1.7
comp=Z,111nm,1.3s
UOSS LR LR
comp=Z,9µm,20.0s
NAZ **Nazwa, Dubai** 94.45 327 P **P** 20 12 29.2 +0.6
NAZ **Nazwa, Dubai** 94.45 327 PcP **PcP** 20 12 32.0 +3.0
SNR=10.0
NAZ **Nazwa, Dubai** 94.45 327 P **PcP** 20 12 32.0 +3.0
SNR=10.0
NAZ P **PcP** 20 12 32.0 +3.0
SNR=10.0
HATD **Hatta, Dubai** 94.45 326 *i* P **P** 20 12 28.1 -0.6
SNR=13
HATD **Hatta, Dubai** 94.45 326 PcP **PcP** 20 12 31.1 +2.0
SNR=11
HATD **Hatta, Dubai** 94.45 326 P **PcP** 20 12 31.1 +2.0
SNR=11
HATD P **PcP** 20 12 31.1 +2.0
SNR=11
URZ **Urewera** 94.50 197 PFAKE 20 12 40.0 +12
URZ LR LR
comp=Z,7µm,21.0s
ASHO **Ashiyiah** 94.61 326 *i* P **P** 20 12 29.7 +0.3
SNR=13
ASHO **Ashiyiah** 94.61 326 PcP **PcP** 20 12 32.7 +2.9
SNR=10
ASHO **Ashiyiah** 94.61 326 P **PcP** 20 12 32.7 +2.9
SNR=10
ASHO P **PcP** 20 12 32.7 +2.9
SNR=10
SKHT **Srikalahasti** 94.61 301 *eP* **P** 20 12 29.6 +0.2
SKHT IAmb IAmb 20 12 33.2
comp=Z,91nm,1.1s
SKHT *ep*P **pP** 20 12 41.1 -0.8
SKHT *es*P **sP** 20 12 45.3 -1.2
FAQ **Al Faqa, Dubai** 94.70 327 *i* P **P** 20 12 29.2 -0.5
SNR=6.4
FAQ **Al Faqa, Dubai** 94.70 327 PcP **PcP** 20 12 32.1 +1.9
SNR=6.1
FAQ **Al Faqa, Dubai** 94.70 327 P **PcP** 20 12 32.1 +1.9
SNR=6.1
FAQ P **PcP** 20 12 32.1 +1.9
SNR=6.1
URV **Uravakonda** 94.77 304 *eP* **P** 20 12 29.4 -0.8
URV IAmb IAmb 20 12 33.0
comp=Z,75nm,1.2s
URV *es*P **sP** 20 12 45.9 -1.4
MDRS **Chennai** 94.92 301 *eP* **P** 20 12 30.4 -0.5
MDRS IAmb IAmb 20 12 34.3
comp=Z,249nm,1.9s
BIDO **Bidbid** 95.01 324 PcP **PcP** 20 12 35.0 +3.5
SNR=6.1
BIDO **Bidbid** 95.01 324 P **PcP** 20 12 35.0 +3.5
SNR=6.1
BIDO P **PcP** 20 12 35.0 +3.5
SNR=6.1
WSAR **Wadi Sarin** 95.10 324 P **P** 20 12 31.9 +0.3
comp=Z,102nm,0.7s,baz=302,slow=3.8,SNR=41
HIZ **Hauiti** 95.14 199 PFAKE 20 12 40.0 +8.9
HIZ LR LR
comp=Z,5µm,22.0s
FITZ **Fitzroy Crossi** 95.22 246 LR LR 20 56 31.1
comp=Z,1µm,19.3s,baz=28,slow=36
FITZ **Fitzroy Crossi** 95.22 246 *eP* **P** 20 12 31.5 -0.5
comp=Z,52nm,1.0s
GSI **Gunungsitoli** 95.35 280 *eP* **P** 20 12 32.3 -0.5
comp=Z,68nm,0.7s
GSI LR LR
comp=Z,4µm,21.0s
BKZ **Black Stump Fm** 95.48 197 PFAKE 20 12 40.0 +7.2
BKZ LR LR
comp=Z,6µm,21.0s
AS01 **Alice Springs** 95.66 236 *eP* **P** 20 12 33.7 -0.3
AS01 *ep*PKKPbc **PKKPbc** 20 29 21.3 -1.3
AS31 **Alice Springs** 95.68 236 *eP* **P** 20 12 33.5 -0.5
comp=Z,5.5nm,0.8s
AS31 LR LR
comp=Z,100nm,21.0s
ASAR **Alice Springs** 95.68 236 P **P** 20 12 33.9 -0.2
comp=Z,17nm,0.9s,baz=32,slow=3.6,SNR=48
ASAR PKiKP **PKiKP** 20 17 13.4 -0.2
comp=Z,1.8nm,0.7s,baz=46,slow=1.9,SNR=6.2
ASAR PKKP **PKKPdf** 20 29 23.5 +0.1
comp=Z,3.7nm,0.5s,baz=202,slow=2.2,SNR=36
ASAR LR LR 20 52 54.6
comp=Z,5µm,20.3s,baz=36,slow=34
ARQ **Araqi** 95.71 325 PcP **P** 20 12 34.4 -0.1
SNR=18
ARQ **Araqi** 95.71 325 P **P** 20 12 34.4 -0.1
SNR=18
GOA **Goa** 95.91 307 *eP* **P** 20 12 34.3 -1.0
JMDO **Jabal Madar** 96.08 324 PcP **PcP** 20 12 39.5 +3.2
SNR=11
JMDO **Jabal Madar** 96.08 324 P **PcP** 20 12 39.5 +3.2
SNR=11
NNA **Nana** 96.52 101 PFAKE 20 12 50.0 +12
NNA LR LR
comp=Z,3µm,21.0s
CISI **Cisompet, Garu** 96.61 266 PFAKE 20 12 50.0 +11
CISI LR LR
comp=Z,2µm,22.0s
BFZ **Birch Farm** 97.00 197 PFAKE 20 12 50.0 +10
BFZ LR LR
comp=Z,7µm,22.0s
PTGA **Pitinga** 97.14 81 PKKP **PKKPdf** 20 29 20.3 +1.1
comp=Z,1.7nm,0.5s,baz=137,slow=4.4,SNR=4.6
PTGA **Pitinga** 97.14 81 *eP* **P** 20 12 39.1 -1.8
comp=Z,104nm,1.4s
PTGA PKKP **PKKPdf** 20 29 20.3 +1.1
PTGA LR LR
comp=Z,5µm,21.0s
SNZO **South Karori** 97.88 198 PFAKE 20 13 00.0 +16
SNZO LR LR
comp=Z,8µm,21.0s
KHZ **Kahutara** 99.17 199 PFAKE 20 13 00.0 +11
KHZ LR LR
comp=Z,7µm,22.0s
STKA **Stephens Creek** 99.23 226 P **Pdif** 20 12 49.2 -0.7
comp=Z,4.3nm,0.7s,baz=4.4,slow=5.3,SNR=12
STKA PKiKP **PKiKP** 20 17 18.9 -0.7
comp=Z,3.1nm,0.8s,baz=124,slow=4.6,SNR=2.9
STKA LR LR 20 53 32.6
comp=Z,7µm,20.8s,baz=24,slow=33
STKA **Stephens Creek** 99.23 226 *eP* **Pdif** 20 12 49.9 +0.1
STKA pmax pmax
comp=Z,6.0nm,1.3s
STKA **Stephens Creek** 99.23 226 *eP* **Pdif** 20 12 49.9 +0.1
comp=Z,6.3nm,1.3s
STKA PKiKP **PKiKP** 20 17 18.9 -0.7
CAN **Canberra** 99.35 219 PFAKE 20 13 00.0 +10
CAN LR LR
comp=Z,3µm,22.0s
PALK **Pallekele** 99.62 297 PFAKE 20 13 00.0 +7.8
PALK LR LR
comp=Z,4µm,21.0s
LTZ **Lake Taylor** 99.76 199 PFAKE 20 13 00.0 +8.1
LTZ LR LR
comp=Z,7µm,20.0s
XMIS **Christmas Isla** 100.22 266 PFAKE 20 13 10.0 +15
XMIS LR LR
comp=Z,2µm,22.0s
OXZ **Oxford** 100.33 199 PFAKE 20 13 10.0 +16
OXZ LR LR
comp=Z,5µm,20.0s
CRLZ **Canterbury Las** 100.46 199 PFAKE 20 13 10.0 +15
CRLZ LR LR
comp=Z,8µm,22.0s
TRD **Trivandrum** 100.46 301 *eP* **Pdif** 20 12 55.1 -0.7
MQZ **McQueen's Vall** 100.58 199 PFAKE 20 13 10.0 +15
MQZ LR LR
comp=Z,7µm,21.0s
MBWA **Marble Bar** 100.89 249 PFAKE 20 13 10.0 +13
MBWA LR LR
comp=Z,1µm,20.0s
RPZ **Rata Peaks** 100.90 200 PFAKE 20 13 10.0 +13
RPZ LR LR
comp=Z,6µm,20.0s
FOZ **Fox Glacier** 100.97 201 PFAKE 20 13 10.0 +13
FOZ LR LR
comp=Z,5µm,20.0s
LBZ **Lake Benmore** 101.72 200 PFAKE 20 13 10.0 +9.5
LBZ LR LR
comp=Z,6µm,22.0s
SACV **Santiago Islan** 101.83 42 PFAKE 20 13 10.0 +8.1
SACV LR LR
comp=Z,1µm,20.0s
TAM **Tamanrasset** 101.93 12 *eP* **Pdif** 20 13 04.3 +1.8
TAM MLR MLR
comp=Z,3µm,20.0s
TAM **Tamanrasset** 101.93 12 *ePdif* **Pdif** 20 13 04.2 +1.8
TAM LR LR
comp=Z,3µm,20.0s
SAML **Samuel** 101.94 89 *ePdif* **Pdif** 20 12 59.6 -2.8
SAML LR LR
comp=Z,2µm,22.0s
ODZ **Otahua Downs** 102.25 200 PFAKE 20 13 20.0 +17
ODZ LR LR
comp=Z,4µm,21.0s
WKZ **Wanaka** 102.38 201 PFAKE 20 13 20.0 +17
WKZ LR LR
comp=Z,7µm,22.0s
BBOO **Buckleboo** 102.43 230 PFAKE 20 13 20.0 +16
BBOO LR LR
comp=Z,4µm,19.0s
MLZ **Mavora Lakes** 103.08 202 PFAKE 20 13 20.0 +13
MLZ LR LR
comp=Z,10µm,22.0s
DCZ **Deep Cove** 103.38 202 PFAKE 20 13 20.0 +12
DCZ LR LR
comp=Z,12µm,22.0s
WHZ **Wether Hill Ro** 103.62 202 PFAKE 20 13 20.0 +11
WHZ LR LR
comp=Z,9µm,22.0s
PYZ **Puysegur Point** 104.15 202 PFAKE 20 13 20.0 +8.7
PYZ LR LR
comp=Z,12µm,22.0s
LPAZ **La Paz** 104.96 97 Pdiff **Pdif** 20 13 15.2 -1.2
comp=Z,2.2nm,0.6s,baz=356,slow=5.8,SNR=9.1
LPAZ PKKPbc **PKKPbc** 20 28 55.7 -0.6
comp=Z,0.9nm,0.7s,baz=184,slow=7.2,SNR=2.3
LPAZ **La Paz** 104.96 97 *ePdif* **Pdif** 20 13 15.7 -0.7
LPAZ *ep*PKKPbc **PKKPbc** 20 28 55.7 -0.6
TAU **Tasmania Unive** 106.69 217 PFAKE 20 17 50.0
TAU LR LR
comp=Z,6µm,22.0s
DAMY **Dhamar** 107.56 334 PFAKE 20 17 50.0
DAMY LR LR
comp=Z,8µm,19.0s
TOC1 **Torodi Ar. Sit** 110.81 18 PFAKE 20 17 50.0
TOC1 LR LR
comp=Z,4µm,21.0s
TOC7 **Torodi Ar. Sit** 110.81 18 PFAKE 20 17 50.0
TOC7 LR LR
comp=Z,3µm,21.0s
TOB1 **Torodi Ar. Sit** 110.82 18 PFAKE 20 17 50.0
TOB1 LR LR
comp=Z,2µm,20.0s
TOB5 **Torodi Ar. Sit** 110.82 18 PFAKE 20 17 50.0
TOB5 LR LR
comp=Z,4µm,21.0s
TOA1 **Torodi Ar. Sit** 110.82 18 *ePdif* **Pdif** 20 13 41.7 -0.2
TOA1 *ep*PKiKP **PKiKP** 20 17 40.4 -1.1

TOA1				*e*PKKPbc	**PKKPbc**	**20 28 36.0**	**-1.1**
TOA1				LR	LR		
	comp=Z,3μm,20.0s						
TOC2	**Torodi Ar. Sit**	**110.83**	**18**	PFAKE		20 17 50.0	
TOC2				LR	LR		
	comp=Z,3μm,20.0s						
TOB2	**Torodi Ar. Sit**	**110.83**	**18**	PFAKE		20 17 50.0	
TOB2				LR	LR		
	comp=Z,3μm,20.0s						
TOA0	**Torodi Ar. Sit**	**110.83**	**18**	*e*Pdif	**Pdif**	**20 13 40.0**	**-1.9**
TOA0				*e*PKKPbc	**PKKPbc**	**20 28 34.1**	**-2.9**
TOA0				*e*PKKPbc	**PKKPbc**	**20 28 36.5**	**-0.6**
TOA0				LR	LR		
	comp=Z,3μm,20.0s						
TORD	**Torodi Ar. Bea**	**110.83**	**18**	Pdiff	**Pdif**	**20 13 41.7**	**-0.2**
	comp=Z,0.3nm,0.4s,baz=344,slow=5.4,SNR=5.5						
TORD				PKiKP	**PKiKP**	**20 17 40.4**	**-1.1**
	comp=Z,3.0nm,0.7s,baz=338,slow=2.3,SNR=14						
TORD				PKKPbc	**PKKPbc**	**20 28 36.0**	**-1.1**
	comp=Z,3.4nm,0.6s,baz=170,slow=2.6,SNR=22						
TORD				PKKP	**PKKPab**	**20 28 48.9**	**-3.3**
	comp=Z,6.5nm,0.7s,baz=165,slow=3.0,SNR=5.3						
TOB4	**Torodi Ar. Sit**	**110.84**	**18**	PFAKE		20 17 50.0	
TOB4				LR	LR		
	comp=Z,3μm,20.0s						
TOB3	**Torodi Ar. Sit**	**110.84**	**18**	PFAKE		20 17 50.0	
TOB3				LR	LR		
	comp=Z,3μm,20.0s						
TOC3	**Torodi Ar. Sit**	**110.84**	**18**	PFAKE		20 17 50.0	
TOC3				LR	LR		
	comp=Z,3μm,21.0s						
TOC5	**Torodi Ar. Sit**	**110.84**	**18**	PFAKE		20 17 50.0	
TOC5				LR	LR		
	comp=Z,4μm,20.0s						
TOC4	**Torodi Ar. Sit**	**110.86**	**18**	PFAKE		20 17 50.0	
TOC4				LR	LR		
	comp=Z,3μm,21.0s						
NWAO	**Narrogin (SRO)**	**111.62**	**243**	PFAKE		20 17 50.0	
NWAO				LR	LR		
	comp=Z,4μm,20.0s						
LCO	**Las Campanas**	**113.50**	**107**	PFAKE		20 18 00.0	
LCO				LR	LR		
	comp=Z,5μm,22.0s						
FURI	**Furi**	**114.38**	**338**	PFAKE		20 18 00.0	+11
FURI				LR	LR		
	comp=Z,5μm,22.0s						
RCBR	**Riachuelo**	**114.60**	**63**	PFAKE		20 18 00.0	+11
RCBR				LR	LR		
	comp=Z,2μm,19.0s						
TIC	**Toumodi**	**115.68**	**26**	*e*PKP1	**PKPdf**	**20 17 49.5**	**-1.3**
DBIC	**Dimbokro**	**115.70**	**26**	PKP	**PKPdf**	**20 17 49.9**	**-0.9**
	comp=Z,4.3nm,0.6s,baz=339,slow=3.6,SNR=7.9						
DBIC				PKPbc	**PKPbc**	**20 28 21.8**	**+1.0**
	comp=Z,3.5nm,1.0s,baz=209,slow=14,SNR=3.3						
DBIC				PKKP	**PKKPdf**	**20 28 44.5**	**+0.1**
	comp=Z,4.9nm,0.9s,baz=180,slow=5.0,SNR=4.2						
DBIC	**Dimbokro**	**115.70**	**26**	*e*PKPdf	**PKPdf**	**20 17 49.2**	**-1.6**
DBIC				PKKPbc	**PKKPbc**	**20 28 21.8**	**+1.0**
DBIC				PKKP	**PKKPdf**	**20 28 44.5**	**+0.1**
KIC	**Kosan Boka**	**116.02**	**26**	*e*PKP1	**PKPdf**	**20 17 49.9**	**-1.6**
	comp=Z,42nm,1.2s						
BDFB	**Brasilia**	**116.05**	**80**	PKP	**PKPdf**	**20 17 51.8**	**+0.3**
	comp=Z,3.2nm,0.5s,baz=348,slow=27,SNR=5.2						
BDFB				PKKPbc	**PKKPbc**	**20 28 19.2**	**-0.4**
	comp=Z,1.4nm,0.4s,baz=343,slow=20,SNR=2.1						
BDFB				PKKP	**PKKPdf**	**20 28 45.0**	**+0.2**
	comp=Z,4.3nm,0.8s,baz=348,slow=27,SNR=4.0						
BDFB	**Brasilia**	**116.05**	**80**	*e*PKPdf	**PKPdf**	**20 17 51.8**	**+0.3**
BDFB				PKKP	**PKKPdf**	**20 28 45.0**	**+0.2**
BDFB				LR	LR		
	comp=Z,5μm,19.0s						
LIC	**Lamto**	**116.08**	**26**	*e*PKP1	**PKPdf**	**20 17 50.5**	**-1.1**
ROC1	**El Roble**	**116.36**	**110**	*e*PKPdf	**PKPdf**	**20 17 50.1**	**-1.7**
DGAR	**Diego Garcia**	**116.36**	**297**	PFAKE		20 18 00.0	+8.0
DGAR				LR	LR		
	comp=Z,6μm,20.0s						
CPUP	**Villa Florida**	**119.03**	**95**	PKP	**PKPdf**	**20 17 55.5**	**-1.2**
	comp=Z,5.7nm,0.7s,baz=314,slow=1.2,SNR=10						
CPUP				PKKPab	**PKKPab**	**20 28 11.8**	**-0.5**
	comp=Z,9.1nm,0.9s,baz=140,slow=5.1,SNR=14						
CPUP	**Villa Florida**	**119.03**	**95**	*e*PKPdf	**PKPdf**	**20 17 55.3**	**-1.5**
CPUP				*e*PKKPbc	**PKKPab**	**20 28 10.9**	**-1.3**
PLCA	**Paso Flores**	**122.39**	**116**	PKP	**PKPdf**	**20 18 02.2**	**-0.6**
	comp=Z,22nm,0.8s,baz=292,slow=1.5,SNR=29						
PLCA				PKKPbc	**PKKPbc**	**20 27 57.7**	**+0.9**
	comp=Z,2.2nm,0.7s,baz=178,slow=1.7,SNR=6.2						
SPB	**Sao Paulo**	**122.66**	**85**	PFAKE		20 18 20.0	+16
SPB				LR	LR		
	comp=Z,3μm,22.0s						
KMBO	**Kilima Mbogo**	**124.41**	**337**	PKP	**PKPdf**	**20 18 08.4**	**+0.5**
	comp=Z,22nm,0.8s,baz=20,slow=3.5,SNR=23						
KMBO				SKKP		20 32 03.8	
	comp=Z,0.9nm,0.3s,baz=188,slow=6.7,SNR=3.0						
KMBO	**Kilima Mbogo**	**124.41**	**337**	*e*PKPdf	**PKPdf**	**20 18 08.5**	**+0.7**
KMBO				LR	LR		
	comp=Z,4μm,21.0s						
TRQA	**Tornquist**	**125.07**	**108**	*e*PKPdf	**PKPdf**	**20 18 06.6**	**-1.4**
TRQA				LR	LR		
	comp=Z,6μm,22.0s						
MBAR	**Mbarara**	**125.11**	**345**	*e*PKIKP	**PKPdf**	**20 18 07.8**	**-1.3**
MBAR				MLR	MLR		
	comp=Z,5μm,18.0s						
MBAR	**Mbarara**	**125.11**	**345**	*e*PKPdf	**PKPdf**	**20 18 07.8**	**-1.3**
MBAR				LR	LR		
	comp=Z,5μm,18.0s						
CHRN	**Cochrane**	**126.00**	**123**	*e*PKPdf	**PKPdf**	**20 18 09.0**	**-0.5**
ASCN	**Ascension**	**126.36**	**42**	PFAKE		20 18 20.0	+8.7
ASCN				LR	LR		
	comp=Z,3μm,22.0s						
USHA	**Ushuaia**	**132.97**	**128**	PKP	**PKPdf**	**20 18 23.3**	**+0.9**
	comp=Z,56nm,0.7s,baz=220,slow=1.2,SNR=4.2						
SBA	**Scott Base**	**133.82**	**189**	PFAKE		20 18 40.0	+17
SBA				LR	LR		
	comp=Z,5μm,20.0s						
VNDA	**Vanda**	**134.00**	**190**	PKhKP	PKPpre	20 18 07.0	
	comp=Z,0.6nm,0.8s,baz=44,slow=5.7,SNR=2.3						
VNDA				PKP	**PKiKP**	**20 18 25.7**	**+0.6**
	comp=Z,7.3nm,1.2s,baz=340,slow=5.0,SNR=7.3						
VNDA				SKPbc	**SKPbc**	**20 21 47.7**	**-1.7**
	comp=Z,8.5nm,1.1s,baz=58,slow=3.2,SNR=8.3						
VNDA	**Vanda**	**134.00**	**190**	*e*PKPdf	**PKPdf**	**20 18 23.5**	**-0.3**
EFI	**East Falkland**	**136.09**	**119**	*e*PKIKP	**PKPdf**	**20 18 27.1**	**-1.3**
EFI				MLR	MLR		
	comp=Z,6μm,20.0s						
EFI	**East Falkland**	**136.09**	**119**	*e*PKPdf	**PKPdf**	**20 18 27.1**	**-1.3**
EFI				LR	LR		
	comp=Z,6μm,20.0s						
OPO	**Ambohidratompo**	**137.82**	**318**	PKhKP	PKPpre	20 18 21.3	
	comp=Z,2.7nm,0.9s,baz=73,slow=12,SNR=2.0						
OPO				PKP	**PKiKP**	**20 18 34.3**	**-0.5**
	comp=Z,12nm,0.9s,baz=52,slow=2.0,SNR=8.1						
OPO				PP	PP	20 21 28.1	+8.1
	comp=Z,7.7nm,1.1s,baz=50,slow=4.2,SNR=3.6						
ABPO	**Ambohimpanom**	**138.21**	**317**	*e*PKIKP	**PKPdf**	**20 18 34.6**	**+1.0**
ABPO				MLR	MLR		
	comp=Z,4μm,22.0s						
ABPO	**Ambohimpanom**	**138.21**	**317**	*e*PKPdf	**PKPdf**	**20 18 34.6**	**+1.0**
ABPO				LR	LR		
	comp=Z,4μm,22.0s						
LSZ	**Lusaka**	**139.90**	**346**	PKhKP	PKPpre	20 18 27.5	
	comp=Z,5.5nm,0.5s,baz=25,slow=2.5,SNR=12						
LSZ				PKP	**PKiKP**	**20 18 38.4**	**-0.8**
	comp=Z,8.8nm,0.6s,baz=335,slow=2.8,SNR=8.1						
LSZ				PP	**PP**	**20 21 32.2**	**-0.2**
	comp=Z,20nm,0.9s,baz=352,slow=2.7,SNR=6.2						
LSZ	**Lusaka**	**139.90**	**346**	*e*PKPpre	PKPpre	20 18 28.6	
LSZ				*e*PKPdf	**PKiKP**	**20 18 38.4**	**-0.8**
LSZ				*e*PP	**PP**	**20 21 32.2**	**-0.2**
LSZ				LR	LR		
	comp=Z,5μm,20.0s						
PMSA	**Palmer Station**	**140.16**	**138**	PKhKP	PKPpre	20 18 27.3	
	comp=Z,16nm,1.0s,baz=261,slow=3.4,SNR=4.0						
PMSA				PKP	**PKPdf**	**20 18 36.3**	**+0.9**
	comp=Z,21nm,0.9s,baz=250,slow=1.5,SNR=5.3						
PMSA	**Palmer Station**	**140.16**	**138**	*e*PKPpre	PKPpre	20 18 27.3	
PMSA				*e*PKPdf	**PKPdf**	**20 18 36.3**	**+0.9**
PMSA				LR	LR		
	comp=Z,6μm,20.0s						
MIR	**Mirnyy**	**144.05**	**221**	*i* PKIKP	PKPbc	20 18 40.5	0.0
TSUM	**Tsumeb**	**144.48**	**2**	PKP	**PKPab**	**20 18 43.2**	**0.0**
	comp=Z,140nm,0.7s,baz=340,slow=5.2,SNR=7.4						
TSUM	**Tsumeb**	**144.48**	**2**	*e*PKPdf	**PKPab**	**20 18 42.6**	**-0.6**
TSUM				*e*PKPdf	PKPbc	20 18 43.2	-0.2
TSUM				LR	LR		
	comp=Z,4μm,21.0s						
QSPA	**South Pole Qui**	**144.55**	**180**	PFAKE		20 19 00.0	+17
QSPA				LR	LR		
	comp=Z,4μm,21.0s						
KJAB	**KAMANJAB**	**144.79**	**6**	*i* P	PKPbc	20 18 44.5	+0.2
KJAB	**KAMANJAB**	**144.79**	**6**	*i* P	PKPbc	20 18 44.5	+0.2
MATP	**Matopo**	**144.91**	**344**	*i* P	**PKPdf**	**20 18 46.1**	**+0.6**
MATP	**Matopo**	**144.91**	**344**	PKP	PKPbc	20 18 44.8	+0.1
	comp=Z,213nm,0.5s,baz=358,slow=3.2,SNR=376						
MATP				PP	**PP**	**20 22 01.7**	**-1.1**
	comp=Z,50nm,1.1s,baz=48,slow=7.5,SNR=3.2						
WIN	**Windhoek**	**147.82**	**3**	*i* P	**PKPbc**	**20 18 52.5**	**-0.9**
WIN	**Windhoek**	**147.82**	**3**	*i* P	**PKPbc**	**20 18 53.8**	**+0.4**
HOPE	**Hope Point**	**148.68**	**112**	*e*PKPdf	**PKPbc**	**20 18 52.5**	**-1.9**
HOPE				LR	LR		
	comp=Z,5μm,21.0s						
LBTB	**Lobatse**	**149.84**	**347**	*i* P	**PKPbc**	**20 18 57.8**	**-0.6**
LBTB	**Lobatse**	**149.84**	**347**	PKP	**PKPdf**	**20 18 53.8**	**+0.3**
	comp=Z,87nm,0.7s,baz=20,slow=1.3,SNR=14						
LBTB				PKPbc	**PKiKP**	**20 18 59.1**	**-0.2**
	comp=Z,108nm,0.8s,baz=3.9,slow=2.1,SNR=107						
LBTB				PP	**PP**	**20 22 31.4**	**-0.2**
	comp=Z,34nm,0.8s,baz=23,slow=8.0,SNR=4.3						
LBTB	**Lobatse**	**149.84**	**347**	*e*PKPdf	**PKPdf**	**20 18 53.4**	**-0.1**
LBTB				*e*PKPbc	**PKPbc**	**20 18 58.8**	**+0.5**
LBTB				PP	**PP**	**20 22 31.4**	**-0.2**
POGA	**Pongola**	**151.04**	**336**	*i* P	**PKPbc**	**20 19 01.2**	**+0.2**
AUSN	**Aus**	**151.87**	**5**	*i* P	**PKPbc**	**20 19 03.7**	**+0.6**
AUSN	**Aus**	**151.87**	**5**	*i* P	**PKPbc**	**20 19 03.4**	**+0.2**
ARMS	**Ukamas**	**153.28**	**358**	*i* P	**PKPbc**	**20 19 06.3**	**+0.1**
ARMS	**Ukamas**	**153.28**	**358**	*i* P	**PKPdf**	**20 19 02.3**	**+3.7**
BOSA	**Boshof**	**153.43**	**347**	*i* P	**PKPbc**	**20 19 03.6**	**-2.9**
BOSA	**Boshof**	**153.43**	**347**	PKP	**PKPdf**	**20 18 57.8**	**-1.1**
	comp=Z,14nm,1.1s,baz=97,slow=1.0,SNR=6.4						
BOSA				PKPbc	**PKiKP**	**20 19 06.7**	**0.0**
	comp=Z,21nm,0.6s,baz=15,slow=2.3,SNR=34						
BOSA				PKPab	**PKPab**	**20 19 20.0**	**+1.2**
	comp=Z,40nm,0.7s,baz=20,slow=2.6,SNR=8.9						
BOSA	**Boshof**	**153.43**	**347**	*e*PKPdf	**PKPdf**	**20 18 57.8**	**-1.1**
BOSA				*e*PKPdf	PKPbc	20 18 58.1	-8.5
BOSA				*e*PKPbc	**PKiKP**	**20 19 06.7**	**0.0**
BOSA				*e*PKPab	**PKPab**	**20 19 20.0**	**+1.2**
MAW	**Mawson**	**155.79**	**221**	PKP	**PKPdf**	**20 18 59.7**	**-1.0**
	comp=Z,8.9nm,0.9s,baz=16,slow=1.9,SNR=14						
MAW				PKPbc	PKPbc	20 19 10.1	
	comp=Z,12nm,0.8s,baz=84,slow=2.9,SNR=14						
MAW				PKPab	**PKPab**	**20 19 28.4**	**+0.8**
	comp=Z,74nm,1.0s,baz=94,slow=6.6,SNR=19						
MAW	**Mawson**	**155.79**	**221**	*e*PKPdf	**PKPdf**	**20 18 59.7**	**-1.0**
MAW				*e*PKPdif	PKPdf	20 19 11.4	+11
MAW				*e*PKPab	**PKPab**	**20 19 27.9**	**+0.3**
MAW				LR	LR		
	comp=Z,900nm,22.0s						
SUR	**Sutherland**	**157.56**	**355**	PKP	**PKPdf**	**20 19 03.4**	**-1.1**
	comp=Z,0.4nm,0.8s,baz=124,slow=6.5,SNR=5.7						
SUR	**Sutherland**	**157.56**	**355**	*e*PKPdf	**PKPdf**	**20 19 03.4**	**-1.1**
SUR				LR	LR		
	comp=Z,6μm,22.0s						
GRM	**Grahamstown**	**157.85**	**342**	*i* P	PKPdf	20 19 12.8	+8.2
VNA1	**Neumayer--Stat**	**160.15**	**154**	PKP	**PKPdf**	**20 19 01.7**	**-4.3**
SNAA	**Sanae**	**160.68**	**159**	PKP	**PKPdf**	**20 19 03.9**	**-2.8**
SNAA	**Sanae**	**160.68**	**159**	PKP	**PKPdf**	**20 19 03.8**	**-2.8**
	comp=Z,5.7nm,0.8s,baz=167,slow=4.4,SNR=15						
SNAA				PKPab	**PKPab**	**20 19 47.4**	**-1.5**
	comp=Z,17nm,0.8s,baz=221,slow=3.5,SNR=7.6						
SNAA				PP	PP	20 23 43.2	+11
	comp=Z,12nm,1.2s,baz=246,slow=3.9,SNR=3.6						
SNAA	**Sanae**	**160.68**	**159**	*e*PKPdf	**PKPdf**	**20 19 02.5**	**-4.2**
SNAA				*e*PKPab	**PKPab**	**20 19 46.8**	**-2.1**
SNAA				PP	PP	20 23 43.2	+11
SYO	**Syowa Base**	**162.81**	**206**	*e*X	**PKPdf**	**20 19 06.0**	**-2.8**
NVL	**N^{1}azarevskaya**	**163.66**	**172**	*e*PKIKP	**PKPdf**	**20 19 06.7**	**-2.9**
NVL				*e*		20 23 45.3	
NVL				*e*SS	SS	20 44 12.6	+0.7

*MOS **16** 19:59:39.9±1.9,52.°79N×108.°59E,h10km,mb4.2/1,Error ellipse: s-maj=27.4km s-min=24.2km az=146.2*
*BYKL **16** 19:59:40.5±0.3,52.°88N×108.°53E,h27km±3km*
ISC 16 19:59:39.9±1.1,52.84N±0.°03×108.°55E±0.°02,h6km±10km, n29,σ2.2s20/70,9C-4D,Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
KELR	**Kotokel**	**0.29**	**255**	⇓*i*Pg		**Pb**	**19 59 47.5**	**0.0**
KELR				*e*Sg		**Sb**	**19 59 52.4**	**-0.3**
MXMB	**Maximikha**	**0.44**	**16**	⇑*i*Pg		**Pg**	**19 59 49.4**	**+1.0**
MXMB				*e*Sg		**Sg**	**19 59 55.6**	**+1.4**
OGRR	**Ongureny**	**0.99**	**325**	⇑*i*Pg		**Pg**	**19 59 58.4**	**-0.4**
	117nm,0.3s							
OGRR				⇓*i*Pg		**Pg**	**19 59 58.4**	**-0.4**
	46nm,0.3s							
OGRR				⇑*i*Pg		**Pg**	**19 59 58.4**	**-0.4**
	133nm,0.3s							
OGRR				*e*			20 00 04.8	
OGRR				*e*Sg		**Sg**	**20 00 11.2**	**-0.4**
OGRR				Pmax				
	142nm,0.1s							
OGRR				Smax				
	602nm,0.1s							
OGRR	**Ongureny**	**0.99**	**325**	⇑*i*PG		**Pg**	**19 59 58.4**	**-0.4**
OGRR				*e*			20 00 11.2	
OGRR				pmax	pmax			
	comp=E,143nm,0.2s							
OGRR				smax	smax			
	comp=E,599nm,0.3s							
UUDB	**Ulan-Yde**	**1.11**	**209**	⇑*i*Pg		**Pn**	**20 00 01.7**	**-0.3**
UUDB				*e*Pb		**Pb**	**20 00 02.6**	**+1.1**
UUDB				*e*Sg		**Sn**	**20 00 17.1**	**-0.5**
UUDB				*e*Sb		**Sb**	**20 00 19.4**	**+3.1**
UUDB				max				
	comp=E,55nm,0.2s							
UUDB				Smax				
	comp=E,360nm,0.3s							
SYVR	**Suvo**	**1.20**	**46**	⇓*i*Pg		**Pn**	**20 00 02.4**	**-0.7**
SYVR				*e*Pb		**Pg**	**20 00 03.4**	**+0.6**
SYVR				*e*			20 00 07.2	
SYVR				*e*Sg		**Sg**	**20 00 19.1**	**+0.7**
SYVR				*e*Sb		**Sn**	**20 00 20.8**	**+1.1**
SYVR				max				
	comp=E,123nm,0.5s							
SYVR				max				
	comp=E,366nm,0.2s							
SYVR	**Suvo**	**1.20**	**46**	*e*PG		**Pn**	**20 00 02.4**	**-0.7**
SYVR				*e*			20 00 18.8	
SYVR				pmax	pmax			
	comp=Z,125nm,0.5s							
SYVR				smax	smax			
	comp=E,374nm,0.2s							
TRG	**Tyrgan**	**1.34**	**267**	⇑*i*Pn		**Pn**	**20 00 04.1**	**-1.0**
TRG				⇓*i*Pg		**Pb**	**20 00 05.0**	**-0.3**
TRG				*e*Sg		**Sb**	**20 00 22.9**	**+0.2**
TRG				Pmax				
	comp=E,75nm,0.1s							
TRG				Smax				
	comp=E,608nm,0.1s							
TRG	**Tyrgan**	**1.34**	**267**	*e*PG		**Pn**	**20 00 04.2**	**-0.9**
TRG				*e*			20 00 22.9	
TRG				pmax	pmax			
	comp=Z,74nm,0.1s							
TRG				smax	smax			
	comp=E,628nm,0.1s							
KAB	**Kabansk**	**1.40**	**236**	*e*Pg		**Pg**	**20 00 06.7**	**0.0**
KAB				*e*Sg		**Sg**	**20 00 26.1**	**+1.2**
KAB				Pmax				
	comp=E,87nm,0.4s							
KAB				Smax				
	comp=E,899nm,0.4s							
STDB	**Stepnoy Dvoret**	**1.49**	**244**	⇑*i*Pg		**Pg**	**20 00 08.9**	**+0.5**
STDB				*e*Sg		**Sg**	**20 00 28.8**	**+1.0**
HRMR	**Khuramsha**	**1.56**	**220**	⇑*i*Pg		**Pg**	**20 00 09.5**	**-0.2**
HRMR				*e*Pb		**Pb**	**20 00 10.2**	**+1.1**
HRMR				*e*			20 00 17.0	
HRMR				*e*Sg		**Sg**	**20 00 30.3**	**+0.4**
HRMR				max				
	comp=E,126nm,0.2s							
HRMR				Smax				
	comp=E,924nm,0.2s							
BGT	**Bolshoye Golou**	**2.08**	**249**	*e*Pg		**Pb**	**20 00 17.9**	**-0.1**
BGT				*e*Sn		**Sn**	**20 00 39.8**	**-1.6**
BGT				*e*Sg		**Sg**	**20 00 46.1**	**-0.5**
BGT				Pmax				
	comp=E,15nm,0.3s							
BGT				Smax				
	comp=E,126nm,0.4s							
LSTR	**Listvyanka**	**2.48**	**248**	*e*Pn		**Pn**	**20 00 20.7**	**0.0**
LSTR				*e*Pg		**Pb**	**20 00 23.5**	**-1.2**
LSTR				*e*Sn		**Sn**	**20 00 49.7**	**-1.5**
LSTR				*e*Sg		**Sb**	**20 00 55.7**	**+0.2**
LSTR				Pmax				
	comp=E,7.0nm,0.1s							
LSTR				Smax				
	comp=E,69nm,0.2s							
YLYR	**Ulyunkhan**	**2.56**	**36**	*e*		**Pn**	**20 00 21.8**	**-0.1**
YLYR				*e*Pg		**Pb**	**20 00 25.0**	**-1.2**
YLYR				*e*			20 00 29.5	
YLYR				*e*Sg		**Sb**	**20 00 59.1**	**+1.2**
YLYR				max				
	comp=E,20nm,0.7s							
YLYR				Smax				
	comp=E,39nm,0.4s							
IRK	**Irkutsk**	**2.68**	**259**	*e*Pn		**Pn**	**20 00 20.9**	**-2.6**
IRK				*e*Pg		**Pb**	**20 00 26.9**	**-1.3**
IRK				*e*Sg		**Sb**	**20 01 03.6**	**+2.4**
IRK				*e*			20 01 07.2	
IRK				Pmax				
	comp=E,47nm,0.1s							
IRK				max				
	comp=E,303nm,0.3s							
IRK	**Irkutsk**	**2.68**	**259**	*e*PN		**Pb**	**20 00 28.3**	**+0.1**
IRK				*e*			20 01 03.0	
IRK				pmax	pmax			
	comp=Z,35nm,0.2s							
IRK				smax	smax			
	comp=N,352nm,0.4s							
IVK	**Ivanovka**	**2.74**	**249**	*e*Pn		**Pn**	**20 00 24.3**	**0.0**
IVK				*e*Pg		**Pb**	**20 00 29.4**	**+0.2**
IVK				*e*Sn		**Sn**	**20 00 56.4**	**-1.4**
IVK				*e*Sg		**Sb**	**20 01 04.6**	**+1.5**
IVK				Pmax				
	comp=N,8.0nm,0.2s							
IVK				Smax				
	comp=N,99nm,0.3s							
IVK	**Ivanovka**	**2.74**	**249**	*e*PN		**Pn**	**20 00 24.4**	**+0.1**
IVK				*e*			20 00 31.0	
IVK				*e*			20 01 04.6	
IVK				pmax	pmax			
	comp=Z,8.0nm,0.2s							
IVK				smax	smax			
	comp=N,99nm,0.4s							
NIZ	**Nizh Angarsk**	**3.00**	**11**	*e*Pn		**Pn**	**20 00 26.0**	**-1.9**
NIZ				*e*			20 00 28.2	
NIZ				*e*Pg		**Pb**	**20 00 32.8**	**-0.8**
NIZ				*e*Sn		**Sn**	**20 01 02.8**	**-1.3**
NIZ				*e*Sg		**Sb**	**20 01 12.1**	**+1.6**
NIZ				Pmax				
	comp=N,13nm,0.4s							
NIZ				Smax				
	comp=N,52nm,0.1s							
CIT	**Chita**	**3.17**	**103**	*e*Pg		**Pb**	**20 00 37.1**	**+0.5**
CIT				*e*			20 00 44.7	
CIT				*e*Sg		**Sg**	**20 01 18.9**	**-2.8**
CIT				max				
	comp=N,44nm,0.3s							
CIT				Smax				
	comp=N,252nm,0.2s							
CIT	**Chita**	**3.17**	**103**	*e*PN		**Pn**	**20 00 28.9**	**-1.4**
CIT				*e*			20 00 35.7	
CIT				*e*S		**Sn**	**20 01 07.3**	**-1.1**
CIT				*e*			20 01 16.8	
CIT				pmax	pmax			
	comp=Z,55nm,0.1s							
CIT				smax	smax			
	comp=E,253nm,0.2s							
KMO	**Kumora**	**3.43**	**26**	*e*Pn		**Pn**	**20 00 34.0**	**+0.2**
KMO				*e*Pg		**Pb**	**20 00 41.5**	**+0.6**
KMO				*e*			20 01 13.2	
KMO				*e*Sg		**Sb**	**20 01 26.1**	**+3.3**
KMO				*e*			20 01 32.3	
KMO				Pmax				
	comp=E,13nm,0.4s							
KMO				max				
	comp=E,76nm,1.1s							
SVKR	**Severomuysk**	**4.40**	**40**	*e*Sg		**Sb**	**20 01 54.7**	**+4.0**
SVKR				Smax				
	comp=E,73nm,0.4s							
MOY	**Mondy**	**4.79**	**259**	*e*Pn		**Pn**	**20 00 49.8**	**-2.7**
MOY				*e*			20 01 02.5	
MOY				*e*			20 01 49.0	
MOY				*e*Sg		**Sb**	**20 02 07.7**	**+5.7**
MOY				max				
	comp=E,4.0nm,0.5s							
MOY				Smax				
	comp=E,36nm,0.9s							
ORL	**Orlik**	**5.32**	**270**	⇑*i*Pn		**Pn**	**20 01 00.6**	**+0.7**
ORL				*e*			20 01 03.9	
ORL				*e*			20 02 00.4	
ORL				*e*Sg		**Sb**	**20 02 23.1**	**+5.7**
ORL				max				
	comp=E,3.0nm,0.5s							
ORL				Smax				
	comp=E,24nm,0.9s							
NLYR	**Nelyaty**	**5.53**	**46**	*e*Pn		**Pn**	**20 01 02.4**	**-0.3**
NLYR				*e*			20 01 09.8	
NLYR				*e*Pg		**Pb**	**20 01 19.1**	**+2.3**
NLYR				*e*			20 02 25.4	
NLYR				*e*Sg		**Sg**	**20 02 31.9**	**-5.5**
NLYR				Pmax				
	comp=E,4.0nm,0.7s							
NLYR				Smax				
	comp=E,37nm,1.6s							
BOD	**Bodaibo**	**5.88**	**30**	*e*Sg		**Sb**	**20 02 41.4**	**+

	comp=E,145μm,0.2s							
DRO	**Drossia**	**0.75**	**341**	P	Pg	20 10 56.8	+0.3	
DRO				S	Sb	20 11 07.1	-0.5	
DRO	**Drossia**	**0.75**	**341**	P	Pg	20 10 56.8	+0.3	
DRO				S	Sb	20 11 07.1	-0.5	
DRO				AML	AML	20 11 12.2		
	comp=E,255μm,0.2s							
DRO				AML	AML	20 11 12.4		
	comp=N,204μm,0.2s							
KLV	**Kalavryta, Ach**	**0.81**	**8**	P	Pg	20 10 56.6	-1.0	
KLV				S	Sb	20 11 09.1	-0.2	
KLV	**Kalavryta, Ach**	**0.81**	**8**	P	Pg	20 10 56.6	-1.0	
KLV				S	Sb	20 11 09.1	-0.2	
VLI	**Veliai**	**0.90**	**125**	P	Pg	20 10 59.1	-0.2	
VLI	**Veliai**	**0.90**	**125**	P	Pg	20 10 59.1	-0.2	
RLS	**Riolos of Patr**	**0.93**	**332**	P	Pb	20 11 00.3	+0.2	
RLS				S	Sb	20 11 12.9	+0.4	
RLS	**Riolos of Patr**	**0.93**	**332**	S	Sb	20 11 12.9	+0.3	
RLS				AML	AML	20 11 17.0		
	comp=E,74μm,0.3s							
RLS				AML	AML	20 11 18.1		
	comp=N,75μm,0.3s							
DID	**Didima**	**1.01**	**74**	P	Pg	20 11 01.4	0.0	
DID				S	Sg	20 11 14.7	+0.2	
DID	**Didima**	**1.01**	**74**	P	Pg	20 11 01.4	+0.1	
DID				S	Sb	20 11 14.7	-0.2	
DID				AML	AML	20 11 16.0		
	comp=N,77μm,0.3s							
DID				AML	AML	20 11 21.6		
	comp=E,68μm,0.3s							
ZKS	**Zakynthos**	**1.08**	**295**	P	Pn	20 11 03.2	0.0	
ZKS	**Zakynthos**	**1.08**	**295**	P	Pn	20 11 03.2	0.0	
LTK	**Loutraki**	**1.09**	**44**	P	Pb	20 11 03.0	+0.1	
LTK	**Loutraki**	**1.09**	**44**	P	Pb	20 11 03.0	+0.1	
TRIZ	**Trizonia**	**1.13**	**2**	P	Pb	20 11 01.9	-1.6	
KALE	**Kalithea**	**1.16**	**5**	P	Pb	20 11 02.5	-1.6	
KALE				S	Sb	20 11 19.1	-0.1	
KALE	**Kalithea**	**1.16**	**5**	P	Pb	20 11 02.5	-1.6	
KALE				S	Sb	20 11 19.1	0.0	
SERG	**Sergoula**	**1.17**	**2**	P	Pb	20 11 03.5	-0.9	
PROD	**Prodromos**	**1.24**	**34**	P	Pn	20 11 05.0	-0.4	
PROD	**Prodromos**	**1.24**	**34**	P	Pn	20 11 05.0	-0.4	
KYTH	**Kithira**	**1.28**	**139**	P	Pn	20 11 04.8	-1.1	
KYTH	**Kithira**	**1.28**	**139**	P	Pn	20 11 04.8	-1.1	
VILL	**Villia**	**1.38**	**48**	P	Pn	20 11 07.4	0.0	
VIL2	**Platees**	**1.39**	**45**	P	Pn	20 11 07.5	0.0	
PVO	**Paravola**	**1.43**	**344**	P	Pb	20 11 08.9	+0.2	
PVO	**Paravola**	**1.43**	**344**	P	Pb	20 11 08.9	+0.1	
PDO	**Prodromos**	**1.51**	**334**	P	Pn	20 11 09.3	+0.2	
PDO	**Prodromos**	**1.51**	**334**	P	Pn	20 11 09.3	+0.2	

JMA 16 20:13:04.6±0.2, 39°.45N×143°.53E, h24km±4km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.33**	**276**	P	Pn	20 13 28.0	+0.3
MIYJ				*e*S	Sn	20 13 45.0	+0.4
JTH	**Tanohata**	**1.38**	**291**	P	Pn	20 13 28.6	+0.3
JTH				*e*S	Sb	20 13 46.4	-0.4
OFUJ	**Ofunato**	**1.49**	**256**	P	Pn	20 13 30.5	+0.6
JOM	**Ohasama**	**1.73**	**271**	P	Pn	20 13 34.3	+1.1
JOM				*e*S	Sb	20 13 56.1	-0.9
JANG	**Nango**	**1.80**	**301**	P	Pn	20 13 34.5	+0.3
JMK	**Ichinoseki**	**1.86**	**255**	P	Pn	20 13 35.9	+0.9
JIO	**Ouri**	**1.97**	**240**	P	Pn	20 13 37.2	+0.8
JIO				*e*S	Sn	20 14 00.2	-0.2
JRG	**Rokugo**	**2.24**	**270**	P	Pn	20 13 41.6	+1.4
JTM	**Tenmabayashi**	**2.31**	**306**	P	Pn	20 13 42.2	+1.0
JTM				*e*S	Sn	20 14 09.9	+1.1
JAH	**Hinai**	**2.35**	**289**	P	Pn	20 13 43.0	+1.3
JAH				S	Sn	20 14 10.9	+1.2
JOU	**Okura**	**2.48**	**245**	P	Pn	20 13 45.0	+1.4
JNBK	**Urakawa-nobuka**	**2.89**	**348**	P	Pn	20 13 51.4	+2.3
JFT	**Otama**	**3.16**	**233**	P	Pn	20 13 54.4	+1.5
MAT	**Matsushiro**	**5.11**	**237**	P	Pn	20 14 22.5	+2.9
MAT				*e*S	Sn	20 15 23.3	+5.4

*ISCJB **16** 20:23:01.6±0.5, 31°.65N±0°.03×115°.93W±0°.04, h23km±5km, Error ellipse: s-maj=5.5km s-min=4.6km az=135.4*
*NEIC **16** 20:23:02.5, 31°.69N×115°.93W, h7km, ML3.2(PAS), ML3.1(ECX), After ECX.*
*ECX **16** 20:23:02.5±0.5, 31°.69N×115°.93W, h7km, MD2.8, ML3.1*
*MEX **16** 20:23:03.5±0.3, 31°.63N×115°.96W, h10km, MD3.6*

ISC 16 20:23:01.4±1.1, 31°.69N±0°.03×115°.92W±0°.03, h12km±10km, n33, σ0°.78/50, 4C-3D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZAX	**El Zacaton**	**0.35**	**240**	⇑*e*P	**Pg**	**20 23 09.0**	**+0.5**
ZAX				*e*S	**Sg**	**20 23 14.0**	**+0.7**
ECNX	**Esteban Cantu**	**0.58**	**267**	⇑*e*P	**Pg**	**20 23 12.8**	**0.0**
ECNX				⇑*e*P	**Pb**	**20 23 13.8**	**+0.1**
ECNX				*e*S	**Sg**	**20 23 20.6**	**0.0**
ECNX				*e*S	**Sb**	**20 23 22.6**	**+0.6**
PBX	**Punta Banda**	**0.69**	**274**	⇓*e*P	**Pg**	**20 23 14.6**	**-0.2**
PBX				*e*S	**Sg**	**20 23 23.7**	**-0.2**
SPX	**San Pedro Mart**	**0.75**	**149**	⇓*e*P	**Pg**	**20 23 15.8**	**-0.3**
SPX				IAML		20 23 26.8	
	comp=N,496nm,0.1s						
SPX				⇓*e*		20 23 26.8	
SPX	**San Pedro Mart**	**0.75**	**149**	*e*Pn	**Pg**	**20 23 15.5**	**-0.5**
CBX	**Cerro Bola**	**0.89**	**314**	*e*P	**Pg**	**20 23 18.5**	**-0.1**
CBX				*e*S	**Sg**	**20 23 30.1**	**-0.2**
CBX	**Cerro Bola**	**0.89**	**314**	*e*P	**Pg**	**20 23 18.3**	**-0.3**
CBX				*e*S	**Sg**	**20 23 30.0**	**-0.2**
CBX				IAML		20 23 31.2	
	comp=E,700nm,0.2s						
CBX	**Cerro Bola**	**0.89**	**314**	*e*Pg	**Pg**	**20 23 18.5**	**-0.1**
CPBX	**Cerro Prieto**	**0.89**	**35**	*e*Pg	**Pn**	**20 23 20.0**	**+0.2**
RMX	**La Rumorosa**	**0.92**	**351**	⇓*e*P	**Pg**	**20 23 18.9**	**-0.3**
RMX				*e*S	**Sg**	**20 23 30.9**	**-0.4**
IKP	**In-Ko-Pah, Jac**	**0.97**	**350**	P	**Pb**	**20 23 20.3**	**0.0**
	baz=171,SNR=40						
IKP				S	**Sg**	**20 23 32.6**	**-0.2**
	baz=171						
TJIG	**Tijuana**	**0.98**	**319**	*e*P	**Pg**	**20 23 20.0**	**-0.4**
TJIG				*e*S	**Sg**	**20 23 32.2**	**-0.9**
BAR	**Barrett**	**1.18**	**327**	*e*Pn	**Pb**	**20 23 23.2**	**-0.5**
BAR				*e*Sn	**Sg**	**20 23 37.9**	**-1.5**
SWSC	**Sam W. Stewart**	**1.25**	**4**	P	**Pg**	**20 23 25.6**	**0.0**
	baz=185,SNR=25						
MONP2	**Monument Peak**	**1.27**	**340**	P	**Pn**	**20 23 25.4**	**+0.2**
	baz=161,SNR=38						
MONP2				S	**Sb**	**20 23 41.4**	**-0.5**
	baz=161						
109C	**Camp Elliot, M**	**1.56**	**320**	P	**Pn**	**20 23 29.5**	**+0.5**
	baz=140,SNR=8.9						
109C				S	**Sn**	**20 23 49.1**	**-0.2**
	baz=140						
GLA	**Glamis**	**1.64**	**34**	P	**Pn**	**20 23 29.9**	**-0.2**
	baz=215						
GLA	**Glamis**	**1.64**	**34**	*e*Pn	**Pn**	**20 23 30.0**	**-0.2**
PFO	**Pinyon Flats O**	**1.97**	**347**	P	**Pn**	**20 23 35.1**	**+0.3**
	baz=167						
PFO				Sb	**Sb**	**20 24 02.6**	**+0.7**
	baz=167						
PFO	**Pinyon Flats O**	**1.97**	**347**	*e*Pn	**Pn**	**20 23 34.9**	**+0.1**
PFO				*e*Pg	**Pb**	**20 23 38.2**	**+0.9**
PFO				*e*Sn	**Sb**	**20 24 02.9**	**+1.0**
113A	**Mohawk Valley,**	**2.11**	**59**	*e*Pn	**Pn**	**20 23 36.8**	**+0.2**
113A				*e*Sn	**Sn**	**20 24 02.1**	**-0.7**
MURC	**Murrieta**	**2.19**	**331**	Sb	**Sb**	**20 24 07.7**	**-0.4**
	baz=150						
BELC	**Belle Mtn. Jos**	**2.30**	**358**	Pb	**Pb**	**20 23 43.1**	**0.0**
	baz=179,SNR=10						
Y12C	**Blythe**	**2.37**	**29**	*e*Pn	**Pn**	**20 23 41.6**	**+1.6**
214A	**Organ Pipe Nat**	**2.66**	**83**	P	**Pn**	**20 23 44.0**	**-0.1**
	baz=265						
MWC	**Mount Wilson**	**3.10**	**325**	*e*Pn	**Pn**	**20 23 49.8**	**-0.6**
Y14A	**Wickenburg**	**3.32**	**47**	*e*Pn	**Pn**	**20 23 54.1**	**+0.9**
SNCC	**San Nicolas Is**	**3.42**	**298**	*e*Pn	**Pn**	**20 23 53.3**	**-1.3**
LDFC	**Landfair**	**3.44**	**11**	*e*Pn	**Pn**	**20 23 57.8**	**+2.7**
GSC	**Goldstone, Bar**	**3.68**	**349**	*e*Pn	**Pn**	**20 23 59.8**	**+1.6**
W13A	**Hualapai Mount**	**3.80**	**26**	*e*Pn	**Pn**	**20 24 01.7**	**+1.7**
TUC	**Tucson**	**4.40**	**81**	*e*Pn	**Pn**	**20 24 08.2**	**+0.1**
X16A	**Lo Mia Camp, P**	**4.64**	**53**	*e*Pn	**Pn**	**20 24 10.8**	**-0.7**

*IDC **16** 20:26:17.4±2.5, 37°.13N×143°.64E, h0km, mb3.5/3, mb1 3.7/5, mb1mx3.4/54, mbtmp3.6/5, ML3.5/2, Error ellipse: s-maj=57.0km s-min=28.8km az=57.0*
*ISCJB **16** 20:26:19.4±0.9, 37°.35N±0°.05×143°.50E±0°.07, h33km, mb3.5/3, Error ellipse: s-maj=7.7km s-min=6.8km az=2.6*
*JMA **16** 20:26:20.5±0.2, 37°.37N×143°.40E, h44km, ML3.5*

ISC 16 20:26:21.4±1.4, 37°.30N±0°.05×143°.47E±0°.10, h35km, n17, σ1°.86/27, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.04**	**305**	P	**Pn**	**20 26 52.5**	**-0.6**
JIO				S	**Sn**	**20 27 16.0**	**-1.3**
JFK	**Kawauchi**	**2.07**	**273**	P	**Pn**	**20 26 53.1**	**-0.5**
JFK				*e*S	**Sn**	**20 27 17.0**	**-1.2**
ONAJ	**Iwakimizuishiy**	**2.14**	**266**	P	**Pn**	**20 26 54.4**	**-0.2**
ONAJ				S	**Sn**	**20 27 18.7**	**-1.3**
JMM	**Marumori**	**2.20**	**286**	P	**Pn**	**20 26 54.7**	**-0.7**
JMM				*e*S	**Sn**	**20 27 20.2**	**-1.2**
JMK	**Ichinoseki**	**2.42**	**314**	P	**Pn**	**20 26 57.7**	**-0.7**
JFT	**Otama**	**2.50**	**276**	P	**Pn**	**20 27 00.2**	**+0.6**
JFT				S	**Sn**	**20 27 28.7**	**-0.2**
JOM	**Ohasama**	**2.76**	**322**	P	**Pn**	**20 27 02.5**	**-0.6**
JOM				*e*S	**Sn**	**20 27 33.7**	**-1.6**
JYK	**Kaneyama**	**2.94**	**304**	P	**Pn**	**20 27 05.6**	**+0.1**
JANG	**Nango**	**3.43**	**334**	S	**Sn**	**20 27 49.4**	**-2.3**
JRY	**Ryogami san**	**3.89**	**252**	P	**Pn**	**20 27 18.8**	**+0.1**
JRY				S	**Sn**	**20 28 00.7**	**-2.4**
MJAR	**Matsushiro Arr**	**4.28**	**261**	Pn	**Pn**	**20 27 25.6**	**+1.6**
	2.3nm,0.3s,baz=88,slow=15,SNR=32						
MJAR				Sn	**Sn**	**20 28 14.5**	**+1.7**
	1.1nm,0.3s,baz=14,slow=25,SNR=5.5						
MAT	**Matsushiro**	**4.28**	**261**	P	**Pn**	**20 27 25.7**	**+1.6**
MAT				*e*S	**Sn**	**20 28 08.8**	**-4.0**
JHJ	**Hachijo jima 2**	**5.15**	**217**	Pn	**Pn**	**20 27 34.8**	**-1.1**
	6.9nm,0.3s,baz=148,slow=21,SNR=6.2						
JHJ				Sn	**Sn**	**20 28 29.2**	**-4.9**
	11nm,0.3s,baz=138,slow=16,SNR=3.8						
JCH	**Chiburi**	**5.31**	**359**	P	**Pn**	**20 27 36.2**	**-1.9**
SONM	**Songino Array**	**29.01**	**303**	P	**P**	**20 32 20.6**	**+2.7**
	0.2nm,0.4s,baz=94,slow=7.3,SNR=3.0						
WRA	**Warramunga Arr**	**57.58**	**190**	P	**P**	**20 36 07.9**	**+0.2**
	0.5nm,0.5s,baz=7.6,slow=7.3,SNR=10						
ASAR	**Alice Springs**	**61.30**	**190**	P	**P**	**20 36 33.8**	**+0.5**
	0.2nm,0.4s,baz=0.2,slow=6.2,SNR=11						

IDC 16 20:33:07.7±8.6, 28°.43S×176°.98W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/36, mbtmp3.7/3, Error ellipse: s-maj=173.6km s-min=33.7km az=112.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.17**	**225**	Pn	Pn	20 33 31.2	-0.1
	108nm,0.3s,baz=87,slow=18,SNR=4.6						
RAO				Sn	Sn	20 33 48.6	+0.7
	319nm,0.3s,baz=265,slow=23,SNR=7.1						
STKA	**Stephens Creek**	**35.84**	**254**	P	P	20 40 08.9	-0.2
	0.8nm,0.6s,baz=109,slow=18,SNR=3.5						
ASAR	**Alice Springs**	**44.15**	**264**	P	P	20 41 18.3	-0.1
	0.3nm,0.6s,baz=106,slow=8.1,SNR=7.9						
WRA	**Warramunga Arr**	**44.96**	**270**	P	P	20 41 24.9	+0.1
	1.3nm,0.6s,baz=109,slow=7.6,SNR=11						

*IDC **16** 20:38:59.4±1.6, 0°.80S×127°.75E, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.6/46, mbtmp3.8/5, ML3.5/1, Error ellipse: s-maj=107.5km s-min=21.1km az=70.0*
*NEIC **16** 20:39:01.3±0.3, 0°.93S×127°.55E, h10km, mb4.4/11, Error ellipse: s-maj=9.1km s-min=5.1km az=59.0*
*ISCJB **16** 20:39:02.2±0.3, 0°.96S±0°.04×127°.56E±0°.04, h31km, mb4.7/12, Error ellipse: s-maj=6.1km s-min=4.7km az=42.0*
*DJA **16** 20:39:04.2±0.5, 1°.S±4°×12°.7E±°, h10km, M4.4/6, mB5.4/1, mb4.7/2, MLv4.2/6, Mw(mB)4.8/1*

ISC 16 20:39:04.1±0.5, 0°.89S±0°.05×127°.56E±0°.05, h31km, n38, σ1°.56/44, mb4.5/12, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LBMI	**Labuha**	**0.26**	**346**	P	**Pb**	**20 39 10.6**	**-0.6**
LBMI				S	**Sb**	**20 39 15.3**	**-0.7**
SANI	**Sanana**	**1.95**	**234**	P	**Pn**	**20 39 35.0**	**-0.1**
SANI				S	**Sn**	**20 39 55.1**	**-3.5**
NLAI	**Namlea**	**2.38**	**191**	P	**Pn**	**20 39 42.5**	**+1.5**
NLAI				S	**Sn**	**20 40 10.9**	**+1.8**
MSAI	**Masohi**	**2.79**	**151**	P	**Pn**	**20 39 49.6**	**+2.9**
MSAI				S	**Sn**	**20 40 13.9**	**-5.5**
KMSI	**Cibinong**	**3.87**	**292**	P	**Pn**	**20 40 02.7**	**+1.2**
LUWI	**Luwuk**	**4.79**	**268**	P	**Pn**	**20 40 14.4**	**+0.1**
LUWI	**Luwuk**	**4.79**	**268**	*e*Pn	**Pn**	**20 40 14.4**	**+0.1**
LUWI				*e*Sn	**Sn**	**20 41 07.0**	**-1.8**
FAKI	**Fak Fak**	**5.10**	**113**	*e*Pn	**Pn**	**20 40 18.8**	**+0.4**
FAKI				*e*Sn	**Sn**	**20 41 14.1**	**-2.2**
MRSI	**Marisa**	**5.79**	**284**	P	**Pn**	**20 40 29.3**	**+1.4**
PCI	**Palu**	**7.73**	**270**	P	**Pn**	**20 40 55.6**	**+1.0**
DAV	**Davao City (W)**	**8.15**	**346**	*e*Pn	**Pn**	**20 40 58.8**	**-1.6**
KAPI	**Kappang**	**8.81**	**242**	*e*Pn	**Pn**	**20 41 08.3**	**-1.2**
MYLDM	**Mound Datu**	**10.88**	**304**	*e*Pn	**Pn**	**20 41 36.3**	**-1.5**
MTN	**Manton Dam**	**12.39**	**164**	*e*Pn	**Pn**	**20 41 58.9**	**+0.4**
FITZ	**Fitzroy Crossi**	**17.21**	**186**	P	**P**	**20 43 03.4**	**-0.2**
	0.1nm,0.3s,baz=5.7,slow=10,SNR=6.0						
FITZ	**Fitzroy Crossi**	**17.21**	**186**	*e*Pn	**Pn**	**20 43 00.6**	**-1.7**
	30nm,2.0s						
WRAB	**Tennant Creek**	**20.06**	**161**	*e*P	**P**	**20 43 33.3**	**-1.6**
	7.1nm,0.9s						
WR1	**Warramunga Arr**	**20.06**	**161**	*e*P	**P**	**20 43 34.9**	**-0.1**
	21nm,1.7s						
WRA	**Warramunga Arr**	**20.06**	**161**	P	**P**	**20 43 34.9**	**-0.1**
	0.8nm,0.4s,baz=340,slow=11,SNR=18						
WB2	**Warramunga Arr**	**20.07**	**161**	*e*P	**P**	**20 43 33.5**	**-1.5**
AS31	**Alice Springs**	**23.46**	**165**	*e*P	**P**	**20 44 11.3**	**+0.1**
	1.2nm,0.6s						
ASAR	**Alice Springs**	**23.46**	**165**	P	**P**	**20 44 10.8**	**-0.3**
	1.8nm,0.5s,baz=344,slow=11,SNR=21						
AS01	**Alice Springs**	**23.47**	**165**	*e*P	**P**	**20 44 10.0**	**-1.2**
CTA	**Charters Tower**	**26.43**	**137**	*e*P	**P**	**20 44 37.8**	**-0.5**
BBOO	**Buckleboo**	**32.74**	**167**	*e*P	**P**	**20 45 34.5**	**+0.3**
	157nm,2.0s						
HNR	**Honiara**	**33.32**	**106**	*e*P	**P**	**20 45 39.0**	**-0.5**
	152nm,1.0s						
STKA	**Stephens Creek**	**33.55**	**158**	*e*P	**P**	**20 45 42.0**	**+0.7**
	10nm,1.9s						
KWAJ	**Kwajalein Atol**	**41.05**	**76**	*e*P	**P**	**20 46 46.5**	**+1.3**
	1μm,1.8s						
LSA	**Lhasa**	**46.17**	**314**	*e*P	**P**	**20 47 29.4**	**+2.6**
	11nm,1.7s						
ASAJ	**Asahikawa**	**46.78**	**15**	*e*P	**P**	**20 47 30.9**	**+0.1**
	24nm,1.7s						
MK01	**Makanchi Array**	**61.80**	**326**	*e*P	**P**	**20 49 20.6**	**+0.5**
MK31	**Makanchi Array**	**61.82**	**326**	*e*P	**P**	**20 49 21.1**	**+0.9**
MK32	**Makanchi Array**	**61.82**	**326**	*e*P	**P**	**20 49 20.9**	**+0.7**
MKAR	**Makanchi Array**	**61.82**	**326**	P	**P**	**20 49 20.9**	**+0.7**
	0.9nm,0.4s,baz=113,slow=7.8,SNR=19						
MKAR	**Makanchi Array**	**61.82**	**326**	*e*P	**P**	**20 49 21.4**	**+1.1**
	12nm,0.6s						
MAKZ	**Makanchi**	**62.01**	**326**	*e*P	**P**	**20 49 21.9**	**+0.5**
	3.7nm,1.3s						
BVAR	**Borovoye Array**	**71.64**	**328**	P	**P**	**20 50 22.2**	**-0.4**
	0.3nm,0.4s,baz=123,slow=7.3,SNR=4.2						
ZRNK	**Zerenda**	**72.35**	**327**	*e*P	**P**	**20 50 27.5**	**+0.6**
	8.7nm,1.8s						

*IDC **16** 20:40:07.0±1.0, 9°.66N×122°.70E, h0km, mb3.9/5, mb1 4.0/5, mb1mx3.5/49, mbtmp3.9/5, Error ellipse: s-maj=71.8km s-min=20.4km az=72.0*
*MAN **16** 20:40:10.9, 9°.75N×122°.39E, h8km, mb4.7, ML3.6, MS3.5*

ISC 16 20:40:06.5±2.0, 9°.58N±0°.05×122°.27E±0°.07, h1km±13km, n14, σ1°.35/21, mb3.9/5, 5C-3D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.98**	**104**	⇓*i*P	**Pg**	**20 40 23.1**	**-2.3**
SNPH				*i* S	**Sg**	**20 40 38.0**	**0.0**
JAP	**San Jose, Anti**	**1.21**	**345**	⇑*i*P	**Pn**	**20 40 28.6**	**-1.9**
DCPH	**Dipolog City**	**1.45**	**133**	⇑*e*P	**Pg**	**20 40 36.2**	**+1.8**
TBP	**Tagbilaran**	**1.57**	**86**	⇑*i*P	**Pg**	**20 40 38.2**	**+1.5**
TBP				*i* S	**Sg**	**20 40 58.9**	**+1.7**
LLP	**Lapu-Lapu**	**1.82**	**66**	*e*P	**Pb**	**20 40 39.6**	**-1.1**
LLP				*e*S	**Sb**	**20 41 03.5**	**-0.6**
RCP	**Roxas**	**2.03**	**13**	⇓*e*P	**Pn**	**20 40 42.0**	**+0.2**
RCP				*e*S	**Sb**	**20 41 10.1**	**+0.2**
CGP	**Cagayan de Oro**	**2.64**	**115**	⇑*e*P	**Pb**	**20 40 54.2**	**-0.4**
CGP				*i* S	**Sb**	**20 41 26.7**	**-0.9**
CTBH	**Cotabato--PC H**	**3.05**	**140**	⇓*i*P	**Pb**	**20 41 00.0**	**-1.6**
PLP	**Palo**	**3.10**	**59**	⇑*e*P	**Pn**	**20 40 57.1**	**+0.5**
PLP				*i* S	**Sn**	**20 41 33.4**	**-0.9**
WRA	**Warramunga Arr**	**31.65**	**158**	P	**P**	**20 46 31.2**	**-0.3**
	0.5nm,1.0s,baz=344,slow=8.7,SNR=4.3						
ASAR	**Alice Springs**	**34.94**	**161**	P	**P**	**20 47 00.8**	**+0.5**
	1.0nm,0.6s,baz=341,slow=7.2,SNR=13						
ASAR				PcP	**PcP**	**20 49 32.0**	**-1.0**
	0.3nm,0.7s,baz=342,slow=2.7,SNR=4.3						
USRK	**Ussuriysk Ar.**	**35.51**	**12**	P	**P**	**20 47 04.6**	**-0.3**
	1.6nm,0.6s,baz=191,slow=6.6,SNR=4.8						
MKAR	**Makanchi Array**	**50.26**	**325**	P	**P**	**20 49 04.7**	**+0.3**
	0.4nm,0.5s,baz=132,slow=7.3,SNR=4.3						
FINES	**FINESS Array B**	**84.62**	**331**	P	**P**	**20 52 44.0**	**+2.4**
	3.5nm,0.7s,baz=72,slow=3.6,SNR=18						

*ISCJB **16** 20:41:21.8±0.5, 39°.05N±0°.04×28°.70E±0°.05, h10km±4km, Error ellipse: s-maj=7.1km s-min=5.1km az=44.7*
*ISK **16** 20:41:21.4, 39°.06N×28°.73E, h10km, MD2.5*
*DDA **16** 20:41:21.6, 39°.02N×28°.69E, h12km, Md2.3*
*CSEM **16** 20:41:22.0±0.1, 39°.05N×28°.70E, h10km, MD2.3, Error ellipse: s-maj=4.1km s-min=3.2km az=122.0*

ISC 16 20:41:22.2±0.8, 39°.04N±0°.03×28°.73E±0°.03, h10km±5km, n25, σ1°.44/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.01**	**266**	*i* P	**Pg**	**20 41 24.2**	**+0.2**
DEMI				*i* S	**Sg**	**20 41 25.4**	**+0.2**
DEMI	**Demirci**	**0.01**	**266**	P	**Pg**	**20 41 24.2**	**+0.2**
DEMI				S	**Sg**	**20 41 25.4**	**+0.2**
KULA	**Kula-Manisa**	**0.53**	**186**	*e*PG	**Pb**	**20 41 33.0**	**-0.7**
KULA				*e*SG	**Sb**	**20 41 40.0**	**-1.4**
KULA	**Kula-Manisa**	**0.53**	**186**	*e*Pg	**Pb**	**20 41 33.0**	**-0.7**
KULA				*e*Sg	**Sb**	**20 41 40.0**	**-1.4**
MANT	**Manisa**	**0.57**	**194**	*i* P	**Pg**	**20 41 32.4**	**-0.8**
MANT				*i* S	**Sg**	**20 41 39.8**	**-0.9**
MANT	**Manisa**	**0.57**	**194**	*i* P	Pn	20 41 46.1	+10
MANT				*i* S	**Sn**	**20 41 53.4**	**+7.2**
MANT	**Manisa**	**0.57**	**194**	P	**Pg**	**20 41 32.4**	**-0.8**
MANT				S	**Sg**	**20 41 39.8**	**-0.9**
GDZ	**Gediz**	**0.59**	**85**	*i* P	**Pb**	**20 41 34.1**	**-0.6**
GDZ				*i* S	**Sb**	**20 41 42.7**	**-0.5**
GDZ	**Gediz**	**0.59**	**85**	P	**Pb**	**20 41 34.1**	**-0.6**
GDZ				S	**Sb**	**20 41 42.7**	**-0.5**
TVSB	**Tavsanli**	**0.70**	**54**	*e*PG	**Pg**	**20 41 35.5**	**-0.2**
TVSB				*e*SG	**Sg**	**20 41 45.0**	**+0.1**
TVSB	**Tavsanli**	**0.70**	**54**	*e*Pg	**Pg**	**20 41 35.5**	**-0.2**
TVSB				*e*Sg	**Sg**	**20 41 45.0**	**+0.1**
AKS	**Akhisar**	**0.73**	**257**	*e*PG	**Pb**	**20 41 36.3**	**-0.8**
AKS	**Akhisar**	**0.73**	**257**	*e*Pg	**Pb**	**20 41 36.3**	**-0.8**
BALB	**Balikesir**	**0.89**	**312**	*e*PG	**Pb**	**20 41 38.9**	**-0.8**
BALB	**Balikesir**	**0.89**	**312**	*e*Pg	**Pb**	**20 41 38.9**	**-0.8**
KCTX	**Karacabey (Bur**	**1.25**	**347**	*e*PN	**Pb**	**20 41 45.4**	**-0.6**
KCTX	**Karacabey (Bur**	**1.25**	**347**	*e*Pn	**Pb**	**20 41 45.4**	**-0.6**
IZI	**Iznik**	**1.41**	**24**	*e*PN	**Pn**	**20 41 47.2**	**-0.9**
IZI	**Iznik**	**1.41**	**24**	*e*Pn	**Pn**	**20 41 47.2**	**-0.9**
EDC	**Edincik**	**1.46**	**333**	*e*PN	**Pn**	**20 41 48.3**	**-0.4**
EDC	**Edincik**	**1.46**	**333**	*e*Pn	**Pn**	**20 41 48.3**	**-0.4**
ARMT	**Armutlu**	**1.52**	**4**	*e*PN	**Pn**	**20 41 49.4**	**-0.2**
ARMT	**Armutlu**	**1.52**	**4**	*e*Pn	**Pn**	**20 41 49.4**	**-0.2**
BORA	**Eskisehir**	**1.58**	**57**	*i* P	**Pg**	**20 41 51.7**	**-0.7**
BORA				*i* S	**Sb**	**20 42 11.2**	**-0.4**
BORA	**Eskisehir**	**1.58**	**57**	P	**Pg**	**20 41 51.7**	**-0.7**
BORA				S	**Sb**	**20 42

SONM	**Songino Array**	**38.09**	**340**	P		**P**	**21 15 43.9**	**+2.4**		
	0.3nm,0.5s,baz=153,slow=9.7,SNR=2.9									
STKA	**Stephens Creek**	**47.33**	**161**	P		**P**	**21 16 56.9**	**+0.4**		
	2.5nm,0.6s,baz=348,slow=7.1,SNR=6.3									
MKAR	**Makanchi Array**	**49.16**	**322**	P		**P**	**21 17 10.2**	**-0.3**		
	0.3nm,0.6s,baz=108,slow=8.0,SNR=3.4									
ZALV	**Zalesovo Beam**	**51.69**	**331**	P		**P**	**21 17 28.6**	**-0.8**		
	0.8nm,0.6s,baz=133,slow=6.1,SNR=5.9									
KURK	**Kurchatov**	**53.17**	**325**	*e*P		**P**	**21 17 40.9**	**+0.5**		
	58nm,1.3s									
BRVK	**Borovoye**	**58.84**	**325**	*e*P		**P**	**21 18 21.4**	**+0.4**		
	2.4nm,0.7s									
ARU	**Arti**	**66.32**	**326**	*e*P		**P**	**21 19 11.2**	**+0.5**		
	0.7nm,0.5s									
KIV	**Kislovodsk**	**75.64**	**312**	*e*P		**P**	**21 20 08.1**	**+0.4**		
	3.8nm,0.9s									
MCK	**McKinley**	**76.73**	**27**	*e*P		**P**	**21 20 12.7**	**-0.7**		
	1.2nm,0.5s									
SML	**Sawmill**	**77.10**	**29**	*e*P		**P**	**21 20 14.1**	**-1.4**		
	0.2nm,0.4s									
COLA	**College**	**77.15**	**26**	*e*P		**P**	**21 20 14.5**	**-1.1**		
	1.9nm,0.6s									
BMRM	**Bremner River**	**78.96**	**30**	*e*P		**P**	**21 20 23.0**	**-2.9**		
	6.0nm,0.7s									
ARCES	**ARCESS Array B**	**81.26**	**339**	P		**P**	**21 20 40.2**	**+2.1**		
	2.2nm,0.9s,baz=79,slow=6.5,SNR=3.6									
INK	**Inuvik**	**82.24**	**22**	*e*P		**P**	**21 20 42.6**	**-0.6**		
	1.1nm,0.8s									
RES	**Resolute Bay**	**89.07**	**10**	*e*P		**P**	**21 21 16.0**	**-1.0**		
	3.9nm,0.9s									
SUMG	**Summit**	**93.96**	**355**	*e*P		**P**	**21 21 39.1**	**-1.2**		
	0.5nm,0.6s									
NEW	**Newport**	**97.96**	**37**	*e*P		**P**	**21 21 57.7**	**-0.8**		
	0.6nm,0.6s									

ISCJB ***16*** *21:32:34.8±1.2, 61.9°N±0.2°×170.2°E±0.3, h10km, mb3.7/5, Error ellipse: s-maj=35.9km s-min=16.6km az=171.8*

IDC ***16*** *21:32:35.0±1.6, 61.91°N×169.96°E, h0km, mb3.7/5, mb1 3.8/6, mb1mx3.5/30, mbtmp3.6/6, ML3.5/1, Error ellipse: s-maj=43.2km s-min=30.1km az=157.0*

ISC 16 21:32:36.1±1.4, 61.8N±0.3°×170.3E±0.1, h10km, n7, σ1§46/7, mb3.7/5, Eastern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SEY	**Seymchan**	**8.40**	**285**	Pn		**Pn**	**21 34 39.4**	**+1.7**
	0.3nm,0.3s,baz=90,slow=20,SNR=3.6							
ILAR	**Eielson Array**	**19.18**	**62**	P		**Pn**	**21 37 01.3**	**+1.0**
	0.1nm,0.3s,baz=268,slow=9.1,SNR=8.5							
SONM	**Songino Array**	**37.72**	**278**	P		**P**	**21 39 49.8**	**-1.9**
	0.2nm,0.3s,baz=46,slow=6.2,SNR=2.6							
MKAR	**Makanchi Array**	**49.40**	**295**	P		**P**	**21 41 25.8**	**+0.2**
	0.5nm,0.6s,baz=42,slow=6.7,SNR=5.3							
AKASG	**Malin Array Be**	**63.61**	**334**	P		**P**	**21 43 06.4**	**-0.2**
	0.2nm,0.3s,baz=21,slow=6.6,SNR=4.5							
GERES	**GERESS Array B**	**68.09**	**344**	P		**P**	**21 43 34.7**	**-0.9**
	0.8nm,0.7s,baz=35,slow=4.9,SNR=7.3							
WRA	**Warramunga Arr**	**86.40**	**214**	P		**P**	**21 45 18.7**	**+0.4**
	0.4nm,0.7s,baz=23,slow=5.4,SNR=4.7							

ISCJB ***16*** *21:36:02.3±0.6, 39.07°N±0.04°×29.01°E±0.04, h9km, Error ellipse: s-maj=7.0km s-min=4.0km az=148.1*

CSEM ***16*** *21:36:02.4±0.2, 39.06°N×29.01E, h10km, MD2.5, Error ellipse: s-maj=4.7km s-min=3.1km az=134.0*

ISK ***16*** *21:36:02.0, 39.08°N×29.05E, h12km, MD2.6*

DDA ***16*** *21:36:02.5, 39.02°N×29.01E, h7km, Md2.5*

ISC 16 21:36:02.4±0.9, 39.06N±0.04×29.01E±0.03, h9km, n16, σ0§54/24, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DEMI	**Demirci**	**0.23**	**265**	*i* P		**Pg**	**21 36 07.7**	**+0.6**
DEMI				*i* S		**Sg**	**21 36 11.1**	**+0.8**
DEMI	**Demirci**	**0.23**	**265**	P		**Pg**	**21 36 07.7**	**+0.6**
DEMI				S		**Sg**	**21 36 11.1**	**+0.8**
GDZ	**Gediz**	**0.37**	**86**	*i* P		**Pg**	**21 36 10.3**	**+0.6**
GDZ				*i* S		**Sg**	**21 36 15.6**	**+1.0**
GDZ	**Gediz**	**0.37**	**86**	P		**Pg**	**21 36 10.3**	**+0.6**
GDZ				S		**Sg**	**21 36 15.6**	**+1.0**
TVSB	**Tavsanli**	**0.52**	**42**	*e*PG		**Pg**	**21 36 12.3**	**-0.3**
TVSB				*e*SG		**Sg**	**21 36 19.2**	**-0.3**
TVSB	**Tavsanli**	**0.52**	**42**	*e*Pg		**Pg**	**21 36 12.3**	**-0.3**
TVSB				*e*Sg		**Sg**	**21 36 19.2**	**-0.3**
KULA	**Kula-Manisa**	**0.61**	**207**	*e*PG		**Pb**	**21 36 14.9**	**-0.4**
KULA	**Kula-Manisa**	**0.61**	**207**	*e*Pg		**Pb**	**21 36 14.9**	**-0.4**
MANT	**Manisa**	**0.67**	**212**	*i* P		**Pg**	**21 36 15.0**	**-0.4**
MANT				*i* S		**Sg**	**21 36 24.4**	**+0.1**
MANT	**Manisa**	**0.67**	**212**	P		**Pg**	**21 36 15.0**	**-0.4**
MANT				S		**Sg**	**21 36 24.4**	**+0.1**
BALB	**Balikesir**	**1.05**	**304**	*e*PG		**Pn**	**21 36 23.3**	**0.0**
BALB	**Balikesir**	**1.05**	**304**	*e*Pg		**Pn**	**21 36 23.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*PN		**Pn**	**21 36 26.4**	**-0.4**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*Pn		**Pn**	**21 36 26.4**	**-0.4**
ARMT	**Armutlu**	**1.50**	**356**	*e*PN		**Pn**	**21 36 29.6**	**+0.1**
ARMT	**Armutlu**	**1.50**	**356**	*e*Pn		**Pn**	**21 36 29.7**	**+0.1**

IDC ***16*** *21:54:03.5±0.4, 29.65°S×176.84W, h0km, mb4.7/18, mb1 4.9/19, mb1mx4.8/31, mbtmp4.7/19, ML3.3/1, MS4.6/10, Ms1 4.6/10, ms1mx4.2/27, Error ellipse: s-maj=17.9km s-min=12.3km az=7.0*

BJI ***16*** *21:54:04.4, 29.45S×176.56W, h13km, mb5.4/34, mB5.6/26, Ms5.2/21, Ms7 4.9/20*

GCMT ***16*** *21:54:05.2±0.6, 29.72S×176.07W, h40km±1km, MW5.2/55, Moment Tensor Solution. s31,c38; s55,c73; Duration: 1§0 Moment tensor: Scale 10^{17}Nm; M_{rr}0.77±.07; $M_{\theta\theta}$-0.09±.05; $M_{\phi\phi}$-0.68±.04; $M_{r\theta}$0.17±.03; $M_{r\phi}$-0.18±.04; $M_{\theta\phi}$0.36±.03; Best double couple: $M_0$0.85100×10^{17} NP1:ϕs20.00000°, δ59.00000°, λ94.00000°. NP2: ϕs192.00000°, δ32.00000°, λ83.00000°. Principal axes: T 0.8700, Plg76.0000°, Azm302.0000°; N -0.0390, Plg4.0000°, Azm198.0000°; P -0.8320, Plg14.0000°, Azm107.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***16*** *21:54:05.2±0.2, 29.80S×176.86W, h10km, mb5.0/62 Error ellipse: s-maj=6.6km s-min=4.6km az=152.0*

ISCJB ***16*** *21:54:06.2±0.2, 29.85S±0.04×176.93W±0.04, h24km, mb5.0/86, MS4.7/16, Error ellipse: s-maj=6.0km s-min=3.9km az=149.9*

MOS ***16*** *21:54:07.6±1.2, 29.78S×176.86W, h33km, mb5.3/29, Error ellipse: s-maj=9.6km s-min=9.4km az=30.5*

ISC 16 21:54:07.2±0.3, 29.91S±0.05×176.84W±0.05, h24km, n349, σ1§38/362, mb5.1/85, MS4.8/16, 24C-7D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**1.15**	**305**	Pn		**Pn**	**21 54 26.8**	**-1.0**
	2µm,0.3s,baz=114,slow=4.7,SNR=52							
RAO				Sn		**Sn**	**21 54 41.7**	**-1.0**
	2µm,0.3s,baz=90,slow=20,SNR=16							
RAO				LR		LR	21 54 54.0	
	comp=Z,8µm,21.6s,baz=86,slow=50							
RAO	**Raoul Island**	**1.15**	**305**	*e*Pg		**Pn**	**21 54 27.1**	**-0.7**
RAO				Sn		**Sn**	**21 54 41.8**	**-1.0**
RAO				*e*Sn		**Sb**	**21 54 44.2**	**+1.4**
OUZ	**Omahuta**	**9.65**	**234**	*e*Pn		**Pn**	**21 56 26.1**	**+1.5**
URZ	**Urewera**	**9.72**	**209**	Pn		**Pn**	**21 56 21.3**	**-4.2**
	0.7nm,0.3s,baz=31,slow=5.9,SNR=5.1							
URZ				Sn		**Sn**	**21 58 09.5**	**-4.4**
	3.0nm,0.3s,baz=131,slow=11,SNR=4.4							
BFZ	**Birch Farm**	**12.13**	**206**	*e*Pn		**Pn**	**21 57 01.1**	**+2.6**
BFZ				*e*Sn		**Sn**	**21 59 08.4**	**-4.7**
MSVF	**Nonsavu**	**12.99**	**338**	*e*P		**Pn**	**21 57 09.4**	**-1.1**
MSVF				pmax		pmax		
	comp=Z,39nm,0.9s							
MSVF	**Nonsavu**	**12.99**	**338**	*e*Pn		**Pn**	**21 57 09.3**	**-1.1**
	comp=Z,39nm,0.9s							
OXZ	**Oxford**	**16.07**	**211**	*e*Pn		**Pn**	**21 57 52.9**	**+1.3**
	comp=Z,58nm,0.6s							
OXZ				*e*Sn		**Sn**	**22 00 49.2**	**+0.1**
RPZ	**Rata Peaks**	**16.82**	**212**	P		**Pn**	**21 57 59.2**	**-1.9**
	comp=Z,1.9nm,0.3s,baz=92,slow=2.9,SNR=6.8							
RPZ				S		Sn	22 00 46.8	-20
	comp=Z,0.8nm,0.3s,baz=100,slow=6.1,SNR=2.9							
RPZ	**Rata Peaks**	**16.82**	**212**	*e*Pn		**P**	**21 58 02.5**	**-0.6**
	comp=Z,205nm,1.8s							
DZM	**Mont Dzumac**	**16.93**	**294**	Pn		**P**	**21 58 06.5**	**+2.1**
	comp=Z,1.4nm,0.3s,baz=164,slow=15,SNR=13							
DZM				LR		LR	22 03 29.7	
	comp=Z,3µm,18.2s,baz=120,slow=34							
DZM	**Mont Dzumac**	**16.93**	**294**	*e*LR		LR	22 01 56.3	
	comp=Z,3µm,23.2s							
DZM	**Mont Dzumac**	**16.93**	**294**	*e*Pn		**Pn**	**21 58 02.2**	**-0.4**
	comp=Z,250nm,1.5s							
RAR	**Rarotonga**	**17.65**	**65**	P		**Pn**	**21 58 10.7**	**-0.8**
	comp=Z,1.0nm,0.3s,baz=229,slow=6.3,SNR=6.4							
RAR				LR		LR	22 03 59.8	
	comp=Z,457nm,21.1s,baz=259,slow=34							
RAR	**Rarotonga**	**17.65**	**65**	*e*P		**Pn**	**21 58 10.2**	**-1.4**
RAR				pmax		pmax		
	comp=Z,217nm,1.3s							
RAR	**Rarotonga**	**17.65**	**65**	*e*Pn		**Pn**	**21 58 10.2**	**-1.4**
	comp=Z,217nm,1.3s							
LHI	**Lord Howe Isla**	**20.77**	**259**	P		Pn	21 58 50.4	+1.4
	baz=21,SNR=6.2							
LHI	**Lord Howe Isla**	**20.77**	**259**	*e*P		**P**	**21 58 47.4**	**+0.9**
	comp=Z,154nm,0.8s							
TBI	**Tubuai**	**25.29**	**82**	*e*LR		LR	22 05 43.0	
	comp=Z,1µm,26.8s							
ARMA	**Armidale**	**27.23**	**261**	P		**P**	**21 59 49.9**	**+0.4**
	baz=27,SNR=7.2							
ARMA	**Armidale**	**27.23**	**261**	*e*P		**P**	**21 59 49.0**	**-0.5**
	comp=Z,116nm,1.8s							
PPT2	**Papeete2**	**27.73**	**70**	*e*LR		LR	22 06 58.0	
	comp=Z,991nm,26.0s							
PPT	**Papeete**	**27.74**	**70**	P		**P**	**21 59 53.1**	**-0.9**
	comp=Z,58nm,1.0s,baz=246,slow=20,SNR=1.9							
PPT				LR		LR	22 08 02.6	
	comp=Z,400nm,21.6s,baz=247,slow=30							
EIDS	**Eidsvold**	**28.72**	**271**	P		**P**	**22 00 04.3**	**+1.5**
	baz=29,SNR=6.1							
EIDS	**Eidsvold**	**28.72**	**271**	*e*P		**P**	**22 00 04.6**	**+1.8**
	comp=Z,45nm,1.4s							
CAN	**Canberra**	**29.18**	**250**	*e*P		**P**	**22 00 07.5**	**+0.6**
CAN				pmax		pmax		
	comp=Z,21nm,1.1s							
CAN	**Canberra**	**29.18**	**250**	*e*P		**P**	**22 00 07.5**	**+0.6**
	comp=Z,20nm,1.1s							
YNG	**Young**	**29.68**	**252**	P		**P**	**22 00 13.0**	**+1.7**
	baz=30							
HNR	**Honiara**	**29.77**	**308**	LR		LR	22 11 06.7	
	comp=Z,606nm,18.8s,baz=147,slow=35							
RMQ	**Roma**	**30.45**	**268**	P		**P**	**22 00 20.1**	**+2.0**
	baz=30,SNR=6.3							
TOO	**Toolangi**	**32.08**	**246**	P		**P**	**22 00 34.1**	**+1.7**
	baz=32,SNR=5.5							
TOO	**Toolangi**	**32.08**	**246**	P		**P**	**22 00 33.1**	**+0.7**
CMSA	**Cobar Meteorol**	**32.15**	**257**	P		**P**	**22 00 34.8**	**+1.7**
	baz=32,SNR=19							
QLP	**Quilpie**	**34.34**	**266**	P		**P**	**22 00 52.6**	**+0.4**
	baz=34,SNR=5.5							
CTA	**Charters Tower**	**34.72**	**278**	P		**P**	**22 00 55.5**	**0.0**
	comp=Z,6.0nm,0.6s,baz=106,slow=14,SNR=6.3							
CTA				LR		LR	22 14 01.9	
	comp=Z,2µm,19.0s,baz=165,slow=35							
CTAO	**Charters Tower**	**34.72**	**278**	*e*P		**P**	**22 00 54.9**	**-0.7**
CTAO				pmax		pmax		
	comp=Z,61nm,1.6s							
CTAO	**Charters Tower**	**34.72**	**278**	*e*P		**P**	**22 00 54.9**	**-0.7**
	comp=Z,61nm,1.6s							
ARPS	**Mount Arapiles**	**34.99**	**248**	P		**P**	**22 00 58.9**	**+1.3**
	baz=35,SNR=4.7							
STKA	**Stephens Creek**	**35.57**	**256**	P		**P**	**22 01 03.5**	**+0.8**
	comp=Z,18nm,0.8s,baz=93,slow=9.1,SNR=24							
STKA				LR		LR	22 15 25.7	
	comp=Z,2µm,18.6s,baz=175,slow=36							
STKA	**Stephens Creek**	**35.57**	**256**	P		**P**	**22 01 03.9**	**+1.1**
	baz=36,SNR=14							
STKA	**Stephens Creek**	**35.57**	**256**	*e*P		**P**	**22 01 04.1**	**+1.3**
STKA				pmax		pmax		
	comp=Z,6.0nm,0.9s							
STKA	**Stephens Creek**	**35.57**	**256**	*e*P		**P**	**22 01 04.1**	**+1.3**
	comp=Z,6.0nm,0.9s							
MTSU	**Mount Surprise**	**37.20**	**279**	P		**P**	**22 01 17.8**	**+1.0**
	baz=37,SNR=5.7							
HTT	**Hallett**	**37.60**	**253**	P		**P**	**22 01 20.6**	**+0.4**
	baz=38,SNR=14							
RKT	**Rikitea**	**37.91**	**90**	*e*LR		LR	22 11 48.0	
	comp=Z,781nm,24.5s							
PMG	**Port Moresby**	**39.32**	**294**	LR		LR	22 15 21.7	
	comp=Z,814nm,19.0s,baz=186,slow=33							
BBOO	**Bueboo**	**40.07**	**253**	P		**P**	**22 01 40.4**	**-0.4**
	baz=40,SNR=11							
TAOE	**Nuku Hiva Isla**	**40.19**	**66**	*e*LR		LR	22 12 25.4	
	comp=Z,784nm,25.8s							
AS01	**Alice Springs**	**44.10**	**266**	*e*P		**P**	**22 02 14.0**	**+0.1**
AS31	**Alice Springs**	**44.14**	**266**	*e*P		**P**	**22 02 13.7**	**-0.5**
	comp=Z,2.6nm,0.8s							
ASAR	**Alice Springs**	**44.14**	**266**	P		**P**	**22 02 12.8**	**-1.4**
	comp=Z,6.4nm,0.7s,baz=108,slow=8.2,SNR=43							
ASAR				PcP		**PcP**	**22 03 58.4**	**-0.6**
	comp=Z,1.0nm,0.5s,baz=118,slow=4.2,SNR=3.7							
ASAR				ScP		**ScP**	**22 07 50.3**	**+0.9**
	comp=Z,0.7nm,0.9s,baz=101,slow=4.8,SNR=3.0							
ASAR				LR		LR	22 20 31.7	
	comp=Z,2µm,19.1s,baz=173,slow=36							
WB2	**Warramunga Arr**	**45.08**	**271**	*e*P		**P**	**22 02 20.9**	**-0.7**
	comp=Z,34nm,0.9s							
WRAB	**Tennant Creek**	**45.08**	**271**	*de*P		**P**	**22 02 20.7**	**-1.0**
WRAB				pmax		pmax		
	comp=Z,110nm,1.2s							
WRAB	**Tennant Creek**	**45.08**	**271**	*e*P		**P**	**22 02 20.8**	**-0.8**
	comp=Z,28nm,0.9s							
WRA	**Warramunga Arr**	**45.09**	**271**	P		**P**	**22 02 20.6**	**-1.1**
	comp=Z,19nm,0.7s,baz=111,slow=7.3,SNR=110							
WRA				PcP		**PcP**	**22 04 01.6**	**-0.7**
	comp=Z,2.7nm,1.0s,baz=107,slow=2.9,SNR=2.5							
FORT	**Forrest**	**47.15**	**254**	*e*P		**P**	**22 02 37.6**	**-0.1**
	comp=Z,272nm,0.7s							
WRKA	**Warakurna**	**48.54**	**262**	P		**P**	**22 02 48.5**	**-0.2**
	baz=48,SNR=11							
SBA	**Scott Base**	**48.60**	**185**	*e*P		**P**	**22 02 50.6**	**+2.2**
SBA				pmax		pmax		
	comp=Z,28nm,1.2s							
SBA	**Scott Base**	**48.60**	**185**	*e*P		**P**	**22 02 50.5**	**+2.2**
	comp=Z,28nm,1.2s							
VNDA	**Vanda**	**48.68**	**186**	P		**P**	**22 02 52.2**	**+3.2**
	comp=Z,2.8nm,1.0s,baz=353,slow=5.7,SNR=6.5							
VNDA	**Vanda**	**48.68**	**186**	*e*P		**P**	**22 02 50.1**	**+1.1**
VNDA				pmax		pmax		
	comp=Z,7.0nm,1.3s							
VNDA	**Vanda**	**48.68**	**186**	*e*P		**P**	**22 02 50.1**	**+1.1**
	comp=Z,6.8nm,1.3s							
KMBL	**Kambalda**	**52.13**	**252**	P		**P**	**22 03 14.3**	**-1.4**
	baz=52,SNR=5.1							
FITZ	**Fitzroy Crossi**	**53.37**	**269**	P		**P**	**22 03 24.3**	**-0.7**
	comp=Z,17nm,1.0s,baz=112,slow=8.2,SNR=16							
FITZ	**Fitzroy Crossi**	**53.37**	**269**	P		**P**	**22 03 24.7**	**-0.3**
	baz=53,SNR=12							
FITZ	**Fitzroy Crossi**	**53.37**	**269**	*e*P		**P**	**22 03 24.4**	**-0.7**
	comp=Z,23nm,1.0s							
KLBR	**Kellerberrin**	**55.46**	**250**	P		**P**	**22 03 38.3**	**-1.8**
	baz=55,SNR=7.9							
MEEK	**Meekatharra**	**56.27**	**256**	P		**P**	**22 03 44.8**	**-1.2**
	baz=56,SNR=4.0							
MBWA	**Marble Bar**	**57.28**	**263**	*e*P		**P**	**22 03 52.5**	**-0.7**
	comp=Z,15nm,1.1s							
MORW	**Morawa**	**57.63**	**253**	P		**P**	**22 03 54.7**	**-0.9**
	baz=58,SNR=7.0							
QSPA	**South Pole Qui**	**60.20**	**180**	*e*P		**P**	**22 04 14.7**	**+1.7**
	comp=Z,142nm,1.2s							
MMRI	**Maumere**	**60.58**	**277**	*e*P		**P**	**22 04 15.5**	**-0.8**
	comp=Z,59nm,1.1s							
PCI	**Palu**	**66.58**	**283**	P		**P**	**22 04 59.3**	**+3.4**
PCI				pmax		pmax		
	comp=Z,24nm,1.0s							
MAW	**Mawson**	**73.11**	**200**	P		**P**	**22 05 37.2**	**+2.1**
	comp=Z,9.4nm,1.0s,baz=112,slow=7.3,SNR=14							
MAW				LR		LR	22 38 36.8	
	comp=Z,348nm,18.5s,baz=77,slow=36							
MAW	**Mawson**	**73.11**	**200**	*e*P		**P**	**22 05 37.5**	**+2.4**
MAW				pmax		pmax		
	comp=Z,3.0nm,1.1s							
MAW	**Mawson**	**73.11**	**200**	*e*P		**P**	**22 05 37.5**	**+2.4**
	comp=Z,3.3nm,1.1s							
SYO	**Syowa Base**	**77.81**	**193**	*e*P		**P**	**22 06 01.6**	**-0.5**
MJAR	**Matsushiro Arr**	**78.42**	**324**	P		**P**	**22 06 04.9**	**-1.0**
	comp=Z,6.0nm,1.0s,baz=158,slow=5.4,SNR=19							
MAJO	**Matsushiro**	**78.42**	**324**	*e*P		**P**	**22 06 05.5**	**-0.4**
MAJO				pmax		pmax		
	comp=Z,11nm,0.9s							
MAJO	**Matsushiro**	**78.42**	**324**	*e*P		**P**	**22 06 05.5**	**-0.4**
	comp=Z,11nm,0.9s							
MAT	**Matsushiro**	**78.42**	**324**	P		**P**	**22 06 04.8**	**-1.1**
MAT				*e*S		S	22 16 10.8	+10
MJB9	**Matsu-Tunnel**	**78.43**	**324**	*e*P		**P**	**22 06 05.5**	**-0.4**
	comp=Z,3.0nm,1.0s							
SNAA	**Sanae**	**78.61**	**178**	P		**P**	**22 06 07.8**	**+1.2**
SNAA	**Sanae**	**78.61**	**178**	*e*P		**P**	**22 06 06.8**	**+0.2**
SNAA				pmax		pmax		
	comp=Z,22nm,1.2s							
SNAA	**Sanae**	**78.61**	**178**	*e*P		**P**	**22 06 06.8**	**+0.2**
	comp=Z,22nm,1.2s							
VNA1	**Neumayer--Stat**	**79.39**	**176**	P		**P**	**22 06 12.7**	**+1.9**
NVL	**N'lazarevskaya**	**79.42**	**183**	*e*P		**P**	**22 06 12.0**	**+1.1**
NVL				*e*S		**S**	**22 16 10.2**	**+0.1**
JNU	**Nakatsue**	**79.87**	**318**	*e*P		**P**	**22 06 13.9**	**0.0**
	comp=Z,12nm,1.0s							
ERM	**Erimo**	**80.52**	**331**	*e*P		**P**	**22 06 18.6**	**+1.5**
ERM				pmax		pmax		
	comp=Z,17nm,1.2s							
KUR	**Kuril'sk**	**81.39**	**336**	*e*P		**P**	**22 06 22.9**	**+1.2**
PLCA	**Paso Flores**	**82.10**	**133**	P		**P**	**22 06 27.2**	**+1.1**
	comp=Z,15nm,1.1s,baz=232,slow=6.5,SNR=7.1							
PLCA	**Paso Flores**	**82.10**	**133**	*e*P		**P**	**22 06 27.1**	**+1.1**
PLCA				pmax		pmax		
	comp=Z,32nm,1.3s							
PLCA	**Paso Flores**	**82.10**	**133**	*e*P		**P**	**22 06 27.1**	**+1.1**
	comp=Z,32nm,1.3s							
ASAJ	**Asahikawa**	**82.48**	**332**	*e*P		**P**	**22 06 28.2**	**+0.7**
	comp=Z,30nm,1.1s							
KSRS	**Korea Array**	**84.64**	**319**	P		**P**	**22 06 37.2**	**-1.5**
	comp=Z,5.3nm,1.0s,baz=139,slow=5.7,SNR=16							
KSAR	**Wonju Array Be**	**84.65**	**319**	P		**P**	**22 06 37.2**	**-1.6**
KSAR	**Wonju Array Be**	**84.65**	**319**	P		**P**	**22 06 37.2**	**-1.6**
KS01	**Wonju Array Si**	**84.67**	**319**	*e*P		**P**	**22 06 39.1**	**+0.3**
MONP2	**Monument Peak**	**84.69**	**47**	P		**P**	**22 06 39.6**	**+0.2**
	baz=229							
IKP	**In-Ko-Pah, Jac**	**84.74**	**48**	P		**P**	**22 06 39.5**	**0.0**
	baz=230							
YSS	**Yuzh-Sakhalins**	**84.75**	**334**	*e*P		**P**	**22 06 40.0**	**+1.0**
YSS				pmax		pmax		
	comp=Z,40nm,1.2s							
YSS	**Yuzh-Sakhalins**	**84.75**	**334**	*e*P		**P**	**22 06 38.5**	**-0.5**
	comp=Z,32nm,0.9s							
BFSC	**Mount Baldy Ra**	**84.80**	**46**	P		**P**	**22 06 39.8**	**0.0**
	baz=228							
VES	**Vestal, Richgr**	**85.00**	**44**	P		**P**	**22 06 40.8**	**+0.2**
	baz=227							
EDW2	**Edwards Air Fo**	**85.02**	**45**	P		**P**	**22 06 41.3**	**+0.5**
	baz=228,SNR=5.2							
SWSC	**Sam W. Stewart**	**85.13**	**48**	P		**P**	**22 06 42.2**	**+0.9**
	baz=230							
PFO	**Pinyon Flats O**	**85.14**	**47**	P		**P**	**22 06 41.7**	**+0.2**
	baz=229							
PFO	**Pinyon Flats O**	**85.14**	**47**	*e*P		**P**	**22 06 39.9**	**-1.6**
PFO				pmax		pmax		
	comp=Z,19nm,1.4s							
PFO	**Pinyon Flats O**	**85.14**	**47**	*e*P		**P**	**22 06 39.9**	**-1.6**
	comp=Z,19nm,1.4s							
TPFO	**Pinon Flats**	**85.14**	**47**	P		**P**	**22 06 42.3**	**+0.8**
	baz=229,SNR=5.3							
ISA	**Isabella, Lake**	**85.25**	**44**	P		**P**	**22 06 42.3**	**+0.3**
	baz=228							
PEA0	**Petropavlovsk-**	**85.60**	**345**	*e*P		**P**	**22 06 42.3**	**-0.8**
PETK	**Petropavlovsk-**	**85.60**	**345**	P		**P**	**22 06 42.0**	**-1.2**
	comp=Z,7.3nm,0.8s,baz=121,slow=7.6,SNR=12							
PETK	**Petropavlovsk-**	**85.60**	**345**	P		**P**	**22 06 42.0**	**-1.2**
LRMC	**Laurel Mtn Rad**	**85.61**	**45**	P		**P**	**22 06 44.2**	**+0.3**
	baz=228							
BELC	**Belle Mtn. Jos**	**85.68**	**47**	P		**P**	**22 06 44.9**	**+0.6**
	baz=230,SNR=5.2							
QIZ	**Qiongzhong**	**85.70**	**295**	P		**P**	**22 06 44.0**	**-0.5**
QIZ				S		**S**	**22 17 15.8**	**0.0**
QIZ				LR		LR		
	comp=Z,390nm,20.4s							
QIZ				LR		LR		
	comp=Z,390nm,16.5s							
QIZ				LR		LR		
	comp=Z,400nm,18.5s							
CMB	**Columbia Colle**	**85.73**	**41**	*e*P		**P**	**22 06 44.0**	**-0.3**
CMB		

	comp=Z,5.1nm,1.4s									
MDJ	**Mudanjiang**	**88.80**	**325**		P		**P**	**22 06 59.8**	**+0.9**
MDJ					pmax		pmax			
	comp=Z,15nm,1.3s									
MDJ					pmax		pmax			
	comp=Z,110nm,4.9s									
X16A	**Lo Mia Camp, P**	**88.87**	**49**		*e*P		**P**	**22 07 00.9**	**+1.2**
J05D	**Fort Rock, OR**	**88.90**	**37**		P		**P**	**22 07 00.2**	**+0.6**
	baz=226									
HABR	**Khabarovsk**	**89.11**	**330**	*ce*	P		**P**	**22 07 00.0**	**-0.2**
HABR					*e**SP		**pP**	**22 07 09.2**	**+1.1**
HABR					*e*			22 10 30.0		
HABR					*e*PPP		PPP	22 12 26.3		
HABR					*e*S		**SKSac**	**22 17 28.0**	**-0.2**
HABR					*e*			22 17 52.6		
HABR					*e*SS		**SS**	**22 23 43.0**	**+1.0**
HABR					*e*SSS		SSS	22 27 18.1		
HABR					MLR		MLR			
	comp=Z,256nm,17.0s									
DL2	**Dalian**	**89.28**	**317**		P		**P**	**22 07 01.5**	**+0.3**
DL2					pmax		pmax			
	comp=Z,42nm,1.1s									
SKNT	**Sakolnakorn**	**89.31**	**290**		P		**P**	**22 07 03.0**	**+1.1**
	comp=Z,23nm,1.1s									
LCMT	**Little Creek M**	**89.33**	**46**	*e*	P		**P**	**22 07 03.2**	**+1.5**
	comp=Z,7.1nm,1.1s									
U15A	**North Rim**	**89.56**	**47**	*e*	P		**P**	**22 07 04.2**	**+1.2**
WUAZ	**Wupatki**	**89.59**	**48**		P		**P**	**22 07 03.5**	**+0.5**
	baz=232									
WUAZ	**Wupatki**	**89.59**	**48**	*e*	P		**P**	**22 07 04.0**	**+0.9**
	comp=Z,12nm,1.0s									
CCUT	**Cedar City**	**89.59**	**45**	*e*	P		**P**	**22 07 03.3**	**+0.2**
	comp=Z,8.0nm,1.2s									
KNB	**Kanab**	**89.60**	**46**	*e*	P		**P**	**22 07 04.2**	**+1.1**
KNB					pmax		pmax			
	comp=Z,14nm,1.2s									
KNB	**Kanab**	**89.60**	**46**	*e*	P		**P**	**22 07 04.2**	**+1.1**
	comp=Z,14nm,1.2s									
WVOR	**Wild Horse Val**	**89.70**	**39**	*e*	P		**P**	**22 07 04.1**	**+0.7**
WVOR					pmax		pmax			
	comp=Z,8.0nm,1.4s									
WVOR	**Wild Horse Val**	**89.70**	**39**	*e*	P		**P**	**22 07 04.1**	**+0.7**
	comp=Z,8.4nm,1.4s									
SNY	**Shenyang**	**90.06**	**320**	⇑	P		**P**	**22 07 05.1**	**+0.3**
SNY					pmax		pmax			
	comp=Z,24nm,1.3s									
121A	**Cookes Peak, D**	**90.19**	**52**		P		**P**	**22 07 06.1**	**+0.2**
	baz=234									
G05D	**Wamic, OR**	**90.22**	**36**		P		**P**	**22 07 06.5**	**+0.9**
	baz=226									
CN2	**Changchun**	**90.37**	**322**	*e*	P		**P**	**22 07 06.8**	**+0.6**
CN2				*es*	P		sP	22 07 15.8	-1.1	
CN2					pmax		pmax			
	comp=Z,40nm,1.1s									
CN2					pmax		pmax			
	comp=Z,200nm,4.0s									
CN2					LR		LR			
	comp=Z,200nm,15.0s									
CN2					LR		LR			
	comp=Z,200nm,15.0s									
CN2					LR		LR			
	comp=Z,400nm,16.0s									
TIA	**Tai'an**	**90.38**	**312**	⇑	P		**P**	**22 07 07.3**	**+0.8**
TIA					pmax		pmax			
	comp=Z,40nm,1.3s									
NONG	**Nongkai**	**90.56**	**290**		P		**P**	**22 07 08.9**	**+1.2**
D05A	**Enumclaw**	**91.25**	**34**	*e*	P		**P**	**22 07 11.8**	**+1.5**
	comp=Z,84nm,1.7s									
TX31	**Lajitas Ar. Si**	**91.28**	**57**	*e*	P		**P**	**22 07 11.2**	**+0.3**
TXAR	**Lajitas Array**	**91.28**	**57**		P		**P**	**22 07 10.9**	**0.0**
	comp=Z,2.4nm,1.1s,baz=218,slow=5.9,SNR=12									
TXAR	**Lajitas Array**	**91.28**	**57**		P		**P**	**22 07 11.0**	**0.0**
MNTX	**Cornudas Mount**	**91.38**	**54**		P		**P**	**22 07 11.7**	**+0.4**
	baz=235									
G08A	**Pilot Rock**	**91.46**	**37**	*e*	P		**P**	**22 07 11.8**	**+0.3**
	comp=Z,7.0nm,1.0s									
LAZ	**Ladron**	**91.72**	**51**	*e*	P		**P**	**22 07 13.6**	**+0.6**
MFID	**Camas Ranch**	**91.90**	**40**	*e*	P		**P**	**22 07 13.6**	**+0.1**
	comp=Z,8.8nm,1.4s									
B05A	**Bryant**	**91.96**	**33**		P		**P**	**22 07 14.3**	**+0.8**
	baz=225									
BMO	**Blue Mountains**	**92.04**	**38**	*e*	P		**P**	**22 07 13.4**	**-0.7**
	comp=Z,8.6nm,1.7s									
ENH	**Enshi**	**92.16**	**304**	*e*	P		**P**	**22 07 15.7**	**+0.7**
	comp=Z,41nm,1.3s									
GYA	**Guiyang**	**92.19**	**299**	*e*	P		**P**	**22 07 16.0**	**+0.7**
GYA					pmax		pmax			
	comp=Z,10.0nm,1.0s									
SRU	**San Rafael Swe**	**92.31**	**45**	*e*	P		**P**	**22 07 16.4**	**+0.8**
SRU					pmax		pmax			
	comp=Z,7.0nm,1.1s									
SRU	**San Rafael Swe**	**92.31**	**45**	*e*	P		**P**	**22 07 16.4**	**+0.8**
	comp=Z,6.6nm,1.1s									
ANMO	**Albuquerque**	**92.49**	**51**		P		**P**	**22 07 16.6**	**0.0**
	baz=235									
ANMO	**Albuquerque**	**92.49**	**51**	*ce*	P		**P**	**22 07 16.9**	**+0.3**
ANMO					pmax		pmax			
	comp=Z,5.0nm,1.2s									
HVU	**Hansel Valley**	**92.60**	**42**	*e*	P		**P**	**22 07 17.2**	**+0.4**
HVU					pmax		pmax			
	comp=Z,6.0nm,1.0s									
HVU	**Hansel Valley**	**92.60**	**42**	*e*	P		**P**	**22 07 17.2**	**+0.4**
	comp=Z,5.5nm,1.0s									
D08A	**Wollman Farm,**	**92.68**	**35**	*e*	P		**P**	**22 07 17.2**	**+0.3**
	comp=Z,6.3nm,0.9s									
HLID	**Hailey**	**92.78**	**40**		P		**P**	**22 07 18.0**	**+0.3**
	baz=230									
HLID	**Hailey**	**92.78**	**40**	*e*	P		**P**	**22 07 17.9**	**+0.3**
	comp=Z,5.2nm,1.1s									
LVC	**Limon Verde**	**93.28**	**118**		P		**P**	**22 07 21.7**	**+0.8**
	comp=Z,48nm,1.1s,baz=255,slow=0.9,SNR=5.1									
LVC	**Limon Verde**	**93.28**	**118**	*e*	P		**P**	**22 07 22.8**	**+1.9**
	comp=Z,20nm,1.1s									
BJI	**Beijing**	**93.29**	**315**		P		**P**	**22 07 20.3**	**+0.5**
BJI					S		**S**	**22 18 29.3**	**+3.6**
BJI					pmax		pmax			
	comp=Z,15nm,1.0s									
BJI					pmax		pmax			
	comp=Z,85nm,4.2s									
BJI					LR		LR			
	comp=Z,360nm,17.0s									
BJI					LR		LR			
	comp=Z,270nm,21.2s									
BJI					LR		LR			
	comp=Z,260nm,18.9s									
S22A	**4UR Ranch, Cre**	**93.85**	**48**		P		**P**	**22 07 23.1**	**+0.2**
	baz=235									
S22A	**4UR Ranch, Cre**	**93.85**	**48**	*e*	P		**P**	**22 07 23.8**	**+0.8**
	comp=Z,4.7nm,1.2s									
TT01	**Tatalina**	**93.98**	**9**	*e*	P		**P**	**22 07 21.8**	**-0.7**
TTA	**Tatalina**	**94.01**	**9**	*e*	P		**P**	**22 07 22.4**	**-0.3**
TTA	**Tatalina**	**94.01**	**9**	*e*	P		**P**	**22 07 22.4**	**-0.3**
CM01	**Chiang Mai Arr**	**94.16**	**289**	*e*	P		**P**	**22 07 24.9**	**+0.5**
CMAR	**Chiang Mai Arr**	**94.19**	**289**		P		**P**	**22 07 24.2**	**-0.3**
	comp=Z,1.2nm,0.8s,baz=138,slow=4.0,SNR=6.6									
PB11	**IPOC Station P**	**94.29**	**116**	*e*	P		**P**	**22 07 26.8**	**+1.5**
	comp=Z,33nm,1.1s									
MCMT	**McKenzie Canyo**	**94.45**	**40**	*e*	P		**P**	**22 07 26.2**	**+0.8**
KMI	**Kunming**	**94.50**	**296**		P		**P**	**22 07 27.4**	**+1.3**
KMI					pmax		pmax			
	comp=Z,3.0nm,0.7s									
KMI					pmax		pmax			
	comp=Z,170nm,5.2s									
IMW	**Indian Meadow**	**94.96**	**41**	*e*	P		**P**	**22 07 26.2**	**-1.7**
	comp=Z,9.3nm,1.1s									
BW06	**Boulder Array**	**95.09**	**43**	*e*	P		**P**	**22 07 27.7**	**-0.7**
PDAR	**Pinedale Array**	**95.09**	**43**		P		**P**	**22 07 26.6**	**-1.8**
	comp=Z,0.4nm,0.8s,baz=212,slow=5.3,SNR=4.6									
SEY	**Seymchan**	**95.74**	**346**	*ce*	P		**P**	**22 07 31.1**	**+0.6**
HHC	**Hu-ho-hao-te**	**96.62**	**314**	*e*	P		**P**	**22 07 37.3**	**+2.0**
HHC					pmax		pmax			
	comp=Z,13nm,0.9s									
HHC					pmax		pmax			
	comp=Z,150nm,9.9s									
CD2	**Chengdu**	**96.68**	**302**	*e*	P		**P**	**22 07 36.0**	**+0.3**
CD2					pP		pP	22 07 42.8	-0.8	
CD2					SKS		**SKSac**	**22 18 11.5**	**+0.3**
CD2					S		**ScS**	**22 18 56.4**	**+0.1**
CD2					sS		sS	22 19 07.9	-1.1	
CD2					SS		**SS**	**22 25 32.9**	**+1.5**
CD2					pmax		pmax			
	comp=Z,10.0nm,0.5s									
CD2					pmax		pmax			
	comp=Z,120nm,5.6s									
WRH	**Wood River Hil**	**96.74**	**12**	*e*	P		**P**	**22 07 34.6**	**-0.4**
	comp=Z,7.4nm,1.2s									

IL1	**Eielson Array**	**97.23**	**12**	*e*	P		**P**	**22 07 36.2**	**-1.1**
ILAR	**Eielson Array**	**97.23**	**12**		P		**P**	**22 07 35.4**	**-1.8**
	comp=Z,1.1nm,1.1s,baz=220,slow=5.4,SNR=5.9									
LPAZ	**La Paz**	**97.42**	**113**		P		Pdif	22 07 40.9	+0.7	
	comp=Z,3.2nm,1.0s,baz=232,slow=3.3,SNR=8.6									
LPAZ	**La Paz**	**97.42**	**113**	*e*	P		**P**	**22 07 39.6**	**-0.5**
LPAZ	**La Paz**	**97.42**	**113**	*e*	P		**P**	**22 07 39.6**	**-0.5**
BILL	**Bilibino**	**98.47**	**354**	*i*	P		**P**	**22 07 41.9**	**-0.8**
BILL					pmax		pmax			
	comp=Z,6.0nm,1.2s									
RSSD	**Black Hills**	**99.17**	**44**		P		**Pdif**	**22 07 47.1**	**+0.4**
	baz=237									
RSSD	**Black Hills**	**99.17**	**44**	*e*	P		**Pdif**	**22 07 46.9**	**+0.1**
RSSD					pmax		pmax			
	comp=Z,7.0nm,1.3s									
RSSD	**Black Hills**	**99.17**	**44**	*e*	P		**Pdif**	**22 07 46.9**	**+0.1**
	comp=Z,7.1nm,1.3s									
CPUP	**Villa Florida**	**99.49**	**128**		LR		LR	22 48 06.2		
	comp=Z,129nm,18.1s,baz=180,slow=32									
SONM	**Songino Array**	**103.46**	**318**		Pdiff		**Pdif**	**22 08 07.5**	**+1.8**
	comp=Z,0.3nm,0.6s,baz=123,slow=7.4,SNR=3.4									
WMQ	**Urumqi**	**113.72**	**308**	*e*	PKP			22 12 42.3		
WMQ					LR		LR			
	comp=Z,210nm,22.0s									
WMQ					LR		LR			
	comp=Z,190nm,18.0s									
WMQ					LR		LR			
	comp=Z,220nm,20.0s									
MKAR	**Makanchi Array**	**118.23**	**310**		PKP		**PKPdf**	**22 12 51.3**	**-0.9**
	comp=Z,1.4nm,0.6s,baz=94,slow=1.6,SNR=16									
ZALV	**Zalesovo Beam**	**118.34**	**318**		PKP		**PKPdf**	**22 12 51.1**	**-1.0**
	comp=Z,2.4nm,1.0s,baz=153,slow=0.7,SNR=11									
NVS	**Novosibirsk**	**119.43**	**319**	*e*	PKIKP		**PKPdf**	**22 12 50.7**	**-3.4**
KSH	**Kashi**	**120.86**	**301**	*e*	PKP		**PKPdf**	**22 12 56.3**	**-1.3**
KSH				*e*	PP		**PP**	**22 14 30.6**	**+3.7**
KSH					PKS		**PKSdf**	**22 16 31.8**	**-2.5**
KSH					SKS		**SKSdf**	**22 20 04.1**	**-4.1**
KSH					SKKS		**SKKSac**	**22 21 18.0**	**-6.7**
KSH					SS		**SS**	**22 30 57.1**	**-0.2**
KSH					AMB		AMB			
	comp=Z,46nm,4.0s									
KSH					LR		LR			
	comp=Z,91nm,5.4s									
KSH					LR		LR			
	comp=Z,53nm,6.3s									
KSH					LR		LR			
	comp=Z,170nm,6.1s									
KURK	**Kurchatov**	**121.44**	**314**	*e*	PKIKP		**PKPdf**	**22 12 57.3**	**-0.8**
KURK	**Kurchatov**	**121.44**	**314**	*e*	PKPdf		**PKPdf**	**22 12 57.3**	**-0.8**
AAK	**Ala-Archa**	**122.68**	**304**	*i*	PKIKP		**PKPdf**	**22 13 00.3**	**-0.7**
KKAR	**Karatay Array**	**125.64**	**304**	*e*	PKIKP		**PKPdf**	**22 13 05.9**	**-0.6**
KKAR	**Karatay Array**	**125.64**	**304**	*e*	PKPdf		**PKPdf**	**22 13 05.9**	**-0.6**
BRVK	**Borovoye**	**126.82**	**316**	*c*	PKIKP		**PKPdf**	**22 13 08.0**	**-0.4**
BRVK					pmax		pmax			
	comp=Z,39nm,1.2s									
BRVK	**Borovoye**	**126.82**	**316**	*e*	PKPdf		**PKPdf**	**22 13 08.3**	**-0.1**
ARU	**Arti**	**133.35**	**321**	*i*	PKIKP		**PKPdf**	**22 13 21.7**	**+1.0**
ARU								22 15 47.8		
ARU	**Arti**	**133.35**	**321**	*e*	PKPdf		**PKPdf**	**22 13 20.6**	**0.0**
ABKAR	**Akbulak array**	**133.35**	**311**	*e*	PKPdf		**PKPdf**	**22 13 21.2**	**+0.3**
GEYT	**Alibeck**	**134.26**	**295**		PKP		**PKPdf**	**22 13 23.8**	**+0.8**
	comp=Z,3.4nm,0.9s,baz=250,slow=3.0,SNR=7.5									
ARCES	**ARCESS Array B**	**138.32**	**348**		PKP		**PKPdf**	**22 13 29.2**	**-0.4**
	comp=Z,5.1nm,1.1s,baz=8.7,slow=1.2,SNR=6.1									
KLMR	**Klimovskoe**	**140.80**	**333**	*e*	PKIKP		**PKPdf**	**22 13 33.7**	**-0.6**
KLMR					pmax		pmax			
	comp=Z,17nm,1.4s									
VRH	**Novokhopyorsk**	**144.37**	**318**	*e*	PKIKP		**PKPab**	**22 13 38.8**	**-0.3**
VRH					pmax		pmax			
	comp=Z,6.0nm,0.5s									
TBLG	**Delisi**	**144.60**	**301**		P		**PKPdf**	**22 13 41.2**	**-0.5**
TBLG	**Delisi**	**144.60**	**301**		PKIKP		**PKPdf**	**22 13 41.2**	**-0.5**
GUDG	**Gudauri**	**144.71**	**302**		P		**PKPdf**	**22 13 42.2**	**0.0**
GNI	**Garni**	**144.73**	**298**	*c*	PKIKP		**PKPdf**	**22 13 42.3**	**+0.1**
GNI					pmax		pmax			
	comp=Z,182nm,1.7s									
GNI	**Garni**	**144.73**	**298**		PKPdf		PKPbc	22 13 41.5	+0.3	
FINES	**FINESS Array B**	**145.02**	**341**		PKP		**PKPbc**	**22 13 40.1**	**-1.1**
	comp=Z,171nm,1.2s,baz=65,slow=3.2,SNR=147									
ZEI	**Tsey**	**145.09**	**303**	*i*	PKIKP		**PKPbc**	**22 13 41.4**	**-0.9**
ZEI					pmax		pmax			
	comp=Z,88nm,0.7s									
GOF	**Gofitskoye**	**145.31**	**307**	⇑	*i* PKIKP		**PKPdf**	**22 13 42.9**	**+0.1**
GOF					pmax		pmax			
	comp=Z,81nm,1.0s									
OBN	**Obninsk**	**145.34**	**326**	*d*	*i* PKIKP		**PKPbc**	**22 13 41.6**	**-0.7**
OBN					pmax		pmax			
	comp=Z,31nm,1.0s									
ONI	**Oni**	**145.45**	**303**		P		**PKPdf**	**22 13 43.1**	**-0.1**
ONI	**Oni**	**145.45**	**303**		PKIKP		**PKPdf**	**22 13 43.1**	**-0.1**
BGD	**Bogdanovka**	**145.50**	**300**		P		**PKPab**	**22 13 44.6**	**+0.7**
AKH	**Akhalkalaki**	**145.57**	**301**	⇑	*i* P		**PKPab**	**22 13 44.9**	**+0.8**
AKH	**Akhalkalaki**	**145.57**	**301**		P		**PKPab**	**22 13 44.8**	**+0.7**
AKH	**Akhalkalaki**	**145.57**	**301**		PKIKP		**PKPab**	**22 13 44.7**	**+0.7**
KBZ	**Khabaz**	**145.67**	**305**		PKPbc		**PKPdf**	**22 13 43.4**	**0.0**
	comp=Z,23nm,1.2s,baz=73,slow=2.1,SNR=11									
KIV	**Kislovodsk**	**145.78**	**305**	*c*	*i* PKP2		**PKPab**	**22 13 44.9**	**+0.2**
KIV					pmax		pmax			
	comp=Z,46nm,1.3s									
KIV	**Kislovodsk**	**145.78**	**305**		PKPdf		**PKPbc**	**22 13 44.5**	**+0.2**
VSR	**Storozhevoye**	**145.84**	**319**		PKP2		**PKPdf**	**22 13 42.8**	**-0.7**
VSR					pmax		pmax			
	comp=Z,50nm,1.0s									
NEY	**Neytrino**	**145.88**	**304**		PKP2		**PKPdf**	**22 13 44.1**	**0.0**
VSU	**Vasula**	**147.18**	**337**	*c*	*i* PKP2		**PKPbc**	**22 13 47.4**	**-0.3**
VSU					pmax		pmax			
	comp=Z,155nm,1.0s									
KBSD	**Kabsdagh**	**148.17**	**293**		*i* P		**PKPbc**	**22 13 52.0**	**+0.8**
NB2	**NORSAR Subarra**	**148.41**	**353**		PKP		**PKPbc**	**22 13 50.2**	**-0.8**
	comp=Z,22nm,1.0s,baz=7.2,slow=2.8									
NOA	**NORSAR Array B**	**148.41**	**353**		PKP		**PKPdf**	**22 13 45.7**	**-1.8**
	comp=Z,3.1nm,1.1s,baz=8.8,slow=4.1,SNR=4.0									
NOA					PKPbc		**PKPbc**	**22 13 50.3**	**-0.8**	
	comp=Z,15nm,1.0s,baz=15,slow=4.4,SNR=16									
IZAR	**Zarasai**	**149.41**	**334**	*e*	P		**PKPbc**	**22 13 53.1**	**-0.6**
IZAR					IAmb		IAmb	22 13 55.6		
	comp=Z,20nm,1.1s									
KSRV	**Kasrt alli**	**149.44**	**291**	*i*	P		**PKPbc**	**22 13 55.0**	**+0.6**
IDID	**Didziasalis**	**149.54**	**333**	*e*	P		**PKPbc**	**22 13 52.8**	**-1.2**
IDID					IAmb		IAmb	22 14 07.5		
	comp=Z,10nm,1.0s									
ISAL	**Salakas**	**149.59**	**334**	*e*	P		**PKPbc**	**22 13 53.8**	**-0.3**
ISAL					IAmb		IAmb	22 14 07.8		
	comp=Z,12nm,0.9s									
MICGM	**Minsk**	**149.66**	**331**	*e*	P		**PKPdf**	**22 13 52.0**	**+2.3**
MNK	**Minsk**	**149.66**	**331**	*e*	PKHKP		**PKPdf**	**22 13 52.0**	**+2.3**
NACGM	**Naroch**	**149.82**	**333**	*e*			**PKPbc**	**22 13 55.0**	**+0.3**
NACGM					eLR		LR	22 24 20.0		
JHLN	**Al Jahlan**	**149.90**	**290**	*i*	P		**PKPbc**	**22 13 55.7**	**+0.1**
KONO	**Kongsberg**	**149.94**	**353**	*c*	*i* PKP2		**PKPbc**	**22 13 55.1**	**+0.3**
KONO					pmax		pmax			
	comp=Z,155nm,1.2s									
KONO	**Kongsberg**	**149.94**	**353**	*e*	PKPdf		**PKPdf**	**22 13 50.4**	**+0.4**
KONO				*e*	PKPbc		**PKPbc**	**22 13 55.2**	**+0.3**
KONO				*e*	PKPbc		**PKiKP**	**22 13 55.5**	**-0.3**
SLMH	**Al Salmeh**	**150.30**	**291**	*i*	P		**PKPbc**	**22 13 55.5**	**-1.0**
ZALF	**Zalf**	**150.76**	**285**	*i*	P		**PKPbc**	**22 13 59.9**	**+2.1**
SALA	**Sala**	**151.25**	**284**	*i*	P		**PKPbc**	**22 13 59.7**	**+0.6**
SIM	**Simferopol'**	**151.41**	**310**	*e*	PKIKP		**PKPbc**	**22 13 59.0**	**+0.2**
SIM					pmax		pmax			
	comp=Z,114nm,1.0s									
AKASG	**Malin Array Be**	**151.51**	**324**		PKP		**PKPdf**	**22 13 51.3**	**-1.3**
	comp=Z,0.4nm,0.4s,baz=36,slow=1.9,SNR=5.1									
AKASG					PKPbc		**PKPbc**	**22 13 58.0**	**-0.9**	
	comp=Z,29nm,0.9s,baz=45,slow=3.0,SNR=60									
KIEV	**Kiev**	**151.52**	**324**	*e*	PKIKP		**PKPbc**	**22 13 58.5**	**-0.3**
KIEV	**Kiev**	**151.52**	**324**	*e*	PKPbc		**PKPbc**	**22 13 58.5**	**-0.3**
TOTH	**TOTAH**	**151.54**	**286**	*i*	P		**PKPbc**	**22 14 00.8**	**+1.2**
SUW	**Suwalki**	**151.88**	**335**	*e*	PKP		**PKPbc**	**22 13 59.6**	**0.0**
SUW	**Suwalki**	**151.88**	**335**	*e*	PKIKP		**PKPbc**	**22 13 59.6**	**0.0**
TCHB	**Talchebab**	**151.89**	**284**	*i*	P		**PKPbc**	**22 14 01.8**	**+1.5**
BRTR	**Keskin Array B**	**153.24**	**300**		PKPbc		**PKPbc**	**22 14 03.0**	**-0.3**
	comp=Z,4.8nm,1.0s,baz=116,slow=2.9,SNR=18									
SORM	**Soroca**	**153.47**	**320**	⇑	*i* P		**PKPbc**	**22 14 03.0**	**-0.3**
LVV	**L'vov**	**154.62**	**327**	*e*	PKIKP		**PKPbc**	**22 14 06.5**	**+0.8**
CFR	**Carcaliu**	**155.15**	**315**	⇓	*i* P		**PKPab**	**22 14 16.1**	**-6.8**
TIRR	**Tirgusor**	**155.32**	**313**	⇓	*i* P		**PKPab**	**22 14 24.2**	**+0.6**
TESR	**Tescani**	**155.34**	**319**	⇓	*i* P		**PKPab**	**22 14 16.2**	**-7.5**
KWP	**Kalwaria Pacla**	**155.36**	**329**	*e*	PKP		**PKPab**	**22 14 24.1**	**+0.4**
KWP	**Kalwaria Pacla**	**155.36**	**329**	*e*	PKP2		**PKPab**	**22 14 24.1**	**+0.4**
BURAR	**Bucovina Array**	**155.48**	**322**	⇓	*i* P		PKPdf	22 14 09.7	+11	
TLB	**Topalu**	**155.49**	**314**	⇓	*i* P		**PKPab**	**22 14 20.3**	**-4.1**
MLR	**Muntele Rosu**	**156.31**	**317**	⇓	*i* P		**PKPab**	**22 14 22.1**	**-6.0**
VOIR		**156.86**	**318**	⇓	*i* P		PKPab	22 14 20.9	-9.5	

KSP	**Ksiaz**	**156.89**	**338**	*e*	PKP		**PKPab**	**22 14 30.0**	**-0.1**
KSP	**Ksiaz**	**156.89**	**338**	*e*	PKP2		**PKPab**	**22 14 30.0**	**-0.1**
OKC	**Ostrava-Krasne**	**157.10**	**335**		AMS		AMS	23 28 10.0		
	comp=Z,100nm,19.9s									
ARR	**Arges**	**157.14**	**318**	⇑	*i* P		**PKPab**	**22 14 32.3**	**+0.7**
UPC	**Upice**	**157.27**	**338**	*e*	PKPAB		**PKPab**	**22 14 32.1**	**+0.3**
UPC				*ex*			x	22 14 43.3		
UPC	**Upice**	**157.27**	**338**	*e*	PKP2		**PKPab**	**22 14 32.1**	**+0.3**
DPC	**Dobruska-Polom**	**157.31**	**338**	*e*	PKPAB		**PKPab**	**22 14 32.1**	**+0.1**
DPC				*ex*			x	22 14 43.3		
DPC	**Dobruska-Polom**	**157.31**	**338**	*e*	PKP2		**PKPab**	**22 14 32.1**	**+0.1**
DRGR		**157.32**	**323**	⇑	*i* P		**PKPab**	**22 14 26.9**	**-5.4**
KRLC	**Kraliky**	**157.39**	**337**	*e*	PKPAB		**PKPab**	**22 14 31.0**	**-1.4**
KRLC				*ex*			x	22 14 42.7		
KRLC	**Kraliky**	**157.39**	**337**	*e*	PKP2		**PKPab**	**22 14 31.0**	**-1.4**
CLL	**Collm**	**157.40**	**344**	*e*	PKPdiff		PKPdf	22 14 12.0	+11	
CLL				⇑	*i* PKPab		**PKPab**	**22 14 31.0**	**-1.3**
	comp=Z,13nm,1.2s									
CLL				*ep*	PKPab		pPKPab	22 14 37.0	-3.2	
CLL				*e*				22 14 44.0		
CLL	**Collm**	**157.40**	**344**	⇑	*i* PKP2		**PKPab**	**22 14 31.0**	**-1.3**
CLL					pmax		pmax			
	comp=Z,13nm,1.2s									
BRG	**Berggiesshubel**	**157.56**	**342**	*e*	PKP		**PKPab**	**22 14 33.0**	**0.0**
	comp=Z,12nm,1.4s									
BRG	**Berggiesshubel**	**157.56**	**342**	*e*	PKP2		**PKPab**	**22 14 33.0**	**0.0**
BRG					pmax		pmax			
	comp=Z,12nm,1.4s									
PVCC	**Panska Ves**	**157.69**	**341**	*e*	PKPAB		**PKPab**	**22 14 33.3**	**-0.3**
PVCC				*ex*			x	22 14 44.3		
PVCC	**Panska Ves**	**157.69**	**341**	*e*	PKP2		**PKPab**	**22 14 33.3**	**-0.3**
PRU	**Pruhonice**	**158.18**	**340**	*e*	PKPAB		**PKPab**	**22 14 35.4**	**-0.3**
PRU				*ex*			x	22 14 46.6		
PRU					AMS		AMS	23 44 20.0		
	comp=Z,200nm,23.8s									
PRU	**Pruhonice**	**158.18**	**340**	*e*	PKP2		**PKPab**	**22 14 35.4**	**-0.3**
PRU					MLR		MLR			
	comp=Z,200nm,23.8s									
NKC	**Novy Kostel**	**158.53**	**344**	*e*	PKPAB		**PKPab**	**22 14 36.9**	**-0.3**
NKC				*ex*			x	22 14 49.5		
NKC	**Novy Kostel**	**158.53**	**344**	*e*	PKP2		**PKPab**	**22 14 36.9**	**-0.3**
KHC	**Kasperske Hory**	**159.23**	**340**	*e*	PKPAB		**PKPab**	**22 14 40.

KARA	**Karaisali**	**1.23**	**72**	*e*PN	**Pb**	**22 11 04.6**	**-0.8**
KARA	**Karaisali**	**1.23**	**72**	*e*Pn	**Pb**	**22 11 04.6**	**-0.8**
KONT	**Konya--Tatoy**	**1.44**	**317**	*e*PN	**Pb**	**22 11 08.9**	**-0.2**
KONT	**Konya--Tatoy**	**1.44**	**317**	*e*Pn	**Pb**	**22 11 08.9**	**-0.2**
KOZT	**Kozan**	**1.88**	**71**	*e*PN	**Pn**	**22 11 15.1**	**+0.7**

ISCJB **16** *22:18:09.2±0.7,37.°21N×36.°26E±0.°05, h8km, Error ellipse: s-maj=6.0km s-min=5.4km az=29.2*
ISK **16** *22:18:09.0,37.°27N×36.°28E, h18km, MD2.5*
CSEM **16** *22:18:09.8±0.2,37.°21N×36.°28E, h10km, MD2.5, Error ellipse: s-maj=6.0km s-min=5.2km az=10.0*
DDA **16** *22:18:10.6,37.°20N×36.°37E, h7km, Md2.5*
ISC 16 22:18:09.4±1.0,**37.°21N**±0.°04×**36.°26E**±0.°04,**h8**km,**n16,**
σ0.65/22,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ANDN	**Andirin**	**0.37**	**11**	*i* P	**Pg**	**22 18 17.7**	**+1.0**
ANDN				*i* S	**Sb**	**22 18 24.3**	**0.0**
ANDN	**Andirin**	**0.37**	**11**	P	**Pg**	**22 18 17.7**	**+1.0**
ANDN				S	**Sb**	**22 18 24.3**	**0.0**
KOZT	**Kozan**	**0.43**	**308**	*e*PG	**Pg**	**22 18 17.6**	**-0.2**
KOZT	**Kozan**	**0.43**	**308**	*e*Pg	**Pg**	**22 18 17.6**	**-0.2**
KMRS	**Kahramanmaras**	**0.59**	**60**	*e*PG	**Pg**	**22 18 20.6**	**-0.2**
KMRS				*e*SG	**Sg**	**22 18 28.5**	**0.0**
KMRS	**Kahramanmaras**	**0.59**	**60**	*e*Pg	**Pg**	**22 18 20.6**	**-0.2**
KMRS				*e*Sg	**Sg**	**22 18 28.5**	**0.0**
GAZ	**Gaziantep**	**0.77**	**93**	*e*PG	**Pg**	**22 18 24.3**	**+0.2**
GAZ	**Gaziantep**	**0.77**	**93**	*e*Pg	**Pg**	**22 18 24.3**	**+0.2**
KUZU	**Kuzuini**	**0.79**	**124**	*i* P	**Pg**	**22 18 24.7**	**+0.1**
KUZU				*i* S	**Sg**	**22 18 34.0**	**-0.9**
KUZU	**Kuzuini**	**0.79**	**124**	P	**Pg**	**22 18 24.7**	**+0.1**
TAHT	**Tahtakopru-Hat**	**0.84**	**184**	*e*PG	**Pb**	**22 18 26.3**	**+0.1**
TAHT	**Tahtakopru-Hat**	**0.84**	**184**	*e*Pg	**Pb**	**22 18 26.3**	**+0.1**
KARA	**Karaisali**	**0.96**	**273**	*e*PG	**Pb**	**22 18 29.0**	**+0.8**
KARA	**Karaisali**	**0.96**	**273**	*e*Pg	**Pb**	**22 18 29.0**	**+0.8**
GZT	**Gaziantep**	**1.05**	**82**	*i* P	**Pn**	**22 18 30.3**	**-0.3**
GZT				*i* S	**Sb**	**22 18 44.3**	**+0.3**
SARI	**SarD1z-Kayseri**	**1.20**	**6**	*e*PN	**Pg**	**22 18 30.4**	**-2.0**

RSNC **16** *22:20:20.9±0.5, 10.°71N×73.°47W, h112km±19km, ML2.9*
ISCJB **16** *22:20:21.4±1.3, 10.°63N±0.°05×73.°40W±0.°04, h24km±10km, Error ellipse: s-maj=8.6km s-min=5.5km az=143.1*
FUNV **16** *22:20:23.5, 10.°56N×73.°29W, h5km, MW2.6*
ISC 16 22:20:19.6±1.9,**10.°65N**±0.°06×**73.°44W**±0.°05,**h8**km±13km,
n10,σ1.°11/19,**Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VIRV	**Villa de Rosa**	**1.02**	**98**	*e*P	**Pg**	**22 20 39.0**	**-0.2**
VIRV				*e*S	**Sg**	**22 20 52.3**	**-0.3**
URIC	**Uribia, Colomb**	**1.76**	**53**	*e*P	**Pn**	**22 20 51.0**	**+0.5**
URIC				*e*S	**Sn**	**22 21 13.2**	**0.0**
URIC				*i*		22 21 22.5	
	comp=Z,50nm,0.5s						
SJCC	**San Jacinto, C**	**1.87**	**247**	*e*P	**Pn**	**22 20 51.6**	**-0.4**
SJCC				*e*S	**Sn**	**22 21 16.2**	**+0.3**
OCAC	**Ocana**	**2.40**	**177**	*e*P	**Pn**	**22 21 00.0**	**+0.7**
OCAC				*e*S	**Sn**	**22 21 29.8**	**+0.8**
OCAC				*i*		22 21 38.7	
	comp=Z,74nm,0.2s						
VIGV	**El Vigia**	**2.72**	**131**	*e*P	**Pn**	**22 21 04.8**	**+1.1**
VIGV				*e*S	**Sn**	**22 21 35.5**	**-1.4**
DABV	**Dabajuro**	**2.77**	**84**	*e*P	**Pn**	**22 21 05.8**	**+1.6**
DABV				*e*S	**Sn**	**22 21 37.5**	**-0.4**
CAPV	**Capacho**	**2.98**	**158**	*e*P	**Pn**	**22 21 09.4**	**+2.0**
CAPV				*e*S	**Sn**	**22 21 42.8**	**-0.7**
PAMC	**Pamplona, Colo**	**3.37**	**167**	*e*P	**Pn**	**22 21 12.6**	**-0.4**
PAMC				*e*S	**Sn**	**22 21 52.8**	**-0.6**
CURV	**Curarigua**	**3.48**	**100**	*e*P	**Pn**	**22 21 14.8**	**+0.6**
CURV				*e*S	**Sn**	**22 21 53.3**	**-2.3**
MONV	**Montecano**	**3.64**	**69**	*e*S	**Sn**	**22 21 59.1**	**-0.4**

ISCJB **16** *22:45:20.9±0.7,24.°73N±0.°05×122.°72E±0.°04, h12km±6km, Error ellipse: s-maj=8.2km s-min=4.7km az=26.9*
JMA **16** *22:45:21.5±0.2,24.°63N×122.°69E, h22km±4km, M1.7*
TAP **16** *22:45:21.5,24.°74N×122.°69E, h22km±1km, ML2.9, C*
ISC 16 22:45:20.3±1.2,**24.°69N**±0.°06×**122.°71E**±0.°03,**h9**km±11km,
n23,σ0.61/39,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.32**	**137**	P	**Pb**	**22 45 28.0**	**-0.2**
JYNG				S	**Sb**	**22 45 32.8**	**-0.7**
YOJ	**Yonaguni jima**	**0.36**	**129**	P	**Pb**	**22 45 28.8**	**0.0**
YOJ				S	**Sb**	**22 45 33.7**	**-0.8**
EGS		**0.72**	**283**	*e*P	**Pb**	**22 45 34.8**	**-0.3**
	baz=278						
TWB1	**Santiao Chiao**	**0.73**	**296**	*e*S	**Sg**	**22 45 44.3**	**+0.4**
	baz=293						
TWC	**Suao**	**0.79**	**264**	P	**Pb**	**22 45 35.8**	**-0.3**
	baz=261						
TWC				S	**Sb**	**22 45 46.3**	**-0.5**
	baz=261						
ENA	**Nanau**	**0.92**	**254**	*e*P	**Pb**	**22 45 38.2**	**-0.2**
	baz=250						
ENA				*e*S	**Sb**	**22 45 50.2**	**-0.4**
	baz=250						
NWF	**Wu-fen Shan**	**0.92**	**295**	*e*P	**Pb**	**22 45 38.4**	**-0.1**
	baz=292						
NWF				*e*S	**Sg**	**22 45 49.6**	**-0.5**
	baz=292						
TWE	**Neicheng**	**0.95**	**272**	P	**Pb**	**22 45 38.8**	**-0.1**
	baz=269						
TWE				*e*S	**Sb**	**22 45 51.2**	**-0.3**
	baz=269						
IRIF	**Iriomote-Funau**	**1.00**	**111**	P	**Pg**	**22 45 39.3**	**-0.2**
IRIF				*e*S	**Sg**	**22 45 52.8**	**+0.4**
ENTT	**Nioudou**	**1.04**	**268**	P	**Pb**	**22 45 40.6**	**+0.1**
	baz=265						
ENTT				*e*S	**Sb**	**22 45 54.1**	**-0.1**
	baz=265						
TWD	**Chiawan**	**1.18**	**239**	*e*P	**Pn**	**22 45 43.6**	**+0.6**
	baz=245						
TWD				*e*S	**Sn**	**22 45 59.1**	**-0.1**
	baz=245						
NSK	**Sanguang**	**1.23**	**270**	*e*P	**Pg**	**22 45 43.5**	**-0.4**
	baz=268						
NSK				*e*S	**Sn**	**22 46 00.2**	**-0.3**
	baz=268						
NNS	**Nan Shan**	**1.24**	**259**	*e*P	**Pn**	**22 45 44.0**	**+0.1**
	baz=256						
NNS				*e*S	**Sg**	**22 45 59.6**	**-0.6**
	baz=256						
WHF	**Hehuan Shan**	**1.42**	**248**	*e*P	**Pb**	**22 45 47.2**	**-0.1**
	baz=247						
WHF				*e*S	**Sb**	**22 46 05.5**	**-0.1**
	baz=247						
TWT	**Tachien**	**1.46**	**253**	*e*P	**Pg**	**22 45 49.0**	**+0.6**
	baz=259						
TWT				*e*S	**Sg**	**22 46 08.1**	**+0.8**
	baz=259						
EHY	**Hungye**	**1.73**	**227**	*e*P	**Pn**	**22 45 51.1**	**+0.6**
	baz=227						
EHY				*e*S	**Sb**	**22 46 14.1**	**0.0**
	baz=227						
SMLT	**Sun Moon Lake**	**1.83**	**244**	*e*P	**Pn**	**22 45 52.7**	**+0.6**
	baz=229						
TWF1	**Yuli**	**1.85**	**224**	*e*S	**Sn**	**22 46 15.3**	**-0.5**
	baz=212						
TYC	**Yuchr**	**1.86**	**246**	*e*P	**Pb**	**22 45 53.8**	**-0.7**
	baz=229						
YUS	**Yu-Shan**	**2.00**	**234**	*e*P	**Pn**	**22 45 55.9**	**+1.2**
	baz=233						
YUS				*e*S	**Sb**	**22 46 21.4**	**-1.0**
	baz=233						
ELDTW	**Lidau**	**2.15**	**226**	*e*S	**Sn**	**22 46 23.6**	**+0.3**
	baz=226						
STYT	**Tauyuan**	**2.34**	**230**	*e*P	**Pn**	**22 46 00.5**	**+1.4**
	baz=229						
CHN4	**Tsaushan**	**2.35**	**236**	*e*P	**Pb**	**22 46 01.2**	**-1.6**
	baz=222						
CHN4				*e*S	**Sb**	**22 46 32.2**	**+0.3**
	baz=222						

ISCJB **16** *22:47:36.1±0.6,56.°08S±0.°10×26.°9W±0.°2, h10km, mb4.3/12, Error ellipse: s-maj=20.1km s-min=12.6km az=154.1*

IDC **16** *22:47:36.1±0.9,56.°07S×26.°93W, h0km, mb4.0/5, mb1 4.1/6, mb1mx3.8/25, mbtmp4.0/6, ML4.2/1, Error ellipse: s-maj=40.7km s-min=21.7km az=70.0*
NEIC **16** *22:47:41.4±0.4,56.°12S×26.°91W, h35km, mb4.2/6, Error ellipse: s-maj=14.5km s-min=9.3km az=63.0*
ISC 16 22:47:37.8±0.7,**56.°1S**±0.°1×**26.°9W**±0.°2,**h10**km,**n20,**
σ0.68/12,**mb4.0**/10,**South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNAA	**Sanae**	**18.64**	**156**	P	**Pn**	**22 51 56.3**	**+0.8**
	0.7nm,0.3s,baz=297,slow=11,SNR=22						
QSPA	**South Pole Qui**	**34.15**	**180**	*e*P	**P**	**22 54 22.1**	**-0.6**
	15nm,0.6s						
MAW	**Mawson**	**40.02**	**143**	P	**P**	**22 55 12.0**	**-0.2**
	1.0nm,0.7s,baz=320,slow=16,SNR=5.3						
VNDA	**Vanda**	**46.53**	**183**	P	**P**	**22 56 05.1**	**+0.4**
	1.5nm,0.5s,baz=188,slow=8.9,SNR=12						
H10S2	**ASCENSION HYDR**	**48.00**	**16**	T	T	23 48 52.8	
	baz=190,slow=7,SNR=13						
H10S3	**ASCENSION HYDR**	**48.01**	**16**	T	T	23 48 51.0	
	baz=190,slow=74,SNR=11						
H10S1	**ASCENSION HYDR**	**48.02**	**16**	T	T	23 48 52.2	
	baz=190,slow=74,SNR=10						
H10N1	**ASCENSION HYDR**	**49.12**	**16**	T	T	23 50 10.8	
	baz=193						
H10N3	**ASCENSION HYDR**	**49.12**	**16**	T	T	23 50 16.3	
	baz=193						
H10N2	**ASCENSION HYDR**	**49.14**	**16**	T	T	23 50 19.4	
	baz=193						
TSUM	**Tsumeb**	**49.57**	**60**	*e*P	**P**	**22 56 29.5**	**+0.4**
	0.9nm,0.8s						
LPAZ	**La Paz**	**50.53**	**305**	P	**P**	**22 56 37.1**	**+0.3**
	1.2nm,0.7s,baz=168,slow=7.3,SNR=7.6						
SAML	**Samuel**	**54.94**	**314**	*e*P	**P**	**22 57 09.2**	**+0.4**
	0.8nm,0.5s						
LSZ	**Lusaka**	**58.25**	**69**	*e*P	**P**	**22 57 32.0**	**-0.5**
	0.4nm,0.6s						
OTAV	**Otavalo**	**69.81**	**303**	*e*P	**P**	**22 58 49.2**	**+0.4**
	4.1nm,1.3s						
TORD	**Torodi Ar. Bea**	**73.02**	**29**	P	**P**	**22 59 07.9**	**+0.3**
	0.8nm,0.5s,baz=202,slow=6.4,SNR=14						
SJG	**San Juan**	**80.97**	**322**	*e*P	**P**	**22 59 51.9**	**-0.3**
	1.5nm,0.3s						
COCO	**West Island**	**97.51**	**125**	*e*P	Pdif	23 01 11.4	-0.7
	275nm,0.8s						
ASAR	**Alice Springs**	**98.90**	**162**	P	Pdif	23 01 17.0	-1.2
	0.3nm,0.7s,baz=191,slow=4.2,SNR=4.6						
ILAR	**Eielson Array**	**150.26**	**312**	PKPbc	**PKPbc**	**23 07 26.1**	**-1.4**
	0.6nm,0.7s,baz=117,slow=2.8,SNR=8.4						

CSEM **16** *22:49:11.3,46.°20N×7.°65E, h4km, ML0.8/5*
ZUR 16 22:49:11.3,46.°20N×7.°65E,h4km±2km,**ML0.8**/5,**8C-2D,**
Switzerland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VANNI	**Vissoie, Val d**	**0.04**	**284**	⇓*i*Pg	Pg	22 49 12.6	+0.1
	350nm,0.3s						
VANNI	**Vissoie, Val d**	**0.04**	**284**	⇓*i*Pg	Pg	22 49 12.6	+0.1
	350nm,0.3s						
EMBD	**Embd, Matterta**	**0.13**	**83**	*i* Pg	Pg	22 49 14.2	+0.3
	47nm,0.2s						
EMBD				*i* Sg	Sg	22 49 15.9	+0.2
	47nm,0.2s						
EMBD	**Embd, Matterta**	**0.13**	**83**	*i* Pg	Pg	22 49 14.2	+0.3
	47nm,0.2s						
EMBD				*i* Sg	Sg	22 49 15.9	+0.2
	47nm,0.2s						
LKBD2	**Leukerbad 2**	**0.17**	**359**	⇑*i*Pg	Pg	22 49 15.0	+0.2
LKBD2	**Leukerbad 2**	**0.17**	**359**	⇑*i*Pg	Pg	22 49 15.0	+0.2
DIX	**Grande Dixence**	**0.21**	**234**	⇑*i*Pg	Pg	22 49 15.6	+0.2
	22nm,0.0s						
DIX				*i* Sg	Sg	22 49 18.3	+0.2
	22nm,0.0s						
DIX	**Grande Dixence**	**0.21**	**234**	⇑*i*Pg	Pg	22 49 15.6	+0.2
	22nm,0.0s						
DIX				*i* Sg	Sg	22 49 18.3	+0.2
	22nm,0.0s						
LAUCH	**Lauchernalp**	**0.23**	**22**	⇑*i*Pg	Pg	22 49 16.0	+0.1
	33nm,0.1s						
LAUCH	**Lauchernalp**	**0.23**	**22**	⇑*i*Pg	Pg	22 49 16.0	+0.1
	33nm,0.1s						
SIMPL	**Simplonpass**	**0.26**	**81**	⇑*i*Pg	Pg	22 49 16.7	+0.3
	14nm,0.2s						
SIMPL	**Simplonpass**	**0.26**	**81**	⇑*i*Pg	Pg	22 49 16.7	+0.3
	14nm,0.2s						

IDC **16** *23:23:30.4±1.4,35.°74N×68.°91E, h0km, mb3.7/3, mb1 3.7/5, mb1mx3.4/53, mbtmp3.6/5, ML3.2/2, Error ellipse: s-maj=37.7km s-min=25.7km az=153.0*
ISCJB **16** *23:23:33.6±1.0,35.°96N±0.°09×68.°7E±0.°1, h30km, mb3.7/3, Error ellipse: s-maj=17.1km s-min=8.1km az=39.7*
NNC **16** *23:23:38.8±12.0,36.°12N×68.°50E, h162km±465km, mb3.1, mpv3.9, Error ellipse: s-maj=140.5km s-min=41.1km az=178.0*
ISC 16 23:23:35.4±1.2,**35.°9N**±0.°1×**68.°71E**±0.°09,**h30**km,**n9,**
σ1.°61/14,**mb3.8**/3,**3C-5D,Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MNAS	**Manas**	**7.21**	**23**	⇑Pn	**Pn**	**23 25 19.5**	**+0.6**
	4.0nm,0.4s						
MNAS				⇑Sn	**Sn**	**23 26 40.3**	**+0.3**
	1.5nm,0.4s						
KK31	**Karatay Array**	**7.34**	**10**	⇓Pn	**Pn**	**23 25 21.4**	**+0.9**
	1.3nm,0.5s,baz=187,slow=14						
KK31				⇑Sn	**Sn**	**23 26 41.0**	**-1.7**
	1.5nm,0.4s,baz=195,slow=22						
AAK	**Ala-Archa**	**8.09**	**32**	⇓Pn	**Pn**	**23 25 31.5**	**+0.6**
	5.0nm,0.6s						
AAK				⇓Sn	**Sn**	**23 27 02.6**	**+1.1**
	4.4nm,0.7s						
GEYT	**Alibeck**	**8.72**	**287**	Pn	**Pn**	**23 25 42.1**	**+2.6**
	0.7nm,0.3s,baz=102,slow=11,SNR=5.6						
GEYT				Sn	**Sn**	**23 27 13.8**	**-3.0**
	0.3nm,0.3s,baz=113,slow=36,SNR=4.2						
TKM2	**Tokmak 2**	**8.81**	**35**	⇓Pn	**Pn**	**23 25 42.1**	**+1.2**
	2.7nm,0.5s						
TKM2				⇓Sn	**Sn**	**23 27 19.3**	**0.0**
	1.4nm,0.8s						
MKAR	**Makanchi Array**	**14.90**	**39**	Pn	**Pn**	**23 27 01.9**	**-1.9**
	0.0nm,0.3s,baz=223,slow=15,SNR=3.2						
ZALV	**Zalesovo Beam**	**21.27**	**27**	P	**P**	**23 28 18.2**	**-0.8**
	1.9nm,0.4s,baz=220,slow=10,SNR=16						
TORD	**Torodi Ar. Bea**	**63.84**	**268**	P	**P**	**23 34 05.5**	**+0.2**
	0.8nm,1.0s,baz=40,slow=6.4,SNR=5.1						
WRA	**Warramunga Arr**	**83.27**	**120**	P	**P**	**23 35 58.3**	**-1.0**
	0.4nm,0.7s,baz=323,slow=5.0,SNR=3.3						

ISCJB **16** *23:28:36.4±0.4,0.°29N±0.°05×121.°73E±0.°06, h202km, mb3.7/7, Error ellipse: s-maj=9.0km s-min=6.8km az=151.9*
DJA **16** *23:28:37.9±0.8,0.°N±6.°×12.°2E±.°, h201km±6km, M4.2/6, mb4.4/1, mB4.5/1, MLv4.1/6, Mw(mB)3.7/1*
IDC **16** *23:28:40.1±2.3,0.°16N×121.°81E, h244km±23km, mb3.4/7, mb1 3.5/9, mb1mx3.2/50, mbtmp4.0/9, Error ellipse: s-maj=32.0km s-min=9.5km az=74.0*
ISC 16 23:28:36.5±0.6,**0.°21N**±0.°06×**121.°77E**±0.°06,**h202**km,**n22,**
σ1.°97/29,**mb3.8**/7,**Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MRSI	**Marisa**	**0.31**	**32**	P	**Pn**	**23 29 04.9**	**+1.6**
MRSI				S	**S**	**23 29 25.5**	**+1.3**
LUWI	**Luwuk**	**1.59**	**141**	P	**Pn**	**23 29 14.0**	**+2.8**
LUWI				S	**S**	**23 29 41.0**	**+3.2**
PCI	**Palu**	**2.23**	**240**	P	**S**	**23 29 51.1**	**+2.1**
KMSI	**Cibinong**	**2.24**	**81**	P	**Pn**	**23 29 19.9**	**+2.3**
KMSI				S	**S**	**23 29 51.9**	**+2.9**
TTSI	**Tana Toraja**	**3.78**	**211**	P	**Pn**	**23 29 38.4**	**+2.8**
SPSI	**Sidrap Palu**	**4.60**	**206**	P	**Pn**	**23 29 48.3**	**+2.4**
SANI	**Sanana**	**4.77**	**118**	P	**Pn**	**23 29 47.8**	**-0.3**
KAPI	**Kappang**	**5.57**	**201**	P	**Pn**	**23 30 01.1**	**+2.9**
	6.0nm,0.3s,baz=52,slow=6.8,SNR=24						
KAPI				S	**S**	**23 30 59.0**	**-3.5**
	0.4nm,0.3s,baz=60,slow=20,SNR=2.5						
FITZ	**Fitzroy Crossi**	**18.59**	**168**	P	**P**	**23 32 39.5**	**+0.9**
	0.7nm,0.3s,baz=1.2,slow=8.9,SNR=27						
FITZ				S	**S**	**23 35 57.8**	**-2.1**
	0.1nm,0.3s,baz=17,slow=19,SNR=2.4						
WRA	**Warramunga Arr**	**23.51**	**149**	P	**P**	**23 33 28.0**	**-0.4**
	0.8nm,0.4s,baz=326,slow=11,SNR=21						
ASAR	**Alice Springs**	**26.50**	**154**	P	**P**	**23 33 55.7**	**+0.3**
	0.2nm,0.4s,baz=328,slow=8.7,SNR=6.5						
ASAR				PcP	**PcP**	**23 37 13.8**	**-1.2**
	0.3nm,0.4s,baz=354,slow=2.1,SNR=4.2						
GUN	**Gumba**	**44.06**	**312**	*e*P	**P**	**23 36 26.1**	**+1.0**
	27nm,0.3s						
PKIN	**Phulchoki**	**44.25**	**311**	*e*P	**P**	**23 36 26.7**	**+0.3**
	3.6nm,0.3s						
KKN	**Kakani**	**44.45**	**311**	*e*P	**P**	**23 36 28.9**	**+0.9**
	6.5nm,0.4s						
GKN	**Gorkha**	**45.04**	**311**	*e*P	**P**	**23 36 33.3**	**+0.7**
	11nm,0.2s						
KOLN	**Koldanda**	**45.71**	**310**	*e*P	**P**	**23 36 38.7**	**+0.8**
	14nm,0.4s						
ASAJ	**Asahikawa**	**47.49**	**20**	P	**P**	**23 36 51.0**	**-0.2**
	2.7nm,0.6s,baz=225,slow=11						
SONM	**Songino Array**	**49.29**	**346**	P	**P**	**23 37 05.5**	**+0.5**
	2.8nm,0.7s,baz=167,slow=9.3,SNR=14						
MKAR	**Makanchi Array**	**57.80**	**329**	P	**P**	**23 38 07.1**	**+0.4**
	3.8nm,0.3s,baz=127,slow=8.8,SNR=81						
MKAR				PcP	**PcP**	**23 38 55.6**	**-1.4**
	0.7nm,0.5s,baz=124,slow=4.2,SNR=4.5						
ZALV	**Zalesovo Beam**	**61.62**	**336**	P	**P**	**23 38 31.1**	**-1.5**
	0.7nm,0.3s,baz=120,slow=4.5,SNR=4.5						
ILAR	**Eielson Array**	**90.39**	**25**	P	**P**	**23 41 11.8**	**-2.8**
	0.2nm,0.5s,baz=249,slow=6.7,SNR=2.9						
TORD	**Torodi Ar. Bea**	**119.17**	**285**	PKP	**PKPdf**	**23 47 00.6**	**-1.9**
	0.5nm,0.4s,baz=66,slow=1.7,SNR=13						

NEIC 16 23:39:05.5±0.5,**13.°30N×91.°86W,h10**km,**mb4.0**/9,
MD3.7(MEX),**Error ellipse: s-maj=16.6km s-min=7.8km**
az=71.0,Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PAYG	**Puerto Ayora**	**13.97**	**173**	Pn	Pn	23 42 23.7	-0.1
DWPF	**Disney Wildern**	**17.65**	**32**	*e*Pn	Pn	23 43 11.5	-0.1
ANMO	**Albuquerque**	**25.28**	**331**	*e*P	P	23 44 32.5	+0.1
	0.3nm,0.4s						
CMB	**Columbia Colle**	**35.35**	**319**	P	P	23 46 01.8	+0.5
	3.2nm,0.5s						
HLID	**Hailey**	**35.85**	**332**	*e*P	P	23 46 05.9	+0.2
	0.2nm,0.4s						
SAML	**Samuel**	**36.05**	**126**	*e*P	P	23 46 07.8	+0.3
	1.4nm,0.5s						
WALA	**Waterton Lakes**	**40.03**	**337**	*e*P	P	23 46 40.0	-0.8
	0.7nm,0.6s						
LCO	**Las Campanas**	**46.77**	**154**	*e*P	P	23 47 35.3	-0.3
	3.1nm,0.6s						
DLBC	**Dease Lake**	**53.35**	**336**	*e*P	P	23 48 25.4	+0.4
	0.5nm,0.5s						
COLA	**College**	**63.95**	**337**	*e*P	P	23 49 38.0	-0.6
	1.3nm,0.5s						
SUMG	**Summit**	**66.87**	**15**	*e*P	P	23 49 58.2	+0.3
	1.4nm,0.7s						

ISCJB **17** *00:00:42.5±0.4,39.°92N±0.°01×23.°98E±0.°01, h11km±3km, mb3.4/6, MS3.0/1, Error ellipse: s-maj=2.0km s-min=1.9km az=169.3*
IDC **17** *00:00:42.4±1.0,39.°88N×24.°10E, h0km, mb3.4/6, mb1 3.6/12, mb1mx3.4/37, mbtmp3.5/12, ML3.2/6, MS3.1/1, Ms1 3.1/1, ms1mx2.2/37, Error ellipse: s-maj=16.4km s-min=15.1km az=99.0*
ISK **17** *00:00:42.5,39.°92N×24.°05E, h6km, ML3.7*
THE **17** *00:00:42.6,39.°93N×23.°99E, h5km±1km, ML3.7/17, Error ellipse: s-maj=1.1km s-min=0.6km az=314.0*
ATH **17** *00:00:42.2,39.°92N×24.°01E, h26km, ML3.5/22, Error ellipse: s-maj=0.9km s-min=0.5km az=28.0*
CSEM **17** *00:00:43.1±0.1,39.°92N×23.°97E, h10km, ML3.7, Error ellipse: s-maj=1.8km s-min=1.6km az=138.0*
SKO **17** *00:00:45.5,40.°00N×23.°96E, h0km, M3.2, ML3.4*
ISC 17 00:00:42.9±1.0,**39.°92N**±0.°01×**23.°99E**±0.°01,**h7**km±7km,
n303,σ1.°19/390,**mb3.4**/6,**24C-13D,Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PAIG	**Paliouri**	**0.24**	**273**	P	**Pg**	**00 00 47.8**	**+0.1**
PAIG				S	**Sg**	**00 00 51.4**	**+0.5**
PAIG	**Paliouri**	**0.24**	**273**	P	**Pg**	**00 00 47.8**	**+0.1**
PAIG				S	**Sg**	**00 00 51.4**	**+0.5**
PAIG	**Paliouri**	**0.24**	**273**	P	**Pg**	**00 00 46.9**	**-0.8**
PAIG				S	**Sg**	**00 00 49.3**	**-1.6**
PAIG				AML	AML	00 00 51.7	
PAIG				AML	AML	00 00 52.6	
	comp=E,93139μm,0.3s						
OUR	**Ouranopolis**	**0.42**	**359**	*e*PG	**Pg**	**00 00 51.1**	**+0.1**
OUR	**Ouranopolis**	**0.42**	**359**	P	**Pg**	**00 00 51.5**	**+0.5**
OUR				S	**Sg**	**00 00 56.9**	**+0.4**
OUR	**Ouranopolis**	**0.42**	**359**	*e*Pg	**Pg**	**00 00 51.1**	**+0.1**
OUR	**Ouranopolis**	**0.42**	**359**	P	**Pg**	**00 00 51.5**	**+0.5**
OUR				S	**Sg**	**00 00 56.9**	**+0.4**
OUR	**Ouranopolis**	**0.42**	**359**	P	**Pg**	**00 00 51.6**	**+0.5**
OUR				S	**Sg**	**00 00 57.4**	**+0.9**
OUR				AML	AML	00 00 58.3	
	comp=E,26374μm,0.3s						
OUR				AML	AML	00 00 59.3	
	comp=N,75818μm,0.5s						
PLG	**Polygyros**	**0.62**	**318**	P	**Pg**	**00 00 54.0**	**-0.9**
PLG				S	**Sg**	**00 01 02.7**	**-0.3**
PLG	**Polygyros**	**0.62**	**318**	P	**Pg**	**00 00 54.0**	**-0.9**
PLG				S	**Sg**	**00 01 02.7**	**-0.3**
PLG	**Polygyros**	**0.62**	**318**	P	**Pg**	**00 00 53.1**	**-1.8**
PLG				S	**Sg**	**00 01 02.5**	**-0.5**
PLG				AML	AML	00 01 03.

comp=N,7709µm,0.6s
SOH AML AML 00 01 22.2

comp=E,6095µm,0.6s
THE Thessaloniki 1.06 313 P **Pg** **00 01 02.0 -1.3**
THE S **Sg** **00 01 16.8 -0.3**
THE Thessaloniki 1.06 313 P **Pg** **00 01 03.2 -0.1**
THE S **Sg** **00 01 16.8 -0.3**
THE Thessaloniki 1.06 313 P **Pg** **00 01 03.2 -0.1**
THE S **Sg** **00 01 17.4 +0.3**
KAVA Kavala 1.15 20 P **Pg** **00 01 04.0 -1.0**
KAVA S **Sb** **00 01 20.3 0.0**
KAVA Kavala 1.15 20 P **Pg** **00 01 04.0 -1.0**
KAVA S **Sb** **00 01 20.3 0.0**
KAVA Kavala 1.15 20 P **Pg** **00 01 03.8 -1.2**
LIT Litokhoron 1.17 280 P **Pg** **00 01 04.4 -0.9**
LIT S **Sn** **00 01 21.4 -0.5**
LIT Litokhoron 1.17 280 P **Pg** **00 01 04.5 -0.9**
LIT S **Sb** **00 01 21.3 +0.5**
LIT Litokhoron 1.17 280 P **Pg** **00 01 04.5 -0.9**
LIT S **Sb** **00 01 21.3 +0.5**
LIT AML AML 00 01 22.1

comp=E,2207µm,0.3s
LIT AML AML 00 01 22.7

comp=N,2526µm,0.3s
SRS Serrai 1.24 346 P **Pb** **00 01 05.5 -1.1**
SRS S **Sg** **00 01 22.7 0.0**
SRS Serrai 1.24 346 P **Pb** **00 01 05.8 -0.8**
SRS S **Sg** **00 01 22.5 -0.2**
SRS Serrai 1.24 346 P **Pb** **00 01 05.8 -0.8**
SRS S **Sg** **00 01 22.5 -0.2**
SRS AML AML 00 01 28.8

comp=E,3610µm,0.5s
SRS AML AML 00 01 32.8

comp=N,2355µm,0.6s
SMTH Samothraki Isl 1.30 64 P **Pn** **00 01 05.8 -1.8**
SMTH Samothraki Isl 1.30 64 P **Pn** **00 01 05.8 -1.8**
SMTH Samothraki Isl 1.30 64 P **Pn** **00 01 05.6 -2.0**
NVR Nevrokopi 1.44 356 P **Pn** **00 01 08.2 -1.2**
NVR Nevrokopi 1.44 356 P **Pn** **00 01 08.6 -0.8**
NVR S **Sb** **00 01 26.6 -1.9**
LKR Lokris 1.48 212 P **Pn** **00 01 08.7 -1.3**
LKR Lokris 1.48 212 P **Pn** **00 01 08.7 -1.3**
LKR Lokris 1.48 212 P **Pn** **00 01 07.8 -2.2**
GADA Gvkgeada 1.49 79 *e*PN **Pn** **00 01 09.4 -0.7**
GADA *e*SN **Sb** **00 01 30.0 0.0**
GADA Gvkgeada 1.49 79 P **Pn** **00 01 08.7 -1.4**
GADA S **Sg** **00 01 30.8 0.0**
GADA Gvkgeada 1.49 79 P **Pn** **00 01 08.7 -1.4**
GADA Gvkgeada 1.49 79 *e*Pn **Pn** **00 01 09.4 -0.7**
GADA *e*Sn **Sb** **00 01 30.0 0.0**
KNT Kendrikon 1.50 327 P **Pn** **00 01 09.6 -0.7**
KNT S **Sb** **00 01 30.4 +0.1**
KNT Kendrikon 1.50 327 P **Pn** **00 01 10.1 -0.2**
KNT S **Sn** **00 01 29.0 -1.0**
KNT Kendrikon 1.50 327 P **Pn** **00 01 10.1 -0.2**
KNT S **Sn** **00 01 29.0 -1.0**
KNT AML AML 00 01 33.2

comp=E,2116µm,0.3s
KNT AML AML 00 01 33.2

comp=N,2722µm,0.3s
THL Klokotos Trika 1.56 258 P **Pn** **00 01 10.1 -1.0**
THL S **Sn** **00 01 30.3 -1.4**
THL Klokotos Trika 1.56 258 P **Pn** **00 01 10.1 -1.0**
THL S **Sn** **00 01 30.3 -1.4**
AGG Agios Georgios 1.57 236 P **Pn** **00 01 10.1 -1.1**
AGG S **Sn** **00 01 31.9 +0.1**
AGG Agios Georgios 1.57 236 P **Pn** **00 01 10.1 -1.1**
AGG S **Sn** **00 01 30.9 -0.9**
AGG Agios Georgios 1.57 236 P **Pn** **00 01 09.7 -1.5**
AGG S **Sn** **00 01 30.0 -0.9**
AGG AML AML 00 01 38.5

comp=E,3422µm,1.0s
AGG AML AML 00 01 43.2

comp=N,3268µm,0.7s
BOZC Bozcaada 1.59 92 *i* P **Pn** **00 01 10.8 -0.6**
BOZC *i* S **Sg** **00 01 34.9 +1.0**
GRG Griva 1.60 311 *e*PN **Pb** **00 01 12.5 -0.3**
GRG Griva 1.60 311 P **Pn** **00 01 11.1 -0.6**
GRG Griva 1.60 311 P **Pn** **00 01 11.1 -0.6**
GRG Griva 1.60 311 *e*Pn **Pb** **00 01 12.5 -0.3**
GRG S **Sn** **00 01 30.5 -2.1**
GRG Griva 1.60 311 P **Pn** **00 01 12.0 +0.3**
GRG S **Sn** **00 01 30.5 -2.1**
GRG AML AML 00 01 38.6

comp=N,2080µm,0.6s
GRG AML AML 00 01 39.6

comp=E,1899µm,0.4s
SIGR SIGRI 1.60 115 P **Pn** **00 01 10.2 -1.5**
SIGR SIGRI 1.60 115 P **Pn** **00 01 11.1 -0.5**
SIGR SIGRI 1.60 115 P **Pn** **00 01 11.2 -0.5**
KZN Kozani 1.75 284 P **Pn** **00 01 12.9 -0.8**
KZN S **Sn** **00 01 36.0 -0.3**
KZN Kozani 1.75 284 P **Pn** **00 01 13.4 -0.3**
KZN S **Sn** **00 01 35.0 -1.3**
VAY Valandovo 1.77 323 P **Pn** **00 01 13.0 -1.0**
VAY Valandovo 1.77 323 *e*Pg **Pb** **00 01 15.4 -0.4**
VAY *e*Sg **Sb** **00 01 38.9 +0.7**
VAY *e*Lg Lg 00 01 40.4

comp=E,268nm,0.4s
VAY *e*Lg Lg 00 01 41.0

comp=N,420nm,0.5s
VAY Valandovo 1.77 323 P **Pn** **00 01 13.0 -1.0**
VAY Valandovo 1.77 323 *e*Pg **Pb** **00 01 15.3 -0.4**
VAY *e*Sg **Sb** **00 01 38.8 +0.7**
VAY *e*Lg Lg 00 01 41.0

comp=N,420nm,0.5s
VIL2 Platees 1.79 199 P **Pn** **00 01 13.2 -1.2**
EZN Ezine 1.80 92 *e*PN **Pn** **00 01 14.7 +0.4**
EZN Ezine 1.80 92 *e*Pn **Pn** **00 01 14.7 +0.4**
VILL Villia 1.83 197 P **Pn** **00 01 13.2 -1.6**
VILL Villia 1.83 197 P **Pn** **00 01 13.2 -1.6**
ENEZ Enez 1.84 63 *e*PN **Pn** **00 01 14.9 -0.1**
ENEZ Enez 1.84 63 P **Pn** **00 01 13.5 -1.5**
ENEZ Enez 1.84 63 P **Pn** **00 01 13.5 -1.5**
ENEZ Enez 1.84 63 *e*Pn **Pn** **00 01 14.9 -0.1**
ALN Alexandroupoli 1.85 57 *e*PN **Pn** **00 01 14.4 -0.6**
ALN Alexandroupoli 1.85 57 P **Pn** **00 01 13.5 -1.6**
ALN Alexandroupoli 1.85 57 *e*Pn **Pn** **00 01 14.5 -0.6**
ALN Alexandroupoli 1.85 57 P **Pn** **00 01 14.8 -0.2**
ALN Alexandroupoli 1.85 57 P **Pn** **00 01 14.8 -0.2**
PTL Penteli 1.87 183 P **Pn** **00 01 14.1 -1.2**
PTL Penteli 1.87 183 P **Pn** **00 01 14.1 -1.2**
PTL Penteli 1.87 183 P **Pn** **00 01 13.8 -1.5**
PRK Paraskevi 1.89 110 P **Pn** **00 01 14.4 -1.1**
PRK Paraskevi 1.89 110 P **Pn** **00 01 14.4 -1.1**
PRK S **Sn** **00 01 38.5 -1.1**
PRK Paraskevi 1.89 110 P **Pn** **00 01 14.2 -1.3**
PRK S **Sn** **00 01 38.5 -1.1**
PRK AML AML 00 01 49.6

comp=E,2014µm,0.5s
PRK AML AML 00 01 52.9

comp=N,1625µm,0.7s
ATH Athens Observa 1.95 186 P **Pn** **00 01 15.7 -0.8**
ATH S **Sn** **00 01 39.7 -1.5**
GELI Tayfur-Gelibol 1.96 75 *e*PN **Pn** **00 01 15.6 -1.0**
GELI Tayfur-Gelibol 1.96 75 *e*Pn **Pn** **00 01 15.6 -1.0**
EVR Evrytania 1.96 240 P **Pn** **00 01 16.1 -0.6**
EVR Evrytania 1.96 240 P **Pn** **00 01 16.1 -0.6**
EVR S **Sn** **00 01 40.4 -1.3**
EVR Evrytania 1.96 240 P **Pn** **00 01 16.1 -0.6**
EVR S **Sn** **00 01 40.4 -1.3**
KPRO Kipourio 2.02 272 P **Pn** **00 01 17.3 -0.2**
KPRO Kipourio 2.02 272 P **Pn** **00 01 17.0 -0.5**
KPRO S **Sn** **00 01 42.2 -0.9**
KPRO Kipourio 2.02 272 P **Pn** **00 01 17.0 -0.5**
KPRO S **Sn** **00 01 42.2 -0.9**
KPRO AML AML 00 01 53.2

comp=N,772µm,0.7s
KPRO AML AML 00 01 55.8

comp=E,1276µm,0.6s
LTK Loutraki 2.05 203 P **Pn** **00 01 17.0 -0.9**
LTK Loutraki 2.05 203 P **Pn** **00 01 17.0 -0.9**
LTK Loutraki 2.05 203 P **Pn** **00 01 16.6 -1.3**
VLY Voula,Athens 2.07 184 P **Pn** **00 01 16.9 -1.2**
VLY Voula,Athens 2.07 184 P **Pn** **00 01 16.9 -1.2**
VLY S **Sn** **00 01 42.7 -1.4**
VLY Voula,Athens 2.07 184 P **Pn** **00 01 16.9 -1.2**
VLY S **Sn** **00 01 42.7 -1.4**
VLY AML AML 00 01 51.2

comp=N,1534µm,0.5s
VLY AML AML 00 01 54.7

comp=E,1528µm,0.6s
ERIK Erikli-Kesan 2.07 68 *e*PN **Pn** **00 01 17.2 -0.9**
ERIK Erikli-Kesan 2.07 68 *e*Pn **Pn** **00 01 17.2 -0.9**
ANX Ano Chora 2.08 231 P **Pn** **00 01 17.8 -0.5**
ANX Ano Chora 2.08 231 P **Pn** **00 01 17.8 -0.5**
ANX Ano Chora 2.08 231 P **Pn** **00 01 18.5 +0.2**
SERG Sergoula 2.12 226 P **Pn** **00 01 18.1 -0.8**
SERG Sergoula 2.12 226 P **Pn** **00 01 18.3 -0.6**
THAL Thalero 2.14 209 P **Pn** **00 01 18.2 -0.9**
THAL Thalero 2.14 209 P **Pn** **00 01 18.2 -0.9**
TRIZ Trizonia 2.15 225 P **Pn** **00 01 17.7 -1.5**
LPK Lapseki 2.17 77 *e*PN **Pn** **00 01 19.6 +0.1**
LPK Lapseki 2.17 77 *e*Pn **Pn** **00 01 19.6 +0.1**
AYVA Ayvalik 2.17 105 *i* P **Pn** **00 01 19.4 -0.1**
AYVA Ayvalik 2.17 105 P **Pn** **00 01 19.4 -0.1**
FNA Florina 2.18 294 *e*PN **Pn** **00 01 20.7 +1.0**
FNA Florina 2.18 294 P **Pn** **00 01 19.8 +0.1**
FNA Florina 2.18 294 P **Pn** **00 01 19.8 +0.1**
FNA Florina 2.18 294 *e*Pn **Pn** **00 01 20.7 +1.0**
FNA Florina 2.18 294 P **Pn** **00 01 20.5 +0.9**
PENT Pentalofos 2.21 278 P **Pn** **00 01 20.2 +0.1**
PENT Pentalofos 2.21 278 P **Pn** **00 01 20.2 +0.1**
PENT Pentalofos 2.21 278 P **Pn** **00 01 20.6 +0.5**
CHOS Chios island 2.21 133 P **Pn** **00 01 20.2 0.0**
CHOS Chios island 2.21 133 P **Pn** **00 01 20.2 0.0**
NEST Nestorio 2.31 283 P **Pn** **00 01 21.8 +0.3**
NEST Nestorio 2.31 283 P **Pn** **00 01 21.8 +0.3**
NEST S **Sn** **00 01 49.9 -0.3**
NEST Nestorio 2.31 283 P **Pn** **00 01 22.8 +1.3**
NEST S **Sn** **00 01 49.9 -0.3**
NEST AML AML 00 01 54.5

comp=E,431µm,0.4s
NEST AML AML 00 02 00.1

comp=N,341µm,0.6s
PVO Paravola 2.31 237 P **Pn** **00 01 21.5 +0.1**
PVO Paravola 2.31 237 P **Pn** **00 01 21.5 +0.1**
PVO Paravola 2.31 237 P **Pn** **00 01 22.1 +0.7**
KLV Kalavryta, Ach 2.36 218 P **Pn** **00 01 21.8 -0.3**
KLV S **Sn** **00 01 49.9 -1.4**
KLV Kalavryta, Ach 2.36 218 P **Pn** **00 01 21.8 -0.3**
KLV S **Sn** **00 01 49.9 -1.4**
GUR Goura 2.36 214 P **Pn** **00 01 21.5 -0.6**
GUR Goura 2.36 214 P **Pn** **00 01 21.6 -0.6**
GUR S **Sn** **00 01 49.4 -2.0**
GUR Goura 2.36 214 P **Pn** **00 01 21.6 -0.6**
GUR S **Sn** **00 01 49.4 -2.0**
GUR AML AML 00 01 52.3

comp=E,853µm,0.5s
GUR AML AML 00 02 03.6

comp=N,932µm,0.5s
UPR University Cam 2.37 227 P **Pn** **00 01 22.9 +0.7**
UPR University Cam 2.37 227 P **Pn** **00 01 22.9 +0.7**
DSL Palaion Diasel 2.37 252 P **Pn** **00 01 22.8 +0.5**
DSL S **Sn** **00 01 51.3 -0.3**
DSL Palaion Diasel 2.37 252 P **Pn** **00 01 22.8 +0.5**
DSL S **Sn** **00 01 51.3 -0.3**
DSL AML AML 00 02 01.6

comp=E,2082µm,0.6s
DSL AML AML 00 02 02.7

comp=N,1479µm,0.6s
DKL Dikili 2.41 110 *e*PN **Pn** **00 01 23.0 +0.3**
DKL Dikili 2.41 110 *e*Pn **Pn** **00 01 23.0 +0.3**
JAN Janina 2.43 265 P **Pn** **00 01 24.3 +1.2**
JAN S **Sn** **00 01 53.4 +0.2**
JAN Janina 2.43 265 AML AML 00 02 01.1

comp=E,734µm,0.6s
DID Didima 2.48 194 P **Pn** **00 01 22.6 -1.1**
DID Didima 2.48 194 P **Pn** **00 01 22.6 -1.1**
DID S **Sn** **00 01 52.0 -2.3**
DID Didima 2.48 194 P **Pn** **00 01 22.3 -1.4**
DID S **Sn** **00 01 52.0 -2.3**
PDO Prodromos 2.55 240 P **Pn** **00 01 25.9 +1.2**
PDO Prodromos 2.55 240 P **Pn** **00 01 25.9 +1.2**
URLA Izmir 2.55 127 *i* P **Pg** **00 01 34.8 +3.0**
URLA Izmir 2.55 127 P **Pg** **00 01 34.8 +3.0**
RKY Sarkoy-Tekirda 2.56 71 *e*PN **Pn** **00 01 24.9 +0.1**
RKY Sarkoy-Tekirda 2.56 71 *e*Pn **Pn** **00 01 24.9 +0.1**
KRBG Karabiga-Canak 2.58 78 *e*PN **Pn** **00 01 25.1 0.0**
KRBG Karabiga-Canak 2.58 78 *e*Pn **Pn** **00 01 25.1 0.0**
DRO Drossia 2.65 223 P **Pn** **00 01 25.8 -0.3**
DRO Drossia 2.65 223 P **Pn** **00 01 25.8 -0.3**
DRO S **Sn** **00 01 55.8 -2.6**
DRO Drossia 2.65 223 P **Pn** **00 01 26.0 0.0**
DRO S **Sn** **00 01 55.8 -2.6**
AXS Araxos 2.66 231 P **Pn** **00 01 25.3 -0.9**
AXS Araxos 2.66 231 P **Pn** **00 01 25.3 -0.9**
RLS Riolos of Patr 2.71 227 P **Pn** **00 01 28.3 +1.5**
OHR Ohrid 2.71 297 *e*Pn **Pb** **00 01 30.0 +0.9**
LKD2 Lefkada island 2.82 248 P **Pn** **00 01 30.0 +1.6**
LKD2 Lefkada island 2.82 248 P **Pn** **00 01 30.0 +1.6**
SKO Skopje 2.82 318 *e*PN **Pn** **00 01 29.1 +0.7**
SKO Skopje 2.82 318 *e*Pn **Pn** **00 01 29.1 +0.7**
VLX Vlachokerasia 2.84 207 P **Pn** **00 01 28.7 -0.1**
VLX Vlachokerasia 2.84 207 P **Pn** **00 01 28.7 -0.1**
EDRB Edirne 2.84 46 *e*PN **Pn** **00 01 28.8 +0.1**
EDRB Edirne 2.84 46 *e*Pn **Pn** **00 01 28.8 +0.1**
GONE Gonen-Balikesi 2.84 86 *e*PN **Pn** **00 01 29.2 +0.5**
GONE Gonen-Balikesi 2.84 86 *e*Pn **Pn** **00 01 29.2 +0.5**
MRMT Marmara Adasi 2.84 75 *e*PN **Pn** **00 01 29.4 +0.6**
MRMT Marmara Adasi 2.84 75 *e*Pn **Pn** **00 01 29.4 +0.6**
IGT Igoumenitsa 2.85 263 P **Pb** **00 01 31.6 -2.5**
IGT S **Sn** **00 01 59.5 -3.8**
IGT Igoumenitsa 2.85 263 P **Pb** **00 01 31.6 -2.5**
IGT S **Sn** **00 01 59.5 -3.8**
IGT AML AML 00 02 09.2

comp=E,336µm,0.6s
IGT AML AML 00 02 13.4

comp=N,331µm,0.6s
TKR Tekirdag 2.91 67 *e*PN **Pn** **00 01 30.2 +0.6**
TKR Tekirdag 2.91 67 *e*Pn **Pn** **00 01 30.2 +0.6**
IZM Izmir 2.96 120 *e*PN **Pn** **00 01 30.9 +0.5**
IZM Izmir 2.96 120 *e*Pn **Pn** **00 01 30.9 +0.5**
AMT Artemida-Makis 2.98 218 P **Pn** **00 01 30.8 +0.2**
AMT S **Sn** **00 02 04.4 -2.2**
AMT Artemida-Makis 2.98 218 P **Pn** **00 01 30.8 +0.2**
AMT S **Sn** **00 02 04.4 -2.2**
AMT AML AML 00 02 15.2

comp=N,1208µm,0.9s
AMT AML AML 00 02 18.1

comp=E,749µm,0.6s
EDC Edincik 3.00 81 *e*PN **Pn** **00 01 31.3 +0.4**
EDC Edincik 3.00 81 *e*Pn **Pn** **00 01 31.3 +0.4**
BALB Balikesir 3.01 94 *e*PN **Pn** **00 01 31.3 +0.3**
BALB Balikesir 3.01 94 *e*Pn **Pn** **00 01 31.3 +0.3**
APE Apeiranthos 3.09 157 *e*PN **Pn** **00 01 32.9 +0.7**
APE Apeiranthos 3.09 157 P **Pn** **00 01 31.8 -0.4**
APE Apeiranthos 3.09 157 *e*Pn **Pn** **00 01 32.9 +0.7**
APE Apeiranthos 3.09 157 P **Pn** **00 01 31.8 -0.4**
AKS Akhisar 3.14 108 *e*PN **Pn** **00 01 33.2 +0.4**
AKS Akhisar 3.14 108 *e*Pn **Pn** **00 01 33.2 +0.4**
PHSR Pinarhisar 3.18 56 *e*PN **Pn** **00 01 34.1 +0.7**
PHSR Pinarhisar 3.18 56 *e*Pn **Pn** **00 01 34.1 +0.7**
KEK Kerkira 3.24 268 P **Pn** **00 01 35.8 +1.7**
KEK S **Sn** **00 02 11.2 -1.7**
MHLO Agia Marina, M 3.24 174 P **Pn** **00 01 34.0 -0.2**
MHLO Agia Marina, M 3.24 174 P **Pn** **00 01 34.0 -0.2**
VLI Veliai 3.30 195 P **Pn** **00 01 34.0 -1.0**
VLI Veliai 3.30 195 P **Pn** **00 01 34.0 -1.0**
BARS Barje 3.33 331 *i*Pn **Pn** **00 01 35.2 -0.2**
KCTX Karacabey (Bur 3.37 83 *e*PN **Pn** **00 01 36.2 +0.2**
KCTX Karacabey (Bur 3.37 83 *e*Pn **Pn** **00 01 36.2 +0.2**
TIR Tirane 3.45 296 *i*P **Pn** **00 01 39.6 +2.5**
TIR Tirane 3.45 296 *i*Pn **Pn** **00 01 39.6 +2.5**
AYDB Zeytinkoy-Aydi 3.62 122 *e*PN **Pn** **00 01 40.0 +0.5**
AYDB Zeytinkoy-Aydi 3.62 122 *e*Pn **Pn** **00 01 40.0 +0.5**
DEMI Demirci 3.76 102 *i* P **Pn** **00 01 42.6 +1.2**
DEMI *i* S **Sg** **00 02 43.6 -0.1**
DEMI Demirci 3.76 102 P **Pn** **00 01 42.6 +1.2**
DEMI S **Sg** **00 02 43.6 -0.1**
MDNY Mudanya-Bursa 3.78 82 *e*PN **Pn** **00 01 42.4 +0.8**
MDNY Mudanya-Bursa 3.78 82 *e*Pn **Pn** **00 01 42.4 +0.8**
ARMT Armutlu 3.78 79 *e*PN **Pn** **00 01 42.8 +1.1**
ARMT Armutlu 3.78 79 *e*Pn **Pn** **00 01 42.8 +1.1**
MANT Manisa 3.82 110 *i* P **Pb** **00 01 48.4 -2.4**
MANT Manisa 3.82 110 P **Pb** **00 01 48.4 -2.4**
BODT Bodrum 3.86 137 *e*PN **Pn** **00 01 43.6 +0.9**
BODT Bodrum 3.86 137 *e*Pn **Pn** **00 01 43.6 +0.9**
KULA Kula-Manisa 3.89 110 *e*PN **Pn** **00 01 44.3 +1.1**
KULA Kula-Manisa 3.89 110 *e*Pn **Pn** **00 01 44.3 +1.1**
ISK Istanbul-Kandi 4.03 72 *e*PN **Pn** **00 01 46.2 +1.1**
ISK Istanbul-Kandi 4.03 72 *e*Pn **Pn** **00 01 46.2 +1.1**
KLYT Kilyos 4.07 69 *e*PN **Pn** **00 01 46.8 +1.2**
KLYT Kilyos 4.07 69 *e*Pn **Pn** **00 01 46.8 +1.2**
BOVS Bovan 4.09 336 ǁ*i*Pn **Pn** **00 01 45.2 -0.7**
BOLS Boljevac 4.20 339 *e*Pn **Pn** **00 01 45.2 -2.1**
TVSB Tavsanli 4.25 95 *e*PN **Pn** **00 01 49.2 +1.1**
TVSB Tavsanli 4.25 95 *e*Pn **Pn** **00 01 49.2 +1.1**
GDZ Gediz 4.33 99 *i* P **Pn** **00 01 52.4 +3.1**
GDZ *i* S **Sg** **00 02 59.2 -2.6**
GDZ Gediz 4.33 99 P **Pn** **00 01 52.4 +3.1**
GDZ S **Sg** **00 02 59.2 -2.6**
PDG Podgorica 4.37 307 ⇑*i*P **Pn** **00 01 52.3 +2.6**
PDG Podgorica 4.37 307 ⇑*i*P **Pn** **00 01 52.3 +2.6**
ADVT Abdulvahap 4.43 81 *e*PN **Pn** **00 01 51.9 +1.3**
ADVT Abdulvahap 4.43 81 *e*Pn **Pn** **00 01 51.9 +1.3**
IVAS Ivanjica 4.65 323 *e*Pn **Pn** **00 01 53.6 0.0**
GRUS Gruza 4.66 329 ⇑*i*Pn **Pn** **00 01 53.3 -0.4**
IDI Anoyia 4.67 171 Pn **Pn** **00 01 53.8 -0.2**
comp=E,2.9nm,0.3s,baz=348,slow=12,SNR=24
BORA Eskisehir 4.97 88 *i* P **Pn** **00 01 59.0 +0.9**
BORA Eskisehir 4.97 88 P **Pn** **00 01 59.0 +0.9**
TRUS Trudelj 5.06 329 *e*Pn **Pn** **00 01 58.8 -0.4**
GOLH Golhisar 5.12 120 *i* P **Pn** **00 01 57.4 -2.7**
GOLH Golhisar 5.12 120 P **Pn** **00 01 57.4 -2.7**
DIVS Divibare 5.13 326 ǁ*i*Pn **Pn** **00 02 00.2 -0.1**
MDVR Moldovita 5.15 342 ǁ*i*P **Pn** **00 01 59.9 -0.5**
MDVR Moldovita 5.15 342 ǁ*i*P **Pn** **00 01 59.9 -0.5**
ESKT Eskisehir 5.30 92 *i* P **Pn** **00 02 03.7 +1.0**
SEYT Eskypehyr 5.30 92 P **Pn** **00 02 03.7 +1.0**
ARR Arges 5.47 5 ⇑*i*P **Pn** **00 02 04.6 -0.3**
ARR Arges 5.47 5 ⇑*i*P **Pn** **00 02 04.6 -0.3**
LOT Lotru 5.53 358 ⇑*i*P **Pn** **00 02 05.1 -0.7**
LOT Lotru 5.53 358 ⇑*i*P **Pn** **00 02 05.1 -0.7**
TLB Topalu 5.55 31 ⇑*i*P **Pn** **00 02 05.4 -0.5**
TLB Topalu 5.55 31 ⇑*i*P **Pn** **00 02 05.4 -0.5**
VOIR 5.57 8 ǁ*i*P **Pn** **00 02 06.6 +0.3**
VOIR 5.57 8 ǁ*i*P **Pn** **00 02 06.6 +0.3**
MLR Muntele Rosu 5.75 14 Pn **Pn** **00 02 09.6 +0.8**
comp=E,0.3nm,0.3s,baz=260,slow=6.4,SNR=24
MLR Sn **Sn** **00 03 13.7 -1.5**
baz=175,slow=14,SNR=2.4
MLR Lg Lg 00 03 49.2
comp=E,0.1nm,0.3s,baz=323,slow=20,SNR=2.4
MLR Muntele Rosu 5.75 14 ǁ*i*P **Pn** **00 02 09.6 +0.8**
BZS Buzias 5.96 344 ǁ*i*P **Pn** **00 02 11.1 -0.4**
BZS Buzias 5.96 344 ǁ*i*P **Pn** **00 02 11.1 -0.4**
DEV Deva 6.02 353 ǁ*i*P **Pn** **00 02 12.5 +0.2**
DEV Deva 6.02 353 ǁ*i*P **Pn** **00 02 12.5 +0.2**
CFR Carcaliu 6.08 29 ⇑*i*P **Pn** **00 02 13.1 -0.1**
CFR Carcaliu 6.08 29 ⇑*i*P **Pn** **00 02 13.1 -0.1**
DOPR Dopca 6.13 9 ⇑*i*P **Pn** **00 02 14.5 +0.5**
DOPR Dopca 6.13 9 ⇑*i*P **Pn** **00 02 14.5 +0.5**
PLOR Plostina 6.24 17 ⇑*i*P **Pn** **00 02 16.4 +0.9**
PLOR Plostina 6.24 17 ⇑*i*P **Pn** **00 02 16.4 +0.9**
SIRR Siria 6.57 346 ⇑*i*P **Pn** **00 02 20.2 +0.2**
SIRR Siria 6.57 346 ⇑*i*P **Pn** **00 02 20.2 +0.2**
CJR Cluj-Napoca 6.80 358 ǁ*i*P **Pn** **00 02 23.0 -0.1**
CJR Cluj-Napoca 6.80 358 ǁ*i*P **Pn** **00 02 23.0 -0.1**
TESR Tescani 6.87 16 ⇑*i*P **Pn** **00 02 24.6 +0.5**
TESR Tescani 6.87 16 ⇑*i*P **Pn** **00 02 24.6 +0.5**
BRTR Keskin Array B 7.43 88 Pn **Pn** **00 02 32.9 +1.0**
comp=E,0.3nm,0.3s,baz=266,slow=12,SNR=15
BRTR Lg Lg 00 04 40.0
comp=E,0.0nm,0.3s,baz=267,slow=27,SNR=4.0
UDBI Udbina 7.65 310 *e*Pn **Pn** **00 02 37.5 +2.8**
UDBI Sn **Sn** **00 04 03.6 +1.9**
BURAR Bucovina Array 7.75 6 ⇑*i*P **Pn** **00 02 37.0 +0.8**
BURAR Bucovina Array 7.75 6 ⇑*i*P **Pn** **00 02 37.0 +0.8**
VAE Valguarnera 7.88 255 Sn **Sn** **00 04 12.1 +4.8**
comp=E,0.8nm,0.3s,baz=345,slow=21,SNR=2.8
SOKA Soboth 9.39 319 *i* Pn **Pn** **00 03 01.2 +2.4**
comp=E,3.5nm,1.2s
OBKA Obir 9.53 317 *i* Pn **Pn** **00 03 04.5 +3.9**
comp=E,1.5nm,0.4s
ARSA Arzberg 9.56 323 *i* Pn **Pn** **00 03 04.9 +4.0**
comp=E,3.3nm,0.7s
CONA Conrad Observa 9.92 326 *i* Pn **Pn** **00 03 08.4 +2.4**
comp=E,1.5nm,0.5s
KBA Koelnbreinsper 10.53 316 *i* Pn **Pn** **00 03 11.1 -3.3**
comp=E,1.9nm,0.4s
MOA Molln 10.58 322 *i* Pn **Pn** **00 03 18.2 +3.3**
comp=E,5.2nm,1.5s
AKASG Malin Array Be 11.39 17 Pn **Pn** **00 03 24.4 -1.5**
comp=E,0.3nm,0.3s,baz=200,slow=13,SNR=2.8
GERES GERESS Array B 11.56 324 Pn **Pn** **00 03 32.0 +3.6**
comp=E,0.1nm,0.3s,baz=145,slow=14,SNR=6.6
KEST Kesra 12.31 255 Pn **Pn** **00 03 40.6 +2.0**
comp=E,0.1nm,0.3s,baz=48,slow=14,SNR=4.3
HFS Hagfors 21.24 346 P **P** **00 05 30.3 +1.0**
comp=E,1.5nm,0.8s,baz=155,slow=11,SNR=3.4
ESDC Sonseca Array 21.45 278 P **P** **00 05 32.3 +0.5**
comp=E,0.4nm,0.6s,baz=72,slow=11,SNR=3.4
NOA NORSAR Array B 22.57 344 P **P** **00 05 43.7 +0.1**
comp=E,0.7nm,0.7s,baz=167,slow=12,SNR=3.5
ARCES ARCESS Array B 29.69 1 LR LR 00 19 52.0
comp=E,36nm,18.6s,baz=142,slow=39
TORD Torodi Ar. Bea 33.11 223 P **P** **00 07 19.4 -0.3**
comp=E,0.5nm,0.7s,baz=265,slow=9.0,SNR=4.1
CMAR Chiang Mai Arr 67.00 85 P **P** **00 11 37.3 +0.5**
comp=E,0.4nm,0.3s,baz=316,slow=7.5,SNR=3.4

IDC ***17*** *00:26:42.7±4.4,28°.41S×177°.15W,h0km,mb3.8/3, mb1 4.0/3,mb1mx3.7/23,mbtmp3.8/3,MS3.3/1,Ms1 3.3/1, ms1mx2.6/24,Error ellipse: s-maj=91.1km s-min=28.9km az=109.0*
NEIC ***17*** *00:26:44.1±0.9,28°.41S×177°.26W,h10km,mb4.4/6,Error ellipse: s-maj=28.0km s-min=9.9km az=125.0*
ISCJB ***17*** *00:26:47.3±0.9,28°.4S±0°.1×177°.2W±0°.2,h48km,mb4.3/9, Error ellipse: s-maj=26.3km s-min=8.9km az=28.6*
ISC 17 00:26:48.7±1.0,28°.5S±0°.1×177°.2W±0°.2,h48km,n15,
σ1s48/16,mb4.2/9,1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.01**	**219**	Pn		**Pn**		**00 27 05.0**	**-1.5**
	359nm,0.3s,baz=93,slow=13,SNR=14								
RAO				Sn		**Sn**		**00 27 21.8**	**+2.2**
	741nm,0.3s,baz=91,slow=23,SNR=8.4								
RAO				LR		LR		00 27 30.1	
	comp=Z,312nm,20.5s,baz=132,slow=44								
RAO	**Raoul Island**	**1.01**	**219**	*e*Pg		**Pn**		**00 27 03.7**	**-2.8**
RAO				*e*Sn		**Sn**		**00 27 19.9**	**+0.2**
AFI	**Afiamalu**	**15.33**	**20**	*e*Pn		**Pn**		**00 30 20.5**	**-1.5**
	15nm,0.8s								
DZM	**Mont Dzumac**	**16.10**	**290**	LR		LR		00 34 43.1	
	comp=Z,108nm,18.4s,baz=44,slow=30								
STKA	**Stephens Creek**	**35.64**	**254**	P		**P**		**00 33 42.4**	**+0.3**
	3.6nm,1.1s,baz=122,slow=9.5,SNR=4.2								
ASAR	**Alice Springs**	**43.95**	**265**	P		**P**		**00 34 51.7**	**+0.4**
	0.4nm,0.5s,baz=102,slow=8.6,SNR=5.0								
WRAB	**Tennant Creek**	**44.76**	**270**	*e*P		**P**		**00 34 55.2**	**-2.6**
	1.2nm,0.8s								
WRA	**Warramunga Arr**	**44.77**	**270**	P		**P**		**00 34 58.8**	**+0.9**
	0.7nm,0.5s,baz=110,slow=7.3,SNR=11								
GUMO	**Guam**	**55.63**	**314**	P		**P**		**00 36 20.2**	**+0.2**
	22nm,0.3s								
MIDW	**Midway**	**56.35**	**360**	P		**P**		**00 36 24.9**	**0.0**
	4.2nm,0.4s								
KKM	**Kota Kinabalu**	**72.64**	**287**	P		**P**		**00 38 13.0**	**+1.2**
	2.0nm,0.4s								
SYO	**Syowa Base**	**79.16**	**193**	ǁ*e*P		**P**		**00 38 48.2**	**+0.3**
ANMO	**Albuquerque**	**91.82**	**51**	*e*P		**P**		**00 39 52.5**	**+0.8**
	0.4nm,0.7s								
BJT	**Baijiatuau**	**92.03**	**315**	*e*P		**P**		**00 39 52.1**	**-0.3**
	5.2nm,0.5s								
FINES	**FINESS Array B**	**143.55**	**341**	PKP		**PKPdf**		**00 46 18.5**	**+1.1**
	1.2nm,0.5s,baz=48,slow=2.1,SNR

MDNY	Mudanya-Bursa	0.49	3	*e*PG	Pg	00 37 27.3	-0.9
MDNY	Mudanya-Bursa	0.49	3	*e*Pg	Pg	00 37 27.3	-0.9
KCTX	Karacabey (Bur	0.54	316	*e*PG	Pg	00 37 28.9	-0.3
KCTX	Karacabey (Bur	0.54	316	*e*Pg	Pg	00 37 28.9	-0.3
ARMT	Armutlu	0.69	1	*e*PG	Pg	00 37 30.9	-1.0
ARMT	Armutlu	0.69	1	*e*Pg	Pg	00 37 30.9	-1.0
BALB	Balikesir	0.79	253	*e*PG	Pg	00 37 33.3	-0.4
BALB	Balikesir	0.79	253	*e*Pg	Pg	00 37 33.3	-0.4
DEMI	Demirci	0.84	187	*i* P	Pg	00 37 34.0	-0.8
DEMI				*i* S	Sn	00 37 49.4	+0.4
DEMI	Demirci	0.84	187	P	Pg	00 37 34.0	-0.8
DEMI				S	Sn	00 37 49.4	+0.4
EDC	Edincik	0.89	302	*e*PG	Pg	00 37 35.4	-0.4
EDC				*e*SG	Sg	00 37 48.8	+1.4
EDC	Edincik	0.89	302	*e*Pg	Pg	00 37 35.4	-0.4
EDC				*e*Sg	Sg	00 37 48.8	+1.4
GDZ	Gediz	0.93	148	*i* P	Pn	00 37 37.0	-0.8
GDZ				*i* S	Sb	00 37 48.6	-0.6
GDZ	Gediz	0.93	148	P	Pn	00 37 37.0	-0.8
GDZ				S	Sb	00 37 48.6	-0.6
MRMT	Marmara Adasi	1.21	307	*e*PN	Pn	00 37 41.1	-0.4
MRMT	Marmara Adasi	1.21	307	*e*Pn	Pn	00 37 41.2	-0.4
BORA	Eskisehir	1.23	89	*i* P	Pg	00 37 42.9	+0.6
BORA				*i* S	Sn	00 37 59.8	+1.1
BORA	Eskisehir	1.23	89	P	Pg	00 37 42.9	+0.6
BORA				S	Sn	00 37 59.8	+1.1
KLYT	Kilyos	1.38	6	*e*PN	Pn	00 37 43.0	-0.9
KLYT	Kilyos	1.38	6	*e*Pn	Pn	00 37 43.0	-0.9
RKY	Sarkoy-Tekirda	1.52	303	*e*PN	Pn	00 37 45.6	-0.2
RKY	Sarkoy-Tekirda	1.52	303	*e*Pn	Pn	00 37 45.6	-0.2
GELI	Tayfur-Gelibol	1.90	287	*e*PN	Pn	00 37 51.1	+0.1
GELI	Tayfur-Gelibol	1.90	287	*e*Pn	Pn	00 37 51.1	+0.1

NIED ***17*** *00:55:00,37.00N×140.70E,h8km,Mw4.0 Best double couple: M0 1.07000×10^15 NP1:φs241.00000°,δ36.00000°, λ-145.00000°. NP2:φs121.00000°,δ70.00000°, λ-60.00000°.*

ISCJB ***17*** *00:55:43.5±0.4,37.02N±0.02×140.77E±0.04,h21km±3km, mb4.0/19,MS3.2/3,Error ellipse: s-maj=6.0km s-min=3.5km az=27.7*

JMA ***17*** *00:55:44.3,37.03N×140.66E,h12km±1km,M4.2 Broadband fault plane solution: P waves. NP1: φs111.00000°,δ62.00000°,λ-62.00000°. NP2: φs242.00000°,δ38.00000°,λ-131.00000°. Principal axes: T Plg13.0000°, Azm181.0000°; N Plg24.0000°, Azm277.0000°; P Plg62.0000°, Azm65.0000°;*

JMA Felt III J1.

IDC ***17*** *00:55:47.5±3.1,37.02N×140.60E,h36km±26km,mb3.8/16, mb1 4.0/18,mb1mx3.8/51,mbtmp4.0/18,ML3.8/2,MS3.1/6, Ms1 3.1/6,ms1mx2.8/43 Error ellipse: s-maj=19.3km s-min=13.6km az=99.0*

NEIC ***17*** *00:55:48.3±1.2,37.08N×140.72E,h42km±9km,mb4.1/4, Error ellipse: s-maj=16.2km s-min=7.7km az=134.0*

NEIC Recorded [3 JMA] in Fukushima and Ibaraki.

ISC 17 00:55:44.4±0.8,37.02N±0.03×140.70E±0.04,h14km±5km, n51,σ1°09/53,mb4.1/19,MS2.9/3,7C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.11	45	⇑P	Pg	00 55 47.5	-0.2
ONAJ				S	Sg	00 55 50.0	+0.1
JFK	Kawauchi	0.37	22	⇑P	Pg	00 55 51.6	-0.3
JFK				S	Sg	00 55 56.9	-0.1
JHO	Hitachi	0.42	194	⇑P	Pg	00 55 52.4	-0.4
JHO				S	Sg	00 55 58.4	-0.1
JFT	Otama	0.57	330	⇑P	Pg	00 55 55.1	-0.5
JFT				S	Sg	00 56 02.8	-0.4
JSB	Shiboa	0.63	265	⇓P	Pg	00 55 56.5	-0.1
JSB				S	Sg	00 56 05.0	+0.1
JMM	Marumori	0.84	5	⇑P	Pg	00 55 59.7	-1.0
JMM				S	Sg	00 56 10.9	-0.9
JFY	Yanaizu	0.88	296	⇑P	Pg	00 56 00.4	-1.0
JFY				S	Sg	00 56 11.4	-1.6
JYT	Yasato	0.89	207	⇑P	Pg	00 56 00.4	-1.2
JYT				S	Sg	00 56 12.4	-0.9
MJAR	Matsushiro Arr	2.06	257	Pn	Pn	00 56 19.3	+0.8
	45nm,0.3s,baz=102,slow=16,SNR=242						
MJAR				LR	LR	00 56 42.9	
	comp=Z,57nm,21.6s,baz=80,slow=28						
MJAR				Sn	Sn	00 56 44.9	+0.8
	100nm,0.3s,baz=60,slow=27,SNR=17						
MAJO	Matsushiro	2.06	257	*e*Pn	Pn	00 56 19.3	+0.7
MAJO				*e*Sn	Sn	00 56 43.5	-0.6
MAT	Matsushiro	2.06	257	P	Pn	00 56 19.3	+0.7
MAT				S	Sb	00 56 46.9	-0.1
JHJ	Hachijo jima 2	3.97	191	Pn	Pn	00 56 45.2	+0.4
	22nm,0.3s,baz=322,slow=23,SNR=13						
JHJ				Sn	Sn	00 57 30.4	-0.7
	17nm,0.3s,baz=17,slow=19,SNR=2.8						
ERM	Erimo	5.33	20	*e*Pn	Pn	00 57 02.7	-0.9
	45nm,0.9s						
ASAJ	Asahikawa	7.23	11	Pn	Pn	00 57 29.9	+0.3
	1.4nm,0.3s,baz=123,slow=16,SNR=4.9						
ASAJ	Asahikawa	7.23	11	*e*Pn	Pn	00 57 30.2	+0.6
	3.4nm,0.6s						
ASAJ				*e*Sn	Sn	00 58 52.2	+0.7
JNU	Nakatsue	8.94	247	Pn	Pn	00 57 57.8	+4.6
	0.3nm,0.3s,baz=39,slow=10,SNR=3.0						
USRK	Ussuriysk Ar.	9.75	320	Pn	Pn	00 58 09.5	+5.3
	0.4nm,0.3s,baz=116,slow=9.8,SNR=16						
YSS	Yuzh-Sakhalins	10.04	8	*e*Pn	Pn	00 58 08.9	+0.8
	19nm,0.7s						
KSRS	Korea Array	10.20	276	Pn	Pn	00 58 15.8	+5.5
	0.2nm,0.3s,baz=93,slow=14,SNR=21						
KSRS				LR	LR	01 02 15.3	
	comp=Z,52nm,18.7s,baz=60,slow=38						
KSAR	Wonju Array Be	10.23	276	Pn	Pn	00 58 15.8	+5.1
KLR	Kul'dur	13.83	335	Pn	P	00 59 07.0	-1.3
	0.1nm,0.3s,baz=145,slow=13,SNR=6.3						
KLR				LR	LR	01 04 15.1	
	comp=Z,39nm,20.5s,baz=124,slow=37						
PETK	Petropavlovsk-	19.99	31	P	P	01 00 16.9	+0.6
	3.7nm,1.0s,baz=210,slow=10.0,SNR=4.5						
PETK				LR	LR	01 08 32.1	
	comp=Z,43nm,18.4s,baz=223,slow=38						
MA2	Magadan	23.49	13	P	P	01 00 53.5	0.0
	4.6nm,0.7s,baz=202,slow=9.9,SNR=3.0						
MA2				LR	LR	01 09 59.3	
	comp=Z,38nm,19.2s,baz=140,slow=36						
YAK	Yakutsk	25.96	348	LR	LR	01 10 19.0	
	comp=Z,31nm,20.6s,baz=216,slow=34						
YAK	Yakutsk	25.96	348	*e*P	P	01 01 15.9	-0.3
	2.9nm,0.6s						
ENH	Enshi	26.76	265	*e*P	P	01 01 23.7	-0.1
	2.7nm,0.5s						
SEY	Seymchan	26.91	12	P	P	01 01 26.1	+1.3
	4.0nm,1.0s,baz=228,slow=12,SNR=4.1						
SONM	Songino Array	27.32	304	P	P	01 01 28.6	-0.2
	1.6nm,0.7s,baz=115,slow=8.4,SNR=9.0						
H11N2	WAKE ISLAND Hy	28.64	120	T	T	01 31 30.0	
	baz=312,slow=75,SNR=504						
H11N1	WAKE ISLAND Hy	28.64	120	T	T	01 31 33.3	
	baz=312,slow=75,SNR=633						
H11N3	WAKE ISLAND Hy	28.65	120	T	T	01 31 31.3	
	baz=312,slow=75,SNR=397						
H11S1	WAKE ISLAND Hy	29.34	122	T	T	01 32 22.3	
	baz=314,slow=75,SNR=751						
H11S3	WAKE ISLAND Hy	29.34	122	T	T	01 32 21.4	
	baz=314,slow=75,SNR=644						
H11S2	WAKE ISLAND Hy	29.35	122	T	T	01 32 22.5	
	baz=314,slow=75,SNR=488						
ZALV	Zalesovo Beam	41.50	312	P	P	01 03 30.6	-0.3
	1.7nm,0.8s,baz=100,slow=7.7,SNR=7.8						
MKAR	Makanchi Array	43.64	302	P	P	01 03 47.5	-0.9
	0.5nm,0.5s,baz=97,slow=8.7,SNR=4.5						
KURK	Kurchatov	45.49	308	*e*P	P	01 04 02.0	-1.0
	17nm,0.7s						
COLA	College	49.39	32	*e*P	P	01 04 33.8	+0.6
	0.5nm,0.3s						
ILAR	Eielson Array	49.81	32	P	P	01 04 36.5	+0.1
	1.1nm,0.8s,baz=270,slow=6.6,SNR=16						
WRA	Warramunga Arr	56.98	187	P	P	01 05 28.9	-0.6
	4.1nm,0.6s,baz=3.5,slow=7.4,SNR=40						
ASAR	Alice Springs	60.70	187	P	P	01 05 55.4	0.0
	1.1nm,0.6s,baz=13,slow=6.1,SNR=13						
GEYT	Alibeck	63.34	299	P	P	01 06 12.4	-0.7
	1.0nm,0.7s,baz=28,slow=6.5,SNR=2.5						
ARCES	ARCESS Array B	63.80	339	P	P	01 06 15.1	-0.6
	2.0nm,1.0s,baz=48,slow=7.3,SNR=4.0						
STKA	Stephens Creek	68.55	179	LR	LR	01 36 18.4	
	comp=Z,66nm,20.4s,baz=28,slow=36						
FINES	FINESS Array B	68.56	332	P	P	01 06 45.5	-0.8
	2.0nm,0.7s,baz=349,slow=7.8,SNR=5.2						
AKASG	Malin Array Be	73.95	322	P	P	01 07 18.1	-1.0
	0.4nm,0.3s,baz=48,slow=5.6,SNR=3.5						
NB2	NORSAR Subarra	73.97	337	P	P	01 07 22.9	+3.8
	comp=Z,2.0nm,0.8s,baz=38,slow=6.2						
NOA	NORSAR Array B	73.97	337	P	P	01 07 19.1	0.0
	comp=Z,1.4nm,0.8s,baz=38,slow=5.9,SNR=5.4						
PDAR	Pinedale Array	78.08	45	P	P	01 07 43.1	+0.1
	comp=Z,0.6nm,0.7s,baz=289,slow=5.4,SNR=5.4						
TXAR	Lajitas Array	90.58	52	P	P	01 08 47.0	+0.4
	comp=Z,0.6nm,0.8s,baz=343,slow=3.9,SNR=6.8						
LPAZ	La Paz	147.19	59	PKPbc	PKPbc	01 15 28.5	+0.1
	comp=Z,2.1nm,0.9s,baz=26,slow=5.2,SNR=8.3						

MDD 17 00:57:47.3±1.6,42.52N×1.23E,h11km±12km,mbLg0.5/2, Error ellipse: s-maj=12.7km s-min=4.6km az=110.0, PRXIMO SIN SOLUCIN,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEST	Esterri de Car	0.08	14	Pg	Pg	00 57 49.9	-0.1
CEST				Lg	Lg	00 57 51.7	
	1.7nm,0.1s						
CSOR	Sort	0.16	206	Pg	Pg	00 57 50.9	-0.1
CSOR				Lg	Lg	00 57 53.4	
	3.3nm,0.2s,SNR=7.9						
CORG	Organya	0.30	167	Pg	Pg	00 57 52.9	-0.4
CORG				Lg	Lg	00 57 57.5	

MEX 17 01:04:14.7±0.7,15.16N×93.44W,h16km±999km,MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	Comitan	1.68	48	*e*P	Pn	01 04 40.8	-2.7
CCIG				*e*S	Sn	01 04 59.6	-5.2

KRNET ***17*** *01:09:05.5±0.1,39.82N×73.03E,h26km,mb3.2*

SOME ***17*** *01:09:06.7,39.78N×73.13E,h10km*

NNC ***17*** *01:09:08.1±2.2,39.93N×73.07E,h0km,mb3.5,mpv3.1, Error ellipse: s-maj=16.8km s-min=9.1km az=6.0*

ISC 17 01:09:03.7±1.2,39.71N±0.06×73.22E±0.03,h10km,n33, σ1°64/62,19C-8D,Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRK	Karamyk	1.12	259	⇓*i* P	Pg	01 09 24.7	-0.5
DRK	baz=251			⇓*i* S	Sn	01 09 40.6	-0.7
	baz=251						
ARSB	Arslanbob	1.62	354	⇓*i* P	Pb	01 09 34.2	+0.4
ARSB	baz=358			⇓*i* S	Sg	01 09 56.3	+0.4
	baz=358						
BTK	Batken	1.88	281	⇑*i* P	Pn	01 09 36.3	+0.3
BTK	baz=279			⇑*i* S	Sb	01 10 01.1	-0.6
	baz=279						
TOKL	Toktogul	2.24	353	⇑*i* P	Pb	01 09 42.9	-1.5
TOKL	baz=357			⇑*i* S	Sb	01 10 11.8	-0.4
	baz=357						
ARK	Arkit	2.29	336	⇑*i* P	Pn	01 09 43.3	+1.6
ARK	baz=338			⇑*i* S	Sb	01 10 12.7	-1.0
	baz=338						
ARLS	Aral	2.31	21	⇑*i* P	Pb	01 09 45.2	-0.3
ARLS	baz=25			⇑*i* S	Sb	01 10 15.7	+1.5
	baz=25						
UCH	Uchtor	2.70	21	*i* P	Pb	01 09 52.1	-0.3
UCH	baz=25			*i* S	Sb	01 10 24.6	-1.1
	baz=25						
KZA	Kyzart	2.82	32	⇑*i* P	Pb	01 09 54.3	-0.2
KZA	baz=36			⇑*i* S	Sb	01 10 30.9	+1.7
	baz=36						
MNAS	Manas	2.83	349	⇑Pg	Pb	01 09 53.7	-0.6
MNAS	4.7nm,0.4s			⇑Lg	Lg	01 10 30.9	
	22nm,0.5s						
MRKS	Merke	3.03	0	*e*P	Pb	01 09 59.7	+1.9
MRKS	15nm,0.4s			*e*S	Sb	01 10 37.9	+2.9
	28nm,0.3s						
AAK	Ala-Archa	3.08	18	⇓Pg	Pb	01 10 00.4	+1.7
AAK	9.0nm,0.4s			⇓Lg	Lg	01 10 40.9	
	34nm,0.8s						
IUG	Iuzhnay	3.43	316	*e*P	Pb	01 10 06.1	+1.5
IUG	65nm,0.5s			*e*S	Sb	01 10 48.4	+2.0
	24nm,0.5s						
TKM2	Tokmak 2	3.67	28	⇑Pn	Pb	01 10 05.5	-3.4
TKM2	0.9nm,0.4s			⇓Pg	Pg	01 10 13.2	-0.9
	3.0nm,0.5s						
TKM2				⇑Lg	Lg	01 11 01.0	
	7.2nm,0.6s						
BMNS	Besmoynak	3.86	28	*e*P	Pg	01 10 17.0	-0.7
BMNS	746nm,0.6s			*e*S	Sg	01 11 07.2	-0.5
	4µm,0.9s						
KST	Kastek	3.92	31	*e*P	Pg	01 10 19.3	+0.6
KST	3.3nm,0.3s			*e*S	Sg	01 11 11.0	+1.4
	20nm,0.7s						
KK31	Karatay Array	3.95	330	Pn	Pn	01 10 06.8	+2.4
KK31	0.7nm,0.4s,baz=168,slow=16,SNR=29			⇑Pg	Pb	01 10 14.7	+1.2
	2.1nm,0.3s,baz=152,slow=13,SNR=22						
KK31				⇑Sn	Sn	01 10 53.2	+2.4
	3.2nm,0.3s,baz=153,slow=23,SNR=6.0						
KK31				⇑Lg	Lg	01 11 05.6	
	3.8nm,0.3s						
DGS	Degeres	4.02	28	*e*P	Pg	01 10 19.5	-1.2
DGS	5.6nm,0.5s			*e*S	Sg	01 11 11.6	-1.1
	16nm,0.9s						
BRLS	Borolday	4.07	320	*e*P	Pg	01 10 19.0	-2.6
BRLS	7.5nm,0.3s			*e*S	Sg	01 11 10.7	-3.5
	14nm,0.8s						
IZV	Izvestkoviy	4.19	36	*e*P	Pg	01 10 23.4	-0.6
IZV	8.7nm,0.5s			*e*S	Sg	01 11 18.1	-0.2
	33nm,0.8s						
TNSS	Tian-Shan	4.35	39	*e*P	Pg	01 10 25.6	-1.5
TNSS	6.2nm,0.6s			*e*S	Sg	01 11 22.7	-0.8
	4.7nm,0.9s						
KNDC	Almaty	4.50	38	⇓Pg	Pg	01 10 29.2	-0.6
KNDC	6.6nm,0.5s			⇑Lg	Lg	01 11 29.1	
	58nm,0.7s						
KOTS	Kotyrbulak	4.58	38	*e*P	Pg	01 10 28.4	-3.0
KOTS	14nm,0.9s			*e*S	Sg	01 11 27.1	-3.6
	45nm,0.6s						
KTBS	Karatobe	4.77	32	*e*P	Pg	01 10 33.2	-1.8
KTBS	3.3nm,0.5s			*e*S	Sg	01 11 35.6	-1.1
	15nm,1.1s						
KUU	Kurty	4.79	28	*e*P	Pg	01 10 33.6	-1.7
KUU	7.3nm,0.5s			*e*S	Sg	01 11 35.3	-2.0
	11nm,0.6s						
CHKK	Chushkaly	5.03	33	*e*P	Pg	01 10 38.2	-1.8
CHKK	2.8nm,0.5s			*e*S	Sg	01 11 43.3	-1.8
	14nm,0.3s						
SATY	Saty	5.14	48	*e*P	Pg	01 10 41.4	-0.8
SATY	8.8nm,0.7s			*e*S	Sg	01 11 48.8	+0.1
	17nm,0.7s						
KURS	Kuram	5.29	43	*e*P	Pg	01 10 44.2	-0.9
KURS	5.1nm,1.2s			*e*S	Sg	01 11 53.6	0.0
	9.5nm,1.7s						
UZB	Uzynbulak	5.55	50	*e*P	Pg	01 10 48.9	-1.2
	2.7nm,0.1s						
UZB				*e*S	Sg	01 12 01.7	-0.2
	8.5nm,0.9s						
KPKS	Kokpek	5.56	46	*e*P	Pg	01 10 47.9	-2.2
	4.8nm,0.4s						
KPKS				*e*S	Sg	01 12 00.5	-1.6
	14nm,0.7s						
ARXS	Arharly	5.66	36	*e*P	Pg	01 10 49.6	-2.5
	3.5nm,0.7s						
ARXS				*e*S	Sg	01 12 03.5	-1.9
	10nm,0.5s						
PDGK	Podgornoye	5.93	50	⇑Lg	Lg	01 12 13.3	
	19nm,1.4s						
SHLS	Shalkode	6.08	53	*e*P	Pg	01 10 58.7	-1.4
	3.8nm,0.3s						
SHLS				*e*S	Sg	01 12 18.5	-0.3
	8.5nm,0.7s						
KTMS	Ketmen	6.52	53	*e*P	Pg	01 11 08.3	-0.3
	1.1nm,0.2s						
KTMS				*e*S	Sg	01 12 35.6	+2.5
	4.2nm,0.6s						

IDC ***17*** *01:14:22.1±1.0,24.19S×175.48W,h0km,mb4.5/13, mb1 4.6/13,mb1mx4.4/26,mbtmp4.5/13,MS3.1/1, Ms1 3.1/1,ms1mx2.6/31,Error ellipse: s-maj=33.6km s-min=20.8km az=147.0*

ISCJB ***17*** *01:14:23.4±0.6,24.35S±0.06×175.5W±0.1,h19km, mb4.6/22,Error ellipse: s-maj=15.1km s-min=8.9km az=10.4*

NEIC ***17*** *01:14:32.9±2.0,24.20S×175.61W,h81km±16km,mb4.8/6, Error ellipse: s-maj=16.0km s-min=11.9km az=95.0*

ISC 17 01:14:24.7±0.6,24.33S±0.09×175.3W±0.1,h19km,n58, σ1°30/53,mb4.7/22,5C-6D,South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	5.43	205	Sn	Sn	01 16 46.4	-0.2
	125nm,0.3s,baz=303,slow=23,SNR=5.5						
RAO				LR	LR	01 17 18.7	
	comp=Z,167nm,18.8s,baz=144,slow=32						
MSVF	Nonsavu	9.04	315	*e*Pn	Pn	01 16 36.4	+2.1
	56nm,1.1s						
AFI	Afiamalu	10.89	18	Pn	Pn	01 16 52.6	-7.1
	4.1nm,0.3s,baz=116,slow=9.6,SNR=5.7						
AFI				Sn	Sn	01 18 43.3	-18
	5.2nm,0.3s,baz=50,slow=20,SNR=4.7						
RAR	Rarotonga	14.65	81	Pn	Pn	01 17 41.5	-10
	2.5nm,0.3s,baz=236,slow=10,SNR=9.3						
RAR	Rarotonga	14.65	81	*e*Pn	Pn	01 17 41.4	-10
URZ	Urewera	15.31	203	Pn	P	01 18 06.0	+1.5
	3.2nm,0.3s,baz=269,slow=2.3,SNR=9.0						
URZ				Sn	Sn	01 20 35.7	-13
	1.4nm,0.3s,baz=229,slow=20,SNR=6.2						
DZM	Mont Dzumac	16.94	274	Pn	P	01 18 25.9	+3.2
	1.6nm,0.3s,baz=66,slow=20,SNR=10						
TBI	Tubuai	23.64	93	*e*LR	LR	01 25 06.3	
	119nm,26.5s						
PPT2	Papeete2	24.91	79	*e*LR	LR	01 25 42.1	
	138nm,24.0s						
CAN	Canberra	32.69	242	*e*P	P	01 20 55.8	-0.2
	5.9nm,1.0s						
CTA	Charters Tower	35.77	269	P	P	01 21 22.2	-0.6
	9.2nm,0.5s,baz=94,slow=10,SNR=14						
CTAO	Charters Tower	35.77	269	*e*P	P	01 21 21.9	-0.9
	76nm,0.8s						
STKA	Stephens Creek	38.56	249	P	P	01 21 45.5	-0.9
	1.6nm,0.3s,baz=86,slow=12,SNR=3.9						
PMG	Port Moresby	38.72	286	P	P	01 21 46.5	-1.4
	31nm,0.7s,baz=66,slow=4.9,SNR=8.3						
PMG	Port Moresby	38.72	286	*e*P	P	01 21 46.5	-1.4
	37nm,0.7s						
COEN	Coen	40.43	277	*e*P	P	01 22 01.2	-0.9
	12nm,0.8s						
ASAR	Alice Springs	46.20	260	P	P	01 22 47.4	-1.3
	6.5nm,0.7s,baz=97,slow=8.1,SNR=43						
WRAB	Tennant Creek	46.65	265	*e*P	P	01 22 49.7	-2.6
	9.0nm,0.8s						
WRA	Warramunga Arr	46.66	265	P	P	01 22 50.4	-1.9
	7.1nm,0.7s,baz=105,slow=8.4,SNR=53						
FITZ	Fitzroy Crossi	55.07	264	P	P	01 23 55.2	-0.6
	5.6nm,0.7s,baz=96,slow=7.3,SNR=6.7						
SOEI	Soe	59.16	273	*e*P	P	01 24 24.3	-0.6
	39nm,1.0s						
MBWA	Marble Bar	59.52	259	*e*P	P	01 24 25.4	-1.7
	21nm,0.8s						
QSPA	South Pole Qui	65.75	180	*e*P	P	01 25 08.9	+0.7
	26nm,1.0s						
MJAR	Matsushiro Arr	74.76	323	P	P	01 26 02.4	-1.1
	2.4nm,0.9s,baz=152,slow=5.8,SNR=7.6						
MAJO	Matsushiro	74.76	323	*e*P	P	01 26 02.5	-1.0
	4.1nm,0.7s						
MAW	Mawson	78.81	199	P	P	01 26 27.4	+1.5
	4.7nm,1.1s,baz=132,slow=6.6,SNR=6.1						
PETK	Petropavlovsk-	80.61	344	P	P	01 26 34.7	-1.1
	3.7nm,0.8s,baz=106,slow=11,SNR=5.8						
KSRS	Korea Array	81.40	318	P	P	01 26 41.0	+0.7
	0.8nm,0.5s,baz=120,slow=5.4,SNR=3.7						
KSAR	Wonju Array Be	81.41	318	P	P	01 26 41.0	+0.6
USRK	Ussuriysk Ar.	83.52	325	P	P	01 26 51.9	+0.6
	3.9nm,0.8s,baz=122,slow=3.1,SNR=10						
SYO	Syowa Base	83.53	192	⇓*e*P	P	01 26 50.0	-1.0
SNAA	Sanae	84.11	178	*e*P	P	01 26 53.5	-0.6
TXAR	Lajitas Array	87.06	56	P	P	01 27 10.7	+1.2
	0.2nm,0.7s,baz=199,slow=5.3,SNR=4.0						
GSI	Gunungsitoli	87.91	272	*e*P	P	01 27 15.2	+1.3
	25nm,1.0s						
ILAR	Eielson Array	91.51	12	P	P	01 27 28.6	-0.9
	0.4nm,0.7s,baz=208,slow=5.1,SNR=3.6						
CMAR	Chiang Mai Arr	93.72	288	P	P	01 27 42.0	+1.3
	1.3nm,0.3s,baz=133,slow=3.0,SNR=7.1						
ZALV	Zalesovo Beam	115.03	320	PKP	PKPdf	01 33 03.1	-1.0
	0.2nm,0.3s,baz=114,slow=3.6,SNR=3.6						
ARU	Arti	129.76	324	*e*PKPdf	PKPdf	01 33 31.6	-0.7
ABKAR	Akbulak array	130.56	315	*e*PKPdf	PKPdf	01 33 34.2	+0.1
GEYT	Alibeck	132.90	300	PKP	PKPdf	01 33 39.4	+0.5
	1.0nm,0.5s,baz=243,slow=6.5,SNR=4.1						
ARCES	ARCESS Array B	133.12	350	PKP	PKPdf	01 33 40.1	+1.8
	1.0nm,1.0s,baz=347,slow=3.7,SNR=2.1						
NACGM	Naroch	145.35	338	*e*	PKPbc	01 34 00.0	-0.8
AKASG	Malin Array Be	147.56	331	PKPbc	PKPdf	01 34 05.9	+1.1
	6.7nm,0.9s,baz=42,slow=3.7,SNR=14						
KIEV	Kiev	147.57	331	*e*PKPbc	PKPbc	01 34 06.5	-1.0
SORM	Soroca	149.76	328	⇓*i* P	PKPbc	01 34 12.3	-0.9
BRTR	Keskin Array B	151.22	309	PKPbc	PKPbc	01 34 16.0	-1.1
	2.7nm,0.8s,baz=127,slow=2.2,SNR=14						
BURAR	Bucovina Array	151.61	330	⇑*i* P	PKPbc	01 34 18.3	+0.5
TESR	Tescani	151.72	327	⇓*i* P	PKPbc	01 34 17.2	-0.7
CFR	Carcaliu	151.84	323	⇑*i* P	PKPbc

TWF1	**Yuli**	**0.73**	**263**	⇑*i*P	**Pb**	**01 14 59.0**	**+0.2**
	baz=257						
TWF1				S	**Sn**	**01 15 09.7**	**0.0**
	baz=257						
CHKT	**Chengkung**	**0.74**	**243**	P	**Pb**	**01 14 58.8**	**-0.2**
	baz=234						
CHKT				S	**Sb**	**01 15 08.2**	**-0.6**
	baz=234						
TWD	**Chiawan**	**0.78**	**325**	P	**Pb**	**01 14 59.3**	**-0.4**
	baz=326						
TWD				*e*S	**Sb**	**01 15 09.1**	**-0.7**
	baz=326						
WDT	**Danda**	**0.93**	**290**	P	**Pn**	**01 15 02.2**	**-0.2**
	baz=289						
WDT				S	**Sb**	**01 15 13.7**	**-0.7**
	baz=289						
ELDTW	**Lidau**	**1.01**	**256**	P	**Pn**	**01 15 03.0**	**-0.4**
	baz=245						
ELDTW				S	**Sn**	**01 15 14.9**	**-2.0**
	baz=245						
WHF	**Hehuan Shan**	**1.03**	**313**	P	**Pn**	**01 15 03.4**	**-0.5**
	baz=314						
WHF				S	**Sb**	**01 15 16.1**	**-1.2**
	baz=314						
ENA	**Nanau**	**1.03**	**342**	P	**Pn**	**01 15 03.4**	**-0.2**
	baz=336						
ENA				*e*S	**Sn**	**01 15 16.6**	**-0.6**
	baz=336						
YUS	**Yu-Shan**	**1.04**	**273**	⇑*i*P	**Pn**	**01 15 04.5**	**+0.4**
	baz=281						
YUS				S	**Sn**	**01 15 17.2**	**-0.8**
	baz=281						
TTN	**Taitung**	**1.10**	**232**	*e*P	**Pn**	**01 15 04.7**	**+0.2**
	baz=230						
TTN				S	**Sn**	**01 15 17.6**	**-1.3**
	baz=230						
TWG	**Pinlang**	**1.12**	**237**	*e*P	**Pn**	**01 15 04.5**	**-0.2**
	baz=247						
TWG				*e*S	**Sn**	**01 15 17.5**	**-1.7**
	baz=247						
TWT	**Tachien**	**1.16**	**314**	P	**Pb**	**01 15 06.1**	**-0.1**
	baz=314						
TWT				S	**Sn**	**01 15 19.5**	**-1.1**
	baz=314						
SMLT	**Sun Moon Lake**	**1.17**	**292**	P	**Pb**	**01 15 06.2**	**-0.2**
	baz=297						
SMLT				*e*S	**Sn**	**01 15 20.7**	**-0.1**
	baz=297						
ALS	**Alishan**	**1.18**	**274**	*i* P	**Pb**	**01 15 06.8**	**+0.3**
	baz=280						
ALS				S	**Sn**	**01 15 21.4**	**+0.2**
	baz=280						
TWC	**Suao**	**1.18**	**350**	P	**Pb**	**01 15 06.2**	**-0.4**
	baz=351						
TWC				S	**Sn**	**01 15 20.1**	**-0.8**
	baz=351						
NNS	**Nan Shan**	**1.19**	**327**	*e*P	**Pn**	**01 15 06.0**	**+0.2**
	baz=318						
NNS				S	**Sn**	**01 15 20.0**	**-1.2**
	baz=318						
TYC	**Yuchr**	**1.22**	**293**	*e*P	**Pb**	**01 15 06.7**	**-0.3**
	baz=292						
TYC				*e*S	**Sb**	**01 15 21.9**	**-0.4**
	baz=292						
STYT	**Tauyuan**	**1.25**	**258**	P	**Pn**	**01 15 07.2**	**+0.6**
	baz=251						
STYT				*e*S	**Sn**	**01 15 23.1**	**+0.5**
	baz=251						
JYNG	**Yonagunijimaku**	**1.28**	**38**	P	**Pn**	**01 15 07.3**	**+0.4**
JYNG				S	**Sn**	**01 15 23.1**	**-0.1**
ENTT	**Nioudou**	**1.28**	**338**	P	**Pn**	**01 15 07.3**	**+0.3**
	baz=340						
ENTT				S	**Sn**	**01 15 21.7**	**-1.7**
	baz=340						
CHN5	**Tsauling**	**1.30**	**277**	P	**Pb**	**01 15 08.9**	**+0.3**
	baz=276						
CHN5				*e*S	**Sb**	**01 15 25.6**	**+0.8**
	baz=276						
YOJ	**Yonaguni jima**	**1.32**	**40**	P	**Pn**	**01 15 08.1**	**+0.5**
YOJ				S	**Sn**	**01 15 24.3**	**-0.1**
TWE	**Neicheng**	**1.33**	**343**	P	**Pb**	**01 15 08.3**	**-0.7**
	baz=345						
TWE				*e*S	**Sn**	**01 15 24.6**	**0.0**
	baz=345						
WNT	**Mingjian**	**1.35**	**289**	*e*P	**Pb**	**01 15 10.6**	**+1.2**
	baz=289						
WNT				*e*S	**Sb**	**01 15 27.1**	**+0.8**
	baz=289						
WTP	**Ta-pu**	**1.36**	**262**	P	**Pb**	**01 15 09.9**	**+0.2**
	baz=261						
WTP				*e*S	**Sb**	**01 15 27.0**	**+0.3**
	baz=261						
CHN4	**Tsaushan**	**1.37**	**267**	P	**Pb**	**01 15 09.8**	**0.0**
	baz=266						
CHN4				*e*S	**Sb**	**01 15 29.1**	**+2.2**
	baz=266						
NSK	**Sanguang**	**1.40**	**332**	*e*P	**Pn**	**01 15 08.9**	**+0.3**
	baz=333						
NSK				*e*S	**Sn**	**01 15 26.2**	**-0.1**
	baz=333						
EGS		**1.41**	**354**	*e*P	**Pb**	**01 15 10.0**	**-0.3**
	baz=6.0						
EGS				*e*S	**Sn**	**01 15 25.8**	**-0.5**
	baz=6.0						
WGK	**Gukeng**	**1.42**	**280**	*e*P	**Pn**	**01 15 07.9**	**-1.0**
	baz=280						
WGK				*e*S	**Sb**	**01 15 28.9**	**+0.7**
	baz=280						
SGST	**Jiashian**	**1.43**	**256**	*e*P	**Pb**	**01 15 10.5**	**-0.1**
	baz=255						
SGST				*e*S	**Sb**	**01 15 29.8**	**+1.4**
	baz=255						
CHN1	**Nanshi**	**1.45**	**260**	*e*P	**Pb**	**01 15 11.2**	**+0.1**
	baz=259						
CHN1				*e*S	**Sb**	**01 15 30.7**	**+1.5**
	baz=259						
TCU	**Taichung**	**1.47**	**299**	*e*P	**Pb**	**01 15 12.2**	**+0.8**
	baz=299						
TCU				*e*S	**Sb**	**01 15 31.6**	**+2.0**
	baz=299						
TWK	**Hsinying**	**1.48**	**264**	*e*P	**Pb**	**01 15 11.4**	**-0.1**
	baz=262						
TWK				*e*S	**Sb**	**01 15 30.0**	**+0.1**
	baz=262						
LAY	**Lan-yu**	**1.48**	**200**	*e*P	**Pn**	**01 15 07.0**	**-2.8**
	baz=198						
LAY				*e*S	**Sn**	**01 15 25.1**	**-3.2**
	baz=198						
CHN2	**Minshiung**	**1.48**	**274**	*e*P	**Pb**	**01 15 12.4**	**+0.8**
	baz=273						
CHN2				*e*S	**Sb**	**01 15 30.0**	**+0.1**
	baz=273						
TWQ1	**Liyutan**	**1.50**	**307**	*e*P	**Pb**	**01 15 11.9**	**0.0**
	baz=316						
TWQ1				*e*S	**Sb**	**01 15 30.3**	**-0.3**
	baz=316						
SSD	**Sandimen**	**1.50**	**243**	*e*P	**Pn**	**01 15 10.6**	**+0.6**
	baz=239						
SSD				*e*S	**Sb**	**01 15 30.6**	**0.0**
	baz=239						
TAW	**Tawu**	**1.54**	**226**	*e*P	**Pb**	**01 15 12.5**	**0.0**
	baz=232						
TAW				*e*S	**Sn**	**01 15 27.6**	**-2.0**
	baz=232						
NSTT	**Nanjuang**	**1.54**	**320**	P	**Pb**	**01 15 12.6**	**-0.1**
	baz=321						
NSTT				S	**Sb**	**01 15 30.6**	**-1.2**
	baz=321						
EAST	**Anshuo**	**1.55**	**228**	*e*P	**Pn**	**01 15 12.1**	**+1.4**
	baz=233						
EAST				*e*S	**Sn**	**01 15 28.4**	**-1.6**
	baz=233						
NSY	**Sanyi**	**1.55**	**309**	*e*P	**Pb**	**01 15 12.9**	**+0.1**
	baz=309						
NSY				*e*S	**Sb**	**01 15 32.1**	**+0.1**
	baz=309						
TWB1	**Santiao Chiao**	**1.56**	**357**	P	**Pn**	**01 15 11.4**	**+0.5**
	baz=358						
TWB1				*e*S	**Sn**	**01 15 29.9**	**-0.4**
	baz=358						
NWF	**Wu-fen Shan**	**1.65**	**350**	*e*P	**Pb**	**01 15 13.7**	**-0.7**
	baz=351						
NWF				*e*S	**Sb**	**01 15 34.5**	**-0.3**
	baz=351						
TWM1	**Shoushan**	**1.65**	**248**	*e*P	**Pb**	**01 15 14.7**	**+0.2**
	baz=247						
TWM1				*e*S	**Sb**	**01 15 37.2**	**+2.4**
	baz=247						

WTCT	**Ta-ch'eng**	**1.71**	**285**	*e*P	**Pb**	**01 15 15.8**	**+0.4**
	baz=274						
WTCT				*e*S	**Sb**	**01 15 36.8**	**+0.3**
	baz=274						
SCZT	**Fangliau**	**1.72**	**232**	*e*P	**Pn**	**01 15 14.3**	**+1.3**
	baz=226						
SCZT				*e*S	**Sn**	**01 15 36.2**	**+2.1**
	baz=226						
CHN8	**Yiju**	**1.72**	**267**	*e*P	**Pn**	**01 15 13.2**	**+0.2**
	baz=266						
CHN8				*e*S	**Sb**	**01 15 37.2**	**+0.2**
	baz=266						
IRIF	**Iriomote-Funau**	**1.75**	**59**	P	**Pn**	**01 15 14.3**	**+0.9**
IRIF				S	**Sn**	**01 15 35.6**	**+0.7**
JKRS	**Kuro-shima**	**1.93**	**65**	P	**Pn**	**01 15 17.1**	**+1.2**
JKRS				*e*S	**Sn**	**01 15 39.9**	**+0.5**
JIJ	**Ishigaki jima**	**2.10**	**64**	P	**Pn**	**01 15 18.9**	**+0.7**
JIJ				S	**Sn**	**01 15 42.6**	**-0.9**
PNG	**Penghu**	**2.33**	**274**	*e*P	**Pn**	**01 15 22.8**	**+1.5**
	baz=273						
PNG				*e*S	**Sn**	**01 15 48.8**	**-0.3**
	baz=273						
JISG	**Ishigakijimahi**	**2.33**	**60**	P	**Pn**	**01 15 22.1**	**+0.6**
JISG				S	**Sn**	**01 15 48.8**	**-0.5**
JTJ	**Tarama**	**2.68**	**63**	P	**Pn**	**01 15 27.2**	**+1.1**

ISK ***17*** *01:23:23.1,40˚.81N×31˚.72E, h2km, MD3.0*
DDA ***17*** *01:23:23.9,40˚.85N×31˚.69E, h7km, Md2.8*
CSEM ***17*** *01:23:24.0±0.1,40˚.82N×31˚.73E, h2km, MD3.0, Error ellipse: s-maj=3.3km s-min=2.5km az=160.0*
ISC 17 01:23:24.1±1.2,**40.82N**±0.03×**31.72E**±0.02,**h2**km±11km,
n51,σ0**§48**/65,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MDUB	**Mudurnu**	**0.53**	**229**	*e*PG	**Pg**	**01 23 34.3**	**+0.1**
MDUB				*e*SG	**Sg**	**01 23 42.3**	**+1.3**
MDUB	**Mudurnu**	**0.53**	**229**	*e*Pg	**Pg**	**01 23 34.3**	**+0.1**
MDUB				*e*Sg	**Sg**	**01 23 42.3**	**+1.3**
KDZE	**Karadeniz Ereo**	**0.54**	**337**	*e*PG	**Pg**	**01 23 34.6**	**+0.2**
KDZE	**Karadeniz Ereo**	**0.54**	**337**	*e*Pg	**Pg**	**01 23 34.6**	**+0.2**
BTAS	**Taskesti**	**0.60**	**246**	*i* P	**Pg**	**01 23 35.1**	**-0.5**
BTAS				*i* S	**Sg**	**01 23 43.3**	**-0.1**
BTAS	**Taskesti**	**0.60**	**246**	P	**Pg**	**01 23 35.1**	**-0.5**
BTAS				S	**Sg**	**01 23 43.3**	**-0.1**
SAHE	**Sakarya_HENDEK**	**0.66**	**273**	*i* P	**Pg**	**01 23 36.2**	**-0.5**
SAHE				*i* S	**Sg**	**01 23 46.2**	**+1.0**
SAHE	**Sakarya_HENDEK**	**0.66**	**273**	P	**Pg**	**01 23 36.2**	**-0.5**
SAHE				S	**Sg**	**01 23 46.2**	**+1.0**
SAFT	**Safranbolu**	**0.84**	**60**	*e*PG	**Pg**	**01 23 40.3**	**0.0**
SAFT	**Safranbolu**	**0.84**	**60**	*e*Pg	**Pg**	**01 23 40.3**	**0.0**
BTIN	**Bart¯–n**	**0.91**	**26**	*i* P	**Pg**	**01 23 41.3**	**-0.2**
BTIN				*i* S	**Sg**	**01 23 53.4**	**+0.1**
BTIN	**Bart¯–n**	**0.91**	**26**	P	**Pg**	**01 23 41.3**	**-0.2**
BTIN				S	**Sg**	**01 23 53.4**	**+0.1**
GULT	**Gulveren**	**0.99**	**247**	*e*PG	**Pg**	**01 23 42.5**	**-0.7**
GULT	**Gulveren**	**0.99**	**247**	*e*Pg	**Pg**	**01 23 42.5**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.08**	**263**	*e*PN	**Pg**	**01 23 44.7**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.08**	**263**	*e*Pn	**Pg**	**01 23 44.7**	**-0.1**
KAND	**Kocaeli-Kandir**	**1.19**	**284**	*i* P	**Pb**	**01 23 46.9**	**-0.4**
KAND				*i* S	**Sg**	**01 24 02.0**	**-0.3**
KAND	**Kocaeli-Kandir**	**1.19**	**284**	P	**Pb**	**01 23 46.9**	**-0.4**
KAND				S	**Sg**	**01 24 02.0**	**-0.3**
LOD	**Lodumlu**	**1.23**	**139**	*e*PN	**Pb**	**01 23 47.7**	**-0.4**
LOD	**Lodumlu**	**1.23**	**139**	*e*Pn	**Pb**	**01 23 47.7**	**-0.4**
BORA	**Eskisehir**	**1.35**	**226**	*i* P	**Pg**	**01 23 49.2**	**-0.7**
BORA				*i* S	**Sn**	**01 24 08.6**	**0.0**
BORA	**Eskisehir**	**1.35**	**226**	P	**Pg**	**01 23 49.2**	**-0.7**
BORA				S	**Sn**	**01 24 08.6**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.38**	**186**	*e*PN	**Pn**	**01 23 50.1**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.38**	**186**	*e*Pn	**Pn**	**01 23 50.1**	**-0.4**
ESKT	**Eskisehir**	**1.46**	**207**	*e*PN	**Pg**	**01 23 51.9**	**-0.1**
ESKT	**Eskisehir**	**1.46**	**207**	*i* P	**Pg**	**01 23 52.7**	**+0.7**
ESKT				*i* S	**Sn**	**01 24 11.9**	**+0.5**
ESKT	**Eskisehir**	**1.46**	**207**	*e*Pn	**Pg**	**01 23 51.9**	**-0.1**
SEYT	**Eskypehyr**	**1.46**	**207**	P	**Pg**	**01 23 52.7**	**+0.7**
SEYT				S	**Sn**	**01 24 11.9**	**+0.6**
CANT	**Cankiri**	**1.46**	**98**	*e*PN	**Pn**	**01 23 51.4**	**-0.2**
ADVT	**Abdulvahap**	**1.56**	**256**	*e*PN	**Pb**	**01 23 53.0**	**-0.6**
ADVT	**Abdulvahap**	**1.56**	**256**	*e*Pn	**Pb**	**01 23 53.0**	**-0.6**
HRT	**Hereke**	**1.56**	**271**	*e*PN	**Pb**	**01 23 53.3**	**-0.4**
HRT	**Hereke**	**1.56**	**271**	*e*Pn	**Pb**	**01 23 53.3**	**-0.4**
CAVI	**Cavuskoy**	**1.56**	**247**	*e*PN	**Pn**	**01 23 52.7**	**-0.1**
CAVI	**Cavuskoy**	**1.56**	**247**	*e*Pn	**Pn**	**01 23 52.7**	**-0.1**
AFSR	**Af˘ar-Bala (A**	**1.72**	**142**	*e*PN	**Pn**	**01 23 54.9**	**-0.3**
AFSR	**Af˘ar-Bala (A**	**1.72**	**142**	*e*Pn	**Pn**	**01 23 54.9**	**-0.3**
IZI	**Iznik**	**1.78**	**255**	*e*PN	**Pn**	**01 23 55.7**	**-0.2**
IZI	**Iznik**	**1.78**	**255**	*e*Pn	**Pn**	**01 23 55.7**	**-0.2**
ISK	**Istanbul-Kandi**	**2.03**	**278**	*e*PN	**Pn**	**01 23 59.7**	**+0.4**
ISK	**Istanbul-Kandi**	**2.03**	**278**	*e*Pn	**Pn**	**01 23 59.7**	**+0.4**
KLYT	**Kilyos**	**2.07**	**283**	*e*PN	**Pn**	**01 24 00.2**	**+0.3**
KLYT	**Kilyos**	**2.07**	**283**	*e*Pn	**Pn**	**01 24 00.2**	**+0.3**
KAMT	**Kaman**	**2.11**	**133**	*e*PN	**Pn**	**01 24 00.5**	**0.0**
KAMT	**Kaman**	**2.11**	**133**	*e*Pn	**Pn**	**01 24 00.5**	**0.0**
ARMT	**Armutlu**	**2.19**	**264**	*e*PN	**Pn**	**01 24 01.8**	**+0.3**
ARMT	**Armutlu**	**2.19**	**264**	*e*Pn	**Pn**	**01 24 01.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**2.21**	**259**	*e*PN	**Pn**	**01 24 02.4**	**+0.7**
MDNY	**Mudanya-Bursa**	**2.21**	**259**	*e*Pn	**Pn**	**01 24 02.4**	**+0.7**
TVSB	**Tavsanli**	**2.21**	**232**	*e*PN	**Pn**	**01 24 02.1**	**+0.2**
TVSB	**Tavsanli**	**2.21**	**232**	*e*Pn	**Pn**	**01 24 02.1**	**+0.2**

ISCJB ***17*** *01:24:59.0±0.4,2˚.39N±0˚.05×122˚.89E±0˚.08, h450km, mb3.7/13, Error ellipse: s-maj=10.5km s-min=6.2km az=180.0*
DJA ***17*** *01:25:03.3±0.6,2˚N±7˚×12˚3E±˚, h431km±8km, M4.5/6, mb4.6/5, mB4.6/4, MLv4.6/6, Mw(mB)3.8/4*
IDC ***17*** *01:25:03.1±1.9,2˚.17N×122˚.76E, h498km±29km, mb3.3/14, mb1 3.4/15, mb1mx3.2/42, mbtmp4.2/15, Error ellipse: s-maj=22.6km s-min=12.3km az=74.0*
ISC 17 01:25:00.2±0.6,**2.34N**±0˚.07×**122.85E**±0˚.09,**h450**km,**n24**,
σ1**§65/28**,**mb3.8**/13,**Celebes Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MRSI	**Marisa**	**2.06**	**206**	P	**P**	**01 26 03.3**	**+2.2**
LUWI	**Luwuk**	**3.36**	**181**	P	**P**	**01 26 10.6**	**+0.5**
LUWI				S	**S**	**01 27 05.5**	**-1.2**
PCI	**Palu**	**4.41**	**223**	P	**P**	**01 26 19.5**	**+0.4**
PCI				S	**S**	**01 27 21.3**	**-2.0**
SANI	**Sanana**	**5.38**	**144**	P	**P**	**01 26 28.3**	**0.0**
SANI				S	**S**	**01 27 36.7**	**-3.4**
LBMI	**Labuha**	**5.51**	**122**	P	**P**	**01 26 31.6**	**+1.9**
TTSI	**Tana Toraja**	**6.15**	**210**	P	**P**	**01 26 38.3**	**+2.2**
	58nm,0.6s,701nm0.2nm						
KAPI	**Kappang**	**7.94**	**203**	P	**P**	**01 26 56.4**	**+1.4**
	1.9nm,0.3s,baz=21,slow=8.0,SNR=9.3						
KAPI				S	**S**	**01 28 29.6**	**+0.5**
	1.2nm,0.3s,baz=174,slow=23,SNR=4.5						
MSAI	**Masohi**	**8.30**	**133**	P	**P**	**01 27 02.8**	**+3.9**
	92nm,0.6s,1µm						
PLAI	**Plampang**	**12.19**	**204**	P	**P**	**01 27 42.4**	**+1.2**
TWSI	**Taliwang, Sumb**	**12.51**	**208**	P	**P**	**01 27 44.5**	**-0.2**
FITZ	**Fitzroy Crossi**	**20.50**	**172**	P	**P**	**01 29 05.6**	**-0.7**
	3.0nm,0.5s,baz=14,slow=8.0,SNR=15						
WRA	**Warramunga Arr**	**24.86**	**154**	P	**P**	**01 29 44.2**	**-1.2**
	0.5nm,0.4s,baz=336,slow=9.7,SNR=7.6						
ASAR	**Alice Springs**	**28.00**	**158**	P	**P**	**01 30 12.4**	**-0.9**
	0.4nm,0.6s,baz=329,slow=6.9,SNR=5.9						
CMAR	**Chiang Mai Arr**	**28.38**	**306**	P	**P**	**01 30 17.2**	**+0.6**
	0.6nm,0.3s,baz=132,slow=6.4,SNR=4.1						
KSRS	**Korea Array**	**35.25**	**7**	P	**P**	**01 31 16.6**	**+1.3**
	1.5nm,0.7s,baz=182,slow=9.2,SNR=5.4						
USRK	**Uesuriysk Ar.**	**42.46**	**10**	P	**P**	**01 32 14.8**	**+0.8**
	4.6nm,0.6s,baz=197,slow=6.3,SNR=17						
ASAJ	**Asahikawa**	**45.13**	**20**	P	**P**	**01 32 35.7**	**+0.8**
	3.9nm,0.5s,baz=231,slow=9.7,SNR=10						
SONM	**Songino Array**	**47.50**	**345**	P	**P**	**01 32 53.7**	**+0.6**
	7.4nm,0.7s,baz=162,slow=8.5,SNR=39						
MKAR	**Makanchi Array**	**56.56**	**328**	P	**P**	**01 33 58.8**	**+0.1**
	5.4nm,0.4s,baz=121,slow=8.8,SNR=79						
ZALV	**Zalesovo Beam**	**60.13**	**335**	P	**P**	**01 34 21.1**	**-1.7**
	1.1nm,0.6s,baz=132,slow=4.8,SNR=8.5						
GEYT	**Ailbeck**	**68.77**	**310**	P	**P**	**01 35 18.1**	**-0.2**
	1.4nm,0.7s,baz=177,slow=10,SNR=4.3						
NRIK	**Noril'sk**	**70.89**	**347**	P	**P**	**01 35 30.0**	**-0.3**
	2.3nm,0.6s,baz=158,slow=5.2,SNR=3.7						
ARCES	**ARCESS Array B**	**90.39**	**340**	P	**P**	**01 37 09.7**	**-2.4**
	1.1nm,0.9s,baz=99,slow=5.6,SNR=3.5						
FINES	**FINESS Array B**	**91.20**	**331**	P	**P**	**01 37 14.1**	**-1.8**
	1.3nm,0.9s,baz=141,slow=7.3,SNR=3.8						

IASPEI ***17*** *01:25:44.4±0.9,43˚.90N±0˚.02×11˚.88E±0˚.02, h6km±5km, Error ellipse: s-maj=3.0km s-min=2.3km az=37.5, GT5 selection from ISC bulletin GT5 identified by Bond¨jr and McLaughlin (2009) selection criteria Bond¨jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
ISCJB ***17*** *01:25:44.2±0.2,43˚.90N±0˚.02×11˚.87E±0˚.02, h12km±2km, Error ellipse: s-maj=3.7km s-min=2.1km az=38.0*
ROM ***17*** *01:25:44.1±0.1,43˚.90N×11˚.86E, h6km, Md2.6/38, Ml2.1/32, Error ellipse: s-maj=1.4km s-min=0.8km az=31.0*
CSEM ***17*** *01:25:44.5±0.1,43˚.90N×11˚.88E, h8km, ML2.9/10, Error ellipse: s-maj=2.5km s-min=1.8km az=51.0*
ISC 17 01:25:44.4±0.8,**43.90N**±0.02×**11.88E**±0.02,**h6**km±4km,
n121,σ0**§70**/158,**2C-2D**,**Central Italy**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFI	**Santa Sofia**	**0.02**	**282**	Pg	**Pg**	**01 25 45.5**	**-0.1**
SFI				Sg	**Sg**	**01 25 46.6**	**+0.2**
	13µm,0.5s						
SFI	**Santa Sofia**	**0.02**	**282**	Pg	**Pg**	**01 25 45.5**	**-0.1**
SFI				Sg	**Sg**	**01 25 46.6**	**+0.2**
	13µm,0.5s						
ASQU	**Asqua**	**0.12**	**211**	⇑*i*Pg	**Pg**	**01 25 47.6**	**+0.6**
ASQU				Sg	**Sg**	**01 25 49.0**	**+0.3**
	1µm,0.2s						
ASQU	**Asqua**	**0.12**	**211**	⇑*i*Pg	**Pg**	**01 25 47.6**	**+0.6**
ASQU				Sg	**Sg**	**01 25 49.0**	**+0.3**
	1µm,0.2s						
T0502	**Localit¯ San**	**0.19**	**90**	Pg	**Pg**	**01 25 48.2**	**0.0**
T0502				Sg	**Sg**	**01 25 51.7**	**+1.0**
	711nm,0.5s						
VMG	**Vicchio**	**0.25**	**284**	⇓*i*Pg	**Pg**	**01 25 49.5**	**+0.2**
VMG				Sg	**Sg**	**01 25 53.9**	**+1.4**
VMG	**Vicchio**	**0.25**	**284**	⇓*i*Pg	**Pg**	**01 25 49.5**	**+0.2**
VMG				Sg	**Sg**	**01 25 53.9**	**+1.4**
CPGN	**Carpegna, Ital**	**0.34**	**107**	Pg	**Pb**	**01 25 52.0**	**-0.9**
CPGN				Sg	**Sb**	**01 25 58.6**	**0.0**
	206nm,0.8s						
CPGN	**Carpegna, Ital**	**0.34**	**107**	Pg	**Pb**	**01 25 52.0**	**-0.9**
PARC	**Parchiule**	**0.36**	**134**	Pg	**Pg**	**01 25 51.6**	**+0.1**
PARC				Sg	**Sb**	**01 25 58.2**	**-1.1**
	129nm,0.3s						
PARC	**Parchiule**	**0.36**	**134**	Pg	**Pg**	**01 25 51.6**	**+0.1**
PARC				Sg	**Sb**	**01 25 58.2**	**-1.1**
	129nm,0.3s						
SEI	**Scarperia**	**0.41**	**293**	Pg	**Pg**	**01 25 51.9**	**-0.4**
SEI				Sg	**Sg**	**01 25 58.6**	**+1.0**
SEI	**Scarperia**	**0.41**	**293**	Pg	**Pg**	**01 25 51.9**	**-0.4**
SEI				Sg	**Sg**	**01 25 58.6**	**+1.0**
IMOL	**Imola, Italy**	**0.47**	**348**	Pg	**Pg**	**01 25 54.1**	**+0.6**
IMOL				Sg	**Sb**	**01 26 01.9**	**-0.4**
	41µm,20.0s						
IMOL	**Imola, Italy**	**0.47**	**348**	Pg	**Pg**	**01 25 54.1**	**+0.6**
IMOL				Sg	**Sb**	**01 26 01.9**	**-0.4**
	41µm,20.0s						
BADI	**Badiali**	**0.47**	**145**	Pg	**Pg**	**01 25 53.7**	**+0.2**
BADI				Sg	**Sb**	**01 26 02.2**	**-0.2**
	118nm,0.3s						
BADI	**Badiali**	**0.47**	**145**	Pg	**Pg**	**01 25 53.7**	**+0.2**
ATMC	**Monte Cedrone**	**0.51**	**153**	Pg	**Pg**	**01 25 54.4**	**+0.2**
ATMC				Sg	**Sb**	**01 26 02.6**	**-0.9**
	153nm,0.4s						
ATMC	**Monte Cedrone**	**0.51**	**153**	Pg	**Pg**	**01 25 54.4**	**+0.2**
ATMC				Sg	**Sb**	**01 26 02.6**	**-0.9**
	153nm,0.4s						
MTRZ	**Monterenzio**	**0.56**	**328**	Pg	**Pg**	**01 25 55.4**	**+0.2**
MTRZ				Sg	**Sg**	**01 26 03.2**	**+0.7**
	191nm,0.4s						
MTRZ	**Monterenzio**	**0.56**	**328**	Pg	**Pg**	**01 25 55.4**	**+0.2**
MTRZ				Sg	**Sg**	**01 26 03.2**	**+0.7**
	191nm,0.4s						
CAFI	**Castiglion Fio**	**0.57**	**173**	Pg	**Pg**	**01 25 55.8**	**+0.3**
CAFI				Sg	**Sb**	**01 26 04.7**	**-0.7**
	78nm,0.5s						
CAFI	**Castiglion Fio**	**0.57**	**173**	Pg	**Pg**	**01 25 55.8**	**+0.3**
CAFI				Sg	**Sb**	**01 26 04.7**	**-0.7**
	78nm,0.5s						
PTF	**Prato**	**0.58**	**276**	Pg	**Pg**	**01 25 55.4**	**-0.3**
PTF				Sg	**Sb**	**01 26 04.6**	**-1.1**
PTF	**Prato**	**0.58**	**276**	Pg	**Pg**	**01 25 55.4**	**-0.3**
PTF				Sg	**Sb**	**01 26 04.6**	**-1.1**
ATPC	**Poggio Castell**	**0.59**	**135**	Pg	**Pg**	**01 25 55.9**	**+0.1**
ATPC				Sg	**Sb**	**01 26 05.8**	**-0.2**
	112nm,0.4s						
ATPC	**Poggio Castell**	**0.59**	**135**	Pg	**Pg**	**01 25 55.9**	**+0.1**
ATPC				Sg	**Sb**	**01 26 05.8**	**-0.2**
	112nm,0.4s						
CSNT	**Castellina Chi**	**0.60**	**225**	Pg	**Pg**	**01 25 56.0**	**0.0**
CSNT				Sg	**Sb**	**01 26 06.0**	**-0.2**
	74nm,0.4s						
CSNT	**Castellina Chi**	**0.60**	**225**	Pg	**Pg**	**01 25 56.0**	**0.0**
CSNT				Sg	**Sb**	**01 26 06.0**	**-0.2**
	74

SNTG	**Esanatoglia**	**1.01**	**129**	Pg		**Pg**	**01 26 03.3**	**-0.4**
	31nm,0.7s							
SACS	**San Casciano d**	**1.05**	**179**	Pg		**Pb**	**01 26 04.8**	**-0.3**
	30nm,0.5s							
TRIF	**Trifonti**	**1.06**	**222**	Pg		**Pb**	**01 26 04.8**	**-0.3**
	35nm,0.9s							
TRIF	**Trifonti**	**1.06**	**222**	Pg		**Pb**	**01 26 04.8**	**-0.3**
	35nm,0.9s							
ARCI	**Arcidosso**	**1.09**	**196**	Pg		**Pg**	**01 26 05.1**	**-0.2**
	31nm,0.6s							
ARCI	**Arcidosso**	**1.09**	**196**	Pg		**Pg**	**01 26 05.1**	**-0.2**
	31nm,0.6s							
CING	**Cingoli**	**1.09**	**118**	Pg		**Pg**	**01 26 05.4**	**0.0**
CING	**Cingoli**	**1.09**	**118**	Pg		**Pg**	**01 26 05.4**	**0.0**
CESI	**CESI - Serrava**	**1.17**	**140**	Pg		**Pg**	**01 26 06.1**	**-0.7**
CESI	**CESI - Serrava**	**1.17**	**140**	Pg		**Pg**	**01 26 06.1**	**-0.7**
FDMO	**Fiordimonte**	**1.23**	**134**	Pg		**Pg**	**01 26 08.0**	**-0.1**
	22nm,0.7s							
FDMO	**Fiordimonte**	**1.23**	**134**	Pg		**Pg**	**01 26 08.0**	**-0.1**
	22nm,0.7s							
NRCA	**Norcia**	**1.40**	**139**	Pg		**Pn**	**01 26 10.1**	**-0.5**
NRCA	**Norcia**	**1.40**	**139**	Pg		**Pn**	**01 26 10.1**	**-0.5**
LNSS	**Leonessa**	**1.55**	**146**	Pg		**Pb**	**01 26 13.0**	**-0.6**
LNSS	**Leonessa**	**1.55**	**146**	Pg		**Pb**	**01 26 13.0**	**-0.6**
CGRP	**Cima Grappa**	**1.98**	**358**	*e*Pn		**Pn**	**01 26 17.2**	**-1.5**
CGRP				*e*Sn		**Sn**	**01 26 43.0**	**-0.9**
CGRP	**Cima Grappa**	**1.98**	**358**	*e*Pn		**Pn**	**01 26 17.2**	**-1.5**
CGRP				*e*Sn		**Sn**	**01 26 43.0**	**-0.9**
DDS	**Dosso del Somm**	**2.04**	**346**	*e*Pn		**Pn**	**01 26 19.5**	**0.0**
DDS	**Dosso del Somm**	**2.04**	**346**	*e*P		**Pn**	**01 26 19.5**	**0.0**
MAGA	**Magasa**	**2.07**	**335**	Pg		**Pn**	**01 26 20.4**	**+0.5**
	46nm,0.5s							
NVLJ	**Novalja**	**2.25**	**72**	*e*Pn		**Pn**	**01 26 21.9**	**-0.4**
NVLJ				Sn		**Sn**	**01 26 50.8**	**+0.4**
NVLJ	**Novalja**	**2.25**	**72**	*e*Pn		**Pn**	**01 26 21.8**	**-0.4**
NVLJ				Sn		**Sn**	**01 26 50.7**	**+0.4**
SABO	**M.te Sabotino**	**2.41**	**30**	*e*Pn		**Pn**	**01 26 23.1**	**-1.4**
SABO	**M.te Sabotino**	**2.41**	**30**	*e*P		**Pn**	**01 26 23.1**	**-1.4**
JAVS	**Javornik**	**2.53**	**37**	*i* Pn		**Pn**	**01 26 24.4**	**-1.7**
JAVS	**Javornik**	**2.53**	**37**	*i* Pn		**Pn**	**01 26 24.4**	**-1.7**
VINO	**Villanova**	**2.56**	**22**	*e*Pn		**Pn**	**01 26 24.8**	**-1.7**
VINO	**Villanova**	**2.56**	**22**	*e*P		**Pn**	**01 26 24.8**	**-1.7**
OZOL	**Ozolo**	**2.57**	**347**	*e*Pn		**Pn**	**01 26 26.5**	**-0.2**
OZOL	**Ozolo**	**2.57**	**347**	*e*P		**Pn**	**01 26 26.5**	**-0.2**
DRE	**Drenchia**	**2.60**	**28**	*e*Pn		**Pn**	**01 26 25.2**	**-1.8**
DRE	**Drenchia**	**2.60**	**28**	*e*P		**Pn**	**01 26 25.2**	**-1.8**
UDBI	**Udbina**	**2.87**	**76**	*i* Pn		**Pn**	**01 26 31.1**	**+0.3**
UDBI				Sn		**Sn**	**01 27 07.0**	**+1.4**
UDBI	**Udbina**	**2.87**	**76**	*i* Pn		**Pn**	**01 26 31.0**	**+0.3**
UDBI				Sn		**Sn**	**01 27 07.0**	**+1.4**
ABTA	**Abfaltersbach**	**2.88**	**9**	*i* Pn		**Pn**	**01 26 30.8**	**-0.2**
	0.2nm,0.1s							
ABTA	**Abfaltersbach**	**2.88**	**9**	Pn		**Pn**	**01 26 30.8**	**-0.2**
	0.2nm,0.1s							
MYKA	**Terra Mystica**	**3.00**	**24**	*i* Pn		**Pn**	**01 26 32.7**	**+0.1**
	0.1nm,0.1s							
MYKA	**Terra Mystica**	**3.00**	**24**	Pn		**Pn**	**01 26 32.7**	**+0.1**
	0.1nm,0.1s							
OBKA	**Obir**	**3.22**	**35**	*i* Pn		**Pn**	**01 26 36.6**	**+0.9**
	1.4nm,0.4s							
OBKA	**Obir**	**3.22**	**35**	Pn		**Pn**	**01 26 36.6**	**+0.9**
	1.4nm,0.4s							
FETA	**Feichten**	**3.22**	**346**	*i* Pn		**Pn**	**01 26 37.0**	**+1.2**
	0.4nm,0.2s							
FETA	**Feichten**	**3.22**	**346**	Pn		**Pn**	**01 26 37.0**	**+1.2**
	0.4nm,0.2s							
WTTA	**Wattenberg**	**3.37**	**357**	*i* Pn		**Pn**	**01 26 38.8**	**+1.0**
	0.7nm,0.2s							
WTTA	**Wattenberg**	**3.37**	**357**	Pn		**Pn**	**01 26 38.8**	**+1.0**
	0.7nm,0.2s							
WATA	**Walderalm**	**3.44**	**357**	*i* Pn		**Pn**	**01 26 39.6**	**+0.9**
	0.4nm,0.1s							
WATA	**Walderalm**	**3.44**	**357**	Pn		**Pn**	**01 26 39.6**	**+0.9**
	0.4nm,0.1s							
MOTA	**Moosalm**	**3.49**	**351**	*i* Pn		**Pn**	**01 26 40.7**	**+1.3**
	0.8nm,0.2s							
MOTA	**Moosalm**	**3.49**	**351**	Pn		**Pn**	**01 26 40.7**	**+1.3**
	0.8nm,0.2s							
SOKA	**Soboth**	**3.56**	**38**	*i* Pn		**Pn**	**01 26 41.2**	**+0.9**
SOKA	**Soboth**	**3.56**	**38**	Pn		**Pn**	**01 26 41.2**	**+0.9**
DAVA	**Damuels**	**3.67**	**338**	*i* Pn		**Pn**	**01 26 41.8**	**0.0**
	0.7nm,0.2s							
DAVA	**Damuels**	**3.67**	**338**	Pn		**Pn**	**01 26 41.8**	**0.0**
	0.7nm,0.2s							
ARSA	**Arzberg**	**4.22**	**36**	*e*Pn		**Pn**	**01 26 49.3**	**0.0**
	0.4nm,0.2s							
ARSA	**Arzberg**	**4.22**	**36**	Pn		**Pn**	**01 26 49.3**	**0.0**
	0.4nm,0.2s							
MOA	**Molln**	**4.29**	**22**	*i* Pn		**Pn**	**01 26 49.9**	**-0.3**
	0.3nm,0.2s							
MOA	**Molln**	**4.29**	**22**	Pn		**Pn**	**01 26 49.9**	**-0.3**
	0.3nm,0.2s							

CSEM ***17*** *01:29:36.6±0.3,37°28N×8°54W,h5km,ML0.8,Error ellipse: s-maj=6.0km s-min=4.2km az=172.0*

MDD 17 01:29:38.1±0.6,**37°34N×8°52W,h4**km±13km,**mbLg0.8**/3,
Error ellipse: s-maj=4.9km s-min=3.6km az=170.0,
PRXIMO SIN SOLUCIN,Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MORF	**Marmelete**	**0.11**	**253**	*e*Sg	Sg	01 29 42.3	+0.4
MORF				A	A	01 29 42.5	
	20nm,0.2s						
MORF	**Marmelete**	**0.11**	**253**	Lg	Lg	01 29 42.3	
	20nm,0.2s						
MORF	**Marmelete**	**0.11**	**253**	*e*Sg	Sg	01 29 42.3	+0.4
	20nm,0.2s						
PTEO	**Sao Teotonio**	**0.26**	**321**	*e*Pg	Pg	01 29 42.8	-0.4
PTEO				*e*Sg	Sg	01 29 46.6	-0.1
PTEO	**Sao Teotonio**	**0.26**	**321**	Pg	Pg	01 29 42.8	-0.4
PTEO				Lg	Lg	01 29 46.6	
PTEO	**Sao Teotonio**	**0.26**	**321**	Pg	Pg	01 29 42.8	-0.4
PTEO				*e*Sg	Sg	01 29 46.6	-0.1
PFVI	**Vila Bisbo**	**0.32**	**230**	*e*Pg	Pg	01 29 41.1	-3.2
PFVI	**Vila Bisbo**	**0.32**	**230**	*e*Pg	Pg	01 29 41.1	-3.2
PFVI				Lg	Lg	01 29 47.7	
	2.0nm,0.1s,SNR=7.9						
PBDV	**Barranco-do-Ve**	**0.48**	**102**	*e*Sg	Sg	01 29 53.7	+0.3
PBDV	**Barranco-do-Ve**	**0.48**	**102**	Lg	Lg	01 29 53.7	
PBDV	**Barranco-do-Ve**	**0.48**	**102**	*e*Sg	Sg	01 29 53.7	+0.3
PCVE	**Castro Verde**	**0.48**	**52**	*e*Sg	Sg	01 29 52.5	-1.0
PCVE	**Castro Verde**	**0.48**	**52**	Lg	Lg	01 29 52.5	
PCVE	**Castro Verde**	**0.48**	**52**	*e*Sg	Sg	01 29 52.5	-1.0
MESJ	**Messejana**	**0.55**	**25**	*e*Pg	Pg	01 29 48.5	-0.2
MESJ	**Messejana**	**0.55**	**25**	Pg	Pg	01 29 48.5	-0.2
MESJ	**Messejana**	**0.55**	**25**	Pg	Pg	01 29 48.5	-0.2
PVAQ	**Vaqueiros**	**0.64**	**84**	*e*Pg	Pg	01 29 50.0	-0.3
PVAQ				*e*Sg	Sg	01 29 58.3	-0.3
PVAQ				A	A	01 30 00.1	
	1.9nm,0.6s						
PVAQ	**Vaqueiros**	**0.64**	**84**	Pg	Pg	01 29 50.0	-0.3
PVAQ				Lg	Lg	01 29 58.3	
	1.9nm,0.6s						
PVAQ	**Vaqueiros**	**0.64**	**84**	Pg	Pg	01 29 50.0	-0.3
PVAQ				*e*Sg	Sg	01 29 58.3	-0.3
	1.9nm,0.6s						
PNCL	**Nicolau / Gran**	**0.77**	**359**	*e*P	Pg	01 29 52.7	-0.2
PNCL				*e*S	Sg	01 30 02.1	-0.8
PNCL				A	A	01 30 03.9	
	1.2nm,0.2s						
PNCL	**Nicolau / Gran**	**0.77**	**359**	*e*P	Pg	01 29 52.7	-0.2
PNCL				*e*S	Sg	01 30 02.1	-0.8
	1.2nm,0.2s						
PBAR	**Barrancos**	**1.44**	**54**	*e*Sg	Sb	01 30 23.6	-0.4
PBAR	**Barrancos**	**1.44**	**54**	Lg	Lg	01 30 23.6	
PBAR	**Barrancos**	**1.44**	**54**	*e*Sg	Sb	01 30 23.6	-0.4
EMIN	**Mina Concepcio**	**1.53**	**73**	Sn	Sn	01 30 25.2	-1.2
	0.2nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**1.53**	**73**	Sn	Sn	01 30 25.2	-1.2
	0.2nm,0.1s,SNR=7.9						

BJI ***17*** *01:32:23.8,4°61N×95°88E,h170km,mb4.6/34,mB4.7/22*
ISCJB ***17*** *01:32:28.6±0.3,5°04N±0°03×95°99E±0°04,h179km±3km, mb4.5/58,Error ellipse: s-maj=6.7km s-min=4.1km az=156.3*
NEIC ***17*** *01:32:29.8±0.6,5°15N×96°05E,h170km±5km,mb4.7/29, Error ellipse: s-maj=8.2km s-min=4.3km az=52.0*
DJA ***17*** *01:32:30.9±0.5,5°N±3°×9°6E±°,h166km±4km,M4.4/10, mb4.8/2,mB5.1/3,MLv4.3/10,Mw(mB)4.5/3*
KLM ***17*** *01:32:31.0,5°15N×96°17E,h169km,mb4.7,ML3.8,MS5.7*

IDC ***17*** *01:32:31.7±1.8,5°29N×96°18E,h183km±15km,mb4.0/23, mb1 4.1/24,mb1mx3.9/48,mbtmp4.5/24,Error ellipse: s-maj=14.5km s-min=7.6km az=54.0*

ISC 17 01:32:30.1±0.6,**5°14N**±0°04×**96°06E**±0°06,**h174**km±5km,
n143,σ1s62/162,**mb4.5**/58,**17C-6D,Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LHMI	**Lhok Sumawe**	**0.89**	**84**	P	**Pn**	**01 32 56.5**	**0.0**
LHMI				S	**Sn**	**01 33 16.1**	**-0.5**
LHMI	**Lhok Sumawe**	**0.89**	**84**	*e*Pn	**Pn**	**01 32 56.5**	**0.0**
LHMI				*e*Sn	**Sn**	**01 33 13.6**	**-3.0**
MLSI	**Meulaboh, Aceh**	**0.93**	**158**	P	**Pn**	**01 32 56.4**	**-0.4**
MLSI				S	**Sn**	**01 33 16.0**	**-1.3**
TPTI		**2.17**	**149**	P	**Pn**	**01 33 07.8**	**-0.9**
TPTI				S	**Sn**	**01 33 37.9**	**-0.8**
KCSI	**Kotacane, Aceh**	**2.34**	**133**	P	**Pn**	**01 33 09.9**	**-0.8**
KCSI				S	**Sn**	**01 33 39.8**	**-2.4**
TSI	**Tuntungan**	**2.98**	**123**	P	**Pn**	**01 33 17.9**	**-0.4**
PKDT	**Phuket**	**3.55**	**39**	P	**Pn**	**01 33 27.1**	**+1.7**
PSI	**Prapat**	**3.68**	**129**	*e*Pn	**Pn**	**01 33 26.9**	**-0.2**
GSI	**Gunungsitoli**	**4.09**	**158**	P	**Pn**	**01 33 31.1**	**-1.2**
GSI				S	**Sn**	**01 34 18.9**	**-2.1**
GSI	**Gunungsitoli**	**4.09**	**158**	*e*Pn	**Pn**	**01 33 31.1**	**-1.2**
GSI				*e*Sn	**Sn**	**01 34 17.9**	**-3.1**
KRAB	**Krabi**	**4.37**	**45**	P	**Pn**	**01 33 34.2**	**-1.7**
KULM	**Kulim**	**4.57**	**88**	*e*Pn	**Pn**	**01 33 37.5**	**-0.9**
IPM	**Ipoh**	**4.99**	**97**	⇓P	**Pn**	**01 33 43.2**	**-0.7**
IPM	**Ipoh**	**4.99**	**97**	*e*Pn	**Pn**	**01 33 42.8**	**-1.2**
MNSI	**Mandailing Nat**	**5.56**	**141**	P	**Pn**	**01 33 50.5**	**-0.9**
FRIM	**Kepong**	**5.86**	**109**	⇓P	**Pn**	**01 33 54.7**	**-0.6**
PHET	**Kaeng Krachan**	**8.49**	**24**	P	**Pn**	**01 34 30.4**	**+0.4**
	20nm,0.8s,0.1nm						
SRDT	**SRDT**	**9.64**	**18**	P	**Pn**	**01 34 46.6**	**+1.5**
	178nm,1.6s						
PBKT	**Sadao Pong**	**12.34**	**23**	P	**Pn**	**01 35 22.3**	**+2.1**
	26nm,0.7s						
SUKH	**Sukhothai**	**12.76**	**16**	P	**Pn**	**01 35 26.4**	**+0.9**
	20nm,0.6s,259nm						
UTTA	**Uttaradit**	**13.28**	**19**	P	**Pn**	**01 35 33.1**	**+1.0**
	18nm,0.7s,173nm						
CM01	**Chiang Mai Arr**	**13.51**	**12**	*e*Pn	**Pn**	**01 35 34.9**	**0.0**
CM31	**Chiang Mai Arr**	**13.54**	**12**	*e*Pn	**P**	**01 35 37.0**	**-1.6**
CMAR	**Chiang Mai Arr**	**13.54**	**12**	P	**Pn**	**01 35 36.1**	**+0.7**
	3.9nm,0.3s,baz=206,slow=11,SNR=38						
CMAR				ScP	**ScP**	**01 44 05.5**	**+0.1**
	baz=231,slow=3.1,SNR=7.8						
UBPT	**Khong Chiam**	**13.68**	**42**	P	**P**	**01 35 41.5**	**+1.3**
	21nm,1.3s						
LAMP	**Lampang**	**13.76**	**14**	P	**P**	**01 35 39.6**	**-1.4**
	18nm,0.8s,173nm						
CHTO	**Chiang Mai**	**13.88**	**11**	P	**Pn**	**01 35 40.6**	**+0.9**
	310nm,0.9s,3μm						
CHTO	**Chiang Mai**	**13.88**	**11**	*e*Pn	**Pn**	**01 35 40.8**	**+1.0**
CMMT	**Chiang Mai**	**13.88**	**11**	P	**Pn**	**01 35 40.6**	**+0.9**
	71nm,0.9s,707nm						
SKNT	**Sakolnakorn**	**14.10**	**33**	P	**P**	**01 35 44.8**	**0.0**
	24nm,9s						
NONG	**Nongkai**	**14.60**	**28**	P	**Pn**	**01 35 48.7**	**+0.1**
	37nm,1.2s,12μm						
PAYA	**Payao**	**14.62**	**14**	P	**P**	**01 35 50.0**	**-0.6**
	19nm,0.9s						
KSM	**Kuching**	**14.68**	**104**	⇑P	**P**	**01 35 53.0**	**+1.7**
KSM	**Kuching**	**14.68**	**104**	*e*P	**P**	**01 35 52.1**	**+0.8**
CMAI	**Chiengmai2**	**14.99**	**11**	P	**P**	**01 35 54.9**	**0.0**
	242nm,1.0s						
PALK	**Pallekele**	**15.41**	**279**	*e*Pn	**Pn**	**01 35 56.7**	**-2.0**
SBUM	**Sibu**	**16.34**	**99**	*e*P	**P**	**01 36 10.4**	**+0.7**
	13nm,0.9s						
QIZ	**Qiongzhong**	**19.27**	**43**	P	**P**	**01 36 42.5**	**+0.8**
QIZ				S	**S**	**01 40 13.1**	**+2.5**
QIZ				pmax	pmax		
	comp=Z,26nm,2.4s						
KKM	**Kota Kinabalu**	**20.08**	**86**	*e*P	**P**	**01 36 50.6**	**+0.1**
	12nm,0.7s						
KMI	**Kunming**	**20.88**	**17**	P	**P**	**01 37 00.3**	**+1.2**
KMI				pmax	pmax		
	comp=Z,14nm,0.9s						
SDKM	**Sandakan**	**21.05**	**88**	⇓P	**P**	**01 37 00.4**	**-0.4**
MYLDM	**Lahad Datu**	**22.35**	**89**	⇑P	**P**	**01 37 14.6**	**+0.6**
MYLDM	**Lahad Datu**	**22.35**	**89**	*e*P	**P**	**01 37 14.5**	**+0.5**
	26nm,0.8s						
GYA	**Guiyang**	**23.50**	**24**	*e*P	**P**	**01 37 25.8**	**+1.3**
GYA				pP	pP	01 37 58.8	+1.3
GYA				sP	PP	01 38 20.0	-1.8
GYA				S	**S**	**01 41 24.3**	**-1.2**
GYA				sS	sS	01 42 23.5	-2.0
GYA				pmax	pmax		
	comp=Z,10.0nm,0.7s						
LSA	**Lhasa**	**24.87**	**350**	P	**P**	**01 37 37.9**	**+0.6**
LSA				pmax	pmax		
	comp=Z,19nm,1.1s						
LSA	**Lhasa**	**24.87**	**350**	*e*P	**P**	**01 37 37.9**	**+0.6**
	38nm,0.6s						
KAPI	**Kappang**	**25.72**	**113**	*e*P	**P**	**01 37 44.5**	**-0.2**
	14nm,0.5s						
CD2	**Chengdu**	**26.64**	**15**	*e*P	**P**	**01 37 53.3**	**+0.5**
CD2				pP	pP	01 38 27.9	-0.7
CD2				sP	sP	01 38 47.8	-1.0
CD2				S	**S**	**01 42 17.3**	**+2.3**
CD2				sS	sS	01 43 19.8	+1.0
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.0s						
H08S2	**Diego Garcia H**	**26.72**	**242**	T	T	02 04 27.2	
	baz=63,slow=75,SNR=62						
H08S3	**Diego Garcia H**	**26.72**	**242**	T	T	02 04 33.6	
	baz=63,slow=75,SNR=59						
H08S1	**Diego Garcia H**	**26.74**	**242**	T	T	02 04 39.4	
	baz=63,slow=75,SNR=70						
LUWI	**Luwuk**	**27.38**	**102**	*e*P	**P**	**01 37 58.4**	**-1.1**
	47nm,0.7s						
MMRI	**Maumere**	**29.47**	**118**	*e*P	**P**	**01 38 17.3**	**-0.7**
	32nm,0.8s						
XAN	**Xi'an**	**31.14**	**21**	P	**P**	**01 38 31.9**	**-0.7**
XAN				pmax	pmax		
	comp=Z,11nm,0.6s						
XAN				pmax	pmax		
	comp=Z,71nm,5.6s						
SOEI	**Soe**	**31.76**	**118**	*e*P	**P**	**01 38 37.8**	**-0.5**
	18nm,0.5s						
GTA	**Gaotai**	**34.29**	**5**	*e*P	**P**	**01 38 59.8**	**-0.2**
GTA				pP	pP	01 39 34.3	-2.4
GTA				sP	sP	01 39 52.9	-3.8
GTA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MBWA	**Marble Bar**	**34.96**	**139**	*e*P	**P**	**01 39 04.9**	**-0.9**
	20nm,0.6s						
FAKI	**Fak Fak**	**37.03**	**102**	*e*P	**P**	**01 39 22.6**	**-0.9**
FITZ	**Fitzroy Crossi**	**37.21**	**129**	P	**P**	**01 39 24.5**	**-0.5**
	18nm,0.5s,baz=324,slow=7.1,SNR=50						
FITZ				PcP	**PcP**	**01 41 42.6**	**+1.5**
	5.4nm,0.7s,baz=336,slow=5.9,SNR=6.5						
FITZ	**Fitzroy Crossi**	**37.21**	**129**	*e*P	**P**	**01 39 24.4**	**-0.5**
	22nm,0.6s						
FITZ				PcP	**PcP**	**01 41 42.6**	**+1.5**
HHC	**Hu-ho-hao-te**	**38.18**	**19**	*e*P	**P**	**01 39 36.3**	**+3.3**
HHC				pmax	pmax		
	comp=Z,18nm,1.4s						
HHC				pmax	pmax		
	comp=Z,100nm,4.5s						
KSH	**Kashi**	**38.74**	**335**	*e*P	**P**	**01 39 36.1**	**-1.6**
KSH				epP	pP	01 40 14.0	-1.0
KSH				esP	sP	01 40 33.8	-1.1
KSH				S	**S**	**01 45 17.1**	**-4.8**
KSH				SS	**SS**	**01 48 07.1**	**-13**
KSH				ScS	**ScS**	**01 49 25.1**	**-3.8**
KSH				pmax	pmax		
	comp=Z,87nm,5.1s						
KSH				LR	LR		
	comp=N,140nm,4.9s						
KSH				LR	LR		
	comp=E,100nm,4.9s						
KSH				LR	LR		
	comp=Z,130nm,6.2s						
MTN	**Manton Dam**	**39.16**	**117**	*e*P	**P**	**01 39 40.1**	**-1.2**
	69nm,0.4s						
BJI	**Beijing**	**39.20**	**25**	P	**P**	**01 39 42.4**	**+1.2**
BJI				pmax	pmax		
	comp=Z,10.0nm,0.6s						
WMQ	**Urumqi**	**39.23**	**350**	*e*P	**P**	**01 39 42.4**	**+0.8**
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,120nm,4.5s						
AAK	**Ala-Archa**	**41.96**	**336**	*e*P	**P**	**01 40 05.1**	**+1.0**
	2.5nm,0.5s						
NWAO	**Narrogin (SRO)**	**42.86**	**153**	P	**P**	**01 40 12.4**	**+1.1**
	10nm,0.6s,baz=197,slow=5.1,SNR=7.9						
MK01	**Makanchi Array**	**43.15**	**346**	*e*P	**P**	**01 40 12.6**	**-0.9**
MK31	**Makanchi Array**	**43.17**	**346**	*e*P	**P**	**01 40 13.3**	**-0.3**
MKAR	**Makanchi Array**	**43.17**	**346**	P	**P**	**01 40 12.9**	**-0.7**
	9.4nm,0.8s,baz=162,slow=8.3,SNR=53						
MKAR	**Makanchi Array**	**43.17**	**346**	*e*P	**P**	**01 40 13.3**	**-0.3**
MAKZ	**Makanchi**	**43.26**	**346**	*e*P	**P**	**01 40 13.9**	**-0.4**
	8.5nm,0.8s						
KSAR	**Wonju Array Be**	**43.33**	**38**	P	**P**	**01 40 14.8**	**-0.2**
KSRS	**Korea Array**	**43.36**	**38**	P	**P**	**01 40 14.8**	**-0.5**
	0.6nm,0.8s,baz=222,slow=9.5,SNR=4.1						
SONM	**Songino Array**	**43.46**	**10**	P	**P**	**01 40 15.7**	**-0.3**
	4.7nm,0.5s,baz=191,slow=9.3,SNR=29						
SONA1	**Songino Array**	**43.47**	**10**	*e*P	**P**	**01 40 15.8**	**-0.4**
KKAR	**Karatay Array**	**44.05**	**333**	*e*P	**P**	**01 40 20.9**	**+0.2**
WRA	**Warramunga Arr**	**45.13**	**125**	P	**P**	**01 40 29.7**	**+0.1**
	31nm,0.6s,baz=303,slow=9.1,SNR=240						
WRA				PcP	**PcP**	**01 42 08.1**	**+0.9**
	4.8nm,0.5s,baz=311,slow=2.7,SNR=10						
WRA				ScP	**ScP**	**01 45 43.0**	**-0.4**
	0.7nm,0.8s,baz=316,slow=3.8,SNR=5.1						
WRA				S	**S**	**01 46 52.4**	**-3.7**
	1.0nm,0.8s,baz=300,slow=17,SNR=3.7						
WRAB	**Tennant Creek**	**45.14**	**125**	*e*P	**P**	**01 40 30.0**	**+0.3**
	55nm,0.6s						
WB2	**Warramunga Arr**	**45.15**	**125**	*e*P	**P**	**01 40 29.9**	**+0.2**
	52nm,0.8s						
AS31	**Alice Springs**	**46.71**	**129**	*e*P	**P**	**01 40 42.5**	**+0.6**
	12nm,0.6s						
ASAR	**Alice Springs**	**46.71**	**129**	P	**P**	**01 40 42.4**	**+0.4**
	26nm,0.5s,baz=299,slow=7.5,SNR=270						
ASAR				PcP	**PcP**	**01 42 13.8**	**+1.1**
	4.7nm,0.5s,baz=302,slow=3.5,SNR=9.8						
ASAR				ScP	**ScP**	**01 45 50.4**	**+0.4**
	0.6nm,0.6s,baz=308,slow=4.6,SNR=4.3						
ASAR				S	**S**	**01 47 16.4**	**-2.1**
	0.7nm,0.8s,baz=295,slow=14,SNR=7.6						
AS01	**Alice Springs**	**46.74**	**129**	*e*P	**P**	**01 40 42.2**	**0.0**
FORT	**Forrest**	**47.02**	**141**	*e*P	**P**	**01 40 45.8**	**+1.6**
	311nm,0.7s						
GEYT	**Alibeck**	**47.50**	**319**	P	**P**	**01 40 48.0**	**+0.1**
	2.7nm,0.5s,baz=140,slow=8.0,SNR=7.7						
KURK	**Kurchatov**	**47.72**	**345**	*e*P	**P**	**01 40 48.2**	**-1.0**
	24nm,0.6s						
MDJ	**Mudanjiang**	**49.07**	**31**	P	**P**	**01 41 01.0**	**+1.4**
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,91nm,7.1s						
ZAA0	**Zalesovo Array**	**49.52**	**351**	*e*P	**P**	**01 41 02.4**	**-0.6**
ZALV	**Zalesovo Beam**	**49.52**	**351**	P	**P**	**01 41 02.0**	**-0.9**
	9.0nm,0.6s,baz=178,slow=7.4,SNR=49						
USRK	**Ussuriysk Ar.**	**50.07**	**33**	P	**P**	**01 41 07.1**	**-0.1**
	1.2nm,0.6s,baz=232,slow=8.0,SNR=4.5						
COEN	**Coen**	**50.45**	**113**	*e*P	**P**	**01 41 09.8**	**-0.7**
	5.6nm,0.7s						
BRVK	**Borovoye**	**52.25**	**341**	*e*P	**P**	**01 41 22.5**	**-0.8**
	5.8nm,0.6s						
ZRNK	**Zerenda**	**52.59**	**340**	*e*P	**P**	**01 41 24.9**	**-1.0**
	5.5nm,0.8s						
KLR	**Kul'dur**	**53.31**	**28**	P	**P**	**01 41 31.9**	**+0.7**
	1.4nm,0.4s,baz=239,slow=7.5,SNR=10						
ABKAR	**Akbulak array**	**53.53**	**331**	*e*P	**P**	**01 41 32.3**	**-0.5**
CTA	**Charters Tower**	**55.32**	**119**	P	**P**	**01 41 46.6**	**+0.4**
	8.7nm,0.8s,baz=292,slow=7.3,SNR=4.9						
CTAO	**Charters Tower**	**55.32**	**119**	*e*P	**P**	**01 41 45.9**	**-0.3**
	64nm,0.9s						
STKA	**Stephens Creek**	**56.85**	**134**	P	**P**	**01 41 57.1**	**+0.3**
	3.1nm,0.5s,baz=317,slow=8.8,SNR=9.3						
ARU	**Arti**	**59.14**	**337**	*e*P	**P**	**01 42 11.4**	**-0.9**
	3.3nm,0.6s						
CAN	**Canberra**	**63

EZN					*e*SG	**Sg**	**01 50 18.8 +0.3**
EZN	**Ezine**	**0.46**	**14**		P	**Pg**	**01 50 12.6 +0.2**
EZN					S	**Sg**	**01 50 19.7 +1.2**
EZN	**Ezine**	**0.46**	**14**		P	**Pg**	**01 50 12.6 +0.2**
EZN					*e*Sg	**Sg**	**01 50 18.8 +0.3**
EZN					S	**Sg**	**01 50 19.7 +1.2**
BOZC	**Bozcaada**	**0.48**	**348**		*i* P	**Pg**	**01 50 12.6 -0.1**
BOZC					*i* S	**Sg**	**01 50 19.6 +0.6**
DKL	**Dikili**	**0.64**	**118**		*e*PG	**Pg**	**01 50 15.8 +0.1**
DKL	**Dikili**	**0.64**	**118**		*e*Pg	**Pg**	**01 50 15.8 +0.1**
GADA	**Gvkgeada**	**0.84**	**345**		*e*PG	**Pn**	**01 50 22.4 +1.1**
GADA	**Gvkgeada**	**0.84**	**345**		P	**Pb**	**01 50 20.2 +0.1**
GADA					S	**Sg**	**01 50 30.5 -0.1**
GADA	**Gvkgeada**	**0.84**	**345**		P	**Pb**	**01 50 20.2 +0.1**
GADA	**Gvkgeada**	**0.84**	**345**		*e*Pg	**Pn**	**01 50 22.4 +1.1**
GADA					S	**Sg**	**01 50 30.5 -0.1**
LIA	**Limnos Island**	**0.93**	**304**		P	**Pg**	**01 50 21.0 -0.3**
LIA					S	**Sb**	**01 50 33.1 -0.9**
LIA	**Limnos Island**	**0.93**	**304**		P	**Pg**	**01 50 21.0 -0.3**
LIA					S	**Sb**	**01 50 33.1 -0.9**
CHOS	**Chios island**	**0.99**	**186**		P	**Pg**	**01 50 22.4 0.0**
CHOS					S	**Sb**	**01 50 36.1 +0.3**
CHOS	**Chios island**	**0.99**	**186**		P	**Pg**	**01 50 22.4 0.0**
CHOS					S	**Sb**	**01 50 36.1 +0.3**
GELI	**Tayfur-Gelibol**	**1.04**	**12**		*e*PG	**Pg**	**01 50 23.0 -0.4**
GELI	**Tayfur-Gelibol**	**1.04**	**12**		*e*Pg	**Pg**	**01 50 23.0 -0.4**
URLA	**Izmir**	**1.06**	**162**		*i* P	**Pg**	**01 50 23.1 -0.7**
URLA					*i* S	**Sg**	**01 50 37.9 +0.3**
URLA	**Izmir**	**1.06**	**162**		P	**Pg**	**01 50 23.1 -0.7**
URLA					S	**Sg**	**01 50 37.9 +0.3**
LPK	**Lapseki**	**1.09**	**24**		*e*PG	**Pg**	**01 50 22.7 -1.6**
LPK	**Lapseki**	**1.09**	**24**		*e*Pg	**Pg**	**01 50 22.7 -1.6**
SMTH	**Samothraki Isl**	**1.20**	**336**		P	**Pg**	**01 50 25.7 -0.8**
SMTH					S	**Sg**	**01 50 42.0 -0.1**
SMTH	**Samothraki Isl**	**1.20**	**336**		P	**Pg**	**01 50 25.7 -0.8**
SMTH					S	**Sg**	**01 50 42.0 -0.1**
ERIK	**Erikli-Kesan**	**1.32**	**11**		*e*PN	**Pg**	**01 50 28.0 -0.6**
ERIK	**Erikli-Kesan**	**1.32**	**11**		*e*Pn	**Pg**	**01 50 28.0 -0.6**
KRBG	**Karabiga-Canak**	**1.33**	**40**		*e*PG	**Pn**	**01 50 25.9 -2.0**
KRBG	**Karabiga-Canak**	**1.33**	**40**		*e*Pg	**Pn**	**01 50 25.9 -2.0**
BALB	**Balikesir**	**1.34**	**78**		*e*PG	**Pn**	**01 50 25.6 -2.4**
BALB	**Balikesir**	**1.34**	**78**		*e*Pg	**Pn**	**01 50 25.6 -2.4**
ENEZ	**Enez**	**1.36**	**359**		*e*PN	**Pn**	**01 50 29.6 +1.2**
ENEZ	**Enez**	**1.36**	**359**		*e*Pn	**Pn**	**01 50 29.6 +1.2**
RKY	**Sarkoy-Tekirda**	**1.52**	**30**		*e*PN	**Pn**	**01 50 29.3 -1.3**
RKY	**Sarkoy-Tekirda**	**1.52**	**30**		*e*Pn	**Pn**	**01 50 29.3 -1.3**
ALN	**Alexandroupoli**	**1.52**	**356**		*e*PN	**Pn**	**01 50 31.7 +1.1**
ALN	**Alexandroupoli**	**1.52**	**356**		P	**Pn**	**01 50 31.3 +0.7**
ALN					S	**Sn**	**01 50 52.2 +1.7**
ALN	**Alexandroupoli**	**1.52**	**356**		P	**Pn**	**01 50 31.3 +0.7**
ALN	**Alexandroupoli**	**1.52**	**356**		*e*Pn	**Pn**	**01 50 31.7 +1.1**
ALN					S	**Sn**	**01 50 52.2 +1.7**
EDC	**Edincik**	**1.62**	**53**		*e*PN	**Pn**	**01 50 30.1 -1.8**
EDC	**Edincik**	**1.62**	**53**		*e*Pn	**Pn**	**01 50 30.1 -1.8**
MRMT	**Marmara Adasi**	**1.64**	**41**		*e*PN	**Pn**	**01 50 30.3 -1.9**
MRMT	**Marmara Adasi**	**1.64**	**41**		*e*Pn	**Pn**	**01 50 30.3 -1.9**
AOS	**Alonnisos**	**1.80**	**264**		*e*PN	Pg	01 50 42.0 +4.1
KCTX	**Karacabey (Bur**	**1.90**	**61**		*e*PN	**Pn**	**01 50 33.2 -2.5**
KCTX	**Karacabey (Bur**	**1.90**	**61**		*e*Pn	**Pn**	**01 50 33.2 -2.5**
AYDB	**Zeytinkoy-Aydi**	**1.96**	**136**		*e*PN	**Pn**	**01 50 37.9 +1.2**
AYDB	**Zeytinkoy-Aydi**	**1.96**	**136**		*e*Pn	**Pn**	**01 50 37.9 +1.2**

CASC 17 01:56:08.2±2.2, 8°29N×82°85W, h5km±12km, MD3.7, 2C, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TBS2		**0.54**	**21**	⇑*i* P	Pb	01 56 20.4	+0.2
TBS2				*i* S	Sn	01 56 31.3	-1.0
BRU	**Baru**	**0.59**	**29**	*i* P	Pb	01 56 20.7	-0.6
BUS	**Buena Vista**	**1.54**	**325**	*e*P	Pn	01 56 35.4	-1.4
QCR	**Quepos**	**1.72**	**311**	*e*P	Pn	01 56 38.6	-0.2
QCR				*e*S	Sn	01 57 00.7	-0.5
URSC	**Urasca**	**1.79**	**329**	⇑*e*P	Pn	01 56 39.2	-0.8
HDC	**Heredia**	**2.11**	**324**	*e*P	Pn	01 56 45.3	+1.0
HDC				*e*S	Sb	01 57 13.5	-0.2
CGA2	**Cerro Gallo 2**	**2.34**	**317**	*e*P	Pn	01 56 48.2	+0.6
CGA2				*e*S	Sn	01 57 17.9	+1.1
PNME	**Penonome**	**2.51**	**85**	*e*P	Pn	01 56 49.7	0.0
AZU	**Azuero**	**2.60**	**101**	*e*P	Pn	01 56 50.6	-0.3
JCR	**Jicaral**	**2.72**	**305**	*e*P	Pn	01 56 50.9	-1.8
ZANG	**Zanguenga, Cho**	**3.02**	**77**	*e*P	Pn	01 56 56.4	-0.4

DDA 17 01:57:23.2, 37°.97N×27°.54E, h7km, Md2.6
ISK 17 01:57:23.7, 37°.90N×27°.46E, h3km, MD2.8
ISCJB 17 01:57:24.2±0.5, 37°.90N±0°.04×27°.48E±0°.04, h10km, Error ellipse: s-maj=5.5km s-min=4.5km az=27.1
CSEM 17 01:57:24.3±0.2, 37°.90N×27°.47E, h5km, MD2.8, Error ellipse: s-maj=4.0km s-min=3.3km az=53.0

ISC 17 01:57:23.8±0.8, 37°89N±0°03×27°48E±0°03, h10km, n27, σ0s73/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AYDB	**Zeytinkoy-Aydi**	**0.33**	**80**	*e*PG	**Pg**	**01 57 31.5**	**+1.0**
AYDB				*e*SG	**Sb**	**01 57 36.8**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**0.33**	**80**	*e*Pg	**Pg**	**01 57 31.5**	**+1.0**
AYDB				*e*Sg	**Sb**	**01 57 36.8**	**-0.6**
IZM	**Izmir**	**0.53**	**342**	*e*PG	**Pg**	**01 57 34.6**	**+0.4**
IZM	**Izmir**	**0.53**	**342**	*e*Pg	**Pg**	**01 57 34.6**	**+0.4**
BDRM	**Kayabasi**	**0.83**	**182**	*i* P	**Pg**	**01 57 39.8**	**+0.1**
BDRM				*i* S	**Sn**	**01 57 54.6**	**+0.9**
BDRM	**Kayabasi**	**0.83**	**182**	P	**Pg**	**01 57 39.8**	**+0.1**
BDRM				S	**Sn**	**01 57 54.7**	**+0.9**
URLA	**Izmir**	**0.84**	**304**	*i* P	**Pg**	**01 57 40.1**	**+0.2**
URLA				*i* S	**Sg**	**01 57 51.3**	**+0.4**
URLA	**Izmir**	**0.84**	**304**	P	**Pg**	**01 57 40.1**	**+0.2**
URLA				S	**Sg**	**01 57 51.3**	**+0.4**
BODT	**Bodrum**	**0.84**	**189**	*e*PG	**Pg**	**01 57 40.5**	**+0.5**
BODT	**Bodrum**	**0.84**	**189**	*e*Pg	**Pg**	**01 57 40.5**	**+0.5**
YER	**Yerkesik**	**0.99**	**139**	*e*PG	**Pb**	**01 57 43.6**	**+0.6**
YER	**Yerkesik**	**0.99**	**139**	*e*Pg	**Pb**	**01 57 43.7**	**+0.6**
AKS	**Akhisar**	**1.02**	**15**	*e*PG	**Pb**	**01 57 43.9**	**+0.3**
AKS	**Akhisar**	**1.02**	**15**	*e*Pg	**Pb**	**01 57 43.9**	**+0.3**
MANT	**Manisa**	**1.04**	**55**	*i* P	**Pb**	**01 57 44.4**	**+0.3**
MANT				*i* S	**Sg**	**01 57 55.7**	**-1.7**
MANT	**Manisa**	**1.04**	**55**	P	**Pb**	**01 57 44.4**	**+0.3**
MANT				S	**Sg**	**01 57 55.7**	**-1.7**
KULA	**Kula-Manisa**	**1.12**	**56**	*e*PN	**Pn**	**01 57 46.0**	**+0.4**
KULA	**Kula-Manisa**	**1.12**	**56**	*e*Pn	**Pn**	**01 57 46.0**	**+0.4**
CHOS	**Chios island**	**1.23**	**294**	*e*PN	**Pg**	**01 57 47.8**	**+0.4**
CHOS	**Chios island**	**1.23**	**294**	*e*Pn	**Pg**	**01 57 47.8**	**+0.4**
DKL	**Dikili**	**1.26**	**339**	*e*PN	**Pg**	**01 57 48.4**	**+0.4**
DKL	**Dikili**	**1.26**	**339**	*e*Pn	**Pg**	**01 57 48.4**	**+0.4**
TURN	**Turunc**	**1.36**	**138**	*i* P	**Pn**	**01 57 47.1**	**-1.7**
DALY	**Dalyan (Mu˘la**	**1.43**	**138**	*e*PN	**Pg**	**01 57 51.6**	**+0.4**
DALY	**Dalyan (Mu˘la**	**1.43**	**138**	*e*Pn	**Pg**	**01 57 51.6**	**+0.4**
SIGR	**SIGRI**	**1.83**	**317**	*e*PN	**Pb**	**01 57 57.0**	**-0.4**
SIGR	**SIGRI**	**1.83**	**317**	*e*Pn	**Pb**	**01 57 57.0**	**-0.4**

GUC 17 02:06:38.3±0.6, 32°.70S×71°.89W, h43km±6km, ML2.5

ISC 17 02:06:27.9±2.8, 32°58S±0°07×72°4W±0°1, h12km±11km, n13, σ2s04/23, 2C-2D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**1.23**	**109**	*i* P	**Pg**	**02 06 51.6**	**-0.1**
ROC1				*i* S	**Sg**	**02 07 05.0**	**-2.7**
ROCH	**El Roble**	**1.24**	**109**	⇓*i* P	**Pn**	**02 06 53.4**	**+2.2**
ROCH				*i* S	**Sg**	**02 07 05.9**	**-1.9**
ROCH				IAML		02 07 08.0	
	comp=N,216nm,0.4s						
PEL	**Peldehue**	**1.55**	**112**	⇑*i* P	**Pg**	**02 06 58.3**	**+0.7**
PEL				*i* S	**Sn**	**02 07 13.4**	**-2.1**
RCDM	**Rinconada Maip**	**1.62**	**125**	⇓*i* P	**Pn**	**02 06 54.6**	**-1.7**
RCDM				*e*S	**Sn**	**02 07 13.6**	**-3.5**
RCDM				IAML		02 07 21.1	
	comp=E,250nm,0.2s						
CLCH	**Cerro Calan**	**1.77**	**118**	⇑*i* P	**Pg**	**02 07 02.7**	**+0.9**
CLCH				*e*S	**Sn**	**02 07 19.9**	**-0.9**
CLCH				IAML		02 07 24.0	
	comp=E,181nm,0.3s						
ANTU	**Antumapu**	**1.79**	**124**	*e*S	**Sn**	**02 07 19.8**	**-1.5**
FCH	**Farellones**	**1.93**	**113**	*e*P	**Pb**	**02 07 04.3**	**+1.1**
AUSP	**Uspallata**	**2.58**	**83**	*i* P	**Pn**	**02 07 11.4**	**+1.8**
TLL	**Tololo Astrono**	**2.76**	**30**	*e*P	**Pn**	**02 07 12.7**	**+0.5**
TLL				*i* S	**Sn**	**02 07 42.5**	**-3.2**
ARCO	**CERRO ARCO**	**2.94**	**96**	*i* P	**Pn**	**02 07 17.0**	**+2.5**
ARCO				*i* S	**Sn**	**02 07 49.5**	**-0.4**
ARCO				IAML		02 07 59.5	
	comp=Z,26nm,0.5s						
ASAL	**Salagasta**	**3.01**	**91**	*i* P	**Pn**	**02 07 17.2**	**+1.7**
ASAL				*i* S	**Sn**	**02 07 51.4**	**-0.2**
AAGR	**Agrelo**	**3.05**	**101**	*i* P	**Pn**	**02 07 19.0**	**+3.0**
AAGR				*i* S	**Sn**	**02 07 53.5**	**+1.0**
AMOG	**MOGNA**	**3.71**	**65**	*i* P	**Pn**	**02 07 26.4**	**+1.3**
AMOG				*i* S	**Sn**	**02 08 06.8**	**-2.0**

IDC 17 02:12:53.5±0.8, 0°.20S×119°.87E, h0km, mb4.1/9, mb1 4.2/11, mb1mx4.0/39, mbtmp4.2/11, ML3.9/2, MS3.3/9, Ms1 3.3/9, ms1mx3.0/46, Error ellipse: s-maj=36.8km s-min=16.0km az=79.0
DJA 17 02:12:55.7±0.5, 0°S±3°×12°0E±°, h10km, M4.9/7, mb5.3/1, mB5.1/1, MLv4.7/7, Mw(mB)4.5/1
ISCJB 17 02:12:57.0±0.3, 0°.34S±0°.05×119°.99E±0°.06, h45km, mb4.5/26, MS3.2/8, Error ellipse: s-maj=8.8km s-min=5.7km az=150.2
NEIC 17 02:12:58.6±0.9, 0°.30S×120°.00E, h42km±10km, mb4.5/10, Error ellipse: s-maj=11.9km s-min=7.1km az=60.0

ISC 17 02:12:59.4±0.5, 0°29S±0°05×120°05E±0°06, h45km, n53, σ2s53/54, mb4.5/26, MS3.2/8, 1D, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCI	**Palu**	**0.64**	**199**	P	Pn	02 13 04.0	-8.2
PCI				S	**Sn**	**02 13 12.8**	**-8.6**
MRSI	**Marisa**	**2.04**	**68**	P	**Pn**	**02 13 28.1**	**-3.2**
TTSI	**Tana Toraja**	**2.74**	**185**	P	**Pn**	**02 13 39.9**	**-1.0**
TTSI				S	**Sn**	**02 14 19.4**	**+6.6**
LUWI	**Luwuk**	**2.82**	**105**	P	**Pn**	**02 13 42.0**	**0.0**
LUWI				S	**Sn**	**02 14 18.8**	**+4.0**
LUWI	**Luwuk**	**2.82**	**105**	*e*Pn	**Pn**	**02 13 41.9**	**0.0**
LUWI				*e*Sn	**Sn**	**02 14 14.6**	**-0.3**
SPSI	**Sidrap Palu**	**3.66**	**184**	P	**Pn**	**02 13 50.3**	**-3.2**
KDI	**Kendari**	**4.46**	**145**	P	**Pn**	**02 14 00.0**	**-4.4**
KAPI	**Kappang**	**4.70**	**184**	Pn	**Pn**	**02 14 07.6**	**-0.2**
	9.0nm,0.3s,baz=8.4,slow=11,SNR=19						
KAPI				Sn	**Sn**	**02 15 05.6**	**+4.6**
	3.9nm,0.3s,baz=163,slow=19,SNR=3.9						
KAPI				LR	LR	02 16 19.2	
	comp=Z,845nm,19.0s,baz=342,slow=43						
KAPI	**Kappang**	**4.70**	**184**	*e*Pn	**Pn**	**02 14 06.8**	**-1.0**
KAPI				Sn	**Sn**	**02 15 05.6**	**+4.6**
	comp=Z,23nm,18.6s,baz=313,slow=36						
CMAR	**Chiang Mai Arr**	**27.88**	**313**	LR	LR	02 31 19.1	
	comp=Z,42nm,18.3s,baz=50,slow=40						
KMI	**Kunming**	**30.31**	**328**	P	**P**	**02 19 08.0**	**+1.0**
KMI				pmax	pmax		
	comp=Z,8.0nm,1.0s						
KSAR	**Wonju Array Be**	**38.24**	**10**	P	**P**	**02 20 16.3**	**+1.1**
KSRS	**Korea Array**	**38.26**	**10**	P	**P**	**02 20 16.3**	**+1.0**
	comp=Z,1.7nm,0.8s,baz=190,slow=10,SNR=4.1						
KSRS				LR	LR	02 37 20.4	
	comp=Z,49nm,18.6s,baz=166,slow=38						
BJI	**Beijing**	**40.30**	**355**	P	**P**	**02 20 33.0**	**+0.8**
BJI				pmax	pmax		
	comp=Z,11nm,0.8s						
MJAR	**Matsushiro Arr**	**40.34**	**23**	P	**P**	**02 20 31.2**	**-1.5**
	comp=Z,2.1nm,0.9s,baz=201,slow=8.4,SNR=8.4						
MJAR				LR	LR	02 38 19.4	
	comp=Z,22nm,19.5s,baz=235,slow=38						
HHC	**Hu-ho-hao-te**	**41.67**	**350**	‖P	**P**	**02 20 46.6**	**+2.9**
HHC				PP	**PnPn**	**02 22 30.0**	**+4.1**
HHC				S	**S**	**02 27 03.4**	**+6.0**
HHC				pmax	pmax		
	comp=Z,12nm,1.4s						
HHC				pmax	pmax		
	comp=Z,130nm,4.6s						
HHC				LR	LR		
	comp=N,190nm,16.2s						
HHC				LR	LR		
	comp=E,180nm,14.9s						
HHC				LR	LR		
	comp=Z,81nm,16.2s						
GTA	**Gaotai**	**43.64**	**337**	*e*P	**P**	**02 21 00.6**	**+0.8**
GTA				pP	pP	02 21 10.0	-2.1
GTA				sP	sP	02 21 13.8	-3.6
GTA				pmax	pmax		
	comp=Z,18nm,0.9s						
CN2	**Changchun**	**44.17**	**6**	*e*P	P	02 21 11.6	+7.9
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
USRK	**Ussuriysk Ar.**	**45.56**	**12**	P	**P**	**02 21 14.6**	**-0.2**
	comp=Z,1.7nm,0.6s,baz=194,slow=3.7,SNR=5.2						
SONM	**Songino Array**	**49.39**	**348**	P	**P**	**02 21 45.1**	**+0.4**
	comp=Z,2.6nm,0.6s,baz=168,slow=8.9,SNR=14						
SONA1	**Songino Array**	**49.40**	**348**	*e*P	**P**	**02 21 44.8**	**0.0**
WMQ	**Urumqi**	**52.56**	**331**	*e*P	**P**	**02 22 10.1**	**+1.6**
KSH	**Kashi**	**56.46**	**320**	*e*P	**P**	**02 22 37.4**	**+0.4**
KSH				*e*pP	PcP	02 23 26.8	-6.7
KSH				*e*sP	PP	02 23 49.1	-54
KSH				S	S	02 29 50.4	-35
KSH				ScS	ScS	02 32 00.3	-23
KSH				pmax	pmax		
	comp=Z,37nm,3.3s						
MK01	**Makanchi Array**	**57.33**	**330**	*e*P	**P**	**02 22 42.7**	**-0.2**
MK31	**Makanchi Array**	**57.35**	**330**	*e*P	**P**	**02 22 43.3**	**+0.2**
MKAR	**Makanchi Array**	**57.35**	**330**	P	**P**	**02 22 42.9**	**-0.1**
	comp=Z,3.1nm,0.7s,baz=127,slow=8.8,SNR=21						
MKAR	**Makanchi Array**	**57.35**	**330**	*e*P	**P**	**02 22 43.3**	**+0.2**
KBL	**Kabul**	**58.90**	**311**	*e*P	**P**	**02 22 53.4**	**-0.9**
	comp=Z,7.4nm,0.8s						
AAK	**Ala-Archa**	**59.12**	**322**	*e*P	**P**	**02 22 55.7**	**0.0**
	comp=Z,7.3nm,0.3s						
ZAA0	**Zalesovo Array**	**61.40**	**337**	*e*P	**P**	**02 23 10.0**	**-0.8**
ZALV	**Zalesovo Beam**	**61.40**	**337**	P	**P**	**02 23 09.9**	**-0.9**
	comp=Z,4.8nm,0.8s,baz=139,slow=6.5,SNR=17						
ZALV				LR	LR	02 52 07.0	
	comp=Z,17nm,18.6s,baz=70,slow=38						
PETK	**Petropavlovsk-**	**61.75**	**25**	LR	LR	02 50 09.1	
	comp=Z,18nm,20.1s,baz=222,slow=36						
KURK	**Kurchatov**	**61.79**	**331**	*e*P	**P**	**02 23 12.4**	**-1.0**
	comp=Z,89nm,0.9s						
MA2	**Magadan**	**64.33**	**17**	LR	LR	02 50 23.5	
	comp=Z,15nm,20.9s,baz=349,slow=35						
BRVK	**Borovoye**	**67.31**	**330**	*e*P	**P**	**02 23 49.2**	**-0.2**
	comp=Z,4.0nm,0.9s						
ZRNK	**Zerenda**	**67.89**	**329**	*e*P	**P**	**02 23 52.7**	**-0.4**
	comp=Z,5.5nm,0.8s						
GEYT	**Alibeck**	**68.35**	**311**	P	**P**	**02 23 55.8**	**-0.6**
	comp=Z,1.3nm,0.4s,baz=114,slow=6.6,SNR=3.9						
ABKAR	**Akbulak array**	**71.17**	**323**	*e*P	**P**	**02 24 12.9**	**-0.5**
	comp=Z,2.6nm,0.7s						
TIXI	**Tiksi**	**72.05**	**3**	*e*P	**P**	**02 24 17.9**	**-0.4**
	comp=Z,9.3nm,1.1s						
ARU	**Arti**	**74.87**	**330**	*e*P	**P**	**02 24 33.9**	**-1.4**
	comp=Z,12nm,0.9s						
BRTR	**Keskin Array B**	**87.42**	**310**	P	**P**	**02 25 40.6**	**-1.8**
	comp=Z,0.7nm,0.7s,baz=85,slow=4.8,SNR=5.5						
KTH	**Kantishna Hill**	**89.83**	**27**	*e*P	**P**	**02 25 51.4**	**-1.8**
	comp=Z,1.2nm,0.6s						
COLA	**College**	**91.16**	**25**	*e*P	**P**	**02 25 58.5**	**-0.8**
	comp=Z,2.4nm,0.7s						

IDC 17 02:26:18.5±4.9, 28°06S×176°42W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/32, mbtmp3.7/2, Error ellipse: s-maj=115.4km s-min=37.3km az=122.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.78**	**228**	Pn	Pn	02 26 51.0	+0.6
	103nm,0.3s,baz=126,slow=21,SNR=4.8						
RAO				Sn	Sn	02 27 13.4	-0.4
	314nm,0.3s,baz=175,slow=23,SNR=10						
ASAR	**Alice Springs**	**44.67**	**264**	P	P	02 34 32.9	-0.5
	0.8nm,0.5s,baz=105,slow=7.7,SNR=16						
WRA	**Warramunga Arr**	**45.46**	**269**	P	P	02 34 40.0	+0.4
	0.4nm,0.5s,baz=109,slow=7.8,SNR=9.1						
FINES	**FINESS Array B**	**143.39**	**342**	PKP	PKPdf	02 45 52.9	-1.4
	0.9nm,0.5s,baz=54,slow=3.6,SNR=9.6						

IDC 17 02:29:26.8±1.4, 39°.30N×144°.59E, h0km, mb3.5/3, mb1 3.8/5, mb1mx3.4/55, mbtmp3.5/5, ML3.0/2, MS3.4/3, Ms1 3.4/3, ms1mx2.5/36, Error ellipse: s-maj=34.5km s-min=26.9km az=120.0
JMA 17 02:29:48.2±0.1, 38°.97N×142°.32E, h34km±2km, M2.7

ISC 17 02:29:33.8±1.5, 39°15N±0°08×143°43E±0°09, h20km, n18, σ3s05/16, mb3.8/3, MS3.2/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.31**	**289**	P	**Pb**	**02 30 01.5**	**+3.7**
MIYJ				S	**Sn**	**02 30 11.0**	**-3.0**
OFUJ	**Ofunato**	**1.37**	**268**	P	**Pn**	**02 29 59.0**	**+1.3**
OFUJ				S	Sn	02 30 06.4	-8.9
JTH	**Tanohata**	**1.44**	**304**	*e*S	**Sb**	**02 30 20.1**	**+2.2**
JOM	**Ohasama**	**1.69**	**282**	P	**Pb**	**02 30 05.3**	**+1.2**
JOM				S	**Sn**	**02 30 17.5**	**-5.6**
JMK	**Ichinoseki**	**1.73**	**264**	P	**Pn**	**02 30 03.9**	**+1.2**
JMK				S	Sn	02 30 15.0	-9.1
JIO	**Ouri**	**1.76**	**247**	P	**Pn**	**02 30 04.2**	**+1.0**
JIO				S	Sn	02 30 15.2	-10
JRG	**Rokugo**	**2.18**	**277**	P	**Pb**	**02 30 12.2**	**-0.3**
JRG				*e*S	**Sn**	**02 30 30.4**	**-4.9**
JOU	**Okura**	**2.30**	**251**	P	**Pn**	**02 30 12.5**	**+2.0**
JOU				S	Sn	02 30 30.2	-8.0
JYK	**Kaneyama**	**2.40**	**265**	P	**Pn**	**02 30 14.1**	**+2.2**
MJAR	**Matsushiro Arr**	**4.88**	**239**	Pn	Pn	02 30 51.7	+5.6
	2.7nm,0.3s,baz=55,slow=11,SNR=46						
MJAR				Sn	**Sb**	**02 31 57.5**	**+0.6**
	0.1nm,0.3s,baz=60,slow=10,SNR=2.7						
ASAJ	**Asahikawa**	**5.00**	**353**	Sn	**Sn**	**02 31 40.4**	**-4.5**
	0.8nm,0.3s,baz=18,slow=22,SNR=5.8						
USRK	**Ussuriysk Ar.**	**9.93**	**304**	Pn	Pn	02 32 01.5	+6.3
	0.2nm,0.3s,baz=116,slow=13,SNR=4.3						
KURBB	**Kurchatov Arra**	**45.98**	**307**	P	**P**	**02 37 56.3**	**+0.9**
	0.4nm,0.8s,baz=80,slow=8.7,SNR=4.1						
ILAR	**Eielson Array**	**46.86**	**33**	P	P	02 37 53.0	-9.1
	0.7nm,0.7s,baz=262,slow=6.9,SNR=11						
INK	**Inuvik**	**51.78**	**28**	LR	LR	03 00 55.6	
	comp=Z,8.6nm,19.2s,baz=263,slow=37						
WRA	**Warramunga Arr**	**59.39**	**190**	P	**P**	**02 39 33.4**	**-1.4**
	1.1nm,1.3s,baz=13,slow=7.2,SNR=3.0						
ARCES	**ARCESS Array B**	**62.58**	**340**	LR	LR	03 13 32.7	
	comp=Z,16nm,18.7s,baz=74,slow=42						
DZM	**Mont Dzumac**	**64.60**	**156**	LR	LR	03 01 58.6	
	comp=Z,186nm,21.2s,baz=201,slow=30						

ISCJB 17 02:30:16.9±2.3, 26°.7S±0°.4×67°.5E±0°.4, h10km, mb3.8/9, MS3.1/1, Error ellipse: s-maj=71.6km s-min=24.6km az=42.4
IDC 17 02:30:17.1±2.5, 26°.72S×67°.49E, h0km, mb3.8/8, mb1 4.0/8, mb1mx3.6/54, mbtmp3.8/8, MS3.0/1, Ms1 3.2/1, ms1mx2.6/31, Error ellipse: s-maj=80.4km s-min=26.3km az=43.0
NEIC 17 02:30:18.7±1.7, 26°.73S×67°.48E, h10km, mb4.1/1, Error ellipse: s-maj=53.4km s-min=18.1km az=223.0

ISC 17 02:30:18.8±2.7, 26°7S±0°5×67°5E±0°4, h10km, n10, σ0s46/10, mb4.0/9, Indian Ocean Triple Junction

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**54.31**	**38**	P	**P**	**02 39 45.8**	**+0.2**
	0.9nm,0.3s,baz=221,slow=8.0,SNR=5.9						
CMAR				LR	LR	02 59 25.8	
	comp=Z,14nm,18.5s,baz=215,slow=32						
ASAR	**Alice Springs**	**59.56**	**103**	P	**P**	**02 40 22.9**	**0.0**
	0.7nm,0.5s,baz=251,slow=6.4,SNR=13						
WRA	**Warramunga Arr**	**61.15**	**99**	P	**P**	**02 40 33.7**	**-0.1**
	1.0nm,0.8s,baz=253,slow=6.7,SNR=4.5						
BRTR	**Keskin Array B**	**73.26**	**333**	P	**P**	**02 41 50.6**	**+0.3**
	0.5nm,0.7s,baz=126,slow=6.2,SNR=3.2						
MKAR	**Makanchi Array**	**74.40**	**11**	P	**P**	**02 41 56.0**	**-0.7**
	0.4nm,0.7s,baz=191,slow=5.9,SNR=2.6						
ABKAR	**Akbulak array**	**75.94**	**355**	*e*P	**P**	**02 42 05.3**	**-0.2**

MJAR	**Matsushiro Arr**	**4.85**	**219**	P		**Pn**	**02 37 35.9**	**+3.7**
	0.5nm,0.3s,baz=28,slow=13,SNR=14							
USRK	**Ussuriysk Ar.**	**8.38**	**301**	P		**Pn**	**02 38 23.8**	**+3.3**
	0.4nm,0.3s,baz=114,slow=14,SNR=7.9							
ZALV	**Zalesovo Beam**	**40.10**	**310**	P		**P**	**02 43 51.5**	**-0.4**
	1.1nm,0.4s,baz=93,slow=9.0,SNR=5.0							
MKAR	**Makanchi Array**	**42.84**	**299**	P		**P**	**02 44 14.5**	**+0.1**
	0.4nm,0.5s,baz=94,slow=7.4,SNR=2.9							
KURBB	**Kurchatov Arra**	**44.40**	**305**	P		**P**	**02 44 26.6**	**-0.3**
	1.1nm,0.5s,baz=80,slow=8.6,SNR=12							
WRA	**Warramunga Arr**	**60.41**	**188**	P		**P**	**02 46 24.7**	**-0.9**
	0.3nm,0.8s,baz=5.6,slow=7.5,SNR=2.7							
FINES	**FINESS Array B**	**66.11**	**332**	P		**P**	**02 47 02.3**	**-0.6**
	1.5nm,1.0s,baz=81,slow=8.6,SNR=3.2							

IDC 17 02:47:37.9±4.8, 26.80S×67.16E, h0km, mb3.7/5, mb1 3.9/5, mb1mx3.5/33, mbtmp3.7/5, Error ellipse: s-maj=140.8km s-min=35.0km az=54.0, Indian Ocean Triple Junction

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**54.55**	**38**	P	P	02 57 07.6	-0.4
	0.5nm,0.4s,baz=235,slow=6.4,SNR=4.2						
ASAR	**Alice Springs**	**59.83**	**103**	P	P	02 57 45.0	-0.5
	0.4nm,0.7s,baz=248,slow=6.2,SNR=9.4						
WRA	**Warramunga Arr**	**61.44**	**99**	P	P	02 57 57.0	+0.5
	0.4nm,0.8s,baz=251,slow=6.1,SNR=3.0						
MKAR	**Makanchi Array**	**74.52**	**11**	P	P	02 59 17.9	-0.3
	0.7nm,0.9s,baz=197,slow=6.9,SNR=4.0						
ZALV	**Zalesovo Beam**	**81.85**	**10**	P	P	02 59 59.2	+0.6
	0.5nm,0.3s,baz=196,slow=4.1,SNR=4.5						

MEX 17 02:51:07.4±0.7, 15.21N×92.37W, h192km±10km, MD3.9, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.09**	**12**	*i* P	Pn	02 51 36.2	-1.0
CCIG				*i* S	Sn	02 51 57.7	-2.8

SCB 17 03:08:10.5±0.6, 10.82S×71.32W, h380km, Ml4.2/2, Error ellipse: s-maj=19.5km s-min=11.6km az=89.0
ISCJB 17 03:08:18.5±0.3, 10.97S±0.04×70.67W±0.06, h500km, mb3.8/11, Error ellipse: s-maj=8.4km s-min=4.4km az=152.9
IDC 17 03:08:19.0±0.5, 11.00S×70.74W, h512km±5km, mb3.6/10, mb1 3.8/17, mb1mx3.6/33, mbtmp4.6/17, Error ellipse: s-maj=13.2km s-min=10.1km az=54.0

ISC 17 03:08:18.3±0.4, 11.04S±0.06×70.74W±0.07, h500km, n46, σ1s27/54, mb4.0/11, 2C-2D, Peru-Brazil border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BBOB	**La Paz, Bander**	**5.67**	**154**	*i* P	**P**	**03 09 53.8**	**+1.7**
BBOB				*e*S	**S**	**03 11 08.7**	**+0.1**
	110nm,1.0s						
LPAZ	**La Paz**	**5.80**	**154**	P	**P**	**03 09 55.6**	**+2.1**
	12nm,0.3s,baz=327,slow=8.3,SNR=331						
LPAZ				S	**S**	**03 11 10.8**	**-0.3**
	0.6nm,0.3s,baz=168,slow=17,SNR=7.3						
LPAZ	**La Paz**	**5.80**	**154**	*i* P	**P**	**03 09 55.4**	**+1.9**
LPAZ				*e*S	**S**	**03 11 10.9**	**-0.2**
BBOD	**La Paz, Gloria**	**5.94**	**160**	*e*P	**P**	**03 09 56.3**	**+1.6**
BBOD				*e*S	**S**	**03 11 12.4**	**-1.0**
	130nm,0.9s						
NNA	**Nana**	**6.05**	**260**	P	**P**	**03 09 56.4**	**+1.2**
	3.5nm,0.3s,baz=94,slow=4.8,SNR=7.9						
NNA				S	**S**	**03 11 15.1**	**+0.6**
	1.8nm,0.3s,baz=202,slow=17,SNR=6.9						
BBOE	**La Paz, Chanca**	**6.34**	**155**	*i* Pn	**P**	**03 10 01.2**	**+2.7**
BBOJ	**La Paz, Jacaqu**	**6.40**	**158**	*e*Pn	**P**	**03 10 01.8**	**+2.7**
ATAH	**Atahualpa**	**8.49**	**297**	P	**P**	**03 10 22.9**	**+2.5**
	6.0nm,0.3s,baz=125,slow=8.2,SNR=36						
ATAH				S	**S**	**03 11 59.8**	**-0.7**
	1.6nm,0.3s,baz=22,slow=19,SNR=3.4						
SIV	**San Ignacio**	**10.61**	**119**	P	**P**	**03 10 43.9**	**+1.6**
	9.9nm,0.3s,baz=301,slow=11,SNR=76						
SIV	**San Ignacio**	**10.61**	**119**	*e*P	**P**	**03 10 43.7**	**+1.4**
MOCB	**Mochara**	**11.28**	**155**	*e*P	**P**	**03 10 50.2**	**+0.5**
LVC	**Limon Verde**	**11.64**	**172**	P	**P**	**03 10 54.9**	**+1.4**
	172nm,0.3s,baz=356,slow=7.1,SNR=11						
LVC				S	S	03 12 52.9	-8.3
	69nm,0.3s,baz=288,slow=19,SNR=4.6						
CMBC	**Cumbal**	**13.83**	**329**	*e*P	**P**	**03 11 18.8**	**+1.9**
CRUC	**La Cruz**	**13.96**	**333**	*e*P	**P**	**03 11 20.7**	**+2.6**
SJAC	**San Juan de Ar**	**14.57**	**347**	*e*P	**P**	**03 11 22.7**	**-1.6**
PTGA	**Pitinga**	**14.81**	**47**	P	**P**	**03 11 27.8**	**+1.1**
	1.4nm,0.3s,baz=219,slow=16,SNR=17						
PTGA				S	**S**	**03 14 02.9**	**+0.9**
	0.3nm,0.3s,baz=212,slow=18,SNR=4.1						
PRAC	**Prado**	**15.22**	**344**	*e*P	**P**	**03 11 30.3**	**-0.7**
GRGC	**Isla de Gorgon**	**15.78**	**332**	*e*P	P	03 11 25.5	-11
RUSC	**La Rusia**	**16.98**	**352**	*e*P	**P**	**03 11 49.1**	**-0.6**
NORC	**Norcasia**	**17.00**	**346**	*e*P	**P**	**03 11 47.4**	**-2.0**
BARC	**Barichara**	**17.68**	**352**	*e*P	**P**	**03 11 55.5**	**-0.7**
HELC	**Santa Helena**	**17.77**	**344**	*e*P	**P**	**03 11 56.0**	**-1.1**
BTLC	**Betulia, Santa**	**18.01**	**352**	*e*P	**P**	**03 11 59.9**	**+0.6**
CBRI	**Barrientos, No**	**18.74**	**354**	*e*P	**P**	**03 12 05.5**	**-0.3**
GRMC	**Gramalote, San**	**18.74**	**354**	*e*P	**P**	**03 12 06.8**	**+1.0**
CPUP	**Villa Florida**	**19.79**	**142**	P	**P**	**03 12 14.6**	**-0.5**
	0.7nm,0.3s,baz=321,slow=9.8,SNR=19						
PLCA	**Paso Flores**	**29.58**	**180**	P	**P**	**03 13 41.2**	**-0.8**
	2.0nm,0.7s,baz=19,slow=10,SNR=5.3						
TXAR	**Lajitas Array**	**51.18**	**322**	P	**P**	**03 16 35.3**	**+0.3**
	0.2nm,0.5s,baz=116,slow=8.1,SNR=3.0						
ULM	**Lac du Bonnet**	**64.86**	**342**	P	**P**	**03 18 06.1**	**-1.4**
	4.0nm,0.3s,baz=162,slow=8.0,SNR=9.0						
DBIC	**Dimbokro**	**67.88**	**78**	P	**P**	**03 18 26.5**	**-0.5**
	5.5nm,0.6s,baz=236,slow=7.0,SNR=13						
SNAA	**Sanae**	**72.71**	**162**	P	**P**	**03 18 54.6**	**-0.1**
	4.3nm,0.6s,baz=285,slow=7.3,SNR=56						
TORD	**Torodi Ar. Bea**	**75.78**	**73**	P	**P**	**03 19 12.3**	**-0.7**
	7.1nm,0.7s,baz=256,slow=4.0,SNR=60						
TORD				pP	**pP**	**03 21 01.7**	**+1.6**
	1.0nm,0.7s,baz=260,slow=4.9,SNR=4.5						
ESDC	**Sonseca Array**	**79.76**	**46**	P	**P**	**03 19 34.6**	**+0.5**
	0.2nm,0.4s,baz=265,slow=5.2,SNR=5.7						
YKA	**Yellowknife Ar**	**80.78**	**341**	P	**P**	**03 19 38.1**	**-0.8**
	3.5nm,0.7s,baz=136,slow=5.4,SNR=31						
YKA				pP	**pP**	**03 21 28.2**	**+0.6**
	0.7nm,0.8s,baz=137,slow=6.7,SNR=4.2						
VNDA	**Vanda**	**86.80**	**190**	P	**P**	**03 20 09.2**	**+0.6**
	1.3nm,0.9s,baz=98,slow=4.5,SNR=5.3						
SYO	**Syowa Base**	**86.88**	**160**	*e*P	**P**	**03 20 07.4**	**-1.7**
GERES	**GERESS Array B**	**94.59**	**41**	P	**P**	**03 20 44.5**	**-0.7**
	0.3nm,0.5s,baz=245,slow=4.0,SNR=3.9						
MAW	**Mawson**	**94.81**	**164**	P	**P**	**03 20 45.1**	**-0.7**
	1.2nm,0.7s,baz=203,slow=7.7,SNR=4.8						
ZALV	**Zalesovo Beam**	**132.98**	**20**	PKP	**PKPdf**	**03 26 36.2**	**-0.2**
	5.0nm,0.6s,baz=276,slow=2.5,SNR=22						
MKAR	**Makanchi Array**	**137.68**	**28**	PKP	**PKPdf**	**03 26 44.8**	**-0.5**
	0.9nm,0.7s,baz=338,slow=1.6,SNR=5.1						
ASAR	**Alice Springs**	**137.92**	**215**	PKP	**PKPdf**	**03 26 45.5**	**-1.0**
	0.8nm,0.6s,baz=131,slow=2.1,SNR=6.3						
ASAR				pPKP	**pPKPdf**	**03 28 46.4**	**+1.1**
	0.3nm,0.3s,baz=120,slow=1.6,SNR=2.5						
WRA	**Warramunga Arr**	**140.54**	**219**	PKhKP	PKPpre	03 26 42.9	
	0.4nm,0.4s,baz=148,slow=2.9,SNR=13						
WRA				PKP	**PKPdf**	**03 26 50.3**	**-1.1**
	2.0nm,0.6s,baz=138,slow=1.9,SNR=13						
WRA				pPKP	pPKPdf	03 28 51.9	+1.8
	1.3nm,0.8s,baz=141,slow=1.9,SNR=6.5						
SONM	**Songino Array**	**143.24**	**3**	PKP	PKPab	03 26 53.4	+0.2
	3.0nm,0.8s,baz=341,slow=2.7,SNR=15						
MJAR	**Matsushiro Arr**	**143.57**	**319**	PKP	PKPab	03 26 53.7	-1.0
	3.1nm,0.8s,baz=66,slow=1.4,SNR=14						
FITZ	**Fitzroy Crossi**	**146.84**	**209**	PKPbc	**PKPbc**	**03 27 04.5**	**-0.5**
	8.2nm,0.7s,baz=174,slow=1.9,SNR=20						
FITZ				pPKPbc	pPKPbc	03 29 04.1	+2.3
	6.8nm,0.8s,baz=191,slow=4.3,SNR=8.2						
KSRS	**Korea Array**	**148.80**	**331**	PKPbc	**PKPbc**	**03 27 09.3**	**-0.2**
	4.7nm,0.7s,baz=23,slow=2.4,SNR=16						
KSRS				pPKPbc	**pPKPbc**	**03 29 07.0**	**0.0**
	1.3nm,0.7s,baz=21,slow=2.2,SNR=3.4						

ISCJB 17 03:28:26.9±0.9, 56.44N±0.04×163.06E±0.05, h10km±5km, mb3.6/3, Error ellipse: s-maj=6.9km s-min=4.9km az=15.4
KRSC 17 03:28:26.3±1.1, 56.38N×163.12E, h15km±7km, ML3.8
IDC 17 03:28:29.0±1.6, 56.75N×162.39E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.4/44, mbtmp3.5/4, ML2.1/1, Error ellipse: s-maj=50.2km s-min=32.0km az=143.0

ISC 17 03:28:25.6±1.7, 56.47N±0.05×163.10E±0.04, h4km±11km, n33, σ1s87/45, mb3.9/3, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KBG	**Krutoberegovo**	**0.31**	**226**	*i* P	**Pg**	**03 28 32.1**	**+0.5**
KBG				*e*S	**Sg**	**03 28 36.1**	**+0.5**
SMKR	**Semkarok**	**0.91**	**278**	*i* P	**Pb**	**03 28 43.0**	**-1.1**
SMKR				*i* S	**Sb**	**03 28 55.2**	**-1.4**
BDR	**Baidarnaya**	**1.05**	**276**	*i* P	**Pb**	**03 28 45.8**	**-0.7**
SRKR	**Sorokina**	**1.09**	**280**	*i* P	**Pb**	**03 28 46.3**	**-0.7**
SRKR				*e*S	**Sb**	**03 29 00.5**	**-1.1**
CIRR	**Tsirk**	**1.36**	**256**	*i* P	**Pb**	**03 28 51.1**	**-0.7**
ZLN	**Zelenaya**	**1.36**	**251**	*i* P	**Pn**	**03 28 50.8**	**-0.7**
ZLN				*e*S	**Sn**	**03 29 08.0**	**-2.1**
KLY	**Klyuchi**	**1.37**	**264**	*e*P	**Pn**	**03 28 48.6**	**-3.0**
KLY				*e*S	**Sn**	**03 29 04.4**	**-5.8**
LGNR	**Loginova**	**1.40**	**255**	*e*P	**Pb**	**03 28 51.9**	**-0.6**
KRSR	**Krestovskiy**	**1.44**	**261**	*e*P	**Pn**	**03 28 51.2**	**-1.4**
KRSR				*e*S	**Sn**	**03 29 10.2**	**-1.7**
BZMR	**Bezymyannaya**	**1.56**	**251**	*e*P	**Pb**	**03 28 54.7**	**-0.4**
KIRR	**Kirishev**	**1.63**	**252**	*e*P	**Pb**	**03 28 55.7**	**-0.6**
KIRR				*e*S	**Sb**	**03 29 16.5**	**-0.7**
KPT	**Kopyto**	**1.69**	**254**	*e*P	**Pb**	**03 28 57.5**	**+0.2**
KPT				*e*S	**Sb**	**03 29 18.1**	**-0.8**
KMNR	**Kamenistaya**	**1.76**	**247**	*e*P	**Pb**	**03 28 58.5**	**0.0**
KMNR				*e*S	**Sb**	**03 29 20.5**	**-0.5**
KOZ	**Kozyrevsk**	**1.85**	**258**	*e*P	**Pb**	**03 29 00.1**	**+0.1**
KOZ				*e*S	**Sb**	**03 29 23.8**	**+0.3**
BKI	**Bering**	**2.06**	**127**	*i* P	**Pb**	**03 29 01.4**	**-2.1**
BKI				*i* S	**Sb**	**03 29 26.7**	**-2.7**
MKZ	**Mys Kozlova**	**2.07**	**203**	*e*P	**Pb**	**03 29 01.3**	**-2.5**
MKZ				*e*S	**Sb**	**03 29 27.8**	**-2.1**
ESO	**Esso**	**2.52**	**259**	*e*P	**Pn**	**03 29 08.8**	**+1.4**
ESO				*e*S	**Sn**	**03 29 38.3**	**-0.3**
KII	**Karymskiy**	**3.21**	**222**	*e*P	**Pn**	**03 29 18.3**	**+1.3**
KII				*e*S	**Sn**	**03 29 55.4**	**-0.3**
SPN	**Mys Shipunski**	**3.82**	**209**	*e*P	**Pn**	**03 29 26.8**	**+1.6**
SPN				*e*S	**Sn**	**03 30 09.9**	**-0.7**
NLC	**Nalytchevo**	**3.96**	**215**	*e*S	**Sn**	**03 30 14.0**	**+0.1**
KRER	**Koryakskii**	**4.05**	**220**	*e*P	**Pn**	**03 29 30.5**	**+1.9**
GNL	**Ganaly**	**4.07**	**229**	*e*P	**Pn**	**03 29 29.9**	**+1.2**
AVH	**Avacha**	**4.08**	**220**	*e*P	**Pn**	**03 29 30.9**	**+2.0**
UGLR	**Uglovaya**	**4.10**	**219**	*i* P	**Pn**	**03 29 31.1**	**+1.9**
DALK	**Dalny**	**4.27**	**218**	*e*P	**Pn**	**03 29 34.2**	**+2.8**
PETK	**Petropavlovsk-**	**4.60**	**225**	Pn	**Pn**	**03 29 38.3**	**+2.4**
	0.5nm,0.3s,baz=54,slow=16,SNR=5.1						
PETK				Sn	**Sg**	**03 30 51.7**	**-1.4**
	0.3nm,0.3s,baz=94,slow=39,SNR=2.4						
RUS	**Russkaya**	**4.85**	**215**	*e*P	**Pn**	**03 29 42.5**	**+3.1**
ILAR	**Eielson Array**	**25.25**	**50**	P	**P**	**03 33 56.2**	**+3.8**
	0.4nm,0.6s,baz=255,slow=8.6,SNR=6.2						
H11N2	**WAKE ISLAND Hy**	**36.80**	**174**	T	T	04 14 21.0	
	baz=357,slow=76,SNR=29						
H11N3	**WAKE ISLAND Hy**	**36.81**	**174**	T	T	04 14 22.0	
	baz=357,slow=76,SNR=19						
H11N1	**WAKE ISLAND Hy**	**36.81**	**174**	T	T	04 14 22.3	
	baz=357,slow=76,SNR=23						
FINES	**FINESS Array B**	**57.69**	**337**	P	**P**	**03 38 17.7**	**+1.0**
	1.8nm,1.0s,baz=27,slow=9.0,SNR=3.9						
TXAR	**Lajitas Array**	**67.78**	**70**	P	P	03 39 31.4	+6.8
	0.5nm,0.6s,baz=314,slow=4.9,SNR=5.7						

IDC 17 03:42:49.6±5.5, 28.01S×176.51W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/31, mbtmp3.5/2, Error ellipse: s-maj=116.5km s-min=51.0km az=112.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.75**	**225**	Pn	Pn	03 43 21.0	-0.2
	50nm,0.3s,baz=32,slow=23,SNR=4.5						
RAO				LR	LR	03 43 34.4	
	comp=Z,302nm,20.5s,baz=154,slow=26						
RAO				Sn	Sn	03 43 40.4	-3.9
	142nm,0.3s,baz=102,slow=20,SNR=5.2						
ASAR	**Alice Springs**	**44.60**	**264**	P	P	03 51 03.2	-0.6
	0.4nm,0.4s,baz=104,slow=7.4,SNR=6.0						
WRA	**Warramunga Arr**	**45.38**	**269**	P	P	03 51 10.5	+0.4
	0.2nm,0.3s,baz=108,slow=7.9,SNR=8.8						
FINES	**FINESS Array B**	**143.31**	**342**	PKP	PKPdf	04 02 24.3	-0.9
	1.5nm,0.8s,baz=64,slow=3.2,SNR=4.5						

MAN 17 03:43:29.9±4.4N×122.15E, h54km, mb4.2, ML3.0, MS2.8, 2C, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DCPH	**Dipolog City**	**1.46**	**125**	*e*P	Pn	03 43 54.9	+1.8
DCPH				*i* S	Sn	03 44 12.8	+1.6
TBP	**Tagbilaran**	**1.71**	**81**	*i* P	Pn	03 43 57.0	+0.6
LLP	**Lapu-Lapu**	**2.00**	**64**	*e*P	Pn	03 44 00.6	+0.3
LLP				*e*S	Sn	03 44 26.5	+2.3
RCP	**Roxas**	**2.19**	**161**	*e*P	Pn	03 44 05.0	+2.0
RCP				*e*S	Sn	03 44 30.2	+1.2

JMA 17 04:06:15.8±0.1, 34.97N×139.14E, h9km±1km, M0.9, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KTJJ	**Kamata 2**	**0.08**	**234**	P	Pg	04 06 18.2	+0.2
KTJJ				S	Sg	04 06 19.9	+0.4
AJI	**Ajiro2**	**0.09**	**332**	P	Pg	04 06 18.3	+0.2
AJI				S	Sg	04 06 19.9	+0.2
JIZS	**Izushimoda**	**0.33**	**221**	S	Sg	04 06 26.9	+0.2

IDC 17 04:06:27.7±6.2, 34.60N×141.34E, h55km±68km, mb3.1/2, mb1 3.4/3, mb1mx3.0/53, mbtmp3.1/3, ML2.6/1, MS3.0/1, Ms1 3.0/1, ms1mx2.4/14, Error ellipse: s-maj=91.1km s-min=18.1km az=105.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**1.96**	**222**	P	Pn	04 06 57.9	-0.7
	8.9nm,0.3s,baz=91,slow=22,SNR=4.7						
JHJ				S	Sn	04 07 22.2	+0.1
	15nm,0.3s,baz=70,slow=22,SNR=4.5						
MJAR	**Matsushiro Arr**	**3.20**	**308**	P	Pn	04 07 16.0	+0.4
	0.6nm,0.3s,baz=108,slow=8.0,SNR=7.2						
KSRS	**Korea Array**	**11.23**	**289**	LR	LR	04 14 02.6	
	comp=Z,66nm,18.2s,baz=158,slow=40						
H11N2	**WAKE ISLAND Hy**	**27.03**	**117**	T	T	04 40 09.5	
	baz=309,slow=75,SNR=6.7						
H11N1	**WAKE ISLAND Hy**	**27.04**	**117**	T	T	04 40 13.3	
	baz=309,slow=75,SNR=5.0						
H11N3	**WAKE ISLAND Hy**	**27.05**	**117**	T	T	04 40 14.0	
	baz=309,slow=75,SNR=3.9						
H11S3	**WAKE ISLAND Hy**	**27.66**	**119**	T	T	04 41 00.3	
	baz=308,slow=74						
H11S1	**WAKE ISLAND Hy**	**27.66**	**119**	T	T	04 40 58.8	
	baz=308,slow=74						
H11S2	**WAKE ISLAND Hy**	**27.68**	**119**	T	T	04 41 02.2	
	baz=308						
ILAR	**Eielson Array**	**51.59**	**31**	P	P	04 15 27.7	-0.4
	0.3nm,0.7s,baz=266,slow=6.1,SNR=5.8						
WRA	**Warramunga Arr**	**54.65**	**188**	P	P	04 15 51.2	+0.2
	0.6nm,1.0s,baz=1.2,slow=7.1,SNR=4.9						

MEX 17 04:24:56.8±0.7, 14.42N×92.47W, h104km±23km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.88**	**10**	*e*P	Pn	04 25 33.5	+5.3
CCIG				*i* S	Sn	04 25 56.8	+4.7

ATH 17 04:39:32.7, 37.67N×26.86E, h19km, ML3.4/7, Error ellipse: s-maj=1.8km s-min=0.9km az=64.0
ISCJB 17 04:39:33.7±0.4, 37.65N±0.02×26.85E±0.02, h8km±3km, Error ellipse: s-maj=3.1km s-min=2.5km az=145.0
IASPEI 17 04:39:33.9±0.8, 37.65N±0.02×26.87E±0.02, h11km±5km, Error ellipse: s-maj=4.0km s-min=2.9km az=43.1, GT5 selection from ISC bulletin GT5 identified by Bond¨ji and McLaughlin (2009) selection criteria Bond¨ji and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009
ISK 17 04:39:33.8, 37.65N×26.92E, h7km, ML3.6
DDA 17 04:39:33.6, 37.65N×26.88E, h10km, Ml3.6
THE 17 04:39:34.6, 37.65N×26.85E, h5km±1km, ML3.5/12, Error ellipse: s-maj=1.3km s-min=0.6km az=58.0
CSEM 17 04:39:34.0±0.1, 37.64N×26.84E, h8km, ML3.4, Error ellipse: s-maj=2.8km s-min=2.5km az=58.0

ISC 17 04:39:33.9±0.8, 37.64N±0.02×26.86E±0.02, h11km±4km, n138, σ0s91/183, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SMG	**Samos**	**0.07**	**346**	P	**Pg**	**04 39 36.2**	**-0.1**
SMG				S	**Sg**	**04 39 37.5**	**-0.5**
SMG	**Samos**	**0.07**	**346**	P	**Pg**	**04 39 36.7**	**+0.5**
SMG				S	**Sg**	**04 39 37.5**	**-0.5**
SMG	**Samos**	**0.07**	**346**	P	**Pg**	**04 39 36.7**	**+0.5**
SMG				S	**Sg**	**04 39 37.4**	**-0.5**
BODT	**Bodrum**	**0.68**	**148**	PG	**Pg**	**04 39 47.2**	**+0.1**
BODT	**Bodrum**	**0.68**	**148**	P	**Pg**	**04 39 47.1**	**0.0**
BODT				S	**Sb**	**04 39 57.2**	**-0.1**
BODT	**Bodrum**	**0.68**	**148**	*i* Pg	**Pg**	**04 39 47.2**	**+0.1**
BODT				S	**Sb**	**04 39 57.2**	**-0.1**
BDRM	**Kayabasi**	**0.74**	**141**	*i* P	**Pg**	**04 39 47.9**	**-0.3**
BDRM				*i* S	**Sb**	**04 39 59.4**	**+0.3**
BDRM	**Kayabasi**	**0.74**	**141**	P	**Pg**	**04 39 47.9**	**-0.3**
BDRM				S	**Sb**	**04 39 59.4**	**+0.3**
URLA	**Izmir**	**0.75**	**344**	*i* P	**Pg**	**04 39 48.1**	**-0.3**
URLA				*i* S	**Sg**	**04 39 58.1**	**-0.1**
URLA	**Izmir**	**0.75**	**344**	P	**Pg**	**04 39 48.1**	**-0.3**
URLA				S	**Sg**	**04 39 58.1**	**-0.1**
IZM	**Izmir**	**0.82**	**23**	PG	**Pg**	**04 39 49.3**	**-0.5**
IZM	**Izmir**	**0.82**	**23**	*i* Pg	**Pg**	**04 39 49.3**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.87**	**69**	PG	**Pg**	**04 39 50.4**	**-0.4**
AYDB				SG	**Sg**	**04 40 01.9**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.87**	**69**	*i* Pg	**Pg**	**04 39 50.4**	**-0.4**
AYDB				*i* Sg	**Sg**	**04 40 01.9**	**-0.3**
CHOS	**Chios island**	**0.98**	**320**	*e*PG	**Pn**	**04 39 53.4**	**-0.3**
CHOS	**Chios island**	**0.98**	**320**	P	**Pg**	**04 39 52.2**	**-0.6**
CHOS				S	**Sn**	**04 40 07.3**	**-0.4**
CHOS	**Chios island**	**0.98**	**320**	P	**Pb**	**04 39 53.1**	**+0.1**
CHOS	**Chios island**	**0.98**	**320**	*e*Pg	**Pn**	**04 39 53.4**	**-0.3**
CHOS				S	**Sg**	**04 40 05.2**	**-0.3**
CHOS	**Chios island**	**0.98**	**320**	P	**Pb**	**04 39 53.1**	**+0.1**
CHOS				S	**Sg**	**04 40 05.2**	**-0.3**
CHOS				AML	AML	04 40 09.1	
	comp=N,3801μm,0.4s						
CHOS				AML	AML	04 40 11.7	
	comp=E,4693μm,0.3s						
NISR	**Nisiros**	**1.05**	**168**	P	**Pn**	**04 39 54.6**	**0.0**
NISR	**Nisiros**	**1.05**	**168**	P	**Pn**	**04 39 54.6**	**0.0**
NISR	**Nisiros**	**1.05**	**168**	P	**Pn**	**04 39 54.6**	**0.0**
NISR				AML	AML	04 40 16.0	
	comp=E,8444μm,0.8s						
NISR				AML	AML	04 40 17.8	
	comp=N,3539μm,0.9s						
NIS1	**Nisyros Isl.**	**1.07**	**166**	*e*PG	**Pg**	**04 39 54.6**	**+0.1**
NIS1	**Nisyros Isl.**	**1.07**	**166**	P	**Pg**	**04 39 54.5**	**0.0**
NIS1				S	**Sn**	**04 40 10.3**	**+0.5**
NIS1	**Nisyros Isl.**	**1.07**	**166**	*e*Pg	**Pg**	**04 39 54.6**	**+0.1**
NIS1				S	**Sn**	**04 40 10.3**	**+0.5**
NIS1	**Nisyros Isl.**	**1.07**	**166**	P	**Pb**	**04 39 54.0**	**-0.5**
NIS1				AML	AML	04 40 18.1	
	comp=N,8386μm,0.6s						
NIS1				AML	AML	04 40 25.6	
	comp=E,9347μm,0.5s						
APE	**Apeiranthos**	**1.20**	**242**	*e*PN	**Pg**	**04 39 57.5**	**+0.5**
APE	**Apeiranthos**	**1.20**	**242**	P	**Pg**	**04 39 57.1**	**+0.1**
APE				S	**Sn**	**04 40 14.0**	**+0.9**
APE	**Apeiranthos**	**1.20**	**242**	P	**Pg**	**04 39 57.1**	**+0.1**
APE	**Apeiranthos**	**1.20**	**242**	*e*Pn	**Pg**	**04 39 57.6**	**+0.5**
APE				S	**Sb**	**04 40 12.2**	**-0.1**
APE	**Apeiranthos**	**1.20**	**242**	P	**Pb**	**04 39 56.8**	**0.0**
APE				S	**Sb**	**04 40 12.2**	**-0.1**
APE				AML	AML	04 40 16.9	
	comp=E,2221μm,0.2s						
APE				AML	AML	04 40 19.6	
	comp=N,2514μm,0.4s						
YER	**Yerkesik**	**1.24**	**114**	*e*PN	**

PTL	**Penteli**	**2.40**	**281**	P	**Pn**	**04 40 14.2**	**+0.9**
EREA	**Eretria**	**2.44**	**289**	P	**Pn**	**04 40 14.2**	**+0.4**
EREA				S	**Sn**	**04 40 43.8**	**+0.2**
VLY	**Voula,Athens**	**2.44**	**276**	P	**Pn**	**04 40 14.2**	**+0.5**
VLY				S	**Sn**	**04 40 44.0**	**+0.4**
VLY	**Voula,Athens**	**2.44**	**276**	P	**Pn**	**04 40 14.7**	**+1.0**
VLY				S	**Sn**	**04 40 44.0**	**+0.4**
VLY	**Voula,Athens**	**2.44**	**276**	P	**Pn**	**04 40 14.7**	**+1.0**
GEDZ	**Gediz**	**2.45**	**54**	*e*PN	**Pn**	**04 40 14.5**	**+0.6**
GEDZ	**Gediz**	**2.45**	**54**	*e*Pn	**Pn**	**04 40 14.5**	**+0.6**
GONE	**Gonen-Balikesi**	**2.49**	**15**	*e*PN	**Pn**	**04 40 16.1**	**+1.7**
GONE	**Gonen-Balikesi**	**2.49**	**15**	*e*Pn	**Pn**	**04 40 16.1**	**+1.7**
GDZ	**Gediz**	**2.52**	**54**	*i* P	**Pb**	**04 40 20.1**	**+0.8**
GDZ				*i* S	**Sg**	**04 40 53.5**	**-1.4**
GDZ	**Gediz**	**2.52**	**54**	P	**Pb**	**04 40 20.1**	**+0.8**
ZKR	**Zakros**	**2.58**	**192**	P	**Pn**	**04 40 13.9**	**-1.7**
ZKR	**Zakros**	**2.58**	**192**	P	**Pn**	**04 40 13.9**	**-1.7**
ELL	**Elmali**	**2.59**	**109**	*e*PN	**Pn**	**04 40 16.7**	**+0.7**
ELL	**Elmali**	**2.59**	**109**	*e*Pn	**Pn**	**04 40 16.7**	**+0.7**
LIA	**Limnos Island**	**2.60**	**330**	P	**Pn**	**04 40 15.9**	**-0.1**
LIA				S	**Sn**	**04 40 47.9**	**+0.2**
LIA	**Limnos Island**	**2.60**	**330**	P	**Pn**	**04 40 16.1**	**+0.1**
LIA				S	**Sn**	**04 40 47.9**	**+0.2**
AKAS	**Kas**	**2.61**	**122**	*i* P	**Pn**	**04 40 18.2**	**+1.9**
AKAS	**Kas**	**2.61**	**122**	P	**Pn**	**04 40 18.2**	**+1.9**
KSL	**Kastellorizon**	**2.64**	**123**	P	**Pn**	**04 40 17.8**	**+1.2**
KSL				S	**Sn**	**04 40 51.0**	**+2.4**
KSL	**Kastellorizon**	**2.64**	**123**	P	**Pn**	**04 40 18.5**	**+2.0**
KSL				AML	AML	04 41 02.4	
	comp=N,268μm,0.8s						
KSL				AML	AML	04 41 11.2	
	comp=E,553μm,0.7s						
LAST	**Lasithi**	**2.71**	**205**	P	**Pn**	**04 40 17.5**	**-0.1**
LAST	**Lasithi**	**2.71**	**205**	P	**Pn**	**04 40 17.5**	**-0.1**
TVSB	**Tavsanli**	**2.73**	**48**	*e*PN	**Pn**	**04 40 18.9**	**+1.1**
TVSB	**Tavsanli**	**2.73**	**48**	*e*Pn	**Pn**	**04 40 18.9**	**+1.1**
AOS	**Alonnisos**	**2.79**	**304**	P	**Pn**	**04 40 19.0**	**+0.4**
AOS	**Alonnisos**	**2.79**	**304**	P	**Pn**	**04 40 19.0**	**+0.4**
AOS	**Alonnisos**	**2.79**	**304**	P	**Pn**	**04 40 19.3**	**+0.7**
IDI	**Anoyia**	**2.83**	**215**	P	**Pn**	**04 40 18.5**	**-0.7**
IDI	**Anoyia**	**2.83**	**215**	P	**Pn**	**04 40 18.5**	**-0.7**
IDI				AML	AML	04 41 06.2	
	comp=E,194μm,0.5s						
IDI				AML	AML	04 41 13.6	
	comp=N,218μm,0.5s						
KORT	**Korkueli**	**2.86**	**102**	*i* P	**Pn**	**04 40 22.0**	**+2.4**
KORT	**Korkueli**	**2.86**	**102**	P	**Pn**	**04 40 22.0**	**+2.4**
SMTH	**Samothraki Isl**	**3.01**	**340**	P	**Pn**	**04 40 21.0**	**-0.6**
SMTH	**Samothraki Isl**	**3.01**	**340**	P	**Pn**	**04 40 20.9**	**-0.6**
SHUT	**Suhut-Afyon**	**3.05**	**72**	*e*PN	**Pn**	**04 40 23.1**	**+0.8**
SHUT	**Suhut-Afyon**	**3.05**	**72**	*e*Pn	**Pn**	**04 40 23.1**	**+0.8**
SART	**Tekirdag**	**3.05**	**5**	*i* P	**Pn**	**04 40 21.6**	**-0.7**
SART	**Tekirdag**	**3.05**	**5**	P	**Pn**	**04 40 21.6**	**-0.7**
ANTB	**Antalya**	**3.12**	**103**	*e*PN	**Pn**	**04 40 23.8**	**+0.7**
ANTB	**Antalya**	**3.12**	**103**	*e*Pn	**Pn**	**04 40 23.8**	**+0.7**
SUTC	**Sutluce-Ispart**	**3.29**	**92**	*e*PN	**Pn**	**04 40 26.5**	**+0.9**
SUTC	**Sutluce-Ispart**	**3.29**	**92**	*e*Pn	**Pn**	**04 40 26.5**	**+0.9**
ALN	**Alexandroupoli**	**3.31**	**349**	P	**Pn**	**04 40 25.1**	**-0.6**
ALN	**Alexandroupoli**	**3.31**	**349**	P	**Pn**	**04 40 25.1**	**-0.6**
ANKY	**Antikythira Is**	**3.36**	**239**	P	**Pn**	**04 40 24.4**	**-2.0**
ANKY	**Antikythira Is**	**3.36**	**239**	P	**Pn**	**04 40 24.4**	**-2.0**
BORA	**Eskisehir**	**3.59**	**50**	*i* P	**Pg**	**04 40 41.6**	**-1.1**
BORA				*i* S	**Sg**	**04 41 30.0**	**+0.7**
BTAS	**Taskesti**	**4.35**	**46**	*i* P	**Pg**	**04 40 56.9**	**-0.4**

*ISCJB **17** 04:43:35.9±0.3,33°.77N±0°.03×88°.75E±0°.05,h10km, mb4.2/31,MS3.8/22,Error ellipse: s-maj=6.6km s-min=4.6km az=168.1*

*IDC **17** 04:43:35.8±0.7,33°.67N×88°.69E,h0km,mb4.0/16, mb1 4.1/21,mb1mx4.0/58,mbtmp4.0/21,ML3.6/5,MS3.7/26, Ms1 3.8/26,ms1mx3.6/37,Error ellipse: s-maj=21.4km s-min=13.8km az=42.0*

*MOS **17** 04:43:39.3±1.4,33°.79N×88°.66E,h33km,mb4.2/13,Error ellipse: s-maj=16.5km s-min=6.8km az=110.6*

*NEIC **17** 04:43:40.6±2.6,33°.76N×88°.57E,h28km±20km,mb4.5/4, Error ellipse: s-maj=14.4km s-min=6.8km az=56.0*

*BJI **17** 04:43:43.5,33°.70N×89°.50E,h10km,mb4.4/10,mB4.3/4, Ms4.3/10,Ms7 4.1/10*

ISC 17 04:43:37.1±0.4,33°.70N±0°.05×88°.82E±0°.06,h10km,n93, σ1s79/80,mb4.3/34,MS3.8/22,1C-1D,Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.45**	**153**	Pn	Pb	04 44 50.3	-5.4
LSA				Sg	**Sg**	**04 46 00.9**	**+0.7**
LSA	**Lhasa**	**4.45**	**153**	*e*P	**Pb**	**04 44 51.2**	**-4.5**
LSA	**Lhasa**	**4.45**	**153**	*e*Pn	**Pb**	**04 44 51.2**	**-4.5**
GUN	**Gumba**	**6.30**	**204**	*e*P	Pn	04 45 12.9	+2.5
	41nm,0.6s						
KKN	**Kakani**	**6.63**	**208**	*e*P	**Pn**	**04 45 16.6**	**+1.7**
GKN	**Gorkha**	**6.72**	**213**	*e*P	**Pn**	**04 45 17.8**	**+1.8**
DMN	**Daman**	**6.86**	**209**	*e*P	Pn	04 45 20.7	+2.6
	61nm,0.6s						
RAMN	**Ramite**	**7.00**	**196**	*e*P	**Pn**	**04 45 21.5**	**+1.6**
	138nm,0.8s						
KOLN	**Koldanda**	**7.42**	**219**	*e*P	**Pn**	**04 45 27.4**	**+1.7**
	19nm,0.6s						
PYUN	**Piuthan**	**7.50**	**223**	*e*P	**Pn**	**04 45 27.5**	**+0.7**
	57nm,0.8s						
SHL	**Shillong**	**8.53**	**161**	*e*P	**Pn**	**04 45 42.0**	**+1.1**
SHL				*e*S	**Sg**	**04 48 16.0**	**+5.0**
CD2	**Chengdu**	**12.94**	**98**	*e*P	**Pn**	**04 46 40.5**	**-0.6**
CD2				S	**Sn**	**04 49 00.1**	**-5.1**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				LR	LR		
	comp=N,500nm,9.3s						
CD2				LR	LR		
	comp=E,930nm,7.8s						
CD2				LR	LR		
	comp=Z,1μm,8.3s						
MK01	**Makanchi Array**	**13.96**	**341**	*e*Pn	**Pn**	**04 46 54.2**	**-0.8**
MK31	**Makanchi Array**	**13.99**	**341**	*e*P	**Pn**	**04 46 56.2**	**+0.8**
MK31	**Makanchi Array**	**13.99**	**341**	*e*Pn	**Pn**	**04 46 56.2**	**+0.8**
MKAR	**Makanchi Array**	**13.99**	**341**	Pn	**Pn**	**04 46 53.7**	**-1.7**
	0.1nm,0.3s,baz=150,slow=13,SNR=9.9						
MKAR				LR	LR	04 52 53.5	
	comp=Z,218nm,18.0s,baz=158,slow=40						
MKAR	**Makanchi Array**	**13.99**	**341**	*e*P	**Pn**	**04 46 56.2**	**+0.8**
MKAR	**Makanchi Array**	**13.99**	**341**	*e*Pn	**Pn**	**04 46 56.2**	**+0.8**
AAK	**Ala-Archa**	**14.36**	**313**	Pn	**Pn**	**04 46 59.7**	**-0.8**
	0.4nm,0.3s,baz=114,slow=17,SNR=5.4						
AAK				LR	LR	04 53 54.0	
	comp=Z,269nm,18.6s,baz=116,slow=43						
AAK	**Ala-Archa**	**14.36**	**313**	*e*Pn	**Pn**	**04 46 58.7**	**-1.9**
FRU	**Bishkek**	**14.39**	**313**	*e*P	**P**	**04 47 05.0**	**-2.9**
KMI	**Kunming**	**14.83**	**122**	P	**Pn**	**04 47 08.3**	**+1.2**
KMI				pP	P	04 47 14.8	+1.8
KMI				sP		04 47 19.8	
KMI				S	**Sn**	**04 49 47.9**	**-3.7**
KMI				pmax	pmax		
	comp=Z,8.0nm,1.6s						
KMI				LR	LR		
	comp=N,1μm,13.0s						
KMI				LR	LR		
	comp=E,910nm,12.5s						
KMI				LR	LR		
	comp=Z,620nm,11.2s						
GYA	**Guiyang**	**17.03**	**110**	⇑*i*P	**Pn**	**04 47 35.9**	**+0.3**
GYA				pmax	pmax		
	comp=Z,30nm,1.0s						
CHTO	**Chiang Mai**	**17.37**	**146**	*e*P	**P**	**04 47 41.8**	**+0.8**
CHTO	**Chiang Mai**	**17.37**	**146**	*e*Pn	**P**	**04 47 41.8**	**+0.8**
CMAR	**Chiang Mai Arr**	**17.68**	**147**	P	**P**	**04 47 44.4**	**-0.1**
	0.3nm,0.3s,baz=331,slow=15,SNR=11						
CMAR				LR	LR	04 54 54.5	
	comp=Z,182nm,18.1s,baz=334,slow=38						
KURBB	**Kurchatov Arra**	**18.52**	**339**	P	**P**	**04 47 51.7**	**-1.8**
	0.1nm,0.3s,baz=143,slow=12,SNR=46						
KURK	**Kurchatov**	**18.57**	**339**	P	**P**	**04 47 51.7**	**-2.4**
KURK	**Kurchatov**	**18.57**	**339**	P	**P**	**04 47 51.7**	**-2.4**
SONM	**Songino Array**	**19.34**	**38**	P	**Pn**	**04 48 04.5**	**+0.8**
	0.1nm,0.3s,baz=225,slow=11,SNR=23						
SONM				LR	LR	04 56 13.8	
	comp=Z,325nm,19.2s,baz=236,slow=39						
SONA1	**Songino Array**	**19.35**	**38**	*e*P	**Pn**	**04 48 06.3**	**+2.4**
HHC	**Hu-ho-hao-te**	**19.43**	**62**	⇓P	**Pn**	**04 48 10.4**	**+5.6**
HHC				pmax	pmax		
	comp=Z,14nm,1.5s						
HHC				pmax	pmax		
	comp=Z,75nm,4.8s						
HHC				LR	LR		
	comp=N,390nm,13.7s						
HHC				LR	LR		
	comp=E,340nm,12.4s						
HHC				LR	LR		
	comp=Z,310nm,13.7s						
ZAK	**Zakamensk**	**19.77**	**28**	*e*P	**Pn**	**04 48 10.3**	**+1.5**
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.2s						
ZALV	**Zalesovo Beam**	**20.44**	**353**	P	**P**	**04 48 14.1**	**-0.4**
	comp=Z,22nm,1.1s,baz=171,slow=10,SNR=27						
ZALV				LR	LR	04 56 59.4	
	comp=Z,318nm,18.3s,baz=256,slow=39						
NVS	**Novosibirsk**	**21.50**	**351**	*e*P	**P**	**04 48 24.3**	**-1.5**
BVAR	**Borovoye Array**	**23.38**	**331**	P	**P**	**04 48 45.3**	**-0.5**
	comp=Z,3.3nm,0.9s,baz=131,slow=10,SNR=9.7						
BRVK	**Borovoye**	**23.45**	**331**	*e*P	**P**	**04 48 46.1**	**-0.4**
BRVK				pmax	pmax		
	comp=Z,11nm,0.8s						
BRVK	**Borovoye**	**23.45**	**331**	*e*P	**P**	**04 48 46.1**	**-0.4**
	comp=Z,11nm,0.8s						
GEYT	**Alibeck**	**25.19**	**288**	P	**P**	**04 49 03.5**	**+0.6**
	comp=Z,11nm,0.8s,baz=120,slow=8.8,SNR=16						
GEYT				LR	LR	05 00 58.1	
	comp=Z,435nm,20.1s,baz=75,slow=42						
ABKAR	**Akbulak array**	**26.43**	**315**	*e*P	**P**	**04 49 12.6**	**-1.3**
	comp=0.7nm,0.5s						
PALK	**Pallekele**	**27.35**	**198**	LR	LR	05 00 04.5	
	comp=Z,125nm,21.2s,baz=296,slow=36						
AKTO	**Aktyubinsk**	**28.06**	**316**	LR	LR	05 02 30.7	
	comp=Z,205nm,19.6s,baz=119,slow=40						
WSAR	**Wadi Sarin**	**28.42**	**256**	LR	LR	05 01 48.1	
	comp=Z,147nm,19.7s,baz=94,slow=39						
BOD	**Bodaibo**	**29.51**	**28**	*e*P	**P**	**04 49 42.7**	**+1.4**
BOD				pmax	pmax		
	comp=Z,7.0nm,1.8s						
KULM	**Kulim**	**30.33**	**156**	*e*P	P	04 49 52.9	+3.9
	comp=Z,10nm,1.1s						
KLR	**Kul'dur**	**35.20**	**51**	P	**P**	**04 50 32.1**	**+0.9**
	comp=Z,2.4nm,1.0s,baz=276,slow=11,SNR=4.0						
NRIK	**Noril'sk**	**35.70**	**359**	LR	LR	05 06 24.4	
	comp=Z,248nm,19.9s,baz=182,slow=38						
KBZ	**Khabaz**	**36.79**	**300**	LR	LR	05 07 55.0	
	comp=Z,96nm,18.8s,baz=84,slow=40						
KKM	**Kota Kinabalu**	**37.45**	**131**	*e*P	P	04 50 55.7	+4.7
	comp=Z,9.9nm,0.9s						
BRTR	**Keskin Array B**	**44.06**	**294**	P	**P**	**04 51 44.6**	**-0.7**
	comp=Z,0.7nm,0.8s,baz=107,slow=7.9,SNR=5.2						
AKASG	**Malin Array Be**	**46.01**	**310**	P	**P**	**04 51 59.3**	**-1.2**
	comp=Z,0.2nm,0.2s,baz=75,slow=6.6,SNR=6.5						
AKASG				LR	LR	05 15 01.7	
	comp=Z,119nm,18.2s,baz=60,slow=41						
FINES	**FINESS Array B**	**48.10**	**325**	P	**P**	**04 52 18.3**	**+1.6**
	comp=Z,1.3nm,0.8s,baz=108,slow=12,SNR=5.9						
FINES				LR	LR	05 13 55.7	
	comp=Z,180nm,19.2s,baz=94,slow=38						
KAPI	**Kappang**	**48.36**	**137**	LR	LR	05 15 17.5	
	comp=Z,44nm,18.1s,baz=302,slow=39						
MLR	**Muntele Rosu**	**48.71**	**304**	*e*P	**P**	**04 52 22.3**	**+0.5**
MLR				pmax	pmax		
	comp=Z,8.0nm,0.9s						
MLR	**Muntele Rosu**	**48.71**	**304**	*e*P	**P**	**04 52 22.3**	**+0.5**
	comp=Z,7.8nm,0.9s						
ARCES	**ARCESS Array B**	**49.56**	**336**	P	**P**	**04 52 27.5**	**-0.3**
	comp=Z,1.4nm,0.8s,baz=102,slow=6.5,SNR=4.0						
PETK	**Petropavlovsk-**	**51.56**	**46**	LR	LR	05 18 39.7	
	comp=Z,26nm,19.9s,baz=264,slow=41						
DPC	**Dobruska-Polom**	**54.22**	**311**	*e*P	**P**	**04 53 03.2**	**+0.3**
DPC	**Dobruska-Polom**	**54.22**	**311**	*e*P	**P**	**04 53 03.2**	**+0.3**
UPC	**Upice**	**54.38**	**311**	*e*P	**P**	**04 53 04.2**	**+0.2**
UPC	**Upice**	**54.38**	**311**	*e*P	**P**	**04 53 04.2**	**+0.2**
CONA	**Conrad Observa**	**55.04**	**308**	*i* P	**P**	**04 53 08.6**	**-0.3**
	comp=Z,7.2nm,1.1s						
NB2	**NORSAR Subarra**	**55.28**	**325**	P	**P**	**04 53 09.1**	**-1.4**
	comp=Z,8nm,1.1s,baz=84,slow=7.9						
NOA	**NORSAR Array B**	**55.28**	**325**	P	**P**	**04 53 09.0**	**-1.4**
	comp=Z,1.3nm,0.8s,baz=83,slow=7.1,SNR=3.3						
NOA				LR	LR	05 18 08.0	
	comp=Z,126nm,19.1s,baz=90,slow=38						
NOA	**NORSAR Array B**	**55.28**	**325**	P	**P**	**04 53 09.0**	**-1.4**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
NOA				MLR	MLR		
	comp=Z,126nm,19.1s						
ARSA	**Arzberg**	**55.42**	**308**	*i* P	**P**	**04 53 12.0**	**+0.3**
	comp=Z,2.7nm,1.0s						
SOKA	**Soboth**	**55.89**	**307**	*i* P	**P**	**04 53 14.7**	**-0.3**
	comp=Z,8.2nm,1.2s						
MOA	**Molln**	**56.10**	**309**	*i* pP	**P**	**04 53 19.3**	**+2.8**
	comp=Z,4.3nm,1.2s						
GEC2	**GERESS Array S**	**56.22**	**310**	*e*P	**P**	**04 53 17.3**	**-0.1**
GEC2				pmax	pmax		
	comp=Z,15nm,1.4s						
GEC2	**GERESS Array S**	**56.22**	**310**	*e*P	**P**	**04 53 17.3**	**-0.1**
	comp=Z,15nm,1.4s						
GERES	**GERESS Array B**	**56.22**	**310**	P	**P**	**04 53 16.5**	**-0.9**
	comp=Z,2.0nm,0.7s,baz=72,slow=5.7,SNR=16						
GERES				LR	LR	05 19 55.8	
	comp=Z,86nm,18.9s,baz=70,slow=39						
GEA0	**GERESS Array S**	**56.22**	**310**	*e*P	**P**	**04 53 16.8**	**-0.6**
MYKA	**Terra Mystica**	**56.83**	**307**	*i* P	**P**	**04 53 20.9**	**-0.8**
	comp=Z,1.3nm,0.5s						
KBA	**Koelnbreinsper**	**56.90**	**308**	*i* P	**P**	**04 53 22.1**	**-0.3**
	comp=Z,3.2nm,1.1s						
ABTA	**Abfaltersbach**	**57.54**	**308**	*i* P	**P**	**04 53 26.3**	**-0.5**
	comp=Z,6.1nm,1.4s						
WTTA	**Wattenberg**	**57.97**	**308**	*i* P	**P**	**04 53 31.3**	**+1.4**
	comp=Z,6.3nm,1.0s						
WATA	**Walderalm**	**57.99**	**309**	*i* pP	P	04 53 33.7	+3.7
	comp=Z,2.0nm,0.7s						
MOTA	**Moosalm**	**58.30**	**309**	*i* P	**P**	**04 53 31.4**	**-0.8**
	comp=Z,3.2nm,0.9s						
RETA	**Reutte**	**58.48**	**309**	*i* P	**P**	**04 53 34.6**	**+1.2**
	comp=Z,11nm,2.2s						
FETA	**Feichten**	**58.64**	**308**	*i* P	**P**	**04 53 35.8**	**+1.2**
	comp=Z,5.8nm,1.5s						
DAVA	**Damuels**	**59.11**	**309**	*i* pP	**P**	**04 53 40.9**	**+3.0**
	comp=Z,5.1nm,0.8s						
KEST	**Kesra**	**63.58**	**297**	LR	LR	05 25 23.6	
	comp=Z,48nm,18.8s,baz=261,slow=40						
WRA	**Warramunga Arr**	**68.76**	**134**	P	**P**	**04 54 41.9**	**+0.4**
	comp=Z,2.9nm,1.0s,baz=326,slow=6.7,SNR=14						
ESDC	**Sonsa Array**	**71.34**	**306**	P	**P**	**04 54 58.0**	**+0.7**
	comp=Z,1.1nm,0.8s,baz=53,slow=7.1,SNR=3.6						
ESDC				LR	LR	05 30 31.0	
	comp=Z,38nm,18.4s,baz=115,slow=40						
ASAR	**Alice Springs**	**71.38**	**137**	P	**P**	**04 54 58.0**	**+0.5**
	comp=Z,2.2nm,0.9s,baz=315,slow=5.1,SNR=14						
ASAR				LR	LR	05 29 40.1	
	comp=Z,22nm,19.5s,baz=330,slow=39						
ILAR	**Eielson Array**	**72.68**	**22**	P	**P**	**04 55 06.5**	**+1.7**
	comp=Z,0.6nm,0.9s,baz=286,slow=3.4,SNR=3.5						
ILAR				PP	**PP**	**04 57 46.7**	**+0.8**
	comp=Z,1.3nm,1.1s,baz=305,slow=8.0,SNR=6.3						
ILAR				LR	LR	05 29 29.9	
	comp=Z,64nm,18.4s,baz=294,slow=38						
TORD	**Torodi Ar. Bea**	**80.47**	**279**	P	**P**	**04 55 49.1**	**-0.5**
	comp=Z,1.0nm,0.8s,baz=40,slow=3.8,SNR=5.6						
TORD				LR	LR	05 36 17.6	
	comp=Z,56nm,18.2s,baz=155,slow=39						
YKA	**Yellowknife Ar**	**82.30**	**11**	P	**P**	**04 55 59.3**	**+0.7**
	comp=Z,0.5nm,0.7s,baz=343,slow=4.7,SNR=4.0						
SCHQ	**Schefferville**	**89.37**	**346**	LR	LR	05 41 40.3	
	comp=Z,53nm,18.7s,baz=26,slow=39						
DBIC	**Dimbokro**	**89.39**	**278**	LR	LR	05 38 60.0	
	comp=Z,40nm,18.3s,baz=77,slow=37						
NEW	**Newport**	**95.17**	**17**	LR	LR	05 45 00.4	
	comp=Z,39nm,18.2s,baz=306,slow=39						
ULM	**Lac du Bonnet**	**96.31**	**3**	LR	LR	05 44 50.4	
	comp=Z,29nm,19.3s,baz=290,slow=38						
CPUP	**Villa Florida**	**149.88**	**275**	PKPbc	**PKPbc**	**05 03 27.4**	**-0.4**
	comp=Z,2.0nm,0.7s,baz=93,slow=5.3,SNR=4.0						

*IDC **17** 04:52:24.7±2.8,7°.11S×156°.03E,h35km±6km,mb3.6/5, mb1 3.8/5,mb1mx3.5/36,mbtmp3.8/5,MS3.1/4,Ms1 3.1/4, ms1mx2.8/26,Error ellipse: s-maj=76.7km s-min=23.6km az=110.0*

ISC 17 04:52:22.3±2.5,7°.2S±0°.3×156°.5E±0°.4,h35km,n13, σ0s39/10,mb3.9/5,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**4.07**	**123**	LR	LR	04 55 28.3	
	comp=Z,102nm,21.8s,baz=302,slow=41						
PMG	**Port Moresby**	**9.46**	**256**	Pn	**Pn**	**04 54 36.4**	**+0.3**
	2.1nm,0.3s,baz=54,slow=6.7,SNR=4.5						
PMG				LR	LR	04 57 36.0	
	comp=Z,106nm,19.2s,baz=63,slow=34						
WRA	**Warramunga Arr**	**24.90**	**237**	P	**P**	**04 57 41.6**	**-0.5**
	1.1nm,0.7s,baz=59,slow=9.7,SNR=7.3						
WRA				pP	**pP**	**04 57 52.0**	**-0.1**
	0.7nm,0.4s,baz=59,slow=9.4,SNR=6.3						
ASAR	**Alice Springs**	**27.12**	**231**	P	**P**	**04 58 02.4**	**+0.1**
	0.2nm,0.6s,baz=59,slow=9.8,SNR=2.9						
ASAR				pP	**pP**	**04 58 12.6**	**+0.3**
	0.3nm,0.3s,baz=61,slow=9.0,SNR=3.7						
H11S3	**WAKE ISLAND Hy 27.49**	**21**		T	T	05 26 36.9	
	baz=202,slow=76,SNR=51						
H11S2	**WAKE ISLAND Hy 27.49**	**21**		T	T	05 26 37.0	
	baz=202,slow=76,SNR=37						
H11S1	**WAKE ISLAND Hy 27.51**	**21**		T	T	05 26 38.2	
	baz=202,slow=76,SNR=25						
FITZ	**Fitzroy Crossi**	**31.90**	**247**	LR	LR	05 11 17.9	
	comp=Z,38nm,20.7s,baz=85,slow=36						
CMAR	**Chiang Mai Arr**	**62.21**	**295**	P	**P**	**05 02 40.5**	**-0.4**
	2.0nm,0.6s,baz=122,slow=5.4,SNR=10						
CMAR				pP	**pP**	**05 02 51.2**	**-0.4**
	1.1nm,0.7s,baz=112,slow=5.5,SNR=3.5						
SONM	**Songino Array**	**70.34**	**327**	P	**P**	**05 03 33.1**	**+0.6**
	0.7nm,0.5s,baz=123,slow=6.5,SNR=4.7						
SONM				pP	**pP**	**05 03 43.3**	**-0.1**
	0.4nm,0.5s,baz=114,slow=44,SNR=3.7						
MKAR	**Makanchi Array**	**84.55**	**318**	P	**P**	**05 04 52.0**	**0.0**
	0.6nm,0.6s,baz=100,slow=6.5,SNR=6.5						
MAW	**Mawson**	**84.73**	**203**	LR	LR	05 38 33.9	
	comp=Z,23nm,18.1s,baz=62,slow=33						
FINES	**FINESS Array B**	**114.75**	**336**	PKP	PKPdf	05 11 00.8	+2.0
	0.3nm,0.4s,baz=74,slow=4.9,SNR=4.1						

*SOME **17** 05:09:26.0,44°.30N×81°.30E,h5km*
*NNC **17** 05:09:27.7±1.8,44°.52N×81°.05E,h22km±9km,mb3.4, mpv2.9,Error ellipse: s-maj=33.8km s-min=5.6km az=121.0*

ISC 17 05:09:24.3±1.4,44°.26N±0°.04×81°.40E±0°.05,h6km±11km, n25,σ1s41/43,12C-4D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**1.11**	**223**	*e*P	**Pn**	**05 09 46.6**	**+0.1**
	24nm,0.1s						
KTMS				*e*S	**Sn**	**05 10 01.8**	**-0.4**
	118nm,0.3s						
DJR	**Jarkent**	**1.16**	**274**	*e*P	**Pn**	**05 09 47.7**	**+0.6**
	80nm,0.2s						
DJR				*e*S	**Sn**	**05 10 03.2**	**-0.1**
	175nm,0.3s						
SHLS	**Shalkode**	**1.56**	**226**	*e*P	**Pg**	**05 09 54.0**	**0.0**
	39nm,0.2s						
SHLS				*e*S	**Sg**	**05 10 14.9**	**+0.6**
	294nm,0.5s						
PDGK	**Podgornoye**	**1.67**	**237**	⇑Pn	**Pb**	**05 09 55.3**	**0.0**
	8.5nm,0.2s						
PDGK				⇑Lg	Lg	05 10 18.2	
	79nm,0.5s						
KAPS	**Kapalarasan**	**1.78**	**306**	*e*P	**Pg**	**05 09 58.1**	**-0.2**
	74nm,0.4s						
KAPS				⇑*i*S	**Sg**	**05 10 20.8**	**-0.7**
	79nm,0.2s						
UZB	**Uzynbulak**	**2.05**	**238**	*e*P	**Pb**	**05 10 01.8**	**-0.1**
	9.8nm,0.1s						
UZB				*e*S	**Sb**	**05 10 28.3**	**+0.5**
	61nm,0.3s						
KPKS	**Kokpek**	**2.12**	**249**	*e*P	**Pb**	**05 10 03.4**	**+0.3**
	47nm,0.2s						
KPKS				*e*S	**Sb**	**05 10 30.6**	**+1.0**
	245nm,0.1s						
ZHN	**Zhinishke**	**2.41**	**244**	*e*P	**Pb**	**05 10 08.2**	**+0.1**
	5.9nm,0.2s						
ZHN				*e*S	**Sb**	**05 10 38.3**	**+0.2**
	151nm,0.2s						
KURS	**Kuram**	**2.46**	**253**	*e*P	**Pb**	**05 10 09.7**	**+0.8**
	1.2nm,0.6s						
KURS				*e*S	**Sb**	**05 10 40.8**	**+1.4**
	38nm,0.6s						
SATY	**Saty**	**2.48**	**242**	*e*P	**Pg**	**05 10 10.5**	**-1.3**
	13nm,0.1s						
SATY				*e*S	**Sg**	**05 10 42.2**	**-1.7**
	192

MDD **17** *05:20:37.8±0.2,37.°15N×3.°76W, h0km, mbLg3.1/49, Error ellipse: s-maj=2.1km s-min=1.3km az=157.0, PRXIMO*
MDD EMS: III INTENSIDAD MAXIMA.
SFS **17** *05:20:37.0,37.°10N×3.°70W, h0km, ML3.2*
CSEM **17** *05:20:37.1±0.1,37.°14N×3.°80W, h2km, ML3.5/30, Error ellipse: s-maj=2.2km s-min=1.5km az=169.0*
INMG **17** *05:20:38.4±2.0,37.°12N×3.°68W, h13km±4km, ML3.0, Error ellipse: s-maj=2.5km s-min=2.5km az=145.0*
IGIL **17** *05:20:38.0,37.°15N×3.°76W, h0km*
LDG **17** *05:20:38.8±0.1,37.°09N×3.°75W, h2km, Md3.0/3, Ml2.8/4, Error ellipse: s-maj=3.3km s-min=2.0km az=167.0*

ISC 17 05:20:36.9±0.8, 37.°17N±0.°02×3.°74W±0.°01, h11km±5km, n226, σ1§62/372, 11C-3D, Spain

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SELV	**Sierra Elvira**	**0.07**	**6**	⇓Pg	**Pg**	**05 20 39.2**	**-0.2**
	2μm,0.2s,SNR=18						
SELV				Lg	Lg	05 20 41.0	
	9μm,0.4s,SNR=7.9						
SELV	**Sierra Elvira**	**0.07**	**6**	Pg	**Pg**	**05 20 39.2**	**-0.2**
	2μm,0.2s,SNR=18						
SELV				Lg	Lg	05 20 41.0	
	9μm,0.4s,SNR=7.9						
EXCH	**Chimeneas**	**0.08**	**242**	Pg	**Pg**	**05 20 39.7**	**+0.2**
	SNR=7.9						
EXCH				Lg	Lg	05 20 41.6	
	SNR=7.9						
EXCH	**Chimeneas**	**0.08**	**242**	Pg	**Pg**	**05 20 39.7**	**+0.2**
	SNR=7.9						
EXCH				Lg	Lg	05 20 41.6	
	SNR=7.9						
EQUE	**Quentar**	**0.24**	**81**	⇓Pg	**Pg**	**05 20 42.6**	**+0.7**
	868nm,0.1s,SNR=18						
EQUE				Lg	Lg	05 20 46.4	
	2μm,0.2s,SNR=5.0						
EQUE	**Quentar**	**0.24**	**81**	Pg	**Pg**	**05 20 42.6**	**+0.7**
	868nm,0.1s,SNR=18						
EQUE				Lg	Lg	05 20 46.4	
	2μm,0.2s,SNR=5.0						
EGOR	**Sierra Gorda,**	**0.30**	**259**	⇑Pg	**Pg**	**05 20 42.9**	**-0.2**
	220nm,0.2s,SNR=18						
EGOR				Lg	Lg	05 20 46.9	
	2μm,0.2s,SNR=7.9						
EGOR	**Sierra Gorda,**	**0.30**	**259**	Pg	**Pg**	**05 20 42.9**	**-0.2**
	220nm,0.2s,SNR=18						
EGOR				Lg	Lg	05 20 46.9	
	2μm,0.2s,SNR=7.9						
GORA	**Gorafe**	**0.64**	**61**	Pg	**Pb**	**05 20 50.3**	**+0.3**
	141nm,0.2s,SNR=7.9						
GORA				Lg	Lg	05 20 59.3	
	686nm,0.2s,SNR=7.9						
GORA	**Gorafe**	**0.64**	**61**	Pg	**Pb**	**05 20 50.3**	**+0.3**
	141nm,0.2s,SNR=7.9						
GORA				Lg	Lg	05 20 59.3	
	686nm,0.2s,SNR=7.9						
EMAL	**Malaga-Limoner**	**0.69**	**234**	Pg	**Pg**	**05 20 49.2**	**-1.0**
EMAL				Lg	Lg	05 20 58.8	
EMAL	**Malaga-Limoner**	**0.69**	**234**	*e*P	**Pg**	**05 20 49.2**	**-1.0**
EMAL				*e*S	**Sg**	**05 20 58.8**	**-0.4**
EBER	**Berja**	**0.73**	**112**	⇑Pg	**Pb**	**05 20 51.9**	**+0.2**
	66nm,0.3s,SNR=18						
EBER				Lg	Lg	05 21 01.0	
	604nm,0.3s,SNR=15						
EBER	**Berja**	**0.73**	**112**	Pg	**Pb**	**05 20 51.9**	**+0.2**
	66nm,0.3s,SNR=18						
EBER				Lg	Lg	05 21 01.0	
	604nm,0.3s,SNR=15						
EQES	**Quesada**	**0.82**	**40**	Pg	**Pn**	**05 20 54.3**	**-0.2**
	94nm,0.1s,SNR=104						
EQES				Lg	Lg	05 21 06.0	
	223nm,0.2s,SNR=5.0						
EQES	**Quesada**	**0.82**	**40**	Pg	**Pn**	**05 20 54.3**	**-0.2**
	94nm,0.1s,SNR=104						
EQES				Lg	Lg	05 21 06.1	
	223nm,0.2s,SNR=5.0						
EMIJ	**Mijas**	**1.03**	**234**	⇑Pg	**Pg**	**05 20 54.9**	**-1.7**
	25nm,0.1s,SNR=18						
EMIJ				Lg	Lg	05 21 09.0	
	309nm,0.3s,SNR=17						
EMIJ	**Mijas**	**1.03**	**234**	Pg	**Pg**	**05 20 54.9**	**-1.7**
	25nm,0.1s,SNR=18						
EMIJ				Lg	Lg	05 21 09.0	
	309nm,0.3s,SNR=17						
EADA	**Adamuz**	**1.20**	**326**	⇑Pg	**Pg**	**05 21 00.5**	**+0.6**
	96nm,0.1s,SNR=18						
EADA				Lg	Lg	05 21 16.3	
	307nm,0.2s,SNR=5.0						
EADA	**Adamuz**	**1.20**	**326**	Pg	**Pg**	**05 21 00.5**	**+0.6**
	96nm,0.1s,SNR=18						
EADA				Lg	Lg	05 21 16.3	
	307nm,0.2s,SNR=5.0						
ENIJ	**Nijar**	**1.24**	**99**	⇑Pg	**Pg**	**05 21 00.7**	**0.0**
	138nm,0.4s,SNR=18						
ENIJ				Lg	Lg	05 21 17.5	
	382nm,0.4s,SNR=7.9						
ENIJ	**Nijar**	**1.24**	**99**	Pg	**Pg**	**05 21 00.7**	**0.0**
	138nm,0.4s,SNR=18						
ENIJ				Lg	Lg	05 21 17.5	
	382nm,0.4s,SNR=7.9						
SESP	**Santiago Espad**	**1.34**	**45**	⇑Pg	**Pg**	**05 21 03.9**	**+1.2**
	302nm,0.4s,SNR=18						
SESP				Lg	Lg	05 21 21.3	
	623nm,0.4s,SNR=7.9						
SESP	**Santiago Espad**	**1.34**	**45**	Pg	**Pg**	**05 21 03.9**	**+1.2**
	302nm,0.4s,SNR=18						
SESP				Lg	Lg	05 21 21.3	
	623nm,0.4s,SNR=7.9						
EALB	**Alboran**	**1.35**	**155**	⇑Pg	**Pn**	**05 21 01.3**	**-0.3**
	25nm,0.2s,SNR=18						
EALB				Lg	Lg	05 21 19.7	
	96nm,0.2s,SNR=6.6						
EALB	**Alboran**	**1.35**	**155**	Pg	**Pn**	**05 21 01.3**	**-0.3**
	25nm,0.2s,SNR=18						
EALB				Lg	Lg	05 21 19.7	
	96nm,0.2s,SNR=6.6						
REAL	**Reales**	**1.36**	**240**	Pg	**Pg**	**05 21 05.0**	**+1.9**
REAL				Lg	Lg	05 21 27.0	
REAL	**Reales**	**1.36**	**240**	*e*P	**Pg**	**05 21 05.0**	**+1.9**
REAL				Lg	Lg	05 21 27.0	
EJIF	**Jimena Fronter**	**1.56**	**243**	Pg	**Pb**	**05 21 06.2**	**+0.4**
	48nm,0.4s,SNR=5.0						
EJIF				Lg	Lg	05 21 27.9	
	62nm,0.4s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.56**	**243**	Pg	**Pb**	**05 21 06.2**	**+0.4**
	48nm,0.4s,SNR=5.0						
EJIF				Lg	Lg	05 21 27.9	
	62nm,0.4s,SNR=7.9						
ECAB	**El Cabril**	**1.61**	**305**	Pn	**Pn**	**05 21 05.9**	**+0.6**
	0.4nm,0.1s,SNR=87						
ECAB				Pg	**Pg**	**05 21 07.5**	**-0.3**
	75nm,0.4s,SNR=11						
ECAB				Lg	Lg	05 21 29.0	
	98nm,0.3s,SNR=12						
ECAB	**El Cabril**	**1.61**	**305**	Pn	**Pn**	**05 21 05.9**	**+0.6**
	0.4nm,0.1s,SNR=87						
ECAB	**El Cabril**	**1.61**	**305**	Pg	**Pg**	**05 21 07.5**	**-0.3**
	75nm,0.4s,SNR=11						
ECAB				Lg	Lg	05 21 29.0	
	98nm,0.3s,SNR=12						
ALJ	**Aljibe**	**1.66**	**248**	Pg	**Pg**	**05 21 11.0**	**+2.2**
ALJ	**Aljibe**	**1.66**	**248**	*e*P	**Pg**	**05 21 11.0**	**+2.2**
ESPR	**Espera**	**1.72**	**261**	Pg	**Pg**	**05 21 09.3**	**-0.6**
	71nm,0.5s,SNR=23						
ESPR				Lg	Lg	05 21 32.6	
	246nm,0.6s,SNR=5.6						
ESPR	**Espera**	**1.72**	**261**	Pg	**Pg**	**05 21 09.3**	**-0.6**
	71nm,0.5s,SNR=23						
ESPR				Lg	Lg	05 21 32.6	
	246nm,0.6s,SNR=5.6						
EVIA	**Vianos**	**1.76**	**33**	⇑Pg	**Pb**	**05 21 09.0**	**-0.3**
	147nm,0.3s,SNR=18						
EVIA				Sn	**Sb**	**05 21 31.8**	**+0.4**
	70nm,0.2s,SNR=7.9						
EVIA				Lg	Lg	05 21 35.5	
	411nm,0.6s,SNR=7.9						
ECEU	**Ceuta**	**1.83**	**227**	Pn	**Pn**	**05 21 08.4**	**+0.1**
	2.1nm,0.1s,SNR=4.9						
ECEU				Sn	**Sn**	**05 21 31.5**	**+0.1**
	11nm,0.3s,SNR=12						
ECEU	**Ceuta**	**1.83**	**227**	Pn	**Pn**	**05 21 08.4**	**+0.1**
	2.1nm,0.1s,SNR=4.9						
ECEU				Sn	**Sn**	**05 21 31.5**	**+0.1**
	11nm,0.3s,SNR=12						
EMEL	**Melilla**	**1.97**	**161**	Pn	**Pn**	**05 21 10.5**	**+0.4**
	53nm,0.1s,SNR=6.3						
EMUR	**La Murta**	**2.10**	**71**	Pn	**Pb**	**05 21 14.4**	**-0.5**
	44nm,0.4s,SNR=41						
EMUR				Sn	**Sg**	**05 21 43.2**	**-1.1**
	70nm,0.4s,SNR=5.0						
EMUR	**La Murta**	**2.10**	**71**	Pn	**Pb**	**05 21 14.4**	**-0.5**
	44nm,0.4s,SNR=41						
EMUR				Sn	**Sg**	**05 21 43.2**	**-1.1**
	70nm,0.4s,SNR=5.0						
CART	**Cartagena**	**2.22**	**78**	⇑Pn	**Pb**	**05 21 15.7**	**-1.2**
CART				Sn	**Sn**	**05 21 41.2**	**+0.3**
CART	**Cartagena**	**2.22**	**78**	*i* P	**Pb**	**05 21 15.7**	**-1.2**
CART				*e*S	**Sn**	**05 21 41.2**	**+0.3**
ETOB	**Tobarra**	**2.27**	**49**	⇑Pn	**Pb**	**05 21 16.4**	**-1.5**
	5.9nm,0.1s,SNR=18						
ETOB				Pg	**Pg**	**05 21 20.8**	**+0.3**
	115nm,0.5s,SNR=47						
ETOB				Lg	Lg	05 21 51.3	
	94nm,0.4s,SNR=6.0						
ETOB	**Tobarra**	**2.27**	**49**	Pn	**Pb**	**05 21 16.4**	**-1.5**
	5.9nm,0.1s,SNR=18						
EMIN	**Mina Concepcio**	**2.41**	**285**	Pn	**Pn**	**05 21 16.5**	**+0.3**
	9.5nm,0.2s,SNR=60						
EMIN				Sn	**Sn**	**05 21 45.9**	**+0.2**
	7.3nm,0.2s,SNR=15						
EMIN				Lg	Lg	05 21 54.4	
	29nm,0.2s,SNR=9.4						
EMIN	**Mina Concepcio**	**2.41**	**285**	Pn	**Pn**	**05 21 16.5**	**+0.3**
	9.5nm,0.2s,SNR=60						
EMIN				Sn	**Sn**	**05 21 45.9**	**+0.2**
	7.3nm,0.2s,SNR=15						
EMIN				Lg	Lg	05 21 54.4	
	29nm,0.2s,SNR=9.4						
ESDC	**Sonseca Array**	**2.51**	**356**	Pn	**Pn**	**05 21 19.2**	**+1.6**
	4.0nm,0.2s,baz=180,slow=12,SNR=38						
ESDC				Pg	**Pg**	**05 21 24.6**	**-0.4**
	48nm,0.3s,baz=174,slow=16,SNR=74						
ESDC				Sn	**Sn**	**05 21 50.7**	**+2.5**
	14nm,0.2s,baz=180,slow=17,SNR=4.0						
ESDC				Lg	Lg	05 21 57.8	
	117nm,0.5s,baz=177,slow=28,SNR=170						
ESDC	**Sonseca Array**	**2.51**	**356**	Pn	**Pn**	**05 21 19.2**	**+1.6**
	4.0nm,0.2s,SNR=38						
ESDC	**Sonseca Array**	**2.51**	**356**	Pg	**Pg**	**05 21 24.6**	**-0.4**
	48nm,0.3s,SNR=74						
ESDC				Sn	**Sn**	**05 21 50.7**	**+2.5**
	14nm,0.2s,SNR=4.0						
ESDC				Lg	Lg	05 21 57.8	
	117nm,0.5s,SNR=170						
PBAR	**Barrancos**	**2.81**	**292**	*e*Pn	**Pn**	**05 21 22.3**	**+0.7**
PBAR				*e*Sn	**Sn**	**05 21 54.9**	**-0.5**
PBAR				*e*Sg	**Sg**	**05 22 07.2**	**+0.2**
PBAR				A	A	05 22 19.9	
	72nm,0.5s						
PBAR	**Barrancos**	**2.81**	**292**	Pn	**Pn**	**05 21 22.3**	**+0.7**
PBAR				Sn	**Sn**	**05 21 54.9**	**-0.5**
PBAR				Lg	Lg	05 22 07.2	
	72nm,0.5s						
PBAR	**Barrancos**	**2.81**	**292**	Pn	**Pn**	**05 21 22.3**	**+0.7**
PBAR				Sn	**Sn**	**05 21 54.9**	**-0.5**
PBAR				*e*Sg	**Sg**	**05 22 07.2**	**+0.2**
	72nm,0.5s						
AFON	**Font Roja**	**2.94**	**58**	Pn	**Pn**	**05 21 25.9**	**+2.3**
	9.1nm,0.3s,SNR=29						
AFON				Sn	**Sn**	**05 22 00.8**	**+2.0**
	3.5nm,0.2s,SNR=4.0						
AFON				Lg	Lg	05 22 12.8	
	16nm,0.4s,SNR=6.3						
AFON	**Font Roja**	**2.94**	**58**	Pn	**Pn**	**05 21 25.9**	**+2.3**
	9.1nm,0.3s,SNR=29						
AFON				Sn	**Sn**	**05 22 00.8**	**+2.0**
	3.5nm,0.2s,SNR=4.0						
AFON				Lg	Lg	05 22 12.8	
	16nm,0.4s,SNR=6.3						
EGRO	**El Granado**	**3.01**	**278**	Pn	**Pn**	**05 21 24.7**	**+0.3**
	6.1nm,0.1s,SNR=20						
EGRO				Pg	**Pb**	**05 21 32.1**	**+1.7**
	2.8nm,0.1s,SNR=4.0						
EGRO				Sn	**Sn**	**05 22 00.8**	**+0.4**
	10.0nm,0.2s,SNR=5.3						
EGRO				Lg	Lg	05 22 12.3	
	30nm,0.3s,SNR=5.0						
EGRO	**El Granado**	**3.01**	**278**	Pn	**Pn**	**05 21 24.7**	**+0.3**
	6.1nm,0.1s,SNR=20						
EBAD	**Badajoz**	**3.04**	**302**	Pn	**Pn**	**05 21 25.6**	**+0.8**
	4.1nm,0.2s,SNR=22						
EBAD				Pg	**Pg**	**05 21 33.3**	**-1.8**
	4.8nm,0.1s,SNR=12						
EBAD				Sn	**Sn**	**05 22 00.5**	**-0.6**
	19nm,0.2s,SNR=5.0						
EBAD				Lg	Lg	05 22 14.3	
	57nm,0.2s,SNR=5.0						
EBAD	**Badajoz**	**3.04**	**302**	Pn	**Pn**	**05 21 25.6**	**+0.8**
	4.1nm,0.2s,SNR=22						
TZK	**Tazeka**	**3.10**	**187**	Sn	**Sb**	**05 22 07.0**	**-2.9**
TZK	**Tazeka**	**3.10**	**187**	*i* S	**Sb**	**05 22 07.0**	**-2.9**
PVAQ	**Vaqueiros**	**3.18**	**275**	*e*Pn	**Pn**	**05 21 27.1**	**+0.3**
PVAQ				*e*Sn	**Sn**	**05 22 05.5**	**+0.7**
PVAQ				*e*Sg	**Sg**	**05 22 16.9**	**-2.2**
PVAQ				A	A	05 22 23.3	
	26nm,0.6s						
PVAQ	**Vaqueiros**	**3.18**	**275**	Pn	**Pn**	**05 21 27.1**	**+0.3**
PVAQ				Sn	**Sn**	**05 22 05.5**	**+0.7**
PVAQ				Lg	Lg	05 22 16.9	
	26nm,0.6s						
PVAQ	**Vaqueiros**	**3.18**	**275**	Pn	**Pn**	**05 21 27.1**	**+0.3**
PVAQ				Sn	**Sn**	**05 22 05.5**	**+0.7**
PVAQ				*e*Sg	**Sg**	**05 22 16.9**	**-2.2**
	26nm,0.6s						
PBDV	**Barranco-do-Ve**	**3.35**	**273**	*e*Pn	**Pn**	**05 21 29.8**	**+0.6**
PBDV				*e*Sn	**Sn**	**05 22 09.3**	**+0.4**
PBDV				A	A	05 22 32.2	
	38nm,0.5s						
PBDV	**Barranco-do-Ve**	**3.35**	**273**	Pn	**Pn**	**05 21 29.8**	**+0.6**
PBDV				Sn	**Sn**	**05 22 09.3**	**+0.4**
	38nm,0.5s						
PBDV	**Barranco-do-Ve**	**3.35**	**273**	Pn	**Pn**	**05 21 29.8**	**+0.6**
PBDV				*e*Sn	**Sn**	**05 22 09.3**	**+0.4**
	38nm,0.5s						
PBEJ	**Beja**	**3.39**	**286**	*e*Pn	**Pn**	**05 21 31.4**	**+1.7**
PBEJ				*e*Sn	**Sn**	**05 22 09.2**	**-0.7**
PBEJ				*e*Sg	**Sg**	**05 22 26.5**	**+0.8**
PBEJ				A	A	05 22 42.0	
	20nm,0.5s						
PBEJ	**Beja**	**3.39**	**286**	Pn	**Pn**	**05 21 31.4**	**+1.7**
PBEJ				Sn	**Sn**	**05 22 09.2**	**-0.7**
PBEJ				Lg	Lg	05 22 26.5	
	9.9nm,0.5s						
PBEJ	**Beja**	**3.39**	**286**	Pn	**Pn**	**05 21 31.4**	**+1.7**
PBEJ				Sn	**Sn**	**05 22 09.2**	**-0.7**
PBEJ				*e*Sg	**Sg**	**05 22 26.5**	**+0.8**
	20nm,0.5s						
EPLA	**Plasencia**	**3.42**	**328**	⇑Pn	**Pn**	**05 21 32.3**	**+2.1**
	4.2nm,0.1s,SNR=18						
EPLA				Sn	**Sn**	**05 22 10.7**	**-0.1**
	7.1nm,0.2s,SNR=8.0						
EPLA				Lg	Lg	05 22 25.7	
	13nm,0.2s,SNR=7.5						
EPLA	**Plasencia**	**3.42**	**328**	Pn	**Pn**	**05 21 32.3**	**+2.1**
	4.2nm,0.1s,SNR=18						
EPLA				Sn	**Sn**	**05 22 10.6**	**-0.1**
	7.1nm,0.2s,SNR=8.0						
EPLA				Lg	Lg	05 22 25.7	
	13nm,0.2s,SNR=7.5						
PCVE	**Castro Verde**	**3.46**	**279**	*e*Pn	**Pn**	**05 21 31.6**	**+1.0**
PCVE				*e*Sn	**Sn**	**05 22 12.3**	**+0.8**
PCVE				*e*Sg	**Sg**	**05 22 25.8**	**-2.1**
PCVE				A	A	05 22 30.9	
	34nm,0.6s						
PCVE	**Castro Verde**	**3.46**	**279**	Pn	**Pn**	**05 21 31.6**	**+1.0**
PCVE				Sn	**Sn**	**05 22 12.3**	**+0.8**
PCVE				Lg	Lg	05 22 25.8	
	34nm,0.6s						
PCVE	**Castro Verde**	**3.46**	**279**	Pn	**Pn**	**05 21 31.6**	**+1.0**
PCVE				Sn	**Sn**	**05 22 12.3**	**+0.8**
PCVE				*e*Sg	**Sg**	**05 22 25.8**	**-2.1**
	34nm,0.6s						
PESTR	**Estremoz**	**3.48**	**300**	*e*Pn	**Pn**	**05 21 32.5**	**+1.5**
PESTR				*e*Sn	**Sn**	**05 22 12.3**	**+0.1**
PESTR				*e*Sg	**Sg**	**05 22 31.9**	**+3.2**
PESTR				A	A	05 22 34.4	
	32nm,0.4s						
PESTR	**Estremoz**	**3.48**	**300**	*e*Pn	**Pn**	**05 21 32.5**	**+1.5**
PESTR				*e*Sn	**Sn**	**05 22 12.3**	**+0.1**
PESTR				*e*Sg	**Sg**	**05 22 31.9**	**+3.2**
	32nm,0.4s						
GUD	**Guadarrama**	**3.48**	**355**	Pn	**Pn**	**05 21 32.6**	**+1.5**
	1.1nm,0.2s,SNR=7.0						
GUD				Pg	**Pg**	**05 21 42.6**	**-1.0**
	3.9nm,0.2s,SNR=11						
GUD				Lg	Lg	05 22 27.3	
	30nm,0.3s,SNR=9.2						
GUD	**Guadarrama**	**3.48**	**355**	Pn	**Pn**	**05 21 32.6**	**+1.5**
	1.1nm,0.2s,SNR=7.0						
MESJ	**Messejana**	**3.63**	**282**	*e*P	**Pn**	**05 21 33.3**	**+0.3**
MESJ	**Messejana**	**3.63**	**282**	*e*Pn	**Pn**	**05 21 33.9**	**+1.0**
MESJ				*e*Sn	**Sn**	**05 22 15.5**	**-0.2**
MESJ				*e*Sg	**Sg**	**05 22 33.7**	**+0.3**
MESJ				A	A	05 22 43.7	
	22nm,0.8s						
MESJ	**Messejana**	**3.63**	**282**	Pn	**Pn**	**05 21 33.9**	**+1.0**
MESJ				Sn	**Sn**	**05 22 15.5**	**-0.2**
MESJ				Lg	Lg	05 22 33.7	
	22nm,0.8s						
MESJ	**Messejana**	**3.63**	**282**	Pn	**Pn**	**05 21 33.9**	**+1.0**
MESJ				Sn	**Sn**	**05 22 15.5**	**-0.2**
MESJ				*e*Sg	**Sg**	**05 22 33.7**	**+0.3**
	22nm,0.8s						
EVO	**Evora**	**3.65**	**293**	*e*Pn	**Pn**	**05 21 34.4**	**+1.2**
EVO				*e*Sn	**Sn**	**05 22 16.8**	**+0.6**
EVO				*e*Sg	**Sg**	**05 22 36.4**	**+2.4**
EVO				A	A	05 22 38.8	
	32nm,0.5s						
EVO	**Evora**	**3.65**	**293**	Pn	**Pn**	**05 21 34.4**	**+1.2**
EVO				Sn	**Sn**	**05 22 16.8**	**+0.6**
EVO				Lg	Lg	05 22 36.4	
	32nm,0.5s						
EVO	**Evora**	**3.65**	**293**	Pn	**Pn**	**05 21 34.4**	**+1.2**
EVO				Sn	**Sn**	**05 22 16.8**	**+0.6**
EVO				*e*Sg	**Sg**	**05 22 36.4**	**+2.4**
	32nm,0.5s						
PNCL	**Nicolau / Gran**	**3.92**	**285**	*e*Pn	**Pn**	**05 21 38.0**	**+1.1**
PNCL				*e*Sn	**Sn**	**05 22 23.1**	**+0.2**
PNCL				*e*Sg	**Sg**	**05 22 41.0**	**-1.7**
PNCL				A	A	05 22 49.7	
	17nm,0.4s						
PNCL	**Nicolau / Gran**	**3.92**	**285**	*e*Pn	**Pn**	**05 21 38.0**	**+1.1**
PNCL				*e*Sn	**Sn**	**05 22 23.1**	**+0.2**
PNCL				*e*Sg	**Sg**	**05 22 41.0**	**-1.7**
	17nm,0.4s						
MORF	**Marmelete**	**3.92**	**273**	*e*P	**Pn**	**05 21 37.5**	**+0.5**
MORF	**Marmelete**	**3.92**	**273**	*e*Pn	**Pn**	**05 21 37.4**	**+0.3**
MORF				*e*Sn	**Sn**	**05 22 24.2**	**+1.1**
MORF				A	A	05 22 50.1	
	14nm,0.7s						
MORF	**Marmelete**	**3.92**	**273**	Pn	**Pn**	**05 21 37.4**	**+0.3**
MORF				Sn	**Sn**	**05 22 24.2**	**+1.1**
	14nm,0.7s						
MORF	**Marmelete**	**3.92**	**273**	Pn	**Pn**	**05 21 37.4**	**+0.3**
MORF				*e*Sn	**Sn**	**05 22 24.2**	**+1.1**
	14nm,0.7s						
PCBR	**Castelo Branco**	**3.96**	**313**	*e*Pn	**Pn**	**05 21 39.8**	**+2.2**
PCBR				*e*Sn	**Sn**	**05 22 24.3**	**+0.3**
PCBR				*e*Sg	**Sg**	**05 22 43.0**	**-1.2**
PCBR				A	A	05 22 57.4	
	18nm,0.8s						
PCBR	**Castelo Branco**	**3.96**	**313**	Pn	**Pn**	**05 21 39.8**	**+2.2**
PCBR				Sn	**Sn**	**05 22 24.3**	**+0.3**
PCBR				Lg	Lg	05 22 43.0	
	9.1nm,0.8s						
PCBR	**Castelo Branco**	**3.96**	**313**	Pn	**Pn**	**05 21 39.8**	**+2.2**
PCBR				Sn	**Sn**	**05 22 24.3**	**+0.3**
PCBR				*e*Sg	**Sg**	**05 22 43.0**	**-1.2**
	18nm,0.8s						
PTEO	**Sao Teotonio**	**3.99**	**277**	*e*Pn	**Pn**	**05 21 39.4**	**+1.5**
PTEO				*e*Sn	**Sn**	**05 22 25.2**	**+0.5**
PTEO				A	A	05 22 50.0	
	22nm,0.5s						
PTEO	**Sao Teotonio**	**3.99**	**277**	Pn	**Pn**	**05 21 39.4**	**+1.5**
PTEO				Sn	**Sn**	**05 22 25.2**	**+0.5**
	11nm,0.5s						
PTEO	**Sao Teotonio**	**3.99**	**277**	Pn	**Pn**	**05 21 39.4**	**+1.5**
PTEO				*e*Sn	**Sn**	**05 22 25.2**	**+0.5**
	22nm,0.5s						
PMTG	**Montargil**	**4.01**	**300**	*e*Pn	**Pn**	**05 21 39.9**	**+1.6**
PMTG				*e*Sn	**Sn**	**05 22 25.1**	**-0.2**
PMTG				*e*Sg	**Sg**	**05 22 47.7**	**+1.9**
PMTG				A	A	05 23 00.3	
	28nm,0.5s						
PMTG	**Montargil**	**4.01**	**300**	*e*Pn	**Pn**	**05 21 39.9**	**+1.6**
PMTG				*e*Sn	**Sn**	**05 22 25.1**	**-0.2**
PMTG				*e*Sg	**Sg**	**05 22 47.7**	**+1.9**
	28nm,0.5s						
PFVI	**Vila Bisbo**	**4.07**	**271**	*e*Pn	**Pn**	**05 21 40.3**	**+1.3**
PFVI				*e*Sn	**Sn**	**05 22 26.3**	**-0.2**
PFVI				A	A	05 22 47.6	
	16nm,0.5s						
PFVI	**Vila Bisbo**	**4.07**	**271**	Pn	**Pn**	**05 21 40.1**	**+1.2**
	4.6nm,0.1s,SNR=5.8						
PFVI				Sn	**Sn**	**05 22 25.7**	**-0.9**
	9.9nm,0.2s,SNR=7.9						
PFVI	**Vila Bisbo**	**4.07**	**271**	Pn	**Pn**	**05 21 40.2**	**+1.2**
	4.6nm,0.1s,SNR=5.8						
PFVI				*e*Sn	**Sn**	**05 22 26.3**	**-0.2**
	16nm,0.5s						
EMOS	**Mosqueruela**	**4.08**	**38**	Pn	**Pn**	**05 21 41.6**	**+2.2**
	6.5nm,0.4s,SNR=9.5						
EMOS				Pg	**Pg**	**05 21 53.1**	**-2.1**
	1.2nm,0.3s,SNR=4.0						
EMOS				Sn	**Sn**	**05 22 27.6**	**+0.4**
	4.0nm,0.3s,SNR=5.0						
EMOS				Lg	Lg	05 22 46.6	
	54nm,0.6s,SNR=6.9						
EMOS	**Mosqueruela**	**4.08**	**38**	Pn	**Pn**	**05 21 41.6**	**+2.2**
	6.5nm,0.4s,SNR=9.5						
EMOS				Lg	Lg	05 22 46.6	
	54nm,0.6s,SNR=6.9						
CZD	**Col de Zad**	**4.26**	**

4.5nm,0.2s,SNR=7.9
PMAFR Sn **Sn** **05 22 41.8 -1.0**
13nm,0.2s,SNR=7.9
PMAFR Lg Lg 05 23 07.3
22nm,0.4s,SNR=7.9
PMAFR Mafra 4.72 294 *e*Pn **Pn** **05 21 49.2 +1.1**
PMAFR *e*Sn **Sn** **05 22 43.2 +0.4**
30nm,0.5s
PMAFR Lg Lg 05 23 07.3
22nm,0.4s,SNR=7.9
MVO Moncorvo 4.74 328 *e*Pn **Pn** **05 21 50.4 +2.1**
MVO *e*Sn **Sn** **05 22 42.5 -0.7**
MVO *e*Sg **Sg** **05 23 08.4 -0.6**
MVO A A 05 23 22.0
26nm,0.5s
MVO Moncorvo 4.74 328 ⇓Pn **Pn** **05 21 50.4 +2.1**
15nm,0.2s,SNR=18
MVO Sn **Sn** **05 22 41.5 -1.7**
7.2nm,0.2s,SNR=7.9
MVO Lg Lg 05 23 06.4
40nm,0.6s,SNR=5.0
MVO Moncorvo 4.74 328 Pn **Pn** **05 21 50.4 +2.1**
15nm,0.2s,SNR=18
MVO *e*Sn **Sn** **05 22 42.5 -0.7**
MVO Lg Lg 05 23 06.4
40nm,0.6s,SNR=5.0
MVO *e*Sg **Sg** **05 23 08.4 -0.6**
26nm,0.5s
PVIS Viseu 4.80 319 *e*Pn **Pn** **05 21 50.8 +1.7**
PVIS *e*Sn **Sn** **05 22 43.5 -1.2**
PVIS *e*Sg **Sg** **05 23 10.1 -0.9**
PVIS A A 05 23 19.2
16nm,0.5s
PVIS Viseu 4.80 319 Pn **Pn** **05 21 50.8 +1.7**
PVIS Sn **Sn** **05 22 43.5 -1.2**
PVIS Lg Lg 05 23 10.1
8.2nm,0.5s
PVIS Viseu 4.80 319 Pn **Pn** **05 21 50.8 +1.7**
PVIS *e*Sn **Sn** **05 22 43.5 -1.2**
PVIS *e*Sg **Sg** **05 23 10.1 -0.9**
16nm,0.5s
ERTA Horta de San J 4.93 39 Pn **Pn** **05 21 53.5 +2.6**
1.9nm,0.2s,SNR=8.5
ERTA Sn **Sn** **05 22 47.7 -0.3**
2.2nm,0.3s,SNR=7.0
ERTA Lg Lg 05 23 13.9
12nm,0.5s,SNR=5.0
ERTA Horta de San J 4.93 39 Pn **Pn** **05 21 53.5 +2.6**
1.9nm,0.2s,SNR=8.5
ERTA Lg Lg 05 23 13.9
12nm,0.5s,SNR=5.0
KIB El Ksiba 4.96 203 Sn **Sn** **05 22 50.0 +1.3**
KIB El Ksiba 4.96 203 *e*S **Sn** **05 22 50.0 +1.3**
PVRL Vila Real 5.13 324 *e*Pn **Pn** **05 21 55.8 +2.1**
PVRL *e*Sn **Sn** **05 22 52.0 -0.9**
PVRL *e*Sg **Sg** **05 23 21.9 +0.2**
PVRL A A 05 23 33.7
16nm,0.9s
PVRL Vila Real 5.13 324 Pn **Pn** **05 21 55.8 +2.1**
PVRL Sn **Sn** **05 22 52.0 -0.9**
PVRL Lg Lg 05 23 21.9
7.9nm,0.9s
PVRL Vila Real 5.13 324 Pn **Pn** **05 21 55.8 +2.1**
PVRL *e*Sn **Sn** **05 22 52.0 -0.9**
PVRL *e*Sg **Sg** **05 23 21.9 +0.2**
16nm,0.9s
PBRG Braganca 5.18 334 *e*Pn **Pn** **05 21 55.6 +1.3**
PBRG *e*Sn **Sn** **05 22 52.7 -1.4**
PBRG *e*Sg **Sg** **05 23 24.3 +1.2**
PBRG A A 05 23 28.3
15nm,0.8s
PBRG Braganca 5.18 334 Pn **Pn** **05 21 55.6 +1.3**
PBRG Sn **Sn** **05 22 52.7 -1.4**
PBRG Lg Lg 05 23 24.3
7.3nm,0.8s
PBRG Braganca 5.18 334 Pn **Pn** **05 21 55.6 +1.3**
PBRG *e*Sn **Sn** **05 22 52.7 -1.4**
PBRG *e*Sg **Sg** **05 23 24.3 +1.2**
15nm,0.8s
ESAC San Caprasio 5.20 28 Lg Lg 05 23 23.8
54nm,0.5s,SNR=7.9
ESAC San Caprasio 5.20 28 Lg Lg 05 23 23.8
54nm,0.5s,SNR=7.9
POLO Lamas de Olo 5.25 324 *e*Pn **Pn** **05 21 57.4 +2.1**
POLO *e*Sn **Sn** **05 22 53.1 -2.7**
POLO *e*Sg **Sg** **05 23 26.7 +1.4**
POLO A A 05 23 34.2
7.1nm,0.8s
POLO Lamas de Olo 5.25 324 *e*Pn **Pn** **05 21 57.4 +2.1**
POLO *e*Sn **Sn** **05 22 53.1 -2.7**
POLO *e*Sg **Sg** **05 23 26.7 +1.4**
7.1nm,0.8s
ECAL Calabor 5.30 335 Pn **Pn** **05 21 57.5 +1.5**
1.5nm,0.3s,SNR=4.6
ECAL Sn **Sn** **05 22 56.0 -1.0**
5.6nm,0.3s,SNR=7.9
ECAL Lg Lg 05 23 27.4
51nm,0.5s,SNR=7.9
ECAL Calabor 5.30 335 Pn **Pn** **05 21 57.5 +1.5**
1.5nm,0.3s,SNR=4.6
ECAL Lg Lg 05 23 27.4
51nm,0.5s,SNR=7.9
EPOB Poblet 5.60 40 Pn **Pn** **05 22 02.2 +2.0**
11nm,0.4s,SNR=21
EPOB Sn **Sn** **05 23 04.2 -0.4**
1.5nm,0.3s,SNR=6.9
EPOB Lg Lg 05 23 36.0
19nm,0.8s,SNR=7.9
EPOB Poblet 5.60 40 Pn **Pn** **05 22 02.2 +2.0**
11nm,0.4s,SNR=21
EPOB Lg Lg 05 23 36.0
19nm,0.8s,SNR=7.9
ETOS Mallorca 5.76 61 Pn **Pn** **05 22 04.1 +1.9**
2.3nm,0.3s,SNR=7.6
ETOS Sn **Sn** **05 23 07.4 -0.9**
1.4nm,0.4s,SNR=7.9
ETOS Mallorca 5.76 61 Pn **Pn** **05 22 04.1 +1.9**
2.3nm,0.3s,SNR=7.6
ELOB Lobios 5.76 326 Pn **Pn** **05 22 04.0 +1.7**
1.7nm,0.2s,SNR=17
ELOB Sn **Sn** **05 23 05.6 -2.8**
2.0nm,0.1s,SNR=7.9
ELOB Lg Lg 05 23 42.1
12nm,0.4s,SNR=7.9
ELOB Lobios 5.76 326 Pn **Pn** **05 22 04.0 +1.7**
1.7nm,0.2s,SNR=17
ELOB Lg Lg 05 23 42.1
12nm,0.4s,SNR=7.9
YMUS Pe˜–a Musera 5.80 20 Pn **Pn** **05 22 05.6 +2.8**
1.1nm,0.1s,SNR=7.9
YMUS Pe˜–a Musera 5.80 20 Pn **Pn** **05 22 05.6 +2.8**
1.1nm,0.1s,SNR=7.9
YARA Arangoiti 5.81 19 Pn **Pn** **05 22 06.0 +2.9**
1.4nm,0.2s,SNR=7.9
YARA Arangoiti 5.81 19 Pn **Pn** **05 22 06.0 +2.9**
1.4nm,0.2s,SNR=7.9
YBER Berdun 5.82 21 Pn **Pn** **05 22 06.4 +3.2**
0.6nm,0.1s,SNR=7.9
YBER Berdun 5.82 21 Pn **Pn** **05 22 06.4 +3.2**
0.6nm,0.1s,SNR=7.9
EARA Aranguren 5.84 16 Lg Lg 05 23 43.5
11nm,0.4s,SNR=7.9
EARA Aranguren 5.84 16 Lg Lg 05 23 43.5
11nm,0.4s,SNR=7.9
IUNC Unciti 5.84 16 Pn **Pn** **05 22 05.3 +1.9**
1.9nm,0.2s,SNR=7.9
IUNC Unciti 5.84 16 Pn **Pn** **05 22 05.3 +1.9**
1.9nm,0.2s,SNR=7.9
YSIG Sigues 5.86 20 Pn **Pn** **05 22 06.2 +2.6**
0.8nm,0.2s,SNR=7.9
YSIG Sigues 5.86 20 Pn **Pn** **05 22 06.2 +2.6**
0.8nm,0.2s,SNR=7.9
YASP Aspurt 5.89 19 Pn **Pn** **05 22 06.6 +2.5**
0.6nm,0.2s,SNR=7.9
YASP Aspurt 5.89 19 Pn **Pn** **05 22 06.6 +2.5**
0.6nm,0.2s,SNR=7.9
IEPA Eparoz 5.92 18 Pn **Pn** **05 22 07.3 +2.9**
1.4nm,0.2s,SNR=7.9
IEPA Eparoz 5.92 18 Pn **Pn** **05 22 07.3 +2.9**
1.4nm,0.2s,SNR=7.9
PGAV Gavieira, Arco 5.93 325 *e*Pn **Pn** **05 22 07.1 +2.4**
PGAV *e*Sn **Sn** **05 23 09.9 -2.8**
PGAV A A 05 23 50.2
10nm,0.6s
PGAV Gavieira, Arco 5.93 325 *e*Pn **Pn** **05 22 07.1 +2.4**
IELO Elcoad 5.98 18 Pn **Pn** **05 22 07.7 +2.3**
5.0nm,0.3s,SNR=7.9
IELO Sn **Sn** **05 23 12.5 -1.4**
4.3nm,0.4s,SNR=7.9
IELO Lg Lg 05 23 48.2
14nm,0.4s,SNR=7.9
IELO Elcoad 5.98 18 Pn **Pn** **05 22 07.7 +2.3**
5.0nm,0.3s,SNR=7.9
IELO Lg Lg 05 23 48.2
14nm,0.4s,SNR=7.9
EORO Oroz-Betelu 6.01 17 Pn **Pn** **05 22 08.5 +2.7**
0.9nm,0.2s,SNR=10
EORO Sn **Sn** **05 23 13.7 -0.9**
3.7nm,0.3s,SNR=10.0
EORO Lg Lg 05 23 50.0
66nm,1.0s,SNR=7.9
EORO Oroz-Betelu 6.01 17 Pn **Pn** **05 22 08.5 +2.7**
0.9nm,0.2s,SNR=10
EORO Lg Lg 05 23 50.0
66nm,1.0s,SNR=7.9
ELAN Lanestosa 6.06 2 Pn **Pn** **05 22 08.6 +2.2**
1.1nm,0.2s,SNR=108
ELAN Lg Lg 05 23 53.1
14nm,0.6s,SNR=7.9
ELAN Lanestosa 6.06 2 Pn **Pn** **05 22 08.6 +2.2**
1.1nm,0.2s,SNR=108
ELAN Lg Lg 05 23 53.1
14nm,0.6s,SNR=7.9
ETSF Etsaut 6.22 22 *e*Pn **Pn** **05 22 11.4 +2.8**
ETSF *e*Sn **Sn** **05 23 17.2 -2.5**
1.2nm,0.3s
ETSF Etsaut 6.22 22 Pn **Pn** **05 22 11.4 +2.8**
ETSF Sn **Sn** **05 23 17.2 -2.5**
0.6nm,0.3s
ETSF Etsaut 6.22 22 Pn **Pn** **05 22 11.4 +2.8**
EARI Arriondas 6.23 350 Pn **Pn** **05 22 10.4 +1.7**
0.6nm,0.1s,SNR=8.7
EARI Lg Lg 05 23 56.4
7.8nm,0.8s,SNR=7.9
EARI Arriondas 6.23 350 Pn **Pn** **05 22 10.4 +1.7**
0.6nm,0.1s,SNR=8.7
EARI Lg Lg 05 23 56.4
7.8nm,0.8s,SNR=7.9
SJPF Ste Jean 6.24 17 *e*Pn **Pn** **05 22 11.8 +2.9**
SJPF *e*Sn **Sn** **05 23 19.2 -1.0**
1.6nm,0.2s
SJPF Ste Jean 6.24 17 Pn **Pn** **05 22 11.8 +2.9**
SJPF Sn **Sn** **05 23 19.2 -1.0**
0.8nm,0.2s
SJPF Ste Jean 6.24 17 Pn **Pn** **05 22 11.8 +2.9**
EALK Alkurruntz 6.28 15 Pn **Pn** **05 22 11.6 +2.2**
4.6nm,0.2s,SNR=15
EALK Sn **Sn** **05 23 19.8 -1.4**
4.9nm,0.3s,SNR=6.2
EALK Alkurruntz 6.28 15 Pn **Pn** **05 22 11.6 +2.2**
4.6nm,0.2s,SNR=15
ATE Arette 6.35 21 Pn **Pn** **05 22 12.7 +2.3**
0.1nm,0.1s,SNR=7.9
ATE Sn **Sn** **05 23 21.2 -1.7**
1.8nm,0.3s,SNR=7.9
ATE Lg Lg 05 24 00.5
10nm,0.6s,SNR=4.0
ATE Arette 6.35 21 Pn **Pn** **05 22 12.7 +2.3**
0.1nm,0.1s,SNR=7.9
ATE Lg Lg 05 24 00.5
10nm,0.6s,SNR=4.0
CSOR Sort 6.41 34 Pn **Pn** **05 22 13.6 +2.3**
0.3nm,0.2s,SNR=7.9
CSOR Sort 6.41 34 Pn **Pn** **05 22 13.6 +2.3**
0.3nm,0.2s,SNR=7.9
EAGO Agolada(Pontev 6.54 331 Pn **Pn** **05 22 14.9 +1.9**
2.1nm,0.2s,SNR=7.9
EAGO Sn **Sn** **05 23 24.6 -3.0**
2.6nm,0.4s,SNR=7.9
EAGO Lg Lg 05 24 05.9
11nm,0.4s,SNR=7.9
EAGO Agolada(Pontev 6.54 331 Pn **Pn** **05 22 14.9 +1.9**
2.1nm,0.2s,SNR=7.9
EAGO Lg Lg 05 24 05.9
11nm,0.4s,SNR=7.9
CFON Fontmartina 6.62 44 Pn **Pn** **05 22 15.5 +1.4**
4.1nm,0.3s,SNR=7.9
CFON Fontmartina 6.62 44 Pn **Pn** **05 22 15.5 +1.4**
4.1nm,0.3s,SNR=7.9
EPF Esparros 6.63 27 *e*Pn **Pn** **05 22 17.0 +2.7**
EPF *e*Sn **Sn** **05 23 26.5 -3.4**
0.6nm,0.2s
EPF Esparros 6.63 27 Pn **Pn** **05 22 17.0 +2.7**
EPF Sn **Sn** **05 23 26.5 -3.4**
0.3nm,0.2s
EPF Esparros 6.63 27 Pn **Pn** **05 22 17.0 +2.7**
EPON Pontenova 6.68 338 Pn **Pn** **05 22 16.7 +1.8**
0.4nm,0.1s,SNR=7.9
EPON Sn **Sn** **05 23 26.6 -4.3**
1.2nm,0.2s,SNR=7.9
EPON Lg Lg 05 24 12.9
10nm,0.5s,SNR=7.9
EPON Pontenova 6.68 338 Pn **Pn** **05 22 16.7 +1.8**
0.4nm,0.1s,SNR=7.9
EPON Lg Lg 05 24 12.9
10nm,0.5s,SNR=7.9
CLLI Llivia 6.89 38 Pn **Pn** **05 22 19.9 +2.1**
0.5nm,0.2s,SNR=7.9
CLLI Llivia 6.89 38 Pn **Pn** **05 22 19.9 +2.1**
0.5nm,0.2s,SNR=7.9
EMAZ Mazaricos 7.03 327 Pn **Pn** **05 22 21.5 +1.8**
1.4nm,0.1s,SNR=7.9
EMAZ Sn **Sn** **05 23 37.5 -2.1**
2.2nm,0.3s,SNR=7.9
EMAZ Lg Lg 05 24 24.0
11nm,0.5s,SNR=4.0
EMAZ Mazaricos 7.03 327 Pn **Pn** **05 22 21.5 +1.8**
1.4nm,0.1s,SNR=7.9
EMAZ Lg Lg 05 24 24.0
11nm,0.5s,SNR=4.0
EJON La Jonquera 7.33 42 Pn **Pn** **05 22 26.0 +2.1**
0.5nm,0.2s,SNR=7.9
EJON Lg Lg 05 24 32.8
3.6nm,0.6s,SNR=4.0
EJON La Jonquera 7.33 42 Pn **Pn** **05 22 26.0 +2.1**
0.5nm,0.2s,SNR=7.9
EJON Lg Lg 05 24 32.8
3.6nm,0.6s,SNR=4.0
SJAF Saint Jean de 7.36 42 Pn **Pn** **05 22 26.6 +2.4**
0.2nm,0.2s,SNR=7.9
SJAF Saint Jean de 7.36 42 Pn **Pn** **05 22 26.6 +2.4**
0.2nm,0.2s,SNR=7.9
LFF La Frestale 8.47 22 *e*Pn **Pn** **05 22 40.2 +0.8**
LFF La Frestale 8.47 22 Pn **Pn** **05 22 40.2 +0.8**
LFF La Frestale 8.47 22 Pn **Pn** **05 22 40.2 +0.8**
RJF Les Rejaudoux 9.04 24 *e*Pn **Pn** **05 22 49.1 +1.9**
RJF *e*Sn **Sn** **05 24 25.6 -3.3**
0.5nm,0.3s
RJF Les Rejaudoux 9.04 24 Pn **Pn** **05 22 49.1 +1.9**
RJF Sn **Sn** **05 24 25.6 -3.3**
0.2nm,0.3s
RJF Les Rejaudoux 9.04 24 Pn **Pn** **05 22 49.1 +1.9**
MFF Saint Martin d 9.80 15 *e*Pn **Pn** **05 22 59.0 +1.4**
MFF Saint Martin d 9.80 15 Pn **Pn** **05 22 59.0 +1.4**
MFF Saint Martin d 9.80 15 Pn **Pn** **05 22 59.0 +1.4**
QUIF Quistinic 10.75 2 *e*Pn **Pn** **05 23 11.8 +1.2**
QUIF Quistinic 10.75 2 Pn **Pn** **05 23 11.8 +1.2**
QUIF Quistinic 10.75 2 Pn **Pn** **05 23 11.8 +1.2**
SGMF Saint Gilles 11.11 4 *e*Pn **Pn** **05 23 15.9 +0.3**
SGMF Saint Gilles 11.11 4 Pn **Pn** **05 23 15.9 +0.3**
SGMF Saint Gilles 11.11 4 Pn **Pn** **05 23 15.9 +0.3**
FLN La Foliniere 11.83 11 *e*Pn **Pn** **05 23 26.2 +0.8**
FLN La Foliniere 11.83 11 Pn **Pn** **05 23 26.2 +0.8**
FLN La Foliniere 11.83 11 Pn **Pn** **05 23 26.2 +0.8**

IDC 17 05:26:50.4±1.9, 29°.71S×176°.68W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/23, mbtmpg3.7/2, MS3.4/1, Ms1 3.4/1, ms1mx2.6/23, Error ellipse: s-maj=75.7km s-min=29.4km az=18.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.17**	**293**	Pn		Pn	Pn	05 27 15.0	+0.9
	244nm,0.3s,baz=48,slow=15,SNR=7.3								
RAO				Sn		Sn	Sn	05 27 30.1	-0.7
	424nm,0.3s,baz=78,slow=14,SNR=8.9								
RAO				LR		LR	LR	05 27 40.9	
	comp=Z,271nm,22.0s,baz=104,slow=43								
ASAR	**Alice Springs**	**44.29**	**266**	P		P	P	05 35 02.2	0.0
	0.7nm,0.6s,baz=102,slow=6.3,SNR=9.6								
WRA	**Warramunga Arr**	**45.22**	**271**	P		P	P	05 35 09.1	-0.5
	0.8nm,0.6s,baz=110,slow=8.1,SNR=8.4								
KAPI	**Kappang**	**64.62**	**279**	LR		LR	LR	06 05 34.7	
	comp=Z,26nm,18.1s,baz=125,slow=36								
FINES	**FINESS Array B**	**144.88**	**341**	PKP		PKPab	PKPab	05 46 27.0	-0.8
	1.1nm,0.8s,baz=356,slow=2.5,SNR=3.9								
AKASG	**Malin Array Be**	**151.43**	**324**	PKPbc		PKPbc	PKPbc	05 46 46.0	+0.2
	0.3nm,0.4s,baz=34,slow=1.7,SNR=5.6								

YARS ***17*** *05:38:46.5±0.2, 57°.42N×0°.01×120°.78E±0°.02, h10km*
BYKL ***17*** *05:38:48.0±0.6, 57°.33N×120°.72E*

ISC 17 05:38:46.2±1.3, 57°.39N±0°.03×120°.72E±0°.02, h3km±10km, n25, σ2s80/54, 2C, Southeastern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KHNR	**Khani**	**0.62**	**221**	⇑*i*Pg		**Pg**	**Pg**	**05 38 58.7**	**+0.7**
KHNR				*e*Sg		**Sg**	**Sg**	**05 39 04.3**	**-1.7**
KHN	**Khani**	**0.69**	**228**	*e*P		**Pg**	**Pg**	**05 38 58.3**	**-1.1**
KHN				Pmax				05 38 58.3	
	comp=Z,173nm,0.1s								
KHN				*e*S		**Sg**	**Sg**	**05 39 06.9**	**-1.4**
KHN				Smax				05 39 06.9	
	comp=E,1μm,0.1s								
YKLR	**Yuktali**	**0.95**	**147**	*e*Pg		**Pg**	**Pg**	**05 39 04.7**	**+0.3**
YKLR				*e*Sg		**Sg**	**Sg**	**05 39 17.0**	**+0.2**
YKLR	**Yuktali**	**0.95**	**147**	*e*P		**Pg**	**Pg**	**05 39 04.6**	**+0.2**
YKLR				Pmax				05 39 04.6	
	comp=Z,255nm,0.5s								
YKLR				*e*S		**Sg**	**Sg**	**05 39 16.9**	**+0.2**
YKLR				Smax				05 39 16.9	
	comp=N,1μm,0.8s								
CRS	**Chara**	**1.42**	**251**	⇑*i*Pg		**Pb**	**Pb**	**05 39 14.4**	**+1.0**
CRS				*e*Sg		**Sb**	**Sb**	**05 39 31.6**	**-0.3**
CRS				Pmax					
	comp=N,76nm,0.9s								
CRS				Smax					
	comp=N,384nm,1.5s								
CRS	**Chara**	**1.42**	**251**	*e*P		**Pb**	**Pb**	**05 39 14.6**	**+1.2**
CRS				Pmax				05 39 14.6	
	comp=Z,97nm,0.5s								
CRS				*e*S		**Sb**	**Sb**	**05 39 31.4**	**-0.5**
CRS				Smax				05 39 31.4	
	comp=E,199nm,0.8s								
CLNS	**Chul'man**	**2.34**	**102**	*e*Pn		**Pn**	**Pn**	**05 39 27.3**	**+1.6**
CLNS				*e*Pg		**Pb**	**Pb**	**05 39 29.4**	**+0.3**
CLNS				*e*Sg		**Sb**	**Sb**	**05 39 59.5**	**+1.0**
CLNS	**Chul'man**	**2.34**	**102**	*e*P		**Pn**	**Pn**	**05 39 27.7**	**+2.0**
CLNS				Pmax				05 39 27.7	
	comp=Z,17nm,0.3s								
CLNS				*e*S		**Sb**	**Sb**	**05 39 57.4**	**-1.1**
CLNS				Smax				05 39 57.4	
	comp=N,546nm,0.5s								
ALDR	**Aldan**	**2.78**	**62**	*e*P		**Pb**	**Pb**	**05 39 35.6**	**-1.0**
ALDR				Pmax				05 39 35.6	
	comp=Z,8.0nm,0.2s								
ALDR				*e*S		**Sb**	**Sb**	**05 40 10.6**	**-0.5**
ALDR				Smax				05 40 10.6	
	comp=N,235nm,0.4s								
NLYR	**Nelyaty**	**2.89**	**254**	*e*Pn		**Pn**	**Pn**	**05 39 35.9**	**+2.7**
NLYR				*e*Pg		**Pb**	**Pb**	**05 39 39.6**	**+1.2**
NLYR				*e*				05 39 43.3	
NLYR				*e*Sg		**Sb**	**Sb**	**05 40 15.8**	**+1.6**
NLYR				max					
	comp=N,45nm,0.5s								
NLYR				Smax					
	comp=N,280nm,1.3s								
TUP	**Tupik**	**3.00**	**189**	*e*Pn		**Pn**	**Pn**	**05 39 34.9**	**+0.2**
TUP				*e*Pg		**Pb**	**Pb**	**05 39 41.5**	**+1.2**
TUP				*e*Sg		**Sb**	**Sb**	**05 40 18.9**	**+1.5**
TUP				*e*SgSg		**Sg**	**Sg**	**05 40 26.5**	**+3.9**
TUP				Pmax					
	comp=N,80nm,0.6s								
TUP				Smax					
	comp=N,397nm,0.6s								
TUP	**Tupik**	**3.00**	**189**	*e*P		**Pn**	**Pn**	**05 39 34.6**	**-0.1**
TUP				*e*P		**Pb**	**Pb**	**05 39 40.4**	**+0.1**
TUP				Pmax				05 39 40.4	
	comp=Z,80nm,0.6s								
TUP				*e*S		**Sn**	**Sn**	**05 40 10.1**	**-1.1**
TUP				*e*S		**Sb**	**Sb**	**05 40 18.8**	**+1.4**
TUP				Smax				05 40 18.8	
	comp=E,398nm,0.8s								
TNDR	**Tynda**	**3.17**	**133**	*e*Pn		**Pn**	**Pn**	**05 39 38.1**	**+1.1**
TNDR				*e*Pg		**Pb**	**Pb**	**05 39 44.3**	**+1.1**
TNDR				*e*Sn		**Sn**	**Sn**	**05 40 15.6**	**+0.3**
TNDR				*e*Sg		**Sb**	**Sb**	**05 40 24.0**	**+1.8**
TNDR	**Tynda**	**3.17**	**133**	*e*P		**Pn**	**Pn**	**05 39 36.3**	**-0.7**
TNDR				*e*P		**Pb**	**Pb**	**05 39 43.7**	**+0.5**
TNDR				Pmax				05 39 43.7	
	comp=Z,17nm,0.2s								
TNDR				*e*S		**Sn**	**Sn**	**05 40 13.6**	**-1.7**
TNDR				*e*S		**Sb**	**Sb**	**05 40 24.3**	**+2.1**
TNDR				Smax				05 40 24.3	
	comp=E,170nm,0.2s								
BOD	**Bodaibo**	**3.64**	**280**	*e*Pn		**Pn**	**Pn**	**05 39 45.3**	**+1.9**
BOD				*e*Pg		**Pb**	**Pb**	**05 39 53.6**	**+2.5**
BOD				*e*Sg		**Sb**	**Sb**	**05 40 39.2**	**+3.6**
BOD				Pmax					
	comp=E,7.0nm,0.5s								
BOD				Smax					
	comp=E,137nm,1.2s								
YVAM	**Verhnyaya Amga**	**4.05**	**53**	*e*S		**Sb**	**Sb**	**05 40 50.7**	**+3.3**
BMKR	**Bomnak**	**5.29**	**117**	*e*P		**Pn**	**Pn**	**05 40 07.0**	**+0.9**
BMKR				*e*P		**Pb**	**Pb**	**05 40 23.4**	**+4.2**
BMKR				Pmax				05 40 23.4	
	comp=Z,10.0nm,0.5s								
BMKR				*e*S		**Sn**	**Sn**	**05 41 05.2**	**-2.2**
BMKR				*e*S		**Sg**	**Sg**	**05 41 30.4**	**-5.4**
BMKR				Smax				05 41 30.4	
	comp=N,98nm,0.5s								
KMO	**Kumora**	**5.46**	**258**	*e*Pg		**Pb**	**Pb**	**05 40 27.0**	**+4.8**
KMO				*e*Sg		**Sg**	**Sg**	**05 41 37.3**	**-4.2**
KMO				Pmax					
	comp=N,5.0nm,0.7s								
KMO				Smax					
	comp=N,79nm,1.4s								
YLYR	**Ulyunkhan**	**5.91**	**249**	*e*Pg		**Pb**	**Pb**	**05 40 34.3**	**+4.5**
YLYR				*e*Sg		**Sg**	**Sg**	**05 41 50.4**	**-5.3**
YLYR				Pmax					
	comp=N,2.0nm,0.5s								
YLYR				Smax					
	comp=N,48nm,1.4s								
YAK	**Yakutsk**	**6.50**	**40**	*e*S		**Sb**	**Sb**	**05 42 05.1**	**+7.4**
YAK				Smax				05 42 05.1	
	comp=N,81nm,0.8s								
NBS	**Nizhniy Bestya**	**6.50**	**42**	*e*S		**Sn**	**Sn**	**05 41 33.3**	**-4.1**
NBS				*e*S		**Sb**	**Sb**	**05 42 05.3**	**+7.3**
YCRN	**Chernyshevskiy**	**6.98**	**327**	*e*S		**Sn**	**Sn**	**05 41 44.3**	**-4.7**
YCRN				*e*S		Sb	Sb	05 42 21.7	+10
YCRN				Smax				05 42 21.7	
	comp=N,55nm,1.3s								
USMR	**Ust'-Maya**	**7.77**	**61**	*e*S		Sb	Sb	05 42 45.4	+11
USMR				Smax				05 42 45.4	
	comp=N,22nm,0.9s								
BTGS	**Batagay**	**12.10**	**26**	*e*S				05 44 59.5	
BTGS				Smax				05 44 59.5	
	comp=N,19nm,1.8s								
MOMR	**Moma**	**13.87**	**40**	*e*S		S		05 45 53.5	+53
MOMR				Smax				05 45 53.5	
	comp=E,17nm,1.5s								

NNC 17 06:03:30.5±3.1, 36°.95N×70°.94E, h153km±75km, mb2.8, mpv3.7,1C-3D, Error ellipse: s-maj=49.3km s-min=17.3km az=116.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.50**	**319**	P		Pn	Pn	06 04 11.8	+0.1
MNAS	**Manas**	**5.66**	**12**	⇓P		Pn	Pn	06 04 52.7	0.0
	1.8nm,0.5s								
MNAS				⇑S		Sn	Sn	06 05 57.6	+0.5
	9.9nm,0.7s								
KK31	**Karatay Array**	**6.15**	**357**	⇓P		Pn	Pn	06 04 59.2	0.0
	4.8nm,0.3s,baz=181,slow=12,SNR=120								
KK31				⇓S		Sn	Sn	06 06 09.3	+0.6
	4.1nm,0.6s,baz=188,slow=26,SNR=12								

NIED ***17*** *06:18:00, 37°.30N×143°.40E, h8km, Mw4.2 Best double couple: M0 2.40000×10^15 NP1: φs 23.00000°, δ30.00000°, λ-83.00000°. NP2: φs 195.00000°, δ60.00000°, λ-94.00000°.*
IDC ***17*** *06:18:16.9±0.7, 37°.12N×143°.57E, h0km, mb4.2/14,*

mb1 4.4/19,mb1mx4.2/46,mbtmp4.2/19,ML3.4/5,MS3.2/13, Ms1 3.2/13,ms1mx3.0/40,Error ellipse: s-maj=17.6km s-min=14.4km az=124.0
MOS ***17*** *06:18:17.7±1.1,37°.26N×143°.46E,h17km,mb4.5/20,Error ellipse: s-maj=9.8km s-min=6.7km az=99.8*
NEIC ***17*** *06:18:18.6±0.4,37°.20N×143°.48E,h10km,mb4.5/10,Error ellipse: s-maj=8.4km s-min=5.8km az=138.0*
ISCJB ***17*** *06:18:19.3±1.3,37°.24N±0°.03×143°.35E±0°.04, h27km±10km,mb4.4/29,MS3.2/9,Error ellipse: s-maj=6.2km s-min=4.7km az=145.4*
JMA ***17*** *06:18:20.2±0.2,37°.28N×143°.35E,h50km,M4.2*
ISC 17 06:18:21.3±3.7,37°.25N±0°.05×143°.36E±0°.06,h29km±26km, n90,σ1§60/96,mb4.3/29,MS3.1/9,3C-4D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
JFK	**Kawauchi**	**1.98**	**274**	P		**Pn**	**06 18 52.4**	**-0.5**
JFK				*eS*		**Sn**	**06 19 15.5**	**-1.3**
JIO	**Ouri**	**1.99**	**308**	P		**Pn**	**06 18 52.2**	**-0.8**
JIO				*eS*		**Sn**	**06 19 15.4**	**-1.5**
ONAJ	**Iwakimizuishiy**	**2.05**	**267**	P		**Pn**	**06 18 52.9**	**-0.9**
JMM	**Marumori**	**2.13**	**288**	P		**Pn**	**06 18 54.0**	**-0.8**
JMM				*eS*		**Sn**	**06 19 19.5**	**-0.8**
JMK	**Ichinoseki**	**2.39**	**316**	P		**Pn**	**06 18 57.6**	**-0.9**
JFT	**Otama**	**2.42**	**277**	P		**Pn**	**06 18 59.1**	**+0.2**
JFT				*eS*		**Sn**	**06 19 27.4**	**-0.2**
JOM	**Ohasama**	**2.75**	**324**	P		**Pn**	**06 19 02.9**	**-0.5**
JOM				*eS*		**Sn**	**06 19 34.2**	**-1.4**
JYK	**Kaneyama**	**2.89**	**306**	P		**Pn**	**06 19 05.1**	**-0.3**
BSO1	**Boso 1**	**3.23**	**217**	P		**Pn**	**06 19 08.7**	**-0.8**
JAG	**Ashikaga**	**3.24**	**256**	P		**Pn**	**06 19 09.9**	**-0.2**
JAG				S		**Sn**	**06 19 46.6**	**-1.1**
JANG	**Nango**	**3.43**	**336**	P		**Pn**	**06 19 12.2**	**-0.6**
JANG				*eS*		**Sn**	**06 19 49.3**	**-3.2**
JAW	**Awa shima**	**3.47**	**292**	P		**Pn**	**06 19 14.1**	**+0.8**
JRY	**Ryogami san**	**3.79**	**252**	P		**Pn**	**06 19 17.2**	**-0.5**
JRY				S		**Sn**	**06 19 59.1**	**-2.3**
JOD2	**Odawara 2**	**3.98**	**241**	P		**Pn**	**06 19 19.5**	**-0.8**
JOD2				*eS*		**Sn**	**06 20 03.5**	**-2.5**
MJAR	**Matsushiro Arr**	**4.19**	**262**	Pn		**Pn**	**06 19 23.9**	**+0.7**
	10nm,0.3s,baz=78,slow=8.3,SNR=132							
MJAR				LR		LR	06 21 28.3	
	comp=Z,139nm,19.8s,baz=80,slow=44							
MAJO	**Matsushiro**	**4.19**	**262**	*d iP*		**Pn**	**06 19 24.7**	**+1.5**
MAJO	**Matsushiro**	**4.19**	**262**	*e*Pn		**Pn**	**06 19 24.3**	**+1.1**
MAT	**Matsushiro**	**4.19**	**262**	P		**Pn**	**06 19 24.2**	**+1.0**
MAT				*eS*		**Sn**	**06 20 12.4**	**+1.2**
JOT	**Ohata**	**4.50**	**337**	P		**Pn**	**06 19 28.2**	**+0.8**
JOT				S		**Sn**	**06 20 15.4**	**-3.3**
ERM	**Erimo**	**4.76**	**358**	*d iP*		Pn	06 19 29.0	-2.0
ERM				pmax	pmax			
	comp=Z,20nm,0.7s							
ERM	**Erimo**	**4.76**	**358**	*e*Pn		**Pn**	**06 19 29.1**	**-1.9**
ERM				*e*Sn		**Sn**	**06 20 19.5**	**-5.7**
JHJ2	**Mitsune**	**5.05**	**216**	*e*Pn		**Pn**	**06 19 35.0**	**0.0**
JHJ2				*e*Sn		**Sn**	**06 20 28.1**	**-4.2**
JHJ	**Hachijo jima 2**	**5.05**	**216**	Pn		**Pn**	**06 19 33.9**	**-1.2**
	comp=Z,13nm,0.3s,baz=168,slow=22,SNR=7.1							
JHJ				Sn		**Sn**	**06 20 26.9**	**-5.6**
	comp=Z,40nm,0.3s,baz=93,slow=23,SNR=5.2							
ASAJ	**Asahikawa**	**6.88**	**355**	Pn		**Pn**	**06 19 60.0**	**-0.2**
ASAJ	**Asahikawa**	**6.88**	**355**	P		**Pn**	**06 20 00.0**	**-0.2**
ASAJ	**Asahikawa**	**6.88**	**355**	Pn		**Pn**	**06 19 60.0**	**-0.2**
	comp=Z,1.6nm,0.5s							
ASAJ				*e*Sn		**Sn**	**06 21 14.5**	**-3.0**
KUR	**Kuril'sk**	**8.67**	**22**	*e*P		**Pn**	**06 20 22.6**	**-2.0**
YSS	**Yuzh-Sakhalins**	**9.71**	**358**	*e*P		**Pn**	**06 20 40.4**	**+1.6**
YSS				*e*S		**Sn**	**06 22 23.8**	**-3.0**
YSS				pmax	pmax			
	comp=Z,20nm,0.8s							
YSS				smax	smax			
	comp=N,30nm,1.2s							
YSS	**Yuzh-Sakhalins**	**9.71**	**358**	*e*Pn		**Pn**	**06 20 39.8**	**+0.9**
MSHR	**Mys Shultsa**	**10.77**	**303**	*e*P		**Pn**	**06 20 54.9**	**+1.4**
JNU	**Nakatsue**	**11.01**	**252**	Pn		**Pn**	**06 20 57.9**	**+1.1**
	comp=N,0.2nm,0.3s,baz=53,slow=11,SNR=5.8							
USRK	**Ussuriysk Ar.**	**11.06**	**312**	Pn		**Pn**	**06 21 00.4**	**+2.9**
	comp=N,0.3nm,0.3s,baz=116,slow=13,SNR=9.0							
USRK				LR		LR	06 25 02.8	
	comp=N,133nm,20.5s,baz=146,slow=36							
KSRS	**Korea Array**	**12.29**	**276**	Pn		**Pn**	**06 21 16.5**	**+2.3**
	comp=N,0.1nm,0.3s,baz=90,slow=14,SNR=19							
KSRS				LR		LR	06 25 32.0	
	comp=N,118nm,21.3s,baz=72,slow=35							
KSAR	**Wonju Array Be**	**12.32**	**276**	P		**Pn**	**06 21 16.6**	**+1.9**
KSAR	**Wonju Array Be**	**12.32**	**276**	Pn		**Pn**	**06 21 16.6**	**+1.9**
HABR	**Khabarovsk**	**12.75**	**334**	*e*P		Pn	06 21 18.2	-2.3
HABR				*e*S		**Sn**	**06 23 38.9**	**-2.5**
HABR				pmax	pmax			
	comp=E,16nm,1.4s							
HABR				pmax	pmax			
	comp=N,8.0nm,1.4s							
HABR				pmax	pmax			
	comp=Z,11nm,1.4s							
HABR				MLR	MLR			
	comp=Z,73nm,14.0s							
KLR	**Kul'dur**	**14.64**	**329**	Pn		Pn	06 21 44.4	-1.8
	comp=Z,0.2nm,0.3s,baz=128,slow=12,SNR=14							
KLR				LR		LR	06 26 54.4	
	comp=Z,63nm,19.3s,baz=146,slow=35							
PET	**Petropavlovsk**	**19.04**	**29**	*e*P		**P**	**06 22 40.3**	**-0.6**
PET				pmax	pmax			
	comp=Z,19nm,0.8s							
PET	**Petropavlovsk**	**19.04**	**29**	*e*P		**P**	**06 22 40.3**	**-0.6**
	comp=Z,20nm,0.8s							
HIA	**Hailar**	**20.88**	**313**	*e*P		**P**	**06 23 00.4**	**-0.6**
HIA				pmax	pmax			
	comp=Z,3.0nm,0.8s							
HIA	**Hailar**	**20.88**	**313**	*e*P		**P**	**06 23 00.4**	**-0.6**
	comp=Z,3.4nm,0.8s							
BJT	**Baijiatuan**	**21.39**	**286**	*e*P		**P**	**06 23 07.2**	**+0.7**
BJT				pmax	pmax			
	comp=Z,10.0nm,1.0s							
BJT	**Baijiatuan**	**21.39**	**286**	*e*P		**P**	**06 23 07.2**	**+0.7**
	comp=Z,9.8nm,1.0s							
MA2	**Magadan**	**22.85**	**10**	LR		LR	06 33 24.3	
	comp=Z,33nm,18.7s,baz=144,slow=40							
YAK	**Yakutsk**	**26.22**	**345**	LR		LR	06 34 41.9	
	comp=Z,51nm,19.3s,baz=184,slow=37							
YAK	**Yakutsk**	**26.22**	**345**	*i* P		**P**	**06 23 53.6**	**+0.3**
YAK				pmax	pmax			
	comp=Z,8.0nm,0.6s							
YAK	**Yakutsk**	**26.22**	**345**	*e*P		**P**	**06 23 53.5**	**+0.1**
	comp=Z,13nm,0.6s							
SEY	**Seymchan**	**26.30**	**9**	P		**P**	**06 23 55.2**	**+1.2**
	comp=Z,6.1nm,0.7s,baz=202,slow=9.2,SNR=12							
H11N2	**WAKE ISLAND Hy**	**26.95**	**124**	T		T	06 52 07.0	
	baz=316,slow=75,SNR=6.6							
H11N1	**WAKE ISLAND Hy**	**26.96**	**124**	T		T	06 52 10.2	
	baz=316,slow=75,SNR=3.9							
H11N3	**WAKE ISLAND Hy**	**26.97**	**124**	T		T	06 52 10.1	
	baz=316,slow=75,SNR=5.1							
BOD	**Bodaibo**	**28.19**	**326**	*e*P		**P**	**06 24 12.0**	**+0.9**
BOD				pmax	pmax			
	comp=Z,5.0nm,0.8s							
ENH	**Enshi**	**28.90**	**266**	*e*P		**P**	**06 24 16.1**	**-1.6**
	comp=Z,35nm,1.9s							
SONM	**Songino Array**	**28.96**	**303**	P		**P**	**06 24 21.1**	**+2.9**
	comp=Z,2.6nm,0.9s,baz=107,slow=9.0,SNR=14							
SONM				LR		LR	06 35 12.2	
	comp=Z,44nm,21.0s,baz=124,slow=35							
ZAK	**Zakamensk**	**31.36**	**308**	*e*P		**P**	**06 24 40.3**	**+1.0**
ZAK				pmax	pmax			
	comp=Z,3.0nm,1.4s							
BILL	**Bilibino**	**33.39**	**15**	*i* P		**P**	**06 24 57.1**	**+0.3**
BILL				*i*			06 26 07.2	
BILL				*i*			06 27 37.1	
BILL				pmax	pmax			
	comp=Z,3.0nm,0.8s							
ZALV	**Zalesovo Beam**	**42.92**	**312**	P		**P**	**06 26 19.0**	**+1.9**
	comp=Z,1.9nm,0.5s,baz=90,slow=7.7,SNR=8.1							
ZALV				LR		LR	06 45 09.0	
	comp=Z,25nm,20.1s,baz=70,slow=37							
CMAR	**Chiang Mai Arr**	**43.06**	**257**	LR		LR	06 44 56.4	
	comp=Z,25nm,18.9s,baz=75,slow=37							
NRIK	**Noril'sk**	**43.73**	**335**	LR		LR	06 46 28.7	
	comp=Z,29nm,18.7s,baz=124,slow=38							
MKAR	**Makanchi Array**	**45.32**	**302**	P		**P**	**06 26 37.8**	**+1.3**
	comp=Z,3.4nm,0.8s,baz=82,slow=10,SNR=13							
MKAR				LR		LR	06 45 33.9	
	comp=Z,29nm,21.6s,baz=74,slow=36							
KURK	**Kurchatov**	**47.02**	**308**	*e*P		**P**	**06 26 50.3**	**+0.5**
KURK	**Kurchatov**	**47.02**	**308**	*e*P		**P**	**06 26 50.3**	**+0.5**
	comp=Z,76nm,0.6s							
COLA	**College**	**48.06**	**32**	*i*P		**P**	**06 26 58.2**	**+0.5**
COLA				pmax	pmax			
	comp=Z,3.0nm,0.9s							
ILAR	**Eielson Array**	**48.48**	**32**	P		**P**	**06 27 01.1**	**+0.2**
	comp=Z,3.4nm,0.6s,baz=260,slow=6.2,SNR=55							
INK	**Inuvik**	**53.48**	**27**	P		**P**	**06 27 39.0**	**+0.6**
	comp=Z,2.6nm,0.8s,baz=290,slow=7.9,SNR=8.0							
INK	**Inuvik**	**53.48**	**27**	P		**P**	**06 27 39.0**	**+0.6**
INK				pmax	pmax			
	comp=Z,3.0nm,0.8s							
ARU	**Arti**	**57.22**	**319**	*d iP*		P	06 28 15.2	+10
ARU							06 30 22.4	
ARU				S		S	06 36 18.6	+19
ARU				pmax	pmax			
	comp=Z,9.0nm,1.7s							
WRAB	**Tennant Creek**	**57.51**	**190**	*e*P		**P**	**06 28 07.2**	**-0.7**
WRAB				pmax	pmax			
	comp=Z,18nm,0.7s							
WRAB	**Tennant Creek**	**57.51**	**190**	*e*P		**P**	**06 28 07.2**	**-0.7**
	comp=Z,7.7nm,0.8s							
WRA	**Warramunga Arr**	**57.52**	**190**	P		**P**	**06 28 07.0**	**-0.9**
	comp=Z,5.9nm,0.7s,baz=11,slow=7.4,SNR=42							
ABKAR	**Akbulak array**	**58.98**	**311**	*e*P		**P**	**06 28 18.7**	**+0.8**
	comp=Z,0.6nm,0.5s							
ABKAR				*e*PcP		**PcP**	**06 29 07.0**	**+0.2**
ASAR	**Alice Springs**	**61.24**	**190**	P		**P**	**06 28 32.9**	**-0.8**
	comp=Z,1.8nm,0.7s,baz=14,slow=8.2,SNR=16							
YKA	**Yellowknife Ar**	**62.83**	**31**	P		**P**	**06 28 43.8**	**-0.1**
	comp=Z,0.8nm,0.7s,baz=305,slow=6.9,SNR=7.6							
FINES	**FINESS Array B**	**69.34**	**333**	P		**P**	**06 29 26.4**	**+0.8**
	comp=Z,2.7nm,0.7s,baz=46,slow=8.2,SNR=11							
NB2	**NORSAR Subarra**	**74.58**	**338**	P		**P**	**06 29 57.7**	**+0.5**
	comp=Z,0.7nm,0.6s,baz=39,slow=5.9							
NOA	**NORSAR Array B**	**74.58**	**338**	P		**P**	**06 29 57.9**	**+0.8**
	comp=Z,1.4nm,1.0s,baz=45,slow=4.4,SNR=4.6							
NOA	**NORSAR Array B**	**74.58**	**338**	P		**P**	**06 29 57.9**	**+0.8**
NOA				pmax	pmax			
	comp=Z,2.0nm,0.9s							
IMW	**Indian Meadow**	**74.91**	**46**	*e*P		**P**	**06 30 01.5**	**+1.8**
	comp=Z,1.2nm,0.4s							
AKASG	**Malin Array Be**	**75.07**	**323**	P		**P**	**06 30 00.3**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=46,slow=5.8,SNR=3.9							
PDAR	**Pinedale Array**	**76.40**	**46**	P		**P**	**06 30 08.3**	**+0.1**
	comp=Z,0.9nm,0.7s,baz=293,slow=2.4,SNR=10							
PV01	**Paradox Valley**	**79.89**	**50**	*e*P		**P**	**06 30 28.6**	**+1.0**
	comp=Z,84nm,0.7s							
CLL	**Collm**	**81.67**	**331**	*e*P		**P**	**06 30 35.0**	**-1.6**
CLL	**Collm**	**81.67**	**331**	*e*P		**P**	**06 30 35.0**	**-1.6**
ANMO	**Albuquerque**	**83.25**	**51**	*e*P		**P**	**06 30 45.6**	**+0.2**
ANMO				pmax	pmax			
	comp=Z,3.0nm,1.2s							
121A	**Cookes Peak, D**	**83.99**	**53**	*e*P		**P**	**06 30 49.6**	**+0.4**
	comp=Z,6.6nm,1.2s							
TXAR	**Lajitas Array**	**88.75**	**54**	P		**P**	**06 31 12.7**	**+0.2**
	comp=Z,1.5nm,0.7s,baz=298,slow=3.3,SNR=23							
TXAR				LR		LR	07 11 16.8	
	comp=Z,14nm,18.0s,baz=0.0,slow=36							
MIAR	**Mount Ida**	**91.10**	**44**	*e*P		**P**	**06 31 23.6**	**+0.3**
MIAR				pmax	pmax			
	comp=Z,6.0nm,1.2s							
MIAR	**Mount Ida**	**91.10**	**44**	*e*P		**P**	**06 31 23.6**	**+0.3**
	comp=Z,6.4nm,1.2s							
KEST	**Kesra**	**95.78**	**324**	LR		LR	07 22 53.9	
	comp=Z,26nm,18.2s,baz=287,slow=40							
LPAZ	**La Paz**	**145.23**	**62**	PKPbc		**PKPbc**	**06 37 57.2**	**+0.2**
	comp=Z,1.0nm,0.6s,baz=349,slow=4.2,SNR=6.3							

JMA 17 06:22:20.3±0.1,38°.25N×142°.75E,h18km±2km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
JIO	**Ouri**	**1.12**	**281**	P		Pn	06 22 40.5	-0.6
JIO				*e*S		Sb	06 22 55.4	0.0
OFUJ	**Ofunato**	**1.19**	**315**	P		Pn	06 22 41.8	-0.2
JMK	**Ichinoseki**	**1.39**	**301**	P		Pn	06 22 44.8	0.0
JMM	**Marumori**	**1.59**	**257**	P		Pn	06 22 48.1	+0.5
JMM				S		Sn	06 23 07.0	-0.7
JOU	**Okura**	**1.65**	**275**	P		Pn	06 22 48.9	+0.6
JOU				*e*S		Sb	06 23 10.0	-0.5
JOM	**Ohasama**	**1.67**	**317**	P		Pn	06 22 49.3	+0.7
JYK	**Kaneyama**	**1.99**	**290**	P		Pn	06 22 54.2	+1.2
JYK				*e*S		Sb	06 23 20.1	-0.3
JRG	**Rokugo**	**2.01**	**305**	P		Pn	06 22 54.8	+1.5
JFT	**Otama**	**2.04**	**250**	S		Sn	06 23 20.2	+1.3
JYS	**Shirataka**	**2.11**	**270**	P		Pn	06 22 55.9	+1.1

ISCJB ***17*** *06:45:06.4±0.6,36°.63N±0°.03×29°.50E±0°.05,h10km, Error ellipse: s-maj=5.5km s-min=4.6km az=5.7*
CSEM ***17*** *06:45:06.3±0.3,36°.63N×29°.49E,h10km,MD2.6,Error ellipse: s-maj=6.0km s-min=5.3km az=99.0*
ISK ***17*** *06:45:06.1,36°.64N×29°.50E,h16km,MD2.6*
DDA ***17*** *06:45:06.2,36°.63N×29°.55E,h7km,Md2.8*
ISC 17 06:45:06.6±1.0,36°.64N±0°.03×29°.48E±0°.03,h10km,n13, σ1§01/23,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
FETY	**Fethiye**	**0.32**	**269**	*e*PG		**Pg**	**06 45 12.9**	**-0.2**
FETY				*e*SG		**Sb**	**06 45 19.6**	**-0.2**
FETY	**Fethiye**	**0.32**	**269**	*e*Pg		**Pg**	**06 45 12.9**	**-0.2**
FETY				*e*Sg		**Sb**	**06 45 19.6**	**-0.2**
ELL	**Elmali**	**0.36**	**73**	*e*PG		**Pg**	**06 45 13.3**	**-0.5**
ELL				*e*SG		**Sb**	**06 45 20.0**	**-0.9**
ELL	**Elmali**	**0.36**	**73**	*e*Pg		**Pg**	**06 45 13.3**	**-0.5**
ELL				*e*Sg		**Sb**	**06 45 20.0**	**-0.9**
AKAS	**Kas**	**0.42**	**167**	*i* P		**Pg**	**06 45 14.4**	**-0.5**
AKAS				*i* S		**Sg**	**06 45 20.3**	**-0.2**
AKAS	**Kas**	**0.42**	**167**	P		**Pg**	**06 45 14.4**	**-0.5**
AKAS				S		**Sg**	**06 45 20.3**	**-0.2**
GLHS	**Glhisar (BURDU**	**0.51**	**1**	*e*PG		**Pg**	**06 45 16.1**	**-0.5**
GLHS				*e*SG		**Sb**	**06 45 24.9**	**-0.5**
GLHS	**Glhisar (BURDU**	**0.51**	**1**	*e*Pg		**Pg**	**06 45 16.1**	**-0.5**
GLHS				*e*Sg		**Sb**	**06 45 24.9**	**-0.5**
GOLH	**Golhisar**	**0.60**	**6**	*i* P		**Pg**	**06 45 17.7**	**-0.5**
GOLH				*i* S		**Sb**	**06 45 27.1**	**-0.7**
GOLH	**Golhisar**	**0.60**	**6**	P		**Pg**	**06 45 17.7**	**-0.5**
GOLH				S		**Sb**	**06 45 27.1**	**-0.7**
KORT	**Korkueli**	**0.78**	**63**	*i* S		**Sn**	**06 45 39.5**	**+3.8**
YER	**Yerkesik**	**1.08**	**297**	*e*PN		**Pb**	**06 45 27.2**	**-0.3**
YER	**Yerkesik**	**1.08**	**297**	*e*Pn		**Pb**	**06 45 27.2**	**-0.3**

IDC 17 06:48:06.5±1.6,0°.50N×125°.13E,h0km,mb3.4/3, mb1 3.6/3,mb1mx3.3/43,mbtmp3.4/3,Error ellipse: s-maj=179.4km s-min=25.5km az=64.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
WRA	**Warramunga Arr**	**22.24**	**157**	P		P	06 53 04.3	-0.8
	1.3nm,0.8s,baz=334,slow=11,SNR=7.4							
ASAR	**Alice Springs**	**25.50**	**161**	P		P	06 53 37.5	+0.7
	0.3nm,0.6s,baz=340,slow=7.9,SNR=3.9							
ASAR				PcP		PcP	06 57 08.2	-0.6
	0.3nm,0.4s,baz=355,slow=2.3,SNR=6.0							
MKAR	**Makanchi Array**	**59.33**	**327**	P		P	06 58 10.4	0.0
	0.3nm,0.3s,baz=128,slow=8.2,SNR=6.3							

IDC ***17*** *06:53:28.9±1.8,29°.56S×176°.28W,h0km,mb4.2/4, mb1 4.4/5,mb1mx4.0/30,mbtmp4.2/5,ML3.4/1,MS3.4/4, Ms1 3.4/4,ms1mx3.0/26,Error ellipse: s-maj=38.1km s-min=29.8km az=2.0*
ISCJB ***17*** *06:53:29.7±1.7,29°.63S±0°.09×176°.1W±0°.1,h28km, mb4.3/4,MS3.0/1,Error ellipse: s-maj=19.2km s-min=11.9km az=162.7*
ISC 17 06:53:32.5±1.5,29°.65±0°.1×176°.2W±0°.1,h28km,n12, σ1§24/10,mb4.3/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
RAO	**Raoul Island**	**1.51**	**281**	Pn		**Pn**	**06 53 57.1**	**-0.6**
	362nm,0.3s,baz=103,slow=6.2,SNR=15							
RAO				Sn		**Sn**	**06 54 16.7**	**+0.3**
	1μm,0.3s,baz=280,slow=23,SNR=12							
RAO				LR		LR	06 54 35.2	
	comp=Z,948nm,21.6s,baz=136,slow=45							
URZ	**Urewera**	**10.29**	**211**	Pn		**Pn**	**06 55 56.6**	**-1.7**
	0.3nm,0.3s,baz=348,slow=5.8,SNR=2.7							
URZ				Sn		**Sn**	**06 57 54.7**	**+1.9**
	1.2nm,0.3s,baz=57,slow=23,SNR=4.8							
RAR	**Rarotonga**	**17.02**	**65**	LR		LR	07 03 06.6	
	comp=Z,99nm,18.8s,baz=236,slow=34							
DZM	**Mont Dzumac**	**17.28**	**292**	LR		LR	07 02 36.0	
	comp=Z,216nm,19.6s,baz=52,slow=32							
RPZ	**Rata Peaks**	**17.41**	**212**	LR		LR	07 05 04.1	
	comp=Z,141nm,18.6s,baz=33,slow=40							
PPT	**Papeete**	**27.11**	**70**	LR		LR	07 08 42.2	
	comp=Z,42nm,18.1s,baz=296,slow=34							
CTA	**Charters Tower**	**35.21**	**277**	P		**P**	**07 00 25.4**	**+0.8**
	3.9nm,0.6s,baz=101,slow=12,SNR=3.5							
ASAR	**Alice Springs**	**44.70**	**265**	P		**P**	**07 01 42.9**	**-0.5**
	1.8nm,0.5s,baz=103,slow=6.7,SNR=36							
WRA	**Warramunga Arr**	**45.62**	**270**	P		**P**	**07 01 50.0**	**-0.7**
	3.3nm,0.6s,baz=109,slow=7.6,SNR=25							
FITZ	**Fitzroy Crossi**	**53.91**	**268**	P		**P**	**07 02 54.6**	**+0.8**
	1.5nm,0.7s,baz=135,slow=4.3,SNR=4.4							
FINES	**FINESS Array B**	**144.86**	**342**	PKP		**PKPdf**	**07 13 06.1**	**-0.1**
	1.9nm,0.9s,baz=48,slow=2.1,SNR=6.8							
AKASG	**Malin Array Be**	**151.53**	**325**	PKPbc		**PKPbc**	**07 13 24.8**	**+1.2**
	0.3nm,0.3s,baz=44,slow=3.3,SNR=4.7							

IDC ***17*** *06:53:46.5±3.1,39°.07N×144°.65E,h0km,mb3.3/2, mb1 3.6/4,mb1mx3.3/45,mbtmp3.4/4,ML3.0/2,Error ellipse: s-maj=74.3km s-min=31.1km az=156.0*
ISCJB ***17*** *06:53:47.7±0.9,39°.24N±0°.06×144°.46E±0°.06,h19km, mb3.3/2,Error ellipse: s-maj=8.9km s-min=6.1km az=143.1*
JMA ***17*** *06:53:49.8±0.1,39°.15N×144°.35E,h31km,M3.4*
ISC 17 06:53:49.2±1.3,39°.15N±0°.08×144°.45E±0°.08,h19km,n21, σ1§44/28,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
MIYJ	**Miyakonagasawa**	**2.08**	**283**	P		**Pn**	**06 54 22.7**	**-0.4**
MIYJ				*e*S		**Sn**	**06 54 47.0**	**-1.5**
JTH	**Tanohata**	**2.15**	**292**	P		**Pn**	**06 54 23.4**	**-0.6**
JTH				*e*S		**Sn**	**06 54 49.2**	**-0.9**
OFUJ	**Ofunato**	**2.16**	**269**	P		**Pn**	**06 54 23.8**	**-0.4**
JOM	**Ohasama**	**2.47**	**278**	P		**Pn**	**06 54 28.6**	**+0.1**
JOM				S		**Sn**	**06 54 57.2**	**-0.9**
JMK	**Ichinoseki**	**2.52**	**266**	P		**Pn**	**06 54 29.2**	**0.0**
JMK				S		**Sn**	**06 54 57.7**	**-1.7**
JANG	**Nango**	**2.57**	**299**	P		**Pn**	**06 54 29.0**	**-0.8**
JRG	**Rokugo**	**2.97**	**276**	P		**Pn**	**06 54 35.9**	**+0.6**
JRG				S		**Sn**	**06 55 11.2**	**+0.7**
JOU	**Okura**	**3.06**	**256**	P		**Pn**	**06 54 36.7**	**+0.1**
JOU				*e*S		**Sn**	**06 55 12.2**	**-0.5**
JTM	**Tenmabayashi**	**3.07**	**303**	S		**Sn**	**06 55 11.7**	**-1.1**
JAH	**Hinai**	**3.12**	**291**	P		**Pn**	**06 54 37.9**	**+0.5**
JYK	**Kaneyama**	**3.19**	**267**	P		**Pn**	**06 54 38.9**	**+0.5**
JFT	**Otama**	**3.62**	**245**	P		**Pn**	**06 54 44.4**	**+0.1**
NEM2	**Nemuro 2**	**4.32**	**13**	P		Pn	06 54 51.1	-2.8
JTKR	**Abashiri--Toko**	**4.83**	**355**	P		**Pn**	**06 55 00.2**	**-0.7**
JTKR				S		**Sn**	**06 55 53.4**	**-2.9**
JRY	**Ryogami san**	**5.40**	**236**	P		**Pn**	**06 55 08.0**	**-0.8**
MJAR	**Matsushiro Arr**	**5.58**	**244**	Pn		**Pn**	**06 55 12.3**	**+1.0**
	2.3nm,0.3s,baz=57,slow=11,SNR=52							
MAT	**Matsushiro**	**5.58**	**244**	P		**Pn**	**06 55 12.2**	**+0.9**
MAT				*e*S		**Sn**	**06 56 10.8**	**-4.1**
USRK	**Ussuriysk Ar.**	**10.59**	**302**	Pn		**Pn**	**06 56 23.0**	**+3.1**
	0.2nm,0.3s,baz=112,slow=12,SNR=4.4							
ZALV	**Zalesovo Beam**	**42.30**	**311**	pP		pP	07 01 51.7	+4.4
	0.8nm,0.6s,baz=116,slow=6.8,SNR=3.6							
MKAR	**Makanchi Array**	**45.06**	**301**	P		**P**	**07 02 04.9**	**+1.1**
	0.4nm,0.8s,baz=62,slow=12,SNR=3.4							
ILAR	**Eielson Array**	**46.42**	**33**	P		**P**	**07 02 14.3**	**+0.1**
	0.3nm,0.7s,baz=262,slow=7.5,SNR=5.1							
ILAR				pP		**sP**	**07 02 23.6**	**+1.1**
	0.5nm,0.7s,baz=266,slow=6.1,SNR=7.7							

**JMA 17 06:57:03.

baz=95
133A Sb Sn 06 58 47.3 -0.5
baz=95
337A Centerville 1.56 137 P Pb 06 58 28.4 -0.4
baz=317
337A Sb Sg 06 58 50.2 +0.8
baz=317
233A Rising Star 1.57 254 Pb Pn 06 58 28.5 +0.4
baz=72
Y34A Reagan Ranch, 1.58 341 Pb Pn 06 58 28.4 +0.1
baz=162
Y34A Sn 06 58 48.8 -0.5
baz=162
Y36A Durant 1.60 26 Pb Pn 06 58 29.3 +0.7
baz=208
Y36A Sb Sb 06 58 51.1 +1.0
baz=208
Z33A Whitaker Ranch 1.60 301 Pb Pn 06 58 29.2 +0.5
baz=121
Z33A Sb Sn 06 58 50.4 +0.5
baz=121
436A Wall Ranch, Ga 1.71 170 Sb Sg 06 58 54.8 +0.4
baz=349
435B Jarrell 1.72 193 Pb Pn 06 58 30.9 +0.7
baz=12
435B Sg Sg 06 58 56.1 +1.5
baz=12
138A Matatall Enter 1.73 83 P Pn 06 58 30.7 +0.4
baz=265
138A S Sb 06 58 54.1 +0.1
baz=265
238A Jacksonville 1.76 105 P Pn 06 58 31.2 +0.5
baz=286
338A Crockett 1.90 125 S Sg 06 58 58.7 -1.6
baz=306
434A Burnet 1.91 211 P Pn 06 58 33.2 +0.3
baz=29
434A Sb Sb 06 58 59.8 +0.6
baz=29
X35A Drake 1.94 4 Pb Pn 06 58 33.8 +0.6
baz=185
333A Richland Sprin 1.95 235 Pb Pn 06 58 33.8 +0.4
baz=53
333A Sb Sb 06 59 00.3 +0.2
baz=53
Z38A Mt. Pleasant 1.96 66 S Sn 06 58 59.0 +0.2
baz=248
Y37A Hugo 1.97 39 P Pn 06 58 33.9 +0.3
baz=221
Y37A S Sn 06 58 60.0 +1.2
baz=221
Y33A Hilltop Ranch, 1.99 321 Pb Pn 06 58 34.8 +0.9
baz=141
Y33A Sb Sn 06 59 00.7 +1.4
baz=141
ABTX Abilene, Hawle 2.13 275 P Pn 06 58 36.4 +0.5
baz=93
ABTX Abilene, Hawle 2.13 275 *e*Pn Pn 06 58 36.6 +0.7
ABTX *e*Sn Sn 06 59 03.8 +0.8
X36A Centrahoma 2.20 17 P Pn 06 58 37.7 +0.9
baz=198
X36A Sb Sb 06 59 08.1 +0.6
baz=198
NATX Nacogdoches 2.21 108 *e*Pn Pn 06 58 36.5 -0.4
X34A Smith Ranch, M 2.21 345 Pb Pn 06 58 38.7 +1.7
baz=165
X34A Sb Sb 06 59 09.2 +1.3
baz=165
438A Sam Houston St 2.21 140 S Sb 06 59 06.7 -1.1
baz=320
239A Gary 2.29 100 S Sn 06 59 07.1 +0.3
baz=282
X33A Lawton 2.37 331 Pb Pn 06 58 41.6 +2.4
baz=152
Y38A Idabel 2.48 53 P Pn 06 58 40.6 -0.1
baz=235
X37A Clayton 2.58 34 P Pn 06 58 42.9 +0.9
baz=216
WMOK Wichita Mounta 2.66 329 P Pn 06 58 43.6 +0.5
baz=149
WMOK Wichita Mounta 2.66 329 *e*Pn Pn 06 58 43.7 +0.5
534A Blanco 2.69 206 P Pn 06 58 43.7 +0.2
baz=24
W35A Tecumseh 2.69 4 Pb Pb 06 58 47.2 -0.9
baz=185
W34A Bridge Creek, 2.82 349 *e*Pn Pn 06 58 47.5 +2.1
W34A *e*Sn Sn 06 59 23.2 +3.4
JCT Junction City 3.02 230 *e*Pn Pn 06 58 48.5 +0.3
V34A Guthrie 3.38 355 *e*Pn Pn 06 58 53.9 +0.8
WLAR White Oak Lake 3.58 69 *e*Pn Pn 06 58 56.4 +0.6
TUL1 Leonard 3.61 17 *e*Pn Pn 06 58 56.9 +0.6
TUL1 *e*Sg Sg 06 59 54.8 -0.7
MIAR Mount Ida 3.62 54 *e*Pn Pn 06 58 56.1 -0.2
MIAR *e*Sn Sn 06 59 36.2 -3.4
U34A Anderson Ranch 3.98 355 *e*Pn Pn 06 59 02.1 +0.9
U34A *e*Sn Sn 06 59 51.3 +2.8
AMTX Amarillo 4.50 304 *e*Pn Pn 06 59 10.1 +1.6
AMTX *e*Sn Sn 07 00 03.6 +2.2
UALR University of 4.61 59 *e*Pn Pn 06 59 10.3 +0.4
HHAR Hobbs 4.63 34 *e*Pn Pn 06 59 10.6 +0.3
CCAR Cane Creek 4.72 71 *e*Pn Pn 06 59 08.6 -2.8
X301 Greenbrier Sit 4.81 54 *e*Pn Pn 06 59 13.3 +0.7
X201 Greenbrier Sit 4.86 53 *e*Pn Pn 06 59 14.2 +0.8
WHAR Wooly Hollow 4.91 54 *e*Pn Pn 06 59 14.7 +0.6
MSTX Muleshoe 4.96 289 *e*Pn Pn 06 59 15.7 +0.8
MSTX *e*Sn Sn 07 00 11.6 -1.3
TX31 Lajitas Ar. Si 6.43 243 *e*Pn Pn 06 59 35.3 +0.3
KSU1 Kansas State U 6.64 3 *e*Pn Pn 06 59 39.2 +1.4
PBMO Poplar Bluff 7.00 50 *e*Pn Pn 06 59 42.7 0.0
MNTX Cornudas Mount 7.05 266 *e*Pn Pn 06 59 44.3 +0.8
KSCO Kaye Shedlock' 7.92 327 *e*Pn Pn 06 59 54.4 -1.1
12nm,0.4s
KSCO *e*Sg Sg 07 02 11.4 -2.1
ANMO Albuquerque 8.16 290 Pn Pn 07 00 02.1 +3.2
3.5nm,0.4s
ANMO *e*Sg Sg 07 02 14.8 -6.6
LRAL Lakeview Retre 8.55 83 *e*Pn Pn 07 00 04.0 0.0
LRAL *e*Sn Sn 07 01 37.7 -3.3
ECSD EROS Data Cent 11.26 2 *e*Pn Pn 07 00 39.6 -1.5

IDC ***17*** *07:08:00.7±0.7,29.˚68S×176.˚84W, h0km, mb4.4/11, mb1 4.5/13, mb1mx4.4/22, mbtmp4.4/13, ML4.2/2, MS3.8/14, Ms1 3.8/14, ms1mx3.6/24, Error ellipse: s-maj=21.5km s-min=18.3km az=73.0*

NEIC ***17*** *07:08:02.5±0.3,29.˚73S×176.˚95W, h10km, mb4.8/10, Error ellipse: s-maj=9.5km s-min=7.1km az=103.0*

ISCJB ***17*** *07:08:03.8±0.5,29.˚82S±0.˚05×177.˚09W±0.˚10, h24km, mb4.7/26, MS3.9/12, Error ellipse: s-maj=12.6km s-min=7.5km az=11.5*

MOS ***17*** *07:08:05.7±1.2,29.˚76S×177.˚13W, h33km, mb5.2/6, Error ellipse: s-maj=20.1km s-min=13.1km az=126.8*

BJI ***17*** *07:08:05.4,29.˚27S×176.˚60W, h36km, mb5.2/18, mB5.6/13, Ms5.2/4, Ms7 4.9/6*

ISC 17 07:08:04.7±0.4,29.˚83S±0.˚06×176.˚94W±0.˚08, h24km, n122, σ1°58/122, mb4.7/26, MS3.9/12, 4C-7D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.03**	**304**	Pn		Pn	**Pb**	**07 08 24.0**	**+0.1**
	994nm,0.3s,baz=268,slow=22,SNR=43								
RAO				Sn			**Sn**	**07 08 41.0**	**+3.6**
	3μm,0.3s,baz=5.4,slow=23,SNR=18								
RAO				LR			LR	07 08 59.2	
	comp=Z,6μm,18.0s,baz=52,slow=57								
URZ	**Urewera**	**9.74**	**209**	Pn			**Pn**	**07 10 24.6**	**+1.3**
	1.0nm,0.3s,baz=66,slow=18,SNR=5.3								
URZ				Sn			**Sn**	**07 12 09.9**	**-2.0**
	1.7nm,0.3s,baz=115,slow=16,SNR=8.7								
URZ				LR			LR	07 14 33.8	
	comp=Z,536nm,18.2s,baz=27,slow=40								
URZ	**Urewera**	**9.74**	**209**	Pn			**Pn**	**07 10 24.6**	**+1.3**
URZ				Sn			**Sn**	**07 12 12.3**	**+0.3**
MSVF	**Nonsavu**	**12.89**	**338**	*e*P			**Pn**	**07 11 06.0**	**-0.5**
MSVF	**Nonsavu**	**12.89**	**338**	*e*Pn			**Pn**	**07 11 06.0**	**-0.5**
OXZ	**Oxford**	**16.09**	**210**	*e*Pn			**Pn**	**07 11 50.6**	**+1.3**
	28nm,0.8s								
OXZ				*e*Sn			**Sn**	**07 14 39.4**	**-7.6**
DZM	**Mont Dzumac**	**16.82**	**293**	Pn			**P**	**07 12 03.2**	**+2.5**
	0.5nm,0.3s,baz=97,slow=16,SNR=6.9								
DZM				LR			LR	07 17 25.8	
	comp=Z,1μm,18.1s,baz=106,slow=34								
DZM	**Mont Dzumac**	**16.82**	**293**	*e*P			**P**	**07 12 03.0**	**+2.3**
	131nm,1.5s								
DZM				*e*LR			LR	07 16 01.8	
	927nm,25.1s								
DZM	**Mont Dzumac**	**16.82**	**293**	*e*Pn			**Pn**	**07 11 53.5**	**-5.2**
	47nm,1.1s								
RPZ	**Rata Peaks**	**16.84**	**211**	Pn			**Pn**	**07 11 58.9**	**+0.2**
	1.6nm,0.3s,baz=47,slow=7.0,SNR=8.1								
RPZ	**Rata Peaks**	**16.84**	**211**	*e*Pn			**Pn**	**07 11 59.1**	**+0.3**
RAR	**Rarotonga**	**17.69**	**65**	LR			LR	07 16 28.1	
	comp=Z,209nm,21.0s,baz=225,slow=29								
TBI	**Tubuai**	**25.37**	**82**	*e*LR			LR	07 19 33.0	
	335nm,31.5s								
TBI	**Tubuai**	**25.37**	**82**	*e*T			T	07 40 12.6	
	4.2nm,0.3s								
PAE	**Paea**	**27.74**	**70**	*e*T			T	07 43 13.5	
	2.3nm,0.3s								
PPT2	**Papeete2**	**27.78**	**70**	*e*LR			LR	07 20 40.4	
	326nm,31.0s								
PPT	**Papeete**	**27.79**	**70**	LR			LR	07 24 14.0	
	comp=Z,72nm,18.4s,baz=246,slow=35								
HNR	**Honiara**	**29.65**	**308**	LR			LR	07 23 58.7	
	comp=Z,154nm,19.4s,baz=126,slow=32								
STKA	**Stephens Creek**	**35.51**	**256**	P			**P**	**07 15 00.7**	**+1.0**
	11nm,0.7s,baz=83,slow=9.5,SNR=16								
STKA				LR			LR	07 28 46.8	
	comp=Z,276nm,18.2s,baz=37,slow=35								
STKA	**Stephens Creek**	**35.51**	**256**	*e*P			**P**	**07 14 59.5**	**-0.1**
STKA				pmax			pmax		
	comp=Z,3.0nm,0.8s								
STKA	**Stephens Creek**	**35.51**	**256**	*e*P			**P**	**07 14 59.5**	**-0.1**
	comp=Z,2.7nm,0.8s								
AS01	**Alice Springs**	**44.02**	**266**	*e*P			**P**	**07 16 10.3**	**-0.4**
AS31	**Alice Springs**	**44.06**	**266**	*e*P			**P**	**07 16 10.8**	**-0.2**
	comp=Z,2.3nm,0.9s								
ASAR	**Alice Springs**	**44.06**	**266**	P			**P**	**07 16 09.8**	**-1.2**
	comp=Z,4.6nm,0.8s,baz=105,slow=7.5,SNR=38								
ASAR				PcP			**PcP**	**07 17 56.0**	**-0.1**
	comp=Z,1.1nm,0.7s,baz=136,slow=4.5,SNR=4.6								
ASAR				LR			LR	07 34 36.2	
	comp=Z,575nm,18.1s,baz=102,slow=36								
WB2	**Warramunga Arr**	**44.99**	**271**	*e*P			**P**	**07 16 17.5**	**-0.9**
	comp=Z,18nm,0.8s								
WRAB	**Tennant Creek**	**45.00**	**271**	*de*P			**P**	**07 16 18.0**	**-0.4**
WRAB				*i* *PP			**pP**	**07 16 26.6**	**+0.8**
WRAB				pmax			pmax		
	comp=Z,30nm,1.0s								
WRAB	**Tennant Creek**	**45.00**	**271**	*e*P			**P**	**07 16 17.9**	**-0.6**
	comp=Z,16nm,0.8s								
WRA	**Warramunga Arr**	**45.00**	**271**	P			**P**	**07 16 17.9**	**-0.6**
	comp=Z,14nm,0.8s,baz=110,slow=7.7,SNR=65								
WRA				LR			LR	07 34 24.6	
	comp=Z,271nm,18.2s,baz=105,slow=35								
FORT	**Forrest**	**47.09**	**254**	*e*P			**P**	**07 16 34.3**	**-0.4**
	comp=Z,139nm,0.8s								
VNDA	**Vanda**	**48.75**	**186**	P			**P**	**07 16 49.3**	**+2.3**
	comp=Z,0.7nm,0.8s,baz=11,slow=5.2,SNR=3.3								
VNDA				LR			LR	07 33 38.7	
	comp=Z,76nm,21.1s,baz=5.5,slow=31								
FITZ	**Fitzroy Crossi**	**53.29**	**269**	*e*P			**P**	**07 17 21.4**	**-0.5**
	comp=Z,8.4nm,0.9s								
QSPA	**South Pole Qui**	**60.27**	**180**	*e*P			**P**	**07 18 13.4**	**+2.4**
MAW	**Mawson**	**73.16**	**200**	P			**P**	**07 19 34.1**	**+1.3**
	comp=Z,2.5nm,0.8s,baz=119,slow=7.8,SNR=4.8								
SYO	**Syowa Base**	**77.87**	**193**	*e*P			**P**	**07 20 00.0**	**+0.1**
SYO	**Syowa Base**	**77.87**	**193**	*e*PcP			**PcP**	**07 20 08.0**	**-1.7**
MJAR	**Matsushiro Arr**	**78.31**	**325**	P			**P**	**07 20 01.4**	**-1.3**
	comp=Z,3.3nm,0.8s,baz=165,slow=6.2,SNR=12								
MAT	**Matsushiro**	**78.31**	**325**	P			**P**	**07 20 02.9**	**+0.2**
ERM	**Erimo**	**80.41**	**331**	*e*P			**P**	**07 20 10.3**	**-3.7**
ERM				pmax			pmax		
	comp=Z,5.0nm,1.0s								
PLCA	**Paso Flores**	**82.21**	**133**	P			**P**	**07 20 24.0**	**0.0**
	comp=Z,1.2nm,0.7s,baz=213,slow=5.4,SNR=3.4								
PLCA				LR			LR	07 48 11.5	
	comp=Z,36nm,21.7s,baz=324,slow=29								
PLCA	**Paso Flores**	**82.21**	**133**	P			**P**	**07 20 24.0**	**0.0**
ASAJ	**Asahikawa**	**82.37**	**332**	*e*P			**P**	**07 20 24.8**	**+0.4**
	comp=Z,15nm,1.0s								
KSRS	**Korea Array**	**84.52**	**319**	P			**P**	**07 20 36.1**	**+0.5**
	comp=Z,2.6nm,0.9s,baz=137,slow=5.9,SNR=7.4								
KSAR	**Wonju Array Be**	**84.53**	**319**	P			**P**	**07 20 36.1**	**+0.5**
KSAR	**Wonju Array Be**	**84.53**	**319**	P			**P**	**07 20 36.1**	**+0.5**
KS01	**Wonju Array Si**	**84.55**	**319**	*e*P			**P**	**07 20 36.0**	**+0.3**
YSS	**Yuzh-Sakhalins**	**84.65**	**334**	*e*P			**P**	**07 20 36.9**	**+1.0**
YSS				*e*				07 20 46.5	
YSS				pmax			pmax		
	comp=Z,20nm,1.0s								
YSS	**Yuzh-Sakhalins**	**84.65**	**334**	*e*P			**P**	**07 20 37.0**	**+1.0**
	comp=Z,19nm,1.0s								
PETK	**Petropavlovsk-**	**85.50**	**345**	P			**P**	**07 20 39.7**	**-0.4**
	comp=Z,2.1nm,0.4s,baz=91,slow=5.9,SNR=3.7								
QIZ	**Qiongzhong**	**85.59**	**295**	P			**P**	**07 20 42.1**	**+0.7**
USRK	**Ussuriysk Ar.**	**87.20**	**326**	P			**P**	**07 20 49.0**	**+0.3**
	comp=Z,4.9nm,0.8s,baz=125,slow=3.4,SNR=13								
LCMT	**Little Creek M**	**89.34**	**46**	*e*P			**P**	**07 21 00.1**	**+0.9**
	comp=Z,4.8nm,1.5s								
U15A	**North Rim**	**89.57**	**47**	*e*P			**P**	**07 21 01.4**	**+0.8**
	comp=Z,9.5nm,0.3s								
CN2	**Changchun**	**90.25**	**322**	*e*P			**P**	**07 21 03.8**	**+0.7**
CN2				pmax			pmax		
	comp=Z,20nm,0.7s								
TXAR	**Lajitas Array**	**91.31**	**57**	LR			LR	07 56 33.6	
	comp=Z,34nm,18.1s,baz=0.0,slow=32								
GYA	**Guiyang**	**92.08**	**299**	*e*P			**P**	**07 21 12.8**	**+0.6**
GYA				pmax			pmax		
	comp=Z,10.0nm,0.8s								
KMI	**Kunming**	**94.39**	**296**	P			**P**	**07 21 24.3**	**+1.3**
KMI				pP			sP	07 21 37.4	+3.7
KMI				pmax			pmax		
	comp=Z,9.0nm,0.9s								
PDAR	**Pinedale Array**	**95.09**	**43**	LR			LR	07 58 31.4	
	comp=Z,46nm,18.5s,baz=254,slow=32								
HHC	**Hu-ho-hao-te**	**96.51**	**314**	*e*P			**P**	**07 21 33.5**	**+1.3**
HHC				pmax			pmax		
	comp=Z,19nm,1.1s								
HHC				pmax			pmax		
	comp=Z,86nm,3.7s								
CD2	**Chengdu**	**96.57**	**302**	*e*P			**P**	**07 21 32.3**	**-0.3**
ILAR	**Eielson Array**	**97.17**	**12**	P			**P**	**07 21 33.7**	**-0.8**
	comp=Z,0.4nm,0.9s,baz=202,slow=6.8,SNR=4.3								
ILAR				PP			**PP**	**07 25 30.4**	**-0.9**
	comp=Z,0.4nm,0.9s,baz=236,slow=7.7,SNR=5.0								
LPAZ	**La Paz**	**97.53**	**114**	LR			LR	08 00 16.7	
	comp=Z,16nm,18.8s,baz=282,slow=32								
BILL	**Bilibino**	**98.38**	**354**	*i* P			**P**	**07 21 37.1**	**-2.7**
BILL				pmax			pmax		
	comp=Z,3.0nm,1.2s								
CPUP	**Villa Florida**	**99.61**	**128**	LR			LR	08 05 19.8	
	comp=Z,37nm,18.1s,baz=246,slow=34								
WMQ	**Urumqi**	**113.60**	**308**	*e*PKP			**PKiKP**	**07 26 40.1**	**-0.7**
WMQ				LR			LR		
	comp=Z,130nm,18.0s								
MK01	**Makanchi Array**	**118.10**	**310**	*e*PKPdf			**PKPdf**	**07 26 48.4**	**-1.0**
MKAR	**Makanchi Array**	**118.12**	**310**	PKP			**PKPdf**	**07 26 48.4**	**-1.0**
	comp=Z,0.9nm,0.9s,baz=90,slow=0.4,SNR=5.4								
KSH	**Kashi**	**120.75**	**301**	*e*PKP			**PKPdf**	**07 26 56.0**	**+1.2**
KSH				*es*PKP				07 27 11.8	
KSH				*e*PP			**PP**	**07 28 28.0**	**+4.5**
KSH				PKS			**PKSdf**	**07 30 31.9**	**+0.4**
KSH				SKS			**SKSdf**	**07 34 03.1**	**-2.3**
KSH				SKKS			**SKKSac**	**07 35 16.8**	**-4.6**
KSH				AMB			AMB		
	comp=Z,120nm,5.3s								
KSH				LR			LR		
	comp=Z,85nm,9.6s								
KSH				LR			LR		
	comp=Z,83nm,5.5s								
KSH				LR			LR		
	comp=Z,88nm,6.4s								
KURK	**Kurchatov**	**121.32**	**314**	*e*PKiKP			**PKPdf**	**07 26 55.0**	**-0.4**
KURK	**Kurchatov**	**121.32**	**314**	*e*PKPdf			**PKPdf**	**07 26 55.0**	**-0.4**
AAK	**Ala-Archa**	**122.56**	**304**	*i* PKiKP			**PKPdf**	**07 26 56.5**	**-1.8**
KKAR	**Karatay Array**	**125.53**	**304**	*e*PKiKP			**PKPdf**	**07 27 03.4**	**-0.3**
KKAR				*e*				07 27 15.2	
KKAR	**Karatay Array**	**125.53**	**304**	*e*PKPdf			**PKPdf**	**07 27 03.4**	**-0.3**
KKAR				*ep*PKPdf			**pPKPdf**	**07 27 15.2**	**+3.4**
VOSK	**Vostochnaya**	**126.27**	**316**	*e*PKiKP			**PKPdf**	**07 27 04.1**	**-0.7**
VOSK	**Vostochnaya**	**126.27**	**316**	*e*PKPdf			**PKPdf**	**07 27 04.1**	**-0.7**
BRVK	**Borovoye**	**126.71**	**316**	*i* PKiKP			**PKPdf**	**07 27 05.4**	**-0.2**
ZRNK	**Zerenda**	**127.48**	**316**	*e*PKiKP			**PKPdf**	**07 27 07.1**	**0.0**
ZRNK	**Zerenda**	**127.48**	**316**	*e*PKPdf			**PKPdf**	**07 27 07.1**	**0.0**
ARU	**Arti**	**133.24**	**321**	*i* PKiKP			**PKPdf**	**07 27 19.1**	**+1.2**
ARU								07 29 45.7	
ABKAR	**Akbulak array**	**133.24**	**311**	*e*PKPdf			**PKPdf**	**07 27 16.2**	**-1.9**
ABKAR				*e*PP			**PP**	**07 29 44.8**	**-0.8**
GEYT	**Alibeck**	**134.15**	**295**	PKP			**PKPdf**	**07 27 21.9**	**+1.7**
	comp=Z,2.1nm,0.8s,baz=190,slow=4.5,SNR=3.8								
H10S3	**ASCENSION HYDR**	**137.83**	**153**	T			T	10 02 50.2	
	baz=204,slow=74,SNR=6.2								
H10S2	**ASCENSION HYDR**	**137.83**	**153**	T			T	10 02 50.2	
	baz=204,slow=74,SNR=5.0								
H10S1	**ASCENSION HYDR**	**137.85**	**153**	T			T	10 02 50.2	
	baz=204,slow=74,SNR=5.4								
ARCES	**ARCESS Array B**	**138.23**	**348**	PKhKP			PKPpre	07 27 17.7	
	comp=Z,2.1nm,0.9s,baz=39,slow=10.0,SNR=4.0								
H10N3	**ASCENSION HYDR**	**138.91**	**153**	T			T	10 04 14.4	
	baz=203,slow=75,SNR=5.8								
H10N1	**ASCENSION HYDR**	**138.91**	**153**	T			T	10 04 13.3	
	baz=203,slow=75,SNR=5.2								
H10N2	**ASCENSION HYDR**	**138.93**	**153**	T			T	10 04 15.7	
	baz=203,slow=75,SNR=5.5								
KLMR	**Klimovskoe**	**140.69**	**333**	*e*PKiKP			**PKPdf**	**07 27 30.8**	**-0.7**
KLMR				pmax			pmax		
	comp=Z,7.0nm,1.4s								
GNI	**Garni**	**144.62**	**298**	*e*PKiKP			PKPbc	07 27 38.9	+0.7
GNI				pmax			pmax		
	comp=Z,163nm,2.5s								
ZEI	**Tsey**	**144.98**	**303**	*i* PKiKP			**PKPab**	**07 27 38.4**	**-1.0**
ZEI				pmax			pmax		
	comp=Z,47nm,0.8s								
NCK	**Nalchik**	**145.09**	**304**	*i* PKiKP			**PKPdf**	**07 27 42.9**	**+3.0**
OBN	**Obninsk**	**145.23**	**326**	*i* PKiKP			**PKPbc**	**07 27 39.2**	**-0.2**
OBN				pmax			pmax		
	comp=Z,15nm,0.9s								
ONI	**Oni**	**145.34**	**303**	P			**PKPab**	**07 27 41.2**	**+0.6**
ONI	**Oni**	**145.34**	**303**	PKiKP			**PKPab**	**07 27 41.1**	**+0.6**
AKH	**Akhalkalaki**	**145.46**	**301**	P			**PKPab**	**07 27 41.7**	**+0.6**
AKH	**Akhalkalaki**	**145.46**	**301**	PKiKP			**PKPab**	**07 27 41.7**	**+0.6**
KBZ	**Khabaz**	**145.56**	**305**	PKPbc			**PKPdf**	**07 27 40.6**	**0.0**
	comp=Z,7.6nm,1.0s,baz=185,slow=3.5,SNR=5.4								
KIV	**Kislovodsk**	**145.66**	**305**	*i* PKP2			**PKPdf**	**07 27 39.9**	**-1.1**
KIV				pmax			pmax		
	comp=Z,13nm,1.1s								
VSR	**Storozhevoye**	**145.73**	**319**	*e*PKiKP			**PKPdf**	**07 27 40.1**	**-0.6**
VSR				pmax			pmax		
	comp=Z,20nm,0.8s								
NEY	**Neytrino**	**145.76**	**304**	*i* PKP2			**PKPab**	**07 27 42.9**	**+0.7**
VSU	**Vasula**	**147.07**	**337**	*c i* PKP2			**PKPbc**	**07 27 44.3**	**-0.6**
VSU				pmax			pmax		
	comp=Z,75nm,1.0s								
NC303	**NORSAR Array S**	**148.12**	**352**	*e*PKPdf			**PKPdf**	**07 27 45.1**	**+0.7**
NB2	**NORSAR Subarra**	**148.32**	**352**	PKP			**PKPbc**	**07 27 47.5**	**-0.8**
	comp=Z,6.1nm,0.9s,baz=16,slow=4.6								
NOA	**NORSAR Array B**	**148.32**	**352**	PKPbc			**PKPbc**	**07 27 46.8**	**-1.5**
	comp=Z,3.3nm,0.8s,baz=16,slow=4.4,SNR=7.5								
NBO02	**NORSAR Array S**	**148.35**	**353**	*e*PKPdf			**PKPdf**	**07 27 45.8**	**+0.9**
NBO02				*e*PKPbc			**PKPbc**	**07 27 48.0**	**-0.4**
NACGM	**Naroch**	**149.72**	**333**	*e*			**PKPbc**	**07 27 51.0**	**-0.9**
AKASG	**Malin Array Be**	**151.40**	**324**	PKPbc			**PKPbc**	**07 27 55.1**	**-0.9**
	comp=Z,9.0nm,0.7s,baz=48,slow=2.7,SNR=8.2								
KIEV	**Kiev**	**151.41**	**324**	*c i* PKiKP			**PKPbc**	**07 27 55.2**	**-0.8**
KIEV	**Kiev**	**151.41**	**324**	*e*PKPbc			**PKPbc**	**07 27 55.9**	**-0.2**
KIEV				*e*PKPab			**PKPab**	**07 28 01.0**	**-3.3**
AK11	**Malin Array Si**	**151.44**	**324**	*e*PKPbc			**PKPbc**	**07 27 55.7**	**-0.4**
BR131	**Keskin Array S**	**153.13**	**300**	*e*PKPbc			**PKPbc**	**07 28 00.8**	**+0.3**
BR131				*e*PKPab			**PKPab**	**07 28 11.7**	**-0.5**
BRTR	**Keskin Array B**	**153.13**	**300**	PKPbc			**PKPbc**	**07 27 59.8**	**-0.7**
	comp=Z,1.8nm,0.9s,baz=97,slow=3.9,SNR=5.8								
BRTR				PKPab			**PKPab**	**07 28 11.3**	**-0.9**
	comp=Z,5.3nm,0.9s,baz=110,slow=2.8,SNR=15								
BR231	**Keskin MP Arra**	**153.75**	**300**	*e*PKPbc			**PKPbc**	**07 28 01.1**	**-0.7**
BR231				*e*PKPab			**PKPab**	**07 28 12.5**	**-2.3**
DPC	**Dobruska-Polom**	**157.20**	**338**	*e*PKPAB			**PKPab**	**07 28 29.8**	**+0.8**
DPC				*ex*			x	07 28 41.5	
DPC	**Dobruska-Polom**	**157.20**	**338**	*e*PKP2			**PKPab**	**07 28 29.8**	**+0.8**
CLL	**Collm**	**157.30**	**344**	*e*PKPab			**PKPab**	**07 28 28.0**	**-1.3**
	comp=Z,3.0nm,0.9s								
CLL				*e*				07 28 33.0	
CLL	**Collm**	**157.30**	**344**	*e*PKP2			**PKPab**	**07 28 28.0**	**-1.3**
CLL				pmax			pmax		
	comp=Z,3.0nm,0.9s								
KHC	**Kasperske Hory**	**159.13**	**340**	*e*PKPAB			**PKPab**	**07 28 37.8**	**+0.4**
KHC	**Kasperske Hory**	**159.13**	**340**	*e*PKP2			**PKPab**	**07 28 37.8**	**+0.4**
GERES	**GERESS Array B**	**159.35**	**340**	PKPab			**PKPab**	**07 28 37.6**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=18,slow=4.8,SNR=3.8								
FUORN	**Ofenpass-Fuorn**	**162.33**	**343**	*e*PKPdf			**PKPdf**	**07 28 03.1**	**-1.3**
FUORN				*e*PKPab			**PKPab**	**07 28 52.0**	**+0.3**
TORD	**Torodi Ar. Bea**	**163.35**	**175**	PKPab			**PKPab**	**07 28 56.5**	**0.0**
	comp=Z,0.8nm,0.7s,baz=188,slow=3.3,SNR=3.5								

NIED ***17*** *07:32:00,43.˚90N×147.˚80E, h83km, Mw3.7 Best double couple: M0 4.51000×10^14 NP1:ϕs 229.00000°, δ44.00000°, λ-69.00000°. NP2:ϕs 21.00000°, δ50.00000°, λ-109.00000°.*

ISCJB ***17*** *07:32:14.5±0.6,44.˚15N±0.˚04×147.˚81E±0.˚06, h97km±4km, mb3.8/14, Error ellipse: s-maj=8.2km s-min=5.4km az=37.5*

MOS ***17*** *07:32:14.6±1.1,44.˚18N×147.˚83E, h101km, mb3.9/9, Error ellipse: s-maj=11.6km s-min=9.1km az=87.6*

SKHL ***17*** *07:32:16.0±0.4,44.˚18N×147.˚84E, h96km±4km, mb4.3/4, msh5.4/3*

JMA ***17*** *07:32:16.3±0.3,43.˚95N×147.˚80E, h85km, M3.9*

IDC ***17*** *07:32:18.1±2.6,44.˚21N×147.˚68E, h112km±23km, mb3.5/14, mb1 3.7/16, mb1mx3.5/35, mbtmp3.8/16, Error ellipse: s-maj=22.8km s-min=15.8km az=164.0*

**ISC 17 07:32:14.9±0.9,44.˚10N±

ERM	**Erimo**	**4.03 240**	*i* PN		**Pn**	**07 33 15.5**	**+1.3**
ERM	**Erimo**	**4.03 240**	*e*P		**Pn**	**07 33 15.5**	**+1.3**
JNBK	**Urakawa-nobuka**	**4.15 246**	P		**Pn**	**07 33 16.3**	**+0.4**
JWK2	**Keihoku**	**4.42 288**	P		**Pn**	**07 33 22.2**	**+2.7**
YSS	**Yuzh-Sakhalins**	**4.58 310**⇑	*e*PN		**Pn**	**07 33 22.6**	**+0.9**
YSS				*e*S	**Sn**	**07 34 12.2**	**-1.4**
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS				smax	smax		
	comp=N,20nm,0.8s						
YSS				smax	smax		
	comp=E,30nm,0.5s						
YSS	**Yuzh-Sakhalins**	**4.58 310**	*e*P		**Pn**	**07 33 22.6**	**+0.9**
YSS				AMB	AMB	07 33 23.6	
	comp=E,30nm,0.8s						
YSS				*e*S	**Sn**	**07 34 12.2**	**-1.4**
YSS				A	A	07 34 13.2	
	comp=E,20nm,0.5s						
YSS				A	A	07 34 13.2	
	comp=E,30nm,0.5s						
JKB	**Kayabe**	**5.47 248**	P		**Pn**	**07 33 34.6**	**+0.7**
JKB				*e*S	**Sn**	**07 34 32.1**	**-3.3**
JOT	**Ohata**	**5.70 244**	P		**Pn**	**07 33 37.1**	**+0.1**
JOT				*e*S	**Sn**	**07 34 36.8**	**-4.3**
UGL	**Uglegorsk**	**6.38 323**	*e*PN		**Pn**	**07 33 45.6**	**-0.5**
UGL				*e*S	**Sn**	**07 34 57.7**	**+0.3**
UGL	**Uglegorsk**	**6.38 323**	*e*P		**Pn**	**07 33 45.6**	**-0.5**
UGL				*e*S	**Sn**	**07 34 57.7**	**+0.3**
TYV	**Tymovskoe**	**7.62 334**	*e*P		**Pn**	**07 34 04.7**	**+1.6**
TYV				AMB	AMB	07 34 05.9	
	comp=E,10.0nm,0.9s						
TYV				*e*S	**Sn**	**07 35 24.7**	**-3.1**
TYV				A	A	07 35 26.8	
	comp=E,50nm,0.8s						
SKR	**Severo-Kuril's**	**8.64 37**⇓	*e*PN		**Pn**	**07 34 15.4**	**-1.5**
SKR	**Severo-Kuril's**	**8.64 37**	*e*P		**Pn**	**07 34 16.2**	**-0.7**
HABR	**Khabarovsk**	**9.88 301**	*e*PN		**Pn**	**07 34 34.0**	**+0.1**
HABR				S	**Sn**	**07 36 23.9**	**+1.1**
HABR				pmax	pmax		
	comp=Z,14nm,1.5s						
HABR				pmax	pmax		
	comp=N,3.0nm,1.0s						
HABR				pmax	pmax		
	comp=E,2.0nm,0.6s						
HABR	**Khabarovsk**	**9.88 301**	*e*P		**Pn**	**07 34 34.0**	**+0.1**
MJAR	**Matsushiro Arr**	**10.54 228**	P		**Pn**	**07 34 44.9**	**+1.9**
	comp=E,0.1nm,0.3s,baz=350,slow=14,SNR=5.6						
PET	**Petropavlovsk**	**11.43 35**⇑	*e*PN		**Pn**	**07 34 55.1**	**+0.3**
PET	**Petropavlovsk**	**11.43 35**	*e*P		**Pn**	**07 34 55.1**	**+0.3**
KLR	**Kul'dur**	**12.19 301**	P		**Pn**	**07 35 06.8**	**+1.6**
	comp=E,0.1nm,0.3s,baz=109,slow=17,SNR=2.8						
KLR	**Kul'dur**	**12.19 301**⇓	*e*PN		**Pn**	**07 35 07.0**	**+1.9**
KLR	**Kul'dur**	**12.19 301**	*e*P		**Pn**	**07 35 07.0**	**+1.9**
H11N2	**WAKE ISLAND Hy**	**29.04 141**	T		T	08 09 12.2	
	baz=332,slow=76,SNR=140						
H11N1	**WAKE ISLAND Hy**	**29.05 141**	T		T	08 09 09.8	
	baz=332,slow=76,SNR=123						
H11N3	**WAKE ISLAND Hy**	**29.06 141**	T		T	08 09 14.2	
	baz=332,slow=76,SNR=134						
H11S1	**WAKE ISLAND Hy**	**30.02 142**	T		T	08 10 21.2	
	baz=333,slow=76,SNR=242						
H11S3	**WAKE ISLAND Hy**	**30.03 142**	T		T	08 10 25.1	
	baz=333,slow=76,SNR=185						
H11S2	**WAKE ISLAND Hy**	**30.04 142**	T		T	08 10 21.5	
	baz=333,slow=76,SNR=152						
KDAK	**Kodiak Island**	**38.63 48**	*i* P		**P**	**07 39 29.5**	**+0.4**
KDAK	**Kodiak Island**	**38.63 48**	*e*P		**P**	**07 39 29.5**	**+0.4**
ILAR	**Eielson Array**	**40.90 36**	P		**P**	**07 39 48.5**	**+0.6**
	comp=E,1.1nm,0.8s,baz=256,slow=6.2,SNR=12						
ZALV	**Zalesovo Beam**	**41.20 307**	P		**P**	**07 39 49.2**	**-1.2**
	comp=E,0.6nm,0.5s,baz=57,slow=10,SNR=3.3						
ZALV				PcP	**PcP**	**07 41 46.8**	**-1.0**
	comp=E,0.9nm,0.5s,baz=297,slow=0.7,SNR=4.4						
MKAR	**Makanchi Array**	**44.88 298**	P		**P**	**07 40 20.1**	**-0.1**
	comp=E,0.7nm,0.5s,baz=77,slow=9.6,SNR=12						
MKAR				PcP	**PcP**	**07 42 00.0**	**-0.3**
	comp=E,0.4nm,0.6s,baz=73,slow=4.1,SNR=3.6						
INK	**Inuvik**	**45.84 31**	P		**P**	**07 40 28.4**	**+1.0**
	comp=E,0.4nm,0.3s,baz=299,slow=9.7,SNR=11						
YKA	**Yellowknife Ar**	**55.22 34**	P		**P**	**07 41 38.6**	**+0.5**
	comp=E,0.8nm,0.6s,baz=302,slow=7.3,SNR=5.9						
ARCES	**ARCESS Array B**	**59.09 340**	P		**P**	**07 42 03.6**	**-1.7**
	comp=E,1.8nm,0.9s,baz=51,slow=9.6,SNR=3.7						
GEYT	**Alibeck**	**64.72 299**	P		**P**	**07 42 43.6**	**+0.1**
	comp=E,1.4nm,0.4s,baz=38,slow=7.3,SNR=3.3						
ASAR	**Alice Springs**	**68.64 194**	P		**P**	**07 43 09.3**	**+0.9**
	comp=E,0.4nm,0.7s,baz=7.4,slow=6.6,SNR=4.1						
PDAR	**Pinedale Array**	**69.29 50**	P		**P**	**07 43 13.4**	**+0.7**
	comp=E,0.6nm,0.8s,baz=166,slow=0.6,SNR=4.8						
NB2	**NORSAR Subarra**	**69.46 339**	P		**P**	**07 43 12.7**	**-0.4**
	comp=Z,0.5nm,0.4s,baz=36,slow=5.9						
NOA	**NORSAR Array B**	**69.46 339**	P		**P**	**07 43 12.1**	**-1.0**
	comp=Z,0.4nm,0.4s,baz=31,slow=6.6,SNR=8.1						
NOA	**NORSAR Array B**	**69.46 339**	P		**P**	**07 43 12.1**	**-1.0**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KBZ	**Khabaz**	**69.95 312**	P		**P**	**07 43 16.9**	**+0.5**
	comp=Z,1.2nm,0.5s,baz=58,slow=9.5,SNR=2.9						
AKASG	**Malin Array Be**	**71.60 324**	P		**P**	**07 43 25.6**	**-0.7**
	comp=Z,1.0nm,0.4s,baz=39,slow=6.8,SNR=6.5						
CLL	**Collm**	**77.24 333**	*e*P		**P**	**07 43 58.0**	**-0.9**
CLL				LmV		10 05 00.0	
	comp=Z,100nm,21.3s						
CLL	**Collm**	**77.24 333**	*e*P		**P**	**07 43 58.0**	**-0.9**
CLL	**Collm**	**77.24 333**	*e*P		**P**	**07 43 58.0**	**-0.9**
GERES	**GERESS Array B**	**79.10 331**	P		**P**	**07 44 09.0**	**-0.4**
	comp=Z,0.4nm,0.6s,baz=51,slow=5.2,SNR=3.7						
TXAR	**Lajitas Array**	**82.03 57**	P		**P**	**07 44 26.4**	**+1.0**
	comp=Z,1.2nm,0.7s,baz=299,slow=4.2,SNR=16						

WEL 17 07:57:03.7±0.1, 43.65S×172.80E, h8km, ML3.5/6, 2C-1D, Error ellipse: s-maj=1.4km s-min=0.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MQZ	**McQueen's Vall**	**0.12**	**240**	⇑PG	Pg	07 57 06.7	+0.3
MQZ				AML	AML	07 57 06.8	
MQZ				SG	Sg	07 57 08.5	+0.2
OXZ	**Oxford**	**0.64**	**300**	⇓P*	Pg	07 57 16.0	0.0
OXZ				AML	AML	07 57 26.7	
OXZ				AML	AML	07 57 26.7	
OXZ				AML	AML	07 57 26.8	
OXZ				AML	AML	07 57 26.9	
LTZ	**Lake Taylor**	**0.95**	**336**	P*	Pg	07 57 21.7	-0.2
LTZ				S*	Sb	07 57 34.6	-0.4
LTZ				AML	AML	07 57 36.0	
RPZ	**Rata Peaks**	**1.27**	**266**	⇑P*	Pn	07 57 26.2	-1.5
RPZ				AML	AML	07 57 46.2	
RPZ				AML	AML	07 57 46.3	
KHZ	**Kahutara**	**1.34**	**24**	PN	Pn	07 57 27.1	-1.5
INZ	**Inchbonnie**	**1.35**	**312**	PN	Pn	07 57 27.9	-0.9
WVZ	**Waitaha Valley**	**1.61**	**290**	PN	Pn	07 57 31.7	-0.6
LBZ	**Lake Benmore**	**2.03**	**248**	PN	Pn	07 57 37.3	-0.8
LBZ				AML	AML	07 58 15.4	
LBZ				AML	AML	07 58 18.7	
ODZ	**Otahua Downs**	**2.08**	**227**	PN	Pn	07 57 37.7	-1.2
ODZ				AML	AML	07 58 15.7	
ODZ				AML	AML	07 58 18.3	
ODZ				AML	AML	07 58 18.9	
ODZ				AML	AML	07 58 20.9	
BSWZ	**Blackbirch Sta**	**2.09**	**23**	PN	Pn	07 57 37.8	-1.1

IDC 17 07:59:18.3±5.9, 30.72S×178.98W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.6/21, mbtmp3.6/2, Error ellipse: s-maj=232.7km s-min=55.8km az=156.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**42.25**	**268**	P	P	08 07 12.7	-0.8
	0.3nm,0.5s,baz=112,slow=7.4,SNR=6.6						
WRA	**Warramunga Arr**	**43.26**	**273**	P	P	08 07 22.2	+0.5
	0.7nm,0.4s,baz=113,slow=7.9,SNR=27						
FINES	**FINESS Array B**	**145.15**	**339**	PKPbc	PKPbc	08 18 55.6	-0.9
	0.5nm,0.4s,baz=60,slow=4.3,SNR=8.2						

IDC 17 08:19:33.4±2.5, 32.07N×141.84E, h0km, mb3.6/2, mb1 3.6/4, mb1mx3.3/40, mbtmp3.4/4, ML2.8/2, Error ellipse: s-maj=62.9km s-min=23.6km az=61.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**2.02**	**302**	Pn	Pn	08 20 09.0	+0.2
	5.9nm,0.3s,baz=118,slow=22,SNR=6.5						
JHJ				Sn	Sn	08 20 34.5	-0.4
	14nm,0.3s,baz=218,slow=18,SNR=2.0						
MJAR	**Matsushiro Arr**	**5.38**	**327**	Pn	Pn	08 20 56.2	+1.3
	0.3nm,0.3s,baz=145,slow=11,SNR=5.0						
MKAR	**Makanchi Array**	**47.19**	**306**	P	P	08 28 06.8	-1.0
	0.6nm,0.8s,baz=89,slow=7.9,SNR=4.3						
WRA	**Warramunga Arr**	**52.22**	**189**	P	P	08 28 46.2	0.0
	0.6nm,0.5s,baz=5.4,slow=7.6,SNR=9.2						

IDC 17 08:19:38.5±53.0, 17.19S×179.42E, h0km, mb4.1/3, mb1 4.3/3, mb1mx3.7/30, mbtmp4.1/3, Error ellipse: s-maj=965.1km s-min=142.2km az=77.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**37.18**	**240**	P	P	08 26 51.6	+0.2
	1.2nm,0.5s,baz=87,slow=9.9,SNR=6.0						
WRA	**Warramunga Arr**	**42.73**	**259**	P	P	08 27 37.7	-0.1
	0.7nm,0.3s,baz=94,slow=7.5,SNR=36						
ASAR	**Alice Springs**	**43.00**	**254**	P	P	08 27 39.5	-0.4
	3.7nm,0.5s,baz=86,slow=8.9,SNR=51						

MEX 17 08:55:21.3±0.4, 16.64N×98.85W, h13km±5km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.74**	**110**	*e*P	Pg	08 55 33.5	-2.2
PNIG				*e*S	Sg	08 55 43.1	-2.3
TLIG	**Tlapa**	**0.95**	**17**	*e*P	Pg	08 55 36.7	-3.1
TLIG				*e*S	Sg	08 55 48.4	-3.9
CAIG	**El Cayaco**	**1.41**	**287**	*e*P	Pn	08 55 42.4	-4.4
CAIG				*e*S	Sn	08 56 00.1	-5.2
MEIG	**Mezcala**	**1.47**	**330**	*e*P	Pn	08 55 44.5	-3.2
MEIG				*e*S	Sn	08 56 01.9	-4.9
PLIG	**Platanillo**	**1.85**	**340**	*i* P	Pn	08 55 48.9	-3.8
PLIG				*i* S	Sn	08 56 11.7	-4.4
ARIG	**Puente Sto Nin**	**2.17**	**319**	*i* P	Pn	08 55 53.9	-3.3
ARIG				*i* S	Sn	08 56 19.6	-4.3
YAIG	**Yautepec**	**2.21**	**355**	*e*P	Pn	08 55 55.7	-2.2
YAIG				*i* S	Sn	08 56 21.2	-4.1

IDC 17 09:02:12.8±4.9, 28.14S×176.64W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.6/27, mbtmp3.8/3, Error ellipse: s-maj=108.3km s-min=34.8km az=117.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.58**	**225**	Pn	Pb	09 02 42.5	-0.4
	198nm,0.3s,baz=81,slow=11,SNR=12						
RAO				Sn	Sn	09 03 02.4	-0.8
	243nm,0.3s,baz=99,slow=23,SNR=4.9						
STKA	**Stephens Creek**	**36.20**	**254**	P	P	09 09 17.7	+0.3
	1.1nm,0.7s,baz=105,slow=12,SNR=4.4						
ASAR	**Alice Springs**	**44.47**	**264**	P	P	09 10 25.6	-0.5
	0.6nm,0.5s,baz=102,slow=6.6,SNR=17						
WRA	**Warramunga Arr**	**45.26**	**269**	P	P	09 10 32.5	+0.1
	0.9nm,0.5s,baz=109,slow=8.0,SNR=16						
FINES	**FINESS Array B**	**143.41**	**342**	PKP	PKPbc	09 21 47.0	+1.2
	0.9nm,0.7s,baz=40,slow=2.4,SNR=4.0						

IDC **17** *09:07:00.3±1.4, 29.31S×176.00W, h0km, mb3.9/4, mb1 4.2/6, mb1mx3.9/30, mbtmp4.0/6, ML3.9/2, MS3.3/4, Ms1 3.2/4, ms1mx2.8/27, Error ellipse: s-maj=44.9km s-min=24.7km az=155.0*

NEIC **17** *09:07:01.6±0.8, 29.32S×175.97W, h10km, mb4.6/4, Error ellipse: s-maj=18.2km s-min=12.0km az=113.0*

ISCJB **17** *09:07:03.8±1.1, 29.53S±0.08×176.1W±0.1, h28km, mb4.0/5, MS3.3/2, Error ellipse: s-maj=13.0km s-min=10.7km az=156.7*

ISC 17 09:07:05.1±1.1, 29.4S±0.1×176.17W±0.09, h28km, n19, σ0.80/18, mb4.0/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.53**	**275**	Pn	**Pb**	**09 07 32.8**	**+0.1**
	272nm,0.3s,baz=56,slow=23,SNR=9.9						
RAO				Sn	**Sb**	**09 07 51.3**	**-0.4**
	293nm,0.3s,baz=109,slow=22,SNR=5.5						
RAO	**Raoul Island**	**1.53**	**275**	*e*Pn	**Pb**	**09 07 32.3**	**-0.4**
RAO				Sn	**Sb**	**09 07 51.3**	**-0.4**
URZ	**Urewera**	**10.46**	**210**	Pn	**Pn**	**09 09 33.5**	**+0.4**
	0.5nm,0.3s,baz=284,slow=5.7,SNR=5.2						
URZ				Sn	**Sn**	**09 11 28.7**	**-0.7**
	3.0nm,0.3s,baz=165,slow=17,SNR=13						
KHZ	**Kahutara**	**15.43**	**210**	*e*P	**Pn**	**09 10 40.6**	**0.0**
	82nm,1.1s						
OXZ	**Oxford**	**16.82**	**211**	*e*P	**P**	**09 10 59.9**	**-0.5**
RAR	**Rarotonga**	**16.90**	**65**	LR	LR	09 15 46.0	
	comp=Z,101nm,19.6s,baz=280,slow=31						
DZM	**Mont Dzumac**	**17.26**	**291**	LR	LR	09 16 57.1	
	comp=Z,68nm,19.8s,baz=70,slow=34						
DZM	**Mont Dzumac**	**17.26**	**291**	*e*LR	LR	09 15 17.8	
	152nm,27.4s						
RPZ	**Rata Peaks**	**17.57**	**212**	P	**P**	**09 11 08.4**	**-0.3**
	0.7nm,0.3s,baz=22,slow=2.5,SNR=4.7						
RPZ	**Rata Peaks**	**17.57**	**212**	*e*P	**P**	**09 11 08.4**	**-0.3**
	26nm,1.3s						
ODZ	**Otahua Downs**	**18.79**	**210**	*e*P	**Pn**	**09 11 23.0**	**+0.2**
	42nm,1.5s						
PPT2	**Papeete2**	**27.00**	**70**	*e*LR	LR	09 19 06.5	
	105nm,27.0s						
STKA	**Stephens Creek**	**36.26**	**255**	P	**P**	**09 14 08.2**	**+2.2**
	1.5nm,0.8s,baz=81,slow=13,SNR=6.8						
STKA				LR	LR	09 28 05.6	
	comp=Z,32nm,18.2s,baz=26,slow=35						
ASAR	**Alice Springs**	**44.76**	**265**	P	**P**	**09 15 15.6**	**-0.8**
	1.0nm,0.5s,baz=105,slow=7.6,SNR=19						
ASAR				LR	LR	09 33 39.2	
	comp=Z,46nm,19.2s,baz=94,slow=36						
WRAB	**Tennant Creek**	**45.66**	**270**	*e*P	**P**	**09 15 24.7**	**+1.2**
	12nm,1.5s						
WRA	**Warramunga Arr**	**45.66**	**270**	P	**P**	**09 15 22.8**	**-0.8**
	1.8nm,0.6s,baz=109,slow=7.9,SNR=26						
TXAR	**Lajitas Array**	**90.51**	**56**	P	**P**	**09 20 04.1**	**-0.5**
	0.2nm,0.8s,baz=203,slow=8.2,SNR=3.7						
FINES	**FINESS Array B**	**144.71**	**342**	PKP	**PKPab**	**09 26 36.9**	**-0.3**
	1.0nm,0.8s,baz=56,slow=2.8,SNR=6.8						
NOA	**NORSAR Array B**	**147.96**	**353**	PKPbc	**PKPbc**	**09 26 46.7**	**-0.4**
	1.1nm,0.9s,baz=0.7,slow=2.6,SNR=3.1						

ISCJB **17** *09:16:26.7±0.7, 10.96N±0.03×62.20W±0.03, h106km±7km, Error ellipse: s-maj=6.3km s-min=4.2km az=41.8*

TRN **17** *09:16:28.3, 10.96N×62.05W, h113km, MD3.3*

FUNV **17** *09:16:29.6, 10.93N×62.22W, h98km, MW2.6*

ISC 17 09:16:25.9±1.3, 10.94N±0.04×62.19W±0.04, h119km±9km, n18, σ1.964/35, 1C-2D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUIV	**Guiria**	**0.29**	**187**	*e*P	**Pn**	**09 16 43.6**	**+0.8**
GUIV				*e*S	**Sn**	**09 16 54.1**	**-1.3**
TRN	**Trinidad (W)**	**0.82**	**110**⇑	*i* P	**Pn**	**09 16 47.8**	**+1.6**
TRN				*e*S	**Sn**	**09 17 00.4**	**-1.2**
TPN	**Pointe-a-Pierr**	**0.95**	**130**	*e*P	**Pn**	**09 16 48.5**	**+1.0**
CRUV	**Carupano**	**1.06**	**256**	*e*P	**Pn**	**09 16 49.6**	**+1.1**
CRUV				*e*S	**Sn**	**09 17 03.6**	**-2.0**
GUNV	**Guanoco**	**1.07**	**224**	*e*P	**Pn**	**09 16 50.6**	**+2.0**
GUNV				*e*S	**Sn**	**09 17 05.1**	**-0.7**
TBH	**Brigand Hill**	**1.19**	**112**	*e*P	**Pn**	**09 16 51.3**	**+1.4**
TBH				*e*S	**Sn**	**09 17 06.8**	**-1.2**
GRW	**Mount Saint Ca**	**1.32**	**23**	*e*P	**Pn**	**09 16 52.1**	**+0.8**
GRW				*e*S	**Sn**	**09 17 10.5**	**-0.1**
BOT	**Bacolet**	**1.46**	**81**	*e*P	**Pn**	**09 16 53.7**	**+0.9**
BOT				*e*S	**Sn**	**09 17 11.8**	**-1.5**
GRSS	**Sisters**	**1.47**	**23**	*e*P	**Pn**	**09 16 54.0**	**+1.1**
GRSS				*e*S	**Sn**	**09 17 12.7**	**-0.8**
TOSP	**Speyside**	**1.66**	**77**	*e*P	**Pn**	**09 16 54.9**	**-0.3**
TOSP				*e*S	**Sn**	**09 17 15.2**	**-2.3**
FCV	**Fort Charlotte**	**2.39**	**23**	*e*P	**Pn**	**09 17 05.5**	**+1.2**
FCV				*e*S	**Sn**	**09 17 33.9**	**+0.1**
SVB	**Belmont**	**2.49**	**21**	*e*P	**Pn**	**09 17 06.7**	**+1.1**
SVB				*e*S	**Sn**	**09 17 36.2**	**0.0**
PCRV	**Puerto La Cruz**	**2.52**	**253**	*e*P	**Pn**	**09 17 08.2**	**+2.1**
PCRV				⇓*e*S	**Sn**	**09 17 35.5**	**-1.4**
SVV	**Soufriere Volc**	**2.55**	**22**	*e*P	**Pn**	**09 17 07.3**	**+0.9**
SVV				*e*S	**Sn**	**09 17 36.1**	**-1.3**
RIOV	**Rio Grande**	**2.88**	**173**	*e*P	**Pn**	**09 17 13.6**	**+2.9**
RIOV				*e*S	**Sn**	**09 17 45.5**	**+0.4**
CUPV	**Cœpira**	**3.65**	**256**⇓	*e*P	**Pn**	**09 17 22.9**	**+2.0**
CUPV				*e*S	**Sn**	**09 18 02.1**	**-1.2**
LUEV	**Luepa**	**5.11**	**172**	*e*P	**Pn**	**09 17 41.6**	**+1.0**
LUEV				*e*S	**Sn**	**09 18 35.7**	**-3.0**
BAUV	**El Baul**	**6.10**	**252**	*e*P	**Pn**	**09 17 54.0**	**+0.3**
BAUV				*e*S	**Sn**	**09 18 58.2**	**-4.0**

BJI **17** *09:20:56.0, 53.00N×173.30E, h7km, mb4.9/53, mB5.0/41, Ms4.8/36, Ms7 4.4/36*

MOS **17** *09:20:58.9±1.0, 53.06N×173.27E, h16km, mb4.9/70, Error ellipse: s-maj=6.5km s-min=5.8km az=53.5*

GCMT **17** *09:20:59.4±0.2, 53.03N×173.29E, h12km, MW4.9/90, Moment Tensor Solution. s34,c40; s90,c134; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-0.05±.07; Mθθ-1.76±.08; Mϕϕ 1.82±.06; Mrθ 0.29±.21; Mϕθ-1.64±.06; Mϕr-0.32±.18; Best double couple: Mo2.46500×10^16 NP1:ϕs113.00000°, δ86.00000°, λ171.00000°. NP2: ϕs204.00000°, δ81.00000°, λ4.00000°. Principal axes: T 2.5210, Plg9.0000°, Azm68.0000°; N -0.1060, Plg80.0000°, Azm272.0000°; P -2.4090, Plg4.0000°, Azm159.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC **17** *09:20:59.4, 52.88N×173.25E, h20km, mb4.9/217, ML4.5(AEIC), After AEIC.*

ISCJB **17** *09:20:59.0±0.1, 52.98N±0.03×173.33E±0.02, h18km, mb4.8/259, MS4.2/39, Error ellipse: s-maj=4.9km s-min=1.9km az=178.6*

IDC **17** *09:21:02.7±2.6, 53.12N×173.26E, h25km±16km, mb4.3/32, mb1 4.4/34, mb1mx4.4/48, mbtmp4.4/34, ML4.7/2, MS4.0/26, Ms1 4.0/26, ms1mx3.9/46, Error ellipse: s-maj=15.6km s-min=9.1km az=163.0*

ISC 17 09:21:00.9±0.3, 52.95N±0.06×173.29E±0.03, h18km, n838, σ1.905/852, mb4.9/262, MS4.1/39, 15C-13D, Near Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SMY	**Shemya**	**0.53**	**114**	P	**Pg**	**09 21 10.4**	**-1.2**
SMY				S	**Sg**	**09 21 18.2**	**-0.6**
SMY	**Shemya**	**0.53**	**114**	P	**Pg**	**09 21 10.4**	**-1.2**
SMY				S	**Sg**	**09 21 18.2**	**-0.6**
GAEA	**Gareloi East**	**5.01**	**100**	P	**Pn**	**09 22 14.9**	**-0.3**
GAEA				S	**Sn**	**09 23 12.5**	**-0.1**
TANO	**Tanaga North**	**5.35**	**98**	P	**Pn**	**09 22 19.9**	**0.0**
TAFP	**Tanaga Falls P**	**5.44**	**98**	P	**Pn**	**09 22 21.8**	**+0.8**
TAFP				S	**Sn**	**09 23 23.4**	**+0.3**
TAPA	**Tanaga Point A**	**5.56**	**98**	P	**Pn**	**09 22 22.7**	**0.0**
KIKV	**Kanaga Island**	**5.93**	**97**	P	**Pn**	**09 22 27.0**	**-0.8**
ADAG	**Mount Adagdak**	**6.25**	**95**	P	**Pn**	**09 22 30.8**	**-1.4**
ADAG				S	**Sn**	**09 23 46.1**	**+3.0**
GSTR	**Great Sitkin T**	**6.55**	**93**	*e*Pn	**Pn**	**09 22 35.9**	**-0.4**
PET	**Petropavlovsk**	**8.84**	**276**	*e*P	**Pn**	**09 23 07.8**	**+0.2**
PET				*e*S	**Sn**	**09 24 40.8**	**-5.8**
PET				pmax	pmax		
	comp=Z,100nm,5.8s						
PET				pmax	pmax		
	comp=Z,49nm,0.5s						
PET				smax	smax		
	comp=E,147nm,0.6s						
PET				MLR	MLR		
	comp=Z,1μm,17.0s						
PET				MLR	MLR		
	comp=Z,1μm,14.0s						
PET	**Petropavlovsk**	**8.84**	**276**	*e*Pn	**Pn**	**09 23 07.8**	**+0.2**
PET				*e*Sn	**Sn**	**09 24 44.4**	**-2.2**
I44RU	**PETROPAVLOVSK-**	**9.39**	**277**	*i*		10 16 20.0	
	baz=87,slow=318,SNR=0.9						
PEA0	**Petropavlovsk-**	**9.40**	**277**	*e*Pn	**Pn**	**09 23 15.8**	**+0.5**
PEA0				*e*Sn	**Sn**	**09 24 59.6**	**-0.9**
PEA0B	**Petropavlovsk-**	**9.40**	**277**	*e*Pn	**Pn**	**09 23 16.7**	**+1.3**
PEA0B				*e*Sn	**Sn**	**09 24 57.5**	**-3.1**
PETK	**Petropavlovsk-**	**9.40**	**277**	Pn	**Pn**	**09 23 16.3**	**+0.9**
	comp=Z,4.0nm,0.3s,baz=89,slow=19,SNR=25						
PETK				Sn	**Sn**	**09 24 56.8**	**-3.7**
	comp=Z,13nm,0.3s,baz=200,slow=26,SNR=13						
PETK				LR	LR	09 26 43.3	
	comp=Z,697nm,21.0s,baz=97,slow=36						
SPIA	**Saint Paul Isl**	**10.34**	**59**	*e*Pn	**Pn**	**09 23 28.4**	**+0.3**
NIKH	**Nikolski High**	**10.77**	**83**	*e*Pn	**Pn**	**09 23 33.9**	**-0.2**
SKR	**Severo-Kuril's**	**10.87**	**265**	*e*P	**Pn**	**09 23 35.4**	**0.0**
SKR				pmax	pmax		
	comp=Z,102nm,1.1s						
SKR				MLR	MLR		
	comp=Z,400nm,16.0s						
UNV	**Unalaska Valle**	**12.09**	**78**	*e*Pn	**Pn**	**09 23 50.8**	**-1.2**
AKUT	**Akutan**	**12.51**	**76**	*e*Pn	**Pn**	**09 23 57.3**	**-0.4**
MA2	**Magadan**	**14.12**	**307**	Pn	**Pn**	**09 24 20.4**	**+0.7**
	comp=Z,0.8nm,0.3s,baz=108,slow=9.2,SNR=4.3

YSS **Yuzh-Sakhalins** 20.44 265 *e*P Pn 09 25 39.3 +0.1
comp=E,214nm,1.6s
CNPM **China Poot** 20.59 57 *e*P **P** **09 25 39.1 +0.5**
comp=E,120nm,1.1s
PPLA **Purkeypile** 20.60 48 *e*P Pn 09 25 40.7 -0.4
comp=E,310nm,2.0s
CAST **Castle Rocks** 20.77 46 *e*P **P** **09 25 40.1 -0.4**
comp=E,40nm,1.2s
BRLK **Bradley Lake** 20.78 57 *e*P **P** **09 25 40.7 0.0**
comp=E,34nm,0.8s
SUA **Susitna One** 21.01 52 *e*P **P** **09 25 44.4 +1.1**
comp=E,62nm,1.1s
KTH **Kantishna Hill** 21.30 46 *e*P **P** **09 25 47.7 +1.4**
comp=E,42nm,0.9s
BPAW **Bear Paw Mtn.** 21.41 45 *e*P **P** **09 25 47.5 +0.1**
comp=E,31nm,1.2s
RC01 **Rabbit Creek A** 21.45 53 *e*P **P** **09 25 48.1 +0.3**
comp=E,24nm,0.7s
TRF **Thorofare Moun** 21.56 47 *e*P **P** **09 25 49.9 +0.7**
comp=E,98nm,1.2s
MLY **Manley** 21.76 42 *e*P **P** **09 25 52.3 +1.1**
comp=E,52nm,1.4s
PMR **Palmer** 21.79 52 *e*P **P** **09 25 50.0 -1.5**
PMR pmax pmax
comp=Z,15nm,0.5s
PMR **Palmer** 21.79 52 *e*P **P** **09 25 50.0 -1.5**
comp=Z,15nm,0.5s
ASAJ **Asahikawa** 22.02 259 P **P** **09 25 55.6 +1.6**
comp=Z,39nm,1.1s,baz=67,slow=12,SNR=23
ASAJ **Asahikawa** 22.02 259 *e*P **P** **09 25 55.9 +1.8**
comp=Z,54nm,1.2s
RND **Reindeer** 22.18 47 *e*P **P** **09 25 55.2 -0.6**
RND pmax pmax
comp=Z,20nm,0.6s
RND **Reindeer** 22.18 47 *e*P **P** **09 25 55.2 -0.6**
comp=Z,20nm,0.6s
SML **Sawmill** 22.19 51 *e*P **P** **09 25 55.9 +0.1**
SML pmax pmax
comp=Z,130nm,0.6s
SML **Sawmill** 22.19 51 *e*P **P** **09 25 55.9 +0.1**
comp=Z,130nm,0.6s
MCK **McKinley** 22.21 46 *e*P **P** **09 25 56.0 0.0**
MCK pmax pmax
comp=Z,32nm,0.9s
MCK **McKinley** 22.21 46 *e*P **P** **09 25 56.0 0.0**
comp=Z,32nm,0.9s
SCM **Sheep Creek Mo** 22.67 51 *e*P **P** **09 26 00.5 -0.5**
SCM pmax pmax
comp=Z,50nm,0.7s
SCM **Sheep Creek Mo** 22.67 51 *e*P **P** **09 26 00.5 -0.5**
comp=Z,50nm,0.7s
COLD **Coldfoot** 22.68 37 *e*P **P** **09 26 01.6 +0.6**
comp=Z,8.8nm,0.8s
WRH **Wood River Hil** 22.72 44 *e*P **P** **09 26 01.5 +0.1**
comp=Z,25nm,0.6s
MDM **Murphy Dome** 22.77 43 *e*P **P** **09 26 02.1 +0.1**
comp=Z,213nm,1.8s
DHY **Denali Highway** 22.79 48 *e*P **P** **09 26 01.9 -0.4**
comp=Z,11nm,0.7s
CCB **Clear Creek Bu** 22.88 44 *e*P **P** **09 26 02.9 -0.2**
comp=Z,28nm,1.2s
COLA **College** 22.91 43 *e*P **P** **09 26 03.4 0.0**
COLA pmax pmax
comp=Z,33nm,0.8s
COLA **College** 22.91 43 *e*P **P** **09 26 03.4 0.0**
comp=Z,33nm,0.8s
ERM **Erimo** 22.95 254⇓ *e*P **P** **09 26 03.3 -0.6**
ERM pmax pmax
comp=Z,30nm,1.0s
ERM **Erimo** 22.95 254 *e*P **P** **09 26 06.7 +2.8**
comp=Z,37nm,1.1s
FID **Port Fidalgo** 23.02 54 *e*P **P** **09 26 03.9 -0.6**
comp=Z,185nm,1.8s
MID **Middleton Isla** 23.09 58 *e*P **P** **09 26 06.3 +1.1**
MID pmax pmax
comp=Z,37nm,0.6s
MID **Middleton Isla** 23.09 58 *e*P **P** **09 26 06.3 +1.1**
comp=Z,37nm,0.6s
HDA **Harding Lake** 23.20 45 *e*P **P** **09 26 06.6 +0.3**
comp=Z,24nm,1.1s
IL1 **Eielson Array** 23.29 44 *e*P **P** **09 26 07.2 -0.1**
ILAR **Eielson Array** 23.29 44 P **P** **09 26 06.1 -1.2**
comp=Z,12nm,0.6s,baz=251,slow=8.9,SNR=71
ILAR PcP **PcP** **09 29 53.0 -1.0**
comp=Z,0.7nm,0.7s,baz=288,slow=3.2,SNR=4.3
ILAR ScP **ScP** **09 33 28.9 -1.9**
comp=Z,0.2nm,0.5s,baz=271,slow=3.4,SNR=4.9
ILAR LR LR 09 36 42.9
comp=Z,358nm,18.7s,baz=255,slow=41
ILB **Eielson Array** 23.29 44 *e*P **P** **09 26 07.0 -0.3**
KLU **Klutina** 23.32 52 *e*P **P** **09 26 07.1 -0.5**
comp=Z,32nm,0.5s
EYAK **Cordova Ski Ar** 23.37 55 *e*P **P** **09 26 08.1 0.0**
comp=Z,20nm,0.7s
DIV **Divide** 23.37 53 *e*P **P** **09 26 08.3 +0.1**
comp=Z,92nm,1.6s
PAX **Paxson** 23.64 49 *e*P **P** **09 26 10.3 -0.6**
PAX pmax pmax
comp=Z,23nm,0.8s
PAX **Paxson** 23.64 49 *e*P **P** **09 26 10.3 -0.6**
comp=Z,23nm,0.8s
RAGM **Ragged Mountai** 23.90 55 *e*P **P** **09 26 13.2 -0.1**
comp=Z,257nm,1.8s
BMRM **Bremner River** 23.94 54 *e*P **P** **09 26 13.3 -0.4**
comp=Z,25nm,0.8s
DOT **Dot Lake** 24.34 47 *e*P **P** **09 26 16.6 -0.8**
comp=Z,41nm,0.8s
FYU **Fort Yukon** 24.36 40 *e*P **P** **09 26 17.8 +0.5**
comp=Z,41nm,1.0s
HABR **Khabarovsk** 24.42 275 *de*P **P** **09 26 16.3 -1.8**
HABR *e**PP **pP** **09 26 19.3 -4.3**
HABR *e**SP **sP** **09 26 20.7 -5.2**
HABR *e* 09 26 46.9
HABR *e* 09 29 55.1
HABR *e*S **S** **09 30 37.2 +0.3**
HABR *e**SS **sS** **09 30 42.9 -3.0**
HABR *e*SS **SnSn** **09 31 22.2 +1.4**
HABR *e* 09 37 21.3
HABR MLR MLR
comp=Z,345nm,19.0s
MENT **Mentasta** 24.43 49 *e*P **P** **09 26 19.2 +1.0**
comp=Z,20nm,0.8s
CRQM **Cirque** 24.66 54 *e*P **P** **09 26 21.4 +1.0**
comp=Z,48nm,0.6s
YAK **Yakutsk** 24.68 309 P **P** **09 26 19.6 -0.7**
comp=Z,23nm,0.4s,baz=79,slow=2.9,SNR=8.5
YAK LR LR 09 35 49.5
comp=Z,512nm,18.6s,baz=100,slow=36
YAK **Yakutsk** 24.68 309 *e*P **P** **09 26 19.0 -1.4**
YAK *e**PP **sP** **09 26 27.5 -0.6**
YAK *e*S **S** **09 30 39.7 -1.1**
YAK *e*SS **SnSn** **09 31 33.8 +6.9**
YAK pmax pmax
comp=Z,34nm,1.1s
YAK pmax pmax
comp=E,24nm,1.6s
YAK pmax pmax
comp=N,14nm,1.7s
YAK smax smax
comp=N,119nm,3.9s
YAK smax smax
comp=E,111nm,3.1s
YAK MLR MLR
comp=Z,384nm,19.0s
YAK MLR MLR
comp=N,376nm,14.0s
YAK MLR MLR
comp=E,286nm,16.0s
YAK **Yakutsk** 24.68 309 *e*P **P** **09 26 19.3 -1.0**
comp=E,42nm,1.0s
BALM **Baldy** 25.04 54 *e*P **P** **09 26 23.4 -0.3**
BALM pmax pmax
comp=Z,41nm,1.4s
BALM **Baldy** 25.04 54 *e*P **P** **09 26 23.4 -0.3**
comp=Z,41nm,1.4s
EGAK **Eagle** 25.72 45 *e*P **P** **09 26 29.3 -0.5**
comp=Z,95nm,1.6s
KLR **Kul'dur** 26.09 279 P **P** **09 26 33.5 +0.3**
comp=Z,8.6nm,0.7s,baz=67,slow=8.7,SNR=26
KLR LR LR 09 37 42.8
comp=Z,321nm,18.2s,baz=70,slow=38
PCA **Pinnacle** 26.12 56 *e*P **P** **09 26 33.3 -0.2**
comp=Z,96nm,1.4s
DAWY **Dawson** 26.44 47 *e*P **P** **09 26 37.0 +0.6**
comp=Z,14nm,0.8s
TIXI **Tiksi** 26.87 331 P **P** **09 26 39.1 -1.0**
comp=Z,2.6nm,0.5s,baz=112,slow=9.8,SNR=4.4

TIXI ScP **ScP** **09 33 39.9 -0.8**
comp=Z,3.5nm,0.5s,baz=76,slow=3.8,SNR=3.8
TIXI LR LR 09 37 13.5
comp=Z,308nm,19.9s,baz=96,slow=36
TIXI **Tiksi** 26.87 331⇑ *i*P **P** **09 26 39.6 -0.5**
TIXI pmax pmax
comp=Z,23nm,1.7s
TIXI MLR MLR
comp=Z,311nm,15.0s
TIXI **Tiksi** 26.87 331 *e*P **P** **09 26 40.4 +0.3**
comp=Z,5.7nm,0.8s
TIXI ScP **ScP** **09 33 39.9 -0.8**
HYT **Haines Junctio** 27.41 54 *e*P **P** **09 26 45.9 +0.7**
comp=Z,15nm,0.6s
USRK **Ussuriysk Ar.** 28.35 269 P **P** **09 26 53.2 -0.3**
comp=Z,3.1nm,0.7s,baz=63,slow=11,SNR=9.3
USRK PcP **PcP** **09 30 07.5 +1.7**
comp=Z,1.4nm,0.6s,baz=51,slow=2.5,SNR=4.5
USRK LR LR 09 37 23.7
comp=Z,232nm,21.1s,baz=44,slow=35
SKAG **Skagway** 28.67 56 *e*P **P** **09 26 57.2 +0.9**
comp=Z,48nm,2.0s
INK **Inuvik** 29.09 38 P **P** **09 27 00.0 +0.1**
comp=Z,3.4nm,0.5s,baz=284,slow=8.7,SNR=25
INK PcP **PcP** **09 30 07.3 +0.1**
comp=Z,1.0nm,0.5s,baz=330,slow=3.2,SNR=3.9
INK LR LR 09 39 36.2
comp=Z,293nm,19.6s,baz=248,slow=38
INK **Inuvik** 29.09 38 *e*P **P** **09 27 00.0 +0.1**
INK 09 30 07.4
INK pmax pmax
comp=Z,10.0nm,1.1s
INK **Inuvik** 29.09 38 *e*P **P** **09 27 00.0 +0.1**
comp=Z,9.9nm,1.1s
INK PcP **PcP** **09 30 07.3 +0.1**
MAJO **Matsushiro** 29.45 250⇑ *e*P **P** **09 27 05.7 +2.2**
MAT **Matsushiro** 29.45 250 P **P** **09 27 07.2 +3.7**
MAT *e*S **S** **09 31 50.8 -5.9**
MJAR **Matsushiro Arr** 29.45 250 P **P** **09 27 05.2 +1.7**
comp=Z,2.1nm,0.7s,baz=46,slow=7.7,SNR=8.0
MDJ **Mudanjiang** 29.58 271 P **P** **09 27 06.6 +2.1**
MDJ pP pP 09 27 09.5 -0.5
MDJ sP sP 09 27 11.4 -0.8
MDJ PcP **PcP** **09 30 10.0 +1.1**
MDJ S **S** **09 32 03.8 +5.3**
MDJ sS sS 09 32 11.0 +3.5
MDJ ScP **ScP** **09 33 52.0 +2.4**
MDJ PcS **PcS** **09 33 53.3 +1.4**
MDJ pmax pmax
comp=Z,10.0nm,0.6s
MDJ pmax pmax
comp=Z,170nm,8.1s
MDJ LR LR
comp=Z,180nm,12.8s
MDJ LR LR
comp=Z,320nm,14.2s
MDJ LR LR
comp=Z,420nm,21.3s
MDJ **Mudanjiang** 29.58 271 *e*P **P** **09 27 06.5 +2.1**
comp=Z,8.7nm,0.6s
MSHR **Mys Shultsa** 29.76 267⇓ *e*P **P** **09 27 07.9 +1.8**
WRAK **Wrangell Islan** 30.93 61 *e*P **P** **09 27 17.3 +1.1**
comp=Z,39nm,1.6s
DLBC **Dease Lake** 31.58 57 P **P** **09 27 23.9 +1.7**
comp=Z,6.4nm,0.7s,baz=284,slow=8.3,SNR=21
DLBC **Dease Lake** 31.58 57 *e*P **P** **09 27 23.8 +1.7**
comp=Z,49nm,1.5s
CN2 **Changchun** 32.52 273 *e*P **P** **09 27 30.0 -0.4**
CN2 *e*S **S** **09 32 42.8 -1.8**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,600nm,16.0s
CN2 LR LR
comp=Z,400nm,16.0s
CN2 LR LR
comp=Z,400nm,18.0s
H11N2 **WAKE ISLAND Hy** 33.52 191 T T 10 03 09.9
baz=5.9,slow=76,SNR=901
H11N3 **WAKE ISLAND Hy** 33.53 191 T T 10 03 10.8
baz=5.9,slow=76,SNR=2050
H11N1 **WAKE ISLAND Hy** 33.54 191 T T 10 03 11.2
baz=5.9,slow=76,SNR=1421
H11S1 **WAKE ISLAND Hy** 34.75 191 T T 10 04 41.9
baz=5.8,slow=76,SNR=2265
H11S3 **WAKE ISLAND Hy** 34.77 191 T T 10 04 40.9
baz=5.8,slow=76,SNR=1594
BBB **Bella Bella** 34.77 67 *e*P **P** **09 27 50.9 +1.1**
comp=Z,81nm,1.6s
H11S2 **WAKE ISLAND Hy** 34.77 191 T T 10 04 43.2
baz=5.8,slow=76,SNR=1634
KSRS **Korea Array** 34.88 262 P **P** **09 27 53.3 +2.4**
comp=Z,8.8nm,0.9s,baz=53,slow=8.2,SNR=22
KSRS LR LR 09 42 07.0
comp=Z,177nm,19.9s,baz=55,slow=36
KS01 **Wonju Array Si** 34.88 262 *e*P **P** **09 27 52.5 +1.6**
KS15 **Wonju Array Si** 34.91 262 *e*P **P** **09 27 52.5 +1.3**
KSAR **Wonju Array Be** 34.91 262 P **P** **09 27 53.3 +2.1**
KSAR **Wonju Array Be** 34.91 262 *e*P **P** **09 27 53.3 +2.1**
YKW3 **Yellowknife Ar** 37.65 46 *e*P **P** **09 28 14.5 +0.2**
comp=Z,36nm,1.8s
YKA **Yellowknife Ar** 37.68 46 P **P** **09 28 14.9 +0.3**
comp=Z,3.6nm,0.6s,baz=288,slow=8.1,SNR=17
YKA LR LR 09 44 16.2
comp=Z,40nm,20.7s,baz=0.0,slow=37
YKB5 **Yellowknife Ar** 37.68 46 *e*P **P** **09 28 14.5 -0.1**
LLLB **Lillooet** 38.96 67 *e*P **P** **09 28 25.9 +0.3**
comp=Z,13nm,0.8s
A04D **Lummi Island** 39.45 70 P **P** **09 28 29.3 -0.3**
baz=301
NLWA **Neilton Lookou** 39.48 72 *e*P **P** **09 28 30.2 +0.2**
comp=Z,79nm,1.6s
B05A **Bryant** 40.03 70 P **P** **09 28 35.3 +0.8**
baz=302,SNR=8.7
E03A **Lebam** 40.11 73 *e*P **P** **09 28 36.5 +1.3**
comp=Z,89nm,1.4s
B06A **Marblemount** 40.24 69 *e*P **P** **09 28 36.5 +0.3**
comp=Z,18nm,1.2s
BJI **Beijing** 40.33 275 P **P** **09 28 36.3 -0.7**
BJI S **S** **09 34 41.6 -2.1**
BJI pmax pmax
comp=Z,6.0nm,0.7s
BJI LR LR
comp=Z,370nm,16.3s
BJI LR LR
comp=Z,660nm,18.9s
BJI LR LR
comp=Z,370nm,22.3s
NRIK **Noril'sk** 40.52 327 P **P** **09 28 37.4 -0.8**
comp=Z,1.1nm,0.4s,baz=41,slow=8.6,SNR=3.7
NRIK LR LR 09 45 55.5
comp=Z,251nm,19.1s,baz=72,slow=37
D05A **Enumclaw** 40.67 71 *e*P **P** **09 28 41.2 +1.5**
comp=Z,59nm,1.4s
TDL **Tradedollar La** 41.00 72 P **P** **09 28 43.1 +0.4**
LON **Longmire** 41.01 72 *e*P **P** **09 28 43.7 +1.0**
LON pmax pmax
comp=Z,41nm,2.0s
LON **Longmire** 41.01 72 *e*P **P** **09 28 43.7 +1.0**
comp=Z,41nm,2.0s
G03D **McMinnville, O** 41.03 74 P **P** **09 28 43.6 +0.8**
baz=304
COR **Corvallis** 41.36 75 *e*P **P** **09 28 44.9 -0.6**
COR pmax pmax
comp=Z,271nm,1.9s
COR **Corvallis** 41.36 75 *e*P **P** **09 28 44.9 -0.6**
comp=Z,271nm,1.9s
LTY **Liberty** 41.38 70 *e*P **P** **09 28 45.9 +0.1**
comp=Z,42nm,1.6s
B08A **Colville Reser** 41.54 68 *e*P **P** **09 28 46.4 -0.7**
comp=Z,71nm,1.9s
SONA1 **Songino Array** 41.55 291 *e*P **P** **09 28 47.5 +0.3**
WTV **Waterville** 41.55 69 P **P** **09 28 46.7 -0.4**
SONM **Songino Array** 41.56 291 P **P** **09 28 47.7 +0.4**
comp=Z,8.2nm,0.4s,baz=63,slow=7.5,SNR=86
SONM ScP **ScP** **09 34 33.3 +0.1**
comp=Z,0.7nm,0.6s,baz=118,slow=2.9,SNR=5.0
SONM LR LR 09 45 54.3
comp=Z,229nm,19.4s,baz=62,slow=36
NAC **Naches** 41.59 71 P **P** **09 28 47.9 +0.5**
TDH **Tom, Dick, Har** 41.84 73 P **P** **09 28 50.0 +0.4**
I03D **Drain, OR** 41.85 76 P **P** **09 28 50.6 +1.1**
baz=306
ZAK **Zakamensk** 41.93 296 *e*P **P** **09 28 48.6 -1.6**

ZAK pmax pmax
comp=Z,6.0nm,1.6s
G05D **Wamic, OR** 42.14 73 P **P** **09 28 52.6 +0.7**
baz=305
TIA **Tai'an** 42.21 270 ⇓P **P** **09 28 53.4 +0.9**
TIA pmax pmax
comp=Z,40nm,0.9s
E07A **Sunnyside** 42.24 71 *e*P **P** **09 28 54.3 +1.6**
comp=Z,36nm,1.3s
EDM **Edmonton** 42.24 59 *e*P **P** **09 28 53.1 +0.4**
EDM pmax pmax
comp=Z,169nm,1.6s
EDM **Edmonton** 42.24 59 *e*P **P** **09 28 53.1 +0.4**
comp=Z,169nm,1.6s
BENWA **Benson Ranch** 42.34 71 P **P** **09 28 53.9 +0.4**
I04A **Tendick Farm,** 42.34 76 P **P** **09 28 53.9 +0.2**
baz=306,SNR=6.8
C09A **Chrisman Ranch** 42.44 68 *e*P **P** **09 28 54.4 0.0**
comp=Z,53nm,1.8s
CROR **Criterion Ridg** 42.48 73 P **P** **09 28 55.1 +0.3**
D08A **Wollman Farm,** 42.49 70 *e*P **P** **09 28 54.9 +0.2**
comp=Z,28nm,1.4s
HAWA **Hanford** 42.52 71 *e*P **P** **09 28 55.4 +0.4**
comp=Z,19nm,0.9s
G06A **Carlson Farm,** 42.54 73 *e*P **P** **09 28 55.2 0.0**
comp=Z,31nm,1.5s
HHC **Hu-ho-hao-te** 42.60 279 *e*P **P** **09 28 57.1 +1.3**
HHC PcS **PcS** **09 34 40.5 +0.6**
HHC S **S** **09 35 20.3 +2.7**
HHC pmax pmax
comp=Z,12nm,1.3s
HHC pmax pmax
comp=Z,95nm,4.2s
HHC LR LR
comp=Z,510nm,12.4s
HHC LR LR
comp=Z,350nm,12.4s
HHC LR LR
comp=Z,290nm,13.7s
VTHM **Trough** 42.62 73 P **P** **09 28 55.7 -0.1**
L02D **Cave Junction,** 42.62 78 P **P** **09 28 55.4 -0.4**
baz=307
I05D **Terrebonne, OR** 42.65 74 P **P** **09 28 56.4 +0.2**
baz=306,SNR=5.3
NEW **Newport** 42.83 67 P **P** **09 28 57.3 -0.2**
comp=Z,5.4nm,0.7s,baz=303,slow=7.3,SNR=13
NEW **Newport** 42.83 67 P **P** **09 28 57.6 0.0**
baz=304,SNR=12
NEW **Newport** 42.83 67 *e*P **P** **09 28 57.8 +0.3**
comp=Z,53nm,1.8s
J04D **Umpqua Nationa** 42.85 76 P **P** **09 28 58.7 +0.8**
baz=306,SNR=6.7
E09A **Wood Farm, Sta** 43.24 70 *e*P **P** **09 29 01.0 +0.2**
comp=Z,35nm,1.4s
J05D **Fort Rock, OR** 43.34 75 P **P** **09 29 02.7 +0.9**
baz=307,SNR=21
YBH **Yreka Blue Hor** 43.40 78 *e*P **P** **09 29 02.6 +0.3**
YBH pmax pmax
comp=Z,43nm,1.5s
YBH **Yreka Blue Hor** 43.40 78 *e*P **P** **09 29 02.5 +0.3**
comp=Z,43nm,1.5s
K04D **Chiloquin, OR** 43.43 77 P **P** **09 29 02.1 -0.4**
baz=307
G08A **Pilot Rock** 43.48 72 *e*P **P** **09 29 02.6 -0.3**
comp=Z,14nm,1.4s
M02C **Callahan** 43.53 79 P **P** **09 29 03.3 0.0**
baz=308
K05A **Summer Lake** 43.87 76 *e*P **P** **09 29 06.8 +0.6**
comp=Z,78nm,1.9s
N02D **Trinity Center** 43.87 79 P **P** **09 29 06.0 -0.1**
baz=308
M04C **Macdoel** 43.89 78 P **P** **09 29 07.1 +0.9**
baz=308,SNR=5.9
NJ2 **Nanjing** 44.00 264 *e*P **P** **09 29 07.8 +0.7**
NJ2 pmax pmax
comp=Z,15nm,0.5s
F10A **Beach Ranch, E** 44.07 70 *e*P **P** **09 29 07.2 -0.3**
comp=Z,30nm,1.8s
WALA **Waterton Lakes** 44.16 64 *e*P **P** **09 29 08.5 +0.2**
comp=Z,125nm,1.7s
WDC **Whiskeytown Da** 44.22 79 *e*P **P** **09 29 09.2 +0.5**
WDC pmax pmax
comp=Z,7.0nm,1.1s
WDC **Whiskeytown Da** 44.22 79 *e*P **P** **09 29 09.2 +0.5**
comp=Z,6.9nm,1.1s
BSMT **Bassoo Peak** 44.36 66 P **P** **09 29 10.1 +0.1**
LTIM **Timbered Crate** 44.47 78 P **P** **09 29 11.6 +0.7**
BLMT **Blacktail Moun** 44.50 66 *e*P **P** **09 29 11.7 +0.5**
BMO **Blue Mountains** 44.68 71 *e*P **P** **09 29 12.5 0.0**
BMO pmax pmax
comp=Z,16nm,1.3s
BMO **Blue Mountains** 44.68 71 *e*P **P** **09 29 12.5 0.0**
comp=Z,16nm,1.3s
JTMT **Jette** 44.70 66 *e*P **P** **09 29 13.1 +0.4**
MOD **Modoc Plateau** 44.72 76 *e*P **P** **09 29 13.2 +0.3**
comp=Z,24nm,1.4s
YBMT **Yellow Bay** 44.78 66 *e*P **P** **09 29 13.9 +0.6**
O03D **Paynes Creek** 44.83 79 P **P** **09 29 13.6 -0.1**
baz=309,SNR=11
SWMT **Swartz Lake** 44.99 66 *e*P **P** **09 29 15.2 +0.2**
WVOR **Wild Horse Val** 45.37 75 *e*P **P** **09 29 18.1 +0.1**
WVOR pmax pmax
comp=Z,19nm,1.5s
WVOR **Wild Horse Val** 45.37 75 *e*P **P** **09 29 18.1 +0.1**
comp=Z,19nm,1.5s
MSO **Missoula** 45.42 67 P **P** **09 29 18.3 -0.1**
baz=306,SNR=9.2
MSO **Missoula** 45.42 67 *e*P **P** **09 29 18.1 -0.3**
comp=Z,37nm,1.6s
SLMT **Seeley Lake** 45.43 66 *e*P **P** **09 29 18.1 -0.4**
ORV **Oroville** 45.48 80 *e*P **P** **09 29 18.3 -0.5**
ORV pmax pmax
comp=Z,3.0nm,0.8s
ORV **Oroville** 45.48 80 *e*P **P** **09 29 18.3 -0.5**
comp=Z,2.7nm,0.8s
CHMT **Chamberlain Mo** 45.75 67 *e*P **P** **09 29 20.8 -0.3**
AFDM **Forest Hills D** 46.18 80 *e*P **P** **09 29 24.4 0.0**
comp=Z,18nm,1.9s
MFID **Camas Ranch** 46.40 72 *e*P **P** **09 29 26.3 +0.2**
comp=Z,28nm,1.9s
PAHR **Pah Rah Range** 46.64 78 *e*P **P** **09 29 28.3 +0.2**
comp=Z,17nm,1.4s
HRY **Holter Researc** 46.66 66 *e*P **P** **09 29 28.0 -0.1**
LRM **Limekiln Ridge** 46.85 67 *e*P **P** **09 29 29.6 -0.2**
EGMT **Eagleton** 47.02 63 P **P** **09 29 30.7 -0.2**
baz=306,SNR=8.8
EGMT **Eagleton** 47.02 63 *e*P **P** **09 29 30.6 -0.3**
comp=Z,12nm,0.9s
FFC **Flin Flon** 47.10 52 *e*P **P** **09 29 31.7 +0.4**
FFC pmax pmax
comp=Z,31nm,1.7s
FFC **Flin Flon** 47.10 52 *e*P **P** **09 29 31.7 +0.4**
comp=Z,31nm,1.7s
HLID **Hailey** 47.12 71 P **P** **09 29 31.6 -0.2**
baz=308,SNR=8.3
HLID **Hailey** 47.12 71 *e*P **P** **09 29 31.7 -0.2**
comp=Z,25nm,1.8s
CMB **Columbia Colle** 47.13 81 *e*P **P** **09 29 31.4 -0.4**
CMB pmax pmax
comp=Z,10.0nm,1.5s
CMB **Columbia Colle** 47.13 81 *e*P **P** **09 29 31.4 -0.4**
comp=Z,9.7nm,1.5s
YOJ **Yonaguni jima** 47.14 253 *e*P **P** **09 29 32.4 +0.4**
YOJ pmax pmax
comp=Z,166nm,1.6s
YOJ **Yonaguni jima** 47.14 253 *e*P **P** **09 29 32.4 +0.4**
comp=Z,166nm,1.6s
MCMT **McKenzie Canyo** 47.23 69 *e*P **P** **09 29 32.2 -0.6**
WAKR **Walker** 47.38 80 *e*P **P** **09 29 34.2 +0.2**
comp=Z,9.5nm,1.4s
BOZ **Bozeman (W)** 47.41 67 P **P** **09 29 33.8 -0.2**
baz=307,SNR=17
BOZ **Bozeman (W)** 47.41 67 *e*P **P** **09 29 33.9 -0.2**
BOZ pmax pmax
comp=Z,9.0nm,1.0s
BOZ **Bozeman (W)** 47.41 67 *e*P **P** **09 29 33.9 -0.2**
comp=Z,9.4nm,1.0s
BMN **Battle Mountai** 47.45 76 *e*P **P** **09 29 34.7 +0.2**
BMN pmax pmax
comp=Z,5.0nm,0.8s
BMN **Battle Mountai** 47.45 76 *e*P **P** **09 29 34.7 +0.2**
comp=Z,5.0nm,0.8s
WHN **Wuhan** 47.79 266 P **P** **09 29 40.3 +3.4**
QLMT **Earthquake Lak** 48.02 68 *e*P **P** **09 29 38.4 -0.5**
YHB **Horse Butte** 48.20 68 *e*P **P** **09 29 40.1 -0.3**
comp=Z,80nm,1.8s
SPA0 **Spitsbergen Ar** 48.38 354 *e*P **P** **09 29 40.9 -0.1**

SPITS **Spitsbergen Ar** 48.38 354 P P 09 29 39.9 -1.1
comp=Z,4.4nm,0.7s,baz=58,slow=7.9,SNR=8.6
YMR **Madison River** 48.38 68 eP P 09 29 41.5 -0.3
comp=Z,13nm,1.2s
GCMT **Greycliff** 48.41 66 eP P 09 29 42.0 +0.2
YFT **Old Faithful** 48.59 68 eP P 09 29 43.3 0.0
comp=Z,9.3nm,0.8s
XAN **Xi'an** 48.63 274 P P 09 29 46.3 +2.8
XAN pmax pmax
comp=Z,11nm,1.1s
XAN pmax pmax
comp=Z,160nm,7.7s
H17A **Grant Village** 48.77 68 P P 09 29 45.8 +1.0
baz=309
H17A **Grant Village** 48.77 68 eP P 09 29 45.6 +0.9
comp=Z,36nm,1.6s
IMW **Indian Meadow** 48.88 68 eP P 09 29 45.7 +0.1
comp=Z,23nm,1.8s
FLWY **Flagg Ranch** 48.90 68 eP P 09 29 45.9 +0.2
comp=Z,7.3nm,0.8s
RLMT **Red Lodge** 49.05 66 P P 09 29 47.3 +0.5
baz=309,SNR=6.1
RLMT **Red Lodge** 49.05 66 eP P 09 29 47.2 +0.5
comp=Z,30nm,1.5s
HVU **Hansel Valley** 49.18 72 eP P 09 29 47.7 -0.1
HVU pmax pmax
comp=Z,4.0nm,0.7s
HVU **Hansel Valley** 49.18 72 eP P 09 29 47.7 -0.1
comp=Z,4.1nm,0.7s
ZAA0 **Zalesovo Array** 49.33 309 eP P 09 29 46.9 -1.7
ZALV **Zalesovo Beam** 49.33 309 P P 09 29 47.2 -1.4
comp=Z,1.5nm,0.6s,baz=64,slow=6.8,SNR=7.1
ZALV LR LR 09 52 31.7
comp=Z,308nm,18.2s,baz=70,slow=38
VES **Vestal, Richgr** 49.36 82 P P 09 29 48.6 -0.4
baz=312
AHID **Auburn Hatcher** 49.51 70 eP P 09 29 50.1 -0.2
comp=Z,7.8nm,1.3s
NVS **Novosibirsk** 49.53 311 eP P 09 29 46.0 -4.0
NVS e 09 31 41.6
BGU **Big Grassy Mou** 49.58 73 eP P 09 29 51.1 +0.3
comp=Z,4.0nm,0.9s
GRAC **Grapevine Rang** 49.61 80 P P 09 29 51.0 0.0
baz=312
SPUT **South Promonto** 49.67 72 eP P 09 29 52.4 +0.9
comp=Z,14nm,1.1s
DGMT **Dagmar** 49.71 60 P P 09 29 51.4 -0.1
baz=308,SNR=7.4
DGMT **Dagmar** 49.71 60 eP P 09 29 51.5 -0.1
comp=Z,16nm,0.8s
LAO **LASA Array** 49.73 63 P P 09 29 52.2 +0.4
baz=309,SNR=10
LAO **LASA Array** 49.73 63 eP P 09 29 52.3 +0.4
comp=Z,85nm,1.7s
HDU **Hyde Park** 49.74 71 eP P 09 29 52.2 +0.2
R11A **Troy Canyon, C** 49.77 77 P P 09 29 52.1 -0.3
baz=311,SNR=14
R11A **Troy Canyon, C** 49.77 77 eP P 09 29 51.6 -0.8
comp=Z,18nm,1.8s
DAC **Darwin (Calif)** 49.96 80 eP P 09 29 53.8 0.0
DAC pmax pmax
comp=Z,4.0nm,0.9s
DAC **Darwin (Calif)** 49.96 80 eP P 09 29 53.8 0.0
comp=Z,3.7nm,0.9s
A25A **Svangstu Ranch** 49.98 59 P P 09 29 53.5 -0.1
baz=308,SNR=7.1
HWUT **Hardware Ranch** 49.98 71 eP P 09 29 54.2 +0.3
comp=Z,27nm,1.9s
ARVC **Arvin** 50.00 82 P P 09 29 53.0 -0.9
baz=313
MPMC **Manual Prospec** 50.17 81 P P 09 29 55.1 -0.3
baz=313
DUG **Dugway, Tooele** 50.18 73 P P 09 29 55.7 +0.3
baz=311,SNR=10
DUG **Dugway, Tooele** 50.18 73 eP P 09 29 55.7 +0.3
DUG pmax pmax
comp=Z,44nm,1.8s
DUG **Dugway, Tooele** 50.18 73 eP P 09 29 55.7 +0.3
comp=Z,44nm,1.8s
FURC **Furnace Creek,** 50.27 80 P P 09 29 55.7 -0.1
baz=312,SNR=5.7
LZH **Lanzhou** 50.29 280 eP P 09 29 58.0 +1.7
LZH pP pP 09 30 00.9 -1.1
LZH sP sP 09 30 03.0 -1.2
LZH eS S 09 37 07.3 -0.7
LZH sS sS 09 37 14.0 -3.4
LZH eSS SS 09 40 38.0 -3.2
LZH pmax pmax
comp=Z,60nm,1.2s
LZH pmax pmax
comp=Z,180nm,4.8s
LZH LR LR
comp=Z,400nm,14.0s
LZH LR LR
comp=Z,460nm,14.9s
LZH LR LR
comp=Z,380nm,15.7s
TPNV **Topopah Spring** 50.31 79 P P 09 29 56.4 -0.1
baz=312,SNR=9.3
TPNV **Topopah Spring** 50.31 79 eP P 09 29 56.3 -0.1
TPNV pmax pmax
comp=Z,25nm,1.8s
TPNV **Topopah Spring** 50.31 79 eP P 09 29 56.2 -0.1
comp=Z,25nm,1.8s
DAG **Danmarks Havn** 50.33 4 i P P 09 29 58.1 +2.3
comp=Z,4.2nm,0.8s
DAG **Danmarks Havn** 50.33 4 i P P 09 29 58.1 +2.3
DAG pmax pmax
comp=Z,3.0nm,0.8s
B25A **Knox Farm, Ray** 50.37 60 P P 09 29 56.7 +0.1
baz=309
BW06 **Boulder Array** 50.38 69 P P 09 29 56.5 -0.4
baz=310,SNR=11
BW06 **Boulder Array** 50.38 69 eP P 09 29 56.6 -0.3
comp=Z,39nm,1.8s
PD31 **Pinedale Array** 50.38 69 eP P 09 29 57.1 +0.1
PDAR **Pinedale Array** 50.38 69 P P 09 29 56.7 -0.3
comp=Z,3.7nm,0.6s,baz=297,slow=3.1,SNR=42
PDAR LR LR 09 49 52.6
comp=Z,145nm,21.8s,baz=342,slow=34
TCUT **Toone Canyon** 50.39 72 eP P 09 29 56.8 -0.3
comp=Z,43nm,1.8s
GTA **Gaotai** 50.45 286 eP P 09 29 57.3 -0.1
GTA pP pP 09 30 01.6 -1.5
GTA sP sP 09 30 04.8 -0.5
GTA S S 09 37 13.8 +3.6
GTA pmax pmax
comp=Z,18nm,0.6s
GTA pmax pmax
comp=Z,100nm,6.2s
GTA LR LR
comp=Z,650nm,17.6s
GTA LR LR
comp=Z,640nm,15.9s
GTA LR LR
comp=Z,380nm,16.2s
CTU **Camp Tracy** 50.47 72 eP P 09 29 57.4 -0.2
comp=Z,98nm,2.0s
A26A **Wade Farm, Ken** 50.56 58 P P 09 29 58.1 +0.1
baz=309,SNR=6.9
EDW2 **Edwards Air Fo** 50.67 82 P P 09 29 58.3 -0.7
baz=313
JLU **Jordanelle** 50.70 72 eP P 09 29 59.8 +0.3
comp=Z,33nm,1.9s
NLU **North Lily Min** 50.76 73 eP P 09 29 59.8 -0.1
comp=Z,2.6nm,0.8s
B26A **Jensen Ranch,** 50.79 59 P P 09 29 59.3 -0.5
baz=309
SNCC **San Nicolas Is** 50.87 85 eP P 09 30 00.5 0.0
comp=Z,65nm,0.9s
A27A **Ledoux Ranch,** 50.94 58 P P 09 30 01.1 +0.3
baz=309,SNR=6.0
MPU **Maple Canyon** 50.98 73 eP P 09 30 01.9 +0.4
comp=Z,16nm,1.7s
SHOC **Shoshone, Teco** 51.00 80 P P 09 30 00.7 -0.8
baz=313
MWC **Mount Wilson** 51.08 83 eP P 09 30 02.8 +0.5
MWC pmax pmax
comp=Z,30nm,1.4s
MWC **Mount Wilson** 51.08 83 eP P 09 30 02.8 +0.5
comp=Z,30nm,1.4s
GSC **Goldstone, Bar** 51.09 81 P P 09 30 01.7 -0.5
baz=313,SNR=5.8
GSC **Goldstone, Bar** 51.09 81 eP P 09 30 02.2 0.0
GSC pmax pmax
comp=Z,18nm,1.6s
GSC **Goldstone, Bar** 51.09 81 eP P 09 30 02.2 0.0
comp=Z,18nm,1.6s
SHPR **Sheep Range** 51.25 79 eP P 09 30 04.3 +0.8
comp=Z,6.9nm,1.4s
TUQ **Turquoise Moun** 51.52 80 P P 09 30 05.3 -0.3
baz=313
D26A **Manning** 51.54 60 P P 09 30 05.2 -0.2
baz=310
CCUT **Cedar City** 51.61 76 eP P 09 30 05.8 -0.5
comp=Z,3.6nm,1.0s
MSU **Marysvale** 51.66 75 eP P 09 30 07.2 +0.5
MSU **Marysvale** 51.66 75 eP P 09 30 07.2 +0.5
TMUT **Trail Mountain** 51.70 73 eP P 09 30 07.5 +0.4
comp=Z,10nm,0.7s
P17A **Butcher Ranch,** 51.85 73 eP P 09 30 07.9 -0.1
comp=Z,4.6nm,0.7s
MTPU **Mount Pierson** 51.97 75 eP P 09 30 09.0 -0.2
A29A **Manning Farm,** 51.98 57 P P 09 30 08.2 -0.4
baz=310,SNR=17
P18A **Preston Nutter** 52.04 72 eP P 09 30 09.3 -0.2
comp=Z,30nm,1.8s
LCMT **Little Creek M** 52.04 77 eP P 09 30 09.8 +0.4
comp=Z,11nm,1.2s
GMRC **Granite Mounta** 52.13 80 P P 09 30 09.5 -0.5
baz=314
K22A **Casper** 52.15 67 P P 09 30 09.5 -0.7
baz=311
K22A **Casper** 52.15 67 eP P 09 30 09.5 -0.7
comp=Z,30nm,1.8s
B29A **Wagenman Farm,** 52.21 57 P P 09 30 09.4 -1.0
baz=310
SRU **San Rafael Swe** 52.22 73 eP P 09 30 11.0 +0.2
SRU pmax pmax
comp=Z,8.0nm,0.8s
SRU **San Rafael Swe** 52.22 73 eP P 09 30 11.0 +0.2
comp=Z,8.2nm,0.8s
KNB **Kanab** 52.29 76 eP P 09 30 11.8 +0.5
KNB pmax pmax
comp=Z,9.0nm,1.1s
KNB **Kanab** 52.29 76 eP P 09 30 11.8 +0.5
comp=Z,8.8nm,1.1s
H25A **Fruitdale** 52.47 63 P P 09 30 12.6 +0.1
baz=311
MDND **Maddock** 52.48 58 P P 09 30 12.8 +0.4
baz=310,SNR=13
MDND **Maddock** 52.48 58 eP P 09 30 12.9 +0.6
comp=Z,145nm,1.5s
RSSD **Black Hills** 52.56 64 P P 09 30 13.1 -0.2
baz=311
RSSD **Black Hills** 52.56 64 eP P 09 30 13.1 -0.2
RSSD pmax pmax
comp=Z,15nm,1.3s
RSSD **Black Hills** 52.56 64 eP P 09 30 13.1 -0.2
comp=Z,16nm,1.3s
B30A **Myrvik Farm, E** 52.74 57 P P 09 30 14.6 +0.4
baz=311,SNR=10.0
ULM **Lac du Bonnet** 52.79 54 P P 09 30 14.3 -0.2
comp=Z,8.5nm,0.8s,baz=296,slow=7.3,SNR=14
ULM LR LR 09 53 32.9
comp=Z,373nm,19.2s,baz=302,slow=37
ULM **Lac du Bonnet** 52.79 54 eP P 09 30 14.6 +0.1
comp=Z,48nm,1.7s
SUMG **Summit** 52.84 11 i P P 09 30 17.2 +2.1
SUMG **Summit** 52.84 11 eP P 09 30 15.9 +0.8
SUMG pmax pmax
comp=Z,17nm,1.2s
SUMG **Summit** 52.84 11 eP P 09 30 15.9 +0.8
comp=Z,17nm,1.2s
O20A **White River Ci** 52.85 70 P P 09 30 15.3 -0.2
baz=312,SNR=12
O20A **White River Ci** 52.85 70 eP P 09 30 15.3 -0.2
comp=Z,8.6nm,0.7s
IRM **Iron Mountain** 52.87 81 P P 09 30 15.1 -0.3
baz=314
U15A **North Rim** 53.00 77 eP P 09 30 17.0 +0.3
comp=Z,22nm,1.7s
B31A **Greenbush Farm** 53.10 56 P P 09 30 16.8 -0.1
baz=311,SNR=6.6
PDMCI **Parker Dam,Lak** 53.37 80 P P 09 30 18.7 -0.3
baz=314
PV09 **Paradox Valley** 53.44 73 eP P 09 30 20.2 +0.3
C31A **Landman Farms,** 53.47 57 P P 09 30 19.5 -0.1
baz=311,SNR=8.2
PV10 **Paradox Valley** 53.57 73 eP P 09 30 21.4 +0.6
PV04 **Paradox Valley** 53.64 73 eP P 09 30 20.4 -0.8
N23A **Red Feather La** 53.64 68 P P 09 30 21.1 -0.2
baz=312,SNR=6.0
N23A **Red Feather La** 53.64 68 eP P 09 30 21.2 -0.2
comp=Z,26nm,1.5s
PHWY **Pilot Hill** 53.64 68 eP P 09 30 21.4 0.0
comp=Z,21nm,1.9s
B32A **Ashes, Strandq** 53.68 56 P P 09 30 21.1 0.0
baz=311,SNR=7.6
F29A **Eureka** 53.68 60 P P 09 30 21.4 +0.1
baz=311,SNR=5.3
PV05 **Paradox Valley** 53.74 73 eP P 09 30 22.1 +0.1
GLA **Glamis** 53.83 81 P P 09 30 22.1 -0.4
baz=315
A33A **Warroad** 53.89 55 P P 09 30 22.7 0.0
baz=312,SNR=7.9
CD2 **Chengdu** 53.93 275 eP P 09 30 23.0 -0.3
CD2 pP pP 09 30 26.4 -2.6
CD2 PP PP 09 32 24.3 -0.1
CD2 PcS PcS 09 35 27.9 0.0
CD2 S S 09 37 58.5 +0.7
CD2 sS sS 09 38 04.3 -2.9
CD2 SS SS 09 41 40.9 +2.2
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.4s
D31A **Mcclaflin, Tow** 53.97 58 P P 09 30 22.8 -0.5
baz=312
PV01 **Paradox Valley** 54.01 73 eP P 09 30 23.9 -0.1
AGMN **Agassiz Nation** 54.08 56 P P 09 30 23.8 -0.3
baz=312,SNR=7.8
AGMN **Agassiz Nation** 54.08 56 eP P 09 30 23.9 -0.2
comp=Z,63nm,1.8s
WUAZ **Wupatki** 54.17 77 P P 09 30 25.7 +0.6
baz=314
WUAZ **Wupatki** 54.17 77 eP P 09 30 25.2 +0.1
comp=Z,17nm,1.5s
E31A **Nome** 54.21 58 P P 09 30 24.6 -0.5
baz=312
SMCO **Snowmass** 54.22 71 eP P 09 30 25.7 0.0
comp=Z,4.3nm,1.0s
B33A **Robert and Kas** 54.23 55 P P 09 30 25.0 -0.2
baz=312
D32A **Dogwood Acres,** 54.27 57 P P 09 30 25.1 -0.3
baz=312
Y14A **Wickenburg** 54.30 79 eP P 09 30 25.5 -0.4
comp=Z,39nm,1.6s
KURK **Kurchatov** 54.33 309 eP P 09 30 24.8 -1.0
KURK **Kurchatov** 54.33 309 eP P 09 30 24.8 -1.0
WMQ **Urumqi** 54.34 297 P P 09 30 26.6 +0.4
WMQ pP pP 09 30 31.8 -0.1
WMQ sP sP 09 30 34.3 +0.2
WMQ pmax pmax
comp=Z,26nm,0.6s
WMQ pmax pmax
comp=Z,150nm,4.2s
WMQ LR LR
comp=Z,950nm,16.6s
WMQ LR LR
comp=Z,740nm,20.0s
WMQ LR LR
comp=Z,610nm,16.2s
F31A **Hecla** 54.49 59 P P 09 30 26.3 -0.9
baz=312
B34A **Aery, Baudette** 54.55 55 P P 09 30 27.2 -0.3
baz=312,SNR=6.3
ISCO **Idaho Springs** 54.57 69 P P 09 30 28.9 +0.8
baz=313,SNR=6.0
ISCO **Idaho Springs** 54.57 69 eP P 09 30 28.5 +0.4
ISCO pmax pmax
comp=Z,25nm,1.8s
ISCO **Idaho Springs** 54.57 69 eP P 09 30 28.5 +0.4
comp=Z,25nm,1.8s
MVCO **Mesa Verde** 54.68 73 P P 09 30 27.9 -1.0
baz=314
MVCO **Mesa Verde** 54.68 73 eP P 09 30 28.9 0.0
comp=Z,26nm,1.9s
D33A **AnnSam, Waubun** 54.86 57 P P 09 30 29.2 -0.6
baz=312
X16A **Lo Mia Camp, P** 54.89 78 eP P 09 30 30.2 -0.1
comp=Z,15nm,1.8s
C34A **RKJ Ranch, Bem** 54.99 56 P P 09 30 30.8 +0.1
baz=312
B35A **Bob, Littlefor** 55.09 54 P P 09 30 31.3 -0.1
baz=313,SNR=8.1
MK31 **Makanchi Array** 55.17 303 i P P 09 30 30.9 -1.1
MK31 pmax pmax
comp=Z,3.0nm,0.5s
MK31 **Makanchi Array** 55.17 303 eP P 09 30 30.9 -1.1
MKAR **Makanchi Array** 55.17 303 P P 09 30 30.8 -1.3
comp=Z,4.6nm,0.5s,baz=56,slow=5.8,SNR=83
MKAR **Makanchi Array** 55.17 303 eP P 09 30 30.9 -1.1
MK01 **Makanchi Array** 55.18 303 eP P 09 30 30.9 -1.3
E33A **Westby DABS, E** 55.21 57 P P 09 30 32.1 -0.2
baz=313
D34A **Park Rapids** 55.23 56 P P 09 30 32.4 -0.1
baz=313
S22A **4UR Ranch, Cre** 55.28 72 P P 09 30 34.0 +0.7
baz=314,SNR=13
S22A **4UR Ranch, Cre** 55.28 72 eP P 09 30 34.1 +0.9
comp=Z,49nm,1.9s
H31A **Wolsey** 55.30 60 P P 09 30 32.8 -0.2
baz=313
MAKZ **Makanchi** 55.32 303 eP P 09 30 32.0 -1.1
MAKZ pmax pmax
comp=Z,6.0nm,0.8s
MAKZ **Makanchi** 55.32 303 eP P 09 30 32.0 -1.1
comp=Z,5.8nm,0.8s
GYA **Guiyang** 55.39 269 P P 09 30 35.3 +1.3
GYA PP PP 09 32 41.0 +3.4
GYA S S 09 38 17.8 +0.1
GYA pmax pmax
comp=Z,10.0nm,1.0s
GYA pmax pmax
comp=Z,110nm,6.0s
C35A **Jirik Farms, M** 55.42 55 P P 09 30 33.5 -0.3
baz=313,SNR=9.2
F33A **5 Mile Ranch,** 55.51 58 P P 09 30 34.1 -0.4
baz=313
J30A **Dallas** 55.55 62 P P 09 30 34.8 0.0
baz=313,SNR=5.9
ARCES **ARCESS Array B** 55.59 347 P P 09 30 34.1 -0.6
comp=Z,2.1nm,0.8s,baz=29,slow=10,SNR=6.9
ARCES LR LR 09 55 47.8
comp=Z,121nm,18.4s,baz=16,slow=38
E34A **Wadena** 55.63 57 P P 09 30 35.4 +0.1
baz=313
X18A **Snowflake** 55.69 77 eP P 09 30 36.7 +0.5
comp=Z,5.8nm,0.9s
OGNE **Ogallala** 55.79 66 P P 09 30 37.2 +0.5
baz=313
OGNE **Ogallala** 55.79 66 eP P 09 30 37.8 +1.2
comp=Z,26nm,0.8s
D35A **Remer** 55.80 56 P P 09 30 36.5 0.0
baz=313,SNR=9.7
214A **Organ Pipe Nat** 55.80 81 P P 09 30 36.7 -0.2
baz=315
H32A **Carlson Farm,** 55.83 60 P P 09 30 36.2 -0.7
baz=313
G33A **Ortonville** 55.88 59 P P 09 30 36.7 -0.5
baz=313
K30A **Basset** 55.92 63 P P 09 30 38.2 +0.7
baz=313,SNR=7.1
C36A **Pine Crest Far** 55.94 54 P P 09 30 37.5 -0.1
baz=313
E35A **Pequot Lakes** 55.98 56 P P 09 30 38.2 +0.3
baz=313,SNR=6.5
SDCO **Great Sand Dun** 56.04 71 P P 09 30 39.3 +0.6
baz=314,SNR=22
SDCO **Great Sand Dun** 56.04 71 eP P 09 30 39.4 +0.6
comp=Z,30nm,1.7s
H33A **Prehn Over Nor** 56.07 59 P P 09 30 38.5 -0.1
baz=313
F34A **Alexandria** 56.07 57 P P 09 30 38.3 -0.3
baz=313
D36A **Goodland** 56.18 55 P P 09 30 39.3 +0.1
baz=313
C37A **Embarrass** 56.28 54 P P 09 30 40.3 +0.3
baz=314
F35A **Swanville** 56.38 57 P P 09 30 40.7 0.0
baz=314,SNR=7.0
VOSK **Vostochnaya** 56.40 314 P P 09 30 39.2 -1.6
VOSK pmax pmax
comp=Z,6.0nm,1.2s
VOSK **Vostochnaya** 56.40 314 eP P 09 30 40.1 -0.7
comp=Z,6.8nm,1.3s
K31A **O'Neill** 56.42 62 P P 09 30 41.4 +0.3
baz=314
BVA0 **Borovoye Array** 56.44 315 i P P 09 30 40.3 -0.7
BVA0 pmax pmax
comp=Z,9.0nm,1.3s
BRVK **Borovoye** 56.46 315 eP P 09 30 40.2 -1.0
BRVK pmax pmax
comp=Z,29nm,1.7s
BRVK **Borovoye** 56.46 315 eP P 09 30 40.5 -0.7
comp=Z,4.9nm,0.5s
EYMN **Ely** 56.47 53 P P 09 30 41.3 0.0
baz=314,SNR=12
EYMN **Ely** 56.47 53 eP P 09 30 41.3 0.0
comp=Z,50nm,1.6s
D37A **Cotton** 56.56 55 P P 09 30 41.8 -0.2
baz=314,SNR=6.7
H34A **Spellman Lake,** 56.58 59 P P 09 30 41.9 -0.2
baz=314
E36A **McGregor** 56.59 56 P P 09 30 42.2 +0.1
baz=314,SNR=8.1
L31A **Butterfield Fa** 56.68 63 P P 09 30 43.5 +0.5
baz=314,SNR=9.5
C38A **Sawbill Land.** 56.74 54 P P 09 30 43.4 +0.1
baz=314,SNR=7.8
TUC **Tucson** 56.76 79 P P 09 30 43.5 -0.2
baz=316
TUC **Tucson** 56.76 79 eP P 09 30 43.8 +0.1
TUC pmax pmax
comp=Z,5.0nm,1.1s
TUC **Tucson** 56.76 79 eP P 09 30 43.8 +0.1
comp=Z,4.7nm,1.1s
KSCO **Kaye Shedlock'** 56.79 68 P P 09 30 44.8 +0.9
baz=314,SNR=15
KSCO **Kaye Shedlock'** 56.79 68 eP P 09 30 45.0 +1.1
comp=Z,30nm,0.6s
ECSD **EROS Data Cent** 56.79 60 P P 09 30 43.2 -0.5
baz=314,SNR=5.2
ECSD **EROS Data Cent** 56.79 60 eP P 09 30 43.3 -0.4
comp=Z,15nm,1.5s
F36A **Milaca** 56.91 56 P P 09 30 43.9 -0.6
baz=314
H35A **Sunnyside Ranc** 57.05 58 P P 09 30 44.8 -0.7
baz=314
ZRNK **Zerenda** 57.08 316 P P 09 30 44.5 -1.1
ZRNK pmax pmax
comp=Z,8.0nm,1.3s
ZRNK **Zerenda** 57.08 316 eP P 09 30 44.8 -0.8
comp=Z,4.1nm,0.7s
T25A **Trinidad** 57.08 71 P P 09 30 46.2 +0.1
baz=314,SNR=8.7
T25A **Trinidad** 57.08 71 eP P 09 30 46.9 +0.8
comp=Z,62nm,1.6s
M31A **Lambtecht Ranc** 57.18 64 P P 09 30 46.7 +0.1
baz=314
C39A **Grand Marais** 57.22 53 P P 09 30 46.7 +0.1
baz=314
G36A **St. Michael** 57.23 57 P P 09 30 46.6 -0.1
baz=314
LAZ **Ladron** 57.43 75 eP P 09 30 49.8 +1.2
ANMO **Albuquerque** 57.44 74 P P 09 30 48.9 +0.3
baz=315
ANMO **Albuquerque** 57.44 74 eP P 09 30 49.3 +0.7
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO **Albuquerque** 57.44 74 eP P 09 30 48.9 +0.3
comp=Z,15nm,1.6s
N31A **Bailey Ranch,** 57.56 64 P P 09 30 48.1 -1.1
baz=314
BGNE **Belgrade** 57.59 63 P P 09 30 49.2 -0.1
baz=314
BGNE **Belgrade** 57.59 63 eP P 09 30 49.5 +0.2
comp=Z,41nm,0.5s
H36A **Jessenland, He** 57.59 58 P P 09 30 49.8 +0.5
baz=314
SPMN **Marine on St.** 57.71 57 eP P 09 30 50.4 +0.2
comp=Z,27nm,1.4s
LPM **Los Pinos Moun** 57.79 75 eP P 09 30 51.8 +0.8
K34A **Le Mars** 57.79 61 P P 09 30 50.8 0.0
baz=314
O31A **Woolen Ranch,** 57.82 65 P P 09 30 51.1 0.0
baz=314
BNM **Barren Site** 57.91 75 eP P 09 30 52.7 +0.8
I36A **Fitzsimmons Fa** 57.94 58 P P 09 30 51.8 0.0
baz=315

N32A **Stulken Farm,** 57.96 64 P P 09 30 51.6 -0.4
baz=314
M33A **Taylor Creek F** 57.98 62 P P 09 30 52.0 -0.1
baz=314
H37A **Dierke Farm, C** 58.11 57 P P 09 30 53.1 +0.2
baz=315
L34A **Svendsen Farm,** 58.14 61 P P 09 30 53.0 -0.2
baz=315
K35A **Storm Lake** 58.22 60 P P 09 30 53.3 -0.4
baz=315
J36A **Seneca 1, Swea** 58.26 59 P P 09 30 53.6 -0.4
baz=315
I37A **Lemond, Waseca** 58.26 58 P P 09 30 54.4 +0.4
baz=315,SNR=6.9
O32A **Brockman Farm,** 58.32 64 P P 09 30 54.1 -0.4
baz=315,SNR=5.6
319A **Douglas** 58.32 79 *e*P P 09 30 55.5 +0.8
comp=Z,8.6nm,1.0s
121A **Cookes Peak, D** 58.38 77 P P 09 30 54.8 -0.4
baz=316
L35A **Bielow Farm, R** 58.48 61 P P 09 30 55.0 -0.6
baz=315,SNR=5.0
CBKS **Cedar Bluff** 58.54 66 P P 09 30 55.3 -0.8
baz=315
ARU **Arti** 58.58 324 *d i*P P 09 30 55.5 -0.5
ARU 09 31 45.0
ARU 09 33 04.4
ARU S S 09 39 01.6 +2.9
ARU SS SS 09 42 50.3 -0.3
ARU pmax pmax
comp=Z,17nm,1.7s
ARU MLR MLR
comp=Z,257nm,17.0s
ARU **Arti** 58.58 324 *e*P P 09 30 55.7 -0.4
comp=Z,14nm,1.3s
P32A **Huiting Farm,** 58.59 65 P P 09 30 56.2 -0.2
baz=315,SNR=5.9
J37A **Redenius Farm,** 58.68 59 P P 09 30 57.0 +0.1
baz=315
K36A **Gilmore City** 58.69 60 P P 09 30 57.0 -0.1
baz=315
KMI **Kunming** 58.75 271 P P 09 31 00.0 +2.1
KMI pP pP 09 31 03.3 -0.4
KMI sP sP 09 31 05.0 -0.9
KMI S S 09 39 02.1 -0.1
KMI pmax pmax
comp=Z,12nm,0.5s
KMI pmax pmax
comp=Z,77nm,4.9s
KMI LR LR
comp=Z,300nm,16.3s
KMI LR LR
comp=Z,340nm,15.6s
KMI LR LR
comp=Z,310nm,23.9s
I38A **Scanlan Farm,** 58.79 57 P P 09 30 57.9 +0.2
baz=315,SNR=6.0
O33A **Hebron** 58.83 64 P P 09 30 57.7 -0.4
baz=315,SNR=8.7
M35A **Neola** 58.86 61 P P 09 30 58.4 +0.2
baz=315
N34A **Lincoln** 58.87 62 P P 09 30 58.3 -0.1
baz=315,SNR=6.6
COWI **Conover** 58.91 54 *e*P P 09 30 58.5 -0.1
comp=Z,36nm,1.7s
OTUK **Ortayu** 58.99 310 P P 09 30 58.6 -0.4
OTUK pmax pmax
comp=Z,8.0nm,0.9s
PDGK **Podgornoye** 59.00 302 P P 09 30 58.4 -0.7
PDGK pmax pmax
comp=Z,15nm,1.3s
K37A **Belmond** 59.02 59 P P 09 30 58.5 -0.8
baz=315
Q32A **Meitler Ranch,** 59.06 65 P P 09 30 59.0 -0.7
baz=315
QIZ **Qiongzhong** 59.08 261 P P 09 30 59.6 -0.4
QIZ S S 09 39 07.0 +0.9
QIZ LR LR
comp=Z,210nm,17.9s
QIZ LR LR
comp=Z,160nm,8.7s
QIZ LR LR
comp=Z,260nm,14.8s
J38A **Wedel Dairy, R** 59.23 58 P P 09 31 00.8 +0.1
baz=315,SNR=5.8
O34A **Beatrice** 59.23 63 P P 09 31 00.4 -0.5
baz=315,SNR=13
N35A **Tabor** 59.31 62 P P 09 31 01.7 +0.3
baz=315,SNR=5.7
M36A **Felix, Anita** 59.34 61 P P 09 31 01.1 -0.5
baz=315
R32A **Long Quarter,** 59.38 66 P P 09 31 01.5 -0.4
baz=315
L37A **Phoenix Point,** 59.41 60 P P 09 31 01.7 -0.3
baz=316
Q33A **Connelly Farm,** 59.45 65 P P 09 31 01.9 -0.5
baz=315,SNR=10
O35A **Humboldt** 59.59 63 P P 09 31 03.1 -0.3
baz=316
J39A **Decorah** 59.61 57 P P 09 31 03.0 -0.4
baz=316,SNR=20
P34A **Walnut Farm, R** 59.61 64 P P 09 31 03.6 +0.1
baz=316
N36A **Muff Farm, Cla** 59.71 61 P P 09 31 04.4 +0.3
baz=316
M37A **Trindle Farm,** 59.77 60 P P 09 31 04.9 +0.4
baz=316
S32A **Newby Ranch, P** 59.77 67 P P 09 31 04.1 -0.5
baz=316
L38A **Oak Wood Farm,** 59.82 59 P P 09 31 04.6 -0.2
baz=316,SNR=7.3
R33A **Olander Ranch,** 59.86 65 P P 09 31 04.5 -0.7
baz=316
K39A **Oelwein** 59.97 58 P P 09 31 05.1 -0.8
baz=316
KSU1 **Kansas State U** 60.05 64 P P 09 31 05.7 -0.8
baz=316
KSU1 **Kansas State U** 60.05 64 *e*P P 09 31 05.6 -0.8
comp=Z,9.2nm,0.6s
J40A **Soldiers Grove** 60.05 57 P P 09 31 05.9 -0.5
baz=316
T32A **Huddler Ranch,** 60.15 67 P P 09 31 06.7 -0.5
baz=316
N37A **Lee Faris, Mou** 60.15 61 P P 09 31 07.3 +0.2
baz=316,SNR=11
O36A **Bolckow** 60.20 62 P P 09 31 06.5 -1.0
baz=316
M38A **Pleasantville** 60.21 60 P P 09 31 06.2 -1.3
baz=316
AMTX **Amarillo** 60.24 71 P P 09 31 08.2 +0.3
baz=316
AMTX **Amarillo** 60.24 71 *e*P P 09 31 08.3 +0.3
comp=Z,63nm,1.8s
MSTX **Muleshoe** 60.27 72 P P 09 31 08.6 +0.4
baz=316,SNR=6.5
MSTX **Muleshoe** 60.27 72 *e*P P 09 31 08.0 -0.1
comp=Z,70nm,1.8s
R34A **Isabella, Hill** 60.27 65 P P 09 31 08.0 -0.1
baz=316
L39A **Vinton** 60.33 59 P P 09 31 08.1 -0.2
baz=316,SNR=7.4
K40A **Colesburg** 60.35 58 P P 09 31 08.0 -0.5
baz=316,SNR=6.2
S33A **Kaszmaul Farm,** 60.36 66 P P 09 31 08.2 -0.5
baz=316
MNTX **Cornudas Mount** 60.39 76 P P 09 31 09.4 +0.5
baz=317,SNR=25
MNTX **Cornudas Mount** 60.39 76 *e*P P 09 31 09.5 +0.5
comp=Z,8.7nm,0.8s
P36A **Good Intent, A** 60.44 63 P P 09 31 08.2 -0.9
baz=316
J41A **Loganville** 60.44 56 P P 09 31 08.8 -0.3
baz=316,SNR=12
O37A **Wolven Farm, M** 60.61 61 P P 09 31 09.6 -0.7
baz=316
N38A **Joes South For** 60.64 60 P P 09 31 10.0 -0.5
baz=316
JFWS **Jewell Farm** 60.65 57 *e*P P 09 31 09.9 -0.7
JFWS pmax pmax
comp=Z,9.0nm,0.6s
JFWS **Jewell Farm** 60.65 57 *e*P P 09 31 09.9 -0.7
comp=Z,8.6nm,0.6s
U32A **Winter Ranch,** 60.68 68 P P 09 31 09.4 -1.4
baz=316
M39A **Webster** 60.70 59 P P 09 31 10.6 -0.3
baz=316,SNR=9.3
KLMR **Klimovskoe** 60.71 336 *e*P P 09 31 09.7 -0.9
KLMR pmax pmax
comp=Z,17nm,1.4s
L40A **Anamosa** 60.77 58 P P 09 31 10.4 -0.9
baz=316
Q36A **Arnold C. Orve** 60.77 63 P P 09 31 10.1 -1.3
baz=316
R35A **Emporia Munici** 60.83 64 P P 09 31 11.3 -0.5
baz=316
K41A **Shullsburg** 60.85 57 P P 09 31 11.2 -0.7
baz=316,SNR=13
P37A **Lathrop** 60.92 62 P P 09 31 10.8 -1.6
baz=316
N39A **Derby Farms, D** 60.96 60 P P 09 31 12.4 -0.3
baz=316
O38A **Galt** 61.00 61 P P 09 31 11.5 -1.4
baz=316,SNR=5.5
L41A **Preston** 61.13 58 P P 09 31 13.1 -0.7
baz=317,SNR=6.2
U33A **Lingo Farm, Me** 61.14 67 P P 09 31 13.2 -0.7
baz=316
R36A **Gordon, Harris** 61.21 64 P P 09 31 13.5 -0.9
baz=316,SNR=8.4
T34A **McClaskey Farm** 61.22 66 P P 09 31 13.7 -0.8
baz=316,SNR=5.2
S35A **Otter Creek Ra** 61.23 65 P P 09 31 13.6 -0.9
baz=316
TKM2 **Tokmak 2** 61.27 304 P P 09 31 14.9 -0.1
TKM2 pmax pmax
comp=Z,5.0nm,0.8s
P38A **Dawn** 61.33 62 P P 09 31 14.4 -0.8
baz=316,SNR=5.1
O39A **Kirksville** 61.39 60 P P 09 31 15.2 -0.3
baz=317
W32A **Sentinel** 61.45 69 P P 09 31 16.7 +0.7
baz=317,SNR=7.3
U34A **Anderson Ranch** 61.45 67 P P 09 31 15.3 -0.8
baz=316
U34A **Anderson Ranch** 61.45 67 *e*P P 09 31 15.8 -0.3
comp=Z,17nm,0.7s
V33A **Lossen Ranch,** 61.48 68 P P 09 31 15.5 -0.8
baz=317
R37A **Teagarden Farm** 61.58 63 P P 09 31 15.8 -1.1
baz=317
S36A **Lake Cedric, C** 61.59 64 P P 09 31 15.9 -1.0
baz=317
SCHQ **Schefferville** 61.64 35 P P 09 31 17.2 +0.1
comp=Z,6.6nm,0.6s,baz=326,slow=6.3,SNR=13
SCHQ LR LR 09 59 33.9
comp=Z,207nm,19.5s,baz=328,slow=38
SCHQ **Schefferville** 61.64 35 *e*P P 09 31 16.7 -0.4
comp=Z,71nm,1.7s
T35A **Sooner Cattle** 61.67 66 P P 09 31 15.9 -1.7
baz=317
Q38A **Cooks Store, C** 61.76 62 P P 09 31 16.7 -1.4
baz=317
FRU **Bishkek** 61.83 304 *e*P P 09 31 16.0 -2.5
P39B **Salisbury** 61.84 61 P P 09 31 17.8 -0.8
baz=317,SNR=20
O40A **La Belle** 61.84 60 P P 09 31 18.3 -0.3
baz=317,SNR=14
W33A **Caddo, Fort Co** 61.87 68 P P 09 31 19.2 +0.4
baz=317,SNR=5.7
T36A **Boggs Farm, Ca** 61.92 65 P P 09 31 17.9 -1.3
baz=317
X32A **Elder** 61.94 69 P P 09 31 19.2 -0.2
baz=317,SNR=7.1
U35A **Pawnee** 61.95 66 P P 09 31 18.7 -0.7
baz=317
S37A **Fort Scott** 61.98 64 P P 09 31 18.3 -1.3
baz=317,SNR=5.9
WMOK **Wichita Mounta** 61.99 69 P P 09 31 19.8 0.0
baz=317,SNR=11
WMOK **Wichita Mounta** 61.99 69 *e*P P 09 31 19.9 +0.2
WMOK pmax pmax
comp=Z,7.0nm,0.8s
WMOK **Wichita Mounta** 61.99 69 *e*P P 09 31 19.9 +0.2
comp=Z,6.8nm,0.8s
AAK **Ala-Archa** 62.03 304 *d i*P P 09 31 19.8 -0.3
AAK pmax pmax
comp=Z,16nm,1.2s
AAK **Ala-Archa** 62.03 304 *e*P P 09 31 20.4 +0.3
comp=Z,36nm,1.6s
Q39A **Willow Grove F** 62.04 62 P P 09 31 19.1 -0.9
baz=317,SNR=6.8
R38A **Fenwick Farm,** 62.17 63 P P 09 31 19.1 -1.8
baz=317
P40A **Paris** 62.18 61 P P 09 31 20.4 -0.5
baz=317,SNR=18
W34A **Bridge Creek,** 62.19 68 P P 09 31 21.4 +0.3
baz=317
W34A **Bridge Creek,** 62.19 68 *e*P P 09 31 21.6 +0.6
comp=Z,12nm,0.6s
X33A **Lawton** 62.29 69 P P 09 31 21.8 +0.1
baz=317,SNR=9.6
LSA **Lhasa** 62.33 283 P P 09 31 23.9 +1.3
LSA pmax pmax
comp=Z,12nm,0.7s
LSA **Lhasa** 62.33 283 P P 09 31 23.5 +0.9
LSA pmax pmax
comp=Z,12nm,0.8s
LSA **Lhasa** 62.33 283 *e*P P 09 31 24.2 +1.6
LSA pmax pmax
comp=Z,13nm,0.8s
LSA **Lhasa** 62.33 283 *e*P P 09 31 24.2 +1.6
comp=Z,13nm,0.8s
V35A **Meyer Ranch, C** 62.33 67 P P 09 31 21.5 -0.5
baz=317
O41A **Passleys Farm,** 62.36 59 P P 09 31 21.7 -0.4
baz=317
T37A **Cheneyville 18** 62.40 64 P P 09 31 21.0 -1.4
baz=317
U36A **Oologah** 62.48 65 P P 09 31 20.9 -2.0
baz=317
R39A **Chumby, Stover** 62.54 62 P P 09 31 22.1 -1.3
baz=317,SNR=5.8
Q40A **Laux Farm, Aux** 62.56 61 P P 09 31 22.7 -0.8
baz=317
S38A **Stockton** 62.58 63 P P 09 31 22.0 -1.5
baz=317
P41A **Barry, Barry** 62.59 60 P P 09 31 23.3 -0.4
baz=317
Y33A **Hilltop Ranch,** 62.61 69 P P 09 31 23.6 -0.2
baz=317,SNR=5.4
X34A **Smith Ranch, M** 62.62 68 P P 09 31 23.8 -0.1
baz=317
W35A **Tecumseh** 62.76 67 P P 09 31 24.6 -0.3
baz=317,SNR=8.6
T38A **Diamond** 62.80 64 P P 09 31 24.2 -0.9
baz=317
TUL1 **Leonard** 62.80 66 P P 09 31 24.6 -0.5
baz=317,SNR=5.8
TUL1 **Leonard** 62.80 66 *e*P P 09 31 24.7 -0.5
comp=Z,8.6nm,0.8s
V36A **Jenks** 62.81 66 P P 09 31 24.7 -0.5
baz=317,SNR=6.7
U37A **Salina** 62.81 65 P P 09 31 24.4 -0.8
baz=317
S39A **Bolivar** 62.85 63 P P 09 31 23.8 -1.6
baz=317
HDIL **Hopedale** 62.86 58 P P 09 31 24.7 -0.7
baz=318,SNR=9.0
HDIL **Hopedale** 62.86 58 *e*P P 09 31 25.2 -0.3
comp=Z,19nm,0.7s
R40A **Maddies Statio** 62.97 62 P P 09 31 24.9 -1.3
baz=317,SNR=16
FINES **FINESS Array B** 63.02 343 P P 09 31 25.4 -0.7
comp=Z,2.9nm,0.9s,baz=26,slow=8.5,SNR=12
FINES LR LR 10 03 22.3
comp=Z,123nm,18.2s,baz=354,slow=40
P42A **Winchester** 63.03 60 P P 09 31 25.8 -0.8
baz=318
ABTX **Abilene, Hawle** 63.04 71 P P 09 31 27.2 +0.4
baz=317,SNR=9.0
ABTX **Abilene, Hawle** 63.04 71 *e*P P 09 31 27.0 +0.2
comp=Z,15nm,0.8s
Z33A **Whitaker Ranch** 63.06 70 P P 09 31 26.7 -0.2
baz=317,SNR=5.8
TX31 **Lajitas Ar. Si** 63.12 76 *e*P P 09 31 27.6 +0.1
TXAR **Lajitas Array** 63.12 76 P P 09 31 27.6 +0.1
comp=Z,5.3nm,0.6s,baz=306,slow=3.9,SNR=96
W36A **Wetumka** 63.13 67 P P 09 31 27.1 -0.2
baz=317,SNR=11
MNAS **Manas** 63.13 305 P P 09 31 27.5 +0.1
MNAS pmax pmax
comp=Z,6.0nm,0.6s
Y34A **Reagan Ranch,** 63.14 69 P P 09 31 27.7 +0.3
baz=317
HNR **Honiara** 63.17 195 LR LR 09 54 13.1
comp=Z,76nm,19.8s,baz=36,slow=31
V37A **Hulbert** 63.18 65 P P 09 31 26.8 -0.8
baz=317,SNR=5.5
X35A **Drake** 63.25 68 P P 09 31 27.7 -0.4
baz=317,SNR=9.1
T39A **Clever** 63.31 63 P P 09 31 28.0 -0.5
baz=318
S40A **Lebanon** 63.36 62 P P 09 31 28.1 -0.6
baz=318
Q42A **Golden Eagle** 63.43 60 P P 09 31 28.8 -0.4
baz=318,SNR=6.9
133A **Hamilton Ranch** 63.47 71 P P 09 31 29.6 0.0
baz=318,SNR=6.0
X36A **Centrahoma** 63.48 67 P P 09 31 29.4 -0.2
baz=318,SNR=6.3
Z34A **Collier Ranch,** 63.48 69 P P 09 31 29.5 -0.2
baz=318
HHAR **Hobbs** 63.55 64 *e*P P 09 31 28.9 -1.2
comp=Z,3.3nm,0.6s
W37B **Quinton** 63.57 66 P P 09 31 30.0 -0.2
baz=318
Y35A **Marietta** 63.58 68 P P 09 31 30.2 -0.1
baz=318,SNR=10
KSH **Kashi** 63.58 301 P P 09 31 33.9 +3.5
KSH *e*pP sP 09 31 38.3 -0.1
KSH *e*sP pP 09 31 40.4 +4.2
KSH *e*PP PP 09 33 56.3 +6.4
KSH *e*ScP 09 36 10.4
KSH S S 09 40 06.6 +3.4
KSH pmax pmax
comp=Z,10.0nm,0.6s
KSH LR LR
comp=Z,290nm,14.3s
KSH LR LR
comp=Z,250nm,11.5s
KSH LR LR
comp=Z,180nm,7.1s
V38A **Canehill** 63.60 65 P P 09 31 29.6 -0.9
baz=318,SNR=10
ABKAR **Abdulbak array** 63.62 318 *e*P P 09 31 30.3 -0.1
KK31 **Karatay Array** 63.64 307 *i* P P 09 31 30.0 -0.6
KK31 pmax pmax
comp=Z,4.0nm,0.6s
KKAR **Karatay Array** 63.64 307 *e*P P 09 31 30.2 -0.4
KKAR **Karatay Array** 63.64 307 *e*P P 09 31 30.2 -0.4
T40A **Mansfield** 63.68 63 P P 09 31 29.6 -1.4
baz=318
U39A **Green Forest** 63.72 64 P P 09 31 30.1 -1.1
baz=318,SNR=9.5
S41A **Jillco Farms,** 63.77 62 P P 09 31 30.4 -1.1
baz=318,SNR=12
Q43A **New Douglas** 63.85 60 P P 09 31 31.8 -0.2
baz=318
Z35A **Perchaven, San** 63.88 69 P P 09 31 31.8 -0.5
baz=318
233A **Rising Star** 63.91 71 P P 09 31 32.8 +0.2
baz=318,SNR=6.6
134A **White-Moore Ra** 63.97 70 P P 09 31 33.0 +0.1
baz=318,SNR=18
X37A **Clayton** 64.01 67 P P 09 31 32.9 -0.2
baz=318
Y36A **Durant** 64.01 68 P P 09 31 32.6 -0.5
baz=318,SNR=5.3
V39A **Pettigrew** 64.03 64 P P 09 31 32.5 -0.8
baz=318,SNR=9.4
U40A **Yellville** 64.08 64 P P 09 31 32.8 -0.8
baz=318,SNR=6.4
SFIN **Lafayette** 64.11 57 P P 09 31 33.1 -0.6
baz=318,SNR=6.3
SFIN **Lafayette** 64.11 57 *e*P P 09 31 33.3 -0.4
comp=Z,65nm,1.9s
W38A **Poteau** 64.12 66 P P 09 31 33.8 -0.1
baz=318,SNR=17
T41A **Mountain View** 64.16 62 P P 09 31 32.7 -1.4
baz=318,SNR=6.7
Q44A **Meyer Farm, Va** 64.23 59 P P 09 31 34.0 -0.5
baz=318
X38A **Whitesboro** 64.25 66 P P 09 31 34.5 -0.1
baz=318,SNR=6.9
Y37A **Hugo** 64.32 67 P P 09 31 35.3 +0.1
baz=318
234A **Clairette** 64.36 70 P P 09 31 35.4 0.0
baz=318,SNR=13
135A **Vickery Place,** 64.36 69 P P 09 31 35.4 -0.1
baz=318
333A **Richland Sprin** 64.38 72 P P 09 31 35.6 0.0
baz=318,SNR=12
Z36A **Blue Ridge** 64.39 68 P P 09 31 35.0 -0.6
baz=318,SNR=5.2
W39A **Magazine** 64.44 65 P P 09 31 35.8 -0.1
baz=318,SNR=5.3
V40A **Witts Springs** 64.51 64 P P 09 31 35.3 -1.1
baz=318,SNR=18
JCT **Junction City** 64.53 73 P P 09 31 36.3 -0.3
baz=318,SNR=11
JCT **Junction City** 64.53 73 *e*P P 09 31 36.4 -0.3
JCT pmax pmax
comp=Z,55nm,1.7s
JCT **Junction City** 64.53 73 *e*P P 09 31 36.4 -0.3
comp=Z,56nm,1.7s
U41A **Viola** 64.60 63 P P 09 31 35.5 -1.4
baz=318,SNR=7.4
S43A **Fulton Ridge,** 64.67 61 P P 09 31 36.1 -1.3
baz=318
R44A **Waltonville** 64.69 60 P P 09 31 36.6 -0.9
baz=318
433A **Art** 64.74 72 P P 09 31 37.8 -0.2
baz=318,SNR=18
WHTX **Lake Whitney,** 64.76 70 P P 09 31 37.9 -0.2
baz=318,SNR=6.6
WHTX **Lake Whitney,** 64.76 70 *e*P P 09 31 37.7 -0.4
comp=Z,8.9nm,0.8s
X39A **Fountain Ranch** 64.76 66 P P 09 31 37.8 -0.3
baz=318,SNR=12
334A **Lometa** 64.80 71 P P 09 31 38.2 -0.1
baz=318
W40A **Ferguson Farm,** 64.83 65 P P 09 31 38.0 -0.5
baz=318,SNR=6.0
OLIL **Olney** 64.83 59 *e*P P 09 31 38.0 -0.4
comp=Z,7.1nm,0.8s
Y38A **Idabel** 64.85 67 P P 09 31 37.8 -0.8
baz=318
V41A **Mountainview** 64.89 64 P P 09 31 37.5 -1.3
baz=318,SNR=9.8
Z37A **Pogue Cattle C** 64.90 68 P P 09 31 38.7 -0.2
baz=318
136A **Ennis** 64.92 69 P P 09 31 37.9 -1.2
baz=318
U42A **Revenden** 64.96 62 P P 09 31 37.9 -1.3
baz=318
S44A **Carbondale** 65.01 60 P P 09 31 38.3 -1.3
baz=319
SIUC **Southern Illin** 65.01 60 *e*P P 09 31 39.0 -0.6
comp=Z,10.0nm,0.9s
MIAR **Mount Ida** 65.03 65 P P 09 31 39.3 -0.5
baz=318,SNR=6.3
MIAR **Mount Ida** 65.03 65 *e*P P 09 31 39.5 -0.3
MIAR pmax pmax
comp=Z,6.0nm,0.8s
MIAR **Mount Ida** 65.03 65 *e*P P 09 31 39.5 -0.3
comp=Z,5.7nm,0.8s
PBMO **Poplar Bluff** 65.07 62 *e*P P 09 31 39.3 -0.7
comp=Z,13nm,0.6s
X201 **Greenbrier Sit** 65.14 64 *e*P P 09 31 39.8 -0.7
comp=Z,5.2nm,0.8s
X301 **Greenbrier Sit** 65.16 64 *e*P P 09 31 39.9 -0.7
comp=Z,7.2nm,0.7s
434A **Burnet** 65.17 71 P P 09 31 40.6 -0.1
baz=318,SNR=11
WHAR **Wooly Hollow** 65.18 64 *e*P P 09 31 40.1 -0.7
comp=Z,5.2nm,0.8s
Y39A **Lockesburg** 65.20 66 P P 09 31 39.7 -1.2
baz=318
533A **Kerrville** 65.28 72 P P 09 31 41.4 -0.2
baz=318,SNR=7.0
V42A **Cord** 65.28 63 P P 09 31 40.1 -1.3
baz=318
W41A **Tony Mavity, V** 65.29 64 P P 09 31 40.8 -0.7
baz=318,SNR=6.1
W41B **Gary Mavity, V** 65.29 64 P P 09 31 40.9 -0.6
baz=318,SNR=6.0
335A **Moody** 65.30 70 P P 09 31 41.6 +0.1
baz=318
S45A **Carrier Mills** 65.38 60 P P 09 31 41.0 -1.0
baz=319
NB2 **NORSAR Subarra** 65.47 351 P P 09 31 41.8 -0.5
comp=Z,2.7nm,0.8s,baz=12,slow=6.5
NOA **NORSAR Array B** 65.47 351 P P 09 31 41.8 -0.5
comp=Z,0.6nm,0.6s,baz=12,slow=6.4,SNR=4.6

NOA LR LR 10 03 44.6
comp=Z,32nm,18.5s,baz=5.0,slow=39
X40A Basin Creek Fa 65.48 65 P **P** 09 31 41.9 -0.8
baz=318
PARMO **Parma 65.52 61** *eP* **P** 09 31 42.7 -0.2
435B Jarrell 65.58 71 P **P** 09 31 43.0 -0.4
baz=318
Y40A Okolona 65.59 66 P **P** 09 31 42.7 -0.8
baz=318
534A Blanco 65.63 72 P **P** 09 31 43.6 -0.1
baz=318,SNR=8.8
USIN University of 65.64 59 *eP* **P** 09 31 43.6 -0.1
comp=Z,12nm,0.7s
Z39A Irene McRaven, 65.67 67 P **P** 09 31 43.3 -0.6
baz=318
237A Washetta, Mont 65.68 69 P **P** 09 31 42.5 -1.5
baz=318
CHTO Chiang Mai 65.81 269 *eP* **P** 09 31 45.4 +0.4
CHTO pmax pmax
comp=Z,12nm,0.9s
CHTO Chiang Mai 65.81 269 *eP* **P** 09 31 45.4 +0.4
comp=Z,12nm,0.9s
WLAR White Oak Lake 65.93 66 *eP* **P** 09 31 45.6 0.0
comp=Z,10nm,0.9s
Y41A Eaglette Beard 66.06 65 P **P** 09 31 46.2 -0.2
baz=319
832A Faith Ranch, C 66.06 74 P **P** 09 31 46.5 0.0
baz=319
CM31 Chiang Mai Arr 66.08 269 *eP* **P** 09 31 47.6 +0.8
CMAR Chiang Mai Arr 66.08 269 P **P** 09 31 47.8 +1.0
comp=Z,7.0nm,0.8s,baz=23,slow=7.4,SNR=22
CM01 Chiang Mai Arr 66.10 269 *eP* **P** 09 31 47.2 +0.4
733A Divot King Ran 66.14 74 P **P** 09 31 46.8 -0.2
baz=319,SNR=5.3
WCI Wyandotte Cave 66.14 58 *eP* **P** 09 31 46.5 -0.5
WCI pmax pmax
comp=Z,7.0nm,0.6s
WCI Wyandotte Cave 66.14 58 *eP* **P** 09 31 46.5 -0.5
comp=Z,6.9nm,0.6s
535A Dale 66.15 71 P **P** 09 31 46.8 -0.3
baz=319
833A Chaparral WMA, 66.37 74 P **P** 09 31 48.1 -0.4
baz=319
734A La Parita Cree 66.47 73 P **P** 09 31 48.8 -0.3
baz=319
NATX Nacogdoches 66.51 68 P **P** 09 31 48.0 -1.3
baz=319
NATX Nacogdoches 66.51 68 *eP* **P** 09 31 49.6 +0.3
635A Leesville 66.52 72 P **P** 09 31 49.0 -0.4
baz=319
OBN Obninsk 66.52 335 *eP* **P** 09 31 49.1 +0.1
OBN pmax pmax
comp=Z,5.0nm,1.0s
OBN MLR MLR
comp=Z,244nm,18.0s
X43A Marvell 66.52 64 P **P** 09 31 48.6 -0.8
baz=319
ALLY Allegheny Colle 66.56 52 *eP* **P** 09 31 49.6 0.0
comp=Z,21nm,0.8s
V45A Humboldt 66.63 61 P **P** 09 31 49.6 -0.5
baz=319
GUN Gumba 66.74 286 *eP* **P** 09 31 51.6 +0.3
comp=Z,44nm,0.4s
MMNY Mt. Morris Dam 66.76 49 *eP* **P** 09 31 50.4 -0.4
438A Sam Houston St 66.81 69 P **P** 09 31 51.4 +0.2
baz=319
537A Green Hill Far 66.83 71 P **P** 09 31 51.3 -0.1
baz=319
636A Smothers Creek 66.86 71 P **P** 09 31 51.7 +0.1
baz=319
735A Kenedy 66.89 72 P **P** 09 31 51.8 0.0
baz=319
M54A Oil Creek Stat 66.89 51 P **P** 09 31 51.6 -0.2
baz=321,SNR=5.5
X44A Crenshaw 66.94 63 P **P** 09 31 51.5 -0.5
baz=319
WVT Waverly 66.94 60 *eP* **P** 09 31 51.8 -0.2
WVT pmax pmax
comp=Z,6.0nm,0.6s
WVT Waverly 66.94 60 *eP* **P** 09 31 51.8 -0.2
comp=Z,6.0nm,0.6s
W45A Hickory Valley 66.95 62 P **P** 09 31 52.0 -0.2
baz=319
933A Laredo 66.98 74 P **P** 09 31 53.5 +1.1
baz=319,SNR=8.1
RAMN Ramite 67.04 285 *eP* **P** 09 31 53.4 +0.3
comp=Z,108nm,0.4s
N54A Moraine State 67.17 52 P **P** 09 31 53.4 0.0
baz=321,SNR=7.3
KKN Kakani 67.18 286 *eP* **P** 09 31 54.3 +0.3
comp=Z,25nm,0.5s
PKIN Phulchoki 67.28 286 *eP* **P** 09 31 55.1 +0.5
comp=Z,45nm,0.5s
241A Mo Tay, Goldon 67.28 67 P **P** 09 31 54.5 +0.2
baz=319
835A Beeville 67.31 73 P **P** 09 31 56.1 +1.6
baz=319,SNR=5.9
OXF Oxford 67.32 63 *eP* **P** 09 31 53.9 -0.6
OXF pmax pmax
comp=Z,23nm,0.8s
OXF Oxford 67.32 63 *eP* **P** 09 31 53.9 -0.6
comp=Z,24nm,0.8s
GKN Gorkha 67.39 287 *eP* **P** 09 31 55.4 +0.1
comp=Z,16nm,0.4s
X45A UM Field Stati 67.40 63 P **P** 09 31 53.6 -1.4
baz=320
DMN Daman 67.42 286 *eP* **P** 09 31 55.7 +0.2
comp=Z,19nm,0.4s
934A Benavides 67.42 74 P **P** 09 31 55.3 +0.1
baz=319
034A Hebbronville 67.73 74 P **P** 09 31 58.3 +1.1
baz=319
AFI Afiamalu 67.81 164 LR LR 09 55 17.7
comp=Z,126nm,21.8s,baz=342,slow=30
Z45A Winona 68.04 64 P **P** 09 31 58.9 -0.1
baz=320
Y46A Houston 68.10 63 P **P** 09 31 59.3 -0.1
baz=320
035A Encino 68.17 74 P **P** 09 32 00.4 +0.5
baz=319
KOLN Koldanda 68.17 287 *eP* **P** 09 32 00.2 0.0
comp=Z,20nm,0.5s
PYUN Piuthan 68.27 288 *eP* **P** 09 32 00.9 +0.1
comp=Z,23nm,0.5s
O56A Blue Knob Stat 68.38 51 P **P** 09 32 00.7 -0.5
baz=322
SSPA Standing Stone 68.41 51 *eP* **P** 09 32 00.9 -0.4
comp=Z,10.0nm,0.6s
VBMS Vicksburg 68.46 65 *eP* **P** 09 32 01.4 -0.3
comp=Z,26nm,1.3s
244A Avery, Jackson 68.50 65 P **P** 09 32 01.7 -0.2
baz=320
Y47A UCPARC, Winfie 68.62 62 P **P** 09 32 01.8 -0.9
baz=320
SWET Sewanee 68.63 60 *eP* **P** 09 32 02.2 -0.5
comp=Z,8.9nm,1.6s
TZTN Tazewell 68.83 57 *eP* **P** 09 32 02.3 -1.7
comp=Z,44nm,1.8s
146A Union 68.94 64 P **P** 09 32 04.8 +0.1
baz=320
245A Little AP, Sta 68.94 65 P **P** 09 32 04.4 -0.3
baz=320
Z47A Carrollton 69.04 63 P **P** 09 32 04.6 -0.7
baz=320,SNR=5.4
N59A State Game Lan 69.17 49 P **P** 09 32 05.6 -0.5
baz=323
CPCT Cooper Cave 69.18 59 *eP* **P** 09 32 05.8 -0.3
comp=Z,11nm,1.4s
Z48A Northport 69.18 62 P **P** 09 32 04.9 -1.2
baz=320,SNR=5.0
VSR Storozhevoye 69.27 331 *eP* **P** 09 32 03.6 -2.8
VSR pmax pmax
comp=Z,10.0nm,1.3s
TKL Tuckaleechee C 69.41 58 *eP* **P** 09 32 07.3 -0.3
TKL pmax pmax
comp=Z,31nm,1.7s
TKL Tuckaleechee C 69.41 58 *eP* **P** 09 32 07.3 -0.3
comp=Z,31nm,1.7s
QUA2 Belchertown 69.61 46 *eP* **P** 09 32 08.4 -0.2
comp=Z,35nm,1.6s
LRAL Lakeview Retre 69.74 62 *eP* **P** 09 32 08.7 -0.9
comp=Z,33nm,1.9s
SDMD Soldier's Deli 69.87 51 *eP* **P** 09 32 10.2 -0.2
comp=Z,5.4nm,0.6s
WES Weston 69.97 45 *eP* **P** 09 32 10.4 -0.5
WES pmax pmax
comp=Z,63nm,1.7s
WES Weston 69.97 45 *eP* **P** 09 32 10.4 -0.5
comp=Z,63nm,1.7s
CPNY Central Park 70.10 48 *eP* **P** 09 32 11.3 -0.3
comp=Z,33nm,1.4s
347A Saraland 70.17 64 P **P** 09 32 10.4 -1.9
baz=320
BRYW Bryant College 70.26 46 *eP* **P** 09 32 11.9 -0.7
comp=Z,56nm,1.5s
KBL Kabul 70.95 302 *eP* **P** 09 32 16.8 -0.5
KBL pmax pmax
comp=Z,13nm,0.7s
KBL Kabul 70.95 302 *eP* **P** 09 32 16.8 -0.5
comp=Z,13nm,0.7s
GOGA Godfrey 71.31 59 *eP* **P** 09 32 18.2 -1.0
GOGA Godfrey 71.31 59 *eP* **P** 09 32 18.2 -1.0
AKASG Malin Array Be 72.37 337 P **P** 09 32 24.8 -0.5
comp=Z,1.6nm,0.5s,baz=27,slow=6.2,SNR=8.2
AKASG LR LR 10 07 58.7
comp=Z,175nm,19.0s,baz=30,slow=39
KIEV Kiev 72.38 337⇓ *eP* **P** 09 32 25.6 +0.3
KIEV pmax pmax
comp=Z,7.0nm,1.8s
KIEV Kiev 72.38 337 *eP* **P** 09 32 24.9 -0.5
comp=Z,4.7nm,0.9s
TAOE Nuku Hiva Isla 73.17 131 *e*LR LR 09 54 44.9
comp=Z,327nm,24.5s
GEYT Alibeck 73.52 312 P **P** 09 32 32.4 +0.1
comp=Z,1.5nm,0.5s,baz=318,slow=2.0,SNR=4.8
KIV Kislovodsk 74.56 325 *eP* **P** 09 32 38.6 +0.2
KIV pmax pmax
comp=Z,7.0nm,1.1s
KIV MLR MLR
comp=Z,147nm,19.0s
KBZ Khabaz 74.69 325 LR LR 10 09 26.1
comp=Z,152nm,19.0s,baz=36,slow=39
DZM Mont Dzumac 74.94 187 *e*LR LR 09 55 34.8
comp=Z,208nm,25.8s
SORM Soroca 74.97 337⇑ *jP* P 09 32 47.1 +6.5
SORM Soroca 74.97 337 ⇑P P 09 32 47.1 +6.5
DPC Dobruska-Polom 75.26 345 *e*pP **pP** 09 32 47.5 -0.7
DPC *ex* x 09 33 00.0
DPC Dobruska-Polom 75.26 345 *eP* P 09 32 47.5 +5.2
DPC *e* 09 33 00.0
BUR08 Bucovina Ar. S 76.17 338 *eP* **P** 09 32 48.3 +0.7
BURAR Bucovina Array 76.19 338⇑ *jP* **P** 09 32 47.9 +0.2
BURAR Bucovina Array 76.19 338 ⇑P **P** 09 32 47.9 +0.2
KHC Kasperske Hory 76.85 346 *e*pP pP 09 32 56.6 -0.7
KHC Kasperske Hory 76.85 346 *eP* P 09 32 56.6 +5.2
GERES GERESS Array B 77.11 346 P **P** 09 32 52.7 -0.2
comp=Z,0.5nm,0.5s,baz=33,slow=5.4,SNR=4.1
GERES LR LR 10 09 50.2
comp=Z,83nm,20.4s,baz=46,slow=38
GEA0 GERESS Array S 77.12 346 *eP* **P** 09 32 53.2 +0.2
PPT Papeete 77.21 144 LR LR 09 59 29.5
comp=Z,158nm,20.4s,baz=352,slow=30
PPT2 Papeete2 77.23 144 *e*LR LR 09 56 41.0
comp=Z,254nm,23.0s,baz=333
DRGR 77.51 340⇓ *jP* **P** 09 32 55.8 +0.6
DRGR 77.51 340 ⇓P **P** 09 32 55.8 +0.6
CONA Conrad Observa 77.68 345 *j* P **P** 09 32 52.0 -4.1
comp=Z,5.5nm,1.2s
CFR Carcaliu 77.79 336⇑ *jP* **P** 09 33 00.5 +3.9
CFR Carcaliu 77.79 336 ⇑P **P** 09 33 00.5 +3.9
MOA Molln 78.00 346 *j* pP **P** 09 32 58.2 +0.4
comp=Z,7.6nm,1.4s
MLR Muntele Rosu 78.03 337⇑ *jP* **P** 09 33 00.6 +2.5
MLR Muntele Rosu 78.03 337 ⇑P **P** 09 33 00.6 +2.5
ARSA Arzberg 78.39 345 *j* P P 09 32 54.7 -5.3
comp=Z,4.9nm,1.5s
ARR Arges 78.45 338⇓ *jP* **P** 09 33 03.6 +3.2
WATA Walderalm 78.89 347 *j* sP sP 09 33 09.6 -1.3
comp=Z,2.3nm,0.6s
KBA Koelnbreinsper 78.89 346 *j* sP sP 09 33 08.7 -2.3
comp=Z,12nm,0.9s
MOTA Moosalm 78.94 348 *j* sP sP 09 33 10.6 -0.7
comp=Z,4.2nm,0.9s
WTTA Wattenberg 78.95 347 *j* sP sP 09 33 10.0 -1.4
comp=Z,7.1nm,1.0s
SOKA Soboth 79.03 345 *j* pP pP 09 33 07.3 -2.2
comp=Z,7.4nm,1.2s
OBKA Obir 79.27 345 *j* PcP P 09 33 09.9 +5.0
comp=Z,5.2nm,0.7s
MYKA Terra Mystica 79.29 346 *j* pP pP 09 33 08.0 -2.9
comp=Z,7.4nm,1.6s
FETA Feichten 79.30 348 *j* P **P** 09 33 05.1 -0.1
comp=Z,9.9nm,1.8s
ABTA Abfaltersbach 79.34 347 *j* sP sP 09 33 11.9 -1.4
comp=Z,5.2nm,0.9s
MDVR Moldovita 79.64 340⇑ *jP* **P** 09 33 09.9 +3.0
WRAB Tennant Creek 80.04 217⇑ *jP* **P** 09 33 08.3 -0.8
WRAB pmax pmax
comp=Z,13nm,1.4s
WB2 Warramunga Arr 80.05 217 *eP* **P** 09 33 09.5 +0.3
comp=Z,10nm,1.3s
WRA Warramunga Arr 80.05 217 P **P** 09 33 09.4 +0.2
comp=Z,2.8nm,0.8s,baz=28,slow=6.0,SNR=14
WC3 Warramunga Arr 80.05 217 *eP* **P** 09 33 09.7 +0.5
comp=Z,8.3nm,1.0s
BR131 Keskin Array S 81.31 330 *eP* **P** 09 33 15.9 -0.1
BRTR Keskin Array B 81.31 330 P **P** 09 33 15.8 -0.3
comp=Z,1.8nm,0.8s,baz=50,slow=2.4,SNR=7.8
BRTR LR LR 10 12 23.6
comp=Z,58nm,21.7s,baz=14,slow=38
BR231 Keskin MP Arra 81.47 330 *eP* **P** 09 33 17.0 +0.1
FITZ Fitzroy Crossi 81.85 225 *eP* **P** 09 33 19.0 +0.2
comp=Z,28nm,1.8s
PDG Podgorica 82.39 341⇓ *jP* **P** 09 33 24.7 +3.2
TBI Tubuai 82.59 146 *e*LR LR 09 59 09.5
comp=Z,243nm,29.2s,baz=336
AS01 Alice Springs 83.61 216 *eP* **P** 09 33 28.7 +0.8
ASAR Alice Springs 83.62 216 P **P** 09 33 29.0 +1.0
comp=Z,1.1nm,0.7s,baz=28,slow=4.9,SNR=10
UOSS Minazif 85.20 306 *eP* **P** 09 33 35.4 -0.8
comp=Z,64nm,1.6s
LAST Lasithi 87.89 334 *eP* **P** 09 33 48.4 -0.9
comp=Z,35nm,1.4s
STKA Stephens Creek 88.87 207 P **P** 09 33 55.6 +2.0
comp=Z,4.3nm,1.1s,baz=314,slow=7.7,SNR=4.3
CPUP Villa Florida 134.09 75 PKP **PKPdf** 09 40 16.9 0.0
comp=Z,1.0nm,0.8s,baz=259,slow=3.3,SNR=4.1
PLCA Paso Flores 136.07 101 PKP **PKPdf** 09 40 20.4 +0.2
comp=Z,2.2nm,1.0s,baz=317,slow=5.0,SNR=5.7
QSPA South Pole Qui 142.70 180 *e*PKPpre PKPpre 09 40 29.4
LBTB Lobatse 143.02 206 *e*PKIKP PKPpre 09 40 29.5
LBTB Lobatse 143.02 306 *e*PKPpre PKPpre 09 40 29.5
MAW Mawson 144.71 218 PKP PKPbc 09 40 34.1 +0.2
comp=Z,9.4nm,0.8s,baz=92,slow=4.1,SNR=24
MAW Mawson 144.71 218 *e*PKPdf PKPbc 09 40 34.2 +0.3
BOSA Boshof 146.17 303 PKPbc **PKPbc** 09 40 39.9 +0.1
comp=Z,4.0nm,0.7s,baz=17,slow=2.8,SNR=14
EFI East Falkland 149.12 109 *e*PKP2 **PKPbc** 09 40 46.3 -0.6
EFI East Falkland 149.12 109 *e*PKPbc **PKPbc** 09 40 46.3 -0.6

MAN 17 09:21:56,9.48N×122.08E,h47km,mb4.7,ML3.6,MS3.5,
1C-1D,Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAP	**San Jose, Anti**	**1.27**	**354**⇑	*eP*	Pn	09 22 18.3	+1.0
TBP	**Tagbilaran**	**1.77**	**83**	*iP*	Pn	09 22 26.8	+2.6
LLP	**Lapu-Lapu**	**2.04**	**66**	*eP*	Pn	09 22 28.4	+0.6
LLP				*eS*	Sn	09 22 54.2	+2.1
RCP	**Roxas**	**2.17**	**18**⇓	*eP*	Pn	09 22 32.7	+3.0

*IDC **17** 09:25:19.6±0.7,3.22N×78.37W,h0km,mb4.0/7,*
mb1 4.2/12,mb1mx4.0/31,mbtmp4.1/12,ML3.6/5,MS3.3/4,
Ms1 3.3/4,ms1mx2.9/26,Error ellipse: s-maj=24.5km
s-min=16.6km az=66.0
*NEIC **17** 09:25:21.7±0.5,3.30N×78.33W,h10km,mb4.5/6,Error*
ellipse: s-maj=13.5km s-min=9.9km az=101.0
*ISCJB **17** 09:25:23.7±0.4,3.31N±0.03×78.27W±0.04,h33km,*
mb4.1/10,MS4.1/1,Error ellipse: s-maj=6.0km
s-min=4.2km az=27.8
*RSNC **17** 09:25:25.8±0.8,3.27N×78.22W,h39km±6km,ML3.7*

ISC 17 09:25:25.4±0.5,3°28N±0.05×78°26W±0.05,h35km,n40,
σ0s95/43,mb4.2/10,South of Panama

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GRGC	**Isla de Gorgon**	**0.29**	**162**	*eP*	**Pn**	**09 25 33.4**	**+0.1**
GRGC				*eS*	**Sn**	**09 25 38.8**	**+0.2**
MALC	**Bahia Malaga**	**1.18**	**51**	*eP*	**Pn**	**09 25 45.1**	**-0.3**
MALC				*eS*	**Sn**	**09 25 60.0**	**-0.2**
MALC				*i*		09 26 02.5	
	comp=Z,1μm,0.2s						
CRUC	**La Cruz**	**2.14**	**142**	*eP*	**Pn**	**09 25 59.0**	**0.0**
CRUC				*i*		09 26 00.6	
	comp=Z,266nm,0.2s						
CMBC	**Cumbal**	**2.36**	**169**	*eP*	**Pn**	**09 26 01.1**	**-1.0**
OTAV	**Otavalo**	**3.02**	**184**	*eP*	**Pn**	**09 26 11.2**	**-0.1**
OTAV				*e*Sn	**Sn**	**09 26 45.1**	**-1.5**
SOLC	**Bahia Solano**	**3.05**	**16**	*eP*	**Pn**	**09 26 10.3**	**-0.9**
MAPC	**Malpelo**	**3.42**	**282**	*e*S	**Sn**	**09 26 56.2**	**+0.5**
NORC	**Norcasia**	**4.07**	**56**	*e*S	**Sn**	**09 27 11.0**	**-0.8**
ROSC	**El Rosal**	**4.22**	**68**	Pn	**Pn**	**09 26 29.1**	**+1.5**
	comp=Z,12nm,0.3s,baz=132,slow=5.2,SNR=27						
ROSC				Sn	**Sn**	**09 27 16.7**	**+0.7**
	comp=Z,9.8nm,0.3s,baz=46,slow=22,SNR=3.9						
DBBC	**Dabeiba**	**4.24**	**29**	*eP*	**Pn**	**09 26 27.0**	**-0.6**
CHIC	**Chingaza**	**4.71**	**73**	*eP*	**Pn**	**09 26 34.8**	**+0.4**
CHIC				*i*		09 26 36.0	
	comp=Z,124nm,0.5s						
BARC	**Barichara**	**6.03**	**57**	*eP*	**Pn**	**09 26 52.7**	**+0.2**
SDV	**Santo Domingo**	**9.41**	**53**	Pn	**Pn**	**09 27 38.9**	**+0.1**
	comp=Z,1.6nm,0.3s,baz=16,slow=12,SNR=2.2						
ATAH	**Atahualpa**	**10.34**	**181**	Pn	**Pn**	**09 27 52.8**	**+1.0**
	comp=Z,2.4nm,0.3s,baz=8.8,slow=9.7,SNR=11						
ATAH				LR	LR	09 31 17.6	
	comp=Z,63nm,20.4s,baz=351,slow=35						
PCRV	**Puerto La Cruz**	**15.16**	**62**	Pn	**Pn**	**09 28 57.6**	**+0.4**
	comp=Z,0.9nm,0.3s,baz=272,slow=6.7,SNR=5.9						
PCRV				LR	LR	09 35 42.2	
	comp=Z,130nm,21.0s,baz=232,slow=41						
NNA	**Nana**	**15.23**	**175**	Pn	**P**	**09 29 00.8**	**-1.8**
	comp=Z,4.0nm,0.3s,baz=0.3,slow=11,SNR=8.1						
NNA	**Nana**	**15.23**	**175**	*eP*	**P**	**09 29 03.5**	**+0.9**
	comp=Z,34nm,0.4s						
PTGA	**Pitinga**	**18.71**	**102**	P	**P**	**09 29 40.5**	**-0.6**
	comp=Z,0.4nm,0.3s,baz=290,slow=17,SNR=6.1						
SJG	**San Juan**	**18.92**	**38**	P	**P**	**09 29 43.0**	**-0.4**
	comp=Z,1.3nm,0.3s,baz=288,slow=3.7,SNR=5.7						
SJG				LR	LR	09 37 33.7	
	comp=Z,34nm,20.4s,baz=248,slow=39						
SJG	**San Juan**	**18.92**	**38**	*eP*	**P**	**09 29 43.4**	**0.0**
	comp=Z,10nm,0.7s						
FDF	**Fort de France**	**20.35**	**55**	*eP*	**P**	**09 29 58.3**	**-0.7**
	comp=Z,21nm,0.5s						
LPAZ	**La Paz**	**21.87**	**153**	P	**P**	**09 30 14.5**	**-1.5**
	comp=Z,4.8nm,0.9s,baz=341,slow=14,SNR=16						
SIV	**San Ignacio**	**25.60**	**139**	P	**P**	**09 30 50.2**	**-1.5**
	comp=Z,2.6nm,0.5s,baz=317,slow=9.7,SNR=12						
LVC	**Limon Verde**	**27.30**	**161**	P	**P**	**09 31 10.1**	**+2.7**
	comp=Z,8.2nm,0.6s,baz=351,slow=11,SNR=4.4						
LVC				LR	LR	09 43 40.6	
	comp=Z,525nm,21.1s,baz=302,slow=40						
TXAR	**Lajitas Array**	**35.40**	**320**	PcP	**PcP**	**09 34 49.1**	**+1.2**
	comp=Z,0.2nm,0.5s,baz=141,slow=5.8,SNR=3.1						
ANMO	**Albuquerque**	**40.96**	**324**	*eP*	**P**	**09 33 07.4**	**+2.2**
	comp=Z,4.9nm,1.0s						
PLCA	**Paso Flores**	**44.36**	**172**	P	**P**	**09 33 32.8**	**+0.3**
	comp=Z,1.1nm,0.6s,baz=16,slow=9.2,SNR=4.5						
ULM	**Lac du Bonnet**	**49.12**	**345**	P	**P**	**09 34 08.4**	**-1.2**
	comp=Z,2.4nm,0.5s,baz=153,slow=9.0,SNR=5.8						
YKA	**Yellowknife Ar**	**64.94**	**342**	P	**P**	**09 36 00.8**	**-0.4**
	comp=Z,1.6nm,0.7s,baz=136,slow=6.2,SNR=9.7						
SUMG	**Summit**	**73.43**	**12**	*eP*	**P**	**09 36 54.1**	**-0.1**
	comp=Z,4.5nm,0.8s						
INK	**Inuvik**	**74.68**	**342**	P	**P**	**09 37 01.2**	**+0.1**
	comp=Z,0.5nm,0.4s,baz=106,slow=6.0,SNR=5.8						
INK	**Inuvik**	**74.68**	**342**	*eP*	**P**	**09 37 01.4**	**+0.3**
	comp=Z,4.9nm,1.5s						
ILAR	**Eielson Array**	**78.04**	**336**	P	**P**	**09 37 20.4**	**+0.2**
	comp=Z,0.4nm,0.7s,baz=104,slow=4.7,SNR=8.6						
MKAR	**Makanchi Array**	**127.27**	**17**	PKP	**PKPdf**	**09 44 25.8**	**-0.9**
	comp=Z,0.6nm,0.7s,baz=315,slow=1.1,SNR=5.9						
SONM	**Songino Array**	**128.94**	**356**	PKP	**PKPdf**	**09 44 29.4**	**-0.5**
	comp=Z,0.3nm,0.4s,baz=307,slow=3.1,SNR=2.5						
WRAB	**Tennant Creek**	**144.15**	**240**	*e*PKPdf	PKPbc	09 44 56.6	0.0
WRA	**Warramunga Arr**	**144.15**	**240**	PKP	**PKPab**	**09 44 56.4**	**+0.2**
	comp=Z,0.5nm,0.5s,baz=109,slow=3.3,SNR=11						
FITZ	**Fitzroy Crossi**	**152.34**	**236**	PKPbc	**PKPbc**	**09 45 18.6**	**-0.2**
	comp=Z,0.9nm,0.5s,baz=275,slow=2.4,SNR=4.1						
FITZ	**Fitzroy Crossi**	**152.34**	**236**	*e*PKPbc	**PKPbc**	**09 45 18.3**	**-0.4**
FITZ	**Fitzroy Crossi**	**152.34**	**236**	*eP*	**PKPbc**	**09 45 18.5**	**-0.2**
	comp=Z,5.4nm,1.3s						

MEX 17 09:27:30.2±0.4,15°43N×93°45W,h21km±44km,MD3.5,
Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.52**	**56**	*eP*	Pn	09 27 53.6	-2.8
CCIG				*eS*	Sn	09 28 11.6	-4.1
HUIG	**Huatulco**	**2.58**	**278**	*iP*	Pn	09 28 08.3	-2.6
HUIG				*iS*	Sn	09 28 38.5	-3.2
VHO	**Vista Hermosa**	**3.55**	**298**	*iP*	Pn	09 28 23.2	-1.1
VHO				*iS*	Sn	09 29 02.5	-3.4

*ISCJB **17** 09:35:19.4±0.8,18.8S±0.2×65.6E±0.1,h10km,mb4.0/15,*
MS3.5/4,Error ellipse: s-maj=23.9km s-min=14.6km
az=10.3
*IDC **17** 09:35:19.1±1.2,18.85S×65.53E,h0km,mb3.9/12,*
mb1 4.1/13,mb1mx3.8/48,mbtmp3.9/13,ML3.7/1,MS3.5/5,
Ms1 3.5/5,ms1mx3.1/39,Error ellipse: s-maj=39.4km
s-min=21.2km az=34.0
*NEIC **17** 09:35:20.9±0.6,18.80S×65.56E,h10km,mb4.6/3,Error*
ellipse: s-maj=19.2km s-min=11.8km az=189.0

ISC 17 09:35:20.6±1.1,18°9S±0.2×65°5E±0.2,h10km,n31,
σ0s73/21,mb4.0/15,MS3.5/4,Mauritius-Reunion region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H08S1	**Diego Carcia H**	**13.06**	**32**	T	T	09 51 37.2	
	baz=210,slow=75,SNR=91						
H08S2	**Diego Garcia H**	**13.07**	**32**	T	T	09 51 47.2	
	baz=210,slow=75,SNR=34						
H08S3	**Diego Garcia H**	**13.08**	**32**	T	T	09 51 38.8	
	baz=210,slow=75,SNR=88						
H08N3	**Diego Garcia H**	**13.55**	**24**	T	T	09 52 46.8	
	baz=204,slow=76,SNR=77						
H08N1	**Diego Garcia H**	**13.56**	**24**	T	T	09 52 47.8	
	baz=204,slow=76,SNR=35						
H08N2	**Diego Garcia H**	**13.57**	**24**	T	T	09 52 48.5	
	baz=204,slow=76,SNR=73						
OPO	**Ambohidratompo**	**17.35**	**268**	P	**P**	**09 39 25.3**	**+0.6**
	0.3nm,0.3s,baz=68,slow=5.9,SNR=4.0						
OPO				LR	LR	09 44 28.6	
	comp=Z,228nm,18.8s,baz=76,slow=32						
KMBO	**Kilima Mbogo**	**32.84**	**299**	LR	LR	09 52 35.3	
	comp=Z,94nm,19.9s,baz=100,slow=32						
BOSA	**Boshof**	**37.94**	**247**	LR	LR	09 55 34.7	
	comp=Z,50nm,19.5s,baz=58,slow=32						
MAW	**Mawson**	**48.74**	**181**	LR	LR	10 01 26.2	
	comp=Z,46nm,18.4s,baz=60,slow=32						
CMAR	**Chiang Mai Arr**	**49.55**	**43**	P	**P**	**09 44 13.1**	**+1.1**
	1.4nm,0.8s,baz=238,slow=9.7,SNR=6.9						
ASAR	**Alice Springs**	**63.39**	**108**	P	**P**	**09 45 50.4**	**-0.4**
	1.4nm,0.7s,baz=272,slow=6.0,SNR=20						
WRA	**Warramunga Arr**	**64.49**	**104**	P	**P**	**09 45 58.2**	**+0.1**
	1.4nm,0.7s,baz=261,slow=5.2,SNR=12						
WRAB	**Tennant Creek**	**64.50**	**104**	*eP*	**P**	**09 45 58.5**	**+0.3**
	4.2nm,0.9s						
BRTR	**Keskin Array B**	**65.45**	**333**	P	**P**	**09 46 04.7**	**+0.7**
	0.4nm,0.5s,baz=166,slow=7.3,SNR=3.5						
MKAR	**Makanchi Array**	**67.10**	**12**	P	**P**	**09 46 13.2**	**-1.0**
	0.5nm,0.8s,baz=190,slow=4.9,SNR=4.3						
STKA	**Stephens Creek**	**68.74**	**118**	LR	LR	10 13 38.4	
	comp=Z,38nm,18.7s,baz=26,slow=34						
KURBB	**Kurchatov Arra**	**70.14**	**9**	P	**P**	**09 46 32.5**	**-0.6**
	0.4nm,0.3s,baz=206,slow=6.7,SNR=10						
KURK	**Kurchatov**	**70.24**	**9**	*eP*	**P**	**09 46 33.2**	**-0.5**
	8.1nm,0.9s						
ZALV	**Zalesovo Beam**	**74.41**	**12**	P	**P**	**09 46 57.8**	**-0.7**
	0.5nm,0.3s,baz=202,slow=6.0,SNR=4.5						
SONM	**Songino Array**	**75.84**	**27**	P	**P**	**09 47 07.4**	**+0.3**
	1.2nm,0.8s,baz=220,slow=5.7,SNR=6.5						
AKASG	**Malin Array Be**	**76.28**	**337**	P	**P**	**09 47 09.2**	**-0.2**
	0.5nm,0.6s,baz=144,slow=4.9,SNR=5.7						
KIEV	**Kiev**	**76.28**	**337**	*eP*	**P**	**09 47 09.2**	**-0.2**
	2.4nm,0.8s						
KSAR	**Wonju Array Be**	**81.10**	**46**	P	**P**	**09 47 36.5**	**+0.2**
KSRS	**Korea Array**	**81.13**	**46**	P	**P**	**09 47 36.5**	**0.0**
	0.9nm,0.8s,baz=240,slow=5.3,SNR=4.8						
FINES	**FINESS Array B**	**86.02**	**342**	P	**P**	**09 48 00.8**	**-0.1**
	1.2nm,0.8s,baz=170,slow=8.5,SNR=3.7						
MJAR	**Matsushiro Arr**	**87.93**	**50**	P	**P**	**09 48 11.1**	**+0.2**
	0.9nm,0.8s,baz=206,slow=5.0,SNR=3.5						

ULM	**Lac du Bonnet**	**145.35**	**339**	PKPbc	**PKPbc**	**09 54 56.5**	**-2.1**
	1.5nm,0.5s,baz=85,slow=4.1,SNR=5.0						
EDM	**Edmonton**	**145.71**	**359**	*e*PKPdf	**PKPdf**	**09 54 59.4**	**0.0**
COWI	**Conover**	**145.72**	**328**	*e*PKPdf	**PKPbc**	**09 54 59.9**	**0.0**
ECSD	**EROS Data Cent**	**151.01**	**333**	*e*PKPbc	**PKPbc**	**09 55 13.3**	**-0.7**

*IDC **17** 09:35:52.7±1.1,29.˚51S×176.˚04W, h0km, mb3.9/5, mb1 4.1/6, mb1mx3.9/27, mbtmp3.9/6, ML3.8/1, MS3.6/2, Ms1 3.6/2, ms1mx2.9/35, Error ellipse: s-maj=38.9km s-min=19.9km az=160.0*

*NEIC **17** 09:35:53.8±0.8,29.˚53S×176.˚01W, h10km, mb4.4/4, Error ellipse: s-maj=19.3km s-min=12.6km az=123.0*

*ISCJB **17** 09:35:55.0±0.9,29.˚60S±0.˚07×175.˚99W±0.˚09, h28km, mb3.8/6, MS3.8/1, Error ellipse: s-maj=11.8km s-min=10.4km az=4.1*

ISC 17 09:35:57.0±0.9,29.˚43S±0.˚10×176.˚15W±0.˚09, h28km, n22, σ1s25/18, mb3.9/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.56**	**276**	P		**Pb**		**09 36 24.8**	**-0.5**
	327nm,0.3s,baz=85,slow=10,SNR=10								
RAO				Sn		**Sn**		**09 36 45.0**	**+0.5**
	348nm,0.3s,baz=6.3,slow=21,SNR=5.1								
OUZ	**Omahuta**	**10.42**	**234**	*e*Pn		Pn		09 38 32.4	+7.8
URZ	**Urewera**	**10.43**	**211**	Pn		**Pn**		**09 38 22.7**	**-2.1**
	0.7nm,0.3s,baz=278,slow=4.1,SNR=7.4								
URZ				Sn		**Sn**		**09 40 22.1**	**+1.4**
	3.7nm,0.3s,baz=96,slow=22,SNR=17								
URZ	**Urewera**	**10.43**	**211**	*e*Pn		**Pn**		**09 38 23.7**	**-1.0**
URZ				Sn		**Sn**		**09 40 22.1**	**+1.4**
KHZ	**Kahutara**	**15.40**	**210**	*e*P		**Pn**		**09 39 29.6**	**-2.7**
	20nm,1.1s								
OXZ	**Oxford**	**16.79**	**211**	*e*P		**Pn**		**09 39 49.5**	**-0.6**
DZM	**Mont Dzumac**	**17.30**	**291**	LR		LR		09 45 50.6	
	comp=Z,164nm,18.2s,baz=163,slow=34								
DZM	**Mont Dzumac**	**17.30**	**291**	*e*LR		LR		09 44 23.4	
	235nm,28.6s								
WHZ	**Wether Hill Ro**	**20.64**	**213**	*e*P		Pn		09 40 37.2	+0.5
	61nm,1.6s								
TBI	**Tubuai**	**24.63**	**82**	*e*LR		LR		09 47 04.2	
	185nm,28.2s								
PPT2	**Papeete2**	**27.00**	**70**	*e*LR		LR		09 48 04.8	
	155nm,25.8s								
STKA	**Stephens Creek**	**36.27**	**255**	P		**P**		**09 42 59.6**	**+1.5**
	2.3nm,0.9s,baz=99,slow=13,SNR=4.9								
ASAR	**Alice Springs**	**44.78**	**265**	P		**P**		**09 44 08.6**	**0.0**
	0.9nm,0.4s,baz=105,slow=7.8,SNR=29								
WRA	**Warramunga Arr**	**45.69**	**270**	P		**P**		**09 44 15.2**	**-0.5**
	0.8nm,0.4s,baz=109,slow=8.0,SNR=21								
KAPI	**Kappang**	**65.04**	**279**	*e*P		**P**		**09 46 34.5**	**-0.7**
	0.5nm,0.5s								
TXAR	**Lajitas Array**	**90.51**	**56**	P		**P**		**09 48 57.9**	**+1.3**
	0.3nm,0.8s,baz=207,slow=5.3,SNR=4.7								
KLR	**Kul'dur**	**91.03**	**329**	LR		LR		10 27 22.9	
	comp=Z,34nm,18.1s,baz=187,slow=34								
ILAR	**Eielson Array**	**96.64**	**12**	P		**P**		**09 49 23.4**	**-0.4**
	0.1nm,0.7s,baz=218,slow=5.7,SNR=4.1								
FINES	**FINESS Array B**	**144.77**	**342**	PKP		**PKPab**		**09 55 29.1**	**-0.4**
	1.2nm,0.6s,baz=33,slow=3.7,SNR=8.9								
NB2	**NORSAR Subarra**	**148.01**	**353**	PKP		**PKPbc**		**09 55 39.2**	**0.0**
	comp=Z,1.5nm,0.5s,baz=11,slow=4.4								
NOA	**NORSAR Array B**	**148.01**	**353**	PKPbc		**PKPbc**		**09 55 38.7**	**-0.5**
	comp=Z,0.5nm,0.5s,baz=59,slow=1.5,SNR=7.4								
AKASG	**Malin Array Be**	**151.47**	**325**	PKPbc		**PKPbc**		**09 55 48.8**	**+0.8**
	comp=Z,0.3nm,0.3s,baz=49,slow=1.8,SNR=4.9								

*ISCJB **17** 09:43:59.9±0.7, 14.˚0N±0.˚1×93.˚2E±0.˚1, h32km, mb3.8/12, Error ellipse: s-maj=17.0km s-min=15.8km az=146.0*

*IDC **17** 09:44:04.1±5.7, 14.˚00N×93.˚17E, h51km±51km, mb3.6/12, mb1 3.7/13, mb1mx3.5/44, mbtmp3.8/13, ML3.8/1, Error ellipse: s-maj=34.5km s-min=15.9km az=55.0*

ISC 17 09:44:01.9±0.8, 14.˚0N±0.˚1×93.˚1E±0.˚1, h32km, n13, σ0s69/14, mb3.9/12, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**7.16**	**51**	P		**Pn**		**09 45 45.0**	**+0.5**
	0.4nm,0.3s,baz=242,slow=15,SNR=6.3								
MKAR	**Makanchi Array**	**33.97**	**347**	P		**P**		**09 50 42.9**	**+0.5**
	1.4nm,0.7s,baz=162,slow=9.1,SNR=11								
SONM	**Songino Array**	**35.53**	**15**	P		**P**		**09 50 56.7**	**+0.6**
	1.0nm,0.8s,baz=202,slow=11,SNR=5.4								
KURBB	**Kurchatov Arra**	**38.44**	**345**	P		**P**		**09 51 20.9**	**+0.4**
	1.7nm,0.8s,baz=162,slow=7.9,SNR=18								
ZALV	**Zalesovo Beam**	**40.43**	**352**	P		**P**		**09 51 37.0**	**0.0**
	1.3nm,0.5s,baz=176,slow=7.0,SNR=7.7								
WRA	**Warramunga Arr**	**52.73**	**129**	P		**P**		**09 53 13.6**	**-0.3**
	0.3nm,0.7s,baz=303,slow=9.7,SNR=4.5								
WRA				PcP		**PcP**		**09 54 23.6**	**+0.1**
	0.5nm,0.7s,baz=318,slow=2.9,SNR=9.7								
ASAR	**Alice Springs**	**54.67**	**133**	P		**P**		**09 53 27.9**	**-0.3**
	0.5nm,0.5s,baz=308,slow=6.6,SNR=11								
BRTR	**Keskin Array B**	**57.80**	**308**	P		**P**		**09 53 50.4**	**-0.1**
	0.2nm,0.4s,baz=94,slow=6.6,SNR=4.1								
FINES	**FINESS Array B**	**66.90**	**331**	P		**P**		**09 54 49.5**	**-1.3**
	1.2nm,0.7s,baz=142,slow=9.6,SNR=5.8								
GERES	**GERESS Array B**	**72.67**	**317**	P		**P**		**09 55 26.6**	**-0.1**
	0.5nm,0.6s,baz=85,slow=5.9,SNR=5.3								
BOSA	**Boshof**	**78.22**	**236**	P		**P**		**09 55 58.7**	**+0.9**
	2.7nm,0.8s,baz=84,slow=5.0,SNR=4.0								
TORD	**Torodi Ar. Bea**	**88.24**	**283**	P		**P**		**09 56 51.1**	**+0.5**
	0.6nm,0.7s,baz=127,slow=3.0,SNR=3.7								
ILAR	**Eielson Array**	**89.51**	**22**	P		**P**		**09 56 54.6**	**-1.1**
	0.3nm,0.8s,baz=280,slow=4.0,SNR=5.4								

*IDC **17** 09:55:50.4±0.7, 2.˚36N×84.˚53W, h0km, mb4.0/13, mb1 4.2/16, mb1mx4.1/30, mbtmp4.1/16, ML2.8/3, MS3.8/20, Ms1 3.8/20, ms1mx3.7/33, Error ellipse: s-maj=22.5km s-min=15.0km az=54.0*

*NEIC **17** 09:55:52.3±0.4, 2.˚17N×84.˚60W, h10km, mb4.4/49, Error ellipse: s-maj=8.9km s-min=5.2km az=210.0*

*ISCJB **17** 09:55:54.4±0.4, 2.˚27N±0.˚06×84.˚48W±0.˚04, h33km, mb4.3/59, MS3.9/18, Error ellipse: s-maj=9.8km s-min=4.5km az=25.2*

ISC 17 09:55:55.8±0.6, 2.˚19N±0.˚08×84.˚60W±0.˚09, h35km, n113, σ1s24/104, mb4.4/59, MS3.9/18, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CMBC	**Cumbal**	**6.88**	**100**	*e*P		**Pn**		**09 57 33.1**	**-1.5**
CRUC	**La Cruz**	**7.67**	**94**	*e*P		**Pn**		**09 57 43.0**	**-2.4**
HDC	**Heredia**	**7.78**	**4**	*e*Pn		**Pn**		**09 57 46.8**	**+0.1**
GUYC	**Guyana, Colomb**	**9.67**	**72**	*e*P		**Pn**		**09 58 16.1**	**+3.2**
PRAC	**Prado**	**9.81**	**81**	*e*Pn		**Pn**		**09 58 14.6**	**0.0**
HELC	**Santa Helena**	**9.88**	**66**	*e*P		**Pn**		**09 58 15.6**	**-0.1**
HELC	**Santa Helena**	**9.88**	**66**	*e*Pn		**Pn**		**09 58 16.4**	**+0.7**
NORC	**Norcasia**	**10.27**	**71**	*e*P		**Pn**		**09 58 21.3**	**+0.5**
ROSC	**El Rosal**	**10.59**	**75**	Pn		**Pn**		**09 58 24.1**	**-1.4**
	0.7nm,0.3s,baz=270,slow=19,SNR=2.7								
ROSC	**El Rosal**	**10.59**	**75**	*e*Pn		**Pn**		**09 58 25.3**	**-0.2**
SJAC	**San Juan de Ar**	**10.69**	**84**	*e*P		**Pn**		**09 58 24.4**	**-2.2**
CHIC	**Chingaza**	**11.11**	**77**	*e*P		**Pn**		**09 58 33.3**	**+0.6**
ATAH	**Atahualpa**	**11.14**	**146**	LR		LR		10 02 23.5	
	comp=Z,623nm,19.2s,baz=311,slow=35								
RUSC	**La Rusia**	**12.06**	**72**	*e*Pn		**Pn**		**09 58 47.0**	**+1.3**
SNET	**Serv Nac Est T**	**12.31**	**338**	*e*Sn		**Sn**		**10 01 06.3**	**+1.4**
CBRI	**Barrientos, No**	**12.97**	**65**	*e*P		**P**		**09 59 11.1**	**+3.1**
SDV	**Santo Domingo**	**15.40**	**64**	Pn		**Pn**		**09 59 28.8**	**-2.1**
	0.7nm,0.3s,baz=231,slow=6.5,SNR=2.2								
SDV	**Santo Domingo**	**15.40**	**64**	*e*Pn		**Pn**		**09 59 30.6**	**-0.3**
	18nm,1.1s								
CCIG	**Comitan**	**15.85**	**333**	*e*Pn		**Pn**		**09 59 36.5**	**-0.1**
	13nm,0.9s								
CMIG	**Matias Romero**	**17.93**	**326**	P		**Pn**		**10 00 00.4**	**-2.2**
	0.1nm,0.3s,baz=116,slow=9.5,SNR=4.7								
CMIG				LR		LR		10 05 33.4	
	comp=Z,382nm,20.8s,baz=142,slow=33								
TLIG	**Tlapa**	**20.53**	**319**	*e*P		**P**		**10 00 31.3**	**-0.2**
	87nm,1.8s								
PCRV	**Puerto La Cruz**	**21.36**	**67**	P		**P**		**10 00 39.3**	**-1.0**
	17nm,1.2s,baz=181,slow=5.9,SNR=3.4								
SJG	**San Juan**	**24.04**	**48**	P		**P**		**10 01 06.6**	**-1.2**
	3.1nm,0.6s,baz=283,slow=7.1,SNR=2.6								
CBYP	**Canovanas**	**24.35**	**48**	*e*P		**P**		**10 01 11.1**	**+0.3**
	19nm,1.0s								
LPAZ	**La Paz**	**24.53**	**139**	P		**P**		**10 01 12.7**	**-0.3**
	6.3nm,1.1s,baz=345,slow=10,SNR=9.2								
LPAZ				LR		LR		10 11 42.9	
	comp=Z,318nm,18.1s,baz=264,slow=39								
LPAZ	**La Paz**	**24.53**	**139**	*e*P		**P**		**10 01 12.3**	**-0.8**
	7.8nm,0.9s								
PTGA	**Pitinga**	**24.79**	**96**	P		**P**		**10 01 13.4**	**-1.4**
	0.9nm,0.4s,baz=272,slow=14,SNR=4.2								
PTGA				LR		LR		10 10 25.3	
	comp=Z,106nm,20.8s,baz=288,slow=35								
PTGA	**Pitinga**	**24.79**	**96**	*e*P		**P**		**10 01 15.2**	**+0.3**
	6.5nm,1.1s								
CDVI	**St. Croix**	**24.86**	**50**	*e*P		**P**		**10 01 15.1**	**-0.3**
	76nm,0.5s								
SIV	**San Ignacio**	**29.44**	**129**	LR		LR		10 14 14.8	
	comp=Z,406nm,19.3s,baz=360,slow=37								
WLAR	**White Oak Lake**	**32.33**	**347**	*e*P		**P**		**10 02 23.3**	**+1.5**
	9.7nm,1.1s								
TXAR	**Lajitas Array**	**32.52**	**328**	P		**P**		**10 02 23.6**	**0.0**
	1.1nm,1.0s,baz=146,slow=6.4,SNR=5.8								
TXAR				PcP		**PcP**		**10 05 10.0**	**-0.1**
	0.3nm,0.9s,baz=184,slow=3.6,SNR=2.8								
TXAR				LR		LR		10 14 44.0	
	comp=Z,126nm,20.6s,baz=0.0,slow=35								
TX31	**Lajitas Ar. Si**	**32.53**	**328**	*e*P		**P**		**10 02 23.8**	**+0.2**
WMOK	**Wichita Mounta**	**34.98**	**339**	*e*P		**P**		**10 02 45.1**	**+0.3**
	10.0nm,1.6s								
MNTX	**Cornudas Mount**	**35.30**	**328**	*e*P		**P**		**10 02 48.1**	**+0.5**
SIUC	**Southern Illin**	**35.61**	**354**	*e*P		**P**		**10 02 49.5**	**-0.7**
	8.2nm,0.9s								
AMTX	**Amarillo**	**36.21**	**336**	*e*P		**P**		**10 02 56.8**	**+1.3**
	6.0nm,0.8s								
121A	**Cookes Peak, D**	**37.23**	**327**	*e*P		**P**		**10 03 05.7**	**+1.3**
	7.8nm,1.1s								
BNM	**Barren Site**	**37.87**	**330**	*e*P		**P**		**10 03 12.0**	**+2.2**
ANMO	**Albuquerque**	**38.42**	**331**	*e*P		**P**		**10 03 15.3**	**+1.0**
	3.6nm,1.0s								
CPUP	**Villa Florida**	**38.70**	**139**	LR		LR		10 21 01.4	
	comp=Z,77nm,20.9s,baz=318,slow=39								
T25A	**Trinidad**	**39.28**	**335**	*e*P		**P**		**10 03 22.2**	**+0.6**
	7.7nm,1.1s								
X18A	**Snowflake**	**39.92**	**327**	*e*P		**P**		**10 03 27.5**	**+0.6**
	11nm,1.4s								
KSCO	**Kaye Shedlock'**	**40.17**	**338**	*e*P		**P**		**10 03 30.6**	**+1.7**
	20nm,1.4s								
SDCO	**Great Sand Dun**	**40.26**	**334**	*e*P		**P**		**10 03 31.1**	**+1.3**
	6.0nm,1.1s								
X16A	**Lo Mia Camp, P**	**40.67**	**325**	*e*P		**P**		**10 03 32.7**	**-0.5**
	3.3nm,1.0s								
MMNY	**Mt. Morris Dam**	**40.81**	**8**	*e*P		**P**		**10 03 33.9**	**0.0**
S22A	**4UR Ranch, Cre**	**40.85**	**333**	*e*P		**P**		**10 03 36.2**	**+1.5**
	3.3nm,1.1s								
MVCO	**Mesa Verde**	**41.22**	**331**	*e*P		**P**		**10 03 40.0**	**+2.4**
	21nm,1.7s								
Y14A	**Wickenburg**	**41.25**	**323**	*e*P		**P**		**10 03 37.7**	**-0.1**
	29nm,1.4s								
WUAZ	**Wupatki**	**41.43**	**326**	*e*P		**P**		**10 03 40.9**	**+1.5**
	11nm,1.2s								
PV01	**Paradox Valley**	**41.98**	**331**	*e*P		**P**		**10 03 45.3**	**+1.4**
SMCO	**Snowmass**	**42.09**	**334**	*e*P		**P**		**10 03 45.7**	**+0.8**
	5.5nm,1.0s								
W13A	**Hualapai Mount**	**42.58**	**324**	*e*P		**P**		**10 03 50.4**	**+1.6**
	4.3nm,1.1s								
U15A	**North Rim**	**42.61**	**326**	*e*P		**P**		**10 03 50.4**	**+1.3**
	6.9nm,1.1s								
ECSD	**EROS Data Cent**	**42.73**	**347**	*e*P		**P**		**10 03 50.0**	**+0.4**
	8.1nm,1.2s								
N23A	**Red Feather La**	**43.09**	**336**	*e*P		**P**		**10 03 53.2**	**+0.3**
	12nm,1.6s								
KNB	**Kanab**	**43.33**	**327**	*e*P		**P**		**10 03 56.4**	**+1.6**
	6.6nm,1.1s								
SPMN	**Marine on St.**	**43.46**	**352**	*e*P		**P**		**10 03 55.9**	**+0.4**
	12nm,1.1s								
LCMT	**Little Creek M**	**43.56**	**326**	*e*P		**P**		**10 03 56.9**	**+0.3**
	3.8nm,1.3s								
CCUT	**Cedar City**	**44.01**	**327**	*e*P		**P**		**10 04 01.2**	**+0.9**
	5.3nm,1.1s								
MSU	**Marysvale**	**44.08**	**329**	*e*P		**P**		**10 04 02.1**	**+1.2**
SHPR	**Sheep Range**	**44.30**	**324**	*e*P		**P**		**10 04 04.0**	**+1.5**
	10nm,1.6s								
PLCA	**Paso Flores**	**44.60**	**165**	P		**P**		**10 04 07.5**	**+2.7**
	1.8nm,0.7s,baz=354,slow=10.0,SNR=5.0								
PLCA				LR		LR		10 18 24.7	
	comp=Z,93nm,21.1s,baz=325,slow=30								
TRQ	**Mont Tremblant**	**44.73**	**10**	*e*P		**P**		**10 04 05.2**	**-0.5**
RSSD	**Black Hills**	**45.17**	**340**	*e*P		**P**		**10 04 09.0**	**-0.5**
	5.6nm,1.1s								
R11A	**Troy Canyon, C**	**45.81**	**326**	*e*P		**P**		**10 04 15.4**	**+0.8**
	3.1nm,1.3s								
MCU	**Monte Cristo P**	**45.99**	**332**	*e*P		**P**		**10 04 12.1**	**-4.1**
HWUT	**Hardware Ranch**	**46.13**	**332**	*e*P		**P**		**10 04 17.0**	**-0.1**
	3.9nm,0.8s								
BW06	**Boulder Array**	**46.15**	**334**	*e*P		**P**		**10 04 17.0**	**-0.3**
	10nm,1.9s								
PD31	**Pinedale Array**	**46.15**	**334**	*e*P		**P**		**10 04 17.4**	**+0.1**
PDAR	**Pinedale Array**	**46.15**	**334**	P		**P**		**10 04 16.5**	**-0.8**
	1.2nm,0.9s,baz=124,slow=7.9,SNR=7.5								
PDAR				PcP		**PcP**		**10 05 52.1**	**-0.8**
	0.6nm,0.7s,baz=169,slow=3.0,SNR=4.5								
PDAR				LR		LR		10 24 04.1	
	comp=Z,213nm,20.1s,baz=142,slow=37								
BGU	**Big Grassy Mou**	**46.32**	**330**	*e*P		**P**		**10 04 18.5**	**-0.1**
	2.7nm,1.0s								
AGMN	**Agassiz Nation**	**46.95**	**350**	*e*P		**P**		**10 04 23.3**	**+0.1**
	6.1nm,0.9s								
LOHW	**Long Hollow**	**47.28**	**334**	*e*P		**P**		**10 04 23.9**	**-2.2**
	6.3nm,1.5s								
MDND	**Maddock**	**47.30**	**346**	*e*P		**P**		**10 04 26.0**	**+0.1**
	50nm,1.3s								
ULM	**Lac du Bonnet**	**48.84**	**350**	P		**P**		**10 04 36.2**	**-1.5**
	6.5nm,1.0s,baz=161,slow=4.6,SNR=5.5								
ULM				LR		LR		10 24 36.7	
	comp=Z,58nm,19.5s,baz=152,slow=36								
ULM	**Lac du Bonnet**	**48.84**	**350**	*e*P		**P**		**10 04 37.8**	**+0.1**
	13nm,1.1s								
MCMT	**McKenzie Canyo**	**49.23**	**334**	*e*P		**P**		**10 04 41.4**	**+0.2**
BOZ	**Bozeman (W)**	**49.35**	**335**	*e*P		**P**		**10 04 41.6**	**-0.3**
	2.5nm,0.9s								
ORV	**Oroville**	**50.07**	**323**	*e*P		**P**		**10 04 48.5**	**+1.1**
	3.7nm,1.1s								
WVOR	**Wild Horse Val**	**50.32**	**327**	*e*P		**P**		**10 04 48.3**	**-1.0**
	9.1nm,1.2s								
CHMT	**Chamberlain Mo**	**51.04**	**335**	*e*P		**P**		**10 04 54.1**	**-0.7**
MSO	**Missoula**	**51.27**	**334**	*e*P		**P**		**10 04 56.6**	**+0.2**
	3.8nm,0.8s								
WALA	**Waterton Lakes**	**53.01**	**336**	*e*P		**P**		**10 05 10.1**	**+0.8**
	4.8nm,1.0s								
SCHQ	**Schefferville**	**54.44**	**13**	P		**P**		**10 05 19.0**	**-0.5**
	2.4nm,0.8s,baz=238,slow=13,SNR=2.3								
SCHQ				LR		LR		10 29 19.3	
	comp=Z,156nm,18.6s,baz=249,slow=37								
EDM	**Edmonton**	**56.15**	**340**	*e*P		**P**		**10 05 32.6**	**+0.7**
	12nm,1.3s								
USHA	**Ushuaia**	**58.38**	**169**	P		**P**		**10 05 49.5**	**+2.0**
	148nm,1.2s,baz=336,slow=16,SNR=3.4								
BBB	**Bella Bella**	**61.57**	**331**	LR		LR		10 35 06.1	
	comp=Z,86nm,18.2s,baz=105,slow=38								
YKA	**Yellowknife Ar**	**64.19**	**345**	P		**P**		**10 06 25.6**	**-1.1**
	1.4nm,0.8s,baz=140,slow=6.7,SNR=9.9								
DLBC	**Dease Lake**	**66.35**	**336**	LR		LR		10 38 40.5	
	comp=Z,100nm,18.1s,baz=125,slow=39								
DLBC	**Dease Lake**	**66.35**	**336**	*e*P		**P**		**10 06 41.2**	**+0.2**
	5.5nm,1.2s								
PPT	**Papeete**	**66.94**	**250**	LR		LR		10 29 15.2	
	comp=Z,101nm,19.1s,baz=72,slow=30								
DOT	**Dot Lake**	**74.90**	**337**	*e*P		**P**		**10 07 32.8**	**-0.1**
	9.2nm,1.0s								
SUMG	**Summit**	**75.83**	**13**	*e*P		**P**		**10 07 39.4**	**+0.9**
	5.4nm,0.9s								
IL1	**Eielson Array**	**76.50**	**337**	*e*P		**P**		**10 07 41.3**	**-0.6**
ILAR	**Eielson Array**	**76.50**	**337**	P		**P**		**10 07 40.6**	**-1.3**
	1.2nm,0.9s,baz=126,slow=4.3,SNR=14								
ILAR				LR		LR		10 43 43.4	
	comp=Z,127nm,19.1s,baz=116,slow=38								
ILB	**Eielson Array**	**76.50**	**337**	*e*P		**P**		**10 07 41.6**	**-0.4**
BPAW	**Beaw Mtn.**	**77.89**	**336**	*e*P		**P**		**10 07 49.3**	**-0.5**
	5.5nm,1.1s								
ESDC	**Sonseca Array**	**81.39**	**50**	P		**P**		**10 08 08.8**	**-0.6**
	1.5nm,1.0s,baz=243,slow=5.8,SNR=3.2								
ES19	**SONSECA Array**	**81.44**	**50**	*e*P		**P**		**10 08 08.6**	**-1.1**
TORD	**Torodi Ar. Bea**	**85.90**	**77**	P		**P**		**10 08 31.2**	**-1.6**
	0.6nm,0.7s,baz=290,slow=5.0,SNR=4.0								
NOA	**NORSAR Array B**	**90.92**	**29**	LR		LR		10 48 06.9	
	comp=Z,23nm,18.9s,baz=265,slow=35								
GERES	**GERESS Array B**	**93.83**	**41**	LR		LR		10 45 13.6	
	comp=Z,44nm,19.9s,baz=269,slow=32								
ARCES	**ARCESS Array B**	**94.89**	**19**	LR		LR		10 49 21.1	
	comp=Z,31nm,20.4s,baz=306,slow=34								
VNDA	**Vanda**	**97.12**	**192**	LR		LR		10 45 07.4	
	comp=Z,69nm,21.9s,baz=121,slow=30								
FINES	**FINESS Array B**	**97.83**	**27**	LR		LR		10 47 24.5	
	comp=Z,27nm,21.8s,baz=316,slow=32								
KURK	**Kurchatov**	**125.37**	**13**	PKP		**PKPdf**		**10 14 51.6**	**-1.5**
KURBB	**Kurchatov Arra**	**125.44**	**13**	PKP		**PKPdf**		**10 14 51.6**	**-1.7**
	0.4nm,0.7s,baz=328,slow=2.5,SNR=5.9								
GEYT	**Alibeck**	**127.26**	**37**	PKP		**PKPdf**		**10 14 56.0**	**-1.3**
	1.0nm,0.7s,baz=207,slow=1.6,SNR=2.1								
AS01	**Alice Springs**	**137.03**	**237**	*e*PKPdf		**PKPdf**		**10 15 16.4**	**+0.3**
ASAR	**Alice Springs**	**137.07**	**237**	PKP		**PKPdf**		**10 15 15.7**	**-0.5**
	0.3nm,0.6s,baz=107,slow=2.4,SNR=4.7								
WRA	**Warramunga Arr**	**138.09**	**242**	PKP		**PKPdf**		**10 15 17.1**	**-0.9**
	0.7nm,0.7s,baz=104,slow=1.8,SNR=9.6								

*ISCJB **17** 09:58:50.0±1.0, 2.˚3N±0.˚2×84.˚4W±0.˚2, h100km, mb3.6/8, Error ellipse: s-maj=41.2km s-min=13.1km az=140.5*

*IDC **17** 09:58:53.0±7.1, 2.˚27N×84.˚31W, h115km±68km, mb3.5/8, mb1 3.7/9, mb1mx3.6/28, mbtmp3.9/9, Error ellipse: s-maj=49.5km s-min=18.0km az=52.0*

ISC 17 09:58:51.4±1.0, 2.˚3N±0.˚2×84.˚3W±0.˚2, h100km, n11, σ0s60/11, mb3.6/8, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**18.04**	**325**	P		**P**		**10 02 55.9**	**+1.1**
	0.1nm,0.3s,baz=160,slow=8.0,SNR=4.3								
LPAZ	**La Paz**	**24.39**	**140**	P		**P**		**10 04 01.4**	**+0.1**
	2.4nm,0.8s,baz=313,slow=8.2,SNR=6.7								
PTGA	**Pitinga**	**24.52**	**97**	P		**P**		**10 04 01.8**	**0.0**
	2.0nm,0.8s,baz=283,slow=11,SNR=3.5								
LVC	**Limon Verde**	**28.93**	**149**	P		**P**		**10 04 42.0**	**+0.4**
	6.7nm,0.8s,baz=324,slow=18,SNR=1.6								
PDAR	**Pinedale Array**	**46.21**	**334**	P		**P**		**10 07 06.6**	**-0.1**
	0.7nm,0.9s,baz=99,slow=9.2,SNR=3.2								
YKA	**Yellowknife Ar**	**64.20**	**345**	P		**P**		**10 09 14.9**	**-0.4**
	0.5nm,0.6s,baz=135,slow=7.0,SNR=4.0								
ILAR	**Eielson Array**	**76.55**	**337**	P		**P**		**10 10 29.8**	**-0.7**
	0.5nm,1.0s,baz=121,slow=5.2,SNR=4.6								
TORD	**Torodi Ar. Bea**	**85.61**	**77**	P		**P**		**10 11 19.2**	**-0.3**
	0.5nm,0.7s,baz=284,slow=5.6,SNR=2.9								
GERES	**GERESS Array B**	**93.60**	**41**	P		**P**		**10 11 57.3**	**+0.7**
	0.1nm,0.3s,baz=256,slow=11,SNR=1.9								
ASAR	**Alice Springs**	**137.34**	**237**	PKP		**PKPdf**		**10 18 04.0**	**-0.1**
	0.4nm,0.9s,baz=110,slow=1.5,SNR=1.6								
WRA	**Warramunga Arr**	**138.36**	**242**	PKP		**PKPdf**		**10 18 05.7**	**-0.4**
	0.4nm,0.7s,baz=271,slow=0.2,SNR=2.8

UNV				S		**Sn**	**10 19 33.8**	**+0.8**
AKMO	**Akutan Morgan**	**2.99**	**35**	P		**Pn**	**10 19 09.1**	**+2.8**
AKMO				S		**Sn**	**10 19 43.7**	**+1.5**
ZRO	**Akutan Zero**	**3.00**	**35**	P		**Pn**	**10 19 09.3**	**+2.8**
AKUT	**Akutan**	**3.11**	**36**	*e*Pn		**Pn**	**10 19 11.5**	**+3.6**
SDPT	**Sand Point**	**6.23**	**50**	*e*Pn		**Pn**	**10 19 53.3**	**+2.6**
OHAK	**Old Harbor**	**10.64**	**52**	*e*Pn		**Pn**	**10 20 52.2**	**+1.0**
KDAK	**Kodiak Island**	**11.23**	**51**	*e*Pn		**Pn**	**10 21 01.4**	**+2.2**
ILAR	**Eielson Array**	**17.38**	**33**	P		Pn	10 22 09.8	-11
	0.1nm,0.3s,baz=227,slow=10,SNR=4.8							
DLBC	**Dease Lake**	**23.00**	**58**	P		**P**	**10 23 21.4**	**-2.3**
	0.8nm,0.5s,baz=257,slow=8.8,SNR=3.1							
DLBC	**Dease Lake**	**23.00**	**58**	*e*P		**P**	**10 23 21.5**	**-2.1**
INK	**Inuvik**	**23.78**	**32**	P		P	10 23 17.9	-13
	0.4nm,0.4s,baz=221,slow=7.4,SNR=1.9							
MA2	**Magadan**	**23.78**	**305**	LR		LR	10 30 46.9	
	comp=Z,32nm,18.3s,baz=24,slow=38							
PDAR	**Pinedale Array**	**40.25**	**79**	P		**P**	**10 25 55.1**	**-0.8**
	0.2nm,0.6s,baz=287,slow=9.1,SNR=2.2							
PDAR	**Pinedale Array**	**40.25**	**79**	P		**P**	**10 25 55.1**	**-0.8**
TXAR	**Lajitas Array**	**52.47**	**89**	P		**P**	**10 27 31.8**	**-0.1**
	0.3nm,0.5s,baz=305,slow=6.2,SNR=4.3							
TXAR	**Lajitas Array**	**52.47**	**89**	P		**P**	**10 27 31.8**	**-0.1**

IDC ***17*** *10:23:15.1±1.4,9.°93N×122.°70E,h0km,mb3.8/9, mb1 3.9/9,mb1mx3.6/48,mbtmp3.8/9,MS3.2/9,Ms1 3.3/9, ms1mx3.0/43,Error ellipse: s-maj=81.9km s-min=18.0km az=63.0*

MAN ***17*** *10:23:17,9.°76N×122.°07E,h2km,mb4.6,ML3.5,MS3.5*

NEIC ***17*** *10:23:17.5±0.7,9.°68N×122.°30E,h10km,mb4.2/3,Error ellipse: s-maj=21.8km s-min=11.1km az=64.0*

ISCJB ***17*** *10:23:18.5±0.5,9.°64N±0.°06×122.°02E±0.°05,h27km, mb3.9/13,MS3.2/8,Error ellipse: s-maj=8.8km s-min=7.7km az=172.1*

ISC 17 10:23:20.9±0.7,9.°77N±0.°06×122.°13E±0.°06,h27km,n26, σ1♀55/20,mb3.9/13,MS3.1/8,2C-1D,Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAP	**San Jose, Anti**	**0.99**	**350**	*i*P	**Pn**	**10 23 37.7**	**-1.3**
TBP	**Tagbilaran**	**1.71**	**92**	*i* P	**Pn**	**10 23 48.3**	**-0.7**
RCP	**Roxas**	**1.88**	**19**	*i*P	**Pn**	**10 23 51.2**	**-0.1**
LLP	**Lapu-Lapu**	**1.89**	**73**	*e*P	**Pn**	**10 23 51.3**	**-0.2**
LLP				*e*S	**Sb**	**10 24 18.0**	**0.0**
CTBH	**Cotabato--PC H**	**3.29**	**140**	*i*P	**Pn**	**10 24 12.0**	**+1.3**
DAV	**Davao City (W)**	**4.34**	**128**	LR	LR	10 25 42.6	
	comp=Z,363nm,18.5s,baz=37,slow=37						
KKM	**Kota Kinabalu**	**6.92**	**238**	*e*Pn	**Pn**	**10 24 59.8**	**-1.0**
GUMO	**Guam**	**22.59**	**78**	LR	LR	10 38 00.4	
	comp=Z,20nm,18.6s,baz=227,slow=40						
CMAR	**Chiang Mai Arr**	**24.06**	**294**	P	**P**	**10 28 35.9**	**+1.7**
	0.9nm,0.7s,baz=117,slow=8.0,SNR=2.1						
CMAR				LR	LR	10 37 37.4	
	comp=Z,54nm,18.4s,baz=110,slow=35						
FITZ	**Fitzroy Crossi**	**27.91**	**173**	P	**P**	**10 29 07.9**	**-1.0**
	2.6nm,1.0s,baz=178,slow=16,SNR=2.3						
JHJ	**Hachijo jima 2**	**28.37**	**32**	LR	LR	10 37 49.3	
	comp=Z,54nm,21.0s,baz=286,slow=31						
MJAR	**Matsushiro Arr**	**30.38**	**26**	LR	LR	10 39 59.9	
	comp=Z,52nm,20.7s,baz=175,slow=34						
WRAB	**Tennant Creek**	**31.88**	**158**	*e*P	**P**	**10 29 41.6**	**-2.4**
	10nm,1.5s						
WRA	**Warramunga Arr**	**31.88**	**158**	P	**P**	**10 29 41.3**	**-2.8**
	0.5nm,0.7s,baz=332,slow=11,SNR=2.3						
ASAR	**Alice Springs**	**35.17**	**161**	P	**P**	**10 30 11.0**	**-1.8**
	0.8nm,0.7s,baz=346,slow=7.5,SNR=7.2						
ASAR				LR	LR	10 47 33.1	
	comp=Z,32nm,18.6s,baz=352,slow=42						
USRK	**Ussuriysk Ar.**	**35.35**	**12**	LR	LR	10 44 59.7	
	comp=Z,40nm,19.8s,baz=191,slow=37						
MKAR	**Makanchi Array**	**50.02**	**325**	P	**P**	**10 32 13.4**	**+0.3**
	1.5nm,0.9s,baz=132,slow=8.4,SNR=6.2						
ZALV	**Zalesovo Beam**	**53.17**	**333**	P	**P**	**10 32 35.9**	**-0.6**
	0.3nm,0.3s,baz=160,slow=4.6,SNR=2.0						
KURBB	**Kurchatov Arra**	**54.22**	**327**	P	**P**	**10 32 43.2**	**-1.0**
	0.5nm,0.6s,baz=130,slow=6.6,SNR=3.4						
KURK	**Kurchatov**	**54.22**	**327**	*e*P	**P**	**10 32 44.5**	**+0.3**
	42nm,1.1s						
KKAR	**Karatay Array**	**55.73**	**316**	*e*P	**P**	**10 32 57.9**	**+2.6**
	1.0nm,0.6s						
GEYT	**Alibeck**	**63.59**	**307**	P	**P**	**10 33 51.6**	**+2.0**
	0.8nm,0.3s,baz=141,slow=3.0,SNR=2.0						
ABKAR	**Akbulak array**	**64.61**	**320**	*e*P	**P**	**10 33 56.2**	**+0.2**
	1.3nm,0.8s						
ARCES	**ARCESS Array B**	**83.23**	**339**	LR	LR	11 16 56.8	
	comp=Z,17nm,18.7s,baz=70,slow=39						
AKASG	**Malin Array Be**	**84.36**	**320**	P	**P**	**10 35 49.0**	**-1.7**
	0.2nm,0.4s,baz=64,slow=5.7,SNR=2.1						
NOA	**NORSAR Array B**	**91.37**	**333**	LR	LR	11 23 29.6	
	comp=Z,22nm,18.3s,baz=50,slow=40						

ISCJB ***17*** *10:27:38.9±0.6,18.°7S±0.°1×65.°7E±0.°1,h15km,mb3.9/11, MS3.7/10,Error ellipse: s-maj=17.4km s-min=16.2km az=156.5*

IDC ***17*** *10:27:38.1±0.8,18.°70S×65.°63E,h0km,mb3.9/11, mb1 4.1/12,mb1mx3.8/46,mbtmp3.9/12,ML3.7/1,MS3.7/11, Ms1 3.7/11,ms1mx3.3/50,Error ellipse: s-maj=26.6km s-min=19.2km az=78.0*

ISC 17 10:27:40.5±0.7,18.°7S±0.°1×65.°6E±0.°2,h15km,n26, σ0♀95/13,mb3.9/11,MS3.6/10,Mauritius-Reunion region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H08S1	**Diego Garcia H**	**12.87**	**32**	T	T	10 43 54.4	
	baz=210,slow=75,SNR=127						
H08S2	**Diego Garcia H**	**12.88**	**32**	T	T	10 43 55.7	
	baz=210,slow=75,SNR=61						
H08S3	**Diego Garcia H**	**12.89**	**32**	T	T	10 43 56.3	
	baz=210,slow=75,SNR=148						
H08N3	**Diego Garcia H**	**13.36**	**24**	T	T	10 44 53.2	
	baz=203,slow=76,SNR=92						
H08N1	**Diego Garcia H**	**13.37**	**24**	T	T	10 45 03.2	
	baz=203,slow=76,SNR=50						
H08N2	**Diego Garcia H**	**13.38**	**24**	T	T	10 44 54.8	
	baz=203,slow=76,SNR=108						
OPO	**Ambohidratompo**	**17.44**	**267**	P	**P**	**10 31 45.0**	**+0.2**
	0.3nm,0.3s,baz=90,slow=12,SNR=3.1						
OPO				LR	LR	10 36 46.2	
	comp=Z,355nm,18.8s,baz=68,slow=31						
PALK	**Pallekele**	**29.80**	**31**	LR	LR	10 43 25.0	
	comp=Z,90nm,18.2s,baz=296,slow=32						
KMBO	**Kilima Mbogo**	**32.83**	**299**	LR	LR	10 45 24.1	
	comp=Z,112nm,18.8s,baz=281,slow=32						
BOSA	**Boshof**	**38.09**	**247**	LR	LR	10 48 48.2	
	comp=Z,86nm,18.9s,baz=20,slow=33						
MAW	**Mawson**	**48.91**	**181**	P	**P**	**10 36 26.0**	**+0.5**
	2.6nm,0.9s,baz=66,slow=12,SNR=4.0						
CMAR	**Chiang Mai Arr**	**49.37**	**43**	P	**P**	**10 36 30.8**	**+1.1**
	0.5nm,0.5s,baz=249,slow=7.6,SNR=3.5						
CMAR				LR	LR	10 56 17.9	
	comp=Z,60nm,18.1s,baz=188,slow=35						
ASAR	**Alice Springs**	**63.36**	**108**	P	**P**	**10 38 09.1**	**-0.6**
	1.6nm,0.9s,baz=267,slow=6.7,SNR=11						
ASAR				LR	LR	11 01 52.5	
	comp=Z,114nm,21.2s,baz=281,slow=32						
TGY	**Tagaytay City**	**63.53**	**63**	LR	LR	11 00 18.2	
	comp=Z,130nm,21.3s,baz=310,slow=31						
WRA	**Warramunga Arr**	**64.45**	**104**	P	**P**	**10 38 16.6**	**-0.3**
	2.7nm,1.0s,baz=260,slow=5.9,SNR=10						
MKAR	**Makanchi Array**	**66.91**	**12**	P	**P**	**10 38 31.5**	**-0.6**
	0.2nm,0.2s,baz=88,slow=8.6,SNR=4.7						
STKA	**Stephens Creek**	**68.74**	**118**	LR	LR	11 04 55.8	
	comp=Z,63nm,18.5s,baz=211,slow=33						
TORD	**Torodi Ar. Bea**	**70.47**	**292**	LR	LR	11 08 28.0	
	comp=Z,36nm,18.2s,baz=245,slow=35						
VNDA	**Vanda**	**73.22**	**167**	P	**P**	**10 39 10.4**	**-0.1**
	0.8nm,0.6s,baz=267,slow=4.7,SNR=4.1						
DBIC	**Dimbokro**	**73.84**	**283**	LR	LR	11 08 51.1	
	comp=Z,34nm,21.5s,baz=107,slow=34						
ZALV	**Zalesovo Beam**	**74.22**	**12**	P	**P**	**10 39 16.2**	**-0.3**
	0.6nm,0.5s,baz=222,slow=1.7,SNR=3.5						
SONM	**Songino Array**	**75.65**	**27**	P	**P**	**10 39 24.7**	**-0.4**
	0.7nm,0.7s,baz=232,slow=3.5,SNR=3.5						
AKASG	**Malin Array Be**	**76.15**	**337**	P	**P**	**10 39 27.1**	**-0.6**
	0.5nm,0.5s,baz=145,slow=4.6,SNR=3.1						
KSRS	**Korea Array**	**80.35**	**46**	P	**P**	**10 39 54.9**	**+0.4**
	1.4nm,1.1s,baz=233,slow=6.2,SNR=3.9						
KSRS				LR	LR	11 16 25.0	
	comp=Z,18nm,18.7s,baz=195,slow=36						
FINES	**FINESS Array B**	**85.88**	**342**	P	**P**	**10 40 20.7**	**+1.5**
	2.0nm,0.8s,baz=171,slow=9.6,SNR=2.7						
ULM	**Lac du Bonnet**	**145.22**	**339**	PKPbc	**PKPbc**	**10 47 15.2**	**-1.9**
	0.9nm,0.3s,baz=126,slow=3.0,SNR=3.0						

ISCJB ***17*** *10:34:30.8±1.0,52.°3N±0.°2×170.°72W±0.°09,h10km, mb3.4/2,Error ellipse: s-maj=24.6km s-min=4.0km az=163.6*

NEIC ***17*** *10:34:32.4,52.°34N×170.°73W,h20km,ML3.0(AEIC),After AEIC.*

IDC ***17*** *10:34:35.4±28.0,51.°52N×169.°51W,h0km,mb3.5/2, mb1 3.7/3,mb1mx3.3/42,mbtmp3.3/3,ML3.1/1,Error ellipse: s-maj=534.8km s-min=75.5km az=85.0*

ISC 17 10:34:31.9±1.3,52.°2N±0.°2×170.°69W±0.°07,h10km,n20, σ2♀02/19,Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NIKH	**Nikolski High**	**1.35**	**55**	P	**Pn**	**10 34 54.0**	**-2.7**
NIKH				S	**Sb**	**10 35 11.3**	**-3.2**
OKWR	**Okmok West Rim**	**1.94**	**50**	P	**Pn**	**10 35 05.4**	**+0.5**
OKWR				S	**Sn**	**10 35 28.2**	**-1.1**
OKWE	**Okmok W'ng Wal**	**1.94**	**49**	P	**Pn**	**10 35 04.9**	**0.0**
OKTU	**Okmok Mt. Tuli**	**1.98**	**53**	P	**Pn**	**10 35 05.7**	**+0.1**
OKRE	**Okmok R'deer P**	**2.01**	**49**	P	**Pn**	**10 35 06.3**	**+0.5**
KOSE	**Korovin Southe**	**2.07**	**275**	P	**Pn**	**10 35 06.3**	**-0.4**
KOSE				S	**Sn**	**10 35 30.5**	**-2.0**
KOFP	**Korovin Flat P**	**2.10**	**273**	P	**Pn**	**10 35 06.8**	**-0.3**
KOFP				S	**Sn**	**10 35 31.4**	**-1.8**
KOKL	**Mount Kliuchef**	**2.16**	**274**	P	**Pn**	**10 35 08.3**	**+0.4**
KOWE	**Korovin West**	**2.19**	**275**	P	**Pn**	**10 35 07.1**	**-1.3**
UNV	**Unalaska Valle**	**3.01**	**56**	P	**Pn**	**10 35 19.0**	**-0.5**
UNV				S	**Sn**	**10 35 54.3**	**-1.2**
AKUT	**Akutan**	**3.52**	**55**	Pn	**Pn**	**10 35 26.2**	**-0.4**
ILAR	**Eielson Array**	**17.53**	**35**	P	**P**	**10 38 43.1**	**+5.9**
	0.0nm,0.3s,baz=231,slow=8.0,SNR=1.9						
H11N2	**WAKE ISLAND Hy**	**36.84**	**217**	T	T	11 20 33.8	
	baz=23,slow=76,SNR=30						
H11N3	**WAKE ISLAND Hy**	**36.85**	**217**	T	T	11 20 33.1	
	baz=23,slow=76,SNR=22						
H11N1	**WAKE ISLAND Hy**	**36.86**	**217**	T	T	11 20 37.0	
	baz=23,slow=76,SNR=29						
H11S1	**WAKE ISLAND Hy**	**38.03**	**216**	T	T	11 22 09.6	
	baz=22,slow=76,SNR=57						
H11S2	**WAKE ISLAND Hy**	**38.05**	**216**	T	T	11 22 08.4	
	baz=22,slow=76,SNR=60						
H11S3	**WAKE ISLAND Hy**	**38.05**	**216**	T	T	11 22 08.5	
	baz=22,slow=76,SNR=41						
PDAR	**Pinedale Array**	**41.23**	**78**	P	**P**	**10 42 17.1**	**+0.2**
	0.4nm,0.6s,baz=316,slow=4.1,SNR=5.6						
TXAR	**Lajitas Array**	**53.56**	**88**	P	**P**	**10 43 52.8**	**-0.1**
	0.4nm,0.7s,baz=290,slow=5.1,SNR=5.2						

IDC ***17*** *10:35:51.7±3.8,30.°91N×140.°61E,h77km±31km,mb3.4/4, mb1 3.5/6,mb1mx3.2/41,mbtmp3.6/6,Error ellipse: s-maj=73.7km s-min=31.3km az=85.0*

ISC 17 10:35:55.1±1.2,31.°1N±0.°1×140.°4E±0.°4,h110km,n6, σ2♀43/7,mb3.6/4,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**2.04**	**345**	P	**Pn**	**10 36 26.2**	**-2.4**
	8.8nm,0.3s,baz=64,slow=23,SNR=1.2						
JHJ				S	**Sn**	**10 36 52.3**	**-2.0**
	41nm,0.3s,baz=292,slow=24,SNR=3.5						
MJAR	**Matsushiro Arr**	**5.69**	**342**	P	**Pn**	**10 37 19.0**	**+1.7**
	0.5nm,0.3s,baz=159,slow=13,SNR=3.4						
WRA	**Warramunga Arr**	**51.12**	**187**	P	**P**	**10 44 45.2**	**-1.6**
	0.3nm,0.4s,baz=5.4,slow=7.6,SNR=2.2						
FINES	**FINESS Array B**	**73.65**	**333**	P	**P**	**10 47 18.8**	**+2.6**
	0.5nm,0.5s,baz=35,slow=7.2,SNR=1.6						
NOA	**NORSAR Array B**	**79.29**	**337**	P	**P**	**10 47 49.5**	**+1.4**
	0.6nm,0.9s,baz=51,slow=4.2,SNR=2.5						
TXAR	**Lajitas Array**	**94.39**	**52**	P	**P**	**10 49 03.4**	**+0.4**
	0.3nm,0.7s,baz=330,slow=3.4,SNR=3.3						

VIE ***17*** *10:36:21.5±1.7,49.°61N×19.°32E,h0km,mb2.2/3,ML2.4/4, Error ellipse: s-maj=13.1km s-min=11.5km az=3.0, Suspected Mining induced.*

ISCJB ***17*** *10:36:24.9±0.7,50.°28N±0.°05×18.°70E±0.°04,h0km,Error ellipse: s-maj=6.8km s-min=3.6km az=2.9*

IPEC ***17*** *10:36:25.8±0.2,50.°27N×18.°80E,h1km,ML1.9/3,Error ellipse: s-maj=2.3km s-min=1.1km az=165.0*

CSEM ***17*** *10:36:25.8±0.3,50.°27N×18.°75E,h2km,ML2.9/7,Error ellipse: s-maj=7.6km s-min=4.0km az=178.0*

PRU ***17*** *10:36:26.1,50.°27N×18.°75E,h0km*

WAR ***17*** *10:36:26.4,50.°26N×18.°82E,h1km,Mw2.7*

ISC 17 10:36:26.0±0.9,50.°20N±0.°05×18.°75E±0.°03,h0km,n25, σ0♀75/37,Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OKC	**Ostrava-Krasne**	**0.53**	**227**	*e*PG	**Pb**	**10 36 38.2**	**+0.1**
OKC				*e*SG	**Sb**	**10 36 47.0**	**+0.7**
	comp=Z,19nm,0.2s						
OKC	**Ostrava-Krasne**	**0.53**	**227**	Pg	**Pb**	**10 36 38.2**	**+0.1**
OJC	**Ojcow**	**0.68**	**88**	*e*Pg	**Pg**	**10 36 38.3**	**-0.6**
OJC				*e*Sg	**Sg**	**10 36 47.9**	**+0.2**
OJC	**Ojcow**	**0.68**	**88**	*e*Pg	**Pg**	**10 36 38.3**	**-0.6**
OJC				*e*Sg	**Sg**	**10 36 47.9**	**+0.2**
OJC	**Ojcow**	**0.68**	**88**	*e*Pg	**Pb**	**10 36 38.3**	**-0.6**
OJC				*e*Sg	**Sg**	**10 36 47.9**	**+0.2**
MORC	**Moravsky Berou**	**0.89**	**242**	*e*Pg	**Pb**	**10 36 43.9**	**-0.3**
MORC				*e*Sg	**Sg**	**10 36 55.5**	**+1.1**
	15nm,0.2s						
KRLC	**Kraliky**	**1.27**	**265**	*e*SG	**Sg**	**10 37 07.0**	**+0.2**
KRLC	**Kraliky**	**1.27**	**265**	Sg	**Sg**	**10 37 07.0**	**+0.2**
DPC	**Dobruska-Polom**	**1.56**	**276**	*e*PG	**Pn**	**10 36 54.7**	**-0.3**
DPC				*e*SG	**Sg**	**10 37 16.8**	**+0.7**
	comp=Z,18nm,0.4s						
DPC	**Dobruska-Polom**	**1.56**	**276**	Pg	**Pn**	**10 36 54.7**	**-0.3**
DPC				Sg	**Sg**	**10 37 16.8**	**+0.7**
	18nm,0.4s						
VRAC	**Vranov**	**1.66**	**238**	*e*Pn	**Pn**	**10 36 56.8**	**+0.5**
VRAC				*e*Sg	**Sg**	**10 37 19.5**	**+0.3**
	16nm,0.2s						
KSP	**Ksiaz**	**1.69**	**293**	*e*Pg	**Pb**	**10 36 58.1**	**+0.1**
KSP				*e*Sg	**Sg**	**10 37 20.7**	**+0.4**
KSP	**Ksiaz**	**1.69**	**293**	*e*Pg	**Pb**	**10 36 58.1**	**+0.1**
KSP				*e*Sg	**Sg**	**10 37 20.7**	**+0.4**
KSP	**Ksiaz**	**1.69**	**293**	*e*Pg	**Pb**	**10 36 58.1**	**+0.1**
KSP				*e*Sg	**Sg**	**10 37 20.7**	**+0.4**
UPC	**Upice**	**1.78**	**281**	*e*SG	**Sg**	**10 37 23.6**	**+0.5**
	comp=Z,6.5nm,0.3s						
UPC	**Upice**	**1.78**	**281**	Sg	**Sg**	**10 37 23.6**	**+0.5**
	6.5nm,0.3s						
KRUC	**Moravsky**	**1.91**	**234**	*e*Pn	**Pn**	**10 37 00.1**	**+0.4**
KRUC				*e*Sg	**Sg**	**10 37 27.5**	**+0.3**
	5.7nm,0.3s						
GOPC	**GO Pecny, Ondr**	**2.57**	**265**	*e*SG	**Sb**	**10 37 46.4**	**+1.4**
	comp=Z,5.6nm,0.2s						
PVCC	**Panska Ves**	**2.70**	**279**	*e*SG	**Sg**	**10 37 51.8**	**-0.7**
PVCC	**Panska Ves**	**2.70**	**279**	Sg	**Sg**	**10 37 51.8**	**-0.7**
PRU	**Pruhonice**	**2.72**	**267**	*e*SG	**Sg**	**10 37 51.8**	**-1.4**
	comp=Z,4.6nm,0.4s						
PRU	**Pruhonice**	**2.72**	**267**	Sg	**Sg**	**10 37 51.8**	**-1.4**
	4.6nm,0.4s						
BRG	**Bergqiesshubel**	**3.14**	**284**	SG	**Sg**	**10 38 06.1**	**-0.6**
	3.6nm,0.5s						
KHC	**Kasperske Hory**	**3.52**	**254**	*e*SG	**Sg**	**10 38 16.8**	**-2.3**
	comp=Z,8.2nm,0.4s						
MOA	**Molln**	**3.77**	**233**	Sg	**Sg**	**10 38 26.2**	**-0.9**
	4.7nm,0.5s						

IDC 17 10:39:45.6±3.4,23.°88S×179.°57E,h483km±34km,mb3.4/4, mb1 3.6/4,mb1mx3.1/19,mbtmp4.2/4,Error ellipse: s-maj=104.5km s-min=24.4km az=160.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**12.23**	**276**	P	P	10 42 33.2	+6.4
	1.1nm,0.3s,baz=91,slow=18,SNR=8.5						
STKA	**Stephens Creek**	**34.37**	**248**	P	P	10 45 50.8	-0.5
	1.2nm,0.4s,baz=98,slow=9.8,SNR=12						
ASAR	**Alice Springs**	**41.65**	**261**	P	P	10 46 51.0	0.0
	1.3nm,0.5s,baz=91,slow=7.7,SNR=52						
WRA	**Warramunga Arr**	**42.02**	**266**	P	P	10 46 54.0	+0.1
	5.1nm,0.6s,baz=102,slow=8.3,SNR=81						
WRA				ScP	ScP	10 51 41.6	-0.5
	1.4nm,0.8s,baz=103,slow=3.7,SNR=7.4						
TXAR	**Lajitas Array**	**90.75**	**58**	P	P	10 51 56.7	0.0
	1.0nm,0.8s,baz=211,slow=6.9,SNR=14						
AKASG	**Malin Array Be**	**144.74**	**327**	PKP	PKPdf	10 58 25.4	-1.0
	0.3nm,0.4s,baz=41,slow=3.8,SNR=4.1						

BJI ***17*** *10:59:07.7,6.°60S×106.°50E,h75km,mb4.8/25,mB5.1/17, Ms4.7/11,Ms7 4.3/11*

ISCJB ***17*** *10:59:08.6±0.3,6.°69S±0.°04×106.°51E±0.°03,h100km±2km, mb4.8/90,Error ellipse: s-maj=6.8km s-min=3.2km az=33.9*

NEIC ***17*** *10:59:09.7±0.6,6.°64S×106.°49E,h95km±4km,mb5.0/49, Error ellipse: s-maj=6.3km s-min=3.8km az=49.0*

NEIC Felt [IV] at Pelabuhanratu; [III] at Cisarua, Sindangbarang and Sukabumi; [II] at Lebak and Rangkasbitung.

DJA ***17*** *10:59:09.5±0.3,7.°5S±3.°×10.°6E±.°,h58km±5km,M5.2/13, mb5.4/6,mB5.4/4,MLv5.2/13,Mw(mB)4.8/4*

IDC ***17*** *10:59:11.0±0.9,6.°64S×106.°53E,h106km±7km,mb4.3/29, mb1 4.3/29,mb1mx4.3/47,mbtmp4.6/29,MS3.2/7, Ms1 3.3/7,ms1mx2.9/52,Error ellipse: s-maj=12.5km s-min=7.2km az=54.0*

MOS ***17*** *10:59:12.5±1.3,6.°52S×106.°61E,h131km,mb4.8/27,Error ellipse: s-maj=11.2km s-min=7.0km az=114.5*

ISC 17 10:59:09.4±0.5,6.°78S±0.°04×106.°43E±0.°04,h94km±3km, n476,σ1♀33/469,mb4.8/90,25C-19D,Jawa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SKJI	**Sukabumi**	**0.25**	**151**	P	**Pn**	**10 59 21.4**	**-1.8**
SKJI				S	**Sn**	**10 59 30.6**	**-2.8**
TNG	**Tangerang**	**0.64**	**19**	P	**Pn**	**10 59 28.7**	**+2.9**
TNG				S	**Sn**	**10 59 42.9**	**+4.9**
SBJI	**Serang**	**0.72**	**336**	P	**Pn**	**10 59 28.0**	**+1.5**
SBJI				S	**Sn**	**10 59 41.1**	**+1.8**
CGJI	**Cibinong**	**0.75**	**283**	P	**Pn**	**10 59 26.6**	**-0.2**
CGJI				S	**Sn**	**10 59 39.2**	**-0.6**
CNJI	**Cibinong**	**0.87**	**127**	P	**Pn**	**10 59 26.1**	**-1.9**
CNJI				S	**Sn**	**10 59 38.5**	**-3.4**
LEM	**Lembang**	**1.18**	**92**	P	Pn	10 59 39.0	+7.4
LEM				S	Sn	10 59 57.4	+9.0
CISI	**Cisompet, Garu**	**1.57**	**119**	P	**Pn**	**10 59 35.3**	**-1.1**
CISI				S	**Sn**	**10 59 54.6**	**-2.2**
CISI	**Cisompet, Garu**	**1.57**	**119**	*e*Pn	**Pn**	**10 59 35.1**	**-1.2**
CISI				*e*Sn	**Sn**	**10 59 54.8**	**-2.1**
BLSI	**Bandar Lampung**	**1.83**	**320**	P	**Pn**	**10 59 42.0**	**+2.3**
JCJI	**Jatiwangi**	**1.85**	**81**	P	**Pn**	**10 59 40.9**	**+1.1**
CMJI	**Cimerak**	**2.23**	**117**	P	**Pn**	**10 59 43.9**	**-0.9**
CMJI				S	**Sn**	**11 00 10.1**	**-1.9**
KASI	**Kota Agung**	**2.29**	**303**	P	**Pn**	**10 59 47.0**	**+1.4**
KASI				S	**Sn**	**11 00 14.9**	**+1.5**
KLI	**Kotabumi**	**2.47**	**321**	P	**Pn**	**10 59 50.8**	**+2.9**
LWLI	**Liwa**	**2.94**	**306**	P	**Pn**	**10 59 56.9**	**+2.6**
XMIS	**Christmas Isla**	**3.75**	**192**	*e*Pn	Pn	10 59 58.4	-6.9
XMIS				*e*Sn	Sn	11 00 34.9	-14
LHSI	**Lahat**	**4.12**	**315**	P	**Pn**	**11 00 12.8**	**+2.6**
UGM	**Wanagama**	**4.21**	**106**	P	**Pn**	**11 00 11.8**	**+0.4**
UGM	**Wanagama**	**4.21**	**106**	*e*Pn	**Pn**	**11 00 11.8**	**+0.4**
MNAI	**Manna**	**4.21**	**305**	P	Pn	**11 00 12.6**	**+1.2**
MNAI	**Manna**	**4.21**	**305**	*e*Pn	**Pn**	**11 00 12.7**	**+1.3**
MNAI				*e*Sn	**Sn**	**11 00 59.0**	**-0.6**
PCJI	**Pacitan**	**4.91**	**107**	P	**Pn**	**11 00 21.6**	**+0.7**
KSI	**Kapahiang**	**4.93**	**309**	P	**Pn**	**11 00 22.9**	**+1.7**
NGJI	**Ngawi**	**5.03**	**97**	P	**Pn**	**11 00 24.9**	**+2.5**
	334nm,0.8s,1.1nm						
PWJI	**Pagerwojo**	**5.47**	**103**	P	**Pn**	**11 00 29.9**	**+1.4**
	455nm,0.7s,4µm2.0nm						
DSRI	**Dabo**	**6.53**	**343**	P	Pn	11 00 48.0	+5.1
	416nm,0.9s,5µm1.3nm						
GMJI	**Gumukmas**	**7.11**	**102**	P	**Pn**	**11 00 53.5**	**+2.7**
BLJI	**Banyuglugur**	**7.17**	**98**	P	**Pn**	**11 00 54.5**	**+2.9**
PPSI	**Pulau Pagai**	**7.54**	**302**	P	**Pn**	**11 00 55.9**	**-0.8**
ABJI	**Asem Bagus**	**7.81**	**98**	P	Pn	11 01 05.1	+4.8
JAGI	**Jajag, Banyuwa**	**7.83**	**103**	P	**

GYA PcP PcP 11 08 19.3 +1.5
GYA S S 11 10 50.5 +2.3
GYA sS sS 11 11 24.4 -1.0
GYA pmax pmax
comp=Z,10.0nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
YULB Yu-li 33.33 25 *e*P P 11 05 38.5 +0.1
comp=Z,56nm,2.0s
COEN Coen 36.80 104 *e*P P 11 06 09.6 +1.1
comp=Z,22nm,1.1s
CD2 Chengdu 37.57 356 *e*P P 11 06 15.5 +0.8
CD2 pP pP 11 06 35.1 -1.5
CD2 sP sP 11 06 45.0 -2.5
CD2 PP PP 11 07 43.1 +0.7
CD2 S S 11 12 00.0 +2.7
CD2 sS sS 11 12 34.4 -0.6
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.2s
BBOO Buckleboo 37.79 137 *e*P P 11 06 17.1 +0.4
comp=Z,68nm,1.8s
PKIN Phulchoki 39.76 330 *e*P P 11 06 31.7 -1.7
comp=Z,6.9nm,0.5s
GUN Gumba 39.80 331 *e*P P 11 06 32.2 -1.6
DMN Daman 39.93 330 *e*P P 11 06 32.1 -2.7
comp=Z,5.9nm,0.2s
KKN Kakani 39.99 330 *e*P P 11 06 33.0 -2.3
PMG Port Moresby 40.39 97 P P 11 06 39.4 +0.8
comp=Z,19nm,0.5s,baz=360,slow=21,SNR=13
PMG LR LR 11 26 09.8
comp=Z,59nm,18.8s,baz=242,slow=40
PMG Port Moresby 40.39 97 *e*P P 11 06 39.9 +1.4
PMG pmax pmax
comp=Z,48nm,1.1s
PMG Port Moresby 40.39 97 *e*P P 11 06 39.9 +1.4
comp=Z,48nm,1.1s
NJ2 Nanjing 40.40 16 *e*P P 11 06 37.0 -1.3
NJ2 pmax pmax
comp=Z,12nm,0.6s
GKN Gorkha 40.49 330 *e*P P 11 06 37.4 -1.9
comp=Z,11nm,0.3s
KOLN Koldanda 40.83 328 *e*P P 11 06 40.7 -1.5
comp=Z,29nm,0.6s
STKA Stephens Creek 41.20 132 P P 11 06 46.0 +1.0
comp=Z,10nm,0.4s,baz=314,slow=7.4,SNR=79
STKA PcP PcP 11 08 43.0 +0.5
comp=Z,8.0nm,0.8s,baz=274,slow=6.2,SNR=2.8
STKA Stephens Creek 41.20 132 *e*P P 11 06 46.1 +1.0
STKA 11 08 43.0
STKA pmax pmax
comp=Z,3.0nm,0.6s
STKA Stephens Creek 41.20 132 *e*P P 11 06 46.1 +1.0
comp=Z,3.3nm,0.6s
STKA PcP PcP 11 08 43.0 +0.5
PYUN Piuthan 41.41 328 *e*P P 11 06 45.2 -1.8
comp=Z,10nm,0.4s
GTA Gaotai 46.37 353 *e*P P 11 07 26.6 +0.3
GTA pP pP 11 07 45.3 -3.6
GTA sP sP 11 07 53.9 -5.7
GTA PcP PcP 11 09 00.8 +0.8
GTA pmax pmax
comp=Z,10.0nm,0.9s
HHC Hu-ho-hao-te 47.63 5 *e*P P 11 07 39.5 +3.4
HHC S S 11 14 29.4 +4.6
HHC pmax pmax
comp=Z,19nm,1.5s
HHC pmax pmax
comp=Z,96nm,4.8s
HHC LR LR
comp=Z,200nm,16.2s
HHC LR LR
comp=Z,220nm,16.2s
HHC LR LR
comp=Z,150nm,14.9s
KSAR Wonju Array Be 48.34 23 P P 11 07 42.1 +0.5
KSAR 11 09 07.5
KSAR Wonju Array Be 48.34 23 P P 11 07 42.0 +0.5
KSAR pP pP 11 08 05.1 +0.9
KSAR PcP PcP 11 09 07.5 +0.6
KSRS Korea Array 48.37 23 P P 11 07 42.0 +0.3
comp=Z,1.5nm,0.7s,baz=212,slow=9.2,SNR=8.5
KSRS pP pP 11 08 05.1 +0.7
comp=Z,2.5nm,0.9s,baz=210,slow=8.6,SNR=5.8
KSRS PcP PcP 11 09 07.5 +0.5
comp=Z,1.8nm,0.7s,baz=206,slow=3.6,SNR=7.1
KS01 Wonju Array Si 48.38 23 *e*P P 11 07 42.0 +0.2
KS01 *e*PcP PcP 11 09 07.8 +0.8
MAJO Matsushiro 52.39 32⇑ *e*P P 11 08 10.3 -1.8
MJAR Matsushiro Ar 52.39 32 P P 11 08 10.1 -2.0
comp=Z,0.9nm,0.4s,baz=206,slow=7.8,SNR=6.1
MJAR PcP PcP 11 09 21.9 +0.1
comp=Z,1.3nm,0.7s,baz=204,slow=4.6,SNR=4.8
WMQ Urumqi 53.15 343 *e*P P 11 08 19.3 +1.7
WMQ pP pP 11 08 38.3 -2.3
WMQ pmax pmax
comp=Z,11nm,0.5s
WMQ pmax pmax
comp=Z,100nm,6.2s
WMQ LR LR
comp=Z,200nm,17.6s
WMQ LR LR
comp=Z,250nm,24.7s
WMQ LR LR
comp=Z,250nm,22.8s
CN2 Changchun 53.21 17 *e*P P 11 08 19.0 +1.0
CN2 pmax pmax
comp=Z,10.0nm,0.7s
KSH Kashi 54.00 331 *e*P P 11 08 20.8 -3.2
KSH *es*P pP 11 08 50.1 +3.0
KSH *e*PcP PcP 11 09 27.8 -0.2
KSH *e*ScP ScP 11 13 17.6 -0.1
KSH S S 11 15 44.3 -8.6
KSH ScS ScS 11 17 59.4 -5.1
KSH pmax pmax
comp=Z,150nm,4.6s
KSH LR LR
comp=Z,110nm,5.6s
KSH LR LR
comp=Z,110nm,9.2s
KSH LR LR
comp=Z,190nm,6.7s
SONM Songino Array 54.38 360 P P 11 08 26.5 -0.1
comp=Z,2.9nm,0.4s,baz=173,slow=8.4,SNR=20
SONM PcP PcP 11 09 29.2 -0.1
comp=Z,2.9nm,0.4s,baz=171,slow=3.2,SNR=9.8
SONM ScP ScP 11 13 18.2 -0.9
comp=Z,1.7nm,0.7s,baz=176,slow=4.6,SNR=6.3
SONA1 Songino Array 54.39 360 *e*P P 11 08 26.5 -0.2
USRK Ussuriysk Ar. 55.74 22 P P 11 08 35.5 -0.8
comp=Z,2.8nm,0.6s,baz=195,slow=7.6,SNR=5.3
MK01 Makanchi Array 57.47 341 *e*P P 11 08 46.9 -1.7
MK31 Makanchi Array 57.49 341 *e*P P 11 08 47.4 -1.3
MK31 Makanchi Array 57.49 341 *e*P P 11 08 47.4 -1.3
MKAR Makanchi Array 57.49 341 P P 11 08 47.0 -1.7
comp=Z,2.0nm,0.6s,baz=142,slow=7.6,SNR=24
MKAR PcP PcP 11 09 41.5 +0.1
comp=Z,2.4nm,0.7s,baz=134,slow=6.3,SNR=5.7
MKAR ScP ScP 11 13 32.7 0.0
comp=Z,0.9nm,0.9s,baz=140,slow=7.0,SNR=3.6
MKAR LR LR 11 35 57.6
comp=Z,37nm,18.0s,baz=104,slow=38
MKAR Makanchi Array 57.49 341 *e*P P 11 08 47.4 -1.3
MKAR 11 09 41.5
MKAR Makanchi Array 57.49 341 *e*P P 11 08 47.4 -1.3
MKAR PcP PcP 11 09 41.5 +0.1
MKAR ScP ScP 11 13 32.7 0.0
UOSS Minazif 58.16 305 *e*P P 11 08 54.3 +0.5
comp=Z,63nm,1.7s
ABPO Ambohimpanom 58.73 252 *e*P P 11 09 00.0 +1.9
ABPO pmax pmax
comp=Z,23nm,1.3s
ABPO Ambohimpanom 58.73 252 *e*P P 11 08 60.0 +1.9
comp=Z,23nm,1.3s
ERM Erimo 59.01 31⇑ *e*P P 11 08 56.1 -3.2
ERM pmax pmax
comp=Z,22nm,1.7s
KLR Kul'dur 60.01 19 P P 11 09 05.1 -1.0
comp=Z,2.9nm,0.7s,baz=243,slow=4.9,SNR=12
KLR LR LR 11 35 30.6
comp=Z,18nm,19.1s,baz=159,slow=36
KLR Kul'dur 60.01 19⇓ *e*P P 11 09 04.4 -1.7
ASAJ Asahikawa 60.26 29 *e*P P 11 09 07.1 -0.7
comp=Z,26nm,1.7s

KURK Kurchatov 62.11 340 *e*P P 11 09 18.9 -1.3
KURK Kurchatov 62.11 340 *e*P P 11 09 18.9 -1.3
YSS Yuzh-Sakhalins 62.44 27 *e*P P 11 09 21.9 -0.6
YSS pmax pmax
comp=Z,10.0nm,0.6s
ZAA0 Zalesovo Array 63.19 346 *e*P P 11 09 25.8 -1.5
ZALV Zalesovo Beam 63.19 346 P P 11 09 25.1 -2.2
comp=Z,2.2nm,0.3s,baz=166,slow=6.5,SNR=7.2
ZALV PcP PcP 11 10 02.9 -1.0
comp=Z,1.3nm,0.4s,baz=160,slow=5.6,SNR=3.7
GEYT Alibeck 63.23 319 P P 11 09 27.5 -0.5
comp=Z,10nm,0.8s,baz=152,slow=6.7,SNR=18
KUR Kuril'sk 63.70 31⇑ *e*P P 11 09 29.8 -1.1
DAMY Dhamar 65.07 289 *e*P P 11 09 39.9 -0.9
comp=Z,36nm,0.8s
VOSK Vostochnaya 66.49 337 *e*P P 11 09 47.0 -1.8
VOSK Vostochnaya 66.49 337 *e*P P 11 09 47.0 -1.8
BRVK Borovoye 67.02 337⇓ *e*P P 11 09 50.4 -1.7
BRVK pmax pmax
comp=Z,14nm,1.0s
BRVK Borovoye 67.02 337 *e*P P 11 09 52.2 +0.1
comp=Z,4.4nm,0.8s
RPZ Rata Peaks 67.08 135 P P 11 09 53.9 +1.0
comp=Z,24nm,1.1s,baz=178,slow=2.8,SNR=3.7
RPZ Rata Peaks 67.08 135 *e*P P 11 09 54.0 +1.2
comp=Z,41nm,1.2s
MAW Mawson 67.41 197 P P 11 09 55.5 +1.1
comp=Z,5.0nm,0.6s,baz=61,slow=5.7,SNR=29
MAW Mawson 67.41 197 *e*P P 11 09 55.6 +1.2
MAW pmax pmax
comp=Z,5.0nm,1.5s
MAW Mawson 67.41 197 *e*P P 11 09 55.6 +1.2
comp=Z,5.2nm,1.5s
ZRNK Zerenda 67.43 337 *e*P P 11 09 53.1 -1.7
ZRNK pmax pmax
comp=Z,4.0nm,0.6s
ZRNK Zerenda 67.43 337 *e*P P 11 09 53.1 -1.7
comp=Z,3.7nm,0.6s
OXZ Oxford 67.70 134 *e*P P 11 09 56.9 +0.2
comp=Z,59nm,1.5s
ABKAR Akbulak array 68.94 329 *e*P P 11 10 03.1 -1.1
KMBO Kilima Mbogo 69.19 271 P P 11 10 08.2 +1.3
comp=Z,1.8nm,0.8s,baz=140,slow=3.3,SNR=7.2
BKZ Black Stump Fm 70.30 129 *e*P P 11 10 13.3 +0.3
comp=Z,78nm,1.7s
URZ Urewera 70.67 128 *e*P P 11 10 15.0 -0.2
comp=Z,83nm,1.8s
YAK Yakutsk 70.93 11 *i* P P 11 10 14.8 -1.4
YAK pmax pmax
comp=Z,9.0nm,0.6s
SVE Sverdlovsk 73.58 336 *e*P P 11 10 31.5 -0.6
SVE pmax pmax
comp=Z,18nm,1.2s
PEA0 Petropavlovsk- 73.68 29 *e*P P 11 10 32.4 -0.4
PEA0B Petropavlovsk- 73.68 29 *e*P P 11 10 32.2 -0.6
comp=Z,20nm,1.3s
PETK Petropavlovsk- 73.68 29 P P 11 10 32.2 -0.5
comp=Z,1.5nm,0.7s,baz=156,slow=1.3,SNR=4.1
ARU Arti 74.19 335 *d i*P P 11 10 35.1 -0.5
ARU *PP pP 11 10 56.7 -3.2
ARU 11 13 19.8
ARU S S 11 20 02.7 +1.4
ARU SS SS 11 24 47.2 -1.6
ARU pmax pmax
comp=Z,10.0nm,1.0s
ARU Arti 74.19 335 *e*P P 11 10 34.6 -1.0
comp=Z,12nm,1.1s
MA2 Magadan 74.90 22 P P 11 10 39.3 -0.4
comp=Z,5.0nm,0.6s,baz=161,slow=4.3,SNR=5.3
ZEI Tsey 75.06 317 *e*P P 11 10 40.5 -0.8
ZEI pmax pmax
comp=Z,35nm,0.4s
SYO Syowa Base 75.51 200⇓ *e*P P 11 10 42.6 -0.5
NCK Nalchik 75.55 318⇓ *e*P P 11 10 44.3 +0.5
NCK pmax pmax
comp=Z,17nm,0.8s
NEY Neytrino 76.04 318⇓ *e*P P 11 10 47.4 +0.6
NEY pmax pmax
comp=Z,3.0nm,0.9s
KBZ Khabaz 76.11 318 P P 11 10 47.3 +0.3
comp=Z,17nm,0.9s,baz=111,slow=4.3,SNR=27
VNDA Vanda 76.28 169 P P 11 10 48.2 +0.8
comp=Z,5.6nm,0.8s,baz=307,slow=4.6,SNR=15
KIV Kislovodsk 76.34 318 *i* P P 11 10 49.1 +0.7
KIV *i* 11 10 59.5
KIV *i* 11 13 43.6
KIV pmax pmax
comp=Z,9.0nm,0.8s
LSZ Lusaka 76.94 256 *e*P P 11 10 53.6 +1.2
LSZ pmax pmax
comp=Z,10.0nm,0.8s
LSZ Lusaka 76.94 256 *e*P P 11 10 53.6 +1.2
comp=Z,10nm,0.8s
NRIK Noril'sk 77.07 353 P P 11 10 50.8 -1.0
comp=Z,3.5nm,0.4s,baz=172,slow=7.5,SNR=4.8
SBA Scott Base 77.36 169 *e*P P 11 10 55.1 +1.7
SBA pmax pmax
comp=Z,77nm,2.0s
SBA Scott Base 77.36 169 *e*P P 11 10 55.1 +1.7
comp=Z,77nm,2.0s
SEY Seymchan 77.79 20 P P 11 10 55.3 -0.6
comp=Z,2.0nm,0.7s,baz=307,slow=20,SNR=5.8
SEY LR LR 11 44 46.7
comp=Z,1µm,21.4s,baz=150,slow=35
SEY Seymchan 77.79 20⇓ *e*P P 11 10 54.8 -1.1
LBTB Lobatse 78.88 246 *e*P P 11 11 03.9 +0.9
LBTB pmax pmax
comp=Z,10.0nm,0.8s
LBTB Lobatse 78.88 246 *e*P P 11 11 03.9 +0.9
comp=Z,9.6nm,0.8s
BOSA Boshof 79.06 242 P P 11 10 04.9 +1.0
comp=Z,3.1nm,0.5s,baz=84,slow=3.7,SNR=12
BOSA Boshof 79.06 242 *e*P P 11 11 05.1 +1.2
BOSA pmax pmax
comp=Z,44nm,1.9s
BOSA Boshof 79.06 242 *e*P P 11 11 05.1 +1.2
comp=Z,44nm,1.9s
TIXI Tiksi 79.66 7⇓ *e*P P 11 11 04.4 -1.6
TIXI pmax pmax
comp=Z,5.0nm,0.8s
TIXI Tiksi 79.66 7 *e*P P 11 11 04.0 -2.0
comp=Z,7.6nm,0.5s
VRH Novokhopyorsk 79.88 325 *e*P P 11 11 07.5 -0.1
VRH pmax pmax
comp=Z,50nm,0.7s
CSS Mathiatis 80.20 307 *e*P P 11 11 10.1 +0.3
comp=Z,8.6nm,0.9s
BR131 Keskin Array S 81.26 312 *e*P P 11 11 15.1 -0.4
BRTR Keskin Array B 81.26 312 P P 11 11 15.2 -0.4
comp=Z,7.0nm,0.7s,baz=138,slow=7.0,SNR=37
VSR Storozhevoye 81.36 324 *e*P P 11 11 14.3 -1.3
VSR pmax pmax
comp=Z,50nm,0.5s
BR231 Keskin MP Arra 81.93 312 *e*P P 11 11 15.9 -3.1
SUR Sutherland 82.72 238 *e*P P 11 11 23.8 +0.3
comp=Z,63nm,1.8s
QSPA South Pole Qui 83.20 180 *e*P P 11 11 25.8 +0.7
OBN Obninsk 84.24 327 *c i*P P 11 11 30.3 0.0
OBN pmax pmax
comp=Z,31nm,0.9s
OBN Obninsk 84.24 327 *e*P P 11 11 30.9 +0.6
comp=Z,36nm,0.8s
KLMR Klimovskoe 84.93 333 *e*P P 11 11 31.9 -1.8
KLMR pmax pmax
comp=Z,6.0nm,0.6s
KARP Karpathos 85.25 306 *e*P P 11 11 37.0 +1.0
comp=Z,48nm,1.5s
BILL Bilibino 85.47 19⇑ *i*P P 11 11 37.1 +0.8
BILL pmax pmax
comp=Z,3.0nm,0.9s
TIRR Tirgusor 86.23 315⇑ *i*P P 11 11 41.2 +0.7
TIRR Tirgusor 86.23 315 *e*P P 11 11 40.7 +0.2
TIRR pmax pmax
comp=Z,8.0nm,0.8s
TIRR Tirgusor 86.23 315 *e*P P 11 11 40.7 +0.2
comp=Z,8.4nm,0.8s
TLB Topalu 86.52 315⇑ *i*P P 11 11 42.7 +0.8
TLB Topalu 86.52 315 ⇑P P 11 11 42.7 +0.8
LAST Lasithi 86.52 306 *e*P P 11 11 43.0 +0.7
comp=Z,63nm,1.7s
MILM Milestii Mici 86.53 318⇑ *i*P P 11 11 41.9 0.0
CFR Carcaliu 86.59 316⇑ *i*P P 11 11 42.9 +0.6
CFR Carcaliu 86.59 316 ⇑P P 11 11 42.9 +0.6
HARR Harsova 86.62 316 ⇓ *i*P P 11 11 43.3 +0.9
HARR Harsova 86.62 316 ⇓P P 11 11 43.3 +0.9
TSUM Tsumeb 86.72 251 *e*P P 11 11 45.1 +1.4

IDI Anoyia 87.02 306 *e*P P 11 11 45.4 +0.7
comp=Z,22nm,1.3s
SORM Soroca 87.12 319⇓ *i*P P 11 11 44.9 +0.1
SORM Soroca 87.12 319 ⇓P P 11 11 44.9 +0.1
AKASG Malin Array Be 87.17 322 P P 11 11 44.4 -0.6
comp=Z,3.5nm,0.7s,baz=86,slow=4.9,SNR=27
AKBB Malin Array Si 87.17 322 *e*P P 11 11 44.5 -0.5
AKBB pmax pmax
comp=Z,7.0nm,0.8s
AKBB Malin Array Si 87.17 322 *e*P P 11 11 44.5 -0.5
comp=Z,6.5nm,0.8s
KIEV Kiev 87.18 322 *d i*P P 11 11 44.5 -0.5
KIEV pmax pmax
comp=Z,7.0nm,0.9s
KIEV Kiev 87.18 322 *e*P P 11 11 44.3 -0.7
comp=Z,6.3nm,0.7s
AK11 Malin Array Si 87.20 322 *e*P P 11 11 44.6 -0.5
ISR Istrita 87.67 316 *i*P P 11 11 49.3 +1.7
ISR Istrita 87.67 316 ⇓P P 11 11 49.3 +1.7
PLOR Plostina 87.75 316⇑ *i*P P 11 11 49.0 +1.0
PLOR Plostina 87.75 316 ⇑P P 11 11 49.0 +1.0
TESR Tescani 87.89 317⇓ *i*P P 11 11 49.5 +0.9
MLR Muntele Rosu 88.16 316⇑ *i*P P 11 11 51.0 +1.0
MLR Muntele Rosu 88.16 316 *e*P P 11 11 50.8 +0.8
MLR pmax pmax
comp=Z,39nm,1.5s
MLR Muntele Rosu 88.16 316 *e*P P 11 11 50.8 +0.8
comp=Z,39nm,1.5s
PRAR RASCA 88.35 318⇑ *i*P P 11 11 51.4 +0.7
VOIR 88.77 316⇑ *i*P P 11 11 52.7 -0.1
VOIR 88.77 316 ⇑P P 11 11 52.7 -0.1
ARR Arges 89.05 316⇓ *i*P P 11 11 54.1 0.0
BURAR Bucovina Array 89.07 318⇑ *i*P P 11 11 55.3 +1.1
BURAR Bucovina Array 89.07 318 ⇑P P 11 11 55.3 +1.1
BUR08 Bucovina Ar. S 89.09 318 *e*P P 11 11 54.2 -0.1
SNAA Sanae 89.56 197 P P 11 11 57.6 +1.5
SNAA Sanae 89.56 197 *e*P P 11 11 57.8 +1.7
SNAA pmax pmax
comp=Z,12nm,0.8s
SNAA Sanae 89.56 197 *e*P P 11 11 57.8 +1.7
comp=Z,12nm,0.8s
AGG Agios Georgios 89.66 309 *e*P P 11 11 57.0 -0.1
AGG pmax pmax
comp=Z,15nm,0.9s
AGG Agios Georgios 89.66 309 *e*P P 11 11 57.0 -0.1
comp=Z,14nm,0.9s
VSU Vasula 90.37 329 *d i*P P 11 12 00.0 +0.2
VSU pmax pmax
comp=Z,26nm,1.0s
DRGR 90.61 317⇑ *i*P P 11 12 00.0 -1.4
DRGR 90.61 317 ⇑P P 11 12 00.0 -1.4
MDVR Moldovita 90.99 315⇑ *i*P P 11 12 03.5 +0.3
BZS Buzias 91.18 316⇑ *i*P P 11 12 04.1 +0.1
BZS Buzias 91.18 316 ⇑P P 11 12 04.1 +0.1
FIA1 FINESS Array S 91.31 332 *e*P P 11 12 04.0 -0.1
comp=Z,9.8nm,0.9s
FINES FINESS Array B 91.31 332 P P 11 12 04.3 +0.1
comp=Z,6.2nm,0.8s,baz=100,slow=7.9,SNR=22
VNA1 Neunayer–Stat 91.58 198 P P 11 12 07.8 +2.5
ARA0 ARCESS Array S 93.14 340 *e*P P 11 12 11.9 -0.6
ARCES ARCESS Array B 93.14 340 P P 11 12 12.3 -0.2
comp=Z,1.1nm,0.4s,baz=97,slow=5.8,SNR=27
ARE0 ARCESS Array S 93.14 340 *e*P P 11 12 12.2 -0.3
comp=Z,53nm,2.0s
UNV Unalaska Valle 93.69 36 *e*P P 11 12 14.4 -0.9
comp=Z,64nm,1.3s
LTY Liberty 123.12 37 *e*PKPdf PKPdf 11 17 55.5 +0.3
J05D Fort Rock, OR 124.65 41 P PKPdf 11 17 59.7 +1.2
baz=297
K05A Summer Lake 125.12 41 *e*PKPdf PKPdf 11 18 00.7 +1.3
BOZ Bozeman (W) 129.21 34 P PKPdf 11 18 08.6 +1.5
baz=308
BOZ Bozeman (W) 129.21 34 *e*PKIKP PKPdf 11 18 08.8 +1.7
BOZ Bozeman (W) 129.21 34 *e*PKPdf PKPdf 11 18 08.8 +1.7
GCMT Greycliff 130.19 33 *e*PKPdf PKPdf 11 18 10.6 +1.7
R11A Troy Canyon, C 130.74 44 *e*PKPdf PKPdf 11 18 12.3 +2.1
PDAR Pinedale Array 132.15 36 PKP PKPdf 11 18 13.6 +0.7
comp=Z,0.4nm,0.5s,baz=141,slow=1.9,SNR=4.5
PLCA Paso Flores 132.64 183 PKP PKPdf 11 18 15.5 +1.9
comp=Z,1.5nm,0.8s,baz=3.4,slow=4.0,SNR=3.5
ULM Lac du Bonnet 132.83 19 PKP PKPdf 11 18 13.9 +0.3
comp=Z,1.0nm,0.4s,baz=285,slow=6.8,SNR=3.8
U15A North Rim 133.97 45 *e*PKPdf PKPdf 11 18 16.7 +0.1
C31A Landman Farms, 134.24 23 P PKPdf 11 18 16.6 +0.3
baz=326
RSSD Black Hills 134.26 31 P PKPdf 11 18 17.0 +0.2
baz=316
RSSD Black Hills 134.26 31 *e*PKIKP PKPdf 11 18 18.0 +1.2
RSSD Black Hills 134.26 31 *e*PKPdf PKPdf 11 18 18.0 +1.2
O20A White River Ci 134.55 38 P PKPdf 11 18 18.6 +1.2
baz=308
O20A White River Ci 134.55 38 *e*PKPdf PKPdf 11 18 18.8 +1.4
VLDQ Val d'Or 138.68 4 *e*PKPdf PKPdf 11 18 23.4 -1.0
ANMO Albuquerque 138.76 43⇑ *i*PKIKP PKPdf 11 18 27.1 +1.8
ANMO pmax pmax
comp=Z,2.0nm,1.7s
LMQ La Malbaie 139.29 357 *e*PKPdf PKPdf 11 18 26.2 +0.6
PKME Peaks-Kenny Pk 141.49 355 *e*PKPpre PKPpre 11 18 23.5
Q34A Chapman 141.68 30 P PKPpre 11 18 25.4
baz=321
PLVO Plevna 141.77 4 *e*PKPpre PKPpre 11 18 24.7
R34A Isabella, Hill 142.00 31 P PKPpre 11 18 25.8
baz=320
N39A Derby Farms, D 142.07 24 P PKPpre 11 18 25.8
baz=328
LONY Lake Ozonia 142.30 1 *e*PKPpre PKPpre 11 18 26.4
LONY *e*PKPdf PKPpre 11 18 26.6
P38A Dawn 142.70 26 P PKPdf 11 18 29.2 -2.8
baz=326
R36A Gordon, Harris 142.85 29 P PKPpre 11 18 28.2
baz=322
MDV Middlebury 142.93 360 *e*PKPpre PKPpre 11 18 28.5
S35A Otter Creek Ra 142.94 31 P PKPpre 11 18 28.8
baz=321
NCB Newcomb 142.96 1 *e*PKPpre PKPpre 11 18 28.8
O40A La Belle 142.97 24 P PKPpre 11 18 28.7
baz=329
R37A Teagarden Farm 143.18 28 P PKPab 11 18 28.7 0.0
baz=323
Q38A Cooks Store, C 143.21 27 P PKPbc 11 18 29.5 -0.6
baz=326
U34A Anderson Ranch 143.24 33 P PKPbc 11 18 30.1 -0.3
baz=318
S36A Lake Cedric, C 143.27 30 P PKPab 11 18 29.0 -0.1
baz=322
O41A Passleys Farm, 143.36 22 P PKPab 11 18 29.7 +0.4
baz=330
P40A Paris 143.40 24 P PKPab 11 18 30.0 +0.5
baz=328
Q39A Willow Grove F 143.42 26 P PKPab 11 18 30.1 +0.5
baz=326
CPUP Villa Florida 143.50 205 PKP PKPbc 11 18 32.0 +0.7
comp=Z,3.0nm,0.5s,baz=158,slow=3.3,SNR=13
CPUP Villa Florida 143.50 205 *e*PKIKP PKPbc 11 18 32.2 +0.9
CPUP Villa Florida 143.50 205 *e*PKPdf PKPbc 11 18 32.2 +0.9
ACCN Adirondack Com 143.55 0 *e*PKPpre PKPpre 11 18 30.6
HDIL Hopedale 143.55 20 P PKPab 11 18 30.2 +0.1
baz=333
HDIL Hopedale 143.55 20 *e*PKPpre PKPpre 11 18 30.5
S37A Fort Scott 143.62 29 P PKPab 11 18 30.5 +0.1
baz=323
P41A Barry, Barry 143.67 23 P PKPab 11 18 30.7 +0.2
baz=330
X32A Elmer 143.68 37 P PKPbc 11 18 32.1 +0.5
baz=314
V34A Guthrie 143.69 34 P PKPbc 11 18 31.2 -0.4
baz=317
V34A Guthrie 143.69 34 *e*PKPdf PKPbc 11 18 31.5 -0.1
R38A Fenwick Farm, 143.71 28 P PKPab 11 18 30.2 -0.5
baz=324
U35A Pawnee 143.72 32 P PKPbc 11 18 31.4 -0.2
baz=319
WMOK Wichita Mounta 143.76 36 P PKPbc 11 18 31.5 -0.3
baz=314
WMOK Wichita Mounta 143.76 36 *e*PKIKP PKPbc 11 18 31.7 -0.2
WMOK Wichita Mounta 143.76 36 *e*PKPdf PKPbc 11 18 31.7 -0.2
Q40A Laux Farm, Aux 143.84 25 P PKPab 11 18 31.5 +0.3
baz=328
TX31 Lajitas Ar. Si 143.84 48 *e*PKPdf PKPdf 11 18 33.5 -0.9
TXAR Lajitas Array 143.84 48 PKP PKPdf 11 18 33.5 -1.0
comp=Z,1.2nm,0.4s,baz=289,slow=0.5,SNR=41
MMNY Mt. Morris Dam 143.99 5 *e*PKPpre PKPab 11 18 31.9 +0.3
R39A Chumby, Stover 144.00 26 P PKPab 11 18 31.7 -0.2
baz=326
P42A Winchester 144.02 22 P PKPab 11 18 31.7 -0.2

	baz=331							
T37A	Cheneyville 18	144.08	30	P		PKPab	11 18 32.2	0.0
	baz=322							
V35A	Meyer Ranch, C	144.12	33	P		PKPbc	11 18 33.1	+0.2
	baz=318							
S38A	Stockton	144.16	28	P		PKPab	11 18 31.7	-0.7
	baz=324							
TRY	Troy	144.20	0	ePKPdf		PKPbc	11 18 33.1	+0.2
R40A	Maddies Statio	144.35	26	P		PKPab	11 18 33.0	-0.2
	baz=327							
HRV	Adam Dziewonsk	144.38	357	ePKIKP		PKPab	11 18 33.2	+0.1
HRV	Adam Dziewonsk	144.38	357	ePKPdf		PKPab	11 18 33.2	+0.1
S39A	Bolivar	144.38	27	P		PKPab	11 18 33.2	-0.2
	baz=325							
SFIN	Lafayette	144.42	18	P		PKPab	11 18 33.3	0.0
	baz=336							
SFIN	Lafayette	144.42	18	ePKPdf		PKPbc	11 18 33.8	+0.2
T38A	Diamond	144.45	29	P		PKPab	11 18 33.4	-0.2
	baz=323							
WES	Weston	144.49	357	ePKIKP		PKPab	11 18 33.4	-0.1
WES	Weston	144.49	357	ePKPdf		PKPab	11 18 33.4	-0.1
BCX	Boston College	144.53	357	ePKPdf		PKPab	11 18 33.7	0.0
Q42A	Golden Eagle	144.53	23	P		PKPab	11 18 33.7	-0.2
	baz=330							
U37A	Salina	144.54	31	P		PKPab	11 18 33.8	-0.2
	baz=321							
W35A	Tecumseh	144.55	34	P		PKPab	11 18 34.0	0.0
	baz=318							
TUL1	Leonard	144.57	32	P		PKPab	11 18 33.9	-0.1
	baz=320							
TUL1	Leonard	144.57	32	ePKPdf		PKPbc	11 18 34.4	+0.1
V36A	Jenks	144.58	32	P		PKPbc	11 18 34.2	-0.1
	baz=320							
QUA2	Belchertown	144.63	358	ePKPdf		PKPbc	11 18 34.5	+0.2
ABTX	Abilene, Hawle	144.66	40	ePKPdf		PKPdf	11 18 35.5	-0.2
BINY	Binghamton	144.66	3	ePKPdf		PKPbc	11 18 34.3	-0.1
Z33A	Whitaker Ranch	144.76	38	P		PKPbc	11 18 35.1	+0.1
	baz=313							
ALLY	Alegheny Colle	144.79	9	ePKPdf		PKPab	11 18 34.3	-0.4
S40A	Lebanon	144.83	27	P		PKPab	11 18 34.5	-0.5
	baz=326							
Q43A	New Douglas	144.83	22	P		PKPab	11 18 34.6	-0.4
	baz=332							
U38A	Gravette	144.88	30	P		PKPab	11 18 34.8	-0.4
	baz=322							
T39A	Clever	144.90	28	P		PKPab	11 18 35.0	-0.3
	baz=324							
Y34A	Reagan Ranch,	144.91	36	P		PKPbc	11 18 35.6	+0.1
	baz=315							
W36A	Watumka	144.92	33	P		PKPab	11 18 35.3	-0.1
	baz=318							
V37A	Hulbert	144.93	31	P		PKPab	11 18 35.0	-0.4
	baz=321							
BRYW	Bryant College	144.97	357	ePKPbc		PKPbc	11 18 35.1	-0.2
M54A	Oil Creek Stat	145.00	8	P		PKPbc	11 18 35.1	-0.4
	baz=349							
X35A	Drake	145.04	35	P		PKPbc	11 18 35.5	-0.3
	baz=317							
Q44A	Meyer Farm, Va	145.11	21	P		PKPbc	11 18 35.5	-0.3
	baz=333							
133A	Hamilton Ranch	145.13	39	P		PKPdf	11 18 36.8	+0.3
	baz=312							
S41A	Jillco Farms,	145.17	26	P		PKPbc	11 18 35.8	-0.4
	baz=327							
T40A	Mansfield	145.19	27	P		PKPbc	11 18 35.6	-0.7
	baz=326							
HHAR	Hobbs	145.22	30	ePKPbc		PKPbc	11 18 35.7	-0.6
Z34A	Collier Ranch,	145.22	37	P		PKPab	11 18 36.5	-0.1
	baz=314							
X36A	Centrahoma	145.27	34	P		PKPbc	11 18 36.5	-0.1
	baz=318							
KSPA	Keystone Colle	145.32	3	ePKPdf		PKPbc	11 18 36.4	0.0
V38A	Canehill	145.32	31	P		PKPbc	11 18 36.0	-0.7
	baz=322							
W37B	Quinton	145.35	32	P		PKPbc	11 18 36.7	0.0
	baz=320							
Y35A	Marietta	145.36	36	P		PKPdf	11 18 36.6	-0.3
	baz=316							
U39A	Green Forest	145.37	29	P		PKPbc	11 18 36.1	-0.7
	baz=324							
N54A	Moraine State	145.49	9	P		PKPdf	11 18 36.6	-0.3
	baz=349							
233A	Rising Star	145.53	40	P		PKPab	11 18 38.1	+0.3
	baz=312							
OLIL	Olney	145.59	20	ePKPdf		PKPbc	11 18 37.5	+0.1
YLE	Yale	145.61	359	ePKPdf		PKPdf	11 18 35.7	-1.3
T41A	Mountain View	145.61	26	P		PKPdf	11 18 37.1	-0.1
	baz=327							
ACSO	Alum Creek Sta	145.64	13	ePKPdf		PKPdf	11 18 37.3	+0.1
Z35A	Perchaven, San	145.65	37	P		PKPbc	11 18 37.7	0.0
	baz=315							
R44A	Waltonville	145.67	22	P		PKPbc	11 18 37.4	-0.2
	baz=332							
134A	White-Moore Ra	145.67	38	P		PKPab	11 18 38.7	+0.4
	baz=313							
U40A	Yellville	145.68	28	P		PKPdf	11 18 37.2	-0.1
	baz=325							
BLO	Bloomington	145.70	18	ePKP2		PKPbc	11 18 37.7	0.0
BLO	Bloomington	145.70	18	ePKPdf		PKPbc	11 18 37.7	0.0
V39A	Pettigrew	145.72	30	P		PKPdf	11 18 37.3	-0.2
	baz=323							
X37A	Clayton	145.79	33	P		PKPbc	11 18 38.2	0.0
	baz=319							
Y36A	Durant	145.80	35	P		PKPbc	11 18 38.1	-0.1
	baz=317							
ODNJ	Ogdensburg	145.83	1	ePKPdf		PKPbc	11 18 37.9	-0.2
W38A	Poteau	145.88	32	P		PKPbc	11 18 38.3	-0.1
	baz=321							
JCT	Junction City	145.92	43	P		PKPab	11 18 39.4	0.0
	baz=309							
JCT	Junction City	145.92	43	ePKP2		PKPbc	11 18 38.8	+0.1
JCT	Junction City	145.92	43	ePKPdf		PKPbc	11 18 38.8	+0.1
PAL	Palisades	145.92	0	ePKP2		PKPbc	11 18 38.4	+0.1
PAL	Palisades	145.92	0	ePKPdf		PKPbc	11 18 38.4	+0.1
333A	Richland Sprin	145.93	41	P		PKPab	11 18 39.1	-0.2
	baz=311							
N59A	State Game Lan	145.96	3	P		PKPbc	11 18 38.4	-0.1
	baz=356							
234A	Clairette	146.02	39	P		PKPab	11 18 39.5	-0.2
	baz=313							
X38A	Whitesboro	146.02	32	P		PKPbc	11 18 39.1	+0.2
	baz=320							
SSPA	Standing Stone	146.07	6	ePKPdf		PKPbc	11 18 38.6	-0.2
SIUC	Southern Illin	146.08	23	ePKPdf		PKPbc	11 18 39.0	+0.1
SIUC				ePKPbc		PKPab	11 18 39.2	-0.5
S44A	Carbondale	146.09	23	P		PKPbc	11 18 38.7	-0.3
	baz=331							
135A	Vickery Place,	146.09	38	P		PKPab	11 18 39.7	-0.1
	baz=314							
U41A	Viola	146.12	27	P		PKPbc	11 18 38.7	-0.4
	baz=326							
V40A	Witts Springs	146.15	29	P		PKPdf	11 18 38.5	+0.3
	baz=324							
Z36A	Blue Ridge	146.17	36	P		PKPbc	11 18 39.3	-0.1
	baz=316							
433A	Art	146.22	42	P		PKPbc	11 18 39.9	+0.2
	baz=310							
BRNJ	Basking Ridge	146.23	1	ePKPdf		PKPbc	11 18 39.6	+0.3
BDFB	Brasilia	146.28	228	PKPbc		PKPab	11 18 42.4	+1.2
	comp=Z,13nm,0.5s,baz=348,slow=27,SNR=24							
LUPA	Lehigh Univers	146.29	2	ePKPdf		PKPbc	11 18 39.4	-0.1
S45A	Carrier Mills	146.35	22	P		PKPbc	11 18 39.5	-0.3
	baz=332							
O56A	Blue Knob Stat	146.36	7	P		PKPbc	11 18 39.6	-0.2
	baz=351							
334A	Lometa	146.40	40	P		PKPbc	11 18 40.2	+0.1
	baz=312							
PBMO	Poplar Bluff	146.41	25	ePKPdf		PKPbc	11 18 39.5	-0.4
U42A	Revenden	146.42	26	P		PKPbc	11 18 39.7	-0.3
	baz=327							
WHTX	Lake Whitney,	146.45	39	P		PKPbc	11 18 40.6	+0.4
	baz=314							
WHTX	Lake Whitney,	146.45	39	ePKPdf		PKPbc	11 18 39.8	-0.4
V41A	Mountainview	146.47	28	P		PKPbc	11 18 39.5	-0.7
	baz=325							
W40A	Ferguson Farm,	146.52	30	P		PKPbc	11 18 39.9	-0.4
	baz=323							
X39A	Fountain Ranch	146.52	32	P		PKPbc	11 18 40.6	+0.3
	baz=321							
WCI	Wyandotte Cave	146.64	18	ePKP2		PKPbc	11 18 40.0	-0.6
WCI	Wyandotte Cave	146.64	18	ePKPdf		PKPbc	11 18 40.0	-0.6
Y38A	Idabel	146.64	33	P		PKPbc	11 18 40.4	-0.3
	baz=320							
136A	Ennis	146.68	37	P		PKPbc	11 18 41.3	+0.5
	baz=315							
533A	Kerrville	146.69	43	P		PKPbc	11 18 41.5	+0.5
	baz=309							
434A	Burnet	146.72	41	P		PKPbc	11 18 41.0	-0.1
	baz=311							
MIAR	Mount Ida	146.77	31	P		PKPbc	11 18 41.2	+0.1
	baz=322							
MIAR	Mount Ida	146.77	31	ePKP2		PKPbc	11 18 41.2	+0.1
MIAR	Mount Ida	146.77	31	ePKPbc		PKPbc	11 18 41.2	+0.1
X201	Greenbrier Sit	146.78	29	ePKPbc		PKPbc	11 18 41.1	0.0
MCWV	Mont Chateau	146.78	9	ePKPbc		PKPbc	11 18 41.1	+0.1
X301	Greenbrier Sit	146.80	29	ePKPdf		PKPdf	11 18 39.9	+0.7
V42A	Cord	146.81	27	P		PKPbc	11 18 41.5	+0.4
	baz=326							
WHAR	Wooly Hollow	146.82	29	ePKPdf		PKPdf	11 18 38.7	-0.6
MVL	Millersville	146.83	4	ePKPdf		PKPbc	11 18 41.1	0.0
W41B	Gary Mavity, V	146.93	29	P		PKPbc	11 18 41.7	+0.2
	baz=324							
335A	Moody	146.95	39	P		PKPbc	11 18 42.1	+0.4
	baz=313							
Y39A	Lockesburg	146.97	32	P		PKPbc	11 18 41.6	-0.1
	baz=320							
534A	Blanco	147.09	42	P		PKPbc	11 18 42.3	+0.2
	baz=310							
832A	Faith Ranch, C	147.12	46	P		PKPbc	11 18 43.0	+0.8
	baz=306							
435B	Jarrell	147.19	40	P		PKPbc	11 18 42.8	+0.5
	baz=312							
X40A	Basin Creek Fa	147.19	30	P		PKPbc	11 18 42.8	+0.6
	baz=323							
UALR	University of	147.21	29	ePKPbc		PKPbc	11 18 42.2	-0.1
336A	Riesel	147.25	39	P		PKPbc	11 18 43.1	+0.7
	baz=314							
GNAR	Gosnell	147.28	25	ePKPbc		PKPbc	11 18 43.1	+0.6
Y40A	Okolona	147.34	31	P		PKPbc	11 18 42.6	-0.1
	baz=322							
X41A	Kaden, Bauxite	147.35	30	P		PKPbc	11 18 42.8	+0.2
	baz=324							
SDMD	Soldier's Deli	147.38	5	ePKPbc		PKPbc	11 18 42.2	-0.4
237A	Washetta, Mont	147.44	37	P		PKPbc	11 18 43.9	+0.9
	baz=316							
833A	Chaparral WMA,	147.51	46	P		PKPab	11 18 44.5	-1.0
	baz=307							
WLAR	White Oak Lake	147.68	31	ePKPbc		PKPbc	11 18 44.0	+0.4
535A	Dale	147.69	41	P		PKPbc	11 18 44.5	+0.7
	baz=311							
436A	Wall Ranch, Ga	147.70	39	P		PKPbc	11 18 44.6	+0.9
	baz=313							
734A	La Parita Cree	147.78	44	P		PKPbc	11 18 45.2	+1.2
	baz=308							
Y41A	Eaglette Beard	147.79	31	P		PKPbc	11 18 44.1	+0.2
	baz=323							
ZAIG	Zacatecas	147.87	57	ePKPbc		PKPbc	11 18 44.3	-0.5
337A	Centerville	147.88	38	P		PKPab	11 18 45.7	-1.3
	baz=315							
635A	Leesville	147.97	42	P		PKPbc	11 18 45.7	+1.2
	baz=310							
WVT	Waverly	148.00	22	ePKP2		PKPbc	11 18 44.4	0.0
WVT	Waverly	148.00	22	ePKPbc		PKPbc	11 18 44.4	0.0
933A	Laredo	148.01	47	P		PKPab	11 18 46.3	-1.3
	baz=306							
X43A	Marvell	148.11	28	P		PKPbc	11 18 44.9	+0.1
	baz=326							
CCAR	Cane Creek	148.18	30	ePKPbc		PKPbc	11 18 45.9	+1.0
Z41A	Richland Creek	148.18	32	P		PKPbc	11 18 45.3	+0.4
	baz=322							
NATX	Nacogdoches	148.29	36	ePKPbc		PKPbc	11 18 46.0	+0.7
537A	Green Hill Far	148.47	40	P		PKPbc	11 18 47.1	+1.3
	baz=313							
934A	Benavides	148.56	46	P		PKPab	11 18 48.1	-1.7
	baz=307							
Y43A	Makayla and Ka	148.59	28	P		PKPbc	11 18 46.3	+0.4
	baz=326							
240A	Hunter Patters	148.60	34	P		PKPbc	11 18 47.5	+1.4
	baz=319							
Z42A	Norrel Spur, H	148.60	30	P		PKPbc	11 18 46.5	+0.5
	baz=323							
141A	Papa Simpson,	148.63	32	P		PKPbc	11 18 47.4	+1.2
	baz=321							
034A	Hebbronville	148.75	47	P		PKPab	11 18 48.7	-1.8
	baz=306							
OXF	Oxford	148.77	26	ePKP2		PKPbc	11 18 46.2	-0.2
OXF	Oxford	148.77	26	ePKPbc		PKPbc	11 18 46.2	-0.2
X45A	Uvalde Stati	148.85	26	P		PKPbc	11 18 46.4	-0.3
	baz=329							
Y44A	Strider, Charl	148.88	27	P		PKPbc	11 18 46.8	+0.1
	baz=327							
340A	Bronson	148.99	35	P		PKPbc	11 18 47.7	+0.6
	baz=318							
TZTN	Tazewell	149.00	16	ePKPbc		PKPbc	11 18 46.8	-0.2
241A	Mo Tay, Goldon	149.07	33	P		PKPbc	11 18 48.3	+1.0
	baz=320							
Y45A	Yeager Farm, C	149.26	27	P		PKPbc	11 18 48.4	+0.7
	baz=331							
Z44A	Pea Ridge, Bel	149.34	28	P		PKPbc	11 18 48.6	+0.7
	baz=326							
SWET	Sewanee	149.50	20	ePKPbc		PKPbc	11 18 47.7	-0.6
Y46A	Houston	149.54	26	P		PKPbc	11 18 48.7	+0.3
	baz=329							
PB10	IPOC Station P	149.75	185	ePKPbc		PKPbc	11 18 50.7	+1.5
CPCT	Cooper Cave	149.75	18	ePKPbc		PKPbc	11 18 49.3	+0.4
TKL	Tuckaleechee C	149.77	17	ePKP2		PKPbc	11 18 49.1	+0.2
TKL	Tuckaleechee C	149.77	17	ePKPbc		PKPbc	11 18 49.1	+0.2
Y47A	UCPARC, Winfie	149.95	24	P		PKPbc	11 18 49.4	0.0
	baz=331							
Z46A	Louisville	150.09	26	P		PKPbc	11 18 50.2	+0.4
	baz=328							
145A	Houston Renfro	150.14	29	P		PKPbc	11 18 50.6	+0.8
	baz=326							
244A	Avery, Jackson	150.22	30	P		PKPbc	11 18 50.9	+0.8
	baz=324							
LVC	Limon Verde	150.43	189	ePKPbc		PKPbc	11 18 53.1	+1.7
Z47A	Carrollton	150.47	25	P		PKPbc	11 18 51.2	+0.5
	baz=330							
146A	Union	150.51	27	P		PKPbc	11 18 51.6	+0.8
	baz=328							
Z48A	Northport	150.53	24	P		PKPbc	11 18 50.2	-0.6
	baz=331							
147A	Livingston	150.83	26	P		PKPbc	11 18 51.9	+0.4
	baz=329							
LRAL	Lakeview Retre	151.05	24	ePKPbc		PKPbc	11 18 52.1	+0.1
JSC	Jenkinsville	151.73	14	ePKIKP		PKPbc	11 18 52.5	-1.0
JSC	Jenkinsville	151.73	14	ePKPbc		PKPbc	11 18 52.5	-1.0
GOGA	Godfrey	151.96	18	ePKIKP		PKPbc	11 18 54.6	+0.5
GOGA	Godfrey	151.96	18	ePKPbc		PKPbc	11 18 54.6	+0.5
PB01	IPOC Station P	152.06	188	ePKPbc		PKPbc	11 18 56.2	+1.4
NHSC	New Hope	153.10	12	ePKPbc		PKPbc	11 18 56.1	-0.5
PB11	IPOC Station P	153.34	188	ePKPbc		PKPbc	11 18 59.1	+1.4
LPAZ	La Paz	156.45	193	PKPab		PKPab	11 19 25.1	+1.4
	comp=Z,2.0nm,0.8s,baz=154,slow=4.5,SNR=6.0							
PTGA	Pitinga	164.51	242	ePKPab		PKPab	11 19 59.6	+1.2
HUMP	Col San Antoni	166.43	327	ePKPdf		PKPdf	11 19 05.3	+0.7

WEL 17 11:00:08.7±0.3, 39.12S×175.01E, h176km±2km, ML3.5/18, 5C-10D, Error ellipse: s-maj=2.1km s-min=1.9km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VRZ	Vera Road	0.20	269	PN	Pn	11 00 31.5	-0.6
VRZ				SN	Sn	11 00 48.4	-1.6
PKVZ	Pokaka	0.31	123	PN	Pn	11 00 32.3	-0.2
PKVZ				SN	Sn	11 00 49.7	-1.0
TWVZ	Taurewa	0.33	81	↓PN	Pn	11 00 32.1	-0.5
FWVZ	Far West T-bar	0.44	108	↓PN	Pn	11 00 32.8	-0.2
FWVZ				SN	Sn	11 00 50.7	-1.1
WTVZ	West Tongariro	0.45	89	PN	Pn	11 00 32.7	-0.3
KRVZ	Karewarewa	0.49	87	↓PN	Pn	11 00 32.9	-0.3
KRVZ				SN	Sn	11 00 50.9	-0.9
WNVZ	Wahianoa	0.50	114	PN	Pn	11 00 33.2	-0.1
OTVZ	Oturere	0.51	95	PN	Pn	11 00 33.3	0.0
TUVZ	Tukino	0.52	107	PN	Pn	11 00 33.3	0.0
WAZ	Wanganui	0.63	182	PN	Pn	11 00 34.1	+0.4
WAZ				SN	Sn	11 00 52.6	-0.5
MOVZ	Moawhango	0.64	117	↓PN	Pn	11 00 33.3	-0.5
MOVZ				SN	Sn	11 00 51.1	-2.0
RATZ	Rangitukua	0.64	67	PN	Pn	11 00 33.2	-0.6
PREZ	Palmer Road	0.70	251	PN	Pn	11 00 34.0	-0.1
KHEZ	Kahui Hut	0.80	257	PN	Pn	11 00 34.6	0.0
NWEZ	Newall Road	0.90	260	PN	Pn	11 00 35.2	0.0
MRHZ	Matea Rd	1.13	76	↓PN	Pn	11 00 36.0	-1.1
MRHZ				AML	AML	11 00 36.5	
MRHZ				AML	AML	11 00 39.3	
KWHZ	Kaweka Forest	1.14	106	PN	Pn	11 00 37.1	0.0
KWHZ				AML	AML	11 00 59.6	
KWHZ				AML	AML	11 01 00.4	
BKZ	Black Stump Fm	1.15	93	↓PN	Pn	11 00 36.5	-0.7
KRHZ	Kereru	1.17	117	PN	Pn	11 00 37.4	-0.1
KRHZ				AML	AML	11 01 00.4	
TSZ	Takapari Road	1.19	142	PN	Pn	11 00 37.6	+0.1
PNHZ	Pukenui	1.21	131	↑PN	Pn	11 00 37.8	0.0
PNHZ				AML	AML	11 00 59.8	
MCHZ	McNeill Hill	1.35	104	PN	Pn	11 00 39.3	+0.4
NMHZ	Naumai	1.40	90	PN	Pn	11 00 39.6	+0.2
WPHZ	Waipukurau	1.45	131	PN	Pn	11 00 39.9	0.0
DVHZ	Dannevirke	1.47	143	PN	Pn	11 00 39.8	-0.2
DVHZ				AML	AML	11 01 03.9	
MUGZ	Murupara	1.52	65	↓PN	Pn	11 00 38.9	-1.6
ARHZ	Aropaoanui	1.55	96	PN	Pn	11 00 40.8	0.0
KAHZ	Kahuranaki	1.59	116	PN	Pn	11 00 41.4	+0.2
MRZ	Mangatainoka R	1.60	164	PN	Pn	11 00 41.1	-0.2
MRZ				AML	AML	11 01 05.6	
MRZ				AML	AML	11 01 06.3	
PXZ	Pawanui	1.69	123	↓PN	Pn	11 00 42.1	-0.1
PRHZ	Porangahau	1.69	133	PN	Pn	11 00 42.3	0.0
PRHZ				AML	AML	11 01 07.4	
OGWZ	Otaki Gorge	1.70	176	↑PN	Pn	11 00 42.2	-0.1
OGWZ				AML	AML	11 01 06.7	
OGWZ				AML	AML	11 01 08.4	
KIW	Kapiti Island	1.74	183	PN	Pn	11 00 42.3	-0.5
TIWZ	Tintock	1.78	158	PN	Pn	11 00 43.1	-0.1
TIWZ				AML	AML	11 01 08.3	
TIWZ				AML	AML	11 01 08.5	
BFZ	Birch Farm	1.82	149	PN	Pn	11 00 43.2	-0.4
SNGZ	Shannon Statio	1.85	80	PN	Pn	11 00 43.1	-0.8
URZ	Urewera	1.85	63	↓PN	Pn	11 00 42.1	-1.8
DUWZ	D'Urville Isla	1.88	206	↑PN	Pn	11 00 43.4	-0.8
CAW	Cannon Point	1.98	179	PN	Pn	11 00 44.8	-0.5
CAW				AML	AML	11 01 13.1	
CAW				AML	AML	11 01 13.2	
MTW	Mount Morrison	2.07	170	PN	Pn	11 00 45.4	-0.8
KNZ	Kokohu	2.07	88	PN	Pn	11 00 45.2	-1.0
TMWZ	Te Maipa	2.09	162	AML	AML	11 01 15.2	
MWZ	Matawai	2.12	69	PN	Pn	11 00 45.3	-1.6
TCW	Tory Channel	2.16	195	PN	Pn	11 00 46.7	-0.5
TCW				AML	AML	11 01 16.5	
TCW				AML	AML	11 01 16.9	
WEL	Wellington	2.17	185	↓PN	Pn	11 00 46.5	-0.8
RIGZ	Rimuhau	2.18	80	PN	Pn	11 00 46.6	-0.9
RIGZ				AML	AML	11 01 15.1	
RIGZ				AML	AML	11 01 17.0	
MHGZ	Mahia Peninsul	2.25	92	PN	Pn	11 00 47.7	-0.6
PAWZ	Paruwai Farm	2.28	172	AML	AML	11 01 17.0	
MSWZ	Moikau Station	2.30	176	PN	Pn	11 00 47.9	-0.9
MSWZ				AML	AML	11 01 17.4	
MSWZ				AML	AML	11 01 19.1	
TKGZ	Te Karaka	2.32	74	PN	Pn	11 00 48.0	-1.0
TKGZ				AML	AML	11 01 18.1	
TKGZ				AML	AML	11 01 18.2	
RUGZ	Raukumara Rang	2.39	62	PN	Pn	11 00 47.5	-2.5
NNZ	Nelson	2.44	210	PN	Pn	11 00 49.2	-1.2
TUWZ	Tuamarina	2.45	199	PN	Pn	11 00 49.7	-0.8
PLWZ	Palliser	2.45	176	PN	Pn	11 00 49.4	-1.2
TWGZ	Tauwhareparae	2.51	69	PN	Pn	11 00 50.1	-1.2
TWGZ				AML	AML	11 01 22.2	
TWGZ				AML	AML	11 01 23.6	
QRZ	Quartz Range	2.56	227	↑PN	Pn	11 00 49.9	-2.0
HAZ	Te Kaha	2.57	59	↑PN	Pn	11 00 49.5	-2.4
BSWZ	Blackbirch Sta	2.73	198	PN	Pn	11 00 53.1	-0.7
WMGZ	Waiomatatini S	2.97	65	PN	Pn	11 00 54.7	-2.0
WMGZ				AML	AML	11 01 30.3	
WMGZ				AML	AML	11 01 30.9	
DSZ	Denniston Nort	3.59	222	PN	Pn	11 01 01.9	-2.5
LTZ	Lake Taylor	4.21	209	PN	Pn	11 01 09.7	-2.5
INZ	Inchbonnie	4.50	216	PN	Pn	11 01 14.0	-2.0
OXZ	Oxford	4.76	207	PN	Pn	11 01 16.4	-3.0
MQZ	McQueen's Vall	4.91	200	PN	Pn	11 01 17.9	-3.4
ODZ	Otahua Downs	6.75	207	PN	Pn	11 01 42.6	-2.8

*ISCJB **17** 11:10:17.8±0.8, 37.81N±0.04×143.34E±0.07, h33km, mb3.7/4, Error ellipse: s-maj=7.6km s-min=5.7km az=18.7*
*IDC **17** 11:10:17.0±2.4, 37.53N×143.51E, h0km, mb3.7/4, mb1 3.8/6, mb1mx3.5/50, mbtmp3.7/6, ML3.4/2, Error ellipse: s-maj=57.2km s-min=26.7km az=64.0*
*JMA **17** 11:10:18.9±0.2, 37.79N×143.22E, h41km, M3.7*
ISC 17 11:10:20.6±1.2, 37.77N±0.05×143.36E±0.09, h35km, n25, σ2.553/30, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	1.73	294	P	Pn	11 10 46.0	-2.1
JIO				eS	Sn	11 11 06.2	-2.7
OFUJ	Ofunato	1.87	315	P	Pn	11 10 48.0	-2.0
OFUJ				eS	Sn	11 11 09.6	-2.7
JFK	Kawauchi	2.02	259	P	Pn	11 10 49.6	-2.5
JFK				eS	Sn	11 11 13.1	-3.0
JMM	Marumori	2.04	274	P	Pn	11 10 50.2	-2.1
JMM				eS	Sn	11 11

*NEIC **17** 11:39:51.1±0.9,35°.25S×179°.72E,h84km±8km,mb5.2/71, Error ellipse: s-maj=8.4km s-min=6.6km az=173.0*
*GCMT **17** 11:39:51.1±0.4,34°.94S×179°.76W,h42km±1km,MW5.0/46, Moment Tensor Solution. s40,c56; s46,c62; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.98±.20; $M_{\theta\theta}$0.24±.17; $M_{\phi\phi}$-3.22±.13; $M_{r\theta}$0.18±.15; $M_{\theta\phi}$-1.10±.13; $M_{\phi r}$1.12±.13; Best double couple: M_o3.45300×10^{16} NP1:ϕ_s13.00000°,δ55.00000°,λ87.00000°. NP2: ϕ_s199.00000°,δ36.00000°,λ95.00000°. Principal axes: T 3.1760, Plg80.0000°, Azm269.0000°; N 0.5510, Plg3.0000°, Azm15.0000°; P -3.7300, Plg10.0000°, Azm106.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **17** 11:39:53.5±3.6,34°.81S×179°.87E,h104km±30km, mb4.5/14,mb1 4.6/15,mb1mx4.5/24,mbtmp4.8/15, MS4.0/17,Mx1 4.0/17,ms1mx3.9/27 Error ellipse: s-maj=15.1km s-min=14.3km az=136.0*
ISC 17 11:39:45.3±0.2,35°.01S±0°.04×180°.00E±0°.05,h35km,n503, σ1ᵍ91/519,mb5.3/90,MS4.0/16,6C-8D,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	2.89	208	*e*Pn		Pn	11 40 30.9	+2.2
MXZ	Matakaoa Point	2.89	208	PN		Pn	11 40 29.6	+0.8
MXZ				SN		Sn	11 41 04.9	+2.6
MXZ				T		T	11 43 07.6	
WMGZ	Waiomatatini S	3.08	204	PN		Pn	11 40 34.1	+2.7
PKGZ	Pakihiroa	3.26	208	PN		Pn	11 40 35.6	+1.6
HAZ	Te Kaha	3.27	213	PN		Pn	11 40 34.4	+0.4
PUZ	Puketiti	3.36	204	PN		Pn	11 40 36.8	+1.5
PUZ				SN		Sn	11 41 19.5	+5.6
WIZ	White Island	3.38	221	PN		Pn	11 40 37.1	+1.5
RUGZ	Raukumara Rang	3.49	212	PN		Pn	11 40 39.2	+2.1
TWGZ	Tauwhareparae	3.55	207	PN		Pn	11 40 39.8	+1.9
WHRZ	Whale Island	3.74	220	PN		Pn	11 40 43.1	+2.6
CNGZ	Carnagh Statio	3.75	202	PN		Pn	11 40 42.4	+1.8
CNGZ				SN		Sn	11 41 31.1	+7.5
TKGZ	Te Karaka	3.83	206	PN		Pn	11 40 42.9	+1.2
MWZ	Matawai	3.86	210	PN		Pn	11 40 43.7	+1.4
KUZ	Kuaotunu	3.88	242	PN		Pn	11 40 45.0	+2.6
GRZ	Great Barrier	3.90	250	PN		Pn	11 40 45.3	+2.6
OPRZ	Ohinepanea	3.96	224	PN		Pn	11 40 45.4	+1.8
URZ	Urewera 69nm,0.3s,baz=120,slow=2.9,SNR=225	3.98	215	P		Pn	11 40 45.8	+2.0
URZ	 152nm,0.3s,baz=149,slow=21,SNR=12			S		Sn	11 41 30.1	+0.8
URZ	Urewera	3.98	215	*e*Pn		Pn	11 40 46.1	+2.2
URZ				S		Sn	11 41 30.1	+0.8
URZ				eSn		Sn	11 41 31.6	+2.3
URZ	Urewera	3.98	215	PN		Pn	11 40 45.7	+1.8
MARZ	Manawahe	4.00	221	PN		Pn	11 40 45.9	+1.9
RAGZ	Rawiri	4.05	210	PN		Pn	11 40 46.0	+1.2
TGRZ	Tauranga	4.05	227	PN		Pn	11 40 47.3	+2.5
RIGZ	Rimuhau	4.10	205	PN		Pn	11 40 46.3	+0.8
OMRZ	Omania	4.25	222	PN		Pn	11 40 50.3	+2.7
PRGZ	Paritu Road	4.25	203	PN		Pn	11 40 48.4	+0.9
KARZ	Kaharoa	4.26	224	PN		Pn	11 40 50.2	+2.5
TARZ	Mount Tarawera	4.27	220	PN		Pn	11 40 50.9	+3.0
MUGZ	Murupara	4.32	216	PN		Pn	11 40 49.5	+1.1
KMRZ	Kaimai	4.32	228	PN		Pn	11 40 51.2	+2.7
SNGZ	Shannon Statio	4.32	209	PN		Pn	11 40 50.4	+1.9
WIAZ	Waiheke Island	4.33	244	PN		Pn	11 40 52.0	+3.4
RRRZ	Republican Roa	4.34	219	PN		Pn	11 40 50.3	+1.5
HLRZ	Highlands Stat	4.36	221	PN		Pn	11 40 51.9	+2.8
UTU	Utuhina	4.40	233	PN		Pn	11 40 52.9	+3.4
KNZ	Kokohu	4.41	204	PN		Pn	11 40 47.9	-1.8
MKAZ	Moumakai	4.44	241	PN		Pn	11 40 53.5	+3.4
MHGZ	Mahia Peninsul	4.46	201	PN		Pn	11 40 50.9	+0.5
ABAZ	Army Bay	4.49	248	PN		Pn	11 40 54.4	+3.7
HRRZ	Handcock Road	4.50	220	PN		Pn	11 40 54.4	+3.4
PRRZ	Plateau Road	4.53	219	PN		Pn	11 40 53.5	+2.2
TOZ	Tahuroa Road	4.53	232	PN		Pn	11 40 54.3	+3.0
ETAZ	East Tamaki Re	4.54	243	PN		Pn	11 40 55.5	+4.0
ALRZ	Allen Road	4.60	219	PN		Pn	11 40 54.6	+2.3
WHHZ	Waihua	4.62	208	PN		Pn	11 40 54.7	+2.2
KBAZ	Karaka Road Bo	4.63	242	PN		Pn	11 40 57.1	+4.4
WPRZ	Whakapapatarin	4.66	220	PN		Pn	11 40 55.9	+2.7
WCZ	Waipu Caves	4.71	257	PN		Pn	11 40 57.1	+3.3
RVAZ	Riverhead Bore	4.74	247	PN		Pn	11 40 58.4	+4.3
MRHZ	Matea Rd	4.77	216	PN		Pn	11 40 55.6	+0.9
AWAZ	Awhitu Peninsu	4.80	243	PN		Pn	11 40 59.3	+4.3
WTAZ	Waiatarua	4.80	245	*e*Pn		Pn	11 40 59.4	+4.4
NMHZ	Naumai	4.81	211	PN		Pn	11 40 56.3	+1.0
KUTZ	Kaahu Road	4.82	223	PN		Pn	11 40 57.9	+2.5
ARHZ	Aropaoanui	4.87	209	PN		Pn	11 40 56.9	+0.8
TLZ	Tolley Road	4.88	226	PN		Pn	11 40 59.0	+2.8
BKZ	Black Stump Fm	5.00	213	*e*Pn		Pn	11 40 58.9	+1.0
BKZ	Black Stump Fm	5.00	213	PN		Pn	11 40 58.1	+0.2
WATZ	Wairara	5.03	222	PN		Pn	11 41 00.2	+2.0
RATZ	Rangitukua	5.12	220	PN		Pn	11 41 01.3	+1.8
MCHZ	McNeill Hill	5.15	210	PN		Pn	11 41 00.7	+0.8
RITZ	Rihia Road	5.16	219	PN		Pn	11 41 01.8	+1.8
KATZ	Kakaramea	5.24	220	PN		Pn	11 41 03.0	+1.7
KWHZ	Kaweka Forest	5.25	212	PN		Pn	11 41 01.3	0.0
OUZ	Omahuta	5.25	266	*e*Pn		Pn	11 41 03.9	+2.6
OUZ	Omahuta	5.25	266	PN		Pn	11 41 04.2	+2.9
KRVZ	Karewarewa	5.36	219	PN		Pn	11 41 04.2	+1.3
KAHZ	Kahuranaki	5.38	207	PN		Pn	11 41 02.3	-0.8
OTVZ	Oturere	5.40	219	PN		Pn	11 41 04.7	+1.2
WTVZ	West Tongariro	5.40	219	PN		Pn	11 41 04.7	+1.2
HIZ	Hauiti	5.41	228	*e*Pn		Pn	11 41 06.8	+3.3
HIZ	Hauiti	5.41	228	PN		Pn	11 41 06.4	+3.0
NGZ	Ngauruhoe	5.44	219	PN		Pn	11 41 05.1	+1.1
TWVZ	Taurewa	5.45	221	PN		Pn	11 41 05.3	+1.3
KRHZ	Kereru	5.45	211	PN		Pn	11 41 04.6	+0.5
TUVZ	Tukino	5.48	218	PN		Pn	11 41 08.9	+4.3
FWVZ	Far West T-bar	5.53	219	PN		Pn	11 41 05.7	+0.5
WHVZ	Whangaehu Hut	5.53	218	PN		Pn	11 41 06.7	+1.4
MOVZ	Moawhango	5.54	216	PN		Pn	11 41 05.3	0.0
WNVZ	Wahianoa	5.56	218	PN		Pn	11 41 05.7	+0.1
PXZ	Pawanui	5.59	206	PN		Pn	11 41 04.8	-1.2
PNHZ	Pukenui	5.75	211	PN		Pn	11 41 07.5	-0.7
WPHZ	Waipukurau	5.78	208	PN		Pn	11 41 07.6	-0.9
VRZ	Vera Road	5.86	224	PN		Pn	11 41 11.6	+1.9
PRHZ	Porangahau	5.88	206	PN		Pn	11 41 10.2	+0.3
TSZ	Takapari Road	5.97	211	PN		Pn	11 41 11.9	+0.7
RAO	Raoul Island 47nm,0.3s,baz=252,slow=19,SNR=3.1	6.01	18	P		Pn	11 41 09.6	-2.1
RAO	 106nm,0.3s,baz=73,slow=19,SNR=2.6			S		Sn	11 42 16.8	-2.5
RAO	 comp=Z,1μm,21.0s,baz=186,slow=36			LR		LR	11 43 26.0	
DVHZ	Dannevirke	6.09	209	PN		Pn	11 41 11.9	-0.9
WAZ	Wanganui	6.19	219	PN		Pn	11 41 15.0	+0.8
POWZ	Post Office Ro	6.33	211	PN		Pn	11 41 15.9	-0.1
OHWZ	Ohakea	6.38	214	PN		Pn	11 41 18.7	+2.0
BFZ	Birch Farm	6.39	207	PN		Pn	11 41 14.6	-2.2
TIWZ	Tintock	6.61	208	PN		Pn	11 41 20.2	+0.3
MRZ	Mangatainoka R	6.63	211	PN		Pn	11 41 18.3	-1.9
TMWZ	Te Maipa	6.89	207	PN		Pn	11 41 21.1	-2.7
OGWZ	Otaki Gorge	6.94	212	PN		Pn	11 41 22.9	-1.5
MTW	Mount Morrison	7.08	209	PN		Pn	11 41 24.7	-1.7
KIW	Kapiti Island	7.09	213	PN		Pn	11 41 24.9	-1.6
KIW				SN		Sn	11 42 41.3	-4.4
CAW	Cannon Point	7.22	211	PN		Pn	11 41 26.1	-2.2
TRWZ	Traveller	7.22	207	SN		Sn	11 42 45.9	-3.1
DUWZ	D'Urville Isla	7.51	218	PN		Pn	11 41 29.7	-2.6
PLWZ	Palliser	7.53	208	PN		Pn	11 41 33.1	+0.5
SNZO	South Karori	7.54	212	*e*Pn		Pn	11 41 30.0	-2.6
TUWZ	Tuamarina	7.98	215	PN		Pn	11 41 35.7	-3.0
NNZ	Nelson	8.09	218	PN		Pn	11 41 38.1	-2.2
QRZ	Quartz Range	8.27	223	PN		Pn	11 41 40.0	-2.8
KHZ	Kahutara	8.95	212	*e*Pn		Pn	11 41 48.2	-3.7
KHZ	Kahutara	8.95	212	PN		Pn	11 41 48.3	-3.7
RPZ	Rata Peaks 2.8nm,0.3s,baz=358,slow=4.6,SNR=9.5	11.10	216	P		Pn	11 42 16.5	-5.0
RPZ	 4.7nm,0.3s,baz=129,slow=22,SNR=7.5			S		Sn	11 44 13.6	-11
RPZ	Rata Peaks	11.10	216	*e*Pn		Pn	11 42 17.3	-4.2
RPZ				S		Sn	11 44 13.6	-11
FOZ	Fox Glacier	11.59	220	*e*Pn		Pn	11 42 26.1	-2.0
LBZ	Lake Benmore	12.02	216	*e*Pn		Pn	11 42 32.0	-2.1
ODZ	Otahua Downs	12.31	213	*e*Pn		Pn	11 42 32.9	-5.0
WKZ	Wanaka	12.91	217	*e*Pn		Pn	11 42 42.5	-3.8
MLZ	Mavora Lakes	13.74	218	*e*Pn		Pn	11 42 55.2	-2.4
WHZ	Wether Hill Ro	14.20	216	*e*Pn		Pn	11 43 01.0	-2.9
DCZ	Deep Cove	14.30	219	*e*Pn		Pn	11 43 02.9	-2.3
MSVF	Nonsavu	17.30	354	*e*P		Pn	11 43 43.8	-0.4
MSVF					pmax	pmax		
	comp=Z,296nm,2.0s							
MSVF	**Nonsavu**	**17.30**	**354**	*e*Pn		**Pn**	**11 43 43.8**	**-0.4**
	comp=Z,296nm,2.0s							
DZM	**Mont Dzumac**	**17.53**	**314**	P		**P**	**11 43 50.1**	**+2.3**
DZM	comp=Z,1.8nm,0.3s,baz=126,slow=14,SNR=5.7				LR	LR	11 49 14.6	
	comp=Z,2μm,21.4s,baz=208,slow=32							
DZM	**Mont Dzumac**	**17.53**	**314**	*e*LR		LR	11 47 57.8	
	comp=Z,2μm,23.8s							
DZM	**Mont Dzumac**	**17.53**	**314**	*e*Pn		**P**	**11 43 49.7**	**+1.8**
	comp=Z,97nm,1.4s							
AFI	**Afiamalu**	**22.29**	**21**	P		**P**	**11 44 40.2**	**+0.5**
	comp=Z,24nm,0.6s,baz=124,slow=2.5,SNR=6.8							
AFI	**Afiamalu**	**22.29**	**21**	*e*P		**P**	**11 44 40.4**	**+0.7**
AFI	comp=Z,135nm,1.4s				pmax	pmax		
AFI	**Afiamalu**	**22.29**	**21**	*e*P		**P**	**11 44 40.4**	**+0.7**
	comp=Z,134nm,1.4s							
RAR	**Rarotonga**	**22.47**	**58**	P		**P**	**11 44 43.4**	**+1.9**
	comp=Z,18nm,0.6s,baz=259,slow=4.1,SNR=3.8							
RAR	comp=Z,185nm,20.8s,baz=207,slow=32				LR	LR	11 51 44.9	
RAR	**Rarotonga**	**22.47**	**58**	*e*P		**P**	**11 44 46.4**	**+4.9**
RAR	comp=Z,300nm,1.9s				pmax	pmax		
RAR	**Rarotonga**	**22.47**	**58**	*e*P		**P**	**11 44 46.4**	**+4.9**
	comp=Z,300nm,1.9s							
MGCD	**Mangrove Creek**	**23.95**	**266**	P		**P**	**11 44 60.0**	**+3.7**
	baz=25,SNR=9.1							
ARMA	**Armidale**	**24.27**	**273**	P		**P**	**11 45 03.1**	**+3.8**
	baz=26,SNR=11							
CNB	**Canberra Magne**	**25.00**	**260**	P		**P**	**11 45 09.1**	**+3.2**
	baz=26,SNR=19							
CAN	**Canberra**	**25.30**	**260**	*e*P		**P**	**11 45 12.4**	**+3.9**
CAN	comp=Z,37nm,1.1s				pmax	pmax		
CAN	**Canberra**	**25.30**	**260**	*e*P		**P**	**11 45 12.4**	**+3.9**
	comp=Z,37nm,1.1s							
EIDS	**Eidsvold**	**26.70**	**283**	P		**P**	**11 45 24.6**	**+3.4**
	baz=28,SNR=4.6							
EIDS	**Eidsvold**	**26.70**	**283**	*e*P		**P**	**11 45 21.0**	**-0.3**
	comp=Z,29nm,1.2s							
RMQ	**Roma**	**28.07**	**279**	P		**P**	**11 45 37.2**	**+3.6**
	baz=29,SNR=17							
CMSA	**Cobar Meteorol**	**28.81**	**267**	P		**P**	**11 45 42.8**	**+2.7**
	baz=30,SNR=32							
TBI	**Tubuai**	**28.98**	**75**	*e*LR		LR	11 53 14.5	
	comp=Z,777nm,26.8s,baz=231							
TBI	**Tubuai**	**28.98**	**75**	*e*T		T	12 15 47.4	
	comp=Z,50nm,0.3s							
ARPS	**Mount Arapiles**	**30.83**	**255**	P		**P**	**11 45 59.8**	**+1.9**
	baz=32,SNR=14							
QLP	**Quilpie**	**31.72**	**275**	P		**P**	**11 46 07.3**	**+1.5**
	baz=33,SNR=18							
STKA	**Stephens Creek**	**32.07**	**265**	P		**P**	**11 46 09.3**	**+0.5**
	comp=Z,10nm,0.7s,baz=107,slow=12,SNR=23							
STKA	comp=Z,3.5nm,0.6s,baz=127,slow=5.1,SNR=6.9				PcP	**PcP**	**11 48 56.3**	**-1.5**
STKA	comp=Z,432nm,19.0s,baz=75,slow=35				LR	LR	11 58 24.3	
STKA	**Stephens Creek**	**32.07**	**265**	P		**P**	**11 46 10.3**	**+1.4**
	baz=33,SNR=16							
STKA	**Stephens Creek**	**32.07**	**265**	*e*P		**P**	**11 46 11.7**	**+2.8**
	comp=Z,2.2nm,0.8s							
STKA					PcP	**PcP**	**11 48 56.3**	**-1.5**
PAE	**Paea**	**32.10**	**65**	*e*T		T	12 19 31.2	
	comp=Z,11nm,0.2s							
PPT2	**Papeete2**	**32.15**	**65**	*e*LR		LR	11 54 36.5	
	comp=Z,836nm,26.2s,baz=232							
PPT2	**Papeete2**	**32.15**	**65**	*e*T		T	12 19 37.0	
	comp=Z,15nm,0.3s							
PPT	**Papeete**	**32.16**	**65**	LR		LR	11 55 54.0	
	comp=Z,292nm,21.3s,baz=208,slow=30							
TVO	**Taravao**	**32.27**	**66**	*e*T		T	12 19 40.6	
	comp=Z,2.3nm,0.3s							
CTA	**Charters Tower**	**33.22**	**288**	P		**P**	**11 46 21.4**	**+2.3**
	comp=Z,12nm,0.4s,baz=126,slow=11,SNR=22							
CTAO	**Charters Tower**	**33.22**	**288**	*e*P		**P**	**11 46 20.1**	**+1.0**
CTAO	comp=Z,40nm,1.0s				pmax	pmax		
CTAO	**Charters Tower**	**33.22**	**288**	*e*P		**P**	**11 46 20.1**	**+1.0**
	comp=Z,40nm,1.0s							
HTT	**Hatett**	**33.83**	**261**	P		**P**	**11 46 26.0**	**+1.6**
	baz=35,SNR=23							
VAH	**Vaihoa**	**35.08**	**64**	*e*T		T	12 23 08.3	
	comp=Z,44nm,0.2s							
MTSU	**Mount Surprise**	**35.83**	**289**	P		**P**	**11 46 43.2**	**+1.5**
	baz=37,SNR=24							
BBOO	**Buckleboo**	**36.31**	**261**	P		**P**	**11 46 46.9**	**+1.2**
	baz=38,SNR=18							
BBOO	**Buckleboo**	**36.31**	**261**	*e*P		**P**	**11 46 47.3**	**+1.6**
	comp=Z,23nm,0.8s							
QIS	**Mount Isa**	**38.26**	**281**	P		**P**	**11 47 03.6**	**+1.3**
	baz=40,SNR=18							
COEN	**Coen**	**39.21**	**293**	P		**P**	**11 47 12.3**	**+2.0**
	baz=41,SNR=18							
COEN	**Coen**	**39.21**	**293**	*e*P		**P**	**11 47 12.7**	**+2.4**
	comp=Z,44nm,0.8s							
PMG	**Port Moresby**	**39.35**	**302**	*e*P		**P**	**11 47 12.3**	**+0.8**
PMG	comp=Z,76nm,1.1s				pmax	pmax		
RABL	**Rabaul**	**40.06**	**314**	*e*P		**P**	**11 47 18.6**	**+1.2**
	comp=Z,83nm,0.8s							
RKT	**Rikitea**	**40.79**	**86**	*e*LR		LR	11 58 43.5	
	comp=Z,581nm,26.8s,baz=251							
RKT	**Rikitea**	**40.79**	**86**	*e*T		T	12 30 54.6	
	comp=Z,3.2nm,0.3s							
AS01	**Alice Springs**	**41.38**	**273**	*e*P		**P**	**11 47 28.5**	**+0.2**
AS31	**Alice Springs**	**41.42**	**273**	*e*P		**P**	**11 47 29.7**	**+1.1**
	comp=Z,15nm,0.6s							
ASAR	**Alice Springs**	**41.42**	**273**	P		**P**	**11 47 29.4**	**+0.8**
	comp=Z,22nm,0.3s,baz=117,slow=7.4,SNR=553							
ASAR	comp=Z,1.3nm,0.9s,baz=115,slow=13,SNR=5.7				S	**S**	**11 53 39.9**	**-1.5**
ASAR	comp=Z,482nm,19.6s,baz=121,slow=36				LR	LR	12 04 18.9	
WB2	**Warramunga Arr**	**42.82**	**278**	*e*P		**P**	**11 47 40.1**	**+0.1**
	comp=Z,62nm,1.0s							
WRAB	**Tennant Creek**	**42.83**	**278**	*ce*P		**P**	**11 47 40.4**	**+0.4**
WRAB	comp=Z,75nm,0.6s				pmax	pmax		
WRAB	**Tennant Creek**	**42.83**	**278**	*e*P		**P**	**11 47 40.1**	**+0.1**
	comp=Z,36nm,0.6s							
WRA	**Warramunga Arr**	**42.83**	**278**	P		**P**	**11 47 39.9**	**-0.2**
	comp=Z,28nm,0.5s,baz=118,slow=7.6,SNR=243							
WRA	comp=Z,1.2nm,0.8s,baz=124,slow=14,SNR=3.8				S	**S**	**11 54 00.9**	**-1.3**
WRA	comp=Z,365nm,19.2s,baz=125,slow=36				LR	LR	12 05 48.9	
WRA	**Warramunga Arr**	**42.83**	**278**	P		**P**	**11 47 39.9**	**-0.2**
WRA					S	**S**	**11 54 00.9**	**-1.3**
WRA	comp=Z,30nm,0.5s				pmax	pmax		
WRA	comp=N,1.0nm,0.8s				smax	smax		
WRA	comp=Z,365nm,19.2s				MLR	MLR		
VNDA	**Vanda**	**43.35**	**186**	P		**P**	**11 47 46.5**	**+3.0**
	comp=Z,3.1nm,1.0s,baz=352,slow=7.6,SNR=5.9							
VNDA	comp=Z,144nm,21.4s,baz=18,slow=30				LR	LR	12 01 49.0	
VNDA	**Vanda**	**43.35**	**186**	*e*P		**P**	**11 47 44.4**	**+0.9**
VNDA	comp=Z,34nm,1.9s				pmax	pmax		
VNDA	**Vanda**	**43.35**	**186**	*e*P		**P**	**11 47 44.4**	**+0.9**
	comp=Z,34nm,1.9s							
FORT	**Forrest**	**43.42**	**260**	P		**P**	**11 47 44.5**	**-0.2**
	baz=45,SNR=50							
FORT	**Forrest**	**43.42**	**260**	*e*P		**P**	**11 47 44.9**	**+0.2**
	comp=Z,479nm,0.6s							
MANU	**Manus Island**	**44.68**	**310**	*e*P		**P**	**11 47 55.4**	**+0.5**
	comp=Z,99nm,1.6s							
TAOE	**Nuku Hiva Isla**	**44.76**	**64**	*e*LR		LR	12 00 39.4	
	comp=Z,516nm,26.8s							
WRKA	**Warakurna**	**45.42**	**268**	P		**P**	**11 48 00.2**	**-0.7**
	baz=47,SNR=158							
KMBL	**Kambalda**	**48.19**	**257**	P		**P**	**11 48 22.0**	**-0.3**
	baz=49,SNR=4.6							
FITZ	**Fitzroy Crossi**	**50.85**	**275**	LR		LR	12 10 20.5	
	comp=Z,430nm,18.2s,slow=36							
FITZ	**Fitzroy Crossi**	**50.85**	**275**	P		**P**	**11 48 43.1**	**+0.4**
	baz=52,SNR=44							
FITZ	**Fitzroy Crossi**	**50.85**	**275**	*e*P		**P**	**11 48 43.2**	**+0.4**
	comp=Z,32nm,0.8s							
RKGY	**Rocky Gully**	**50.94**	**251**	P		**P**	**11 48 43.0**	**-0.4**
	baz=52,SNR=5.5							
NWAO	**Narrogin (SRO)**	**51.32**	**253**	P		**P**	**11 48 45.2**	**-0.9**
NWAO	baz=52,SNR=12				P	**P**	**11 48 45.2**	**-0.9**
NWAO	**Narrogin (SRO)**	**51.32**	**253**	*e*P		**P**	**11 48 45.3**	**-0.9**
NWAO	comp=Z,33nm,1.1s				pmax	pmax		
NWAO	**Narrogin (SRO)**	**51.32**	**253**	*e*P		**P**	**11 48 45.3**	**-0.9**
	comp=Z,33nm,1.1s							
KLBR	**Kellerberrin**	**51.39**	**255**	P		**P**	**11 48 45.8**	**-0.9**
	baz=52,SNR=41							
BLDU	**Ballidu**	**52.59**	**256**	P		**P**	**11 48 54.6**	**-1.1**
	baz=54,SNR=10.0							
MEEK	**Meekatharra**	**52.66**	**261**	P		**P**	**11 48 55.4**	**-0.8**
	baz=54,SNR=18							
MORW	**Morawa**	**53.73**	**257**	P		**P**	**11 49 03.2**	**-0.9**
	baz=55,SNR=12							
MBWA	**Marble Bar**	**54.20**	**268**	*e*P		**P**	**11 49 06.8**	**-0.8**
	comp=Z,58nm,0.7s							
FAKI	**Fak Fak**	**54.54**	**295**	*e*P		**P**	**11 49 09.9**	**-0.2**
	comp=Z,42nm,1.0s							
QSPA	**South Pole Qui**	**55.11**	**180**	*e*P		**P**	**11 49 16.5**	**+2.8**
SOEI	**Soe**	**56.51**	**282**	*e*P		**P**	**11 49 24.9**	**+0.5**
	comp=Z,69nm,1.1s							
MIR	**Mirnyy**	**57.27**	**208**	*i* P		**P**	**11 49 30.0**	**+1.2**
MIR	comp=Z,6.0nm,1.0s				pmax	pmax		
GIRL	**Giralia**	**58.00**	**263**	P		**P**	**11 49 34.4**	**-0.3**
	baz=59,SNR=14							
MMRI	**Maumere**	**58.79**	**282**	*e*P		**P**	**11 49 40.6**	**+0.3**
	comp=Z,115nm,0.7s							
KEKH	**Kekaha**	**59.87**	**22**	*e*P		**P**	**11 49 49.1**	**+1.7**
	comp=Z,209nm,1.4s							
KIP	**Kipapa**	**59.88**	**24**	‖*e*P		**P**	**11 49 48.7**	**+1.1**
KAPI	**Kappang**	**62.91**	**284**	*e*P		**P**	**11 50 08.8**	**+0.5**
	comp=Z,24nm,0.8s							
LUWI	**Luwuk**	**62.96**	**289**	*e*P		**P**	**11 50 08.6**	**-0.1**
	comp=Z,101nm,1.1s							
JAGI	**Jajag, Banyuwa**	**65.43**	**277**	*e*P		**P**	**11 50 24.7**	**-0.1**
	comp=Z,73nm,1.2s							
MAW	**Mawson**	**67.41**	**202**	P		**P**	**11 50 37.8**	**+1.1**
	comp=Z,16nm,0.8s,baz=143,slow=5.1,SNR=36							
MAW	comp=Z,203nm,18.8s,baz=64,slow=35				LR	LR	12 19 26.5	
MAW	**Mawson**	**67.41**	**202**	*e*P		**P**	**11 50 37.8**	**+1.1**
	comp=Z,8.9nm,1.1s							
CISI	**Cisompet, Garu**	**71.12**	**274**	*e*P		**P**	**11 50 59.5**	**-1.1**
	comp=Z,88nm,1.0s							
SYO	**Syowa Base**	**72.25**	**194**	‖*e*P		**P**	**11 51 04.6**	**-1.8**
SYO	**Syowa Base**	**72.25**	**194**	‖*e*PcP		**PcP**	**11 51 20.6**	**-3.8**
SYO	**Syowa Base**	**72.25**	**194**	‖*e*pP		pP	11 51 26.4	+9.1
KKM	**Kota Kinabalu**	**72.49**	**291**	*e*P		**P**	**11 51 08.0**	**-0.9**
	comp=Z,39nm,1.1s							
SBUM	**Sibu**	**73.39**	**285**	*e*P		**P**	**11 51 13.5**	**-0.5**
	comp=Z,19nm,1.0s							
SNAA	**Sanae**	**73.59**	**179**	P		**P**	**11 51 15.4**	**+1.0**
SNAA	**Sanae**	**73.59**	**179**	*e*P		**P**	**11 51 15.5**	**+1.0**
SNAA	comp=Z,19nm,1.0s				pmax	pmax		
SNAA	**Sanae**	**73.59**	**179**	*e*P		**P**	**11 51 15.5**	**+1.0**
	comp=Z,19nm,1.0s							
NVL	**N'lazarevskaya**	**74.18**	**184**	*e*P		**P**	**11 51 18.6**	**+0.8**
KSM	**Kuching**	**74.32**	**283**	*e*P		**P**	**11 51 17.8**	**-1.8**
	comp=Z,16nm,0.7s							
VNA1	**Neumayer--Stat**	**74.47**	**177**	P		**P**	**11 51 20.5**	**+1.1**
PLCA	**Paso Flores**	**80.59**	**133**	P		**P**	**11 51 56.6**	**+2.3**
	comp=Z,17nm,1.0s,baz=248,slow=5.3,SNR=24							
PLCA	comp=Z,51nm,20.2s,baz=311,slow=30				LR	LR	12 19 49.6	
PLCA	**Paso Flores**	**80.59**	**133**	*e*P		**P**	**11 51 56.6**	**+2.3**
	comp=Z,25nm,1.0s

ISA pmax pmax
ISA Isabella, Lake 90.74 46 *e*P **P 11 52 46.4 +1.8**
comp=Z,12nm,0.8s
HSIG 91.07 55 *e*P **P 11 52 48.1 +1.9**
comp=Z,20nm,1.0s
LRMC Laurel Mtn Rad 91.08 46 P **P 11 52 48.8 +2.5**
baz=226
BELC Belle Mtn. Jos 91.09 48 P **P 11 52 48.7 +2.4**
baz=227,SNR=10.0
GLA Glamis 91.18 50 P **P 11 52 49.8 +3.1**
baz=228,SNR=8.0
GLA Glamis 91.18 50 *e*P **P 11 52 50.0 +3.4**
GLA pmax pmax
comp=Z,28nm,0.9s
GLA Glamis 91.18 50 *e*P **P 11 52 50.0 +3.4**
comp=Z,28nm,0.9s
BC3 Big Chuckawall 91.19 49 P **P 11 52 49.2 +2.4**
baz=228,SNR=10
CMB Columbia Colle 91.30 43 *e*P **P 11 52 48.8 +1.7**
CMB pmax pmax
comp=Z,10.0nm,1.1s
CMB Columbia Colle 91.30 43 *e*P **P 11 52 48.8 +1.7**
comp=Z,9.9nm,1.1s
HEC Hector,Ludlow 91.44 48 P **P 11 52 50.5 +2.6**
baz=227
GSC Goldstone, Bar 91.48 47 P **P 11 52 50.3 +2.3**
baz=227
GSC Goldstone, Bar 91.48 47 *e*P **P 11 52 50.5 +2.5**
GSC pmax pmax
comp=Z,5.0nm,0.8s
GSC Goldstone, Bar 91.48 47 *e*P **P 11 52 50.5 +2.5**
comp=Z,4.7nm,0.8s
MDJ Mudanjiang 91.50 327 P **P 11 52 48.0 +0.2**
MDJ pmax pmax
comp=Z,5.0nm,1.1s
MDJ pmax pmax
comp=Z,99nm,6.0s
CWC Cottonwood Cre 91.50 45 P **P 11 52 50.6 +2.3**
baz=226
SDPT Sand Point 91.55 11 *e*P **P 11 52 48.0 +0.4**
comp=Z,110nm,1.4s
MPMC Manual Prospec 91.59 46 P **P 11 52 50.8 +2.1**
baz=227
AFDM Forest Hills D 91.62 42 *e*P **P 11 52 50.3 +1.8**
comp=Z,5.4nm,0.9s
113A Mohawk Valley, 91.66 50 *e*P **P 11 52 51.9 +3.1**
comp=Z,16nm,1.0s
IRM Iron Mountain 91.72 49 P **P 11 52 51.7 +2.6**
baz=228,SNR=16
214A Organ Pipe Nat 91.74 52 P **P 11 52 52.3 +3.1**
baz=229,SNR=14
214A Organ Pipe Nat 91.74 52 *e*P **P 11 52 51.8 +2.6**
comp=Z,55nm,0.9s
GMRC Granite Mounta 91.83 48 P **P 11 52 52.2 +2.5**
baz=228
Y12C Blythe 91.83 49 P **P 11 52 52.6 +3.0**
baz=228
Y12C Blythe 91.83 49 *e*P **P 11 52 52.2 +2.6**
comp=Z,13nm,0.9s
MLAC Mammoth, Mammo 91.89 44 P **P 11 52 52.5 +2.4**
baz=226
WDC Whiskeytown Da 91.94 40 *e*P **P 11 52 51.8 +1.9**
WDC pmax pmax
comp=Z,5.0nm,0.9s
WDC Whiskeytown Da 91.94 40 *e*P **P 11 52 51.8 +1.9**
comp=Z,4.8nm,0.9s
TUQ Turquoise Moun 92.10 47 P **P 11 52 53.3 +2.3**
baz=228
O03D Paynes Creek 92.13 41 P **P 11 52 52.7 +1.8**
baz=224
N02D Trinity Center 92.14 40 P **P 11 52 53.5 +2.5**
baz=224
WAKR Walker 92.16 43 *e*P **P 11 52 53.4 +2.2**
comp=Z,6.2nm,0.8s
SHOC Shoshone, Teco 92.20 47 P **P 11 52 53.9 +2.6**
baz=227
FURC Furnace Creek, 92.24 46 P **P 11 52 53.9 +2.5**
baz=227
GRAC Grapevine Rang 92.30 45 P **P 11 52 54.3 +2.6**
baz=227
LDFC Landfair 92.36 48 *e*P **P 11 52 54.6 +2.5**
comp=Z,13nm,0.8s
M02C Callahan 92.36 39 P **P 11 52 54.4 +2.4**
baz=224
GYA Guiyang 92.41 301 *e*P **P 11 52 54.0 +1.4**
GYA pP sP 11 53 08.6 +0.8
GYA SKS **SKSac 12 03 22.3 -1.3**
GYA S **S 12 03 51.8 -2.2**
GYA sS sS 12 04 14.0 +1.5
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.5s
PDMCI Parker Dam,Lak 92.44 49 P **P 11 52 55.0 +2.6**
baz=228
L02D Cave Junction, 92.53 38 P **P 11 52 55.0 +2.4**
baz=223
CHGN Chignik 92.80 12 *e*P **P 11 52 53.8 +0.4**
CN2 Changchun 92.82 324 *e*P **P 11 52 54.0 +0.1**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
ENH Enshi 92.84 305 *e*P **P 11 52 54.1 -0.3**
comp=Z,11nm,0.8s
Y14A Wickenburg 92.91 50 *e*P **P 11 52 57.2 +2.6**
comp=Z,38nm,1.0s
TPNV Topopah Spring 92.93 46 P **P 11 52 57.1 +2.3**
baz=227
TPNV Topopah Spring 92.93 46 *e*P **P 11 52 57.1 +2.3**
TPNV pmax pmax
comp=Z,5.0nm,0.8s
TPNV Topopah Spring 92.93 46 *e*P **P 11 52 57.1 +2.3**
comp=Z,4.7nm,0.8s
LVC Limon Verde 93.13 120 *e*P **P 11 52 59.8 +3.3**
comp=Z,18nm,1.0s
M04C Macdoel 93.17 40 P **P 11 52 57.7 +1.9**
baz=224
SHPR Sheep Range 93.28 47 *e*P **P 11 52 59.0 +2.6**
TUC Tucson 93.28 52 P **P 11 52 59.1 +2.8**
baz=230
TUC Tucson 93.28 52 *e*P **P 11 52 59.2 +2.8**
TUC pmax pmax
comp=Z,11nm,0.9s
TUC Tucson 93.28 52 *e*P **P 11 52 59.2 +2.8**
comp=Z,11nm,0.9s
CM01 Chiang Mai Arr 93.33 290 *e*P **P 11 52 56.2 -0.7**
CMAR Chiang Mai Arr 93.36 290 P **P 11 52 56.5 -0.5**
comp=Z,3.6nm,0.8s,baz=150,slow=4.2,SNR=16
CMAR PP **PP 11 56 40.5 -1.1**
comp=Z,1.4nm,0.8s,baz=149,slow=7.3,SNR=5.0
CMAR LR LR 12 37 58.4
comp=Z,28nm,19.9s,baz=85,slow=37
J04D Umpqua Nationa 94.08 38 P **P 11 53 02.0 +2.0**
baz=224
X16A Lo Mia Camp, P 94.21 50 *e*P **P 11 53 03.1 +2.3**
comp=Z,8.8nm,1.0s
R11A Troy Canyon, C 94.26 45 P **P 11 53 02.6 +1.7**
baz=228
I04A Tendick Farm, 94.32 38 P **P 11 53 02.5 +1.6**
baz=224
K05A Summer Lake 94.34 39 *e*P **P 11 53 03.1 +1.9**
comp=Z,49nm,2.0s
KMI Kunming 94.42 298 P **P 11 53 06.3 +4.3**
KMI pmax pmax
comp=Z,6.0nm,1.4s
J05D Fort Rock, OR 94.56 39 P **P 11 53 03.9 +1.7**
baz=225
LCMT Little Creek M 94.77 48 *e*P **P 11 53 05.7 +2.5**
comp=Z,3.4nm,1.0s
WUAZ Wupatki 94.95 50 P **P 11 53 06.2 +2.1**
baz=230
WUAZ Wupatki 94.95 50 *e*P **P 11 53 06.4 +2.2**
comp=Z,6.1nm,1.1s
U15A North Rim 94.97 49 *e*P **P 11 53 05.8 +1.4**
comp=Z,6.0nm,1.0s
KNB Kanab 95.03 48 *e*P **P 11 53 06.0 +1.5**
KNB pmax pmax
comp=Z,6.0nm,0.9s
KNB Kanab 95.03 48 *e*P **P 11 53 06.0 +1.5**
comp=Z,5.5nm,0.9s
X18A Snowflake 95.23 51 *e*P **P 11 53 08.8 +3.3**
comp=Z,3.6nm,0.8s
I05D Terrebonne, OR 95.25 38 P **P 11 53 07.2 +2.1**
baz=225
WVOR Wild Horse Val 95.32 41 *e*P **P 11 53 06.4 +0.8**
WVOR pmax pmax
comp=Z,3.0nm,0.9s
WVOR Wild Horse Val 95.32 41 *e*P **P 11 53 06.4 +0.8**
comp=Z,3.4nm,0.9s
TXAR Lajitas Array 96.26 59 P **P 11 53 11.3 +1.2**
comp=Z,0.5nm,0.8s,baz=219,slow=7.0,SNR=7.0
TXAR LR LR 12 27 33.5
comp=Z,59nm,21.7s,baz=0.0,slow=30
MNTX Cornudas Mount 96.49 56 P **P 11 53 12.7 +1.6**
baz=233
CD2 Chengdu 97.13 303 *e*P Pdif 11 53 14.6 +0.5
CD2 pP sP 11 53 28.4 -0.8
CD2 sP pP 11 53 33.8 +8.6
CD2 SKS **SKSac 12 03 47.5 -1.0**
CD2 S **S 12 04 34.3 -0.5**
CD2 SS **SS 12 11 13.8 +0.6**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.4s
MFID Camas Ranch 97.50 41 *e*P Pdif 11 53 16.4 +0.9
comp=Z,2.8nm,0.8s
B05A Bryant 97.68 35 P Pdif 11 53 18.2 +2.2
baz=224
A04D Lummi Island 97.72 34 P Pdif 11 53 18.7 +2.5
baz=224
LPAZ La Paz 97.73 116 P **P 11 53 17.4 -0.4**
comp=Z,1.1nm,0.8s,baz=141,slow=0.7,SNR=4.5
ANMO Albuquerque 97.74 53 P Pdif 11 53 18.6 +1.7
baz=232
ANMO Albuquerque 97.74 53 *de*P Pdif 11 53 18.8 +1.9
ANMO pmax pmax
comp=Z,2.0nm,2.5s
MVCO Mesa Verde 97.82 50 P Pdif 11 53 19.2 +1.9
baz=232
HHC Hu-ho-hao-te 98.24 315 *e*P Pdif 11 53 21.3 +2.4
HHC PP **PP 11 57 22.4 +3.2**
HHC SKS **SKSac 12 03 54.1 +0.2**
HHC S **S 12 04 41.4 -2.5**
HHC pmax pmax
comp=Z,14nm,1.7s
HHC pmax pmax
comp=Z,38nm,4.8s
HHC LR LR
comp=Z,290nm,13.7s
HHC LR LR
comp=Z,220nm,13.7s
HHC LR LR
comp=Z,160nm,14.9s
HLID Hailey 98.37 42 P Pdif 11 53 21.1 +1.6
baz=229
CPUP Villa Florida 98.38 130 LR LR 12 29 42.3
comp=Z,157nm,21.9s,baz=226,slow=30
SDCO Great Sand Dun 100.04 51 P **Pdif 11 53 28.6 +1.4**
baz=233
PDAR Pinedale Array 100.61 45 PKKPbc PKKPbc 12 09 43.5 -1.0
comp=Z,0.7nm,0.8s,baz=72,slow=5.8,SNR=5.6
ILAR Eielson Array 102.79 14 P **Pdif 11 53 38.2 -0.2**
comp=Z,0.6nm,0.9s,baz=243,slow=4.0,SNR=4.0
ILAR PKiKP **PKiKP 11 57 57.9 -0.7**
comp=Z,0.7nm,0.5s,baz=313,slow=3.2,SNR=14
SONM Songino Array 105.42 318 PKiKP **PKiKP 11 58 03.7 -0.5**
comp=Z,0.5nm,0.7s,baz=112,slow=1.6,SNR=3.0
SONM PKKPbc **PKKPbc 12 09 30.3 +0.2**
comp=Z,0.9nm,0.8s,baz=322,slow=1.2,SNR=4.6
SONM PKKPab **PKKPab 12 09 43.8 -0.3**
comp=Z,0.3nm,0.3s,baz=297,slow=4.2,SNR=3.5
INK Inuvik 108.67 17 PKKPab PKKPab 12 09 29.3 +0.7
comp=Z,1.3nm,0.7s,baz=316,slow=15,SNR=3.5
LRAL Lakeview Retre 110.25 63 *e*PKPbc PKKPbc 12 09 11.0 -3.2
YKA Yellowknife Ar 110.32 27 PKiKP **PKiKP 11 58 12.4 -0.3**
comp=Z,0.9nm,0.5s,baz=259,slow=1.7,SNR=8.7
YKA PKKPbc **PKKPbc 12 09 12.6 -2.2**
comp=Z,1.5nm,0.6s,baz=44,slow=3.4,SNR=9.2
YKA PKKPab **PKKPab 12 09 23.4 +1.8**
comp=Z,1.5nm,0.8s,baz=44,slow=4.7,SNR=5.9
AGMN Agassiz Nation 111.67 46 *e*PKKPbc PKKPbc 12 09 08.4 -1.6
BOSA Boshof 112.37 204 PKiKP **PKiKP 11 58 17.7 -0.3**
comp=Z,1.2nm,0.5s,baz=112,slow=19,SNR=4.9
BOSA PKKPbc **PKKPbc 12 09 08.8 +1.4**
comp=Z,2.1nm,0.8s,baz=297,slow=14,SNR=3.6
ULM Lac du Bonnet 112.58 44 PKiKP **PKiKP 11 58 16.1 -1.3**
comp=Z,1.6nm,0.5s,baz=149,slow=12,SNR=2.5
WMQ Urumqi 114.71 307 *e*PKP PKPdf 11 58 23.8 +2.1
MK01 Makanchi Array 119.37 309 *e*PKPdf **PKPdf 11 58 28.4 -2.1**
MK31 Makanchi Array 119.38 309 *e*PKiKP **PKPdf 11 58 29.0 -1.6**
MK31 Makanchi Array 119.38 309 *e*PKPdf **PKPdf 11 58 29.0 -1.6**
MKAR Makanchi Array 119.38 309 PKP **PKPdf 11 58 28.8 -1.8**
comp=Z,1.9nm,0.5s,baz=82,slow=1.8,SNR=18
MKAR PKKPbc **PKKPab 12 08 42.9 -0.1**
comp=Z,0.4nm,0.5s,baz=270,slow=3.7,SNR=5.0
MAKZ Makanchi 119.59 309 *e*PKiKP **PKPdf 11 58 28.8 -2.2**
MAKZ Makanchi 119.59 309 *e*PKPdf **PKPdf 11 58 28.8 -2.2**
ZAA0 Zalesovo Array 120.30 317 *e*PKPdf **PKPdf 11 58 29.9 -2.2**
ZAA0 *e*PKPdf **PKiKP 11 58 30.3 -1.8**
ZALV Zalesovo Beam 120.30 317 PKP **PKPdf 11 58 29.6 -2.5**
comp=Z,2.3nm,0.4s,baz=179,slow=3.1,SNR=11
KSH Kashi 121.06 299 *e*PKP **PKPdf 11 58 35.3 +1.1**
KSH *es*PKP 11 58 50.8
KSH *e*PP **PP 12 00 05.8 +1.1**
KSH PKS **PKSdf 12 02 10.8 -0.1**
KSH SKS **SKSdf 12 05 42.8 -0.7**
KSH SKKS **SKKSac 12 06 54.8 -6.2**
KSH AMB AMB
comp=Z,69nm,3.8s
KSH LR LR
comp=Z,120nm,6.4s
KSH LR LR
comp=Z,120nm,5.7s
KSH LR LR
comp=Z,86nm,9.0s
KURBB Kurchatov Arra 122.97 312 SKP **SKPdf 12 02 06.7 -3.3**
comp=Z,0.5nm,0.6s,baz=119,slow=3.4,SNR=3.4
KURBB PKKP 12 09 07.0
comp=Z,0.4nm,0.6s,baz=277,slow=3.3,SNR=4.8
NRIK Noril'sk 123.12 335 PKP **PKPdf 11 58 36.5 -0.6**
comp=Z,9.8nm,0.5s,baz=104,slow=2.4,SNR=10
AAK Ala-Archa 123.19 302 PKP **PKPdf 11 58 37.2 -1.1**
comp=Z,3.3nm,0.4s,baz=251,slow=3.8,SNR=3.8
LSZ Lusaka 123.28 213 *e*PKiKP **PKPdf 11 58 39.4 +0.2**
LSZ Lusaka 123.28 213 *e*PKPdf **PKPdf 11 58 39.4 +0.2**
TSUM Tsumeb 123.55 200 *e*PKPdf **PKPdf 11 58 39.9 +0.2**
LONY Lake Ozonia 123.76 56 *e*PKPdf **PKPdf 11 58 41.7 +2.7**
NCB Newcomb 123.80 57 *e*PKPdf **PKPdf 11 58 39.5 +0.4**
KBL Kabul 124.38 291 *e*PKiKP **PKPdf 11 58 40.4 -0.4**
KBL Kabul 124.38 291 *e*PKPdf **PKPdf 11 58 40.4 -0.4**
KKAR Karatay Array 126.12 301 *e*PKiKP **PKPdf 11 58 42.1 -1.5**
KKAR Karatay Array 126.12 301 *e*PKPdf **PKPdf 11 58 42.1 -1.5**
VOSK Vostochnaya 128.03 313 *e*PKiKP **PKPdf 11 58 45.5 -1.5**
VOSK Vostochnaya 128.03 313 *e*PKPdf **PKPdf 11 58 45.5 -1.5**
BVAR Borovoye Array 128.43 313 PKP **PKPdf 11 58 46.4 -1.3**
comp=Z,4.0nm,0.4s,baz=96,slow=3.0,SNR=24
BRVK Borovoye 128.50 313 || *i* PKiKP **PKPdf 11 58 46.5 -1.3**
BRVK Borovoye 128.50 313 *e*PKPdf **PKPdf 11 58 46.7 -1.1**
SHEL Horse Pasture 129.02 173 *i* PKiKP **PKPdf 11 58 47.9 -2.2**
ZRNK Zerenda 129.25 313 *e*PKiKP **PKPdf 11 58 48.0 -1.3**
ZRNK Zerenda 129.25 313 *e*PKPdf **PKPdf 11 58 48.0 -1.3**
GEYT Alibeck 133.82 291 PKP **PKPdf 11 58 56.7 -1.7**
comp=Z,7.1nm,0.7s,baz=202,slow=0.8,SNR=16
GEYT SKPab **SKPbc 12 02 22.8 -1.9**
comp=Z,14nm,1.2s,baz=150,slow=3.3,SNR=14
ABKAR Akbulak array 134.50 307 *e*PKPdf **PKPdf 11 58 59.2 -0.1**
ARU Arti 135.46 317 SKPbc **SKPbc 12 02 23.9 -5.3**
comp=Z,1.3nm,0.3s,baz=119,slow=13,SNR=3.8
ARU Arti 135.46 317 *i* PKiKP **PKPdf 11 58 59.8 -1.0**
ARU 12 01 34.4
ARU SS SS 12 19 23.0 -9.4
ARU Arti 135.46 317 *e*PKPdf **PKPdf 11 59 00.0 -0.8**
ARU SKPbc **SKPbc 12 02 23.9 -5.3**
KBS Kingsbay 135.70 357 *e*PKPdf **PKPdf 11 59 00.9 +0.2**
AKTO Aktyubinsk 135.82 309 PKP **PKPdf 11 59 00.3 -1.4**
comp=Z,2.6nm,0.5s,baz=113,slow=5.0,SNR=12
SPA0 Spitsbergen Ar 136.16 355 *e*PKPdf **PKPdf 11 59 01.3 -0.3**
SPA0 Spitsbergen Ar 136.16 355 *e*PKPdf **PKPdf 11 59 01.4 -0.2**
HSPB Hornsund (broa 137.34 355 *e*PKPdf **PKPdf 11 59 03.2 -0.6**
BJO Bjornoya 139.34 352 *e*PKPdf **PKPdf 11 59 09.7 +2.2**
HAMF Hammerfest 142.11 347 *e*PKPdf **PKPdf 11 59 14.5 +1.9**
ARA0 ARCESS Array S 142.68 346 *e*PKPpre PKPpre 11 59 09.2
ARCES ARCESS Array B 142.68 346 PKhKP PKPpre 11 59 09.1
comp=Z,14nm,0.7s,baz=5.0,slow=2.7,SNR=34
ARCES PKP **PKPdf 11 59 11.7 -2.0**
comp=Z,12nm,0.5s,baz=35,slow=3.3,SNR=41
ARE0 ARCESS Array S 142.68 346 *e*PKPdf **PKPdf 11 59 13.3 -0.4**
ARE0 ARCESS Array S 142.68 346 *e*PKPpre PKPpre 11 59 09.1
TRO Tromso 143.79 349 *e*PKPdf PKPab 11 59 12.6 0.0
KLMR Klimovskoe 143.90 328 *e*PKiKP PKPab 11 59 12.5 -0.8
KLMR pmax pmax
comp=Z,25nm,1.3s
DGRG David-gareji 144.11 294 P **PKPab 11 59 14.3 -0.4**
DGRG David-gareji 144.11 294 PKiKP **PKPab 11 59 14.3 -0.4**
GNI Garni 144.46 292 PKP **PKPab 11 59 15.7 -0.6**
comp=Z,5.3nm,0.4s,baz=323,slow=20,SNR=2.4
TBLG Delisi 144.60 295 P **PKPab 11 59 14.8 -1.8**
TBLG Delisi 144.60 295 PKiKP **PKPab 11 59 14.8 -1.8**
ZEI Tsey 145.28 296 *i* PKP2 **PKPbc 11 59 17.7 -1.4**
ZEI pmax pmax
comp=Z,47nm,0.5s
AKH Akhalkalaki 145.52 294 P **PKPdf 11 59 17.8 -1.9**
AKH Akhalkalaki 145.52 294 PKP2 **PKPdf 11 59 17.8 -1.9**
ONI Oni 145.60 296 P **PKPdf 11 59 17.8 -1.9**
ONI Oni 145.60 296 PKP2 **PKPdf 11 59 17.8 -1.9**
STEI Steigen 145.91 350 *e*PKPdf **PKPdf 11 59 18.3 -0.9**
LOF Lofoten 145.95 351 *e*PKPdf **PKPdf 11 59 19.1 -0.2**
KBZ Khabaz 146.03 298 PKPbc **PKPdf 11 59 19.4 -0.8**
comp=Z,11nm,0.9s,baz=149,slow=3.4,SNR=17
VRH Novokhopyorsk 146.04 311 *e*PKiKP **PKPdf 11 59 19.3 -0.7**
VRH pmax pmax
comp=Z,60nm,0.6s
NEY Neytrino 146.16 297 || *e*PKP2 **PKPdf 11 59 21.2 +0.4**
KVAR Kislovodsk Arr 146.18 298 PKP **PKPdf 11 59 18.9 -1.8**
comp=Z,7.9nm,0.5s,baz=132,slow=2.4,SNR=2.3
KVAR PKPbc **PKPbc 11 59 22.1 +0.4**
comp=Z,7.9nm,0.5s,baz=236,slow=3.5,SNR=3.7
KIV Kislovodsk 146.18 298 *i* PKiKP **PKPdf 11 59 19.1 -1.6**
KIV pmax pmax
comp=Z,13nm,1.0s
KONS Konsvik 147.55 350 *e*PKPdf **PKPbc 11 59 24.2 -0.5**
BORG Borgarnes 147.56 17 PKPbc **PKPab 11 59 26.1 -0.9**
comp=Z,15nm,0.7s,baz=358,slow=4.1,SNR=5.9
BORG Borgarnes 147.56 17 *e*PKPbc **PKPbc 11 59 26.0 +1.1**
VSR Storozhevoye 147.60 312 *e*PKiKP **PKPdf 11 59 23.2 +0.6**
VSR pmax pmax
comp=Z,10.0nm,0.7s
STOK Stokkvaagen 147.72 350 *e*PKPdf **PKPbc 11 59 24.3 -0.9**
OBN Obninsk 147.81 320 *i* PKiKP **PKPdf 11 59 22.6 -0.2**
OBN *i* 11 59 38.1
OBN pmax pmax
comp=Z,15nm,1.0s
FIA1 FINESS Array S 148.78 336 *e*PKPdf **PKPdf 11 59 25.3 +1.1**
FIA1 *e*PKPbc **PKPbc 11 59 27.6 -0.6**
FINES FINESS Array B 148.78 336 PKPbc **PKPdf 11 59 25.1 +0.9**
comp=Z,20nm,0.6s,baz=67,slow=2.7,SNR=146
ASF Jabal al Asfar 149.24 275 PKPbc **PKPbc 11 59 29.8 -0.6**
comp=Z,8.1nm,0.7s,baz=84,slow=5.4,SNR=13
ANN Anapa 149.90 300 *i* PKHKP PKPpre 11 59 29.9
ANN pmax pmax
comp=Z,36nm,0.8s
EIL Elat 150.09 270 PKPbc **PKPbc 11 59 31.5 -0.9**
comp=Z,27nm,0.9s,baz=303,slow=2.9,SNR=17
VSU Vasula 150.60 331 *c* *i* PKiKP **PKPbc 11 59 31.6 -1.1**
MMAI Mount Meron Ar 150.68 276 PKPbc **PKPbc 11 59 33.6 -0.2**
comp=Z,16nm,0.5s,baz=88,slow=5.3,SNR=29
SACV Santiago Islan 150.87 127 *e*PKPbc **PKPbc 11 59 35.0 +0.3**
LIC Lamto 150.98 170 *e*PKP1 **PKPbc 11 59 35.3 +0.3**
comp=Z,93nm,1.0s
KIC Kosan Boka 151.15 170 *e*PKP1 **PKPbc 11 59 36.0 +0.6**
comp=Z,149nm,1.0s
TIC Toumodi 151.39 170 *e*PKP1 **PKPbc 11 59 36.6 +0.6**
DBIC Dimbokro 151.44 170 PKP **PKPdf 11 59 29.5 -0.4**
comp=Z,4.7nm,0.9s,baz=115,slow=6.4,SNR=3.1
DBIC PKPbc **PKiKP 11 59 36.7 +0.2**
comp=Z,36nm,0.6s,baz=146,slow=1.9,SNR=30
MOL Molde 152.02 353 *e*PKPdf **PKPbc 11 59 35.7 -0.1**
DOMB Dombas 152.35 351 *e*PKPdf **PKPbc 11 59 36.3 -0.4**
AKN Aaknes 152.46 353 *e*PKPdf **PKPbc 11 59 37.0 0.0**
CSS Mathiatis 152.76 280 *e*PKPbc **PKPbc 11 59 37.5 -1.0**
NC303 NORSAR Array S 152.78 348 *e*PKPbc **PKPbc 11 59 37.3 -0.3**
NACGM Naroch 152.81 325 *e* **PKPbc 11 59 36.0 -1.9**
NC405 NORSAR Array S 152.82 348 *e*PKPbc **PKPbc 11 59 37.2 -0.6**
NC204 NORSAR Array S 152.83 349 *e*PKPbc **PKPbc 11 59 37.5 -0.3**
BR131 Keskin Array S 152.95 290 *e*PKPbc **PKPbc 11 59 37.5 -1.4**
BRTR Keskin Array B 152.95 290 PKP **PKPdf 11 59 29.6 -2.0**
comp=Z,1.7nm,0.9s,baz=64,slow=2.9,SNR=5.4
BRTR PKPbc **PKPbc 11 59 37.4 -1.6**
comp=Z,17nm,0.5s,baz=149,slow=4.0,SNR=60
NB201 NORSAR Array S 152.96 348 *e*PKPbc **PKPbc 11 59 37.7 -0.4**
NB2 NORSAR Subarray 152.98 348 PKP **PKPbc 11 59 37.2 -0.9**
comp=Z,13nm,0.6s,baz=17,slow=2.6
NOA NORSAR Array B 152.98 348 PKPbc **PKPbc 11 59 37.7 -0.4**
comp=Z,11nm,0.7s,baz=20,slow=4.7,SNR=70
NBO02 NORSAR Array S 153.03 348 *e*PKPdf **PKPdf 11 59 30.8 -0.1**
NBO02 *e*PKPbc **PKPbc 11 59 38.0 -0.2**
NBO00 NORSAR Array S 153.06 348 *e*PKPbc **PKPbc 11 59 38.2 -0.1**
FOO Floro 153.20 355 *e*PKPdf **PKPbc 11 59 38.6 +0.1**
NC602 NORSAR Array S 153.21 347 *e*PKPdf **PKPdf 11 59 30.9 -0.2**
NC602 NORSAR Array S 153.21 347 *e*PKPbc **PKPbc 11 59 38.0 -0.6**
NAO01 NORSAR Array S 153.22 348 *e*PKPbc **PKPbc 11 59 38.5 -0.1**
HFS Hagfors 153.33 345 PKPbc **PKPbc 11 59 37.9 -0.9**
comp=Z,34nm,0.7s,baz=58,slow=3.7,SNR=63
BR231 Keskin MP Arra 153.62 290 *e*PKPdf **PKPdf 11 59 30.5 -2.0**
BR231 *e*PKPbc **PKPbc 11 59 38.0 -2.3**
AKASG Malin Array Be 153.68 316 PKP **PKPdf 11 59 30.1 -2.0**
comp=Z,1.4nm,0.6s,baz=62,slow=1.4,SNR=7.4
AKASG PKPbc **PKPbc 11 59 38.2 -1.7**
comp=Z,10nm,0.7s,baz=61,slow=2.5,SNR=12
AKBB Malin Array Si 153.68 316 *e*PKiKP **PKPbc 11 59 38.8 -1.1**
AKBB Malin Array Si 153.68 316 *e*PKPbc **PKPbc 11 59 38.8 -1.1**
KIEV Kiev 153.69 316 || *e*PKiKP **PKPdf 11 59 31.4 -0.7**
KIEV Kiev 153.69 316 *e*PKPdf **PKPdf 11 59 33.0 +0.9**
KIEV *e*PKPbc **PKPbc 11 59 38.6 -1.3**
AK11 Malin Array Si 153.72 316 *e*PKPdf **PKPdf 11 59 30.6 -1.6**
AK11 *e*PKPbc **PKPbc 11 59 39.0 -1.0**
SUE Sulen 153.76 355 *e*PKPdf **PKPbc 11 59 39.5 -0.2**
ASK Askoy 154.29 354 *e*PKPdf **PKPbc 11 59 40.8 -0.1**
BER Bergen 154.38 354 *e*PKPdf **PKPbc 11 59 41.1 +0.1**
KONO Kongsberg 154.56 349 *e*PKPdf **PKPbc 11 59 41.2 -0.3**
KONO Kongsberg 154.56 349 *e*PKiKP **PKPbc 11 59 41.4 -0.1**
KONO Kongsberg 154.56 349 *e*PKPbc **PKPbc 11 59 41.4 -0.1**
MLR Muntele Rosu 157.69 306 PKP **PKPdf 11 59 36.6 -1.3**
comp=Z,0.3nm,0.4s,baz=167,slow=12,SNR=3.3
KARP Karpathos 157.84 279 *e*PKPab **PKPab 12 00 11.0 -0.2**
TOA0 Torodi Ar. Sit 158.18 184 *e*PKPdf **PKPdf 11 59 39.4 +0.3**
TOA0 *e*PKPab **PKPab 12 00 13.2 +0.4**
TORD Torodi Ar. Bea 158.18 184 PKP **PKPdf 11 59 38.9 -0.3**
comp=Z,3.0nm,0.9s,baz=210,slow=1.0,SNR=16
TORD PKPab **PKPab 12 00 13.1 +0.3**
comp=Z,23nm,0.8s,baz=170,slow=4.1,SNR=30
LAST Lasithi 159.16 278 *e*PKPab **PKPab 12 00 16.3 -0.7**
EKA Eskdalemuir Ar 159.56 5 PKPab **PKPab 12 00 16.4 -1.4**
comp=Z,1.8nm,0.4s,baz=324,slow=3.0,SNR=12
ESK Eskdalemuir 159.58 5 *e*PKP2 **PKPab 12 00 17.6 -0.3**
ESK Eskdalemuir 159.58 5 *e*PKPab **PKPab 12 00 17.6 -0.3**
IDI Anoyia 159.65 278 PKPab **PKPab 12 00 18.5 -0.6**
comp=Z,5.4nm,0.6s,baz=69,slow=7.9,SNR=6.7
IDI Anoyia 159.65 278 *e*PKPab **PKPab 12 00 18.6 -0.5**
MORC Moravsky Berou 160.44 324 *e*PKiKP **PKPdf 11 59 40.6 -0.2**
MORC Moravsky Berou 160.44 324 *e*PKPdf **PKPdf 11 59 40.6 -0.2**
DPC Dobruska-Polom 160.60 327 *e*PKPdf **PKPdf 11 59 40.9 0.0**
DPC Dobruska-Polom 160.60 327 *e*PKPdf **PKPdf 11 59 40.9 0.0**
VRAC Vranov 161.21 325 PKP **PKPdf 11 59 39.3 -2.3**
comp=Z,1.0nm,0.5s,baz=169,slow=5.2,SNR=2.7
VRAC PKPab **PKPab 12 00 25.1 -0.2**
comp=Z,1.8nm,0.6s,baz=346,slow=8.3,SNR=2.8
KHC Kasperske Hory 162.70 329 *e*PKPDF **PKPdf 11 59 42.2 -1.0**
KHC *e*PKPAB **PKPab 12 00 31.5 -0.4**
KHC Kasperske Hory 162.70 329 *e*PKiKP **PKPdf 11 59 42.2 -1.0**
KHC *e* 12 00 31.5
GERES GERESS Array B 162.87 328 PKP **PKPdf 11 59 41.8 -1.6**
comp=Z,0.7nm,0.7s,baz=342,slow=0.3,SNR=4.6
GERES PKPab **PKPab 12 00 31.5 -1.2**
comp=Z,0.3nm,0.4s,baz=26,slow=6.9,SNR=3.4
DAVOX Davos/Dischmat 166.09 331 PKP **PKPdf 11 59 44.9 -1.5**
comp=Z,3.5nm,0.8s,baz=230,slow=7.9,SNR=4.8
KEST Kesra 172.33 278 PKP **PKPdf 11 59 50.2 -0.3**
comp=Z,4.8nm,1.1s,baz=90,slow=9.1,SNR=3.5
KEST PKPab **PKPab 12 01 14.7 -0.4**
comp=Z,5.2nm,0.8s,baz=53,slow=1.5,SNR=5.5
PAB San Pablo 174.30 36 *e*PKiKP **PKPdf 11 59 52.5 +1.4**
PAB San Pablo 174.30 36 *e*PKPdf **PKPdf 11 59 52.5 +1.4**
ESDC Sonseca Array 174.38 33 PKP **PKPdf 11 59 50.8 -0.4**
comp=Z,1.3nm,0.8s,baz=353,slow=5.5,SNR=7.1
ESDC PKPab **PKPab 12 01 23.5 -0.3**
comp=Z,1.7nm,0.8s,baz=318,slow=4.2,SNR=6.3
ES19 SONSECA Array 174.39 32 *e*PKPdf **PKPdf 11 59 51.8 +0.6**
ES19 *e*PKPab **PKPab 12 01 24.2 +0.5**
MDT Midelt 175.58 118 PKP **PKPdf 11 59 52.3 +0.5**
comp=Z,3.5nm,0.8s,baz=266,slow=6.4,SNR=6.3

NIED ***17*** *11:39:00.38˚10N×143˚50E,h17km,Mw3.8 Best double*

couple: $M_{\odot}4.94000\times10^{14}$ NP1:ϕ_s66.00000°, δ75.00000°, λ4.00000°. NP2:ϕ_s335.00000°, δ86.00000°, λ165.00000°.

*IDC **17** 11:39:47.8±2.1,37.90N×143.71E, h0km, mb3.7/5, mb1 3.8/10, mb1mx3.6/50, mbtmp3.7/10, ML3.1/5, MS2.8/2, Ms1 2.8/2, ms1mx2.3/40, Error ellipse: s-maj=41.7km s-min=21.3km az=148.0*

*ISCJB **17** 11:39:49.7±0.7, 38.10N±0.04×143.48E±0.06, h19km, mb3.7/5, MS2.8/1, Error ellipse: s-maj=6.9km s-min=5.4km az=32.7*

*JMA **17** 11:39:50.4±0.2, 38.13N×143.52E, h37km, M3.8*

ISC 17 11:39:50.7±1.1, 38.02N±0.05×143.57E±0.08, h19km, n26, σ2.93/31/37, mb3.7/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.80**	**285**	P	**Pn**	**11 40 19.2**	**-1.5**
JIO				*e*S	**Sn**	**11 40 40.4**	**-2.6**
OFUJ	**Ofunato**	**1.83**	**306**	P	**Pn**	**11 40 19.1**	**-2.0**
OFUJ				*e*S	**Sn**	**11 40 40.9**	**-2.8**
JMK	**Ichinoseki**	**2.06**	**297**	P	**Pn**	**11 40 22.9**	**-1.4**
JMK				*e*S	**Sn**	**11 41 02.8**	**-1.8**
JANG	**Nango**	**2.84**	**326**	P	**Pn**	**11 40 33.8**	**-1.2**
JANG				*e*S	**Sn**	**11 41 05.3**	**-3.4**
JAW	**Awa shima**	**3.43**	**279**	P	**Pn**	**11 40 43.0**	**-0.1**
JAG	**Ashikaga**	**3.65**	**245**	P	**Pn**	**11 40 45.8**	**-0.4**
JRY	**Ryogami san**	**4.24**	**243**	P	**Pn**	**11 40 54.0**	**-0.2**
JRY				*e*S	**Sn**	**11 41 39.9**	**-3.3**
JNBK	**Urakawa-nobuka**	**4.30**	**352**	P	**Pn**	**11 40 53.4**	**-1.7**
JKB	**Kayabe**	**4.33**	**334**	*e*S	**Sn**	**11 41 41.4**	**-3.9**
MJAR	**Matsushiro Arr**	**4.52**	**253**	Pn	**Pn**	**11 40 59.2**	**+1.1**
	1.7nm,0.3s,baz=87,slow=15,SNR=19						
MJAR				Sn	**Sn**	**11 41 51.8**	**+1.6**
	1.3nm,0.3s,baz=159,slow=31,SNR=5.4						
MAT	**Matsushiro**	**4.52**	**253**	P	**Pn**	**11 40 59.5**	**+1.3**
MAT				*e*S	**Sn**	**11 41 49.7**	**-0.5**
JOD2	**Odawara 2**	**4.53**	**234**	P	**Pn**	**11 40 58.1**	**-0.2**
JOD2				*e*S	**Sn**	**11 41 46.6**	**-3.9**
JHJ	**Hachijo jima 2**	**5.78**	**213**	Pn	**Pn**	**11 41 14.7**	**-0.8**
	16nm,0.3s,baz=85,slow=23,SNR=6.2						
JHJ				Sn	**Sn**	**11 42 14.2**	**-7.0**
	12nm,0.3s,baz=41,slow=19,SNR=4.1						
ASAJ	**Asahikawa**	**6.13**	**353**	Pn	**Pn**	**11 41 18.6**	**-1.6**
	2.8nm,0.3s,baz=196,slow=8.4,SNR=32						
USRK	**Ussuriysk Ar.**	**10.69**	**309**	Pn	**Pn**	**11 42 24.9**	**+2.2**
	0.3nm,0.3s,baz=148,slow=14,SNR=3.2						
KSRS	**Korea Array**	**12.40**	**272**	Pn	**Pn**	**11 42 47.9**	**+1.7**
	0.1nm,0.3s,baz=86,slow=14,SNR=3.9						
KSRS				LR	LR	11 47 35.1	
	comp=Z,26nm,18.7s,baz=150,slow=37						
PETK	**Petropavlovsk-**	**17.99**	**28**	P	**P**	**11 44 01.6**	**+1.6**
	0.1nm,0.3s,baz=198,slow=4.1,SNR=3.6						
YAK	**Yakutsk**	**25.52**	**345**	LR	LR	11 56 01.8	
	comp=Z,26nm,19.6s,baz=109,slow=38						
SONM	**Songino Array**	**28.69**	**302**	P	**P**	**11 45 48.1**	**+1.6**
	0.5nm,0.5s,baz=70,slow=8.3,SNR=2.5						
ZALV	**Zalesovo Beam**	**42.53**	**312**	P	**P**	**11 47 47.6**	**+2.8**
	0.9nm,0.5s,baz=90,slow=10,SNR=3.4						
MKAR	**Makanchi Array**	**45.05**	**302**	P	**P**	**11 48 05.4**	**+0.2**
	0.2nm,0.3s,baz=93,slow=7.5,SNR=3.1						
KURBB	**Kurchatov Arra**	**46.75**	**309**	P	**P**	**11 48 18.4**	**-0.1**
	0.8nm,0.3s,baz=80,slow=8.7,SNR=2.6						
ILAR	**Eielson Array**	**47.74**	**33**	P	**P**	**11 48 25.9**	**-0.2**
	0.6nm,0.8s,baz=258,slow=6.6,SNR=8.5						

IDC 17 11:46:42.6±999.0, 28.11N×16.44E, h0km, Error ellipse: s-maj=541.0km s-min=166.9km az=126.0, Libya

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I48TN	**KESRA INFRASON**	**9.76**	**324**	*i*		12 45 50.0	
	baz=137,slow=320,SNR=1.2						
I42PT	**GRACIOSA ISLAN**	**38.26**	**298**	*i*		15 39 00.0	
	baz=95,slow=311,SNR=0.7						
I11CV	**MAIO ISLAND IN**	**38.80**	**259**	*i*		15 47 10.0	
	baz=61,slow=309,SNR=0.3						

*IDC **17** 11:58:59.7±1.2, 33.30N×47.33E, h0km, mb3.7/8, mb1 3.9/11, mb1mx3.6/49, mbtmp3.8/11, ML3.8/3, MS3.2/2, Ms1 3.2/2, ms1mx2.4/44, Error ellipse: s-maj=28.7km s-min=17.0km az=173.0*

*ISCJB **17** 11:59:00.8±1.3, 33.32N±0.06×47.18E±0.04, h9km±8km, mb3.9/16, MS3.6/1, Error ellipse: s-maj=10.3km s-min=4.8km az=26.7*

*TEH **17** 11:59:02.2, 33.27N×47.27E, h2km, ML3.5*

*CSEM **17** 11:59:03.1±0.5, 33.38N×47.29E, h2km, ML3.5, Error ellipse: s-maj=11.2km s-min=5.5km az=50.0*

*THR **17** 11:59:04.0±0.4, 33.40N×47.34E, h16km±5km, ML3.5*

ISC 17 11:59:01.9±1.4, 33.31N±0.04×47.26E±0.04, h11km±9km, n61, σ1.962/71, mb4.0/18, 1D, Western Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IKFM	**Kafar-mosalman**	**0.54**	**66**	*e*Pg	**Pg**	**11 59 12.0**	**-0.4**
IKFM				*e*Sg	**Sb**	**11 59 19.7**	**-1.4**
IKFM	**Kafar-mosalman**	**0.54**	**66**	*e*Pg	**Pg**	**11 59 12.0**	**-0.4**
IKFM				*e*Sg	**Sb**	**11 59 19.7**	**-1.4**
IKOM	**Komasi**	**0.89**	**14**	*e*Pg	**Pg**	**11 59 18.1**	**-1.0**
IKOM				*e*Sg	**Sb**	**11 59 30.6**	**-0.9**
IKOM				*e*AMB	AMB	11 59 31.8	
	comp=Z,21μm,0.2s						
IKOM	**Komasi**	**0.89**	**14**	*e*Pg	**Pg**	**11 59 18.1**	**-1.0**
IKOM				*e*Sg	**Sb**	**11 59 30.6**	**-0.9**
IGHG	**Ghaleghazi**	**1.17**	**331**	*e*Pn	**Pg**	**11 59 23.7**	**-0.8**
IGHG				*e*AMB	AMB	11 59 51.2	
	comp=Z,24μm,0.2s						
IBZA	**Bozab**	**1.27**	**23**	*e*Pg	**Pb**	**11 59 26.0**	**+0.1**
IBZA				*e*AMB	AMB	11 59 49.9	
	comp=Z,12μm,0.3s						
IBZA	**Bozab**	**1.27**	**23**	*e*Pg	**Pb**	**11 59 26.0**	**+0.1**
IVIS	**Veis**	**1.27**	**345**	*e*Pg	**Pg**	**11 59 25.5**	**-0.7**
IVIS				*e*AMB	AMB	11 59 47.9	
	comp=Z,23μm,0.2s						
IVIS	**Veis**	**1.27**	**345**	*e*Pg	**Pg**	**11 59 25.5**	**-0.7**
IDHR	**Dehrash**	**1.57**	**333**	*e*Pn	**Pn**	**11 59 30.7**	**+0.8**
IDHR				*e*Sg	**Sg**	**11 59 52.8**	**+0.4**
IDHR				*e*AMB	AMB	11 59 57.1	
	comp=Z,81μm,0.2s						
IDHR	**Dehrash**	**1.57**	**333**	*e*Pn	**Pn**	**11 59 30.7**	**+0.8**
IDHR				*e*Sg	**Sg**	**11 59 52.8**	**+0.4**
ILIN	**Lien**	**1.63**	**351**	*e*Pn	**Pn**	**11 59 32.6**	**+1.8**
ILIN				*e*Sg	**Sg**	**11 59 54.5**	**+0.2**
ILIN				*e*AMB	AMB	12 00 02.6	
	comp=Z,387nm,0.2s						
ILIN	**Lien**	**1.63**	**351**	*e*Pn	**Pn**	**11 59 32.6**	**+1.8**
ILIN				*e*Sg	**Sg**	**11 59 54.5**	**+0.2**
SHGR	**Shooshtar-Gavs**	**1.77**	**132**	*e*Pn	**Pb**	**11 59 36.0**	**+1.8**
SHGR				AML	AML	12 00 12.4	
	comp=E,341nm,0.6s						
SHGR				AML	AML	12 00 16.5	
	comp=N,306nm,0.5s						
SHGR	**Shooshtar-Gavs**	**1.77**	**132**	*e*Pn	**Pb**	**11 59 36.0**	**+1.8**
SNGE	**Sanandaj**	**1.79**	**2**	*e*Pn	**Pb**	**11 59 34.9**	**+0.2**
SNGE				*e*Sg	**Sb**	**11 59 57.8**	**+0.6**
SNGE				AML	AML	12 00 02.9	
	comp=N,514nm,0.4s						
SNGE				AML	AML	12 00 04.5	
	comp=E,716nm,0.5s						
SNGE	**Sanandaj**	**1.79**	**2**	*e*Pn	**Pb**	**11 59 34.9**	**+0.2**
SNGE				*e*Sg	**Sb**	**11 59 57.8**	**+0.6**
KHMZ	**Khomeyn**	**2.30**	**78**	*e*Pn	**Pn**	**11 59 42.4**	**+2.5**
KHMZ				*e*Sg	**Sg**	**12 00 13.8**	**-1.9**
KHMZ	**Khomeyn**	**2.30**	**78**	*e*Pn	**Pn**	**11 59 42.4**	**+2.5**
KHMZ				*e*Sg	**Sg**	**12 00 13.8**	**-1.9**
IRAZ	**Razeghan**	**3.04**	**46**	*e*Pn	**Pn**	**11 59 53.8**	**+3.6**
IRAZ				*e*AMB	AMB	12 00 06.2	
	comp=Z,2μm,0.4s						
IRAZ	**Razeghan**	**3.04**	**46**	*e*Pn	**Pn**	**11 59 53.8**	**+3.6**
IPIR	**Pirpir**	**3.12**	**100**	*e*Pn	**Pn**	**11 59 53.4**	**+2.1**
IPIR				*e*AMB	AMB	12 00 58.9	
	comp=Z,1μm,0.4s						
IPIR	**Pirpir**	**3.12**	**100**	*e*Pn	**Pn**	**11 59 53.4**	**+2.1**
QAM	**Ghamsar**	**3.52**	**81**	*e*Pn	**Pn**	**11 59 57.3**	**+0.5**
QAM				*e*AMB	AMB	12 01 05.5	
	comp=Z,1μm,0.3s						
GHVR	**GHOM**	**3.56**	**70**	*e*P	**Pn**	**11 59 58.9**	**+1.8**
GHVR	**GHOM**	**3.56**	**70**	*e*P	**Pn**	**11 59 58.9**	**+1.8**
IKLH	**Kolahrood**	**3.62**	**89**	*e*Pn	**Pn**	**11 59 58.1**	**0.0**
IKLH				*e*AMB	AMB	12 01 08.2	
	comp=Z,720nm,0.4s						
IKLH	**Kolahrood**	**3.62**	**89**	*e*Pn	**Pn**	**11 59 58.1**	**0.0**
IGAR	**Gharneh**	**4.12**	**101**	*e*Pn	**Pn**	**12 00 06.5**	**+1.4**
IGAR				*e*AMB	AMB	12 01 23.2	
	comp=Z,342nm,0.3s						
IZEF	**Zefreh**	**4.28**	**94**	*e*Pn	**Pn**	**12 00 10.2**	**+3.0**
IZEF				*e*AMB	AMB	12 00 28.1	
	comp=Z,239nm,0.3s						
IZEF	**Zefreh**	**4.28**	**94**	*e*Pn	**Pn**	**12 00 10.2**	**+3.0**
DAMV	**Damavand**	**4.53**	**58**	*e*Pn	**Pn**	**12 00 12.8**	**+2.1**
DAMV	**Damavand**	**4.53**	**58**	*e*Pn	**Pn**	**12 00 12.8**	**+2.1**
IDMV	**Damavand**	**4.55**	**59**	*e*Pn	**Pn**	**12 00 12.7**	**+1.7**
IDMV				*e*AMB	AMB	12 01 06.7	
	comp=Z,392nm,0.3s						
IDMV	**Damavand**	**4.55**	**59**	*e*Pn	**Pn**	**12 00 12.7**	**+1.7**
IRAM	**Ramesheh**	**4.58**	**108**	*e*Pn	**Pn**	**12 00 12.3**	**+1.0**
IRAM				*e*AMB	AMB	12 01 36.9	
	comp=Z,256nm,0.3s						
IRAM	**Ramesheh**	**4.58**	**108**	*e*Pn	**Pn**	**12 00 12.3**	**+1.0**
ASF	**Jabal al Asfar**	**8.80**	**265**	Pn	**Pn**	**12 01 10.8**	**+1.7**
	comp=Z,0.5nm,0.3s,baz=63,slow=4.5,SNR=2.7						
ASF				Sn	**Sn**	**12 02 44.3**	**-4.1**
	comp=Z,0.7nm,0.3s,baz=233,slow=20,SNR=2.7						
ASF				Lg	Lg	12 03 42.6	
	comp=Z,0.6nm,0.3s,baz=209,slow=19,SNR=2.9						
WSAR	**Wadi Sarin**	**14.16**	**132**	Pn	Pn	12 02 19.9	-2.7
	comp=Z,0.6nm,0.3s,baz=329,slow=12,SNR=5.3						
WSAR				LR	LR	12 08 23.5	
	comp=Z,43nm,18.4s,baz=270,slow=40						
IDI	**Anoyia**	**18.58**	**282**	P	**P**	**12 03 19.5**	**+0.4**
	comp=Z,0.4nm,0.3s,baz=92,slow=14,SNR=4.8						
BURAR	**Bucovina Array**	**21.93**	**317**	⇓*i* P	**P**	**12 03 56.6**	**+1.2**
BVAR	**Borovoye Array**	**25.75**	**33**	P	**P**	**12 04 31.2**	**-1.1**
	comp=Z,0.8nm,0.7s,baz=212,slow=5.1,SNR=3.7						
ARSA	**Arzberg**	**27.71**	**310**	*i* pP	**P**	**12 04 52.8**	**+2.6**
	comp=Z,0.5nm,0.3s						
KURBB	**Kurchatov Arra**	**28.69**	**44**	P	**P**	**12 04 59.3**	**+0.5**
	comp=Z,0.4nm,0.6s,baz=249,slow=9.1,SNR=3.2						
MOA	**Molln**	**28.71**	**310**	*i* P	**P**	**12 04 59.7**	**+0.6**
	comp=Z,1.1nm,0.5s						
MYKA	**Terra Mystica**	**28.76**	**308**	*i* pP	**P**	**12 05 01.3**	**+1.7**
	comp=Z,0.4nm,0.1s						
KBA	**Koelnbreinsper**	**29.08**	**308**	*i* P	**P**	**12 05 03.6**	**+1.1**
	comp=Z,1.1nm,0.2s						
MKAR	**Makanchi Array**	**29.75**	**53**	P	**P**	**12 05 11.8**	**+3.6**
	comp=Z,0.3nm,0.3s,baz=248,slow=7.6,SNR=3.5						
WTTA	**Wattenberg**	**30.25**	**308**	*i* P	**P**	**12 05 12.9**	**0.0**
	comp=Z,2.9nm,0.6s						
WATA	**Walderalm**	**30.31**	**308**	*i* P	**P**	**12 05 13.7**	**+0.3**
	comp=Z,1.3nm,0.3s						
MOTA	**Moosalm**	**30.62**	**308**	*i* P	**P**	**12 05 15.8**	**-0.3**
	comp=Z,1.8nm,0.3s						
FETA	**Feichten**	**30.80**	**307**	*i* P	**P**	**12 05 18.0**	**+0.3**
	comp=Z,3.9nm,0.9s						
RETA	**Reutte**	**30.88**	**308**	*i* pP	pP	12 05 21.4	-0.3
	comp=Z,0.5nm,0.2s						
FINES	**FINESS Array B**	**31.30**	**340**	P	**P**	**12 05 21.9**	**+0.2**
	comp=Z,0.5nm,0.5s,baz=141,slow=9.6,SNR=3.5						
DAVA	**Damuels**	**31.42**	**308**	*i* P	**P**	**12 05 23.0**	**-0.2**
	comp=Z,3.2nm,0.3s						
HFS	**Hagfors**	**34.67**	**331**	P	**P**	**12 05 50.5**	**-0.7**
	comp=Z,3.8nm,1.0s,baz=139,slow=9.0,SNR=4.8						
EKA	**Eskdalemuir Ar**	**41.11**	**318**	P	**P**	**12 06 44.6**	**-1.0**
	comp=Z,1.5nm,0.6s,baz=105,slow=8.7,SNR=5.7						
TORD	**Torodi Ar. Bea**	**46.00**	**255**	P	**P**	**12 07 25.2**	**-0.3**
	comp=Z,0.5nm,0.8s,baz=63,slow=6.6,SNR=3.7						
CMAR	**Chiang Mai Arr**	**48.33**	**94**	P	**P**	**12 07 42.8**	**-0.9**
	comp=Z,0.9nm,0.6s,baz=297,slow=8.4,SNR=5.5						
BOSA	**Boshof**	**65.02**	**201**	LR	LR	12 40 24.2	
	comp=Z,36nm,18.5s,baz=174,slow=38						
ILAR	**Eielson Array**	**81.62**	**6**	P	**P**	**12 11 18.7**	**-0.9**
	comp=Z,0.3nm,0.7s,baz=322,slow=4.8,SNR=4.8						

*ISCJB **17** 12:18:54.5±1.2, 35.79N±0.05×141.04E±0.09, h22km±5km, mb3.4/4, Error ellipse: s-maj=13.3km s-min=8.2km az=161.9*

*JMA **17** 12:18:55.5±0.1, 35.82N×140.99E, h14km±1km, M3.6*

JMA Felt I J1.

*IDC **17** 12:18:56.0±1.4, 35.40N×140.51E, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.4/27, mbtmp3.3/5, ML2.9/1, Error ellipse: s-maj=39.3km s-min=23.8km az=51.0*

ISC 17 12:18:55.4±1.5, 35.83N±0.05×140.98E±0.10, h14km±7km, n16, σ0.979/15, mb3.5/4, 1C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.16**	**218**	⇑P	**Pg**	**12 18 59.3**	**0.0**
CHOJ				S	**Sg**	**12 19 02.0**	**+0.1**
JYT	**Yasato**	**0.75**	**302**	⇓P	**Pg**	**12 19 09.7**	**-0.3**
JYT				S	**Sg**	**12 19 20.0**	**+0.1**
JCN	**Nagara**	**0.75**	**237**	P	**Pn**	**12 19 11.1**	**-0.5**
JCN				S	**Sn**	**12 19 22.8**	**+0.1**
JHO	**Hitachi**	**0.85**	**337**	⇓P	**Pg**	**12 19 11.3**	**-0.6**
JHO				S	**Sg**	**12 19 23.6**	**+0.5**
MJAR	**Matsushiro Arr**	**2.35**	**288**	Pn	**Pn**	**12 19 33.4**	**-0.2**
	4.0nm,0.3s,baz=92,slow=8.7,SNR=45						
MJAR				Sn	**Sn**	**12 20 03.3**	**+1.0**
	4.6nm,0.3s,baz=120,slow=12,SNR=7.6						
MAT	**Matsushiro**	**2.35**	**289**	P	**Pn**	**12 19 33.8**	**+0.2**
MAT				*e*S	**Sn**	**12 20 00.9**	**-1.4**
H11N2	**WAKE ISLAND Hy**	**27.86**	**118**	T	T	12 53 44.6	
	baz=311,slow=75,SNR=72						
H11N1	**WAKE ISLAND Hy**	**27.87**	**118**	T	T	12 53 46.4	
	baz=311,slow=75,SNR=35						
H11N3	**WAKE ISLAND Hy**	**27.88**	**118**	T	T	12 53 46.8	
	baz=311,slow=75,SNR=48						
H11S1	**WAKE ISLAND Hy**	**28.53**	**120**	T	T	12 54 38.3	
	baz=312,slow=75,SNR=47						
H11S3	**WAKE ISLAND Hy**	**28.53**	**120**	T	T	12 54 38.3	
	baz=312,slow=75,SNR=40						
H11S2	**WAKE ISLAND Hy**	**28.54**	**120**	T	T	12 54 39.4	
	baz=312,slow=75,SNR=37						
MKAR	**Makanchi Array**	**44.47**	**303**	P	**P**	**12 27 07.3**	**+1.3**
	0.2nm,0.3s,baz=88,slow=12,SNR=2.3						
WRA	**Warramunga Arr**	**55.82**	**188**	P	**P**	**12 28 31.2**	**-1.0**
	0.6nm,0.9s,baz=1.9,slow=7.3,SNR=2.6						
ASAR	**Alice Springs**	**59.55**	**188**	P	**P**	**12 28 58.6**	**+0.1**
	0.3nm,0.9s,baz=8.9,slow=9.0,SNR=1.9						
PDAR	**Pinedale Array**	**78.76**	**45**	P	P	12 31 04.1	+6.3
	0.2nm,0.6s,baz=295,slow=6.9,SNR=1.9						

MEX 17 12:28:17.1±0.6, 16.48N×98.34W, h26km±7km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.22**	**112**	*i* P	Pb	12 28 21.5	-1.6
PNIG				*i* S	Sb	12 28 26.4	-0.8
TLIG	**Tlapa**	**1.10**	**349**	*i* P	Pn	12 28 34.3	-2.8
TLIG				*e*S	Sn	12 28 47.9	-3.6
VHO	**Vista Hermosa**	**1.65**	**69**	*e*P	Pn	12 28 43.2	-1.4
VHO				*e*S	Sn	12 29 01.5	-3.5
MEIG	**Mezcala**	**1.89**	**320**	*e*P	Pn	12 28 45.6	-2.2
MEIG				*e*S	Sn	12 29 07.6	-3.3
CAIG	**El Cayaco**	**1.94**	**287**	*e*P	Pn	12 28 46.2	-2.1
CAIG				*e*S	Sn	12 29 09.4	-2.4
TPIG	**Tehuac#an**	**2.15**	**26**	*i* P	Pn	12 28 50.1	-1.3
TPIG				*i* S	Sn	12 29 14.3	-3.0
HUIG	**Huatulco**	**2.25**	**108**	*i* P	Pn	12 28 49.9	-2.8
HUIG				*e*S	Sn	12 29 17.3	-2.4
YAIG	**Yautepec**	**2.47**	**344**	*i* P	Pn	12 28 54.7	-1.2
YAIG				*e*S	Sn	12 29 22.4	-2.9

HLW 17 12:51:01.2, 29.95N×36.75E, h10km±16km, Md3.2, MI3.5, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HBST	**Basata**	**1.90**	**248**	P	Pn	12 51 32.1	-1.6
	baz=248						
HBST				AMP		12 51 00.3	
	comp=N,940μm,0.4s,logA/T=6.4,baz=248						
HBST				S	Sn	12 51 55.0	-2.7
	baz=248						
NUB		**2.05**	**244**	P	Pn	12 51 35.1	-0.6
	baz=243						
HDHB	**Dhahab**	**2.23**	**237**	P	Pn	12 51 36.6	-1.5
	baz=238						
HNKL	**Nakhl**	**2.40**	**270**	P	Pn	12 51 39.2	-1.3
	baz=271						
HNKL				AMP		12 52 00.0	
	comp=N,200μm,0.6s,logA/T=5.5,baz=271						
SUZ	**Suez**	**3.40**	**269**	P	Pn	12 51 52.9	-1.4
	baz=270						

*CSEM **17** 12:54:48.6±0.2, 30.73N×56.82E, h10km, ML3.5, Error ellipse: s-maj=5.8km s-min=4.6km az=85.0*

TEH 17 12:54:49.2, 30.76N×56.80E, h10km, ML3.5, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KHGB	**Koh Gabri**	**0.47**	**217**	*e*Pg	Pg	12 54 56.6	-1.9
KHGB	**Koh Gabri**	**0.47**	**217**	*e*Pg	Pg	12 54 56.6	-1.9
TVBK	**TV Kerman**	**0.77**	**183**	*e*Pg	Pg	12 55 03.1	-1.0
TVBK	**TV Kerman**	**0.77**	**183**	*e*Pg	Pg	12 55 03.1	-1.0
KRBR	**Kerman**	**0.78**	**183**	*e*Sg	Sg	12 55 14.5	+0.1
CHMN	**Cheshme madani**	**1.10**	**144**	*e*Pg	Pg	12 55 08.8	-1.6
CHMN	**Cheshme madani**	**1.10**	**144**	*e*Pg	Pg	12 55 08.8	-1.6
NGRK	**Negar Kerman**	**1.11**	**183**	*e*Pg	Pg	12 55 09.4	-1.2
NGRK	**Negar Kerman**	**1.11**	**183**	*e*Pg	Pg	12 55 09.4	-1.2
IBAF	**Bafgh**	**1.34**	**308**	*e*AMB	AMB	12 55 13.8	
	comp=Z,13μm,0.2s						
IMEH	**Mehriz**	**1.98**	**289**	*e*Pn	Pn	12 55 22.2	-0.8
IMEH				*e*AMB	AMB	12 55 49.4	
	comp=Z,9μm,0.2s						
IMEH	**Mehriz**	**1.98**	**289**	*e*Pn	Pn	12 55 22.2	-0.8
IKOO	**Kooshah**	**2.51**	**48**	*e*Pn	Pn	12 55 30.3	0.0
IKOO	**Kooshah**	**2.51**	**48**	*e*Pn	Pn	12 55 30.3	0.0
ICHK	**Chekchek**	**2.53**	**306**	*e*Pn	Pn	12 55 30.0	-0.5
ICHK				*e*Sg	Sn	12 56 02.9	+1.4
ICHK				*e*AMB	AMB	12 56 06.9	
	comp=Z,4μm,0.2s						
ICHK	**Chekchek**	**2.53**	**306**	*e*Pn	Pn	12 55 30.0	-0.5
ITEG	**Tejag**	**2.70**	**37**	*e*Pn	Pn	12 55 32.8	-0.1
ITEG				*e*AMB	AMB	12 56 21.8	
	comp=Z,2μm,0.2s						
ITEG	**Tejag**	**2.70**	**37**	*e*Pn	Pn	12 55 32.8	-0.1
TABS	**Tabas**	**2.89**	**5**	*e*Pn	Pn	12 55 35.5	0.0
ISAD	**Sadrabad**	**2.91**	**294**	*e*Pn	Pn	12 55 35.6	-0.2
ISAD				*e*AMB	AMB	12 56 18.5	
	comp=Z,2μm,0.2s						
ISAD	**Sadrabad**	**2.91**	**294**	*e*Pn	Pn	12 55 35.6	-0.2
IDAH	**Dahanechah**	**3.27**	**52**	*e*Pn	Pn	12 55 40.1	-0.7
IDAH				*e*AMB	AMB	12 56 47.1	
	comp=Z,807nm,0.3s						
IDAH	**Dahanechah**	**3.27**	**52**	*e*Pn	Pn	12 55 40.1	-0.7
IPAR	**Pars**	**3.37**	**255**	*e*Pn	Pn	12 55 42.4	+0.2
IPAR				*e*AMB	AMB	12 56 51.3	
	comp=Z,590nm,0.3s						
IPAR	**Pars**	**3.37**	**255**	*e*Pn	Pn	12 55 42.4	+0.2
BNDS	**Bandar-Abbas**	**3.39**	**190**	*e*Pn	Pn	12 55 42.8	+0.4
ISRV	**Sarvestan**	**3.48**	**248**	*e*Pn	Pn	12 55 44.8	+1.1
ISRV				*e*AMB	AMB	12 56 53.0	
	comp=Z,611nm,0.4s						
ISRV	**Sarvestan**	**3.48**	**248**	*e*Pn	Pn	12 55 44.8	+1.1
IRAM	**Ramesheh**	**3.93**	**287**	*e*Pn	Pn	12 55 48.6	-1.2
IRAM				*e*AMB	AMB	12 56 51.4	
	comp=Z,733nm,0.4s						
IRAM	**Ramesheh**	**3.93**	**287**	*e*Pn	Pn	12 55 48.6	-1.2
NASN	**Na'in**	**3.96**	**302**	*e*Pn	Pn	12 55 49.9	-0.5
IZEF	**Zefreh**	**4.36**	**300**	*e*Pn	Pn	12 55 55.3	-0.5
IZEF				*e*AMB	AMB	12 57 05.9	
	comp=Z,364nm,0.2s						
IZEF	**Zefreh**	**4.36**	**300**	*e*Pn	Pn	12 55 55.3	-0.5
IGAR	**Gharneh**	**4.38**	**293**	*e*Pn	Pn	12 55 55.5	-0.5
IGAR				*e*AMB	AMB	12 57 04.3	
	comp=Z,336nm,0.2s						
IPIR	**Pirpir**	**5.39**	**292**	*e*Pn	Pn	12 56 09.7	-0.3
IPIR				*e*AMB	AMB	12 57 41.7	
	comp=Z,126nm,0.3s						
IPIR	**Pirpir**	**5.39**	**292**	*e*Pn	Pn	12 56 09.7	-0.3

IDC 17 13:09:23.8±39.0, 26.25S×70.15E, h0km, mb3.7/3, mb1 4.0/3, mb1mx3.3/46, mbtmp3.7/3, Error ellipse: s-maj=938.6km s-min=55.2km az=71.0, Indian Ocean Triple Junction

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**52.51**	**35**	P	P	13 18 38.7	-0.2
	0.3nm,0.4s,baz=224,slow=5.0,SNR=4.6						
ASAR	**

λ156.00000°. NP2:φ∞343.00000°,λ77.00000°,λ59.00000°.
*JMA **17** 13:41:47.8±0.7,45°.43N×151°.30E,h30km,M4.3*
*ISCJB **17** 13:41:49.1±0.4,45°.17N±0°.05×151°.09E±0°.05,h42km, mb3.9/20,MS3.4/3,Error ellipse: s-maj=8.2km s-min=3.4km az=144.0*
*SKHL **17** 13:41:49.9±1.0,45°.12N×151°.25E,h61km±9km,mb4.8/8*
*IDC **17** 13:41:50.6±5.8,45°.38N×150°.96E,h33km±44km,mb3.7/16, mb1 3.9/19,mb1mx3.8/35,mbtmp3.9/19,ML3.3/2,MS3.2/8, Ms1 3.2/8,ms1mx2.9/51,Error ellipse: s-maj=21.7km s-min=15.2km az=118.0*
*MOS **17** 13:41:52.3±1.2,45°.35N×150°.82E,h64km,mb4.1/12,Error ellipse: s-maj=9.4km s-min=8.3km az=92.8*

ISC 17 13:41:50.5±0.6,45°.16N±0°.06×151°.11E±0°.07,h42km,n106, σ2s00/116,mb3.9/20,MS3.4/3,6C-2D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**2.29**	**273**	*e*	PN	**Pn**		**13 42 26.1**	**+0.3**
KUR					S	**Sn**		**13 42 53.6**	**+0.9**
KUR					pmax	pmax			
	comp=Z,90nm,0.4s								
KUR					smax	smax			
	comp=N,232nm,0.6s								
KUR					smax	smax			
	comp=E,124nm,0.6s								
KUR	**Kuril'sk**	**2.29**	**273**	*i*	P	**Pn**		**13 42 26.2**	**+0.4**
KUR					AMB	AMB		13 42 27.7	
	comp=E,40nm,0.4s								
KUR					AMB	AMB		13 42 27.7	
	comp=E,20nm,0.4s								
KUR					AMB	AMB		13 42 27.7	
	comp=E,180nm,0.4s								
KUR				*i*	S	**Sn**		**13 42 53.6**	**+0.9**
KUR					A	A		13 42 55.9	
	comp=E,270nm,0.2s								
KUR					A	A		13 42 55.9	
	comp=E,350nm,0.2s								
SHO	**Shikotan**	**3.32**	**249**	*e*	PN	**Pn**		**13 42 40.1**	**+0.2**
SHO					S	**Sn**		**13 43 19.1**	**+1.1**
SHO					pmax	pmax			
	comp=N,40nm,0.4s								
SHO					pmax	pmax			
	comp=Z,154nm,0.4s								
SHO					pmax	pmax			
	comp=E,51nm,0.3s								
SHO					smax	smax			
	comp=N,161nm,0.5s								
SHO					smax	smax			
	comp=E,369nm,0.5s								
SHO	**Shikotan**	**3.32**	**249**	*e*	P	**Pn**		**13 42 40.5**	**+0.6**
SHO					AMB	AMB		13 42 43.7	
	comp=E,40nm,0.3s								
SHO					AMB	AMB		13 42 43.7	
	comp=E,50nm,0.3s								
SHO					AMB	AMB		13 42 43.7	
	comp=E,150nm,0.3s								
SHO					S	**Sn**		**13 43 18.0**	**0.0**
SHO					A	A		13 43 22.2	
	comp=E,160nm,0.3s								
SHO					A	A		13 43 22.2	
	comp=E,370nm,0.3s								
YUK	**Yuzh-Kuril'sk**	**3.91**	**255**	*e*	PN	**Pn**		**13 42 49.8**	**+1.8**
YUK					S	**Sn**		**13 43 35.3**	**+2.7**
YUK					pmax	pmax			
	comp=E,136nm,0.4s								
YUK					pmax	pmax			
	comp=Z,136nm,0.4s								
YUK					pmax	pmax			
	comp=N,27nm,0.2s								
YUK	**Yuzh-Kuril'sk**	**3.91**	**255**	*e*	P	**Pn**		**13 42 49.8**	**+1.8**
YUK					AMB	AMB		13 42 51.8	
	comp=N,30nm,0.3s								
YUK					AMB	AMB		13 42 51.8	
	comp=N,140nm,0.3s								
YUK					AMB	AMB		13 42 51.8	
	comp=N,190nm,0.3s								
YUK					S	**Sn**		**13 43 34.4**	**+1.8**
YUK					A	A		13 43 44.8	
	comp=N,400nm,0.6s								
YUK					A	A		13 43 44.8	
	comp=N,600nm,0.6s								
NEM2	**Nemuro 2**	**4.25**	**247**		P	**Pn**		**13 42 52.8**	**+0.2**
NEM2					S	**Sn**		**13 43 41.8**	**+0.9**
JRA	**Rausu**	**4.45**	**256**		P	**Pn**		**13 42 57.8**	**+2.4**
JRA					S	**Sn**		**13 43 50.2**	**+4.4**
JNK	**Nakash**	**4.84**	**253**		P	**Pn**		**13 43 02.5**	**+1.7**
JNK					S	**Sn**		**13 43 57.0**	**+1.4**
JAK	**Akkeshi**	**5.10**	**247**		P	**Pn**		**13 43 03.5**	**-0.8**
JAK					S	**Sn**		**13 44 01.2**	**-0.7**
JTKR	**Abashiri--Toko**	**5.28**	**260**		P	**Pn**		**13 43 09.0**	**+2.2**
JAR	**Ashorobuto**	**5.59**	**253**		P	**Pn**		**13 43 13.3**	**+2.2**
JAR					S	**Sn**		**13 44 16.2**	**+2.2**
JMP	**Maruseppu**	**5.65**	**261**		P	**Pn**		**13 43 14.6**	**+2.7**
JOB	**Onbets**	**5.71**	**249**		P	**Pn**		**13 43 14.0**	**+1.4**
HRK	**Horoka**	**5.97**	**256**	*e*	P	**Pn**		**13 43 19.4**	**+3.1**
JSE	**Soyaes**	**6.04**	**271**		P	**Pn**		**13 43 20.2**	**+3.0**
YSS	**Yuzh-Sakhalins**	**6.08**	**290**	*e*	PN	**Pn**		**13 43 19.0**	**+1.2**
YSS					S	**Sn**		**13 44 23.7**	**-2.4**
YSS					pmax	pmax			
	comp=Z,10.0nm,0.7s								
YSS					smax	smax			
	comp=N,10.0nm,1.1s								
YSS					MLR	MLR			
	comp=E,200nm,15.0s								
YSS					MLR	MLR			
	comp=Z,400nm,15.0s								
YSS					MLR	MLR			
	comp=N,200nm,19.0s								
YSS	**Yuzh-Sakhalins**	**6.08**	**290**	*e*	P	**Pn**		**13 43 19.1**	**+1.2**
YSS					AMB	AMB		13 43 20.5	
	comp=N,30nm,0.6s								
YSS					AMB	AMB		13 43 20.5	
	comp=N,90nm,0.6s								
YSS					S	**Sn**		**13 44 26.2**	**+0.1**
YSS					A	A		13 44 29.0	
	comp=N,110nm,0.5s								
JKK2	**Kamakawa 2**	**6.11**	**261**		P	**Pn**		**13 43 21.3**	**+3.0**
JCH	**Churui**	**6.15**	**248**		P	**Pn**		**13 43 20.0**	**+1.3**
JCH					S	**Sn**		**13 44 28.3**	**+0.6**
ASAJ	**Asahikawa**	**6.16**	**263**		Pn	**Pn**		**13 43 22.5**	**+3.6**
	baz=180,slow=20								
ASAJ	**Asahikawa**	**6.16**	**263**		P	**Pn**		**13 43 22.0**	**+3.1**
MYR	**Moyori**	**6.35**	**246**	*e*	P	**Pn**		**13 43 22.4**	**+0.9**
MYR					S	**Sn**		**13 44 32.4**	**-0.3**
JFR	**Furan**	**6.44**	**255**		P	**Pn**		**13 43 26.4**	**+3.7**
SKR	**Severo-Kuril's**	**6.47**	**30**	*e*	PN	Pn		13 43 30.1	+7.0
SKR	**Severo-Kuril's**	**6.47**	**30**	*e*	P	**Pn**		**13 43 23.2**	**+0.1**
SKR					AMB	AMB		13 43 25.6	
	comp=N,90nm,0.8s								
SKR					S	**Sn**		**13 44 32.2**	**-3.4**
SKR					A	A		13 45 13.3	
	comp=N,100nm,1.0s								
JWK2	**Keihoku**	**6.51**	**275**		P	Pn		13 43 28.5	+4.9
JEM	**Erimo**	**6.57**	**244**		P	**Pn**		**13 43 26.3**	**+1.8**
JEM					S	**Sn**		**13 44 37.9**	**-0.2**
ERM	**Erimo**	**6.57**	**244**	*e*	PN	**Pn**		**13 43 28.6**	**+4.1**
ERM	**Erimo**	**6.57**	**244**	*e*	P	**Pn**		**13 43 28.6**	**+4.1**
JAB	**Ashibetsu**	**6.58**	**259**		P	**Pn**		**13 43 28.1**	**+3.4**
JNBK	**Urakawa-nobuka**	**6.70**	**248**		P	**Pn**		**13 43 26.8**	**+0.5**
JBT2	**Biratori 2**	**6.74**	**252**		P	**Pn**		**13 43 28.1**	**+1.2**
UGL	**Uglegorsk**	**7.31**	**306**	*e*	PN	**Pn**		**13 43 33.9**	**-0.7**
UGL					S	**Sn**		**13 44 53.0**	**-3.1**
UGL	**Uglegorsk**	**7.31**	**306**	*e*	P	**Pn**		**13 43 35.9**	**+1.3**
UGL					AMB	AMB		13 43 36.5	
	comp=N,40nm,0.6s								
JNB	**Noboribetsu**	**7.76**	**253**	*e*	S	**Sn**		**13 45 07.4**	**0.0**
JKB	**Kayabe**	**8.02**	**249**		P	**Pn**		**13 43 45.0**	**+0.7**
JKB					S	**Sn**		**13 45 11.2**	**-2.4**
TYV	**Tymovskoe**	**8.04**	**318**	*e*	PN	**Pn**		**13 43 43.2**	**-1.4**
TYV					pmax	pmax			
	comp=Z,11nm,0.8s								
TYV	**Tymovskoe**	**8.04**	**318**	*e*	P	**Pn**		**13 43 46.5**	**+1.9**
TYV					AMB	AMB		13 43 54.4	
	comp=Z,50nm,0.9s								
JYM2	**Yakumo 2**	**8.36**	**252**		P	**Pn**		**13 43 51.0**	**+2.0**
JANG	**Nango**	**8.52**	**239**		P	**Pn**		**13 43 49.9**	**-1.4**
JANG					S	**Sn**		**13 45 19.5**	**-6.6**
JTM	**Tenmabayashi**	**8.56**	**243**		P	**Pn**		**13 43 51.7**	**0.0**
JTM					S	**Sn**		**13 45 21.9**	**-5.0**
JSR	**Shiriuchi**	**8.59**	**249**		P	**Pn**		**13 43 53.5**	**+1.3**
JOSM	**Okushiri--Mats**	**8.98**	**254**		P	**Pn**		**13 43 58.0**	**+0.5**
PETK	**Petropavlovsk-**	**9.05**	**26**		Pn	**Pn**		**13 43 56.7**	**-1.8**
	baz=192,slow=9.1,SNR=2.1								
PETK					LR	LR		13 47 27.7	
	comp=Z,63nm,19.4s,baz=224,slow=38								
PET	**Petropavlovsk**	**9.29**	**29**	*e*	PN	Pn		13 44 06.0	+4.2
PET	**Petropavlovsk**	**9.29**	**29**	*e*	P	**Pn**		**13 44 03.3**	**+1.5**
JRG	**Rokugo**	**9.66**	**237**		P	**Pn**		**13 44 06.7**	**-0.2**
JRG					S	**Sn**		**13 45 50.5**	**-3.5**
JIO	**Ouri**	**9.89**	**231**		P	**Pn**		**13 44 09.4**	**-0.6**
JIO					S	**Sn**		**13 45 52.7**	**-6.9**
TEY	**Ternei**	**10.26**	**274**	*e*	P	**Pn**		**13 44 18.5**	**+3.5**
HABR	**Khabarovsk**	**11.49**	**292**	*e*	PN	**Pn**		**13 44 31.2**	**-0.6**
HABR					pmax	pmax			
	comp=E,10.0nm,1.5s								
HABR					pmax	pmax			
	comp=N,8.0nm,1.5s								
HABR					pmax	pmax			
	comp=Z,9.0nm,1.5s								
HABR					MLR	MLR			
	comp=Z,92nm,13.0s								
HABR	**Khabarovsk**	**11.49**	**292**	*e*	P	**Pn**		**13 44 31.2**	**-0.6**
MAJO	**Matsushiro**	**13.00**	**233**	*e*	PN	**Pn**		**13 44 52.8**	**+0.2**
MJAR	**Matsushiro Arr**	**13.00**	**233**		Pn	**Pn**		**13 44 51.7**	**-0.8**
	comp=Z,0.1nm,0.3s,baz=31,slow=15,SNR=4.3								
USRK	**Usuriysk Ar.**	**13.64**	**273**		LR	LR		13 49 21.0	
	comp=Z,80nm,21.0s,baz=81,slow=33								
KLR	**Kul'dur**	**13.77**	**294**		Pn	**P**		**13 45 07.8**	**-2.8**
	comp=Z,0.1nm,0.3s,baz=95,slow=16,SNR=4.4								
KLR					LR	LR		13 50 15.9	
	comp=Z,78nm,21.4s,baz=116,slow=37								
EKMR	**Ekimchan**	**14.26**	**310**	*e*	P	**Pn**		**13 45 10.0**	**+0.5**
EKMR					AMB	AMB		13 45 16.1	
	comp=Z,6.0nm,1.0s								
MA2	**Magadan**	**14.44**	**359**		LR	LR		13 50 08.9	
	comp=Z,73nm,19.0s,baz=156,slow=35								
BMKR	**Bomnak**	**17.16**	**312**	*e*	P	**Pn**		**13 45 45.4**	**-1.5**
BMKR					AMB	AMB		13 45 50.4	
	comp=Z,6.0nm,1.0s								
ZEA	**Zeya**	**17.66**	**308**	*e*	P	**P**		**13 45 52.5**	**-1.1**
ZEA					AMB	AMB		13 45 56.4	
	comp=Z,20nm,1.0s								
KSRS	**Korea Array**	**19.00**	**254**		P	**Pn**		**13 46 10.8**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=62,slow=11,SNR=5.9								
KSRS					LR	LR		13 52 36.7	
	comp=Z,61nm,21.0s,baz=76,slow=34								
YAK	**Yakutsk**	**20.98**	**331**	*i*	P	Pn		13 46 29.5	-3.1
YAK					pmax	pmax			
	comp=Z,7.0nm,0.9s								
YAK	**Yakutsk**	**20.98**	**331**	*e*	P	Pn		13 46 29.5	-3.1
BILL	**Bilibino**	**24.27**	**14**	*i*	P	**P**		**13 47 04.4**	**+1.1**
BILL					pmax	pmax			
	comp=Z,3.0nm,1.3s								
BILL	**Bilibino**	**24.27**	**14**	*e*	P	**P**		**13 47 04.4**	**+1.1**
H11N2	**WAKE ISLAND Hy**	**28.54**	**148**		T	T		14 18 26.2	
	baz=337,slow=76,SNR=60								
H11N1	**WAKE ISLAND Hy**	**28.55**	**148**		T	T		14 18 31.8	
	baz=337,slow=76,SNR=32								
H11N3	**WAKE ISLAND Hy**	**28.55**	**148**		T	T		14 18 30.0	
	baz=337,slow=76,SNR=40								
TIXI	**Tiksi**	**28.63**	**346**		P	**P**		**13 47 41.6**	**-0.9**
	comp=Z,1.2nm,0.3s,baz=127,slow=15,SNR=2.1								
H11S1	**WAKE ISLAND Hy**	**29.58**	**149**		T	T		14 20 07.1	
	baz=338,slow=76,SNR=22								
H11S3	**WAKE ISLAND Hy**	**29.59**	**149**		T	T		14 19 50.0	
	baz=338,slow=76,SNR=20								
H11S2	**WAKE ISLAND Hy**	**29.60**	**149**		T	T		14 19 53.3	
	baz=338,slow=76,SNR=22								
COLA	**College**	**38.25**	**37**	*e*	P	**P**		**13 49 08.2**	**+2.1**
COLA					pmax	pmax			
	comp=Z,1.0nm,0.9s								
COLA	**College**	**38.25**	**37**	*e*	P	**P**		**13 49 08.1**	**+2.0**
ILAR	**Eielson Array**	**38.66**	**37**		P	**P**		**13 49 09.8**	**+0.2**
	comp=Z,0.3nm,0.5s,baz=265,slow=7.6,SNR=8.7								
NRIK	**Noril'sk**	**39.42**	**330**		P	**P**		**13 49 16.7**	**+0.9**
	comp=Z,2.4nm,0.6s,baz=121,slow=5.9,SNR=2.1								
ZALV	**Zalesovo Beam**	**42.42**	**307**		PcP	**PcP**		**13 51 34.1**	**+1.0**
	comp=Z,0.4nm,0.4s,baz=46,slow=6.4,SNR=3.8								
ZALV					LR	LR		14 08 25.1	
	comp=Z,37nm,20.1s,baz=69,slow=38								
INK	**Inuvik**	**43.74**	**31**		P	**P**		**13 49 51.6**	**+0.5**
	comp=Z,1.6nm,1.0s,baz=343,slow=3.7,SNR=4.8								
MKAR	**Makanchi Array**	**46.44**	**298**		P	**P**		**13 50 12.6**	**-0.4**
	comp=Z,1.1nm,0.7s,baz=68,slow=7.9,SNR=8.3								
MKAR					PcP	**PcP**		**13 51 48.1**	**+1.1**
	comp=Z,0.3nm,0.4s,baz=64,slow=4.8,SNR=3.0								
MKAR					LR	LR		14 09 58.0	
	comp=Z,38nm,19.3s,baz=75,slow=36								
MKAR	**Makanchi Array**	**46.44**	**298**	*e*	P	**P**		**13 50 13.3**	**+0.4**
MKAR					pmax	pmax			
	comp=Z,1.0nm,0.7s								
MKAR	**Makanchi Array**	**46.44**	**298**	*e*	P	**P**		**13 50 13.3**	**+0.4**
CMAR	**Chiang Mai Arr**	**50.63**	**256**		P	**P**		**13 50 45.7**	**+0.3**
	comp=Z,0.7nm,0.6s,baz=32,slow=8.6,SNR=4.6								
KBS	**Kingsbay**	**53.85**	**191**	*e*	P	**P**		**13 51 06.7**	**-1.9**
ARU	**Arti**	**55.24**	**318**	*e*	P	**P**		**13 51 19.4**	**+0.5**
ARU					pmax	pmax			
	comp=Z,2.0nm,0.9s								
ARU	**Arti**	**55.24**	**318**	*e*	P	**P**		**13 51 19.4**	**+0.5**
FINES	**FINESS Array B**	**64.87**	**334**		P	**P**		**13 52 23.2**	**-1.6**
	comp=Z,0.9nm,0.6s,baz=40,slow=11,SNR=7.4								
FINES	**FINESS Array B**	**64.87**	**334**	*e*	P	**P**		**13 52 23.5**	**-1.3**
FINES					pmax	pmax			
	comp=Z,1.0nm,0.7s								
FINES	**FINESS Array B**	**64.87**	**334**	*e*	P	**P**		**13 52 23.5**	**-1.3**
GEYT	**Ailbeck**	**66.21**	**300**		P	**P**		**13 52 34.4**	**+0.5**
	comp=Z,1.9nm,0.6s,baz=25,slow=3.9,SNR=5.9								
WRA	**Warramunga Arr**	**66.56**	**197**		P	**P**		**13 52 37.9**	**+1.7**
	comp=Z,1.4nm,0.8s,baz=15,slow=6.7,SNR=9.5								
WRA	**Warramunga Arr**	**66.56**	**197**	*e*	P	**P**		**13 52 37.1**	**+0.9**
WRA					pmax	pmax			
	comp=Z,1.0nm,0.9s								
WRA	**Warramunga Arr**	**66.56**	**197**	*e*	P	**P**		**13 52 37.1**	**+0.9**
NOA	**NORSAR Array B**	**69.27**	**340**		P	**P**		**13 52 52.0**	**-0.8**
	comp=Z,0.8nm,0.7s,baz=27,slow=6.4,SNR=3.9								
ASAR	**Alice Springs**	**70.27**	**197**		P	**P**		**13 53 02.4**	**+3.1**
	comp=Z,0.7nm,0.8s,baz=14,slow=6.5,SNR=12								
KBZ	**Khabaz**	**70.94**	**313**		P	**P**		**13 53 02.3**	**-0.9**
	comp=Z,4.8nm,0.9s,baz=61,slow=3.9,SNR=7.6								
AKASG	**Malin Array Be**	**72.08**	**325**		P	**P**		**13 53 08.4**	**-1.5**
	comp=Z,0.4nm,0.4s,baz=36,slow=5.8,SNR=5.1								
CLL	**Collm**	**77.32**	**335**	*i*	P	**P**		**13 53 40.0**	**-0.3**
	comp=Z,5.0nm,0.8s								
CLL	**Collm**	**77.32**	**335**	*i*	P	**P**		**13 53 40.0**	**-0.3**
CLL					pmax	pmax			
	comp=Z,5.0nm,0.8s								
BRTR	**Keskin Array B**	**78.57**	**316**		P	**P**		**13 53 48.6**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=76,slow=7.6,SNR=3.8								
KHC	**Kasperske Hory**	**79.04**	**333**	*e*	P	**P**		**13 53 50.6**	**+0.6**
KHC	**Kasperske Hory**	**79.04**	**333**	*e*	P	**P**		**13 53 50.6**	**+0.6**
GERES	**GERESS Array B**	**79.25**	**333**		P	**P**		**13 53 51.0**	**-0.2**
	comp=Z,1.0nm,0.6s,baz=38,slow=6.8,SNR=8.8								
GERES	**GERESS Array B**	**79.25**	**333**	*e*	P	**P**		**13 53 51.2**	**0.0**
GERES					pmax	pmax			
	comp=Z,1.0nm,0.7s								
GERES	**GERESS Array B**	**79.25**	**333**	*e*	P	**P**		**13 53 51.2**	**0.0**
TXAR	**Lajitas Array**	**79.50**	**59**		P	**P**		**13 53 53.7**	**+0.8**
	comp=Z,0.2nm,0.7s,baz=298,slow=5.2,SNR=5.2								
MMAI	**Mount Meron Ar**	**82.80**	**310**		LR	LR		14 34 49.8	
	comp=Z,28nm,18.3s,baz=225,slow=38								

*ISCJB **17** 13:44:55.1±0.9,27°.1S±0°.2×67°.2E±0°.2,h10km,mb4.1/9, MS3.5/3,Error ellipse: s-maj=29.4km s-min=22.0km az=170.7*
*NEIC **17** 13:44:57.0±0.7,27°.06S×67°.17E,h10km,mb4.1/2,Error ellipse: s-maj=22.7km s-min=17.2km az=80.0*
*IDC **17** 13:44:56.1±4.6,26°.98S×67°.28E,h0km,mb3.9/6, mb1 4.1/6,mb1mx3.6/39,mbtmp3.9/6,MS3.5/3,Ms1 3.5/3, ms1mx2.8/40,Error ellipse: s-maj=134.9km s-min=32.9km az=55.0*

ISC 17 13:44:57.0±1.1,27°.1S±0°.2×67°.2E±0°.3,h10km,n19, σ0s65/10,mb4.0/9,MS3.4/3,Indian Ocean Triple Junction

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
H08S1	**Diego Garcia H**	**19.96**	**16**	T		T	T	14 08 58.5	
	baz=194,slow=76,SNR=4.7								
H08S2	**Diego Garcia H**	**19.96**	**16**	T		T	T	14 09 00.7	
	baz=194,slow=76,SNR=5.4								
H08S3	**Diego Garcia H**	**19.98**	**16**	T		T	T	14 09 04.5	
	baz=194,slow=76,SNR=5.5								
PALK	**Pallekele**	**36.57**	**23**	LR		LR	LR	14 02 41.8	
	comp=Z,59nm,18.2s,baz=297,slow=29								
MAW	**Mawson**	**40.64**	**183**	LR		LR	LR	14 08 07.3	
	comp=Z,53nm,18.4s,baz=324,slow=34								
H01W2	**Cape Leeuwin H**	**40.72**	**113**	T		T	T	14 35 33.1	
	baz=263								
H01W3	**Cape Leeuwin H**	**40.72**	**113**	T		T	T	14 35 33.2	
	baz=263								
H01W1	**Cape Leeuwin H**	**40.73**	**113**	T		T	T	14 35 34.3	
	baz=263								
CMAR	**Chiang Mai Arr**	**54.75**	**38**	P		**P**		**13 54 26.4**	**-0.6**
	1.0nm,0.7s,baz=226,slow=7.6,SNR=6.8								
SNAA	**Sanae**	**58.28**	**200**	*e*	P	**P**		**13 54 51.5**	**0.0**
	178nm,1.2s								
ASAR	**Alice Springs**	**59.77**	**103**		P	**P**		**13 55 02.9**	**+0.3**
	2.2nm,0.8s,baz=247,slow=6.4,SNR=32								
WRA	**Warramunga Arr**	**61.39**	**99**		P	**P**		**13 55 13.5**	**-0.2**
	2.6nm,0.8s,baz=251,slow=6.1,SNR=12								
WRAB	**Tennant Creek**	**61.40**	**99**	*e*	P	**P**		**13 55 13.6**	**-0.1**
	1.8nm,0.7s								
MKAR	**Makanchi Array**	**74.77**	**11**		P	**P**		**13 56 37.6**	**+0.6**
	0.1nm,0.4s,baz=178,slow=4.3,SNR=1.9								
ABKAR	**Akbulak array**	**76.25**	**355**	*e*	P	**P**		**13 56 45.2**	**-0.2**
	0.4nm,0.3s								
ZALV	**Zalesovo Beam**	**82.11**	**10**		P	**P**		**13 57 16.5**	**-0.8**
	0.5nm,0.4s,baz=212,slow=8.0,SNR=3.9								
SONM	**Songino Array**	**82.47**	**25**		P	**P**		**13 57 20.8**	**+1.2**
	0.2nm,0.3s,baz=205,slow=5.7,SNR=4.0								
DAVOX	**Davos/Dischmat**	**89.86**	**325**		LR	LR		14 37 42.3	
	comp=Z,27nm,18.5s,baz=26,slow=35								
KTH	**Kantishna Hill**	**135.97**	**23**	*e*	PKPdf	**PKPdf**		**14 04 17.3**	**-0.3**

IDC 17 13:58:01.2±1.4,3°.59S×141°.30E,h0km,mb3.5/4, mb1 3.9/5,mb1mx3.6/30,mbtmp3.7/5,ML4.1/1,MS3.4/3, Ms1 3.4/3,ms1mx2.8/26,Error ellipse: s-maj=59.6km s-min=26.0km az=109.0,New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**17.43**	**12**		LR	LR		14 09 06.4	
	comp=Z,75nm,19.3s,baz=168,slow=38								
WRA	**Warramunga Arr**	**17.61**	**202**		P	P		14 02 09.2	-0.1
	0.6nm,0.3s,baz=22,slow=12,SNR=26								
FITZ	**Fitzroy Crossi**	**21.05**	**226**		P	P		14 02 46.2	-0.8
	1.3nm,0.8s,baz=35,slow=16,SNR=1.6								
FITZ					LR	LR		14 11 50.8	
	comp=Z,102nm,18.9s,baz=79,slow=39								
ASAR	**Alice Springs**	**21.20**	**199**		P	P		14 02 48.9	+0.3
	1.2nm,0.5s,baz=28,slow=10,SNR=42								
ASAR					LR	LR		14 11 24.7	
	comp=Z,114nm,19.3s,baz=55,slow=38								
H11S3	**WAKE ISLAND Hy**	**33.28**	**48**		T	T		14 39 21.5	
	baz=230								
H11S2	**WAKE ISLAND Hy**	**33.29**	**48**		T	T		14 39 18.4	
	baz=230								
H11S1	**WAKE ISLAND Hy**	**33.30**	**48**		T	T		14 39 16.5	
	baz=230								
MKAR	**Makanchi Array**	**72.07**	**322**		P	P		14 09 28.5	+1.1
	0.6nm,0.7s,baz=138,slow=6.8,SNR=2.9								
ILAR	**Eielson Array**	**85.57**	**24**		P	P		14 10 41.0	-0.2
	0.2nm,0.6s,baz=282,slow=4.2,SNR=4.8								
LPAZ	**La Paz**	**144.84**	**125**		PKP	PKPab		14 17 39.4	-1.6
	0.5nm,0.7s,baz=252,slow=9.6,SNR=2.0								

*ISCJB **17** 14:04:14.9±0.7,4°.23S±0°.07×143°.15E±0°.09,h100km, mb3.5/7,Error ellipse: s-maj=13.1km s-min=9.1km az=163.8*
*IDC **17** 14:04:20.1±4.6,4°.36S×143°.32E,h145km±53km,mb3.3/6, mb1 3.4/8,mb1mx3.2/29,mbtmp3.8/8,Error ellipse: s-maj=37.9km s-min=22.7km az=132.0*

ISC 17 14:04:16.6±0.9,4°.28S±0°.08×143°.0E±0°.1,h100km,n10, σ2s46/12,mb3.6/7,New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.53**	**141**		P	**Pn**		**14 05 51.2**	**+1.0**
	1.6nm,0.3s,baz=353,slow=5.3,SNR=5.6								
PMG					S	**Sn**		**14 07 01.8**	**-1.5**
	1.4nm,0.3s,baz=336,slow=20,SNR=1.2								
WRA	**Warramunga Arr**	**17.73**	**208**		P	**Pn**		**14 08 17.9**	**+0.7**
	0.5nm,0.3s,baz=24,slow=12,SNR=11								
WRA					S	**Sn**		**14 11 29.4**	**-5.6**
	0.2nm,0.3s,baz=34,slow=23,SNR=4.5								
ASAR	**Alice Springs**	**21.20**	**204**		P	**P**		**14 08 56.2**	**+1.9**
	0.7nm,0.7s,baz=31,slow=12,SNR=7.5								
ASAR					S	**S**		**14 12 46.9**	**+2.3**
	0.5nm,0.8s,baz=21,slow=22,SNR=3.4								
FITZ	**Fitzroy Crossi**	**21.88**	**230**		P	**P**		**14 09 01.8**	**+0.2**
	3.8nm,0.7s,baz=52,

TEKS	**Tekeris**	**1.40**	**23**	*e*Pg	Pb	14 40 28.7 +5.5
TEKS				*e*Sg	Sb	14 40 47.2 +6.6
TEKS	**Tekeris**	**1.40**	**23**	*e*Pg	Pb	14 40 28.7 +5.5
TEKS				*e*Sg	Sb	14 40 47.2 +6.6
BLY	**Banja Luka**	**1.87**	**323**	*e*Sn	Sb	14 40 59.4 +5.2
BLY	**Banja Luka**	**1.87**	**323**	*e*Sn	Sb	14 40 59.4 +5.2

IDC 17 14:41:47.7±1.3, 19°.93S×133°.93E, h0km, mb3.5/1, mb1 3.3/3, mb1mx3.2/25, mbtmp3.3/3, ML3.0/2, Error ellipse: s-maj=8.7km s-min=3.7km az=92.0, Northern Territory

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**0.38**	**92**	Pg	Pg	14 41 55.2	+0.2
	5.3nm,0.3s,baz=272,slow=19,SNR=267						
WRA				Lg	Lg	14 42 00.1	
	20nm,0.3s,baz=272,slow=31,SNR=104						
ASAR	**Alice Springs**	**3.72**	**180**	Pn	Pn	14 42 48.0	+1.6
	1.0nm,0.3s,baz=7.7,slow=7.6,SNR=82						
ASAR				Sn	Sn	14 43 32.4	+1.3
	1.4nm,0.3s,baz=0.3,slow=28,SNR=9.6						
ASAR				Lg	Lg	14 43 44.6	
	2.2nm,0.3s,baz=1.9,slow=30,SNR=16						
FITZ	**Fitzroy Crossi**	**8.05**	**282**	Pn	Pn	14 43 44.3	-1.8
	0.1nm,0.3s,baz=90,slow=16,SNR=19						
FITZ				Sn	Sn	14 45 06.9	-11
	0.2nm,0.3s,baz=273,slow=19,SNR=5.1						
FITZ				Lg	Lg	14 45 57.3	
	0.1nm,0.3s,baz=18,slow=19,SNR=2.0						
MKAR	**Makanchi Array**	**81.09**	**327**	P	P	14 54 04.8	+0.1
	0.1nm,0.3s,baz=116,slow=3.4,SNR=3.3						

LJU 17 14:42:07.5, 46°.10N×13°.79E, h14km, ML0.0, Austria

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VOJS	**Vojsko**	**0.10**	**137**	*i* Pg	Pg	14 42 10.6	-0.1
VOJS				*i* Sg	Sg	14 42 13.1	+0.2
	comp=Z,4.0nm,0.1s						
CADS	**Cadrg**	**0.13**	**344**	*i* Pg	Pg	14 42 11.3	+0.2
CADS				*i* Sg	Sg	14 42 13.8	+0.3
GORS	**Gorjuse**	**0.26**	**34**	*i* Sg	Sg	14 42 17.1	+0.3
	comp=Z,1.0nm,0.1s						
CRNS	**Crni Vrh**	**0.33**	**94**	*i* Pg	Pg	14 42 14.2	-0.1
CRNS				*i* Sg	Sb	14 42 19.8	-0.6
	comp=Z,0.0nm,0.1s						

NIED 17 14:49:00, 37°.10N×142°.60E, h5km, Mw3.5 Best double couple: M₀2.21000×10¹⁴ NP1:φs357.00000°, δ47.00000°, λ-114.00000°. NP2:φs210.00000°, δ48.00000°, λ-66.00000°.

ISCJB 17 14:49:59.9±0.7, 37°.13N±0°.04×142°.58E±0°.05, h9km, mb3.6/3, Error ellipse: s-maj=6.2km s-min=5.7km az=161.1

JMA 17 14:49:59.9±0.2, 37°.14N×142°.58E, h10km, M3.6

IDC 17 14:50:00.8±1.4, 36°.93N×142°.65E, h0km, mb3.4/3, mb1 3.7/4, mb1mx3.4/34, mbtmp3.4/4, ML3.2/1, Error ellipse: s-maj=37.4km s-min=27.9km az=137.0

ISC 17 14:50:01.5±1.2, 37°.18N±0°.05×142°.53E±0°.07, h9km, n24, σ1°15°/30, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.33**	**279**	P	**Pn**	**14 50 25.7**	**-0.6**
JFK				S	**Sb**	**14 50 43.5**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.38**	**267**	P	**Pn**	**14 50 25.5**	**-1.5**
ONAJ				*e*S	**Sb**	**14 50 43.7**	**-1.6**
JMM	**Marumori**	**1.54**	**297**	P	**Pn**	**14 50 27.7**	**-1.4**
JMM				S	**Sb**	**14 50 49.7**	**-0.1**
JIO	**Ouri**	**1.58**	**324**	P	**Pn**	**14 50 28.9**	**-0.8**
JIO				S	**Sn**	**14 50 48.7**	**-1.5**
JFT	**Otama**	**1.78**	**282**	P	**Pn**	**14 50 31.9**	**-0.5**
JFT				*e*S	**Sn**	**14 50 55.1**	**0.0**
JOU	**Okura**	**1.89**	**309**	P	**Pn**	**14 50 34.1**	**+0.1**
JOU				S	**Sn**	**14 50 57.4**	**-0.6**
JMK	**Ichinoseki**	**2.05**	**330**	P	**Pn**	**14 50 35.5**	**-0.6**
JYS	**Shirataka**	**2.21**	**299**	P	**Pn**	**14 50 39.5**	**+1.1**
JFY	**Yanaizu**	**2.26**	**277**	P	**Pn**	**14 50 39.8**	**+0.7**
JFY				*e*S	**Sn**	**14 51 08.4**	**+1.3**
JYK	**Kaneyama**	**2.44**	**316**	P	**Pn**	**14 50 41.9**	**+0.4**
JAG	**Ashikaga**	**2.58**	**254**	P	**Pn**	**14 50 43.0**	**-0.4**
JAG				S	**Sn**	**14 51 15.1**	**+0.3**
BSO1	**Boso 1**	**2.81**	**207**	P	**Pn**	**14 50 45.9**	**-0.2**
BSO1				*e*S	**Sn**	**14 51 19.4**	**-0.5**
JRY	**Ryogami san**	**3.14**	**249**	P	**Pn**	**14 50 50.9**	**-0.2**
JRY				S	**Sn**	**14 51 26.8**	**-1.9**
MJAR	**Matsushiro Arr**	**3.52**	**261**	Pn	**Pn**	**14 50 57.7**	**+1.3**
	1.9nm,0.3s,baz=89,slow=15,SNR=24						
MJAR				Sn	**Sn**	**14 51 40.8**	**+2.7**
	1.2nm,0.3s,baz=189,slow=32,SNR=4.9						
MAT	**Matsushiro**	**3.52**	**261**	P	**Pn**	**14 50 57.8**	**+1.4**
MAT				*e*S	**Sn**	**14 51 38.9**	**+0.8**
H11N2	**WAKE ISLAND Hy**	**27.47**	**123**	T	T	15 24 34.6	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**27.47**	**123**	T	T	15 24 43.8	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**27.48**	**123**	T	T	15 24 44.0	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**28.20**	**125**	T	T	15 25 30.4	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**28.20**	**125**	T	T	15 25 35.1	
	baz=314						
H11S2	**WAKE ISLAND Hy**	**28.22**	**125**	T	T	15 25 30.3	
	baz=314						
ILAR	**Eielson Array**	**48.90**	**32**	P	**P**	**14 58 49.2**	**+1.9**
	0.3nm,0.8s,baz=282,slow=7.4,SNR=4.5						
WRA	**Warramunga Arr**	**57.33**	**189**	P	**P**	**14 59 48.9**	**-1.0**
	0.7nm,0.6s,baz=7.1,slow=7.1,SNR=9.4						
ASAR	**Alice Springs**	**61.06**	**189**	P	**P**	**15 00 14.9**	**-0.7**
	0.2nm,0.5s,baz=2.6,slow=6.8,SNR=7.8						

NEIC 17 14:58:29.1, 43°.61S×172°.76E, h9km, ML4.2(WEL), After WEL.

NEIC Felt in the Christchurch area.

WEL 17 14:58:29.1±0.1, 43°.62S×172°.76E, h10km, ML4.2/39, **Mw3.8, 8C-5D, Error ellipse: s-maj=1.0km s-min=0.5km az=90.0, South Island**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.11**	**293**	⇑Pg	Pg	14 58 31.6	-0.1
CRLZ	**Canterbury Las**	**0.11**	**293**	⇑PG	Pg	14 58 31.6	-0.1
CRLZ				AML	AML	14 58 33.5	
CRLZ				AML	AML	14 58 33.6	
CRLZ				AML	AML	14 58 33.6	
CRLZ				AML	AML	14 58 33.6	
MQZ	**McQueen's Vall**	**0.12**	**222**	⇑Pg	Pg	14 58 32.1	+0.2
MQZ				Sg	Sg	14 58 34.1	+0.2
MQZ	**McQueen's Vall**	**0.12**	**222**	⇑PG	Pg	14 58 32.1	+0.2
MQZ				SG	Sg	14 58 34.1	+0.2
MQZ				SG		14 58 34.2	
MQZ				AML	AML	14 58 34.3	
OXZ	**Oxford**	**0.60**	**299**	⇓P*	Pg	14 58 40.5	-0.2
OXZ	**Oxford**	**0.60**	**299**	⇓P*	Pg	14 58 40.5	-0.2
OXZ				AML	AML	14 58 50.7	
OXZ				AML	AML	14 58 50.7	
OXZ				AML	AML	14 58 51.2	
OXZ				AML	AML	14 58 51.2	
LTZ	**Lake Taylor**	**0.91**	**337**	P*	Pg	14 58 46.1	-0.5
LTZ	**Lake Taylor**	**0.91**	**337**	P*	Pg	14 58 46.1	-0.5
LTZ				AML	AML	14 59 02.0	
RPZ	**Rata Peaks**	**1.24**	**265**	⇑P*	Pn	14 58 51.2	-1.3
RPZ	**Rata Peaks**	**1.24**	**265**	⇑P*	Pn	14 58 51.2	-1.3
RPZ				AML	AML	14 59 10.1	
RPZ				AML	AML	14 59 10.6	
INZ	**Inchbonnie**	**1.31**	**312**	PN	Pn	14 58 52.0	-1.5
KHZ	**Kahutara**	**1.33**	**26**	Pn	Pn	14 58 52.2	-1.5
KHZ	**Kahutara**	**1.33**	**26**	PN	Pn	14 58 52.2	-1.5
KHZ				AML	AML	14 59 18.6	
KHZ				AML	AML	14 59 19.8	
KHZ				AML	AML	14 59 30.4	
KHZ				AML	AML	14 59 30.4	
WVZ	**Waitaha Valley**	**1.57**	**289**	Pn	Pn	14 58 56.1	-0.9
WVZ	**Waitaha Valley**	**1.57**	**289**	⇓PN	Pn	14 58 56.1	-0.9
WVZ				AML	AML	14 59 26.3	
WVZ				AML	AML	14 59 26.7	
DSZ	**Denniston Nort**	**2.00**	**339**	Pn	Pn	14 59 02.3	-0.7
DSZ	**Denniston Nort**	**2.00**	**339**	PN	Pn	14 59 02.3	-0.7
DSZ				AML	AML	14 59 31.1	
DSZ				AML	AML	14 59 31.1	
DSZ				AML	AML	14 59 38.1	
DSZ				AML	AML	14 59 43.6	
LBZ	**Lake Benmore**	**2.01**	**247**	Pn	Pn	14 59 03.0	-0.2
LBZ	**Lake Benmore**	**2.01**	**247**	PN	Pn	14 59 03.0	-0.2
LBZ				AML	AML	14 59 40.5	
LBZ				AML	AML	14 59 40.5	
LBZ				AML	AML	14 59 42.8	
LBZ				AML	AML	14 59 42.8	
BSWZ	**Blackbirch Sta**	**2.07**	**24**	Pn	Pn	14 59 02.9	-1.0
BSWZ	**Blackbirch Sta**	**2.07**	**24**	PN	Pn	14 59 02.9	-1.0
BSWZ				AML	AML	14 59 44.7	
BSWZ				AML	AML	14 59 50.1	
ODZ	**Otahua Downs**	**2.08**	**226**	Pn	Pn	14 59 02.7	-1.4
ODZ	**Otahua Downs**	**2.08**	**226**	PN	Pn	14 59 02.7	-1.4
ODZ				AML	AML	14 59 38.4	
ODZ				AML	AML	14 59 38.4	
ODZ				AML	AML	14 59 42.5	
ODZ				AML	AML	14 59 43.4	
FOZ	**Fox Glacier**	**2.14**	**271**	Pn	Pn	14 59 05.0	+0.1
FOZ	**Fox Glacier**	**2.14**	**271**	PN	Pn	14 59 05.0	+0.1
FOZ				AML	AML	14 59 32.9	
FOZ				AML	AML	14 59 46.3	
FOZ				AML	AML	14 59 48.4	
FOZ				AML	AML	14 59 48.5	
TUWZ	**Tuamarina**	**2.35**	**22**	Pn	Pn	14 59 06.4	-1.4
TUWZ	**Tuamarina**	**2.35**	**22**	PN	Pn	14 59 06.4	-1.4
TUWZ				AML	AML	14 59 57.7	
TUWZ				AML	AML	15 00 00.3	
NNZ	**Nelson**	**2.44**	**11**	Pn	Pn	14 59 08.3	-0.7
NNZ	**Nelson**	**2.44**	**11**	PN	Pn	14 59 08.3	-0.7
NNZ				AML	AML	14 59 56.8	
NNZ				AML	AML	14 59 56.8	
NNZ				AML	AML	14 59 57.9	
NNZ				AML	AML	14 59 57.9	
TCW	**Tory Channel**	**2.65**	**25**	Pn	Pn	14 59 10.4	-1.5
TCW	**Tory Channel**	**2.65**	**25**	PN	Pn	14 59 10.4	-1.5
TCW				AML	AML	14 59 52.2	
TCW				AML	AML	14 59 56.3	
SNZO	**South Karori**	**2.72**	**33**	*e*Pn	Pn	14 59 11.2	-1.5
HHSZ	**Highcliff Hill**	**2.74**	**213**	Pn	Pn	14 59 11.8	-1.4
HHSZ	**Highcliff Hill**	**2.74**	**213**	⇓PN	Pn	14 59 11.7	-1.4
HHSZ				AML	AML	15 00 05.4	
HHSZ				AML	AML	15 00 10.1	
PLWZ	**Palliser**	**2.75**	**43**	Pn	Pn	14 59 11.3	-2.0
PLWZ	**Palliser**	**2.75**	**43**	PN	Pn	14 59 11.3	-2.0
WEL	**Wellington**	**2.76**	**33**	Pn	Pn	14 59 11.9	-1.5
WEL	**Wellington**	**2.76**	**33**	PN	Pn	14 59 11.9	-1.5
WEL				AML	AML	14 59 45.0	
WEL				AML	AML	14 59 45.0	
WEL				AML	AML	14 59 47.4	
WEL				AML	AML	14 59 47.4	
QRZ	**Quartz Range**	**2.79**	**356**	Pn	Pn	14 59 13.4	-0.5
QRZ	**Quartz Range**	**2.79**	**356**	PN	Pn	14 59 13.4	-0.5
QRZ				AML	AML	15 00 01.5	
QRZ				AML	AML	15 00 01.5	
QRZ				AML	AML	15 00 03.3	
QRZ				AML	AML	15 00 03.3	
JCZ	**Jackson Bay**	**2.91**	**260**	Pn	Pn	14 59 14.7	-0.8
JCZ	**Jackson Bay**	**2.91**	**260**	PN	Pn	14 59 14.7	-0.9
JCZ				AML	AML	15 00 09.3	
JCZ				AML	AML	15 00 10.6	
DUWZ	**D'Urville Isla**	**2.94**	**17**	Pn	Pn	14 59 15.1	-0.9
DUWZ	**D'Urville Isla**	**2.94**	**17**	PN	Pn	14 59 15.0	-0.9
DUWZ				AML	AML	15 00 03.8	
DUWZ				AML	AML	15 00 07.7	
WKZ	**Wanaka**	**2.95**	**245**	Pn	Pn	14 59 14.9	-1.1
WKZ	**Wanaka**	**2.95**	**245**	PN	Pn	14 59 14.9	-1.1
WKZ				AML	AML	15 00 09.4	
WKZ				AML	AML	15 00 09.5	
WKZ				AML	AML	15 00 10.2	
WKZ				AML	AML	15 00 10.3	
EAZ	**Earnscleugh**	**2.96**	**236**	Pn	Pn	14 59 14.8	-1.3
EAZ	**Earnscleugh**	**2.96**	**236**	⇑PN	Pn	14 59 14.8	-1.3
EAZ				AML	AML	15 00 12.1	
EAZ				AML	AML	15 00 12.1	
EAZ				AML	AML	15 00 15.3	
EAZ				AML	AML	15 00 15.3	
PAWZ	**Paruwai Farm**	**2.98**	**42**	PN	Pn	14 59 16.2	-0.2
PAWZ				AML	AML	14 59 48.6	
PAWZ				AML	AML	14 59 50.7	
CAW	**Cannon Point**	**3.03**	**35**	Pn	Pn	14 59 15.4	-1.8
CAW	**Cannon Point**	**3.03**	**35**	PN	Pn	14 59 15.4	-1.8
CAW				AML	AML	14 59 52.9	
CAW				AML	AML	14 59 57.6	
KIW	**Kapiti Island**	**3.18**	**31**	Pn	Pn	14 59 17.6	-1.6
KIW	**Kapiti Island**	**3.18**	**31**	PN	Pn	14 59 17.6	-1.6
KIW				AML	AML	14 59 58.4	
MTW	**Mount Morrison**	**3.19**	**40**	Pn	Pn	14 59 16.8	-2.5
MTW	**Mount Morrison**	**3.19**	**40**	PN	Pn	14 59 16.8	-2.5
MTW				AML	AML	14 59 53.8	
MTW				AML	AML	14 59 57.5	
TUZ	**Tuapeka**	**3.23**	**223**	Pn	Pn	14 59 18.4	-1.4
TUZ	**Tuapeka**	**3.23**	**223**	PN	Pn	14 59 18.4	-1.4
TUZ				AML	AML	15 00 20.9	
TUZ				AML	AML	15 00 20.9	
TUZ				AML	AML	15 00 25.8	
TUZ				AML	AML	15 00 25.9	
OGWZ	**Otaki Gorge**	**3.32**	**33**	Pn	Pn	14 59 19.4	-1.7
OGWZ	**Otaki Gorge**	**3.32**	**33**	PN	Pn	14 59 19.4	-1.7
OGWZ				AML	AML	14 59 58.8	
OGWZ				AML	AML	14 59 58.9	
HOWZ	**Holdsworth Sta**	**3.40**	**38**	AML	AML	15 00 02.3	
MRZ	**Mangatainoka R**	**3.62**	**36**	Pn	Pn	14 59 23.1	-2.1
MRZ	**Mangatainoka R**	**3.62**	**36**	⇑PN	Pn	14 59 23.1	-2.1
MRZ				AML	AML	15 00 08.4	
MRZ				AML	AML	15 00 11.5	
MSZ	**Milford Sound**	**3.64**	**251**	Pn	Pn	14 59 24.2	-1.2
MSZ	**Milford Sound**	**3.64**	**251**	PN	Pn	14 59 24.2	-1.2
MSZ				AML	AML	15 00 29.3	
MSZ				AML	AML	15 00 29.5	
TIWZ	**Tintock**	**3.67**	**40**	AML	AML	15 00 09.1	
TIWZ				AML	AML	15 00 10.0	
MLZ	**Mavora Lakes**	**3.76**	**241**	Pn	Pn	14 59 25.6	-1.5
MLZ	**Mavora Lakes**	**3.76**	**241**	PN	Pn	14 59 25.6	-1.5
MLZ				AML	AML	15 00 32.8	
MLZ				AML	AML	15 00 35.0	
SYZ	**Scrubby Hill**	**3.89**	**220**	Pn	Pn	14 59 28.0	-0.9
SYZ	**Scrubby Hill**	**3.89**	**220**	PN	Pn	14 59 28.0	-0.9
SYZ				AML	AML	15 00 43.8	
SYZ				AML	AML	15 00 46.2	
BFZ	**Birch Farm**	**3.91**	**43**	Pn	Pn	14 59 26.4	-2.8
BFZ	**Birch Farm**	**3.91**	**43**	PN	Pn	14 59 26.4	-2.8
POWZ	**Post Office Ro**	**3.92**	**36**	AML	AML	15 00 22.6	
WHZ	**Wether Hill Ro**	**4.12**	**235**	*e*Pn	Pn	14 59 30.0	-2.1
WHZ	**Wether Hill Ro**	**4.12**	**235**	PN	Pn	14 59 30.1	-2.0
WHZ				AML	AML	15 00 52.2	
WHZ				AML	AML	15 00 54.3	
TSZ	**Takapari Road**	**4.28**	**35**	Pn	Pn	14 59 32.2	-2.2
TSZ	**Takapari Road**	**4.28**	**35**	PN	Pn	14 59 32.2	-2.2
PREZ	**Palmer Road**	**4.40**	**14**	Pn	Pn	14 59 36.5	+0.5
PREZ	**Palmer Road**	**4.40**	**14**	PN	Pn	14 59 36.5	+0.5
DCZ	**Deep Cove**	**4.42**	**243**	AML	AML	15 00 54.9	
DCZ				AML	AML	15 00 55.8	
PNHZ	**Pukenui**	**4.50**	**36**	Pn	Pn	14 59 35.8	-1.7
PKE	**Pukeiti**	**4.51**	**12**	Pn	Pn	14 59 38.0	+0.5
PKE	**Pukeiti**	**4.51**	**12**	PN	Pn	14 59 38.0	+0.5
DREZ	**Durham Road**	**4.55**	**14**	Pn	Pn	14 59 38.2	+0.2
DREZ	**Durham Road**	**4.55**	**14**	PN	Pn	14 59 38.2	+0.2
APZ	**The Paps**	**4.66**	**225**	Pn	Pn	14 59 38.5	-1.0
APZ	**The Paps**	**4.66**	**225**	PN	Pn	14 59 38.5	-1.1
VRZ	**Vera Road**	**4.73**	**19**	Pn	Pn	14 59 40.8	+0.3
VRZ	**Vera Road**	**4.73**	**19**	PN	Pn	14 59 40.8	+0.3
VRZ				AML	AML	15 00 38.8	
WNVZ	**Wahianoa**	**4.79**	**27**	PN	Pn	14 59 41.2	-0.2
KRHZ	**Kereru**	**4.80**	**35**	PN	Pn	14 59 39.3	-2.2
TUVZ	**Tukino**	**4.86**	**28**	Pn	Pn	14 59 41.9	-0.5
TUVZ	**Tukino**	**4.86**	**28**	PN	Pn	14 59 41.9	-0.5
KAHZ	**Kahuranaki**	**4.91**	**40**	PN	Pn	14 59 43.0	+0.1
NGZ	**Ngauruhoe**	**4.92**	**27**	Pn	Pn	14 59 43.3	+0.1
NGZ	**Ngauruhoe**	**4.92**	**27**	PN	Pn	14 59 43.3	+0.1
OTVZ	**Oturere**	**4.96**	**27**	Pn	Pn	14 59 43.0	-0.7
OTVZ	**Oturere**	**4.96**	**27**	PN	Pn	14 59 43.0	-0.7
TWVZ	**Taurewa**	**4.97**	**25**	Pn	Pn	14 59 43.1	-0.8
TWVZ	**Taurewa**	**4.97**	**25**	PN	Pn	14 59 43.1	-0.8
KWHZ	**Kaweka Forest**	**5.01**	**34**	AML	AML	15 00 40.1	
KWHZ				AML	AML	15 00 45.1	
HIZ	**Hauiti**	**5.34**	**18**	Pn	Pn	14 59 47.9	-0.9
HIZ	**Hauiti**	**5.34**	**18**	⇓PN	Pn	14 59 47.9	-0.9
MKAZ	**Moumakai**	**6.76**	**17**	Pn	Pn	15 00 07.2	-1.1
MKAZ	**Moumakai**	**6.76**	**17**	PN	Pn	15 00 07.2	-1.1
ETAZ	**East Tamaki Re**	**6.86**	**15**	Pn	Pn	15 00 08.9	-0.8
ETAZ	**East Tamaki Re**	**6.86**	**15**	PN	Pn	15 00 08.9	-0.8

CSEM 17 15:11:44.6, 37°.27N×28°.24E, h9km, MD2.6

ISK 17 15:11:44.6, 37°.27N×28°.24E, h9km, MD2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.14**	**164**	*e*PG	Pg	15 11 48.1	+0.4
YER	**Yerkesik**	**0.14**	**164**	*e*Pg	Pg	15 11 48.1	+0.4
DALY	**Dalyan (Mu¨la**	**0.56**	**143**	*e*Pg	Pb	15 11 56.1	-0.5
DALY				*e*SG	Sb	15 12 04.2	-0.5
DALY	**Dalyan (Mu¨la**	**0.56**	**143**	*e*Pg	Pb	15 11 56.1	-0.5
DALY				*e*Sg	Sb	15 12 04.2	-0.5
AYDB	**Zeytinkoy-Aydi**	**0.73**	**338**	*e*PG	Pg	15 11 59.1	+0.4
AYDB	**Zeytinkoy-Aydi**	**0.73**	**338**	*e*Pg	Pg	15 11 59.1	+0.4
BODT	**Bodrum**	**0.77**	**255**	*e*PG	Pb	15 11 59.9	-0.2
BODT	**Bodrum**	**0.77**	**255**	*e*Pg	Pb	15 11 59.9	-0.2
DENT	**Denizli**	**0.80**	**52**	*e*PG	Pb	15 12 00.5	-0.2
DENT	**Denizli**	**0.80**	**52**	*e*Pg	Pb	15 12 00.5	-0.2
FETY	**Fethiye**	**0.93**	**133**	*e*PG	Pn	15 12 03.4	-0.5
FETY	**Fethiye**	**0.93**	**133**	*e*Pg	Pn	15 12 03.4	-0.5
IZM	**Izmir**	**1.36**	**326**	*e*PN	Pb	15 12 10.3	0.0
IZM	**Izmir**	**1.36**	**326**	*e*Pn	Pb	15 12 10.4	0.0

ISCJB 17 15:21:03.4±1.0, 6°.45S±0°.07×147°.9E±0°.2, h51km, mb3.9/6, MS3.2/1, Error ellipse: s-maj=28.5km s-min=9.4km az=10.7

IDC 17 15:21:05.7±2.3, 6°.57S×148°.12E, h62km±23km, mb3.7/6, mb1 3.9/9, mb1mx3.6/32, mbtmp4.0/9, ML3.8/2, MS3.3/1, Ms1 3.2/1, ms1mx2.6/28, Error ellipse: s-maj=43.7km s-min=13.5km az=114.0

ISC 17 15:21:04.8±1.1, 6°.47S±0°.10×148°.0E±0°.3, h51km, n10, σ0°91/12, mb3.8/6, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.04**	**197**	P	**Pn**	**15 21 50.7**	**+0.2**
	20nm,0.3s,baz=9.3,slow=5.4,SNR=49						
PMG				S	**Sn**	**15 22 25.7**	**0.0**
	12nm,0.3s,baz=59,slow=19,SNR=3.5						
CTA	**Charters Tower**	**13.65**	**187**	P	**Pn**	**15 24 16.7**	**+0.9**
	0.2nm,0.3s,baz=16,slow=15,SNR=2.6						
WRA	**Warramunga Arr**	**18.88**	**224**	P	**P**	**15 25 20.9**	**-0.3**
	0.5nm,0.3s,baz=51,slow=10,SNR=18						
WRA				S	Sn	15 28 42.4	-10
	0.0nm,0.3s,baz=56,slow=23,SNR=2.5						
ASAR	**Alice Springs**	**21.84**	**217**	P	**P**	**15 25 52.8**	**-0.4**
	5.3nm,0.6s,baz=53,slow=9.2,SNR=243						
ASAR				S	**S**	**15 29 51.9**	**-0.1**
	0.8nm,0.9s,baz=37,slow=22,SNR=5.2						
FITZ	**Fitzroy Crossi**	**24.71**	**240**	P	**P**	**15 26 21.7**	**+0.2**
	12nm,0.5s,baz=57,slow=8.3,SNR=93						
STKA	**Stephens Creek**	**25.98**	**193**	P	**P**	**15 26 31.5**	**-1.4**
	4.1nm,1.0s,baz=22,slow=10,SNR=7.1						
STKA				LR	LR	15 36 53.9	
	comp=Z,65nm,18.4s,baz=22,slow=37						
MJAR	**Matsushiro Arr**	**43.77**	**349**	P	**P**	**15 29 06.7**	**+1.2**
	1.1nm,0.9s,baz=166,slow=9.8,SNR=3.8						
MKAR	**Makanchi Array**	**78.52**	**320**	P	**P**	**15 32 59.9**	**-0.9**
	0.2nm,0.5s,baz=105,slow=7.0,SNR=2.9						
ILAR	**Eielson Array**	**85.51**	**23**	P	**P**	**15 33 36.1**	**-0.9**
	0.4nm,0.8s,baz=250,slow=5.5,SNR=5.9						
GERES	**GERESS Array B**	**122.88**	**326**	PKP	**PKPdf**	**15 39 56.7**	**+1.2**
	0.4nm,0.6s,baz=66,slow=1.6,SNR=6.2						

MEX 17 15:31:58.1±0.4, 16°.65N×98°.88W, h16km±4km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.76**	**109**	*i* P	Pg	15 32 10.1	-2.9
PNIG				*e*S	Sg	15 32 19.7	-3.3
TLIG	**Tlapa**	**0.96**	**18**	*e*P	Pb	15 32 13.3	-3.2
TLIG				*e*S	Sb	15 32 24.7	-4.3
CAIG	**El Cayaco**	**1.39**	**287**	*e*P	Pn	15 32 19.3	-3.6
CAIG				*i* S	Sn	15 32 35.4	-5.6
MEIG	**Mezcala**	**1.46**	**331**	*e*P	Pn	15 32 20.6	-3.3
MEIG				*e*S	Sn	15 32 37.1	-5.7
PLIG	**Platanillo**	**1.84**	**341**	*i* P	Pn	15 32 26.0	-3.1
PLIG				*i* S	Sn	15 32 47.5	-4.6
VHO	**Vista Hermosa**	**2.09**	**78**	*i* P	Pn	15 32 29.7	-3.0
VHO				*i* S	Sn	15 32 53.9	-4.7
YAIG	**Yautepec**	**2.21**	**355**	*i* P	Pn	15 32 32.0	-2.4
YAIG				*e*S	Sn	15 32 57.3	-4.2

*ISCJB 17 15:39:05.4±0.5, 39°.07N±0°.04×29°

JMK	**Ichinoseki**	**1.74 319**	P	**Pn**	**15 45 04.3**	**-0.2**
JOU	**Okura**	**1.75 295**	P	**Pn**	**15 45 04.8**	**+0.1**
JFT	**Otama**	**1.87 267**	P	**Pb**	**15 45 06.8**	**-2.4**
JFT			*e*S	**Sb**	**15 45 31.6**	**-0.5**
JOM	**Ohasama**	**2.12 330**	P	**Pn**	**15 45 09.8**	**0.0**
JYK	**Kaneyama**	**2.23 306**	P	**Pn**	**15 45 11.9**	**+0.7**
JYK			*e*S	**Sn**	**15 45 39.9**	**+2.0**
JAW	**Awa shima**	**2.83 288**	P	**Pn**	**15 45 21.3**	**+1.8**
JAG	**Ashikaga**	**2.85 246**	P	**Pn**	**15 45 20.5**	**+0.6**
JANG	**Nango**	**2.87 342**	P	**Pn**	**15 45 20.5**	**+0.4**
MJAR	**Matsushiro Arr**	**3.74 254**	Pn	**Pn**	**15 45 34.6**	**+2.6**
	3.1nm,0.3s,baz=73,slow=10.0,SNR=52					
MAT	**Matsushiro**	**3.74 254**	P	**Pn**	**15 45 35.1**	**+3.0**
MAT			S	**Sb**	**15 46 22.4**	**-3.7**
JHJ	**Hachijo jima 2**	**5.10 209**	Pn	**Pn**	**15 45 51.3**	**+0.6**
	7.0nm,0.3s,baz=66,slow=20,SNR=2.9					
JHJ			Sn	**Sn**	**15 46 49.2**	**+0.4**
	25nm,0.3s,baz=127,slow=20,SNR=3.9					
USRK	**Ussuriysk Ar.**	**10.40 312**	Pn	**Pn**	**15 47 01.9**	**-1.5**
	0.2nm,0.3s,baz=117,slow=13,SNR=2.5					
KSRS	**Korea Array**	**11.72 274**	Pn	Pn	15 47 25.8	+4.4
	0.1nm,0.3s,baz=85,slow=13,SNR=3.3					
MA2	**Magadan**	**22.56 11**	LR	LR	15 59 06.3	
	comp=Z,25nm,18.2s,baz=149,slow=38					
SONM	**Songino Array**	**28.29 303**	P	**P**	**15 50 28.7**	**+1.3**
	1.0nm,0.9s,baz=101,slow=7.7,SNR=3.9					
ZALV	**Zalesovo Beam**	**42.25 312**	P	**P**	**15 52 27.8**	**+0.9**
	0.4nm,0.3s,baz=94,slow=7.8,SNR=3.0					
MKAR	**Makanchi Array**	**44.65 302**	P	**P**	**15 52 49.4**	**+3.0**
	0.8nm,0.8s,baz=93,slow=9.2,SNR=6.9					
ILAR	**Eielson Array**	**48.44 33**	P	**P**	**15 53 15.8**	**0.0**
	0.6nm,0.8s,baz=264,slow=6.9,SNR=7.8					
WRA	**Warramunga Arr**	**57.81 189**	P	**P**	**15 54 24.6**	**-0.7**
	1.4nm,0.8s,baz=8.2,slow=7.0,SNR=10					
ASAR	**Alice Springs**	**61.54 189**	P	**P**	**15 54 50.5**	**-0.4**
	0.3nm,0.6s,baz=2.1,slow=6.6,SNR=10.0					
TXAR	**Lajitas Array**	**88.95 53**	P	**P**	**15 57 27.3**	**-1.4**
	0.2nm,0.8s,baz=342,slow=5.7,SNR=3.1					

NIED ***17*** *15:47:00,39.˚10N×144.˚40E, h5km, Mw3.7 Best double couple: M*o*3.64000×10^14 NP1:*φs*337.00000°,δ26.00000°, λ-77.00000°. NP2:*φs*142.00000°, δ65.00000°, λ-96.00000°.*

ISCJB ***17*** *15:47:05.5±0.7,39.˚10N±0.˚04×144.˚41E±0.˚06, h19km, mb3.7/9, Error ellipse: s-maj=7.3km s-min=6.2km az=24.1*

JMA ***17*** *15:47:06.7±0.2,39.˚15N×144.˚42E, h35km, M3.6*

IDC ***17*** *15:47:07.9±7.1,39.˚02N×144.˚59E, h30km±49km, mb3.6/9, mb1 3.7/13,mb1mx3.6/48,mbtmp3.8/13,ML3.4/3, Error ellipse: s-maj=29.0km s-min=18.9km az=88.0*

ISC 17 15:47:07.1±0.9, 39.˚10N±0.˚06×144.˚40E±0.˚08, h19km, n29, σ1§00/33, mb3.7/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**2.06**	**284**	P	**Pn**	**15 47 40.3**	**-0.4**
MIYJ				*e*S	**Sn**	**15 48 05.0**	**-0.9**
OFUJ	**Ofunato**	**2.13**	**270**	P	**Pn**	**15 47 41.4**	**-0.2**
JTH	**Tanohata**	**2.14**	**294**	P	**Pn**	**15 47 40.9**	**-0.9**
JOM	**Ohasama**	**2.44**	**280**	*e*S	**Sn**	**15 48 14.5**	**-0.8**
JMK	**Ichinoseki**	**2.48**	**268**	P	**Pn**	**15 47 46.6**	**+0.1**
JANG	**Nango**	**2.57**	**301**	P	**Pn**	**15 47 46.4**	**-1.3**
JOU	**Okura**	**3.02**	**257**	P	**Pn**	**15 47 54.0**	**+0.1**
JTM	**Tenmabayashi**	**3.07**	**304**	P	**Pn**	**15 47 54.4**	**-0.2**
JTM				*e*S	**Sn**	**15 48 29.1**	**-1.6**
JAH	**Hinai**	**3.11**	**292**	P	**Pn**	**15 47 55.4**	**+0.3**
JYK	**Kaneyama**	**3.16**	**268**	P	**Pn**	**15 47 56.1**	**+0.3**
JNBK	**Urakawa-nobuka**	**3.42**	**339**	*e*S	**Sn**	**15 48 38.5**	**-0.8**
JOT	**Ohata**	**3.44**	**313**	S	**Sn**	**15 48 39.6**	**-0.2**
JFT	**Otama**	**3.57**	**245**	P	**Pn**	**15 48 01.8**	**+0.3**
JFT				*e*S	**Sn**	**15 48 42.5**	**-0.6**
JOSM	**Okushiri--Mats**	**4.79**	**310**	P	**Pn**	**15 48 19.4**	**+1.2**
ASAJ	**Asahikawa**	**5.19**	**345**	Pn	**Pn**	**15 48 25.2**	**+1.5**
	baz=90,slow=11						
MJAR	**Matsushiro Arr**	**5.53**	**244**	Pn	**Pn**	**15 48 29.6**	**+1.1**
	7.6nm,0.3s,baz=55,slow=11,SNR=38						
MAT	**Matsushiro**	**5.53**	**244**	P	**Pn**	**15 48 29.8**	**+1.4**
MAT				*e*S	**Sn**	**15 49 32.0**	**+0.5**
USRK	**Ussuriysk Ar.**	**10.59**	**303**	Pn	**Pn**	**15 49 38.5**	**+0.7**
	0.5nm,0.3s,baz=100,slow=13,SNR=6.9						
KSRS	**Korea Array**	**13.06**	**268**	Pn	**Pn**	**15 50 12.8**	**+1.3**
	0.1nm,0.3s,baz=78,slow=14,SNR=4.3						
SONM	**Songino Array**	**28.69**	**300**	P	**P**	**15 53 03.6**	**+0.7**
	0.3nm,0.4s,baz=99,slow=8.9,SNR=2.4						
ZALV	**Zalesovo Beam**	**42.31**	**311**	P	**P**	**15 54 59.7**	**+0.3**
	0.6nm,0.5s,baz=86,slow=8.4,SNR=2.8						
MKAR	**Makanchi Array**	**45.05**	**301**	P	**P**	**15 55 22.2**	**+0.5**
	0.8nm,0.8s,baz=79,slow=8.8,SNR=5.0						
ILAR	**Eielson Array**	**46.48**	**33**	P	**P**	**15 55 31.9**	**-0.7**
	0.5nm,0.8s,baz=269,slow=6.5,SNR=8.5						
WRA	**Warramunga Arr**	**59.48**	**191**	P	**P**	**15 57 07.5**	**-1.4**
	0.7nm,0.8s,baz=9.6,slow=7.0,SNR=4.0						
ASAR	**Alice Springs**	**63.20**	**191**	P	**P**	**15 57 33.3**	**-0.7**
	0.3nm,0.8s,baz=8.8,slow=6.7,SNR=4.1						
GEYT	**Alibeck**	**64.89**	**299**	P	**P**	**15 57 46.0**	**+0.8**
	0.8nm,0.4s,baz=46,slow=8.3,SNR=3.3						
FINES	**FINESS Array B**	**68.07**	**333**	P	**P**	**15 58 04.7**	**-0.4**
	1.5nm,0.7s,baz=64,slow=4.4,SNR=5.0						
KBZ	**Khabaz**	**71.33**	**311**	P	**P**	**15 58 26.6**	**+1.2**
	0.8nm,0.4s,baz=165,slow=1.8,SNR=3.6						
TORD	**Torodi Ar. Bea**	**117.46**	**318**	PKP	**PKPdf**	**16 05 49.5**	**-2.6**
	0.3nm,0.8s,baz=222,slow=1.9,SNR=2.2						

IDC ***17*** *16:03:59.3±0.7,55.˚41S×28.˚03W, h0km, mb4.2/6, mb1 4.3/7,mb1mx3.9/23,mbtmp4.2/7,ML4.3/1,MS3.1/2, Ms1 3.1/2,ms1mx2.6/24, Error ellipse: s-maj=29.3km s-min=19.2km az=55.0*

NEIC ***17*** *16:04:00.0±4.5,55.˚41S×28.˚11W, h7km±27km, mb4.8/1, Error ellipse: s-maj=14.9km s-min=7.8km az=47.0*

ISCJB ***17*** *16:04:01.1±0.7,55.˚5S±0.˚1×28.˚2W±0.˚2, h26km, mb4.2/8, Error ellipse: s-maj=19.3km s-min=12.3km az=42.8*

ISC 17 16:04:03.1±0.6, 55.˚4S±0.˚1×28.˚2W±0.˚1, h26km, n21, σ1§15/20, mb4.3/7,1C, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HOPE	**Hope Point**	**4.94**	**280**	*e*P	**Pn**	**16 05 14.6**	**-0.8**
SNAA	**Sanae**	**19.54**	**156**	P	**P**	**16 08 27.7**	**-0.6**
	1.0nm,0.3s,baz=293,slow=11,SNR=61						
SNAA				LR	LR	16 15 35.8	
	comp=Z,29nm,18.0s,baz=323,slow=36						
PMSA	**Palmer Station**	**19.90**	**228**	LR	LR	16 14 19.8	
	comp=Z,74nm,18.0s,baz=134,slow=31						
SYO	**Syowa Base**	**32.42**	**142**	*e*X	P	16 10 21.0	-9.3
QSPA	**South Pole Qui**	**34.83**	**180**	*e*P	**P**	**16 10 51.5**	**0.0**
	12nm,0.8s						
CPUP	**Villa Florida**	**35.98**	**312**	P	**P**	**16 11 01.0**	**-0.6**
	2.5nm,0.9s,baz=171,slow=7.8,SNR=4.6						
MAW	**Mawson**	**40.98**	**144**	P	**P**	**16 11 42.9**	**-0.2**
	1.3nm,0.8s,baz=241,slow=7.8,SNR=3.4						
BOSA	**Boshof**	**46.37**	**77**	P	**P**	**16 12 26.2**	**-0.9**
	3.4nm,1.0s,baz=180,slow=5.1,SNR=3.2						
VNDA	**Vanda**	**47.17**	**183**	P	**P**	**16 12 33.0**	**+0.4**
	1.8nm,0.6s,baz=204,slow=6.7,SNR=9.9						
LPAZ	**La Paz**	**49.56**	**306**	P	**P**	**16 12 53.5**	**+1.1**
	4.5nm,0.8s,baz=160,slow=6.3,SNR=18						
TORD	**Torodi Ar. Bea**	**72.79**	**31**	P	**P**	**16 15 29.6**	**+0.5**
	2.5nm,0.8s,baz=194,slow=7.1,SNR=12						
ASAR	**Alice Springs**	**99.75**	**163**	P	**Pdif**	**16 17 49.0**	**+4.2**
	0.5nm,0.8s,baz=203,slow=5.7,SNR=4.5						
FINES	**FINESS Array B**	**124.09**	**28**	PKP	**PKPdf**	**16 22 57.0**	**-0.5**
	1.6nm,0.9s,baz=194,slow=1.1,SNR=4.2						
ARCES	**ARCESS Array B**	**130.57**	**22**	PKP	**PKPdf**	**16 23 09.9**	**+0.2**
	1.9nm,0.9s,baz=202,slow=2.6,SNR=4.6						
INK	**Inuvik**	**144.96**	**321**	*e*PKPbc	**PKPdf**	**16 23 35.8**	**-0.3**
DAWY	**Dawson**	**145.96**	**313**	*e*PKPbc	**PKPbc**	**16 23 38.5**	**-0.4**
DOT	**Dot Lake**	**147.81**	**311**	*e*PKPbc	**PKPbc**	**16 23 44.3**	**+0.1**
ILAR	**Eielson Array**	**149.28**	**313**	PKPbc	**PKPbc**	**16 23 47.9**	**+0.1**
	2.8nm,0.8s,baz=114,slow=1.5,SNR=32						
MCK	**McKinley**	**149.94**	**310**	*e*PKPbc	**PKPbc**	**16 23 49.6**	**+0.1**
MCK				*e*PKPab	**PKPab**	**16 23 55.9**	**+0.6**
BPAW	**Bear Paw Mtn.**	**150.90**	**311**	*e*PKPbc	**PKPbc**	**16 23 51.6**	**-0.1**
SONM	**Songino Array**	**151.24**	**86**	PKPbc	**PKPbc**	**16 23 53.1**	**-0.1**
	1.6nm,0.6s,baz=236,slow=3.4,SNR=6.9						

IDC 17 16:24:05.5±32.0, 17.˚71S×177.˚81W, h519km±292km, mb3.3/3, mb1 3.5/3, mb1mx2.9/32, mbtmp4.2/3, Error ellipse: s-maj=220.2km s-min=101.0km az=88.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**39.23**	**241**	P	P	16 30 49.5	+0.5
	3.8nm,1.0s,baz=63,slow=7.1,SNR=3.6						
WRA	**Warramunga Arr**	**45.23**	**259**	P	P	16 31 36.1	-0.3
	1.6nm,0.7s,baz=95,slow=7.2,SNR=31						
ASAR	**Alice Springs**	**45.40**	**254**	P	P	16 31 37.5	-0.2
	4.4nm,0.6s,baz=87,slow=8.6,SNR=97						
ASAR				PcP	PcP	16 33 05.2	-1.0
	0.3nm,0.5s,baz=110,slow=3.7,SNR=6.6						
BRTR	**Keskin Array B**	**145.05**	**315**	PKPbc	PKPbc	16 42 44.5	-0.2
	0.5nm,0.7s,baz=72,slow=4.0,SNR=3.6						

DJA 17 16:25:40.6±0.7, 8.˚S±4.˚×10.˚7E±.˚, h31km±5km, M4.0/7, MLv4.0/7, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CNJI	**Cibinong**	**0.59**	**55**	P	Pn	16 25 53.6	+0.7
CNJI				S	Sn	16 26 01.9	+0.4
SKJI	**Sukabumi**	**0.65**	**353**	P	Pn	16 25 54.9	+1.2
SKJI				S	Sn	16 26 03.7	+0.9
DBJI	**Dramaga**	**1.09**	**6**	S	Sn	16 26 12.8	-1.1
CISI	**Cisompet, Garu**	**1.17**	**85**	P	Pn	16 26 01.4	+0.5
CISI				S	Sn	16 26 15.0	-0.8
LEM	**Lembang**	**1.27**	**50**	P	Pb	16 26 08.5	+4.5
LEM				S	Sb	16 26 23.2	+3.1
CGJI	**Cibinong**	**1.39**	**318**	P	Pb	16 26 05.0	-1.1
CGJI				S	Sn	16 26 21.2	-0.1
SBJI	**Serang**	**1.60**	**342**	P	Pn	16 26 07.7	+0.9
SBJI				S	Sn	16 26 26.1	-0.3
CMJI	**Cimerak**	**1.80**	**94**	P	Pn	16 26 10.0	+0.5
CMJI				S	Sn	16 26 30.1	-1.2
JCJI	**Jatiwangi**	**1.99**	**55**	P	Pn	16 26 10.2	-1.9

ISCJB ***17*** *16:37:23.0±0.5,0.˚58N±0.˚09×25.˚13W±0.˚07, h10km, mb4.2/22,MS4.0/25, Error ellipse: s-maj=13.0km s-min=10.1km az=169.8*

BJI ***17*** *16:37:23.0,0.˚60N×25.˚20W, h10km, Ms5.1/1,Ms7 4.8/3*

IDC ***17*** *16:37:23.2±0.6,0.˚57N×25.˚15W, h0km, mb4.1/17, mb1 4.3/17,mb1mx4.0/51,mbtmp4.1/17,MS4.0/26, Ms1 3.9/26,ms1mx3.9/35, Error ellipse: s-maj=19.7km s-min=15.9km az=164.0*

NEIC ***17*** *16:37:24.4±0.4,0.˚55N×25.˚22W, h10km, mb4.7/7, Error ellipse: s-maj=13.2km s-min=9.6km az=155.0*

ISC 17 16:37:24.1±0.5, 0.˚58N±0.˚10×25.˚25W±0.˚09, h10km, n56, σ1§59/37, mb4.2/22, MS4.0/25, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RCBR	**Riachuelo**	**12.39**	**239**	Pn	**Pn**	**16 40 18.2**	**-2.6**
	0.8nm,0.3s,baz=62,slow=11,SNR=13						
RCBR				LR	LR	16 44 00.2	
	comp=Z,µm,19.7s,baz=78,slow=32						
RCBR	**Riachuelo**	**12.39**	**239**	*e*Pn	**Pn**	**16 40 19.4**	**-1.4**
H10N3	**ASCENSION HYDR**	**13.59**	**128**	T	T	16 54 20.0	
	baz=307,slow=74,SNR=665						
H10N2	**ASCENSION HYDR**	**13.60**	**128**	T	T	16 54 27.0	
	baz=307,slow=74,SNR=1058						
H10N1	**ASCENSION HYDR**	**13.61**	**128**	T	T	16 54 28.0	
	baz=307,slow=74,SNR=1187						
H10S3	**ASCENSION HYDR**	**14.17**	**132**	T	T	16 55 09.7	
	baz=311,slow=74,SNR=452						
H10S1	**ASCENSION HYDR**	**14.18**	**132**	T	T	16 55 02.4	
	baz=311,slow=74,SNR=570						
H10S2	**ASCENSION HYDR**	**14.19**	**132**	T	T	16 55 11.1	
	baz=311,slow=74,SNR=507						
SACV	**Santiago Islan**	**14.39**	**6**	*e*Pn	**Pn**	**16 40 46.9**	**-1.2**
LIC	**Lamto**	**20.94**	**74**	*e*P	Pn	16 42 12.3	+2.4
	212nm,1.6s						
TIC	**Toumodi**	**21.06**	**73**	*e*P	**P**	**16 42 10.0**	**+1.4**
DBIC	**Dimbokro**	**21.22**	**73**	P	**P**	**16 42 08.6**	**-1.8**
	8.7nm,0.7s,baz=234,slow=10.0,SNR=7.9						
DBIC				LR	LR	16 48 31.8	
	comp=Z,648nm,21.6s,baz=224,slow=32						
DBIC	**Dimbokro**	**21.22**	**73**	*e*P	**P**	**16 42 09.3**	**-1.1**
	31nm,1.1s						
KIC	**Kosan Boka**	**21.25**	**74**	*e*P	**P**	**16 42 09.4**	**-1.3**
	54nm,1.0s						
BDFB	**Brasilia**	**27.67**	**233**	LR	LR	16 53 11.5	
	comp=Z,999nm,19.8s,baz=167,slow=34						
TORD	**Torodi Ar. Bea**	**29.47**	**64**	P	**P**	**16 43 27.1**	**-1.5**
	5.3nm,1.1s,baz=253,slow=9.9,SNR=13						
TORD				LR	LR	16 53 46.0	
	comp=Z,921nm,19.9s,baz=230,slow=33						
TAM	**Tamanrasset**	**37.18**	**51**	P	**P**	**16 44 36.6**	**+0.8**
	2.4nm,0.8s						
SIV	**San Ignacio**	**39.01**	**243**	P	**P**	**16 44 52.1**	**+0.8**
	1.9nm,0.8s,baz=89,slow=8.9,SNR=3.6						
H09W1	**TRISTAN DA CUN**	**39.35**	**164**	T	T	17 26 37.7	
	SNR=5.9						
CPUP	**Villa Florida**	**40.89**	**227**	LR	LR	17 01 47.5	
	comp=Z,208nm,18.2s,baz=51,slow=36						
ESDC	**Sonseca Array**	**43.49**	**24**	P	**P**	**16 45 29.4**	**+1.6**
	0.9nm,0.7s,baz=211,slow=11,SNR=5.7						
ESDC				LR	LR	17 03 17.8	
	comp=Z,73nm,18.8s,baz=140,slow=36						
LPAZ	**La Paz**	**45.50**	**246**	P	**P**	**16 45 45.9**	**+1.0**
	3.6nm,0.8s,baz=62,slow=7.7,SNR=20						
LPAZ				LR	LR	17 04 27.7	
	comp=Z,794nm,18.9s,baz=100,slow=36						
LPAZ	**La Paz**	**45.50**	**246**	*e*P	**P**	**16 45 45.5**	**+0.6**
	5.4nm,0.8s						
TSUM	**Tsumeb**	**46.39**	**117**	P	**P**	**16 45 51.6**	**+0.3**
	2.5nm,0.9s,baz=274,slow=6.2,SNR=6.3						
TSUM				LR	LR	17 00 58.2	
	comp=Z,227nm,21.2s,baz=279,slow=31						
TSUM	**Tsumeb**	**46.39**	**117**	*e*P	**P**	**16 45 51.0**	**-0.3**
	21nm,1.9s						
KEST	**Kesra**	**47.50**	**39**	LR	LR	17 06 17.9	
	comp=Z,907nm,21.5s,baz=176,slow=37						
ROSC	**El Rosal**	**49.19**	**276**	LR	LR	17 05 41.0	
	comp=Z,224nm,19.2s,baz=251,slow=34						
LSZ	**Lusaka**	**55.09**	**109**	P	**P**	**16 46 57.4**	**+0.4**
	1.5nm,0.5s,baz=291,slow=3.1,SNR=6.4						
BOSA	**Boshof**	**56.33**	**125**	P	**P**	**16 47 05.0**	**-0.7**
	2.3nm,0.8s,baz=302,slow=7.8,SNR=3.1						
BOSA				LR	LR	17 07 47.1	
	comp=Z,96nm,18.3s,baz=304,slow=32						
MATP	**Matopo**	**56.56**	**115**	P	**P**	**16 47 06.7**	**-0.8**
	4.2nm,0.8s,baz=279,slow=9.2,SNR=7.1						
PLCA	**Paso Flores**	**58.13**	**219**	LR	LR	17 12 44.7	
	comp=Z,139nm,18.6s,baz=112,slow=36						
GERES	**GERESS Array B**	**58.58**	**29**	LR	LR	17 10 47.1	
	comp=Z,69nm,20.8s,baz=264,slow=34						
KMBO	**Kilima Mbogo**	**62.52**	**92**	LR	LR	17 12 10.6	
	comp=Z,129nm,19.2s,baz=84,slow=33						
SCHQ	**Schefferville**	**63.84**	**335**	LR	LR	17 11 14.0	
	comp=Z,82nm,21.6s,baz=91,slow=32						
BRTR	**Keskin Array B**	**66.12**	**46**	P	**P**	**16 48 12.8**	**+0.8**
	1.4nm,0.8s,baz=235,slow=5.7,SNR=7.7						
BRTR				LR	LR	17 18 09.1	
	comp=Z,102nm,21.1s,baz=214,slow=37						
NOA	**NORSAR Array B**	**66.41**	**18**	P	**P**	**16 48 12.2**	**-1.1**
	0.5nm,0.7s,baz=234,slow=8.5,SNR=2.9						
NOA				LR	LR	17 13 48.0	
	comp=Z,47nm,20.9s,baz=215,slow=33						
AKASG	**Malin Array Be**	**67.84**	**34**	P	**P**	**16 48 23.2**	**+0.8**
	2.6nm,0.6s,baz=240,slow=6.4,SNR=7.0						
AKASG				LR	LR	17 20 06.7	
	comp=Z,90nm,18.3s,baz=235,slow=38						
OLIL	**Olney**	**68.71**	**312**	*e*P	**P**	**16 48 27.6**	**-0.6**
	14nm,0.9s						
VNA1	**Neumayer--Stat**	**71.98**	**174**	P	**P**	**16 48 49.1**	**+1.5**
FINES	**FINESS Array B**	**72.00**	**23**	P	**P**	**16 48 48.9**	**+1.0**
	1.6nm,0.7s,baz=185,slow=6.7,SNR=5.5						
FINES				LR	LR	17 21 06.1	
	comp=Z,57nm,18.1s,baz=230,slow=36						
KBZ	**Khabaz**	**73.93**	**44**	P	**P**	**16 49 02.1**	**+2.4**
	1.5nm,0.7s,baz=178,slow=5.6,SNR=3.6						
ARCES	**ARCESS Array B**	**76.59**	**16**	LR	LR	17 18 49.4	
	comp=Z,61nm,20.8s,baz=232,slow=32						
ULM	**Lac du Bonnet**	**77.25**	**322**	LR	LR	17 18 24.1	
	comp=Z,29nm,19.8s,baz=58,slow=32						
TXAR	**Lajitas Array**	**79.62**	**300**	P	**P**	**16 49 33.4**	**+1.1**
	1.1nm,0.9s,baz=126,slow=6.5,SNR=8.3						
TXAR				LR	LR	17 22 35.5	
	comp=Z,14nm,21.4s,baz=0.0,slow=34						
TX31	**Lajitas Ar. Si**	**79.62**	**300**	*e*P	**P**	**16 49 32.7**	**+0.4**
SDCO	**Great Sand Dun**	**81.93**	**308**	*e*P	**P**	**16 49 45.8**	**+1.1**
	2.6nm,1.1s						
GEYT	**Alibeck**	**84.41**	**52**	P	**P**	**16 49 57.9**	**+0.7**
	0.5nm,0.5s,baz=270,slow=8.1,SNR=2.2						
GEYT				LR	LR	17 31 46.1	
	comp=Z,70nm,18.5s,baz=220,slow=39						
PDAR	**Pinedale Array**	**85.42**	**313**	P	**P**	**16 50 03.4**	**+0.9**
	0.2nm,0.3s,baz=82,slow=6.5,SNR=4.3						
PDAR				LR	LR	17 26 01.8	
	comp=Z,24nm,18.1s,baz=76,slow=34						
ARU	**Arti**	**86.09**	**34**	*e*P	**P**	**16 50 06.0**	**+0.9**
	26nm,2.0s						
YKA	**Yellowknife Ar**	**89.19**	**332**	LR	LR	17 26 12.8	
	comp=Z,8.1nm,21.5s,baz=180,slow=33						
AAK	**Ala-Archa**	**96.78**	**47**	LR	LR	17 38 29.0	
	comp=Z,78nm,19.0s,baz=256,slow=38						
KSH	**Kashi**	**98.29**	**50**	*e*P	Pdif	16 51 02.8	+0.3
KSH				*es*P	sP	16 51 08.8	+1.8
KSH				S	**S**	**17 02 26.8**	**-4.1**
KSH				LR	LR		
	comp=Z,350nm,9.1s						
CD2	**Chengdu**	**122.40**	**52**	PKP	**PKPdf**	**16 56 19.5**	**-0.9**
HHC	**Hu-ho-hao-te**	**123.13**	**38**	*e*PKP	**PKPdf**	**16 56 17.4**	**-4.2**
ASAR	**Alice Springs**	**149.41**	**140**	PKPbc	**PKPbc**	**16 57 14.3**	**-0.2**
	2.1nm,0.8s,baz=209,slow=2.6,SNR=12						
WRA	**Warramunga Arr**	**152.26**	**135**	PKPbc	**PKPbc**	**16 57 23.9**	**+2.7**
	0.6nm,0.9s,baz=230,slow=2.2,SNR=3.2						
WRA				PKPab	**PKPab**	**16 57 31.1**	**+0.2**
	1.0nm,0.8s,baz=226,slow=3.0,SNR=7.6						

IDC 17 16:56:10.8±1.5, 29.˚72S×176.˚64W, h0km, mb3.8/3, mb1 3.9/3, mb1mx3.7/23, mbtmp3.8/3, MS3.4/1, Ms1 3.4/1, ms1mx2.6/23, Error ellipse: s-maj=51.7km s-min=26.9km az=9.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.21**	**293**	Pn	Pn	16 56 34.7	-0.2
	159nm,0.3s,baz=76,slow=10,SNR=14						
RAO				Sn	Sn	16 56 53.6	+1.6
	573nm,0.3s,baz=242,slow=23,SNR=10.0						
DZM	**Mont Dzumac**	**17.01**	**293**	LR	LR	17 04 56.9	
	comp=Z,143nm,21.2s,baz=26,slow=31						
STKA	**Stephens Creek**	**35.78**	**256**	P	P	17 03 12.6	+0.9
	1.5nm,0.8s,baz=120,slow=8.1,SNR=3.3						
ASAR	**Alice Springs**	**44.33**	**266**	P	P	17 04 22.4	-0.4
	0.4nm,0.7s,baz=105,slow=6.9,SNR=12						
WRA	**Warramunga Arr**	**45.26**	**271**	P	P	17 04 29.8	-0.5
	1.2nm,0.6s,baz=110,slow=8.0,SNR=17						
FINES	**FINESS Array B**	**144.90**	**341**	PKP	PKPdf	17 15 49.5	+0.4
	1.4nm,0.5s,baz=41,slow=2.7,SNR=16						
AKASG	**Malin Array Be**	**151.46**	**325**	PKPbc	PKPbc	17 16 05.5	-0.7
	0.3nm,0.4s,baz=47,slow=3.0,SNR=3.0						
AKASG				PKPab	PKPab	17 16 15.8	+1.2
	1.7nm,0.7s,baz=46,slow=3.2,SNR=5.9						
BRTR	**Keskin Array B**	**153.30**	**300**	PKPab	PKPab	17 16 20.4	-2.5
	0.4nm,0.6s,baz=270,slow=1.0,SNR=3.9						

ISCJB ***17*** *16:59:19.5±0.8,43.˚64N±0.˚06×147.˚17E±0.˚07, h61km±7km, mb3.2/2, Error ellipse: s-maj=11.6km s-min=5.5km az=139.1*

MOS ***17*** *16:59:19.0±1.3,43.˚67N×147.˚17E, h58km, mb4.3/1, Error ellipse: s-maj=21.0km s-min=17.3km az=81.3*

MOS Felt (II-III) at Shikotan.

JMA ***17*** *16:59:19.8±0.2,43.˚52N×147.˚17E, h50km±4km, M3.9*

SKHL ***17*** *16:59:20.5±0.3,43.˚62N×147.˚22E, h58km±3km, mb4.3/4*

IDC ***17*** *17:00:32.1±23.0,48.˚49N×151.˚35E, h316km±78km, mb2.7/2, mb1 3.0/3, mb1mx2.6/41, mbtmp3.3/3, Error ellipse: s-maj=460.0km s-min=135.6km az=93.0*

ISC 17 16:59:19.5±1.2, 43.˚58N±0.˚07×147.˚27E±0.˚07, h50km±11km, n33, σ1§04/49, 5D, Kuril Islands

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

comp=Z,10.0nm,0.5s

YSS					smax	smax			
	comp=N,10.0nm,1.0s								
YSS	**Yuzh-Sakhalins**	**4.64**	**318**	*e*P		**Pn**	**17 00 28.4**	**+1.4**
YSS				AMB	AMB	AMB	17 00 28.8		
	comp=N,6.0nm,0.2s								
YSS				*e*S		**Sn**	**17 01 18.1**	**-1.4**
PETK	**Petropavlovsk-**	**11.78**	**32**	P		**Pn**	**17 02 03.2**	**-1.5**
	comp=N,0.3nm,0.3s,baz=220,slow=14,SNR=7.3								
PETK	**Petropavlovsk-**	**11.78**	**32**	*e*PN		**Pn**	**17 02 04.5**	**-0.2**
MSHR	**Mys Shultsa**	**11.83**	**271**	*e*PN		**Pn**	**17 02 04.4**	**-1.0**
ILAR	**Eielson Array**	**41.57**	**36**	P		**P**	**17 07 02.8**	**+0.8**
	comp=N,0.3nm,0.5s,baz=287,slow=8.1,SNR=4.5								
ILAR	**Eielson Array**	**41.57**	**36**	*e*P		**P**	**17 07 02.8**	**+0.8**
ILAR	**Eielson Array**	**41.57**	**36**	*e*P		**P**	**17 07 02.8**	**+0.8**
TXAR	**Lajitas Array**	**82.67**	**56**	P		P	17 11 54.3	+16
	comp=N,0.2nm,0.9s,baz=316,slow=5.1,SNR=3.4								

WEL 17 17:06:20.7±0.1, 43.60S×172.78E, h8km, ML3.7/19, 4C-3D, Error ellipse: s-maj=1.0km s-min=0.5km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.12**	**282**	⇑PG	Pg	17 06 23.2	0.0
CRLZ				SG	Sg	17 06 24.9	-0.2
CRLZ				AML	AML	17 06 25.3	
CRLZ				AML	AML	17 06 25.5	
CRLZ				AML	AML	17 06 25.6	
MQZ	**McQueen's Vall**	**0.14**	**220**	⇑PG	Pg	17 06 24.0	+0.2
MQZ				SG	Sg	17 06 26.2	+0.4
MQZ				AML	AML	17 06 26.6	
OXZ	**Oxford**	**0.60**	**297**	⇓P*	Pg	17 06 32.2	-0.1
OXZ				AML	AML	17 06 41.1	
OXZ				AML	AML	17 06 41.1	
OXZ				AML	AML	17 06 43.0	
OXZ				AML	AML	17 06 43.0	
LTZ	**Lake Taylor**	**0.90**	**335**	P*	Pg	17 06 37.8	-0.1
LTZ				S*	Sb	17 06 50.2	-0.4
LTZ				AML	AML	17 06 51.2	
RPZ	**Rata Peaks**	**1.26**	**264**	⇑P*	Pn	17 06 43.2	-1.4
RPZ				AML	AML	17 07 04.4	
RPZ				AML	AML	17 07 07.3	
KHZ	**Kahutara**	**1.31**	**26**	P*	Pn	17 06 43.7	-1.5
KHZ				AML	AML	17 06 49.6	
KHZ				AML	AML	17 07 21.4	
INZ	**Inchbonnie**	**1.31**	**311**	P*	Pn	17 06 44.1	-1.2
WVZ	**Waitaha Valley**	**1.58**	**289**	PN	Pn	17 06 48.4	-0.6
WVZ				AML	AML	17 06 18.6	
WVZ				AML	AML	17 07 19.4	
DSZ	**Denniston Nort**	**1.99**	**338**	PN	Pn	17 06 53.9	-0.8
DSZ				AML	AML	17 07 21.8	
DSZ				AML	AML	17 07 21.8	
DSZ				AML	AML	17 07 22.1	
DSZ				AML	AML	17 07 27.7	
LBZ	**Lake Benmore**	**2.03**	**246**	PN	Pn	17 06 54.4	-0.8
LBZ				AML	AML	17 07 33.0	
LBZ				AML	AML	17 07 33.1	
BSWZ	**Blackbirch Sta**	**2.05**	**24**	PN	Pn	17 06 54.4	-1.1
BSWZ				AML	AML	17 07 37.1	
ODZ	**Otahua Downs**	**2.11**	**226**	⇓PN	Pn	17 06 54.8	-1.4
ODZ				AML	AML	17 07 31.1	
ODZ				AML	AML	17 07 33.8	
ODZ				AML	AML	17 07 33.8	
ODZ				AML	AML	17 07 35.3	
FOZ	**Fox Glacier**	**2.15**	**271**	PN	Pn	17 06 57.0	+0.2
FOZ				AML	AML	17 07 34.5	
FOZ				AML	AML	17 07 37.9	
TUWZ	**Tuamarina**	**2.33**	**22**	PN	Pn	17 06 57.9	-1.4
NNZ	**Nelson**	**2.42**	**11**	⇓PN	Pn	17 06 59.9	-0.6
TCW	**Tory Channel**	**2.63**	**25**	PN	Pn	17 07 01.8	-1.6
WEL	**Wellington**	**2.74**	**33**	PN	Pn	17 07 03.5	-1.4
QRZ	**Quartz Range**	**2.78**	**356**	PN	Pn	17 07 04.8	-0.6
QRZ				AML	AML	17 07 56.8	
QRZ				AML	AML	17 07 56.8	
QRZ				AML	AML	17 07 59.2	
QRZ				AML	AML	17 07 59.2	
DUWZ	**D'Urville Isla**	**2.92**	**17**	PN	Pn	17 07 06.6	-0.9
JCZ	**Jackson Bay**	**2.93**	**259**	PN	Pn	17 07 07.4	-0.2
JCZ				AML	AML	17 07 59.4	
JCZ				AML	AML	17 07 59.6	
WKZ	**Wanaka**	**2.97**	**244**	PN	Pn	17 07 07.7	-0.5
WKZ				AML	AML	17 08 01.0	
WKZ				AML	AML	17 08 02.8	
EAZ	**Earnscleugh**	**2.97**	**236**	PN	Pn	17 07 07.0	-1.2
EAZ				AML	AML	17 07 59.6	
EAZ				AML	AML	17 07 59.6	
EAZ				AML	AML	17 08 05.5	
EAZ				AML	AML	17 08 05.5	
CAW	**Cannon Point**	**3.01**	**35**	PN	Pn	17 07 06.7	-2.0
CAW				AML	AML	17 08 31.6	
CAW				AML	AML	17 08 47.2	
KIW	**Kapiti Island**	**3.16**	**31**	PN	Pn	17 07 09.1	-1.6
MTW	**Mount Morrison**	**3.17**	**41**	PN	Pn	17 07 08.3	-2.5
TUZ	**Tuapeka**	**3.25**	**222**	PN	Pn	17 07 11.2	-0.8
TUZ				AML	AML	17 08 08.3	
TUZ				AML	AML	17 08 09.0	
OGWZ	**Otaki Gorge**	**3.30**	**33**	PN	Pn	17 07 10.7	-1.9
MRZ	**Mangatainoka R**	**3.60**	**36**	PN	Pn	17 07 14.7	-2.0
MSZ	**Milford Sound**	**3.65**	**251**	AML	AML	17 08 24.8	
MSZ				AML	AML	17 08 27.7	
BFZ	**Birch Farm**	**3.89**	**43**	PN	Pn	17 07 18.5	-2.3
SYZ	**Scrubby Hill**	**3.91**	**220**	PN	Pn	17 07 20.5	-0.5
WHZ	**Wether Hill Ro**	**4.14**	**235**	PN	Pn	17 07 22.6	-1.6
PREZ	**Palmer Road**	**4.38**	**14**	PN	Pn	17 07 28.2	+0.7
NWEZ	**Newall Road**	**4.40**	**11**	PN	Pn	17 07 28.4	+0.7
KHEZ	**Kahui Hut**	**4.40**	**13**	PN	Pn	17 07 28.7	+0.8
PKE	**Pukeiti**	**4.49**	**12**	PN	Pn	17 07 29.5	+0.4
DREZ	**Durham Road**	**4.53**	**14**	PN	Pn	17 07 29.8	+0.2
VRZ	**Vera Road**	**4.71**	**19**	⇑PN	Pn	17 07 32.4	+0.3
WNVZ	**Wahianoa**	**4.76**	**27**	PN	Pn	17 07 33.1	+0.1
TUVZ	**Tukino**	**4.84**	**28**	PN	Pn	17 07 33.6	-0.3
HIZ	**Hauiti**	**5.32**	**18**	PN	Pn	17 07 39.4	-0.9

IDC 17 17:22:53.9±15.0, 24.20S×175.68W, h104km±126km, mb4.1/3, mb1 4.2/4, mb1mx3.6/29, mbtmp4.4/4, ML4.1/1, MS3.3/2, Ms1 3.3/2, ms1mx2.7/27, Error ellipse: s-maj=86.0km s-min=48.9km az=28.0, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**15.30**	**202**	P	Pn	17 26 24.2	0.0
	0.8nm,0.3s,baz=313,slow=6.0,SNR=5.3						
DZM	**Mont Dzumac**	**16.58**	**274**	LR	LR	17 31 36.7	
	comp=Z,71nm,18.4s,baz=72,slow=32						
PMG	**Port Moresby**	**36.35**	**286**	P	P	17 30 05.0	+0.1
	15nm,0.7s,baz=135,slow=7.1,SNR=4.2						
ASAR	**Alice Springs**	**45.87**	**260**	P	P	17 31 06.2	0.0
	4.0nm,1.0s,baz=99,slow=7.5,SNR=33						
WRA	**Warramunga Arr**	**46.32**	**265**	P	P	17 31 09.2	-0.4
	2.2nm,0.6s,baz=104,slow=8.4,SNR=21						
PETK	**Petropavlovsk-**	**80.39**	**344**	LR	LR	18 03 12.4	
	comp=Z,29nm,20.1s,baz=235,slow=30						
KURBB	**Kurchatov Arra**	**118.20**	**316**	PKP	PKPdf	17 41 27.7	-0.8
	0.3nm,0.6s,baz=108,slow=2.5,SNR=4.5						
AKASG	**Malin Array Be**	**147.28**	**330**	PKPbc	PKPbc	17 42 24.4	-0.6
	1.6nm,0.6s,baz=40,slow=4.0,SNR=7.8						
BRTR	**Keskin Array B**	**150.87**	**309**	PKPbc	PKPbc	17 42 34.6	0.0
	0.7nm,0.7s,baz=104,slow=0.6,SNR=4.6						

*ISCJB **17** 17:29:52.4±1.6, 34.3N±0.2×88.7E±0.1, h33km, mb3.5/4, MS3.4/7, Error ellipse: s-maj=27.6km s-min=17.0km az=5.0*
*IDC **17** 17:29:56.5±8.9, 34.35N×88.59E, h49km±80km, mb3.3/4, mb1 3.5/8, mb1mx3.2/51, mbtmp3.6/8, ML2.9/4, MS3.4/7, Ms1 3.4/7, ms1mx3.0/34, Error ellipse: s-maj=69.5km s-min=23.2km az=4.0*
ISC 17 17:29:54.4±2.0, 34.2N±0.2×88.6E±0.2, h35km, n14, σ0.93/8, mb3.6/4, MS3.4/7, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**13.47**	**341**	P	**Pn**	**17 33 03.8**	**+0.9**
	0.1nm,0.3s,baz=147,slow=13,SNR=3.7						
KURBB	**Kurchatov Arra**	**18.00**	**339**	P	**P**	**17 34 01.1**	**-0.7**
	0.0nm,0.3s,baz=147,slow=12,SNR=21						
SONM	**Songino Array**	**19.06**	**39**	P	**P**	**17 34 13.0**	**-0.7**
	0.1nm,0.3s,baz=222,slow=12,SNR=7.6						
ZALV	**Zalesovo Beam**	**19.93**	**353**	P	**P**	**17 34 22.4**	**-0.6**
	0.1nm,0.3s,baz=170,slow=11,SNR=12						
BVAR	**Borovoye Array**	**22.87**	**331**	P	**P**	**17 34 53.3**	**-1.3**
	0.3nm,0.4s,baz=133,slow=14,SNR=2.9						
GEYT	**Alibeck**	**24.88**	**287**	P	**P**	**17 35 13.5**	**-0.3**
	0.9nm,0.3s,baz=120,slow=8.8,SNR=5.9						
GEYT				LR	LR	17 47 04.9	
	comp=Z,128nm,18.8s,baz=355,slow=41						
ARU	**Arti**	**30.27**	**326**	LR	LR	17 49 42.1	
	comp=Z,72nm,18.5s,baz=132,slow=39						
KSRS	**Korea Array**	**31.88**	**73**	P	**P**	**17 36 16.5**	**+0.4**
	0.4nm,0.6s,baz=280,slow=9.2,SNR=3.0						
NRIK	**Noril'sk**	**35.20**	**359**	LR	LR	17 52 26.6	
	comp=Z,71nm,18.9s,baz=186,slow=38						
KVAR	**Kislovodsk Arr**	**36.55**	**299**	LR	LR	17 53 46.5	
	comp=Z,36nm,18.6s,baz=34,slow=39						
HFS	**Hagfors**	**53.69**	**323**	LR	LR	18 03 40.8	
	comp=Z,38nm,20.1s,baz=60,slow=38						
VRAC	**Vranov**	**53.82**	**310**	LR	LR	18 05 56.6	
	comp=Z,28nm,21.6s,baz=91,slow=40						
NOA	**NORSAR Array B**	**54.79**	**324**	LR	LR	18 04 25.0	
	comp=Z,41nm,18.9s,baz=65,slow=38						
GERES	**GERESS Array B**	**55.78**	**310**	P	**P**	**17 39 28.3**	**+0.5**
	0.4nm,0.5s,baz=58,slow=8.0,SNR=3.7						

*CSEM **17** 17:29:57.2, 33.79N×35.78E, h1km, ML2.7*
*NSSC **17** 17:29:57.0±1.4, 33.79N×35.78E, h0km±8km, ML1.3*
*GRAL **17** 17:29:57.2±0.3, 33.79N×35.78E, h2km±14km, MD2.7*
ISC 17 17:29:57.1±1.2, 33.79N±0.03×35.77E±0.03, h2km±15km, n13, σ0.934/22, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.15**	**321**	*e*P	**Pg**	**17 30 00.0**	**-0.1**
BHL	**Bhannes**	**0.15**	**321**	*e*P	**Pg**	**17 30 00.0**	**-0.1**
DQRL	**Deir Qamar**	**0.18**	**244**	*e*P	**Pg**	**17 30 00.8**	**+0.1**
DQRL				*e*S	**Sg**	**17 30 03.3**	**+0.2**
DQRL	**Deir Qamar**	**0.18**	**244**	*e*P	**Pg**	**17 30 00.8**	**+0.1**
DQRL				*e*S	**Sg**	**17 30 03.3**	**+0.2**
RCY	**Rachaya**	**0.29**	**169**	*e*P	**Pg**	**17 30 02.5**	**-0.3**
RCY				*e*S	**Sg**	**17 30 06.5**	**-0.1**
RCY	**Rachaya**	**0.29**	**169**	*e*P	**Pg**	**17 30 02.5**	**-0.3**
RCY				*e*S	**Sg**	**17 30 06.5**	**-0.1**
HWQ	**Hawqa**	**0.51**	**17**	*e*P	**Pg**	**17 30 06.3**	**-0.6**
HWQ	**Hawqa**	**0.51**	**17**	*e*P	**Pg**	**17 30 06.3**	**-0.6**
MARH	**Ras Al Marh**	**0.64**	**68**	*e*P	**Pg**	**17 30 09.8**	**+0.4**
MARH				*e*S	**Sg**	**17 30 18.2**	**+0.5**
MARH				AML	AML	17 30 26.3	
	comp=N,19nm,0.5s						
MARH				AML	AML	17 30 28.8	
	comp=E,40nm,0.5s						
TOTH	**TOTAH**	**0.69**	**128**	*e*P	**Pg**	**17 30 10.4**	**0.0**
TOTH				*e*S	**Sg**	**17 30 19.9**	**+0.5**
TOTH				AML	AML	17 30 26.9	
	comp=N,15nm,0.7s						
TOTH				AML	AML	17 30 30.2	
	comp=E,14nm,0.5s						
ROOS	**tl_alroos**	**1.32**	**73**	*e*P	**Pg**	**17 30 22.3**	**-0.1**
ROOS				*e*S	**Sb**	**17 30 40.2**	**+0.2**
ROOS				AML	AML	17 30 48.3	
	comp=N,16nm,0.5s						
ROOS				AML	AML	17 30 51.3	
	comp=E,11nm,0.5s						
SALA	**Sala**	**1.34**	**143**	*e*P	**Pg**	**17 30 22.4**	**-0.4**
SALA				*e*S	**Sb**	**17 30 41.0**	**+0.2**
SALA				AML	AML	17 30 46.9	
	comp=N,12nm,0.4s						
SALA				AML	AML	17 30 50.7	
	comp=E,1.0nm,0.4s						
ZALF	**Zalf**	**1.57**	**123**	*e*P	**Pn**	**17 30 25.8**	**-0.1**
ZALF				*e*S	**Sg**	**17 30 47.4**	**-0.1**
ZALF				AML	AML	17 30 52.5	
	comp=N,5.6nm,0.4s						
ZALF				AML	AML	17 30 55.9	
	comp=E,5.2nm,0.4s						

*ISCJB **17** 17:34:41.6±0.3, 5.97S±0.07×151.55E±0.09, h33km, mb4.5/55, Error ellipse: s-maj=15.4km s-min=5.2km az=37.7*
*BJI **17** 17:34:43.5, 5.96S×151.94E, h35km, mb4.5/14, mB5.1/10, Ms4.9/2, Ms7 4.5/6*
*NEIC **17** 17:34:43.2±0.2, 5.94S×151.56E, h35km, mb4.7/36, Error ellipse: s-maj=14.7km s-min=5.0km az=123.0*
*IDC **17** 17:34:45.2±4.4, 5.97S×151.51E, h52km±37km, mb4.0/16, mb1 4.2/18, mb1mx4.0/39, mbtmp4.3/18, ML3.1/2, MS3.2/4, Ms1 3.2/4, ms1mx2.9/25, Error ellipse: s-maj=29.9km s-min=17.1km az=96.0*
ISC 17 17:34:43.9±0.6, 6.16S±0.07×151.83E±0.10, h41km, n71, σ1.89/73, mb4.6/55, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**1.98**	**10**	*e*Pn	**Pn**	**17 35 12.8**	**-2.2**
PMG	**Port Moresby**	**5.64**	**235**	P	**Pn**	**17 36 05.8**	**+0.6**
	18nm,0.3s,baz=29,slow=6.5,SNR=45						
PMG				S	**Sn**	**17 37 05.8**	**-3.0**
	6.3nm,0.3s,baz=44,slow=21,SNR=3.5						
PMG				LR	LR	17 37 41.8	
	comp=Z,58nm,19.6s,baz=52,slow=32						
PMG	**Port Moresby**	**5.64**	**235**	*e*Pn	**Pn**	**17 36 04.9**	**-0.4**
PMG				*e*Sn	**Sn**	**17 37 03.8**	**-5.0**
PMG				S	**Sn**	**17 37 05.8**	**-3.0**
MANU	**Manus Island**	**6.04**	**312**	*e*Pn	**Pn**	**17 36 12.1**	**+1.3**
HNR	**Honiara**	**8.68**	**113**	LR	LR	17 40 21.9	
	comp=Z,86nm,18.9s,baz=259,slow=37						
CTA	**Charters Tower**	**14.87**	**201**	P	**Pn**	**17 38 13.6**	**+2.2**
	0.1nm,0.3s,baz=75,slow=7.7,SNR=2.1						
DZM	**Mont Dzumac**	**21.21**	**140**	LR	LR	17 46 03.2	
	comp=Z,166nm,20.8s,baz=326,slow=32						
MTN	**Manton Dam**	**21.46**	**250**	*e*P	**P**	**17 39 31.7**	**+2.7**
	16nm,0.9s						
WRAB	**Tennant Creek**	**21.82**	**229**	*e*P	**P**	**17 39 31.6**	**-1.2**
	12nm,0.8s						
WB2	**Warramunga Arr**	**21.82**	**229**	*e*P	**P**	**17 39 32.0**	**-0.9**
	10nm,0.7s						
WRA	**Warramunga Arr**	**21.83**	**229**	P	**P**	**17 39 31.4**	**-1.5**
	9.8nm,0.7s,baz=55,slow=10,SNR=28						
AS31	**Alice Springs**	**24.50**	**223**	*e*P	**P**	**17 39 59.0**	**-0.6**
	5.4nm,0.8s						
ASAR	**Alice Springs**	**24.50**	**223**	P	**P**	**17 39 59.2**	**-0.4**
	17nm,0.8s,baz=55,slow=9.3,SNR=111						
STKA	**Stephens Creek**	**27.32**	**199**	P	**P**	**17 40 26.5**	**+1.6**
	6.9nm,0.9s,baz=9.6,slow=11,SNR=9.1						
STKA	**Stephens Creek**	**27.32**	**199**	*e*P	**P**	**17 40 25.3**	**+0.3**
	2.2nm,1.0s						
FITZ	**Fitzroy Crossi**	**28.17**	**243**	P	**P**	**17 40 32.2**	**-0.5**
	5.6nm,0.4s,baz=63,slow=7.4,SNR=37						
FITZ				LR	LR	17 53 05.4	
	comp=Z,136nm,19.3s,baz=244,slow=39						
FITZ	**Fitzroy Crossi**	**28.17**	**243**	*e*P	**P**	**17 40 31.4**	**-1.3**
	6.8nm,0.6s						
MBWA	**Marble Bar**	**34.47**	**241**	*e*P	**P**	**17 41 23.5**	**-4.6**
	22nm,0.6s						
GYA	**Guiyang**	**54.46**	**309**	*e*P	**P**	**17 44 11.0**	**+3.3**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KMI	**Kunming**	**56.96**	**305**	P	**P**	**17 44 28.9**	**+3.1**
KMI				pP	pP	17 44 35.8	-1.9
KMI				pmax	pmax		
	comp=Z,3.0nm,0.9s						
CMAR	**Chiang Mai Arr**	**57.59**	**296**	P	**P**	**17 44 28.6**	**-1.6**
	0.5nm,0.5s,baz=121,slow=6.2,SNR=4.0						
CD2	**Chengdu**	**58.90**	**312**	*e*P	**P**	**17 44 40.5**	**+1.4**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.2s						
PETK	**Petropavlovsk-**	**59.25**	**4**	P	**P**	**17 44 40.7**	**-0.3**
	2.2nm,0.7s,baz=154,slow=8.1,SNR=5.2						
HHC	**Hu-ho-hao-te**	**59.59**	**325**	*e*P	P	17 44 48.6	+4.8
HHC				pmax	pmax		
	comp=Z,10.0nm,1.1s						
SONM	**Songino Array**	**66.96**	**329**	P	**P**	**17 45 31.1**	**-1.3**
	0.8nm,0.6s,baz=135,slow=4.8,SNR=5.8						
VNDA	**Vanda**	**71.52**	**178**	P	**P**	**17 46 00.9**	**+0.9**
	2.1nm,0.9s,baz=312,slow=4.4,SNR=5.8						
WMQ	**Urumqi**	**76.09**	**318**	*e*P	**P**	**17 46 29.4**	**+1.9**
WMQ				pP	pP	17 46 41.3	+1.5
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,81nm,4.5s						
OHAK	**Old Harbor**	**77.19**	**27**	*e*P	**P**	**17 46 31.6**	**-1.7**
	6.5nm,0.6s						
SVW2	**Sparrevohn**	**78.44**	**23**	*e*P	**P**	**17 46 40.7**	**+0.5**
	6.9nm,0.8s						
CNPM	**China Poot**	**79.35**	**26**	*e*P	**P**	**17 46 46.1**	**+0.9**
	30nm,0.8s						
TT01	**Tatalina**	**79.36**	**22**	*e*P	**P**	**17 46 45.9**	**+0.7**
TTA	**Tatalina**	**79.38**	**22**	*e*P	**P**	**17 46 46.3**	**+0.9**
	5.9nm,1.0s						
MKAR	**Makanchi Array**	**80.71**	**319**	P	**P**	**17 46 51.3**	**-1.6**
	0.5nm,0.6s,baz=99,slow=5.5,SNR=4.6						
CAST	**Castle Rocks**	**81.12**	**22**	*e*P	**P**	**17 46 54.0**	**-0.7**
	5.2nm,0.9s						
PMR	**Palmer**	**81.31**	**25**	*e*P	**P**	**17 46 55.9**	**+0.2**
	5.4nm,1.0s						
KTH	**Kantishna Hill**	**81.63**	**22**	*e*P	**P**	**17 46 55.2**	**-2.3**
	5.8nm,0.9s						
ZALV	**Zalesovo Beam**	**81.74**	**327**	P	**P**	**17 46 55.0**	**-3.2**
	0.7nm,0.4s,baz=118,slow=6.6,SNR=6.0						
SML	**Sawmill**	**81.75**	**25**	*e*P	**P**	**17 46 57.0**	**-1.1**
	2.3nm,0.7s						
TRF	**Thorofare Moun**	**81.82**	**23**	*e*P	**P**	**17 46 54.7**	**-3.8**
	5.1nm,1.1s						
SCM	**Sheep Creek Mo**	**82.18**	**25**	*e*P	**P**	**17 47 00.2**	**-0.2**
	6.1nm,0.8s						
RND	**Reindeer**	**82.34**	**23**	*e*P	**P**	**17 46 59.4**	**-1.8**
	8.8nm,1.0s						
DIV	**Divide**	**82.51**	**26**	*e*P	**P**	**17 47 02.2**	**+0.1**
	8.7nm,1.0s						
KLU	**Klutina**	**82.61**	**25**	*e*P	**P**	**17 47 03.0**	**+0.3**
	9.5nm,1.0s						
RAGM	**Ragged Mountai**	**82.65**	**27**	*e*P	**P**	**17 47 02.2**	**-0.7**
	13nm,1.1s						
DHY	**Denali Highway**	**82.76**	**24**	*e*P	**P**	**17 47 03.9**	**+0.4**
	5.9nm,1.0s						
BMRM	**Bremner River**	**82.94**	**26**	*e*P	**P**	**17 47 03.3**	**-1.0**
	8.9nm,1.1s						
KSH	**Kashi**	**83.08**	**311**	*e*P	**P**	**17 47 09.6**	**+3.9**
KSH				*es*P	sP	17 47 24.3	+1.5
KSH				*e*PP	PP	17 50 24.8	+7.6
KSH				S	**S**	**17 57 27.1**	**+4.5**
KSH				pmax	pmax		
	comp=Z,83nm,4.6s						
KSH				LR	LR		
	comp=Z,140nm,6.1s						
WRH	**Wood River Hil**	**83.17**	**22**	*e*P	**P**	**17 47 04.7**	**-0.7**
	8.1nm,1.0s						
MDM	**Murphy Dome**	**83.36**	**22**	*e*P	**P**	**17 47 05.7**	**-0.7**
	3.7nm,1.0s						
CCB	**Clear Creek Bu**	**83.37**	**22**	*e*P	**P**	**17 47 05.5**	**-0.9**
	5.4nm,0.9s						
CRQM	**Cirque**	**83.50**	**27**	*e*P	**P**	**17 47 08.4**	**+1.1**
	6.7nm,0.6s						
HDA	**Harding Lake**	**83.57**	**23**	*e*P	**P**	**17 47 07.6**	**+0.2**
	5.2nm,0.8s						
ILAR	**Eielson Array**	**83.77**	**22**	P	**P**	**17 47 07.8**	**-0.7**
	4.8nm,0.8s,baz=252,slow=5.1,SNR=47						
ILB	**Eielson Array**	**83.77**	**22**	*e*P	**P**	**17 47 07.0**	**-1.4**
IL1	**Eielson Array**	**83.77**	**22**	*e*P	**P**	**17 47 07.6**	**-0.9**
QSPA	**South Pole Qui**	**83.81**	**180**	*e*P	**P**	**17 47 09.9**	**+1.0**
	38nm,1.0s						
MAW	**Mawson**	**83.95**	**203**	P	**P**	**17 47 10.0**	**+0.6**
	1.6nm,0.8s,baz=101,slow=6.2,SNR=5.9						
BALM	**Baldy**	**83.97**	**27**	*e*P	**P**	**17 47 08.8**	**-0.9**
	6.0nm,0.8s						
MENT	**Mentasta**	**84.18**	**25**	*e*P	**P**	**17 47 11.8**	**+1.1**
	5.8nm,0.8s						
KURK	**Kurchatov**	**84.24**	**322**	P	**P**	**17 47 08.4**	**-2.7**
KURBB	**Kurchatov Arra**	**84.27**	**322**	P	**P**	**17 47 08.4**	**-2.9**
	0.9nm,0.8s,baz=108,slow=4.1,SNR=6.4						
DOT	**Dot Lake**	**84.35**	**24**	*e*P	**P**	**17 47 11.1**	**-0.4**
	24nm,1.0s						
EGAK	**Eagle**	**85.98**	**23**	*e*P	**P**	**17 47 18.5**	**-1.0**
	6.8nm,0.9s						
HYT	**Haines Junctio**	**86.08**	**28**	*e*P	**P**	**17 47 21.7**	**+1.4**
	7.4nm,0.9s						
DAWY	**Dawson**	**86.41**	**24**	*e*P	**P**	**17 47 19.8**	**-2.0**
	5.0nm,0.9s						
NRIK	**Noril'sk**	**86.93**	**341**	P	**P**	**17 47 23.2**	**-1.0**
	1.4nm,0.4s,baz=90,slow=4.0,SNR=1.9						
BVAR	**Borovoye Array**	**89.74**	**323**	P	**P**	**17 47 35.6**	**-2.3**
	1.1nm,0.7s,baz=68,slow=9.7,SNR=4.6						
INK	**Inuvik**	**90.06**	**21**	P	**P**	**17 47 38.9**	**0.0**
	2.5nm,0.7s,baz=266,slow=4.6,SNR=3.6						
DAC	**Darwin (Calif)**	**94.06**	**54**	*e*P	**P**	**17 47 59.5**	**+1.0**
	3.0nm,0.8s						
GERES	**GERESS Array B**	**124.69**	**328**	PKP	**PKPdf**	**17 53 38.2**	**-1.1**
	0.3nm,0.4s,baz=25,slow=5.4,SNR=1.7						
TORD	**Torodi Ar. Bea**	**149.77**	**286**	PKP	**PKPdf**	**17 54 24.1**	**-1.7**
	0.4nm,0.8s,baz=90,slow=0.8,SNR=3.4						
TORD				PKPbc	**PKPbc**	**17 54 29.7**	**-0.8**
	3.6nm,0.6s,baz=76,slow=2.9,SNR=22						

IDC 17 17:42:28.1±4.5, 1.17S×98.16E, h0km, mb3.5/4, mb1 3.6/4, mb1mx3.3/48, mbtmp3.5/4, Error ellipse: s-maj=176.4km s-min=25.2km az=58.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	**Diego Garcia H**	**26.37**	**255**	T	T	18 15 50.5	
	baz=76,slow=75,SNR=80						
H08S3	**Diego Garcia H**	**26.37**	**255**	T

σ0.85/16, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.35**	**300**	P	**Pn**	**17 51 51.7**	**-0.7**
OFUJ				*eS*	**Sn**	**17 52 10.0**	**+0.2**
JIO	**Ouri**	**1.43**	**272**	P	**Pn**	**17 51 52.7**	**-0.8**
JIO				*eS*	**Sn**	**17 52 11.2**	**-0.7**
JMK	**Ichinoseki**	**1.62**	**290**	P	**Pn**	**17 51 55.8**	**-0.3**
JOM	**Ohasama**	**1.80**	**306**	P	**Pn**	**17 51 59.1**	**+0.4**
JMM	**Marumori**	**1.96**	**254**	P	**Pn**	**17 52 00.2**	**-0.5**
JOU	**Okura**	**1.97**	**269**	P	**Pn**	**17 52 01.5**	**+0.5**
JFK	**Kawauchi**	**2.10**	**241**	P	**Pn**	**17 52 02.0**	**-0.8**
JRG	**Rokugo**	**2.21**	**297**	P	**Pn**	**17 52 05.1**	**+0.9**
JYK	**Kaneyama**	**2.26**	**284**	P	**Pn**	**17 52 05.5**	**+0.6**
JANG	**Nango**	**2.33**	**327**	P	**Pn**	**17 52 06.2**	**+0.2**
JFT	**Otama**	**2.42**	**249**	P	**Pn**	**17 52 07.9**	**+0.8**
MJAR	**Matsushiro Arr**	**4.37**	**246**	Pn	**Pn**	**17 52 36.0**	**+2.0**
	1.5nm,0.3s,baz=55,slow=10,SNR=23						
USRK	**Ussuriysk Ar.**	**10.20**	**308**	Pn	Pn	17 54 02.2	+8.4
	0.2nm,0.3s,baz=125,slow=17,SNR=5.3						
USRK				LR	LR	17 57 34.9	
	comp=Z,125nm,18.7s,baz=258,slow=34						
MKAR	**Makanchi Array**	**44.58**	**301**	P	P	17 59 45.3	+6.0
	0.3nm,0.5s,baz=73,slow=7.8,SNR=2.6						
WRA	**Warramunga Arr**	**58.64**	**190**	P	**P**	**18 01 24.1**	**-0.6**
	1.5nm,0.7s,baz=7.8,slow=7.1,SNR=9.2						
ASAR	**Alice Springs**	**62.37**	**190**	P	**P**	**18 01 50.0**	**0.0**
	0.2nm,0.5s,baz=3.7,slow=6.6,SNR=6.2						
EIL	**Elat**	**84.78**	**304**	LR	LR	18 47 59.6	
	comp=Z,73nm,20.2s,baz=248,slow=40						

WEL 17 17:55:46.3±0.1, 38.39S×176.39E, h97km±1km, ML3.7/40, 16C-19D, Error ellipse: s-maj=0.8km s-min=0.7km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HRRZ	**Handcock Road**	**0.08**	**268**	↑P	Pn	17 55 59.7	-0.2
RRRZ	**Republican Roa**	**0.11**	**64**	↑P	Pn	17 55 59.7	-0.2
PRRZ	**Plateau Road**	**0.11**	**178**	↑P	Pn	17 55 59.6	-0.3
HSRZ	**Hossack Road**	**0.14**	**304**	↑P	Pn	17 55 60.0	0.0
HSRZ					Sn	17 56 11.1	+1.0
ALRZ	**Allen Road**	**0.18**	**191**	PN	Pn	17 55 59.8	-0.3
TARZ	**Mount Tarawera**	**0.18**	**32**	PN	Pn	17 56 00.1	-0.1
WPRZ	**Whakapapataran**	**0.22**	**233**	↑P	Pn	17 56 00.1	-0.1
UTU	**Utuhina**	**0.26**	**324**	PN	Pn	17 56 00.6	+0.2
OMRZ	**Omania**	**0.28**	**357**	PN	Pn	17 56 00.4	-0.1
OMRZ					Sn	17 56 11.7	+0.7
MUGZ	**Murupara**	**0.31**	**107**	↑P	Pn	17 56 00.2	-0.5
MRHZ	**Matea Rd**	**0.45**	**177**	↑P	Pn	17 56 01.2	-0.3
MRHZ					Sn	17 56 11.9	-0.9
MRHZ					AML	17 56 13.4	
KUTZ	**Kaahu Road**	**0.46**	**257**	PN	Pn	17 56 01.5	0.0
MARZ	**Manawahe**	**0.46**	**29**	PN	Pn	17 56 01.4	-0.2
MARZ					Sn	17 56 13.6	+0.7
OPRZ	**Ohinepanea**	**0.56**	**14**	↓P	Pn	17 56 01.9	-0.3
URZ	**Urewera**	**0.58**	**78**	↓P	Pn	17 56 01.9	-0.5
URZ					Sn	17 56 13.8	-0.7
URZ					AML	17 56 14.3	
WATZ	**Wairara**	**0.60**	**238**	↓P	Pn	17 56 02.6	-0.1
WATZ					Sn	17 56 15.3	+0.5
KMRZ	**Kaimai**	**0.65**	**327**	↓P	Pn	17 56 03.1	+0.1
TGRZ	**Tauranga**	**0.67**	**351**	↓P	Pn	17 56 03.1	0.0
TGRZ					Sn	17 56 16.5	+0.8
TLZ	**Tolley Road**	**0.67**	**275**	↓P	Pn	17 56 03.2	0.0
RATZ	**Rangitukua**	**0.68**	**225**	PN	Pn	17 56 03.1	-0.2
RITZ	**Rihia Road**	**0.72**	**215**	PN	Pn	17 56 03.8	+0.1
NMHZ	**Naumai**	**0.78**	**155**	↑P	Pn	17 56 04.9	+0.6
NMHZ					AML	17 56 23.2	
NMHZ					AML	17 56 23.5	
BKZ	**Black Stump Fm**	**0.78**	**174**	↓P	Pn	17 56 03.9	-0.4
BKZ					AML	17 56 17.5	
BKZ					AML	17 56 17.6	
RAGZ	**Rawiri**	**0.81**	**98**	↑P	Pn	17 56 04.5	-0.1
RAGZ					AML	17 56 23.2	
RAGZ					AML	17 56 23.4	
SNGZ	**Shannon Statio**	**0.84**	**118**	PN	Pn	17 56 05.1	+0.2
SNGZ					AML	17 56 28.2	
SNGZ					AML	17 56 28.8	
MWZ	**Matawai**	**0.90**	**87**	PN	Pn	17 56 05.2	-0.3
MWZ					AML	17 56 24.9	
MWZ					AML	17 56 25.3	
MWZ					AML	17 56 25.3	
KRVZ	**Karewarewa**	**0.92**	**219**	↑P	Pn	17 56 05.7	0.0
WHHZ	**Waihua**	**0.95**	**136**	PN	Pn	17 56 06.3	+0.3
WHHZ					AML	17 56 32.2	
WHHZ					AML	17 56 35.4	
TOZ	**Tahuroa Road**	**0.96**	**313**	↑P	Pn	17 56 06.1	+0.1
WTVZ	**West Tongariro**	**0.96**	**220**	↓P	Pn	17 56 06.0	-0.2
OTVZ	**Oturere**	**0.96**	**216**	PN	Pn	17 56 06.2	0.0
ARHZ	**Aropaoanui**	**0.99**	**152**	PN	Pn	17 56 06.8	+0.3
ARHZ					AML	17 56 28.4	
ARHZ					AML	17 56 29.7	
NGZ	**Ngauruhoe**	**1.00**	**218**	↓P	Pn	17 56 06.6	0.0
TWVZ	**Taurewa**	**1.01**	**227**	↓P	Pn	17 56 06.5	-0.2
KWHZ	**Kaweka Forest**	**1.04**	**179**	PN	Pn	17 56 06.9	-0.1
KWHZ					AML	17 56 25.4	
KWHZ					AML	17 56 27.1	
TUVZ	**Tukino**	**1.05**	**213**	↓P	Pn	17 56 07.3	+0.1
MCHZ	**McNeill Hill**	**1.08**	**167**	↑P	Pn	17 56 07.8	+0.3
MCHZ					AML	17 56 33.9	
MCHZ					AML	17 56 34.4	
FWVZ	**Far West T-bar**	**1.08**	**217**	↑P	Pn	17 56 07.6	-0.1
WHVZ	**Whangaehu Hut**	**1.09**	**215**	PN	Pn	17 56 07.6	-0.2
RUGZ	**Raukumara Rang**	**1.10**	**68**	PN	Pn	17 56 06.8	-1.0
TRVZ	**Turoa**	**1.12**	**216**	↓P	Pn	17 56 08.1	0.0
WNVZ	**Wahianoa**	**1.12**	**213**	↓P	Pn	17 56 08.0	-0.1
RIGZ	**Rimuhau**	**1.12**	**107**	PN	Pn	17 56 08.1	+0.2
RIGZ					AML	17 56 30.2	
RIGZ					AML	17 56 36.9	
MOVZ	**Moawhango**	**1.13**	**206**	PN	Pn	17 56 07.6	-0.4
TKGZ	**Te Karaka**	**1.15**	**93**	PN	Pn	17 56 08.8	+0.7
TKGZ					AML	17 56 27.4	
TKGZ					AML	17 56 33.0	
KNZ	**Kokohu**	**1.19**	**123**	PN	Pn	17 56 08.4	-0.2
KNZ					AML	17 56 27.2	
HIZ	**Hauiti**	**1.21**	**264**	PN	Pn	17 56 08.9	0.0
PKVZ	**Pokaka**	**1.21**	**222**	↓P	Pn	17 56 09.0	-0.1
KRHZ	**Kereru**	**1.25**	**181**	PN	Pn	17 56 08.9	-0.5
KRHZ					AML	17 56 31.6	
KRHZ					AML	17 56 32.4	
HAZ	**Te Kaha**	**1.27**	**61**	↓P	Pn	17 56 08.9	-0.7
HAZ					AML	17 56 26.6	
HAZ					AML	17 56 26.6	
HAZ					AML	17 56 29.6	
TWGZ	**Tauwhareparae**	**1.27**	**81**	PN	Pn	17 56 10.5	+0.8
TWGZ					AML	17 56 35.5	
TWGZ					AML	17 56 36.8	
PRGZ	**Paritu Road**	**1.29**	**115**	↓P	Pn	17 56 09.7	-0.2
PRGZ					AML	17 56 31.3	
PRGZ					AML	17 56 38.7	
CKHZ	**Cape Kidnapper**	**1.38**	**157**	PN	Pn	17 56 10.7	-0.2
CKHZ					AML	17 56 31.0	
CKHZ					AML	17 56 31.4	
MHGZ	**Mahia Peninsul**	**1.41**	**123**	PN	Pn	17 56 11.1	-0.3
MHGZ					AML	17 56 49.1	
PKGZ	**Pakihiroa**	**1.42**	**70**	↑P	Pn	17 56 11.5	0.0
CNGZ	**Carnagh Statio**	**1.43**	**94**	AML	AML	17 56 48.6	
KAHZ	**Kahuranaki**	**1.46**	**165**	PN	Pn	17 56 11.4	-0.5
KAHZ					AML	17 56 33.0	
KAHZ					AML	17 56 39.8	
VRZ	**Vera Road**	**1.47**	**239**	PN	Pn	17 56 11.7	-0.3
PUZ	**Puketiti**	**1.50**	**78**	AML	AML	17 56 32.3	
PUZ					AML	17 56 40.4	
PNHZ	**Pukenui**	**1.53**	**185**	PN	Pn	17 56 11.8	-1.1
PNHZ					AML	17 56 38.6	
PNHZ					AML	17 56 38.7	
WPHZ	**Waipukurau**	**1.68**	**179**	PN	Pn	17 56 13.5	-1.1
WPHZ					AML	17 56 43.1	
WPHZ					AML	17 56 44.9	
PXZ	**Pawanui**	**1.68**	**167**	↑P	Pn	17 56 13.5	-1.1
PXZ					AML	17 56 38.1	
PXZ					AML	17 56 38.2	
PXZ					AML	17 56 48.3	
PXZ					AML	17 56 48.3	
WMGZ	**Waiomatatini S**	**1.70**	**71**	PN	Pn	17 56 14.6	-0.2
WMGZ					AML	17 56 48.1	
WMGZ					AML	17 56 52.0	
TSZ	**Takapari Road**	**1.70**	**191**	PN	Pn	17 56 13.5	-1.4
TSZ					AML	17 56 41.3	
TSZ					AML	17 56 43.2	
KUZ	**Kuaotunu**	**1.72**	**342**	↓P	Pn	17 56 15.0	-0.2
MXZ	**Matakaoa Point**	**1.73**	**62**	PN	Pn	17 56 15.6	+0.3
MXZ					AML	17 56 18.9	
MXZ					AML	17 56 45.8	
WAZ	**Wanganui**	**1.75**	**218**	↓P	Pn	17 56 15.5	-0.1
PRHZ	**Porangahau**	**1.89**	**174**	PN	Pn	17 56 15.9	-1.4
PRHZ					AML	17 56 40.3	
PRHZ					AML	17 56 42.8	
DVHZ	**Dannevirke**	**1.92**	**185**	PN	Pn	17 56 15.8	-2.0
DVHZ					AML	17 56 49.5	
DVHZ					AML	17 56 51.0	
OHWZ	**Ohakea**	**2.00**	**204**	PN	Pn	17 56 18.1	-0.6
PKE	**Pukeiti**	**2.04**	**246**	PN	Pn	17 56 19.5	+0.1
KHEZ	**Kahui Hut**	**2.06**	**243**	PN	Pn	17 56 19.9	+0.2
ANWZ	**Angora Road**	**2.07**	**178**	PN	Pn	17 56 18.5	-1.2
ANWZ					AML	17 56 43.6	
ANWZ					AML	17 56 43.6	
NWEZ	**Newall Road**	**2.16**	**245**	PN	Pn	17 56 20.9	+0.1
BFZ	**Birch Farm**	**2.29**	**183**	PN	Pn	17 56 20.3	-2.3
MRZ	**Mangatainoka R**	**2.35**	**195**	PN	Pn	17 56 21.1	-2.3
MRZ					AML	17 56 49.6	
MRZ					AML	17 56 54.2	
TIWZ	**Tintock**	**2.42**	**189**	PN	Pn	17 56 21.9	-2.3
TIWZ					AML	17 56 53.6	
TIWZ					AML	17 56 56.3	
HOWZ	**Holdsworth Sta**	**2.60**	**195**	PN	Pn	17 56 23.9	-2.7
OGWZ	**Otaki Gorge**	**2.60**	**201**	PN	Pn	17 56 24.2	-2.5
OGWZ					AML	17 57 04.8	
OGWZ					AML	17 57 07.4	
KIW	**Kapiti Island**	**2.72**	**204**	PN	Pn	17 56 25.5	-2.7
KIW					AML	17 56 57.5	
TMWZ	**Te Maipa**	**2.74**	**188**	PN	Pn	17 56 25.8	-2.7
TMWZ					AML	17 56 58.2	
MTW	**Mount Morrison**	**2.85**	**194**	PN	Pn	17 56 26.7	-3.2
CAW	**Cannon Point**	**2.90**	**200**	PN	Pn	17 56 27.5	-3.2
CAW					AML	17 57 14.5	
CAW					AML	17 57 16.4	
TRWZ	**Traveller**	**3.06**	**190**	PN	Pn	17 56 29.6	-3.1
DUWZ	**D'Urville Isla**	**3.07**	**218**	PN	Pn	17 56 30.0	-3.0
PAWZ	**Paruwai Farm**	**3.08**	**194**	PN	Pn	17 56 29.6	-3.5
PAWZ					AML	17 57 05.5	
MSWZ	**Moikau Station**	**3.15**	**196**	PN	Pn	17 56 30.5	-3.5
WEL	**Wellington**	**3.15**	**203**	PN	Pn	17 56 30.5	-3.4
WEL					AML	17 57 06.4	
WEL					AML	17 57 06.4	
WEL					AML	17 57 08.3	
WEL					AML	17 57 08.3	
TCW	**Tory Channel**	**3.25**	**209**	PN	Pn	17 56 31.9	-3.4
PLWZ	**Palliser**	**3.29**	**195**	PN	Pn	17 56 32.1	-3.9
TUWZ	**Tuamarina**	**3.57**	**211**	↑P	Pn	17 56 35.9	-3.7
QRZ	**Quartz Range**	**3.85**	**230**	PN	Pn	17 56 40.4	-3.0
KHZ	**Kahutara**	**4.57**	**207**	PN	Pn	17 56 48.7	-4.4
DSZ	**Denniston Nort**	**4.86**	**225**	PN	Pn	17 56 52.7	-4.4
LTZ	**Lake Taylor**	**5.39**	**214**	PN	Pn	17 56 58.3	-6.1
ODZ	**Otahua Downs**	**7.92**	**211**	↓P	Pn	17 57 32.7	-5.8

SGS 17 18:03:07.7, 25.21N×37.79E, h18km, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LNY02	**LNY02**	**0.09**	**137**	S	Sg	18 03 13.9	-0.1
LNY02				P	Pg	18 03 11.2	-0.3
LNY02	**LNY02**	**0.09**	**137**	S	Sg	18 03 13.9	-0.1
LNY02				P	Pg	18 03 11.3	-0.2
LNY11	**LNY11**	**0.11**	**352**	S	Sg	18 03 14.2	-0.1
LNY11				P	Pg	18 03 11.6	-0.1
LNY11	**LNY11**	**0.11**	**352**	S	Sg	18 03 14.2	-0.1
LNY11				P	Pg	18 03 11.6	-0.1
LNY04	**LNY04**	**0.15**	**297**	S	Sg	18 03 14.7	-0.2
LNY04				P	Pg	18 03 11.9	-0.2
LNY04	**LNY04**	**0.15**	**297**	S	Sg	18 03 14.7	-0.2
LNY04				P	Pg	18 03 11.9	-0.2
LNY01	**LNY01**	**0.15**	**84**	S	Sg	18 03 14.8	-0.3
LNY01				P	Pb	18 03 11.1	-0.5
LNY01	**LNY01**	**0.15**	**84**	S	Sg	18 03 14.8	-0.3
LNY01				P	Pg	18 03 12.3	+0.1
LNY05	**LNY05**	**0.18**	**209**	S	Sg	18 03 15.4	-0.2
LNY05				P	Pb	18 03 12.3	+0.1
LNY05	**LNY05**	**0.18**	**209**	S	Sg	18 03 15.4	-0.2
LNY05				P	Pb	18 03 12.3	+0.1
LNY07	**LNY07**	**0.21**	**250**	S	Sg	18 03 16.4	0.0
LNY07				P	Pg	18 03 12.8	-0.1
LNY07	**LNY07**	**0.21**	**250**	S	Sg	18 03 16.4	0.0
LNY07				P	Pg	18 03 12.8	-0.1
LNY09	**LNY09**	**0.23**	**329**	S	Sg	18 03 16.7	-0.1
LNY09				P	Pg	18 03 12.7	-0.5

IDC 17 18:04:47.3±28.0, 27.42S×64.12E, h0km, mb3.6/3, mb1 3.9/3, mb1mx3.4/35, mbtmp3.6/3, Error ellipse: s-maj=691.4km s-min=56.4km az=75.0, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**56.74**	**40**	P	P	18 14 33.0	-0.1
	0.9nm,0.8s,baz=228,slow=7.2,SNR=5.0						
ASAR	**Alice Springs**	**62.32**	**104**	P	P	18 15 12.2	+0.3
	0.5nm,0.7s,baz=246,slow=6.7,SNR=12						
WRA	**Warramunga Arr**	**64.00**	**100**	P	P	18 15 22.7	-0.4
	0.4nm,0.6s,baz=251,slow=6.4,SNR=6.1						

*FUNV **17** 18:06:53.4, 9.93N×73.94W, h51km, MW2.9*
*ISCJB **17** 18:06:54.4±1.4, 9.81N±0.06×73.64W±0.08, h19km, Error ellipse: s-maj=12.9km s-min=6.4km az=25.0*
*RSNC **17** 18:06:57.7±0.7, 9.61N×73.53W, h0km±8km, ML2.4*

ISC 17 18:06:56.5±1.2, 9.73N±0.05×73.52W±0.06, h19km, n11, σ1s36/16, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VIRV	**Villa del Rosa**	**1.34**	**55**	*eP*	**Pn**	**18 07 19.0**	**-1.3**
VIRV				*eS*	**Sb**	**18 07 37.7**	**-0.2**
OCAC	**Ocana**	**1.49**	**172**	*eP*	**Pn**	**18 07 21.8**	**-0.7**
OCAC				*eS*	**Sn**	**18 07 41.4**	**-0.2**
OCAC				*i*		18 07 53.0	
	comp=Z,51nm,0.6s						
SJCC	**San Jacinto, C**	**1.64**	**276**	*eP*	**Pb**	**18 07 26.8**	**+0.6**
CBRI	**Barrientos, No**	**2.12**	**160**	*eS*	**Sb**	**18 07 58.9**	**-1.7**
CAPV	**Capacho**	**2.20**	**147**	*eP*	**Pn**	**18 07 31.7**	**-0.7**
CAPV				*eS*	**Sb**	**18 08 01.5**	**-1.4**
VIGV	**El Vigia**	**2.31**	**112**	*eP*	**Pn**	**18 07 34.8**	**+1.2**
VIGV				*eS*	**Sb**	**18 08 04.3**	**-1.5**
BRRC	**Barranca, Sant**	**2.61**	**184**	*eP*	**Pn**	**18 07 38.7**	**+0.9**
SDV	**Santo Domingo**	**2.97**	**106**	*eP*	**Pn**	**18 07 45.0**	**+2.1**
SOCV	**Socops**	**3.00**	**118**	*eP*	**Pn**	**18 07 44.1**	**+1.0**
SOCV				*eS*	**Sn**	**18 08 20.8**	**+2.2**
CURV	**Curarigua**	**3.52**	**85**	*eP*	**Pn**	**18 07 49.6**	**-0.8**
BAUV	**El Baul**	**5.47**	**98**	*eP*	**Pn**	**18 08 16.1**	**-0.9**

*IDC **17** 18:12:14.6±1.5, 2.46N×84.52W, h0km, mb4.0/5, mb1 4.1/5, mb1mx3.8/33, mbtmp4.0/5, MS3.5/16, Ms1 3.5/16, ms1mx3.4/33, Error ellipse: s-maj=60.9km s-min=26.6km az=47.0*

ISC 17 18:12:19.6±1.2, 2.2N±0.2×84.7W±0.1, h35km, n27, σ1s24/13, mb3.9/5, MS3.5/13, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GRGC	**Isla de Gorgon**	**6.53**	**82**	*eP*	**Pn**	**18 13 51.8**	**-1.5**
CMBC	**Cumbal**	**6.93**	**100**	*eP*	**Pn**	**18 13 57.9**	**-1.2**
CRUC	**La Cruz**	**7.72**	**94**	*eP*	**Pn**	**18 14 08.7**	**-1.3**
POPC	**Popayan, Colom**	**7.98**	**87**	*eP*	**Pn**	**18 14 13.8**	**+0.4**
SJAC	**San Juan de Ar**	**10.75**	**84**	*eP*	**Pn**	**18 14 53.4**	**+2.2**
ATAH	**Atahualpa**	**11.15**	**146**	LR	LR	18 18 48.8	
	comp=Z,246nm,19.6s,baz=313,slow=35						
SDV	**Santo Domingo**	**15.46**	**64**	Pn	**P**	**18 16 00.1**	**+0.6**
	0.2nm,0.3s,baz=242,slow=17,SNR=4.3						
NNA	**Nana**	**16.05**	**151**	LR	LR	18 22 05.7	
	comp=Z,76nm,19.4s,baz=320,slow=36						
CMIG	**Matias Romero**	**17.93**	**326**	LR	LR	18 22 00.0	
	comp=Z,155nm,21.0s,baz=142,slow=33						
LPAZ	**La Paz**	**24.54**	**139**	P	**P**	**18 17 38.1**	**+1.2**
	5.5nm,0.8s,baz=320,slow=7.7,SNR=13						
LPAZ				LR	LR	18 28 18.4	
	comp=Z,158nm,20.2s,baz=297,slow=39						
PTGA	**Pitinga**	**24.85**	**96**	P	**P**	**18 17 38.6**	**-0.5**
	0.9nm,0.3s,baz=50,slow=1.7,SNR=6.8						
SIV	**San Ignacio**	**29.47**	**129**	P	**P**	**18 18 21.7**	**+1.1**
	2.5nm,0.9s,baz=300,slow=8.5,SNR=3.5						
SIV				LR	LR	18 30 39.8	
	comp=Z,143nm,18.7s,baz=284,slow=37						
TXAR	**Lajitas Array**	**32.52**	**328**	LR	LR	18 30 22.2	
	comp=Z,57nm,19.9s,baz=0.0,slow=34						
TKL	**Tuckaleechee C**	**33.34**	**1**	LR	LR	18 32 08.7	
	comp=Z,107nm,18.2s,baz=132,slow=36						
CPUP	**Villa Florida**	**38.72**	**139**	LR	LR	18 36 16.0	
	comp=Z,57nm,21.9s,baz=316,slow=37						
BDFB	**Brasilia**	**40.31**	**117**	LR	LR	18 37 56.5	
	comp=Z,60nm,18.1s,baz=176,slow=38						
PLCA	**Paso Flores**	**44.59**	**165**	LR	LR	18 36 10.9	
	comp=Z,35nm,19.5s,baz=12,slow=32						
PDAR	**Pinedale Array**	**46.15**	**335**	LR	LR	18 41 10.4	
	comp=Z,87nm,18.0s,baz=166,slow=38						
ULM	**Lac du Bonnet**	**48.86**	**350**	LR	LR	18 42 41.5	
	comp=Z,39nm,18.5s,baz=220,slow=38						
NEW	**Newport**	**53.76**	**334**	LR	LR	18 46 01.5	
	comp=Z,29nm,18.7s,baz=137,slow=38						
BBB	**Bella Bella**	**61.57**	**331**	LR	LR	18 51 04.4	
	comp=Z,50nm,18.1s,baz=96,slow=38						
DLBC	**Dease Lake**	**66.36**	**336**	LR	LR	18 52 35.4	
	comp=Z,47nm,20.7s,baz=156,slow=37						
ILAR	**Eielson Array**	**76.51**	**337**	P	**P**	**18 24 05.5**	**-0.4**
	0.5nm,0.8s,baz=123,slow=3.3,SNR=5.7						
RAR	**Rarotonga**	**76.94**	**248**	LR	LR	18 51 23.2	
	comp=Z,60nm,20.2s,baz=310,slow=30						
TORD	**Torodi Ar. Bea**	**85.96**	**77**	P	**P**	**18 24 55.8**	**-1.2**
	0.5nm,0.6s,baz=286,slow=5.2,SNR=3.3						
ASAR	**Alice Springs**	**137.01**	**237**	PKP	**PKPdf**	**18 31 40.1**	**+0.3**
	0.4nm,0.9s,baz=116,slow=2.2,SNR=4.5						
WRA	**Warramunga Arr**	**138.02**	**242**	PKP	**PKPdf**	**18 31 42.3**	**+0.6**
	1.0nm,1.1s,baz=96,slow=2.0,SNR=5.3						

TAP 17 18:13:05.2, 23.82N×121.58E, h25km, ML2.5, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ESL	**Shilin**	**0.13**	**270**	*i* P	Pb	18 13 10.6	+0.4
	baz=268						
ESL				*i* S	Sb	18 13 13.8	+0.3
	baz=268						
HWA	**Hwalien**	**0.16**	**10**	P	Pb	18 13 10.9	+0.4
	baz=12						
HWA				S	Sb	18 13 15.5	+1.4
	baz=12						
TWD	**Chiawan**	**0.27**	**4**	*i* P	Pb	18 13 12.4	+0.6
	baz=5.0						
TWD				*i* S	Sb	18 13 17.4	+1.2
	baz=5.0						
EHY	**Hungye**	**0.39**	**217**	*eP*	Pb	18 13 13.8	+0.2
	baz=216						
EHY				*eS*	Sb	18 13 19.9	+0.6
	baz=216						
WHF	**Hehuan Shan**	**0.43**	**319**	P	Pb	18 13 14.6	0.0
	baz=319						
WHF				*eS*	Sb	18 13 21.5	+0.4
	baz=319						
TWF1	**Yuli**	**0.53**	**209**	*eP*	Pb	18 13 16.3	+0.4
	baz=208						
TWF1				*eS*	Sn	18 13 24.5	-0.6
	baz=208						
TWT	**Tachien**	**0.57**	**320**	*eP*	Pn	18 13 17.7	-0.1
	baz=318						
TWT				*eS*	Sb	18 13 24.9	+0.4
	baz=318						
SMLT	**Sun Moon Lake**	**0.62**	**276**	P	Pn	18 13 18.2	-0.3
	baz=276						
ENA	**Nanau**	**0.63**	**14**	*eP*	Pb	18 13 17.7	+0.1
	baz=14						
ENA				*eS*	Sn	18 13 27.4	-0.3
	baz=14						
NNS	**Nan Shan**	**0.65**	**344**	*eP*	Pb	18 13 18.3	+0.3
	baz=344						
NNS				*eS*	Sn	18 13 27.9	-0.5
	baz=344						
TYC	**Yuchr**	**0.66**	**278**	*eP*	Pb	18 13 18.5	+0.4
	baz=277						
TYC				S	Sn	18 13 28.4	-0.1
	baz=277						
ALS	**Alishan**	**0.77**	**247**	*eP*	Pb	18 13 20.3	+0.2
	baz=246						
ELDTW	**Lidau**	**0.81**	**220**	*eP*	Pb	18 13 20.5	-0.1
	baz=218						
ELDTW				*eS*	Sn	18 13 31.8	-0.5
	baz=218						
ENTT	**Nioudou**	**0.82**	**359**	*eP*	Pb	18 13 20.9	+0.1
	baz=359						
ENTT				*eS*	Sn	18 13 32.5	0.0
	baz=359						
CHN5	**Tsauling**	**0.85**	**255**	*eP*	Pn	18 13 21.8	+0.2
	baz=255						
NSK	**Sanguang**	**0.88**	**347**	*eP*	Pn	18 13 22.1	+0.1
	baz=347						
NSK				*eS*	Sb	18 13 33.6	+0.4
	baz=347						
WTP	**Ta-pu**	**1.05**	**237**	*eP*	Pb	18 13 24.5	-0.2
	baz=236						
WTP				*eS*	Sn	18 13 38.6	+0.5
	baz=236						
**C

	baz=1.0									
TWC	**Suao**	**0.78**	**20**	*e*P	Pn	18 13 30.6	+0.2			
	baz=20									
TWC				*e*S	Sn	18 13 41.5	+0.4			
	baz=20									
ALS	**Alishan**	**0.78**	**243**	*e*P	Pn	18 13 30.6	-0.1			
	baz=241									
ALS				*e*S	Sb	18 13 41.1	+0.2			
	baz=241									
ALS	**Alishan**	**0.78**	**243**	*e*S	Pn	18 13 31.1	+0.4			
	baz=246									
CHKT	**Chengkung**	**0.79**	**193**	P	Pb	18 13 30.4	-0.1			
	baz=192									
CHKT				*e*S	Sn	18 13 41.6	+0.2			
	baz=192									
WNT	**Mingjian**	**0.80**	**271**	*e*P	Pb	18 13 31.5	+0.8			
	baz=270									
WNT				*e*S	Sn	18 13 43.3	+1.6			
	baz=270									
NSK	**Sanguang**	**0.82**	**347**	*e*P	Pb	18 13 31.5	+0.4			
	baz=347									
NSK				S	Sn	18 13 42.5	+0.3			
	baz=347									
ELDTW	**Lidau**	**0.84**	**216**	*e*P	Pn	18 13 30.4	-1.0			
	baz=215									
ELDTW				*e*S	Sn	18 13 43.2	+0.3			
	baz=215									
TWE	**Neicheng**	**0.85**	**7**	*e*P	Pn	18 13 31.3	0.0			
	baz=7.0									
TWE				*e*S	Sn	18 13 42.8	-0.1			
	baz=7.0									
CHN5	**Tsauling**	**0.85**	**251**	P	Pb	18 13 32.4	+0.7			
	baz=251									
CHN5				S	Sn	18 13 44.0	+0.9			
	baz=251									
CHN5	**Tsauling**	**0.85**	**251**	*e*S	Pb	18 13 32.3	+0.7			
	baz=255									
NSTT	**Nanjuang**	**0.91**	**326**	*e*P	Pn	18 13 32.0	-0.2			
	baz=326									
NSTT				*e*S	Sn	18 13 44.7	+0.3			
	baz=326									
STYT	**Tauyuan**	**1.02**	**226**	*e*P	Pn	18 13 33.7	0.0			
	baz=225									
STYT				*e*S	Sb	18 13 47.8	+0.3			
	baz=225									
CHN4	**Tsaushan**	**1.03**	**240**	*e*P	Pb	18 13 34.9	+0.4			
	baz=239									
CHN4				*e*S	Sb	18 13 48.4	+0.7			
	baz=239									
WTP	**Ta-pu**	**1.07**	**234**	*e*P	Pb	18 13 35.4	+0.2			
	baz=233									
WTP				*e*S	Sb	18 13 49.5	+0.6			
	baz=233									
TWG	**Pinlang**	**1.14**	**203**	*e*P	Pn	18 13 33.3	-2.1			
	baz=202									
TWG				*e*S	Sb	18 13 51.7	+0.9			
	baz=202									
TWK	**Hsinying**	**1.15**	**239**	*e*P	Pn	18 13 35.7	+0.1			
	baz=237									
TWK				*e*S	Sb	18 13 51.5	+0.2			
	baz=237									
CHN1	**Nanshi**	**1.17**	**234**	*e*P	Pb	18 13 37.1	+0.2			
	baz=234									
CHN1				*e*S	Sb	18 13 52.0	+0.3			
	baz=234									
SGST	**Jiashian**	**1.19**	**229**	*e*P	Pb	18 13 37.1	-0.2			
	baz=228									
SGST				*e*S	Sn	18 13 51.7	+0.4			
	baz=228									
ECL	**Taimali**	**1.39**	**204**	*e*P	Pn	18 13 38.8	0.0			
	baz=203									
ECL				*e*S	Sn	18 13 57.0	+0.8			
	baz=203									
SSD	**Sandimen**	**1.41**	**217**	*e*P	Pb	18 13 40.2	-0.8			
	baz=216									
SSD				*e*S	Sb	18 13 57.6	-0.9			
	baz=216									

NEIC ***17*** *18:19:58.4, 39.91S×174.42E, h138km, MG4.0(WEL), After WEL.*

WEL 17 18:19:59.2±0.2, 39.92S×174.44E, h130km±1km, ML4.0/49, 19C-31D, Error ellipse: s-maj=1.0km s-min=0.5km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAZ	**Wanganui**	**0.45**	**69**	Pn	Pn	18 20 18.4	+0.4
WAZ	**Wanganui**	**0.45**	**69**	⇓PN	Pn	18 20 18.4	+0.4
WAZ				SN	Sn	18 20 32.4	+0.2
LREZ	**Lake Rotokare**	**0.46**	**356**	⇓PN	Pn	18 20 18.1	+0.1
LREZ				SN	Sn	18 20 32.3	0.0
PREZ	**Palmer Road**	**0.61**	**339**	Pn	Pn	18 20 18.8	-0.3
PREZ	**Palmer Road**	**0.61**	**339**	⇓PN	Pn	18 20 18.8	-0.3
NMEZ	**Namu Road**	**0.67**	**319**	Pn	Pn	18 20 19.0	-0.3
NMEZ	**Namu Road**	**0.67**	**319**	⇑PN	Pn	18 20 19.0	-0.3
KHEZ	**Kahui Hut**	**0.70**	**332**	Pn	Pn	18 20 19.4	-0.3
KHEZ	**Kahui Hut**	**0.70**	**332**	PN	Pn	18 20 19.4	-0.3
OHWZ	**Ohakea**	**0.73**	**114**	PN	Pn	18 20 20.2	+0.5
DREZ	**Durham Road**	**0.75**	**346**	Pn	Pn	18 20 19.8	-0.2
DREZ	**Durham Road**	**0.75**	**346**	PN	Pn	18 20 19.7	-0.2
NWEZ	**Newall Road**	**0.78**	**325**	Pn	Pn	18 20 20.1	-0.1
NWEZ	**Newall Road**	**0.78**	**325**	PN	Pn	18 20 20.1	-0.1
PKE	**Pukeiti**	**0.80**	**334**	Pn	Pn	18 20 20.0	-0.4
PKE	**Pukeiti**	**0.80**	**334**	PN	Pn	18 20 20.0	-0.4
VRZ	**Vera Road**	**0.83**	**17**	Pn	Pn	18 20 19.9	-0.7
VRZ	**Vera Road**	**0.83**	**17**	PN	Pn	18 20 19.9	-0.7
MHEZ	**Mangahewa**	**0.84**	**354**	Pn	Pn	18 20 20.8	0.0
MHEZ	**Mangahewa**	**0.84**	**354**	⇑PN	Pn	18 20 20.8	0.0
PKVZ	**Pokaka**	**0.94**	**48**	Pn	Pn	18 20 21.4	-0.2
PKVZ	**Pokaka**	**0.94**	**48**	⇓PN	Pn	18 20 21.4	-0.2
DUWZ	**D'Urville Isla**	**0.97**	**204**	PN	Pn	18 20 21.6	-0.2
DUWZ				SN	Sn	18 20 37.4	-1.7
KIW	**Kapiti Island**	**1.01**	**159**	Pn	Pn	18 20 22.1	-0.1
KIW	**Kapiti Island**	**1.01**	**159**	⇑PN	Pn	18 20 22.0	-0.1
KIW				AML	AML	18 20 39.6	
KIW				AML	AML	18 20 39.8	
TRVZ	**Turoa**	**1.05**	**55**	Pn	Pn	18 20 22.5	-0.4
TRVZ	**Turoa**	**1.05**	**55**	⇓PN	Pn	18 20 22.5	-0.4
OGWZ	**Otaki Gorge**	**1.06**	**149**	Pn	Pn	18 20 22.7	0.0
OGWZ	**Otaki Gorge**	**1.06**	**149**	⇑PN	Pn	18 20 22.7	0.0
OGWZ				AML	AML	18 20 39.3	
OGWZ				AML	AML	18 20 39.7	
WNVZ	**Wahianoa**	**1.07**	**57**	Pn	Pn	18 20 22.6	-0.3
WNVZ	**Wahianoa**	**1.07**	**57**	⇓PN	Pn	18 20 22.6	-0.3
DRZ	**Dome Shelter**	**1.08**	**54**	Pn	Pn	18 20 22.8	-0.4
DRZ				Sn	Sn	18 20 40.0	-1.3
DRZ	**Dome Shelter**	**1.08**	**54**	PN	Pn	18 20 22.8	-0.4
DRZ				SN	Sn	18 20 40.0	-1.3
FWVZ	**Far West T-bar**	**1.08**	**53**	Pn	Pn	18 20 22.7	-0.5
FWVZ				Sn	Sn	18 20 39.9	-1.4
FWVZ	**Far West T-bar**	**1.08**	**53**	PN	Pn	18 20 22.7	-0.5
FWVZ				SN	Sn	18 20 39.9	-1.4
WHVZ	**Whangaehu Hut**	**1.09**	**55**	Pn	Pn	18 20 22.7	-0.5
WHVZ	**Whangaehu Hut**	**1.09**	**55**	⇓PN	Pn	18 20 22.7	-0.5
POWZ	**Post Office Ro**	**1.12**	**115**	Pn	Pn	18 20 23.3	0.0
POWZ	**Post Office Ro**	**1.12**	**115**	PN	Pn	18 20 23.3	0.0
POWZ				AML	AML	18 20 41.3	
POWZ				AML	AML	18 20 43.7	
MOVZ	**Moawhango**	**1.13**	**64**	Pn	Pn	18 20 22.9	-0.6
MOVZ	**Moawhango**	**1.13**	**64**	⇓PN	Pn	18 20 22.9	-0.6
TUVZ	**Tukino**	**1.14**	**56**	Pn	Pn	18 20 23.4	-0.2
TUVZ	**Tukino**	**1.14**	**56**	⇓PN	Pn	18 20 23.4	-0.2
TWVZ	**Taurewa**	**1.14**	**43**	Pn	Pn	18 20 23.0	-0.6
TWVZ	**Taurewa**	**1.14**	**43**	⇓PN	Pn	18 20 23.0	-0.6
MRZ	**Mangatainoka R**	**1.14**	**131**	Pn	Pn	18 20 23.4	0.0
MRZ	**Mangatainoka R**	**1.14**	**131**	⇓PN	Pn	18 20 23.4	0.0
MRZ				AML	AML	18 20 41.5	
MRZ				AML	AML	18 20 41.9	
NGZ	**Ngauruhoe**	**1.16**	**51**	Pn	Pn	18 20 23.5	-0.4
NGZ	**Ngauruhoe**	**1.16**	**51**	⇓PN	Pn	18 20 23.5	-0.4
TSZ	**Takapari Road**	**1.18**	**97**	Pn	Pn	18 20 23.6	-0.2
TSZ	**Takapari Road**	**1.18**	**97**	⇓PN	Pn	18 20 23.6	-0.2
TSZ				AML	AML	18 20 41.5	
TSZ				AML	AML	18 20 41.8	
WTVZ	**West Tongariro**	**1.19**	**48**	Pn	Pn	18 20 23.7	-0.4
WTVZ	**West Tongariro**	**1.19**	**48**	⇓PN	Pn	18 20 23.7	-0.4
OTVZ	**Oturere**	**1.21**	**52**	Pn	Pn	18 20 24.1	-0.2
OTVZ	**Oturere**	**1.21**	**52**	⇓PN	Pn	18 20 24.1	-0.2
KRVZ	**Karewarewa**	**1.24**	**49**	Pn	Pn	18 20 24.2	-0.4
KRVZ	**Karewarewa**	**1.24**	**49**	⇓PN	Pn	18 20 24.2	-0.4
HOWZ	**Holdsworth Sta**	**1.28**	**140**	Pn	Pn	18 20 24.8	-0.1
HOWZ	**Holdsworth Sta**	**1.28**	**140**	⇑PN	Pn	18 20 24.8	-0.1
HOWZ				AML	AML	18 20 42.8	
HOWZ				AML	AML	18 20 43.8	
CAW	**Cannon Point**	**1.28**	**158**	Pn	Pn	18 20 25.0	+0.1
CAW	**Cannon Point**	**1.28**	**158**	⇑PN	Pn	18 20 25.0	+0.1
CAW				AML	AML	18 20 44.1	
CAW				AML	AML	18 20 45.7	
TCW	**Tory Channel**	**1.30**	**186**	Pn	Pn	18 20 25.0	0.0
TCW	**Tory Channel**	**1.30**	**186**	PN	Pn	18 20 25.0	0.0
TCW				AML	AML	18 20 43.4	
TCW				AML	AML	18 20 43.9	
KATZ	**Kakaramea**	**1.35**	**46**	Pn	Pn	18 20 25.6	-0.2
KATZ	**Kakaramea**	**1.35**	**46**	⇓PN	Pn	18 20 25.5	-0.3
PNHZ	**Pukenui**	**1.35**	**90**	Pn	Pn	18 20 25.6	-0.1
PNHZ	**Pukenui**	**1.35**	**90**	⇓PN	Pn	18 20 25.6	-0.1
PNHZ				SN	Sn	18 20 44.1	-1.8
PNHZ				AML	AML	18 20 44.5	
DVHZ	**Dannevirke**	**1.38**	**107**	Pn	Pn	18 20 25.8	-0.1
DVHZ	**Dannevirke**	**1.38**	**107**	⇓PN	Pn	18 20 25.8	-0.1
DVHZ				SN	Sn	18 20 43.9	-2.4
DVHZ				AML	AML	18 20 44.1	
WEL	**Wellington**	**1.39**	**170**	Pn	Pn	18 20 25.9	-0.1
WEL	**Wellington**	**1.39**	**170**	PN	Pn	18 20 25.9	-0.1
WEL				AML	AML	18 20 46.7	
WEL				AML	AML	18 20 48.4	
WEL				AML	AML	18 20 48.5	
TIWZ	**Tintock**	**1.40**	**128**	Pn	Pn	18 20 26.2	0.0
TIWZ	**Tintock**	**1.40**	**128**	⇑PN	Pn	18 20 26.2	0.0
TIWZ				AML	AML	18 20 45.3	
TIWZ				AML	AML	18 20 47.2	
SNZO	**South Karori**	**1.41**	**172**	*e*Pn	Pn	18 20 25.9	-0.3
SNZO				*e*Sn	Sn	18 20 45.2	-1.6
HIZ	**Hauiti**	**1.44**	**13**	Pn	Pn	18 20 26.1	-0.5
HIZ	**Hauiti**	**1.44**	**13**	PN	Pn	18 20 26.1	-0.5
RITZ	**Rihia Road**	**1.44**	**50**	Pn	Pn	18 20 26.6	-0.1
RITZ	**Rihia Road**	**1.44**	**50**	PN	Pn	18 20 26.6	-0.1
RATZ	**Rangitukua**	**1.47**	**45**	Pn	Pn	18 20 26.9	-0.1
RATZ	**Rangitukua**	**1.47**	**45**	PN	Pn	18 20 26.9	-0.1
MTW	**Mount Morrison**	**1.48**	**147**	Pn	Pn	18 20 26.9	-0.2
MTW	**Mount Morrison**	**1.48**	**147**	⇑PN	Pn	18 20 26.9	-0.2
MTW				SN	Sn	18 20 46.0	-2.4
MTW				AML	AML	18 20 48.2	
KRHZ	**Kereru**	**1.51**	**80**	⇓PN	Pn	18 20 27.1	-0.3
KRHZ				AML	AML	18 20 50.6	
KRHZ				AML	AML	18 20 50.8	
BHW	**Baring Head**	**1.53**	**168**	Pn	Pn	18 20 27.3	-0.2
BHW	**Baring Head**	**1.53**	**168**	⇑PN	Pn	18 20 27.3	-0.2
BHW				AML	AML	18 20 48.8	
BHW				AML	AML	18 20 49.2	
NNZ	**Nelson**	**1.53**	**212**	Pn	Pn	18 20 27.3	-0.3
NNZ	**Nelson**	**1.53**	**212**	⇑PN	Pn	18 20 27.3	-0.3
WPHZ	**Waipukurau**	**1.54**	**96**	Pn	Pn	18 20 27.7	-0.1
WPHZ	**Waipukurau**	**1.54**	**96**	⇓PN	Pn	18 20 27.7	-0.1
WPHZ				AML	AML	18 20 48.2	
WPHZ				AML	AML	18 20 48.4	
TUWZ	**Tuamarina**	**1.56**	**194**	PN	Pn	18 20 27.5	-0.4
TUWZ				AML	AML	18 20 49.1	
TUWZ				AML	AML	18 20 49.5	
WATZ	**Wairara**	**1.57**	**40**	Pn	Pn	18 20 28.1	0.0
WATZ	**Wairara**	**1.57**	**40**	PN	Pn	18 20 28.1	0.0
BFZ	**Birch Farm**	**1.58**	**120**	Pn	Pn	18 20 28.1	-0.1
BFZ	**Birch Farm**	**1.58**	**120**	PN	Pn	18 20 28.0	-0.1
BFZ				AML	AML	18 20 51.8	
BFZ				AML	AML	18 20 51.8	
BFZ				AML	AML	18 20 52.3	
BFZ				AML	AML	18 20 52.3	
KWHZ	**Kaweka Forest**	**1.60**	**73**	⇑PN	Pn	18 20 28.5	-0.1
KWHZ				AML	AML	18 20 51.2	
KWHZ				AML	AML	18 20 54.3	
MSWZ	**Moikau Station**	**1.62**	**158**	Pn	Pn	18 20 28.5	-0.2
MSWZ	**Moikau Station**	**1.62**	**158**	⇑PN	Pn	18 20 28.5	-0.2
MSWZ				AML	AML	18 20 50.6	
MSWZ				AML	AML	18 20 50.7	
TMWZ	**Te Maipa**	**1.62**	**138**	Pn	Pn	18 20 28.6	-0.1
TMWZ	**Te Maipa**	**1.62**	**138**	⇑PN	Pn	18 20 28.6	-0.1
TMWZ				AML	AML	18 20 49.2	
TMWZ				AML	AML	18 20 50.4	
PAWZ	**Paruwai Farm**	**1.65**	**153**	Pn	Pn	18 20 28.8	-0.2
PAWZ	**Paruwai Farm**	**1.65**	**153**	⇑PN	Pn	18 20 28.8	-0.2
PAWZ				AML	AML	18 20 51.2	
PAWZ				AML	AML	18 20 51.4	
ANWZ	**Angora Road**	**1.65**	**110**	⇓PN	Pn	18 20 29.2	+0.2
ANWZ				AML	AML	18 20 50.7	
ANWZ				AML	AML	18 20 50.7	
CPWZ	**Castlepoint**	**1.67**	**127**	PN	Pn	18 20 29.8	+0.6
CPWZ				AML	AML	18 20 53.6	
CPWZ				AML	AML	18 20 53.8	
PRHZ	**Porangahau**	**1.72**	**102**	Pn	Pn	18 20 29.8	+0.1
PRHZ	**Porangahau**	**1.72**	**102**	⇓PN	Pn	18 20 29.8	+0.1
PRHZ				AML	AML	18 20 53.7	
PRHZ				AML	AML	18 20 55.7	
QRZ	**Quartz Range**	**1.72**	**238**	PN	Pn	18 20 28.9	-0.8
BKZ	**Black Stump Fm**	**1.75**	**65**	PN	Pn	18 20 29.6	-0.7
BKZ				AML	AML	18 21 02.7	
BKZ				AML	AML	18 21 05.6	
TRWZ	**Traveller**	**1.76**	**148**	Pn	Pn	18 20 29.9	-0.3
TRWZ	**Traveller**	**1.76**	**148**	PN	Pn	18 20 29.9	-0.3
TRWZ				AML	AML	18 20 55.0	
TRWZ				AML	AML	18 20 55.1	
PLWZ	**Palliser**	**1.76**	**160**	Pn	Pn	18 20 29.9	-0.4
PLWZ	**Palliser**	**1.76**	**160**	PN	Pn	18 20 29.9	-0.4
PLWZ				AML	AML	18 20 53.3	
PLWZ				AML	AML	18 20 53.8	
KUTZ	**Kaahu Road**	**1.78**	**37**	Pn	Pn	18 20 30.7	+0.1
KUTZ	**Kaahu Road**	**1.78**	**37**	⇓PN	Pn	18 20 30.7	+0.1
TLZ	**Tolley Road**	**1.80**	**29**	Pn	Pn	18 20 30.4	-0.4
TLZ	**Tolley Road**	**1.80**	**29**	PN	Pn	18 20 30.4	-0.4
MCHZ	**McNeill Hill**	**1.80**	**76**	Pn	Pn	18 20 31.0	+0.2
MCHZ	**McNeill Hill**	**1.80**	**76**	PN	Pn	18 20 31.0	+0.2
MCHZ				AML	AML	18 21 04.5	
MCHZ				AML	AML	18 21 08.5	
CMWZ	**Cape Campbell**	**1.84**	**185**	Pn	Pn	18 20 31.6	+0.4
CMWZ	**Cape Campbell**	**1.84**	**185**	PN	Pn	18 20 31.6	+0.4
CMWZ				AML	AML	18 20 55.8	
CMWZ				AML	AML	18 20 57.3	
BSWZ	**Blackbirch Sta**	**1.85**	**193**	Pn	Pn	18 20 31.2	-0.1
BSWZ	**Blackbirch Sta**	**1.85**	**193**	PN	Pn	18 20 31.2	-0.1
BSWZ				AML	AML	18 20 55.6	
BSWZ				AML	AML	18 20 57.0	
PXZ	**Pawanui**	**1.86**	**94**	Pn	Pn	18 20 31.2	-0.2
PXZ	**Pawanui**	**1.86**	**94**	PN	Pn	18 20 31.2	-0.2
PXZ				AML	AML	18 20 55.0	
PXZ				AML	AML	18 20 56.7	
PXZ				AML	AML	18 20 56.8	
MRHZ	**Matea Rd**	**1.87**	**55**	⇓PN	Pn	18 20 30.7	-1.0
MRHZ				AML	AML	18 20 34.2	
MRHZ				AML	AML	18 20 35.2	
KAHZ	**Kahuranaki**	**1.88**	**87**	Pn	Pn	18 20 31.5	-0.2
KAHZ	**Kahuranaki**	**1.88**	**87**	PN	Pn	18 20 31.5	-0.2
KAHZ				AML	AML	18 20 56.9	
KAHZ				AML	AML	18 21 09.0	
WPRZ	**Whakapapatarin**	**1.93**	**44**	Pn	Pn	18 20 32.0	-0.3
WPRZ				Sn	Pn	18 20 33.3	+0.9
WPRZ	**Whakapapatarin**	**1.93**	**44**	PN	Pn	18 20 32.0	-0.3
ALRZ	**Allen Road**	**2.00**	**48**	Pn	Pn	18 20 32.6	-0.5
ALRZ	**Allen Road**	**2.00**	**48**	⇑PN	Pn	18 20 32.6	-0.5
NMHZ	**Naumai**	**2.00**	**67**	Pn	Pn	18 20 33.4	+0.1
NMHZ	**Naumai**	**2.00**	**67**	PN	Pn	18 20 33.4	+0.1
NMHZ				AML	AML	18 21 06.9	
NMHZ				AML	AML	18 21 10.0	
CKHZ	**Cape Kidnapper**	**2.05**	**84**	Pn	Pn	18 20 33.7	0.0
CKHZ	**Cape Kidnapper**	**2.05**	**84**	PN	Pn	18 20 33.7	0.0
CKHZ				AML	AML	18 20 59.5	
CKHZ				AML	AML	18 20 59.9	
PRRZ	**Plateau Road**	**2.07**	**48**	Pn	Pn	18 20 33.5	-0.6
PRRZ	**Plateau Road**	**2.07**	**48**	PN	Pn	18 20 33.4	-0.6
ARHZ	**Aropaoanui**	**2.08**	**73**	Pn	Pn	18 20 33.8	-0.3
ARHZ	**Aropaoanui**	**2.08**	**73**	PN	Pn	18 20 33.8	-0.3
ARHZ				AML	AML	18 21 01.3	
ARHZ				AML	AML	18 21 02.0	
HRRZ	**Handcock Road**	**2.09**	**44**	Pn	Pn	18 20 34.1	-0.2
HRRZ	**Handcock Road**	**2.09**	**44**	⇓PN	Pn	18 20 34.1	-0.2
UTU	**Utuhina**	**2.21**	**39**	PN	Pn	18 20 35.8	+0.1
RRRZ	**Republican Roa**	**2.25**	**46**	Pn	Pn	18 20 35.0	-1.4
RRRZ	**Republican Roa**	**2.25**	**46**	PN	Pn	18 20 34.9	-1.4
MUGZ	**Murupara**	**2.31**	**52**	⇓PN	Pn	18 20 35.7	-1.3
WHHZ	**Waihua**	**2.32**	**70**	PN	Pn	18 20 36.6	-0.4
WHHZ				AML	AML	18 21 06.8	
WHHZ				AML	AML	18 21 07.0	
TARZ	**Mount Tarawera**	**2.32**	**44**	PN	Pn	18 20 37.2	-0.1
TOZ	**Tahuroa Road**	**2.33**	**21**	Pn	Pn	18 20 36.3	-1.0
TOZ	**Tahuroa Road**	**2.33**	**21**	⇓PN	Pn	18 20 36.3	-1.0
SNGZ	**Shannon Statio**	**2.52**	**64**	Pn	Pn	18 20 38.8	-0.8
SNGZ	**Shannon Statio**	**2.52**	**64**	PN	Pn	18 20 38.8	-0.8
SNGZ				AML	AML	18 21 10.6	
SNGZ				AML	AML	18 21 12.3	
KHZ	**Kahutara**	**2.59**	**195**	*e*Pn	Pn	18 20 39.8	-0.7
KHZ				*e*Sn	Sn	18 21 08.4	-3.8
KHZ	**Kahutara**	**2.59**	**195**	PN	Pn	18 20 40.1	-0.3
KHZ				AML	AML	18 21 11.2	
KHZ				AML	AML	18 21 11.2	
KHZ				AML	AML	18 21 11.4	
KHZ				AML	AML	18 21 11.4	
URZ	**Urewera**	**2.66**	**52**	*e*Pn	Pn	18 20 39.7	-1.6
URZ				*e*Sn	Sn	18 21 10.4	-3.4
URZ	**Urewera**	**2.66**	**52**	PN	Pn	18 20 39.7	-1.6
URZ				AML	AML	18 21 11.9	
KNZ	**Kokohu**	**2.66**	**71**	PN	Pn	18 20 40.1	-1.2
DSZ	**Denniston Nort**	**2.71**	**227**	PN	Pn	18 20 41.0	-1.0
RAGZ	**Rawiri**	**2.71**	**59**	Pn	Pn	18 20 40.9	-1.3
RAGZ	**Rawiri**	**2.71**	**59**	⇓PN	Pn	18 20 40.9	-1.3
RAGZ				AML	AML	18 21 16.9	
RAGZ				AML	AML	18 21 19.5	
MHGZ	**Mahia Peninsul**	**2.79**	**75**	Pn	Pn	18 20 42.2	-0.9
MHGZ	**Mahia Peninsul**	**2.79**	**75**	PN	Pn	18 20 42.2	-0.9
MHGZ				AML	AML	18 20 47.0	
PRGZ	**Paritu Road**	**2.84**	**71**	Pn	Pn	18 20 42.7	-1.1
PRGZ	**Paritu Road**	**2.84**	**71**	⇓PN	Pn	18 20 42.7	-1.1
PRGZ				AML	AML	18 21 17.4	
PRGZ				AML	AML	18 21 19.8	
RIGZ	**Rimuhau**	**2.84**	**66**	PN	Pn	18 20 42.5	-1.3
RIGZ				AML	AML	18 21 18.1	
RIGZ				AML	AML	18 21 18.4	
MKAZ	**Moumakai**	**2.86**	**12**	Pn	Pn	18 20 43.5	-0.5
MKAZ	**Moumakai**	**2.86**	**12**	⇓PN	Pn	18 20 43.5	-0.5
MWZ	**Matawai**	**2.87**	**58**	Pn	Pn	18 20 42.6	-1.6
MWZ	**Matawai**	**2.87**	**58**	PN	Pn	18 20 42.6	-1.6
TKGZ	**Te Karaka**	**3.03**	**62**	Pn	Pn	18 20 44.8	-1.3
TKGZ	**Te Karaka**	**3.03**	**62**	PN	Pn	18 20 44.8	-1.3
TKGZ				AML	AML	18 21 23.1	
TKGZ				AML	AML	18 21 23.5	
WIAZ	**Waiheke Island**	**3.17**	**10**	PN	Pn	18 20 47.7	-0.2
RUGZ	**Raukumara Rang**	**3.19**	**53**	PN	Pn	18 20 46.2	-2.1
CNGZ	**Carnagh Statio**	**3.26**	**65**	Pn	Pn	18 20 47.9	-1.2
CNGZ	**Carnagh Statio**	**3.26**	**65**	PN	Pn	18 20 47.9	-1.2
TWGZ	**Tauwhareparae**	**3.26**	**59**	Pn	Pn	18 20 47.9	-1.3
TWGZ	**Tauwhareparae**	**3.26**	**59**	PN	Pn	18 20 47.9	-1.3
TWGZ				AML	AML	18 21 28.7	
TWGZ				AML	AML	18 21 28.7	
LTZ	**Lake Taylor**	**3.30**	**209**	Pn	Pn	18 20 48.2	-1.5
LTZ	**Lake Taylor**	**3.30**	**209**	PN	Pn	18 20 48.2	-1.5
HAZ	**Te Kaha**	**3.38**	**51**	⇑PN	Pn	18 20 48.4	-2.4
HAZ				AML	AML	18 21 36.7	
HAZ				AML	AML	18 21 39.5	
PKGZ	**Pakihiroa**	**3.48**	**56**	⇑PN	Pn	18 20 50.6	-1.6
PUZ	**Puketiti**	**3.50**	**59**	Pn	Pn	18 20 50.2	-2.1
PUZ	**Puketiti**	**3.50**	**59**	PN	Pn	18 20 50.2	-2.1
INZ	**Inchbonnie**	**3.60**	**218**	PN	Pn	18 20 52.1	-1.5
WMGZ	**Waiomatatini S**	**3.74**	**57**	Pn	Pn	18 20 53.5	-2.0
WMGZ	**Waiomatatini S**	**3.74**	**57**	⇑PN	Pn	18 20 53.5	-2.0
WMGZ				AML	AML	18 21 37.4	
WMGZ				AML	AML	18 21 38.3	
MXZ	**Matakaoa Point**	**3.83**	**53**	Pn	Pn	18 20 55.0	-1.7
MXZ	**Matakaoa Point**	**3.83**	**53**	⇑PN	Pn	18 20 55.0	-1.7
OXZ	**Oxford**	**3.85**	**207**	Pn	Pn	18 20 54.3	-2.7
OXZ	**Oxford**	**3.85**	**207**	PN	Pn	18 20 54.3	-2.7
CRLZ	**Canterbury Las**	**3.90**	**200**	Pn	Pn	18 20 55.1	-2.4
**CRLZ

FNVD **Fontana Vidola** 0.87 190 Pg Pb 18 23 00.5 -0.4
481nm,0.3s
ERBM **Eremo** 0.90 228 Pg Pb 18 23 01.8 +0.4
1µm,1.5s
ERBM **Eremo** 0.90 228 Pg Pb 18 23 01.8 +0.4
1µm,1.5s
MAGA **Magasa** 0.90 327 Pg Pb 18 23 01.1 -0.4
MAGA Sg Sg 18 23 15.0 +1.6
2µm,0.6s
MAGA **Magasa** 0.90 327 Pg Pb 18 23 01.1 -0.4
MAGA Sg Sg 18 23 15.0 +1.6
2µm,0.6s
CGRP **Cima Grappa** 0.92 21 Pg Pb 18 23 02.0 +0.2
CGRP Sg Sn 18 23 16.8 +1.2
790nm,0.6s
CGRP **Cima Grappa** 0.92 21⇓ *i*Pg Pb 18 23 02.1 +0.2
CGRP *i* Sg Sn 18 23 17.4 +1.7
CGRP **Cima Grappa** 0.92 21 Pg Pb 18 23 02.0 +0.2
CGRP *i* Sg Sn 18 23 17.4 +1.7
MTLO **Montello** 0.95 34 *e*Pg Pn 18 23 03.7 +0.7
MTLO **Montello** 0.95 34 *e*P Pn 18 23 03.7 +0.7
PZZT **Monte Pizzetto** 0.96 201 Pg Pb 18 23 02.5 +0.1
286nm,0.3s
PZZT **Monte Pizzetto** 0.96 201 Pg Pb 18 23 02.5 +0.1
286nm,0.3s
SEI **Scarperia** 0.97 179 Pg Pg 18 23 02.9 +0.1
SEI Sg Sn 18 23 16.9 +0.2
SEI **Scarperia** 0.97 179 Pg Pg 18 23 02.9 +0.1
SEI Sg Sn 18 23 16.9 +0.2
GRAM **Graiana** 1.05 240 P Pn 18 23 05.0 +0.6
GRAM S Sb 18 23 17.0 -0.6
POPM **Popiglio** 1.06 203 P Pb 18 23 03.5 -0.7
POPM S Sg 18 23 18.7 +0.2
VMG **Vicchio** 1.07 172 Pg Pg 18 23 05.3 +0.6
VMG **Vicchio** 1.07 172 Pg Pg 18 23 05.3 +0.6
SARO **Sassorosso** 1.07 219 P Pb 18 23 04.6 +0.2
SARO S Sb 18 23 18.6 +0.3
PTF **Prato** 1.08 190 Pg Pb 18 23 04.6 +0.1
PTF **Prato** 1.08 190 Pg Pb 18 23 04.6 +0.1
BDI **Bagni Di Lucca** 1.10 209 Pg Pb 18 23 04.1 -0.7
BDI Sg Sn 18 23 21.1 +1.1
335nm,0.7s
BDI **Bagni Di Lucca** 1.10 209 Pg Pb 18 23 04.1 -0.7
BDI Sg Sn 18 23 21.1 +1.1
335nm,0.7s
VLC **Villacollemand** 1.10 219 Pg Pb 18 23 04.9 +0.1
185nm,1.0s
VLC **Villacollemand** 1.10 219 Pg Pb 18 23 04.9 +0.1
185nm,1.0s
VARN **Col Varnada, M** 1.11 29 *e*Pg Pg 18 23 05.7 +0.2
VARN *e*Sg Sn 18 23 22.4 +2.2
VARN **Col Varnada, M** 1.11 29 *e*Pg Pg 18 23 05.7 +0.2
VARN *e*Sg Sn 18 23 22.4 +2.2
CTL8 **Castelleone** 1.14 283 Pg Pg 18 23 07.1 +1.0
385nm,0.8s
CTL8 **Castelleone** 1.14 283 Pg Pg 18 23 07.1 +1.0
385nm,0.8s
SFI **Santa Sofia** 1.18 162 Pg Pb 18 23 06.3 +0.2
SFI Sg Sg 18 23 24.3 +2.2
821nm,1.2s
SFI **Santa Sofia** 1.18 162 Pg Pb 18 23 06.3 +0.2
MABI **Malga Bissina** 1.18 331 Pg Pn 18 23 06.1 -0.2
MABI Sg Sn 18 23 22.9 +0.6
137nm,0.6s
MABI **Malga Bissina** 1.18 331 Pg Pn 18 23 06.1 -0.2
MABI Sg Sn 18 23 22.9 +0.6
137nm,0.6s
CODM **Codolo** 1.24 240 P Pb 18 23 07.7 +0.6
T0502 **Localit` San** 1.26 153 Pg Pg 18 23 08.1 -0.2
1341µm,43.0s
CRMI **Carmignano** 1.26 192 Pg Pb 18 23 07.6 0.0
256nm,0.8s
CRMI **Carmignano** 1.26 192 Pg Pb 18 23 07.6 0.0
256nm,0.8s
MAIM **Mastiano** 1.27 209 Pg Pb 18 23 08.0 +0.4
293nm,0.9s
MAIM **Mastiano** 1.27 209 Pg Pb 18 23 08.0 +0.4
293nm,0.9s
MAIM **Mastiano** 1.27 209 P Pg 18 23 08.9 +0.5
MAIM S Sg 18 23 25.2 +0.3
ASQU **Asqua** 1.27 165 Pg Pb 18 23 07.9 +0.2
ASQU Sg Sg 18 23 26.9 +1.9
335nm,0.6s
ASQU **Asqua** 1.27 165 Pg Pb 18 23 07.9 +0.2
POLC **Polcenigo** 1.29 39 Pg Pb 18 23 08.5 +0.4
POLC **Polcenigo** 1.29 39 *e*Pg Pb 18 23 08.5 +0.4
POLC *e*Sg Sg 18 23 28.9 +3.2
POLC **Polcenigo** 1.29 39 Pg Pb 18 23 08.5 +0.4
POLC *e*Sg Sg 18 23 28.9 +3.2
AGOR **Agordo** 1.35 21 Pg Pb 18 23 09.2 +0.1
397nm,0.3s
AGOR **Agordo** 1.35 21 *e*Pg Pb 18 23 09.2 +0.1
CPGN **Carpegna, Ital** 1.41 150 Pg Pg 18 23 12.0 +0.8
423nm,0.8s
CPGN **Carpegna, Ital** 1.41 150 Pg Pg 18 23 12.0 +0.8
423nm,0.8s
KOSI **Kohlern** 1.44 1 Pg Pb 18 23 11.0 +0.3
KOSI Sg Sg 18 23 31.4 +0.9
566nm,0.6s
KOSI **Kohlern** 1.44 1 Pg Pb 18 23 11.0 +0.3
KOSI Sg Sg 18 23 31.4 +0.9
566nm,0.6s
APPI **Appiano** 1.46 357 Pg Pb 18 23 11.1 +0.2
APPI Sg Sg 18 23 31.8 +0.8
397nm,0.3s
APPI **Appiano** 1.46 357 Pg Pb 18 23 11.1 +0.2
APPI Sg Sg 18 23 31.8 +0.8
397nm,0.3s
BOSI **Bolzano** 1.47 359 Pg Pb 18 23 12.0 +0.9
1µm,0.7s
BOSI **Bolzano** 1.47 359 Pg Pb 18 23 12.0 +0.9
1µm,0.7s
CIMO **Cimolais** 1.50 31⇓ *e*Pg Pn 18 23 10.9 +0.4
CIMO *e*Sg Sg 18 23 33.5 +1.1
CIMO **Cimolais** 1.50 31 *e*Pg Pn 18 23 10.9 +0.4
CIMO *e*Sg Sg 18 23 33.5 +1.1
PARC **Parchiule** 1.52 155 Pg Pb 18 23 11.8 -0.2
158nm,0.6s
PARC **Parchiule** 1.52 155 Pg Pb 18 23 11.8 -0.2
158nm,0.6s
CSNT **Castellina Chi** 1.55 181 Pg Pn 18 23 11.4 +0.2
147nm,0.6s
CSNT **Castellina Chi** 1.55 181 Pg Pn 18 23 11.4 +0.2
147nm,0.6s
STAL **STALIGIAL** 1.57 37 Pg Pn 18 23 12.0 +0.6
626nm,0.6s
STAL **STALIGIAL** 1.57 37 Pg Pn 18 23 12.0 +0.6
626nm,0.6s
BRMO **Bormio** 1.60 335 Pg Pn 18 23 13.4 +1.4
BRMO Sg Sb 18 23 35.1 +1.5
126nm,0.6s
BRMO **Bormio** 1.60 335 Pg Pn 18 23 13.4 +1.4
BRMO Sg Sb 18 23 35.1 +1.5
126nm,0.6s
BADI **Badiali** 1.65 156 Pg Pb 18 23 14.7 +0.5
205nm,0.7s
BADI **Badiali** 1.65 156 Pg Pb 18 23 14.7 +0.5
205nm,0.7s
BERNI **Berninapass** 1.67 327 Pg Pn 18 23 14.2 +1.2
144nm,0.8s
BERNI **Berninapass** 1.67 327 Pg Pn 18 23 14.2 +1.2
144nm,0.8s
MPRI **Monte Prat** 1.68 43⇑ *e*Pg Pn 18 23 14.0 +1.0
MPRI **Monte Prat** 1.68 43 *e*P Pn 18 23 14.0 +1.0
MOSI **Grossmontoni** 1.69 341 Pg Pb 18 23 14.9 0.0
MOSI **Grossmontoni** 1.69 341 Pg Pb 18 23 14.9 0.0
ABSI **Aberstueckl** 1.70 360 Pg Pn 18 23 14.7 +1.2
ABSI Sg Sb 18 23 37.7 +1.1
760nm,0.6s
ABSI **Aberstueckl** 1.70 360 Pg Pn 18 23 14.7 +1.2
ABSI Sg Sb 18 23 37.7 +1.1
760nm,0.6s
MPAG **Monte Paganucc** 1.73 143 Pg Pg 18 23 16.2 -1.0
MPAG **Monte Paganucc** 1.73 143 Pg Pg 18 23 16.2 -1.0
CAFI **Castiglion Fio** 1.75 165 Pg Pb 18 23 15.1 -0.9
147nm,0.8s
CAFI **Castiglion Fio** 1.75 165 Pg Pb 18 23 15.1 -0.9
147nm,0.8s
FUORN **Ofenpass-Fuorn** 1.76 335 Pg Pb 18 23 16.2 -0.1
206nm,0.6s
FUORN **Ofenpass-Fuorn** 1.76 335 Pg Pb 18 23 16.2 -0.1
206nm,0.6s
COLI **Coloredo** 1.81 52⇓ *e*Pn Pn 18 23 15.4 +0.7
COLI **Coloredo** 1.81 52 *e*P Pn 18 23 15.4 +0.7
VINO **Villanova** 1.84 47 Pg Pn 18 23 15.4 +0.3
VINO **Villanova** 1.84 47⇓ *e*Pn Pn 18 23 15.5 +0.3
VINO **Villanova** 1.84 47 *e*P Pn 18 23 15.5 +0.3
TRI **Trieste** 1.84 67 *e*Pn Pn 18 23 15.5 +0.4
TRI **Trieste** 1.84 67 *e*P Pn 18 23 15.5 +0.4
SABO **M.te Sabotino** 1.85 58 Pg Pn 18 23 16.4 +1.0
399nm,0.6s
SABO **M.te Sabotino** 1.85 58 *e*Pn Pb 18 23 16.6 -1.1
SABO **M.te Sabotino** 1.85 58 *e*P Pb 18 23 16.6 -1.1
FVI **Forni Avoltri** 1.87 32 Pg Pn 18 23 16.7 +1.1
FVI **Forni Avoltri** 1.87 32 Pg Pn 18 23 16.7 +1.1
ABTA **Abfaltersbach** 1.91 25 Pn Pb 18 23 17.8 -0.9
26nm,0.3s,SNR=34
ABTA Sn Sg 18 23 45.7 +0.3
189nm,0.8s
ABTA **Abfaltersbach** 1.91 25 Pn Pb 18 23 17.8 -0.9
26nm,0.3s,SNR=34
ABTA Sn Sg 18 23 45.7 +0.3
189nm,0.8s
SKDS **Skadanscina** 1.96 74 *i* Pn Pn 18 23 16.9 +0.1
SKDS *i* Sn Sn 18 23 41.2 0.0
comp=Z,55nm,0.2s
SKDS **Skadanscina** 1.96 74 *i* Pn Pn 18 23 16.9 +0.1
SKDS *i* Sn Sn 18 23 41.2 0.0
comp=Z,55nm,0.2s
DRE **Drenchia** 1.98 54 *e*Pn Pn 18 23 18.1 +0.9
DRE **Drenchia** 1.98 54 *e*P Pn 18 23 18.1 +0.9
FETA **Feichten** 2.04 348 Pn Pb 18 23 20.3 -0.7
comp=Z,34nm,0.5s,SNR=88
FETA Sn Sb 18 23 47.3 +1.0
comp=Z,31nm,0.4s
FETA **Feichten** 2.04 348 Pn Pb 18 23 20.3 -0.7
comp=Z,34nm,0.5s,SNR=88
FETA Sn Sb 18 23 47.3 +1.0
comp=Z,31nm,0.4s
PCP **Piancastagn** 2.05 257 P Pn 18 23 19.0 +1.0
PCP S Sg 18 23 49.5 -0.4
VOJS **Vojsko** 2.05 60 *i* Pn Pn 18 23 18.7 +0.6
VOJS *i* Sn Sb 18 23 45.0 -1.5
comp=Z,62nm,0.3s
VOJS **Vojsko** 2.05 60 *i* Pn Pn 18 23 18.7 +0.6
VOJS *i* Sn Sb 18 23 45.0 -1.5
comp=Z,62nm,0.3s
WTTA **Wattenberg** 2.25 5 Pn Pb 18 23 24.1 -0.4
comp=Z,5.7nm,0.3s,SNR=42
WTTA Sn Sb 18 23 53.2 +1.0
comp=Z,58nm,0.3s
WTTA **Wattenberg** 2.25 5 *e*PN Pb 18 23 23.3 -1.2
WTTA *e*PG Pg 18 23 26.3 -0.9
WTTA **Wattenberg** 2.25 5 *e*Pn Pb 18 23 24.7 +0.1
WTTA *e*Sg Sg 18 23 57.5 +1.1
WTTA **Wattenberg** 2.25 5 Pn Pb 18 23 24.1 -0.4
comp=Z,5.7nm,0.3s,SNR=42
WTTA Sn Sb 18 23 53.2 +1.0
comp=Z,58nm,0.3s
WTTA Sg Sg 18 23 57.5 +1.1
MYKA **Terra Mystica** 2.27 44 Pn Pb 18 23 23.4 -1.5
comp=Z,1.2nm,0.2s,SNR=39
MYKA Sn Sb 18 23 54.3 +1.5
comp=Z,65nm,0.3s
MYKA **Terra Mystica** 2.27 44 Pn Pb 18 23 23.4 -1.5
comp=Z,1.2nm,0.2s,SNR=39
MYKA Sn Sb 18 23 54.3 +1.5
comp=Z,65nm,0.3s
CRNS **Crni Vrh** 2.31 62 *i* Pn Pn 18 23 22.3 +0.7
CRNS *e*Sn Sn 18 23 51.3 +1.5
comp=Z,108nm,0.4s
CRNS **Crni Vrh** 2.31 62 *i* Pn Pn 18 23 22.3 +0.7
CRNS *e*Sn Sn 18 23 51.3 +1.5
comp=Z,108nm,0.4s
WATA **Walderalm** 2.32 4 Pn Pn 18 23 24.2 +2.4
comp=Z,16nm,0.3s,SNR=35
WATA Sn Sb 18 23 53.8 -0.3
comp=Z,37nm,0.3s
WATA **Walderalm** 2.32 4 Pn Pn 18 23 24.2 +2.4
comp=Z,16nm,0.3s,SNR=35
WATA Sn Sb 18 23 53.8 -0.3
comp=Z,37nm,0.3s
MOTA **Moosalm** 2.33 356 *e*Pn Pb 18 23 24.7 -1.1
comp=Z,10nm,0.3s,SNR=120
MOTA Sn Sb 18 23 54.9 +0.5
comp=Z,30nm,0.4s
MOTA **Moosalm** 2.33 356 Pn Pb 18 23 24.7 -1.1
comp=Z,10nm,0.3s,SNR=120
MOTA Sn Sb 18 23 54.9 +0.5
comp=Z,30nm,0.4s
LJU **Ljubljana** 2.46 64 *e*Pn Pn 18 23 25.0 +1.3
LJU *i* Sn Sn 18 23 55.4 +1.9
comp=Z,245nm,0.8s
LJU **Ljubljana** 2.46 64 *e*Pn Pn 18 23 25.0 +1.3
LJU *i* Sn Sn 18 23 55.4 +1.9
comp=Z,245nm,0.8s
DAVA **Damuels** 2.48 336 *e*Pn Pn 18 23 26.8 +2.7
comp=Z,16nm,0.3s
DAVA Sn Sb 18 23 58.8 0.0
comp=Z,64nm,0.7s
DAVA **Damuels** 2.48 336 *e*Pn Pn 18 23 26.8 +2.7
DAVA **Damuels** 2.48 336 Pn Pn 18 23 26.8 +2.7
DAVA Sn Sb 18 23 58.8 0.0
comp=Z,64nm,0.7s
KBA **Koelnbreinsper** 2.48 34 Pn Pn 18 23 26.5 +2.3
comp=Z,1.8nm,0.3s,SNR=39
KBA Sn Sg 18 24 03.9 0.0
comp=Z,39nm,0.3s
KBA **Koelnbreinsper** 2.48 34 *e*Pn Pn 18 23 26.5 +2.3
KBA *e*Sg Sg 18 24 03.8 0.0
KBA **Koelnbreinsper** 2.48 34 Pn Pn 18 23 26.5 +2.3
KBA Sg Sg 18 24 03.8 0.0
OBER **Oberstdorf** 2.49 343 *e*Pn Pn 18 23 27.0 +2.8
OBER **Oberstdorf** 2.49 343 Pn Pn 18 23 27.0 +2.8
RETA **Reutte** 2.50 351 Pn Pb 18 23 27.1 -1.5
comp=Z,12nm,0.3s,SNR=7.7
RETA Sn Sb 18 23 59.8 +0.6
comp=Z,14nm,0.4s
RETA **Reutte** 2.50 351 Pn Pb 18 23 27.1 -1.5
comp=Z,12nm,0.3s,SNR=7.7
RETA Sn Sb 18 23 59.8 +0.6
comp=Z,14nm,0.4s
RORO **Rocca Rossa** 2.51 250 P Pn 18 23 24.2 -0.1
NVLJ **Novalja** 2.56 99 *e*Pn Pn 18 23 25.4 +0.4
NVLJ Sn Sn 18 23 55.3 -0.5
NVLJ **Novalja** 2.56 99 *e*Pn Pn 18 23 25.3 +0.4
NVLJ Sn Sn 18 23 55.3 -0.5
OBKA **Obir** 2.69 55 *e*Pn Pn 18 23 28.7 +1.7
comp=Z,2.4nm,0.2s,SNR=14
OBKA Sg Sg 18 24 14.0 +3.4
comp=Z,61nm,0.3s
OBKA **Obir** 2.69 55 *e*Pn Pn 18 23 28.4 +1.4
OBKA *e*Sg Sg 18 24 13.9 +3.4
OBKA **Obir** 2.69 55 Pn Pn 18 23 28.4 +1.4
OBKA Sg Sg 18 24 13.9 +3.4
RJOB **Jochberg** 2.90 20 *e*Pn Pn 18 23 31.3 +1.6
RJOB **Jochberg** 2.90 20 Pn Pn 18 23 31.3 +1.6
OZLJ **Ozalj** 2.97 77 *e*Pn Pn 18 23 32.0 +1.4
OZLJ Sn Sn 18 24 07.0 +0.9
OZLJ **Ozalj** 2.97 77 *e*Pn Pn 18 23 32.0 +1.4
OZLJ Sn Sn 18 24 06.9 +0.9
PGF **Pioggiola** 3.00 215 *e*Pn Pn 18 23 31.2 0.0
SNR=1.0
PGF *e*Sn Sn 18 24 05.1 -1.8
comp=Z,2.7nm,0.2s,SNR=1.0
PGF **Pioggiola** 3.00 215 *e*Pn Pn 18 23 31.2 0.0
SNR=1.0
PGF *e*Sn Sn 18 24 05.1 -1.8
comp=Z,1.4nm,0.2s,SNR=1.0
SBF **Sospel** 3.03 249 *e*Pn Pn 18 23 33.2 +1.7
SNR=1.0
SBF **Sospel** 3.03 249 *e*Pn Pn 18 23 33.2 +1.7
SNR=1.0
SOKA **Soboth** 3.07 56 *e*Pn Pn 18 23 33.5 +1.4
comp=Z,0.6nm,0.2s,SNR=8.0
SOKA *e*Sn Sn 18 24 10.4 +1.9
comp=Z,17nm,0.4s
SOKA **Soboth** 3.07 56 Pn Pn 18 23 33.5 +1.4
comp=Z,0.6nm,0.2s,SNR=8.0
SOKA Sn Sn 18 24 10.4 +1.9
comp=Z,17nm,0.4s
LUCF **Luceram** 3.08 250 P Pn 18 23 31.9 -0.3
LUCF S Sn 18 24 13.0 +4.2
LUCF **Luceram** 3.08 250 P Pn 18 23 31.9 -0.3
LUCF S Sn 18 24 13.0 +4.2
FUR **Furstenfeldbru** 3.14 359 *e*Pg Pg 18 23 43.1 -1.2
FUR **Furstenfeldbru** 3.14 359 Pg Pg 18 23 43.1 -1.2
UDBI **Udbina** 3.19 97 *e*Pn Pn 18 23 33.3 -0.4
UDBI Sn Sn 18 24 11.2 -0.4
UDBI **Udbina** 3.19 97 *e*Pn Pn 18 23 33.3 -0.4
UDBI Sn Sn 18 24 11.2 -0.4
MBDF **Montbardon** 3.26 266 *e*Pn Pn 18 23 35.5 +0.7
SNR=1.0
MBDF *e*Sn Sn 18 24 12.0 -1.4
comp=Z,9.1nm,0.4s,SNR=1.0
MBDF **Montbardon** 3.26 266 *e*Pn Pn 18 23 35.5 +0.7
SNR=1.0
MBDF *e*Sn Sn 18 24 12.0 -1.4
comp=Z,4.6nm,0.4s,SNR=1.0
LPG **La Plagne** 3.27 280 *e*Pn Pn 18 23 38.6 +3.5
SNR=1.0
LPG **La Plagne** 3.27 280 *e*Pn Pn 18 23 38.6 +3.5
SNR=1.0
LPL **La Plagne** 3.29 280 *e*Pn Pn 18 23 37.4 +2.1
LPL **La Plagne** 3.29 280 *e*Pn Pn 18 23 37.4 +2.1
MOA **Molln** 3.48 35 *e*Pn Pn 18 23 40.1 +2.4
comp=Z,4.8nm,0.3s
MOA *e*Sn Sg 18 24 35.2 -0.4
comp=Z,14nm,0.4s
MOA **Molln** 3.48 35 *e*Pn Pn 18 23 39.9 +2.3
MOA **Molln** 3.48 35 Pn Pn 18 23 39.9 +2.3
ARSA **Arzberg** 3.66 51 *e*Pn Pn 18 23 42.3 +2.1
comp=Z,2.1nm,0.3s
ARSA *e*Sn Sg 18 24 40.3 -1.3
comp=Z,8.9nm,0.6s
ARSA **Arzberg** 3.66 51 *e*Pn Pn 18 23 41.2 +1.0
ARSA **Arzberg** 3.66 51 Pn Pn 18 23 41.2 +1.0
FELD **Feldberg im Sc** 3.67 322 P Pn 18 23 41.1 +0.7
FRF **La Foret Royal** 3.67 248 *e*Pn Pn 18 23 40.2 -0.1
SNR=1.0
FRF *e*Sn Sn 18 24 22.0 -1.4
comp=Z,10nm,0.2s,SNR=1.0
FRF **La Foret Royal** 3.67 248 *e*Pn Pn 18 23 40.2 -0.1
SNR=1.0
FRF *e*Sn Sn 18 24 22.0 -1.4
comp=Z,5.2nm,0.2s,SNR=1.0
LMR **La Mourre** 3.86 246 *e*Pn Pn 18 23 42.5 -0.4
SNR=1.0
LMR *e*Sn Sn 18 24 25.5 -2.6
comp=Z,6.0nm,0.3s,SNR=1.0
LMR **La Mourre** 3.86 246 *e*Pn Pn 18 23 42.5 -0.4
SNR=1.0
LMR *e*Sn Sn 18 24 25.5 -2.6
comp=Z,3.0nm,0.3s,SNR=1.0
ORIF **Oris-en-Rattie** 3.88 270 *e*Pn Pn 18 23 45.7 +2.5
SNR=1.0
ORIF **Oris-en-Rattie** 3.88 270 *e*Pn Pn 18 23 45.7 +2.5
SNR=1.0
BFO **Black Forest** 3.90 329 *e*Pn Pn 18 23 44.4 +0.9
BFO **Black Forest** 3.90 329 Pn Pn 18 23 44.4 +0.9
CABF **La Chapelle** 4.00 295 *e*Pn Pn 18 23 46.1 +1.2
SNR=1.0
CABF *e*Sn Sn 18 24 31.0 -0.6
comp=Z,1.7nm,0.2s,SNR=1.0
CABF **La Chapelle** 4.00 295 *e*Pn Pn 18 23 46.1 +1.2
SNR=1.0
CABF *e*Sn Sn 18 24 31.0 -0.6
comp=Z,0.9nm,0.2s,SNR=1.0
MOF **Molkenrain** 4.06 316 P Pn 18 23 45.8 +0.1
MOF **Molkenrain** 4.06 316 P Pn 18 23 45.8 +0.1
GEC2 **GERESS Array S** 4.15 22 *e*Pn Pn 18 23 47.7 +0.7
GEC2 **GERESS Array S** 4.15 22 Pn Pn 18 23 47.7 +0.7
HINF **Hinteralfeld** 4.17 314 *e*Pn Pn 18 23 47.8 +0.5
SNR=1.0
HINF *e*Sn Sn 18 24 33.4 -2.4
comp=Z,26nm,0.5s,SNR=1.0
HINF **Hinteralfeld** 4.17 314 *e*Pn Pn 18 23 47.8 +0.5
SNR=1.0
HINF *e*Sn Sn 18 24 33.4 -2.4
comp=Z,13nm,0.5s,SNR=1.0
WET **Wettzell** 4.25 14 *e*Pn Pn 18 23 49.0 +0.7
WET **Wettzell** 4.25 14 Pn Pn 18 23 49.0 +0.7
SMRF **Simiane la Rot** 4.25 258 *e*Pn Pn 18 23 50.8 +2.4
SNR=1.0
SMRF **Simiane la Rot** 4.25 258 *e*Pn Pn 18 23 50.8 +2.4
SNR=1.0
CONA **Conrad Observa** 4.27 45 *e*Pn Pn 18 23 51.1 +2.5
comp=Z,0.8nm,0.3s
CONA *e*Sn Sn 18 24 40.8 +2.7
comp=Z,4.5nm,0.3s
CONA **Conrad Observa** 4.27 45 Pn Pn 18 23 51.1 +2.5
comp=Z,0.8nm,0.3s
CONA Sn Sn 18 24 40.8 +2.7
comp=Z,4.5nm,0.3s
ECH **Echery** 4.30 319 P Pn 18 23 49.5 +0.5
ECH **Echery** 4.30 319 P Pn 18 23 49.5 +0.5
WLS **Welschbruch** 4.36 322 P Pn 18 23 50.2 +0.4
WLS **Welschbruch** 4.36 322 P Pn 18 23 50.2 +0.4
KHC **Kasperske Hory** 4.38 20 *e*PN Pn 18 23 51.1 +1.0
KHC *e*PG Pg 18 24 06.2 -1.8
KHC *e*SN Sn 18 24 40.6 -0.4
KHC *e*SG Sg 18 25 05.0 +0.3
comp=Z,17nm,0.6s
KHC **Kasperske Hory** 4.38 20 Pn Pn 18 23 51.1 +1.0
CDF **Champ du Feu** 4.39 322 *e*Pn Pn 18 23 50.7 +0.4
SNR=1.0
CDF *e*Sn Sn 18 24 40.2 -1.0
comp=Z,5.7nm,0.3s,SNR=1.0
CDF **Champ du Feu** 4.39 322 *e*Pn Pn 18 23 50.7 +0.4
SNR=1.0
CDF *e*Sn Sn 18 24 40.2 -1.0
comp=Z,2.8nm,0.3s,SNR=1.0
HAU **Haudompre** 4.56 313 *e*Pn Pn 18 23 53.0 +0.5
SNR=1.0
HAU *e*Sn Sn 18 24 44.2 -1.0
comp=Z,29nm,0.4s,SNR=1.0
HAU **Haudompre** 4.56 313 *e*Pn Pn 18 23 53.0 +0.5
SNR=1.0
HAU *e*Sn Sn 18 24 44.2 -1.0
comp=Z,14nm,0.4s,SNR=1.0
VIVF **Saint-Julien-l** 4.74 270 *e*Pn Pn 18 23 55.2 +0.2
SNR=1.0
VIVF **Saint-Julien-l** 4.74 270 *e*Pn Pn 18 23 55.2 +0.2
SNR=1.0
ROTZ **Rotzenmuhle** 4.78 7 *e*Pn Pn 18 23 56.1 +0.5
ROTZ **Rotzenmuhle** 4.78 7 Pn Pn 18 23 56.1 +0.5
THEF **They Montfort** 4.88 313 P Pn 18 23 57.5 +0.5
THEF **They Montfort** 4.88 313 P Pn 18 23 57.5 +0.5
NKC **Novy Kostel** 5.26 8 *e*PG Pg 18 24 23.2 -1.6
NKC **Novy Kostel** 5.26 8 Pg Pg 18 24 23.2 -1.6
PRU **Pruhonice** 5.42 22 *e*PG Pg 18 24 24.7 -3.1
PRU *e*SN Sn 18 25 04.7 -1.7
PRU *e*SG Sg 18 25 35.8 -2.1
comp=Z,10nm,0.7s
PRU **Pruhonice** 5.42 22 Pg Pg 18 24 24.7 -3.1
PRU Sg Sg 18 25 35.8 -2.1
comp=Z,10nm,0.7s
GOPC **GO Pecny, Ondr** 5.42 24 *e*PN Pn 18 24 05.8 +1.4
GOPC *e*PG Pg 18 24 25.1 -2.7
GOPC *e*SN Sn 18 25 04.7 -1.8
GOPC *e*SG Sg 18 25 36.7 -1.3
comp=Z,13nm,0.6s
GOPC **GO Pecny, Ondr** 5.42 24 Pn Pn 18 24 05.8 +1.4
LASF **Ste Croix** 5.43 263 *e*Pn Pn 18 24 04.8 +0.3
SNR=1.0
LASF *e*Sn Sn 18 25 02.1 -4.6
comp=Z,2.0nm,0.4s,SNR=1.0
LASF **Ste Croix** 5.43 263 *e*Pn Pn 18 24 04.8 +0.3
SNR=1.0
SMF **Signal de Mont** 5.48 290 *e*Pn Pn 18 24 05.7 +0.5
SNR=1.0
SMF *e*Sn Sn 18 25 05.9 -2.1
comp=Z,14nm,0.6s,SNR=1.0
SMF **Signal de Mont** 5.48 290 *e*Pn Pn 18 24 05.7 +0.5
SNR=1.0
RUP **Ruppelstein** 5.51 330 P Pn 18 24 06.9 +1.3
MEZF **Maizieres J'vi** 5.54 311 *e*Sn Sn 18 25 06.1 -3.4
comp=Z,6.9nm,0.4s,SNR=1.0
MOX **Moxa** 5.63 2 *e*Pn Pn 18 24 07.8 +0.6
MOX **Moxa** 5.63 2 Pn Pn 18 24 07.8 +0.6
LOR **Lormes** 5.66 296 *e*Pn Pn 18 24 07.6 -0.1
SNR=1.0
LOR *e*Sn Sn 18 25 10.7 -1.7
comp=Z,12nm,0.4s,SNR=1.0
LOR **Lormes** 5.66 296 *e*Pn Pn 18 24 07.6 -0.1
SNR=1.0
SSF **Saint Saulge** 5.82 293 *e*Pn Pn 18 24 10.7 +0.9
SNR=1.0
SSF **Saint Saulge** 5.82 293 *e*Pn Pn 18 24 10.7 +0.9
SNR=1.0
AVF **Avril sur Loir** 5.85 290 *e*Pn Pn 18 24 10.1 -0.1
SNR=1.0
AVF **Avril sur Loir** 5.85 290 *e*Pn Pn 18 24 10.1 -0.1
SNR=1.0
PVCC **Panska Ves** 5.92 20 *e*SG Sg 18 25 53.2 -0.8
comp=Z,24nm,0.8s

PVCC	**Panska Ves**	**5.92**	**20**	Sg		**Sg**	18 25 53.2	-0.8
	comp=Z,24nm,0.8s							
BRG	**Berggiesshubel**	**6.11**	**16**	PN		**Pg**	18 24 38.6	-2.3
BRG				SG		**Sg**	18 26 02.3	+2.4
	comp=Z,17nm,1.1s							
VYHS	**Vyhne**	**6.21**	**53**	*e*PN		**Pn**	18 24 15.3	+0.1
VYHS				*e*SN		**Sn**	18 25 21.7	-4.2
KRLC	**Kraliky**	**6.25**	**34**	*e*SG		**Sg**	18 26 04.1	-0.5
KRLC	**Kraliky**	**6.25**	**34**	Sg		**Sg**	18 26 04.1	-0.5
DPC	**Dobruska-Polom**	**6.30**	**30**	*e*PN		Pn	18 24 23.7	+7.3
DPC				*e*PG		**Pg**	18 24 41.8	-2.8
DPC				*e*SN		**Sn**	18 25 24.9	-3.3
DPC				*e*SG		**Sg**	18 26 05.2	-0.9
	comp=Z,8.9nm,0.7s							
UPC	**Upice**	**6.33**	**28**	*e*PN		**Pn**	18 24 17.3	+0.6
UPC				*e*PG		**Pg**	18 24 42.2	-2.9
UPC				*ex*		x	18 26 04.4	
	comp=Z,16nm,0.7s							
UPC	**Upice**	**6.33**	**28**	Pn		**Pn**	18 24 17.3	+0.6
UPC	**Upice**	**6.33**	**28**	Pg		**Pg**	18 24 42.2	-2.9
UPC				Sg		**Sg**	18 26 04.4	-2.5
	comp=Z,16nm,0.7s							
CLL	**Collm**	**6.38**	**9**	*e*Pg		**Pg**	18 24 45.0	-1.2
CLL				*e*Sg		**Sg**	18 26 11.0	+2.2
	comp=Z,18nm,1.1s							

MEX 17 18:23:40.7±0.5, **16°68N**×**96°54W**, **h51**km±8km, **MD3.7, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OXBJ	**Oaxaca**	**0.42**	**335**	*eP*	Pn	18 23 49.4	-2.0
OXBJ				*eS*	Sn	18 23 57.1	-1.9
VHO	**Vista Hermosa**	**0.43**	**334**	*i* P	Pn	18 23 49.6	-1.8
VHO				*eS*	Sn	18 23 57.5	-1.6
HUIG	**Huatulco**	**1.00**	**156**	*eP*	Pn	18 23 57.3	-1.2
HUIG				*eS*	Sn	18 24 09.2	-2.3
PANG	**Puerto Angel**	**1.01**	**177**	*eP*	Pn	18 23 57.6	-1.0
PANG				*i* S	Sn	18 24 09.8	-2.0
PNIG	**Pinotepa**	**1.55**	**259**	*eP*	Pn	18 24 04.4	-1.6
PNIG				*eS*	Sn	18 24 23.1	-1.9
TPIG	**Tehuac#an**	**1.90**	**336**	*eP*	Pn	18 24 10.2	-0.7
TPIG				*i* S	Sn	18 24 32.5	-1.2
TLIG	**Tlapa**	**2.13**	**295**	*i* P	Pn	18 24 13.1	-0.8
TLIG				*i* S	Sn	18 24 37.5	-1.8

IDC ***17*** *18:29:37.6*±*1.1, 35°10N*×*143°40E, h0km, mb3.6/6, mb1 3.7/9, mb1mx3.5/60, mbtmp3.6/9, ML3.5/3, Error ellipse: s-maj=29.5km s-min=20.3km az=79.0*

ISCJB ***17*** *18:29:40.8*±*0.8, 35°14N*±*0°06*×*143°21E*±*0°07, h33km, mb3.6/6, Error ellipse: s-maj=8.6km s-min=7.7km az=25.5*

JMA ***17*** *18:29:40.9*±*0.4, 35°24N*×*143°24E, h71km, M3.5*

ISC 17 18:29:42.8±**1.1, 35°18N**±**0°07**×**143°22E**±**0°09, h35**km**, n16,** σ**1**ϟ**35/22, mb3.5/6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.91**	**255**	P	**Pn**	**18 30 11.9**	**-0.6**
BSO1				S	**Sn**	**18 30 36.2**	**+1.2**
CHOJ	**Chosi**	**2.00**	**286**	P	**Pn**	**18 30 13.5**	**-0.6**
CHOJ				S	**Sn**	**18 30 37.3**	**-0.5**
JHO	**Hitachi**	**2.58**	**304**	P	**Pn**	**18 30 20.2**	**-1.9**
JFT	**Otama**	**3.30**	**316**	S	**Sn**	**18 31 08.0**	**-1.9**
JAG	**Ashikaga**	**3.30**	**293**	P	**Pn**	**18 30 31.3**	**-0.8**
JAG				S	**Sn**	**18 31 08.9**	**-1.2**
JHJ	**Hachijo jima 2**	**3.51**	**235**	Pn	**Pn**	**18 30 33.5**	**-1.4**
	25nm,0.3s,baz=239,slow=12,SNR=5.6						
JHJ				Sn	**Sn**	**18 31 13.4**	**-1.8**
	71nm,0.3s,baz=267,slow=23,SNR=15						
JRY	**Ryogami san**	**3.62**	**285**	P	**Pn**	**18 30 36.5**	**+0.1**
MJAR	**Matsushiro Arr**	**4.29**	**290**	Pn	**Pn**	**18 30 45.6**	**0.0**
	1.8nm,0.3s,baz=92,slow=9.0,SNR=11						
MJAR				Sn	**Sn**	**18 31 36.1**	**+1.6**
	2.2nm,0.3s,baz=162,slow=16,SNR=7.1						
MAT	**Matsushiro**	**4.29**	**290**	P	**Pn**	**18 30 45.9**	**+0.2**
MAT				S	**Sn**	**18 31 31.7**	**-2.8**
KLR	**Kul'dur**	**16.38**	**332**	Pn	**P**	**18 33 32.3**	**-0.2**
	0.1nm,0.3s,baz=136,slow=5.7,SNR=4.7						
SONM	**Songino Array**	**30.05**	**306**	P	**P**	**18 35 50.8**	**+2.2**
	0.5nm,0.8s,baz=79,slow=7.6,SNR=3.7						
ZALV	**Zalesovo Beam**	**44.25**	**314**	P	**P**	**18 37 49.3**	**+0.7**
	0.4nm,0.5s,baz=95,slow=8.7,SNR=2.1						
MKAR	**Makanchi Array**	**46.35**	**304**	P	**P**	**18 38 06.3**	**+0.9**
	0.4nm,0.8s,baz=104,slow=6.1,SNR=3.2						
ILAR	**Eielson Array**	**50.29**	**32**	P	**P**	**18 38 35.0**	**-0.5**
	0.5nm,0.7s,baz=255,slow=6.3,SNR=7.1						
WRA	**Warramunga Arr**	**55.46**	**190**	P	**P**	**18 39 13.4**	**-0.7**
	1.7nm,0.7s,baz=13,slow=7.7,SNR=12						
ASAR	**Alice Springs**	**59.19**	**190**	P	**P**	**18 39 40.5**	**+0.1**
	0.5nm,0.7s,baz=2.4,slow=6.2,SNR=7.0						

BJI ***17*** *18:30:23.8, 45°11N*×*10°77E, h8km, mb4.7/50, mB5.1/33, Ms4.9/14, Ms7 4.5/22*

IDC ***17*** *18:30:26.3*±*0.4, 44°86N*×*11°29E, h0km, mb4.4/36, mb1 4.4/48, mb1mx4.4/62, mbtmp4.4/48, ML4.0/11, MS4.0/35, Ms1 4.0/35, ms1mx3.8/55, Error ellipse: s-maj=8.9km s-min=7.8km az=125.0*

MOS ***17*** *18:30:27.6*±*1.1, 45°05N*×*11°25E, h15km, mb4.9/53, MS4.1/38, Error ellipse: s-maj=3.5km s-min=2.7km az=67.8*

ROM ***17*** *18:30:27.3*±*0.1, 45°01N*×*11°37E, h2km, Ml4.8/55, Error ellipse: s-maj=1.4km s-min=1.0km az=86.0*

ZUR ***17*** *18:30:27.5, 44°93N*×*11°23E, h10km*±*1km, ML5.0/23*

BNS ***17*** *18:30:28.8*±*0.4, 44°92N*×*11°41E, h10km, ML4.5*

LDG ***17*** *18:30:28.0*±*0.1, 45°02N*×*11°41E, h10km, Md4.5/4, Ml4.9/44, Error ellipse: s-maj=3.5km s-min=2.6km az=1.0*

ISCJB ***17*** *18:30:28.5*±*0.2, 44°978N*±*0°009*×*11°29E*±*0°01, h23km*±*1km, mb4.7/154, MS4.1/36, Error ellipse: s-maj=1.5km s-min=1.3km az=2.8*

PDG ***17*** *18:30:28.6*±*0.9, 45°02N*×*11°30E, h21km*±*1km, ML4.6/13, Error ellipse: s-maj=0.6km s-min=0.8km az=0.0*

NEIC ***17*** *18:30:28.1*±*0.6, 45°00N*×*11°29E, h6km*±*3km, mb4.9/94, ML5.0(ZUR), ML4.7(ROM), Error ellipse: s-maj=2.9km s-min=2.4km az=188.0*

NEIC Felt [IV] at Medolla; [III] at Brescia, Mantova and Modena; [II] at Milan, Monza, Padova, Parma, Trento, Venice and Verona. Felt widely in northern Italy.

STR ***17*** *18:30:28.4*±*0.4, 45°01N*×*11°31E, h10km, Ml5.1, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

CSEM ***17*** *18:30:28.1*±*0.1, 45°01N*×*11°28E, h8km, mb4.9/99, Error ellipse: s-maj=1.9km s-min=1.7km az=117.0*

BGR ***17*** *18:30:29.6*±*0.5, 44°96N*×*11°30E, h10km, ML5.0/18, Error ellipse: s-maj=8.9km s-min=6.7km az=2.0*

PRU ***17*** *18:30:29.9, 45°03N*×*11°33E, h17km, M4.9*

GEN ***17*** *18:30:29.2, 45°01N*×*11°41E, h8km, ML4.9*

THE ***17*** *18:30:31.1, 44°82N*×*11°70E, h7km*±*33km, Error ellipse: s-maj=33.9km s-min=4.5km az=298.0*

ISC 17 18:30:29.0±**0.6, 45°03N**±**0°01**×**11°26E**±**0°01, h16**km±3km**, n1373,** σ**1**ϟ**56/1647, mb4.8/154, MS4.1/36, 70C-95D, Northern Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAZZ	**Gazzo Veronese**	**0.14**	**305**	⇑*e*Pg	**Pg**	**18 30 32.6**	**-0.3**
GAZZ	**Gazzo Veronese**	**0.14**	**305**	*eP*	**Pg**	**18 30 32.6**	**-0.3**
SBPO	**S.Benedetto Po**	**0.24**	**274**	⇓*e*Pg	**Pg**	**18 30 34.2**	**-0.2**
SBPO				Sg	**Sb**	**18 30 40.1**	**+1.0**
SBPO	**S.Benedetto Po**	**0.24**	**274**	⇓*e*Pg	**Pg**	**18 30 34.2**	**-0.2**
SBPO				Sg	**Sb**	**18 30 40.1**	**+1.0**
RAVA	**Ravarino**	**0.29**	**200**	⇓*e*Pg	**Pg**	**18 30 33.7**	**-1.6**
RAVA				Sg	**Sg**	**18 30 39.3**	**-0.2**
	198µm,0.4s						
RAVA	**Ravarino**	**0.29**	**200**	P	**Pg**	**18 30 33.9**	**-1.4**
RAVA				Sg	**Sg**	**18 30 39.3**	**-0.2**
	198µm,0.4s						
RAVA	**Ravarino**	**0.29**	**200**	P	**Pg**	**18 30 33.9**	**-1.4**
FIU	**Minerbio Fiu**	**0.43**	**157**	⇓*e*Pg	**Pg**	**18 30 35.6**	**-2.0**
FIU				Sg	**Sg**	**18 30 42.3**	**-1.1**
	334µm,1.7s						
FIU	**Minerbio Fiu**	**0.43**	**157**	P	**Pg**	**18 30 35.8**	**-1.8**
FIU				Sg	**Sg**	**18 30 42.3**	**-1.1**
	334µm,1.7s						
FIU	**Minerbio Fiu**	**0.43**	**157**	P	**Pg**	**18 30 35.8**	**-1.8**
TEOL	**Teolo**	**0.44**	**41**	⇓*e*Pg	**Pg**	**18 30 37.3**	**-0.5**
TEOL				*e*Sg	**Sb**	**18 30 45.2**	**+0.4**
TEOL	**Teolo**	**0.44**	**41**	*e*Pg	**Pg**	**18 30 37.3**	**-0.5**
TEOL				*e*Sg	**Sb**	**18 30 45.2**	**+0.4**
NOVE	**Novellara**	**0.45**	**239**	⇓*e*Pg	**Pg**	**18 30 37.1**	**-1.0**
NOVE				Sg	**Sb**	**18 30 46.3**	**+1.2**
	215µm,0.7s						
NOVE	**Novellara**	**0.45**	**239**	⇓*e*Pg	**Pg**	**18 30 37.1**	**-1.0**
NOVE	**Novellara**	**0.45**	**239**	P	**Pg**	**18 30 37.5**	**-0.6**
NOVE				Sg	**Sb**	**18 30 46.3**	**+1.2**
	215µm,0.7s						
NOVE	**Novellara**	**0.45**	**239**	P	**Pg**	**18 30 37.5**	**-0.6**
ADRI	**Adria, Italy**	**0.54**	**89**	⇓*e*Pg	**Pg**	**18 30 39.1**	**-0.6**
ADRI	**Adria, Italy**	**0.54**	**89**	*e*P	**Pg**	**18 30 39.1**	**-0.6**
ROVR	**Rover˜¤ Verone**	**0.63**	**348**	⇓*e*Pg	**Pg**	**18 30 41.2**	**-0.3**
ROVR	**Rover˜¤ Verone**	**0.63**	**348**	⇓*e*Pg	**Pg**	**18 30 41.2**	**-0.3**
MTRZ	**Monterenzio**	**0.67**	**167**	⇓*e*Pg	**Pn**	**18 30 43.0**	**-1.0**
MTRZ				Sg	**Sb**	**18 30 52.0**	**+0.5**
	91µm,0.9s						
MTRZ	**Monterenzio**	**0.67**	**167**	⇓*e*Pg	**Pn**	**18 30 43.0**	**-1.0**
MTRZ				Sg	**Sb**	**18 30 52.0**	**+0.5**
	91µm,0.9s						
ZCCA	**Zocca**	**0.71**	**197**	⇓*e*Pg	**Pb**	**18 30 42.6**	**-0.5**
ZCCA				Sg	**Sn**	**18 30 53.7**	**-1.4**
ZCCA	**Zocca**	**0.71**	**197**	⇓*e*Pg	**Pb**	**18 30 42.6**	**-0.5**
ZCCA				Sg	**Sn**	**18 30 53.7**	**-1.4**
ZCCA	**Zocca**	**0.71**	**197**	P	**Pb**	**18 30 42.6**	**-0.5**
BALD	**Monte Baldo**	**0.72**	**335**	⇓*e*Pg	**Pg**	**18 30 42.9**	**-0.3**
BALD				*e*Sg	**Sn**	**18 30 55.7**	**0.0**
BALD	**Monte Baldo**	**0.72**	**335**	*e*Pg	**Pg**	**18 30 42.9**	**-0.3**
BALD				*e*Sg	**Sn**	**18 30 55.7**	**0.0**
PRMA	**PARMA**	**0.72**	**249**	⇑*i*Pg	**Pb**	**18 30 43.5**	**+0.2**
PRMA				Sg	**Sn**	**18 30 55.5**	**+0.1**
	65µm,1.1s						
PRMA	**PARMA**	**0.72**	**249**	⇑*i*Pg	**Pb**	**18 30 43.5**	**+0.2**
PRMA				Sg	**Sn**	**18 30 55.5**	**+0.1**
	65µm,1.1s						
IMOL	**Imola, Italy**	**0.76**	**153**	Pg	**Pg**	**18 30 43.3**	**-0.5**
	7041µm,29.0s						
IMOL	**Imola, Italy**	**0.76**	**153**	Pg	**Pg**	**18 30 43.3**	**-0.5**
	7041µm,29.0s						
SALO	**Salr**	**0.78**	**319**	⇓*i*Pg	**Pg**	**18 30 44.1**	**-0.2**
SALO				Sg	**Sn**	**18 30 57.6**	**+0.7**
	93µm,0.6s						
SALO	**Salr**	**0.78**	**319**	⇓*e*Pn	**Pg**	**18 30 44.1**	**-0.2**
	83µm,0.6s						
SALO	**Salr**	**0.78**	**319**	⇓*i*Pg	**Pg**	**18 30 44.1**	**-0.2**
SALO				Sg	**Sn**	**18 30 57.6**	**+0.7**
	93µm,0.6s						
DDS	**Dosso del Somm**	**0.85**	**357**	⇓*e*Pg	**Pg**	**18 30 45.1**	**-0.5**
DDS				*e*Sg	**Sn**	**18 30 58.9**	**0.0**
DDS	**Dosso del Somm**	**0.85**	**357**	*e*Pg	**Pg**	**18 30 45.1**	**-0.5**
DDS				*e*Sg	**Sn**	**18 30 58.8**	**0.0**
ERBM	**Eremo**	**0.86**	**225**	⇓*e*Pg	**Pb**	**18 30 45.4**	**-0.3**
	108µm,1.5s						
ERBM	**Eremo**	**0.86**	**225**	⇓*e*Pg	**Pb**	**18 30 45.4**	**-0.3**
	108µm,1.5s						
MAGA	**Magasa**	**0.87**	**329**	⇓*e*Pg	**Pb**	**18 30 45.3**	**-0.5**
MAGA				Sg	**Sn**	**18 30 59.5**	**+0.4**
	147µm,0.6s						
MAGA	**Magasa**	**0.87**	**329**	⇓*e*Pg	**Pb**	**18 30 45.3**	**-0.5**
MAGA				Sg	**Sn**	**18 30 59.5**	**+0.4**
	147µm,0.6s						
FNVD	**Fontana Vidola**	**0.87**	**187**	⇓*i*Pg	**Pg**	**18 30 44.1**	**-1.9**
FNVD				Sg	**Sn**	**18 30 58.0**	**-1.1**
	28µm,0.8s						
FNVD	**Fontana Vidola**	**0.87**	**187**	⇓*i*Pg	**Pg**	**18 30 44.1**	**-1.9**
FNVD				Sg	**Sn**	**18 30 58.0**	**-1.1**
	28µm,0.8s						
CGRP	**Cima Grappa**	**0.93**	**24**	⇓*e*Pg	**Pb**	**18 30 46.3**	**-0.6**
CGRP				Sg	**Sb**	**18 30 59.1**	**0.0**
	19µm,0.7s						
CGRP	**Cima Grappa**	**0.93**	**24**	⇓*i*Pn	**Pb**	**18 30 46.3**	**-0.6**
	53µm,0.7s						
CGRP	**Cima Grappa**	**0.93**	**24**	⇓*i*Pg	**Pb**	**18 30 46.2**	**-0.6**
CGRP				*i* Sg	**Sn**	**18 31 01.4**	**+0.6**
CGRP	**Cima Grappa**	**0.93**	**24**	⇓*e*Pg	**Pb**	**18 30 46.3**	**-0.6**
CGRP				Sg	**Sb**	**18 30 59.1**	**0.0**
	19µm,0.7s						
CGRP	**Cima Grappa**	**0.93**	**24**	⇓*i*Pn	**Pb**	**18 30 46.3**	**-0.6**
PZZT	**Monte Pizzetto**	**0.94**	**198**	⇓*e*Pg	**Pb**	**18 30 45.9**	**-1.2**
	21µm,0.8s						
PZZT	**Monte Pizzetto**	**0.94**	**198**	⇓*e*Pg	**Pb**	**18 30 45.9**	**-1.2**
	21µm,0.8s						
MTLO	**Montello**	**0.98**	**37**	*e*Pg	**Pb**	**18 30 47.5**	**-0.1**
MTLO				*e*Sg	**Sn**	**18 31 03.2**	**+1.5**
MTLO	**Montello**	**0.98**	**37**	*e*Pg	**Pb**	**18 30 47.5**	**-0.1**
MTLO				*e*Sg	**Sn**	**18 31 03.2**	**+1.5**
SEI	**Scarperia**	**0.98**	**176**	Pg	**Pb**	**18 30 46.2**	**-1.5**
SEI	**Scarperia**	**0.98**	**176**	Pg	**Pb**	**18 30 46.2**	**-1.5**
GRAM	**Graiana**	**1.01**	**238**	P	**Pb**	**18 30 47.8**	**-0.4**
PANI	**Panarotta**	**1.02**	**3**	⇓*e*Pg	**Pb**	**18 30 48.1**	**-0.3**
PANI				*e*Sg	**Sn**	**18 31 04.1**	**+1.1**
PANI	**Panarotta**	**1.02**	**3**	*e*Pg	**Pb**	**18 30 48.1**	**-0.3**
PANI				*e*Sg	**Sn**	**18 31 04.1**	**+1.1**
IESO	**Jesolo**	**1.03**	**61**	⇑*e*Pg	**Pb**	**18 30 48.8**	**+0.2**
IESO				*e*Sg	**Sn**	**18 31 04.6**	**+1.6**
IESO	**Jesolo**	**1.03**	**61**	*e*Pg	**Pb**	**18 30 48.8**	**+0.2**
IESO				*e*Sg	**Sn**	**18 31 04.6**	**+1.6**
SARO	**Sassorosso**	**1.05**	**216**	P	**Pb**	**18 30 48.5**	**-0.3**
RNI	**Roncone**	**1.05**	**335**	⇓*e*Pg	**Pb**	**18 30 48.6**	**-0.3**
RNI				*e*Sg	**Sn**	**18 31 04.8**	**+1.0**
POPM	**Popiglio**	**1.05**	**200**	P	**Pb**	**18 30 47.8**	**-1.1**
VLC	**Villacollemand**	**1.07**	**216**	Pg	**Pb**	**18 30 48.1**	**-1.2**
	19µm,1.0s						
VLC	**Villacollemand**	**1.07**	**216**	Pg	**Pb**	**18 30 48.1**	**-1.2**
	19µm,1.0s						
VLC	**Villacollemand**	**1.07**	**216**	*e*Pn	**Pb**	**18 30 48.8**	**-0.4**
VLC	**Villacollemand**	**1.07**	**216**	*e*Pn	**Pb**	**18 30 48.8**	**-0.4**
BDI	**Bagni Di Lucca**	**1.08**	**206**	Pg	**Pb**	**18 30 47.6**	**-1.8**
BDI				Sg	**Sn**	**18 31 05.5**	**+1.2**
	23µm,0.7s						
BDI	**Bagni Di Lucca**	**1.08**	**206**	P	**Pg**	**18 30 49.9**	**0.0**
BDI				S	**Sn**	**18 31 06.5**	**+2.2**
BDI	**Bagni Di Lucca**	**1.08**	**206**	Pg	**Pb**	**18 30 47.6**	**-1.8**
BDI	**Bagni Di Lucca**	**1.08**	**206**	P	**Pg**	**18 30 49.9**	**0.0**
BDI				Sg	**Sn**	**18 31 05.5**	**+1.2**
	23µm,0.7s						
BDI				S	**Sn**	**18 31 06.5**	**+2.2**
BDI	**Bagni Di Lucca**	**1.08**	**206**	P	**Pg**	**18 30 49.9**	**0.0**
BDI				S	**Sn**	**18 31 06.5**	**+2.2**
PTF	**Prato**	**1.08**	**187**	Pg	**Pb**	**18 30 48.3**	**-1.1**
PTF	**Prato**	**1.08**	**187**	Pg	**Pb**	**18 30 48.3**	**-1.1**
CTL8	**Castelleone**	**1.09**	**283**	Pg	**Pg**	**18 30 50.6**	**+0.5**
	50µm,0.7s						
CTL8	**Castelleone**	**1.09**	**283**	Pg	**Pg**	**18 30 50.6**	**+0.5**
	50µm,0.7s						
VMG	**Vicchio**	**1.09**	**169**	Pg	**Pb**	**18 30 48.1**	**-1.4**
VMG	**Vicchio**	**1.09**	**169**	Pg	**Pb**	**18 30 48.1**	**-1.4**
VARN	**Col Varnada, M**	**1.13**	**31**	⇓*e*Pg	**Pb**	**18 30 49.5**	**-0.8**
VARN				*e*Sg	**Sg**	**18 31 07.0**	**+1.4**
VARN	**Col Varnada, M**	**1.13**	**31**	*e*Pg	**Pb**	**18 30 49.5**	**-0.8**
VARN				*e*Sg	**Sg**	**18 31 07.1**	**+1.4**
MABI	**Malga Bissina**	**1.15**	**333**	⇓*e*Pg	**Pb**	**18 30 50.0**	**-0.6**
MABI				Sg	**Sg**	**18 31 07.2**	**+0.9**
	18µm,1.3s						
MABI	**Malga Bissina**	**1.15**	**333**	⇓*i*Pn	**Pb**	**18 30 50.1**	**-0.6**
	26µm,0.7s						
MABI	**Malga Bissina**	**1.15**	**333**	⇓*e*Pg	**Pb**	**18 30 50.0**	**-0.6**
MABI				Sg	**Sg**	**18 31 07.2**	**+0.9**
	18µm,1.3s						
CODM	**Codolo**	**1.19**	**238**	P	**Pg**	**18 30 51.4**	**-0.7**
SFI	**Santa Sofia**	**1.20**	**159**	⇑*e*Pg	**Pn**	**18 30 50.6**	**-0.7**
	31µm,1.1s						
SFI	**Santa Sofia**	**1.20**	**159**	P	**Pn**	**18 30 50.9**	**-0.4**
SFI				S	**Sg**	**18 31 09.0**	**+1.1**
SFI	**Santa Sofia**	**1.20**	**159**	⇑*e*Pg	**Pn**	**18 30 50.6**	**-0.7**
	31µm,1.1s						
SFI	**Santa Sofia**	**1.20**	**159**	P	**Pn**	**18 30 50.9**	**-0.4**
SFI				S	**Sg**	**18 31 09.0**	**+1.1**
MAIM	**Mastiano**	**1.25**	**206**	⇑*e*Pg	**Pn**	**18 30 51.4**	**-0.4**
MAIM				Sg	**Sg**	**18 31 10.4**	**+1.1**
	25µm,0.7s						
MAIM	**Mastiano**	**1.25**	**206**	⇑*e*Pg	**Pn**	**18 30 51.4**	**-0.4**
MAIM	**Mastiano**	**1.25**	**206**	P	**Pb**	**18 30 52.0**	**-0.2**
MAIM				Sg	**Sg**	**18 31 10.4**	**+1.1**
	25µm,0.7s						
FIR	**Firenze**	**1.26**	**180**	Pg	**Pb**	**18 30 52.1**	**-0.3**
	36µm,0.9s						
FIR	**Firenze**	**1.26**	**180**	P	**Pg**	**18 30 53.0**	**-0.3**
FIR	**Firenze**	**1.26**	**180**	Pg	**Pb**	**18 30 52.1**	**-0.3**
	36µm,0.9s						
FIR	**Firenze**	**1.26**	**180**	P	**Pg**	**18 30 53.0**	**-0.3**
FIR	**Firenze**	**1.26**	**180**	P	**Pg**	**18 30 53.0**	**-0.3**
CRMI	**Carmignano**	**1.26**	**190**	Pg	**Pn**	**18 30 50.5**	**-1.5**
	17µm,0.8s						
CRMI	**Carmignano**	**1.26**	**190**	Pg	**Pn**	**18 30 50.5**	**-1.5**
	17µm,0.8s						
CAE	**Caneva**	**1.28**	**40**	*e*Pg	**Pn**	**18 30 52.0**	**-0.3**
CAE				*e*Sg	**Sg**	**18 31 11.9**	**+1.6**
CAE	**Caneva**	**1.28**	**40**	*e*Pg	**Pn**	**18 30 52.0**	**-0.3**
CAE				*e*Sg	**Sg**	**18 31 11.9**	**+1.6**
ASQU	**Asqua**	**1.29**	**163**	⇓*e*Pg	**Pn**	**18 30 51.0**	**-1.5**
	22µm,1.1s						
ASQU	**Asqua**	**1.29**	**163**	⇓*e*Pg	**Pn**	**18 30 51.0**	**-1.5**
	22µm,1.1s						
T0502	**Localit˜ San**	**1.29**	**151**	Pg	**Pn**	**18 30 52.1**	**-0.4**
	12µm,0.8s						
FAU	**Forcella Aurin**	**1.30**	**23**	*e*Pg	**Pn**	**18 30 52.9**	**+0.1**
FAU				*e*Sg	**Sg**	**18 31 11.6**	**+0.5**
FAU	**Forcella Aurin**	**1.30**	**23**	*e*Pg	**Pn**	**18 30 52.8**	**+0.1**
FAU				*e*Sg	**Sg**	**18 31 11.6**	**+0.5**
BOB	**Bobbio (Coli)**	**1.31**	**259**	⇑*i*Pg	**Pg**	**18 30 53.8**	**-0.6**
BOB				Sg	**Sg**	**18 31 14.1**	**+2.6**
	41µm,0.9s						
BOB	**Bobbio (Coli)**	**1.31**	**259**	⇑*i*P	**Pb**	**18 30 53.4**	**0.0**
BOB	**Bobbio (Coli)**	**1.31**	**259**	⇑*i*Pn	**Pb**	**18 30 53.4**	**0.0**
	73µm,0.9s						
BOB	**Bobbio (Coli)**	**1.31**	**259**	⇑*i*Pn	**Pb**	**18 30 53.4**	**0.0**
	73µm,0.9s						
BOB	**Bobbio (Coli)**	**1.31**	**259**	⇑*i*Pg	**Pg**	**18 30 53.8**	**-0.6**
BOB				Sg	**Sg**	**18 31 14.1**	**+2.6**
	41µm,0.9s						
POLC	**Polcenigo**	**1.32**	**41**	Pg	**Pn**	**18 30 52.6**	**-0.3**
POLC	**Polcenigo**	**1.32**	**41**	⇓*e*Pg	**Pn**	**18 30 52.5**	**-0.3**
POLC				*e*Sg	**Sg**	**18 31 13.1**	**+1.4**
POLC	**Polcenigo**	**1.32**	**41**	Pg	**Pn**	**18 30 52.6**	**-0.3**
POLC				*e*Sg	**Sg**	**18 31 13.1**	**+1.4**
AGOR	**Agordo**	**1.37**	**24**	Pg	**Pn**	**18 30 53.5**	**0.0**
	12µm,0.8s						
AGOR	**Agordo**	**1.37**	**24**	⇑*i*Pg	**Pn**	**18 30 53.5**	**0.0**
KOSI	**Kohlern**	**1.43**	**3**	Pg	**Pb**	**18 30 55.3**	**-0.2**
KOSI				Sg	**Sg**	**18 31 15.5**	**+0.2**
	24µm,0.8s						
KOSI	**Kohlern**	**1.43**	**3**	⇓*i*Pn	**Pn**	**18 30 53.9**	**-0.7**
	53µm,0.8s						
KOSI	**Kohlern**	**1.43**	**3**	Pg	**Pb**	**18 30 55.3**	**-0.2**
KOSI				Sg	**Sg**	**18 31 15.5**	**+0.2**
	24µm,0.8s						
KOSI	**Kohlern**	**1.43**	**3**	⇓*i*Pn	**Pn**	**18 30 53.9**	**-0.7**
MSSA	**Maissana**	**1.44**	**241**	Pg	**Pb**	**18 30 55.0**	**-0.5**
MSSA				Sg	**Sg**	**18 31 16.4**	**+1.0**
	20µm,0.7s						
MSSA	**Maissana**	**1.44**	**241**	Pg	**Pb**	**18 30 55.0**	**-0.5**
MSSA				Sg	**Sg**	**18 31 16.4**	**+1.0**
	20µm,0.7s						
APPI	**Appiano**	**1.45**	**359**	Pg	**Pn**	**18 30 55.3**	**+0.6**
	15µm,0.3s						
APPI	**Appiano**	**1.45**	**359**	Pg	**Pn**	**18 30 55.3**	**+0.6**
	15µm,0.3s						
CPGN	**Carpegna, Ital**	**1.45**	**148**	Pg	**Pb**	**18 30 55.1**	**-0.6**
	24593µm,36.0s						
CPGN	**Carpegna, Ital**	**1.45**	**148**	Pg	**Pb**	**18 30 55.1**	**-0.6**
BOSI	**Bolzano**	**1.46**	**2**	*e*Pn	**Pn**	**18 30 55.2**	**+0.4**
	85µm,1.6s						
BOSI	**Bolzano**	**1.46**	**2**	*e*Pn	**Pn**	**18 30 55.2**	**+0.4**
CIMO	**Cimolais**	**1.52**	**32**	⇓*i*Pg	**Pn**	**18 30 55.0**	**-0.6**

SABO	M.te Sabotino	1.90	59⇓	ePn	Pn	18 31 00.6	-0.2
SABO	M.te Sabotino	1.90	59	Pg	Pn	18 31 00.5	-0.3
	10µm,0.7s						
ABTA	Abfaltersbach	1.93	27	ePn	Pn	18 31 01.9	+0.7
	85nm,0.5s,SNR=959						
ABTA				Sn	Sb	18 31 27.3	-0.4
	917nm,0.3s						
VDL	Val di Lei	1.93	319⇓	iP	Pn	18 31 00.1	-1.3
VDL	Val di Lei	1.93	319⇓	iPn	Pn	18 31 00.1	-1.3
	14µm,0.9s						
VDL	Val di Lei	1.93	319	i P	Pn	18 31 00.1	-1.3
TRIF	Trifonti	1.94	188⇑	ePg	Pn	18 31 00.5	-0.8
	7µm,1.2s						
TRIF	Trifonti	1.94	188⇑	ePg	Pn	18 31 00.5	-0.8
	7µm,1.2s						
ZOU	Zoufplan	1.94	38	ePn	Pb	18 31 03.7	-0.5
ARVD	Arcevia	1.95	141	Pg	Pn	18 31 00.9	-0.6
	5µm,0.9s						
ARVD	Arcevia	1.95	141	Pg	Pn	18 31 00.9	-0.6
	5µm,0.9s						
TUE	Stuetta	1.97	318	Pg	Pn	18 31 02.9	+1.0
	7µm,0.5s						
TUE	Stuetta	1.97	318	ePn	Pn	18 31 03.0	+1.0
TUE	Stuetta	1.97	318	ePn	Pn	18 31 03.0	+1.0
ROBS	Robic	1.99	52	ePn	Pn	18 31 01.4	-0.7
ROBS				eSn	Sn	18 31 26.6	0.0
	comp=Z,3µm,0.5s						
PCP	Piancastagn	2.00	257	Pg	Pn	18 31 03.2	+1.0
	comp=Z,8µm,0.6s						
PCP	Piancastagn	2.00	257	Pg	Pn	18 31 03.2	+1.0
	comp=Z,8µm,0.6s						
ATTE	AVT- Monte Tez	2.00	156⇑	ePg	Pn	18 31 01.6	-0.6
	comp=Z,8µm,1.1s						
ATTE	AVT- Monte Tez	2.00	156⇑	ePg	Pn	18 31 01.6	-0.6
	comp=Z,8µm,1.1s						
DAVOX	Davos/Dischmat	2.00	332	Pn	Pb	18 31 04.3	-0.8
	comp=Z,163nm,0.3s,baz=156,slow=12,SNR=719						
DAVOX				Lg	Lg	18 31 34.9	
	comp=Z,634nm,0.3s,baz=334,slow=17,SNR=12						
DAVOX				LR	LR	18 31 59.8	
	comp=Z,5µm,18.9s,baz=128,slow=43						
DAVOX	Davos/Dischmat	2.00	332	ePn	Pn	18 31 03.8	+1.5
	comp=Z,13µm,0.5s						
DAVOX	Davos/Dischmat	2.00	332	ePn	Pn	18 31 03.8	+1.5
RISI	Rein	2.00	16	ePn	Pn	18 31 02.5	+0.2
	comp=Z,28µm,0.5s						
SKDS	Skadanscina	2.01	74	i Pn	Pn	18 31 00.9	-1.5
SKDS				eSn	Sn	18 31 25.4	-1.7
	comp=Z,2µm,0.3s						
FETA	Feichten	2.02	350	Pn	Pn	18 31 04.2	+1.5
	comp=Z,727nm,0.5s,SNR=820						
FETA				Sn	Sn	18 31 29.2	+1.5
	comp=Z,2µm,0.5s						
DRE	Drenchia	2.02	55⇓	ePn	Pn	18 31 02.2	-0.4
DRE				eSn	Sn	18 31 28.6	+1.0
VOJS	Vojsko	2.10	61	ePn	Pn	18 31 02.8	-0.8
VOJS				eSn	Sn	18 31 29.1	-0.3
	comp=Z,2µm,0.4s						
SNTG	Esanatoglia	2.15	145⇑	ePg	Pn	18 31 03.8	-0.5
	comp=Z,4µm,0.9s						
SNTG	Esanatoglia	2.15	145⇑	ePg	Pn	18 31 03.8	-0.5
	comp=Z,4µm,0.9s						
ACOM	Acomizza, Ital	2.19	45	ePn	Pn	18 31 05.6	+0.7
ACOM				eSn	Sg	18 31 39.4	0.0
MGAB	Montegabbione	2.21	164⇑	ePg	Pn	18 31 04.3	-0.8
	comp=Z,7µm,1.0s						
MGAB	Montegabbione	2.21	164⇑	ePg	Pn	18 31 04.3	-0.8
	comp=Z,7µm,1.0s						
WTTA	Wattenberg	2.25	7	ePb	Pb	18 31 07.8	-1.6
	SNR=740						
WTTA	Wattenberg	2.25	7	eP	Pn	18 31 04.3	-1.5
WTTA	Wattenberg	2.25	7	ePn	Pn	18 31 04.3	-1.5
	comp=Z,12µm,0.8s						
WTTA	Wattenberg	2.25	7	ePn	Pb	18 31 07.7	-1.6
WTTA	Wattenberg	2.25	7	eP	Pn	18 31 04.3	-1.5
WTTA	Wattenberg	2.25	7	ePn	Pn	18 31 04.3	-1.5
MYKA	Terra Mystica	2.31	45	Pn	Pn	18 31 06.7	+0.2
	comp=Z,9.4nm,0.2s,SNR=203						
MYKA				Sn	Sn	18 31 36.2	+1.6
	comp=Z,936nm,0.4s						
FUSIO	Fusio	2.31	309	ePn	Pn	18 31 07.4	+0.8
	comp=Z,26µm,0.7s						
WATA	Walderalm	2.31	5	ePn	Pn	18 31 08.5	+1.9
	SNR=1322						
MOTA	Moosalm	2.31	357	ePn	Pn	18 31 08.8	+2.1
	comp=Z,214nm,0.2s,SNR=2504						
MOTA				Sg	Sg	18 31 43.3	-0.2
	comp=Z,1µm,0.4s						
PLONS	Plons/SG	2.41	328	ePn	Pn	18 31 07.4	-0.4
	comp=Z,8µm,1.2s						
PLONS	Plons/SG	2.41	328	ePn	Pn	18 31 07.4	-0.4
DAVA	Damuels	2.45	337	Pn	Pb	18 31 11.0	-1.8
	comp=Z,184nm,0.3s,SNR=246						
DAVA				Sn	Sn	18 31 39.1	+0.9
DAVA	Damuels	2.45	337⇓	ePn	Pn	18 31 08.8	+0.3
	comp=Z,15µm,0.8s						
DAVA	Damuels	2.45	337	ePn	Pb	18 31 11.0	-1.8
DAVA	Damuels	2.45	337⇓	ePn	Pn	18 31 08.8	+0.3
OBER	Oberstdorf	2.47	345	ePn	Pn	18 31 11.1	+2.4
RETA	Reutte	2.48	352	ePn	Pn	18 31 11.2	+2.3
	comp=Z,262nm,0.3s,SNR=168						
RETA				Sn	Sn	18 31 40.7	+1.9
	comp=Z,529nm,0.4s						
KBA	Koelnbreinsper	2.51	35	Pn	Pn	18 31 10.4	+1.0
	comp=Z,216nm,0.3s,SNR=437						
KBA				Sn	Sn	18 31 40.4	+0.7
	comp=Z,1µm,0.3s						
KBA	Koelnbreinsper	2.51	35	P	Pn	18 31 10.1	+0.8
KBA	Koelnbreinsper	2.51	35	ePn	Pn	18 31 10.0	+0.7
KBA				eSg	Sg	18 31 49.1	-0.6
KBA	Koelnbreinsper	2.51	35	P	Pn	18 31 10.1	+0.8
LJU	Ljubljana	2.51	65	ePn	Pn	18 31 08.6	-0.5
LJU				e		18 31 15.0	
LJU				eSn	Sn	18 31 40.3	+0.8
	comp=Z,4µm,0.7s						
TRAV	Traversella	2.53	282⇑	ePn	Pn	18 31 08.2	-1.3
	comp=Z,51µm,0.4s						
MMK	Mattmark	2.53	295⇓	eP	Pn	18 31 10.3	+0.6
MMK	Mattmark	2.53	295⇓	ePn	Pn	18 31 10.3	+0.6
	comp=Z,26µm,0.7s						
MMK	Mattmark	2.53	295	eP	Pn	18 31 10.3	+0.6
MMK	Mattmark	2.53	295⇓	ePn	Pn	18 31 10.3	+0.6
NVLJ	Novalja	2.61	99	i Pn	Pn	18 31 09.5	-1.1
NVLJ				Sn	Sn	18 31 40.4	-1.6
VISS	Visnje	2.63	72	i Pn	Pn	18 31 10.4	-0.5
VISS				eSn	Sn	18 31 41.3	-1.3
	comp=Z,1µm,0.5s						
OBKA	Obir	2.73	56	Pn	Pn	18 31 12.4	0.0
	comp=Z,10nm,0.2s,SNR=43						
OBKA				Sg	Sg	18 31 57.2	+0.3
	comp=Z,2µm,0.4s						
OBKA	Obir	2.73	56	ePn	Pn	18 31 12.6	+0.2
OBKA				eSg	Sg	18 31 58.8	+1.9
RSP	Reno Superiore	2.83	274	ePn	Pn	18 31 11.1	-2.6
	comp=Z,6µm,0.4s						
LKBD2	Leukerbad 2	2.87	299	ePn	Pn	18 31 11.4	-2.9
RJOB	Jochberg	2.91	21	ePn	Pn	18 31 16.3	+1.6
LSD	Lago del Serru	2.95	280⇑	ePn	Pn	18 31 11.4	-4.0
	comp=Z,6µm,0.7s						
PGF	Pioggiola	2.98	214	ePn	Pn	18 31 14.9	-0.8
	SNR=1.0						
PGF				eSn	Sn	18 31 50.5	-0.6
	comp=Z,954nm,0.3s,SNR=1.0						
PGF	Pioggiola	2.98	214	eP	Pn	18 31 14.9	-0.8
PGF				e		18 31 50.5	
PGF	Pioggiola	2.98	214	eP	Pn	18 31 14.9	-0.8
PGF				eS	Sn	18 31 50.5	-0.6
PGF	Pioggiola	2.98	214	ePn	Pn	18 31 14.9	-0.8
PGF				eSn	Sn	18 31 50.5	-0.6
SBF	Sospel	2.98	248	ePn	Pn	18 31 15.9	+0.2
	SNR=1.0						
SBF				eSn	Sn	18 31 50.9	-0.2
	comp=Z,3µm,0.3s,SNR=1.0						
SBF	Sospel	2.98	248	eP	Pn	18 31 15.9	+0.2
SBF				e		18 31 50.9	
SBF	Sospel	2.98	248	eP	Pn	18 31 15.9	+0.2
SBF				eS	Sn	18 31 50.9	-0.2
SBF	Sospel	2.98	248	ePn	Pn	18 31 15.9	+0.2
SBF				eSn	Sn	18 31 50.9	-0.2
OZLJ	Ozalj	3.02	77	ePn	Pn	18 31 16.5	+0.3
LUCF	Luceram	3.02	249	P	Pn	18 31 16.9	+0.5
LUCF				S	Sb	18 31 56.5	-2.8
OG22	Abries	3.07	268	P	Pn	18 31 17.1	0.0
REVF	Revere	3.08	247	P	Pn	18 31 17.9	+0.9
SENIN	Lac Senin/Sane	3.08	297	ePn	Pn	18 31 18.6	+1.4
SENIN	Lac Senin/Sane	3.08	297	ePn	Pn	18 31 18.6	+1.4
AQU	L'Aquila	3.10	149	eP	Pn	18 31 17.9	+0.6
AQU	L'Aquila	3.10	149	ePn	Pn	18 31 17.9	+0.6
AQU	L'Aquila	3.10	149	ePn	Pn	18 31 17.9	+0.6
SOKA	Soboth	3.11	57	ePn	Pn	18 31 17.5	+0.1
	comp=Z,110nm,0.3s,SNR=42						
SOKA				Sn	Sn	18 31 55.9	+1.6
FUR	Furstenfeldbru	3.13	0	eSg	Sg	18 32 10.0	+0.3
MVIF	Mont Vial	3.15	250	P	Pn	18 31 18.3	+0.1
MVIF				S	Sb	18 31 59.8	-3.2
MBDF	Montbardon	3.21	266	ePn	Pn	18 31 18.9	0.0
	SNR=1.0						
MBDF				eSn	Sn	18 31 55.9	-1.0
	comp=Z,1µm,0.5s,SNR=1.0						
MBDF	Montbardon	3.21	266	eP	Pn	18 31 18.9	0.0
MBDF				e		18 31 55.9	
MBDF	Montbardon	3.21	266	eP	Pn	18 31 18.9	0.0
MBDF				eS	Sn	18 31 55.9	-1.0
MBDF	Montbardon	3.21	266	ePn	Pn	18 31 18.9	0.0
MBDF				eSn	Sn	18 31 55.9	-1.0
LPG	La Plagne	3.22	280	ePn	Pn	18 31 21.4	+2.2
	SNR=1.0						
LPG				eSn	Sn	18 31 55.6	-1.7
	comp=Z,1µm,0.5s,SNR=1.0						
LPG				eSg	Sg	18 32 14.4	+2.0
	comp=Z,3µm,0.6s						
LPG	La Plagne	3.22	280	eP	Pn	18 31 21.4	+2.2
LPG				e		18 31 55.6	
LPG	La Plagne	3.22	280	eP	Pn	18 31 21.4	+2.2
LPG				eS	Sn	18 31 55.6	-1.7
LPG	La Plagne	3.22	280	ePn	Pn	18 31 21.4	+2.2
LPG				eSn	Sn	18 31 55.6	-1.7
LPG				eSg	Sg	18 32 14.4	+2.0
EMV	Vieux Emosson	3.23	290⇑	ePn	Pn	18 31 13.7	-5.7
	comp=Z,3µm,0.6s						
LPL	La Plagne	3.23	280	ePn	Pn	18 31 20.8	+1.5
	SNR=1.0						
LPL				eSg	Sg	18 32 15.1	+2.2
	comp=Z,2µm,0.5s						
LPL	La Plagne	3.23	280	eP	Pn	18 31 20.8	+1.5
LPL	La Plagne	3.23	280	eP	Pn	18 31 20.8	+1.5
LPL	La Plagne	3.23	280	ePn	Pn	18 31 20.8	+1.5
LPL				eSg	Sg	18 32 15.1	+2.2
UDBI	Udbina	3.25	97	ePn	Pn	18 31 19.4	0.0
UDBI				Sn	Sn	18 31 56.2	-1.5
RSL	Roselend	3.33	283	P	Pn	18 31 21.4	+0.8
MOA	Molln	3.50	35	ePn	Pn	18 31 23.6	+0.8
	comp=Z,38nm,0.2s,SNR=42						
MOA				Sn	Sn	18 32 06.2	+2.2
	comp=Z,983nm,1.1s						
MOA	Molln	3.50	35	ePn	Pn	18 31 23.6	+0.8
FRF	La Foret Royal	3.62	248	ePn	Pn	18 31 24.4	-0.1
	SNR=1.0						
FRF				eSn	Sn	18 32 03.1	-3.9
	comp=Z,2µm,0.5s,SNR=1.0						
FRF	La Foret Royal	3.62	248	eP	Pn	18 31 24.4	-0.1
FRF				e		18 32 03.1	
FRF	La Foret Royal	3.62	248	eP	Pn	18 31 24.4	-0.1
FRF				eS	Sn	18 32 03.1	-3.9
FRF	La Foret Royal	3.62	248	ePn	Pn	18 31 24.4	-0.1
FRF				eSn	Sn	18 32 03.1	-3.9
SISC	Sisak	3.64	81	ePn	Pn	18 31 26.2	+1.6
ARSA	Arzberg	3.70	52	ePn	Pn	18 31 25.4	-0.2
	comp=Z,28nm,0.3s,SNR=51						
ARSA				Sg	Sg	18 32 27.4	-0.4
	comp=Z,156nm,0.6s						
ARSA	Arzberg	3.70	52	ePn	Pn	18 31 25.2	-0.4
LMR	La Mourre	3.82	245	ePn	Pn	18 31 26.5	-0.6
	SNR=1.0						
LMR				eSn	Sn	18 32 11.2	-0.5
	comp=Z,1µm,0.4s						
LMR	La Mourre	3.82	245	eP	Pn	18 31 26.5	-0.6
LMR				e		18 32 11.2	
LMR	La Mourre	3.82	245	eP	Pn	18 31 26.5	-0.6
LMR				eS	Sn	18 32 11.2	-0.5
LMR	La Mourre	3.82	245	ePn	Pn	18 31 26.5	-0.6
LMR				eSn	Sn	18 32 11.2	-0.5
ORIF	Oris-en-Rattie	3.82	270	ePn	Pn	18 31 28.3	+1.0
	SNR=1.0						
ORIF				eSn	Sn	18 32 08.8	-3.1
	comp=Z,1µm,0.5s						
ORIF	Oris-en-Rattie	3.82	270	eP	Pn	18 31 28.3	+1.0
ORIF				e		18 32 08.8	
ORIF	Oris-en-Rattie	3.82	270	eP	Pn	18 31 28.3	+1.0
ORIF				eS	Sn	18 32 08.8	-3.1
ORIF	Oris-en-Rattie	3.82	270	ePn	Pn	18 31 28.3	+1.0
ORIF				eSn	Sn	18 32 08.8	-3.1
BFO	Black Forest	3.87	330	i P	Pn	18 31 28.8	+0.9
BFO	Black Forest	3.87	330	ePn	Pn	18 31 28.5	+0.6
BFO				eSn	Sn	18 32 12.8	-0.2
BFO	Black Forest	3.87	330	ePn	Pn	18 31 28.3	+0.4
BFO	Black Forest	3.87	330	i P	Pn	18 31 28.8	+0.9
BFO	Black Forest	3.87	330	ePn	Pn	18 31 28.3	+0.4
CABF	La Chapelle	3.95	295	ePn	Pn	18 31 29.6	+0.6
	SNR=1.0						
CABF				eSg	Sg	18 32 34.7	-1.0
	comp=Z,3µm,0.7s,SNR=1.0						
CABF	La Chapelle	3.95	295	eP	Pn	18 31 29.6	+0.6
CABF	La Chapelle	3.95	295	eP	Pn	18 31 29.6	+0.6
CABF	La Chapelle	3.95	295	ePn	Pn	18 31 29.6	+0.6
CABF				eSg	Sg	18 32 34.7	-1.0
STU	Stuttgart	4.00	340	eP	Pn	18 31 30.3	+0.6
STU	Stuttgart	4.00	340	ePn	Pn	18 31 30.4	+0.6
STU				eSg	Sg	18 32 38.6	+1.2
STU	Stuttgart	4.00	340	ePn	Pn	18 31 30.2	+0.6
STU	Stuttgart	4.00	340	ePn	Pn	18 31 30.2	+0.6
MOF	Molkenrain	4.01	316	P	Pn	18 31 30.1	+0.2
BEHE	Becsehely	4.12	68	ePn	Pn	18 31 32.4	+1.1
BEHE				ex	x	18 32 51.6	
HINF	Hinteralfeld	4.13	314	ePn	Pn	18 31 31.8	+0.3
	SNR=1.0						
HINF				eSn	Sn	18 32 16.8	-2.6
	comp=Z,949nm,0.5s						
HINF	Hinteralfeld	4.13	314	eP	Pn	18 31 31.8	+0.3
HINF				e		18 32 16.8	
HINF	Hinteralfeld	4.13	314	eP	Pn	18 31 31.8	+0.3
HINF				eS	Sn	18 32 16.8	-2.6
HINF	Hinteralfeld	4.13	314	ePn	Pn	18 31 31.8	+0.3
HINF				eSn	Sn	18 32 16.8	-2.6
GEA0	GERESS Array S	4.16	23	ePn	Pn	18 31 31.7	-0.2
GEA0	GERESS Array S	4.16	23	ePn	Pn	18 31 31.7	-0.2
GEC2	GERESS Array S	4.16	23	eP	Pn	18 31 31.7	-0.3
GEC2	GERESS Array S	4.16	23	ePn	Pn	18 31 31.8	-0.3
GEC2	GERESS Array S	4.16	23	ePn	Pn	18 31 31.7	-0.3
GEC2	GERESS Array S	4.16	23	ePn	Pn	18 31 31.7	-0.3
GERES	GERESS Array B	4.16	23	Pn	Pn	18 31 31.7	-0.3
	comp=Z,11nm,0.3s,baz=198,slow=13,SNR=104						
GERES				Pg	Pg	18 31 46.2	-2.6
	comp=Z,56nm,0.3s,baz=200,slow=17,SNR=80						
GERES				Lg	Lg	18 32 44.0	
	comp=Z,62nm,0.3s,baz=207,slow=29,SNR=5.2						
GERES				LR	LR	18 33 47.5	
	comp=Z,2µm,19.4s,baz=226,slow=47						
SMRF	Simiane la Rot	4.20	257	ePn	Pn	18 31 33.0	+0.5
	SNR=1.0						
SMRF	Simiane la Rot	4.20	257	eP	Pn	18 31 36.9	+4.4
SMRF				eSn	Sn	18 32 19.5	-1.8
	comp=Z,648nm,0.5s						
SMRF				eSg	Sg	18 32 44.7	+0.8
	comp=Z,2µm,1.1s						
SMRF	Simiane la Rot	4.20	257	ePn	Pn	18 31 33.0	+0.5
SMRF				eSn	Sn	18 32 19.5	-1.8
SMRF				eSg	Sg	18 32 44.7	+0.8
ECH	Echery	4.26	320	P	Pn	18 31 33.4	+0.2
WET	Wettzell	4.26	14	P	Pn	18 31 33.7	+0.4
WET	Wettzell	4.26	14	eSg	Sg	18 32 45.0	-0.7
WET	Wettzell	4.26	14	P	Pn	18 31 33.7	+0.4
OG26	St.-Nazaire-De	4.26	266	P	Pn	18 31 34.1	+0.7
LEPF	PUYLOUBIER	4.27	251	P	Pn	18 31 33.4	0.0
LEPF				S	Sn	18 32 27.6	+4.8
CONA	Conrad Observa	4.30	46	ePn	Pn	18 31 33.9	0.0
	comp=Z,9.3nm,0.2s,SNR=40						
CONA				Sn	Sn	18 32 26.4	+2.7
	comp=Z,124nm,0.5s						
CDF	Champ du Feu	4.35	322	ePn	Pn	18 31 35.1	+0.5
	SNR=1.0						
CDF				eSn	Sn	18 32 22.8	-2.2
	comp=Z,283nm,0.2s,SNR=1.0						
CDF				eSg	Sg	18 32 49.0	+0.3
	comp=Z,2µm,0.7s						
CDF	Champ du Feu	4.35	322	eP	Pn	18 31 35.1	+0.5
CDF				e		18 32 22.8	
CDF	Champ du Feu	4.35	322	eP	Pn	18 31 35.1	+0.5
CDF				eS	Sn	18 32 22.8	-2.2
CDF	Champ du Feu	4.35	322	ePn	Pn	18 31 35.1	+0.5
CDF				eSn	Sn	18 32 22.8	-2.2
CDF				eSg	Sg	18 32 49.0	+0.3
KHC	Kasperske Hory	4.39	20	ePN	Pn	18 31 35.1	0.0
KHC				ePG	Pg	18 31 50.5	-2.7
KHC				eSN	Sn	18 32 25.3	-0.7
KHC				eSG	Sg	18 32 49.2	-0.9
	comp=Z,1µm,1.2s						
KHC				AMS	AMS	18 33 30.0	
	comp=Z,6µm,9.9s						
KHC	Kasperske Hory	4.39	20	eP	Pn	18 31 35.1	0.0
KHC				e		18 32 25.3	
KHC				smax	smax		
	comp=N,1µm,1.2s						
KHC				MLR	MLR		
	comp=Z,6µm,9.9s						
KHC	Kasperske Hory	4.39	20	eP	Pn	18 31 35.1	0.0
KHC	Kasperske Hory	4.39	20	ePn	Pn	18 31 35.4	+0.3
KHC				eS	Sn	18 32 25.3	-0.7
	comp=Z,6µm,9.9s						
KHC	Kasperske Hory	4.39	20	ePn	Pn	18 31 35.4	+0.3
HAU	Haudompre	4.51	313	ePn	Pn	18 31 37.3	+0.6
	SNR=1.0						
HAU				eSn	Sn	18 32 28.0	-0.8
	comp=Z,480nm,0.2s						
HAU				eSg	Sg	18 32 50.7	-3.1
	comp=Z,700nm,0.4s,SNR=1.0						
HAU	Haudompre	4.51	313	eP	Pn	18 31 37.3	+0.6
HAU				e		18 32 28.0	
HAU	Haudompre	4.51	313	eP	Pn	18 31 37.3	+0.6
HAU				eS	Sn	18 32 28.0	-0.8
HAU	Haudompre	4.51	313	ePn	Pn	18 31 37.3	+0.6
HAU				eSn	Sn	18 32 28.0	-0.8
HAU				eSg	Sg	18 32 50.7	-3.1
SOP	Sopron	4.53	52	P	Pn	18 31 37.1	+0.2
SOP	Sopron	4.53	52	P	Pn	18 31 37.1	+0.2
SOP	Sopron	4.53	52	ePn	Pn	18 31 36.5	-0.4
SOP				eSn	Sn	18 32 28.6	-0.5
LANF	Langenberg	4.60	330	P	Pn	18 31 38.1	+0.1
VIVF	Saint-Julien-l	4.68	270	ePn	Pn	18 31 38.7	-0.4
	SNR=1.0						
VIVF				eSn	Sn	18 32 31.7	-1.3
	comp=Z,220nm,0.3s						
VIVF	Saint-Julien-l	4.68	270	eP	Pn	18 31 38.7	-0.4
VIVF				e		18 32 31.7	
VIVF	Saint-Julien-l	4.68	270	eP	Pn	18 31 38.7	-0.4
VIVF				eS	Sn	18 32 31.7	-1.3
VIVF	Saint-Julien-l	4.68	270	ePn	Pn	18 31 38.7	-0.4
VIVF				eSn	Sn	18 32 31.7	-1.3
SSB	Saint Sauveur	4.76	275	P	Pn	18 31 40.0	-0.1
SSB	Saint Sauveur	4.76	275	eP	Pn	18 31 39.8	-0.3
SSB	Saint Sauveur	4.76	275	ePn	Pn	18 31 39.8	-0.3
SSB	Saint Sauveur	4.76	275	ePn	Pn	18 31 39.8	-0.3
ROTZ	Rotzenmuhle	4.78	7	ePn	Pn	18 31 40.0	-0.4
THEF	They Montfort	4.84	313	P	Pn	18 31 41.7	+0.5
MANZ	Manzenberg	4.99	6	ePn	Pn	18 31 42.4	-0.9
PAGF	Fort de Pagny	5.18	315	ePn	Pn	18 31 47.2	+1.3
	baz=136						
PAGF	Fort de Pagny	5.18	315	ePg	Pg	18 32 06.6	-1.6
	baz=124						
PAGF				eSn	Sn	18 32 40.8	-4.5
	comp=Z,124nm,0.5s						
PAGF	Fort de Pagny	5.18	315	ePn	Pn	18 31 47.2	+1.3
PAGF				ePg	Pg	18 32 06.6	-1.6
PAGF				eSn	Sn	18 32 40.8	-4.5
NKC	Novy Kostel	5.26	8	ePN	Pn	18 31 46.7	-0.4
NKC				ePG	Pg	18 32 07.1	-2.7
NKC				eSG	Sg	18 33 17.0	-0.9
	comp=Z,2µm,1.2s						
NKC				AMS	AMS	18 33 40.0	
	comp=Z,5µm,6.6s						
NKC	Novy Kostel	5.26	8	eP	Pn	18 31 46.7	-0.4
NKC				MLR	MLR		
	comp=Z,5µm,6.6s						
NKC	Novy Kostel	5.26	8	eP	Pn	18 31 46.7	-0.4
	comp=Z,5µm,6.6s						
WERN	Wernitzgruen	5.31	8	ePn	Pn	18 31 47.1	-0.6
WERN				eSg	Sg	18 33 21.4	+1.9
SFTF	Sexfontaines	5.33	309	ePn	Pn	18 31 48.7	+0.7
	baz=123						
SFTF				eSn	Sn	18 32 48.3	-0.7
	comp=Z,331nm,0.4s						
SFTF	Sexfontaines	5.33	309	ePn	Pn	18 31 48.7	+0.7
SFTF				eSn	Sn	18 32 48.3	-0.7
LASF	Ste Croix	5.38	262	ePn	Pn	18 31 47.5	-1.1
	SNR=1.0						
LASF				eSn	Sn	18 32 47.2	-3.0
	comp=Z,318nm,0.5s,SNR=1.0						
LASF	Ste Croix	5.38	262	ePn	Pn	18 31 47.5	-1.1
LASF				eSn	Sn	18 32 47.2	-3.0
CSKK	Csˆ‡kako	5.39	62	ePn	Pn	18 31 49.1	+0.4
CSKK				eSn	Sn	18 32 50.2	-0.2
SMF	Signal de Mont	5.43	290	ePn	Pn	18 31 49.4	+0.1
	SNR=1.0						
SMF				eSn	Sn	18 32 49.6	-1.9
	comp=Z,230nm,0.2s						
SMF	Signal de Mont	5.43	290	eP	Pn	18 31 49.4	+0.1
SMF				e		18 32 49.6	
SMF	Signal de Mont	5.43	290	eP	Pn	18 31 49.4	+0.1
SMF				eS	Sn	18 32 49.6	-1.9
SMF	Signal de Mont	5.43	290	ePn	Pn	18 31 49.4	+0.1
SMF				eSn	Sn	18 32 49.6	-1.9
PRU	Pruhonice	5.43	23	ePN	Pn	18 31 48.7	-0.6
PRU				ePG	Pg	18 32 09.3	-3.7
PRU				eSN	Sn	18 32 49.5	-2.0
PRU				eSG	Sg	18 33 20.5	-2.8
PRU				AMS	AMS	18 34 10.0	
	comp=Z,6µm,9.8s						
PRU	Pruhonice	5.43	23	eP	Pn	18 31 48.7	-0.6
PRU				e		18 32 49.5	
PRU				MLR	MLR		
	comp=Z,6µm,9.8s						
PRU	Pruhonice	5.43	23	eP	Pn	18 31 48.7	-0.6
PRU				eS	Sn	18 32 49.5	-2.0
	comp=Z,6µm,9.8s						
GOPC	GO Pecny, Ondr	5.44	25	ePN	Pn	18 31 49.3	-0.1
GOPC				ePG	Pg	18 32 09.6	-3.5
GOPC				eSN	Sn	18 32 49.9	-1.7
GOPC				eSG	Sg	18 33 22.6	-0.8
	comp=Z,764nm,1.1s						
GOPC				AMS	AMS	18 34 10.0	
	comp=Z,7µm,9.3s						
GOPC	GO Pecny, Ondr	5.44	25	eP	Pn	18 31 49.3	-0.1
GOPC				e		18 32 49.9	
GOPC				smax	smax		
	comp=N,764nm,1.1s						
GOPC				MLR	MLR		
	comp=Z,7µm,9.3s						
GOPC	GO Pecny, Ondr	5.44	25	eP	Pn	18 31 49.3	-0.1
GOPC				eS	Sn	18 32 49.9	-1.7
	comp=Z,7µm,9.3s						
PLDF	La Plantade	5.45	283	P	Pn	18 31 50.0	+0.3
WERD	Werda	5.46	7	ePn	Pn	18 31 49.8	0.0
WERD				eSg	Sg	18 33 25.1	+0.8
SMOL	Smolenice	5.48	48	eP	Pn	18 31 50.3	+0.3
SMOL	Smolenice	5.48	48	eP	Pn	18 31 50.3	+0.3
SMOL	Smolenice	5.48	48	ePN	Pn	18 31 50.3	+0.3
PLN	Plauen	5.49	6	ePn	Pn	18 31 49.6	-0.5
PLN				eSg	Sg	18 33 25.9	+0.8
MEZF	Maizieres J'vi	5.50	311	ePn	Pn	18 31 51.8	+1.6
	baz=125,SNR=1.0						
MEZF				eSg	Sg	18 33 24.8	-0.6
	comp=Z,1µm,0.8s						
MEZF	Maizieres J'vi	5.50	311	ePn	Pn	18 31 51.8	+1.6
MEZF				eSg	Sg	18 33 24.8	-0.6
TNS	Taunus Mts	5.53	341	ePn	Pn	18 31 51.5	+0.7
LOR	Lormes	5.61	296	ePn	Pn	18 31 52.0	+0.2
	baz=116,SNR=1.0						
LOR				eSn	Sn	18 32 54.7	-1.1
	comp=Z,603nm,0.5s						
LOR	Lormes	5.61	296	eP	Pn	18 31 52.0	+0.2
LOR				e		18 32 54.7	
LOR	Lormes	5.61	296	eP	Pn	18 31 52.0	+0.2
LOR				eS	Sn	18 32 54.7	-1.1
LOR	Lormes	5.61	296	ePn	Pn	18 31 52.0	+0.2
LOR				eSn	Sn	18 32 54.7	-1.1
VRAC	Vranov	5.61	38	Pn	Pn	18 31 51.3	-0.5
	comp=Z,3.4nm,0.3s,baz=234,slow=14,SNR=22						
VRAC				Lg	Lg	18 33 30.2	
	comp=Z,9.5nm,0.3s,baz=316,slow=23,SNR=5.4						
VRAC				LR	LR	18 34 35.3	
	comp=Z,2µm,18.8s,baz=222,slow=43						

VRAC	**Vranov**	**5.61**	**38**	⇓*i*P	**Pn**	**18 31 51.5**	**-0.3**
MOX	**Moxa**	**5.62**	**2**	P	**Pn**	**18 31 51.7**	**-0.2**
MOX				pmax	pmax		
	comp=Z,300nm,0.8s						
MOX	**Moxa**	**5.62**	**2**	*e*Pn	**Pn**	**18 31 50.7**	**-1.2**
MOX				*e*Sn	**Sn**	**18 32 55.2**	**-1.0**
MOX	**Moxa**	**5.62**	**2**	P	**Pn**	**18 31 51.7**	**-0.2**
	comp=Z,300nm,0.8s						
BRY	**Bratogost**	**5.67**	**110**	⇓*i*Pn	**Pn**	**18 31 52.7**	**0.0**
BRY				*e*Sn	**Sn**	**18 32 56.1**	**-1.4**
LBL	**Lubilhac**	**5.67**	**275**	P	**Pn**	**18 31 53.0**	**+0.3**
VSL	**Villasalto**	**5.71**	**195**	*e*Pn	**Pn**	**18 31 54.2**	**+1.0**
VSL	**Villasalto**	**5.71**	**195**	*e*Pn	**Pn**	**18 31 54.1**	**+1.0**
SSF	**Saint Saulge**	**5.77**	**293**	*e*Pn	**Pn**	**18 31 53.9**	**0.0**
	SNR=1.0						
SSF				*e*Sn	**Sn**	**18 32 55.9**	**-3.8**
	comp=Z,212nm,0.2s,SNR=1.0						
SSF	**Saint Saulge**	**5.77**	**293**	*e*P	**Pn**	**18 31 53.9**	**0.0**
SSF				*e*		18 32 55.9	
SSF	**Saint Saulge**	**5.77**	**293**	*e*P	**Pn**	**18 31 53.9**	**0.0**
SSF				*e*S	**Sn**	**18 32 55.9**	**-3.8**
SSF	**Saint Saulge**	**5.77**	**293**	*e*Pn	**Pn**	**18 31 53.9**	**0.0**
SSF				*e*Sn	**Sn**	**18 32 55.9**	**-3.8**
WLF	**Walferdange**	**5.79**	**325**	P	**Pn**	**18 31 55.2**	**+1.1**
WLF	**Walferdange**	**5.79**	**325**	P	**Pn**	**18 31 55.3**	**+1.1**
WLF	**Walferdange**	**5.79**	**325**	*e*Pn	**Pn**	**18 31 55.3**	**+1.1**
WLF	**Walferdange**	**5.79**	**325**	*e*P	**Pn**	**18 31 55.3**	**+1.1**
WLF	**Walferdange**	**5.79**	**325**	*e*Pn	**Pn**	**18 31 55.3**	**+1.1**
AVF	**Avril sur Loir**	**5.79**	**290**	*e*Pn	**Pn**	**18 31 54.4**	**+0.1**
	SNR=1.0						
AVF				*e*Sn	**Sn**	**18 32 55.8**	**-4.5**
	comp=Z,84nm,0.3s						
AVF	**Avril sur Loir**	**5.79**	**290**	*e*P	**Pn**	**18 31 54.4**	**+0.1**
AVF				*e*		18 32 55.8	
AVF	**Avril sur Loir**	**5.79**	**290**	*e*P	**Pn**	**18 31 54.4**	**+0.1**
AVF				*e*S	**Sn**	**18 32 55.8**	**-4.5**
AVF	**Avril sur Loir**	**5.79**	**290**	*e*Pn	**Pn**	**18 31 54.4**	**+0.1**
AVF				*e*Sn	**Sn**	**18 32 55.8**	**-4.5**
UPM	**Unac-Piva**	**5.80**	**106**	⇓*i*Pn	**Pn**	**18 31 55.5**	**+0.9**
UPM				*e*Sn	**Sn**	**18 32 58.9**	**-1.9**
AGO	**Saint Agoulin**	**5.80**	**283**	P	**Pn**	**18 31 54.4**	**0.0**
BGG	**Burgeitz**	**5.81**	**334**	*e*Pn	**Pn**	**18 31 55.8**	**+1.2**
BGG				*e*Sn	**Sn**	**18 33 02.1**	**+1.2**
	comp=Z,166nm,0.6s						
HCY	**Herceg Novi**	**5.84**	**114**	*e*Pn	**Pn**	**18 31 55.5**	**+0.5**
HCY				*e*Sn	**Sn**	**18 33 00.0**	**-1.6**
PYM	**Petit Puy Mans**	**5.86**	**280**	P	**Pn**	**18 31 54.6**	**-0.6**
KOE	**Koeppel**	**5.90**	**337**	*e*Pn	**Pn**	**18 31 57.0**	**+1.3**
PVCC	**Panska Ves**	**5.93**	**21**	*e*PN	**Pn**	**18 31 55.6**	**-0.6**
PVCC				*e*PG	Pg	18 32 18.5	-4.1
PVCC				*e*SG	**Sg**	**18 33 36.9**	**-2.4**
	comp=Z,497nm,0.8s						
PVCC				AMS	AMS	18 34 30.0	
	comp=Z,4μm,11.9s						
PVCC	**Panska Ves**	**5.93**	**21**	*e*P	**Pn**	**18 31 55.6**	**-0.6**
PVCC				MLR	MLR		
	comp=Z,4μm,11.9s						
PVCC	**Panska Ves**	**5.93**	**21**	*e*P	**Pn**	**18 31 55.6**	**-0.6**
	comp=Z,4μm,11.9s						
NKME	**Niksic**	**6.00**	**109**	⇓*i*Pn	**Pn**	**18 31 57.5**	**+0.3**
NKME				*e*Sn	**Sn**	**18 33 04.2**	**-1.4**
NKY	**Niksic**	**6.01**	**109**	⇓*i*Pn	**Pn**	**18 31 57.4**	**0.0**
NKY				*e*Sn	**Sn**	**18 33 04.2**	**-1.7**
CUC	**Castrocucco**	**6.06**	**145**	*e*Pn	**Pn**	**18 31 56.8**	**-1.1**
CUC	**Castrocucco**	**6.06**	**145**	*e*Pn	**Pn**	**18 31 56.9**	**-1.1**
FBE	**Freiberg**	**6.06**	**13**	*e*Pn	**Pn**	**18 31 58.1**	**+0.2**
FBE				*e*Sg	**Sg**	**18 33 44.0**	**+0.6**
CEME	**Cevo**	**6.07**	**111**	⇓*i*Pn	**Pn**	**18 31 58.3**	**+0.1**
CEME				*e*Sn	**Sn**	**18 33 05.9**	**-1.5**
BGF	**Bois d'Agland**	**6.08**	**288**	*e*Pn	**Pn**	**18 31 58.5**	**+0.3**
	SNR=1.0						
BGF				*e*Sn	**Sn**	**18 33 04.7**	**-2.7**
	comp=Z,617nm,0.5s						
BGF	**Bois d'Agland**	**6.08**	**288**	*e*P	**Pn**	**18 31 58.5**	**+0.3**
BGF				*e*		18 33 04.7	
BGF	**Bois d'Agland**	**6.08**	**288**	*e*P	**Pn**	**18 31 58.5**	**+0.3**
BGF				*e*S	**Sn**	**18 33 04.7**	**-2.7**
BGF	**Bois d'Agland**	**6.08**	**288**	*e*Pn	**Pn**	**18 31 58.5**	**+0.3**
BGF				*e*Sn	**Sn**	**18 33 04.7**	**-2.7**
PLE	**Pljevlja**	**6.09**	**103**	⇑*i*Pn	**Pn**	**18 31 59.1**	**+0.6**
PLE				*e*Sn	**Sn**	**18 33 05.8**	**-2.0**
HILG	**Hillesheim**	**6.10**	**331**	*e*Pn	**Pn**	**18 31 59.8**	**+1.2**
BRG	**Berggiesshubel**	**6.12**	**16**	PN	**Pn**	**18 32 00.2**	**+1.5**
BRG				*i*		18 33 19.3	
BRG	**Berggiesshubel**	**6.12**	**16**	SG	**Sg**	**18 33 50.3**	**+5.1**
	comp=Z,1μm,1.7s						
	comp=N,3μm,9.7s						
	comp=E,3μm,7.3s						
	comp=Z,4μm,9.7s						
BRG	**Berggiesshubel**	**6.12**	**16**	P	**Pn**	**18 32 00.2**	**+1.5**
BRG				*i*		18 33 19.3	
BRG				smax	smax		
	comp=N,1μm,1.7s						
BRG				MLR	MLR		
	comp=N,3μm,9.7s						
BRG				MLR	MLR		
	comp=E,3μm,7.4s						
BRG				MLR	MLR		
	comp=Z,4μm,9.7s						
BRG	**Berggiesshubel**	**6.12**	**16**	*e*Pn	**Pn**	**18 31 59.3**	**+0.6**
BRG	**Berggiesshubel**	**6.12**	**16**	P	**Pn**	**18 32 00.2**	**+1.5**
BRG				*i* S	Sb	18 33 19.3	-8.7
	comp=Z,4μm,9.7s						
FRNF	**Fournols**	**6.16**	**276**	P	**Pn**	**18 32 00.3**	**+1.0**
BUM	**Brajici-Budva**	**6.17**	**114**	⇓*i*Pn	**Pn**	**18 31 59.5**	**-0.1**
BUM				*e*Sn	**Sn**	**18 33 08.0**	**-1.8**
AHRW	**Bad Neuenahr-A**	**6.19**	**334**	*e*Pn	**Pn**	**18 32 01.2**	**+1.5**
NEUB	**Neuenburg**	**6.19**	**3**	*e*Pn	**Pn**	**18 32 00.1**	**+0.4**
VERF	**Verneugheol**	**6.22**	**280**	P	**Pn**	**18 32 00.2**	**-0.1**
VYHS	**Vyhne**	**6.25**	**54**	*e*P	**Pn**	**18 31 59.2**	**-1.4**
VYHS				*e*		18 33 06.6	
VYHS				MLR	MLR		
	comp=Z,200nm,1.9s						
VYHS	**Vyhne**	**6.25**	**54**	*e*P	**Pn**	**18 31 59.2**	**-1.4**
	comp=Z,200nm,1.9s						
VYHS				*e*S	**Sn**	**18 33 06.6**	**-5.0**
VYHS	**Vyhne**	**6.25**	**54**	*e*PN	**Pn**	**18 31 59.2**	**-1.4**
VYHS				*e*SN	**Sn**	**18 33 06.6**	**-5.0**
VYHS				*e*LG	Lg	18 34 57.1	
KRLC	**Kraliky**	**6.28**	**35**	*e*PN	**Pn**	**18 32 01.0**	**0.0**
KRLC				*ex*	x	18 32 09.6	
KRLC				*e*SN	**Sn**	**18 33 09.9**	**-2.4**
KRLC				*e*SG	**Sg**	**18 33 49.2**	**-1.1**
KRLC	**Kraliky**	**6.28**	**35**	*e*P	**Pn**	**18 32 01.0**	**0.0**
KRLC				*e*		18 33 09.9	
KRLC	**Kraliky**	**6.28**	**35**	*e*P	**Pn**	**18 32 01.0**	**0.0**
KRLC				*e*S	**Sn**	**18 33 09.9**	**-2.4**
DIVS	**Divibare**	**6.31**	**95**	P	**Pn**	**18 32 00.4**	**-1.0**
STB	**Steinbach**	**6.31**	**333**	*e*Pn	**Pn**	**18 32 02.6**	**+1.2**
DPC	**Dobruska-Polom**	**6.32**	**31**	*i* PN	**Pn**	**18 32 00.8**	**-0.8**
DPC				*e*PG	**Pg**	**18 32 22.8**	**+4.1**
DPC				*e*SN	**Sn**	**18 33 09.6**	**-3.8**
DPC				*e*SG	**Sg**	**18 33 50.4**	**-1.4**
	comp=Z,700nm,1.1s						
DPC				AMS	AMS	18 34 30.0	
DPC	**Dobruska-Polom**	**6.32**	**31**	*i* P	**Pn**	**18 32 00.8**	**-0.8**
DPC				*e*		18 33 09.6	
DPC				smax	smax		
	comp=N,700nm,1.1s						
DPC	**Dobruska-Polom**	**6.32**	**31**	*i* P	**Pn**	**18 32 00.8**	**-0.8**
DPC				*e*S	**Sn**	**18 33 09.6**	**-3.8**
	comp=N,700nm,1.1s						
UPC	**Upice**	**6.34**	**29**	*e*PN	**Pn**	**18 32 01.3**	**-0.6**
UPC				*e*PG	**Pg**	**18 32 26.9**	**-3.5**
UPC				*e*SN	**Sn**	**18 33 10.2**	**-3.7**
UPC				*e*SG	**Sg**	**18 33 49.7**	**-2.8**
	comp=N,1μm,1.2s						
UPC				AMS	AMS	18 34 40.0	
	comp=N,6μm,9.0s						
UPC	**Upice**	**6.34**	**29**	*e*P	**Pn**	**18 32 01.3**	**-0.6**
UPC				*e*		18 33 10.2	
UPC				smax	smax		
	comp=N,1μm,1.2s						
UPC				MLR	MLR		
	comp=Z,6μm,9.0s						
UPC	**Upice**	**6.34**	**29**	*e*P	**Pn**	**18 32 01.3**	**-0.6**
UPC				*e*S	**Sn**	**18 33 10.2**	**-3.7**
	comp=Z,6μm,9.0s						
PDG	**Podgorica**	**6.35**	**111**	P	**Pn**	**18 32 01.7**	**-0.2**
PDG	**Podgorica**	**6.35**	**111**	⇓*i*P	**Pn**	**18 32 01.9**	**0.0**
TTG	**Podgorica**	**6.35**	**111**	⇑*i*Pn	**Pn**	**18 32 02.2**	**+0.3**
TTG				*e*Sn	**Sn**	**18 33 12.5**	**-1.6**
MORC	**Moravsky Berou**	**6.38**	**40**	⇓*i*P	**Pn**	**18 32 01.7**	**-0.7**
MORC	**Moravsky Berou**	**6.38**	**40**	⇓P	**Pn**	**18 32 01.7**	**-0.7**
MORC	**Moravsky Berou**	**6.38**	**40**	*e*Pn	**Pn**	**18 32 01.7**	**-0.7**
MORC	**Moravsky Berou**	**6.38**	**40**	*e*Pn	**Pn**	**18 32 01.7**	**-0.7**
CLL	**Collm**	**6.39**	**10**	*e*Pn	**Pn**	**18 32 03.0**	**+0.6**
CLL				*e*Pg	**Pg**	**18 32 29.0**	**-2.2**
CLL				*e*		18 32 35.0	
CLL				*e*Sn	Sn	18 32 58.0	-17
CLL				*e*		18 33 43.0	
CLL				*i* Sg	**Sg**	**18 33 54.1**	**+0.3**
	comp=Z,1μm,1.4s						
CLL				Lm	MLR	18 34 00.0	
	comp=Z,2μm,18.0s						
CLL	**Collm**	**6.39**	**10**	*e*P	**Pn**	**18 32 03.0**	**+0.6**
CLL				MLR	MLR		
	comp=Z,2μm,18.0s						
CLL	**Collm**	**6.39**	**10**	*e*Pn	**Pn**	**18 32 02.5**	**0.0**
CLL				*e*Sg	**Sg**	**18 33 54.5**	**+0.7**
CLL	**Collm**	**6.39**	**10**	*e*Pn	**Pn**	**18 32 02.0**	**-0.4**
CLL	**Collm**	**6.39**	**10**	*e*P	**Pn**	**18 32 03.0**	**+0.6**
	comp=Z,2μm,18.0s						
CLL	**Collm**	**6.39**	**10**	*e*Pn	**Pn**	**18 32 02.0**	**-0.4**
HYF	**Humbligny**	**6.39**	**294**	*e*Pn	**Pn**	**18 32 03.6**	**+1.1**
HYF				*e*Sn	**Sn**	**18 33 13.4**	**-1.8**
HYF	**Humbligny**	**6.39**	**294**	*e*Pn	**Pn**	**18 32 03.6**	**+1.1**
HYF				*e*Sn	**Sn**	**18 33 13.4**	**-1.8**
DRME	**Dracevica, Mon**	**6.42**	**114**	⇓*i*Pn	**Pn**	**18 32 03.1**	**+0.2**
DRME				*e*Sn	**Sn**	**18 33 14.1**	**-1.7**
TCF	**Toulx Ste Croi**	**6.47**	**284**	*e*Pn	**Pn**	**18 32 03.8**	**+0.2**
	SNR=1.0						
TCF				*e*Sn	**Sn**	**18 33 14.6**	**-2.4**
	comp=Z,183nm,0.3s,SNR=1.0						
TCF	**Toulx Ste Croi**	**6.47**	**284**	*e*P	**Pn**	**18 32 03.8**	**+0.2**
TCF				*e*		18 33 14.6	
TCF	**Toulx Ste Croi**	**6.47**	**284**	*e*P	**Pn**	**18 32 03.8**	**+0.2**
TCF				*e*S	**Sn**	**18 33 14.6**	**-2.4**
TCF	**Toulx Ste Croi**	**6.47**	**284**	*e*Pn	**Pn**	**18 32 03.8**	**+0.2**
TCF				*e*Sn	**Sn**	**18 33 14.6**	**-2.4**
HOBG	**Hohbusch**	**6.51**	**338**	*e*Pn	**Pn**	**18 32 05.4**	**+1.3**
CAF	**Calviac**	**6.52**	**272**	*e*Pn	**Pn**	**18 32 05.1**	**+0.7**
	SNR=1.0						
CAF	**Calviac**	**6.52**	**272**	*e*P	**Pn**	**18 32 05.1**	**+0.7**
CAF	**Calviac**	**6.52**	**272**	*e*P	**Pn**	**18 32 05.1**	**+0.7**
CAF	**Calviac**	**6.52**	**272**	*e*Pn	**Pn**	**18 32 05.1**	**+0.7**
KLL	**Kalltalsperre**	**6.53**	**331**	*e*Pn	**Pn**	**18 32 05.9**	**+1.5**
BNS	**Bensberg**	**6.54**	**337**	*e*Pn	**Pn**	**18 32 06.1**	**+1.6**
ULC	**Ulcinj**	**6.57**	**115**	⇓*i*Pn	**Pn**	**18 32 05.3**	**+0.4**
ULC				*e*Sn	**Sn**	**18 33 17.5**	**-2.0**
GTTG	**Gvttingen**	**6.57**	**353**	*e*Pn	**Pn**	**18 32 05.1**	**+0.1**
SJAF	**Saint Jean de**	**6.58**	**250**	P	**Pn**	**18 32 04.4**	**-0.7**
IVA	**Berane**	**6.59**	**106**	⇑*i*Pn	**Pn**	**18 32 06.3**	**+0.9**
IVA				*e*Sn	**Sn**	**18 33 18.0**	**-2.3**
MEM	**Membach**	**6.61**	**330**	P	**Pn**	**18 32 07.1**	**+1.7**
PSZ	**Piszkesteto**	**6.62**	**61**	⇓*i*P	**Pn**	**18 32 06.1**	**+0.3**
PSZ	**Piszkesteto**	**6.62**	**61**	⇓P	**Pn**	**18 32 06.1**	**+0.3**
PSZ	**Piszkesteto**	**6.62**	**61**	*e*Pn	**Pn**	**18 32 05.3**	**-0.4**
PSZ	**Piszkesteto**	**6.62**	**61**	P	**Pn**	**18 32 06.1**	**+0.3**
PSZ	**Piszkesteto**	**6.62**	**61**	*e*Pn	**Pn**	**18 32 05.3**	**-0.4**
PSZ	**Piszkesteto**	**6.62**	**61**	*e*Pn	**Pn**	**18 32 05.5**	**-0.3**
PSZ				*e*Sn	**Sn**	**18 33 18.4**	**-2.5**
LRDF	**Laroque-de-Fa**	**6.63**	**255**	P	**Pn**	**18 32 06.0**	**+0.2**
GIVF	**Givet**	**6.68**	**322**	*e*Pn	**Pn**	**18 32 07.8**	**+1.3**
	SNR=1.0						
GIVF				*e*Sn	**Sn**	**18 33 16.6**	**-5.7**
	comp=Z,178nm,0.6s,SNR=1.0						
GIVF	**Givet**	**6.68**	**322**	*e*P	**Pn**	**18 32 07.8**	**+1.3**
GIVF				*e*		18 33 16.6	
GIVF	**Givet**	**6.68**	**322**	*e*P	**Pn**	**18 32 07.8**	**+1.3**
GIVF				*e*S	**Sn**	**18 33 16.6**	**-5.7**
GIVF	**Givet**	**6.68**	**322**	*e*Pn	**Pn**	**18 32 07.8**	**+1.3**
GIVF				*e*Sn	**Sn**	**18 33 16.6**	**-5.7**
OKC	**Ostrava-Krasne**	**6.70**	**42**	*e*PN	**Pn**	**18 32 06.5**	**-0.2**
OKC				*e*SG	**Sg**	**18 34 02.0**	**-1.9**
	comp=Z,331nm,1.1s						
OKC				AMS	AMS	18 35 30.0	
	comp=Z,2μm,8.1s						
OKC	**Ostrava-Krasne**	**6.70**	**42**	*e*P	**Pn**	**18 32 06.5**	**-0.2**
OKC				MLR	MLR		
	comp=Z,2μm,8.1s						
OKC	**Ostrava-Krasne**	**6.70**	**42**	*e*P	**Pn**	**18 32 06.5**	**-0.2**
	comp=Z,2μm,8.1s						
MTLF	**Montolieu**	**6.72**	**259**	*e*Pn	**Pn**	**18 32 06.5**	**-0.5**
MTLF				*e*Sn	**Sn**	**18 33 20.5**	**-2.7**
	comp=Z,150nm,0.8s						
MTLF	**Montolieu**	**6.72**	**259**	*e*P	**Pn**	**18 32 06.5**	**-0.5**
MTLF				*e*		18 33 20.5	
MTLF	**Montolieu**	**6.72**	**259**	*e*P	**Pn**	**18 32 06.5**	**-0.5**
MTLF				*e*S	**Sn**	**18 33 20.5**	**-2.7**
MTLF	**Montolieu**	**6.72**	**259**	*e*Pn	**Pn**	**18 32 06.5**	**-0.5**
MTLF				*e*Sn	**Sn**	**18 33 20.5**	**-2.7**
BCLA	**Clavier**	**6.72**	**325**	P	**Pn**	**18 32 09.4**	**+2.4**
KSP	**Ksiaz**	**6.72**	**28**	*e*Pn	**Pn**	**18 32 06.2**	**-0.9**
KSP				*e*Pb	Pg	18 32 32.6	-5.0
KSP				*e*Sn	**Sg**	**18 34 02.9**	**-1.7**
KSP	**Ksiaz**	**6.72**	**28**	*e*P	**Pn**	**18 32 06.2**	**-0.9**
KSP	**Ksiaz**	**6.72**	**28**	*e*P	**Pn**	**18 32 06.2**	**-0.9**
PVY	**Plav**	**6.75**	**108**	⇑*i*Pn	**Pn**	**18 32 08.1**	**+0.6**
PVY				*e*Sn	**Sn**	**18 33 22.2**	**-1.9**
HGN	**Heimansgroeve**	**6.76**	**330**	*e*Pn	**Pn**	**18 32 09.3**	**+1.7**
HGN				*e*Sn	**Sn**	**18 33 22.6**	**-1.5**
FILF	**Fillols**	**6.76**	**252**	P	**Pn**	**18 32 08.7**	**+1.0**
DOU	**Dourbes**	**6.78**	**321**	P	**Pn**	**18 32 09.8**	**+2.0**
CLZ	**Clausthal**	**6.84**	**355**	*e*Pn	**Pn**	**18 32 08.4**	**-0.3**
BEBN	**Eben Emael**	**6.88**	**329**	P	**Pn**	**18 32 12.6**	**+3.4**
RJF	**Les Rejaudoux**	**6.89**	**276**	*e*Pn	**Pn**	**18 32 10.4**	**+1.0**
RJF				*e*Sn	**Sn**	**18 33 24.9**	**-2.6**
	comp=Z,176nm,0.6s						
RJF	**Les Rejaudoux**	**6.89**	**276**	*e*P	**Pn**	**18 32 10.4**	**+1.0**
RJF				*e*		18 33 24.9	
RJF	**Les Rejaudoux**	**6.89**	**276**	*e*P	**Pn**	**18 32 10.4**	**+1.0**
RJF				*e*S	**Sn**	**18 33 24.9**	**-2.6**
RJF	**Les Rejaudoux**	**6.89**	**276**	*e*Pn	**Pn**	**18 32 10.4**	**+1.0**
RJF				*e*Sn	**Sn**	**18 33 24.9**	**-2.6**
BAIF	**Baives**	**6.93**	**319**	*e*Pn	**Pn**	**18 32 10.8**	**+0.9**
	SNR=1.0						
BAIF				*e*Sn	**Sg**	**18 34 09.2**	**-2.1**
	comp=Z,464nm,1.0s						
BAIF	**Baives**	**6.93**	**319**	*e*P	**Pn**	**18 32 10.8**	**+0.9**
BAIF	**Baives**	**6.93**	**319**	*e*P	**Pn**	**18 32 10.8**	**+0.9**
BAIF	**Baives**	**6.93**	**319**	*e*Pn	**Pn**	**18 32 10.8**	**+0.9**
BUG	**Bochum--Univer**	**6.94**	**339**	P	**Pn**	**18 32 14.3**	**+4.3**
BUG				pmax	pmax		
	comp=Z,99nm,0.9s						
BUG	**Bochum--Univer**	**6.94**	**339**	*e*Pn	**Pn**	**18 32 11.3**	**+1.3**
BUG	**Bochum--Univer**	**6.94**	**339**	P	**Pn**	**18 32 14.3**	**+4.3**
	comp=Z,99nm,0.9s						
LAUG	**Laupendahl**	**6.95**	**337**	*e*Pn	**Pn**	**18 32 11.7**	**+1.6**
LANS	**Liptovska Anna**	**6.95**	**51**	*e*P	**Pn**	**18 32 11.1**	**+0.8**
LANS	**Liptovska Anna**	**6.95**	**51**	*e*P	**Pn**	**18 32 11.1**	**+0.8**
LANS	**Liptovska Anna**	**6.95**	**51**	*e*PN	**Pn**	**18 32 11.0**	**+0.8**
ASSE	**Asse, Remlinge**	**7.11**	**357**	*e*Pn	**Pn**	**18 32 12.4**	**+0.1**
TIP	**Timpagrande**	**7.13**	**143**	P	**Pn**	**18 32 12.2**	**-0.6**
VALF	**Valcebollere**	**7.19**	**252**	P	**Pn**	**18 32 14.2**	**+0.5**
KECS	**Kecovo**	**7.21**	**58**	*e*P	**Pn**	**18 32 13.6**	**-0.2**
KECS	**Kecovo**	**7.21**	**58**	*e*P	**Pn**	**18 32 13.6**	**-0.2**
KECS	**Kecovo**	**7.21**	**58**	*e*PN	**Pn**	**18 32 13.6**	**-0.2**
KECS				*e*LG	Lg	18 34 44.9	
SNF	**Seneffe**	**7.22**	**322**	P	**Pn**	**18 32 16.1**	**+2.3**
TIR	**Tirane**	**7.29**	**117**	⇑*i*P	**Pn**	**18 32 13.4**	**-1.4**
TIR	**Tirane**	**7.29**	**117**	⇑P	**Pn**	**18 32 13.4**	**-1.4**
TIR	**Tirane**	**7.29**	**117**	*e*Pn	**Pn**	**18 32 13.1**	**-1.7**
TIR	**Tirane**	**7.29**	**117**	P	**Pn**	**18 32 13.4**	**-1.4**
TIR	**Tirane**	**7.29**	**117**	*e*Pn	**Pn**	**18 32 13.1**	**-1.7**
BZS	**Buzias**	**7.32**	**82**	⇓*i*P	**Pn**	**18 32 16.8**	**+1.5**
BZS	**Buzias**	**7.32**	**82**	⇓P	**Pn**	**18 32 16.8**	**+1.5**
BZS	**Buzias**	**7.32**	**82**	P	**Pn**	**18 32 16.8**	**+1.5**
MDVR	**Moldovita**	**7.43**	**88**	⇑*i*P	**Pn**	**18 32 17.0**	**+0.2**
LFF	**La Frestale**	**7.46**	**273**	*e*Pn	**Pn**	**18 32 17.9**	**+0.7**
	SNR=1.0						
LFF				*e*Sn	**Sn**	**18 33 38.0**	**-3.4**
	comp=Z,318nm,0.8s						
LFF	**La Frestale**	**7.46**	**273**	*e*P	**Pn**	**18 32 17.9**	**+0.7**
LFF				*e*		18 33 38.0	
LFF	**La Frestale**	**7.46**	**273**	*e*P	**Pn**	**18 32 17.9**	**+0.7**
LFF				*e*S	**Sn**	**18 33 38.0**	**-3.4**
LFF	**La Frestale**	**7.46**	**273**	*e*Pn	**Pn**	**18 32 17.9**	**+0.7**
LFF				*e*Sn	**Sn**	**18 33 38.0**	**-3.4**
NRDL	**Niedersach Rie**	**7.51**	**355**	*e*Pn	**Pn**	**18 32 18.2**	**+0.5**
WTSB	**Winterswijk**	**7.54**	**338**	*e*Pn	**Pn**	**18 32 20.7**	**+2.4**
WTSB				*e*Sn	**Sn**	**18 33 42.9**	**-0.4**
CEL	**Celeste**	**7.60**	**151**	*e*Pn	**Pn**	**18 32 18.8**	**-0.4**
CEL	**Celeste**	**7.60**	**151**	*e*Pn	**Pn**	**18 32 18.8**	**-0.4**
RUE	**Ruedersdorf**	**7.64**	**12**	*e*Sg		18 34 34.9	
OJC	**Ojcow**	**7.76**	**45**	*e*Pn	**Pn**	**18 32 24.5**	**+3.3**
OJC				*e*Pb		18 33 00.2	
OJC	**Ojcow**	**7.76**	**45**	*e*P	**Pn**	**18 32 24.5**	**+3.3**
OJC	**Ojcow**	**7.76**	**45**	*e*P	**Pn**	**18 32 24.5**	**+3.3**
VAE	**Valguarnera**	**7.91**	**161**	Pn	Pn	18 32 31.6	+8.1
	comp=Z,1.1nm,0.3s,baz=156,slow=6.2,SNR=4.8						
VAE				LR	LR	18 35 35.4	
	comp=Z,1μm,18.7s,baz=3.0,slow=40						
OHR	**Ohrid**		**8.01**	**116**	*e*Pn	**Pn**	**18 32 24.9**	**+0.2**
SKO	**Skopje**		**8.01**	**109**	P	**Pn**	**18 32 25.4**	**+0.7**
SKO	**Skopje**		**8.01**	**109**	*e*Pn	**Pn**	**18 32 23.7**	**-1.0**
STHS	**Stebnicka Huta**		**8.09**	**54**	*e*P	**Pn**	**18 32 27.3**	**+1.5**
STHS	**Stebnicka Huta**		**8.09**	**54**	*e*P	**Pn**	**18 32 27.3**	**+1.5**
STHS	**Stebnicka Huta**		**8.09**	**54**	*e*PN	**Pn**	**18 32 27.3**	**+1.5**
EPF	**Esparros**		**8.12**	**260**	*e*Pn	**Pn**	**18 32 25.8**	**-0.5**
EPF					*e*Sn	**Sn**	**18 33 53.6**	**-4.2**
	comp=Z,42nm,0.4s							
EPF	**Esparros**		**8.12**	**260**	*e*P	**Pn**	**18 32 25.8**	**-0.5**
EPF					*e*		18 33 53.6	
EPF	**Esparros**		**8.12**	**260**	*e*P	**Pn**	**18 32 25.8**	**-0.5**
EPF					*e*S	**Sn**	**18 33 53.6**	**-4.2**
EPF	**Esparros**		**8.12**	**260**	*e*Pn	**Pn**	**18 32 25.8**	**-0.5**
EPF					*e*Sn	**Sn**	**18 33 53.6**	**-4.2**
MFF	**Saint Martin d**		**8.12**	**285**	*e*Pn	**Pn**	**18 32 26.6**	**+0.4**
	SNR=1.0							
MFF					*e*Sn	**Sn**	**18 33 54.4**	**-3.3**
	comp=Z,108nm,0.5s							
MFF	**Saint Martin d**		**8.12**	**285**	*e*P	**Pn**	**18 32 26.6**	**+0.4**
MFF					*e*		18 33 54.4	
MFF	**Saint Martin d**		**8.12**	**285**	*e*P	**Pn**	**18 32 26.6**	**+0.4**
MFF					*e*S	**Sn**	**18 33 54.4**	**-3.3**
MFF	**Saint Martin d**		**8.12**	**285**	*e*Pn	**Pn**	**18 32 26.6**	**+0.4**
MFF					*e*Sn	**Sn**	**18 33 54.4**	**-3.3**
DRGR			**8.18**	**74**	⇑*i*P	**Pn**	**18 32 27.8**	**+0.7**
DRGR			**8.18**	**74**	⇑P	**Pn**	**18 32 27.8**	**+0.7**
DRGR			**8.18**	**74**	P	**Pn**	**18 32 27.8**	**+0.7**
DEV	**Deva**		**8.23**	**80**	⇑*i*P	**Pn**	**18 32 30.4**	**+2.7**
DEV	**Deva**		**8.23**	**80**	⇑P	**Pn**	**18 32 30.4**	**+2.7**
DEV	**Deva**		**8.23**	**80**	P	**Pn**	**18 32 30.4**	**+2.7**
KEK	**Kerkira**		**8.26**	**127**	P	**Pn**	**18

SGMF eSn Sn 18 34 37.1 -7.5
AGG Agios Georgios 10.19 122 P Pn 18 32 53.6 -1.0
AGG Agios Georgios 10.19 122 eP Pn 18 32 55.8 +1.2
AGG Agios Georgios 10.19 122 ePn Pn 18 32 55.8 +1.2
AGG Agios Georgios 10.19 122 ePn Pn 18 32 55.8 +1.2
ANX Ano Chora 10.23 125 P Pn 18 32 55.5 +0.3
QUIF Quistinic 10.36 291 ePn Pn 18 32 56.8 -0.1
SNR=1.0
QUIF eSn Sn 18 34 48.0 -4.6
comp=Z,60nm,0.5s
QUIF Quistinic 10.36 291 eP Pn 18 32 56.8 -0.1
QUIF e 18 34 48.0
QUIF Quistinic 10.36 291 eP Pn 18 32 56.8 -0.1
QUIF eS Sn 18 34 48.0 -4.6
QUIF Quistinic 10.36 291 ePn Pn 18 32 56.8 -0.1
QUIF eSn Sn 18 34 48.0 -4.6
MLR Muntele Rosu 10.37 82 Pn Pn 18 32 58.0 +0.9
comp=Z,0.1nm,0.3s,baz=262,slow=5.2,SNR=7.9
MLR LR LR 18 37 03.3
comp=Z,122nm,18.2s,baz=274,slow=38
MLR Muntele Rosu 10.37 82 i P Pn 18 32 58.7 +1.6
LAKA Lakka 10.50 127 P Pn 18 32 55.4 -3.5
XOR Xorichti 10.50 118 P Pn 18 32 56.7 -2.2
KAVA Kavala 10.51 108 P Pn 18 32 58.2 -0.7
ROSF Rostrenen 10.52 293 ePn Pn 18 32 58.8 -0.3
ROSF eSn Sn 18 34 50.7 -5.8
comp=Z,28nm,0.4s
ROSF Rostrenen 10.52 293 eP Pn 18 32 58.8 -0.3
ROSF e 18 34 50.7
ROSF Rostrenen 10.52 293 eP Pn 18 32 58.8 -0.3
ROSF eS Sn 18 34 50.7 -5.8
ROSF Rostrenen 10.52 293 ePn Pn 18 32 58.8 -0.3
ROSF eSn Sn 18 34 50.7 -5.8
KLV Kalavryta, Ach 10.73 127 P Pn 18 33 02.0 -0.1
PLOR Plostina 10.85 80 i P Pn 18 33 05.2 +1.6
PLOR Plostina 10.85 80 i P Pn 18 33 05.2 +1.6
PLOR Plostina 10.85 80 P Pn 18 33 05.2 +1.6
KDZ Kurdzhali 10.85 103 i P Pn 18 33 02.1 -1.6
KDZ Kurdzhali 10.85 103 i P Pn 18 33 02.1 -1.6
KLNR Kaliningrad 11.18 28 eP Pn 18 33 12.1 +4.1
KLNR Kaliningrad 11.18 28 ePn Pn 18 33 12.1 +4.1
CWF Charnwood Fore 11.30 318 ePn Pn 18 33 10.5 +0.8
CWF Charnwood Fore 11.30 318 ePn Pn 18 33 10.5 +0.8
ALN Alexandroupoli 11.59 106 P Pn 18 33 13.0 -0.8
DID Didima 11.73 126 P Pn 18 33 14.2 -1.5
GUD Guadarrama 12.13 254 P Pn 18 33 22.4 +1.1
GUD Guadarrama 12.13 254 P Pn 18 33 22.4 +1.1
KIS Kishinev 12.37 75 eP P 18 33 31.0 -5.4
KIS eS Sn 18 35 48.0 +6.3
KIS eLi 18 36 20.0
KIS eLQ LQ 18 37 30.0
KIS eLR LR 18 38 05.0
comp=Z,1μm,12.0s
KIS Kishinev 12.37 75 eP P 18 33 31.0 -5.4
KIS eS Sn 18 35 48.0 +6.3
KIS MLR MLR
comp=E,1μm,10.0s
KIS MLR MLR
comp=Z,1μm,10.0s
KIS MLR MLR
comp=Z,1μm,12.0s
KIS Kishinev 12.37 75 eP P 18 33 31.0 -5.4
KIS eS Sn 18 35 48.0 +6.3
comp=Z,1μm,12.0s
ES19 SONSECA Array 12.41 250 ePn Pn 18 33 23.2 -1.8
ES19 SONSECA Array 12.41 250 ePn Pn 18 33 23.2 -1.8
ESDC Sonseca Array 12.46 250 Pn Pn 18 33 24.9 -0.9
comp=Z,0.7nm,0.3s,baz=61,slow=14,SNR=17
ESLA Sonseca Array 12.46 250 ePn Pn 18 33 27.2 +1.4
ESLA Sonseca Array 12.46 250 ePn Pn 18 33 27.2 +1.4
PAB San Pablo 12.79 250 eP Pn 18 33 30.4 +0.2
PAB San Pablo 12.79 250 ePn Pn 18 33 30.4 +0.2
PAB San Pablo 12.79 250 ePn Pn 18 33 30.4 +0.2
KIEV Kiev 13.30 58 i eP Pn 18 33 37.6 +0.5
KIEV pmax pmax
comp=Z,4.0nm,1.1s
KIEV Kiev 13.30 58 eP Pn 18 33 37.6 +0.5
comp=Z,4.0nm,1.1s
AKASG Malin Array Be 13.31 58 Pn Pn 18 33 37.2 -0.1
comp=Z,0.6nm,0.3s,baz=247,slow=12,SNR=5.2
APE Apeiranthos 13.38 122 i eP Pn 18 33 37.9 -0.3
APE pmax pmax
comp=Z,12nm,1.1s
APE Apeiranthos 13.38 122 eP Pn 18 33 37.9 -0.3
comp=Z,12nm,1.1s
PBRG Braganca 13.48 262 eP Pn 18 33 40.2 +0.6
comp=Z,40nm,1.6s
EKA Eskdalemuir Ar 13.81 323 Pn Pn 18 33 44.1 +0.1
baz=140,slow=14,SNR=13
MVO Moncorvo 13.91 260 eP P 18 33 55.2 +1.6
comp=Z,60nm,1.3s
MVO eLQ LQ 18 37 54.7
MVO eLR LR 18 39 04.1
comp=Z,427nm,16.0s
NACGM Naroch 14.02 40 eP P 18 33 55.0 +0.3
NACGM eS S 18 36 33.0 -10
NACGM eLQ LQ 18 38 02.0
NACGM eLR LR 18 39 02.0
NACGM LRM MLR 18 39 38.0
comp=Z,2.6nm,12.0s
IDI Anoyia 14.24 128 Pn Pn 18 33 44.6 -5.4
comp=Z,0.2nm,0.3s,baz=203,slow=15,SNR=2.7
POLO Lamas de Olo 14.37 262 eP Pn 18 33 53.6 +1.8
comp=Z,24nm,1.7s
PGAV Gavieira, Arco 14.50 265 eLQ LQ 18 38 15.5
PGAV eLR LR 18 39 05.9
comp=Z,291nm,18.0s
MTE Manteigas 14.57 258 eP P 18 34 00.2 -0.8
comp=Z,48nm,1.6s
MTE eLQ LQ 18 38 18.2
MTE eLR LR 18 39 40.4
comp=Z,539nm,16.0s
LAST Lasithi 14.66 127 ePn Pn 18 33 54.4 -1.5
LAST Lasithi 14.66 127 ePn Pn 18 33 54.4 -1.5
PVIS Viseu 14.69 260 eP Pn 18 33 56.3 +0.2
comp=Z,31nm,1.4s
PCBR Castelo Branco 14.77 256 eP P 18 34 03.4 +0.3
comp=Z,44nm,1.4s
HFS Hagfors 15.20 5 Pn Pn 18 34 03.1 +0.3
comp=Z,0.1nm,0.3s,baz=201,slow=7.7,SNR=4.7
HFS LR LR 18 40 36.3
comp=Z,894nm,19.2s,baz=191,slow=40
PBAR Barrancos 15.29 250 eP P 18 34 09.3 +0.4
comp=Z,138nm,1.4s
PESTR Estremoz 15.30 253 eP P 18 34 09.3 +0.2
comp=Z,70nm,1.4s
PCAS Casmilo, Conde 15.38 258 eP P 18 34 10.7 +0.8
comp=Z,59nm,1.4s
PTOM Tomar 15.51 256 eP P 18 34 12.1 +0.8
comp=Z,90nm,1.6s
PMTG Montargil 15.64 254 eP P 18 34 13.5 +0.7
comp=Z,56nm,1.2s
EVO Evora 15.76 252 eP Pn 18 34 10.3 0.0
NAO01 NORSAR Array S 15.84 359 ePn P 18 34 13.9 -1.0
NAO01 NORSAR Array S 15.84 359 ePn P 18 34 13.9 -1.0
NB2 NORSAR Subarra 16.04 360 P Pn 18 34 13.4 -0.3
comp=Z,17nm,1.2s,baz=177,slow=14
NOA NORSAR Array B 16.04 360 Pn Pn 18 34 13.0 -0.7
comp=Z,0.3nm,0.3s,baz=189,slow=12,SNR=4.6
NOA LR LR 18 41 12.4
comp=Z,518nm,18.1s,baz=180,slow=40
NC405 NORSAR Array S 16.11 1 ePn P 18 34 21.1 +3.1
PVAQ Vaqueiros 16.16 248 eP P 18 34 18.8 +0.2
comp=Z,39nm,1.2s
PVAQ eLQ LQ 18 40 00.4
PVAQ eLR LR 18 41 08.5
comp=Z,438nm,16.0s
PBDV Barranco-do-Ve 16.39 248 eP P 18 34 21.7 +0.5
comp=Z,50nm,1.3s
VSU Vasula 16.45 30 d i P P 18 34 21.0 -0.6
VSU pmax pmax
comp=Z,142nm,1.0s
VSU Vasula 16.45 30 i P P 18 34 21.0 -0.6
comp=Z,142nm,1.0s
MDT Midelt 17.32 231 Pn P 18 34 31.6 0.0
comp=Z,0.3nm,0.3s,baz=53,slow=13,SNR=8.2
MDT LR LR 18 40 26.7
comp=Z,253nm,19.3s,baz=16,slow=35
BR131 Keskin Array S 17.34 100 eP P 18 34 32.2 +0.4
BR131 Keskin Array S 17.34 100 eP P 18 34 32.2 +0.4
BRTR Keskin Array B 17.34 100 Pn P 18 34 32.7 +0.9
comp=Z,0.1nm,0.3s,baz=304,slow=8.8,SNR=17
BRTR LR LR 18 42 18.1
comp=Z,264nm,19.5s,baz=290,slow=41

ANN Anapa 18.52 81 eP Pn 18 34 46.4 +1.7
ANN eS Sn 18 38 13.2 +2.0
ANN pmax pmax
comp=Z,51nm,1.5s
ANN MLR MLR
comp=N,204nm,12.0s
ANN MLR MLR
comp=Z,474nm,12.0s
ANN MLR MLR
comp=E,152nm,12.0s
ANN Anapa 18.52 81 eP Pn 18 34 46.4 +1.7
comp=E,51nm,1.5s
ANN eS Sn 18 38 13.2 +2.0
comp=E,474nm,12.0s
FINES FINESS Array B 18.60 23 P P 18 34 44.8 -0.5
comp=E,0.5nm,0.3s,baz=178,slow=11,SNR=20
FINES LR LR 18 42 07.0
comp=E,576nm,20.5s,baz=214,slow=37
FIA1 FINESS Array S 18.60 23 eP P 18 34 45.4 +0.1
FIA1 FINESS Array S 18.60 23 eP P 18 34 45.4 +0.1
OBN Obninsk 19.02 49 P P 18 34 49.0 -0.9
comp=E,0.4nm,0.3s,baz=242,slow=17,SNR=3.9
OBN LR LR 18 42 01.9
comp=E,433nm,20.3s,baz=254,slow=36
OBN Obninsk 19.02 49 i P Pn 18 34 52.4 +1.7
OBN i S Sn 18 38 20.2 -2.9
OBN pmax pmax
comp=Z,27nm,1.7s
OBN MLR MLR
comp=Z,323nm,15.0s
VSR Storozhevoye 19.56 62 eP P 18 34 55.9 0.0
VSR pmax pmax
comp=Z,10.0nm,0.7s
VSR Storozhevoye 19.56 62 eP P 18 34 55.9 0.0
comp=Z,10.0nm,0.7s
CSS Mathiatis 19.62 113 eP P 18 34 55.7 -1.0
comp=Z,5.2nm,1.1s
CSS Mathiatis 19.62 113 eP P 18 34 55.7 -1.0
comp=Z,5.2nm,1.1s
MOS Moscow 19.81 48 eP Pn 18 35 01.0 +0.8
MOS pmax pmax
comp=Z,100nm,1.2s
MOS pmax pmax
comp=Z,52nm,0.8s
MOS Moscow 19.81 48 eP Pn 18 35 01.0 +0.8
comp=Z,52nm,0.8s
SOC Sochi 20.38 84 eP P 18 35 04.8 -0.1
SOC ePPP PPP 18 35 28.3
SOC eS S 18 38 53.2 +0.7
SOC pmax pmax
comp=Z,21nm,0.8s
SOC MLR MLR
comp=Z,576nm,19.0s
SOC Sochi 20.38 84 eP P 18 35 04.8 -0.1
comp=Z,21nm,0.8s
SOC eS S 18 38 53.2 +0.7
VRH Novokhopyorsk 21.15 62 eP P 18 35 14.8 +1.6
VRH pmax pmax
comp=Z,10.0nm,0.6s
VRH Novokhopyorsk 21.15 62 eP P 18 35 14.8 +1.6
comp=Z,10.0nm,0.6s
MMAI Mount Meron Ar 22.18 114 P P 18 35 23.5 -0.9
comp=Z,4.5nm,0.7s,baz=302,slow=8.3,SNR=3.0
MMAI LR LR 18 47 47.8
comp=Z,181nm,19.5s,baz=300,slow=47
KIV Kislovodsk 22.38 82 i P P 18 35 28.0 +1.5
KIV i 18 35 49.0
KIV pmax pmax
comp=Z,38nm,1.1s
KIV MLR MLR
comp=Z,150nm,17.0s
KIV Kislovodsk 22.38 82 eP P 18 35 26.4 -0.1
comp=Z,34nm,1.0s
KIV Kislovodsk 22.38 82 eP P 18 35 26.4 -0.1
comp=Z,34nm,1.0s
KVAR Kislovodsk Arr 22.38 82 LR LR 18 45 18.8
comp=Z,174nm,18.8s,baz=318,slow=40
GOF Gofitskoye 22.39 79 i eP P 18 35 27.5 +1.0
GOF Gofitskoye 22.39 79 eP P 18 35 27.5 +1.0
KBZ Khabaz 22.58 82 P P 18 35 28.9 +0.3
comp=Z,8.5nm,0.9s,baz=299,slow=9.2,SNR=8.7
NEY Neytrino 22.58 83 i eP P 18 35 31.2 +2.4
NEY pmax pmax
comp=Z,1.0nm,0.8s
NEY Neytrino 22.58 83 eP P 18 35 31.2 +2.4
comp=Z,1.0nm,0.8s
TAM Tamanrasset 22.68 194 eP P 18 35 29.3 -0.6
TAM pmax pmax
comp=Z,19nm,1.0s
TAM Tamanrasset 22.68 194 eP P 18 35 29.3 -0.6
comp=Z,20nm,1.0s
TAM Tamanrasset 22.68 194 eP P 18 35 29.3 -0.6
comp=Z,20nm,1.0s
KLMR Klimovskoe 22.98 36 eP P 18 35 32.1 -0.6
KLMR e 18 39 18.9
KLMR pmax pmax
comp=Z,30nm,1.3s
KLMR Klimovskoe 22.98 36 eP P 18 35 32.1 -0.6
comp=Z,30nm,1.3s
NCK Nalchik 23.13 82 i eP P 18 35 37.1 +2.7
NCK pmax pmax
comp=Z,7.0nm,1.1s
NCK Nalchik 23.13 82 eP P 18 35 37.1 +2.7
comp=Z,7.0nm,1.1s
ONI Oni 23.28 85 P P 18 35 37.5 +1.6
ONI Oni 23.28 85 P P 18 35 37.5 +1.6
ONI Oni 23.28 85 P P 18 35 37.5 +1.6
ZEI Tsey 23.54 84 eP P 18 35 40.0 +1.3
ZEI pmax pmax
comp=Z,30nm,0.6s
ZEI Tsey 23.54 84 eP P 18 35 40.0 +1.3
comp=Z,30nm,0.6s
ASF Jabal al Asfar 23.68 114 P P 18 35 41.7 +1.7
comp=Z,13nm,0.9s,baz=252,slow=5.2,SNR=14
GUDG Gudauri 24.04 84 P P 18 35 45.9 +2.4
EIL Elat 24.16 121 P P 18 35 46.6 +2.1
comp=Z,6.3nm,0.7s,baz=353,slow=9.0,SNR=7.8
GNI Garni 25.02 89 P P 18 35 54.8 +2.5
comp=Z,7.3nm,0.8s,baz=203,slow=8.4,SNR=4.7
GNI LR LR 18 47 29.5
comp=Z,92nm,18.0s,baz=250,slow=41
GNI Garni 25.02 89 d eP P 18 35 53.3 +1.0
GNI pmax pmax
comp=Z,193nm,1.7s
GNI Garni 25.02 89 eP P 18 35 53.3 +1.0
comp=Z,193nm,1.7s
GNI Garni 25.02 89 eP P 18 35 51.7 -0.6
comp=Z,68nm,1.4s
APA Apatity 25.42 20 i P P 18 35 56.0 +0.5
APA i 18 36 28.0
APA i S S 18 40 18.0 -3.4
APA pmax pmax
comp=Z,6.0nm,1.3s
APA MLR MLR
comp=Z,800nm,20.0s
APA Apatity 25.42 20 i P P 18 35 56.0 +0.5
comp=Z,6.0nm,1.3s
ARA0 ARCESS Array S 25.61 12 eP P 18 35 57.8 +0.6
ARA0 ARCESS Array S 25.61 12 eP P 18 35 57.8 +0.6
ARCES ARCESS Array B 25.61 12 P P 18 35 58.3 +1.1
comp=Z,2.5nm,0.6s,baz=186,slow=6.1,SNR=13
ARCES LR LR 18 46 19.8
comp=Z,382nm,18.9s,baz=222,slow=37
LVZ Lovozero 25.98 20 i eP P 18 36 03.0 +2.4
LVZ pmax pmax
comp=Z,27nm,1.7s
LVZ Lovozero 25.98 20 eP P 18 36 03.0 +2.4
comp=Z,27nm,1.7s
BORG Borgarnes 26.72 329 LR LR 18 47 46.7
comp=Z,295nm,18.0s,baz=142,slow=39
JMIC Jan Mayen 27.76 346 LR LR 18 47 04.8
comp=Z,196nm,20.5s,baz=82,slow=36
SOKR Solikamsk 30.71 45 c i P P 18 36 44.0 +1.2
SOKR S S 18 41 41.6 -3.1
SOKR pmax pmax
comp=Z,37nm,1.5s
SOKR MLR MLR
comp=Z,189nm,16.0s
SOKR Solikamsk 30.71 45 i P P 18 36 44.0 +1.2
comp=Z,37nm,1.5s
ARU Arti 31.41 52 P P 18 36 49.7 +0.6
comp=Z,8.0nm,0.6s,baz=259,slow=7.3,SNR=19
ARU Arti 31.41 52 d i P P 18 36 49.0 -0.1
ARU 18 37 48.4
ARU 18 39 42.8
ARU S S 18 41 57.9 +2.1

ARU SS SnSn 18 43 42.2 +2.4
ARU pmax pmax
comp=Z,35nm,1.2s
ARU MLR MLR
comp=Z,679nm,15.0s
ARU Arti 31.41 52 i P P 18 36 49.0 -0.1
comp=Z,35nm,1.2s
ARU Arti 31.41 52 PcP PcP 18 39 42.8 +0.7
ARU S S 18 41 57.9 +2.1
comp=Z,679nm,15.0s
ARU Arti 31.41 52 eP P 18 36 48.9 -0.2
comp=Z,32nm,1.1s
SVE Sverdlovsk 32.56 51 c i P P 18 37 00.2 +1.0
SVE pmax pmax
comp=Z,66nm,1.1s
SVE MLR MLR
comp=Z,675nm,13.0s
SVE Sverdlovsk 32.56 51 i P P 18 37 00.2 +1.0
comp=Z,675nm,13.0s
TOA0 Torodi Ar. Sit 32.81 197 eP P 18 36 59.4 -2.3
TOA0 Torodi Ar. Sit 32.81 197 eP P 18 36 59.4 -2.3
TORD Torodi Ar. Bea 32.81 197 P P 18 36 59.3 -2.4
comp=Z,5.5nm,0.5s,baz=7.7,slow=8.9,SNR=49
TORD PcP PcP 18 39 45.2 -1.4
comp=Z,1.2nm,0.7s,baz=5.3,slow=3.2,SNR=3.7
TORD LR LR 18 51 03.2
comp=Z,296nm,20.4s,baz=355,slow=38
SPA0 Spitsbergen Ar 33.32 2 eP P 18 37 06.2 +0.6
SPA0 Spitsbergen Ar 33.32 2 eP P 18 37 06.2 +0.6
SPITS Spitsbergen Ar 33.32 2 P P 18 37 07.0 +1.4
comp=Z,7.5nm,1.0s,baz=143,slow=8.9,SNR=5.1
SPITS Spitsbergen Ar 33.32 2 P P 18 37 07.1 +1.4
SPITS pmax pmax
comp=Z,6.0nm,0.8s
KBS Kingsbay 34.01 0 i eP P 18 37 14.1 +2.5
KBS pmax pmax
comp=Z,33nm,1.0s
KBS Kingsbay 34.01 0 eP P 18 37 14.1 +2.5
comp=Z,33nm,1.0s
GEYT Ailbeck 35.41 85 P P 18 37 25.1 +0.9
comp=Z,4.4nm,0.8s,baz=291,slow=9.4,SNR=14
ZRNK Zerenda 37.78 57 eP P 18 37 44.3 +0.2
ZRNK pmax pmax
comp=Z,7.0nm,0.9s
ZRNK Zerenda 37.78 57 eP P 18 37 44.3 +0.2
comp=Z,7.1nm,0.9s
ZRNK Zerenda 37.78 57 eP P 18 37 44.3 +0.2
comp=Z,7.1nm,0.9s
BRVK Borovoye 38.51 56 i eP P 18 37 51.7 +1.4
BRVK pmax pmax
comp=Z,42nm,1.7s
BRVK Borovoye 38.51 56 eP P 18 37 51.7 +1.4
comp=Z,42nm,1.7s
BVAR Borovoye Array 38.58 56 P P 18 37 51.7 +0.8
comp=Z,2.2nm,1.0s,baz=280,slow=8.6,SNR=4.8
DBIC Dimbokro 40.71 205 P P 18 38 06.7 -2.3
comp=Z,5.9nm,0.7s,baz=0.8,slow=9.4,SNR=11
KKAR Karatay Array 41.79 71 eP P 18 38 18.2 +0.5
KKAR Karatay Array 41.79 71 eP P 18 38 18.2 +0.5
KKAR Karatay Array 41.79 71 eP P 18 38 18.2 +0.5
NRIK Noril'sk 44.04 30 P P 18 38 36.3 +0.8
comp=Z,2.8nm,0.7s,baz=260,slow=9.5,SNR=4.9
NRIK LR LR 18 59 28.0
comp=Z,345nm,19.2s,baz=278,slow=39
FRU Bishkek 44.64 69 eP P 18 38 40.0 -0.7
FRU Bishkek 44.64 69 eP P 18 38 40.0 -0.7
AAK Ala-Archa 44.64 70 i eP P 18 38 42.8 +1.9
AAK pmax pmax
comp=Z,22nm,1.2s
AAK Ala-Archa 44.64 70 eP P 18 38 42.5 +1.6
comp=Z,32nm,1.6s
AAK Ala-Archa 44.64 70 eP P 18 38 42.5 +1.6
comp=Z,32nm,1.6s
NVS Novosibirsk 45.40 51 eP P 18 38 47.8 +1.3
NVS pmax pmax
comp=Z,26nm,1.4s
NVS pmax pmax
comp=E,10.0nm,1.5s
NVS Novosibirsk 45.40 51 eP P 18 38 47.8 +1.3
comp=E,26nm,1.4s
DRLN Deer Lake 45.49 301 eP P 18 38 43.8 -3.6
comp=E,46nm,0.8s
ZAA0 Zalesovo Array 46.58 51 eP P 18 38 56.4 +0.6
ZAA0 Zalesovo Array 46.58 51 eP P 18 38 56.4 +0.6
ZALV Zalesovo Beam 46.58 51 P P 18 38 56.1 +0.3
comp=E,3.4nm,0.7s,baz=292,slow=7.8,SNR=15
ZALV LR LR 18 59 05.0
comp=E,146nm,18.2s,baz=246,slow=37
KSH Kashi 47.06 73 eP P 18 39 01.1 +1.1
KSH epP pP 18 39 05.4 +0.4
KSH esP sP 18 39 07.8 +0.9
KSH ePP PP 18 40 51.8 +1.3
KSH PcS PcS 18 44 27.4 +0.4
KSH S S 18 45 50.5 -0.8
KSH ScS ScS 18 48 51.4 -2.4
KSH pmax pmax
comp=E,9.0nm,0.7s
KSH LR LR
comp=E,210nm,9.4s
KSH LR LR
comp=E,230nm,6.4s
KSH LR LR
comp=E,200nm,6.3s
MAKZ Makanchi 47.68 61 eP P 18 39 03.6 -1.0
MAKZ pmax pmax
comp=Z,7.0nm,1.0s
MAKZ Makanchi 47.68 61 eP P 18 39 03.6 -1.0
comp=Z,6.9nm,1.0s
MAKZ Makanchi 47.68 61 eP P 18 39 03.6 -1.0
comp=Z,6.9nm,1.0s
MK31 Makanchi Array 47.88 61 eP P 18 39 05.9 -0.2
MK31 Makanchi Array 47.88 61 eP P 18 39 05.9 -0.2
MK31 Makanchi Array 47.88 61 eP P 18 39 05.9 -0.2
MKAR Makanchi Array 47.88 61 P P 18 39 06.5 +0.4
comp=Z,5.3nm,0.8s,baz=290,slow=5.0,SNR=24
MKAR LR LR 19 00 28.5
comp=Z,195nm,19.2s,baz=301,slow=38
MKAR Makanchi Array 47.88 61 eP P 18 39 05.8 -0.3
MK01 Makanchi Array 47.89 61 eP P 18 39 05.7 -0.6
MK01 Makanchi Array 47.89 61 eP P 18 39 05.7 -0.6
SCHQ Schefferville 48.72 311 P P 18 39 12.6 +0.1
comp=Z,8.5nm,0.8s,baz=90,slow=5.9,SNR=4.6
SCHQ LR LR 18 58 29.7
comp=Z,172nm,18.4s,baz=72,slow=34
LMN Caledonia Moun 51.42 300 eP P 18 39 33.0 -0.1
comp=Z,12nm,0.8s
LMN Caledonia Moun 51.42 300 eP P 18 39 33.0 -0.1
comp=Z,12nm,0.8s
WMQ Urumqi 52.63 62 eP P 18 39 42.8 +0.6
WMQ pP sP 18 39 49.8 +0.6
WMQ S S 18 47 05.5 -3.4
WMQ SS SS 18 50 50.5 +3.7
WMQ pmax pmax
comp=Z,11nm,0.9s
WMQ pmax pmax
comp=Z,130nm,4.9s
WMQ LR LR
comp=Z,310nm,16.2s
PKME Peaks-Kenny Pk 54.45 301 eP P 18 39 55.2 -0.2
comp=Z,24nm,1.0s
PKME Peaks-Kenny Pk 54.45 301 eP P 18 39 55.2 -0.2
comp=Z,24nm,1.0s
LONY Lake Ozonia 57.97 303 eP P 18 40 21.8 +1.2
comp=Z,22nm,1.5s
LONY Lake Ozonia 57.97 303 eP P 18 40 21.8 +1.2
comp=Z,22nm,1.5s
PYUN Piuthan 58.21 81 eP P 18 40 22.9 +0.1
comp=Z,89nm,1.3s
ZAK Zakamensk 58.29 49 eP P 18 40 21.1 -1.7
ZAK pmax pmax
comp=Z,5.0nm,1.5s
ZAK Zakamensk 58.29 49 eP P 18 40 21.1 -1.7
comp=Z,5.0nm,1.5s
KOLN Koldanda 58.84 81 eP P 18 40 28.1 +1.0
comp=Z,20nm,0.8s
BOD Bodaibo 59.21 37 eP P 18 40 28.4 -0.6
BOD pmax pmax
comp=Z,10.0nm,1.7s
BOD Bodaibo 59.21 37 eP P 18 40 28.4 -0.6
comp=Z,10.0nm,1.7s
PLVO Plevna 59.21 304 eP P 18 40 30.2 +1.0
comp=Z,19nm,1.4s
PLVO Plevna 59.21 304 eP P 18 40 30.2 +1.0
comp=Z,19nm,1.4s
GKN Gorkha 59.42 80 eP P 18 40 30.9 -0.2
comp=Z,67nm,1.2s

DMN Daman 59.99 80 *eP* **P 18 40 35.1 -0.1**
KKN Kakani 60.00 80 *eP* **P 18 40 34.5 -0.7**
PKIN Phulchoki 60.21 80 *eP* **P 18 40 36.3 -0.4**
comp=Z,31nm,1.1s
SADO Sadowa 60.57 305 P **P 18 40 39.7 +1.1**
comp=Z,7.0nm,0.9s,baz=43,slow=10,SNR=4.0
N59A State Game Lan 60.80 300 P **P 18 40 40.1 -0.1**
baz=54
SONA1 Songino Array 61.42 50 *eP* **P 18 40 44.8 +0.3**
SONA1 Songino Array 61.42 50 *eP* **P 18 40 44.9 +0.3**
SONM Songino Array 61.42 50 P **P 18 40 45.5 +1.1**
comp=Z,8.1nm,1.1s,baz=296,slow=8.6,SNR=27
SONM LR LR 19 09 43.1
comp=Z,293nm,18.3s,baz=288,slow=38
SSPA Standing Stone 62.26 301 *eP* **P 18 40 49.8 -0.3**
comp=Z,51nm,1.5s
SSPA Standing Stone 62.26 301 *eP* **P 18 40 49.8 -0.3**
comp=Z,51nm,1.5s
YAK Yakutsk 62.44 28 P **P 18 40 53.2 +2.4**
comp=Z,3.5nm,0.3s,baz=134,slow=3.1,SNR=6.5
YAK Yakutsk 62.44 28 *eP* **P 18 40 51.4 +0.6**
YAK pmax pmax
comp=Z,12nm,1.1s
YAK pmax pmax
comp=N,6.0nm,1.6s
YAK pmax pmax
comp=E,6.0nm,1.5s
YAK Yakutsk 62.44 28 *eP* **P 18 40 51.4 +0.6**
comp=E,6.0nm,1.6s
YAK Yakutsk 62.44 28 *eP* **P 18 40 51.3 +0.5**
comp=E,16nm,1.1s
GTA Gaotai 62.63 61 *eP* **P 18 40 53.6 +0.9**
GTA pP pP 18 40 57.8 0.0
GTA sP sP 18 41 01.6 +1.9
GTA pmax pmax
comp=E,4.0nm,1.4s
M54A Oil Creek Stat 62.81 302 P **P 18 40 54.4 +0.7**
baz=53
LSA Lhasa 62.88 74 P **P 18 40 55.8 +0.9**
LSA pmax pmax
comp=E,15nm,0.9s
O56A Blue Knob Stat 62.90 301 P **P 18 40 54.9 +0.5**
baz=53
N54A Moraine State 63.34 302 P **P 18 40 57.9 +0.6**
baz=52
INK Inuvik 63.95 346 P **P 18 41 02.1 +1.4**
comp=E,2.4nm,0.8s,baz=28,slow=8.0,SNR=6.2
YKA Yellowknife Ar 64.43 335 P **P 18 41 04.6 +0.6**
comp=E,1.5nm,0.8s,baz=50,slow=6.6,SNR=3.7
YKA LR LR 19 08 35.4
comp=E,18nm,21.9s,baz=0.0,slow=36
EYMN Ely 65.37 314 P **P 18 41 10.8 +0.3**
baz=50
C38A Sawbill Land. 65.41 314 P **P 18 41 10.3 -0.4**
baz=50
BILL Bilibino 65.69 10 *i* P **P 18 41 12.6 +0.4**
BILL pmax pmax
comp=Z,7.0nm,1.1s
BILL Bilibino 65.69 10 *i* P **P 18 41 12.6 +0.4**
comp=Z,7.0nm,1.1s
C37A Embarrass 65.87 314 P **P 18 41 13.2 -0.4**
baz=49
ULM Lac du Bonnet 66.01 318 P **P 18 41 14.6 +0.1**
comp=Z,6.8nm,0.8s,baz=34,slow=4.1,SNR=9.3
ULM LR LR 19 08 20.0
comp=Z,99nm,21.1s,baz=62,slow=34
ULM Lac du Bonnet 66.01 318 *eP* **P 18 41 14.8 +0.3**
comp=Z,9.5nm,0.9s
ULM Lac du Bonnet 66.01 318 *eP* **P 18 41 14.8 +0.3**
comp=Z,9.5nm,0.9s
C36A Pine Crest Far 66.18 314 P **P 18 41 15.4 -0.3**
baz=49
B35A Bob, Littlefor 66.23 315 P **P 18 41 15.6 -0.3**
baz=48
D37A Cotton 66.36 314 P **P 18 41 16.2 -0.7**
baz=49
A33A Warroad 66.66 317 P **P 18 41 19.1 +0.4**
baz=48
D36A Goodland 66.73 314 P **P 18 41 19.6 +0.4**
baz=48
C35A Jirik Farms, M 66.79 315 P **P 18 41 19.3 -0.3**
baz=48
COLD Coldfoot 67.18 352 *eP* **P 18 41 22.4 +0.7**
comp=Z,5.4nm,1.1s
COLD Coldfoot 67.18 352 *eP* **P 18 41 22.4 +0.7**
comp=Z,5.4nm,1.1s
LZH Lanzhou 67.19 61 *eP* **P 18 41 21.9 -0.6**
LZH pP pP 18 41 26.9 -0.8
LZH sP sP 18 41 28.8 -0.8
LZH pmax pmax
comp=Z,23nm,1.0s
A32A Rocking H Ranc 67.21 317 P **P 18 41 22.4 +0.2**
baz=47
E36A McGregor 67.22 314 P **P 18 41 22.8 +0.5**
baz=48
AGMN Agassiz Nation 67.33 316 P **P 18 41 23.3 +0.4**
baz=47
AGMN Agassiz Nation 67.33 316 *eP* **P 18 41 22.4 -0.5**
comp=Z,37nm,1.8s
AGMN Agassiz Nation 67.33 316 *eP* **P 18 41 22.4 -0.5**
comp=Z,37nm,1.8s
J41A Loganville 67.58 309 P **P 18 41 25.2 +0.6**
baz=49
B32A Ashes, Strandq 67.59 317 P **P 18 41 25.1 +0.5**
baz=47
C33A Trail 67.65 316 P **P 18 41 25.3 +0.3**
baz=47
F36A Milaca 67.79 313 P **P 18 41 26.5 +0.5**
baz=48
J40A Soldiers Grove 67.96 310 P **P 18 41 27.4 +0.4**
baz=48
SEY Seymchan 68.01 18 P **P 18 41 27.7 +0.7**
comp=Z,6.7nm,1.0s,baz=332,slow=7.3,SNR=10
K41A Shullsburg 68.24 309 P **P 18 41 29.0 +0.2**
baz=48
I38A Scanlan Farm, 68.39 311 P **P 18 41 30.0 +0.3**
baz=48
B30A Myrvik Farm, E 68.42 318 P **P 18 41 29.5 -0.3**
baz=46
EGAK Eagle 68.42 348 *eP* **P 18 41 31.1 +1.6**
comp=Z,14nm,1.6s
EGAK Eagle 68.42 348 *eP* **P 18 41 31.1 +1.6**
comp=Z,14nm,1.6s
A29A Manning Farm, 68.51 318 P **P 18 41 30.6 +0.1**
baz=46
J39A Decorah 68.53 310 P **P 18 41 30.8 +0.2**
baz=48
C31A Landman Farms, 68.59 317 P **P 18 41 30.4 -0.5**
baz=46
E33A Westby DABS, E 68.62 315 P **P 18 41 31.1 0.0**
baz=47
K40A Colesburg 68.64 309 P **P 18 41 31.2 -0.1**
baz=48
HHC Hu-ho-hao-te 68.70 53 *eP* **P 18 41 30.9 -1.0**
HHC PP **PP 18 44 04.3 +1.2**
HHC S **S 18 50 31.0 -3.3**
HHC pmax pmax
comp=Z,14nm,1.3s
HHC pmax pmax
comp=Z,81nm,4.5s
HHC LR LR
comp=Z,410nm,18.7s
HHC LR LR
comp=Z,320nm,18.7s
HHC LR LR
comp=Z,310nm,14.9s
L41A Preston 68.70 309 P **P 18 41 32.0 +0.3**
baz=48
DAWY Dawson 68.81 347 *eP* **P 18 41 33.6 +1.5**
comp=Z,16nm,1.4s
DAWY Dawson 68.81 347 *eP* **P 18 41 33.6 +1.5**
comp=Z,16nm,1.4s
TKL Tuckaleechee C 68.99 300 P **P 18 41 33.2 -0.3**
comp=Z,4.9nm,0.9s,baz=85,slow=5.0,SNR=4.6
TKL LR LR 19 11 42.1
comp=Z,87nm,18.3s,baz=122,slow=36
K39A Oelwein 69.05 310 P **P 18 41 33.6 -0.2**
baz=48
L40A Anamosa 69.11 309 P **P 18 41 34.3 0.0**
baz=48
MDM Murphy Dome 69.18 351 *eP* **P 18 41 35.2 +0.9**
comp=Z,8.7nm,1.2s
MDM Murphy Dome 69.18 351 *eP* **P 18 41 35.2 +0.9**
comp=Z,8.7nm,1.2s
IL1 Eielson Array 69.20 350 *eP* **P 18 41 34.6 +0.2**
IL1 Eielson Array 69.20 350 *eP* **P 18 41 34.6 +0.2**
ILAR Eielson Array 69.20 350 P **P 18 41 35.6 +1.2**
comp=Z,1.4nm,0.9s,baz=12,slow=6.1,SNR=15
ILAR LR LR 19 12 45.0
comp=Z,40nm,20.6s,baz=44,slow=37
F33A 5 Mile Ranch, 69.22 315 P **P 18 41 34.7 -0.2**
baz=46,SNR=6.1
H35A Sunnyside Ranc 69.26 313 P **P 18 41 35.8 +0.7**
baz=47
G34A Benson 69.30 314 P **P 18 41 35.6 +0.2**
baz=46,SNR=5.1
MLY Manley 69.38 352 *eP* **P 18 41 36.7 +1.1**
comp=Z,10nm,1.3s
MLY Manley 69.38 352 *eP* **P 18 41 36.7 +1.1**
comp=Z,10nm,1.3s
L39A Vinton 69.50 309 P **P 18 41 36.4 -0.3**
baz=47
E31A Nome 69.52 316 P **P 18 41 36.9 +0.2**
baz=46
J37A Redenius Farm, 69.53 311 P **P 18 41 36.8 -0.1**
baz=47
H34A Spellman Lake, 69.77 313 P **P 18 41 39.2 +0.9**
baz=46
DOT Dot Lake 69.91 349 *eP* **P 18 41 39.8 +1.0**
comp=Z,38nm,1.6s
DOT Dot Lake 69.91 349 *eP* **P 18 41 39.8 +1.0**
comp=Z,38nm,1.6s
J36A Seneca 1, Swea 69.94 312 P **P 18 41 39.9 +0.5**
baz=46
K37A Belmond 69.95 311 P **P 18 41 39.1 -0.3**
baz=47
L38A Oak Wood Farm, 70.01 310 P **P 18 41 39.3 -0.5**
baz=47
M39A Webster 70.03 309 P **P 18 41 39.4 -0.6**
baz=47
P42A Winchester 70.29 306 P **P 18 41 40.8 -0.7**
baz=47
BPAW Bear Paw Mtn. 70.31 352 *eP* **P 18 41 41.0 -0.3**
comp=Z,6.0nm,1.0s
BPAW Bear Paw Mtn. 70.31 352 *eP* **P 18 41 41.0 -0.3**
comp=Z,6.0nm,1.0s
MCK McKinley 70.45 351 *eP* **P 18 41 42.1 0.0**
MCK pmax pmax
comp=Z,22nm,1.3s
MCK McKinley 70.45 351 *eP* **P 18 41 42.1 0.0**
comp=Z,22nm,1.3s
MCK McKinley 70.45 351 *eP* **P 18 41 42.1 0.0**
comp=Z,22nm,1.3s
CD2 Chengdu 70.50 66 *eP* **P 18 41 41.5 -1.5**
CD2 PP **PP 18 44 16.8 -2.0**
CD2 S **S 18 50 54.1 -1.5**
CD2 SKS **SKSac 18 51 42.9 -1.4**
CD2 SS **SS 18 55 25.3 -0.9**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.6s
MA2 Magadan 70.58 21 P **P 18 41 46.0 +3.0**
comp=Z,9.0nm,0.8s,baz=333,slow=7.2,SNR=3.7
MA2 LR LR 19 16 30.7
comp=Z,124nm,19.4s,baz=322,slow=39
MA2 Magadan 70.58 21 P **P 18 41 46.0 +3.0**
MA2 pmax pmax
comp=Z,9.0nm,0.9s
MA2 MLR MLR
comp=Z,124nm,19.4s
MA2 Magadan 70.58 21 P **P 18 41 46.0 +3.0**
N39A Derby Farms, D 70.62 309 P **P 18 41 43.0 -0.5**
baz=47
P41A Barry, Barry 70.63 307 P **P 18 41 43.0 -0.6**
baz=47
H32A Carlson Farm, 70.73 314 P **P 18 41 44.7 +0.5**
baz=45
KTH Kantishna Hill 70.84 352 *eP* **P 18 41 45.7 +1.1**
comp=Z,4.7nm,1.0s
KTH Kantishna Hill 70.84 352 *eP* **P 18 41 45.7 +1.1**
comp=Z,4.7nm,1.0s
Q42A Golden Eagle 70.85 306 P **P 18 41 45.0 +0.1**
baz=47
ECSD EROS Data Cent 70.85 313 P **P 18 41 45.4 +0.5**
baz=46,SNR=6.1
ECSD EROS Data Cent 70.85 313 *eP* **P 18 41 45.0 0.0**
comp=Z,8.1nm,0.8s
ECSD EROS Data Cent 70.85 313 *eP* **P 18 41 45.0 0.0**
comp=Z,8.1nm,0.8s
TRF Thorofare Moun 70.87 351 *eP* **P 18 41 45.3 +0.4**
comp=Z,9.6nm,1.1s
TRF Thorofare Moun 70.87 351 *eP* **P 18 41 45.3 +0.4**
comp=Z,9.6nm,1.1s
DHY Denali Highway 70.90 350 *eP* **P 18 41 46.1 +1.0**
comp=Z,24nm,1.0s
DHY Denali Highway 70.90 350 *eP* **P 18 41 46.1 +1.0**
comp=Z,24nm,1.0s
WVT Waverly 71.14 302 *eP* **P 18 41 45.5 -1.3**
WVT pmax pmax
comp=Z,17nm,1.4s
WVT Waverly 71.14 302 *eP* **P 18 41 45.5 -1.3**
comp=Z,17nm,1.4s
WVT Waverly 71.14 302 *eP* **P 18 41 45.5 -1.3**
comp=Z,17nm,1.4s
EDM Edmonton 71.26 328 *eP* **P 18 41 48.3 +1.0**
EDM pmax pmax
comp=Z,12nm,0.9s
EDM Edmonton 71.26 328 *eP* **P 18 41 48.3 +1.0**
comp=Z,12nm,0.9s
EDM Edmonton 71.26 328 *eP* **P 18 41 48.3 +1.0**
comp=Z,12nm,0.9s
P40A Paris 71.29 307 P **P 18 41 46.8 -0.8**
baz=47
S43A Fulton Ridge, 71.49 305 P **P 18 41 48.7 -0.2**
baz=47
SUSD Miller 71.55 315 P **P 18 41 50.0 +0.8**
baz=44
XAN Xi'an 71.68 60 P **P 18 41 50.9 +0.8**
XAN pmax pmax
comp=Z,16nm,1.1s
XAN pmax pmax
comp=Z,390nm,7.3s
PARMO Parma 71.92 304 *eP* **P 18 41 51.5 0.0**
PARMO Parma 71.92 304 *eP* **P 18 41 51.5 0.0**
TT01 Tatalina 71.93 354 *eP* **P 18 41 53.2 +2.1**
TT01 Tatalina 71.93 354 *eP* **P 18 41 53.2 +2.1**
L34A Svendsen Farm, 71.97 312 P **P 18 41 52.1 +0.4**
baz=45
DLBC Dease Lake 72.02 340 P **P 18 41 54.4 +2.6**
comp=Z,1.0nm,0.4s,baz=92,slow=2.3,SNR=4.4
DLBC Dease Lake 72.02 340 *eP* **P 18 41 55.0 +3.2**
comp=Z,7.2nm,1.3s
DLBC Dease Lake 72.02 340 *eP* **P 18 41 55.0 +3.2**
comp=Z,7.2nm,1.3s
O37A Wolven Farm, M 72.02 309 P **P 18 41 51.9 -0.2**
baz=46
P38A Dawn 72.06 308 P **P 18 41 51.7 -0.6**
baz=46
Q39A Willow Grove F 72.15 308 P **P 18 41 53.1 +0.3**
baz=46
SML Sawmill 72.25 350 *eP* **P 18 41 53.8 +0.8**
SML pmax pmax
comp=Z,17nm,1.0s
SML Sawmill 72.25 350 *eP* **P 18 41 53.8 +0.8**
comp=Z,17nm,1.0s
SML Sawmill 72.25 350 *eP* **P 18 41 53.8 +0.8**
comp=Z,17nm,1.0s
R40A Maddies Statio 72.27 307 P **P 18 41 53.4 -0.1**
baz=46
S41A Jillco Farms, 72.45 306 P **P 18 41 54.4 -0.3**
baz=46,SNR=8.0
P37A Lathrop 72.53 309 P **P 18 41 54.8 -0.3**
baz=46
BMRM Bremner River 72.55 348 *eP* **P 18 41 56.2 +1.3**
comp=Z,21nm,1.1s
BMRM Bremner River 72.55 348 *eP* **P 18 41 56.2 +1.3**
comp=Z,21nm,1.1s
Q38A Cooks Store, C 72.56 308 P **P 18 41 55.1 -0.1**
baz=46
Y47A UCPARC, Winfie 72.66 301 P **P 18 41 55.3 -0.6**
baz=47
R39A Chumby, Stover 72.69 307 P **P 18 41 55.5 -0.5**
baz=46
LRAL Lakeview Retre 72.72 299 *eP* **P 18 41 56.3 0.0**
comp=Z,10nm,0.8s
LRAL Lakeview Retre 72.72 299 *eP* **P 18 41 56.3 0.0**
comp=Z,10nm,0.8s
KLR Kul'dur 72.74 36 P **P 18 41 56.2 0.0**
comp=Z,2.5nm,1.0s,baz=308,slow=6.6,SNR=6.1
KLR LR LR 19 16 54.0
comp=Z,252nm,18.1s,baz=354,slow=38
N34A Lincoln 72.83 311 P **P 18 41 56.4 -0.5**
baz=45
Z48A Northport 72.83 300 P **P 18 41 56.5 -0.5**
baz=47,SNR=9.3
T41A Mountain View 72.84 305 P **P 18 41 56.8 -0.2**
baz=46,SNR=7.7
S40A Lebanon 72.88 306 P **P 18 41 57.1 -0.1**
baz=46,SNR=6.1
O35A Humboldt 72.91 310 P **P 18 41 57.2 -0.2**
baz=45
P36A Good Intent, A 72.98 309 P **P 18 41 58.0 +0.2**
baz=45
U42A Revenden 73.01 304 P **P 18 41 58.0 0.0**
baz=46
T40A Mansfield 73.20 306 P **P 18 41 59.3 +0.2**
baz=46,SNR=7.3
X45A UM Field Stati 73.24 302 P **P 18 41 59.2 -0.1**
baz=47
R38A Fenwick Farm, 73.27 307 P **P 18 41 59.4 -0.1**
baz=46
Z47A Carrollton 73.27 300 P **P 18 42 00.2 +0.7**
baz=47
S39A Bolivar 73.28 307 P **P 18 41 59.5 0.0**
baz=46
Y46A Houston 73.28 301 P **P 18 41 59.2 -0.4**
baz=47
BGNE Belgrade 73.30 312 P **P 18 42 00.2 +0.6**
baz=44
BGNE Belgrade 73.30 312 *eP* **P 18 41 59.0 -0.7**
comp=Z,24nm,0.6s
BGNE Belgrade 73.30 312 *eP* **P 18 41 59.0 -0.7**
comp=Z,24nm,0.6s
LAO LASA Array 73.37 320 P **P 18 42 00.2 +0.1**
baz=41
LAO LASA Array 73.37 320 *eP* **P 18 42 00.5 +0.5**
comp=Z,15nm,0.8s
LAO LASA Array 73.37 320 *eP* **P 18 42 00.5 +0.5**
comp=Z,15nm,0.8s
O34A Beatrice 73.40 310 P **P 18 42 00.5 +0.3**
baz=45
U41A Viola 73.41 305 P **P 18 42 00.8 +0.4**
baz=46
V42A Cord 73.47 304 P **P 18 42 00.9 +0.2**
baz=46
P35A Duane Minner, 73.50 310 P **P 18 42 01.0 +0.2**
baz=45
Q36A Arnold C. Orve 73.59 309 P **P 18 42 01.9 +0.6**
baz=45
S38A Stockton 73.66 307 P **P 18 42 01.7 -0.1**
baz=45
KMI Kunming 73.67 71 P **P 18 42 00.3 -2.0**
KMI pP pP 18 42 04.3 -3.2
KMI sP sP 18 42 06.1 -3.3
KMI pmax pmax
comp=Z,4.0nm,0.7s
KMI LR LR
comp=Z,110nm,52.3s
SVW2 Sparrevohn 73.69 353 *eP* **P 18 42 03.0 +1.4**
comp=Z,6.4nm,1.0s
SVW2 Sparrevohn 73.69 353 *eP* **P 18 42 03.0 +1.4**
comp=Z,6.4nm,1.0s
H25A Fruitdale 73.69 318 P **P 18 42 02.6 +0.6**
baz=42
R37A Teagarden Farm 73.69 308 P **P 18 42 02.0 +0.1**
baz=45
T39A Clever 73.78 306 P **P 18 42 02.2 -0.3**
baz=46
P34A Walnut Farm, R 73.92 310 P **P 18 42 03.5 +0.2**
baz=44,SNR=9.2
V41A Mountainview 73.94 305 P **P 18 42 03.4 -0.1**
baz=46,SNR=9.5
U40A Yellville 73.94 305 P **P 18 42 03.4 -0.1**
baz=46,SNR=8.2
O33A Hebron 73.95 311 P **P 18 42 03.3 -0.2**
baz=44
CN2 Changchun 73.98 43 *eP* **P 18 42 04.6 +1.1**
CN2 pmax pmax
comp=Z,10.0nm,0.8s
CN2 LR LR
comp=Z,500nm,17.0s
CN2 LR LR
comp=Z,500nm,17.0s
CN2 LR LR
comp=Z,300nm,14.0s
Q35A Mercer Eighty, 73.98 309 P **P 18 42 03.3 -0.4**
baz=45
X43A Marvell 74.06 303 P **P 18 42 03.5 -0.6**
baz=46
R36A Gordon, Harris 74.06 308 P **P 18 42 03.8 -0.4**
baz=45
S37A Fort Scott 74.08 308 P **P 18 42 03.9 -0.3**
baz=45
KSU1 Kansas State U 74.12 310 P **P 18 42 04.2 -0.2**
baz=44
KSU1 Kansas State U 74.12 310 *eP* **P 18 42 03.4 -1.1**
comp=Z,29nm,0.8s
KSU1 Kansas State U 74.12 310 *eP* **P 18 42 03.4 -1.1**
comp=Z,29nm,0.8s
Z45A Winona 74.14 301 P **P 18 42 04.4 -0.3**
baz=46
O32A Brockman Farm, 74.19 311 P **P 18 42 04.3 -0.6**
baz=44
RSSD Black Hills 74.28 317 P **P 18 42 04.9 -0.7**
baz=42
U39A Green Forest 74.29 306 P **P 18 42 05.2 -0.3**
baz=45
T38A Diamond 74.29 307 P **P 18 42 05.1 -0.4**
baz=45
V40A Witts Springs 74.31 305 P **P 18 42 05.6 -0.1**
baz=46
WHAR Wooly Hollow 74.36 304 *eP* **P 18 42 05.8 -0.1**
comp=Z,34nm,1.4s
WHAR Wooly Hollow 74.36 304 *eP* **P 18 42 05.8 -0.1**
comp=Z,34nm,1.4s
247A Quitman 74.38 300 P **P 18 42 06.5 +0.4**
baz=46
BOSA Boshof 74.40 167 P **P 18 42 03.7 -2.4**
comp=Z,4.1nm,0.9s,baz=350,slow=7.1,SNR=7.2
BOSA LR LR 19 17 06.9
comp=Z,103nm,18.5s,baz=356,slow=38
X201 Greenbrier Sit 74.40 304 *eP* **P 18 42 05.5 -0.6**
comp=Z,51nm,1.6s
X201 Greenbrier Sit 74.40 304 *eP* **P 18 42 05.5 -0.6**
comp=Z,51nm,1.6s
W41A Tony Mavity, V 74.41 304 P **P 18 42 05.8 -0.4**
baz=46
W41B Gary Mavity, V 74.41 304 P **P 18 42 05.9 -0.3**
baz=46
Q34A Chapman 74.43 310 P **P 18 42 06.6 +0.3**
baz=44
X301 Greenbrier Sit 74.46 304 *eP* **P 18 42 06.4 -0.1**
comp=Z,48nm,1.6s
X301 Greenbrier Sit 74.46 304 *eP* **P 18 42 06.4 -0.1**
comp=Z,48nm,1.6s
S36A Lake Cedric, C 74.54 308 P **P 18 42 06.6 -0.3**
baz=45
T37A Cheneyville 18 74.58 307 P **P 18 42 07.1 -0.1**
baz=45,SNR=8.4
HHAR Hobbs 74.62 306 *eP* **P 18 42 07.3 -0.1**
comp=Z,9.3nm,0.7s
HHAR Hobbs 74.62 306 *eP* **P 18 42 07.3 -0.1**
comp=Z,9.3nm,0.7s
V39A Pettigrew 74.76 306 P **P 18 42 08.3 0.0**
baz=45,SNR=6.7
U38A Gravette 74.76 306 P **P 18 42 08.1 -0.2**
baz=45,SNR=7.2
Q33A Connelly Farm, 74.86 310 P **P 18 42 09.3 +0.5**
baz=44
W40A Ferguson Farm, 74.88 305 P **P 18 42 09.0 +0.1**
baz=45
S35A Otter Creek Ra 74.97 308 P **P 18 42 09.7 +0.3**
baz=44
R34A Isabella, Hill 75.04 309 P **P 18 42 10.3 +0.5**
baz=44
T36A Boggs Farm, Ca 75.17 308 P **P 18 42 10.7 +0.1**
baz=44
V38A Canehill 75.18 306 P **P 18 42 10.6 -0.1**
baz=45,SNR=8.9
U37A Salina 75.20 307 P **P 18 42 10.5 -0.3**
baz=45
X40A Basin Creek Fa 75.24 304 P **P 18 42 11.4 +0.3**
baz=45
W39A Magazine 75.29 305 P **P 18 42 11.7 +0.4**
baz=45
MDJ Mudanjiang 75.33 41 P **P 18 42 09.9 -1.5**
MDJ pmax pmax
comp=Z,6.0nm,0.9s
MDJ pmax pmax
comp=Z,240nm,7.7s
GYA Guiyang 75.37 67 *eP* **P 18 42 13.0 +1.0**
GYA PP **PP 18 45 03.0 +2.5**

GYA S **S** 18 51 50.3 -1.0
GYA SKS **SKSac** 18 52 17.8 -3.5
GYA SS **SS** 18 56 42.6 +1.7
GYA pmax pmax
comp=Z,10.0nm,1.0s
GYA pmax pmax
comp=Z,110nm,6.0s
GYA LR LR
comp=Z,410nm,18.9s
GYA LR LR
comp=Z,380nm,19.2s
GYA LR LR
comp=Z,340nm,20.0s

S34A Willow Spring 75.40 309 P **P** 18 42 12.3 +0.4
baz=44
R33A Olander Ranch, 75.44 310 P **P** 18 42 12.6 +0.5
baz=44
Y41A Eaglette Beard 75.53 303 P **P** 18 42 13.2 +0.5
baz=45
U36A Oologah 75.56 307 P **P** 18 42 13.1 +0.3
baz=44
Z42A Norrel Spur, H 75.56 303 P **P** 18 42 13.1 +0.2
baz=45
CMAR Chiang Mai Arr 75.58 78 P **P** 18 42 13.3 +0.1
comp=Z,2.8nm,0.8s,baz=304,slow=7.0,SNR=13
V37A Hulbert 75.59 306 P **P** 18 42 12.9 -0.1
baz=44
GCMT Greycliff 75.59 322 *eP* **P** 18 42 13.1 +0.1
GCMT Greycliff 75.59 322 *eP* **P** 18 42 13.1 +0.1
CM01 Chiang Mai Arr 75.61 78 *eP* **P** 18 42 10.9 -2.5
CM01 Chiang Mai Arr 75.61 78 *eP* **P** 18 42 10.9 -2.5
T35A Sooner Cattle 75.63 308 P **P** 18 42 13.5 +0.3
baz=44
MIAR Mount Ida 75.63 305 P **P** 18 42 13.6 +0.3
baz=45,SNR=9.5
MIAR Mount Ida 75.63 305 *eP* **P** 18 42 13.4 +0.1
MIAR pmax pmax
comp=Z,21nm,1.2s
MIAR Mount Ida 75.63 305 *eP* **P** 18 42 13.4 +0.1
comp=Z,21nm,1.2s
MIAR Mount Ida 75.63 305 *eP* **P** 18 42 13.4 +0.1
comp=Z,21nm,1.2s
244A Avery, Jackson 75.66 301 P **P** 18 42 13.9 +0.5
baz=46
R32A Long Quarter, 75.75 310 P **P** 18 42 14.1 +0.2
baz=43
BLMT Blacktail Moun 75.81 326 *eP* **P** 18 42 14.4 +0.1
BLMT Blacktail Moun 75.81 326 *eP* **P** 18 42 14.4 +0.1
W38A Poteau 75.81 305 P **P** 18 42 14.8 +0.5
baz=45
T34A McClaskey Farm 75.93 308 P **P** 18 42 15.6 +0.7
baz=44
RLMT Red Lodge 75.94 321 P **P** 18 42 15.6 +0.5
baz=39
RLMT Red Lodge 75.94 321 *eP* **P** 18 42 16.7 +1.6
comp=Z,5.5nm,0.9s
RLMT Red Lodge 75.94 321 *eP* **P** 18 42 16.7 +1.6
comp=Z,5.5nm,0.9s
TUL1 Leonard 75.94 307 P **P** 18 42 15.8 +0.8
baz=44
TUL1 Leonard 75.94 307 *eP* **P** 18 42 16.8 +1.8
comp=Z,9.1nm,0.8s
TUL1 Leonard 75.94 307 *eP* **P** 18 42 16.8 +1.8
comp=Z,9.1nm,0.8s
S33A Kaszmaul Farm, 75.96 309 P **P** 18 42 15.8 +0.6
baz=44
X39A Fountain Ranch 75.97 305 P **P** 18 42 15.9 +0.6
baz=45
JTMT Jette 75.99 326 *eP* **P** 18 42 14.9 -0.4
JTMT Jette 75.99 326 *eP* **P** 18 42 14.9 -0.4
CBKS Cedar Bluff 76.02 311 P **P** 18 42 16.2 +0.7
baz=43
SWMT Swartz Lake 76.06 325 *eP* **P** 18 42 15.7 0.0
SWMT Swartz Lake 76.06 325 *eP* **P** 18 42 15.7 0.0
344A Westbrook Farm 76.10 301 P **P** 18 42 17.1 +1.1
baz=46
BSMT Bassoo Peak 76.10 326 *eP* **P** 18 42 15.9 -0.1
BSMT Bassoo Peak 76.10 326 *eP* **P** 18 42 15.9 -0.1
V36A Jenks 76.11 307 P **P** 18 42 16.4 +0.4
baz=44
U35A Pawnee 76.14 308 P **P** 18 42 16.9 +0.7
baz=44
X38A Whitesboro 76.27 305 P **P** 18 42 17.6 +0.7
baz=44
W37B Quinton 76.28 306 P **P** 18 42 17.5 +0.5
baz=44
U34A Anderson Ranch 76.54 308 P **P** 18 42 19.4 +0.9
baz=44
U34A Anderson Ranch 76.54 308 *eP* **P** 18 42 17.8 -0.6
comp=Z,13nm,0.7s
U34A Anderson Ranch 76.54 308 *eP* **P** 18 42 17.8 -0.6
comp=Z,13nm,0.7s
BOZ Bozeman (W) 76.56 323 P **P** 18 42 19.5 +0.9
baz=38
BOZ Bozeman (W) 76.56 323 *eP* **P** 18 42 18.1 -0.5
BOZ pmax pmax
comp=Z,7.0nm,1.0s
BOZ Bozeman (W) 76.56 323 *eP* **P** 18 42 18.1 -0.5
comp=Z,7.0nm,1.0s
BOZ Bozeman (W) 76.56 323 *eP* **P** 18 42 18.1 -0.5
comp=Z,6.8nm,1.0s
K22A Casper 76.58 318 P **P** 18 42 19.3 +0.6
baz=40
MSO Missoula 76.59 325 P **P** 18 42 19.2 +0.5
baz=36
V35A Meyer Ranch, C 76.64 307 P **P** 18 42 19.7 +0.8
baz=44
X37A Clayton 76.64 306 P **P** 18 42 19.8 +0.7
baz=44
KDAK Kodiak Island 76.67 351 *eP* **P** 18 42 21.4 +2.7
KDAK pmax pmax
comp=Z,20nm,1.2s
KDAK Kodiak Island 76.67 351 *eP* **P** 18 42 21.4 +2.7
comp=Z,20nm,1.2s
KDAK Kodiak Island 76.67 351 *eP* **P** 18 42 21.4 +2.7
comp=Z,20nm,1.2s
NEW Newport 76.68 327 P **P** 18 42 20.4 +1.4
comp=Z,7.0nm,0.8s,baz=38,slow=5.9,SNR=10
NEW Newport 76.68 327 P **P** 18 42 20.0 +0.9
baz=35
NEW Newport 76.68 327 *eP* **P** 18 42 20.7 +1.6
NEW pmax pmax
comp=Z,10.0nm,0.9s
NEW Newport 76.68 327 *eP* **P** 18 42 20.7 +1.6
comp=Z,10nm,0.9s
NEW Newport 76.68 327 *eP* **P** 18 42 20.7 +1.6
comp=Z,10nm,0.9s
W36A Wetumka 76.74 307 P **P** 18 42 20.6 +1.0
baz=44
USRK Ussuriysk Ar. 76.74 39 P **P** 18 42 20.1 +0.7
comp=Z,3.2nm,1.0s,baz=270,slow=5.3,SNR=8.6
T32A Huddler Ranch, 76.77 310 P **P** 18 42 20.5 +0.7
baz=43
V34A Guthrie 76.97 308 P **P** 18 42 22.0 +1.1
baz=43
V34A Guthrie 76.97 308 *eP* **P** 18 42 22.4 +1.5
comp=Z,14nm,0.9s
V34A Guthrie 76.97 308 *eP* **P** 18 42 22.4 +1.5
comp=Z,14nm,0.9s
BBB Bella Bella 77.04 336 P **P** 18 42 21.6 +0.7
comp=Z,2.7nm,0.8s,baz=116,slow=1.6,SNR=3.2
PHWY Pilot Hill 77.09 316 *eP* **P** 18 42 23.1 +1.3
comp=Z,4.8nm,0.8s
PHWY Pilot Hill 77.09 316 *eP* **P** 18 42 23.1 +1.3
comp=Z,4.8nm,0.8s
W35A Tecumseh 77.10 307 P **P** 18 42 22.4 +0.8
baz=44
DLMT Dillon 77.20 323 *eP* **P** 18 42 24.3 +2.1
comp=Z,8.7nm,1.0s
DLMT Dillon 77.20 323 *eP* **P** 18 42 24.3 +2.1
comp=Z,8.7nm,1.0s
X36A Centrahoma 77.22 306 P **P** 18 42 23.3 +1.1
baz=44
YPP Pitchstone Pla 77.28 321 *eP* **P** 18 42 26.6 +3.8
comp=Z,15nm,1.2s
PTGA Pitinga 77.34 256 *eP* **P** 18 42 23.9 +0.7
comp=Z,25nm,1.8s
PTGA Pitinga 77.34 256 *eP* **P** 18 42 23.9 +0.7
comp=Z,25nm,1.8s
B08A Colville Reser 77.43 329 *eP* **P** 18 42 24.8 +1.5
comp=Z,30nm,1.6s
B08A Colville Reser 77.43 329 *eP* **P** 18 42 24.8 +1.5
comp=Z,30nm,1.6s
240A Hunter Patters 77.52 303 P **P** 18 42 25.1 +1.2
baz=44
MSHR Mys Shultsa 77.62 41⇑ *eP* **P** 18 42 27.3 +2.9
MSHR Mys Shultsa 77.62 41 *eP* **P** 18 42 27.3 +2.9

N23A Red Feather La 77.64 316 P **P** 18 42 25.0 +0.1
baz=40
N23A Red Feather La 77.64 316 *eP* P 18 42 29.8 +4.9
comp=Z,16nm,1.5s
IMW Indian Meadow 77.64 321 *eP* **P** 18 42 28.0 +3.1
comp=Z,13nm,1.3s
IMW Indian Meadow 77.64 321 *eP* **P** 18 42 28.0 +3.1
comp=Z,13nm,1.3s
Y36A Durant 77.66 306 P **P** 18 42 25.5 +0.7
baz=44
MOOW Moose Ponds 77.67 321 *eP* **P** 18 42 27.0 +2.1
comp=Z,8.6nm,1.3s
MOOW Moose Ponds 77.67 321 *eP* **P** 18 42 27.1 +2.1
comp=Z,8.6nm,1.3s
X35A Drake 77.70 307 P **P** 18 42 25.6 +0.7
baz=44
MCMT McKenzie Canyo 77.73 323 *eP* **P** 18 42 27.4 +2.1
MCMT McKenzie Canyo 77.73 323 *eP* **P** 18 42 27.4 +2.1
BW06 Boulder Array 77.90 320 P **P** 18 42 26.6 +0.3
baz=38
BW06 Boulder Array 77.90 320 *eP* **P** 18 42 26.8 +0.5
BW06 Boulder Array 77.90 320 *eP* **P** 18 42 26.8 +0.5
PD31 Pinedale Array 77.90 320 *eP* **P** 18 42 27.2 +0.9
PD31 Pinedale Array 77.90 320 *eP* **P** 18 42 27.2 +0.9
PDAR Pinedale Array 77.90 320 P **P** 18 42 26.2 0.0
comp=Z,1.8nm,0.7s,baz=52,slow=4.7,SNR=10
PDAR LR LR 19 15 56.0
comp=Z,114nm,20.1s,baz=62,slow=35
W33A Caddo, Fort Co 78.00 308 P **P** 18 42 27.0 +0.4
baz=43
X34A Smith Ranch, M 78.04 307 P **P** 18 42 28.0 +1.1
baz=43
SDV Santo Domingo 78.05 271 *eP* **P** 18 42 27.5 +0.1
comp=Z,32nm,0.8s
SDV Santo Domingo 78.05 271 *eP* **P** 18 42 27.5 +0.1
comp=Z,32nm,0.8s
PEA0 Petropavlovsk- 78.09 20 *eP* **P** 18 42 27.9 +1.1
PEA0 Petropavlovsk- 78.09 20 *eP* **P** 18 42 27.9 +1.1
PETK Petropavlovsk- 78.09 20 P **P** 18 42 26.6 -0.2
comp=Z,12nm,1.1s,baz=50,slow=10,SNR=6.9
PETK LR LR 19 21 41.8
comp=Z,152nm,18.8s,baz=319,slow=39
137A Heron Place, G 78.29 304 P **P** 18 42 29.6 +1.3
baz=44
ISCO Idaho Springs 78.31 315 P **P** 18 42 29.4 +0.7
baz=40
ISCO Idaho Springs 78.31 315 *eP* **P** 18 42 30.3 +1.6
ISCO pmax pmax
comp=Z,8.0nm,0.9s
ISCO Idaho Springs 78.31 315 *eP* **P** 18 42 30.3 +1.6
comp=Z,8.4nm,0.9s
ISCO Idaho Springs 78.31 315 *eP* **P** 18 42 30.3 +1.6
comp=Z,8.4nm,0.9s
D08A Wollman Farm, 78.36 328 *eP* **P** 18 42 29.8 +1.4
comp=Z,6.6nm,0.9s
D08A Wollman Farm, 78.36 328 *eP* **P** 18 42 29.8 +1.4
comp=Z,6.6nm,0.9s
W32A Sentinel 78.45 308 P **P** 18 42 30.5 +1.3
baz=43
WMOK Wichita Mounta 78.47 308 P **P** 18 42 30.2 +0.9
baz=43
WMOK Wichita Mounta 78.47 308 *eP* **P** 18 42 30.4 +1.1
WMOK pmax pmax
comp=Z,41nm,1.9s
WMOK Wichita Mounta 78.47 308 *eP* **P** 18 42 30.4 +1.1
comp=Z,41nm,1.9s
WMOK Wichita Mounta 78.47 308 *eP* **P** 18 42 30.4 +1.1
comp=Z,41nm,1.9s
E09A Wood Farm, Sta 78.52 327 *eP* **P** 18 42 30.7 +1.4
comp=Z,14nm,0.9s
E09A Wood Farm, Sta 78.52 327 *eP* **P** 18 42 30.7 +1.4
comp=Z,14nm,0.9s
F10A Beach Ranch, E 78.60 326 *eP* **P** 18 42 31.2 +1.3
comp=Z,6.9nm,0.8s
F10A Beach Ranch, E 78.60 326 *eP* **P** 18 42 31.2 +1.3
comp=Z,6.9nm,0.8s
338A Crockett 78.92 303 P **P** 18 42 32.8 +1.0
baz=44
YSS Yuzh-Sakhalins 78.94 32⇑ *eP* **P** 18 42 32.4 +0.8
YSS *e* 18 42 40.3
YSS pmax pmax
comp=Z,30nm,1.0s
YSS MLR MLR
comp=Z,100nm,18.0s
YSS Yuzh-Sakhalins 78.94 32 *eP* **P** 18 42 32.2 +0.7
comp=Z,90nm,1.5s
YSS Yuzh-Sakhalins 78.94 32 *ePcP* **PcP** 18 42 40.3 +0.1
comp=Z,100nm,18.0s
YSS Yuzh-Sakhalins 78.94 32 *eP* **P** 18 42 32.2 +0.7
comp=Z,90nm,1.5s
Z34A Collier Ranch, 78.98 306 P **P** 18 42 33.0 +0.9
baz=43
X32A Elmer 78.99 308 P **P** 18 42 32.2 +0.1
baz=42
HAWA Hanford 79.15 328 *eP* **P** 18 42 35.3 +2.6
comp=Z,10nm,0.9s
HAWA Hanford 79.15 328 *eP* **P** 18 42 35.3 +2.6
comp=Z,10nm,0.9s
HLID Hailey 79.42 323 P **P** 18 42 36.2 +1.7
baz=36
HLID Hailey 79.42 323 *eP* **P** 18 42 36.7 +2.2
comp=Z,19nm,1.8s
HLID Hailey 79.42 323 *eP* **P** 18 42 36.7 +2.2
comp=Z,19nm,1.8s
SMCO Snowmass 79.46 316 *eP* **P** 18 42 36.5 +1.4
comp=Z,4.2nm,0.9s
SMCO Snowmass 79.46 316 *eP* **P** 18 42 36.5 +1.4
comp=Z,4.2nm,0.9s
BMO Blue Mountains 79.56 326 *eP* **P** 18 42 35.9 +0.7
comp=Z,20nm,0.8s
BMO Blue Mountains 79.56 326 *eP* **P** 18 42 35.9 +0.7
comp=Z,20nm,0.8s
LON Longmire 79.69 329 *eP* **P** 18 42 37.4 +1.6
LON pmax pmax
comp=Z,19nm,1.5s
LON Longmire 79.69 329 *eP* **P** 18 42 37.3 +1.6
comp=Z,19nm,1.5s
LON Longmire 79.69 329 *eP* **P** 18 42 37.4 +1.6
comp=Z,19nm,1.5s
T25A Trinidad 79.72 313 P **P** 18 42 35.5 -0.8
baz=40
T25A Trinidad 79.72 313 *eP* P 18 42 41.2 +4.9
comp=Z,6.0nm,0.9s
WHTX Lake Whitney, 79.72 305 P **P** 18 42 35.7 -0.4
baz=43
HWUT Hardware Ranch 79.73 320 *eP* **P** 18 42 37.8 +1.5
comp=Z,14nm,1.0s
HWUT Hardware Ranch 79.73 320 *eP* **P** 18 42 37.8 +1.5
comp=Z,14nm,1.0s
SDCO Great Sand Dun 79.82 314 P **P** 18 42 37.6 +0.7
baz=40
SDCO Great Sand Dun 79.82 314 *eP* **P** 18 42 38.2 +1.2
comp=Z,5.7nm,1.0s
SDCO Great Sand Dun 79.82 314 *eP* **P** 18 42 38.2 +1.2
comp=Z,5.7nm,1.0s
G08A Pilot Rock 79.85 327 *eP* **P** 18 42 38.5 +1.7
comp=Z,4.9nm,0.9s
G08A Pilot Rock 79.85 327 *eP* **P** 18 42 38.5 +1.7
comp=Z,4.9nm,0.9s
KS01 Wonju Array Si 79.96 46 *eP* **P** 18 42 37.2 -0.1
KS01 Wonju Array Si 79.96 46 *eP* **P** 18 42 37.2 -0.1
KSAR Wonju Array Be 79.98 46 P **P** 18 42 38.3 +0.9
KSAR Wonju Array Be 79.98 46 P **P** 18 42 38.3 +0.9
KSAR Wonju Array Be 79.98 46 P **P** 18 42 38.3 +0.9
KSRS Korea Array 79.99 46 P **P** 18 42 38.3 +0.8
comp=Z,1.9nm,0.8s,baz=331,slow=4.9,SNR=8.9
KSRS LR LR 19 22 37.6
comp=Z,275nm,19.8s,baz=144,slow=39
MFID Camas Ranch 80.14 324 *eP* **P** 18 42 40.2 +1.9
comp=Z,7.7nm,0.9s
MFID Camas Ranch 80.14 324 *eP* **P** 18 42 40.2 +1.9
comp=Z,7.7nm,0.9s
HVU Hansel Valley 80.14 321 *eP* **P** 18 42 40.4 +1.9
HVU pmax pmax
comp=Z,5.0nm,1.0s
HVU Hansel Valley 80.14 321 *eP* **P** 18 42 40.3 +1.9
comp=Z,5.4nm,1.0s
HVU Hansel Valley 80.14 321 *eP* **P** 18 42 40.4 +1.9
comp=Z,5.4nm,1.0s
CBRI Barrientos, No 80.40 271 *eP* **P** 18 42 35.5 -4.7
GRMC Gramalote, San 80.40 271 *eP* **P** 18 42 35.5 -4.7
S22A 4UR Ranch, Cre 80.49 315 P **P** 18 42 42.1 +1.5
baz=39
S22A 4UR Ranch, Cre 80.49 315 *eP* **P** 18 42 42.3 +1.7
comp=Z,7.4nm,1.0s
S22A 4UR Ranch, Cre 80.49 315 *eP* **P** 18 42 42.3 +1.7
comp=Z,7.4nm,1.0s

233A Rising Star 80.53 306 P **P** 18 42 41.3 +0.7
baz=42
G06A Carlson Farm, 80.54 328 *eP* **P** 18 42 42.9 +2.5
comp=Z,47nm,1.7s
G06A Carlson Farm, 80.54 328 *eP* **P** 18 42 42.9 +2.5
comp=Z,47nm,1.7s
334A Lometa 80.66 305 P **P** 18 42 41.8 +0.6
baz=42
BDFB Brasilia 80.79 237 P **P** 18 42 42.6 +0.5
comp=Z,3.9nm,1.0s,baz=39,slow=5.1
BDFB Brasilia 80.79 237 *eP* **P** 18 42 43.8 +1.8
BDFB pmax pmax
comp=Z,33nm,1.5s
BDFB Brasilia 80.79 237 *eP* **P** 18 42 43.8 +1.8
comp=Z,33nm,1.5s
BDFB Brasilia 80.79 237 *eP* **P** 18 42 43.8 +1.8
comp=Z,33nm,1.5s
BGU Big Grassy Mou 80.94 321 *eP* **P** 18 42 44.8 +2.0
comp=Z,9.5nm,1.0s
BGU Big Grassy Mou 80.94 321 *eP* **P** 18 42 44.8 +2.0
comp=Z,9.5nm,1.0s
PV09 Paradox Valley 81.05 317 *eP* **P** 18 42 45.2 +1.7
PV09 Paradox Valley 81.05 317 *eP* **P** 18 42 45.2 +1.7
434A Burnet 81.06 305 P **P** 18 42 43.8 +0.4
baz=42
PV01 Paradox Valley 81.06 316 *eP* **P** 18 42 44.9 +1.4
PV01 Paradox Valley 81.06 316 *eP* **P** 18 42 44.9 +1.4
333A Richland Sprin 81.09 306 P **P** 18 42 44.5 +0.9
baz=42
SRU San Rafael Swe 81.23 318 *eP* **P** 18 42 45.9 +1.5
SRU pmax pmax
comp=Z,9.0nm,1.1s
SRU San Rafael Swe 81.23 318 *eP* **P** 18 42 45.9 +1.5
comp=Z,9.4nm,1.1s
SRU San Rafael Swe 81.23 318 *eP* **P** 18 42 45.9 +1.5
comp=Z,9.4nm,1.1s
MSTX Muleshoe 81.25 310 P **P** 18 42 45.2 +0.8
baz=41
ASAJ Asahikawa 81.27 33 *eP* **P** 18 42 44.7 +0.5
comp=Z,58nm,1.8s
ASAJ Asahikawa 81.27 33 *eP* **P** 18 42 44.7 +0.5
comp=Z,58nm,1.8s
636A Smothers Creek 81.32 303 P **P** 18 42 46.6 +1.8
baz=43
DUG Dugway, Tooele 81.43 320 P **P** 18 42 47.1 +1.7
baz=36
DUG Dugway, Tooele 81.43 320 *eP* **P** 18 42 47.0 +1.7
DUG Dugway, Tooele 81.43 320 *eP* **P** 18 42 47.0 +1.7
DUG Dugway, Tooele 81.43 320 *eP* **P** 18 42 47.0 +1.7
G03D McMinnville, O 81.53 329 P **P** 18 42 47.5 +2.0
baz=31
I05D Terrebonne, OR 81.56 328 P **P** 18 42 47.9 +2.0
baz=32
433A Art 81.58 305 P **P** 18 42 47.1 +1.0
baz=42
MVCO Mesa Verde 81.74 316 P **P** 18 42 48.5 +1.3
baz=38
534A Blanco 81.75 304 P **P** 18 42 48.0 +0.9
baz=42
RUSC La Rusia 81.87 270 *eP* **P** 18 42 46.5 -1.9
comp=Z,7.2nm,1.3s
533A Kerrville 82.05 305 P **P** 18 42 50.5 +1.9
baz=42
JCT Junction City 82.19 306 P **P** 18 42 51.3 +1.8
baz=42
JCT Junction City 82.19 306 *eP* **P** 18 42 51.2 +1.8
JCT pmax pmax
comp=Z,33nm,1.8s
JCT Junction City 82.19 306 *eP* **P** 18 42 51.2 +1.8
comp=Z,33nm,1.8s
JCT Junction City 82.19 306 *eP* **P** 18 42 51.2 +1.8
comp=Z,33nm,1.8s
J05D Fort Rock, OR 82.42 327 P **P** 18 42 52.8 +2.3
baz=32
ANMO Albuquerque 82.46 313 P **P** 18 42 51.9 +0.9
baz=39
ANMO Albuquerque 82.46 313⇑ *eP* **P** 18 42 51.8 +0.9
ANMO pmax pmax
comp=Z,5.0nm,1.7s
ANMO Albuquerque 82.46 313 *eP* **P** 18 42 51.8 +0.9
comp=Z,5.0nm,1.7s
ANMO Albuquerque 82.46 313 *eP* **P** 18 42 52.7 +1.8
comp=Z,2.5nm,0.9s
633A Saathoff Ranch 82.58 305 P **P** 18 42 52.6 +1.2
baz=42
MTPU Mount Pierson 82.87 318 *eP* **P** 18 42 55.3 +2.1
comp=Z,5.5nm,1.3s
MTPU Mount Pierson 82.87 318 *eP* **P** 18 42 55.4 +2.1
comp=Z,5.5nm,1.3s
BNM Barren Site 83.17 312 *eP* **P** 18 42 56.6 +1.9
BNM Barren Site 83.17 312 *eP* **P** 18 42 56.6 +1.9
LAZ Ladron 83.24 313 *eP* **P** 18 42 55.1 +0.1
LAZ Ladron 83.24 313 *eP* **P** 18 42 55.1 +0.1
DBBC Dabeiba 83.30 273 *eP* **P** 18 42 52.8 -2.6
NORC Norcasia 83.36 271 *eP* **P** 18 42 54.1 -1.6
HELC Santa Helena 83.39 272 *eP* **P** 18 42 56.4 +0.1
comp=Z,29nm,1.0s
ROSC El Rosal 83.48 270 P **P** 18 42 55.9 -0.8
comp=Z,5.4nm,0.5s,baz=84,slow=9.8,SNR=4.6
CCUT Cedar City 83.82 319 *eP* **P** 18 42 59.1 +1.2
comp=Z,4.8nm,0.8s
CCUT Cedar City 83.82 319 *eP* **P** 18 42 59.1 +1.2
comp=Z,4.8nm,0.8s
KNB Kanab 83.99 318 *eP* **P** 18 42 59.8 +1.0
KNB pmax pmax
comp=Z,9.0nm,1.4s
KNB Kanab 83.99 318 *eP* **P** 18 42 59.8 +1.0
comp=Z,9.0nm,1.4s
KNB Kanab 83.99 318 *eP* **P** 18 42 59.8 +1.0
comp=Z,9.0nm,1.4s
933A Laredo 84.01 303 P **P** 18 43 01.2 +2.4
baz=42
034A Hebbronville 84.06 303 P **P** 18 43 01.5 +2.4
baz=42
R11A Troy Canyon, C 84.18 321 P **P** 18 43 01.5 +1.8
baz=35
R11A Troy Canyon, C 84.18 321 *eP* **P** 18 43 01.2 +1.5
R11A Troy Canyon, C 84.18 321 *eP* **P** 18 43 01.2 +1.5
LCMT Little Creek M 84.19 318 *eP* **P** 18 43 01.8 +2.0
comp=Z,10nm,1.6s
LCMT Little Creek M 84.19 318 *eP* **P** 18 43 01.8 +2.0
comp=Z,10nm,1.6s
L02D Cave Junction, 84.28 328 P **P** 18 43 02.0 +2.0
baz=30
SJAC San Juan de Ar 84.31 269 *eP* P 18 42 55.4 -5.2
MNTX Cornudas Mount 84.39 310 P **P** 18 43 03.0 +2.3
baz=39
MNTX Cornudas Mount 84.39 310 *eP* **P** 18 43 01.8 +1.1
comp=Z,10nm,1.6s
MNTX Cornudas Mount 84.39 310 *eP* **P** 18 43 01.8 +1.1
comp=Z,10nm,1.6s
WUAZ Wupatki 84.50 316 P **P** 18 43 03.3 +1.9
baz=37
WUAZ Wupatki 84.50 316 *eP* **P** 18 43 03.8 +2.4
comp=Z,20nm,1.4s
WUAZ Wupatki 84.50 316 *eP* **P** 18 43 03.8 +2.4
comp=Z,20nm,1.4s
M02C Callahan 84.66 327 P **P** 18 43 01.9 0.0
baz=31
PAHR Pah Rah Range 84.70 324 *eP* **P** 18 43 04.5 +2.2
comp=Z,11nm,1.2s
PAHR Pah Rah Range 84.70 324 *eP* **P** 18 43 04.5 +2.2
comp=Z,11nm,1.2s
N02D Trinity Center 84.96 327 P **P** 18 43 03.9 +0.4
baz=31
121A Cookes Peak, D 85.03 312 P **P** 18 43 05.7 +1.6
baz=38
O03D Paynes Creek 85.19 326 P **P** 18 43 05.5 +0.9
baz=31
WDC Whiskeytown Da 85.23 327 *eP* **P** 18 43 08.7 +3.9
WDC pmax pmax
comp=Z,17nm,1.8s
WDC Whiskeytown Da 85.23 327 *eP* **P** 18 43 08.7 +3.9
comp=Z,17nm,1.8s
TX31 Lajitas Ar. Si 85.25 307 *eP* **P** 18 43 06.5 +1.3
TX31 Lajitas Ar. Si 85.25 307 *eP* **P** 18 43 06.5 +1.3
TXAR Lajitas Array 85.25 307 P **P** 18 43 06.6 +1.4
comp=Z,4.6nm,0.9s,baz=64,slow=5.7,SNR=29
TXAR LR LR 19 20 45.1
comp=Z,70nm,18.6s,baz=0.0,slow=35
X16A Lo Mia Camp, P 85.41 316 *eP* **P** 18 43 08.4 +2.4
X16A Lo Mia Camp, P 85.41 316 *eP* **P** 18 43 08.4 +2.4
SHPR Sheep Range 85.50 319 *eP* **P** 18 43 09.3 +2.9
SHPR Sheep Range 85.50 319 *eP* **P** 18 43 09.3 +2.9
ORV Oroville 85.70 325 *eP* **P** 18 43 08.8 +1.7
ORV Oroville 85.70 325 *eP* **P** 18 43 08.8 +1.7
ORV Oroville 85.70 325 *eP* **P** 18 43 08.8 +1.7

MAT	**Matsushiro**	**85.71**	**40**	P	**P**	**18 43 06.9**	**-0.3**
MJAR	**Matsushiro Arr**	**85.71**	**40**	P	**P**	**18 43 07.5**	**+0.3**
	comp=Z,3.2nm,0.8s,baz=308,slow=4.6,SNR=11						
MJAR				LR	LR	19 24 10.9	
	comp=Z,80nm,18.1s,baz=45,slow=38						
WAKR	**Walker**	**85.73**	**323**	*e*P	**P**	**18 43 10.5**	**+2.9**
WAKR	**Walker**	**85.73**	**323**	*e*P	**P**	**18 43 10.5**	**+2.9**
TUC	**Tucson**	**86.76**	**314**	P	**P**	**18 43 13.8**	**+1.2**
	baz=37						
TUC	**Tucson**	**86.76**	**314**	*e*P	**P**	**18 43 15.8**	**+3.2**
TUC	**Tucson**	**86.76**	**314**	*e*P	**P**	**18 43 15.8**	**+3.2**
TUC	**Tucson**	**86.76**	**314**	*e*P	**P**	**18 43 15.8**	**+3.2**
MPMC	**Manual Prospec**	**86.93**	**321**	P	**P**	**18 43 14.8**	**+1.3**
	baz=34						
GMRC	**Granite Mounta**	**87.14**	**319**	P	**P**	**18 43 15.9**	**+1.4**
	baz=34						
214A	**Organ Pipe Nat**	**88.07**	**315**	P	**P**	**18 43 19.9**	**+1.1**
	baz=36						
WRA	**Warramunga Arr**	**127.10**	**81**	PKP	**PKPdf**	**18 49 30.6**	**-2.0**
	comp=Z,0.6nm,0.8s,baz=298,slow=4.9,SNR=3.9						
ASAR	**Alice Springs**	**129.21**	**85**	PKP	**PKPdf**	**18 49 36.1**	**-0.4**
	comp=Z,0.4nm,0.8s,baz=312,slow=2.0,SNR=8.3						
VNDA	**Vanda**	**145.35**	**169**	PKPbc	**PKPbc**	**18 50 04.2**	**-0.2**
	comp=Z,25nm,1.1s,baz=267,slow=4.8,SNR=60						

NIED ***17*** *18:45:00,23.˝80N×121.˝60E,h5km,Mw4.6 Best double couple: M₀8.59000×10¹⁵ NP1:φ=236.00000°,δ8.00000°, λ102.00000°. NP2:φ=44.00000°,δ82.00000°,λ88.00000°.*
IDC ***17*** *18:45:19.7±0.7,23.˝82N×121.˝78E,h0km,mb3.9/13, mb1 4.0/13,mb1mx3.9/43,mbtmp3.9/13,MS3.7/7, Ms1 3.7/7,ms1mx3.3/38,Error ellipse: s-maj=26.1km s-min=15.2km az=68.0*
BJI ***17*** *18:45:21.3,23.˝88N×121.˝52E,h7km,mb4.0/12,mB4.5/3, ML4.1/8,Ms4.1/5,Ms7 4.1/4*
JMA ***17*** *18:45:22.8±0.1,23.˝80N×121.˝63E,h24km±3km,M3.7*
NEIC ***17*** *18:45:22.8±1.1,23.˝79N×121.˝64E,h21km±9km,mb4.5/2, ML4.6(TAP),Error ellipse: s-maj=10.2km s-min=6.6km az=111.0*
NEIC Recorded [3 TAP] in Hualien and Nantou; [2 TAP] in Yilan; [1 TAP] in Changua and Taichung.
TAP ***17*** *18:45:23.9,23.˝83N×121.˝59E,h26km,ML4.6,B*
ISCJB ***17*** *18:45:23.6±0.3,23.˝80N±0.˝01×121.˝65E±0.˝02,h26km±2km, mb3.9/14,MS3.8/6,Error ellipse: s-maj=3.0km s-min=1.8km az=136.0*

ISC 17 18:45:23.7±0.7,23.˝79N±0.˝02×121.˝64E±0.˝02,h28km±5km, n119,σ1$45/166,mb3.9/14,MS3.8/6,22C-21D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.12**	**231**	⇑P	**Pb**	**18 45 29.8**	**+0.9**
	baz=189						
ESF	**Shoufeng Towns**	**0.15**	**305**	⇑P	**Pb**	**18 45 29.4**	**+0.2**
	baz=300						
ESF				S	**Sb**	**18 45 33.1**	**+0.3**
	baz=300						
ESL	**Shilin**	**0.19**	**279**	⇑*i*P	**Pb**	**18 45 29.0**	**-0.6**
	baz=263						
HWA	**Hwalien**	**0.19**	**350**	⇓*i*P	**Pb**	**18 45 29.4**	**-0.2**
	baz=16						
TWD	**Chiawan**	**0.30**	**352**	⇓*i*P	**Pb**	**18 45 30.5**	**-0.4**
	baz=353						
TWD				*i* S	**Sb**	**18 45 35.4**	**-0.4**
	baz=353						
NACB	**Ninganchiao**	**0.39**	**354**	*e*Pg	**Pb**	**18 45 31.3**	**-1.0**
NACB				*e*Sg	**Sb**	**18 45 35.6**	**-2.5**
EHY	**Hungye**	**0.40**	**227**	⇓*e*P	**Pb**	**18 45 32.0**	**-0.5**
	baz=223						
WHF	**Hehuan Shan**	**0.50**	**316**	⇑*i*P	**Pb**	**18 45 33.1**	**-1.2**
	baz=317						
YULB	**Yu-li**	**0.50**	**219**	*e*Pn	**Pb**	**18 45 33.3**	**-0.8**
YULB				*e*Sn	**Sn**	**18 45 43.1**	**+0.3**
EHP	**Heping Village**	**0.53**	**10**	*e*P	**Pn**	**18 45 35.2**	**-0.2**
	baz=17						
TWF1	**Yuli**	**0.54**	**216**	⇓P	**Pb**	**18 45 34.1**	**-0.5**
	baz=221						
SSLB	**Suanglung**	**0.63**	**270**	*e*Pn	**Pb**	**18 45 35.2**	**-1.0**
SSLB				*e*Sn	**Sb**	**18 45 43.1**	**-1.6**
TWT	**Tachien**	**0.63**	**318**	⇑*i*P	**Pb**	**18 45 35.7**	**-0.6**
	baz=311						
TWT				S	**Sb**	**18 45 43.0**	**-1.9**
	baz=311						
ENA	**Nanau**	**0.65**	**8**	⇑*i*P	**Pb**	**18 45 36.1**	**-0.4**
	baz=2.0						
ENA				*e*S	**Sb**	**18 45 44.6**	**-0.6**
	baz=2.0						
SMLT	**Sun Moon Lake**	**0.69**	**278**	⇑*i*P	**Pb**	**18 45 36.6**	**-0.6**
	baz=275						
SMLT				S	**Sb**	**18 45 45.2**	**-1.1**
	baz=275						
NNS	**Nan Shan**	**0.70**	**339**	⇑*i*P	**Pb**	**18 45 36.5**	**-0.9**
	baz=342						
NNS				*i* S	**Sb**	**18 45 44.9**	**-1.9**
	baz=342						
YUS	**Yu-Shan**	**0.70**	**245**	⇓*i*P	**Pn**	**18 45 37.5**	**-0.6**
	baz=240						
YUS				S	**Sb**	**18 45 46.5**	**-0.6**
	baz=240						
CHKT	**Chengkung**	**0.73**	**201**	⇓*i*P	**Pn**	**18 45 38.3**	**+0.2**
	baz=208						
TYC	**Yuchr**	**0.73**	**280**	⇑*i*P	**Pb**	**18 45 37.0**	**-0.8**
	baz=283						
TYC				*i* S	**Sb**	**18 45 45.9**	**-1.5**
	baz=283						
ALS	**Alishan**	**0.81**	**251**	⇓*i*P	**Pn**	**18 45 39.4**	**-0.2**
	baz=247						
ALS				*e*S	**Sb**	**18 45 49.7**	**-0.5**
	baz=247						
ELDTW	**Lidau**	**0.83**	**224**	*e*P	**Pb**	**18 45 38.4**	**-1.2**
	baz=210						
TWC	**Suao**	**0.84**	**13**	*e*P	**Pb**	**18 45 39.1**	**-0.6**
	baz=27						
TWC				*e*S	**Sb**	**18 45 49.5**	**-1.2**
	baz=27						
ENTT	**Nioudou**	**0.85**	**355**	⇑P	**Pb**	**18 45 39.0**	**-0.9**
	baz=358						
ENTT				S	**Sb**	**18 45 49.7**	**-1.3**
	baz=358						
WNT	**Mingjian**	**0.88**	**276**	⇑*i*P	**Pn**	**18 45 40.7**	**+0.5**
	baz=273						
WNT				*i* S	**Sn**	**18 45 52.4**	**+0.3**
	baz=273						
CHN5	**Tsauling**	**0.90**	**258**	⇓*i*P	**Pn**	**18 45 41.1**	**+0.5**
	baz=247						
CHN5				S	**Sn**	**18 45 52.4**	**-0.3**
	baz=247						
YHNB	**Yeheng**	**0.91**	**345**	*e*Pn	**Pb**	**18 45 39.7**	**-1.3**
YHNB				*e*Sn	**Sb**	**18 45 45.7**	**-7.2**
NSK	**Sanguang**	**0.92**	**344**	⇑*i*P	**Pb**	**18 45 40.4**	**-0.8**
	baz=345						
NSK				*i* S	**Sb**	**18 45 51.4**	**-1.7**
	baz=345						
TWE	**Neicheng**	**0.93**	**1**	⇑*i*P	**Pb**	**18 45 40.3**	**-0.9**
	baz=355						
TWE				*e*S	**Sn**	**18 45 54.9**	**+1.5**
	baz=355						
TCU	**Taichung**	**0.95**	**292**	⇑P	**Pn**	**18 45 41.9**	**+0.7**
	baz=290						
TCU				S	**Sn**	**18 45 54.8**	**+0.8**
	baz=290						
TWQ1	**Liyutan**	**0.97**	**305**	⇑*i*P	**Pn**	**18 45 42.1**	**+0.6**
	baz=304						
TWQ1				*i* S	**Sn**	**18 45 54.0**	**-0.3**
	baz=304						
ILA	**Ilan**	**0.98**	**6**	*e*P	**Pn**	**18 45 42.5**	**+0.9**
WGK	**Gukeng**	**0.99**	**265**	⇓*e*P	**Pn**	**18 45 42.4**	**+0.6**
	baz=261						
NSY	**Sanyi**	**1.02**	**308**	⇑*i*P	**Pn**	**18 45 43.4**	**+1.2**
	baz=306						
NSY				*i* S	**Sn**	**18 45 56.3**	**+0.7**
	baz=306						
STYT	**Tauyuan**	**1.02**	**233**	⇓*i*P	**Pn**	**18 45 42.7**	**+0.5**
	baz=230						
STYT				*i* S	**Sn**	**18 45 56.4**	**+0.8**
	baz=230						
NSTT	**Nanjuang**	**1.03**	**325**	⇑*i*P	**Pn**	**18 45 42.4**	**+0.2**
	baz=319						
NSTT				*i* S	**Sb**	**18 45 54.7**	**-1.2**
	baz=319						
TPUB	**Ta-pu**	**1.05**	**243**	*e*Pn	**Pn**	**18 45 43.0**	**+0.5**
TPUB				*e*Sn	**Sn**	**18 45 57.3**	**+1.0**
CHN4	**Tsaushan**	**1.05**	**246**	⇓*i*P	**Pn**	**18 45 43.6**	**+1.0**
	baz=244						
CHN4				S	**Sn**	**18 45 58.3**	**+1.9**
	baz=244						
WTP	**Ta-pu**	**1.09**	**241**	⇓*i*P	**Pb**	**18 45 44.0**	**+0.2**
	baz=238						
WTP				*e*S	**Sn**	**18 45 58.2**	**+1.0**
	baz=238						
EGS		**1.09**	**14**	*e*P	**Pb**	**18 45 45.3**	**+1.4**
	baz=6.0						
TWG	**Pinlang**	**1.09**	**209**	⇓*e*P	**Pn**	**18 45 41.8**	**-1.4**
	baz=191						
TWG	**Pinlang**	**1.09**	**209**	*e*Pn	**Pn**	**18 45 41.7**	**-1.4**
TWG				*e*Sn	**Sb**	**18 45 50.4**	**-7.5**
CHN2	**Minshiung**	**1.10**	**257**	*e*P	**Pb**	**18 45 44.5**	**+0.5**
	baz=254						
CHN2				*e*S	**Sn**	**18 45 58.7**	**+1.2**
	baz=254						
TTN	**Taitung**	**1.12**	**204**	*e*P	**Pn**	**18 45 43.2**	**-0.3**
	baz=201						
CHY	**Chiayi**	**1.15**	**256**	⇓P	**Pb**	**18 45 44.9**	**-0.1**
	baz=253						
CHY				S	**Sn**	**18 45 59.6**	**+0.8**
	baz=253						
TWK	**Hsinying**	**1.18**	**244**	*e*P	**Pb**	**18 45 44.6**	**-0.9**
	baz=242						
TWK				*e*S	**Sn**	**18 46 01.6**	**+2.1**
	baz=242						
HSN	**Hsinchu**	**1.18**	**329**	⇑*e*P	**Pb**	**18 45 46.1**	**+0.6**
	baz=337						
HSN				S	**Sn**	**18 46 01.5**	**+2.0**
	baz=337						
CHN1	**Nanshi**	**1.19**	**240**	⇓P	**Pb**	**18 45 45.6**	**+0.1**
	baz=238						
CHN1				S	**Sn**	**18 46 01.8**	**+2.2**
	baz=238						
TATO	**Taipei**	**1.19**	**353**	*e*Pn	**Pb**	**18 45 44.6**	**-1.0**
SGST	**Jiashian**	**1.20**	**234**	⇓*i*P	**Pb**	**18 45 46.0**	**+0.2**
	baz=223						
SGST				S	**Sn**	**18 46 02.5**	**+2.5**
	baz=223						
WTCT	**Ta-ch'eng**	**1.25**	**274**	*e*P	**Pb**	**18 45 46.4**	**-0.2**
	baz=271						
WTCT				*e*S	**Sb**	**18 46 02.4**	**+0.2**
	baz=271						
NCU	**National Centr**	**1.25**	**341**	⇑P	**Pb**	**18 45 46.5**	**-0.2**
	baz=351						
NCU				S	**Sb**	**18 46 02.6**	**+0.3**
	baz=351						
TAP1	**Taipei**	**1.25**	**355**	*e*P	**Pn**	**18 45 45.4**	**+0.1**
	baz=355						
TAP1				*e*S	**Sn**	**18 46 01.3**	**0.0**
	baz=355						
TAP	**Taipei**	**1.25**	**354**	*e*P	**Pb**	**18 45 45.6**	**-1.1**
	baz=355						
TAP				*e*S	**Sb**	**18 46 01.5**	**-0.9**
	baz=355						
TWB1	**Santiao Chiao**	**1.26**	**14**	*e*P	**Pb**	**18 45 46.5**	**-0.2**
	baz=29						
TWB1				*e*S	**Sb**	**18 46 02.6**	**0.0**
	baz=29						
NWF	**Wu-fen Shan**	**1.29**	**6**	⇓*e*P	**Pb**	**18 45 46.5**	**-0.7**
	baz=6.0						
NWF				*e*S	**Sb**	**18 46 04.5**	**+1.0**
	baz=6.0						
WSF	**Szhu**	**1.31**	**264**	*e*P	**Pb**	**18 45 47.2**	**-0.4**
	baz=261						
WSF				*e*S	**Sb**	**18 46 04.7**	**+0.7**
	baz=261						
TWS1	**Kuangyinshan**	**1.33**	**351**	*e*P	**Pb**	**18 45 47.2**	**-0.7**
	baz=3.0						
TWS1				*e*S	**Sb**	**18 46 04.2**	**-0.3**
	baz=3.0						
ECL	**Taimali**	**1.34**	**208**	*e*P	**Pn**	**18 45 45.3**	**-1.2**
	baz=194						
JYNG	**Yonagunijimaku**	**1.36**	**61**	P	**Pb**	**18 45 47.6**	**-0.9**
JYNG				*e*S	**Sb**	**18 46 05.1**	**-0.4**
CHN8	**Yiju**	**1.38**	**252**	*e*P	**Pb**	**18 45 48.3**	**-0.6**
	baz=250						
CHN8				*e*S	**Sb**	**18 46 06.7**	**+0.5**
	baz=250						
SSD	**Sandimen**	**1.39**	**222**	*e*P	**Pb**	**18 45 48.1**	**-0.9**
	baz=219						
YOJ	**Yonaguni jima**	**1.42**	**61**	P	**Pb**	**18 45 48.5**	**-1.0**
YOJ				S	**Sb**	**18 46 06.4**	**-0.8**
YOJ	**Yonaguni jima**	**1.42**	**61**	⇓*i*P	**Pb**	**18 45 48.5**	**-1.0**
	baz=62						
YOJ				*e*S	**Sb**	**18 46 06.1**	**-1.1**
	baz=62						
YOJ	**Yonaguni jima**	**1.42**	**61**	*e*Pn	**Pb**	**18 45 48.3**	**-1.2**
SCLT	**Jiali**	**1.46**	**246**	⇑*e*P	**Pb**	**18 45 49.8**	**-0.4**
	baz=244						
SCLT				*e*S	**Sb**	**18 46 08.7**	**+0.3**
	baz=244						
TWM1	**Shoushan**	**1.47**	**230**	⇑*i*P	**Pb**	**18 45 51.7**	**+1.3**
	baz=241						
TWY	**Chenhua**	**1.48**	**359**	*e*P	**Pn**	**18 45 48.6**	**+0.1**
	baz=1.0						
TAI1	**Yung-k'ang**	**1.50**	**241**	⇓*e*P	**Pb**	**18 45 50.2**	**-0.5**
	baz=240						
TAI1				*e*S	**Sb**	**18 46 09.0**	**-0.4**
	baz=240						
EAST	**Anshuo**	**1.58**	**208**	*e*P	**Pn**	**18 45 48.8**	**-1.0**
	baz=196						
TAW	**Tawu**	**1.58**	**206**	*e*P	**Pb**	**18 45 51.3**	**-0.9**
	baz=192						
SCZT	**Fangliau**	**1.69**	**214**	*e*P	**Pn**	**18 45 52.1**	**+0.7**
	baz=212						
LAY	**Lan-yu**	**1.74**	**183**	*e*P	**Pn**	**18 45 51.1**	**-0.9**
	baz=181						
TWP	**Hsiaoliuchiu**	**1.85**	**220**	*e*P	**Pb**	**18 45 59.4**	**+2.5**
	baz=218						
PCYT	**Pengchaiyu**	**1.88**	**12**	*e*P	**Pn**	**18 45 54.8**	**+0.8**
	baz=358						
WDGT	**Dungji**	**1.89**	**254**	*e*P	**Pn**	**18 45 53.9**	**-0.2**
	baz=253						
WDGT				*e*S	**Sn**	**18 46 16.1**	**-0.9**
	baz=253						
PNG	**Penghu**	**1.93**	**264**	⇓*e*P	**Pn**	**18 45 55.3**	**+0.7**
	baz=261						
PNG				*e*S	**Sn**	**18 46 18.2**	**+0.3**
	baz=261						
HEN	**Hengchun**	**1.96**	**205**	*e*P	**Pb**	**18 45 58.2**	**-0.4**
	baz=194						
IRIF	**Iriomote-Funau**	**1.98**	**74**	P	**Pn**	**18 45 56.5**	**+1.1**
IRIF				*e*S	**Sn**	**18 46 21.0**	**+1.7**
JKRS	**Kuro-shima**	**2.21**	**78**	P	**Pb**	**18 46 00.4**	**-2.5**
JKRS				*e*S	**Sn**	**18 46 26.2**	**+1.3**
JIJ	**Ishigaki jima**	**2.36**	**75**	P	**Pn**	**18 46 01.3**	**+0.8**
JIJ				S	**Sn**	**18 46 29.3**	**+0.8**
JISG	**Ishigakijimahi**	**2.56**	**71**	P	**Pn**	**18 46 04.1**	**+0.7**
JISG				S	**Sn**	**18 46 33.8**	**+0.2**
JTJ	**Tarama**	**2.92**	**72**	S	**Sn**	**18 46 43.4**	**+1.0**
KNM	**Kinmen**	**3.00**	**283**	⇓*e*P	**Pn**	**18 46 10.7**	**+1.4**
	baz=278						
QZH	**Quanzhou**	**3.01**	**293**	⇑*i*Pn	**Pn**	**18 46 09.3**	**-0.2**
QZH				Sn	**Sn**	**18 46 42.0**	**-2.7**
QZH				smax	smax		
	comp=N,2μm,1.0s						
QZH				smax	smax		
	comp=E,1μm,1.1s						
JIRB	**Irabujima**	**3.38**	**71**	P	**Pn**	**18 46 16.3**	**+1.7**
JIRB				S	**Sn**	**18 46 55.8**	**+1.9**
GZH	**Guangzhou**	**7.65**	**266**	P	**Pn**	**18 47 11.3**	**-2.0**
GZH				S	**Sn**	**18 48 33.8**	**-5.3**
GZH				pmax	pmax		
	comp=Z,28nm,0.6s						
NJ2	**Nanjing**	**8.60**	**344**	*e*P	**Pn**	**18 47 27.3**	**+1.1**
NJ2				S	**Sn**	**18 49 02.3**	**0.0**
NJ2				pmax	pmax		
	comp=Z,27nm,0.6s						
NJ2				smax	smax		
	comp=N,84nm,0.8s						
NJ2				smax	smax		
	comp=E,81nm,1.1s						
NJ2				LR	LR		
	comp=N,490nm,5.7s						
NJ2				LR	LR		
	comp=E,710nm,8.6s						
NJ2				LR	LR		
	comp=Z,900nm,7.1s						
WHN	**Wuhan**	**9.35**	**318**	P	Pn	18 47 42.5	+5.9
WHN				S	**Sn**	**18 49 15.9**	**-4.9**
WHN				LR	LR		
	comp=N,2μm,8.7s						
WHN				LR	LR		
	comp=E,1μm,17.4s						
WHN				LR	LR		
	comp=Z,2μm,9.6s						
KSAR	**Wonju Array Be**	**14.63**	**20**	Pn	**P**	**18 48 53.0**	**-1.7**
KSRS	**Korea Array**	**14.65**	**20**	Pn	**P**	**18 48 53.0**	**-1.9**
	0.4nm,0.3s,baz=201,slow=11,SNR=27						
KSRS				LR	LR	18 55 38.4	
	comp=Z,138nm,18.4s,baz=180,slow=42						
KMI	**Kunming**	**17.26**	**278**	P	**Pn**	**18 49 23.5**	**+0.5**
KMI				pP	pP	18 49 29.5	-2.4
KMI				sP	sP	18 49 32.3	-3.1
KMI				pmax	pmax		
	comp=Z,5.0nm,1.3s						
KMI				LR	LR		
	comp=N,400nm,17.0s						
KMI				LR	LR		
	comp=E,220nm,8.7s						
KMI				LR	LR		
	comp=Z,420nm,15.0s						
CD2	**Chengdu**	**17.39**	**298**	*e*P	**Pn**	**18 49 24.5**	**+0.1**
MAJO	**Matsushiro**	**19.12**	**45**	*e*P	**P**	**18 49 43.1**	**-1.3**
	31nm,0.4s						
CMAR	**Chiang Mai Arr**	**21.82**	**260**	P	**P**	**18 50 15.4**	**+1.6**
	1.6nm,0.7s,baz=59,slow=8.2,SNR=8.8						
KLR	**Kul'dur**	**26.61**	**15**	P	**P**	**18 50 60.0**	**+0.3**
	0.8nm,0.3s,baz=208,slow=12,SNR=2.7						
SONM	**Songino Array**	**26.90**	**337**	P	**P**	**18 51 02.6**	**+0.2**
	0.9nm,0.7s,baz=164,slow=9.4,SNR=5.7						
MKAR	**Makanchi Array**	**38.91**	**316**	P	**P**	**18 52 47.7**	**+0.8**
	2.7nm,0.8s,baz=104,slow=10,SNR=18						
ZALV	**Zalesovo Beam**	**40.81**	**327**	P	**P**	**18 53 02.0**	**-0.5**
	1.0nm,0.5s,baz=119,slow=7.2,SNR=6.9						
H11N1	**WAKE ISLAND Hy**	**42.09**	**86**	T	T	19 38 18.0	
	baz=283,slow=74,SNR=5.9						
H11N2	**WAKE ISLAND Hy**	**42.09**	**86**	T	T	19 38 16.5	
	baz=283,slow=74,SNR=6.2						
H11N3	**WAKE ISLAND Hy**	**42.11**	**86**	T	T	19 38 19.5	
	baz=283,slow=74,SNR=4.8						
H11S3	**WAKE ISLAND Hy**	**42.21**	**88**	T	T	19 38 27.4	
	baz=284,slow=74,SNR=89						
H11S1	**WAKE ISLAND Hy**	**42.22**	**88**	T	T	19 38 28.0	
	baz=284,slow=74,SNR=39						
H11S2	**WAKE ISLAND Hy**	**42.23**	**88**	T	T	19 38 27.2	
	baz=284,slow=74,SNR=42						
KURK	**Kurchatov**	**42.66**	**320**	P	**P**	**18 53 19.6**	**+1.9**
KURBB	**Kurchatov Arra**	**42.68**	**320**	P	**P**	**18 53 19.6**	**+1.8**
	1.2nm,0.3s,baz=114,slow=7.9,SNR=4.2						
WRA	**Warramunga Arr**	**45.19**	**163**	P	**P**	**18 53 37.5**	**-0.8**
	0.8nm,0.5s,baz=345,slow=8.6,SNR=18						
ASAR	**Alice Springs**	**48.65**	**165**	P	**P**	**18 54 05.2**	**-0.2**
	0.9nm,0.8s,baz=345,slow=6.3,SNR=13						
ABKAR	**Akbulak array**	**54.02**	**315**	*e*P	**P**	**18 54 43.8**	**-1.5**
	1.6nm,0.7s						
GEYT	**Alibeck**	**55.36**	**301**	P	**P**	**18 54 56.7**	**+1.3**
	2.1nm,0.8s,baz=38,slow=2.6,SNR=5.4						
ARU	**Arti**	**55.68**	**323**	LR	LR	19 20 13.5	
	comp=Z,58nm,18.9s,baz=90,slow=38						
WSAR	**Wadi Sarin**	**57.34**	**283**	LR	LR	19 22 09.5	
	comp=Z,57nm,18.3s,slow=38						
STKA	**Stephens Creek**	**58.55**	**160**	P	**P**	**18 55 19.7**	**+1.9**
	1.3nm,0.7s,baz=335,slow=11,SNR=3.9						
ILAR	**Eielson Array**	**69.37**	**27**	P	**P**	**18 56 28.4**	**-0.2**
	0.6nm,0.7s,baz=297,slow=8.2,SNR=16						
ARCES	**ARCESS Array B**	**70.06**	**338**	LR	LR	19 30 55.4	
	comp=Z,29nm,18.2s,baz=56,slow=39						
FINES	**FINESS Array B**	**72.00**	**330**	P	**P**	**18 56 44.7**	**+0.1**
	1.6nm,0.8s,baz=73,slow=6.4,SNR=4.3						
FINES				LR	LR	19 31 18.3	
	comp=Z,52nm,18.4s,baz=76,slow=38						
BRTR	**Keskin Array B**	**73.75**	**307**	P	**P**	**18 56 56.1**	**+0.6**
	1.0nm,0.7s,baz=124,slow=6.1,SNR=5.7						
NOA	**NORSAR Array B**	**78.77**	**332**	LR	LR	19 34 41.1	
	comp=Z,44nm,19.4s,baz=95,slow=38						
RES	**Resolute Bay**	**78.99**	**9**	LR	LR	19 34 13.9	
	comp=Z,192nm,21.6s,baz=138,slow=37						

IDC 17 18:57:22.9±5.6,30.˝80S×178.˝99W,h0km,mb3.5/3, mb1 3.7/3,mb1mx3.5/25,mbtmp3.5/3,Error ellipse: s-maj=210.5km s-min=53.5km az=151.0,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**33.55**	**258**	P	P	19 04 04.9	+0.3
	1.2nm,0.7s,baz=107,slow=17,SNR=3.0						
ASAR	**Alice Springs**	**42.23**	**268**	P	P	19 05 17.9	-0.2
	0.2nm,0.6s,baz=110,slow=7.7,SNR=4.8						
WRA	**Warramunga Arr**	**43.26**	**273**	P	P	19 05 25.9	-0.4
	0.4nm,0.5s,baz=112,slow=8.0,SNR=7.3						
FINES	**FINESS Array B**	**145.22**	**339**	PKPbc	PKPbc	19 17 00.6	-0.8
	0.7nm,0.6s,baz=47,slow=3.4,SNR=5.2						

IDC ***17*** *18:58:01.1±7.0,36.˝51N×141.˝32E,h0km,mb3.6/2, mb1 3.7/3,mb1mx3.2/46,mbtmp3.4/3,ML3.0/1,Error ellipse: s-maj=146.6km s-min=31.2km az=21.0*
ISCJB ***17*** *18:58:03.5±1.3,36.˝49N±0.˝05×141.˝25E±0.˝07,h19km±7km, mb3.6/2,Error ellipse: s-maj=10.4km s-min=7.1km az=30.1*
JMA ***17*** *18:58:05.6±0.1,36.˝51N×141.˝10E,h29km±1km,M3.3*
JMA Felt I J1.

ISC 17 18:58:05.5±2.2,36.˝55N±0.˝07×141.˝11E±0.˝09,h25km±14km, n12,σ0$87/21,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.44**	**278**	P	**Pb**	**18 58 14.6**	**-0.1**
JHO				S	**Sb**	**18 58 21.0**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.60**	**336**	P	**Pb**	**18 58 17.7**	**+0.1**
ONAJ				S	**Sn**	**18 58 26.6**	**-0.9**
JYT	**Yasato**	**0.81**	**247**	P	**Pn**	**18 58 20.2**	**-1.0**
JYT				S	**Sn**	**18 58 31.0**	**-1.4**
JFK	**Kawauchi**	**0.83**	**347**	P	**Pn**	**18 58 21.0**	**-0.7**
JSB	**Shiboa**	**1.04**	**294**	P	**Pb**	**18 58 25.0**	**+0.1**
JSB				*e*S	**Sb**	**18 58 39.8**	**+1.6**
JFT	**Otama**	**1.15**	**328**	P	**Pb**	**18 58 26.6**	**-0.1**
JFT				S	**Sb**	**18 58 41.4**	**+0.2**
JMM	**Marumori**	**1.34**	**349**	P	**Pn**	**18 58 28.8**	**+0.2**
JMM				S	**Sb**	**18 58 45.9**	**-0.7**
JAG	**Ashikaga**	**1.34**	**265**	P	**Pn**	**18 58 28.6**	**0.0**
JAG				*e*S	**Sn**	**18 58 45.1**	**-0.5**
MJAR	**Matsushiro Arr**	**2.33**	**271**	Pn	**Pn**	**18 58 43.1**	**+0.8**
	3.2nm,0.3s,baz=84,slow=9.3,SNR=37						
MJAR				Sn	**Sb**	**18 59 14.2**	**-1.1**
	4.8nm,0.3s,baz=59,slow=27,SNR=7.1						
MAT	**Matsushiro**	**2.34**	**271**	P	**Pn**	**18 58 43.6**	**+1.3**
MAT				S	**Sb**	**18 59 15.0**	**-

BDR				S		Sn	19 08 32.1	-0.4	
BDR	**Baidarnaya**	**2.16**	**298**	*i* P		Pn	19 08 06.8	+1.1	
BDR				*e*S		Sn	19 08 32.1	-0.4	
ZLN	**Zelenaya**	**2.21**	**283**	PN		Pn	19 08 07.5	+1.2	
ZLN				S		Sn	19 08 34.2	+0.5	
ZLN	**Zelenaya**	**2.21**	**283**	*e*P		Pn	19 08 07.5	+1.2	
ZLN				*e*S		Sn	19 08 34.2	+0.5	
SRKR	**Sorokina**	**2.22**	**300**	PN		Pn	19 08 07.1	+0.6	
SRKR				S		Sn	19 08 34.3	+0.3	
SRKR	**Sorokina**	**2.22**	**300**	*i* P		Pn	19 08 07.1	+0.6	
SRKR				*e*S		Sn	19 08 34.3	+0.3	
CIRR	**Tsirk**	**2.26**	**285**	PN		Pn	19 08 08.2	+1.1	
CIRR				S		Sn	19 08 35.3	+0.3	
CIRR	**Tsirk**	**2.26**	**285**	*e*P		Pn	19 08 08.2	+1.1	
CIRR				*e*S		Sn	19 08 35.3	+0.3	
LGNR	**Loginova**	**2.28**	**284**	PN		Pn	19 08 08.6	+1.1	
LGNR				S		Sn	19 08 36.3	+0.5	
LGNR	**Loginova**	**2.28**	**284**	*i* P		Pn	19 08 08.6	+1.1	
LGNR				*e*S		Sn	19 08 36.3	+0.5	
KLY	**Klyuchi**	**2.36**	**290**	PN		Pn	19 08 07.8	-0.5	
KLY				S		Sn	19 08 35.2	-2.0	
KLY	**Klyuchi**	**2.36**	**290**	*i* P		Pn	19 08 07.8	-0.5	
KLY				*i* S		Sn	19 08 35.2	-2.0	
BZMR	**Bezymyannaya**	**2.37**	**280**	PN		Pn	19 08 09.7	+1.1	
BZMR				S		Sn	19 08 38.5	+0.7	
BZMR	**Bezymyannaya**	**2.37**	**280**	*e*P		Pn	19 08 09.7	+1.1	
BZMR				*e*S		Sn	19 08 38.5	+0.7	
KRSR	**Krestovskiy**	**2.38**	**287**	PN		Pn	19 08 09.4	+0.7	
KRSR				S		Sn	19 08 38.4	+0.4	
KRSR	**Krestovskiy**	**2.38**	**287**	*i* P		Pn	19 08 09.4	+0.7	
KRSR				*e*S		Sn	19 08 38.4	+0.4	
KIRR	**Kirishev**	**2.46**	**280**	PN		Pn	19 08 10.9	+1.4	
KIRR				S		Sn	19 08 40.9	+1.0	
KIRR	**Kirishev**	**2.46**	**280**	*i* P		Pn	19 08 11.2	+1.4	
KIRR				*e*S		Sn	19 08 40.9	+1.0	
KMNR	**Kamenistaya**	**2.50**	**276**	PN		Pn	19 08 11.9	+1.6	
KMNR				S		Sn	19 08 40.5	-0.4	
KMNR	**Kamenistaya**	**2.50**	**276**	*i* P		Pn	19 08 11.9	+1.6	
KMNR				*e*S		Sn	19 08 40.5	-0.4	
KPT	**Kopyto**	**2.52**	**280**	PN		Pn	19 08 12.0	+1.3	
KPT				S		Sn	19 08 42.2	+0.7	
KPT	**Kopyto**	**2.52**	**280**	*i* P		Pn	19 08 12.0	+1.3	
KPT				*e*S		Sn	19 08 42.2	+0.7	
KZV	**Kizimen**	**2.53**	**261**	PN		Pn	19 08 12.1	+1.3	
KZV				S		Sn	19 08 40.0	-1.7	
KZV	**Kizimen**	**2.53**	**261**	*i* P		Pn	19 08 12.1	+1.3	
KZV				*e*S		Sn	19 08 40.0	-1.7	
KOZ	**Kozyrevsk**	**2.73**	**282**	PN		Pn	19 08 15.4	+2.0	
KOZ				S		Sn	19 08 47.1	+0.6	
KOZ	**Kozyrevsk**	**2.73**	**282**	*e*P		Pn	19 08 15.4	+2.0	
KOZ				*e*S		Sn	19 08 47.1	+0.6	
ESO	**Esso**	**3.37**	**278**	PN		Pn	19 08 23.4	+1.1	
ESO	**Esso**	**3.37**	**278**	*e*P		Pn	19 08 23.4	+1.1	
KII	**Karymskiy**	**3.38**	**245**	PN		Pn	19 08 24.2	+1.8	
KII				S		Sn	19 09 02.4	-0.2	
KII	**Karymskiy**	**3.38**	**245**	*i* P		Pn	19 08 24.2	+1.8	
KII				*e*S		Sn	19 09 02.4	-0.2	
SPN	**Mys Shipunski**	**3.68**	**229**	PN		Pn	19 08 26.6	+0.2	
SPN	**Mys Shipunski**	**3.68**	**229**	*e*P		Pn	19 08 26.6	+0.2	
SPN				*i* S		Sn	19 09 05.9	-3.9	
OSSR	**Ossora**	**3.77**	**348**	PN		Pn	19 08 27.5	-0.2	
OSSR	**Ossora**	**3.77**	**348**	*i* P		Pn	19 08 27.5	-0.2	
OSSR				*e*S		Sn	19 09 07.4	-4.7	
NLC	**Nalytchevo**	**3.93**	**234**	PN		Pn	19 08 31.1	+1.2	
NLC	**Nalytchevo**	**3.93**	**234**	*i* P		Pn	19 08 31.1	+1.2	
NLC				*e*S		Sn	19 09 13.3	-2.7	
SDLR	**Sedlovina**	**4.08**	**238**	PN		Pn	19 08 34.0	+1.9	
SDLR	**Sedlovina**	**4.08**	**238**	*i* P		Pn	19 08 34.0	+1.9	
SDLR				*e*S		Sn	19 09 17.2	-2.7	
SMAR	**Somma**	**4.13**	**238**	PN		Pn	19 08 34.7	+1.9	
SMAR	**Somma**	**4.13**	**238**	*e*P		Pn	19 08 34.7	+1.9	
SMAR				*e*S		Sn	19 09 18.8	-2.4	
KRER	**Koryakskii**	**4.13**	**239**	PN		Pn	19 08 35.0	+2.2	
KRER	**Koryakskii**	**4.13**	**239**	*i* P		Pn	19 08 35.0	+2.2	
KRER				*e*S		Sn	19 09 19.4	-1.8	
KRX	**Arik**	**4.15**	**240**	PN		Pn	19 08 35.2	+2.2	
KRX	**Arik**	**4.15**	**240**	*i* P		Pn	19 08 35.2	+2.2	
KRX				*e*S		Sn	19 09 21.2	-0.4	
UGLR	**Uglovaya**	**4.15**	**237**	PN		Pn	19 08 35.0	+2.0	
UGLR	**Uglovaya**	**4.15**	**237**	*i* P		Pn	19 08 35.0	+2.0	
UGLR				*e*S		Sn	19 09 19.2	-2.4	
AVH	**Avacha**	**4.16**	**238**	PN		Pn	19 08 35.3	+2.2	
AVH	**Avacha**	**4.16**	**238**	*e*P		Pn	19 08 35.3	+2.2	
AVH				*e*S		Sn	19 09 20.5	-1.3	
KOK	**Koryaka**	**4.19**	**239**	PN		Pn	19 08 36.1	+2.5	
KOK	**Koryaka**	**4.19**	**239**	*e*P		Pn	19 08 36.1	+2.5	
KOK				*e*S		Sn	19 09 20.5	-2.1	
DALK	**Dalny**	**4.29**	**236**	PN		Pn	19 08 36.4	+1.5	
DALK	**Dalny**	**4.29**	**236**	*i* P		Pn	19 08 36.4	+1.5	
DALK				*e*S		Sn	19 09 22.4	-2.6	
GNL	**Ganaly**	**4.33**	**247**	PN		Pn	19 08 37.8	+2.3	
GNL	**Ganaly**	**4.33**	**247**	*i* P		Pn	19 08 37.8	+2.3	
PET	**Petropavlovsk**	**4.35**	**236**	⇑*i* PN		Pn	19 08 37.2	+1.7	
PET					pmax	pmax			
	comp=Z,131nm,0.4s								
PET	**Petropavlovsk**	**4.35**	**236**	*e*Pn		Pn	19 08 37.1	+1.5	
PET	**Petropavlovsk**	**4.35**	**236**	*i* P		Pn	19 08 37.3	+1.7	
PET				*e*S		Sn	19 09 22.9	-3.3	
KRMR	**Karymshinskiy**	**4.71**	**237**	PN		Pn	19 08 42.8	+2.1	
KRMR	**Karymshinskiy**	**4.71**	**237**	*e*P		Pn	19 08 42.8	+2.1	
KRMR				*e*S		Sn	19 09 34.6	-0.7	
PETK	**Petropavlovsk-**	**4.76**	**241**	Pn		Pn	19 08 43.2	+1.9	
	comp=Z,9.1nm,0.3s,baz=72,slow=18,SNR=143								
PETK					Sn	Sn	19 09 37.6	+1.1	
	comp=Z,9.2nm,0.3s,baz=32,slow=14,SNR=7.9								
RUS	**Russkaya**	**4.80**	**231**	PN		Pn	19 08 42.9	+1.1	
RUS	**Russkaya**	**4.80**	**231**	*i* P		Pn	19 08 42.9	+1.1	
RUS				*e*S		Sn	19 09 33.9	-3.5	
TILK	**Tilichiki**	**4.94**	**9**	PN		Pn	19 08 43.0	-0.7	
TILK	**Tilichiki**	**4.94**	**9**	*i* P		Pn	19 08 43.0	-0.7	
TILK				*e*S		Sn	19 09 36.7	-4.1	
ASAK	**Asacha**	**5.11**	**234**	PN		Pn	19 08 48.6	+2.4	
ASAK	**Asacha**	**5.11**	**234**	*e*P		Pn	19 08 48.6	+2.4	
ASAK				*e*S		Sn	19 09 44.2	-1.0	
PAU	**Pauzhetka**	**6.23**	**232**	PN		Pn	19 09 03.9	+2.4	
PAU	**Pauzhetka**	**6.23**	**232**	*e*P		Pn	19 09 03.9	+2.4	
KMSK	**Kamenskaya**	**6.95**	**6**	PN		Pn	19 09 12.7	+1.4	
KMSK	**Kamenskaya**	**6.95**	**6**	*i* P		Pn	19 09 12.7	+1.4	
SKR	**Severo-Kuril's**	**7.10**	**230**	*e*PN		Pn	19 09 15.2	+1.8	
SKR					pmax	pmax			
	comp=Z,69nm,0.3s								
SKR					MLR	MLR			
	comp=Z,100nm,13.0s								
SKR	**Severo-Kuril's**	**7.10**	**230**	*e*P		Pn	19 09 14.8	+1.4	
SKR				*e*S		Sn	19 10 29.6	-4.4	
SHO	**Shikotan**	**16.37**	**232**	*e*P		Pn	19 11 14.6	-4.7	
YUK	**Yuzh-Kuril'sk**	**16.68**	**234**	P		Pn	19 11 18.4	-4.8	
ASAJ	**Asahikawa**	**18.18**	**240**	*e*P		Pn	19 11 40.4	-1.5	
	comp=Z,5.9nm,0.6s								
YAK	**Yakutsk**	**19.03**	**304**	P		P	19 11 50.5	-0.8	
	comp=Z,0.0nm,0.3s,baz=358,slow=1.2,SNR=6.0								
KLR	**Kul'dur**	**20.90**	**266**	P		P	19 12 11.9	+0.1	
	comp=Z,1.5nm,0.5s,baz=55,slow=9.1,SNR=7.5								
TRF	**Thorofare Moun**	**23.71**	**52**	*e*P		P	19 12 39.2	-2.2	
	comp=Z,8.1nm,0.9s								
ILAR	**Eielson Array**	**25.16**	**49**	P		P	19 12 53.6	-1.0	
	comp=Z,1.6nm,0.8s,baz=264,slow=8.0,SNR=17								
MJAR	**Matsushiro Arr**	**26.18**	**234**	P		P	19 13 05.4	+1.4	
	comp=Z,2.5nm,0.6s,baz=22,slow=9.4,SNR=19								
MJAR	**Matsushiro Arr**	**26.18**	**234**	P		P	19 13 05.4	+1.4	
MJAR					pmax	pmax			
	comp=Z,4.0nm,0.7s								
H11N2	**WAKE ISLAND Hy**	**35.84**	**176**	T		T	19 52 27.9		
	baz=358,slow=76,SNR=430								
H11N3	**WAKE ISLAND Hy**	**35.85**	**176**	T		T	19 52 32.0		
	baz=358,slow=76,SNR=382								
H11N1	**WAKE ISLAND Hy**	**35.86**	**176**	T		T	19 52 32.3		
	baz=358,slow=76,SNR=444								
SONM	**Songino Array**	**35.94**	**283**	P		P	19 14 29.7	-0.3	
	comp=Z,0.3nm,0.5s,baz=62,slow=8.2,SNR=3.1								
H11S1	**WAKE ISLAND Hy**	**37.05**	**177**	T		T	19 53 58.2		
	baz=359,slow=76,SNR=14								
H11S3	**WAKE ISLAND Hy**	**37.06**	**177**	T		T	19 53 57.8		
	baz=359,slow=76,SNR=13								
H11S2	**WAKE ISLAND Hy**	**37.06**	**177**	T		T	19 54 01.1		
	baz=359,slow=76,SNR=11								
GUMO	**Guam**	**44.63**	**208**	*e*P		P	19 15 43.6	+1.6	
GUMO	**Guam**	**44.63**	**208**	*e*P		P	19 15 43.6	+1.6	
KURK	**Kurchatov**	**48.66**	**302**	P		P	19 16 13.2	-0.2	
KURK					pmax	pmax			
	comp=Z,1.0nm,0.5s								
KURK	**Kurchatov**	**48.66**	**302**	P		P	19 16 13.2	-0.2	
KURBB	**Kurchatov Arra**	**48.77**	**302**	P		P	19 16 13.2	-1.0	
	comp=Z,0.9nm,0.5s,baz=53,slow=8.0,SNR=13								
PDAR	**Pinedale Array**	**54.02**	**65**	P		P	19 16 52.4	-1.5	
	comp=Z,0.7nm,0.6s,baz=325,slow=4.6,SNR=2.8								
FRB	**Frobisher Bay**	**54.12**	**26**	LR		LR	19 43 08.0		
	comp=Z,24nm,18.9s,baz=28,slow=40								
CMAR	**Chiang Mai Arr**	**61.26**	**261**	P		P	19 17 47.4	+2.5	
	comp=Z,0.4nm,0.3s,baz=31,slow=7.4,SNR=3.1								
TXAR	**Lajitas Array**	**67.26**	**71**	P		P	19 18 24.6	+0.4	
	comp=Z,0.8nm,0.6s,baz=298,slow=4.5,SNR=12								
WRA	**Warramunga Arr**	**79.51**	**209**	P		P	19 19 40.7	+4.5	
	comp=Z,0.5nm,0.8s,baz=23,slow=5.6,SNR=2.9								
ASAR	**Alice Springs**	**83.17**	**208**	P		P	19 19 56.8	+1.2	
	comp=Z,0.2nm,0.8s,baz=18,slow=4.9,SNR=4.0								

MEX 17 19:11:37.3±0.6, 15°.32N×93°.80W, h16km±296km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.87**	**59**	*i* P		Pn	19 12 05.3	-3.5
CCIG				*i* S		Sn	19 12 27.4	-4.8

*IDC **17** 19:44:46.2±1.9, 37°.94N×142°.98E, h0km, mb3.4/3, mb1 3.3/5, mb1mx3.2/53, mbtmp3.2/5, ML2.9/1, Error ellipse: s-maj=39.7km s-min=27.0km az=83.0*
*JMA **17** 19:44:47.4±0.2, 37°.95N×142°.75E, h18km±2km, M3.6*
*ISCJB **17** 19:44:48.5±2.0, 37°.94N±0°.05×142°.75E±0°.09, h23km±13km, mb3.3/3, Error ellipse: s-maj=12.3km s-min=8.6km az=19.6*

ISC 17 19:44:47.9±2.7, 37°.95N±0°.06×142°.63E±0°.09, h4km±15km, n24, σ1§32/24, mb3.3/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.13**	**297**	P	**Pg**	**19 45 09.3**	**-0.2**
JIO				S	**Sb**	**19 45 25.2**	**+0.2**
OFUJ	**Ofunato**	**1.36**	**327**	P	**Pn**	**19 45 12.5**	**-1.1**
OFUJ				S	**Sb**	**19 45 31.2**	**-0.4**
JMM	**Marumori**	**1.46**	**267**	P	**Pn**	**19 45 14.2**	**-0.7**
JMM				S	**Sn**	**19 45 34.5**	**+0.1**
JMK	**Ichinoseki**	**1.50**	**313**	P	**Pn**	**19 45 15.1**	**-0.4**
JFK	**Kawauchi**	**1.51**	**248**	P	**Pn**	**19 45 14.9**	**-0.8**
JFK				S	**Sn**	**19 45 35.6**	**-0.2**
JOU	**Okura**	**1.61**	**286**	P	**Pn**	**19 45 17.1**	**+0.1**
JOM	**Ohasama**	**1.85**	**326**	P	**Pn**	**19 45 20.1**	**-0.2**
JOM				S	**Sn**	**19 45 43.7**	**-0.5**
JFT	**Otama**	**1.87**	**257**	P	**Pn**	**19 45 21.4**	**+0.8**
JYK	**Kaneyama**	**2.03**	**299**	P	**Pn**	**19 45 23.7**	**+0.9**
JYS	**Shirataka**	**2.04**	**278**	P	**Pn**	**19 45 24.4**	**+1.4**
JRG	**Rokugo**	**2.13**	**313**	P	**Pn**	**19 45 25.4**	**+1.2**
JAW	**Awa shima**	**2.71**	**282**	P	**Pn**	**19 45 34.1**	**+1.9**
JAH	**Hinai**	**2.72**	**326**	P	**Pn**	**19 45 34.1**	**+1.7**
MJAR	**Matsushiro Arr**	**3.80**	**250**	Pn	**Pn**	**19 45 50.5**	**+3.4**
	0.8nm,0.3s,baz=65,slow=8.6,SNR=10						
MJAR				Sn	**Sb**	**19 46 39.1**	**-2.7**
	0.4nm,0.3s,baz=149,slow=44,SNR=3.2						
ASAJ	**Asahikawa**	**6.16**	**360**	Pn	**Pn**	**19 46 20.4**	**+0.7**
	baz=114,slow=19						
H11N2	**WAKE ISLAND Hy**	**27.82**	**124**	T	T	20 19 40.9	
	baz=316,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**27.83**	**124**	T	T	20 19 45.6	
	baz=316,slow=75,SNR=8.3						
H11N3	**WAKE ISLAND Hy**	**27.84**	**124**	T	T	20 19 51.1	
	baz=316,slow=75,SNR=8.2						
SONM	**Songino Array**	**28.10**	**302**	P	**P**	**19 50 41.6**	**+0.9**
	0.2nm,0.4s,baz=99,slow=7.4,SNR=2.9						
H11S1	**WAKE ISLAND Hy**	**28.58**	**126**	T	T	20 20 45.5	
	baz=318,slow=76,SNR=4.8						
H11S3	**WAKE ISLAND Hy**	**28.58**	**126**	T	T	20 20 43.2	
	baz=318,slow=76,SNR=7.3						
H11S2	**WAKE ISLAND Hy**	**28.59**	**126**	T	T	20 20 30.1	
	baz=318,slow=76,SNR=8.6						
MKAR	**Makanchi Array**	**44.46**	**302**	P	**P**	**19 52 59.9**	**-0.1**
	0.2nm,0.4s,baz=80,slow=7.3,SNR=3.3						
WRA	**Warramunga Arr**	**58.11**	**189**	P	**P**	**19 54 41.7**	**-0.8**
	0.4nm,0.7s,baz=6.9,slow=7.3,SNR=3.2						

IDC 17 19:49:34.7±3.0, 60°.57S×23°.91W, h0km, mb3.8/2, mb1 3.9/2, mb1mx3.6/20, mbtmp3.8/2, Error ellipse: s-maj=264.1km s-min=37.0km az=101.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VNDA	**Vanda**	**42.12**	**182**	P	P	19 57 28.1	+0.3
	1.2nm,1.0s,baz=190,slow=8.4,SNR=4.2						
H10S2	**ASCENSION HYDR**	**51.97**	**12**	T	T	20 55 09.8	
	baz=186,slow=74,SNR=12						
H10S3	**ASCENSION HYDR**	**51.97**	**12**	T	T	20 55 10.1	
	baz=186,slow=74,SNR=9.9						
H10S1	**ASCENSION HYDR**	**51.98**	**12**	T	T	20 55 11.1	
	baz=186,slow=74,SNR=9.6						
H10N1	**ASCENSION HYDR**	**53.08**	**12**	T	T	20 56 40.3	
	baz=194						
H10N3	**ASCENSION HYDR**	**53.09**	**12**	T	T	20 56 31.0	
	baz=194,slow=74						
H10N2	**ASCENSION HYDR**	**53.10**	**12**	T	T	20 56 36.0	
	baz=194,slow=74						
TORD	**Torodi Ar. Bea**	**76.27**	**26**	P	P	20 01 25.7	+0.8
	0.7nm,0.8s,baz=198,slow=4.9,SNR=3.6						
FINES	**FINESS Array B**	**127.58**	**28**	PKP	PKPdf	20 08 39.0	-1.1
	3.6nm,1.1s,baz=235,slow=4.9,SNR=3.4						
SONM	**Songino Array**	**149.07**	**92**	PKPbc	PKPbc	20 09 22.6	-1.2
	0.3nm,0.8s,baz=236,slow=1.6,SNR=2.7						

*IDC **17** 19:51:48.6±1.0, 39°.04N×29°.06E, h0km, mb3.8/14, mb1 3.8/20, mb1mx3.7/49, mbtmp3.7/20, ML3.5/6, MS2.9/6, Ms1 2.9/6, ms1mx2.5/50, Error ellipse: s-maj=17.9km s-min=12.9km az=14.0*
*DDA **17** 19:51:49.8, 39°.06N×29°.12E, h14km, Ml4.0*
*MOS **17** 19:51:49.9±0.6, 39°.18N×29°.19E, h12km, mb4.0/11, Error ellipse: s-maj=7.3km s-min=3.9km az=98.7*
*CSEM **17** 19:51:50.9±0.1, 39°.11N×29°.11E, h10km, ML4.1, Error ellipse: s-maj=2.2km s-min=2.0km az=39.0*
*ISCJB **17** 19:51:50.3±0.4, 39°.15N±0°.02×29°.09E±0°.02, h11km±3km, mb3.8/16, MS2.9/4, Error ellipse: s-maj=2.6km s-min=2.3km az=7.3*
*ISK **17** 19:51:50.1, 39°.12N×29°.10E, h10km, ML4.1*
*NEIC **17** 19:51:50.0, 39°.12N×29°.11E, h9km, ML4.2(ISK), After ISK.*
*THE **17** 19:51:51.1, 39°.14N×29°.05E, h0km±1km, ML3.7/5, Error ellipse: s-maj=1.9km s-min=1.1km az=81.0*

ISC 17 19:51:50.9±0.8, 39°.14N±0°.02×29°.09E±0°.02, h13km±5km, n309, σ1§42/363, mb3.8/16, MS2.9/4, 47C-28D, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GEDZ	**Gediz**	**0.27**	**111**	*e*PG	**Pg**	**19 51 56.6**	**+0.1**
GEDZ				*e*SG	**Sg**	**19 51 60.0**	**-0.2**
GEDZ	**Gediz**	**0.27**	**111**	*e*Pg	**Pg**	**19 51 56.6**	**+0.1**
GEDZ				*e*Sg	**Sg**	**19 52 00.0**	**-0.2**
DEMI	**Demirci**	**0.31**	**252**	⇑*i* P	**Pg**	**19 51 56.8**	**-0.4**
DEMI				*i* S	**Sg**	**19 52 01.0**	**-0.5**
DEMI	**Demirci**	**0.31**	**252**	P	**Pg**	**19 51 56.8**	**-0.4**
DEMI				S	**Sg**	**19 52 01.0**	**-0.5**
GDZ	**Gediz**	**0.31**	**99**	⇑*i* P	**Pg**	**19 51 56.7**	**-0.5**
GDZ				*i* S	**Sg**	**19 52 01.2**	**-0.3**
GDZ	**Gediz**	**0.31**	**99**	P	**Pg**	**19 51 56.7**	**-0.5**
GDZ				S	**Sg**	**19 52 01.2**	**-0.3**
TVSB	**Tavsanli**	**0.42**	**43**	*e*PG	**Pg**	**19 51 58.9**	**-0.4**
TVSB	**Tavsanli**	**0.42**	**43**	*e*Pg	**Pg**	**19 51 58.9**	**-0.4**
KULA	**Kula-Manisa**	**0.71**	**208**	*e*PG	**Pg**	**19 52 03.8**	**-0.9**
KULA	**Kula-Manisa**	**0.71**	**208**	P	**Pg**	**19 52 03.7**	**-0.9**
KULA	**Kula-Manisa**	**0.71**	**208**	*e*Pg	**Pg**	**19 52 03.8**	**-0.9**
MANT	**Manisa**	**0.77**	**213**	⇑*i* P	**Pg**	**19 52 03.8**	**-2.0**
MANT				*i* S	**Sg**	**19 52 13.6**	**-2.3**
MANT	**Manisa**	**0.77**	**213**	P	**Pg**	**19 52 03.8**	**-2.0**
MANT				S	**Sg**	**19 52 13.6**	**-2.3**
KHL	**Karahalli**	**0.88**	**157**	*e*PG	**Pg**	**19 52 07.1**	**-0.8**
KHL	**Karahalli**	**0.88**	**157**	*e*Pg	**Pg**	**19 52 07.1**	**-0.8**
AKS	**Akhisar**	**1.03**	**256**	*e*PG	**Pb**	**19 52 10.6**	**0.0**
AKS	**Akhisar**	**1.03**	**256**	*e*Pg	**Pb**	**19 52 10.6**	**0.0**
BALB	**Balikesir**	**1.06**	**298**	*e*PN	**Pg**	**19 52 11.5**	**+0.1**
BALB				*e*SN	**Sn**	**19 52 27.0**	**+0.8**
BALB	**Balikesir**	**1.06**	**298**	*e*Pn	**Pg**	**19 52 11.5**	**+0.1**
BALB				*e*Sn	**Sn**	**19 52 27.0**	**+0.8**
IZI	**Iznik**	**1.23**	**14**	*e*PN	**Pn**	**19 52 14.0**	**+0.1**
IZI	**Iznik**	**1.23**	**14**	*e*Pn	**Pn**	**19 52 14.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*e*PN	**Pn**	**19 52 14.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*e*Pn	**Pn**	**19 52 14.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*PN	**Pb**	**19 52 14.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*Pn	**Pb**	**19 52 14.7**	**+0.2**
SHUT	**Suhut-Afyon**	**1.28**	**117**	*e*PN	**Pn**	**19 52 14.5**	**-0.1**
SHUT	**Suhut-Afyon**	**1.28**	**117**	*e*Pn	**Pn**	**19 52 14.5**	**-0.1**
BORA	**Eskisehir**	**1.29**	**54**	⇑*i* P	**Pn**	**19 52 14.2**	**-0.5**
BORA				*i* S	**Sg**	**19 52 32.5**	**+0.1**
BORA	**Eskisehir**	**1.29**	**54**	P	**Pn**	**19 52 14.2**	**-0.5**
BORA				S	**Sg**	**19 52 32.5**	**+0.1**
GEMT	**Gemlik**	**1.30**	**3**	*e*PN	**Pn**	**19 52 15.0**	**+0.2**
GEMT	**Gemlik**	**1.30**	**3**	*e*Pn	**Pn**	**19 52 15.0**	**+0.2**
DENT	**Denizli**	**1.38**	**182**	*e*PN	**Pn**	**19 52 15.7**	**-0.2**
DENT	**Denizli**	**1.38**	**182**	*e*Pn	**Pn**	**19 52 15.7**	**-0.2**
ADVT	**Abdulvahap**	**1.39**	**21**	*e*PN	**Pn**	**19 52 16.4**	**+0.5**
ADVT	**Abdulvahap**	**1.39**	**21**	*e*Pn	**Pn**	**19 52 16.4**	**+0.5**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*PN	**Pn**	**19 52 16.5**	**+0.2**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*Pn	**Pn**	**19 52 16.5**	**+0.2**
ESKT	**Eskisehir**	**1.42**	**74**	*e*PN	**Pn**	**19 52 16.6**	**+0.1**
ESKT	**Eskisehir**	**1.42**	**74**	⇑*i* P	**Pn**	**19 52 16.5**	**+0.1**
ESKT	**Eskisehir**	**1.42**	**74**	*e*Pn	**Pn**	**19 52 16.6**	**+0.1**
SEYT	**Eskypehyr**	**1.42**	**74**	P	**Pn**	**19 52 16.5**	**+0.1**
ARMT	**Armutlu**	**1.44**	**353**	*e*PN	**Pb**	**19 52 17.5**	**-0.1**
ARMT	**Armutlu**	**1.44**	**353**	*e*Pn	**Pb**	**19 52 17.5**	**-0.1**
BOLV	**Bolvadin**	**1.51**	**106**	⇑*i* P	**Pn**	**19 52 18.1**	**+0.3**
BOLV				*i* S	**Sb**	**19 52 38.0**	**0.0**
BOLV	**Bolvadin**	**1.51**	**106**	P	**Pn**	**19 52 18.1**	**+0.3**
BOLV				S	**Sb**	**19 52 38.0**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**219**	*e*PN	**Pn**	**19 52 18.0**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**219**	*e*Pn	**Pn**	**19 52 18.0**	**+0.1**
EDC	**Edincik**	**1.53**	**322**	*e*PN	**Pb**	**19 52 18.8**	**-0.4**
EDC	**Edincik**	**1.53**	**322**	P	**Pb**	**19 52 18.8**	**-0.4**
EDC	**Edincik**	**1.53**	**322**	*e*Pn	**Pb**	**19 52 18.8**	**-0.4**
IZM	**Izmir**	**1.61**	**243**	*e*PN	**Pn**	**19 52 19.5**	**+0.4**
IZM	**Izmir**	**1.61**	**243**	P	**Pb**	**19 52 19.9**	**-0.6**
IZM	**Izmir**	**1.61**	**243**	*e*Pn	**Pn**	**19 52 19.5**	**+0.4**
IZM	**Izmir**	**1.61**	**243**	P	**Pb**	**19 52 19.9**	**-0.6**
GULT	**Gulveren**	**1.69**	**40**	*e*PN	**Pn**	**19 52 20.9**	**+0.6**
GULT	**Gulveren**	**1.69**	**40**	*e*Pn	**Pn**	**19 52 20.9**	**+0.6**
DKL	**Dikili**	**1.70**	**268**	*e*PN	**Pn**	**19 52 20.5**	**+0.2**
DKL	**Dikili**	**1.70**	**268**	*e*Pn	**Pn**	**19 52 20.5**	**+0.2**

BCAM	Yenicaga	2.83	53	P		Pn	19 52 37.5	+1.5
KMER	Konya-Meram	2.91	117	*i* P		Pn	19 52 38.2	+1.1
KMER	Konya-Meram	2.91	117	P		Pn	19 52 38.2	+1.1
ALN	Alexandroupoli	2.92	308	P		Pn	19 52 37.4	+0.3
ALN				S		Sn	19 53 13.2	+1.1
ALN	Alexandroupoli	2.92	308	P		Pn	19 52 37.6	+0.5
ALN	Alexandroupoli	2.92	308	P		Pn	19 52 37.6	+0.5
ALN				S		Sn	19 53 13.2	+1.1
AKAS	Kas	2.93	172	*i* P		Pn	19 52 38.8	+1.5
AKAS	Kas	2.93	172	P		Pn	19 52 38.8	+1.5
LOD	Lodumlu	2.94	74	*e*PN		Pn	19 52 38.2	+0.8
LOD	Lodumlu	2.94	74	*e*Pn		Pn	19 52 38.2	+0.8
KKUL	Konya-Kulu	2.98	88	*i* P		Pn	19 52 39.4	+1.5
KKUL	Konya-Kulu	2.98	88	P		Pn	19 52 39.4	+1.5
KSL	Kastellorizon	3.01	172	P		Pn	19 52 39.5	+1.2
KSL				S		Sn	19 53 16.9	+2.7
SMTH	Samothraki Isl	3.05	297	P		Pn	19 52 39.1	+0.3
LIA	Limnos Island	3.12	285	P		Pn	19 52 40.2	+0.5
BBAL	Bala	3.15	81	*i* P		Pn	19 52 41.6	+1.2
BBAL				*i* S		Sg	19 53 34.4	+2.3
BBAL	Bala	3.15	81	P		Pn	19 52 41.6	+1.2
BTIN	Bart¯–n	3.47	43	*i* P		Pn	19 52 45.3	+0.7
BTIN	Bart¯–n	3.47	43	P		Pn	19 52 45.3	+0.7
BRTR	Keskin Array B 3.8nm,0.3s,baz=254,slow=14,SNR=84	3.57	79	Pn		Pn	19 52 46.9	+0.7
BRTR				Sn		Sn	19 53 28.4	+0.1
	4.2nm,0.3s,baz=266,slow=18,SNR=6.9							
BRTR				Lg		Lg	19 53 45.8	
	3.4nm,0.3s,baz=263,slow=20,SNR=4.5							
JMB	Yambol	3.83	331	P		Pn	19 52 53.6	+4.0
JMB	Yambol	3.83	331	P		Pn	19 52 53.6	+4.0
GAZI	Gazipasa	3.87	138	*i* P		Pn	19 52 50.2	+0.1
GAZI	Gazipasa	3.87	138	P		Pn	19 52 50.2	+0.1
ERMK	Ermenek	3.92	128	*i* P		Pn	19 52 52.6	+1.6
ERMK	Ermenek	3.92	128	P		Pn	19 52 52.6	+1.6
KAVA	Kavala	3.97	299	P		Pn	19 52 52.0	+0.5
KAVA	Kavala	3.97	299	P		Pn	19 52 52.0	+0.5
SANT	Santorini	3.99	227	*e*Pn		Pn	19 52 51.4	-0.4
SANT				*e*Sn		Sn	19 53 36.8	-1.6
SANT	Santorini	3.99	227	*e*Pn		Pn	19 52 51.4	-0.4
SANT				*e*Sn		Sn	19 53 36.8	-1.6
OUR	Ouranopolis	4.12	288	P		Pn	19 52 54.8	+1.3
OUR	Ouranopolis	4.12	288	P		Pn	19 52 54.8	+1.3
CDAG	Cicekdag	4.12	82	*i* P		Pn	19 52 55.1	+1.4
CDAG	Cicekdag	4.12	82	P		Pn	19 52 55.1	+1.4
PAIG	Paliouri	4.26	282	P		Pn	19 52 58.0	+2.6
PAIG	Paliouri	4.26	282	P		Pn	19 52 58.0	+2.6
PLD	Plovdiv	4.46	313	P		Pn	19 52 59.2	+0.9
PLD	Plovdiv	4.46	313	P		Pn	19 52 59.2	+0.9
PLG	Polygyros	4.52	288	P		Pn	19 53 02.0	+2.9
PLG	Polygyros	4.52	288	P		Pn	19 53 02.0	+2.9
SRS	Serrai	4.66	297	P		Pn	19 53 01.6	+0.7
SRS	Serrai	4.66	297	P		Pn	19 53 01.6	+0.7
NPS	Neapolis	4.76	217	P		Pn	19 53 04.2	+1.8
NPS	Neapolis	4.76	217	P		Pn	19 53 04.2	+1.8
IDI	Anoyia 0.6nm,0.3s,baz=12,slow=18,SNR=5.1	5.10	222	Pn		Pn	19 53 07.0	0.0
IDI				LR		LR	19 54 53.0	
	comp=Z,36nm,21.5s,baz=89,slow=37							
IDI	Anoyia 11nm,0.6s	5.10	222	*e*Pn		Pn	19 53 06.8	-0.3
IDI	Anoyia 11nm,0.6s	5.10	222	*e*Pn		Pn	19 53 06.8	-0.3
TIRR	Tirgusor	5.34	355	⇑*i* P		Pn	19 53 11.4	+1.1
TIRR	Tirgusor	5.34	355	*e*P		Pn	19 53 10.6	+0.3
TIRR				pmax		pmax		
	comp=Z,24nm,0.3s							
TIRR	Tirgusor comp=Z,24nm,0.3s	5.34	355	*e*Pn		Pn	19 53 10.6	+0.3
TIRR	Tirgusor	5.34	355	⇑*i* P		Pn	19 53 11.4	+1.1
TIRR	Tirgusor comp=Z,24nm,0.3s	5.34	355	*e*Pn		Pn	19 53 10.6	+0.3
CSS	Mathiatis comp=Z,5.2nm,0.6s	5.37	140	*e*Pn		Pn	19 53 08.8	-2.0
CSS	Mathiatis comp=Z,5.2nm,0.6s	5.37	140	*e*Pn		Pn	19 53 08.8	-2.0
TLB	Topalu	5.50	352	⇑*i* P		Pn	19 53 13.4	+1.0
TLB	Topalu	5.50	352	⇑P		Pn	19 53 13.5	+1.0
TLB	Topalu	5.50	352	⇑*i* P		Pn	19 53 13.4	+1.0
HARR	Harsova	5.61	352	⇑*i* P		Pn	19 53 15.9	+1.9
HARR	Harsova	5.61	352	⇑P		Pn	19 53 15.9	+1.9
HARR	Harsova	5.61	352	⇑*i* P		Pn	19 53 15.9	+1.9
TLCR		6.05	358	⇓*i* P		Pn	19 53 21.1	+1.1
TLCR		6.05	358	⇓P		Pn	19 53 21.1	+1.1
TLCR		6.05	358	⇓*i* P		Pn	19 53 21.1	+1.1
CFR	Carcaliu	6.08	354	⇓*i* P		Pn	19 53 20.6	+0.2
CFR	Carcaliu	6.08	354	⇓P		Pn	19 53 20.6	+0.2
CFR	Carcaliu	6.08	354	⇓*i* P		Pn	19 53 20.6	+0.2
SEV	Sevastopol'	6.39	31	⇑*e*P		Pn	19 53 24.2	-0.5
SEV				*e*S		Sn	19 54 33.1	-4.4
SEV				pmax		pmax		
	comp=Z,6.0nm,0.4s							
SEV				smax		smax		
	comp=N,24nm,0.3s							
SEV				smax		smax		
	comp=E,4.0nm,0.3s							
SEV	Sevastopol' comp=E,6.0nm,0.4s	6.39	31	*e*P		Pn	19 53 24.2	-0.5
SEV				*e*S		Sn	19 54 33.1	-4.4
YAL	Yalta	6.55	34	⇑*e*P		Pn	19 53 27.5	+0.7
YAL				*e*S		Sn	19 54 38.3	-3.0
YAL				pmax		pmax		
	comp=Z,28nm,0.3s							
YAL				smax		smax		
	comp=N,21nm,0.3s							
YAL				smax		smax		
	comp=E,42nm,0.3s							
YAL	Yalta comp=E,28nm,0.3s	6.55	34	*e*P		Pn	19 53 27.5	+0.7
YAL				*e*S		Sn	19 54 38.3	-3.0
BARS	Barje	6.62	306	⇓*i* Pn		Pn	19 53 28.8	+0.9
MLR	Muntele Rosu comp=E,0.2nm,0.3s,baz=270,slow=6.1,SNR=3.2	6.76	341	Pn		Pn	19 53 29.4	-0.5
MLR	Muntele Rosu	6.76	341	⇑*i* P		Pn	19 53 31.5	+1.6
MLR	Muntele Rosu	6.76	341	⇑P		Pn	19 53 31.5	+1.6
MLR	Muntele Rosu	6.76	341	⇑*i* P		Pn	19 53 31.5	+1.6
MTUR	Matau	6.78	335	⇑*i* P		Pn	19 53 31.5	+1.4
MTUR	Matau	6.78	335	⇑P		Pn	19 53 31.5	+1.4
MTUR	Matau	6.78	335	⇑*i* P		Pn	19 53 31.5	+1.4
ALU	Alushta	6.81	34	*e*P		Pn	19 53 30.9	+0.5
ALU				*e*S		Sn	19 54 42.9	-4.9
ALU				pmax		pmax		
	comp=Z,9.0nm,0.3s							
ALU				smax		smax		
	comp=N,62nm,0.3s							
ALU	Alushta comp=N,9.0nm,0.3s	6.81	34	*e*P		Pn	19 53 30.9	+0.5
ALU				*e*S		Sn	19 54 42.9	-4.9
	comp=N,62nm,0.3s							
SIM	Simferopol'	6.91	31	*e*P		Pn	19 53 32.6	+0.8
SIM				*e*S		Sn	19 54 47.0	-3.2
SIM				pmax		pmax		
	comp=Z,45nm,0.4s							
SIM				smax		smax		
	comp=N,79nm,0.6s							
SIM	Simferopol' comp=N,45nm,0.4s	6.91	31	*e*P		Pn	19 53 32.6	+0.8
SIM				*e*S		Sn	19 54 47.0	-3.2
PLOR	Plostina	6.95	346	⇓*i* P		Pn	19 53 34.9	+2.5
PLOR	Plostina	6.95	346	⇓P		Pn	19 53 34.9	+2.5
PLOR	Plostina	6.95	346	⇓*i* P		Pn	19 53 34.9	+2.5
VOIR		6.97	336	⇑*i* P		Pn	19 53 34.0	+1.3
VOIR		6.97	336	⇑P		Pn	19 53 34.0	+1.3
VOIR		6.97	336	⇑*i* P		Pn	19 53 34.0	+1.3
ARR	Arges	7.05	333	⇑*i* P		Pn	19 53 35.5	+1.7
ARR	Arges	7.05	333	⇑*i* P		Pn	19 53 35.5	+1.7
BOLS	Boljevac	7.12	313	*i* Pn		Pn	19 53 34.1	-0.6
BOVS	Bovan	7.14	311	*e*Pn		Pn	19 53 36.2	+1.2
SUDU	Sudak	7.24	36	⇑*e*P		Pn	19 53 35.7	-0.6
SUDU				*e*S		Sn	19 54 54.5	-3.8
SUDU				pmax		pmax		
	comp=Z,7.0nm,0.3s							
SUDU				smax		smax		
	comp=N,14nm,0.3s							
SUDU				smax		smax		
	comp=E,27nm,0.5s							
SUDU	Sudak comp=E,7.0nm,0.3s	7.24	36	*e*P		Pn	19 53 35.7	-0.6
SUDU				*e*S		Sn	19 54 54.5	-3.8
	comp=E,14nm,0.3s							
DOPR	Dopca	7.35	339	⇑*i* P		Pn	19 53 40.1	+2.2
DOPR	Dopca	7.35	339	⇑*i* P		Pn	19 53 40.1	+2.2
LOT	Lotru	7.44	330	⇑*i* P		Pn	19 53 41.4	+2.2
LOT	Lotru	7.44	330	⇑*i* P		Pn	19 53 41.4	+2.2
TESR	Tescani	7.58	347	⇑*i* P		Pn	19 53 42.1	+1.0
TESR	Tescani	7.58	347	⇑*i* P		Pn	19 53 42.1	+1.0
GRUS	Gruza	7.87	310	*e*Pn		Pn	19 53 45.0	-0.1
MDVR	Moldovita	7.87	318	⇑*i* P		Pn	19 53 45.6	+0.5
MDVR	Moldovita	7.87	318	⇑*i* P		Pn	19 53 45.6	+0.5
MMAI	Mount Meron Ar comp=E,3.1nm,0.3s,baz=310,slow=13,SNR=8.5	7.96	138	Pn		Pn	19 53 44.4	-2.0
MMAI				LR		LR	19 57 56.2	
	comp=E,28nm,18.0s,baz=45,slow=46							
IVAS	Ivanjica	8.05	306	*e*Pn		Pn	19 53 49.0	+1.4
TRUS	Trudelj	8.25	311	*e*Pn		Pn	19 53 53.3	+3.1
DIVS	Divibare	8.42	309	*e*Pn		Pn	19 53 53.0	+0.3
BZS	Buzias	8.51	322	⇓*i* P		Pn	19 53 55.2	+1.4
BZS	Buzias	8.51	322	⇓P		Pn	19 53 55.2	+1.4
BZS	Buzias	8.51	322	⇓*i* P		Pn	19 53 55.2	+1.4
CJR	Cluj-Napoca	8.57	334	⇑*i* P		Pn	19 53 55.6	+0.9
CJR	Cluj-Napoca	8.57	334	⇑P		Pn	19 53 55.6	+0.9
CJR	Cluj-Napoca	8.57	334	⇑*i* P		Pn	19 53 55.6	+0.9
ARCR	ARCALIA	8.66	338	⇑*i* P		Pn	19 53 58.1	+2.2
ARCR	ARCALIA	8.66	338	⇑*i* P		Pn	19 53 58.1	+2.2
BURAR	Bucovina Array	8.93	343	⇑*i* P		Pn	19 54 01.6	+2.0
BURAR	Bucovina Array	8.93	343	⇑P		Pn	19 54 01.6	+2.0
BURAR	Bucovina Array	8.93	343	⇑*i* P		Pn	19 54 01.6	+2.0
DRGR		8.96	331	⇓*i* P		Pn	19 54 01.3	+1.2
DRGR		8.96	331	⇓P		Pn	19 54 01.3	+1.2
DRGR		8.96	331	⇓*i* P		Pn	19 54 01.3	+1.2
SIRR	Siria	8.98	325	⇓*i* P		Pn	19 54 02.5	+2.3
SIRR	Siria	8.98	325	⇓*i* P		Pn	19 54 02.5	+2.3
SORM	Soroca	9.01	357	⇑*i* P		Pn	19 54 01.1	+0.5
SORM	Soroca	9.01	357	⇑P		Pn	19 54 01.1	+0.5
SORM	Soroca	9.01	357	⇑*i* P		Pn	19 54 01.1	+0.5
ASF	Jabal al Asfar comp=E,0.4nm,0.3s,baz=61,slow=19,SNR=3.1	9.41	135	Pn		Pn	19 54 10.1	+3.8
BMR	Baia Mare	9.45	336	⇓*i* P		Pn	19 54 08.4	+1.7
BMR	Baia Mare	9.45	336	⇓P		Pn	19 54 08.4	+1.7
BMR	Baia Mare	9.45	336	⇓*i* P		Pn	19 54 08.4	+1.7
EIL	Elat comp=E,0.7nm,0.3s,baz=0.4,slow=1.0,SNR=4.4	10.61	151	Pn		Pn	19 54 24.1	+1.5
EIL				Sn		Sn	19 56 15.8	-5.5
	comp=E,0.3nm,0.3s,baz=67,slow=18,SNR=3.2							
AKASG	Malin Array Be comp=E,0.3nm,0.3s,baz=181,slow=12,SNR=3.9	11.56	0	Pn		Pn	19 54 37.5	+1.9
AKASG				Sn		Sn	19 56 48.7	+4.2
	comp=E,0.6nm,0.3s,baz=176,slow=27,SNR=4.0							
GERES	GERESS Array B comp=E,0.2nm,0.3s,baz=124,slow=12,SNR=2.5	14.70	316	Pn		Pn	19 55 20.3	+1.7
FINES	FINESS Array B comp=E,2.1nm,0.7s,baz=150,slow=12,SNR=6.7	22.41	356	P		P	19 56 49.8	+0.9
FINES				LR		LR	20 06 10.5	
	comp=E,40nm,18.1s,baz=72,slow=38							
GEYT	Alibeck comp=E,2.4nm,0.7s,baz=286,slow=11,SNR=11	22.70	84	P		P	19 56 52.3	0.0
HFS	Hagfors comp=E,4.1nm,1.0s,baz=158,slow=12,SNR=3.1	23.15	340	P		P	19 56 55.8	-0.9
HFS				LR		LR	20 07 34.4	
	comp=E,37nm,21.0s,baz=150,slow=41							
AKTK	Aktyubinsk comp=E,2.0nm,0.6s	23.28	52	P		P	19 56 57.8	-0.3
AKTO	Aktyubinsk comp=E,1.9nm,0.6s,baz=256,slow=11,SNR=6.3	23.28	52	P		P	19 56 57.8	-0.3
NB2	NORSAR Subarra comp=Z,18nm,2.0s,baz=145,slow=10	24.58	339	P		P	19 57 09.1	-1.3
NB2	NORSAR Subarra comp=Z,18nm,2.0s,SNR=3.7	24.58	339	P		P	19 57 09.1	-1.3
NOA	NORSAR Array B comp=Z,1.1nm,0.7s,baz=143,slow=9.4,SNR=3.1	24.58	339	P		P	19 57 10.3	-0.1
NOA				LR		LR	20 08 18.1	
	comp=Z,36nm,18.4s,baz=155,slow=40							
ARU	Arti	25.99	39	P		P	19 57 23.6	+0.4
ARU				LR		LR	20 08 48.7	
	comp=Z,52nm,18.1s,baz=190,slow=39							
ARU	Arti	25.99	39	P		P	19 57 22.6	-0.6
EKA	Eskdalemuir Ar comp=Z,1.1nm,0.5s,baz=116,slow=11,SNR=4.6	26.91	318	P		P	19 57 33.3	+1.9
ARCES	ARCESS Array B comp=Z,1.0nm,0.7s,baz=171,slow=12,SNR=5.2	30.52	358	P		P	19 58 03.6	+0.2
TORD	Torodi Ar. Bea comp=Z,0.4nm,0.7s,baz=40,slow=10,SNR=3.1	35.44	231	P		P	19 58 45.1	-1.8
KURBB	Kurchatov Arra comp=Z,0.5nm,0.4s,baz=276,slow=8.8,SNR=11	36.22	55	P		P	19 58 53.7	+0.4
KURK	Kurchatov comp=Z,1.0nm,0.4s	36.28	55	P		P	19 58 53.7	-0.1
KURK				pmax		pmax		
KURK	Kurchatov	36.28	55	P		P	19 58 53.7	-0.1
KURK	Kurchatov	36.28	55	P		P	19 58 53.7	-0.1
MKAR	Makanchi Array comp=Z,0.8nm,0.5s,baz=268,slow=8.6,SNR=10	39.03	61	P		P	19 59 18.0	+0.8
ZALV	Zalesovo Beam comp=Z,0.9nm,0.5s,baz=286,slow=7.6,SNR=4.9	40.01	49	P		P	19 59 24.8	-0.4
SONM	Songino Array comp=Z,0.7nm,0.5s,baz=285,slow=8.5,SNR=6.5	54.57	54	P		P	20 01 19.5	+0.7
KSAR	Wonju Array Be	73.39	55	P		P	20 03 22.6	0.0
KSAR	Wonju Array Be	73.39	55	P		P	20 03 22.6	0.0
KSAR	Wonju Array Be	73.39	55	P		P	20 03 22.6	0.0
KSRS	Korea Array comp=Z,2.1nm,0.8s,baz=304,slow=4.8,SNR=7.3	73.40	55	P		P	20 03 22.6	-0.1
ZALV				PcP		PcP	20 02 41.6	+0.5
	0.6nm,0.4s,baz=132,slow=3.0,SNR=4.2							
ZALV				LR		LR	20 21 28.7	
	comp=Z,20nm,19.0s,baz=70,slow=40							
MKAR	Makanchi Array 0.4nm,0.6s,baz=89,slow=9.6,SNR=2.9	45.02	302	P		P	20 01 09.1	+0.1
KURBB	Kurchatov Arra 0.6nm,0.8s,baz=80,slow=8.1,SNR=14	46.74	308	P		P	20 01 22.6	+0.1
ILAR	Eielson Array 0.6nm,0.8s,baz=261,slow=6.2,SNR=9.5	47.95	33	P		P	20 01 32.0	+0.4
WRA	Warramunga Arr 0.9nm,0.5s,baz=8.3,slow=7.3,SNR=19	58.12	190	P		P	20 02 47.4	+0.3
ASAR	Alice Springs 0.4nm,0.7s,baz=5.0,slow=7.1,SNR=5.0	61.85	190	P		P	20 03 12.3	-0.4
FINES	FINESS Array B 1.1nm,0.7s,baz=46,slow=8.5,SNR=4.8	68.81	333	P		P	20 03 57.5	+0.2
TXAR	Lajitas Array 0.2nm,0.8s,baz=329,slow=3.4,SNR=2.9	88.36	54	P		P	20 05 45.7	0.0

NIED ***17*** *19:52:00,38˚.00N×143˚.30E,h11km,Mw3.6 Best double couple: M₀3.30000×10¹⁴ NP1:φ₀21.00000°,δ36.00000°, λ-82.00000°. NP2:φ₀191.00000°,δ54.00000°, λ-96.00000°.*

IDC ***17*** *19:52:52.0±0.9,37˚.82N×143˚.50E,h0km,mb3.7/9, mb1 3.9/11,mb1mx3.7/48,mbtmpb3.7/11,ML3.5/2,MS3.0/1, Ms1 3.0/1,ms1mx2.3/41,Error ellipse: s-maj=22.2km s-min=18.9km az=96.0*

ISCJB ***17*** *19:52:53.5±0.6,37˚.89N±0˚.05×143˚.37E±0˚.05,h19km, mb3.7/9,MS3.0/1,Error ellipse: s-maj=6.6km s-min=5.7km az=1.5*

JMA ***17*** *19:52:55.4±0.2,37˚.96N×143˚.26E,h25km,M3.8*

ISC 17 19:52:54.7±0.8,37˚.86N±0˚.05×143˚.40E±0˚.07,h19km,n31, σ18˚41/39,mb3.7/9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	Ouri	1.72	291	P		Pn	19 53 22.7	-0.9
JIO				S		Sn	19 53 42.5	-2.5
OFUJ	Ofunato	1.82	312	P		Pn	19 53 23.7	-1.3
OFUJ				S		Sn	19 53 44.2	-3.4
JMK	Ichinoseki	2.03	303	P		Pn	19 53 26.8	-1.1
JMM	Marumori	2.06	271	P		Pn	19 53 27.8	-0.5
JMM				S		Sn	19 53 52.0	-1.5
JFK	Kawauchi	2.06	257	P		Pn	19 53 27.6	-0.8
JFK				S		Sn	19 53 52.8	-0.8
JOU	Okura	2.21	284	P		Pn	19 53 30.4	-0.1
JOM	Ohasama	2.30	315	P		Pn	19 53 30.8	-0.9
JOM				S		Sn	19 53 57.3	-2.2
JFT	Otama	2.45	263	P		Pn	19 53 34.1	+0.4
JFT				S		Sn	19 54 03.2	-0.0
JYK	Kaneyama	2.61	295	P		Pn	19 53 35.6	-0.3
JYK				S		Sn	19 54 06.2	-0.8
JRG	Rokugo	2.65	306	P		Pn	19 53 36.8	+0.3
JRG				S		Sn	19 54 07.9	-0.2
JYS	Shirataka	2.65	279	P		Pn	19 53 37.2	+0.7
JYS				S		Sn	19 54 07.4	-0.8
JANG	Nango	2.90	330	P		Pn	19 53 40.2	+0.3
JAH	Hinai	3.17	318	P		Pn	19 53 43.6	+0.1
JAW	Awa shima	3.32	282	P		Pn	19 53 46.1	+0.4
JTM	Tenmabayashi	3.43	329	P		Pn	19 53 46.7	-0.5
MJAR	Matsushiro Arr 1.2nm,0.3s,baz=66,slow=9.3,SNR=20	4.35	254	Pn		Pn	19 54 01.5	+1.7
MJAR				Sn		Sn	19 54 51.2	+1.3
	1.3nm,0.3s,baz=87,slow=14,SNR=5.5							
JHJ	Hachijo jima 2 6.9nm,0.3s,baz=246,slow=20,SNR=4.4	5.58	213	Pn		Pn	19 54 16.3	-0.3
JHJ				Sn		Sn	19 55 15.1	-5.1
	18nm,0.3s,baz=217,slow=20,SNR=3.3							
USRK	Ussuriysk Ar. 0.2nm,0.3s,baz=125,slow=12,SNR=5.1	10.69	310	Pn		Pn	19 55 38.7	+12
KSRS	Korea Array 0.1nm,0.3s,baz=82,slow=15,SNR=3.3	12.27	273	Pn		P	19 55 59.8	-0.8
H11N2	WAKE ISLAND Hy baz=317,slow=75,SNR=12	27.27	125	T		T	20 27 20.4	
H11N1	WAKE ISLAND Hy baz=317,slow=75,SNR=9.2	27.28	125	T		T	20 27 44.7	
H11N3	WAKE ISLAND Hy baz=317,slow=75,SNR=8.5	27.29	125	T		T	20 27 19.4	
SONM	Songino Array 0.5nm,0.5s,baz=69,slow=7.9,SNR=3.8	28.66	302	P		P	19 58 51.5	+1.2
ZALV	Zalesovo Beam 0.6nm,0.4s,baz=99,slow=8.1,SNR=3.0	42.53	312	P		P	20 00 51.0	+2.2

IDC 17 20:04:53.8±47.0,15˚.48S×172˚.49W,h0km,mb3.9/3, mb1 4.1/3,mb1mx3.6/31,mbtmpb3.9/3,Error ellipse: s-maj=917.1km s-min=187.4km az=79.0,Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
STKA	Stephens Creek 1.3nm,0.8s,baz=90,slow=7.1,SNR=4.8	44.76	240	P		P	20 13 09.2	-0.2
WRA	Warramunga Arr 0.3nm,0.4s,baz=93,slow=6.9,SNR=5.0	50.68	257	P		P	20 13 55.0	-0.6
ASAR	Alice Springs 2.2nm,0.5s,baz=88,slow=8.3,SNR=26	50.92	252	P		P	20 13 57.6	+0.2

MEX 17 20:07:22.8±0.6,17˚.45N×100˚.85W,h25km±8km,MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ZIIG	Zihuatanejo	0.61	285	*e*P		Pb	20 07 32.5	-2.4
ZIIG				*e*S		Sb	20 07 40.6	-2.5
CAIG	El Cayaco	0.68	126	*i* P		Pb	20 07 33.8	-2.3
CAIG				*e*S		Sb	20 07 42.6	-2.5
ARIG	Puente Sto Nin	0.95	30	*e*P		Pn	20 07 37.7	-2.9
ARIG				*e*S		Sb	20 07 49.4	-3.5
ACP2	Acapulco	1.08	122	*e*P		Pn	20 07 40.4	-2.0
ACP2				*e*S		Sb	20 07 52.6	-4.0
MEIG	Mezcala	1.26	68	*e*P		Pn	20 07 42.9	-2.0
MEIG				*e*S		Sn	20 07 56.8	-4.3
TLIG	Tlapa	2.18	87	*e*P		Pn	20 07 55.8	-1.7
TLIG				*e*S		Sn	20 08 21.7	-2.2
YAIG	Yautepec	2.20	50	*i* P		Pn	20 07 55.4	-2.5
YAIG				*i* S		Sn	20 08 20.7	-3.6

ISCJB ***17*** *20:09:59.3±0.5,39˚.07N±0˚.04×29˚.11E±0˚.04,h9km,Error ellipse: s-maj=5.9km s-min=3.9km az=150.7*

CSEM ***17*** *20:09:59.4±0.1,39˚.07N×29˚.12E,h8km,MD2.7,Error ellipse: s-maj=3.5km s-min=2.7km az=132.0*

ISK ***17*** *20:09:59.2,39˚.11N×29˚.16E,h6km,MD2.7*

DDA ***17*** *20:09:59.4,39˚.02N×29˚.10E,h7km,Md2.7*

ISC 17 20:09:59.4±0.9,39˚.07N±0˚.03×29˚.11E±0˚.02,h9km,n26, σ0˚54/34,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GEDZ	Gediz	0.23	95	*e*PG		Pg	20 10 03.8	-0.4
GEDZ	Gediz	0.23	95	*e*Pg		Pg	20 10 03.8	-0.4
GDZ	Gediz	0.29	85	*i* P		Pg	20 10 05.9	+0.7
GDZ				*i* S		Sg	20 10 10.4	+1.3
GDZ	Gediz	0.29	85	P		Pg	20 10 05.9	+0.7
GDZ				S		Sg	20 10 10.4	+1.3
DEMI	Demirci	0.31	266	*i* P		Pg	20 10 05.9	+0.3
DEMI				*i* S		Sg	20 10 10.1	+0.4
DEMI	Demirci	0.31	266	P		Pg	20 10 05.9	+0.3
DEMI				S		Sg	20 10 10.1	+0.4
TVSB	Tavsanli	0.47	35	*e*PG		Pg	20 10 08.2	-0.4
TVSB				*e*SG		Sg	20 10 13.7	-1.1
TVSB	Tavsanli	0.47	35	*e*Pg		Pg	20 10 08.2	-0.4
TVSB				*e*Sg		Sg	20 10 13.7	-1.1

BORA				*i* S	**Sb**	**20 12 50.2 +0.3**	
BORA	**Eskisehir**	**1.37**	**53**	P	**Pb**	**20 12 32.5 +0.1**	
BORA				S	**Sb**	**20 12 50.2 +0.3**	
GONE	**Gonen-Balikesi**	**1.42**	**314**	*e*PN	**Pb**	**20 12 33.2 +0.1**	
GONE	**Gonen-Balikesi**	**1.42**	**314**	*e*Pn	**Pb**	**20 12 33.2 +0.1**	
ARMT	**Armutlu**	**1.50**	**355**	*e*PN	**Pn**	**20 12 34.0 +0.7**	
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn	**Pn**	**20 12 34.1 +0.7**	
EDC	**Edincik**	**1.56**	**325**	*e*PN	**Pb**	**20 12 35.5 +0.1**	
EDC	**Edincik**	**1.56**	**325**	*e*Pn	**Pb**	**20 12 35.5 +0.1**	
GULT	**Gulveren**	**1.78**	**40**	*e*PN	**Pn**	**20 12 38.4 +1.1**	
GULT	**Gulveren**	**1.78**	**40**	*e*Pn	**Pn**	**20 12 38.4 +1.1**	

ISCJB ***17*** *20:14:28.8±0.4,39.°11N±0.°04×29.°07E±0.°04, h9km, Error ellipse: s-maj=5.4km s-min=3.7km az=151.1*
CSEM ***17*** *20:14:28.9±0.2,39.°12N×29.°07E, h8km, MD2.7, Error ellipse: s-maj=4.4km s-min=3.7km az=133.0*
ISK ***17*** *20:14:28.9, 39.°17N×29.°08E, h8km, MD2.7*
DDA ***17*** *20:14:28.6, 39.°02N×29.°10E, h7km, Md2.6*

ISC 17 20:14:28.9±0.9, 39.°11N±0.°03×29.°07E±0.°02, h9km, n32, σ0$57/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GEDZ	**Gediz**	**0.27**	**104**	*e*PG	**Pg**	**20 14 35.2**	**+0.9**
GEDZ	**Gediz**	**0.27**	**104**	*e*Pg	**Pg**	**20 14 35.2**	**+0.9**
DEMI	**Demirci**	**0.29**	**257**	*i* P	**Pg**	**20 14 35.1**	**+0.4**
DEMI				*i* S	**Sg**	**20 14 39.4**	**+0.9**
DEMI	**Demirci**	**0.29**	**257**	P	**Pg**	**20 14 35.1**	**+0.4**
DEMI				S	**Sg**	**20 14 39.4**	**+0.9**
GDZ	**Gediz**	**0.32**	**94**	*i* P	**Pg**	**20 14 34.8**	**-0.5**
GDZ				*i* S	**Sg**	**20 14 39.6**	**+0.1**
GDZ	**Gediz**	**0.32**	**94**	P	**Pg**	**20 14 34.8**	**-0.5**
GDZ				S	**Sg**	**20 14 39.6**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**41**	*e*PG	**Pg**	**20 14 37.4**	**-0.4**
TVSB				*e*SG	**Sg**	**20 14 43.4**	**-0.4**
TVSB	**Tavsanli**	**0.45**	**41**	*e*Pg	**Pg**	**20 14 37.4**	**-0.4**
TVSB				*e*Sg	**Sg**	**20 14 43.4**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	**Pb**	**20 14 43.4**	**+0.5**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*Pg	**Pb**	**20 14 43.4**	**+0.5**
MANT	**Manisa**	**0.74**	**213**	*i* P	**Pg**	**20 14 41.8**	**-1.4**
MANT				*i* S	**Sg**	**20 14 51.8**	**-1.0**
MANT	**Manisa**	**0.74**	**213**	P	**Pg**	**20 14 41.8**	**-1.4**
MANT				S	**Sg**	**20 14 51.8**	**-1.0**
KHL	**Karahalli**	**0.86**	**156**	*e*PG	**Pb**	**20 14 46.8**	**+0.8**
KHL	**Karahalli**	**0.86**	**156**	*e*Pg	**Pb**	**20 14 46.8**	**+0.8**
BALB	**Balikesir**	**1.07**	**300**	*e*PG	**Pg**	**20 14 49.3**	**-0.1**
BALB	**Balikesir**	**1.07**	**300**	*e*Pg	**Pg**	**20 14 49.3**	**-0.1**
IZI	**Iznik**	**1.26**	**14**	*e*PN	**Pn**	**20 14 52.7**	**-0.2**
IZI	**Iznik**	**1.26**	**14**	*e*Pn	**Pn**	**20 14 52.7**	**-0.2**
SHUT	**Suhut-Afyon**	**1.28**	**115**	*e*PN	**Pb**	**20 14 53.4**	**+0.1**
SHUT	**Suhut-Afyon**	**1.28**	**115**	*e*Pn	**Pb**	**20 14 53.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pb**	**20 14 53.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pb**	**20 14 53.2**	**0.0**
BORA	**Eskisehir**	**1.32**	**54**	*i* P	**Pn**	**20 14 53.6**	**0.0**
BORA	**Eskisehir**	**1.32**	**54**	P	**Pn**	**20 14 53.6**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*PN	**Pn**	**20 14 54.8**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*Pn	**Pn**	**20 14 54.8**	**-0.1**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pn**	**20 14 55.2**	**+0.3**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pn**	**20 14 55.2**	**+0.3**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pn**	**20 14 55.5**	**0.0**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pn**	**20 14 55.5**	**0.0**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**	**20 14 59.2**	**0.0**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**	**20 14 59.2**	**0.0**

IDC ***17*** *20:20:57.5±1.7, 37.°70N×141.°79E, h0km, mb3.4/5, mb1 3.5/6, mb1mx3.4/46, mbtmp3.4/6, ML3.0/1, Error ellipse: s-maj=42.0km s-min=23.4km az=62.0*
ISCJB ***17*** *20:21:05.3±0.8, 37.°50N±0.°04×141.°36E±0.°09, h61km±5km, mb3.4/5, Error ellipse: s-maj=12.1km s-min=6.3km az=17.6*
JMA ***17*** *20:21:06.5, 37.°52N×141.°35E, h51km±1km, M3.6*
JMA Felt I J1.

ISC 17 20:21:05.6±1.4, 37.°53N±0.°05×141.°45E±0.°09, h46km±11km, n25, σ1$77/30, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.49**	**251**	P	**Pn**	**20 21 16.8**	**+0.3**
JFK				S	**Sn**	**20 21 23.9**	**-0.4**
JMM	**Marumori**	**0.62**	**303**	P	**Pn**	**20 21 18.7**	**+0.5**
JMM				S	**Sn**	**20 21 27.4**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.67**	**231**	P	**Pn**	**20 21 19.0**	**+0.1**
ONAJ				S	**Sn**	**20 21 27.7**	**-0.8**
JFT	**Otama**	**0.89**	**270**	P	**Pn**	**20 21 22.2**	**+0.4**
JFT				S	**Sn**	**20 21 33.1**	**-0.5**
JIO	**Ouri**	**0.93**	**355**	P	**Pn**	**20 21 23.5**	**+1.2**
JIO				S	**Sn**	**20 21 35.3**	**+0.8**
JOU	**Okura**	**1.04**	**324**	P	**Pn**	**20 21 24.3**	**+0.4**
JOU				S	**Sn**	**20 21 37.6**	**+0.2**
JYS	**Shirataka**	**1.30**	**303**	P	**Pn**	**20 21 27.7**	**+0.4**
JYS				*e*S	**Sn**	**20 21 42.7**	**-0.9**
JFY	**Yanaizu**	**1.40**	**266**	P	**Pn**	**20 21 28.7**	**0.0**
JFY				S	**Sn**	**20 21 44.6**	**-1.4**
JMK	**Ichinoseki**	**1.44**	**353**	P	**Pn**	**20 21 30.2**	**+1.0**
JMK				*e*S	**Sn**	**20 21 47.5**	**+0.7**
JYK	**Kaneyama**	**1.64**	**328**	P	**Pn**	**20 21 32.9**	**+1.0**
JNS	**Sasagawa**	**1.72**	**280**	P	**Pn**	**20 21 33.2**	**+0.1**
JYA	**Atsumi**	**1.74**	**308**	P	**Pn**	**20 21 33.9**	**+0.6**
MJAR	**Matsushiro Arr**	**2.78**	**250**	Pn	**Pn**	**20 21 46.9**	**-0.7**
	2.0nm,0.3s,baz=77,slow=15,SNR=14						
MJAR				Sn	**Sn**	**20 22 26.8**	**+6.9**
	1.8nm,0.3s,baz=288,slow=7.1,SNR=5.5						
MAT	**Matsushiro**	**2.78**	**250**	P	**Pn**	**20 21 48.4**	**+0.8**
MAT				S	**Sn**	**20 22 24.4**	**+4.5**
SONM	**Songino Array**	**27.54**	**303**	P	**P**	**20 26 47.3**	**-0.7**
	0.4nm,0.6s,baz=105,slow=8.9,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**28.38**	**122**	T	T	20 57 09.5	
	baz=314,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**28.38**	**122**	T	T	20 57 08.6	
	baz=314,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**28.39**	**122**	T	T	20 57 09.2	
	baz=314,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**29.10**	**124**	T	T	20 58 08.9	
	baz=316,slow=76,SNR=4.7						
H11S3	**WAKE ISLAND Hy**	**29.10**	**124**	T	T	20 58 08.6	
	baz=316,slow=76,SNR=4.6						
H11S2	**WAKE ISLAND Hy**	**29.12**	**124**	T	T	20 58 09.6	
	baz=316,slow=76,SNR=4.3						
ZALV	**Zalesovo Beam**	**41.61**	**312**	P	**P**	**20 28 48.2**	**-0.7**
	0.5nm,0.4s,baz=122,slow=5.4,SNR=4.1						
MKAR	**Makanchi Array**	**43.89**	**302**	P	**P**	**20 29 06.1**	**-1.4**
	0.4nm,0.6s,baz=91,slow=10,SNR=3.9						
WRA	**Warramunga Arr**	**57.55**	**190**	P	**P**	**20 30 50.1**	**-0.4**
	0.2nm,0.4s,baz=5.3,slow=7.3,SNR=4.5						
ASAR	**Alice Springs**	**61.28**	**188**	P	**P**	**20 31 16.3**	**+0.1**
	0.2nm,0.7s,baz=359,slow=6.5,SNR=3.1						

ISCJB ***17*** *20:20:25:15.7±0.5, 39.°13N±0.°04×29.°07E±0.°04, h11km±5km, Error ellipse: s-maj=6.6km s-min=4.3km az=148.7*
CSEM ***17*** *20:20:25:15.8±0.2, 39.°15N×29.°06E, h8km, MD2.6, Error ellipse: s-maj=4.2km s-min=3.6km az=131.0*
ISK ***17*** *20:20:25:15.8, 39.°19N×29.°06E, h8km, MD2.7*
DDA ***17*** *20:20:25:15.1, 39.°08N×29.°11E, h7km, Md2.6*

ISC 17 20:25:15.9±0.9, 39.°14N±0.°03×29.°07E±0.°02, h13km±9km, n34, σ0$68/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.29**	**251**	*i* P	**Pg**	**20 25 22.4**	**+0.4**
DEMI				*i* S	**Sg**	**20 25 26.7**	**+0.6**
DEMI	**Demirci**	**0.29**	**251**	P	**Pg**	**20 25 22.4**	**+0.4**
DEMI				S	**Sg**	**20 25 26.7**	**+0.6**
GDZ	**Gediz**	**0.32**	**99**	*i* P	**Pg**	**20 25 22.1**	**-0.5**
GDZ				*i* S	**Sg**	**20 25 26.6**	**-0.5**
GDZ	**Gediz**	**0.32**	**99**	P	**Pg**	**20 25 22.1**	**-0.5**
GDZ				S	**Sg**	**20 25 26.6**	**-0.5**
TVSB	**Tavsanli**	**0.43**	**44**	*e*PG	**Pg**	**20 25 24.4**	**-0.2**
TVSB				*e*SG	**Sg**	**20 25 30.3**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**44**	*e*Pg	**Pg**	**20 25 24.4**	**-0.2**
TVSB				*e*Sg	**Sg**	**20 25 30.3**	**-0.2**
KULA	**Kula-Manisa**	**0.70**	**207**	*e*PG	**Pb**	**20 25 30.5**	**+0.5**
KULA	**Kula-Manisa**	**0.70**	**207**	*e*Pg	**Pb**	**20 25 30.5**	**+0.5**
MANT	**Manisa**	**0.76**	**212**	*i* P	**Pg**	**20 25 29.1**	**-1.6**
MANT				*i* S	**Sg**	**20 25 38.7**	**-2.0**
MANT	**Manisa**	**0.76**	**212**	P	**Pg**	**20 25 29.1**	**-1.6**
KHL	**Karahalli**	**0.89**	**156**	*e*PG	**Pb**	**20 25 34.1**	**+0.8**
KHL	**Karahalli**	**0.89**	**156**	*e*Pg	**Pg**	**20 25 34.1**	**+0.8**
BALB	**Balikesir**	**1.05**	**299**	*e*PG	**Pg**	**20 25 35.5**	**-0.7**
BALB	**Balikesir**	**1.05**	**299**	*e*Pg	**Pg**	**20 25 35.5**	**-0.7**
IZI	**Iznik**	**1.24**	**14**	*e*PN	**Pg**	**20 25 39.2**	**-0.5**
IZI	**Iznik**	**1.24**	**14**	*e*Pn	**Pg**	**20 25 39.3**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*e*PN	**Pb**	**20 25 39.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*e*Pn	**Pb**	**20 25 39.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.25**	**334**	*e*PN	**Pb**	**20 25 39.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**334**	*e*Pn	**Pb**	**20 25 39.5**	**0.0**
SHUT	**Suhut-Afyon**	**1.30**	**116**	*e*PN	**Pg**	**20 25 41.1**	**+0.2**
SHUT	**Suhut-Afyon**	**1.30**	**116**	*e*Pn	**Pg**	**20 25 41.1**	**+0.2**
BORA	**Eskisehir**	**1.30**	**55**	*i* P	**Pn**	**20 25 39.3**	**-0.6**
BORA				*i* S	**Sb**	**20 25 57.4**	**+0.4**
BORA	**Eskisehir**	**1.30**	**55**	P	**Pn**	**20 25 39.3**	**-0.6**
BORA				S	**Sb**	**20 25 57.4**	**+0.4**
ADVT	**Abdulvahap**	**1.39**	**22**	*e*PN	**Pb**	**20 25 41.7**	**-0.1**
ADVT	**Abdulvahap**	**1.39**	**22**	*e*Pn	**Pb**	**20 25 41.7**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**311**	*e*PN	**Pn**	**20 25 41.7**	**+0.5**
GONE	**Gonen-Balikesi**	**1.40**	**311**	*e*Pn	**Pn**	**20 25 41.7**	**+0.5**
ARMT	**Armutlu**	**1.43**	**354**	*e*PN	**Pn**	**20 25 41.9**	**+0.2**
ARMT	**Armutlu**	**1.43**	**354**	*e*Pn	**Pn**	**20 25 41.9**	**+0.2**
EDC	**Edincik**	**1.52**	**323**	*e*PN	**Pn**	**20 25 43.3**	**+0.4**
EDC	**Edincik**	**1.52**	**323**	*e*Pn	**Pn**	**20 25 43.3**	**+0.4**
GULT	**Gulveren**	**1.71**	**40**	*e*PN	**Pn**	**20 25 46.2**	**+0.7**
GULT	**Gulveren**	**1.71**	**40**	*e*Pn	**Pn**	**20 25 46.2**	**+0.7**

ISCJB ***17*** *20:20:37:33.7±0.6, 6.°83N±0.°04×73.°07W±0.°05, h162km±5km, Error ellipse: s-maj=9.8km s-min=4.1km az=36.0*
FUNV ***17*** *20:20:37:35.1, 6.°81N×73.°01W, h173km, MW3.2*
RSNC ***17*** *20:20:37:36.1±0.8, 6.°77N×73.°10W, h148km±4km, ML3.3*
IDC ***17*** *20:20:37:38.6±6.4, 6.°84N×74.°09W, h181km±131km, Error ellipse: s-maj=1046.0km s-min=90.6km az=103.0*

ISC 17 20:37:33.3±1.1, 6.°82N±0.°04×73.°04W±0.°05, h167km±6km, n28, σ1$55/45, 2C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BTLC	**Betulia, Santa**	**0.25**	**292**	*e*P	**Pn**	**20 37 56.3**	**+0.3**
BARC	**Barichara**	**0.27**	**212**	*i* P	**Pn**	**20 37 56.1**	**0.0**
BARC				*i*		20 37 56.7	
	comp=Z,444nm,0.3s						
BARC				*e*S	**Sn**	**20 38 11.4**	**-2.1**
GIRC	**Giron, Santand**	**0.30**	**328**	*e*P	**Pn**	**20 37 56.0**	**0.0**
PAMC	**Pamplona, Colo**	**0.61**	**33**	*e*P	**Pn**	**20 37 58.9**	**+1.2**
PAMC				*e*S	**Sn**	**20 38 15.6**	**-0.8**
BRRC	**Barranca, Sant**	**0.73**	**293**	*i* P	**Pn**	**20 37 58.0**	**+0.2**
BRRC				*i*		20 37 58.3	
	comp=Z,749nm,0.2s						
BRRC				*e*S	**Sn**	**20 38 15.0**	**-1.6**
GRMC	**Gramalote, San**	**0.92**	**14**	*i* P	**Pn**	**20 38 01.9**	**+2.6**
GRMC				*e*S	**Sn**	**20 38 21.3**	**+2.1**
GRMC				*i*		20 38 22.6	
	comp=Z,287nm,0.3s						
CBRI	**Barrientos, No**	**0.92**	**15**	*e*P	**Pn**	**20 38 00.6**	**+1.3**
RUSC	**La Rusia**	**0.93**	**183**	*i* P	**Pn**	**20 37 59.9**	**+0.1**
RUSC				*e*S	**Sn**	**20 38 17.8**	**-2.2**
RUSC				*i*		20 38 19.9	
	comp=Z,202nm,0.3s						
CAPV	**Capacho**	**1.26**	**35**	*e*P	**Pn**	**20 38 03.7**	**+1.6**
CAPV				*e*S	**Sn**	**20 38 24.9**	**+0.5**
OCAC	**Ocana**	**1.43**	**349**	*e*P	**Pn**	**20 38 04.7**	**+1.0**
OCAC				*e*S	**Sn**	**20 38 27.2**	**0.0**
OCAC				*i*		20 38 30.7	
	comp=Z,200nm,0.5s						
NORC	**Norcasia**	**2.21**	**236**	*e*P	**Pn**	**20 38 11.3**	**-0.6**
NORC				*e*S	**Sn**	**20 38 40.0**	**-1.9**
CHIC	**Chingaza**	**2.29**	**198**	*e*P	**Pn**	**20 38 14.0**	**+0.8**
CHIC				*e*S	**Sn**	**20 38 42.7**	**-1.4**
CHIC				*i*		20 38 49.4	
	comp=Z,68nm,0.4s						
ROSC	**El Rosal**	**2.35**	**213**	P	**Pn**	**20 38 16.2**	**+2.3**
	comp=Z,6.5nm,0.3s,baz=299,slow=19,SNR=16						
ROSC				S	**Sn**	**20 38 45.7**	**+0.4**
	comp=Z,16nm,0.3s,baz=127,slow=17,SNR=14						
HELC	**Santa Helena**	**2.56**	**256**	*e*P	**Pn**	**20 38 16.5**	**+0.2**
HELC				*e*S	**Sn**	**20 38 48.2**	**-1.4**
VIGV	**El Vigia**	**2.60**	**39**	*e*P	**Pn**	**20 38 17.4**	**+0.9**
VIGV				*e*S	**Sn**	**20 38 49.0**	**-1.0**
SOCV	**Socops**	**2.60**	**56**	*e*P	**Pn**	**20 38 18.0**	**+1.5**
SOCV				*e*S	**Sn**	**20 38 48.5**	**-1.5**
SDV	**Santo Domingo**	**3.14**	**49**	*e*P	**Pn**	**20 38 25.4**	**+2.2**
DBBC	**Dabeiba**	**3.16**	**274**	*e*P	**Pn**	**20 38 23.8**	**+0.4**
TOLC	**Tolima**	**3.18**	**226**	*e*P	**Pn**	**20 38 25.4**	**+1.5**
PRAC	**Prado**	**3.60**	**211**	*e*P	**Pn**	**20 38 29.5**	**+0.6**
PRAC				*e*S	**Sn**	**20 39 11.3**	**-1.0**
SJAC	**San Juan de Ar**	**3.64**	**195**	*e*P	**Pn**	**20 38 30.4**	**+0.8**
SJAC				*i*		20 39 20.9	
	comp=Z,79nm,0.2s						
VIRV	**Villa del Rosa**	**3.71**	**10**	*e*P	**Pn**	**20 38 30.8**	**+0.5**
VIRV				*e*S	**Sn**	**20 39 12.9**	**-1.9**
QARV	**Quebrada Arrib**	**4.18**	**36**	*e*S	**Sn**	**20 39 22.5**	**-3.1**
SANV	**Sanarito**	**4.37**	**52**	*e*P	**Pn**	**20 38 39.3**	**+0.4**
SANV				*e*S	**Sn**	**20 39 27.1**	**-3.0**
CURV	**Curarigua**	**4.39**	**44**	*e*P	**Pn**	**20 38 39.4**	**+0.2**
CURV				*e*S	**Sn**	**20 39 27.1**	**-3.6**
DABV	**Dabajuro**	**4.71**	**30**	*e*P	**Pn**	**20 38 43.6**	**+0.4**
ASAR	**Alice Springs**	**149.18**	**234**	PKPbc	**PKPbc**	**20 57 03.7**	**+0.8**
	comp=Z,0.4nm,1.0s,baz=123,slow=3.2,SNR=4.7						
WRA	**Warramunga Arr**	**150.41**	**241**	PKPbc	**PKPbc**	**20 57 07.1**	**+1.1**
	comp=Z,0.3nm,0.6s,baz=108,slow=2.6,SNR=8.8						

ISCJB ***17*** *20:20:37:39.8±0.5, 39.°06N±0.°04×29.°08E±0.°04, h12km±5km, Error ellipse: s-maj=7.8km s-min=4.4km az=156.3*
CSEM ***17*** *20:20:37:39.7±0.1, 39.°07N×29.°08E, h10km, MD2.7, Error ellipse: s-maj=3.6km s-min=2.7km az=139.0*
ISK ***17*** *20:20:37:39.5, 39.°10N×29.°07E, h8km, MD2.7*
DDA ***17*** *20:20:37:39.5, 39.°14N×29.°08E, h8km, Md2.5*

ISC 17 20:37:39.8±0.9, 39.°09N±0.°03×29.°08E±0.°02, h14km±7km, n26, σ0$52/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GEDZ	**Gediz**	**0.26**	**99**	*e*PG	**Pg**	**20 37 45.5**	**+0.2**
GEDZ				*e*SG	**Sb**	**20 37 50.4**	**-0.3**
GEDZ	**Gediz**	**0.26**	**99**	*e*Pg	**Pg**	**20 37 45.6**	**+0.2**
GEDZ				*e*Sg	**Sb**	**20 37 50.4**	**-0.3**
DEMI	**Demirci**	**0.29**	**261**	*i* P	**Pg**	**20 37 46.0**	**+0.1**
DEMI				*i* S	**Sg**	**20 37 50.1**	**+0.1**
DEMI	**Demirci**	**0.29**	**261**	P	**Pg**	**20 37 46.0**	**+0.1**
DEMI				S	**Sg**	**20 37 50.1**	**+0.1**
GDZ	**Gediz**	**0.31**	**89**	*i* P	**Pg**	**20 37 46.2**	**-0.1**
GDZ				*i* S	**Sg**	**20 37 50.7**	**0.0**
GDZ	**Gediz**	**0.31**	**89**	P	**Pg**	**20 37 46.2**	**-0.1**
GDZ				S	**Sg**	**20 37 50.7**	**0.0**
TVSB	**Tavsanli**	**0.47**	**39**	*e*PG	**Pg**	**20 37 48.4**	**-0.7**
TVSB	**Tavsanli**	**0.47**	**39**	*e*Pg	**Pg**	**20 37 48.4**	**-0.7**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*PG	**Pg**	**20 37 52.9**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*Pg	**Pg**	**20 37 52.9**	**+0.2**
MANT	**Manisa**	**0.72**	**215**	*i* P	**Pg**	**20 37 53.0**	**-0.9**
MANT				*i* S	**Sg**	**20 38 02.5**	**-1.0**
MANT	**Manisa**	**0.72**	**215**	P	**Pg**	**20 37 53.0**	**-0.9**
MANT				S	**Sg**	**20 38 02.5**	**-1.0**
KHL	**Karahalli**	**0.84**	**155**	*e*PG	**Pg**	**20 37 55.7**	**-0.3**
KHL	**Karahalli**	**0.84**	**155**	*e*Pg	**Pg**	**20 37 55.7**	**-0.3**
BALB	**Balikesir**	**1.08**	**301**	*e*PN	**Pn**	**20 38 01.1**	**+0.5**
BALB	**Balikesir**	**1.08**	**301**	*e*Pn	**Pn**	**20 38 01.1**	**+0.5**
IZI	**Iznik**	**1.28**	**13**	*e*PN	**Pg**	**20 38 04.0**	**-0.6**
IZI	**Iznik**	**1.28**	**13**	*e*Pn	**Pg**	**20 38 04.0**	**-0.6**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**20 38 04.5**	**-0.4**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pg**	**20 38 04.5**	**-0.4**
BORA	**Eskisehir**	**1.32**	**53**	*i* P	**Pn**	**20 38 04.1**	**+0.1**
BORA				*i* S	**Sn**	**20 38 22.2**	**+0.7**
BORA	**Eskisehir**	**1.32**	**53**	P	**Pn**	**20 38 04.1**	**+0.1**
BORA				S	**Sn**	**20 38 22.2**	**+0.7**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pb**	**20 38 07.2**	**-0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pb**	**20 38 07.2**	**-0.1**
GULT	**Gulveren**	**1.74**	**39**	*e*PN	**Pn**	**20 38 10.3**	**+0.6**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn	**Pn**	**20 38 10.3**	**+0.6**

ISCJB ***17*** *20:41:04.4±0.6, 39.°10N±0.°05×29.°10E±0.°05, h9km, Error ellipse: s-maj=7.6km s-min=4.1km az=147.0*
CSEM ***17*** *20:41:04.5±0.2, 39.°10N×29.°11E, h10km, MD2.3, Error ellipse: s-maj=7.1km s-min=3.6km az=131.0*
ISK ***17*** *20:41:04.3, 39.°16N×29.°08E, h5km, MD2.6*
DDA ***17*** *20:41:04.7, 39.°02N×29.°11E, h7km, Md2.3*

ISC 17 20:41:04.6±0.9, 39.°10N±0.°04×29.°10E±0.°03, h9km, n16, σ0$62/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GDZ	**Gediz**	**0.29**	**91**	*i* P	**Pg**	**20 41 10.7**	**+0.2**
GDZ				*i* S	**Sg**	**20 41 15.5**	**+1.0**
GDZ	**Gediz**	**0.29**	**91**	P	**Pg**	**20 41 10.7**	**+0.2**
GDZ				S	**Sg**	**20 41 15.5**	**+1.0**
DEMI	**Demirci**	**0.31**	**260**	*i* P	**Pg**	**20 41 11.5**	**+0.7**
DEMI				*i* S	**Sg**	**20 41 15.7**	**+0.9**
DEMI	**Demirci**	**0.31**	**260**	P	**Pg**	**20 41 11.5**	**+0.7**
DEMI				S	**Sg**	**20 41 15.7**	**+0.9**
TVSB	**Tavsanli**	**0.45**	**38**	*e*PG	**Pg**	**20 41 13.0**	**-0.4**
TVSB				*e*SG	**Sg**	**20 41 19.0**	**-0.4**
TVSB	**Tavsanli**	**0.45**	**38**	*e*Pg	**Pg**	**20 41 13.0**	**-0.4**
TVSB				*e*Sg	**Sg**	**20 41 19.0**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**211**	*e*PG	**Pb**	**20 41 18.6**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**211**	*e*Pg	**Pb**	**20 41 18.6**	**0.0**
MANT	**Manisa**	**0.74**	**215**	*i* P	**Pg**	**20 41 18.3**	**-0.6**
MANT				*i* S	**Sg**	**20 41 27.9**	**-0.6**
MANT	**Manisa**	**0.74**	**215**	P	**Pg**	**20 41 18.3**	**-0.6**
MANT				S	**Sg**	**20 41 27.9**	**-0.6**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*PN	**Pn**	**20 41 28.3**	**-0.7**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*Pn	**Pn**	**20 41 28.3**	**-0.7**
ARMT	**Armutlu**	**1.48**	**353**	*e*PN	**Pn**	**20 41 31.5**	**0.0**
ARMT	**Armutlu**	**1.48**	**353**	*e*Pn	**Pn**	**20 41 31.5**	**0.0**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pn**	**20 41 35.1**	**+0.3**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pn**	**20 41 35.1**	**+0.3**

ISCJB ***17*** *20:43:09.6±0.6, 39.°80N±0.°03×32.°72E±0.°05, h5km±6km, Error ellipse: s-maj=7.0km s-min=4.7km az=160.4*
CSEM ***17*** *20:43:09.7±0.2, 39.°80N×32.°73E, h8km, MD2.6, Error ellipse: s-maj=4.4km s-min=3.5km az=67.0*
ISK ***17*** *20:43:09.6, 39.°80N×32.°77E, h6km, MD2.6*
DDA ***17*** *20:43:09.6, 39.°84N×32.°77E, h7km, Md2.7*

ISC 17 20:43:09.7±0.9, 39.°81N±0.°03×32.°75E±0.°03, h10km±6km, n25, σ0$47/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LOD	**Lodumlu**	**0.08**	**6**	*e*PG	**Pg**	**20 43 12.1**	**-0.1**
LOD				*e*SG	**Sg**	**20 43 14.0**	**+0.1**
LOD	**Lodumlu**	**0.08**	**6**	*e*Pg	**Pg**	**20 43 12.1**	**-0.1**
LOD				*e*Sg	**Sg**	**20 43 14.0**	**+0.1**
BBAL	**Bala**	**0.39**	**132**	*i* P	**Pg**	**20 43 17.4**	**0.0**
BBAL				*i* S	**Sb**	**20 43 24.1**	**-0.8**
BBAL	**Bala**	**0.39**	**132**	P	**Pg**	**20 43 17.4**	**0.0**
BBAL				S	**Sb**	**20 43 24.1**	**-0.8**
AFSR	**Af ar-Bala (A**	**0.43**	**145**	*e*PG	**Pg**	**20

PMG	**Port Moresby**	**46.62 172**	LR	LR	21 24 07.3	
	comp=Z,184nm,19.7s,baz=35,slow=35					
ILAR	**Eielson Array**	**49.36 32**	P	**P**	**21 05 49.6**	**+1.4**
	0.6nm,0.7s,baz=262,slow=5.7,SNR=10					
ABKAR	**Akbulak array**	**57.91 310**	*eP*	**P**	**21 06 50.1**	**-0.9**
	0.9nm,0.6s					
AKASG	**Malin Array Be**	**74.24 322**	P	**P**	**21 08 34.9**	**-0.9**
	0.5nm,0.4s,baz=44,slow=5.7,SNR=4.6					

IDC ***17*** *20:58:20.7±1.1,31°.1S×177°.91W, h0km, mb4.8/3, mb1 4.8/4, mb1mx4.1/31, mbtmp4.6/4, ML3.7/1, MS3.4/6, Ms1 3.4/6, ms1mx3.0/34, Error ellipse: s-maj=36.3km s-min=24.5km az=125.0*

ISCJB ***17*** *20:58:21.8±3.1,31°.3S±0°.1×177°.6W±0°.5, h33km, mb4.6/4, MS3.5/4, Error ellipse: s-maj=65.0km s-min=9.2km az=14.1*

ISC 17 20:58:26.7±1.2, 31°.1S±0°.1×178°.0W±0°.2, h46km, n27, σ1°49/16, mb4.6/4, MS3.4/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.85**	**3**	Pn	**Pn**	**20 58 55.7**	**-0.4**
	134nm,0.3s,baz=152,slow=7.4,SNR=5.0						
RAO				Sn	**Sn**	**20 59 15.5**	**-2.8**
	247nm,0.3s,baz=201,slow=22,SNR=7.8						
URZ	**Urewera**	**8.18**	**208**	Pn	**Pn**	**21 00 20.0**	**-2.8**
	1.0nm,0.3s,baz=275,slow=5.1,SNR=9.7						
URZ				Sn	**Sn**	**21 01 52.5**	**-1.4**
	2.8nm,0.3s,baz=252,slow=6.8,SNR=14						
DZM	**Mont Dzumac**	**16.55 299**		eLR	LR	21 07 45.3	
	comp=Z,114nm,18.6s,baz=172,slow=34						
DZM	**Mont Dzumac**	**16.55 299**		eLR	LR	21 06 22.3	
	310nm,25.5s						
RAR	**Rarotonga**	**19.09**	**63**	LR	LR	21 07 55.9	
	comp=Z,120nm,21.4s,baz=238,slow=30						
TBI	**Tubuai**	**26.49**	**80**	eLR	LR	21 10 43.0	
	106nm,26.2s						
PPT2	**Papeete2**	**29.09**	**69**	eLR	LR	21 11 54.0	
	91nm,27.2s						
STKA	**Stephens Creek**	**34.31**	**258**	P	**P**	**21 05 10.9**	**+2.0**
	3.4nm,0.5s,baz=90,slow=11,SNR=8.3						
STKA				LR	LR	21 17 20.8	
	comp=Z,50nm,20.4s,baz=26,slow=33						
ASAR	**Alice Springs**	**43.06**	**268**	P	**P**	**21 06 23.0**	**+0.6**
	11nm,0.6s,baz=106,slow=7.2,SNR=172						
ASAR				LR	LR	21 23 45.9	
	comp=Z,49nm,18.3s,baz=85,slow=35						
WRAB	**Tennant Creek**	**44.11**	**273**	*eP*	**P**	**21 06 31.0**	**+0.2**
	2.2nm,0.5s						
WRA	**Warramunga Arr**	**44.12**	**273**	P	**P**	**21 06 31.4**	**+0.5**
	9.0nm,0.4s,baz=112,slow=8.0,SNR=129						
KAPI	**Kappang**	**53.72**	**281**	LR	LR	21 35 10.1	
	comp=Z,29nm,20.3s,baz=74,slow=35						
MJAR	**Matsushiro Arr**	**78.82**	**325**	LR	LR	21 41 60.0	
	comp=Z,38nm,18.9s,baz=120,slow=33						
KURBB	**Kurchatov Arra**	**121.57**	**313**	PKP	**PKPdf**	**21 17 14.7**	**-0.1**
	0.7nm,0.6s,baz=107,slow=2.1,SNR=5.7						
BVAR	**Borovoye Array**	**126.90**	**315**	PKP	**PKPdf**	**21 17 25.4**	**+0.4**
	0.9nm,0.7s,baz=106,slow=4.1,SNR=4.1						
H10S3	**ASCENSION HYDR**	**137.09**	**155**	T	T	23 51 23.4	
	baz=204,slow=74,SNR=5.0						
H10S2	**ASCENSION HYDR**	**137.09**	**155**	T	T	23 51 16.9	
	baz=204,slow=74,SNR=5.1						
H10S1	**ASCENSION HYDR**	**137.10**	**155**	T	T	23 51 22.0	
	baz=204,slow=74,SNR=5.8						
H10N3	**ASCENSION HYDR**	**138.17**	**155**	T	T	23 53 03.6	
	baz=203,slow=75,SNR=8.6						
H10N1	**ASCENSION HYDR**	**138.18**	**155**	T	T	23 53 14.4	
	baz=203,slow=75,SNR=10						
H10N2	**ASCENSION HYDR**	**138.19**	**155**	T	T	23 53 15.2	
	baz=203,slow=75,SNR=7.2						
FINES	**FINESS Array B**	**145.81**	**340**	PKPbc	**PKPab**	**21 18 00.4**	**-0.2**
	5.4nm,0.6s,baz=45,slow=3.9,SNR=32						
NB2	**NORSAR Subarra**	**149.45**	**351**	PKP	**PKPbc**	**21 18 10.7**	**+0.6**
	comp=Z,1.6nm,0.8s,baz=13,slow=2.6						
NOA	**NORSAR Array B**	**149.45**	**351**	PKPbc	**PKPbc**	**21 18 10.2**	**+0.1**
	comp=Z,1.0nm,0.7s,baz=15,slow=4.1,SNR=5.0						
AKASG	**Malin Array Be**	**151.85**	**322**	PKPbc	**PKPbc**	**21 18 16.5**	**+0.5**
	comp=Z,1.2nm,0.4s,baz=46,slow=2.9,SNR=4.3						
BRTR	**Keskin Array B**	**152.92**	**297**	PKPbc	**PKPbc**	**21 18 20.1**	**+1.1**
	comp=Z,0.8nm,0.4s,baz=127,slow=3.8,SNR=7.4						
TORD	**Torodi Ar. Bea**	**162.12**	**179**	PKPab	**PKPab**	**21 19 12.3**	**+2.1**
	comp=Z,0.5nm,0.6s,baz=173,slow=3.0,SNR=3.6						

JMA 17 21:06:09.8±0.1, 34°.98N×139°.14E, h8km±1km, M0.5, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AJI	**Ajiro2**	**0.08**	**329**	P	Pg	21 06 12.0	+0.2
AJI				S	Sg	21 06 13.6	+0.3
KTJJ	**Kamata 2**	**0.08**	**229**	P	Pg	21 06 12.1	+0.2
KTJJ				S	Sg	21 06 13.6	+0.2
JOD2	**Odawara 2**	**0.29**	**351**	P	Pg	21 06 15.7	+0.2
JOD2				S	Sg	21 06 20.1	+0.8

ISCJB ***17*** *21:06:40.4±1.4,35°.87N±0°.03×141°.17E±0°.07, h6km±8km, mb3.5/4, Error ellipse: s-maj=9.8km s-min=5.3km az=176.4*

IDC ***17*** *21:06:41.8±1.7,35°.86N×140°.87E, h0km, mb3.5/4, mb1 3.5/7, mb1mx3.3/46, mbtmp3.5/7, ML3.2/3, Error ellipse: s-maj=44.6km s-min=20.5km az=73.0*

JMA ***17*** *21:06:43.3±0.2,35°.81N×140°.99E, h14km±1km, M3.4*

ISC 17 21:06:43.4±1.1, 35°.81N±0°.04×140°.95E±0°.07, h14km±6km, n15, σ1°04/20, mb3.5/4, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.13**	**214**	⇑P	**Pg**	**21 06 47.0**	**+0.2**
CHOJ				S	**Sg**	**21 06 49.7**	**+0.6**
JCN	**Nagara**	**0.72**	**238**	P	**Pn**	**21 06 58.9**	**-0.2**
JCN				S	**Sn**	**21 07 10.4**	**+0.5**
JYT	**Yasato**	**0.74**	**305**	⇑P	**Pb**	**21 06 57.5**	**-0.5**
JYT				S	**Sb**	**21 07 07.9**	**-0.1**
JHO	**Hitachi**	**0.86**	**339**	P	**Pb**	**21 06 59.3**	**-0.7**
JHO				S	**Sb**	**21 07 11.5**	**+0.1**
BSO4	**Boso 4**	**0.95**	**212**	*e*S	**Sn**	**21 07 16.9**	**+1.3**
BSO3	**Boso 3**	**1.06**	**200**	P	**Pg**	**21 07 03.3**	**-0.6**
BSO2	**Boso 2**	**1.07**	**189**	S	**Sn**	**21 07 19.4**	**+1.4**
BSO1	**Boso 1**	**1.15**	**179**	P	**Pb**	**21 07 03.5**	**-1.2**
BSO1				*e*S	**Sb**	**21 07 18.5**	**-0.8**
MJAR	**Matsushiro Arr**	**2.33**	**289**	Pn	**Pn**	**21 07 20.7**	**-0.6**
	5.5nm,0.3s,baz=90,slow=8.5,SNR=50						
JHJ	**Hachijo jima 2**	**2.85**	**200**	Pn	**Pn**	**21 07 28.5**	**+0.1**
	15nm,0.3s,baz=94,slow=14,SNR=2.4						
ASAJ	**Asahikawa**	**8.39**	**8**	Pn	**Pn**	**21 08 44.3**	**-0.2**
	0.3nm,0.3s,baz=214,slow=11,SNR=3.6						
MKAR	**Makanchi Array**	**44.46**	**303**	P	**P**	**21 14 52.7**	**-1.3**
	0.2nm,0.2s,baz=82,slow=10,SNR=2.9						
KURBB	**Kurchatov Arra**	**46.47**	**309**	P	**P**	**21 15 10.1**	**+0.4**
	0.2nm,0.4s,baz=81,slow=7.4,SNR=5.4						
WRA	**Warramunga Arr**	**55.80**	**188**	P	**P**	**21 16 19.1**	**-0.9**
	0.6nm,0.8s,baz=6.3,slow=7.5,SNR=4.5						
ASAR	**Alice Springs**	**59.52**	**187**	P	**P**	**21 16 48.8**	**+2.6**
	0.2nm,0.6s,baz=17,slow=11,SNR=3.4						

NIED ***17*** *21:07:00, 35°.80N×141°.00E, h11km, Mw3.8 Best double couple: M0=5.08000×10^14 NP1:φs=4.00000°, δ31.00000°, λ=-78.00000°. NP2:φs=170.00000°, δ60.00000°, λ=-97.00000°.*

IDC ***17*** *21:07:04.7±1.1,35°.72N×141°.01E, h0km, mb3.5/7, mb1 3.7/9, mb1mx3.5/44, mbtmp3.5/9, ML3.6/2, Error ellipse: s-maj=30.3km s-min=20.8km az=71.0*

ISCJB ***17*** *21:07:05.1±1.1,35°.83N±0°.04×141°.11E±0°.07, h14km±6km, mb3.5/7, Error ellipse: s-maj=9.4km s-min=6.4km az=4.0*

JMA ***17*** *21:07:07.2±0.1,35°.80N×140°.97E, h12km±1km, M3.9*

JMA Felt I J1.

ISC 17 21:07:06.6±1.4, 35°.85N±0°.04×140°.98E±0°.09, h11km±7km, n21, σ1°00/21, mb3.5/7, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.18**	**214**	⇑P	**Pg**	**21 07 10.5**	**0.0**
CHOJ				S	**Sg**	**21 07 13.1**	**-0.1**
JYT	**Yasato**	**0.74**	**301**	P	**Pb**	**21 07 21.3**	**-0.2**
JYT				S	**Sg**	**21 07 31.0**	**+0.4**
JCN	**Nagara**	**0.77**	**236**	P	**Pn**	**21 07 22.5**	**-0.8**
JCN				S	**Sn**	**21 07 33.9**	**-0.9**
JHO	**Hitachi**	**0.83**	**336**	P	**Pn**	**21 07 23.7**	**-0.5**
JHO				S	**Sn**	**21 07 35.0**	**-1.4**
BSO4	**Boso 4**	**1.01**	**212**	S	**Sn**	**21 07 41.2**	**+0.6**
MJAR	**Matsushiro Arr**	**2.34**	**288**	Pn	**Pn**	**21 07 44.5**	**-0.5**
	15nm,0.3s,baz=91,slow=8.5,SNR=17						
MJAR				Sn	**Sn**	**21 08 12.9**	**-0.9**
	6.1nm,0.3s,baz=118,slow=10,SNR=5.9						
JHJ	**Hachijo jima 2**	**2.90**	**200**	Pn	**Pn**	**21 07 54.2**	**+1.5**
	15nm,0.3s,baz=72,slow=20,SNR=3.1						
JHJ				Sn	**Sn**	**21 08 26.2**	**-1.3**
	22nm,0.3s,baz=253,slow=19,SNR=3.5						
ASAJ	**Asahikawa**	**8.35**	**8**	Pn	**Pn**	**21 09 07.1**	**-0.3**
	0.7nm,0.3s,baz=210,slow=8.0,SNR=6.9						
H11N2	**WAKE ISLAND Hy**	**27.87**	**118**	T	T	21 41 53.6	
	baz=311,slow=75,SNR=129						
H11N1	**WAKE ISLAND Hy**	**27.88**	**118**	T	T	21 41 54.2	
	baz=311,slow=75,SNR=67						
H11N3	**WAKE ISLAND Hy**	**27.89**	**118**	T	T	21 41 54.6	
	baz=311,slow=75,SNR=74						
SONM	**Songino Array**	**28.17**	**306**	P	**P**	**21 13 00.5**	**+1.5**
	0.3nm,0.6s,baz=119,slow=12,SNR=2.9						
H11S1	**WAKE ISLAND Hy**	**28.54**	**120**	T	T	21 42 42.6	
	baz=312,slow=75,SNR=136						
H11S3	**WAKE ISLAND Hy**	**28.54**	**120**	T	T	21 42 47.1	
	baz=312,slow=75,SNR=116						
H11S2	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	21 42 44.5	
	baz=312,slow=75,SNR=88						
ZALV	**Zalesovo Beam**	**42.46**	**313**	P	**P**	**21 15 01.4**	**+0.1**
	0.4nm,0.5s,baz=94,slow=6.7,SNR=2.4						
MKAR	**Makanchi Array**	**44.46**	**303**	P	**P**	**21 15 18.1**	**+0.5**
	0.2nm,0.3s,baz=87,slow=9.4,SNR=3.4						
KURBB	**Kurchatov Arra**	**46.46**	**309**	P	**P**	**21 15 34.1**	**+0.7**
	0.5nm,0.4s,baz=82,slow=7.5,SNR=8.7						
ILAR	**Eielson Array**	**50.68**	**32**	P	**P**	**21 16 06.6**	**+1.0**
	0.4nm,0.6s,baz=264,slow=6.0,SNR=5.3						
WRA	**Warramunga Arr**	**55.84**	**188**	P	**P**	**21 16 42.3**	**-1.8**
	0.8nm,0.6s,baz=3.4,slow=6.7,SNR=5.8						
ASAR	**Alice Springs**	**59.57**	**188**	P	**P**	**21 17 09.7**	**-0.6**
	0.2nm,0.7s,baz=17,slow=11,SNR=4.2						

ISK ***17*** *21:10:06.5, 39°.09N×29°.14E, h5km, MD2.6*

ISCJB ***17*** *21:10:07.4±0.5, 39°.07N±0°.05×29°.11E±0°.04, h7km±7km, Error ellipse: s-maj=8.9km s-min=4.3km az=150.8*

CSEM ***17*** *21:10:07.3±0.1, 39°.07N×29°.12E, h8km, MD2.6, Error ellipse: s-maj=4.7km s-min=2.8km az=142.0*

DDA ***17*** *21:10:07.7, 39°.03N×29°.12E, h7km, Md2.6*

ISC 17 21:10:07.3±1.0, 39°.08N±0°.04×29°.13E±0°.03, h10km±9km, n20, σ0°55/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.22**	**98**	*e*PG	**Pg**	**21 10 11.6**	**-0.4**
GEDZ	**Gediz**	**0.22**	**98**	*e*Pg	**Pg**	**21 10 11.6**	**-0.4**
GDZ	**Gediz**	**0.28**	**88**	*i* P	**Pg**	**21 10 13.7**	**+0.8**
GDZ				*i* S	**Sb**	**21 10 18.5**	**-0.7**
GDZ	**Gediz**	**0.28**	**88**	P	**Pg**	**21 10 13.7**	**+0.8**
GDZ				S	**Sb**	**21 10 18.5**	**-0.7**
DEMI	**Demirci**	**0.32**	**264**	*i* P	**Pb**	**21 10 14.5**	**-0.7**
DEMI				*i* S	**Sg**	**21 10 18.9**	**+0.8**
DEMI	**Demirci**	**0.32**	**264**	P	**Pb**	**21 10 14.5**	**-0.7**
DEMI				S	**Sg**	**21 10 18.9**	**+0.8**
TVSB	**Tavsanli**	**0.45**	**35**	*e*PG	**Pg**	**21 10 15.5**	**-0.7**
TVSB				*e*SG	**Sg**	**21 10 22.2**	**0.0**
TVSB	**Tavsanli**	**0.45**	**35**	*e*Pg	**Pg**	**21 10 15.5**	**-0.7**
TVSB				*e*Sg	**Sg**	**21 10 22.2**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**213**	*e*PG	**Pg**	**21 10 20.0**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**213**	*e*Pg	**Pg**	**21 10 20.0**	**-0.2**
MANT	**Manisa**	**0.73**	**217**	*i* P	**Pg**	**21 10 21.4**	**-0.1**
MANT				*i* S	**Sg**	**21 10 31.1**	**0.0**
MANT	**Manisa**	**0.73**	**217**	P	**Pg**	**21 10 21.4**	**-0.1**
MANT				S	**Sg**	**21 10 31.1**	**0.0**
BALB	**Balikesir**	**1.12**	**301**	*e*PN	**Pg**	**21 10 28.7**	**-0.1**
BALB	**Balikesir**	**1.12**	**301**	*e*Pn	**Pg**	**21 10 28.7**	**-0.1**
BORA	**Eskisehir**	**1.30**	**52**	*i* P	**Pg**	**21 10 32.4**	**+0.1**
BORA				*i* S	**Sn**	**21 10 49.9**	**+0.7**
BORA	**Eskisehir**	**1.30**	**52**	P	**Pg**	**21 10 32.4**	**+0.1**
BORA				S	**Sn**	**21 10 49.9**	**+0.7**
KCTX	**Karacabey (Bur**	**1.33**	**334**	*e*PN	**Pn**	**21 10 32.4**	**+0.5**
KCTX	**Karacabey (Bur**	**1.33**	**334**	*e*Pn	**Pn**	**21 10 32.4**	**+0.5**
ARMT	**Armutlu**	**1.50**	**352**	*e*PN	**Pn**	**21 10 34.8**	**+0.5**
ARMT	**Armutlu**	**1.50**	**352**	*e*Pn	**Pn**	**21 10 34.8**	**+0.5**

ISK ***17*** *21:11:28.8, 39°.15N×29°.00E, h5km, MD2.6*

ISCJB ***17*** *21:11:30.0±0.5, 39°.10N±0°.04×29°.06E±0°.05, h13km±5km, Error ellipse: s-maj=8.6km s-min=4.2km az=139.8*

CSEM ***17*** *21:11:29.8±0.2, 39°.12N×29°.04E, h12km, MD2.5, Error ellipse: s-maj=7.5km s-min=4.0km az=129.0*

DDA ***17*** *21:11:30.6, 39°.01N×29°.10E, h7km, Md2.5*

ISC 17 21:11:30.1±1.3, 39°.10N±0°.04×29°.06E±0°.04, h22km±3km, n18, σ0°90/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**259**	*i* P	**Pb**	**21 11 36.9**	**+0.3**
DEMI				*i* S	**Sb**	**21 11 41.4**	**+0.3**
DEMI	**Demirci**	**0.28**	**259**	P	**Pb**	**21 11 36.9**	**+0.3**
DEMI				S	**Sb**	**21 11 41.4**	**+0.3**
GDZ	**Gediz**	**0.33**	**91**	*i* P	**Pb**	**21 11 37.3**	**0.0**
GDZ				*i* S	**Sb**	**21 11 41.4**	**-0.9**
GDZ	**Gediz**	**0.33**	**91**	P	**Pb**	**21 11 37.3**	**0.0**
GDZ				S	**Sb**	**21 11 41.4**	**-0.9**
TVSB	**Tavsanli**	**0.47**	**41**	*e*PG	**Pb**	**21 11 38.5**	**-1.2**
TVSB				*e*SG	**Sb**	**21 11 45.0**	**-1.3**
TVSB	**Tavsanli**	**0.47**	**41**	*e*Pg	**Pb**	**21 11 38.5**	**-1.2**
TVSB				*e*Sg	**Sb**	**21 11 45.0**	**-1.3**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*PG	**Pb**	**21 11 42.7**	**-0.3**
KULA				*e*SG	**Sb**	**21 11 52.3**	**+0.5**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*Pg	**Pb**	**21 11 42.7**	**-0.3**
KULA				*e*Sg	**Sb**	**21 11 52.3**	**+0.5**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pb**	**21 11 43.9**	**-0.2**
MANT				*i* S	**Sb**	**21 11 53.2**	**-0.5**
MANT	**Manisa**	**0.72**	**213**	P	**Pb**	**21 11 43.9**	**-0.2**
MANT				S	**Sb**	**21 11 53.2**	**-0.5**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pb**	**21 11 53.5**	**0.0**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pb**	**21 11 53.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pn**	**21 11 52.2**	**-0.6**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pn**	**21 11 52.2**	**-0.6**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pb**	**21 11 55.4**	**+1.0**
BORA				*i* S	**Sb**	**21 12 13.2**	**+2.1**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pb**	**21 11 55.4**	**+1.0**
BORA				S	**Sb**	**21 12 13.1**	**+2.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pn**	**21 11 55.9**	**+0.5**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**21 11 55.9**	**+0.5**

CSEM ***17*** *21:15:33.7±0.4, 37°.13N×28°.37E, h10km, MD2.5, Error ellipse: s-maj=12.3km s-min=8.7km az=13.0*

ISK ***17*** *21:15:34.0, 37°.01N×28°.30E, h7km, MD2.5*

ISC 17 21:15:34.0±1.0, 37°.02N±0°.05×28°.32E±0°.03, h12km±8km, n16, σ0°63/21, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.12**	**345**	*e*PG	**Pg**	**21 15 37.2**	**0.0**
YER	**Yerkesik**	**0.12**	**345**	*e*Pg	**Pg**	**21 15 37.2**	**0.0**
TURN	**Turunc**	**0.27**	**123**	*i* P	**Pg**	**21 15 38.5**	**-1.2**
TURN				*i* S	**Sg**	**21 15 42.5**	**-0.9**
DALY	**Dalyan (Mu˘la**	**0.34**	**127**	*e*PG	**Pg**	**21 15 41.2**	**+0.4**
DALY				*e*SG	**Sg**	**21 15 46.5**	**+1.1**
DALY	**Dalyan (Mu˘la**	**0.34**	**127**	*e*Pg	**Pg**	**21 15 41.2**	**+0.4**
DALY				*e*Sg	**Sg**	**21 15 46.5**	**+1.1**
BDRM	**Kayabasi**	**0.70**	**274**	*i* P	**Pg**	**21 15 47.8**	**+0.2**
BDRM				*i* S	**Sg**	**21 15 57.1**	**+0.2**
BDRM	**Kayabasi**	**0.70**	**274**	P	**Pg**	**21 15 47.8**	**+0.2**
BDRM				S	**Sg**	**21 15 57.1**	**+0.2**
FETY	**Fethiye**	**0.72**	**122**	*e*PG	**Pb**	**21 15 48.7**	**+0.1**
FETY	**Fethiye**	**0.72**	**122**	*e*Pg	**Pb**	**21 15 48.7**	**+0.1**
BODT	**Bodrum**	**0.81**	**273**	*e*PG	**Pg**	**21 15 49.8**	**+0.1**
BODT	**Bodrum**	**0.81**	**273**	*e*Pg	**Pg**	**21 15 49.8**	**+0.1**
GLHS	**Glhisar (BURDU**	**0.95**	**82**	*e*PG	**Pn**	**21 15 53.1**	**-0.2**
GLHS	**Glhisar (BURDU**	**0.95**	**82**	*e*Pg	**Pn**	**21 15 53.1**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**340**	*e*PG	**Pn**	**21 15 53.1**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**340**	*e*Pg	**Pn**	**21 15 53.1**	**-0.7**
DEMI	**Demirci**	**2.04**	**9**	*i* P	**Pg**	**21 16 13.7**	**+0.5**

ISCJB ***17*** *21:16:02.9±0.6, 38°.75N±0°.04×30°.22E±0°.04, h2km±8km, Error ellipse: s-maj=6.5km s-min=4.8km az=25.7*

CSEM ***17*** *21:16:03.2±0.2, 38°.70N×30°.21E, h2km, MD2.7, Error ellipse: s-maj=5.6km s-min=4.3km az=21.0*

ISK ***17*** *21:16:03.3, 38°.66N×30°.20E, h9km, MD2.7*

DDA ***17*** *21:16:03.0, 38°.79N×30°.23E, h7km, Md2.6*

ISC 17 21:16:03.3±1.0, 38.74N±0°.03×30°.22E±0°.03, h8km±13km, n25, σ0°69/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHUT	**Suhut-Afyon**	**0.32**	**126**	*e*PG	**Pg**	**21 16 09.6**	**-0.1**
SHUT				*e*SG	**Sg**	**21 16 14.3**	**+0.4**
SHUT	**Suhut-Afyon**	**0.32**	**126**	*e*Pg	**Pg**	**21 16 09.6**	**-0.1**
SHUT				*e*Sg	**Sg**	**21 16 14.3**	**+0.4**
BOLV	**Bolvadin**	**0.57**	**92**	*i* P	**Pg**	**21 16 13.7**	**-0.7**
BOLV				*i* S	**Sg**	**21 16 22.2**	**+0.3**
BOLV	**Bolvadin**	**0.57**	**92**	P	**Pg**	**21 16 13.7**	**-0.7**
GDZ	**Gediz**	**0.67**	**301**	*i* P	**Pg**	**21 16 17.1**	**+0.8**
GDZ				*i* S	**Sg**	**21 16 24.7**	**-0.4**
GDZ	**Gediz**	**0.67**	**301**	P	**Pg**	**21 16 17.1**	**+0.8**
GDZ				S	**Sg**	**21 16 24.7**	**-0.4**
KHL	**Karahalli**	**0.69**	**233**	*e*PG	**Pg**	**21 16 15.9**	**-0.6**
KHL	**Karahalli**	**0.69**	**233**	*e*Pg	**Pg**	**21 16 15.9**	**-0.6**
ESKT	**Eskisehir**	**0.92**	**32**	*i* P	**Pg**	**21 16 20.9**	**-0.1**
ESKT				*i* S	**Sg**	**21 16 32.6**	**-0.4**
SEYT	**Eskypehyr**	**0.92**	**32**	S	**Sg**	**21 16 32.6**	**-0.4**
SEYT	**Eskypehyr**	**0.92**	**32**	P	**Pg**	**21 16 20.9**	**-0.1**
TVSB	**Tavsanli**	**0.92**	**320**	*e*PG	**Pb**	**21 16 22.3**	**+0.7**
TVSB	**Tavsanli**	**0.92**	**320**	*e*Pg	**Pb**	**21 16 22.3**	**+0.7**
BORA	**Eskisehir**	**1.15**	**9**	*i* P	**Pg**	**21 16 24.1**	**-1.3**
BORA				*i* S	**Sg**	**21 16 39.6**	**-0.8**
BORA	**Eskisehir**	**1.15**	**9**	P	**Pg**	**21 16 24.1**	**-1.3**
SVRH	**Sivrihisar-ESK**	**1.24**	**55**	*e*PN	**Pg**	**21 16 28.1**	**+1.1**
SVRH	**Sivrihisar-ESK**	**1.24**	**55**	*e*Pn	**Pg**	**21 16 28.1**	**+1.1**
KULA	**Kula-Manisa**	**1.24**	**260**	*e*PN	**Pn**	**21 16 27.1**	**0.0**
KULA	**Kula-Manisa**	**1.24**	**260**	*e*Pn	**Pn**	**21 16 27.1**	**0.0**
KIZT	**Kizilcal**	**1.31**	**83**	*e*PN	**Pg**	**21 16 28.6**	**+0.3**
KIZT	**Kizilcal**	**1.31**	**83**	*e*Pn	**Pg**	**21 16 28.6**	**+0.3**
SUTC	**Sutluce-Ispart**	**1.41**	**154**	*e*PN	**Pn**	**21 16 28.6**	**-0.7**
SUTC	**Sutluce-Ispart**	**1.41**	**154**	*e*Pn	**Pn**	**21 16 28.6**	**-0.7**
GULT	**Gulveren**	**1.71**	**8**	*e*PN	**Pb**	**21 16 35.5**	**+0.5**
GULT	**Gulveren**	**1.71**	**8**	*e*Pn	**Pb**	**21 16 35.5**	**+0.5**

ISCJB ***17*** *21:18:34.6±0.5, 39°.09N±0°.04×28°.99E±0°.04, h11km±5km, Error ellipse: s-maj=7.4km s-min=4.2km az=150.9*

CSEM ***17*** *21:18:34.7±0.1, 39°.09N×29°.00E, h10km, MD2.5, Error ellipse: s-maj=3.8km s-min=2.6km az=147.0*

ISK ***17*** *21:18:34.3, 39°.12N×29°.03E, h9km, MD2.8*

DDA ***17*** *21:18:35.0, 39°.04N×28°.99E, h7km, Md2.5*

ISC 17 21:18:34.6±0.9, 39°.08N±0°.03×29°.02E±0°.02, h12km±9km, n30, σ0°26/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**262**	*i* P	**Pg**	**21 18 39.9**	**+0.2**
DEMI				*i* S	**Sg**	**21 18 43.1**	**0.0**
DEMI	**Demirci**	**0.24**	**262**	P	**Pg**	**21 18 39.9**	**+0.2**
DEMI				S	**Sg**	**21 18 43.1**	**0.0**
GEDZ	**Gediz**	**0.30**	**96**	*e*PG	**Pg**	**21 18 40.7**	**-0.2**
GEDZ	**Gediz**	**0.30**	**96**	*e*Pg	**Pg**	**21 18 40.7**	**-0.2**
GDZ	**Gediz**	**0.36**	**88**	*i* P	**Pb**	**21 18 43.0**	**0.0**
GDZ				*i* S	**Sb**	**21 18 48.6**	**-0.1**
GDZ	**Gediz**	**0.36**	**88**	P	**Pb**	**21 18 43.0**	**0.0**
GDZ				S	**Sb**	**21 18 48.6**	**-0.1**
TVSB	**Tavsanli**	**0.51**	**42**	*e*PG	**Pg**	**21 18 44.3**	**-0.2**
TVSB				*e*SG	**Sg**	**21 18 51.0**	**-0.3**
TVSB	**Tavsanli**	**0.51**	**42**	*e*Pg	**Pg**	**21 18 44.3**	**-0.

	2.4nm,1.0s,baz=341,slow=8.8,SNR=6.2							
STKA	**Stephens Creek**	**44.07**	**161**	*e*P	**P**	**21 31 33.3**	**+0.6**	
	5.7nm,1.7s							
DZM	**Mont Dzumac**	**50.61**	**129**	*e*P	**P**	**21 32 22.7**	**-1.2**	
	51nm,1.5s							
MK01	**Makanchi Array**	**52.30**	**323**	*e*P	**P**	**21 32 36.6**	**+0.4**	
MK32	**Makanchi Array**	**52.32**	**323**	*e*P	**P**	**21 32 36.5**	**+0.1**	
MKAR	**Makanchi Array**	**52.32**	**323**	P	**P**	**21 32 36.5**	**+0.1**	
	0.6nm,0.5s,baz=122,slow=8.4,SNR=8.8							
ZALV	**Zalesovo Beam**	**54.94**	**331**	P	**P**	**21 32 53.5**	**-1.9**	
	0.3nm,0.4s,baz=98,slow=8.9,SNR=2.4							
ZAA1	**Zalesovo Array**	**54.94**	**331**	*e*P	**P**	**21 32 53.5**	**-1.9**	
SEY	**Seymchan**	**56.14**	**14**	LR	LR	21 56 46.2		
	comp=Z,889nm,20.2s,baz=329,slow=36							
ARCES	**ARCESS Array B**	**84.52**	**340**	P	**P**	**21 35 57.2**	**0.0**	
	0.6nm,0.7s,baz=79,slow=6.3,SNR=6.9							
FIA0	**FINESS Array S**	**86.20**	**332**	*e*P	**P**	**21 36 05.7**	**0.0**	
FINES	**FINESS Array B**	**86.20**	**332**	P	**P**	**21 36 05.7**	**0.0**	
	0.8nm,0.4s,baz=76,slow=4.4,SNR=11							

ISCJB ***17*** *21:26:52.6±0.5, 39.°08N±0.°04×29.°11E±0.°04, h9km, Error ellipse: s-maj=6.5km s-min=3.7km az=151.0*
CSEM ***17*** *21:26:52.6±0.1, 39.°08N×29.°13E, h8km, MD2.7, Error ellipse: s-maj=4.0km s-min=2.5km az=142.0*
ISK ***17*** *21:26:52.2, 39.°10N×29.°14E, h5km, MD2.7*
DDA ***17*** *21:26:53.0, 39.°01N×29.°12E, h7km, Md2.7*

ISC 17 21:26:52.8±0.9, 39°08N±0.°03×29°12E±0.°02, h9km, n28, σ0s50/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GEDZ	**Gediz**	**0.23**	**98**	*e*PG	**Pg**	**21 26 56.9**	**-0.6**
GEDZ	**Gediz**	**0.23**	**98**	*e*Pg	**Pg**	**21 26 56.9**	**-0.6**
GDZ	**Gediz**	**0.28**	**87**	*i* P	**Pg**	**21 26 59.1**	**+0.6**
GDZ				*i* S	**Sg**	**21 27 03.5**	**+1.2**
GDZ	**Gediz**	**0.28**	**87**	P	**Pg**	**21 26 59.1**	**+0.6**
GDZ				S	**Sg**	**21 27 03.5**	**+1.2**
DEMI	**Demirci**	**0.31**	**264**	*i* P	**Pg**	**21 26 59.6**	**+0.5**
DEMI				*i* S	**Sg**	**21 27 02.9**	**-0.3**
DEMI	**Demirci**	**0.31**	**264**	P	**Pg**	**21 26 59.6**	**+0.5**
DEMI				S	**Sg**	**21 27 02.9**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**35**	*e*PG	**Pg**	**21 27 01.3**	**-0.5**
TVSB				*e*SG	**Sg**	**21 27 07.2**	**-0.6**
TVSB	**Tavsanli**	**0.46**	**35**	*e*Pg	**Pg**	**21 27 01.3**	**-0.5**
TVSB				*e*Sg	**Sg**	**21 27 07.2**	**-0.6**
KULA	**Kula-Manisa**	**0.66**	**213**	*e*PG	**Pb**	**21 27 06.3**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**213**	*e*Pg	**Pb**	**21 27 06.3**	**-0.3**
MANT	**Manisa**	**0.73**	**217**	*i* P	**Pg**	**21 27 06.5**	**-0.4**
MANT				*i* S	**Sg**	**21 27 16.2**	**-0.2**
MANT	**Manisa**	**0.73**	**217**	P	**Pg**	**21 27 06.5**	**-0.4**
MANT				S	**Sg**	**21 27 16.2**	**-0.2**
AKS	**Akhisar**	**1.03**	**259**	*e*PG	**Pg**	**21 27 12.7**	**0.0**
AKS	**Akhisar**	**1.03**	**259**	*e*Pg	**Pg**	**21 27 12.7**	**0.0**
BALB	**Balikesir**	**1.11**	**301**	*e*PN	**Pg**	**21 27 14.0**	**-0.1**
BALB	**Balikesir**	**1.11**	**301**	*e*Pn	**Pg**	**21 27 14.0**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**26**	*e*PN	**Pn**	**21 27 16.2**	**-0.4**
CAVI	**Cavuskoy**	**1.26**	**26**	*e*Pn	**Pn**	**21 27 16.2**	**-0.4**
IZI	**Iznik**	**1.29**	**12**	*e*PN	**Pn**	**21 27 16.7**	**-0.4**
IZI	**Iznik**	**1.29**	**12**	*e*Pn	**Pn**	**21 27 16.7**	**-0.4**
KCTX	**Karacabey (Bur**	**1.33**	**334**	*e*PN	**Pb**	**21 27 18.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.33**	**334**	*e*Pn	**Pb**	**21 27 18.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.47**	**312**	*e*PN	**Pn**	**21 27 19.9**	**+0.4**
GONE	**Gonen-Balikesi**	**1.47**	**312**	*e*Pn	**Pn**	**21 27 19.9**	**+0.4**
ARMT	**Armutlu**	**1.50**	**353**	*e*PN	**Pn**	**21 27 20.2**	**+0.3**
ARMT	**Armutlu**	**1.50**	**353**	*e*Pn	**Pn**	**21 27 20.2**	**+0.3**
GULT	**Gulveren**	**1.73**	**38**	*e*PN	**Pn**	**21 27 23.5**	**+0.4**
GULT	**Gulveren**	**1.73**	**38**	*e*Pn	**Pn**	**21 27 23.5**	**+0.4**

MEX 17 21:27:00.7±0.4, 16°67N×99°53W, h30km±15km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CAIG	**El Cayaco**	**0.80**	**299**	*e*P	Pn	21 27 13.4	-2.5
CAIG				*e*S	Sb	21 27 23.8	-2.8
MEIG	**Mezcala**	**1.26**	**356**	*e*P	Pn	21 27 20.1	-2.3
MEIG				*e*S	Sn	21 27 35.2	-3.1
TLIG	**Tlapa**	**1.29**	**46**	*e*P	Pn	21 27 20.9	-1.9
TLIG				*e*S	Sn	21 27 36.0	-3.1
ARIG	**Puente Sto Nin**	**1.78**	**334**	*i* P	Pn	21 27 28.3	-1.3
ARIG				*i* S	Sn	21 27 48.1	-3.2

ISCJB ***17*** *21:28:31.4±0.6, 39.°21N±0.°04×28.°91E±0.°05, h9km, Error ellipse: s-maj=7.3km s-min=4.1km az=136.1*
CSEM ***17*** *21:28:31.4±0.2, 39.°21N×28.°88E, h10km, MD2.5, Error ellipse: s-maj=6.4km s-min=4.1km az=120.0*
ISK ***17*** *21:28:31.3, 39.°23N×28.°95E, h10km, MD2.5*
DDA ***17*** *21:28:32.5, 39.°09N×28.°96E, h7km, Md2.5*

ISC 17 21:28:31.2±0.9, 39°21N±0.°03×28°94E±0.°04, h9km, n18, σ0s67/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.24**	**227**	*i* P	**Pg**	**21 28 36.8**	**+0.7**
DEMI				*i* S	**Sg**	**21 28 40.0**	**+0.6**
DEMI	**Demirci**	**0.24**	**227**	P	**Pg**	**21 28 36.8**	**+0.7**
DEMI				S	**Sg**	**21 28 40.0**	**+0.6**
GDZ	**Gediz**	**0.44**	**105**	*i* P	**Pg**	**21 28 42.3**	**+1.1**
GDZ				*i* S	**Sb**	**21 28 46.9**	**-1.0**
GDZ	**Gediz**	**0.44**	**105**	P	**Pb**	**21 28 42.3**	**+1.1**
GDZ				S	**Sb**	**21 28 46.9**	**-1.0**
TVSB	**Tavsanli**	**0.47**	**59**	*e*PG	**Pb**	**21 28 41.0**	**-0.8**
TVSB				*e*SG	**Sg**	**21 28 47.1**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**59**	*e*Pg	**Pb**	**21 28 41.0**	**-0.8**
TVSB				*e*Sg	**Sg**	**21 28 47.1**	**+0.4**
KULA	**Kula-Manisa**	**0.72**	**198**	*e*PG	**Pb**	**21 28 46.0**	**0.0**
KULA	**Kula-Manisa**	**0.72**	**198**	*e*Pg	**Pb**	**21 28 46.0**	**0.0**
MANT	**Manisa**	**0.78**	**203**	*i* P	**Pg**	**21 28 45.6**	**-0.6**
MANT				*i* S	**Sg**	**21 28 55.5**	**-0.8**
MANT	**Manisa**	**0.78**	**203**	P	**Pg**	**21 28 45.6**	**-0.6**
MANT				S	**Sg**	**21 28 55.5**	**-0.8**
KCTX	**Karacabey (Bur**	**1.15**	**337**	*e*PN	**Pg**	**21 28 53.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.15**	**337**	*e*Pn	**Pg**	**21 28 53.4**	**+0.1**
IZI	**Iznik**	**1.20**	**20**	*e*PN	**Pn**	**21 28 54.5**	**+0.2**
IZI	**Iznik**	**1.20**	**20**	*e*Pn	**Pn**	**21 28 54.5**	**+0.2**
ARMT	**Armutlu**	**1.36**	**358**	*e*PN	**Pb**	**21 28 56.7**	**-0.1**
ARMT	**Armutlu**	**1.36**	**358**	*e*Pn	**Pb**	**21 28 56.7**	**-0.1**
GULT	**Gulveren**	**1.72**	**44**	*e*PN	**Pn**	**21 29 01.9**	**+0.5**
GULT	**Gulveren**	**1.72**	**44**	*e*Pn	**Pn**	**21 29 01.9**	**+0.5**

ISCJB ***17*** *21:29:23.5±1.1, 37.°97N±0.°05×32.°04E±0.°08, h9km, Error ellipse: s-maj=10.5km s-min=5.1km az=142.6*
CSEM ***17*** *21:29:23.2±0.3, 37.°94N×32.°01E, h5km, MD2.5, Error ellipse: s-maj=5.9km s-min=3.7km az=42.0*
ISK ***17*** *21:29:23.1, 37.°93N×32.°06E, h11km, MD2.5*

ISC 17 21:29:22.9±1.3, 37°93N±0.°05×32°01E±0.°06, h9km, n14, σ0s61/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KONT	**Konya--Tatoy**	**0.28**	**88**	*e*PG	**Pg**	**21 29 28.6**	**+0.1**
KONT				*e*SG	**Sg**	**21 29 32.5**	**+0.3**
KONT	**Konya--Tatoy**	**0.28**	**88**	*e*Pg	**Pg**	**21 29 28.6**	**+0.1**
KONT				*e*Sg	**Sg**	**21 29 32.5**	**+0.3**
KMER	**Konya-Meram**	**0.33**	**120**	*i* P	**Pg**	**21 29 29.6**	**+0.1**
KMER				*i* S	**Sb**	**21 29 35.1**	**-1.3**
KMER	**Konya-Meram**	**0.33**	**120**	P	**Pg**	**21 29 29.6**	**+0.1**
KMER				S	**Sb**	**21 29 35.1**	**-1.3**
LADK	**Ladik-KONYA**	**0.39**	**46**	*e*PG	**Pg**	**21 29 31.0**	**+0.5**
LADK	**Ladik-KONYA**	**0.39**	**46**	*e*Pg	**Pg**	**21 29 31.0**	**+0.5**
KDHN	**Kadinhani**	**0.59**	**8**	*i* P	**Pg**	**21 29 33.9**	**-0.5**
KDHN				*i* S	**Sg**	**21 29 42.0**	**-0.2**
KDHN	**Kadinhani**	**0.59**	**8**	P	**Pg**	**21 29 33.9**	**-0.5**
KDHN				S	**Sg**	**21 29 42.0**	**-0.2**
CHBY	**Cihanbeyli**	**0.95**	**47**	*e*PG	**Pg**	**21 29 41.4**	**+0.3**
CHBY	**Cihanbeyli**	**0.95**	**47**	*e*Pg	**Pg**	**21 29 41.4**	**+0.3**
KIZT	**Kizilcal**	**0.95**	**354**	*e*PG	**Pb**	**21 29 42.1**	**+0.5**
KIZT	**Kizilcal**	**0.95**	**354**	*e*Pg	**Pb**	**21 29 42.1**	**+0.5**
SHUT	**Suhut-Afyon**	**1.30**	**299**	*e*PN	**Pb**	**21 29 48.3**	**+0.7**
SHUT	**Suhut-Afyon**	**1.30**	**299**	*e*Pn	**Pb**	**21 29 48.3**	**+0.7**

ISCJB ***17*** *21:32:13.9±1.0, 34.°81N±0.°07×142.°78E±0.°09, h33km, mb3.5/3, Error ellipse: s-maj=11.8km s-min=9.2km az=43.3*
IDC ***17*** *21:32:14.1±2.1, 34.°47N×142.°57E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.4/44, mbtmp3.5/5, ML3.4/2, Error ellipse: s-maj=42.5km s-min=27.7km az=61.0*
JMA ***17*** *21:32:15.5±0.4, 34.°78N×142.°67E, h50km, M3.4*

ISC 17 21:32:14.9±1.4, 34°83N±0.°07×142°8E±0.°1, h35km, n20, σ1s81/19, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**1.50**	**264**	P	**Pn**	**21 32 39.0**	**+0.2**
BSO1				*e*S	**Sn**	**21 32 56.8**	**0.0**
CHOJ	**Chosi**	**1.80**	**300**	P	**Pn**	**21 32 44.3**	**+0.9**
CHOJ				*e*S	**Sn**	**21 33 05.2**	**+0.1**
BSO3	**Boso 3**	**1.87**	**270**	P	**Pn**	**21 32 44.5**	**+0.3**
BSO4	**Boso 4**	**2.02**	**275**	P	**Pn**	**21 32 47.4**	**+1.1**
JHJ	**Hachijo jima 2**	**3.02**	**237**	Pn	**Pn**	**21 32 58.6**	**-1.6**
	28nm,0.3s,baz=87,slow=17,SNR=4.9						
JHJ				Sn	**Sn**	**21 33 32.3**	**-2.9**
	49nm,0.3s,baz=84,slow=18,SNR=4.3						
JOD2	**Odawara 2**	**3.07**	**279**	P	**Pn**	**21 33 00.9**	**+0.1**
JAG	**Ashikaga**	**3.15**	**301**	P	**Pn**	**21 33 02.9**	**+0.9**
JRY	**Ryogami san**	**3.39**	**292**	P	**Pn**	**21 33 06.4**	**+1.1**
MJAR	**Matsushiro Arr**	**4.10**	**296**	Pn	**Pn**	**21 33 16.4**	**+1.3**
	1.2nm,0.3s,baz=109,slow=8.3,SNR=10						
MJAR				Sn	**Sn**	**21 34 01.4**	**-0.5**
	1.2nm,0.3s,baz=129,slow=9.9,SNR=5.3						
MAT	**Matsushiro**	**4.10**	**296**	P	**Pn**	**21 33 16.4**	**+1.3**
MAT				S	**Sn**	**21 33 58.6**	**-3.3**
ASAJ	**Asahikawa**	**9.28**	**359**	Pn	**Pn**	**21 34 26.3**	**+0.2**
	1.0nm,0.3s,baz=190,slow=29,SNR=6.9						
ASAJ				Sn	**Sn**	**21 36 05.0**	**-4.2**
	0.3nm,0.3s,baz=315,slow=20,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**26.08**	**119**	T	T	22 05 01.7	
	baz=316,slow=74						
H11N1	**WAKE ISLAND Hy**	**26.09**	**119**	T	T	22 05 09.8	
	baz=316						
H11N3	**WAKE ISLAND Hy**	**26.10**	**119**	T	T	22 05 06.1	
	baz=316,slow=74						
H11S1	**WAKE ISLAND Hy**	**26.75**	**121**	T	T	22 05 47.3	
	baz=312,slow=75,SNR=11						
H11S3	**WAKE ISLAND Hy**	**26.75**	**121**	T	T	22 05 50.3	
	baz=312,slow=75,SNR=6.8						
H11S2	**WAKE ISLAND Hy**	**26.76**	**121**	T	T	22 05 54.0	
	baz=312,slow=75,SNR=7.1						
MKAR	**Makanchi Array**	**46.26**	**304**	P	P	21 40 41.8	+5.1
	0.2nm,0.5s,baz=87,slow=9.4,SNR=2.7						
WRA	**Warramunga Arr**	**55.06**	**190**	P	**P**	**21 41 44.8**	**+1.6**
	0.9nm,0.8s,baz=8.9,slow=7.6,SNR=5.3						
ASAR	**Alice Springs**	**58.78**	**190**	P	**P**	**21 42 11.3**	**+1.7**
	0.3nm,0.8s,baz=11,slow=5.2,SNR=3.7						

ISCJB ***17*** *21:53:58.5±0.6, 18.°4S±0.°1×177.°9W±0.°1, h557km, mb4.0/11, Error ellipse: s-maj=18.8km s-min=8.7km az=142.5*
IDC ***17*** *21:54:00.6±1.5, 18.°43S×177.°87W, h572km±19km, mb3.5/12, mb1 3.7/14, mb1mx3.4/27, mbtmp4.4/14, Error ellipse: s-maj=20.9km s-min=11.6km az=132.0*

ISC 17 21:53:59.3±0.7, 18°4S±0.°2×177°9W±0.°1, h557km, n39, σ1s11/42, mb4.1/11, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.33**	**54**	P	**P**	**21 55 51.9**	**+1.0**
	3.4nm,0.3s,baz=6.2,slow=19,SNR=3.8						
AFI				S	**S**	**21 57 19.9**	**-2.4**
	1.2nm,0.3s,baz=128,slow=19,SNR=2.6						
DZM	**Mont Dzumac**	**15.19**	**253**	P	**P**	**21 57 11.2**	**+0.5**
	0.4nm,0.3s,baz=101,slow=17,SNR=4.4						
URZ	**Urewera**	**20.30**	**191**	P	**P**	**21 57 55.8**	**-1.8**
	12nm,0.5s,baz=58,slow=4.0,SNR=8.4						
RPZ	**Rata Peaks**	**26.94**	**198**	P	**P**	**21 58 57.9**	**+1.2**
	7.6nm,0.8s,baz=292,slow=6.8,SNR=2.9						
STKA	**Stephens Creek**	**38.87**	**242**	P	**P**	**22 00 38.4**	**+1.0**
	7.5nm,0.6s,baz=90,slow=10,SNR=24						
WRA	**Warramunga Arr**	**45.07**	**260**	P	**P**	**22 01 26.1**	**-0.3**
	9.2nm,0.7s,baz=97,slow=7.1,SNR=139						
WRA				PcP	**PcP**	**22 02 55.0**	**-0.2**
	1.9nm,0.8s,baz=89,slow=3.7,SNR=5.3						
ASAR	**Alice Springs**	**45.17**	**255**	P	**P**	**22 01 27.2**	**+0.1**
	24nm,0.7s,baz=86,slow=8.7,SNR=186						
ASAR				PcP	**PcP**	**22 02 55.3**	**-0.3**
	1.7nm,0.5s,baz=101,slow=3.9,SNR=7.8						
ASAR				S	**S**	**22 07 24.4**	**-2.4**
	1.1nm,0.7s,baz=86,slow=16,SNR=8.0						
MJAR	**Matsushiro Arr**	**68.59**	**323**	P	**P**	**22 04 06.4**	**-0.6**
	2.3nm,0.5s,baz=143,slow=6.2,SNR=5.3						
ASAJ	**Asahikawa**	**71.93**	**331**	P	**P**	**22 04 27.5**	**+0.9**
	1.8nm,0.7s,baz=180,slow=5.8						
PETK	**Petropavlovsk-**	**74.26**	**345**	P	**P**	**22 04 40.0**	**+0.3**
	2.3nm,0.7s,baz=106,slow=5.1,SNR=2.7						
SEY	**Seymchan**	**84.34**	**347**	P	**P**	**22 05 32.5**	**-0.1**
	1.3nm,0.2s,baz=185,slow=23,SNR=5.2						
TXAR	**Lajitas Array**	**85.80**	**57**	P	**P**	**22 05 41.8**	**+1.2**
	0.1nm,0.4s,baz=179,slow=11,SNR=4.2						
ILAR	**Eielson Array**	**86.22**	**13**	P	**P**	**22 05 41.1**	**-0.5**
	0.5nm,0.4s,baz=219,slow=4.9,SNR=10.0						
CMAR	**Chiang Mai Arr**	**89.53**	**290**	P	**P**	**22 05 59.1**	**+0.9**
	2.0nm,0.9s,baz=126,slow=3.1,SNR=9.3						
MKAR	**Makanchi Array**	**109.83**	**314**	PKiKP	**PKiKP**	**22 11 26.0**	**-1.5**
	0.2nm,0.3s,baz=116,slow=1.4,SNR=3.3						
ARCES	**ARCESS Array B**	**126.86**	**350**	PKP	**PKPdf**	**22 11 58.1**	**-1.3**
	1.5nm,0.8s,baz=29,slow=2.8,SNR=6.6						
FINES	**FINESS Array B**	**129.77**	**344**	PKP	**PKPdf**	**22 12 10.3**	**-2.3**
	0.7nm,0.7s,baz=57,slow=5.1,SNR=4.0						
AKASG	**Malin Array Be**	**141.21**	**332**	PKhKP	PKPpre	22 12 20.5	
	0.3nm,0.3s,baz=39,slow=4.1,SNR=7.1						
BRTR	**Keskin Array B**	**145.48**	**315**	PKPbc	**PKPbc**	**22 12 35.6**	**-0.4**
	3.2nm,0.9s,baz=136,slow=4.4,SNR=13						
CLL	**Collm**	**146.02**	**348**	*i* PKP	**PKPbc**	**22 12 37.1**	**+0.1**
	comp=Z,11nm,0.9s						
UPC	**Upice**	**146.07**	**344**	*e*PKP	**PKPbc**	**22 12 37.8**	**+0.6**
DPC	**Dobruska-Polom**	**146.14**	**344**	*e*PKP	**PKPbc**	**22 12 38.1**	**+0.7**
DPC				*ex*	x	22 12 40.3	
BRG	**Berggiesshubel**	**146.24**	**347**	*i* PKP	**PKPbc**	**22 12 37.9**	**+0.3**
	comp=Z,7.0nm,1.3s						
PRU	**Pruhonice**	**146.92**	**345**	*e*PKP	**PKPbc**	**22 12 39.8**	**+0.3**
KHC	**Kasperske Hory**	**147.95**	**346**	*e*PKP	**PKPbc**	**22 12 42.6**	**+0.3**
GERES	**GERESS Array B**	**148.19**	**345**	PKPbc	**PKPbc**	**22 12 43.0**	**+0.1**
	comp=Z,1.1nm,0.5s,baz=20,slow=4.3,SNR=11						
CONA	**Conrad Observa**	**148.46**	**342**	*i* PKPbc	**PKPbc**	**22 12 44.3**	**+0.7**
	comp=Z,6.1nm,1.1s						
MOA	**Molln**	**148.97**	**344**	*i* PKPbc	**PKPbc**	**22 12 45.5**	**+0.7**
	comp=Z,1.6nm,0.5s						
ARSA	**Arzberg**	**149.17**	**342**	*i* PKPdf	**PKPdf**	**22 12 42.6**	**+2.2**
	comp=Z,3.1nm,1.1s						
SOKA	**Soboth**	**149.83**	**342**	*i* PKPdf	**PKPdf**	**22 12 43.9**	**+2.4**
	comp=Z,5.2nm,1.5s						
KBA	**Koelnbreinsper**	**149.92**	**345**	*i* PKPdf	**PKPdf**	**22 12 41.7**	**-0.1**
	comp=Z,2.1nm,0.5s						
WATA	**Walderalm**	**150.09**	**347**	*i* PKPbc	**PKPbc**	**22 12 47.2**	**-0.4**
	comp=Z,1.2nm,0.5s						
OBKA	**Obir**	**150.12**	**343**	*i* PKPdf	**PKPdf**	**22 12 43.1**	**+1.1**
	comp=Z,3.7nm,1.1s						
WTTA	**Wattenberg**	**150.15**	**347**	*i* PKPbc	**PKPbc**	**22 12 47.8**	**0.0**
	comp=Z,4.8nm,0.9s						
MOTA	**Moosalm**	**150.18**	**348**	*i* PKPbc	**PKPbc**	**22 12 47.4**	**-0.5**
	comp=Z,2.0nm,0.7s						
MYKA	**Terra Mystica**	**150.26**	**344**	*i* PKPbc	**PKPbc**	**22 12 47.2**	**-0.7**
ABTA	**Abfaltersbach**	**150.44**	**345**	*i* PKPbc	**PKPbc**	**22 12 47.7**	**-0.7**
	comp=Z,5.1nm,0.7s						
DAVA	**Damuels**	**150.47**	**349**	*i* PKPdf	**PKPdf**	**22 12 43.3**	**+0.7**
	comp=Z,5.7nm,1.1s						
FETA	**Feichten**	**150.56**	**348**	*i* PKPbc	**PKPbc**	**22 12 48.6**	**-0.2**
	comp=Z,7.0nm,1.6s						

IDC 17 22:02:27.2±5.1, 26°96S×67°27E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.5/40, mbtmp3.8/5, Error ellipse: s-maj=148.1km s-min=38.7km az=56.0, Indian Ocean Triple Junction

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**54.61**	**38**	P	P	22 11 57.4	-0.3
	0.5nm,0.5s,baz=231,slow=5.7,SNR=4.2						
ASAR	**Alice Springs**	**59.70**	**103**	P	P	22 12 34.1	+0.2
	0.8nm,0.7s,baz=247,slow=6.5,SNR=7.7						
WRA	**Warramunga Arr**	**61.31**	**99**	P	P	22 12 44.7	-0.3
	0.5nm,0.9s,baz=250,slow=6.5,SNR=4.9						
ZALV	**Zalesovo Beam**	**81.99**	**10**	P	P	22 14 48.4	-0.3
	0.4nm,0.5s,baz=197,slow=4.5,SNR=3.7						
SONM	**Songino Array**	**82.34**	**25**	P	P	22 14 51.3	+0.5
	0.5nm,0.8s,baz=225,slow=3.9,SNR=3.1						

ISCJB ***17*** *22:15:04.9±0.8, 35.°89N±0.°04×140.°94E±0.°08, h31km±4km, mb3.4/5, Error ellipse: s-maj=10.9km s-min=5.9km az=163.8*
JMA ***17*** *22:15:05.5±0.1, 35.°87N×140.°89E, h31km±1km, M3.3 Broadband fault plane solution: P waves. NP1: φs325.00000°, δ83.00000°, λ-134.00000°. NP2: φs228.00000°, δ44.00000°, λ-10.00000°. Principal axes: T Plg25.0000°, Azm88.0000°; N Plg44.0000°, Azm332.0000°; P Plg36.0000°, Azm198.0000°;*
JMA Felt I J1.
IDC ***17*** *22:15:10.3±3.1, 35.°76N×140.°64E, h62km±28km, mb3.2/5, mb1 3.3/7, mb1mx3.2/45, mbtmp3.5/7, ML3.1/2 Error ellipse: s-maj=33.8km s-min=9.5km az=64.0*

ISC 17 22:15:05.4±0.9, 35°88N±0.°04×140°88E±0.°08, h21km±2km, n21, σ0s97/21, mb3.5/5, 3C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.18**	**187**	↑P	**Pb**	**22 15 11.1**	**-0.1**
CHOJ				S	**Sb**	**22 15 15.2**	**-0.1**
JYT	**Yasato**	**0.66**	**302**	↑P	**Pb**	**22 15 18.1**	**-0.1**
JYT				S	**Sb**	**22 15 27.2**	**+0.2**
JCN	**Nagara**	**0.72**	**231**	↑P	**Pn**	**22 15 20.4**	**+0.1**
JHO	**Hitachi**	**0.77**	**341**	↓P	**Pb**	**22 15 19.8**	**-0.3**
JHO				S	**Sn**	**22 15 31.0**	**-1.0**
BSO4	**Boso 4**	**0.99**	**207**	P	**Pn**	**22 15 23.7**	**-0.1**
BSO3	**Boso 3**	**1.12**	**196**	P	**Pn**	**22 15 24.2**	**-1.3**
MJAR	**Matsushiro Arr**	**2.26**	**288**	P	**Pn**	**22 15 41.8**	**+0.3**
	4.3nm,0.3s,baz=108,slow=9.1,SNR=52						
MJAR				S	**Sn**	**22 16 08.4**	**-0.3**
	4.6nm,0.3s,baz=93,slow=14,SNR=9.6						
MAT	**Matsushiro**	**2.26**	**288**	P	**Pn**	**22 15 41.7**	**+0.2**
MAT				S	**Sn**	**22 16 09.7**	**+0.9**
JHJ	**Hachijo jima 2**	**2.90**	**199**	P	**Pn**	**22 15 51.0**	**+0.7**
	10nm,0.3s,baz=72,slow=17,SNR=3.2						
JHJ				S	**Sn**	**22 16 24.9**	**+0.4**
	19nm,0.3s,baz=72,slow=20,SNR=4.7						
ASAJ	**Asahikawa**	**8.33**	**9**	P	**Pn**	**22 17 03.6**	**-1.2**
	baz=90,slow=20						
H11N2	**WAKE ISLAND Hy**	**27.95**	**118**	T	T	22 50 00.9	
	baz=311,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy**	**27.96**	**118**	T	T	22 50 09.8	
	baz=311,slow=75,SNR=27						
H11N3	**WAKE ISLAND Hy**	**27.97**	**118**	T	T	22 49 53.8	
	baz=311,slow=75,SNR=26						
SONM	**Songino Array**	**28.09**	**306**	P	**P**	**22 20 55.7**	**+0.1**
	0.2nm,0.3s,baz=114,slow=9.6,SNR=3.2						
H11S1	**WAKE ISLAND Hy**	**28.62**	**120**	T	T	22 50 47.6	
	baz=312,slow=75,SNR=39						
H11S3	**WAKE ISLAND Hy**	**28.62**	**120**	T	T	22 50 47.6	
	baz=312,slow=75,SNR=30						
H11S2	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	22 50 44.5	
	baz=312,slow=75,SNR=33						
ZALV	**Zalesovo Beam**	**42.38**	**313**	P	**P**	**22 22 58.3**	**+0.3**
	0.3nm,0.3s,baz=94,slow=7.8,SNR=2.0						
MKAR	**Makanchi Array**	**44.38**	**303**	P	**P**	**22 23 14.0**	**-0.2**
	0.8nm,0.6s,baz=86,slow=10.0,SNR=6.5						
ILAR	**Eielson Array**	**50.70**	**32**	P	**P**	**22 24 05.2**	**+2.2**
	0.2nm,0.6s,baz=287,slow=6.1,SNR=3.6						
WRA	**Warramunga Arr**	**55.86**	**187**	P	**P**	**22 24 39.2**	**-2.2**
	0.3nm,0.5s,

	0.4nm,0.3s,baz=278,slow=19,SNR=2.4							
URZ				Sn	Sn	22 22 06.1	+7.6	
	0.9nm,0.3s,baz=37,slow=20,SNR=5.1							
STKA	**Stephens Creek**	**34.71**	**256**	P	P	22 24 54.1	+1.8	
	1.5nm,0.7s,baz=104,slow=12,SNR=4.0							
ASAR	**Alice Springs**	**43.29**	**266**	P	P	22 26 04.0	-0.3	
	0.2nm,0.3s,baz=105,slow=9.0,SNR=4.6							
WRA	**Warramunga Arr**	**44.25**	**272**	P	P	22 26 10.6	-1.4	
	0.7nm,0.6s,baz=110,slow=7.8,SNR=9.2							
FINES	**FINESS Array B**	**144.89**	**340**	PKP	PKPbc	22 37 38.2	+0.2	
	0.9nm,0.8s,baz=76,slow=5.9,SNR=3.4							

THE ***17*** *22:20:18.4,41°.36N×21°.14E,h11*$^{km}_{\pm}$*15km,ML2.2/2,Error ellipse: s-maj=15.5km s-min=0.5km az=98.0*
CSEM ***17*** *22:20:19.1±0.3,41°.32N×21°.13E,h10km,ML2.1,Error ellipse: s-maj=8.1km s-min=5.1km az=104.0*
BEO ***17*** *22:20:19.7±0.5,41°.31N×21°.11E,h4km±5km,M1.6/7*
SKO 17 22:20:18.4,41°.32N×21°.10E,h13km,M1.2,ML2.1,4C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OHR	**Ohrid**	**0.31**	**228**	*i*Pg		Pg	22 20 24.8	0.0
OHR				*i* Sg		Sg	22 20 29.8	+0.8
OHR				*e*Lg		Lg	22 20 29.9	
	comp=N,216nm,0.3s							
OHR				*e*Lg		Lg	22 20 30.0	
	comp=E,185nm,0.3s							
OHR	**Ohrid**	**0.31**	**228**	*i*Pg		Pg	22 20 24.7	0.0
OHR				*i* Sg		Sg	22 20 29.8	+0.8
OHR				*e*Lg		Lg	22 20 29.9	
	comp=E,185nm,0.3s							
FNA	**Florina**	**0.57**	**159**	P		Pb	22 20 30.2	-0.1
FNA				S		Sb	22 20 39.0	+0.6
FNA	**Florina**	**0.57**	**159**	P		Pb	22 20 30.2	-0.1
FNA				S		Sb	22 20 39.0	+0.6
SKO	**Skopje**	**0.70**	**21**	P		Pg	22 20 31.6	-0.4
SKO				S		Sg	22 20 41.0	-0.2
SKO	**Skopje**	**0.70**	**21**	*i*Pg		Pg	22 20 32.1	+0.1
SKO				*i* Sg		Sb	22 20 41.6	-0.4
SKO				*e*Lg		Lg	22 20 43.6	
	comp=E,3.1nm,0.4s							
SKO				*e*Lg		Lg	22 20 43.6	
	comp=N,5.5nm,0.3s							
SKO	**Skopje**	**0.70**	**21**	*e*Pg		Pg	22 20 32.2	+0.2
SKO	**Skopje**	**0.70**	**21**	P		Pg	22 20 31.6	-0.4
SKO	**Skopje**	**0.70**	**21**	*i*Pg		Pg	22 20 32.0	0.0
SKO				S		Sg	22 20 41.0	-0.2
SKO				*e*Lg		Lg	22 20 43.5	
	comp=N,3.1nm,0.4s							
NEST	**Nestorio**	**0.91**	**182**	P		Pb	22 20 36.1	+0.1
NEST				S		Sn	22 20 50.1	+0.3
NEST	**Nestorio**	**0.91**	**182**	P		Pb	22 20 36.1	+0.1
NEST				S		Sn	22 20 50.1	+0.3
TIR	**Tirane**	**0.93**	**272**	*e*Pg		Pb	22 20 35.8	-0.5
TIR				*e*Sg		Sb	22 20 49.3	+0.7
TIR	**Tirane**	**0.93**	**272**	*e*Pg		Pb	22 20 35.8	-0.5
TIR	**Tirane**	**0.93**	**272**	*e*Sg		Sb	22 20 49.3	+0.7
VAY	**Valandovo**	**1.11**	**89**	*e*Sg		Sn	22 20 55.2	+0.5
VAY	**Valandovo**	**1.11**	**89**	*e*Sg		Sn	22 20 55.2	+0.5
BARS	**Barje**	**1.59**	**19**	*e*Pn		Pb	22 20 47.6	0.0
BARS				*e*Sg		Sg	22 21 09.2	-0.3
BARS	**Barje**	**1.59**	**19**	*e*Pn		Pb	22 20 47.6	0.0
BARS				*e*Sg		Sg	22 21 09.2	-0.3
PDG	**Podgorica**	**1.77**	**309**	*e*Pn		Pg	22 20 51.6	-0.7
PDG				*e*Sg		Sg	22 21 17.0	+1.7
PDG	**Podgorica**	**1.77**	**309**	*e*Pn		Pg	22 20 51.6	-0.7
PDG				*e*Sg		Sg	22 21 17.0	+1.7
SELS	**Selova**	**1.90**	**0**	*e*Pn		Pb	22 20 53.0	+0.1
ZAPS	**Zavoj**	**2.26**	**30**	*e*Pg		Pg	22 21 00.8	-0.9
ZAPS	**Zavoj**	**2.26**	**30**	*e*Pg		Pg	22 21 00.8	-0.9
BOVS	**Bovan**	**2.36**	**11**	*e*Pn		Pn	22 20 58.0	+1.3
BOVS	**Bovan**	**2.36**	**11**	*e*Pn		Pn	22 20 58.0	+1.3
IVAS	**Ivanjica**	**2.36**	**343**	*e*Pn		Pb	22 21 00.6	-0.2
IVAS				*e*Sg		Sg	22 21 33.7	-0.6
IVAS	**Ivanjica**	**2.36**	**343**	*e*Pn		Pb	22 21 00.6	-0.2
IVAS				*e*Sg		Sg	22 21 33.7	-0.6

ISCJB ***17*** *22:25:38.7±2.0,29°.62S±0°.09×176°.9W±0°.2,h31km, mb3.9/3,MS3.1/2,Error ellipse: s-maj=23.1km s-min=9.9km az=159.3*
IDC ***17*** *22:25:41.3±5.2,29°.50S×176°.97W,h36km±35km,mb3.7/3, mb1 4.0/5,mb1mx3.7/26,mbtmp4.0/5,ML3.7/2,MS3.2/2, Ms1 3.2/2,ms1mx2.9/17,Error ellipse: s-maj=39.3km s-min=31.1km az=63.0*
ISC 17 22:25:40.2±1.1,29°.5S±0°.1×176°.9W±0°.1,h31km,n18, σ0^{s}68/14,mb3.9/3,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.90**	**284**	Pn		**Pn**	**22 25 56.7**	**-0.1**
	472nm,0.3s,baz=61,slow=12,SNR=26							
RAO				Sn		**Sb**	**22 26 09.2**	**+0.1**
	1μm,0.3s,baz=90,slow=20,SNR=14							
URZ	**Urewera**	**10.06**	**208**	Pn		**Pn**	**22 28 03.1**	**+0.4**
	0.4nm,0.3s,baz=188,slow=19,SNR=2.8							
URZ				Sn		**Sn**	**22 29 53.8**	**-0.6**
	1.8nm,0.3s,baz=184,slow=19,SNR=3.8							
RPZ	**Rata Peaks**	**17.15**	**211**	P		**Pn**	**22 29 37.8**	**+0.2**
	0.4nm,0.3s,baz=49,slow=2.4,SNR=3.1							
PPT	**Papeete**	**27.66**	**71**	LR		LR	22 42 30.7	
	comp=Z,15nm,18.2s,baz=170,slow=36							
STKA	**Stephens Creek**	**35.61**	**255**	P		**P**	**22 32 36.3**	**+1.1**
	3.1nm,1.0s,baz=120,slow=17,SNR=2.7							
ASAR	**Alice Springs**	**44.11**	**266**	P		**P**	**22 33 45.2**	**-0.8**
	0.7nm,0.5s,baz=101,slow=6.4,SNR=13							
ASAR				LR		LR	22 51 49.7	
	comp=Z,73nm,18.2s,baz=81,slow=36							
WRA	**Warramunga Arr**	**45.01**	**271**	P		**P**	**22 33 52.5**	**-0.8**
	0.6nm,0.4s,baz=110,slow=8.0,SNR=16							
H10S3	**ASCENSION HYDR**	**38.14**	**153**	T		T	01 20 34.6	
	baz=203							
H10S2	**ASCENSION HYDR**	**38.14**	**153**	T		T	01 20 35.4	
	baz=203							
H10S1	**ASCENSION HYDR**	**38.16**	**153**	T		T	01 20 48.3	
	baz=203							
H10N3	**ASCENSION HYDR**	**39.22**	**153**	T		T	01 21 59.2	
	baz=205							
H10N1	**ASCENSION HYDR**	**39.22**	**153**	T		T	01 22 01.8	
	baz=205							
H10N2	**ASCENSION HYDR**	**39.24**	**153**	T		T	01 22 00.6	
	baz=205							
FINES	**FINESS Array B**	**144.59**	**341**	PKP		**PKPab**	**22 45 11.3**	**-0.2**
	1.5nm,0.7s,baz=56,slow=4.8,SNR=5.6							
KBZ	**Khabaz**	**145.36**	**305**	PKPbc		**PKPbc**	**22 45 13.8**	**-1.0**
	0.9nm,0.5s,baz=200,slow=5.2,SNR=2.4							
NB2	**NORSAR Subarra**	**147.97**	**353**	PKP		**PKPbc**	**22 45 22.0**	**+0.1**
	comp=Z,1.4nm,0.7s,baz=16,slow=4.4							
NOA	**NORSAR Array B**	**147.97**	**353**	PKPbc		**PKPbc**	**22 45 21.6**	**-0.3**
	comp=Z,1.6nm,1.0s,baz=12,slow=4.3,SNR=3.1							
AKASG	**Malin Array Be**	**151.12**	**325**	PKPbc		**PKPbc**	**22 45 30.1**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=54,slow=2.7,SNR=4.7							
AKASG				PKPab		**PKPab**	**22 45 38.6**	**+1.0**
	comp=Z,0.4nm,0.3s,baz=43,slow=3.4,SNR=5.3							

JMA 17 22:37:47.0±0.2,37°.97N×144°.05E,h25km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.17**	**301**	P		Pn	22 38 22.9	+1.4
OFUJ				*e*S		Sn	22 38 49.3	+1.6
JIO	**Ouri**	**2.18**	**284**	P		Pn	22 38 22.7	+1.0
JIO				*e*S		Sn	22 38 49.1	+1.2
MIYJ	**Miyakonagasawa**	**2.37**	**313**	P		Pn	22 38 25.0	+0.7
MIYJ				*e*S		Sn	22 38 53.9	+1.4
JMK	**Ichinoseki**	**2.43**	**295**	P		Pn	22 38 26.6	+1.5
JMK				*e*S		Sn	22 38 56.0	+2.0
JOM	**Ohasama**	**2.63**	**306**	P		Pn	22 38 29.1	+1.3
JOM				*e*S		Sn	22 39 00.6	+1.7
JOU	**Okura**	**2.70**	**279**	P		Pn	22 38 30.4	+1.6
JOU				*e*S		Sn	22 39 02.7	+2.0
JFT	**Otama**	**2.98**	**262**	*e*S		Sn	22 39 08.6	+1.0
JRG	**Rokugo**	**3.03**	**299**	P		Pn	22 38 36.0	+2.7
JRG				*e*S		Sn	22 39 11.7	+2.9
JYK	**Kaneyama**	**3.05**	**289**	P		Pn	22 38 35.3	+1.7
JYK				*e*S		Sn	22 39 11.7	+2.4
JANG	**Nango**	**3.10**	**321**	P		Pn	22 38 35.7	+1.3
JANG				*e*S		Sn	22 39 11.4	+0.7
JTM	**Tenmabayashi**	**3.64**	**322**	*e*S		Sn	22 39 23.6	-0.3
JRY	**Ryogami san**	**4.56**	**246**	P		Pn	22 38 54.7	+0.3
JRY				*e*S		Sn	22 39 45.4	-1.2
JCH	**Churui**	**4.67**	**354**	P		Pn	22 38 55.9	0.0

ISCJB ***17*** *22:39:21.3±0.5,39°.10N±0°.04×29°.09E±0°.04,h9km±5km, Error ellipse: s-maj=6.4km s-min=4.2km az=150.9*
CSEM ***17*** *22:39:21.4±0.1,39°.11N×29°.10E,h8km,MD2.8,Error ellipse: s-maj=2.4km s-min=2.0km az=135.0*
DDA ***17*** *22:39:21.5,39°.03N×29°.11E,h7km,Md2.6*
ISK ***17*** *22:39:21.1,39°.13N×29°.10E,h8km,MD2.8*
ISC 17 22:39:21.5±0.9,39°.10N±0°.03×29°.10E±0°.02,h13km±8km, n36,σ0^{s}50/46,Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.25**	**103**	*e*PG		**Pg**	**22 39 26.7**	**-0.2**
GEDZ	**Gediz**	**0.25**	**103**	*e*Pg		**Pg**	**22 39 26.7**	**-0.2**
DEMI	**Demirci**	**0.30**	**259**	*i* P		**Pg**	**22 39 28.1**	**+0.3**
DEMI				*i* S		**Sg**	**22 39 32.3**	**+0.3**
DEMI	**Demirci**	**0.30**	**259**	P		**Pg**	**22 39 28.1**	**+0.3**
DEMI				S		**Sg**	**22 39 32.3**	**+0.3**
GDZ	**Gediz**	**0.30**	**93**	*i* P		**Pg**	**22 39 27.6**	**-0.2**
GDZ				*i* S		**Sg**	**22 39 32.2**	**+0.1**
GDZ	**Gediz**	**0.30**	**93**	P		**Pg**	**22 39 27.6**	**-0.2**
GDZ				S		**Sg**	**22 39 32.2**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**39**	*e*PG		**Pg**	**22 39 30.0**	**-0.5**
TVSB				*e*SG		**Sg**	**22 39 35.7**	**-0.8**
TVSB	**Tavsanli**	**0.45**	**39**	*e*Pg		**Pg**	**22 39 30.0**	**-0.5**
TVSB				*e*Sg		**Sg**	**22 39 35.7**	**-0.8**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*PG		**Pb**	**22 39 35.2**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*Pg		**Pb**	**22 39 35.2**	**-0.1**
MANT	**Manisa**	**0.74**	**215**	*i* P		**Pg**	**22 39 35.1**	**-0.9**
MANT				*i* S		**Sg**	**22 39 44.8**	**-1.0**
MANT	**Manisa**	**0.74**	**215**	P		**Pg**	**22 39 35.1**	**-0.9**
MANT				S		**Sg**	**22 39 44.8**	**-1.0**
KHL	**Karahalli**	**0.85**	**157**	*e*PG		**Pb**	**22 39 38.5**	**+0.3**
KHL	**Karahalli**	**0.85**	**157**	*e*Pg		**Pb**	**22 39 38.5**	**+0.3**
BALB	**Balikesir**	**1.08**	**300**	*e*PG		**Pg**	**22 39 41.9**	**-0.5**
BALB	**Balikesir**	**1.08**	**300**	*e*Pg		**Pg**	**22 39 41.9**	**-0.5**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*PN		**Pn**	**22 39 44.8**	**+0.2**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*Pn		**Pn**	**22 39 44.8**	**+0.2**
SHUT	**Suhut-Afyon**	**1.26**	**115**	*e*PN		**Pg**	**22 39 45.6**	**-0.3**
SHUT	**Suhut-Afyon**	**1.26**	**115**	*e*Pn		**Pg**	**22 39 45.6**	**-0.3**
IZI	**Iznik**	**1.27**	**13**	*e*PN		**Pn**	**22 39 45.4**	**+0.4**
IZI	**Iznik**	**1.27**	**13**	*e*Pn		**Pn**	**22 39 45.4**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN		**Pn**	**22 39 45.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn		**Pn**	**22 39 45.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN		**Pn**	**22 39 45.6**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn		**Pn**	**22 39 45.6**	**+0.3**
BORA	**Eskisehir**	**1.31**	**53**	*i* P		**Pn**	**22 39 45.8**	**+0.2**
BORA				*i* S		**Sb**	**22 40 03.0**	**+0.3**
BORA	**Eskisehir**	**1.31**	**53**	P		**Pn**	**22 39 45.8**	**+0.2**
BORA				S		**Sb**	**22 40 03.0**	**+0.3**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN		**Pb**	**22 39 48.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn		**Pb**	**22 39 48.3**	**+0.1**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN		**Pb**	**22 39 48.6**	**-0.2**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn		**Pb**	**22 39 48.6**	**-0.2**
EDC	**Edincik**	**1.56**	**323**	*e*PN		**Pn**	**22 39 49.8**	**+0.8**
EDC	**Edincik**	**1.56**	**323**	*e*Pn		**Pn**	**22 39 49.8**	**+0.8**
GULT	**Gulveren**	**1.72**	**39**	*e*PN		**Pn**	**22 39 52.0**	**+0.7**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn		**Pn**	**22 39 52.0**	**+0.7**

ISK ***17*** *23:08:22.4,38°.69N×30°.85E,h11km,MD2.8*
CSEM ***17*** *23:08:22.9±0.1,38°.69N×30°.88E,h10km,MD2.7,Error ellipse: s-maj=2.8km s-min=2.5km az=22.0*
ISCJB ***17*** *23:08:23.0±0.5,38°.68N±0°.04×30°.87E±0°.04,h11km±4km, Error ellipse: s-maj=6.2km s-min=5.1km az=2.9*
DDA ***17*** *23:08:23.9,38°.78N×31°.00E,h7km,Md2.7*
ISC 17 23:08:22.9±0.8,38°.69N±0°.03×30°.88E±0°.03,h14km±5km, n26,σ0^{s}52/38,Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BOLV	**Bolvadin**	**0.07**	**60**	*i* P		**Pg**	**23 08 26.0**	**+0.1**
BOLV				*i* S		**Sg**	**23 08 27.9**	**0.0**
BOLV	**Bolvadin**	**0.07**	**60**	P		**Pg**	**23 08 26.0**	**+0.1**
BOLV				S		**Sg**	**23 08 27.9**	**0.0**
SHUT	**Suhut-Afyon**	**0.29**	**243**	*e*PG		**Pg**	**23 08 28.9**	**0.0**
SHUT				*e*SG		**Sg**	**23 08 32.4**	**-0.7**
SHUT	**Suhut-Afyon**	**0.29**	**243**	*e*Pg		**Pg**	**23 08 29.0**	**0.0**
SHUT				*e*Sg		**Sg**	**23 08 32.4**	**-0.7**
KIZT	**Kizilcal**	**0.81**	**76**	*e*PG		**Pb**	**23 08 38.8**	**-0.1**
KIZT	**Kizilcal**	**0.81**	**76**	*e*Pg		**Pb**	**23 08 38.8**	**-0.1**
ESKT	**Eskisehir**	**0.83**	**359**	*e*PG		**Pg**	**23 08 38.8**	**-0.3**
ESKT	**Eskisehir**	**0.83**	**359**	*i* P		**Pg**	**23 08 38.9**	**-0.3**
ESKT				*i* S		**Sg**	**23 08 50.0**	**-0.1**
ESKT	**Eskisehir**	**0.83**	**359**	*e*Pg		**Pg**	**23 08 38.8**	**-0.3**
SEYT	**Eskypehyr**	**0.83**	**359**	P		**Pg**	**23 08 38.9**	**-0.3**
SEYT				S		**Sg**	**23 08 50.0**	**-0.1**
SVRH	**Sivrihisar-ESK**	**0.91**	**33**	*e*PG		**Pg**	**23 08 40.5**	**-0.1**
SVRH	**Sivrihisar-ESK**	**0.91**	**33**	*e*Pg		**Pg**	**23 08 40.5**	**-0.1**
KDHN	**Kadinhani**	**0.99**	**99**	*i* P		**Pg**	**23 08 41.8**	**-0.2**
KDHN				*i* S		**Sg**	**23 08 54.4**	**-0.6**
KDHN	**Kadinhani**	**0.99**	**99**	P		**Pg**	**23 08 41.8**	**-0.2**
KDHN				S		**Sg**	**23 08 54.3**	**-0.6**
GDZ	**Gediz**	**1.16**	**291**	*i* P		**Pn**	**23 08 46.3**	**+1.4**
GDZ				*i* S		**Sb**	**23 08 59.0**	**-0.9**
GDZ	**Gediz**	**1.16**	**291**	P		**Pn**	**23 08 46.3**	**+1.4**
GDZ				S		**Sb**	**23 08 59.0**	**-0.9**
SUTC	**Sutluce-Ispart**	**1.21**	**175**	*e*PN		**Pb**	**23 08 45.8**	**+0.1**
SUTC	**Sutluce-Ispart**	**1.21**	**175**	*e*Pn		**Pb**	**23 08 45.8**	**+0.1**
BORA	**Eskisehir**	**1.24**	**345**	*i* P		**Pg**	**23 08 47.0**	**+0.2**
BORA				*i* S		**Sb**	**23 09 02.2**	**+0.2**
BORA	**Eskisehir**	**1.24**	**345**	P		**Pg**	**23 08 47.0**	**+0.2**
BORA				S		**Sb**	**23 09 02.2**	**+0.2**
TVSB	**Tavsanli**	**1.34**	**305**	*e*PN		**Pn**	**23 08 47.4**	**0.0**
TVSB	**Tavsanli**	**1.34**	**305**	*e*Pn		**Pn**	**23 08 47.4**	**0.0**
KONT	**Konya--Tatoy**	**1.38**	**122**	*e*PN		**Pn**	**23 08 48.5**	**+0.7**
KONT	**Konya--Tatoy**	**1.38**	**122**	*e*Pn		**Pn**	**23 08 48.5**	**+0.7**
GULT	**Gulveren**	**1.77**	**351**	*e*PN		**Pn**	**23 08 53.5**	**+0.3**
GULT	**Gulveren**	**1.77**	**351**	*e*Pn		**Pn**	**23 08 53.5**	**+0.3**

IDC ***17*** *23:10:34.5±1.5,29°.19S×176°.40W,h0km,mb3.9/3, mb1 4.1/5,mb1mx3.8/29,mbtmp4.0/5,ML3.8/2,MS3.3/3, Ms1 3.3/3,ms1mx2.9/28,Error ellipse: s-maj=42.1km s-min=26.7km az=141.0*
ISCJB ***17*** *23:10:36.7±0.6,29°.31S±0°.06×176°.67W±0°.08,h10km, mb4.5/17,MS3.3/3,Error ellipse: s-maj=10.9km s-min=8.4km az=25.5*
NEIC ***17*** *23:10:38.6±0.7,29°.28S×176°.78W,h10km,mb4.5/11, Error ellipse: s-maj=16.3km s-min=12.3km az=111.0*
ISC 17 23:10:36.3±0.8,29°.20S±0°.09×176°.49W±0°.09,h10km,n36, σ1^{s}22/22,mb4.2/16,MS3.2/3,2C,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.25**	**267**	Pn		**Pg**	**23 11 01.1**	**+0.7**
	629nm,0.3s,baz=189,slow=2.2,SNR=26							
RAO				Sn		**Sb**	**23 11 15.9**	**-0.2**
	1μm,0.3s,baz=261,slow=22,SNR=13							
RAO				LR		LR	23 11 25.0	
	comp=Z,305nm,21.0s,baz=104,slow=38							
URZ	**Urewera**	**10.49**	**209**	Pn		**Pn**	**23 13 05.4**	**-1.3**
	0.3nm,0.3s,baz=128,slow=17,SNR=4.8							
URZ				Sn		**Sn**	**23 15 04.8**	**+0.6**
	1.3nm,0.3s,baz=260,slow=19,SNR=5.6							
RPZ	**Rata Peaks**	**17.58**	**211**	P		**P**	**23 14 43.2**	**+0.8**
	0.7nm,0.3s,baz=311,slow=19,SNR=3.3							
FUNA	**Funafuti**	**20.96**	**348**	P		Pn	23 15 23.6	+1.5
	26nm,0.4s							
TBI	**Tubuai**	**24.89**	**83**	*e*LR		LR	23 22 14.0	
	88nm,24.5s							
PPT2	**Papeete2**	**27.20**	**71**	*e*LR		LR	23 23 11.2	
	62nm,22.8s							
PPT	**Papeete**	**27.21**	**71**	LR		LR	23 24 24.1	
	comp=Z,46nm,19.0s,baz=200,slow=31							
EIDS	**Eidsvold**	**29.02**	**270**	P		**P**	**23 16 36.0**	**-0.6**
	0.1nm,0.3s							
HNR	**Honiara**	**29.57**	**307**	*e*P		**P**	**23 16 42.4**	**+0.9**
	54nm,0.6s							
TAU	**Tasmania Unive**	**32.04**	**235**	*e*P		**P**	**23 17 00.5**	**-2.5**
	10.0nm,1.1s							
STKA	**Stephens Creek**	**36.04**	**255**	P		**P**	**23 17 39.3**	**+1.4**
	1.5nm,0.7s,baz=111,slow=10,SNR=2.3							
STKA				LR		LR	23 31 17.7	
	comp=Z,85nm,18.2s,baz=26,slow=34							
PMG	**Port Moresby**	**39.32**	**293**	*e*P		**P**	**23 18 05.9**	**+0.1**
	4.3nm,0.3s							
ASAR	**Alice Springs**	**44.51**	**265**	P		**P**	**23 18 48.1**	**-0.2**
	0.7nm,0.5s,baz=104,slow=7.1,SNR=8.2							
WRAB	**Tennant Creek**	**45.38**	**270**	*e*P		**P**	**23 18 54.5**	**-0.7**
	1.8nm,0.8s							
WRA	**Warramunga Arr**	**45.39**	**270**	P		**P**	**23 18 54.6**	**-0.7**
	1.0nm,0.5s,baz=109,slow=7.5,SNR=9.6							
SBA	**Scott Base**	**49.33**	**185**	*e*P		**P**	**23 19 27.5**	**+2.4**
	1.0nm,0.5s							
FITZ	**Fitzroy Crossi**	**53.69**	**268**	LR		LR	23 41 53.1	
	comp=Z,22nm,18.5s,baz=88,slow=35							
QSPA	**South Pole Qui**	**60.91**	**180**	*e*P		P	23 20 52.5	+3.3
	14nm,1.3s							
DAV	**Davao City (W)**	**66.34**	**293**	*e*P		**P**	**23 21 26.5**	**+0.9**
	69nm,0.4s							
MAJO	**Matsushiro**	**78.03**	**324**	*e*P		P	23 22 38.4	+3.4
	1.1nm,0.5s							
SYO	**Syowa Base**	**78.57**	**193**	*e*P		**P**	**23 22 37.4**	**-0.2**
SYO	**Syowa Base**	**78.57**	**193**	*e*pP		pP	23 22 40.8	-0.1
ENH	**Enshi**	**92.02**	**304**	*e*P		**P**	**23 23 45.4**	**-0.2**
	78nm,1.6s							
NEW	**Newport**	**93.64**	**35**	P		P	23 23 55.8	+3.2
	0.6nm,0.6s							
SDCO	**Great Sand Dun**	**94.02**	**49**	*e*P		P	23 23 58.6	+3.6
	0.3nm,0.5s							
BOZ	**Bozeman (W)**	**94.86**	**40**	*e*P		P	23 24 02.2	+3.6
	3.1nm,0.6s							
MKAR	**Makanchi Array**	**118.01**	**310**	PKP		**PKPdf**	**23 29 22.1**	**-1.1**
	0.5nm,0.8s,baz=66,slow=3.6,SNR=3.2							
H10S3	**ASCENSION HYDR**	**38.22**	**152**	T		T	02 05 50.2	
	baz=200							
H10S2	**ASCENSION HYDR**	**38.22**	**152**	T		T	02 05 53.1	
	baz=200							
H10S1	**ASCENSION HYDR**	**38.23**	**152**	T		T	02 05 52.0	
	baz=200							
H10N3	**ASCENSION HYDR**	**39.29**	**152**	T		T	02 06 57.5	
	baz=203,slow=75,SNR=5.5							
H10N1	**ASCENSION HYDR**	**39.29**	**152**	T		T	02 07 01.2	
	baz=203,slow=75,SNR=5.0							
H10N2	**ASCENSION HYDR**	**39.31**	**152**	T		T	02 06 57.5	
	baz=203,slow=75,SNR=6.6							
FINES	**FINESS Array B**	**144.45**	**342**	PKP		**PKPdf**	**23 30 10.7**	**-1.5**
	0.5nm,0.5s,baz=73,slow=4.7,SNR=3.5							
AKASG	**Malin Array Be**	**151.11**	**325**	PKPbc		**PKPbc**	**23 30 30.0**	**+0.7**
	1.5nm,0.4s,baz=47,slow=2.8,SNR=12							
BRTR	**Keskin Array B**	**153.15**	**301**	PKPbc		**PKPbc**	**23 30 35.5**	**+1.0**
	0.8nm,0.8s,baz=106,slow=3.7,SNR=4.9							
BRTR				PKPab		**PKPab**	**23 30 44.4**	**-1.7**
	0.7nm,0.7s,baz=140,slow=4.5,SNR=3.9							

IDC ***17*** *23:24:58.0±1.3,35°.58N×141°.14E,h0km,mb3.5/4, mb1 3.6/6,mb1mx3.4/40,mbtmp3.5/6,ML3.3/2,Error ellipse: s-maj=28.9km s-min=24.8km az=57.0*
NIED ***17*** *23:25:00,35°.80N×141°.00E,h11km,Mw3.5 Best double couple: M0 2.21000×10^{14} NP1:φ$_s$345.00000°,δ50.00000°, λ-124.00000°. NP2:φ$_s$212.00000°,δ50.00000°, λ-56.00000°.*
JMA ***17*** *23:25:01.7±0.2,35°.81N×140°.97E,h13km±1km,M3.5*
ISC 17 23:25:00.3±1.6,35°.82N±0°.05×141°.08E±0°.08,h11km±9km, n17,σ1^{s}12/16,mb3.5/4,1C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.21**	**236**	P		**Pg**	**23 25 05.1**	**+0.3**
CHOJ				S		**Sg**	**23 25 07.7**	**-0.1**
JCN	**N

CTKS	**Kestenelik-??a**	**1.54**	**314**	*e*Pn	**Pn**	**23 54 06.4**	**-0.3**
BOLV	**Bolvadin**	**1.64**	**152**	*i* P	**Pb**	**23 54 09.9**	**+0.2**
BOLV				*i* S	**Sn**	**23 54 29.5**	**+0.3**
BOLV	**Bolvadin**	**1.64**	**152**	P	**Pb**	**23 54 09.9**	**+0.2**
SHUT	**Suhut-Afyon**	**1.67**	**164**	*e*Pn	**Pn**	**23 54 08.8**	**+0.1**
SHUT	**Suhut-Afyon**	**1.67**	**164**	*e*Pn	**Pn**	**23 54 08.8**	**+0.1**

NNC ***18*** *00:01:35.7±8.8, 39.°40N×75.°93E, h0km, mb3.6, mpv3.3, Error ellipse: s-maj=71.3km s-min=65.6km az=90.0*

KRNET ***18*** *00:01:43.7±0.1, 39.°87N×75.°99E, mb2.7*

ISC 18 00:01:46.8±3.1, **40.°12N**±0.°09×**75.°88E**±0.°06, **h6**km±20km, **n10**, σ1§**74**/20, **13C-5D, Kyrgyzstan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KZA	**Kyzart**	**2.01**	**346**	⇓*i*P	**Pb**	**00 02 23.7**	**-0.3**
KZA	baz=346			⇓*i*S	**Sg**	**00 02 53.8**	**+2.3**
KDJ	**Kajisay**	**2.23**	**26**	⇑*i*P	**Pb**	**00 02 26.5**	**-1.2**
KDJ	baz=21			⇑*e*S	**Sg**	**00 02 57.9**	**-0.7**
BOOM	**Boomskoye usch**	**2.37**	**1**	⇑*e*P	**Pb**	**00 02 29.8**	**-0.1**
BOOM	baz=359			⇑*i*S	**Sg**	**00 03 05.0**	**+2.2**
KBK	**Karagaybulak**	**2.63**	**345**	⇑*i*P	**Pn**	**00 02 30.4**	**+0.5**
KBK	baz=345			⇑*i*S	**Sb**	**00 03 06.2**	**-0.8**
AAK	**Ala-Archa**	**2.72**	**338**	Pn	**Pn**	**00 02 30.6**	**-0.5**
AAK	12nm,0.7s			Sn	**Sb**	**00 03 11.0**	**+1.3**
TKM2	**Tokmak 2**	**2.81**	**356**	⇓Pn	**Pn**	**00 02 32.9**	**+0.5**
TKM2	4.8nm,0.3s			⇑Sn	**Sg**	**00 03 16.2**	**-0.7**
ANVS	**Anan'yevo**	**2.98**	**26**	⇑*e*P	**Pn**	**00 02 36.2**	**+1.5**
ANVS	baz=23			⇑*e*S	**Sb**	**00 03 15.3**	**-1.8**
DRK	**Karamyk**	**3.21**	**260**	⇑*e*P	**Pn**	**00 02 37.4**	**-0.6**
DRK	baz=264			⇑*i*S	**Sn**	**00 03 17.7**	**+1.0**
MNAS	**Manas**	**3.47**	**314**	⇓Pn	**Pn**	**00 02 37.1**	**-4.3**
MNAS	3.0nm,1.2s			⇓Sn	**Sb**	**00 03 29.7**	**-1.5**
BTK	**Batken**	**3.88**	**271**	⇑*e*P	**Pn**	**00 02 47.8**	**+0.7**
BTK	baz=274			⇑*e*S	**Sn**	**00 03 35.1**	**+2.1**

NIED ***18*** *00:06:00, 37.°70N×144.°20E, h5km, Mw3.8 Best double couple: M₀5.22000×10¹⁴ NP1:φs1.00000°, δ21.00000°, λ-124.00000°. NP2:φs217.00000°, δ73.00000°, λ-78.00000°.*

IDC ***18*** *00:06:11.8±1.1, 37.°55N×144.°48E, h0km, mb3.7/4, mb1 3.9/6, mb1mx3.6/37, mbtmp3.7/6, ML3.6/1, MS3.3/2, Ms1 3.3/2, ms1mx2.6/51, Error ellipse: s-maj=33.9km s-min=22.5km az=97.0*

ISCJB ***18*** *00:06:14.4±0.8, 37.°74N±0.°05×144.°36E±0.°06, h33km, mb3.9/4, MS3.4/1, Error ellipse: s-maj=7.2km s-min=6.0km az=148.6*

JMA ***18*** *00:06:16.4±0.2, 37.°71N×144.°17E, h30km, M4.1*

ISC 18 00:06:16.4±1.1, **37.°76N**±0.°07×**144.°45E**±0.°07, **h35**km, **n19**, σ1§**80**/23, **mb3.8**/4, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.55**	**287**	*e*S	**Sn**	**00 07 22.6**	**-2.3**
JOM	**Ohasama**	**3.01**	**306**	*e*S	**Sn**	**00 07 35.9**	**-0.5**
JFT	**Otama**	**3.28**	**267**	S	**Sn**	**00 07 40.2**	**-2.8**
JRG	**Rokugo**	**3.41**	**300**	*e*S	**Sn**	**00 07 45.5**	**-0.8**
JYK	**Kaneyama**	**3.42**	**291**	*e*S	**Sn**	**00 07 45.8**	**-0.8**
JTM	**Tenmabayashi**	**4.01**	**320**	P	**Pn**	**00 07 16.6**	**+1.3**
JTM				S	**Sn**	**00 07 59.2**	**-1.8**
JOT	**Ohata**	**4.48**	**325**	P	**Pn**	**00 07 23.0**	**+1.3**
JOT				*e*S	**Sn**	**00 08 10.7**	**-1.8**
JCH	**Churui**	**4.92**	**351**	P	**Pn**	**00 07 28.5**	**+0.7**
JCH				*e*S	**Sn**	**00 08 21.3**	**-2.3**
MJAR	**Matsushiro Arr**	**5.13**	**258**	Pn	**Pn**	**00 07 31.3**	**+0.5**
MJAR	2.4nm,0.3s,baz=89,slow=15,SNR=10			Sn	**Sn**	**00 08 26.9**	**-1.9**
MAT	**Matsushiro**	**5.13**	**258**	P	**Pn**	**00 07 30.4**	**-0.4**
MAT	1.6nm,0.3s,baz=105,slow=23,SNR=6.3			S	**Sn**	**00 08 27.0**	**-1.8**
NEM2	**Nemuro 2**	**5.69**	**10**	P	**Pn**	**00 07 37.7**	**-0.6**
NEM2				*e*S	**Sn**	**00 08 38.2**	**-4.2**
JTKR	**Abashiri--Toko**	**6.22**	**356**	P	**Pn**	**00 07 46.3**	**+0.6**
ASAJ	**Asahikawa**	**6.51**	**348**	Pn	**Pn**	**00 07 49.7**	**+0.1**
KSRS	baz=179,slow=9.5 **Korea Array**	**13.12**	**274**	LR	LR	00 14 06.4	
JAY	comp=Z,76nm,18.5s,baz=152,slow=36 **Jayapura**	**40.22**	**186**	LR	LR	00 28 19.9	
MKAR	comp=Z,61nm,20.3s,baz=340,slow=33 **Makanchi Array**	**45.79**	**302**	P	**P**	**00 14 35.6**	**+1.1**
ILAR	0.4nm,0.7s,baz=92,slow=9.4,SNR=3.4 **Eielson Array**	**47.59**	**33**	P	**P**	**00 14 50.7**	**+2.4**
WRA	0.8nm,0.9s,baz=254,slow=5.9,SNR=8.3 **Warramunga Arr**	**58.17**	**191**	P	**P**	**00 16 05.7**	**-1.1**
ASAR	2.7nm,0.7s,baz=13,slow=7.3,SNR=15 **Alice Springs**	**61.90**	**191**	P	**P**	**00 16 31.7**	**-0.6**
	0.5nm,0.6s,baz=13,slow=7.5,SNR=5.8						

IDC 18 00:28:30.9±10.0, **17.°42S×178.°63W, h557**km±113km, **mb3.3/6, mb1 3.5/6, mb1mx3.1/37, mbtmp4.2/6, Error ellipse: s-maj=57.4km s-min=41.6km az=144.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**38.68**	**241**	P	P	00 35 07.0	-0.5
WRA	1.9nm,0.5s,baz=90,slow=7.8,SNR=8.1 **Warramunga Arr**	**44.51**	**259**	P	P	00 35 53.4	-0.3
ASAR	1.7nm,0.3s,baz=93,slow=7.4,SNR=45 **Alice Springs**	**44.72**	**254**	P	P	00 35 55.1	-0.1
FITZ	7.6nm,0.5s,baz=87,slow=8.6,SNR=68 **Fitzroy Crossi**	**52.90**	**260**	P	P	00 36 55.9	+0.2
MAW	0.5nm,0.4s,baz=78,slow=8.4,SNR=4.6 **Mawson**	**84.25**	**200**	P	P	00 40 03.9	+0.1
TXAR	0.9nm,0.5s,baz=124,slow=9.4,SNR=6.8 **Lajitas Array**	**85.92**	**58**	P	P	00 40 12.7	0.0
BRTR	0.4nm,0.6s,baz=215,slow=6.1,SNR=6.6 **Keskin Array B**	**144.28**	**315**	PKP	PKPbc	00 47 03.0	-1.0
	0.4nm,0.7s,baz=29,slow=3.3,SNR=3.2						

NEIC ***18*** *00:42:57.9±0.2, 9.°58N×122.°33E, h10km, mb4.9/31, Error ellipse: s-maj=6.6km s-min=3.9km az=77.0*

NEIC Felt [III PIVS] at Sipalay; [II PIVS] at Bais, Bayawan and Himamaylan; [I PIVS] at Dumaguete and Sibulan. Also felt [II PIVS] at Iloilo, Panay.

BJI ***18*** *00:42:58.2, 9.°30N×122.°50E, h41km, mb4.9/56, mB5.1/41, Ms4.7/31, Ms7 4.4/30*

MAN ***18*** *00:43:00, 9.°51N×122.°12E, h74km, mb4.8, ML3.7, MS3.8*

MAN INTENSITY III - SIPALAY CITY NEGROS OCCIDENTAL; INTENSITY II - ILOILO CITY; BAIS CITY NEGROS ORIENTAL; BAYAWAN NEGROS ORIENTAL; HIMAMAYLAN CITY NEGROS OCCIDENTAL; INTENSITY I - DUMAGUETE CITY; SIBULAN NEGROS ORIENTAL.

MOS ***18*** *00:43:00.9±0.9, 9.°55N×122.°34E, h46km, mb5.1/40, Error ellipse: s-maj=11.6km s-min=5.2km az=117.7*

IDC ***18*** *00:43:00.8±0.5, 9.°54N×122.°29E, h29km±3km, mb4.5/29, mb1 4.6/29, mb1mx4.4/49, mbtmp4.6/29, MS3.7/17, Ms1 3.7/17, ms1mx3.5/37, Error ellipse: s-maj=17.2km s-min=9.2km az=71.0*

ISCJB ***18*** *00:43:01.6±0.5, 9.°54N±0.°03×122.°26E±0.°03, h50km±4km, mb4.8/97, MS4.0/23, Error ellipse: s-maj=5.3km s-min=4.1km az=155.4*

DJA ***18*** *00:43:16.2±1.3, 10.°N±7.°×12.°2E±.°, h196km±13km, mB5.0/19, mb4.5/19, mB5.8/6, Mw(mB)5.3/6*

ISC 18 00:43:01.6±0.4, **9.°64N**±0.°03×**122.°29E**±0.°03, **h32**km±2km, **h31**km:**pP-P, n230**, σ1§**74**/266, **mb4.9**/97, **MS4.0**/23, **22C-33D, Negros**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.98**	**108**	⇓*i*P	Pn	00 43 13.3	-5.9
SNPH				*i* S	**Sn**	**00 43 29.4**	**-2.7**
JAP	**San Jose, Anti**	**1.15**	**343**	⇓*i*P	**Pn**	**00 43 21.2**	**-0.4**
TBP	**Tagbilaran**	**1.55**	**88**	*i* P	**Pb**	**00 43 30.5**	**+0.7**
TBP				*i* S	**Sb**	**00 43 51.6**	**+2.5**
LLP	**Lapu-Lapu**	**1.78**	**68**	*e*P	**Pb**	**00 43 32.1**	**-1.6**
LLP				*e*S	**Sb**	**00 43 58.2**	**+2.5**
RCP	**Roxas**	**1.96**	**13**	⇑*e*P	**Pb**	**00 43 35.1**	**-1.5**
KALP	**Kalibo**	**2.02**	**1**	⇑*e*P	**Pn**	**00 43 30.9**	**-2.7**
CGP	**Cagayan de Oro**	**2.65**	**116**	⇑*e*P	**Pn**	**00 43 42.8**	**+0.6**
CGP				*i* S	**Sn**	**00 44 15.9**	**+2.6**
MMPH	**Masbate**	**3.00**	**26**	*i* P	**Pb**	**00 43 50.8**	**-3.7**
MMPH				*i* S	**Sb**	**00 44 29.9**	**-0.7**
PLP	**Palo**	**3.05**	**60**	⇓*e*P	**Pn**	**00 43 49.1**	**+1.4**
PLP				*i* S	**Sb**	**00 44 27.8**	**-4.3**
CTBH	**Cotabato--PC H**	**3.09**	**141**	⇓*i*P	**Pn**	**00 43 48.2**	**0.0**
PPR	**Puerto Princes**	**3.51**	**272**	⇓*e*P	**Pn**	**00 43 52.7**	**-1.3**
PPR				*e*S	**Sn**	**00 44 30.7**	**-3.8**
PGP	**Puerto Galera**	**4.05**	**341**	⇓*e*P	**Pb**	**00 44 11.0**	**-1.4**
DAV	**Davao City (W)**	**4.14**	**128**	LR	LR	00 45 35.7	
GQP	comp=Z,562nm,19.8s,baz=326,slow=38 **Guinayangan**	**4.24**	**2**	⇓*e*P	**Pn**	**00 44 05.5**	**+1.4**
GQP				*e*S	**Sb**	**00 45 10.9**	**+4.6**
LQP	**Lukban**	**4.50**	**351**	⇑*e*P	**Pn**	**00 44 11.9**	**+4.0**
KKM	**Kota Kinabalu**	**7.00**	**240**	*e*Pn	**Pn**	**00 44 39.7**	**-2.4**
KKM	58nm,0.6s			*e*Sn	**Sn**	**00 45 58.4**	**-2.3**
LUWI	**Luwuk**	**10.62**	**177**	P	**Pn**	**00 45 35.3**	**+3.6**
LUWI	**Luwuk**	**10.62**	**177**	*e*Pn	**Pn**	**00 45 33.9**	**+2.1**
SANI	**Sanana**	**12.19**	**162**	P	**Pn**	00 46 00.0	-5.3
YULB	**Yu-li**	**13.71**	**356**	*e*Pn	**Pn**	**00 46 12.3**	**-1.6**
SSLB	**Suanglung**	**14.12**	**355**	*e*Pn	**Pn**	**00 46 18.3**	**-1.3**
STKI	**Sintang**	**14.36**	**229**	P	**P**	**00 46 33.0**	**+3.5**
KAPI	**Kappang**	**14.78**	**190**	LR	LR	00 52 00.6	
KAPI	comp=Z,191nm,20.1s,baz=19,slow=37 **Kappang**	**14.78**	**190**	*e*Pn	**Pn**	**00 46 28.1**	**-0.4**
YHNB	**Yeheng**	**14.97**	**357**	*e*Pn	**Pn**	**00 46 32.2**	**+1.0**
QIZ	107nm,1.4s **Qiongzhong**	**15.24**	**309**	P	**Pn**	**00 46 36.1**	**+1.5**
QIZ				S	**Sn**	**00 49 24.4**	**+1.9**
QIZ	comp=N,760nm,12.5s			LR	LR		
QIZ	comp=E,660nm,15.6s			LR	LR		
QIZ	comp=Z,1μm,13.9s			LR	LR		
FAKI	**Fak Fak**	**15.94**	**141**	P	**P**	**00 46 49.4**	**+2.3**
FAKI	45nm,1.2s **Fak Fak**	**15.94**	**141**	*e*Pn	**P**	**00 46 46.4**	**-0.7**
PLAI	53nm,1.1s **Plampang**	**18.89**	**194**	P	**Pn**	**00 47 24.0**	**+3.6**
TWSI	62nm,0.8s **Taliwang, Sumb**	**19.04**	**197**	P	**Pn**	**00 47 26.3**	**+4.2**
SOEI	**Soe**	**19.37**	**174**	P	**Pn**	**00 47 30.4**	**+4.1**
SOEI	66nm,0.9s **Soe**	**19.37**	**174**	*e*P	**P**	**00 47 24.3**	**-0.7**
BATI	76nm,1.0s **Baumata**	**19.77**	**176**	P	**Pn**	**00 47 30.0**	**-0.9**
NGJI	**Ngawi**	**20.05**	**213**	P	Pn	00 47 37.4	+3.2
IPM	**Ipoh**	**21.71**	**258**	*e*P	**P**	**00 47 50.7**	**+0.4**
KULM	23nm,0.6s **Kulim**	**21.88**	**260**	*e*P	**P**	**00 47 52.0**	**-0.1**
JAY	34nm,1.0s **Jayapura**	**21.96**	**122**	P	**P**	**00 47 57.4**	**+4.3**
WHN	18nm,1.1s **Wuhan**	**22.07**	**342**	P	**P**	**00 47 54.8**	**+0.8**
GYA	**Guiyang**	**22.33**	**321**	⇓*i*P	**P**	**00 47 59.1**	**+2.1**
GYA				pP	sP	00 48 09.8	+0.3
GYA				PP	**PnPn**	**00 48 27.3**	**+7.0**
GYA				PcP	**PcP**	**00 51 54.0**	**+2.0**
GYA				S	**S**	**00 51 58.8**	**-2.1**
GYA				sS	sS	00 52 16.3	+1.4
GYA				SS	**SnSn**	**00 52 40.4**	**+11**
GYA				ScP	**ScP**	**00 55 27.5**	**+0.2**
GYA	comp=Z,20nm,0.8s			pmax	pmax		
GYA	comp=Z,120nm,4.8s			pmax	pmax		
GYA	comp=N,490nm,16.9s			LR	LR		
GYA	comp=E,460nm,17.2s			LR	LR		
GYA	comp=Z,500nm,17.0s			LR	LR		
BKNI	**Bangkinang**	**23.08**	**248**	P	**P**	**00 48 06.2**	**+1.3**
KSI	83nm,0.8s,9μm **Kapahiang**	**23.65**	**237**	P	P	00 48 22.2	+12
MTN	**Manton Dam**	**24.00**	**158**	*e*P	**P**	**00 48 12.6**	**-1.1**
KMI	33nm,1.0s **Kunming**	**24.14**	**312**	P	**P**	**00 48 16.3**	**+1.1**
KMI				pP	sP	00 48 27.3	-0.9
KMI				sP	pP	00 48 32.6	+8.3
KMI				S	**S**	**00 52 33.3**	**+1.9**
KMI	comp=Z,16nm,0.8s			pmax	pmax		
KMI	comp=Z,170nm,3.8s			pmax	pmax		
KMI	comp=N,440nm,15.5s			LR	LR		
KMI	comp=E,670nm,15.5s			LR	LR		
KMI	comp=Z,730nm,14.9s			LR	LR		
PSI	**Prapat**	**24.19**	**255**	P	**P**	**00 48 14.8**	**-0.8**
PSI	24nm,0.9s,baz=72,slow=6.3,SNR=18 **Prapat**	**24.19**	**255**	*e*P	**P**	**00 48 15.3**	**-0.4**
CM01	104nm,1.5s **Chiang Mai Arr**	**24.23**	**294**	*e*P	**P**	**00 48 15.2**	**-0.7**
MNSI	**Mandailing Nat**	**24.24**	**250**	P	**P**	**00 48 17.3**	**+1.3**
CM31	**Chiang Mai Ar**	**24.26**	**294**	*e*P	**P**	**00 48 16.1**	**0.0**
CMAR	**Chiang Mai Arr**	**24.26**	**294**	P	**P**	**00 48 15.9**	**-0.2**
CMAR	8.1nm,0.9s,baz=127,slow=8.4,SNR=38			LR	LR	00 57 29.9	
CMAR	comp=Z,111nm,18.9s,baz=110,slow=36 **Chiang Mai Arr**	**24.26**	**294**	P	**P**	**00 48 16.0**	**-0.2**
CHTO	**Chiang Mai**	**24.37**	**295**	*e*P	**P**	**00 48 16.9**	**-0.2**
CHTO	comp=Z,56nm,1.8s			pmax	pmax		
CHTO	**Chiang Mai**	**24.37**	**295**	*e*P	**P**	**00 48 16.9**	**-0.2**
KCSI	comp=Z,56nm,1.8s **Kotacane, Aceh**	**25.09**	**258**	P	**P**	**00 48 24.1**	**+0.4**
GSI	comp=Z,24nm,0.7s,comp=Z,4μm **Gunungsitoli**	**25.94**	**253**	P	**P**	**00 48 30.0**	**-1.4**
GSI	comp=Z,90nm,0.8s **Gunungsitoli**	**25.94**	**253**	*e*P	**P**	**00 48 29.5**	**-1.9**
XAN	comp=Z,58nm,0.7s **Xi'an**	**27.21**	**335**	P	P	00 48 51.1	+8.4
XAN	comp=Z,5.0nm,0.8s			pmax	pmax		
XAN	comp=Z,12nm,7.8s			pmax	pmax		
CD2	**Chengdu**	**27.30**	**323**	*e*P	**P**	**00 48 44.0**	**+0.4**
CD2				pP	sP	00 48 55.3	-1.3
CD2				sP	pP	00 49 00.5	+7.8
CD2				S	**S**	**00 53 22.3**	**+1.1**
CD2				sS	sS	00 53 41.8	+5.4
CD2	comp=Z,20nm,0.5s			pmax	pmax		
CD2	comp=Z,180nm,5.2s			pmax	pmax		
FITZ	**Fitzroy Crossi**	**27.76**	**173**	P	**P**	**00 48 46.2**	**-1.5**
FITZ	comp=Z,6.3nm,0.8s,baz=345,slow=3.9,SNR=9.5 **Fitzroy Crossi**	**27.76**	**173**	*e*P	**P**	**00 48 46.4**	**-1.4**
KSAR	comp=Z,7.4nm,0.9s **Wonju Array Be**	**28.14**	**9**	P	**P**	**00 48 51.9**	**+1.0**
KSAR	**Wonju Array Be**	**28.14**	**9**	P	**P**	**00 48 51.9**	**+1.0**
KSRS	**Korea Array**	**28.15**	**10**	P	**P**	**00 48 51.9**	**+0.9**
KSRS	comp=Z,3.6nm,0.7s,baz=186,slow=10,SNR=13			LR	LR	01 01 18.3	
MAJO	comp=Z,153nm,18.8s,baz=185,slow=39 **Matsushiro**	**30.43**	**26**	⇓*e*P	**P**	**00 49 13.2**	**+1.9**
MAJO	comp=Z,17nm,1.0s			pmax	pmax		
MBWA	**Marble Bar**	**30.71**	**185**	*e*P	**P**	**00 49 12.8**	**-1.1**
BJI	comp=Z,12nm,0.9s **Beijing**	**30.76**	**351**	P	**P**	**00 49 14.3**	**+0.2**
BJI	comp=Z,11nm,1.2s			pmax	pmax		
PMG	**Port Moresby**	**31.16**	**127**	⇓*e*P	**P**	**00 49 17.8**	**-0.1**
LZH	**Lanzhou**	**31.21**	**330**	*e*P	**P**	**00 49 19.5**	**+1.1**
LZH				pP	sP	00 49 32.9	+1.4
LZH				sP	pP	00 49 39.1	+12
LZH	comp=Z,28nm,1.0s			pmax	pmax		
LZH	comp=Z,250nm,5.0s			pmax	pmax		
LZH	comp=Z,610nm,13.6s			LR	LR		
LZH	comp=Z,450nm,13.7s			LR	LR		
LZH	comp=Z,670nm,16.0s			LR	LR		
WRAB	**Tennant Creek**	**31.70**	**158**	⇓*e*P	**P**	**00 49 20.4**	**-2.2**
WRAB	comp=Z,17nm,0.6s			pmax	pmax		
WRAB	**Tennant Creek**	**31.70**	**158**	*e*P	**P**	**00 49 20.5**	**-2.2**
WRA	comp=Z,15nm,0.8s **Warramunga Arr**	**31.70**	**158**	P	**P**	**00 49 20.6**	**-2.0**
WRA	comp=Z,5.9nm,0.7s,baz=337,slow=9.9,SNR=51			pP	**pP**	**00 49 29.0**	**-2.9**
WRA	comp=Z,11nm,0.7s,baz=340,slow=9.3,SNR=16			PcP	**PcP**	**00 52 12.8**	**-1.3**
WRA	comp=Z,1.3nm,0.7s,baz=332,slow=2.8,SNR=5.3			pPcP		00 52 21.9	
WRA	comp=Z,3.1nm,0.6s,baz=337,slow=3.1,SNR=6.8			ScP	**ScP**	**00 55 54.2**	**-1.1**
WB2	comp=Z,3.3nm,1.2s,baz=339,slow=4.0,SNR=5.3 **Warramunga Arr**	**31.71**	**158**	*e*P	**P**	**00 49 20.4**	**-2.3**
HHC	comp=Z,17nm,0.7s **Hu-ho-hao-te**	**32.50**	**345**	*e*P	**P**	**00 49 31.3**	**+1.7**
HHC	comp=Z,14nm,1.3s			pmax	pmax		
HHC	comp=Z,68nm,4.1s			pmax	pmax		
MSHR	**Mys Shultsa**	**33.72**	**12**	*de*P	**P**	**00 49 41.5**	**+1.5**
CN2	**Changchun**	**34.14**	**4**	*e*P	**P**	**00 49 42.8**	**-0.9**
CN2	comp=Z,10.0nm,0.6s			pmax	pmax		
VLA	**Vladivostok**	**34.39**	**12**	*de*P	**P**	**00 49 48.6**	**+2.8**
VLA	comp=Z,20nm,0.5s			pmax	pmax		
AS31	**Alice Springs**	**35.00**	**161**	*e*P	**P**	**00 49 50.4**	**-1.0**
ASAR	comp=Z,7.3nm,0.6s **Alice Springs**	**35.00**	**161**	P	**P**	**00 49 50.1**	**-1.3**
ASAR	comp=Z,14nm,0.6s,baz=340,slow=7.2,SNR=172			pP	**pP**	**00 49 58.6**	**-2.0**
ASAR	comp=Z,17nm,0.6s,baz=340,slow=7.2,SNR=18			PcP	**PcP**	**00 52 22.4**	**-0.9**
ASAR	comp=Z,0.8nm,0.4s,baz=345,slow=2.5,SNR=5.2			pPcP		00 52 31.1	
ASAR	comp=Z,2.7nm,0.6s,baz=343,slow=2.9,SNR=6.3			ScP	**ScP**	**00 56 05.7**	**-1.0**
ASAR	comp=Z,1.2nm,0.9s,baz=1.9,slow=5.6,SNR=6.0			LR	LR	01 06 11.8	
AS01	comp=Z,55nm,19.3s,baz=348,slow=40 **Alice Springs**	**35.01**	**161**	*e*P	**P**	**00 49 50.0**	**-1.5**
AS01				ePcP	**PcP**	**00 52 21.6**	**-1.8**
MDJ	**Mudanjiang**	**35.41**	**9**	P	**P**	**00 49 55.8**	**+1.1**
MDJ	comp=Z,23nm,0.9s			pmax	pmax		
MDJ	comp=Z,180nm,7.1s			pmax	pmax		
MDJ	**Mudanjiang**	**35.41**	**9**	*e*P	**P**	**00 49 55.8**	**+1.1**
USRK	comp=Z,10nm,0.7s **Ussuriysk Ar.**	**35.44**	**12**	P	**P**	**00 49 55.7**	**+0.8**
GTA	comp=Z,13nm,0.8s,baz=204,slow=7.9,SNR=26 **Gaotai**	**35.80**	**330**	*e*P	**P**	**00 49 59.3**	**+1.1**
GTA				pP	sP	00 50 11.4	0.0
GTA				sP	pP	00 50 16.4	+8.9
GTA				S	**S**	**00 55 32.6**	**-1.1**
GTA				sS	sS	00 55 53.3	+4.2
GTA				SS	**SnSn**	**00 57 57.5**	**-0.2**
GTA	comp=Z,13nm,0.9s			pmax	pmax		
GTA	comp=Z,180nm,6.4s			pmax	pmax		
GTA	comp=Z,350nm,15.0s			LR	LR		
GTA	comp=Z,350nm,16.6s			LR	LR		
GTA	comp=Z,570nm,16.6s			LR	LR		
ASAJ	**Asahikawa**	**38.60**	**24**	*e*P	**P**	**00 50 22.6**	**+0.8**
GUN	comp=Z,69nm,1.8s **Gumba**	**38.76**	**303**	*e*P	**P**	**00 50 23.5**	**-0.3**
PKIN	comp=Z,74nm,0.8s **Phulchoki**	**39.05**	**302**	*e*P	**P**	**00 50 26.4**	**+0.3**
KKN	comp=Z,28nm,0.7s **Kakani**	**39.22**	**302**	*e*P	**P**	**00 50 27.2**	**-0.3**
HIA	**Hailar**	**39.56**	**357**	⇓*e*P	**P**	**00 50 30.2**	**+0.5**
HIA	comp=Z,4.0nm,0.8s			pmax	pmax		
GKN	**Gorkha**	**39.82**	**302**	*e*P	**P**	**00 50 31.9**	**-0.6**
KLR	comp=Z,30nm,0.9s **Kul'dur**	**40.25**	**10**	*d*P	**P**	**00 50 35.8**	**+0.3**
KLR	comp=Z,2.6nm,0.5s,baz=208,slow=3.1,SNR=15 **Kul'dur**	**40.25**	**10**	*d*P	**P**	**00 50 36.0**	**+0.6**
SONM	**Songino Array**	**40.37**	**343**	P	**P**	**00 50 36.9**	**+0.3**
SONM	comp=Z,8.5nm,0.8s,baz=166,slow=9.0,SNR=38			pScP		00 56 34.8	
SONM	comp=Z,0.8nm,0.7s,baz=159,slow=5.7,SNR=4.8			LR	LR	01 09 29.0	
SONA1	comp=Z,190nm,19.1s,baz=152,slow=39 **Songino Array**	**40.38**	**343**	*e*P	**P**	**00 50 36.9**	**+0.2**
FORT	**Forrest**	**40.57**	**172**	*e*P	**P**	**00 50 37.4**	**-0.9**
KOLN	comp=Z,404nm,0.6s **Koldanda**	**40.61**	**302**	*e*P	**P**	**00 50 39.0**	**-0.1**
YSS	comp=Z,39nm,0.7s **Yuzh-Sakhalins**	**41.06**	**21**	*e*P	**P**	**00 50 46.1**	**+4.0**
PYUN	**Piuthan**	**41.23**	**302**	*e*P	**P**	**00 50 44.3**	**+0.2**
ZAK	comp=Z,70nm,0.8s **Zakamensk**	**43.56**	**342**	*e*P	**P**	**00 51 01.1**	**-1.5**
ZAK	comp=Z,3.0nm,1.4s			pmax	pmax		
BBOO	**Buckleboo**	**44.21**	**163**	*e*P	**P**	**00 51 07.4**	**-0.6**
STKA	comp=Z,23nm,0.8s **Stephens Creek**	**45.23**	**157**	P	**P**	**00 51 15.1**	**-1.0**
STKA	comp=Z,8.0nm,0.8s,baz=326,slow=9.1,SNR=14			pP	**pP**	**00 51 23.9**	**-1.6**
STKA	comp=Z,13nm,0.7s,baz=327,slow=8.8,SNR=16			LR	LR	01 15 23.4	
STKA	comp=Z,71nm,18.1s,baz=23,slow=43 **Stephens Creek**	**45.23**	**157**	*e*P	**P**	**00 51 15.6**	**-0.5**
STKA	comp=Z,3.2nm,0.8s			pP	**pP**	**00 51 23.9**	**-1.6**
MOY	**Mondy**	**45.38**	**341**	*e*P	**P**	**00 51 17.5**	**+0.3**
WMQ	**Urumqi**	**45.38**	**325**	*e*P	**P**	**00 51 19.6**	**+2.3**
WMQ				pP	sP	00 51 33.6	+3.0
WMQ				S	**S**	**00 57 57.3**	**+0.9**
WMQ				sS	sS	00 58 22.8	+11
WMQ	comp=Z,14nm,0.9s			pmax	pmax		
WMQ	comp=Z,190nm,5.5s			pmax	pmax		
WMQ	comp=Z,590nm,13.4s			LR	LR		
WMQ	comp=Z,460nm,12.2s			LR	LR		
WMQ	comp=Z,510nm,22.3s			LR	LR		
BOD	**Bodaibo**	**48.49**	**354**	*e*P	**P**	**00 51 41.2**	**0.0**
BOD	comp=Z,13nm,1.0s			pmax	pmax		
THN	**Thein Dam**	**48.54**	**305**	*e*P	**P**	**00 51 40.0**	**-2.0**
ARMA	**Armidale**	**48.80**	**146**	*e*P	**P**	**00 51 43.6**	**-0.5**
ARMA	comp=Z,3.8nm,0.5s			*e*		00 51 53.4	
PDGK	**Podgornoye**	**50.08**	**320**	P	**P**	**00 51 54.6**	**+1.0**
PDGK	comp=Z,48nm,0.8s			pmax	pmax		
MK01	**Makanchi Array**	**50.20**	**325**	*e*P	**P**	**00 51 55.0**	**+0.5**
MK31	**Makanchi Array**	**50.22**	**325**	*e*P	**P**	**00 51 55.2**	**+0.6**
MK31	comp=Z,8.0nm,0.7s			pmax	pmax		
MK31	**Makanchi Array**	**50.22**	**325**	*e*P	**P**	**00 51 55.5**	**+0.8**

KSH	**Kashi**	**50.78**	**314**	P		**P**	**00 52 01.4**	**+2.2**
KSH				*es*P		sP	00 52 18.4	+5.9
KSH				*e*PP		**PP**	**00 53 59.3**	**+3.8**
KSH				*e*ScP		**ScP**	**00 57 08.8**	**-1.2**
KSH				S		**S**	**00 59 12.4**	**-0.7**
KSH				SS		**SS**	**01 02 45.0**	**-2.9**
KSH				pmax	pmax			
	comp=Z,9.0nm,0.7s							
KSH				LR	LR			
	comp=Z,190nm,6.2s							
KSH				LR	LR			
	comp=Z,83nm,7.3s							
KSH				LR	LR			
	comp=Z,170nm,9.4s							
CAN	**Canberra**	**51.35**	**152**	*e*P		**P**	**00 52 02.1**	**-1.2**
CAN				pmax	pmax			
	comp=Z,26nm,1.3s							
CAN	**Canberra**	**51.35**	**152**	*e*P		**P**	**00 52 02.1**	**-1.2**
	comp=Z,26nm,1.3s							
TKM2	**Tokmak 2**	**52.43**	**318**	P		**P**	**00 52 12.0**	**+0.5**
TKM2				pmax	pmax			
	comp=Z,16nm,0.8s							
YAK	**Yakutsk**	**52.57**	**4**⇓	*e*P		**P**	**00 52 12.1**	**+0.2**
YAK				pmax	pmax			
	comp=Z,10.0nm,0.8s							
AAK	**Ala-Archa**	**53.05**	**317**	*de*P		**P**	**00 52 18.0**	**+1.9**
AAK				pmax	pmax			
	comp=Z,15nm,0.9s							
AAK	**Ala-Archa**	**53.05**	**317**	*e*P		**P**	**00 52 17.8**	**+1.7**
	comp=Z,11nm,0.8s							
ZAA0	**Zalesovo Array**	**53.36**	**333**	*e*P		**P**	**00 52 17.6**	**-0.2**
ZALV	**Zalesovo Beam**	**53.36**	**333**	P		**P**	**00 52 17.4**	**-0.5**
	comp=Z,6.6nm,0.6s,baz=128,slow=6.9,SNR=34							
ZALV				LR	LR		01 15 43.1	
	comp=Z,67nm,18.4s,baz=70,slow=37							
MA2	**Magadan**	**54.24**	**17**	P		**P**	**00 52 24.6**	**+0.3**
	comp=Z,8.0nm,0.7s,baz=177,slow=10.0,SNR=5.1							
MNAS	**Manas**	**54.34**	**316**	P		**P**	**00 52 25.9**	**+0.4**
MNAS				pmax	pmax			
	comp=Z,18nm,0.7s							
KURBB	**Kurchatov Arra**	**54.41**	**327**	P		**P**	**00 52 26.1**	**+0.4**
	comp=Z,7.8nm,0.5s,baz=118,slow=9.6,SNR=82							
KURK	**Kurchatov**	**54.42**	**327**	P		**P**	**00 52 26.1**	**+0.4**
KURK	**Kurchatov**	**54.42**	**327**	P		**P**	**00 52 26.1**	**+0.4**
KBL	**Kabul**	**54.48**	**306**	*e*P		**P**	**00 52 27.3**	**+0.5**
KBL				pmax	pmax			
	comp=Z,11nm,0.8s							
KBL	**Kabul**	**54.48**	**306**	*e*P		**P**	**00 52 27.3**	**+0.5**
	comp=Z,11nm,0.8s							
NVS	**Novosibirsk**	**54.64**	**333**⇓	*i*P		**P**	**00 52 27.3**	**0.0**
NVS				pmax	pmax			
	comp=Z,11nm,0.8s							
NVS				pmax	pmax			
	comp=N,6.0nm,0.7s							
NVS				pmax	pmax			
	comp=E,5.0nm,0.7s							
KK31	**Karatay Array**	**55.94**	**316**	*i* P		**P**	**00 52 37.8**	**+0.9**
KK31				pmax	pmax			
	comp=Z,8.0nm,0.6s							
KKAR	**Karatay Array**	**55.94**	**316**	*e*P		**P**	**00 52 37.6**	**+0.8**
KKAR	**Karatay Array**	**55.94**	**316**	*e*P		**P**	**00 52 37.6**	**+0.8**
OTUK	**Ortayu**	**56.78**	**322**	P		**P**	**00 52 42.5**	**-0.3**
OTUK				pmax	pmax			
	comp=Z,13nm,1.1s							
SEY	**Seymchan**	**57.44**	**16**	P		**P**	**00 52 48.2**	**+1.1**
	comp=Z,6.4nm,0.7s,baz=210,slow=7.8,SNR=16							
SEY	**Seymchan**	**57.44**	**16***c*	*i*P		**P**	**00 52 48.0**	**+0.9**
VOSK	**Vostochnaya**	**59.54**	**327**	P		**P**	**00 53 00.5**	**-1.5**
VOSK				pmax	pmax			
	comp=Z,6.0nm,0.8s							
VOSK	**Vostochnaya**	**59.54**	**327**	*e*P		**P**	**00 53 01.7**	**-0.3**
	comp=Z,9.5nm,1.2s							
BVA0	**Borovoye Array**	**59.99**	**327**	P		**P**	**00 53 04.0**	**-1.1**
BVA0				pmax	pmax			
	comp=Z,7.0nm,1.1s							
BRVK	**Borovoye**	**60.06**	**327***c*	*i*P		**P**	**00 53 05.7**	**+0.2**
BRVK				pmax	pmax			
	comp=Z,44nm,1.2s							
BRVK	**Borovoye**	**60.06**	**327**	*e*P		**P**	**00 53 05.8**	**+0.2**
	comp=Z,16nm,1.1s							
ZRNK	**Zerenda**	**60.71**	**326**	P		**P**	**00 53 09.5**	**-0.5**
ZRNK				pmax	pmax			
	comp=Z,8.0nm,0.9s							
ZRNK	**Zerenda**	**60.71**	**326**	*e*P		**P**	**00 53 10.1**	**+0.1**
	comp=Z,18nm,1.4s							
TIXI	**Tiksi**	**62.09**	**2***ce*P			**P**	**00 53 18.2**	**-0.7**
TIXI				pmax	pmax			
	comp=Z,10.0nm,0.8s							
TIXI	**Tiksi**	**62.09**	**2**	*e*P		**P**	**00 53 17.4**	**-1.6**
	comp=Z,9.8nm,0.9s							
NRIK	**Noril'sk**	**63.69**	**347**	P		**P**	**00 53 29.6**	**-0.1**
	comp=Z,16nm,0.7s,baz=126,slow=6.9,SNR=20							
NRIK				LR	LR		01 23 32.6	
	comp=Z,76nm,19.2s,baz=146,slow=38							
GEYT	**Alibeck**	**63.80**	**308**	P		**P**	**00 53 31.8**	**+0.8**
	comp=Z,3.9nm,0.6s,baz=127,slow=5.9,SNR=16							
GEYT				pP		**pP**	**00 53 40.7**	**-0.1**
	comp=Z,5.0nm,0.6s,baz=56,slow=7.9,SNR=8.3							
GEYT				LR	LR		01 25 57.7	
	comp=Z,53nm,18.3s,baz=185,slow=40							
AB31	**Akbulak array**	**64.81**	**320**	P		**P**	**00 53 37.0**	**-0.4**
AB31				pmax	pmax			
	comp=Z,4.0nm,0.6s							
ABKAR	**Akbulak array**	**64.81**	**320**	*e*P		**P**	**00 53 37.6**	**+0.2**
BILL	**Bilibino**	**65.10**	**17**⇓	*e*P		**P**	**00 53 38.8**	**-0.1**
BILL				*SP		**sP**	**00 53 53.0**	**+0.5**
BILL				*e*			00 54 12.9	
BILL				*e*S		**S**	**01 02 12.2**	**-6.9**
BILL				pmax	pmax			
	comp=Z,11nm,1.7s							
BILL				MLR	MLR			
	comp=Z,87nm,20.0s							
SVE	**Sverdlovsk**	**66.65**	**328**⇓	*e*P		**P**	**00 53 48.9**	**-0.2**
SVE				pmax	pmax			
	comp=Z,18nm,1.1s							
ARU	**Arti**	**67.61**	**327***c*	*i*P		**P**	**00 53 54.6**	**-0.6**
ARU							00 56 23.7	
ARU				S		**S**	**01 02 51.7**	**+1.7**
ARU				SS		**SS**	**01 07 11.3**	**+0.3**
ARU				pmax	pmax			
	comp=Z,10.0nm,1.0s							
ARU	**Arti**	**67.61**	**327**	*e*P		**P**	**00 53 54.4**	**-0.8**
	comp=Z,9.1nm,0.9s							
GNI	**Garni**	**74.34**	**309***ce*	P		**P**	**00 54 37.5**	**+0.9**
GNI				pmax	pmax			
	comp=Z,188nm,2.5s							
GNI	**Garni**	**74.34**	**309**	*e*P		**P**	**00 54 38.9**	**+2.3**
	comp=Z,58nm,1.5s							
ZEI	**Tsey**	**75.00**	**312**	*e*P		**P**	**00 54 40.0**	**-0.5**
ZEI				pmax	pmax			
	comp=Z,30nm,0.8s							
NCK	**Nalchik**	**75.24**	**312**⇓	*e*P		**P**	**00 54 42.0**	**+0.5**
NCK				pmax	pmax			
	comp=Z,9.0nm,1.0s							
GOF	**Gofitskoye**	**75.65**	**314**⇑	*e*P		**P**	**00 54 43.9**	**0.0**
KBZ	**Khabaz**	**75.75**	**313**	P		**P**	**00 54 44.8**	**+0.5**
	comp=Z,7.3nm,1.0s,baz=113,slow=6.6,SNR=11							
KBZ				LR	LR		01 32 09.9	
	comp=Z,55nm,19.1s,baz=71,slow=39							
NEY	**Neytrino**	**75.87**	**312**⇑	*e*P		**P**	**00 54 47.3**	**+1.9**
NEY				pmax	pmax			
	comp=Z,1.0nm,0.9s							
KIV	**Kislovodsk**	**75.90**	**313**	*d i*P		**P**	**00 54 46.5**	**+1.1**
KIV							00 54 56.0	
KIV				*SP		**sP**	**00 55 00.0**	**+0.9**
KIV				pmax	pmax			
	comp=Z,25nm,1.0s							
KIV	**Kislovodsk**	**75.90**	**313**	*e*P		**P**	**00 54 46.4**	**+1.0**
	comp=Z,15nm,0.8s							
VRH	**Novokhopyorsk**	**76.64**	**320**	*e*P		**P**	**00 54 48.8**	**-0.5**
VRH				pmax	pmax			
	comp=Z,60nm,0.7s							
KLMR	**Klimovskoe**	**78.12**	**330**	*e*P		**P**	**00 54 55.2**	**-2.2**
KLMR				pmax	pmax			
	comp=Z,20nm,1.2s							
VSR	**Storozhevoye**	**78.25**	**320**	*e*P		**P**	**00 54 56.6**	**-1.7**
VSR				pmax	pmax			
	comp=Z,20nm,0.6s							
CAST	**Castle Rocks**	**79.49**	**27**	*e*P		**P**	**00 55 04.9**	**0.0**
ANN	**Anapa**	**79.64**	**314**	*e*P		**P**	**00 55 04.8**	**-1.3**
ANN				pmax	pmax			
	comp=Z,35nm,1.1s							
OBN	**Obninsk**	**79.72**	**324***c*	*i*P		**P**	**00 55 05.1**	**-1.2**
OBN				*e*			00 55 14.0	
OBN				*e**PP		**sP**	**00 55 17.9**	**-2.1**
OBN				*e**SP		**pP**	**00 55 20.8**	**+4.5**
OBN				pmax	pmax			
	comp=Z,57nm,2.5s							
OBN				MLR	MLR			
	comp=Z,67nm,18.0s							
BPAW	**Bear Paw Mtn.**	**79.97**	**26**	*e*P		**P**	**00 55 07.5**	**0.0**
APA	**Apatity**	**80.73**	**337**	*e*P		**P**	**00 55 07.0**	**-4.5**
APA				pmax	pmax			
	comp=Z,4.0nm,0.8s							
APA				MLR	MLR			
	comp=Z,300nm,14.0s							
ILAR	**Eielson Array**	**81.71**	**26**	P		**P**	**00 55 14.8**	**-1.9**
	comp=Z,0.5nm,0.7s,baz=252,slow=5.0,SNR=7.0							
BR131	**Keskin Array S**	**82.89**	**309**	*e*P		**P**	**00 55 23.4**	**-0.3**
BRTR	**Keskin Array B**	**82.89**	**309**	P		**P**	**00 55 23.1**	**-0.6**
	comp=Z,5.0nm,0.7s,baz=113,slow=5.3,SNR=37							
BRTR				LR	LR		01 38 04.2	
	comp=Z,24nm,18.2s,baz=66,slow=40							
ARA0	**ARCESS Array S**	**83.41**	**339**	*e*P		**P**	**00 55 25.1**	**-0.5**
ARCES	**ARCESS Array B**	**83.41**	**339**	P		**P**	**00 55 25.2**	**-0.4**
	comp=Z,10.0nm,0.9s,baz=77,slow=6.4,SNR=20							
ARCES				LR	LR		01 35 05.3	
	comp=Z,47nm,19.7s,baz=47,slow=37							
BR231	**Keskin MP Arra**	**83.53**	**309**	*e*P		**P**	**00 55 24.1**	**-2.8**
CSS	**Mathiatis**	**83.70**	**304**	*e*P		**P**	**00 55 27.6**	**-0.2**
	comp=Z,2.5nm,0.6s							
SPA0	**Spitsbergen Ar**	**83.86**	**348**	*e*P		**P**	**00 55 27.8**	**0.0**
AKASG	**Malin Array Be**	**84.56**	**320**	P		**P**	**00 55 30.6**	**-1.2**
	comp=Z,11nm,0.6s,baz=67,slow=4.9,SNR=42							
AKASG				pP		**pP**	**00 55 40.0**	**-1.9**
	comp=Z,3.0nm,0.5s,baz=69,slow=4.7,SNR=5.9							
AKASG				LR	LR		01 37 22.9	
	comp=Z,85nm,18.2s,baz=45,slow=38							
KIEV	**Kiev**	**84.57**	**320**	*e*P		**P**	**00 55 30.8**	**-1.0**
KIEV	**Kiev**	**84.57**	**320**	*e*P		**P**	**00 55 30.8**	**-1.0**
FINES	**FINESS Array B**	**84.57**	**331**	P		**P**	**00 55 30.8**	**-0.7**
	comp=Z,5.8nm,0.5s,baz=58,slow=5.4,SNR=78							
VSU	**Vasula**	**84.76**	**328***c*	*i*P		**P**	**00 55 31.9**	**-0.7**
VSU				pmax	pmax			
	comp=Z,115nm,1.7s							
KMBO	**Kilima Mbogo**	**85.29**	**268**	P		**P**	**00 55 36.4**	**-0.2**
	comp=Z,3.9nm,0.9s,baz=60,slow=7.6,SNR=10							
NACGM	**Naroch**	**85.34**	**325**	*e*P		**P**	**00 55 33.0**	**-2.6**
NACGM				PM			00 55 35.0	
	comp=Z,0.1nm,0.8s							
MILM	**Milestii Mici**	**85.40**	**317**⇑	*i*P		**P**	**00 55 34.8**	**-1.3**
SORM	**Soroca**	**85.52**	**318**⇑	*i*P		**P**	**00 55 35.7**	**-0.9**
SORM	**Soroca**	**85.52**	**318**	⇑P		**P**	**00 55 35.7**	**-0.9**
LEOM	**Leova**	**85.86**	**316**⇓	*i*P		**P**	**00 55 38.2**	**-0.1**
LEOM	**Leova**	**85.86**	**316**	⇓P		**P**	**00 55 38.2**	**-0.1**
TIRR	**Tirgusor**	**86.08**	**314**⇑	*i*P		**P**	**00 55 38.5**	**-1.0**
TIRR	**Tirgusor**	**86.08**	**314**	⇑P		**P**	**00 55 38.5**	**-1.0**
CFR	**Carcaliu**	**86.15**	**315**⇑	*i*P		**P**	**00 55 39.5**	**-0.3**
CFR	**Carcaliu**	**86.15**	**315**	⇑P		**P**	**00 55 39.5**	**-0.3**
INK	**Inuvik**	**86.30**	**21**	P		**P**	**00 55 40.0**	**0.0**
	comp=Z,3.2nm,0.5s,baz=203,slow=5.4,SNR=3.6							
INK	**Inuvik**	**86.30**	**21**	*e*P		**P**	**00 55 40.3**	**+0.2**
INK	**Inuvik**	**86.30**	**21**	*e*P		**P**	**00 55 40.3**	**+0.2**
TESR	**Tescani**	**86.94**	**317**⇑	*i*P		**P**	**00 55 43.3**	**-0.4**
PLOR	**Plostina**	**87.06**	**316**⇓	*i*P		**P**	**00 55 44.4**	**0.0**
PLOR	**Plostina**	**87.06**	**316**	⇓P		**P**	**00 55 44.4**	**0.0**
SUW	**Suwalki**	**87.58**	**324**	*e*P		**P**	**00 55 45.9**	**-0.7**
SUW	**Suwalki**	**87.58**	**324**	*e*P		**P**	**00 55 45.9**	**-0.7**
MLR	**Muntele Rosu**	**87.61**	**316**⇓	*i*P		**P**	**00 55 47.1**	**-0.1**
MLR	**Muntele Rosu**	**87.61**	**316**	*e*P		**P**	**00 55 47.0**	**-0.1**
MLR	**Muntele Rosu**	**87.61**	**316**	*e*P		**P**	**00 55 47.0**	**-0.1**
BURAR	**Bucovina Array**	**87.69**	**318**⇓	*i*P		**P**	**00 55 47.2**	**-0.2**
BURAR	**Bucovina Array**	**87.69**	**318**	⇓P		**P**	**00 55 47.2**	**-0.2**
BUR08	**Bucovina Ar. S**	**87.69**	**318**	*e*P		**P**	**00 55 47.4**	**-0.1**
VOIR		**88.24**	**316**⇓	*i*P		**P**	**00 55 49.3**	**-0.8**
VOIR		**88.24**	**316**	⇓P		**P**	**00 55 49.3**	**-0.8**
DRGR		**89.53**	**317**⇓	*i*P		**P**	**00 55 55.8**	**-0.3**
DRGR		**89.53**	**317**	⇓P		**P**	**00 55 55.8**	**-0.3**
VNDA	**Vanda**	**89.83**	**172**	P		**P**	**00 55 55.7**	**-1.0**
	comp=Z,1.4nm,0.6s,baz=318,slow=6.7,SNR=9.1							
VNDA	**Vanda**	**89.83**	**172**	*e*P		**P**	**00 55 56.1**	**-0.6**
OJC	**Ojcow**	**90.54**	**321**	*e*P		**P**	**00 56 01.2**	**+0.6**
OJC	**Ojcow**	**90.54**	**321**	*e*P		**P**	**00 56 01.2**	**+0.6**
NOA	**NORSAR Array B**	**91.56**	**333**	P		**P**	**00 56 03.9**	**-1.3**
	comp=Z,1.9nm,1.0s,baz=70,slow=5.0,SNR=3.5							
NOA				LR	LR		01 41 21.4	
	comp=Z,93nm,18.1s,baz=350,slow=38							
KSP	**Ksiaz**	**92.50**	**322**	*e*P		**P**	**00 56 10.2**	**+0.5**
KSP	**Ksiaz**	**92.50**	**322**	*e*P		**P**	**00 56 10.2**	**+0.5**
PDG	**Podgorica**	**93.03**	**314**⇑	*i*P		**P**	**00 56 10.9**	**-1.4**
BRG	**Berggiesshubel**	**93.89**	**323**	*e*P		**P**	**00 56 16.1**	**0.0**
	comp=Z,6.6nm,0.8s							
BRG				*e*			00 56 25.1	
	comp=Z,6.8nm,1.1s							
BRG				*e*			00 57 46.6	
	comp=Z,6.6nm,1.4s							
BRG	**Berggiesshubel**	**93.89**	**323**	*e*P		**P**	**00 56 16.1**	**0.0**
BRG				*e*			00 56 25.1	
BRG				pmax	pmax			
	comp=Z,7.0nm,0.8s							
CLL	**Collm**	**94.30**	**324**	*i* P		**P**	**00 56 17.4**	**-0.6**
	comp=Z,5.0nm,0.9s							
CLL				LmV			01 43 00.0	
	comp=Z,100nm,20.2s							
CLL	**Collm**	**94.30**	**324**	*i* P		**P**	**00 56 17.4**	**-0.6**
CLL				pmax	pmax			
	comp=Z,5.0nm,0.9s							
GERES	**GERESS Array B**	**94.74**	**321**	P		**P**	**00 56 19.2**	**-1.0**
	comp=Z,0.7nm,0.8s,baz=74,slow=7.2,SNR=4.6							
GERES				LR	LR		01 40 54.6	
	comp=Z,37nm,20.3s,baz=358,slow=37							
YKA	**Yellowknife Ar**	**95.89**	**23**	P		**P**	**00 56 22.9**	**-2.1**
	comp=Z,1.0nm,0.7s,baz=293,slow=4.1,SNR=3.4							
TXAR	**Lajitas Array**	**121.16**	**47**	PKP		**PKPdf**	**01 01 52.0**	**-0.2**
	comp=Z,0.3nm,0.5s,baz=17,slow=0.9,SNR=7.6							
TXAR	**Lajitas Array**	**121.16**	**47**	PKIKP		**PKPdf**	**01 01 52.0**	**-0.2**
PLCA	**Paso Flores**	**147.01**	**162**	PKPbc		**PKPbc**	**01 02 41.5**	**-0.1**
	comp=Z,4.6nm,0.7s,baz=181,slow=1.3,SNR=5.4							
PLCA				pPKPbc		pPKPbc	01 02 50.2	-1.8
	comp=Z,12nm,0.7s,baz=215,slow=1.1,SNR=11							
TRQA	**Tornquist**	**151.45**	**173**	*e*PKPdf		**PKPdf**	**01 02 47.0**	**+0.2**
TRQA				*e*PKPbc		**PKPbc**	**01 02 52.5**	**-0.4**

MEX 18 00:43:43.2±0.5, 13°.78N×92°.16W, h15km, MD3.9, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
					Op	ISC	h	m	s	ISC
CCIG	**Comitan**	**2.49**	**1**	*e*P		Pn	00	44	20.6	-2.7
CCIG				*e*S		Sn	00	44	49.4	-4.1

*IDC **18** 00:54:12.8±1.9, 28°.16S×176°.56W, h0km, mb3.8/3, mb1 4.1/3, mb1mx3.7/31, mbtmp3.8/3, MS3.6/3, Ms1 3.6/3, ms1mx3.0/27, Error ellipse: s-maj=67.8km s-min=25.6km az=142.0*

*NEIC **18** 00:54:14.4±0.3, 28°.20S×176°.57W, h10km, mb4.4/15, Error ellipse: s-maj=12.2km s-min=6.3km az=145.0*

*ISCJB **18** 00:54:17.4±0.6, 28°.1S±0°.1×176°.7W±0°.1, h37km, mb4.4/19, MS3.6/3, Error ellipse: s-maj=19.7km s-min=8.4km az=43.6*

ISC 18 00:54:18.5±0.9, 28°.2S±0°.1×176°.6W±0°.2, h37km, n27, σ0s88/24, mb4.3/19, MS3.6/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
					Op	ISC	h	m	s	ISC
RAO	**Raoul Island**	**1.58**	**227**	Pn		**Pn**	**00**	**54**	**42.0**	**-1.8**
	111nm,0.3s,baz=58,slow=9.7,SNR=11									
RAO				Sn		**Sn**	**00**	**55**	**05.7**	**+2.7**
	194nm,0.3s,baz=93,slow=19,SNR=8.0									
RAO	**Raoul Island**	**1.58**	**227**	*e*Pn		**Pn**	**00**	**54**	**42.4**	**-1.4**
RAO				*e*Sn		**Sn**	**00**	**55**	**03.1**	**+0.1**
FUNA	**Funafuti**	**19.96**	**348**	*e*P		**P**	**00**	**58**	**46.5**	**-1.0**
	63nm,0.8s									
TBI	**Tubuai**	**24.88**	**85**	*e*LR		LR	01	05	24.0	
	120nm,27.2s									
PPT2	**Papeete2**	**26.97**	**73**	*e*LR		LR	01	06	24.0	
	96nm,25.5s									
PPT	**Papeete**	**26.98**	**73**	LR		LR	01	09	17.1	
	comp=Z,69nm,18.7s,baz=191,slow=34									
HNR	**Honiara**	**28.90**	**306**	*e*P		**P**	**01**	**00**	**13.8**	**-0.3**
	116nm,0.9s									
TAU	**Tasmania Unive**	**32.56**	**234**	*e*P		**P**	**01**	**00**	**45.5**	**-0.5**
	8.6nm,0.9s									
ASAR	**Alice Springs**	**44.51**	**264**	P		**P**	**01**	**02**	**26.4**	**-0.2**
	0.7nm,0.6s,baz=98,slow=7.3,SNR=8.9									
WRA	**Warramunga Arr**	**45.30**	**269**	P		**P**	**01**	**02**	**33.0**	**+0.1**
	0.8nm,0.6s,baz=109,slow=7.7,SNR=5.2									
KKM	**Kota Kinabalu**	**73.08**	**287**	*e*P		**P**	**01**	**05**	**45.3**	**-0.1**
	2.3nm,0.5s									
MAJO	**Matsushiro**	**77.16**	**324**	*e*P		**P**	**01**	**06**	**08.6**	**+0.3**
	0.8nm,0.5s									
COCO	**West Island**	**81.36**	**261**	*e*P		**P**	**01**	**06**	**32.3**	**+0.5**
	283nm,0.9s									
CMB	**Columbia Colle**	**84.29**	**41**	*e*P		**P**	**01**	**06**	**46.1**	**-0.3**
	1.8nm,0.6s									
KULM	**Kulim**	**86.12**	**278**	*e*P		**P**	**01**	**06**	**56.3**	**+0.2**
	2.4nm,0.5s									
TXAR	**Lajitas Array**	**90.15**	**57**	P		**P**	**01**	**07**	**15.2**	**+0.1**
	0.5nm,0.9s,baz=202,slow=3.9,SNR=4.1									
ANMO	**Albuquerque**	**91.23**	**51**	*e*P		**P**	**01**	**07**	**20.7**	**+0.5**
	0.6nm,0.9s									
HWUT	**Hardware Ranch**	**91.80**	**43**	*e*P		**P**	**01**	**07**	**22.2**	**-0.3**
	0.3nm,0.3s									
BJT	**Baijiatuau**	**92.22**	**315**	*e*P		**P**	**01**	**07**	**24.9**	**+0.6**
	2.7nm,0.4s									
NEW	**Newport**	**92.86**	**35**	P		**P**	**01**	**07**	**27.2**	**+0.1**
	0.8nm,0.8s									
SDCO	**Great Sand Dun**	**93.42**	**49**	*e*P		**P**	**01**	**07**	**30.6**	**+0.3**
	0.3nm,0.7s									
ATAH	**Atahualpa**	**93.83**	**100**	LR		LR	01	42	28.7	
	comp=Z,22nm,20.1s,baz=0.6,slow=31									
CHTO	**Chiang Mai**	**94.01**	**289**	*e*P		**P**	**01**	**07**	**33.3**	**+0.2**
	1.4nm,0.4s									
MCK	**McKinley**	**94.18**	**12**	*e*P		**P**	**01**	**07**	**33.7**	**+0.9**
	0.4nm,0.4s									
DLBC	**Dease Lake**	**94.61**	**23**	LR		LR	01	42	41.5	
	comp=Z,46nm,20.5s,baz=139,slow=31									
WALA	**Waterton Lakes**	**95.01**	**36**	*e*P		**P**	**01**	**07**	**37.0**	**-0.2**
	0.6nm,0.5s									
RSSD	**Black Hills**	**97.78**	**44**	*e*P		**P**	**01**	**07**	**49.6**	**-0.4**
	0.8nm,0.7s									

*SJA **18** 00:55:13.5±1.2, 31°.77S×68°.32W, h17km±7km, ML3.1, MW3.6*

*GUC **18** 00:55:13.2±0.5, 31°.56S×68°.18W, h150km, ML3.7*

ISC 18 00:55:14.3±1.0, 31°.74S±0°.03×68°.29W±0°.03, h16km±8km, n19, σ1s19/29, 1C-13D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
					Op	ISC	h	m	s	ISC
RTCV	**Cerro Valdivia**	**0.25**	**239**⇓	*e*P		**Pg**	**00**	**55**	**19.1**	**-0.7**
SJA	**San Juan**	**0.31**	**312**	*e*P		**Pg**	**00**	**55**	**21.3**	**+0.4**
SJA				*e*S		**Sg**	**00**	**55**	**26.1**	**+0.7**
SJA				IAML			00	55	26.7	
	comp=Z,6µm,0.2s									
RTLL	**Cerro Villicun**	**0.44**	**339**⇓	*e*P		**Pb**	**00**	**55**	**23.4**	**-0.3**
AMOG	**MOGNA**	**0.81**	**348**⇓	*e*P		**Pn**	**00**	**55**	**30.5**	**-0.8**
AMOG				*e*S		**Sn**	**00**	**55**	**42.3**	**-0.8**
RTLS	**Leoncito**	**0.86**	**266**	*e*P		**Pb**	**00**	**55**	**29.6**	**-1.5**
ASAL	**Salagasta**	**0.97**	**208**⇓	*e*P		**Pb**	**00**	**55**	**31.2**	**-1.6**
ASAL				⇓*e*S		**Sb**	**00**	**55**	**45.0**	**-0.5**
AUSP	**Uspallata**	**1.05**	**242**	*e*P		**Pb**	**00**	**55**	**33.0**	**-1.3**
AUSP				⇓*e*S		**Sb**	**00**	**55**	**46.0**	**-2.0**
ACAN	**Cantantal**	**1.08**	**120**⇓	*e*P		**Pb**	**00**	**55**	**34.5**	**-0.2**
AVFE	**Valle Fertil**	**1.29**	**34**	*e*P		**Pg**	**00**	**55**	**38.7**	**-0.5**
AVFE				⇓*e*S		**Sg**	**00**	**55**	**56.4**	**+0.4**
AVFE				IAML			00	55	56.8	
	comp=Z,203nm,0.3s									
ACCO	**Cerro Coronel**	**1.32**	**330**⇓	*e*P		**Pb**	**00**	**55**	**38.8**	**-0.2**
ACCO				⇓*e*S		**Sg**	**00**	**55**	**57.0**	**-0.1**
ACCO				IAML			00	55	57.8	
	comp=Z,260nm,0.6s									
AAGR	**Agrelo**	**1.42**	**199**⇓	*e*P		**Pn**	**00**	**55**	**39.9**	**+0.2**
ACHE	**Chepes**	**1.50**	**68**⇓	*e*P		**Pg**	**00**	**55**	**42.7**	**-0.6**
ACDV	**Cuesta del Vie**	**1.72**	**335**	*e*P		**Pb**	**00**	**55**	**45.6**	**+0.1**
AGUA	**GUANDACOL**	**2.25**	**356**⇓	*e*P		**Pb**	**00**	**55**	**54.9**	**+0.2**
FCH	**Farellones**	**2.32**	**226**	*e*P		**Pb**	**00**	**55**	**55.4**	**-0.5**
FCH				*i* S		**Sb**	**00**	**56**	**25

MEX 18 01:34:55.4±0.4, 16°55'N×98°70'W, h16km±5km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res
PNIG	**Pinotepa**	**0.57**	**106**	*i* P	Pg	01 35 04.6	-2.1
PNIG				*i* S	Sg	01 35 12.1	-2.2
TLIG	**Tlapa**	**1.01**	**7**	*i* P	Pb	01 35 11.2	-3.5
TLIG				*eS*	Sb	01 35 23.6	-4.3
CAIG	**El Cayaco**	**1.58**	**288**	*eP*	Pn	01 35 19.4	-3.4
CAIG				*i* S	Sn	01 35 37.4	-5.6
MEIG	**Mezcala**	**1.63**	**327**	*eP*	Pn	01 35 20.6	-2.9
MEIG				*eS*	Sn	01 35 38.6	-5.6
VHO	**Vista Hermosa**	**1.95**	**74**	*eP*	Pn	01 35 25.1	-2.9
VHO				*eS*	Sn	01 35 47.5	-4.8
YAIG	**Yautepec**	**2.33**	**351**	*eP*	Pn	01 35 30.2	-3.0
YAIG				*i* S	Sn	01 35 57.0	-4.5
ARIG	**Puente Sto Nin**	**2.33**	**318**	*i* P	Pn	01 35 30.4	-2.8
ARIG				*eS*	Sn	01 35 57.8	-3.7

*ISCJB **18** 01:42:39.6±0.5, 39°08'N±0°04'×29°11'E±0°04, h8km±5km, Error ellipse: s-maj=6.9km s-min=4.1km az=153.7*
*CSEM **18** 01:42:39.6±0.1, 39°08'N×29°14'E, h8km, MD2.8, Error ellipse: s-maj=2.6km s-min=2.1km az=142.0*
*ISK **18** 01:42:39.4, 39°11'N×29°16'E, h7km, MD2.8*
*DDA **18** 01:42:39.3, 39°13'N×29°10'E, h7km, Md2.9*

ISC 18 01:42:39.5±0.9, 39°09'N±0°02'×29°12'E±0°02, h11km±8km, n40, σ0°75/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.23**	**100**	*e*PG	**Pg**	**01 42 44.1**	**-0.3**
GEDZ	**Gediz**	**0.23**	**100**	*e*Pg	**Pg**	01 42 44.1	-0.3
GDZ	**Gediz**	**0.28**	**89**	*i* P	**Pb**	**01 42 46.0**	**-0.7**
GDZ				*i* S	**Sb**	**01 42 50.4**	**-1.1**
GDZ	**Gediz**	**0.28**	**89**	P	**Pb**	**01 42 46.0**	**-0.7**
GDZ				S	**Sb**	**01 42 50.4**	**-1.1**
DEMI	**Demirci**	**0.32**	**263**	*i* P	**Pg**	**01 42 46.4**	**+0.4**
DEMI				*i* S	**Sg**	**01 42 50.5**	**+0.3**
DEMI	**Demirci**	**0.32**	**263**	P	**Pg**	01 42 46.4	+0.4
DEMI				S	**Sg**	**01 42 50.5**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**36**	*e*PG	**Pg**	**01 42 48.4**	**0.0**
TVSB				*e*SG	**Sg**	**01 42 53.9**	**-0.5**
TVSB	**Tavsanli**	**0.45**	**36**	*e*Pg	**Pg**	**01 42 48.4**	**0.0**
TVSB				*e*Sg	**Sg**	**01 42 53.9**	**-0.5**
KULA	**Kula-Manisa**	**0.67**	**212**	*e*PG	**Pb**	**01 42 53.5**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**212**	*e*Pg	**Pb**	**01 42 53.5**	**+0.1**
MANT	**Manisa**	**0.74**	**217**	*i* P	**Pg**	**01 42 53.4**	**-0.5**
MANT				*i* S	**Sg**	**01 43 03.0**	**-0.6**
MANT	**Manisa**	**0.74**	**217**	P	**Pg**	01 42 53.4	-0.5
MANT				S	**Sg**	**01 43 03.0**	**-0.6**
KHL	**Karahalli**	**0.82**	**157**	*e*PG	**Pg**	**01 42 55.8**	**+0.4**
KHL	**Karahalli**	**0.82**	**157**	*e*Pg	**Pg**	**01 42 55.8**	**+0.4**
BALB	**Balikesir**	**1.11**	**300**	*e*PN	**Pn**	**01 43 01.3**	**+0.3**
BALB	**Balikesir**	**1.11**	**300**	*e*Pn	**Pn**	**01 43 01.3**	**+0.3**
SHUT	**Suhut-Afyon**	**1.24**	**115**	*e*PN	**Pn**	**01 43 03.3**	**+0.4**
SHUT	**Suhut-Afyon**	**1.24**	**115**	*e*Pn	**Pn**	**01 43 03.3**	**+0.4**
CAVI	**Cavuskoy**	**1.25**	**26**	*e*PN	**Pn**	**01 43 03.1**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**26**	*e*Pn	**Pn**	01 43 03.1	+0.1
MDNY	**Mudanya-Bursa**	**1.30**	**352**	*e*PN	**Pg**	**01 43 04.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**352**	*e*Pn	**Pg**	**01 43 04.6**	**+0.2**
BORA	**Eskisehir**	**1.30**	**52**	*i* P	**Pg**	**01 43 04.2**	**-0.3**
BORA				*i* S	**Sn**	**01 43 21.5**	**+0.3**
BORA	**Eskisehir**	**1.30**	**52**	P	**Pg**	**01 43 04.2**	**-0.3**
BORA				S	**Sn**	**01 43 21.5**	**+0.3**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*PN	**Pg**	**01 43 04.6**	**-0.3**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*Pn	**Pg**	**01 43 04.6**	**-0.3**
ESKT	**Eskisehir**	**1.41**	**72**	*e*PN	**Pn**	**01 43 05.5**	**+0.2**
ESKT	**Eskisehir**	**1.41**	**72**	*i* P	**Pn**	**01 43 04.8**	**-0.5**
ESKT				*i* S	**Sg**	**01 43 28.0**	**+3.0**
ESKT	**Eskisehir**	**1.41**	**72**	*e*Pn	**Pn**	**01 43 05.5**	**+0.2**
SEYT	**Eskypehyr**	**1.41**	**72**	P	**Pn**	**01 43 04.8**	**-0.5**
SEYT				S	**Sg**	**01 43 28.0**	**+3.0**
ADVT	**Abdulvahap**	**1.43**	**19**	*e*PN	**Pb**	**01 43 05.7**	**-0.5**
ADVT	**Abdulvahap**	**1.43**	**19**	*e*Pn	**Pb**	**01 43 05.7**	**-0.5**
GONE	**Gonen-Balikesi**	**1.47**	**311**	*e*PN	**Pb**	**01 43 07.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.47**	**311**	*e*Pn	**Pb**	**01 43 07.0**	**+0.1**
ARMT	**Armutlu**	**1.49**	**352**	*e*PN	**Pb**	**01 43 07.0**	**-0.2**
ARMT	**Armutlu**	**1.49**	**352**	*e*Pn	**Pb**	**01 43 07.1**	**-0.2**
EDC	**Edincik**	**1.59**	**323**	*e*PN	**Pb**	**01 43 08.6**	**-0.4**
EDC	**Edincik**	**1.59**	**323**	*e*Pn	**Pb**	**01 43 08.6**	**-0.4**
GULT	**Gulveren**	**1.72**	**38**	*e*PN	**Pn**	**01 43 09.9**	**+0.4**
GULT	**Gulveren**	**1.72**	**38**	*e*Pn	**Pn**	**01 43 09.9**	**+0.4**

*NIED **18** 01:43:00, 36°90'N×144°40'E, h14km, Mw3.8 Best double couple: M0≤5.64000×10^14 NP1:φs=51.00000°, δ=28.00000°, λ=-102.00000°. NP2:φs=245.00000°, δ=63.00000°, λ=-84.00000°.*
*IDC **18** 01:43:52.0±1.2, 36°66'N×144°78'E, h0km, mb3.8/9, mb1 3.9/12, mb1mx3.7/54, mbtmp3.9/12, ML3.6/3, Error ellipse: s-maj=38.1km s-min=20.0km az=80.0*
*ISCJB **18** 01:43:55.3±0.6, 36°80'N±0°04'×144°38'E±0°05, h26km, mb3.8/9, Error ellipse: s-maj=6.3km s-min=5.1km az=30.5*
*JMA **18** 01:43:56.6±0.2, 36°86'N×144°40'E, h52km, M4.0*

ISC 18 01:43:56.5±1.0, 36°88'N±0°06'×144°55'E±0°08, h26km, n37, σ2°35/44, mb3.9/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.97**	**280**	P	**Pn**	**01 44 41.2**	**-0.8**
JFK				*e*S	**Sn**	**01 45 14.1**	**-2.8**
JIO	**Ouri**	**2.98**	**303**	P	**Pn**	**01 44 41.7**	**-0.4**
JIO				*e*S	**Sn**	**01 45 14.6**	**-2.4**
ONAJ	**Iwakimizuishiy**	**3.01**	**275**	*e*S	**Sn**	**01 45 15.2**	**-2.5**
JMM	**Marumori**	**3.15**	**289**	P	**Pn**	**01 44 43.7**	**-0.7**
JMM				*e*S	**Sn**	**01 45 18.9**	**-2.1**
JMK	**Ichinoseki**	**3.34**	**309**	P	**Pn**	**01 44 46.7**	**-0.4**
JMK				*e*S	**Sn**	**01 45 24.8**	**-1.1**
JFT	**Otama**	**3.42**	**282**	P	**Pn**	**01 44 48.3**	**+0.2**
JFT				*e*S	**Sn**	**01 45 26.3**	**-1.5**
BSO1	**Boso 1**	**3.65**	**234**	P	**Pn**	**01 44 49.5**	**-1.4**
BSO1				*e*S	**Sn**	**01 45 31.3**	**-1.6**
JRY	**Ryogami san**	**4.63**	**261**	P	**Pn**	**01 45 03.8**	**-1.0**
JRY				*e*S	**Sn**	**01 45 54.3**	**-3.4**
JOD2	**Odawara 2**	**4.71**	**252**	P	**Pn**	**01 45 05.5**	**-0.3**
JOD2				*e*S	**Sn**	**01 45 56.9**	**-2.7**
MJAR	**Matsushiro Arr**	**5.10**	**268**	Pn	**Pn**	**01 45 11.7**	**+0.5**
	4.0nm,0.3s,baz=78,slow=9.6,SNR=24						
MAT	**Matsushiro**	**5.10**	**268**	P	**Pn**	**01 45 11.7**	**+0.4**
MAT				S	**Sn**	**01 46 06.1**	**-3.3**
JOT	**Ohata**	**5.25**	**330**	P	**Pn**	**01 45 13.8**	**+0.5**
JHJ2	**Mitsune**	**5.40**	**227**	P	**Pn**	**01 45 14.0**	**-1.4**
JHJ2				*e*S	**Sn**	**01 46 12.6**	**-4.2**
JHJ	**Hachijo jima 2**	**5.42**	**228**	Pn	**Pn**	**01 45 14.2**	**-1.5**
	25nm,0.3s,baz=54,slow=22,SNR=4.6						
JHJ				Sn	**Sn**	**01 46 12.4**	**-4.7**
	66nm,0.3s,baz=65,slow=23,SNR=5.6						
JKB	**Kayabe**	**5.69**	**333**	P	**Pn**	**01 45 19.4**	**+0.1**
JCH	**Churui**	**5.80**	**351**	P	**Pn**	**01 45 19.1**	**-1.7**
JCH				*e*S	**Sn**	**01 46 21.6**	**-4.8**
JOSM	**Okushiri--Mats**	**6.51**	**325**	P	**Pn**	**01 45 30.7**	**+0.2**
NEM2	**Nemuro 2**	**6.54**	**8**	P	**Pn**	**01 45 27.3**	**-3.7**
NEM2				*e*S	**Sn**	**01 46 37.7**	**-7.0**
JTKR	**Abashiri--Toko**	**7.10**	**356**	P	**Pn**	**01 45 37.2**	**-1.4**
JHR	**Hokuryu**	**7.18**	**343**	P	**Pn**	**01 45 40.3**	**+0.5**
USRK	**Ussuriysk Ar.**	**12.02**	**311**	Pn	**Pn**	**01 46 47.1**	**+1.0**
	0.5nm,0.3s,baz=118,slow=14,SNR=13						
KLR	**Kul'dur**	**15.46**	**327**	Pn	**P**	**01 47 38.5**	**+1.6**
	0.1nm,0.3s,baz=142,slow=9.0,SNR=12						
H11N2	**WAKE ISLAND Hy**	**25.96**	**125**	T	T	02 16 16.7	
	baz=316,slow=75,SNR=658						
H11N1	**WAKE ISLAND Hy**	**25.97**	**125**	T	T	02 16 17.5	
	baz=316,slow=75,SNR=308						
H11N3	**WAKE ISLAND Hy**	**25.98**	**125**	T	T	02 16 15.9	
	baz=316,slow=75,SNR=380						
H11S1	**WAKE ISLAND Hy**	**26.72**	**127**	T	T	02 17 10.6	
	baz=318,slow=76,SNR=150						
H11S3	**WAKE ISLAND Hy**	**26.72**	**127**	T	T	02 17 13.3	
	baz=318,slow=76,SNR=122						
H11S2	**WAKE ISLAND Hy**	**26.74**	**127**	T	T	02 17 12.4	
	baz=318,slow=76,SNR=118						
MKAR	**Makanchi Array**	**46.32**	**303**	P	**P**	**01 52 21.4**	**+1.3**
	1.0nm,0.7s,baz=84,slow=9.1,SNR=9.2						
KURBB	**Kurchatov Arra**	**48.06**	**309**	P	**P**	**01 52 35.0**	**+1.4**
	1.2nm,0.5s,baz=82,slow=7.9,SNR=8.4						
WRA	**Warramunga Arr**	**57.33**	**191**	P	**P**	**01 53 40.1**	**-2.2**
	0.8nm,0.6s,baz=11,slow=7.3,SNR=6.5						
AKTO	**Aktyubinsk**	**60.63**	**313**	P	**P**	**01 54 06.9**	**+2.0**
	0.8nm,0.6s,baz=58,slow=10,SNR=4.4						
ASAR	**Alice Springs**	**61.05**	**191**	P	**P**	**01 54 06.4**	**-1.7**
	0.2nm,0.5s,baz=8.5,slow=6.9,SNR=3.4						
HFS	**Hagfors**	**75.23**	**337**	P	**P**	**01 55 38.0**	**+1.4**
	0.6nm,0.7s,baz=62,slow=6.7,SNR=5.0						
NOA	**NORSAR Array B**	**75.27**	**339**	P	**P**	**01 55 37.7**	**+0.9**
	0.6nm,0.7s,baz=43,slow=6.0,SNR=2.6						
AKASG	**Malin Array Be**	**75.33**	**324**	P	**P**	**01 55 41.9**	**+1.2**
	0.6nm,0.5s,baz=45,slow=6.1,SNR=5.3						
BRTR	**Keskin Array B**	**80.81**	**313**	P	**P**	**01 56 10.2**	**+2.1**
	0.3nm,0.7s,baz=90,slow=4.3,SNR=2.4						

MEX 18 01:44:09.0±0.4, 13°96N×93°37W, h15km, MD3.8, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.60**	**27**	*e*P	Pn	01 44 47.9	-2.7
CCIG				*e*S	Sn	01 45 18.0	-4.0

*ISCJB **18** 01:53:37.8±1.1, 32°22N±0°06×115°39W±0°05, h1km±12km, Error ellipse: s-maj=9.7km s-min=6.6km az=178.4*
*ECX **18** 01:53:39.6±0.6, 32°26N×115°34W, h5km, MD2.4, ML2.6*
*MEX **18** 01:53:40.3±0.7, 32°34N×115°20W, h18km±10km, MD3.6*

ISC 18 01:53:38.0±1.2, 32°22N±0°07×115°37W±0°05, h11km±13km, n19, σ0°50/25, 6C-5D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.20**	**16**	⇓*e*P	**Pg**	**01 53 42.3**	**0.0**
CPBX				*e*S	**Sg**	**01 53 45.5**	**+0.3**
CPBX				IAML		01 53 47.5	
	comp=N,5μm,0.3s						
MBIG	**Mexicali**	**0.23**	**38**	*e*P	**Pg**	**01 53 43.3**	**+0.4**
MBIG				*e*S	**Sg**	**01 53 44.9**	**-1.3**
MBIG	**Mexicali**	**0.23**	**38**	⇑*e*P	**Pg**	**01 53 43.5**	**+0.6**
SGL	**Mount Signal**	**0.52**	**325**	⇑*i*P	**Pg**	**01 53 48.2**	**0.0**
ERPC	**Ernies Place**	**0.57**	**335**	*e*P	**Pg**	**01 53 49.4**	**+0.2**
DREC	**Desert Rsrch C**	**0.58**	**354**	⇓*e*P	**Pg**	**01 53 49.4**	**0.0**
EMSC	**East Mesa**	**0.61**	**32**	⇑*i*P	**Pg**	**01 53 49.5**	**-0.3**
WESC	**Westside Schoo**	**0.61**	**330**	⇓*e*P	**Pg**	**01 53 50.3**	**+0.3**
YUH	**Yuha Desert**	**0.63**	**312**	⇑*i*P	**Pg**	**01 53 50.1**	**-0.1**
RMX	**La Rumorosa**	**0.71**	**302**	*e*P	**Pg**	**01 53 51.3**	**-0.5**
RMX				*e*S	**Sg**	**01 54 00.8**	**-0.3**
RMX				IAML		01 54 01.0	
	comp=E,201nm,0.2s						
IKP	**In-Ko-Pah, Jac**	**0.76**	**304**	⇑*e*P	**Pg**	**01 53 52.7**	**0.0**
ZAX	**El Zacaton**	**1.04**	**228**	*e*P	**Pb**	**01 53 58.9**	**+0.6**
CBX	**Cerro Bola**	**1.10**	**275**	*e*P	**Pb**	**01 53 59.3**	**+0.1**
CBX				*e*S	**Sb**	**01 54 14.4**	**+0.8**
CBX	**Cerro Bola**	**1.10**	**275**	*e*P	**Pb**	**01 53 59.5**	**+0.3**
CBX				*e*S	**Sb**	**01 54 14.1**	**+0.5**
CBX				IAML		01 54 20.2	
	comp=E,183nm,0.5s						
TJIG	**Tijuana**	**1.12**	**281**	*e*P	**Pn**	**01 53 59.5**	**-0.3**
TJIG				*i* S	**Sb**	**01 54 14.1**	**-0.1**
TJIG	**Tijuana**	**1.12**	**281**	⇑*e*P	**Pn**	**01 53 59.4**	**-0.4**
SPX	**San Pedro Mart**	**1.18**	**184**	⇓*e*P	**Pn**	**01 54 00.3**	**-0.6**
BAR	**Barrett**	**1.19**	**293**	⇓*e*P	**Pn**	**01 54 00.3**	**-0.4**
SDRC	**San Diego Road**	**1.42**	**291**	*e*P	**Pn**	**01 54 04.3**	**+0.4**

*ISCJB **18** 02:02:27.3±0.7, 63°.6N±0°.1×19°.2W±0°.2, h10km, mb3.6/7, MS3.0/5, Error ellipse: s-maj=19.7km s-min=11.6km az=27.8*
*IDC **18** 02:02:27.3±0.9, 63°.65N×19°.22W, h0km, mb3.5/7, mb1 3.9/9, mb1mx3.6/54, mbtmp3.6/9, ML3.6/2, MS3.1/9, Ms1 3.1/9, ms1mx2.8/54, Error ellipse: s-maj=29.0km s-min=11.7km az=40.0*

ISC 18 02:02:28.5±0.8, 63°.6N±0°.2×19°.2W±0°.1, h10km, n19, σ1°30/13, mb3.7/7, MS3.0/5, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**1.45**	**322**	Pg	**Pn**	**02 02 52.0**	**-2.6**
	34nm,0.3s,baz=139,slow=10,SNR=196						
BORG				Lg	Lg	02 03 12.5	
	28nm,0.3s,baz=165,slow=21,SNR=10						
EKA	**Eskdalemuir Ar**	**11.63**	**128**	Pn	**Pn**	**02 05 13.2**	**-1.1**
	baz=326,slow=13,SNR=7.8						
SFJD	**Kangerlussuaq**	**13.45**	**298**	LR	LR	02 10 16.8	
	comp=Z,110nm,18.1s,baz=108,slow=35						
NOA	**NORSAR Array B**	**14.31**	**87**	LR	LR	02 11 25.7	
	comp=Z,35nm,18.6s,baz=285,slow=38						
HFS	**Hagfors**	**15.80**	**88**	LR	LR	02 12 55.9	
	comp=Z,52nm,18.3s,baz=294,slow=40						
ARCES	**ARCESS Array B**	**18.35**	**52**	P	**P**	**02 06 44.4**	**+1.7**
	0.1nm,0.3s,baz=276,slow=11,SNR=5.3						
ARCES				LR	LR	02 12 38.8	
	comp=Z,43nm,18.4s,baz=360,slow=33						
FINES	**FINESS Array B**	**20.68**	**75**	P	**P**	**02 07 07.2**	**-1.0**
	1.8nm,0.7s,baz=286,slow=10.0,SNR=6.9						
FINES				LR	LR	02 14 07.6	
	comp=Z,48nm,19.1s,baz=330,slow=34						
FRB	**Frobisher Bay**	**21.43**	**293**	LR	LR	02 15 02.4	
	comp=Z,41nm,19.6s,baz=175,slow=35						
BRG	**Berggiesshubel**	**21.71**	**110**	*e*P	**P**	**02 07 20.0**	**+0.6**
	16nm,1.7s						
KHC	**Kasperske Hory**	**22.90**	**114**	*e*P	**P**	**02 07 32.4**	**+0.3**
DPC	**Dobruska-Polom**	**23.11**	**108**	*e*P	**P**	**02 07 33.6**	**-0.7**
DPC				*ex*	x	02 07 42.0	
GERES	**GERESS Array B**	**23.18**	**114**	P	**P**	**02 07 34.8**	**-0.3**
	0.7nm,0.8s,baz=330,slow=9.5,SNR=3.1						
GERES				LR	LR	02 16 59.8	
	comp=Z,49nm,18.1s,baz=288,slow=38						
ESDC	**Sonseca Array**	**25.65**	**152**	P	**P**	**02 07 58.5**	**+0.4**
	1.7nm,0.9s,baz=352,slow=9.2,SNR=5.8						
RES	**Resolute Bay**	**26.88**	**325**	LR	LR	02 18 16.6	
	comp=Z,47nm,18.7s,baz=70,slow=35						
BRTR	**Keskin Array B**	**38.98**	**102**	P	**P**	**02 09 54.9**	**+0.2**
	0.7nm,0.8s,baz=331,slow=6.1,SNR=4.3						
KVAR	**Kislovodsk Arr**	**39.59**	**90**	LR	LR	02 25 17.7	
	comp=Z,49nm,18.2s,baz=58,slow=35						
ILAR	**Eielson Array**	**46.25**	**332**	P	**P**	**02 10 55.0**	**+1.8**
	0.6nm,0.9s,baz=28,slow=6.6,SNR=6.7						
PDAR	**Pinedale Array**	**52.88**	**293**	P	**P**	**02 11 44.8**	**+0.5**
	0.8nm,0.7s,baz=45,slow=6.5,SNR=6.1						
TXAR	**Lajitas Array**	**61.71**	**279**	P	**P**	**02 12 47.4**	**+0.7**
	0.9nm,0.9s,baz=54,slow=3.5,SNR=5.8						

*IDC **18** 02:15:13.6±3.6, 35°.43N×65°.22E, h0km, mb3.6/2, mb1 3.8/8, mb1mx3.5/45, mbtmp3.8/8, ML3.5/6, MS3.2/4, Ms1 3.3/4, ms1mx2.6/48, Error ellipse: s-maj=58.7km s-min=19.1km az=163.0*
*NNC **18** 02:15:17.5±3.3, 36°.09N×65°.22E, h0km, mb4.1, mpv4.0, Error ellipse: s-maj=40.6km s-min=22.5km az=154.0*

ISC 18 02:15:19.7±2.4, 35°.9N±0°.2×65°.25E±0°.09, h35km, n23, σ1°89/24, MS3.2/4, 7C-5D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEYT	**Alibeck**	**6.08**	**292**	Pn	**Pn**	**02 16 46.9**	**-0.3**
	0.8nm,0.3s,baz=116,slow=12,SNR=6.2						
GEYT				Sn	**Sn**	**02 17 58.8**	**+3.2**
	0.8nm,0.3s,baz=73,slow=17,SNR=2.4						
GEYT				Lg	Lg	02 18 42.6	
	1.0nm,0.3s,baz=85,slow=32,SNR=3.2						
KK31	**Karatay Array**	**8.30**	**28**	Pn	**Pn**	**02 17 17.8**	**+0.2**
	2.2nm,0.3s,baz=216,slow=14,SNR=37						
KK31				⇑Sn	**Sn**	**02 18 50.0**	**0.0**
	2.1nm,0.3s,baz=216,slow=24,SNR=8.0						
MNAS	**Manas**	**8.69**	**38**	⇑Pn	**Pn**	**02 17 23.4**	**+0.4**
	7.3nm,0.8s						
MNAS				⇑Sn	**Sn**	**02 18 60.0**	**+0.1**
	14nm,0.9s						
AAK	**Ala-Archa**	**9.85**	**44**	Pn	**Pn**	**02 17 39.6**	**+0.6**
	1.3nm,0.3s,baz=193,slow=8.3,SNR=6.5						
AAK				Sn	**Sn**	**02 19 32.1**	**+3.7**
	0.6nm,0.3s,baz=329,slow=18,SNR=2.9						
AAK	**Ala-Archa**	**9.85**	**44**	⇑Pn	**Pn**	**02 17 38.8**	**-0.2**
	3.4nm,0.5s						
AAK				⇓Sn	**Sn**	**02 19 30.3**	**+1.9**
	6.9nm,0.7s						
TKM2	**Tokmak 2**	**10.66**	**45**	⇑Pn	**Pn**	**02 17 49.2**	**-0.9**
	4.7nm,0.6s						
AB31	**Akbulak array**	**13.95**	**345**	⇓P	**Pn**	**02 18 31.7**	**-3.0**
	1.0nm,0.7s,baz=0.3,slow=26,SNR=7.5						
AKTO	**Aktyubinsk**	**15.49**	**342**	Pn	**Pn**	**02 18 54.4**	**-1.0**
	0.3nm,0.3s,baz=153,slow=16,SNR=7.4						
AKTO	**Aktyubinsk**	**15.49**	**342**	⇓P	**Pn**	**02 18 53.8**	**-1.6**
	2.2nm,0.7s						
MK31	**Makanchi Array**	**16.79**	**44**	⇑P	**Pn**	**02 19 11.8**	**-0.2**
	1.5nm,0.6s,baz=241,slow=12,SNR=9.5						
MKAR	**Makanchi Array**	**16.79**	**44**	Pn	**Pn**	**02 19 11.3**	**-0.8**
	0.2nm,0.3s,baz=234,slow=16,SNR=10						
ZRNK	**Zerenda**	**17.30**	**8**	⇑P	**P**	**02 19 19.3**	**-0.1**
	2.1nm,0.5s						
VOSK	**Vostochnaya**	**17.35**	**12**	⇓P	**Pn**	**02 19 17.5**	**-1.4**
	2.3nm,1.0s						
BVA0	**Borovoye Array**	**17.55**	**10**	P	**P**	**02 19 22.1**	**-0.1**
	3.7nm,0.8s,baz=235,slow=39,SNR=18						
BVAR	**Borovoye Array**	**17.55**	**10**	Pn	**Pn**	**02 19 20.7**	**-0.7**
	0.3nm,0.3s,baz=197,slow=9.4,SNR=14						
KURBB	**Kurchatov Arra**	**17.61**	**29**	Pn	**Pn**	**02 19 20.2**	**-1.9**
	0.1nm,0.3s,baz=220,slow=12,SNR=10						
KURBB	**Kurchatov Arra**	**17.61**	**29**	⇓P	**Pn**	**02 19 17.0**	**-5.1**
	3.9nm,1.0s						
ZALV	**Zalesovo Beam**	**22.66**	**31**	P	**P**	**02 20 18.5**	**+0.8**
	2.1nm,0.6s,baz=228,slow=8.2,SNR=7.6						
BRTR	**Keskin Array B**	**25.21**	**288**	P	**P**	**02 20 42.5**	**+0.3**
	0.7nm,0.9s,baz=93,slow=2.9,SNR=5.0						
OBN	**Obninsk**	**27.53**	**323**	LR	LR	02 34 50.5	
	comp=Z,41nm,19.6s,baz=88,slow=42						
PALK	**Pallekele**	**31.77**	**150**	LR	LR	02 33 58.4	
	comp=Z,44nm,20.5s,baz=297,slow=36						
HFS	**Hagfors**	**40.74**	**323**	LR	LR	02 43 52.6	
	comp=Z,37nm,18.3s,baz=60,slow=42						
NOA	**NORSAR Array B**	**42.13**	**324**	LR	LR	02 43 37.9	
	comp=Z,31nm,19.3s,baz=65,slow=40						

*IDC **18** 02:16:47.6±1.2, 29°.42S×176°.81W, h0km, mb4.0/4, mb1 4.2/6, mb1mx3.9/27, mbtmp4.1/6, ML3.9/2, MS3.5/4, Ms1 3.5/4, ms1mx3.1/32, Error ellipse: s-maj=38.9km s-min=23.9km az=163.0*
*NEIC **18** 02:16:48.7±0.7, 29°.44S×176°.75W, h10km, mb4.3/2, Error ellipse: s-maj=15.6km s-min=13.5km az=153.0*

ISC 18 02:16:53.5±0.9, 29°44S±0°.10×177°02W±0°09, h31km, n32, σ1°24/22, mb4.1/6, MS3.6/4, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.81**	**284**	Pn	**Pn**	**02 17 08.8**	**+0.2**
	1μm,0.3s,baz=119,slow=6.4,SNR=82						
RAO				Sn	**Sn**	**02 17 20.4**	**+0.8**
	3μm,0.3s,baz=99,slow=19,SNR=26						
RAO	**Raoul Island**	**0.81**	**284**	*e*Pg	**Pn**	**02 17 08.9**	**+0.2**
RAO				*e*S	**Sn**	**02 17 18.5**	**-1.1**
OUZ	**Omahuta**	**9.80**	**232**	*e*Pn	Pn	02 19 21.0	+8.7
	17nm,0.9s						
URZ	**Urewera**	**10.05**	**207**	Pn	**Pn**	**02 19 14.5**	**-1.1**
	0.5nm,0.3s,baz=265,slow=4.6,SNR=3.4						
URZ				Sn	**Sn**	**02 21 06.1**	**-1.3**
	1.2nm,0.3s,baz=204,slow=13,SNR=5.5						
DZM	**Mont Dzumac**	**16.60**	**292**	*e*LR	LR	02 24 51.0	
	407nm,24.3s						
RPZ	**Rata Peaks**	**17.14**	**211**	Pn	**Pn**	**02 20 50.0**	**-0.5**
	1.0nm,0.3s,baz=113,slow=1.6,SNR=9.0						
TBI	**Tubuai**	**25.39**	**83**	*e*LR	LR	02 28 35.3	
	146nm,26.0s						
PPT2	**Papeete2**	**27.72**	**71**	*e*LR	LR	02 29 35.7	
	129nm,25.5s						
PPT	**Papeete**	**27.73**	**71**	LR	LR	02 30 40.3	
	comp=Z,41nm,21.3s,baz=254,slow=30						
CTA	**Charters Tower**	**34.50**	**277**	P	**P**	**02 23 40.3**	**+1.3**
	3.1nm,0.6s,baz=93,slow=13,SNR=4.5						
STKA	**Stephens Creek**	**35.53**	**255**	P	**P**	**02 23 49.5**	**+1.8**
	1.5nm,0.6s,baz=82,slow=12,SNR=3.4						
ASAR	**Alice Springs**	**44.02**	**266**	P	**P**	**02 24

SPIA Saint Paul Isl 5.46 12 P Pn 02 25 08.2 -0.1
SDPT Sand Point 7.84 59 *e*Pn Pn 02 25 40.4 -0.5
SDPT *eS* Sn 02 27 10.0 +1.0
SMY Shemya 8.41 281 *e*Pn Pn 02 25 48.6 -0.1
CHGN Chignik 9.28 56 *e*Pn Pn 02 26 00.5 -0.1
OHAK Old Harbor 12.24 57 *e*Pn Pn 02 26 36.9 -4.3
KDAK Kodiak Island 12.79 55 *e*Pn Pn 02 26 45.9 -2.6
SVW2 Sparrevohn 13.03 38 *e*Pn Pn 02 26 54.6 +2.7
TT01 Tatalina 14.07 32 *e*Pn P 02 27 10.1 -3.6
TTA Tatalina 14.09 32 *e*Pn P 02 27 10.2 -3.8
SPU Mount Spurr 14.49 42 *e*Pn P 02 27 15.5 -2.9
PPLA Purkeypile 15.40 36 *e*Pn Pn 02 27 24.3 +0.3
31nm,1.3s
CAST Castle Rocks 15.75 35 *e*Pn P 02 27 31.7 -0.7
20nm,1.4s
KTH Kantishna Hill 16.25 36 *e*Pn P 02 27 37.3 -0.7
19nm,1.0s
SML Sawmill 16.36 43 *e*Pn Pn 02 27 34.9 -1.4
3.6nm,0.9s
MID Middleton Isla 16.40 52 *e*Pn Pn 02 27 36.4 -0.4
38nm,0.8s
BPAW Bear Paw Mtn. 16.56 34 *e*Pn P 02 27 41.5 +0.2
24nm,1.2s
MCK McKinley 17.08 37 *e*P P 02 27 49.4 +2.3
8.5nm,1.0s
DIV Divide 17.21 47 *e*Pn Pn 02 27 46.8 -0.3
29nm,1.6s
MLY Manley 17.23 32 *e*P P 02 27 50.9 +2.2
6.9nm,0.9s
WRH Wood River Hil 17.80 35 *e*Pn P 02 27 57.3 +2.3
8.2nm,0.9s
CCB Clear Creek Bu 18.00 35 *e*Pn Pn 02 27 56.5 -0.3
4.8nm,0.9s
MDM Murphy Dome 18.03 34 *e*Pn P 02 27 59.8 +2.2
13nm,1.2s
PAX Paxson 18.07 42 *e*Pn Pn 02 27 57.3 -0.4
10nm,1.1s
COLA College 18.11 35 *e*Pn P 02 28 00.9 +2.5
5.9nm,0.8s
PEA0 Petropavlovsk- 18.28 286 *e*P P 02 28 05.7 +5.3
PEA0B Petropavlovsk- 18.28 286 *e*P P 02 28 02.0 +1.7
25nm,1.1s
PETK Petropavlovsk- 18.28 286 P P 02 28 01.3 +1.0
0.3nm,0.3s,baz=81,slow=14,SNR=4.0
PETK LR LR 02 34 37.6
comp=Z,72nm,19.4s,baz=98,slow=36
IL1 Eielson Array 18.40 36 *e*P Pn 02 28 04.0 +2.3
ILAR Eielson Array 18.40 36 P P 02 27 59.9 -1.7
0.3nm,0.3s,baz=236,slow=8.9,SNR=17
ILAR LR LR 02 35 18.8
comp=Z,136nm,19.1s,baz=264,slow=38
ILB Eielson Array 18.40 36 *e*P Pn 02 28 03.6 +1.9
BALM Baldy 18.76 49 *e*P Pn 02 28 06.7 +0.5
BALM *e*Pn pP 02 28 10.5 -0.6
COLD Coldfoot 18.86 27 *e*Pn Pn 02 28 07.1 -0.2
6.1nm,0.9s
DOT Dot Lake 18.93 41 *e*P P 02 28 06.6 -0.9
19nm,1.0s
BILL Bilibino 19.28 335 *e*P Pn 02 28 12.7 +0.5
37nm,1.0s
PCA Pinnacle 19.55 53 *e*P P 02 28 09.4 -4.9
74nm,0.8s
EGAK Eagle 20.56 39 *e*P P 02 28 24.2 -1.0
11nm,0.9s
HYT Haines Junctio 21.02 51 *e*P P 02 28 30.9 +0.6
12nm,0.7s
SEY Seymchan 21.73 314 P P 02 28 38.1 +0.3
4.6nm,0.7s,baz=133,slow=11,SNR=11
MA2 Magadan 21.96 305 LR LR 02 36 55.7
comp=Z,84nm,18.1s,baz=96,slow=36
DIB Dawson Inlet, 24.04 71 *e*P P 02 29 01.9 +0.4
24nm,1.2s
DLBC Dease Lake 24.68 58 P P 02 29 08.7 +1.2
18nm,0.8s,baz=296,slow=8.5,SNR=18
DLBC Dease Lake 24.68 58 *e*P P 02 29 08.0 +0.5
19nm,0.8s
INK Inuvik 24.77 34 P P 02 29 06.0 -2.0
3.4nm,0.3s,baz=242,slow=6.8,SNR=22
INK LR LR 02 39 37.3
comp=Z,128nm,18.2s,baz=245,slow=39
INK Inuvik 24.77 34 *e*P P 02 29 05.7 -2.4
23nm,1.8s
B05A Bryant 31.89 76 P P 02 30 12.5 +0.7
baz=296
YKA Yellowknife Ar 31.92 48 P P 02 30 09.9 -2.0
0.7nm,0.6s,baz=275,slow=9.4,SNR=4.3
YKA LR LR 02 44 55.8
comp=Z,11nm,18.6s,baz=180,slow=40
YAK Yakutsk 32.17 311 LR LR 02 43 52.6
comp=Z,91nm,18.6s,baz=93,slow=38
D05A Enumclaw 32.44 78 *e*P P 02 30 16.9 +0.4
12nm,0.8s
B08A Colville Reser 33.51 75 *e*P P 02 30 27.2 +1.2
11nm,1.0s
I04A Tendick Farm, 33.85 84 P P 02 30 30.1 +1.0
baz=302
L02D Cave Junction, 33.99 87 P P 02 30 32.0 +1.7
baz=304
I05D Terrebonne, OR 34.22 82 P P 02 30 32.4 +0.2
baz=301
C09A Chrisman Ranch 34.40 75 *e*P P 02 30 34.4 +0.7
6.5nm,0.8s
J05D Fort Rock, OR 34.84 84 P P 02 30 39.2 +1.4
baz=302
NEW Newport 34.87 74 LR LR 02 44 08.1
comp=Z,42nm,19.9s,baz=296,slow=35
NEW Newport 34.87 74 P P 02 30 38.3 +0.5
baz=297,SNR=9.4
NEW Newport 34.87 74 *e*P P 02 30 37.8 -0.1
8.5nm,0.8s
M02C Callahan 34.88 88 P P 02 30 39.9 +1.8
baz=304
KLR Kul'dur 34.93 288 LR LR 02 43 41.0
comp=Z,49nm,21.1s,baz=91,slow=34
EDM Edmonton 34.98 64 *e*P P 02 30 38.7 -0.1
17nm,0.8s
N02D Trinity Center 35.22 88 P P 02 30 42.6 +1.7
baz=305
M04C Macdoel 35.29 86 P P 02 30 42.9 +1.3
baz=304
F10A Beach Ranch, E 35.90 77 *e*P P 02 30 47.7 +1.0
4.2nm,0.8s
H11N2 WAKE ISLAND Hy 35.97 215 T T 03 09 07.8
baz=21,slow=76,SNR=948
H11N3 WAKE ISLAND Hy 35.98 215 T T 03 09 07.3
baz=21,slow=76,SNR=853
H11N1 WAKE ISLAND Hy 35.99 215 T T 03 09 05.8
baz=21,slow=76,SNR=673
O03D Paynes Creek 36.17 88 P P 02 30 49.7 +0.6
baz=306
WALA Waterton Lakes 36.40 71 *e*P P 02 30 48.9 -2.1
7.6nm,1.1s
WVOR Wild Horse Val 36.91 83 *e*P P 02 30 56.1 +0.7
6.1nm,0.8s
H11S1 WAKE ISLAND Hy 37.17 214 T T 03 10 26.4
baz=21,slow=76,SNR=23
H11S2 WAKE ISLAND Hy 37.18 214 T T 03 10 28.0
baz=21,slow=76,SNR=140
H11S3 WAKE ISLAND Hy 37.19 214 T T 03 10 37.8
baz=21,slow=76,SNR=147
MSO Missoula 37.45 74 P P 02 31 00.3 +0.3
baz=300
MSO Missoula 37.45 74 *e*P P 02 31 00.3 +0.3
13nm,1.2s
RES Resolute Bay 37.60 25 LR LR 02 50 09.5
comp=Z,95nm,18.3s,baz=334,slow=42
MJAR Matsushiro Arr 37.88 266 P P 02 31 03.5 -0.1
5.0nm,0.8s,baz=47,slow=7.4,SNR=14
MJAR LR LR 02 49 03.1
comp=Z,22nm,18.4s,baz=215,slow=40
MAJO Matsushiro 37.88 266 *e*P P 02 31 03.5 -0.1
19nm,1.0s
MAT Matsushiro 37.88 266 P P 02 31 03.1 -0.5
MJB9 Matsu-Tunnel 37.88 266 *e*P P 02 31 03.5 -0.2
4.9nm,1.0s
PAHR Pah Rah Range 38.01 87 *e*P P 02 31 05.9 +1.0
5.8nm,0.8s
MFID Camas Ranch 38.09 80 *e*P P 02 31 04.9 -0.6
9.5nm,1.5s
WAKR Walker 38.71 89 *e*P P 02 31 12.8 +2.0
5.4nm,0.9s
HLID Hailey 38.87 79 P P 02 31 12.5 +0.4
baz=303
HLID Hailey 38.87 79 *e*P P 02 31 12.0 0.0
4.1nm,1.1s
MCMT McKenzie Canyo 39.13 76 *e*P P 02 31 14.6 +0.3
EGMT Eagleton 39.33 70 P P 02 31 16.0 +0.3
baz=300
EGMT Eagleton 39.33 70 *e*P P 02 31 15.1 -0.6
7.9nm,0.7s
BOZ Bozeman (W) 39.43 74 P P 02 31 16.9 +0.2
baz=302,SNR=9.4
BOZ Bozeman (W) 39.43 74 *e*P P 02 31 16.5 -0.2
12nm,1.2s
FFC Flin Flon 40.51 57 *e*P P 02 31 23.8 -1.6
5.2nm,0.8s
IMW Indian Meadow 40.79 76 *e*P P 02 31 25.9 -2.3
6.5nm,1.0s
RLMT Red Lodge 41.12 74 P P 02 31 31.2 +0.4
baz=303,SNR=6.6
RLMT Red Lodge 41.12 74 *e*P P 02 31 30.7 -0.1
15nm,1.1s
R11A Troy Canyon, C 41.19 86 P P 02 31 31.8 +0.4
baz=308
R11A Troy Canyon, C 41.19 86 *e*P P 02 31 32.3 +1.0
1.8nm,0.8s
FURC Furnace Creek, 41.58 89 P P 02 31 35.3 +1.0
baz=310
TPNV Topopah Spring 41.65 88 P P 02 31 36.0 +0.9
baz=309,SNR=5.4
DUG Dugway, Tooele 41.78 82 P P 02 31 37.0 +0.9
baz=307
DUG Dugway, Tooele 41.78 82 *e*P P 02 31 36.1 0.0
8.2nm,1.2s
EDW2 Edwards Air Fo 41.90 92 P P 02 31 37.7 +0.6
baz=311
LAO LASA Array 42.07 70 P P 02 31 38.5 +0.2
baz=302
BW06 Boulder Array 42.26 77 P P 02 31 40.2 0.0
baz=305,SNR=9.4
BW06 Boulder Array 42.26 77 *e*P P 02 31 39.7 -0.4
PD31 Pinedale Array 42.26 77 *e*P P 02 31 40.6 +0.4
PDAR Pinedale Array 42.26 77 P P 02 31 40.2 0.0
5.5nm,0.6s,baz=302,slow=4.3,SNR=46
PDAR pP pP 02 31 46.6 +0.5
4.8nm,0.7s,baz=280,slow=5.2,SNR=13
PDAR LR LR 02 46 45.7
comp=Z,18nm,19.3s,baz=328,slow=33
SHOC Shoshone, Teco 42.30 89 P P 02 31 41.3 +0.9
baz=310
GSC Goldstone, Bar 42.36 91 P P 02 31 41.8 +1.0
baz=311,SNR=5.2
GSC Goldstone, Bar 42.36 91 *e*P P 02 31 41.4 +0.5
7.1nm,0.9s
BFSC Mount Baldy Ra 42.53 92 P P 02 31 42.9 +0.6
baz=312
TUQ Turquoise Moun 42.82 90 P P 02 31 45.4 +0.7
baz=311
SCI2 San Clemente I 42.82 95 P P 02 31 44.1 -0.4
baz=313
CCUT Cedar City 43.06 85 *e*P P 02 31 46.8 +0.2
13nm,1.9s
TMUT Trail Mountain 43.31 82 *e*P P 02 31 49.9 +1.1
4.9nm,0.8s
GMRC Granite Mounta 43.41 90 P P 02 31 49.9 +0.5
baz=311
LCMT Little Creek M 43.47 86 *e*P P 02 31 50.0 +0.1
2.7nm,0.9s
LDFC Landfair 43.56 90 *e*P P 02 31 51.4 +0.8
10.0nm,0.9s
KSRS Korea Array 43.68 275 P P 02 31 53.3 +2.0
3.3nm,0.7s,baz=54,slow=7.6,SNR=15
KSRS pP sP 02 31 59.8 +0.1
1.5nm,0.7s,baz=63,slow=7.2,SNR=3.7
KSRS LR LR 02 51 07.2
comp=Z,43nm,18.5s,baz=120,slow=38
KSAR Wonju Array Be 43.71 275 P P 02 31 53.4 +1.7
KSAR pP sP 02 31 59.8 -0.2
SRU San Rafael Swe 43.84 82 *e*P P 02 31 54.1 +1.2
6.5nm,1.0s
K22A Casper 44.15 75 P P 02 31 55.5 +0.2
baz=306
K22A Casper 44.15 75 *e*P P 02 31 54.0 -1.3
18nm,1.4s
W13A Hualapai Mount 44.31 89 *e*P P 02 31 57.6 +0.9
2.5nm,0.8s
U15A North Rim 44.43 86 *e*P P 02 31 59.1 +1.3
5.2nm,1.0s
O20A White River Ci 44.61 79 P P 02 31 59.0 -0.1
baz=307,SNR=8.2
O20A White River Ci 44.61 79 *e*P P 02 31 58.3 -0.8
9.7nm,0.7s
H25A Fruitdale 44.75 71 P P 02 31 59.8 -0.2
baz=305
RSSD Black Hills 44.78 72 P P 02 32 00.3 -0.1
baz=305
RSSD Black Hills 44.78 72 *e*P P 02 31 59.5 -0.9
4.7nm,0.8s
Y12C Blythe 44.80 90 *e*P P 02 32 01.4 +1.0
4.3nm,0.8s
A29A Manning Farm, 44.85 63 P P 02 32 00.5 -0.1
baz=303
GLA Glamis 45.08 91 P P 02 32 03.3 +0.6
baz=312
PV10 Paradox Valley 45.21 81 *e*P P 02 32 04.9 +1.0
MDND Maddock 45.23 65 P P 02 32 03.7 0.0
baz=304
N23A Red Feather La 45.54 77 *e*P P 02 32 07.0 +0.4
7.8nm,1.1s
WUAZ Wupatki 45.59 86 P P 02 32 07.3 +0.5
baz=311
WUAZ Wupatki 45.59 86 *e*P P 02 32 07.3 +0.5
4.7nm,0.8s
B30A Myrvik Farm, E 45.61 64 P P 02 32 07.1 +0.4
baz=303
Y14A Wickenburg 45.62 89 *e*P P 02 32 07.3 +0.4
11nm,0.8s
PV01 Paradox Valley 45.65 81 *e*P P 02 32 07.1 -0.3
ULM Lac du Bonnet 45.97 60 P P 02 32 08.4 -1.1
1.7nm,0.6s,baz=277,slow=8.5,SNR=3.0
ULM LR LR 02 52 12.0
comp=Z,53nm,18.8s,baz=322,slow=37
X16A Lo Mia Camp, P 46.27 87 *e*P P 02 32 11.7 -0.5
3.3nm,1.1s
A33A Warroad 46.95 61 P P 02 32 16.4 -0.8
baz=304
S22A 4UR Ranch, Cre 46.96 81 P P 02 32 16.9 -0.9
baz=310
AGMN Agassiz Nation 47.06 62 P P 02 32 17.4 -0.6
baz=304
AGMN Agassiz Nation 47.06 62 *e*P P 02 32 16.6 -1.4
10nm,1.0s
SDCO Great Sand Dun 47.77 80 P P 02 32 22.8 -1.2
baz=310
SDCO Great Sand Dun 47.77 80 *e*P P 02 32 22.6 -1.5
3.1nm,0.9s
TUC Tucson 48.09 89 P P 02 32 25.9 -0.4
baz=313
D34A Park Rapids 48.12 63 P P 02 32 25.5 -0.8
baz=306
B35A Bob, Littlefor 48.19 61 P P 02 32 25.9 -0.9
baz=305
T25A Trinidad 48.82 80 *e*P P 02 32 32.5 +0.4
11nm,1.0s
ECSD EROS Data Cent 49.33 68 P P 02 32 34.7 -0.9
baz=308
ECSD EROS Data Cent 49.33 68 *e*P P 02 32 33.9 -1.7
9.1nm,1.4s
SONM Songino Array 50.01 300 P P 02 32 42.1 +1.1
0.5nm,0.5s,baz=54,slow=9.7,SNR=4.3
SONM PcP PcP 02 34 00.1 -0.5
1.1nm,0.8s,baz=48,slow=2.1,SNR=4.5
H36A Jessenland, He 50.34 65 P P 02 32 42.6 -0.7
baz=308
C39A Grand Marais 50.46 60 P P 02 32 43.1 -1.0
baz=307
I37A Lemond, Waseca 50.98 66 P P 02 32 46.7 -1.5
baz=308
Q32A Meitler Ranch, 51.16 74 P P 02 32 48.6 -1.0
baz=310
HHC Hu-ho-hao-te 51.42 290 *e*P P 02 32 52.4 +0.8
HHC pmax pmax
comp=Z,18nm,1.6s
HHC pmax pmax
comp=Z,110nm,4.3s
R32A Long Quarter, 51.44 74 P P 02 32 51.0 -0.7
baz=310
O34A Beatrice 51.50 71 P P 02 32 51.4 -0.7
baz=310
Q33A Connelly Farm, 51.59 73 P P 02 32 52.0 -0.8
baz=310
N35A Tabor 51.68 70 P P 02 32 52.7 -0.8
baz=310
MNTX Cornudas Mount 51.85 85 P P 02 32 55.1 +0.2
baz=314
MSTX Muleshoe 51.92 81 P P 02 32 55.1 -0.3
baz=312
L37A Phoenix Point, 51.97 68 P P 02 32 54.7 -0.9
baz=310
T32A Huddler Ranch, 52.12 76 P P 02 32 55.8 -1.0
baz=311
Q34A Chapman 52.17 73 P P 02 32 56.4 -0.7
baz=311
P35A Duane Minner, 52.32 72 P P 02 32 56.0 -2.2
baz=310
J39A Decorah 52.37 65 P P 02 32 57.3 -1.2
baz=309
R34A Isabella, Hill 52.39 74 P P 02 32 57.9 -0.9
baz=311
S33A Kaszmaul Farm, 52.40 75 P P 02 32 58.1 -0.8
baz=311
L38A Oak Wood Farm, 52.41 67 P P 02 32 57.8 -1.1
baz=310
K39A Oelwein 52.66 66 P P 02 32 59.3 -1.5
baz=310
P36A Good Intent, A 52.74 71 P P 02 33 00.2 -1.1
baz=311
L39A Vinton 52.97 67 P P 02 33 01.9 -1.1
baz=310
O37A Wolven Farm, M 53.00 70 P P 02 33 02.3 -0.9
baz=311
U33A Lingo Farm, Me 53.10 76 P P 02 33 03.0 -1.0
baz=312
P37A Lathrop 53.26 71 P P 02 33 04.1 -1.1
baz=311
T34A McClaskey Farm 53.27 75 P P 02 33 04.4 -0.8
baz=312
M39A Webster 53.29 67 P P 02 33 04.4 -1.0
baz=310
J41A Loganville 53.30 64 P P 02 33 04.0 -1.3
baz=310
S35A Otter Creek Ra 53.35 74 P P 02 33 04.8 -1.0
baz=311
R36A Gordon, Harris 53.41 72 P P 02 33 04.9 -1.4
baz=311,SNR=6.4
U34A Anderson Ranch 53.45 76 P P 02 33 05.9 -0.7
baz=312
L40A Anamosa 53.46 66 P P 02 33 05.7 -0.8
baz=310
N39A Derby Farms, D 53.49 68 P P 02 33 05.6 -1.2
baz=311
P38A Dawn 53.71 70 P P 02 33 07.0 -1.5
baz=311
WMOK Wichita Mounta 53.83 78 P P 02 33 08.9 -0.6
baz=313
WMOK Wichita Mounta 53.83 78 *e*P P 02 33 08.1 -1.4
3.2nm,0.8s
T36A Boggs Farm, Ca 54.02 74 P P 02 33 09.6 -1.2
baz=312
S37A Fort Scott 54.18 73 P P 02 33 10.7 -1.2
baz=312,SNR=6.9
P39B Salisbury 54.26 70 P P 02 33 11.1 -1.3
baz=311
V35A Meyer Ranch, C 54.32 76 P P 02 33 11.9 -1.1
baz=312
O40A La Belle 54.35 69 P P 02 33 11.6 -1.5
baz=311,SNR=5.8
Q39A Willow Cove F 54.42 70 P P 02 33 11.6 -2.0
baz=312,SNR=6.3
R38A Fenwick Farm, 54.44 72 P P 02 33 11.7 -2.1
baz=312
T37A Cheneyville 18 54.55 73 P P 02 33 13.1 -1.5
baz=312
TX31 Lajitas Ar. Si 54.55 86 *e*P P 02 33 14.6 -0.3
TXAR Lajitas Array 54.55 86 P P 02 33 14.6 -0.3
2.1nm,0.5s,baz=296,slow=5.1,SNR=38
TXAR pP sP 02 33 22.5 -0.8
3.1nm,0.7s,baz=298,slow=5.5,SNR=13
TXAR PcP PcP 02 34 18.1 +0.2
0.8nm,0.5s,baz=270,slow=1.2,SNR=3.8
P40A Paris 54.64 69 P P 02 33 13.4 -1.8
baz=312,SNR=5.5
S38A Stockton 54.81 72 P P 02 33 14.2 -2.3
baz=312,SNR=6.1
U37A Salina 54.91 74 P P 02 33 16.2 -1.1
baz=312
O41A Passleys Farm, 54.92 68 P P 02 33 16.1 -1.2
baz=312
Q40A Laux Farm, Aux 54.98 70 P P 02 33 16.2 -1.5
baz=312
T38A Diamond 54.98 73 P P 02 33 16.4 -1.4
baz=312
S39A Bolivar 55.12 72 P P 02 33 16.3 -2.4
baz=312
133A Hamilton Ranch 55.20 80 P P 02 33 18.8 -0.7
baz=314
V37A Hulbert 55.25 74 P P 02 33 18.7 -1.0
baz=313
U38A Gravette 55.33 73 P P 02 33 18.7 -1.5
baz=312
R40A Maddies Statio 55.33 70 P P 02 33 17.7 -2.5
baz=312,SNR=5.9
T39A Clever 55.53 72 P P 02 33 19.8 -1.9
baz=312
W37B Quinton 55.58 75 P P 02 33 21.7 -0.4
baz=313
V38A Canehill 55.70 74 P P 02 33 21.7 -1.3
baz=313
134A White-Moore Ra 55.74 79 P P 02 33 22.5 -0.7
baz=314
U39A Green Forest 55.90 73 P P 02 33 22.8 -1.6
baz=313
Y36A Durant 55.91 77 P P 02 33 24.3 -0.2
baz=313
Q42A Golden Eagle 55.93 69 P P 02 33 23.3 -1.2
baz=312
T40A Mansfield 55.95 72 P P 02 33 23.1 -1.7
baz=313
X37A Clayton 55.99 76 P P 02 33 24.5 -0.6
baz=313
333A Richland Sprin 56.05 81 P P 02 33 24.7 -0.8
baz=314
S41A Jillco Farms, 56.11 71 P P 02 33 23.4 -2.4
baz=313,SNR=6.2
JCT Junction City 56.14 82 P P 02 33 25.2 -1.0
baz=315
V39A Pettigrew 56.17 74 P P 02 33 25.4 -1.0
baz=313
W38A Poteau 56.18 75 P P 02 33 25.9 -0.5
baz=313
X38A Whitesboro 56.27 75 P P 02 33 26.3 -0.7
baz=313
U40A Yellville 56.29 73 P P 02 33 25.5 -1.7
baz=313
334A Lometa 56.50 81 P P 02 33 28.2 -0.6
baz=314,SNR=6.3
WHTX Lake Whitney, 56.52 79 P P 02 33 28.3 -0.5
baz=314
W39A Magazine 56.53 74 P P 02 33 27.6 -1.2
baz=313
V40A Witts Springs 56.69 73 P P 02 33 28.0 -2.1
baz=313
X39A Fountain Ranch 56.80 75 P P 02 33 30.0 -0.8
baz=314,SNR=6.1
434A Burnet 56.84 81 P P 02 33 30.6 -0.6
baz=315
SCHQ Schefferville 57.02 42 LR LR 02 59 10.8
comp=Z,59nm,18.0s,baz=28,slow=37
V41A Mountainview 57.09 73 P P 02 33 30.9 -2.0
baz=313
S43A Fulton Ridge, 57.10 70 P P 02 33 31.1 -1.8
baz=313,SNR=6.4
MIAR Mount Ida 57.10 75 P P 02 33 32.0 -0.9
baz=314,SNR=8.2
MIAR Mount Ida 57.10 75 *e*P P 02 33 31.4 -1.5
8.3nm,0.8s
U42A Revenden 57.25 71 P P 02 33 31.5 -2.4
baz=313
534A Blanco 57.27 82 P P 02 33 33.4 -0.9
baz=315
336A Riesel 57.31 80 P P 02 33 34.8 +0.3
baz=314
X301 Greenbrier Sit 57.33 73 *e*P P 02 33 33.5 -1.0
6.3nm,1.0s
W41B Gary Mavity, V 57.46 73 P P 02 33 34.4 -1.1
baz=314
S44A Carbondale 57.49 69 P P 02 33 34.4 -1.2
baz=313
832A Faith Ranch, C 57.58 84 P P 02 33 36.1 -0.3
baz=316
X40A Basin Creek Fa 57.58 74 P P 02 33 35.7 -0.7
baz=314
Y40A Okolona 57.65 75 P P 02 33 35.9 -0.9

baz=314
833A **Chaparral WMA,** 57.91 84 P P 02 33 38.5 -0.2
baz=316
WLAR **White Oak Lake** 57.97 75 *e*P P 02 33 38.9 -0.1
17nm,0.7s
635A **Leesville** 58.15 82 P P 02 33 40.3 -0.1
baz=315
USIN **University of** 58.22 68 *e*P P 02 33 40.1 -0.7
14nm,0.8s
ARCES **ARCESS Array B** 58.23 353 LR LR 03 00 39.6
comp=Z,23nm,18.5s,baz=16,slow=38
034A **Hebbronville** 59.25 84 P P 02 33 48.2 +0.2
baz=316
OXF **Oxford** 59.60 72 *e*P P 02 33 48.7 -1.7
23nm,1.0s
342A **Flagon Creek P** 60.06 76 P P 02 33 53.7 +0.1
baz=315
Y46A **Houston** 60.36 72 P P 02 33 54.8 -0.8
baz=315
244A **Avery, Jackson** 60.58 75 P P 02 33 56.7 -0.4
baz=315
Y47A **UCPARC, Winfie** 60.94 71 P P 02 33 58.5 -1.1
baz=315
Z47A **Carrollton** 61.31 72 P P 02 34 01.1 -1.0
baz=315
Z48A **Northport** 61.49 71 P P 02 34 02.0 -1.3
baz=315
248A **Dixon Mills** 62.29 73 P P 02 34 08.1 -0.6
baz=316
WMQ **Urumqi** 62.42 306 *e*P P 02 34 11.0 +1.5
WMQ pmax pmax
comp=Z,8.0nm,0.5s
WMQ pmax pmax
comp=Z,78nm,4.4s
MKAR **Makanchi Array** 62.84 312 P P 02 34 11.9 -0.3
0.6nm,0.6s,baz=48,slow=7.2,SNR=5.8
BVAR **Borovoye Array** 63.06 323 P P 02 34 12.5 -1.1
0.8nm,0.5s,baz=33,slow=8.6,SNR=3.7
ZRNK **Zerenda** 63.63 324 *e*P P 02 34 16.2 -1.1
2.4nm,0.6s
FINES **FINESS Array B** 66.11 350 P P 02 34 32.6 -0.6
0.7nm,0.6s,baz=8.9,slow=9.8,SNR=3.1
FINES LR LR 03 06 31.3
comp=Z,31nm,18.1s,baz=38,slow=39
NOA **NORSAR Array B** 67.42 358 P P 02 34 39.9 -1.9
0.8nm,0.9s,baz=6.6,slow=6.7,SNR=2.9
NOA LR LR 03 05 07.4
comp=Z,10nm,18.4s,baz=50,slow=37
KMI **Kunming** 67.65 282 P P 02 34 45.3 +1.4
KMI pP sP 02 34 56.5 +4.0
KMI pmax pmax
comp=Z,11nm,0.5s
HFS **Hagfors** 68.26 357 P P 02 34 44.1 -2.9
0.9nm,0.3s,baz=9.8,slow=3.6,SNR=18
AKTO **Aktyubinsk** 69.54 328 P P 02 34 53.3 -1.8
2.8nm,0.7s,baz=20,slow=6.7,SNR=12
ABKAR **Akbulak array** 69.91 327 *e*P P 02 34 55.3 -2.0
KSH **Kashi** 71.38 311 *e*P P 02 35 10.9 +4.2
KSH *e*PP PP 02 37 53.4 +8.9
KSH S S 02 44 25.1 +1.4
KSH SKS SKSac 02 45 04.8 -3.9
KSH pmax pmax
comp=Z,18nm,3.5s
KSH LR LR
comp=N,100nm,6.7s
KSH LR LR
comp=E,150nm,7.9s
KSH LR LR
comp=Z,170nm,6.9s
PPT **Papeete** 71.91 157 LR LR 03 00 11.1
comp=Z,23nm,20.5s,baz=164,slow=30
CMAR **Chiang Mai Arr** 74.97 281 P P 02 35 29.4 +1.5
5.7nm,0.8s,baz=25,slow=7.1,SNR=19
CM01 **Chiang Mai Arr** 74.99 281 *e*P P 02 35 29.6 +1.5
AKASG **Malin Array Be** 76.21 346 P P 02 35 33.6 -1.0
0.8nm,0.5s,baz=17,slow=6.0,SNR=4.4
VRAC **Vranov** 78.93 354 LR LR 03 14 56.8
comp=Z,22nm,18.9s,baz=345,slow=39
KVAR **Kislovodsk Arr** 79.89 335 LR LR 03 15 29.6
comp=Z,38nm,18.4s,baz=306,slow=39
KBZ **Khabaz** 80.05 335 LR LR 03 15 17.3
comp=Z,47nm,20.6s,baz=47,slow=39
GEYT **Alibeck** 80.36 322 LR LR 03 15 11.5
comp=Z,41nm,18.4s,baz=285,slow=38
WRA **Warramunga Arr** 85.30 229 P P 02 36 22.6 -0.9
0.8nm,0.6s,baz=34,slow=5.9,SNR=6.6
WRA pP pP 02 36 30.2 +0.3
1.6nm,0.6s,baz=34,slow=5.9,SNR=6.7
BRTR **Keskin Array B** 86.04 340 P P 02 36 27.3 0.0
0.7nm,0.9s,baz=46,slow=8.4,SNR=3.4
BRTR LR LR 03 20 26.1
comp=Z,23nm,18.3s,baz=30,slow=40
ASAR **Alice Springs** 88.71 228 P P 02 36 40.2 +0.3
6.3nm,0.7s,baz=34,slow=4.7,SNR=46
ASAR pP pP 02 36 47.4 +1.0
6.2nm,0.6s,baz=30,slow=4.7,SNR=21
STKA **Stephens Creek** 92.67 218 P P 02 36 58.5 +0.3
3.0nm,1.0s,baz=30,slow=6.8,SNR=4.4
STKA pP sP 02 37 06.4 -0.4
1.2nm,0.6s,baz=343,slow=7.6,SNR=2.1
MAW **Mawson** 149.36 218 PKPbc PKPbc 02 43 33.8 -0.2
1.9nm,0.6s,baz=112,slow=2.5,SNR=8.9
BOSA **Boshof** 153.35 324 PKPbc PKPbc 02 43 43.4 -1.3
1.4nm,0.7s,baz=2.7,slow=1.6,SNR=5.3
BOSA pPKPbc pPKPbc 02 43 51.2 0.0
2.9nm,0.7s,baz=83,slow=3.9,SNR=3.6

MEX 18 02:32:09.5±0.7, 15°42N×94°74W, h17km±999km, MD3.9,
Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.37**	**285**	*e*P	Pn	02 32 30.7	-3.1
HUIG				*i* S	Sn	02 32 46.0	-5.6
VHO	**Vista Hermosa**	**2.53**	**311**	*i* P	Pn	02 32 48.0	-1.9
VHO				*i* S	Sn	02 33 17.1	-3.4
CCIG	**Comitan**	**2.65**	**71**	*e*P	Pn	02 32 49.8	-1.8
CCIG				*e*S	Sn	02 33 19.2	-4.2

*IDC **18** 02:35:38.2±1.5, 18°.32S×177°.95W, h505km±18km, mb3.6/17, mb1 3.7/18, mb1mx3.5/37, mbtmp4.4/18, Error ellipse: s-maj=16.1km s-min=10.8km az=122.0*
*NEIC **18** 02:35:40.5±0.8, 18°.36S×178°.02W, h534km±9km, mb4.6/31, Error ellipse: s-maj=15.7km s-min=7.8km az=111.0*
*BJI **18** 02:35:40.0, 18°.40S×178°.00W, h534km, mb4.5/15, mB4.9/3*
*ISCJB **18** 02:35:41.5±0.3, 18°.48S±0°.05×178°.08W±0°.07, h557km, mb4.3/47, Error ellipse: s-maj=9.9km s-min=6.3km az=25.0*

ISC 18 02:35:42.0±0.5, 18°.34S±0°.09×177°.93W±0°.08, h557km,
n111, σ1§37/119, mb4.4/47, 6C-8D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**3.87**	**278**	*e*P	**P**	**02 37 02.5**	**-1.1**
MSVF				*e*S	**S**	**02 38 10.5**	**+0.5**
AFI	**Afiamalu**	**7.38**	**54**	P	**P**	**02 37 30.3**	**-3.7**
	3.7nm,0.3s,baz=96,slow=9.1,SNR=4.5						
AFI				S	S	02 38 57.2	-8.5
	3.5nm,0.3s,baz=71,slow=19,SNR=4.1						
AFI	**Afiamalu**	**7.38**	**54**	*e*P	**P**	**02 37 30.9**	**-3.1**
FUNA	**Funafuti**	**10.15**	**344**	*e*P	**P**	**02 37 58.4**	**-3.3**
	409nm,1.1s						
OUZ	**Omahuta**	**18.42**	**202**	*e*P	**P**	**02 39 25.2**	**+2.0**
	48nm,1.2s						
URZ	**Urewera**	**20.31**	**191**	P	**P**	**02 39 38.4**	**-2.0**
	10.0nm,0.3s,baz=263,slow=3.0,SNR=12						
URZ	**Urewera**	**20.31**	**191**	*e*P	**P**	**02 39 38.1**	**-2.3**
	17nm,0.8s						
BFZ	**Birch Farm**	**22.82**	**191**	*e*P	**P**	**02 40 02.0**	**-0.9**
	37nm,1.1s						
SNZO	**South Karori**	**23.75**	**194**	*e*P	**P**	**02 40 09.5**	**-1.6**
	618nm,0.8s						
KHZ	**Kahutara**	**25.07**	**195**	*e*P	**P**	**02 40 20.3**	**-2.5**
	50nm,1.5s						
RPZ	**Rata Peaks**	**26.95**	**198**	P	**P**	**02 40 37.9**	**-1.5**
	2.8nm,0.4s,baz=114,slow=0.3,SNR=3.9						
RPZ	**Rata Peaks**	**26.95**	**198**	*e*P	**P**	**02 40 38.5**	**-0.8**
	62nm,1.7s						
FOZ	**Fox Glacier**	**27.16**	**200**	*e*P	**P**	**02 40 40.2**	**-0.9**
	157nm,1.9s						
LBZ	**Lake Benmore**	**27.81**	**198**	*e*P	**P**	**02 40 44.8**	**-2.1**
	110nm,1.8s						
WKZ	**Wanaka**	**28.57**	**200**	*e*P	**P**	**02 40 52.3**	**-1.3**
	180nm,1.7s						
MLZ	**Mavora Lakes**	**29.34**	**200**	*e*P	**P**	**02 41 01.1**	**+0.8**
	22nm,0.6s						
DCZ	**Deep Cove**	**29.76**	**201**	*e*P	**P**	**02 41 04.0**	**+0.2**
	67nm,1.6s						
WHZ	**Wether Hill Ro**	**29.86**	**200**	*e*P	**P**	**02 41 05.0**	**+0.3**
	28nm,0.7s						
CTAO	**Charters Tower**	**33.83**	**261**	*e*P	**P**	**02 41 37.6**	**-1.3**
	39nm,1.8s						
STKA	**Stephens Creek**	**38.82**	**242**	P	**P**	**02 42 19.8**	**0.0**
	2.0nm,0.7s,baz=90,slow=11,SNR=3.9						
JAY	**Jayapura**	**43.46**	**286**	P	**P**	**02 42 57.0**	**+0.1**
	1.2nm,0.7s,baz=271,slow=24,SNR=9.2						
WRAB	**Tennant Creek**	**44.99**	**260**	*e*P	**P**	**02 43 07.4**	**-1.1**
	3.3nm,0.4s						
WRA	**Warramunga Arr**	**45.00**	**260**	P	**P**	**02 43 07.7**	**-0.9**
	4.6nm,0.6s,baz=97,slow=6.7,SNR=88						
WRA				PcP	**PcP**	**02 44 38.4**	**+0.7**
	0.5nm,0.3s,baz=88,slow=3.5,SNR=5.6						
ASAR	**Alice Springs**	**45.11**	**255**	P	**P**	**02 43 09.2**	**-0.3**
	20nm,0.6s,baz=89,slow=8.5,SNR=273						
ASAR				PcP	**PcP**	**02 44 38.5**	**+0.4**
	1.3nm,0.5s,baz=104,slow=3.4,SNR=6.8						
ASAR				S	**S**	**02 49 07.7**	**-1.0**
	1.3nm,0.8s,baz=87,slow=16,SNR=8.5						
MBWA	**Marble Bar**	**58.41**	**256**	*e*P	**P**	**02 44 44.5**	**-0.5**
	32nm,0.8s						
VNDA	**Vanda**	**60.05**	**185**	P	**P**	**02 44 57.0**	**+1.9**
	0.7nm,0.7s,baz=343,slow=7.8,SNR=5.9						
JAGI	**Jajag, Banyuwa**	**66.48**	**269**	*e*P	**P**	**02 45 35.6**	**-1.7**
	68nm,1.3s						
MJAR	**Matsushiro Arr**	**68.53**	**323**	P	**P**	**02 45 49.1**	**-0.3**
	2.3nm,0.5s,baz=162,slow=6.0,SNR=6.5						
QSPA	**South Pole Qui**	**71.71**	**180**	*e*P	**P**	**02 46 08.8**	**+0.9**
	32nm,1.3s						
ASAJ	**Asahikawa**	**71.87**	**331**	P	**P**	**02 46 10.5**	**+1.6**
	5.3nm,0.7s,baz=159,slow=3.3,SNR=9.0						
ASAJ	**Asahikawa**	**71.87**	**331**	*e*P	**P**	**02 46 10.3**	**+1.4**
	6.6nm,0.7s						
PETK	**Petropavlovsk-**	**74.21**	**345**	P	**P**	**02 46 22.6**	**+0.4**
	9.0nm,0.7s,baz=117,slow=7.8,SNR=10.0						
KSRS	**Korea Array**	**75.33**	**318**	P	**P**	**02 46 29.2**	**+0.5**
	0.6nm,0.5s,baz=131,slow=6.6,SNR=3.0						
CN2	**Changchun**	**80.64**	**322**	*e*P	**P**	**02 46 58.4**	**+1.3**
KLR	**Kul'dur**	**80.72**	**329**	P	**P**	**02 46 57.6**	**+0.3**
	2.2nm,1.1s,baz=139,slow=6.1,SNR=5.2						
TUC	**Tucson**	**81.61**	**52**	*e*P	**P**	**02 47 04.2**	**+1.7**
	3.4nm,1.0s						
LCMT	**Little Creek M**	**82.09**	**47**	*e*P	**P**	**02 47 07.3**	**+2.3**
	2.2nm,0.9s						
CCUT	**Cedar City**	**82.28**	**46**	*e*P	**P**	**02 47 07.6**	**+1.6**
	2.6nm,0.9s						
U15A	**North Rim**	**82.47**	**48**	*e*P	**P**	**02 47 09.3**	**+2.3**
	5.4nm,0.8s						
SCM	**Sheep Creek Mo**	**83.54**	**14**	*e*P	**P**	**02 47 11.5**	**0.0**
	8.3nm,0.8s						
F10A	**Beach Ranch, E**	**84.26**	**38**	*e*P	**P**	**02 47 16.8**	**+1.3**
	3.5nm,0.9s						
SEY	**Seymchan**	**84.30**	**347**	P	**P**	**02 47 15.1**	**0.0**
	7.1nm,0.5s,baz=126,slow=5.0,SNR=18						
KTH	**Kantishna Hill**	**84.31**	**12**	*e*P	**P**	**02 47 14.8**	**-0.5**
	5.2nm,0.9s						
GYA	**Guiyang**	**85.64**	**300**	*e*P	**P**	**02 47 24.3**	**+1.6**
GYA				pP	pP	02 49 21.5	-1.8
GYA				sP	sP	02 50 14.0	-5.6
GYA				PP	**PP**	**02 50 54.3**	**+2.0**
GYA				SKS	**SKSac**	**02 56 57.3**	**+1.7**
GYA				S	**S**	**02 57 11.4**	**+2.3**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
WRH	**Wood River Hil**	**85.69**	**12**	*e*P	**P**	**02 47 21.9**	**+0.1**
	11nm,1.3s						
TX31	**Lajitas Ar. Si**	**85.84**	**57**	*e*P	**P**	**02 47 24.5**	**+1.0**
TXAR	**Lajitas Array**	**85.84**	**57**	P	**P**	**02 47 25.7**	**+2.2**
	2.9nm,0.8s,baz=219,slow=6.4,SNR=26						
DOT	**Dot Lake**	**85.87**	**14**	*e*P	**P**	**02 47 23.3**	**+0.5**
	10nm,0.9s						
CCB	**Clear Creek Bu**	**85.91**	**13**	*e*P	**P**	**02 47 22.5**	**-0.3**
	7.1nm,1.3s						
ANMO	**Albuquerque**	**86.01**	**51**	*e*P	**P**	**02 47 26.7**	**+2.3**
	3.5nm,1.3s						
MDM	**Murphy Dome**	**86.10**	**12**	*e*P	**P**	**02 47 23.6**	**-0.2**
	5.2nm,1.0s						
IL1	**Eielson Array**	**86.21**	**13**	*e*P	**P**	**02 47 23.8**	**-0.5**
ILAR	**Eielson Array**	**86.21**	**13**	P	**P**	**02 47 23.9**	**-0.4**
	1.9nm,0.8s,baz=228,slow=5.6,SNR=18						
ILB	**Eielson Array**	**86.21**	**13**	*e*P	**P**	**02 47 24.2**	**-0.1**
MCMT	**McKenzie Canyo**	**86.28**	**40**	*e*P	**P**	**02 47 27.4**	**+2.0**
BILL	**Bilibino**	**86.91**	**354**	*e*P	**P**	**02 47 28.8**	**+1.3**
PDAR	**Pinedale Array**	**87.36**	**43**	P	**P**	**02 47 31.7**	**+1.2**
	0.8nm,0.7s,baz=194,slow=1.2,SNR=7.6						
COLD	**Coldfoot**	**87.76**	**10**	*e*P	**P**	**02 47 32.7**	**+1.2**
	2.5nm,0.8s						
HHC	**Hu-ho-hao-te**	**87.90**	**314**	*e*P	**P**	**02 47 33.4**	**+0.4**
HHC				pmax	pmax		
	comp=Z,19nm,1.5s						
KMI	**Kunming**	**88.43**	**297**	P	**P**	**02 47 36.0**	**+0.1**
KMI				pmax	pmax		
	comp=Z,12nm,0.5s						
CM01	**Chiang Mai Arr**	**89.43**	**290**	*e*P	**P**	**02 47 41.8**	**+1.4**
CMAR	**Chiang Mai Arr**	**89.46**	**290**	P	**P**	**02 47 41.8**	**+1.2**
	1.5nm,0.6s,baz=117,slow=3.2,SNR=8.5						
LZH	**Lanzhou**	**91.51**	**308**	*e*P	**P**	**02 47 52.4**	**+2.5**
LZH				pP	pP	02 49 48.3	-3.7
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
KSH	**Kashi**	**113.70**	**306**	*e*PKP	**PKiKP**	**02 53 14.3**	**-3.6**
KSH				*es*PKP		02 56 13.3	
KSH				PKS	**PKSdf**	**02 56 49.8**	**-4.9**
KSH				SKS	**SKSdf**	**02 59 36.0**	**-1.6**
ARCES	**ARCESS Array B**	**126.82**	**350**	PKP	**PKPdf**	**02 53 42.3**	**+0.2**
	1.5nm,0.6s,baz=70,slow=1.1,SNR=8.4						
FINES	**FINESS Array B**	**133.73**	**344**	PKP	**PKPdf**	**02 53 55.6**	**+0.3**
	1.0nm,0.7s,baz=40,slow=3.2,SNR=3.6						
SORM	**Soroca**	**143.39**	**330**	*i* P	PKPbc	02 54 11.9	0.0
KWP	**Kalwaria Pacla**	**144.65**	**337**	*e*PKP	**PKPab**	**02 54 16.9**	**+0.4**
OJC	**Ojcow**	**145.18**	**340**	*e*PKP	**PKPab**	**02 54 18.2**	**-0.3**
BURAR	**Bucovina Array**	**145.21**	**332**	*i* P	**PKPbc**	**02 54 18.1**	**+0.4**
TESR	**Tescani**	**145.36**	**330**	*i* P	**PKPbc**	**02 54 18.4**	**+0.4**
BRTR	**Keskin Array B**	**145.41**	**315**	PKPbc	**PKPbc**	**02 54 18.8**	**+0.2**
	2.5nm,0.8s,baz=51,slow=3.5,SNR=16						
CFR	**Carcaliu**	**145.55**	**327**	*i* P	**PKPab**	**02 54 19.7**	**-0.3**
KSP	**Ksiaz**	**145.65**	**344**	*e*PKP	**PKPab**	**02 54 20.1**	**-0.2**
CLL	**Collm**	**145.98**	**348**	*i* PKP	**PKPbc**	**02 54 20.3**	**+0.7**
	comp=Z,18nm,0.7s						
TLB	**Topalu**	**145.99**	**326**	*i* P	**PKPbc**	**02 54 20.6**	**+0.7**
OKC	**Ostrava-Krasne**	**146.03**	**341**	*e*PKP	**PKPbc**	**02 54 20.8**	**+1.0**
UPC	**Upice**	**146.03**	**344**	*e*PKP	**PKPab**	**02 54 21.1**	**-0.7**
UPC				*ex*	x	02 54 23.0	
DPC	**Dobruska-Polom**	**146.09**	**344**	*e*PKP	**PKPab**	**02 54 21.4**	**-0.7**
DPC				*ex*	x	02 54 23.0	
BRG	**Berggiesshubel**	**146.19**	**346**	*e*PKP	**PKPbc**	**02 54 21.1**	**+0.9**
	comp=Z,8.2nm,0.8s						
MORC	**Moravsky Berou**	**146.26**	**342**	*i* P	**PKPbc**	**02 54 21.6**	**+1.1**
PVCC	**Panska Ves**	**146.37**	**346**	*e*PKP	**PKPab**	**02 54 22.1**	**-1.1**
PVCC				*ex*	x	02 54 24.3	
MLR	**Muntele Rosu**	**146.44**	**329**	PKPbc	**PKPbc**	**02 54 21.7**	**+0.4**
	comp=Z,0.8nm,0.6s,baz=335,slow=8.0,SNR=13						
MLR	**Muntele Rosu**	**146.44**	**329**	*i* P	**PKPbc**	**02 54 21.5**	**+0.2**
CJR	**Cluj-Napoca**	**146.61**	**333**	*i* P	**PKPbc**	**02 54 22.4**	**+0.8**
MMAI	**Mount Meron Ar**	**146.76**	**303**	PKPbc	**PKPbc**	**02 54 23.7**	**+1.2**
	comp=Z,1.8nm,0.4s,baz=80,slow=3.5,SNR=6.3						
PRU	**Pruhonice**	**146.88**	**345**	*e*PKP	**PKPbc**	**02 54 23.1**	**+1.0**
PRU				*ex*	x	02 54 26.2	
VOIR		**146.91**	**330**	*i* P	**PKPbc**	**02 54 23.5**	**+1.0**
DRGR		**146.93**	**334**	*i* P	**PKPbc**	**02 54 23.2**	**+0.7**
NKC	**Novy Kostel**	**147.12**	**348**	*e*PKP	**PKPbc**	**02 54 23.9**	**+1.1**
ARR	**Arges**	**147.16**	**330**	*i* P	**PKPbc**	**02 54 24.8**	**+1.7**
MEM	**Memluch**	**147.66**	**355**	PKPbc	**PKPbc**	**02 54 24.9**	**+0.8**
KHC	**Kasperske Hory**	**147.91**	**346**	*e*PKP	**PKPbc**	**02 54 26.0**	**+1.1**
KHC				*ex*	x	02 54 30.5	
GERES	**GERESS Array B**	**148.15**	**345**	PKPbc	**PKPbc**	**02 54 26.3**	**+0.8**
	comp=Z,3.6nm,0.7s,baz=24,slow=2.9,SNR=25						
BZS	**Buzias**	**148.32**	**333**	*i* P	**PKPbc**	**02 54 26.5**	**+0.5**
CONA	**Conrad Observa**	**148.41**	**342**	*i* PKiKP	**PKiKP**	**02 54 27.4**	**0.0**
	comp=Z,6.2nm,0.9s						
WLF	**Walferdange**	**148.58**	**355**	PKPbc	**PKPbc**	**02 54 28.1**	**+1.6**
MOA	**Molln**	**148.93**	**344**	*i* PKPab	**PKPab**	**02 54 35.1**	**+1.4**
	comp=Z,2.8nm,0.7s						
MDVR	**Modovita**	**148.94**	**332**	*i* P	**PKPbc**	**02 54 27.2**	**-0.4**
ARSA	**Arzberg**	**149.13**	**342**	*i* PKPdf	**PKPdf**	**02 54 22.0**	**-1.0**
	comp=Z,2.0nm,0.6s						
SOKA	**Soboth**	**149.79**	**342**	*i* PKPbc	**PKPbc**	**02 54 30.1**	**+0.5**
	comp=Z,8.6nm,1.6s						
KBA	**Koelnbreinsper**	**149.88**	**345**	*i* PKPbc	**PKPbc**	**02 54 29.8**	**-0.2**
	comp=Z,7.3nm,0.6s						
WATA	**Walderalm**	**150.05**	**347**	*i* PKiKP	**PKiKP**	**02 54 31.2**	**+0.3**
	comp=Z,3.8nm,0.5s						
RETA	**Reutte**	**150.07**	**348**	*i* PKiKP	**PKiKP**	**02 54 31.0**	**+0.2**
	comp=Z,2.9nm,0.7s						
OBKA	**Obir**	**150.08**	**343**	*i* PKPbc	**PKPbc**	**02 54 30.2**	**-0.1**
	comp=Z,8.1nm,1.2s						
WTTA	**Wattenberg**	**150.10**	**347**	*i* PKiKP	**PKiKP**	**02 54 31.4**	**+0.4**
	comp=Z,7.3nm,0.6s						
MOTA	**Moosalm**	**150.14**	**348**	*i* PKiKP	**PKiKP**	**02 54 31.5**	**+0.4**
	comp=Z,4.2nm,0.8s						
MYKA	**Terra Mystica**	**150.22**	**344**	*i* PKPbc	**PKPbc**	**02 54 30.4**	**-0.2**
	comp=Z,5.0nm,0.6s						
ABTA	**Abfaltersbach**	**150.39**	**345**	*i* PKPbc	**PKPbc**	**02 54 31.3**	**+0.3**
	comp=Z,11nm,0.7s						
DAVA	**Damuels**	**150.43**	**349**	*i* PKiKP	**PKiKP**	**02 54 31.8**	**+0.1**
	comp=Z,10nm,1.1s						
FETA	**Feichten**	**150.53**	**348**	*i* PKiKP	**PKiKP**	**02 54 32.4**	**+0.6**
	comp=Z,7.4nm,0.9s						

*SCB **18** 02:51:29.9±0.6, 22°.57S×66°.58W, h235km, Ml3.6/1, Error ellipse: s-maj=15.9km s-min=6.8km az=30.0*
*ISCJB **18** 02:51:31.9±0.8, 22°.75S±0°.06×66°.39W±0°.06, h245km, Error ellipse: s-maj=8.8km s-min=6.2km az=138.1*
*IDC **18** 02:51:31.6±1.9, 22°.70S×66°.25W, h230km±24km, mb1 3.4/4, mb1mx3.1/22, mbtmp3.9/4, Error ellipse: s-maj=38.4km s-min=16.1km az=111.0*
*GUC **18** 02:51:32.1±0.5, 22°.66S×66°.77W, h270km, ML4.5*

ISC 18 02:51:31.9±1.2, 22°.69S±0°.07×66°.37W±0°.07, h245km, n19,
σ1§15/30, 4C-2D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MOCB	**Mochara**	**1.59**	**25**	*e*Pn	**Pn**	**02 52 11.9**	**+0.9**
MOCB				*e*Sn	**S**	**02 52 41.2**	**-0.4**
LVC	**Limon Verde**	**2.35**	**271**	P	**Pn**	**02 52 18.4**	**+0.7**
	436nm,0.3s,baz=93,slow=6.9,SNR=128						
LVC				S	**S**	**02 52 53.5**	**-0.2**
	434nm,0.3s,baz=230,slow=20,SNR=16						
PB09	**IPOC Station P**	**2.81**	**288**	*i* P	**Pn**	**02 52 23.4**	**+1.2**
PB09				*e*S	**S**	**02 53 02.3**	**+0.5**
PB09				IAML		02 53 05.5	
	comp=N,640nm,0.6s						
PB06	**IPOC Station P**	**2.96**	**269**	*e*P	**Pn**	**02 52 24.1**	**+0.3**
PB06				*i* S	**S**	**02 53 03.7**	**-1.0**
PB01	**IPOC Station P**	**3.33**	**299**	*i* P	**Pn**	**02 52 28.5**	**+0.7**
PB01				*i* S	**S**	**02 53 11.2**	**-0.9**
PB07	**IPOC Station P**	**3.40**	**286**	*i* P	**Pn**	**02 52 29.1**	**+0.4**
PB07				*e*S	**S**	**02 53 11.8**	**-1.9**
PB07				IAML		02 53 12.1	
	comp=N,403nm,0.3s						
PB04	**IPOC Station P**	**3.52**	**275**	*i* P	**Pn**	**02 52 30.2**	**+0.2**
PB04				*i* S	**S**	**02 53 13.9**	**-2.1**
PB04				IAML		02 53 19.0	
	comp=N,382nm,0.3s						
PB08	**IPOC Station P**	**3.63**	**314**	*e*P	**Pn**	**02 52 33.1**	**+1.5**
PB08				*i* S	**S**	**02 53 19.0**	**+0.2**
PB08				IAML		02 53 20.1	
	comp=N,194nm,0.5s						
ANCH	**Antofagasta**	**3.85**	**254**	*e*P	**Pn**	**02 52 33.7**	**+0.1**
BBOJ	**La Paz, Jacaqu**	**5.94**	**343**	*e*Pn	**Pn**	**02 53 01.6**	**+1.8**
BBOE	**La Paz, Chanca**	**6.04**	**345**	*e*Pn	**Pn**	**02 53 03.1**	**+2.0**
BBOD	**La Paz, Gloria**	**6.38**	**340**	*e*Pn	**Pn**	**02 53 06.8**	**+1.5**
LPAZ	**La Paz**	**6.58**	**345**	P	**Pn**	**02 53 08.6**	**+0.7**
	comp=N,0.8nm,0.3s,baz=178,slow=8.9,SNR=37						
LPAZ				S	**S**	**02 54 23.4**	**-1.3**
	comp=N,0.1nm,0.3s,baz=320,slow=16,SNR=4.2						
LPAZ	**La Paz**	**6.58**	**345**	*e*Pn	**Pn**	**02 53 08.7**	**+0.7**
LPAZ				*e*Sn	**S**	**02 54 22.9**	**-1.8**
BBOB	**La Paz, Bander**	**6.73**	**345**	*e*Pn	**Pn**	**02 53 10.2**	**+0.6**
BBOB				*e*Sn	**S**	**02 54 26.7**	**-1.1**
	comp=N,21nm,0.9s						
SIV	**San Ignacio**	**8.33**	**38**	P	**Pn**	**02 53 28.3**	**-1.2**
	comp=N,0.9nm,0.3s,baz=252,slow=6.9,SNR=20						
SIV	**San Ignacio**	**8.33**	**38**	*e*P	**Pn**	**02 53 28.5**	**-1.0**
PLCA	**Paso Flores**	**18.33**	**190**	P	**P**	**02 55 28.2**	**-0.1**
	comp=N,0.1nm,0.3s,baz=41,slow=11,SNR=5.3						
MKAR	**Makanchi Array**	**145.15**	**39**	PKPbc	**PKPab**	**03 10 41.0**	**+0.5**
	comp=N,0.6nm,0.8s,baz=290,slow=3.6,SNR=4.8						

KRSC 18 02:51:55.9±2.0, 48°.53N×156°.96E, h6km±2km, ML3.9,
East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.23**	**346**	*e*P	Pn	02 52 33.1	-0.2
SKR				S	Sn	02 53 01.7	+0.6
PAU	**Pauzhetka**	**2.94**	**358**	S	Sb	02 53 22.2	-2.7
ASAK	**Asacha**	**3.91**	**8**	P	Pb	02 53 01.3	-3.9
RUS	**Russkaya**	**4.03**	**14**	P	Pn	02 53 01.0	+2.9
RUS				S	Sn	02 53 50.7	+5.1
UGLR	**Uglovaya**	**4.83**	**13**	P	Pn	02 53 13.4	+4.2
AVH	**Avacha**	**4.88**	**13**	P	Pn	02 53 15.2	+5.4
SDLR	**Sedlovina**	**4.91**	**14**	P	Pn	02 53 13.0	+3.3
SPN	**Mys Shipunski**	**4.97**	**22**	P	Pn	02 53 15.8	+4.8
SPN				S	Sn	02 54 15.2	+6.5
GNL	**Ganaly**	**5.21**	**6**	*e*P	Pn	02 53 19.5	+5.1
MKZ	**Mys Kozlova**	**6.73**	**24**	P	Pn	02 53 39.6	+4.5

*ISCJB **18** 03:18:04.9±0.6, 24°.38N±0°.06×122°.74E±0°.02, h73km±7km, Error ellipse: s-maj=9.8km s-min=3.0km az=175.3*
*JMA **18** 03:18:04.0±0.1, 24°.43N×122°.71E, h82km±1km, M1.7*
*TAP **18** 03:18:05.8, 24°.37N×122°.

JISG				S		**Sn**	**03 18 47.0**	**-0.8**
EHY	**Hungye**	**1.56**	**237**	*e*P		**Pn**	**03 18 31.1**	**-0.1**
	baz=236							
EHY				*e*S		**Sn**	**03 18 50.9**	**+0.2**
	baz=236							
WDT	**Danda**	**1.60**	**248**	P		**Pn**	**03 18 31.8**	**-0.1**
	baz=247							
WDT				S		**Sn**	**03 18 51.2**	**-0.8**
	baz=247							
NSTT	**Nanjuang**	**1.61**	**280**	*e*P		**Pn**	**03 18 33.0**	**+1.2**
	baz=279							
NSTT				*e*S		**Sn**	**03 18 52.6**	**+0.7**
	baz=279							
TWF1	**Yuli**	**1.67**	**233**	*e*P		**Pn**	**03 18 32.0**	**-0.6**
	baz=232							
TWF1				*e*S		**Sn**	**03 18 52.5**	**-0.8**
	baz=232							
SMLT	**Sun Moon Lake**	**1.76**	**254**	*e*P		**Pn**	**03 18 34.2**	**+0.4**
	baz=254							
SMLT				*e*S		**Sn**	**03 18 54.8**	**-0.7**
	baz=254							
TYC	**Yuchr**	**1.79**	**255**	*e*P		**Pn**	**03 18 35.1**	**+1.0**
	baz=255							
TYC				*e*S		**Sn**	**03 18 56.2**	**+0.2**
	baz=255							
JTJ	**Tarama**	**1.80**	**81**	P		**Pn**	**03 18 34.2**	**-0.1**
JTJ				S		**Sn**	**03 18 56.3**	**-0.1**
CHN5	**Tsauling**	**2.04**	**248**	*e*P		**Pn**	**03 18 38.6**	**+1.0**
	baz=248							
CHN5				*e*S		**Sn**	**03 19 02.9**	**+0.6**
	baz=248							

BJI ***18*** *03:20:25.9, 19.˚25S×169.˚80E, h217km, mb4.7/30, mB5.1/20*

ISCJB ***18*** *03:20:27.7±0.9, 19.˚35S±0.˚08×169.˚25E±0.˚04, h220km±9km, mb4.6/98, Error ellipse: s-maj=13.1km s-min=6.0km az=164.6*

MOS ***18*** *03:20:27.4±1.1, 19.˚31S×169.˚27E, h219km, mb4.9/24, Error ellipse: s-maj=12.4km s-min=9.5km az=148.0*

NEIC ***18*** *03:20:28.3±0.8, 19.˚38S×169.˚30E, h218km±7km, mb4.7/70, Error ellipse: s-maj=9.6km s-min=4.5km az=159.0*

IDC ***18*** *03:20:28.7±1.2, 19.˚49S×169.˚41E, h225km±9km, mb4.1/17, mb1 4.3/18, mb1mx4.1/35, mbtmp4.7/18, Error ellipse: s-maj=23.8km s-min=12.5km az=133.0*

ISC 18 03:20:28.2±0.5, 19.˚51S±0.˚09×169.˚39E±0.˚07, h221km±4km, h221km:pP-P, n268, σ1.906/270, mb4.7/98, 5C-7D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.75**	**227**	P		**Pn**	**03 21 28.4**	**+0.6**
	12nm,0.3s,baz=57,slow=18,SNR=116							
DZM				S		**S**	**03 22 15.2**	**+0.7**
	16nm,0.3s,baz=320,slow=21,SNR=6.2							
DZM	**Mont Dzumac**	**3.75**	**227**	*e*Pn		**Pn**	**03 21 26.4**	**-1.4**
DZM				*e*Sn		**S**	**03 22 14.9**	**+0.3**
MSVF	**Nonsavu**	**8.40**	**79***c*	*i*P		**Pn**	**03 22 27.2**	**+0.5**
MSVF				pmax	pmax			
	comp=Z,175nm,0.8s							
MSVF	**Nonsavu**	**8.40**	**79**	*e*Pn		**Pn**	**03 22 27.6**	**+0.9**
EIDS	**Eidsvold**	**17.89**	**248**	*e*P		**Pn**	**03 24 23.3**	**-0.5**
	comp=Z,32nm,0.7s							
ARMA	**Armidale**	**19.39**	**233**	*e*P		**Pn**	**03 24 40.6**	**-1.0**
	comp=Z,21nm,0.7s							
CTA	**Charters Tower**	**21.77**	**265**	P		**P**	**03 25 03.6**	**+1.1**
	comp=Z,19nm,0.9s,baz=88,slow=13,SNR=14							
CTAO	**Charters Tower**	**21.77**	**265**	*e*P		**P**	**03 25 02.4**	**-0.1**
CTAO				pmax	pmax			
	comp=Z,37nm,1.2s							
CTAO	**Charters Tower**	**21.77**	**265**	*e*P		**P**	**03 25 02.4**	**-0.1**
	comp=Z,37nm,1.2s							
CAN	**Canberra**	**23.91**	**225**	*e*P		**P**	**03 25 23.6**	**+1.6**
CAN				pmax	pmax			
	comp=Z,31nm,1.4s							
CAN	**Canberra**	**23.91**	**225**	*e*P		**P**	**03 25 23.6**	**+1.6**
	comp=Z,31nm,1.4s							
STKA	**Stephens Creek**	**27.82**	**238**	P		**P**	**03 25 58.3**	**+1.3**
	comp=Z,13nm,0.7s,baz=64,slow=9.2,SNR=28							
STKA	**Stephens Creek**	**27.82**	**238**	*e*P		**P**	**03 25 58.1**	**+1.1**
STKA				pmax	pmax			
	comp=Z,3.0nm,0.7s							
STKA	**Stephens Creek**	**27.82**	**238**	*e*P		**P**	**03 25 58.1**	**+1.1**
	comp=Z,2.7nm,0.7s							
WB2	**Warramunga Arr**	**32.95**	**263**	*e*P		**P**	**03 26 41.0**	**-1.3**
	comp=Z,15nm,1.1s							
WRAB	**Tennant Creek**	**32.95**	**263**	*de*P		**P**	**03 26 41.5**	**-0.7**
WRAB				pmax	pmax			
	comp=Z,30nm,0.9s							
WRAB	**Tennant Creek**	**32.95**	**263**	*e*P		**P**	**03 26 40.9**	**-1.4**
	comp=Z,19nm,0.8s							
WRA	**Warramunga Arr**	**32.96**	**263**	P		**P**	**03 26 41.6**	**-0.8**
	comp=Z,8.0nm,0.8s,baz=95,slow=8.5,SNR=65							
WRA				pP		**pP**	**03 27 28.1**	**+0.8**
	comp=Z,2.0nm,0.8s,baz=94,slow=8.8,SNR=2.8							
WRA				PcP		**PcP**	**03 29 21.0**	**-0.2**
	comp=Z,1.3nm,0.8s,baz=90,slow=3.0,SNR=5.1							
WRA				S		**S**	**03 31 41.2**	**-2.8**
	comp=Z,1.3nm,0.9s,baz=98,slow=14,SNR=4.6							
ASAR	**Alice Springs**	**33.20**	**256**	P		**P**	**03 26 44.5**	**+0.1**
	comp=Z,40nm,0.7s,baz=86,slow=9.1,SNR=378							
ASAR				pP		**pP**	**03 27 31.1**	**+1.7**
	comp=Z,7.4nm,0.6s,baz=86,slow=9.0,SNR=4.2							
ASAR				PcP		**PcP**	**03 29 21.9**	**+0.2**
	comp=Z,1.3nm,0.8s,baz=104,slow=3.9,SNR=4.7							
ASAR				S		**S**	**03 31 45.6**	**-2.1**
	comp=Z,1.0nm,0.9s,baz=84,slow=17,SNR=4.9							
FORT	**Forrest**	**38.86**	**245**	*e*P		**P**	**03 27 32.1**	**-0.1**
	comp=Z,210nm,0.8s							
FITZ	**Fitzroy Crossi**	**41.35**	**265**	P		**P**	**03 27 53.6**	**+0.8**
	comp=Z,11nm,0.8s,baz=94,slow=7.4,SNR=9.8							
FITZ				pP		**pP**	**03 28 42.0**	**+2.6**
	comp=Z,4.4nm,0.8s,baz=104,slow=8.8,SNR=3.3							
FITZ	**Fitzroy Crossi**	**41.35**	**265**	*e*P		**P**	**03 27 53.2**	**+0.4**
	comp=Z,10nm,0.8s							
FITZ				pP		**pP**	**03 28 42.0**	**+2.6**
MBWA	**Marble Bar**	**46.44**	**259**	*e*P		**P**	**03 28 33.4**	**+0.2**
	comp=Z,16nm,0.7s							
MJAR	**Matsushiro Arr**	**63.06**	**332**	P		**P**	**03 30 31.2**	**-0.8**
	comp=Z,4.6nm,0.6s,baz=170,slow=7.6,SNR=17							
MAJO	**Matsushiro**	**63.06**	**332**	‖*e*P		**P**	**03 30 30.9**	**-1.1**
MAJO				pmax	pmax			
	comp=Z,75nm,0.9s							
MAJO	**Matsushiro**	**63.06**	**332**	*e*P		**P**	**03 30 31.8**	**-0.2**
	comp=Z,9.6nm,0.8s							
MJB9	**Matsu-Tunnel**	**63.06**	**332**	*e*P		**P**	**03 30 31.8**	**-0.2**
	comp=Z,2.3nm,0.8s							
MJB9				*e*pP		**pP**	**03 31 21.6**	**-1.0**
JNU	**Nakatsue**	**63.97**	**324**	P		**P**	**03 30 37.8**	**-0.2**
	comp=Z,8.7nm,0.8s,baz=26,slow=5.9,SNR=4.0							
ASAJ	**Asahikawa**	**67.90**	**339**	*e*P		**P**	**03 31 03.5**	**+0.7**
	comp=Z,18nm,0.9s							
KSRS	**Korea Array**	**68.81**	**326**	P		**P**	**03 31 09.0**	**+0.5**
	comp=Z,1.4nm,0.8s,baz=128,slow=6.3,SNR=4.6							
KSAR	**Wonju Array Be**	**68.82**	**326**	P		**P**	**03 31 09.0**	**+0.4**
KSAR	**Wonju Array Be**	**68.82**	**326**	P		**P**	**03 31 09.0**	**+0.4**
YSS	**Yuzh-Sakhalins**	**70.38**	**341**	*e*P		**P**	**03 31 18.9**	**+1.0**
YSS				pmax	pmax			
	comp=Z,20nm,0.8s							
QSPA	**South Pole Qui**	**70.54**	**180**	*e*P		**P**	**03 31 20.0**	**+1.1**
QSPA				*epP*		**pP**	**03 32 07.6**	**-3.0**
MSHR	**Mys Shultsa**	**71.13**	**331**	‖*i*P		**P**	**03 31 23.4**	**+0.9**
USRK	**Ussuriysk Ar.**	**72.04**	**333**	P		**P**	**03 31 28.1**	**+0.2**
	comp=Z,5.4nm,0.8s,baz=138,slow=4.5,SNR=17							
WHN	**Wuhan**	**72.63**	**312**	P		P	03 31 38.5	+6.8
WHN				pmax	pmax			
	comp=Z,36nm,0.5s							
PEA0	**Petropavlovsk-**	**73.02**	**353**	*e*P		**P**	**03 31 33.7**	**+0.2**
PEA0B	**Petropavlovsk-**	**73.02**	**353**	*e*P		**P**	**03 31 34.2**	**+0.7**
	comp=Z,28nm,1.0s							
PETK	**Petropavlovsk-**	**73.02**	**353**	P		**P**	**03 31 33.4**	**-0.2**
	comp=Z,11nm,0.8s,baz=143,slow=7.7,SNR=13							
NIKH	**Nikolski High**	**74.61**	**13**	*e*P		**P**	**03 31 42.2**	**-0.5**
	comp=Z,73nm,0.9s							
CN2	**Changchun**	**74.76**	**329**	*e*P		**P**	**03 31 43.8**	**0.0**
CN2				pmax	pmax			
	comp=Z,20nm,0.8s							
CN2				pmax	pmax			
	comp=Z,500nm,4.0s							
GYA	**Guiyang**	**76.09**	**305**	*e*P		**P**	**03 31 53.0**	**+1.1**
GYA				pP		pP	03 32 43.3	-1.1
GYA				sP		sP	03 33 05.3	-2.6
GYA				PP		**PP**	**03 34 48.0**	**+1.8**
GYA				S		**S**	**03 41 17.4**	**+0.1**
GYA				SKS		**SKSac**	**03 41 38.0**	**-3.9**
GYA				pmax	pmax			
	comp=Z,10.0nm,1.0s							
KLR	**Kul'dur**	**76.17**	**336**	P		**P**	**03 31 52.4**	**+0.7**
	comp=Z,6.9nm,0.8s,baz=157,slow=5.3,SNR=31							
KLR	**Kul'dur**	**76.17**	**336**	*e*P		**P**	**03 31 52.0**	**+0.3**
BJI	**Beijing**	**77.23**	**321**	P		**P**	**03 31 58.3**	**+0.5**
BJI				pmax	pmax			
	comp=Z,10.0nm,0.8s							
XAN	**Xi'an**	**78.39**	**312**	P		**P**	**03 32 05.3**	**+0.8**
XAN				pmax	pmax			
	comp=Z,12nm,0.5s							
XAN				pmax	pmax			
	comp=Z,100nm,7.4s							
KMI	**Kunming**	**78.53**	**302**	P		**P**	**03 32 06.4**	**+0.8**
KMI				pmax	pmax			
	comp=Z,14nm,0.5s							
CMAR	**Chiang Mai Arr**	**78.74**	**294**	P		**P**	**03 32 07.5**	**+0.9**
	comp=Z,1.3nm,0.3s,baz=126,slow=4.6,SNR=5.8							
CD2	**Chengdu**	**80.51**	**307**	*e*P		**P**	**03 32 16.4**	**+0.5**
HHC	**Hu-ho-hao-te**	**80.52**	**319**	*e*P		**P**	**03 32 17.9**	**+2.1**
HHC				pmax	pmax			
	comp=Z,17nm,1.4s							
HHC				pmax	pmax			
	comp=Z,64nm,4.9s							
LZH	**Lanzhou**	**83.01**	**312**	*e*P		**P**	**03 32 30.5**	**+1.5**
LZH				pP		pP	03 33 24.0	+1.6
LZH				sP		sP	03 33 41.9	-3.8
LZH				pmax	pmax			
	comp=Z,19nm,1.0s							
KDAK	**Kodiak Island**	**83.24**	**19**	*e*P		**P**	**03 32 29.3**	**-0.1**
KDAK				pmax	pmax			
	comp=Z,19nm,0.9s							
KDAK	**Kodiak Island**	**83.24**	**19**	*e*P		**P**	**03 32 29.3**	**-0.1**
	comp=Z,19nm,0.9s							
SEY	**Seymchan**	**83.26**	**352**	P		**P**	**03 32 29.0**	**-0.4**
	comp=Z,1.6nm,0.2s,baz=174,slow=10,SNR=6.6							
SEY	**Seymchan**	**83.26**	**352**	‖*e*P		**P**	**03 32 28.4**	**-1.0**
CNPM	**China Poot**	**85.07**	**19**	*e*P		**P**	**03 32 38.5**	**-0.1**
	comp=Z,27nm,1.1s							
SVW2	**Sparrevohn**	**85.12**	**16**	*e*P		**P**	**03 32 38.6**	**-0.3**
	comp=Z,8.0nm,1.0s							
HOPS	**Hopland Field**	**85.83**	**46**	*e*P		**P**	**03 32 43.2**	**+0.3**
	comp=Z,13nm,0.9s							
SAO	**San Andreas Ge**	**85.90**	**49**	*e*P		**P**	**03 32 43.9**	**+0.6**
SAO				pmax	pmax			
	comp=Z,13nm,0.9s							
SAO	**San Andreas Ge**	**85.90**	**49**	*e*P		**P**	**03 32 43.9**	**+0.6**
	comp=Z,13nm,0.9s							
SAO				*epP*		**pP**	**03 33 30.9**	**-6.1**
KMRM	**Mail Ridge**	**86.00**	**45**	*e*P		**P**	**03 32 44.7**	**+0.9**
	comp=Z,30nm,0.9s							
PKM	**Mcpherson Peak**	**86.22**	**51**	P		**P**	**03 32 46.1**	**+1.0**
	baz=243							
KHMM	**Horse Mountain**	**86.31**	**44**	*e*P		**P**	**03 32 46.2**	**+0.9**
	comp=Z,29nm,0.9s							
KRMB	**Red Mountain**	**86.51**	**44**	*e*P		**P**	**03 32 46.9**	**+0.6**
	comp=Z,22nm,1.2s							
CIS	**Catalina Islan**	**86.60**	**53**	P		**P**	**03 32 47.9**	**+1.1**
	baz=244							
RC01	**Rabbit Creek A**	**86.77**	**19**	*e*P		**P**	**03 32 47.2**	**+0.3**
	comp=Z,13nm,1.0s							
WDC	**Whiskeytown Da**	**86.95**	**45**	*e*P		**P**	**03 32 49.1**	**+0.8**
WDC				pmax	pmax			
	comp=Z,13nm,1.0s							
WDC	**Whiskeytown Da**	**86.95**	**45**	*e*P		**P**	**03 32 49.1**	**+0.8**
	comp=Z,13nm,1.0s							
L02D	**Cave Junction,**	**87.03**	**43**	P		**P**	**03 32 50.3**	**+1.7**
	baz=240,SNR=5.2							
N02D	**Trinity Center**	**87.03**	**45**	P		**P**	**03 32 50.1**	**+1.3**
	baz=241,SNR=17							
ARVC	**Arvin**	**87.05**	**51**	P		**P**	**03 32 49.7**	**+0.9**
	baz=244							
M02C	**Callahan**	**87.14**	**44**	P		**P**	**03 32 50.5**	**+1.2**
	baz=241,SNR=17							
ORV	**Oroville**	**87.17**	**46**	*e*P		**P**	**03 32 50.0**	**+0.6**
ORV				pmax	pmax			
	comp=Z,11nm,0.9s							
ORV	**Oroville**	**87.17**	**46**	*e*P		**P**	**03 32 50.0**	**+0.6**
	comp=Z,11nm,0.9s							
VES	**Vesal, Richgr**	**87.18**	**50**	P		**P**	**03 32 49.9**	**+0.4**
	baz=244							
CMB	**Columbia Colle**	**87.23**	**48**	*e*P		**P**	**03 32 50.3**	**+0.6**
CMB				pmax	pmax			
	comp=Z,11nm,0.9s							
CMB	**Columbia Colle**	**87.23**	**48**	*e*P		**P**	**03 32 50.3**	**+0.6**
	comp=Z,11nm,0.9s							
AFDM	**Forest Hills D**	**87.25**	**47**	*e*P		**P**	**03 32 50.2**	**+0.5**
	comp=Z,15nm,1.0s							
O03D	**Paynes Creek**	**87.31**	**46**	P		**P**	**03 32 50.4**	**+0.3**
	baz=242,SNR=10							
BILL	**Bilibino**	**87.33**	**359**	‖*e*P		**P**	**03 32 49.3**	**-0.1**
BILL				*i* *SP		**sP**	**03 34 09.2**	**+2.7**
BILL				pmax	pmax			
	comp=Z,2.0nm,0.4s							
109C	**Camp Elliot, M**	**87.37**	**54**	P		**P**	**03 32 50.8**	**+0.3**
	baz=245							
YBH	**Yreka Blue Hor**	**87.40**	**44**	*e*P		**P**	**03 32 51.5**	**+1.0**
YBH				pmax	pmax			
	comp=Z,18nm,0.8s							
YBH	**Yreka Blue Hor**	**87.40**	**44**	*e*P		**P**	**03 32 51.5**	**+1.0**
	comp=Z,18nm,0.8s							
GTA	**Gaotai**	**87.41**	**313**	*e*P		**P**	**03 32 51.3**	**+0.6**
GTA				pmax	pmax			
	comp=Z,6.0nm,1.1s							
SONM	**Songino Array**	**87.52**	**323**	P		**P**	**03 32 51.2**	**+0.2**
	comp=Z,6.1nm,0.8s,baz=138,slow=5.5,SNR=31							
SONA1	**Songino Array**	**87.52**	**323**	*e*P		**P**	**03 32 51.0**	**0.0**
BFSC	**Mount Baldy Ra**	**87.53**	**52**	P		**P**	**03 32 51.7**	**+0.3**
	baz=245							
ISA	**Isabella, Lake**	**87.54**	**51**	P		**P**	**03 32 52.1**	**+0.8**
	baz=244							
ISA	**Isabella, Lake**	**87.54**	**51**	*e*P		**P**	**03 32 52.5**	**+1.2**
ISA				pmax	pmax			
	comp=Z,11nm,0.9s							
ISA	**Isabella, Lake**	**87.54**	**51**	*e*P		**P**	**03 32 52.5**	**+1.2**
	comp=Z,11nm,0.9s							
EDW2	**Edwards Air Fo**	**87.56**	**52**	P		**P**	**03 32 52.0**	**+0.6**
	baz=244,SNR=5.9							
HUMO	**Hull Mountain**	**87.66**	**43**	*e*P		**P**	**03 32 52.7**	**+1.1**
	comp=Z,15nm,0.9s							
MONP2	**Monument Peak**	**87.89**	**54**	P		**P**	**03 32 53.9**	**+0.7**
	baz=245							
I03D	**Drain, OR**	**87.95**	**42**	P		**P**	**03 32 53.7**	**+0.8**
	baz=241							
BUOR	**Burton Butte**	**87.97**	**44**	P		**P**	**03 32 54.3**	**+1.0**
M04C	**Macdoel**	**87.99**	**44**	P		**P**	**03 32 54.1**	**+0.8**
	baz=242,SNR=5.4							
DIB	**Dawson Inlet,**	**88.03**	**31**	*e*P		**P**	**03 32 53.5**	**+0.4**
	comp=Z,15nm,1.1s							
IKP	**In-Ko-Pah, Jac**	**88.03**	**54**	P		**P**	**03 32 54.5**	**+0.8**
	baz=246							
LRMC	**Laurel Mtn Rad**	**88.05**	**51**	P		**P**	**03 32 54.3**	**+0.6**
	baz=244,SNR=6.4							
WAKR	**Walker**	**88.11**	**48**	*e*P		**P**	**03 32 54.7**	**+0.6**
	comp=Z,12nm,1.1s							
PFO	**Pinyon Flats O**	**88.17**	**53**	P		**P**	**03 32 54.8**	**+0.4**
	baz=245							
TPFO	**Pinon Flats**	**88.17**	**53**	P		**P**	**03 32 54.7**	**+0.3**
	baz=245							
CWC	**Cottonwood Cre**	**88.17**	**50**	P		**P**	**03 32 54.9**	**+0.5**
	baz=244							
RRX	**Edison Barstow**	**88.30**	**52**	P		**P**	**03 32 55.5**	**+0.7**
	baz=245							
SWSC	**Sam W. Stewart**	**88.39**	**54**	P		**P**	**03 32 55.9**	**+0.7**
	baz=246							
MPMC	**Manual Prospec**	**88.44**	**51**	P		**P**	**03 32 56.3**	**+0.7**
	baz=245,SNR=8.8							
I04A	**Tendick Farm,**	**88.59**	**42**	P		**P**	**03 32 56.4**	**+0.4**
	baz=241							
GSC	**Goldstone, Bar**	**88.62**	**52**	P		**P**	**03 32 57.2**	**+0.8**
	baz=245							
CRQM	**Cirque**	**88.64**	**21**	*e*P		**P**	**03 32 55.6**	**-0.3**
	comp=Z,10nm,0.4s							
BELC	**Belle Mtn. Jos**	**88.68**	**53**	P		**P**	**03 32 57.5**	**+0.7**
	baz=246,SNR=7.0							
PAHR	**Pah Rah Range**	**88.69**	**47**	*e*P		**P**	**03 32 56.8**	**+0.1**
	comp=Z,14nm,1.2s							
G03D	**McMinnville, O**	**88.74**	**41**	P		**P**	**03 32 57.6**	**+1.0**
	baz=241							
HEC	**Hector,Ludlow**	**88.77**	**52**	P		**P**	**03 32 57.6**	**+0.5**
	baz=245							
IRO	**Indian Ridge**	**88.79**	**42**	P		**P**	**03 32 57.5**	**+0.4**
RND	**Reindeer**	**88.84**	**17**	*e*P		**P**	**03 32 58.1**	**+1.3**
RND				*e*			03 36 32.5	
RND				pmax	pmax			
	comp=Z,6.0nm,1.0s							
RND	**Reindeer**	**88.84**	**17**	*e*P		**P**	**03 32 58.1**	**+1.3**
	comp=Z,5.7nm,1.0s							
RND				*e*PP		**PP**	**03 36 32.5**	**+2.8**
SNAA	**Sanae**	**88.90**	**182**	*e*P		**P**	**03 32 57.0**	**-0.1**
SNAA	**Sanae**	**88.90**	**182**	*e*P		**P**	**03 32 57.0**	**-0.1**
GRAC	**Grapevine Rang**	**88.93**	**50**	P		**P**	**03 32 58.6**	**+0.8**
	baz=245							
BC3	**Big Chuckawall**	**88.95**	**54**	P		**P**	**03 32 58.8**	**+0.8**
	baz=246							
K05A	**Summer Lake**	**89.06**	**44**	*e*P		**P**	**03 32 59.3**	**+0.8**
MOD	**Modoc Plateau**	**89.06**	**45**	*e*P		**P**	**03 32 59.2**	**+0.7**
	comp=Z,12nm,1.0s							
MOD				*epP*		**pP**	**03 33 51.2**	**-1.4**
FURC	**Furnace Creek,**	**89.07**	**51**	P		**P**	**03 32 59.1**	**+0.8**
	baz=245,SNR=6.0							
J05D	**Fort Rock, OR**	**89.10**	**43**	P		**P**	**03 32 59.5**	**+0.9**
	baz=242,SNR=17							
GLA	**Glamis**	**89.18**	**55**	P		**P**	**03 33 00.0**	**+1.0**
	baz=246							
GLA	**Glamis**	**89.18**	**55**	*e*P		**P**	**03 32 59.9**	**+0.8**
GLA				pmax	pmax			
	comp=Z,35nm,1.5s							
GLA	**Glamis**	**89.18**	**55**	*e*P		**P**	**03 32 59.9**	**+0.8**
	comp=Z,35nm,1.5s							
E03A	**Lebam**	**89.22**	**39**	*e*P		**P**	**03 33 00.1**	**+1.4**
	comp=Z,38nm,1.1s							
GMRC	**Granite Mounta**	**89.26**	**53**	P		**P**	**03 32 60.0**	**+0.5**
	baz=246							
SHOC	**Shoshone, Teco**	**89.26**	**51**	P		**P**	**03 32 60.0**	**+0.7**
	baz=245							
TUQ	**Turquoise Moun**	**89.33**	**52**	P		**P**	**03 33 00.4**	**+0.6**
	baz=246,SNR=6.8							
IRM	**Iron Mountain**	**89.39**	**53**	P		**P**	**03 33 00.9**	**+1.0**
	baz=246,SNR=7.2							
NLWA	**Neilton Lookou**	**89.46**	**39**	*e*P		**P**	**03 33 00.6**	**+0.6**
	comp=Z,20nm,1.2s							
I05D	**Terrebonne, OR**	**89.53**	**42**	P		**P**	**03 33 01.0**	**+0.6**
	baz=242							
BOD	**Bodaibo**	**89.64**	**334**	*e*P		**P**	**03 32 57.8**	**-2.7**
BOD				pmax	pmax			
	comp=Z,8.0nm,1.2s							
LVP	**Lakeview Peak**	**89.69**	**40**	P		**P**	**03 33 02.0**	**+0.9**
Y12C	**Blythe**	**89.69**	**54**	P		**P**	**03 33 02.1**	**+0.8**
	baz=246							
Y12C	**Blythe**	**89.69**	**54**	*e*P		**P**	**03 33 02.3**	**+0.9**
	comp=Z,20nm,1.4s							
TPNV	**Topopah Spring**	**89.72**	**50**	P		**P**	**03 33 02.2**	**+0.6**
	baz=245,SNR=11							
TPNV	**Topopah Spring**	**89.72**	**50**	*e*P		**P**	**03 33 02.0**	**+0.4**
TPNV				pmax	pmax			
	comp=Z,20nm,1.3s							
TPNV	**Topopah Spring**	**89.72**	**50**	*e*P		**P**	**03 33 02.0**	**+0.4**
	comp=Z,20nm,1.3s							
LDFC	**Landfair**	**89.79**	**53**	*e*P		**P**	**03 33 03.4**	**+1.5**
	comp=Z,18nm,1.0s							
WRH	**Wood River Hil**	**89.88**	**17**	*e*P		**P**	**03 33 00.0**	**-1.5**
	comp=Z,3.6nm,0.8s							
G05D	**Wamic, OR**	**89.97**	**41**	P		**P**	**03 33 03.0**	**+0.7**
	baz=242							
CCB	**Clear Creek Bu**	**90.10**	**17**	*e*P		**P**	**03 33 00.8**	**-1.6**
	comp=Z,3.0nm,0.9s							
PDMCI	**Parker Dam,Lak**	**90.21**	**54**	P		**P**	**03 33 04.5**	**+0.8**
	baz=247,SNR=7.8							
MDM	**Murphy Dome**	**90.22**	**17**	*e*P		**P**	**03 33 01.4**	**-1.7**
	comp=Z,3.7nm,0.8s							
COLA	**College**	**90.26**	**17**	‖*e*P		**P**	**03 33 02.2**	**-1.0**
COLA				pmax	pmax			
	comp=Z,4.0nm,0.9s							
214A	**Organ Pipe Nat**	**90.31**	**56**	P		**P**	**03 33 05.2**	**+0.9**
	baz=247							
214A	**Organ Pipe Nat**	**90.31**	**56**	*e*P		**P**	**03 33 05.6**	**+1.2**
	comp=Z,54nm,1.3s							
PGC	**Sidney**	**90.33**	**38**	*e*P		**P**	**03 33 03.7**	**-0.2**
	comp=Z,14nm,1.0s							
SHPR	**Sheep Range**	**90.33**	**51**	*e*P		**P**	**03 33 05.1**	**+0.6**
	comp=Z,13nm,1.4s							
LON	**Longmire**	**90.38**	**40**	*e*P		**P**	**03 33 04.3**	**0.0**
LON				pmax	pmax			
	comp=Z,3.0nm,0.9s							
LON	**Longmire**	**90.38**	**40**	*e*P		**P**	**03 33 04.3**	**0.0**
	comp=Z,3.4nm,0.9s							
WVOR	**Wild Horse Val**	**90.41**	**45**	*e*P		**P**	**03 33 04.8**	**+0.2**
WVOR				pmax	pmax			
	comp=Z,17nm,1.4s							
WVOR	**Wild Horse Val**	**90.41**	**45**	*e*P		**P**	**03 33 04.8**	**+0.2**
	comp=Z,17nm,1.4s							
DOT	**Dot Lake**	**90.44**	**19**	*e*P		**P**	**03 33 03.1**	**-1.0**
	comp=Z,8.4nm,0.9s							
IL1	**Eielson Array**	**90.45**	**17**	*e*P		**P**	**03 33 01.8**	**-2.3**
ILAR	**Eielson Array**	**90.45**	**17**	P		**P**	**03 33 02.1**	**-2.0**
	comp=Z,2.3nm,0.8s,baz=234,slow=5.4,SNR=34							
ILB	**Eielson Array**	**90.45**	**17**	*e*P		**P**	**03

TXAR	**Lajitas Array**	**96.78**	**61**	P		**P**	**03 33 34.9**	**+0.7**
	comp=Z,0.9nm,0.8s,baz=229,slow=5.9,SNR=14							
WMQ	**Urumqi**	**97.49**	**314**	*e*P		Pdif	03 33 39.0	+2.0
WMQ				pmax		pmax		
	comp=Z,7.0nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,93nm,4.9s							
MSTX	**Muleshoe**	**98.92**	**57**	Pdiff		**P**	**03 33 43.8**	**+0.1**
	baz=253							
AMTX	**Amarillo**	**100.06**	**57**	Pdiff		**Pdif**	**03 33 48.8**	**+0.2**
	baz=253							
034A	**Hebbronville**	**100.29**	**65**	Pdiff		**Pdif**	**03 33 50.1**	**+0.3**
	baz=253							
YKA	**Yellowknife Ar**	**100.85**	**27**	P		**Pdif**	**03 33 52.3**	**+1.0**
	comp=Z,1.3nm,0.7s,baz=243,slow=4.1,SNR=4.5							
W32A	**Sentinel**	**102.04**	**57**	Pdiff		**Pdif**	**03 33 57.8**	**+0.4**
	baz=255							
ARU	**Arti**	**117.54**	**324**	*i* PKIKP		**PKPdf**	**03 38 46.8**	**-0.5**
ARU							03 39 58.4	
ARU							03 45 38.6	
AKTO	**Aktyubinsk**	**118.36**	**317**	PKP		**PKPdf**	**03 38 48.3**	**-0.8**
	comp=Z,2.8nm,0.9s,baz=212,slow=1.8,SNR=8.8							
ARA0	**ARCESS Array S**	**125.36**	**345**	*e*PKPdf		**PKPdf**	**03 39 01.4**	**-0.6**
ARCES	**ARCESS Array B**	**125.36**	**345**	PKP		**PKPdf**	**03 39 01.2**	**-0.8**
	comp=Z,2.6nm,0.6s,baz=70,slow=1.3,SNR=16							
KLMR	**Klimovskoe**	**125.84**	**332**	*e*PKIKP		**PKPdf**	**03 39 00.4**	**-2.7**
KLMR				pmax		pmax		
	comp=Z,6.0nm,1.0s							
KIV	**Kislovodsk**	**129.55**	**311**	⇓*i*PKIKP		**PKPdf**	**03 39 11.4**	**+0.6**
KIV				pmax		pmax		
	comp=Z,4.0nm,0.8s							
NEY	**Neytrino**	**129.66**	**310**	⇑*i*PKIKP		**PKPdf**	**03 39 12.5**	**+1.3**
OBN	**Obninsk**	**129.80**	**327**	⇓*i*PKIKP		**PKPdf**	**03 39 11.7**	**+0.9**
OBN				PPP		PPP	03 44 22.0	
OBN				*e*			03 45 48.6	
OBN				pmax		pmax		
	comp=Z,7.0nm,1.3s							
NB2	**NORSAR Subarra**	**135.74**	**345**	PKPdf		**PKPdf**	**03 39 21.9**	**0.0**
	comp=Z,3.7nm,1.2s,baz=31,slow=1.9							
NOA	**NORSAR Array B**	**135.74**	**345**	PKP		**PKPdf**	**03 39 21.8**	**-0.1**
	comp=Z,1.4nm,0.7s,baz=36,slow=2.0,SNR=5.4							
AKASG	**Malin Array Be**	**135.79**	**324**	PKIKP		**PKPdf**	**03 39 22.0**	**-0.2**
AKASG	**Malin Array Be**	**135.79**	**324**	PKIKP		**PKPdf**	**03 39 22.0**	**-0.2**
KIEV	**Kiev**	**135.80**	**324**	⇓*i*PKIKP		**PKPdf**	**03 39 23.4**	**+1.2**
BRTR	**Keskin Array B**	**137.09**	**308**	PKP		**PKPdf**	**03 39 24.9**	**-0.3**
	comp=Z,0.9nm,0.8s,baz=94,slow=0.6,SNR=5.1							
BR231	**Keskin MP Arra**	**137.70**	**308**	*e*PKPdf		**PKPdf**	**03 39 25.9**	**-0.4**
BUR08	**Bucovina Ar. S**	**139.63**	**322**	*e*PKPdf		**PKPdf**	**03 39 30.3**	**+0.7**
DPC	**Dobruska-Polom**	**142.53**	**332**	*e*PKP		PKPpre	03 39 29.9	
DPC				*ex*		x	03 39 39.9	
DPC	**Dobruska-Polom**	**142.53**	**332**	*e*PKHKP		PKPpre	03 39 29.9	
BRG	**Berggiesshubel**	**143.17**	**334**	*e*PKP		PKPbc	03 39 32.8	-0.5
	comp=Z,12nm,1.4s							
BRG				*e*			03 42 54.4	
	comp=Z,10.0nm,1.5s							
BRG	**Berggiesshubel**	**143.17**	**334**	*e*PKIKP		PKPbc	03 39 32.8	-0.5
BRG				*e*			03 42 54.4	
BRG				pmax		pmax		
	comp=Z,12nm,1.4s							
BRG				pmax		pmax		
	comp=Z,10.0nm,1.5s							
CLL	**Collm**	**143.22**	**335**	*i* PKPdf		PKPbc	03 39 33.6	+0.2
	comp=Z,8.0nm,0.8s							
CLL				*e*			03 39 39.0	
CLL	**Collm**	**143.22**	**335**	*i* PKIKP		PKPbc	03 39 33.6	+0.2
CLL				pmax		pmax		
	comp=Z,8.0nm,0.8s							
PRU	**Pruhonice**	**143.58**	**332**	*e*PKP		PKPab	03 39 32.7	-0.8
PRU	**Pruhonice**	**143.58**	**332**	*e*PKHKP		PKPab	03 39 32.7	-0.8
NKC	**Novy Kostel**	**144.28**	**334**	*e*PKP		PKPbc	03 39 36.6	+0.1
NKC				*ex*		x	03 39 44.5	
NKC	**Novy Kostel**	**144.28**	**334**	*e*PKIKP		PKPbc	03 39 36.6	+0.1
CONA	**Conrad Observa**	**144.44**	**329**	*i* PKPdf		PKPbc	03 39 37.6	+0.4
	comp=Z,12nm,0.9s,SNR=8.4							
LAST	**Lasithi**	**144.57**	**304**	*e*PKPdf		PKPbc	03 39 38.2	+0.3
KHC	**Kasperske Hory**	**144.64**	**332**	*e*PKP		PKPbc	03 39 37.7	0.0
KHC				*ep*PKP		pPKiKP	03 40 32.1	-6.8
KHC				*ex*		x	03 40 51.2	
KHC	**Kasperske Hory**	**144.64**	**332**	*e*PKIKP		PKPbc	03 39 37.7	0.0
KHC				*e*			03 40 32.1	
KHC				*e*			03 40 51.2	
KHC	**Kasperske Hory**	**144.64**	**332**	*e*PKPdf		**PKPab**	**03 39 37.6**	**0.0**
GERES	**GERESS Array B**	**144.79**	**332**	PKP		PKPbc	03 39 37.8	-0.4
	comp=Z,12nm,0.8s,baz=36,slow=3.7,SNR=78							
GEA0	**GERESS Array S**	**144.80**	**332**	*e*PKPbc		PKPbc	03 39 38.0	-0.3
SKO	**Skopje**	**144.82**	**317**	*i* PKP		**PKPdf**	**03 39 38.9**	**+0.1**
ARSA	**Arzberg**	**145.08**	**328**	*i* PKPdf		**PKPab**	**03 39 39.4**	**+0.1**
	comp=Z,15nm,0.9s,SNR=6.9							
KOGS	**Kog**	**145.25**	**327**	*i* PKPbc		**PKPdf**	**03 39 39.4**	**0.0**
MOA	**Molln**	**145.26**	**330**	*i* PKPab		**PKPab**	**03 39 40.0**	**0.0**
	comp=Z,28nm,0.8s,SNR=15							
OHR	**Ohrid**	**145.66**	**316**	*i* PKP		**PKPbc**	**03 39 41.0**	**-0.1**
SOKA	**Soboth**	**145.72**	**328**	*i* PKPab		**PKPbc**	**03 39 41.1**	**0.0**
	comp=Z,7.7nm,0.9s							
OBKA	**Obir**	**146.07**	**328**	*i* PKPab		**PKPab**	**03 39 43.1**	**-0.1**
	comp=Z,9.7nm,0.9s							
TIR	**Tirane**	**146.16**	**317**	*e*PKP2		**PKPbc**	**03 39 42.6**	**+0.1**
TIR	**Tirane**	**146.16**	**317**	*e*PKPdf		**PKPbc**	**03 39 42.6**	**+0.1**
BEBN	**Eben Emael**	**146.22**	**341**	PKP		**PKPbc**	**03 39 41.8**	**-0.6**
KBA	**Koelnbreinsper**	**146.25**	**330**	*i* PKPab		**PKPbc**	**03 39 42.5**	**-0.4**
	comp=Z,15nm,0.9s							
BOJS	**Bojanci**	**146.40**	**326**	*e*PKPbc		**PKPbc**	**03 39 43.3**	**+0.3**
LJU	**Ljubljana**	**146.41**	**328**	*i* PKPbc		**PKPbc**	**03 39 43.0**	**-0.1**
MYKA	**Terra Mystica**	**146.43**	**329**	*i* PKPbc		**PKPbc**	**03 39 42.5**	**-0.7**
	comp=Z,7.3nm,0.6s							
WATA	**Walderalm**	**146.87**	**332**	*i* PKPdf		**PKPdf**	**03 39 42.0**	**-0.4**
	comp=Z,4.5nm,0.5s							
ABTA	**Abfaltersbach**	**146.88**	**330**	*i* PKPbc		**PKPbc**	**03 39 43.8**	**-0.7**
	comp=Z,18nm,1.0s							
WTTA	**Wattenberg**	**146.90**	**332**	*i* PKPab		**PKPbc**	**03 39 44.7**	**+0.1**
	comp=Z,11nm,0.9s							
WLF	**Walferdange**	**147.06**	**340**	PKPbc		**PKPbc**	**03 39 45.3**	**+0.5**
MOTA	**Moosalm**	**147.07**	**332**	*i* PKPbc		**PKPbc**	**03 39 45.0**	**-0.1**
	comp=Z,17nm,0.9s,SNR=9.5							
RETA	**Reutte**	**147.11**	**333**	*i* PKPbc		**PKPbc**	**03 39 44.9**	**-0.2**
	comp=Z,7.3nm,0.9s							
DOU	**Dourbes**	**147.16**	**342**	PKPbc		**PKPbc**	**03 39 45.0**	**0.0**
BFO	**Black Forest**	**147.42**	**336**	*i* PKP2		**PKPbc**	**03 39 46.2**	**+0.3**
BFO	**Black Forest**	**147.42**	**336**	*e*PKPbc		**PKPbc**	**03 39 45.8**	**0.0**
FETA	**Feichten**	**147.48**	**332**	*i* PKPbc		**PKPbc**	**03 39 46.2**	**0.0**
	comp=Z,15nm,0.8s,SNR=5.4							
DAVA	**Damuels**	**147.64**	**334**	*i* PKPbc		**PKPbc**	**03 39 46.4**	**-0.3**
	comp=Z,15nm,0.8s							
FUORN	**Ofenpass-Fuorn**	**148.00**	**332**	*e*PKPbc		**PKPbc**	**03 39 47.5**	**-0.2**
TUE	**Stuetta**	**148.51**	**333**	*e*PKPbc		**PKPbc**	**03 39 48.8**	**-0.2**
TIP	**Timpagrande**	**149.31**	**316**	*e*PKPbc		**PKPbc**	**03 39 51.4**	**+0.3**
CUC	**Castrocucco**	**149.48**	**318**	*e*PKPbc		**PKPbc**	**03 39 50.2**	**-1.2**
AQU	**L'Aquila**	**149.49**	**324**	*e*PKP2		**PKPbc**	**03 39 51.5**	**+0.1**
AQU	**L'Aquila**	**149.49**	**324**	*e*PKPbc		**PKPbc**	**03 39 51.5**	**+0.1**

JMA 18 03:23:39.8±0.1, 38°40N×142°14E, h33km±1km, M3.6,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.62**	**275**	P		Pn	03 23 52.1	-0.2
JIO				S		Sb	03 24 00.5	-0.5
OFUJ	**Ofunato**	**0.77**	**332**	P		Pn	03 23 54.3	-0.1
OFUJ				S		Sn	03 24 04.2	-0.7
JMK	**Ichinoseki**	**0.91**	**308**	P		Pn	03 23 56.4	+0.2
JMK				S		Sn	03 24 08.1	0.0
JOU	**Okura**	**1.16**	**269**	P		Pn	03 24 00.3	+0.6
JOU				S		Sn	03 24 15.1	+0.6
JMM	**Marumori**	**1.19**	**244**	P		Pn	03 23 59.7	-0.4
JMM				S		Sn	03 24 14.4	-0.7
JOM	**Ohasama**	**1.26**	**329**	P		Pn	03 24 01.8	+0.7
JOM				S		Sn	03 24 17.7	+0.8
JFK	**Kawauchi**	**1.44**	**225**	P		Pn	03 24 02.9	-0.7
JYK	**Kaneyama**	**1.49**	**291**	P		Pn	03 24 05.0	+0.8
JRG	**Rokugo**	**1.54**	**311**	P		Pn	03 24 06.2	+1.3

MEX 18 03:52:15.7±0.4, 14°67N×92°82W, h42km±28km, MD3.6,
Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CCIG	**Comitan**	**1.73**	**22**	*e*P		Pn	03 52 42.1	-1.5
CCIG				*e*S		Sn	03 53 01.8	-2.7

*RSNC **18** 03:53:01.3±0.7, 10°.51N×72°.39W, h136km±15km, ML2.4*

*FUNV **18** 03:53:02.0, 10°.53N×72°.55W, h14km, MW2.9*
ISC 18 03:53:02.4±1.0, 10°.45N±0°.05×72°.47W±0°.04, h17km±6km,
n20,σ1s22/30, Venezuela

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VIRV	**Villa del Rosa**	**0.09**	**52**	*e*P		**Pg**	**03 53 05.5**	**-0.3**
VIRV				*e*S		**Sg**	**03 53 08.6**	**+0.5**
URIC	**Uribia, Colomb**	**1.33**	**21**	*e*P		**Pg**	**03 53 26.6**	**-1.5**
URIC				*i*			03 53 28.5	
	comp=Z,37nm,0.1s							
URIC				*e*S		**Sg**	**03 53 46.3**	**+0.9**
DABV	**Dabajuro**	**1.87**	**75**	*e*P		**Pn**	**03 53 34.4**	**+0.8**
DABV				*e*S		**Sn**	**03 53 57.8**	**+1.0**
QARV	**Quebrada Arrib**	**1.93**	**97**	*e*P		**Pn**	**03 53 35.2**	**+0.7**
VIGV	**El Vigia**	**1.94**	**146**	*e*P		**Pn**	**03 53 36.1**	**+1.6**
VIGV				*e*S		**Sn**	**03 54 00.5**	**+1.9**
OCAC	**Ocana**	**2.35**	**201**	*e*P		**Pn**	**03 53 40.9**	**+0.5**
OCAC				*e*S		**Sn**	**03 54 11.2**	**+2.3**
SDV	**Santo Domingo**	**2.39**	**130**	*e*P		**Pn**	**03 53 39.6**	**-1.3**
SDV				*i*			03 54 20.6	
	comp=Z,22nm,0.3s							
SDV	**Santo Domingo**	**2.39**	**130**	*e*S		**Sn**	**03 54 11.0**	**+1.1**
CURV	**Curarigua**	**2.51**	**100**	*e*P		**Pn**	**03 53 42.7**	**+0.2**
CAPV	**Capacho**	**2.57**	**176**	*e*P		**Pn**	**03 53 43.8**	**+0.3**
CAPV				*e*S		**Sn**	**03 54 15.4**	**+0.9**
SIQV	**Siquisique**	**2.63**	**85**	*e*P		**Pn**	**03 53 44.5**	**+0.4**
SOCV	**Socops**	**2.68**	**143**	*e*P		**Pn**	**03 53 45.1**	**+0.3**
SOCV				*e*S		**Sn**	**03 54 17.5**	**+0.6**
SJCC	**San Jacinto, C**	**2.72**	**259**	*e*P		**Pn**	**03 53 46.0**	**+0.6**
SJCC				*e*S		**Sn**	**03 54 18.8**	**+0.8**
SJCC				*i*			03 54 22.8	
	comp=Z,5.6nm,0.4s							
GRMC	**Gramalote, San**	**2.73**	**187**	*e*P		**Pn**	**03 53 43.5**	**-2.1**
GRMC				*e*S		**Sn**	**03 54 16.4**	**-2.0**
MONV	**Montecano**	**2.88**	**58**	*e*P		**Pn**	**03 53 46.9**	**-0.6**
SANV	**Sanarito**	**3.04**	**108**	*e*P		**Pn**	**03 53 49.8**	**-0.1**
TEPV	**Terepaima**	**3.27**	**98**	*e*P		**Pn**	**03 53 53.5**	**+0.6**
BRRC	**Barranca, Sant**	**3.54**	**200**	*e*P		**Pn**	**03 53 55.3**	**-1.3**
BRRC				*i*			03 54 52.0	
	comp=Z,6.7nm,0.1s							
MAPV	**Macapo**	**4.00**	**98**	*e*P		**Pn**	**03 54 02.9**	**-0.1**
BAUV	**El Baul**	**4.62**	**109**	*e*P		**Pn**	**03 54 11.1**	**-0.4**
BAUV				*e*S		**Sn**	**03 55 02.6**	**-2.1**

GUC 18 04:02:47.0±0.5, 37°.05S×72°.35W, h66km±3km, ML4.0,
1C-1D, Central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CCHI	**Chillan**	**0.50**	**26**	*i* P		Pn	04 03 00.2	+0.8
CCHI				*i* S		Sn	04 03 09.8	+1.3
CCHI				IAML			04 03 11.2	
	comp=E,14μm,0.3s							
CCSP	**San Pedro de C**	**0.64**	**289**	*e*P		Pn	04 03 01.2	+0.3
CCSP				*i* S		Sn	04 03 12.5	+1.4
COCH	**Cobquecura**	**0.98**	**339**	⇓*i*P		Pn	04 03 06.0	+1.0
COCH				*i* S		Sn	04 03 20.4	+2.0
TALC	**Talca**	**1.75**	**20**	⇑*i*P		Pn	04 03 16.5	+1.3
TALC				*i* S		Sn	04 03 38.2	+1.7
NICH	**Los Niches**	**2.24**	**24**	*e*P		Pn	04 03 23.1	+1.3
NICH				*i* S		Sn	04 03 50.6	+2.3

*DDA **18** 04:04:57.9, 36°.04N×28°.19E, h47km, Md3.4*
*ISCJB **18** 04:04:58.6±0.4, 36°.08N±0°.03×28°.15E±0°.02, h64km±6km,*
Error ellipse: s-maj=4.9km s-min=3.0km az=163.1
*ATH **18** 04:04:58.1, 36°.11N×28°.16E, h62km±3km, ML3.0/8, Error*
ellipse: s-maj=3.2km s-min=1.4km az=80.0
*HLW **18** 04:04:58.9, 35°.80N×28°.32E, h11km±11km, Md4.0, Ml3.9*
*ISK **18** 04:04:58.7, 36°.09N×28°.17E, h61km, MD3.3*
*CSEM **18** 04:04:59.4±0.1, 36°.05N×28°.17E, h52km±4km, ML3.0,*
Error ellipse: s-maj=3.6km s-min=2.2km az=159.0
*THE **18** 04:04:59.9, 36°.09N×28°.18E, h54km±1km, ML3.4/6, Error*
ellipse: s-maj=1.7km s-min=0.6km az=110.0
ISC 18 04:04:58.7±1.1, 36°.07N±0°.03×28°.16E±0°.02, h55km±7km,
n128,σ1s37/178, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ARG	**Arkhangelos**	**0.15**	**350**	P		**Pn**	**04 05 08.0**	**+0.7**
ARG				S		**Sn**	**04 05 14.5**	**+1.0**
ARG	**Arkhangelos**	**0.15**	**350**	P		**Pn**	**04 05 08.1**	**+0.7**
ARG				S		**Sn**	**04 05 14.5**	**+1.0**
DALY	**Dalyan (Mu¨la**	**0.84**	**28**	*e*PG		**Pn**	**04 05 15.6**	**+1.1**
DALY				*e*SG		**Sn**	**04 05 27.4**	**+1.3**
DALY	**Dalyan (Mu¨la**	**0.84**	**28**	*e*Pg		**Pn**	**04 05 15.6**	**+1.1**
DALY				*e*Sg		**Sn**	**04 05 27.4**	**+1.3**
TURN	**Turunc**	**0.88**	**24**	*i* P		**Pn**	**04 05 14.0**	**-0.9**
TURN				*i* S		**Sn**	**04 05 24.5**	**-2.3**
FETY	**Fethiye**	**0.94**	**53**	*e*PG		**Pn**	**04 05 16.3**	**+0.6**
FETY				*e*SG		**Sn**	**04 05 29.0**	**+0.8**
FETY	**Fethiye**	**0.94**	**53**	P		**Pn**	**04 05 16.0**	**+0.3**
FETY				S		**Sn**	**04 05 29.0**	**+0.8**
FETY	**Fethiye**	**0.94**	**53**	P		**Pn**	**04 05 16.0**	**+0.3**
FETY	**Fethiye**	**0.94**	**53**	*e*Pg		**Pn**	**04 05 16.3**	**+0.6**
FETY				S		**Sn**	**04 05 29.0**	**+0.8**
NIS1	**Nisyros Isl.**	**0.95**	**304**	*e*PG		**Pn**	**04 05 17.4**	**+1.4**
NIS1	**Nisyros Isl.**	**0.95**	**304**	P		**Pn**	**04 05 16.8**	**+0.9**
NIS1				S		**Sn**	**04 05 29.2**	**+0.5**
NIS1	**Nisyros Isl.**	**0.95**	**304**	P		**Pn**	**04 05 16.9**	**+0.9**
NIS1	**Nisyros Isl.**	**0.95**	**304**	*e*Pg		**Pn**	**04 05 17.4**	**+1.4**
NIS1				S		**Sn**	**04 05 29.2**	**+0.5**
NIS1	**Nisyros Isl.**	**0.95**	**304**	P		**Pn**	**04 05 17.3**	**+1.4**
NIS1				S		**Sn**	**04 05 28.5**	**-0.2**
KARP	**Karpathos**	**0.96**	**238**	*e*PG		**Pn**	**04 05 17.1**	**+1.0**
KARP				*e*SG		**Sn**	**04 05 30.8**	**+1.8**
KARP	**Karpathos**	**0.96**	**238**	P		**Pn**	**04 05 17.0**	**+1.0**
KARP				S		**Sn**	**04 05 29.9**	**+1.0**
KARP	**Karpathos**	**0.96**	**238**	P		**Pn**	**04 05 17.0**	**+1.0**
KARP				S		**Sn**	**04 05 29.2**	**+0.3**
KARP				*e*Sg		**Sn**	**04 05 30.8**	**+1.8**
KARP	**Karpathos**	**0.96**	**238**	P		**Pn**	**04 05 17.1**	**+1.0**
KARP				S		**Sn**	**04 05 29.2**	**+0.3**
KARP				AML		AML	04 05 30.6	
	comp=N,1849μm,0.2s							
KARP				AML		AML	04 05 30.8	
	comp=E,2409μm,0.2s							
NISR	**Nisiros**	**0.99**	**303**	P		**Pn**	**04 05 17.6**	**+1.2**
NISR	**Nisiros**	**0.99**	**303**	P		**Pn**	**04 05 17.6**	**+1.2**
NISR				AML		AML	04 05 34.6	
	comp=E,1281μm,0.3s							
NISR				AML		AML	04 05 38.1	
	comp=N,770μm,0.4s							
YER	**Yerkesik**	**1.07**	**5**	*e*PG		**Pn**	**04 05 17.9**	**+0.4**
YER	**Yerkesik**	**1.07**	**5**	P		**Pn**	**04 05 18.7**	**+1.2**
YER	**Yerkesik**	**1.07**	**5**	*e*Pg		**Pn**	**04 05 17.9**	**+0.4**
YER	**Yerkesik**	**1.07**	**5**	P		**Pn**	**04 05 18.7**	**+1.2**
BDRM	**Kayabasi**	**1.15**	**330**	*i* P		**Pn**	**04 05 19.1**	**+0.5**
BDRM				*i* S		**Sn**	**04 05 33.8**	**+0.5**
BDRM	**Kayabasi**	**1.15**	**330**	P		**Pn**	**04 05 19.1**	**+0.5**
BDRM				S		**Sn**	**04 05 33.8**	**+0.5**
KSL	**Kastellorizon**	**1.16**	**86**	P		**Pn**	**04 05 19.3**	**+0.7**
KSL				S		**Sn**	**04 05 33.6**	**+0.2**
KSL	**Kastellorizon**	**1.16**	**86**	P		**Pn**	**04 05 19.3**	**+0.7**
KSL				S		**Sn**	**04 05 33.6**	**+0.2**
KSL	**Kastellorizon**	**1.16**	**86**	P		**Pn**	**04 05 19.3**	**+0.7**
KSL				S		**Sn**	**04 05 33.0**	**-0.4**
KSL				AML		AML	04 05 34.2	
	comp=N,821μm,0.3s							
KSL				AML		AML	04 05 36.0	
	comp=E,1173μm,0.3s							
AKAS	**Kas**	**1.18**	**82**	*i* P		**Pn**	**04 05 19.6**	**+0.5**
AKAS				*i* S		**Sn**	**04 05 34.9**	**+0.6**
AKAS	**Kas**	**1.18**	**82**	P		**Pn**	**04 05 19.6**	**+0.5**
AKAS				S		**Sn**	**04 05 34.9**	**+0.6**
BODT	**Bodrum**	**1.20**	**326**	*e*PN		**Pn**	**04 05 19.9**	**+0.6**
BODT	**Bodrum**	**1.20**	**326**	P		**Pn**	**04 05 19.9**	**+0.6**
BODT				S		**Sn**	**04 05 35.4**	**+0.8**
BODT	**Bodrum**	**1.20**	**326**	P		**Pn**	**04 05 19.9**	**+0.6**
BODT				S		**Sn**	**04 05 35.4**	**+0.8**
GLHS	**Glhisar (BURDU**	**1.53**	**44**	*e*PN		**Pn**	**04 05 24.6**	**+0.9**
GLHS	**Glhisar (BURDU**	**1.53**	**44**	*e*Pn		**Pn**	**04 05 24.6**	**+0.9**
ELL	**Elmali**	**1.56**	**64**	*e*PN		**Pn**	**04 05 25.3**	**+1.0**
ELL	**Elmali**	**1.56**	**64**	*e*Pn		**Pn**	**04 05 25.3**	**+1.0**
GOLH	**Golhisar**	**1.62**	**44**	*i* P		**Pn**	**04 05 26.9**	**+1.9**
GOLH				*i* S		**Sn**	**04 05 47.0**	**+2.2**
GOLH	**Golhisar**	**1.62**	**44**	P		**Pn**	**04 05 26.9**	**+1.9**
GOLH				S		**Sn**	**04 05 47.0**	**+2.2**
DENT	**Denizli**	**1.82**	**22**	*e*PN		**Pn**	**04 05 28.7**	**+1.0**
DENT	**Denizli**	**1.82**	**22**	*e*Pn		**Pn**	**04 05 28.7**	**+1.0**
ZKR	**Zakros**	**1.85**	**240**	P		**Pn**	**04 05 29.6**	**+1.6**
ZKR	**Zakros**	**1.85**	**240**	P		**Pn**	**04 05 29.6**	**+1.6**
ZKR				S		**Sn**	**04 05 52.7**	**+2.5**
ZKR	**Zakros**	**1.85**	**240**	P		**Pn**	**04 05 30.0**	**+2.0**
ZKR				S		**Sn**	**04 05 52.7**	**+2.5**
ZKR				AML		AML	04 05 53.5	
	comp=N,279μm,0.5s							
ZKR				AML		AML	04 05 54.3	
	comp=E,284μm,0.4s							
AYDB	**Zeytinkoy-Aydi**	**1.89**	**354**	*e*PN		**Pn**	**04 05 29.3**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.89**	**354**	*e*Pn		**Pn**	**04 05 29.3**	**+0.7**
SMG	**Samos**	**1.95**	**327**	P		**Pn**	**04 05 29.9**	**+0.5**
SMG				S		**Sn**	**04 05 53.0**	**+0.3**
SMG	**Samos**	**1.95**	**327**	P		**Pn**	**04 05 30.1**	**+0.7**
SMG				S		**Sn**	**04 05 53.0**	**+0.3**
SMG	**Samos**	**1.95**	**327**	P		**Pn**	**04 05 30.1**	**+0.7**
SMG				S		**Sn**	**04 05 51.9**	**-0.8**
SMG				AML		AML	04 05 54.5	
	comp=N,984μm,0.4s							
SMG				AML		AML	04 05 55.1	
	comp=E,786μm,0.3s							
KORT	**Korkueli**	**1.99**	**62**	*i* P		**Pn**	**04 05 31.7**	**+1.6**
KORT				*i* S		**Sn**	**04 05 56.3**	**+2.3**
KORT	**Korkueli**	**1.99**	**62**	P		**Pn**	**04 05 31.7**	**+1.6**
KORT				S		**Sn**	**04 05 56.3**	**+2.3**
ANTB	**Antalya**	**2.17**	**67**	*e*PN		**Pn**	**04 05 33.9**	**+1.5**
ANTB	**Antalya**	**2.17**	**67**	*e*Pn		**Pn**	**04 05 33.9**	**+1.5**
SANT	**Santorini**	**2.20**	**279**	P		**Pn**	**04 05 33.5**	**+0.6**
SANT	**Santorini**	**2.20**	**279**	P		**Pn**	**04 05 33.5**	**+0.6**
NPS	**Neapolis**	**2.23**	**250**	P		**Pn**	**04 05 33.8**	**+0.7**
NPS	**Neapolis**	**2.23**	**250**	P		**Pn**	**04 05 33.8**	**+0.7**
NPS	**Neapolis**	**2.23**	**250**	P		**Pn**	**04 05 33.5**	**+0.3**
SAP1	**Santorini-Akro**	**2.25**	**278**	P		**Pn**	**04 05 33.8**	**+0.3**
SAP1	**Santorini-Akro**	**2.25**	**278**	P		**Pn**	**04 05 33.8**	**+0.3**
THR3	**Thira Island,**	**2.26**	**279**	P		**Pn**	**04 05 34.4**	**+0.9**
THR3	**Thira Island,**	**2.26**	**279**	P		**Pn**	**04 05 34.4**	**+0.9**
CMBO	**Columbo, Santo**	**2.26**	**281**	P		**Pn**	**04 05 34.3**	**+0.7**
CMBO	**Columbo, Santo**	**2.26**	**281**	P		**Pn**	**04 05 34.3**	**+0.7**
CMBO				AML		AML	04 06 00.8	
	comp=N,832μm,0.6s							
CMBO				AML		AML	04 06 04.2	
	comp=E,617μm,0.5s							
APE	**Apeiranthos**	**2.34**	**296**	*e*PN		**Pn**	**04 05 36.1**	**+1.4**
APE	**Apeiranthos**	**2.34**	**296**	P		**Pn**	**04 05 35.8**	**+1.0**
APE	**Apeiranthos**	**2.34**	**296**	P		**Pn**	**04 05 35.7**	**+1.0**
APE	**Apeiranthos**	**2.34**	**296**	*e*Pn		**Pn**	**04 05 36.1**	**+1.4**
APE				S		**Sn**	**04 06 01.3**	**-1.0**
APE	**Apeiranthos**	**2.34**	**296**	P		**Pn**	**04 05 35.7**	**+1.0**
APE				S		**Sn**	**04 06 01.3**	**-1.0**
APE				AML		AML	04 06 02.7	
	comp

WRA	**Warramunga Arr**	**21.45 229**	P	**P**	**04 19 47.0**	**-0.7**
	5.2nm,0.7s,baz=53,slow=11,SNR=34						
DZM	**Mont Dzumac**	**21.62 139**	P	**P**	**04 19 49.7**	**+0.1**
	7.7nm,0.8s,baz=286,slow=16,SNR=2.5						
DZM			LR	LR	04 26 06.2		
	comp=Z,106nm,18.5s,baz=81,slow=31						
ASAR	**Alice Springs**	**24.17 222**	P	**P**	**04 20 15.0**	**-0.4**
	5.0nm,0.6s,baz=54,slow=9.3,SNR=50						
STKA	**Stephens Creek**	**27.20 198**	P	**P**	**04 20 42.1**	**-0.5**
	5.7nm,1.0s,baz=11,slow=7.9,SNR=6.4						
STKA			LR	LR	04 31 36.2		
	comp=Z,72nm,18.2s,baz=24,slow=37						
FITZ	**Fitzroy Crossi**	**27.70 242**	P	**P**	**04 20 46.6**	**-0.8**
	2.8nm,0.7s,baz=67,slow=10,SNR=7.5						
ILAR	**Eielson Array**	**83.93 22**	P	**P**	**04 27 27.4**	**-0.7**
	1.0nm,0.9s,baz=255,slow=5.4,SNR=6.7						
TORD	**Torodi Ar. Bea**	**149.22 285**	PKPbc	**PKPbc**	**04 34 49.0**	**+1.1**
	1.4nm,0.8s,baz=80,slow=2.5,SNR=17						

*IDC **18** 04:15:44.6±1.1,29°.41S×176°.56W,h0km,mb4.2/6, mb1 4.4/6,mb1mx3.9/30,mbtmp4.2/6,Error ellipse: s-maj=36.8km s-min=22.5km az=6.0*
*NEIC **18** 04:15:45.9±0.9,29°.58S×176°.46W,h10km,mb4.4/1,Error ellipse: s-maj=20.0km s-min=16.7km az=49.0*
*ISCJB **18** 04:15:48.2±1.1,29°.87S±0°.07×176°.8W±0°.1,h21km, mb4.2/8,Error ellipse: s-maj=16.1km s-min=7.4km az=151.0*

ISC 18 04:15:49.2±0.9,29°.71S±0°.08×176°.75W±0°.09,h21km,n19, σ1°28/23,mb4.3/8,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.12 294**		Pn	**Pn**	**04 16 08.5**	**-1.1**
	28nm,0.3s,baz=38,slow=19,SNR=2.6						
RAO				Sn	**Sn**	**04 16 25.3**	**+0.9**
	378nm,0.3s,baz=49,slow=21,SNR=10						
RAO	**Raoul Island**	**1.12 294**		*e*Pn	**Pb**	**04 16 09.9**	**0.0**
RAO				*e*S	**Sb**	**04 16 23.1**	**-0.8**
URZ	**Urewera**	**9.93 209**		Pn	**Pn**	**04 18 09.3**	**-1.4**
	0.6nm,0.3s,baz=45,slow=19,SNR=2.9						
URZ				Sn	**Sn**	**04 20 00.7**	**-0.8**
	1.8nm,0.3s,baz=150,slow=18,SNR=3.5						
URZ	**Urewera**	**9.93 209**		Pn	**Pn**	**04 18 09.9**	**-0.8**
URZ				Sn	**Sn**	**04 20 00.7**	**-0.8**
CTA	**Charters Tower**	**34.78 277**		P	**P**	**04 22 40.6**	**+2.2**
	1.2nm,0.5s,baz=91,slow=12,SNR=4.4						
CTAO	**Charters Tower**	**34.78 277**		*e*P	**P**	**04 22 40.5**	**+2.1**
	31nm,0.9s						
STKA	**Stephens Creek**	**35.70 256**		P	**P**	**04 22 48.3**	**+2.1**
	6.9nm,0.8s,baz=99,slow=5.9,SNR=8.4						
ASAR	**Alice Springs**	**44.24 266**		P	**P**	**04 23 57.1**	**-0.2**
	1.1nm,0.7s,baz=107,slow=7.7,SNR=7.7						
WRAB	**Tennant Creek**	**45.16 271**		*e*P	**P**	**04 24 04.5**	**-0.1**
WRA	**Warramunga Arr**	**45.17 271**		P	**P**	**04 24 03.9**	**-0.8**
	6.4nm,0.8s,baz=109,slow=7.8,SNR=17						
FITZ	**Fitzroy Crossi**	**53.45 269**		P	**P**	**04 25 08.3**	**+0.2**
	2.7nm,0.8s,baz=185,slow=7.9,SNR=3.8						
QSPA	**South Pole Qui**	**60.40 180**		*e*P	**P**	**04 25 57.8**	**+1.1**
	1.8nm,0.6s						
MAW	**Mawson**	**73.33 200**		P	**P**	**04 27 19.6**	**+0.7**
	0.8nm,0.7s,baz=148,slow=13,SNR=3.2						
MJAR	**Matsushiro Arr**	**78.31 324**		P	**P**	**04 27 46.1**	**-1.5**
	2.0nm,0.8s,baz=165,slow=6.6,SNR=5.2						
FINES	**FINESS Array B**	**144.86 341**		PKP	**PKPab**	**04 35 21.0**	**-1.9**
	2.5nm,0.7s,baz=72,slow=6.2,SNR=7.8						
NB2	**NORSAR Subarra**	**148.22 359**		PKP	**PKPdf**	**04 35 30.9**	**+1.3**
	comp=Z,0.6nm,0.7s,baz=5.3,slow=2.9						
NOA	**NORSAR Array B**	**148.22 353**		PKPbc	**PKPdf**	**04 35 30.5**	**+0.9**
	comp=Z,1.2nm,0.8s,baz=18,slow=4.4,SNR=3.8						
AKASG	**Malin Array Be**	**151.39 324**		PKPbc	**PKPbc**	**04 35 39.6**	**-1.4**
	comp=Z,1.8nm,0.6s,baz=47,slow=3.3,SNR=11						
TORD	**Torodi Ar. Bea**	**163.46 175**		PKPab	**PKPab**	**04 36 41.3**	**-0.6**
	comp=Z,0.8nm,0.9s,baz=191,slow=2.8,SNR=6.4						

IDC 18 04:15:56.9±1.4,29°.45S×176°.81W,h0km,mb3.9/1, mb1 4.3/1,mb1mx3.5/31,mbtmp3.9/1,Error ellipse: s-maj=64.0km s-min=50.8km az=12.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.99 281**		Pn	Pg	04 16 14.1	-1.8
	161nm,0.3s,baz=228,slow=24,SNR=9.2						
RAO				Sn	Sn	04 16 32.9	+0.2
	610nm,0.3s,baz=86,slow=22,SNR=9.9						
WRA	**Warramunga Arr**	**45.11 271**		P	P	04 24 15.0	-0.2
	1.4nm,0.7s,baz=109,slow=7.8,SNR=3.8						
FINES	**FINESS Array B**	**144.60 341**		PKP	PKPab	04 35 33.2	-0.1
	2.1nm,0.8s,baz=25,slow=6.3,SNR=4.8						
NOA	**NORSAR Array B**	**147.96 353**		PKPbc	PKPbc	04 35 43.2	-0.3
	1.1nm,0.7s,baz=15,slow=4.4,SNR=3.8						
AKASG	**Malin Array Be**	**151.15 325**		PKPbc	PKPbc	04 35 51.8	+0.1
	2.1nm,0.7s,baz=44,slow=3.9,SNR=8.2						
TORD	**Torodi Ar. Bea**	**163.72 175**		PKPab	PKPab	04 36 53.6	-0.7
	1.8nm,0.8s,baz=199,slow=3.6,SNR=7.0						

*NIED **18** 04:18:00,36°.60N×143°.10E,h8km,Mw3.7 Best double couple: M₀4.23000×10¹⁴ NP1:φ₀48.00000°,δ35.00000°, λ-98.00000°. NP2:φ₀238.00000°,δ56.00000°, λ-84.00000°.*
*IDC **18** 04:18:14.3±0.8,36°.42N×143°.38E,h0km,mb3.7/10, mb1 3.9/13,mb1mx3.8/45,mbtmp3.7/13,ML3.6/3,MS2.8/1, Ms1 2.8/1,ms1mx2.4/31,Error ellipse: s-maj=23.0km s-min=19.4km az=105.0*
*ISCJB **18** 04:18:17.3±0.6,36°.55N±0°.04×143°.14E±0°.05,h29km, mb3.7/10,Error ellipse: s-maj=6.4km s-min=5.8km az=178.8*
*JMA **18** 04:18:18.3±0.3,36°.57N×143°.11E,h54km,M3.5*

ISC 18 04:18:18.7±0.7,36°.51N±0°.05×143°.18E±0°.07,h29km,n27, σ1°43/35,mb3.8/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**2.00 288**		P	**Pn**	**04 18 50.0**	**-0.6**
ONAJ				*e*S	**Sn**	**04 19 13.5**	**-1.3**
JFK	**Kawauchi**	**2.04 296**		P	**Pn**	**04 18 50.0**	**-1.1**
JFK				*e*S	**Sn**	**04 19 13.3**	**-2.3**
JHO	**Hitachi**	**2.11 274**		P	**Pn**	**04 18 51.1**	**-0.9**
JFT	**Otama**	**2.49 295**		P	**Pn**	**04 18 57.3**	**0.0**
JFT				S	**Sn**	**04 19 25.7**	**-1.0**
BSO1	**Boso 1**	**2.58 225**		P	**Pn**	**04 18 58.5**	**+0.5**
JMK	**Ichinoseki**	**2.89 328**		P	**Pn**	**04 19 01.3**	**-1.5**
JAG	**Ashikaga**	**3.01 270**		P	**Pn**	**04 19 04.3**	**-0.1**
JAG				*e*S	**Sn**	**04 19 37.5**	**-2.0**
JYK	**Kaneyama**	**3.29 318**		P	**Pn**	**04 19 07.6**	**-0.6**
JYK				*e*S	**Sn**	**04 19 44.4**	**-1.9**
JOM	**Ohasama**	**3.32 334**		P	**Pn**	**04 19 07.7**	**-0.9**
JOM				*e*S	**Sn**	**04 19 44.5**	**-2.6**
JRY	**Ryogami san**	**3.49 263**		P	**Pn**	**04 19 10.7**	**-0.4**
JYN	**Shimob**	**3.89 256**		P	**Pn**	**04 19 17.3**	**+0.7**
JYN				*e*S	**Sn**	**04 20 00.6**	**-0.8**
MJAR	**Matsushiro Arr**	**4.01 272**		Pn	**Pn**	**04 19 19.0**	**+0.9**
	1.1nm,0.3s,baz=84,slow=9.9,SNR=12						
MAT	**Matsushiro**	**4.01 272**		P	**Pn**	**04 19 19.6**	**+1.4**
MAT				*e*S	**Sn**	**04 20 01.5**	**-2.7**
JHJ	**Hachijo jima 2**	**4.39 221**		Pn	**Pn**	**04 19 22.4**	**-0.9**
	6.1nm,0.3s,baz=67,slow=18,SNR=1.9						
JHJ				Sn	**Sn**	**04 20 09.8**	**-3.7**
	3.9nm,0.3s,baz=72,slow=20,SNR=2.8						
ASAJ	**Asahikawa**	**7.61 357**		Pn	**Pn**	**04 20 07.5**	**-0.1**
	1.6nm,0.3s,baz=194,slow=10.0,SNR=9.0						
USRK	**Ussuriysk Ar.**	**11.48 315**		LR	LR	04 24 59.0	
	comp=Z,52nm,20.8s,baz=85,slow=35						
SONM	**Songino Array**	**29.26 304**		P	**P**	**04 24 20.9**	**+2.6**
	1.1nm,0.9s,baz=105,slow=9.3,SNR=5.3						
ZALV	**Zalesovo Beam**	**43.32 313**		P	**P**	**04 26 19.0**	**+1.3**
	0.5nm,0.3s,baz=87,slow=5.9,SNR=2.1						
MKAR	**Makanchi Array**	**45.60 303**		P	**P**	**04 26 36.5**	**+0.3**
	0.1nm,0.3s,baz=94,slow=9.1,SNR=2.7						
ILAR	**Eielson Array**	**49.18 32**		P	**P**	**04 27 03.7**	**0.0**
	0.8nm,0.7s,baz=260,slow=6.2,SNR=12						
WRA	**Warramunga Arr**	**56.76 190**		P	**P**	**04 27 59.5**	**-0.5**
	1.0nm,0.8s,baz=10,slow=7.6,SNR=4.9						
ASAR	**Alice Springs**	**60.49 192**		P	**P**	**04 28 25.4**	**-0.5**
	1.0nm,0.8s,baz=16,slow=6.2,SNR=5.7						
NOA	**NORSAR Array B**	**75.21 338**		P	**P**	**04 29 58.9**	**+0.6**
	1.4nm,0.9s,baz=44,slow=5.0,SNR=3.2						
AKASG	**Malin Array Be**	**75.58 323**		P	**P**	**04 30 01.3**	**+0.8**
	0.5nm,0.5s,baz=46,slow=6.0,SNR=7.8						
PDAR	**Pinedale Array**	**77.01 46**		P	**P**	**04 30 08.1**	**-1.0**
	0.2nm,0.6s,baz=270,slow=1.8,SNR=2.6						
TXAR	**Lajitas Array**	**89.31 53**		P	**P**	**04 31 12.8**	**+0.3**
	0.2nm,0.5s,baz=299,slow=4.9,SNR=3.8						
LPAZ	**La Paz**	**145.71 62**		PKPbc	**PKPbc**	**04 37 56.1**	**+0.2**
	1.2nm,0.8s,baz=38,slow=3.5,SNR=5.6						

*DDA **18** 04:24:46.8,39°.08N×29°.05E,h7km,Md3.3*
*CSEM **18** 04:24:47.7±0.1,39°.06N×29°.06E,h2km,MD3.3,Error ellipse: s-maj=2.7km s-min=2.2km az=153.0*
*ISK **18** 04:24:47.6,39°.08N×29°.06E,h5km,MD2.9*

ISC 18 04:24:47.8±1.0,39°.07N±0°.02×29°.05E±0°.02,h8km±9km, n63,σ0°59/77,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26 265**		*i* P	**Pg**	**04 24 52.9**	**0.0**
DEMI				*i* S	**Sg**	**04 24 56.5**	**+0.1**
DEMI	**Demirci**	**0.26 265**		P	**Pg**	**04 24 52.9**	**0.0**
DEMI				S	**Sg**	**04 24 56.5**	**+0.1**
GEDZ	**Gediz**	**0.28 95**		*e*PG	**Pg**	**04 24 53.6**	**+0.2**
GEDZ				*e*SG	**Sg**	**04 24 57.8**	**+0.5**
GEDZ	**Gediz**	**0.28 95**		*e*Pg	**Pg**	**04 24 53.7**	**+0.2**
GEDZ				*e*Sg	**Sg**	**04 24 57.8**	**+0.5**
GDZ	**Gediz**	**0.34 86**		*i* P	**Pg**	**04 24 54.2**	**-0.3**
GDZ				*i* S	**Sg**	**04 24 59.2**	**+0.2**
GDZ	**Gediz**	**0.34 86**		P	**Pg**	**04 24 54.2**	**-0.3**
GDZ				S	**Sg**	**04 24 59.2**	**+0.2**
TVSB	**Tavsanli**	**0.50 40**		*e*PG	**Pg**	**04 24 56.7**	**-0.7**
TVSB	**Tavsanli**	**0.50 40**		*e*Pg	**Pg**	**04 24 56.7**	**-0.7**
KULA	**Kula-Manisa**	**0.63 209**		*e*PG	**Pg**	**04 24 60.0**	**+0.1**
KULA	**Kula-Manisa**	**0.63 209**		*e*Pg	**Pg**	**04 25 00.0**	**+0.1**
MANT	**Manisa**	**0.69 214**		*i* P	**Pg**	**04 24 59.9**	**-1.2**
MANT				*i* S	**Sg**	**04 25 09.2**	**-0.9**
MANT	**Manisa**	**0.69 214**		P	**Pg**	**04 24 59.9**	**-1.2**
MANT				S	**Sg**	**04 25 09.2**	**-0.9**
KHL	**Karahalli**	**0.83 153**		*e*PG	**Pb**	**04 25 04.5**	**0.0**
KHL	**Karahalli**	**0.83 153**		*e*Pg	**Pb**	**04 25 04.5**	**0.0**
AKS	**Akhisar**	**0.98 259**		*e*PG	**Pg**	**04 25 06.7**	**+0.1**
BALB	**Balikesir**	**1.07 303**		*e*PG	**Pb**	**04 25 08.7**	**+0.2**
SHUT	**Suhut-Afyon**	**1.28 113**		*e*PN	**Pn**	**04 25 12.9**	**+0.8**
SHUT	**Suhut-Afyon**	**1.28 113**		*e*Pn	**Pn**	**04 25 12.9**	**+0.8**
CAVI	**Cavuskoy**	**1.29 28**		*e*PN	**Pb**	**04 25 12.3**	**0.0**
CAVI	**Cavuskoy**	**1.29 28**		*e*Pn	**Pb**	**04 25 12.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.31 355**		*e*PN	**Pg**	**04 25 12.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.31 355**		*e*Pn	**Pg**	**04 25 12.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.31 336**		*e*PN	**Pb**	**04 25 13.2**	**+0.6**
IZI	**Iznik**	**1.31 14**		*e*PN	**Pb**	**04 25 13.1**	**+0.4**
IZI	**Iznik**	**1.31 14**		*e*Pn	**Pb**	**04 25 13.1**	**+0.4**
BORA	**Eskisehir**	**1.36 53**		*i* P	**Pn**	**04 25 12.4**	**-0.8**
BORA				*i* S	**Sn**	**04 25 31.3**	**-0.1**
BORA	**Eskisehir**	**1.36 53**		P	**Pn**	**04 25 12.4**	**-0.8**
BORA				S	**Sn**	**04 25 31.3**	**-0.1**
GEMT	**Gemlik**	**1.37 5**		*e*PN	**Pg**	**04 25 13.9**	**-0.1**
GEMT	**Gemlik**	**1.37 5**		*e*Pn	**Pg**	**04 25 14.0**	**-0.1**
GONE	**Gonen-Balikesi**	**1.44 313**		*e*PN	**Pg**	**04 25 15.0**	**-0.3**
GONE	**Gonen-Balikesi**	**1.44 313**		*e*Pn	**Pg**	**04 25 15.0**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.44 219**		*e*PN	**Pg**	**04 25 15.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.44 219**		*e*Pn	**Pg**	**04 25 15.4**	**0.0**
ADVT	**Abdulvahap**	**1.47 21**		*e*PN	**Pb**	**04 25 15.2**	**-0.1**
ADVT	**Abdulvahap**	**1.47 21**		*e*Pn	**Pb**	**04 25 15.2**	**-0.1**
ESKT	**Eskisehir**	**1.47 72**		*e*PN	**Pb**	**04 25 15.2**	**-0.3**
ESKT	**Eskisehir**	**1.47 72**		*i* P	**Pn**	**04 25 14.5**	**-0.2**
ESKT				*i* S	**Sb**	**04 25 34.1**	**-0.2**
ESKT	**Eskisehir**	**1.47 72**		*e*Pn	**Pb**	**04 25 15.2**	**-0.3**
SEYT	**Eskypehyr**	**1.47 72**		P	**Pn**	**04 25 14.5**	**-0.2**
SEYT				S	**Sb**	**04 25 34.2**	**-0.2**
ARMT	**Armutlu**	**1.50 355**		*e*PN	**Pb**	**04 25 15.8**	**-0.2**
ARMT	**Armutlu**	**1.50 355**		*e*Pn	**Pb**	**04 25 15.8**	**-0.2**
BOLV	**Bolvadin**	**1.53 103**		*i* P	**Pn**	**04 25 15.2**	**-0.3**
BOLV				*i* S	**Sg**	**04 25 37.4**	**+0.6**
BOLV	**Bolvadin**	**1.53 103**		P	**Pn**	**04 25 15.2**	**-0.3**
BOLV				S	**Sg**	**04 25 37.4**	**+0.6**
IZM	**Izmir**	**1.55 245**		*e*PN	**Pb**	**04 25 16.9**	**+0.2**
IZM	**Izmir**	**1.55 245**		*e*Pn	**Pb**	**04 25 16.9**	**+0.2**
EDC	**Edincik**	**1.57 325**		*e*PN	**Pb**	**04 25 17.0**	**-0.1**
EDC	**Edincik**	**1.57 325**		*e*Pn	**Pb**	**04 25 17.0**	**-0.1**
GULT	**Gulveren**	**1.77 39**		*e*PN	**Pn**	**04 25 19.4**	**+0.6**
GULT	**Gulveren**	**1.77 39**		*e*Pn	**Pn**	**04 25 19.4**	**+0.6**
HRT	**Hereke**	**1.82 15**		*e*PN	**Pb**	**04 25 20.5**	**+0.8**
HRT	**Hereke**	**1.82 15**		*e*Pn	**Pb**	**04 25 20.5**	**+0.8**
SPNC	**Sapanca-Adapaz**	**1.89 31**		*e*PN	**Pb**	**04 25 21.4**	**-1.0**
SPNC	**Sapanca-Adapaz**	**1.89 31**		*e*Pn	**Pb**	**04 25 21.4**	**-1.0**
KRBG	**Karabiga-Canak**	**1.89 315**		*e*PN	**Pb**	**04 25 21.6**	**-0.9**
KRBG	**Karabiga-Canak**	**1.89 315**		*e*Pn	**Pb**	**04 25 21.6**	**-0.9**
MRMT	**Marmara Adasi**	**1.90 324**		*e*PN	**Pb**	**04 25 22.0**	**-0.7**
MRMT	**Marmara Adasi**	**1.90 324**		*e*Pn	**Pb**	**04 25 22.0**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.96 78**		*e*PN	**Pn**	**04 25 22.3**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.96 78**		*e*Pn	**Pn**	**04 25 22.3**	**+0.9**
RKY	**Sarkoy-Tekirda**	**2.16 319**		*e*PN	**Pn**	**04 25 25.2**	**+1.1**
RKY	**Sarkoy-Tekirda**	**2.16 319**		*e*Pn	**Pn**	**04 25 25.3**	**+1.1**
MDUB	**Mudurnu**	**2.17 49**		*e*PN	**Pn**	**04 25 25.6**	**+1.3**
MDUB	**Mudurnu**	**2.17 49**		*e*Pn	**Pn**	**04 25 25.6**	**+1.3**

*PRU **18** 04:27:46.4,50°.16N×12°.39E,h0km,West Bohemia*

WBNET 18 04:27:46.3,50°.20N×12°.46E,h8km,Ml0.1,6C-11D, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KVC	**Kvetna**	**0.04 75**		↑P	Pg	04 27 47.7	-0.3
KVC				S	Sg	04 27 48.8	-0.4
KVC	**Kvetna**	**0.04 75**		↑P	Pg	04 27 48.0	0.0
KVC				S	Sg	04 27 49.1	-0.2
NKC	**Novy Kostel**	**0.04 350**		*e*PG	Pg	04 27 47.9	-0.1
NKC				*e*SG	Sg	04 27 49.1	-0.2
	comp=Z,7.4nm,0.2s						
NKC	**Novy Kostel**	**0.04 350**		↓P	Pg	04 27 47.9	-0.1
NKC				S	Sg	04 27 49.1	-0.2
NKC	**Novy Kostel**	**0.04 350**		↓P	Pg	04 27 48.1	+0.1
NKC				S	Sg	04 27 49.3	+0.1
KACW	**Kace˘ov**	**0.07 144**		S	Sg	04 27 49.5	-0.2
KACW	**Kace˘ov**	**0.07 144**		S	Sg	04 27 49.7	0.0
VAC	**Vackov**	**0.07 307**		↓P	Pg	04 27 48.2	-0.1
VAC				S	Sg	04 27 49.6	-0.1
VAC	**Vackov**	**0.07 307**		↓P	Pg	04 27 48.5	+0.2
VAC				S	Sg	04 27 49.8	+0.1
SKC	**Skalna**	**0.07 247**		↓P	Pg	04 27 48.2	-0.1
SKC				S	Sg	04 27 49.5	-0.2
SKC	**Skalna**	**0.07 247**		↓P	Pg	04 27 48.4	+0.1
SKC				S	Sg	04 27 49.8	+0.1
STCW	**Studenec**	**0.07 32**		↑P	Pg	04 27 48.3	-0.2
STCW				S	Sg	04 27 49.0	-0.3
STCW	**Studenec**	**0.07 32**		↑P	Pg	04 27 48.5	+0.1
STCW				S	Sg	04 27 49.9	-0.1
LBCW	**Luby**	**0.08 337**		↓P	Pg	04 27 48.4	-0.1
LBCW				S	Sg	04 27 50.0	0.0
LBCW	**Luby**	**0.08 337**		↓P	Pg	04 27 48.6	+0.2
LBCW				S	Sg	04 27 50.2	+0.3
POCW	**Po¯¡tky**	**0.13 351**		↓P	Pg	04 27 49.2	0.0
POCW				S	Sg	04 27 51.1	-0.1
POCW	**Po¯¡tky**	**0.13 351**		S	Sg	04 27 51.4	+0.2
KRCW	**Kraslice**	**0.14 19**		↑P	Pg	04 27 49.3	-0.1
KRCW				S	Sg	04 27 51.5	-0.2
KRCW	**Kraslice**	**0.14 19**		↑P	Pg	04 27 49.6	+0.1
KRCW				S	Sg	04 27 51.7	+0.1
ZHC	**Zelena Hora**	**0.16 217**		S	Sg	04 27 51.8	-0.1
ZHC	**Zelena Hora**	**0.16 217**		S	Sg	04 27 52.1	+0.1
KOCW	**Kopaniny**	**0.16 296**		↓P	Pg	04 27 49.6	-0.1
KOCW				S	Sg	04 27 52.0	0.0
KOCW	**Kopaniny**	**0.16 296**		↓P	Pg	04 27 49.9	+0.2
KOCW				S	Sg	04 27 52.3	+0.2
LACW	**Lazy**	**0.18 143**		S	Sg	04 27 52.6	0.0
LACW	**Lazy**	**0.18 143**		S	Sg	04 27 52.9	+0.2

*PRU **18** 04:28:02.6,50°.16N×12°.40E,h0km,West Bohemia*

WBNET 18 04:28:02.4,50°.20N×12°.46E,h9km,Ml0.2,7C-11D, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KVC	**Kvetna**	**0.04 74**		↑P	Pg	04 28 03.8	-0.3
KVC				S	Sg	04 28 04.9	-0.4
KVC	**Kvetna**	**0.04 74**		↑P	Pg	04 28 03.8	-0.3
KVC				S	Sg	04 28 04.9	-0.5
NKC	**Novy Kostel**	**0.04 351**		*e*PG	Pg	04 28 04.0	-0.1
NKC				*e*SG	Sg	04 28 05.1	-0.3
	comp=Z,9.4nm,0.2s						
NKC	**Novy Kostel**	**0.04 351**		↓P	Pg	04 28 04.0	-0.1
NKC				S	Sg	04 28 05.2	-0.2
NKC	**Novy Kostel**	**0.04 351**		↓P	Pg	04 28 04.0	-0.1
NKC				S	Sg	04 28 05.2	-0.2
KACW	**Kace˘ov**	**0.06 143**		S	Sg	04 28 05.6	-0.2
KACW	**Kace˘ov**	**0.06 143**		S	Sg	04 28 05.6	-0.2
VAC	**Vackov**	**0.07 308**		↓P	Pg	04 28 04.3	-0.1
VAC				S	Sg	04 28 05.7	-0.2
VAC	**Vackov**	**0.07 308**		↓P	Pg	04 28 04.3	-0.1
VAC				S	Sg	04 28 05.7	-0.2
SKC	**Skalna**	**0.07 248**		↓P	Pg	04 28 04.2	-0.1
SKC				S	Sg	04 28 05.6	-0.2
SKC	**Skalna**	**0.07 248**		↓P	Pg	04 28 04.2	-0.1
SKC				S	Sg	04 28 05.6	-0.2
LBCW	**Luby**	**0.08 338**		↓P	Pg	04 28 04.5	-0.1
LBCW				S	Sg	04 28 06.0	-0.1
LBCW	**Luby**	**0.08 338**		↓P	Pg	04 28 04.5	-0.1
LBCW				S	Sg	04 28 06.0	-0.1
STCW	**Studenec**	**0.08 32**		↑P	Pg	04 28 04.3	-0.2
STCW				S	Sg	04 28 05.7	-0.4
STCW	**Studenec**	**0.08 32**		↑P	Pg	04 28 04.3	-0.2
STCW				S	Sg	04 28 05.7	-0.4
POCW	**Po¯¡tky**	**0.13 351**		↑P	Pg	04 28 05.2	-0.1
POCW				S	Sg	04 28 07.2	-0.1
POCW	**Po¯¡tky**	**0.13 351**		↓P	Pg	04 28 05.2	0.0
POCW				S	Sg	04 28 07.2	-0.1
KRCW	**Kraslice**	**0.14 19**		↑P	Pg	04 28 05.4	-0.1
KRCW				S	Sg	04 28 07.5	-0.2
KRCW	**Kraslice**	**0.14 19**		↑P	Pg	04 28 05.4	-0.1
KRCW				S	Sg	04 28 07.5	-0.2
ZHC	**Zelena Hora**	**0.16 218**		S	Sg	04 28 07.9	-0.2
ZHC	**Zelena Hora**	**0.16 218**		S	Sg	04 28 07.9	-0.2
KOCW	**Kopaniny**	**0.16 296**		↓P	Pg	04 28 05.7	0.0
KOCW				S	Sg	04 28 08.1	-0.1
LACW	**Lazy**	**0.18 143**		↓P	Pg	04 28 06.0	-0.2
LACW				S	Sg	04 28 08.7	0.0

*ISCJB **18** 04:29:04.5±0.5,39°.07N±0°.04×29°.04E±0°.04,h9km,Error ellipse: s-maj=6.6km s-min=4.0km az=144.3*
*CSEM **18** 04:29:04.6±0.1,39°.08N×29°.02E,h10km,MD2.7,Error ellipse: s-maj=3.2km s-min=2.1km az=121.0*
*ISK **18** 04:29:04.2,39°.10N×29°.04E,h8km,MD2.6*
*DDA **18** 04:29:04.7,39°.02N×29°.04E,h7km,Md2.7*

ISC 18 04:29:04.7±0.9,39°.07N±0°.03×29°.04E±0°.03,h9km,n20, σ0°42/28,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25 263**		*i* P	**Pg**	**04 29 10.4**	**+0.5**
DEMI				*i* S	**Sg**	**04 29 14.0**	**+0.6**
DEMI	**Demirci**	**0.25 263**		P	**Pg**	**04 29 10.4**	**+0.5**
DEMI				S	**Sg**	**04 29 14.0**	**+0.6**
GDZ	**Gediz**	**0.34 87**		*i* P	**Pg**	**04 29 11.9**	**+0.3**
GDZ				*i* S	**Sg**	**04 29 17.0**	**+0.8**
GDZ	**Gediz**	**0.34 87**		P	**Pg**	**04 29 11.9**	**+0.3**
GDZ				S	**Sg**	**04 29 17.0**	**+0.8**
TVSB	**Tavsanli**	**0.50 41**		*e*PG	**Pg**	**04 29 14.2**	**-0.3**
TVSB				*e*SG	**Sg**	**04 29 21.0**	**-0.1**
TVSB	**Tavsanli**	**0.50 41**		*e*Pg	**Pg**	**04 29 14.2**	**-0.3**
TVSB				*e*Sg	**Sg**	**04 29 21.0**	**-0

0.1nm,0.4s,baz=318,slow=1.7,SNR=3.6

GUC 18 04:42:01.6±0.5, 23°42S×68°67W, h133km±7km, ML3.5, 6C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB06	**IPOC Station P**	**1.09**	**310**	⇑*i*	P	04 42 26.4	+0.6
PB06				*i*	S	04 42 45.2	+1.0
PB06					IAML	04 42 47.1	
	comp=N,942nm,0.2s						
ANCH	**Antofagasta**	**1.62**	**260**	⇑*i*	P	04 42 31.9	+0.7
ANCH				*i*	S	04 42 54.5	+0.7
PB09	**IPOC Station P**	**1.70**	**342**	⇓*i*	P	04 42 34.0	+1.6
PB09				*i*	S	04 42 57.9	+2.1
PB09					IAML	04 43 02.0	
	comp=N,1μm,0.5s						
PB10	**IPOC Station P**	**1.73**	**267**	⇑*i*	P	04 42 33.2	+0.7
PB10				*i*	S	04 42 56.9	+0.7
PB04	**IPOC Station P**	**1.74**	**308**	⇑*i*	P	04 42 33.7	+0.9
PB04				*i*	S	04 42 58.2	+1.6
PB04					IAML	04 43 04.4	
	comp=N,305nm,0.1s						
PB14	**IPOC Station P**	**1.99**	**232**		IAML	04 43 06.5	
	comp=E,270nm,0.4s						
PB07	**IPOC Station P**	**2.02**	**326**	⇑*i*	P	04 42 37.4	+1.2
PB07				*i*	S	04 43 04.3	+1.6
PB07					IAML	04 43 06.1	
	comp=E,313nm,0.4s						
PB01	**IPOC Station P**	**2.48**	**342**	⇑*i*	P	04 42 42.7	+0.9
PB01				*i*	S	04 43 14.1	+1.3
PB01					IAML	04 43 17.9	
	comp=N,196nm,0.3s						
PB08	**IPOC Station P**	**3.29**	**352**	*e*P		04 42 53.6	+1.0

*ISCJB **18** 04:47:18.6±0.7, 11°.60N±0°.08×65°.07W±0°.03, h88km±14km, Error ellipse: s-maj=12.7km s-min=4.8km az=0.3*
*FUNV **18** 04:47:20.8, 11°.65N×65°.01W, h35km, MW3.7*
ISC 18 04:47:18.9±1.7, 11°.7N±0°.1×65°.07W±0°.05, h74km±36km, n32, σ1s23/42, Caribbean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCRV	**Puerto La Cruz**	**1.54**	**164**	*e*P		**04 47 45.0**	**+0.3**
PCRV				*e*S		**04 48 03.5**	**-0.6**
BIRV	**Birongo**	**1.68**	**225**	*e*P		**04 47 47.1**	**+0.8**
BIRV				*e*S		**04 48 06.9**	**-0.2**
CUPV	**Cœpira**	**1.75**	**204**	*e*P		**04 47 48.2**	**+0.7**
CUPV				*e*S		**04 48 08.8**	**-0.3**
CRUV	**Carupano**	**2.05**	**119**	*e*P		**04 47 51.8**	**+0.5**
CRUV				*e*S		**04 48 15.8**	**-0.2**
FUNV	**FUNVISIS**	**2.09**	**235**	*e*P		**04 47 52.6**	**+0.7**
FUNV				*e*S		**04 48 16.8**	**-0.3**
GUNV	**Guanoco**	**2.57**	**126**	*e*P		**04 47 58.9**	**+0.6**
GUNV				*e*S		**04 48 25.9**	**-2.6**
MERV	**Las Mercedes**	**2.69**	**207**	*e*P		**04 48 01.3**	**+1.3**
MERV				*e*S		**04 48 29.9**	**-1.7**
GUIV	**Guiria**	**2.97**	**110**	*e*P		**04 48 03.5**	**-0.3**
TURV	**Turiamo**	**2.98**	**246**	*e*P		**04 48 04.2**	**+0.3**
TURV				*e*S		**04 48 37.8**	**-0.8**
JACV	**Jacura**	**3.74**	**261**	*e*P		**04 48 14.9**	**+0.7**
MAPV	**Macapo**	**3.80**	**242**	*e*P		**04 48 16.4**	**+1.3**
MAPV				*e*S		**04 48 56.9**	**-1.8**
BAUV	**El Baul**	**3.99**	**227**	*e*P		**04 48 19.2**	**+1.5**
BAUV				*e*S		**04 49 01.0**	**-2.2**
TEPV	**Terepaima**	**4.39**	**248**	*e*P		**04 48 23.8**	**+0.6**
TEPV				*e*S		**04 49 11.2**	**-2.0**
SIQV	**Siquisique**	**4.76**	**258**	*e*P		**04 48 28.4**	**+0.2**
RIOV	**Rio Grande**	**4.80**	**138**	*e*P		**04 48 28.7**	**-0.1**
MONV	**Montecano**	**4.81**	**274**	*e*P		**04 48 30.6**	**+1.8**
SANV	**Sanarito**	**4.89**	**244**	*e*P		**04 48 31.6**	**+1.5**
CURV	**Curarigua**	**5.08**	**252**	*e*P		**04 48 33.8**	**+1.2**
DABV	**Dabajuro**	**5.51**	**263**	*e*P		**04 48 39.7**	**+1.2**
SOCV	**Socops**	**6.62**	**240**	*e*P		**04 48 54.4**	**+0.7**
URIC	**Uribia, Colomb**	**6.79**	**271**	*e*P		**04 48 55.1**	**-0.8**
LUEV	**Luepa**	**6.80**	**148**	*e*P		**04 48 56.0**	**-0.1**
VIGV	**El Vigia**	**6.81**	**246**	*e*P		**04 48 56.2**	**+0.1**
VIRV	**Villa del Rosa**	**7.30**	**262**	*e*P		**04 49 03.1**	**+0.2**
CBRI	**Barrientos, No**	**8.57**	**243**	*e*P		**04 49 23.2**	**+2.8**
GRMC	**Gramalote, San**	**8.58**	**243**	*e*P		**04 49 21.6**	**+1.1**
OCAC	**Ocana**	**8.82**	**248**	*e*P		**04 49 24.3**	**+0.6**
BRRC	**Barranca, Sant**	**9.66**	**243**	*e*P	Pn	04 49 44.7	+10
RUSC	**La Rusia**	**9.78**	**235**	*e*P		**04 49 38.9**	**+1.6**
SJCC	**San Jacinto, C**	**10.09**	**261**	*e*P		**04 49 42.0**	**+0.9**
CHIC	**Chingaza**	**11.07**	**231**	*e*P		**04 49 56.2**	**+1.5**
PRAC	**Prado**	**12.53**	**232**	*e*P		**04 50 15.3**	**+0.9**

MAN 18 04:51:08, 9°.50N×122°.23E, h13km, mb4.1, ML2.9, MS2.6, 2D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.00**	**99**	⇓*i*	P	04 51 21.0	-6.3
SNPH				*i*	S	04 51 35.6	-4.8
TBP	**Tagbilaran**	**1.62**	**83**	*i*	P	04 51 37.5	-0.3
TBP				*i*	S	04 51 57.6	+0.6
RCP	**Roxas**	**2.11**	**14**	⇓*e*	P	04 51 43.3	+0.2

DJA 18 05:04:25.0±0.9, 8°S±9°×10°8E±°, h31km±6km, M3.9/6, MLv3.9/6, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CISI	**Cisompet, Garu**	**0.47**	**345**	P		05 04 36.1	+0.4
CISI				S		05 04 44.4	+1.5
CMJI	**Cimerak**	**0.55**	**66**	P		05 04 37.3	+0.6
CMJI				S		05 04 46.1	+1.2
CNJI	**Cibinong**	**1.06**	**311**	P		05 04 43.4	-0.4
CNJI				S		05 04 56.7	-0.8
LEM	**Lembang**	**1.22**	**345**	P		05 04 52.8	+5.2
SKJI	**Sukabumi**	**1.70**	**306**	P		05 04 52.8	+0.3
SKJI				S		05 05 13.6	+0.4
UGM	**Wanagama**	**2.56**	**88**	P		05 05 04.2	-0.2
CGJI	**Cibinong**	**2.63**	**302**	P		05 05 05.2	-0.1
PCJI	**Pacitan**	**3.21**	**94**	P		05 05 10.8	-2.5
PWJI	**Pagerwojo**	**3.83**	**90**	P		05 05 19.4	-2.4

*IDC **18** 05:22:50.5±1.1, 28°.50S×176°.60W, h0km, mb3.9/5, mb1 4.1/5, mb1mx3.8/29, mbtmp3.9/5, MS3.3/5, Ms1 3.3/5, ms1mx3.0/24, Error ellipse: s-maj=42.9km s-min=21.6km az=154.0*
*NEIC **18** 05:22:51.8±0.7, 28°.76S×176°.57W, h10km, mb4.4/2, Error ellipse: s-maj=23.7km s-min=14.2km az=145.0*
ISC 18 05:22:52.5±0.9, 29°3S±0°.1×176°28W±0°08, h21km, n17, σ1s45/16, mb3.9/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.44**	**273**	P		**05 23 18.1**	**-0.5**
	191nm,0.3s,baz=98,slow=12,SNR=12						
RAO					Sn	**05 23 38.3**	**+1.9**
	811nm,0.3s,baz=274,slow=23,SNR=12						
RAO	**Raoul Island**	**1.44**	**273**	*e*Pn		**05 23 16.6**	**-0.7**
RAO				*e*Sn		**05 23 38.1**	**+1.7**
URZ	**Urewera**	**10.46**	**210**	Pn		**05 25 20.3**	**-1.0**
	0.3nm,0.3s,baz=68,slow=11,SNR=3.5						
URZ					Sn	**05 27 18.4**	**+0.6**
	0.9nm,0.3s,baz=109,slow=23,SNR=6.4						
KHZ	**Kahutara**	**15.43**	**209**	*e*Pn		**P**	**05 26 33.0**	**-0.2**
RAR	**Rarotonga**	**16.96**	**65**	LR		LR	05 32 16.8	
	comp=Z,45nm,19.0s,baz=264,slow=34							
DZM	**Mont Dzumac**	**17.16**	**291**	LR		LR	05 31 49.1	
	comp=Z,157nm,18.0s,baz=170,slow=32							
RPZ	**Rata Peaks**	**17.57**	**212**	LR		LR	05 34 09.1	
	comp=Z,58nm,21.7s,baz=49,slow=37							
STKA	**Stephens Creek**	**36.19**	**255**	P		**P**	**05 29 53.4**	**-0.3**
	1.2nm,0.7s,baz=119,slow=13,SNR=2.4							
ASAR	**Alice Springs**	**44.68**	**265**	P		**P**	**05 31 03.2**	**-0.9**
	0.7nm,0.4s,baz=103,slow=7.0,SNR=12							
ASAR					LR	LR	05 49 44.6	
	comp=Z,42nm,21.5s,baz=92,slow=36							
WRAB	**Tennant Creek**	**45.57**	**270**	*e*P		**P**	**05 31 10.4**	**-0.8**
	2.4nm,0.8s							
WRA	**Warramunga Arr**	**45.57**	**270**	P		**P**	**05 31 09.9**	**-1.4**
	1.4nm,0.7s,baz=108,slow=8.0,SNR=10							
MAW	**Mawson**	**73.83**	**200**	P		P	05 34 31.0	+5.9
	1.0nm,0.8s,baz=112,slow=5.4,SNR=3.6							
MAW					LR	LR	06 06 50.8	
	comp=Z,51nm,18.1s,baz=2.0,slow=35							
HUMO	**Hull Mountain**	**86.77**	**36**	*e*P		**P**	**05 35 33.8**	**-1.2**
	2.2nm,0.5s							
TXAR	**Lajitas Array**	**90.55**	**56**	P		**P**	**05 35 55.1**	**+1.8**
	0.2nm,0.5s,baz=230,slow=5.9,SNR=4.5							
FINES	**FINESS Array B**	**144.63**	**342**	PKP		**PKPab**	**05 42 25.7**	**+0.2**
	1.1nm,0.8s,baz=29,slow=4.8,SNR=3.6							
AKASG	**Malin Array Be**	**151.32**	**325**	PKPbc		**PKPbc**	**05 42 43.8**	**-0.4**
	0.1nm,0.3s,baz=46,slow=2.6,SNR=2.6							
TORD	**Torodi Ar. Bea**	**163.79**	**173**	PKPab		**PKPab**	**05 43 49.9**	**+3.2**
	0.3nm,0.6s,baz=189,slow=3.8,SNR=3.5							

*CSEM **18** 05:23:24.4, 29°.07N×16°.33W, h46km, mb3.5/7*
MDD 18 05:23:24.4±0.4, 29°.07N×16°.33W, h46km±5km, mb3.5/7, 1C, Error ellipse: s-maj=5.3km s-min=2.1km az=176.0, PRXIMO TT-MODEL: CANARY, Canary Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EBAJ	**Bajamar**	**0.53**	**181**	P		05 23 34.9	-1.0
	10nm,0.2s,SNR=18						
EBAJ					S	05 23 42.5	-1.5
	5.7nm,0.1s,SNR=12						
EBAJ	**Bajamar**	**0.53**	**181**	P		05 23 34.9	-1.0
	10nm,0.2s,SNR=18						
EBAJ					S	05 23 42.5	-1.5
	5.7nm,0.1s,SNR=12						
CRAJ	**Montana Rajada**	**0.84**	**196**	P		05 23 39.2	-0.9
	6.7nm,0.1s,SNR=7.2						
CRAJ					S	05 23 49.3	-2.3
	18nm,0.2s,SNR=10						
CRAJ	**Montana Rajada**	**0.84**	**196**	P		05 23 39.2	-1.0
	6.7nm,0.1s,SNR=7.2						
CRAJ					S	05 23 49.3	-2.3
	18nm,0.2s,SNR=10						
CCAN	**Las Canadas**	**0.88**	**196**	P		05 23 39.5	-1.2
	6.3nm,0.1s,SNR=17						
CCAN					S	05 23 50.6	-2.0
	6.6nm,0.1s,SNR=11						
CCAN	**Las Canadas**	**0.88**	**196**	P		05 23 39.5	-1.2
	6.3nm,0.1s,SNR=17						
CCAN					S	05 23 50.6	-2.0
	6.6nm,0.1s,SNR=11						
EGOM	**La Gomera**	**1.19**	**220**	P		05 23 43.4	-1.3
	9.0nm,0.1s,SNR=15						
EGOM					S	05 23 56.9	-2.8
	13nm,0.1s,SNR=8.3						
EGOM	**La Gomera**	**1.19**	**220**	P		05 23 43.4	-1.3
	9.0nm,0.1s,SNR=15						
EGOM					S	05 23 56.9	-2.8
	13nm,0.1s,SNR=8.3						
EOSO	**Osorio**	**1.21**	**145**	⇑P		P	05 23 43.7	-1.4
	5.6nm,0.1s,SNR=18							
EOSO					S	Sn	05 23 57.6	-2.7
	7.2nm,0.1s,SNR=9.0							
EOSO	**Osorio**	**1.21**	**145**	P		P	05 23 43.7	-1.3
	5.6nm,0.1s,SNR=18							
EOSO					S	Sn	05 23 57.6	-2.7
	7.2nm,0.1s,SNR=9.0							
TBT	**Taburiente**	**1.44**	**255**	P		P	05 23 46.7	-1.4
	0.6nm,0.2s,SNR=4.0							
TBT					S	Sn	05 24 02.3	-3.5
	2.0nm,0.2s,SNR=7.9							
TBT	**Taburiente**	**1.44**	**255**	P		P	05 23 46.7	-1.4
	0.6nm,0.2s,SNR=4.0							
TBT					S	Sn	05 24 02.3	-3.6
	2.0nm,0.2s,SNR=7.9							
CFTV	**Fuerteventura**	**2.08**	**108**	P		P	05 23 54.8	-2.1
	0.0nm,0.2s,SNR=7.9							
CFTV					S	Sn	05 24 16.0	-5.6
	1.0nm,0.1s,SNR=7.9							
CFTV	**Fuerteventura**	**2.08**	**108**	P		P	05 23 54.8	-2.1
	SNR=7.9							
CFTV					S	Sn	05 24 16.0	-5.6
	1.0nm,0.1s,SNR=7.9							
EFAM	**Famara**	**2.45**	**88**	S		Sn	05 24 26.3	-4.4
	0.4nm,0.2s,SNR=7.9							
EFAM	**Famara**	**2.45**	**88**	S		Sn	05 24 26.3	-4.4
	0.4nm,0.2s,SNR=7.9							

*ISCJB **18** 05:41:16.7±0.4, 1°.51N±0°.07×99°.66E±0°.08, h181km±4km, mb4.0/9, Error ellipse: s-maj=15.2km s-min=5.7km az=136.4*
*IDC **18** 05:41:17.4±1.1, 1°.36N×99°.46E, h178km±6km, mb3.7/8, mb1 3.7/9, mb1mx3.4/41, mbtmp4.1/9, Error ellipse: s-maj=42.5km s-min=11.4km az=56.0*
*DJA **18** 05:41:18.7±0.4, 2°N±3°×10°0E±°, h164km±4km, M4.1/11, MLv4.1/11*
ISC 18 05:41:17.6±0.7, 1°.51N±0°.08×99°.66E±0°.08, h178km±6km, n21, σ1s05/32, mb3.9/9, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MNSI	**Mandailing Nat**	**0.71**	**187**	P		**Pn**	**05 41 43.8**	**+0.6**
MNSI				S		**Sn**	**05 42 03.0**	**0.0**
PSI	**Prapat**	**1.48**	**330**	P		**Pn**	**05 41 49.4**	**0.0**
	7.9nm,0.3s,baz=150,slow=8.2,SNR=19							
PSI					S	Sn	**05 42 12.8**	**-1.2**
	16nm,0.3s,baz=3.1,slow=21,SNR=40							
PSI					LR	LR	05 42 28.4	
	comp=Z,178nm,18.4s,baz=276,slow=50							
BKNI	**Bangkinang**	**1.81**	**130**	P		**Pn**	**05 41 52.8**	**+0.3**
BKNI				S		**Sn**	**05 42 17.9**	**-1.6**
GSI	**Gunungsitoli**	**2.10**	**265**	P		**Pn**	**05 41 56.5**	**+0.9**
GSI				S		**Sn**	**05 42 24.1**	**-0.9**
KCSI	**Kotacane, Aceh**	**2.75**	**317**	P		**Pn**	**05 42 03.8**	**+0.6**
KCSI				S		**Sn**	**05 42 37.1**	**-1.7**
SDSI	**Sungai Dareh**	**3.00**	**144**	P		**Pn**	**05 42 06.9**	**+0.8**
TPTI		**3.03**	**305**	P		**Pn**	**05 42 07.6**	**+1.1**
TPTI				S		**Sn**	**05 42 43.8**	**-0.9**
MLSI	**Meulaboh, Aceh**	**4.26**	**310**	P		**Pn**	**05 42 22.7**	**+0.8**
MLSI				S		**Sn**	**05 43 09.7**	**-2.7**
LHMI	**Lhok Sumawe**	**4.59**	**324**	P		**Pn**	**05 42 27.7**	**+1.5**
KSI	**Kapahiang**	**5.90**	**150**	P		**Pn**	**05 42 42.7**	**-0.7**
CMAR	**Chiang Mai Arr**	**16.86**	**358**	P		**Pn**	**05 45 03.9**	**+0.4**
	0.6nm,0.3s,baz=186,slow=11,SNR=5.7							
WRA	**Warramunga Arr**	**40.13**	**124**	P		**P**	**05 48 36.7**	**+0.3**
	12nm,0.4s,baz=302,slow=9.1,SNR=143							
WRA					PcP	**PcP**	**05 50 37.4**	**0.0**
	0.9nm,0.5s,baz=313,slow=2.5,SNR=7.1							
ASAR	**Alice Springs**	**41.64**	**129**	P		**P**	**05 48 49.0**	**+0.3**
	2.0nm,0.5s,baz=301,slow=7.9,SNR=28							
ASAR					PcP	**PcP**	**05 50 42.5**	**+0.2**
	0.7nm,0.7s,baz=329,slow=3.2,SNR=7.4							
ASAR					ScP	**ScP**	**05 54 14.0**	**-1.8**
	0.3nm,0.4s,baz=334,slow=23,SNR=4.5							
SONM	**Songino Array**	**46.52**	**6**	P		**P**	**05 49 28.5**	**+1.3**
	2.2nm,0.5s,baz=191,slow=9.7,SNR=17							
SONM					PcP	**PcP**	**05 50 58.7**	**+0.1**
	1.2nm,0.6s,baz=177,slow=4.9,SNR=5.8							
SONM					ScP	**ScP**	**05 54 33.9**	**-1.5**
	1.1nm,0.8s,baz=195,slow=5.7,SNR=5.3							
MKAR	**Makanchi Array**	**47.59**	**344**	P		**P**	**05 49 36.0**	**+0.6**
	1.0nm,0.4s,baz=155,slow=7.5,SNR=13							
STKA	**Stephens Creek**	**51.76**	**134**	P		**P**	**05 50 06.8**	**-0.3**
	1.4nm,0.6s,baz=310,slow=10,SNR=3.6							
ZALV	**Zalesovo Beam**	**53.69**	**349**	P		**P**	**05 50 21.1**	**+0.3**
	3.3nm,0.5s,baz=179,slow=6.0,SNR=15							
KBZ	**Khabaz**	**65.47**	**318**	P		**P**	**05 51 41.6**	**0.0**
	1.1nm,0.6s,baz=92,slow=6.5,SNR=3.6							
BRTR	**Keskin Array B**	**70.74**	**312**	P		**P**	**05 52 14.0**	**-0.8**
	0.7nm,0.8s,baz=118,slow=7.1,SNR=3.8							
ARCES	**ARCESS Array B**	**83.08**	**340**	P		**P**	**05 53 23.1**	**+0.2**
	1.5nm,0.9s,baz=108,slow=4.0,SNR=9.4							
TXAR	**Lajitas Array**	**142.07**	**34**	PKhKP		PKPpre	06 00 23.6	
	0.1nm,0.5s,baz=48,slow=1.3,SNR=2.7							

*ISCJB **18** 05:54:15.4±0.5, 39°.08N±0°.04×29°.04E±0°.03, h1km±7km, Error ellipse: s-maj=6.2km s-min=3.9km az=175.4*
*CSEM **18** 05:54:15.6±0.1, 39°.07N×29°.04E, h5km, MD2.8, Error ellipse: s-maj=2.5km s-min=2.2km az=160.0*
*ISK **18** 05:54:15.3, 39°.10N×29°.04E, h5km, ML2.7*
*DDA **18** 05:54:15.3, 39°.07N×29°.04E, h10km, Md2.8*
ISC 18 05:54:15.8±0.9, 39°06N±0°.03×29°04E±0°02, h11km±9km, n39, σ0s48/50, 1D, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.25**	**267**	⇓*i*	P	**05 54 21.1**	**+0.1**
DEMI				*i*	S	**05 54 24.7**	**+0.2**
DEMI	**Demirci**	**0.25**	**267**	P		**P**	**05 54 21.1**	**+0.1**
DEMI				S		**Sg**	**05 54 24.7**	**+0.2**
GEDZ	**Gediz**	**0.29**	**92**	*e*PG		**Pg**	**05 54 21.5**	**-0.3**
GEDZ				*e*SG		**Sg**	**05 54 26.0**	**+0.2**
GEDZ	**Gediz**	**0.29**	**92**	*e*Pg		**Pg**	**05 54 21.5**	**-0.3**
GEDZ				*e*Sg		**Sg**	**05 54 26.0**	**+0.2**
GDZ	**Gediz**	**0.35**	**85**	*i* P		**Pg**	**05 54 22.5**	**-0.3**
GDZ				*i* S		**Sg**	**05 54 27.5**	**0.0**
GDZ	**Gediz**	**0.35**	**85**	P		**Pg**	**05 54 22.5**	**-0.3**
GDZ				S		**Sg**	**05 54 27.5**	**0.0**
TVSB	**Tavsanli**	**0.51**	**40**	*e*PG		**Pg**	**05 54 24.9**	**-1.0**
TVSB	**Tavsanli**	**0.51**	**40**	*e*Pg		**Pg**	**05 54 24.9**	**-1.0**
KULA	**Kula-Manisa**	**0.62**	**209**	*e*PG		**Pb**	**05 54 28.2**	**-0.4**
KULA	**Kula-Manisa**	**0.62**	**209**	*e*Pg		**Pb**	**05 54 28.2**	**-0.4**
MANT	**Manisa**	**0.68**	**214**	*i* P		**Pg**	**05 54 28.0**	**-1.0**
MANT				*i* S		**Sg**	**05 54 37.4**	**-0.5**
MANT	**Manisa**	**0.68**	**214**	P		**Pg**	**05 54 28.0**	**-1.0**
MANT				S		**Sg**	**05 54 37.4**	**-0.5**
KHL	**Karahalli**	**0.83**	**152**	*e*PG		**Pb**	**05 54 32.2**	**0.0**
KHL	**Karahalli**	**0.83**	**152**	*e*Pg		**Pb**	**05 54 32.2**	**0.0**
AKS	**Akhisar**	**0.97**	**260**	*e*PG		**Pb**	**05 54 34.9**	**+0.3**
AKS	**Akhisar**	**0.97**	**260**	*e*Pg		**Pb**	**05 54 34.9**	**+0.3**
BALB	**Balikesir**	**1.07**	**303**	*e*PG		**Pb**	**05 54 36.2**	**-0.1**
BALB				*e*SG		**Sb**	**05 54 51.1**	**+0.8**
BALB	**Balikesir**	**1.07**	**303**	*e*Pg		**Pb**	**05 54 36.2**	**-0.1**
BALB				*e*Sg		**Sb**	**05 54 51.1**	**+0.8**
SHUT	**Suhut-Afyon**	**1.29**	**113**	*e*PN		**Pb**	**05 54 40.9**	**+0.8**
SHUT	**Suhut-Afyon**	**1.29**	**113**	*e*Pn		**Pb**	**05 54 40.9**	**+0.8**
CAVI	**Cavuskoy**	**1.30**	**28**	*e*PN		**Pn**	**05 54 40.0**	**0.0**
CAVI	**Cavuskoy**	**1.30**	**28**	*e*Pn		**Pn**	**05 54 40.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.32**	**337**	*e*PN		**Pb**	**05 54 40.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.32**	**337**	*e*Pn		**Pb**	**05 54 40.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.32**	**355**	*e*PN		**Pn**	**05 54 40.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.32**	**355**	*e*Pn		**Pn**	**05 54 40.1**	**0.0**
IZI	**Iznik**	**1.32**	**15**	*e*PN		**Pn**	**05 54 40.2**	**0.0**
IZI	**Iznik**	**1.32**	**15**	*e*Pn		**Pn**	**05 54 40.3**	**0.0**
ADVT	**Abdulvahap**	**1.48**	**21**	*e*PN		**Pn**	**05 54 42.3**	**0.0**
ADVT	**Abdulvahap**	**1.48**	**21**	*e*Pn		**Pn**	**05 54 42.3**	**0.0**
ESKT	**Eskisehir**	**1.48**	**71**	*e*PN		**Pb**	**05 54 43.1**	**-0.4**
ESKT	**Eskisehir**	**1.48**	**71**	*e*Pn		**Pb**	**05 54 43.1**	**-0.4**
ARMT	**Armutlu**	**1.51**	**355**	*e*PN		**Pb**	**05 54 43.4**	**-0.5**
ARMT	**Armutlu**	**1.51**	**355**	*e*Pn		**Pb**	**05 54 43.4**	**-0.5**
EDC	**Edincik**	**1.57**	**325**	*e*PN		**Pn**	**05 54 44.1**	**+0.4**
EDC	**Edincik**	**1.57**	**325**	*e*Pn		**Pn**	**05 54 44.1**	**+0.4**
GULT	**Gulveren**	**1.79**	**39**	*e*PN		**Pn**	**05 54 47.3**	**+0.6**
GULT	**Gulveren**	**1.79**	**39**	*e*Pn		**Pn**	**05 54 47.3**	**+0.6**
DGB	**˙zmir**	**1.96**	**240**	*i* P		**Pg**	**05 54 52.9**	**-0.6**
DGB				*i* S		**Sg**	**05 55 19.1**	**+0.2**

*CRAAG **18** 06:18:34.2, 36°.47N×3°.25E, Ml2.5*
*ISCJB **18** 06:18:35.1±0.7, 36°.51N±0°.05×3°.28E±0°.10, h18km, Error ellipse: s-maj=11.5km s-min=7.1km az=162.6*
*CSEM **18** 06:18:35.3±0.3, 36°.49N×3°.27E, h2km, mb3.5, Error ellipse: s-maj=12.4km s-min=7.9km az=66.0*
*MDD **18** 06:18:36.1±1.4, 36°.45N×3°.33E, h2km±6km, mb3.5/3, Error ellipse: s-maj=5.6km s-min=3.7km az=74.0, PRXIMO*
ISC 18 06:18:35.3±1.0, 36°48N±0°.03×3°30E±0°05, h18km, n21, σ0s94/23, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABMS	**Boumerdes**	**0.31**	**28**	P		**Pg**	**06 18 42.1**	**+0.1**
ABMS	**Boumerdes**	**0.31**	**28**	P		**Pg**	**06 18 42.1**	**+0.1**
ABMS	**Boumerdes**	**0.31**	**28**	P		**Pg**	**06 18 42.1**	**+0.1**
ADJB	**Djebel Djouab**	**0.34**	**160**	P		**Pg**	**06 18 42.6**	**+0.1**
ADJB	**Djebel Djouab**	**0.34**	**160**	P		**Pg**	**06 18 42.6**	**+0.1**
ADJB	**Djebel Djouab**	**0.34**	**160**	P		**Pg**	**06 18 42.6**	**+0.1**
ABA	**Alger-Bouzarea**	**0.39**	**327**	P		**Pg**	**06 18 43.6**	**+0.3**
ABA	**Alger-Bouzarea**	**0.39**	**327**	P		**Pg**	**06 18 43.6**	**+0.3**
ABA	**Alger-Bouzarea**	**0.39**	**327**	P		**Pg**	**06 18 43.6**	**+0.3**
EMHD	**Djebel Mahouad**	**0.39**	**225**	P		**Pg**	**06 18 43.1**	**-0.3**
EMHD	**Djebel Mahouad**	**0.39**	**225**	P		**Pg**	**06 18 43.1**	**-0.3**
EMHD	**Djebel Mahouad**	**0.39**	**225**	P		**Pg**	**06 18 43.1**	**-0.3**
AKET	**Djebel Ketaf**	**0.64**	**132**	P		**Pb**	**06 18 48.0**	**+0.1**
AKET	**Djebel Ketaf**	**0.64**	**132**	P		**Pb**	**06 18 48.0**	**+0.1**
AKET	**Djebel Ketaf**	**0.64**	**132**	P		**Pb**	**06 18 48.0**	**+0.1**
ETOS	**Mallorca**	**3.31**	**354**	P		**Pn**	**06 19 26.9**	**+0.7**
	0.6nm,0.1s,SNR=7.9							
ETOS					S	**Sn**	**06 20 02.8**	**-2.3**

GONE	Gonen-Balikesi	1.38	310	ePN	Pg	06 20 22.1	+0.1
GONE	Gonen-Balikesi	1.38	310	ePn	Pg	06 20 22.1	+0.1
DENT	Denizli	1.41	181	ePN	Pg	06 20 22.4	-0.1
DENT	Denizli	1.41	181	ePn	Pg	06 20 22.4	-0.1
ARMT	Armutlu	1.41	354	ePN	Pn	06 20 21.3	-0.6
ARMT	Armutlu	1.41	354	ePn	Pn	06 20 21.3	-0.6
ESKT	Eskisehir	1.44	75	ePN	Pn	06 20 22.6	+0.1
ESKT	Eskisehir	1.44	75	*i* P	Pn	06 20 22.3	-0.1
ESKT	Eskisehir	1.44	75	ePn	Pn	06 20 22.6	+0.1
SEYT	Eskypehyr	1.44	75	P	Pn	06 20 22.3	-0.1
EDC	Edincik	1.50	323	ePN	Pg	06 20 24.2	0.0
EDC	Edincik	1.50	323	ePn	Pg	06 20 24.2	0.0
AYDB	Zeytinkoy-Aydi	1.52	217	ePN	Pb	06 20 23.8	-0.4
AYDB	Zeytinkoy-Aydi	1.52	217	ePn	Pb	06 20 23.8	-0.4
BOLV	Bolvadin	1.54	106	*i* P	Pb	06 20 24.8	+0.1
BOLV	Bolvadin	1.54	106	P	Pb	06 20 24.8	+0.1
IZM	Izmir	1.59	242	ePN	Pb	06 20 25.4	-0.1
IZM	Izmir	1.59	242	ePn	Pb	06 20 25.4	-0.1
KNL	Bal¯–kesir	1.62	314	*i* P	Pn	06 20 24.7	0.0
KNL				*i* S	Sn	06 20 45.6	-0.3
DKL	Dikili	1.67	268	ePN	Pn	06 20 25.4	-0.1
DKL	Dikili	1.67	268	ePn	Pn	06 20 25.4	-0.1
GULT	Gulveren	1.70	41	ePN	Pn	06 20 26.2	+0.2
GULT	Gulveren	1.70	41	ePn	Pn	06 20 26.2	+0.2
HRT	Hereke	1.72	16	ePN	Pn	06 20 26.4	+0.2
HRT	Hereke	1.72	16	ePn	Pn	06 20 26.5	+0.2
SPNC	Sapanca-Adapaz	1.80	32	ePN	Pb	06 20 28.2	-0.9
SPNC	Sapanca-Adapaz	1.80	32	ePn	Pb	06 20 28.2	-0.9
MRMT	Marmara Adasi	1.82	323	ePN	Pn	06 20 27.4	-0.3
MRMT	Marmara Adasi	1.82	323	ePn	Pn	06 20 27.4	-0.3
KRBG	Karabiga-Canak	1.83	313	ePN	Pn	06 20 27.4	-0.2
KRBG	Karabiga-Canak	1.83	313	ePn	Pn	06 20 27.4	-0.2
AYVA	Ayvalik	1.84	275	*i* P	Pn	06 20 27.2	-0.6
AYVA				*i* S	Sg	06 20 55.2	+0.5
AYVA	Ayvalik	1.84	275	P	Pn	06 20 27.2	-0.6
ISK	Istanbul-Kandi	1.90	0	ePN	Pn	06 20 29.1	+0.4
ISK	Istanbul-Kandi	1.90	0	P	Pn	06 20 27.9	-0.8
ISK	Istanbul-Kandi	1.90	0	P	Pn	06 20 27.9	-0.8
ISK	Istanbul-Kandi	1.90	0	ePn	Pn	06 20 29.1	+0.4
DGB	¯zmir	2.03	238	*i* P	Pb	06 20 33.0	+0.2
GLHS	Glhisar (BURDU	2.03	170	ePN	Pn	06 20 31.0	+0.4
GLHS	Glhisar (BURDU	2.03	170	ePn	Pn	06 20 31.0	+0.4
SILT	Sile	2.04	13	ePN	Pn	06 20 31.5	+1.0
SILT	Sile	2.04	13	ePn	Pn	06 20 31.5	+1.0
URLA	Izmir	2.08	248	*i* P	Pb	06 20 34.5	+0.7
URLA				*i* S	Sg	06 21 04.2	+1.8
KLYT	Kilyos	2.09	360	ePN	Pn	06 20 31.8	+0.6
KLYT	Kilyos	2.09	360	ePn	Pn	06 20 31.8	+0.6
RKY	Sarkoy-Tekirda	2.10	317	ePN	Pn	06 20 31.9	+0.5
RKY	Sarkoy-Tekirda	2.10	317	ePn	Pn	06 20 31.9	+0.5
MDUB	Mudurnu	2.11	51	ePN	Pn	06 20 32.3	+0.7
MDUB	Mudurnu	2.11	51	ePn	Pn	06 20 32.3	+0.7
YER	Yerkesik	2.11	197	P	Pn	06 20 31.1	-0.5
YER	Yerkesik	2.11	197	P	Pn	06 20 31.1	-0.5
CTKS	Kestanelik-??a	2.11	349	ePN	Pn	06 20 32.6	+1.1
CTKS	Kestanelik-??a	2.11	349	ePn	Pn	06 20 32.6	+1.1
KAND	Kocaeli-Kandir	2.12	24	*i* P	Pn	06 20 31.6	0.0
KAND				*i* S	Sg	06 21 03.4	-0.3
KAND	Kocaeli-Kandir	2.12	24	P	Pn	06 20 31.6	0.0
LPK	Lapseki	2.14	305	ePN	Pn	06 20 31.9	0.0
LPK	Lapseki	2.14	305	ePn	Pn	06 20 31.9	0.0
PRK	Paraskevi	2.16	273	P	Pn	06 20 31.9	-0.3
PRK	Paraskevi	2.16	273	P	Pn	06 20 31.9	-0.3
SAHE	Sakarya_HENDEK	2.18	39	*i* P	Pn	06 20 32.6	+0.1
SAHE	Sakarya_HENDEK	2.18	39	P	Pn	06 20 32.6	+0.1
ZEY	¯zmir	2.20	246	*i* P	Pb	06 20 36.1	+0.3
ZEY				*i* S	Sg	06 21 15.2	-0.7
EZN	Ezine	2.21	288	P	Pn	06 20 33.0	+0.1
EZN	Ezine	2.21	288	P	Pn	06 20 33.0	+0.1
KIZT	Kizilcal	2.22	96	ePN	Pb	06 20 34.8	-1.5
KIZT	Kizilcal	2.22	96	ePn	Pb	06 20 34.8	-1.5
SMG	Samos	2.27	231	P	Pn	06 20 33.5	-0.2
SMG	Samos	2.27	231	P	Pn	06 20 33.5	-0.2
CHOS	Chios island	2.47	253	P	Pn	06 20 36.0	-0.5
CHOS	Chios island	2.47	253	P	Pn	06 20 36.0	-0.5
KDHN	Kadinhani	2.48	104	*i* P	Pn	06 20 37.6	+0.9
KDHN	Kadinhani	2.48	104	P	Pn	06 20 37.6	+0.9
SIGR	SIGRI	2.48	272	P	Pn	06 20 36.3	-0.4
SIGR	SIGRI	2.48	272	P	Pn	06 20 36.3	-0.4
GADA	Gvkgeada	2.64	294	P	Pn	06 20 38.8	0.0
GADA	Gvkgeada	2.64	294	P	Pn	06 20 38.8	0.0
ALN	Alexandroupoli	2.89	308	P	Pn	06 20 41.6	-0.6
ALN	Alexandroupoli	2.89	308	P	Pn	06 20 41.6	-0.6
SMTH	Samothraki Isl	3.01	297	P	Pn	06 20 44.0	+0.1
SMTH	Samothraki Isl	3.01	297	P	Pn	06 20 44.0	+0.1
TIRR	Tirgusor	5.31	355	⇑*i* P	Pn	06 21 15.6	+0.1
TIRR	Tirgusor	5.31	355	⇑*i* P	Pn	06 21 15.6	+0.1
TLB	Topalu	5.47	352	⇑*i* P	Pn	06 21 17.4	-0.3
TLB	Topalu	5.47	352	⇑*i* P	Pn	06 21 17.4	-0.3
CFR	Carcaliu	6.05	354	⇑*i* P	Pn	06 21 25.1	-0.5
CFR	Carcaliu	6.05	354	⇑*i* P	Pn	06 21 25.1	-0.5
BARS	Barje	6.58	306	ePn	Pn	06 21 33.8	+0.9
MLR	Muntele Rosu	6.73	341	⇓*i* P	Pn	06 21 35.7	+0.6
MLR	Muntele Rosu	6.73	341	⇓*i* P	Pn	06 21 35.7	+0.6
VOIR		6.94	336	⇑*i* P	Pn	06 21 38.6	+0.7
VOIR		6.94	336	⇑*i* P	Pn	06 21 38.6	+0.7
BOVS	Bovan	7.10	311	ePn	Pn	06 21 41.5	+1.4
MDVR	Moldovita	7.83	318	⇑*i* P	Pn	06 21 50.5	+0.3
MDVR	Moldovita	7.83	318	⇑*i* P	Pn	06 21 50.5	+0.3

*ISK **18** 06:22:30.7, 39˚.14N×29˚.04E, h9km, ML2.6*
*DDA **18** 06:22:30.9, 39˚.12N×29˚.06E, h7km, Ml2.9*
*ISCJB **18** 06:22:31.0±0.5, 39˚.13N±0˚.03×29˚.04E±0˚.03, h9km±5km,*
Error ellipse: s-maj=5.1km s-min=4.3km az=147.4
*CSEM **18** 06:22:31.1±0.1, 39˚.13N×29˚.04E, h8km, ML2.9, Error*
ellipse: s-maj=2.8km s-min=2.4km az=144.0

ISC 18 06:22:31.2±0.9, 39˚.13N±0˚.03×29˚.04E±0˚.02, h13km±8km, n37, σ0s50/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	251	*i* P	Pg	06 22 36.9	0.0
DEMI				*i* S	Sg	06 22 41.0	+0.3
DEMI	Demirci	0.27	251	P	Pg	06 22 36.9	0.0
DEMI				S	Sg	06 22 41.0	+0.3
GEDZ	Gediz	0.30	107	ePG	Pg	06 22 37.3	-0.1
GEDZ	Gediz	0.30	107	ePg	Pg	06 22 37.3	-0.1
GDZ	Gediz	0.34	97	*i* P	Pg	06 22 37.7	-0.5
GDZ				*i* S	Sg	06 22 42.8	-0.1
GDZ	Gediz	0.34	97	P	Pg	06 22 37.7	-0.5
GDZ				S	Sg	06 22 42.8	-0.1
TVSB	Tavsanli	0.45	46	ePG	Pg	06 22 40.0	-0.1
TVSB	Tavsanli	0.45	46	ePg	Pg	06 22 40.1	-0.1
KULA	Kula-Manisa	0.69	206	ePG	Pg	06 22 44.0	-0.5
KULA				eSG	Sb	06 22 54.2	-0.3
MANT	Manisa	0.74	211	*i* P	Pg	06 22 44.9	-0.8
MANT				*i* S	Sg	06 22 54.8	-0.7
MANT	Manisa	0.74	211	P	Pg	06 22 44.9	-0.8
MANT				S	Sg	06 22 54.8	-0.7
KHL	Karahalli	0.89	155	ePG	Pb	06 22 48.5	-0.1
KHL				eSG	Sb	06 23 01.7	+1.2
AKS	Akhisar	0.99	256	ePG	Pb	06 22 50.2	-0.1
AKS	Akhisar	0.99	256	ePg	Pb	06 22 50.2	-0.1
BALB	Balikesir	1.03	300	ePG	Pb	06 22 51.3	+0.3
BALB	Balikesir	1.03	300	ePg	Pb	06 22 51.3	+0.3
IGD	Bursa	1.14	6	*i* P	Pg	06 22 51.1	-2.0
IGD				*i* S	Sn	06 23 08.5	+0.2
CAVI	Cavuskoy	1.23	30	ePN	Pn	06 22 54.2	-0.1
MDNY	Mudanya-Bursa	1.24	354	ePN	Pn	06 22 54.6	+0.3
MDNY	Mudanya-Bursa	1.24	354	ePn	Pn	06 22 54.6	+0.3
IZI	Iznik	1.25	15	ePN	Pn	06 22 54.4	-0.1
IZI	Iznik	1.25	15	ePn	Pn	06 22 54.4	-0.1
KCTX	Karacabey (Bur	1.25	335	ePN	Pg	06 22 55.2	0.0
KCTX	Karacabey (Bur	1.25	335	ePn	Pg	06 22 55.2	0.0
SHUT	Suhut-Afyon	1.31	116	ePN	Pb	06 22 55.9	+0.1
GONE	Gonen-Balikesi	1.39	311	ePN	Pn	06 22 56.6	+0.3
GONE	Gonen-Balikesi	1.39	311	ePn	Pn	06 22 56.6	+0.3
ADVT	Abdulvahap	1.41	22	ePN	Pb	06 22 57.5	+0.2
ADVT	Abdulvahap	1.41	22	ePn	Pb	06 22 57.5	+0.2
ARMT	Armutlu	1.44	354	ePN	Pn	06 22 57.5	+0.4
ARMT	Armutlu	1.44	354	ePn	Pn	06 22 57.5	+0.4
ESKT	Eskisehir	1.45	74	ePN	Pb	06 22 58.2	0.0
EDC	Edincik	1.52	324	ePN	Pb	06 22 58.9	-0.3
EDC	Edincik	1.52	324	ePn	Pb	06 22 58.9	-0.3
GULT	Gulveren	1.72	41	ePN	Pn	06 23 01.5	+0.5
GULT	Gulveren	1.72	41	ePn	Pn	06 23 01.5	+0.5
SVRH	Sivrihisar-ESK	1.95	80	ePN	Pn	06 23 04.5	+0.4

*IDC **18** 06:34:40.8±0.7, 54˚.86N×160˚.00W, h0km, mb4.3/30,*
mb1 4.4/32, mb1mx4.3/48, mbtmp4.2/32, ML4.1/2, MS3.3/15,
Ms1 3.3/15, ms1mx3.1/43, Error ellipse: s-maj=17.5km
s-min=10.9km az=162.0
*MOS **18** 06:34:43.6±1.1, 55˚.01N×159˚.95W, h27km, mb4.8/25,*
Error ellipse: s-maj=12.3km s-min=6.0km az=81.4
*BJI **18** 06:34:43.7, 54˚.90N×160˚.00W, h35km, mb4.8/30,*
mB5.2/15, Ms4.9/8, Ms7 4.6/8
*ISCJB **18** 06:34:45.6±0.4, 54˚.88N±0˚.04×159˚.85W±0˚.04, h49km±3km,*
mb4.5/88, MS3.3/14, Error ellipse: s-maj=6.7km
s-min=2.6km az=154.9
*NEIC **18** 06:34:45.4, 54˚.72N×159˚.85W, h26km, mb4.7/23,*
ML4.2(AEIC), After AEIC.
NEIC Felt at Sand Point.

ISC 18 06:34:46.4±0.7, 54˚.80N±0˚.06×159˚.87W±0˚.04, h40km±6km, n250, σ1s57/272, mb4.6/88, MS3.4/14, 3C, South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	Sand Point	0.65	328	ePn	Pn	06 34 58.6	-0.5
SDPT				eSn	Sn	06 35 07.7	-0.5
DOL	Dolgoi Island	1.20	288	P	Pn	06 35 06.2	-0.4
PVV	Pavlof Volcano	1.24	298	P	Pn	06 35 07.5	+0.3
VNKR	Veniaminof 5	1.26	13	P	Pn	06 35 08.2	+0.7
PS4A	Pavlof South-4	1.27	296	P	Pn	06 35 07.8	+0.3
PN6	Pavlof North-6	1.35	300	ePn	Pn	06 35 09.9	+1.2
VNWF	Veniaminof 8	1.36	7	P	Pn	06 35 10.5	+1.5
VNSG	Veniaminof 6	1.40	18	P	Pn	06 35 10.7	+1.3
VNSG				S	Sn	06 35 30.9	+4.2
DTNA	Dutton South F	1.42	285	ePn	Pn	06 35 09.6	0.0
DT1	Dutton Round H	1.42	283	ePn	Pn	06 35 09.4	-0.3
VNHG	Veniaminof 1	1.48	15	P	Pn	06 35 11.9	+1.4
VNNF	Veniaminof 3	1.52	12	P	Pn	06 35 13.2	+2.1
ANPB	Aniakchak Plen	2.19	23	P	Pn	06 35 21.4	+1.1
ISLZ	Isanotski Laza	2.23	270	P	Pn	06 35 20.9	+0.2
ANNW	Aniakchak Nort	2.36	23	P	Pn	06 35 24.3	+1.7
SSLN	Shishaldin Nor	2.39	272	P	Pn	06 35 24.3	+1.3
SSLS	Shishaldin Sou	2.40	269	P	Pn	06 35 24.0	+0.9
SSLW	Shishaldin Wes	2.46	271	P	Pn	06 35 25.0	+1.0
WESN	West Dahl Nort	2.75	267	ePn	Pn	06 35 29.1	+1.2
WESE	West Dahl East	2.76	265	ePn	Pn	06 35 29.1	+0.9
WESE				eSn	Sn	06 36 03.8	+3.6
WESP	Westdahl Peak	2.84	266	P	Pn	06 35 30.3	+1.1
PLK4	Peulik 4	3.45	33	P	Pn	06 35 38.7	+1.2
AKSA	Akutan Strait	3.47	261	ePn	Pn	06 35 38.3	+0.5
AKUT	Akutan	3.51	261	ePn	Pn	06 35 39.0	+0.7
AKUT				eSn	Sn	06 36 19.7	+1.2
PLUL	Peulik 1	3.51	30	P	Pn	06 35 39.0	+0.7
AKGG	Akutan Green G	3.62	263	P	Pn	06 35 40.2	+0.3
UNV	Unalaska Valle	4.00	259	ePn	Pn	06 35 44.9	-0.2
MTBL	Makushin Table	4.07	261	ePn	Pn	06 35 46.4	+0.3
CAHL	Cahill	4.13	36	P	Pn	06 35 47.1	+0.3
MCIR	Makushin Cirqu	4.19	261	P	Pn	06 35 48.5	+0.7
KELA	Mount Kelaz	4.30	30	P	Pn	06 35 49.6	+0.3
KABR	Katmai Barrier	4.30	37	P	Pn	06 35 49.5	+0.2
KVTA	Katmai Vly 10	4.39	33	P	Pn	06 35 51.1	+0.7
OHAK	Old Harbor	4.42	54	ePn	Pn	06 35 49.8	-0.9
OHAK				eSn	Sn	06 36 41.3	+0.5
KAHC	Katmai Hardscr	4.69	33	P	Pn	06 35 55.2	+0.5
OKER	Okmok East Rim	5.00	258	P	Pn	06 35 59.6	+0.7
OKTU	Okmok Mt. Tuli	5.02	257	P	Pn	06 35 60.0	+0.9
KDAK	Kodiak Island	5.04	51	*i* P	Pn	06 35 57.7	-1.6
KDAK	Kodiak Island	5.04	51	ePn	Pn	06 35 58.0	-1.2
KDAK				eSn	Sn	06 36 48.4	-7.8
CDD	Cape Douglas	5.36	37	P	Pn	06 36 04.3	+0.5
NIKH	Nikolski High	5.62	255	ePn	Pn	06 36 06.7	-0.8
NIKH				eSn	Sn	06 37 10.3	-0.3
SPIA	Saint Paul Isl	6.29	296	ePn	Pn	06 36 17.7	+1.2
HOM	Homer	6.60	39	ePn	Pn	06 36 16.5	-4.2
CNPM	China Poot	6.66	41	ePn	Pn	06 36 20.7	-0.9
SVW2	Sparrevohn	6.71	18	ePn	Pn	06 36 23.3	+1.1
SVW2				eSn	Sn	06 37 40.4	+3.1
RDWB	Redoubt West	6.83	31	P	Pn	06 36 26.6	+2.6
RSO	Redoubt South	6.84	31	ePn	Pn	06 36 26.3	+2.2
BRLK	Bradley Lake	6.96	41	ePn	Pn	06 36 24.0	-1.6
SPU	Mount Spurr	7.62	30	ePn	Pn	06 36 38.0	+3.3
SUA	Susitna One	8.23	32	ePn	Pn	06 36 45.6	+2.4
RC01	Rabbit Creek A	8.28	36	ePn	Pn	06 36 44.5	+0.7
RC01				eSn	Sn	06 38 16.0	+0.1
TT01	Tatalina	8.37	12	ePn	Pn	06 36 45.6	+0.7
TTA	Tatalina	8.39	12	eP	Pn	06 36 45.5	+0.2
TTA	Tatalina	8.39	12	ePn	Pn	06 36 45.5	+0.2
MID	Middleton Isla	8.69	52	eP	Pn	06 36 48.5	-0.9
MID	Middleton Isla	8.69	52	ePn	Pn	06 36 48.5	-0.9
PMR	Palmer	8.85	35	eP	Pn	06 36 48.3	-3.2
PMR	Palmer	8.85	35	ePn	Pn	06 36 48.3	-3.2
PMR				ePn	Pn	06 36 52.3	+0.8
PPLA	Purkeypile	9.03	23	ePn	Pn	06 36 57.1	+3.0
SML	Sawmill	9.27	36	eP	Pn	06 36 57.4	+0.1
SML	Sawmill	9.27	36	ePn	Pn	06 36 57.4	+0.1
FID	Port Fidalgo	9.30	45	ePn	Pn	06 36 55.7	-2.0
EYAK	Cordova Ski Ar	9.49	47	ePn	Pn	06 36 59.4	-0.9
EYAK				eSn	Sn	06 38 42.7	-2.9
CAST	Castle Rocks	9.52	22	ePn	Pn	06 37 02.1	+1.4
SCM	Sheep Creek Mo	9.64	38	eP	Pn	06 37 01.7	-0.7
SCM				*e*		06 38 50.0	
SCM	Sheep Creek Mo	9.64	38	ePn	Pn	06 37 01.7	-0.7
SCM				eSn	Sn	06 38 50.0	+0.7
RAGM	Ragged Mountai	9.88	49	ePn	Pn	06 37 04.5	-1.2
KLU	Klutina	9.95	42	ePn	Pn	06 37 05.5	-1.2
TRF	Thorofare Moun	9.96	26	ePn	Pn	06 37 06.4	-0.4
BMRM	Bremner River	10.19	47	ePn	Pn	06 37 08.3	-1.6
RND	Reindeer	10.30	29	eP	Pn	06 37 07.3	-4.2
RND	Reindeer	10.30	29	ePn	Pn	06 37 07.2	-4.2
RND				ePn	Pn	06 37 11.4	-0.1
BPAW	Bear Paw Mtn.	10.35	22	ePn	Pn	06 37 12.3	+0.2
DHY	Denali Highway	10.49	33	ePn	Pn	06 37 14.4	+0.3
MCK	McKinley	10.54	27	eP	Pn	06 37 13.2	-1.5
MCK	McKinley	10.54	27	ePn	Pn	06 37 13.2	-1.5
CRQM	Cirque	10.72	49	ePn	Pn	06 37 16.5	-0.8
BWN	Browne	10.76	25	ePn	Pn	06 37 13.1	-4.6
BALM	Baldy	11.19	49	eP	Pn	06 37 23.2	-0.5
BALM	Baldy	11.19	49	ePn	Pn	06 37 23.2	-0.5
MLY	Manley	11.22	20	ePn	Pn	06 37 28.0	+4.0
HDA	Harding Lake	11.62	29	ePn	Pn	06 37 26.8	-2.5
MENT	Mentasta	11.64	39	ePn	Pn	06 37 30.6	+0.8
MDM	Murphy Dome	11.72	25	ePn	Pn	06 37 30.9	+0.1
COLA	College	11.74	26	eP	Pn	06 37 28.8	-2.2
PCA	Pinnacle	11.80	55	ePn	Pn	06 37 32.2	+0.3
IL1	Eielson Array	11.91	28	ePn	Pn	06 37 32.0	-1.4
ILAR	Eielson Array	11.91	28	Pn	Pn	06 37 30.8	-2.6
ILAR		0.6nm,0.3s,baz=218,slow=13,SNR=19		Sn	Sn	06 39 44.5	-0.3
ILAR		0.1nm,0.3s,baz=231,slow=16,SNR=3.1		LR	LR	06 42 29.7	
ILB	Eielson Array	comp=Z,185nm,18.9s,baz=255,slow=39 11.91	28	ePn	Pn	06 37 34.0	+0.6
ILB				eSn	Sn	06 39 44.5	-0.3
DOT	Dot Lake	11.97	36	ePn	Pn	06 37 34.5	+0.3
COLD	Coldfoot	13.29	17	ePn	Pn	06 37 51.8	-0.3
HYT	Haines Junctio	13.32	54	ePn	Pn	06 37 54.6	+1.9
EGAK	Eagle	13.67	36	ePn	Pn	06 37 56.8	-0.5
DAWY	Dawson	13.88	40	ePn	Pn	06 37 59.9	-0.4
DLBC	Dease Lake	16.75	65	Pn	Pn	06 38 38.2	+0.4
DLBC		0.2nm,0.3s,baz=271,slow=13,SNR=5.2		LR	LR	06 44 27.1	
DLBC	Dease Lake	comp=Z,62nm,18.5s,baz=124,slow=35 16.75	65	ePn	P	06 38 39.1	-0.5
INK	Inuvik	4.8nm,0.8s 18.23	32	P	P	06 38 54.4	-1.4
INK		1.1nm,0.3s,baz=235,slow=15,SNR=21		S	Sn	06 42 19.3	+1.1
INK	Inuvik	0.1nm,0.3s,baz=45,slow=18,SNR=2.4 18.23	32	eP	P	06 38 53.5	-2.3
INK				*e*		06 42 19.3	
INK				pmax	pmax		
INK	Inuvik	comp=Z,10.0nm,0.8s 18.23	32	eP	P	06 38 53.5	-2.3
INK		comp=Z,10nm,0.8s		eSn	Sn	06 42 19.3	+1.1
BBB	Bella Bella	18.99	85	LR	LR	06 44 49.7	
BILL	Bilibino	comp=Z,104nm,18.2s,baz=270,slow=32 20.56	323	⇑eP	P	06 39 20.9	-0.3
BILL				*e*		06 39 33.9	
BILL				pmax	pmax		
BILL		comp=Z,8.0nm,0.9s		MLR	MLR		
PET	Petropavlovsk	comp=Z,135nm,16.0s 24.24	283	*i* P	P	06 39 58.7	-0.5
PET				pmax	pmax		
YKA	Yellowknife Ar	comp=Z,56nm,1.7s 24.31	53	P	P	06 39 59.9	+0.2
YKA		comp=Z,2.4nm,0.6s,baz=268,slow=7.9,SNR=8.3		LR	LR	06 50 49.7	
YKB5	Yellowknife Ar	comp=Z,8.9nm,18.5s,baz=180,slow=40 24.31	53	eP	P	06 39 59.0	-0.7
PEA1	Petropavlovsk-	24.75	284	eP	P	06 40 03.6	-0.2
PEA0	Petropavlovsk-	24.75	284	eP	P	06 40 03.5	-0.4
PEA0B	Petropavlovsk-	24.75	284	eP	P	06 40 03.7	-0.1
PETK	Petropavlovsk-	comp=Z,23nm,0.5s 24.75	284	P	P	06 40 03.6	-0.2
PETK		comp=Z,18nm,0.4s,baz=81,slow=14,SNR=18		LR	LR	06 51 04.5	
SEY	Seymchan	comp=Z,62nm,18.7s,baz=70,slow=40 25.43	308	P	P	06 40 08.2	-1.6
SEY	Seymchan	comp=Z,4.3nm,0.8s,baz=103,slow=7.6,SNR=10 25.43	308	*i* P	P	06 40 07.5	-2.3
MA2	Magadan	26.65	301	LR	LR	06 51 01.9	
NEW	Newport	comp=Z,80nm,18.8s,baz=130,slow=37 27.04	86	P	P	06 40 25.9	+1.3
NEW		comp=Z,1.5nm,0.7s,baz=315,slow=14,SNR=3.7		LR	LR	06 49 28.3	
SZCU	Shurtz Canyon	comp=Z,71nm,18.1s,baz=294,slow=33 35.88	99	eP	P	06 41 43.0	+0.5
YSS	Yuzh-Sakhalins	comp=Z,8.9nm,0.8s 36.12	282	⇑eP	P	06 41 42.6	-1.5
YSS		comp=Z,20nm,1.0s		pmax	pmax		
SRU	San Rafael Swe	36.32	95	eP	P	06 41 47.8	+1.6
SRU		comp=Z,5.0nm,0.8s		pmax	pmax		
SRU	San Rafael Swe	36.32	95	eP	P	06 41 47.8	+1.6
O20A	White River Ci	comp=Z,5.2nm,0.8s 36.96	92	eP	P	06 41 52.6	+0.9
ASAJ	Asahikawa	comp=Z,6.4nm,0.9s 37.87	278	eP	P	06 41 59.0	0.0
ULM	Lac du Bonnet	comp=Z,4.9nm,0.7s 37.99	70	P	P	06 42 00.4	+0.3
ULM		comp=Z,1.5nm,0.5s,baz=314,slow=5.0,SNR=3.3		LR	LR	06 57 26.8	
PV01	Paradox Valley	38.11	94	eP	P	06 42 02.6	+1.1
MVCO	Mesa Verde	comp=Z,44nm,18.1s,baz=110,slow=36 38.78	95	eP	P	06 42 09.2	+2.1
KLR	Kul'dur	comp=Z,2.9nm,0.9s 40.93	292	P	P	06 42 23.6	-0.9
ANMO	Albuquerque	comp=Z,2.4nm,0.8s,baz=63,slow=9.4,SNR=9.7 41.55	96	eP	P	06 42 30.4	+0.4
ANMO		comp=Z,1.0nm,1.2s		pmax	pmax		
EYMN	Ely	41.67	70	eP	P	06 42 30.7	+0.1
H11N2	WAKE ISLAND Hy	comp=Z,4.4nm,0.7s 43.13	229	T	T	07 28 34.8	
H11N3	WAKE ISLAND Hy	baz=28,slow=76,SNR=42 43.13	229	T	T	07 28 35.2	
H11N1	WAKE ISLAND Hy	baz=28,slow=76,SNR=37 43.15	229	T	T	07 28 38.1	
FRB	Frobisher Bay	baz=28,slow=76,SNR=42 43.59	40	LR	LR	07 01 27.2	
USRK	Ussuriysk Ar.	comp=Z,82nm,20.6s,baz=292,slow=37 43.82	285	P	P	06 42 46.8	-1.2
H11S1	WAKE ISLAND Hy	comp=Z,1.1nm,0.5s,baz=26,slow=3.7,SNR=2.7 44.29	228	T	T	07 30 14.3	
H11S2	WAKE ISLAND Hy	baz=28,slow=76,SNR=15 44.31	228	T	T	07 30 19.8	
H11S3	WAKE ISLAND Hy	baz=28,slow=76,SNR=12 44.31	228	T	T	07 30 19.7	
MSHR	Mys Shultsa	baz=28,slow=76,SNR=6.1 45.32	284	*i* P	P	06 42 58.5	-1.6
MJAR	Matsush

TXAR				PcP	**PcP**	06 44 46.5	+0.3	
	comp=Z,0.3nm,0.7s,baz=339,slow=2.3,SNR=2.4							
TXAR				LR	LR	07 01 50.7		
	comp=Z,52nm,19.2s,baz=0.0,slow=34							
HDIL	**Hopedale**	**47.56**	**77**	*e*P	**P**	**06 43 17.2**	**-0.5**	
	comp=Z,11nm,0.7s							
KSRS	**Korea Array**	**50.62**	**281**	P	**P**	**06 43 41.2**	**+0.2**	
	comp=Z,3.0nm,0.8s,baz=47,slow=7.1,SNR=9.7							
KS01	**Wonju Array Si**	**50.62**	**281**	*e*P	**P**	**06 43 39.6**	**-1.4**	
KS15	**Wonju Array Si**	**50.65**	**281**	*e*P	**P**	**06 43 40.1**	**-1.1**	
WVT	**Waverly**	**51.45**	**80**	*e*P	**P**	**06 43 47.0**	**-0.3**	
WVT				pmax	pmax			
	comp=Z,8.0nm,1.0s							
WVT	**Waverly**	**51.45**	**80**	*e*P	**P**	**06 43 47.0**	**-0.3**	
	comp=Z,7.7nm,1.0s							
SONA1	**Songino Array**	**54.74**	**305**	*e*P	**P**	**06 44 11.2**	**-0.4**	
SONA0	**Songino Array**	**54.75**	**305**	*e*P	**P**	**06 44 11.7**	**+0.1**	
	comp=Z,6.0nm,0.8s							
SONA0				*e*PcP	**PcP**	**06 45 14.4**	**+0.6**	
SONM	**Songino Array**	**54.75**	**305**	P	**P**	**06 44 11.7**	**+0.1**	
	comp=Z,5.4nm,0.8s,baz=47,slow=6.8,SNR=27							
SONM				PcP	**PcP**	**06 45 14.4**	**+0.6**	
	comp=Z,0.2nm,0.3s,baz=45,slow=3.5,SNR=3.5							
ARCES	**ARCESS Array B**	**55.91**	**358**	P	**P**	**06 44 18.7**	**-0.8**	
	comp=Z,2.0nm,0.7s,baz=16,slow=6.8,SNR=12							
ARCES				PcP	**PcP**	**06 45 17.9**	**+0.2**	
	comp=Z,3.0nm,0.8s,baz=3.4,slow=4.5,SNR=4.3							
BORG	**Borgarnes**	**56.60**	**20**	LR	LR	07 12 36.2		
	comp=Z,25nm,18.1s,baz=18,slow=40							
HHC	**Hu-ho-hao-te**	**57.16**	**296**	*e*P	**P**	**06 44 30.0**	**+1.0**	
HHC				pmax	pmax			
	comp=Z,15nm,1.5s							
HHC				pmax	pmax			
	comp=Z,350nm,3.8s							
ZAA1	**Zalesovo Array**	**59.24**	**322**	*e*P	**P**	**06 44 43.0**	**-0.1**	
ZALV	**Zalesovo Beam**	**59.25**	**322**	P	**P**	**06 44 43.0**	**-0.1**	
	comp=Z,1.3nm,0.4s,baz=8.1,slow=7.6,SNR=4.6							
KLMR	**Klimovskoe**	**63.66**	**350**	*e*P	**P**	**06 45 09.5**	**-3.3**	
KLMR				pmax	pmax			
	comp=Z,9.0nm,1.1s							
FIA0	**FINESS Array S**	**64.00**	**357**	*e*P	**P**	**06 45 14.5**	**-0.6**	
FIA0	**FINESS Array S**	**64.00**	**357**	*e*P	**P**	**06 45 14.5**	**-0.6**	
FINES	**FINESS Array B**	**64.00**	**357**	P	**P**	**06 45 14.5**	**-0.6**	
	comp=Z,2.0nm,0.6s,baz=27,slow=8.8,SNR=7.7							
KURK	**Kurchatov**	**64.09**	**323**	*i* P	**P**	**06 45 14.8**	**-1.0**	
KURK				pmax	pmax			
	comp=Z,19nm,1.7s							
KURK	**Kurchatov**	**64.09**	**323**	*e*P	**P**	**06 45 16.0**	**+0.2**	
	comp=Z,4.4nm,0.5s							
GTA	**Gaotai**	**64.20**	**302**	*e*P	**P**	**06 45 16.8**	**-0.1**	
GTA				pP	pP	06 45 26.9	-1.8	
GTA				sP	sP	06 45 30.8	-2.5	
GTA				pmax	pmax			
	comp=Z,7.0nm,1.1s							
NC405	**NORSAR Array S**	**64.24**	**5**	*e*P	**P**	**06 45 16.9**	**+0.3**	
NB2	**NORSAR Subarra**	**64.28**	**5**	P	**P**	**06 45 16.8**	**-0.2**	
	comp=Z,2.4nm,0.7s,baz=354,slow=6.9							
NB2	**NORSAR Subarra**	**64.28**	**5**	P	**P**	**06 45 16.8**	**-0.2**	
NB2				pmax	pmax			
	comp=Z,2.0nm,0.7s							
NB200	**NORSAR Array S**	**64.28**	**5**	*e*P	**P**	**06 45 17.0**	**0.0**	
NOA	**NORSAR Array B**	**64.28**	**5**	P	**P**	**06 45 17.0**	**0.0**	
	comp=Z,2.8nm,0.6s,baz=355,slow=6.5,SNR=13							
LZH	**Lanzhou**	**64.74**	**297**	*e*P	**P**	**06 45 20.6**	**+0.1**	
LZH				pP	pP	06 45 29.6	-2.7	
LZH				sP	sP	06 45 34.3	-2.6	
LZH				pmax	pmax			
	comp=Z,15nm,1.0s							
BVAR	**Borovoye Array**	**64.77**	**329**	P	**P**	**06 45 20.3**	**0.0**	
	comp=Z,3.8nm,0.7s,baz=43,slow=6.7,SNR=16							
BRVK	**Borovoye**	**64.78**	**329**	*i* P	**P**	**06 45 19.2**	**-1.1**	
BRVK				pmax	pmax			
	comp=Z,6.0nm,0.6s							
ARU	**Arti**	**64.79**	**338**	*c i*P	**P**	**06 45 19.5**	**-0.8**	
ARU						06 45 53.4		
ARU						06 47 39.7		
ARU				S	**S**	**06 53 58.7**	**+1.0**	
ARU				SS	**SS**	**06 58 09.6**	**+1.4**	
ARU				pmax	pmax			
	comp=Z,6.0nm,1.2s							
ZRNK	**Zerenda**	**65.25**	**330**	*e*P	**P**	**06 45 23.1**	**-0.2**	
ZRNK				pmax	pmax			
	comp=Z,6.0nm,0.9s							
ZRNK	**Zerenda**	**65.25**	**330**	*e*P	**P**	**06 45 23.1**	**-0.2**	
	comp=Z,5.5nm,0.9s							
MK31	**Makanchi Array**	**66.00**	**318**	*e*P	**P**	**06 45 27.8**	**-0.6**	
MK31	**Makanchi Array**	**66.00**	**318**	*e*P	**P**	**06 45 27.8**	**-0.6**	
MK32	**Makanchi Array**	**66.00**	**318**	*e*P	**P**	**06 45 27.6**	**-0.8**	
MKAR	**Makanchi Array**	**66.00**	**318**	P	**P**	**06 45 27.6**	**-0.8**	
	comp=Z,1.2nm,0.5s,baz=46,slow=6.2,SNR=18							
MKAR	**Makanchi Array**	**66.00**	**318**	*e*P	**P**	**06 45 27.8**	**-0.6**	
MKAR				pmax	pmax			
	comp=Z,14nm,0.8s							
MKAR	**Makanchi Array**	**66.00**	**318**	*e*P	**P**	**06 45 27.8**	**-0.6**	
	comp=Z,14nm,0.8s							
MK01	**Makanchi Array**	**66.02**	**318**	*e*P	**P**	**06 45 27.6**	**-0.9**	
MAKZ	**Makanchi**	**66.11**	**319**	*e*P	**P**	**06 45 28.3**	**-0.7**	
MAKZ				pmax	pmax			
	comp=Z,4.0nm,1.1s							
MAKZ	**Makanchi**	**66.11**	**319**	*e*P	**P**	**06 45 28.3**	**-0.7**	
	comp=Z,3.7nm,1.1s							
WMQ	**Urumqi**	**66.26**	**313**	*e*P	**P**	**06 45 30.6**	**+0.5**	
WMQ				pP	pP	06 45 40.9	-1.0	
WMQ				pmax	pmax			
	comp=Z,11nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,140nm,5.1s							
VSU	**Vasula**	**66.96**	**356**	*i* P	**P**	**06 45 32.5**	**-1.7**	
VSU				pmax	pmax			
	comp=Z,47nm,1.7s							
OTUK	**Ortayu**	**68.33**	**325**	P	**P**	**06 45 43.6**	**+0.5**	
OTUK				pmax	pmax			
	comp=Z,6.0nm,1.1s							
CD2	**Chengdu**	**68.81**	**294**	*e*P	**P**	**06 45 45.0**	**-1.3**	
CD2				pP	pP	06 45 55.6	-2.6	
CD2				PP	**PP**	**06 48 16.3**	**-1.9**	
CD2				S	**S**	**06 54 45.1**	**-2.0**	
CD2				sS	sS	06 55 03.3	-3.5	
CD2				SKS	**SKSac**	**06 55 41.0**	**-1.5**	
CD2				pmax	pmax			
	comp=Z,10.0nm,0.5s							
CD2				pmax	pmax			
	comp=Z,120nm,5.6s							
PDGK	**Podgornoye**	**69.99**	**318**	P	**P**	**06 45 53.9**	**+0.5**	
PDGK				pmax	pmax			
	comp=Z,8.0nm,0.9s							
AKTO	**Aktyubinsk**	**70.45**	**335**	P	**P**	**06 45 56.1**	**0.0**	
	comp=Z,4.0nm,0.7s,baz=34,slow=5.5,SNR=13							
GYA	**Guiyang**	**70.73**	**289**	*e*P	**P**	**06 45 59.3**	**+0.9**	
GYA				pmax	pmax			
	comp=Z,10.0nm,1.0s							
ABKAR	**Akbulak array**	**71.06**	**334**	*e*P	**P**	**06 45 59.9**	**+0.1**	
	comp=Z,33nm,0.4s							
MNAS	**Manas**	**73.31**	**322**	P	**P**	**06 46 14.7**	**+1.1**	
MNAS				pmax	pmax			
	comp=Z,4.0nm,1.1s							
KKAR	**Karatay Array**	**73.46**	**324**	*e*P	**P**	**06 46 14.4**	**+0.2**	
KKAR				pmax	pmax			
	comp=Z,29nm,0.7s							
KKAR	**Karatay Array**	**73.46**	**324**	*e*P	**P**	**06 46 14.4**	**+0.2**	
	comp=Z,29nm,0.7s							
KMI	**Kunming**	**73.93**	**291**	P	**P**	**06 46 17.3**	**-0.3**	
KMI				pmax	pmax			
	comp=Z,9.0nm,0.8s							
CLL	**Collm**	**74.09**	**5**	*e*P	**P**	**06 46 18.0**	**+0.2**	
	comp=Z,5.0nm,0.9s							
CLL	**Collm**	**74.09**	**5**	*e*P	**P**	**06 46 18.0**	**+0.2**	
CLL				pmax	pmax			
	comp=Z,5.0nm,0.9s							
AKASG	**Malin Array Be**	**74.59**	**354**	P	**P**	**06 46 20.2**	**-0.5**	
	comp=Z,2.0nm,0.4s,baz=8.9,slow=6.1,SNR=6.6							
AKASG				LR	LR	07 21 49.1		
	comp=Z,22nm,18.6s,baz=30,slow=38							
AKBB	**Malin Array Si**	**74.59**	**354**	*e*P	**P**	**06 46 20.3**	**-0.4**	
AKBB				pmax	pmax			
	comp=Z,6.0nm,0.8s							
AKBB	**Malin Array Si**	**74.59**	**354**	*e*P	**P**	**06 46 20.3**	**-0.4**	
	comp=Z,5.8nm,0.8s							
KIEV	**Kiev**	**74.60**	**354**	*e*P	**P**	**06 46 19.2**	**-1.5**	
KIEV				pmax	pmax			
	comp=Z,5.0nm,1.1s							
KIEV	**Kiev**	**74.60**	**354**	*e*P	**P**	**06 46 20.2**	**-0.5**	
	comp=Z,18nm,1.5s							
KSH	**Kashi**	**74.62**	**318**	P	**P**	**06 46 24.8**	**+3.6**	
KSH				*e*pP	PcP	06 46 35.3	-0.1	
KSH				*e*PP	**PP**	**06 49 14.6**	**+6.9**	
KSH				S	**S**	**06 55 57.6**	**+3.7**	
KSH				pmax	pmax			
	comp=Z,9.0nm,0.8s							
KSH				pmax	pmax			
	comp=Z,91nm,4.4s							
KSH				LR	LR			
	comp=Z,240nm,6.6s							
KSH				LR	LR			
	comp=Z,140nm,7.4s							
KSH				LR	LR			
	comp=Z,170nm,8.2s							
AK11	**Malin Array Si**	**74.62**	**354**	*e*P	**P**	**06 46 19.8**	**-1.1**	
DPC	**Dobruska-Polom**	**75.17**	**3**	*e*P	**P**	**06 46 25.2**	**+1.1**	
DPC	**Dobruska-Polom**	**75.17**	**3**	*e*P	**P**	**06 46 25.2**	**+1.1**	
KHC	**Kasperske Hory**	**76.29**	**4**	*e*P	**P**	**06 46 32.0**	**+1.4**	
KHC				*ex*	x	06 46 36.4		
KHC				*e*pP	**PcP**	**06 46 40.1**	**-2.3**	
KHC	**Kasperske Hory**	**76.29**	**4**	*e*P	**P**	**06 46 32.0**	**+1.4**	
KHC				*e*		06 46 36.4		
KHC				*e*		06 46 40.1		
GERES	**GERESS Array B**	**76.58**	**4**	P	**P**	**06 46 32.9**	**+0.7**	
	comp=Z,0.5nm,0.3s,baz=358,slow=3.2,SNR=9.5							
GEA0	**GERESS Array S**	**76.59**	**4**	*e*P	**P**	**06 46 32.8**	**+0.5**	
CONA	**Conrad Observa**	**77.58**	**3**	*i* P	**P**	**06 46 36.1**	**-1.8**	
	comp=Z,2.1nm,0.6s							
MOA	**Molln**	**77.60**	**4**	*i* P	**P**	**06 46 35.5**	**-2.4**	
	comp=Z,3.7nm,0.8s							
MOTA	**Moosalm**	**77.94**	**6**	*i* P	**P**	**06 46 40.3**	**+0.3**	
	comp=Z,5.0nm,0.7s							
WTTA	**Wattenberg**	**78.05**	**6**	*i* P	**P**	**06 46 37.6**	**-3.0**	
	comp=Z,3.1nm,0.5s							
FETA	**Feichten**	**78.24**	**7**	*i* P	**P**	**06 46 40.1**	**-1.6**	
	comp=Z,6.5nm,1.0s							
KBA	**Koelnbreinsper**	**78.33**	**5**	*i* P	**P**	**06 46 38.7**	**-3.5**	
	comp=Z,5.4nm,0.7s							
ABTA	**Abfaltersbach**	**78.62**	**5**	*i* P	**P**	**06 46 41.9**	**-1.7**	
	comp=Z,2.4nm,0.4s							
MYKA	**Terra Mystica**	**78.79**	**5**	*i* P	**P**	**06 46 43.6**	**-1.0**	
	comp=Z,6.8nm,1.1s							
SOKA	**Soboth**	**78.80**	**4**	*i* P	**P**	**06 46 45.9**	**+1.2**	
	comp=Z,3.7nm,0.8s							
OBKA	**Obir**	**78.95**	**4**	*i* P	**P**	**06 46 42.9**	**-2.6**	
	comp=Z,7.8nm,0.6s							
KIV	**Kislovodsk**	**79.76**	**344**	*e*P	**P**	**06 46 50.3**	**+0.4**	
KIV				*e*		06 46 54.9		
KIV				*e**PP	**PcP**	**06 46 57.5**	**-0.1**	
KIV				*e**SP	**pP**	**06 47 01.4**	**-0.6**	
KIV				*e*S	**S**	**06 56 46.6**	**-2.9**	
KIV				pmax	pmax			
	comp=Z,6.0nm,0.8s							
KIV				MLR	MLR			
	comp=Z,28nm,17.0s							
KBZ	**Khabaz**	**79.94**	**343**	P	**P**	**06 46 51.8**	**+1.0**	
	comp=Z,3.9nm,0.9s,baz=21,slow=2.7,SNR=7.0							
KBZ				LR	LR	07 25 23.3		
	comp=Z,23nm,18.5s,baz=78,slow=38							
NCK	**Nalchik**	**80.05**	**343**	*e*P	**P**	**06 46 50.6**	**-0.9**	
NCK				pmax	pmax			
	comp=Z,9.0nm,0.7s							
NEY	**Neytrino**	**80.44**	**343**	*e*P	**P**	**06 46 53.0**	**-0.7**	
NEY				pmax	pmax			
	comp=Z,1.0nm,1.0s							
CM31	**Chiang Mai Arr**	**81.38**	**290**	*e*P	**P**	**06 46 58.6**	**-0.3**	
CMAR	**Chiang Mai Arr**	**81.38**	**290**	P	**P**	**06 46 58.6**	**-0.3**	
	comp=Z,2.8nm,0.4s,baz=16,slow=5.6,SNR=9.7							
GEYT	**Alibeck**	**82.05**	**331**	P	**P**	**06 47 02.2**	**0.0**	
	comp=Z,2.8nm,0.6s,baz=352,slow=3.3,SNR=4.2							
GEYT				LR	LR	07 27 34.0		
	comp=Z,42nm,18.9s,baz=200,slow=39							
ES19	**SONSECA Array**	**83.64**	**18**	*e*P	**P**	**06 47 11.6**	**+1.1**	
ESDC	**Sonseca Array**	**83.65**	**18**	P	**P**	**06 47 11.3**	**+0.8**	
	comp=Z,2.4nm,0.6s,baz=343,slow=5.0,SNR=11							
BR231	**Keskin MP Arra**	**85.10**	**350**	*e*P	**P**	**06 47 18.5**	**+0.6**	
BR101	**Keskin Array S**	**85.13**	**350**	*e*P	**P**	**06 47 18.8**	**+0.7**	
BRTR	**Keskin Array B**	**85.13**	**350**	P	**P**	**06 47 18.8**	**+0.7**	
	comp=Z,2.1nm,0.9s,baz=343,slow=3.9,SNR=7.1							
WRAB	**Tennant Creek**	**93.03**	**239**	*i* P	**P**	**06 47 56.7**	**+1.2**	
WRAB				pmax	pmax			
	comp=Z,13nm,1.2s							
WR1	**Warramunga Arr**	**93.04**	**239**	*e*P	**P**	**06 47 54.5**	**-1.0**	
	comp=Z,12nm,1.4s							
WRA	**Warramunga Arr**	**93.04**	**239**	P	**P**	**06 47 54.6**	**-1.0**	
	comp=Z,2.7nm,0.9s,baz=32,slow=6.6,SNR=3.5							
ASAR	**Alice Springs**	**96.40**	**238**	P	**P**	**06 48 10.2**	**-0.6**	
	comp=Z,0.4nm,0.6s,baz=64,slow=3.2,SNR=3.2							
BOSA	**Boshof**	**153.57**	**350**	PKPbc	**PKPbc**	**06 54 40.2**	**-0.2**	
	comp=Z,2.6nm,0.9s,baz=28,slow=6.5,SNR=3.4							

ISCJB ***18*** *06:51:01.2±0.9, 26.37S±0.09×179.4E±0.1, h495km, mb3.7/4, Error ellipse: s-maj=17.8km s-min=11.6km az=8.6*
IDC ***18*** *06:51:02.0±2.5, 26.44S×179.49E, h501km±31km, mb3.3/4, mb1 3.5/8, mb1mx3.3/23, mbtmp4.3/8, Error ellipse: s-maj=26.4km s-min=21.5km az=154.0*

ISC 18 06:51:01.6±0.9, 26.4S±0.1×179.5E±0.1, h495km, n10, σ0 9 93/11, mb4.0/4, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
URZ	**Urewera**	**11.97**	**189**	P	**P**		**06 53 39.6**	**0.0**
	1.5nm,0.3s,baz=277,slow=2.8,SNR=8.8							
URZ				S	**S**		**06 55 50.4**	**+0.5**
	0.4nm,0.3s,baz=20,slow=18,SNR=8.8							
DZM	**Mont Dzumac**	**12.66**	**287**	P	**P**		**06 53 47.7**	**+0.3**
	0.8nm,0.3s,baz=115,slow=16,SNR=7.6							
AFI	**Afiamalu**	**14.90**	**35**	P	**P**		**06 54 12.4**	**+1.3**
	2.5nm,0.3s,baz=156,slow=18,SNR=3.0							
RPZ	**Rata Peaks**	**18.56**	**200**	P	**P**		**06 54 47.5**	**+0.3**
	0.3nm,0.3s,baz=41,slow=9.3,SNR=2.8							
STKA	**Stephens Creek**	**33.41**	**252**	P	**P**		**06 56 59.0**	**+0.4**
	2.0nm,0.5s,baz=100,slow=12,SNR=10.0							
ASAR	**Alice Springs**	**41.22**	**264**	P	**P**		**06 58 02.7**	**-0.2**
	5.2nm,0.9s,baz=107,slow=8.3,SNR=28							
WRA	**Warramunga Arr**	**41.83**	**269**	P	**P**		**06 58 07.2**	**-0.5**
	4.0nm,0.7s,baz=104,slow=7.8,SNR=18							
TXAR	**Lajitas Array**	**92.16**	**58**	P	**P**		**07 03 16.7**	**-1.4**
	0.1nm,0.5s,baz=207,slow=6.9,SNR=4.0							
AKASG	**Malin Array Be**	**146.80**	**325**	PKPbc	**PKPbc**		**07 09 47.9**	**+0.4**
	2.3nm,0.9s,baz=48,slow=4.6,SNR=5.2							
BRTR	**Keskin Array B**	**148.65**	**304**	PKPab	**PKPab**		**07 09 57.0**	**-1.4**
	1.0nm,0.6s,baz=113,slow=4.1,SNR=5.0							

ISCJB ***18*** *06:57:05.1±0.7, 18.6S±0.1×177.7W±0.2, h557km, mb3.9/9, Error ellipse: s-maj=20.4km s-min=15.3km az=27.3*
IDC ***18*** *06:57:08.9±1.2, 18.76S×177.66W, h597km±17km, mb3.4/9, mb1 3.6/12, mb1mx3.4/25, mbtmp4.4/12, Error ellipse: s-maj=19.3km s-min=11.8km az=138.0*

ISC 18 06:57:07.1±0.6, 18.6S±0.1×177.9W±0.1, h557km, n14, σ2 2 22/15, mb3.8/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
AFI	**Afiamalu**	**7.51**	**52**	P	**P**		**06 59 04.1**	**+3.7**
	4.3nm,0.3s,baz=249,slow=17,SNR=5.7							
AFI				S	**S**		**07 00 35.4**	**+2.2**
	0.9nm,0.3s,baz=211,slow=19,SNR=2.2							
RAO	**Raoul Island**	**10.57**	**180**	P	**P**		**06 59 32.2**	**+1.4**
	70nm,0.3s,baz=252,slow=20,SNR=3.1							
DZM	**Mont Dzumac**	**15.09**	**254**	P	**P**		**07 00 20.6**	**+3.2**
	0.8nm,0.3s,baz=109,slow=22,SNR=7.6							
URZ	**Urewera**	**20.04**	**192**	P	**P**		**07 01 01.0**	**-1.9**
	2.1nm,0.3s,baz=263,slow=2.5,SNR=14							
STKA	**Stephens Creek**	**38.73**	**242**	P	**P**		**07 03 45.1**	**+1.1**
	3.5nm,0.4s,baz=85,slow=9.1,SNR=10							
JAY	**Jayapura**	**43.59**	**287**	P	**P**		**07 04 24.2**	**+1.4**
	1.4nm,0.5s,baz=95,slow=23,SNR=15							
WRA	**Warramunga Arr**	**45.00**	**260**	P	**P**		**07 04 33.5**	**0.0**
	8.2nm,0.4s,baz=98,slow=6.9,SNR=207							
ASAR	**Alice Springs**	**45.08**	**255**	P	**P**		**07 04 34.5**	**+0.3**
	15nm,0.8s,baz=88,slow=7.9,SNR=138							
PETK	**Petropavlovsk-**	**74.50**	**345**	P	**P**		**07 07 47.5**	**-1.3**
	1.3nm,0.7s,baz=184,slow=2.0,SNR=2.6							
MAW	**Mawson**	**83.35**	**200**	P	**P**		**07 08 34.1**	**-1.5**
	1.1nm,0.4s,baz=146,slow=7.3,SNR=9.4							
TXAR	**Lajitas Array**	**85.96**	**57**	P	**P**		**07 08 48.5**	**-0.6**
	1.1nm,0.7s,baz=222,slow=6.7,SNR=18							
ILAR	**Eielson Array**	**86.48**	**13**	P	**P**		**07 08 47.8**	**-2.8**
	0.8nm,0.5s,baz=226,slow=5.0,SNR=18							
PDAR	**Pinedale Array**	**87.53**	**43**	P	**P**		**07 08 54.4**	**-2.0**
	0.6nm,0.6s,baz=250,slow=3.0,SNR=6.8							
ARCES	**ARCESS Array B**	**127.11**	**350**	PKP	**PKPdf**		**07 15 05.3**	**-2.4**
	1.1nm,0.9s,baz=5.7,slow=0.9,SNR=4.2							

ISK ***18*** *07:06:09.8, 37.25N×28.21E, h13km, MD2.6*
CSEM ***18*** *07:06:10.4±0.2, 37.26N±28.25E, h10km, MD2.6, Error ellipse: s-maj=6.0km s-min=4.5km az=41.0*
DDA ***18*** *07:06:10.7, 37.23N×28.21E, h7km, Ml2.6*

ISC 18 07:06:10.7±1.3, 37.25N±0.04×28.19E±0.03, h6km±10km, n22, σ1 9 37/36, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
YER	**Yerkesik**	**0.14**	**145**	*e*PG	**Pg**		**07 06 13.3**	**-0.2**
YER	**Yerkesik**	**0.14**	**145**	*e*Pg	**Pg**		**07 06 13.3**	**-0.2**
TURN	**Turunc**	**0.50**	**138**	*i* P	**Pg**		**07 06 18.9**	**-1.4**
TURN				*i* S	**Sb**		**07 06 27.6**	**-1.9**
DALY	**Dalyan (Mu˘la**	**0.57**	**139**	*e*PG	**Pg**		**07 06 21.2**	**-0.4**
DALY				*e*SG	**Sb**		**07 06 29.5**	**-2.0**
DALY	**Dalyan (Mu˘la**	**0.57**	**139**	*e*Pg	**Pg**		**07 06 21.2**	**-0.4**
DALY				*e*Sg	**Sb**		**07 06 29.5**	**-2.0**
BDRM	**Kayabasi**	**0.62**	**253**	*i* P	**Pg**		**07 06 22.8**	**+0.2**
BDRM				*i* S	**Sb**		**07 06 32.8**	**-0.1**
BDRM	**Kayabasi**	**0.62**	**253**	P	**Pg**		**07 06 22.8**	**+0.2**
BDRM				S	**Sb**		**07 06 32.8**	**-0.1**
BODT	**Bodrum**	**0.72**	**255**	*e*PG	**Pg**		**07 06 24.8**	**+0.3**
BODT				*e*SG	**Sb**		**07 06 35.5**	**-0.4**
BODT	**Bodrum**	**0.72**	**255**	*e*Pg	**Pg**		**07 06 24.8**	**+0.3**
BODT				*e*Sg	**Sb**		**07 06 35.5**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**342**	*e*PG	**Pg**		**07 06 24.9**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**342**	*e*Pg	**Pg**		**07 06 25.0**	**+0.2**
GCAM	**G?zelcaml?**	**0.88**	**301**	*i* P	**Pn**		**07 06 29.6**	**0.0**
GCAM				*i* S	**Sn**		**07 06 41.7**	**-1.1**
GCAM	**G?zelcaml?**	**0.88**	**301**	P	**Pn**		**07 06 29.6**	**0.0**
GCAM				S	**Sn**		**07 06 41.7**	**-1.1**
FETY	**Fethiye**	**0.94**	**130**	*e*PG	**Pg**		**07 06 28.3**	**-0.5**
FETY	**Fethiye**	**0.94**	**130**	*e*Pg	**Pg**		**07 06 28.3**	**-0.5**
GOLH	**Golhisar**	**1.10**	**90**	*i* P	**Pn**		**07 06 34.2**	**+1.4**
GOLH				*i* S	**Sn**		**07 06 51.7**	**+3.4**
GOLH	**Golhisar**	**1.10**	**90**	P	**Pn**		**07 06 34.2**	**+1.4**
GOLH				S	**Sn**		**07 06 51.7**	**+3.4**
MANT	**Manisa**	**1.27**	**13**	*i* P	**Pn**		**07 06 33.7**	**-1.6**
MANT				*i* S	**Sn**		**07 06 53.5**	**+0.7**
MANT	**Manisa**	**1.27**	**13**	P	**Pn**		**07 06 33.7**	**-1.6**
MANT				S	**Sn**		**07 06 53.5**	**+0.7**
DGB	**˜zmir**	**1.31**	**308**	*i* P	**Pn**		**07 06 34.4**	**-1.1**
DGB				*i* S	**Sg**		**07 06 54.5**	**+1.8**
KULA	**Kula-Manisa**	**1.32**	**16**	*e*PN	**Pn**		**07 06 34.2**	**-1.6**
KULA	**Kula-Manisa**	**1.32**	**16**	*e*Pn	**Pn**		**07 06 34.2**	**-1.6**

MAN 18 07:10:34, 9.65N×124.59E, h28km, mb4.2, ML3.0, MS2.8, 2C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
TBP	**Tagbilaran**	**0.72**	**273**	*i* P	Pn		07 10 49.2	+0.8
TBP				*i* S	Sn		07 10 59.7	+1.1
CGP	**Cagayan de Oro**	**1.19**	**175**	*e*P	Pn		07 10 55.0	+0.2
CGP				*e*S	Sb		07 11 11.2	+0.3
SNPH	**Sibulan**	**1.37**	**257**	*i*P	Pn		07 10 53.3	-4.1
SNPH				*i* S	Sn		07 11 11.9	-2.7
RCP	**Roxas**	**2.63**	**316**	*e*P	Pn		07 11 16.2	+1.6

IDC ***18*** *07:21:28.0±1.9, 51.49N×179.61E, h0km, mb3.5/6, mb1 3.9/6, mb1mx3.6/34, mbtmp3.6/6, Error ellipse: s-maj=57.9km s-min=22.2km az=0.0*
NEIC ***18*** *07:21:29.8, 51.36N×179.33E, h22km, ML3.9(AEIC), After AEIC.*

ISC 18 07:21:34.6±1.7, 51.6N±0.4×179.42E±0.05, h52km, n29, σ1 9 76/28, mb3.5/6, Rat Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
GALAA	**Gareloi Lava P**	**1.13**	**83**	P	**Pn**		**07 21 51.6**	**-2.5**
GANE	**Gareloi Northe**	**1.14**	**80**	P	**Pn**		**07 21 51.6**	**-2.6**
GANE				S	**Sn**		**07 22 07.7**	**-

KSRS	**Korea Array**	**11.36**	**280**	LR	LR	07 40 26.3	
	comp=Z,74nm,21.9s,baz=135,slow=38						
KLR	**Kul'dur**	**14.98**	**333**	LR	LR	07 42 39.7	
	comp=Z,78nm,18.2s,baz=144,slow=38						
PETK	**Petropavlovsk-**	**20.14**	**28**	LR	LR	07 47 16.8	
	comp=Z,40nm,18.2s,baz=248,slow=42						
SONM	**Songino Array**	**28.63**	**305**	P	**P**	**07 39 25.8**	**+1.1**
	0.8nm,0.6s,baz=107,slow=9.8,SNR=4.9						
ZALV	**Zalesovo Beam**	**42.80**	**313**	P	**P**	**07 41 27.1**	**+1.3**
	0.9nm,0.5s,baz=80,slow=7.0,SNR=3.6						
MKAR	**Makanchi Array**	**44.95**	**303**	P	**P**	**07 41 44.2**	**+1.0**
	0.5nm,0.6s,baz=86,slow=10,SNR=7.1						
WRA	**Warramunga Arr**	**56.35**	**189**	P	P	07 43 17.9	+8.5
	0.3nm,0.4s,baz=3.1,slow=7.8,SNR=5.2						
ASAR	**Alice Springs**	**60.08**	**189**	P	P	07 43 41.9	+6.4
	0.3nm,0.7s,baz=20,slow=13,SNR=4.3						

*NNC **18** 08:14:00.3±3.6, 45.09N×75.41E, h0km, mb3.4, mpv3.0, Error ellipse: s-maj=29.3km s-min=14.9km az=155.0*
*SOME **18** 08:14:00.7, 41.00N×76.67E, h5km*
*KRNET **18** 08:14:00.1±0.1, 41.01N×76.65E, h25km, mb2.5*
ISC 18 08:13:59.4±1.5, 40.94N±0.07×76.70E±0.03, h10km, n31, σ1§51/61, 22C-12D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
KDJ	**Kajisay**	**1.24**	**17**	⇑	*eP*		**Pn**	**08 14 23.5**	**+0.5**
	baz=19								
KDJ				⇑	*eS*		**Sn**	**08 14 40.4**	**+0.5**
	baz=19								
ULHL	**Ulahol**	**1.35**	**345**	⇓	*iP*		**Pb**	**08 14 24.5**	**-0.4**
	baz=345								
ULHL				⇓	*iS*		**Sn**	**08 14 42.5**	**0.0**
	baz=345								
KZA	**Kyzart**	**1.57**	**317**	⇑	*iP*		**Pg**	**08 14 28.9**	**-0.7**
	baz=316								
KZA				⇑	*iS*		**Sg**	**08 14 50.5**	**+0.5**
	baz=316								
BOOM	**Boomskoye usch**	**1.65**	**340**	⇑	*eP*		**Pg**	**08 14 30.2**	**-0.8**
	baz=340								
BOOM				⇑	*eS*		**Sg**	**08 14 51.8**	**-0.6**
	baz=340								
ANVS	**Anan'yevo**	**1.98**	**21**	⇓	*eP*		**Pb**	**08 14 35.9**	**+0.3**
	baz=23								
ANVS				⇓	*eS*		**Sg**	**08 15 02.1**	**-0.9**
	baz=23								
PRZ	**Przheval'sk**	**2.00**	**39**	⇓	*eP*		**Pb**	**08 14 36.3**	**+0.3**
	baz=41								
PRZ				⇓	*eS*		**Sg**	**08 15 03.2**	**-0.5**
	baz=41								
ARLS	**Aral**	**2.01**	**298**	⇓	*eP*		**Pb**	**08 14 36.1**	**0.0**
	baz=297								
ARLS				⇓	*eS*		**Sg**	**08 15 02.5**	**-1.4**
	baz=297								
UCH	**Uchtor**	**2.08**	**309**	⇑	*iP*		**Pb**	**08 14 37.2**	**-0.3**
	baz=308								
UCH				⇑	*iS*		**Sg**	**08 15 05.0**	**-1.3**
	baz=308								
IZV	**Izvestkoviy**	**2.10**	**358**		*eP*		**Pg**	**08 14 38.9**	**-0.6**
	6.7nm,0.4s								
IZV					*eS*		**Sg**	**08 15 06.2**	**-0.6**
	28nm,0.8s								
TNSS	**Tian-Shan**	**2.10**	**5**		*eP*		**Pg**	**08 14 39.4**	**-0.4**
	10nm,0.8s								
TNSS					*eS*		**Sg**	**08 15 07.0**	**0.0**
	19nm,0.4s								
TKM2	**Tokmak 2**	**2.14**	**338**	⇑	Pn		**Pg**	**08 14 39.0**	**-1.5**
	3.9nm,0.4s								
TKM2				⇑	Sn		**Sg**	**08 15 07.5**	**-0.8**
	14nm,0.6s								
KST	**Kastek**	**2.17**	**346**		*eP*		**Pg**	**08 14 40.6**	**-0.4**
	1.5nm,0.1s								
KST					*eS*		**Sg**	**08 15 09.0**	**-0.1**
	6.6nm,0.3s								
MDOK	**Medeo**	**2.24**	**7**		*eP*		**Pg**	**08 14 41.6**	**-0.6**
	5.8nm,0.5s								
MDOK					*eS*		**Sg**	**08 15 11.1**	**-0.1**
	19nm,0.6s								
KOTS	**Kotyrbulak**	**2.31**	**8**		*eP*		**Pg**	**08 14 42.2**	**-1.5**
KOTS					*eS*		**Sg**	**08 15 11.9**	**-1.8**
AAK	**Ala-Archa**	**2.36**	**317**	⇑	*iP*		**Pb**	**08 14 41.1**	**-1.0**
	baz=316								
AAK				⇑	*iS*		**Sb**	**08 15 11.9**	**+0.5**
	baz=316								
AAK	**Ala-Archa**	**2.36**	**317**	⇑	Pn		**Pb**	**08 14 42.7**	**+0.6**
	11nm,0.6s								
AAK				⇑	Sn		**Sg**	**08 15 14.4**	**-1.0**
	11nm,0.6s								
DGS	**Degeres**	**2.40**	**344**		*eP*		**Pg**	**08 14 43.8**	**-1.6**
	12nm,0.6s								
DGS					*eS*		**Sg**	**08 15 14.5**	**-2.0**
	13nm,0.5s								
CHMS	**Chumysh**	**2.52**	**325**	⇑	*iP*		**Pb**	**08 14 43.3**	**-1.4**
	baz=325								
CHMS				⇑	*iS*		**Sb**	**08 15 15.3**	**-0.4**
	baz=325								
AML	**Almayashu**	**2.55**	**299**	⇑	*iP*		**Pb**	**08 14 44.2**	**-1.2**
	baz=298								
AML				⇑	*iS*		**Sb**	**08 15 17.1**	**+0.1**
	baz=298								
KTBS	**Karatobe**	**2.77**	**360**		*eP*		**Pb**	**08 14 50.3**	**+1.3**
KTBS					*eS*		**Sg**	**08 15 25.8**	**-2.5**
KURS	**Kuram**	**2.77**	**23**		*eP*		**Pb**	**08 14 50.4**	**+1.4**
	1.1nm,0.4s								
KURS					*eS*		**Sg**	**08 15 25.8**	**-2.6**
	5.5nm,0.6s								
UZB	**Uzynbulak**	**2.80**	**37**		*eP*		**Pg**	**08 14 51.7**	**-1.3**
	3.9nm,0.4s								
UZB					*eS*		**Sg**	**08 15 28.2**	**-1.2**
	6.3nm,0.5s								
CHKK	**Chushkaly**	**2.92**	**4**		*eP*		**Pg**	**08 14 53.5**	**-1.8**
	2.6nm,0.5s								
CHKK					*eS*		**Sg**	**08 15 31.2**	**-1.9**
	19nm,0.7s								
KPKS	**Kokpek**	**2.92**	**30**		*eP*		**Pg**	**08 14 53.8**	**-1.6**
	7.2nm,0.3s								
KPKS					*eS*		**Sg**	**08 15 31.7**	**-1.5**
	19nm,0.3s								
MRKS	**Merke**	**3.16**	**306**		*eP*		**Pg**	**08 14 57.6**	**-2.2**
	3.8nm,0.2s								
MRKS					*eS*		**Sg**	**08 15 38.3**	**-2.5**
	6.1nm,0.2s								
PDGK	**Podgornoye**	**3.16**	**40**	⇓	*eP*		**Pb**	**08 14 53.3**	**-2.4**
	baz=41								
PDGK				⇓	*eS*		**Sn**	**08 15 30.7**	**+3.5**
	baz=41								
PDGK	**Podgornoye**	**3.16**	**40**	⇓	Pn		**Pb**	**08 14 54.7**	**-1.1**
	1.8nm,0.5s								
PDGK				⇑	Sn		**Sb**	**08 15 36.9**	**+2.5**
	12nm,0.7s								
ARXS	**Arharly**	**3.38**	**14**		*eP*		**Pb**	**08 15 01.2**	**+1.9**
	1.7nm,0.3s								
ARXS					*eS*		**Sg**	**08 15 44.6**	**-3.2**
	5.9nm,0.6s								
MNAS	**Manas**	**3.50**	**298**	⇑	*eP*		**Pn**	**08 14 56.5**	**+2.6**
	baz=297								
MNAS				⇑	*iS*		**Sn**	**08 15 37.9**	**+2.4**
	baz=297								
MNAS	**Manas**	**3.50**	**298**	⇑	Pg		**Pb**	**08 15 01.8**	**+0.4**
	2.7nm,0.9s								
MNAS				⇓	Lg		Lg	08 15 48.0	
	3.7nm,0.7s								
KTMS	**Ketmen**	**3.69**	**46**		*eP*		**Pg**	**08 15 08.0**	**-2.1**
	0.6nm,0.2s								
KTMS					*eS*		**Sg**	**08 15 56.2**	**-1.7**
	1.1nm,0.5s								

*ISCJB **18** 08:16:56.2±0.5, 6.82N±0.04×73.10W±0.04, h156km±4km, Error ellipse: s-maj=8.2km s-min=3.6km az=38.3*
*FUNV **18** 08:16:57.9, 6.85N×73.13W, h170km, MW3.5*
*RSNC **18** 08:16:58.8±1.0, 6.78N×73.14W, h141km±5km, ML3.4*
ISC 18 08:16:56.0±1.4, 6.81N±0.04×73.11W±0.05, h160km±8km, n36, σ1§21/54, 6C-2D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
BTLC	**Betulia, Santa**	**0.19**	**305**		*iP*		**Pn**	**08 17 18.2**	**+0.4**
BTLC					*eS*		**Sn**	**08 17 32.7**	**-1.7**
BARC	**Barichara**	**0.23**	**198**		*iP*		**Pn**	**08 17 17.9**	**0.0**
BARC					*eS*		**Sn**	**08 17 32.7**	**-1.9**
BARC					*i*			08 17 35.3	
	comp=Z,895nm,0.3s								
GIRC	**Giron, Santand**	**0.28**	**343**		*iP*		**Pn**	**08 17 18.1**	**+0.2**
BRRC	**Barranca, Sant**	**0.66**	**296**	⇓	*iP*		**Pn**	**08 17 19.9**	**+0.5**
BRRC				⇓	*eS*		**Sn**	**08 17 36.5**	**-0.7**
BRRC					*i*			08 17 37.9	
	comp=Z,487nm,0.3s								
PAMC	**Pamplona, Colo**	**0.67**	**38**		*eP*		**Pn**	**08 17 20.9**	**+0.9**
PAMC					*eS*		**Sn**	**08 17 37.2**	**-1.1**
RUSC	**La Rusia**	**0.91**	**178**		*eP*		**Pn**	**08 17 21.9**	**+0.2**
RUSC					*eS*		**Sn**	**08 17 40.2**	**-1.1**
RUSC					*i*			08 17 42.0	
	comp=Z,470nm,0.3s								
GRMC	**Gramalote, San**	**0.95**	**19**		*iP*		**Pn**	**08 17 24.0**	**+2.5**
GRMC					*eS*		**Sn**	**08 17 43.2**	**+2.0**
GRMC					*i*			08 17 44.9	
	comp=Z,460nm,0.4s								
CBRI	**Barrientos, No**	**0.95**	**19**		*eP*		**Pn**	**08 17 22.7**	**+1.1**
CBRI					*eS*		**Sn**	**08 17 40.8**	**-0.5**
CBRI					*i*			08 17 43.1	
	comp=Z,495nm,0.3s								
CAPV	**Capacho**	**1.31**	**37**	⇓	*iP*		**Pn**	**08 17 26.2**	**+1.5**
CAPV					*eS*		**Sn**	**08 17 47.7**	**+0.9**
OCAC	**Ocana**	**1.43**	**352**		*eP*		**Pn**	**08 17 26.9**	**+1.0**
OCAC					*eS*		**Sn**	**08 17 48.4**	**-0.4**
OCAC					*i*			08 17 52.0	
	comp=Z,247nm,0.1s								
NORC	**Norcasia**	**2.14**	**235**		*eP*		**Pn**	**08 17 33.9**	**+0.5**
NORC					*eS*		**Sn**	**08 18 00.9**	**-1.4**
CHIC	**Chingaza**	**2.25**	**196**		*eP*		**Pn**	**08 17 35.9**	**+0.7**
CHIC					*eS*		**Sn**	**08 18 04.7**	**-0.6**
CHIC					*i*			08 18 08.9	
	comp=Z,141nm,0.4s								
ROSC	**El Rosal**	**2.30**	**212**		*eP*		**Pn**	**08 17 37.7**	**+2.1**
ROSC					*i*			08 18 15.5	
	comp=Z,165nm,0.2s								
HELC	**Santa Helena**	**2.48**	**256**		*eP*		**Pn**	**08 17 38.5**	**+0.8**
HELC					*eS*		**Sn**	**08 18 09.0**	**-0.9**
VIGV	**El Vigia**	**2.66**	**41**	⇑	*iP*		**Pn**	**08 17 40.7**	**+1.2**
VIGV					*eS*		**Sn**	**08 18 12.4**	**-1.0**
SOCV	**Socops**	**2.67**	**57**		*eP*		**Pn**	**08 17 40.7**	**+1.0**
SOCV					*eS*		**Sn**	**08 18 12.7**	**-1.0**
VILC	**Villavicencio,**	**2.74**	**192**		*eP*		**Pn**	**08 17 42.0**	**+1.3**
VILC					*eS*		**Sn**	**08 18 14.6**	**-0.9**
VILC					*i*			08 18 22.2	
	comp=Z,70nm,0.7s								
GUYC	**Guyana, Colomb**	**2.76**	**235**		*eP*		**Pn**	**08 17 43.2**	**+2.0**
GUYC					*eS*		**Sn**	**08 18 15.8**	**-0.4**
DBBC	**Dabeiba**	**3.08**	**274**		*eP*		**Pn**	**08 17 46.7**	**+1.8**
TOLC	**Tolima**	**3.12**	**225**		*eP*		**Pn**	**08 17 47.9**	**+2.3**
SDV	**Santo Domingo**	**3.21**	**50**		*eP*		**Pn**	**08 17 47.9**	**+1.3**
SDV					*i*			08 18 29.9	
	comp=Z,134nm,0.6s								
SDV	**Santo Domingo**	**3.21**	**50**		*eP*		**Pn**	**08 17 47.8**	**+1.3**
PRAC	**Prado**	**3.55**	**210**		*eP*		**Pn**	**08 17 51.3**	**+0.6**
PRAC					*eS*		**Sn**	**08 18 34.1**	**+0.7**
ELOV	**Elorza**	**3.61**	**87**		*eP*		**Pn**	**08 17 53.4**	**+2.0**
VIRV	**Villa del Rosa**	**3.73**	**11**	⇑	*iP*		**Pn**	**08 17 53.2**	**+0.1**
VIRV					*eS*		**Sn**	**08 18 35.1**	**-2.5**
GUVC	**San Jose del G**	**4.26**	**173**		*eP*		**Pn**	**08 18 01.2**	**+1.2**
SANV	**Sanarito**	**4.44**	**53**		*eP*		**Pn**	**08 18 02.6**	**+0.3**
CURV	**Curarigua**	**4.46**	**44**	⇑	*eP*		**Pn**	**08 18 03.0**	**+0.4**
DABV	**Dabajuro**	**4.76**	**31**		*eP*		**Pn**	**08 18 07.1**	**+0.6**
TEPV	**Terepaima**	**4.99**	**51**	⇑	*iP*		**Pn**	**08 18 09.8**	**+0.4**
SIQV	**Siquisique**	**5.02**	**40**	⇑	*iP*		**Pn**	**08 18 09.3**	**-0.6**
BAUV	**El Baul**	**5.45**	**67**		*eP*		**Pn**	**08 18 15.0**	**-0.6**
MAPV	**Macapo**	**5.50**	**57**	⇑	*iP*		**Pn**	**08 18 16.4**	**+0.3**
MONV	**Montecano**	**5.98**	**31**		*eP*		**Pn**	**08 18 22.2**	**-0.3**
TURV	**Turiamo**	**6.34**	**55**		*eP*		**Pn**	**08 18 27.5**	**+0.2**
CUPV	**Cepira**	**7.93**	**66**		*eP*		**Pn**	**08 18 48.0**	**-0.6**

*NIED **18** 08:21:00, 38.20N×141.70E, h50km, Mw3.8 Best double couple: M0=5.64000×10^14 NP1:φs=9.00000°, δ=30.00000°, λ=85.00000°. NP2:φs=194.00000°, δ=61.00000°, λ=93.00000°.*
*ISCJB **18** 08:21:12.3±0.7, 38.14N±0.03×141.80E±0.07, h62km±5km, mb3.8/11, Error ellipse: s-maj=9.8km s-min=4.9km az=20.2*
*IDC **18** 08:21:12.8±0.9, 38.08N×141.68E, h50km±7km, mb3.5/11, mb1 3.8/13, mb1mx3.5/53, mbtmp3.8/13, Error ellipse: s-maj=21.8km s-min=12.1km az=90.0*
*JMA **18** 08:21:13.5, 38.15N×141.73E, h55km±1km, M3.8*
JMA Felt II J1.
ISC 18 08:21:12.5±0.8, 38.12N±0.04×141.86E±0.07, h47km±7km, n35, σ0§88/49, mb3.8/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
JIO	**Ouri**	**0.53**	**310**			P	**Pn**	**08 21 24.4**	**+0.6**
JIO						S	**Sn**	**08 21 31.9**	**-0.1**
JMM	**Marumori**	**0.88**	**254**			P	**Pn**	**08 21 28.4**	**-0.1**
JMM						S	**Sn**	**08 21 39.9**	**-0.3**
JOU	**Okura**	**0.97**	**285**			P	**Pn**	**08 21 29.9**	**+0.1**
JOU						S	**Sn**	**08 21 41.8**	**-0.7**
JMK	**Ichinoseki**	**0.97**	**329**			P	**Pn**	**08 21 30.2**	**+0.4**
JMK						S	**Sn**	**08 21 42.2**	**-0.3**
OFUJ	**Ofunato**	**0.97**	**351**			P	**Pn**	**08 21 30.4**	**+0.6**
OFUJ						S	**Sn**	**08 21 42.4**	**-0.1**
JFK	**Kawauchi**	**1.08**	**227**			P	**Pn**	**08 21 31.7**	**+0.4**
JFK						S	**Sn**	**08 21 45.4**	**+0.3**
JFT	**Otama**	**1.35**	**244**			P	**Pn**	**08 21 35.5**	**+0.7**
JFT						S	**Sn**	**08 21 51.6**	**0.0**
JYS	**Shirataka**	**1.42**	**275**			P	**Pn**	**08 21 36.0**	**+0.2**
JYS						S	**Sn**	**08 21 52.7**	**-0.6**
JYK	**Kaneyama**	**1.42**	**305**			P	**Pn**	**08 21 35.9**	**0.0**
JYK						S	**Sn**	**08 21 53.0**	**-0.5**
JOM	**Ohasama**	**1.43**	**342**			P	**Pn**	**08 21 36.7**	**+0.8**
JOM						S	**Sn**	**08 21 53.6**	**+0.1**
JRG	**Rokugo**	**1.60**	**324**			P	**Pn**	**08 21 39.0**	**+0.7**
JRG						S	**Sn**	**08 21 58.9**	**+1.2**
JYA	**Atsumi**	**1.75**	**286**			P	**Pn**	**08 21 40.5**	**+0.1**
JYA						*eS*	**Sn**	**08 22 01.5**	**-0.1**
JFY	**Yanaizu**	**1.85**	**248**			P	**Pn**	**08 21 42.5**	**+0.8**
JFY						S	**Sn**	**08 22 04.2**	**+0.3**
MJAR	**Matsushiro Arr**	**3.31**	**243**			P	**Pn**	**08 22 03.6**	**+1.9**
	5.0nm,0.3s,baz=65,slow=11,SNR=22								
MAT	**Matsushiro**	**3.31**	**243**			P	**Pn**	**08 22 03.6**	**+1.8**
MAT						S	**Sn**	**08 22 42.9**	**+3.1**
JHJ	**Hachijo jima 2**	**5.26**	**199**			P	**Pn**	**08 22 29.5**	**+0.9**
	12nm,0.3s,baz=347,slow=19,SNR=4.3								
JHJ						S	**Sn**	**08 23 25.6**	**-2.4**
	14nm,0.3s,baz=68,slow=22,SNR=2.9								
USRK	**Ussuriysk Ar.**	**9.61**	**312**			P	**Pn**	**08 23 28.7**	**+0.6**
	0.4nm,0.3s,baz=126,slow=14,SNR=5.1								
H11N2	**WAKE ISLAND Hy**	**28.42**	**123**			T	T	08 57 24.7	
	baz=316,slow=75,SNR=243								
H11N1	**WAKE ISLAND Hy**	**28.43**	**123**			T	T	08 57 23.4	
	baz=316,slow=75,SNR=275								
H11N3	**WAKE ISLAND Hy**	**28.44**	**123**			T	T	08 57 27.1	
	baz=316,slow=75,SNR=229								
H11S1	**WAKE ISLAND Hy**	**29.17**	**125**			T	T	08 58 20.9	
	baz=318,slow=76,SNR=41								
H11S3	**WAKE ISLAND Hy**	**29.17**	**125**			T	T	08 58 19.9	
	baz=318,slow=76,SNR=51								
H11S2	**WAKE ISLAND Hy**	**29.18**	**125**			T	T	08 58 20.5	
	baz=318,slow=76,SNR=56								
ZALV	**Zalesovo Beam**	**41.46**	**311**			P	**P**	**08 28 53.0**	**-1.5**
	0.6nm,0.4s,baz=62,slow=7.9,SNR=2.6								
ZALV						pP	**pP**	**08 29 07.1**	**0.0**
	0.7nm,0.4s,baz=76,slow=6.1,SNR=1.9								
MKAR	**Makanchi Array**	**43.85**	**301**			P	**P**	**08 29 13.6**	**-0.4**
	0.3nm,0.3s,baz=85,slow=11,SNR=5.5								
MKAR						pP	**pP**	**08 29 26.8**	**0.0**
	0.8nm,0.6s,baz=84,slow=10,SNR=3.6								
KURBB	**Kurchatov Arra**	**45.62**	**307**			P	**P**	**08 29 27.1**	**-0.9**
	1.2nm,0.4s,baz=82,slow=8.2,SNR=7.3								
KURBB						pP	**pP**	**08 29 40.5**	**-0.3**
	2.4nm,0.5s,baz=81,slow=8.1,SNR=7.7								
ILAR	**Eielson Array**	**48.39**	**33**			P	**P**	**08 29 50.0**	**+0.5**
	0.5nm,0.6s,baz=275,slow=6.0,SNR=7.8								
BVAR	**Borovoye Array**	**50.11**	**312**			P	**P**	**08 30 02.1**	**-0.6**
	0.4nm,0.6s,baz=73,slow=6.8,SNR=3.0								
BVAR						pP	**pP**	**08 30 15.7**	**+0.1**
	0.5nm,0.5s,baz=69,slow=7.9,SNR=2.8								
WRA	**Warramunga Ar**	**58.18**	**189**			P	**P**	**08 31 01.1**	**-0.6**
	1.2nm,0.5s,baz=5.7,slow=6.9,SNR=25								
SPITS	**Spitsbergen Ar**	**59.53**	**349**			P	**P**	**08 31 09.9**	**-0.6**
	0.6nm,0.4s,baz=72,slow=4.7,SNR=3.7								
ASAR	**Alice Springs**	**61.91**	**188**			P	**P**	**08 31 27.1**	**-0.1**
	0.7nm,0.6s,baz=355,slow=4.2,SNR=14								
AKASG	**Malin Array Be**	**73.66**	**322**			P	**P**	**08 32 40.2**	**-0.7**
	0.7nm,0.4s,baz=40,slow=5.7,SNR=6.2								
AKASG						pP	**pP**	**08 32 54.2**	**-0.2**
	0.2nm,0.2s,baz=38,slow=25,SNR=1.4								
PDAR	**Pinedale Array**	**76.66**	**46**			P	**P**	**08 32 59.2**	**+0.6**
	0.4nm,0.6s,baz=264,slow=3.0,SNR=5.1								
TXAR	**Lajitas Array**	**89.18**	**53**			P	**P**	**08 34 03.9**	**+0.4**
	0.3nm,0.6s,baz=292,slow=3.3,SNR=5.6								
LPAZ	**La Paz**	**145.84**	**59**			PKPbc	**PKPbc**	**08 40 48.1**	**+0.4**
	0.5nm,0.5s,baz=20,slow=3.0,SNR=4.5								

*IDC **18** 08:24:16.8±2.1, 30.26S×177.62W, h64km±13km, mb4.2/5, mb1 4.4/6, mb1mx3.9/33, mbtmp4.6/6, Error ellipse: s-maj=31.4km s-min=14.2km az=113.0*
*NEIC **18** 08:24:17.5±1.3, 30.24S×177.76W, h67km±10km, mb4.9/8, Error ellipse: s-maj=21.7km s-min=10.8km az=100.0*
ISC 18 08:24:17.0±0.8, 30.28S±0.06×177.6W±0.1, h100km, n73, σ3§46/66, mb4.5/10, 1D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
RAO	**Raoul Island**	**1.06**	**343**			P	**Pn**	**08 24 36.7**	**-1.4**
	8µm,0.3s,baz=102,slow=6.1,SNR=443								
RAO						S	**Sn**	**08 24 49.5**	**-4.5**
	16µm,0.3s,baz=259,slow=19,SNR=20								
MXZ	**Matakaoa Point**	**8.04**	**204**			PN	**Pn**	**08 26 10.6**	**-0.3**
MXZ						SN	**Sn**	**08 27 44.0**	**+4.0**
WMGZ	**Waiomatatini S**	**8.23**	**203**		*eP*	PN	**Pn**	**08 26 13.8**	**+0.3**
HAZ	**Te Kaha**	**8.40**	**206**		*eP*	PN	**Pn**	**08 26 15.5**	**-0.3**
PUZ	**Puketiti**	**8.51**	**203**		*eP*	PN	**Pn**	**08 26 16.4**	**-1.0**
KUZ	**Kuaotunu**	**8.54**	**219**		*eP*	PN	**Pn**	**08 26 21.1**	**+3.3**
RUGZ	**Raukumara Rang**	**8.62**	**206**		*eP*	PN	**Pn**	**08 26 18.4**	**-0.6**
TWGZ	**Tauwhareparae**	**8.70**	**204**		*eP*	PN	**Pn**	**08 26 19.2**	**-0.8**
CNGZ	**Carnagh Station**	**8.90**	**202**		*eP*	PN	**Pn**	**08 26 22.2**	**-0.4**
OUZ	**Omahuta**	**8.93**	**234**			PN	Pn	08 26 29.7	+6.7
TKGZ	**Te Karaka**	**8.98**	**204**		*eP*	PN	**Pn**	**08 26 22.2**	**-1.5**
MWZ	**Matawai**	**9.00**	**205**			PN	**Pn**	**08 26 22.6**	**-1.5**
MWZ						*eS*	**Sn**	**08 28 06.2**	**+2.6**
URZ	**Urewera**	**9.10**	**208**			P	**Pn**	**08 26 24.2**	**-1.1**
	7.8nm,0.3s,baz=1.4,slow=18,SNR=16								
URZ						S	**Sn**	**08 28 06.5**	**+0.6**
	15nm,0.3s,baz=210,slow=23,SNR=11								
URZ	**Urewera**	**9.10**	**208**		*eP*	n	**Pn**	**08 26 24.6**	**-0.7**
	29nm,0.3s								
URZ					*eS*	n	**Sn**	**08 28 01.3**	**-4.6**
URZ	**Urewera**	**9.10**	**208**			PN	**Pn**	**08 26 23.9**	**-1.4**
URZ					*eS*	N	**Sn**	**08 28 06.3**	**+0.4**
RAGZ	**Rawiri**	**9.19**	**205**		*eP*	PN	**Pn**	**08 26 24.9**	**-1.7**
RIGZ	**Rimuhau**	**9.25**	**203**		*eP*	PN	**Pn**	**08 26 25.3**	**-2.1**
MUGZ	**Murupara**	**9.42**	**208**		*eP*	PN	**Pn**	**08 26 28.3**	**-1.5**
SNGZ	**Shannon Statio**	**9.47**	**205**		*eP*	PN	**Pn**	**08 26 28.8**	**-1.6**
NMHZ	**Naumai**	**9.94**	**206**		*eP*	PN	**Pn**	**08 26 34.6**	**-2.2**
KWHZ	**Kaweka Forest**	**10.37**	**207**			PN	**Pn**	**08 26 39.8**	**-2.9**
KAHZ	**Kahuranaki**	**10.53**	**204**		*eP*	PN	**Pn**	**08 26 42.0**	**-2.9**
PXZ	**Pawanui**	**10.74**	**204**		*eP*	PN	**Pn**	**08 26 44.0**	**-3.7**
TSZ	**Takapari Road**	**11.10**	**207**		*eP*	PN	Pn	08 26 47.6	-5.0
BFZ	**Birch Farm**	**11.54**	**204**		*eP*	PN	**Pn**	**08 26 53.7**	**-4.7**
TIWZ	**Tintock**	**11.75**	**205**		*eP*	PN	Pn	08 26 56.0	-5.2
MRZ	**Mangatainoka R**	**11.77**	**206**		*eP*	PN	Pn	08 26 55.8	-5.6
HOWZ	**Holdsworth Sta**	**12.00**	**206**		*eP*	PN	Pn	08 26 59.4	-5.1
MSVF	**Nonsavu**	**13.11**	**341**		*eP*	n	**Pn**	**08 27 19.2**	**-0.2**
QRZ	**Quartz Range**	**13.25**	**215**		*eP*	PN	**Pn**	**08 27 16.3**	**-4.7**
CTZ	**Chatham Island**	**13.46**	**177**		*eP*	N	**P**	**08 27 28.6**	**-0.8**
KHZ	**Kahutara**	**14.07**	**208**		*eP*	n	**Pn**	**08 27 27.6**	**-4.0**
	163nm,0.4s								
KHZ	**Kahutara**	**14.07**	**208**		*eP*	n	Pn	08 27 24.3	-7.3
DSZ	**Denniston Nort**	**14.30**	**214**		*eP*	N	**Pn**	**08 27 32.1**	**-2.7**
INZ	**Inchbonnie**	**15.23**	**212**		*e

OKAK	**Okmok**	**2.67**	**44**	P	**Pn**	**08 27 42.0**	**+1.7**
OKTU	**Okmok Mt. Tuli**	**2.69**	**50**	P	**Pb**	**08 27 44.6**	**-2.0**
GSMY	**Great Sitkin M**	**2.85**	**278**	P	**Pn**	**08 27 44.3**	**+1.4**
GSTD	**Great Sitkin T**	**2.90**	**279**	P	**Pn**	**08 27 44.9**	**+1.2**
GSTD				S	**Sn**	**08 28 17.4**	**-0.3**
GSCK	**Great Sitkin C**	**2.91**	**278**	P	**Pn**	**08 27 44.9**	**+1.2**
ETKA	**Kagalaska Isla**	**3.06**	**275**	P	**Pn**	**08 27 47.0**	**+1.3**
ADAG	**Mount Adagdak**	**3.18**	**277**	P	**Pn**	**08 27 49.5**	**+2.1**
MSOM	**Makushin Julie**	**3.47**	**51**	P	**Pn**	**08 27 54.1**	**+2.8**
KIKV	**Kanaga Island**	**3.53**	**275**	P	**Pn**	**08 27 54.1**	**+1.9**
MTBL	**Makushin Table**	**3.69**	**50**	P	**Pn**	**08 27 57.2**	**+2.8**
UNV	**Unalaska Valle**	**3.71**	**53**	P	**Pn**	**08 27 57.4**	**+2.8**
UNV				S	**Sn**	**08 28 38.8**	**+1.5**
TAFP	**Tanaga Falls P**	**4.03**	**275**	P	**Pn**	**08 28 00.7**	**+1.5**
SPIA	**Saint Paul Isl**	**5.52**	**7**	P	**Pn**	**08 28 21.3**	**+1.8**
ILAR	**Eielson Array**	**18.23**	**35**	P	**Pn**	**08 31 08.8**	**-1.2**
	0.2nm,0.3s,baz=221,slow=9.5,SNR=11						
EGAK	**Eagle**	**20.37**	**38**	*eP*	**P**	**08 31 32.6**	**-0.7**
	2.6nm,0.6s						
DLBC	**Dease Lake**	**24.35**	**58**	P	**P**	**08 32 17.2**	**+2.6**
	2.4nm,0.5s,baz=276,slow=7.1,SNR=12						
INK	**Inuvik**	**24.61**	**33**	P	**P**	**08 32 15.7**	**-1.1**
	1.1nm,0.4s,baz=249,slow=9.3,SNR=7.1						
YKA	**Yellowknife Ar**	**31.66**	**48**	P	**P**	**08 33 19.0**	**-0.7**
	0.6nm,0.8s,baz=276,slow=7.4,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**36.14**	**216**	T	T	09 12 32.6	
	baz=22,slow=76,SNR=3.5						
H11N3	**WAKE ISLAND Hy**	**36.15**	**216**	T	T	09 12 32.6	
	baz=22,slow=76,SNR=5.3						
H11N1	**WAKE ISLAND Hy**	**36.16**	**216**	T	T	09 12 32.8	
	baz=22,slow=76,SNR=6.0						
H11S1	**WAKE ISLAND Hy**	**37.33**	**216**	T	T	09 14 09.2	
	baz=24,slow=74,SNR=3.7						
H11S2	**WAKE ISLAND Hy**	**37.35**	**216**	T	T	09 14 08.6	
	baz=24,slow=74,SNR=4.5						
H11S3	**WAKE ISLAND Hy**	**37.35**	**216**	T	T	09 14 09.6	
	baz=24						
TXAR	**Lajitas Array**	**54.08**	**87**	pP	pP	08 36 35.6	+5.8
	0.1nm,0.4s,baz=298,slow=6.2,SNR=2.4						
ASAR	**Alice Springs**	**88.97**	**228**	P	**P**	**08 39 50.6**	**-0.6**
	0.4nm,0.5s,baz=26,slow=5.0,SNR=11						

IDC 18 08:30:13.6±2.8, 55°.43N×86°.02E, h0km, mb1 3.1/3, mb1mx3.1/50, mbtmp3.1/3, ML2.9/3, Error ellipse: s-maj=24.8km s-min=15.8km az=52.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.64**	**206**	*i*		08 41 25.9	
	baz=23,slow=317,SNR=17						
ZALV	**Zalesovo Beam**	**1.64**	**206**	Pg	Pn	08 30 41.5	-2.1
	7.4nm,0.3s,baz=27,slow=16,SNR=29						
ZALV				Lg	Lg	08 31 07.3	
	1.8nm,0.3s,baz=27,slow=27,SNR=3.7						
KURBB	**Kurchatov Arra**	**6.60**	**226**	Pn	Pn	08 31 51.6	-0.1
	0.1nm,0.3s,baz=45,slow=14,SNR=6.2						
KURBB				Lg	Lg	08 33 45.4	
	0.1nm,0.3s,baz=43,slow=31,SNR=7.4						
MKAR	**Makanchi Array**	**8.96**	**197**	Pn	Pn	08 32 23.8	-0.3
	0.1nm,0.3s,baz=7.7,slow=12,SNR=3.0						
MKAR				Lg	Lg	08 34 56.8	
	0.1nm,0.3s,baz=25,slow=28,SNR=5.5						
BVAR	**Borovoye Array**	**9.46**	**262**	Pn	Pn	08 32 31.1	+0.1
	0.5nm,0.3s,baz=66,slow=14,SNR=6.6						
BVAR				Sn	Sn	08 34 12.1	-5.9
	0.4nm,0.3s,baz=64,slow=23,SNR=6.0						

SJA 18 08:30:53.9±2.9, 24°.17S×65°.95W, h14km±41km, ML3.3, MW3.7, Salta Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**0.69**	**144**	*e*P	Pn	08 31 09.1	-0.3
	baz=313,slow=6.9						
SLA				*e*S	Sg	08 31 16.8	+0.3
HJA	**Humahuaca**	**1.07**	**28**	*e*P	Pn	08 31 15.5	+0.6
HJA				*e*S	Sn	08 31 30.4	+0.7
FSA	**Cafayete**	**1.94**	**181**	*e*P	Pg	08 31 32.1	+0.9
FSA				*e*S	Sg	08 32 01.1	+4.7
FSA				IAML		08 32 05.2	
	comp=Z,265nm,0.2s						
AHML	**Horco Molle**	**2.67**	**168**	*e*P	Pn	08 31 38.5	+2.0
AHML				*e*S	Sb	08 32 11.8	-2.3
CYA	**Choya**	**4.26**	**178**	*e*P	Pn	08 32 02.1	+3.7
CYA	**Choya**	**4.26**	**178**	*e*P	Pg	08 32 17.4	+1.8
CYA				*e*S	Sg	08 33 09.5	-1.3
CYA				IAML		08 33 18.6	
	comp=Z,42nm,0.4s						
VCA	**Vinchina**	**4.98**	**203**	*e*P	Pg	08 32 35.9	+6.6
VCA				*e*S	Sg	08 33 44.0	+10
VCA				IAML		08 33 51.3	
	comp=Z,32nm,0.6s						
ACHE	**Chepes**	**7.00**	**185**	*e*P	Pn	08 32 44.2	+8.0

ISK ***18*** *08:35:09.8, 40°.72N×30°.17E, h6km, MD2.4*
ISCJB ***18*** *08:35:10.2±0.5, 40°.70N±0°.04×30°.14E±0°.03, h5km±6km, Error ellipse: s-maj=6.8km s-min=4.4km az=0.0*
DDA ***18*** *08:35:10.0, 40°.67N×30°.14E, h7km, Md2.6*
CSEM ***18*** *08:35:10.4±0.1, 40°.71N×30°.15E, h5km, MD2.4, Error ellipse: s-maj=3.4km s-min=2.6km az=7.0*
ISC 18 08:35:10.4±1.0, 40°.71N±0°.03×30°.15E±0°.02, h11km±9km, n45, σ0°55/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPNC	**Sapanca-Adapaz**	**0.12**	**103**	*e*PG	**Pg**	**08 35 12.9**	**-0.5**
SPNC	**Sapanca-Adapaz**	**0.12**	**103**	*e*Pg	**Pg**	**08 35 12.9**	**-0.5**
KAND	**Kocaeli-Kandir**	**0.38**	**4**	*i* P	**Pb**	**08 35 19.0**	**-0.2**
KAND	**Kocaeli-Kandir**	**0.38**	**4**	P	**Pb**	**08 35 19.0**	**-0.2**
HRT	**Hereke**	**0.39**	**286**	*e*PG	**Pg**	**08 35 18.2**	**+0.2**
HRT				*e*SG	**Sg**	**08 35 23.9**	**+0.8**
HRT	**Hereke**	**0.39**	**286**	*e*Pg	**Pg**	**08 35 18.2**	**+0.2**
HRT				*e*Sg	**Sg**	**08 35 23.9**	**+0.8**
GULT	**Gulveren**	**0.39**	**136**	*e*PG	**Pg**	**08 35 17.9**	**-0.3**
GULT	**Gulveren**	**0.39**	**136**	*e*Pg	**Pg**	**08 35 17.9**	**-0.3**
ADVT	**Abdulvahap**	**0.42**	**229**	*e*PG	**Pg**	**08 35 18.4**	**-0.3**
ADVT	**Abdulvahap**	**0.42**	**229**	*e*Pg	**Pg**	**08 35 18.4**	**-0.3**
SAHE	**Sakarya_HENDEK**	**0.55**	**75**	*i* P	**Pg**	**08 35 21.0**	**-0.1**
SAHE				*i* S	**Sb**	**08 35 29.6**	**-0.4**
SAHE	**Sakarya_HENDEK**	**0.55**	**75**	P	**Pg**	**08 35 21.0**	**-0.1**
SAHE				S	**Sb**	**08 35 29.6**	**-0.4**
CAVI	**Cavuskoy**	**0.56**	**205**	*e*PG	**Pg**	**08 35 21.2**	**-0.2**
CAVI	**Cavuskoy**	**0.56**	**205**	*e*Pg	**Pg**	**08 35 21.2**	**-0.2**
SILT	**Sile**	**0.58**	**319**	*e*PG	**Pg**	**08 35 21.6**	**-0.2**
SILT	**Sile**	**0.58**	**319**	*e*Pg	**Pg**	**08 35 21.6**	**-0.2**
IZI	**Iznik**	**0.64**	**234**	*e*PG	**Pg**	**08 35 22.8**	**-0.1**
IZI	**Iznik**	**0.64**	**234**	*e*Pg	**Pg**	**08 35 22.8**	**-0.1**
IGD	**Bursa**	**0.85**	**239**	*i* P	**Pg**	**08 35 25.4**	**-1.5**
BORA	**Eskisehir**	**0.86**	**165**	*i* P	**Pg**	**08 35 26.4**	**-0.6**
BORA	**Eskisehir**	**0.86**	**165**	P	**Pg**	**08 35 26.4**	**-0.6**
ISK	**Istanbul-Kandi**	**0.90**	**293**	*e*PG	**Pg**	**08 35 26.9**	**-0.8**
ISK	**Istanbul-Kandi**	**0.90**	**293**	*e*Pg	**Pg**	**08 35 26.9**	**-0.8**
ARMT	**Armutlu**	**0.99**	**262**	*e*PG	**Pg**	**08 35 28.6**	**-1.0**
ARMT	**Armutlu**	**0.99**	**262**	*e*Pg	**Pg**	**08 35 28.6**	**-1.0**
KLYT	**Kilyos**	**1.00**	**303**	*e*PG	**Pb**	**08 35 29.9**	**+0.2**
KLYT	**Kilyos**	**1.00**	**303**	*e*Pg	**Pb**	**08 35 29.9**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.03**	**251**	*e*PG	**Pb**	**08 35 30.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.03**	**251**	*e*Pg	**Pb**	**08 35 30.2**	**0.0**
KDZE	**Karadeniz Ereo**	**1.14**	**58**	*e*PN	**Pg**	**08 35 31.8**	**-0.6**
KDZE	**Karadeniz Ereo**	**1.14**	**58**	*e*Pn	**Pg**	**08 35 31.8**	**-0.6**
ESKT	**Eskisehir**	**1.31**	**156**	*e*PN	**Pg**	**08 35 35.8**	**+0.3**
ESKT	**Eskisehir**	**1.31**	**156**	*e*Pn	**Pg**	**08 35 35.8**	**+0.3**
CTKS	**Kestanelik-??a**	**1.35**	**293**	*e*PN	**Pb**	**08 35 35.7**	**-0.1**
CTKS	**Kestanelik-??a**	**1.35**	**293**	*e*Pn	**Pb**	**08 35 35.7**	**-0.1**
TVSB	**Tavsanli**	**1.37**	**203**	*e*PN	**Pg**	**08 35 36.4**	**-0.3**
TVSB	**Tavsanli**	**1.37**	**203**	*e*Pn	**Pg**	**08 35 36.4**	**-0.3**
BCAM	**Yenicaga**	**1.46**	**85**	*i* P	**Pb**	**08 35 37.3**	**-0.3**
BCAM	**Yenicaga**	**1.46**	**85**	P	**Pb**	**08 35 37.3**	**-0.3**
GDZ	**Gediz**	**1.70**	**198**	*i* P	**Pb**	**08 35 41.7**	**-0.1**
GDZ	**Gediz**	**1.70**	**198**	P	**Pb**	**08 35 41.7**	**-0.1**
EDC	**Edincik**	**1.78**	**259**	*e*PN	**Pn**	**08 35 41.9**	**+0.7**
EDC	**Edincik**	**1.78**	**259**	*e*Pn	**Pn**	**08 35 41.9**	**+0.7**
MRMT	**Marmara Adasi**	**1.95**	**268**	*e*PN	**Pb**	**08 35 44.9**	**-1.1**
MRMT	**Marmara Adasi**	**1.95**	**268**	*e*Pn	**Pb**	**08 35 44.9**	**-1.1**

IDC 18 08:35:51.7±9.3, 24°.44S×179°.34E, h650km±117km, mb3.0/5, mb1 3.2/5, mb1mx2.8/33, mbtmp4.1/5, Error ellipse: s-maj=88.4km s-min=56.6km az=163.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**30.88**	**271**	P	P	08 41 19.4	+0.8
	3.9nm,0.4s,baz=95,slow=12,SNR=9.5						
STKA	**Stephens Creek**	**33.96**	**249**	P	P	08 41 43.5	-0.8
	1.1nm,0.4s,baz=96,slow=10,SNR=8.0						
ASAR	**Alice Springs**	**41.35**	**261**	P	P	08 42 44.3	+0.2
	0.5nm,0.3s,baz=91,slow=7.6,SNR=26						
WRA	**Warramunga Arr**	**41.77**	**267**	P	P	08 42 47.4	+0.1
	2.1nm,0.5s,baz=99,slow=7.2,SNR=56						
TXAR	**Lajitas Array**	**91.23**	**58**	P	P	08 47 50.1	+0.1
	0.3nm,0.8s,baz=208,slow=3.6,SNR=4.6						
HFS	**Hagfors**	**142.96**	**348**	PKP	PKPdf	08 54 12.1	-0.6
	0.8nm,0.4s,baz=22,slow=1.6,SNR=7.6						

IDC 18 08:37:53.8±2.3, 5°.04S×152°.79E, h0km, mb3.5/3, mb1 3.9/3, mb1mx3.5/37, mbtmp3.6/3, MS2.9/1, Ms1 2.9/1, ms1mx2.5/25, Error ellipse: s-maj=175.6km s-min=27.6km az=127.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**8.33**	**122**	LR	LR	08 43 36.4	
	comp=Z,76nm,18.2s,baz=177,slow=41						
WRA	**Warramunga Arr**	**23.28**	**229**	P	P	08 43 03.2	-0.2
	0.4nm,0.6s,baz=54,slow=9.8,SNR=3.4						
ASAR	**Alice Springs**	**25.97**	**223**	P	P	08 43 28.4	+0.1
	0.4nm,0.6s,baz=58,slow=8.9,SNR=6.7						
ILAR	**Eielson Array**	**82.38**	**22**	P	P	08 50 17.6	+0.2
	1.2nm,0.7s,baz=246,slow=5.9,SNR=13						
TORD	**Torodi Ar. Bea**	**150.37**	**288**	PKPbc	PKPbc	08 57 47.7	-0.6
	0.4nm,0.4s,baz=63,slow=3.1,SNR=3.5						

TAP ***18*** *08:44:48.0, 24°.53N×121°.98E, h64km, ML2.9, D*
ISCJB ***18*** *08:44:48.3±0.6, 24°.54N±0°.04×122°.06E±0°.03, h57km±7km, Error ellipse: s-maj=7.3km s-min=3.9km az=160.0*
JMA ***18*** *08:44:48.0±0.1, 24°.49N×122°.02E, h59km*
ISC 18 08:44:48.6±1.4, 24°.54N±0°.05×122°.05E±0°.03, h57km±10km, n23, σ0°86/43, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.20**	**290**	P	**Pn**	**08 44 57.8**	**+0.2**
	baz=303						
TWC				S	**Sn**	**08 45 05.0**	**+0.8**
	baz=303						
ENA	**Nanau**	**0.30**	**248**	*i* P	**Pn**	**08 44 58.4**	**0.0**
	baz=243						
ENA				*i* S	**Sn**	**08 45 06.1**	**+0.6**
	baz=243						
TWE	**Neicheng**	**0.39**	**297**	*e*P	**Pn**	**08 44 59.0**	**-0.2**
	baz=303						
TWE				*e*S	**Sn**	**08 45 07.8**	**+0.9**
	baz=303						
ENTT	**Nioudou**	**0.45**	**283**	P	**Pn**	**08 44 59.9**	**0.0**
	baz=285						
ENTT				S	**Sn**	**08 45 08.5**	**+0.6**
	baz=285						
TWB1	**Santiao Chiao**	**0.47**	**353**	*e*P	**Pn**	**08 44 59.8**	**-0.2**
	baz=1.0						
TWB1				*e*S	**Sn**	**08 45 07.3**	**-0.9**
	baz=1.0						
NWF	**Wu-fen Shan**	**0.58**	**335**	*e*P	**Pn**	**08 45 01.3**	**-0.1**
	baz=341						
NWF				*e*S	**Sn**	**08 45 10.4**	**-0.2**
	baz=341						
TWA	**Mucha**	**0.61**	**316**	*e*P	**Pn**	**08 45 00.8**	**-0.8**
	baz=321						
TWA				*e*S	**Sn**	**08 45 12.2**	**+1.2**
	baz=321						
TWD	**Chiawan**	**0.62**	**222**	*e*P	**Pn**	**08 45 01.1**	**-0.5**
	baz=217						
TWD				*e*S	**Sn**	**08 45 10.9**	**-0.2**
	baz=217						
NNS	**Nan Shan**	**0.62**	**261**	*e*P	**Pn**	**08 45 01.5**	**-0.4**
	baz=260						
NNS				*e*S	**Sn**	**08 45 10.7**	**-0.8**
	baz=260						
NSK	**Sanguang**	**0.65**	**282**	P	**Pn**	**08 45 01.6**	**-0.4**
	baz=283						
NSK				S	**Sn**	**08 45 11.2**	**-0.6**
	baz=283						
WHF	**Hehuan Shan**	**0.82**	**241**	P	**Pn**	**08 45 03.8**	**-0.7**
	baz=239						
WHF				S	**Sn**	**08 45 14.8**	**-1.5**
	baz=239						
JYNG	**Yonagunijimaku**	**0.82**	**96**	P	**Pn**	**08 45 04.3**	**+0.1**
JYNG				*e*S	**Sn**	**08 45 14.4**	**-1.2**
TWT	**Tachien**	**0.85**	**250**	*e*P	**Pn**	**08 45 04.9**	**+0.2**
	baz=249						
TWT				*e*S	**Sn**	**08 45 16.7**	**+0.2**
	baz=249						
NSTT	**Nanjuang**	**0.96**	**276**	*e*P	**Pn**	**08 45 05.9**	**-0.1**
	baz=276						
NSTT				*e*S	**Sn**	**08 45 18.7**	**-0.2**
	baz=276						
WDT	**Danda**	**1.15**	**227**	*e*P	**Pn**	**08 45 08.0**	**-0.8**
	baz=224						
WDT				*e*S	**Sn**	**08 45 23.0**	**-0.7**
	baz=224						
SMLT	**Sun Moon Lake**	**1.24**	**238**	*e*P	**Pn**	**08 45 10.3**	**+0.5**
	baz=236						
SMLT				*e*S	**Sn**	**08 45 26.2**	**+0.6**
	baz=236						
TYC	**Yuchr**	**1.26**	**240**	*e*P	**Pn**	**08 45 10.7**	**+0.7**
	baz=238						
TYC				*e*S	**Sn**	**08 45 27.1**	**+1.2**
	baz=238						
CHN5	**Tsauling**	**1.57**	**233**	*e*P	**Pn**	**08 45 14.8**	**+0.6**
	baz=231						
CHN5				*e*S	**Sn**	**08 45 34.6**	**+1.1**
	baz=231						
CHN4	**Tsaushan**	**1.78**	**229**	*e*P	**Pn**	**08 45 18.5**	**+1.4**
	baz=227						
CHN4				*e*S	**Sn**	**08 45 40.0**	**+1.3**
	baz=227						
JKRS	**Kuro-shima**	**1.81**	**99**	*e*S	**Sn**	**08 45 40.3**	**+1.0**
JIJ	**Ishigaki jima**	**1.92**	**95**	*e*S	**Sn**	**08 45 41.5**	**-0.3**
CHN1	**Nanshi**	**1.94**	**226**	*e*P	**Pn**	**08 45 18.5**	**-0.8**
	baz=224						
CHN1				*e*P	**Sn**	**08 45 39.9**	**-2.6**
	baz=224						
JISG	**Ishigakijimahi**	**2.06**	**88**	*e*S	**Sn**	**08 45 45.9**	**+0.6**

JMA ***18*** *08:45:42.2±0.2, 23°.66N×121°.78E, h20km±3km, M3.0*
ISCJB ***18*** *08:45:44.8±0.3, 23°.75N±0°.02×121°.82E±0°.02, h34km±7km, Error ellipse: s-maj=3.9km s-min=2.5km az=43.0*
TAP ***18*** *08:45:44.5, 23°.79N×121°.77E, h41km, ML3.1, C*
ISC 18 08:45:44.0±1.0, 23°.75N±0°.02×121°.80E±0°.02, h31km±11km, n42, σ0°74/82, 1C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.24**	**262**	P	**Pn**	**08 45 52.5**	**+1.0**
	baz=248						
TEGC				S	**Sn**	**08 45 58.1**	**+1.9**
	baz=248						
HWA	**Hwalien**	**0.29**	**322**	P	**Pn**	**08 45 52.1**	**-0.1**
	baz=323						
HWA				*e*S	**Sn**	**08 45 58.5**	**+1.0**
	baz=323						
ESF	**Shoufeng Towns**	**0.30**	**295**	*e*P	**Pn**	**08 45 52.7**	**+0.5**
	baz=289						
ESF				*e*S	**Sn**	**08 45 58.4**	**+0.8**
	baz=289						
ESL	**Shilin**	**0.34**	**282**	P	**Pn**	**08 45 52.6**	**-0.3**
	baz=275						
ESL				*e*S	**Sn**	**08 45 58.3**	**-0.4**
	baz=275						
TWD	**Chiawan**	**0.38**	**331**	*i*P	**Pn**	**08 45 52.9**	**-0.5**
	baz=337						
TWD				*e*S	**Sn**	**08 45 59.2**	**-0.5**
	baz=337						
TWF1	**Yuli**	**0.61**	**230**	*e*P	**Pn**	**08 45 56.1**	**-0.4**
	baz=236						
TWF1				*e*S	**Sn**	**08 46 04.9**	**-0.3**
	baz=236						
WDT	**Danda**	**0.61**	**271**	P	**Pn**	**08 45 56.4**	**-0.4**
	baz=267						
WDT				S	**Sn**	**08 46 04.8**	**-1.0**
	baz=267						
WHF	**Hehuan Shan**	**0.63**	**309**	P	**Pn**	**08 45 56.5**	**-0.7**
	baz=308						
WHF				S	**Sn**	**08 46 05.3**	**-1.1**
	baz=308						
ENA	**Nanau**	**0.68**	**355**	P	**Pn**	**08 45 57.2**	**-0.4**
	baz=358						
ENA				S	**Sb**	**08 46 06.7**	**0.0**
	baz=358						
CHKT	**Chengkung**	**0.76**	**212**	*e*P	**Pb**	**08 45 58.7**	**-0.1**
	baz=199						
CHKT				*e*S	**Sn**	**08 46 07.3**	**-1.6**
	baz=199						
TWT	**Tachien**	**0.76**	**312**	*e*P	**Pb**	**08 45 59.0**	**0.0**
	baz=310						
TWT				S	**Sn**	**08 46 08.8**	**-0.6**
	baz=310						
NNS	**Nan Shan**	**0.80**	**331**	*e*P	**Pb**	**08 45 59.2**	**-0.3**
	baz=325						
NNS				*e*S	**Sn**	**08 46 09.6**	**-0.5**
	baz=325						
YUS	**Yu-Shan**	**0.82**	**252**	*e*P	**Pb**	**08 46 00.1**	**0.0**
	baz=248						
YUS				*e*S	**Sn**	**08 46 10.8**	**-0.4**
	baz=248						
SMLT	**Sun Moon Lake**	**0.84**	**280**	P	**Pb**	**08 45 59.7**	**-0.4**
	baz=281						
SMLT				S	**Sn**	**08 46 10.6**	**-0.5**
	baz=281						
TWC	**Suao**	**0.86**	**3**	P	**Pb**	**08 46 00.4**	**-0.1**
	baz=359						
TWC				S	**Sn**	**08 46 11.6**	**0.0**
	baz=359						
TYC	**Yuchr**	**0.88**	**281**	*e*P	**Pb**	**08 46 00.3**	**-0.4**
	baz=283						
TYC				*e*S	**Sb**	**08 46 11.5**	**-0.7**
	baz=283						
ELDTW	**Lidau**	**0.91**	**233**	*e*P	**Pb**	**08 46 00.2**	**-1.1**
	baz=229						
ELDTW				*e*S	**Sb**	**08 46 11.9**	**-1.2**
	baz=229						
ENTT	**Nioudou**	**0.92**	**346**	*e*P	**Pb**	**08 46 01.1**	**-0.4**
	baz=348						
ENTT				*e*S	**Sb**	**08 46 13.2**	**-0.2**
	baz=348						
ALS	**Alishan**	**0.94**	**256**	*e*P	**Pb**	**08 46 01.9**	**-0.1**
	baz=253						
ALS				*e*S	**Sb**	**08 46 14.8**	**+0.4**
	baz=253						
TWE	**Neicheng**	**0.98**	**353**	*e*P	**Pb**	**08 46 02.0**	**-0.4**
	baz=345						
TWE				*e*S	**Sb**	**08 46 14.8**	**-0.2**
	baz=345						
NSK	**Sanguang**	**1.01**	**336**	*e*P	**Pb**	**08 46 02.2**	**-0.8**
	baz=337						
NSK				*e*S	**Sn**	**08 46 15.1**	**-0.3**
	baz=337						
CHN5	**Tsauling**	**1.04**	**262**	P	**Pb**	**08 46 03.6**	**0.0**
	baz=259						
CHN5				S	**Sb**	**08 46 17.7**	**+0.8**
	baz=259						
TWQ1	**Liyutan**	**1.12**	**303**	*e*P	**Pb**	**08 46 05.0**	**+0.3**
	baz=302						
TWQ1				*e*S	**Sb**	**08 46 19.1**	**+0.2**
	baz=302						
STYT	**Tauyuan**	**1.12**	**239**	P	**Pb**	**08 46 04.4**	**-0.5**
	baz=236						
STYT				S	**Sb**	**08 46 19.5**	**+0.4**
	baz=236						
TWG	**Pinlang**	**1.14**	**216**	*e*P	**Pn**	**08 46 03.1**	**-0.7**
	baz=214						
TWG				*e*S	**Sn**	**08 46 17.0**	**-1.4**
	baz=214						
NSTT	**Nanjuang**	**1.15**	**321**	*e*P	**Pb**	**08 46 05.5**	**+0.2**
	baz=320						
NSTT				*e*S	**Sb**	**08 46 19.4**	**-0.4**
	baz=320						
NSY	**Sanyi**	**1.16**	**305**	*e*P	**Pb**	**08 46 06.6**	**+1.1**
	baz=304						
NSY				*e*S	**Sb**	**08 46 20.8**	**+0.5**
	baz=304						
CHN4	**Tsaushan**	**1.18**	**251**	*e*P	**Pb**	**08 46 06.1**	**+0.4**
	baz=248						
CHN4				*e*S	**Sb**	**08 46 22.4**	**+1.7**
	baz=248						
WTP	**Ta-pu**	**1.20**	**246**	*e*P	**Pb**	**08 46 06.0**	**-0.1**
	baz=243						
WTP				*e*S	**Sb**	**08 46 22.6**	**+1.2**
	baz=243						
JYNG	**Yonagunijimaku**	**1.26**	**56**	P	**Pb**	**08 46 06.2**	**-1.0**
JYNG				*e*S	**Sb**	**08 46 22.6**	**-0.4**
TWB1	**Santiao Chiao**	**1.27**	**8**	*e*P	**Pb**	**08 46 08.2**	**+0.9**
	baz=25						
TWB1				*e*S	**Sn**	**08 46 22.0**	**+0.4**
	baz=25						
CHN1	**Nanshi**	**1.29**	**245**	*e*P	**Pb**	**08 46 07.8**	**0.0**
	baz=243						
CHN1				*e*S	**Sb**	**08 46 25.1**	**+1.0**
	baz=243						
TWK	**Hsinying**	**1.30**	**249**	*e*P	**Pb**	**08 46 07.4**	**-0.4**
	baz=246						
TWK				*e*S	**Sb**	**08 46 25.4**	**+1.3**
	baz=246						
SGST	**Jiashian**	**1.30**	**240**	*e*P	**Pb**	**08 46 08.4**	**+0.5**
	baz=237						
SGST				*e*S	**Sb**	**08 46 25.8**	**+1.6**
	baz=237						
YOJ	**Yonaguni jima**	**1.32**	**57**	P	**Pn**	**08 46 07.0**	**+0.8**
YOJ				*e*S	**Sb**	**08 46 24.9**	**+0.3**
NWF	**Wu-fen Shan**	**1.32**	**359**	*e*P	**Pb**	**08 46 07.9**	**-0.4**
	baz=347						
NWF				*e*S	**Sb**	**08 46 24.4**	**-0.5**
	baz=347						
SSD	**Sandimen**	**1.47**	**227**	*e*P	**Pb**	**08 46 10.0**	**-0.7**
	baz=221						
SSD				*e*S	**Sb**	**08 46 30.1**	**+1.2**
	baz=221						
EAST	**Anshuo**	**1.61**	**213**	*e*P	**Pb**	**08 46 12.8**	**-0.5**
	baz=203						
EAST				*e*S	**Sn**	**08 46 29.8**	**-0.4**
	baz=203						
JKRS	**Kuro-shima**	**2.08**	**76**	P	**Pn**	**08 46 17.2**	**+0.5**
JIJ

GCAM	**G?zelcaml?**	**0.56**	**182**	*i* P	**Pg**	**08 57 30.5**	**+0.6**
GCAM				*i* S	**Sb**	**08 57 38.9**	**-0.3**
GCAM	**G?zelcaml?**	**0.56**	**182**	P	**Pg**	**08 57 30.5**	**+0.6**
GCAM				S	**Sb**	**08 57 38.9**	**-0.3**
ZEY	**˜zmir**	**0.59**	**268**	*i* P	**Pg**	**08 57 30.1**	**-0.4**
ZEY				*i* S	**Sg**	**08 57 38.0**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.59**	**122**	*e*PG	**Pg**	**08 57 30.1**	**-0.5**
AYDB				*e*SG	**Sg**	**08 57 39.0**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**0.59**	**122**	*e*Pg	**Pg**	**08 57 30.1**	**-0.5**
AYDB				*e*Sg	**Sg**	**08 57 39.0**	**+0.6**
AKS	**Akhisar**	**0.76**	**35**	*e*PG	**Pg**	**08 57 34.1**	**+0.4**
AKS	**Akhisar**	**0.76**	**35**	*e*Pg	**Pg**	**08 57 34.1**	**+0.4**
DKL	**Dikili**	**0.85**	**341**	*e*PG	**Pb**	**08 57 36.0**	**-0.2**
DKL				*e*SG	**Sn**	**08 57 49.4**	**-0.6**
DKL	**Dikili**	**0.85**	**341**	*e*Pg	**Pb**	**08 57 36.0**	**-0.2**
CHOS	**Chios island**	**0.95**	**278**	*e*PG	**Pg**	**08 57 37.5**	**+0.1**
CHOS	**Chios island**	**0.95**	**278**	*e*Pg	**Pg**	**08 57 37.5**	**+0.1**
MANT	**Manisa**	**1.05**	**77**	*i* P	**Pg**	**08 57 38.9**	**-0.4**
MANT				*i* S	**Sg**	**08 57 51.7**	**-1.3**
MANT	**Manisa**	**1.05**	**77**	P	**Pg**	**08 57 38.9**	**-0.4**
MANT				S	**Sg**	**08 57 51.7**	**-1.3**
KULA	**Kula-Manisa**	**1.13**	**77**	*e*PN	**Pg**	**08 57 40.6**	**-0.3**
KULA	**Kula-Manisa**	**1.13**	**77**	*e*Pn	**Pg**	**08 57 40.6**	**-0.3**
BODT	**Bodrum**	**1.20**	**178**	*e*PN	**Pg**	**08 57 41.1**	**-1.0**
BODT	**Bodrum**	**1.20**	**178**	*e*Pn	**Pg**	**08 57 41.1**	**-1.0**
BDRM	**Kayabasi**	**1.20**	**173**	*i* P	**Pn**	**08 57 43.2**	**+1.0**
BDRM	**Kayabasi**	**1.20**	**173**	P	**Pn**	**08 57 43.2**	**+1.0**
DEMI	**Demirci**	**1.39**	**55**	*i* P	**Pg**	**08 57 46.2**	**+0.5**
DEMI				*i* S	**Sb**	**08 58 03.1**	**0.0**
DEMI	**Demirci**	**1.39**	**55**	P	**Pg**	**08 57 46.2**	**+0.5**
DEMI				S	**Sb**	**08 58 03.1**	**0.0**

IDC ***18*** *08:58:51.4±2.1,29˚.31S×175˚.54W,h0km,mb4.2/3, mb1 4.3/5,mb1mx3.9/36,mbtmp4.2/5,ML4.0/2,MS3.1/4, Ms1 3.1/4,ms1mx2.7/31,Error ellipse: s-maj=63.0km s-min=37.7km az=155.0*

ISCJB ***18*** *08:58:53.1±1.3,29˚.31S±0˚.09×175˚.5W±0˚.1,h33km, mb4.3/6,MS3.1/2,Error ellipse: s-maj=15.9km s-min=12.9km az=165.1*

NEIC ***18*** *08:58:53.2±1.1,29˚.32S×175˚.69W,h10km,mb4.4/3,Error ellipse: s-maj=20.7km s-min=15.5km az=103.0*

ISC 18 08:58:56.5±1.4,29˚.3S±0˚.1×175˚.6W±0˚.1,h35km,n16, σ1§13/14,mb4.3/6,1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.04**	**272**	Pn		**Pn**	**Pn**	**08 59 29.2**	**+0.9**
	62nm,0.3s,baz=70,slow=21,SNR=4.2								
RAO	**Raoul Island**	**2.04**	**272**	*e*Pn		**Pn**	**Pn**	**08 59 26.0**	**-2.3**
RAO				*e*Sn		**Sn**	**Sn**	**08 59 53.3**	**+0.7**
URZ	**Urewera**	**10.77**	**212**	Sn		Sn	Sn	09 03 17.2	-10
	0.9nm,0.3s,baz=130,slow=21,SNR=6.0								
KHZ	**Kahutara**	**15.73**	**211**	*e*Pn		**Pn**	**Pn**	**09 02 34.9**	**-0.3**
KHZ				*e*Sn		**Sn**	**Sn**	**09 05 29.4**	**+1.1**
RAR	**Rarotonga**	**16.42**	**64**	LR		LR	LR	09 07 15.6	
	comp=Z,74nm,19.1s,baz=258,slow=31								
RPZ	**Rata Peaks**	**17.89**	**213**	P		**Pn**	**Pn**	**09 03 00.8**	**-1.6**
	0.4nm,0.3s,baz=46,slow=12,SNR=3.6								
RPZ				LR		LR	LR	09 12 24.5	
	comp=Z,26nm,18.0s,baz=18,slow=45								
PPT	**Papeete**	**26.52**	**70**	LR		LR	LR	09 12 51.3	
	comp=Z,24nm,18.6s,baz=42,slow=32								
STKA	**Stephens Creek**	**36.77**	**255**	P		**P**	**P**	**09 06 01.9**	**+1.1**
	5.9nm,1.1s,baz=86,slow=9.8,SNR=8.6								
ASAR	**Alice Springs**	**45.28**	**265**	P		**P**	**P**	**09 07 10.5**	**-0.5**
	1.4nm,0.6s,baz=96,slow=7.8,SNR=35								
ASAR				LR		LR	LR	09 25 13.2	
	comp=Z,41nm,19.8s,baz=74,slow=35								
WRAB	**Tennant Creek**	**46.17**	**270**	*e*P		**P**	**P**	**09 07 17.0**	**-1.0**
	2.3nm,0.7s								
WRA	**Warramunga Arr**	**46.18**	**270**	P		**P**	**P**	**09 07 17.6**	**-0.5**
	2.5nm,0.7s,baz=109,slow=7.7,SNR=13								
FITZ	**Fitzroy Crossi**	**54.48**	**268**	*e*P		**P**	**P**	**09 08 20.4**	**-0.5**
	2.7nm,0.7s								
KAPI	**Kappang**	**65.51**	**278**	*e*P		**P**	**P**	**09 09 36.9**	**+0.2**
	4.3nm,0.6s								
SYO	**Syowa Base**	**78.61**	**192**	eX		P		09 10 46.6	-7.5
FINES	**FINESS Array B**	**144.83**	**342**	PKP		**PKPdf**		**09 18 29.1**	**+0.1**
	1.1nm,0.7s,baz=356,slow=1.8,SNR=2.4								
AKASG	**Malin Array Be**	**151.67**	**326**	PKPbc		**PKPbc**		**09 18 47.8**	**+1.0**
	1.0nm,0.5s,baz=45,slow=2.7,SNR=6.7								

MAN 18 09:02:07,9.62N×124.55E,h1km,mb4.4,ML3.3,MS3.1, 5C-3D,Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TBP	**Tagbilaran**	**0.69**	**276**	*i*P		Pn	Pn	09 02 25.4	+1.6
TBP				*i* S		Sn	Sn	09 02 36.2	+1.0
LLP	**Lapu-Lapu**	**0.90**	**320**	*e*P		Pb	Pb	09 02 25.0	-0.5
LLP				*i* S		Sb	Sb	09 02 37.5	-0.4
CGP	**Cagayan de Oro**	**1.17**	**173**	*e*P		Pn	Pn	09 02 30.8	+0.2
CGP				*i* S		Sn	Sn	09 02 48.7	+1.6
SNPH	**Sibulan**	**1.33**	**258**	*i*P		Pg	Pg	09 02 28.8	-3.7
SNPH				*i* S		Sg	Sg	09 02 49.0	-0.8
DCPH	**Dipolog City**	**1.57**	**229**	*e*P		Pb	Pb	09 02 36.9	0.0
DCPH				*e*S		Sg	Sg	09 02 58.3	+0.7
PLP	**Palo**	**1.59**	**15**	*e*P		Pb	Pb	09 02 36.8	-0.4
PLP				*i* S		Sg	Sg	09 02 59.0	+0.9
CTBH	**Cotabato--PC H**	**2.41**	**187**	*i*P		Pg	Pg	09 02 52.6	-0.6
RCP	**Roxas**	**2.62**	**317**	*e*P		Pn	Pn	09 02 52.3	+1.8
RCP				*e*S		Sb	Sb	09 03 25.8	-1.7

ISCJB ***18*** *09:03:21.9±0.7,38˚.26N±0˚.05×27˚.29E±0˚.04,h9km±13km, Error ellipse: s-maj=9.0km s-min=4.9km az=2.1*

CSEM ***18*** *09:03:22.4±0.2,38˚.25N×27˚.31E,h10km,MD2.4,Error ellipse: s-maj=6.0km s-min=3.9km az=14.0*

ISK ***18*** *09:03:22.2,38˚.26N×27˚.34E,h13km,MD2.4*

DDA ***18*** *09:03:23.4,38˚.30N×27˚.17E,h7km,Ml2.6*

ISC 18 09:03:22.4±1.0,38˚.25N±0˚.04×27˚.28E±0˚.03,h13km±9km, n16,σ0§45/22,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
IZM	**Izmir**	**0.15**	**353**	*e*PG		**Pg**	**Pg**	**09 03 26.2**	**+0.1**
IZM	**Izmir**	**0.15**	**353**	*e*Pg		**Pg**	**Pg**	**09 03 26.2**	**+0.1**
DGB	**˜zmir**	**0.37**	**238**	*i* P		**Pg**	**Pg**	**09 03 30.1**	**+0.2**
DGB				*i* S		**Sg**	**Sg**	**09 03 34.9**	**-0.1**
URLA	**Izmir**	**0.55**	**282**	*i* P		**Pg**	**Pg**	**09 03 32.9**	**-0.4**
URLA				*i* S		**Sg**	**Sg**	**09 03 40.3**	**-0.3**
URLA	**Izmir**	**0.55**	**282**	P		**Pg**	**Pg**	**09 03 32.9**	**-0.4**
URLA				S		**Sg**	**Sg**	**09 03 40.3**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.57**	**122**	*e*PG		**Pg**	**Pg**	**09 03 33.0**	**-0.6**
AYDB				*e*SG		**Sg**	**Sg**	**09 03 41.3**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.57**	**122**	*e*Pg		**Pg**	**Pg**	**09 03 33.0**	**-0.6**
AYDB				*e*Sg		**Sg**	**Sg**	**09 03 41.3**	**+0.2**
ZEY	**˜zmir**	**0.61**	**269**	*i* P		**Pg**	**Pg**	**09 03 33.9**	**-0.5**
ZEY				*i* S		**Sg**	**Sg**	**09 03 41.9**	**-0.7**
AKS	**Akhisar**	**0.75**	**33**	*e*PG		**Pg**	**Pg**	**09 03 36.6**	**-0.4**
AKS	**Akhisar**	**0.75**	**33**	*e*Pg		**Pg**	**Pg**	**09 03 36.6**	**-0.4**
CHOS	**Chios island**	**0.98**	**278**	*e*PG		**Pn**	**Pg**	**09 03 42.5**	**+0.7**
CHOS	**Chios island**	**0.98**	**278**	*e*Pg		**Pn**	**Pg**	**09 03 42.5**	**+0.7**
KULA	**Kula-Manisa**	**1.11**	**76**	*e*PG		**Pb**	**Pb**	**09 03 43.4**	**-0.1**
KULA	**Kula-Manisa**	**1.11**	**76**	*e*Pg		**Pb**	**Pb**	**09 03 43.4**	**-0.1**
BODT	**Bodrum**	**1.19**	**179**	*e*PN		**Pn**	**Pg**	**09 03 45.2**	**+0.5**
BODT	**Bodrum**	**1.19**	**179**	*e*Pn		**Pn**	**Pn**	**09 03 45.2**	**+0.5**

IDC ***18*** *09:07:21.0±2.1,19˚.47S×168˚.28E,h0km,mb4.0/7, mb1 4.2/8,mb1mx3.9/31,mbtmp4.0/8,ML3.5/1,MS2.7/1, Ms1 2.7/1,ms1mx2.4/26,Error ellipse: s-maj=58.8km s-min=26.3km az=133.0*

ISCJB ***18*** *09:07:25.1±1.6,19˚.5S±0˚.1×168˚.1E±0˚.3,h33km,mb3.9/6, Error ellipse: s-maj=36.9km s-min=11.8km az=21.9*

ISC 18 09:07:26.4±1.8,19˚.6S±0˚.2×168˚.3E±0˚.3,h35km,n8, σ1§31/9,mb3.9/6,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.04**	**214**	Pn			**Pn**	**09 08 12.6**	**+0.5**
	5.9nm,0.3s,baz=36,slow=19,SNR=96								
DZM				Sn			**Sn**	**09 08 46.6**	**-0.8**
	7.5nm,0.3s,baz=113,slow=21,SNR=6.0								
DZM				LR			LR	09 08 55.8	
	comp=Z,125nm,18.6s,baz=77,slow=31								
CTA	**Charters Tower**	**20.73**	**265**	P			**P**	**09 12 04.9**	**+0.9**
	6.6nm,0.9s,baz=101,slow=13,SNR=4.6								
STKA	**Stephens Creek**	**26.92**	**238**	P			**P**	**09 13 05.4**	**+1.0**
	1.7nm,1.0s,baz=86,slow=9.2,SNR=4.8								
WRA	**Warramunga Arr**	**31.92**	**263**	P			**P**	**09 13 46.8**	**-2.2**
	1.0nm,0.7s,baz=100,slow=8.3,SNR=13								
ASAR	**Alice Springs**	**32.18**	**256**	P			**P**	**09 13 50.2**	**-1.0**
	3.5nm,0.8s,baz=84,slow=8.6,SNR=45								
FITZ	**Fitzroy Crossi**	**40.31**	**265**	P			**P**	**09 15 00.2**	**-0.5**
	3.2nm,0.8s,baz=120,slow=12,SNR=6.2								
SONM	**Songino Array**	**86.93**	**323**	P			**P**	**09 20 08.8**	**+1.0**
	0.6nm,0.7s,baz=134,slow=4.2,SNR=2.9								
ILAR	**Eielson Array**	**90.80**	**18**	P			**P**	**09 20 24.6**	**-0.8**
	0.5nm,0.8s,baz=224,slow=5.0,SNR=6.1								

IDC ***18*** *09:15:08.0±2.0,35˚.23S×179˚.87E,h0km,mb3.7/3, mb1 4.0/4,mb1mx3.7/29,mbtmp3.7/4,ML3.7/1,Error ellipse: s-maj=50.0km s-min=31.9km az=137.0*

ISC 18 09:15:08.0±1.5,35˚.5S±0˚.2×179˚.7W±0˚.2,h10km,n19, σ1§92/22,mb3.6/3,East of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**2.64**	**218**	PN			**Pn**	**09 15 49.7**	**-0.9**
MXZ				*e*SN			**Sn**	**09 16 23.4**	**+0.8**
WMGZ	**Waiomatatini S**	**2.79**	**213**	PN			**Pn**	**09 15 52.4**	**-0.4**
PKGZ	**Pakihiroa**	**3.01**	**216**	PN			**Pn**	**09 15 55.2**	**-0.6**
HAZ	**Te Kaha**	**3.06**	**221**	PN			**Pn**	**09 15 56.7**	**+0.3**
PUZ	**Puketiti**	**3.07**	**212**	*e*PN			**Pn**	**09 15 55.1**	**-1.5**
PUZ				*e*SN			**Sn**	**09 16 34.3**	**+0.8**
RUGZ	**Raukumara Rang**	**3.27**	**220**	*e*PN			**Pn**	**09 15 59.5**	**+0.1**
TWGZ	**Tauwhareparae**	**3.29**	**214**	*e*PN			**Pn**	**09 15 57.2**	**-2.4**
CNGZ	**Carnagh Statio**	**3.44**	**209**	*e*PN			**Pn**	**09 16 00.5**	**-1.2**
MWZ	**Matawai**	**3.63**	**217**	*e*PN			**Pn**	**09 16 03.1**	**-1.1**
URZ	**Urewera**	**3.79**	**222**	Pn			**Pn**	**09 16 05.8**	**-0.6**
	5.7nm,0.3s,baz=254,slow=2.0,SNR=42								
URZ				Sn			**Sn**	**09 16 54.1**	**+3.1**
	4.1nm,0.3s,baz=319,slow=20,SNR=14								
URZ	**Urewera**	**3.79**	**222**	*e*Pn			**Pn**	**09 16 05.7**	**-0.6**
URZ				SN			**Sn**	**09 16 54.2**	**+3.2**
RAGZ	**Rawiri**	**3.81**	**217**	*e*PN			**Pn**	**09 16 05.8**	**-0.9**
RIGZ	**Rimuhau**	**3.82**	**212**	*e*PN			**Pn**	**09 16 05.2**	**-1.7**
BKZ	**Black Stump Fm**	**4.78**	**219**	*e*PN			**Pn**	**09 16 18.9**	**-1.2**
BFZ	**Birch Farm**	**6.11**	**211**	*e*PN			Pn	09 16 33.4	-4.9
MRZ	**Mangatainoka R**	**6.38**	**215**	*e*PN			**Pn**	**09 16 37.8**	**-4.3**
ASAR	**Alice Springs**	**41.72**	**273**	P			**P**	**09 22 55.9**	**-1.3**
	0.6nm,0.8s,baz=113,slow=7.8,SNR=6.6								
WRA	**Warramunga Arr**	**43.17**	**278**	P			**P**	**09 23 07.0**	**-2.0**
	0.7nm,0.8s,baz=118,slow=7.6,SNR=7.8								
TXAR	**Lajitas Array**	**96.27**	**58**	P			**P**	**09 28 39.4**	**+2.5**
	0.2nm,0.8s,baz=199,slow=1.9,SNR=3.6								

ISCJB ***18*** *09:35:38.3±0.4,5˚.83S±0˚.04×146˚.94E±0˚.07,h78km, mb4.3/17,Error ellipse: s-maj=9.5km s-min=5.9km az=5.8*

IDC ***18*** *09:35:38.9±2.7,5˚.83S×147˚.00E,h71km±23km,mb3.9/11, mb1 4.2/12,mb1mx4.0/29,mbtmp4.3/12,MS3.2/4, Ms1 3.1/4,ms1mx2.7/30,Error ellipse: s-maj=22.6km s-min=15.0km az=82.0*

DJA ***18*** *09:35:38.2±3.2,6˚S±24˚×14˚7'E±1˚3,h75km±14km, M5.2/12,mB5.4/2,mb4.9/12,MLv5.3/1,Mw(mB)4.8/2*

NEIC ***18*** *09:35:42.4±1.1,5.90S×146.98E,h102km±10km,mb4.8/9, Error ellipse: s-maj=13.0km s-min=7.6km az=76.0*

ISC 18 09:35:39.8±0.5,5˚.86S±0˚.06×146˚.9E±0˚.1,h78km,n65, σ1§22/66,mb4.3/17,1C,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.54**	**175**	P			**Pn**	**09 36 33.0**	**+0.6**
	160nm,0.3s,baz=32,slow=6.3,SNR=382								
PMG				S			**Sn**	**09 37 12.7**	**-0.4**
	167nm,0.3s,baz=318,slow=12,SNR=4.9								
JAY	**Jayapura**	**6.99**	**298**	P			Pn	09 37 25.6	+6.1
	0.3nm,0.3s,baz=95,slow=22,SNR=13								
COEN	**Coen**	**8.83**	**204**	P			**Pn**	**09 37 46.3**	**+1.7**
	baz=8.5,SNR=228								
COEN	**Coen**	**8.83**	**204**	*e*Pn			**Pn**	**09 37 46.4**	**+1.7**
	48nm,0.4s								
MTSU	**Mount Surprise**	**12.45**	**191**	P			**Pn**	**09 38 35.7**	**+1.7**
	baz=12,SNR=46								
CTA	**Charters Tower**	**14.16**	**182**	P			**P**	**09 38 59.6**	**-2.2**
	3.6nm,0.3s,baz=352,slow=13,SNR=24								
CTAO	**Charters Tower**	**14.16**	**182**	*e*Pn			**Pn**	**09 38 59.0**	**+2.4**
	50nm,0.5s								
KDU	**Kakadu**	**15.73**	**243**	P			**P**	**09 39 18.9**	**-0.5**
	baz=16,SNR=12								
QIS	**Mount Isa**	**16.22**	**205**	P			**P**	**09 39 24.2**	**-0.5**
	baz=16,SNR=65								
MTN	**Manton Dam**	**17.00**	**245**	P			**P**	**09 39 34.3**	**+1.0**
	baz=17,SNR=22								
WRAB	**Tennant Creek**	**18.54**	**220**	*e*P			**Pn**	**09 39 51.2**	**-0.2**
	34nm,0.7s								
WRA	**Warramunga Arr**	**18.55**	**220**	P			**Pn**	**09 39 51.3**	**-0.3**
	3.7nm,0.3s,baz=38,slow=11,SNR=107								
WRA				S			**S**	**09 43 12.4**	**-5.3**
	0.4nm,0.3s,baz=43,slow=24,SNR=4.1								
WRA				PcP			**PcP**	**09 44 18.0**	**+0.8**
	0.5nm,0.3s,baz=24,slow=1.7,SNR=6.9								
WRA				LR			LR	09 47 44.4	
	comp=Z,87nm,18.6s,baz=330,slow=39								
EIDS	**Eidsvold**	**19.82**	**169**	P			**Pn**	**09 40 05.4**	**-1.0**
	baz=20,SNR=20								
EIDS	**Eidsvold**	**19.82**	**169**	*e*P			**P**	**09 40 05.2**	**+1.1**
	23nm,0.6s								
RMQ	**Roma**	**20.59**	**175**	P			Pn	09 40 14.1	-1.4
	baz=20,SNR=14								
QLP	**Quilpie**	**20.76**	**187**	P			**P**	**09 40 15.2**	**+0.8**
	baz=20,SNR=39								
ASAR	**Alice Springs**	**21.66**	**214**	P			**P**	**09 40 24.9**	**+0.8**
	8.7nm,0.6s,baz=50,slow=8.6,SNR=109								
ASAR				S			**S**	**09 44 18.6**	**-1.2**
	2.0nm,1.0s,baz=29,slow=20,SNR=6.3								
ASAR				PcP			**PcP**	**09 44 23.5**	**+0.6**
	1.4nm,0.5s,baz=54,slow=1.6,SNR=5.5								
ASAR				LR			LR	09 50 17.1	
	comp=Z,47nm,18.4s,baz=59,slow=40								
SOEI	**Soe**	**22.72**	**259**	P			**P**	**09 40 34.4**	**-1.2**
FITZ	**Fitzroy Crossi**	**24.03**	**238**	P			**P**	**09 40 48.9**	**+1.2**
	75nm,0.6s,baz=58,slow=7.3,SNR=131								
FITZ				LR			LR	09 50 29.8	
	comp=Z,65nm,21.1s,baz=59,slow=37								
FITZ	**Fitzroy Crossi**	**24.03**	**238**	P			**P**	**09 40 48.9**	**+1.2**
	baz=24,SNR=89								
ARMA	**Armidale**	**24.84**	**170**	P			**P**	**09 40 55.7**	**+0.7**
	baz=25,SNR=10								
ARMA	**Armidale**	**24.84**	**170**	*e*P			**P**	**09 40 55.3**	**+0.3**
	16nm,0.8s								
DZM	**Mont Dzumac**	**24.86**	**132**	P			**P**	**09 40 54.2**	**-1.1**
	6.5nm,0.6s,baz=315,slow=4.3,SNR=5.3								
CMSA	**Cobar Meteorol**	**25.57**	**182**	P			**P**	**09 41 02.0**	**+0.5**
	baz=25,SNR=25								
WRKA	**Warakurna**	**26.09**	**221**	P			**P**	**09 41 07.1**	**+0.8**
	baz=26,SNR=75								
STKA	**Stephens Creek**	**26.35**	**190**	P			**P**	**09 41 08.8**	**+0.2**
	8.7nm,0.5s,baz=11,slow=8.1,SNR=57								
STKA				LR			LR	09 52 39.4	
	comp=Z,33nm,19.8s,baz=24,slow=39								
STKA	**Stephens Creek**	**26.35**	**190**	P			**P**	**09 41 08.9**	**+0.3**
	baz=26,SNR=8.0								
YNG	**Young**	**28.33**	**177**	P			**P**	**09 41 27.3**	**+1.0**
	baz=28,SNR=6.1								
HTT	**Hallett**	**28.41**	**194**	P			**P**	**09 41 27.6**	**+0.5**
	baz=28,SNR=16								
BBOO	**Buckleboo**	**28.64**	**199**	P			**P**	**09 41 29.4**	**+0.3**
	baz=28,SNR=16								
FORT	**Forrest**	**30.44**	**213**	P			**P**	**09 41 45.9**	**+0.9**
	baz=30,SNR=10								
FORT	**Forrest**	**30.44**	**213**	*e*P			**P**	**09 41 45.6**	**+0.6**
	148nm,0.8s								
H11S3	**WAKE ISLAND Hy**	**31.11**	**39**	T			T	10 14 49.3	
	baz=219,slow=74,SNR=8.5								
H11S2	**WAKE ISLAND Hy**	**31.12**	**39**	T			T	10 14 49.3	
	baz=219,slow=74,SNR=4.3								
H11S1	**WAKE ISLAND Hy**	**31.13**	**39**	T			T	10 14 47.8	
	baz=219,slow=74,SNR=4.1								
TOO	**Toolangi**	**31.59**	**182**	P			**P**	**09 41 56.2**	**+1.1**
	baz=31,SNR=4.2								
MEEK	**Meekatharra**	**33.94**	**229**	P			**P**	**09 42 17.0**	**+1.2**
	baz=34,SNR=33								
KMBL	**Kambalda**	**34.52**	**220**	P			**P**	**09 42 21.6**	**+0.8**
	baz=34,SNR=35								
MORW	**Morawa**	**37.16**	**228**	P			**P**	**09 42 44.3**	**+0.9**
	baz=37,SNR=6.5								
KLBR	**Kellerberrin**	**37.38**	**223**	P			**P**	**09 42 46.0**	**+0.8**
	baz=37,SNR=36								
BLDU	**Ballidu**	**37.54**	**225**	P			**P**	**09 42 47.6**	**+1.1**
	baz=37,SNR=9.7								
NWAO	**Narrogin (SRO)**	**38.54**	**222**	P			**P**	**09 42 55.8**	**+0.8**
	baz=38,SNR=6.5								
NWAO				P			**P**	**09 42 55.8**	**+0.8**
	baz=38,SNR=6.5								
RKGY	**Rocky Gully**	**39.76**	**220**	P			**P**	**09 43 06.5**	**+1.5**
	baz=40,SNR=6.2								
KSRS	**Korea Array**	**46.57**	**339**	P			**P**	**09 44 00.8**	**+0.9**
	1.1nm,0.6s,baz=164,slow=9.7,SNR=4.5								
KSAR	**Wonju Array Be**	**46.58**	**339**	P			**P**	**09 44 00.8**	**+0.9**
PETK	**Petropavlovsk-**	**59.46**	**8**	P			**P**	**09 45 35.4**	**+1.0**
	2.8nm,0.6s,baz=159,slow=6.0,SNR=4.0								
SONM	**Songino Array**	**64.22**	**331**	P			**P**	**09 46 07.3**	**+0.7**
	0.7nm,0.6s,baz=134,slow=6.2,SNR=4.2								
VNDA	**Vanda**	**72.06**	**177**	P			**P**	**09 46 55.4**	**+0.4**
	1.9nm,0.7s,baz=328,slow=5.5,SNR=9.1								
MKAR	**Makanchi Array**	**77.31**	**320**	P			**P**	**09 47 25.1**	**-0.8**
	0.2nm,0.3s,baz=96,slow=7.6,SNR=4.1								
ZALV	**Zalesovo Beam**	**78.82**	**328**	P			**P**	**09 47 33.3**	**-0.8**
	0.6nm,0.3s,baz=107,slow=7.4,SNR=3.4								
ZALV				pP			**sP**	**09 48 01.4**	**-2.0**
	0.6nm,0.4s,baz=104,slow=6.1,SNR=2.0								
MAW	**Mawson**	**82.33**	**203**	P			**P**	**09 47 52.8**	**+0.2**
	1.1nm,0.6s,baz=90,slow=8.1,SNR=7.8								
QSPA	**South Pole Qui**	**84.11**	**180**	*e*P			**P**	**09 48 01.4**	**-0.6**
	12nm,0.6s								
ILAR	**Eielson Array**	**85.41**	**23**	P			**P**	**09 48 06.4**	**-2.0**
	4.6nm,0.7s,baz=251,slow=4.9,SNR=47								
ILAR				pP			**sP**	**09 48 36.1**	**-1.7**
	1.0nm,0.6s,baz=251,slow=4.9,SNR=2.9								
EGAK	**Eagle**	**87.69**	**24**	*e*P			**P**	**09 48 19.4**	**-0.1**
	2.0nm,0.8s								
DAWY	**Dawson**	**88.20**	**25**	*e*P			**P**	**09 48 21.9**	**-0.1**
	1.6nm,0.7s								
SYO	**Syowa Base**	**90.68**	**200**	eX			P	09 48 38.5	+5.1
PLCA	**Paso Flores**	**122.31**	**147**	PKP			**PKPdf**	**09 54 26.6**	**+0.2**
	3.5nm,0.7s,baz=253,slow=3.4,SNR=13								
LVC	**Limon Verde**	**135.00**	**130**	PKP			**PKPdf**	**09 54 51.7**	**+0.4**
	15nm,0.8s,baz=268,slow=3.5,SNR=3.8								
LPAZ	**La Paz**	**138.97**	**123**	PKhKP			PKPpre	09 54 52.2	
	1.3nm,0.7s,baz=306,slow=3.9,SNR=8.5								
CPUP	**Villa Florida**	**140.32**	**145**	PKP			**PKPdf**	**09 55 00.9**	**+0.3**
	3.0nm,0.8s,baz=257,slow=0.4,SNR=5.0								
SIV	**San Ignacio**	**144.84**	**129**	PKPbc			**PKPab**	**09 55 07.2**	**-0.8**
	3.3nm,0.5s,baz=245,slow=6.2,SNR=15								
TORD	**Torodi Ar. Bea**	**144.93**	**284**	PKPbc			**PKPab**	**09 55 07.7**	**-0.7**
	1.3nm,0.5s,baz=62,slow=3.9,SNR=12								
DBIC	**Dimbokro**	**151.88**	**273**	PKPbc			**PKPbc**	**09 55 26.2**	**-0.7**
	1.1nm,0.4s,baz=49,slow=6.5,SNR=4.6								

couple: M₀3.56000×10^14 NP1:φs21.00000°,δ31.00000°, λ-89.00000°. NP2:φs200.00000°,δ59.00000°, λ-91.00000°.
*IDC **18** 10:01:36.1±1.2,36°.83N×141°.08E,h0km,mb3.5/5, mb1 3.7/7,mb1mx3.5/42,mbtmp3.5/7,ML3.1/1,Error ellipse: s-maj=29.1km s-min=24.3km az=139.0*
*ISCJB **18** 10:01:37.1±1.1,36°.86N±0°.04×141°.23E±0°.07,h20km±6km, mb3.5/5,Error ellipse: s-maj=10.1km s-min=5.3km az=27.3*
*JMA **18** 10:01:39.5±0.1,36°.87N×141°.04E,h31km±1km,M3.8*
JMA Felt I J1.
ISC 18 10:01:38.5±2.1,**36°.86N**±0°.04×**141°.09E**±0°.08,**h17**km±12km, **n21**,σ**0s.72**/25,**mb3.5**/5,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.34	315	P	Pb	10 01 46.8	+0.7
ONAJ				S	Sb	10 01 51.6	+0.4
JHO	Hitachi	0.49	239	P	Pb	10 01 49.0	+0.3
JHO				S	Sb	10 01 55.7	+0.1
JFK	Kawauchi	0.53	341	P	Pb	10 01 49.6	+0.2
JFK				S	Sb	10 01 56.7	-0.1
JFT	Otama	0.89	317	P	Pg	10 01 55.8	0.0
JFT				S	Sb	10 02 06.9	-0.2
JSB	Shiboa	0.95	277	P	Pn	10 01 57.0	-0.1
JSB				S	Sg	10 02 09.5	+0.2
JYT	Yasato	0.96	229	P	Pb	10 01 56.2	-0.5
JYT				S	Sb	10 02 08.5	-0.7
JMM	Marumori	1.03	347	P	Pb	10 01 57.3	-0.6
JMM				S	Sb	10 02 09.8	-1.3
MJAR	Matsushiro Arr	2.34	263	Pn	Pn	10 02 16.8	+0.6
	5.5nm,0.3s,baz=87,slow=14,SNR=35						
MJAR				Sn	Sb	10 02 47.7	-1.1
	7.7nm,0.3s,baz=296,slow=25,SNR=4.4						
MAT	Matsushiro	2.34	263	P	Pn	10 02 17.2	+1.0
MAT				S	Sb	10 02 47.3	-1.6
ASAJ	Asahikawa	7.33	9	Pn	Pn	10 03 24.6	-0.2
	baz=225,slow=11						
ASAJ				Sn	Sn	10 04 47.0	-0.7
	0.2nm,0.3s,baz=46,slow=28,SNR=1.6						
H11N2	WAKE ISLAND Hy	28.28	120	T	T	10 37 16.2	
	baz=313,slow=75,SNR=103						
H11N1	WAKE ISLAND Hy	28.29	120	T	T	10 37 16.9	
	baz=313,slow=75,SNR=96						
H11N3	WAKE ISLAND Hy	28.30	120	T	T	10 37 17.2	
	baz=313,slow=75,SNR=94						
H11S1	WAKE ISLAND Hy	28.98	122	T	T	10 38 20.2	
	baz=314,slow=75,SNR=150						
H11S3	WAKE ISLAND Hy	28.98	122	T	T	10 38 20.0	
	baz=314,slow=75,SNR=95						
H11S2	WAKE ISLAND Hy	29.00	122	T	T	10 38 18.8	
	baz=314,slow=75,SNR=37						
ZALV	Zalesovo Beam	41.84	313	P	P	10 09 27.1	-0.2
	0.3nm,0.2s,baz=93,slow=8.9,SNR=3.0						
MKAR	Makanchi Array	43.99	302	P	P	10 09 44.5	-0.4
	0.3nm,0.4s,baz=90,slow=9.3,SNR=4.9						
ILAR	Eielson Array	49.77	32	P	P	10 10 30.6	+0.9
	0.3nm,0.7s,baz=262,slow=6.3,SNR=3.6						
WRA	Warramunga Arr	56.86	188	P	P	10 11 21.9	-0.4
	0.5nm,0.8s,baz=5.1,slow=7.3,SNR=5.6						
TXAR	Lajitas Array	90.43	52	P	P	10 14 40.2	+0.7
	0.2nm,0.8s,baz=293,slow=4.7,SNR=3.1						

IDC 18 10:03:14.2±999.0,**45°.71N**×**48°.79E**,**h0**km,**Error ellipse: s-maj=547.8km s-min=224.6km az=131.0**,**Caspian Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	DUBNA INFRASON	13.17	331	i		11 26 10.0	
	baz=142,slow=318,SNR=2.5						
I26DE	FREYUNG INFRAS	23.87	290	i		12 31 30.0	
	baz=83,slow=303,SNR=0.4						
I48TN	KESRA INFRASON	31.21	266	i		13 11 00.0	
	baz=56,slow=302,SNR=0.7						

IDC 18 10:05:27.8±1.9,**22°.49S**×**175°.09W**,**h0**km,**mb4.0**/4, **mb1 4.2**/4,**mb1mx3.7**/33,**mbtmp4.0**/4,**MS3.4**/2,**Ms1 3.3**/2, **ms1mx2.7**/25,**Error ellipse: s-maj=89.3km s-min=31.4km az=152.0**,**Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	27.23	294	LR	LR	10 21 35.5	
	comp=Z,77nm,19.1s,baz=286,slow=36						
ASAR	Alice Springs	46.74	258	P	P	10 13 58.8	-0.4
	1.1nm,0.8s,baz=93,slow=8.2,SNR=8.9						
ASAR				PcP	PcP	10 15 33.2	+0.5
	0.2nm,0.6s,baz=119,slow=4.3,SNR=3.2						
WRA	Warramunga Arr	47.04	263	P	P	10 14 00.8	-0.7
	0.8nm,0.7s,baz=93,slow=8.5,SNR=7.1						
PETK	Petropavlovsk-	78.90	344	P	P	10 17 32.8	0.0
	4.8nm,0.9s,baz=126,slow=7.3,SNR=4.3						
TXAR	Lajitas Array	85.87	56	P	P	10 18 09.2	-0.7
	0.4nm,0.9s,baz=206,slow=8.2,SNR=4.0						
PLCA	Paso Flores	85.94	132	LR	LR	10 50 10.2	
	comp=Z,15nm,19.6s,baz=157,slow=31						
AKASG	Malin Array Be	146.04	332	PKPbc	PKPdf	10 25 08.8	+0.1
	0.2nm,0.3s,baz=37,slow=3.8,SNR=4.3						
BRTR	Keskin Array B	150.18	312	PKPbc	PKPbc	10 25 21.4	+0.2
	0.5nm,0.7s,baz=120,slow=2.8,SNR=4.3						

JMA 18 10:26:11.4±0.1,**37°.09N**×**141°.36E**,**h25**km±1km,**M3.5**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.45	272	P	Pb	10 26 20.3	-0.5
ONAJ				S	Sb	10 26 26.8	-0.4
JFK	Kawauchi	0.48	306	P	Pb	10 26 20.7	-0.6
JFK				S	Sb	10 26 27.5	-0.4
JHO	Hitachi	0.80	233	P	Pb	10 26 25.6	-1.0
JHO				S	Sb	10 26 36.5	-0.4
JMM	Marumori	0.90	330	P	Pb	10 26 27.9	-0.4
JMM				S	Sb	10 26 40.1	+0.3
JFT	Otama	0.92	298	P	Pn	10 26 28.9	+0.1
JFT				S	Sn	10 26 41.1	-0.1
JSB	Shiboa	1.16	264	P	Pb	10 26 32.9	+0.1
JSB				S	Sb	10 26 48.3	+0.9
JFY	Yanaizu	1.36	284	P	Pb	10 26 36.4	+0.2
JFY				S	Sb	10 26 54.1	+1.0
MAT	Matsushiro	2.59	259	P	Pn	10 26 53.7	+2.0
MAT				S	Sb	10 27 28.2	-0.3

*ATH **18** 10:57:37.4,39°.21N×29°.16E,h10km±31km,Error ellipse: s-maj=31.6km s-min=5.5km az=0.0,Suspected Mining explosion.*
*ISCJB **18** 10:57:38.6±0.3,39°.13N±0°.02×29°.07E±0°.03,h0km,Error ellipse: s-maj=3.1km s-min=2.8km az=152.7*
*CSEM **18** 10:57:38.9±0.1,39°.12N×29°.09E,h1km,ML3.5,Error ellipse: s-maj=2.6km s-min=2.3km az=145.0,Suspected Mining explosion.*
*ISK **18** 10:57:38.8,39°.12N×29°.08E,h5km,ML3.5*
*DDA **18** 10:57:38.6,39°.13N×29°.08E,h5km,Ml3.5*
ISC 18 10:57:39.1±0.8,**39°.12N**±0°.02×**29°.09E**±0°.02,**h0**km,**n94**, σ**0s.83**/107,**2C-6D**,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	Gediz	0.26	107	ePG	Pg	10 57 44.5	+0.4
GEDZ				eSG	Sg	10 57 49.4	+1.9
GEDZ	Gediz	0.26	107	ePg	Pg	10 57 44.5	+0.4
GEDZ				eSg	Sg	10 57 49.4	+1.9
DEMI	Demirci	0.30	255	iP	Pg	10 57 45.6	+0.8
DEMI				iS	Sg	10 57 50.0	+1.2
DEMI	Demirci	0.30	255	P	Pg	10 57 45.6	+0.8
DEMI				S	Sg	10 57 50.0	+1.2
GDZ	Gediz	0.31	96	iP	Pg	10 57 45.3	+0.4
GDZ				iS	Sg	10 57 49.7	+0.8
GDZ	Gediz	0.31	96	P	Pg	10 57 45.3	+0.4
GDZ				S	Sg	10 57 49.7	+0.8
TVSB	Tavsanli	0.44	41	ePG	Pg	10 57 47.6	+0.2
TVSB	Tavsanli	0.44	41	ePg	Pg	10 57 47.6	+0.2
KULA	Kula-Manisa	0.69	209	ePG	Pg	10 57 52.5	+0.2
KULA				eSG	Sg	10 58 01.8	+0.5
KULA	Kula-Manisa	0.69	209	ePg	Pg	10 57 52.5	+0.2
KULA				eSg	Sg	10 58 01.8	+0.5
MANT	Manisa	0.75	214	iP	Pg	10 57 52.4	-1.1
MANT				iS	Sg	10 58 02.2	-1.1
MANT	Manisa	0.75	214	P	Pg	10 57 52.4	-1.1
MANT				S	Sg	10 58 02.2	-1.1
KHL	Karahalli	0.87	157	ePG	Pg	10 57 56.1	+0.4
KHL	Karahalli	0.87	157	ePg	Pg	10 57 56.1	+0.4
AKS	Akhisar	1.02	257	ePG	Pg	10 57 59.1	+0.4
AKS	Akhisar	1.02	257	ePg	Pg	10 57 59.1	+0.4
BALB	Balikesir	1.07	299	ePG	Pb	10 58 00.2	-0.2
BALB				eSG	Sb	10 58 14.9	-0.1
BALB	Balikesir	1.07	299	ePg	Pb	10 58 00.3	-0.2
BALB				eSg	Sb	10 58 14.9	-0.1
IGD	Bursa	1.15	4	iP	Pg	10 57 59.5	-1.6
IGD				iS	Sg	10 58 16.4	+0.5
CAVI	Cavuskoy	1.23	28	ePN	Pg	10 58 02.7	+0.1
CAVI	Cavuskoy	1.23	28	ePn	Pg	10 58 02.7	+0.1
IZI	Iznik	1.25	14	ePN	Pb	10 58 03.4	-0.2
IZI	Iznik	1.25	14	ePn	Pb	10 58 03.4	-0.2
MDNY	Mudanya-Bursa	1.26	353	ePN	Pb	10 58 03.5	-0.2
MDNY	Mudanya-Bursa	1.26	353	ePn	Pb	10 58 03.5	-0.2
KCTX	Karacabey (Bur	1.27	334	ePN	Pg	10 58 03.4	-0.1
KCTX	Karacabey (Bur	1.27	334	ePn	Pg	10 58 03.4	-0.1
SHUT	Suhut-Afyon	1.27	116	ePN	Pb	10 58 03.8	-0.2
SHUT	Suhut-Afyon	1.27	116	ePn	Pb	10 58 03.8	-0.2
BALY	Balya	1.30	299	iP	Pb	10 58 04.1	-0.2
BORA	Eskisehir	1.30	54	iP	Pg	10 58 03.5	-0.5
BORA	Eskisehir	1.30	54	P	Pg	10 58 03.5	-0.5
GEMT	Gemlik	1.31	3	ePN	Pb	10 58 04.5	-0.2
GEMT	Gemlik	1.31	3	ePn	Pb	10 58 04.5	-0.2
DENT	Denizli	1.37	182	ePN	Pg	10 58 05.0	-0.2
DENT	Denizli	1.37	182	ePn	Pg	10 58 05.0	-0.2
ADVT	Abdulvahap	1.40	21	ePN	Pn	10 58 05.8	-0.1
ADVT	Abdulvahap	1.40	21	ePn	Pn	10 58 05.8	-0.1
ESKT	Eskisehir	1.42	73	ePN	Pn	10 58 06.1	-0.2
ESKT	Eskisehir	1.42	73	iP	Pn	10 58 05.9	-0.4
ESKT	Eskisehir	1.42	73	ePn	Pn	10 58 06.1	-0.2
SEYT	Eskypehyr	1.42	73	P	Pn	10 58 05.9	-0.4
GONE	Gonen-Balikesi	1.43	311	ePN	Pn	10 58 05.7	-0.5
GONE	Gonen-Balikesi	1.43	311	ePn	Pn	10 58 05.7	-0.5
ARMT	Armutlu	1.45	353	ePN	Pn	10 58 06.4	-0.2
ARMT	Armutlu	1.45	353	ePn	Pn	10 58 06.4	-0.2
BOLV	Bolvadin	1.51	105	iP	Pn	10 58 06.9	-0.5
BOLV	Bolvadin	1.51	105	P	Pn	10 58 06.9	-0.5
EDC	Edincik	1.55	323	ePN	Pn	10 58 07.6	-0.3
EDC	Edincik	1.55	323	ePn	Pn	10 58 07.6	-0.3
KNL	Bal˘–kesir	1.67	314	iP	Pn	10 58 09.8	+0.2
GULT	Gulveren	1.71	40	ePN	Pn	10 58 10.1	-0.1
GULT	Gulveren	1.71	40	ePn	Pn	10 58 10.1	-0.1
HRT	Hereke	1.76	14	ePN	Pn	10 58 10.5	-0.3
HRT	Hereke	1.76	14	ePn	Pn	10 58 10.5	-0.3
SPNC	Sapanca-Adapaz	1.82	31	ePN	Pn	10 58 11.7	0.0
SPNC	Sapanca-Adapaz	1.82	31	ePn	Pn	10 58 11.7	0.0
AYVA	Ayvalik	1.87	276	iP	Pg	10 58 16.9	+1.9
AYVA	Ayvalik	1.87	276	P	Pg	10 58 16.9	+1.9
SVRH	Sivrihisar-ESK	1.92	79	ePN	Pn	10 58 13.0	-0.1
SVRH	Sivrihisar-ESK	1.92	79	ePn	Pn	10 58 13.0	-0.1
GOLH	Golhisar	1.92	169	iP	Pn	10 58 13.2	+0.1
GOLH	Golhisar	1.92	169	P	Pn	10 58 13.2	+0.1
ISK	Istanbul-Kandi	1.94	359	ePN	Pn	10 58 13.3	0.0
ISK	Istanbul-Kandi	1.94	359	ePn	Pn	10 58 13.3	0.0
DGB	˜zmir	2.03	239	iP	Pg	10 58 18.5	+0.5
SILT	Sile	2.07	12	ePN	Pn	10 58 15.3	+0.2
SILT	Sile	2.07	12	ePn	Pn	10 58 15.3	+0.2
URLA	Izmir	2.09	249	iP	Pg	10 58 20.1	+0.9
MDUB	Mudurnu	2.11	50	ePN	Pn	10 58 15.8	0.0
MDUB	Mudurnu	2.11	50	ePn	Pn	10 58 15.8	0.0
PRK	Paraskevi	2.19	274	P	Pn	10 58 15.6	-1.2
PRK	Paraskevi	2.19	274	P	Pn	10 58 15.6	-1.2
ZEY	˜zmir	2.21	247	iP	Pg	10 58 21.7	+0.3
SMG	Samos	2.26	232	P	Pn	10 58 18.6	+0.8
SMG	Samos	2.26	232	P	Pn	10 58 18.6	+0.8
CHOS	Chios island	2.48	254	P	Pn	10 58 18.3	-2.6
SIGR	SIGRI	2.52	273	P	Pn	10 58 22.0	+0.8
SIGR	SIGRI	2.52	273	P	Pn	10 58 22.0	+0.8
ALN	Alexandroupoli	2.93	308	P	Pn	10 58 25.8	-1.2
ALN	Alexandroupoli	2.93	308	P	Pn	10 58 25.8	-1.2
KSL	Kastellorizon	2.99	172	P	Pn	10 58 25.0	-2.7
SMTH	Samothraki Isl	3.06	297	P	Pn	10 58 28.5	-0.1
SMTH	Samothraki Isl	3.06	297	P	Pn	10 58 28.5	-0.1
KARP	Karpathos	3.88	204	P	Pn	10 58 37.6	-2.5
KARP	Karpathos	3.88	204	P	Pn	10 58 37.6	-2.5
TIRR	Tirgusor	5.36	355	⇓iP	Pn	10 58 59.5	-0.7
TIRR	Tirgusor	5.36	355	⇓iP	Pn	10 58 59.5	-0.7
TLB	Topalu	5.52	352	⇑iP	Pn	10 59 01.8	-0.6
TLB	Topalu	5.52	352	⇑iP	Pn	10 59 01.8	-0.6
CFR	Carcaliu	6.09	354	⇓iP	Pn	10 59 09.5	-0.9
CFR	Carcaliu	6.09	354	⇓iP	Pn	10 59 09.5	-0.9
MLR	Muntele Rosu	6.78	341	⇓iP	Pn	10 59 20.1	+0.2
MLR	Muntele Rosu	6.78	341	⇓iP	Pn	10 59 20.1	+0.2

*ECX **18** 11:27:47.7±0.5,32°.07N×115°.12W,h12km,MD3.0,ML3.2*
*MEX **18** 11:27:48.3±0.4,32°.15N×114°.94W,h21km±15km,MD3.7*
ISC 18 11:27:45.4±1.5,**32°.09N**±0°.04×**115°.06W**±0°.03, **h15**km±11km,**n34**,σ**0s.53**/49,**5C-10D**,**California-Baja California border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	Mexicali	0.34	340	eP	Pb	11 27 54.3	+1.2
MBIG				eS	Sb	11 27 59.0	+0.6
MBIG	Mexicali	0.34	340	⇑eP	Pb	11 27 53.9	+0.7
CPBX	Cerro Prieto	0.39	328	⇓eP	Pb	11 27 54.7	+0.7
CPBX				eS	Sb	11 28 00.6	+0.7
CPBX				IAML		11 28 03.6	
	comp=N,8μm,0.2s						
CPBX				e		11 28 03.6	
YMD	Yuma Desert	0.64	43	⇓iP	Pn	11 27 59.6	-0.3
EMSC	East Mesa	0.65	5	⇓iP	Pn	11 27 59.7	-0.4
COA	Coachella	0.78	356	⇓iP	Pn	11 28 01.2	-0.6
DREC	Desert Rsrch C	0.79	335	⇑eP	Pn	11 28 01.8	-0.2
SGL	Mount Signal	0.79	315	⇓iP	Pb	11 28 01.1	+0.1
ERPC	Ernies Place	0.83	322	eP	Pn	11 28 02.2	-0.4
WESC	Westside Schoo	0.88	320	⇓eP	Pn	11 28 03.1	-0.1
YUH	Yuha Desert	0.92	308	⇑iP	Pb	11 28 02.9	-0.1
GLA	Glamis	0.98	11	P	Pg	11 28 04.3	-0.1
	baz=191,SNR=135						
GLA				S	Sg	11 28 17.2	-0.1
	baz=191						
RMX	La Rumorosa	1.00	301	⇓eP	Pb	11 28 04.1	-0.5
RMX				eS	Sb	11 28 17.4	-0.3
RMX				⇑e		11 28 18.3	
RMX				IAML		11 28 18.3	
	comp=E,500nm,0.4s						
IKP	In-Ko-Pah, Jac	1.05	302	P	Pb	11 28 05.2	-0.2
	baz=119,SNR=76						
IKP				S	Sb	11 28 18.8	-0.2
	baz=119						
IKP	In-Ko-Pah, Jac	1.05	302	⇓eP	Pb	11 28 05.3	-0.1
SWSC	Sam W. Stewart	1.06	324	P	Pb	11 28 04.6	-0.8
	baz=141						
SPX	San Pedro Mart	1.10	199	⇑eP	Pb	11 28 06.4	+0.1
ZAX	El Zacaton	1.18	241	eP	Pn	11 28 07.6	+0.1
CBX	Cerro Bola	1.38	280	eP	Pb	11 28 10.8	-0.2
CBX				eS	Sn	11 28 28.1	-0.2
CBX	Cerro Bola	1.38	280	⇓eP	Pb	11 28 10.8	-0.2
CBX				eS	Sb	11 28 28.6	+0.1
CBX				IAML		11 28 31.7	
	comp=E,699nm,0.4s						
MONP2	Monument Peak	1.41	305	P	Pn	11 28 10.5	-0.2
	baz=122,SNR=40						
MONP2				S	Sn	11 28 28.5	-0.6
	baz=122						
TJIG	Tijuana	1.41	285	eP	Pn	11 28 10.9	+0.3
TJIG				eS	Sn	11 28 28.5	-0.5
BAR	Barrett	1.49	294	⇓eP	Pn	11 28 12.0	+0.4
BC3	Big Chuckawall	1.60	348	P	Pn	11 28 13.0	-0.2
	baz=167,SNR=19						
BC3				S	Sn	11 28 32.5	-1.2
	baz=167						
Y12C	Blythe	1.72	15	P	Pn	11 28 15.0	+0.2
	baz=195						
Y12C				S	Sn	11 28 36.9	+0.4
	baz=195						
109C	Camp Elliot, M	1.91	295	P	Pn	11 28 17.4	+0.1
	baz=112,SNR=21						
109C				Sb	Sb	11 28 44.2	+0.7
	baz=112						
214A	Organ Pipe Nat	1.91	93	P	Pn	11 28 18.4	+0.8
	baz=276,SNR=36						
214A				S	Sb	11 28 42.5	-1.3
	baz=276						
TPFO	Pinon Flats	1.92	323	P	Pn	11 28 17.2	-0.5
	baz=140,SNR=7.5						
PFO	Pinyon Flats O	1.92	323	P	Pn	11 28 17.3	-0.5
	baz=140,SNR=7.0						
PFO				S	Sn	11 28 41.3	-0.4
	baz=140						
BELC	Belle Mtn. Jos	2.06	338	P	Pn	11 28 19.6	-0.1
	baz=156						
IRM	Iron Mountain	2.06	358	P	Pn	11 28 19.7	+0.1
	baz=177,SNR=43						
NEE2	Needles Airpor	2.70	8	S	Sn	11 29 01.0	+0.3
	baz=188						
GMRC	Granite Mounta	2.74	350	P	Pn	11 28 29.3	+0.3
	baz=169						
CIS	Catalina Islan	3.12	296	P	Pn	11 28 34.4	+0.3
	baz=113						
CIS				S	Sn	11 29 12.1	+1.1
	baz=113						

*NSSC **18** 11:38:11.3±0.7,34°.47N×36°.65E,h0km±3km,ML2.5*
*GRAL **18** 11:38:15.1±0.2,34°.39N×36°.56E,h1km±3km,MD3.1*
ISC 18 11:38:12.1±3.0,**34°.5N**±0°.1×**36°.62E**±0°.10,**h6**km±13km,**n9**, σ**0s.65**/16,**Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FKH	Fakeheh	0.28	217	eP	Pg	11 38 18.5	+0.8
MARH	Ras Al Marh	0.46	194	eP	Pg	11 38 20.5	-0.6
MARH				eS	Sg	11 38 28.1	+1.0
MARH				AML	AML	11 38 38.1	
	comp=N,286nm,0.5s						
MARH				AML	AML	11 38 38.2	
	comp=E,446nm,0.6s						
HWQ	Hawqa	0.59	251	eP	Pb	11 38 24.5	-0.4
HWQ				eS	Sg	11 38 31.3	+0.2
BHL	Bhannes	0.98	235	eP	Pg	11 38 31.1	+0.2
DQRL	Deir Qamar	1.16	229	eP	Pg	11 38 34.3	0.0
DQRL				eS	Sg	11 38 48.4	-0.9
RCY	Rachaya	1.17	214	eP	Pg	11 38 34.4	-0.2
RCY				eS	Sg	11 38 48.7	-1.0
ZALF	Zalf	1.66	159	eP	Pn	11 38 41.8	0.0
ZALF				eS	Sn	11 39 03.6	+0.2
ZALF				AML	AML	11 39 05.0	
	comp=E,61nm,0.5s						
ZALF				AML	AML	11 39 07.9	
	comp=N,56nm,0.5s						
SALA	Sala	1.76	177	eP	Pn	11 38 43.4	+0.1
SALA				eS	Sn	11 39 06.0	-0.1
SALA				AML	AML	11 39 09.1	
	comp=N,147nm,0.5s						
SALA				AML	AML	11 39 12.4	
	comp=E,12nm,0.5s						
TCHB	Talchebab	1.88	197	eP	Pn	11 38 45.2	+0.4
TCHB				eS	Sn	11 39 09.6	+0.8
TCHB				AML	AML	11 39 18.8	
	comp=E,160nm,0.5s						
TCHB				AML	AML	11 39 19.1	
	comp=N,131nm,0.5s						

IDC 18 11:43:24.2±4.2,**18°.46N**×**145°.83E**,**h135**km±33km,**mb3.2**/4, **mb1 3.5**/5,**mb1mx3.1**/39,**mbtmp3.8**/5,**Error ellipse: s-maj=179.0km s-min=20.3km az=109.0**,**Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	4.93	191	P	Pn	11 44 37.1	+0.5
	9.3nm,0.3s,baz=92,slow=5.0,SNR=8.0						
GUMO				S	Sn	11 45 32.9	+0.1
	8.2nm,0.3s,baz=144,slow=20,SNR=1.2						
WRA	Warramunga Arr	39.80	197	P	P	11 50 44.6	+0.3
	0.9nm,0.8s,baz=17,slow=8.9,SNR=8.4						
ASAR	Alice Springs	43.46	196	P	P	11 51 13.9	-0.2
	0.2nm,0.5s,baz=14,slow=7.2,SNR=6.7						
STKA	Stephens Creek	50.21	185	P	P	11 52 05.9	-0.5
	1.6nm,1.0s,baz=351,slow=9.0,SNR=2.5						
ILAR	Eielson Array	63.80	26	P	P	11 53 41.6	-0.1
	0.4nm,0.4s,baz=250,slow=6.1,SNR=11						

IDC 18 11:48:56.4±1.9,**6°.02S**×**117°.47E**,**h0**km,**mb3.1**/3, **mb1 3.4**/4,**mb1mx3.2**/40,**mbtmp3.3**/4,**Error ellipse: s-maj=36.0km s-min=28.5km az=48.0**,**Bali Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	Kappang	2.48	66	Pn	Pn	11 49 38.7	+0.7
	baz=255,slow=16						
KAPI				Sn	Sn	11 50 08.5	-0.5
	43nm,0.3s,baz=190,slow=21,SNR=3.7						
WRA	Warramunga Arr	21.45	132	P	P	11 53 45.4	-1.1
	1.1nm,1.1s,baz=307,slow=12,SNR=4.7						
ASAR	Alice Springs	23.62	140	P	P	11 54 10.0	+0.7
	0.3nm,0.6s,baz=310,slow=8.4,SNR=5.8						
MKAR	Makanchi Array	61.13	333	P	P	11 59 12.5	-0.1
	0.2nm,0.5s,baz=138,slow=6.2,SNR=2.6						

*FUNV **18** 12:07:21.9,11°.65N×61°.34W,h32km,MW2.9*
*ISCJB **18** 12:07:23.5±0.8,11°.66N±0°.03×61°.67W±0°.04,h84km±8km, Error ellipse: s-maj=6.8km s-min=4.7km az=14.0*
*TRN **18** 12:07:25.0,11°.68N×61°.63W,h75km,MD3.2*
ISC 18 12:07:22.9±1.5,**11°.63N**±0°.04×**61°.63W**±0°.05,**h94**km±11km, **n18**,σ**1s.80**/29,**1C**,**Windward Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRW	Mount Saint Ca	0.53	357	eP	Pn	12 07 38.0	-0.4
GRW				eS	Sn	12 07 48.8	-1.0
GRHS	Sauteurs	0.59	359	eP	Pn	12 07 38.3	-0.4
GRHS				eS	Sn	12 07 49.2	-1.3
GRSS	Sisters	0.66	1	eP	Pn	12 07 38.9	-0.5
GRSS				eS	Sn	12 07 49.5	-2.2
TRN	Trinidad (W)	1.00	167	⇑eP	Pn	12 07 45.1	+2.2
TRN				eS	Sn	12 07 59.3	+1.4
BOT	Bacolet	1.00	117	eP	Pn	12 07 43.5	+0.6
BOT				eS	Sn	12 07 59.4	+1.5
TOSP	Speyside	1.12	107	eP	Pn	12 07 45.1	+0.9
TOSP				eS	Sn	12 08 00.3	0.0
GUIV	Guiria	1.14	211	eP	Pn	12 07 44.2	-0.3
GUIV				eS	Sn	12 07 59.4	-1.2
TBH	Brigand Hill	1.27	154	eS	Sn	12 08 04.7	+1.3
SVB	Belmont	1.67	13	eS	Sn	12 08 12.7	+0.3
SVV	Soufriere Volc	1.73	13	eP	Pn	12 07 53.4	+1.6
SVV				eS	Sn	12 08 13.9	+0.3
CRUV	Carupano	1.84	239	eP	Pn	12 07 53.5	+0.3
CRUV				eS	Sn	12 08 16.8	+0.6
GUNV	Guanoco	1.95	222	eP	Pn	12 07 55.5	+0.9
GUNV				eS	Sn	12 08 20.4	+1.6
MCLT	Moule a Chique	2.17	18	eS	Sn	12 08 23.3	-0.7
PCRV	Puerto La Cruz	3.29	244	eP	Pn	12 08 13.2	+0.8
RIOV	Rio Grande	3.54	183	eP	Pn	12 08 14.3	-1.6
CUPV	Cœpira	4.38	249	eP	Pn	12 08 28.5	+1.3
CUPV				eS	Sn	12 09 18.3	+1.2
LUEV	Luepa	5.75	178	eS	Sn	12 09 44.1	-6.7
BAUV	El Baul	6.85	248	eP	Pn	12 09 01.1	+0.3

*ISCJB **18** 12:09:57.3±0.5,38°.56N±0°.07×92°.59E±0°.06,h10km, mb3.8/13,Error ellipse: s-maj=11.1km s-min=5.9km az=24.5*
*IDC **18** 12:09:57.8±0.8,38°.35N×92°.38E,h0km,mb3.8/10, mb1 4.0/14,mb1mx3.8/46,mbtmp3.9/14,ML3.8/3,Error ellipse: s-maj=33.9km s-min=14.1km az=53.0*
*BJI **18** 12:09:59.4,38°.50N×92°.43E,h10km,ML3.9/10,Ms3.4/2, Ms7 3.0/2*
*NNC **18** 12:10:03.3±2.6,38°.69N×91°.80E,h0km,mb4.0,Error ellipse: s-maj=71.3km s-min=26.4km az=62.0*
ISC 18 12:09:59.6±0.7,**38°.53N**±0°.08×**92°.44E**±0°.05,**h10**km,**n29**, σ**2s.09**/36,**mb4.0**/13,**6C-3D**,**Qinghai**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTA	Gaotai	5.82	79	Pn	Pn	12 11 32.4	+6.3
GTA				Pg	Pg	12 11 50.1	-0.9
GTA				Sn	Sn	12 12 37.4	+4.5
GTA				Sg	Sg	12 13 04.6	-1.8
GTA				smax	smax		
	comp=N,83nm,0.9s						
GTA				smax	smax		
	comp=E,46nm,1.0s						

WMQ	**Urumqi**	**6.38 327**	Pn	**Pn**	**12 11 36.4**	**+2.6**
WMQ			Sn	**Sn**	**12 12 48.0**	**+1.3**
WMQ			smax	smax		
	comp=E,120nm,0.6s					
WMQ			smax	smax		
	comp=E,130nm,0.6s					
MK31	**Makanchi Array**	**11.13 321**	⇑Pn	**Pn**	**12 12 39.3**	**+0.5**
	comp=E,3.8nm,0.4s,baz=128,slow=14,SNR=66					
MK31			⇑Sn	**Sn**	**12 14 38.3**	**-4.9**
	comp=E,4.9nm,0.5s,baz=135,slow=25,SNR=13					
MKAR	**Makanchi Array**	**11.13 321**	Pn	**Pn**	**12 12 38.7**	**-0.1**
	comp=E,3.3nm,0.3s,baz=132,slow=14,SNR=72					
MKAR			Sn	**Sn**	**12 14 38.6**	**-4.5**
	comp=E,1.1nm,0.3s,baz=134,slow=26,SNR=6.3					
MAKZ	**Makanchi**	**11.29 320**	⇓Pn	**Pn**	**12 12 41.2**	**+0.2**
	comp=E,5.1nm,0.4s					
MAKZ			⇓Sn	**Sn**	**12 14 42.8**	**-4.5**
	comp=E,4.5nm,0.5s					
CD2	**Chengdu**	**12.02 126**	*e*P	**Pn**	**12 12 50.4**	**-0.6**
KSH	**Kashi**	**12.84 280**	*e*P	**Pn**	**12 13 05.1**	**+2.7**
KSH			S	**Sn**	**12 15 28.8**	**+3.4**
SONM	**Songino Array**	**13.77 43**	Pn	**Pn**	**12 13 17.6**	**+2.7**
	comp=E,0.5nm,0.3s,baz=227,slow=15,SNR=5.4					
SONM			Lg	Lg	12 17 09.5	
	comp=E,0.3nm,0.3s,baz=237,slow=30,SNR=5.3					
KURBB	**Kurchatov Arra**	**15.60 325**	Pn	**Pn**	**12 13 38.2**	**-1.2**
	comp=E,0.1nm,0.3s,baz=135,slow=13,SNR=5.3					
KURBB	**Kurchatov Arra**	**15.60 325**	⇑P	**P**	**12 13 42.6**	**-1.1**
	comp=E,9.1nm,0.6s					
ZALV	**Zalesovo Beam**	**16.28 344**	Pn	**Pn**	**12 13 49.5**	**+1.3**
	baz=158,slow=12,SNR=4.8					
KK31	**Karatay Array**	**17.20 292**	P	**Pn**	**12 13 59.9**	**-0.1**
	comp=E,1.7nm,0.7s,baz=99,slow=11,SNR=12					
VOSK	**Vostochnaya**	**20.54 321**	⇑P	**P**	**12 14 38.3**	**+0.2**
	comp=E,4.4nm,0.7s					
CMAR	**Chiang Mai Arr**	**20.79 162**	P	**P**	**12 14 37.8**	**-3.2**
	comp=E,0.6nm,0.3s,baz=336,slow=10,SNR=3.1					
BVA0	**Borovoye Array**	**21.01 321**	⇓P	**P**	**12 14 43.0**	**-0.2**
	comp=E,2.4nm,0.6s,baz=125,slow=10,SNR=14					
BVAR	**Borovoye Array**	**21.01 321**	P	**P**	**12 14 43.1**	**0.0**
	comp=E,1.8nm,0.5s,baz=119,slow=11,SNR=12					
BRVK	**Borovoye**	**21.08 321**	⇑P	**P**	**12 14 44.9**	**+1.0**
	comp=E,6.9nm,1.0s					
ZRNK	**Zerenda**	**21.67 319**	⇑P	**P**	**12 14 50.0**	**-0.2**
	comp=E,2.0nm,0.6s					
AB31	**Akbulak array**	**25.57 305**	P	**P**	**12 15 28.9**	**+0.4**
	comp=E,0.6nm,0.5s,baz=97,slow=10,SNR=9.4					
AKTO	**Aktyubinsk**	**27.04 307**	P	**P**	**12 15 42.4**	**+0.5**
	comp=E,1.4nm,0.6s,baz=95,slow=6.9,SNR=6.7					
BRTR	**Keskin Array B**	**44.91 291**	P	**P**	**12 18 15.2**	**+0.5**
	comp=E,1.6nm,0.6s,baz=102,slow=7.3,SNR=1.8					
FINES	**FINESS Array B**	**45.96 322**	P	**P**	**12 18 22.5**	**+0.1**
	comp=E,1.1nm,0.4s,baz=80,slow=7.8,SNR=11					
ARCES	**ARCESS Array B**	**46.46 333**	P	**P**	**12 18 26.9**	**+0.6**
	comp=E,1.1nm,0.5s,baz=91,slow=8.5,SNR=7.4					
NB2	**NORSAR Subarra**	**53.12 323**	P	**P**	**12 19 16.4**	**-0.7**
	comp=Z,0.9nm,0.5s,baz=74,slow=7.4					
NOA	**NORSAR Array B**	**53.12 323**	P	**P**	**12 19 16.8**	**-0.4**
	comp=Z,1.5nm,0.7s,baz=76,slow=7.3,SNR=4.8					
ILAR	**Eielson Array**	**67.11 24**	P	**P**	**12 20 53.4**	**+0.4**
	comp=Z,0.4nm,0.8s,baz=301,slow=4.7,SNR=4.5					
WRA	**Warramunga Arr**	**70.19 138**	P	**P**	**12 21 12.2**	**-0.6**
	comp=Z,0.7nm,0.6s,baz=332,slow=6.2,SNR=6.9					
ASAR	**Alice Springs**	**73.07 141**	P	**P**	**12 21 29.9**	**-0.1**
	comp=Z,1.3nm,0.8s,baz=325,slow=5.6,SNR=26					
CPUP	**Villa Florida**	**151.86 287**	PKPbc	**PKPbc**	**12 29 53.5**	**-1.4**
	comp=Z,2.5nm,0.8s,baz=85,slow=8.7,SNR=3.5					

MEX 18 12:12:49.6±0.4, **13°.86N**×**94°.21W, h22**km±108km**, MD3.9, Off coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**3.13**	**40**	*e*P	Pn	12 13 36.3	-1.6
CCIG				*e*S	Sn	12 14 11.3	-3.4

*ISCJB **18** 12:16:17.3±0.5, 39°.15N±0°.04×28°.91E±0°.05, h15km±5km, Error ellipse: s-maj=6.2km s-min=5.9km az=36.9*
*CSEM **18** 12:16:17.3±0.2, 39°.17N×28°.90E, h5km, MD2.6, Error ellipse: s-maj=4.8km s-min=4.4km az=72.0*
*ISK **18** 12:16:17.0, 39°.18N×28°.87E, h5km, MD2.5*
*DDA **18** 12:16:17.6, 39°.11N×28°.97E, h7km, Md2.6*
ISC 18 12:16:17.3±1.0, **39°.16N**±0°.03×**28°.93E**±0°.03, **h18**km±5km, **n24**, σ0°**70**/32, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.20**	**236**	*i* P	**Pg**	**12 16 22.8**	**+0.5**
DEMI				*i* S	**Sg**	**12 16 25.8**	**+0.1**
DEMI	**Demirci**	**0.20**	**236**	P	**Pg**	**12 16 22.8**	**+0.5**
DEMI				S	**Sg**	**12 16 25.8**	**+0.1**
GEDZ	**Gediz**	**0.39**	**106**	*e*PG	**Pb**	**12 16 26.0**	**+0.2**
GEDZ	**Gediz**	**0.39**	**106**	*e*Pg	**Pb**	**12 16 26.0**	**+0.2**
GDZ	**Gediz**	**0.43**	**99**	*i* P	**Pg**	**12 16 26.0**	**-0.2**
GDZ				*i* S	**Sg**	**12 16 31.4**	**-0.8**
GDZ	**Gediz**	**0.43**	**99**	P	**Pg**	**12 16 26.0**	**-0.2**
GDZ				S	**Sg**	**12 16 31.4**	**-0.8**
TVSB	**Tavsanli**	**0.51**	**54**	*e*PG	**Pb**	**12 16 27.9**	**+0.2**
TVSB	**Tavsanli**	**0.51**	**54**	*e*Pg	**Pb**	**12 16 27.9**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**198**	*e*PG	**Pg**	**12 16 30.8**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**198**	*e*Pg	**Pg**	**12 16 30.8**	**+0.2**
MANT	**Manisa**	**0.72**	**204**	*i* P	**Pg**	**12 16 30.6**	**-1.0**
MANT				*i* S	**Sg**	**12 16 39.6**	**-1.6**
MANT	**Manisa**	**0.72**	**204**	P	**Pg**	**12 16 30.6**	**-1.0**
MANT				S	**Sg**	**12 16 39.6**	**-1.6**
BALB	**Balikesir**	**0.94**	**301**	*e*PG	**Pg**	**12 16 34.9**	**-0.8**
BALB				*e*SG	**Sb**	**12 16 47.7**	**+0.4**
BALB	**Balikesir**	**0.94**	**301**	*e*Pg	**Pg**	**12 16 34.9**	**-0.8**
BALB				*e*Sg	**Sb**	**12 16 47.7**	**+0.4**
KHL	**Karahalli**	**0.95**	**151**	*e*PG	**Pn**	**12 16 36.7**	**+0.8**
KHL	**Karahalli**	**0.95**	**151**	*e*Pg	**Pn**	**12 16 36.7**	**+0.8**
KCTX	**Karacabey (Bur**	**1.19**	**338**	*e*PN	**Pb**	**12 16 39.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.19**	**338**	*e*Pn	**Pb**	**12 16 39.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.21**	**358**	*e*PN	**Pg**	**12 16 40.4**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.21**	**358**	*e*Pn	**Pg**	**12 16 40.4**	**-0.3**
IZI	**Iznik**	**1.25**	**19**	*e*PN	**Pg**	**12 16 41.2**	**-0.3**
IZI	**Iznik**	**1.25**	**19**	*e*Pn	**Pg**	**12 16 41.2**	**-0.3**
ARMT	**Armutlu**	**1.41**	**358**	*e*PN	**Pb**	**12 16 43.6**	**+0.6**
ARMT	**Armutlu**	**1.41**	**358**	*e*Pn	**Pb**	**12 16 43.6**	**+0.6**

*DDA **18** 12:22:04.0, 40°.72N×34°.49E, h7km, Md2.7*
*ISK **18** 12:22:03.8, 40°.75N×34°.56E, h13km, MD2.6*
*ISCJB **18** 12:22:04.1±0.5, 40°.74N±0°.02×34°.49E±0°.04, h9km±5km, Error ellipse: s-maj=5.6km s-min=4.0km az=165.1*
*CSEM **18** 12:22:04.1±0.1, 40°.73N×34°.51E, h12km, MD2.7, Error ellipse: s-maj=2.9km s-min=2.0km az=78.0*
ISC 18 12:22:04.0±0.9, **40°.73N**±0°.02×**34°.49E**±0°.03, **h15**km±7km, **n24**, σ0°**24**/40, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTAK	**Corum_Osmancik**	**0.24**	**110**	*i* P	**Pg**	**12 22 09.4**	**-0.1**
CTAK				*i* S	**Sg**	**12 22 13.2**	**+0.1**
CTAK	**Corum_Osmancik**	**0.24**	**110**	P	**Pg**	**12 22 09.4**	**-0.1**
CTAK				S	**Sg**	**12 22 13.2**	**+0.1**
TOS	**Tosya**	**0.47**	**311**	*e*PG	**Pb**	**12 22 14.0**	**0.0**
TOS	**Tosya**	**0.47**	**311**	*e*Pg	**Pb**	**12 22 14.0**	**0.0**
CORM	**Corum**	**0.56**	**169**	*e*PG	**Pb**	**12 22 15.5**	**-0.1**
CORM				*e*SG	**Sb**	**12 22 24.0**	**+0.5**
CORM	**Corum**	**0.56**	**169**	*e*Pg	**Pb**	**12 22 15.5**	**-0.1**
CORM				*e*Sg	**Sb**	**12 22 24.0**	**+0.5**
COAL	**Corum-Alaca**	**0.61**	**141**	*i* P	**Pg**	**12 22 15.8**	**-0.1**
COAL				*i* S	**Sb**	**12 22 24.5**	**-0.3**
COAL	**Corum-Alaca**	**0.61**	**141**	P	**Pg**	**12 22 15.8**	**-0.1**
COAL				S	**Sb**	**12 22 24.5**	**-0.3**
ILGA	**Ilgaz**	**0.67**	**299**	*i* P	**Pb**	**12 22 17.6**	**+0.1**
ILGA				*i* S	**Sb**	**12 22 27.0**	**+0.3**
ILGA	**Ilgaz**	**0.67**	**299**	P	**Pb**	**12 22 17.6**	**+0.1**
ILGA				S	**Sb**	**12 22 27.0**	**+0.3**
BOYT	**Boyabat**	**0.76**	**24**	*i* P	**Pg**	**12 22 18.8**	**0.0**
BOYT				*i* S	**Sb**	**12 22 29.5**	**+0.4**
BOYT	**Boyabat**	**0.76**	**24**	P	**Pg**	**12 22 18.8**	**0.0**
BOYT				S	**Sb**	**12 22 29.5**	**+0.4**
BYBT	**Boyabat**	**0.77**	**16**	*e*PG	**Pg**	**12 22 18.4**	**-0.5**
BYBT				*e*SG	**Sg**	**12 22 28.9**	**-0.1**
BYBT	**Boyabat**	**0.77**	**16**	*e*Pg	**Pg**	**12 22 18.4**	**-0.5**
BYBT				*e*Sg	**Sg**	**12 22 28.9**	**-0.1**
HAVZ	**Havza**	**0.99**	**69**	*i* P	**Pb**	**12 22 23.0**	**+0.1**
HAVZ				*i* S	**Sn**	**12 22 37.0**	**-0.2**
HAVZ	**Havza**	**0.99**	**69**	P	**Pb**	**12 22 23.0**	**+0.1**
HAVZ				S	**Sn**	**12 22 37.0**	**-0.2**
CDAG	**Cicekdag**	**1.11**	**185**	*i* P	**Pb**	**12 22 24.8**	**-0.2**
CDAG				*i* S	**Sg**	**12 22 40.1**	**+0.2**
CDAG	**Cicekdag**	**1.11**	**185**	P	**Pb**	**12 22 24.8**	**-0.2**
CDAG				S	**Sg**	**12 22 40.2**	**+0.2**
KVT	**Kavak**	**1.23**	**73**	*e*PN	**Pb**	**12 22 27.1**	**+0.1**
KVT	**Kavak**	**1.23**	**73**	*e*Pn	**Pb**	**12 22 27.1**	**+0.1**
YOZ	**Yozgat**	**1.26**	**150**	*e*PN	**Pn**	**12 22 27.3**	**+0.1**
YOZ	**Yozgat**	**1.26**	**150**	*e*Pn	**Pn**	**12 22 27.3**	**+0.1**
SNOP	**Sinop**	**1.40**	**22**	*e*PN	**Pn**	**12 22 28.9**	**0.0**
SNOP	**Sinop**	**1.40**	**22**	*e*Pn	**Pn**	**12 22 28.9**	**0.0**

*ISCJB **18** 12:23:55.1±0.6, 24°.83N±0°.04×122°.46E±0°.03, h7km±4km, Error ellipse: s-maj=7.2km s-min=3.3km az=20.1*
*JMA **18** 12:23:55.3±0.1, 24°.85N×122°.50E, h38km±4km, M2.8*
*TAP **18** 12:23:56.7, 24°.83N×122°.41E, h8km±2km, ML3.0, D*
ISC 18 12:23:55.2±1.1, **24°.83N**±0°.05×**122°.47E**±0°.03, **h10**km±9km, **n25**, σ0°**80**/45, **Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWB1	**Santiao Chiao**	**0.47**	**292**	*e*P	**Pg**	**12 24 04.4**	**0.0**
	baz=295						
TWB1				*e*S	**Sg**	**12 24 10.0**	**-0.5**
	baz=295						
EGS		**0.48**	**272**	*e*P	**Pg**	**12 24 05.2**	**+0.5**
	baz=271						
EGS				*e*S	**Sb**	**12 24 12.0**	**-1.0**
	baz=271						
JYNG	**Yonagunijimaku**	**0.58**	**131**	P	**Pg**	**12 24 06.7**	**+0.3**
JYNG				*e*S	**Sg**	**12 24 15.0**	**+1.0**
TWC	**Suao**	**0.60**	**249**	*e*P	**Pg**	**12 24 06.7**	**-0.2**
	baz=246						
TWC				*e*S	**Sg**	**12 24 14.7**	**-0.1**
	baz=246						
YOJ	**Yonaguni jima**	**0.62**	**127**	P	**Pg**	**12 24 07.2**	**0.0**
YOJ				*e*S	**Sg**	**12 24 15.5**	**+0.2**
NWF	**Wu-fen Shan**	**0.67**	**291**	*e*P	**Pg**	**12 24 08.2**	**+0.1**
	baz=293						
NWF				*e*S	**Sg**	**12 24 17.2**	**+0.3**
	baz=293						
TWE	**Neicheng**	**0.73**	**262**	*e*P	**Pg**	**12 24 09.3**	**-0.1**
	baz=260						
TWE				*e*S	**Sg**	**12 24 18.9**	**-0.1**
	baz=260						
ENA	**Nanau**	**0.77**	**239**	*e*P	**Pg**	**12 24 09.9**	**-0.2**
	baz=236						
ENA				*e*S	**Sg**	**12 24 20.2**	**0.0**
	baz=236						
TWA	**Mucha**	**0.81**	**281**	*e*S	**Sg**	**12 24 21.7**	**+0.1**
	baz=281						
ENTT	**Nioudou**	**0.84**	**257**	*e*P	**Pg**	**12 24 11.4**	**0.0**
	baz=255						
ENTT				*e*S	**Sg**	**12 24 21.5**	**-0.9**
	baz=255						
TWY	**Chenhua**	**0.90**	**300**	*e*P	**Pg**	**12 24 12.9**	**+0.3**
	baz=301						
TWY				*e*S	**Sg**	**12 24 24.2**	**-0.1**
	baz=301						
NSK	**Sanguang**	**1.02**	**261**	*e*P	**Pg**	**12 24 14.6**	**-0.3**
	baz=260						
NSK				*e*S	**Sg**	**12 24 27.0**	**-1.1**
	baz=260						
NNS	**Nan Shan**	**1.07**	**249**	*e*P	**Pg**	**12 24 15.7**	**-0.1**
	baz=247						
NNS				*e*S	**Sg**	**12 24 29.3**	**-0.4**
	baz=247						
IRIF	**Iriomote-Funau**	**1.25**	**113**	P	Pn	12 24 16.1	-2.6
WHF	**Hehuan Shan**	**1.29**	**238**	*e*P	**Pg**	**12 24 19.6**	**-0.5**
	baz=236						
WHF				*e*S	**Sg**	**12 24 34.8**	**-2.1**
	baz=236						
TWT	**Tachien**	**1.31**	**244**	*e*P	**Pn**	**12 24 19.9**	**+0.2**
	baz=243						
TWT				*e*S	**Sb**	**12 24 35.6**	**-1.3**
	baz=243						
NSTT	**Nanjuang**	**1.35**	**262**	*e*P	**Pg**	**12 24 21.4**	**+0.3**
	baz=261						
NSTT				*e*S	**Sb**	**12 24 37.4**	**-0.4**
	baz=261						
JIJ	**Ishigaki jima**	**1.60**	**107**	P	**Pn**	**12 24 22.1**	**-1.4**
TWQ1	**Liyutan**	**1.61**	**253**	*e*P	**Pg**	**12 24 26.9**	**+0.7**
	baz=252						
TWQ1				*e*S	**Sn**	**12 24 44.8**	**+0.2**
	baz=252						
WDT	**Danda**	**1.62**	**229**	*e*P	**Pb**	**12 24 25.9**	**+0.5**
	baz=227						
WDT				*e*S	**Sn**	**12 24 44.8**	**-0.4**
	baz=227						
SMLT	**Sun Moon Lake**	**1.71**	**237**	*e*P	**Pn**	**12 24 26.6**	**+1.5**
	baz=235						
TYC	**Yuchr**	**1.73**	**238**	*e*P	**Pn**	**12 24 26.0**	**+0.6**
	baz=236						
TYC				*e*S	**Sn**	**12 24 47.5**	**-0.1**
	baz=236						
ALS	**Alishan**	**2.01**	**229**	*e*P	**Pb**	**12 24 31.8**	**-0.2**
	baz=227						
ALS				*e*S	**Sn**	**12 24 55.9**	**+1.1**
	baz=227						
CHN5	**Tsauling**	**2.04**	**233**	*e*P	**Pb**	**12 24 32.5**	**0.0**
	baz=232						
CHN5				*e*S	**Sb**	**12 24 57.5**	**-0.4**
	baz=232						
CHN4	**Tsaushan**	**2.26**	**230**	*e*P	**Pn**	**12 24 35.3**	**+2.7**
	baz=228						
CHN4				*e*S	**Sn**	**12 25 00.1**	**-0.4**
	baz=228						

IDC 18 12:26:48.5±1.8, **3°.69N**×**126°.09E, h0**km, **mb3.7**/5, **mb1 3.9**/5, **mb1mx3.5**/51, **mbtmp3.7**/5, **Error ellipse: s-maj=104.3km s-min=25.0km az=67.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**21.66**	**181**	P	P	12 31 42.4	+1.6
	2.1nm,0.5s,baz=11,slow=10,SNR=9.9						
WRA	**Warramunga Arr**	**24.84**	**161**	P	P	12 32 11.8	-1.1
	1.7nm,0.5s,baz=338,slow=10,SNR=18						
ASAR	**Alice Springs**	**28.24**	**165**	P	P	12 32 43.4	-0.1
	0.3nm,0.4s,baz=336,slow=7.1,SNR=13						
STKA	**Stephens Creek**	**38.32**	**158**	P	P	12 34 11.2	0.0
	0.8nm,0.3s,baz=355,slow=7.5,SNR=7.9						
MKAR	**Makanchi Array**	**57.23**	**326**	P	P	12 36 37.8	0.0
	0.2nm,0.4s,baz=127,slow=7.0,SNR=4.3						

IDC 18 12:30:12.2±10.0, **28°.50N**×**85°.68E, h0**km, **mb3.3**/2, **mb1 3.5**/3, **mb1mx3.1**/58, **mbtmp3.3**/3, **ML3.3**/1, **Error ellipse: s-maj=501.4km s-min=38.5km az=69.0, Nepal**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MKAR	**Makanchi Array**	**18.46**	**353**	P	Pn	12 34 29.3	-0.1
	0.1nm,0.3s,baz=171,slow=11,SNR=3.4						
WRA	**Warramunga Arr**	**67.29**	**130**	P	P	12 41 09.7	+0.7
	0.4nm,0.7s,baz=323,slow=6.3,SNR=4.7						
ASAR	**Alice Springs**	**69.62**	**133**	P	P	12 41 22.9	-0.6
	0.3nm,0.9s,baz=313,slow=5.9,SNR=5.6						

*NIED **18** 12:37:00, 35°.50N×142°.00E, h20km, Mw4.2 Best double couple: Mo2.17000×10^15 NP1:φs204.00000°, δ32.00000°, λ109.00000°. NP2:φs1.00000°, δ60.00000°, λ78.00000°.*
*IDC **18** 12:37:09.0±0.8, 35°.52N×141°.76E, h0km, mb4.0/13, mb1 4.1/16, mb1mx3.9/51, mbtmp4.0/16, ML3.3/3, MS3.3/4, Ms1 3.3/4, ms1mx2.8/44, Error ellipse: s-maj=24.7km s-min=15.2km az=77.0*
*ISCJB **18** 12:37:10.7±1.5, 35°.48N±0°.04×141°.91E±0°.06, h29km±10km, mb4.1/16, MS3.4/3, Error ellipse: s-maj=8.7km s-min=6.9km az=7.6*
*JMA **18** 12:37:10.2±0.2, 35°.52N×141°.96E, h42km±4km, M3.8*
*NEIC **18** 12:37:14.1±0.7, 35°.62N×141°.78E, h35km, mb4.2/1, Error ellipse: s-maj=15.1km s-min=14.1km az=220.0*
ISC 18 12:37:10.7±3.4, **35°.51N**±0°.05×**141°.76E**±0°.07, **h11**km±21km, **n39**, σ1°**04**/39, **mb4.0**/16, **MS3.4**/3, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.76**	**285**	P	**Pn**	**12 37 26.8**	**-0.6**
CHOJ				S	**Sn**	**12 37 39.3**	**+0.5**
BSO1	**Boso 1**	**1.07**	**217**	P	**Pb**	**12 37 30.8**	**-0.1**
BSO3	**Boso 3**	**1.24**	**236**	P	**Pn**	**12 37 34.2**	**+0.4**
JFK	**Kawauchi**	**1.98**	**339**	P	**Pn**	**12 37 42.8**	**-1.5**
JIM2	**Oshima 3**	**2.07**	**248**	P	**Pn**	**12 37 45.5**	**+0.1**
JIM2				*e*S	**Sn**	**12 38 11.4**	**+0.2**
JAG	**Ashikaga**	**2.08**	**297**	P	**Pn**	**12 37 45.6**	**0.0**
JOD2	**Odawara 2**	**2.20**	**264**	P	**Pn**	**12 37 47.4**	**+0.2**
JOD2				*e*S	**Sn**	**12 38 15.2**	**+0.8**
JFT	**Otama**	**2.31**	**331**	P	**Pn**	**12 37 48.9**	**+0.2**
JFT				S	**Sn**	**12 38 17.2**	**+0.1**
JHJ	**Hachijo jima 2**	**2.89**	**215**	Pn	**Pn**	**12 37 57.4**	**+0.7**
	34nm,0.3s,baz=112,slow=23,SNR=3.0						
JHJ				Sn	**Sn**	**12 38 29.1**	**-2.4**
	73nm,0.3s,baz=67,slow=22,SNR=6.2						
MJAR	**Matsushiro Arr**	**3.06**	**291**	Pn	**Pn**	**12 37 59.3**	**+0.2**
	6.3nm,0.3s,baz=225,slow=3.1,SNR=46						
MJAR				Sn	**Sb**	**12 38 39.7**	**-2.8**
	3.8nm,0.3s,baz=302,slow=7.2,SNR=5.3						
MAJO	**Matsushiro**	**3.06**	**291**	*e*Pn	**Pn**	**12 38 00.1**	**+1.1**
MAT	**Matsushiro**	**3.06**	**291**	P	**Pn**	**12 38 00.5**	**+1.5**
MAT				*e*S	**Sn**	**12 38 38.0**	**+2.4**
KSRS	**Korea Array**	**11.31**	**284**	LR	LR	12 43 15.1	
	comp=Z,86nm,18.8s,baz=119,slow=32						
USRK	**Ussuriysk Ar.**	**11.47**	**322**	Pn	**Pn**	**12 39 55.7**	**+1.3**
	0.3nm,0.3s,baz=130,slow=15,SNR=6.9						
H11N2	**WAKE ISLAND Hy**	**27.15**	**119**	T	T	13 11 15.8	
	baz=311,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy**	**27.16**	**119**	T	T	13 11 18.4	
	baz=311,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**27.17**	**119**	T	T	13 11 20.4	
	baz=311,slow=75,SNR=20						
H11S1	**WAKE ISLAND Hy**	**27.82**	**121**	T	T	13 12 11.1	
	baz=312,slow=75,SNR=17						
H11S3	**WAKE ISLAND Hy**	**27.82**	**121**	T	T	13 12 07.0	
	baz=312,slow=75,SNR=16						
H11S2	**WAKE ISLAND Hy**	**27.83**	**121**	T	T	13 12 16.5	
	baz=312,slow=75,SNR=14						
SONM	**Songino Array**	**28.89**	**306**	P	**P**	**12 43 09.9**	**+0.4**
	1.6nm,0.6s,baz=111,slow=7.0,SNR=7.7						
SIJI	**Sorong**	**37.49**	**197**	P	**P**	**12 44 25.1**	**+0.5**
	49nm,0.5s,baz=1.3,slow=5.2,SNR=1.8						
ZALV	**Zalesovo Beam**	**43.16**	**314**	P	**P**	**12 45 11.2**	**0.0**
	2.0nm,0.6s,baz=100,slow=7.0,SNR=7.1						
ZALV				LR	LR	13 04 21.7	
	comp=Z,56nm,18.4s,baz=70,slow=38						
MKAR	**Makanchi Array**	**45.18**	**303**	P	**P**	**12 45 27.4**	**-0.1**
	0.9nm,0.6s,baz=83,slow=8.9,SNR=9.9						
MKAR				LR	LR	13 05 08.9	
	comp=Z,38nm,18.6s,baz=104,slow=37						
KURK	**Kurchatov**	**47.10**	**309**	*e*P	**P**	**12 45 42.1**	**-0.4**
KURK				P	**P**	**12 45 42.9**	**+0.4**
KURBB	**Kurchatov Arra**	**47.17**	**309**	P	**P**	**12 45 42.9**	**-0.2**
	8.4nm,0.6s,baz=84,slow=8.0,SNR=44						
ILAR	**Eielson Array**	**50.63**	**32**	P	**P**	**12 46 09.6**	**+0.1**
	0.5nm,0.8s,baz=262,slow=6.1,SNR=7.5						
BVAR	**Borovoye Array**	**51.81**	**313**	P	**P**	**12 46 18.1**	**-0.4**
	1.2nm,0.5s,baz=94,slow=4.8,SNR=6.3						
WRA	**Warramunga Arr**	**55.60**	**188**	P	**P**	**12 46 45.5**	**-0.9**
	1.8nm,0.7s,baz=3.8,slow=7.6,SNR=8.1						
ABKAR	**Akbulak array**	**59.14**	**311**	*e*P	**P**	**12 47 10.8**	**-0.5**
	1.1nm,0.6s						
ASAR	**Alice Springs**	**59.32**	**188**	P	**P**	**12 47 12.8**	**0.0**
	0.8nm,1.0s,baz=2.4,slow=6.2,SNR=10.0						
AKTO	**Aktyubinsk**	**59.91**	**313**	P	**P**	**12 47 16.0**	**-0.5**
	0.6nm,0.5s,baz=56,slow=9.3,SNR=3.2						
FINES	**FINESS Array B**	**70.29**	**333**	P	**P**	**12 48 23.4**	**-0.4**
	0.8nm,0.6s,baz=33,slow=8.3,SNR=2.6						
NB2	**NORSAR Subarra**	**75.70**	**338**	P	**P**	**12 48 55.7**	**-0.2**
	comp=Z,1.2nm,0.6s,baz=42,slow=5.9						
BRTR	**Keskin Array B**	**80.07**	**312**	P	**P**	**12 49 20.4**	**-0.4**
	comp=Z,1.0nm,1.0s,baz=175,slow=3.1,SNR=2.8						
GERES	**GERESS Array B**	**84.15**	**328**	P	**P**	**12 49 40.4**	**-1.5**
	comp=Z,0.3nm,0.2s,baz=23,slow=4.4,SNR=3.4						
SCHQ	**Schefferville**	**86.72**	**16**	LR	LR	13 33 53.2	
	comp=Z,14nm,18.3s,baz=294,slow=39						
TXAR	**Lajitas Array**	**90.83**	**53**	P	**P**	**12 50 16.1**	**+1.5**
	comp=Z,0.8nm,1.0s,baz=286,slow=4.7,SNR=5.1						
LPAZ	**La Paz**	**147.19**	**62**	PKPbc	**PKPab**	**12 56 58.3**	**+1.4**
	comp=Z,1.2nm,0.9s,baz=56,slow=6.9,SNR=4.4						

JMA 18 12:39:04.6, 43°.99N×142°.09E, h6km±1km**, M0.5, Hokkaido region**

| Code | Station Name | Δ° | AZ° | Phase | ID |

ZALV				Lg	Lg	12 42 32.3	
	2.5nm,0.3s,baz=56,slow=27,SNR=12						
KURBB	**Kurchatov Arra**	**6.26 234**		Pn	Pn	12 43 28.4	+1.0
	0.1nm,0.3s,baz=52,slow=14,SNR=8.3						
KURBB				Lg	Lg	12 45 12.4	
	0.0nm,0.3s,baz=45,slow=30,SNR=3.5						
MKAR	**Makanchi Array**	**8.23 201**		Pn	Pn	12 43 55.2	+0.7
	0.2nm,0.3s,baz=23,slow=14,SNR=8.0						

IDC 18 12:42:00.6±2.2,6°45S×129°49E,h0km,mb3.2/1, mb1 3.5/3,mb1mx3.3/37,mbtmp3.3/3,ML3.3/2,Error ellipse: s-maj=147.9km s-min=30.9km az=68.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**14.22**	**161**	Pn	Pn	12 45 22.9	-0.5
	0.1nm,0.3s,baz=343,slow=14,SNR=9.5						
WRA				Sn	Sn	12 47 49.6	-12
	0.2nm,0.3s,baz=359,slow=7.0,SNR=4.5						
ASAR	**Alice Springs**	**17.64**	**167**	P	Pn	12 46 08.2	+0.2
	0.1nm,0.3s,baz=343,slow=10,SNR=17						
MKAR	**Makanchi Array**	**67.49**	**327**	P	P	12 52 58.5	0.0
	0.1nm,0.3s,baz=120,slow=8.5,SNR=1.7						

MEX 18 12:51:55.1±0.7,15°62N×93°82W,h20km±474km,MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.74**	**68**	*e*P	Pn	12 52 21.4	-3.0
CCIG				*e*S	Sn	12 52 42.1	-4.0

IDC 18 12:52:40.5±6.8,6°15S×153°60E,h97km±51km,mb3.7/7, mb1 3.8/9,mb1mx3.5/34,mbtmp4.0/9,MS3.1/6,Ms1 3.1/6, ms1mx2.9/28,Error ellipse: s-maj=52.7km s-min=26.6km az=90.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**7.09**	**118**	LR	LR	12 57 23.0	
	comp=Z,176nm,18.2s,baz=247,slow=40						
PMG	**Port Moresby**	**7.15**	**243**	P	Pn	12 54 22.1	-0.3
	3.2nm,0.3s,baz=73,slow=10,SNR=9.1						
PMG				S	Sn	12 55 43.1	+0.9
	1.3nm,0.3s,baz=268,slow=18,SNR=1.4						
PMG				LR	LR	12 57 04.8	
	comp=Z,150nm,21.7s,baz=76,slow=37						
CTA	**Charters Tower**	**15.58**	**207**	P	Pn	12 56 15.7	+0.9
	0.2nm,0.3s,baz=22,slow=14,SNR=5.3						
WRA	**Warramunga Arr**	**23.20**	**232**	P	P	12 57 38.7	-0.3
	1.4nm,0.4s,baz=58,slow=9.1,SNR=37						
ASAR	**Alice Springs**	**25.73**	**225**	P	P	12 58 02.4	+0.3
	2.7nm,0.8s,baz=57,slow=9.3,SNR=44						
ASAR				LR	LR	13 07 43.1	
	comp=Z,48nm,20.6s,baz=78,slow=35						
STKA	**Stephens Creek**	**27.95**	**202**	P	P	12 58 21.7	-0.1
	1.1nm,0.9s,baz=18,slow=14,SNR=2.9						
STKA				LR	LR	13 09 39.8	
	comp=Z,32nm,18.9s,baz=24,slow=36						
FITZ	**Fitzroy Crossi**	**29.75**	**244**	P	P	12 58 37.9	-0.1
	4.6nm,0.7s,baz=64,slow=6.9,SNR=15						
FITZ				LR	LR	13 11 15.7	
	comp=Z,41nm,20.0s,baz=56,slow=38						
PETK	**Petropavlovsk-**	**59.13**	**3**	LR	LR	13 23 00.1	
	comp=Z,17nm,22.0s,baz=218,slow=31						
SONM	**Songino Array**	**67.88**	**328**	P	P	13 03 28.6	0.0
	0.3nm,0.4s,baz=138,slow=7.1,SNR=2.9						
MKAR	**Makanchi Array**	**81.86**	**319**	P	P	13 04 49.0	0.0
	0.3nm,0.4s,baz=99,slow=7.2,SNR=4.8						
MAW	**Mawson**	**84.64**	**203**	P	P	13 05 02.4	-0.6
	1.3nm,0.6s,baz=102,slow=9.3,SNR=2.5						
TORD	**Torodi Ar. Bea**	**151.46**	**286**	PKPbc	PKPbc	13 12 24.4	+0.3
	0.7nm,0.5s,baz=44,slow=2.9,SNR=2.7						

IDC 18 12:53:02.7±2.1,16°18S×174°64W,h207km±32km, mb3.3/4,mb1 3.6/6,mb1mx3.2/33,mbtmp4.0/6,Error ellipse: s-maj=150.9km s-min=24.2km az=141.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**3.57**	**51**	P	Pn	12 54 00.5	+0.9
	23nm,0.3s,baz=190,slow=2.4,SNR=21						
AFI				S	S	12 54 44.4	+0.7
	50nm,0.3s,baz=238,slow=21,SNR=13						
DZM	**Mont Dzumac**	**18.81**	**249**	P	P	12 57 05.3	-1.7
	0.6nm,0.3s,baz=333,slow=16,SNR=1.6						
STKA	**Stephens Creek**	**42.62**	**240**	P	P	13 00 37.7	-1.1
	1.8nm,0.8s,baz=85,slow=8.2,SNR=3.5						
WRA	**Warramunga Arr**	**48.51**	**258**	P	P	13 01 25.8	+0.6
	0.6nm,0.5s,baz=91,slow=7.0,SNR=9.1						
ASAR	**Alice Springs**	**48.74**	**253**	P	P	13 01 27.2	+0.3
	4.3nm,0.8s,baz=88,slow=8.7,SNR=44						
ILAR	**Eielson Array**	**83.44**	**12**	P	P	13 05 05.7	-0.8
	0.2nm,0.6s,baz=224,slow=6.2,SNR=2.5						

*ISCJB **18** 12:54:11.0±0.5,38°26N±0°03×27°22E±0°03,h5km±6km, Error ellipse: s-maj=5.5km s-min=3.9km az=156.2*
*DDA **18** 12:54:10.9,38°27N×27°21E,h7km,Md2.5*
*ATH **18** 12:54:11.9,38°23N×27°15E,h21km±4km,ML1.9/2,Error ellipse: s-maj=5.2km s-min=1.5km az=243.0*
*CSEM **18** 12:54:11.3±0.1,38°27N×27°23E,h5km,MD2.6,Error ellipse: s-maj=2.8km s-min=2.5km az=178.0*
*ISK **18** 12:54:11.3,38°30N×27°23E,h11km,MD2.6*
ISC 18 12:54:11.2±0.9,38°27N±0°02×27°23E±0°02,h10km±9km, n32,σ0°34/44,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IZM	**Izmir**	**0.13**	**11**	*e*PG	**Pg**	**12 54 14.4**	**+0.2**
IZM	**Izmir**	**0.13**	**11**	*e*Pg	**Pg**	**12 54 14.4**	**+0.2**
DGB	**˙zmir**	**0.35**	**232**	*i* P	**Pg**	**12 54 18.0**	**-0.1**
DGB				*i* S	**Sg**	**12 54 22.2**	**-0.5**
URLA	**Izmir**	**0.51**	**280**	*i* P	**Pg**	**12 54 20.9**	**-0.1**
URLA				*i* S	**Sg**	**12 54 27.9**	**+0.2**
URLA	**Izmir**	**0.51**	**280**	P	**Pg**	**12 54 20.9**	**-0.1**
URLA				S	**Sg**	**12 54 27.9**	**+0.2**
GCAM	**G?zelcaml?**	**0.57**	**180**	*i* P	**Pg**	**12 54 22.3**	**+0.1**
GCAM	**G?zelcaml?**	**0.57**	**180**	P	**Pg**	**12 54 22.3**	**+0.1**
ZEY	**˙zmir**	**0.57**	**267**	*i* P	**Pg**	**12 54 21.9**	**-0.4**
ZEY				*i* S	**Sg**	**12 54 29.8**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.61**	**122**	*e*PG	**Pb**	**12 54 23.8**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.61**	**122**	*e*Pg	**Pb**	**12 54 23.8**	**-0.3**
SMG	**Samos**	**0.64**	**209**	P	**Pg**	**12 54 23.2**	**-0.3**
SMG				S	**Sg**	**12 54 31.8**	**-0.2**
SMG	**Samos**	**0.64**	**209**	P	**Pg**	**12 54 23.2**	**-0.3**
SMG				S	**Sg**	**12 54 31.8**	**-0.2**
SMG				AML	AML	12 54 34.9	
	comp=E,304μm,0.3s						
SMG				AML	AML	12 54 35.0	
	comp=N,395μm,0.4s						
AKS	**Akhisar**	**0.76**	**37**	*e*PG	**Pg**	**12 54 26.1**	**+0.3**
AKS				*e*SG	**Sb**	**12 54 36.8**	**-0.2**
AKS	**Akhisar**	**0.76**	**37**	*e*Pg	**Pg**	**12 54 26.1**	**+0.3**
AKS				*e*Sg	**Sb**	**12 54 36.8**	**-0.2**
DKL	**Dikili**	**0.84**	**342**	*e*PG	**Pg**	**12 54 27.3**	**0.0**
DKL	**Dikili**	**0.84**	**342**	*e*Pg	**Pg**	**12 54 27.3**	**0.0**
CHOS	**Chios island**	**0.93**	**278**	*e*PG	**Pb**	**12 54 29.8**	**+0.3**
CHOS	**Chios island**	**0.93**	**278**	P	**Pg**	**12 54 29.0**	**-0.1**
CHOS	**Chios island**	**0.93**	**278**	*e*Pg	**Pb**	**12 54 29.8**	**+0.3**
CHOS				S	**Sg**	**12 54 41.1**	**-0.1**
CHOS	**Chios island**	**0.93**	**278**	P	**Pg**	**12 54 29.0**	**-0.1**
CHOS				S	**Sg**	**12 54 41.1**	**-0.1**
CHOS				AML	AML	12 54 44.3	
	comp=E,148μm,0.3s						
CHOS				AML	AML	12 54 44.4	
	comp=N,105μm,0.4s						
MANT	**Manisa**	**1.07**	**78**	*i* P	**Pg**	**12 54 31.2**	**-0.5**
MANT				*i* S	**Sg**	**12 54 45.3**	**-0.3**
MANT	**Manisa**	**1.07**	**78**	P	**Pg**	**12 54 31.2**	**-0.5**
MANT				S	**Sg**	**12 54 45.3**	**-0.3**
KULA	**Kula-Manisa**	**1.15**	**77**	*e*PN	**Pn**	**12 54 34.0**	**+0.5**
KULA	**Kula-Manisa**	**1.15**	**77**	*e*Pn	**Pn**	**12 54 34.0**	**+0.5**
BODT	**Bodrum**	**1.21**	**177**	*e*PN	**Pg**	**12 54 35.2**	**+0.8**
BODT	**Bodrum**	**1.21**	**177**	*e*Pn	**Pg**	**12 54 35.2**	**+0.8**
PRK	**Paraskevi**	**1.23**	**323**	P	**Pg**	**12 54 35.2**	**+0.5**
PRK	**Paraskevi**	**1.23**	**323**	P	**Pg**	**12 54 35.2**	**+0.5**
SIGR	**SIGRI**	**1.43**	**312**	*e*PN	**Pn**	**12 54 36.9**	**-0.3**
SIGR	**SIGRI**	**1.43**	**312**	*e*Pn	**Pn**	**12 54 36.9**	**-0.3**
SIGR	**SIGRI**	**1.43**	**312**	P	**Pg**	**12 54 38.5**	**-0.1**
SIGR	**SIGRI**	**1.43**	**312**	P	**Pg**	**12 54 38.5**	**-0.1**

*IDC **18** 12:54:35.0±1.2,21°12S×176°05W,h0km,mb4.1/7, mb1 4.2/8,mb1mx3.9/30,mbtmp4.1/8,ML4.2/1,Error ellipse: s-maj=43.0km s-min=24.2km az=135.0*
*ISCJB **18** 12:54:36.3±1.5,21°2S±0°1×176°2W±0°2,h10km,mb4.1/7, Error ellipse: s-maj=33.3km s-min=21.1km az=3.4*
ISC 18 12:54:36.3±1.2,21°2S±0°2×176°0W±0°2,h10km,n12, σ1s11/12,mb4.2/7,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**18.05**	**198**	P	**P**	**12 58 47.8**	**+0.1**
	0.8nm,0.3s,baz=115,slow=21,SNR=2.0						
RPZ	**Rata Peaks**	**24.95**	**203**	P	**P**	**13 00 00.3**	**+0.4**
	4.6nm,0.5s,baz=0.0,slow=5.1,SNR=2.4						
CTA	**Charters Tower**	**35.29**	**265**	P	**P**	**13 01 32.9**	**+1.1**
	2.0nm,0.4s,baz=95,slow=12,SNR=5.2						
STKA	**Stephens Creek**	**39.20**	**245**	P	**P**	**13 02 05.7**	**+0.8**
	1.1nm,0.5s,baz=91,slow=11,SNR=7.3						
ASAR	**Alice Springs**	**46.20**	**257**	P	**P**	**13 03 01.4**	**-0.4**
	1.8nm,0.7s,baz=94,slow=9.8,SNR=12						
WRA	**Warramunga Arr**	**46.37**	**262**	P	**P**	**13 03 02.2**	**-0.9**
	1.3nm,0.5s,baz=96,slow=8.4,SNR=19						
FITZ	**Fitzroy Crossi**	**54.80**	**262**	P	**P**	**13 04 06.1**	**-0.8**
	1.5nm,0.9s,baz=148,slow=6.0,SNR=7.6						
ILAR	**Eielson Array**	**88.55**	**12**	P	**P**	**13 07 30.4**	**+1.7**
	0.3nm,0.7s,baz=207,slow=5.9,SNR=5.6						
ARCES	**ARCESS Array B**	**129.89**	**350**	PKP	**PKPdf**	**13 13 45.3**	**-0.2**
	1.1nm,0.7s,baz=101,slow=1.2,SNR=6.4						
AKASG	**Malin Array Be**	**144.48**	**332**	PKP	**PKPdf**	**13 14 10.9**	**-1.9**
	1.1nm,0.6s,baz=43,slow=4.4,SNR=13						
BRTR	**Keskin Array B**	**148.66**	**313**	PKPbc	**PKPbc**	**13 14 23.4**	**-0.8**
	1.4nm,0.6s,baz=143,slow=4.7,SNR=7.1						
GERES	**GERESS Array B**	**151.30**	**347**	PKPbc	**PKPbc**	**13 14 29.8**	**-0.4**
	0.4nm,0.4s,baz=348,slow=2.4,SNR=3.4						

IDC 18 13:00:33.1±1.7,1°98S×138°38E,h0km,mb3.0/2, mb1 3.2/4,mb1mx3.1/30,mbtmp3.0/4,ML2.8/2,Error ellipse: s-maj=33.4km s-min=27.7km az=25.0,Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**2.39**	**103**	Pn	Pn	13 01 13.9	+0.4
	0.6nm,0.3s,baz=267,slow=23,SNR=7.4						
JAY				Sn	Sn	13 01 43.6	+0.1
	0.3nm,0.3s,baz=93,slow=23,SNR=2.9						
WRA	**Warramunga Arr**	**18.29**	**192**	P	P	13 04 49.1	+0.4
	0.1nm,0.3s,baz=16,slow=13,SNR=1.9						
ASAR	**Alice Springs**	**22.00**	**191**	P	P	13 05 29.1	+0.1
	0.2nm,0.5s,baz=19,slow=10,SNR=1.8						
MKAR	**Makanchi Array**	**69.01**	**322**	P	P	13 11 40.2	-0.3
	0.2nm,0.4s,baz=117,slow=8.3,SNR=2.2						

IDC 18 13:02:20.5±28.0,16°13S×174°38W,h0km,mb4.3/4, mb1 4.5/4,mb1mx3.8/29,mbtmp4.3/4,Error ellipse: s-maj=562.6km s-min=140.7km az=85.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H11S2	**WAKE ISLAND Hy**	**39.12**	**331**	T	T	13 52 16.3	
	baz=194,slow=76,SNR=8.8						
H11S3	**WAKE ISLAND Hy**	**39.13**	**331**	T	T	13 52 11.4	
	baz=194,slow=76,SNR=9.4						
H11S1	**WAKE ISLAND Hy**	**39.14**	**331**	T	T	13 52 13.5	
	baz=194,slow=76,SNR=6.3						
H11N3	**WAKE ISLAND Hy**	**40.09**	**332**	T	T	13 53 44.0	
	baz=194,slow=76,SNR=8.6						
H11N1	**WAKE ISLAND Hy**	**40.10**	**332**	T	T	13 53 41.8	
	baz=194,slow=76,SNR=7.7						
H11N2	**WAKE ISLAND Hy**	**40.11**	**332**	T	T	13 53 44.2	
	baz=194,slow=76,SNR=12						
STKA	**Stephens Creek**	**42.86**	**240**	P	P	13 10 21.3	+0.5
	2.5nm,0.5s,baz=89,slow=9.8,SNR=17						
WRA	**Warramunga Arr**	**48.76**	**257**	P	P	13 11 06.9	-0.8
	1.9nm,0.7s,baz=96,slow=7.2,SNR=34						
ASAR	**Alice Springs**	**48.99**	**253**	P	P	13 11 08.9	-0.4
	12nm,0.6s,baz=88,slow=8.1,SNR=262						
FITZ	**Fitzroy Crossi**	**57.14**	**259**	P	P	13 12 09.7	+0.2
	1.0nm,0.7s,baz=126,slow=8.7,SNR=5.3						

MEX 18 13:02:34.9±0.4,14°15N×92°91W,h15km±287km,MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.25**	**19**	*i* P	Pn	13 03 08.3	-3.5
CCIG				*i* S	Sn	13 03 35.6	-3.8

IDC 18 13:03:23.2±1.9,17°16S×169°93W,h0km,mb4.0/5, mb1 4.2/5,mb1mx3.8/30,mbtmp4.0/5,Error ellipse: s-maj=179.8km s-min=26.5km az=156.0,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**41.54**	**259**	P	P	13 11 11.2	-1.6
	2.8nm,0.6s,baz=82,slow=9.4,SNR=5.6						
STKA	**Stephens Creek**	**46.10**	**242**	P	P	13 11 48.6	-0.7
	1.9nm,0.9s,baz=72,slow=9.6,SNR=2.7						
WRA	**Warramunga Arr**	**52.71**	**258**	P	P	13 12 40.8	+0.7
	0.7nm,0.3s,baz=96,slow=7.0,SNR=13						
ASAR	**Alice Springs**	**52.76**	**253**	P	P	13 12 41.1	+0.7
	1.6nm,0.7s,baz=94,slow=8.2,SNR=9.4						
TXAR	**Lajitas Array**	**78.87**	**55**	P	P	13 15 28.7	0.0
	0.5nm,0.7s,baz=208,slow=7.1,SNR=7.2						

IDC 18 13:13:49.8±2.1,1°94N×127°37E,h0km,mb3.4/3, mb1 3.6/3,mb1mx3.3/31,mbtmp3.4/3,MS3.4/1,Ms1 3.4/1, ms1mx2.6/19,Error ellipse: s-maj=145.3km s-min=27.2km az=66.0,Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.79**	**163**	P	P	13 18 54.5	+0.2
	0.4nm,0.3s,baz=342,slow=10,SNR=19						
ASAR	**Alice Springs**	**26.23**	**166**	P	P	13 19 25.9	-0.8
	0.1nm,0.3s,baz=344,slow=11,SNR=1.5						
SONM	**Songino Array**	**49.19**	**341**	LR	LR	13 44 28.4	
	comp=Z,46nm,20.5s,baz=84,slow=37						
MKAR	**Makanchi Array**	**59.38**	**326**	P	P	13 23 54.4	+0.4
	0.4nm,0.5s,baz=118,slow=7.4,SNR=4.1						

*SJA **18** 13:15:08.7±0.9,24°05S×66°56W,h226km±12km,ML3.4, MW3.3*
*ISCJB **18** 13:15:09.8±0.5,24°05S±0°04×66°95W±0°05,h181km, Error ellipse: s-maj=8.2km s-min=4.0km az=137.4*
*GUC **18** 13:15:10.3±0.3,23°88S×67°43W,h244km±11km,ML4.5*
ISC 18 13:15:09.4±1.2,24°10S±0°06×66°92W±0°06,h181km,n16, σ2s00/26,3C-2D,Salta Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SLA	**San Lorenzo**	**1.44**	**116**	*e*P	**Pn**	**13 15 43.5**	**+2.4**
HJA	**Humahuaca**	**1.65**	**58**	*e*P	**Pn**	**13 15 44.5**	**+1.1**
HJA				IAML		13 15 47.6	
	comp=Z,86nm,0.5s						
AZAP	**Zapla**	**1.70**	**95**	*e*P	**Pn**	**13 15 44.6**	**+0.9**
FSA	**Cafayete**	**2.18**	**157**	*e*P	**Pn**	**13 15 50.7**	**+2.0**
FSA				IAML		13 15 51.8	
	comp=Z,207nm,0.9s						
FSA				*e*S	**Sn**	**13 16 22.3**	**+2.9**
PB06	**IPOC Station P**	**2.80**	**299**	*i* P	**Pn**	**13 15 57.0**	**+1.1**
PB06				*i* S	**Sn**	**13 16 32.5**	**+0.5**
PB06				IAML		13 16 34.9	
	comp=E,843nm,0.2s						
AHML	**Horco Molle**	**3.04**	**152**	*e*P	**Pn**	**13 15 59.7**	**+1.0**
AHML				*e*S	**Sn**	**13 16 37.4**	**+0.3**
PB14	**IPOC Station P**	**3.22**	**260**	⇑*i*P	**Pn**	**13 16 02.9**	**+1.8**
PB14				*i* S	**Sn**	**13 16 43.1**	**+1.8**
PB14				IAML		13 16 44.9	
	comp=E,699nm,0.9s						
PB10	**IPOC Station P**	**3.38**	**279**	*i* P	**Pn**	**13 16 03.2**	**+0.5**
PB10				*i* S	**Sn**	**13 16 43.5**	**-0.8**
PB04	**IPOC Station P**	**3.45**	**300**	⇑*i*P	**Pn**	**13 16 04.2**	**+0.4**
PB04				*i* S	**Sn**	**13 16 45.0**	**-1.2**
PB07	**IPOC Station P**	**3.61**	**310**	⇑*i*P	**Pn**	**13 16 06.2**	**+0.4**
PB07				*i* S	**Sn**	**13 16 48.5**	**-1.4**
PB01	**IPOC Station P**	**3.85**	**322**	*i* P	**Pn**	**13 16 08.7**	**-0.2**
PB01				*i* S	**Sn**	**13 16 53.5**	**-1.7**
CYA	**Choya**	**4.44**	**167**	*i* P	**Pn**	**13 16 16.6**	**+0.3**
CYA				*e*P	**Pn**	**13 16 17.2**	**+1.0**
CYA				IAML		13 16 19.2	
	comp=Z,18nm,0.5s						
VCA	**Vinchina**	**4.76**	**194**	*e*P	**Pn**	**13 16 23.5**	**+3.0**
ACCO	**Cerro Coronel**	**6.74**	**196**	*e*S	**Sn**	**13 18 03.8**	**+0.8**
ACCO				IAML		13 18 08.3	
	comp=Z,7.5nm,0.4s						
TCA	**Tanti**	**7.50**	**165**	*e*P	**Pn**	**13 16 55.9**	**-0.3**
TCA				IAML		13 16 56.7	
	comp=Z,5.4nm,0.5s						
ACAN	**Cantantal**	**8.15**	**182**	*e*P	**Pn**	**13 17 03.5**	**-1.2**
ACAN				⇓*e*S	**Sn**	**13 18 29.6**	**-6.6**

*ISK **18** 13:34:16.1,41°03N×35°94E,h5km,MD2.3*
*ISCJB **18** 13:34:17.4±0.6,41°03N±0°04×36°06E±0°05,h9km±4km, Error ellipse: s-maj=7.5km s-min=5.5km az=39.6*
*CSEM **18** 13:34:17.2±0.2,41°04N×36°02E,h10km,MD2.3,Error ellipse: s-maj=6.6km s-min=5.6km az=26.0*
*DDA **18** 13:34:17.5,41°01N×36°04E,h7km,Md2.5*
ISC 18 13:34:16.8±0.9,41°04N±0°03×36°05E±0°03,h6km±6km, n20,σ1s00/33,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KVT	**Kavak**	**0.04**	**359**	*e*PG	**Pg**	**13 34 18.1**	**-0.1**
KVT				*e*SG	**Sg**	**13 34 20.0**	**+0.7**
KVT	**Kavak**	**0.04**	**359**	*e*Pg	**Pg**	**13 34 18.1**	**-0.1**
KVT				*e*Sg	**Sg**	**13 34 20.0**	**+0.7**
HAVZ	**Havza**	**0.25**	**278**	*i* P	**Pb**	**13 34 22.8**	**-0.9**
HAVZ				*i* S	**Sb**	**13 34 28.5**	**+0.1**
HAVZ	**Havza**	**0.25**	**278**	P	**Pb**	**13 34 22.8**	**-0.9**
HAVZ				S	**Sb**	**13 34 28.5**	**+0.1**
SAMS	**Samsun-Alacam**	**0.34**	**18**	*i* P	**Pb**	**13 34 24.8**	**-0.4**
SAMS				*i* S	**Sb**	**13 34 30.8**	**-0.1**
SAMS	**Samsun-Alacam**	**0.34**	**18**	P	**Pb**	**13 34 24.8**	**-0.4**
SAMS				S	**Sb**	**13 34 30.8**	**-0.1**
ERBA	**Erbaa**	**0.65**	**123**	*i* P	**Pb**	**13 34 29.9**	**-0.5**
ERBA				*i* S	**Sb**	**13 34 39.4**	**-0.4**
ERBA	**Erbaa**	**0.65**	**123**	P	**Pb**	**13 34 30.0**	**-0.5**
ERBA				S	**Sb**	**13 34 39.4**	**-0.4**
BOYT	**Boyabat**	**0.94**	**294**	*i* P	**Pn**	**13 34 35.7**	**-0.9**
BOYT				*i* S	**Sn**	**13 34 50.7**	**+0.3**
BOYT	**Boyabat**	**0.94**	**294**	P	**Pn**	**13 34 35.7**	**-0.9**
BOYT				S	**Sn**	**13 34 50.7**	**+0.3**
CTAK	**Corum_Osmancik**	**1.03**	**248**	*i* P	**Pn**	**13 34 36.9**	**-1.0**
CTAK				*i* S	**Sn**	**13 34 56.3**	**+3.6**
CTAK	**Corum_Osmancik**	**1.03**	**248**	P	**Pn**	**13 34 36.9**	**-1.0**
BYBT	**Boyabat**	**1.06**	**294**	*e*PG	**Pb**	**13 34 36.3**	**-1.1**
BYBT	**Boyabat**	**1.06**	**294**	*e*Pg	**Pb**	**13 34 36.3**	**-1.1**
SNOP	**Sinop**	**1.17**	**328**	*e*PN	**Pb**	**13 34 38.8**	**-0.5**
SNOP				*e*SN	**Sg**	**13 34 55.7**	**+1.4**
SNOP	**Sinop**	**1.17**	**328**	*e*Pn	**Pb**	**13 34 38.8**	**-0.5**
SNOP				*e*Sn	**Sg**	**13 34 55.7**	**+1.4**
CORM	**Corum**	**1.38**	**232**	*e*PN	**Pb**	**13 34 42.3**	**-0.7**
CORM	**Corum**	**1.38**	**232**	*e*Pn	**Pb**	**13 34 42.3**	**-0.7**
YOZ	**Yozgat**	**1.50**	**202**	*e*PN	**Pb**	**13 34 44.9**	**-0.2**
YOZ	**Yozgat**	**1.50**	**202**	*e*Pn	**Pb**	**13 34 44.9**	**-0.2**

*ISCJB **18** 13:47:03.6±0.4,24°15N±0°03×122°28E±0°02,h23km±5km, Error ellipse: s-maj=5.7km s-min=2.9km az=162.9*
*TAP **18** 13:47:03.5,24°19N×122°24E,h20km±1km,ML2.7,D*
*JMA **18** 13:47:03.9,24°10N×122°27E,h31km±3km,M1.9*
ISC 18 13:47:03.6±1.1,24°15N±0°04×122°25E±0°02,h24km±13km, n23,σ0s47/43,2C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.54**	**301**	⇑*i*P	**Pb**	**13 47 14.5**	**-0.1**
	baz=297						
ENA				S	**Sb**	**13 47 22.0**	**0.0**
	baz=297						
TWC	**Suao**	**0.59**	**321**	⇑*i*P	**Pb**	**13 47 14.6**	**-0.7**
	baz=320						
TWC				*i* S	**Sb**	**13 47 22.4**	**-0.9**
	baz=320						
JYNG	**Yonagunijimaku**	**0.70**	**64**	P	**Pb**	**13 47 17.3**	**+0.1**
JYNG				*e*S	**Sb**	**13 47 26.3**	**-0.1**
YOJ	**Yonaguni jima**	**0.76**	**66**	P	**Pb**	**13 47 18.3**	**+0.1**
YOJ				*e*S	**Sb**	**13 47 28.1**	**0.0**
TWE	**Neicheng**	**0.78**	**317**	P	**Pb**	**13 47 18.4**	**-0.2**
	baz=316						
TWE				S	**Sb**	**13 47 29.1**	**+0.3**
	baz=316						
ENTT	**Nioudou**	**0.79**	**308**	P	**Pb**	**13 47 19.0**	**+0.2**
	baz=306						
ENTT				*e*S	**Sb**	**13 47 29.8**	**+0.7**
	baz=306						
ESL	**Shilin**	**0.82**	**246**	*e*P	**Pb**	**13 47 19.3**	**+0.1**
	baz=242						
ESL				*e*S	**Sn**	**13 47 30.8**	**-0.2**
	baz=242						
NNS	**Nan Shan**	**0.85**	**290**	*e*P	**Pn**	**13 47 20.5**	**+0.3**
	baz=287						
NNS				*e*S	**Sn**	**13 47 31.6**	**-0.5**
	baz=287						
WHF	**Hehuan Shan**	**0.90**	**270**	*e*P	**Pn**	**13 47 21.6**	**+0.4**
	baz=266						
WHF			

NICH	**Los Niches**	**0.63**	**103**	⇑*i*	P	**Pg**	**13 50 49.2**	**+0.1**
NICH				*i*	S	**Sb**	**13 50 57.6**	**+0.1**
NICH					IAML		13 50 58.3	
	comp=N,12μm,0.2s							
COCH	**Cobquecura**	**1.42**	**207**	*i*	P	**Pn**	**13 51 01.5**	**0.0**
COCH				*i*	S	**Sn**	**13 51 19.3**	**-0.4**
ANTU	**Antumapu**	**1.71**	**41**	*i*	P	**Pn**	**13 51 05.5**	**0.0**
ANTU				*i*	S	**Sn**	**13 51 26.3**	**-0.6**
CCHI	**Chillan**	**1.73**	**183**	*i*	P	**Pn**	**13 51 05.3**	**-0.5**
CCHI				*i*	S	**Sn**	**13 51 25.7**	**-1.7**
CCHI					IAML		13 51 38.6	
	comp=E,1μm,0.5s							
CLCH	**Cerro Calan**	**1.90**	**40**	⇑*i*	P	**Sn**	**13 51 08.3**	**+0.2**
CLCH				*i*	S	**Sn**	**13 51 30.9**	**-0.6**
CLCH					IAML		13 51 34.8	
	comp=E,2μm,0.3s							
ROC1	**El Roble**	**2.05**	**23**	⇓*e*	P	**Pn**	**13 51 11.2**	**+0.8**
ROC1				*e*	S	**Sn**	**13 51 37.1**	**+1.5**
ROCH	**El Roble**	**2.06**	**23**	*i*	P	**Pn**	**13 51 11.0**	**+0.5**
ROCH				*i*	S	**Sn**	**13 51 36.3**	**+0.6**
FCH	**Farellones**	**2.08**	**43**	⇓*i*	P	**Pn**	**13 51 11.3**	**+0.4**
FCH				*i*	S	**Sn**	**13 51 36.0**	**-0.4**
CANA	**Caviahue**	**3.10**	**166**	*e*	P	**Pn**	**13 51 27.8**	**+3.0**
AAGR	**Agrelo**	**3.17**	**57**	*e*	P	**Pn**	**13 51 27.3**	**+1.6**
ARCO	**CERRO ARCO**	**3.24**	**52**	*e*	P	**Pn**	**13 51 30.1**	**+3.4**
ARCO					IAML		13 51 47.9	
	comp=Z,76nm,0.5s							
AUSP	**Uspallata**	**3.41**	**40**	*e*	P	**Pn**	**13 51 31.4**	**+2.2**
AUSP				*e*	Pg	**Pn**	**13 51 31.4**	**+2.2**
AUSP				*e*	S	**Sb**	**13 52 16.9**	**-1.1**
ASAL	**Salagasta**	**3.47**	**50**	*e*	P	**Pn**	**13 51 32.0**	**+2.2**
ASAL				*e*	S	**Sb**	**13 52 16.1**	**-3.3**
RTLS	**Leoncito**	**3.80**	**37**	*e*	P	**Pn**	**13 51 36.6**	**+2.2**
RTLS				*e*	S	**Sb**	**13 52 30.0**	**+1.0**
RTCV	**Cerro Valdivia**	**4.16**	**45**	*e*	P	**Pn**	**13 51 40.0**	**+0.9**
RTCV				*e*	S	**Sb**	**13 52 38.0**	**-1.1**
RTLL	**Cerro Villicun**	**4.59**	**41**	*e*	P	**Pn**	**13 51 45.7**	**+0.5**
ACAN	**Cantantal**	**4.76**	**58**	*e*	P	**Pn**	**13 51 48.5**	**+1.0**
ACAN				*e*	S	**Sb**	**13 52 52.9**	**-3.7**
AMOG	**MOGNA**	**4.89**	**38**	*e*	P	**Pn**	**13 51 49.4**	**+0.1**
ACCO	**Cerro Coronel**	**4.92**	**31**	*e*	P	**Pn**	**13 51 50.4**	**+0.4**
ACCO				*e*	S	**Sb**	**13 53 00.1**	**-1.4**
ACCO					IAML		13 53 02.3	
	comp=Z,56nm,0.4s							
ACDV	**Cuesta del Vie**	**5.27**	**28**	*e*	P	**Pn**	**13 51 55.2**	**+0.6**
ACDV				*e*	S	**Sb**	**13 53 08.7**	**-2.6**
AVFE	**Valle Fertil**	**5.67**	**44**	*e*	P	**Pn**	**13 51 58.9**	**-1.1**
AVFE					IAML		13 53 18.7	
	comp=Z,27nm,0.5s							
MRA	**San Martin**	**5.77**	**67**	*e*	P	**Pn**	**13 52 01.7**	**+0.3**
MRA					IAML		13 52 37.8	
	comp=Z,9.9nm,0.5s							
SUCO	**SUCO**	**6.08**	**78**	⇓*e*	P	**Pn**	**13 52 06.8**	**+1.1**
SUCO					IAML		13 52 43.6	
	comp=Z,7.5nm,0.2s							
AGUA	**GUANDACOL**	**6.13**	**30**	*e*	P	**Pn**	**13 52 06.5**	**+0.2**
VCA	**Vinchina**	**6.91**	**29**	*e*	P	**Pn**	**13 52 17.0**	**0.0**
TCA	**Tanti**	**7.13**	**62**	*e*	P	**Pn**	**13 52 18.1**	**-1.9**
TCA					IAML		13 53 53.5	
	comp=Z,6.1nm,0.5s							

MEX 18 13:54:45.5±0.7, 13°85N×92°37W, h12km±999km, MD3.6, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.43**	**5**	*i* P	Pn	13 55 22.7	-2.6
CCIG				*i* S	Sn	13 55 51.9	-3.2

*ROM **18** 14:01:05.0±0.1, 45°.01N×11°.27E, h2km, Md2.7/22, Ml2.9/21, Error ellipse: s-maj=2.4km s-min=1.0km az=77.0*
*CSEM **18** 14:01:05.2±0.1, 45°.00N×11°.26E, h5km, ML3.2/14, Error ellipse: s-maj=3.1km s-min=2.1km az=103.0*
*LDG **18** 14:01:05.2±0.1, 44°.99N×11°.38E, h2km, Md3.0/3, Ml3.1/10, Error ellipse: s-maj=3.1km s-min=2.6km az=110.0*
*ISCJB **18** 14:01:06.4±0.3, 44°.99N±0°.01×11°.14E±0°.03, h20km±3km, Error ellipse: s-maj=3.9km s-min=2.5km az=1.2*
*PRU **18** 14:01:08.1, 45°.14N×11°.16E, h6km*

ISC 18 14:01:05.5±0.8, 45°.01N±0°.01×11°.26E±0°.02, h15km±5km, n145, σ0°.82/203, 2C, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAZZ	**Gazzo Veronese**	**0.16**	**311**	⇑*e*Pg	**Pg**	**14 01 09.4**	**-0.1**
GAZZ				*e*Sg	**Sg**	**14 01 12.3**	**+0.1**
GAZZ	**Gazzo Veronese**	**0.16**	**311**	*e*Pg	**Pg**	**14 01 09.4**	**-0.1**
GAZZ				*e*Sg	**Sg**	**14 01 12.3**	**+0.1**
SBPO	**S.Benedetto Po**	**0.25**	**280**	Pg	**Pg**	**14 01 10.9**	**0.0**
SBPO	**S.Benedetto Po**	**0.25**	**280**	Pg	**Pg**	**14 01 10.9**	**0.0**
RAVA	**Ravarino**	**0.27**	**202**	Pg	**Pg**	**14 01 10.3**	**-1.0**
RAVA				Sg	**Sg**	**14 01 15.4**	**+0.2**
	3μm,0.2s						
RAVA	**Ravarino**	**0.27**	**202**	Pg	**Pg**	**14 01 10.3**	**-1.0**
RAVA				Sg	**Sg**	**14 01 15.4**	**+0.2**
	3μm,0.2s						
FIU	**Minerbio Fiu**	**0.40**	**156**	Pg	**Pb**	**14 01 13.7**	**-0.6**
	713nm,0.3s						
FIU	**Minerbio Fiu**	**0.40**	**156**	Pg	**Pb**	**14 01 13.7**	**-0.6**
	713nm,0.3s						
NOVE	**Novellara**	**0.44**	**242**	Pg	**Pb**	**14 01 15.2**	**+0.2**
NOVE	**Novellara**	**0.44**	**242**	Pg	**Pb**	**14 01 15.2**	**+0.2**
TEOL	**Teolo**	**0.45**	**39**	⇑*e*Pg	**Pb**	**14 01 14.8**	**-0.4**
TEOL				*e*Sg	**Sb**	**14 01 21.9**	**+0.2**
TEOL	**Teolo**	**0.45**	**39**	*e*Pg	**Pb**	**14 01 14.8**	**-0.4**
TEOL				*e*Sg	**Sb**	**14 01 22.0**	**+0.2**
MARN	**Marana (Italy)**	**0.63**	**357**	*e*Pg	**Pg**	**14 01 17.9**	**0.0**
MARN	**Marana (Italy)**	**0.63**	**357**	*e*P	**Pg**	**14 01 17.9**	**0.0**
MTRZ	**Monterenzio**	**0.65**	**167**	Pg	**Pn**	**14 01 20.7**	**+0.5**
	410nm,0.5s						
ROVR	**Rover¤ Verone**	**0.65**	**348**	Pg	**Pg**	**14 01 18.2**	**-0.1**
ROVR				Sg	**Sb**	**14 01 28.3**	**+0.6**
ROVR	**Rover¤ Verone**	**0.65**	**348**	Pg	**Pg**	**14 01 18.2**	**-0.1**
ROVR				Sg	**Sb**	**14 01 28.3**	**+0.6**
ZCCA	**Zocca**	**0.69**	**197**	Pg	**Pb**	**14 01 19.7**	**+0.5**
	154nm,0.4s						
ZCCA	**Zocca**	**0.69**	**197**	Pg	**Pb**	**14 01 19.7**	**+0.5**
	154nm,0.4s						
BALD	**Monte Baldo**	**0.74**	**335**	*e*Pg	**Pg**	**14 01 20.0**	**0.0**
BALD				*e*Sg	**Sb**	**14 01 31.5**	**+1.1**
BALD	**Monte Baldo**	**0.74**	**335**	*e*Pg	**Pg**	**14 01 20.0**	**0.0**
BALD				*e*Sg	**Sb**	**14 01 31.5**	**+1.1**
SALO	**Salr**	**0.80**	**320**	Pg	**Pg**	**14 01 21.3**	**+0.2**
SALO				Sg	**Sn**	**14 01 34.3**	**+0.2**
	1μm,0.2s						
SALO	**Salr**	**0.80**	**320**	Pg	**Pg**	**14 01 21.3**	**+0.2**
DDS	**Dosso del Somm**	**0.87**	**357**	*e*Pg	**Pb**	**14 01 22.2**	**-0.3**
DDS				*e*Sg	**Sn**	**14 01 35.3**	**-0.7**
DDS	**Dosso del Somm**	**0.87**	**357**	*e*Pg	**Pb**	**14 01 22.2**	**-0.3**
DDS				*e*Sg	**Sn**	**14 01 35.3**	**-0.7**
MAGA	**Magasa**	**0.89**	**330**	Pg	**Pb**	**14 01 22.6**	**-0.1**
MAGA				Sg	**Sn**	**14 01 35.9**	**-0.4**
	2μm,0.4s						
MAGA	**Magasa**	**0.89**	**330**	Pg	**Pb**	**14 01 22.6**	**-0.1**
MAGA				Sg	**Sn**	**14 01 35.9**	**-0.4**
	2μm,0.4s						
CGRP	**Cima Grappa**	**0.95**	**23**	*e*Pg	**Pb**	**14 01 23.4**	**-0.4**
CGRP	**Cima Grappa**	**0.95**	**23**	*e*P	**Pb**	**14 01 23.4**	**-0.4**
MTLO	**Montello**	**1.00**	**36**	*e*Pg	**Pn**	**14 01 24.9**	**-0.1**
MTLO	**Montello**	**1.00**	**36**	*e*P	**Pn**	**14 01 24.9**	**-0.1**
GRAM	**Graiana**	**1.00**	**239**	P	**Pb**	**14 01 24.4**	**-0.1**
GRAM				S	**Sn**	**14 01 41.9**	**+3.0**
POPM	**Popiglio**	**1.03**	**201**	Pg	**Pb**	**14 01 24.5**	**-0.5**
	127nm,0.2s						
POPM	**Popiglio**	**1.03**	**201**	Pg	**Pb**	**14 01 24.5**	**-0.5**
	127nm,0.2s						
PANI	**Panarotta**	**1.04**	**3**	*e*Pg	**Pb**	**14 01 25.3**	**-0.1**
PANI	**Panarotta**	**1.04**	**3**	*e*P	**Pb**	**14 01 25.3**	**-0.1**
PTF	**Prato**	**1.06**	**188**	Pg	**Pn**	**14 01 25.6**	**-0.2**
PTF	**Prato**	**1.06**	**188**	Pg	**Pn**	**14 01 25.6**	**-0.2**
BDI	**Bagni Di Lucca**	**1.06**	**207**	Pg	**Pg**	**14 01 25.9**	**0.0**
	129nm,0.4s						
BDI	**Bagni Di Lucca**	**1.06**	**207**	Pg	**Pg**	**14 01 25.9**	**0.0**
	129nm,0.4s						
VMG	**Vicchio**	**1.06**	**169**	Pg	**Pg**	**14 01 26.3**	**+0.2**
VMG				Sg	**Sn**	**14 01 41.1**	**+0.6**
VMG	**Vicchio**	**1.06**	**169**	Pg	**Pg**	**14 01 26.3**	**+0.2**
VMG				Sg	**Sn**	**14 01 41.1**	**+0.6**
RNI	**Roncone**	**1.07**	**335**	*e*Pg	**Pb**	**14 01 25.5**	**-0.4**
RNI	**Roncone**	**1.07**	**335**	*e*P	**Pb**	**14 01 25.5**	**-0.4**
MABI	**Malga Bissina**	**1.17**	**334**	Pg	**Pn**	**14 01 27.4**	**-0.2**
MABI				Sg	**Sg**	**14 01 44.0**	**+0.5**
	116nm,0.3s						
MABI	**Malga Bissina**	**1.17**	**334**	Pg	**Pn**	**14 01 27.4**	**-0.2**
MABI				Sg	**Sg**	**14 01 44.0**	**+0.5**
	116nm,0.3s						
SFI	**Santa Sofia**	**1.18**	**159**	Pg	**Pb**	**14 01 27.4**	**-0.2**
SFI				Sg	**Sg**	**14 01 45.4**	**+1.8**
	203nm,1.2s						
SFI	**Santa Sofia**	**1.18**	**159**	Pg	**Pb**	**14 01 27.4**	**-0.2**
CODM	**Codolo**	**1.18**	**239**	P	**Pg**	**14 01 29.1**	**+0.8**
MAIM	**Mastiano**	**1.23**	**207**	Pg	**Pb**	**14 01 28.5**	**+0.1**
MAIM	**Mastiano**	**1.23**	**207**	Pg	**Pb**	**14 01 28.5**	**+0.1**
MAIM	**Mastiano**	**1.23**	**207**	P	**Pg**	**14 01 29.2**	**+0.1**
CRMI	**Carmignano**	**1.24**	**190**	Pg	**Pb**	**14 01 28.4**	**-0.1**
	366nm,2.2s						
CRMI	**Carmignano**	**1.24**	**190**	Pg	**Pb**	**14 01 28.4**	**-0.1**
	366nm,2.2s						
ASQU	**Asqua**	**1.27**	**163**	Pg	**Pg**	**14 01 29.3**	**-0.6**
	92nm,0.8s						
ASQU	**Asqua**	**1.27**	**163**	Pg	**Pg**	**14 01 29.3**	**-0.6**
	92nm,0.8s						
T0502	**Localit˜ San**	**1.27**	**150**	Pg	**Pg**	**14 01 29.6**	**-0.4**
	232μm,34.0s						
POLC	**Polcenigo**	**1.34**	**40**	*e*Pg	**Pb**	**14 01 30.4**	**+0.1**
POLC	**Polcenigo**	**1.34**	**40**	*e*P	**Pb**	**14 01 30.4**	**+0.1**
OZOL	**Ozolo**	**1.41**	**354**	*e*Pg	**Pb**	**14 01 31.8**	**+0.3**
OZOL	**Ozolo**	**1.41**	**354**	*e*P	**Pb**	**14 01 31.8**	**+0.3**
KOSI	**Kohlern**	**1.46**	**3**	Pg	**Pb**	**14 01 32.3**	**-0.1**
	318nm,0.7s						
KOSI	**Kohlern**	**1.46**	**3**	Pg	**Pb**	**14 01 32.3**	**-0.1**
	318nm,0.7s						
APPI	**Appiano**	**1.47**	**359**	Pg	**Pb**	**14 01 32.8**	**+0.2**
	255nm,0.2s						
APPI	**Appiano**	**1.47**	**359**	Pg	**Pb**	**14 01 32.8**	**+0.2**
	255nm,0.2s						
CARE	**Lago del Cares**	**1.47**	**344**	*e*Pg	**Pb**	**14 01 33.0**	**+0.2**
CARE	**Lago del Cares**	**1.47**	**344**	*e*P	**Pb**	**14 01 33.0**	**+0.2**
CIMO	**Cimolais**	**1.54**	**32**	*e*Pg	**Pb**	**14 01 33.4**	**-0.4**
CIMO	**Cimolais**	**1.54**	**32**	*e*P	**Pb**	**14 01 33.4**	**-0.4**
BRMO	**Bormio**	**1.59**	**337**	Pg	**Pb**	**14 01 35.4**	**+0.6**
	105nm,0.4s						
BRMO	**Bormio**	**1.59**	**337**	Pg	**Pb**	**14 01 35.4**	**+0.6**
	105nm,0.4s						
MOSI	**Grossmontoni**	**1.68**	**343**	Pg	**Pb**	**14 01 36.7**	**+0.4**
	592nm,0.8s						
MOSI	**Grossmontoni**	**1.68**	**343**	Pg	**Pb**	**14 01 36.7**	**+0.4**
	592nm,0.8s						
FSSB	**Fossombrone**	**1.71**	**140**	Pg	**Pb**	**14 01 36.9**	**+0.3**
	101nm,0.4s						
FSSB	**Fossombrone**	**1.71**	**140**	Pg	**Pb**	**14 01 36.9**	**+0.3**
	101nm,0.4s						
ABSI	**Aberstueckl**	**1.72**	**1**	Pg	**Pb**	**14 01 36.0**	**-0.9**
	433nm,0.6s						
FUORN	**Ofenpass-Fuorn**	**1.76**	**337**	Pg	**Pb**	**14 01 38.2**	**+0.6**
	87nm,0.5s						
FUORN	**Ofenpass-Fuorn**	**1.76**	**337**	Pg	**Pb**	**14 01 38.2**	**+0.6**
	87nm,0.5s						
SABO	**M.te Sabotino**	**1.91**	**59**	*e*Pn	**Pn**	**14 01 38.1**	**+0.6**
SABO	**M.te Sabotino**	**1.91**	**59**	*e*P	**Pn**	**14 01 38.1**	**+0.6**
ABTA	**Abfaltersbach**	**1.95**	**26**	*e*Sg	**Sg**	**14 02 09.4**	**+1.3**
	24nm,0.5s						
ABTA	**Abfaltersbach**	**1.95**	**26**	*e*Sg	**Sg**	**14 02 09.4**	**+1.3**
	24nm,0.5s						
ABTA	**Abfaltersbach**	**1.95**	**26**	Sg	**Sg**	**14 02 09.4**	**+1.3**
	24nm,0.5s						
TUE	**Stuetta**	**1.99**	**318**	Pg	**Pb**	**14 01 40.2**	**-1.3**
	76nm,0.5s						
PCP	**Piancastagn**	**1.99**	**257**	P	**Pb**	**14 01 40.2**	**-1.3**
FETA	**Feichten**	**2.05**	**350**	*e*Pn	**Pb**	**14 01 42.3**	**-0.2**
	3.5nm,0.2s,SNR=8.4						
FETA				*e*Sn	**Sg**	**14 02 10.8**	**-0.6**
	16nm,0.3s						
FETA	**Feichten**	**2.05**	**350**	*e*Pn	**Pb**	**14 01 42.3**	**-0.2**
	3.5nm,0.2s,SNR=8.4						
FETA				*e*Sn	**Sg**	**14 02 10.8**	**-0.6**
	16nm,0.3s						
FETA	**Feichten**	**2.05**	**350**	Pn	**Pb**	**14 01 42.3**	**-0.2**
	3.5nm,0.2s,SNR=8.4						
WTTA	**Wattenberg**	**2.27**	**6**	*e*Pn	**Pb**	**14 01 47.1**	**+0.8**
	8.4nm,0.2s						
WTTA				*e*Sn	**Sg**	**14 02 17.6**	**-0.9**
	21nm,0.2s						
WTTA	**Wattenberg**	**2.27**	**6**	*e*Pn	**Pb**	**14 01 47.1**	**+0.8**
	8.4nm,0.2s						
WTTA				*e*Sn	**Sg**	**14 02 17.6**	**-0.9**
	21nm,0.2s						
WTTA	**Wattenberg**	**2.27**	**6**	*e*PG	**Pb**	**14 01 47.1**	**+0.8**
WTTA	**Wattenberg**	**2.27**	**6**	Pn	**Pb**	**14 01 47.1**	**+0.8**
	8.4nm,0.2s						
MYKA	**Terra Mystica**	**2.32**	**45**	*i* Pg	**Pg**	**14 01 49.7**	**-0.4**
	2.7nm,0.2s						
MYKA				Sg	**Sg**	**14 02 20.4**	**+0.2**
	13nm,0.3s						
MYKA	**Terra Mystica**	**2.32**	**45**	*i* Pg	**Pg**	**14 01 49.7**	**-0.4**
	2.7nm,0.2s						
MYKA				Sg	**Sg**	**14 02 20.4**	**+0.2**
	13nm,0.3s						
MYKA	**Terra Mystica**	**2.32**	**45**	Pg	**Pg**	**14 01 49.7**	**-0.4**
	2.7nm,0.2s						
MYKA				Sg	**Sg**	**14 02 20.4**	**+0.2**
	13nm,0.3s						
DAVA	**Damuels**	**2.47**	**338**	*e*Pn	**Pb**	**14 01 48.2**	**-1.5**
	5.6nm,0.2s						
DAVA				Sn	**Sb**	**14 02 20.2**	**+0.1**
	25nm,0.5s						
DAVA	**Damuels**	**2.47**	**338**	*e*Pn	**Pb**	**14 01 48.2**	**-1.5**
	5.6nm,0.2s						
DAVA				Sn	**Sb**	**14 02 20.2**	**+0.1**
	25nm,0.5s						
DAVA	**Damuels**	**2.47**	**338**	Pn	**Pb**	**14 01 48.2**	**-1.5**
	5.6nm,0.2s						
DAVA				Sn	**Sb**	**14 02 20.2**	**+0.1**
	25nm,0.5s						
RETA	**Reutte**	**2.50**	**352**	*e*Pn	**Pb**	**14 01 48.6**	**-1.6**
	2.6nm,0.2s						
RETA	**Reutte**	**2.50**	**352**	*e*Pn	**Pb**	**14 01 48.6**	**-1.6**
	2.6nm,0.2s						
RETA				*e*Sn	**Sb**	**14 02 20.3**	**-0.6**
	8.6nm,0.3s						
RETA	**Reutte**	**2.50**	**352**	Pn	**Pb**	**14 01 48.6**	**-1.6**
	2.6nm,0.2s						
RETA				Sn	**Sb**	**14 02 20.3**	**-0.6**
	8.6nm,0.3s						
KBA	**Koelnbreinsper**	**2.53**	**34**	*e*Pg	**Pg**	**14 01 53.1**	**-0.9**
	SNR=8.4						
KBA				*e*Sg	**Sg**	**14 02 26.7**	**0.0**
	14nm,0.3s						
KBA	**Koelnbreinsper**	**2.53**	**34**	Pg	**Pg**	**14 01 53.1**	**-0.9**
	SNR=8.4						
KBA				Sg	**Sg**	**14 02 26.7**	**0.0**
	14nm,0.3s						
NVLJ	**Novalja**	**2.61**	**99**	*e*Pn	**Pn**	**14 01 46.6**	**-0.4**
NVLJ				Sn	**Sn**	**14 02 17.4**	**-1.0**
NVLJ	**Novalja**	**2.61**	**99**	*e*Pn	**Pn**	**14 01 46.6**	**-0.4**
NVLJ				Sn	**Sn**	**14 02 17.4**	**-1.0**
OBKA	**Obir**	**2.75**	**56**	*e*Pg	**Pg**	**14 01 57.1**	**-1.0**
	3.2nm,0.3s						
OBKA				*e*Sg	**Sg**	**14 02 33.0**	**-0.7**
	23nm,0.4s						
OBKA	**Obir**	**2.75**	**56**	Pg	**Pg**	**14 01 57.1**	**-1.0**
	3.2nm,0.3s						
OBKA				Sg	**Sg**	**14 02 33.0**	**-0.7**
	23nm,0.4s						
SBF	**Sospel**	**2.97**	**249**	*e*Pn	**Pn**	**14 01 52.6**	**+0.4**
SBF				*e*Sn	**Sn**	**14 02 27.3**	**-0.3**
	19nm,0.3s						
SBF	**Sospel**	**2.97**	**249**	*e*Pn	**Pn**	**14 01 52.6**	**+0.4**
SBF				*e*Sn	**Sn**	**14 02 27.3**	**-0.3**
	9.6nm,0.3s						
MBDF	**Montbardon**	**3.21**	**267**	*e*Pn	**Pn**	**14 01 55.1**	**-0.4**
MBDF	**Montbardon**	**3.21**	**267**	*e*Pn	**Pn**	**14 01 55.1**	**-0.4**
LPL	**La Plagne**	**3.24**	**281**	*e*Pn	**Pn**	**14 01 56.7**	**+0.7**
LPL	**La Plagne**	**3.24**	**281**	*e*Pn	**Pn**	**14 01 56.7**	**+0.7**
MOA	**Molln**	**3.52**	**35**	*i* Pn	**Pn**	**14 02 02.3**	**+2.7**
	0.4nm,0.1s						
MOA	**Molln**	**3.52**	**35**	Pn	**Pn**	**14 02 02.3**	**+2.7**
	0.4nm,0.1s						
FRF	**La Foret Royal**	**3.62**	**248**	*e*Pn	**Pn**	**14 02 01.1**	**+0.1**
FRF				*e*Sn	**Sn**	**14 02 43.4**	**0.0**
	4.0nm,0.2s						
FRF	**La Foret Royal**	**3.62**	**248**	*e*Pn	**Pn**	**14 02 01.1**	**+0.1**
FRF				*e*Sn	**Sn**	**14 02 43.4**	**0.0**
	2.0nm,0.2s						
LMR	**La Mourre**	**3.81**	**246**	*e*Pn	**Pn**	**14 02 03.3**	**-0.3**
LMR				*e*Sn	**Sn**	**14 02 47.0**	**-1.1**
	7.0nm,0.3s						
LMR	**La Mourre**	**3.81**	**246**	*e*Pn	**Pn**	**14 02 03.3**	**-0.3**
LMR				*e*Sn	**Sn**	**14 02 47.0**	**-1.1**
	3.5nm,0.3s						
ORIF	**Oris-en-Rattie**	**3.82**	**271**	*e*Pn	**Pn**	**14 02 05.4**	**+1.5**
ORIF	**Oris-en-Rattie**	**3.82**	**271**	*e*Pn	**Pn**	**14 02 05.4**	**+1.5**
CABF	**La Chapelle**	**3.96**	**296**	*e*Pn	**Pn**	**14 02 06.3**	**+0.5**
CABF	**La Chapelle**	**3.96**	**296**	*e*Pn	**Pn**	**14 02 06.3**	**+0.5**
HINF	**Hinteralfeld**	**4.15**	**314**	*e*Sn	**Sn**	**14 02 55.9**	**-0.6**
	8.4nm,0.3s						
HINF	**Hinteralfeld**	**4.15**	**314**	*e*Sn	**Sn**	**14 02 55.9**	**-0.6**
	4.2nm,0.3s						
SMRF	**Simiane la Rot**	**4.20**	**258**	*e*Pn	**Pn**	**14 02 09.4**	**+0.4**
SMRF	**Simiane la Rot**	**4.20**	**258**	*e*Pn	**Pn**	**14 02 09.4**	**+0.4**
CDF	**Champ du Feu**	**4.37**	**323**	*e*Pn	**Pn**	**14 02 12.0**	**+0.6**
CDF				*e*Sn	**Sn**	**14 03 01.7**	**-0.4**
	4.5nm,0.2s						
CDF	**Champ du Feu**	**4.37**	**323**	*e*Pn	**Pn**	**14 02 12.0**	**+0.6**
CDF				*e*Sn	**Sn**	**14 03 01.7**	**-0.4**
	2.2nm,0.2s						
KHC	**Kasperske Hory**	**4.42**	**20**	*e*PN	**Pn**	**14 02 15.4**	**+3.4**
KHC				*e*PG	**Pg**	**14 02 31.5**	**+1.5**
KHC				*e*SN	**Sn**	**14 03 02.7**	**-0.5**
KHC				*e*SG	**Sg**	**14 03 27.2**	**0.0**
KHC	**Kasperske Hory**	**4.42**	**20**	Pn	**Pn**	**14 02 15.4**	**+3.4**
KHC				Sn	**Sn**	**14 03 02.7**	**-0.5**
HAU	**Haudompre**	**4.53**	**313**	*e*Pn	**Pn**	**14 02 14.2**	**+0.7**
HAU				*e*Sn	**Sn**	**14 03 05.2**	**-0.7**
	13nm,0.3s						
HAU	**Haudompre**	**4.53**	**313**	*e*Pn	**Pn**	**14 02 14.2**	**+0.7**
HAU				*e*Sn	**Sn**	**14 03 05.2**	**-0.7**
	6.6nm,0.3s						
VIVF	**Saint-Julien-l**	**4.68**	**270**	*e*Pn	**Pn**	**14 02 15.5**	**-0.2**
VIVF				*e*Sn	**Sn**	**14 03 08.1**	**-1.6**
	1.7nm,0.3s						
VIVF	**Saint-Julien-l**	**4.68**	**270**	*e*Pn	**Pn**	**14 02 15.5**	**-0.2**
VIVF				*e*Sn	**Sn**	**14 03 08.1**	**-1.6**
	0.9nm,0.3s						
LASF	**Ste Croix**	**5.38**	**263**	*e*Pn	**Pn**	**14 02 25.1**	**-0.1**
LASF	**Ste Croix**	**5.38**	**263**	*e*Pn	**Pn**	**14 02 25.1**	**-0.1**
SMF	**Signal de Mont**	**5.44**	**290**	*e*Pn	**Pn**	**14 02 26.1**	**+0.1**
SMF				*e*Sn	**Sn**	**14 03 26.5**	**-1.8**
	4.0nm,0.3s						
SMF	**Signal de Mont**	**5.44**	**290**	*e*Pn	**Pn**	**14 02 26.1**	**+0.1**
GOPC	**GO Pecny, Ondr**	**5.46**	**25**	*e*SG	**Sg**	**14 04 00.0**	**-0.6**
GOPC	**GO Pecny, Ondr**	**5.46**	**25**	Sg	**Sg**	**14 04 00.0**	**-0.6**
LOR	**Lormes**	**5.62**	**296**	*e*Pn	**Pn**	**14 02 28.5**	**0.0**
LOR				*e*Sn	**Sn**	**14 03 31.5**	**-1.3**
	4.1nm,0.3s						
LOR	**Lormes**	**5.62**	**296**	*e*Pn	**Pn**	**14 02 28.5**	**0.0**
LOR				*e*Sn	**Sn**	**14 03 31.5**	**-1.3**
	2.0nm,0.3s						
AVF	**Avril sur Loir**	**5.80**	**291**	*e*Pn	**Pn**	**14 02 30.9**	**-0.1**
AVF	**Avril sur Loir**	**5.80**	**291**	*e*Pn	**Pn**	**14 02 30.9**	**-0.1**

WEL 18 14:12:02.9±0.1, 43°.56S×172°.74E, h10km, ML3.7/13, 3C-4D, Error ellipse: s-maj=1.0km s-min=0.5km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.08**	**262**	PG	Pg	14 12 05.2	0.0
CRLZ				SG	Sg	14 12 07.0	0.0
CRLZ				AML	AML	14 12 07.1	
CRLZ				AML	AML	14 12 08.2	
CRLZ				AML	AML	14 12 08.9	
MQZ	**McQueen's Vall**	**0.15**	**203**	⇑PG	Pg	14 12 06.5	+0.2
MQZ				SG	Sg	14 12 09.0	+0.3
MQZ				AML	AML	14 12 09.2	
OXZ	**Oxford

LHSI	**Lahat**	**2.17**	**132**	P		**Pn**	**14 14 29.4**	**+0.7**
MNAI	**Manna**	**2.24**	**152**	P		**Pn**	**14 14 30.1**	**+0.6**
MNAI				S		**Sn**	**14 14 59.3**	**+0.5**
CMAR	**Chiang Mai Arr**	**20.90**	**352**	P		**P**	**14 18 22.9**	**+0.6**
	0.6nm,0.4s,baz=188,slow=7.5,SNR=4.1							
WRA	**Warramunga Arr**	**36.18**	**121**	P		**P**	**14 20 38.8**	**-1.1**
	0.4nm,0.6s,baz=311,slow=9.0,SNR=6.0							
ASAR	**Alice Springs**	**37.51**	**127**	P		**P**	**14 20 50.2**	**-1.0**
	0.5nm,0.6s,baz=299,slow=7.5,SNR=13							
SONM	**Songino Array**	**50.16**	**4**	P		**P**	**14 22 32.7**	**+0.9**
	0.6nm,0.5s,baz=183,slow=11,SNR=3.5							
MKAR	**Makanchi Array**	**51.92**	**343**	P		**P**	**14 22 44.4**	**-0.5**
	0.4nm,0.4s,baz=148,slow=8.2,SNR=6.9							
ZALV	**Zalesovo Beam**	**57.90**	**348**	P		**P**	**14 23 27.7**	**0.0**
	0.7nm,0.4s,baz=177,slow=5.9,SNR=5.0							
TXAR	**Lajitas Array**	**143.81**	**40**	PKPbc		PKPbc	14 33 08.1	+0.3
	0.2nm,0.5s,baz=22,slow=0.2,SNR=6.0							

MEX 18 14:22:48.0±0.4,14°.71N×92°.57W,h73km±16km,MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.61**	**15**	*e*P		Pn	14 23 13.3	-1.4
CCIG				*e*S		Sn	14 23 33.3	-1.6

*NIED **18** 14:24:00,39°.60N×143°.80E,h14km,Mw4.0 Best double couple: M0 1.05000×10^15 NP1:φ=202.00000°,δ=34.00000°, λ=87.00000°. NP2:φ=26.00000°,δ=56.00000°,λ=92.00000°.*
*ISCJB **18** 14:24:53.1±0.5,39°.48N±0°.04×143°.70E±0°.06,h11km, mb4.1/16,MS3.3/2,Error ellipse: s-maj=7.1km s-min=4.7km az=31.4*
*JMA **18** 14:24:53.2±0.2,39°.56N×143°.77E,h22km,M4.2*
*IDC **18** 14:24:53.9±0.9,39°.46N×143°.60E,h0km,mb3.9/13, mb1 4.0/19,mb1mx3.9/53,mbtmp4.0/19,ML3.4/5,MS3.3/4, Ms1 3.3/4,ms1mx2.8/51,Error ellipse: s-maj=21.0km s-min=14.8km az=108.0*
*NEIC **18** 14:24:58.5±2.4,39°.51N×143°.57E,h32km±16km,mb4.8/4, Error ellipse: s-maj=12.2km s-min=6.2km az=113.0*

ISC 18 14:24:55.2±0.8,39°.53N±0°.06×143°.63E±0°.07,h11km,n48, σ1§21/44,mb4.0/16,1D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.40**	**272**	P		**Pn**	**14 25 19.5**	**-1.1**
JTH	**Tanohata**	**1.42**	**287**	P		**Pn**	**14 25 19.5**	**-1.4**
JTH				S		**Sg**	**14 25 40.3**	**-0.5**
OFUJ	**Ofunato**	**1.58**	**254**	P		**Pn**	**14 25 22.2**	**-1.0**
OFUJ				*e*S		**Sn**	**14 25 42.3**	**-1.4**
JOM	**Ohasama**	**1.81**	**269**	P		**Pn**	**14 25 25.8**	**-0.5**
JANG	**Nango**	**1.83**	**298**	P		**Pn**	**14 25 24.8**	**-1.7**
JMK	**Ichinoseki**	**1.96**	**254**	P		**Pn**	**14 25 27.6**	**-0.7**
ERM	**Erimo**	**2.50**	**352**	*e*Pn		**Pn**	**14 25 36.4**	**+0.6**
JYK	**Kaneyama**	**2.61**	**257**	P		**Pn**	**14 25 36.7**	**-0.6**
JOT	**Ohata**	**2.70**	**314**	P		**Pn**	**14 25 37.8**	**-0.7**
JNBK	**Urakawa-nobuka**	**2.82**	**347**	P		**Pn**	**14 25 40.5**	**+0.3**
JNBK				S		**Sn**	**14 26 14.6**	**+0.4**
JKB	**Kayabe**	**3.07**	**321**	P		**Pn**	**14 25 43.6**	**0.0**
JCH	**Churui**	**3.08**	**356**	P		**Pn**	**14 25 43.0**	**-0.8**
JCH				*e*S		**Sn**	**14 26 17.6**	**-3.1**
JFT	**Otama**	**3.27**	**233**	P		**Pn**	**14 25 45.2**	**-1.2**
JAK	**Akkeshi**	**3.55**	**13**	P		**Pn**	**14 25 49.1**	**-1.1**
JAK				S		**Sn**	**14 26 29.6**	**-2.6**
ASAJ	**Asahikawa**	**4.64**	**351**	Pn		**Pn**	**14 26 06.0**	**+0.8**
	baz=270,slow=20							
MJAR	**Matsushiro Arr**	**5.21**	**237**	Pn		**Pn**	**14 26 13.9**	**+0.8**
	4.1nm,0.3s,baz=44,slow=11,SNR=67							
MAJO	**Matsushiro**	**5.22**	**237**	*e*Pn		**Pn**	**14 26 13.9**	**+0.7**
	69nm,0.7s							
JHJ	**Hachijo jima 2**	**7.11**	**207**	Pn		**Pn**	**14 26 38.7**	**-0.5**
	8.1nm,0.3s,baz=72,slow=20,SNR=2.2							
USRK	**Ussuriysk Ar.**	**9.85**	**302**	Pn		**Pn**	**14 27 18.4**	**+1.7**
	0.4nm,0.3s,baz=104,slow=12,SNR=14							
USRK				LR		LR	14 30 56.3	
	comp=Z,140nm,19.3s,baz=157,slow=37							
KSRS	**Korea Array**	**12.48**	**265**	Pn		**Pn**	**14 27 54.2**	**+1.6**
	0.2nm,0.3s,baz=84,slow=13,SNR=5.9							
KSAR	**Wonju Array Be**	**12.51**	**265**	Pn		**Pn**	**14 27 54.2**	**+1.1**
KLR	**Kul'dur**	**12.87**	**323**	Pn		**Pn**	**14 27 59.2**	**+1.2**
	0.2nm,0.3s,baz=138,slow=12,SNR=4.0							
KLR				LR		LR	14 32 48.9	
	comp=Z,94nm,20.8s,baz=136,slow=37							
MA2	**Magadan**	**20.57**	**10**	P		Pn	14 29 35.0	-0.9
	6.9nm,0.8s,baz=192,slow=20,SNR=2.9							
SEY	**Seymchan**	**24.02**	**10**	P		**P**	**14 30 10.6**	**+0.8**
	1.7nm,0.6s,baz=183,slow=8.1,SNR=6.2							
YAK	**Yakutsk**	**24.08**	**344**	LR		LR	14 40 17.4	
	comp=Z,72nm,20.1s,baz=126,slow=38							
SONM	**Songino Array**	**27.95**	**300**	P		**P**	**14 30 45.6**	**-0.1**
	1.0nm,0.5s,baz=92,slow=9.4,SNR=6.0							
H11N2	**WAKE ISLAND Hy**	**28.11**	**128**	T		T	15 00 11.9	
H11N1	**WAKE ISLAND Hy**	**28.12**	**128**	T		T	15 00 11.9	
H11N3	**WAKE ISLAND Hy**	**28.13**	**128**	T		T	15 00 11.3	
	SNR=32							
H11S1	**WAKE ISLAND Hy**	**28.93**	**130**	T		T	15 01 41.3	
	baz=181,slow=74,SNR=6.4							
H11S3	**WAKE ISLAND Hy**	**28.94**	**130**	T		T	15 01 39.9	
	SNR=7.8							
H11S2	**WAKE ISLAND Hy**	**28.95**	**130**	T		T	15 01 41.3	
	baz=149,slow=74,SNR=6.9							
ZALV	**Zalesovo Beam**	**41.57**	**310**	P		**P**	**14 32 42.8**	**+0.1**
	1.7nm,0.5s,baz=87,slow=7.1,SNR=7.4							
CMAR	**Chiang Mai Arr**	**43.83**	**255**	P		**P**	**14 33 01.6**	**+0.2**
	0.5nm,0.4s,baz=48,slow=6.7,SNR=3.9							
MKAR	**Makanchi Array**	**44.31**	**300**	P		**P**	**14 33 05.0**	**0.0**
	2.0nm,0.6s,baz=83,slow=9.4,SNR=18							
KURK	**Kurchatov**	**45.80**	**307**	*e*P		**P**	**14 33 16.2**	**-0.5**
	38nm,0.8s							
ILAR	**Eielson Array**	**46.45**	**34**	P		**P**	**14 33 23.1**	**+1.4**
	0.8nm,0.7s,baz=263,slow=7.0,SNR=14							
BVAR	**Borovoye Array**	**50.21**	**311**	P		**P**	**14 33 51.1**	**+0.3**
	2.1nm,0.7s,baz=73,slow=9.3,SNR=12							
BRVK	**Borovoye**	**50.26**	**311**	*e*P		**P**	**14 33 51.3**	**+0.1**
	6.3nm,0.7s							
AAK	**Ala-Archa**	**50.87**	**297**	LR		LR	14 55 47.9	
	comp=Z,32nm,18.5s,baz=198,slow=36							
INK	**Inuvik**	**51.37**	**28**	P		**P**	**14 34 01.2**	**+1.9**
	1.3nm,0.5s,baz=269,slow=6.8,SNR=3.7							
ABKAR	**Akbulak array**	**57.68**	**310**	*e*P		**P**	**14 34 44.8**	**-0.6**
	0.7nm,0.4s							
AKTO	**Aktyubinsk**	**58.31**	**311**	P		**P**	**14 34 51.8**	**+1.8**
	0.8nm,0.5s,baz=64,slow=10,SNR=4.5							
WRAB	**Tennant Creek**	**59.79**	**190**	*e*P		**P**	**14 34 59.5**	**-0.8**
	11nm,1.0s							
WRA	**Warramunga Arr**	**59.80**	**190**	P		**P**	**14 34 59.5**	**-0.9**
	0.4nm,0.6s,baz=8.5,slow=6.9,SNR=7.0							
ASAR	**Alice Springs**	**63.52**	**190**	P		**P**	**14 35 25.5**	**0.0**
	0.3nm,0.8s,baz=0.1,slow=6.0,SNR=6.5							
FINES	**FINESS Array B**	**67.41**	**333**	P		**P**	**14 35 49.6**	**-0.6**
	1.3nm,0.7s,baz=79,slow=7.2,SNR=4.6							
SYO	**Syowa Base**	**131.22**	**208**	⇓*e*P		**PKPdf**	**14 44 03.6**	**-2.5**

*SCB **18** 14:29:02.1±0.7,24°.12S×67°.21W,h160km,Ml3.9/1,Error ellipse: s-maj=19.5km s-min=9.1km az=40.0*
*ISCJB **18** 14:29:03.4±0.3,24°.28S±0°.03×67°.06W±0°.05,h181km, mb3.6/6,Error ellipse: s-maj=6.4km s-min=3.3km az=152.7*
*SJA **18** 14:29:03.7±0.4,24°.39S×67°.00W,h223km±9km,ML3.5, MW3.2*
*IDC **18** 14:29:04.8±1.2,24°.21S×66°.99W,h182km±10km,mb3.5/6, mb1 3.7/11,mb1mx3.6/22,mbtmp4.1/11,Error ellipse: s-maj=17.3km s-min=14.2km az=37.0*
*GUC **18** 14:29:07.0±0.5,23°.94S×67°.61W,h238km±14km,ML5.0*

ISC 18 14:29:03.6±0.6,24°.33S±0°.05×67°.05W±0°.07,h181km,n39, σ2§23/58,mb3.7/6,10C-3D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.42**	**315**	P		**Pn**	**14 29 47.9**	**+2.0**
	3µm,0.3s,baz=189,slow=8.7,SNR=1018							
LVC				S		**Sn**	**14 30 19.0**	**+0.4**
	5µm,0.3s,baz=271,slow=20,SNR=36							
PB06	**IPOC Station P**	**2.83**	**304**	⇑*i*P		**Pn**	**14 29 52.3**	**+1.9**
PB06				*i* S		**Sn**	**14 30 26.1**	**-0.7**
AHML	**Horco Molle**	**2.89**	**148**	*i* P		**Pn**	**14 29 52.9**	**+1.8**
AHML				*i* S		**Sn**	**14 30 29.7**	**+1.6**
AHML				IAML			14 30 33.3	
	comp=Z,35nm,0.6s							
PB09	**IPOC Station P**	**3.23**	**321**	⇓*i*P		**Pn**	**14 29 56.9**	**+1.5**
PB09				*i* S		**Sn**	**14 30 34.8**	**-0.9**
PB09				IAML			14 30 38.3	
	comp=E,3µm,0.2s							
PB10	**IPOC Station P**	**3.31**	**283**	⇑*i*P		**Pn**	**14 29 57.9**	**+1.8**
PB10				*i* S		**Sn**	**14 30 36.1**	**-1.0**
PB10				IAML			14 30 41.9	
	comp=E,1µm,0.2s							
MOCB	**Mochara**	**3.33**	**23**	⇓*i*Pn		**Pn**	**14 29 58.3**	**+1.5**
PB04	**IPOC Station P**	**3.48**	**304**	⇑*i*P		**Pn**	**14 29 59.4**	**+1.0**
PB04				*i* S		**Sn**	**14 30 39.3**	**-1.8**
PB07	**IPOC Station P**	**3.68**	**314**	⇑*i*P		**Pn**	**14 30 01.8**	**+0.8**
PB07				*i* S		**Sn**	**14 30 43.5**	**-2.3**
PB07				IAML			14 30 45.3	
	comp=N,1µm,0.7s							
PB01	**IPOC Station P**	**3.97**	**325**	⇑*i*P		**Pn**	**14 30 04.8**	**+0.2**
PB01				*i* S		**Sn**	**14 30 49.9**	**-2.3**
PB01				IAML			14 30 50.7	
	comp=E,1µm,0.3s							
PB08	**IPOC Station P**	**4.60**	**334**	⇓*i*P		**Pn**	**14 30 13.8**	**+0.9**
PB08				*i* S		**Sn**	**14 31 05.4**	**-1.7**
PB08				IAML			14 31 08.9	
	comp=E,382nm,0.7s							
HMBC	**Humberstone**	**4.81**	**326**	⇑*i*P		**Pn**	**14 30 14.1**	**-1.3**
HMBC				*i* S		**Sn**	**14 31 08.0**	**-3.6**
PB11	**IPOC Station P**	**5.15**	**331**	⇑*i*P		**Pn**	**14 30 18.5**	**-1.2**
PB11				*i* S		**Sn**	**14 31 14.9**	**-4.7**
MNMC	**Minye Minye**	**5.69**	**335**	⇑*i*P		**Pn**	**14 30 26.0**	**-0.9**
MNMC				*i* S		**Sn**	**14 31 28.6**	**-3.7**
AVFE	**Valle Fertil**	**6.32**	**183**	*i* P		**Pn**	**14 30 35.6**	**+0.8**
AVFE				*i* S		**Sn**	**14 31 43.0**	**-3.9**
AVFE				IAML			14 31 49.6	
	comp=Z,27nm,0.3s							
ACHE	**Chepes**	**6.81**	**177**	*i* P		**Pn**	**14 30 41.8**	**+0.3**
ACHE				*i* S		**Sn**	**14 31 54.3**	**-4.4**
TCA	**Tanti**	**7.31**	**163**	*i* P		**Pn**	**14 30 47.7**	**-0.2**
TCA				*i* S		**Sn**	**14 32 05.0**	**-5.4**
BBOJ	**La Paz, Jacaqu**	**7.39**	**351**	⇑*i*Pn		**Pn**	**14 30 50.9**	**+1.4**
BBOE	**La Paz, Chanca**	**7.53**	**353**	*e*Pn		**Pn**	**14 30 52.7**	**+1.4**
RTLS	**Leoncito**	**7.70**	**194**	*i* P		**Pn**	**14 30 54.1**	**+0.9**
BBOD	**La Paz, Gloria**	**7.79**	**349**	*e*Pn		**Pn**	**14 30 55.8**	**+1.1**
BBOD				*e*Sn		**Sn**	**14 32 18.4**	**-4.2**
ACAN	**Cantantal**	**7.92**	**181**	*i* P		**Pn**	**14 30 55.6**	**-0.2**
ACAN				*i* S		**Sn**	**14 32 18.5**	**-6.3**
LPAZ	**La Paz**	**8.06**	**353**	P		**Pn**	**14 30 58.5**	**0.0**
	comp=Z,2.1nm,0.3s,baz=132,slow=4.7,SNR=71							
LPAZ				S		**Sn**	**14 32 26.4**	**-2.8**
	comp=Z,0.3nm,0.3s,baz=294,slow=19,SNR=4.3							
LPAZ	**La Paz**	**8.06**	**353**	*e*Pn		**Pn**	**14 30 58.4**	**0.0**
LPAZ				*e*Sn		**Sn**	**14 32 25.5**	**-3.8**
BBOB	**La Paz, Bander**	**8.21**	**353**	⇑*i*Pn		**Pn**	**14 31 00.0**	**-0.2**
BBOB				*e*Sn		**Sn**	**14 32 29.6**	**-3.0**
	comp=Z,26nm,0.8s							
CPUP	**Villa Florida**	**9.01**	**105**	P		**Pn**	**14 31 10.6**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=298,slow=11,SNR=8.4							
SIV	**San Ignacio**	**10.01**	**35**	P		**Pn**	**14 31 21.5**	**-2.0**
	comp=Z,2.2nm,0.3s,baz=227,slow=14,SNR=33							
SIV	**San Ignacio**	**10.01**	**35**	*e*P		**Pn**	**14 31 21.4**	**-2.0**
PLCA	**Paso Flores**	**16.62**	**189**	P		**Pn**	**14 32 47.6**	**+1.3**
	comp=Z,0.2nm,0.3s,baz=33,slow=14,SNR=5.9							
BDFB	**Brasilia**	**19.85**	**68**	P		**P**	**14 33 22.2**	**+1.2**
	baz=258,slow=9.7							
PTGA	**Pitinga**	**24.44**	**17**	P		**P**	**14 34 07.0**	**+1.1**
	comp=Z,0.8nm,0.5s,baz=205,slow=19,SNR=3.3							
TXAR	**Lajitas Array**	**63.92**	**325**	P		**P**	**14 39 18.1**	**+0.7**
	comp=Z,0.6nm,0.8s,baz=158,slow=7.7,SNR=5.9							
PDAR	**Pinedale Array**	**77.41**	**329**	P		**P**	**14 40 39.1**	**+0.3**
	comp=Z,0.3nm,0.5s,baz=212,slow=8.2,SNR=3.9							
ULM	**Lac du Bonnet**	**78.53**	**342**	P		**P**	**14 40 45.2**	**+0.7**
	comp=Z,1.4nm,0.4s,baz=172,slow=7.1,SNR=3.7							
BOSA	**Boshof**	**80.62**	**117**	P		**P**	**14 40 57.2**	**+0.6**
	comp=Z,1.4nm,0.6s,baz=275,slow=2.8,SNR=4.0							
MAW	**Mawson**	**81.14**	**163**	P		**P**	**14 41 00.5**	**+2.1**
	comp=Z,1.5nm,0.5s,baz=221,slow=9.3,SNR=4.5							
ASAR	**Alice Springs**	**128.14**	**205**	PKP		**PKPdf**	**14 47 49.9**	**+0.9**
	comp=Z,0.7nm,0.7s,baz=144,slow=2.1,SNR=15							
WRA	**Warramunga Arr**	**131.31**	**207**	PKP		**PKPdf**	**14 47 56.4**	**+1.3**
	comp=Z,0.5nm,0.5s,baz=154,slow=1.7,SNR=7.8							
ZALV	**Zalesovo Beam**	**143.70**	**28**	PKP		PKPbc	14 48 15.6	+0.9
	comp=Z,1.1nm,0.6s,baz=308,slow=5.0,SNR=5.4							
MKAR	**Makanchi Array**	**146.80**	**40**	PKPbc		**PKPbc**	**14 48 24.1**	**-0.2**
	comp=Z,1.7nm,0.7s,baz=302,slow=3.2,SNR=15							

JMA 18 14:39:04.7,36°.32N×137°.09E,h8km±1km,M-0.2,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JGN	**Niukaw**	**0.21**	**118**	P		Pg	14 39 08.9	0.0
JGN				S		Sg	14 39 11.8	0.0

*NIED **18** 14:48:00,23°.60N×122°.30E,h35km,Mw5.1 Best double couple: M0 4.61000×10^16 NP1:φ=149.00000°,δ=79.00000°, λ=4.00000°. NP2:φ=58.00000°,δ=86.00000°,λ=169.00000°.*
*IDC **18** 14:48:51.3±0.5,23°.67N×122°.49E,h0km,mb4.5/35, mb1 4.6/36,mb1mx4.5/61,mbtmp4.5/36,ML3.8/1,MS4.2/26, Ms1 4.2/26,ms1mx4.0/46,Error ellipse: s-maj=14.4km s-min=10.8km az=78.0*
*BJI **18** 14:48:52.5,23°.75N×122°.35E,h6km,mb4.5/60,mB4.9/51, ML4.9/5,Ms4.8/75,Ms7 4.5/69*
*GCMT **18** 14:48:53.2±0.2,23°.53N×122°.31E,h23km±1km, MW5.0/101,Moment Tensor Solution. s42,c50; s101,c156; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=0.04±.14; Mθθ 3.38±.10; Mφφ=-3.34±.11; Mrθ 0.19±.15; Mθφ=-2.03±.08; Mφr=0.56±.17; Best double couple: M0 3.97100×10^16 NP1:φ=330.00000°,δ=88.00000°, λ=-8.00000°. NP2:φ=61.00000°,δ=82.00000°,λ=-178.00000°. Principal axes: T 3.9740, Plg5.0000°, Azm16.0000°; N -0.0020, Plg81.0000°, Azm140.0000°; P -3.9670, Plg7.0000°, Azm285.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **18** 14:48:53.2±0.8,23°.59N×122°.38E,h12km±5km,mb5.1/76 Error ellipse: s-maj=4.5km s-min=3.4km az=124.0*
NEIC Felt [III] at Taipei. Also felt at Hualien and Taichung.
*MOS **18** 14:48:53.5±1.0,23°.67N×122°.35E,h25km,mb4.9/38,Error ellipse: s-maj=8.4km s-min=5.1km az=100.9*
*JMA **18** 14:48:53.1±0.1,23°.56N×122°.33E,h22km,M4.9*
*ISCJB **18** 14:48:54.0±0.4,23°.57N±0°.01×122°.42E±0°.01,h29km±3km, mb4.8/127,MS4.3/44,Error ellipse: s-maj=2.3km s-min=1.7km az=155.3*
*TAP **18** 14:48:54.9,23°.59N×122°.37E,h30km±1km,ML5.1,C*
*BKK **18** 14:48:56.0±0.5,24°.N±5°×12°.2E±°,h10km,M5.1/12, mB5.2/4,mb4.8/12,MLv5.4/1,Mw(mB)4.6/4*

ISC 18 14:48:53.8±0.7,23°.58N±0°.02×122°.36E±0°.02,h15km±4km, n419,σ1§63/467,mb4.9/127,MS4.4/44,61C-30D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.76**	**280**	*e*P		**Pb**	**14 49 09.2**	**+0.5**
	baz=279							
HWA	**Hwalien**	**0.80**	**300**	⇑*i*P		**Pg**	**14 49 09.1**	**-0.2**
	baz=288							
ESF	**Shoufeng Towns**	**0.83**	**291**	*e*P		**Pb**	**14 49 09.9**	**0.0**
	baz=289							
TWD	**Chiawan**	**0.86**	**306**	⇑*i*P		**Pb**	**14 49 09.8**	**-0.6**
	baz=305							
TWD				*i* S		**Sb**	**14 49 20.4**	**-1.3**
	baz=305							
ESL	**Shilin**	**0.88**	**286**	⇑*i*P		**Pb**	**14 49 09.9**	**-0.9**
	baz=275							
ESL				*e*S		**Sb**	**14 49 20.1**	**-2.3**
	baz=275							
NACB	**Ninganchiao**	**0.92**	**310**	*e*Pg		**Pb**	**14 49 10.4**	**-1.0**
EHP	**Heping Village**	**0.92**	**322**	*e*P		**Pg**	**14 49 11.7**	**0.0**
	baz=308							
EHY	**Hungye**	**0.96**	**266**	⇑P		**Pb**	**14 49 11.4**	**-0.6**
	baz=265							
EHY				*e*S		**Sb**	**14 49 23.8**	**-0.8**
	baz=265							
YULB	**Yu-li**	**0.99**	**260**	*e*Pg		**Pb**	**14 49 11.9**	**-0.8**
TWF1	**Yuli**	**1.00**	**257**	⇑*i*P		**Pb**	**14 49 11.9**	**-1.0**
	baz=247							
ENA	**Nanau**	**1.02**	**326**	P		**Pb**	**14 49 12.8**	**-0.4**
	baz=326							
JYNG	**Yonagunijimaku**	**1.02**	**31**	P		**Pb**	**14 49 12.7**	**-0.5**
JYNG				S		**Sb**	**14 49 26.2**	**-0.2**
CHKT	**Chengkung**	**1.03**	**243**	⇓P		**Pb**	**14 49 12.0**	**-1.3**
	baz=241							
CHKT				S		**Sb**	**14 49 23.9**	**-2.8**
	baz=241							
YOJ	**Yonaguni jima**	**1.06**	**34**	P		**Pb**	**14 49 12.9**	**-1.0**
YOJ				S		**Sb**	**14 49 27.2**	**-0.4**
YOJ	**Yonaguni jima**	**1.06**	**34**	⇑*i*P		**Pb**	**14 49 13.5**	**-0.5**
	baz=34							
YOJ				S		**Sb**	**14 49 26.6**	**-1.0**
	baz=34							
YOJ	**Yonaguni jima**	**1.06**	**34**	*e*P		**Pb**	**14 49 13.4**	**-0.5**
YOJ	**Yonaguni jima**	**1.06**	**34**	*e*Pg		**Pb**	**14 49 13.4**	**-0.5**
TWC	**Suao**	**1.13**	**336**	⇓*i*P		**Pb**	**14 49 14.6**	**-0.4**
	baz=348							
TWC				*e*S		**Sb**	**14 49 27.4**	**-2.1**
	baz=348							
WHF	**Hehuan Shan**	**1.15**	**300**	⇑*i*P		**Pb**	**14 49 14.6**	**-1.1**
	baz=298							
NNS	**Nan Shan**	**1.25**	**314**	⇑*i*P		**Pn**	**14 49 16.1**	**-0.6**
	baz=313							
NNS				*i* S		**Sn**	**14 49 31.7**	**-1.3**
	baz=313							
TWT	**Tachien**	**1.28**	**302**	⇑*i*P		**Pn**	**14 49 17.0**	**-0.2**
	baz=301							
TWT				*e*S		**Sb**	**14 49 32.8**	**-1.2**
	baz=301							
ENTT	**Nioudou**	**1.28**	**326**	⇑*i*P		**Pn**	**14 49 16.9**	**-0.3**
	baz=325							
ELDTW	**Lidau**	**1.29**	**253**	⇓*i*P		**Pn**	**14 49 16.2**	**-1.3**
	baz=251							
YUS	**Yu-Shan**	**1.30**	**266**	⇑*i*P		**Pn**	**14 49 17.4**	**-0.4**
	baz=254							
TWE	**Neicheng**	**1.30**	**331**	⇑*i*P		**Pn**	**14 49 17.5**	**+0.1**
	baz=331							
TWE				*e*S		**Sb**	**14 49 33.4**	**-1.1**
	baz=331							
SSLB	**Suanglung**	**1.31**	**280**	*e*Pn		**Pn**	**14 49 16.6**	**-0.9**
ILA	**Ilan**	**1.31**	**335**	*e*P		**Pb**	**14 49 18.0**	**-0.1**
	baz=335							
ILA				S		**Sb**	**14 49 34.2**	**-0.5**
	baz=335							
EGS		**1.32**	**343**	⇓*i*P		**Pn**	**14 49 18.0**	**+0.3**
	baz=343							
SMLT	**Sun Moon Lake**	**1.37**	**283**	⇑*i*P		**Pn**	**14 49 18.2**	**-0.3**
	baz=274							
TTN	**Taitung**	**1.39**	**234**	*e*P		**Pn**	**14 49 15.4**	**-3.2**
	baz=232							
TWG	**Pinlang**	**1.40**	**238**	⇓*i*P		**Pn**	**14 49 17.8**	**-1.1**
	baz=227							
TWG				*e*S		**Sn**	**14 49 34.3**	**-2.8**
	baz=227							
TWG	**Pinlang**	**1.40**	**238**	*e*Pn		**Pn**	**14 49 17.1**	**-1.7**
HATJ	**Hateruma jima**	**1.41**	**70**	P		**Pn**	**14 49 18.2**	**-0.7**
HATJ				S		**Sn**	**14 49 35.9**	**-1.2**
YHNB	**Yeheng**	**1.41**	**321**	*e*Pn		**Pn**	**14 49 18.6**	**-0.4**
TYC	**Yuchr**	**1.42**	**284**	⇑*i*P		**Pn**	**14 49 18.8**	**-0.2**
	baz=283							
NSK	**Sanguang**	**1.43**	**320**	⇑*i*P		**Pn**	**14 49 19.0**	**-0.2**
	baz=307							
NSK				*e*S		**Sn**	**14 49 35.7**	**-2.1**
	baz=307							
ALS	**Alishan**	**1.43**	**268**	⇑P		**Pn**	**14 49 19.5**	**+0.1**
	baz=266							
IRIF	**Iriomote-Funau**	**1.46**	**59**	P		**Pn**	**14 49 19.3**	**-0.3**
IRIF				S		**Sn**	**14 49 38.2**	**-0.3**
TWB1	**Santiao Chiao**	**1.47**	**347**	⇓P		**Pn**	**14 49 19.5**	**-0.1**
	baz=347							
STYT	**Tauyuan**	**1.53**	**255**	⇑P		**Pn**	**14 49 20.6**	**0.0**
	baz=245							
STYT				*e*S		**Sn**	**14 49 39.9**	**-0.4**
	baz=245							
CHN5	**Tsauling**	**1.54**	**271**	⇑*i*P		**Pb**	**14 49 21.7**	**-0.4**
	baz=270							
WNT	**Mingjian**	**1.56**	**281**	⇑*i*P		**Pb**	**14 49 22.4**	**0.0**
	baz=290							
TWA	**Mucha**	**1.57**	**333**	⇑P		**Pb**	**14 49 22.2**	**-0.3**
	baz=334							
TWA				*e*S		**Sn**	**14 49 40.9**	**-0.2**
	baz=334							
NWF	**Wu-fen Shan**	**1.58**	**341**	⇓*e*P		**Pn**	**14 49 21.6**	**+0.3**
	baz=357							
NWF				*e*S		**Sn**	**14 49 40.8**	**-0.8**
	baz=357							
TATO	**Taipei**	**1.60**	**330**	*e*Pn		**Pn**	**14 49 22.0**	**+0.4**
TPUB	**Ta-pu**	**1.61**	**261**	*e*Pn		**Pn**	**14

SGLT	**Jiouru**	**1.92**	**244**	*e*P		**Pb**	**14 49 27.6**	**-0.8**
	baz=237								
WTCT	**Ta-ch'eng**	**1.93**	**279**	⇑P		**Pb**	**14 49 27.4**	**-1.2**
	baz=267								
WTCT				*e*S		**Sb**	**14 49 52.0**	**-0.5**
	baz=267								
TWM1	**Shoushan**	**1.93**	**248**	*e*P		**Pb**	**14 49 28.5**	**-0.2**
	baz=238								
WSF	**Szhu**	**1.96**	**272**	⇑P		**Pn**	**14 49 27.6**	**+1.1**
	baz=273								
WSF				*e*S		**Sn**	**14 49 51.9**	**+1.0**
	baz=273								
CHN8	**Yiju**	**1.99**	**264**	*e*P		**Pn**	**14 49 28.1**	**+1.2**
	baz=264								
CHN8				*e*S		**Sn**	**14 49 52.5**	**+1.0**
	baz=264								
SCZT	**Fangliau**	**2.00**	**234**	*e*P		**Pn**	**14 49 27.3**	**+0.2**
	baz=232								
SCLT	**Jiali**	**2.03**	**259**	*e*P		**Pb**	**14 49 29.3**	**-1.1**
	baz=259								
SCLT				*e*S		**Sb**	**14 49 54.2**	**-1.3**
	baz=259								
TAI1	**Yung-k'ang**	**2.03**	**255**	*e*P		**Pb**	**14 49 29.4**	**-1.0**
	baz=254								
JISG	**Ishigakijimahi**	**2.05**	**60**	P		**Pn**	**14 49 26.7**	**-1.0**
JISG				S		**Sn**	**14 49 51.8**	**-1.2**
PCYT	**Pengchaiyu**	**2.06**	**353**	*e*P		**Pn**	**14 49 28.2**	**+0.4**
	baz=353								
KAU	**Kaohsiung**	**2.14**	**242**	*e*P		**Pb**	**14 49 31.2**	**-1.0**
	baz=257								
TSEB	**Hengchuen, Pin**	**2.15**	**219**	*e*P		**Pn**	**14 49 30.3**	**+1.3**
	baz=228								
TSEB				*e*S		**Sn**	**14 49 54.8**	**-0.6**
	baz=228								
HEN	**Hengchun**	**2.17**	**224**	*e*P		**Pn**	**14 49 29.9**	**+0.6**
	baz=223								
HEN				*e*S		**Sn**	**14 49 53.9**	**-2.0**
	baz=223								
TWK1	**Hengchun**	**2.17**	**222**	*e*P		**Pn**	**14 49 29.5**	**+0.1**
	baz=220								
TWK1				*e*S		**Sn**	**14 49 53.8**	**-2.1**
	baz=220								
TWP	**Hsiaoliuchiu**	**2.21**	**237**	*e*P		**Pb**	**14 49 32.6**	**-0.9**
	baz=228								
JTJ	**Tarama**	**2.39**	**63**	P		**Pn**	**14 49 31.8**	**-0.6**
JTJ				S		**Sn**	**14 49 59.7**	**-1.7**
WDGT	**Dungji**	**2.50**	**263**	⇑*i*P		**Pn**	**14 49 34.6**	**+0.7**
	baz=263								
WDGT				*e*S		**Sn**	**14 50 02.5**	**-1.6**
	baz=263								
PNG	**Penghu**	**2.57**	**270**	⇑*i*P		**Pn**	**14 49 35.7**	**+0.8**
	baz=270								
PNG				*e*S		**Sn**	**14 50 05.1**	**-0.9**
	baz=270								
JIRB	**Irabujima**	**2.85**	**64**	P		**Pn**	**14 49 38.4**	**-0.4**
JIRB				S		**Sn**	**14 50 10.9**	**-2.0**
JMJ	**Miyako jima 2**	**2.95**	**65**	P		**Pn**	**14 49 40.4**	**+0.3**
JMJ				S		**Sn**	**14 50 13.9**	**-1.3**
JMJ	**Miyako jima 2**	**2.95**	**65**	*e*P		**Pn**	**14 49 39.9**	**-0.1**
	baz=63								
JMJ				*e*S		**Sn**	**14 50 13.7**	**-1.5**
	baz=63								
JIKM	**Ikemajima**	**2.96**	**62**	P		**Pn**	**14 49 39.9**	**-0.3**
JIKM				S		**Sn**	**14 50 14.0**	**-1.4**
JOGS	**Gusukube**	**3.02**	**66**	P		**Pn**	**14 49 41.3**	**+0.2**
JOGS				S		**Sn**	**14 50 16.8**	**-0.2**
KNM	**Kinmen**	**3.69**	**284**	⇑P		**Pn**	**14 49 51.9**	**+1.6**
	baz=284								
QZH	**Quanzhou**	**3.70**	**292**	⇓*i*Pn		**Pn**	**14 49 50.3**	**-0.1**
QZH				Sn		**Sn**	**14 50 30.8**	**-2.9**
QZH				smax	smax			
	comp=N,2μm,1.3s								
QZH				smax	smax			
	comp=E,3μm,1.3s								
QZH				LR	LR			
	comp=N,16μm,12.2s								
QZH				LR	LR			
	comp=E,18μm,16.6s								
QZH				LR	LR			
	comp=Z,11μm,15.3s								
JKE	**Kume jima 2**	**4.86**	**55**	P		**Pn**	**14 50 05.2**	**-1.2**
JAGN	**Aguni-jima**	**5.35**	**55**	P		**Pn**	**14 50 11.4**	**-1.6**
PIP	**Pasuquin**	**5.47**	**198**	⇓*e*P		**Pn**	**14 50 15.5**	**+0.7**
CVP	**Callao Caves**	**5.87**	**185**	⇓*e*P		**Pn**	**14 50 19.6**	**-0.7**
CVP				*i* S		**Sn**	**14 51 25.6**	**-1.6**
JNTH	**Nagotoyohara**	**5.91**	**59**	P		**Pn**	**14 50 18.8**	**-2.0**
JIH	**Iheya**	**6.13**	**55**	P		**Pn**	**14 50 21.6**	**-2.2**
JOW	**Kunigami**	**6.26**	**58**	P		**Pn**	**14 50 23.6**	**-2.0**
JOW				*e*S		**Sn**	**14 51 35.3**	**-1.6**
JOW	**Kunigami**	**6.26**	**58**	*e*P		**Pn**	**14 50 23.8**	**-1.9**
	baz=59								
JOW	**Kunigami**	**6.26**	**58**	*e*Pn		**Pn**	**14 50 23.7**	**-1.9**
JOKE	**Okinoerabujima**	**6.76**	**55**	P		**Pn**	**14 50 29.9**	**-2.6**
JTK	**Tokunoshima**	**7.27**	**53**	P		**Pn**	**14 50 36.9**	**-2.6**
SSE	**Sheshan**	**7.56**	**352**	P		**Pn**	**14 50 42.6**	**-0.9**
SSE				pmax	pmax			
	comp=Z,50nm,0.8s								
SSE				LR	LR			
	comp=N,690nm,20.2s								
SSE				LR	LR			
	comp=E,4μm,19.9s								
SSE				LR	LR			
	comp=Z,970nm,16.6s								
JAMN	**Amaminishikomi**	**7.70**	**51**	P		**Pn**	**14 50 42.1**	**-3.2**
JAM	**Amami Oshima**	**8.10**	**52**	P		**Pn**	**14 50 47.7**	**-3.2**
MCO	**Taipa Grande**	**8.25**	**262**	P		**Sn**	**14 52 21.0**	**-4.9**
GZH	**Guangzhou**	**8.30**	**268**	Pn		**Pn**	**14 50 51.5**	**-2.1**
GZH				Sn		Sn	14 52 13.5	-14
GZH				pmax	pmax			
	comp=Z,26nm,0.3s								
NJ2	**Nanjing**	**8.99**	**341**	*e*P		**Pn**	**14 51 02.3**	**-0.8**
NJ2				S		**Sn**	**14 52 39.4**	**-4.8**
NJ2				smax	smax			
	comp=Z,72nm,0.7s								
NJ2				smax	smax			
	comp=Z,77nm,0.6s								
NJ2				LR	LR			
	comp=Z,2μm,5.4s								
NJ2				LR	LR			
	comp=Z,6μm,7.1s								
NJ2				LR	LR			
	comp=Z,2μm,13.6s								
TGY	**Tagaytay City**	**9.52**	**188**	Pn		**Pn**	**14 51 14.3**	**+3.8**
	comp=Z,39nm,0.3s,baz=215,slow=5.3,SNR=4.6								
TGY				LR	LR		14 55 24.9		
	comp=Z,1μm,21.1s,baz=36,slow=41								
WHN	**Wuhan**	**9.95**	**316**	P		**Pn**	**14 51 19.0**	**+2.7**
WHN				S		**Sn**	**14 53 04.1**	**-3.6**
WHN				LR	LR			
	comp=Z,9μm,9.7s								
WHN				LR	LR			
	comp=Z,7μm,9.8s								
WHN				LR	LR			
	comp=Z,6μm,10.4s								
QIZ	**Qiongzhong**	**12.51**	**251**	P		**Pn**	**14 51 51.5**	**+0.1**
QIZ				S		**Sn**	**14 54 11.6**	**+1.0**
QIZ				LR	LR			
	comp=Z,3μm,20.6s								
QIZ				LR	LR			
	comp=Z,1μm,23.0s								
QIZ				LR	LR			
	comp=Z,1μm,17.3s								
ENH	**Enshi**	**13.27**	**303**	*e*Pn		**Pn**	**14 52 01.2**	**-0.5**
TIA	**Tai'an**	**13.38**	**341**	*e*P		**Pn**	**14 52 06.1**	**+2.9**
TIA				S		**Sn**	**14 54 29.8**	**-1.9**
TIA				pmax	pmax			
	comp=Z,20nm,0.8s								
TIA				LR	LR			
	comp=Z,960nm,15.0s								
TIA				LR	LR			
	comp=Z,5μm,16.0s								
INCN	**Inchon**	**14.34**	**14**	*e*Pn		**Pn**	**14 52 14.7**	**-1.6**
GYA	**Guiyang**	**14.52**	**285**	⇑*i*P		**Pn**	**14 52 19.3**	**+0.4**
GYA				S		**Sn**	**14 54 53.9**	**-5.8**
GYA				SS		**S**	**14 55 18.3**	**-0.9**
GYA				pmax	pmax			
	comp=Z,20nm,0.8s								
GYA				pmax	pmax			
	comp=Z,110nm,4.8s								
GYA				LR	LR			
	comp=Z,3μm,13.3s								
GYA				LR	LR			
	comp=Z,2μm,12.4s								
KS15	**Wonju Array Si**	**14.61**	**18**	*e*Pn		**Pn**	**14 52 21.9**	**+2.0**
KSAR	**Wonju Array Be**	**14.61**	**18**	P		**Pn**	**14 52 20.5**	**+0.5**
KSAR	**Wonju Array Be**	**14.61**	**18**	Pn		**Pn**	**14 52 20.5**	**+0.5**
KSRS	**Korea Array**	**14.63**	**18**	Pn		**Pn**	**14 52 20.5**	**+0.2**
	comp=Z,0.4nm,0.3s,baz=198,slow=13,SNR=23								
KSRS				LR	LR		14 58 23.9		
	comp=Z,750nm,21.5s,baz=180,slow=40								
KS01	**Wonju Array Si**	**14.65**	**18**	*e*Pn		**Pn**	**14 52 21.6**	**+1.1**
XAN	**Xi'an**	**15.71**	**315**	P		**Pn**	**14 52 35.1**	**+0.4**
XAN				pP		P	14 52 38.1	-0.6
XAN				sP		pP	14 52 41.6	-1.3
XAN				S		**Sn**	**14 55 20.6**	**-8.0**
XAN				LR	LR			
	comp=Z,2μm,10.1s								
XAN				LR	LR			
	comp=Z,2μm,10.5s								
XAN				LR	LR			
	comp=Z,1μm,9.8s								
CTBH	**Cotabato--PC H**	**16.36**	**173**	⇑*i*P		**P**	**14 52 45.5**	**-0.4**
BJT	**Baijiatuan**	**17.21**	**344**	*e*P		**P**	**14 52 54.5**	**-0.6**
BJT				pmax	pmax			
	comp=Z,62nm,1.4s								
BJT	**Baijiatuan**	**17.21**	**344**	*e*Pn		**P**	**14 52 54.5**	**-0.6**
	comp=Z,62nm,1.4s								
BJI	**Beijing**	**17.23**	**344**	P		**P**	**14 52 54.8**	**-0.5**
BJI				S		**Sn**	**14 56 05.9**	**+0.7**
BJI				pmax	pmax			
	comp=Z,14nm,0.9s								
BJI				LR	LR			
	comp=Z,1μm,18.6s								
BJI				LR	LR			
	comp=Z,3μm,18.0s								
BJI				LR	LR			
	comp=Z,550nm,21.2s								
UBPT	**Khong Chiam**	**17.93**	**246**	P		P	14 53 10.6	+7.4
KMI	**Kunming**	**17.95**	**279**	P		**P**	**14 53 05.0**	**+1.4**
KMI				pP		sP	14 53 11.4	+1.6
KMI				sP		pP	14 53 13.8	+5.9
KMI				S		**Sn**	**14 56 19.0**	**-4.2**
KMI				pmax	pmax			
	comp=Z,9.0nm,0.9s								
KMI				pmax	pmax			
	comp=Z,240nm,4.5s								
KMI				LR	LR			
	comp=Z,2μm,19.0s								
KMI				LR	LR			
	comp=Z,720nm,21.5s								
KMI				LR	LR			
	comp=Z,1μm,11.9s								
CD2	**Chengdu**	**18.07**	**298**	P		**P**	**14 53 04.8**	**0.0**
CD2				pP		pP	14 53 07.9	-1.1
CD2				sP		sP	14 53 09.3	-1.6
CD2				S		**Sn**	**14 56 27.0**	**+1.2**
CD2				pmax	pmax			
	comp=Z,60nm,0.7s								
CD2				pmax	pmax			
	comp=Z,320nm,5.0s								
CD2				LR	LR			
	comp=Z,3μm,10.5s								
CD2				LR	LR			
	comp=Z,2μm,10.5s								
CD2				LR	LR			
	comp=Z,2μm,14.7s								
SNY	**Shenyang**	**18.23**	**3**	⇑P		**P**	**14 53 08.4**	**+2.0**
SNY				pmax	pmax			
	comp=Z,22nm,1.1s								
SNY				pmax	pmax			
	comp=Z,680nm,5.9s								
SNY				LR	LR			
	comp=Z,1μm,9.8s								
SNY				LR	LR			
	comp=Z,3μm,12.7s								
SNY				LR	LR			
	comp=Z,2μm,15.7s								
KKM	**Kota Kinabalu**	**18.41**	**200**	*e*P		**Pn**	**14 53 09.3**	**+0.6**
	comp=Z,134nm,1.2s								
MYLDM	**Lahad Datu**	**18.66**	**192**	⇓P		**Pn**	**14 53 12.0**	**+0.3**
MYLDM	**Lahad Datu**	**18.66**	**192**	*e*P		**Pn**	**14 53 13.6**	**+1.9**
	comp=Z,112nm,1.1s								
MAJO	**Matsushiro**	**18.81**	**43**	*e*P		**Pn**	**14 53 14.7**	**+1.3**
MAJO				pmax	pmax			
	comp=Z,16nm,1.0s								
MAJO	**Matsushiro**	**18.81**	**43**	*e*P		**Pn**	**14 53 14.7**	**+1.3**
	comp=Z,16nm,1.0s								
MJB9	**Matsu-Tunnel**	**18.81**	**43**	*e*P		**Pn**	**14 53 14.7**	**+1.3**
	comp=Z,4.1nm,1.0s								
MJAR	**Matsushiro Arr**	**18.81**	**43**	P		**P**	**14 53 12.5**	**-0.3**
	comp=Z,0.3nm,0.3s,baz=178,slow=2.7,SNR=4.1								
MJAR				LR	LR		15 01 36.1		
	comp=Z,648nm,18.5s,baz=225,slow=41								
HHC	**Hu-ho-hao-te**	**19.47**	**335**	⇑P		**Pn**	**14 53 22.0**	**+0.7**
HHC				S		**Sn**	**14 56 57.8**	**-1.7**
HHC				sS		sS	14 57 04.0	-2.5
HHC				SS		**SnSn**	**14 57 23.1**	**+9.2**
HHC				pmax	pmax			
	comp=Z,46nm,1.2s								
HHC				pmax	pmax			
	comp=Z,370nm,4.4s								
HHC				LR	LR			
	comp=Z,1μm,16.2s								
HHC				LR	LR			
	comp=Z,3μm,14.9s								
HHC				LR	LR			
	comp=Z,1μm,17.4s								
TSM	**Tawau**	**19.66**	**193**	⇓P		**Pn**	**14 53 24.0**	**+0.4**
LZH	**Lanzhou**	**20.29**	**312**	*e*P		Pn	14 53 32.8	+1.6
LZH				pP		sP	14 53 36.6	+1.2
LZH				sP		pP	14 53 39.6	+6.2
LZH				PP		**PnPn**	**14 53 51.6**	**+5.5**
LZH				S		Sn	14 57 19.0	-0.6
LZH				sS		sS	14 57 22.0	-1.2
LZH				pmax	pmax			
	comp=Z,82nm,1.3s								
LZH				pmax	pmax			
	comp=Z,290nm,5.1s								
LZH				LR	LR			
	comp=Z,880nm,11.8s								
LZH				LR	LR			
	comp=Z,1μm,10.1s								
LZH				LR	LR			
	comp=Z,2μm,11.4s								
MSHR	**Mys Shultsa**	**20.31**	**19**	*ce*P		**P**	**14 53 28.4**	**-0.8**
CN2	**Changchun**	**20.33**	**6**	*e*P		**P**	**14 53 28.6**	**-0.8**
CN2				pmax	pmax			
	comp=Z,10.0nm,1.0s								
CN2				pmax	pmax			
	comp=Z,600nm,4.0s								
CN2				LR	LR			
	comp=Z,3μm,18.0s								
CN2				LR	LR			
	comp=Z,2μm,18.0s								
CN2				LR	LR			
	comp=Z,1μm,18.0s								
LOEI	**Loei**	**20.65**	**257**	P		**P**	**14 53 34.0**	**+1.0**
	comp=Z,22nm,1.8s,comp=Z,570nm								
PBKT	**Sadao Pong**	**21.25**	**255**	P		**P**	**14 53 44.3**	**+4.8**
	comp=Z,27nm,1.4s,comp=Z,993nm								
LAMP	**Lampang**	**21.79**	**261**	P		**P**	**14 53 51.3**	**+6.0**
	comp=Z,7.9nm,1.3s								
MDJ	**Mudanjiang**	**21.81**	**14**	P		**P**	**14 53 43.3**	**-2.0**
MDJ				S		**S**	**14 57 47.8**	**+1.9**
MDJ				ScP		**ScP**	**15 01 22.0**	**+0.1**
MDJ				pmax	pmax			
	comp=Z,7.0nm,0.9s								
MDJ				pmax	pmax			
	comp=Z,260nm,7.5s								
MDJ				LR	LR			
	comp=Z,1μm,16.6s								
MDJ				LR	LR			
	comp=Z,420nm,13.0s								
MDJ				LR	LR			
	comp=Z,1μm,14.2s								
USRK	**Ussuriysk Ar.**	**22.04**	**19**	P		**P**	**14 53 44.9**	**-2.8**
	comp=Z,2.2nm,0.7s,baz=206,slow=12,SNR=4.7								
BTM	**Bintulu**	**22.16**	**205**	⇓P		**P**	**14 53 51.2**	**+1.9**
CMMT	**Chiang Mai**	**22.33**	**262**	P		**P**	**14 53 54.8**	**+3.7**
	comp=Z,21nm,1.1s								
CHTO	**Chiang Mai**	**22.33**	**262**	P		**P**	**14 53 54.8**	**+3.6**
	comp=Z,92nm,1.5s								
CHTO	**Chiang Mai**	**22.33**	**262**	*e*P		**P**	**14 53 54.3**	**+3.1**
CHTO				pmax	pmax			
	comp=Z,68nm,1.7s								
CHTO	**Chiang Mai**	**22.33**	**262**	*e*P		**P**	**14 53 54.3**	**+3.1**
	comp=Z,68nm,1.7s								
CM01	**Chiang Mai Arr**	**22.43**	**261**	*e*P		**P**	**14 53 54.8**	**+2.5**
CM31	**Chiang Mai Arr**	**22.43**	**261**	*e*P		**P**	**14 53 54.7**	**+2.4**
CMAR	**Chiang Mai Arr**	**22.43**	**261**	P		**P**	**14 53 54.2**	**+2.0**
	comp=Z,5.7nm,0.9s,baz=62,slow=8.4,SNR=24								
CMAR				LR	LR		15 02 29.4		
	comp=Z,203nm,20.0s,baz=74,slow=36								
GTOI	**Gorontalo**	**22.81**	**178**	P		**P**	**14 53 57.2**	**+1.0**
MRSI	**Marisa**	**22.97**	**181**	P		**P**	**14 54 00.4**	**+2.6**
SBUM	**Sibu**	**23.18**	**207**	⇓P		**P**	**14 54 00.5**	**+0.4**
SBUM	**Sibu**	**23.18**	**207**	*e*P		**P**	**14 53 59.1**	**-1.0**
	comp=Z,48nm,0.9s								
GUMO	**Guam**	**23.50**	**111**	P		**P**	**14 54 03.4**	**+0.1**
	comp=Z,174nm,1.1s,baz=300,slow=5.9,SNR=4.5								
GUMO				LR		LR	15 02 31.1		
	comp=Z,305nm,20.3s,baz=316,slow=35								
GUMO	**Guam**	**23.50**	**111**	*e*P		**P**	**14 54 04.7**	**+1.4**
GUMO				pmax	pmax				
	comp=Z,248nm,1.1s								
GUMO	**Guam**	**23.50**	**111**	*e*P		**P**	**14 54 04.7**	**+1.4**
	comp=Z,248nm,1.1s								
PCI	**Palu**	**24.46**	**186**	P		**P**	**14 54 14.8**	**+2.5**
LUWI	**Luwuk**	**24.47**	**179**	P		**P**	**14 54 14.8**	**+2.4**
LUWI	**Luwuk**	**24.47**	**179**	*e*P		**P**	**14 54 12.8**	**+0.3**
	comp=Z,155nm,1.1s								
LBMI	**Labuha**	**24.58**	**168**	P		**P**	**14 54 15.8**	**+2.4**
GTA	**Gaotai**	**24.77**	**315**	*e*P		**P**	**14 54 16.6**	**+1.4**
GTA				pP		sP	14 54 21.0	-0.6
GTA				sP		pP	14 54 24.3	+4.6
GTA				S		**S**	**14 58 38.8**	**+1.7**
GTA				sS		sS	14 58 48.8	+4.2
GTA				pmax	pmax			
	comp=Z,88nm,5.2s								
GTA				LR	LR			
	comp=Z,790nm,21.9s								
GTA				LR	LR			
	comp=Z,830nm,19.0s								
GTA				LR	LR			
	comp=Z,1μm,15.4s								
KSM	**Kuching**	**24.89**	**210**	⇑P		**P**	**14 54 16.2**	**+0.1**
KSM	**Kuching**	**24.89**	**210**	*e*P		**P**	**14 54 15.5**	**-0.7**
	comp=Z,40nm,1.1s								
ERM	**Erimo**	**25.26**	**38**	*e*P		**P**	**14 54 18.4**	**-0.9**
ERM				pmax	pmax			
	comp=Z,18nm,1.1s								
ERM	**Erimo**	**25.26**	**38**	*e*P		**P**	**14 54 18.4**	**-0.9**
	comp=Z,18nm,1.1s								
MTKI	**Muara Teweh, K**	**25.43**	**198**	P		**P**	**14 54 21.9**	**+0.8**
	comp=Z,104nm,0.9s,comp=Z,9μm								
STKI	**Sintang**	**25.65**	**206**	P		**P**	**14 54 18.0**	**-5.1**
HIA	**Hailar**	**25.72**	**356**	*e*P		**P**	**14 54 21.6**	**-1.9**
HIA				pmax	pmax			
	comp=Z,12nm,0.7s								
HIA	**Hailar**	**25.72**	**356**	*e*P		**P**	**14 54 21.6**	**-1.9**
	comp=Z,12nm,0.7s								
ASAJ	**Asahikawa**	**26.37**	**34**	P		**P**	**14 54 27.7**	**-1.7**
	comp=Z,3.5nm,0.5s,baz=270,slow=0.0								
ASAJ	**Asahikawa**	**26.37**	**34**	*e*P		**P**	**14 54 27.9**	**-1.5**
	comp=Z,6.3nm,0.8s								
TTSI	**Tana Toraja**	**26.58**	**186**	P		**P**	**14 54 33.7**	**+2.3**
KLR	**Kul'dur**	**26.65**	**14**	P		**P**	**14 54 30.2**	**-1.6**
	comp=Z,2.2nm,0.7s,baz=269,slow=4.8,SNR=7.1								
KLR				LR		LR	15 06 18.1		
	comp=Z,970nm,18.2s,baz=196,slow=39								
KLR	**Kul'dur**	**26.65**	**14**	*i* P		**P**	**14 54 29.9**	**-2.0**
SONM	**Songino Array**	**27.35**	**336**	P		**P**	**14 54 37.7**	**-0.6**
	comp=Z,37nm,1.2s,baz=152,slow=8.5,SNR=73								
SONM				LR		LR	15 07 31.1		
	comp=Z,878nm,18.4s,baz=146,slow=41								
SONA1	**Songino Array**	**27.36**	**336**	*e*P		**P**	**14 54 37.3**	**-1.2**
KULM	**Kulim**	**27.72**	**232**	⇑P		**P**	**14 54 43.1**	**+1.3**
KULM	**Kulim**	**27.72**	**232**	*e*P		**P**	**14 54 42.7**	**+0.9**
	comp=Z,31nm,1.2s								
BBKI	**Banjar Baru**	**27.86**	**196**	P		**P**	**14 54 45.3**	**+2.3**
IPM	**Ipoh**	**28.00**	**231**	⇑P		**P**	**14 54 45.3**	**+1.0**
IPM	**Ipoh**	**28.00**	**231**	*e*P		**P**	**14 54 44.3**	**0.0**
	comp=Z,45nm,0.8s								
MYKOM	**Kota Tinggi**	**28.12**	**222**	⇓P		**P**	**14 54 46.3**	**+1.0**
MYKOM	**Kota Tinggi**	**28.12**	**222**	*e*P		**P**	**14 54 45.9**	**+0.6**
	comp=Z,25nm,0.7s								
KGM	**Kluang**	**28.28**	**223**	⇓P		**P**	**14 54 48.0**	**+1.2**
YSS	**Yuzh-Sakhalins**	**28.49**	**30**	*e*P		P	14 54 41.5	-6.9
YSS				pmax	pmax			
	comp=Z,20nm,1.4s								
YSS				MLR	MLR			
	comp=Z,400nm,18.0s								
LSA	**Lhasa**	**28.50**	**289**	P		**P**	**14 54 50.8**	**+1.6**
LSA	**Lhasa**	**28.50**	**289**	*e*P		**P**	**14 54 49.0**	**-0.2**
LSA				pmax	pmax			
	comp=Z,7.0nm,0.6s								
LSA	**Lhasa**	**28.50**	**289**	*e*P		**P**	**14 54 49.0**	**-0.2**
	comp=Z,6.7nm,0.6s								
KAPI	**Kappang**	**28.53**	**185**	LR		LR	15 06 28.7		
	comp=Z,181nm,20.0s,baz=2.8,slow=37								
ZAK	**Zakamensk**	**30.61**	**336**	*e*P		**P**	**14 55 05.1**	**-2.2**
ZAK				pmax	pmax			
	comp=Z,4.0nm,1.2s								
PSI	**Prapat**	**30.67**	**231**	P		**P**	**14 55 09.0**	**+0.8**
	comp=Z,27nm,0.8s,baz=41,slow=5.0,SNR=25								
PSI				LR		LR	15 08 36.2		
	comp=Z,310nm,18.3s,baz=34,slow=38								
PSI	**Prapat**	**30.67**	**231**	*e*P		**P**	**14 55 08.6**	**+0.5**
PSI				pmax	pmax				
	comp=Z,36nm,0.9s								
PSI	**Prapat**	**30.67**	**231**	*e*P		**P**	**14 55 08.6**	**+0.5**
	comp=Z,36nm,0.9s								
TLY	**Talaya**	**31.54**	**338**	P		**P**	**14 55 14.6**	**-0.8**
	comp=Z,5.0nm,0.6s,baz=184,slow=6.8,SNR=11								
TLY	**Talaya**	**31.54**	**338**	*e*P		**P**	**14 55 14.8**	**-0.5**
TLY				pmax	pmax			
	comp=Z,15nm,1.3s								
TLY				MLR	MLR			
	comp=Z,711nm,17.0s								
MLSI	**Meulaboh, Aceh**	**31.56**	**237**	P		**P**	**14 55 17.7**	**+1.8**
	comp=Z,97nm,0.6s								
MNSI	**Mandailing Nat**	**31.64**	**228**	P		**P**	**14 55 17.0**	**+0.4**
	comp=Z,60nm,0.9s								
IRK	**Irkutsk**	**31.80**	**339**	*e*P		**P**	**14 55 15.2**	**-2.4**
IRK				pmax	pmax			
	comp=Z,37nm,2.0s								
WOJI	**Wonogiri, Jawa**	**33.16**	**201**	P		**P**	**14 55 30.8**	**+1.0**
	comp=Z,74nm,0.6s,comp=Z,8μm								
WMQ	**Urumqi**	**34.85**	**314**	P		**P**	**14 55 46.0**	**+1.6**
WMQ				pP		sP	14 55 50.1	-0.8
WMQ				sP		pP	14 55 54.5	+5.5
WMQ				S		**S**	**15 01 12.5**	**-2.4**
WMQ				sS		sS	15 01 28.1	+5.6
WMQ				pmax	pmax			
	comp=Z,9.0nm,0.7s								
WMQ				pmax	pmax			
	comp=Z,96nm,4.4s								
WMQ				LR	LR			
	comp=Z,780nm,10.4s					

baz=283,slow=75,SNR=7.4
FITZ Fitzroy Crossi 41.55 175 P **P** **14 56 39.5 -1.4**
comp=Z,1.1nm,0.6s,baz=12,slow=6.8,SNR=6.4
H11S1 WAKE ISLAND Hy 41.57 88 T T 15 42 21.8
H11S2 WAKE ISLAND Hy 41.58 88 T T 15 42 21.8
KSH Kashi 42.13 303 *eP* P 14 56 51.8 +6.1
KSH *epP* sP 14 56 56.5 +4.3
KSH *ePcP* **PcP** **14 58 43.6 +3.4**
KSH S S 15 03 15.4 +10
KSH ScS **ScS** **15 06 51.4 +3.4**
KSH pmax pmax
comp=Z,150nm,5.7s
KSH LR LR
comp=Z,240nm,9.4s
KSH LR LR
comp=Z,640nm,14.5s
KSH LR LR
comp=Z,820nm,12.2s
COEN Coen 42.50 149 *eP* **P** **14 56 46.6 -2.2**
comp=Z,26nm,1.1s
NVS Novosibirsk 42.60 327 *eP* **P** **14 56 49.7 +0.6**
TKM2 Tokmak 2 42.98 308 P **P** **14 56 52.6 -0.1**
TKM2 pmax pmax
comp=Z,11nm,1.0s
KURK Kurchatov 43.25 320 P **P** **14 56 53.5 -0.9**
KURK Kurchatov 43.25 320 P **P** **14 56 53.5 -0.9**
KURBB Kurchatov Arra 43.26 320 P **P** **14 56 53.5 -1.1**
comp=Z,4.0nm,0.6s,baz=111,slow=8.0,SNR=19
FRU Bishkek 43.67 308 *eP* **P** **14 56 58.0 -0.1**
WRAB Tennant Creek 44.80 164 *ceP* **P** **14 57 06.4 -0.8**
WRAB pmax pmax
comp=Z,50nm,1.2s
WRAB Tennant Creek 44.80 164 *eP* **P** **14 57 04.8 -2.4**
comp=Z,15nm,0.8s
WRA Warramunga Arr 44.80 164 P **P** **14 57 07.0 -0.3**
comp=Z,13nm,0.7s,baz=345,slow=8.8,SNR=65
WRA Warramunga Arr 44.80 164 P **P** **14 57 07.0 -0.3**
WB2 Warramunga Arr 44.81 164 *eP* **P** **14 57 06.3 -0.9**
comp=Z,17nm,0.8s
OTUK Ortayu 46.38 315 P **P** **14 57 20.1 +0.6**
OTUK pmax pmax
comp=Z,11nm,1.0s
TIXI Tiksi 48.24 3 *ceP* **P** **14 57 31.7 -1.9**
TIXI pmax pmax
comp=Z,19nm,1.2s
TIXI Tiksi 48.24 3 *eP* **P** **14 57 31.5 -2.1**
comp=Z,20nm,1.1s
AS31 Alice Springs 48.28 166 *eP* **P** **14 57 34.6 +0.1**
comp=Z,2.6nm,0.8s
ASAR Alice Springs 48.28 166 P **P** **14 57 35.0 +0.5**
comp=Z,7.7nm,0.7s,baz=343,slow=7.1,SNR=133
AS01 Alice Springs 48.29 166 *eP* **P** **14 57 34.3 -0.3**
VOSK Vostochnaya 48.39 321 P **P** **14 57 33.6 -1.5**
VOSK pmax pmax
comp=Z,4.0nm,0.9s
VOSK Vostochnaya 48.39 321 *eP* **P** **14 57 34.3 -0.8**
comp=Z,15nm,1.6s
BVA0 Borovoye Array 48.82 321 *i* P **P** **14 57 38.1 -0.3**
BVA0 pmax pmax
comp=Z,7.0nm,1.5s
BVAR Borovoye Array 48.82 321 P **P** **14 57 38.1 -0.3**
comp=Z,2.5nm,0.7s,baz=117,slow=12,SNR=13
BVAR PcP **PcP** **14 59 05.3 +2.3**
comp=Z,1.4nm,0.7s,baz=111,slow=7.9,SNR=2.5
BVAR LR LR 15 18 22.3
comp=Z,266nm,21.5s,baz=96,slow=36
BRVK Borovoye 48.89 321 P **P** **14 57 38.0 -0.9**
BRVK pmax pmax
comp=Z,8.0nm,1.1s
BRVK Borovoye 48.89 321 *eP* **P** **14 57 38.1 -0.8**
comp=Z,6.7nm,0.8s
HNR Honiara 49.26 127 LR LR 15 16 45.7
comp=Z,167nm,19.7s,baz=291,slow=34
ZRNK Zerenda 49.61 320 P **P** **14 57 43.3 -1.1**
ZRNK pmax pmax
comp=Z,8.0nm,0.8s
ZRNK Zerenda 49.61 320 *eP* **P** **14 57 43.9 -0.5**
comp=Z,8.6nm,0.8s
NRIK Noril'sk 50.27 345 P **P** **14 57 47.1 -2.0**
comp=Z,7.4nm,0.9s,baz=125,slow=7.2,SNR=8.3
NRIK LR LR 15 21 18.0
comp=Z,398nm,18.7s,baz=140,slow=39
BILL Bilibino 51.89 19↑ *eP* **P** **14 58 02.0 +0.6**
BILL *e* 14 58 05.2
BILL *e* 14 58 16.1
BILL pmax pmax
comp=Z,5.0nm,1.1s
BILL MLR MLR
comp=Z,459nm,19.0s
AB31 Akbulak array 54.63 315 *i* P **P** **14 58 21.2 -0.6**
AB31 pmax pmax
comp=Z,7.0nm,0.9s
ABKAR Akbulak array 54.63 315 *eP* **P** **14 58 21.6 -0.3**
SVE Sverdlovsk 55.17 324↑ *eP* **P** **14 58 25.7 +0.1**
SVE pmax pmax
comp=Z,18nm,1.3s
SVE MLR MLR
comp=Z,294nm,14.0s
AKTO Aktyubinsk 55.96 316 P **P** **14 58 31.3 -0.1**
comp=Z,1.7nm,0.5s,baz=87,slow=7.2,SNR=9.1
AKTO Aktyubinsk 55.96 316 P **P** **14 58 31.2 -0.2**
AKTO pmax pmax
comp=Z,5.0nm,1.2s
GEYT Alibeck 56.03 301 P **P** **14 58 32.9 +0.7**
comp=Z,1.8nm,0.8s,baz=96,slow=2.9,SNR=4.4
GEYT LR LR 15 26 13.2
comp=Z,376nm,18.3s,baz=25,slow=40
ARU Arti 56.24 323 *d iP* **P** **14 58 32.5 -0.8**
ARU 15 00 35.2
ARU S **S** **15 06 24.9 +2.6**
ARU SS **SS** **15 10 10.8 +2.1**
ARU pmax pmax
comp=Z,4.0nm,0.7s
ARU MLR MLR
comp=Z,292nm,17.0s
ARU Arti 56.24 323 *eP* **P** **14 58 32.2 -1.0**
comp=Z,9.5nm,0.8s
BBOO Buckleboo 57.58 166 *eP* **P** **14 58 43.0 +0.1**
comp=Z,28nm,1.1s
STKA Stephens Creek 58.13 161 P **P** **14 58 47.0 +0.2**
comp=Z,10nm,0.7s,baz=341,slow=6.8,SNR=36
STKA Stephens Creek 58.13 161 *eP* **P** **14 58 47.2 +0.3**
STKA pmax pmax
comp=Z,2.0nm,0.7s
STKA Stephens Creek 58.13 161 *eP* **P** **14 58 47.2 +0.3**
comp=Z,2.4nm,0.7s
DZM Mont Dzumac 62.44 133 LR LR 15 21 28.0
comp=Z,189nm,20.5s,baz=2.0,slow=31
DZM Mont Dzumac 62.44 133 *eLR* LR 15 17 47.0
comp=Z,650nm,27.7s
TT01 Tatalina 65.49 30 *eP* **P** **14 59 36.2 +0.1**
SVW2 Sparrevohn 65.84 32 *eP* **P** **14 59 38.0 -0.4**
comp=Z,14nm,1.1s
VRH Novokhopyorsk 66.23 317 *eP* **P** **14 59 39.9 -1.2**
VRH pmax pmax
comp=Z,10.0nm,0.4s
KLMR Klimovskoe 66.25 328 *eP* **P** **14 59 38.0 -3.0**
KLMR *e* 15 00 08.5
KLMR pmax pmax
comp=Z,11nm,0.9s
KBZ Khabaz 66.70 309 P **P** **14 59 45.4 +1.2**
comp=Z,0.6nm,0.3s,baz=90,slow=1.0,SNR=2.8
KBZ LR LR 15 31 07.5
comp=Z,178nm,18.9s,baz=67,slow=38
KIV Kislovodsk 66.80 309↑ *eP* **P** **14 59 45.8 +0.8**
KIV *e* 14 59 57.0
KIV *i* 15 00 11.8
KIV pmax pmax
comp=Z,9.0nm,1.3s
KIV MLR MLR
comp=Z,190nm,17.0s
CAST Castle Rocks 67.22 29 *eP* **P** **14 59 46.9 -0.4**
comp=Z,16nm,0.8s
PPLA Purkeypile 67.24 30 *eP* **P** **14 59 47.5 0.0**
comp=Z,51nm,1.6s
RSO Reoubt South 67.29 32 *eP* **P** **14 59 48.2 +0.2**
COLD Coldfoot 67.52 25 *eP* **P** **14 59 48.8 -0.2**
comp=Z,26nm,1.6s
SPU Mount Spurr 67.53 32 *eP* **P** **14 59 49.2 -0.1**
MLY Manley 67.59 27 *eP* **P** **14 59 49.9 +0.3**
comp=Z,26nm,1.1s
BPAW Bear Paw Mtn. 67.61 28 *eP* **P** **14 59 49.8 0.0**
comp=Z,15nm,1.0s
KTH Kantishna Hill 67.72 29 *eP* **P** **14 59 50.1 -0.3**
comp=Z,15nm,0.4s
KDAK Kodiak Island 67.78 35 *i* P **P** **14 59 50.4 -0.4**

VSR Storozhevoye 67.81 318 *eP* **P** **14 59 50.4 -0.7**
VSR pmax pmax
comp=Z,10.0nm,1.4s
TRF Thorofare Moun 68.02 29 *eP* **P** **14 59 51.5 -0.9**
comp=Z,11nm,1.0s
APA Apatity 68.06 336↓ *iP* **P** **14 59 52.5 +0.1**
APA *i* 15 00 03.9
APA pmax pmax
comp=Z,6.0nm,1.0s
APA MLR MLR
comp=Z,300nm,12.0s
SUA Susitna One 68.12 31 *eP* **P** **14 59 53.1 +0.1**
comp=Z,28nm,0.8s
BRLK Bradley Lake 68.33 33 *eP* **P** **14 59 54.4 +0.2**
comp=Z,22nm,0.8s
MCK McKinley 68.57 29 *eP* **P** **14 59 54.9 -0.8**
MCK pmax pmax
comp=Z,23nm,0.8s
MCK McKinley 68.57 29 *eP* **P** **14 59 54.9 -0.8**
comp=Z,23nm,0.8s
OBN Obninsk 68.64 322↓ *eP* **P** **14 59 56.8 +0.6**
OBN *SP **pP** **15 00 01.0 -0.1**
OBN pmax pmax
comp=Z,5.0nm,1.0s
OBN MLR MLR
comp=Z,181nm,18.0s
MDM Murphy Dome 68.66 27 *eP* **P** **14 59 55.9 -0.3**
comp=Z,42nm,0.9s
RND Reindeer 68.66 29 *eP* **P** **14 59 55.4 -0.9**
RND pmax pmax
comp=Z,52nm,0.8s
RND Reindeer 68.66 29 *eP* **P** **14 59 55.4 -0.9**
comp=Z,52nm,0.8s
WRH Wood River Hil 68.80 28 *eP* **P** **14 59 56.0 -1.1**
comp=Z,16nm,0.9s
COLA College 68.83 27 *eP* **P** **14 59 56.2 -1.0**
COLA pmax pmax
comp=Z,15nm,0.8s
COLA College 68.83 27 *eP* **P** **14 59 56.2 -1.0**
comp=Z,15nm,0.8s
PMR Palmer 68.86 31 *eP* **P** **14 59 56.3 -1.2**
PMR pmax pmax
comp=Z,25nm,1.3s
PMR Palmer 68.86 31 *eP* **P** **14 59 56.3 -1.2**
comp=Z,25nm,1.3s
CCB Clear Creek Bu 68.89 27 *eP* **P** **14 59 56.4 -1.3**
comp=Z,6.4nm,1.0s
SML Sawmill 69.19 31 *eP* **P** **14 59 58.9 -0.7**
SML pmax pmax
comp=Z,24nm,1.1s
SML Sawmill 69.19 31 *eP* **P** **14 59 58.9 -0.7**
comp=Z,24nm,1.1s
IL1 Eielson Array 69.26 27 *eP* **P** **14 59 58.2 -1.8**
ILAR Eielson Array 69.26 27 P **P** **14 59 58.5 -1.4**
comp=Z,3.0nm,0.7s,baz=257,slow=5.8,SNR=52
ILAR LR LR 15 34 24.6
comp=Z,92nm,18.1s,baz=309,slow=40
ILB Eielson Array 69.26 27 *eP* **P** **14 59 58.3 -1.6**
DHY Denali Highway 69.38 29 *eP* **P** **14 59 59.6 -1.3**
comp=Z,7.1nm,0.8s
SCM Sheep Creek Mo 69.65 30 *eP* **P** **15 00 02.0 -0.5**
SCM pmax pmax
comp=Z,36nm,0.8s
SCM Sheep Creek Mo 69.65 30 *eP* **P** **15 00 02.0 -0.5**
comp=Z,36nm,0.8s
PAX Paxson 70.25 29 *eP* **P** **15 00 05.6 -0.6**
PAX pmax pmax
comp=Z,12nm,0.8s
PAX Paxson 70.25 29 *eP* **P** **15 00 05.6 -0.6**
comp=Z,12nm,0.8s
FID Port Fidalgo 70.29 31 *eP* **P** **15 00 05.8 -0.5**
comp=Z,13nm,0.8s
SPITS Spitsbergen Ar 70.30 348 P **P** **15 00 05.7 -0.5**
comp=Z,3.8nm,0.6s,baz=94,slow=8.4,SNR=8.6
KLU Klutina 70.38 31 *eP* **P** **15 00 06.6 -0.4**
comp=Z,23nm,1.2s
ARCES ARCESS Array B 70.50 338 P **P** **15 00 07.8 +0.3**
comp=Z,4.0nm,0.8s,baz=67,slow=4.1,SNR=12
DIV Divide 70.53 31 *eP* **P** **15 00 07.7 -0.2**
comp=Z,44nm,1.3s
EYAK Cordova Ski Ar 70.68 32 *eP* **P** **15 00 08.5 -0.2**
comp=Z,17nm,1.2s
DOT Dot Lake 70.71 28 *eP* **P** **15 00 07.9 -1.0**
comp=Z,52nm,0.9s
KBS Kingsbay 70.83 349↑ *eP* **P** **15 00 07.8 -1.6**
KBS pmax pmax
comp=Z,32nm,0.8s
MENT Mentasta 71.03 29 *eP* **P** **15 00 10.6 -0.3**
comp=Z,21nm,0.8s
BMRM Bremner River 71.13 31 *eP* **P** **15 00 11.2 -0.3**
comp=Z,17nm,0.9s
RAGM Ragged Mountai 71.24 32 *eP* **P** **15 00 12.2 0.0**
comp=Z,19nm,0.8s
EGAK Eagle 71.64 27 *eP* **P** **15 00 13.8 -0.6**
comp=Z,19nm,0.8s
CRQM Cirque 71.87 31 *eP* **P** **15 00 15.8 -0.4**
comp=Z,28nm,1.0s
FINES FINESS Array B 72.51 330 P **P** **15 00 20.0 +0.3**
comp=Z,4.1nm,0.8s,baz=49,slow=4.0,SNR=9.6
FINES LR LR 15 35 45.5
comp=Z,405nm,18.1s,baz=74,slow=39
DAWY Dawson 72.58 27 *eP* **P** **15 00 20.1 -0.2**
comp=Z,24nm,0.8s
INK Inuvik 73.38 22 P **P** **15 00 24.5 -0.3**
comp=Z,27nm,0.9s,baz=297,slow=6.0,SNR=28
INK Inuvik 73.38 22 *eP* **P** **15 00 24.2 -0.5**
INK pmax pmax
comp=Z,28nm,0.9s
INK Inuvik 73.38 22 *eP* **P** **15 00 24.2 -0.5**
comp=Z,28nm,0.9s
PCA Pinnacle 73.43 31 *eP* **P** **15 00 25.6 +0.2**
comp=Z,62nm,0.8s
AKASG Malin Array Be 74.04 319 P **P** **15 00 28.8 -0.1**
comp=Z,1.1nm,0.5s,baz=59,slow=6.2,SNR=7.5
AKASG LR LR 15 34 54.3
comp=Z,238nm,19.6s,baz=65,slow=37
KIEV Kiev 74.05 319↑ *iP* **P** **15 00 28.6 -0.4**
KIEV pmax pmax
comp=Z,5.0nm,1.0s
KIEV Kiev 74.05 319 *eP* **P** **15 00 28.2 -0.8**
comp=Z,4.7nm,0.8s
BR131 Keskin Array S 74.40 307 *eP* **P** **15 00 31.0 -0.4**
BRTR Keskin Array B 74.40 307 P **P** **15 00 31.6 +0.1**
comp=Z,3.4nm,0.9s,baz=110,slow=5.4,SNR=12
BRTR LR LR 15 38 53.4
comp=Z,66nm,18.9s,baz=56,slow=40
HYT Haines Junctio 74.48 30 *eP* **P** **15 00 32.1 +0.6**
comp=Z,18nm,0.9s
BR231 Keskin MP Arra 74.99 307 *eP* **P** **15 00 32.6 -2.3**
SKAG Skagway 75.99 31 *eP* **P** **15 00 40.9 +0.8**
comp=Z,27nm,0.9s
CFR Carcaliu 76.50 313↑ *iP* P 15 00 53.7 +10
TIRR Tirgusor 76.56 313↑ *iP* P 15 00 55.0 +11
TLB Topalu 76.77 313↓ *iP* P 15 00 57.1 +12
PLOR Plostina 77.25 315↑ *iP* **P** **15 00 50.4 +2.8**
PLOR Plostina 77.25 315↑↑ *P* **P** **15 00 50.4 +2.8**
BUR08 Bucovina Ar. S 77.55 317 *eP* **P** **15 00 49.4 +0.2**
BURAR Bucovina Array 77.55 317↑ *iP* **P** **15 00 49.2 0.0**
BURAR Bucovina Array 77.55 317↑↑ *P* **P** **15 00 49.2 0.0**
MLR Muntele Rosu 77.84 314↓ *iP* **P** **15 00 54.7 +3.7**
MLR Muntele Rosu 77.84 314 *eP* **P** **15 00 51.5 +0.5**
MLR pmax pmax
comp=Z,7.0nm,0.8s
MLR Muntele Rosu 77.84 314 *eP* **P** **15 00 51.5 +0.5**
comp=Z,7.4nm,0.8s
VOIR 78.45 315↓ *iP* **P** **15 00 57.4 +3.1**
VOIR 78.45 315↓↓ *P* **P** **15 00 57.4 +3.1**
HFS Hagfors 78.62 331 P **P** **15 00 54.7 -0.1**
comp=Z,3.9nm,0.8s,baz=84,slow=6.1,SNR=7.7
DLBC Dease Lake 78.92 31 *eP* **P** **15 00 56.2 -0.3**
comp=Z,21nm,1.0s
NC405 NORSAR Array S 79.01 332 *eP* **P** **15 00 56.5 -0.5**
RES Resolute Bay 79.08 9 P **P** **15 00 56.2 -0.9**
comp=Z,12nm,1.1s,baz=316,slow=3.8,SNR=4.3
RES Resolute Bay 79.08 9 *eP* **P** **15 00 56.1 -0.9**
RES pmax pmax
comp=Z,24nm,1.4s
RES Resolute Bay 79.08 9 *eP* **P** **15 00 56.1 -0.9**
comp=Z,24nm,1.4s
NB2 NORSAR Subarra 79.26 332 P **P** **15 00 58.0 -0.4**
comp=Z,1.7nm,0.6s,baz=56,slow=5.6
NB2 NORSAR Subarra 79.26 332 P **P** **15 01 01.2 +2.8**
NB2 pmax pmax
comp=Z,1.0nm,0.6s
NOA NORSAR Array B 79.26 332 P **P** **15 00 58.4 0.0**
comp=Z,4.2nm,0.9s,baz=58,slow=5.8,SNR=10.0
NOA LR LR 15 38 48.3
comp=Z,169nm,19.8s,baz=80,slow=38
LOT Lotru 79.28 315↑↑ *iP* **P** **15 01 02.3 +3.4**
DRGR 79.44 316↑↓ *iP* **P** **15 00 58.4 -1.3**
DRGR 79.44 316↑↑ *P* **P** **15 00 58.4 -1.3**
URZ Urewera 80.12 139 LR LR 15 30 12.7
comp=Z,70nm,21.5s,baz=5.0,slow=31
VTS Vitosha 80.77 312↑↑ *iP* P 15 01 19.4 +12
MDVR Moldovita 80.88 315↑↑ *iP* **P** **15 01 10.8 +3.3**
VYHS Vyhne 81.13 319 *eP* **P** **15 01 09.8 +1.1**
VYHS pmax pmax
comp=Z,2.0nm,1.1s
VYHS Vyhne 81.13 319 *eP* **P** **15 01 09.8 +1.1**
MORC Moravsky Berou 81.33 321↓↓ *iP* P 15 01 16.9 +7.1
MORC Moravsky Berou 81.33 321↓↓ *P* P 15 01 16.9 +7.1
DPC Dobruska-Polom 81.78 322 *eP* **P** **15 01 15.2 +3.1**
DPC *epP* **sP** **15 01 19.8 +1.0**
DPC *ex* x 15 01 24.5
DPC AMS AMS 15 39 40.0
comp=Z,300nm,19.0s
DPC Dobruska-Polom 81.78 322 *eP* **P** **15 01 15.2 +3.1**
DPC *e* 15 01 19.8
DPC *e* 15 01 24.5
DPC MLR MLR
comp=Z,300nm,19.0s
UPC Upice 81.88 322 AMS AMS 15 39 50.0
comp=Z,300nm,15.1s
PVCC Panska Ves 82.69 322 AMS AMS 15 43 10.0
comp=Z,300nm,16.8s
AGG Agios Georgios 82.82 309↑↑ *eP* P 15 01 23.1 +5.3
AGG Agios Georgios 82.82 309 *ePcP* **PcP** **15 01 23.1 +0.5**
PRU Pruhonice 82.96 322 AMS AMS 15 40 20.0
comp=Z,300nm,19.4s
YKA Yellowknife Ar 83.11 23 P **P** **15 01 18.5 -0.2**
comp=Z,4.6nm,0.7s,baz=311,slow=5.2,SNR=12
YKA LR LR 15 41 24.4
comp=Z,5.6nm,18.3s,baz=0.0,slow=38
CLL Collm 83.18 323 *eP* **P** **15 01 18.0 -1.3**
CLL *e* 15 01 33.0
CLL LmV 15 42 00.0
comp=Z,400nm,20.2s
CLL Collm 83.18 323 *eP* **P** **15 01 18.0 -1.3**
CLL MLR MLR
comp=Z,400nm,20.2s
SUMG Summit 83.21 354 *eP* **P** **15 01 19.1 -0.5**
SUMG pmax pmax
comp=Z,13nm,1.0s
SUMG Summit 83.21 354 *eP* **P** **15 01 19.1 -0.5**
comp=Z,13nm,1.0s
KHC Kasperske Hory 83.92 321 AMS AMS 15 40 50.0
GERES GERESS Array B 83.99 321 P **P** **15 01 24.4 +0.8**
comp=Z,1.4nm,0.8s,baz=80,slow=3.2,SNR=8.6
GEA0 GERESS Array S 84.00 321 *eP* **P** **15 01 23.7 0.0**
NKC Novy Kostel 84.02 323 AMS AMS 15 45 30.0
comp=Z,300nm,15.3s
OPO Ambohitrotompo 84.44 247 P **P** **15 01 27.0 +0.5**
comp=Z,2.8nm,0.8s,baz=67,slow=13,SNR=3.1
ABPO Ambohimpanom 84.61 247 *eP* **P** **15 01 27.7 +0.4**
ABPO Ambohimpanom 84.61 247 *eP* **P** **15 01 27.7 +0.4**
KMBO Kilima Mbogo 85.96 267 LR LR 15 38 29.1
comp=Z,40nm,21.8s,baz=94,slow=35
EDM Edmonton 89.60 30 *eP* **P** **15 01 51.9 +1.0**
EDM Edmonton 89.60 30 *eP* **P** **15 01 51.9 +1.0**
B08A Colville Reser 89.65 36 *eP* **P** **15 01 51.5 +0.4**
comp=Z,8.6nm,1.0s
NEW Newport 90.88 35 P **P** **15 01 57.6 +0.7**
comp=Z,1.2nm,0.3s,baz=271,slow=4.9,SNR=3.9
WALA Waterton Lakes 92.04 33 *eP* **P** **15 02 03.8 +1.4**
comp=Z,8.8nm,1.0s
BMO Blue Mountains 92.87 38 *eP* **P** **15 02 06.8 +0.5**
comp=Z,3.5nm,1.0s
FFC Flin Flon 93.25 24 *eP* **P** **15 02 07.5 -0.2**
FFC pmax pmax
comp=Z,5.0nm,1.0s
FFC Flin Flon 93.25 24 *eP* **P** **15 02 07.5 -0.2**
comp=Z,5.3nm,1.0s
PPT2 Papeete2 95.16 107 *eLR* LR 15 32 55.0
comp=Z,248nm,23.8s
TBI Tubuai 97.47 112 *eLR* LR 15 33 59.1
comp=Z,108nm,33.0s
ULM Lac du Bonnet 99.07 24 LR LR 15 51 10.2
comp=Z,130nm,19.4s,baz=312,slow=38
RKT Rikitea 109.91 107 *eLR* LR 15 39 44.3
comp=Z,228nm,27.2s
SDV Santo Domingo 145.32 23 *ePKPbc* **PKPbc** **15 08 30.7 -1.2**
CBRI Barrientos, No 146.55 27 *eP* **PKPab** **15 08 34.0 +1.2**
BARC Barichara 146.39 29 *eP* **PKPbc** **15 08 35.0 -0.3**
MALC Bahia Malaga 146.52 38 *eP* **PKPdf** **15 08 30.8 -3.2**
GUYC Guyana, Colomb 146.54 33 *eP* **PKPdf** **15 08 33.5 -1.1**
GRGC Isla de Gorgon 146.87 40 *eP* **PKPab** **15 08 40.1 +2.4**
RUSC La Rusia 147.06 29 *eP* **PKPab** **15 08 39.7 +0.7**
CHIC Chingaza 147.87 31 *eP* **PKPdf** **15 08 37.3 +0.5**
PRAC Prado 148.09 34 *eP* **PKPbc** **15 08 40.7 +0.8**
PRAC Prado 148.09 34 *ePKPbc* **PKPbc** **15 08 38.8 -1.1**
VILC Villavicencio, 148.34 32 *eP* **PKPab** **15 08 51.4 +7.8**
CRUC La Cruz 148.73 40 *eP* PKPab 15 08 54.0 +8.5

MEX 18 14:53:52.3±0.3, 14°06'N×92°75'W, h15^{km}±267^{km}, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.28**	**15**	*i* P	Pn	14 54 26.4	-3.2
CCIG				*i* S	Sn	14 54 53.3	-4.2

NIED ***18*** *14:54:00.35°30N×143°.30E, h5^{km}, Mw4.0 Best double couple: M$_0$1.22000×10^{15} NP1:φ$_{fs}$23.00000°, δ29.00000°, λ-98.00000°. NP2:φ$_{fs}$212.00000°, δ62.00000°, λ-86.00000°.*

IDC ***18*** *14:54:29.8±1.0, 35°.19N×143°.43E, h0^{km}, mb3.8/10, mb1 4.0/14, mb1mx3.8/61, mbtmp3.9/14, ML3.7/4, Error ellipse: s-maj=27.9km s-min=18.0km az=82.0*

NEIC ***18*** *14:54:31.1±0.6, 35°.25N×143°.46E, h10^{km}, mb4.6/3, Error ellipse: s-maj=13.9km s-min=9.6km az=83.0*

ISCJB ***18*** *14:54:32.9±0.6, 35°.32N±0°.04×143°.29E±0°.04, h33^{km}, mb4.0/13, Error ellipse: s-maj=6.3km s-min=5.0km az=162.5*

JMA ***18*** *14:54:32.6±0.3, 35°.30N×143°.31E, h52^{km}, M3.8*

ISC 18 14:54:35.0±0.9, 35°.28N±0°.06×143°.31E±0°.08, h35^{km}, n36, σ1^{s}69/49, mb3.9/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**2.02**	**253**	P	**Pn**	**14 55 04.4**	**-1.6**
BSO1				S	**Sn**	**14 55 28.7**	**-1.0**
CHOJ	**Chosi**	**2.05**	**283**	P	**Pn**	**14 55 06.0**	**-0.9**
CHOJ				*eS*	**Sn**	**14 55 29.8**	**-1.4**
BSO2	**Boso 2**	**2.16**	**257**	S	**Sn**	**14 55 33.8**	**+0.1**
BSO3	**Boso 3**	**2.35**	**259**	P	**Pn**	**14 55 10.0**	**-0.8**
BSO4	**Boso 4**	**2.45**	**264**	P	**Pn**	**14 55 12.1**	**-0.3**
BSO4				*eS*	**Sn**	**14 55 41.1**	**0.0**
KTR	**Katsuura**	**2.46**	**268**	*eS*	**Sn**	**14 55 41.2**	**-0.1**
JFT	**Otama**	**3.28**	**314**	P	**Pn**	**14 55 23.1**	**-0.8**
JFT				S	**Sn**	**14 56 00.6**	**-1.1**
JAG	**Ashikaga**	**3.34**	**291**	P	**Pn**	**14 55 23.5**	**-1.2**
JAG				S	**Sn**	**14 56 00.7**	**-2.4**
JOD2	**Odawara 2**	**3.46**	**271**	P	**Pn**	**14 55 24.6**	**-1.7**
JOD2				S	**Sn**	**14 56 03.3**	**-2.7**
JHJ2	**Mitsune**	**3.61**	**234**	S	**Sn**	**14 56 06.2**	**-3.7**
JHJ	**Hachijo jima 2**	**3.63**	**235**	Pn	**Pn**	**14 55 26.6**	**-2.1**
	21nm,0.3s,baz=344,slow=21,SNR=10.0						
JHJ				Sn	**Sn**	**14 56 05.1**	**-5.2**
	274nm,0.3s,baz=26,slow=23,SNR=16						
JRY	**Ryogami san**	**3.67**	**283**	P	**Pn**	**14 55 28.8**	**-0.4**
JYN	**Shimob**	**3.90**	**275**	P	**Pn**	**14 55 32.1**	**-0.4**
JYN				*eS*	**Sn**	**14 56 17.1**	**0.0**
JMK	**Ichinoseki**	**4.03**	**336**	P	**Pn**	**14 55 32.7**	**-1.5**
JMK				S	**Sn**	**14 56 16.2**	**-3.9**
MJAR	**Matsushiro Arr**	**4.33**	**288**	Pn	**Pn**	**14 55 38.0**	**-0.4**
	3.0nm,0.3s,baz=89,slow=12,SNR=21						
MJAR				Sn	**Sn**	**14 56 27.5**	**-0.1**
	1.6nm,0.3s,baz=73,slow=34,SNR=2.1						
MAJO	**Matsushiro**	**4.33**	**288**	*ePn*	**Pn**	**14 55 38.2**	**-0.1**
MAT	**Matsushiro**	**4.33**	**288**	P	**Pn**	**14 55 37.7**	**-0.7**
MAT				*eS*	**Sn**	**14 56 23.4**	**-4.2**
MAT	**Matsushiro**	**4.33**	**288**	P	**Pn**	**14 55 37.9**	**-0.5**
MAT				*eS*	**Sn**	**14 56 27.6**	**0.0**
JYK	**Kaneyama**	**4.33**	**328**	P	**Pn**	**14 55 37.2**	**-1.1**
JYK				*eS*	**Sn**	**14 56 25.8**	**-1.8**
ERM	**Erimo**	**6.73**	**359**	*ePn*	**Pn**	**14 56 08.6**	**-2.6**

ASAJ	**Asahikawa**	**8.85**	**357**	Pn	**Pn**	**14 56 38.7**	**-1.5**
	1.4nm,0.3s,baz=192,slow=8.4,SNR=9.5						
KLR	**Kul'dur**	**16.33**	**332**	Pn	**P**	**14 58 23.6**	**-0.4**
	0.1nm,0.3s,baz=151,slow=11,SNR=4.7						
SONM	**Songino Array**	**30.05**	**306**	P	**P**	**15 00 42.9**	**+2.1**
	1.5nm,0.8s,baz=284,slow=5.8,SNR=7.2						
ZALV	**Zalesovo Beam**	**44.23**	**314**	P	**P**	**15 02 41.0**	**+0.4**
	1.2nm,0.6s,baz=101,slow=7.7,SNR=5.1						
MKAR	**Makanchi Array**	**46.36**	**304**	P	**P**	**15 02 58.6**	**+0.9**
	0.5nm,0.5s,baz=84,slow=11,SNR=7.5						
KURK	**Kurchatov**	**48.23**	**310**	*eP*	**P**	**15 03 12.4**	**+0.3**
	56nm,1.2s						
ILAR	**Eielson Array**	**50.17**	**32**	P	**P**	**15 03 26.9**	**+0.2**
	0.5nm,0.7s,baz=269,slow=5.6,SNR=6.0						
BVAR	**Borovoye Array**	**52.89**	**314**	P	**P**	**15 03 47.5**	**+0.3**
	1.4nm,1.0s,baz=96,slow=4.5,SNR=3.9						
BRVK	**Borovoye**	**52.95**	**314**	P	**P**	**15 03 48.7**	**+1.1**
WRAB	**Tennant Creek**	**55.56**	**190**	*eP*	**P**	**15 04 06.6**	**-0.3**
	4.5nm,0.9s						
WRA	**Warramunga Arr**	**55.57**	**190**	P	**P**	**15 04 06.4**	**-0.7**
	2.4nm,0.8s,baz=9.0,slow=7.5,SNR=15						
ASAR	**Alice Springs**	**59.30**	**190**	P	**P**	**15 04 33.1**	**-0.1**
	0.5nm,0.7s,baz=347,slow=7.6,SNR=6.5						
ABKAR	**Akbulak array**	**60.25**	**311**	*eP*	**P**	**15 04 39.8**	**+0.2**
	0.9nm,0.7s						
AKTO	**Aktyubinsk**	**60.99**	**313**	P	**P**	**15 04 45.3**	**+0.7**
	0.6nm,0.5s,baz=75,slow=16,SNR=3.5						
GEYT	**Alibeck**	**66.04**	**300**	P	**P**	**15 05 19.5**	**+1.3**
	1.6nm,0.8s,baz=64,slow=3.4,SNR=3.7						
AKASG	**Malin Array Be**	**76.62**	**323**	P	**P**	**15 06 22.6**	**+0.8**
	0.4nm,0.4s,baz=49,slow=6.2,SNR=4.0						

MAN 18 14:57:34.9±0.39N×122.14E±0.51, h51km±6.4, mb4.6, ML3.5, MS3.5, 4C, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.09**	**92**	*i* P	Pn	14 57 47.8	-5.2
SNPH				*i* S	Sn	14 58 03.7	-3.3
DCPH	**Dipolog City**	**1.45**	**124**	*eP*	Pn	14 57 59.3	+1.5
TBP	**Tagbilaran**	**1.73**	**80**	*i* P	Pn	14 58 05.6	+4.0
TBP				*i* S	Sn	14 58 30.1	+7.5
LLP	**Lapu-Lapu**	**2.02**	**63**	*eP*	Pn	14 58 06.5	+0.8
LLP				*i* S	Sn	14 58 31.6	+1.8
RCP	**Roxas**	**2.24**	**15**	*eP*	Pn	14 58 10.3	+1.7
RCP				*eS*	Sn	14 58 36.4	+1.3
CTBH	**Cotabato--PC H**	**3.00**	**136**	*i* P	Pn	14 58 24.8	+5.7

*IDC **18** 15:02:17.9±2.0, 15°.98S×172°.66W, h0km, mb3.5/4, mb1 3.9/4, mb1mx3.6/35, mbtmp3.5/4, MS3.6/4, Ms1 3.6/4, ms1mx3.2/25, Error ellipse: s-maj=115.0km s-min=26.2km az=150.0*

ISC 18 15:02:24.7±2.0, 15°.1S±0°.5×172°.9W±0°.4, h35km, n18, σ1§96/7, mb3.5/4, MS3.8/3, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**1.59**	**41**	Pn	**Pn**	**15 02 50.1**	**-0.4**
	68nm,0.3s,baz=182,slow=1.7,SNR=71						
AFI				*i* S	**Sn**	**15 03 08.4**	**-1.5**
	319nm,0.3s,baz=99,slow=17,SNR=20						
RAR	**Rarotonga**	**13.83**	**118**	LR	LR	15 09 36.6	
	comp=Z,172nm,20.2s,baz=294,slow=33						
DZM	**Mont Dzumac**	**20.79**	**247**	*e*LR	LR	15 12 15.9	
	280nm,25.1s						
PPT	**Papeete**	**22.47**	**99**	LR	LR	15 13 45.8	
	comp=Z,107nm,20.4s,baz=276,slow=31						
PAE	**Paea**	**22.47**	**100**	*e*T	T	15 30 15.2	
	1.6nm,0.3s						
PPT2	**Papeete2**	**22.47**	**99**	*e*LQ	LQ	15 11 49.7	
	312nm,28.0s						
PPT2				*e*LR	LR	15 12 44.7	
	262nm,24.8s						
PPT2	**Papeete2**	**22.47**	**99**	*e*T	T	15 30 21.8	
	3.0nm,0.4s						
TBI	**Tubuai**	**23.54**	**114**	*e*LQ	LQ	15 12 18.0	
	212nm,27.5s						
TBI				*e*LR	LR	15 13 14.3	
	271nm,26.0s						
TBI	**Tubuai**	**23.54**	**114**	*e*T	T	15 31 37.6	
	4.1nm,0.3s						
RKT	**Rikitea**	**36.59**	**108**	*e*LR	LR	15 19 27.2	
	195nm,26.5s						
RKT	**Rikitea**	**36.59**	**108**	*e*T	T	15 47 54.8	
	4.0nm,0.4s						
WRA	**Warramunga Arr**	**50.42**	**256**	P	**P**	**15 11 16.8**	**-2.4**
	0.6nm,0.6s,baz=90,slow=7.0,SNR=7.5						
ASAR	**Alice Springs**	**50.70**	**252**	P	P	15 11 18.6	-2.7
	2.3nm,0.7s,baz=90,slow=7.5,SNR=50						
ASAR				LR	LR	15 30 27.7	
	comp=Z,119nm,21.9s,baz=72,slow=33						
FITZ	**Fitzroy Crossi**	**58.78**	**258**	LR	LR	15 34 38.8	
	comp=Z,71nm,21.2s,slow=33						
TXAR	**Lajitas Array**	**80.02**	**56**	P	**P**	**15 14 31.2**	**+0.1**
	0.1nm,0.4s,baz=243,slow=3.8,SNR=2.3						
ILAR	**Eielson Array**	**82.07**	**11**	P	**P**	**15 14 42.4**	**+1.4**
	0.2nm,0.7s,baz=227,slow=6.6,SNR=3.2						
GERES	**GERESS Array B**	**145.93**	**352**	PKPbc	**PKPab**	**15 22 02.8**	**+1.6**
	0.4nm,0.6s,baz=35,slow=3.6,SNR=3.6						
BRTR	**Keskin Array B**	**146.26**	**322**	PKPbc	**PKPab**	**15 22 04.5**	**+1.7**
	1.9nm,0.8s,baz=96,slow=2.6,SNR=7.9						

MEX 18 15:11:31.6±0.3, 14°.33N×92°.61W, h16km±163km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.00**	**13**	*i* P	Pn	15 12 01.6	-3.3
CCIG				*i* S	Sn	15 12 25.1	-4.5

*IDC **18** 15:12:03.1±1.1, 36°.99N×141°.95E, h0km, mb3.5/6, mb1 3.8/8, mb1mx3.6/40, mbtmp3.7/8, ML3.8/2, MS4.3/1, Ms1 4.3/1, ms1mx2.7/51, Error ellipse: s-maj=25.6km s-min=20.8km az=82.0*

*JMA **18** 15:12:08.2±0.1, 37°.02N×141°.66E, h44km±2km, M3.9*

ISC 18 15:12:05.3±3.3, 37°.01N±0°.04×141°.65E±0°.06, h11km±21km, n27, σ1§00/30, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.68**	**278**	P	**Pn**	**15 12 21.8**	**+0.9**
ONAJ				S	**Sn**	**15 12 31.0**	**-0.6**
JFK	**Kawauchi**	**0.71**	**300**	P	**Pn**	**15 12 22.0**	**+0.7**
JFK				S	**Sn**	**15 12 31.7**	**-0.5**
JHO	**Hitachi**	**0.95**	**245**	P	**Pn**	**15 12 25.4**	**+0.8**
JHO				S	**Sn**	**15 12 38.0**	**-0.1**
JMM	**Marumori**	**1.09**	**322**	P	**Pn**	**15 12 27.2**	**+0.8**
JMM				S	**Sn**	**15 12 41.0**	**-0.5**
JFT	**Otama**	**1.16**	**296**	S	**Sn**	**15 12 44.2**	**+0.9**
JIO	**Ouri**	**1.46**	**351**	P	**Pn**	**15 12 31.8**	**+0.3**
JIO				S	**Sn**	**15 12 48.6**	**-2.0**
JOU	**Okura**	**1.56**	**330**	P	**Pb**	**15 12 34.1**	**0.0**
JOU				S	**Sb**	**15 12 53.9**	**0.0**
JAG	**Ashikaga**	**1.86**	**252**	P	**Pb**	**15 12 39.0**	**-0.2**
JAG				S	**Sb**	**15 13 01.3**	**-1.1**
JKT	**Katashina**	**1.94**	**263**	S	**Sb**	**15 13 03.7**	**-1.1**
JMK	**Ichinoseki**	**1.96**	**350**	P	**Pn**	**15 12 39.4**	**+0.9**
JMK				S	**Sn**	**15 13 02.7**	**-0.4**
MJAR	**Matsushiro Arr**	**2.80**	**261**	P	**Pb**	**15 12 54.0**	**-1.3**
	7.4nm,0.3s,baz=83,slow=15,SNR=55						
MJAR				Sn	**Sb**	**15 13 29.5**	**-0.1**
	5.7nm,0.3s,baz=177,slow=24,SNR=8.6						
MAT	**Matsushiro**	**2.80**	**261**	P	**Pb**	**15 12 54.1**	**-1.2**
MAT				S	**Sb**	**15 13 30.0**	**+0.4**
JHJ	**Hachijo jima 2**	**4.17**	**202**	Pn	**Pn**	**15 13 10.3**	**+1.4**
	29nm,0.3s,baz=115,slow=9.4,SNR=3.6						
JHJ				Sn	**Sn**	**15 13 57.0**	**-0.7**
	31nm,0.3s,baz=80,slow=22,SNR=4.5						
USRK	**Ussuriysk Ar.**	**10.26**	**317**	Pn	Pn	15 14 38.8	+6.4
	0.2nm,0.3s,baz=122,slow=14,SNR=5.1						
SONM	**Songino Array**	**27.95**	**304**	P	**P**	**15 17 58.1**	**+2.4**
	0.5nm,0.3s,baz=112,slow=9.5,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**27.98**	**121**	T	T	15 47 21.1	
	baz=314,slow=75,SNR=35						
H11N1	**WAKE ISLAND Hy**	**27.99**	**121**	T	T	15 47 29.9	
	baz=314,slow=75,SNR=31						
H11N3	**WAKE ISLAND Hy**	**28.00**	**121**	T	T	15 47 31.0	
	baz=314,slow=75,SNR=32						
H11S1	**WAKE ISLAND Hy**	**28.69**	**123**	T	T	15 48 15.1	
	baz=316,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**28.69**	**123**	T	T	15 48 30.3	
	baz=316,slow=76,SNR=19						
H11S2	**WAKE ISLAND Hy**	**28.71**	**123**	T	T	15 48 20.0	
	baz=316,slow=76,SNR=22						
TGY	**Tagaytay City**	**29.36**	**224**	LR	LR	15 28 22.0	
	comp=Z,558nm,20.1s,baz=106,slow=33						
ZALV	**Zalesovo Beam**	**42.06**	**312**	P	**P**	**15 19 57.8**	**+1.0**
	0.3nm,0.3s,baz=79,slow=7.5,SNR=2.8						
MKAR	**Makanchi Array**	**44.29**	**302**	P	**P**	**15 20 14.6**	**-0.3**
	0.8nm,0.7s,baz=91,slow=11,SNR=7.4						
ILAR	**Eielson Array**	**49.41**	**32**	P	**P**	**15 20 54.0**	**-0.7**
	0.1nm,0.7s,baz=260,slow=6.6,SNR=2.8						
WRA	**Warramunga Arr**	**57.07**	**188**	P	**P**	**15 21 50.5**	**-1.0**
	0.6nm,0.5s,baz=7.9,slow=7.5,SNR=8.5						
ASAR	**Alice Springs**	**60.79**	**188**	P	**P**	**15 22 17.0**	**-0.3**
	0.3nm,0.6s,baz=13,slow=5.3,SNR=7.6						

*IDC **18** 15:25:08.9±0.4, 9°.54N×122°.13E, h0km, mb4.2/26, mb1 4.4/27, mb1mx4.2/49, mbtmp4.3/27, ML4.7/1, MS3.6/11, Ms1 3.7/11, ms1mx3.3/48, Error ellipse: s-maj=18.9km s-min=10.7km az=77.0*

*NEIC **18** 15:25:10.5±0.3, 9°.60N×122°.22E, h10km, mb4.6/16, Error ellipse: s-maj=7.4km s-min=5.3km az=90.0*

NEIC Felt [III PIVS] at Sipalay.

*ISCJB **18** 15:25:13.0±0.5, 9°.55N±0°.03×122°.16E±0°.03, h36km±5km, mb4.4/47, MS3.7/10, Error ellipse: s-maj=5.1km s-min=4.3km az=31.6*

*MAN **18** 15:25:12, 9°.58N×122°.19E, h21km, mb5.2, ML4.1, MS4.3*

MAN INTENSITY III - SIPALAY CITY NEGROS OCCIDENTAL.

*BJI **18** 15:25:13.3, 9°.67N×122°.23E, h34km, mb4.5/26, mB5.1/20, Ms4.4/9, Ms7 4.1/13*

*KLM **18** 15:25:20.2, 9°.31N×121°.81E, h79km, mb4.6, ML4.3, MS5.4*

*DJA **18** 15:25:31.8±1.5, 9°.N±.7°×12°.1E±.1°, h58km±10km, M4.7/9, mb4.7/9, mB5.5/5, MLv4.5/2, Mw(mB)5.0/5*

ISC 18 15:25:14.0±1.4, 9°.62N±0°.04×122°.22E±0°.04, h33km±10km, n111, σ1§38/119, mb4.4/47, MS3.8/10, 5C-10D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.04**	**105**	*i* P	Pn	15 25 26.2	-6.1
SNPH				*i* S	**Sn**	**15 25 41.8**	**-4.0**
JAP	**San Jose, Anti**	**1.15**	**347**	*i* P	**Pn**	**15 25 32.3**	**-1.5**
DCPH	**Dipolog City**	**1.52**	**133**	*e*P	**Pn**	**15 25 38.5**	**-0.4**
TBP	**Tagbilaran**	**1.62**	**87**	*i* P	Pb	15 25 54.1	+11
TBP				*i* S	**Sb**	**15 26 04.9**	**+1.3**
LLP	**Lapu-Lapu**	**1.86**	**68**	*e*P	**Pn**	**15 25 44.1**	**+0.6**
LLP				*e*S	**Sb**	**15 26 07.4**	**-2.8**
RCP	**Roxas**	**2.00**	**15**	*e*P	**Pn**	**15 25 46.2**	**+0.8**
RCP				*e*S	**Sb**	**15 26 12.7**	**-1.5**
KALP	**Kalibo**	**2.05**	**3**	*e*P	**Pn**	**15 25 46.1**	**0.0**
CGP	**Cagayan de Oro**	**2.71**	**115**	*e*P	**Pn**	**15 25 56.3**	**+1.1**
CGP				*i* S	**Sb**	**15 26 31.3**	**-3.3**
MMPH	**Masbate**	**3.05**	**27**	*e*P	**Pn**	**15 26 01.5**	**+1.5**
MMPH				*e*S	**Sb**	**15 26 40.8**	**-3.7**
CTBH	**Cotabato--PC H**	**3.12**	**140**	*i* P	**Pn**	**15 26 02.0**	**+1.2**
PLP	**Palo**	**3.12**	**60**	*e*P	**Pn**	**15 26 01.2**	**+0.3**
PLP				*e*S	**Sn**	**15 26 40.7**	**+3.6**
PPR	**Puerto Princes**	**3.44**	**273**	*e*P	**Pn**	**15 26 04.9**	**-0.4**
DAV	**Davao City (W)**	**4.18**	**127**	LR	LR	15 28 28.0	
	comp=Z,1µm,18.2s,baz=291,slow=47						
LQP	**Lukban**	**4.51**	**352**	*e*P	Pb	15 26 37.7	+5.0
TGY	**Tagaytay City**	**4.63**	**344**	Pn	**Pn**	**15 26 22.7**	**+1.0**
	35nm,0.3s,baz=221,slow=7.5,SNR=2.7						
TGY				Sn	**Sn**	**15 27 12.8**	**-1.6**
	42nm,0.3s,baz=48,slow=9.4,SNR=3.1						
MYLDM	**Lahad Datu**	**5.75**	**220**	*i*P	**Pn**	**15 26 37.9**	**+0.9**
MYLDM	**Lahad Datu**	**5.75**	**220**	*e*Pn	**Pn**	**15 26 37.6**	**+0.5**
KDM	**Kudat**	**5.97**	**244**	*i*P	**Pn**	**15 26 40.3**	**+0.3**
SDKM	**Sandakan**	**6.36**	**232**	*i*P	**Pn**	**15 26 43.2**	**-2.2**
TSM	**Tawau**	**6.83**	**219**	*i*P	**Pn**	**15 26 51.3**	**-0.6**
KKM	**Kota Kinabalu**	**6.93**	**240**	*i*P	**Pn**	**15 26 52.1**	**-1.2**
KKM	**Kota Kinabalu**	**6.93**	**240**	*e*Pn	**Pn**	**15 26 51.7**	**-1.6**
BTM	**Bintulu**	**11.09**	**235**	*i*P	**Pn**	**15 27 49.8**	**-0.6**
SBUM	**Sibu**	**12.23**	**235**	*i*P	**Pn**	**15 28 05.8**	**-0.1**
SBUM	**Sibu**	**12.23**	**235**	*e*Pn	**Pn**	**15 28 05.5**	**-0.4**
KAPI	**Kappang**	**14.74**	**190**	LR	LR	15 34 02.9	
	comp=Z,262nm,21.4s,baz=26,slow=36						
QIZ	**Qiongzhong**	**15.20**	**309**	P	**Pn**	**15 28 45.3**	**-1.0**
QIZ				S	**Sn**	**15 31 35.3**	**+1.6**
QIZ				LR	LR		
	comp=N,260nm,11.6s						
QIZ				LR	LR		
	comp=E,540nm,10.8s						
QIZ				LR	LR		
	comp=Z,600nm,11.2s						
UBPT	**Khong Chiam**	**17.29**	**291**	P	**P**	**15 29 17.5**	**+3.3**
	32nm,1.6s						
MMRI	**Maumere**	**18.14**	**180**	*e*P	**P**	**15 29 24.4**	**+0.9**
PLAI	**Plampang**	**18.85**	**194**	P	Pn	15 29 41.0	+8.9
SKNT	**Sakolnakorn**	**19.18**	**294**	P	**Pn**	**15 29 36.6**	**+0.4**
	21nm,1.2s						
NGJI	**Ngawi**	**19.99**	**213**	P	**Pn**	**15 29 49.1**	**+3.4**
	57nm,0.9s						
NONG	**Nongkai**	**20.32**	**296**	P	Pn	15 29 52.8	+3.2
	102nm,1.8s,8µm						
PWJI	**Pagerwojo**	**20.36**	**211**	P	Pn	15 29 58.6	+8.5
WOJI	**Wonogiri, Jawa**	**20.67**	**213**	P	Pn	15 29 54.1	+0.4
	97nm,0.9s						
IPM	**Ipoh**	**21.64**	**258**	*e*P	**P**	**15 30 01.7**	**-0.1**
	19nm,0.8s						
PBKT	**Sadao Pong**	**21.80**	**291**	P	**P**	**15 30 06.9**	**+3.5**
	14nm,0.8s						
KULM	**Kulim**	**21.81**	**260**	*e*P	**P**	**15 30 03.4**	**-0.1**
	12nm,0.9s						
LOEI	**Loei**	**21.81**	**293**	P	**P**	**15 30 02.4**	**-1.1**
	52nm,1.8s,3µm						
CISI	**Cisompet, Garu**	**22.29**	**221**	*e*P	**P**	**15 30 09.3**	**+0.6**
	32nm,0.8s						
GYA	**Guiyang**	**22.30**	**321**	*e*P	**P**	**15 30 10.0**	**+1.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GUMO	**Guam**	**22.53**	**78**	LR	LR	15 37 41.7	
	comp=Z,79nm,21.7s,baz=236,slow=33						
NJ2	**Nanjing**	**22.54**	**353**	*e*P	**P**	**15 30 12.3**	**+1.1**
NJ2				pmax	pmax		
	comp=Z,16nm,1.0s						
BKNI	**Bangkinang**	**23.01**	**248**	*e*P	**P**	**15 30 16.8**	**+0.4**
	53nm,0.5s						
KSI	**Kapahiang**	**23.58**	**237**	P	**P**	**15 30 23.7**	**+1.7**
ENH	**Enshi**	**23.74**	**332**	*e*P	**P**	**15 30 24.2**	**+0.9**
	12nm,1.2s						
MTN	**Manton Dam**	**24.01**	**158**	*e*P	**P**	**15 30 25.6**	**-0.3**
	37nm,1.5s						
PDSI	**Padang**	**24.06**	**245**	P	**P**	**15 30 27.3**	**+0.8**
	62nm,0.8s,1µm						
KMI	**Kunming**	**24.10**	**312**	P	**P**	**15 30 30.9**	**+3.9**
KMI				pP	sP	15 30 38.1	-2.5
KMI				sP	pP	15 30 41.9	+5.4
KMI				S	**S**	**15 34 40.8**	**-2.0**
KMI				pmax	pmax		
	comp=Z,6.0nm,1.2s						
KMI				pmax	pmax		
	comp=Z,230nm,4.3s						
KMI				LR	LR		
	comp=N,330nm,14.3s						
KMI				LR	LR		
	comp=E,400nm,11.9s						
KMI				LR	LR		
	comp=Z,360nm,17.1s						
PSI	**Prapat**	**24.11**	**255**	P	**P**	**15 30 27.1**	**0.0**
	16nm,0.7s,baz=35,slow=3.9,SNR=13						
PSI	**Prapat**	**24.11**	**255**	*e*P	**P**	**15 30 26.8**	**-0.3**
	61nm,1.4s						
MNSI	**Mandailing Nat**	**24.17**	**250**	P	**P**	**15 30 29.4**	**+1.9**
CM01	**Chiang Mai Arr**	**24.18**	**294**	*e*P	**P**	**15 30 26.8**	**-0.7**
CM31	**Chiang Mai Arr**	**24.20**	**294**	*e*P	**P**	**15 30 27.2**	**-0.6**
CMAR	**Chiang Mai Arr**	**24.20**	**294**	P	**P**	**15 30 27.6**	**-0.2**
	2.9nm,0.7s,baz=119,slow=7.9,SNR=20						
CMAR				LR	LR	15 40 17.3	
	comp=Z,84nm,18.1s,baz=135,slow=38						
CHTO	**Chiang Mai**	**24.32**	**295**	*e*P	**P**	**15 30 28.2**	**-0.6**
	6.6nm,1.1s						
CBIJ	**Chichi jima**	**25.65**	**45**	*e*P	**P**	**15 30 40.2**	**-0.6**
	23nm,0.9s						
GSI	**Gunungsitoli**	**25.86**	**253**	P	**P**	**15 30 45.4**	**+2.5**
GSI	**Gunungsitoli**	**25.86**	**253**	*e*P	**P**	**15 30 40.7**	**-2.2**
	30nm,0.7s						
CD2	**Chengdu**	**27.27**	**324**	*e*P	**P**	**15 30 56.0**	**+0.5**
CD2				pP	sP	15 31 07.1	-2.0
CD2				sP	pP	15 31 12.4	+7.3
CD2				S	**S**	**15 35 34.0**	**+1.1**
CD2				sS	sS	15 35 53.3	+4.6
CD2				pmax	pmax		
	comp=Z,20nm,0.6s						
CD2				pmax	pmax		
	comp=Z,120nm,5.0s						
FITZ	**Fitzroy Crossi**	**27.75**	**173**	P	**P**	**15 30 59.1**	**-0.6**
	3.5nm,0.8s,baz=349,slow=8.5,SNR=7.5						
FITZ	**Fitzroy Crossi**	**27.75**	**173**	*e*P	**P**	**15 30 59.2**	**-0.6**
	21nm,1.8s						
KSAR	**Wonju Array Be**	**28.17**	**10**	P	**P**	**15 31 04.6**	**+1.3**
KSRS	**Korea Array**	**28.19**	**10**	P	**P**	**15 31 04.6**	**+1.1**
	1.2nm,0.8s,baz=184,slow=10,SNR=3.9						
MJAR	**Matsushiro Arr**	**30.48**	**26**	P	**P**	**15 31 26.6**	**+2.7**
	1.0nm,0.7s,baz=178,slow=9.7,SNR=2.9						
WRA	**Warramunga Arr**	**31.71**	**158**	P	**P**	**15 31 33.5**	**-1.4**
	1.4nm,0.6s,baz=337,slow=9.8,SNR=17						
WRA				PcP	**PcP**	**15 34 25.9**	**-0.3**
	3.1nm,0.7s,baz=339,slow=3.1,SNR=18						
HHC	**Hu-ho-hao-te**	**32.50**	**345**	*e*P	**P**	**15 31 43.4**	**+1.6**
HHC				pmax	pmax		
	comp=Z,21nm,1.3s						
HHC				pmax	pmax		
	comp=Z,140nm,3.7s						
AS31	**Alice Springs**	**35.00**	**161**	*e*P	**P**	**15 32 03.1**	**-0.5**
	2.7nm,0.6s						
ASAR	**Alice Springs**	**35.00**	**161**	P	**P**	**15 32 03.5**	**-0.1**
	7.4nm,0.6s,baz=342,slow=7.6,SNR=187						
ASAR				PcP	**PcP**	**15 34 34.9**	**-0.6**
	3.2nm,0.7s,baz=347,slow=2.8,SNR=21						
AS01	**Alice Springs**	**35.01**	**161**	*e*P	**P**	**15 32 02.7**	**-0.9**
AS01				*e*PcP	**PcP**	**15 34 34.8**	**-0.7**
USRK	**Ussuriysk Ar.**	**35.48**	**12**	P	**P**	**15 32 08.3**	**+0.9**
	5.7nm,0.8s,baz=206,slow=7.2,SNR=14						
RAMN	**Ramite**	**37.78**	**302**	*e*P	**P**	**15 32 27.9**	**+0.3**
	11nm,0.5s						
GUN	**Gumba**	**38.71**	**303**	*e*P	**P**	**15 32 35.7**	**+0.1**
	18nm,0.5s						
PKIN	**Phulchoki**	**39.00**	**302**	*e*P	**P**	**15 32 37.7**	**-0.2**
	11nm,0.6s						
KKN	**Kakani**	**39.17**	**303**	*e*P	**P**	**15 32 39.0**	**-0.2**
	7.8nm,0.5s						
KLR	**Kul'dur**	**40.28**	**10**	P	**P**	**15 32 48.3**	**+0.4**
	1.5nm,0.6s,baz=189,slow=4.9,SNR=6.9						
KLR				LR	LR	15 48 49.4	
	comp=Z,63nm,20.1s,slow=35						
SONM	**Songino Array**	**40.37**	**344**	P	**P**	**15 32 48.8**	**0.0**
	1.1nm,0.6s,baz=164,slow=9.9,SNR=7.1						
SONM				PcP	**PcP**	**15 34 51.2**	**-0.5**
	0.3nm,0.5s,baz=172,slow=2.9,SNR=2.4						
SONM				LR	LR	15 51 23.5	
	comp=Z,101nm,18.5s,baz=120,slow=39						
SONA1	**Songino Array**	**40.38**	**344**	*e*P	**P**	**15 32 48.2**	**-0.7**
KOLN	**Koldanda**	**40.56**	**302**	*e*P	**P**	**15 32 50.8**	**0.0**
	11nm,0.5s						
PYUN	**Piuthan**	**41.18**	**302**	*e*P	**P**	**15 32 56.1**	**+0.2**
NWAO	**Narrogin (SRO)**	**42.57**	**186**	LR	LR	15 49 58.1	
	comp=Z,41nm,21.5s,slow=35						
STKA	**Stephens Creek**	**45.24**	**157**	P	**P**	**15 33 27.9**	**-0.4**
	5.8nm,0.7s,baz=328,slow=7.4,SNR=21						
STKA				PcP	**PcP**	**15 35 07.4**	**-0.6**
	2.4nm,0.6s,baz=315,slow=3.5,SNR=6.1						
STKA	**Stephens Creek**	**45.24**	**157**	*e*P	**P**	**15 33 27.7**	**-0.6**
	1.2nm,0.7s						
STKA				PcP	**PcP**	**15 35 07.4**	**-0.6**
MK01	**Makanchi Array**	**50.17**	**325**	*e*P	**P**	**15 34 06.7**	**+0.3**
MK31	**Makanchi Array**	**50.19**	**325**	*e*P	**P**	**15 34 07.2**	**+0.5**
MKAR	**Makanchi Array**	**50.19**	**325**	P	**P**	**15 34 06.9**	**+0.3**
	2.4nm,0.8s,baz=114,slow=9.8,SNR=10						
MKAR				LR	LR	15 56 14.6	
	comp=Z,94nm,18.7s,baz=120,slow=37						
MKAR	**Makanchi Array**	**50.19**	**325**	*e*P	**P**	**15 34 07.2**	**+0.5**
MAKZ	**Makanchi**	**50.38**	**325**	*e*P	**P**	**15 34 08.6**	**+0.5**
	8.2nm,1.3s						
KSH	**Kashi**	**50.75**	**314**	*e*P	**P**	**15 34 13.4**	**+2.3**
KSH				*es*P	sP	15 34 31.1	+6.1
KSH				S	**S**	**15 41 24.4**	**-0.2**
KSH				ScS	**ScS**	**15 43 57.3**	**-2.4**
KSH				LR	LR		
	comp=Z,110nm,8.2s						
ZALV	**Zalesovo Beam**	**53.35**	**333**	P	**P**	**15 34 29.3**	**-0.7**
	0.9nm,0.5s,baz=153,slow=7.2,SNR=4.0						
ZALV				LR	LR	15 58 03.8	
	comp=Z,90nm,18.2s,baz=72,slow=37						
KKAR	**Karatay Array**	**55.90**	**316**	*e*P	**P**	**15 34 49.3**	**+0.5**
NRIK	**Noril'sk**	**63.70**	**347**	P	**P**	**15 35 41.9**	**0.0**
	2.7nm,0.6s,baz=116,slow=7.5,SNR=5.3						
GEYT	**Alibeck**	**63.75**	**308**	P	**P**	**15 35 43.6

MAT	**Matsushiro**	**5.80**	**231**	P	**Pn**	**15 26 41.4**	**+0.8**
MAT				*e*S	**Sn**	**15 27 47.4**	**+0.6**
MJAR	**Matsushiro Arr**	**5.80**	**231**	Pn	**Pn**	**15 26 41.2**	**+0.6**
	0.6nm,0.3s,baz=39,slow=11,SNR=15						
USRK	**Ussuriysk Ar.**	**9.55**	**298**	Pn	**Pn**	**15 27 34.9**	**+3.0**
	0.7nm,0.3s,baz=104,slow=15,SNR=11						
SONM	**Songino Array**	**27.66**	**298**	P	**P**	**15 31 03.1**	**+0.8**
	0.5nm,0.5s,baz=97,slow=12,SNR=3.4						
ZALV	**Zalesovo Beam**	**41.14**	**310**	P	**P**	**15 32 59.0**	**+0.7**
	1.3nm,0.6s,baz=81,slow=9.1,SNR=4.5						
MKAR	**Makanchi Array**	**44.01**	**300**	P	**P**	**15 33 22.4**	**+0.6**
	1.2nm,0.7s,baz=80,slow=9.4,SNR=4.4						
ILAR	**Eielson Array**	**45.70**	**34**	P	**P**	**15 33 34.6**	**-0.3**
	0.2nm,0.7s,baz=286,slow=6.4,SNR=2.7						
AKASG	**Malin Array Be**	**72.80**	**323**	P	**P**	**15 36 42.7**	**+0.1**
	0.5nm,0.4s,baz=44,slow=6.4,SNR=1.7						

*IDC **18** 15:39:42.4±2.7,29°.30S×175°.94W,h0km,mb3.6/2, mb1 3.9/3,mb1mx3.5/29,mbtmp3.7/3,ML3.5/1,MS3.1/2, Ms1 3.2/2,ms1mx2.7/27,Error ellipse: s-maj=58.1km s-min=39.0km az=1.0*

*ISCJB **18** 15:39:46.8±2.4,29°.86S±0°.09×176°.1W±0°.2,h28km, mb3.6/2,MS3.1/2,Error ellipse: s-maj=24.7km s-min=11.8km az=162.9*

ISC 18 15:39:47.8±2.0,29°.7S±0°.1×176°.1W±0°.2,h28km,n7, σ1s76/7,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.66**	**283**	Pn	**Pn**	**15 40 15.3**	**+0.3**
	151nm,0.3s,baz=84,slow=20,SNR=9.2						
RAO				Sn	**Sn**	**15 40 35.5**	**+0.2**
	245nm,0.3s,baz=253,slow=22,SNR=5.9						
URZ	**Urewera**	**10.28**	**212**	Pn	**Pn**	**15 42 15.7**	**+2.2**
	0.4nm,0.3s,baz=347,slow=10.0,SNR=3.7						
URZ				Sn	**Sn**	**15 44 05.3**	**-2.4**
	0.9nm,0.3s,baz=277,slow=22,SNR=8.0						
PPT	**Papeete**	**27.02**	**70**	LR	LR	15 55 36.6	
	comp=Z,40nm,18.6s,baz=283,slow=36						
ASAR	**Alice Springs**	**44.83**	**265**	P	**P**	**15 47 59.1**	**-0.5**
	0.4nm,0.5s,baz=104,slow=7.6,SNR=9.8						
WRA	**Warramunga Arr**	**45.75**	**270**	P	**P**	**15 48 06.6**	**-0.4**
	0.8nm,0.8s,baz=110,slow=7.7,SNR=4.8						
VNDA	**Vanda**	**49.01**	**186**	LR	LR	16 04 33.2	
	comp=Z,22nm,19.6s,baz=156,slow=30						
FINES	**FINESS Array B**	**144.99**	**342**	PKP	**PKPbc**	**15 59 19.9**	**-1.1**
	1.9nm,0.8s,baz=28,slow=4.5,SNR=3.4						

IDC 18 15:45:36.6±2.0,9°.86S×124°.47E,h0km,mb3.4/1, mb1 3.4/4,mb1mx3.3/38,mbtmp3.3/4,ML3.1/3,Error ellipse: s-maj=113.2km s-min=29.1km az=64.0,Timor region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**8.28**	**172**	Pn	Pn	15 47 37.8	-0.2
	0.3nm,0.3s,baz=358,slow=12,SNR=25						
FITZ				Sn	Sn	15 49 03.1	-9.2
	1.5nm,0.3s,baz=214,slow=8.9,SNR=8.6						
WRA	**Warramunga Arr**	**13.83**	**138**	Pn	Pn	15 48 54.0	-0.1
	0.1nm,0.3s,baz=314,slow=13,SNR=2.5						
WRA				Sn	Sn	15 51 22.0	-6.5
	0.3nm,0.3s,baz=191,slow=20,SNR=6.8						
ASAR	**Alice Springs**	**16.43**	**148**	Pn	Pn	15 49 28.9	+0.3
	0.1nm,0.3s,baz=330,slow=13,SNR=9.8						
ASAR				Sn	Sn	15 52 19.8	-12
	0.1nm,0.3s,baz=315,slow=21,SNR=3.1						
MKAR	**Makanchi Array**	**67.78**	**330**	P	P	15 56 36.3	0.0
	0.2nm,0.5s,baz=148,slow=6.0,SNR=2.3						

*IDC **18** 15:55:46.5±0.7,15°.95S×166°.72E,h0km,mb4.4/17, mb1 4.5/20,mb1mx4.3/42,mbtmp4.4/20,ML4.5/3,MS3.7/5, Ms1 3.7/5,ms1mx3.3/31,Error ellipse: s-maj=22.7km s-min=15.6km az=91.0*

*ISCJB **18** 15:55:49.1±0.3,15°.97S±0°.05×166°.65E±0°.06,h26km, mb4.7/47,MS3.8/3,Error ellipse: s-maj=8.6km s-min=6.6km az=7.9*

*BJI **18** 15:55:49.5,15°.68S×167°.29E,h35km,mb4.8/30,mB5.3/18, Ms5.1/3,Ms7 4.7/5*

*NEIC **18** 15:55:51.6±0.3,15°.94S×166°.72E,h35km,mb4.7/26,Error ellipse: s-maj=8.4km s-min=6.6km az=102.0*

ISC 18 15:55:50.9±0.5,16°.08S±0°.06×166°.57E±0°.08,h26km,n78, σ2s16/78,mb4.8/44,MS3.8/3,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**5.96**	**181**	Pn	**Pn**	**15 57 17.5**	**0.0**
	20nm,0.3s,baz=26,slow=7.0,SNR=276						
DZM				Sn	**Sn**	**15 58 20.7**	**-4.4**
	4.2nm,0.3s,baz=311,slow=23,SNR=5.5						
DZM				LR	LR	15 59 20.0	
	comp=Z,465nm,18.9s,baz=345,slow=35						
DZM	**Mont Dzumac**	**5.96**	**181**	*e*Pn	**Pn**	**15 57 16.2**	**-1.4**
DZM				Sn	**Sn**	**15 58 20.7**	**-4.4**
HNR	**Honiara**	**9.23**	**315**	Pn	**Pn**	**15 58 00.5**	**-2.0**
	12nm,0.3s,baz=175,slow=16,SNR=3.9						
HNR				LR	LR	16 00 58.0	
	comp=Z,149nm,19.5s,baz=164,slow=34						
HNR	**Honiara**	**9.23**	**315**	*e*Pn	**Pn**	**15 58 00.7**	**-1.8**
MSVF	**Nonsavu**	**11.12**	**100**	*e*Pn	**Pn**	**15 58 31.6**	**+3.3**
LHI	**Lord Howe Isla**	**16.82**	**203**	*e*Pn	**P**	**15 59 47.0**	**+0.4**
	196nm,1.1s						
EIDS	**Eidsvold**	**17.17**	**235**	*e*Pn	**P**	**15 59 52.7**	**+2.2**
	9.4nm,0.8s						
RAO	**Raoul Island**	**19.39**	**135**	LR	LR	16 05 36.1	
	comp=Z,6μm,18.6s,baz=87,slow=30						
CTA	**Charters Tower**	**19.71**	**255**	P	**Pn**	**16 00 21.5**	**+1.4**
	0.3nm,0.3s,baz=95,slow=13,SNR=9.7						
CTAO	**Charters Tower**	**19.71**	**255**	*e*P	**Pn**	**16 00 21.3**	**+1.1**
	12nm,0.8s						
ARMA	**Armidale**	**19.77**	**221**	*e*P	**Pn**	**16 00 22.6**	**+1.8**
	42nm,1.4s						
PMG	**Port Moresby**	**20.05**	**287**	LR	LR	16 07 32.5	
	comp=Z,215nm,18.1s,baz=99,slow=35						
COEN	**Coen**	**22.69**	**272**	*e*P	**P**	**16 00 52.8**	**+2.1**
	27nm,0.9s						
MANU	**Manus Island**	**23.50**	**304**	*e*P	**P**	**16 01 00.1**	**+1.2**
	35nm,1.6s						
HIZ	**Hauiti**	**23.51**	**164**	*e*P	**P**	**16 01 00.9**	**+2.1**
	61nm,1.4s						
MXZ	**Matakaoa Point**	**23.78**	**156**	*e*P	**P**	**16 01 02.7**	**+1.3**
	58nm,1.5s						
URZ	**Urewera**	**23.97**	**159**	P	**P**	**16 01 04.5**	**+1.3**
	20nm,0.3s,baz=329,slow=9.1,SNR=8.3						
URZ	**Urewera**	**23.97**	**159**	*e*P	**P**	**16 01 05.5**	**+2.3**
	27nm,1.0s						
BKZ	**Black Stump Fm**	**24.59**	**161**	*e*P	**P**	**16 01 10.1**	**+1.1**
	9.4nm,0.8s						
CAN	**Canberra**	**24.78**	**216**	*e*P	**P**	**16 01 11.1**	**+0.4**
	42nm,1.4s						
STKA	**Stephens Creek**	**27.61**	**231**	P	**P**	**16 01 38.1**	**+1.8**
	5.0nm,0.9s,baz=52,slow=7.4,SNR=9.3						
STKA				PcP	**PcP**	**16 04 53.3**	**-0.2**
	0.8nm,0.6s,baz=62,slow=6.4,SNR=3.1						
STKA	**Stephens Creek**	**27.61**	**231**	*e*P	**P**	**16 01 37.3**	**+1.0**
	2.1nm,1.0s						
STKA				PcP	**PcP**	**16 04 53.3**	**-0.2**
MLZ	**Mavora Lakes**	**29.23**	**178**	*e*P	**P**	**16 01 49.8**	**-0.7**
	42nm,1.4s						
WB2	**Warramunga Arr**	**30.85**	**258**	*e*P	**P**	**16 02 05.2**	**0.0**
	11nm,1.1s						
WRAB	**Tennant Creek**	**30.85**	**258**	*e*P	**P**	**16 02 05.0**	**-0.2**
	8.2nm,1.0s						
WRA	**Warramunga Arr**	**30.86**	**258**	P	**P**	**16 02 05.1**	**-0.2**
	5.4nm,0.9s,baz=86,slow=8.3,SNR=22						
WRA				PcP	**PcP**	**16 05 01.5**	**-0.5**
	1.4nm,0.8s,baz=88,slow=2.4,SNR=5.6						
AS01	**Alice Springs**	**31.53**	**251**	*e*P	**P**	**16 02 11.2**	**0.0**
AS31	**Alice Springs**	**31.57**	**251**	*e*P	**P**	**16 02 11.8**	**+0.2**
	4.7nm,0.6s						
ASAR	**Alice Springs**	**31.57**	**251**	P	**P**	**16 02 12.1**	**+0.5**
	12nm,0.7s,baz=76,slow=9.0,SNR=192						
ASAR				PcP	**PcP**	**16 05 03.5**	**-0.4**
	1.1nm,0.9s,baz=68,slow=2.6,SNR=4.6						
FORT	**Forrest**	**38.03**	**240**	*e*P	**P**	**16 03 08.1**	**+0.8**
	194nm,0.7s						
FITZ	**Fitzroy Crossi**	**39.12**	**261**	LR	LR	16 19 11.1	
	comp=Z,174nm,18.4s,baz=36,slow=36						
FITZ	**Fitzroy Crossi**	**39.12**	**261**	*e*P	**P**	**16 03 16.7**	**+0.3**
	11nm,0.6s						
MBWA	**Marble Bar**	**44.55**	**256**	*e*P	**P**	**16 04 01.5**	**+0.6**
	10.0nm,0.7s						

NWAO	**Narrogin (SRO)**	**47.48**	**240**	LR	LR	16 24 47.2	
	comp=Z,96nm,19.0s,baz=292,slow=36						
KSM	**Kuching**	**58.21**	**282**	*e*P	**P**	**16 05 43.8**	**+0.4**
	11nm,1.1s						
VNDA	**Vanda**	**61.51**	**181**	P	**P**	**16 06 05.0**	**-0.1**
	1.1nm,0.9s,baz=356,slow=4.4,SNR=4.6						
KSRS	**Korea Array**	**64.48**	**327**	P	**P**	**16 06 24.6**	**-0.6**
	2.2nm,0.8s,baz=136,slow=6.4,SNR=7.0						
KSAR	**Wonju Array Be**	**64.49**	**327**	P	**P**	**16 06 24.6**	**-0.7**
KS01	**Wonju Array Si**	**64.51**	**327**	*e*P	**P**	**16 06 25.5**	**0.0**
USRK	**Ussuriysk Ar.**	**67.78**	**334**	P	**P**	**16 06 46.6**	**+0.2**
	1.1nm,0.5s,baz=134,slow=5.5,SNR=7.7						
PSI	**Prapat**	**69.39**	**279**	P	**P**	**16 06 56.9**	**-0.4**
	3.5nm,0.5s,baz=176,slow=2.8,SNR=5.0						
CN2	**Changchun**	**70.45**	**330**	*e*P	**P**	**16 07 03.5**	**+0.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
GYA	**Guiyang**	**71.93**	**305**	*e*P	**P**	**16 07 14.6**	**+2.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KLR	**Kul'dur**	**71.97**	**337**	P	**P**	**16 07 12.1**	**+0.1**
	0.8nm,0.6s,baz=150,slow=4.5,SNR=3.9						
BJI	**Beijing**	**72.89**	**322**	P	**P**	**16 07 18.5**	**+0.8**
BJI				pmax	pmax		
	comp=Z,9.0nm,0.7s						
XAN	**Xi'an**	**74.10**	**313**	P	**P**	**16 07 25.8**	**+0.7**
XAN				pmax	pmax		
	comp=Z,16nm,0.7s						
XAN				pmax	pmax		
	comp=Z,250nm,7.0s						
KMI	**Kunming**	**74.44**	**302**	P	**P**	**16 07 29.1**	**+1.6**
KMI				pP	PcP	16 07 41.6	-0.4
KMI				sP	sP	16 07 48.3	+9.5
KMI				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CM01	**Chiang Mai Arr**	**74.85**	**295**	*e*P	**P**	**16 07 30.7**	**+1.0**
CMAR	**Chiang Mai Arr**	**74.88**	**295**	P	**P**	**16 07 31.0**	**+1.1**
	0.9nm,0.8s,baz=127,slow=4.6,SNR=4.8						
HHC	**Hu-ho-hao-te**	**76.17**	**320**	*e*P	**P**	**16 07 38.8**	**+1.9**
HHC				pmax	pmax		
	comp=Z,19nm,1.8s						
HHC				pmax	pmax		
	comp=Z,280nm,4.2s						
CD2	**Chengdu**	**76.30**	**308**	*e*P	**P**	**16 07 37.0**	**-0.8**
LZH	**Lanzhou**	**78.73**	**313**	*e*P	**P**	**16 07 53.3**	**+1.9**
LZH				pP	sP	16 08 04.8	+2.0
LZH				sP	PcP	16 08 09.4	+9.2
LZH				pmax	pmax		
	comp=Z,24nm,1.0s						
LZH				pmax	pmax		
	comp=Z,170nm,7.2s						
MAW	**Mawson**	**80.39**	**202**	P	**P**	**16 08 00.8**	**+1.2**
	1.0nm,0.8s,baz=148,slow=9.5,SNR=8.1						
GTA	**Gaotai**	**83.11**	**314**	*e*P	**P**	**16 08 15.8**	**+1.1**
GTA				pP	pP	16 08 23.4	+0.3
GTA				sP	sP	16 08 27.3	+1.2
GTA				pmax	pmax		
	comp=Z,12nm,1.0s						
YAK	**Yakutsk**	**83.12**	**343**	P	**P**	**16 08 13.8**	**-0.2**
	3.7nm,0.3s,baz=269,slow=0.6,SNR=4.2						
SONM	**Songino Array**	**83.18**	**324**	P	**P**	**16 08 14.9**	**0.0**
	1.3nm,0.6s,baz=155,slow=7.9,SNR=9.8						
SONA1	**Songino Array**	**83.18**	**324**	*e*P	**P**	**16 08 14.8**	**-0.1**
CAST	**Castle Rocks**	**85.48**	**17**	*e*P	**P**	**16 08 24.1**	**-1.9**
	16nm,0.7s						
TRF	**Thorofare Moun**	**86.03**	**18**	*e*P	**P**	**16 08 27.1**	**-1.8**
	5.5nm,0.9s						
RND	**Reindeer**	**86.42**	**18**	*e*P	**P**	**16 08 28.9**	**-1.9**
	3.6nm,0.7s						
WRH	**Wood River Hil**	**87.44**	**18**	*e*P	**P**	**16 08 33.8**	**-1.8**
	4.4nm,0.8s						
CCB	**Clear Creek Bu**	**87.65**	**18**	*e*P	**P**	**16 08 34.8**	**-1.8**
	2.9nm,0.8s						
HDA	**Harding Lake**	**87.73**	**18**	*e*P	**P**	**16 08 35.7**	**-1.3**
	13nm,0.8s						
MDM	**Murphy Dome**	**87.75**	**18**	*e*P	**P**	**16 08 34.8**	**-2.3**
	4.6nm,0.8s						
IL1	**Eielson Array**	**88.01**	**18**	*e*P	**P**	**16 08 35.5**	**-2.8**
ILAR	**Eielson Array**	**88.01**	**18**	P	**P**	**16 08 35.9**	**-2.5**
	2.5nm,0.8s,baz=234,slow=5.6,SNR=26						
ILB	**Eielson Array**	**88.01**	**18**	*e*P	**P**	**16 08 35.8**	**-2.5**
SNAA	**Sanae**	**92.17**	**183**	P	**P**	**16 08 56.6**	**-1.3**
WMQ	**Urumqi**	**93.19**	**315**	*e*P	**P**	**16 09 03.6**	**+0.6**
WMQ				pP	sP	16 09 14.0	-0.5
WMQ				pmax	pmax		
	comp=Z,10.0nm,0.7s						
WMQ				pmax	pmax		
	comp=Z,140nm,8.4s						
VNA1	**Neumayer--Stat**	**93.42**	**182**	P	P	16 08 55.8	-7.7
MK01	**Makanchi Array**	**97.69**	**316**	*e*P	**P**	**16 09 21.3**	**-2.2**
MKAR	**Makanchi Array**	**97.71**	**316**	P	Pdif	16 09 23.7	+0.1
	1.6nm,0.6s,baz=96,slow=6.9,SNR=8.9						
ZALV	**Zalesovo Beam**	**98.07**	**324**	P	Pdif	16 09 25.7	+0.7
	0.4nm,0.3s,baz=98,slow=6.0,SNR=3.0						
YKA	**Yellowknife Ar**	**99.05**	**27**	P	**Pdif**	**16 09 27.5**	**-1.6**
	2.3nm,0.7s,baz=250,slow=4.7,SNR=5.5						
KSH	**Kashi**	**100.49**	**308**	*e*P	**Pdif**	**16 09 34.0**	**-2.3**
KSH				*e*pP	pP	16 09 45.8	+0.9
KSH				SKS	**SKSac**	**16 20 08.0**	**-5.9**
KSH				S	**Sdif**	**16 20 59.8**	**-12**
KSH				pmax	pmax		
	comp=Z,54nm,3.6s						
ARCES	**ARCESS Array B**	**121.38**	**345**	PKP	**PKPdf**	**16 14 40.6**	**-0.6**
	1.2nm,0.5s,baz=48,slow=1.8,SNR=8.0						
TIP	**Timpagrande**	**144.99**	**317**	*e*PKPbc	PKPbc	16 15 25.8	+0.2
CEL	**Celeste**	**146.05**	**316**	*e*PKPbc	**PKPdf**	**16 15 27.8**	**-0.2**

*SOME **18** 15:56:10.5,40°.85N×76°.60E,h10km*

*NNC **18** 15:56:11.7±3.8,45°.07N×75°.46E,h0km,mb3.2,mpv2.9, Error ellipse: s-maj=31.7km s-min=16.7km az=154.0*

*KRNET **18** 15:56:11.9±0.1,41°.06N×76°.63E,h20km,mb2.5*

ISC 18 15:56:11.3±1.8,41°.02N±0°.07×76°.63E±0°.03,h6km±12km, n31,σ1s35/61,27C-7D,Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KDJ	**Kajisay**	**1.19**	**20**	⇑*e*P	**Pn**	**15 56 34.5**	**-0.2**
	baz=21						
KDJ				⇑*e*S	**Sn**	**15 56 51.2**	**0.0**
	baz=21						
ULHL	**Ulahol**	**1.26**	**347**	⇑*i*P	**Pg**	**15 56 35.3**	**-0.2**
	baz=346						
ULHL				⇑*i*S	**Sn**	**15 56 53.3**	**+0.2**
	baz=346						
KZA	**Kyzart**	**1.48**	**316**	⇑*i*P	**Pg**	**15 56 40.2**	**+0.5**
	baz=315						
KZA				⇑*i*S	**Sg**	**15 57 00.5**	**+1.6**
	baz=315						
BOOM	**Boomskoye usch**	**1.56**	**341**	⇑*e*P	**Pb**	**15 56 40.2**	**-0.5**
	baz=340						
BOOM				⇑*e*S	**Sg**	**15 57 02.5**	**+1.1**
	baz=340						
ARLS	**Aral**	**1.92**	**297**	⇓*e*P	**Pg**	**15 56 47.8**	**-0.4**
	baz=296						
ARLS				⇓*e*S	**Sg**	**15 57 13.6**	**+0.4**
	baz=296						
ANVS	**Anan'yevo**	**1.93**	**23**	⇑*e*P	**Pb**	**15 56 47.4**	**+0.4**
	baz=24						
ANVS				⇑*e*S	**Sg**	**15 57 12.9**	**-0.4**
	baz=24						
PRZ	**Przheval'sk**	**1.98**	**42**	⇑*e*P	**Pb**	**15 56 47.8**	**0.0**
	baz=43						
PRZ				⇑*e*S	**Sg**	**15 57 14.4**	**-0.4**
	baz=43						
UCH	**Uchtor**	**1.99**	**308**	⇑*i*P	**Pg**	**15 56 49.1**	**-0.4**
	baz=307						
UCH				⇑*i*S	**Sg**	**15 57 15.4**	**+0.1**
	baz=307						
IZV	**Izvestkoviy**	**2.02**	**360**	*e*P	**Pg**	**15 56 49.4**	**-0.6**
	6.0nm,0.3s						
IZV				*e*S	**Sg**	**15 57 17.6**	**+1.5**
	30nm,0.4s						
TNSS	**Tian-Shan**	**2.03**	**7**	*e*P	**Pg**	**15 56 49.9**	**-0.3**
	8.7nm,0.4s						
TNSS				*e*S	**Sg**	**15 57 18.5**	**+1.9**
	18nm,0.3s						
TKM2	**Tokmak 2**	**2.05**	**338**	⇑*i*P	**Pg**	**15 56 49.5**	**-1.1**
	baz=338						
TKM2				⇑*i*S	**Sg**	**15 57 16.7**	**-0.5**
	baz=338						
TKM2	**Tokmak 2**	**2.05**	**338**	⇑Pn	**Pg**	**15 56 50.4**	**-0.2**
	2.3nm,0.3s						
TKM2				⇓Sn	**Sg**	**15 57 18.2**	**+1.0**
	12nm,0.6s						

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KST	**Kastek**	**2.08**	**347**	⇓*i*P	**Pg**	**15 56 51.2**	**-0.1**
	2.6nm,0.6s						
KST				⇓*i*S	**Sg**	**15 57 20.0**	**+1.8**
	8.8nm,0.8s						
KOTS	**Kotyrbulak**	**2.24**	**9**	*e*P	**Pg**	**15 56 53.9**	**-0.5**
KOTS				*e*S	**Sg**	**15 57 25.2**	**+1.8**
AAK	**Ala-Archa**	**2.27**	**316**	⇑*i*P	**Pb**	**15 56 52.8**	**0.0**
	baz=315						
AAK				⇑*i*S	**Sg**	**15 57 22.5**	**-1.8**
	baz=315						
AAK	**Ala-Archa**	**2.27**	**316**	⇑Pn	**Pg**	**15 56 54.3**	**-0.5**
	8.0nm,0.6s						
AAK				⇓Sn	**Sg**	**15 57 25.6**	**+1.3**
	8.0nm,0.6s						
DGS	**Degeres**	**2.31**	**344**	*e*P	**Pg**	**15 56 54.6**	**-1.0**
	10nm,0.4s						
DGS				*e*S	**Sg**	**15 57 26.5**	**+1.0**
	10nm,0.9s						
CHMS	**Chumysh**	**2.42**	**325**	⇑*i*P	**Pb**	**15 56 54.5**	**-0.8**
	baz=325						
CHMS				⇑*i*S	**Sb**	**15 57 25.7**	**+0.2**
	baz=325						
AML	**Almayashu**	**2.46**	**298**	⇑*i*P	**Pb**	**15 56 56.0**	**-0.3**
	baz=297						
AML				⇑*i*S	**Sb**	**15 57 27.8**	**+0.8**
	baz=297						
KTBS	**Karatobe**	**2.69**	**1**	*e*P	**Pg**	**15 57 01.8**	**-1.2**
KTBS				*e*S	**Sg**	**15 57 38.9**	**+1.1**
UZB	**Uzynbulak**	**2.78**	**39**	*e*P	**Pg**	**15 57 03.1**	**-1.5**
	4.9nm,0.3s						
UZB				*e*S	**Sg**	**15 57 40.9**	**+0.4**
	6.3nm,0.4s						
CHKK	**Chushkaly**	**2.85**	**5**	*e*P	**Pg**	**15 57 04.2**	**-1.6**
	3.7nm,0.3s						
CHKK				*e*S	**Sg**	**15 57 43.1**	**+0.4**
	14nm,0.7s						
KUU	**Kurty**	**2.88**	**356**	*e*P	**Pg**	**15 57 04.9**	**-1.6**
	5.3nm,0.6s						
KUU				*e*S	**Sg**	**15 57 44.0**	**+0.2**
	12nm,0.5s						
KPKS	**Kokpek**	**2.88**	**31**	*e*P	**Pg**	**15 57 04.9**	**-1.7**
	7.8nm,0.2s						
KPKS				*e*S	**Sg**	**15 57 44.0**	**0.0**
	17nm,0.4s						
SHLS	**Shalkode**	**3.00**	**44**	*e*P	**Pg**	**15 57 10.5**	**+1.6**
	4.8nm,0.3s						
SHLS				*e*S	**Sg**	**15 57 53.6**	**+5.8**
	6.7nm,0.6s						
MRKS	**Merke**	**3.07**	**305**	*e*P	**Pb**	**15 57 07.8**	**+1.4**
	3.8nm,0.3s						
MRKS				*e*S	**Sg**	**15 57 48.9**	**-1.0**
	5.5nm,0.3s						
PDGK	**Podgornoye**	**3.14**	**42**	⇑Pn	**Pb**	**15 57 05.3**	**-2.3**
	1.8nm,0.6s						
PDGK				⇓Sn	**Sb**	**15 57 46.7**	**+0.5**
	13nm,0.8s						
ARXS	**Arharly**	**3.31**	**15**	*e*P	**Pb**	**15 57 11.7**	**+1.1**
	2.9nm,0.2s						
ARXS				*e*S	**Sg**	**15 57 55.9**	**-1.9**
	5.7nm,0.3s						
MNAS	**Manas**	**3.41**	**297**	⇑Pg	**Pb**	**15 57 12.2**	**-0.1**
	2.3nm,0.8s						
MNAS				⇑Lg	Lg	15 57 58.8	
	3.1nm,0.6s						
DJR	**Jarkent**	**4.05**	**34**	*e*P	**Pg**	**15 57 27.7**	**-1.3**
	2.2nm,0.4s						
DJR				*e*S	**Sg**	**15 58 23.3**	**+1.9**
	3.1nm,0.2s						
KAPS	**Kapalarasan**	**4.71**	**24**	*e*P	**Pg**	**15 57 39.1**	**-2.4**
	1.1nm,0.3s						
KAPS				*e*S	**Sg**	**15 58 43.2**	**+0.7**
	2.9nm,0.6s						

*NIED **18** 16:00:00,38°.30N×142°.20E,h26km,Mw3.9 Best double couple: M₀8.96000×10¹⁴ NP1:φs154.00000°,δ37.00000°, λ-99.00000°. NP2:φs345.00000°,δ53.00000°, λ-83.00000°.*

*ISCJB **18** 16:00:20.0±0.9,38°.29N±0°.04×142°.20E±0°.07,h41km±7km, mb4.2/20,Error ellipse: s-maj=10.4km s-min=4.9km az=24.5*

*JMA **18** 16:00:19.8±0.1,38°.32N×142°.22E,h37km±1km,M4.3*

JMA Felt I J1.

*IDC **18** 16:00:21.1±0.8,38°.25N×142°.21E,h34km±6km,mb3.8/17, mb1 4.0/20,mb1mx3.8/56,mbtmp4.0/20,ML3.2/3,MS3.2/1, Ms1 3.2/1,ms1mx2.5/37,Error ellipse: s-maj=18.3km s-min=13.3km az=91.0*

*NEIC **18** 16:00:22.6±0.8,38°.30N×142°.23E,h49km±7km,mb4.6/1, Error ellipse: s-maj=10.9km s-min=5.9km az=116.0*

NEIC Recorded [1 JMA] in Iwate and Miyagi.

ISC 18 16:00:21.1±0.8,38°.30N±0°.04×142°.16E±0°.06,h33km±3km, n46,σ1s08/55,mb4.2/20,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.65**	**284**	P	**Pn**	**16 00 33.2**	**-0.8**
JIO				S	**Sb**	**16 00 42.3**	**-0.8**
OFUJ	**Ofunato**	**0.87**	**334**	P	**Pn**	**16 00 35.8**	**-1.2**
OFUJ				S	**Sn**	**16 00 47.0**	**-1.5**
JMK	**Ichinoseki**	**0.98**	**312**	P	**Pn**	**16 00 37.9**	**-0.6**
JMK				S	**Sn**	**16 00 50.6**	**-0.7**
JMM	**Marumori**	**1.16**	**248**	P	**Pn**	**16 00 40.1**	**-0.9**
JMM				S	**Sn**	**16 00 54.7**	**-1.0**
JOU	**Okura**	**1.18**	**274**	P	**Pn**	**16 00 41.3**	**0.0**
JOU				S	**Sn**	**16 00 56.8**	**+0.6**
JOM	**Ohasama**	**1.35**	**330**	P	**Pn

ABKAR	**Akbulak array** 3.0nm,0.6s	**57.58**	**310**	*e*P	**P**	**16 10 06.7**	**-0.7**
FITZ	**Fitzroy Crossi** 2.3nm,0.9s,baz=18,slow=9.6,SNR=3.0	**58.21**	**199**	P	**P**	**16 10 11.9**	**-0.1**
WRA	**Warramunga Arr** 1.7nm,0.7s,baz=7.0,slow=7.2,SNR=14	**58.40**	**189**	P	**P**	**16 10 12.3**	**-1.0**
ASAR	**Alice Springs** 0.8nm,0.8s,baz=13,slow=11,SNR=14	**62.12**	**189**	P	**P**	**16 10 38.5**	**-0.4**
GEYT	**Alibeck** 1.9nm,0.8s,baz=64,slow=6.8,SNR=4.2	**63.74**	**299**	P	**P**	**16 10 49.9**	**+0.2**
FINES	**FINESS Array B** 3.4nm,0.7s,baz=63,slow=8.8,SNR=10	**67.97**	**332**	P	**P**	**16 11 16.3**	**-0.1**
KBZ	**Khabaz** 3.2nm,0.7s,baz=43,slow=3.6,SNR=6.4	**70.53**	**311**	P	**P**	**16 11 33.4**	**+0.9**
NB2	**NORSAR Subarra** comp=Z,0.6nm,0.6s,baz=38,slow=5.9	**73.25**	**337**	P	**P**	**16 11 48.3**	**-0.3**
NOA	**NORSAR Array B** comp=Z,1.3nm,0.8s,baz=39,slow=5.9,SNR=4.1	**73.25**	**337**	P	**P**	**16 11 48.6**	**0.0**
NOA				pP	**pP**	**16 11 58.4**	**-0.5**
AKASG	**Malin Array Be** comp=Z,0.7nm,0.6s,baz=39,slow=6.0,SNR=2.8	**73.66**	**322**	P	**P**	**16 11 50.9**	**-0.2**
PDAR	**Pinedale Array** comp=Z,2.1nm,0.7s,baz=47,slow=6.1,SNR=7.1	**76.36**	**46**	P	**P**	**16 12 06.9**	**-0.3**
PDAR	comp=Z,0.5nm,0.6s,baz=218,slow=1.9,SNR=6.8			pP	**pP**	**16 12 18.1**	**+0.5**
TXAR	**Lajitas Array** comp=Z,0.6nm,0.5s,baz=248,slow=1.8,SNR=5.9	**88.88**	**53**	P	**P**	**16 13 12.1**	**-0.3**
TXAR	comp=Z,0.4nm,0.7s,baz=342,slow=2.0,SNR=2.8			pP	**pP**	**16 13 23.5**	**+0.5**
LPAZ	**La Paz** comp=Z,1.2nm,0.6s,baz=346,slow=1.4,SNR=4.6	**145.54**	**59**	PKPbc	**PKPdf**	**16 19 57.0**	**0.0**

IDC ***18*** *16:00:21.3±2.5,34.02S×179.10W,h0km,mb3.6/2, mb1 3.9/3,mb1mx3.6/37,mbtmp3.7/3,ML3.8/1,MS3.7/1, Ms1 3.7/1,ms1mx2.8/15,Error ellipse: s-maj=64.1km s-min=43.8km az=129.0*

ISCJB ***18*** *16:00:24.0±1.3,34.3S±0.1×178.8W±0.2,h51km,mb3.4/2, MS3.5/1,Error ellipse: s-maj=30.8km s-min=9.3km az=23.6*

ISC 18 16:00:24.7±2.1,34.3S±0.2×178.6W±0.3,h51km,n22, σ0§90/28,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**4.09**	**217**	*e*PN			**Pn**	**16 01 25.1**	**+0.5**
MXZ				*e*SN			**Sn**	**16 02 10.3**	**-0.9**
PKGZ	**Pakihiroa**	**4.46**	**216**	*e*PN			**Pn**	**16 01 30.9**	**+1.1**
PKGZ				*e*SN			**Sn**	**16 02 21.2**	**+0.9**
HAZ	**Te Kaha**	**4.50**	**220**	*e*PN			**Pn**	**16 01 31.6**	**+1.2**
PUZ	**Puketiti**	**4.52**	**213**	*e*PN			**Pn**	**16 01 31.3**	**+0.7**
PUZ				*e*SN			**Sn**	**16 02 21.6**	**-0.2**
RUGZ	**Raukumara Rang**	**4.72**	**219**	*e*PN			**Pn**	**16 01 34.1**	**+0.7**
TWGZ	**Tauwhareparae**	**4.73**	**215**	*e*PN			**Pn**	**16 01 34.5**	**+1.0**
TWGZ				*e*SN			**Sn**	**16 02 28.2**	**+1.1**
CNGZ	**Carnagh Statio**	**4.88**	**211**	*e*PN			**Pn**	**16 01 36.6**	**+1.1**
MWZ	**Matawai**	**5.07**	**217**	*e*PN			**Pn**	**16 01 38.3**	**+0.1**
URZ	**Urewera** 3.2nm,0.3s,baz=275,slow=5.4,SNR=38	**5.23**	**220**	PN			**Pn**	**16 01 40.9**	**+0.5**
URZ				Sn			**Sn**	**16 02 38.8**	**-0.6**
URZ	**Urewera** 5.8nm,0.3s,baz=263,slow=6.6,SNR=14	**5.23**	**220**	PN			**Pn**	**16 01 40.4**	**0.0**
RAGZ	**Rawiri**	**5.25**	**217**	PN			**Pn**	**16 01 41.0**	**+0.3**
RAGZ				SN			**Sn**	**16 02 39.7**	**-0.3**
RIGZ	**Rimuhau**	**5.26**	**213**	*e*PN			**Pn**	**16 01 41.1**	**+0.3**
PRGZ	**Paritu Road**	**5.38**	**211**	PN			**Pn**	**16 01 42.9**	**+0.4**
SNGZ	**Shannon Statio**	**5.51**	**215**	*e*PN			**Pn**	**16 01 44.3**	**0.0**
KNZ	**Kokohu**	**5.56**	**212**	*e*PN			**Pn**	**16 01 45.1**	**+0.3**
MHGZ	**Mahia Peninsul**	**5.57**	**209**	*e*PN			**Pn**	**16 01 44.1**	**-0.9**
TSZ	**Takapari Road**	**7.18**	**216**	*e*PN			**Pn**	**16 02 05.8**	**-1.2**
MRZ	**Mangatainoka R**	**7.83**	**215**	*e*PN			**Pn**	**16 02 13.8**	**-2.2**
AFI	**Afiamalu** comp=Z,190nm,18.1s,baz=174,slow=41	**21.25**	**19**	LR			LR	16 14 51.4	
ASAR	**Alice Springs** 0.4nm,0.5s,baz=117,slow=7.8,SNR=15	**42.56**	**271**	P			**P**	**16 08 15.5**	**-0.2**
ASAR				PcP			**PcP**	**16 10 08.9**	**+1.4**
WRA	**Warramunga Arr** 0.3nm,0.3s,baz=117,slow=8.1,SNR=18	**43.90**	**277**	P			**P**	**16 08 26.1**	**-0.4**
FINES	**FINESS Array B** 1.1nm,0.6s,baz=52,slow=2.5,SNR=7.0	**148.62**	**337**	PKPbc			**PKPab**	**16 20 08.2**	**-0.7**

NEIC ***18*** *16:03:44.9±0.1,29.17S×176.21W,h10km,mb5.2/124, Error ellipse: s-maj=7.8km s-min=3.7km az=157.0*

GCMT ***18*** *16:03:44.9±0.3,29.01S×175.93W,h14km±1km,MW5.0/88, Moment Tensor Solution. s33,c35; s88,c118; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-3.26±.20; Mθθ0.51±.12; Mφφ2.75±.13; Mrθ0.27±.36; Mrφ0.30±.08; Mθφ1.45±.28; Best double couple: M₀3.36500×10¹⁶ NP1:ϕs189.00000°,δ58.00000°,λ-89.00000°. NP2: ϕs7.00000°,δ32.00000°,λ-92.00000°. Principal axes: T 3.1290, Plg13.0000°, Azm278.0000°; N 0.4720, Plg1.0000°, Azm8.0000°; P -3.6010, Plg77.0000°, Azm102.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***18*** *16:03:45.1±1.3,28.94S×176.22W,h17km,mb5.3/33 Error ellipse: s-maj=10.6km s-min=9.5km az=45.1*

ISCJB ***18*** *16:03:45.2±0.1,29.65S±0.03×176.15W±0.04,h28km, mb5.2/129,MS4.5/12,Error ellipse: s-maj=6.2km s-min=2.5km az=39.5*

IDC ***18*** *16:03:48.7±6.4,28.98S×176.22W,h33km±46km,mb4.5/16, mb1 4.7/16,mb1mx4.4/36,mbtmp4.6/16,MS4.3/9, Ms1 4.3/9,ms1mx4.0/19,Error ellipse: s-maj=21.8km s-min=18.0km az=49.0*

BJI ***18*** *16:03:50.0,29.31S×176.61W,h39km,mb5.0/22, mB5.6/17,Ms5.2/7,Ms7 4.8/12*

ISC 18 16:03:46.9±0.3,29.51S±0.06×176.02W±0.05,h28km, n401,σ1§58/395,mb5.2/129,MS4.5/12,6C-3D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 1μm,0.3s,baz=38,slow=1.3,SNR=104	**1.68**	**278**	Pn			**Pn**	**16 04 14.4**	**0.0**
RAO				Sn			**Sn**	**16 04 37.1**	**+2.2**
MXZ	1μm,0.3s,baz=30,slow=22,SNR=10 **Matakaoa Point**	**9.32**	**209**	*e*Pn			**Pn**	**16 05 59.3**	**-0.1**
MXZ	**Matakaoa Point**	**9.32**	**209**	*e*PN			**Pn**	**16 05 58.5**	**-0.9**
MXZ				*e*SN			**Sn**	**16 07 41.7**	**-1.7**
WMGZ	**Waiomatatini S**	**9.50**	**208**	*e*PN			**Pn**	**16 06 01.7**	**-0.1**
WMGZ				SN			**Sn**	**16 07 49.0**	**+1.4**
PKGZ	**Pakihiroa**	**9.70**	**209**	*e*PN			**Pn**	**16 06 02.5**	**-2.1**
HAZ	**Te Kaha**	**9.71**	**210**	*e*PN			**Pn**	**16 06 02.9**	**-1.8**
PUZ	**Puketiti**	**9.78**	**208**	*e*PN			**Pn**	**16 06 03.1**	**-2.6**
PUZ				*e*SN			**Sn**	**16 07 52.8**	**-1.7**
RUGZ	**Raukumara Rang**	**9.93**	**210**	*e*PN			**Pn**	**16 06 06.5**	**-1.4**
MWZ	**Matawai**	**10.30**	**210**	*e*PN			**Pn**	**16 06 10.8**	**-2.1**
MWZ				*e*SN			**Sn**	**16 08 05.4**	**-2.1**
URZ	**Urewera** 1.8nm,0.3s,baz=42,slow=2.4,SNR=12	**10.43**	**211**	Pn			**Pn**	**16 06 12.1**	**-2.4**
URZ				Sn			**Sn**	**16 08 10.4**	**0.0**
URZ	19nm,0.3s,baz=79,slow=23,SNR=16 **Urewera**	**10.43**	**211**	*e*PN			**Pn**	**16 06 11.9**	**-2.7**
URZ				*e*SN			**Sn**	**16 08 08.8**	**-1.6**
OUZ	**Omahuta**	**10.46**	**234**	*e*Pn			**Pn**	**16 06 19.4**	**+4.3**
RIGZ	**Rimuhau**	**10.52**	**208**	*e*PN			**Pn**	**16 06 13.6**	**-2.3**
SNGZ	**Shannon Statio**	**10.76**	**209**	*e*PN			**Pn**	**16 06 16.5**	**-2.7**
NMHZ	**Naumai**	**11.25**	**210**	*e*PN			**Pn**	**16 06 24.0**	**-1.9**
BKZ	**Black Stump Fm**	**11.45**	**211**	*e*Pn			**Pn**	**16 06 26.6**	**-2.0**
BKZ	**Black Stump Fm**	**11.45**	**211**	*e*PN			**Pn**	**16 06 25.5**	**-3.0**
HIZ	**Hauiti**	**11.74**	**218**	*e*PN			**Pn**	**16 06 33.8**	**+1.3**
BFZ	**Birch Farm**	**12.81**	**207**	*e*Pn			**Pn**	**16 06 44.1**	**-3.1**
BFZ	**Birch Farm**	**12.81**	**207**	*e*PN			**Pn**	**16 06 42.8**	**-4.4**
BFZ				*e*SN			**Sn**	**16 09 03.3**	**-5.6**
MSVF	**Nonsavu**	**12.91**	**334**	*e*P			Pn	16 06 40.6	-8.1
MSVF	**Nonsavu**	**12.91**	**334**	*e*Pn			Pn	16 06 44.4	-4.3
MRZ	**Mangatainoka R**	**13.07**	**209**	*e*PN			Pn	16 06 45.7	-5.1
MRZ				*e*SN			**Sn**	**16 09 09.0**	**-6.2**
SNZO	**South Karori**	**13.98**	**210**	*e*Pn			**Pn**	**16 07 00.5**	**-2.6**
KHZ	**Kahutara** 168nm,1.0s	**15.39**	**210**	*e*Pn			**Pn**	**16 07 17.1**	**-4.9**
AFI	**Afiamalu** 3.4nm,0.3s,baz=264,slow=5.9,SNR=6.1	**16.01**	**15**	Pn			Pn	16 07 19.7	-11
AFI				Sn			Sn	16 10 01.6	-25
AFI	2.1nm,0.3s,baz=18,slow=21,SNR=4.6 **Afiamalu** 204nm,1.5s	**16.01**	**15**	*e*Pn			Pn	16 07 20.6	-10
AFI				Sn			Sn	16 10 01.6	-25

LTZ	**Lake Taylor** 31nm,0.7s	**16.25**	**212**	*e*Pn		**Pn**	**16 07 32.4**	**-0.9**
INZ	**Inchbonnie**	**16.60**	**214**	*e*PN		**Pn**	**16 07 33.2**	**-4.4**
CRLZ	**Canterbury Las** 173nm,1.6s	**16.72**	**210**	*e*Pn		**Pn**	**16 07 38.0**	**-1.1**
OXZ	**Oxford** 62nm,0.6s	**16.78**	**212**	*e*Pn		**Pn**	**16 07 35.7**	**-4.2**
MQZ	**McQueen's Vall** 196nm,2.0s	**16.81**	**209**	*e*Pn		**Pn**	**16 07 36.4**	**-3.9**
MQZ	**McQueen's Vall**	**16.81**	**209**	*e*SN		Sn	16 10 33.1	-13
RAR	**Rarotonga** 2.5nm,0.3s,baz=221,slow=9.3,SNR=3.6	**16.84**	**64**	Pn		**Pn**	**16 07 34.5**	**-6.2**
RAR	**Rarotonga** 368nm,1.4s	**16.84**	**64**	*e*Pn		**Pn**	**16 07 34.3**	**-6.4**
DZM	**Mont Dzumac** comp=Z,766nm,18.1s,baz=113,slow=34	**17.43**	**291**	LR		LR	16 13 29.9	
DZM	**Mont Dzumac** 124nm,1.2s	**17.43**	**291**	*e*P		**P**	**16 07 50.3**	**+1.0**
DZM	1μm,28.7s			*e*LQ		LQ	16 11 12.0	
DZM	2μm,28.5s			*e*LR		LR	16 11 59.7	
DZM	**Mont Dzumac** 59nm,1.1s	**17.43**	**291**	*e*P		**Pn**	**16 07 49.0**	**+0.8**
RPZ	**Rata Peaks** 3.2nm,0.3s,baz=34,slow=1.3,SNR=17	**17.54**	**213**	P		**Pn**	**16 07 47.4**	**-1.9**
RPZ	**Rata Peaks** 54nm,0.7s	**17.54**	**213**	*e*Pn		**Pn**	**16 07 45.8**	**-3.5**
FOZ	**Fox Glacier** 54nm,1.2s	**18.00**	**215**	*e*Pn		**Pn**	**16 07 53.3**	**-1.7**
LBZ	**Lake Benmore** 34nm,1.2s	**18.46**	**213**	*e*P		**P**	**16 07 57.5**	**-2.8**
ODZ	**Otahua Downs** 38nm,0.8s	**18.75**	**211**	*e*P		**P**	**16 08 02.7**	**-0.8**
WKZ	**Wanaka** 129nm,1.7s	**19.34**	**214**	*e*P		**P**	**16 08 10.1**	**0.0**
MLZ	**Mana Lakes** 27nm,0.8s	**20.17**	**214**	*e*P		**P**	**16 08 19.3**	**+0.1**
WHZ	**Wether Hill Ro** 72nm,1.4s	**20.64**	**213**	*e*P		Pn	16 08 25.2	-1.3
DCZ	**Deep Cove** 91nm,1.8s	**20.72**	**215**	*e*P		**P**	**16 08 25.2**	**+0.2**
LHI	**Lord Howe Isla** 277nm,0.9s	**21.55**	**258**	*e*P		**P**	**16 08 36.5**	**+2.4**
TBI	**Tubuai** 298nm,28.5s	**24.53**	**82**	*e*S		**S**	**16 13 22.9**	**-0.4**
TBI	2μm,27.0s,baz=248			*e*LR		LR	16 14 54.4	
PAE	**Paea** 25nm,1.2s	**26.88**	**70**	*e*P		**P**	**16 09 27.6**	**+2.1**
PPT2	**Papeete2** 186nm,1.3s	**26.92**	**70**	*e*P		**P**	**16 09 27.9**	**+1.9**
PPT2	609nm,24.2s			*e*LQ		LQ	16 14 37.6	
PPT2	2μm,26.2s,baz=234			*e*LR		LR	16 15 52.2	
PPT	**Papeete**	**26.93**	**70**	*e*P		**P**	**16 09 26.8**	**+0.8**
PPT	**Papeete**	**26.93**	**70**	*e*P		**P**	**16 09 26.8**	**+0.8**
TIAR	**Tiarei** 51nm,0.9s	**27.12**	**70**	*e*P		**P**	**16 09 30.4**	**+2.6**
ARMA	**Armidale** 15nm,1.1s	**27.99**	**260**	*e*P		**P**	**16 09 35.1**	**-0.5**
EIDS	**Eidsvold** baz=29,SNR=5.1	**29.43**	**270**	P		**P**	**16 09 49.3**	**+1.1**
EIDS	**Eidsvold** 47nm,1.4s	**29.43**	**270**	*e*P		**P**	**16 09 47.6**	**-0.7**
HNR	**Honiara** comp=Z,229nm,18.6s,baz=146,slow=35	**30.08**	**307**	LR		LR	16 21 01.3	
HNR	**Honiara** comp=Z,120nm,0.9s	**30.08**	**307**	*e*P		**P**	**16 09 52.6**	**-1.5**
HNR					pmax	pmax		
HNR	**Honiara** comp=Z,120nm,0.9s	**30.08**	**307**	*e*P		**P**	**16 09 52.5**	**-1.5**
RMQ	**Roma** baz=31,SNR=14	**31.17**	**267**	P		**P**	**16 10 04.9**	**+1.2**
CMSA	**Cobar Meteorol** baz=33,SNR=10	**32.94**	**257**	P		**P**	**16 10 20.7**	**+1.6**
QLP	**Quilpie** baz=35,SNR=8.1	**35.08**	**265**	P		**P**	**16 10 37.5**	**-0.3**
CTA	**Charters Tower** comp=Z,5.6nm,0.6s,baz=105,slow=11,SNR=15	**35.38**	**277**	P		**P**	**16 10 39.6**	**-0.9**
CTAO	**Charters Tower**	**35.38**	**277**	*e*P		**P**	**16 10 39.5**	**-0.9**
CTAO	comp=Z,17nm,1.1s				pmax	pmax		
CTAO	**Charters Tower** comp=Z,17nm,1.1s	**35.38**	**277**	*e*P		**P**	**16 10 39.5**	**-0.9**
STKA	**Stephens Creek** comp=Z,13nm,0.8s,baz=99,slow=12,SNR=26	**36.36**	**255**	P		**P**	**16 10 49.5**	**+0.8**
STKA	comp=Z,906nm,18.3s,baz=73,slow=35			LR		LR	16 25 04.5	
STKA	**Stephens Creek** baz=36,SNR=26	**36.36**	**255**	P		**P**	**16 10 49.5**	**+0.8**
STKA	**Stephens Creek** comp=Z,5.2nm,1.0s	**36.36**	**255**	*e*P		**P**	**16 10 49.1**	**+0.4**
RKT	**Rikitea** comp=Z,970nm,27.0s,baz=260	**37.20**	**90**	*e*LR		LR	16 20 45.9	
MTSU	**Mount Surprise** baz=38,SNR=7.2	**37.84**	**278**	P		**P**	**16 11 01.3**	**-0.1**
HTT	**Hallett** baz=38,SNR=25	**38.40**	**252**	P		**P**	**16 11 06.7**	**+0.6**
TAOE	**Nuku Hiva Isla** comp=Z,1μm,27.2s	**39.38**	**66**	*e*LR		LR	16 21 34.6	
PMG	**Port Moresby** comp=Z,152nm,1.7s	**39.81**	**293**	*ce*P		P	16 11 10.5	-7.5
PMG					pmax	pmax		
BBOO	**Buckleboo** baz=41,SNR=18	**40.87**	**253**	P		**P**	**16 11 26.4**	**-0.2**
BBOO	**Buckleboo** comp=Z,28nm,0.9s	**40.87**	**253**	*e*P		**P**	**16 11 26.1**	**-0.4**
AS01	**Alice Springs**	**44.84**	**265**	*e*P		**P**	**16 11 58.1**	**-0.8**
AS31	**Alice Springs** comp=Z,6.4nm,1.2s	**44.88**	**265**	*e*P		**P**	**16 11 57.5**	**-1.7**
ASAR	**Alice Springs** comp=Z,8.8nm,0.9s,baz=106,slow=7.4,SNR=120	**44.88**	**265**	P		**P**	**16 11 58.1**	**-1.1**
WB2	**Warramunga Arr** comp=Z,33nm,1.1s	**45.78**	**270**	*e*P		**P**	**16 12 04.5**	**-1.9**
WRAB	**Tennant Creek**	**45.79**	**270**	*i* P		P	16 12 01.7	-4.7
WRAB	comp=Z,63nm,1.2s				pmax	pmax		
WRAB	**Tennant Creek** comp=Z,18nm,0.9s	**45.79**	**270**	*e*P		**P**	**16 12 04.5**	**-2.0**
WRA	**Warramunga Arr** comp=Z,43nm,1.2s,baz=109,slow=8.0,SNR=52	**45.80**	**270**	P		**P**	**16 12 05.1**	**-1.4**
FORT	**Forrest** baz=48,SNR=6.8	**47.94**	**254**	P		**P**	**16 12 22.2**	**-0.9**
FORT	**Forrest** comp=Z,236nm,1.0s	**47.94**	**254**	*e*P		**P**	**16 12 21.5**	**-1.6**
JAY	**Jayapura** comp=Z,0.9nm,1.1s,baz=276,slow=24,SNR=3.4	**49.05**	**295**	P		**P**	**16 12 29.3**	**-2.5**
SBA	**Scott Base**	**49.06**	**185**	*e*P		P	16 12 36.1	+5.1
SBA	comp=Z,50nm,1.5s				pmax	pmax		
SBA	**Scott Base** comp=Z,50nm,1.5s	**49.06**	**185**	*e*P		P	16 12 36.1	+5.1
VNDA	**Vanda** comp=Z,3.5nm,0.9s,baz=357,slow=6.6,SNR=15	**49.16**	**186**	P		P	16 12 37.9	+6.0
VNDA	**Vanda**	**49.16**	**186**	*e*P		P	16 12 36.8	+5.0
VNDA	comp=Z,7.0nm,1.1s				pmax	pmax		
VNDA	**Vanda** comp=Z,7.3nm,1.1s	**49.16**	**186**	*e*P		P	16 12 36.8	+4.9
WRKA	**Warkuna** baz=49,SNR=22	**49.30**	**261**	P		**P**	**16 12 32.0**	**-1.7**
KIP	**Kipapa**	**53.52**	**21**	*i* P		**P**	**16 13 02.1**	**-3.0**
FITZ	**Fitzroy Crossi** baz=54,SNR=6.6	**54.09**	**268**	P		**P**	**16 13 09.0**	**-0.5**
KLBR	**Kellerberrin** baz=56,SNR=5.6	**56.27**	**250**	P		**P**	**16 13 24.9**	**-0.2**
MBWA	**Marble Bar** comp=Z,19nm,0.9s	**58.04**	**262**	*e*P		**P**	**16 13 36.7**	**-1.0**
MAW	**Mawson** comp=Z,8.5nm,1.0s,baz=112,slow=5.3,SNR=12	**73.74**	**200**	P		**P**	**16 15 21.4**	**+3.5**
MAW				LR		LR	16 46 09.6	
MAW	comp=Z,53nm,20.8s,baz=62,slow=34 **Mawson** baz=74,SNR=7.8	**73.74**	**200**	P		**P**	**16 15 22.0**	**+4.0**
MAW	**Mawson**	**73.74**	**200**	*e*P		**P**	**16 15 21.6**	**+3.6**
MAW	comp=Z,3.0nm,1.0s				pmax	pmax		
MAW	**Mawson** comp=Z,3.0nm,1.0s	**73.74**	**200**	*e*P		**P**	**16 15 21.6**	**+3.6**
KKM	**Kota Kinabalu** comp=Z,34nm,1.3s	**73.93**	**287**	*e*P		**P**	**16 15 19.4**	**-0.7**
SBUM	**Sibu** comp=Z,46nm,1.4s	**75.42**	**281**	*e*P		**P**	**16 15 28.2**	**-0.4**
KSM	**Kuching** comp=Z,27nm,1.3s	**76.56**	**279**	*e*P		**P**	**16 15 34.5**	**-0.7**
SYO	**Syowa Base**	**78.36**	**192**	*ij e*P		**P**	**16 15 46.0**	**+1.7**

MJAR	**Matsushiro Arr** comp=Z,1.7nm,0.9s,baz=141,slow=4.5,SNR=4.5	**78.51**	**324**	P		**P**	**16 15 42.5**	**-3.0**
SNAA	**Sanae**	**78.99**	**178**	*e*P		**P**	**16 15 50.0**	**+2.2**
SNAA	comp=Z,13nm,1.3s				pmax	pmax		
SNAA	**Sanae** comp=Z,13nm,1.3s	**78.99**	**178**	*e*P		**P**	**16 15 50.0**	**+2.2**
PLCA	**Paso Flores** comp=Z,13nm,0.9s,baz=249,slow=4.8,SNR=22	**81.85**	**132**	P		**P**	**16 16 06.9**	**+3.1**
PLCA	comp=Z,246nm,18.2s,baz=324,slow=32			LR		LR	16 47 38.1	
PLCA	**Paso Flores** comp=Z,21nm,1.0s	**81.85**	**132**	*e*P		**P**	**16 16 05.7**	**+1.9**
PKM	**Mcpherson Peak** baz=227	**83.13**	**43**	P		**P**	**16 16 11.4**	**+0.9**
SRIG	**Santa Rosalia** comp=Z,30nm,1.0s	**83.17**	**54**	*e*P		**P**	**16 16 10.9**	**+0.3**
SMMC	**Simmler** baz=227	**83.32**	**43**	P		**P**	**16 16 12.0**	**+0.7**
BAR	**Barrett** comp=Z,40nm,1.7s	**83.60**	**47**	*e*P		**P**	**16 16 13.1**	**+0.3**
MONP2	**Monument Peak** baz=229	**83.90**	**47**	P		**P**	**16 16 15.0**	**+0.5**
IKP	**In-Ko-Pah, Jac** baz=230	**83.94**	**47**	P		**P**	**16 16 15.2**	**+0.6**
BFSC	**Mount Baldy Ra** baz=228	**84.01**	**45**	P		**P**	**16 16 15.2**	**+0.3**
VES	**Vestal, Richgr** baz=228	**84.22**	**43**	P		**P**	**16 16 16.1**	**+0.3**
EDW2	**Edwards Air Fo** baz=228	**84.23**	**45**	P		**P**	**16 16 16.4**	**+0.4**
PFO	**Pinyon Flats O**	**84.34**	**46**	*e*P		**P**	**16 16 17.3**	**+0.6**
PFO	comp=Z,21nm,1.1s				pmax	pmax		
PFO	**Pinyon Flats O** comp=Z,20nm,1.1s	**84.34**	**46**	*e*P		**P**	**16 16 17.3**	**+0.6**
TPFO	**Pinon Flats** baz=229	**84.34**	**46**	P		**P**	**16 16 17.2**	**+0.6**
ISA	**Isabella, Lake** baz=228	**84.46**	**44**	P		**P**	**16 16 17.8**	**+0.7**
ISA	**Isabella, Lake**	**84.46**	**44**	*e*P		**P**	**16 16 17.7**	**+0.6**
ISA	comp=Z,35nm,1.5s				pmax	pmax		
ISA	**Isabella, Lake** comp=Z,35nm,1.5s	**84.46**	**44**	*e*P		**P**	**16 16 17.7**	**+0.6**
KMRM	**Mail Ridge** comp=Z,50nm,1.3s	**84.67**	**37**	*e*P		**P**	**16 16 19.0**	**+0.9**
LRMC	**Laurel Mtn Rad** baz=228	**84.82**	**44**	P		**P**	**16 16 19.6**	**+0.6**
KS01	**Wonju Array Si**	**84.83**	**318**	*e*P		**P**	**16 16 20.2**	**+1.4**
BELC	**Belle Mtn. Jos** baz=230	**84.89**	**46**	P		**P**	**16 16 20.1**	**+0.7**
CMB	**Columbia Colle**	**84.96**	**41**	*e*P		**P**	**16 16 19.7**	**+0.1**
CMB	comp=Z,19nm,1.1s				pmax	pmax		
CMB	**Columbia Colle** comp=Z,19nm,1.1s	**84.96**	**41**	*e*P		**P**	**16 16 19.6**	**+0.1**
BC3	**Big Chuckawall** baz=230	**85.01**	**47**	P		**P**	**16 16 20.8**	**+0.8**
GLA	**Glamis** baz=230	**85.02**	**48**	P		**P**	**16 16 21.0**	**+1.1**
GLA	**Glamis**	**85.02**	**48**	*e*P		**P**	**16 16 17.9**	**-2.1**
GLA	comp=Z,29nm,1.3s				pmax	pmax		
GLA	**Glamis** comp=Z,29nm,1.3s	**85.02**	**48**	*e*P		**P**	**16 16 17.9**	**-2.1**
KHMM	**Horse Mountain** comp=Z,20nm,1.1s	**85.13**	**37**	*e*P		**P**	**16 16 21.4**	**+0.9**
HEC	**Hector,Ludlow** baz=229	**85.22**	**45**	P		**P**	**16 16 21.5**	**+0.5**
GSC	**Goldstone, Bar** baz=229	**85.24**	**45**	P		**P**	**16 16 21.8**	**+0.7**
GSC	**Goldstone, Bar**	**85.24**	**45**	*e*P		**P**	**16 16 21.5**	**+0.4**
GSC	comp=Z,19nm,1.1s				pmax	pmax		
GSC	**Goldstone, Bar** comp=Z,19nm,1.1s	**85.24**	**45**	*e*P		**P**	**16 16 21.5**	**+0.4**
AFDM	**Forest Hills D** comp=Z,19nm,1.2s	**85.26**	**40**	*e*P		**P**	**16 16 21.0**	**0.0**
MPMC	**Manual Prospec** baz=228	**85.32**	**44**	P		**P**	**16 16 22.1**	**+0.5**
ORV	**Oroville**	**85.39**	**39**	*e*P		**P**	**16 16 21.6**	**0.0**
ORV	comp=Z,14nm,1.2s				pmax	pmax		
ORV	**Oroville** comp=Z,14nm,1.2s	**85.39**	**39**	*e*P		**P**	**16 16 21.6**	**0.0**
PETK	**Petropavlovsk-** comp=Z,2.7nm,0.9s,baz=104,slow=9.2,SNR=4.3	**85.40**	**344**	P		**P**	**16 16 20.5**	**-0.8**
DAC	**Darwin (Calif)**	**85.40**	**44**	*e*P		**P**	**16 16 21.8**	**-0.2**
DAC	comp=Z,7.0nm,1.1s				pmax	pmax		
DAC	**Darwin (Calif)** comp=Z,6.9nm,1.1s	**85.40**	**44**	*e*P		**P**	**16 16 21.8**	**-0.2**
KRMB	**Red Mountain** comp=Z,24nm,1.3s	**85.51**	**36**	*e*P		**P**	**16 16 22.5**	**+0.2**
113A	**Mohawk Valley,** comp=Z,23nm,1.4s	**85.53**	**48**	*e*P		**P**	**16 16 22.3**	**-0.1**
IRM	**Iron Mountain** baz=230	**85.53**	**47**	P		**P**	**16 16 23.6**	**+1.1**
WDC	**Whiskeytown Da**	**85.55**	**38**	*e*P		**P**	**16 16 22.5**	**+0.1**
WDC	comp=Z,33nm,1.2s				pmax	pmax		
WDC	**Whiskeytown Da** comp=Z,33nm,1.2s	**85.55**	**38**	*e*P		**P**	**16 16 22.5**	**+0.1**
GMRC	**Granite Mounta** baz=230	**85.61**	**46**	P		**P**	**16 16 23.6**	**+0.6**
214A	**Organ Pipe Nat** baz=232	**85.65**	**50**	P		**P**	**16 16 23.9**	**+0.8**
214A	**Organ Pipe Nat** comp=Z,234nm,1.9s	**85.65**	**50**	*e*P		**P**	**16 16 22.2**	**-1.0**
Y12C	**Blythe** baz=230	**85.66**	**47**	P		**P**	**16 16 24.0**	**+0.9**
Y12C	**Blythe** comp=Z,32nm,1.5s	**85.66**	**47**	*e*P		**P**	**16 16 23.6**	**+0.5**
N02D	**Trinity Center** baz=225	**85.74**	**38**	P		**P**	**16 16 24.2**	**+0.8**
O03D	**Paynes Creek** baz=225	**85.75**	**38**	P		**P**	**16 16 23.2**	**-0.2**
PEL	**Peldehue**	**85.80**	**126**	P		**P**	**16 16 26.6**	**+2.5**
PEL	comp=Z,66nm,0.9s				pmax	pmax		
WAKR	**Walker** comp=Z,33nm,1.2s	**85.82**	**41**	*e*P		**P**	**16 16 24.6**	**+0.6**
TUQ	**Turquoise Moun** baz=230	**85.87**	**45**	P		**P**	**16 16 24.7**	**+0.5**
M02C	**Callahan** baz=225	**85.96**	**37**	P		**P**	**16 16 25.4**	**+0.9**
IPM	**

TUC	**Tucson**	**87.22**	**50**	*e*P		**P**	**16 16 31.3**	**+0.4**
TUC	comp=Z,32nm,1.3s			pmax		pmax		
TUC	**Tucson**	**87.22**	**50**	*e*P		**P**	**16 16 31.3**	**+0.4**
	comp=Z,32nm,1.3s							
I03D	**Drain, OR**	**87.36**	**35**	P		**P**	**16 16 31.7**	**+0.5**
	baz=224							
USRK	**Ussuriysk Ar.**	**87.38**	**325**	P		**P**	**16 16 31.0**	**-0.3**
	comp=Z,17nm,0.7s,baz=140,slow=6.2,SNR=5.3							
GSI	**Gunungsitoli**	**87.50**	**273**	*e*P		**P**	**16 16 33.6**	**+1.0**
	comp=Z,79nm,1.3s							
319A	**Douglas**	**87.67**	**52**	*e*P		**P**	**16 16 33.5**	**+0.4**
	comp=Z,14nm,0.9s							
MOD	**Modoc Plateau**	**87.68**	**38**	*e*P		**P**	**16 16 32.7**	**-0.2**
	comp=Z,41nm,1.8s							
I04A	**Tendick Farm,**	**87.90**	**36**	P		**P**	**16 16 33.7**	**-0.2**
	baz=225							
K05A	**Summer Lake**	**87.94**	**37**	*e*P		**P**	**16 16 34.6**	**+0.4**
	comp=Z,18nm,1.0s							
R11A	**Troy Canyon, C**	**87.97**	**43**	P		**P**	**16 16 34.5**	**0.0**
	baz=230							
R11A	**Troy Canyon, C**	**87.97**	**43**	*e*P		**P**	**16 16 34.5**	**0.0**
	comp=Z,11nm,1.6s							
X16A	**Lo Mia Camp, P**	**88.07**	**48**	*e*P		**P**	**16 16 36.3**	**+1.2**
	comp=Z,12nm,1.0s							
J05D	**Fort Rock, OR**	**88.15**	**37**	P		**P**	**16 16 35.5**	**+0.4**
	baz=226							
BMN	**Battle Mountai**	**88.39**	**41**	*e*P		**P**	**16 16 36.7**	**+0.3**
BMN				pmax		pmax		
	comp=Z,15nm,1.2s							
BMN	**Battle Mountai**	**88.39**	**41**	*e*P		**P**	**16 16 36.7**	**+0.3**
	comp=Z,15nm,1.2s							
G03D	**McMinnville, O**	**88.49**	**34**	P		**P**	**16 16 37.0**	**+0.5**
	baz=224							
LCMT	**Little Creek M**	**88.54**	**45**	*e*P		**P**	**16 16 38.2**	**+1.0**
	comp=Z,8.6nm,1.0s							
U15A	**North Rim**	**88.77**	**46**	*e*P		**P**	**16 16 39.3**	**+0.9**
	comp=Z,100nm,1.9s							
WUAZ	**Wupatki**	**88.79**	**48**	P		**P**	**16 16 39.3**	**+0.9**
	baz=232							
WUAZ	**Wupatki**	**88.79**	**48**	*e*P		**P**	**16 16 39.3**	**+0.9**
	comp=Z,49nm,1.6s							
CCUT	**Cedar City**	**88.81**	**45**	*e*P		**P**	**16 16 38.7**	**+0.2**
	comp=Z,23nm,1.5s							
I05D	**Terrebonne, OR**	**88.83**	**36**	P		**P**	**16 16 39.0**	**+0.8**
	baz=226							
MDJ	**Mudanjiang**	**88.88**	**324**	P		**P**	**16 16 38.1**	**-0.3**
MDJ				pP		sP	16 16 50.5	-0.2
MDJ				sP		pP	16 16 55.6	+8.2
MDJ				pmax		pmax		
	comp=Z,5.0nm,1.3s							
MDJ				pmax		pmax		
	comp=Z,120nm,6.2s							
X18A	**Snowflake**	**89.12**	**49**	*e*P		**P**	**16 16 41.0**	**+1.0**
	comp=Z,9.4nm,1.0s							
E03A	**Lebam**	**89.31**	**33**	*e*P		**P**	**16 16 40.5**	**+0.2**
	comp=Z,26nm,0.9s							
121A	**Cookes Peak, D**	**89.38**	**52**	P		**P**	**16 16 42.4**	**+1.1**
	baz=234							
VFP	**Flag Point**	**89.46**	**35**	P		**P**	**16 16 42.0**	**+0.6**
LVP	**Lakeview Peak**	**89.53**	**34**	P		**P**	**16 16 42.3**	**+0.8**
W18A	**Petrified Fore**	**89.61**	**49**	P		**P**	**16 16 43.1**	**+0.8**
	baz=233							
ERK	**Elk Rock**	**89.73**	**34**	P		**P**	**16 16 43.5**	**+1.0**
NLWA	**Neilton Lookou**	**89.78**	**32**	*e*P		**P**	**16 16 43.2**	**+0.7**
TDL	**Tradedollar La**	**89.82**	**34**	P		**P**	**16 16 43.6**	**+0.7**
G06A	**Carlson Farm,**	**89.82**	**36**	*e*P		**P**	**16 16 42.1**	**-0.7**
	comp=Z,42nm,1.5s							
MTPU	**Mount Pierson**	**89.84**	**45**	*e*P		**P**	**16 16 44.6**	**+1.1**
	comp=Z,80nm,2.0s							
MSU	**Marysvale**	**90.14**	**45**	*e*P		**P**	**16 16 46.0**	**+1.2**
MSU	**Marysvale**	**90.14**	**45**	*e*P		**P**	**16 16 46.0**	**+1.2**
LON	**Longmire**	**90.30**	**34**	*e*P		**P**	**16 16 45.1**	**0.0**
LON				pmax		pmax		
	comp=Z,7.0nm,0.9s							
LON	**Longmire**	**90.30**	**34**	*e*P		**P**	**16 16 45.1**	**0.0**
	comp=Z,6.6nm,0.9s							
TX31	**Lajitas Ar. Si**	**90.46**	**56**	*e*P		**P**	**16 16 46.9**	**+0.6**
TXAR	**Lajitas Array**	**90.46**	**56**	P		**P**	**16 16 46.3**	**0.0**
	comp=Z,5.5nm,1.0s,baz=216,slow=6.2,SNR=33							
TXAR	**Lajitas Array**	**90.46**	**56**	P		**P**	**16 16 46.3**	**0.0**
TXAR				pmax		pmax		
	comp=Z,5.0nm,1.0s							
D05A	**Enumclaw**	**90.53**	**34**	*e*P		**P**	**16 16 47.1**	**+1.1**
	comp=Z,53nm,1.0s							
MNTX	**Cornudas Mount**	**90.57**	**54**	P		**P**	**16 16 47.0**	**+0.4**
	baz=236							
MNTX	**Cornudas Mount**	**90.57**	**54**	*e*P		**P**	**16 16 47.0**	**+0.4**
	comp=Z,9.0nm,1.0s							
TIA	**Tai'an**	**90.64**	**312**	*e*P		**P**	**16 16 43.1**	**-3.7**
TIA				pmax		pmax		
	comp=Z,20nm,1.1s							
DIB	**Dawson Inlet,**	**90.65**	**24**	*e*P		**P**	**16 16 46.9**	**+0.5**
	comp=Z,19nm,1.1s							
G08A	**Pilot Rock**	**90.72**	**36**	*e*P		**P**	**16 16 47.4**	**+0.3**
	comp=Z,32nm,1.2s							
CMIG	**Matias Romero**	**90.84**	**71**	LR		LR	16 47 32.9	
	comp=Z,198nm,21.7s,baz=150,slow=29							
PGC	**Sidney**	**90.88**	**32**	*e*P		**P**	**16 16 47.6**	**0.0**
	comp=Z,23nm,1.0s							
LAZ	**Ladron**	**90.91**	**50**	*e*P		**P**	**16 16 48.9**	**+0.5**
BNM	**Barren Site**	**91.11**	**51**	*e*P		**P**	**16 16 49.5**	**+0.2**
MFID	**Camas Ranch**	**91.14**	**39**	*e*P		**P**	**16 16 49.2**	**+0.1**
KLR	**Kul'dur**	**91.15**	**329**	*e*P		**P**	**16 16 46.3**	**-2.5**
HAWA	**Hanford**	**91.18**	**35**	*e*P		**P**	**16 16 49.4**	**+0.3**
	comp=Z,32nm,1.2s							
TMUT	**Trail Mountain**	**91.22**	**45**	*e*P		**P**	**16 16 50.5**	**+0.7**
	comp=Z,9.4nm,1.0s							
B05A	**Bryant**	**91.24**	**33**	P		**P**	**16 16 50.2**	**+1.0**
	baz=225							
A04D	**Lummi Island**	**91.28**	**32**	P		**P**	**16 16 50.2**	**+0.8**
	baz=225							
BMO	**Blue Mountains**	**91.29**	**37**	*e*P		**P**	**16 16 49.7**	**-0.1**
	comp=Z,25nm,1.6s							
BBB	**Bella Bella**	**91.51**	**27**	*e*P		**P**	**16 16 50.8**	**+0.4**
	comp=Z,23nm,1.0s							
SRU	**San Rafael Swe**	**91.52**	**45**	*e*P		**P**	**16 16 51.6**	**+0.5**
SRU				pmax		pmax		
	comp=Z,13nm,1.1s							
SRU	**San Rafael Swe**	**91.52**	**45**	*e*P		**P**	**16 16 51.6**	**+0.5**
	comp=Z,13nm,1.1s							
MVCO	**Mesa Verde**	**91.66**	**48**	P		**P**	**16 16 52.1**	**+0.2**
	baz=234							
ANMO	**Albuquerque**	**91.68**	**50**	P		**P**	**16 16 52.3**	**+0.4**
	baz=235							
ANMO	**Albuquerque**	**91.68**	**50**	*ce*P		**P**	**16 16 50.0**	**-2.0**
ANMO				pmax		pmax		
	comp=Z,5.0nm,1.0s							
ANMO	**Albuquerque**	**91.68**	**50**	*e*P		**P**	**16 16 52.5**	**+0.6**
	comp=Z,6.8nm,0.9s							
PV05	**Paradox Valley**	**91.79**	**47**	*e*P		**P**	**16 16 53.2**	**+0.8**
D08A	**Wollman Farm,**	**91.94**	**35**	*e*P		**P**	**16 16 53.0**	**+0.4**
	comp=Z,28nm,0.9s							
E09A	**Wood Farm, Sta**	**91.96**	**36**	*e*P		**P**	**16 16 53.1**	**+0.5**
	comp=Z,26nm,1.0s							
HLID	**Hailey**	**92.02**	**40**	P		**P**	**16 16 53.8**	**+0.5**
	baz=230							
HLID	**Hailey**	**92.02**	**40**	*e*P		**P**	**16 16 53.6**	**+0.4**
	comp=Z,11nm,1.0s							
PV09	**Paradox Valley**	**92.02**	**46**	*e*P		**P**	**16 16 54.1**	**+0.5**
F10A	**Beach Ranch, E**	**92.07**	**37**	*e*P		**P**	**16 16 53.0**	**-0.4**
	comp=Z,20nm,0.9s							
PV01	**Paradox Valley**	**92.16**	**47**	*e*P		**P**	**16 16 53.7**	**-0.4**
ENH	**Enshi**	**92.53**	**303**	*e*P		**P**	**16 16 56.9**	**+1.2**
	comp=Z,39nm,1.2s							
GYA	**Guiyang**	**92.61**	**299**	P		P	16 17 07.5	+11
GYA				pP		sP	16 17 11.8	+3.1
GYA				PP		**PP**	**16 20 40.0**	**+1.5**
GYA	**Guiyang**	**92.61**	**299**	SKS		**SKSac**	**16 27 24.3**	**-4.0**
GYA	**Guiyang**	**92.61**	**299**	S		**S**	**16 27 54.5**	**-4.9**
GYA	**Guiyang**	**92.61**	**299**	sS		sS	16 28 17.6	+3.2
GYA				pmax		pmax		
	comp=Z,20nm,1.0s							
GYA				pmax		pmax		
	comp=Z,130nm,6.2s							
C09A	**Chrisman Ranch**	**92.77**	**35**	*e*P		**P**	**16 16 56.4**	**0.0**
	comp=Z,8.8nm,0.8s							
RC01	**Rabbit Creek A**	**92.78**	**12**	*e*P		**P**	**16 16 55.8**	**-0.3**
933A	**Laredo**	**92.78**	**60**	P		**P**	**16 16 57.6**	**+0.6**
	baz=238							
LVC	**Limon Verde**	**92.85**	**118**	*e*P		**P**	**16 17 00.5**	**+2.5**
	comp=Z,26nm,1.1s							
034A	**Hebbronville**	**92.94**	**61**	P		**P**	**16 16 59.2**	**+1.5**
	baz=239							
S22A	**4UR Ranch, Cre**	**93.05**	**48**	P		**P**	**16 16 59.2**	**+0.8**
	baz=235							
S22A	**4UR Ranch, Cre**	**93.05**	**48**	*e*P		**P**	**16 16 58.3**	**-0.1**
	comp=Z,5.5nm,0.9s							
934A	**Benavides**	**93.35**	**60**	P		**P**	**16 17 00.6**	**+1.1**
	baz=239							
AHID	**Auburn Hatcher**	**93.41**	**42**	*e*P		**P**	**16 17 00.2**	**+0.5**
	comp=Z,19nm,1.2s							
O20A	**White River Ci**	**93.55**	**45**	P		**P**	**16 17 00.8**	**+0.3**
	baz=234							
MSTX	**Muleshoe**	**93.65**	**53**	P		**P**	**16 17 01.1**	**+0.1**
	baz=237							
MSTX	**Muleshoe**	**93.65**	**53**	*e*P		**P**	**16 17 01.0**	**0.0**
	comp=Z,14nm,0.9s							
MCMT	**McKenzie Canyo**	**93.69**	**40**	*e*P		**P**	**16 17 01.1**	**+0.1**
PB11	**IPOC Station P**	**93.82**	**115**	*e*P		**P**	**16 17 03.7**	**+1.4**
	comp=Z,32nm,0.9s							
JCT	**Junction City**	**93.90**	**57**	P		**P**	**16 17 02.0**	**-0.1**
	baz=238							
SDCO	**Great Sand Dun**	**93.91**	**49**	P		**P**	**16 17 02.5**	**+0.2**
	baz=236							
SDCO	**Great Sand Dun**	**93.91**	**49**	*e*P		**P**	**16 17 02.3**	**0.0**
	comp=Z,4.5nm,1.1s							
REDW	**Red Top Meadow**	**93.92**	**42**	*e*P		**P**	**16 17 02.0**	**-0.1**
	comp=Z,15nm,1.1s							
TPAW	**Teton Pass**	**93.94**	**41**	*e*P		**P**	**16 17 02.4**	**+0.2**
	comp=Z,22nm,1.5s							
IMW	**Indian Meadow**	**94.19**	**41**	*e*P		**P**	**16 17 03.8**	**+0.4**
	comp=Z,9.7nm,1.0s							
LOHW	**Long Hollow**	**94.21**	**41**	*e*P		**P**	**16 17 03.7**	**+0.2**
	comp=Z,24nm,1.6s							
MOOW	**Moose Ponds**	**94.21**	**41**	*e*P		**P**	**16 17 03.6**	**+0.2**
	comp=Z,20nm,1.9s							
T25A	**Trinidad**	**94.29**	**50**	*e*P		**P**	**16 17 03.2**	**-0.7**
	comp=Z,5.7nm,1.0s							
BW06	**Boulder Array**	**94.31**	**43**	P		**P**	**16 17 03.8**	**-0.2**
	baz=234							
BW06	**Boulder Array**	**94.31**	**43**	*e*P		**P**	**16 17 02.7**	**-1.2**
PDAR	**Pinedale Array**	**94.31**	**43**	P		**P**	**16 17 02.9**	**-1.1**
	comp=Z,1.3nm,0.8s,baz=219,slow=3.8,SNR=9.9							
PDAR				LR		LR	16 55 43.2	
	comp=Z,260nm,18.3s,baz=232,slow=33							
QLMT	**Earthquake Lak**	**94.48**	**40**	*e*P		**P**	**16 17 05.5**	**+0.8**
LRM	**Limekiln Ridge**	**94.53**	**39**	*e*P		**P**	**16 17 04.8**	**-0.1**
YHB	**Horse Butte**	**94.57**	**40**	*e*P		**P**	**16 17 05.6**	**+0.5**
	comp=Z,6.9nm,0.8s							
433A	**Art**	**94.57**	**57**	P		**P**	**16 17 05.0**	**-0.1**
	baz=239							
CM01	**Chiang Mai Arr**	**94.71**	**288**	*e*P		**P**	**16 17 06.1**	**+0.1**
CMAR	**Chiang Mai Arr**	**94.74**	**288**	P		**P**	**16 17 06.5**	**+0.3**
	comp=Z,1.1nm,0.9s,baz=132,slow=3.2,SNR=7.2							
CHMT	**Chamberlain Mo**	**94.78**	**38**	*e*P		**P**	**16 17 05.0**	**-1.0**
YHH	**Holmes Hill**	**94.78**	**40**	*e*P		**P**	**16 17 08.3**	**+2.2**
	comp=Z,18nm,1.3s							
TRF	**Thorofare Moun**	**94.87**	**11**	*e*P		**P**	**16 17 04.8**	**-1.1**
	comp=Z,5.4nm,0.9s							
BOZ	**Bozeman (W)**	**94.87**	**39**	P		**P**	**16 17 06.5**	**+0.1**
	baz=232							
BOZ	**Bozeman (W)**	**94.87**	**39**	*e*P		**P**	**16 17 06.4**	**+0.1**
BOZ				pmax		pmax		
	comp=Z,11nm,0.9s							
BOZ	**Bozeman (W)**	**94.87**	**39**	*e*P		**P**	**16 17 06.4**	**+0.1**
	comp=Z,11nm,0.9s							
AMTX	**Amarillo**	**94.91**	**53**	P		**P**	**16 17 06.6**	**-0.1**
	baz=238							
333A	**Richland Sprin**	**94.94**	**57**	P		**P**	**16 17 06.7**	**-0.1**
	baz=239							
KMI	**Kunming**	**94.97**	**296**	P		**P**	**16 17 07.6**	**+0.3**
KMI				pP		sP	16 17 22.0	+2.3
KMI				sP		pP	16 17 28.3	+12
KMI				pmax		pmax		
	comp=Z,8.0nm,1.2s							
KMI				pmax		pmax		
	comp=Z,130nm,5.4s							
RND	**Reindeer**	**95.08**	**12**	*e*P		**P**	**16 17 06.2**	**-0.6**
RND				pmax		pmax		
	comp=Z,11nm,1.1s							
RND	**Reindeer**	**95.08**	**12**	*e*P		**P**	**16 17 06.2**	**-0.6**
	comp=Z,11nm,1.1s							
MCK	**McKinley**	**95.36**	**12**	*e*P		**P**	**16 17 07.3**	**-0.7**
MCK				pmax		pmax		
	comp=Z,10.0nm,1.2s							
MCK	**McKinley**	**95.36**	**12**	*e*P		**P**	**16 17 07.3**	**-0.7**
	comp=Z,9.5nm,1.2s							
SEY	**Seymchan**	**95.51**	**346**	*e*P		**P**	**16 17 04.8**	**-3.8**
RLMT	**Red Lodge**	**95.88**	**41**	P		**P**	**16 17 11.6**	**+0.6**
	baz=234							
234A	**Clairette**	**95.91**	**57**	P		**P**	**16 17 11.2**	**-0.1**
	baz=239							
WRH	**Wood River Hil**	**96.19**	**12**	*e*P		**P**	**16 17 11.0**	**-0.7**
	comp=Z,8.2nm,0.9s							
DOT	**Dot Lake**	**96.23**	**14**	*e*P		**P**	**16 17 11.2**	**-0.7**
	comp=Z,27nm,1.0s							
HDA	**Harding Lake**	**96.34**	**12**	*e*P		**P**	**16 17 11.5**	**-0.9**
	comp=Z,10nm,0.7s							
CCB	**Clear Creek Bu**	**96.41**	**12**	*e*P		**P**	**16 17 11.4**	**-1.2**
	comp=Z,3.9nm,0.9s							
MDM	**Murphy Dome**	**96.62**	**12**	*e*P		**P**	**16 17 12.7**	**-0.9**
	comp=Z,5.8nm,1.0s							
IL1	**Eielson Array**	**96.69**	**12**	*e*P		**P**	**16 17 12.8**	**-1.1**
ILAR	**Eielson Array**	**96.69**	**12**	P		**P**	**16 17 12.6**	**-1.3**
	comp=Z,1.9nm,0.8s,baz=218,slow=5.5,SNR=22							
ILB	**Eielson Array**	**96.69**	**12**	*e*P		**P**	**16 17 12.8**	**-1.1**
HHC	**Hu-ho-hao-te**	**96.86**	**313**	*e*P		**P**	**16 17 18.3**	**+2.8**
HHC				pmax		pmax		
	comp=Z,14nm,1.7s							
HHC				pmax		pmax		
	comp=Z,210nm,4.7s							
HHC				LR		LR		
	comp=Z,240nm,16.2s							
LPAZ	**La Paz**	**96.93**	**113**	P		**P**	**16 17 19.6**	**+2.5**
	comp=Z,4.8nm,0.8s,baz=232,slow=3.2,SNR=21							
LPAZ				LR		LR	16 54 52.9	
	comp=Z,116nm,18.7s,baz=299,slow=32							
LPAZ	**La Paz**	**96.93**	**113**	*e*P		**P**	**16 17 18.2**	**+1.2**
LPAZ				pmax		pmax		
	comp=Z,6.0nm,0.8s							
LPAZ	**La Paz**	**96.93**	**113**	*e*P		**P**	**16 17 18.2**	**+1.2**
	comp=Z,6.0nm,0.8s							
CD2	**Chengdu**	**97.08**	**301**	*e*P		**P**	**16 17 16.4**	**-0.2**
CD2				pP		sP	16 17 30.5	+1.6
CD2				SKS		**SKSac**	**16 27 49.0**	**-3.0**
CD2				S		**S**	**16 28 34.8**	**-3.2**
CD2				SS		**SS**	**16 35 13.0**	**-2.8**
CD2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
CD2				pmax		pmax		
	comp=Z,120nm,5.4s							
RSSD	**Black Hills**	**98.38**	**44**	P		**P**	**16 17 22.3**	**-0.1**
	baz=237							
RSSD	**Black Hills**	**98.38**	**44**	*e*P		**P**	**16 17 21.8**	**-0.6**
RSSD				pmax		pmax		
	comp=Z,9.0nm,0.9s							
RSSD	**Black Hills**	**98.38**	**44**	*e*P		**P**	**16 17 21.8**	**-0.6**
	comp=Z,9.4nm,0.9s							
CPUP	**Villa Florida**	**99.17**	**127**	LR		LR	16 58 03.7	
	comp=Z,148nm,18.2s,baz=262,slow=33							
LZH	**Lanzhou**	**99.58**	**306**	*e*P		**Pdif**	**16 17 28.8**	**+0.9**
LZH				sP		sP	16 17 46.6	+6.4
LZH				pmax		pmax		
	comp=Z,16nm,1.0s							
ACSO	**Alum Creek Sta**	**110.53**	**55**	*e*Pdif		**Pdif**	**16 18 17.2**	**+1.0**
WMQ	**Urumqi**	**114.03**	**308**	*e*PKP		PKPdf	16 22 25.8	+2.5
WMQ				PP		**PP**	**16 23 21.3**	**+3.0**
WMQ				SS		SS	16 39 02.5	-4.4
WMQ				AMB		AMB		
	comp=Z,87nm,5.2s							
WMQ				LR		LR		
	comp=Z,170nm,17.8s							
WMQ				LR		LR		
	comp=Z,170nm,21.2s							
WMQ				LR		LR		
	comp=Z,190nm,18.8s							
MK01	**Makanchi Array**	**118.50**	**310**	*e*PKPdf		**PKPdf**	**16 22 31.2**	**-0.6**
ZALV	**Zalesovo Beam**	**118.51**	**318**	PKP		**PKPdf**	**16 22 31.3**	**-0.2**
	comp=Z,0.4nm,0.3s,baz=101,slow=1.5,SNR=2.9							
MK31	**Makanchi Array**	**118.51**	**310**	*e*PKIKP		**PKPdf**	**16 22 31.6**	**-0.2**
MK31	**Makanchi Array**	**118.51**	**310**	*e*PKPdf		**PKPdf**	**16 22 31.6**	**-0.2**
MKAR	**Makanchi Array**	**118.51**	**310**	PKP		**PKPdf**	**16 22 31.5**	**-0.3**
	comp=Z,0.7nm,0.6s,baz=64,slow=2.8,SNR=9.7							
MKAR				PKKPab		**PKKPab**	**16 32 50.9**	**+1.1**
	comp=Z,1.7nm,0.7s,baz=280,slow=3.5,SNR=14							
MKAR	**Makanchi Array**	**118.51**	**310**	*e*PKIKP		**PKPdf**	**16 22 31.7**	**-0.1**
MAKZ	**Makanchi**	**118.73**	**310**	*e*PKIKP		**PKPdf**	**16 22 31.3**	**-0.9**
MAKZ	**Makanchi**	**118.73**	**310**	*e*PKPdf		**PKPdf**	**16 22 31.3**	**-0.9**
KSH	**Kashi**	**121.26**	**301**	*e*PKP		**PKPdf**	**16 22 40.8**	**+3.3**
KSH				*es*PKP			16 22 55.8	
KSH				PKS		**PKSdf**	**16 26 16.5**	**+2.3**
KSH				SKS		**SKSdf**	**16 29 48.1**	**+0.5**
KSH				AMB		AMB		
	comp=Z,48nm,5.5s							
KSH				LR		LR		
	comp=Z,120nm,5.6s							
KSH				LR		LR		
	comp=Z,170nm,11.5s							
KSH				LR		LR		
	comp=Z,110nm,10.0s							
MATP	**Matopo**	**125.02**	**208**	PKP		**PKPdf**	**16 22 47.0**	**+1.7**
	comp=Z,2.7nm,0.9s,baz=27,slow=5.5,SNR=4.6							
KKAR	**Karatay Array**	**126.01**	**304**	*e*PKIKP		**PKPdf**	**16 22 46.5**	**+0.2**
KKAR	**Karatay Array**	**126.01**	**304**	*e*PKPdf		**PKPdf**	**16 22 46.5**	**+0.2**
VOSK	**Vostochnaya**	**126.59**	**316**	*e*PKIKP		**PKPdf**	**16 22 47.0**	**-0.1**
VOSK	**Vostochnaya**	**126.59**	**316**	*e*PKPdf		**PKPdf**	**16 22 47.0**	**-0.1**
BRVK	**Borovoye**	**127.02**	**316**	*i* PKIKP		**PKPdf**	**16 22 47.2**	**-0.7**
BRVK	**Borovoye**	**127.02**	**316**	*e*PKPdf		**PKPdf**	**16 22 48.0**	**+0.2**
SUMG	**Summit**	**131.38**	**16**	*e*PKIKP		**PKPdf**	**16 22 57.2**	**+1.0**
SUMG	**Summit**	**131.38**	**16**	*e*PKPdf		**PKPdf**	**16 22 57.1**	**+1.0**
ARU	**Arti**	**133.48**	**321**	*i* PKIKP		**PKPdf**	**16 23 01.3**	**+1.3**
ARU							16 25 32.0	
ARCES	**ARCESS Array B**	**138.06**	**349**	PKP		**PKPdf**	**16 23 07.7**	**-0.5**
	comp=Z,4.4nm,0.8s,baz=29,slow=2.1,SNR=7.6							
FIA1	**FINESS Array S**	**144.87**	**342**	*e*PKPdf		**PKPab**	**16 23 19.2**	**-0.5**
FINES	**FINESS Array B**	**144.87**	**342**	PKP		**PKPab**	**16 23 19.6**	**0.0**
	comp=Z,16nm,0.9s,baz=62,slow=4.5,SNR=23							
TBLG	**Delisi**	**145.00**	**302**	P		**PKPdf**	**16 23 23.3**	**+1.8**
TBLG	**Delisi**	**145.00**	**302**	PKIKP		**PKPdf**	**16 23 23.3**	**+1.8**
GNI	**Garni**	**145.16**	**299**	*i* PKIKP		**PKPdf**	**16 23 24.5**	**+2.5**
OBN	**Obninsk**	**145.39**	**327**	*e*PKIKP		**PKPdf**	**16 23 21.0**	**-0.6**
OBN				*e*			16 23 26.3	
OBN				pmax		pmax		
	comp=Z,7.0nm,0.7s							
OBN				MLR		MLR		
	comp=Z,75nm,18.0s							
ZEI	**Tsey**	**145.47**	**304**	*i* PKIKP		**PKPab**	**16 23 23.8**	**+1.0**
NCK	**Nalchik**	**145.56**	**305**	*i* PKP2		**PKPdf**	**16 23 21.0**	**-1.4**
GOF	**Gofitskoye**	**145.63**	**308**	*e*PKIKP		**PKPab**	**16 23 24.8**	**+1.7**
GOF				pmax		pmax		
	comp=Z,27nm,0.8s							
ONI	**Oni**	**145.82**	**303**	P		**PKPab**	**16 23 25.1**	**+1.1**
ONI	**Oni**	**145.82**	**303**	PKIKP		**PKPab**	**16 23 25.0**	**+1.1**
BGD	**Bogdanovka**	**145.91**	**301**	P		**PKPab**	**16 23 27.5**	**+3.0**
AKH	**Akhalkalaki**	**145.97**	**301**	P		**PKPab**	**16 23 26.4**	**+1.7**
AKH	**Akhalkalaki**	**145.97**	**301**	PKIKP		**PKPab**	**16 23 26.4**	**+1.7**
VSR	**Storozhevoye**	**146.00**	**320**	*e*PKIKP		**PKPdf**	**16 23 23.2**	**+0.4**
VSR				pmax		pmax		
	comp=Z,30nm,1.2s							
KBZ	**Khabaz**	**146.02**	**305**	PKPbc		**PKPab**	**16 23 24.8**	**+0.2**
	comp=Z,3.1nm,0.8s,baz=45,slow=1.4,SNR=7.6							
KIV	**Kislovodsk**	**146.12**	**306**	*i* PKIKP		**PKPab**	**16 23 26.5**	**+1.4**
KIV				*e*			16 23 33.4	
KIV				pmax		pmax		
	comp=Z,24nm,1.8s							
NEY	**Neytrino**	**146.24**	**305**	*i* PKP2		**PKPab**	**16 23 26.5**	**+0.8**
VSU	**Vasula**	**147.08**	**338**	*i* PKIKP		**PKPdf**	**16 23 22.3**	**-2.1**
NC303	**NORSAR Array S**	**147.90**	**353**	*e*PKPbc		**PKPbc**	**16 23 28.7**	**0.0**
NC405	**NORSAR Array S**	**147.97**	**353**	*e*PKPbc		**PKPbc**	**16 23 28.8**	**-0.2**
NB201	**NORSAR Array S**	**148.08**	**353**	*e*PKPbc		**PKPbc**	**16 23 29.1**	**-0.1**
NB2	**NORSAR Subarra**	**148.10**	**353**	PKP		**PKPbc**	**16 23 29.0**	**-0.4**
	comp=Z,35nm,1.2s,baz=11,slow=2.9							
NB2	**NORSAR Subarra**	**148.10**	**353**	PKP2		**PKPbc**	**16 23 29.0**	**-0.4**
NOA	**NORSAR Array B**	**148.10**	**353**	PKPbc		**PKPbc**	**16 23 28.4**	**-1.0**
	comp=Z,13nm,0.9s,baz=13,slow=4.4,SNR=26							
NBO02	**NORSAR Array S**	**148.12**	**354**	*e*PKPbc		**PKPbc**	**16 23 29.3**	**-0.1**
NBO00	**NORSAR Array S**	**148.15**	**354**	*e*PKPbc		**PKPbc**	**16 23 29.4**	**-0.1**

MMRI	**Maumere**	**20.09**	**101**	*eP*	**P**	**16 11 56.6**	**-1.4**	
	58nm,1.3s							
CM01	**Chiang Mai Arr**	**23.69**	**352**	*eP*	**P**	**16 12 35.3**	**-0.6**	
CMAR	**Chiang Mai Arr**	**23.73**	**352**	P	**P**	**16 12 35.6**	**-0.7**	
	2.1nm,0.5s,baz=183,slow=9.6,SNR=13							
CMAR				pP	**sP**	**16 12 48.0**	**-0.7**	
	2.4nm,0.6s,baz=186,slow=8.1,SNR=4.3							
CMAR				LR	LR	16 21 29.7		
	comp=Z,39nm,20.0s,baz=170,slow=36							
FITZ	**Fitzroy Crossi**	**26.18**	**121**	P	**P**	**16 12 59.0**	**+0.3**	
	1.1nm,0.7s,baz=352,slow=8.8,SNR=3.7							
FITZ	**Fitzroy Crossi**	**26.18**	**121**	*eP*	**P**	**16 12 57.2**	**-1.5**	
	13nm,1.0s							
H08S2	**Diego Garcia H**	**29.70**	**264**	T	T	16 44 28.7		
	baz=87,slow=75,SNR=118							
H08S3	**Diego Garcia H**	**29.71**	**264**	T	T	16 44 21.3		
	baz=87,slow=75,SNR=83							
H08S1	**Diego Garcia H**	**29.72**	**264**	T	T	16 44 22.1		
	baz=87,slow=75,SNR=104							
KMI	**Kunming**	**30.14**	**1**	P	**P**	**16 13 30.8**	**-3.4**	
KMI				pmax	pmax			
	comp=Z,5.0nm,0.9s							
H01W3	**Cape Leeuwin H**	**31.51**	**161**	T	T	16 46 38.1		
	baz=339,slow=76,SNR=40							
H01W2	**Cape Leeuwin H**	**31.53**	**161**	T	T	16 46 41.1		
	baz=339,slow=76,SNR=56							
H01W1	**Cape Leeuwin H**	**31.53**	**161**	T	T	16 46 37.4		
	baz=339,slow=76,SNR=45							
WRA	**Warramunga Arr**	**34.45**	**118**	P	**P**	**16 14 11.9**	**0.0**	
	0.8nm,0.5s,baz=304,slow=10.0,SNR=5.2							
WRA				PcP	**PcP**	**16 16 48.0**	**+1.0**	
	0.3nm,0.5s,baz=273,slow=1.6,SNR=2.9							
ASAR	**Alice Springs**	**35.56**	**124**	P	**P**	**16 14 22.3**	**+0.8**	
	0.5nm,0.6s,baz=300,slow=8.2,SNR=4.1							
ASAR				PcP	**PcP**	**16 16 51.1**	**+0.8**	
	0.4nm,0.9s,baz=316,slow=2.6,SNR=2.8							
CTA	**Charters Tower**	**45.22**	**113**	P	**P**	**16 15 41.2**	**-0.2**	
	2.5nm,0.6s,baz=297,slow=14,SNR=3.8							
STKA	**Stephens Creek**	**45.34**	**131**	P	**P**	**16 15 43.1**	**+0.9**	
	2.9nm,0.6s,baz=304,slow=8.4,SNR=11							
HHC	**Hu-ho-hao-te**	**46.60**	**10**	*eP*	**P**	**16 15 54.0**	**+1.9**	
HHC				pmax	pmax			
	comp=Z,16nm,1.6s							
WMQ	**Urumqi**	**50.53**	**346**	*eP*	**P**	**16 16 23.8**	**+1.5**	
WMQ				pP	sP	16 16 36.0	+0.9	
WMQ				pmax	pmax			
	comp=Z,8.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,67nm,3.9s							
SONM	**Songino Array**	**52.92**	**3**	P	**P**	**16 16 40.2**	**+0.1**	
	3.9nm,0.7s,baz=184,slow=9.3,SNR=26							
SONM				pP	**sP**	**16 16 52.8**	**-0.1**	
	1.3nm,0.6s,baz=187,slow=9.9,SNR=4.1							
SONM				PcP	**PcP**	**16 17 49.1**	**+0.3**	
	0.3nm,0.3s,baz=183,slow=4.4,SNR=2.7							
SONA1	**Songino Array**	**52.94**	**3**	*eP*	**P**	**16 16 40.0**	**-0.2**	
MK01	**Makanchi Array**	**54.69**	**343**	*eP*	**P**	**16 16 52.7**	**-0.2**	
MK31	**Makanchi Array**	**54.71**	**343**	*eP*	**P**	**16 16 53.2**	**+0.1**	
MKAR	**Makanchi Array**	**54.71**	**343**	P	**P**	**16 16 53.1**	**0.0**	
	3.2nm,0.7s,baz=143,slow=8.1,SNR=38							
MKAR				LR	LR	16 44 32.7		
	comp=Z,26nm,21.3s,baz=60,slow=41							
MKAR	**Makanchi Array**	**54.71**	**343**	*eP*	**P**	**16 16 53.2**	**+0.1**	
USRK	**Ussuriysk Ar.**	**55.96**	**25**	P	**P**	**16 17 00.8**	**-1.3**	
	2.7nm,0.7s,baz=227,slow=5.1,SNR=4.6							
TLY	**Talaya**	**56.66**	**1**	P	**P**	**16 17 07.3**	**+0.3**	
	1.4nm,0.4s,baz=212,slow=9.5,SNR=2.8							
GEYT	**Ailbeck**	**59.34**	**320**	P	**P**	**16 17 27.0**	**+0.9**	
	2.3nm,0.7s,baz=165,slow=6.2,SNR=4.1							
KLR	**Kul'dur**	**59.96**	**22**	P	**P**	**16 17 28.5**	**-1.6**	
	0.9nm,0.5s,baz=207,slow=9.0,SNR=4.1							
ZAA0	**Zalesovo Array**	**60.72**	**348**	*eP*	**P**	**16 17 34.8**	**-0.4**	
ZALV	**Zalesovo Beam**	**60.72**	**348**	P	**P**	**16 17 34.7**	**-0.5**	
	1.7nm,0.4s,baz=177,slow=4.3,SNR=13							
ZALV				pP	**sP**	**16 17 47.3**	**-0.7**	
	3.1nm,0.5s,baz=166,slow=4.3,SNR=7.3							
VOSK	**Vostochnaya**	**63.50**	**339**	*eP*	**P**	**16 17 53.2**	**-0.6**	
	1.8nm,0.8s							
ABKAR	**Akbulak array**	**65.52**	**331**	*eP*	**P**	**16 18 06.5**	**-0.6**	
MAW	**Mawson**	**67.80**	**195**	P	**P**	**16 18 22.9**	**+1.6**	
	1.4nm,0.7s,baz=54,slow=8.7,SNR=4.4							
YAK	**Yakutsk**	**70.27**	**13**	P	**P**	**16 18 35.1**	**-1.6**	
	6.1nm,0.6s,baz=46,slow=3.0,SNR=7.8							
YAK	**Yakutsk**	**70.27**	**13**	*eP*	**P**	**16 18 33.8**	**-2.9**	
	10nm,0.8s							
KBZ	**Khabaz**	**72.20**	**319**	P	**P**	**16 18 50.9**	**+2.2**	
	0.8nm,0.5s,baz=114,slow=10,SNR=3.5							
PETK	**Petropavlovsk-**	**74.39**	**31**	P	**P**	**16 19 00.3**	**-1.2**	
	1.6nm,0.8s,baz=219,slow=8.5,SNR=2.8							
SEY	**Seymchan**	**77.74**	**21**	P	**P**	**16 19 19.9**	**-0.5**	
	1.9nm,0.7s,baz=214,slow=6.7,SNR=5.1							
FINES	**FINESS Array B**	**87.98**	**332**	P	**P**	**16 20 14.4**	**+1.0**	
	1.4nm,0.8s,baz=101,slow=3.0,SNR=5.5							
WMOK	**Wichita Mounta**	**144.72**	**31**	*e*PKPdf	**PKPab**	**16 26 58.5**	**-1.3**	
TXAR	**Lajitas Array**	**145.66**	**43**	PKPbc	**PKPab**	**16 27 03.5**	**-0.1**	
	3.4nm,0.7s,baz=288,slow=1.1,SNR=38							
TXAR				pPKPbc	pPKPbc	16 27 16.4	+3.1	
	2.5nm,0.7s,baz=283,slow=1.2,SNR=12							
JCT	**Junction City**	**147.36**	**37**	*e*PKPbc	**PKPbc**	**16 27 08.0**	**-0.1**	

*CSEM **18** 16:28:04.0±0.2,34°.43N×25°.45E,h5km,ML3.2,Error ellipse: s-maj=6.0km s-min=3.0km az=36.0*
*THE **18** 16:28:05.9,34°.55N×25°.46E,h0km±1km,ML3.3/8,Error ellipse: s-maj=2.6km s-min=0.9km az=166.0*
*ATH **18** 16:28:06.4,34°.58N×25°.45E,h25km±1km,ML3.2/15,Error ellipse: s-maj=2.6km s-min=1.1km az=353.0*
*GII **18** 16:28:11.3±0.1,34°.31N×25°.91E,h32km,MD3.3/1*
*IDC **18** 16:28:14.8±7.7,34°.90N×25°.29E,h105km±79km,mb3.3/5, mb1 3.4/7,mb1mx3.2/45,mbtmp3.6/7,ML3.6/2,Error ellipse: s-maj=54.1km s-min=20.7km az=138.0*

ISC 18 16:28:04.8±1.2,34°.63N±0°.05×25°.60E±0°.03,h16km±8km, n76,σ1s62/109,mb3.4/5,Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAST	**Lasithi**	**0.54**	**349**	P	**Pn**	**16 28 18.0**	**+0.2**
LAST				S	**Sn**	**16 28 27.4**	**+0.9**
LAST	**Lasithi**	**0.54**	**349**	P	**Pn**	**16 28 18.0**	**+0.2**
LAST				S	**Sn**	**16 28 27.4**	**+0.9**
LAST	**Lasithi**	**0.54**	**349**	P	**Pn**	**16 28 17.4**	**-0.4**
NPS	**Neapolis**	**0.63**	**1**	P	**Pn**	**16 28 19.9**	**+0.9**
NPS				S	**Sn**	**16 28 31.8**	**+3.1**
NPS	**Neapolis**	**0.63**	**1**	P	**Pn**	**16 28 19.9**	**+0.9**
NPS				S	**Sn**	**16 28 29.3**	**+0.6**
NPS	**Neapolis**	**0.63**	**1**	P	**Pn**	**16 28 19.6**	**+0.6**
NPS				S	**Sn**	**16 28 29.3**	**+0.6**
NPS				AML	AML	16 28 34.3	
	comp=E,3384μm,0.5s						
NPS				AML	AML	16 28 36.9	
	comp=N,3476μm,0.7s						
ZKR	**Zakros**	**0.70**	**46**	P	**Pn**	**16 28 22.1**	**+2.2**
ZKR				S	**Sn**	**16 28 35.4**	**+5.0**
ZKR	**Zakros**	**0.70**	**46**	P	**Pn**	**16 28 21.3**	**+1.4**
ZKR				S	**Sn**	**16 28 33.9**	**+3.5**
ZKR	**Zakros**	**0.70**	**46**	P	**Pn**	**16 28 21.3**	**+1.4**
ZKR				S	**Sn**	**16 28 33.9**	**+3.5**
ZKR				AML	AML	16 28 39.9	
	comp=N,5484μm,0.4s						
ZKR				AML	AML	16 28 41.0	
	comp=E,5181μm,0.4s						
SIVA	**Sivas**	**0.76**	**301**	P	**Pb**	**16 28 20.1**	**+0.6**
SIVA				S	**Sb**	**16 28 29.9**	**+0.3**
SIVA	**Sivas**	**0.76**	**301**	P	**Pb**	**16 28 20.1**	**+0.6**
SIVA				S	**Sb**	**16 28 29.9**	**+0.3**
SIVA	**Sivas**	**0.76**	**301**	P	**Pn**	**16 28 20.9**	**+0.2**
SIVA				S	**Sg**	**16 28 28.8**	**-0.8**
SIVA				AML	AML	16 28 33.9	
	comp=E,8634μm,0.7s						
SIVA				AML	AML	16 28 44.5	
	comp=N,8739μm,0.6s						
IACM	**Heraklion**	**0.80**	**327**	P	**Pn**	**16 28 21.7**	**+0.4**
IACM				S	**Sn**	**16 28 34.9**	**+2.0**
IACM	**Heraklion**	**0.80**	**327**	P	**Pn**	**16 28 21.7**	**+0.4**
IACM				S	**Sn**	**16 28 33.5**	**+0.6**
IACM	**Heraklion**	**0.80**	**327**	P	**Pn**	**16 28 23.5**	**+2.1**
IACM				S	**Sn**	**16 28 33.5**	**+0.6**
IACM				AML	AML	16 28 42.7	
	comp=N,26422μm,0.6s						
IACM				AML	AML	16 28 49.1	
	comp=E,17654μm,0.7s						
TMBK	**Timbaki Herakl**	**0.82**	**303**	P	**Pn**	**16 28 21.8**	**+0.3**
TMBK				S	**Sn**	**16 28 33.6**	**+0.3**
TMBK	**Timbaki Herakl**	**0.82**	**303**	P	**Pn**	**16 28 21.8**	**+0.3**
TMBK				S	**Sn**	**16 28 33.6**	**+0.3**
IDI	**Anoyia**	**0.88**	**318**	P	**Pn**	**16 28 22.6**	**+0.1**
IDI				S	**Sn**	**16 28 34.6**	**-0.3**
IDI	**Anoyia**	**0.88**	**318**	P	**Pn**	**16 28 22.6**	**+0.1**
IDI				S	**Sn**	**16 28 35.3**	**+0.4**
IDI	**Anoyia**	**0.88**	**318**	P	**Pn**	**16 28 22.2**	**-0.2**
IDI				S	**Sn**	**16 28 35.3**	**+0.4**
IDI				AML	AML	16 28 37.7	
	comp=E,2158μm,1.0s						
IDI				AML	AML	16 28 39.0	
	comp=N,1556μm,0.6s						
GVD	**Gavdhos**	**1.27**	**280**	P	**Pb**	**16 28 28.3**	**+0.1**
GVD				S	**Sg**	**16 28 45.2**	**-0.5**
GVD	**Gavdhos**	**1.27**	**280**	P	**Pb**	**16 28 28.3**	**+0.1**
GVD				S	**Sg**	**16 28 45.2**	**-0.5**
GVD				AML	AML	16 28 55.3	
	comp=E,2474μm,0.8s						
GVD				AML	AML	16 28 57.0	
	comp=N,1381μm,0.4s						
VAM	**Vamos**	**1.39**	**304**	P	**Pg**	**16 28 30.7**	**-0.8**
VAM				S	**Sg**	**16 28 49.6**	**0.0**
VAM	**Vamos**	**1.39**	**304**	P	**Pb**	**16 28 30.4**	**+0.1**
VAM				S	**Sg**	**16 28 48.8**	**-0.8**
IMMV	**Iera Moni Meta**	**1.57**	**302**	P	**Pb**	**16 28 33.2**	**-0.1**
IMMV				S	**Sg**	**16 28 54.2**	**-1.1**
IMMV	**Iera Moni Meta**	**1.57**	**302**	P	**Pb**	**16 28 32.8**	**-0.5**
IMMV				S	**Sg**	**16 28 54.2**	**-1.1**
IMMV	**Iera Moni Meta**	**1.57**	**302**	P	**Pb**	**16 28 32.9**	**-0.5**
IMMV				S	**Sb**	**16 28 53.3**	**+0.4**
IMMV				AML	AML	16 29 05.2	
	comp=E,1560μm,0.9s						
IMMV				AML	AML	16 29 10.8	
	comp=N,1263μm,0.8s						
KARP	**Karpathos**	**1.57**	**54**	P	**Pg**	**16 28 37.8**	**+2.8**
KARP				AML	AML	16 29 08.9	
	comp=E,1225μm,0.9s						
KARP				AML	AML	16 29 18.3	
	comp=N,1272μm,0.6s						
SAP1	**Santorini-Akro**	**1.73**	**354**	P	**Pg**	**16 28 38.1**	**+0.1**
SAP1	**Santorini-Akro**	**1.73**	**354**	P	**Pg**	**16 28 38.1**	**+0.1**
SAP1				AML	AML	16 29 13.9	
	comp=N,2653μm,0.5s						
SAP1				AML	AML	16 29 14.1	
	comp=E,3222μm,0.7s						
SANT	**Santorini**	**1.74**	**356**	P	**Pg**	**16 28 38.7**	**+0.5**
SANT	**Santorini**	**1.74**	**356**	P	**Pg**	**16 28 38.7**	**+0.5**
SANT				AML	AML	16 29 10.5	
	comp=E,1084μm,0.7s						
SANT				AML	AML	16 29 13.2	
	comp=N,534μm,0.6s						
SAP3	**Santorini-Thir**	**1.81**	**353**	P	**Pg**	**16 28 38.0**	**-1.6**
SAP3	**Santorini-Thir**	**1.81**	**353**	P	**Pg**	**16 28 38.0**	**-1.6**
CMBO	**Columbo, Santo**	**1.84**	**355**	P	**Pg**	**16 28 39.8**	**-0.3**
CMBO	**Columbo, Santo**	**1.84**	**355**	P	**Pg**	**16 28 39.8**	**-0.3**
CMBO				AML	AML	16 29 15.5	
	comp=E,1274μm,0.6s						
CMBO				AML	AML	16 29 28.2	
	comp=N,1078μm,0.8s						
ANKY	**Antikythira Is**	**2.25**	**304**	P	**Pb**	**16 28 45.3**	**+0.3**
MHLO	**Agia Marina, M**	**2.27**	**335**	P	**Pb**	**16 28 43.4**	**-2.0**
MHLO	**Agia Marina, M**	**2.27**	**335**	P	**Pb**	**16 28 43.4**	**-2.0**
MHLO				AML	AML	16 29 24.2	
	comp=E,1333μm,1.0s						
MHLO				AML	AML	16 29 33.3	
	comp=N,1402μm,0.5s						
APE	**Apeiranthos**	**2.43**	**359**	P	**Pb**	**16 28 46.2**	**-1.9**
APE	**Apeiranthos**	**2.43**	**359**	P	**Pb**	**16 28 46.2**	**-1.9**
APE				AML	AML	16 29 36.9	
	comp=N,177μm,0.6s						
APE				AML	AML	16 29 44.1	
	comp=E,210μm,1.3s						
ARG	**Arkhangelos**	**2.60**	**52**	P	**Pb**	**16 28 51.5**	**+0.6**
ARG				S	**Sg**	**16 29 25.4**	**-2.8**
KYTH	**Kithira**	**2.65**	**309**	P	**Pn**	**16 28 49.0**	**+2.2**
KYTH	**Kithira**	**2.65**	**309**	P	**Pn**	**16 28 49.0**	**+2.2**
VLI	**Veliai**	**3.01**	**315**	P	**Pn**	**16 28 52.3**	**+0.6**
VLI	**Veliai**	**3.01**	**315**	P	**Pn**	**16 28 52.3**	**+0.6**
VLI				AML	AML	16 29 31.6	
	comp=N,116μm,1.3s						
VLI				AML	AML	16 29 47.6	
	comp=E,202μm,0.9s						
SMG	**Samos**	**3.23**	**18**	P	**Pb**	**16 29 00.4**	**-1.2**
SMG	**Samos**	**3.23**	**18**	P	**Pb**	**16 29 00.4**	**-1.2**
KLV	**Kalavryta, Ach**	**4.40**	**322**	P	Pn	16 29 15.8	+4.9
KLV				AML	AML	16 30 25.2	
	comp=N,60μm,1.5s						
KLV				AML	AML	16 30 35.5	
	comp=E,46μm,1.0s						
CSS	**Mathiatis**	**6.37**	**85**	Pn	**Pn**	**16 29 39.1**	**+1.2**
CSS	**Mathiatis**	**6.37**	**85**	Pn	**Pn**	**16 29 39.1**	**+1.2**
SLTI	**Sal'it**	**8.24**	**104**	Pn	**Pn**	**16 30 04.5**	**+0.9**
SLTI				Sn	**Sn**	**16 31 33.3**	**-3.0**
SLTI	**Sal'it**	**8.24**	**104**	Pn	**Pn**	**16 30 04.5**	**+0.9**
KZIT	**Kziot**	**8.28**	**114**	Sn	**Sn**	**16 31 33.2**	**-4.2**
AMAZ	**Amatzia**	**8.40**	**109**	Pn	**Pn**	**16 30 06.4**	**+0.5**
AMAZ	**Amatzia**	**8.40**	**109**	Pn	**Pn**	**16 30 06.4**	**+0.5**
HMDT	**Nahal Hemdat**	**8.62**	**103**	Pn	**Pn**	**16 30 10.4**	**+1.5**
HMDT				Sn	**Sn**	**16 31 43.4**	**-2.4**
HMDT	**Nahal Hemdat**	**8.62**	**103**	Pn	**Pn**	**16 30 10.4**	**+1.5**
YTIR	**Yattir**	**8.63**	**110**	Sn	**Sn**	**16 31 43.5**	**-2.5**
DSI	**Dead Sea**	**8.75**	**108**	Pn	**Pn**	**16 30 11.1**	**+0.5**
DSI				Sn	**Sn**	**16 31 45.5**	**-3.4**
DSI	**Dead Sea**	**8.75**	**108**	Pn	**Pn**	**16 30 11.1**	**+0.5**
PRNI	**Paran**	**9.01**	**116**	Pn	**Pn**	**16 30 14.4**	**+0.2**
PRNI				Sn	**Sn**	**16 31 51.6**	**-3.8**
PRNI	**Paran**	**9.01**	**116**	Pn	**Pn**	**16 30 14.4**	**+0.2**
HRFI	**Mount Harif**	**9.20**	**117**	Pn	**Pn**	**16 30 17.7**	**+0.9**
HRFI				Sn	**Sn**	**16 31 55.9**	**-4.1**
HRFI	**Mount Harif**	**9.20**	**117**	Pn	**Pn**	**16 30 17.7**	**+0.9**
MBRI	**Mt Berech**	**9.24**	**119**	Pn	**Pn**	**16 30 18.1**	**+0.7**
MBRI				Sn	**Sn**	**16 31 57.2**	**-4.0**
MBRI	**Mt Berech**	**9.24**	**119**	Pn	**Pn**	**16 30 18.1**	**+0.7**
EIL	**Elat**	**9.34**	**119**	Pn	**Pn**	**16 30 18.8**	**+0.1**
EIL				Sn	**Sn**	**16 31 59.7**	**-3.7**
EIL	**Elat**	**9.34**	**119**	Pn	**Pn**	**16 30 18.8**	**+0.1**
KBZ	**Khabaz**	**16.17**	**51**	P	**P**	**16 31 56.7**	**+2.4**
	comp=E,0.1nm,0.3s,baz=227,slow=8.3,SNR=6.9						
AKASG	**Malin Array Be**	**16.27**	**8**	P	**Pn**	**16 31 53.7**	**+1.2**
	comp=E,0.6nm,0.3s,baz=201,slow=11,SNR=3.3						
FINES	**FINESS Array B**	**26.83**	**1**	P	**P**	**16 33 42.8**	**-1.2**
	comp=E,2.7nm,0.9s,baz=179,slow=13,SNR=2.6						
TORD	**Torodi Ar. Bea**	**30.44**	**231**	P	**P**	**16 34 17.2**	**+0.6**
	comp=E,0.2nm,0.4s,baz=130,slow=38,SNR=3.7						
KURBB	**Kurchatov Arra**	**41.17**	**51**	P	**P**	**16 35 48.8**	**+0.6**
	comp=E,0.2nm,0.4s,baz=272,slow=8.8,SNR=4.1						
MKAR	**Makanchi Array**	**43.76**	**56**	P	**P**	**16 36 10.3**	**+0.9**
	comp=E,0.3nm,0.6s,baz=282,slow=6.1,SNR=4.3						
ZALV	**Zalesovo Beam**	**45.11**	**46**	P	**P**	**16 36 19.8**	**-0.2**
	comp=E,0.4nm,0.3s,baz=260,slow=7.4,SNR=2.9						

*IDC **18** 16:31:04.0±1.6,35°.67N×140°.83E,h0km,mb3.5/4, mb1 3.6/6,mb1mx3.4/41,mbtmp3.5/6,ML3.3/2,Error ellipse: s-maj=49.4km s-min=21.6km az=68.0*
*ISCJB **18** 16:31:08.7±0.7,35°.72N±0°.05×140°.87E±0°.09,h57km±5km, mb3.5/4,Error ellipse: s-maj=13.0km s-min=7.7km az=165.1*
*JMA **18** 16:31:10.5±0.1,35°.72N×140°.68E,h45km±1km,M3.0*
JMA Felt I J1.

ISC 18 16:31:10.2±1.0,35°.72N±0°.05×140°.78E±0°.08,h48km±8km, n22,σ1s03/19,mb3.6/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.07**	**103**	P	**Pn**	**16 31 17.9**	**+0.2**
CHOJ				S	**Sn**	**16 31 23.5**	**+0.4**
JCN	**Nagara**	**0.56**	**238**	P	**Pn**	**16 31 22.1**	**0.0**
JYT	**Yasato**	**0.70**	**317**	P	**Pn**	**16 31 23.3**	**-0.6**
JYT				*e*S	**Sn**	**16 31 32.5**	**-1.2**
BSO4	**Boso 4**	**0.81**	**207**	P	**Pn**	**16 31 25.3**	**0.0**
JHO	**Hitachi**	**0.91**	**349**	P	**Pn**	**16 31 26.9**	**+0.2**
BSO3	**Boso 3**	**0.94**	**194**	P	**Pn**	**16 31 27.3**	**+0.4**
JAG	**Ashikaga**	**1.29**	**304**	P	**Pn**	**16 31 31.0**	**-0.8**
JOD2	**Odawara 2**	**1.45**	**252**	P	**Pn**	**16 31 33.4**	**-0.7**
MJAR	**Matsushiro Arr**	**2.24**	**292**	Pn	**Pn**	**16 31 44.6**	**-0.2**
	6.6nm,0.3s,baz=97,slow=14,SNR=48						
MAT	**Matsushiro**	**2.24**	**292**	P	**Pn**	**16 31 45.9**	**+1.0**
MAT				*e*S	**Sn**	**16 32 13.8**	**+2.5**
JHJ	**Hachijo jima 2**	**2.72**	**198**	Sn	**Sn**	**16 32 21.3**	**-1.8**
	34nm,0.3s,baz=115,slow=21,SNR=2.7						
ASAJ	**Asahikawa**	**8.50**	**9**	Pn	**Pn**	**16 33 09.6**	**-1.1**
	0.4nm,0.3s,baz=214,slow=15,SNR=9.1						
H11N2	**WAKE ISLAND Hy**	**27.95**	**118**	T	T	17 06 05.1	
	baz=310,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy**	**27.96**	**118**	T	T	17 06 01.7	
	baz=310,slow=75,SNR=10						
H11N3	**WAKE ISLAND Hy**	**27.97**	**118**	T	T	17 06 17.6	
	baz=310,slow=75,SNR=8.3						
H11S1	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	17 06 57.1	
	baz=312,slow=75,SNR=15						
H11S3	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	17 06 49.4	
	baz=312,slow=75,SNR=14						
H11S2	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	17 06 51.0	
	baz=312,slow=75,SNR=14						
MKAR	**Makanchi Array**	**44.40**	**303**	P	**P**	**16 39 16.0**	**+0.1**
	0.3nm,0.4s,baz=92,slow=8.1,SNR=4.0						
KURBB	**Kurchatov Arra**	**46.42**	**309**	P	**P**	**16 39 31.9**	**+0.1**
	0.4nm,0.3s,baz=82,slow=7.6,SNR=9.3						
WRA	**Warramunga Arr**	**55.69**	**187**	P	**P**	**16 40 41.3**	**-0.4**
	0.3nm,0.4s,baz=2.1,slow=7.7,SNR=8.9						
ASAR	**Alice Springs**	**59.42**	**187**	P	**P**	**16 41 08.7**	**+0.8**
	0.2nm,0.6s,baz=21,slow=11,SNR=7.5						

*IDC **18** 16:39:02.8±4.6,10°.12N×86°.12W,h0km,mb3.9/4, mb1 4.2/5,mb1mx3.8/32,mbtmp3.9/5,ML3.8/1,MS3.6/6, Ms1 3.6/6,ms1mx3.2/31,Error ellipse: s-maj=105.1km s-min=69.6km az=27.0*
*ISCJB **18** 16:39:07.7±0.9,10°.31N±0°.08×86°.31W±0°.07,h33km, mb4.0/8,MS3.6/4,Error ellipse: s-maj=13.9km s-min=6.3km az=43.1*
*CASC **18** 16:39:08.0±1.5,10°.40N×86°.20W,h15km±13km,MD4.5, ML3.6,mb4.3(NEIC)*
*NEIC **18** 16:39:10.0±1.8,10°.38N×86°.23W,h35km,mb4.3/4,Error ellipse: s-maj=35.4km s-min=30.6km az=52.0*

ISC 18 16:39:09.7±0.9,10°.39N±0°.09×86°.2W±0°.1,h33km,n26, σ0s95/22,mb4.1/8,MS3.5/4,Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCR	**Jicaral**	**1.20**	**117**	*eP*	**Pn**	**16 39 29.6**	**-0.7**
JCR				*e*S	**Sn**	**16 39 44.7**	**-0.8**
CONN	**Concepcion**	**1.29**	**26**	*eP*	**Pn**	**16 39 30.8**	**-0.6**
MASN	**Masaya**	**1.58**	**2**	*eP*	**Pn**	**16 39 34.7**	**-0.8**
TISN	**Laguna Tiscapa**	**1.74**	**358**	*eP*	**Pn**	**16 39 37.3**	**-0.3**
MGAN	**Managua**	**1.74**	**359**	*eP*	**Pn**	**16 39 37.2**	**-0.4**
XAVN	**Gruta Xavier**	**1.75**	**356**	*eP*	**Pn**	**16 39 37.5**	**-0.2**
ACON	**Acoyapa**	**1.86**	**33**	*eP*	**Pn**	**16 39 38.7**	**-0.6**
MOMN	**Momotombo**	**2.03**	**351**	*eP*	**Pn**	**16 39 41.0**	**-0.6**
CNGN	**Cerro Negro**	**2.15**	**347**	*eP*	**Pn**	**16 39 42.9**	**-0.3**
CNGN				*e*S	**Sn**	**16 40 10.0**	**+1.2**
CNGN				AML	AML	16 40 21.5	
	comp=N,595nm,0.4s						
URSC	**Urasca**	**2.45**	**103**	*eP*	**Pn**	**16 39 48.7**	**+1.1**
CMIG	**Matias Romero**	**10.74**	**309**	Pn	**Pn**	**16 41 41.1**	**-0.1**
	comp=N,0.7nm,0.3s,baz=129,slow=10.0,SNR=6.7						
ROSC	**El Rosal**	**13.01**	**114**	LR	LR	16 46 34.5	
	comp=N,138nm,19.6s,baz=268,slow=35						
SDV	**Santo Domingo**	**15.43**	**94**	LR	LR	16 50 55.5	
	comp=N,156nm,18.4s,baz=118,slow=46						
LRAL	**Lakeview Retre**	**22.55**	**358**	*eP*	**P**	**16 44 07.1**	**+0.2**
	comp=N,11nm,1.1s						
TXAR	**Lajitas Array**	**24.93**	**322**	P	**P**	**16 44 31.2**	**+1.2**
	comp=N,2.4nm,0.5s,baz=141,slow=9.3,SNR=24						
MIAR	**Mount Ida**	**24.97**	**345**	*eP*	**P**	**16 44 28.9**	**-1.3**
	comp=N,11nm,0.9s						
TKL	**Tuckaleechee C**	**25.25**	**5**	LR	LR	16 55 04.5	
	comp=N,96nm,19.1s,baz=216,slow=38						
WMOK	**Wichita Mounta**	**26.82**	**337**	*eP*	**P**	**16 44 48.6**	**+1.6**
	comp=N,12nm,1.1s						
PTGA	**Pitinga**	**28.35**	**111**	LR	LR	16 57 15.1	
	comp=N,92nm,21.0s,baz=206,slow=39						
PDAR	**Pinedale Array**	**38.15**	**332**	P	**P**	**16 46 25.7**	**-0.5**
	comp=N,0.5nm,0.6s,baz=126,slow=10,SNR=5.8						
REDW	**Red Top Meadow

BGT				*e*Sg	**Sg**	16 45 42.8	-0.4	
BGT				*e*		16 45 47.0		
BGT				max				
	comp=E,16nm,0.3s							
BGT				Smax				
	comp=E,75nm,0.5s							
LSTR	**Listvyanka**	**2.47**	**247**	*e*Pn	**Pn**	16 45 18.9	+1.0	
LSTR				*e*Pg	**Pb**	16 45 22.4	+0.7	
LSTR				*e*Sg	**Sb**	16 45 53.7	+1.2	
LSTR				Pmax				
	comp=E,7.0nm,0.5s							
LSTR				Smax				
	comp=E,40nm,0.4s							
YLYR	**Ulyunkhan**	**2.54**	**37**	*i*Pn	**Pn**	16 45 19.4	+0.5	
YLYR				*e*Pg	**Pb**	16 45 23.7	+0.7	
YLYR				*e*PgPg	**PbPb**	16 45 27.0	+0.9	
YLYR				*e*Sn	**Sn**	16 45 46.5	-3.9	
YLYR				*e*Sg	**Sb**	16 45 57.0	+2.3	
YLYR				max				
	comp=E,12nm,0.3s							
YLYR				Smax				
	comp=E,49nm,0.2s							
IRK	**Irkutsk**	**2.66**	**258**	*e*	**Sb**	16 45 57.4	-0.7	
IRK				*e*Sg	**Sg**	16 46 00.1	-2.0	
IRK				Smax				
	comp=E,338nm,0.4s							
IRK	**Irkutsk**	**2.66**	**258**	*e*PN	**Pb**	16 45 23.6	-1.4	
IRK				*e*		16 45 58.6		
IRK				pmax	pmax			
	comp=Z,58nm,0.1s							
IRK				smax	smax			
	comp=E,333nm,0.4s							
IVK	**Ivanovka**	**2.73**	**248**	*e*Pn	**Pn**	16 45 20.2	-1.3	
IVK				*e*		16 45 48.2		
IVK				*e*Sg	**Sb**	16 46 01.8	+1.7	
IVK				Pmax				
	comp=E,7.0nm,0.3s							
IVK				Smax				
	comp=E,66nm,0.5s							
NIZ	**Nizh Angarsk**	**2.96**	**11**	*e*Pg	**Pb**	16 45 30.3	+0.2	
NIZ				*e*		16 46 00.7		
NIZ				*e*Sg	**Sb**	16 46 09.3	+2.5	
NIZ				Pmax				
	comp=E,11nm,0.5s							
NIZ				Smax				
	comp=E,55nm,0.4s							
CIT	**Chita**	**3.21**	**104**	*e*Pg	**Pb**	16 45 35.6	+1.3	
CIT				*e*Sg	**Sg**	16 46 18.9	-0.7	
CIT				Smax				
	comp=E,223nm,0.2s							
CIT	**Chita**	**3.21**	**104**	*e*PN	**Pb**	16 45 35.5	+1.3	
CIT				*e*S	**Sn**	16 46 06.0	-0.7	
CIT				*e*		16 46 15.8		
CIT				pmax	pmax			
	comp=Z,39nm,0.2s							
CIT				smax	smax			
	comp=E,216nm,0.2s							
TLY	**Talaya**	**3.22**	**250**	*e*Pn	**Pn**	16 45 25.0	-3.2	
TLY				*e*Pg	**Pb**	16 45 34.7	+0.2	
TLY				*e*Sg	**Sg**	16 46 17.1	-2.9	
TLY				Pmax				
	comp=E,5.0nm,0.3s							
TLY				Smax				
	comp=E,36nm,0.3s							
KMO	**Kumora**	**3.40**	**27**	*e*Pn	**Pn**	16 45 31.5	+0.8	
KMO				*e*Pg	**Pb**	16 45 39.5	+1.9	
KMO				*e*		16 45 44.0		
KMO				*e*Sg	**Sg**	16 46 24.1	-1.7	
KMO				max				
	comp=E,24nm,0.3s							
KMO				Smax				
	comp=E,107nm,1.2s							
KMO	**Kumora**	**3.40**	**27**	*e*PN	**Pn**	16 45 31.5	+0.8	
KMO				*e*		16 45 39.2		
KMO				*e*S	**Sn**	16 46 11.9	+0.4	
KMO				*e*		16 46 23.3		
KMO				pmax	pmax			
	comp=Z,15nm,0.6s							
KMO				smax	smax			
	comp=N,108nm,1.2s							
YOA	**Uoyan**	**3.76**	**29**	*e*Pg	**Pb**	16 45 46.0	+2.3	
YOA				*e*		16 46 21.2		
YOA				*e*Sg	**Sg**	16 46 34.9	-2.5	
YOA				Pmax				
	comp=N,16nm,0.4s							
YOA				Smax				
	comp=N,334nm,1.5s							
YOA	**Uoyan**	**3.76**	**29**	*e*PN	**Pg**	16 45 47.0	-1.7	
YOA				*e*		16 46 36.3		
YOA				pmax	pmax			
	comp=Z,29nm,0.6s							
YOA				smax	smax			
	comp=E,324nm,1.8s							
ZAK	**Zakamensk**	**4.11**	**235**	*e*Pg	**Pb**	16 45 50.7	+1.1	
ZAK				*e*		16 46 20.5		
ZAK				*e*Sg	**Sg**	16 46 45.1	-3.4	
ZAK				Pmax				
	comp=E,7.0nm,0.5s							
ZAK				Smax				
	comp=E,30nm,0.9s							
SVKR	**Severomuysk**	**4.38**	**40**	*e*	**Sb**	16 46 44.4	-3.1	
SVKR				*e*Sg	**Sg**	16 46 56.1	-1.2	
SVKR				Smax				
	comp=E,93nm,0.7s							
MOY	**Mondy**	**4.77**	**258**	*e*	Pn	16 45 54.5	+4.9	
MOY				*e*Pg	**Pb**	16 46 02.5	+1.5	
MOY				*e*		16 46 45.7		
MOY				*e*Sg	**Sg**	16 47 04.4	-5.4	
MOY				Pmax				
	comp=E,6.0nm,0.4s							
MOY				Smax				
	comp=E,32nm,1.0s							
ORL	**Orlik**	**5.30**	**270**	*e*	**Pn**	16 45 57.4	+0.6	
ORL				*e*		16 45 59.2		
ORL				*e*Pg	**Pb**	16 46 10.8	+0.8	
ORL				*e*Sg	**Sb**	16 47 19.4	+5.4	
ORL				Pmax				
	comp=E,2.0nm,0.5s							
ORL				Smax				
	comp=E,22nm,0.9s							
NLYR	**Nelyaty**	**5.52**	**46**	*e*Pn	**Pn**	16 46 00.1	+0.3	
NLYR				*e*		16 46 05.3		
NLYR				*e*Pg	**Pb**	16 46 17.8	+4.1	
NLYR				*e*Sg	**Sg**	16 47 29.9	-4.0	
NLYR				Pmax				
	comp=E,3.0nm,0.4s							
NLYR				Smax				
	comp=E,50nm,1.5s							
BOD	**Bodaibo**	**5.86**	**30**	*e*Sg	**Sg**	16 47 39.5	-5.2	
BOD				Smax				
	comp=E,17nm,1.2s							
TUP	**Tupik**	**6.98**	**73**	*e*Pn	**Pn**	16 46 19.7	-0.1	
TUP				*e*Pg	**Pb**	16 46 43.2	+4.7	
TUP				*e*Sg	**Sg**	16 48 13.3	-7.3	
TUP				Smax				
	comp=E,22nm,1.0s							

MEX 18 16:58:54.8±0.3, 14°.86N×92°.32W, h98km±4km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
CCIG	**Comitan**	**1.43**	**7**	*i*	P	Pn	16 59 19.1	-1.2
CCIG				*i*	S	Sn	16 59 37.8	-1.7

*FUNV **18** 17:01:26.7, 11°.14N×61°.67W, h26km, MW2.8*
*TRN **18** 17:01:28.4, 11°.30N×61°.66W, h9km, MD3.2*
ISC 18 17:01:26.6±1.3, 11°.24N±0°.02×61°.88W±0°.03, h23km±15km, n22, σ1°.46/41, 2C-1D, Windward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
GUIV	**Guiria**	**0.67**	**210**	*e*P		**Pn**	**17 01 40.9**	**0.0**
GUIV				*e*S		**Sn**	**17 01 50.9**	**+0.2**
TRN	**Trinidad (W)**	**0.75**	**141**	*i*P		**Pn**	**17 01 42.3**	**+0.4**
TRN				*e*S		**Sn**	**17 01 52.2**	**-0.4**
GRGR	**Grenville**	**0.92**	**14**	*e*P		**Pn**	**17 01 44.5**	**+0.2**
GRGR				*e*S		**Sn**	**17 01 57.4**	**+0.6**
GRGR	**Grenville**	**0.92**	**14**	*e*P		**Pn**	**17 01 44.4**	**+0.2**
GRGR				*e*S		**Sn**	**17 01 57.9**	**+1.2**
GRW	**Mount Saint Ca**	**0.94**	**13**	*e*P		**Pn**	**17 01 45.0**	**+0.3**
GRW				*e*S		**Sn**	**17 01 57.7**	**+0.2**
TPP	**Pointe-a-Pierr**	**1.01**	**155**	*e*P		**Pb**	**17 01 47.9**	**+2.4**
TPP				*e*S		**Sn**	**17 02 01.8**	**+2.9**
GRSS	**Sisters**	**1.09**	**14**	*e*P		**Pb**	**17 01 47.3**	**+0.5**
GRSS				*e*S		**Sn**	**17 02 02.2**	**+1.2**
TBH	**Brigand Hill**	**1.10**	**133**	*e*P		**Pb**	**17 01 48.0**	**+1.1**
TBH				*e*S		**Sn**	**17 02 03.1**	**+1.9**
BOT	**Bacolet**	**1.15**	**93**	*e*P		**Pn**	**17 01 47.3**	**-0.1**
BOT				*e*S		**Sb**	**17 02 00.0**	**-2.2**
TOSP	**Speyside**	**1.32**	**87**	*e*P		**Pn**	**17 01 49.2**	**-0.6**
TOSP				*e*S		**Sn**	**17 02 05.8**	**-1.0**
CRUV	**Carupano**	**1.44**	**247**	*e*P		**Pn**	**17 01 51.8**	**+0.4**
CRUV				*e*S		**Sb**	**17 02 12.4**	**+1.7**
GUNV	**Guanoco**	**1.49**	**224**	*i*P		**Pn**	**17 01 52.2**	**+0.2**
GUNV				*e*S		**Sn**	**17 02 11.5**	**+0.7**
FCV	**Fort Charlotte**	**2.01**	**18**	*e*S		**Sn**	**17 02 25.0**	**+1.3**
SVB	**Belmont**	**2.12**	**17**	*e*P		**Pn**	**17 02 02.8**	**+2.1**
SVB				*e*S		**Sb**	**17 02 28.6**	**-1.6**
SVV	**Soufriere Volc**	**2.17**	**17**	*e*P		**Pb**	**17 02 03.9**	**-1.4**
SVV				*e*S		**Sb**	**17 02 30.0**	**-1.7**
MCLT	**Moule a Chique**	**2.62**	**20**	*e*P		**Pn**	**17 02 08.9**	**+1.1**
MCLT				*e*S		**Sn**	**17 02 40.3**	**+1.4**
ORIV	**Oritupano**	**2.62**	**215**	*e*P		**Pn**	**17 02 08.2**	**+0.5**
ORIV				*e*S		**Sn**	**17 02 37.5**	**-1.4**
PCRV	**Puerto La Cruz**	**2.90**	**249**	*e*P		**Pn**	**17 02 12.4**	**+0.8**
PCRV				*e*S		**Sn**	**17 02 44.9**	**-0.9**
PRGV	**PARIAGUAN**	**3.67**	**228**	*e*P		**Pn**	**17 02 21.6**	**-0.5**
CUPV	**Cœpira**	**4.01**	**253**	*e*P		**Pn**	**17 02 28.4**	**+1.5**
CUPV				*e*S		**Sn**	**17 03 13.6**	**+0.3**
LUEV	**Luepa**	**5.38**	**176**	*e*P		**Pn**	**17 02 42.6**	**-3.1**
BAUV	**El Baul**	**6.48**	**250**	*i*P		**Pn**	**17 02 59.8**	**-0.9**
BAUV				*e*S		**Sn**	**17 04 10.4**	**-3.5**

MEX 18 17:17:42.4±0.3, 14°.21N×92°.61W, h13km±291km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
CCIG	**Comitan**	**2.11**	**12**	*i*	P	Pn	17 18 14.3	-3.2
CCIG				*i*	S	Sn	17 18 39.2	-4.5

MEX 18 17:20:37.3±0.4, 14°.12N×92°.58W, h12km±484km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
CCIG	**Comitan**	**2.19**	**11**	*i*	P	Pn	17 21 10.1	-3.6
CCIG				*i*	S	Sn	17 21 36.6	-4.2

*ISCJB **18** 17:43:57.4±0.7, 7°.30S±0°.06×75°.75W±0°.06, h35km, mb3.8/3, MS3.1/2, Error ellipse: s-maj=9.2km s-min=7.7km az=38.6*
*IDC **18** 17:44:00.5±2.5, 7°.33S×75°.88W, h58km±30km, mb3.2/2, mb1 3.8/6, mb1mx3.5/33, mbtmp3.8/6, ML4.0/4, MS3.2/8, Ms1 3.2/8, ms1mx3.1/12, Error ellipse: s-maj=25.3km s-min=12.4km az=45.0*
*NEIC **18** 17:44:00.2±0.9, 7°.31S×75°.80W, h55km±10km, mb4.7/1, Error ellipse: s-maj=13.1km s-min=9.9km az=46.0*
ISC 18 17:43:58.5±0.7, 7°.27S±0°.07×75°.72W±0°.07, h35km, n18, σ1°.84/20, mb3.5/3, Northern Peru

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
ATAH	**Atahualpa**	**2.66**	**273**	P		**Pn**	**17 44 39.6**	**+0.4**
	11nm,0.3s,baz=76,slow=12,SNR=51							
ATAH				S		**Sn**	**17 45 09.2**	**-1.1**
	22nm,0.3s,baz=22,slow=19,SNR=7.0							
NNA	**Nana**	**4.82**	**193**	P		**Pn**	**17 45 10.6**	**+2.0**
	23nm,0.3s,baz=20,slow=13,SNR=40							
NNA				S		**Sn**	**17 46 03.2**	**0.0**
	44nm,0.3s,baz=345,slow=20,SNR=19							
NNA				LR		LR	17 47 34.2	
	comp=Z,205nm,20.2s,baz=0.5,slow=45							
NNA	**Nana**	**4.82**	**193**	*e*Pn		**Pn**	**17 45 10.3**	**+1.7**
NNA				*e*Sn		**Sn**	**17 46 02.0**	**-1.3**
NNA				S		**Sn**	**17 46 03.2**	**0.0**
OTAV	**Otavalo**	**7.94**	**340**	*e*Pn		**Pn**	**17 45 53.5**	**+1.6**
LPAZ	**La Paz**	**11.64**	**141**	P		**Pn**	**17 46 44.5**	**+1.8**
	0.5nm,0.3s,baz=345,slow=10,SNR=8.9							
LPAZ				LR		LR	17 52 14.0	
	comp=Z,137nm,20.6s,baz=5.0,slow=42							
ROSC	**El Rosal**	**12.11**	**7**	LR		LR	17 52 27.7	
	comp=Z,80nm,21.8s,baz=248,slow=42							
SIV	**San Ignacio**	**16.75**	**122**	P		**Pn**	**17 47 49.9**	**-0.7**
	1.1nm,0.3s,baz=301,slow=11,SNR=8.3							
SIV				S		**Sn**	**17 50 50.1**	**-5.7**
	0.2nm,0.3s,baz=285,slow=20,SNR=3.9							
SIV				LR		LR	17 54 44.9	
	comp=Z,110nm,18.0s,baz=352,slow=38							
SDV	**Santo Domingo**	**16.83**	**18**	LR		LR	17 55 33.9	
	comp=Z,78nm,18.9s,baz=217,slow=41							
PTGA	**Pitinga**	**17.00**	**68**	P		**P**	**17 47 57.2**	**+2.0**
	0.4nm,0.3s,baz=220,slow=15,SNR=4.0							
PTGA				LR		LR	17 55 11.6	
	comp=Z,48nm,19.4s,baz=106,slow=39							
CPUP	**Villa Florida**	**25.81**	**139**	LR		LR	18 02 07.5	
	comp=Z,46nm,19.7s,baz=342,slow=42							
BDFB	**Brasilia**	**28.37**	**109**	LR		LR	18 01 25.5	
	comp=Z,56nm,18.6s,baz=169,slow=37							
TXAR	**Lajitas Array**	**45.25**	**325**	P		**P**	**17 52 12.2**	**-0.6**
	0.4nm,0.5s,baz=150,slow=8.9,SNR=5.5							
TXAR				pP		**sP**	**17 52 26.5**	**-0.8**
	0.3nm,0.9s,baz=140,slow=9.9,SNR=3.2							
TORD	**Torodi Ar. Bea**	**79.51**	**75**	P		**P**	**17 56 02.0**	**-0.3**
	0.2nm,0.6s,baz=254,slow=6.0,SNR=4.0							
TORD				pP		**sP**	**17 56 16.3**	**-1.0**
	0.3nm,0.3s,baz=277,slow=5.1,SNR=3.7							
QSPA	**South Pole Qui**	**82.84**	**180**	*e*P		**P**	**17 56 19.5**	**+0.3**
	9.2nm,1.0s							
SML	**Sawmill**	**88.27**	**333**	*e*P		P	17 56 34.8	-11
ASAR	**Alice Springs**	**137.78**	**222**	PKP		**PKPdf**	**18 03 19.2**	**-0.9**
	0.2nm,0.9s,baz=127,slow=1.9,SNR=3.6							
NWAO	**Narrogin (SRO)**	**138.17**	**196**	*e*P		**PKPdf**	**18 03 19.2**	**-1.3**
WRA	**Warramunga Arr**	**139.92**	**227**	PKP		**PKPdf**	**18 03 23.5**	**-0.5**
	0.5nm,0.8s,baz=119,slow=2.0,SNR=4.7							

*ISCJB **18** 17:58:22.6±0.6, 50°.13N±0°.04×19°.07E±0°.03, h0km, Error ellipse: s-maj=5.9km s-min=2.7km az=6.9*
*IPEC **18** 17:58:23.5±0.2, 50°.16N×19°.16E, h2km±1km, ML1.5/3, Error ellipse: s-maj=2.8km s-min=1.1km az=166.0*
*CSEM **18** 17:58:23.4±0.2, 50°.14N×19°.12E, h2km, ML2.5/5, Error ellipse: s-maj=4.9km s-min=2.2km az=6.0*
*PRU **18** 17:58:24.0, 50°.15N×19°.12E, h0km*
ISC 18 17:58:23.4±0.9, 50°.10N±0°.04×19°.12E±0°.02, h0km, n26, σ0°.61/40, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
OJC	**Ojcow**	**0.45**	**74**	*e*Pg		**Pg**	**17 58 31.8**	**-0.2**
OJC				*e*Sg		**Sg**	**17 58 37.9**	**0.0**
OJC	**Ojcow**	**0.45**	**74**	*e*Pg		**Pg**	**17 58 31.8**	**-0.2**
OJC				*e*Sg		**Sg**	**17 58 37.9**	**0.0**
OKC	**Ostrava-Krasne**	**0.68**	**248**	*e*SG		**Sb**	**17 58 47.2**	**-0.9**
	comp=Z,7.7nm,0.4s							
OKC	**Ostrava-Krasne**	**0.68**	**248**	Sg		**Sb**	**17 58 47.2**	**-0.9**
	7.7nm,0.4s							
LANS	**Liptovska Anna**	**0.98**	**166**	*e*Pg		**Pb**	**17 58 43.0**	**-0.2**
LANS				*e*Sg		**Sb**	**17 58 57.0**	**+0.3**
LANS	**Liptovska Anna**	**0.98**	**166**	*e*PG		**Pb**	**17 58 43.0**	**-0.2**
LANS				*e*SG		**Sb**	**17 58 57.0**	**+0.3**
NIE	**Niedzica**	**1.02**	**131**	*e*Pg		**Pg**	**17 58 43.3**	**+0.3**
NIE				*e*Sg		**Sb**	**17 58 58.2**	**+0.2**
MORC	**Moravsky Berou**	**1.07**	**253**	*e*Pg		**Pb**	**17 58 44.8**	**0.0**
MORC				*e*Sg		**Sg**	**17 58 58.3**	**+0.6**
	6.7nm,0.1s,baz=69							
KRLC	**Kraliky**	**1.51**	**270**	*e*SG		**Sg**	**17 59 11.8**	**+0.1**
KRLC	**Kraliky**	**1.51**	**270**	Sg		**Sg**	**17 59 11.8**	**+0.1**
STHS	**Stebnicka Huta**	**1.54**	**116**	*e*Pn		**Pg**	**17 58 53.2**	**+0.4**
STHS				*e*Sn		**Sb**	**17 59 13.4**	**+0.6**
STHS	**Stebnicka Huta**	**1.54**	**116**	*e*PN		**Pg**	**17 58 53.2**	**+0.4**
STHS				*e*SN		**Sb**	**17 59 13.4**	**+0.6**
STHS				*e*LG		Lg	17 59 25.3	
VYHS	**Vyhne**	**1.62**	**187**	*e*Pn		**Pn**	**17 58 53.1**	**-0.1**
VYHS				*e*Sn		**Sn**	**17 59 14.3**	**-0.4**
VYHS	**Vyhne**	**1.62**	**187**	*e*PN		**Pn**	**17 58 53.1**	**-0.1**
VYHS				*e*SN		**Sn**	**17 59 14.3**	**-0.4**
DPC	**Dobruska-Polom**	**1.81**	**279**	*e*PG		**Pb**	**17 58 57.3**	**-0.2**
DPC				*e*SG		**Sg**	**17 59 22.0**	**+0.4**
	comp=Z,3.5nm,0.2s							
DPC	**Dobruska-Polom**	**1.81**	**279**	Pg		**Pb**	**17 58 57.3**	**-0.2**
DPC				Sg		**Sg**	**17 59 22.0**	**+0.4**
	3.5nm,0.2s							
VRAC	**Vranov**	**1.82**	**245**	*e*Pn		**Pn**	**17 58 56.5**	**+0.5**
	baz=62							
VRAC				*e*Sg		**Sg**	**17 59 21.9**	**0.0**
	3.9nm,0.2s,baz=62							
KECS	**Kecovo**	**1.85**	**151**	*e*Pn		**Pn**	**17 58 55.8**	**-0.5**
KECS	**Kecovo**	**1.85**	**151**	*e*PN		**Pn**	**17 58 55.8**	**-0.5**
KECS				eLG		Lg	17 59 24.9	
UPC	**Upice**	**2.03**	**283**	*e*SG		**Sg**	**17 59 30.1**	**+1.4**
UPC	**Upice**	**2.03**	**283**	Sg		**Sg**	**17 59 30.1**	**+1.4**
KRUC	**Moravsky**	**2.06**	**241**	*e*Pn		**Pn**	**17 58 59.8**	**+0.6**
	baz=58							
KRUC				*e*Sg		**Sg**	**17 59 29.5**	**+0.1**
	2.1nm,0.3s,baz=58							
GOPC	**GO Pecny, Ondr**	**2.80**	**268**	*e*SG		**Sg**	**17 59 52.0**	**-1.3**
GOPC	**GO Pecny, Ondr**	**2.80**	**268**	Sg		**Sg**	**17 59 52.0**	**-1.3**
KHC	**Kasperske Hory**	**3.73**	**257**	*e*SG		**Sg**	**18 00 23.8**	**+0.6**
KHC	**Kasperske Hory**	**3.73**	**257**	Sg		**Sg**	**18 00 23.8**	**+0.6**

IDC 18 18:02:32.3±2.3, 11°.54S×166°.96E, h0km, mb3.9/6, mb1 4.0/6, mb1mx3.7/31, mbtmp3.8/6, Error ellipse: s-maj=80.8km s-min=29.2km az=134.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
WRA	**Warramunga Arr**	**32.44**	**251**	P		P	18 09 04.5	+0.1
	1.0nm,0.7s,baz=85,slow=9.0,SNR=8.4							
ASAR	**Alice Springs**	**33.64**	**245**	P		P	18 09 15.2	+0.2
	1.2nm,0.8s,baz=73,slow=9.0,SNR=15							
ASAR				PcP		PcP	18 11 54.5	-0.8
	0.2nm,0.5s,baz=89,slow=2.5,SNR=3.8							
CMAR	**Chiang Mai Arr**	**73.40**	**293**	P		P	18 14 07.2	+0.4
	0.7nm,0.7s,baz=120,slow=5.5,SNR=6.0							
SONM	**Songino Array**	**79.77**	**323**	P		P	18 14 42.2	-0.2
	0.3nm,0.4s,baz=117,slow=4.7,SNR=2.6							
ILAR	**Eielson Array**	**83.61**	**18**	P		P	18 15 02.7	+0.5
	0.3nm,0.7s,baz=238,slow=5.0,SNR=3.9							
MKAR	**Makanchi Array**	**94.69**	**317**	P		P	18 15 54.8	-0.7
	0.6nm,0.5s,baz=86,slow=5.8,SNR=8.4							

KRSC 18 18:06:57.3±1.6, 49°.85N×157°.31E, h20km±8km, ML3.5, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
SKR	**Severo-Kuril's**	**1.13**	**318**	*i*	P	Pn	18 07 17.9	-0.2
SKR				*i*	S	Sb	18 07 32.4	-0.1
PAU	**Pauzhetka**	**1.65**	**349**	*i*	P	Pb	18 07 26.5	-0.6
PAU				*i*	S	Sb	18 07 47.9	+0.5
RUS	**Russkaya**	**2.70**	**16**	P		Pb	18 07 42.5	-2.4
RUS				S		Sb	18 08 16.0	-1.5
DALK	**Dalny**	**3.31**	**15**	S		Sn	18 08 31.0	+4.2
SDLR	**Sedlovina**	**3.57**	**15**	P		Pn	18 07 54.5	+2.8
KRER	**Koryakskii**	**3.58**	**14**	P		Pb	18 07 56.3	-3.7
SPN	**Mys Shipunski**	**3.67**	**27**	S		Sn	18 08 38.7	+3.1
GNL	**Ganaly**	**3.87**	**6**	P		Pn	18 07 59.3	+3.4

*KRSC **18** 18:15:21.1±1.4, 52°.48N×153°.59E, h527km±23km, ML5.8*
*MOS **18** 18:15:22.5±0.8, 52°.47N×153°.60E, h526km, mb5.4/96, Error ellipse: s-maj=7.0km s-min=5.0km az=81.9*
*ISCJB **18** 18:15:23.7±0.1, 52°.79N±0°.02×153°.08E±0°.02, h492km±1km, mb5.3/387, Error ellipse: s-maj=2.7km s-min=1.5km az=161.1*
*BJI **18** 18:15:23.5, 52°.65N×153°.24E, h500km, mb5.8/46, mB5.5/37*
*GCMT **18** 18:15:24.9±0.2, 52°.76N×152°.96E, h499km±1km, MW5.5/96, Moment Tensor Solution. s96,c165; Duration: 1s3 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.58±.03; $M_{\theta\theta}$0.30±.04; $M_{\phi\phi}$0.28±.04; $M_{r\theta}$-0.51±.04; $M_{\theta\phi}$0.41±.04; $M_{\phi r}$-1.77±.04; Best double couple: $M_0$1.95200×10^{17} NP1:ϕ_s18.00000°, δ82.00000°, λ-100.00000°. NP2:ϕ_s249.00000°, δ13.00000°, λ-40.00000°. Principal axes: T 1.9220, Plg36.0000°, Azm117.0000°; N 0.0590, Plg10.0000°, Azm20.0000°; P -1.9810, Plg52.0000°, Azm277.0000°; nsta1 refers to body waves, cutoff=40s.*
*NEIC **18** 18:15:24.9±0.1, 52°.80N×152°.94E, mb5.2/166 Error ellipse: s-maj=3.2km s-min=1.9km az=161.0*
*IDC **18** 18:15:25.5±0.3, 52°.77N×153°.13E, h501km±3km, mb4.9/32, mb1 5.0/40, mb1mx5.0/43, mbtmp5.8/40, Error ellipse: s-maj=6.7km s-min=5.0km az=142.0*
ISC 18 18:15:25.4±0.2, 52°.72N±0°.03×153°.18E±0°.03, h503km±2km, h501km:pP-P, n1777, σ1°.41/2164, mb5.3/409, 32C-168D, Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
PAU	**Pauzhetka**	**2.56**	**118**	P		**P**	**18 16 31.7**	**-2.1**
PAU				S		**S**	**18 17 26.1**	**-3.4**
PAU	**Pauzhetka**	**2.56**	**118**	*i*	P	**P**	**18 16 31.7**	**-2.1**
PAU				*e*S		**S**	**18 17 26.1**	**-3.4**
SKR	**Severo-Kuril's**	**2.73**	**137**	*i*	P	**P**	**18 16 32.3**	**-2.5**
SKR				*i*	S	**S**	**18 17 26.1**	**-5.3**
SKR				pmax	pmax			
	comp=Z,16μm,1.2s							
SKR				pmax	pmax			
	comp=Z,12μm,0.6s							
SKR				smax	smax			
	comp=N,4μm,1.0s							
SKR				smax	smax			
	comp=E,5μm,1.0s							
SKR	**Severo-Kuril's**	**2.73**	**137**	*i*	P	**P**	**18 16 32.1**	**-2.7**
SKR				*e*S		**S**	**18 17 26.4**	**-5.0**
PEA0	**Petropavlovsk-**	**2.76**	**80**	*e*P		**P**	**18 16 33.2**	**-1.7**
PEA0B	**Petropavlovsk-**	**2.76**	**80**	*e*P		**P**	**18 16 33.3**	**-1.6**
PETK	**Petropavlovsk-**	**2.76**	**80**	P		**P**	**18 16 33.2**	**-1.7**
	comp=E,563nm,0.3s,baz=325,slow=2.0							
PETK				ScP		**ScP**	**18 25 41.1**	**+1.4**
	comp=E,0.1nm,0.3s,baz=116,slow=3.4,SNR=7.8							
ASAK	**Asacha**	**2.90**	**95**	P		**P**	**18 16 34.3**	**-1.6**
ASAK				S		**S**	**18 17 30.0**	**-3.5**
ASAK	**Asacha**	**2.90**	**95**	*i*	P	**P**	**18 16 34.3**	**-1.6**
ASAK

AVH	Avacha	3.40	78	*i*	P		P	18 16 37.7	-1.7
KRER	Koryakskii	3.41	78		P		P	18 16 37.9	-1.7
KRER					S		S	18 17 38.1	-2.1
KRER	Koryakskii	3.41	78	*i*	P		P	18 16 37.9	-1.7
KRER					*e*S		S	18 17 38.1	-2.1
SMAR	Somma	3.44	79		P		P	18 16 38.1	-1.7
SMAR					S		S	18 17 37.4	-3.2
SMAR	Somma	3.44	79	*i*	P		P	18 16 38.1	-1.7
SMAR					*e*S		S	18 17 37.4	-3.2
UGLR	Uglovaya	3.45	80		P		P	18 16 38.1	-1.6
UGLR	Uglovaya	3.45	80	*i*	P		P	18 16 38.1	-1.6
SDLR	Sedlovina	3.49	78		P		P	18 16 38.1	-2.0
SDLR	Sedlovina	3.49	78	*i*	P		P	18 16 38.1	-2.0
NLC	Nalytchevo	3.76	81		P		P	18 16 39.5	-2.4
NLC					S		S	18 17 37.5	-7.0
NLC	Nalytchevo	3.76	81	*e*P			S	18 16 39.5	-2.4
NLC					*e*S		S	18 17 37.5	-7.0
KII	Karymskiy	3.98	68		P		S	18 16 42.0	-1.8
KII					S		S	18 17 45.2	-2.7
KII	Karymskiy	3.98	68	*i*	P		S	18 16 42.0	-1.8
KII					S		S	18 17 45.2	-2.7
SPN	Mys Shipunski	4.16	82		P		S	18 16 41.7	-3.4
SPN					S		S	18 17 41.1	-9.3
SPN	Mys Shipunski	4.16	82	*i*	P		S	18 16 41.7	-3.4
SPN					*i* S		S	18 17 41.1	-9.3
ESO	Esso	4.56	43		P		S	18 16 48.2	-0.2
ESO					S		S	18 17 55.5	-1.0
ESO	Esso	4.56	43	*i*	P		S	18 16 48.2	-0.2
ESO					*i* S		S	18 17 55.5	-1.0
KZV	Kizimen	4.84	57		P		S	18 16 51.1	0.0
KZV					S		S	18 17 58.1	-3.2
KZV	Kizimen	4.84	57	*e*P			S	18 16 51.1	0.0
KZV					*e*S		S	18 17 58.1	-3.2
KMNR	Kamenistaya	5.14	51		P		S	18 16 53.3	-0.4
KMNR					S		S	18 18 05.6	-0.4
KMNR	Kamenistaya	5.14	51	*i*	P		S	18 16 53.3	-0.4
KMNR					*e*S		S	18 18 05.6	-0.4
KOZ	Kozyrevsk	5.15	47		P		S	18 16 52.5	-1.1
KOZ	Kozyrevsk	5.15	47	*i*	P		S	18 16 52.5	-1.1
KPT	Kopyto	5.25	49		P		S	18 16 53.1	-1.6
KPT					S		S	18 18 05.9	-1.9
KPT	Kopyto	5.25	49	*i*	P		S	18 16 53.1	-1.6
KPT					*e*S		S	18 18 05.9	-1.9
KIRR	Kirishev	5.30	49		P		S	18 16 53.4	-1.8
KIRR					S		S	18 18 05.7	-3.0
KIRR	Kirishev	5.30	49	*i*	P		S	18 16 53.4	-1.8
KIRR					*i* S		S	18 18 05.7	-3.0
BZMR	Bezymyannaya	5.36	50		P		S	18 16 53.9	-1.8
BZMR					S		S	18 18 06.0	-3.7
BZMR	Bezymyannaya	5.36	50	*i*	P		S	18 16 53.9	-1.8
BZMR					*e*S		S	18 18 06.0	-3.7
LGNR	Loginova	5.53	49		P		S	18 16 56.5	-1.0
LGNR					S		S	18 18 08.8	-4.2
LGNR	Loginova	5.53	49	*e*P			S	18 16 56.5	-1.0
LGNR					*e*S		S	18 18 08.8	-4.2
ZLN	Zelenaya	5.55	50		P		S	18 16 56.3	-1.1
ZLN	Zelenaya	5.55	50	*i*	P		S	18 16 56.3	-1.1
KRSR	Krestovskiy	5.55	48		P		S	18 16 55.2	-2.3
KRSR					S		S	18 18 08.8	-4.2
KRSR	Krestovskiy	5.55	48	*i*	P		S	18 16 55.2	-2.3
KRSR					*e*S		S	18 18 08.8	-4.2
CIRR	Tsirk	5.58	49		P		S	18 16 56.2	-1.6
CIRR					S		S	18 18 10.7	-2.8
CIRR	Tsirk	5.58	49	*i*	P		S	18 16 56.2	-1.6
CIRR					*e*S		S	18 18 10.7	-2.8
KLY	Klyuchi	5.65	47		P		S	18 16 56.8	-1.4
KLY					S		S	18 18 11.3	-3.1
KLY	Klyuchi	5.65	47	*i*	P		S	18 16 56.8	-1.4
KLY					*e*S		S	18 18 11.3	-3.1
BDR	Baidarnaya	6.05	47		P		S	18 17 00.6	-1.6
BDR					S		S	18 18 18.2	-3.3
BDR	Baidarnaya	6.05	47	*i*	P		S	18 17 00.6	-1.6
BDR					*e*S		S	18 18 18.2	-3.3
SRKR	Sorokina	6.08	46		P		S	18 17 01.3	-1.2
SRKR					S		S	18 18 20.0	-2.1
SRKR	Sorokina	6.08	46	*e*P			S	18 17 01.3	-1.2
SRKR					*e*S		S	18 18 20.0	-2.1
SMKR	Semkarok	6.17	48		P		S	18 17 01.8	-1.6
SMKR					S		S	18 18 22.0	-1.7
SMKR	Semkarok	6.17	48	*e*P			S	18 17 01.8	-1.6
SMKR					*e*S		S	18 18 22.0	-1.7
KBG	Krutoberegovo	6.58	54		P		S	18 17 04.4	-2.9
KBG					S		S	18 18 23.4	-7.5
KBG	Krutoberegovo	6.58	54	*e*P			S	18 17 04.4	-2.9
KBG					*e*S		S	18 18 23.4	-7.5
TYV	Tymovskoe	6.79	258	*e*P			S	18 17 10.0	+0.6
TYV					*e*S		S	18 18 31.0	-3.7
TYV						pmax	pmax		
	comp=E,3μm,2.0s								
TYV						pmax	pmax		
	comp=Z,2μm,1.0s								
TYV						smax	smax		
	comp=E,9μm,1.8s								
TYV						smax	smax		
	comp=E,24μm,7.0s								
MA2	Magadan	7.01	350		P		P	18 17 11.2	-0.3
	comp=E,51nm,0.3s,baz=155,slow=9.7,SNR=316								
MA2					S		S	18 18 38.0	-0.6
	baz=5.6,slow=22,SNR=3.8								
NKL	Nikolayevsk	7.57	278	*i*	P		P	18 17 18.1	+0.9
NKL				*i*	S		S	18 18 51.0	+1.9
NKL						pmax	pmax		
	comp=N,280nm,0.8s								
NKL						pmax	pmax		
	comp=E,940nm,0.8s								
NKL						pmax	pmax		
	comp=Z,2μm,0.7s								
NKL						pmax	pmax		
	comp=E,3μm,1.5s								
NKL						pmax	pmax		
	comp=Z,6μm,1.5s								
NKL						smax	smax		
	comp=N,9μm,3.5s								
NKL						smax	smax		
	comp=E,28μm,3.0s								
UGL	Uglegorsk	7.91	247	*c*	*i*P		P	18 17 18.6	-2.3
UGL					*e*S		S	18 18 53.3	-2.3
BKI	Bering	7.95	67		P		P	18 17 19.8	-1.2
BKI					S		S	18 18 50.7	-5.4
BKI	Bering	7.95	67	*i*	P		P	18 17 19.8	-1.2
BKI					*i* S		S	18 18 50.7	-5.4
KUR	Kuril'sk	8.26	207	*d*	*i*P		P	18 17 23.0	-1.5
KUR					*i* S		S	18 18 59.1	-3.2
KUR						pmax	pmax		
	comp=E,47nm,0.9s								
KUR						pmax	pmax		
	comp=Z,199nm,0.9s								
KUR						pmax	pmax		
	comp=N,52nm,0.3s								
KUR						smax	smax		
	comp=N,1μm,2.8s								
KUR						smax	smax		
	comp=E,1μm,2.8s								
KUR						smax	smax		
	comp=E,276nm,0.6s								
KUR						smax	smax		
	comp=N,235nm,0.4s								
OSSR	Ossora	8.57	36		P		P	18 17 27.1	-0.3
OSSR					S		S	18 19 03.4	-4.4
OSSR	Ossora	8.57	36	*i*	P		S	18 17 27.1	-0.3
OSSR					*i* S		S	18 19 03.4	-4.4
YSS	Yuzh-Sakhalins	8.86	234	α	*i*P		P	18 17 31.3	+0.5
YSS					*e*S		S	18 19 13.3	-0.5
YSS						pmax	pmax		
	comp=N,130nm,0.6s								
YSS						pmax	pmax		
	comp=Z,240nm,0.6s								
YSS						pmax	pmax		
	comp=Z,400nm,4.0s								
YSS						smax	smax		
	comp=N,400nm,1.5s								
YSS						smax	smax		
	comp=E,400nm,1.2s								
YSS						smax	smax		
	comp=N,7μm,8.6s								
YSS						smax	smax		
	comp=E,6μm,6.0s								
YSS	Yuzh-Sakhalins	8.86	234	*e*P			P	18 17 31.5	+0.7
SHO	Shikotan	9.81	208	*d*	*i*P		P	18 17 35.9	-4.8
SHO					*i* S		S	18 19 18.9	-13
SHO						pmax	pmax		
	comp=N,432nm,0.4s								
SHO						pmax	pmax		
	comp=E,234nm,0.4s								
SHO						pmax	pmax		
	comp=Z,1μm,0.4s								
YUK	Yuzh-Kuril'sk	9.95	212	*c*	*i*P		P	18 17 41.3	-0.9
YUK					*i* S		S	18 19 29.1	-5.7
YUK						pmax	pmax		
	comp=N,83nm,0.6s								
YUK						pmax	pmax		
	comp=E,296nm,0.6s								
YUK						pmax	pmax		
	comp=Z,330nm,0.6s								
SEY	Seymchan	10.26	358		P		P	18 17 45.4	+0.3
	comp=Z,46nm,0.3s,baz=176,slow=9.8,SNR=872								
SEY					S		S	18 19 40.5	+0.4
	baz=311,slow=20,SNR=8.3								
TILK	Tilichiki	10.52	38	*e*S			S	18 19 37.4	-8.0
ASAJ	Asahikawa	11.10	223		P		S	18 17 53.3	-1.1
	baz=90,slow=4.5								
ASAJ					S		S	18 19 54.8	-2.3
	baz=0.0,slow=20								
ASAJ	Asahikawa	11.10	223	*e*P			P	18 17 53.2	-1.1
ASAJ					S		S	18 19 54.8	-2.3
ASAJ					*e*ScP		ScP	18 25 48.4	+1.2
KMSK	Kamenskaya	11.99	30		P		P	18 18 03.4	0.0
KMSK	Kamenskaya	11.99	30	*i*	P		P	18 18 03.4	0.0
HABR	Khabarovsk	12.27	257	*d*	*i*P		P	18 18 04.6	-2.0
HABR					*e*S		S	18 20 17.9	-1.7
HABR						pmax	pmax		
	comp=N,27nm,0.8s								
HABR						pmax	pmax		
	comp=E,165nm,0.8s								
HABR						pmax	pmax		
	comp=Z,253nm,0.8s								
HABR						MLR	MLR		
	comp=Z,148nm,13.0s								
ERM	Erimo	12.66	216	*c*	*i*P		P	18 18 07.1	-3.8
ERM	Erimo	12.66	216		*e*P		P	18 18 07.7	-3.2
SMY	Shemya	12.68	82		*e*P		P	18 18 10.6	-0.3
SMY					*e*S		S	18 20 28.0	+0.7
SMY	Shemya	12.68	82		*e*P		P	18 18 10.6	-0.3
SMY					*e*S		S	18 20 28.0	+0.7
KLR	Kul'dur	13.94	264		P		P	18 18 24.4	+0.2
	comp=Z,10.0nm,0.3s,baz=63,slow=10,SNR=277								
KLR					S		S	18 20 53.0	+1.3
	baz=342,slow=14,SNR=7.5								
KLR					ScP		ScP	18 25 52.7	+1.2
	comp=Z,0.6nm,0.3s,baz=83,slow=3.0,SNR=7.1								
YAK	Yakutsk	15.65	316		P		P	18 18 40.3	-1.5
	comp=Z,0.5nm,0.3s,baz=309,slow=1.4,SNR=203								
YAK					S		S	18 21 21.8	-2.1
	comp=Z,0.0nm,0.3s,baz=225,slow=23,SNR=26								
YAK	Yakutsk	15.65	316	ǁ	*i*P		P	18 18 40.3	-1.5
YAK					*i* S		S	18 21 21.0	-2.9
YAK						pmax	pmax		
	comp=Z,819nm,0.7s								
YAK						pmax	pmax		
	comp=N,199nm,1.1s								
YAK	Yakutsk	15.65	316		*e*P		P	18 18 40.3	-1.5
	comp=N,1μm,0.6s								
YAK					S		S	18 21 21.9	-2.1
USRK	Ussuriysk Ar.	16.39	247		P		P	18 18 48.1	-1.8
	comp=N,5.9nm,0.3s,baz=57,slow=8.4,SNR=140								
USRK					ScP		ScP	18 25 57.2	+1.0
	comp=N,0.1nm,0.3s,baz=17,slow=1.2,SNR=11								
BILL	Bilibino	16.61	17	*c*	*i*P		P	18 18 50.4	-1.5
BILL					*e*S		S	18 21 40.6	-0.8
BILL						pmax	pmax		
	comp=Z,14nm,0.6s								
CLNS	Chul'man	16.77	295	*d*	*i*P		P	18 18 53.3	-0.4
CLNS					*e*S		S	18 21 46.0	+1.5
CLNS					*e*S		S	18 21 46.7	+2.2
CLNS						pmax	pmax		
	comp=N,251nm,1.0s								
CLNS						pmax	pmax		
	comp=Z,596nm,1.0s								
CLNS						pmax	pmax		
	comp=E,365nm,0.9s								
CLNS						smax	smax		
	comp=N,517nm,1.2s								
VLA	Vladivostok	17.14	244	*d*	*i*P		P	18 18 53.9	-3.6
MDJ	Mudanjiang	17.50	252		P		P	18 18 59.1	-1.8
MDJ					S		S	18 21 52.4	-4.5
MDJ					PcP		PcP	18 23 13.1	+1.6
MDJ					ScP		ScP	18 25 59.4	+0.9
MDJ					PcS		PcS	18 26 48.8	+0.9
MDJ					ScS		ScS	18 29 38.6	-0.3
MDJ						pmax	pmax		
	comp=N,370nm,1.0s								
MDJ						pmax	pmax		
	comp=N,480nm,4.3s								
MSHR	Mys Shultsa	17.90	244	*d*	*i*P		P	18 19 01.4	-3.2
MJB9	Matsu-Tunnel	19.30	219		*e*P		P	18 19 17.2	-0.2
	comp=N,227nm,0.7s								
MJB9					*e*ScP		ScP	18 26 04.2	+1.5
MAJO	Matsushiro	19.30	219		*e*P		P	18 19 17.2	-0.3
MAJO						pmax	pmax		
	comp=Z,900nm,0.7s								
MAJO	Matsushiro	19.30	219		*e*P		P	18 19 17.2	-0.3
	comp=Z,899nm,0.6s								
MAJO					*e*ScP		ScP	18 26 03.8	+1.1
MAT	Matsushiro	19.30	219		P		P	18 19 17.1	-0.4
MAT					S		S	18 22 27.0	+0.7
MJAR	Matsushiro Arr	19.30	219		P		P	18 19 18.0	+0.5
	comp=E,68nm,0.3s,baz=21,slow=10,SNR=701								
MJAR					S		S	18 22 27.8	+1.4
	baz=20,slow=19,SNR=5.5								
MJAR					ScP		ScP	18 26 02.7	0.0
	comp=Z,0.3nm,0.3s,baz=31,slow=1.0,SNR=8.2								
CN2	Changchun	20.40	255		*e*P		P	18 19 26.1	-1.2
CN2					*e*sP		sP	18 21 38.3	-1.1
CN2					*e*S		S	18 22 40.8	-2.9
CN2						pmax	pmax		
	comp=Z,300nm,1.0s								
CN2						pmax	pmax		
	comp=Z,1μm,3.0s								
INU	Inuyama	20.81	220		*e*P		P	18 19 30.7	-0.5
	comp=Z,241nm,0.6s								
SPIA	Saint Paul Isl	21.30	63		*e*P		P	18 19 35.8	+0.6
	comp=Z,663nm,1.5s								
TIXI	Tiksi	21.81	339	*d*	*i*P		P	18 19 39.5	-0.2
TIXI						pmax	pmax		
	comp=Z,211nm,0.9s								
TIXI	Tiksi	21.81	339		*e*P		P	18 19 39.6	-0.2
	comp=Z,250nm,0.9s								
TIXI					*e*ScP		ScP	18 26 08.0	-0.1
BOD	Bodaibo	22.66	299	ǁ	*i*P		P	18 19 46.5	-1.0
BOD					*e*			18 23 16.4	
BOD						pmax	pmax		
	comp=Z,222nm,1.5s								
SNY	Shenyang	22.69	253	ǁ	P		P	18 19 47.8	-0.1
SNY						pmax	pmax		
	comp=Z,250nm,1.1s								
KS01	Wonju Array Si	23.30	239		*e*P		P	18 19 53.6	+0.1
KSRS	Korea Array	23.30	239		P		P	18 19 54.0	+0.6
	comp=Z,183nm,0.9s,baz=43,slow=9.0,SNR=370								
KSRS					PcP		PcP	18 23 23.4	+0.7
	comp=Z,23nm,0.7s,baz=8.9,slow=1.8,SNR=14								
KSRS					ScP		ScP	18 26 13.2	+0.6
	comp=Z,16nm,0.9s,baz=9.9,slow=1.8,SNR=19								
KS15	Wonju Array Si	23.33	239		*e*P		P	18 19 54.1	+0.4
KSAR	Wonju Array Be	23.33	239		P		P	18 19 54.1	+0.3
KSAR								18 23 23.4	
KSAR	Wonju Array Be	23.33	239		P		P	18 19 54.0	+0.3
KSAR					PcP		PcP	18 23 23.4	+0.6
KSAR					ScP		ScP	18 26 13.2	+0.5
UNV	Unalaska Valle	23.91	71		*e*P		P	18 19 56.8	-1.9
	comp=Z,49nm,0.8s								
UNV					*e*pP		pP	18 21 18.1	-3.4
INCN	Inchon	23.96	241		P		P	18 19 59.4	0.0
	SNR=11								
INCN	Inchon	23.96	241		*e*P		P	18 19 59.5	+0.2
	comp=Z,224nm,0.9s								
CIT	Chita	24.00	284		*e*P		P	18 19 59.8	+0.2
CIT					*e*S		S	18 23 42.1	+1.5
CIT						pmax	pmax		
	comp=Z,604nm,1.1s								
AKUT	Akutan	24.26	70		*e*P		P	18 20 00.7	-1.1
	comp=Z,127nm,0.9s								
AKUT					*e*pP		pP	18 21 21.2	-3.5
JNU	Nakatsue	25.32	228		P		P	18 20 11.6	+0.1
	comp=Z,173nm,0.7s,baz=350,slow=0.8,SNR=48								
JNU					S		S	18 24 03.6	+2.0
	comp=Z,27nm,0.9s,baz=196,slow=4.5,SNR=3.6								
JNU	Nakatsue	25.32	228		*e*P		P	18 20 11.8	+0.3
	comp=Z,183nm,0.7s								
JNU					*e*S		S	18 24 07.2	+5.6
DL2	Dalian	25.72	250	ǁ	*i*P		P	18 20 14.6	-0.3
DL2					S		S	18 24 06.5	-1.2
DL2					ScP		ScP	18 26 19.9	+0.4
SDPT	Sand Point	26.96	66		*e*P		P	18 20 25.0	-0.6
	comp=Z,79nm,0.6s								
SDPT					*e*ScP		ScP	18 26 22.9	+0.1
CHGN	Chignik	27.86	63		*e*P		P	18 20 32.1	-1.4
TT01	Tatalina	28.16	49		*e*P		P	18 20 36.5	+0.5
TT01					*e*ScP		ScP	18 26 28.3	+1.8
TTA	Tatalina	28.16	49		*e*P		P	18 20 35.1	-1.1
TTA						pmax	pmax		
	comp=Z,77nm,0.8s								
TTA	Tatalina	28.16	49		*e*P		P	18 20 35.1	-1.1
	comp=Z,77nm,0.8s								
TTA					*e*pP		pP	18 22 02.4	+1.8
BJI	Beijing	28.17	258		P		P	18 20 36.3	-0.1
BJI					PcP		PcP	18 23 33.8	-0.2
BJI					S		S	18 24 42.3	-3.7
BJI						pmax	pmax		
	comp=Z,97nm,1.3s								
SVW2	Sparrevohn	28.51	53		*e*P		P	18 20 39.9	+0.8
	comp=Z,100nm,1.1s								
SVW2					*e*ScP		ScP	18 26 29.4	+1.7
IRK	Irkutsk	29.34	289		*e*P		P	18 20 45.5	-1.0
IRK						pmax	pmax		
	comp=Z,491nm,1.3s								
SONA1	Songino Array	29.86	280		*e*P		P	18 20 51.3	+0.1
SONM	Songino Array	29.87	280		P		P	18 20 51.5	+0.2
	comp=Z,33nm,0.8s,baz=53,slow=6.6,SNR=123								
SONM					PcP		PcP	18 23 38.4	-0.1
	comp=Z,35nm,0.7s,baz=76,slow=1.4,SNR=15								
SONM					ScP		ScP	18 26 32.4	-0.1
	comp=Z,20nm,0.8s,baz=80,slow=1.8,SNR=15								
TLY	Talaya	29.90	288		P		P	18 20 51.8	+0.4
	comp=Z,109nm,0.8s,baz=66,slow=9.2,SNR=52								
TLY					PcP		PcP	18 23 38.9	+0.5
	comp=Z,28nm,0.7s,baz=236,slow=3.8,SNR=6.9								
TLY					ScP		ScP	18 26 32.4	0.0
	comp=Z,12nm,0.8s,baz=135,slow=1.8,SNR=7.3								
TLY	Talaya	29.90	288	*d*	*i*P		P	18 20 52.3	+0.9
TLY					*e*			18 22 16.3	
TLY					*e*S		S	18 25 15.5	+2.9
TLY								18 28 00.0	
TLY						pmax	pmax		
	comp=Z,358nm,1.3s								
TLY	Talaya	29.90	288		*e*P		P	18 20 52.6	+1.2
	comp=Z,396nm,1.3s								
TLY					*e*pP		pP	18 22 22.5	+5.8
TLY					*e*PcP		PcP	18 23 38.9	+0.5
TLY					*e*ScP		ScP	18 26 33.4	+1.0
CAST	Castle Rocks	29.91	47		*e*P		P	18 20 52.2	+0.9
	comp=Z,64nm,0.6s								
CAST					*e*ScP		ScP	18 26 33.7	+1.5
PPLA	Purkeypile	29.91	49		*e*P		P	18 20 52.7	+1.2
	comp=Z,318nm,1.6s								
PPLA					*e*ScP		ScP	18 26 33.6	+1.3
RSO	Redoubt South	29.97	53		*e*P		P	18 20 52.7	+0.6
RSO					*e*ScP		ScP	18 26 34.1	+1.4
TIA	Tai'an	30.17	251	ǁ	P		P	18 20 53.8	-0.1
SPU	Mount Spurr	30.19	52		*e*P		P	18 20 55.0	+1.2
SPU					*e*pP		pP	18 22 22.9	+3.7
SPU					*e*ScP		ScP	18 26 33.5	+0.4
BPAW	Bear Paw Mtn.	30.34	46		*e*P		P	18 20 55.7	+0.7
	comp=Z,79nm,1.1s								
MLY	Manley	30.38	44		*e*P		P	18 20 56.0	+0.7
	comp=Z,66nm,1.2s								
MLY					*e*ScP		ScP	18 26 35.1	+1.3
OHAK	Old Harbor	30.38	60		*e*P		P	18 20 54.8	-0.6
	comp=Z,174nm,0.7s								
OHAK					*e*ScP		ScP	18 26 35.4	+1.6
KTH	Kantishna Hill	30.41	47		*e*P		P	18 20 56.7	+1.0
	comp=Z,221nm,1.4s								
KTH					*e*ScP		ScP	18 26 35.5	+1.6
HHC	Hu-ho-hao-te	30.44	264		*e*P		P	18 20 56.1	-0.2
HHC					pP		pP	18 22 22.8	+1.0
HHC					PP		PP	18 22 24.6	-11
HHC					S		S	18 25 22.4	+1.0
HHC					ScS		ScS	18 30 30.8	-1.1
HHC						pmax	pmax		
	comp=Z,95nm,1.4s								
HHC						pmax	pmax		
	comp=Z,690nm,4.9s								
COLD	Coldfoot	30.53	40		*e*P		P	18 20 57.0	+0.4
	comp=Z,69nm,0.8s								
COLD					*e*ScP		ScP	18 26 36.1	+2.0
KDAK	Kodiak Island	30.61	59		*e*P		P	18 20 56.5	-0.8
KDAK						pmax	pmax		
	comp=Z,130nm,0.6s								
KDAK	Kodiak Island	30.61	59		*e*P		P	18 20 56.5	-0.8
	comp=Z,126nm,0.6s								
KDAK					*e*ScP		ScP	18 26 36.2	+1.7
ZAK	Zakamensk	30.62	286		*e*P		P	18 20 57.8	+0.1
ZAK						pmax	pmax		
	comp=Z,138nm,1.3s								
TRF	Thorofare Moun	30.71	47		*e*P		P	18 20 59.0	+0.6
	comp=Z,92nm,0.7s								
TRF					*e*ScP		ScP	18 26 36.1	+1.1
SUA	Susitna One	30.77	51		*e*P		P	18 20 59.1	+0.2
	comp=Z,109nm,1.1s								
SUA					*e*ScP		ScP	18 26 35.9	+0.7
CNPM	China Poot	30.90	55		*e*P		P	18 20 59.3	-0.5
	comp=Z,128nm,0.8s								
CNPM					*e*ScP		ScP	18 26 36.8	+1.3
BRLK	Bradley Lake	31.02	54		*e*P		P	18 21 00.6	-0.3
	comp=Z,177nm,1.2s								
BRLK					*e*ScP		ScP	18 26 36.7	+0.8
MCK	McKinley	31.27	47		*e*P		P	18 21 03.3	+0.2
MCK						pmax	pmax		
	comp=Z,110nm,1.0s								
MCK	McKinley	31.27	47		*e*P		P	18 21 03.3	+0.2
	comp=Z,114nm,1.0s								
MCK					*e*ScP		ScP	18 26 37.5	+0.8
RC01	Rabbit Creek A	31.32	52		*e*P		P	18 21 03.6	+0.2
	comp=Z,118nm,1.2s								
RC01					*e*ScP		ScP	18 26 37.9	+1.1
RND	Reindeer	31.35	47		*e*P		P	18 21 03.6	-0.2
RND						pmax	pmax		
	comp=Z,130nm,1.1s								
RND	Reindeer	31.35	47		*e*P		P	18 21 03.6	-0.2
	comp=Z,130nm,1.1s		

comp=Z,43nm,0.6s
HDA eScP ScP 18 26 38.8 -0.5
DHY Denali Highway 32.06 48 eP P 18 21 09.7 -0.2
comp=Z,87nm,0.9s
NJ2 Nanjing 32.24 244 eP P 18 21 11.4 -0.3
NJ2 PcP PcP 18 23 44.5 -0.6
NJ2 S S 18 25 54.8 +5.9
NJ2 ScP ScP 18 26 40.4 -0.1
NJ2 pmax pmax
comp=Z,550nm,4.6s
SCM Sheep Creek Mo 32.31 50 eP P 18 21 12.4 +0.4
SCM pmax pmax
comp=Z,190nm,1.0s
SCM Sheep Creek Mo 32.31 50 eP P 18 21 12.4 +0.4
comp=Z,185nm,1.0s
MIDW Midway 32.78 127 eP P 18 21 17.2 +0.9
comp=Z,234nm,1.1s
PAX Paxson 32.94 48 eP P 18 21 17.9 +0.6
PAX pmax pmax
comp=Z,33nm,1.0s
PAX Paxson 32.94 48 eP P 18 21 17.9 +0.6
comp=Z,33nm,1.0s
FID Port Fidalgo 32.94 52 eP P 18 21 17.2 -0.1
comp=Z,62nm,1.0s
FID eScP ScP 18 26 44.4 +1.9
KLU Klutina 33.04 50 eP P 18 21 18.7 +0.6
comp=Z,146nm,1.0s
KLU eScP ScP 18 26 44.5 +1.5
DIV Divide 33.19 51 eP P 18 21 20.1 +0.6
comp=Z,231nm,1.3s
EYAK Cordova Ski Ar 33.34 52 eP P 18 21 21.4 +0.8
comp=Z,103nm,1.0s
MID Middleton Isla 33.34 54 eP P 18 21 20.9 +0.2
MID pmax pmax
comp=Z,250nm,1.0s
MID Middleton Isla 33.34 54 eP P 18 21 20.9 +0.2
comp=Z,247nm,1.0s
DOT Dot Lake 33.43 46 eP P 18 21 15.3 -6.1
comp=Z,205nm,0.8s
DOT eScP ScP 18 26 45.5 +1.3
MENT Mentasta 33.73 47 eP P 18 21 24.5 +0.5
comp=Z,43nm,0.8s
MENT eScP ScP 18 26 47.0 +1.7
BMRM Bremner River 33.78 51 eP P 18 21 25.2 +0.7
comp=Z,154nm,0.8s
NRIK Noril'sk 33.79 324 P P 18 21 24.1 -0.1
comp=Z,64nm,0.8s,baz=95,slow=9.8,SNR=67
NRIK PcP PcP 18 23 47.6 -1.2
comp=Z,31nm,0.9s,baz=55,slow=4.5,SNR=3.6
NRIK S S 18 26 11.3 -0.2
comp=Z,9.3nm,0.9s,baz=289,slow=20,SNR=6.3
NRIK ScP ScP 18 26 45.0 -0.4
comp=Z,9.5nm,0.9s,baz=111,slow=0.6,SNR=4.8
RAGM Ragged Mountai 33.90 52 eP P 18 21 26.6 +1.2
comp=Z,198nm,1.3s
RAGM eScP ScP 18 26 47.7 +1.7
KRAR Krasnoyarsk 34.32 300 eP P 18 21 28.7 -0.2
EGAK Eagle 34.46 44 eP P 18 21 29.9 -0.1
comp=Z,132nm,0.9s
CRQM Cirque 34.53 51 eP P 18 21 32.1 +1.3
comp=Z,187nm,0.9s
CRQM eScP ScP 18 26 50.2 +1.8
DAWY Dawson 35.36 45 eP P 18 21 37.7 +0.1
comp=Z,17nm,0.8s
WHN Wuhan 35.89 247 ⇓P P 18 21 41.9 -0.4
WHN pP pP 18 23 11.1 +0.7
WHN PcP PcP 18 23 55.6 -0.1
PCA Pinnacle 36.09 51 eP P 18 21 44.7 +0.9
comp=Z,211nm,0.8s
PCA eScP ScP 18 26 55.9 +1.9
YOJ Yonaguni jima 36.28 231 eP P 18 21 42.9 -2.8
YOJ pmax pmax
comp=Z,410nm,1.7s
YOJ Yonaguni jima 36.28 231 eP P 18 21 42.9 -2.8
comp=Z,408nm,1.7s
XAN Xi'an 36.49 257 P P 18 21 46.8 -0.6
XAN pP pP 18 23 16.8 +1.1
XAN sP sP 18 24 13.8 +0.6
XAN S S 18 26 52.0 -1.0
XAN sS sS 18 29 32.5 -3.1
XAN SS SS 18 29 51.6 -10
XAN pmax pmax
comp=Z,160nm,1.0s
YKU2 Yakutat 36.56 52 esP sP 18 24 07.3 -6.3
TATO Taipei 36.58 233 eP P 18 21 48.8 +0.7
comp=Z,233nm,0.7s
INK Inuvik 36.70 37 P P 18 21 49.2 +0.7
comp=Z,17nm,0.3s,baz=280,slow=6.5,SNR=53
INK pP pP 18 23 18.6 +1.7
comp=Z,16nm,1.1s,baz=283,slow=11,SNR=2.7
INK S S 18 26 55.1 0.0
comp=Z,35nm,1.1s,baz=22,slow=5.1,SNR=15
INK Inuvik 36.70 37 eP P 18 21 49.2 +0.7
comp=Z,28nm,0.5s
INK pP pP 18 23 18.6 +1.7
INK S S 18 26 55.1 0.0
YHNB Yeheng 36.89 233 eP P 18 21 49.8 -1.1
comp=Z,115nm,0.7s
HYT Haines Junctio 37.14 49 eP P 18 21 54.2 +1.8
comp=Z,180nm,0.9s
NACB Ninganchiao 37.20 232 eP P 18 21 51.1 -2.1
comp=Z,51nm,0.7s
SSLB Suanglung 37.84 233 eP P 18 21 57.9 -0.7
comp=Z,80nm,0.9s
YULB Yu-li 38.01 232 eP P 18 21 59.0 -0.9
comp=Z,112nm,0.6s
QZH Quanzhou 38.05 237 ⇓iP P 18 22 00.0 -0.2
LZH Lanzhou 38.14 264 ⇓P P 18 22 01.9 +0.9
LZH pP pP 18 23 33.6 +3.3
LZH PcP PcP 18 24 03.3 +0.4
LZH sP sP 18 24 27.4 -0.1
LZH ScP ScP 18 27 03.3 +1.0
LZH S S 18 27 18.0 +0.2
LZH sS sS 18 30 00.1 -1.4
LZH SS SS 18 30 23.3 -10
LZH pmax pmax
comp=Z,1μm,4.0s
GTA Gaotai 38.46 272 ⇓P P 18 22 04.3 +0.7
GTA pP pP 18 23 36.9 +3.9
GTA sP sP 18 24 32.3 +2.1
GTA ScP ScP 18 27 02.8 -0.6
GTA S S 18 27 22.8 +0.5
GTA sS sS 18 30 07.8 +1.5
GTA ScS ScS 18 31 13.8 -1.9
GTA pmax pmax
comp=Z,300nm,1.1s
GTA pmax pmax
comp=Z,1μm,5.9s
TWG Pinlang 38.60 232 eP P 18 22 03.2 -1.5
comp=Z,679nm,0.7s
SKAG Skagway 38.65 51 eP P 18 22 05.7 +1.1
comp=Z,32nm,0.9s
ZAA0 Zalesovo Array 39.40 300 eP P 18 22 09.3 -1.4
ZALV Zalesovo Beam 39.40 300 P P 18 22 10.2 -0.5
comp=Z,155nm,0.8s,baz=60,slow=6.9,SNR=589
ZALV PcP PcP 18 24 05.9 -0.5
comp=Z,48nm,0.8s,baz=57,slow=3.8,SNR=8.7
NVS Novosibirsk 39.82 302 ⇑iP P 18 22 14.8 +0.7
NVS i 18 24 01.7
NVS i S S 18 27 42.4 +0.9
NVS pmax pmax
comp=N,108nm,0.8s
NVS pmax pmax
comp=E,297nm,0.8s
NVS pmax pmax
comp=Z,475nm,0.8s
NVS smax smax
comp=N,70nm,1.5s
NVS smax smax
comp=E,36nm,1.5s
WRAK Wrangell Islan 41.38 54 eP P 18 22 28.8 +2.2
comp=E,87nm,0.9s
WRAK eScP ScP 18 27 15.9 +1.5
CRAG Craig 41.44 56 eP P 18 22 29.2 +2.2
comp=E,55nm,1.0s
DLBC Dease Lake 41.57 51 P P 18 22 30.4 +2.2
comp=E,54nm,0.8s,baz=293,slow=6.4,SNR=123
DLBC pP pP 18 24 01.3 +1.9
comp=E,15nm,0.9s,baz=297,slow=5.0,SNR=4.4
DLBC ScP ScP 18 27 16.9 +1.6
comp=E,12nm,1.0s,baz=305,slow=4.9,SNR=9.2
DLBC Dease Lake 41.57 51 eP P 18 22 30.5 +2.2
comp=E,83nm,1.0s
DLBC pP pP 18 24 01.3 +1.9
DLBC ScP ScP 18 27 16.9 +1.6

CD2 Chengdu 41.77 259 ⇓iP P 18 22 30.3 +0.2
CD2 pP pP 18 24 01.3 -0.2
CD2 PP PP 18 24 19.8 +0.1
CD2 sP sP 18 24 57.9 -0.2
CD2 S S 18 28 11.1 +0.4
CD2 sS sS 18 30 57.8 +0.7
CD2 pmax pmax
comp=E,950nm,4.8s
DIB Dawson Inlet, 42.88 58 eP P 18 22 40.1 +1.6
comp=E,63nm,0.9s
WMQ Urumqi 43.09 285 ⇓iP P 18 22 41.8 +1.5
WMQ PcP pP 18 24 15.4 +3.0
WMQ PP PP 18 24 33.8 +2.4
WMQ ScP ScP 18 27 21.3 -0.4
WMQ S S 18 28 32.9 +3.6
WMQ ScS ScS 18 31 41.3 -2.5
WMQ pmax pmax
comp=E,270nm,0.9s
WMQ pmax pmax
comp=E,710nm,3.6s
GYA Guiyang 43.37 251 ⇓iP P 18 22 42.6 -0.2
GYA pP pP 18 24 17.3 +2.2
GYA PcP PcP 18 24 22.0 +1.8
GYA PP PP 18 24 35.8 +1.4
GYA ScP ScP 18 27 25.0 +1.8
GYA S S 18 28 31.5 -2.2
GYA sS sS 18 31 21.3 -0.2
GYA ScS ScS 18 31 42.6 -3.5
KURK Kurchatov 44.31 299 P P 18 22 50.5 +0.9
KURK 18 24 22.2
KURK S S 18 28 48.3 +2.1
KURK pmax pmax
comp=Z,383nm,0.5s
KURK smax smax
comp=N,8.0nm,1.0s
KURK Kurchatov 44.31 299 P P 18 22 50.5 +0.9
KURK PcP pP 18 24 22.2 -0.1
KURK ScP ScP 18 27 26.9 +0.5
KURK S S 18 28 48.3 +2.1
KURBB Kurchatov Arra 44.41 299 P P 18 22 50.5 +0.1
comp=N,359nm,0.5s,baz=61,slow=7.6,SNR=3566
KURBB PcP PcP 18 24 22.2 -1.0
comp=N,33nm,0.8s,baz=71,slow=2.6,SNR=5.5
KURBB ScP ScP 18 27 26.9 +0.1
comp=N,9.8nm,0.8s,baz=61,slow=3.9,SNR=5.3
KURBB S S 18 28 48.3 +0.7
comp=N,8.3nm,1.0s,baz=66,slow=19,SNR=5.6
MK31 Makanchi Array 44.48 292 P P 18 22 50.4 -0.7
MK31 pmax pmax
comp=Z,137nm,0.6s
MK31 Makanchi Array 44.48 292 eP P 18 22 51.1 0.0
MKAR Makanchi Array 44.48 292 P P 18 22 51.1 +0.1
comp=Z,210nm,0.7s,baz=57,slow=6.7,SNR=2001
MKAR ScP ScP 18 27 28.2 +0.9
comp=Z,2.9nm,0.6s,baz=55,slow=4.2,SNR=2.3
MKAR S S 18 28 49.7 +0.8
comp=Z,7.1nm,0.8s,baz=61,slow=18,SNR=4.6
MKAR Makanchi Array 44.48 292 P P 18 22 51.1 +0.1
MKAR S S 18 28 49.7 +0.8
MKAR pmax pmax
comp=Z,211nm,0.7s
MKAR smax smax
comp=N,7.0nm,0.8s
MK01 Makanchi Array 44.49 292 eP P 18 22 51.3 +0.2
MAKZ Makanchi 44.65 292 P P 18 22 51.5 -0.9
MAKZ pmax pmax
comp=Z,258nm,0.8s
MAKZ Makanchi 44.65 292 eP P 18 22 52.4 +0.1
comp=Z,322nm,0.9s
RES Resolute Bay 45.19 20 P P 18 22 55.9 -0.1
comp=Z,35nm,0.7s,baz=348,slow=5.5,SNR=58
RES PcP PcP 18 24 25.3 -0.2
comp=Z,8.3nm,0.6s,baz=329,slow=5.3,SNR=4.2
RES S S 18 28 58.6 +0.6
comp=Z,5.2nm,1.0s,baz=24,slow=19,SNR=9.6
RES Resolute Bay 45.19 20 eP P 18 22 56.0 -0.1
RES pmax pmax
comp=Z,46nm,1.0s
RES Resolute Bay 45.19 20 eP P 18 22 56.0 -0.1
comp=Z,46nm,0.9s
RES PcP PcP 18 24 25.3 -0.2
RES S S 18 28 58.6 +0.6
BBB Bella Bella 45.67 58 eP P 18 23 01.4 +1.3
comp=Z,118nm,1.1s
YKA Yellowknife Ar 46.21 40 P P 18 23 04.2 +0.2
comp=Z,30nm,0.7s,baz=302,slow=7.3,SNR=58
YKA pP pP 18 24 38.6 +0.8
comp=Z,4.7nm,0.8s,baz=300,slow=8.0,SNR=3.4
YKA ScP ScP 18 27 35.2 +1.0
comp=Z,19nm,1.0s,baz=303,slow=4.0,SNR=19
YKA Yellowknife Ar 46.21 40 P P 18 23 04.2 +0.2
YKA *PP pP 18 24 38.6 +0.8
YKA pmax pmax
comp=Z,35nm,0.8s
KBS Kingsbay 46.61 350 ⇓iP P 18 23 06.8 0.0
KBS IAmb IAmb 18 23 07.5
comp=Z,101nm,0.9s
KBS epP pP 18 24 43.6 +2.7
KBS Kingsbay 46.61 350 eP P 18 23 06.8 0.0
KBS pmax pmax
comp=Z,100nm,0.9s
KMI Kunming 46.66 254 ⇓P P 18 23 08.4 +0.1
KMI pP pP 18 24 43.3 +0.9
KMI ScP ScP 18 27 36.9 -0.1
KMI PcS PcS 18 28 28.0 -0.1
KMI S S 18 29 22.0 +1.6
KMI ScS ScS 18 32 05.6 -2.2
KMI pmax pmax
comp=Z,320nm,1.3s
KMI pmax pmax
comp=Z,930nm,3.1s
SPA0 Spitsbergen Ar 46.75 349 ⇓iP P 18 23 07.1 -0.8
SPA0 IAmb IAmb 18 23 08.1
comp=Z,181nm,1.1s
SPA0 e 18 24 31.2
SPA0 Spitsbergen Ar 46.75 349 eP P 18 23 07.2 -0.8
SPITS Spitsbergen Ar 46.75 349 P P 18 23 07.1 -0.8
comp=Z,37nm,0.5s,baz=70,slow=8.1,SNR=214
SPITS PcP PcP 18 24 30.9 -0.3
comp=Z,22nm,0.9s,baz=101,slow=13,SNR=5.0
SPITS pP pP 18 24 42.7 +0.6
comp=Z,3.4nm,0.4s,baz=82,slow=6.9,SNR=2.3
HOPEN Hopen 46.90 345 eP P 18 23 08.4 -0.7
HOPEN IAmb IAmb 18 23 09.0
comp=Z,44nm,0.9s
VOSK Vostochnaya 47.14 305 P P 18 23 10.2 -1.1
VOSK pmax pmax
comp=Z,189nm,0.7s
VOSK Vostochnaya 47.14 305 eP P 18 23 10.6 -0.6
comp=Z,249nm,0.9s
KEKH Kekaha 47.18 112 eP P 18 23 12.6 +0.6
comp=Z,235nm,0.9s
BVA0 Borovoye Array 47.27 305 P P 18 23 11.8 -0.4
BVA0 pmax pmax
comp=Z,259nm,0.7s
BVAR Borovoye Array 47.27 305 P P 18 23 12.1 -0.1
comp=Z,271nm,0.6s,baz=58,slow=8.3,SNR=1819
BVAR PcP PcP 18 24 32.8 -0.6
comp=Z,26nm,0.6s,baz=80,slow=3.6,SNR=7.6
BVAR ScP ScP 18 27 37.8 -1.0
comp=Z,10nm,0.7s,baz=51,slow=2.8,SNR=4.2
BVAR S S 18 29 26.4 -1.2
comp=Z,8.2nm,0.9s,baz=60,slow=10,SNR=4.5
BRVK Borovoye 47.30 305 P P 18 23 12.1 -0.3
BRVK pmax pmax
comp=Z,333nm,0.7s
QIZ Qiongzhong 47.48 242 P P 18 23 15.5 +1.2
QIZ PP PP 18 25 13.5 +1.7
QIZ sP sP 18 25 43.4 -1.0
QIZ S S 18 29 34.0 +2.5
QIZ sS sS 18 32 23.0 +0.5
QIZ pmax pmax
comp=Z,170nm,1.1s
QIZ pmax pmax
comp=Z,250nm,14.2s
HSPB Hornsund (broa 47.83 348 ⇓iP P 18 23 15.5 -0.5
HSPB IAmb IAmb 18 23 16.6
comp=Z,172nm,1.5s
HSPB epP pP 18 24 53.4 +2.6
HSPB Hornsund (broa 47.83 348 eP P 18 23 15.5 -0.5
ZRNK Zerenda 47.99 306 P P 18 23 16.6 -1.0
ZRNK pmax pmax
comp=Z,324nm,0.7s
PDGK Podgornoye 48.14 290 P P 18 23 18.8 -0.2
PDGK pmax pmax

comp=Z,425nm,1.2s
OPA Opana 48.38 111 eP P 18 23 22.0 +1.1
OPA pmax pmax
comp=Z,380nm,0.9s
OPA Opana 48.38 111 eP P 18 23 22.0 +1.1
comp=Z,383nm,0.9s
KIP Kipapa 48.58 111 c iP P 18 23 22.9 +0.5
KIP pmax pmax
comp=Z,1μm,1.1s
KIP Kipapa 48.58 111 eP P 18 23 23.7 +1.2
comp=Z,415nm,1.3s
BJO Bjornoya 49.39 345 eP P 18 23 27.1 -0.6
BJO IAmb IAmb 18 23 27.7
comp=Z,119nm,0.9s
SOKR Solikamsk 49.54 318 d iP P 18 23 26.8 -2.1
SOKR pmax pmax
comp=Z,205nm,1.4s
SVE Sverdlovsk 49.60 314 c iP P 18 23 29.7 +0.2
SVE pmax pmax
comp=Z,402nm,0.9s
PFB Port Renfrew 49.69 60 P P 18 23 31.2 +0.9
OCP Olym-Cheeka Pk 49.76 60 P P 18 23 32.1 +1.2
LLLB Lillooet 49.77 56 eP P 18 23 32.0 +1.1
comp=Z,65nm,0.9s
LLLB epP pP 18 25 07.9 +1.2
PGC Sidney 50.16 59 eP P 18 23 34.5 +0.8
comp=Z,52nm,0.7s
LSA Lhasa 50.25 268 P P 18 23 36.5 +1.3
LSA pmax pmax
comp=Z,380nm,0.8s
A04D Lummi Island 50.50 59 P P 18 23 37.4 +1.2
baz=309,SNR=14
TKM2 Tokmak 2 50.61 292 P P 18 23 37.2 -0.2
TKM2 pmax pmax
comp=Z,170nm,0.7s
DAG Danmarks Havn 50.68 358 ⇓iP P 18 23 36.3 -0.8
comp=Z,45nm,0.8s
DAG Danmarks Havn 50.68 358 ⇓iP P 18 23 36.3 -0.8
DAG pmax pmax
comp=Z,34nm,0.8s
NLWA Neilton Lookou 50.72 61 eP P 18 23 39.2 +1.3
comp=Z,112nm,1.0s
NLWA epP pP 18 25 15.2 +1.0
ARU Arti 50.75 314 d iP P 18 23 37.4 -0.5
ARU e 18 24 43.4
ARU e 18 25 37.1
ARU S S 18 30 15.4 +0.3
ARU 18 32 30.3
ARU *SS sS 18 33 09.6 +1.0
ARU SS SS 18 33 59.4 +2.1
ARU pmax pmax
comp=Z,510nm,0.8s
ARU Arti 50.75 314 eP P 18 23 37.7 -0.2
comp=Z,423nm,0.7s
CMW Cultus Mountai 50.99 59 P P 18 23 41.1 +1.2
HPAH Hawaii Prepara 51.00 110 eP P 18 23 41.1 +0.7
comp=Z,447nm,0.8s
B05A Bryant 51.11 59 P P 18 23 41.7 +1.0
baz=309,SNR=30
B05A Bryant 51.11 59 P P 18 23 41.7 +1.0
KKH Kailua Kona 51.12 110 eP P 18 23 41.9 +0.8
KKH Kailua Kona 51.12 110 eP P 18 23 41.9 +0.8
CTBH Cotabato--PC H 51.15 218 ⇓iP P 18 23 42.5 +1.2
FRU Bishkek 51.22 292 ⇓iP P 18 23 41.0 -0.6
FRU e 18 25 21.0
FRU i S S 18 30 23.0 +1.0
FRU i 18 32 36.0
FRU pmax pmax
comp=Z,450nm,2.0s
LVZ Lovozero 51.34 335 d iP P 18 23 41.1 -1.0
LVZ pmax pmax
comp=Z,183nm,0.9s
LVZ Lovozero 51.34 335 eP P 18 23 41.7 -0.4
comp=Z,199nm,0.9s
AAK Ala-Archa 51.41 292 P P 18 23 43.4 +0.2
AAK pmax pmax
comp=Z,219nm,0.6s
AAK Ala-Archa 51.41 292 P P 18 23 43.7 +0.5
E03A Lebam 51.42 61 eP P 18 23 44.4 +1.4
comp=Z,142nm,0.9s
E03A epP pP 18 25 22.2 +2.7
MLOA Mauna Loa Obse 51.46 110 eP P 18 23 44.7 +0.5
HAMF Hammerfest 51.74 341 ⇓iP P 18 23 43.5 -1.4
HAMF IAmb IAmb 18 23 44.3
comp=Z,80nm,1.1s
F03A Seaside 51.81 62 eP P 18 23 47.2 +1.4
comp=Z,158nm,1.1s
D05A Enumclaw 51.84 60 eP P 18 23 47.7 +1.7
comp=Z,132nm,1.3s
APA Apatity 51.91 335 ⇓iP P 18 23 44.4 -1.7
APA i 18 24 42.0
APA i S S 18 30 22.0 -8.3
APA pmax pmax
comp=Z,108nm,0.8s
APA MLR MLR
comp=Z,200nm,14.0s
C06D Leavenworth 51.95 58 P P 18 23 47.6 +0.8
baz=310
NONG Nongkai 51.95 248 P P 18 23 47.4 +0.2
comp=Z,196nm,1.0s
WRW Wenatchee Ridg 51.99 58 P P 18 23 48.1 +0.9
F04D Rainier, OR 52.01 61 P P 18 23 48.2 +1.0
baz=310
NLW Nelson Butte 52.13 58 P P 18 23 49.3 +1.0
LON Longmire 52.22 60 eP P 18 23 49.6 +0.8
LON pmax pmax
comp=Z,19nm,1.1s
LON Longmire 52.22 60 eP P 18 23 49.6 +0.8
comp=Z,19nm,1.1s
ARA0 ARCESS Array S 52.25 339 eP P 18 23 47.9 -0.7
ARCES ARCESS Array B 52.25 339 P P 18 23 47.9 -0.7
comp=Z,103nm,0.8s,baz=32,slow=7.1,SNR=302
ARE0 ARCESS Array S 52.25 339 ⇓iP P 18 23 48.0 -0.6
ARE0 IAmb IAmb 18 23 48.8
comp=Z,115nm,0.8s
ARE0 ARCESS Array S 52.25 339 eP P 18 23 48.0 -0.6
comp=Z,113nm,0.8s
TDL Tradedollar La 52.26 61 P P 18 23 50.3 +1.1
EDM Edmonton 52.26 49 eP P 18 23 49.5 +0.5
EDM e*PP pP 18 25 27.6 +1.5
EDM pmax pmax
comp=Z,100nm,0.9s
EDM Edmonton 52.26 49 eP P 18 23 49.5 +0.5
comp=Z,100nm,0.8s
EDM epP pP 18 25 27.6 +1.5
G03D McMinnville, O 52.43 62 P P 18 23 51.5 +1.2
baz=311
B08A Colville Reser 52.47 57 eP P 18 23 51.2 +0.6
comp=Z,89nm,0.9s
B08A epP pP 18 25 27.9 +0.2
WTV Waterville 52.58 58 P P 18 23 51.9 +0.5
KSH Kashi 52.61 288 ⇓iP P 18 23 56.1 +4.2
KSH epP pP 18 25 34.3 +5.2
KSH ePP PP 18 26 04.9 +7.5
KSH esP sP 18 26 29.4 +5.4
KSH eScP ScP 18 28 04.8 +2.5
KSH S S 18 30 46.3 +5.4
KSH ScS ScS 18 32 50.0 +1.8
KSH pmax pmax
comp=Z,220nm,1.0s
MNAS Manas 52.63 293 P P 18 23 51.6 -0.3
MNAS pmax pmax
comp=Z,138nm,0.7s
COR Corvallis 52.82 63 eP P 18 23 55.0 +1.9
COR pmax pmax
comp=Z,93nm,1.0s
COR Corvallis 52.82 63 eP P 18 23 55.0 +1.9
comp=Z,93nm,0.9s
CMAI Chiengmai2 52.82 253 P P 18 23 54.3 +0.7
comp=Z,2μm,1.1s,comp=Z,190μm
UBPT Khong Chiam 52.92 243 P P 18 23 54.4 +0.3
comp=Z,240nm,1.4s,comp=Z,3μm
TDH Tom, Dick, Har 53.17 61 P P 18 23 56.9 +1.1
KK31 Karatay Array 53.33 295 i P P 18 23 56.5 -0.3
KK31 pmax pmax
comp=Z,106nm,0.7s
KKAR Karatay Array 53.33 295 eP P 18 23 56.7 -0.1
VFP Flag Point 53.33 61 P P 18 23 58.0 +1.1
C09A Chrisman Ranch 53.37 57 eP P 18 23 57.6 +0.6
comp=Z,112nm,1.4s
C09A epP pP 18 25 35.1 +0.5
I03D Drain, OR 53.38 64 P P 18 23 58.9 +1.9
baz=311,SNR=17
G05D Wamic, OR 53.46 61 P P 18 23 58.9 +1.2
baz=311,SNR=15

LOEI Loei 53.46 249 P P 18 23 55.9 -2.1
comp=Z,179nm,1.0s
TRO Tromso 53.50 342 ⇓*i*P P 18 23 57.0 -0.5
TRO IAmb IAmb 18 23 57.7
comp=Z,254nm,1.5s
TRO *e*pP **pP** 18 25 39.1 +4.0
D08A Wollman Farm, 53.53 58 *e*P P 18 23 58.7 +0.6
comp=Z,45nm,1.0s
LAMP Lampang 53.59 252 P P 18 23 59.5 +0.6
comp=Z,110nm,1.0s,comp=Z,874nm
HAWA Hanford 53.65 59 *e*P P 18 23 59.8 +0.9
comp=Z,41nm,0.8s
HAWA *e*pP **pP** 18 25 36.7 0.0
NEW Newport 53.66 56 P P 18 23 59.6 +0.6
comp=Z,36nm,0.9s,baz=318,slow=6.7,SNR=38
NEW pP **pP** 18 25 36.9 +0.1
comp=Z,10nm,1.0s,baz=307,slow=9.0,SNR=3.5
NEW Newport 53.66 56 P P 18 23 59.6 +0.6
baz=311,SNR=25
NEW S S 18 30 54.0 -0.3
baz=311
NEW Newport 53.66 56 *e*P P 18 23 59.6 +0.6
comp=Z,56nm,1.0s
NEW pP **pP** 18 25 36.9 +0.1
UTTA Uttaradit 53.68 250 P P 18 23 59.7 +0.2
comp=Z,95nm,0.9s,comp=Z,665nm
CMMT Chiang Mai 53.76 252 P P 18 24 00.2 +0.1
comp=Z,412nm,0.8s,comp=Z,4µm
CHTO Chiang Mai 53.76 252 P P 18 24 00.3 +0.2
comp=Z,2µm,0.9s,comp=Z,16µm
CHTO Chiang Mai 53.76 252 *e*P P 18 24 00.8 +0.7
CHTO pmax pmax
comp=Z,310nm,0.9s
CHTO Chiang Mai 53.76 252 P P 18 24 00.7 +0.6
SNR=71
CROR Criterion Ridg 53.80 61 P P 18 24 01.5 +1.3
I04A Tendick Farm, 53.82 63 P P 18 24 01.5 +1.3
baz=312,SNR=35
G06A Carlson Farm, 53.83 61 *e*P P 18 24 01.2 +0.9
comp=Z,19nm,0.9s
CM31 Chiang Mai Arr 54.04 252 *e*P P 18 24 03.1 +1.0
CMAR Chiang Mai Arr 54.04 252 P P 18 24 03.1 +1.0
comp=Z,138nm,0.8s,baz=28,slow=6.6,SNR=462
CMAR PcP **PcP** 18 24 59.6 +0.3
comp=Z,35nm,0.8s,baz=20,slow=3.2,SNR=11
CMAR ScP **ScP** 18 28 07.2 -1.4
comp=Z,12nm,0.8s,baz=9.7,slow=4.0,SNR=9.9
I05D Terrebonne, OR 54.04 62 P P 18 24 03.1 +1.3
baz=312,SNR=24
CM01 Chiang Mai Arr 54.06 252 *e*P P 18 24 01.8 -0.4
L02D Cave Junction, 54.26 65 P P 18 24 05.3 +1.9
baz=312,SNR=28
E09A Wood Farm, Sta 54.29 58 *e*P P 18 24 04.3 +0.9
comp=Z,101nm,0.9s
E09A *e*pP **pP** 18 25 41.9 +0.4
MSF Maaselka 54.30 335 P P 18 24 02.6 -0.6
HUMO Hull Mountain 54.31 65 *e*P P 18 24 05.7 +1.9
comp=Z,78nm,1.0s
J04D Umpqua Nationa 54.35 64 P P 18 24 06.1 +1.8
baz=312,SNR=10
PBKT Sadao Pong 54.38 249 P P 18 24 04.6 +0.1
comp=Z,158nm,0.7s,comp=Z,2µm
KRMB Red Mountain 54.51 66 *e*P P 18 24 07.4 +2.1
comp=Z,91nm,1.1s
G08A Pilot Rock 54.67 60 *e*P P 18 24 07.3 +1.0
comp=Z,20nm,0.8s
WALA Waterton Lakes 54.73 54 *e*P P 18 24 07.4 +0.7
comp=Z,58nm,0.8s
GUN Gumba 54.74 271 *e*P P 18 24 07.6 +0.3
comp=Z,754nm,0.6s
SUMG Summit 54.74 4 ⇓*i*P P 18 24 06.6 -0.2
comp=Z,75nm,0.6s
SUMG Summit 54.74 4 *e*P P 18 24 06.5 -0.2
SUMG pmax pmax
comp=Z,110nm,1.0s
SUMG Summit 54.74 4 *e*P P 18 24 06.5 -0.2
comp=Z,113nm,1.0s
AB31 Akbulak array 54.76 307 P P 18 24 05.6 -1.1
AB31 pmax pmax
comp=Z,207nm,0.6s
ABKAR Akbulak array 54.76 307 *e*P P 18 24 06.6 -0.1
J05D Fort Rock, OR 54.80 63 P P 18 24 09.4 +2.1
baz=312,SNR=24
JCC Jacoby Creek, 54.92 67 *e*P P 18 24 10.1 +2.1
comp=Z,144nm,1.4s
K04D Chiloquin, OR 54.96 64 P P 18 24 10.3 +1.8
baz=312,SNR=6.5
RAMN Ramite 55.00 269 *e*P P 18 24 09.4 +0.4
comp=Z,1µm,0.6s
YBH Yreka Blue Hor 55.03 65 *e*P P 18 24 10.9 +2.0
YBH pmax pmax
comp=Z,130nm,1.1s
YBH Yreka Blue Hor 55.03 65 *e*P P 18 24 10.9 +2.0
comp=Z,126nm,1.1s
KHMM Horse Mountain 55.05 67 *e*P P 18 24 11.3 +2.2
comp=Z,189nm,1.3s
KLMR Klimovskoe 55.07 327 *d*iP P 18 24 08.5 -0.2
KLMR *e*S **S** 18 31 12.5 +0.2
KLMR pmax pmax
comp=Z,513nm,1.4s
BSMT Bassoo Peak 55.10 55 *e*P P 18 24 10.7 +1.3
M02C Callahan 55.19 66 P P 18 24 12.2 +2.2
baz=313,SNR=33
KKN Kakani 55.19 271 *e*P P 18 24 10.9 +0.5
comp=Z,959nm,0.5s
BLMT Blacktail Moun 55.20 55 *e*P P 18 24 11.1 +0.9
BLMT *e*pP **pP** 18 25 50.0 +1.3
PKIN Phulchoki 55.27 271 *e*P P 18 24 11.5 +0.5
comp=Z,900nm,0.7s
MYLDM Lahad Datu 55.29 224 *e*P P 18 24 12.8 +1.9
comp=Z,186nm,1.3s
K05A Summer Lake 55.36 63 *e*P P 18 24 13.3 +2.0
comp=Z,236nm,1.1s
JTMT Jette 55.42 55 *e*P P 18 24 12.6 +1.0
DMN Daman 55.43 271 *e*P P 18 24 12.8 +0.7
comp=Z,2µm,0.8s
GKN Gorkha 55.43 272 *e*P P 18 24 12.4 +0.5
comp=Z,2µm,0.9s
YBMT Yellow Bay 55.48 55 *e*P P 18 24 13.0 +1.0
M04C Macdoel 55.48 65 P P 18 24 13.9 +1.8
baz=313
KKM Kota Kinabalu 55.50 227 *e*P P 18 24 13.6 +1.1
comp=Z,192nm,1.1s
KMRM Mail Ridge 55.50 67 *e*P P 18 24 14.5 +2.3
comp=Z,71nm,0.9s
N02D Trinity Center 55.55 66 P P 18 24 14.6 +2.1
baz=313,SNR=24
STEI Steigen 55.66 342 ⇓*i*P P 18 24 11.6 -1.1
STEI IAmb IAmb 18 24 12.5
comp=Z,58nm,1.3s
DANN Dangsing 55.71 273 *e*P P 18 24 14.8 +0.7
SWMT Swartz Lake 55.73 55 *e*P P 18 24 14.6 +1.0
SWMT *e*pP **pP** 18 25 53.7 +1.3
OUL Oulu 55.75 336 P P 18 24 12.4 -0.9
OUL pmax pmax
comp=Z,229nm,0.8s
LOF Lofoten 55.79 343 *e*P P 18 24 12.6 -1.0
LOF IAmb IAmb 18 24 13.4
comp=Z,123nm,0.8s
UMPA Umpang Tak 55.87 251 P P 18 24 16.9 +1.9
comp=Z,94nm,0.8s,comp=Z,914nm
JMIC Jan Mayen 55.91 353 *e*P P 18 24 15.1 +0.8
JMIC IAmb IAmb 18 24 15.7
comp=Z,94nm,1.0s
WDC Whiskeytown Da 55.91 66 *e*P P 18 24 16.5 +1.6
WDC *e**PP **pP** 18 25 55.0 +1.2
WDC pmax pmax
comp=Z,34nm,0.9s
WDC Whiskeytown Da 55.91 66 *e*P P 18 24 16.5 +1.6
comp=Z,34nm,0.9s
WDC *e*pP **pP** 18 25 55.0 +1.2
JOF Joensuu 56.04 332 P P 18 24 14.5 -0.9
JOF pmax pmax
comp=Z,283nm,1.3s
SLMT Seeley Lake 56.16 55 *e*P P 18 24 17.4 +0.7
GENI Genyem 56.19 196 P P 18 24 14.4 -2.7
comp=Z,66nm,0.8s
FFC Flin Flon 56.21 42 *e*P P 18 24 17.4 +0.6
FFC pmax pmax
comp=Z,34nm,0.8s
FFC Flin Flon 56.21 42 *e*P P 18 24 17.4 +0.6
comp=Z,34nm,0.8s
MSO Missoula 56.22 56 P P 18 24 18.0 +1.0
baz=313,SNR=50
MSO Missoula 56.22 56 *e*P P 18 24 18.1 +1.0
comp=Z,76nm,1.0s
MSO *e*pP **pP** 18 25 57.2 +1.1
KOLN Koldanda 56.23 273 *e*P P 18 24 17.9 +0.4
comp=Z,893nm,0.7s
MOD Modoc Plateau 56.24 64 *e*P P 18 24 18.9 +1.5
comp=Z,56nm,0.8s
MOD *e*pP **pP** 18 25 57.6 +1.2
FCC Fort Churchill 56.30 35 *e*P P 18 24 17.2 0.0
FCC pmax pmax
comp=Z,17nm,0.8s
FCC Fort Churchill 56.30 35 *e*P P 18 24 17.2 0.0
comp=Z,17nm,0.8s
PYUN Piuthan 56.36 273 *e*P P 18 24 18.9 +0.5
comp=Z,3µm,1.0s
SWI Sorong 56.47 207 P P 18 24 19.5 +0.5
comp=Z,159nm,1.2s,comp=Z,2µm
CHMT Chamberlain Mo 56.50 55 *e*P P 18 24 19.7 +0.5
O03D Paynes Creek 56.52 66 P P 18 24 20.2 +1.0
baz=314,SNR=53
HOPS Hopland Field 56.70 68 *e*P P 18 24 21.8 +1.4
comp=Z,92nm,1.3s
CHBT CHBT 56.72 245 P P 18 24 21.7 +1.0
comp=Z,378nm,1.1s
WVOR Wild Horse Val 56.78 62 *e*P P 18 24 22.6 +1.6
WVOR pmax pmax
comp=Z,120nm,1.0s
WVOR Wild Horse Val 56.78 62 *e*P P 18 24 22.6 +1.6
comp=Z,117nm,1.0s
SCO Scoresbysund 57.06 358 ⇓*i*P P 18 24 22.2 -0.1
comp=Z,21nm,0.7s
SCO Scoresbysund 57.06 358 ⇓*i*P P 18 24 22.2 -0.1
SCO pmax pmax
comp=Z,21nm,0.7s
ORV Oroville 57.19 66 *e*P P 18 24 24.3 +0.5
ORV *e**PP **pP** 18 26 03.6 +0.3
ORV pmax pmax
comp=Z,50nm,0.9s
ORV Oroville 57.19 66 *e*P P 18 24 24.3 +0.5
comp=Z,50nm,0.8s
ORV *e*pP **pP** 18 26 03.6 +0.3
SRDT SRDT 57.21 249 P P 18 24 24.7 +0.5
comp=Z,297nm,1.6s,comp=Z,4µm
HRY Holter Researc 57.35 55 *e*P P 18 24 26.2 +1.3
LBMI Labuha 57.35 211 P P 18 24 27.3 +2.2
comp=Z,119nm,0.8s
KMSI Cibinong 57.39 215 P P 18 24 21.9 -3.5
MCCM Marconi Confer 57.40 69 *e*P P 18 24 26.1 +1.0
comp=Z,60nm,0.9s
EGMT Eagleton 57.45 52 P P 18 24 26.1 +0.6
baz=314,SNR=23
STOK Stokkvaagen 57.48 342 ⇓*i*P P 18 24 24.1 -1.1
STOK IAmb IAmb 18 24 24.5
comp=Z,43nm,1.0s
SDNR Sundarnagar 57.55 281 *e*P P 18 24 25.6 -0.8
MFID Camas Ranch 57.60 60 *e*P P 18 24 27.9 +1.3
THN Thein Dam 57.64 282 *e*P P 18 24 24.8 -2.1
LRM Limekiln Ridge 57.66 56 *e*P P 18 24 28.1 +1.0
DLMT Dillon 57.91 56 *e*P P 18 24 29.8 +1.1
comp=Z,140nm,1.2s
AFDM Forest Hills D 57.91 67 *e*P P 18 24 29.8 +1.1
comp=Z,47nm,1.1s
PHET Kaeng Krachan 58.09 248 P P 18 24 31.1 +1.0
comp=Z,148nm,0.8s,comp=Z,1µm
MCMT McKenzie Canyo 58.15 57 *e*P P 18 24 31.4 +0.9
FAKI Fak Fak 58.17 205 P P 18 24 32.4 +1.7
comp=Z,130nm,1.3s,comp=Z,2µm
FAKI Fak Fak 58.17 205 *e*P P 18 24 31.4 +0.6
comp=Z,158nm,1.2s
MRSI Marisa 58.22 218 P P 18 24 31.0 0.0
comp=Z,264nm,1.2s,comp=Z,3µm
BOZ Bozeman (W) 58.23 55 P P 18 24 32.1 +1.2
baz=315,SNR=51
BOZ Bozeman (W) 58.23 55 *e*P P 18 24 32.1 +1.2
BOZ pmax pmax
comp=Z,64nm,0.9s
BOZ Bozeman (W) 58.23 55 *e*pP pP 18 26 11.9 +1.0
HLID Hailey 58.23 59 P P 18 24 32.2 +1.2
baz=315,SNR=39
HLID Hailey 58.23 59 *e*P P 18 24 32.3 +1.3
comp=Z,28nm,1.0s
VAF Ylistaro 58.24 336 P P 18 24 30.0 -0.5
VAF pmax pmax
comp=Z,138nm,0.8s
PAHR Pah Rah Range 58.26 65 *e*P P 18 24 32.5 +1.3
comp=Z,119nm,1.1s
PAHR *e*pP **pP** 18 26 12.9 +1.7
FIA1 FINESS Array S 58.69 333 *e*P P 18 24 33.1 -0.3
FINES FINESS Array B 58.69 333 P P 18 24 33.0 -0.5
comp=Z,189nm,0.7s,baz=36,slow=7.0,SNR=733
FINES pP **pP** 18 26 14.4 +0.7
comp=Z,12nm,0.8s,baz=50,slow=18,SNR=3.0
QLMT Earthquake Lak 58.87 56 *e*P P 18 24 36.7 +1.3
CMB Columbia Colle 58.88 67 *e*P P 18 24 36.5 +1.2
CMB *e**PP **pP** 18 26 17.2 +1.6
CMB pmax pmax
comp=Z,120nm,1.3s
CMB Columbia Colle 58.88 67 *e*P P 18 24 36.5 +1.2
comp=Z,120nm,1.3s
CMB *e*pP **pP** 18 26 17.2 +1.6
BMN Battle Mountai 58.94 63 *e*P P 18 24 37.5 +1.7
BMN pmax pmax
comp=Z,65nm,1.0s
BMN Battle Mountai 58.94 63 *e*P P 18 24 37.5 +1.7
comp=Z,65nm,1.0s
BMN *e*pP **pP** 18 26 16.8 +0.7
YHB Horse Butte 59.04 56 *e*P P 18 24 38.1 +1.6
comp=Z,104nm,0.8s
GCMT Greycliff 59.07 54 *e*P P 18 24 38.1 +1.6
GCMT *e*pP **pP** 18 26 18.7 +1.8
WAKR Walker 59.08 66 *e*P P 18 24 38.6 +1.8
comp=Z,55nm,0.8s
WAKR *e*pP **pP** 18 26 18.6 +1.4
SANI Sanana 59.16 212 P P 18 24 38.2 +0.8
comp=Z,187nm,0.8s,comp=Z,2µm
SAO San Andreas Ge 59.18 69 *e*P P 18 24 38.3 +1.1
SAO *e**PP **pP** 18 26 19.1 +1.4
SAO pmax pmax
comp=Z,92nm,1.6s
SAO San Andreas Ge 59.18 69 *e*P P 18 24 38.3 +1.1
comp=Z,92nm,1.6s
YHH Holmes Hill 59.19 56 *e*P P 18 24 39.0 +1.4
comp=Z,63nm,0.8s
SFJD Kangerlussuaq 59.27 11 *e*P P 18 24 36.2 -1.1
SFJD pmax pmax
comp=Z,43nm,0.7s
SFJD Kangerlussuaq 59.27 11 *e*P P 18 24 36.2 -1.1
comp=Z,43nm,0.7s
LUWI Luwuk 59.32 216 P P 18 24 37.7 -0.7
comp=Z,153nm,1.0s,comp=Z,2µm
LUWI Luwuk 59.32 216 *e*P P 18 24 37.0 -1.4
comp=Z,114nm,0.8s
YFT Old Faithful 59.44 56 *e*P P 18 24 42.2 +3.0
comp=Z,79nm,0.8s
MCID Moose Creek 59.45 56 *e*P P 18 24 41.3 +2.1
YPP Pitchstone Pla 59.58 56 *e*P P 18 24 42.9 +2.6
comp=Z,141nm,2.0s
YPP *e*pP **pP** 18 26 24.1 +3.3
MOS Moscow 59.59 324 *e*P P 18 24 37.8 -1.9
MOS *e**PP **pP** 18 26 18.8 -1.5
MOS *e* 18 26 55.1
MOS *e*S **S** 18 32 06.6 -3.7
MOS *e* 18 33 34.7
MOS pmax pmax
comp=Z,600nm,1.5s
MOS pmax pmax
comp=Z,364nm,1.3s
H17A Grant Village 59.61 56 P P 18 24 43.2 +2.9
baz=316,SNR=10
H17A Grant Village 59.61 56 *e*P P 18 24 43.2 +2.9
comp=Z,71nm,0.9s
DGMT Dagmar 59.74 49 P P 18 24 41.5 +0.6
baz=317,SNR=6.9
DGMT Dagmar 59.74 49 *e*P P 18 24 41.7 +0.9
comp=Z,76nm,1.0s
RLMT Red Lodge 59.74 54 P P 18 24 42.6 +1.5
baz=316,SNR=46
RLMT Red Lodge 59.74 54 *e*P P 18 24 42.6 +1.5
comp=Z,94nm,1.0s
FLWY Flagg Ranch 59.77 56 *e*P P 18 24 43.4 +2.1
comp=Z,45nm,1.0s
IMW Indian Meadow 59.78 56 *e*P P 18 24 43.3 +1.8
comp=Z,138nm,1.7s
A25A Svangstu Ranch 59.89 48 P P 18 24 42.7 +0.9
baz=317,SNR=6.8
NLAI Namlea 59.93 210 P P 18 24 43.9 +1.4
comp=Z,79nm,1.1s,comp=Z,943nm
MOOW Moose Ponds 59.98 56 *e*P P 18 24 44.5 +1.7
comp=Z,32nm,0.9s
MOOW *e*pP **pP** 18 26 25.7 +2.1
MLAC Mammoth, Mammo 60.03 66 P P 18 24 44.9 +1.7
baz=316
KBL Kabul 60.05 289 *e*P P 18 24 42.3 -1.1
KBL pmax pmax
comp=Z,240nm,0.9s
KBL Kabul 60.05 289 *e*P P 18 24 42.3 -1.1
comp=Z,242nm,0.9s
TPAW Teton Pass 60.06 57 *e*P P 18 24 45.3 +1.9
comp=Z,65nm,0.8s
TPAW *e*pP **pP** 18 26 27.3 +3.0
LAO LASA Array 60.09 51 P P 18 24 44.4 +1.2
baz=317,SNR=24
LAO LASA Array 60.09 51 *e*P P 18 24 44.4 +1.2
comp=Z,58nm,0.9s
LAO *e*pP **pP** 18 26 25.2 +1.1
LOHW Long Hollow 60.15 56 *e*P P 18 24 45.7 +1.8
comp=Z,64nm,1.1s
SNOW Snow King Moun 60.18 57 *e*P P 18 24 46.2 +2.0
comp=Z,35nm,0.8s
SNOW *e*pP **pP** 18 26 28.3 +3.3
REDW Red Top Meadow 60.21 57 *e*P P 18 24 46.0 +1.7
comp=Z,73nm,1.1s
PCI Palu 60.28 219 P P 18 24 44.3 -0.6
comp=Z,226nm,1.2s,comp=Z,2µm
HVU Hansel Valley 60.35 59 *e*P P 18 24 46.7 +1.5
HVU pmax pmax
comp=Z,87nm,1.5s
HVU Hansel Valley 60.35 59 *e*P P 18 24 46.7 +1.5
comp=Z,87nm,1.5s
B25A Knox Farm, Ray 60.36 48 P P 18 24 45.9 +0.9
baz=317
A26A Wade Farm, Ken 60.40 47 P P 18 24 45.8 +0.5
baz=318
OBN Obninsk 60.46 324 *d*iP P 18 24 44.7 -0.7
OBN *i* 18 25 24.0
OBN *e* 18 27 09.8
OBN *i*S **S** 18 32 19.2 -1.9
OBN *i*SS **SS** 18 36 28.6 -0.6
OBN pmax pmax
comp=Z,211nm,1.0s
OBN Obninsk 60.46 324 *e*P P 18 24 44.9 -0.5
comp=Z,222nm,0.9s
SBUM Sibu 60.48 229 *e*P P 18 24 47.7 +1.5
AHID Auburn Hatcher 60.51 57 *e*P P 18 24 47.5 +1.3
B26A Jensen Ranch, 60.70 48 P P 18 24 48.0 +0.8
baz=318
A27A Ledoux Ranch, 60.72 47 P P 18 24 48.2 +0.9
baz=318,SNR=5.6
C25A Freed Ranch, W 60.73 49 P P 18 24 48.6 +1.2
baz=318
RCTC Rector, Farmer 60.75 68 P P 18 24 48.6 +0.9
baz=316
TIN Tinemaha, Big 60.78 66 P P 18 24 49.9 +1.8
baz=316,SNR=9.1
BGU Big Grassy Mou 60.83 60 *e*P P 18 24 49.6 +1.3
comp=Z,23nm,0.7s
BGU *e*pP **pP** 18 26 31.4 +1.8
SPUT South Promonto 60.86 59 *e*P P 18 24 50.4 +1.8
comp=Z,67nm,1.2s
VSU Vasula 60.97 331 *d*iP P 18 24 48.5 -0.3
VSU pmax pmax
comp=Z,686nm,0.9s
SMMC Simmler 61.03 69 P P 18 24 51.2 +1.5
baz=316,SNR=20
HWUT Hardware Ranch 61.10 59 *e*P P 18 24 51.7 +1.5
comp=Z,68nm,0.8s
HWUT *e*pP **pP** 18 26 33.2 +1.7
RSUT Red Spur Mount 61.16 58 *e*P P 18 24 52.3 +1.6
VES Vestal, Richgr 61.17 68 P P 18 24 51.0 +0.5
baz=316,SNR=14
MCU Monte Cristo P 61.24 59 *e*P P 18 24 52.5 +1.3
BW06 Boulder Array 61.29 56 P P 18 24 52.3 +0.8
baz=317,SNR=85
BW06 Boulder Array 61.29 56 *e*P P 18 24 51.2 -0.3
PD31 Pinedale Array 61.29 56 *e*P P 18 24 52.4 +0.9
PDAR Pinedale Array 61.29 56 P P 18 24 52.4 +0.9
comp=Z,51nm,0.8s,baz=310,slow=2.5,SNR=327
PDAR pP **pP** 18 26 33.5 +0.7
comp=Z,10nm,0.8s,baz=298,slow=3.2,SNR=7.0
GRAC Grapevine Rang 61.30 66 P P 18 24 53.2 +1.8
baz=316,SNR=11
R11A Troy Canyon, C 61.31 64 P P 18 24 52.5 +0.9
baz=316,SNR=55
R11A Troy Canyon, C 61.31 64 *e*P P 18 24 52.6 +1.0
PKM Mcpherson Peak 61.44 69 P P 18 24 54.0 +1.5
baz=316,SNR=30
DUG Dugway, Tooele 61.47 60 P P 18 24 54.0 +1.4
baz=317,SNR=43
DUG Dugway, Tooele 61.47 60 *e*P P 18 24 54.1 +1.5
DUG pmax pmax
comp=Z,78nm,0.9s
DUG Dugway, Tooele 61.47 60 *e*P P 18 24 54.1 +1.5
comp=Z,78nm,0.8s
VRH Novokhopyorsk 61.52 318 *e*P P 18 24 51.3 -1.2
VRH pmax pmax
comp=Z,350nm,0.6s
TCUT Toone Canyon 61.54 59 *e*P P 18 24 54.6 +1.5
comp=Z,56nm,0.8s
D26A Manning 61.60 49 P P 18 24 54.1 +0.9
baz=318,SNR=8.2
A29A Manning Farm, 61.62 46 P P 18 24 53.6 +0.3
baz=319,SNR=7.5
ISA Isabella, Lake 61.64 68 P P 18 24 54.0 +0.3
baz=317,SNR=13
ISA Isabella, Lake 61.64 68 *e*pP pP 18 26 35.8 +0.5
CTU Camp Tracy 61.67 59 *e*P P 18 24 55.4 +1.5
comp=Z,89nm,0.9s
DAC Darwin (Calif) 61.69 67 *e*P P 18 24 55.2 +1.0
DAC pmax pmax
comp=Z,37nm,0.9s
DAC Darwin (Calif) 61.69 67 *e*P P 18 24 55.2 +1.0
comp=Z,36nm,0.9s
SBC Santa Barbara 61.82 69 P P 18 24 55.9 +1.2
baz=317
ARVC Arvin 61.83 68 P P 18 24 55.3 +0.5
baz=317
JLU Jordanelle 61.89 59 *e*P P 18 24 56.7 +1.3
comp=Z,27nm,0.8s
MOL Molde 61.91 343 *e*P P 18 24 54.1 -0.8
MOL IAmb IAmb 18 24 55.3
comp=Z,52nm,0.8s
MPMC Manual Prospec 61.91 67 P P 18 24 56.7 +1.1
baz=317,SNR=63
B29A Wagenman Farm, 61.91 46 P P 18 24 55.7 +0.5
baz=319,SNR=9.3
TPNV Topopah Spring 61.95 65 P P 18 24 57.0 +1.2
baz=317,SNR=84
TPNV Topopah Spring 61.95 65 *e*P P 18 24 57.2 +1.4
TPNV pmax pmax
comp=Z,99nm,0.9s
TPNV Topopah Spring 61.95 65 *e*P P 18 24 57.1 +1.4
comp=Z,99nm,0.9s
TPNV *e*pP **pP** 18 26 38.4 +0.9
FURC Furnace Creek, 61.96 66 P P 18 24 57.1 +1.5
baz=317,SNR=69
ULM Lac du Bonnet 62.04 43 P P 18 24 55.5 -0.4
comp=Z,7.2nm,0.6s,baz=319,slow=5.9,SNR=15
ULM pP **pP** 18 26 38.2 +0.6
comp=Z,16nm,1.2s,baz=311,slow=7.3,SNR=4.1
KDI Kendari 62.08 215 P P 18 24 58.5 +1.9
comp=Z,86nm,1.1s,comp=Z,1µm
PSUT Pine Spring 62.11 62 *e*P P 18 24 58.3 +1.4
comp=Z,42nm,0.7s
DOMB Dombas 62.11 342 ⇓*i*P P 18 24 55.5 -0.8
DOMB IAmb IAmb 18 24 56.3
comp=Z,74nm,0.8s
DOMB *e*pP **pP** 18 26 38.4 +0.4
KRAB Krabi 62.17 245 P P 18 24 58.2 +0.9
comp=Z,624nm,0.6s,comp=Z,5µm
SCZ2 Santa Cruz Isl 62.19 70 P P 18 24 58.1 +0.9
baz=317
TRTT Trang 62.22 244 P P 18 24 58.0 +0.4
comp=Z,260nm,0.8s,comp=Z,3µm
LRMC Laurel Mtn Rad 62.22 67 P P 18 24 58.4 +0.9
baz=317,SNR=28
KSM Kuching 62.23 230 *e*P P 18 24 58.6 +1.0
TTSI Tana Toraja 62.26 218 P P 18 24 57.6 -0.2
comp=Z,55nm,1.0s,comp=Z,610nm
OSI Osito Audit: C 62.26 69 P P 18 24 58.7 +1.0
baz=317
SKLT Songkhla 62.27 243 P P 18 24 58.7 +0.8
comp=Z,329nm,0.8s,comp=Z,3µm
MDND Maddock 62.27 47 P P 18 24 58.2 +0.7
baz=319,SNR=8.9
MDND Maddock 62.27 47 *e*P P 18 24 58.4 +0.9

MDND ePP pP 18 26 44.5 +5.2
MTKI Muara Teweh, K 62.32 224 P P 18 24 58.9 +0.7
comp=Z,288nm,1.2s,comp=Z,8µm
AKN Aaknes 62.37 343↓*i* P P 18 24 57.5 -0.4
AKN IAmb IAmb 18 24 58.3
comp=Z,96nm,0.9s
AKN ePP pP 18 26 40.5 +0.8
NC303 NORSAR Array S 62.41 340 *e*P P 18 24 57.6 -0.5
BLG Laguna Peak, P 62.43 69 P P 18 24 59.5 +0.8
baz=317,SNR=9.5
NC405 NORSAR Array S 62.44 340 *e*P P 18 24 58.0 -0.3
EDW2 Edwards Air Fo 62.48 68 P P 18 25 00.3 +1.2
baz=317,SNR=72
NC204 NORSAR Array S 62.48 341 *e*P P 18 24 58.1 -0.6
A31A Linda, St. Vin 62.49 44 P P 18 24 59.9 +1.0
baz=320
LEVU Levan 62.49 60 *e*P P 18 25 00.9 +1.5
VSR Storozhevoye 62.53 320 *e*P P 18 24 57.4 -1.7
VSR pmax pmax
comp=Z,200nm,0.8s
NB201 NORSAR Array S 62.58 340 *e*P P 18 24 59.0 -0.3
NB2 NORSAR Subarra 62.60 340 P P 18 24 58.7 -0.8
comp=Z,110nm,0.8s,baz=24,slow=6.9
NB2 NORSAR Subarra 62.60 340 P pP 18 26 41.7 +0.3
comp=Z,5.4nm,0.8s,baz=28,slow=7.4
NB2 NORSAR Subarra 62.60 340 P P 18 24 58.7 -0.8
baz=24,slow=6.9
NB2 NORSAR Subarra 62.60 340 P P 18 24 58.6 -0.9
NB2 pmax pmax
comp=Z,92nm,0.9s
NOA NORSAR Array B 62.60 340 P P 18 24 58.6 -0.9
comp=Z,78nm,0.8s,baz=25,slow=6.5,SNR=287
NOA pP pP 18 26 40.5 -0.9
comp=Z,5.6nm,0.8s,baz=29,slow=7.2,SNR=5.0
SHOC Shoshone, Teco 62.70 66 P P 18 25 01.7 +1.2
baz=317,SNR=11
NBO00 NORSAR Array S 62.70 340 *e*P P 18 24 59.5 -0.6
DECC Green Verdugo 62.74 69 P P 18 25 01.8 +1.0
baz=317,SNR=6.5
BORG Borgarnes 62.80 357 *e*P P 18 25 02.1 +1.6
BORG pmax pmax
comp=Z,50nm,1.0s
BORG Borgarnes 62.80 357 *e*P P 18 25 02.1 +1.6
comp=Z,50nm,0.9s
SNCC San Nicolas Is 62.80 70 P P 18 25 01.9 +0.8
baz=317
A32A Rocking H Ranc 62.80 44 P P 18 25 00.3 -0.6
baz=320
NC602 NORSAR Array S 62.81 340 *e*P P 18 24 59.9 -0.9
NC602 IAmb IAmb 18 25 00.3
comp=Z,57nm,0.9s
NC602 ePP pP 18 26 42.0 -0.7
NC602 NORSAR Array S 62.81 340 *e*P P 18 24 59.9 -0.9
GSC Goldstone, Bar 62.84 67 P P 18 25 02.6 +1.1
baz=317,SNR=38
GSC Goldstone, Bar 62.84 67 *e*P P 18 25 02.7 +1.2
GSC pmax pmax
comp=Z,96nm,1.2s
GSC Goldstone, Bar 62.84 67 *e*P P 18 25 02.7 +1.2
comp=Z,96nm,1.3s
GSC ePP pP 18 26 44.2 +0.6
NAO01 NORSAR Array S 62.85 340 *e*P P 18 25 00.4 -0.6
H25A Fruitdale 62.85 51 P P 18 25 01.9 +0.4
baz=319,SNR=7.1
SHPR Sheep Range 62.88 65 *e*P P 18 25 03.3 +1.5
comp=Z,48nm,1.1s
SHPR ePP pP 18 26 45.3 +1.4
PASC Pasadena Art C 62.89 69 *e*P P 18 25 02.7 +1.0
K22A Casper 62.90 55 P P 18 25 02.2 +0.4
baz=318,SNR=12
K22A Casper 62.90 55 *e*P P 18 25 02.4 +0.6
K22A ePP pP 18 26 44.4 +0.5
PKDT Phuket 62.92 245 P P 18 25 02.6 +0.5
comp=Z,173nm,0.7s,comp=Z,2µm
MWC Mount Wilson 62.92 68 *e*P P 18 25 03.2 +1.1
MWC pmax pmax
comp=Z,110nm,1.1s
MWC Mount Wilson 62.92 68 *e*P P 18 25 03.2 +1.1
comp=Z,106nm,1.1s
MWC ePP pP 18 26 44.7 +0.4
STKI Sintang 62.93 228 P P 18 25 03.3 +1.1
comp=Z,213nm,1.1s,comp=Z,2µm
TMUT Trail Mountain 62.97 60 *e*P P 18 25 03.9 +1.3
comp=Z,82nm,0.8s
RSSD Black Hills 63.02 52 P P 18 25 03.2 +0.6
baz=318
RSSD Black Hills 63.02 52 *e*P P 18 25 03.4 +0.7
RSSD pmax pmax
comp=Z,81nm,0.9s
RSSD Black Hills 63.02 52 *e*P P 18 25 03.4 +0.7
comp=Z,81nm,0.9s
MSU Marysvale 63.03 61 *e*P P 18 25 04.6 +1.8
MSU Marysvale 63.03 61 *e*P P 18 25 04.6 +1.8
MSU ePP pP 18 26 46.5 +1.5
RRX Edison Barstow 63.04 67 P P 18 25 03.9 +1.2
baz=317
P17A Butcher Ranch, 63.09 60 *e*P P 18 25 04.4 +1.3
comp=Z,114nm,1.4s
CCUT Cedar City 63.09 63 *e*P P 18 25 03.7 +0.4
C31A Landman Farms, 63.13 46 P P 18 25 03.0 0.0
baz=320,SNR=6.0
BFSC Mount Baldy Ra 63.13 68 P P 18 25 04.3 +0.8
baz=317,SNR=31
FMP Fort Macarthur 63.16 69 P P 18 25 04.3 +0.9
baz=317
B32A Ashes, Strandq 63.18 44 P P 18 25 02.9 -0.5
baz=320,SNR=6.3
TUQ Turquoise Moun 63.23 66 P P 18 25 05.4 +1.3
baz=317,SNR=29
A33A Warroad 63.25 43 P P 18 25 03.4 -0.4
baz=321,SNR=9.8
Q16A Castle Valley 63.27 60 *e*P P 18 25 05.5 +1.2
comp=Z,34nm,0.8s
CIS Catalina Islan 63.32 69 P P 18 25 05.2 +0.6
baz=317,SNR=6.3
MTPU Mount Pierson 63.37 62 *e*P P 18 25 06.9 +1.7
comp=Z,35nm,0.8s
HEC Hector,Ludlow 63.45 67 P P 18 25 06.7 +1.3
baz=317,SNR=18
SRU San Rafael Swe 63.47 60 *e*P P 18 25 06.6 +1.0
SRU pmax pmax
comp=Z,75nm,0.8s
SRU San Rafael Swe 63.47 60 *e*P P 18 25 06.6 +1.0
comp=Z,75nm,0.8s
AGMN Agassiz Nation 63.54 44 P P 18 25 05.1 -0.6
baz=321,SNR=10
AGMN Agassiz Nation 63.54 44 *e*P P 18 25 05.2 -0.5
comp=Z,16nm,0.8s
AGMN ePP pP 18 26 48.8 +0.7
SCI2 San Clemente I 63.55 70 P P 18 25 06.8 +0.9
baz=318
LCMT Little Creek M 63.55 63 *e*P P 18 25 07.6 +1.5
comp=Z,151nm,1.8s
C32A Crookston 63.62 45 P P 18 25 05.8 -0.4
baz=321
GEYT Alibeck 63.68 299 P P 18 25 07.3 +0.5
comp=Z,237nm,0.9s,baz=29,slow=3.4,SNR=407
GEYT pP pP 18 26 48.7 -0.6
comp=Z,25nm,1.0s,baz=32,slow=8.5,SNR=4.2
GEYT PP PP 18 27 33.4 -1.2
comp=Z,21nm,0.8s,baz=343,slow=7.8,SNR=4.3
F29A Eureka 63.69 48 P P 18 25 06.9 +0.2
baz=320
D31A Mcclaflin, Tow 63.70 46 P P 18 25 06.6 -0.1
baz=320
OSL Oslo 63.71 340 *e*P P 18 25 06.2 -0.3
OSL IAmb IAmb 18 25 07.1
comp=Z,101nm,0.9s
MMU Miners Mountai 63.73 61 *e*P P 18 25 09.0 +1.6
PKCU Pink Cliffs 63.74 62 *e*P P 18 25 09.9 +2.3
comp=Z,33nm,0.8s
SUE Sulen 63.81 344 *e*P P 18 25 06.9 -0.2
SUE IAmb IAmb 18 25 07.6
comp=Z,86nm,1.0s
KULM Kulim 63.82 242 *e*P P 18 25 08.7 +0.8
GMRC Granite Mounta 63.86 66 P P 18 25 09.3 +1.2
baz=318,SNR=53
MURC Murrieta 63.86 68 P P 18 25 08.8 +0.8
baz=318,SNR=17
O20A White River Ci 63.90 58 P P 18 25 09.1 +0.8
baz=318,SNR=32
O20A White River Ci 63.90 58 *e*P P 18 25 09.2 +0.8
B34A Aery, Baudette 63.91 43 P P 18 25 07.2 -0.8
baz=321,SNR=9.7
MICGM Minsk 63.92 328↓*i* P P 18 25 07.0 -0.9
MICGM PM 18 25 08.0
comp=Z,1.2nm,0.8s
MICGM PM 18 25 09.0
comp=N,0.4nm,1.0s
MICGM *e*PcP PcP 18 25 38.0 -0.3
MICGM *e*pP pP 18 26 50.0 -0.4
MICGM *e*PP PP 18 27 33.0 -3.1
MICGM *e*PPP PPP 18 29 02.0
MICGM *e*S S 18 33 03.0 -0.6
MICGM *e*ScS SKSac 18 34 08.0 -3.2
MNK Minsk 63.92 328↓*i* P 18 25 07.0 -0.9
MNK *e* 18 25 38.0
MNK *e* 18 27 33.0
MNK *e*S S 18 33 03.0 -0.6
MNK *e* 18 34 08.0
MNK pmax pmax
comp=Z,1µm,0.8s
MNK pmax pmax
comp=N,440nm,1.0s
NACGM Naroch 63.93 329 *e*P P 18 25 07.0 -1.0
NACGM PM 18 25 09.0
comp=Z,0.9nm,0.8s
D32A Dogwood Acres, 63.95 46 P P 18 25 08.0 -0.2
baz=321
LDFC Landfair 63.95 66 *e*P P 18 25 09.9 +1.2
comp=Z,165nm,0.8s
C33A Trail 64.00 44 P P 18 25 08.2 -0.4
baz=321
E31A Nome 64.01 47 P P 18 25 08.8 +0.1
baz=320,SNR=29
F30A Leola 64.06 48 P P 18 25 08.8 -0.3
baz=320
KONO Kongsberg 64.21 340 *e*P P 18 25 09.6 -0.1
KONO IAmb IAmb 18 25 10.4
comp=Z,82nm,0.9s
KONO *e*pP pP 18 26 52.6 +0.3
KONO Kongsberg 64.21 340 *e*P P 18 25 09.6 -0.1
KONO Kongsberg 64.21 340 *e*P P 18 25 09.6 -0.1
BELC Belle Mtn. Jos 64.24 67 P P 18 25 11.2 +0.6
baz=318,SNR=23
PFO Pinyon Flats O 64.27 68 P P 18 25 11.5 +0.7
baz=318,SNR=22
PFO Pinyon Flats O 64.27 68 *e*P P 18 25 11.4 +0.7
PFO Pinyon Flats O 64.27 68 *e*P P 18 25 11.4 +0.7
ASK Askoy 64.27 343 *e*P P 18 25 09.8 -0.2
ASK IAmb IAmb 18 25 11.6
comp=Z,100nm,1.0s
TPFO Pinon Flats 64.28 68 P P 18 25 11.5 +0.7
baz=318,SNR=22
IPM Ipoh 64.30 241 *e*P P 18 25 11.1 +0.1
BER Bergen 64.34 343↑*i*P P 18 25 10.3 -0.2
BER IAmb IAmb 18 25 11.4
comp=Z,2µm,3.0s
E32A Braaten, Kindr 64.34 46 P P 18 25 10.4 -0.4
baz=321
F31A Hea 64.38 47 P P 18 25 10.9 -0.2
baz=320,SNR=7.5
B35A Bob, Littlefor 64.39 43 P P 18 25 10.6 -0.5
baz=322,SNR=14
109C Camp Elliot, M 64.44 69 P P 18 25 12.4 +0.8
baz=318
D33A AnnSam, Waubun 64.45 45 P P 18 25 11.0 -0.5
baz=321
NEE2 Needles Airpor 64.45 66 P P 18 25 12.6 +0.9
baz=318
C34A RKJ Ranch, Bem 64.45 44 P P 18 25 10.9 -0.6
baz=322
N23A Red Feather La 64.50 56 P P 18 25 13.0 +0.8
baz=319,SNR=20
N23A Red Feather La 64.50 56 *e*P P 18 25 13.1 +0.8
N23A *e*pP pP 18 26 55.8 +0.8
U15A North Rim 64.50 63 *e*P P 18 25 13.7 +1.4
ODD1 Odda 64.55 342↓*i*P P 18 25 11.7 -0.2
ODD1 IAmb IAmb 18 25 12.5
comp=Z,136nm,1.1s
IRM Iron Mountain 64.61 67 P P 18 25 14.0 +1.3
baz=318,SNR=61
BBKI Banjar Baru 64.62 223 P P 18 25 13.2 +0.3
comp=Z,284nm,1.6s,comp=Z,3µm
PV09 Paradox Valley 64.65 59 *e*P P 18 25 14.3 +1.0
PV10 Paradox Valley 64.79 59 *e*P P 18 25 15.3 +1.2
BC3 Big Chuckawall 64.80 67 P P 18 25 14.9 +0.8
baz=318,SNR=24
C35A Jirik Farms, M 64.80 43 P P 18 25 12.9 -0.8
baz=322,SNR=5.1
MONP2 Monument Peak 64.82 68 P P 18 25 15.1 +0.8
baz=318,SNR=13
BAR Barrett 64.84 69 *e*P P 18 25 15.0 +0.8
BAR *e*pP pP 18 26 58.1 +0.9
E33A Westby DABS, E 64.88 45 P P 18 25 14.0 -0.2
baz=321
F32A Veblen 64.88 47 P P 18 25 13.6 -0.6
baz=321
G31A Conde 64.89 48 P P 18 25 14.1 -0.2
baz=321
XMAS Kiritimati 64.91 123 *e*P P 18 25 15.8 +1.0
PV05 Paradox Valley 64.98 60 *e*P P 18 25 16.2 +0.9
BLS5 Blasjo 65.03 342 *e*P P 18 25 14.8 -0.2
BLS5 IAmb IAmb 18 25 15.6
comp=Z,54nm,0.9s
BLS5 *e*pP pP 18 27 02.4 +4.5
PDMCI Parker Dam,Lak 65.06 66 P P 18 25 16.7 +1.2
baz=318,SNR=45
MYKOM Kota Tinggi 65.11 237 *e*P P 18 25 17.1 +1.0
SWSC Sam W. Stewart 65.13 68 P P 18 25 16.8 +0.8
baz=318,SNR=13
SUSD Miller 65.16 49 P P 18 25 15.9 -0.1
baz=321
IKP In-Ko-Pah, Jac 65.18 68 P P 18 25 17.5 +1.0
baz=318,SNR=25
G32A Webster 65.19 47 P P 18 25 16.1 -0.1
baz=321,SNR=9.7
PV01 Paradox Valley 65.21 59 *e*P P 18 25 17.6 +0.8
PV01 *e*pP pP 18 27 00.5 +0.7
C36A Pine Crest Far 65.23 43 P P 18 25 16.0 -0.5
baz=322,SNR=14
Y12C Blythe 65.25 66 P P 18 25 18.1 +1.3
baz=318,SNR=24
Y12C Blythe 65.25 66 *e*P P 18 25 18.1 +1.3
Y12C *e*pP pP 18 27 01.2 +1.3
D35A Remer 65.26 44 P P 18 25 15.6 -1.0
baz=322
SMCO Snowmass 65.26 57 *e*P P 18 25 18.1 +0.9
F33A 5 Mile Ranch, 65.27 46 P P 18 25 16.3 -0.3
baz=321
PBKI Pangkalan Bun 65.30 227 P P 18 25 17.9 +0.6
comp=Z,748nm,0.9s,comp=Z,6µm
H31A Wolsey 65.34 48 P P 18 25 17.1 -0.1
baz=321,SNR=8.1
KMY Karmoy 65.45 343 *e*P P 18 25 17.7 +0.1
KMY IAmb IAmb 18 25 17.8
comp=Z,4.3nm,0.6s
ISCO Idaho Springs 65.48 56 P P 18 25 19.6 +1.1
baz=319,SNR=26
ISCO Idaho Springs 65.48 56 *e*P P 18 25 19.7 +1.1
ISCO Idaho Springs 65.48 56 *e*P P 18 25 19.7 +1.1
TPRI Tanjung Pinang 65.52 236 P P 18 25 20.0 +1.4
comp=Z,115nm,1.1s,comp=Z,1µm
E35A Pequot Lakes 65.52 45 P P 18 25 17.7 -0.6
baz=322
C37A Embarrass 65.52 42 P P 18 25 17.7 -0.5
baz=323,SNR=8.1
D36A Goodland 65.56 43 P P 18 25 17.6 -0.9
baz=322
GLA Glamis 65.60 67 P P 18 25 20.3 +1.3
baz=318,SNR=40
GLA Glamis 65.60 67 *e*P P 18 25 19.7 +0.6
GLA Glamis 65.60 67 *e*P P 18 25 19.7 +0.6
LRW Lerwick 65.63 346↓*e*P P 18 25 17.7 -0.9
LRW AMB AMB 18 25 23.2
comp=Z,137nm,1.3s
STAV Stavanger 65.63 342 *e*P P 18 25 18.4 -0.3
STAV IAmb IAmb 18 25 19.3
comp=Z,103nm,1.1s
EYMN Ely 65.63 42 P P 18 25 18.4 -0.6
baz=323,SNR=15
EYMN Ely 65.63 42 *e*P P 18 25 18.0 -0.9
EYMN *e*pP pP 18 27 02.3 +0.2
I31A Royce, Wessing 65.67 49 P P 18 25 19.2 0.0
baz=321
WUAZ Wupatki 65.67 63 P P 18 25 21.1 +1.4
baz=319,SNR=36
WUAZ Wupatki 65.67 63 *e*P P 18 25 21.2 +1.6
WUAZ *e*pP pP 18 27 04.5 +1.6
F34A Alexandria 65.75 46 P P 18 25 19.3 -0.5
baz=322
J30A Dallas 65.77 50 P P 18 25 20.1 +0.2
baz=321,SNR=11
H32A Carlson Farm, 65.80 48 P P 18 25 19.7 -0.4
baz=321,SNR=7.9
SUW Suwalki 65.80 330 *i* P P 18 25 19.1 -0.8
SUW *e*S S 18 33 24.7 -1.5
SUW Suwalki 65.80 330↓*i*P P 18 25 19.0 -0.8
SUW *e*S S 18 33 24.7 -1.5
D37A Cotton 65.88 43 P P 18 25 19.7 -0.8
baz=323,SNR=6.3
LHMI Lhok Sumawe 65.88 245 P P 18 25 23.4 +2.5
comp=Z,358nm,0.7s,comp=Z,4µm
LHMI Lhok Sumawe 65.88 245 *e*P P 18 25 22.7 +1.8
GROC Groznyy 65.89 310 *e*P P 18 25 19.4 -1.2
GROC pmax pmax
comp=Z,164nm,1.1s
C38A Sawbill Land. 65.91 42 P P 18 25 19.9 -0.8
baz=323,SNR=16
MVCO Mesa Verde 65.94 60 P P 18 25 22.1 +0.8
baz=319,SNR=23
MVCO Mesa Verde 65.94 60 *e*P P 18 25 22.2 +0.8
MVCO *e*pP pP 18 27 05.8 +1.1
H33A Prehn Over Nor 65.97 47 P P 18 25 21.0 -0.1
baz=322,SNR=5.1
F35A Swanville 66.00 45 P P 18 25 20.7 -0.6
baz=322
G34A Benson 66.02 46 P P 18 25 21.1 -0.3
baz=322
E36A McGregor 66.04 44 P P 18 25 21.1 -0.4
baz=323,SNR=6.0
J31A Geddes 66.14 49 P P 18 25 22.3 +0.1
baz=321,SNR=24
I32A Karley and Nic 66.16 48 P P 18 25 21.8 -0.4
baz=321,SNR=6.8
KLNR Kaliningrad 66.16 332*d* *i*P P 18 25 21.2 -0.8
KLNR pmax pmax
comp=Z,421nm,1.0s
K30A Basset 66.22 50 P P 18 25 23.2 +0.5
baz=321
Q24A Divide 66.35 56 P P 18 25 24.4 +0.5
baz=320,SNR=11
Q24A Divide 66.35 56 *e*P P 18 25 24.7 +0.7
OGNE Ogallala 66.39 53 P P 18 25 24.5 +0.6
baz=320,SNR=9.0
OGNE Ogallala 66.39 53 *e*P P 18 25 24.7 +0.8
113A Mohawk Valley, 66.41 67 *e*P P 18 25 25.0 +1.0
H34A Spellman Lake, 66.41 47 P P 18 25 23.8 0.0
baz=322
S22A 4UR Ranch, Cre 66.41 58 P P 18 25 25.5 +1.2
baz=320,SNR=43
S22A 4UR Ranch, Cre 66.41 58 *e*P P 18 25 25.5 +1.2
S22A *e*pP pP 18 27 08.9 +1.1
I33A Coleman 66.44 48 P P 18 25 23.9 -0.1
baz=322,SNR=6.3
F36A Milaca 66.45 44 P P 18 25 23.1 -0.9
baz=323
J32A Parkston 66.49 49 P P 18 25 24.0 -0.4
baz=321,SNR=8.2
G35A Watkins 66.54 45 P P 18 25 24.4 -0.3
baz=322
MMRI Maumere 66.58 214 P P 18 25 25.3 +0.1
comp=Z,327nm,0.9s,comp=Z,3µm
MMRI Maumere 66.58 214 *e*P P 18 25 25.1 -0.1
AKASG Malin Array Be 66.64 325 P P 18 25 24.2 -0.9
comp=Z,123nm,0.6s,baz=33,slow=6.4,SNR=369
AKASG pP pP 18 27 07.2 -1.6
comp=Z,20nm,0.9s,baz=32,slow=6.9,SNR=5.7
K31A O'Neill 66.66 50 P P 18 25 25.5 +0.1
baz=321,SNR=6.4
KIEV Kiev 66.66 325*d* *i*P P 18 25 24.2 -1.0
KIEV pmax pmax
comp=Z,193nm,1.0s
KIEV Kiev 66.66 325 *e*P P 18 25 24.1 -1.0
NCK Nalchik 66.68 312*d* *i*P P 18 25 25.5 0.0
NCK pmax pmax
comp=Z,260nm,1.0s
KIV Kislovodsk 66.73 313 *i* P P 18 25 26.2 +0.2
SNR=16
KIV Kislovodsk 66.73 313*d* *i*P P 18 25 25.8 -0.1
KIV *e* 18 25 49.4
KIV *i* 18 27 58.6
KIV *e*PPP PPP 18 29 49.5
KIV *i* S S 18 33 38.3 +0.6
KIV *i* 18 34 31.7
KIV *e*SS SS 18 38 01.3 -5.4
KIV *e*SSS SSS 18 41 13.8
KIV pmax pmax
comp=Z,122nm,1.0s
KIV Kislovodsk 66.73 313 P P 18 25 26.1 +0.2
SNR=47
KIV Kislovodsk 66.73 313 *e*P P 18 25 26.1 +0.2
ECSD EROS Data Cent 66.77 48 P P 18 25 26.0 -0.1
baz=322,SNR=44
ECSD EROS Data Cent 66.77 48 *e*P P 18 25 26.0 -0.1
ECSD *e*pP pP 18 27 09.9 +0.1
H35A Sunnyside Ranc 66.80 46 P P 18 25 26.3 0.0
baz=322,SNR=15
KBZ Khabaz 66.81 312 P P 18 25 26.8 +0.5
comp=Z,181nm,0.9s,baz=55,slow=2.6,SNR=238
PSI Prapat 66.83 242 *e*P P 18 25 27.0 0.0
PSI Prapat 66.83 242 *e*P P 18 25 27.0 0.0
G36A St. Michael 66.85 45 P P 18 25 25.8 -0.7
baz=323
W18A Petrified Fore 66.86 62 P P 18 25 28.3 +1.3
baz=319,SNR=7.7
W18A Petrified Fore 66.86 62 *e*P P 18 25 28.5 +1.5
EDFI Ende, Flores 66.87 214 P P 18 25 27.6 +0.5
comp=Z,84nm,1.1s,comp=Z,2µm
J33A Davis 66.93 48 P P 18 25 26.8 -0.3
baz=322,SNR=7.1
L31A Butterfield Fa 66.96 50 P P 18 25 27.6 +0.3
baz=321,SNR=9.9
SOEI Soe 66.96 211 P P 18 25 27.8 +0.1
comp=Z,146nm,0.8s,comp=Z,1µm
SOEI Soe 66.96 211 *e*P P 18 25 26.8 -1.0
MLSI Meulaboh, Aceh 66.98 245 P P 18 25 26.4 -1.4
comp=Z,151nm,0.9s
K32A Verdigre 66.99 49 P P 18 25 27.3 -0.2
baz=322,SNR=6.8
HYB Hyderabad 67.04 269↓*i*P P 18 25 28.0 -0.2
comp=Z,165nm,0.8s
HYB *e*PcP PcP 18 25 51.5 -0.5
GUDG Gudauri 67.08 310 P P 18 25 28.8 +0.5
ZEI Tsey 67.09 311 *e*P P 18 25 23.8 -4.5
ZEI pmax pmax
comp=Z,388nm,1.0s
SDCO Great Sand Dun 67.10 58 P P 18 25 29.2 +0.7
baz=320,SNR=42
SDCO Great Sand Dun 67.10 58 *e*P P 18 25 29.5 +0.9
SDCO *e*pP pP 18 27 13.2 +0.8
BSD Bornholm Skovb 67.12 335↓*i*P P 18 25 27.3 -0.7
comp=Z,144nm,0.8s
BSD Bornholm Skovb 67.12 335↓*i*P P 18 25 27.3 -0.7
BSD pmax pmax
comp=Z,140nm,0.8s
COP Copenhagen 67.21 337↓*i*P P 18 25 28.4 -0.1
comp=Z,67nm,1.0s
COP Copenhagen 67.21 337↓*i*P P 18 25 28.4 -0.1
COP pmax pmax
comp=Z,67nm,1.0s
MUD Monsted U'grnd 67.24 339 *i* P P 18 25 28.9 +0.2
comp=Z,58nm,0.9s
MUD Monsted U'grnd 67.24 339 *e*P P 18 25 28.9 +0.2
MUD pmax pmax
comp=Z,58nm,0.9s
SPMN Marine on St. 67.26 44 P P 18 25 28.6 -0.5
baz=323
SPMN Marine on St. 67.26 44 *e*P P 18 25 29.0 -0.1
SPMN *e*pP pP 18 27 15.5 +2.5
NEY Neytrino 67.26 312*d* *i*P P 18 25 29.4 0.0
NEY pmax pmax
comp=Z,10.0nm,0.9s
H36A Jessenland, He 67.29 46 P P 18 25 29.4 +0.1
baz=323,SNR=7.1
PPBI Pangkal Pinang 67.39 232 P P 18 25 31.0 +0.8
comp=Z,138nm,1.1s,comp=Z,1µm
TPTI 67.39 244 P P 18 25 29.4 -0.9
comp=Z,52nm,0.8s,comp=Z,569nm
I35A Creekview Farm 67.40 47 P P 18 25 29.1 -0.8
baz=323
J34A George 67.42 48 P P 18 25 29.6 -0.5
baz=322
DGRG David-gareji 67.45 309 P P 18 25 30.5 +0.2
DGRG David-gareji 67.45 309 P P 18 25 30.5 +0.2
ONI Oni 67.45 311 P P 18 25 30.9 +0.5
ONI Oni 67.45 311 P P 18 25 30.8 +0.5
K33A Hardington 67.48 49 P P 18 25 30.4 -0.1

baz=322,SNR=5.8
L32A Elgin 67.48 50 P **P** 18 25 30.4 -0.2
baz=322,SNR=6.6
TBLG Delisi 67.53 310 P **P** 18 25 31.1 +0.2
TBLG Delisi 67.53 310 P **P** 18 25 31.0 +0.2
M31A Lambtecht Ranc 67.55 51 P **P** 18 25 30.8 -0.2
baz=322
214A Organ Pipe Nat 67.55 67 P **P** 18 25 32.2 +1.1
baz=319,SNR=52
BATI Baumata 67.58 212 P **P** 18 25 31.8 +0.4
comp=Z,35nm,1.1s
KSCO Kaye Shedlock' 67.58 55 P **P** 18 25 31.4 0.0
baz=321
LLD Lille Linde 67.58 337 *i* P **P** 18 25 30.6 -0.2
comp=Z,199nm,0.8s
LLD Lille Linde 67.58 337 *i* P **P** 18 25 30.6 -0.2
LLD pmax pmax
comp=Z,200nm,0.8s
BIGH Upper Bighouse 67.60 347⇓ *e*P **P** 18 25 30.2 -0.6
J35A Milford 67.69 47 P **P** 18 25 31.2 -0.6
baz=323
I36A Fitzsimmons Fa 67.70 46 P **P** 18 25 31.4 -0.3
baz=323
L33A Hoskins 67.70 49 P **P** 18 25 31.5 -0.3
baz=322
MLA1 Latheron 67.70 347⇓ *e*P **P** 18 25 30.9 -0.6
H37A Dierke Farm, C 67.72 45 P **P** 18 25 31.8 -0.1
baz=323
BKNI Bangkinang 67.80 239 P **P** 18 25 33.5 +0.7
comp=Z,726nm,0.9s,comp=Z,5μm
SCHQ Schefferville 67.80 24 P **P** 18 25 31.3 -0.9
comp=Z,22nm,0.5s,baz=348,slow=5.5,SNR=19
SCHQ Schefferville 67.80 24 *e*P **P** 18 25 31.6 -0.6
K34A Le Mars 67.83 48 P **P** 18 25 32.3 -0.3
baz=322
BGNE Belgrade 67.88 50 P **P** 18 25 32.8 -0.2
baz=322
SBSI Sibolga 67.90 241 P **P** 18 25 32.0 -1.4
comp=Z,84nm,0.8s
N31A Bailey Ranch, 67.96 51 P **P** 18 25 33.3 -0.2
baz=322
I37A Lemond, Waseca 67.97 46 P **P** 18 25 33.5 0.0
baz=323,SNR=9.3
CHVG Ch'k'valeri 67.97 312 P **P** 18 25 33.5 0.0
MTN Manton Dam 68.00 203 *e*P **P** 18 25 34.7 +0.8
RGN Rugen 68.03 336 *e*P **P** 18 25 33.8 +0.2
J36A Seneca 1, Swea 68.10 47 P **P** 18 25 33.9 -0.4
baz=323,SNR=11
T25A Trinidad 68.12 57 P **P** 18 25 34.9 +0.2
baz=320,SNR=14
T25A Trinidad 68.12 57 *e*P **P** 18 25 35.2 +0.5
JMBI JAMBI 68.15 235 P **P** 18 25 37.4 +2.5
comp=Z,532nm,0.5s
GKP Gorka Klasztor 68.16 333 *i* P **P** 18 25 34.3 -0.1
GKP *e*S **S** 18 33 48.7 -5.3
GKP Gorka Klasztor 68.16 333⇓ *i*P **P** 18 25 34.3 -0.1
GKP *e*S **S** 18 33 48.7 -5.3
MNSI Mandailing Nat 68.17 240 P **P** 18 25 33.7 -1.3
comp=Z,55nm,0.7s
K35A Storm Lake 68.19 48 P **P** 18 25 34.1 -0.7
baz=323
M33A Taylor Creek F 68.20 50 P **P** 18 25 34.5 -0.4
baz=322,SNR=6.6
O31A Woolen Ranch, 68.31 52 P **P** 18 25 35.0 -0.6
baz=322
N32A Stulken Farm, 68.32 51 P **P** 18 25 35.1 -0.5
baz=322
ANN Anapa 68.33 316 *e*P **P** 18 25 34.4 -1.2
ANN *e* 18 28 13.6
ANN *e*PPP PPP 18 30 02.4
ANN *e*S **S** 18 33 55.0 -1.2
ANN pmax pmax
comp=Z,164nm,1.5s
SOC Sochi 68.33 314 *d* iP **P** 18 25 35.0 -0.6
SOC *e* 18 28 14.3
SOC *e*PPP PPP 18 30 00.4
SOC *e*S **S** **18 33 56.7 +0.4**
SOC *e*SSS SSS 18 41 49.4
SOC pmax pmax
comp=Z,110nm,0.9s
PLAI Plampang 68.34 218 P **P** 18 25 34.8 -1.2
comp=Z,144nm,0.9s,comp=Z,1μm
AKH Akhalkalaki 68.36 310 ⇑ *i*P **P** 18 25 36.8 +0.7
AKH Akhalkalaki 68.36 310 P **P** 18 25 37.0 +0.9
AKH Akhalkalaki 68.36 310 P **P** 18 25 36.9 +0.9
TUC Tucson 68.41 65 P **P** 18 25 37.5 +1.2
baz=320
TUC Tucson 68.41 65 *e*P **P** 18 25 37.6 +1.2
TUC Tucson 68.41 65 *e*P **P** 18 25 37.6 +1.2
I38A Scanlan Farm, 68.41 45 P **P** 18 25 35.6 -0.5
baz=324
BEL Belsk 68.41 330 *i* P **P** 18 25 36.4 +0.4
BEL *e*S **S** 18 33 57.1 +0.2
BEL Belsk 68.41 330⇓ *i*P **P** 18 25 36.4 +0.4
BEL *e*S **S** 18 33 57.1 +0.2
BGD Bogdanovka 68.42 310 P **P** 18 25 37.3 +0.8
J37A Redenius Farm, 68.47 46 P **P** 18 25 36.1 -0.3
baz=323,SNR=15
M34A Aspy Farms, Fr 68.54 49 P **P** 18 25 36.9 -0.1
baz=322,SNR=6.3
TWSI Taliwang, Sumb 68.60 219 P **P** 18 25 38.0 +0.4
comp=Z,35nm,0.9s,comp=Z,1μm
MME1 Meikle Cairn 68.61 346⇓ *e*P **P** 18 25 35.9 -1.2
SDSI Sungai Dareh 68.67 237 P **P** 18 25 38.7 +0.6
comp=Z,57nm,1.1s
MDO Dochfour 68.68 347⇓ *e*P **P** 18 25 36.7 -0.8
PMBI Palembang 68.71 233 P **P** 18 25 40.2 +1.9
comp=Z,650nm,1.0s
ANMO Albuquerque 68.73 60 P **P** 18 25 39.7 +1.2
baz=320
ANMO Albuquerque 68.73 60 *c* iP **P** 18 25 39.4 +1.0
ANMO pmax pmax
comp=Z,13nm,0.9s
ANMO Albuquerque 68.73 60 *e*P **P** 18 25 39.5 +1.0
N33A J Bar K, Exete 68.74 50 P **P** 18 25 37.7 -0.5
baz=322
KAC Achnashellach 68.74 348⇓ *e*P **P** 18 25 36.9 -1.0
GNI Garni 68.76 309 *i* P **P** 18 25 39.6 +1.1
SNR=22
GNI Garni 68.76 309 *d* iP **P** 18 25 39.1 +0.6
GNI pmax pmax
comp=Z,466nm,1.1s
GNI Garni 68.76 309 P **P** 18 25 39.7 +1.1
SNR=22
GNI Garni 68.76 309 *e*P **P** 18 25 39.9 +1.3
ABJI Asem Bagus 68.78 222 P **P** 18 25 40.0 +1.3
comp=Z,165nm,0.9s,comp=Z,2μm
LAZ Ladron 68.79 61 *e*P **P** 18 25 40.4 +1.6
GSI Gunungsitoli 68.81 242 P **P** 18 25 39.0 +0.1
comp=Z,323nm,0.9s,comp=Z,3μm
GSI Gunungsitoli 68.81 242 *e*P **P** 18 25 38.0 -0.9
K37A Belmond 68.86 47 P **P** 18 25 38.1 -0.7
baz=323,SNR=7.0
EAK Akyaka 68.88 310 *i* P **P** 18 25 39.3 +0.1
DRUM Mains of Drumt 68.92 346 *e*P **P** 18 25 38.2 -0.7
DRUM AMB AMB 18 25 40.0
comp=Z,139nm,1.3s
J38A Wedel Dairy, R 68.93 45 P **P** 18 25 38.6 -0.7
baz=324
L36A Harm Buss Farm 68.93 48 P **P** 18 25 38.9 -0.4
baz=323
KPL Plockton 68.95 348⇓ *e*P **P** 18 25 38.1 -1.0
M35A Neola 68.97 49 P **P** 18 25 39.4 -0.1
baz=323
BLJI Banyuglugur 69.00 223 P **P** 18 25 40.0 0.0
comp=Z,113nm,1.0s,comp=Z,2μm
P32A Huiting Farm, 69.07 52 P **P** 18 25 39.5 -0.7
baz=322
N34A Lincoln 69.10 50 P **P** 18 25 39.7 -0.6
baz=323
SORM Soroca 69.11 324⇓ *i*P **P** 18 25 39.2 -1.0
LPM Los Pinos Moun 69.13 61 *e*P **P** 18 25 39.7 -1.1
LPM *e*pP **pP** 18 27 26.4 +0.8
LVV L'vov 69.15 327 ⇑ *i*P **P** 18 25 39.7 -0.8
LVV *e*S **S** 18 33 57.4 -8.1
LVV *e* 18 34 43.4
LVV pmax pmax
comp=Z,600nm,1.2s
PDSI Padang 69.15 238 P **P** 18 25 39.6 -1.4
comp=Z,76nm,1.0s
CBKS Cedar Bluff 69.16 53 P **P** 18 25 40.3 -0.5
baz=322
CBKS Cedar Bluff 69.16 53 *e*P **P** 18 25 40.7 -0.1
CBKS Cedar Bluff 69.16 53 *e*P **P** 18 25 40.7 -0.1
O33A Hebron 69.20 51 P **P** 18 25 40.1 -0.8
baz=322
DIGO Kars 69.20 310 *i* P **P** 18 25 42.2 +0.9
J39A Decorah 69.25 45 P **P** 18 25 40.0 -1.2
baz=324,SNR=8.0
BNM Barren Site 69.25 61 *e*P **P** 18 25 42.9 +1.2
BNM *e*pP **pP** 18 27 26.9 +0.5
ARTV Artvin 69.26 311 *i* P **P** 18 25 42.0 +0.4
L37A Phoenix Point, 69.32 47 P **P** 18 25 41.1 -0.6
baz=324,SNR=6.7
K38A Parkersburg 69.34 46 P **P** 18 25 41.0 -0.8
baz=324
DAGI Agillar 69.35 311 *i* P **P** 18 25 42.4 +0.4
EDU Dundee 69.36 346⇓ *e*P **P** 18 25 40.7 -0.8
M36A Felix, Anita 69.39 48 P **P** 18 25 41.6 -0.5
baz=323
N35A Tabor 69.48 49 P **P** 18 25 42.3 -0.3
baz=323,SNR=7.1
O34A Beatrice 69.53 50 P **P** 18 25 42.1 -0.9
baz=323,SNR=9.7
NGJI Ngawi 69.56 225 P **P** 18 25 45.4 +2.1
comp=Z,65nm,1.3s
DDEM Demirkent 69.57 311 *i* P **P** 18 25 42.9 -0.4
SIM Simferopol' 69.58 319 *de*P **P** 18 25 42.5 -0.6
SIM *e*S **S** 18 34 08.8 -1.8
SIM pmax pmax
comp=Z,111nm,0.9s
Q32A Meitler Ranch, 69.59 52 P **P** 18 25 42.7 -0.6
baz=322,SNR=13
P33A Williams Farm, 69.65 51 P **P** 18 25 42.7 -1.0
baz=322
L38A Oak Wood Farm, 69.66 47 P **P** 18 25 43.0 -0.7
baz=324
K39A Oelwein 69.68 45 P **P** 18 25 42.4 -1.4
baz=324,SNR=7.3
KWP Kalwaria Pacla 69.74 328 *i* P **P** 18 25 44.4 +0.3
KWP *e*S **S** 18 34 12.0 -0.4
KWP Kalwaria Pacla 69.74 328⇓ *i*P **P** 18 25 44.3 +0.3
KWP *e*S **S** 18 34 12.0 -0.4
M37A Trindle Farm, 69.77 48 P **P** 18 25 44.0 -0.3
baz=324
N36A Muff Farm, Cla 69.83 49 P **P** 18 25 44.7 0.0
baz=323
O35A Humboldt 69.83 50 P **P** 18 25 43.9 -0.8
baz=323
121A Cookes Peak, D 69.87 63 P **P** 18 25 46.8 +1.5
baz=320,SNR=21
EAB Aberfoyle 69.89 347⇓ *e*P **P** 18 25 44.1 -0.7
ESY Stoneypath 69.91 346⇓ *e*P **P** 18 25 44.2 -0.7
KIS Kishinev 69.91 323 *i* P **P** 18 25 43.0 -2.0
comp=Z,400nm,1.2s
KIS *i* pP **pP** 18 27 28.0 -2.0
KIS Kishinev 69.91 323 *i* PP PP 18 28 27.0 -0.5
KIS *i* S **S** 18 34 12.0 -2.2
KIS *e*sS sS 18 37 18.0 -3.4
KIS *e*SSS SSS 18 42 26.0
KIS Kishinev 69.91 323 *x* iP P 18 25 40.0 -5.0
KIS *i* 18 28 27.0
KIS *i* S **S** 18 34 12.0 -2.2
KIS *e* 18 34 54.0
KIS pmax pmax
comp=Z,430nm,1.2s
Q33A Connelly Farm, 69.93 52 P **P** 18 25 44.5 -0.9
baz=322,SNR=16
J41A Loganville 69.94 44 P **P** 18 25 44.5 -0.9
baz=325,SNR=5.5
R32A Long Quarter, 69.96 53 P **P** 18 25 44.6 -0.9
baz=322
P34A Walnut Farm, R 69.97 51 P **P** 18 25 44.7 -0.9
baz=323,SNR=15
PWJI Pagerwojo 70.00 224 P **P** 18 25 44.7 -1.3
comp=Z,257nm,1.2s,comp=Z,2μm
K40A Colesburg 70.00 45 P **P** 18 25 44.8 -1.0
baz=325,SNR=7.2
L39A Vinton 70.10 46 P **P** 18 25 45.5 -0.8
baz=324,SNR=6.3
LHSI Lahat 70.10 234 P **P** 18 25 46.0 -0.6
comp=Z,327nm,0.9s,comp=Z,3μm
OJC Ojcow 70.13 330 *i* P **P** 18 25 46.4 +0.1
OJC *e*S **S** 18 34 15.7 -1.2
OJC Ojcow 70.13 330⇓ *i*P **P** 18 25 46.4 +0.1
OJC *e*S **S** 18 34 15.6 -1.2
OJC Ojcow 70.13 330 *e*P **P** 18 25 46.1 -0.3
M38A Pleasantville 70.14 47 P **P** 18 25 46.3 -0.3
baz=324
HOMI Horasan 70.17 310 ⇑ *i*P **P** 18 25 47.9 +0.8
IAS Iasi 70.19 324 ⇑ *i*P **P** 18 25 45.9 -0.8
WOJI Wonogiri, Jawa 70.21 225 P **P** 18 25 47.9 +0.7
comp=Z,141nm,1.7s,comp=Z,7μm
JFWS Jewell Farm 70.21 44 *e*P **P** 18 25 46.2 -0.7
JFWS Jewell Farm 70.21 44 *e*P **P** 18 25 46.2 -0.7
N37A Lee Faris, Mou 70.21 48 P **P** 18 25 47.0 -0.1
baz=324
VMUR Van-Muradiye 70.23 309 *i* P **P** 18 25 48.5 +1.2
TUTA Tutak 70.26 309 *i* P **P** 18 25 48.7 +1.1
PGBU Glenifferbraes 70.28 347⇓ *e*P **P** 18 25 46.7 -0.4
PGBU AMB AMB 18 25 47.9
comp=Z,120nm,1.1s
P35A Duane Minner, 70.36 50 P **P** 18 25 47.0 -0.9
baz=323,SNR=8.4
O36A Bolckow 70.37 49 P **P** 18 25 47.7 -0.2
baz=323,SNR=12
STHS Stebnicka Huta 70.40 329 *e*P **P** 18 25 48.5 +0.5
STHS Stebnicka Huta 70.40 329 *e*P **P** 18 25 48.5 +0.5
R33A Olander Ranch, 70.40 52 P **P** 18 25 47.3 -0.9
baz=323,SNR=7.6
KSI Kapahiang 70.41 235 P **P** 18 25 47.3 -1.3
comp=Z,113nm,0.8s
Q34A Chapman 70.41 51 P **P** 18 25 47.4 -0.8
baz=323
S32A Newby Ranch, P 70.42 53 P **P** 18 25 47.6 -0.7
baz=322
KSU1 Kansas State U 70.43 51 P **P** 18 25 47.4 -0.9
baz=323,SNR=5.8
K41A Shullsburg 70.44 45 P **P** 18 25 47.3 -1.0
baz=325
L40A Anamosa 70.49 45 P **P** 18 25 47.5 -1.1
baz=325
KOLS Kolonicke sedl 70.49 328 *e*P **P** 18 25 48.3 -0.2
KOLS pmax pmax
comp=Z,148nm,1.4s
KOLS Kolonicke sedl 70.49 328 *e*P **P** 18 25 48.3 -0.2
PRAR RASCA 70.52 325 ⇓ *i*P **P** 18 25 47.9 -0.8
M39A Webster 70.55 46 P **P** 18 25 48.3 -0.7
baz=324,SNR=6.9
LEOM Leova 70.56 323 ⇓ *i*P **P** 18 25 48.4 -0.5
ESK Eskdalemuir 70.57 346⇓ *e*P **P** 18 25 48.2 -0.7
ESK AMB AMB 18 25 48.9
comp=Z,88nm,1.7s
ESK Eskdalemuir 70.57 346 *i* P **P** 18 25 49.1 +0.2
KSP Ksiaz 70.60 333 *i* P **P** 18 25 49.1 0.0
KSP *e*S **S** 18 34 21.3 -0.7
KSP Ksiaz 70.60 333⇓ *i*P **P** 18 25 49.1 0.0
KSP *e*S **S** 18 34 21.3 -0.7
N38A Joes South For 70.63 48 P **P** 18 25 49.0 -0.4
baz=324
BUR08 Bucovina Ar. S 70.64 326 *e*P **P** 18 25 49.3 -0.2
BURAR Bucovina Array 70.66 326 ⇓ *i*P **P** 18 25 49.3 -0.3
BURAR Bucovina Array 70.66 326 P **P** 18 25 49.3 -0.3
P36A Good Intent, A 70.67 50 P **P** 18 25 49.4 -0.4
baz=323,SNR=6.7
TVAN Van 70.68 309 *i* P **P** 18 25 51.0 +0.9
NIE Niedzica 70.69 330 *i* P **P** 18 25 50.1 +0.4
NIE *e*S **S** 18 34 25.4 +2.2
NIE Niedzica 70.69 330⇓ *i*P **P** 18 25 50.1 +0.4
NIE *e*S **S** 18 34 25.4 +2.2
ECK Cauldkaine Hil 70.69 346⇓ *e*P **P** 18 25 49.0 -0.5
VLDQ Val d'Or 70.70 33 *e*P **P** 18 25 48.6 -1.1
O37A Wolven Farm, M 70.72 49 P **P** 18 25 49.8 -0.2
baz=324
UZH Uzhgorod 70.75 328 ⇑ *i*P **P** 18 25 48.8 -1.2
UZH *e**PP pP 18 27 46.0 +11
UZH *e*S **S** 18 34 19.7 -4.1
UZH pmax pmax
comp=Z,320nm,0.8s
R34A Isabella, Hill 70.76 52 P **P** 18 25 49.6 -0.7
baz=323,SNR=11
L41A Preston 70.79 45 P **P** 18 25 49.1 -1.2
baz=325
BHH Howats Hill 70.79 346⇓ *e*P **P** 18 25 49.7 -0.5
HSIG 70.82 67 *e*P **P** 18 25 51.9 +1.1
T32A Huddler Ranch, 70.83 54 P **P** 18 25 50.1 -0.7
baz=322,SNR=5.6
KOPT Kop Dagi 70.84 311 *i* P **P** 18 25 52.2 +1.1
LWLI Liwa 70.87 233 P **P** 18 25 49.3 -2.0
comp=Z,312nm,0.9s,comp=Z,3μm
N39A Derby Farms, D 70.89 47 P **P** 18 25 50.2 -0.7
baz=324,SNR=10
Q35A Mercer Eighty, 70.89 51 P **P** 18 25 50.1 -0.9
baz=323,SNR=6.5
DBJI Dramaga 70.94 230 P **P** 18 25 50.4 -1.2
comp=Z,248nm,1.0s,comp=Z,3μm
ECAT Cat-ERZURUM 70.95 311 *i* P **P** 18 25 52.4 +0.7
S33A Kaszmaul Farm, 70.96 53 P **P** 18 25 50.8 -0.7
baz=323,SNR=8.0
PPSI Pulau Pagai 70.96 238 P **P** 18 25 53.0 +1.3
comp=Z,316nm,1.1s
OKC Ostrava-Krasne 70.97 331 ⇓ *i*P **P** 18 25 51.5 +0.2
OKC *e*pP **pP** 18 27 36.2 -0.4
OKC *e*S **S** 18 34 26.9 +0.7
OKC *e*XS **sS** 18 37 33.9 -0.2
OKC Ostrava-Krasne 70.97 331 ⇓ *i*P **P** 18 25 51.5 +0.2
OKC *e*S **S** 18 34 26.9 +0.7
UPC Upice 70.98 333 ⇓ *e*P **P** 18 25 51.4 0.0
UPC *e*S **S** 18 34 26.7 +0.3
UPC *e*XS **sS** 18 37 36.6 +2.4
UPC Upice 70.98 333 *e*P **P** 18 25 51.4 0.0
UPC *e*S **S** 18 34 26.7 +0.3
DPC Dobruska-Polom 71.03 332 ⇓ *e*P **P** 18 25 52.1 +0.4
DPC *ex* x 18 26 00.7
DPC *e*pP **pP** 18 27 37.4 +0.3
DPC *e*S **S** 18 34 27.7 +0.6
DPC Dobruska-Polom 71.03 332 ⇓ *e*P **P** 18 25 52.1 +0.4
DPC *e*S **S** 18 34 27.7 +0.6
O38A Galt 71.06 48 P **P** 18 25 51.6 -0.4
baz=324
CLL Collm 71.06 335 ⇓ *i*P **P** 18 25 51.4 -0.4
comp=Z,167nm,0.9s
CLL *e*pP **pP** 18 27 36.0 -1.2
CLL *e*sP **sP** 18 28 29.0 -0.9
CLL *i* S **S** 18 34 26.5 -0.7
CLL *e*sS **sS** 18 37 37.0 +1.9
CLL *e*SS SS 18 36.0 +24
CLL *e*SSS SSS 18 42 36.0
CLL Collm 71.06 335 ⇓ *i*P **P** 18 25 51.4 -0.4
CLL *i* S **S** 18 34 26.5 -0.7
CLL pmax pmax
comp=Z,167nm,0.9s
CLL Collm 71.06 335 *e*P **P** 18 25 51.0 -0.9
Q36A Arnold C. Orve 71.08 50 P **P** 18 25 51.3 -0.8
baz=324
P37A Lathrop 71.09 49 P **P** 18 25 52.0 -0.2
baz=324,SNR=20
KASI Kota Agung 71.10 232 P **P** 18 25 50.5 -2.0
comp=Z,105nm,1.0s
TESR Tescani 71.10 324 ⇓ *i*P **P** 18 25 51.7 -0.5
TRPA Tarpa 71.11 328 ⇓ *ex* P **P** 18 25 52.5 +0.4
GRSN GIRESUNGRSN 71.11 313 *i* P **P** 18 25 51.9 -0.5
KRLC Kraliky 71.15 332 ⇓ *e*P **P** 18 25 52.7 +0.3
KRLC Kraliky 71.15 332 ⇓ *e*P **P** 18 25 52.7 +0.3
LANS Liptovska Anna 71.18 330 *e*P **P** 18 25 53.6 +1.0
LANS Liptovska Anna 71.18 330 *e*P **P** 18 25 53.6 +1.0
LANS *e*pP **pP** 18 27 38.8 +0.8
BMR Baia Mare 71.19 327 ⇓ *i*P **P** 18 25 52.8 +0.2
MORC Moravsky Berou 71.20 331 ⇓ *i*P **P** 18 25 52.9 +0.3
MORC Moravsky Berou 71.20 331 *e*P **P** 18 25 53.0 +0.3
MORC Moravsky Berou 71.20 331 *e*P **P** 18 25 53.0 +0.3
BRG Berggiesshubel 71.21 334 *i* P **P** 18 25 52.3 -0.4
comp=Z,86nm,1.3s
BRG *e*PP **sP** 18 28 26.0 -4.8
comp=Z,26nm,1.6s
BRG Berggiesshubel 71.21 334 *i* P **P** 18 25 52.3 -0.4
BRG pmax pmax
comp=Z,86nm,1.3s
GAL1 Galloway 71.23 347⇓ *e*P **P** 18 25 51.9 -0.8
ORDU Ordu-Boztepe 71.24 314 *i* P **P** 18 25 53.2 +0.1
R35A Emporia Munici 71.24 51 P **P** 18 25 52.7 -0.4
baz=323
T33A Patterson Ranc 71.24 53 P **P** 18 25 52.4 -0.7
baz=323
AMTX Amarillo 71.26 57 P **P** 18 25 53.9 +0.5
baz=322
AMTX Amarillo 71.26 57 *e*P **P** 18 25 53.9 +0.5
KESW Keswick, Cumbr 71.26 346⇓ *e*P **P** 18 25 52.6 -0.3
KESW AMB AMB 18 25 53.3
comp=Z,107nm,1.3s
KELT Kelkit 71.30 312 *i* P **P** 18 25 53.3 -0.4
S34A Willow Spring 71.30 52 P **P** 18 25 52.6 -0.9
baz=323
HAKT HAKKARI 71.30 308 *i* P **P** 18 25 53.7 -0.1
CISI Cisompet, Garu 71.33 228 *e*P **P** 18 25 51.4 -2.5
PVCC Panska Ves 71.36 334 ⇓ *e*P **P** 18 25 53.7 +0.1
PVCC *ex* x 18 26 00.6
PVCC Panska Ves 71.36 334 *e*P **P** 18 25 53.7 +0.1
O39A Kirksville 71.37 47 P **P** 18 25 53.4 -0.4
baz=324
BNGL BINGOL 71.40 310 *i* P **P** 18 25 55.6 +1.3
ARCR ARCALIA 71.41 326 ⇓ *i*P **P** 18 25 54.5 +0.5
MSTX Muleshoe 71.42 58 P **P** 18 25 54.6 +0.3
baz=322,SNR=17
MSTX Muleshoe 71.42 58 *e*P **P** 18 25 54.7 +0.3
SKJI Sukabumi 71.42 230 P **P** 18 25 53.0 -1.4
comp=Z,192nm,0.7s
U32A Winter Ranch, 71.43 54 P **P** 18 25 54.4 +0.1
baz=323
P38A Dawn 71.43 48 P **P** 18 25 53.9 -0.3
baz=324,SNR=14
TLCR 71.44 322 ⇓ *i*P **P** 18 25 53.8 -0.3
KECS Kecovo 71.46 329 *e*P **P** 18 25 54.1 -0.1
KECS pmax pmax
comp=Z,47nm,0.9s
KECS Kecovo 71.46 329 *e*P **P** 18 25 54.1 -0.1
EUZM Uzumlu 71.46 312 *i* P **P** 18 25 55.1 +0.6
CGJI Cibinong 71.48 231 P **P** 18 25 52.0 -2.8
comp=Z,173nm,1.1s,comp=Z,2μm
R36A Gordon, Harris 71.57 51 P **P** 18 25 54.5 -0.5
baz=324,SNR=12
ODBI Odobesti 71.60 323 ⇓ *i*P **P** 18 25 55.9 +0.9
Q37A Longview Farm, 71.61 50 P **P** 18 25 54.8 -0.5
baz=324
HPK Haverah Park 71.64 345⇓ *e*P **P** 18 25 54.9 -0.2
HPK AMB AMB 18 25 56.1
comp=Z,141nm,1.3s
SAMS Samsun-Alacam 71.66 315 *i* P **P** 18 25 56.0 +0.5
PLOR Plostina 71.67 324 ⇑ *i*P **P** 18 25 55.3 -0.2
PLOR Plostina 71.67 324 P **P** 18 25 55.3 -0.2
S35A Otter Creek Ra 71.69 52 P **P** 18 25 55.3 -0.5
baz=323,SNR=6.6
CFR Carcaliu 71.70 322 ⇓ *i*P **P** 18 25 55.2 -0.4
SUSE Susehri 71.72 313 *i* P **P** 18 25 55.7 -0.4
O40A La Belle 71.78 47 P **P** 18 25 56.0 -0.2
baz=325,SNR=12
T34A McClaskey Farm 71.80 53 P **P** 18 25 55.6 -0.8
baz=323,SNR=8.1
MNTX Cornudas Mount 71.81 62 P **P** 18 25 57.8 +1.2
baz=321,SNR=79
MNTX Cornudas Mount 71.81 62 *e*P **P** 18 25 57.7 +1.2
U33A Lingo Farm, Me 71.82 54 P **P** 18 25 56.2 -0.4
baz=323
GOPC GO Pecny, Ondr 71.85 333 ⇓ *e*P **P** 18 25 56.8 +0.3
GOPC *ex* x 18 26 03.7
GOPC GO Pecny, Ondr 71.85 333 ⇓ *e*P **P** 18 25 56.8 +0.3
PRU Pruhonice 71.85 333 ⇓ *e*P **P** 18 25 56.6 +0.1
PRU *e*S **S** 18 34 36.8 +0.6
PRU *e*XS **sS** 18 37 47.1 +2.5
PRU Pruhonice 71.85 333 ⇓ *e*P **P** 18 25 56.6 +0.1
PRU *e*S **S** 18 34 36.8 +0.6
R37A Teagarden Farm 71.89 50 P **P** 18 25 56.0 -0.9
baz=324,SNR=11
VRAC Vranov 71.89 332 ⇓ *i*P **P** 18 25 57.2 +0.5
P39B Salisbury 71.90 48 P **P** 18 25 56.5 -0.4
baz=324,SNR=9.1
WIM Isle of Man 71.92 347⇓ *e*P **P** 18 25 56.2 -0.6
V32A Arapaho 71.93 55 P **P** 18 25 57.6 +0.4
baz=323
Q38A Cooks Store, C 71.93 49 P **P** 18 25 56.8 -0.3
baz=324,SNR=31
WTSB Winterswijk 71.94 339 *e*P **P** 18 25 56.6 -0.2
comp=Z,91nm,0.8s
GRER 71.95 323 ⇓ *i*P **P** 18 25 57.9 +0.8
VYHS Vyhne 71.96 330 *e*P **P** 18 25 57.5 +0.4
VYHS pmax pmax
comp=Z,62nm,0.9s
VYHS Vyhne 71.96 330 *e*P **P** 18 25 57.5 +0.4
VYHS *e*pP **pP** 18 27 42.9 +0.1
ERBA Erbaa 71.97 314 *i* P **P** 18 25 58.2 +0.8
CJR Cluj-Napoca 71.99 326 ⇓ *i*P **P** 18 25 57.7 +0.3
S36A Lake Cedric, C 72.01 51 P **P** 18 25 57.1 -0.5
baz=324,SNR=14
GMM Mts of Mourne 72.01 347⇓ *e*P **P** 18 25 56.2 -1.0

DOPR **Dopca** 72.02 325 ⇓*i*P P 18 25 57.8 +0.3
MOX **Moxa** 72.02 335 P P 18 25 57.2 -0.3
MOX pmax pmax
comp=Z,83nm,1.1s
LHO **Holmfirth** 72.08 345⇓*e*P P 18 25 56.9 -0.9
HAVZ **Havza** 72.10 315 *i* P P 18 25 58.8 +0.7
U34A **Anderson Ranch** 72.10 53 P P 18 25 58.0 -0.2
baz=323
U34A **Anderson Ranch** 72.10 53 *e*P P 18 25 58.2 +0.1
PSZ **Piszkesteto** 72.14 329⇓*i*P P 18 25 58.6 +0.3
PSZ **Piszkesteto** 72.14 329 *e*P P 18 25 58.6 +0.3
PSZ **Piszkesteto** 72.14 329 *e*P P 18 25 58.6 +0.3
Q39A **Willow Grove F** 72.16 48 P P 18 25 58.3 -0.1
baz=324,SNR=15
BOYT **Boyabat** 72.16 316 *i* P P 18 25 59.1 +0.6
CUZAR **Zara_SIVAS** 72.18 313 *i* P P 18 25 59.2 +0.5
P40A **Paris** 72.18 48 P P 18 25 58.2 -0.3
baz=325,SNR=17
NKC **Novy Kostel** 72.19 335⇓*e*P P 18 25 58.5 0.0
NKC **Novy Kostel** 72.19 335⇓*e*P P 18 25 58.5 0.0
HARR **Harsova** 72.19 322⇓*i*P P 18 25 58.2 -0.3
TIRR **Tirgusor** 72.21 322⇓*i*P P 18 25 58.3 -0.3
TIRR **Tirgusor** 72.21 322 *e*P P 18 25 58.3 -0.3
TIRR **Tirgusor** 72.21 322 *e*P P 18 25 58.2 -0.3
DRGR 72.22 327⇑*i*P P 18 25 58.5 -0.3
O41A **Passleys Farm,** 72.22 46 P P 18 25 58.2 -0.6
baz=325
V33A **Lossen Ranch,** 72.22 54 P P 18 25 58.6 -0.3
baz=323
MLR **Muntele Rosu** 72.23 324⇓*i*P P 18 25 58.7 -0.2
MLR **Muntele Rosu** 72.23 324 *e*P P 18 25 58.7 -0.2
MLR **Muntele Rosu** 72.23 324 *e*P P 18 25 58.7 -0.2
TLB **Topalu** 72.24 322⇓*i*P P 18 25 58.5 -0.3
W32A **Sentinel** 72.30 55 P P 18 26 00.1 +0.7
baz=323,SNR=11
ISR **Istrita** 72.33 323⇓*i*P P 18 25 59.5 +0.1
S37A **Fort Scott** 72.34 50 P P 18 25 59.0 -0.5
baz=324,SNR=17
KEMA **Kemaliye** 72.36 312 *i* P P 18 25 59.7 0.0
T36A **Boggs Farm, Ca** 72.40 52 P P 18 25 59.6 -0.3
baz=324,SNR=6.9
R38A **Fenwick Farm,** 72.42 50 P P 18 25 58.9 -1.1
baz=324,SNR=16
EFOR **EFORIE** 72.45 321⇑*i*P P 18 25 59.7 -0.3
CVDA **Cernavoda** 72.46 322⇑*i*P P 18 25 59.7 -0.3
AMRR **Amara** 72.48 323⇑*i*P P 18 26 00.9 +0.7
SCER **sogukcermik** 72.48 314 *i* P P 18 26 00.9 +0.4
P41A **Barry, Barry** 72.50 47 P P 18 26 00.1 -0.4
baz=325,SNR=13
U35A **Pawnee** 72.54 53 P P 18 26 00.7 -0.1
baz=324
HDIL **Hopedale** 72.55 45 P P 18 26 00.2 -0.5
baz=326
V34A **Guthrie** 72.59 53 P P 18 26 01.2 +0.2
baz=323,SNR=9.9
V34A **Guthrie** 72.59 53 *e*P P 18 26 01.4 +0.4
VOIR 72.59 325⇓*i*P P 18 26 01.3 +0.3
VOIR 72.59 325 P P 18 26 01.2 +0.3
Q40A **Laux Farm, Aux** 72.61 48 P P 18 26 00.8 -0.2
baz=325,SNR=7.9
W33A **Caddo, Fort Co** 72.67 55 P P 18 26 02.1 +0.7
baz=323
WPM1 **Penmaenmawr** 72.67 346⇓*e*P P 18 26 00.4 -0.8
MANR **Mangalia** 72.69 321⇑*i*P P 18 26 01.4 0.0
DIYA **Diyarbakir** 72.70 310 *i* P P 18 26 02.5 +0.8
R39A **Chumby, Stover** 72.72 49 P P 18 26 01.2 -0.5
baz=325,SNR=15
CTAO **Charters Tower** 72.75 187 *e*P P 18 26 02.8 +0.9
CTAO **Charters Tower** 72.75 187 *e*P P 18 26 02.8 +0.9
ELZG **Elazig** 72.76 311 *i* P P 18 26 03.2 +1.0
CWF **Charnwood Fore** 72.77 344 *e*P P 18 26 01.1 -0.6
CWF AMB AMB 18 26 02.6
comp=Z,120nm,1.4s
CWF **Charnwood Fore** 72.77 344 *e*P P 18 26 01.4 -0.3
MTUR **Matau** 72.77 324⇑*i*P P 18 26 02.3 +0.3
CUKAN **kangal_SIVAS** 72.78 313 *i* P P 18 26 02.7 +0.5
BUD **Budapest** 72.80 329 P P 18 26 02.4 +0.5
BUD **Budapest** 72.80 329⇓*e*x P 18 26 02.5 +0.5
ARR **Arges** 72.80 325⇓*i*P P 18 26 02.8 +0.6
T37A **Cheneyville 18** 72.81 51 P P 18 26 02.1 -0.1
baz=324,SNR=31
SULR 72.82 323⇓*i*P P 18 26 02.0 -0.1
X32A **Elmer** 72.84 56 P P 18 26 02.5 0.0
baz=323,SNR=6.3
WMOK **Wichita Mounta** 72.84 55 P P 18 26 02.7 +0.2
baz=323,SNR=47
WMOK **Wichita Mounta** 72.84 55 *e*P P 18 26 02.8 +0.3
WMOK **Wichita Mounta** 72.84 55 *e*P P 18 26 02.8 +0.3
WMOK *e*pP pP 18 27 48.1 -0.5
CTAK **Corum_Osmancik** 72.85 316 *i* P P 18 26 03.3 +0.6
S38A **Stockton** 72.87 50 P P 18 26 01.6 -1.0
baz=324
MARD **Mardin** 72.89 310 *i* P P 18 26 03.0 +0.1
P42A **Winchester** 72.89 46 P P 18 26 02.1 -0.6
baz=326
KHC **Kasperske Hory** 72.89 334⇓*e*P P 18 26 02.9 +0.3
KHC *ex* x 18 26 09.3
KHC *e*pP pP 18 27 48.6 0.0
KHC *e*S S 18 34 48.6 +0.7
KHC *e*XS sS 18 37 59.8 +2.8
KHC **Kasperske Hory** 72.89 334⇓*e*P P 18 26 02.9 +0.3
KHC *e*S S 18 34 48.6 +0.7
KHC **Kasperske Hory** 72.89 334 *e*P P 18 26 02.2 -0.3
FOEL **Foel Wylfa** 72.92 345⇓*e*P P 18 26 02.1 -0.6
FOEL AMB AMB 18 26 02.9
comp=Z,90nm,1.2s
W34A **Bridge Creek,** 72.94 54 P P 18 26 03.6 +0.6
baz=323
W34A **Bridge Creek,** 72.94 54 *e*P P 18 26 03.7 +0.6
DEV **Deva** 72.95 326⇑*i*P P 18 26 02.7 -0.2
PSN **Preselentsi** 72.96 322 *i* P P 18 26 02.5 -0.5
V35A **Meyer Ranch, C** 72.98 53 P P 18 26 03.4 +0.2
baz=324,SNR=8.1
GRFO **Grafenberg** 73.00 335 *e*P P 18 26 03.6 +0.4
GRFO **Grafenberg** 73.00 335 *e*P P 18 26 03.5 +0.4
U36A **Oologah** 73.01 52 P P 18 26 03.5 +0.1
baz=324,SNR=6.7
SIRR **Siria** 73.03 327⇓*i*P P 18 26 03.2 -0.2
LOT **Lotru** 73.03 325⇑*i*P P 18 26 02.8 -0.7
WET **Wettzell** 73.07 334 P P 18 26 03.5 -0.1
WET pmax pmax
comp=Z,154nm,1.0s
COAL **Corum-Alaca** 73.09 315 *i* P P 18 26 04.6 +0.6
R40A **Maddies Statio** 73.09 48 P P 18 26 03.4 -0.4
baz=325,SNR=14
S39A **Bolivar** 73.09 49 P P 18 26 02.9 -1.0
baz=325,SNR=16
GEC2 **GERESS Array S** 73.12 333 *e*P P 18 26 03.8 -0.2
GEC2 **GERESS Array S** 73.12 333 *e*P P 18 26 03.8 -0.2
GERES **GERESS Array B** 73.12 333 P P 18 26 03.8 -0.2
comp=Z,42nm,0.7s,baz=32,slow=5.2,SNR=301
CUALT **Altinyayla-SIV** 73.13 313 *i* P P 18 26 05.2 +0.9
X33A **Lawton** 73.14 55 P P 18 26 04.2 0.0
baz=323
CSKK **Cs˙‡kako** 73.14 330⇓*e*x P 18 26 04.5 +0.5
T38A **Diamond** 73.17 51 P P 18 26 03.9 -0.5
baz=324,SNR=19
CUSAR **Sarkisla-SIVAS** 73.23 314 *i* P P 18 26 05.1 +0.2
HLM1 **Long Mynd** 73.23 345⇓*e*P P 18 26 03.9 -0.5
HLM1 AMB AMB 18 26 05.4
comp=Z,146nm,1.6s
HGN **Heimansgroeve** 73.25 339 *e*P P 18 26 04.3 -0.2
comp=Z,141nm,1.1s
U37A **Salina** 73.29 51 P P 18 26 05.0 0.0
baz=324,SNR=15
TRQ **Mont Tremblant** 73.31 32 *e*P P 18 26 04.8 -0.3
CONA **Conrad Observa** 73.35 332 *i* P P 18 26 05.8 +0.6
comp=Z,109nm,0.8s,SNR=59
CONA *i* pP pP 18 27 51.5 0.0
comp=Z,23nm,1.1s
Q42A **Golden Eagle** 73.36 47 P P 18 26 05.2 -0.2
baz=326,SNR=6.2
SOP **Sopron** 73.36 331 P P 18 26 05.6 +0.4
SOP **Sopron** 73.36 331⇓*e*x P 18 26 06.0 +0.8
TUL1 **Leonard** 73.37 52 P P 18 26 05.7 +0.2
baz=324,SNR=9.9
TUL1 **Leonard** 73.37 52 *e*P P 18 26 05.8 +0.3
V36A **Jenks** 73.39 52 P P 18 26 05.8 +0.2
baz=324,SNR=12
MSVF **Nonsavu** 73.39 155*c* *i*P P 18 26 06.9 +1.1
MSVF pmax pmax
comp=Z,48nm,1.0s
MSVF **Nonsavu** 73.39 155 *e*P P 18 26 07.7 +1.9
AKCD **Akcadag** 73.41 312 *i* P P 18 26 06.7 +0.9

X34A **Smith Ranch, M** 73.42 54 P P 18 26 06.3 +0.5
baz=323,SNR=10
LMQ **La Malbaie** 73.45 29 *e*P P 18 26 05.5 -0.2
W35A **Tecumseh** 73.45 53 P P 18 26 06.1 +0.2
baz=324,SNR=10
Y33A **Hilltop Ranch,** 73.50 55 P P 18 26 06.3 0.0
baz=323,SNR=8.1
PLVO **Plevna** 73.50 35 *e*P P 18 26 06.0 -0.1
S40A **Lebanon** 73.55 49 P P 18 26 06.0 -0.5
baz=325,SNR=17
T39A **Clever** 73.61 50 P P 18 26 06.1 -0.8
baz=325
U38A **Gravette** 73.61 51 P P 18 26 06.5 -0.4
baz=324,SNR=12
BZS **Buzias** 73.62 327⇑*i*P P 18 26 06.1 -0.6
SFIN **Lafayette** 73.64 44 P P 18 26 05.8 -1.1
baz=327
SFIN **Lafayette** 73.64 44 *e*P P 18 26 06.6 -0.3
PALK **Pallekele** 73.65 260 *i* P P 18 26 07.2 -0.2
SNR=19
PALK **Pallekele** 73.65 260 *i* P P 18 26 07.5 +0.1
PALK **Pallekele** 73.65 260 *e*P P 18 26 07.3 -0.2
PRD **Provadia** 73.67 322 *i* P P 18 26 06.4 -0.6
V37A **Hulbert** 73.70 52 P P 18 26 07.4 0.0
baz=324,SNR=16
MCH1 **Michaelchurch** 73.76 345 *e*P P 18 26 06.8 -0.6
MCH1 AMB AMB 18 26 07.5
comp=Z,174nm,1.7s
BANOM **Banah** 73.77 291 *i* P P 18 26 07.7 -0.3
SNR=18
BANOM **Banah** 73.77 291 P P 18 26 07.7 -0.3
SNR=11
W36A **Wetumka** 73.78 53 P P 18 26 08.1 +0.3
baz=324,SNR=9.3
BCAM **Yenicaga** 73.85 317 *i* P P 18 26 08.2 -0.1
MOA **Molln** 73.87 333 *i* P P 18 26 08.3 +0.2
comp=Z,60nm,0.8s,SNR=22
MOA *e*pP pP 18 27 54.0 -0.6
comp=Z,10nm,1.1s
CDAG **Cicekdag** 73.88 315 *i* P P 18 26 08.8 +0.3
MONM **Monmouth** 73.88 345 *e*P P 18 26 06.8 -1.2
MONM AMB AMB 18 26 08.9
comp=Z,111nm,1.2s
S41A **Jillco Farms,** 73.90 48 P P 18 26 08.1 -0.4
baz=325,SNR=12
T40A **Mansfield** 73.90 49 P P 18 26 07.9 -0.6
baz=325,SNR=10
ATAB **Bozova** 73.91 311 *i* P P 18 26 09.8 +1.1
SRE **Strehaia** 73.91 325⇓*i*P P 18 26 08.1 -0.3
SFNV **Sufian** 73.93 309 *i* P P 18 26 08.2 -0.5
HHAR **Hobbs** 73.95 51 *e*P P 18 26 08.4 -0.4
Y34A **Reagan Ranch,** 73.97 55 P P 18 26 09.1 +0.1
baz=324,SNR=10
Z33A **Whitaker Ranch** 74.00 56 P P 18 26 08.9 -0.2
baz=323,SNR=6.5
X35A **Drake** 74.00 54 P P 18 26 08.9 -0.2
baz=324,SNR=7.9
ZIMR 74.02 323⇑*i*P P 18 26 08.4 -0.6
ARSA **Arzberg** 74.06 331 *i* P P 18 26 09.7 +0.5
comp=Z,84nm,1.0s,SNR=43
ARSA *e*pP pP 18 27 55.9 +0.1
comp=Z,18nm,1.2s
V38A **Canehill** 74.07 51 P P 18 26 09.4 -0.1
baz=324,SNR=29
HGH **Gray Hill** 74.07 345 *e*P P 18 26 09.1 -0.1
ABTX **Abilene, Hawle** 74.08 57 P P 18 26 09.8 +0.2
baz=323,SNR=9.7
ABTX **Abilene, Hawle** 74.08 57 *e*P P 18 26 09.9 +0.3
U39A **Green Forest** 74.08 50 P P 18 26 09.3 -0.3
baz=325,SNR=35
BR131 **Keskin Array S** 74.10 316 *e*P P 18 26 09.7 -0.1
BRTR **Keskin Array B** 74.11 316 P P 18 26 09.7 -0.1
comp=Z,96nm,0.8s,baz=48,slow=3.0,SNR=374
BRTR pP pP 18 27 55.7 -0.6
comp=Z,9.1nm,0.9s,baz=58,slow=3.1,SNR=5.9
GIVF **Givet** 74.12 339 *e*P P 18 26 08.2 -1.3
GIVF pmax pmax
comp=Z,101nm,1.2s
WOL **Wolverton** 74.12 344 *e*P P 18 26 08.2 -1.3
WOL AMB AMB 18 26 09.6
comp=Z,150nm,1.6s
SZH **Strazhica** 74.15 323 *i* P P 18 26 08.9 -0.9
W37B **Quinton** 74.16 52 P P 18 26 10.5 +0.5
baz=324,SNR=22
X36A **Centrahoma** 74.17 53 P P 18 26 10.2 +0.1
baz=324,SNR=8.6
WRAB **Tennant Creek** 74.17 198*d* *i*P P 18 26 10.4 +0.3
WRAB pmax pmax
comp=Z,288nm,0.9s
WRAB **Tennant Creek** 74.17 198 *e*P P 18 26 10.6 +0.5
WRA **Warramunga Arr** 74.18 198 P P 18 26 10.0 -0.2
comp=Z,112nm,0.7s,baz=16,slow=5.9,SNR=355
WRA pP pP 18 27 57.5 +0.6
comp=Z,6.5nm,0.9s,baz=14,slow=6.3,SNR=3.5
WRA **Warramunga Arr** 74.18 198 P P 18 26 10.0 -0.2
WRA pmax pmax
comp=Z,116nm,0.7s
WLF **Walferdange** 74.24 338 *e*P P 18 26 10.3 +0.1
WLF **Walferdange** 74.24 338 *e*P P 18 26 10.2 +0.1
BAIF **Baives** 74.29 340 *e*P P 18 26 09.4 -1.0
BAIF pmax pmax
comp=Z,86nm,1.1s
MDVR **Moldovita** 74.32 326⇑*i*P P 18 26 10.0 -0.8
T41A **Mountain View** 74.34 49 P P 18 26 10.3 -0.6
baz=325,SNR=15
GZT **Gaziantep** 74.34 312 *i* P P 18 26 11.6 +0.4
STU **Stuttgart** 74.36 336 *e*P P 18 26 10.3 -0.6
STU **Stuttgart** 74.36 336 *e*P P 18 26 10.3 -0.6
Z34A **Collier Ranch,** 74.36 55 P P 18 26 11.0 -0.2
baz=324,SNR=5.8
Y35A **Marietta** 74.37 54 P P 18 26 11.3 +0.1
baz=324,SNR=7.9
BR231 **Keskin MP Arra** 74.37 316 *e*P P 18 26 09.6 -1.6
BEHE **Becsehely** 74.39 330⇓*e*x P 18 26 11.4 +0.3
U40A **Yellville** 74.40 50 P P 18 26 10.9 -0.4
baz=325,SNR=36
V39A **Pettigrew** 74.45 51 P P 18 26 11.3 -0.4
baz=325,SNR=23
FITZ **Fitzroy Crossi** 74.46 207 *e*P P 18 26 12.4 +0.7
133A **Hamilton Ranch** 74.47 56 P P 18 26 11.8 0.0
baz=323,SNR=14
LANF **Langenberg** 74.50 337 *e*P P 18 26 11.5 -0.2
R44A **Waltonville** 74.55 46 P P 18 26 11.6 -0.6
baz=326,SNR=5.4
KOGS **Kog** 74.57 331⇓*i*P P 18 26 11.8 -0.2
TX31 **Lajitas Ar. Si** 74.57 62 *e*P P 18 26 12.6 0.0
TXAR **Lajitas Array** 74.58 62 P P 18 26 13.6 +1.0
comp=Z,32nm,0.7s,baz=300,slow=4.3,SNR=343
TXAR pP pP 18 27 58.3 -0.9
comp=Z,6.5nm,0.7s,baz=300,slow=4.4,SNR=6.2
UOSS **Minazif** 74.59 291 *e*P P 18 26 11.7 -0.9
BIDO **Bidbid** 74.59 288 P P 18 26 12.7 +0.1
SNR=9.1
JMB **Yambol** 74.60 322 *i* P P 18 26 11.8 -0.5
X37A **Clayton** 74.63 53 P P 18 26 12.7 0.0
baz=324,SNR=5.9
HCB **Kahramanmara˙** 74.65 312 *i* P P 18 26 13.3 +0.5
W38A **Poteau** 74.66 52 P P 18 26 13.1 +0.3
baz=325,SNR=14
S43A **Fulton Ridge,** 74.67 47 P P 18 26 12.4 -0.5
baz=326
ANDN **Andirin** 74.70 313 *i* P P 18 26 13.8 +0.6
YAHY **KAYSERI_Yahyal** 74.72 314 *i* P P 18 26 13.6 +0.3
SOKA **Soboth** 74.72 332 *i* P P 18 26 13.3 +0.3
comp=Z,149nm,1.0s,SNR=54
SOKA *i* pP pP 18 27 59.7 -0.1
comp=Z,21nm,1.2s
LONY **Lake Ozonia** 74.72 33 *e*P P 18 26 12.7 -0.3
HATD **Hatia, Dubai** 74.72 291 *i* P P 18 26 13.1 -0.2
SNR=98
HATD **Hatta, Dubai** 74.72 291 P P 18 26 13.1 -0.2
SNR=26
Z35A **Perchaven, San** 74.72 55 P P 18 26 13.0 -0.2
baz=324
PERS **Pernice** 74.73 331 *e*P P 18 26 13.2 +0.1
Y36A **Durant** 74.74 54 P P 18 26 13.2 -0.1
baz=324,SNR=8.4
X38A **Whitesboro** 74.83 52 P P 18 26 14.2 +0.4
baz=324,SNR=18
KBA **Koelnbreinsper** 74.83 333 *i* P P 18 26 14.5 +0.7
comp=Z,263nm,0.7s,SNR=136
KBA *i* pP pP 18 28 00.7 +0.2
comp=Z,63nm,1.1s
KBA **Koelnbreinsper** 74.83 333 P P 18 26 14.2 +0.4
KBA pmax pmax
comp=Z,418nm,0.9s

U41A **Viola** 74.84 49 P P 18 26 13.2 -0.6
baz=325,SNR=5.5
NAZ **Nazwa, Dubai** 74.86 291 *i* P P 18 26 13.5 -0.5
SNR=75
NAZ **Nazwa, Dubai** 74.86 291 P P 18 26 13.6 -0.5
SNR=20
V40A **Witts Springs** 74.86 50 P P 18 26 13.4 -0.6
baz=325,SNR=8.4
MPEP **Malo Peshtene** 74.87 324 P P 18 26 13.5 -0.3
ASHO **Ashiyiah** 74.87 291 *i* P P 18 26 13.8 -0.5
SNR=15
ASHO **Ashiyiah** 74.87 291 P P 18 26 13.9 -0.3
SNR=25
KKUL **Konya-Kulu** 74.87 316 *i* P P 18 26 13.0 -1.1
XMIS **Christmas Isla** 74.90 229 *e*P P 18 26 14.2 -0.1
KSRV **Kasrt alli** 74.90 310 *i* P P 18 26 15.7 +1.5
W39A **Magazine** 74.90 51 P P 18 26 13.9 -0.2
baz=325,SNR=8.8
134A **White-Moore Ra** 74.92 56 P P 18 26 14.3 0.0
baz=324
S44A **Carbondale** 74.93 47 P P 18 26 13.9 -0.3
baz=326
233A **Rising Star** 74.94 57 P P 18 26 14.6 +0.1
baz=324,SNR=6.2
BFO **Black Forest** 74.98 337 *i* P P 18 26 14.0 -0.4
SMDO **Samad** 74.99 288 P P 18 26 14.7 -0.3
SNR=24
Y37A **Hugo** 75.00 53 P P 18 26 14.9 +0.1
baz=324
HOQ **Hoqain** 75.01 289 P P 18 26 14.5 -0.5
SNR=38
OBKA **Obir** 75.01 332 *i* P P 18 26 14.8 +0.1
comp=Z,81nm,0.8s,SNR=26
OBKA *i* pP pP 18 28 01.4 -0.1
comp=Z,39nm,1.3s
KUZU **Kuzuini** 75.04 312 *i* P P 18 26 15.8 +0.8
EDRB **Edirne** 75.08 322 P P 18 26 14.6 -0.4
WATA **Walderalm** 75.08 334 *i* P P 18 26 15.5 +0.3
comp=Z,102nm,1.0s,SNR=23
FAQ **Al Faqa, Dubai** 75.09 291 *i* P P 18 26 14.7 -0.7
SNR=18
FAQ **Al Faqa, Dubai** 75.09 291 P P 18 26 14.7 -0.7
SNR=18
SLMH **Al Salmeh** 75.11 311 *i* P P 18 26 15.3 -0.1
WTTA **Wattenberg** 75.13 334 *i* P P 18 26 16.0 +0.6
comp=Z,133nm,0.9s,SNR=41
WTTA *i* pP pP 18 28 01.7 -0.6
comp=Z,17nm,1.1s
WLS **Welschbruch** 75.14 337⇑*e*P P 18 26 15.2 -0.1
U42A **Revenden** 75.15 49 P P 18 26 14.8 -0.7
baz=326
RETA **Reutte** 75.15 335 *i* P P 18 26 15.6 +0.1
comp=Z,69nm,1.0s,SNR=24
CDF **Champ du Feu** 75.16 337 *e*P P 18 26 14.3 -1.2
CDF pmax pmax
comp=Z,109nm,0.9s
MYKA **Terra Mystica** 75.16 332 *i* P P 18 26 15.3 -0.2
comp=Z,43nm,0.6s,SNR=31
MYKA *i* pP pP 18 28 01.9 -0.5
comp=Z,31nm,1.3s
PBMO **Poplar Bluff** 75.16 48 *e*P P 18 26 15.6 0.0
Z36A **Blue Ridge** 75.18 54 P P 18 26 15.5 -0.2
baz=324
V41A **Mountainview** 75.19 50 P P 18 26 15.1 -0.7
baz=325,SNR=12
MOTA **Moosalm** 75.19 334 *i* P P 18 26 15.9 +0.1
comp=Z,163nm,1.0s,SNR=88
MOTA *i* pP pP 18 28 02.6 -0.1
comp=Z,9.6nm,0.8s
MMNY **Mt. Morris Dam** 75.22 36 *e*P P 18 26 15.7 -0.1
S45A **Carrier Mills** 75.25 46 P P 18 26 15.8 -0.2
baz=327
W40A **Ferguson Farm,** 75.25 51 P P 18 26 16.1 0.0
baz=325,SNR=7.0
135A **Vickery Place,** 75.27 55 P P 18 26 16.4 +0.2
baz=324
X39A **Fountain Ranch** 75.30 52 P P 18 26 16.7 +0.2
baz=325,SNR=17
234A **Clairette** 75.34 56 P P 18 26 16.9 +0.1
baz=324,SNR=10
DRWC **Darouich** 75.35 312 *i* P P 18 26 17.3 +0.6
DIM **Dimitrovgrad** 75.35 322 *i* P P 18 26 16.1 -0.5
ABTA **Abfaltersbach** 75.37 333 *i* P P 18 26 16.4 -0.3
comp=Z,153nm,1.2s,SNR=30
ABTA *i* pP pP 18 28 03.0 -0.6
comp=Z,25nm,1.1s
CRES **Cresnjev** 75.37 331⇓*i*P P 18 26 16.4 -0.3
ECH **Echery** 75.37 337 *e*P P 18 26 16.3 -0.3
HPIG 75.37 65 *e*P P 18 26 18.1 +0.9
NCB **Newcomb** 75.41 33 *e*P P 18 26 17.1 +0.2
SISC **Sisak** 75.41 330 P P 18 26 16.8 0.0
DYA **Yadsworthy** 75.42 345 *e*P P 18 26 16.3 -0.5
PGB **Panagyurishte** 75.42 324 *i* P P 18 26 16.5 -0.5
LJU **Ljubljana** 75.44 332⇓*i*P P 18 26 16.6 -0.5
ACSO **Alum Creek Sta** 75.45 41 *e*P P 18 26 17.1 0.0
333A **Richland Sprin** 75.45 57 P P 18 26 17.4 0.0
baz=324,SNR=12
Y38A **Idabel** 75.48 53 P P 18 26 17.2 -0.2
baz=325
JMDO **Jabal Madar** 75.49 288 P P 18 26 17.5 -0.2
SNR=33
X201 **Greenbrier Sit** 75.50 50 *e*P P 18 26 17.3 -0.2
DIVS **Divibare** 75.50 327 P P 18 26 16.9 -0.6
CADS **Cadrg** 75.50 332⇓*i*P P 18 26 16.4 -1.0
SLBS **Sierra La Lagu** 75.50 70 *e*P P 18 26 19.5 +1.6
X301 **Greenbrier Sit** 75.52 50 *e*P P 18 26 17.4 -0.2
V42A **Cord** 75.53 49 P P 18 26 17.0 -0.6
baz=326,SNR=7.4
WHAR **Wooly Hollow** 75.53 50 *e*P P 18 26 17.6 -0.1
MIAR **Mount Ida** 75.53 52 P P 18 26 17.9 +0.1
baz=325,SNR=14
MIAR **Mount Ida** 75.53 52 *e*P P 18 26 17.8 +0.1
MIAR **Mount Ida** 75.53 52 *e*P P 18 26 17.8 +0.1
OZLJ **Ozalj** 75.56 331 P P 18 26 17.2 -0.3
DAVA **Damuels** 75.56 335 *i* P P 18 26 17.9 +0.1
comp=Z,112nm,0.9s,SNR=32
FETA **Feichten** 75.59 335 *i* P P 18 26 18.4 +0.4
comp=Z,102nm,0.9s,SNR=41
FETA *i* pP pP 18 28 05.0 -0.1
comp=Z,15nm,1.0s
THEF **They Montfort** 75.63 338⇑*e*P P 18 26 17.8 -0.2
Z37A **Pogue Cattle C** 75.64 54 P P 18 26 18.3 0.0
baz=324
M54A **Oil Creek Stat** 75.64 38 P P 18 26 17.8 -0.4
baz=330,SNR=5.0
W41B **Gary Mavity, V** 75.65 50 P P 18 26 18.1 -0.2
baz=326,SNR=8.0
YURE **YUREGIR** 75.65 313 *i* P P 18 26 19.4 +1.1
ARQ **Araqi** 75.65 290 P P 18 26 18.4 -0.2
SNR=30
WHTX **Lake Whitney,** 75.70 56 P P 18 26 18.8 +0.1
baz=324,SNR=9.3
WHTX **Lake Whitney,** 75.70 56 *e*P P 18 26 18.5 -0.2
JCT **Junction City** 75.71 58 P P 18 26 18.8 0.0
baz=323,SNR=10
JCT **Junction City** 75.71 58 *e*P P 18 26 19.0 +0.2
JCT **Junction City** 75.71 58 *e*P P 18 26 19.0 +0.2
MOF **Molkenrain** 75.71 337 *e*P P 18 26 18.0 -0.6
VTS **Vitosha** 75.73 324 P P 18 26 18.5 -0.3
VTS **Vitosha** 75.73 324⇓*i*P P 18 26 18.5 -0.3
VTS **Vitosha** 75.73 324 *e*P P 18 26 18.6 -0.3
VTS **Vitosha** 75.73 324 *e*P P 18 26 18.6 -0.3
MDV **Middlebury** 75.73 33 *e*P P 18 26 20.0 +1.3
KDZ **Kurdzhali** 75.74 322 *i* P P 18 26 17.9 -0.9
136A **Ennis** 75.77 55 P P 18 26 19.0 0.0
baz=324
WCI **Wyandotte Cave** 75.77 44 *e*P P 18 26 18.8 -0.2
WCI **Wyandotte Cave** 75.77 44 *e*P P 18 26 18.8 -0.2
Y39A **Lockesburg** 75.78 52 P P 18 26 19.0 -0.1
baz=325
HINF **Hinteralfeld** 75.81 337 *e*P P 18 26 17.6 -1.5
HINF pmax pmax
comp=Z,81nm,1.3s
KERG **Konya-Eregli** 75.82 314 *i* P P 18 26 18.6 -0.9
334A **Lometa** 75.83 57 P P 18 26 19.6 +0.2
baz=324,SNR=14
433A **Art** 75.86 58 P P 18 26 19.4 -0.2
baz=324,SNR=16
DED **Mersin** 75.91 313 *i* P P 18 26 19.0 -0.8
Z38A **Mt. Pleasant** 75.91 53 P P 18 26 19.7 -0.1
baz=325
X40A **Basin Creek Fa** 75.93 51 P P 18 26 19.8 -0.2
baz=325,SNR=9.4
TRI **Trieste** 75.97 332 *e*P P 18 26 18.9 -1.0
TRI **Trieste** 75.97 332 *e*P P 18 26 18.9 -1.0

RZN Rozhen 75.97 323 *i* P P 18 26 20.0 -0.2
N54A Moraine State 75.99 39 P P 18 26 19.9 -0.3
baz=330
FUORN Ofenpass-Fuorn 76.08 335 *e*P P 18 26 21.4 +0.5
Y40A Okolona 76.11 52 P P 18 26 20.9 0.0
baz=325
ACCN Adirondack Com 76.12 33 *e*P P 18 26 21.1 +0.3
ALN Alexandroupoli 76.16 322 P P 18 26 20.6 -0.5
V44A Blytheville 76.19 48 P P 18 26 21.4 +0.1
baz=326
434A Burnet 76.23 57 P P 18 26 21.5 -0.2
baz=324,SNR=9.1
ENEZ Enez 76.26 321 P P 18 26 21.4 -0.2
335A Moody 76.28 56 P P 18 26 22.0 +0.1
baz=324,SNR=6.4
Z39A Irene McRaven, 76.30 53 P P 18 26 22.0 0.0
baz=325
138A Matatall Enter 76.33 54 P P 18 26 22.3 +0.1
baz=325
BINY Binghamton 76.37 35 *e*P P 18 26 22.6 +0.3
PLE Pljevlja 76.38 327 ||*i*P P 18 26 21.1 -1.3
533A Kerrville 76.43 58 P P 18 26 22.8 0.0
baz=324,SNR=5.4
FLN La Foliniere 76.45 342 *e*P P 18 26 21.3 -1.2
FLN pmax pmax
comp=Z,144nm,1.1s
UDBI Udbina 76.45 330 P P 18 26 21.8 -0.9
TUE Stuetta 76.46 335 *e*P P 18 26 23.2 +0.3
336A Riesel 76.49 56 P P 18 26 23.1 0.0
baz=324
237A Washetta, Mont 76.51 55 P P 18 26 23.2 +0.1
baz=325
Y41A Eaglette Beard 76.53 51 P P 18 26 23.3 +0.1
baz=326
LMN Caledonia Moun 76.55 26 *e*P P 18 26 23.1 -0.1
NVR Nevrokopi 76.58 323 P P 18 26 23.0 -0.4
NVR Nevrokopi 76.58 323 P P 18 26 23.0 -0.4
KIZK Mersin 76.59 314 *i* P P 18 26 22.3 -1.3
435B Jarrell 76.60 57 P P 18 26 23.9 +0.2
baz=324
IVA Berane 76.62 327 ||*i*P P 18 26 23.5 -0.2
KAVA Kavala 76.65 323 P P 18 26 23.2 -0.5
KAVA Kavala 76.65 323 P P 18 26 23.2 -0.5
UPM Unac-Piva 76.65 327 ||*i*P P 18 26 23.0 -1.0
139A Bunkhouse Ranc 76.66 53 P P 18 26 24.5 +0.6
baz=325
Z40A Long Farm, Mag 76.67 52 P P 18 26 24.4 +0.4
baz=325
NVLJ Novalja 76.69 331 P P 18 26 22.2 -1.7
V45A Humboldt 76.69 48 P P 18 26 23.9 -0.2
baz=327
SMTH Samothraki Isl 76.72 322 P P 18 26 23.1 -1.1
SMTH Samothraki Isl 76.72 322 P P 18 26 23.1 -1.1
534A Blanco 76.75 58 P P 18 26 24.6 +0.1
baz=324,SNR=6.7
GADA Gvkgeada 76.83 321 P P 18 26 23.3 -1.4
GADA Gvkgeada 76.83 321 P P 18 26 23.3 -1.4
633A Saathoff Ranch 76.85 59 P P 18 26 25.6 +0.5
baz=324
PVY Plav 76.85 326 ||*i*P P 18 26 24.4 -0.6
238A Jacksonville 76.85 54 P P 18 26 25.8 +0.8
baz=325
WVT Waverly 76.87 47 *e*P P 18 26 25.1 +0.1
WVT Waverly 76.87 47 *e*P P 18 26 25.1 +0.1
GRR Gorron 76.88 343 *e*P P 18 26 23.9 -1.0
GRR pmax pmax
comp=Z,168nm,1.0s
SRS Serrai 76.88 323 P P 18 26 24.3 -0.7
SRS Serrai 76.88 323 P P 18 26 24.3 -0.7
SRS Serrai 76.88 323 P P 18 26 24.3 -0.7
SKO Skopje 76.89 325 P P 18 26 24.7 -0.4
SKO Skopje 76.89 325 *i* P P 18 26 25.0 -0.1
SKO Skopje 76.89 325 P P 18 26 24.7 -0.4
SKO Skopje 76.89 325 P P 18 26 24.7 -0.4
Y42A Garnett, Star 76.96 51 P P 18 26 26.1 +0.5
baz=326
NKY Niksic 76.97 327 ||*i*P P 18 26 24.7 -0.9
EZN Ezine 76.98 321 P P 18 26 24.8 -0.8
EZN Ezine 76.98 321 P P 18 26 24.8 -0.8
EZN Ezine 76.98 321 P P 18 26 24.8 -0.8
ERMK Ermenek 77.00 315 *i* P P 18 26 24.7 -1.3
436A Wall Ranch, Ga 77.01 56 P P 18 26 26.8 +0.9
baz=324
ISP Isparta 77.02 317 P P 18 26 25.0 -1.0
ISP Isparta 77.02 317 ||*i*P P 18 26 25.0 -1.0
ISP Isparta 77.02 317 *d i*P P 18 26 24.8 -1.2
ISP pmax pmax
comp=Z,34nm,0.8s
ISP Isparta 77.02 317 *e*P P 18 26 25.2 -0.8
NKME Niksic 77.03 327 ||*i*P P 18 26 24.8 -1.1
BRY Bratogost 77.04 328 ||*i*P P 18 26 24.8 -1.3
SSPA Standing Stone 77.06 37 *e*P P 18 26 26.1 +0.1
SENIN Lac Senin/Sane 77.07 337 *e*P P 18 26 26.3 0.0
VAY Valandovo 77.07 324 P P 18 26 25.8 -0.2
VAY Valandovo 77.07 324 *i* P P 18 26 25.8 0.0
VAY Valandovo 77.07 324 P P 18 26 25.8 -0.2
VAY Valandovo 77.07 324 P P 18 26 25.8 -0.2
W45A Hickory Valley 77.07 48 P P 18 26 26.2 +0.1
baz=327
140A Cam and Jess, 77.09 53 P P 18 26 27.1 +0.9
baz=325
ROOS tl_alroos 77.09 310 *i* P P 18 26 26.4 0.0
KNT Kendrikon 77.09 324 P P 18 26 25.6 -0.6
KNT Kendrikon 77.09 324 P P 18 26 25.6 -0.6
KNT Kendrikon 77.09 324 P P 18 26 25.6 -0.6
CABF La Chapelle 77.12 337 *e*P P 18 26 25.5 -0.9
O56A Blue Knob Stat 77.13 38 P P 18 26 26.8 +0.3
baz=331
239A Gary 77.16 54 P P 18 26 27.4 +0.7
baz=325
X44A Crenshaw 77.18 49 P P 18 26 27.3 +0.6
baz=326
KULA Kula-Manisa 77.19 318 P P 18 26 26.4 -0.5
535A Dale 77.22 57 P P 18 26 27.7 +0.7
baz=324
SOH Sokhos 77.22 323 P P 18 26 26.2 -0.8
SOH Sokhos 77.22 323 P P 18 26 26.2 -0.8
SOH Sokhos 77.22 323 P P 18 26 26.2 -0.8
PDG Podgorica 77.23 327 P P 18 26 26.1 -0.8
PDG Podgorica 77.23 327 ||*i*P P 18 26 26.2 -0.7
TTG Podgorica 77.23 327 ||*i*P P 18 26 26.2 -0.7
TTG Podgorica 77.23 327 P P 18 26 26.1 -0.8
TTG Podgorica 77.23 327 P P 18 26 26.1 -0.8
CEME Cevo 77.24 327 ||*i*P P 18 26 25.8 -1.2
OG01 Vacheresse 77.25 337 *e*P P 18 26 27.1 0.0
NATX Nacogdoches 77.27 54 P P 18 26 28.3 +0.9
baz=325
NATX Nacogdoches 77.27 54 *e*P P 18 26 28.7 +1.4
338A Crockett 77.28 55 P P 18 26 28.4 +1.1
baz=325
437A Phantom Ranch, 77.30 56 P P 18 26 28.4 +1.0
baz=325
Y43A Makayla and Ka 77.30 50 P P 18 26 28.1 +0.7
baz=326
634A China Grove, S 77.34 58 P P 18 26 28.3 +0.6
baz=324
Z42A Norrel Spur, H 77.35 51 P P 18 26 28.3 +0.6
baz=326
LIA Limnos Island 77.35 322 P P 18 26 26.9 -0.7
LIA Limnos Island 77.35 322 P P 18 26 26.9 -0.7
832A Faith Ranch, C 77.37 60 P P 18 26 28.8 +0.9
baz=324
733A Divot King Ran 77.38 59 P P 18 26 28.7 +0.7
baz=324
OUR Ouranopolis 77.42 323 P P 18 26 27.0 -1.0
OUR Ouranopolis 77.42 323 P P 18 26 27.0 -1.0
OUR Ouranopolis 77.42 323 P P 18 26 27.0 -1.0
FKH Fakeheh 77.43 311 *e*P P 18 26 28.6 +0.2
536A Bastrop 77.44 57 P P 18 26 29.0 +0.7
baz=324
141A Papa Simpson, 77.44 52 P P 18 26 28.9 +0.7
baz=326
GRG Griva 77.45 324 P P 18 26 27.7 -0.5
GRG Griva 77.45 324 P P 18 26 27.7 -0.5
GRG Griva 77.45 324 P P 18 26 27.7 -0.5
BUM Brajici-Budva 77.46 327 ||*i*P P 18 26 27.2 -1.1
HCY Herceg Novi 77.47 327 ||*i*P P 18 26 26.9 -1.3
DRME Dracevica, Mon 77.47 327 ||*i*P P 18 26 27.6 -0.6
240A Hunter Patters 77.49 53 P P 18 26 29.1 +0.7
baz=325
PRK Paraskevi 77.50 321 P P 18 26 27.6 -0.8
PRK Paraskevi 77.50 321 P P 18 26 27.6 -0.8
PRK Paraskevi 77.50 321 P P 18 26 27.6 -0.8
HORT Hortiatis 77.51 323 P P 18 26 27.3 -1.3
HORT Hortiatis 77.51 323 P P 18 26 27.3 -1.3
THE Thessaloniki 77.53 323 P P 18 26 27.1 -1.5
THE Thessaloniki 77.53 323 P P 18 26 27.1 -1.5
THE Thessaloniki 77.53 323 P P 18 26 27.1 -1.5
N59A State Game Lan 77.58 36 P P 18 26 29.2 +0.3
baz=332
MARH Ras Al Marh 77.58 311 *i* P P 18 26 29.7 +0.4
PLG Polygyros 77.58 323 P P 18 26 27.9 -1.0
PLG Polygyros 77.58 323 P P 18 26 27.9 -1.0
PLG Polygyros 77.58 323 P P 18 26 27.9 -1.0
X45A UM Field Stati 77.58 49 P P 18 26 28.8 -0.1
baz=327
Y44A Strider, Charl 77.59 50 P P 18 26 29.4 +0.4
baz=326
HWQ Hawqa 77.62 311 *e*P P 18 26 28.9 -0.5
635A Leesville 77.63 58 P P 18 26 29.9 +0.6
baz=324
833A Chaparral WMA, 77.64 59 P P 18 26 30.3 +0.9
baz=324
ULC Ulcinj 77.65 327 ||*i*P P 18 26 28.1 -1.1
734A La Parita Cree 77.66 59 P P 18 26 30.3 +0.8
baz=324
339A Huntington 77.67 54 P P 18 26 30.2 +0.7
baz=325
438A Sam Houston St 77.69 55 P P 18 26 30.8 +1.2
baz=325
SIGR SIGRI 77.69 321 P P 18 26 28.5 -1.0
SIGR SIGRI 77.69 321 P P 18 26 28.5 -1.0
EIDS Eidsvold 77.77 182 *e*P P 18 26 31.3 +1.4
KORT Korkueli 77.79 317 *i* P P 18 26 27.8 -2.4
537A Green Hill Far 77.81 56 P P 18 26 31.4 +1.1
baz=325
RSL Roselend 77.86 337 *e*P P 18 26 30.5 0.0
OHR Ohrid 77.88 325 *i* P P 18 26 29.8 -0.7
AS01 Alice Springs 77.88 198 *e*P P 18 26 29.7 -0.9
PAIG Paliouri 77.89 323 P P 18 26 29.4 -1.1
PAIG Paliouri 77.89 323 P P 18 26 29.4 -1.1
PAIG Paliouri 77.89 323 P P 18 26 29.4 -1.1
AS31 Alice Springs 77.89 198 *e*P P 18 26 31.6 +1.0
ASAR Alice Springs 77.89 198 P P 18 26 31.6 +1.0
comp=Z,99nm,0.7s,baz=11,slow=5.4,SNR=1510
ASAR PKKPbc PKKPbc 18 45 26.4 +1.0
comp=Z,0.3nm,0.6s,baz=183,slow=2.0,SNR=9.1
241A Mo Tay, Goldon 77.91 53 P P 18 26 31.3 +0.5
baz=326
636A Smothers Creek 77.92 57 P P 18 26 31.9 +1.1
baz=324
340A Bronson 77.93 54 P P 18 26 31.5 +0.6
baz=325
142A Monroe 77.94 52 P P 18 26 31.6 +0.6
baz=326
FNA Florina 77.97 325 P P 18 26 29.9 -1.1
FNA Florina 77.97 325 P P 18 26 29.9 -1.1
FNA Florina 77.97 325 P P 18 26 29.9 -1.1
Y45A Yeager Farm, C 77.98 49 P P 18 26 31.6 +0.5
baz=327
TIR Tirane 77.99 326 ||*i*P P 18 26 30.6 -0.4
TIR Tirane 77.99 326 *e*P P 18 26 30.6 -0.4
TIR Tirane 77.99 326 *e*P P 18 26 30.6 -0.4
LPL La Plagne 78.00 337 *e*P P 18 26 31.0 -0.3
LPL pmax pmax
comp=Z,117nm,0.9s
439A Center Grove, 78.01 55 P P 18 26 32.4 +1.1
baz=325
LPG La Plagne 78.01 337 *e*P P 18 26 31.2 -0.3
LPG pmax pmax
comp=Z,136nm,0.9s
735A Kenedy 78.04 58 P P 18 26 32.8 +1.3
baz=324
Z44A Pea Ridge, Bel 78.06 50 P P 18 26 32.0 +0.5
baz=326
BHL Bhannes 78.06 311 *e*P P 18 26 31.4 -0.3
143A Socs Landing, 78.07 51 P P 18 26 32.4 +0.7
baz=326
ZALF Zalf 78.10 309 *i* P P 18 26 31.6 -0.2
MAMC Mammari 78.10 314 P P 18 26 31.0 -0.8
538A Harpers Horsep 78.11 55 P P 18 26 33.5 +1.6
baz=325
TOTH TOTAH 78.16 310 *i* P P 18 26 32.8 +0.6
LIT Litokhoron 78.17 324 P P 18 26 30.6 -1.5
LIT Litokhoron 78.17 324 P P 18 26 30.6 -1.5
LIT Litokhoron 78.17 324 P P 18 26 30.6 -1.5
CSS Mathiatis 78.23 313 P P 18 26 31.9 -0.5
CSS Mathiatis 78.23 313 P P 18 26 32.0 -0.5
CSS Mathiatis 78.23 313 *e*P P 18 26 32.2 -0.3
834A Tilden 78.24 59 P P 18 26 34.0 +1.3
baz=324
KZN Kozani 78.25 324 P P 18 26 31.2 -1.4
KZN Kozani 78.25 324 P P 18 26 31.2 -1.4
KZN Kozani 78.25 324 P P 18 26 31.2 -1.4
DQRL Deir Qamar 78.27 311 *e*P P 18 26 33.0 +0.2
933A Laredo 78.28 60 P P 18 26 34.2 +1.4
baz=324,SNR=12
Y46A Houston 78.28 49 P P 18 26 32.8 +0.1
baz=327
PLDF La Plantade 78.29 339 *e*P P 18 26 33.3 +0.6
AGO Saint Agoulin 78.32 339 *e*P P 18 26 33.6 +0.8
RCY Rachaya 78.32 311 *e*P P 18 26 33.2 +0.1
Z45A Winona 78.32 50 P P 18 26 33.4 +0.4
baz=327
637A Eagle Lake 78.32 57 P P 18 26 34.4 +1.3
baz=325
VLC Villacollemand 78.33 334 *e*P P 18 26 33.3 +0.4
CHOS Chios island 78.33 320 P P 18 26 32.1 -0.9
CHOS Chios island 78.33 320 P P 18 26 32.1 -0.9
BRBR Barbar 78.34 311 *i* P P 18 26 33.4 +0.1
736A Circle Diamond 78.34 57 P P 18 26 34.8 +1.7
baz=324,SNR=6.2
341A Kurthwood 78.35 53 P P 18 26 34.0 +0.8
baz=326
TZTN Tazewell 78.36 43 *e*P P 18 26 33.4 +0.2
ALFC Alefka 78.39 314 P P 18 26 32.0 -1.3
NEST Nestorio 78.41 325 P P 18 26 32.7 -0.8
GDM Grand'Maison 78.44 337 *e*P P 18 26 34.1 +0.5
SWET Sewanee 78.47 46 *e*P P 18 26 33.6 -0.2
AOS Alonnisos 78.48 322 P P 18 26 32.6 -1.1
AOS Alonnisos 78.48 322 P P 18 26 32.6 -1.1
835A Beeville 78.49 58 P P 18 26 35.0 +1.1
baz=324
GRN Grenoble 78.49 337 *e*P P 18 26 34.4 +0.6
YER Yerkesik 78.53 318 P P 18 26 33.9 -0.2
SALA Sala 78.56 310 *i* P P 18 26 34.4 0.0
XOR Xorichti 78.56 323 P P 18 26 32.7 -1.5
PENT Pentalofos 78.57 325 P P 18 26 33.5 -0.8
539A Cross D Ranch, 78.59 55 P P 18 26 35.8 +1.3
baz=325
SZAC Souni 78.60 314 P P 18 26 34.1 -0.4
NEO Neokhori 78.60 323 P P 18 26 32.7 -1.7
NEO Neokhori 78.60 323 P P 18 26 32.7 -1.7
AKMC Akamas 78.61 314 P P 18 26 33.3 -1.2
FYTO Fytoko, Volos 78.62 323 P P 18 26 33.2 -1.2
FYTO Fytoko, Volos 78.62 323 P P 18 26 33.2 -1.2
FETY Fethiye 78.63 317 P P 18 26 33.9 -0.7
FETY Fethiye 78.63 317 P P 18 26 33.9 -0.7
PYM Petit Puy Mans 78.63 339 *e*P P 18 26 35.1 +0.6
SKIA Skiathos 78.64 322 P P 18 26 33.2 -1.4
KPRO Kipourio 78.70 324 P P 18 26 33.6 -1.4
243A Waterproof 78.72 52 P P 18 26 34.9 -0.1
baz=326
Y47A UCPARC, Winfie 78.72 48 P P 18 26 34.6 -0.5
baz=327
PPCY Paphos 78.73 314 P P 18 26 34.1 -1.0
SSB Saint Sauveur 78.74 338 *e*P P 18 26 35.3 +0.2
SSB Saint Sauveur 78.74 338 *e*P P 18 26 35.3 +0.2
SSB Saint Sauveur 78.74 338 *e*P P 18 26 35.3 +0.2
VERF Verneugheol 78.75 340 *e*P P 18 26 35.3 +0.2
ORIF Oris-en-Rattie 78.77 337 *e*P P 18 26 34.9 -0.4
ORIF pmax pmax
comp=Z,66nm,0.8s
THL Klokotos Trika 78.82 324 P P 18 26 33.3 -2.2
Z46A Louisville 78.82 49 P P 18 26 34.9 -0.7
baz=327
540A Vidor 78.88 54 P P 18 26 36.4 +0.5
baz=325
CPCT Cooper Cave 78.88 45 *e*P P 18 26 35.8 -0.1
TCHB Talchebab 78.95 310 *i* P P 18 26 36.4 +0.1
244A Avery, Jackson 78.96 51 P P 18 26 37.4 +1.0
baz=326
BODT Bodrum 78.98 319 P P 18 26 35.4 -1.1
BODT Bodrum 78.98 319 P P 18 26 35.4 -1.1
SMIA Simia 78.98 322 P P 18 26 35.0 -1.5
034A Hebbronville 79.03 60 P P 18 26 38.2 +1.4
baz=324,SNR=13
BLA Blacksburg 79.06 41 *e*P P 18 26 37.0 0.0
BLA Blacksburg 79.06 41 *e*P P 18 26 37.0 0.0
LBL Lubilhac 79.07 339 *e*P P 18 26 37.5 +0.6
FRNF Fournols 79.07 339 *e*P P 18 26 37.5 +0.7
MBWA Marble Bar 79.11 212 P P 18 26 36.9 -0.2
SNR=8.9
MBWA Marble Bar 79.11 212 *e*P P 18 26 36.4 -0.7
VIVF Saint-Julien-l 79.11 338 *e*P P 18 26 36.5 -0.5
VIVF pmax pmax
comp=Z,95nm,1.0s
EREA Eretria 79.12 322 P P 18 26 35.9 -1.3
AQU L'Aquila 79.14 331 *e*P P 18 26 37.8 +0.5
AQU L'Aquila 79.14 331 *e*P P 18 26 37.8 +0.5
JAN Janina 79.15 324 P P 18 26 37.1 -0.2
738A Farr-Stevens R 79.16 56 P P 18 26 38.1 +0.6
baz=325
AGG Agios Georgios 79.18 323 P P 18 26 35.2 -2.3
AGG Agios Georgios 79.18 323 *e*P P 18 26 35.5 -2.0
AGG Agios Georgios 79.18 323 *e*P P 18 26 35.5 -2.0
Z47A Carrollton 79.21 48 P P 18 26 37.6 -0.1
baz=327
ATAL Atalanti 79.22 322 P P 18 26 35.9 -1.8
ATAL Atalanti 79.22 322 P P 18 26 35.9 -1.8
OG26 St.-Nazaire-De 79.22 337 *e*P P 18 26 38.5 +0.8
146A Union 79.23 49 P P 18 26 38.6 +0.8
baz=327
Z48A Northport 79.30 48 P P 18 26 37.3 -0.9
baz=328
245A Little AP, Sta 79.34 50 P P 18 26 38.5 0.0
baz=327
LUCF Luceram 79.37 336 *e*P P 18 26 38.3 -0.2
ARG Arkhangelos 79.38 318 P P 18 26 37.9 -0.7
ARG Arkhangelos 79.38 318 P P 18 26 37.9 -0.7
ARG Arkhangelos 79.38 318 P P 18 26 37.9 -0.7
541A Lake Charles 79.39 54 P P 18 26 39.0 +0.3
baz=326
SGD Sagiada 79.41 325 P P 18 26 37.8 -0.8
MVIF Mont Vial 79.42 336 *e*P P 18 26 38.8 0.0
035A Encino 79.43 59 P P 18 26 39.1 +0.1
baz=324
IGT Igoumenitsa 79.44 325 P P 18 26 37.7 -1.2
IGT Igoumenitsa 79.44 325 P P 18 26 37.7 -1.2
IGT Igoumenitsa 79.44 325 P P 18 26 37.7 -1.2
EVR Evrytania 79.46 323 P P 18 26 37.5 -1.6
EVR Evrytania 79.46 323 P P 18 26 37.5 -1.6
PTL Penteli 79.47 322 P P 18 26 37.4 -1.6
PTL Penteli 79.47 322 P P 18 26 37.4 -1.6
KEK Kerkira 79.47 325 P P 18 26 38.0 -1.0
KEK Kerkira 79.47 325 P P 18 26 38.0 -1.0
REVF Revere 79.51 336 *e*P P 18 26 38.9 -0.3
DSL Palaion Diasel 79.53 324 P P 18 26 38.3 -1.0
DSL Palaion Diasel 79.53 324 P P 18 26 38.3 -1.0
147A Livingston 79.56 49 P P 18 26 39.6 0.0
baz=327
ATHU Athens Univers 79.57 322 P P 18 26 37.1 -2.4
ATHU Athens Univers 79.57 322 P P 18 26 37.1 -2.4
VILL Villia 79.57 322 P P 18 26 37.6 -2.0
ATH Athens Observa 79.59 322 P P 18 26 37.6 -2.0
ATH Athens Observa 79.59 322 P P 18 26 37.6 -2.0
CAF Calviac 79.62 340 *e*P P 18 26 39.3 -0.4
CAF pmax pmax
comp=Z,60nm,1.0s
542A Morse 79.65 53 P P 18 26 39.8 -0.2
baz=326
DSF Desfina 79.65 323 P P 18 26 37.6 -2.4
VLY Voula,Athens 79.67 322 P P 18 26 37.9 -2.1
APE Apeiranthos 79.68 320 *e*P P 18 26 38.6 -1.6
APE pmax pmax
comp=Z,55nm,0.9s
ANX Ano Chora 79.71 323 P P 18 26 38.7 -1.7
KALE Kalithea 79.81 323 P P 18 26 38.9 -2.0
KALE Kalithea 79.81 323 P P 18 26 38.9 -2.0
SERG Sergoula 79.82 323 P P 18 26 38.8 -2.1
LTK Loutraki 79.83 322 P P 18 26 38.2 -2.7
LTK Loutraki 79.83 322 P P 18 26 38.2 -2.7
PVO Paravola 79.83 324 P P 18 26 39.7 -1.2
345A Thompson Farm, 79.88 51 P P 18 26 40.9 -0.4
baz=327
247A Quitman 79.92 49 P P 18 26 40.7 -0.7
baz=327
THAL Thalero 79.93 322 P P 18 26 39.0 -2.4
PDO Prodromos 79.97 324 P P 18 26 40.5 -1.1
LKD2 Lefkada island 79.99 324 P P 18 26 40.6 -1.2
LKD2 Lefkada island 79.99 324 P P 18 26 40.6 -1.2
LAKA Lakka 80.00 323 P P 18 26 39.9 -1.9
LAKA Lakka 80.00 323 P P 18 26 39.9 -1.9
346A Big Creek Wild 80.08 50 P P 18 26 42.0 -0.3
baz=327
KLV Kalavryta, Ach 80.11 323 P P 18 26 40.8 -1.7
KLV Kalavryta, Ach 80.11 323 P P 18 26 40.8 -1.7
GUR Goura 80.13 323 P P 18 26 40.7 -1.9
GUR Goura 80.13 323 P P 18 26 40.7 -1.9
DID Didima 80.18 322 P P 18 26 39.5 -3.3
445A Amite 80.21 51 P P 18 26 43.5 +0.5
baz=327
AXS Araxos 80.26 323 P P 18 26 41.8 -1.3
248A Dixon Mills 80.29 49 P P 18 26 43.1 -0.3
baz=328
RLS Riolos of Patr 80.35 323 P P 18 26 42.7 -0.9
RLS Riolos of Patr 80.35 323 P P 18 26 42.7 -0.9
KARP Karpathos 80.35 318 *e*P P 18 26 41.8 -1.9
DRO Drossia 80.35 323 P P 18 26 42.6 -1.1
ZAIG Zacatecas 80.38 65 *e*P P 18 26 45.6 +1.2
KMSC Kings Mountain 80.48 43 P P 18 26 43.5 -0.9
baz=330
347A Saraland 80.50 50 P P 18 26 44.5 +0.1
baz=327
CUC Castrocucco 80.55 328 *e*P P 18 26 43.1 -1.6
VLS Valsamata 80.56 324 P P 18 26 43.2 -1.5
COCO West Island 80.61 236 *i* P P 18 26 47.1 +1.9
VLX Vlachokerasia 80.62 322 P P 18 26 43.2 -2.0
AMT Artemida-Makis 80.72 323 P P 18 26 44.1 -1.5
ITM Ithomi 80.96 323 P P 18 26 45.1 -1.7
ITM Ithomi 80.96 323 P P 18 26 45.1 -1.7
TIP Timpagrande 80.98 327 P P 18 26 46.5 -0.5
TIP Timpagrande 80.98 327 *e*P P 18 26 46.4 -0.6
VLI Veliai 80.99 322 P P 18 26 43.7 -3.3
VLI Veliai 80.99 322 P P 18 26 43.7 -3.3
ZKR Zakros 81.11 318 P P 18 26 46.5 -1.1
PYL PYLOS 81.28 323 P P 18 26 46.3 -2.2
KYTH Kithira 81.34 321 P P 18 26 46.3 -2.6
KYTH Kithira 81.34 321 P P 18 26 46.3 -2.6
LAST Lasithi 81.36 319 P P 18 26 47.0 -2.0
LAST Lasithi 81.36 319 *e*P P 18 26 47.3 -1.8
LRDF Laroque-de-Fa 81.41 339 *e*P P 18 26 49.8 +0.7
IDI Anoyia 81.49 320 P P 18 26 47.0 -2.7
IDI Anoyia 81.49 320 *e*P P 18 26 47.2 -2.5
ANKY Antikythira Is 81.60 321 P P 18 26 48.1 -2.0
ANKY Antikythira Is 81.60 321 P P 18 26 48.1 -2.0
IMMV Iera Moni Meta 81.69 320 P P 18 26 49.1 -1.5
SIVA Sivas 81.75 319 P P 18 26 49.7 -1.2
FILF Fillols 81.77 339 *e*P P 18 26 51.5 +0.5
SJAF Saint Jean de 81.77 338 *e*P P 18 26 51.0 +0.1
VIEF Viey 82.00 340 *e*P P 18 26 52.9 +0.7
RESF Ens 82.01 340 *e*P P 18 26 52.8 +0.5
VALF Valcebollere 82.04 339 *e*P P 18 26 53.2 +0.7
CEL Celeste 82.09 327 *e*P P 18 26 51.0 -1.7
ARMA Armidale 82.79 181 *e*P P 18 26 58.0 +1.9
VSL Villasalto 82.94 333 *e*P P 18 26 57.1 +0.2
PBRG Braganca 84.27 345 *e*P P 18 27 02.6 -0.9
comp=Z,21nm,1.7s
PGAV Gavieira, Arco 84.34 346 *e*P P 18 27 03.0 -0.9
comp=Z,54nm,1.4s
WDD Wied Dalam 84.75 327 *e*P P 18 27 05.1 -0.8
STKA Stephens Creek 84.84 190 P P 18 27 06.0 -0.1
comp=Z,19nm,0.8s,baz=338,slow=6.4,SNR=39
STKA Stephens Creek 84.84 190 *e*P P 18 27 06.5 +0.4
POLO Lamas de Olo 84.85 346 *e*P P 18 27 05.5 -0.9
comp=Z,35nm,1.1s
POLO *e*pP pP 18 28 58.8 +2.2
PVRL Vila Real 84.94 346 *e*P P 18 27 06.0 -0.8
comp=Z,80nm,1.0s
PVRL *e*pP pP 18 28 57.8 +0.8
MVO Moncorvo 84.94 345 *e*P P 18 27 05.8 -1.0
comp=Z,61nm,1.2s
MVO *e*pP pP 18 28 58.8 +1.8
PTO Porto 85.20 346 *e*P P 18 27 07.2 -0.8
PVIS Viseu 85.51 346 *e*P P 18 27 08.5 -1.1
comp=Z,46nm,1.3s
MTE Manteigas 85.77 345 *e*P P 18 27 09.8 -1.0
comp=Z,52nm,0.9s
MTE Manteigas 85.77 345 *e*P P 18 27 09.2 -1.6

ES19	**SONSECA Array**	**85.83**	**342**	*eP*	**P**	**18 27 09.9**	**-1.2**
ESDC	**Sonseca Array**	**85.87**	**343**	P	**P**	**18 27 10.1**	**-1.3**
	comp=Z,20nm,0.9s,baz=5.6,slow=4.2,SNR=56						
ESDC				pP	**pP**	**18 29 01.7**	**-0.1**
	comp=Z,3.0nm,0.8s,baz=11,slow=4.8,SNR=5.3						
ESLA	**Sonseca Array**	**85.87**	**343**	*eP*	**P**	**18 27 10.2**	**-1.2**
FORT	**Forrest**	**85.99**	**201**	*eP*	**P**	**18 27 11.7**	**0.0**
PAB	**San Pablo**	**86.06**	**343**	*eP*	**P**	**18 27 11.0**	**-1.3**
PAB	**San Pablo**	**86.06**	**343**	*eP*	**P**	**18 27 11.0**	**-1.3**
CMAH	**Djebel Manchou**	**86.17**	**333**	P	**P**	**18 27 12.9**	**+0.1**
PCAS	**Casmilo, Conde**	**86.25**	**346**	*eP*	**P**	**18 27 11.9**	**-1.2**
	comp=Z,57nm,1.7s						
PCAS				*ep*P	**pP**	**18 29 06.0**	**+2.3**
PCBR	**Castelo Branco**	**86.30**	**345**	*eP*	**P**	**18 27 12.2**	**-1.1**
	comp=Z,38nm,1.3s						
PCBR				*ep*P	**pP**	**18 29 04.6**	**+0.6**
KEST	**Kesra**	**86.45**	**331**	P	**P**	**18 27 13.9**	**-0.3**
	comp=Z,34nm,0.8s,baz=286,slow=1.5,SNR=39						
KEST	**Kesra**	**86.45**	**331**	*eP*	**P**	**18 27 14.4**	**+0.2**
BBOO	**Buckleboo**	**86.47**	**194**	*eP*	**P**	**18 27 13.8**	**-0.1**
CKFL	**Kef-Lekhel**	**86.57**	**333**	P	**P**	**18 27 13.4**	**-1.4**
SET	**Setif**	**87.11**	**334**	P	**P**	**18 27 17.0**	**-0.3**
PMTG	**Montargil**	**87.17**	**346**	*eP*	**P**	**18 27 16.6**	**-0.8**
	comp=Z,24nm,2.0s						
CKHR	**Kef el Ahmar**	**87.25**	**334**	P	**P**	**18 27 17.8**	**-0.2**
PESTR	**Estremoz**	**87.27**	**345**	*eP*	**P**	**18 27 16.4**	**-1.5**
	comp=Z,33nm,1.1s						
EVO	**Evora**	**87.67**	**345**	*eP*	**P**	**18 27 18.0**	**-1.7**
	comp=Z,29nm,1.1s						
PBAR	**Barrancos**	**87.86**	**345**	*eP*	**P**	**18 27 19.2**	**-1.5**
	comp=Z,87nm,1.5s						
PNCL	**Nicolau / Gran**	**88.16**	**346**	*eP*	**P**	**18 27 20.9**	**-1.1**
	comp=Z,25nm,1.8s						
MESJ	**Messejana**	**88.38**	**345**	*eP*	**P**	**18 27 21.8**	**-1.2**
MESJ				AMb	AMB	18 27 23.5	
	comp=Z,52nm,2.5s						
MESJ	**Messejana**	**88.38**	**345**	*eP*	**P**	**18 27 21.9**	**-1.2**
	comp=Z,52nm,1.2s						
PCVE	**Castro Verde**	**88.55**	**345**	*eP*	**P**	**18 27 22.7**	**-1.2**
	comp=Z,47nm,1.2s						
PVAQ	**Vaqueiros**	**88.72**	**345**	*eP*	**P**	**18 27 23.5**	**-1.2**
	comp=Z,45nm,1.6s						
PBDV	**Barranco-do-Ve**	**88.92**	**345**	*eP*	**P**	**18 27 21.6**	**-4.0**
	comp=Z,49nm,1.5s						
MORF	**Marmelete**	**88.96**	**346**	*eP*	**P**	**18 27 25.0**	**-0.9**
	comp=Z,59nm,1.5s						
DAMY	**Dhamar**	**89.50**	**294**	*eP*	**P**	**18 27 29.2**	**+0.2**
NWAO	**Narrogin (SRO)**	**90.87**	**210**	*eP*	**P**	**18 27 33.8**	**-0.6**
NWAO	**Narrogin (SRO)**	**90.87**	**210**	*eP*	**P**	**18 27 33.8**	**-0.6**
PMAR	**Madeira**	**94.48**	**352**	*eP*	**P**	**18 27 51.0**	**-0.5**
	comp=Z,169nm,1.3s						
TORD	**Torodi Ar. Bea**	**109.96**	**330**	Pdiff	**Pdif**	**18 29 01.1**	**+0.6**
	comp=Z,1.6nm,0.9s,baz=31,slow=4.6,SNR=7.0						
TORD				PKiKP	**PKiKP**	**18 32 58.5**	**-0.9**
	comp=Z,2.4nm,0.9s,baz=20,slow=1.6,SNR=20						
TORD				PKKPbc	**PKKPbc**	**18 44 01.4**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=167,slow=2.7,SNR=5.1						
TORD				PKKP	**PKKPdf**	**18 44 14.9**	**+0.3**
	comp=Z,1.2nm,1.0s,baz=210,slow=4.0,SNR=4.0						
DBIC	**Dimbokro**	**117.96**	**335**	PKP	**PKPdf**	**18 33 13.7**	**-1.0**
	comp=Z,4.0nm,0.4s,baz=27,slow=2.1,SNR=17						
VNDA	**Vanda**	**130.08**	**178**	PKP	**PKPdf**	**18 33 35.6**	**-0.4**
	comp=Z,3.1nm,0.7s,baz=313,slow=3.6,SNR=19						
VNDA				SKPbc	**SKPbc**	**18 36 11.3**	**-0.1**
	comp=Z,14nm,1.1s,baz=330,slow=5.1,SNR=14						
LPAZ	**La Paz**	**131.30**	**58**	PKP	**PKPdf**	**18 33 40.5**	**-0.3**
	comp=Z,1.8nm,0.5s,baz=21,slow=6.0,SNR=8.6						
LPAZ				SKPbc	**SKPbc**	**18 36 18.4**	**-0.2**
	comp=Z,15nm,0.9s,baz=342,slow=3.8,SNR=24						
BOSA	**Boshof**	**134.98**	**281**	PKhKP	PKPpre	18 33 31.6	
	comp=Z,3.8nm,0.9s,baz=37,slow=2.2,SNR=5.4						
BOSA				SKPbc	**SKPbc**	**18 36 29.8**	**0.0**
	comp=Z,11nm,0.7s,baz=24,slow=3.0,SNR=11						
MAW	**Mawson**	**137.25**	**214**	PKhKP	PKPpre	18 33 36.4	
	comp=Z,2.9nm,0.7s,baz=50,slow=1.5,SNR=5.0						
MAW				SKPbc	**SKPbc**	**18 36 34.6**	**-0.5**
	comp=Z,11nm,0.9s,baz=39,slow=1.9,SNR=9.5						
BDFB	**Brasilia**	**139.39**	**32**	PKhKP	PKPpre	18 33 47.9	
	baz=163,slow=20						
BDFB				SKPbc	**SKPbc**	**18 36 43.4**	**+0.6**
	comp=Z,9.1nm,0.9s,baz=168,slow=27,SNR=6.0						
CPUP	**Villa Florida**	**145.13**	**53**	PKPbc	**PKPdf**	**18 34 05.0**	**+0.1**
	comp=Z,13nm,0.8s,baz=2.2,slow=1.3,SNR=14						
CPUP				pPKPbc	pPKPbc	18 36 02.8	0.0
	comp=Z,12nm,1.1s,baz=310,slow=2.9,SNR=7.0						
CPUP				SKPbc	**SKiKP**	**18 36 57.5**	**+0.5**
	comp=Z,15nm,1.0s,baz=332,slow=4.2,SNR=7.5						
SYO	**Syowa Base**	**145.90**	**216**	*e*PKPdf	**PKPdf**	**18 34 04.6**	**-0.3**
PLCA	**Paso Flores**	**148.21**	**86**	PKPbc	**PKPbc**	**18 34 13.4**	**-0.4**
	comp=Z,17nm,0.6s,baz=320,slow=3.3,SNR=35						
PLCA				pPKPbc	**pPKPbc**	**18 36 09.6**	**-1.8**
	comp=Z,22nm,1.0s,baz=326,slow=3.4,SNR=12						
NVL	**N'lazarevskaya**	**154.99**	**209**	*e*PKIKP	**PKPdf**	**18 34 16.4**	**-2.4**

CSEM ***18*** *18:18:58.9, 35.60N×21.84E, h25km, ML2.4/4*
ATH 18 18:18:58.9, 35.60N×21.84E, h25km±2km, ML2.4/3, Error ellipse: s-maj=3.9km s-min=1.9km az=49.0, Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KYTH	**Kithira**	**1.19**	**56**	P	Pb	18 19 21.9	+1.1
KYTH				S	Sb	18 19 38.7	+3.0
KYTH	**Kithira**	**1.19**	**56**	P	Pb	18 19 21.7	+1.0
KYTH	**Kithira**	**1.19**	**56**	P	Pb	18 19 21.9	+1.2
ANKY	**Antikythira Is**	**1.22**	**77**	P	Pb	18 19 22.7	+1.4
ANKY				S	Sb	18 19 39.0	+2.3
ANKY	**Antikythira Is**	**1.22**	**77**	P	Pb	18 19 22.7	+1.4
ANKY	**Antikythira Is**	**1.22**	**77**	P	Pb	18 19 22.7	+1.4
ANKY				S	Sb	18 19 39.0	+2.4
ANKY				AML	AML	18 19 43.9	
	comp=E,409μm,1.1s						
ANKY				AML	AML	18 19 47.0	
	comp=N,448μm,0.7s						
PYL	**PYLOS**	**1.30**	**357**	P	Pn	18 19 21.9	+0.4
PYL				S	Sb	18 19 41.0	+2.2
PYL	**PYLOS**	**1.30**	**357**	P	Pb	18 19 22.4	-0.2
PYL				S	Sb	18 19 41.3	+2.5
PYL	**PYLOS**	**1.30**	**357**	P	Pn	18 19 21.9	+0.5
PYL				S	Sb	18 19 41.0	+2.2
PYL				AML	AML	18 19 46.5	
	comp=E,176μm,0.4s						
PYL				AML	AML	18 19 47.9	
	comp=N,165μm,0.5s						
VLI	**Velíai**	**1.43**	**38**	P	Pb	18 19 25.3	+0.4
VLI				S	Sb	18 19 43.8	+1.2
VLI	**Velíai**	**1.43**	**38**	P	Pb	18 19 25.4	+0.5
VLI				S	Sb	18 19 46.2	+3.6
VLI				AML	AML	18 19 59.9	
	comp=N,190μm,0.6s						
VLI				AML	AML	18 20 02.5	
	comp=E,178μm,0.5s						
ITM	**Ithomi**	**1.58**	**3**	P	Pb	18 19 29.4	+1.9
ITM	**Ithomi**	**1.58**	**3**	P	Pb	18 19 28.4	+0.9
ITM	**Ithomi**	**1.58**	**3**	P	Pb	18 19 29.4	+2.0
IMMV	**Iera Moni Meta**	**1.75**	**94**	P	Pn	18 19 29.0	+1.3
IMMV	**Iera Moni Meta**	**1.75**	**94**	P	Pb	18 19 29.4	-1.0
IMMV	**Iera Moni Meta**	**1.75**	**94**	P	Pn	18 19 29.1	+1.3
VLX	**Vlachokerasia**	**1.82**	**14**	P	Pb	18 19 32.8	+1.2
VLX	**Vlachokerasia**	**1.82**	**14**	P	Pb	18 19 32.8	+1.2
VAM	**Vamos**	**1.94**	**95**	P	Pb	18 19 34.1	+0.6
DID	**Didima**	**2.21**	**30**	P	Pn	18 19 33.9	-0.2
DID	**Didima**	**2.21**	**30**	P	Pn	18 19 33.9	-0.2
KLV	**Kalavryta, Ach**	**2.45**	**6**	P	Pb	18 19 40.9	-1.5
KLV				S	Sb	18 20 10.8	-1.4
KLV	**Kalavryta, Ach**	**2.45**	**6**	P	Pb	18 19 40.9	-1.5
KLV				S	Sb	18 20 10.8	-1.4
IDI	**Anoyia**	**2.51**	**96**	P	Pn	18 19 39.4	+1.2
IDI	**Anoyia**	**2.51**	**96**	P	Pn	18 19 39.8	+1.6
IDI	**Anoyia**	**2.51**	**96**	P	Pn	18 19 39.4	+1.2
ANX	**Ano Chora**	**2.99**	**1**	P	Pb	18 19 49.4	-2.1
PDO	**Prodromos**	**3.04**	**350**	P	Pn	18 19 47.9	+2.5
PDO	**Prodromos**	**3.04**	**350**	P	Pn	18 19 47.9	+2.4
AGG	**Agios Georgios**	**3.44**	**6**	P	Pn	18 19 53.1	+2.1
AGG	**Agios Georgios**	**3.44**	**6**	P	Pn	18 19 53.1	+2.1

IDC 18 18:27:18.6±1.5, 19.53N×146.73E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.5/52, mbtmp3.7/6, Error ellipse: s-maj=50.9km s-min=29.0km az=92.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSRS	**Korea Array**	**24.25**	**321**	P	P	18 32 42.6	+5.2
	2.1nm,0.9s,baz=152,slow=8.7,SNR=4.9						
WRA	**Warramunga Arr**	**41.07**	**198**	P	P	18 35 04.2	0.0
	1.5nm,1.1s,baz=22,slow=12,SNR=6.7						
MKAR	**Makanchi Array**	**58.60**	**313**	P	P	18 37 18.5	+1.0
	0.7nm,0.9s,baz=94,slow=7.8,SNR=3.4						
KURBB	**Kurchatov Arra**	**61.36**	**318**	P	P	18 37 35.6	-0.7
	0.4nm,0.6s,baz=92,slow=7.6,SNR=6.3						
ILAR	**Eielson Array**	**62.47**	**26**	P	P	18 37 43.9	+0.3
	0.3nm,0.8s,baz=260,slow=5.4,SNR=3.9						
BVAR	**Borovoye Array**	**66.46**	**320**	P	P	18 38 09.5	-0.4
	0.5nm,0.5s,baz=104,slow=6.1,SNR=5.1						
FINES	**FINESS Array B**	**86.54**	**336**	P	P	18 40 02.9	-0.5
	0.8nm,0.6s,baz=64,slow=4.4,SNR=6.1						

IDC ***18*** *18:39:55.8±1.3, 37.05N×140.92E, h0km, mb3.5/6, mb1 3.6/7, mb1mx3.4/54, mbtmp3.5/7, ML3.3/1, Error ellipse: s-maj=26.0km s-min=24.2km az=125.0*
ISCJB ***18*** *18:39:56.2±0.9, 37.08N±0.03×140.99E±0.06, h11km±4km, mb3.5/6, Error ellipse: s-maj=8.1km s-min=4.8km az=16.2*
JMA ***18*** *18:39:57.8, 37.09N×140.86E, h10km±1km, M3.5 Broadband fault plane solution: P waves. NP1: ϕs214.00000°, δ75.00000°, λ-82.00000°. NP2: ϕs4.00000°, δ17.00000°, λ-119.00000°. Principal axes: T Plg30.0000°, Azm297.0000°; N Plg8.0000°, Azm32.0000°; P Plg59.0000°, Azm135.0000°;*
JMA Felt II J1.
ISC 18 18:39:57.3±1.2, 37.06N±0.05×140.89E±0.06, h9km±7km, n22, σ0961/26, mb3.6/6, 3C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**301**	⇓P	**Pg**	**18 39 59.8**	**+0.2**
ONAJ				S	**Sg**	**18 40 01.1**	**-0.2**
JFK	**Kawauchi**	**0.31**	**358**	⇓P	**Pg**	**18 40 03.5**	**+0.1**
JFK				S	**Sg**	**18 40 07.5**	**-0.1**
JHO	**Hitachi**	**0.52**	**210**	⇓P	**Pb**	**18 40 07.9**	**-0.6**
JHO				S	**Sb**	**18 40 15.2**	**-0.9**
JFT	**Otama**	**0.64**	**316**	⇑P	**Pg**	**18 40 09.6**	**0.0**
JFT				S	**Sg**	**18 40 17.8**	**-0.2**
JSB	**Shiboa**	**0.78**	**264**	⇑P	**Pb**	**18 40 13.0**	**-0.1**
JSB				S	**Sb**	**18 40 23.6**	**-0.2**
JMM	**Marumori**	**0.81**	**355**	⇓P	**Pg**	**18 40 12.4**	**-0.5**
JMM				S	**Sg**	**18 40 22.9**	**-0.6**
JYT	**Yasato**	**1.00**	**214**	P	**Pb**	**18 40 16.6**	**-0.1**
JYT				S	**Sb**	**18 40 30.3**	**+0.3**
JFY	**Yanaizu**	**1.01**	**291**	⇑P	**Pg**	**18 40 16.3**	**-0.4**
JFY				S	**Sg**	**18 40 29.3**	**-0.5**
MJAR	**Matsushiro Arr**	**2.21**	**257**	Pn	**Pn**	**18 40 35.5**	**+1.4**
	8.8nm,0.3s,baz=81,slow=16,SNR=83						
MJAR				Sn	**Sb**	**18 41 04.1**	**-0.9**
	5.4nm,0.3s,baz=72,slow=15,SNR=4.4						
MAT	**Matsushiro**	**2.21**	**257**	P	**Pn**	**18 40 35.6**	**+1.4**
MAT				S	**Sb**	**18 41 05.2**	**+0.2**
H11N2	**WAKE ISLAND Hy**	**28.52**	**120**	T	T	19 15 39.0	
	baz=316,SNR=42						
H11N1	**WAKE ISLAND Hy**	**28.53**	**120**	T	T	19 15 38.9	
	baz=316,SNR=42						
H11N3	**WAKE ISLAND Hy**	**28.54**	**120**	T	T	19 15 39.6	
	baz=316,SNR=43						
H11S1	**WAKE ISLAND Hy**	**29.22**	**122**	T	T	19 16 27.8	
	baz=315,slow=74						
H11S3	**WAKE ISLAND Hy**	**29.23**	**122**	T	T	19 16 29.8	
	baz=315						
H11S2	**WAKE ISLAND Hy**	**29.24**	**122**	T	T	19 16 27.6	
	baz=315,slow=74						
ZALV	**Zalesovo Beam**	**41.59**	**312**	P	**P**	**18 47 45.1**	**-0.1**
	0.6nm,0.3s,baz=85,slow=8.5,SNR=2.6						
MKAR	**Makanchi Array**	**43.75**	**302**	P	**P**	**18 48 02.4**	**-0.5**
	0.3nm,0.7s,baz=83,slow=12,SNR=2.9						
KURBB	**Kurchatov Arra**	**45.66**	**308**	P	**P**	**18 48 17.6**	**-0.5**
	0.7nm,0.7s,baz=83,slow=8.1,SNR=9.8						
ILAR	**Eielson Array**	**49.70**	**32**	P	**P**	**18 48 49.9**	**+0.7**
	0.3nm,0.7s,baz=277,slow=7.2,SNR=3.9						
BVAR	**Borovoye Array**	**50.25**	**312**	P	**P**	**18 48 53.4**	**-0.2**
	0.2nm,0.4s,baz=90,slow=3.3,SNR=2.8						
WRA	**Warramunga Arr**	**57.03**	**187**	P	**P**	**18 49 43.1**	**-0.4**
	0.5nm,0.6s,baz=5.4,slow=7.5,SNR=7.2						

IDC ***18*** *18:40:59.3±2.0, 37.01N×141.13E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.3/53, mbtmp3.5/4, ML3.2/1, Error ellipse: s-maj=40.7km s-min=25.7km az=65.0*
ISCJB ***18*** *18:41:01.4±1.0, 37.08N±0.03×140.97E±0.07, h10km±4km, mb3.5/3, Error ellipse: s-maj=9.6km s-min=4.8km az=12.9*
JMA ***18*** *18:41:02.7, 37.09N×140.86E, h10km, M3.4*
JMA Felt III J1.
ISC 18 18:41:00.9±1.4, 37.12N±0.04×140.95E±0.07, h12km±7km, n13, σ0990/23, mb3.6/3, 2C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**261**	⇓P	**Pg**	**18 41 04.6**	**+0.5**
ONAJ				S	**Sg**	**18 41 05.9**	**-0.5**
JFK	**Kawauchi**	**0.25**	**346**	P	**Pn**	**18 41 08.4**	**-2.1**
JFK				S	**Sb**	**18 41 12.3**	**+0.5**
JHO	**Hitachi**	**0.59**	**211**	P	**Pb**	**18 41 13.0**	**-0.2**
JHO				S	**Sg**	**18 41 20.1**	**-0.2**
JFT	**Otama**	**0.63**	**309**	P	**Pb**	**18 41 14.4**	**+0.6**
JFT				S	**Sb**	**18 41 22.6**	**0.0**
JMM	**Marumori**	**0.75**	**350**	P	**Pn**	**18 41 17.2**	**-0.2**
JMM				S	**Sn**	**18 41 27.8**	**-0.9**
JSB	**Shiboa**	**0.84**	**260**	⇑P	**Pb**	**18 41 17.8**	**+0.4**
JSB				S	**Sg**	**18 41 28.4**	**+0.4**
JFY	**Yanaizu**	**1.03**	**286**	⇑P	**Pn**	**18 41 21.1**	**-0.1**
JFY				S	**Sg**	**18 41 34.1**	**-0.2**
JYT	**Yasato**	**1.08**	**215**	P	**Pn**	**18 41 21.7**	**-0.1**
JYT				S	**Sg**	**18 41 35.2**	**-0.5**
MJAR	**Matsushiro Arr**	**2.27**	**256**	Pn	**Pb**	**18 41 40.7**	**-1.2**
	5.9nm,0.3s,baz=80,slow=16,SNR=5.3						
MJAR				Sn	**Sb**	**18 42 09.2**	**-0.8**
	5.5nm,0.3s,baz=82,slow=30,SNR=7.7						
MAT	**Matsushiro**	**2.27**	**256**	P	**Pb**	**18 41 40.2**	**-1.7**
MAT				S	**Sb**	**18 42 10.1**	**+0.1**
MKAR	**Makanchi Array**	**43.76**	**302**	P	**P**	**18 49 07.8**	**+1.7**
	0.4nm,0.7s,baz=92,slow=8.8,SNR=4.2						
KURBB	**Kurchatov Arra**	**45.66**	**308**	P	**P**	**18 49 21.9**	**+0.7**
	0.8nm,0.7s,baz=84,slow=8.1,SNR=8.4						
WRA	**Warramunga Arr**	**57.10**	**187**	P	**P**	**18 50 47.2**	**+0.1**
	0.5nm,0.7s,baz=3.6,slow=7.2,SNR=4.0						

IDC ***18*** *18:41:43.3±1.8, 37.01N×141.07E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/53, mbtmp3.4/4, ML3.3/1, Error ellipse: s-maj=33.8km s-min=24.4km az=86.0*
ISCJB ***18*** *18:41:44.2±1.0, 37.08N±0.03×141.01E±0.06, h10km±4km, mb3.5/3, Error ellipse: s-maj=8.7km s-min=4.9km az=16.9*
JMA ***18*** *18:41:46.2, 37.09N×140.86E, h10km±1km, M3.5*
JMA Felt II J1.
ISC 18 18:41:45.4±1.1, 37.08N±0.04×140.92E±0.06, h13km±4km, n20, σ0978/23, mb3.6/3, 3C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**283**	P	**Pb**	**18 41 48.1**	**-0.3**
ONAJ				S	**Sb**	**18 41 49.5**	**-1.0**
JFK	**Kawauchi**	**0.29**	**353**	P	**Pg**	**18 41 51.9**	**+0.5**
JFK				S	**Sb**	**18 41 55.8**	**-1.4**
JHO	**Hitachi**	**0.55**	**211**	⇑P	**Pb**	**18 41 56.4**	**-0.4**
JHO				S	**Sb**	**18 42 03.5**	**-1.1**
JFT	**Otama**	**0.64**	**314**	⇑P	**Pb**	**18 41 58.0**	**-0.4**
JFT				S	**Sb**	**18 42 06.2**	**-1.0**
JMM	**Marumori**	**0.79**	**353**	⇓P	**Pb**	**18 42 00.8**	**-0.2**
JMM				S	**Sb**	**18 42 11.2**	**-0.4**
JSB	**Shiboa**	**0.81**	**262**	⇑P	**Pb**	**18 42 01.3**	**0.0**
JSB				S	**Sb**	**18 42 11.7**	**-0.4**
JFY	**Yanaizu**	**1.02**	**289**	P	**Pb**	**18 42 04.7**	**-0.3**
JFY				S	**Sb**	**18 42 17.5**	**-0.8**
JYT	**Yasato**	**1.03**	**215**	S	**Sn**	**18 42 19.1**	**-0.7**
MJAR	**Matsushiro Arr**	**2.24**	**257**	Pn	**Pn**	**18 42 23.5**	**+1.3**
	8.3nm,0.3s,baz=81,slow=16,SNR=5.0						
MJAR				Sn	**Sb**	**18 42 53.1**	**-0.3**
	8.7nm,0.3s,baz=82,slow=30,SNR=5.5						
MAT	**Matsushiro**	**2.24**	**257**	P	**Pb**	**18 42 24.6**	**-1.1**
MAT				S	**Sb**	**18 42 53.4**	**0.0**
ASAJ	**Asahikawa**	**7.14**	**10**	Pn	**Pn**	**18 43 29.9**	**+0.3**
	baz=349,slow=16						
H11N2	**WAKE ISLAND Hy**	**28.51**	**120**	T	T	19 17 26.6	
	baz=312,slow=75,SNR=66						
H11N1	**WAKE ISLAND Hy**	**28.52**	**120**	T	T	19 17 27.2	
	baz=312,slow=75,SNR=43						
H11N3	**WAKE ISLAND Hy**	**28.53**	**120**	T	T	19 17 28.0	
	baz=312,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**29.22**	**122**	T	T	19 18 16.9	
	baz=314,slow=74,SNR=13						
H11S3	**WAKE ISLAND Hy**	**29.22**	**122**	T	T	19 18 15.8	
	baz=314,slow=74,SNR=23						
H11S2	**WAKE ISLAND Hy**	**29.23**	**122**	T	T	19 18 17.9	
	baz=314						
MKAR	**Makanchi Array**	**43.76**	**302**	P	**P**	**18 49 51.3**	**+0.8**
	0.3nm,0.8s,baz=82,slow=10,SNR=2.4						
KURBB	**Kurchatov Arra**	**45.66**	**308**	P	**P**	**18 50 05.3**	**-0.2**
	0.6nm,0.7s,baz=85,slow=8.1,SNR=5.5						
WRA	**Warramunga Arr**	**57.05**	**187**	P	**P**	**18 51 31.4**	**+0.1**
	0.3nm,0.4s,baz=5.0,slow=7.4,SNR=5.4						

IDC ***18*** *18:46:32.3±1.1, 20.10N×121.65E, h0km, mb3.5/7, mb1 3.7/8, mb1mx3.4/50, mbtmp3.5/8, ML3.2/1, MS2.9/1, Ms1 2.9/1, ms1mx2.5/36, Error ellipse: s-maj=42.4km s-min=18.0km az=64.0*
ISCJB ***18*** *18:46:36.1±0.5, 20.06N±0.06×121.6E±0.1, h40km, mb3.4/7, MS2.8/1, Error ellipse: s-maj=16.0km s-min=4.3km az=29.4*
JMA ***18*** *18:46:37.9±0.6, 20.37N×121.68E, h0km, M4.1*
ISC 18 18:46:37.8±0.9, 20.00N±0.08×121.6E±0.1, h40km, n17, σ1820/22, mb3.6/7, 1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PIP	**Pasuquin**	**1.90**	**209**	⇓*i*P	**Pn**	**18 47 07.2**	**-0.5**
PIP				*e*S	**Sn**	**18 47 29.8**	**-0.7**
HATJ	**Hateruma jima**	**4.53**	**27**	*e*S	**Sn**	**18 48 33.7**	**-1.7**
JYNG	**Yonagunijimaku**	**4.60**	**16**	P	**Pn**	**18 47 45.7**	**+0.8**
IRIF	**Iriomote-Funau**	**4.75**	**24**	P	**Pn**	**18 47 47.0**	**+0.1**
IRIF				S	**Sn**	**18 48 40.0**	**-0.7**
JKRS	**Kuro-shima**	**4.78**	**28**	P	**Pn**	**18 47 48.5**	**+1.2**
JKRS				*e*S	**Sn**	**18 48 41.0**	**-0.5**
JIJ	**Ishigaki jima**	**4.95**	**28**	P	**Pn**	**18 47 50.8**	**+1.1**
JIJ				S	**Sn**	**18 48 44.3**	**-1.3**
JISG	**Ishigakijimahi**	**5.22**	**29**	P	**Pn**	**18 47 53.0**	**-0.3**
JISG				*e*S	**Sn**	**18 48 50.6**	**-1.6**
JTJ	**Tarama**	**5.45**	**31**	P	**Pn**	**18 47 58.1**	**+1.6**
JTJ				*e*S	**Sn**	**18 48 56.3**	**-1.6**
KSRS	**Korea Array**	**18.25**	**16**	P	**P**	**18 50 47.3**	**-0.5**
	0.1nm,0.3s,baz=194,slow=11,SNR=3.6						
CMAR	**Chiang Mai Arr**	**21.43**	**270**	P	**P**	**18 51 23.6**	**+1.0**
	0.5nm,0.7s,baz=71,slow=7.9,SNR=4.4						
KAPI	**Kappang**	**24.93**	**184**	LR	LR	19 01 40.4	
	comp=Z,30nm,19.6s,baz=55,slow=36						
WRA	**Warramunga Arr**	**41.62**	**162**	P	**P**	**18 54 22.1**	**-0.2**
	0.5nm,0.5s,baz=344,slow=9.1,SNR=8.8						
MKAR	**Makanchi Array**	**41.66**	**319**	P	**P**	**18 54 21.5**	**-0.9**
	0.4nm,0.6s,baz=111,slow=8.6,SNR=7.5						
ZALV	**Zalesovo Beam**	**43.98**	**329**	P	**P**	**18 54 39.5**	**-1.5**
	0.4nm,0.3s,baz=108,slow=4.7,SNR=2.8						
ASAR	**Alice Springs**	**45.04**	**164**	P	**P**	**18 54 50.9**	**+1.0**
	0.7nm,0.6s,baz=345,slow=6.7,SNR=21						
KURBB	**Kurchatov Arra**	**45.58**	**323**	P	**P**	**18 54 52.8**	**-1.1**
	0.7nm,0.9s,baz=106,slow=6.5,SNR=6.2						
BRTR	**Keskin Array B**	**75.96**	**307**	P	**P**	**18 58 22.8**	**+1.8**
	0.3nm,0.5s,baz=74,slow=6.3,SNR=2.4						

IDC 18 18:49:38.9±3.1, 30.41S×177.54W, h0km, mb3.3/2, mb1 3.5/2, mb1mx3.3/30, mbtmp3.3/2, Error ellipse: s-maj=65.2km s-min=26.2km az=99.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.20**	**344**	Pn	Pn	18 50 03.8	+0.9
	46nm,0.3s,baz=90,slow=20,SNR=4.3						
RAO				Sn	Sb	18 50 19.1	+0.6
	132nm,0.3s,baz=128,slow=19,

BILL MLR MLR
comp=Z,282nm,18.0s
BILL Bilibino 19.15 338 *e*P **Pn 19 13 44.8 0.0**
comp=Z,54nm,1.0s
COLA College 19.21 35 *e*P **Pn 19 13 45.9 +0.4**
COLA pmax pmax
comp=Z,12nm,0.6s
COLA College 19.21 35 *e*P **Pn 19 13 45.9 +0.4**
comp=Z,12nm,0.6s
ILAR Eielson Array 19.51 36 P **P 19 13 45.2 -2.5**
comp=Z,4.3nm,0.3s,baz=238,slow=9.2,SNR=96
ILAR S **S 19 17 22.8 -2.9**
baz=241,slow=26,SNR=3.2
ILAR ScP **ScP 19 21 39.6 +0.1**
comp=Z,0.0nm,0.3s,baz=275,slow=3.6,SNR=5.3
ILAR LR LR 19 21 59.8
comp=Z,354nm,18.1s,baz=250,slow=39
COLD Coldfoot 19.84 28 *e*P **Pn 19 13 51.8 -1.2**
comp=Z,13nm,0.7s
DOT Dot Lake 20.10 41 *e*P **P 19 13 53.7 -0.5**
comp=Z,48nm,0.6s
SEY Seymchan 21.11 316 P **P 19 14 04.1 -0.9**
comp=Z,7.5nm,0.7s,baz=98,slow=10.0,SNR=14
SEY ScP **ScP 19 21 43.9 +0.5**
comp=Z,3.3nm,1.0s,baz=36,slow=7.1,SNR=4.0
MA2 Magadan 21.15 306 P **P 19 14 05.5 0.0**
comp=Z,14nm,0.9s,baz=198,slow=19,SNR=3.0
MA2 LR LR 19 22 09.4
comp=Z,374nm,19.2s,baz=106,slow=36
EGAK Eagle 21.71 39 *e*P **P 19 14 11.6 +0.1**
comp=Z,55nm,0.6s
DAWY Dawson 22.19 42 *e*P **P 19 14 14.9 -1.8**
comp=Z,13nm,0.6s
CRAG Craig 24.62 64 *e*P **P 19 14 42.3 +1.9**
comp=Z,40nm,1.2s
WRAK Wrangell Islan 24.93 62 *e*P **P 19 14 45.5 +2.2**
comp=Z,41nm,1.0s
INK Inuvik 25.84 34 P **P 19 14 51.7 +0.3**
comp=Z,6.0nm,0.7s,baz=242,slow=13,SNR=7.8
INK LR LR 19 25 57.8
comp=Z,252nm,19.8s,baz=220,slow=38
DLBC Dease Lake 26.00 57 P **P 19 14 54.6 +1.5**
comp=Z,12nm,0.8s,baz=273,slow=9.4,SNR=20
DLBC LR LR 19 26 35.9
comp=Z,226nm,18.6s,baz=283,slow=40
YSS Yuzh-Sakhalins 28.08 278 *e*P **P 19 15 11.0 -0.8**
YSS pmax pmax
comp=Z,30nm,1.3s
YSS MLR MLR
comp=Z,400nm,19.0s
YSS Yuzh-Sakhalins 28.08 278 *e*P **P 19 15 12.7 +0.9**
comp=Z,31nm,0.9s
BBB Bella Bella 28.23 70 LR LR 19 24 51.8
comp=Z,172nm,19.6s,baz=293,slow=33
ASAJ Asahikawa 29.49 273 *e*P **P 19 15 26.0 +1.7**
comp=Z,11nm,1.1s
YAK Yakutsk 31.47 312 *e*P **P 19 15 40.2 -1.4**
YAK pmax pmax
comp=Z,14nm,0.9s
YAK Yakutsk 31.47 312 *e*P **P 19 15 40.1 -1.5**
comp=Z,16nm,0.6s
HABR Khabarovsk 32.16 285 *e*P **P 19 15 46.2 -1.6**
HABR *e* 19 16 52.3
HABR *e*PPP PPP 19 17 02.6
HABR *e* 19 18 34.7
HABR *e*S **S 19 20 57.1 -0.7**
HABR *e*SS **SnSn 19 22 49.7 -0.4**
HABR *e* 19 26 14.4
HABR pmax pmax
comp=N,5.0nm,1.0s
HABR pmax pmax
comp=E,14nm,1.0s
HABR pmax pmax
comp=Z,28nm,1.0s
HABR MLR MLR
comp=Z,163nm,18.0s
YKA Yellowknife Ar 33.17 47 P **P 19 15 56.3 -0.1**
comp=Z,0.9nm,0.6s,baz=274,slow=8.8,SNR=3.5
YKA PcP **PcP 19 18 37.7 -0.7**
comp=Z,2.3nm,0.7s,baz=293,slow=2.7,SNR=4.5
YKA LR LR 19 31 11.9
comp=Z,56nm,18.1s,baz=0.0,slow=39
B05A Bryant 33.26 74 P **P 19 15 58.1 +0.7**
baz=296
H11N2 WAKE ISLAND Hy 34.90 212 T T 19 53 38.0
baz=19,slow=75,SNR=54
H11N3 WAKE ISLAND Hy 34.91 212 T T 19 53 32.8
baz=19,slow=75,SNR=49
H11N1 WAKE ISLAND Hy 34.92 212 T T 19 53 24.7
baz=19,slow=75,SNR=54
G05D Wamic, OR 35.13 79 P **P 19 16 15.1 +1.4**
baz=300
I04A Tendick Farm, 35.19 82 P **P 19 16 15.5 +1.2**
baz=301
L02D Cave Junction, 35.32 85 P **P 19 16 16.7 +1.4**
baz=303
I05D Terrebonne, OR 35.57 80 P **P 19 16 17.7 +0.1**
baz=301
HAWA Hanford 35.66 76 *e*P **P 19 16 19.8 +1.5**
comp=Z,6.8nm,0.8s
USRK Ussuriysk Ar. 36.04 280 P **P 19 16 20.8 -0.7**
comp=Z,18nm,0.6s,baz=56,slow=9.7,SNR=39
USRK pP **pP 19 16 33.6 +1.4**
comp=Z,18nm,0.7s,baz=65,slow=7.8,SNR=11
USRK LR LR 19 31 51.7
comp=Z,177nm,20.6s,baz=46,slow=37
H11S1 WAKE ISLAND Hy 36.11 212 T T 19 55 33.1
baz=20,slow=76,SNR=124
H11S2 WAKE ISLAND Hy 36.12 212 T T 19 55 28.2
baz=20,slow=76,SNR=51
H11S3 WAKE ISLAND Hy 36.12 212 T T 19 55 34.3
baz=20,slow=76,SNR=23
M02C Callahan 36.21 85 P **P 19 16 23.7 +0.6**
baz=304
NEW Newport 36.24 72 P **P 19 16 23.9 +0.6**
comp=Z,3.1nm,0.5s,baz=274,slow=4.8,SNR=5.5
EDM Edmonton 36.34 63 *e*P **P 19 16 25.1 +1.1**
EDM pmax pmax
comp=Z,40nm,0.6s
EDM Edmonton 36.34 63 *e*P **P 19 16 25.1 +1.1**
comp=Z,40nm,0.6s
N02D Trinity Center 36.54 86 P **P 19 16 27.3 +1.4**
baz=305
MAJO Matsushiro 36.55 265 *e*P **P 19 16 25.8 -0.2**
MAJO pmax pmax
comp=Z,9.0nm,0.6s
MAJO Matsushiro 36.55 265 *e*P **P 19 16 25.8 -0.2**
comp=Z,9.2nm,0.6s
MAT Matsushiro 36.55 265 P **P 19 16 26.1 +0.1**
MJAR Matsushiro Arr 36.55 265 P **P 19 16 25.3 -0.7**
comp=Z,5.6nm,0.9s,baz=49,slow=7.9,SNR=6.6
MJAR pP **pP 19 16 38.7 +2.0**
comp=Z,3.7nm,0.6s,baz=51,slow=5.9,SNR=5.0
MJAR LR LR 19 30 17.0
comp=Z,138nm,21.3s,baz=90,slow=34
VLA Vladivostok 36.67 279 *c i*P **P 19 16 27.1 +0.2**
VLA pmax pmax
comp=Z,71nm,0.9s
MDJ Mudanjiang 37.30 282 *e*P **P 19 16 30.6 -1.6**
comp=Z,21nm,1.0s
MSHR Mys Shultsa 37.41 278 *ce*P **P 19 16 33.3 +0.1**
O03D Paynes Creek 37.49 86 P **P 19 16 34.9 +0.9**
baz=305
WALA Waterton Lakes 37.77 69 *e*P **P 19 16 37.2 +0.9**
comp=Z,27nm,1.4s
BMO Blue Mountains 37.78 77 *e*P **P 19 16 37.7 +1.3**
comp=Z,7.0nm,1.4s
WVOR Wild Horse Val 38.25 81 *e*P **P 19 16 42.3 +1.9**
WVOR pmax pmax
comp=Z,9.0nm,0.8s
WVOR Wild Horse Val 38.25 81 *e*P **P 19 16 42.3 +1.9**
comp=Z,8.8nm,0.8s
RES Resolute Bay 38.54 25 P **P 19 16 41.6 -0.7**
comp=Z,2.6nm,0.7s,baz=148,slow=15,SNR=3.6
RES PcP **PcP 19 18 54.8 +0.7**
comp=Z,4.5nm,0.7s,baz=208,slow=6.3,SNR=4.2
MSO Missoula 38.82 72 P **P 19 16 46.4 +1.3**
baz=300
BOD Bodaibo 40.16 308 ⇓ *i*P **P 19 16 54.0 -2.0**
BOD pmax pmax
comp=Z,11nm,1.6s
HLID Hailey 40.23 77 P **P 19 16 57.5 +0.5**
baz=303
HLID Hailey 40.23 77 *e*P **P 19 16 57.6 +0.6**
comp=Z,4.7nm,0.9s
CN2 Changchun 40.26 284 *e*P **P 19 16 56.0 -1.0**
CN2 pmax pmax
comp=Z,20nm,1.2s
BMN Battle Mountai 40.26 83 *e*P P 19 17 05.6 +8.3
BMN pmax pmax
comp=Z,3.0nm,0.7s
BMN Battle Mountai 40.26 83 *e*P P 19 17 05.6 +8.3
comp=Z,2.9nm,0.7s
EGMT Eagleton 40.69 68 P **P 19 17 01.2 +0.5**
baz=300
EGMT Eagleton 40.69 68 *e*P **P 19 17 01.8 +1.2**
comp=Z,21nm,1.0s
BOZ Bozeman (W) 40.80 73 P **P 19 17 02.1 +0.4**
baz=302
BOZ Bozeman (W) 40.80 73 *e*P **P 19 17 04.9 +3.3**
BOZ pmax pmax
comp=Z,11nm,0.8s
BOZ Bozeman (W) 40.80 73 *e*P **P 19 17 04.9 +3.3**
comp=Z,11nm,0.8s
FFC Flin Flon 41.83 56 *e*P **P 19 17 09.9 +0.1**
FFC pmax pmax
comp=Z,22nm,1.4s
FFC Flin Flon 41.83 56 *e*P **P 19 17 09.9 +0.1**
comp=Z,22nm,1.4s
KSRS Korea Array 42.42 274 P **P 19 17 15.2 +0.5**
comp=Z,7.5nm,0.8s,baz=55,slow=7.3,SNR=15
KSRS LR LR 19 33 38.9
comp=Z,109nm,20.1s,baz=89,slow=34
KSAR Wonju Array Be 42.45 274 P **P 19 17 15.3 +0.3**
KSAR Wonju Array Be 42.45 274 P **P 19 17 15.2 +0.3**
RLMT Red Lodge 42.49 72 P **P 19 17 15.2 -0.4**
baz=303
RLMT Red Lodge 42.49 72 *e*P **P 19 17 16.8 +1.2**
comp=Z,25nm,1.0s
REDW Red Top Meadow 42.51 75 *e*P **P 19 17 19.8 +4.0**
comp=Z,3.6nm,0.5s
R11A Troy Canyon, C 42.52 84 P **P 19 17 15.7 -0.1**
baz=308
TPNV Topopah Spring 42.97 86 P **P 19 17 20.2 +0.8**
baz=308
LRMC Laurel Mtn Rad 43.00 89 P **P 19 17 21.0 +1.3**
baz=310
DUG Dugway, Tooele 43.13 80 P **P 19 17 21.8 +1.0**
baz=307
DUG Dugway, Tooele 43.13 80 *e*P **P 19 17 20.9 +0.2**
DUG pmax pmax
comp=Z,7.0nm,0.8s
DUG Dugway, Tooele 43.13 80 *e*P **P 19 17 20.9 +0.2**
comp=Z,7.3nm,0.8s
EDW2 Edwards Air Fo 43.19 90 P **P 19 17 21.9 +0.7**
baz=311
JNU Nakatsue 43.35 267 P **P 19 17 21.2 -1.2**
comp=Z,12nm,0.8s,baz=27,slow=11,SNR=3.2
LAO LASA Array 43.44 68 P **P 19 17 23.4 +0.4**
baz=303
BW06 Boulder Array 43.62 75 P **P 19 17 24.7 -0.1**
baz=305
BW06 Boulder Array 43.62 75 *e*P **P 19 17 25.0 +0.2**
comp=Z,8.1nm,0.8s
PDAR Pinedale Array 43.62 75 P **P 19 17 25.4 +0.6**
comp=Z,3.8nm,0.6s,baz=294,slow=4.6,SNR=24
PDAR LR LR 19 35 43.9
comp=Z,107nm,18.2s,baz=309,slow=36
DGMT Dagmar 43.66 65 P **P 19 17 24.5 -0.2**
baz=302
GSC Goldstone, Bar 43.67 89 P **P 19 17 25.9 +0.8**
baz=310
BFSC Mount Baldy Ra 43.82 90 P **P 19 17 27.0 +0.7**
baz=311
A25A Svangstu Ranch 44.03 64 P **P 19 17 27.8 +0.1**
baz=302
A26A Wade Farm, Ken 44.65 63 P **P 19 17 32.7 0.0**
baz=302
GMRC Granite Mounta 44.72 88 P **P 19 17 34.5 +1.0**
baz=311
PFO Pinyon Flats O 44.98 90 P **P 19 17 34.9 -0.7**
comp=Z,1.8nm,0.5s,baz=177,slow=7.0,SNR=4.1
PFO Pinyon Flats O 44.98 90 P **P 19 17 37.5 +1.8**
baz=312
NRIK Noril'sk 45.75 331 P **P 19 17 39.7 -1.4**
comp=Z,3.7nm,0.6s,baz=67,slow=7.8,SNR=4.7
NRIK LR LR 19 39 13.2
comp=Z,72nm,18.0s,baz=340,slow=39
Y12C Blythe 46.10 88 P **P 19 17 44.5 +0.2**
baz=312
H25A Fruitvale 46.11 69 P **P 19 17 43.7 -0.7**
baz=305
A29A Manning Farm, 46.20 62 P **P 19 17 44.1 -0.8**
baz=303
B29A Wagenman Farm, 46.38 63 P **P 19 17 46.0 -0.4**
baz=304
MDND Maddock 46.59 63 P **P 19 17 47.6 -0.4**
baz=304
PV04 Paradox Valley 46.63 79 *e*P **P 19 17 48.0 -0.6**
N23A Red Feather La 46.91 75 P **P 19 17 50.8 0.0**
baz=307
WUAZ Wupatki 46.92 84 P **P 19 17 50.7 -0.2**
baz=310
PV01 Paradox Valley 47.00 80 *e*P **P 19 17 52.1 +0.5**
comp=Z,572nm,0.6s
ULM Lac du Bonnet 47.30 59 P **P 19 17 53.1 -0.3**
comp=Z,6.3nm,0.7s,baz=302,slow=9.1,SNR=8.8
ULM LR LR 19 38 47.6
comp=Z,154nm,19.7s,baz=355,slow=37
A31A Lima, St. Vin 47.32 61 P **P 19 17 53.2 -0.4**
baz=304
C31A Landman Farms, 47.66 63 P **P 19 17 55.9 -0.4**
baz=305
A32A Rocking H Ranc 47.71 61 P **P 19 17 56.1 -0.6**
baz=304
ISCO Idaho Springs 47.77 76 P **P 19 17 57.9 +0.2**
baz=308
B32A Ashes, Strandq 47.98 61 P **P 19 17 58.6 -0.2**
baz=305
BJI Beijing 48.07 285 P **P 19 18 00.0 +0.5**
BJI pmax pmax
comp=Z,31nm,0.8s
BJT Baijiatuau 48.09 285 *e*P **P 19 17 59.9 +0.2**
BJT pmax pmax
comp=Z,17nm,0.8s
BJT Baijiatuau 48.09 285 *e*P **P 19 17 59.9 +0.2**
comp=Z,17nm,0.8s
D31A Mcclaflin, Tow 48.09 63 P **P 19 17 59.2 -0.4**
baz=305
E31A Nome 48.28 64 P **P 19 18 00.7 -0.4**
baz=306
A33A Warroad 48.30 60 P **P 19 18 00.8 -0.4**
baz=305,SNR=6.1
S22A 4UR Ranch, Cre 48.31 79 P **P 19 18 01.9 0.0**
baz=309
TLY Talaya 48.36 304 *e*P **P 19 18 02.0 +0.3**
TLY pmax pmax
comp=Z,20nm,0.8s
TLY Talaya 48.36 304 *e*P **P 19 18 02.0 +0.3**
comp=Z,20nm,0.8s
AGMN Agassiz Nation 48.41 61 P **P 19 18 01.8 -0.3**
baz=305,SNR=6.5
AGMN Agassiz Nation 48.41 61 *e*P **P 19 18 01.8 -0.3**
comp=Z,16nm,0.9s
D32A Dogwood Acres, 48.44 63 P **P 19 18 01.4 -0.9**
baz=306
F31A Hecla 48.48 65 P **P 19 18 02.5 -0.2**
baz=306
B33A Robert and Kas 48.57 61 P **P 19 18 03.1 -0.2**
baz=305
E32A Braaten, Kindr 48.72 64 P **P 19 18 04.3 -0.1**
baz=306
C33A Trail 48.76 62 P **P 19 18 04.4 -0.5**
baz=306
B34A Aery, Baudette 48.96 60 P **P 19 18 06.1 -0.2**
baz=306
D33A AnnSam, Waubun 49.08 62 P **P 19 18 07.1 -0.2**
baz=306
SONM Songino Array 49.09 299 P **P 19 18 07.3 -0.2**
comp=Z,4.2nm,0.7s,baz=46,slow=8.2,SNR=33
SONM PcP **PcP 19 19 30.8 +0.2**
comp=Z,2.6nm,0.7s,baz=58,slow=3.0,SNR=6.4
SONM ScP **ScP 19 23 26.6 +4.1**
comp=Z,1.0nm,0.7s,baz=82,slow=3.9,SNR=4.5
SONM LR LR 19 40 08.1
comp=Z,246nm,19.7s,baz=55,slow=38
F32A Veblen 49.11 64 P **P 19 18 07.5 0.0**
baz=306
SDCO Great Sand Dun 49.13 78 P **P 19 18 08.2 +0.2**
baz=310
SDCO Great Sand Dun 49.13 78 *e*P **P 19 18 07.9 -0.2**
comp=Z,5.9nm,1.0s
H31A Wolsey 49.17 67 P **P 19 18 08.0 0.0**
baz=307
G32A Webster 49.27 65 P **P 19 18 08.7 0.0**
baz=307
ZAK Zakamensk 49.29 303 *e*P **P 19 18 08.2 -0.7**
ZAK *e* 19 19 31.6
ZAK pmax pmax
comp=Z,19nm,1.2s
C34A RKJ Ranch, Bem 49.30 61 P **P 19 18 09.1 +0.2**
baz=306
D34A Park Rapids 49.48 62 P **P 19 18 09.7 -0.6**
baz=306
B35A Bob, Littlefor 49.53 60 P **P 19 18 10.6 -0.1**
baz=306
K30A Basset 49.60 69 P **P 19 18 11.4 +0.1**
baz=308
F33A 5 Mile Ranch, 49.60 64 P **P 19 18 10.8 -0.4**
baz=307
MOY Mondy 49.73 306 *e*P **P 19 18 12.2 -0.1**
MOY pmax pmax
comp=Z,26nm,1.4s
C35A Jirik Farms, M 49.78 61 P **P 19 18 12.0 -0.6**
baz=306
KBS Kingsbay 49.85 358 *e*P **P 19 18 13.2 +0.5**
KBS pmax pmax
comp=Z,10.0nm,0.9s
KBS Kingsbay 49.85 358 *e*P **P 19 18 13.2 +0.5**
comp=Z,10nm,0.9s
TIA Tai'an 49.91 280 ⇑ P **P 19 18 13.3 -0.4**
TIA pmax pmax
comp=Z,30nm,1.1s
D35A Remer 50.11 61 P **P 19 18 13.9 -1.1**
baz=307
T25A Trinidad 50.18 78 P **P 19 18 15.8 -0.3**
baz=310
F34A Alexandria 50.21 63 P **P 19 18 15.0 -0.8**
baz=307
E35A Pequot Lakes 50.23 62 P **P 19 18 15.5 -0.4**
baz=307
G34A Benson 50.33 64 P **P 19 18 16.4 -0.4**
baz=307
HHC Hu-ho-hao-te 50.33 289 *e*P **P 19 18 18.9 +1.9**
HHC S **S 19 25 31.6 +4.4**
HHC pmax pmax
comp=Z,22nm,1.7s
HHC pmax pmax
comp=Z,210nm,3.8s
HHC LR LR
comp=Z,220nm,17.4s
HHC LR LR
comp=Z,380nm,16.2s
HHC LR LR
comp=Z,370nm,16.2s
ANMO Albuquerque 50.34 81 P **P 19 18 17.1 -0.1**
baz=311
C36A Pine Crest Far 50.37 60 P **P 19 18 16.8 -0.3**
baz=307
SPITS Spitsbergen Ar 50.49 357 P **P 19 18 16.9 -0.7**
comp=Z,8.8nm,0.7s,baz=63,slow=3.9,SNR=19
D36A Goodland 50.54 61 P **P 19 18 17.9 -0.4**
baz=307
F35A Swanville 50.55 63 P **P 19 18 18.3 -0.2**
baz=307
H34A Spellman Lake, 50.60 65 P **P 19 18 18.4 -0.4**
baz=308
ECSD EROS Data Cent 50.69 66 P **P 19 18 18.0 -1.5**
baz=308
ECSD EROS Data Cent 50.69 66 *e*P **P 19 18 19.1 -0.4**
comp=Z,8.7nm,0.8s
C37A Embarrass 50.74 60 P **P 19 18 19.1 -0.8**
baz=307
E36A McGregor 50.88 62 P **P 19 18 20.4 -0.6**
baz=307,SNR=6.3
L32A Elgin 50.95 69 P **P 19 18 21.6 +0.1**
baz=309
D37A Cotton 50.95 60 P **P 19 18 20.8 -0.6**
baz=307
EYMN Ely 50.98 59 P **P 19 18 21.5 -0.2**
baz=307,SNR=6.5
EYMN Ely 50.98 59 *e*P **P 19 18 21.5 -0.2**
comp=Z,12nm,0.9s
G35A Watkins 50.99 64 P **P 19 18 21.3 -0.4**
baz=308
121A Cookes Peak, D 51.12 85 P **P 19 18 22.5 -0.6**
baz=313,SNR=6.2
F36A Milaca 51.13 62 P **P 19 18 22.4 -0.4**
baz=308
C38A Sawbill Land. 51.24 59 P **P 19 18 23.2 -0.4**
baz=307
G36A St. Michael 51.39 63 P **P 19 18 24.7 0.0**
baz=308
NJ2 Nanjing 51.59 275 *e*P **P 19 18 26.9 +0.5**
NJ2 S **S 19 25 52.6 +8.2**
NJ2 pmax pmax
comp=Z,9.0nm,0.7s
NJ2 LR LR
comp=Z,400nm,12.5s
NJ2 LR LR
comp=Z,390nm,8.7s
NJ2 LR LR
comp=Z,470nm,17.9s
H36A Jessenland, He 51.69 64 P **P 19 18 27.4 +0.4**
baz=308
C39A Grand Marais 51.79 59 P **P 19 18 26.9 -0.8**
baz=308
SPMN Marine on St. 51.92 63 P **P 19 18 27.7 -1.0**
baz=308
M34A Aspy Farms, Fr 52.09 68 P **P 19 18 29.2 -0.9**
baz=309
J36A Seneca 1, Swea 52.24 65 P **P 19 18 29.5 -1.6**
baz=309
H37A Dierke Farm, C 52.26 63 P **P 19 18 30.3 -0.9**
baz=309
I37A Lemond, Waseca 52.34 64 P **P 19 18 30.8 -1.0**
baz=309
O33A Hebron 52.41 70 P **P 19 18 31.7 -0.7**
baz=310
Q32A Meitler Ranch, 52.53 72 P **P 19 18 32.6 -0.7**
baz=310
M35A Neola 52.63 68 P **P 19 18 33.6 -0.4**
baz=310
J37A Redenius Farm, 52.70 65 P **P 19 18 34.1 -0.4**
baz=309
O34A Beatrice 52.87 70 P **P 19 18 35.1 -0.7**
baz=310
I38A Scanlan Farm, 52.93 64 P **P 19 18 36.3 +0.1**
baz=309
Q33A Connelly Farm, 52.96 72 P **P 19 18 35.8 -0.7**
baz=310
K37A Belmond 52.99 66 P **P 19 18 35.6 -1.1**
baz=310
N35A Tabor 53.05 69 P **P 19 18 36.5 -0.6**
baz=310
MNTX Cornudas Mount 53.19 84 P **P 19 18 37.8 -0.5**
baz=313
MNTX Cornudas Mount 53.19 84 *e*P **P 19 18 38.6 +0.4**
comp=Z,2.7nm,0.8s
MSTX Muleshoe 53.27 80 P **P 19 18 38.9 -0.1**
baz=312
J38A Wedel Dairy, R 53.30 64 P **P 19 18 37.7 -1.3**
baz=310
AMTX Amarillo 53.33 78 P **P 19 18 38.7 -0.7**
baz=312
L37A Phoenix Point, 53.33 66 P **P 19 18 38.7 -0.5**
baz=310
COWI Conover 53.39 60 *e*P **P 19 18 39.0 -0.6**
comp=Z,10nm,0.8s
N36A Muff Farm, Cla 53.47 68 P **P 19 18 39.2 -1.0**
baz=310
T32A Huddler Ranch, 53.49 74 P **P 19 18 39.9 -0.5**
baz=311
Q34A Chapman 53.53 71 P **P 19 18 40.5 -0.2**
baz=311
K38A Parkersburg 53.56 65 P **P 19 18 40.5 -0.4**
baz=310
KSU1 Kansas State U 53.62 71 P **P 19 18 40.2 -1.1**
baz=311
M37A Trindle Farm, 53.62 67 P **P 19 18 40.8 -0.6**
baz=310
P35A Duane Minner, 53.69 70 P **P 19 18 40.4 -1.4**
baz=311
J39A Decorah 53.72 64 P **P 19 18 40.5 -1.5**
baz=310
R34A Isabella, Hill 53.76 72 P **P 19 18 40.5 -1.8**
baz=311
S33A Kaszmaul Farm, 53.77 73 P **P 19 18 42.0 -0.5**
baz=311
L38A Oak Wood Farm, 53.78 66 P **P 19 18 41.4 -1.1**
baz=310
O36A Bolckow 53.91 69 P **P 19 18 42.8 -0.6**
baz=311

N37A	**Lee Faris, Mou**	**53.95**	**68**	P		**P**		**19 18 43.1**	**-0.7**
	baz=310								
K39A	**Oelwein**	**54.02**	**65**	P		**P**		**19 18 43.6**	**-0.6**
	baz=310								
P36A	**Good Intent, A**	**54.10**	**69**	P		**P**		**19 18 44.0**	**-0.9**
	baz=311								
M38A	**Pleasantville**	**54.11**	**67**	P		**P**		**19 18 44.2**	**-0.7**
	baz=310								
J40A	**Soldiers Grove**	**54.23**	**63**	P		**P**		**19 18 45.2**	**-0.5**
	baz=310								
L39A	**Vinton**	**54.33**	**65**	P		**P**		**19 18 45.5**	**-1.0**
	baz=310								
R35A	**Emporia Munici**	**54.37**	**71**	P		**P**		**19 18 46.5**	**-0.3**
	baz=311								
O37A	**Wolven Farm, M**	**54.37**	**68**	P		**P**		**19 18 46.5**	**-0.3**
	baz=311								
N38A	**Joes South For**	**54.49**	**67**	P		**P**		**19 18 47.1**	**-0.5**
	baz=311								
P37A	**Lathrop**	**54.63**	**69**	P		**P**		**19 18 48.0**	**-0.6**
	baz=311								
T34A	**McClaskey Farm**	**54.63**	**73**	P		**P**		**19 18 48.3**	**-0.5**
	baz=312								
J41A	**Loganville**	**54.65**	**63**	P		**P**		**19 18 48.4**	**-0.4**
	baz=310								
M39A	**Webster**	**54.65**	**66**	P		**P**		**19 18 48.5**	**-0.3**
	baz=311								
W32A	**Sentinel**	**54.65**	**76**	P		**P**		**19 18 48.9**	**0.0**
	baz=312								
S35A	**Otter Creek Ra**	**54.72**	**72**	P		**P**		**19 18 49.2**	**-0.2**
	baz=312								
R36A	**Gordon, Harris**	**54.78**	**71**	P		**P**		**19 18 49.2**	**-0.6**
	baz=312								
U34A	**Anderson Ranch**	**54.81**	**74**	P		**P**		**19 18 49.9**	**-0.2**
	baz=312								
L40A	**Anamosa**	**54.81**	**65**	P		**P**		**19 18 49.2**	**-0.7**
	baz=311								
N39A	**Derby Farms, D**	**54.85**	**67**	P		**P**		**19 18 49.8**	**-0.5**
	baz=311								
K41A	**Shullsburg**	**54.98**	**64**	P		**P**		**19 18 50.7**	**-0.5**
	baz=311								
Q37A	**Longview Farm,**	**55.03**	**70**	P		**P**		**19 18 50.7**	**-1.0**
	baz=312								
P38A	**Dawn**	**55.08**	**68**	P		**P**		**19 18 51.2**	**-0.7**
	baz=311								
T35A	**Sooner Cattle**	**55.11**	**73**	P		**P**		**19 18 51.2**	**-1.0**
	baz=312								
R37A	**Teagarden Farm**	**55.18**	**70**	P		**P**		**19 18 52.3**	**-0.4**
	baz=312								
WMOK	**Wichita Mounta**	**55.20**	**76**	P		**P**		**19 18 53.3**	**+0.5**
	baz=313								
WMOK	**Wichita Mounta**	**55.20**	**76**	*e*P		**P**		**19 18 53.2**	**+0.3**
WMOK				pmax		pmax			
	comp=Z,7.0nm,0.9s								
WMOK	**Wichita Mounta**	**55.20**	**76**	*e*P		**P**		**19 18 53.2**	**+0.3**
	comp=Z,7.3nm,0.9s								
L41A	**Preston**	**55.22**	**64**	P		**P**		**19 18 52.1**	**-0.7**
	baz=311								
V34A	**Guthrie**	**55.23**	**74**	P		**P**		**19 18 53.0**	**-0.1**
	baz=312								
O39A	**Kirksville**	**55.24**	**67**	P		**P**		**19 18 52.7**	**-0.4**
	baz=311								
U35A	**Pawnee**	**55.34**	**73**	P		**P**		**19 18 53.9**	**0.0**
	baz=312								
WHN	**Wuhan**	**55.42**	**277**	P		**P**		**19 18 53.6**	**-0.9**
Q38A	**Cooks Store, C**	**55.47**	**69**	P		**P**		**19 18 54.0**	**-0.7**
	baz=312								
S37A	**Fort Scott**	**55.55**	**71**	P		**P**		**19 18 54.4**	**-0.9**
	baz=312								
P39B	**Salisbury**	**55.62**	**68**	P		**P**		**19 18 55.2**	**-0.6**
	baz=312								
V35A	**Meyer Ranch, C**	**55.68**	**74**	P		**P**		**19 18 56.0**	**-0.3**
	baz=312								
O40A	**La Belle**	**55.71**	**67**	P		**P**		**19 18 55.7**	**-0.8**
	baz=312,SNR=6.2								
Y33A	**Hilltop Ranch,**	**55.78**	**77**	P		**P**		**19 18 58.2**	**+1.1**
	baz=313								
Q39A	**Willow Grove F**	**55.78**	**69**	P		**P**		**19 18 56.0**	**-1.0**
	baz=312								
R38A	**Fenwick Farm,**	**55.81**	**70**	P		**P**		**19 18 55.7**	**-1.5**
	baz=312								
X34A	**Smith Ranch, M**	**55.86**	**76**	P		**P**		**19 18 57.8**	**+0.1**
	baz=313								
TXAR	**Lajitas Array**	**55.88**	**84**	P		**P**		**19 18 58.0**	**+0.1**
	comp=Z,1.7nm,0.9s,baz=298,slow=5.3,SNR=11								
TXAR				pP		**sP**		**19 19 12.2**	**-1.3**
	comp=Z,2.6nm,0.7s,baz=297,slow=5.6,SNR=11								
TXAR				LR		LR		19 42 20.2	
	comp=Z,49nm,18.4s,baz=0.0,slow=35								
T37A	**Cheneyville 18**	**55.92**	**72**	P		**P**		**19 18 57.8**	**-0.2**
	baz=312								
ZALV	**Zalesovo Beam**	**55.98**	**316**	P		**P**		**19 18 57.0**	**-1.2**
	comp=Z,1.0nm,0.4s,baz=49,slow=7.4,SNR=6.3								
ZALV				PcP		**PcP**		**19 19 56.3**	**+0.1**
	comp=Z,3.0nm,0.6s,baz=43,slow=3.0,SNR=8.5								
ZALV				LR		LR		19 44 33.5	
	comp=Z,184nm,18.8s,baz=70,slow=38								
P40A	**Paris**	**56.00**	**68**	P		**P**		**19 18 57.8**	**-0.7**
	baz=312,SNR=6.7								
NVS	**Novosibirsk**	**56.06**	**317**	*e*P		**P**		**19 18 57.9**	**-0.9**
W35A	**Tecumseh**	**56.07**	**75**	P		**P**		**19 18 58.6**	**-0.6**
	baz=313								
SSLB	**Suanglung**	**56.09**	**266**	*e*P		**P**		**19 18 58.8**	**-0.6**
	comp=Z,37nm,1.0s								
ABTX	**Abilene, Hawle**	**56.10**	**79**	P		**P**		**19 18 59.1**	**-0.3**
	baz=314								
S38A	**Stockton**	**56.18**	**70**	P		**P**		**19 18 58.7**	**-1.2**
	baz=312								
Z33A	**Whitaker Ranch**	**56.19**	**78**	P		**P**		**19 18 59.4**	**-0.6**
	baz=313								
V36A	**Jenks**	**56.20**	**73**	P		**P**		**19 18 59.5**	**-0.5**
	baz=313								
R39A	**Chumby, Stover**	**56.23**	**69**	P		**P**		**19 18 59.8**	**-0.4**
	baz=312								
U37A	**Salina**	**56.28**	**72**	P		**P**		**19 18 59.9**	**-0.7**
	baz=313								
O41A	**Passleys Farm,**	**56.29**	**66**	P		**P**		**19 19 00.0**	**-0.6**
	baz=312								
Q40A	**Laux Farm, Aux**	**56.34**	**68**	P		**P**		**19 19 00.0**	**-1.0**
	baz=312								
Y34A	**Reagan Ranch,**	**56.35**	**76**	P		**P**		**19 19 00.8**	**-0.3**
	baz=313								
T38A	**Diamond**	**56.35**	**71**	P		**P**		**19 19 00.4**	**-0.7**
	baz=312								
XAN	**Xi'an**	**56.37**	**284**	P		**P**		**19 19 00.8**	**-0.5**
XAN				pmax		pmax			
	comp=Z,28nm,1.1s								
XAN				pmax		pmax			
	comp=Z,300nm,6.1s								
W36A	**Wetumka**	**56.47**	**74**	P		**P**		**19 19 02.4**	**+0.5**
	baz=313								
P41A	**Barry, Barry**	**56.48**	**67**	P		**P**		**19 19 00.7**	**-1.2**
	baz=312								
S39A	**Bolivar**	**56.48**	**70**	P		**P**		**19 19 00.7**	**-1.3**
	baz=312								
V37A	**Hulbert**	**56.62**	**73**	P		**P**		**19 19 02.5**	**-0.5**
	baz=313								
U38A	**Gravette**	**56.70**	**72**	P		**P**		**19 19 03.0**	**-0.5**
	baz=313								
R40A	**Maddies Statio**	**56.70**	**69**	P		**P**		**19 19 02.5**	**-1.1**
	baz=312								
X36A	**Centrahoma**	**56.78**	**75**	P		**P**		**19 19 04.1**	**0.0**
	baz=313								
Y35A	**Marietta**	**56.82**	**76**	P		**P**		**19 19 04.8**	**+0.4**
	baz=313								
T39A	**Clever**	**56.90**	**71**	P		**P**		**19 19 03.9**	**-1.1**
	baz=313								
P42A	**Winchester**	**56.95**	**66**	P		**P**		**19 19 04.7**	**-0.5**
	baz=312								
W37B	**Quinton**	**56.95**	**74**	P		**P**		**19 19 05.4**	**0.0**
	baz=313								
233A	**Rising Star**	**56.98**	**79**	P		**P**		**19 19 05.7**	**0.0**
	baz=314								
V38A	**Canehill**	**57.07**	**72**	P		**P**		**19 19 05.7**	**-0.5**
	baz=313								
134A	**White-Moore Ra**	**57.10**	**78**	P		**P**		**19 19 06.1**	**-0.3**
	baz=314								
U39A	**Green Forest**	**57.27**	**71**	P		**P**		**19 19 06.7**	**-0.9**
	baz=313								
Y36A	**Durant**	**57.28**	**75**	P		**P**		**19 19 07.6**	**-0.1**
	baz=314								
Q42A	**Golden Eagle**	**57.29**	**67**	P		**P**		**19 19 07.2**	**-0.5**
	baz=312								
T40A	**Mansfield**	**57.32**	**70**	P		**P**		**19 19 07.3**	**-0.7**
	baz=313								
X37A	**Clayton**	**57.36**	**74**	P		**P**		**19 19 07.9**	**-0.3**
	baz=313								
333A	**Richland Sprin**	**57.40**	**79**	P		**P**		**19 19 08.2**	**-0.4**
	baz=314								
234A	**Clairette**	**57.45**	**78**	P		**P**		**19 19 08.9**	**-0.1**
	baz=314								
S41A	**Jillco Farms,**	**57.48**	**69**	P		**P**		**19 19 08.1**	**-1.0**
	baz=313								
V39A	**Pettigrew**	**57.54**	**72**	P		**P**		**19 19 09.3**	**-0.3**
	baz=313								
W38A	**Poteau**	**57.54**	**73**	P		**P**		**19 19 10.0**	**+0.5**
	baz=313								
X38A	**Whitesboro**	**57.63**	**74**	P		**P**		**19 19 09.9**	**-0.3**
	baz=313								
U40A	**Yellville**	**57.66**	**71**	P		**P**		**19 19 09.4**	**-1.0**
	baz=313								
433A	**Art**	**57.73**	**80**	P		**P**		**19 19 10.3**	**-0.6**
	baz=314								
Q43A	**New Douglas**	**57.75**	**67**	P		**P**		**19 19 10.3**	**-0.7**
	baz=313								
T41A	**Mountain View**	**57.84**	**70**	P		**P**		**19 19 10.8**	**-0.8**
	baz=313								
334A	**Lometa**	**57.86**	**79**	P		**P**		**19 19 11.8**	**0.0**
	baz=314								
LZH	**Lanzhou**	**58.02**	**289**	*e*P		**P**		**19 19 13.9**	**+0.8**
LZH				pP		pP		19 19 18.3	-6.0
LZH				sP		sP		19 19 20.8	-7.9
LZH				pmax		pmax			
	comp=Z,30nm,1.0s								
LZH				pmax		pmax			
	comp=Z,210nm,5.2s								
V40A	**Witts Springs**	**58.05**	**71**	P		**P**		**19 19 11.4**	**-1.8**
	baz=313								
GTA	**Gaotai**	**58.11**	**294**	*e*P		**P**		**19 19 13.3**	**-0.3**
GTA				pP		pP		19 19 17.5	-7.3
GTA				sP		sP		19 19 21.0	-8.2
GTA				pmax		pmax			
	comp=Z,13nm,1.0s								
Q44A	**Meyer Farm, Va**	**58.17**	**66**	P		**P**		**19 19 12.0**	**-1.9**
	baz=313								
X39A	**Fountain Ranch**	**58.17**	**73**	P		**P**		**19 19 12.8**	**-1.2**
	baz=314								
434A	**Burnet**	**58.20**	**79**	P		**P**		**19 19 14.1**	**-0.2**
	baz=315								
SCHQ	**Schefferville**	**58.20**	**40**	LR		LR		19 46 42.4	
	comp=Z,213nm,19.0s,baz=301,slow=38								
U41A	**Viola**	**58.22**	**70**	P		**P**		**19 19 12.4**	**-1.9**
	baz=313								
SFIN	**Lafayette**	**58.26**	**64**	P		**P**		**19 19 13.8**	**-0.7**
	baz=313								
SFIN	**Lafayette**	**58.26**	**64**	*e*P		P		19 19 20.9	+6.4
	comp=Z,21nm,0.7s								
W40A	**Ferguson Farm,**	**58.33**	**72**	P		**P**		**19 19 14.3**	**-0.7**
	baz=314								
S43A	**Fulton Ridge,**	**58.46**	**68**	P		**P**		**19 19 15.0**	**-0.9**
	baz=313								
V41A	**Mountainview**	**58.46**	**71**	P		**P**		**19 19 14.7**	**-1.3**
	baz=314								
MIAR	**Mount Ida**	**58.47**	**73**	P		**P**		**19 19 15.6**	**-0.4**
	baz=314								
MIAR	**Mount Ida**	**58.47**	**73**	*e*P		**P**		**19 19 16.2**	**+0.2**
MIAR				pmax		pmax			
	comp=Z,25nm,1.2s								
MIAR	**Mount Ida**	**58.47**	**73**	*e*P		**P**		**19 19 16.2**	**+0.2**
	comp=Z,25nm,1.2s								
ARCES	**ARCESS Array B**	**58.48**	**352**	P		**P**		**19 19 14.6**	**-1.0**
	comp=Z,8.3nm,0.7s,baz=22,slow=7.5,SNR=25								
ARCES				PcP		**PcP**		**19 20 05.6**	**-0.1**
	comp=Z,11nm,0.6s,baz=15,slow=5.0,SNR=14								
ARCES				LR		LR		19 47 11.2	
	comp=Z,99nm,18.3s,baz=10.0,slow=39								
ENH	**Enshi**	**58.62**	**280**	*e*P		**P**		**19 19 16.7**	**-0.5**
	comp=Z,12nm,0.6s								
W41B	**Gary Mavity, V**	**58.83**	**72**	P		**P**		**19 19 17.3**	**-1.2**
	baz=314								
V42A	**Cord**	**58.90**	**70**	P		**P**		**19 19 17.9**	**-1.1**
	baz=314								
X40A	**Basin Creek Fa**	**58.95**	**72**	P		**P**		**19 19 18.7**	**-0.7**
	baz=314								
LVZ	**Lovozero**	**59.03**	**348**	*i*eP		**P**		**19 19 18.2**	**-1.3**
LVZ				pmax		pmax			
	comp=Z,9.0nm,0.7s								
LVZ	**Lovozero**	**59.03**	**348**	*e*P		**P**		**19 19 18.0**	**-1.5**
	comp=Z,16nm,0.9s								
WCI	**Wyandotte Cave**	**60.18**	**65**	P		**P**		**19 19 27.7**	**-0.2**
WCI				pmax		pmax			
	comp=Z,28nm,0.9s								
WVT	**Waverly**	**60.76**	**68**	P		**P**		**19 19 31.3**	**-0.5**
WVT				pmax		pmax			
	comp=Z,11nm,1.4s								
KURK	**Kurchatov**	**60.96**	**316**	*e*P		**P**		**19 19 32.1**	**-0.8**
KURK	**Kurchatov**	**60.96**	**316**	*e*P		**P**		**19 19 32.1**	**-0.8**
	comp=Z,67nm,0.3s								
Y46A	**Houston**	**61.73**	**70**	P		**P**		**19 19 38.2**	**-0.2**
	baz=315								
MK31	**Makanchi Array**	**62.15**	**311**	*e*P		**P**		**19 19 39.3**	**-1.7**
MK31				pmax		pmax			
	comp=Z,6.0nm,0.8s								
MKAR	**Makanchi Array**	**62.15**	**311**	P		**P**		**19 19 40.0**	**-1.1**
	comp=Z,2.9nm,0.3s,baz=46,slow=6.7,SNR=109								
MKAR				pP		**pP**		**19 19 53.6**	**+1.3**
	comp=Z,2.2nm,0.5s,baz=52,slow=5.2,SNR=5.6								
MKAR				LR		LR		19 47 06.4	
	comp=Z,111nm,21.0s,baz=44,slow=36								
MKAR	**Makanchi Array**	**62.15**	**311**	P		**P**		**19 19 40.0**	**-1.1**
MKAR				pmax		pmax			
	comp=Z,3.0nm,0.3s								
MKAR				MLR		MLR			
	comp=Z,111nm,21.0s								
MAKZ	**Makanchi**	**62.28**	**311**	P		**P**		**19 19 40.3**	**-1.7**
MAKZ				pmax		pmax			
	comp=Z,4.0nm,0.6s								
BVA0	**Borovoye Array**	**62.61**	**322**	*i*P		**P**		**19 19 43.2**	**-0.8**
BVA0				pmax		pmax			
	comp=Z,7.0nm,0.6s								
VOSK	**Vostochnaya**	**62.61**	**321**	P		**P**		**19 19 42.6**	**-1.4**
VOSK				pmax		pmax			
	comp=Z,2.0nm,0.7s								
BRVK	**Borovoye**	**62.62**	**322**	*ce*P		**P**		**19 19 42.7**	**-1.4**
BRVK				pmax		pmax			
	comp=Z,9.0nm,0.5s								
BRVK	**Borovoye**	**62.62**	**322**	*e*P		**P**		**19 19 43.1**	**-1.0**
	comp=Z,34nm,0.8s								
OUL	**Oulu**	**62.77**	**351**	P		**P**		**19 19 44.4**	**-0.4**
OUL				pmax		pmax			
	comp=Z,16nm,1.0s								
BINY	**Binghamton**	**62.99**	**56**	*e*P		**P**		**19 19 47.5**	**+0.8**
	comp=Z,112nm,1.4s								
GYA	**Guiyang**	**63.08**	**279**	P		**P**		**19 19 51.0**	**+3.4**
GYA				pmax		pmax			
	comp=Z,10.0nm,1.0s								
SSPA	**Standing Stone**	**63.11**	**58**	*e*P		**P**		**19 19 47.7**	**+0.1**
	comp=Z,71nm,0.8s								
ZRNK	**Zerenda**	**63.19**	**323**	P		**P**		**19 19 46.8**	**-1.1**
ZRNK				pmax		pmax			
	comp=Z,7.0nm,0.5s								
ARU	**Arti**	**63.98**	**330**	*e*P		**P**		**19 19 52.1**	**-0.9**
ARU				pmax		pmax			
	comp=Z,11nm,1.0s								
ARU	**Arti**	**63.98**	**330**	*e*P		**P**		**19 19 52.1**	**-0.9**
	comp=Z,10nm,1.0s								
N59A	**State Game Lan**	**64.03**	**56**	P		**P**		**19 19 53.8**	**+0.2**
	baz=317								
KLMR	**Klimovskoe**	**64.82**	**342**	*e*P		**P**		**19 19 55.4**	**-3.0**
KLMR				*e*				19 20 29.6	
KLMR				pmax		pmax			
	comp=Z,7.0nm,1.1s								
KMSC	**Kings Mountain**	**65.18**	**64**	P		**P**		**19 20 01.0**	**-0.2**
	baz=317								
KMSC	**Kings Mountain**	**65.18**	**64**	*e*P		**P**		**19 20 00.2**	**-0.9**
	comp=Z,27nm,0.9s								
GOGA	**Godfrey**	**65.21**	**67**	*e*P		**P**		**19 19 59.9**	**-1.5**
GOGA	**Godfrey**	**65.21**	**67**	*e*P		**P**		**19 19 59.9**	**-1.5**
PDGK	**Podgornoye**	**66.05**	**310**	P		**P**		**19 20 05.6**	**-1.0**
PDGK				pmax		pmax			
	comp=Z,20nm,1.1s								
FINES	**FINESS Array B**	**66.30**	**349**	P		**P**		**19 20 06.7**	**-1.3**
	comp=Z,4.4nm,0.6s,baz=22,slow=6.1,SNR=17								
FINES				pP		**pP**		**19 20 19.8**	**+0.5**
	comp=Z,2.8nm,0.7s,baz=15,slow=8.0,SNR=4.0								
FINES				PcP		**PcP**		**19 20 37.5**	**-0.1**
	comp=Z,3.9nm,0.5s,baz=32,slow=3.8,SNR=8.9								
FINES				LR		LR		19 52 08.1	
	comp=Z,82nm,19.6s,baz=32,slow=39								
KMI	**Kunming**	**66.46**	**281**	P		**P**		**19 20 09.6**	**-0.2**
KMI				pP		pP		19 20 15.0	-6.2
KMI				sP		sP		19 20 17.9	-7.7
KMI				pmax		pmax			
	comp=Z,11nm,0.9s								
QIZ	**Qiongzhong**	**66.55**	**271**	P		**P**		**19 20 14.0**	**+3.8**
QIZ				S		**S**		**19 29 05.5**	**+7.1**
QIZ				LR		LR			
	comp=Z,260nm,9.4s								
QIZ				LR		LR			
	comp=Z,340nm,8.7s								
QIZ				LR		LR			
	comp=Z,320nm,7.7s								
NB2	**NORSAR Subarra**	**67.79**	**357**	P		**P**		**19 20 17.0**	**-0.6**
	comp=Z,4.9nm,0.5s,baz=5.7,slow=6.9								
NB2	**NORSAR Subarra**	**67.79**	**357**	P		**P**		**19 20 16.9**	**-0.6**
NB2				pmax		pmax			
	comp=Z,4.0nm,0.5s								
NOA	**NORSAR Array B**	**67.79**	**357**	P		**P**		**19 20 16.7**	**-0.8**
	comp=Z,6.8nm,0.8s,baz=4.5,slow=7.5,SNR=28								
NOA				LR		LR		19 50 36.2	
	comp=Z,35nm,19.1s,baz=30,slow=36								
TKM2	**Tokmak 2**	**68.19**	**312**	P		**P**		**19 20 19.3**	**-1.3**
TKM2				pmax		pmax			
	comp=Z,7.0nm,1.1s								
FRU	**Bishkek**	**68.72**	**313**	*e*P		**P**		**19 20 22.0**	**-1.6**
AAK	**Ala-Archa**	**68.93**	**312**	*e*P		**P**		**19 20 25.3**	**+0.2**
AAK				pmax		pmax			
	comp=Z,12nm,0.9s								
AAK	**Ala-Archa**	**68.93**	**312**	*e*P		**P**		**19 20 25.2**	**+0.2**
	comp=Z,12nm,0.9s								
VSU	**Vasula**	**69.12**	**348**	*ce*P		**P**		**19 20 24.8**	**-0.9**
VSU				pmax		pmax			
	comp=Z,146nm,1.7s								
AKTO	**Aktyubinsk**	**69.20**	**327**	P		**P**		**19 20 25.1**	**-1.3**
AKTO				pmax		pmax			
	comp=Z,8.0nm,0.7s								
ABKAR	**Akbulak array**	**69.53**	**325**	*e*P		**P**		**19 20 27.8**	**-0.7**
MNAS	**Manas**	**69.95**	**314**	P		**P**		**19 20 30.9**	**-0.5**
MNAS				pmax		pmax			
	comp=Z,6.0nm,0.6s								
LSA	**Lhasa**	**70.02**	**293**	*e*P		**P**		**19 20 32.9**	**+0.5**
LSA				pmax		pmax			
	comp=Z,37nm,0.8s								
LSA	**Lhasa**	**70.02**	**293**	*e*P		**P**		**19 20 32.9**	**+0.5**
	comp=Z,37nm,0.8s								
KK31	**Karatay Array**	**70.36**	**315**	*e*P		**P**		**19 20 33.0**	**-0.7**
KK31				pmax		pmax			
	comp=Z,4.0nm,0.6s								
KKAR	**Karatay Array**	**70.36**	**315**	*e*P		**P**		**19 20 33.3**	**-0.4**
KKAR				pmax		pmax			
	comp=Z,5.0nm,0.6s								
KKAR	**Karatay Array**	**70.36**	**315**	*e*P		**P**		**19 20 33.3**	**-0.4**
	comp=Z,4.9nm,0.6s								
KSH	**Kashi**	**70.66**	**309**	P		**P**		**19 20 39.4**	**+3.7**
KSH				*es*P		pP		19 20 45.9	-1.3
KSH				S		**S**		**19 29 49.9**	**+2.9**
KSH				ScS		**ScS**		**19 30 37.4**	**+1.2**
KSH				SS		**SS**		**19 34 21.9**	**+3.6**
KSH				pmax		pmax			
	comp=Z,49nm,1.6s								
KSH				LR		LR			
	comp=Z,140nm,9.0s								
KSH				LR		LR			
	comp=Z,130nm,5.4s								
KSH				LR		LR			
	comp=Z,100nm,7.5s								
OBN	**Obninsk**	**70.75**	**342**	*ie*P		**P**		**19 20 33.4**	**-2.4**
OBN				*e*				19 20 39.2	
OBN				*e*				19 20 55.4	
OBN				pmax		pmax			
	comp=Z,8.0nm,0.8s								
PPT	**Papeete**	**72.04**	**155**	LR		LR		19 48 13.7	
	comp=Z,99nm,18.4s,baz=4.5,slow=32								
PPT2	**Papeete2**	**72.06**	**155**	*e*LR		LR		19 42 46.8	
	comp=Z,120nm,21.5s								
VRH	**Novokhopyorsk**	**73.27**	**337**	*e*P		**P**		**19 20 49.2**	**-1.8**
VRH				pmax		pmax			
	comp=Z,10.0nm,0.5s								
CHTO	**Chiang Mai**	**73.50**	**279**	*e*P		**P**		**19 20 51.9**	**-0.9**
CHTO				pmax		pmax			
	comp=Z,12nm,1.4s								
CHTO	**Chiang Mai**	**73.50**	**279**	*e*P		**P**		**19 20 51.9**	**-0.9**
	comp=Z,12nm,1.4s								
CMAR	**Chiang Mai Arr**	**73.77**	**279**	P		**P**		**19 20 54.5**	**+0.1**
	comp=Z,1.8nm,0.6s,baz=32,slow=7.3,SNR=13								
CMAR				LR		LR		19 53 33.7	
	comp=Z,44nm,21.7s,baz=350,slow=36								
VSR	**Storozhevoye**	**73.86**	**339**	*e*P		**P**		**19 20 52.9**	**-1.5**
VSR				pmax		pmax			
	comp=Z,40nm,1.2s								
GUN	**Gumba**	**74.39**	**295**	*e*P		**P**		**19 20 58.7**	**+0.3**
	comp=Z,183nm,0.7s								
RAMN	**Ramite**	**74.71**	**294**	*e*P		**P**		**19 21 00.2**	**+0.1**
	comp=Z,176nm,0.8s								
KKN	**Kakani**	**74.82**	**295**	*e*P		**P**		**19 21 00.7**	**0.0**
	comp=Z,65nm,0.8s								
PKIN	**Phulchoki**	**74.92**	**295**	*e*P		**P**		**19 21 01.4**	**+0.1**
	comp=Z,58nm,0.8s								
GKN	**Gorkha**	**75.02**	**296**	*e*P		**P**		**19 21 01.7**	**-0.1**
	comp=Z,109nm,0.8s								
DMN	**Daman**	**75.06**	**295**	*e*P		**P**		**19 21 02.3**	**+0.2**
	comp=Z,116nm,1.0s								
KOLN	**Koldanda**	**75.78**	**297**	*e*P		**P**		**19 21 06.2**	**0.0**
	comp=Z,62nm,0.8s								
PYUN	**Piuthan**	**75.87**	**297**	*e*P		**P**		**19 21 06.7**	**0.0**
	comp=Z,216nm,1.0s								
AKASG	**Malin Array Be**	**76.30**	**345**	P		**P**		**19 21 07.1**	**-1.4**
	comp=Z,4.1nm,0.4s,baz=18,slow=6.1,SNR=18								
AKASG				LR		LR		19 59 23.4	
	comp=Z,97nm,19.1s,baz=40,slow=39								
AKASG	**Malin Array Be**	**76.30**	**345**	P		**P**		**19 21 07.1**	**-1.4**
AKASG				pmax		pmax			
	comp=Z,5.0nm,0.4s								
AKASG				MLR		MLR			
	comp=Z,97nm,19.1s	

VRAC Vranov 79.21 353 ⇑ iP P 19 21 25.4 +0.7
VRAC Vranov 79.21 353 ⇑ P P 19 21 25.4 +0.7
KHC Kasperske Hory 79.59 355 eP P 19 21 27.1 +0.2
KHC Kasperske Hory 79.59 355 eP P 19 21 26.7 -0.2
KHC pmax pmax
comp=Z,4.0nm,1.1s
KHC Kasperske Hory 79.59 355 eP P 19 21 26.7 -0.2
comp=Z,4.5nm,1.1s
WET Wettzell 79.61 355 P P 19 21 26.2 -0.8
WET pmax pmax
comp=Z,14nm,1.5s
KIV Kislovodsk 79.72 334 ⇑ eP P 19 21 30.1 +2.4
KIV e 19 21 35.2
KIV e*PP pP 19 21 38.8 -0.5
KIV pmax pmax
comp=Z,6.0nm,0.9s
GERES GERESS Array B 79.87 355 P P 19 21 28.5 +0.1
comp=Z,3.7nm,0.8s,baz=18,slow=4.6,SNR=28
GERES LR LR 19 58 33.1
comp=Z,50nm,19.3s,baz=13,slow=37
KBZ Khabaz 79.87 334 P P 19 21 28.3 -0.1
comp=Z,1.9nm,0.6s,baz=4.6,slow=3.3,SNR=4.8
KBZ LR LR 20 03 25.2
comp=Z,58nm,18.1s,baz=58,slow=41
GEYT Alibeck 79.88 320 P P 19 21 29.2 +0.5
comp=Z,15nm,1.0s,baz=336,slow=3.3,SNR=24
BURAR Bucovina Array 79.92 347 ⇑ iP P 19 21 28.5 -0.2
BURAR Bucovina Array 79.92 347 ⇑ P P 19 21 28.5 -0.2
LANF Langenberg 79.95 359 eP P 19 21 29.0 +0.2
FLN La Foliniere 80.05 4 eP P 19 21 28.7 -0.6
FLN pmax pmax
comp=Z,69nm,1.5s
PSZ Piszkesteto 80.28 350 ⇑ iP P 19 21 30.9 +0.2
PSZ Piszkesteto 80.28 350 ⇑ P P 19 21 30.9 +0.2
WLS Welschbruch 80.53 359 eP P 19 21 32.5 +0.5
BFO Black Forest 80.59 358 eP P 19 21 32.0 -0.3
BFO Black Forest 80.59 358 eP P 19 21 32.0 -0.3
CONA Conrad Observa 80.64 353 i pP P 19 21 32.7 +0.1
comp=Z,5.1nm,0.6s
THEF They Montfort 80.72 360 eP P 19 21 33.4 +0.4
ECH Echery 80.73 359 eP P 19 21 33.0 0.0
TESR Tescani 80.78 345 ⇓ iP P 19 21 33.1 -0.2
DRGR 81.06 348 ⇓ iP P 19 21 34.2 -0.7
DRGR 81.06 348 ⇓ P P 19 21 34.2 -0.7
MOF Molkenrain 81.09 359 eP P 19 21 35.0 0.0
HINF Hinteralfeld 81.13 359 eP P 19 21 34.6 -0.6
HINF pmax pmax
comp=Z,8.0nm,0.7s
ARSA Arzberg 81.33 353 i pP P 19 21 36.4 +0.2
comp=Z,3.3nm,0.6s
PLOR Plostina 81.42 345 ⇓ iP P 19 21 36.9 +0.2
PLOR Plostina 81.42 345 ⇓ P P 19 21 36.9 +0.2
WATA Walderalm 81.48 356 i pP P 19 21 37.2 0.0
comp=Z,5.2nm,0.7s
MOTA Moosalm 81.50 356 i pP P 19 21 36.1 -1.2
comp=Z,2.8nm,0.6s
DOPR Dopca 81.50 346 ⇓ iP P 19 21 38.2 +1.1
KBA Koelnbreinsper 81.65 355 i pP P 19 21 38.5 +0.4
comp=Z,11nm,0.6s
KBA Koelnbreinsper 81.65 355 P P 19 21 39.0 +0.9
KBA pmax pmax
comp=Z,20nm,1.4s
TLCR 81.70 344 ⇓ iP P 19 21 38.5 +0.4
TLCR 81.70 344 ⇓ P P 19 21 38.6 +0.4
SIRR Siria 81.71 349 ⇑ iP P 19 21 38.0 -0.2
CFR Carcaliu 81.83 344 ⇓ iP P 19 21 39.3 +0.5
CFR Carcaliu 81.83 344 ⇓ P P 19 21 39.3 +0.5
FETA Feichten 81.83 356 i pP P 19 21 38.6 -0.5
comp=Z,8.3nm,0.9s
MLR Muntele Rosu 81.88 346 ⇑ iP P 19 21 40.9 +1.6
MLR Muntele Rosu 81.88 346 ⇑ P P 19 21 40.9 +1.6
RKT Rikitea 81.89 144 eLR LR 19 47 20.3
comp=Z,154nm,32.0s
SOKA Soboth 81.94 353 i pP P 19 21 39.4 -0.2
comp=Z,8.5nm,0.9s
VOIR 82.07 346 ⇑ iP P 19 21 40.4 +0.2
VOIR 82.07 346 ⇑ P P 19 21 40.4 +0.2
AVF Avril sur Loir 82.14 2 eP P 19 21 40.2 -0.3
AVF pmax pmax
comp=Z,21nm,0.9s
OBKA Obir 82.14 354 epP P 19 21 40.1 -0.5
comp=Z,6.1nm,0.7s
ARR Arges 82.20 347 ⇑ iP P 19 21 41.9 +1.0
MTUR Matau 82.27 346 ⇓ iP P 19 21 42.9 +1.6
MTUR Matau 82.27 346 ⇓ P P 19 21 42.9 +1.6
HARR Harsova 82.34 344 ⇑ iP P 19 21 41.7 +0.2
HARR Harsova 82.34 344 ⇑ P P 19 21 41.7 +0.2
BZS Buzias 82.36 349 ⇑ iP P 19 21 41.8 +0.2
BZS Buzias 82.36 349 ⇑ P P 19 21 41.8 +0.2
TLB Topalu 82.42 344 ⇓ iP P 19 21 40.9 -1.0
TLB Topalu 82.42 344 ⇓ P P 19 21 40.9 -1.0
TIRR Tirgusor 82.48 344 ⇑ iP P 19 21 42.3 +0.1
TIRR Tirgusor 82.48 344 ⇑ P P 19 21 42.3 +0.1
AGO Saint Agoulin 82.88 2 eP P 19 21 45.2 +0.9
PLDF La Plantade 82.97 1 eP P 19 21 45.7 +0.8
MDVR Moldovita 83.17 349 ⇓ iP P 19 21 45.5 -0.4
PYM Petit Puy Mans 83.17 2 eP P 19 21 46.7 +0.7
LPL La Plagne 83.43 359 eP P 19 21 50.6 +3.1
LPL pmax pmax
comp=Z,33nm,1.7s
LPG La Plagne 83.45 359 eP P 19 21 49.5 +1.8
LPG pmax pmax
comp=Z,35nm,1.8s
LBL Lubilhac 83.70 2 eP P 19 21 49.6 +0.9
ZIMR 83.76 346 ⇑ iP P 19 21 49.3 +0.4
ZIMR 83.76 346 ⇑ P P 19 21 49.3 +0.4
CAF Calviac 83.98 3 eP P 19 21 50.1 +0.1
CAF pmax pmax
comp=Z,21nm,1.1s
WRA Warramunga Arr 84.04 228 P P 19 21 48.8 -1.7
comp=Z,1.4nm,0.7s,baz=32,slow=5.8,SNR=10
WRA Warramunga Arr 84.04 228 P P 19 21 48.8 -1.7
WRA pmax pmax
comp=Z,2.0nm,0.8s
VTS Vitosha 85.12 347 ⇑ iP P 19 21 55.7 -0.3
VTS Vitosha 85.12 347 ⇑ P P 19 21 55.7 -0.3
PDG Podgorica 85.77 350 ⇑ iP P 19 21 57.6 -1.4
BRTR Keskin Array B 85.98 339 P P 19 21 59.7 -0.6
comp=Z,1.6nm,0.5s,baz=52,slow=2.0,SNR=12
PBRG Braganca 86.52 9 eP P 19 22 02.2 -0.6
comp=Z,40nm,1.5s
FITZ Fitzroy Crossi 86.74 236 P P 19 22 03.5 -0.5
comp=Z,6.7nm,0.8s,baz=6.0,slow=4.7,SNR=14
HYB Hyderabad 86.77 294 i P P 19 22 04.0 -0.4
POLO Lamas de Olo 86.84 10 eP P 19 22 03.8 -0.6
comp=Z,16nm,2.4s
GRG Griva 86.84 347 P P 19 22 05.1 +0.7
GRG pmax pmax
comp=Z,14nm,1.0s
PVRL Vila Real 86.94 10 eP P 19 22 05.3 +0.4
comp=Z,45nm,1.9s
MVO Moncorvo 87.12 10 eP P 19 22 05.3 -0.5
comp=Z,46nm,1.4s
FNA Florina 87.14 348 eP P 19 22 06.1 +0.2
FNA pmax pmax
comp=Z,10.0nm,0.9s
ASAR Alice Springs 87.47 226 P P 19 22 07.0 -0.4
comp=Z,3.8nm,0.8s,baz=30,slow=4.6,SNR=29
PVIS Viseu 87.47 10 eP P 19 22 07.8 +0.3
comp=Z,46nm,1.9s
MTE Manteigas 87.83 10 eP P 19 22 09.4 +0.2
comp=Z,28nm,1.2s
ESDC Sonseca Array 88.89 7 P P 19 22 13.4 -0.8
comp=Z,5.1nm,0.9s,baz=351,slow=4.1,SNR=17
PESTR Estremoz 89.34 10 eP P 19 22 16.1 -0.2
comp=Z,35nm,1.9s
PBAR Barrancos 90.08 10 eP P 19 22 19.8 +0.1
comp=Z,63nm,1.1s
STKA Stephens Creek 91.55 216 P P 19 22 25.4 -0.9
comp=Z,2.9nm,0.8s,baz=352,slow=5.4,SNR=5.1
MMAI Mount Meron Ar 91.94 335 P P 19 22 28.4 -0.2
comp=Z,4.9nm,1.0s,baz=345,slow=4.8,SNR=3.9
TORD Torodi Ar. Bea 115.60 4 PKP PKPdf 19 28 01.5 -0.7
comp=Z,0.6nm,0.8s,baz=349,slow=2.7,SNR=5.3
PLCA Paso Flores 128.34 110 PKP PKPdf 19 28 25.4 -0.5
comp=Z,2.2nm,0.9s,baz=318,slow=2.3,SNR=5.0
TSUM Tsumeb 146.49 339 eP PKPbc 19 29 01.3 0.0
MAW Mawson 148.23 218 PKPbc PKPbc 19 29 04.2 -0.2
comp=Z,5.6nm,0.8s,baz=23,slow=1.5,SNR=9.4
BOSA Boshof 152.88 320 PKPbc PKPbc 19 29 16.6 -0.3
comp=Z,4.0nm,0.4s,baz=26,slow=1.8,SNR=26

*PDG **18** 19:12:28.0±0.3, 42°.66N×20°.34E, h13km, MD2.7/1,*

ML2.7/13, Error ellipse: s-maj=0.5km s-min=0.6km az=0.0
*CSEM **18** 19:12:30.2±0.1, 42°.63N×20°.24E, h8km, ML2.7, Error ellipse: s-maj=2.9km s-min=2.2km az=154.0*
*SKO **18** 19:12:31.4, 42°.66N×20°.19E, h8km*
*BEO **18** 19:12:31.0±0.4, 42°.63N×20°.22E, h10km±3km, M2.6/9*
*TIR **18** 19:12:39.1±0.3, 42°.45N×20°.65E, h2km, ML3.0*

ISC 18 19:12:30.8±0.9, **42°.64N**±0°.01×**20°.20E**±0°.01, **h9**km±7km,
n83, σ1°.59/138, **30C-7D, Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PVY	Plav	0.18	256	⇑ iPg	Pg	19 12 34.7	0.0
PVY				eSg	Sg	19 12 38.6	+1.1
PVY	Plav	0.18	256	⇑ iPg	Pg	19 12 34.7	0.0
PVY				eSg	Sg	19 12 38.6	+1.1
BEY	Berane	0.32	316	⇑ iPg	Pg	19 12 37.1	-0.2
BEY				eSg	Sg	19 12 41.7	+0.1
IVA	Berane	0.32	316	⇑ iPg	Pg	19 12 37.1	-0.2
IVA				eSg	Sg	19 12 41.7	+0.1
PDG	Podgorica	0.73	254	⇑ iP	Pg	19 12 44.1	-0.8
PDG				S	Sg	19 12 53.5	-0.9
PDG	Podgorica	0.73	254	ePg	Pg	19 12 44.1	-0.8
PDG				eSg	Sg	19 12 55.0	+0.6
PDG	Podgorica	0.73	254	⇑ iP	Pg	19 12 44.1	-0.8
PDG				S	Sg	19 12 53.5	-0.9
PDG				eSg	Sg	19 12 55.0	+0.6
TTG	Podgorica	0.73	254	⇑ iPg	Pg	19 12 44.1	-0.8
TTG				eSg	Sb	19 12 56.2	+0.5
DRME	Dracevica, Mon	0.88	239	⇑ iPg	Pg	19 12 47.4	-0.3
DRME				eSg	Sb	19 12 59.0	+1.0
DRME	Dracevica, Mon	0.88	239	⇑ iPg	Pg	19 12 47.4	-0.3
DRME				eSg	Sg	19 12 59.7	+0.6
SELS	Selova	0.89	49	ePg	Pg	19 12 45.8	-2.1
SELS				eSg	Sb	19 12 59.7	-0.7
NKY	Niksic	0.91	281	⇑ iPg	Pg	19 12 48.4	+0.2
NKY				eSg	Sb	19 13 01.4	+0.5
NKY	Niksic	0.91	281	⇑ iPg	Pg	19 12 48.4	+0.2
NKY				eSg	Sb	19 13 01.4	+0.5
PLE	Pljevlja	0.91	319	⇓ iPg	Pg	19 12 47.6	-0.7
PLE				eSg	Sg	19 12 59.9	-0.3
PLE	Pljevlja	0.91	319	⇓ iPg	Pg	19 12 47.6	-0.7
PLE				eSg	Sg	19 12 59.9	-0.3
NKME	Niksic	0.93	278	⇑ iPg	Pg	19 12 48.6	-0.1
NKME				eSg	Sb	19 13 02.5	+1.0
NKME	Niksic	0.93	278	⇑ iPg	Pg	19 12 48.6	-0.1
NKME				eSg	Sb	19 13 02.5	+1.0
IVAS	Ivanjica	0.94	358	ePg	Pg	19 12 48.5	-0.3
IVAS				iSg	Sg	19 13 00.0	-1.0
IVAS	Ivanjica	0.94	358	ePg	Pg	19 12 48.5	-0.3
CEME	Cevo	0.95	265	⇑ iPg	Pg	19 12 48.4	-0.7
CEME				eSg	Sn	19 13 03.9	-0.1
CEME	Cevo	0.95	265	⇑ iPg	Pg	19 12 48.4	-0.7
CEME				eSg	Sn	19 13 03.9	-0.1
ULC	Ulcinj	0.98	227	⇑ iPg	Pg	19 12 49.5	-0.1
ULC				eSg	Sb	19 13 03.9	+1.0
ULC	Ulcinj	0.98	227	⇑ iPg	Pg	19 12 49.5	-0.1
ULC				eSg	Sb	19 13 03.9	+1.0
BUM	Brajici-Budva	1.02	251	⇑ iPg	Pg	19 12 50.5	0.0
BUM				eSg	Sn	19 13 05.7	-0.1
BUM	Brajici-Budva	1.02	251	⇑ iPg	Pg	19 12 50.5	0.0
BUM				eSg	Sn	19 13 05.7	-0.1
UPM	Unac-Piva	1.10	301	⇓ iPg	Pb	19 12 52.1	-0.1
UPM				eSg	Sb	19 13 07.0	+0.3
UPM	Unac-Piva	1.10	301	⇓ iPg	Pb	19 12 52.1	-0.1
UPM				eSg	Sb	19 13 07.0	+0.3
SKO	Skopje	1.14	126	iPg	Pg	19 12 51.9	-0.8
SKO				iSg	Sn	19 13 07.9	-0.7
SKO	Skopje	1.14	126	iPg	Pg	19 12 51.8	-0.8
SKO				iSg	Sn	19 13 07.8	-0.7
BARS	Barje	1.20	81	ePg	Pb	19 12 52.8	-0.9
BARS				iSg	Sn	19 13 09.2	-1.0
BARS	Barje	1.20	81	ePg	Pb	19 12 52.8	-0.9
BARS				iSg	Sn	19 13 09.2	-1.0
BRY	Bratogost	1.25	283	⇑ iPg	Pn	19 12 53.9	-0.6
BRY				eSg	Sn	19 13 12.6	+1.1
BRY	Bratogost	1.25	283	⇑ iPg	Pn	19 12 54.1	-0.4
BRY				eSg	Sn	19 13 12.6	+1.1
HCY	Herceg Novi	1.28	262	⇑ iPg	Pn	19 12 54.2	-0.6
HCY				eSg	Sn	19 13 13.8	+1.8
HCY	Herceg Novi	1.28	262	⇑ iPg	Pn	19 12 54.2	-0.6
HCY				eSg	Sn	19 13 13.5	+1.5
GRUS	Gruza	1.30	17	ePg	Pb	19 12 55.1	-0.3
GRUS	Gruza	1.30	17	ePg	Pb	19 12 55.0	-0.3
TIR	Tirane	1.32	191	iPN	Pg	19 12 59.2	+3.2
TIR				iSN	Sg	19 13 19.1	+6.0
TIR	Tirane	1.32	191	⇑ iP	Pn	19 12 53.9	-1.4
TIR				S	Sb	19 13 06.4	-6.2
TIR	Tirane	1.32	191	⇑ iP	Pn	19 12 53.9	-1.4
TIR	Tirane	1.32	191	iPn	Pg	19 12 59.2	+3.2
TIR				S	Sb	19 13 06.4	-6.2
BBLS	Lazi?i	1.36	335	ePg	Pn	19 12 55.9	0.0
BBLS				eSg	Sg	19 13 15.3	+0.9
BBLS	Lazi?i	1.36	335	ePg	Pn	19 12 55.9	0.0
BBLS				eSg	Sg	19 13 15.3	+0.9
TREB	Trebinje	1.37	274	ePg	Pn	19 12 55.9	-0.1
TREB				eSg	Sg	19 13 17.3	+2.6
DIVS	Divibare	1.47	354	ePg	Pb	19 12 57.6	-0.6
DIVS				iSg	Sn	19 13 16.6	-0.2
DIVS	Divibare	1.47	354	ePn	Pn	19 12 57.3	-0.1
DIVS	Divibare	1.47	354	ePg	Pb	19 12 57.6	-0.6
DIVS				eSn	Sg	19 13 17.3	-0.6
BOVS	Bovan	1.48	47	ePg	Pb	19 12 58.1	-0.4
BOVS				eSg	Sg	19 13 19.2	+0.7
BOVS	Bovan	1.48	47	ePg	Pb	19 12 58.1	-0.4
BOVS				eSg	Sg	19 13 19.2	+0.7
TRUS	Trudelj	1.59	5	ePg	Pb	19 13 00.3	0.0
TRUS				eSg	Sg	19 13 23.0	+1.1
TRUS	Trudelj	1.59	5	ePg	Pb	19 13 00.3	0.0
TRUS				eSg	Sg	19 13 23.0	+1.1
OHR	Ohrid	1.59	163	ePn	Pb	19 13 00.4	0.0
OHR				iSg	Sg	19 13 23.1	+1.1
OHR	Ohrid	1.59	163	ePn	Pb	19 13 00.4	0.0
OHR				iSg	Sg	19 13 23.0	+1.1
BOLS	Boljevac	1.75	47	ePn	Pn	19 13 00.4	-0.8
BOLS	Boljevac	1.75	47	ePn	Pn	19 13 00.4	-0.8
ZAGS	Zajecar	1.89	51	ePn	Pn	19 13 02.4	-0.8
ZAGS				iSg	Sb	19 13 29.3	+0.1
ZAGS	Zajecar	1.89	51	ePn	Pn	19 13 02.4	-0.8
ZAGS				iSg	Sb	19 13 29.3	+0.1
ZAPS	Zavoj	1.90	70	ePn	Pn	19 13 03.8	+0.5
ZAPS	Zavoj	1.90	70	ePn	Pn	19 13 03.8	+0.5
TEKS	Tekeris	1.97	346	ePn	Pb	19 13 05.5	-1.3
TEKS				iSg	Sg	19 13 34.1	0.0
TEKS	Tekeris	1.97	346	ePn	Pn	19 13 04.7	+0.4
TEKS				eSn	Sb	19 13 30.4	-1.0
TEKS				iSg	Sg	19 13 34.1	0.0
KUBS	Kucevo	2.07	31	ePn	Pn	19 13 06.5	+0.8
KUBS				eSg	Sg	19 13 36.3	-1.0
KUBS	Kucevo	2.07	31	ePn	Pn	19 13 06.5	+0.8
KUBS				eSg	Sg	19 13 36.3	-1.0
VTS	Vitosha	2.22	90	⇑ iP	Pg	19 13 16.0	+2.6
VTS	Vitosha	2.22	90	S	Sg	19 13 47.1	+4.9
MDVR	Moldovita	2.41	27	⇓ iP	Sg	19 13 19.6	+2.7
MDVR	Moldovita	2.41	27	S	Sg	19 13 54.7	+6.6
BANR	Banloc	2.82	14	⇓ iP	Pg	19 13 26.3	+1.4
BANR	Banloc	2.82	14	S	Sg	19 14 05.5	+4.0
BZS	Buzias	3.15	18	⇓ iP	Pg	19 13 30.3	-0.7
BZS	Buzias	3.15	18	S	Sg	19 14 12.3	+0.5
BZS	Buzias	3.15	18	ePn	Pn	19 13 20.3	-0.1
BZS	Buzias	3.15	18	ePn	Pn	19 13 20.3	-0.1
LOT	Lotru	3.81	41	S	Sg	19 14 30.6	-2.4
ANX	Ano Chora	4.25	161	P	Pn	19 13 32.8	-2.9
VOIR		4.48	50	⇑ iP	Pb	19 13 48.5	-1.0
VOIR		4.48	50	S	Sb	19 14 46.1	+2.5
DRGR		4.52	22	⇑ iP	Pb	19 13 50.3	0.0
DRGR		4.52	22	S	Sb	19 14 47.2	+2.4
MLR	Muntele Rosu	5.03	54	⇑ iP	Pb	19 13 56.7	-2.2
MLR	Muntele Rosu	5.03	54	S	Sb	19 15 00.0	+0.6
BURAR	Bucovina Array	6.11	34	⇑ iP	Pb	19 14 12.1	-5.3
BURAR	Bucovina Array	6.11	34	S	Sb	19 15 27.8	-2.8

*ATH **18** 19:12:42.9, 35°.57N×21°.83E, h83km±5km, ML3.2/5, Error ellipse: s-maj=6.3km s-min=1.7km az=53.0*
*THE **18** 19:12:45.3, 35°.66N×21°.88E, h65km±8km, ML3.2/7, Error ellipse: s-maj=8.4km s-min=1.4km az=50.0*
*CSEM **18** 19:12:45.0±0.5, 35°.61N×21°.84E, h60km, ML3.2, Error ellipse: s-maj=12.6km s-min=5.2km az=38.0*

ISC 18 19:12:44.4±1.8, **35°.59N**±0°.08×**21°.82E**±0°.06, **h63**km±22km,
n90, σ1°.16/116, **Central Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KYTH	Kithira	1.21	56	P	Pn	19 13 05.2	-0.1
KYTH				S	Sn	19 13 19.9	-1.0
KYTH	Kithira	1.21	56	P	Pn	19 13 05.2	-0.1
KYTH				S	Sn	19 13 19.9	-1.0
KYTH	Kithira	1.21	56	P	Pn	19 13 05.1	-0.2
ANKY	Antikythira Is	1.24	77	P	Pn	19 13 06.0	+0.3
ANKY				S	Sn	19 13 21.8	+0.2
ANKY	Antikythira Is	1.24	77	P	Pn	19 13 06.0	+0.3
ANKY				S	Sn	19 13 21.8	+0.2
ANKY	Antikythira Is	1.24	77	P	Pn	19 13 06.1	+0.4
ANKY				S	Sn	19 13 22.2	+0.6
ANKY				AML	AML	19 13 30.6	
	comp=N,2347μm,0.7s						
ANKY				AML	AML	19 13 34.5	
	comp=E,1436μm,1.2s						
PYL	PYLOS	1.30	357	P	Pn	19 13 06.1	-0.5
PYL				S	Sn	19 13 23.4	+0.2
PYL	PYLOS	1.30	357	P	Pn	19 13 06.1	-0.5
PYL				S	Sn	19 13 23.4	+0.2
PYL	PYLOS	1.30	357	P	Pn	19 13 04.8	-1.7
PYL				S	Sn	19 13 24.6	+1.4
PYL				AML	AML	19 13 30.4	
	comp=E,816μm,0.4s						
PYL				AML	AML	19 13 31.2	
	comp=N,1111μm,0.7s						
VLI	Veliai	1.45	39	P	Pn	19 13 08.8	+0.4
VLI	Veliai	1.45	39	P	Pn	19 13 08.8	+0.4
VLI				S	Sn	19 13 26.2	-0.3
VLI	Veliai	1.45	39	P	Pn	19 13 08.8	+0.4
VLI				S	Sn	19 13 26.2	-0.3
VLI				AML	AML	19 13 40.1	
	comp=E,775μm,0.5s						
VLI				AML	AML	19 13 43.1	
	comp=N,1130μm,0.8s						
ITM	Ithomi	1.59	3	P	Pn	19 13 11.1	+0.7
ITM				S	Sn	19 13 30.0	0.0
ITM	Ithomi	1.59	3	P	Pn	19 13 11.1	+0.7
ITM				S	Sn	19 13 30.0	0.0
ITM	Ithomi	1.59	3	P	Pn	19 13 11.6	+1.2
IMMV	Iera Moni Meta	1.77	94	P	Pn	19 13 13.1	+0.3
IMMV	Iera Moni Meta	1.77	94	P	Pn	19 13 13.1	+0.3
IMMV	Iera Moni Meta	1.77	94	P	Pn	19 13 13.2	+0.4
VLX	Vlachokerasia	1.83	14	P	Pn	19 13 16.5	+2.7
VLX	Vlachokerasia	1.83	14	P	Pn	19 13 16.5	+2.7
AMT	Artemida-Makis	1.94	357	P	Pn	19 13 15.6	+0.4
AMT	Artemida-Makis	1.94	357	P	Pn	19 13 15.6	+0.4
VAM	Vamos	1.95	95	P	Pn	19 13 15.4	+0.1
TRIP	Tripoli	1.97	11	P	Pn	19 13 18.1	+2.5
TRIP	Tripoli	1.97	11	P	Pn	19 13 18.1	+2.5
DID	Didima	2.23	30	P	Pn	19 13 18.2	-0.9
DID				S	Sn	19 13 44.7	-0.8
DID	Didima	2.23	30	P	Pn	19 13 18.2	-0.9
DID				S	Sn	19 13 44.7	-0.8
DID	Didima	2.23	30	P	Pn	19 13 17.4	-1.6
ZKS	Zakynthos	2.26	339	P	Pn	19 13 18.9	-0.6
ZKS				S	Sn	19 13 45.8	-0.5
ZKS	Zakynthos	2.26	339	P	Pn	19 13 18.9	-0.6
ZKS				S	Sn	19 13 45.8	-0.5
ZKS	Zakynthos	2.26	339	P	Pn	19 13 17.9	-1.6
DRO	Drossia	2.36	358	P	Pn	19 13 21.8	+1.0
DRO	Drossia	2.36	358	P	Pn	19 13 21.8	+1.0
DRO	Drossia	2.36	358	P	Pn	19 13 22.7	+1.9
MHLO	Agia Marina, M	2.36	62	P	Pn	19 13 19.3	-1.5
MHLO				S	Sn	19 13 48.0	-0.7
MHLO	Agia Marina, M	2.36	62	P	Pn	19 13 19.3	-1.5
MHLO				S	Sn	19 13 48.0	-0.7
MHLO				AML	AML	19 13 49.1	
	comp=N,1267μm,0.5s						
MHLO				AML	AML	19 13 50.1	
	comp=E,1456μm,0.4s						
GUR	Goura	2.38	10	P	Pn	19 13 21.5	+0.3
GUR	Goura	2.38	10	P	Pn	19 13 21.5	+0.3
GUR	Goura	2.38	10	P	Pn	19 13 23.7	+2.5
KLV	Kalavryta, Ach	2.46	6	P	Pn	19 13 23.2	+0.9
KLV	Kalavryta, Ach	2.46	6	P	Pn	19 13 23.2	+0.9
KLV	Kalavryta, Ach	2.46	6	P	Pn	19 13 24.0	+1.7
IDI	Anoyia	2.53	96	P	Pn	19 13 23.4	+0.3
IDI	Anoyia	2.53	96	P	Pn	19 13 23.4	+0.3
IDI	Anoyia	2.53	96	P	Pn	19 13 23.4	+0.3
LTK	Loutraki	2.60	20	P	Pn	19 13 23.9	-0.2
LTK	Loutraki	2.60	20	P	Pn	19 13 23.9	-0.2
LTK	Loutraki	2.60	20	P	Pn	19 13 25.9	+1.8
KFL	Anninata	2.65	342	P	Pn	19 13 24.8	+0.1
KFL				S	Sn	19 13 56.1	+0.4
KFL	Anninata	2.65	342	P	Pn	19 13 24.8	+0.1
KFL				S	Sn	19 13 56.1	+0.4
KFL	Anninata	2.65	342	P	Pn	19 13 24.0	-0.5
LAKA	Lakka	2.65	3	P	Pn	19 13 26.0	+1.2
LAKA	Lakka	2.65	3	P	Pn	19 13 26.0	+1.2
LAKA	Lakka	2.65	3	P	Pn	19 13 26.7	+1.9
VLY	Voula,Athens	2.76	35	P	Pn	19 13 26.1	-0.2
VLY	Voula,Athens	2.76	35	P	Pn	19 13 26.1	-0.2
VLY	Voula,Athens	2.76	35	P	Pn	19 13 25.6	-0.7
VLS	Valsamata	2.76	340	P	Pn	19 13 25.8	-0.5
VLS	Valsamata	2.76	340	P	Pn	19 13 25.8	-0.5
KALE	Kalithea	2.81	5	P	Pn	19 13 28.6	+1.6
KALE	Kalithea	2.81	5	P	Pn	19 13 28.6	+1.6
SERG	Sergoula	2.83	4	P	Pn	19 13 27.5	+0.3
SERG	Sergoula	2.83	4	P	Pn	19 13 27.5	+0.3
VILL	Villia	2.84	25	P	Pn	19 13 27.4	+0.1
VIL2	Platees	2.86	24	P	Pn	19 13 27.4	-0.3
ANX	Ano Chora	3.00	2	P	Pn	19 13 31.0	+1.4
ANX	Ano Chora	3.00	2	P	Pn	19 13 31.0	+1.4
LAST	Lasithi	3.02	97	P	Pn	19 13 31.4	+1.5
LAST	Lasithi	3.02	97	P	Pn	19 13 31.4	+1.5
PVO	Paravola	3.03	356	P	Pn	19 13 31.0	+1.1
PVO	Paravola	3.03	356	P	Pn	19 13 31.0	+1.1
PDO	Prodromos	3.05	351	P	Pn	19 13 31.8	+1.6
PDO	Prodromos	3.05	351	P	Pn	19 13 31.8	+1.6
LKR	Lokris	3.20	17	P	Pn	19 13 31.7	-0.5
LKR	Lokris	3.20	17	P	Pn	19 13 31.7	-0.5
EVR	Evrytania	3.32	360	P	Pn	19 13 37.7	+3.7
EVR	Evrytania	3.32	360	P	Pn	19 13 37.7	+3.7
LKD2	Lefkada island	3.33	344	P	Pn	19 13 33.9	-0.1
LKD2				S	Sn	19 14 10.9	-1.4
LKD2	Lefkada island	3.33	344	P	Pn	19 13 33.9	-0.1
LKD2				S	Sn	19 14 10.9	-1.4
LKD2				AML	AML	19 14 18.3	
	comp=E,148

GDZ	**Gediz**	**0.38**	**99**	P		**Pb**	**19 15 48.9**	**-1.0**
GDZ				S		**Sg**	**19 15 54.1**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**49**	*e*PG		**Pb**	**19 15 50.6**	**-0.9**
TVSB	**Tavsanli**	**0.47**	**49**	*e*Pg		**Pb**	**19 15 50.6**	**-0.9**
KULA	**Kula-Manisa**	**0.69**	**203**	*e*PG		**Pg**	**19 15 54.6**	**+0.1**
KULA	**Kula-Manisa**	**0.69**	**203**	*e*Pg		**Pg**	**19 15 54.6**	**+0.1**
MANT	**Manisa**	**0.74**	**208**	*i* P		**Pg**	**19 15 54.5**	**-1.1**
MANT				*i* S		**Sg**	**19 16 03.7**	**-1.7**
MANT	**Manisa**	**0.74**	**208**	P		**Pg**	**19 15 54.5**	**-1.1**
MANT				S		**Sg**	**19 16 03.7**	**-1.7**
KHL	**Karahalli**	**0.92**	**154**	*e*PG		**Pb**	**19 15 59.7**	**+0.6**
KHL	**Karahalli**	**0.92**	**154**	*e*Pg		**Pb**	**19 15 59.7**	**+0.6**
AKS	**Akhisar**	**0.97**	**254**	*e*PG		**Pn**	**19 16 00.7**	**0.0**
AKS	**Akhisar**	**0.97**	**254**	*e*Pg		**Pn**	**19 16 00.7**	**0.0**
BALB	**Balikesir**	**1.00**	**300**	*e*PG		**Pn**	**19 16 01.4**	**+0.3**
BALB	**Balikesir**	**1.00**	**300**	*e*Pg		**Pn**	**19 16 01.4**	**+0.3**
IGD	**Bursa**	**1.13**	**8**	*i* P		**Pg**	**19 16 01.6**	**-1.2**
IGD				*i* S		**Sb**	**19 16 16.8**	**-0.5**
KCTX	**Karacabey (Bur**	**1.22**	**336**	*e*PN		**Pn**	**19 16 04.9**	**+0.7**
KCTX	**Karacabey (Bur**	**1.22**	**336**	*e*PN		**Pn**	**19 16 04.9**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.22**	**356**	*e*PN		**Pn**	**19 16 04.8**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.22**	**356**	*e*PN		**Pn**	**19 16 04.8**	**+0.6**
BALY	**Balya**	**1.23**	**299**	*i* P		**Pn**	**19 16 04.7**	**+0.4**
BALY				*i* S		**Sb**	**19 16 20.6**	**+0.4**
BALY	**Balya**	**1.23**	**299**	P		**Pn**	**19 16 04.7**	**+0.4**
BALY				S		**Sb**	**19 16 20.6**	**+0.4**
CAVI	**Cavuskoy**	**1.24**	**31**	*e*PN		**Pn**	**19 16 04.9**	**+0.5**
CAVI	**Cavuskoy**	**1.24**	**31**	*e*PN		**Pn**	**19 16 04.9**	**+0.5**
IZI	**Iznik**	**1.24**	**17**	*e*PN		**Pn**	**19 16 05.4**	**+0.8**
IZI	**Iznik**	**1.24**	**17**	*e*PN		**Pn**	**19 16 05.4**	**+0.8**
GEMT	**Gemlik**	**1.29**	**6**	*e*PN		**Pb**	**19 16 06.4**	**+0.9**
GEMT	**Gemlik**	**1.29**	**6**	*e*PN		**Pb**	**19 16 06.4**	**+0.9**
BORA	**Eskisehir**	**1.34**	**56**	*i* P		**Pb**	**19 16 06.4**	**0.0**
BORA				*i* S		**Sn**	**19 16 24.4**	**+0.7**
BORA	**Eskisehir**	**1.34**	**56**	P		**Pb**	**19 16 06.4**	**0.0**
BORA				S		**Sn**	**19 16 24.4**	**+0.7**
SHUT	**Suhut-Afyon**	**1.35**	**116**	*e*PN		**Pg**	**19 16 07.3**	**+0.2**
SHUT	**Suhut-Afyon**	**1.35**	**116**	*e*PN		**Pg**	**19 16 07.3**	**+0.2**
GONE	**Gonen-Balikesi**	**1.36**	**312**	*e*PN		**Pg**	**19 16 07.9**	**+0.6**
GONE	**Gonen-Balikesi**	**1.36**	**312**	*e*PN		**Pg**	**19 16 07.9**	**+0.6**
ADVT	**Abdulvahap**	**1.40**	**24**	*e*PN		**Pg**	**19 16 08.2**	**+0.1**
ADVT	**Abdulvahap**	**1.40**	**24**	*e*PN		**Pg**	**19 16 08.2**	**+0.1**
ARMT	**Armutlu**	**1.42**	**356**	*e*PN		**Pg**	**19 16 08.7**	**+0.2**
ARMT	**Armutlu**	**1.42**	**356**	*e*PN		**Pg**	**19 16 08.7**	**+0.2**
ESKT	**Eskisehir**	**1.48**	**75**	*e*PN		**Pg**	**19 16 09.2**	**-0.4**
ESKT	**Eskisehir**	**1.48**	**75**	*e*PN		**Pg**	**19 16 09.2**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**216**	*e*PN		**Pg**	**19 16 09.6**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**216**	*e*PN		**Pg**	**19 16 09.6**	**-0.1**
EDC	**Edincik**	**1.49**	**324**	*e*PN		**Pg**	**19 16 09.8**	**0.0**
EDC	**Edincik**	**1.49**	**324**	*e*PN		**Pg**	**19 16 09.8**	**0.0**
IZM	**Izmir**	**1.55**	**242**	*e*PN		**Pg**	**19 16 10.8**	**-0.2**
IZM	**Izmir**	**1.55**	**242**	*e*PN		**Pg**	**19 16 10.8**	**-0.2**
KNL	**Bal¯¯kesir**	**1.60**	**315**	*i* P		**Pb**	**19 16 10.5**	**-0.2**
KNL				*i* S		**Sg**	**19 16 32.3**	**-0.4**
DKL	**Dikili**	**1.64**	**268**	*e*PN		**Pg**	**19 16 12.1**	**-0.5**
DKL	**Dikili**	**1.64**	**268**	*e*PN		**Pg**	**19 16 12.1**	**-0.5**
GULT	**Gulveren**	**1.73**	**42**	*e*PN		**Pb**	**19 16 12.1**	**-1.0**
GULT	**Gulveren**	**1.73**	**42**	*e*PN		**Pb**	**19 16 12.1**	**-1.0**
HRT	**Hereke**	**1.75**	**17**	*e*PN		**Pb**	**19 16 12.8**	**-0.5**
HRT	**Hereke**	**1.75**	**17**	*e*PN		**Pb**	**19 16 12.8**	**-0.5**
KRBG	**Karabiga-Canak**	**1.81**	**314**	*e*PN		**Pb**	**19 16 14.5**	**+0.2**
KRBG	**Karabiga-Canak**	**1.81**	**314**	*e*PN		**Pb**	**19 16 14.5**	**+0.2**
MRMT	**Marmara Adasi**	**1.81**	**324**	*e*PN		**Pb**	**19 16 14.5**	**+0.1**
MRMT	**Marmara Adasi**	**1.81**	**324**	*e*PN		**Pb**	**19 16 14.5**	**+0.1**
ISK	**Istanbul-Kandi**	**1.92**	**1**	*e*PN		**Pb**	**19 16 15.7**	**-0.5**
ISK	**Istanbul-Kandi**	**1.92**	**1**	*e*PN		**Pb**	**19 16 15.7**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN		**Pb**	**19 16 16.4**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN		**Pb**	**19 16 16.4**	**-0.8**
ELBA	**Catalca**	**2.04**	**348**	*i* P		**Pg**	**19 16 19.8**	**-0.6**
ELBA				*i* S		**Sg**	**19 16 46.2**	**-0.8**
ELBA	**Catalca**	**2.04**	**348**	P		**Pg**	**19 16 19.8**	**-0.6**
SILT	**Sile**	**2.06**	**14**	*e*PN		**Pb**	**19 16 17.7**	**-0.9**
SILT	**Sile**	**2.06**	**14**	*e*PN		**Pb**	**19 16 17.7**	**-0.9**
RKY	**Sarkoy-Tekirda**	**2.08**	**318**	*e*PN		**Pb**	**19 16 18.1**	**-0.9**
RKY	**Sarkoy-Tekirda**	**2.08**	**318**	*e*PN		**Pb**	**19 16 18.1**	**-0.9**
SART	**Tekirdag**	**2.08**	**318**	*i* P		**Pg**	**19 16 20.9**	**-0.2**
SART				*i* S		**Sg**	**19 16 48.3**	**+0.1**
KLYT	**Kilyos**	**2.10**	**1**	*e*PN		**Pb**	**19 16 18.2**	**-1.1**
KLYT	**Kilyos**	**2.10**	**1**	*e*PN		**Pb**	**19 16 18.2**	**-1.1**
LPK	**Lapseki**	**2.12**	**306**	*e*PN		**Pb**	**19 16 18.6**	**-1.0**
LPK	**Lapseki**	**2.12**	**306**	*e*PN		**Pb**	**19 16 18.6**	**-1.0**
CTKS	**Kestanelik-??a**	**2.12**	**350**	*e*PN		**Pb**	**19 16 18.8**	**-0.8**
CTKS	**Kestanelik-??a**	**2.12**	**350**	*e*PN		**Pb**	**19 16 18.8**	**-0.8**
MDUB	**Mudurnu**	**2.15**	**51**	*e*PN		**Pb**	**19 16 18.6**	**-1.5**
MDUB	**Mudurnu**	**2.15**	**51**	*e*PN		**Pb**	**19 16 18.6**	**-1.5**
KIZT	**Kizilcal**	**2.26**	**96**	*e*PN		**Pn**	**19 16 20.1**	**+1.6**
KIZT	**Kizilcal**	**2.26**	**96**	*e*PN		**Pn**	**19 16 20.1**	**+1.6**
GELI	**Tayfur-Gelibol**	**2.32**	**303**	*e*PN		**Pb**	**19 16 21.7**	**-1.3**
GELI	**Tayfur-Gelibol**	**2.32**	**303**	*e*PN		**Pb**	**19 16 21.7**	**-1.3**
ERIK	**Erikli-Kesan**	**2.45**	**309**	*e*PN		**Pn**	**19 16 22.7**	**+1.7**
ERIK	**Erikli-Kesan**	**2.45**	**309**	*e*Pn		**Pn**	**19 16 22.7**	**+1.7**

IDC 18 19:16:17.0±3.8, 22°.26N×12°.90W, h0km, mb3.6/2, mb1 3.6/4, mb1mx3.4/37, mbtmp3.5/4, ML3.4/2, Error ellipse: s-maj=94.6km s-min=37.4km az=85.0, Mauritania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TORD	**Torodi Ar. Bea**	**16.58**	**121**	P	Pn	19 20 10.2	-0.9
	0.1nm,0.3s,baz=312,slow=12,SNR=7.1						
TORD				S	Sn	19 23 03.8	-12
	0.1nm,0.3s,baz=305,slow=22,SNR=3.5						
DBIC	**Dimbokro**	**17.33**	**152**	P	Pn	19 20 20.3	-0.2
	0.2nm,0.3s,baz=313,slow=15,SNR=3.9						
I42PT	**GRACIOSA ISLAN 21.14**		**326**	*i*		21 25 00.0	
	baz=140,slow=321,SNR=0.9						
GERES	**GERESS Array B**	**33.91**	**32**	P	P	19 23 00.7	-1.0
	0.4nm,0.5s,baz=225,slow=6.8,SNR=3.2						
BRTR	**Keskin Array B**	**43.02**	**55**	P	P	19 24 19.4	+0.9
	0.5nm,0.6s,baz=266,slow=8.7,SNR=2.6						
ASAR	**Alice Springs**	**149.44**	**99**	PKPbc	PKPbc	19 36 08.6	-0.2
	0.3nm,0.6s,baz=280,slow=2.4,SNR=2.9						

*ISCJB **18** 19:24:59.0±0.8, 14°.01S±0°.06×167°.2E±0°.2, h200km, mb4.0/14, Error ellipse: s-maj=24.0km s-min=8.7km az=2.0*
*IDC **18** 19:25:03.8±2.2, 14°.28S×167°.27E, h239km±19km, mb3.7/15, mb1 3.8/16, mb1mx3.7/29, mbtmp4.3/16, Error ellipse: s-maj=20.1km s-min=13.3km az=94.0*

ISC 18 19:24:59.6±0.7, 14°.08S±0°.08×167°.3E±0°.2, h200km, n24, σ1°56/29, mb4.0/14, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.99**	**186**	P	**Pn**	**19 26 55.4**	**+2.6**
	0.9nm,0.3s,baz=98,slow=13,SNR=10.0						
DZM				S	**Sn**	**19 28 23.7**	**+0.8**
	0.2nm,0.3s,baz=180,slow=19,SNR=1.6						
CTA	**Charters Tower**	**20.98**	**251**	P	**P**	**19 29 28.6**	**+1.0**
	4.2nm,0.5s,baz=71,slow=13,SNR=9.2						
STKA	**Stephens Creek**	**29.44**	**229**	P	**P**	**19 30 44.9**	**+0.1**
	6.8nm,0.5s,baz=48,slow=8.7,SNR=38						
STKA				PcP	**PcP**	**19 33 44.6**	**-0.8**
	1.8nm,1.0s,baz=48,slow=3.8,SNR=4.0						
WRA	**Warramunga Arr**	**32.02**	**255**	P	**P**	**19 31 06.2**	**-1.4**
	5.1nm,0.5s,baz=86,slow=9.5,SNR=68						
WRA				PcP	**PcP**	**19 33 51.1**	**-1.4**
	0.4nm,0.9s,baz=15,slow=24,SNR=4.7						
ASAR	**Alice Springs**	**32.94**	**248**	P	**P**	**19 31 14.2**	**-1.4**
	4.7nm,0.4s,baz=75,slow=9.6,SNR=156						
ASAR				PcP	**PcP**	**19 33 54.0**	**-1.1**
	0.4nm,0.6s,baz=78,slow=2.8,SNR=4.2						
ASAR				ScP	**ScP**	**19 37 15.0**	**-5.3**
	0.3nm,0.8s,baz=64,slow=4.2,SNR=3.7						
MJAR	**Matsushiro Arr**	**57.35**	**332**	P	**P**	**19 34 27.2**	**+0.3**
	1.3nm,0.5s,baz=170,slow=6.8,SNR=4.1						
KSRS	**Korea Array**	**63.23**	**326**	P	**P**	**19 35 07.7**	**+1.0**
	0.5nm,0.5s,baz=129,slow=7.2,SNR=2.9						
VNDA	**Vanda**	**63.51**	**181**	P	**P**	**19 35 06.4**	**-1.6**
	0.9nm,0.7s,baz=1.7,slow=4.8,SNR=8.7						
USRK	**Ussuriysk Ar.**	**66.33**	**333**	P	**P**	**19 35 28.4**	**+1.7**
	1.5nm,0.9s,baz=148,slow=6.9,SNR=4.1						
PETK	**Petropavlovsk-**	**67.42**	**354**	P	**P**	**19 35 34.4**	**+1.0**
	2.6nm,0.7s,baz=136,slow=9.2,SNR=3.7						
CMAR	**Chiang Mai Arr**	**74.72**	**294**	P	**P**	**19 36 19.1**	**+1.1**
	1.3nm,0.7s,baz=128,slow=5.0,SNR=9.3						
SONM	**Songino Array**	**82.00**	**324**	P	**P**	**19 36 58.6**	**+1.3**
	0.8nm,0.4s,baz=144,slow=5.1,SNR=7.9						
MAW	**Mawson**	**82.50**	**202**	P	**P**	**19 36 58.6**	**-0.9**
	2.4nm,0.6s,baz=127,slow=6.7,SNR=6.7						
ILAR	**Eielson Array**	**85.90**	**18**	P	**P**	**19 37 15.5**	**-1.0**
	0.8nm,0.7s,baz=237,slow=5.3,SNR=9.0						
MKAR	**Makanchi Array**	**96.76**	**316**	P	**P**	**19 38 08.3**	**+0.8**
	1.4nm,0.6s,baz=91,slow=6.3,SNR=16						
ZALV	**Zalesovo Beam**	**96.89**	**324**	P	**P**	**19 38 07.6**	**-0.2**
	1.3nm,0.7s,baz=115,slow=5.7,SNR=5.8						
ARCES	**ARCESS Array B**	**119.64**	**346**	PKP	**PKPdf**	**19 43 23.9**	**-1.1**
	2.0nm,0.5s,baz=64,slow=1.4,SNR=13						
FINES	**FINESS Array B**	**125.14**	**338**	PKP	**PKPdf**	**19 43 35.2**	**-0.6**
	1.9nm,0.7s,baz=47,slow=3.4,SNR=8.0						
NOA	**NORSAR Array B**	**130.01**	**345**	PKP	**PKPdf**	**19 43 45.8**	**+0.6**
	0.7nm,0.7s,baz=20,slow=1.4,SNR=3.1						
AKASG	**Malin Array Be**	**130.22**	**326**	PKP	**PKPdf**	**19 43 45.9**	**+0.1**
	0.5nm,0.4s,baz=52,slow=2.4,SNR=3.9						
BRTR	**Keskin Array B**	**132.12**	**311**	PKP	**PKPdf**	**19 43 49.3**	**-0.7**
	0.2nm,0.4s,baz=121,slow=4.9,SNR=2.8						
GERES	**GERESS Array B**	**139.09**	**333**	PKP	**PKPdf**	**19 44 04.0**	**+1.4**
	0.6nm,0.7s,baz=80,slow=1.5,SNR=5.7						
KEST	**Kesra**	**150.74**	**321**	PKPbc	**PKPbc**	**19 44 29.5**	**+0.9**
	7.3nm,0.6s,baz=140,slow=2.6,SNR=9.3						
TORD	**Torodi Ar. Bea**	**165.99**	**268**	PKPab	**PKPab**	**19 45 41.7**	**-1.1**
	0.7nm,1.0s,baz=102,slow=2.9,SNR=3.3						

*NNC **18** 19:37:40.0±10.0, 44°.48N×73°.93E, h0km, mb2.6, mpv2.2, Error ellipse: s-maj=76.4km s-min=53.7km az=5.0*
*SOME **18** 19:37:40.0, 40°.95N×74°.93E, h0km*

KRNET 18 19:37:40.5±0.1, 40°.98N×74°.82E, h15km, mb1.9, 10C-12D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARLS	**Aral**	**0.96**	**337**	⇓*e*P	Pg	19 37 59.2	0.0
	baz=338						
ARLS				⇓*e*S	Sn	19 38 13.8	+0.7
	baz=338						
KZA	**Kyzart**	**1.15**	**16**	⇓*i*P	Pg	19 38 03.1	+0.4
	baz=16						
KZA				⇓*i*S	Sn	19 38 19.4	+1.3
	baz=16						
UCH	**Uchtor**	**1.27**	**350**	⇑*i*P	Pg	19 38 05.7	+0.6
	baz=350						
UCH				⇑*i*S	Sg	19 38 23.1	+1.4
	baz=350						
ULHL	**Ulahol**	**1.66**	**40**	⇑*i*P	Pg	19 38 11.7	-0.7
	baz=40						
ULHL				⇑*i*S	Sg	19 38 33.5	-0.4
	baz=40						
AAK	**Ala-Archa**	**1.68**	**352**	⇓Pn	Pb	19 38 11.8	+0.6
	1.2nm,0.4s						
AAK				⇓Sn	Sg	19 38 38.9	+4.3
	4.8nm,0.7s						
BOOM	**Boomskoye usch**	**1.73**	**29**	⇑*e*P	Pg	19 38 13.4	-0.4
	baz=29						
BOOM				⇑*i*S	Sg	19 38 38.3	+2.1
	baz=29						
TKM2	**Tokmak 2**	**2.03**	**16**	⇑*i*P	Pb	19 38 18.0	+0.8
	baz=16						
TKM2				⇑*i*S	Sg	19 38 45.0	-0.8
	baz=16						
TKM2	**Tokmak 2**	**2.03**	**16**	⇓Pg	Pb	19 38 17.8	+0.6
	1.2nm,0.5s						
TKM2				⇓Lg	Lg	19 38 44.8	
	3.1nm,0.6s						
KDJ	**Kajisay**	**2.11**	**56**	⇑*e*P	Pg	19 38 20.1	-1.0
	baz=56						
KDJ				⇑*e*S	Sg	19 38 48.7	+0.2
	baz=56						
MRKS	**Merke**	**2.13**	**327**	*e*P	Pg	19 38 22.1	+0.7
	2.8nm,0.2s						
MRKS				*e*S	Sg	19 38 51.9	+2.8
	4.5nm,0.2s						
KST	**Kastek**	**2.23**	**22**	*e*P	Pg	19 38 22.1	-1.3
	1.4nm,0.0s						
KST				*e*S	Sg	19 38 52.1	-0.3
	4.4nm,0.3s						
MNAS	**Manas**	**2.30**	**312**	⇓*e*P	Pb	19 38 21.5	-0.3
	baz=312						
MNAS				⇓*e*S	Sb	19 38 52.0	+1.9
	baz=312						
MNAS	**Manas**	**2.30**	**312**	⇓Pg	Pb	19 38 22.9	+1.1
	0.7nm,0.6s						
MNAS				⇓Lg	Lg	19 38 52.0	
	1.4nm,0.4s						
DGS	**Degeres**	**2.37**	**17**	*e*P	Pb	19 38 24.0	+1.0
	2.9nm,0.2s						
DGS				*e*S	Sg	19 38 55.2	-1.6
	9.5nm,0.3s						
IZV	**Izvestkoviy**	**2.45**	**32**	*e*P	Pb	19 38 25.2	+0.7
	3.5nm,0.1s						
IZV				*e*S	Sg	19 38 57.2	-2.2
	7.7nm,0.3s						
TNSS	**Tian-Shan**	**2.60**	**37**	*e*P	Pb	19 38 28.1	+1.1
	1.7nm,0.3s						
TNSS				*e*S	Sg	19 39 02.4	-1.7
	3.8nm,0.3s						
MDOK	**Medeo**	**2.74**	**36**	*e*P	Pb	19 38 30.7	+1.3
	2.2nm,0.3s						
MDOK				*e*S	Sg	19 39 06.8	-1.9
	4.5nm,0.5s						
KUU	**Kurty**	**3.12**	**21**	*e*P	Pg	19 38 38.6	-1.7
	2.7nm,0.2s						
KUU				*e*S	Sg	19 39 20.4	-0.5
	4.1nm,0.4s						

*IDC **18** 19:58:05.7±0.7, 30°.93N×69°.91E, h0km, mb3.9/23, mb1 4.1/26, mb1mx4.0/61, mbtmp4.0/26, ML4.0/3, MS3.6/31, Ms1 3.6/31, ms1mx3.5/55, Error ellipse: s-maj=17.5km s-min=13.3km az=21.0*
*ISCJB **18** 19:58:06.9±0.3, 30°.78N±0°.04×69°.93E±0°.03, h23km, mb4.0/25, MS3.5/27, Error ellipse: s-maj=5.5km s-min=3.5km az=13.6*
*MOS **18** 19:58:06.3±1.4, 31°.05N×69°.89E, h12km, mb4.2/18, Error ellipse: s-maj=13.1km s-min=7.6km az=90.2*
*NEIC **18** 19:58:07.4±0.4, 30°.96N×69°.89E, h10km, mb4.2/4, Error ellipse: s-maj=8.3km s-min=7.1km az=172.0*

ISC 18 19:58:09.1±0.5, 30°.88N±0°.05×69°.97E±0°.05, h23km, n88, σ1°91/88, mb4.0/25, MS3.5/27, 7C-7D, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THW	**Thamme Wali**	**2.44**	**38**	P	**Pn**	**19 58 48.5**	**+1.0**
SARP	**Sargodha**	**2.54**	**65**	P	**Pn**	**19 58 50.7**	**+1.8**
CEP	**Cherat**	**3.37**	**29**	P	**Pn**	**19 59 01.6**	**+1.2**
CHCP	**Chirah Chowk**	**3.94**	**44**	P	**Pn**	**19 59 09.2**	**+1.0**
THN	**Thein Dam**	**5.14**	**71**	*e*P	**Pn**	**19 59 25.3**	**+0.6**
THN				*ex*	**Sn**	**20 00 29.0**	**+5.7**
JWA	**Jwalamukhi**	**5.54**	**78**	*e*P	**Pn**	**19 59 32.0**	**+1.9**
JWA				*e*S	**Sn**	**20 00 35.0**	**+2.0**
BHK	**Bhakra**	**5.56**	**83**	*e*P	**Pn**	**19 59 30.8**	**+0.4**
BHK				*ex*	Sn	20 00 43.0	+9.4
SDNR	**Sundarnagar**	**6.03**	**82**	*e*P	**Pn**	**19 59 39.6**	**+2.6**
SDNR				*ex*	x	20 01 21.0	
SMLA	**Simla**	**6.19**	**86**	*e*P	**Pn**	**19 59 41.6**	**+2.6**
SMLA				*e*S	**Sn**	**20 00 51.1**	**+2.1**
SMLA				IAML		20 01 33.6	
	comp=N,633nm,0.8s						
SMLA				IAML		20 01 36.6	
	comp=E,690nm,1.0s						
NDI	**New Delhi**	**6.67**	**107**	*e*P	Pn	19 59 39.0	-6.7
NDI				*e*S	**Sn**	**20 00 55.0**	**-6.0**
DDI	**Dehra Dun**	**7.00**	**92**	*e*P	**Pn**	**19 59 52.7**	**+2.5**
DDI				*e*S	**Sn**	**20 01 11.0**	**+1.9**
BHJ	**Bhuj**	**7.60**	**182**	*e*P	**Pn**	**19 59 57.3**	**-1.2**
BHJ				*e*S	**Sn**	**20 01 21.9**	**-2.0**
BHJ				IAML		20 02 06.7	
	comp=E,81nm,0.9s						
BHJ				IAML		20 02 08.2	
	comp=N,70nm,1.2s						
BHPL	**Bhopal**	**10.10**	**137**	*e*P	**Pn**	**20 00 34.2**	**+1.4**
BHPL				*e*S	**Sn**	**20 02 22.6**	**-2.8**
BHPL				IAML		20 03 42.6	
	comp=E,125nm,1.4s						
BHPL				IAML		20 03 44.2	
	comp=N,99nm,0.8s						
PYUN	**Piuthan**	**11.68**	**100**	*e*P	**Pn**	**20 00 54.9**	**+0.3**
	comp=N,45nm,0.5s						
GEYT	**Alibeck**	**12.04**	**309**	Pn	**Pn**	**20 01 01.5**	**+2.2**
	comp=N,0.3nm,0.3s,baz=118,slow=12,SNR=4.8						
GEYT				LR	LR	20 06 36.7	
	comp=N,308nm,19.4s,baz=60,slow=43						
KKAR	**Karatay Array**	**12.21**	**2**	*e*P	**Pn**	**20 00 59.3**	**-2.3**
KKAR				pmax	pmax		
	comp=Z,9.0nm,0.5s						
KKAR	**Karatay Array**	**12.21**	**2**	*e*Pn	**Pn**	**20 00 59.3**	**-2.3**
	comp=Z,8.9nm,0.5s						
AAK	**Ala-Archa**	**12.28**	**16**	Pn	**Pn**	**20 01 01.5**	**-1.2**
	comp=Z,2.5nm,0.3s,baz=189,slow=11,SNR=11						
AAK				Sn	**Sn**	**20 03 14.0**	**-4.9**
	comp=Z,0.3nm,0.3s,baz=0.0,slow=20,SNR=2.3						
AAK				LR	LR	20 06 22.0	
	comp=Z,498nm,19.8s,baz=202,slow=40						
KOLN	**Koldanda**	**12.29**	**101**	*e*P	**Pn**	**20 01 03.4**	**+0.4**
	comp=Z,36nm,0.5s						
KOLN				*e*S	**Sn**	**20 03 17.5**	**-1.9**
FRU	**Bishkek**	**12.50**	**16**	*e*P	**Pn**	**20 01 03.0**	**-2.5**
FRU				*e*S	**Sn**	**20 03 21.0**	**-3.0**
FRU				smax	smax		
	comp=E,80nm,1.9s						
WSAR	**Wadi Sarin**	**12.64**	**236**	Pn	**Pn**	**20 01 06.3**	**-1.2**
	comp=E,0.6nm,0.3s,baz=106,slow=7.1,SNR=10						
WSAR				Sn	Sn	20 03 13.2	-14
	comp=E,0.8nm,0.3s,baz=290,slow=17,SNR=7.4						
WSAR				LR	LR	20 07 18.5	
	comp=E,115nm,21.0s,baz=81,slow=44						
GKN	**Gorkha**	**13.10**	**99**	*e*P	**Pn**	**20 01 13.4**	**-0.6**
	comp=E,30nm,0.4s						
KKN	**Kakani**	**13.71**	**99**	*e*P	**Pn**	**20 01 21.3**	**-1.0**
	comp=E,34nm,0.6s						
PKIN	**Phulchoki**	**13.87**	**100**	*e*P	**Pn**	**20 01 23.7**	**-0.9**
	comp=E,33nm,0.7s						
GUN	**Gumba**	**14.19**	**98**	*e*P	**Pn**	**20 01 27.9**	**-1.1**
	comp=E,152nm,0.7s						
RAMN	**Ramite**	**15.08**	**101**	*e*P	**Pn**	**20 01 39.4**	**-1.6**
	comp=E,62nm,0.7s						
LSA	**Lhasa**	**18.33**	**88**	*e*P	**P**	**20 02 24.6**	**+2.2**
LSA				pmax	pmax		
	comp=Z,8.0nm,0.8s						
LSA	**Lhasa**	**18.33**	**88**	*e*P	**P**	**20 02 24.6**	**+2.2**
	comp=Z,8.4nm,0.8s						
MKAR	**Makanchi Array**	**18.53**	**27**	P	**P**	**20 02 23.0**	**-0.9**
	comp=Z,0.3nm,0.3s,baz=208,slow=12,SNR=24						
MKAR				LR	LR	20 10 32.3	
	comp=Z,177nm,19.8s,baz=212,slow=40						
MKAR	**Makanchi Array**	**18.53**	**27**	P	**P**	**20 02 23.0**	**-0.9**
MKAR				MLR	MLR		
	comp=Z,177nm,19.8s						
ABKAR	**Akbulak array**	**19.86**	**340**	*e*P	**P**	**20 02 38.2**	**-0.2**
	comp=Z,2.7nm,0.4s						
KURBB	**Kurchatov Arra**	**20.74**	**16**	P	**P**	**20 02 46.6**	**-1.4**
	comp=Z,4.4nm,0.8s,baz=207,slow=11,SNR=33						
KURK	**Kurchatov**	**20.84**	**16**	P	**P**	**20 02 46.6**	**-2.5**
KURK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KURK	**Kurchatov**	**20.84**	**16**	*e*P	**P**	**20 02 47.1**	**-2.0**
AKTO	**Aktyubinsk**	**21.49**	**339**	P	**P**	**20 02 55.7**	**-0.3**
	comp=Z,6.7nm,0.7s,baz=114,slow=12,SNR=14						
AKTO				LR	LR	20 12 52.7	
	comp=Z,49nm,18.1s,baz=144,slow=41						
AKTO	**Aktyubinsk**	**21.49**	**339**	P	**P**	**20 02 55.7**	**-0.3**
AKTO				pmax	pmax		
	comp=Z,6.0nm,0.7s						
BVAR	**Borovoye Array**	**22.13**	**1**	P	**P**	**20 03 02.3**	**-0.7**
	comp=Z,5.7nm,0.6s,baz=161,slow=9.4,SNR=16						
BRVK	**Borovoye**	**22.17**	**1**	*e*P	**P**	**20 03

comp=Z,3.0nm,0.9s
PETK MLR MLR
comp=Z,90nm,19.6s
TORD Torodi Ar. Bea 64.82 271 P **P 20 08 46.0 -0.5**
comp=Z,0.8nm,0.8s,baz=68,slow=5.3,SNR=6.1
TORD LR LR 20 38 23.7
comp=Z,30nm,19.6s,baz=305,slow=37
GUMO Guam 70.31 86 LR LR 20 41 40.3
comp=Z,37nm,21.8s,baz=234,slow=37
DBIC Dimbokro 73.59 268 LR LR 20 44 17.2
comp=Z,63nm,19.1s,baz=35,slow=38
WRA Warramunga Arr 79.82 120 P **P 20 10 16.6 +0.7**
comp=Z,1.6nm,0.7s,baz=320,slow=5.1,SNR=12
ILAR Eielson Array 80.41 15 P **P 20 10 18.1 -0.4**
comp=Z,0.5nm,1.0s,baz=336,slow=4.2,SNR=3.3
ILAR LR LR 20 50 04.2
comp=Z,41nm,18.6s,baz=278,slow=39
ASAR Alice Springs 81.81 124 P **P 20 10 27.2 +0.7**
comp=Z,1.2nm,0.7s,baz=307,slow=5.7,SNR=26
SCHQ Schefferville 86.91 337 LR LR 20 52 59.0
comp=Z,43nm,18.0s,baz=274,slow=38

*ISCJB **18** 19:58:34.6±0.8,37.00N±0.05×142.79E±0.07, h9km, mb3.6/6, Error ellipse: s-maj=8.2km s-min=7.7km az=34.7*
*IDC **18** 19:58:35.0±1.3,37.01N×142.77E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.5/57, mbtmp3.6/8, ML3.4/1, Error ellipse: s-maj=29.6km s-min=25.0km az=103.0*
*JMA **18** 19:58:36.3±0.3,36.98N×142.66E, h12km±4km, M3.5*
ISC 18 19:58:36.3±1.0, 36.99N±0.07×142.65E±0.07, h9km, n20, σ1ş72/26, mb3.7/6, 1C, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.47**	**285**	P		**Pn**	**19 59 02.8**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.49**	**275**	P		**Pn**	**19 59 03.1**	**-0.2**
JHO	**Hitachi**	**1.71**	**258**	P		**Pn**	**19 59 06.3**	**0.0**
JMM	**Marumori**	**1.72**	**301**	P		**Pn**	**19 59 06.5**	**+0.1**
JMM				S		**Sn**	**19 59 28.3**	**-0.2**
JIO	**Ouri**	**1.79**	**325**	P		**Pn**	**19 59 07.5**	**+0.1**
JIO				*e*S		**Sn**	**19 59 30.3**	**+0.1**
JFT	**Otama**	**1.92**	**287**	P		**Pn**	**19 59 10.2**	**+1.0**
JFT				*e*S		**Sb**	**19 59 35.3**	**-0.3**
JMK	**Ichinoseki**	**2.26**	**330**	P		**Pn**	**19 59 14.7**	**+0.8**
JMK				*e*S		**Sn**	**19 59 42.7**	**+0.8**
JAG	**Ashikaga**	**2.63**	**259**	P		**Pn**	**19 59 19.9**	**+0.9**
JYK	**Kaneyama**	**2.64**	**317**	P		**Pn**	**19 59 20.1**	**+1.0**
JRY	**Ryogami san**	**3.17**	**253**	P		**Pn**	**19 59 27.2**	**+0.7**
MJAR	**Matsushiro Arr**	**3.59**	**264**	Pn		**Pn**	**19 59 34.1**	**+1.9**
MJAR	2.9nm,0.3s,baz=87,slow=16,SNR=18			Sn		**Sn**	**20 00 15.2**	**+0.4**
MAT	**Matsushiro**	**3.60**	**264**	P		**Pn**	**19 59 34.3**	**+2.0**
MAT	baz=94,slow=17,SNR=2.7			*e*S		**Sb**	**20 00 20.7**	**-3.1**
ASAJ	**Asahikawa**	**7.12**	**360**	Pn		**Pn**	**20 00 20.1**	**-0.5**
	baz=321,slow=13							
SONM	**Songino Array**	**28.63**	**304**	P		**P**	**20 04 34.6**	**+1.4**
	0.4nm,0.6s,baz=106,slow=8.4,SNR=3.5							
MKAR	**Makanchi Array**	**44.98**	**302**	P		**P**	**20 06 52.1**	**+0.3**
	0.9nm,0.8s,baz=93,slow=10,SNR=3.8							
KURBB	**Kurchatov Arra**	**46.81**	**308**	P		**P**	**20 07 06.0**	**-0.1**
	0.6nm,0.5s,baz=82,slow=8.1,SNR=3.6							
ILAR	**Eielson Array**	**49.00**	**32**	P		**P**	**20 07 23.2**	**+0.3**
	0.2nm,0.6s,baz=270,slow=4.5,SNR=3.7							
WRA	**Warramunga Arr**	**57.17**	**189**	P		**P**	**20 08 23.7**	**+0.2**
	0.7nm,1.0s,baz=6.6,slow=7.4,SNR=4.1							
NOA	**NORSAR Array B**	**74.61**	**338**	P		**P**	**20 10 15.0**	**-0.4**
	1.3nm,1.0s,baz=49,slow=7.5,SNR=2.7							
SYO	**Syowa Base**	**128.61**	**207**	*e*P		**Pdif**	**20 14 21.6**	**-6.5**

*ISCJB **18** 20:01:55.3±0.3,7.40N±0.03×73.26W±0.03, h138km±3km, mb3.6/6, Error ellipse: s-maj=6.5km s-min=3.1km az=43.9*
*FUNV **18** 20:01:55.6, 7.31N×73.48W, h132km, MW4.1*
*IDC **18** 20:01:56.4±0.6,7.43N×73.26W, h132km±6km, mb3.4/5, mb1 3.8/9, mb1mx3.5/41, mbtmp4.0/9, MS3.1/2, Ms1 3.1/2, ms1mx2.6/19, Error ellipse: s-maj=16.4km s-min=7.7km az=129.0*
*RSNC **18** 20:01:57.6±1.0,7.34N×73.35W, h124km±5km, ML4.1*
ISC 18 20:01:56.1±0.6, 7.39N±0.04×73.25W±0.04, h134km±4km, n51, σ1ş61/80, mb3.8/6, 2D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GIRC	**Giron, Santand**	**0.31**	**170**	*e*P		**Pn**	**20 02 14.7**	**-0.3**
GIRC				*e*S		**Sn**	**20 02 27.3**	**-1.9**
BTLC	**Betulia, Santa**	**0.46**	**183**	*e*P		**Pn**	**20 02 16.1**	**+0.4**
BRRC	**Barranca, Sant**	**0.54**	**239**	*i* P		**Pn**	**20 02 15.1**	**-0.7**
BRRC				*e*S		**Sn**	**20 02 28.9**	**-1.9**
BRRC				*i*			20 02 30.1	
	comp=Z,3μm,0.1s							
PAMC	**Pamplona, Colo**	**0.54**	**95**	*e*P		**Pn**	**20 02 17.1**	**+0.6**
PAMC				*e*S		**Sn**	**20 02 32.2**	**+0.5**
GUEC	**Guerrero, Nort**	**0.54**	**36**	*e*P		**Pn**	**20 02 16.8**	**+0.5**
GRMC	**Gramalote, San**	**0.55**	**53**	*e*P		**Pn**	**20 02 17.8**	**+1.7**
GRMC				*e*S		**Sn**	**20 02 33.3**	**+2.1**
GRMC				*i*			20 02 36.0	
	comp=Z,4μm,0.3s							
CBRI	**Barrientos, No**	**0.55**	**53**	*e*P		**Pn**	**20 02 17.0**	**+0.9**
CBRI				*e*S		**Sn**	**20 02 32.8**	**+1.5**
CBRI				*i*			20 02 36.8	
	comp=Z,2μm,0.5s							
BARC	**Barichara**	**0.79**	**175**	*e*P		**Pn**	**20 02 17.8**	**-0.1**
BARC				*e*S		**Sn**	**20 02 33.6**	**-0.8**
BARC				*i*			20 02 34.8	
	comp=Z,7μm,0.4s							
OCAC	**Ocana**	**0.85**	**355**	*e*P		**Pn**	**20 02 18.6**	**+0.4**
OCAC				*e*S		**Sn**	**20 02 34.6**	**-0.5**
OCAC				*i*			20 02 39.2	
	comp=Z,3μm,0.1s							
CAPV	**Capacho**	**1.04**	**63**	*e*P		**Pn**	**20 02 21.6**	**+1.6**
CAPV				*e*S		**Sn**	**20 02 39.7**	**+1.6**
RUSC	**La Rusia**	**1.49**	**174**	*e*P		**Pn**	**20 02 24.6**	**-0.4**
RUSC				*e*S		**Sn**	**20 02 45.6**	**-1.3**
RUSC				*i*			20 02 48.4	
	comp=Z,602nm,0.4s							
VIGV	**El Vigia**	**2.36**	**52**	*e*P		**Pn**	**20 02 36.5**	**+1.7**
VIGV				*e*S		**Sn**	**20 03 06.2**	**+1.7**
NORC	**Norcasia**	**2.42**	**222**	*e*P		**Pn**	**20 02 34.5**	**-1.1**
NORC				*e*S		**Sn**	**20 03 03.5**	**-2.5**
SOCV	**Socops**	**2.53**	**69**	*e*P		**Pn**	**20 02 38.3**	**+1.4**
SOCV				*e*S		**Sn**	**20 03 10.2**	**+2.0**
HELC	**Santa Helena**	**2.56**	**243**	*e*P		**Pn**	**20 02 37.1**	**-0.6**
HELC				*e*S		**Sn**	**20 03 07.2**	**-2.2**
ROSC	**El Rosal**	**2.75**	**203**	P		**Pn**	**20 02 41.8**	**+1.7**
	comp=Z,19nm,0.3s,baz=62,slow=5.4,SNR=30							
ROSC				S		**Sn**	**20 03 15.9**	**+2.1**
	comp=Z,40nm,0.3s,baz=18,slow=18,SNR=9.8							
CHIC	**Chingaza**	**2.78**	**190**	*e*P		**Pn**	**20 02 40.6**	**+0.1**
CHIC				*i*			20 03 22.0	
	comp=Z,507nm,0.5s							
DBBC	**Dabeiba**	**2.96**	**263**	*e*P		**Pn**	**20 02 42.1**	**-0.4**
SDV	**Santo Domingo**	**2.98**	**60**	P		**Pn**	**20 02 44.6**	**+1.7**
	comp=Z,24nm,0.3s,baz=209,slow=6.5,SNR=113							
SDV				S		**Sn**	**20 03 19.4**	**+0.5**
	comp=Z,52nm,0.3s,baz=50,slow=17,SNR=18							
SDV	**Santo Domingo**	**2.98**	**60**	*e*P		**Pn**	**20 02 44.6**	**+1.7**
SDV				*i*			20 03 24.0	
	comp=Z,302nm,0.4s							
SDV	**Santo Domingo**	**2.98**	**60**	*e*P		**Pn**	**20 02 44.1**	**+1.2**
GUYC	**Guyana, Colomb**	**3.03**	**225**	*e*S		**Sn**	**20 03 19.4**	**-0.9**
GUYC				*i*			20 03 30.9	
	comp=Z,2μm,0.5s							
SJCC	**San Jacinto, C**	**3.14**	**323**	*e*P		**Pn**	**20 02 44.2**	**-0.6**
SJCC				*i*			20 03 21.2	
	comp=Z,262nm,0.4s							
VIRV	**Villa del Rosa**	**3.21**	**15**	⇓*i* P		**Pn**	**20 02 45.6**	**0.0**
VIRV				*e*S		**Sn**	**20 03 21.8**	**-2.1**
VILC	**Villavicencio,**	**3.28**	**188**	*e*P		**Pn**	**20 02 47.5**	**+0.8**
VILC				*i*			20 03 42.8	
	comp=Z,446nm,0.5s							
QARV	**Quebrada Arrib**	**3.88**	**44**	*e*S		**Sn**	**20 03 39.8**	**0.0**
PRAC	**Prado**	**4.00**	**204**	*e*P		**Pn**	**20 02 55.6**	**-0.5**
PRAC				*i*			20 03 51.6	
	comp=Z,1μm,0.3s							
SJAC	**San Juan de Ar**	**4.14**	**190**	*e*P		**Pn**	**20 02 58.0**	**-0.1**
CURV	**Curarigua**	**4.17**	**51**	*e*P		**Pn**	**20 02 59.2**	**+0.9**
CURV				*e*S		**Sn**	**20 03 46.0**	**-0.5**
SANV	**Sanarito**	**4.23**	**60**	⇓*i* P		**Pn**	**20 03 00.1**	**+0.9**
SANV				*e*S		**Sn**	**20 03 48.4**	**+0.3**
DABV	**Dabajuro**	**4.36**	**36**	*e*P		**Pn**	**20 03 02.0**	**+1.2**
DABV				*e*S		**Sn**	**20 03 50.4**	**-0.6**
SIQV	**Siquisique**	**4.70**	**46**	*e*P		**Pn**	**20 03 05.4**	**+0.1**
SIQV				*e*S		**Sn**	**20 03 57.3**	**-1.8**
BAUV	**El Baul**	**5.38**	**73**	*e*P		**Pn**	**20 03 14.2**	**-0.2**
BAUV				*e*S		**Sn**	**20 04 13.6**	**-1.8**
MONV	**Montecano**	**5.57**	**35**	*e*P		**Pn**	**20 03 17.2**	**+0.2**
MONV				*e*S		**Sn**	**20 04 17.9**	**-2.1**
PAYV	**Puerto Ayacuch**	**5.89**	**109**	*e*P		**Pn**	**20 03 21.6**	**+0.4**
PAYV				*e*S		**Sn**	**20 04 24.4**	**-3.2**
TURV	**Turiamo**	**6.15**	**60**	*e*P		**Pn**	**20 03 25.2**	**+0.5**
TURV				*e*S		**Sn**	**20 04 31.7**	**-2.1**
BIRV	**Birongo**	**7.54**	**65**	*e*P		**Pn**	**20 03 43.3**	**-0.3**
BIRV				*e*S		**Sn**	**20 05 02.9**	**-4.8**
PCRV	**Puerto La Cruz**	**8.95**	**71**	P		**Pn**	**20 04 03.1**	**+0.6**
	comp=Z,1.3nm,0.3s,baz=332,slow=0.7,SNR=6.5							
PCRV				S		**Sn**	**20 05 39.8**	**-1.9**
	comp=Z,1.1nm,0.3s,baz=144,slow=22,SNR=6.9							
PCRV	**Puerto La Cruz**	**8.95**	**71**	*e*P		**Pn**	**20 04 02.0**	**-0.4**
ATAH	**Atahualpa**	**15.31**	**200**	P		**P**	**20 05 28.3**	**+0.8**
	comp=Z,0.6nm,0.3s,baz=27,slow=4.5,SNR=4.8							
ATAH				LR		LR	20 11 58.7	
	comp=Z,46nm,20.5s,baz=69,slow=39							
PTGA	**Pitinga**	**15.51**	**121**	P		**P**	**20 05 31.7**	**+2.4**
	comp=Z,0.4nm,0.3s,baz=296,slow=13,SNR=22							
PTGA				S		**Sn**	**20 08 13.1**	**-6.9**
	comp=Z,1.0nm,0.3s,baz=358,slow=19,SNR=7.3							
CMIG	**Matias Romero**	**23.22**	**297**	LR		LR	20 17 49.2	
	comp=Z,68nm,19.7s,baz=205,slow=41							
LPAZ	**La Paz**	**24.06**	**168**	P		**P**	**20 07 00.5**	**+0.6**
	comp=Z,1.6nm,0.6s,baz=335,slow=12,SNR=9.0							
TXAR	**Lajitas Array**	**36.00**	**311**	P		**P**	**20 08 45.0**	**+0.5**
	comp=Z,0.5nm,0.7s,baz=120,slow=8.8,SNR=4.0							
PDAR	**Pinedale Array**	**47.55**	**324**	P		**P**	**20 10 19.8**	**+1.3**
	comp=Z,0.9nm,1.0s,baz=110,slow=6.9,SNR=3.9							
PLCA	**Paso Flores**	**47.94**	**177**	P		**P**	**20 10 20.7**	**-0.6**
	comp=Z,1.7nm,0.8s,baz=338,slow=5.1,SNR=4.4							
YKA	**Yellowknife Ar**	**62.70**	**340**	P		**P**	**20 12 06.9**	**+0.4**
	comp=Z,0.9nm,0.6s,baz=140,slow=6.1,SNR=3.1							
NB2	**NORSAR Subarra**	**80.90**	**29**	P		**P**	**20 13 56.2**	**+0.9**
	comp=Z,2.0nm,0.9s,baz=270,slow=5.6							
ASAR	**Alice Springs**	**149.33**	**235**	PKPbc		**PKPbc**	**20 21 29.4**	**-0.8**
	comp=Z,0.7nm,0.8s,baz=117,slow=2.7,SNR=14							
ASAR				pPKPbc		**pPKPbc**	**20 22 03.6**	**-2.2**
	comp=Z,0.9nm,0.8s,baz=115,slow=3.2,SNR=3.6							
WRA	**Warramunga Arr**	**150.49**	**242**	PKPbc		**PKPbc**	**20 21 32.6**	**-0.4**
	comp=Z,0.8nm,0.4s,baz=108,slow=2.6,SNR=13							
WRA				pPKPbc		**pPKPbc**	**20 22 07.1**	**-1.6**
	comp=Z,0.8nm,0.6s,baz=108,slow=2.7,SNR=2.8							
CMAR	**Chiang Mai Arr**	**153.19**	**17**	PKPbc		**PKPbc**	**20 21 40.1**	**+0.9**
	comp=Z,0.5nm,0.7s,baz=310,slow=3.2,SNR=4.5							
CMAR				pPKPbc		**pPKPbc**	**20 22 14.9**	**0.0**
	comp=Z,1.3nm,0.9s,baz=321,slow=3.1,SNR=4.6							

*ATH **18** 20:04:35.3,38.38N±21.93E, h15km±2km, ML1.6/6, Error ellipse: s-maj=3.0km s-min=0.8km az=63.0*
*CSEM **18** 20:04:35.2±0.1,38.39N×21.94E, h0km, ML1.6, Error ellipse: s-maj=2.7km s-min=2.1km az=66.0*
THE 18 20:04:35.3,38.39N×21.94E, h14km±1km, ML1.7/11, Error ellipse: s-maj=1.5km s-min=0.5km az=62.0, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SERG	**Sergoula**	**0.10**	**76**	P		Pg	20 04 38.3	-0.2
SERG				S		Sg	20 04 40.8	+0.2
SERG	**Sergoula**	**0.10**	**76**	P		Pg	20 04 38.3	-0.2
SERG				S		Sg	20 04 40.8	+0.2
TRIZ	**Trizonia**	**0.11**	**103**	P		Pg	20 04 38.5	-0.1
TRIZ				S		Sg	20 04 41.2	+0.4
LAKA	**Lakka**	**0.15**	**167**	P		Pg	20 04 39.0	-0.2
LAKA	**Lakka**	**0.15**	**167**	P		Pg	20 04 38.8	-0.4
LAKA	**Lakka**	**0.15**	**167**	P		Pg	20 04 38.8	-0.4
KALE	**Kalithea**	**0.16**	**90**	P		Pg	20 04 39.4	+0.1
KALE				S		Sb	20 04 42.8	-0.5
KALE	**Kalithea**	**0.16**	**90**	P		Pg	20 04 39.4	+0.1
KALE				S		Sb	20 04 42.8	-0.5
KALE	**Kalithea**	**0.16**	**90**	P		Pg	20 04 39.4	+0.1
KALE				AML	AML		20 04 43.0	
	comp=N,476μm,0.3s							
KALE				AML	AML		20 04 43.1	
	comp=E,242μm,0.2s							
KALE				S		Sb	20 04 43.3	0.0
ANX	**Ano Chora**	**0.20**	**357**	P		Sg	20 04 39.5	-0.5
ANX				S		Sg	20 04 43.0	-0.2
ANX	**Ano Chora**	**0.20**	**357**	P		Sg	20 04 39.5	-0.5
ANX				S		Sg	20 04 43.0	-0.2
ANX	**Ano Chora**	**0.20**	**357**	S		Sg	20 04 42.4	-0.8
ANX				AML	AML		20 04 43.6	
	comp=N,1215μm,0.3s							
ANX				AML	AML		20 04 45.1	
	comp=E,691μm,0.3s							
KLV	**Kalavryta, Ach**	**0.39**	**154**	P		Pg	20 04 42.9	-0.2
KLV				S		Sb	20 04 49.1	-0.6
KLV	**Kalavryta, Ach**	**0.39**	**154**	P		Pg	20 04 43.0	-0.1
KLV				S		Sg	20 04 48.2	-0.2
KLV	**Kalavryta, Ach**	**0.39**	**154**	S		Sg	20 04 48.2	-0.2
KLV				S		Sg	20 04 48.8	+0.2
PVO	**Paravola**	**0.39**	**305**	P		Pg	20 04 42.6	-0.6
PVO				S		Sg	20 04 48.8	+0.2
PVO	**Paravola**	**0.39**	**305**	P		Pg	20 04 42.6	-0.6
PVO				S		Sg	20 04 48.8	+0.2
PVO	**Paravola**	**0.39**	**305**	P		Pg	20 04 42.1	-1.2
PVO				S		Sb	20 04 50.0	+0.1
DSF	**Desfina**	**0.47**	**87**	P		Pg	20 04 44.7	+0.1
DSF				S		Sb	20 04 51.5	-0.6
DSF	**Desfina**	**0.47**	**87**	P		Pg	20 04 44.8	+0.2
DSF				S		Sb	20 04 51.5	-0.6
DSF	**Desfina**	**0.47**	**87**	P		Pg	20 04 44.8	+0.2
DSF				S		Sb	20 04 52.7	+0.6
DRO	**Drossia**	**0.47**	**202**	P		Pg	20 04 44.3	-0.4
DRO				S		Sb	20 04 52.1	-0.1
DRO	**Drossia**	**0.47**	**202**	P		Pg	20 04 44.3	-0.4
DRO				S		Sg	20 04 51.2	+0.2
DRO	**Drossia**	**0.47**	**202**	P		Pg	20 04 44.1	-0.6
DRO				S		Sg	20 04 51.2	+0.2
DRO				AML	AML		20 04 52.2	
	comp=N,199μm,0.2s							
DRO				AML	AML		20 04 53.3	
	comp=E,277μm,0.2s							
EVR	**Evrytania**	**0.54**	**349**	P		Pg	20 04 45.4	-0.5
EVR				S		Sb	20 04 54.2	+0.1
EVR	**Evrytania**	**0.54**	**349**	P		Pg	20 04 45.4	-0.5
EVR				S		Sb	20 04 54.2	+0.1
EVR	**Evrytania**	**0.54**	**349**	P		Pg	20 04 45.0	-0.9
EVR				S		Sb	20 04 54.6	+0.5
EVR				AML	AML		20 04 55.0	
	comp=N,220μm,0.3s							
GUR	**Goura**	**0.56**	**145**	P		Pg	20 04 45.9	-0.4
GUR				S		Sg	20 04 53.8	+0.1
GUR	**Goura**	**0.56**	**145**	P		Pg	20 04 45.9	-0.4
GUR				S		Sg	20 04 53.8	+0.1
GUR	**Goura**	**0.56**	**145**	P		Pg	20 04 45.8	-0.5
GUR				S		Sg	20 04 54.0	+0.3
GUR				AML	AML		20 04 55.8	
	comp=N,105μm,0.3s							
GUR				AML	AML		20 04 59.0	
	comp=E,77μm,0.2s							
PDO	**Prodromos**	**0.63**	**290**	P		Pg	20 04 47.5	-0.1
PDO				S		Sb	20 04 57.3	+0.7
PDO	**Prodromos**	**0.63**	**290**	P		Pg	20 04 47.6	0.0
PDO				S		Sb	20 04 57.2	+0.6
PDO	**Prodromos**	**0.63**	**290**	P		Pg	20 04 47.6	0.0
PDO				S		Sb	20 04 57.2	+0.6
PDO				AML	AML		20 04 57.8	
	comp=N,87μm,0.3s							
PDO				AML	AML		20 05 00.3	
	comp=E,66μm,0.4s							
AGG	**Agios Georgios**	**0.70**	**26**	P		Pg	20 04 48.3	-0.7
AGG				S		Sb	20 04 59.6	+0.7
AGG	**Agios Georgios**	**0.70**	**26**	P		Pg	20 04 48.3	-0.7
AGG				S		Sb	20 04 59.6	+0.7
AMT	**Artemida-Makis**	**0.88**	**192**	P		Pg	20 04 52.0	-0.3
AMT	**Artemida-Makis**	**0.88**	**192**	P		Pb	20 04 52.3	0.0
AMT	**Artemida-Makis**	**0.88**	**192**	P		Pb	20 04 52.3	0.0

*IDC **18** 20:14:17.7±1.1, 13.44N×124.47E, h0km, mb3.6/7, mb1 3.7/7, mb1mx3.5/49, mbtmp3.6/7, Error ellipse: s-maj=63.9km s-min=17.6km az=64.0*
*MAN **18** 20:14:20, 13.69N×124.72E, h106km, mb5.0, ML4.0, MS4.1*
ISC 18 20:14:21.9±1.0, 13.41N±0.10×124.5E±0.1, h31km, n16, σ0ş84/11, mb3.7/7, 1C-2D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GQP	**Guinayangan**	**2.04**	**284**	⇓*e*P		**Pb**	**20 14 57.2**	**-1.2**
PLP	**Palo**	**2.28**	**168**	⇑*e*P		**Pb**	**20 15 01.1**	**-1.4**
RCP	**Roxas**	**2.51**	**223**	⇓*e*P		**Pb**	**20 15 06.1**	**-0.2**
CMAR	**Chiang Mai Arr**	**25.06**	**285**	P		**P**	**20 19 43.8**	**0.0**
	0.5nm,0.6s,baz=104,slow=8.2,SNR=4.3							
WRA	**Warramunga Arr**	**34.53**	**164**	P		**P**	**20 21 08.4**	**+0.7**
	0.2nm,0.3s,baz=347,slow=7.9,SNR=6.5							
SONM	**Songino Array**	**37.49**	**340**	P		**P**	**20 21 32.7**	**-0.1**
	0.3nm,0.7s,baz=155,slow=7.9,SNR=2.4							
ASAR	**Alice Springs**	**37.98**	**166**	P		**P**	**20 21 37.9**	**+0.7**
	0.6nm,0.3s,baz=340,slow=7.1,SNR=35							
ASAR				PcP		**PcP**	**20 23 52.7**	**+0.1**
	0.3nm,0.5s,baz=342,slow=3.5,SNR=3.5							
H11S3	**WAKE ISLAND Hy**	**40.82**	**77**	T		T	21 05 31.2	
	baz=269,slow=75,SNR=73							
H11S1	**WAKE ISLAND Hy**	**40.83**	**77**	T		T	21 05 28.0	
	baz=269,slow=75,SNR=51							
H11S2	**WAKE ISLAND Hy**	**40.84**	**77**	T		T	21 05 29.1	
	baz=269,slow=75,SNR=78							
H11N1	**WAKE ISLAND Hy**	**41.04**	**75**	T		T	21 05 40.2	
	baz=268,slow=74,SNR=112							
H11N2	**WAKE ISLAND Hy**	**41.05**	**75**	T		T	21 05 41.9	
	baz=268,slow=74,SNR=92							
H11N3	**WAKE ISLAND Hy**	**41.06**	**75**	T		T	21 05 42.7	
	baz=268,slow=74,SNR=113							
MKAR	**Makanchi Array**	**48.49**	**322**	P		**P**	**20 23 01.3**	**-0.5**
	1.0nm,0.9s,baz=119,slow=7.5,SNR=5.2							
KURBB	**Kurchatov Arra**	**52.51**	**325**	P		**P**	**20 23 32.8**	**+0.7**
	1.7nm,0.7s,baz=122,slow=7.8,SNR=12							
BVAR	**Borovoye Array**	**58.11**	**325**	P		**P**	**20 24 12.9**	**+0.5**
	0.3nm,0.4s,baz=94,slow=6.2,SNR=3.4							

*CSEM **18** 20:14:53.7,41.47N×43.99E, h0km, ML1.7*
TIF 18 20:14:53.7,41.47N×43.99E, h8km, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BGD	**Bogdanovka**	**0.36**	**235**	P		Pg	20 15 01.0	+0.2
BGD				S		Sg	20 15 06.3	+0.7
BGD	**Bogdanovka**	**0.36**	**235**	P		Pg	20 15 01.0	+0.2
BGD				S		Sg	20 15 06.3	+0.7
AKH	**Akhalkalaki**	**0.38**	**261**	P		Pg	20 15 01.4	+0.2
AKH				S		Sg	20 15 07.0	+0.8
AKH	**Akhalkalaki**	**0.38**	**261**	P		Pg	20 15 01.3	+0.1
AKH				S		Sg	20 15 07.0	+0.8
TBLG	**Delisi**	**0.62**	**65**	P		Pb	20 15 06.8	0.0
TBLG				S		Sb	20 15 15.7	0.0
TBLG	**Delisi**	**0.62**	**65**	P		Pb	20 15 06.8	0.0
TBLG				S		Sb	20 15 15.7	0.0
GUDG	**Gudauri**	**1.06**	**20**	P		Pn	20 15 15.5	+0.5
GUDG	**Gudauri**	**1.06**	**20**	P		Pn	20 15 15.5	+0.5
ONI	**Oni**	**1.19**	**341**	P		Sn	20 15 34.1	+1.0
ONI	**Oni**	**1.19**	**341**	P		Pn	20 15 17.4	+0.7
ONI				S		Sn	20 15 34.3	+1.2

MEX 18 20:16:09.8±0.5, 14.54N×93.42W, h16km±230km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.13**	**35**	*i* P		Pn	20 16 42.2	-2.7
CCIG				*i* S		Sn	20 17 06.4	-4.8

*NIED **18** 20:22:00,34.70N×138.70E, h14km, Mw3.8 Best double couple: M0 4.99000×10^14 NP1:φs320.00000°, δ80.00000°, λ170.00000°. NP2:φs52.00000°, δ80.00000°, λ10.00000°.*
*IDC **18** 20:22:39.6±1.1,34.56N×138.51E, h0km, mb3.5/4, mb1 3.6/4, mb1mx3.3/46, mbtmp3.5/4, Error ellipse: s-maj=31.2km s-min=15.5km az=59.0*
*ISCJB **18** 20:22:41.2±0.6,34.64N±0.02×138.66E±0.03, h12km±4km, mb3.3/4, Error ellipse: s-maj=4.7km s-min=3.9km az=151.5*
*JMA **18** 20:22:42.0,34.68N×138.69E, h13km±1km, M4.0 Broadband fault plane solution: P waves. NP1: φs241.00000°, δ82.00000°, λ-9.00000°. NP2:φs333.00000°, δ81.00000°, λ-172.00000°. Principal axes: T Plg1.0000°, Azm287.0000°; N Plg78.0000°, Azm22.0000°; P Plg12.0000°, Azm197.0000°;*
JMA Felt III J1.
ISC 18 20:22:41.0±1.0, 34.64N±0.03×138.63E±0.04, h11km±8km, n24, σ0ş52/30, mb3.3/4, 4C-3D, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIZS	**Izushimoda**	**0.21**	**69**	⇑P		**Pg**	**20 22 45.8**	**+0.2**
JIZS				S		**Sg**	**20 22 48.4**

ECBX	**El Chinero**	0.44	215	⇓	*eP*		**Pn**	**20 40 43.9 -1.7**
ECBX					*eS*		**Sb**	**20 40 50.8 +1.1**
MBIG	**Mexicali**	0.69	327		*i* P		**Pn**	**20 40 46.9 -2.0**
MBIG					*i* S		**Sg**	**20 40 55.1 +0.7**
MBIG	**Mexicali**	0.69	327	⇓	*eP*		**Pn**	**20 40 47.0 -1.9**
MBIG					*eS*		**Sn**	**20 40 57.5 -2.5**
MBIG	**Mexicali**	0.69	327	⇓	*eP*		**Pn**	**20 40 47.0 -1.9**
MBIG					*eS*		**Sn**	**20 40 57.5 -2.5**
YMD	**Yuma Desert**	0.74	14	⇓	*iP*		**Pn**	**20 40 47.6 -2.1**
CPBX	**Cerro Prieto**	0.75	322	⇓	*eP*		**Pn**	**20 40 47.8 -2.0**
CPBX					*eS*		**Sn**	**20 40 59.1 -2.5**
CPBX	**Cerro Prieto**	0.75	322		*eP*		**Pg**	**20 40 47.5 +0.8**
CPBX					*i* S		**Sb**	**20 40 54.7 -3.9**
EMSC	**East Mesa**	0.93	348	⇓	*iP*		**Pn**	**20 40 50.3 -1.9**
SPX	**San Pedro Mart**	0.99	218		*eP*		**Pb**	**20 40 52.1 -0.3**
SPX					*eS*		**Sn**	**20 41 06.7 -1.4**
SPX				⇑	*e*			20 41 09.2
SPX					IAML			20 41 09.2
	comp=N,5μm,0.3s							
SPX	**San Pedro Mart**	0.99	218		*i* P		**Pn**	**20 40 52.4 -1.1**
SPX					*i* S		**Sb**	**20 41 04.8 -1.1**
DREC	**Desert Rsrch C**	1.13	329		*eP*		**Pn**	**20 40 53.4 -1.7**
RUN	**Ruthven**	1.15	351	⇓	*iP*		**Pn**	**20 40 53.1 -2.2**
SGL	**Mount Signal**	1.16	315	⇓	*iP*		**Pn**	**20 40 53.1 -2.3**
GLA	**Glamis**	1.22	357		P		**Pn**	**20 40 54.3 -2.0**
	baz=177,SNR=1000							
GLA	**Glamis**	1.22	357	⇓	*iP*		**Pn**	**20 40 54.3 -2.0**
WESC	**Westside Schoo**	1.24	318	⇓	*eP*		**Pg**	**20 40 56.3 +0.1**
ZAX	**El Zacaton**	1.33	257	⇓	*eP*		**Pn**	**20 40 57.0 -1.0**
RMX	**La Rumorosa**	1.36	305		*eP*		**Pn**	**20 40 56.1 -2.2**
RMX					IAML			20 41 16.9
	comp=E,4μm,0.2s							
RMX				⇓	*e*			20 41 16.9
IKP	**In-Ko-Pah, Jac**	1.41	306		P		**Pn**	**20 40 57.3 -1.7**
	baz=123,SNR=275							
IKP					S		**Sb**	**20 41 17.4 -0.3**
	baz=123							
IKP	**In-Ko-Pah, Jac**	1.41	306	⇓	*eP*		**Pn**	**20 40 57.3 -1.7**
SWSC	**Sam W. Stewart**	1.42	322		P		**Pn**	**20 40 56.6 -2.4**
	baz=140,SNR=72							
ECNX	**Esteban Cantu**	1.58	264	⇑	*eP*		**Pn**	**20 41 00.3 -1.0**
ECNX				⇑	*eP*		**Pb**	**20 41 00.6 -1.7**
214A	**Organ Pipe Nat**	1.66	85		P		**Pb**	**20 41 01.4 -2.2**
	baz=268,SNR=673							
214A	**Organ Pipe Nat**	1.66	85		*e*Pn		**Pb**	**20 41 01.3 -2.2**
PBX	**Punta Banda**	1.68	267	⇑	*eP*		**Pn**	**20 41 01.6 -1.0**
CBX	**Cerro Bola**	1.69	287		*eP*		**Pn**	**20 41 02.0 -0.9**
CBX					*i* S		**Sn**	**20 41 20.9 -4.1**
CBX	**Cerro Bola**	1.69	287	⇑	*eP*		**Pn**	**20 41 02.0 -0.9**
CBX					*eS*		**Sn**	**20 41 23.4 -1.6**
CBX					IAML			20 41 27.7
	comp=N,8μm,0.4s							
CBX	**Cerro Bola**	1.69	287		*eP*		**Pn**	**20 41 02.0 -0.9**
CBX					*i* S		**Sn**	**20 41 20.9 -4.1**
TJIG	**Tijuana**	1.74	291		*i* P		**Pn**	**20 41 02.2 -1.1**
TJIG					*i* S		**Sn**	**20 41 22.2 -3.8**
TJIG	**Tijuana**	1.74	291	⇑	*eP*		**Pn**	**20 41 02.4 -1.1**
MONP2	**Monument Peak**	1.76	307		P		**Pn**	**20 41 02.5 -1.4**
	baz=125,SNR=170							
MONP2					Sb		**Sb**	**20 41 28.0 -0.1**
	baz=125							
BAR	**Barrett**	1.83	298	⇑	*eP*		**Pn**	**20 41 03.6 -1.1**
BC3	**Big Chuckawall**	1.91	342		P		**Pn**	**20 41 04.3 -1.6**
	baz=161,SNR=182							
Y12C	**Blythe**	1.92	6		P		**Pn**	**20 41 04.7 -1.3**
	baz=186,SNR=215							
SDRC	**San Diego Road**	2.06	296	⇑	*eP*		**Pn**	**20 41 06.9 -1.0**
109C	**Camp Elliot, M**	2.25	299		P		**Pn**	**20 41 09.8 -0.7**
	baz=116,SNR=69							
109C					Sb		**Sb**	**20 41 42.4 +0.5**
	baz=116							
I57US	**PINON FLAT INF**	2.27	321		*i*			20 52 00.0
	baz=141,slow=319,SNR=0.3							
TPFO	**Pinon Flats**	2.28	321		P		**Pn**	**20 41 09.0 -2.0**
	baz=140,SNR=63							
PFO	**Pinyon Flats O**	2.28	321		Pn		**Pn**	**20 41 09.7 -1.3**
	comp=N,3.9nm,0.3s,baz=139,slow=12,SNR=34							
PFO					LR		LR	20 41 44.3
	comp=N,69nm,21.4s,baz=124,slow=32							
PFO	**Pinyon Flats O**	2.28	321		P		**Pn**	**20 41 09.1 -1.9**
	baz=140,SNR=53							
PFO	**Pinyon Flats O**	2.28	321		*e*Pn		**Pb**	**20 41 14.4 +0.1**
IRM	**Iron Mountain**	2.34	352		P		**Pn**	**20 41 10.3 -1.5**
	baz=172,SNR=82							
BELC	**Belle Mtn. Jos**	2.40	335		P		**Pn**	**20 41 11.0 -1.7**
	baz=153,SNR=24							
PDMCI	**Parker Dam,Lak**	2.52	12		P		**Pn**	**20 41 13.3 -0.9**
	baz=192,SNR=83							
PDMCI					Sb		**Sg**	**20 41 50.8 -2.5**
	baz=192							
MURC	**Murrieta**	2.71	311		P		**Pn**	**20 41 15.5 -1.3**
	baz=129,SNR=11							
NEE2	**Needles Airpor**	2.93	2		P		**Pn**	**20 41 19.1 -0.7**
	baz=182,SNR=21							
GMRC	**Granite Mounta**	3.04	346		P		**Pn**	**20 41 20.1 -1.3**
	baz=165,SNR=49							
HEC	**Hector,Ludlow**	3.27	337		P		**Pn**	**20 41 22.9 -1.6**
	baz=155							
TUC	**Tucson**	3.40	81		P		**Pn**	**20 41 25.1 -1.3**
	baz=264							
TUC	**Tucson**	3.40	81		*e*Pn		**Pn**	**20 41 24.8 -1.7**
SCI2	**San Clemente I**	3.41	291		Sb		**Sb**	**20 42 16.8 +1.7**
	baz=108							
BFSC	**Mount Baldy Ra**	3.42	315		Sb		**Sb**	**20 42 18.4 +2.7**
	baz=133							
CIS	**Catalina Islan**	3.46	298		P		**Pn**	**20 41 26.2 -0.9**
	baz=115,SNR=13							
CIS					Sb		**Sb**	**20 42 18.7 +1.9**
	baz=115							
FMP	**Fort Macarthur**	3.52	303		Sb		**Sb**	**20 42 20.7 +2.2**
	baz=121							
RRX	**Edison Barstow**	3.57	329		S		**Sn**	**20 42 10.5 -0.7**
	baz=147							
PASC	**Pasadena Art C**	3.71	310		*e*Pn		**Pb**	**20 41 39.3 +0.8**
TUQ	**Turquoise Moun**	3.72	345		P		**Pn**	**20 41 29.7 -1.2**
	baz=164,SNR=16							
DECC	**Green Verdugo**	3.85	310		Sb		**Sb**	**20 42 31.0 +2.9**
	baz=127							
OSI	**Osito Audit: C**	4.33	311		Sb		**Sb**	**20 42 43.9 +2.1**
	baz=128							
WUAZ	**Wupatki**	4.63	37		S		**Sn**	**20 42 37.3 -0.4**
	baz=219							
WUAZ	**Wupatki**	4.63	37		*e*Pn		**Pn**	**20 41 44.2 +0.8**
DAC	**Darwin (Calif)**	5.02	333		*e*Pn		**Pn**	**20 41 48.0 -0.7**
TPNV	**Topopah Spring**	5.25	347		P		**Pn**	**20 41 51.4 -0.5**
	baz=166							
W18A	**Petrified Fore**	5.32	51		P		**Pn**	**20 41 53.8 +0.9**
	baz=234							
W18A					S		**Sn**	**20 42 53.3 -1.5**
	baz=234							
W18A	**Petrified Fore**	5.32	51		*e*Pn		**Pn**	**20 41 54.1 +1.3**
	comp=N,55nm,0.5s							
121A	**Cookes Peak, D**	5.95	81		P		**Pn**	**20 42 01.5 0.0**
	baz=266							
121A					S		**Sn**	**20 43 08.0 -2.3**
	baz=266							
121A	**Cookes Peak, D**	5.95	81		*e*Pn		**Pn**	**20 42 01.5 0.0**
	comp=N,34nm,0.6s							
R11A	**Troy Canyon, C**	6.54	354		P		**Pn**	**20 42 10.1 +0.6**
	baz=174,SNR=9.6							
R11A	**Troy Canyon, C**	6.54	354		*e*Pn		**Pn**	**20 42 09.7 +0.1**
	comp=N,16nm,0.6s							
MVCO	**Mesa Verde**	7.44	42		*e*Pn		**Pn**	**20 42 23.4 +1.3**
	comp=N,27nm,0.6s							
MNTX	**Cornudas Mount**	7.98	88		*e*Pn		**Pn**	**20 42 30.2 +0.9**
	comp=N,4.2nm,0.4s							
PV04	**Paradox Valley**	8.11	35		*e*Pn		Pn	20 42 34.5 +3.4
TXAR	**Lajitas Array**	9.88	102		Pn		**Pn**	**20 42 57.0 +1.7**
	comp=N,2.9nm,0.3s,baz=275,slow=14,SNR=90							
TXAR					Sn		**Sn**	**20 44 48.6 +1.9**
	comp=N,0.3nm,0.3s,baz=278,slow=25,SNR=3.3							
TXAR					Lg		Lg	20 45 45.4
	comp=N,0.2nm,0.3s,baz=272,slow=28,SNR=5.3							
TXAR					LR		LR	20 47 03.5
	comp=N,85nm,19.8s,baz=0.0,slow=40							
MFID	**Camas Ranch**	11.59	356		*e*Pn		Pn	20 43 23.6 +4.8
	comp=N,4.9nm,0.9s							
PDAR	**Pinedale Array**	11.67	19		Pn		Pn	20 43 23.1 +3.1
	comp=N,0.1nm,0.3s,baz=184,slow=13,SNR=3.3							
PDAR					Lg		Lg	20 46 38.8
	baz=196,slow=25,SNR=2.9							
PDAR					LR		LR	20 48 05.5
	comp=N,149nm,20.1s,baz=217,slow=39							
NEW	**Newport**	16.51	354		LR		LR	20 51 36.6
	comp=N,80nm,20.2s,baz=158,slow=40							
EGMT	**Eagleton**	16.61	12		*eP*		**P**	**20 44 28.9 +0.2**
	comp=N,3.9nm,0.7s							
EDM	**Edmonton**	21.40	2		P		**P**	**20 45 22.3 +1.2**
	comp=N,4.5nm,0.7s							
ULM	**Lac du Bonnet**	23.15	32		LR		LR	20 54 51.7
	comp=N,61nm,20.6s,baz=326,slow=37							
CMIG	**Matias Romero**	23.23	125		P		**P**	**20 45 41.4 +0.6**
	comp=N,5.1nm,1.0s,baz=293,slow=9.3,SNR=5.6							
ILAR	**Eielson Array**	38.45	338		P		**P**	**20 47 57.0 +1.9**
	comp=N,1.5nm,0.7s,baz=148,slow=7.5,SNR=20							
BPAW	**Bear Paw Mtn.**	39.37	336		*eP*		**P**	**20 48 04.8 +2.0**
	comp=N,1.2nm,1.0s							
ARCES	**ARCESS Array B**	74.86	13		LR		LR	21 25 47.8
	comp=N,24nm,20.1s,baz=34,slow=36							

MDD ***18*** *20:47:50.4±2.7,34.80N×16.35W,h24km±31km, mb3.7/2, Error ellipse: s-maj=50.0km s-min=7.4km az=127.0, PRXIMO*
CSEM ***18*** *20:47:51.3±0.7,34.56N×15.91W,h20km, mb3.7, Error ellipse: s-maj=30.2km s-min=6.6km az=129.0*
INMG ***18*** *20:47:51.9±2.3,34.95N×16.65W,h10km, ML2.6, Error ellipse: s-maj=23.7km s-min=5.1km az=118.0*

ISC 18 20:47:35.7±1.7, 35.2N±0.1×15.7W±0.1, h10km, n39, σ2.59/57, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
PMPS	**Porto Santo**	2.17	194	*eP*		**Pg**	**20 48 18.4**	**+1.0**
PMPS				*eS*		**Sn**	**20 48 38.6**	**-0.3**
PMPS				A		A	20 49 00.2	
	28nm,0.7s							
PMPS	**Porto Santo**	2.17	194	P		**Pg**	**20 48 18.4**	**+1.0**
PMPS				S		**Sn**	**20 48 38.6**	**-0.3**
	14nm,0.7s							
PMPS	**Porto Santo**	2.17	194	P		**Pg**	**20 48 18.4**	**+1.0**
PMPS				*eS*		**Sn**	**20 48 38.6**	**-0.3**
	28nm,0.7s							
PMAR	**Madeira**	2.64	202	*e*Pn		**Pb**	**20 48 23.1**	**-0.1**
PMAR				*e*Sn		**Sn**	**20 48 47.4**	**-3.3**
PMAR				A		A	20 48 51.9	
	51nm,0.2s							
PMAR	**Madeira**	2.64	202	P		**Pb**	**20 48 23.1**	**-0.1**
PMAR				S		**Sn**	**20 48 47.4**	**-3.3**
	26nm,0.2s							
PMAR	**Madeira**	2.64	202	P		**Pb**	**20 48 23.1**	**-0.1**
PMAR				S		**Sn**	**20 48 47.4**	**-3.3**
	26nm,0.2s							
PMOZ	**Porto Moniz, M**	2.65	208	*e*Sn		**Sn**	**20 48 48.3**	**-2.5**
PMOZ	**Porto Moniz, M**	2.65	208	S		**Sn**	**20 48 48.3**	**-2.5**
PMOZ	**Porto Moniz, M**	2.65	208	S		**Sn**	**20 48 48.3**	**-2.5**
PTEO	**Sao Teotonio**	6.12	65	*e*Sn		**Sb**	**20 50 38.0**	**+2.2**
PTEO	**Sao Teotonio**	6.12	65	S		**Sb**	**20 50 38.0**	**+2.2**
PTEO	**Sao Teotonio**	6.12	65	S		**Sb**	**20 50 38.0**	**+2.2**
PMAFR	**Mafra**	6.38	52	*e*Sn		**Sb**	**20 50 42.0**	**-1.3**
PMAFR	**Mafra**	6.38	52	S		**Sb**	**20 50 41.5**	**-1.8**
	3.0nm,0.1s,SNR=7.9							
PNCL	**Nicolau / Gran**	6.48	61	*e*Pn		**Pb**	**20 49 31.0**	**+2.4**
PNCL				*e*Sn		**Sb**	**20 50 43.9**	**-2.2**
PNCL	**Nicolau / Gran**	6.48	61	*e*Pn		**Pb**	**20 49 31.0**	**+2.4**
MESJ	**Messejana**	6.60	64	*e*Pn		**Pb**	**20 49 33.0**	**+2.4**
MESJ				*e*Sn		**Sn**	**20 50 31.5**	**+3.4**
MESJ	**Messejana**	6.60	64	P		**Pb**	**20 49 33.0**	**+2.4**
MESJ				S		**Sn**	**20 50 31.5**	**+3.4**
MESJ	**Messejana**	6.60	64	P		**Pb**	**20 49 33.0**	**+2.4**
PBDV	**Barranco-do-Ve**	6.63	70	*e*Pn		**Pb**	**20 49 34.6**	**+3.5**
PBDV				*e*Sn		**Sb**	**20 50 50.7**	**+0.3**
PBDV	**Barranco-do-Ve**	6.63	70	P		**Pb**	**20 49 34.6**	**+3.5**
PBDV				S		**Sb**	**20 50 50.7**	**+0.3**
PBDV	**Barranco-do-Ve**	6.63	70	P		**Pb**	**20 49 34.6**	**+3.5**
PBDV				S		**Sb**	**20 50 50.7**	**+0.3**
PCVE	**Castro Verde**	6.66	66	*e*Sn		**Sb**	**20 50 51.3**	**-0.1**
PCVE	**Castro Verde**	6.66	66	S		**Sb**	**20 50 51.3**	**-0.1**
PCVE	**Castro Verde**	6.66	66	S		**Sb**	**20 50 51.3**	**-0.1**
CFUE	**Fuerteventura**	6.69	166	S		**Sn**	**20 50 30.7**	**+0.4**
	2.6nm,0.1s,SNR=7.9							
CFUE	**Fuerteventura**	6.69	166	S		**Sn**	**20 50 30.7**	**+0.4**
	2.6nm,0.1s,SNR=7.9							
PVAQ	**Vaqueiros**	6.84	69	*e*Pn		**Pb**	**20 49 37.0**	**+2.4**
PVAQ				*e*Sn		**Sb**	**20 50 55.2**	**-1.1**
PVAQ	**Vaqueiros**	6.84	69	P		**Pb**	**20 49 37.0**	**+2.4**
PVAQ				S		**Sb**	**20 50 55.2**	**-1.1**
PVAQ	**Vaqueiros**	6.84	69	P		**Pb**	**20 49 37.0**	**+2.4**
PVAQ				S		**Sb**	**20 50 55.2**	**-1.1**
PMTG	**Montargil**	7.14	55	*e*Pn		**Pb**	**20 49 40.4**	**+0.7**
PMTG				*e*Sn		**Sb**	**20 51 00.1**	**-4.9**
PMTG	**Montargil**	7.14	55	*e*Pn		**Pb**	**20 49 40.4**	**+0.7**
PBAR	**Barrancos**	7.59	64	*e*Pn		**Pb**	**20 49 47.8**	**+0.3**
PBAR				*e*Sn		**Sb**	**20 51 11.5**	**-6.5**
PBAR	**Barrancos**	7.59	64	P		**Pb**	**20 49 47.8**	**+0.3**
PBAR				S		**Sb**	**20 51 11.5**	**-6.5**
PBAR	**Barrancos**	7.59	64	P		**Pb**	**20 49 47.8**	**+0.3**
EMIN	**Mina Concepcio**	7.74	68	P		**Pb**	**20 49 48.3**	**-1.7**
	0.2nm,0.1s,SNR=7.9							
EMIN				S		**Sb**	**20 51 16.9**	**-5.3**
	0.4nm,0.3s,SNR=7.9							
EMIN	**Mina Concepcio**	7.74	68	P		**Pb**	**20 49 48.3**	**-1.7**
	0.2nm,0.1s,SNR=7.9							
EMIN				S		**Sb**	**20 51 16.9**	**-5.3**
	0.4nm,0.3s,SNR=7.9							
ECAB	**El Cabril**	8.78	68	P		Pn	20 50 03.0	+20
	0.2nm,0.1s,SNR=7.9							
ECAB				S		Sn	20 51 40.0	+18
	0.2nm,0.2s,SNR=7.9							
ECAB	**El Cabril**	8.78	68	P		Pn	20 50 03.0	+20
	0.2nm,0.1s,SNR=7.9							

IDC 18 20:58:29.2±7.7, 21.43S×174.25W, h0km, mb3.8/2, mb1 4.1/2, mb1mx3.6/37, mbtmp3.8/2, MS3.2/1, Ms1 3.2/1, ms1mx2.6/27, Error ellipse: s-maj=323.8km s-min=60.0km az=145.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
PPT	**Papeete**	23.57	85	LR		LR	21 11 18.2	
	comp=Z,53nm,19.9s,baz=182,slow=33							
ASAR	**Alice Springs**	47.72	257	P		P	21 07 08.2	+0.1
	1.6nm,0.8s,baz=107,slow=7.9,SNR=16							
WRA	**Warramunga Arr**	47.94	262	P		P	21 07 09.7	-0.3
	0.7nm,0.6s,baz=96,slow=8.2,SNR=15							
AKASG	**Malin Array Be**	145.46	333	PKPbc		PKPbc	21 18 08.1	-1.0
	0.6nm,0.4s,baz=41,slow=4.5,SNR=4.0							

MEX 18 20:59:02.9±0.4, 16.92N×95.03W, h207km±7km, MD3.9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
HUIG	**Huatulco**	1.54	222	*eP*		Pn	20 59 36.1	-1.8
HUIG				*i* S		S	21 00 02.5	-1.8
VHO	**Vista Hermosa**	1.63	275	*eP*		Pn	20 59 37.5	-1.1
VHO				*eS*		S	21 00 04.0	-2.0
TPIG	**Tehuac#an**	2.67	304	*i* P		Pn	20 59 47.6	-1.7
TPIG				*i* S		S	21 00 22.9	-2.2
PNIG	**Pinotepa**	3.01	260	*i* P		Pn	20 59 51.9	-1.1
PNIG				*i* S		S	21 00 30.1	-1.7
TLIG	**Tlapa**	3.44	281	*i* P		Pn	20 59 57.3	-0.9
TLIG				*i* S		S	21 00 39.6	-1.4

NIED ***18*** *21:00:00,37.30N×141.30E,h74km,Mw3.9 Best double couple: M0 7.25000×10^14 NP1:φ=257.00000°,δ=11.00000°, λ=156.00000°. NP2:φ=11.00000°,δ=86.00000°,λ=80.00000°.*
IDC ***18*** *21:00:22.6±1.0,37.43N×141.97E,h0km,mb3.8/10, mb1 3.8/13,mb1mx3.7/65,mbtmp3.8/13,ML2.8/2,MS3.3/4, Ms1 3.3/4,ms1mx2.7/46,Error ellipse: s-maj=27.6km s-min=17.7km az=83.0*
NEIC ***18*** *21:00:25.4±3.1,37.44N×141.98E,h19km±19km,mb4.7/11, Error ellipse: s-maj=9.4km s-min=6.3km az=118.0*
NEIC Recorded [2 JMA] in Fukushima.
ISCJB ***18*** *21:00:26.9±0.8,37.38N±0.04×141.76E±0.06,h42km±7km, mb4.2/20,MS3.3/4, Error ellipse: s-maj=8.6km s-min=5.9km az=7.6*
JMA ***18*** *21:00:31.6±0.1,37.35N×141.35E,h49km±1km,M3.9*
JMA Felt II J1.

ISC 18 21:00:27.1±1.5, 37.38N±0.04×141.79E±0.06, h31km±10km, n62, σ1.97/67, mb4.2/20, MS3.3/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JFK	**Kawauchi**	0.73	269	P		Pn	21 00 41.3	0.0
JFK				S		**Sb**	**21 00 48.0**	**-3.1**
ONAJ	**Iwakimizuishiy**	0.84	251	P		Pn	21 00 42.8	0.0
ONAJ				S		**Sb**	**21 00 50.5**	**-3.7**
JMM	**Marumori**	0.93	302	P		**Pb**	**21 00 44.9**	**+0.2**
JMM				S		**Sn**	**21 00 54.5**	**-1.8**
JIO	**Ouri**	1.13	342	P		**Pb**	**21 00 54.0**	**+2.3**
JIO				S		**Sb**	**21 01 03.7**	**+1.3**
JFT	**Otama**	1.17	277	P		Pn	21 00 47.6	+0.3
JFT				S		**Sn**	**21 00 58.8**	**-3.3**
JHO	**Hitachi**	1.24	232	P		Pn	21 00 48.3	0.0
JHO				S		**Sn**	**21 01 00.1**	**-3.9**
JOU	**Okura**	1.33	318	P		**Pb**	**21 00 51.1**	**-0.3**
JYS	**Shirataka**	1.60	302	P		**Pn**	**21 00 54.4**	**+1.1**
JYS				*e*S		**Sn**	**21 01 10.7**	**-2.3**
JMK	**Ichinoseki**	1.64	344	P		**Pb**	**21 00 57.8**	**+1.2**
JMK				S		**Sb**	**21 01 16.5**	**-0.3**
JFY	**Yanaizu**	1.66	272	P		**Pn**	**21 00 53.8**	**-0.3**
JFY				S		**Sn**	**21 01 11.0**	**-3.4**
MJAR	**Matsushiro Arr**	2.99	255	Pn		**Pn**	**21 01 12.9**	**+0.6**
	11nm,0.3s,baz=133,slow=8.7,SNR=41							
MJAR				Sn		**Sn**	**21 01 48.6**	**+1.5**
	8.6nm,0.3s,baz=204,slow=9.5,SNR=5.5							
MAJO	**Matsushiro**	2.99	255	*e*Pn		**Pn**	**21 01 13.4**	**+1.0**
MAJO				*e*Sn		**Sn**	**21 01 46.4**	**-0.8**
MAT	**Matsushiro**	2.99	255	P		**Pn**	**21 01 13.2**	**+0.8**
MAT				S		**Sn**	**21 01 46.5**	**-0.6**
MJB9	**Matsu-Tunnel**	2.99	255	*e*Pn		**Pn**	**21 01 13.6**	**+1.2**
INU	**Inuyama**	4.35	244	*e*Pn		**Pn**	**21 01 32.8**	**+1.8**
JHJ	**Hachijo jima 2**	4.55	202	Pn		**Pn**	**21 01 36.3**	**+2.4**
	50nm,0.3s,baz=252,slow=19,SNR=2.9							
JHJ				Sn		**Sn**	**21 02 25.2**	**-0.5**
	19nm,0.3s,baz=246,slow=20,SNR=3.4							
ERM	**Erimo**	4.75	12	*e*Pn		**Pn**	**21 01 35.0**	**-1.5**
ERM				Sn		**Sn**	**21 02 26.9**	**-3.6**
ASAJ	**Asahikawa**	6.76	5	*e*Pn		**Pn**	**21 02 02.9**	**-1.2**
USRK	**Ussuriysk Ar.**	10.08	316	Pn		**Pn**	**21 02 50.3**	**+0.7**
	0.1nm,0.3s,baz=118,slow=14,SNR=2.4							
KSRS	**Korea Array**	11.03	275	Pn		**Pn**	**21 03 07.3**	**+4.6**
	0.3nm,0.3s,baz=92,slow=16,SNR=3.7							
KS15	**Wonju Array Si**	11.06	275	*e*Pn		**Pn**	**21 03 04.7**	**+1.6**
KSAR	**Wonju Array Be**	11.06	275	Pn		**Pn**	**21 03 07.3**	**+4.2**
PEA0	**Petropavlovsk-**	19.24	30	*eP*		**P**	**21 04 45.0**	**-3.6**
SONA1	**Songino Array**	27.84	303	*eP*		**P**	**21 06 14.5**	**+0.7**
SONA0	**Songino Array**	27.84	303	*eP*		**P**	**21 06 14.5**	**+0.7**
	11nm,1.9s							
SONM	**Songino Array**	27.84	303	P		**P**	**21 06 14.5**	**+0.7**
	0.9nm,0.7s,baz=106,slow=7.9,SNR=7.0							
H11N2	**WAKE ISLAND Hy**	28.07	122	T		T	21 36 29.2	
	baz=314,slow=75,SNR=94							
H11N1	**WAKE ISLAND Hy**	28.08	122	T		T	21 36 34.5	
	baz=314,slow=75,SNR=142							
H11N3	**WAKE ISLAND Hy**	28.09	122	T		T	21 36 35.1	
	baz=314,slow=75,SNR=106							
H11S1	**WAKE ISLAND Hy**	28.80	124	T		T	21 37 22.4	
	baz=316,slow=75,SNR=66							
H11S3	**WAKE ISLAND Hy**	28.80	124	T		T	21 37 38.6	
	baz=316,slow=75,SNR=85							
H11S2	**WAKE ISLAND Hy**	28.81	124	T		T	21 37 34.0	
	baz=316,slow=75,SNR=42							
TLY	**Talaya**	30.34	310	LR		LR	21 18 25.3	
	comp=Z,38nm,19.7s,baz=166,slow=36							
KKM	**Kota Kinabalu**	38.94	223	*eP*		**P**	**21 07 49.7**	**-0.7**
	31nm,1.3s							
ZAA1	**Zalesovo Array**	41.91	312	*eP*		**P**	**21 08 15.7

KARA	Karaisali	0.65	240	*e*PG	Pg	21 19 43.4	0.0	EVR	Evrytania	1.02	109
KARA	Karaisali	0.65	240	*e*Pg	Pg	21 19 43.4	0.0	EVR			
KMRS	Kahramanmaras	0.91	95	*e*PG	Pn	21 19 48.5	-0.3	EVR	Evrytania	1.02	109
KMRS	Kahramanmaras	0.91	95	*e*Pg	Pn	21 19 48.6	-0.3	PENT	Pentalofos	1.04	25
SARI	SarD1z-Kayseri	0.97	32	*e*PG	Pn	21 19 49.6	-0.2	PENT			
DED	Mersin	0.99	231	*i* P	Pb	21 19 47.5	-1.8	PENT	Pentalofos	1.04	25
DED				*i* S	Sb	21 19 59.7	-2.4	PENT			
MERS	Mersin	1.22	234	*e*PN	Pn	21 19 53.5	+0.4	PENT	Pentalofos	1.04	25
MERS	Mersin	1.22	234	*e*Pn	Pn	21 19 53.5	+0.4	PENT			
TAHT	Tahtakopru-Hat	1.26	164	*e*PN	Pb	21 19 54.3	+0.3	PENT			
TAHT	Tahtakopru-Hat	1.26	164	*e*Pn	Pb	21 19 54.3	+0.3				
DARE	Darende-Malaty	1.68	54	*e*PN	Pn	21 19 59.8	+0.3				
DARE	Darende-Malaty	1.68	54	*e*Pn	Pn	21 19 59.8	+0.3				

IDC 18 21:30:00.8±8.3, 20°92S×170°09E, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.4/19, mbtmp3.5/2, MS3.1/1, Ms1 3.0/1, ms1mx2.5/17, Error ellipse: s-maj=371.8km s-min=56.3km az=151.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**27.68**	**241**	LR	LR	21 46 53.0	
	comp=Z,36nm,18.0s,baz=28,slow=37						
WRA	**Warramunga Arr**	**33.47**	**265**	P	P	21 36 42.0	0.0
	0.6nm,0.9s,baz=96,slow=8.5,SNR=4.3						
ASAR	**Alice Springs**	**33.54**	**258**	P	P	21 36 42.5	-0.1
	0.6nm,0.8s,baz=87,slow=8.3,SNR=4.5						
GERES	**GERESS Array B**	**146.34**	**331**	PKPbc	PKPdf	21 49 42.8	+0.4
	0.7nm,0.8s,baz=17,slow=1.0,SNR=5.0						

IDC 18 22:25:22.4±2.1, 23°15S×174°60W, h0km, mb4.2/5, mb1 4.4/5, mb1mx3.9/26, mbtmp4.1/5, MS3.9/2, Ms1 3.9/2, ms1mx3.1/33, Error ellipse: s-maj=107.0km s-min=30.3km az=158.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.87**	**85**	LR	LR	22 32 15.7	
	comp=Z,86nm,22.0s,baz=275,slow=30						
PPT	**Papeete**	**24.09**	**81**	LR	LR	22 37 08.4	
	comp=Z,25nm,21.6s,baz=220,slow=29						
ASAR	**Alice Springs**	**47.04**	**259**	P	P	22 33 56.2	+0.2
	3.0nm,0.9s,baz=90,slow=8.2,SNR=20						
WRA	**Warramunga Arr**	**47.41**	**264**	P	P	22 33 58.0	-1.0
	1.8nm,0.8s,baz=93,slow=8.3,SNR=14						
USRK	**Ussuriysk Ar.**	**82.94**	**324**	P	P	22 37 48.8	-0.2
	2.3nm,0.8s,baz=124,slow=2.6,SNR=4.3						
TXAR	**Lajitas Array**	**85.87**	**56**	P	P	22 38 04.4	-0.1
	0.6nm,1.1s,baz=224,slow=7.6,SNR=3.3						
CMAR	**Chiang Mai Arr**	**93.96**	**288**	P	P	22 38 44.1	+1.4
	0.7nm,0.3s,baz=140,slow=4.7,SNR=4.4						
LVC	**Limon Verde**	**94.62**	**117**	LR	LR	23 10 39.4	
	comp=Z,349nm,19.7s,baz=34,slow=29						
AKASG	**Malin Array Be**	**146.84**	**332**	PKPbc	PKPdf	22 45 05.0	+0.5
	0.7nm,0.5s,baz=43,slow=4.0,SNR=4.0						

ROM 18 22:29:17.8±0.0, 38°40N×16°21E, h6km, Ml1.3/2, Error ellipse: s-maj=0.3km s-min=0.2km az=178.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAC	**Placanica**	**0.18**	**75**	Pg	Pg	22 29 22.0	+0.5
PLAC				Sg	Sg	22 29 25.2	+1.2
	77nm,0.2s						
JOPP	**Joppolo**	**0.33**	**309**	Pg	Pg	22 29 25.1	+0.9
JOPP				Sg	Sb	22 29 30.6	-1.0
	26nm,0.3s						
SOI	**Samo**	**0.35**	**201**	Pg	Pb	22 29 25.7	-0.8
SOI				Sg	Sb	22 29 31.6	-0.7

*TIR **18** 22:32:01.3, 39°28N×20°65E, h2km, ML4.3*
*ISCJB **18** 22:32:07.1±0.4, 39°26N±0°01×20°48E±0°02, h7km±2km, mb4.2/20, MS3.0/2, Error ellipse: s-maj=2.4km s-min=1.6km az=142.1*
*CSEM **18** 22:32:07.8±0.1, 39°24N×20°53E, h2km, mb4.3/6, Error ellipse: s-maj=3.1km s-min=1.8km az=53.0*
*ATH **18** 22:32:07.8, 39°25N×20°62E, h14km±1km, ML3.9/17, Error ellipse: s-maj=1.3km s-min=0.6km az=261.0*
*PDG **18** 22:32:07.2±0.4, 39°31N×20°52E, h5km±2km, ML4.0/13, Error ellipse: s-maj=1.4km s-min=0.9km az=90.0*
*NEIC **18** 22:32:08.2, 39°25N×20°59E, h0km, mb4.2/7, ML4.0(THE), After THE.*
*THE **18** 22:32:08.2, 39°25N×20°59E, h0km±1km, ML4.0/29, Error ellipse: s-maj=1.4km s-min=0.5km az=246.0*
*IDC **18** 22:32:13.8±1.7, 39°44N×20°51E, h55km±17km, mb3.9/13, mb1 3.9/26, mb1mx3.8/53, mbtmp4.0/26, ML3.7/11, MS3.1/10, Ms1 3.1/10, ms1mx3.0/56, Error ellipse: s-maj=14.9km s-min=12.5km az=180.0*

ISC 18 22:32:08.2±0.9, 39°25N±0°01×20°57E±0°02, h11km±6km, n413, σ1°66/553, mb4.2/20, 38C-26D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.33**	**327**	P	**Pg**	**22 32 14.7**	**-0.2**
IGT				S	**Sg**	**22 32 20.6**	**+1.2**
IGT	**Igoumenitsa**	**0.33**	**327**	P	**Pg**	**22 32 14.6**	**-0.3**
IGT				S	**Sg**	**22 32 19.9**	**+0.5**
IGT	**Igoumenitsa**	**0.33**	**327**	P	**Pg**	**22 32 14.1**	**-0.9**
IGT				S	**Sb**	**22 32 21.8**	**+0.3**
IGT				AML	AML	22 32 22.1	
	comp=N,62532μm,0.7s						
IGT				AML	AML	22 32 24.1	
	comp=E,63275μm,0.8s						
DSL	**Palaion Diasel**	**0.43**	**106**	P	**Pg**	**22 32 15.1**	**-1.6**
DSL				S	**Sg**	**22 32 21.8**	**-0.6**
DSL	**Palaion Diasel**	**0.43**	**106**	P	**Pg**	**22 32 15.1**	**-1.6**
DSL				S	**Sg**	**22 32 21.8**	**-0.6**
SGD	**Sagiada**	**0.44**	**324**	P	**Pg**	**22 32 16.3**	**-0.6**
SGD				S	**Sb**	**22 32 24.2**	**-0.4**
SGD	**Sagiada**	**0.44**	**324**	P	**Pg**	**22 32 16.3**	**-0.6**
SGD				S	**Sb**	**22 32 24.2**	**-0.4**
SGD	**Sagiada**	**0.44**	**324**	P	**Pg**	**22 32 16.7**	**-0.3**
SGD				S	**Sb**	**22 32 24.8**	**+0.2**
JAN	**Janina**	**0.46**	**29**	P	**Pg**	**22 32 16.4**	**-0.9**
JAN				S	**Sg**	**22 32 23.5**	**+0.1**
JAN	**Janina**	**0.46**	**29**	P	**Pg**	**22 32 16.4**	**-0.9**
JAN				S	**Sg**	**22 32 23.1**	**-0.3**
JAN	**Janina**	**0.46**	**29**	S	**Sg**	**22 32 23.1**	**-0.3**
JAN				AML	AML	22 32 25.5	
	comp=E,72575μm,0.6s						
LKD2	**Lefkada island**	**0.47**	**171**	P	**Pg**	**22 32 16.6**	**-0.8**
LKD2	**Lefkada island**	**0.47**	**171**	P	**Pg**	**22 32 16.6**	**-0.8**
LKD2				S	**Sb**	**22 32 25.3**	**-0.1**
LKD2	**Lefkada island**	**0.47**	**171**	P	**Pg**	**22 32 16.8**	**-0.7**
LKD2				S	**Sb**	**22 32 25.3**	**-0.1**
LKD2				AML	AML	22 32 35.2	
	comp=N,23223μm,0.5s						
LKD2				AML	AML	22 32 35.7	
	comp=E,16606μm,0.5s						
KEK	**Kerkira**	**0.75**	**308**	P	**Pg**	**22 32 22.5**	**-0.3**
KEK				S	**Sb**	**22 32 34.9**	**+1.4**
KEK	**Kerkira**	**0.75**	**308**	P	**Pg**	**22 32 22.0**	**-0.8**
KEK				S	**Sn**	**22 32 36.0**	**-0.1**
PDO	**Prodromos**	**0.81**	**144**	P	**Pg**	**22 32 22.5**	**-1.4**
PDO				S	**Sb**	**22 32 35.0**	**-0.2**
PDO	**Prodromos**	**0.81**	**144**	P	**Pg**	**22 32 22.7**	**-1.2**
PDO				S	**Sb**	**22 32 35.8**	**-0.2**
PDO	**Prodromos**	**0.81**	**144**	P	**Pg**	**22 32 22.7**	**-1.2**
PDO				S	**Sb**	**22 32 35.2**	**0.0**
PDO				AML	AML	22 32 42.4	
	comp=E,37214μm,0.9s						
PDO				AML	AML	22 32 44.2	
	comp=N,22255μm,0.7s						
KPRO	**Kipourio**	**0.93**	**41**	P	**Pg**	**22 32 24.6**	**-1.6**
KPRO				S	**Sb**	**22 32 39.2**	**+0.4**
KPRO	**Kipourio**	**0.93**	**41**	P	**Pg**	**22 32 24.6**	**-1.6**
KPRO				S	**Sb**	**22 32 39.2**	**+0.4**
KPRO	**Kipourio**	**0.93**	**41**	P	**Pg**	**22 32 23.9**	**-2.3**
KPRO				S	**Sn**	**22 32 39.8**	**-0.9**
PVO	**Paravola**	**0.98**	**130**	P	**Pg**	**22 32 26.1**	**-1.0**
PVO				S	**Sn**	**22 32 41.0**	**-0.7**
PVO	**Paravola**	**0.98**	**130**	P	**Pg**	**22 32 26.1**	**-1.0**
PVO				S	**Sn**	**22 32 41.0**	**-0.7**
EVR	**Evrytania**	**1.02**	**109**	P	**Pg**	**22 32 26.2**	**-1.7**
EVR				S	**Sn**	**22 32 43.1**	**+0.2**
EVR	**Evrytania**	**1.02**	**109**	P	**Pg**	**22 32 25.9**	**-2.1**
PENT	**Pentalofos**	**1.04**	**25**	P	**Pg**	**22 32 27.6**	**-0.6**
PENT				S	**Sn**	**22 32 43.2**	**-0.1**
PENT	**Pentalofos**	**1.04**	**25**	P	**Pg**	**22 32 27.6**	**-0.6**
PENT				S	**Sg**	**22 32 41.6**	**-0.2**
PENT	**Pentalofos**	**1.04**	**25**	P	**Pg**	**22 32 26.6**	**-1.6**
PENT				S	**Sg**	**22 32 41.6**	**-0.2**
PENT				AML	AML	22 32 47.4	
	comp=E,7543μm,0.5s						
PENT				AML	AML	22 32 53.2	
	comp=N,10051μm,0.5s						
VLS	**Valsamata**	**1.07**	**179**	P	**Pb**	**22 32 27.8**	**-1.0**
VLS				S	**Sn**	**22 32 43.6**	**-0.5**
VLS	**Valsamata**	**1.07**	**179**	P	**Pb**	**22 32 27.8**	**-1.0**
VLS				S	**Sn**	**22 32 43.6**	**-0.5**
KFL	**Anninata**	**1.16**	**171**	P	**Pb**	**22 32 29.0**	**-1.2**
KFL				S	**Sn**	**22 32 47.4**	**+1.4**
KFL	**Anninata**	**1.16**	**171**	P	**Pb**	**22 32 29.0**	**-1.2**
KFL				S	**Sn**	**22 32 46.4**	**+0.4**
KFL	**Anninata**	**1.16**	**171**	P	**Pb**	**22 32 28.0**	**-2.2**
KFL				S	**Sn**	**22 32 46.4**	**+0.4**
THL	**Klokotos Trika**	**1.16**	**74**	P	**Pb**	**22 32 27.5**	**-2.8**
THL				S	**Sn**	**22 32 46.1**	**-0.1**
NEST	**Nestorio**	**1.22**	**18**	P	**Pn**	**22 32 31.1**	**-0.1**
NEST				S	**Sn**	**22 32 49.3**	**+1.6**
NEST	**Nestorio**	**1.22**	**18**	P	**Pn**	**22 32 31.1**	**-0.1**
NEST				S	**Sn**	**22 32 49.3**	**+1.6**
NEST	**Nestorio**	**1.22**	**18**	P	**Pn**	**22 32 29.7**	**-1.6**
NEST				S	**Sn**	**22 32 49.4**	**+1.6**
NEST				AML	AML	22 32 55.9	
	comp=E,14646μm,0.6s						
NEST				AML	AML	22 32 56.5	
	comp=N,8774μm,0.4s						
AXS	**Araxos**	**1.23**	**149**	P	**Pn**	**22 32 30.0**	**-1.3**
AXS	**Araxos**	**1.23**	**149**	P	**Pn**	**22 32 30.0**	**-1.3**
AXS				S	**Sn**	**22 32 49.0**	**+1.1**
AXS	**Araxos**	**1.23**	**149**	P	**Pn**	**22 32 29.2**	**-2.1**
AXS				S	**Sn**	**22 32 49.0**	**+1.1**
ANX	**Ano Chora**	**1.25**	**122**	P	**Pn**	**22 32 30.6**	**-1.0**
ANX				S	**Sn**	**22 32 50.0**	**+1.6**
ANX	**Ano Chora**	**1.25**	**122**	P	**Pn**	**22 32 30.6**	**-1.0**
ANX				S	**Sn**	**22 32 50.0**	**+1.6**
UPR	**University Cam**	**1.36**	**135**	P	**Pg**	**22 32 35.5**	**+1.2**
UPR	**University Cam**	**1.36**	**135**	P	**Pg**	**22 32 35.5**	**+1.2**
RLS	**Riolos of Patr**	**1.39**	**149**	P	**Pn**	**22 32 31.5**	**-1.9**
AGG	**Agios Georgios**	**1.39**	**99**	P	**Pn**	**22 32 33.1**	**-0.4**
AGG				S	**Sg**	**22 32 53.6**	**+0.6**
AGG	**Agios Georgios**	**1.39**	**99**	P	**Pn**	**22 32 33.1**	**-0.4**
AGG				S	**Sg**	**22 32 52.7**	**-0.3**
AGG	**Agios Georgios**	**1.39**	**99**	P	**Pn**	**22 32 31.9**	**-1.7**
AGG				S	**Sg**	**22 32 52.7**	**-0.3**
AGG				AML	AML	22 33 03.4	
	comp=N,35641μm,0.6s						
AGG				AML	AML	22 33 05.7	
	comp=E,23088μm,0.5s						
KZN	**Kozani**	**1.40**	**41**	P	**Pn**	**22 32 33.7**	**-0.1**
KZN				S	**Sg**	**22 32 54.6**	**+1.2**
KZN	**Kozani**	**1.40**	**41**	P	**Pn**	**22 32 33.7**	**-0.1**
KZN				S	**Sg**	**22 32 53.4**	**0.0**
SERG	**Sergoula**	**1.43**	**125**	P	**Pb**	**22 32 34.7**	**-0.2**
SERG				S	**Sg**	**22 32 55.5**	**+1.1**
SERG	**Sergoula**	**1.43**	**125**	P	**Pb**	**22 32 34.7**	**-0.2**
SERG				S	**Sg**	**22 32 55.5**	**+1.1**
TRIZ	**Trizonia**	**1.47**	**127**	P	**Pb**	**22 32 35.3**	**-0.3**
LAKA	**Lakka**	**1.50**	**132**	P	**Pn**	**22 32 34.9**	**-0.1**
LAKA				S	**Sg**	**22 32 56.9**	**+0.5**
LAKA	**Lakka**	**1.50**	**132**	P	**Pn**	**22 32 34.9**	**-0.1**
LAKA				S	**Sg**	**22 32 56.9**	**+0.5**
LAKA	**Lakka**	**1.50**	**132**	P	**Pn**	**22 32 34.6**	**-0.4**
KALE	**Kalithea**	**1.50**	**125**	P	**Pb**	**22 32 36.3**	**+0.2**
KALE				S	**Sg**	**22 32 57.3**	**+0.8**
KALE	**Kalithea**	**1.50**	**125**	P	**Pb**	**22 32 36.1**	**0.0**
KALE				S	**Sg**	**22 32 57.3**	**+0.8**
KALE	**Kalithea**	**1.50**	**125**	P	**Pb**	**22 32 36.1**	**0.0**
ZKS	**Zakynthos**	**1.56**	**174**	P	**Pn**	**22 32 35.6**	**-0.3**
ZKS	**Zakynthos**	**1.56**	**174**	P	**Pn**	**22 32 35.6**	**-0.3**
ZKS	**Zakynthos**	**1.56**	**174**	P	**Pn**	**22 32 34.6**	**-1.3**
DRO	**Drossia**	**1.58**	**145**	P	**Pn**	**22 32 35.4**	**-0.7**
DRO	**Drossia**	**1.58**	**145**	P	**Pn**	**22 32 35.4**	**-0.7**
DRO	**Drossia**	**1.58**	**145**	P	**Pn**	**22 32 34.4**	**-1.8**
KTI	**Kastanea**	**1.65**	**46**	P	**Pb**	**22 32 38.0**	**-0.7**
KTI	**Kastanea**	**1.65**	**46**	P	**Pb**	**22 32 38.0**	**-0.7**
FNA	**Florina**	**1.65**	**22**	P	**Pb**	**22 32 38.4**	**-0.2**
FNA				S	**Sg**	**22 33 01.0**	**-0.3**
FNA	**Florina**	**1.65**	**22**	P	**Pb**	**22 32 38.4**	**-0.2**
FNA				S	**Sg**	**22 33 01.0**	**-0.3**
FNA	**Florina**	**1.65**	**22**	P	**Pn**	**22 32 37.1**	**0.0**
FNA				S	**Sb**	**22 32 59.0**	**-0.5**
FNA				AML	AML	22 33 06.6	
	comp=E,13604μm,0.8s						
FNA				AML	AML	22 33 09.2	
	comp=N,6294μm,0.8s						
LIT	**Litokhoron**	**1.71**	**60**	P	**Pn**	**22 32 38.4**	**+0.5**
LIT				S	**Sb**	**22 33 01.6**	**+0.5**
LIT	**Litokhoron**	**1.71**	**60**	P	**Pn**	**22 32 38.4**	**+0.5**
LIT				S	**Sb**	**22 33 01.6**	**+0.5**
LIT	**Litokhoron**	**1.71**	**60**	P	**Pn**	**22 32 38.3**	**+0.4**
LIT				S	**Sb**	**22 33 01.8**	**+0.7**
LIT				AML	AML	22 33 06.7	
	comp=E,6414μm,0.7s						
LIT				AML	AML	22 33 10.7	
	comp=N,7878μm,0.9s						
KLV	**Kalavryta, Ach**	**1.73**	**134**	P	**Pn**	**22 32 38.3**	**0.0**
KLV	**Kalavryta, Ach**	**1.73**	**134**	P	**Pn**	**22 32 38.3**	**0.0**
KLV	**Kalavryta, Ach**	**1.73**	**134**	P	**Pn**	**22 32 37.4**	**-0.9**
DSF	**Desfina**	**1.75**	**118**	P	**Pn**	**22 32 39.1**	**+0.6**
DSF				S	**Sb**	**22 33 02.1**	**-0.1**
DSF	**Desfina**	**1.75**	**118**	P	**Pn**	**22 32 39.1**	**+0.6**
DSF				S	**Sb**	**22 33 02.1**	**-0.1**
DSF	**Desfina**	**1.75**	**118**	P	**Pn**	**22 32 38.9**	**+0.4**
FYTO	**Fytoko, Volos**	**1.85**	**84**	P	**Pn**	**22 32 39.5**	**-0.3**
FYTO				S	**Sb**	**22 33 05.0**	**0.0**
FYTO	**Fytoko, Volos**	**1.85**	**84**	P	**Pn**	**22 32 39.5**	**-0.3**
FYTO				S	**Sb**	**22 33 05.0**	**0.0**
OHR	**Ohrid**	**1.86**	**5**	*i* Pn	**Pb**	**22 32 43.0**	**+0.8**
OHR				*i* Sn	**Sg**	**22 33 09.9**	**+1.8**
OHR	**Ohrid**	**1.86**	**5**	*i* Pn	**Pb**	**22 32 43.0**	**+0.7**
OHR				*i* Sn	**Sg**	**22 33 09.9**	**+1.7**
GUR	**Goura**	**1.92**	**133**	P	**Pn**	**22 32 41.6**	**+0.8**
GUR	**Goura**	**1.92**	**133**	P	**Pn**	**22 32 41.6**	**+0.8**
GUR	**Goura**	**1.92**	**133**	P	**Pn**	**22 32 41.3**	**+0.5**
AMT	**Artemida-Makis**	**1.94**	**152**	P	**Pb**	**22 32 42.5**	**-1.0**
AMT	**Artemida-Makis**	**1.94**	**152**	P	**Pn**	**22 32 42.1**	**+1.0**
AMT	**Artemida-Makis**	**1.94**	**152**	P	**Pn**	**22 32 42.1**	**+1.0**
LKR	**Lokris**	**1.99**	**107**	P	**Pb**	**22 32 43.1**	**-1.3**
LKR	**Lokris**	**1.99**	**107**	P	**Pb**	**22 32 43.1**	**-1.3**
LKR	**Lokris**	**1.99**	**107**	P	**Pb**	**22 32 44.1**	**-0.3**
ATAL	**Atalanti**	**1.99**	**106**	P	**Pn**	**22 32 43.0**	**+1.2**
ATAL	**Atalanti**	**1.99**	**106**	P	**Pn**	**22 32 43.0**	**+1.2**
ATAL	**Atalanti**	**1.99**	**106**	P	**Pb**	**22 32 44.2**	**-0.2**
XOR	**Xorichti**	**2.04**	**86**	P	**Pn**	**22 32 42.9**	**+0.4**
XOR				S	**Sb**	**22 33 10.5**	**-0.1**
XOR	**Xorichti**	**2.04**	**86**	P	**Pn**	**22 32 42.9**	**+0.4**
XOR				S	**Sb**	**22 33 10.5**	**-0.1**
XOR	**Xorichti**	**2.04**	**86**	P	**Pn**	**22 32 42.8**	**+0.4**
XOR				S	**Sn**	**22 33 07.4**	**-0.5**
XOR				AML	AML	22 33 18.8	
	comp=N,7742μm,0.7s						
XOR				AML	AML	22 33 27.5	
	comp=E,2548μm,0.7s						
THAL	**Thalero**	**2.04**	**126**	P	**Pb**	**22 32 44.5**	**-0.8**
THAL	**Thalero**	**2.04**	**126**	P	**Pb**	**22 32 44.5**	**-0.8**
THAL	**Thalero**	**2.04**	**126**	P	**Pb**	**22 32 45.3**	**0.0**
NEO	**Neokhori**	**2.06**	**88**	P	**Pn**	**22 32 43.8**	**+1.0**
NEO	**Neokhori**	**2.06**	**88**	P	**Pn**	**22 32 43.8**	**+1.0**
NEO				S	**Sn**	**22 33 08.7**	**+0.2**
NEO	**Neokhori**	**2.06**	**88**	P	**Pn**	**22 32 44.0**	**+1.2**
NEO				S	**Sn**	**22 33 08.7**	**+0.2**
NEO				AML	AML	22 33 19.4	
	comp=E,2994μm,1.0s						
NEO				AML	AML	22 33 20.3	
	comp=N,4656μm,0.8s						
PROD	**Prodromos**	**2.08**	**118**	P	**Pb**	**22 32 45.2**	**-0.7**
PROD	**Prodromos**	**2.08**	**118**	P	**Pb**	**22 32 45.2**	**-0.7**
SMIA	**Simia**	**2.09**	**99**	P	**Pn**	**22 32 44.2**	**+1.0**
SMIA	**Simia**	**2.09**	**99**	P	**Pn**	**22 32 44.2**	**+1.0**
SMIA	**Simia**	**2.09**	**99**	P	**Pb**	**22 32 45.6**	**-0.5**
TIR	**Tirane**	**2.16**	**346**	*i* PG		20 32 14.4	
TIR				*i* SG		20 32 21.1	
TIR	**Tirane**	**2.16**	**346**	⇑*i* P	**Pb**	**22 32 46.3**	**-1.0**
TIR	**Tirane**	**2.16**	**346**	*e*Pn	**Pb**	**22 32 46.2**	**-1.1**
TIR	**Tirane**	**2.16**	**346**	P	**Pb**	**22 32 46.7**	**-0.6**
TIR				S	**Sb**	**22 33 13.6**	**-0.4**
TIR	**Tirane**	**2.16**	**346**	*e*Pn	**Pb**	**22 32 46.2**	**-1.1**
TIR	**Tirane**	**2.16**	**346**	P	**Pb**	**22 32 46.7**	**-0.6**
GRG	**Griva**	**2.21**	**39**	P	**Pn**	**22 32 45.8**	**+1.0**
GRG	**Griva**	**2.21**	**39**	P	**Pn**	**22 32 45.8**	**+1.0**
GRG				S	**Sb**	**22 33 13.8**	**-1.7**
GRG	**Griva**	**2.21**	**39**	P	**Pb**	**22 32 47.4**	**-0.7**
GRG				S	**Sb**	**22 33 13.8**	**-1.7**
GRG				AML	AML	22 33 30.4	
	comp=N,3038μm,1.1s						
GRG				AML	AML	22 33 31.4	
	comp=E,2275μm,0.9s						
LTK	**Loutraki**	**2.25**	**122**	P	**Pb**	**22 32 48.3**	**-0.5**
LTK	**Loutraki**	**2.25**	**122**	P	**Pb**	**22 32 48.3**	**-0.5**
SKIA	**Skiathos**	**2.25**	**91**	P	**Pn**	**22 32 46.1**	**+0.7**
SKIA	**Skiathos**	**2.25**	**91**	P	**Pn**	**22 32 46.1**	**+0.7**
SKIA	**Skiathos**	**2.25**	**91**	P	**Pn**	**22 32 47.0**	**+1.6**
THE	**Thessaloniki**	**2.30**	**52**	P	**Pb**	**22 32 48.5**	**-1.2**
THE	**Thessaloniki**	**2.30**	**52**	P	**Pb**	**22 32 48.5**	**-1.2**
ITM	**Ithomi**	**2.33**	**152**	P	**Pb**	**22 32 49.6**	**-0.6**
ITM	**Ithomi**	**2.33**	**152**	P	**Pb**	**22 32 49.6**	**-0.6**
VIL2	**Platees**	**2.35**	**115**	P	**Pb**	**22 32 50.0**	**-0.6**
HORT	**Hortiatis**	**2.37**	**55**	P	**Pn**	**22 32 47.8**	**+0.8**
HORT	**Hortiatis**	**2.37**	**55**	P	**Pn**	**22 32 48.1**	**+1.1**
HORT	**Hortiatis**	**2.37**	**55**	P	**Pn**	**22 32 48.1**	**+1.1**
VILL	**Villia**	**2.41**	**116**	P	**Pb**	**22 32 50.0**	**-1.5**
PLG	**Polygyros**	**2.48**	**62**	P	**Pn**	**22 32 48.5**	**-0.1**
PLG				S	**Sn**	**22 33 20.5**	**+1.6**
PLG	**Polygyros**	**2.48**	**62**	P	**Pn**	**22 32 48.5**	**-0.1**
PLG				S	**Sn**	**22 33 20.5**	**+1.6**
PLG	**Polygyros**	**2.48**	**62**	P	**Pn**	**22 32 48.1**	**-0.4**
PLG				S	**Sn**	**22 33 19.2**	**+0.3**
PLG				AML	AML	22 33 27.6	
	comp=E,1000μm,0.6s						
PLG				AML	AML	22 33 39.7	
	comp=N,868μm,0.8s						
PAIG	**Paliouri**	**2.50**	**73**	P	**Pn**	**22 32 48.6**	**-0.1**
PAIG				S	**Sn**	**22 33 21.3**	**+2.2**
PAIG	**Paliouri**	**2.50**	**73**	P	**Pn**	**22 32 48.6**	**-0.1**
PAIG				S	**Sn**	**22 33 21.3**	**+2.2**
PAIG	**Paliouri**	**2.50**	**73**	P	**Pn**	**22 32 47.3**	**-1.4**
PAIG				S	**Sn**	**22 33 20.4**	**+1.3**
PAIG				AML	AML	22 33 24.1	
	comp=N,932μm,1.0s						
PAIG				AML	AML	22 33 29.5	
	comp=E,1060μm,1.0s						
VAY	**Valandovo**	**2.57**	**36**	P	**Pn**	**22 32 51.8**	**+2.0**
VAY				S	**Sb**	**22 33 24.1**	**-1.8**
VAY	**Valandovo**	**2.57**	**36**	*i* Pn	**Pn**	**22 32 51.7**	**+2.0**
VAY				*i* Sn	**Sb**	**22 33 24.5**	**-1.4**
VAY	**Valandovo**	**2.57**	**36**	*i* Pn	**Pn**	**22 32 51.7**	**+2.0**
VAY				S	**Sb**	**22 33 24.1**	**-1.8**
AOS	**Alonnisos**	**2.58**	**91**	P	**Pn**	**22 32 49.7**	**-0.1**
AOS				S	**Sn**	**22 33 22.7**	**+1.6**
AOS	**Alonnisos**	**2.58**	**91**	P	**Pn**	**22 32 49.9**	**+0.1**
AOS				S	**Sn**	**22 33 22.7**	**+1.6**
AOS	**Alonnisos**	**2.58**	**91**	P	**Pn**	**22 32 49.9**	**+0.1**
KNT	**Kendrikon**	**2.61**	**42**	P	**Pn**	**22 32 51.1**	**+0.8**
KNT				S	**Sn**	**22 33 24.4**	**+2.4**
KNT	**Kendrikon**	**2.61**	**42**	P	**Pn**	**22 32 51.1**	**+0.8**
KNT				S	**Sn**	**22 33 24.4**	**+2.4**
KNT	**Kendrikon**	**2.61**	**42**	P	**Pn**	**22 32 52.4**	**+2.1**
KNT				S	**Sb**	**22 33 25.8**	**-1.3**
KNT				AML	AML	22 33 28.0	
	comp=E,768μm,1.1s						
KNT				AML	AML	22 33 45.5	
	comp=N,869μm,1.3s						
SOH	**Sokhos**	**2.65**	**53**	P	**Pn**	**22 32 52.0**	**+1.1**
SOH				S	**Sb**	**22 33 26.1**	**-2.1**
SOH	**Sokhos**	**2.65**	**53**	P	**Pn**	**22 32 52.0**	**+1.1**
SOH				S	**Sn**	**22 33 24.1**	**+1.1**
SOH	**Sokhos**	**2.65**	**53**	P	**Pn**	**22 32 52.6**	**+1.7**
SOH				S	**Sn**	**22 33 24.1**	**+1.1**
SOH				AML	AML	22 33 29.8	
	comp=E,2734μm,0.8s						
SOH				AML	AML	22 33 35.3	
	comp=N,1368μm,0.7s						
DID	**Didima**	**2.73

HCY	Herceg Novi	3.56	334	⇓	iPn		Pn		22 33 03.5	+0.2
HCY					eSn		Sn		22 33 46.3	+1.0
HCY	Herceg Novi	3.56	334	⇓	iPn		Pn		22 33 03.5	+0.2
HCY					eSn		Sn		22 33 46.3	+1.0
LIA	Limnos Island	3.62	78		P		Pn		22 33 04.7	+0.5
LIA	Limnos Island	3.62	78		P		Pn		22 33 04.7	+0.5
BEY	Berane	3.65	352	⇑	iPn		Pn		22 33 06.7	+2.0
BEY					eSn		Sn		22 33 48.1	+0.4
IVA	Berane	3.65	352	⇑	iPn		Pn		22 33 06.7	+2.0
IVA					eSn		Sn		22 33 48.1	+0.4
BARS	Barje	3.68	14		ePn		Pn		22 33 06.7	+1.7
NKME	Niksic	3.72	341	⇓	iPn		Pn		22 33 06.0	+0.5
NKME					eSn		Sn		22 33 49.5	+0.2
NKME	Niksic	3.72	341	⇓	iPn		Pn		22 33 06.0	+0.5
NKME					eSn		Sn		22 33 49.5	+0.2
CUC	Castrocucco	3.74	283		ePn		Pn		22 33 07.8	+1.9
CUC	Castrocucco	3.74	283		ePn		Pn		22 33 07.8	+1.9
NKY	Niksic	3.75	342	⇑	iPn		Pn		22 33 06.9	+0.9
NKY					eSn		Sn		22 33 51.0	+0.8
NKY	Niksic	3.75	342	⇑	iPn		Pn		22 33 06.9	+0.9
NKY					eSn		Sn		22 33 51.0	+0.8
CDT	Castel del Mon	3.76	300		ePn		Pn		22 33 07.0	+0.9
CEL	Celeste	3.79	256		ePn		Pn		22 33 07.1	+0.6
CEL	Celeste	3.79	256		ePn		Pn		22 33 07.1	+0.6
TREB	Trebinje	3.84	335		ePn		Pn		22 33 06.8	-0.5
VTS	Vitosha	3.89	30		P		Pn		22 33 10.6	+2.6
VTS	Vitosha	3.89	30	⇑	iP		Pn		22 33 10.6	+2.6
VTS	Vitosha	3.89	30		P		Pn		22 33 10.6	+2.6
VTS					S		Sb		22 33 59.6	-4.3
BRY	Bratogost	3.95	338	⇑	iPn		Pn		22 33 09.1	+0.2
BRY					eSn		Sn		22 33 56.0	+0.7
BRY	Bratogost	3.95	338	⇑	iPn		Pn		22 33 09.1	+0.2
BRY					eSn		Sn		22 33 56.0	+0.7
SMTH	Samothraki Isl	4.01	71		P		Pn		22 33 10.1	+0.6
SMTH	Samothraki Isl	4.01	71		P		Pn		22 33 10.1	+0.6
ANKY	Antikythira Is	4.02	146		P		Pn		22 33 11.7	+2.1
ANKY	Antikythira Is	4.02	146		P		Pn		22 33 11.7	+2.1
SIGR	SIGRI	4.11	89		P		Pn		22 33 12.9	+2.1
SIGR	SIGRI	4.11	89		P		Pn		22 33 12.9	+2.1
UPM	Unac-Piva	4.14	343	⇓	iPn		Pn		22 33 13.1	+1.6
UPM					eSn		Sn		22 33 59.6	-0.3
UPM	Unac-Piva	4.14	343	⇓	iPn		Pn		22 33 13.1	+1.6
UPM					eSn		Sn		22 33 59.6	-0.3
PLE	Pljevlja	4.17	348	⇑	iPn		Pn		22 33 13.1	+1.3
PLE					eSn		Sn		22 34 00.8	+0.3
PLE	Pljevlja	4.17	348	⇑	iPn		Pn		22 33 13.1	+1.3
PLE					eSn		Sn		22 34 00.8	+0.3
BOZC	Bozcaada	4.28	80		iP		Pn		22 33 12.2	-1.0
MS1	Monte Sant'Ang	4.29	306		ePn		Pb		22 33 18.8	-4.9
IVAS	Ivanjica	4.33	356		ePn		Pn		22 33 14.7	+0.7
PRK	Paraskevi	4.43	88		P		Pn		22 33 17.5	+2.2
PRK	Paraskevi	4.43	88		P		Pn		22 33 17.5	+2.2
BOVS	Bovan	4.46	11		ePn		Pn		22 33 16.9	+1.2
APE	Apeiranthos	4.48	118	⇓	iP		Pn		22 33 18.7	+2.7
APE	Apeiranthos	4.48	118	⇓	iP		Pn		22 33 18.7	+2.7
ALN	Alexandroupoli	4.51	67		P		Pn		22 33 17.7	+1.3
ALN	Alexandroupoli	4.51	67		P		Pn		22 33 17.7	+1.3
ALN	Alexandroupoli	4.51	67		P		Pn		22 33 18.5	+2.1
GRUS	Gruza	4.63	1		ePn		Pn		22 33 18.7	+0.6
IMMV	Iera Moni Meta	4.66	143		P		Pn		22 33 21.8	+3.3
IMMV	Iera Moni Meta	4.66	143		P		Pn		22 33 21.8	+3.3
BOLS	Boljevac	4.69	12		ePn		Pn		22 33 18.5	-0.3
BBLS	Lazići	4.69	350		ePn		Pn		22 33 20.1	+1.2
ZAGS	Zajecar	4.72	15		ePn		Pn		22 33 20.4	+1.1
URLA	Izmir	4.79	99		iP		Pn		22 33 18.6	-1.7
URLA	Izmir	4.79	99		P		Pn		22 33 18.6	-1.7
VAM	Vamos	4.81	142		P		Pn		22 33 21.1	-0.4
DIVS	Divibare	4.86	355		P		Pn		22 33 21.6	+0.3
DIVS	Divibare	4.86	355		P		Pn		22 33 21.6	+0.3
TRUS	Trudelj	4.97	359		ePn		Pn		22 33 23.6	+0.9
DGB	¯zmir	5.09	102		iP		Pn		22 33 25.5	+1.2
VAE	Valguarnera	5.15	252		P		Pn		22 33 29.8	+4.5
	comp=N,0.7nm,0.3s,baz=194,slow=8.3,SNR=4.3									
VAE					S		Sn		22 34 24.4	-0.3
	comp=N,0.6nm,0.3s,baz=22,slow=19,SNR=3.3									
KUBS	Kucevo	5.22	9		ePn		Pn		22 33 25.5	-0.7
IDI	Anoyia	5.25	138		P		Pn		22 33 27.0	+0.4
	comp=N,0.9nm,0.3s,baz=335,slow=14,SNR=14									
IDI					S		Sn		22 34 24.6	-2.5
	comp=N,3.5nm,0.3s,baz=238,slow=15,SNR=4.2									
IDI	Anoyia	5.25	138		P		Pn		22 33 25.2	-1.4
TEKS	Tekeris	5.35	352		ePn		Pn		22 33 27.3	-0.6
BALY	Balya	5.48	83		iP		Pn		22 33 32.6	+2.9
BALY	Balya	5.48	83		P		Pn		22 33 32.6	+2.9
MDVR	Moldovita	5.59	8	⇓	iP		Pn		22 33 32.9	+1.6
MDVR	Moldovita	5.59	8	⇓	iP		Pn		22 33 32.9	+1.6
SRE	Strehaia	5.75	19	⇑	iP		Pn		22 33 35.5	+2.1
SRE	Strehaia	5.75	19	⇑	iP		Pn		22 33 35.5	+2.1
FGSL	Fruska Gora	5.93	355		ePn		Pn		22 33 37.1	+1.2
BLY	Banja Luka	6.04	336		ePn		Pn		22 33 37.3	-0.1
AQU	L'Aquila	6.26	302		ePn		Pn		22 33 42.5	+2.1
	comp=N,51nm,0.9s									
AQU	L'Aquila	6.26	302		ePn		Pn		22 33 42.5	+2.1
	comp=N,51nm,0.9s									
DEMI	Demirci	6.34	89		iP		Pn		22 33 45.1	+3.5
DEMI	Demirci	6.34	89		P		Pn		22 33 45.1	+3.5
UDBI	Udbina	6.37	327		iPn		Pn		22 33 43.2	+1.2
UDBI					Sn		Sn		22 34 54.4	-0.3
UDBI	Udbina	6.37	327		iPn		Pn		22 33 43.1	+1.1
UDBI					Sn		Sn		22 34 54.4	-0.3
BZS	Buzias	6.41	7	⇓	iP		Pn		22 33 44.2	+1.8
BZS	Buzias	6.41	7	⇓	iP		Pn		22 33 44.2	+1.8
BZS					S		Sn		22 34 59.5	+4.0
LOT	Lotru	6.63	20	⇓	iP		Pn		22 33 47.3	+1.7
LOT	Lotru	6.63	20		S		Sn		22 35 06.0	+4.9
LOT	Lotru	6.63	20	⇓	iP		Pn		22 33 47.3	+1.7
NVLJ	Novalja	6.79	323		ePn		Pn		22 33 47.8	0.0
NVLJ					Sn		Sn		22 35 01.6	-3.4
NVLJ	Novalja	6.79	323		ePn		Pn		22 33 47.7	0.0
ARR	Arges	6.81	25	⇑	iP		Pn		22 33 50.2	+2.1
ARR	Arges	6.81	25		S		Sn		22 35 10.5	+4.9
ARR	Arges	6.81	25	⇑	iP		Pn		22 33 50.2	+2.1
MTUR	Matau	6.84	28	⇑	iP		Pn		22 33 51.8	+3.4
MTUR	Matau	6.84	28	⇑	iP		Pn		22 33 51.8	+3.4
GDZ	Gediz	6.93	89		iP		Pn		22 33 54.3	+4.6
VOIR		7.01	27	⇑	iP		Pn		22 33 54.3	+3.5
VOIR		7.01	27	⇑	iP		Pn		22 33 54.3	+3.5
VOIR					S		Sn		22 35 14.1	+3.5
SIRR	Siria	7.05	6	⇓	iP		Pn		22 33 53.9	+2.5
SIRR	Siria	7.05	6	⇓	iP		Pn		22 33 53.9	+2.5
SIRR					S		Sn		22 35 15.4	+3.9
ISR	Istrita	7.35	35	⇑	iP		Pn		22 33 59.2	+3.8
OZLJ	Ozalj	7.39	331		ePn		Pn		22 33 55.8	-0.1
OZLJ					Sn		Sn		22 35 14.1	-5.5
OZLJ	Ozalj	7.39	331		ePn		Pn		22 33 55.7	-0.2
MLR	Muntele Rosu	7.39	31		P		Pn		22 33 58.4	+2.3
	comp=N,0.4nm,0.3s,baz=250,slow=5.7,SNR=31									
MLR					S		Sn		22 35 25.7	+5.7
	comp=N,0.1nm,0.3s,baz=36,slow=17,SNR=2.2									
MLR					LR		LR		22 37 51.2	
	comp=N,38nm,18.0s,baz=213,slow=46									
MLR	Muntele Rosu	7.39	31	⇓	iP		Pn		22 33 59.2	+3.1
MLR	Muntele Rosu	7.39	31		S		Sn		22 35 25.5	+5.5
CRES	Cresnjev	7.57	332		iPn		Pn		22 33 58.5	0.0
CRES					iSn		Sn		22 35 21.0	-3.3
CRES	Cresnjev	7.57	332		ePn		Pn		22 33 57.8	-0.7
DOPR	Dopca	7.59	26	⇓	iP		Pn		22 34 01.5	+2.8
DOPR	Dopca	7.59	26	⇓	iP		Pn		22 34 01.5	+2.8
DOPR					S		Sn		22 35 28.8	+4.1
DRGR		7.70	11	⇑	iP		Pn		22 34 02.6	+2.4
DRGR		7.70	11		S		Sn		22 35 32.8	+5.5
DRGR		7.70	11	⇑	iP		Pn		22 34 02.6	+2.4
TLB	Topalu	7.71	44	⇑	iP		Pn		22 34 02.8	+2.5
TLB	Topalu	7.71	44	⇑	iP		Pn		22 34 02.8	+2.5
TIRR	Tirgusor	7.83	46	⇓	iP		Pn		22 34 05.0	+3.1
TIRR	Tirgusor	7.83	46	⇓	iP		Pn		22 34 05.0	+3.1
CEY	Cerknica	7.91	327		ePn		Pn		22 34 02.7	-0.4
PLOR	Plostina	7.97	32	⇑	iP		Pn		22 34 08.3	+4.3
PLOR	Plostina	7.97	32		S		Sn		22 35 39.0	+4.9
CFR	Carcaliu	8.16	41	⇑	iP		Pn		22 34 09.6	+3.2
CFR	Carcaliu	8.16	41	⇑	iP		Pn		22 34 09.6	+3.2
SOKA	Soboth	8.45	333		iPn		Pn		22 34 10.1	-0.5
	comp=N,7.9nm,0.4s,SNR=8.6									
SOKA					iSn		Sn		22 35 40.7	-5.3
	comp=N,6.8nm,0.8s									
SOKA	Soboth	8.45	333		Pn		Pn		22 34 10.1	-0.5
	comp=N,7.9nm,0.4s,SNR=8.6									
OBKA	Obir	8.49	331		iPn		Pn		22 34 10.9	-0.2
	comp=N,17nm,0.5s,SNR=6.6									
OBKA	Obir	8.49	331		Pn		Pn		22 34 10.9	-0.2
	comp=N,17nm,0.5s,SNR=6.6									
PSZ	Piszkesteto	8.68	357	⇑	iP		Pn		22 34 15.5	+1.9
PSZ	Piszkesteto	8.68	357		ePn		Pn		22 34 13.2	-0.4
	comp=N,18nm,0.9s									
PSZ	Piszkesteto	8.68	357		eP		Pn		22 34 14.7	+1.1
PSZ					S		Sn		22 35 55.7	+4.3
PSZ	Piszkesteto	8.68	357		ePn		Pn		22 34 13.2	-0.4
	comp=N,18nm,0.9s									
PSZ	Piszkesteto	8.68	357		ePn		Pn		22 34 14.7	+1.1
PSZ					eSn		Sn		22 35 48.3	-3.1
ARSA	Arzberg	8.80	337		ePn		Pn		22 34 15.1	-0.1
	comp=N,4.1nm,0.4s									
ARSA	Arzberg	8.80	337		Pn		Pn		22 34 15.1	-0.1
	comp=N,4.1nm,0.4s									
MYKA	Terra Mystica	8.95	328		iPn		Pn		22 34 18.4	+1.1
	comp=N,3.6nm,0.4s									
MYKA	Terra Mystica	8.95	328		Pn		Pn		22 34 18.4	+1.1
	comp=N,3.6nm,0.4s									
BURAR	Bucovina Array	9.01	20	⇓	iP		Pn		22 34 22.0	+3.7
KECS	Kecovo	9.23	360		ePn		Pn		22 34 22.6	+1.5
KECS	Kecovo	9.23	360		ePN		Pn		22 34 22.6	+1.5
VYHS	Vyhne	9.32	353		ePn		Pn		22 34 22.0	-0.4
VYHS	Vyhne	9.32	353		ePN		Pn		22 34 22.0	-0.4
ABTA	Abfaltersbach	9.53	324		ePn		Pn		22 34 26.0	+0.6
	comp=N,3.1nm,0.3s									
ABTA					eSn		Sn		22 36 08.5	-3.9
	comp=N,15nm,0.7s									
ABTA	Abfaltersbach	9.53	324		Pn		Pn		22 34 26.0	+0.6
	comp=N,3.1nm,0.3s									
KEST	Kesra	9.58	252		P		Pn		22 34 29.8	+3.6
	comp=N,0.3nm,0.3s,baz=72,slow=13,SNR=6.5									
KEST					LR		LR		22 39 25.9	
	comp=N,173nm,19.8s,baz=186,slow=45									
CRVS	Cervenica-Dubn	9.67	4		ePn		Pn		22 34 27.2	0.0
CRVS	Cervenica-Dubn	9.67	4		ePN		Pn		22 34 27.2	0.0
MOA	Molln	9.73	334		ePn		Pn		22 34 28.4	+0.4
	comp=N,4.8nm,0.4s,SNR=5.8									
MOA					eSn		Sn		22 36 14.9	-2.3
	comp=N,4.9nm,0.6s									
MOA	Molln	9.73	334		Pn		Pn		22 34 28.4	+0.4
	comp=N,4.8nm,0.4s,SNR=5.8									
MILM	Milestii Mici	9.74	36	⇑	iP		Pn		22 34 31.6	+3.4
MILM	Milestii Mici	9.74	36	⇑	iP		Pn		22 34 31.6	+3.4
KOLS	Kolonicke sedl	9.75	7		ePn		Pn		22 34 30.6	+2.3
KOLS	Kolonicke sedl	9.75	7		ePN		Pn		22 34 30.6	+2.3
BRTR	Keskin Array B	10.12	83		P		Pn		22 34 36.6	+3.1
	comp=N,0.1nm,0.3s,baz=273,slow=11,SNR=9.3									
WTTA	Wattenberg	10.31	324		eSn		Sn		22 36 30.1	-1.7
	comp=N,8.9nm,0.4s									
WATA	Walderalm	10.39	324		iPn		Pn		22 34 37.9	+0.6
	comp=N,11nm,0.6s,SNR=8.2									
WATA					eSn		Sn		22 36 30.8	-3.0
	comp=N,5.2nm,0.5s									
WATA	Walderalm	10.39	324		Pn		Pn		22 34 37.9	+0.6
	comp=N,11nm,0.6s,SNR=8.2									
VRAC	Vranov	10.45	346		P		Pn		22 34 37.4	-0.4
	comp=N,0.2nm,0.3s,baz=183,slow=14,SNR=2.6									
VRAC					LR		LR		22 38 53.9	
	comp=N,143nm,21.5s,baz=190,slow=39									
MOTA	Moosalm	10.62	323		ePn		Pn		22 34 41.3	+1.0
	comp=N,22nm,0.8s,SNR=8.5									
MOTA	Moosalm	10.62	323		Pn		Pn		22 34 41.3	+1.0
	comp=N,22nm,0.8s,SNR=8.5									
OKC	Ostrava-Krasne	10.72	352		eP		Pn		22 34 43.0	+1.4
OKC					AMS		AMS		22 40 00.0	
	comp=N,300nm,9.2s									
OKC	Ostrava-Krasne	10.72	352		P		Pn		22 34 43.0	+1.4
MORC	Moravsky Berou	10.74	349		ePn		Pn		22 34 42.2	+0.3
MORC	Moravsky Berou	10.74	349	⇑	iP		Pn		22 34 43.3	+1.4
GERES	GERESS Array B	10.78	335		P		Pn		22 34 41.5	-1.0
	comp=N,0.8nm,0.3s,baz=154,slow=14,SNR=14									
GERES					S		Sn		22 36 38.7	-4.4
	comp=N,0.4nm,0.3s,baz=161,slow=16,SNR=4.0									
GERES					LR		LR		22 39 31.2	
	comp=N,44nm,21.7s,baz=146,slow=41									
DAVOX	Davos/Dischmat	10.85	317		P		Pn		22 34 44.6	+1.2
	comp=N,0.2nm,0.3s,baz=160,slow=15,SNR=3.9									
DAVOX					S		Sn		22 36 41.4	-3.5
	comp=N,0.3nm,0.3s,baz=4.1,slow=14,SNR=2.9									
DAVOX					LR		LR		22 39 37.0	
	comp=N,165nm,18.2s,baz=130,slow=42									
RETA	Reutte	10.88	322		iPn		Pn		22 34 44.9	+1.0
	comp=N,0.7nm,0.2s									
RETA					eSn		Sn		22 36 42.1	-3.6
	comp=N,3.6nm,0.3s									
RETA	Reutte	10.88	322		Pn		Pn		22 34 44.9	+1.0
	comp=N,0.7nm,0.2s									
KHC	Kasperske Hory	11.07	335		eP		Pn		22 34 45.9	-0.5
KHC					ex		x		22 34 58.6	
KHC					ex		x		22 35 20.3	
KHC					eS		Sn		22 36 46.6	-3.5
KHC					AMS		AMS		22 40 10.0	
	comp=N,600nm,8.4s									
KHC	Kasperske Hory	11.07	335		P		Pn		22 34 45.9	-0.5
KHC	Kasperske Hory	11.07	335		ePn		Pn		22 34 45.8	-0.6
	comp=N,3.6nm,1.0s									
GOPC	GO Pecny, Ondr	11.42	341		AMS		AMS		22 39 50.0	
	comp=N,300nm,7.8s									
DPC	Dobruska-Polom	11.49	346		eP		Pn		22 35 01.9	+10
DPC					AMS		AMS		22 40 10.0	
PRU	Pruhonice	11.55	340		AMS		AMS		22 39 50.0	
	comp=N,300nm,9.0s									
UPC	Upice	11.70	346		AMS		AMS		22 40 20.0	
	comp=N,600nm,11.2s									
PVCC	Panska Ves	12.04	341		AMS		AMS		22 40 50.0	
	comp=N,300nm,7.9s									
STU	Stuttgart	12.54	323		ePn		Pn		22 35 07.6	+1.2
	comp=N,12nm,0.6s									
STU	Stuttgart	12.54	323		ePn		Pn		22 35 07.6	+1.2
	comp=N,12nm,0.6s									
KIEV	Kiev	12.96	25		ePn		Pn		22 35 13.4	+1.2
KIEV	Kiev	12.96	25		ePn		Pn		22 35 13.4	+1.2
AKASG	Malin Array Be	12.97	25		P		Pn		22 35 12.2	0.0
	baz=209,slow=12,SNR=4.3									
MMAI	Mount Meron Ar	13.50	113		P		Pn		22 35 20.2	+0.4
	baz=317,slow=12,SNR=2.6									
SUW	Suwalki	14.87	6		eP		P		22 35 43.9	-0.1
ASF	Jabal al Asfar	15.02	113		P		P		22 35 44.8	-1.0
	comp=N,0.1nm,0.3s,baz=225,slow=1.4,SNR=2.3									
EIL	Elat	15.22	125		P		P		22 35 48.8	+0.8
	comp=N,0.5nm,0.3s,baz=333,slow=5.6,SNR=15									
KVAR	Kislovodsk Arr	17.19	67		P		Pn		22 36 08.3	0.0
	baz=297,slow=18,SNR=2.1									
KBZ	Khabaz	17.30	68		P		P		22 36 11.4	+0.4
	comp=N,0.1nm,0.3s,baz=297,slow=6.8,SNR=2.9									
KBZ					LR		LR		22 44 46.2	
	comp=N,36nm,20.0s,baz=288,slow=44									
GNI	Garni	18.61	80		LR		LR		22 43 58.0	
	comp=N,63nm,19.6s,baz=270,slow=38									
GNI	Garni	18.61	80		eP		Pn		22 36 27.3	+1.3
	comp=N,100nm,1.2s									
GNI	Garni	18.61	80		eP		Pn		22 36 27.3	+1.3
	comp=N,100nm,1.2s									
ESDC	Sonseca Array	18.93	279		P		Pn		22 36 31.1	+1.3
	comp=N,0.2nm,0.3s,baz=71,slow=11,SNR=6.7									
OBN	Obninsk	19.16	29		LR		LR		22 44 44.8	
	comp=N,101nm,18.5s,baz=102,slow=40									
TAM	Tamanrasset	20.82	222		eP		Pn		22 36 54.1	+1.8
	comp=N,1.7nm,0.9s									
MDT	Midelt	21.32	260		LR		LR		22 44 56.5	
	comp=N,66nm,19.8s,baz=48,slow=36									
HFS	Hagfors	21.34	351		P		P		22 36 54.5	-0.5
	comp=N,5.9nm,0.6s,baz=168,slow=9.7,SNR=17									
HFS					LR		LR		22 46 42.8	
	comp=N,73nm,19.5s,baz=172,slow=41									
FINES	FINESS Array B	22.48	7		P		P		22 37 05.7	-1.5
	comp=N,3.9nm,0.5s,baz=178,slow=10,SNR=24									
NB2	NORSAR Subarra	22.57	348		P		P		22 37 07.5	-0.7
	comp=Z,13nm,1.0s,baz=165,slow=11									
NB2	NORSAR Subarra	22.57	348		P		P		22 37 07.5	-0.7
	comp=Z,13nm,1.0s,SNR=8.2									
NOA	NORSAR Array B	22.57	348		P		P		22 37 07.6	-0.7
	comp=Z,7.0nm,0.8s,baz=165,slow=10,SNR=17									
EKA	Eskdalemuir Ar	22.58	323		P		P		22 37 08.2	-0.1
	comp=Z,5.9nm,0.7s,baz=121,slow=11,SNR=12									
ESK	Eskdalemuir	22.59	323		eP		P		22 37 10.3	+1.8
	comp=Z,12nm,0.8s									
ESK	Eskdalemuir	22.59	323		eP		P		22 37 10.3	+1.8
	comp=Z,12nm,0.8s									
AKTO	Aktyubinsk	28.52	55		P		P		22 38 03.0	-0.5
	comp=Z,0.9nm,0.4s,baz=280,slow=7.9,SNR=3.8									
GEYT	Alibeck	29.25	81		P		P		22 38 10.1	0.0
	comp=Z,2.4nm,0.5s,baz=268,slow=8.8,SNR=6.8									
ABKAR	Akbulak array	29.62	57		eP		P		22 38 12.7	-0.5
	comp=Z,0.7nm,0.6s									
ABKAR	Akbulak array	29.62	57		eP		P		22 38 12.7	-0.5
	comp=Z,0.7nm,0.6s									
ARU	Arti	30.24	43		eP		P		22 38 17.2	-1.4
	comp=Z,2.5nm,0.6s									
ARCES	ARCESS Array B	30.46	3		P		P		22 38 18.6	-1.9
	comp=Z,2.7nm,0.7s,baz=190,slow=10,SNR=8.6									
TORD	Torodi Ar. Bea	30.89	218		P		P		22 38 25.1	+0.3
	comp=Z,0.7nm,0.7s,baz=21,slow=10,SNR=8.9									
BRVK	Borovoye	36.34	51		eP		P		22 39 10.8	-1.1
	comp=Z,11nm,0.8s									
BRVK	Borovoye	36.34	51		eP		P		22 39 10.8	-1.1
	comp=Z,11nm,0.8s									
KKAR	Karatay Array	37.34	68		eP		P		22 39 20.1	-0.4
	comp=Z,1.8nm,0.5s									
KKAR	Karatay Array	37.34	68		eP		P		22 39 20.1	-0.4
	comp=Z,1.8nm,0.5s									
KURK	Kurchatov	41.61	54		eP		P		22 39 54.7	-1.3
	comp=Z,29nm,1.0s									
MKAR	Makanchi Array	44.71	59		P		P		22 40 20.4	-0.8
	comp=Z,3.3nm,0.5s,baz=281,slow=7.2,SNR=42									
ZALV	Zalesovo Beam	44.95	49		P		P		22 40 22.2	-0.7
	comp=Z,7.3nm,0.6s,baz=275,slow=8.4,SNR=30									
NRIK	Noril'sk	45.82	27		P		P		22 40 29.9	+0.3
	comp=Z,4.2nm,0.6s,baz=346,slow=8.2,SNR=6.7									
LSA	Lhasa	57.64	76		eP		P		22 41 58.5	-0.5
	comp=Z,2.9nm,0.6s									
LSA	Lhasa	57.64	76		eP		P		22 41 58.5	-0.5
	comp=Z,2.9nm,0.6s									
SONM	Songino Array	59.75	51		P		P		22 42 12.9	-0.2
	comp=Z,0.6nm,0.6s,baz=285,slow=10,SNR=5.9									
TXAR	Lajitas Array	94.26	314		P		P		22 45 26.0	-1.7
	comp=Z,0.1nm,0.3s,baz=264,slow=0.9,SNR=2.8									

IDC 18 22:37:46.3±6.5, 19.13S×169.14E, h154km±50km, mb3.7/3, mb1 3.8/4, mb1mx3.3/37, mbtmp4.1/4, Error ellipse: s-maj=88.5km s-min=55.7km az=145.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	3.87	220	P	Pn

PETK LR LR 22 46 48.9
comp=Z,10µm,21.9s,baz=95,slow=37
GAMB Gambell 13.57 18 *e*Pn **Pn 22 41 50.0 -0.3**
CHGN Chignik 14.26 60 *e*Pn **Pn 22 41 58.4 -1.4**
SKR Severo-Kuril's 14.47 277*c i*P **Pn 22 42 04.1 +1.4**
SKR *i* S **Sn 22 44 50.1 +8.0**
SKR pmax pmax
comp=Z,3µm,4.6s
SKR pmax pmax
comp=Z,164nm,1.3s
SKR MLR MLR
comp=Z,6µm,17.0s
SKR MLR MLR
comp=Z,6µm,17.0s
SVW2 Sparrevohn 17.17 45 *e*P **P 22 42 39.2 0.0**
comp=Z,72nm,0.8s
SVW2 *e*ScP **ScP 22 50 54.3 +0.7**
OHAK Old Harbor 17.21 59 *e*Pn **Pn 22 42 34.6 -3.5**
comp=Z,207nm,0.6s
KDAK Kodiak Island 17.67 57 *e*P **Pn 22 42 41.1 -2.7**
KDAK pmax pmax
comp=Z,130nm,0.7s
KDAK Kodiak Island 17.67 57 *e*Pn **Pn 22 42 41.1 -2.7**
comp=Z,131nm,0.7s
TT01 Tatalina 17.81 39 *e*Pn **P 22 42 47.0 +0.9**
TTA Tatalina 17.82 39 *e*P **P 22 42 47.8 +1.4**
TTA pmax pmax
comp=Z,150nm,1.0s
TTA Tatalina 17.82 39 *e*Pn **P 22 42 47.8 +1.4**
comp=Z,149nm,1.0s
MA2 Magadan 18.03 309 P **P 22 42 49.4 +0.8**
comp=Z,1.6nm,0.3s,baz=76,slow=10,SNR=11
MA2 LR LR 22 49 20.5
comp=Z,15µm,19.3s,baz=111,slow=36
BILL Bilibino 18.05 344*c i*P **P 22 42 50.2 +1.4**
BILL *e*S **S 22 46 13.1 -1.3**
BILL pmax pmax
comp=Z,190nm,0.8s
BILL MLR MLR
comp=Z,8µm,16.0s
BILL Bilibino 18.05 344 *e*Pn **P 22 42 50.4 +1.6**
comp=Z,170nm,0.8s
RSO Redoubt South 18.24 48 *e*Pn **P 22 42 52.5 +1.4**
SEY Seymchan 18.52 320 P **Pn 22 42 55.3 +1.0**
comp=Z,0.6nm,0.3s,baz=119,slow=10,SNR=14
SEY PcP **PcP 22 47 23.0 +0.3**
comp=Z,0.6nm,0.3s,baz=134,slow=23,SNR=7.7
SEY LR LR 22 49 29.7
comp=Z,14µm,21.3s,baz=130,slow=35
CNPM China Poot 18.72 52 *e*P **Pn 22 42 56.5 -0.1**
comp=Z,114nm,0.8s
SPU Mount Spurr 18.79 47 *e*P **Pn 22 42 57.6 0.0**
BRLK Bradley Lake 18.95 51 *e*P **P 22 42 58.7 0.0**
comp=Z,115nm,0.9s
PPLA Purkeypile 19.37 42 *e*P **P 22 43 03.5 +0.1**
comp=Z,242nm,0.8s
SUA Susitna One 19.48 46 *e*P **P 22 43 04.5 -0.1**
comp=Z,207nm,0.9s
SUA *e*ScP **ScP 22 50 57.9 -0.8**
CAST Castle Rocks 19.63 40 *e*P **Pn 22 43 07.1 -0.5**
comp=Z,174nm,0.8s
RC01 Rabbit Creek A 19.84 48 *e*P **P 22 43 07.4 -1.0**
comp=Z,80nm,0.7s
RC01 *e*S **Sn 22 46 55.8 +3.7**
KTH Kantishna Hill 20.16 41 *e*P Pn 22 43 13.1 -0.8
comp=Z,498nm,0.9s
KTH LR LR
comp=Z,8µm,21.0s
PMR Palmer 20.26 47 *e*P **P 22 43 12.2 -0.7**
PMR pmax pmax
comp=Z,57nm,0.7s
PMR MLR MLR
comp=Z,7µm,21.0s
PMR Palmer 20.26 47 *e*P **P 22 43 12.2 -0.7**
comp=Z,57nm,0.7s
PMR *e*ScP **ScP 22 51 00.9 +0.5**
PMR LR LR
comp=Z,7µm,21.0s
BPAW Bear Paw Mtn. 20.36 39 *e*P **P 22 43 15.1 +1.0**
comp=Z,150nm,1.0s
BPAW LR LR
comp=Z,6µm,21.0s
TRF Thorofare Moun 20.38 41 *e*P **P 22 43 15.0 +0.5**
comp=Z,289nm,0.9s
TRF *e*ScP **ScP 22 51 03.3 +2.4**
TRF LR LR
comp=Z,7µm,18.0s
SML Sawmill 20.68 46 *e*P **P 22 43 16.4 -1.2**
SML pmax pmax
comp=Z,210nm,0.8s
SML MLR MLR
comp=Z,3µm,19.0s
SML Sawmill 20.68 46 *e*P **P 22 43 16.4 -1.2**
comp=Z,215nm,0.8s
SML LR LR
comp=Z,3µm,19.0s
MLY Manley 20.87 37 *e*P **P 22 43 20.7 +1.1**
comp=Z,143nm,0.9s
MLY *e*ScP **ScP 22 51 02.9 +1.0**
MLY LR LR
comp=Z,8µm,20.0s
RND Reindeer 20.96 42 *e*P **P 22 43 20.0 -0.7**
RND pmax pmax
comp=Z,150nm,0.8s
RND MLR MLR
comp=Z,9µm,21.0s
RND Reindeer 20.96 42 *e*P **P 22 43 20.0 -0.7**
comp=Z,148nm,0.8s
RND LR LR
comp=Z,9µm,21.0s
GLI Glacier Island 21.04 49 *e*P **P 22 43 19.5 -1.9**
comp=Z,112nm,0.8s
GLI *e*ScP **ScP 22 51 03.4 +1.1**
GLI LR LR
comp=Z,8µm,21.0s
MCK McKinley 21.05 41 *e*P **P 22 43 21.0 -0.5**
MCK pmax pmax
comp=Z,140nm,0.9s
MCK MLR MLR
comp=Z,8µm,19.0s
MCK McKinley 21.05 41 *e*P **P 22 43 20.9 -0.5**
comp=Z,143nm,0.9s
MCK *e*ScP **ScP 22 51 12.2 +10**
MCK LR LR
comp=Z,8µm,19.0s
SCM Sheep Creek Mo 21.15 47 *e*P **P 22 43 21.9 -0.8**
SCM pmax pmax
comp=Z,260nm,0.9s
SCM MLR MLR
comp=Z,2µm,20.0s
SCM Sheep Creek Mo 21.15 47 *e*P **P 22 43 21.9 -0.8**
comp=Z,255nm,0.9s
SCM LR LR
comp=Z,2µm,20.0s
MID Middleton Isla 21.16 54 *e*P **P 22 43 22.6 0.0**
MID pmax pmax
comp=Z,160nm,0.9s
MID MLR MLR
comp=Z,6µm,22.0s
MID Middleton Isla 21.16 54 *e*P **P 22 43 22.6 0.0**
comp=Z,157nm,0.9s
MID LR LR
comp=Z,6µm,22.0s
FID Port Fidalgo 21.30 50 *e*P **P 22 43 22.6 -1.6**
comp=Z,140nm,0.7s
FID LR LR
comp=Z,10µm,21.0s
DHY Denali Highway 21.48 43 *e*P **P 22 43 25.8 -0.5**
comp=Z,286nm,0.7s
DHY *e*ScP **ScP 22 51 06.7 +3.1**
DHY LR LR
comp=Z,12µm,18.0s
KUR Kuril'sk 21.51 266*c i*P **P 22 43 27.0 +0.4**
KUR PPP PPP 22 43 55.6
KUR *i* S **S 22 47 25.9 +2.1**
KUR pmax pmax
comp=Z,246nm,1.7s
KUR pmax pmax
comp=Z,2µm,8.5s
KUR MLR MLR
comp=N,4µm,21.0s
KUR MLR MLR
comp=E,3µm,21.0s
KUR MLR MLR
comp=Z,3µm,21.0s
EYAK Cordova Ski Ar 21.62 51 *e*P **P 22 43 26.9 -0.7**
comp=Z,117nm,1.0s
EYAK LR LR
comp=Z,14µm,22.0s
WRH Wood River Hil 21.67 40 *e*P **P 22 43 26.9 -1.2**
comp=Z,88nm,0.8s
WRH *e*ScP **ScP 22 51 04.0 +0.2**
WRH LR LR
comp=Z,5µm,18.0s
DIV Divide 21.72 49 *e*P **P 22 43 27.5 -1.2**
comp=Z,98nm,0.7s
DIV LR LR
comp=Z,12µm,21.0s
KLU Klutina 21.72 48 *e*P **P 22 43 27.8 -1.0**
comp=Z,164nm,1.0s
KLU LR LR
comp=Z,9µm,19.0s
MDM Murphy Dome 21.80 38 *e*P **P 22 43 29.2 -0.5**
comp=Z,222nm,0.8s
MDM LR LR
comp=Z,7µm,18.0s
CCB Clear Creek Bu 21.85 39 *e*P **P 22 43 28.6 -1.5**
comp=Z,82nm,0.8s
CCB *e*ScP **ScP 22 51 04.2 0.0**
CCB LR LR
comp=Z,7µm,18.0s
COLA College 21.92 39 *e*P **P 22 43 31.1 +0.3**
COLA pmax pmax
comp=Z,180nm,0.8s
COLA MLR MLR
comp=Z,7µm,19.0s
COLA College 21.92 39 *e*P **P 22 43 31.1 +0.3**
comp=Z,178nm,0.8s
COLA LR LR
comp=Z,7µm,19.0s
HDA Harding Lake 22.11 40 *e*P **P 22 43 31.4 -1.5**
comp=Z,84nm,1.0s
HDA LR LR
comp=Z,6µm,20.0s
RAGM Ragged Mountai 22.12 51 *e*P **P 22 43 31.8 -1.3**
comp=Z,160nm,1.0s
RAGM LR LR
comp=Z,10µm,21.0s
COLD Coldfoot 22.14 32 *e*P **P 22 43 33.6 +0.4**
comp=Z,106nm,0.9s
COLD *e*ScP **ScP 22 51 08.3 +3.3**
COLD LR LR
comp=Z,6µm,20.0s
BMRM Bremner River 22.25 50 *e*P **P 22 43 34.0 -0.4**
comp=Z,179nm,0.9s
BMRM *e*ScP **ScP 22 51 08.0 +2.6**
BMRM LR LR
comp=Z,14µm,22.0s
ILAR Eielson Array 22.26 39 P **P 22 43 32.2 -2.3**
comp=Z,28nm,0.6s,baz=242,slow=9.4,SNR=63
ILAR PcP **PcP 22 47 29.3 -0.3**
comp=Z,6.1nm,0.6s,baz=281,slow=3.4,SNR=8.9
ILAR ScP **ScP 22 51 05.0 -0.4**
comp=Z,2.6nm,0.7s,baz=284,slow=3.3,SNR=7.8
ILB Eielson Array 22.26 39 *e*P **P 22 43 33.1 -1.4**
ILB *e*ScP **ScP 22 51 06.8 +1.5**
IL1 Eielson Array 22.26 39 *e*P **P 22 43 33.0 -1.6**
IL1 *e*ScP **ScP 22 51 04.6 -0.7**
PAX Paxson 22.29 44 *e*P **P 22 43 34.2 -0.7**
PAX pmax pmax
comp=Z,130nm,0.8s
PAX MLR MLR
comp=Z,8µm,18.0s
PAX Paxson 22.29 44 *e*P **P 22 43 34.2 -0.7**
comp=Z,126nm,0.8s
PAX LR LR
comp=Z,8µm,18.0s
TYV Tymovskoe 22.76 284 *e*P **P 22 43 39.2 -0.7**
TYV *e*S **PcP 22 47 29.0 -1.8**
TYV pmax pmax
comp=Z,92nm,1.0s
TYV pmax pmax
comp=E,3µm,4.0s
TYV MLR MLR
comp=E,9µm,15.0s
CRQM Cirque 22.92 51 *e*P **P 22 43 40.4 -1.3**
comp=E,166nm,0.9s
CRQM *e*ScP **ScP 22 51 08.7 +1.4**
CRQM LR LR
comp=Z,7µm,22.0s
MENT Mentasta 23.05 45 *e*P **P 22 43 42.2 -0.7**
comp=Z,110nm,0.8s
MENT LR LR
comp=Z,7µm,20.0s
DOT Dot Lake 23.08 43 *e*P **P 22 43 42.6 -0.6**
comp=Z,235nm,0.9s
DOT *e*ScP **ScP 22 51 08.3 +0.8**
DOT LR LR
comp=Z,30µm,22.0s
YUK Yuzh-Kuril'sk 23.34 265 *i* P **P 22 43 46.8 +0.9**
BALM Baldy 23.34 50 *e*P **P 22 43 44.4 -1.5**
BALM pmax pmax
comp=Z,76nm,1.0s
BALM MLR MLR
comp=Z,7µm,22.0s
BALM Baldy 23.34 50 *e*P **P 22 43 44.4 -1.5**
comp=Z,76nm,1.0s
BALM *e*ScP **ScP 22 51 10.6 +2.2**
BALM LR LR
comp=Z,7µm,22.0s
FYU Fort Yukon 23.58 36 PFAKE 22 44 00.0 +12
FYU LR LR
comp=Z,7µm,20.0s
YSS Yuzh-Sakhalins 24.00 274α *i* P **P 22 43 53.1 +1.0**
YSS *e*S **S 22 48 06.1 -1.4**
YSS pmax pmax
comp=Z,140nm,1.3s
YSS pmax pmax
comp=E,160nm,1.7s
YSS pmax pmax
comp=Z,3µm,4.0s
YSS pmax pmax
comp=E,2µm,3.3s
YSS MLR MLR
comp=E,5µm,19.0s
YSS MLR MLR
comp=Z,5µm,19.0s
YSS Yuzh-Sakhalins 24.00 274 *e*P **P 22 43 53.5 +1.3**
comp=Z,234nm,1.2s
YSS LR LR
comp=Z,3µm,20.0s
PCA Pinnacle 24.28 53 *e*P **P 22 43 54.0 -0.8**
comp=Z,124nm,0.7s
PCA LR LR
comp=Z,12µm,18.0s
YKU2 Yakutat 24.55 54 PFAKE 22 44 10.0 +13
YKU2 LR LR
comp=Z,11µm,19.0s
EGAK Eagle 24.60 41 *e*P **P 22 43 56.8 -0.7**
comp=Z,374nm,1.1s
EGAK LR LR
comp=Z,6µm,18.0s
DAWY Dawson 25.19 43 *e*P **P 22 44 02.6 -0.3**
comp=Z,257nm,0.9s
DAWY *e*ScP **ScP 22 51 12.9 -0.4**
DAWY LR LR
comp=Z,9µm,20.0s
DHAK Deception Hill 25.30 55 PFAKE 22 44 20.0 +16
DHAK LR LR
comp=Z,10µm,20.0s
ASAJ Asahikawa 25.36 268 *e*P **P 22 44 05.5 +0.9**
comp=Z,234nm,0.9s
ASAJ LR LR
comp=Z,3µm,20.0s
HYT Haines Junctio 25.68 51 *e*P **P 22 44 07.0 -0.5**
comp=Z,57nm,0.8s
HYT LR LR
comp=Z,7µm,18.0s
ERM Erimo 26.08 264 *i* P **P 22 44 11.4 +0.2**
ERM pmax pmax
comp=Z,115nm,1.2s
ERM Erimo 26.08 264 *e*P **P 22 44 11.6 +0.4**
comp=Z,154nm,1.4s
SKAG Skagway 26.77 54 PFAKE 22 44 30.0 +13
SKAG LR LR
comp=Z,8µm,21.0s
HABR Khabarovsk 28.20 282*ce*P **P 22 44 29.2 -0.9**
HABR *e**PP **pP 22 44 38.3 +1.1**
HABR *e* 22 45 17.6
HABR *e*PPP PPP 22 45 26.5
HABR *e*S **S 22 49 14.4 +0.2**
HABR *e**SS **sS 22 49 29.7 +3.9**
HABR *e*SS **SnSn 22 50 33.2 +2.2**
HABR *e*SSS SSS 22 50 48.3
HABR *e* 22 55 12.1
HABR pmax pmax
comp=N,31nm,1.8s
HABR pmax pmax
comp=E,66nm,1.8s
HABR pmax pmax
comp=Z,134nm,1.8s
HABR MLR MLR
comp=Z,3µm,21.0s
INK Inuvik 28.41 35 P **P 22 44 31.5 -0.3**
comp=Z,32nm,0.9s,baz=248,slow=8.5,SNR=22
INK PcP **PcP 22 47 43.4 0.0**
comp=Z,19nm,0.9s,baz=187,slow=4.2,SNR=3.7
INK S **S 22 49 15.0 -2.2**
comp=Z,0.8nm,0.3s,baz=265,slow=12,SNR=1.8
INK ScP **SS 22 51 19.7 +2.4**
comp=Z,3.8nm,0.7s,baz=227,slow=3.9,SNR=3.1
INK Inuvik 28.41 35 *e*P **P 22 44 31.7 -0.1**
INK pmax pmax
comp=Z,120nm,0.9s
INK Inuvik 28.41 35 *e*P **P 22 44 31.7 -0.1**
comp=Z,122nm,0.8s
INK PcP **PcP 22 47 43.4 0.0**
INK *S* **S 22 49 15.0 -2.2**
INK *e*ScP **ScP 22 51 24.0 +1.2**
INK LR LR
comp=Z,6µm,20.0s
CRAG Craig 28.44 62 PFAKE 22 44 40.0 +7.9
CRAG LR LR
comp=Z,8µm,21.0s
YAK Yakutsk 28.55 312 P **P 22 44 32.6 -0.5**
comp=Z,68nm,0.6s,baz=96,slow=1.4,SNR=14
YAK S **S 22 49 19.2 -0.3**
comp=Z,14nm,0.4s,baz=197,slow=19,SNR=2.5
YAK ScP **SS 22 51 21.3 +1.1**
comp=Z,17nm,0.5s,baz=301,slow=3.8,SNR=3.4
YAK LR LR 22 55 54.6
comp=Z,8µm,19.3s,baz=98,slow=36
YAK Yakutsk 28.55 312 *i* P **P 22 44 31.7 -1.4**
YAK pmax pmax
comp=Z,101nm,1.1s
WRAK Wrangell Islan 28.69 60 *e*P **P 22 44 35.4 +1.1**
comp=Z,17nm,0.8s
WRAK LR LR
comp=Z,10µm,21.0s
DIB Dawson Inlet, 29.34 67 *e*P **P 22 44 41.2 +1.0**
comp=Z,26nm,1.0s
DIB LR LR
comp=Z,5µm,19.0s
DLBC Dease Lake 29.60 56 P **P 22 44 41.8 -0.8**
comp=Z,3.5nm,0.6s,baz=291,slow=6.7,SNR=5.6
DLBC PcP **PcP 22 47 46.1 -0.6**
comp=Z,6.3nm,0.8s,baz=218,slow=27,SNR=3.0
DLBC LR LR 22 56 41.0
comp=Z,8µm,21.4s,baz=279,slow=37
DLBC Dease Lake 29.60 56 *e*P **P 22 44 42.8 +0.2**
comp=Z,21nm,1.1s
DLBC PcP **PcP 22 47 46.1 -0.6**
KLR Kul'dur 29.94 285 P **P 22 44 45.9 +0.3**
comp=Z,44nm,0.5s,baz=67,slow=7.3,SNR=194
KLR S **S 22 49 40.9 -0.7**
comp=Z,1.4nm,0.8s,baz=191,slow=18,SNR=2.0
KLR LR LR 22 57 25.7
comp=Z,2µm,19.0s,baz=78,slow=38
TIXI Tiksi 30.17 331*c i*P **P 22 44 46.7 -0.6**
TIXI pmax pmax
comp=Z,25nm,1.7s
TIXI Tiksi 30.17 331 *e*P **P 22 44 47.1 -0.2**
comp=Z,43nm,1.5s
TIXI *e*ScP **ScP 22 51 26.1 -2.1**
TIXI LR LR
comp=Z,8µm,20.0s
CLNS Chul'man 31.61 302 *e*P **P 22 44 59.6 -0.7**
CLNS *e**PP **sP 22 45 09.7 -0.5**
CLNS *e* 22 46 16.6
CLNS *e* 22 47 50.4
CLNS *e*S **S 22 50 12.5 +4.8**
CLNS *e* 22 52 19.6
CLNS pmax pmax
comp=Z,21nm,1.3s
CLNS pmax pmax
comp=E,13nm,1.0s
CLNS pmax pmax
comp=N,8.0nm,1.0s
CLNS smax smax
comp=N,262nm,14.8s
CLNS smax smax
comp=E,453nm,12.2s
CLNS MLR MLR
comp=Z,7µm,18.0s
CLNS MLR MLR
comp=E,5µm,19.0s
USRK Ussuriysk Ar. 31.98 276 P **P 22 45 04.2 +0.5**
comp=E,9.9nm,0.5s,baz=58,slow=7.9,SNR=24
USRK PcP **PcP 22 47 54.0 +0.9**
comp=E,13nm,0.8s,baz=90,slow=1.7,SNR=9.7
USRK S **S 22 50 14.2 +0.6**
comp=E,2.1nm,0.6s,baz=151,slow=44,SNR=2.3
USRK ScP **ScP 22 51 36.7 +1.9**
comp=E,1.4nm,0.8s,baz=64,slow=4.4,SNR=4.6
USRK LR LR 22 57 07.1
comp=E,4µm,21.8s,baz=57,slow=35
BBB Bella Bella 32.18 67 LR LR 22 57 50.2
comp=E,3µm,19.5s,baz=296,slow=36
MAJO Matsushiro 32.42 259 *e*P **P 22 45 07.3 -0.3**
MAJO pmax pmax
comp=Z,290nm,1.2s
MAJO Matsushiro 32.42 259 *e*P **P 22 45 08.3 +0.8**
comp=Z,104nm,1.4s
MAJO LR LR
comp=Z,6µm,21.0s
MJAR Matsushiro Arr 32.42 259 P **P 22 45 08.6 +1.1**
comp=Z,10nm,0.9s,baz=50,slow=7.6,SNR=19
MJAR PcP **PcP 22 47 54.9 +0.4**
comp=Z,9.2nm,0.9s,baz=57,slow=1.5,SNR=8.2
MJAR ScP **ScP 22 51 37.0 +0.5**
comp=Z,2.2nm,0.5s,baz=32,slow=3.4,SNR=8.1
MJAR LR LR 22 56 17.4
comp=Z,4µm,21.6s,baz=60,slow=33
MJB9 Matsu-Tunnel 32.42 259 *e*P **P 22 45 08.5 +0.9**
comp=Z,27nm,1.4s
MJB9 LR LR
comp=Z,2µm,21.0s
VLA Vladivostok 32.59 274*c i*P **P 22 45 09.1 +0.2**
VLA pmax pmax
comp=Z,180nm,1.6s
H11N2 WAKE ISLAND Hy 32.80 201 T T 23 20 18.5
baz=20,slow=76,SNR=47
H11N3 WAKE ISLAND Hy 32.81 201 T T 23 20 18.4
baz=20,slow=76,SNR=185
H11N1 WAKE ISLAND Hy 32.81 201 T T 23 20 19.9
baz=20,slow=76,SNR=44
MDJ Mudanjiang 33.28 278 P **P 22 45 14.5 -0.4**
MDJ pP pP 22 45 18.0 -4.0
MDJ sP sP 22 45 20.0 -4.9
MDJ PP **PP 22 46 28.8 -1.4**
MDJ PcP **PcP 22 47 57.5 +0.8**
MDJ S **S 22 50 33.4 -0.3**
MDJ sS sS 22 50 41.3 -4.0
MDJ pmax pmax
comp=Z,22nm,1.1s
MDJ pmax pmax
comp=Z,600nm,10.8s
MDJ LR LR
comp=Z,520nm,13.2s
MDJ LR LR
comp=Z,5µm,20.6s
MDJ LR LR
comp=Z,6µm,20.6s
MDJ Mudanjiang 33.28 278 *e*P **P 22 45 15.2 +0.3**
comp=Z,20nm,0.9s
MDJ *e*PcP **PcP 22 47 57.9 +1.2**
MDJ LR LR
comp=Z,7µm,20.0s
MSHR Mys Shultsa 33.33 274*c i*P **P 22 45 16.3 +0.9**
KEKH Kekaha 33.50 142 PFAKE 22 45 30.0 +13
KEKH LR LR
comp=Z,6µm,20.0s
H11S1 WAKE ISLAND Hy 34.02 201 T T 23 21 44.4
baz=19,slow=76,SNR=37
H11S2 WAKE ISLAND Hy 34.04 201 T T 23 21 44.1
baz=19,slow=76,SNR=24
H11S3 WAKE ISLAND Hy 34.04 201 T T 23 21 47.7
baz=19,slow=76,SNR=27
OPA Opana 34.43 140 PFAKE 22 45 40.0 +15
OPA LR LR
comp=Z,5µm,19.0s

KIP Kipapa 34.67 140 PFAKE 22 45 40.0 +13
KIP LR LR
comp=Z,5µm,22.0s
JOHN Johnston Islan 35.54 161 PFAKE 22 45 50.0 +15
JOHN LR LR
comp=Z,5µm,20.0s
HLK Haleakala 35.99 138 PFAKE 22 45 50.0 +11
HLK LR LR
comp=Z,6µm,21.0s
OBC Olympics--Boni 36.21 72 P P **22 45 42.2 +1.9**
CN2 Changchun 36.26 280 eP P **22 45 39.3 -1.4**
CN2 ePP **PnPn** **22 47 01.6 -1.0**
CN2 eS **S** **22 51 17.1 -2.6**
CN2 eSS **SnSn** **22 53 40.6 -6.2**
CN2 pmax pmax
comp=Z,20nm,1.8s
CN2 pmax pmax
comp=Z,500nm,3.0s
CN2 LR LR
comp=Z,3µm,18.0s
CN2 LR LR
comp=Z,4µm,18.0s
CN2 LR LR
comp=Z,5µm,19.0s
PGC Sidney 36.31 71 eP P **22 45 42.0 +1.0**
comp=Z,28nm,1.0s
PGC LR LR
comp=Z,3µm,20.0s
YKW3 Yellowknife Ar 36.34 46 eP P **22 45 39.9 -1.2**
comp=Z,52nm,0.8s
YKW3 ePcP **PcP** **22 48 05.7 +0.5**
YKW3 eScP **ScP** **22 51 50.0 +0.1**
YKA Yellowknife Ar 36.36 46 P P **22 45 40.8 -0.5**
comp=Z,49nm,0.8s,baz=283,slow=8.5,SNR=58
YKA PcP **PcP** **22 48 05.8 +0.5**
comp=Z,22nm,0.9s,baz=291,slow=3.0,SNR=12
YKA ScP **ScP** **22 51 50.0 +0.1**
comp=Z,8.4nm,0.7s,baz=292,slow=3.1,SNR=14
YKA Yellowknife Ar 36.36 46 P P **22 45 40.8 -0.5**
YKA PcP **PcP** **22 48 05.8 +0.5**
YKA ScP **ScP** **22 51 50.0 +0.1**
YKB5 Yellowknife Ar 36.36 46 eP P **22 45 39.6 -1.6**
YKB5 ePcP **PcP** **22 48 05.1 -0.1**
YKB5 eScP **ScP** **22 51 49.6 -0.4**
LLLB Lillooet 36.39 67 eP P **22 45 42.6 +0.8**
comp=Z,36nm,1.0s
LLLB ePcP **PcP** **22 48 08.9 +3.3**
LLLB LR LR
comp=Z,4µm,20.0s
NLWA Neilton Lookou 36.63 73 eP P **22 45 45.6 +1.8**
comp=Z,86nm,0.9s
NLWA LR LR
comp=Z,4µm,20.0s
A04D Lummi Island 36.72 70 P P **22 45 44.8 +0.3**
baz=297
HPAH Hawaii Prepara 36.87 138 PFAKE 22 46 00.0 +14
HPAH LR LR
comp=Z,6µm,21.0s
SMW South Mountain 36.98 73 P P **22 45 48.7 +1.8**
BOD Bodaibo 37.03 306 eP P **22 45 46.4 -0.6**
BOD e 22 51 39.3
BOD pmax pmax
comp=Z,165nm,1.7s
HIA Hailar 37.11 291 eP P **22 45 47.9 -0.1**
HIA pmax pmax
comp=Z,155nm,1.5s
HIA MLR MLR
comp=Z,5µm,18.0s
HIA Hailar 37.11 291 eP P **22 45 47.9 -0.1**
comp=Z,156nm,1.5s
HIA LR LR
comp=Z,5µm,18.0s
GNW Green Mountain 37.17 72 eP P **22 45 49.5 +1.1**
POHA Pohakuloa 37.18 138 PFAKE 22 46 00.0 +11
POHA LR LR
comp=Z,5µm,19.0s
E03A Lebam 37.21 74 eP P **22 45 48.9 +0.2**
comp=Z,187nm,0.9s
E03A ePcP **PcP** **22 48 09.8 +1.7**
E03A LR LR
comp=Z,4µm,21.0s
B05A Bryant 37.29 71 P P **22 45 49.4 +0.1**
baz=298,SNR=18
JCW Jim Creek 37.42 71 P P **22 45 50.8 +0.2**
F03A Seaside 37.51 75 PFAKE 22 46 00.0 +8.7
F03A LR LR
comp=Z,3µm,20.0s
B06A Marblemount 37.53 70 PFAKE 22 46 00.0 +8.6
B06A LR LR
comp=Z,4µm,20.0s
UWE Uwekahuna 37.58 138 PFAKE 22 46 10.0 +18
UWE LR LR
comp=Z,6µm,21.0s
F04D Rainier, OR 37.77 74 P P **22 45 54.4 +0.9**
baz=300,SNR=7.4
D05A Enumclaw 37.85 72 P P **22 45 55.1 +0.9**
G03D McMinnville, O 38.05 76 P P **22 45 56.9 +1.0**
baz=301,SNR=5.1
FL2 Flat Top 2 38.12 74 P P **22 45 57.7 +1.1**
LVP Lakeview Peak 38.14 74 P P **22 45 58.0 +1.2**
C06D Leavenworth 38.16 71 P P **22 45 57.1 +0.3**
baz=298
LON Longmire 38.17 73 eP P **22 45 58.0 +1.0**
LON pmax pmax
comp=Z,30nm,0.8s
LON Longmire 38.17 73 eP P **22 45 58.0 +1.0**
comp=Z,30nm,0.8s
LON LR LR
comp=Z,2µm,21.0s
F04A Amboy 38.20 74 PFAKE 22 46 10.0 +13
F04A LR LR
comp=Z,2µm,21.0s
KSRS Korea Array 38.29 269 P P **22 45 59.6 +1.6**
comp=Z,15nm,0.8s,baz=58,slow=8.1,SNR=32
KSRS PcP **PcP** **22 48 12.4 +0.8**
comp=Z,12nm,0.8s,baz=55,slow=3.3,SNR=15
KSRS LR LR 23 02 13.8
comp=Z,1µm,19.4s,baz=55,slow=37
KSRS Korea Array 38.29 269 P P **22 45 59.6 +1.6**
KSRS 22 48 12.4
KSRS pmax pmax
comp=Z,16nm,0.8s
KSRS MLR MLR
comp=Z,1µm,19.4s
KS01 Wonju Array Si 38.30 269 eP P **22 45 58.5 +0.5**
KS01 ePcP **PcP** **22 48 12.1 +0.5**
KS15 Wonju Array Si 38.32 269 eP P **22 45 58.6 +0.4**
KSAR Wonju Array Be 38.32 269 P P **22 45 59.6 +1.4**
KSAR 22 48 12.4
KSAR Wonju Array Be 38.32 269 P P **22 45 59.6 +1.4**
KSAR PcP **PcP** **22 48 12.4 +0.7**
COR Corvallis 38.35 77 eP P **22 45 59.2 +0.8**
COR pmax pmax
comp=Z,100nm,1.0s
COR MLR MLR
comp=Z,4µm,22.0s
COR Corvallis 38.35 77 eP P **22 45 59.2 +0.8**
comp=Z,100nm,1.0s
COR LR LR
comp=Z,4µm,22.0s
RNO Roman Nose 38.43 78 P P **22 46 01.2 +2.1**
SNY Shenyang 38.48 278 ⇑P P **22 46 00.3 +0.8**
SNY PP **PnPn** **22 47 31.8 +2.3**
SNY pmax pmax
comp=Z,95nm,0.7s
SNY LR LR
comp=Z,3µm,17.6s
SNY LR LR
comp=Z,3µm,21.6s
SNY LR LR
comp=Z,7µm,21.6s
ASR Mount Adams--S 38.59 73 P P **22 46 01.4 +0.8**
LTY Liberty 38.61 71 PFAKE 22 46 10.0 +9.4
LTY LR LR
comp=Z,3µm,20.0s
TBM Table Mountain 38.69 72 P P **22 46 02.0 +0.6**
GULW Guler Mountain 38.71 74 P P **22 46 02.5 +0.9**
I03D Drain, OR 38.78 78 P P **22 46 02.4 +0.4**
baz=302,SNR=14
B08A Colville Reser 38.88 69 eP P **22 46 03.1 +0.3**
comp=Z,53nm,0.9s
B08A LR LR
comp=Z,3µm,20.0s
INCN Inchon 39.09 270 eP P **22 46 05.6 +0.9**
comp=Z,120nm,1.3s

JNU Nakatsue 39.21 262 eP P **22 46 05.8 0.0**
comp=Z,50nm,1.0s
G05D Wamic, OR 39.22 75 P P **22 46 06.3 +0.5**
baz=301,SNR=22
I04A Tendick Farm, 39.31 77 P P **22 46 07.4 +0.9**
baz=302,SNR=33
L02D Cave Junction, 39.45 80 P P **22 46 08.0 +0.3**
baz=304,SNR=13
CIT Chita 39.46 298 eP P **22 46 07.5 -0.2**
CIT e 22 46 21.0
CIT pmax pmax
comp=Z,262nm,1.7s
HUMO Hull Mountain 39.61 79 eP P **22 46 09.5 +0.5**
comp=Z,26nm,0.9s
HUMO LR LR
comp=Z,4µm,22.0s
KRMB Red Mountain 39.62 81 eP P **22 46 11.2 +2.0**
comp=Z,33nm,1.2s
KRMB LR LR
comp=Z,3µm,22.0s
G06A Carlson Farm, 39.64 74 eP P **22 46 10.1 +0.9**
comp=Z,85nm,1.5s
G06A LR LR
comp=Z,3µm,22.0s
I05D Terrebonne, OR 39.67 76 P P **22 46 10.0 +0.4**
baz=302,SNR=20
VTHM Trough 39.71 74 P P **22 46 10.4 +0.5**
HAWA Hanford 39.71 72 eP P **22 46 10.6 +0.8**
comp=Z,88nm,0.9s
HAWA LR LR
comp=Z,3µm,19.0s
D08A Wollman Farm, 39.75 71 eP P **22 46 10.3 +0.2**
comp=Z,50nm,1.2s
D08A LR LR
comp=Z,3µm,19.0s
C09A Chrisman Ranch 39.77 69 eP P **22 46 10.3 +0.1**
comp=Z,45nm,0.9s
C09A LR LR
comp=Z,3µm,18.0s
J04D Umpqua Nationa 39.79 78 P P **22 46 11.3 +0.6**
baz=303,SNR=21
JCC Jacoby Creek, 39.94 82 PFAKE 22 46 20.0 +8.3
JCC LR LR
comp=Z,2µm,21.0s
EDM Edmonton 40.09 60 eP P **22 46 12.0 -0.9**
EDM pmax pmax
comp=Z,100nm,1.0s
EDM Edmonton 40.09 60 eP P **22 46 12.0 -0.9**
comp=Z,103nm,1.0s
EDM LR LR
comp=Z,5µm,21.0s
KHMM Horse Mountain 40.09 82 eP P **22 46 13.8 +0.6**
comp=Z,36nm,0.9s
KHMM LR LR
comp=Z,3µm,22.0s
NEW Newport 40.22 68 LR LR 23 01 47.7
comp=Z,3µm,20.4s,baz=296,slow=35
NEW Newport 40.22 68 P P **22 46 13.4 -0.6**
baz=299,SNR=64
NEW Newport 40.22 68 eP P **22 46 13.6 -0.4**
NEW pmax pmax
comp=Z,74nm,0.9s
NEW Newport 40.22 68 eP P **22 46 13.6 -0.4**
comp=Z,74nm,0.8s
YBH Yreka Blue Hor 40.24 80 eP P **22 46 16.0 +1.6**
YBH pmax pmax
comp=Z,73nm,1.0s
YBH Yreka Blue Hor 40.24 80 eP P **22 46 16.0 +1.6**
comp=Z,72nm,0.9s
YBH LR LR
comp=Z,6µm,22.0s
J05D Fort Rock, OR 40.30 77 P P **22 46 15.7 +0.8**
baz=303,SNR=27
K04D Chiloquin, OR 40.34 78 P P **22 46 15.7 +0.5**
baz=304,SNR=5.8
M02C Callahan 40.35 81 P P **22 46 16.2 +1.0**
baz=305,SNR=19
E09A Wood Farm, Sta 40.48 71 eP P **22 46 16.2 0.0**
comp=Z,67nm,1.1s
E09A LR LR
comp=Z,2µm,20.0s
KMRM Mail Ridge 40.48 83 eP P **22 46 17.8 +1.5**
comp=Z,33nm,0.8s
KMRM LR LR
comp=Z,4µm,20.0s
RES Resolute Bay 40.50 24 LR LR 23 06 16.3
comp=Z,4µm,18.8s,baz=274,slow=41
RES Resolute Bay 40.50 24 eP P **22 46 16.1 +0.2**
RES pmax pmax
comp=Z,42nm,1.0s
RES Resolute Bay 40.50 24 eP P **22 46 16.1 +0.2**
comp=Z,42nm,0.9s
RES eScP **ScP** **22 52 05.3 -0.3**
G08A Pilot Rock 40.62 73 eP P **22 46 17.9 +0.4**
comp=Z,30nm,1.0s
G08A LR LR
comp=Z,4µm,22.0s
N02D Trinity Center 40.68 81 P P **22 46 18.8 +0.8**
baz=305,SNR=14
M04C Macdoel 40.76 79 P P **22 46 19.4 +0.7**
baz=304,SNR=34
K05A Summer Lake 40.82 78 eP P **22 46 21.2 +2.0**
comp=Z,59nm,0.8s
K05A eScP **ScP** **22 52 10.7 +3.0**
K05A LR LR
comp=Z,4µm,21.0s
WDC Whiskeytown Da 41.00 81 eP P **22 46 22.2 +1.7**
WDC pmax pmax
comp=Z,29nm,1.0s
WDC Whiskeytown Da 41.00 81 eP P **22 46 22.2 +1.7**
comp=Z,29nm,1.0s
WDC LR LR
comp=Z,2µm,20.0s
F10A Beach Ranch, E 41.30 71 eP P **22 46 23.6 +0.5**
comp=Z,64nm,1.0s
F10A LR LR
comp=Z,3µm,20.0s
DL2 Dalian 41.38 276 P P **22 46 23.6 0.0**
DL2 S S **22 52 36.8 +0.1**
DL2 pmax pmax
comp=Z,92nm,1.1s
DL2 pmax pmax
comp=Z,1µm,7.5s
DL2 LR LR
comp=Z,2µm,11.8s
DL2 LR LR
comp=Z,1µm,17.3s
DL2 LR LR
comp=Z,3µm,23.0s
HOPS Hopland Field 41.60 84 eP P **22 46 26.8 +1.4**
comp=Z,75nm,1.4s
HOPS LR LR
comp=Z,5µm,20.0s
O03D Paynes Creek 41.63 81 P P **22 46 25.7 0.0**
baz=306,SNR=54
MOD Modoc Plateau 41.64 78 eP P **22 46 27.5 +1.6**
comp=Z,53nm,0.9s
MOD LR LR
comp=Z,4µm,22.0s
WALA Waterton Lakes 41.69 66 eP P **22 46 26.1 -0.1**
comp=Z,96nm,1.0s
WALA LR LR
comp=Z,3µm,21.0s
BSMT Bassoo Peak 41.79 68 eP P **22 46 27.1 -0.1**
BMO Blue Mountains 41.85 73 eP P **22 46 27.4 -0.2**
comp=Z,58nm,1.0s
BMO eScP **ScP** **22 52 14.6 +2.9**
BMO LR LR
comp=Z,3µm,22.0s
BLMT Blacktail Moun 41.95 67 eP P **22 46 28.3 -0.2**
JTMT Jette 42.13 67 eP P **22 46 29.9 +0.1**
MCCM Marconi Confer 42.23 85 PFAKE 22 46 40.0 +9.4
MCCM LR LR
comp=Z,4µm,21.0s
YBMT Yellow Bay 42.23 67 eP P **22 46 30.6 -0.1**
ORV Oroville 42.25 82 eP P **22 46 31.5 +0.7**
ORV pmax pmax
comp=Z,16nm,0.8s
ORV MLR MLR
comp=Z,3µm,22.0s
ORV Oroville 42.25 82 eP P **22 46 31.5 +0.7**
comp=Z,16nm,0.8s
ORV LR LR
comp=Z,3µm,22.0s
WVOR Wild Horse Val 42.36 77 eP P **22 46 33.1 +1.3**
WVOR pmax pmax
comp=Z,64nm,1.0s

WVOR Wild Horse Val 42.36 77 eP P **22 46 33.1 +1.3**
comp=Z,64nm,0.9s
WVOR LR LR
comp=Z,4µm,18.0s
SWMT Swartz Lake 42.42 68 eP P **22 46 31.9 -0.2**
SWMT eScP **ScP** **22 52 15.7 +1.8**
MSO Missoula 42.80 68 P P **22 46 34.4 -0.9**
baz=302,SNR=32
MSO Missoula 42.80 68 eP P **22 46 34.9 -0.4**
comp=Z,36nm,0.8s
MSO eScP **ScP** **22 52 22.8 +7.4**
MSO LR LR
comp=Z,2µm,20.0s
SLMT Seeley Lake 42.85 68 eP P **22 46 34.7 -1.1**
AFDM Forest Hills D 42.94 82 eP P **22 46 37.3 +0.9**
comp=Z,21nm,1.2s
AFDM LR LR
comp=Z,3µm,20.0s
CHMT Chamberlain Mo 43.16 68 eP P **22 46 37.4 -1.0**
PAHR Pah Rah Range 43.48 80 eP P **22 46 42.1 +1.3**
comp=Z,67nm,0.9s
PAHR LR LR
comp=Z,2µm,22.0s
MFID Camas Ranch 43.52 74 eP P **22 46 41.7 +0.5**
comp=Z,45nm,1.0s
MFID LR LR
comp=Z,3µm,22.0s
CMB Columbia Colle 43.86 83 eP P **22 46 45.1 +1.2**
CMB pmax pmax
comp=Z,48nm,1.4s
CMB Columbia Colle 43.86 83 eP P **22 46 45.1 +1.2**
comp=Z,48nm,1.4s
CMB LR LR
comp=Z,4µm,22.0s
NRIK Noril'sk 43.91 329 P P **22 46 44.4 +0.5**
comp=Z,70nm,0.9s,baz=73,slow=8.5,SNR=62
NRIK PcP **PcP** **22 48 30.2 +0.8**
comp=Z,28nm,0.9s,baz=152,slow=3.2,SNR=4.6
NRIK ScP **ScP** **22 52 19.9 +0.6**
comp=Z,7.8nm,0.9s,baz=146,slow=4.1,SNR=3.8
NRIK LR LR 23 06 16.8
comp=Z,5µm,18.4s,baz=73,slow=38
SAO San Andreas Ge 43.98 85 eP P **22 46 45.7 +0.9**
SAO pmax pmax
comp=Z,21nm,0.9s
SAO San Andreas Ge 43.98 85 eP P **22 46 45.7 +0.9**
comp=Z,21nm,0.8s
SAO LR LR
comp=Z,3µm,19.0s
BJI Beijing 44.10 281 P P **22 46 46.1 +0.5**
BJI PP **PP** **22 48 28.0 -0.4**
BJI S **S** **22 53 16.8 +0.1**
BJI pmax pmax
comp=Z,41nm,1.7s
BJI pmax pmax
comp=Z,2µm,4.2s
BJI LR LR
comp=Z,5µm,18.1s
BJI LR LR
comp=Z,2µm,17.2s
BJI LR LR
comp=Z,4µm,21.0s
HRY Holter Researc 44.10 67 eP P **22 46 45.6 -0.2**
BJT Baijiatuau 44.12 281 eP P **22 46 46.6 +0.8**
BJT pmax pmax
comp=Z,58nm,1.1s
BJT MLR MLR
comp=Z,5µm,20.0s
BJT Baijiatuau 44.12 281 eP P **22 46 46.6 +0.8**
comp=Z,58nm,1.1s
BJT LR LR
comp=Z,5µm,20.0s
WAKR Walker 44.16 82 eP P **22 46 48.1 +1.6**
comp=Z,28nm,0.6s
WAKR LR LR
comp=Z,4µm,20.0s
LRM Limekiln Ridge 44.21 69 eP P **22 46 46.6 -0.3**
HLID Hailey 44.29 73 P P **22 46 47.6 +0.1**
baz=304,SNR=109
HLID Hailey 44.29 73 eP P **22 46 48.1 +0.7**
comp=Z,82nm,0.9s
HLID eScP **ScP** **22 52 25.4 +3.7**
HLID LR LR
comp=Z,2µm,21.0s
DLMT Dillon 44.38 70 eP P **22 46 47.9 -0.2**
comp=Z,22nm,0.9s
DLMT eScP **ScP** **22 52 23.9 +1.9**
DLMT LR LR
comp=Z,1µm,19.0s
BMN Battle Mountai 44.39 78 eP P **22 46 49.3 +1.1**
BMN pmax pmax
comp=Z,62nm,1.0s
BMN Battle Mountai 44.39 78 eP P **22 46 49.3 +1.1**
comp=Z,62nm,1.0s
BMN LR LR
comp=Z,4µm,22.0s
IRK Irkutsk 44.42 302 eP P **22 46 47.4 -0.7**
IRK e 22 48 33.0
IRK pmax pmax
comp=Z,184nm,2.9s
MCMT McKenzie Canyo 44.52 70 eP P **22 46 49.0 -0.3**
EGMT Eagleton 44.60 65 P P **22 46 48.0 -1.7**
baz=302,SNR=25
EGMT Eagleton 44.60 65 PFAKE 22 47 00.0 +10
EGMT LR LR
comp=Z,3µm,20.0s
BOZ Bozeman (W) 44.79 69 P P **22 46 50.7 -0.7**
baz=304,SNR=46
BOZ Bozeman (W) 44.79 69 eP P **22 46 51.3 -0.1**
BOZ pmax pmax
comp=Z,45nm,0.8s
BOZ Bozeman (W) 44.79 69 eP P **22 46 51.3 -0.1**
comp=Z,45nm,0.8s
BOZ LR LR
comp=Z,2µm,18.0s
TLY Talaya 45.04 302 i P P **22 46 53.0 -0.1**
TLY pmax pmax
comp=Z,136nm,2.5s
TLY Talaya 45.04 302 eP P **22 46 53.9 +0.8**
comp=Z,25nm,0.7s
TLY LR LR
comp=Z,11µm,19.0s
MLAC Mammoth, Mammo 45.07 82 P P **22 46 54.5 +0.7**
baz=308
FFC Flin Flon 45.36 53 eP P **22 46 54.3 -1.2**
FFC e 22 48 35.0
FFC Flin Flon 45.36 53 eP P **22 46 54.3 -1.2**
FFC ePcP **PcP** **22 48 35.0 +0.4**
FFC LR LR
comp=Z,6µm,21.0s
QLMT Earthquake Lak 45.36 70 eP P **22 46 56.2 +0.2**
SONA1 Songino Array 45.52 296 eP P **22 46 57.0 -0.1**
SONA1 eScP **ScP** **22 52 27.1 +0.5**
SONM Songino Array 45.53 296 P P **22 46 58.3 +1.1**
comp=Z,36nm,1.0s,baz=61,slow=8.0,SNR=118
SONM PcP **PcP** **22 48 35.4 -0.1**
comp=Z,7.0nm,0.7s,baz=71,slow=2.7,SNR=3.2
SONM ScP **ScP** **22 52 26.4 -0.2**
comp=Z,2.9nm,0.9s,baz=62,slow=3.0,SNR=5.4
SONM LR LR 23 07 49.9
comp=Z,9µm,18.0s,baz=54,slow=38
SONM Songino Array 45.53 296 P P **22 46 58.3 +1.1**
SONM 22 48 35.4
SONM pmax pmax
comp=Z,35nm,1.0s
SONM MLR MLR
comp=Z,9µm,18.0s
YHB Horse Butte 45.54 69 eP P **22 46 57.7 +0.3**
comp=Z,78nm,0.9s
YHB LR LR
comp=Z,2µm,21.0s
RCTC Rector, Farmer 45.65 84 P P **22 46 57.9 -0.1**
baz=310
YHH Holmes Hill 45.73 69 eP P **22 46 58.9 0.0**
YHH LR LR
comp=Z,2µm,19.0s
YMR Madison River 45.73 69 eP P **22 46 59.8 +0.9**
comp=Z,100nm,0.4s
YMR LR LR
comp=Z,2µm,19.0s
SMMC Simmler 45.80 86 P P **22 46 59.9 +0.5**
baz=310
TIN Tinemaha, Big 45.81 83 P P **22 46 59.9 +0.5**
baz=309,SNR=5.9
TIA Tai'an 45.85 276 ⇑P P **22 47 00.4 +0.7**
TIA S S **22 53 44.3 +2.0**

TIA pmax pmax
comp=Z,100nm,1.0s
TIA pmax pmax
comp=Z,1µm,5.0s
TIA LR LR
comp=Z,1µm,17.0s
TIA LR LR
comp=Z,2µm,18.0s
TIA LR LR
comp=Z,2µm,19.0s
GCMT Greycliff 45.86 67 *e*P **P** 22 47 00.0 +0.2
ZAK Zakamensk 45.91 300 *e*P **P** 22 47 00.7 +0.6
ZAK pmax pmax
comp=Z,62nm,2.0s
YFT Old Faithful 45.92 70 *e*P **P** 22 47 02.5 +2.0
comp=Z,72nm,1.0s
VES Vestal, Richgr 46.04 84 P **P** 22 47 00.9 -0.2
baz=310,SNR=15
YPP Pitchstone Pla 46.05 70 *e*P **P** 22 47 02.7 +1.2
comp=Z,37nm,1.0s
H17A Grant Village 46.11 70 P **P** 22 47 02.2 +0.3
baz=305,SNR=15
H17A Grant Village 46.11 70 *e*P **P** 22 47 03.5 +1.6
comp=Z,103nm,1.2s
LKWY Lake 46.12 69 *e*P **P** 22 47 02.8 +0.8
LKWY pmax pmax
comp=Z,71nm,0.9s
LKWY Lake 46.12 69 *e*P **P** 22 47 02.8 +0.8
comp=Z,72nm,0.9s
IMW Indian Meadow 46.18 70 *e*P **P** 22 47 03.2 +0.7
comp=Z,44nm,1.0s
IMW LR LR
comp=Z,2µm,22.0s
PKM Mcpherson Peak 46.19 86 P **P** 22 47 02.8 +0.2
baz=310,SNR=14
FLWY Flagg Ranch 46.22 70 *e*P **P** 22 47 03.7 +0.9
comp=Z,50nm,0.8s
HVU Hansel Valley 46.31 74 *e*P **P** 22 47 04.3 +0.9
HVU pmax pmax
comp=Z,69nm,0.8s
HVU Hansel Valley 46.31 74 *e*P **P** 22 47 04.3 +0.9
comp=Z,69nm,0.8s
MOOW Moose Ponds 46.38 70 *e*P **P** 22 47 04.5 +0.5
comp=Z,14nm,0.8s
MOOW LR LR
comp=Z,2µm,22.0s
GRAC Grapevine Rang 46.39 82 P **P** 22 47 04.2 +0.3
baz=309
TPAW Teton Pass 46.41 71 *e*P **P** 22 47 05.0 +0.7
comp=Z,26nm,0.8s
TPAW LR LR
comp=Z,2µm,19.0s
HHC Hu-ho-hao-te 46.45 285 ⇑P **P** 22 47 04.4 0.0
HHC PP **PP** 22 48 54.1 +0.6
HHC ScP **ScP** 22 52 31.8 +1.3
HHC S **S** 22 53 52.6 +1.6
HHC sS sS 22 53 57.5 -5.4
HHC SS **SS** 22 57 09.0 -7.5
HHC pmax pmax
comp=Z,93nm,1.6s
HHC pmax pmax
comp=Z,1µm,4.2s
HHC LR LR
comp=Z,3µm,16.2s
HHC LR LR
comp=Z,3µm,17.4s
HHC LR LR
comp=Z,2µm,17.4s
MOY Mondy 46.46 303 *e*P **P** 22 47 04.9 +0.5
MOY pmax pmax
comp=Z,193nm,3.5s
RLMT Red Lodge 46.47 68 P **P** 22 47 04.4 -0.3
baz=305,SNR=46
RLMT Red Lodge 46.47 68 *e*P **P** 22 47 05.0 +0.3
comp=Z,81nm,1.0s
RLMT *e*ScP **ScP** 22 52 33.1 +2.5
RLMT LR LR
comp=Z,2µm,18.0s
ISA Isabella, Lake 46.53 84 P **P** 22 47 04.6 -0.6
baz=310,SNR=12
ISA Isabella, Lake 46.53 84 *e*P **P** 22 47 05.4 +0.3
ISA pmax pmax
comp=Z,31nm,1.0s
ISA Isabella, Lake 46.53 84 *e*P **P** 22 47 05.4 +0.3
comp=Z,31nm,1.0s
ISA LR LR
comp=Z,3µm,18.0s
REDW Red Top Meadow 46.54 71 *e*P **P** 22 47 05.9 +0.6
comp=Z,30nm,0.9s
REDW LR LR
comp=Z,2µm,19.0s
SNOW Snow King Moun 46.54 71 *e*P **P** 22 47 06.8 +1.5
comp=Z,41nm,1.0s
SNOW LR LR
comp=Z,2µm,19.0s
LOHW Long Hollow 46.54 70 *e*P **P** 22 47 05.8 +0.5
comp=Z,16nm,0.8s
LOHW LR LR
comp=Z,2µm,22.0s
SBC Santa Barbara 46.54 86 P **P** 22 47 05.8 +0.7
baz=311
SSE Sheshan 46.64 268 P **P** 22 47 07.6 +1.7
SSE PP **PP** 22 48 58.0 +2.4
SSE S **S** 22 53 57.6 +3.9
SSE sS **sS** 22 54 08.4 +2.8
SSE pmax pmax
comp=Z,79nm,0.9s
SSE pmax pmax
comp=Z,650nm,4.6s
SSE LR LR
comp=Z,1µm,24.8s
SSE LR LR
comp=Z,690nm,25.1s
SSE LR LR
comp=Z,1µm,23.4s
R11A Troy Canyon, C 46.65 79 P **P** 22 47 06.1 -0.1
baz=308,SNR=30
R11A Troy Canyon, C 46.65 79 *e*P **P** 22 47 07.0 +0.8
comp=Z,50nm,0.9s
R11A LR LR
comp=Z,3µm,22.0s
ARVC Arvin 46.66 85 P **P** 22 47 05.3 -0.7
baz=310
BGU Big Grassy Mou 46.66 75 *e*P **P** 22 47 07.1 +0.9
comp=Z,38nm,0.8s
BGU LR LR
comp=Z,2µm,22.0s
DAC Darwin (Calif) 46.70 83 PFAKE 22 47 20.0 +13
DAC LR LR
comp=Z,3µm,19.0s
AHID Auburn Hatcher 46.74 72 *e*P **P** 22 47 07.3 +0.5
comp=Z,63nm,0.9s
AHID LR LR
comp=Z,3µm,20.0s
SPUT South Promonto 46.78 74 *e*P **P** 22 47 07.3 +0.2
comp=Z,58nm,1.0s
SCZ2 Santa Cruz Isl 46.88 87 P **P** 22 47 07.4 -0.4
baz=311
MPMC Manual Prospec 46.90 83 P **P** 22 47 07.9 -0.3
baz=310,SNR=27
FURC Furnace Creek, 47.03 82 P **P** 22 47 09.2 +0.3
baz=310,SNR=31
OSI Osito Audit: C 47.05 85 P **P** 22 47 09.1 -0.1
baz=311
OSI Osito Audit: C 47.05 85 *e*P **P** 22 47 10.7 +1.5
comp=Z,46nm,0.7s
OSI LR LR
comp=Z,2µm,22.0s
FCC Fort Churchill 47.08 45 *e*P **P** 22 47 08.3 -0.7
FCC pmax pmax
comp=Z,29nm,0.6s
FCC Fort Churchill 47.08 45 *e*P **P** 22 47 08.3 -0.7
comp=Z,29nm,0.6s
FCC LR LR
comp=Z,7µm,20.0s
TPNV Topopah Spring 47.11 81 P **P** 22 47 10.0 +0.2
baz=309,SNR=48
TPNV Topopah Spring 47.11 81 *e*P **P** 22 47 10.4 +0.6
TPNV pmax pmax
comp=Z,66nm,0.9s
TPNV Topopah Spring 47.11 81 *e*P **P** 22 47 10.3 +0.6
comp=Z,66nm,0.8s
TPNV LR LR
comp=Z,4µm,20.0s
HWUT Hardware Ranch 47.14 73 *e*P **P** 22 47 10.8 +0.8
comp=Z,38nm,0.8s
HWUT LR LR
comp=Z,2µm,20.0s
LRMC Laurel Mtn Rad 47.15 84 P **P** 22 47 09.4 -0.6
baz=310
BLG Laguna Peak, P 47.17 86 P **P** 22 47 09.2 -0.8
baz=311,SNR=6.2
DUG Dugway, Tooele 47.23 76 P **P** 22 47 10.8 +0.2
baz=308,SNR=72
DUG Dugway, Tooele 47.23 76 *e*P **P** 22 47 11.5 +0.9
DUG pmax pmax
comp=Z,120nm,1.1s
DUG Dugway, Tooele 47.23 76 *e*P **P** 22 47 11.5 +0.9
comp=Z,120nm,1.1s
DUG LR LR
comp=Z,3µm,18.0s
EDW2 Edwards Air Fo 47.34 85 P **P** 22 47 11.3 -0.2
baz=311,SNR=22
LAO LASA Array 47.34 65 P **P** 22 47 10.3 -0.9
baz=305,SNR=22
LAO LASA Array 47.34 65 *e*P **P** 22 47 11.3 0.0
comp=Z,46nm,0.8s
LAO LR LR
comp=Z,4µm,20.0s
SNCC San Nicolas Is 47.44 87 P **P** 22 47 12.4 +0.3
baz=312
SNCC San Nicolas Is 47.44 87 PFAKE 22 47 20.0 +7.8
SNCC LR LR
comp=Z,3µm,20.0s
NJ2 Nanjing 47.47 270 *e*P **P** 22 47 12.8 +0.4
NJ2 sP **pP** 22 47 21.0 +1.4
NJ2 PP **PP** 22 49 03.1 -0.6
NJ2 S **S** 22 54 06.9 +1.5
NJ2 pmax pmax
comp=Z,67nm,0.9s
NJ2 pmax pmax
comp=Z,750nm,9.8s
NJ2 LR LR
comp=Z,2µm,16.8s
NJ2 LR LR
comp=Z,2µm,11.4s
NJ2 LR LR
comp=Z,3µm,20.1s
DGMT Dagmar 47.48 62 P **P** 22 47 10.9 -1.4
baz=304
DGMT Dagmar 47.48 62 *e*P **P** 22 47 12.1 -0.2
DGMT *e*PcP **PcP** 22 48 43.5 +1.2
DGMT LR LR
comp=Z,4µm,21.0s
TCUT Toone Canyon 47.53 74 *e*P **P** 22 47 13.8 +0.8
comp=Z,81nm,0.8s
DECC Green Verdugo 47.53 86 P **P** 22 47 12.9 0.0
baz=311
BTO Baotou 47.53 285 *e*P **P** 22 47 14.4 +1.5
CTU Camp Tracy 47.58 74 *e*P **P** 22 47 14.2 +0.8
comp=Z,136nm,0.9s
CTU LR LR
comp=Z,8µm,20.0s
PSUT Pine Spring 47.61 78 *e*P **P** 22 47 14.7 +1.0
comp=Z,34nm,0.7s
PSUT LR LR
comp=Z,2µm,20.0s
BW06 Boulder Array 47.66 71 P **P** 22 47 13.4 -0.7
baz=306,SNR=149
BW06 Boulder Array 47.66 71 *e*P **P** 22 47 13.3 -0.7
comp=Z,89nm,0.8s
BW06 LR LR
comp=Z,3µm,22.0s
PD31 Pinedale Array 47.66 71 *e*P **P** 22 47 13.8 -0.3
PDAR Pinedale Array 47.66 71 P **P** 22 47 14.4 +0.4
comp=Z,103nm,0.9s,baz=295,slow=4.2,SNR=440
PDAR ScP **ScP** 22 52 36.0 +0.3
comp=Z,3.2nm,0.9s,baz=301,slow=0.9,SNR=4.1
PDAR LR LR 23 07 01.8
comp=Z,2µm,19.4s,baz=319,slow=36
PASC Pasadena Art C 47.68 86 PFAKE 22 47 30.0 +16
PASC LR LR
comp=Z,3µm,21.0s
MWC Mount Wilson 47.72 85 *e*P **P** 22 47 15.3 +0.7
MWC pmax pmax
comp=Z,84nm,1.2s
MWC Mount Wilson 47.72 85 *e*P **P** 22 47 15.3 +0.7
comp=Z,84nm,1.3s
MWC LR LR
comp=Z,3µm,22.0s
SHOC Shoshone, Teco 47.76 82 P **P** 22 47 14.8 +0.2
baz=310
GSC Goldstone, Bar 47.81 83 P **P** 22 47 15.0 -0.1
baz=310,SNR=48
GSC Goldstone, Bar 47.81 83 *e*P **P** 22 47 15.5 +0.4
GSC pmax pmax
comp=Z,44nm,0.8s
GSC Goldstone, Bar 47.81 83 *e*P **P** 22 47 15.5 +0.4
comp=Z,44nm,0.8s
GSC LR LR
comp=Z,2µm,19.0s
A25A Svangstu Ranch 47.81 60 P **P** 22 47 13.7 -1.2
baz=304,SNR=17
JLU Jordanelle 47.81 74 *e*P **P** 22 47 16.2 +1.0
comp=Z,65nm,1.0s
JLU LR LR
comp=Z,2µm,21.0s
NLU North Lily Min 47.83 75 PFAKE 22 47 30.0 +15
NLU LR LR
comp=Z,1µm,18.0s
TIY Taiyuan 47.83 281 *e*P **P** 22 47 17.1 +1.9
TIY S **S** 22 54 06.8 -3.8
TIY pmax pmax
comp=Z,73nm,0.7s
TIY pmax pmax
comp=Z,730nm,8.4s
TIY LR LR
comp=Z,2µm,16.1s
TIY LR LR
comp=Z,2µm,14.1s
TIY LR LR
comp=Z,3µm,17.0s
FMP Fort Macarthur 47.91 86 P **P** 22 47 15.9 +0.1
baz=311
BFSC Mount Baldy Ra 47.96 85 P **P** 22 47 16.3 -0.1
baz=311,SNR=17
RRX Edison Barstow 47.97 84 P **P** 22 47 16.5 +0.2
baz=311
CIS Catalina Islan 48.04 87 P **P** 22 47 16.6 -0.2
baz=312
SHPR Sheep Range 48.07 81 *e*P **P** 22 47 17.4 +0.2
comp=Z,41nm,1.4s
SHPR LR LR
comp=Z,4µm,20.0s
B25A Knox Farm, Ray 48.16 61 P **P** 22 47 17.0 -0.6
baz=305
KRAR Krasnoyarsk 48.22 311 *c i*P **P** 22 47 17.1 -0.8
SCI2 San Clemente I 48.23 87 P **P** 22 47 18.5 +0.3
baz=312
TUQ Turquoise Moun 48.28 83 P **P** 22 47 18.3 -0.4
baz=310
HEC Hector,Ludlow 48.41 84 P **P** 22 47 19.5 -0.2
baz=311,SNR=30
BBRC Big Bear Solar 48.41 85 P **P** 22 47 19.6 -0.4
baz=311
A26A Wade Farm, Ken 48.42 60 P **P** 22 47 18.3 -1.3
baz=305
C25A Freed Ranch, W 48.42 62 P **P** 22 47 18.6 -1.1
baz=305
CCUT Cedar City 48.52 79 *e*P **P** 22 47 20.6 -0.2
comp=Z,24nm,0.8s
CCUT LR LR
comp=Z,3µm,20.0s
B26A Jensen Ranch, 48.61 61 P **P** 22 47 19.5 -1.6
baz=305
MURC Murrieta 48.67 85 P **P** 22 47 21.4 -0.3
baz=312,SNR=8.2
TMUT Trail Mountain 48.76 75 *e*P **P** 22 47 23.2 +0.6
comp=Z,100nm,0.8s
TMUT LR LR
comp=Z,2µm,18.0s
GMRC Granite Mounta 48.86 83 P **P** 22 47 23.1 -0.2
baz=311,SNR=32
P17A Butcher Ranch, 48.93 75 *e*P **P** 22 47 24.8 +1.0
comp=Z,48nm,0.8s
P17A LR LR
comp=Z,2µm,19.0s
LCMT Little Creek M 48.94 79 *e*P **P** 22 47 25.0 +1.2
comp=Z,72nm,0.9s
LCMT LR LR
comp=Z,4µm,22.0s
MTPU Mount Pierson 48.94 77 *e*P **P** 22 47 25.2 +1.1
comp=Z,36nm,0.9s
MTPU LR LR
comp=Z,3µm,18.0s
LDFC Landfair 49.02 82 PFAKE 22 47 40.0 +16
LDFC LR LR
comp=Z,2µm,19.0s
Q16A Castle Valley 49.02 76 *e*P **P** 22 47 25.6 +1.1
comp=Z,38nm,0.8s
Q16A LR LR
comp=Z,3µm,22.0s
KULLO Kullorsuaq 49.08 17 ⇑*i*P **P** 22 47 23.9 -0.4
comp=Z,97nm,0.8s
comp=Z,2µm,16.0s
KULLO Kullorsuaq 49.08 17 ⇑*i*P **P** 22 47 23.9 -0.4
KULLO pmax pmax
comp=Z,97nm,0.8s
KULLO MLR MLR
comp=Z,2µm,16.0s
PFO Pinyon Flats O 49.13 85 P **P** 22 47 25.9 +0.6
comp=Z,18nm,0.9s,baz=331,slow=6.4,SNR=20
PFO Pinyon Flats O 49.13 85 P **P** 22 47 25.1 -0.2
baz=312,SNR=12
PFO Pinyon Flats O 49.13 85 *e*P **P** 22 47 25.8 +0.4
comp=Z,25nm,1.0s
PFO LR LR
comp=Z,3µm,22.0s
TPFO Pinon Flats 49.13 85 P **P** 22 47 24.8 -0.6
baz=312,SNR=12
P18A Preston Nutter 49.14 75 PFAKE 22 47 40.0 +14
P18A LR LR
comp=Z,2µm,22.0s
BELC Belle Mtn. Jos 49.16 84 P **P** 22 47 24.6 -1.0
baz=311,SNR=14
KNB Kanab 49.19 79 *e*P **P** 22 47 26.8 +0.9
KNB pmax pmax
comp=Z,55nm,0.9s
KNB Kanab 49.19 79 *e*P **P** 22 47 26.8 +0.9
comp=Z,54nm,0.9s
KNB LR LR
comp=Z,3µm,21.0s
109C Camp Elliot, M 49.20 86 P **P** 22 47 25.3 -0.4
baz=312
PKCU Pink Cliffs 49.24 78 *e*P **P** 22 47 26.9 +0.5
comp=Z,41nm,0.9s
D26A Manning 49.27 62 P **P** 22 47 25.0 -1.2
baz=306
SRU San Rafael Swe 49.29 75 *e*P **P** 22 47 27.1 +0.5
SRU pmax pmax
comp=Z,81nm,0.9s
SRU MLR MLR
comp=Z,2µm,22.0s
SRU San Rafael Swe 49.29 75 *e*P **P** 22 47 27.1 +0.5
comp=Z,81nm,0.9s
SRU LR LR
comp=Z,2µm,22.0s
K22A Casper 49.52 69 P **P** 22 47 27.1 -1.2
baz=307,SNR=14
K22A Casper 49.52 69 *e*P **P** 22 47 27.7 -0.6
comp=Z,27nm,0.8s
NEE2 Needles Airpor 49.52 82 P **P** 22 47 27.7 -0.5
baz=311
IRM Iron Mountain 49.59 83 P **P** 22 47 28.5 -0.3
baz=311,SNR=25
BAR Barrett 49.61 86 *e*P **P** 22 47 29.0 +0.1
comp=Z,40nm,0.9s
BAR LR LR
comp=Z,1µm,20.0s
MONP2 Monument Peak 49.62 86 P **P** 22 47 28.9 -0.3
baz=312,SNR=22
BC3 Big Chuckawall 49.73 84 P **P** 22 47 29.3 -0.6
baz=312,SNR=12
W13A Hualapai Mount 49.77 82 *e*P **P** 22 47 30.4 +0.2
comp=Z,24nm,1.0s
TARA Tarawa 49.90 188 PFAKE 22 47 40.0 +8.9
TARA LR LR
comp=Z,3µm,21.0s
U15A North Rim 49.90 79 *e*P **P** 22 47 31.6 +0.2
comp=Z,84nm,0.9s
U15A LR LR
comp=Z,4µm,22.0s
A29A Manning Farm, 49.93 59 P **P** 22 47 29.5 -1.6
baz=306,SNR=13
KBS Kingsbay 49.95 357 *e*P **P** 22 47 30.7 -0.1
KBS IAmb IAmb 22 47 32.3
comp=Z,49nm,0.8s
KBS *e*S **S** 22 54 40.2 +0.9
KBS Kingsbay 49.95 357 *e*P **P** 22 47 31.0 +0.2
KBS pmax pmax
comp=Z,47nm,0.7s
KBS Kingsbay 49.95 357 *e*P **P** 22 47 31.0 +0.2
comp=Z,46nm,0.7s
KBS LR LR
comp=Z,4µm,18.0s
SWSC Sam W. Stewart 49.98 85 P **P** 22 47 31.4 -0.3
baz=312,SNR=7.3
IKP In-Ko-Pah, Jac 49.98 86 P **P** 22 47 31.9 +0.1
baz=312,SNR=11
O20A White River Ci 50.04 73 P **P** 22 47 31.7 -0.5
baz=309,SNR=80
O20A White River Ci 50.04 73 *e*P **P** 22 47 31.6 -0.7
comp=Z,103nm,0.8s
O20A LR LR
comp=Z,2µm,18.0s
RSSD Black Hills 50.08 66 P **P** 22 47 31.3 -1.3
baz=307
RSSD Black Hills 50.08 66 *e*P **P** 22 47 31.5 -1.1
RSSD pmax pmax
comp=Z,17nm,0.7s
RSSD Black Hills 50.08 66 *e*P **P** 22 47 31.5 -1.1
comp=Z,17nm,0.7s
RSSD LR LR
comp=Z,2µm,21.0s
PDMCI Parker Dam,Lak 50.12 83 P **P** 22 47 32.4 -0.4
baz=311,SNR=23
B29A Wagenman Farm, 50.13 59 P **P** 22 47 30.9 -1.7
baz=306,SNR=7.1
Y12C Blythe 50.25 83 P **P** 22 47 33.3 -0.3
baz=312,SNR=12
Y12C Blythe 50.25 83 *e*P **P** 22 47 34.2 +0.5
comp=Z,40nm,0.8s
Y12C LR LR
comp=Z,2µm,21.0s
MDND Maddock 50.35 60 P **P** 22 47 32.6 -1.7
baz=306,SNR=7.5
MDND Maddock 50.35 60 *e*P **P** 22 47 34.0 -0.4
MDND *e*PcP **PcP** 22 48 53.5 +0.9
MDND LR LR
comp=Z,5µm,21.0s
SPA0 Spitsbergen Ar 50.49 355 *e*P **P** 22 47 33.8 -1.2
SPA0 IAmb IAmb 22 47 36.2
comp=Z,61nm,0.7s
SPA0 *e*S **S** 22 54 47.2 +0.3
SPA0 Spitsbergen Ar 50.49 355 *e*P **P** 22 47 34.1 -0.9
SPITS Spitsbergen Ar 50.49 355 LR LR 23 08 34.4
comp=Z,2µm,21.4s,baz=20,slow=36
PV09 Paradox Valley 50.52 75 *e*P **P** 22 47 36.6 +0.5
GLA Glamis 50.52 84 P **P** 22 47 35.4 -0.4
baz=312,SNR=18
GLA Glamis 50.52 84 *e*P **P** 22 47 36.2 +0.4
GLA pmax pmax
comp=Z,51nm,1.0s
GLA Glamis 50.52 84 *e*P **P** 22 47 36.2 +0.4
comp=Z,51nm,1.0s
GLA LR LR
comp=Z,3µm,18.0s
PV10 Paradox Valley 50.65 75 *e*P **P** 22 47 37.8 +0.8
PV05 Paradox Valley 50.81 75 *e*P **P** 22 47 38.6 +0.5
ULM Lac du Bonnet 50.92 55 P **P** 22 47 36.3 -2.2
comp=Z,14nm,0.8s,baz=306,slow=7.3,SNR=9.2
ULM PcP **PcP** 22 48 54.6 -0.1
comp=Z,14nm,0.8s,baz=317,slow=3.0,SNR=5.2
ULM LR LR 23 09 10.8
comp=Z,5µm,21.1s,baz=310,slow=36
ULM Lac du Bonnet 50.92 55 *e*P **P** 22 47 37.3 -1.3
ULM pmax pmax
comp=Z,15nm,0.9s
ULM Lac du Bonnet 50.92 55 *e*P **P** 22 47 37.3 -1.3
comp=Z,15nm,0.8s
ULM PcP **PcP** 22 48 54.6 -0.1
N23A Red Feather La 50.94 71 P **P** 22 47 38.9 -0.3
baz=309,SNR=23
N23A Red Feather La 50.94 71 *e*P **P** 22 47 39.5 +0.4
comp=Z,60nm,1.3s
N23A LR LR
comp=Z,3µm,22.0s
PHWY Pilot Hill 50.97 70 *e*P **P** 22 47 39.0 -0.4
comp=Z,28nm,1.4s
YHNB Yeheng 51.04 261 PFAKE 22 47 50.0 +10
YHNB LR LR
comp=Z,3µm,21.0s

WUAZ **Wupatki** 51.05 79 P P 22 47 39.9 0.0
baz=311,SNR=41
WUAZ **Wupatki** 51.05 79 eP P 22 47 40.8 +0.8
comp=Z,69nm,0.9s
WUAZ LR LR
comp=Z,4µm,19.0s
B31A **Greenbush Farm** 51.07 58 P P 22 47 38.6 -1.1
baz=307
Y14A **Wickenburg** 51.07 82 eP P 22 47 40.1 +0.1
comp=Z,96nm,0.8s
Y14A LR LR
comp=Z,7µm,19.0s
PV01 **Paradox Valley** 51.09 75 eP P 22 47 40.5 +0.1
NACB **Ninganchiao** 51.27 261 eP P 22 47 41.5 0.0
comp=Z,104nm,1.5s
NACB LR LR
comp=Z,3µm,22.0s
WHN **Wuhan** 51.32 272 P P 22 47 41.6 -0.2
WHN S S 22 54 58.4 -1.1
WHN LR LR
comp=Z,6µm,19.3s
WHN LR LR
comp=Z,3µm,14.2s
WHN LR LR
comp=Z,4µm,15.8s
113A **Mohawk Valley,** 51.37 84 PFAKE 22 47 50.0 +7.8
113A LR LR
comp=Z,3µm,22.0s
A32A **Rocking H Ranc** 51.39 57 P P 22 47 40.4 -1.7
baz=307
SMCO **Snowmass** 51.40 73 eP P 22 47 42.8 0.0
comp=Z,19nm,0.8s
SMCO LR LR
comp=Z,2µm,22.0s
C31A **Landman Farms,** 51.40 59 P P 22 47 40.2 -2.0
baz=307,SNR=21
F29A **Eureka** 51.44 62 P P 22 47 41.3 -1.2
baz=308
HOPEN **Hopen** 51.52 352 eP P 22 47 42.0 -0.7
HOPEN IAmb IAmb 22 48 03.7
comp=Z,119nm,1.3s
B32A **Ashes, Strandq** 51.68 58 P P 22 47 42.4 -1.8
baz=307,SNR=14
HSPB **Hornsund (broa** 51.69 355 eP P 22 47 43.2 -0.7
HSPB IAmb IAmb 22 47 45.2
comp=Z,52nm,0.9s
HSPB **Hornsund (broa** 51.69 355 eP P 22 47 43.0 -0.9
HSPB e 22 48 57.0
HSPB e 22 49 48.7
HSPB eS S 22 55 22.4 +19
HSPB e 22 57 33.0
HSPB MLR MLR
comp=Z,4µm,22.3s
MVCO **Mesa Verde** 51.73 76 P P 22 47 44.7 -0.4
baz=310,SNR=25
MVCO **Mesa Verde** 51.73 76 eP P 22 47 45.5 +0.4
comp=Z,40nm,0.7s
MVCO LR LR
comp=Z,3µm,22.0s
X16A **Lo Mia Camp, P** 51.73 81 eP P 22 47 46.2 +1.1
comp=Z,28nm,0.9s
X16A LR LR
comp=Z,2µm,20.0s
ISCO **Idaho Springs** 51.82 71 P P 22 47 45.9 0.0
baz=310,SNR=43
ISCO **Idaho Springs** 51.82 71 eP P 22 47 45.8 0.0
ISCO pmax pmax
comp=Z,33nm,0.9s
ISCO **Idaho Springs** 51.82 71 eP P 22 47 45.8 0.0
comp=Z,32nm,0.9s
ISCO LR LR
comp=Z,2µm,22.0s
DAG **Danmarks Havn** 51.84 5⇑iP P 22 47 44.2 -0.9
comp=Z,30nm,0.7s
DAG **Danmarks Havn** 51.84 5⇑iP P 22 47 44.2 -0.9
DAG pmax pmax
comp=Z,21nm,0.7s
D31A **Mcclaflin, Tow** 51.86 60 P P 22 47 43.7 -1.9
baz=308,SNR=9.5
F30A **Leola** 51.88 62 P P 22 47 43.8 -2.1
baz=308
SSLB **Suanglung** 51.95 261 eP P 22 47 46.9 +0.3
comp=Z,76nm,1.1s
SSLB LR LR
comp=Z,2µm,22.0s
A33A **Warroad** 51.96 57 P P 22 47 44.7 -1.6
baz=307,SNR=25
YULB **Yu-li** 52.02 260 eP P 22 47 46.8 -0.4
comp=Z,128nm,1.5s
C32A **Crookston** 52.03 58 P P 22 47 45.2 -1.7
baz=308
E31A **Nome** 52.06 60 P P 22 47 45.4 -1.8
baz=308,SNR=16
AGMN **Agassiz Nation** 52.10 57 P P 22 47 45.5 -1.8
baz=308,SNR=16
AGMN **Agassiz Nation** 52.10 57 eP P 22 47 46.0 -1.4
comp=Z,24nm,1.0s
AGMN LR LR
comp=Z,5µm,20.0s
D32A **Dogwood Acres,** 52.19 59 P P 22 47 46.4 -1.7
baz=308
B33A **Robert and Kas** 52.26 57 P P 22 47 46.4 -2.2
baz=308,SNR=9.1
F31A **Hecla** 52.29 61 P P 22 47 47.0 -1.9
baz=308
W18A **Petrified Fore** 52.33 79 P P 22 47 49.5 0.0
baz=311,SNR=18
W18A **Petrified Fore** 52.33 79 eP P 22 47 50.0 +0.5
comp=Z,56nm,0.9s
W18A LR LR
comp=Z,4µm,21.0s
XAN **Xi'an** 52.37 280 P P 22 47 49.8 +0.1
XAN pP pP 22 47 55.5 -1.5
XAN sP sP 22 47 58.3 -1.5
XAN PP PP 22 49 47.5 -0.7
XAN S S 22 55 13.5 -0.5
XAN sS sS 22 55 22.8 -3.2
XAN SS SS 22 58 47.4 -4.1
XAN pmax pmax
comp=Z,52nm,1.0s
XAN pmax pmax
comp=Z,760nm,9.8s
XAN LR LR
comp=Z,1µm,19.8s
XAN LR LR
comp=Z,2µm,19.8s
XAN LR LR
comp=Z,3µm,21.0s
S22A **4UR Ranch, Cre** 52.40 74 P P 22 47 50.4 +0.3
baz=310,SNR=88
S22A **4UR Ranch, Cre** 52.40 74 eP P 22 47 51.1 +1.0
comp=Z,63nm,1.0s
S22A LR LR
comp=Z,2µm,19.0s
C33A **Trail** 52.48 58 P P 22 47 48.2 -2.0
baz=308
E32A **Braaten, Kindr** 52.49 60 P P 22 47 48.4 -1.9
baz=308
214A **Organ Pipe Nat** 52.52 84 P P 22 47 50.1 -0.6
baz=313,SNR=9.5
X18A **Snowflake** 52.58 79 eP P 22 47 52.4 +1.0
comp=Z,34nm,0.9s
X18A LR LR
comp=Z,3µm,19.0s
QZH **Quanzhou** 52.58 264⇑iP P 22 47 51.8 +0.6
QZH S S 22 55 21.1 +4.2
QZH pmax pmax
comp=Z,200nm,1.0s
QZH pmax pmax
comp=Z,3µm,3.5s
QZH LR LR
comp=Z,4µm,24.5s
B34A **Aery, Baudette** 52.62 57 P P 22 47 49.7 -1.6
baz=308,SNR=23
Q24A **Divide** 52.63 72 P P 22 47 52.0 +0.2
baz=310,SNR=9.0
Q24A **Divide** 52.63 72 eP P 22 47 52.4 +0.5
comp=Z,26nm,0.8s
Q24A LR LR
comp=Z,2µm,20.0s
G31A **Conde** 52.71 62 P P 22 47 50.1 -1.9
baz=308
SUSD **Miller** 52.78 63 P P 22 47 51.2 -1.3
baz=309
D33A **AnnSam, Waubun** 52.82 59 P P 22 47 50.9 -1.8
baz=308,SNR=9.1
F32A **Veblen** 52.91 61 P P 22 47 51.7 -1.7
baz=309
C34A **RKJ Ranch, Bem** 53.00 58 P P 22 47 52.2 -1.9
baz=308
H31A **Wolsey** 53.02 63 P P 22 47 52.5 -1.8
baz=309
G32A **Webster** 53.08 61 P P 22 47 52.9 -1.8
baz=309
E33A **Westby DABS, E** 53.12 59 P P 22 47 52.8 -2.2
baz=309
J30A **Dallas** 53.17 64 P P 22 47 54.2 -1.3
baz=309,SNR=9.0
B35A **Bob, Littlefor** 53.19 56 P P 22 47 53.4 -2.0
baz=308,SNR=15
ZAA0 **Zalesovo Array** 53.20 313 eP P 22 47 55.1 -0.3
ZALV **Zalesovo Beam** 53.20 313 P P 22 47 55.0 -0.4
comp=Z,13nm,0.5s,baz=47,slow=6.7,SNR=59
ZALV PcP PcP 22 49 03.8 +0.7
comp=Z,25nm,0.8s,baz=25,slow=3.9,SNR=8.0
ZALV LR LR 23 12 07.4
comp=Z,5µm,18.7s,baz=54,slow=38
D34A **Park Rapids** 53.20 58 P P 22 47 53.8 -1.7
baz=309,SNR=18
SDCO **Great Sand Dun** 53.20 73 P P 22 47 56.1 0.0
baz=311,SNR=75
SDCO **Great Sand Dun** 53.20 73 eP P 22 47 56.8 +0.8
comp=Z,58nm,1.0s
SDCO LR LR
comp=Z,2µm,19.0s
OGNE **Ogallala** 53.21 68 P P 22 47 55.5 -0.4
baz=310
OGNE **Ogallala** 53.21 68 PFAKE 22 48 10.0 +14
OGNE LR LR
comp=Z,1µm,20.0s
I31A **Royce, Wessing** 53.27 63 P P 22 47 54.5 -1.6
baz=309
NVS **Novosibirsk** 53.37 314⇑iP P 22 47 56.9 +0.3
NVS eS S 22 55 30.1 +3.3
NVS pmax pmax
comp=Z,72nm,0.8s
NVS pmax pmax
comp=N,10.0nm,0.5s
NVS pmax pmax
comp=E,40nm,0.6s
NVS smax smax
comp=N,21nm,1.5s
NVS smax smax
comp=E,4.0nm,0.5s
F33A **5 Mile Ranch,** 53.38 60 P P 22 47 54.7 -2.2
baz=309
C35A **Jirik Farms, M** 53.47 57 P P 22 47 55.4 -2.1
baz=309,SNR=27
K30A **Basset** 53.51 65 P P 22 47 56.8 -1.1
baz=310
TUC **Tucson** 53.54 82 P P 22 47 58.0 -0.3
baz=313
TUC **Tucson** 53.54 82 eP P 22 47 58.6 +0.2
TUC pmax pmax
comp=Z,21nm,0.9s
TUC **Tucson** 53.54 82 eP P 22 47 58.6 +0.2
comp=Z,21nm,0.9s
TUC LR LR
comp=Z,2µm,19.0s
E34A **Wadena** 53.57 59 P P 22 47 56.9 -1.3
baz=309
H32A **Carlson Farm,** 53.59 62 P P 22 47 56.4 -2.0
baz=309
J31A **Geddes** 53.62 64 P P 22 47 57.2 -1.5
baz=310
G33A **Ortonville** 53.70 61 P P 22 47 57.4 -1.9
baz=309
D35A **Remer** 53.81 58 P P 22 47 58.2 -1.9
baz=309,SNR=25
SUMG **Summit** 53.83 13⇑iP P 22 48 00.1 -0.2
comp=Z,138nm,1.0s
SUMG **Summit** 53.83 13 eP P 22 48 00.0 -0.2
SUMG pmax pmax
comp=Z,143nm,1.0s
SUMG MLR MLR
comp=Z,4µm,20.0s
SUMG **Summit** 53.83 13 eP P 22 48 00.0 -0.2
comp=Z,143nm,1.0s
SUMG LR LR
comp=Z,4µm,20.0s
H33A **Prehn Over Nor** 53.86 62 P P 22 47 58.2 -2.3
baz=309,SNR=13
I32A **Karley and Nic** 53.87 63 P P 22 47 58.7 -1.9
baz=310
BJO **Bjornoya** 53.89 353 eP P 22 47 59.8 -0.4
BJO IAmb IAmb 22 48 01.0
comp=Z,47nm,0.9s
E35A **Pequot Lakes** 53.95 58 P P 22 47 59.4 -1.7
baz=309,SNR=9.2
F34A **Alexandria** 53.97 60 P P 22 47 59.3 -1.9
baz=309,SNR=7.4
C36A **Pine Crest Far** 54.03 56 P P 22 48 00.1 -1.5
baz=309,SNR=23
K31A **O'Neill** 54.03 65 P P 22 48 00.5 -1.2
baz=310,SNR=6.0
J32A **Parkston** 54.07 63 P P 22 47 59.8 -2.2
baz=310
KSCO **Kaye Shedlock'** 54.10 70 P P 22 48 02.1 -0.4
baz=311,SNR=14
KSCO **Kaye Shedlock'** 54.10 70 eP P 22 48 03.5 +1.1
comp=Z,158nm,1.2s
KSCO LR LR
comp=Z,2µm,20.0s
G34A **Benson** 54.11 60 P P 22 48 00.2 -2.0
baz=310
LZH **Lanzhou** 54.15 285 ⇑P P 22 48 04.3 +1.5
LZH pP pP 22 48 09.4 -0.8
LZH sP sP 22 48 11.8 -1.2
LZH PP PP 22 50 05.0 +0.7
LZH S S 22 55 40.0 +1.7
LZH sS sS 22 55 47.1 -3.2
LZH SS SS 22 59 19.0 -0.6
LZH pmax pmax
comp=Z,810nm,1.8s
LZH pmax pmax
comp=Z,1µm,4.0s
D36A **Goodland** 54.22 57 P P 22 48 00.9 -2.1
baz=309,SNR=13
I33A **Coleman** 54.23 62 P P 22 48 01.1 -2.0
baz=310
T25A **Trinidad** 54.25 73 P P 22 48 03.9 +0.2
baz=311,SNR=114
T25A **Trinidad** 54.25 73 eP P 22 48 04.8 +1.1
comp=Z,122nm,0.9s
T25A LR LR
comp=Z,2µm,18.0s
L31A **Butterfield Fa** 54.27 65 P P 22 48 02.4 -1.1
baz=310,SNR=12
F35A **Swanville** 54.30 59 P P 22 48 02.1 -1.6
baz=310,SNR=7.3
C37A **Embarrass** 54.39 56 P P 22 48 02.9 -1.4
baz=310,SNR=31
GTA **Gaotai** 54.39 291 P P 22 48 04.5 0.0
GTA pP pP 22 48 08.9 -3.0
GTA sP sP 22 48 11.8 -2.9
GTA S S 22 55 40.3 -1.1
GTA sS sS 22 55 48.9 -4.6
GTA SS SS 22 59 22.3 -0.9
GTA pmax pmax
comp=Z,73nm,1.7s
GTA pmax pmax
comp=Z,1µm,5.2s
GTA LR LR
comp=Z,3µm,17.1s
GTA LR LR
comp=Z,5µm,16.2s
GTA LR LR
comp=Z,6µm,15.7s
LAZ **Ladron** 54.40 78 eP P 22 48 06.0 +1.2
H34A **Spellman Lake,** 54.40 61 P P 22 48 02.5 -1.9
baz=310
ILULI **Ilulissat** 54.44 20⇑iP P 22 48 02.9 -1.3
comp=Z,38nm,0.7s
comp=Z,3µm,18.0s
ILULI **Ilulissat** 54.44 20⇑iP P 22 48 02.9 -1.3
ILULI pmax pmax
comp=Z,38nm,0.7s
ILULI MLR MLR
comp=Z,3µm,18.0s
K32A **Verdigre** 54.46 64 P P 22 48 03.3 -1.5
baz=310
ANMO **Albuquerque** 54.46 77 P P 22 48 05.0 -0.1
baz=312
ANMO **Albuquerque** 54.46 77c iP P 22 48 05.2 0.0
ANMO pmax pmax
comp=Z,12nm,1.0s
ANMO **Albuquerque** 54.46 77 eP P 22 48 05.8 +0.6
comp=Z,14nm,0.9s
ANMO LR LR
comp=Z,3µm,19.0s
ECSD **EROS Data Cent** 54.53 62 P P 22 48 03.8 -1.5
baz=310,SNR=13
ECSD **EROS Data Cent** 54.53 62 eP P 22 48 03.8 -1.5
comp=Z,32nm,0.8s
ECSD LR LR
comp=Z,4µm,21.0s
ENH **Enshi** 54.56 276 eP P 22 48 06.0 +0.2
comp=Z,42nm,0.8s
ENH LR LR
comp=Z,2µm,18.0s
E36A **McGregor** 54.59 58 P P 22 48 04.0 -1.7
baz=310,SNR=28
J33A **Davis** 54.60 63 P P 22 48 04.2 -1.6
baz=310
EYMN **Ely** 54.61 56 P P 22 48 04.5 -1.4
baz=310,SNR=39
EYMN **Ely** 54.61 56 eP P 22 48 04.6 -1.3
comp=Z,39nm,0.8s
EYMN LR LR
comp=Z,4µm,21.0s
D37A **Cotton** 54.62 57 P P 22 48 04.5 -1.5
baz=310,SNR=28
M31A **Lambtecht Ranc** 54.73 66 P P 22 48 05.5 -1.4
baz=310
G35A **Watkins** 54.76 60 P P 22 48 05.6 -1.3
baz=310
I34A **Hadley** 54.76 62 P P 22 48 05.1 -1.9
baz=310
LPM **Los Pinos Moun** 54.77 77 eP P 22 48 08.2 +0.7
L32A **Elgin** 54.86 65 P P 22 48 06.0 -1.7
baz=310,SNR=7.2
F36A **Milaca** 54.87 59 P P 22 48 05.5 -2.2
baz=310,SNR=9.8
C38A **Sawbill Land.** 54.87 56 P P 22 48 05.6 -2.1
baz=310,SNR=27
BNM **Barren Site** 54.88 77 eP P 22 48 08.9 +0.6
H35A **Sunnyside Ranc** 54.90 60 P P 22 48 06.5 -1.5
baz=310
E37A **Wrenshall** 55.02 57 P P 22 48 06.8 -2.0
baz=310
K33A **Hardington** 55.04 64 P P 22 48 07.7 -1.4
baz=310
N31A **Bailey Ranch,** 55.08 66 P P 22 48 08.4 -1.0
baz=311
319A **Douglas** 55.12 82 eP P 22 48 10.5 +0.6
comp=Z,43nm,1.0s
319A LR LR
comp=Z,3µm,19.0s
G36A **St. Michael** 55.15 59 P P 22 48 07.5 -2.3
baz=310
BGNE **Belgrade** 55.16 65 P P 22 48 08.6 -1.3
baz=311
BGNE **Belgrade** 55.16 65 eP P 22 48 10.5 +0.5
comp=Z,87nm,0.6s
BGNE LR LR
comp=Z,3µm,20.0s
L33A **Hoskins** 55.17 64 P P 22 48 08.8 -1.2
baz=311
J34A **George** 55.19 62 P P 22 48 08.2 -1.9
baz=310
121A **Cookes Peak, D** 55.26 80 P P 22 48 11.1 +0.1
baz=313,SNR=19
O31A **Woolen Ranch,** 55.30 67 P P 22 48 10.0 -0.9
baz=311
I35A **Creekview Farm** 55.36 61 P P 22 48 09.2 -2.2
baz=310
C39A **Grand Marais** 55.40 55 P P 22 48 09.8 -1.8
baz=310,SNR=13
H36A **Jessenland, He** 55.47 60 P P 22 48 10.6 -1.5
baz=310,SNR=7.3
N32A **Stulken Farm,** 55.50 66 P P 22 48 11.6 -0.8
baz=311
J35A **Milford** 55.55 62 P P 22 48 11.2 -1.5
baz=311
M33A **Taylor Creek F** 55.60 65 P P 22 48 11.8 -1.3
baz=311
SPMN **Marine on St.** 55.66 59 P P 22 48 11.7 -1.8
baz=311
SPMN **Marine on St.** 55.66 59 eP P 22 48 12.2 -1.3
comp=Z,41nm,1.4s
SPMN LR LR
comp=Z,5µm,18.0s
HSIG 55.70 85 PFAKE 22 48 30.0 +16
HSIG LR LR
comp=Z,2µm,22.0s
I36A **Fitzsimmons Fa** 55.79 61 P P 22 48 12.4 -2.0
baz=311
L34A **Svendsen Farm,** 55.81 64 P P 22 48 13.1 -1.5
baz=311,SNR=13
O32A **Brockman Farm,** 55.84 67 P P 22 48 13.5 -1.3
baz=311
CBKS **Cedar Bluff** 55.94 69 P P 22 48 14.9 -0.7
baz=312,SNR=12
CBKS **Cedar Bluff** 55.94 69 eP P 22 48 15.9 +0.3
CBKS pmax pmax
comp=Z,73nm,0.9s
CBKS **Cedar Bluff** 55.94 69 eP P 22 48 15.9 +0.3
comp=Z,74nm,0.8s
CBKS LR LR
comp=Z,2µm,20.0s
K35A **Storm Lake** 55.96 62 P P 22 48 13.8 -1.9
baz=311
M34A **Aspy Farms, Fr** 55.99 64 P P 22 48 14.6 -1.3
baz=311
H37A **Dierke Farm, C** 56.02 59 P P 22 48 15.5 -0.6
baz=311
J36A **Seneca 1, Swea** 56.06 61 P P 22 48 14.6 -1.8
baz=311
P32A **Huiting Farm,** 56.07 67 P P 22 48 15.4 -1.0
baz=312
SRIG **Santa Rosalia** 56.07 87 PFAKE 22 48 30.0 +13
SRIG LR LR
comp=Z,2µm,19.0s
I37A **Lemond, Waseca** 56.13 60 P P 22 48 15.8 -1.0
baz=311
L35A **Bielow Farm, R** 56.18 63 P P 22 48 15.9 -1.4
baz=311
SFJD **Kangerlussuaq** 56.35 21⇑iP P 22 48 17.0 -1.0
comp=Z,27nm,0.9s
SFJD **Kangerlussuaq** 56.35 21⇑iP P 22 48 17.0 -1.0
SFJD pmax pmax
comp=Z,27nm,0.9s
SFJD **Kangerlussuaq** 56.35 21 eP P 22 48 17.4 -0.6
comp=Z,175nm,2.0s
SFJD LR LR
comp=Z,2µm,20.0s
O33A **Hebron** 56.36 66 P P 22 48 17.0 -1.5
baz=312
N34A **Lincoln** 56.48 65 P P 22 48 18.1 -1.3
baz=312
J37A **Redenius Farm,** 56.50 61 P P 22 48 18.1 -1.4
baz=311
Q32A **Meitler Ranch,** 56.51 68 P P 22 48 18.6 -1.0
baz=312,SNR=12
M35A **Neola** 56.52 64 P P 22 48 18.7 -1.0
baz=312,SNR=10
L36A **Harm Buss Farm** 56.68 63 P P 22 48 19.2 -1.6
baz=312
I38A **Scanlan Farm,** 56.69 60 P P 22 48 19.3 -1.6
baz=311
P33A **Williams Farm,** 56.72 67 P P 22 48 20.1 -1.0
baz=312,SNR=5.3
R32A **Long Quarter,** 56.80 68 P P 22 48 20.6 -1.1
baz=312,SNR=6.7
O34A **Beatrice** 56.80 66 P P 22 48 20.2 -1.4
baz=312,SNR=13
K37A **Belmond** 56.81 62 P P 22 48 19.7 -2.0
baz=312,SNR=7.6
Q33A **Connelly Farm,** 56.93 67 P P 22 48 21.3 -1.3
baz=312,SNR=12
N35A **Tabor** 56.95 64 P P 22 48 21.6 -1.1
baz=312,SNR=36
M36A **Felix, Anita** 57.03 63 P P 22 48 22.1 -1.2
baz=312
COWI **Conover** 57.04 56 eP P 22 48 21.9 -1.3
comp=Z,24nm,0.9s
COWI LR LR
comp=Z,3µm,21.0s
J38A **Wedel Dairy, R** 57.09 60 P P 22 48 22.1 -1.5
baz=312,SNR=7.5
P34A **Walnut Farm, R** 57.14 66 P P 22 48 22.5 -1.7
baz=312,SNR=8.3

S32A	**Newby Ranch, P**	**57.15**	**69**	P		**P**	**22 48 22.8**	**-1.4**
	baz=312									
L37A	**Phoenix Point,**	**57.17**	**62**	P		**P**	**22 48 22.9**	**-1.4**
	baz=312,SNR=8.6									
O35A	**Humboldt**	**57.19**	**65**	P		**P**	**22 48 22.8**	**-1.7**
	baz=312,SNR=8.1									
HAMF	**Hammerfest**	**57.22**	**350**	*e*P		**P**	**22 48 23.1**	**-1.0**
GZH	**Guangzhou**	**57.22**	**267**	P		**P**	**22 48 21.4**	**-3.4**
GZH				S		**S**	**22 56 13.3**	**-5.8**
GZH				pmax		pmax				
	comp=Z,2μm,7.0s									
R33A	**Olander Ranch,**	**57.30**	**68**	P		**P**	**22 48 24.1**	**-1.1**
	baz=312									
MNTX	**Cornudas Mount**	**57.31**	**79**	P		**P**	**22 48 25.1**	**-0.3**
	baz=314,SNR=77									
MNTX	**Cornudas Mount**	**57.31**	**79**	*e*P		**P**	**22 48 25.9**	**+0.5**
	comp=Z,41nm,0.9s									
MNTX				LR		LR				
	comp=Z,1μm,20.0s									
MSTX	**Muleshoe**	**57.36**	**75**	P		**P**	**22 48 25.1**	**-0.8**
	baz=313,SNR=20									
MSTX	**Muleshoe**	**57.36**	**75**	*e*P		**P**	**22 48 26.0**	**+0.1**
	comp=Z,86nm,1.3s									
MSTX				LR		LR				
	comp=Z,1μm,18.0s									
N36A	**Muff Farm, Cla**	**57.37**	**64**	P		**P**	**22 48 24.5**	**-1.2**
	baz=312,SNR=25									
K38A	**Parkersburg**	**57.37**	**61**	P		**P**	**22 48 24.0**	**-1.6**
	baz=312									
AMTX	**Amarillo**	**57.40**	**73**	P		**P**	**22 48 25.7**	**-0.4**
	baz=313									
AMTX	**Amarillo**	**57.40**	**73**	*e*P		**P**	**22 48 26.9**	**+0.7**
	comp=Z,62nm,0.8s									
AMTX				LR		LR				
	comp=Z,2μm,20.0s									
M37A	**Trindle Farm,**	**57.48**	**63**	P		**P**	**22 48 25.3**	**-1.2**
	baz=312,SNR=9.8									
Q34A	**Chapman**	**57.49**	**67**	P		**P**	**22 48 25.1**	**-1.5**
	baz=312,SNR=15									
J39A	**Decorah**	**57.50**	**60**	P		**P**	**22 48 24.5**	**-2.0**
	baz=312,SNR=24									
T32A	**Huddler Ranch,**	**57.50**	**70**	P		**P**	**22 48 25.6**	**-1.1**
	baz=313,SNR=12									
KSU1	**Kansas State U**	**57.57**	**67**	P		**P**	**22 48 25.8**	**-1.3**
	baz=312									
KSU1	**Kansas State U**	**57.57**	**67**	PFAKE			22 48 40.0	+13		
KSU1				LR		LR				
	comp=Z,2μm,19.0s									
ZSN	**Zaisan**	**57.60**	**307**	⇑*i*P		**P**	**22 48 24.4**	**-2.9**
	comp=Z,277nm,1.2s									
ZSN				*e*S		**S**	**22 56 21.4**	**-2.3**
ZSN				*i* LR		LR	23 13 24.2			
	comp=Z,819nm,14.8s									
L38A	**Oak Wood Farm,**	**57.60**	**62**	P		**P**	**22 48 25.5**	**-1.9**
	baz=312,SNR=22									
P35A	**Duane Minner,**	**57.62**	**66**	P		**P**	**22 48 26.5**	**-1.0**
	baz=312,SNR=9.0									
SEM	**Semipalatinsk**	**57.64**	**312**	*i* P		**P**	**22 48 29.7**	**+2.3**
	comp=Z,285nm,0.9s									
SEM				*i* S		**S**	**22 56 26.9**	**+2.9**
SEM				LR		LR	23 13 05.5			
	comp=Z,1μm,17.4s									
CD2	**Chengdu**	**57.70**	**280**	⇑P		**P**	**22 48 28.4**	**+0.2**
CD2				pP		pP	22 48 34.4	-1.1		
CD2				PP		**PP**	**22 50 36.1**	**+0.2**		
CD2				PcS		**PcS**	**22 53 22.9**	**+0.6**		
CD2				S		**S**	**22 56 25.8**	**+0.4**		
CD2				sS		sS	22 56 36.0	-1.5		
CD2				pmax		pmax				
	comp=Z,90nm,0.6s									
CD2				pmax		pmax				
	comp=Z,860nm,7.4s									
CD2				LR		LR				
	comp=Z,2μm,19.9s									
CD2				LR		LR				
	comp=Z,3μm,18.4s									
CD2				LR		LR				
	comp=Z,3μm,20.4s									
SCO	**Scoresbysund**	**57.72**	**8**	*i* P		**P**	**22 48 26.4**	**-1.3**
	comp=Z,66nm,1.2s									
	comp=Z,3μm,18.0s									
SCO	**Scoresbysund**	**57.72**	**8**	*i* P		**P**	**22 48 26.4**	**-1.3**
SCO				pmax		pmax				
	comp=Z,66nm,1.2s									
SCO				MLR		MLR				
	comp=Z,3μm,18.0s									
R34A	**Isabella, Hill**	**57.73**	**68**	P		**P**	**22 48 27.1**	**-1.2**
	baz=312,SNR=7.7									
S33A	**Kaszmaul Farm,**	**57.77**	**69**	P		**P**	**22 48 27.3**	**-1.2**
	baz=313,SNR=19									
K39A	**Oelwein**	**57.82**	**61**	P		**P**	**22 48 26.9**	**-1.9**
	baz=312,SNR=11									
O36A	**Bolckow**	**57.82**	**65**	P		**P**	**22 48 27.3**	**-1.5**
	baz=312,SNR=7.7									
N37A	**Lee Faris, Mou**	**57.83**	**64**	P		**P**	**22 48 27.7**	**-1.2**
	baz=312,SNR=21									
M38A	**Pleasantville**	**57.96**	**62**	P		**P**	**22 48 28.5**	**-1.3**
	baz=312,SNR=11									
T33A	**Patterson Ranc**	**57.97**	**69**	P		**P**	**22 48 28.8**	**-1.2**
	baz=313									
J40A	**Soldiers Grove**	**57.98**	**59**	P		**P**	**22 48 28.3**	**-1.7**
	baz=312,SNR=16									
P36A	**Good Intent, A**	**58.02**	**65**	P		**P**	**22 48 28.5**	**-1.8**
	baz=312,SNR=20									
JMIC	**Jan Mayen**	**58.04**	**3**	*e*P		**P**	**22 48 29.9**	**0.0**
Q35A	**Mercer Eighty,**	**58.06**	**66**	P		**P**	**22 48 28.8**	**-1.8**
	baz=313									
ARA0	**ARCESS Array S**	**58.07**	**349**	*e*P		**P**	**22 48 28.8**	**-1.4**
ARCES	**ARCESS Array B**	**58.07**	**349**	P		**P**	**22 48 28.5**	**-1.7**
	comp=Z,11nm,0.6s,baz=25,slow=8.0,SNR=25									
ARCES				LR		LR	23 17 04.9			
	comp=Z,3μm,18.0s,baz=6.5,slow=40									
ARE0	**ARCESS Array S**	**58.07**	**349**	*e*P		**P**	**22 48 29.2**	**-1.0**
ARE0				IAmb		IAmb	22 48 40.0			
	comp=Z,69nm,1.9s									
ARE0	**ARCESS Array S**	**58.07**	**349**	PFAKE			22 48 40.0	+10		
ARE0				LR		LR				
	comp=Z,3μm,18.0s									
L39A	**Vinton**	**58.15**	**61**	P		**P**	**22 48 29.5**	**-1.6**
	baz=312,SNR=63									
S34A	**Willow Spring**	**58.22**	**68**	P		**P**	**22 48 30.0**	**-1.7**
	baz=313									
K40A	**Colesburg**	**58.23**	**60**	P		**P**	**22 48 29.6**	**-2.1**
	baz=312,SNR=13									
O37A	**Wolven Farm, M**	**58.26**	**64**	P		**P**	**22 48 30.5**	**-1.4**
	baz=313,SNR=18									
LVZ	**Lovozero**	**58.31**	**345**	*c* *i*P		**P**	**22 48 30.1**	**-1.9**
LVZ				pmax		pmax				
	comp=Z,27nm,0.7s									
LVZ	**Lovozero**	**58.31**	**345**	*e*P		**P**	**22 48 30.6**	**-1.4**
	comp=Z,28nm,0.8s									
LVZ				LR		LR				
	comp=Z,3μm,20.0s									
WMQ	**Urumqi**	**58.32**	**302**	P		**P**	**22 48 33.1**	**+0.7**
WMQ				pP		pP	22 48 40.5	+0.7		
WMQ				PcP		**PcP**	**22 49 26.5**	**+3.2**		
WMQ				PP		**PP**	**22 50 41.4**	**+0.2**		
WMQ				S		**S**	**22 56 30.3**	**-3.0**		
WMQ				SS		**SS**	**23 00 24.0**	**-0.7**		
WMQ				pmax		pmax				
	comp=Z,50nm,1.3s									
WMQ				pmax		pmax				
	comp=Z,1μm,4.8s									
WMQ				LR		LR				
	comp=Z,8μm,18.5s									
WMQ				LR		LR				
	comp=Z,5μm,20.0s									
WMQ				LR		LR				
	comp=Z,9μm,20.3s									
Q36A	**Arnold C. Orve**	**58.32**	**66**	P		**P**	**22 48 30.6**	**-1.8**
	baz=313,SNR=7.8									
R35A	**Emporia Munici**	**58.33**	**67**	P		**P**	**22 48 31.2**	**-1.2**
	baz=313									
N38A	**Joes South For**	**58.35**	**63**	P		**P**	**22 48 30.8**	**-1.8**
	baz=313,SNR=14									
J41A	**Loganville**	**58.40**	**59**	P		**P**	**22 48 31.1**	**-1.8**
	baz=313,SNR=29									
V32A	**Arapaho**	**58.42**	**71**	P		**P**	**22 48 32.2**	**-0.9**
	baz=313									
M39A	**Webster**	**58.48**	**62**	P		**P**	**22 48 31.9**	**-1.6**
	baz=313,SNR=43									
U33A	**Lingo Farm, Me**	**58.49**	**70**	P		**P**	**22 48 32.4**	**-1.2**
	baz=313,SNR=5.2									
P37A	**Lathrop**	**58.54**	**65**	P		**P**	**22 48 31.8**	**-2.0**
	baz=313,SNR=13									
JFWS	**Jewell Farm**	**58.57**	**59**	*e*P		**P**	**22 48 32.8**	**-1.3**
JFWS				pmax		pmax				
	comp=Z,39nm,0.8s									
JFWS	**Jewell Farm**	**58.57**	**59**	*e*P		**P**	**22 48 32.8**	**-1.3**
	comp=Z,38nm,0.8s									
JFWS				LR		LR				
	comp=Z,6μm,19.0s									
L40A	**Anamosa**	**58.62**	**61**	P		**P**	**22 48 32.9**	**-1.5**
	baz=313,SNR=13									
T34A	**McClaskey Farm**	**58.63**	**69**	P		**P**	**22 48 33.0**	**-1.6**
	baz=313,SNR=11									
TRO	**Tromso**	**58.65**	**352**	*e*P		**P**	**22 48 33.5**	**-0.7**
TRO				IAmb		IAmb	22 49 07.5			
	comp=Z,15nm,0.8s									
O38A	**Galt**	**58.67**	**64**	P		**P**	**22 48 33.0**	**-1.8**
	baz=313									
S35A	**Otter Creek Ra**	**58.69**	**68**	P		**P**	**22 48 33.4**	**-1.6**
	baz=313,SNR=12									
W32A	**Sentinel**	**58.70**	**72**	P		**P**	**22 48 35.0**	**-0.1**
	baz=314,SNR=24									
N39A	**Derby Farms, D**	**58.71**	**63**	P		**P**	**22 48 33.2**	**-1.8**
	baz=313,SNR=52									
R36A	**Gordon, Harris**	**58.73**	**67**	P		**P**	**22 48 33.8**	**-1.5**
	baz=313,SNR=14									
K41A	**Shullsburg**	**58.75**	**60**	P		**P**	**22 48 33.2**	**-2.1**
	baz=313,SNR=13									
V33A	**Lossen Ranch,**	**58.80**	**70**	P		**P**	**22 48 34.5**	**-1.3**
	baz=313,SNR=8.4									
APA	**Apatity**	**58.81**	**345**	⇓*i*P		**P**	**22 48 33.7**	**-1.7**
APA				*i*			22 49 24.0			
APA				*i*			22 50 50.0			
APA				*i* S		**S**	**22 56 30.0**	**-8.8**		
APA				*i* SS		**SS**	**23 00 34.0**	**+2.7**		
APA				*i* SSS		SSS	23 03 01.0			
APA				pmax		pmax				
	comp=Z,7.0nm,1.0s									
APA				MLR		MLR				
	comp=Z,4μm,18.0s									
U34A	**Anderson Ranch**	**58.82**	**69**	P		**P**	**22 48 35.0**	**-0.9**
	baz=313,SNR=22									
U34A	**Anderson Ranch**	**58.82**	**69**	*e*P		**P**	**22 48 36.0**	**0.0**
	comp=Z,92nm,0.9s									
U34A				LR		LR				
	comp=Z,2μm,19.0s									
Q37A	**Longview Farm,**	**58.96**	**65**	P		**P**	**22 48 34.8**	**-2.0**
	baz=313									
P38A	**Dawn**	**58.98**	**64**	P		**P**	**22 48 35.3**	**-1.7**
	baz=313,SNR=47									
GYA	**Guiyang**	**59.00**	**275**	⇑*i*P		**P**	**22 48 37.1**	**-0.3**
GYA				pP		pP	22 48 44.6	-0.2		
GYA				PP		**PP**	**22 50 51.5**	**+3.8**		
GYA				ScP		**ScP**	**22 53 26.4**	**+1.3**		
GYA				S		**S**	**22 56 42.0**	**-0.6**		
GYA				SS		**SS**	**23 00 37.3**	**+1.1**		
GYA				pmax		pmax				
	comp=Z,20nm,0.8s									
GYA				pmax		pmax				
	comp=Z,140nm,6.4s									
GYA				LR		LR				
	comp=Z,3μm,18.8s									
GYA				LR		LR				
	comp=Z,2μm,19.7s									
GYA				LR		LR				
	comp=Z,2μm,19.1s									
L41A	**Preston**	**59.01**	**60**	P		**P**	**22 48 35.0**	**-2.1**
	baz=313,SNR=21									
S36A	**Lake Cedric, C**	**59.09**	**67**	P		**P**	**22 48 35.9**	**-1.8**
	baz=313,SNR=9.2									
T35A	**Sooner Cattle**	**59.10**	**68**	P		**P**	**22 48 36.5**	**-1.3**
	baz=313,SNR=11									
MK31	**Makanchi Array**	**59.11**	**307**	*e*P		**P**	**22 48 37.0**	**-0.8**
MK31	**Makanchi Array**	**59.11**	**307**	*e*P		**P**	**22 48 37.0**	**-0.8**
MKAR	**Makanchi Array**	**59.11**	**307**	P		**P**	**22 48 37.6**	**-0.2**
	comp=Z,24nm,0.6s,baz=49,slow=6.6,SNR=217									
MKAR				LR		LR	23 14 52.2			
	comp=Z,4μm,20.7s,baz=43,slow=37									
MKAR	**Makanchi Array**	**59.11**	**307**	*e*P		**P**	**22 48 37.0**	**-0.8**
O39A	**Kirksville**	**59.11**	**63**	P		**P**	**22 48 36.1**	**-1.7**
	baz=313,SNR=6.4									
MK01	**Makanchi Array**	**59.12**	**307**	*e*P		**P**	**22 48 37.2**	**-0.6**
R37A	**Teagarden Farm**	**59.12**	**66**	P		**P**	**22 48 35.6**	**-2.4**
	baz=313									
W33A	**Caddo, Fort Co**	**59.15**	**71**	P		**P**	**22 48 38.3**	**+0.1**
	baz=314,SNR=9.4									
X32A	**Elmer**	**59.16**	**72**	P		**P**	**22 48 37.8**	**-0.5**
	baz=314,SNR=37									
V34A	**Guthrie**	**59.25**	**70**	P		**P**	**22 48 38.0**	**-0.9**
	baz=314,SNR=27									
V34A	**Guthrie**	**59.25**	**70**	*e*P		**P**	**22 48 38.3**	**-0.6**
	comp=Z,73nm,0.8s									
V34A				LR		LR				
	comp=Z,1μm,20.0s									
WMOK	**Wichita Mounta**	**59.25**	**72**	P		**P**	**22 48 38.5**	**-0.4**
	baz=314,SNR=78									
WMOK	**Wichita Mounta**	**59.25**	**72**	*e*P		**P**	**22 48 38.4**	**-0.5**
WMOK				pmax		pmax				
	comp=Z,61nm,1.0s									
WMOK	**Wichita Mounta**	**59.25**	**72**	*e*P		**P**	**22 48 38.4**	**-0.5**
	comp=Z,61nm,1.0s									
WMOK				LR		LR				
	comp=Z,3μm,18.0s									
MAKZ	**Makanchi**	**59.25**	**308**	*e*P		**P**	**22 48 38.1**	**-0.7**
MAKZ	**Makanchi**	**59.25**	**308**	*e*P		**P**	**22 48 38.1**	**-0.7**
	comp=Z,49nm,1.0s									
MAKZ				LR		LR				
	comp=Z,5μm,20.0s									
U35A	**Pawnee**	**59.34**	**69**	P		**P**	**22 48 38.5**	**-1.0**
	baz=314,SNR=6.5									
T36A	**Boggs Farm, Ca**	**59.37**	**68**	P		**P**	**22 48 38.0**	**-1.7**
	baz=314,SNR=5.4									
Q38A	**Cooks Store, C**	**59.38**	**65**	P		**P**	**22 48 37.6**	**-2.1**
	baz=313,SNR=28									
MANU	**Manus Island**	**59.47**	**218**	PFAKE			22 48 50.0	+9.4		
MANU				LR		LR				
	comp=Z,3μm,18.0s									
S37A	**Fort Scott**	**59.50**	**67**	P		**P**	**22 48 38.9**	**-1.7**
	baz=314,SNR=14									
W34A	**Bridge Creek,**	**59.51**	**71**	P		**P**	**22 48 40.0**	**-0.6**
	baz=314,SNR=5.6									
W34A	**Bridge Creek,**	**59.51**	**71**	*e*P		**P**	**22 48 41.3**	**+0.6**
	comp=Z,65nm,1.1s									
W34A				LR		LR				
	comp=Z,2μm,20.0s									
P39B	**Salisbury**	**59.51**	**64**	P		**P**	**22 48 38.8**	**-1.8**
	baz=313,SNR=68									
X33A	**Lawton**	**59.55**	**72**	P		**P**	**22 48 40.4**	**-0.6**
	baz=314,SNR=16									
O40A	**La Belle**	**59.57**	**63**	P		**P**	**22 48 39.6**	**-1.4**
	baz=313,SNR=89									
Q39A	**Willow Grove F**	**59.69**	**64**	P		**P**	**22 48 39.9**	**-1.9**
	baz=314,SNR=58									
V35A	**Meyer Ranch, C**	**59.70**	**70**	P		**P**	**22 48 41.1**	**-0.9**
	baz=314,SNR=11									
R38A	**Fenwick Farm,**	**59.74**	**66**	P		**P**	**22 48 40.0**	**-2.2**
	baz=314									
Y33A	**Hilltop Ranch,**	**59.84**	**72**	P		**P**	**22 48 42.5**	**-0.5**
	baz=314,SNR=18									
P40A	**Paris**	**59.88**	**63**	P		**P**	**22 48 41.5**	**-1.7**
	baz=314,SNR=84									
T37A	**Cheneyville 18**	**59.89**	**67**	P		**P**	**22 48 41.2**	**-2.1**
	baz=314,SNR=11									
X34A	**Smith Ranch, M**	**59.91**	**71**	P		**P**	**22 48 43.5**	**0.0**
	baz=314,SNR=16									
U36A	**Oologah**	**59.91**	**68**	P		**P**	**22 48 42.3**	**-1.2**
	baz=314									
TX31	**Lajitas Ar. Si**	**60.02**	**80**	*e*P		**P**	**22 48 44.5**	**+0.1**
TXAR	**Lajitas Array**	**60.02**	**80**	P		**P**	**22 48 44.3**	**-0.1**
	comp=Z,22nm,1.0s,baz=301,slow=4.7,SNR=109									
TXAR				PKP2bc			23 18 23.1			
	comp=Z,0.9nm,0.9s,baz=106,slow=1.8,SNR=5.7									
W35A	**Tecumseh**	**60.09**	**70**	P		**P**	**22 48 44.3**	**-0.4**
	baz=314,SNR=36									
SLBS	**Sierra La Lagu**	**60.12**	**89**	*e*P		**P**	**22 48 45.8**	**+0.7**
	comp=Z,32nm,1.0s									
SLBS				LR		LR				
	comp=Z,2μm,20.0s									
S38A	**Stockton**	**60.12**	**66**	P		**P**	**22 48 42.6**	**-2.2**
	baz=314,SNR=22									
O41A	**Passleys Farm,**	**60.13**	**62**	P		**P**	**22 48 43.3**	**-1.6**
	baz=314,SNR=84									
SOKR	**Solikamsk**	**60.14**	**330**	*c* *i*P		**P**	**22 48 43.0**	**-1.6**
SOKR				S		S	22 57 08.7	+13		
SOKR				pmax		pmax				
	comp=Z,44nm,0.9s									
SOKR				MLR		MLR				
	comp=Z,3μm,16.0s									
VOSK	**Vostochnaya**	**60.15**	**318**	*e*P		**P**	**22 48 44.5**	**-0.3**
VOSK				pmax		pmax				
	comp=Z,56nm,1.1s									
VOSK	**Vostochnaya**	**60.15**	**318**	*e*P		**P**	**22 48 44.8**	**0.0**
	comp=Z,56nm,1.1s									
R39A	**Chumby, Stover**	**60.15**	**65**	P		**P**	**22 48 42.3**	**-2.7**
	baz=314,SNR=21									
ABTX	**Abilene, Hawle**	**60.19**	**74**	P		**P**	**22 48 45.0**	**-0.4**
	baz=314,SNR=56									
ABTX	**Abilene, Hawle**	**60.19**	**74**	*e*P		**P**	**22 48 46.1**	**+0.6**
	comp=Z,95nm,0.9s									
ABTX				LR		LR				
	comp=Z,3μm,18.0s									
BRVK	**Borovoye**	**60.20**	**319**	*c* *i*P		**P**	**22 48 45.0**	**-0.1**
BRVK				pmax		pmax				
	comp=Z,109nm,0.9s									
BRVK	**Borovoye**	**60.20**	**319**	*e*P		**P**	**22 48 45.1**	**-0.1**
	comp=Z,226nm,1.4s									
BRVK				LR		LR				
	comp=Z,9μm,21.0s									
V36A	**Jenks**	**60.21**	**69**	P		**P**	**22 48 44.7**	**-0.8**
	baz=314,SNR=16									
TUL1	**Leonard**	**60.21**	**69**	P		**P**	**22 48 44.5**	**-1.0**
	baz=314,SNR=12									
TUL1	**Leonard**	**60.21**	**69**	*e*P		**P**	**22 48 45.3**	**-0.2**
	comp=Z,42nm,0.9s									
TUL1				LR		LR				
	comp=Z,2μm,18.0s									
Q40A	**Laux Farm, Aux**	**60.23**	**64**	P		**P**	**22 48 43.9**	**-1.7**
	baz=314,SNR=29									
GLMI	**Grayling**	**60.24**	**55**	*e*P		**P**	**22 48 45.3**	**-0.3**
	comp=Z,108nm,0.7s									
GLMI				LR		LR				
	comp=Z,3μm,21.0s									
Z33A	**Whitaker Ranch**	**60.26**	**73**	P		**P**	**22 48 45.3**	**-0.6**
	baz=314,SNR=24									
U37A	**Salina**	**60.26**	**68**	P		**P**	**22 48 44.6**	**-1.3**
	baz=314,SNR=16									
T38A	**Diamond**	**60.31**	**67**	P		**P**	**22 48 44.6**	**-1.6**
	baz=314,SNR=13									
P41A	**Barry, Barry**	**60.33**	**63**	P		**P**	**22 48 44.7**	**-1.5**
	baz=314,SNR=27									
Y34A	**Reagan Ranch,**	**60.40**	**72**	P		**P**	**22 48 46.5**	**-0.3**
	baz=314,SNR=40									
S39A	**Bolivar**	**60.42**	**66**	P		**P**	**22 48 44.0**	**-2.9**
	baz=314,SNR=12									
HPIG		**60.47**	**83**	PFAKE			22 49 00.0	+12		
HPIG				LR		LR				
	comp=Z,2μm,22.0s									
W36A	**Wetumka**	**60.49**	**70**	P		**P**	**22 48 46.8**	**-0.6**
	baz=314,SNR=38									
O42A	**Bath**	**60.52**	**62**	P		**P**	**22 48 46.1**	**-1.4**
	baz=314,SNR=5.3									
LOF	**Lofoten**	**60.54**	**354**	*e*P		**P**	**22 48 46.2**	**-1.0**
LOF				IAmb		IAmb	22 48 48.1			
	comp=Z,38nm,1.2s									
X35A	**Drake**	**60.56**	**71**	P		**P**	**22 48 47.3**	**-0.6**
	baz=314,SNR=41									
R40A	**Maddies Statio**	**60.60**	**65**	P		**P**	**22 48 45.9**	**-2.2**
	baz=314,SNR=28									
V37A	**Hulbert**	**60.61**	**68**	P		**P**	**22 48 47.0**	**-1.3**
	baz=314,SNR=10									
STEI	**Steigen**	**60.62**	**353**	*e*P		**P**	**22 48 46.8**	**-0.9**
STEI				IAmb		IAmb	22 48 54.7			
	comp=Z,14nm,0.7s									
133A	**Hamilton Ranch**	**60.64**	**74**	P		**P**	**22 48 48.1**	**-0.4**
	baz=315,SNR=31									
U38A	**Gravette**	**60.67**	**67**	P		**P**	**22 48 47.3**	**-1.3**
	baz=314,SNR=11									
HDIL	**Hopedale**	**60.70**	**61**	P		**P**	**22 48 47.6**	**-1.2**
	baz=314,SNR=22									
HDIL	**Hopedale**	**60.70**	**61**	*e*P		**P**	**22 48 48.1**	**-0.7**
	comp=Z,85nm,0.6s									
HDIL				LR		LR				
	comp=Z,4μm,18.0s									
Z34A	**Collier Ranch,**	**60.71**	**72**	P		**P**	**22 48 48.6**	**-0.3**
	baz=314,SNR=14									
P42A	**Winchester**	**60.80**	**62**	P		**P**	**22 48 47.7**	**-1.7**
	baz=314,SNR=31									
X36A	**Centrahoma**	**60.81**	**70**	P		**P**	**22 48 49.2**	**-0.3**
	baz=314,SNR=45									
T39A	**Clever**	**60.85**	**66**	P		**P**	**22 48 47.1**	**-2.7**
	baz=314,SNR=16									
Y35A	**Marietta**	**60.86**	**71**	P		**P**	**22 48 49.9**	**-0.1**
	baz=314,SNR=25									
S40A	**Lebanon**	**60.95**	**65**	P		**P**	**22 48 48.3**	**-2.2**
	baz=314,SNR=9.9									
W37B	**Quinton**	**60.96**	**69**	P		**P**	**22 48 50.2**	**-0.4**
	baz=314,SNR=22									
SCHQ	**Schefferville**	**61.00**	**37**	P		**P**	**22 48 49.5**	**-1.2**
	comp=Z,49nm,0.9s,baz=333,slow=6.4,SNR=25									
SCHQ	**Schefferville**	**61.00**	**37**	*e*P		**P**	**22 48 49.9**	**-0.7**
	comp=Z,44nm,0.9s									
SCHQ				LR		LR				
	comp=Z,4μm,18.0s									
HHAR	**Hobbs**	**61.03**	**67**	*e*P		**P**	**22 48 50.0**	**-1.1**
	comp=Z,26nm,0.9s									
HHAR				LR		LR				
	comp=Z,2μm,20.0s									
SVE	**Sverdlovsk**	**61.04**	**326**	*d* *i*P		**P**	**22 48 51.4**	**+0.6**
SVE				*e*			22 49 34.6			
SVE				*e*			22 51 06.9			
SVE				*e*PPP		PPP	22 52 32.5			
SVE				*e*S		**S**	**22 57 06.8**	**-1.0**		
SVE				pmax		pmax				
	comp=Z,173nm,1.9s									
SVE				MLR		MLR				
	comp=Z,5μm,19.0s									
V38A	**Canehill**	**61.05**	**68**	P		**P**	**22 48 50.2**	**-1.1**
	baz=314,SNR=10									
233A	**Rising Star**	**61.06**	**74**	P		**P**	**22 48 50.8**	**-0.5**
	baz=315,SNR=19									
Z35A	**Perchaven, San**	**61.13**	**72**	P		**P**	**22 48 51

baz=315,SNR=74
WHTX Lake Whitney, 61.95 73 P P 22 48 57.3 0.0
baz=315,SNR=11
WHTX Lake Whitney, 61.95 73 *e*P P 22 48 58.2 +0.8
comp=Z,88nm,0.8s
WHTX LR LR
comp=Z,2µm,18.0s
Q44A Meyer Farm, Va 62.01 62 P P 22 48 56.2 -1.4
baz=315,SNR=11
V40A Witts Springs 62.02 67 P P 22 48 56.2 -1.6
baz=315,SNR=35
SFIN Lafayette 62.03 60 P P 22 48 56.3 -1.5
baz=315,SNR=25
SFIN Lafayette 62.03 60 *e*P P 22 48 57.1 -0.6
comp=Z,62nm,0.8s
SFIN LR LR
comp=Z,4µm,20.0s
ARU Arti 62.07 327 *c i*P P 22 48 56.5 -1.3
ARU *e* 22 49 36.8
ARU S **S** 22 57 20.5 -0.3
ARU SS **SS** 23 01 23.7 +1.0
ARU SSS SSS 23 04 09.8
ARU pmax pmax
comp=Z,170nm,1.7s
ARU MLR MLR
comp=Z,5µm,20.0s
ARU Arti 62.07 327 *e*P P 22 48 57.8 +0.1
comp=Z,68nm,0.6s
ARU LR LR
comp=Z,5µm,20.0s
U41A Viola 62.16 66 P P 22 48 56.7 -1.9
baz=315,SNR=28
DAV Davao City (W) 62.16 244 PFAKE 22 49 10.0 +11
DAV LR LR
comp=Z,2µm,18.0s
136A Ennis 62.17 72 P P 22 48 58.4 -0.4
baz=315,SNR=8.3
X39A Fountain Ranch 62.17 69 P P 22 48 58.0 -0.8
baz=315,SNR=51
Z37A Pogue Cattle C 62.20 71 P P 22 48 58.6 -0.4
baz=315
Y38A Idabel 62.22 70 P P 22 48 57.9 -1.2
baz=315
434A Burnet 62.29 75 P P 22 48 59.2 -0.5
baz=315,SNR=50
W40A Ferguson Farm, 62.30 68 P P 22 48 58.9 -0.8
baz=315,SNR=16
533A Kerrville 62.35 76 P P 22 48 59.0 -1.1
baz=316,SNR=12
S43A Fulton Ridge, 62.35 64 P P 22 48 58.2 -1.7
baz=315,SNR=28
STOK Stokkvaagen 62.35 354 *e*P P 22 48 58.8 -0.7
STOK IAmb IAmb 22 49 02.9
comp=Z,34nm,0.7s
QIZ Qiongzhong 62.41 266 P P 22 49 01.6 +1.1
QIZ pP **pP** 22 49 03.8 -4.2
QIZ S **S** 22 57 28.4 +2.4
QIZ sS **sS** 22 57 36.1 -2.2
QIZ pmax pmax
comp=Z,27nm,1.9s
QIZ pmax pmax
comp=Z,670nm,9.8s
QIZ LR LR
comp=Z,590nm,18.0s
QIZ LR LR
comp=Z,830nm,18.8s
QIZ LR LR
comp=Z,1µm,25.3s
QIZ Qiongzhong 62.41 266 PFAKE 22 49 10.0 +9.5
QIZ LR LR
comp=Z,1µm,20.0s
V41A Mountainview 62.41 67 P P 22 48 58.5 -1.9
baz=315,SNR=28
KMI Kunming 62.42 276 P P 22 49 00.9 +0.1
KMI pP pP 22 49 09.4 +1.1
KMI PcP **PcP** 22 49 40.8 +0.6
KMI PP **PP** 22 51 18.9 +0.9
KMI S **S** 22 57 27.8 +1.3
KMI pmax pmax
comp=Z,24nm,1.7s
KMI pmax pmax
comp=Z,790nm,6.0s
KMI LR LR
comp=Z,2µm,19.0s
KMI LR LR
comp=Z,1µm,17.8s
KMI LR LR
comp=Z,2µm,17.2s
R44A Waltonville 62.43 63 P P 22 48 59.1 -1.4
baz=315,SNR=12
MIAR Mount Ida 62.46 68 P P 22 49 00.1 -0.6
baz=315,SNR=39
MIAR Mount Ida 62.46 68 *e*P P 22 49 01.0 +0.3
MIAR pmax pmax
comp=Z,110nm,1.2s
MIAR Mount Ida 62.46 68 *e*P P 22 49 01.0 +0.3
comp=Z,115nm,1.3s
MIAR LR LR
comp=Z,2µm,19.0s
335A Moody 62.47 74 P P 22 49 00.7 -0.1
baz=315,SNR=6.2
AAM Ann Arbor 62.51 56 PFAKE 22 49 10.0 +9.1
AAM LR LR
comp=Z,2µm,20.0s
NRS Narsarsuaq 62.51 23 *i* P P 22 48 59.6 -1.0
comp=Z,48nm,0.9s
comp=Z,3µm,16.0s
NRS Narsarsuaq 62.51 23 *i* P P 22 48 59.6 -1.0
NRS pmax pmax
comp=Z,48nm,0.9s
NRS MLR MLR
comp=Z,3µm,16.0s
Z38A Mt. Pleasant 62.54 70 P P 22 49 00.7 -0.6
baz=315,SNR=8.6
137A Heron Place, G 62.54 71 P P 22 49 01.1 -0.1
baz=315,SNR=6.7
U42A Revenden 62.55 65 P P 22 48 59.3 -1.9
baz=315,SNR=33
HNR Honiara 62.57 201 LR LR 23 13 59.2
comp=Z,2µm,18.4s,baz=16,slow=34
Y39A Lockesburg 62.58 69 P P 22 49 01.0 -0.6
baz=315,SNR=7.2
OLIL Olney 62.64 62 *e*P P 22 49 01.3 -0.5
comp=Z,81nm,0.8s
OLIL LR LR
comp=Z,2µm,20.0s
X201 Greenbrier Sit 62.64 67 *e*P P 22 49 01.2 -0.7
comp=Z,47nm,0.8s
X201 LR LR
comp=Z,2µm,18.0s
X301 Greenbrier Sit 62.66 67 *e*P P 22 49 01.1 -0.9
comp=Z,48nm,0.9s
X301 LR LR
comp=Z,2µm,19.0s
WHAR Wooly Hollow 62.69 67 *e*P P 22 49 01.6 -0.7
comp=Z,40nm,0.8s
WHAR LR LR
comp=Z,2µm,19.0s
633A Saathoff Ranch 62.69 76 P P 22 49 01.7 -0.6
baz=316
PBMO Poplar Bluff 62.71 65 *e*P P 22 49 01.1 -1.3
comp=Z,89nm,0.8s
PBMO LR LR
comp=Z,2µm,20.0s
534A Blanco 62.72 75 P P 22 49 01.9 -0.7
baz=316,SNR=11
435B Jarrell 62.72 74 P P 22 49 02.3 -0.2
baz=316,SNR=8.9
S44A Carbondale 62.73 63 P P 22 49 01.1 -1.4
baz=315,SNR=10
SIUC Southern Illin 62.73 63 *e*P P 22 49 01.7 -0.8
comp=Z,70nm,0.8s
SIUC LR LR
comp=Z,2µm,20.0s
336A Riesel 62.74 73 P P 22 49 02.7 0.0
baz=316,SNR=32
W41B Gary Mavity, V 62.79 67 P P 22 49 01.9 -1.0
baz=315,SNR=30
V42A Cord 62.84 66 P P 22 49 01.2 -2.0
baz=315,SNR=23
SHLS Shalkode 62.87 306 *i* P P 22 49 01.5 -2.2
comp=Z,726nm,0.6s
SHLS *e*S **S** 22 57 29.7 -2.1
SHLS LR LR 23 17 02.1
comp=Z,362nm,15.2s
138A Matatall Enter 62.90 71 P P 22 49 03.5 -0.2
baz=315,SNR=17

237A Washetta, Mont 62.93 72 P P 22 49 03.4 -0.5
baz=316
X40A Basin Creek Fa 62.94 68 P P 22 49 03.0 -0.9
baz=315,SNR=6.4
Y40A Okolona 63.01 69 P P 22 49 03.7 -0.7
baz=315,SNR=7.8
UALR University of 63.02 67 *e*P P 22 49 04.2 -0.2
comp=Z,24nm,0.9s
UALR LR LR
comp=Z,2µm,20.0s
Z39A Irene McRaven, 63.02 70 P P 22 49 04.0 -0.4
baz=315
SADO Sadowa 63.03 51 *e*P P 22 49 03.2 -1.1
comp=Z,25nm,1.0s
SADO LR LR
comp=Z,4µm,21.0s
832A Faith Ranch, C 63.04 78 P P 22 49 04.5 -0.2
baz=316,SNR=6.6
S45A Carrier Mills 63.12 63 P P 22 49 03.5 -1.5
baz=315,SNR=10.0
X41A Kaden, Bauxite 63.12 68 P P 22 49 04.2 -0.9
baz=315
733A Divot King Ran 63.15 77 P P 22 49 05.0 -0.3
baz=316
PARMO Parma 63.17 64 *e*P P 22 49 03.8 -1.6
BLO Bloomington 63.20 60 *e*P P 22 49 04.8 -0.7
BLO pmax pmax
comp=Z,35nm,0.7s
BLO Bloomington 63.20 60 *e*P P 22 49 04.8 -0.7
comp=Z,34nm,0.6s
BLO LR LR
comp=Z,4µm,19.0s
436A Wall Ranch, Ga 63.21 74 P P 22 49 05.9 +0.2
baz=316,SNR=16
634A China Grove, S 63.25 76 P P 22 49 06.1 0.0
baz=316
535A Dale 63.27 75 P P 22 49 06.0 -0.2
baz=316,SNR=6.7
139A Bunkhouse Ranc 63.30 70 P P 22 49 06.3 0.0
baz=316
UZB Uzynbulak 63.32 306 *i* P P 22 49 04.4 -2.1
comp=Z,276nm,1.1s
UZB LR LR 23 16 40.6
comp=Z,775nm,16.2s
WLAR White Oak Lake 63.34 69 *e*P P 22 49 07.0 +0.5
comp=Z,126nm,1.0s
WLAR LR LR
comp=Z,2µm,18.0s
238A Jacksonville 63.34 71 P P 22 49 06.7 +0.1
baz=316,SNR=9.2
BORG Borgarnes 63.35 10 *e*P P 22 49 07.2 +1.1
BORG pmax pmax
comp=Z,25nm,1.0s
BORG Borgarnes 63.35 10 *e*P P 22 49 07.2 +1.1
comp=Z,25nm,0.9s
833A Chaparral WMA, 63.37 77 P P 22 49 06.9 +0.1
baz=316
337A Centerville 63.37 73 P P 22 49 06.8 0.0
baz=316
PVMO Portageville 63.38 64 PFAKE 22 49 20.0 +13
PVMO LR LR
comp=Z,2µm,20.0s
USIN University of 63.42 62 *e*P P 22 49 06.6 -0.4
comp=Z,112nm,0.8s
USIN LR LR
comp=Z,2µm,20.0s
HBAR Harrisburg 63.44 66 *e*P P 22 49 07.3 +0.1
Z40A Long Farm, Mag 63.47 69 P P 22 49 07.5 +0.1
baz=316
Y41A Eaglette Beard 63.49 68 P P 22 49 07.1 -0.5
baz=316,SNR=13
734A La Parita Cree 63.51 76 P P 22 49 07.5 -0.2
baz=316
536A Bastrop 63.54 74 P P 22 49 08.0 +0.1
baz=316
437A Phantom Ranch, 63.56 73 P P 22 49 08.7 +0.6
baz=316,SNR=9.8
635A Leesville 63.60 75 P P 22 49 08.5 +0.1
baz=316,SNR=9.9
V44A Blytheville 63.68 65 P P 22 49 08.1 -0.7
baz=316
338A Crockett 63.69 72 P P 22 49 08.9 0.0
baz=316
KLMR Klimovskoe 63.72 339 *e*P P 22 49 06.8 -1.8
KLMR pmax pmax
comp=Z,33nm,1.1s
239A Gary 63.72 71 P P 22 49 08.6 -0.5
baz=316,SNR=10
NATX Nacogdoches 63.79 71 P P 22 49 09.6 0.0
baz=316,SNR=8.6
NATX Nacogdoches 63.79 71 *e*P P 22 49 10.4 +0.8
comp=Z,112nm,1.1s
NATX LR LR
comp=Z,3µm,19.0s
140A Cam and Jess, 63.81 70 P P 22 49 09.6 0.0
baz=316,SNR=6.0
Z41A Richland Creek 63.82 69 P P 22 49 09.5 -0.3
baz=316
PLVO Plevna 63.84 50 *e*P P 22 49 08.9 -0.9
comp=Z,20nm,0.9s
PLVO LR LR
comp=Z,4µm,20.0s
933A Laredo 63.95 78 P P 22 49 10.7 -0.1
baz=316,SNR=7.0
CCAR Cane Creek 63.96 68 PFAKE 22 49 20.0 +9.4
CCAR LR LR
comp=Z,3µm,19.0s
735A Kenedy 63.96 76 P P 22 49 11.5 +0.8
baz=316
636A Smothers Creek 63.97 75 P P 22 49 11.7 +0.9
baz=316,SNR=7.2
537A Green Hill Far 63.99 74 P P 22 49 11.3 +0.3
baz=316,SNR=20
WCI Wyandotte Cave 63.99 61 *e*P P 22 49 10.2 -0.7
WCI pmax pmax
comp=Z,42nm,0.9s
WCI Wyandotte Cave 63.99 61 *e*P P 22 49 10.2 -0.7
comp=Z,42nm,0.9s
WCI LR LR
comp=Z,3µm,18.0s
Y42A Garnett, Star 64.01 68 P P 22 49 11.0 0.0
baz=316
438A Sam Houston St 64.02 73 P P 22 49 11.8 +0.7
baz=316,SNR=18
834A Tilden 64.03 77 P P 22 49 12.1 +0.9
baz=316
X43A Marvell 64.05 67 P P 22 49 10.4 -0.9
baz=316
KUU Kurty 64.12 308 *i* P P 22 49 09.4 -2.2
comp=Z,351nm,1.0s
KUU *e*S **S** 22 57 44.8 -2.1
KUU LR LR 23 17 11.9
comp=Z,2µm,17.0s
240A Hunter Patters 64.12 71 P P 22 49 11.6 -0.1
baz=316,SNR=7.7
339A Huntington 64.16 72 P P 22 49 11.8 -0.2
baz=316
MET Memphis--Engin 64.16 66 PFAKE 22 49 20.0 +8.0
MET LR LR
comp=Z,2µm,19.0s
TRQ Mont Tremblant 64.17 48 *e*P P 22 49 09.6 -2.4
W44A Shelby Farms P 64.22 66 P P 22 49 11.4 -0.9
baz=316
141A Papa Simpson, 64.23 70 P P 22 49 12.2 -0.3
baz=316,SNR=7.9
AAA Alma-Ata 64.27 308 *e*P P 22 49 14.0 +1.3
AAA *e*S **S** 22 57 56.6 +7.7
AAA pmax pmax
comp=Z,1µm,4.6s
AAA smax smax
comp=N,300nm,8.5s
AAA MLR MLR
comp=Z,4µm,19.0s
V45A Humboldt 64.28 64 P P 22 49 11.9 -0.8
baz=316
MDOK Medeo 64.30 307 *i* P P 22 49 11.0 -2.0
comp=Z,466nm,0.7s
MDOK *e*S **S** 22 57 47.5 -2.0
MDOK LR LR 23 17 23.7
comp=Z,2µm,16.8s
Z42A Norrel Spur, H 64.31 68 P P 22 49 12.6 -0.4
baz=316,SNR=10
736A Circle Diamond 64.34 75 P P 22 49 14.4 +1.1
baz=316,SNR=11
ACSO Alum Creek Sta 64.34 57 *e*P P 22 49 12.4 -0.7
comp=Z,38nm,0.9s
ACSO LR LR
comp=Z,3µm,21.0s

835A Beeville 64.36 76 P P 22 49 14.4 +1.0
baz=316
538A Harpers Horsep 64.39 73 P P 22 49 14.7 +1.2
baz=316
BTLS Baital 64.39 311 *i* P P 22 49 12.2 -1.2
comp=Z,96nm,0.7s
BTLS *e*S **S** 22 57 49.3 -0.9
BTLS LR LR 23 16 52.2
comp=Z,716nm,16.4s
439A Center Grove, 64.42 72 P P 22 49 14.4 +0.7
baz=316
934A Benavides 64.42 77 P P 22 49 14.6 +0.8
baz=316,SNR=13
637A Eagle Lake 64.44 74 P P 22 49 14.6 +0.7
baz=316,SNR=11
Y43A Makayla and Ka 64.45 67 P P 22 49 13.6 -0.2
baz=316
X44A Crenshaw 64.48 66 P P 22 49 13.0 -1.1
baz=316
340A Bronson 64.49 71 P P 22 49 13.8 -0.4
baz=316,SNR=15
BUF Buffalo 64.52 53 *e*P P 22 49 14.2 +0.1
ERPA Erie 64.53 54 *e*P P 22 49 14.3 0.0
comp=Z,42nm,0.8s
ERPA LR LR
comp=Z,4µm,20.0s
W45A Hickory Valley 64.57 65 P P 22 49 13.8 -0.8
baz=316
241A Mo Tay, Goldon 64.64 70 P P 22 49 15.3 +0.2
baz=316,SNR=5.8
WVT Waverly 64.64 63 *e*P P 22 49 14.7 -0.4
WVT pmax pmax
comp=Z,41nm,0.8s
WVT Waverly 64.64 63 *e*P P 22 49 14.7 -0.4
comp=Z,41nm,0.8s
WVT LR LR
comp=Z,2µm,20.0s
034A Hebbronville 64.71 78 P P 22 49 16.4 +0.7
baz=317,SNR=8.6
Z43A Armstrong Fami 64.77 68 P P 22 49 15.2 -0.8
baz=316
ALLY Alegheny Colle 64.79 54 *e*P P 22 49 15.6 -0.4
comp=Z,62nm,0.9s
Y44A Strider, Charl 64.83 67 P P 22 49 15.0 -1.3
baz=316
142A Monroe 64.83 69 P P 22 49 16.2 -0.2
baz=316,SNR=5.4
737A Port Lavaca 64.86 75 P P 22 49 17.3 +0.6
baz=316
539A Cross D Ranch, 64.93 73 P P 22 49 17.5 +0.5
baz=316
440A Kirbyville 64.93 72 P P 22 49 17.1 0.0
baz=316
X45A UM Field Stati 64.97 66 P P 22 49 16.4 -0.9
baz=316,SNR=9.5
341A Kurthwood 64.98 71 P P 22 49 17.6 +0.3
baz=316,SNR=9.9
638A Rosharon 64.99 74 P P 22 49 18.6 +1.1
baz=316
BMNS Besmoynak 65.03 308 *i* P P 22 49 15.6 -2.1
comp=Z,674nm,0.9s
BMNS *e*S **S** 22 57 56.6 -1.8
BMNS LR LR 23 17 41.9
comp=Z,1µm,14.8s
143A Socs Landing, 65.04 68 P P 22 49 17.3 -0.4
baz=316,SNR=5.3
242A Grayson 65.06 69 P P 22 49 17.6 -0.3
baz=316
LMQ La Malbaie 65.09 44 *e*P P 22 49 16.5 -1.4
LMQ LR LR
comp=Z,5µm,21.0s
MMNY Mt. Morris Dam 65.13 52 *e*P P 22 49 17.5 -0.7
M54A Oil Creek Stat 65.14 54 P P 22 49 17.2 -1.1
baz=317
035A Encino 65.16 77 P P 22 49 19.0 +0.4
baz=317,SNR=5.6
Z44A Pea Ridge, Bel 65.20 67 P P 22 49 17.7 -1.1
baz=316
AFI Afiamalu 65.28 170 PFAKE 22 49 30.0 +11
AFI LR LR
comp=Z,3µm,20.0s
738A Farr-Stevens R 65.29 74 P P 22 49 21.2 +1.9
baz=317
Y45A Yeager Farm, C 65.29 66 P P 22 49 18.3 -1.0
baz=316,SNR=13
540A Vidor 65.31 72 P P 22 49 20.6 +1.1
baz=316
LONY Lake Ozonia 65.35 49 *e*P P 22 49 17.6 -2.0
comp=Z,19nm,1.0s
LONY LR LR
comp=Z,3µm,18.0s
N54A Moraine State 65.38 55 P P 22 49 20.8 +1.0
baz=317
441A DeRidder 65.39 71 P P 22 49 20.5 +0.5
baz=316
ZAIG Zacatecas 65.42 84 *e*P P 22 49 20.9 +0.2
comp=Z,21nm,1.0s
342A Flagon Creek P 65.45 70 P P 22 49 20.3 -0.1
baz=316,SNR=5.6
035Z Hargill 65.52 78 P P 22 49 20.7 -0.2
baz=317
Z45A Winona 65.56 67 P P 22 49 20.2 -0.8
baz=316
243A Waterproof 65.59 69 P P 22 49 21.2 -0.1
baz=316,SNR=10
FRNY Flat Rock 65.66 48 *e*P P 22 49 19.3 -2.3
comp=Z,8.6nm,0.9s
FRNY LR LR
comp=Z,4µm,21.0s
144A Alexander Plac 65.67 68 P P 22 49 21.2 -0.6
baz=317
Y46A Houston 65.67 66 P P 22 49 21.2 -0.6
baz=317,SNR=26
FIA1 FINESS Array S 65.69 346 *e*P P 22 49 20.4 -1.1
FINES FINESS Array B 65.69 346 P P 22 49 19.9 -1.6
comp=Z,20nm,0.8s,baz=23,slow=6.2,SNR=38
FINES LR LR 23 22 35.9
comp=Z,2µm,18.4s,baz=16,slow=40
FRU Bishkek 65.75 309 *i*P P 22 49 21.0 -1.3
FRU *e*S **S** 22 58 10.0 +3.0
FRU *e* 22 58 22.0
FRU pmax pmax
comp=Z,670nm,2.8s
442A Mamou 65.87 71 P P 22 49 24.1 +1.0
baz=317
541A Lake Charles 65.89 72 P P 22 49 23.8 +0.6
baz=317
VBMS Vicksburg 65.91 68 P P 22 49 22.4 -0.9
baz=317
VBMS Vicksburg 65.91 68 PFAKE 22 49 40.0 +17
VBMS LR LR
comp=Z,2µm,20.0s
244A Avery, Jackson 65.94 68 P P 22 49 23.4 -0.2
baz=317,SNR=24
343A Vidalia 65.94 70 P P 22 49 23.3 -0.2
baz=317
AAK Ala-Archa 65.96 309 *e*P P 22 49 24.0 +0.2
AAK pmax pmax
comp=Z,42nm,0.7s
AAK MLR MLR
comp=Z,4µm,19.0s
AAK Ala-Archa 65.96 309 *e*P P 22 49 24.0 +0.2
comp=Z,42nm,0.7s
AAK LR LR
comp=Z,4µm,19.0s
145A Houston Renfro 65.97 68 P P 22 49 23.1 -0.7
baz=317
NCB Newcomb 66.00 49 *e*P P 22 49 22.3 -1.5
comp=Z,0.2nm,0.8s
Z46A Louisville 66.12 66 P P 22 49 24.0 -0.7
baz=317
443A Delano Plantat 66.22 70 P P 22 49 26.4 +1.0
baz=317
542A Morse 66.22 71 P P 22 49 25.9 +0.6
baz=317,SNR=6.4
Y47A UCPARC, Winfie 66.23 65 P P 22 49 24.7 -0.7
baz=317,SNR=22
LSA Lhasa 66.24 288 P P 22 49 26.8 +0.7
LSA Lhasa 66.24 288 *e*P P 22 49 27.4 +1.3
LSA pmax pmax
comp=Z,38nm,0.8s
LSA MLR MLR
comp=Z,3µm,21.0s
LSA Lhasa 66.24 288 *e*P P 22 49 27.4 +1.3
comp=Z,38nm,0.8s
LSA LR LR
comp=Z,3µm,21.0s
344A Westbrook Farm 66.34 69 P P 22 49 26.6 +0.5

baz=317,SNR=6.5
SWET Sewanee 66.36 63 *e*P **P** **22 49 25.5 -0.9**
comp=Z,8.8nm,0.7s
SWET LR LR
comp=Z,800nm,20.0s
245A Little AP, Sta 66.41 68 P **P** **22 49 26.6 +0.1**
baz=317,SNR=7.4
MCWV Mont Chateau 66.41 56 PFAKE 22 49 40.0 +14
MCWV LR LR
comp=Z,1μm,18.0s
MOL Molde 66.42 356 *e*P **P** **22 49 25.8 -0.3**
MOL IAmb IAmb 22 49 26.9
comp=Z,41nm,1.1s
146A Union 66.45 67 P **P** **22 49 26.5 -0.3**
baz=317,SNR=7.0
BINY Binghamton 66.48 52 *e*P **P** **22 49 26.0 -0.9**
comp=Z,44nm,1.0s
BINY LR LR
comp=Z,4μm,21.0s
MDV Middlebury 66.48 49 *e*P **P** **22 49 25.8 -1.0**
Z47A Carrollton 66.62 66 P **P** **22 49 27.5 -0.4**
baz=317,SNR=21
O56A Blue Knob Stat 66.62 55 P **P** **22 49 27.0 -0.8**
baz=318
543A St. Martinvill 66.66 71 P **P** **22 49 28.1 -0.1**
baz=317
SSPA Standing Stone 66.69 54 *e*P **P** **22 49 27.3 -0.9**
comp=Z,27nm,0.8s
SSPA LR LR
comp=Z,3μm,19.0s
ACCN Adirondack Com 66.71 49 *e*P **P** **22 49 27.0 -1.4**
comp=Z,22nm,0.9s
ACCN LR LR
comp=Z,4μm,18.0s
TZTN Tazewell 66.72 60 *e*P **P** **22 49 28.2 -0.3**
comp=Z,32nm,1.1s
TZTN LR LR
comp=Z,3μm,19.0s
Z48A Northport 66.78 65 P **P** **22 49 28.0 -1.0**
baz=317,SNR=17
AKN Aaknes 66.83 356 *e*P **P** **22 49 28.7 -0.2**
AKN IAmb IAmb 22 49 32.8
comp=Z,63nm,1.0s
345A Thompson Farm, 66.85 69 P **P** **22 49 29.8 +0.3**
baz=317,SNR=6.9
444A Pine Grove 66.86 69 P **P** **22 49 30.2 +0.8**
baz=317
DOMB Dombas 66.87 355 *e*P **P** **22 49 28.5 -0.6**
DOMB IAmb IAmb 22 49 29.6
comp=Z,31nm,0.8s
147A Livingston 66.88 66 P **P** **22 49 29.2 -0.3**
baz=317,SNR=14
CPCT Cooper Cave 66.98 62 *e*P **P** **22 49 29.6 -0.7**
comp=Z,36nm,1.5s
CPCT LR LR
comp=Z,2μm,19.0s
544A White Castle 67.06 70 P **P** **22 49 31.8 +1.0**
baz=317
KSPA Keystone Colle 67.07 52 PFAKE 22 49 40.0 +9.3
KSPA LR LR
comp=Z,5μm,21.0s
AKTO Aktyubinsk 67.07 323 P **P** **22 49 30.8 +0.2**
comp=Z,128nm,0.7s,baz=55,slow=7.2,SNR=352
445A Amite 67.09 69 P **P** **22 49 31.4 +0.5**
baz=317
HNH Hanover 67.12 48 *e*P **P** **22 49 29.8 -1.2**
comp=Z,64nm,1.4s
HNH LR LR
comp=Z,7μm,21.0s
346A Big Creek Wild 67.13 68 P **P** **22 49 31.4 +0.2**
baz=317,SNR=5.5
247A Quitman 67.14 67 P **P** **22 49 31.4 +0.2**
baz=317,SNR=5.7
TRY Troy 67.21 50 PFAKE 22 49 40.0 +8.5
TRY LR LR
comp=Z,5μm,18.0s
TKL Tuckaleechee C 67.24 61 *e*P **P** **22 49 31.1 -0.8**
TKL Tuckaleechee C 67.24 61 *e*P **P** **22 49 31.1 -0.8**
comp=Z,37nm,1.0s
TKL LR LR
comp=Z,4μm,18.0s
PKME Peaks-Kenny Pk 67.30 45 *e*P **P** **22 49 31.8 -0.3**
comp=Z,24nm,1.0s
PKME LR LR
comp=Z,3μm,19.0s
NONG Nongkai 67.34 271 P **P** **22 49 32.8 +0.1**
comp=Z,28nm,1.4s,comp=Z,8μm
LRAL Lakeview Retre 67.35 65 *e*P **P** **22 49 31.6 -1.0**
comp=Z,23nm,0.9s
LRAL LR LR
comp=Z,2μm,19.0s
FOO Floro 67.49 357 *e*P **P** **22 49 32.5 -0.4**
545A Edgard 67.50 70 P **P** **22 49 34.6 +1.0**
baz=317
NC204 NORSAR Array S 67.53 354 *e*P **P** **22 49 32.8 -0.5**
KKAR Karatay Array 67.53 311 *e*P **P** **22 49 33.5 -0.1**
KKAR Karatay Array 67.53 311 *e*P **P** **22 49 33.5 -0.1**
NC303 NORSAR Array S 67.53 354 *e*P **P** **22 49 32.7 -0.6**
KSH Kashi 67.54 305 P **P** **22 49 37.6 +3.8**
KSH *e*pP sP 22 49 43.1 -1.0
KSH *es*P pP 22 49 46.4 +5.1
KSH *e*ScP 22 54 05.8
KSH PcS 22 54 07.9
KSH S **S** **22 58 32.3 +3.4**
KSH SS **SS** **23 02 56.8 +8.0**
KSH pmax pmax
comp=Z,41nm,0.8s
KSH pmax pmax
comp=Z,920nm,3.8s
KSH LR LR
comp=Z,2μm,13.6s
KSH LR LR
comp=Z,2μm,14.9s
KSH LR LR
comp=Z,5μm,17.1s
N59A State Game Lan 67.55 52 P **P** **22 49 33.1 -0.6**
baz=319,SNR=14
FFD Franklin Falls 67.60 48 PFAKE 22 49 50.0 +16
FFD LR LR
comp=Z,7μm,21.0s
248A Dixon Mills 67.61 66 P **P** **22 49 34.0 -0.2**
baz=317,SNR=7.4
446A Poplarville 67.62 68 P **P** **22 49 34.4 +0.1**
baz=317
NC405 NORSAR Array S 67.62 353 *e*P **P** **22 49 33.2 -0.6**
SKNT Sakolnakorn 67.63 269 P **P** **22 49 34.4 -0.1**
comp=Z,35nm,1.5s,comp=Z,3μm
347A Saraland 67.65 67 P **P** **22 49 34.3 -0.2**
baz=317,SNR=5.8
WVL Waterville 67.68 46 *e*P **P** **22 49 33.4 -1.0**
comp=Z,34nm,0.9s
WVL LR LR
comp=Z,7μm,21.0s
NB201 NORSAR Array S 67.71 354 *e*P **P** **22 49 33.4 -1.1**
NB2 NORSAR Subarra 67.73 354 P **P** **22 49 33.7 -0.9**
comp=Z,20nm,0.7s,baz=8.6,slow=6.5
NB2 NORSAR Subarra 67.73 354 P **P** **22 49 33.7 -0.9**
baz=8.6,slow=6.5
NB2 NORSAR Subarra 67.73 354 P **P** **22 49 33.7 -0.9**
NB2 pmax pmax
comp=Z,16nm,0.6s
NOA NORSAR Array B 67.73 354 P **P** **22 49 33.7 -0.9**
comp=Z,22nm,0.7s,baz=9.7,slow=6.3,SNR=88
NOA PKP2bc 23 18 01.2
comp=Z,1.3nm,0.9s,baz=72,slow=2.8,SNR=3.6
NOA LR LR 23 20 50.6
comp=Z,966nm,18.7s,baz=15,slow=37
NBO02 NORSAR Array S 67.74 354 *e*P **P** **22 49 34.0 -0.7**
NBO00 NORSAR Array S 67.77 354 *e*P **P** **22 49 34.9 +0.1**
MYLDM Lahad Datu 67.79 250 *e*P **P** **22 49 35.8 +0.3**
comp=Z,205nm,1.8s
546A Slidell 67.82 69 P **P** **22 49 36.2 +0.7**
baz=318
645A Chauvin 67.87 70 P **P** **22 49 37.5 +1.7**
baz=318
BLA Blacksburg 67.92 58 *e*P **P** **22 49 35.7 -0.4**
BLA pmax pmax
comp=Z,23nm,0.9s
BLA Blacksburg 67.92 58 *e*P **P** **22 49 35.7 -0.4**
comp=Z,22nm,0.9s
BLA LR LR
comp=Z,3μm,21.0s
NAO01 NORSAR Array S 67.95 354 *e*P **P** **22 49 35.1 -0.8**
MVL Millersville 67.95 53 *e*P **P** **22 49 35.4 -0.8**
comp=Z,15nm,0.8s
MVL LR LR
comp=Z,3μm,21.0s

UBPT Khong Chiam 67.97 267 P **P** **22 49 37.0 +0.4**
comp=Z,75nm,1.0s,comp=Z,1μm
LUPA Lehigh Univers 67.99 52 *e*P **P** **22 49 35.9 -0.5**
comp=Z,67nm,0.9s
LUPA LR LR
comp=Z,5μm,21.0s
ODNJ Ogdensburg 68.00 51 *e*P **P** **22 49 35.5 -1.0**
comp=Z,13nm,0.8s
ODNJ LR LR
comp=Z,3μm,18.0s
NC602 NORSAR Array S 68.01 353 *e*P **P** **22 49 35.4 -0.8**
comp=Z,1μm,3.5s
NC602 NORSAR Array S 68.01 353 *e*P **P** **22 49 35.5 -0.8**
348A Jackson 68.02 67 P **P** **22 49 37.0 +0.2**
baz=318
447A Lucedale 68.03 68 P **P** **22 49 37.0 +0.1**
baz=318
SUE Sulen 68.04 357 *e*P **P** **22 49 37.1 +0.7**
SDMD Soldier's Deli 68.14 54 *e*P **P** **22 49 37.4 0.0**
comp=Z,14nm,0.9s
QUA2 Belchertown 68.18 49 PFAKE 22 49 50.0 +12
QUA2 LR LR
comp=Z,4μm,18.0s
646A Port Sulphur 68.23 70 P **P** **22 49 39.8 +1.7**
baz=318
BRNJ Basking Ridge 68.32 52 *e*P **P** **22 49 37.9 -0.6**
comp=Z,25nm,0.8s
BRNJ LR LR
comp=Z,5μm,20.0s
HRV Adam Dziewonsk 68.38 49 *e*P **P** **22 49 38.6 -0.3**
HRV pmax pmax
comp=Z,22nm,0.9s
HRV MLR MLR
comp=Z,3μm,19.0s
HRV Adam Dziewonsk 68.38 49 *e*P **P** **22 49 38.6 -0.3**
comp=Z,22nm,0.9s
HRV LR LR
comp=Z,3μm,19.0s
448A Bay Minette 68.39 67 P **P** **22 49 38.9 -0.3**
baz=318
PAL Palisades 68.40 51 *e*P **P** **22 49 38.1 -0.9**
PAL pmax pmax
comp=Z,34nm,0.8s
PAL Palisades 68.40 51 *e*P **P** **22 49 38.1 -0.9**
comp=Z,34nm,0.8s
PAL LR LR
comp=Z,4μm,20.0s
VSU Vasula 68.42 345 *c i*P **P** **22 49 37.2 -1.7**
VSU pmax pmax
comp=Z,58nm,0.7s
PSUB Penn St. - Bra 68.45 53 PFAKE 22 49 50.0 +11
PSUB LR LR
comp=Z,5μm,21.0s
KKM Kota Kinabalu 68.46 252 PFAKE 22 49 50.0 +10
KKM LR LR
comp=Z,2μm,22.0s
GGN Saint George 68.50 44 *e*P **P** **22 49 38.4 -1.2**
comp=Z,44nm,0.9s
GGN LR LR
comp=Z,4μm,21.0s
CMAI Chiengmai2 68.53 275 P **P** **22 49 41.2 +0.8**
comp=Z,302nm,1.3s,comp=Z,61μm
CPNY Central Park 68.54 51 *e*P **P** **22 49 39.2 -0.7**
comp=Z,40nm,0.8s
EMMW East Machias 68.55 45 *e*P **P** **22 49 38.7 -1.2**
comp=Z,62nm,1.0s
MOIG Morelia 68.56 85 PFAKE 22 49 50.0 +9.4
MOIG LR LR
comp=Z,2μm,19.0s
WES Weston 68.59 49 *e*P **P** **22 49 39.0 -1.2**
WES pmax pmax
comp=Z,49nm,1.0s
WES Weston 68.59 49 *e*P **P** **22 49 39.0 -1.2**
comp=Z,49nm,0.9s
WES LR LR
comp=Z,5μm,19.0s
MSVF Nonsavu 68.60 181 *e*P **P** **22 49 40.2 -0.2**
MSVF pmax pmax
comp=Z,29nm,1.3s
MSVF Nonsavu 68.60 181 PFAKE 22 49 50.0 +10
MSVF LR LR
comp=Z,3μm,20.0s
ASK Askoy 68.60 357 *e*P **P** **22 49 39.7 -0.2**
BRAL Brewton 68.69 67 *e*P **P** **22 49 41.2 +0.2**
comp=Z,115nm,0.8s
BRAL LR LR
comp=Z,1μm,21.0s
MOS Moscow 68.77 338 *e*P **P** **22 49 42.2 +1.1**
MOS *e* 22 49 59.4
MOS *e* 22 52 17.9
MOS pmax pmax
comp=Z,47nm,1.0s
MOS MLR MLR
comp=N,100nm,18.0s
MOS MLR MLR
comp=E,3μm,18.0s
MOS MLR MLR
comp=Z,6μm,18.0s
CBN Corbin Frederi 68.78 55 PFAKE 22 49 50.0 +8.6
CBN LR LR
comp=Z,3μm,18.0s
LMN Caledonia Moun 68.80 42 *e*P **P** **22 49 40.1 -1.3**
comp=Z,49nm,1.0s
LMN LR LR
comp=Z,4μm,20.0s
SHL Shillong 68.81 285 *e*P **P** **22 49 41.4 -0.6**
BRYW Bryant College 68.85 49 PFAKE 22 49 50.0 +8.2
BRYW LR LR
comp=Z,5μm,18.0s
OSL Oslo 68.86 354 *e*P **P** **22 49 41.4 -0.2**
OSL IAmb IAmb 22 49 41.8
comp=Z,28nm,0.7s
DRLN Deer Lake 68.93 36 *e*P **P** **22 49 41.4 -0.8**
comp=Z,47nm,0.9s
DRLN LR LR
comp=Z,4μm,20.0s
LOEI Loei 68.94 272 P **P** **22 49 40.6 -2.1**
comp=Z,113nm,1.0s,comp=Z,5μm
KMSC Kings Mountain 68.96 60 P **P** **22 49 42.3 -0.4**
baz=319,SNR=24
KMSC Kings Mountain 68.96 60 *e*P **P** **22 49 42.0 -0.6**
comp=Z,56nm,0.9s
KMSC LR LR
comp=Z,4μm,21.0s
GOGA Godfrey 69.07 63 *e*P **P** **22 49 42.3 -1.1**
GOGA pmax pmax
comp=Z,17nm,0.8s
GOGA Godfrey 69.07 63 *e*P **P** **22 49 42.3 -1.1**
comp=Z,17nm,0.8s
GOGA LR LR
comp=Z,2μm,20.0s
ODD1 Odda 69.12 356 *e*P **P** **22 49 43.1 -0.2**
LAMP Lampang 69.21 274 P **P** **22 49 45.2 +0.8**
comp=Z,6.1nm,1.0s
UTTA Uttaradit 69.21 273 P **P** **22 49 44.3 -0.1**
comp=Z,14nm,0.8s,comp=Z,107nm
KONO Kongsberg 69.22 354 *e*P **P** **22 49 43.5 -0.3**
KONO IAmb IAmb 22 49 44.8
comp=Z,43nm,0.9s
KONO Kongsberg 69.22 354 *e*P **P** **22 49 43.7 -0.1**
KONO pmax pmax
comp=Z,42nm,0.9s
KONO Kongsberg 69.22 354 *e*P **P** **22 49 43.7 -0.1**
comp=Z,42nm,0.9s
TAOE Nuku Hiva Isla 69.37 136 *e*S **S** **22 58 49.7 -1.3**
comp=Z,816nm,31.6s
TAOE Nuku Hiva Isla 69.37 136 *e*LR LR 23 10 48.0
comp=Z,6μm,22.3s,baz=346
CMMT Chiang Mai 69.42 275 P **P** **22 49 45.5 -0.2**
comp=Z,33nm,1.6s,comp=Z,940nm
CHTO Chiang Mai 69.42 275 P **P** **22 49 45.6 -0.1**
comp=Z,147nm,1.7s,comp=Z,4μm
CHTO Chiang Mai 69.42 275 *e*P **P** **22 49 45.6 -0.1**
CHTO pmax pmax
comp=Z,38nm,1.3s
CHTO Chiang Mai 69.42 275 *e*P **P** **22 49 45.6 -0.1**
comp=Z,38nm,1.3s
CHTO LR LR
comp=Z,1μm,18.0s
OBN Obninsk 69.58 338 *d i*P **P** **22 49 45.8 -0.3**
OBN *e* 22 49 59.0
OBN 22 50 06.0
OBN *e* 22 52 16.1
OBN PPP PPP 22 54 08.0
OBN *i* S **S** **22 58 55.8 +3.4**
OBN *e* 22 59 26.6
OBN pmax pmax
comp=Z,40nm,0.9s
OBN MLR MLR
OBN Obninsk 69.58 338 *e*P **P** **22 49 46.2 +0.1**
comp=Z,7μm,18.0s
comp=Z,42nm,0.6s
OBN LR LR
comp=Z,8μm,19.0s
BLS5 Blasjo 69.61 356 *e*P **P** **22 49 46.1 -0.2**
BLS5 IAmb IAmb 22 49 48.3
comp=Z,551nm,2.6s
JSC Jenkinsville 69.64 61 *e*P **P** **22 49 46.4 -0.5**
JSC Jenkinsville 69.64 61 *e*P **P** **22 49 46.4 -0.5**
CM31 Chiang Mai Arr 69.69 274 *e*P **P** **22 49 48.0 +0.6**
CMAR Chiang Mai Arr 69.69 274 P **P** **22 49 47.6 +0.3**
comp=Z,13nm,0.6s,baz=28,slow=7.2,SNR=77
CM01 Chiang Mai Arr 69.71 274 *e*P **P** **22 49 46.7 -0.7**
PBKT Sadao Pong 69.83 272 P **P** **22 49 48.2 0.0**
comp=Z,61nm,1.1s,comp=Z,1μm
SUKH Sukhothai 69.99 273 P **P** **22 49 49.5 +0.3**
comp=Z,7.0nm,0.8s,comp=Z,76nm
UNM Universidad Na 70.08 84 PFAKE 22 50 00.0 +10
UNM LR LR
comp=Z,2μm,19.0s
STAV Stavanger 70.13 356 *e*P **P** **22 49 49.1 -0.3**
LUWI Luwuk 70.40 242 *e*P **P** **22 49 50.3 -1.4**
comp=Z,207nm,1.5s
LUWI LR LR
comp=Z,1μm,21.0s
TIGA Tifton 70.47 64 P **P** **22 49 51.6 -0.3**
baz=319
TIGA Tifton 70.47 64 PFAKE 22 50 00.0 +8.0
TIGA LR LR
comp=Z,2μm,20.0s
MHMT Maesarieng 70.54 275 P **P** **22 49 53.1 +0.6**
comp=Z,29nm,1.9s,comp=Z,636nm
HOMB Homborsund 70.66 355 *e*P **P** **22 49 52.5 -0.1**
HOMB IAmb IAmb 22 50 02.1
comp=Z,330nm,2.0s
GUN Gumba 70.68 291 *e*P **P** **22 49 54.7 +0.9**
comp=Z,266nm,0.6s
CNNC Cliffs of the 70.74 58 PFAKE 22 50 10.0 +16
CNNC LR LR
comp=Z,4μm,20.0s
RAMN Ramite 70.97 289 *e*P **P** **22 49 55.5 +0.1**
comp=Z,368nm,0.6s
NHSC New Hope 71.12 61 *e*P **P** **22 49 56.2 +0.3**
comp=Z,49nm,0.8s
NHSC LR LR
comp=Z,3μm,18.0s
KKN Kakani 71.12 291 *e*P **P** **22 49 57.0 +0.7**
comp=Z,141nm,0.6s
PKIN Phulchoki 71.21 291 *e*P **P** **22 49 57.4 +0.5**
comp=Z,136nm,0.7s
GKN Gorkha 71.34 291 *e*P **P** **22 49 58.0 +0.5**
comp=Z,138nm,0.6s
DMN Daman 71.36 291 *e*P **P** **22 49 58.4 +0.6**
comp=Z,169nm,0.9s
UMPA Umpang Tak 71.43 273 P **P** **22 49 59.5 +1.5**
comp=Z,14nm,0.9s,comp=Z,121nm
TLIG Tlapa 71.78 85 *e*P P 22 50 05.6 +5.4
comp=Z,24nm,1.1s
TLIG LR LR
comp=Z,1μm,19.0s
VRH Novokhopyorsk 71.79 333 *e*P **P** **22 49 58.7 -0.9**
VRH pmax pmax
comp=Z,50nm,0.6s
NACGM Naroch 71.81 344 *e* **P** **22 50 01.0 +1.3**
NACGM *e*LQ LQ 23 03 42.0
NACGM *e*LR LR 23 14 06.0
MICGM Minsk 71.99 343 *e* **P** **22 50 01.0 +0.2**
MICGM *e*LR LR 23 14 18.0
MICGM LRM MLR 23 26 48.0
comp=E,2.5nm,16.0s
MICGM LRM MLR 23 27 00.0
comp=Z,4.2nm,16.0s
MICGM LRM MLR 23 27 04.0
comp=N,3.0nm,16.0s
MNK Minsk 71.99 343 *e*P **P** **22 50 01.0 +0.2**
MNK MLR MLR
comp=E,3μm,16.0s
MNK MLR MLR
comp=Z,4μm,16.0s
COEN Coen 71.99 217 PFAKE 22 50 10.0 +8.8
COEN LR LR
comp=Z,2μm,20.0s
KOLN Koldanda 72.12 292 *e*P **P** **22 50 02.7 +0.4**
comp=Z,72nm,0.7s
PYUN Piuthan 72.23 293 *e*P **P** **22 50 03.1 +0.1**
comp=Z,255nm,0.9s
MUD Monsted U'grnd 72.43 354 *i*P **P** **22 50 02.9 -0.4**
comp=Z,25nm,0.9s
MUD Monsted U'grnd 72.43 354 *e*P **P** **22 50 02.9 -0.4**
MUD pmax pmax
comp=Z,25nm,0.9s
VSR Storozhevoye 72.48 335 *e*P **P** **22 50 02.5 -1.3**
VSR pmax pmax
comp=Z,20nm,0.8s
VSR MLR MLR
comp=Z,4μm,15.0s
SMLA Simla 73.24 299 *e*P **P** **22 50 09.0 +0.4**
SUW Suwalki 73.27 345 *e*P **P** **22 50 06.8 -1.6**
SUW LMZ LR 23 21 24.6
comp=Z,3μm,24.5s
SUW Suwalki 73.27 345 *e*P **P** **22 50 06.8 -1.6**
BSD Bornholm Skovb 73.28 351 *i*P **P** **22 50 07.6 -0.8**
comp=Z,16nm,0.9s
comp=Z,2μm,20.0s
BSD Bornholm Skovb 73.28 351 *i*P **P** **22 50 07.6 -0.8**
BSD pmax pmax
comp=Z,16nm,0.9s
BSD MLR MLR
comp=Z,2μm,20.0s
DDI Dehra Dun 73.36 298 *e*P **P** **22 50 09.2 -0.2**
PHET Kaeng Krachan 73.43 270 P **P** **22 50 11.6 +1.7**
comp=Z,12nm,0.8s,comp=Z,162nm
SBUM Sibu 73.71 253 *e*P **P** **22 50 12.1 +0.6**
comp=Z,12nm,0.9s
SBUM LR LR
comp=Z,700nm,21.0s
PPT Papeete 73.75 149 LR LR 23 16 38.3
comp=Z,2μm,20.4s,baz=360,slow=31
DZM Mont Dzumac 73.75 192 P **P** **22 50 13.0 +1.5**
comp=Z,13nm,1.0s,baz=87,slow=15,SNR=3.6
DZM LR LR 23 16 22.0
comp=Z,2μm,21.6s,baz=1.0,slow=31
DZM Mont Dzumac 73.75 192 *e*P **P** **22 50 11.0 -0.6**
comp=Z,85nm,1.6s
DZM *e*S **SKiKP** **22 59 38.3 -1.0**
comp=Z,4μm,28.1s
DZM Mont Dzumac 73.75 192 *e*LR LR 23 12 42.4
comp=Z,5μm,22.8s
DZM Mont Dzumac 73.75 192 *e*P **P** **22 50 11.9 +0.4**
comp=Z,46nm,1.3s
BOK Bokaro 73.75 288 *e*P **P** **22 50 12.4 +0.6**
PPT2 Papeete2 73.77 149 *e*S **SKiKP** **22 59 36.0 -3.4**
comp=Z,7μm,28.2s
PPT2 *e*SS **SS** **23 04 23.6 -2.3**
comp=Z,1μm,24.8s
PPT2 *e*LQ LQ 23 09 42.4
PPT2 comp=Z,3μm,27.2s *e*LR LR 23 12 38.3
comp=Z,5μm,24.5s,baz=337
PPT2 Papeete2 73.77 149 *e*T T 00 11 05.0
comp=Z,35nm,0.3s
TIAR Tiarei 73.81 149 *e*T T 00 11 08.5
comp=Z,8.4nm,0.2s
PAE Paea 73.83 149 *e*T T 00 11 09.3
comp=Z,9.2nm,0.3s
ESK Eskdalemuir 73.88 1 *e*P **P** **22 50 11.9 0.0**
ESK pmax pmax
comp=Z,38nm,1.0s
ESK Eskdalemuir 73.88 1 *e*P **P** **22 50 11.9 0.0**
comp=Z,38nm,0.9s
ESK LR LR
comp=Z,2μm,22.0s
RGN Rugen 73.99 351 PFAKE 22 50 20.0 +7.4
RGN LR LR
comp=Z,2μm,19.0s
TVO Taravao 74.05 149 *e*T T 00 11 20.5
comp=Z,3.0nm,0.3s
DWPF Disney Wildern 74.21 65 PFAKE 22 50 30.0 +16
DWPF LR LR
comp=Z,2μm,20.0s
MEH Mehetia 74.53 148 *e*T T 00 12 02.1
comp=Z,26nm,0.3s
GKP Gorka Klasztor 74.83 349 *e*P **P** **22 50 16.0 -1.5**
GKP LMZ LR 23 24 36.6

comp=Z,3µm,20.9s
GKP Gorka Klasztor 74.83 349 *e*P **P** **22 50 16.0 -1.5**
GKP MLR MLR
comp=Z,3µm,20.9s
KBL Kabul 74.90 307 *e*P **P** **22 50 18.2 -0.4**
KBL pmax pmax
comp=Z,49nm,0.8s
KBL Kabul 74.90 307 *e*P **P** **22 50 18.2 -0.4**
comp=Z,49nm,0.8s
KBL LR LR
comp=Z,3µm,22.0s
AKASG Malin Array Be 75.33 341 P **P** **22 50 19.4 -1.0**
comp=Z,18nm,0.6s,baz=24,slow=6.1,SNR=40
AKASG LR LR 23 27 26.4
comp=Z,4µm,19.4s,baz=25,slow=39
AKBB Malin Array Si 75.33 341 *e*P **P** **22 50 19.6 -0.9**
AKBB pmax pmax
comp=Z,37nm,0.9s
AKBB MLR MLR
comp=Z,4µm,19.0s
AKBB Malin Array Si 75.33 341 *e*P **P** **22 50 19.6 -0.9**
comp=Z,37nm,0.9s
AKBB LR LR
comp=Z,4µm,19.0s
KIEV Kiev 75.34 341*c i*P **P** **22 50 18.8 -1.7**
KIEV pmax pmax
comp=Z,40nm,0.9s
KIEV Kiev 75.34 341 *e*P **P** **22 50 19.4 -1.0**
comp=Z,37nm,0.9s
KIEV LR LR
comp=Z,4µm,20.0s
KAPI Kappang 75.36 242 P **P** **22 50 21.1 +0.1**
comp=Z,14nm,0.7s,baz=326,slow=1.8,SNR=4.8
KAPI Kappang 75.36 242 P **P** **22 50 21.1 +0.1**
KAPI LR LR
comp=Z,800nm,22.0s
AK11 Malin Array Si 75.36 341 *e*P **P** **22 50 19.7 -0.9**
KSM Kuching 75.64 254 PFAKE 22 50 30.0 +7.3
KSM LR LR
comp=Z,600nm,21.0s
BEL Belsk 75.75 346 *e*P **P** **22 50 22.6 -0.2**
BEL LMZ LR 23 28 04.1
comp=Z,3µm,17.4s
BEL Belsk 75.75 346 *e*P **P** **22 50 22.6 -0.2**
DSB Dublin 75.87 3 *e*P **P** **22 50 23.6 +0.1**
comp=Z,49nm,1.0s
DSB LR LR
comp=Z,2µm,20.0s
MTN Manton Dam 76.11 228 *e*P **P** **22 50 25.5 +0.2**
comp=Z,67nm,0.8s
BWNR Bhubaneshwar 76.45 285 *e*P **P** **22 50 27.6 +0.3**
CTA Charters Tower 76.57 212 P **P** **22 50 28.1 +0.3**
comp=Z,21nm,0.9s,baz=23,slow=6.7,SNR=16
CTA LR LR 23 20 29.3
comp=Z,522nm,20.3s,slow=33
CTAO Charters Tower 76.57 212 *e*P **P** **22 50 28.1 +0.3**
CTAO pmax pmax
comp=Z,23nm,0.9s
CTAO Charters Tower 76.57 212 *e*P **P** **22 50 28.1 +0.3**
comp=Z,23nm,0.9s
CCIG Comitan 76.76 81 PFAKE 22 50 40.0 +11
CCIG LR LR
comp=Z,2µm,21.0s
SOEI Soe 76.87 236 *e*P **P** **22 50 28.8 -1.0**
comp=Z,52nm,1.0s
SOEI *e*pwP **pP** **22 50 38.0 +0.6**
GOF Gofitskoye 76.89 330⇑*i*P **P** **22 50 29.8 +0.4**
GOF *e*S **S** **23 00 08.3 -7.3**
GOF pmax pmax
comp=Z,176nm,0.8s
WTSB Winterswijk 77.04 355 *e*P **P** **22 50 29.6 -0.6**
LVV L'vov 77.17 344 *e*P **P** **22 50 30.0 -0.9**
LVV *e* 22 50 46.9
LVV *e* 22 53 26.6
LVV *e*PPP PPP 22 55 17.2
LVV *e*S **S** **23 00 15.3 -3.2**
LVV *e*PS **PnS** **23 01 01.3 +2.8**
LVV *e*SS **SS** **23 05 20.9 +6.1**
CLL Collm 77.23 351 *e*P **P** **22 50 30.0 -1.2**
comp=Z,10.0nm,1.1s
CLL *e*Plp 22 50 34.0
comp=Z,400nm,21.9s
CLL ⇓*i* 22 50 37.7
comp=Z,15nm,1.1s
CLL *e*PP **PP** **22 53 24.0 -0.4**
CLL *e*PPP PPP 22 55 18.0
CLL *e*S **S** **23 00 20.0 +1.0**
CLL *e*PS **PnS** **23 00 57.0 -2.1**
CLL *e*SS **SS** **23 05 06.0 -10**
CLL *e*SSSS 23 10 42.0
CLL LmV 23 26 00.0
comp=Z,2µm,20.5s
CLL Collm 77.23 351⇓*e*P **P** **22 50 30.0 -1.2**
CLL *i* 22 50 37.7
CLL *e*S **S** **23 00 20.0 +1.0**
CLL pmax pmax
comp=Z,10.0nm,1.1s
CLL MLR MLR
comp=Z,2µm,20.5s
CLL Collm 77.23 351 *e*P **P** **22 50 30.4 -0.8**
comp=Z,14nm,1.1s
CLL LR LR
comp=Z,2µm,20.0s
GEYT Alibeck 77.32 316 P **P** **22 50 32.9 +0.8**
comp=Z,28nm,1.0s,baz=343,slow=3.6,SNR=51
GEYT PP **PP** **22 53 26.1 +0.4**
comp=Z,3.3nm,0.9s,baz=1.7,slow=4.9,SNR=3.5
GEYT LR LR 23 29 42.1
comp=Z,6µm,18.2s,baz=5.0,slow=40
KSP Ksiaz 77.33 349 *e*P **P** **22 50 30.9 -0.9**
KSP LMZ LR 23 26 49.3
comp=Z,1µm,21.2s
KSP Ksiaz 77.33 349 *e*P **P** **22 50 30.9 -0.9**
DGPR DIGLIPUR 77.44 275 *e*P **P** **22 50 32.8 -0.1**
OJC Ojcow 77.47 347 *e*P **P** **22 50 31.2 -1.4**
OJC LMZ LR 23 29 19.5
comp=Z,4µm,17.8s
OJC Ojcow 77.47 347 *e*P **P** **22 50 31.2 -1.4**
OJC Ojcow 77.47 347 *e*P **P** **22 50 32.4 -0.2**
comp=Z,14nm,0.9s
BRG Berggiesshubel 77.56 350 *e*P **P** **22 50 32.0 -1.1**
comp=Z,7.9nm,1.0s
BRG Berggiesshubel 77.56 350 S **ScS** **23 00 52.0 +2.3**
comp=N,2µm,15.4s
comp=E,860nm,1.7s
comp=Z,1µm,17.2s
BRG Berggiesshubel 77.56 350 *e*P **P** **22 50 32.0 -1.1**
BRG S **ScS** **23 00 52.0 +2.3**
BRG pmax pmax
comp=Z,8.0nm,1.0s
BRG MLR MLR
comp=N,2µm,15.4s
BRG MLR MLR
comp=E,860nm,1.7s
BRG MLR MLR
comp=Z,1µm,17.2s
KWP Kalwaria Pacla 77.58 345 *e*P **P** **22 50 32.9 -0.4**
KWP LMZ LR 23 24 25.9
comp=Z,4µm,23.5s
KWP Kalwaria Pacla 77.58 345 *e*P **P** **22 50 32.9 -0.4**
GROC Groznyy 77.62 327 *e*P **P** **22 50 33.0 -0.6**
GROC pmax pmax
comp=Z,91nm,2.1s
UPC Upice 77.69 349 *e*P **P** **22 50 33.5 -0.3**
UPC *e*pP **pP** **22 50 37.8 -3.6**
UPC *e*SS SS 23 05 32.6 +10
UPC AMS AMS 23 30 50.0
comp=Z,2µm,16.6s
UPC Upice 77.69 349 *e*P **P** **22 50 33.5 -0.3**
UPC *e* 22 50 37.8
UPC MLR MLR
comp=Z,2µm,16.6s
DPC Dobruska-Polom 77.81 349 *e*P **P** **22 50 34.2 -0.4**
DPC *e*pP **pP** **22 50 39.9 -2.3**
DPC AMS AMS 23 32 40.0
comp=Z,2µm,17.8s
DPC Dobruska-Polom 77.81 349 *e*P **P** **22 50 34.2 -0.4**
DPC *e* 22 50 39.9
DPC MLR MLR
comp=Z,2µm,17.8s
PVCC Panska Ves 77.83 350 AMS AMS 23 28 50.0
comp=Z,2µm,21.2s
SORM Soroca 77.94 340⇓*i*P **P** **22 50 34.9 -0.4**
KIV Kislovodsk 77.99 329*c i*P **P** **22 50 35.5 -0.2**
KIV *e* 22 50 43.9
KIV *e* 22 53 36.1
KIV *e*PPP PPP 22 55 24.7
KIV S **S** **23 00 23.0 -4.7**
KIV SS **SS** **23 05 35.0 +7.3**
KIV pmax pmax
comp=Z,47nm,0.9s
KIV MLR MLR
comp=Z,2µm,20.0s
KIV Kislovodsk 77.99 329 *e*P **P** **22 50 36.6 +0.8**
comp=Z,51nm,0.9s
KIV LR LR
comp=Z,2µm,21.0s
KRLC Kraliky 78.02 348 *e*P **P** **22 50 35.5 -0.2**
KRLC Kraliky 78.02 348 *e*P **P** **22 50 35.5 -0.2**
OKC Ostrava-Krasne 78.07 348 *e*P **P** **22 50 35.9 -0.1**
OKC AMS AMS 23 31 10.0
comp=Z,2µm,17.1s
OKC Ostrava-Krasne 78.07 348 *e*P **P** **22 50 35.9 -0.1**
OKC MLR MLR
comp=Z,2µm,17.1s
NCK Nalchik 78.10 329*c i*P **P** **22 50 37.0 +0.7**
NCK pmax pmax
comp=Z,63nm,0.8s
KBZ Khabaz 78.12 329 P **P** **22 50 37.4 +1.1**
comp=Z,28nm,0.8s,baz=82,slow=2.4,SNR=45
KBZ LR LR 23 29 20.8
comp=Z,4µm,21.4s,baz=23,slow=39
MORC Moravsky Berou 78.21 348⇓*i*P **P** **22 50 36.5 -0.3**
MORC Moravsky Berou 78.21 348 *e*P **P** **22 50 36.5 -0.3**
MORC pmax pmax
comp=Z,19nm,0.8s
MORC Moravsky Berou 78.21 348 *e*P **P** **22 50 36.5 -0.3**
comp=Z,19nm,0.8s
MORC LR LR
comp=Z,9µm,18.0s
BEBN Eben Emael 78.27 356 P **P** **22 50 36.4 -0.6**
HGN Heimansgroeve 78.29 356 *e*P **P** **22 50 36.4 -0.7**
comp=Z,25nm,1.0s
HGN *e*P S 23 00 19.2 -11
comp=Z,30nm,1.0s
UCC Uccle 78.32 357 P **P** **22 50 36.8 -0.5**
NKC Novy Kostel 78.34 351 *e*P **P** **22 50 37.3 -0.2**
NKC *e*S **S** **23 00 27.8 -3.4**
NKC AMS AMS 23 33 00.0
comp=Z,1µm,15.9s
NKC Novy Kostel 78.34 351 *e*P **P** **22 50 37.3 -0.2**
NKC *e*S **S** **23 00 27.8 -3.4**
NKC MLR MLR
comp=Z,1µm,15.9s
PRU Pruhonice 78.37 350 *e*P **P** **22 50 37.3 -0.3**
PRU *e*pP **pP** **22 50 44.5 -0.7**
PRU *e*PP **PP** **22 53 32.1 -1.9**
PRU *e*S **S** **23 00 28.1 -3.3**
PRU *e*SKS **SKKSac** **23 00 52.1 +0.5**
PRU *e*SS **SS** **23 05 36.2 +3.4**
PRU AMS AMS 23 29 10.0
comp=Z,2µm,21.4s
PRU Pruhonice 78.37 350 *e*P **P** **22 50 37.3 -0.3**
PRU *e* 22 50 44.5
PRU *e* 22 53 32.1
PRU *e*S **S** **23 00 28.1 -3.3**
PRU *e* 23 00 52.1
PRU *e*SS **SS** **23 05 36.2 +3.4**
PRU MLR MLR
comp=Z,2µm,21.4s
GOPC GO Pecny, Ondr 78.42 350 *e*P **P** **22 50 37.6 -0.3**
GOPC *e*S **S** **23 00 28.7 -3.3**
GOPC AMS AMS 23 33 20.0
comp=Z,2µm,16.5s
GOPC GO Pecny, Ondr 78.42 350 *e*P **P** **22 50 37.6 -0.3**
GOPC *e*S **S** **23 00 28.7 -3.3**
GOPC MLR MLR
comp=Z,2µm,16.5s
MEM Membach 78.44 355 P **P** **22 50 38.0 0.0**
comp=Z,14nm,0.9s
NEY Neytrino 78.61 329 *e*P **P** **22 50 39.1 -0.2**
NEY pmax pmax
comp=Z,2.0nm,0.9s
SNF Seneffe 78.61 357 P **P** **22 50 38.8 -0.1**
UZH Uzhgorod 78.62 345 *e*P **P** **22 50 38.6 -0.4**
UZH *i* 22 50 51.8
KULM Kulim 78.63 264 *e*P **P** **22 50 39.2 -0.3**
comp=Z,14nm,0.9s
KULM LR LR
comp=Z,700nm,21.0s
ZEI Tsey 78.63 328 *e*P **P** **22 50 37.0 -2.5**
ZEI pmax pmax
comp=Z,123nm,0.7s
BCLA Clavier 78.66 356 P **P** **22 50 38.9 -0.3**
GUDG Gudauri 78.73 327 P **P** **22 50 40.9 +0.9**
DYA Yadsworthy 78.75 2 PFAKE 22 50 50.0 +10
DYA LR LR
comp=Z,900nm,20.0s
VRAC Vranov 78.80 348⇑*i*P **P** **22 50 40.0 0.0**
ANN Anapa 78.81 333 *e*P **P** **22 50 39.0 -1.1**
ANN *e*S **S** **23 00 34.7 -1.6**
ANN pmax pmax
comp=Z,58nm,1.0s
ANN MLR MLR
comp=Z,2µm,23.0s
ANN MLR MLR
comp=N,5µm,23.0s
KIS Kishinev 78.92 340 *e*P **P** **22 50 39.0 -1.7**
comp=N,400nm,10.0s
KIS Kishinev 78.92 340 *e*PP PP 22 53 38.0 -0.7
KIS *e*S **S** **23 00 32.0 -5.4**
KIS *e*ScS **SKSac** **23 00 50.0 -4.5**
KIS Kishinev 78.92 340 *e*PS 23 01 10.0
KIS *e*SS SS 23 05 40.0 -1.2
KIS *e*SSS SSS 23 08 55.0
KIS *e*L L 23 16 36.0
KIS LRM MLR 23 30 08.0
comp=N,5µm,18.0s
KIS Kishinev 78.92 340 *e*P **P** **22 50 39.0 -1.7**
KIS *e*S **S** **23 00 32.0 -5.4**
KIS *e* 23 00 50.0
KIS *e*SS **SS** **23 05 40.0 -1.2**
KIS *e*SSS SSS 23 08 55.0
KIS pmax pmax
comp=Z,360nm,10.0s
KIS pmax pmax
comp=Z,800nm,16.0s
KIS MLR MLR
comp=N,3µm,17.0s
KIS MLR MLR
comp=E,2µm,17.0s
KIS MLR MLR
comp=Z,5µm,17.0s
KIS MLR MLR
comp=Z,5µm,18.0s
ONI Oni 78.96 328 P **P** **22 50 41.3 +0.2**
ONI Oni 78.96 328 P **P** **22 50 41.3 +0.2**
GRFO Grafenberg 78.99 352 *e*P **P** **22 50 41.2 +0.1**
GRFO pmax pmax
comp=Z,16nm,1.0s
GRFO Grafenberg 78.99 352 *e*P **P** **22 50 41.2 +0.1**
comp=Z,16nm,1.0s
GRFO LR LR
comp=Z,1µm,19.0s
DOU Dourbes 79.01 356 P **P** **22 50 40.6 -0.5**
IPM Ipoh 79.02 263 *e*P **P** **22 50 41.1 -0.6**
comp=Z,20nm,0.9s
IPM LR LR
comp=Z,700nm,20.0s
BUR08 Bucovina Ar. S 79.05 342 *e*P **P** **22 50 41.5 0.0**
TRPA Tarpa 79.06 344⇓*e*P **P** **22 50 41.6 +0.2**
BAIF Baives 79.06 357 *e*P **P** **22 50 40.3 -1.1**
BAIF pmax pmax
comp=Z,30nm,1.0s
BURAR Bucovina Array 79.07 342⇓*i*P **P** **22 50 41.3 -0.4**
BURAR Bucovina Array 79.07 342 P **P** **22 50 41.3 -0.4**
PRAR RASCA 79.11 342⇑*i*P **P** **22 50 41.9 +0.1**
BHPL Bhopal 79.16 293 *e*P **P** **22 50 42.4 -0.1**
TBI Tubuai 79.20 151 *e*S **S** **23 00 35.6 -5.0**
comp=Z,3µm,34.0s
TBI *e*SS **SS** **23 05 45.3 -2.6**
comp=Z,749nm,26.0s
TBI *e*LR LR 23 15 14.3
comp=Z,5µm,22.2s,baz=337
TBI Tubuai 79.20 151 *e*T T 00 17 52.2
comp=Z,7.7nm,0.2s
SEAG Tbilisi Sea 79.24 327 P **P** **22 50 44.3 +1.7**
SOC Sochi 79.25 331*c i*P **P** **22 50 41.3 -1.3**
SOC *e**SP **sP** **22 50 55.3 +2.3**
SOC *e*PPP PPP 22 55 31.7
SOC *e*S **S** **23 00 40.6 -0.4**
SOC pmax pmax
comp=Z,30nm,0.9s
SOC MLR MLR
comp=Z,2µm,14.0s
TBLG Delisi 79.29 327 P **P** **22 50 42.6 -0.3**
TBLG Delisi 79.29 327 P **P** **22 50 42.5 -0.3**
KHC Kasperske Hory 79.32 350 *e*P **P** **22 50 42.6 -0.3**
KHC *e*pP **pP** **22 50 46.6 -3.9**
KHC *e*S **S** **23 00 40.1 -1.6**
KHC *e*SKS **SKKSac** **23 01 00.3 +1.4**
KHC AMS AMS 23 29 00.0
comp=Z,2µm,20.3s
KHC Kasperske Hory 79.32 350 *e*P **P** **22 50 42.6 -0.3**
KHC *e* 22 50 46.6
KHC *e*S **S** **23 00 40.1 -1.6**
KHC *e* 23 01 00.3
KHC MLR MLR
comp=Z,2µm,20.3s
KHC Kasperske Hory 79.32 350 *e*P **P** **22 50 42.9 -0.1**
comp=Z,3.9nm,0.9s
KHC LR LR
comp=Z,1µm,20.0s
BMR Baia Mare 79.33 343⇑*i*P **P** **22 50 43.2 +0.3**
WLF Walferdange 79.37 355 P **P** **22 50 43.3 +0.1**
LEOM Leova 79.54 340⇓*i*P **P** **22 50 44.1 0.0**
SIM Simferopol' 79.58 335*c e*P **P** **22 50 43.3 -1.0**
SIM 22 53 45.1
SIM S S 23 00 57.7 +13
SIM pmax pmax
comp=Z,14nm,0.7s
SIM pmax pmax
comp=Z,220nm,11.0s
GEC2 GERESS Array S 79.59 350 *e*P **P** **22 50 44.0 -0.5**
GEC2 GERESS Array S 79.59 350 *e*P **P** **22 50 44.0 -0.5**
comp=Z,6.9nm,0.9s
GEC2 LR LR
comp=Z,2µm,20.0s
GERES GERESS Array B 79.59 350 P **P** **22 50 43.9 -0.5**
comp=Z,4.6nm,0.7s,baz=24,slow=5.0,SNR=30
GERES PKKPbc **PKKPbc** **23 09 30.0 -0.2**
comp=Z,0.2nm,0.5s,baz=231,slow=4.3,SNR=3.8
GERES LR LR 23 29 37.1
comp=Z,1µm,18.6s,baz=17,slow=38
GEA0 GERESS Array S 79.60 350 *e*P **P** **22 50 43.4 -1.1**
PSZ Piszkesteto 79.69 346⇑*i*P **P** **22 50 45.2 +0.2**
PSZ Piszkesteto 79.69 346 *e*P **P** **22 50 45.7 +0.7**
PSZ pmax pmax
comp=Z,14nm,0.9s
PSZ MLR MLR
comp=Z,2µm,20.0s
PSZ Piszkesteto 79.69 346 *e*P **P** **22 50 45.7 +0.7**
comp=Z,14nm,0.9s
PSZ LR LR
comp=Z,2µm,20.0s
PSZ Piszkesteto 79.69 346⇑*e*P **P** **22 50 45.1 +0.1**
BBSR BB Station 79.73 50 PFAKE 22 51 00.0 +15
BBSR LR LR
comp=Z,1µm,18.0s
ARCR ARCALIA 79.74 343⇑*i*P **P** **22 50 46.3 +1.1**
NGP Nagpur 79.83 291 *e*P **P** **22 50 46.0 -0.1**
NGP IAmb IAmb 22 50 46.3
comp=Z,40nm,0.7s
TESR Tescani 79.84 341⇓*i*P **P** **22 50 45.6 -0.2**
VIS Vishakhapatnam 79.92 286 *e*P **P** **22 50 47.1 +0.6**
LANF Langenberg 79.96 354 *e*P **P** **22 50 45.2 -1.2**
AKH Akhalkalaki 80.00 328⇓*i*P **P** **22 50 47.8 +0.9**
STU Stuttgart 80.07 353 *e*P **P** **22 50 46.7 -0.3**
STU pmax pmax
comp=Z,15nm,0.8s
STU Stuttgart 80.07 353 *e*P **P** **22 50 46.6 -0.3**
comp=Z,15nm,0.8s
STU LR LR
comp=Z,900nm,20.0s
EIDS Eidsvold 80.09 206 *e*P **P** **22 50 47.7 +0.5**
comp=Z,12nm,1.0s
EIDS LR LR
comp=Z,2µm,22.0s
BGD Bogdanovka 80.09 328 P **P** **22 50 48.8 +1.3**
CJR Cluj-Napoca 80.24 343⇓*i*P **P** **22 50 48.7 +0.7**
CONA Conrad Observa 80.24 349 *e*P **P** **22 50 47.8 -0.2**
comp=Z,7.4nm,0.8s
BUD Budapest 80.25 346 P **P** **22 50 49.6 +1.7**
BUD Budapest 80.25 346⇑*e*P **P** **22 50 47.6 -0.3**
DRGR 80.32 344⇑*i*P **P** **22 50 48.5 +0.1**
FLN La Foliniere 80.46 360 *e*P **P** **22 50 47.4 -1.6**
FLN pmax pmax
comp=Z,41nm,1.0s
ODBI Odobesti 80.47 341⇑*i*P **P** **22 50 51.7 +2.6**
PLOR Plostina 80.47 341⇓*i*P **P** **22 50 49.4 +0.2**
CSKK Cs^‡kako 80.48 347⇓*e*P **P** **22 50 47.3 -1.9**
MOA Molln 80.51 350 *e*P **P** **22 50 48.8 -0.6**
comp=Z,4.0nm,0.7s
WLS Welschbruch 80.55 354 *e*P **P** **22 50 48.9 -0.7**
CDF Champ du Feu 80.56 354 *e*P **P** **22 50 48.8 -0.9**
CDF pmax pmax
comp=Z,13nm,1.0s
BFO Black Forest 80.57 354 *e*P **P** **22 50 49.3 -0.4**
BFO pmax pmax
comp=Z,9.0nm,0.9s
BFO Black Forest 80.57 354 *e*P **P** **22 50 49.3 -0.4**
comp=Z,8.6nm,0.9s
BFO LR LR
comp=Z,1µm,21.0s
DOPR Dopca 80.62 342⇓*i*P **P** **22 50 51.3 +1.3**
TLCR 80.64 339⇑*i*P **P** **22 50 50.3 +0.3**
GNI Garni 80.69 326*c i*P **P** **22 50 51.2 +0.5**
GNI pmax pmax
comp=Z,73nm,0.9s
GNI Garni 80.69 326 *e*P **P** **22 50 51.4 +0.8**
comp=Z,38nm,0.8s
GNI LR LR
comp=Z,5µm,19.0s
ARTV Artvin 80.72 329 *i*P **P** **22 50 50.9 0.0**
WB0 Warramunga Arr 80.75 222 PFAKE 22 51 00.0 +9.1
WB0 LR LR
comp=Z,1µm,21.0s
ECH Echery 80.76 355 *e*P **P** **22 50 49.7 -1.0**
CFR Carcaliu 80.80 340⇑*i*P **P** **22 50 51.3 +0.4**
THEF They Montfort 80.82 355 *e*P **P** **22 50 50.2 -0.8**
DAGI Agillar 80.82 329 *i*P **P** **22 50 51.6 +0.3**
GRR Gorron 80.83 360 *e*P **P** **22 50 49.5 -1.5**
GRR pmax pmax
comp=Z,23nm,0.8s
GRER 80.86 340⇓*i*P **P** **22 50 52.8 +1.6**
WRAB Tennant Creek 80.92 222*c i*P **P** **22 50 50.8 -0.9**
WRAB pmax pmax
comp=Z,67nm,0.9s
WRAB Tennant Creek 80.92 222 *e*P **P** **22 50 51.4 -0.4**
comp=Z,28nm,0.8s
WR2 Warramunga Arr 80.93 222 PFAKE 22 51 00.0 +8.2
WR2 LR LR
comp=Z,1µm,19.0s
WB2 Warramunga Arr 80.93 222 *e*P **P** **22 50 51.2 -0.6**
comp=Z,35nm,0.8s
WRA Warramunga Arr 80.93 222 P **P** **22 50 51.1 -0.7**
comp=Z,24nm,0.8s,baz=35,slow=6.1,SNR=87
WRA PKKPbc **PKKPbc** **23 09 28.8 +0.4**
comp=Z,0.9nm,0.7s,baz=233,slow=2.0,SNR=8.4
WRA LR LR 23 24 42.1
comp=Z,798nm,20.1s,baz=35,slow=34
WRA Warramunga Arr 80.93 222 P **P** **22 50 51.1 -0.7**
WRA pmax pmax
comp=Z,22nm,0.7s
WRA MLR MLR
comp=Z,798nm,20.1s
WRA Warramunga Arr 80.93 222 P **P** **22 50 51.1 -0.7**
WRA PKKPbc **PKKPbc** **23 09 28.8 +0.4**
ARSA Arzberg 80.95 349 *e*P **P** **22 50 51.7 0.0**
comp=Z,8.1nm,0.9s
MLR Muntele Rosu 80.96 341⇓*i*P **P** **22 50 53.1 +1.1**
MLR Muntele Rosu 80.96 341 *e*P **P** **22 50 51.4 -0.5**
MLR pmax pmax
comp=Z,29nm,0.6s
MLR Muntele Rosu 80.96 341 *e*P **P** **22 50 51.4 -0.5**
comp=Z,29nm,0.6s
MLR LR LR
comp=Z,4µm,19.0s
LHMI Lhok Sumawe 81.00 267 *e*P **P** **22 50 52.8 +0.4**
comp=Z,124nm,0.8s
SIRR Siria 81.01 344⇓*i*P **P** **22 50 53.3 +1.2**
HINF Hinteralfeld 81.18 355 *e*P **P** **22 50 50.3 -2.7**
HINF pmax pmax
comp=Z,43nm,2.0s

VOIR 81.19 342⇑ *i*P P 22 50 53.8 +0.7
ISR Istrita 81.20 341⇓ *i*P P 22 50 53.4 +0.3
QUIF Quistinic 81.29 2 *e*P P 22 50 52.1 -1.3
QUIF pmax pmax
comp=Z,93nm,1.8s
WATA Walderalm 81.30 351 *i* P P 22 50 53.1 -0.6
comp=Z,13nm,0.8s,SNR=10
HARR Harsova 81.31 340⇑ *i*P P 22 50 54.7 +1.1
MOTA Moosalm 81.33 352 *i* P P 22 50 53.2 -0.7
comp=Z,13nm,0.9s,SNR=10
ARR Arges 81.34 342⇓ *i*P P 22 50 55.0 +1.1
WTTA Wattenberg 81.36 351 *i* P P 22 50 54.0 -0.1
comp=Z,13nm,0.7s,SNR=6.6
KBA Koelnbreinsper 81.37 350 *i* P P 22 50 54.4 +0.2
comp=Z,29nm,0.7s,SNR=12
KBA Koelnbreinsper 81.37 350 P P 22 50 54.4 +0.2
TLB Topalu 81.38 339⇓ *i*P P 22 50 54.3 +0.3
MTUR Matau 81.39 342⇑ *i*P P 22 50 55.6 +1.4
TIRR Tirgusor 81.42 339⇑ *i*P P 22 50 54.6 +0.4
TIRR Tirgusor 81.42 339 *e*P P 22 50 54.0 -0.2
TIRR pmax pmax
comp=Z,34nm,0.8s
TIRR Tirgusor 81.42 339 *e*P P 22 50 54.0 -0.2
comp=Z,34nm,0.8s
TIRR LR LR
comp=Z,4μm,18.0s
LOT Lotru 81.43 343⇑ *i*P P 22 50 54.4 0.0
BEHE Becsehely 81.56 348⇑ *e*P P 22 50 54.4 -0.5
SOKA Soboth 81.58 349 *i* P P 22 50 54.8 -0.4
comp=Z,42nm,1.1s,SNR=17
PERS Pernice 81.61 349 *e*P P 22 50 54.7 -0.6
CVDA Cernavoda 81.62 339⇓ *i*P P 22 50 56.5 +1.2
PSI Prapat 81.63 264 *e*P P 22 50 55.7 -0.2
PSI pmax pmax
comp=Z,39nm,0.9s
PSI Prapat 81.63 264 *e*P P 22 50 55.7 -0.2
comp=Z,39nm,0.9s
KOGS Kog 81.65 348 *e*P P 22 50 54.7 -0.7
BZS Buzias 81.65 344⇑ *i*P P 22 50 55.4 0.0
SULR 81.68 341⇓ *i*P P 22 50 55.8 +0.3
FETA Feichten 81.69 352 *i* P P 22 50 55.6 -0.2
comp=Z,22nm,1.0s
EFOR EFORIE 81.73 339⇑ *i*P P 22 50 57.3 +1.5
MYKA Terra Mystica 81.78 350 *e*P P 22 50 55.6 -0.6
comp=Z,14nm,1.2s
ABTA Abfaltersbach 81.79 351 *i* P P 22 50 55.1 -1.1
comp=Z,11nm,0.9s
OBKA Obir 81.80 349 *i* P P 22 50 55.8 -0.5
comp=Z,14nm,0.8s
BANR Banloc 81.96 344⇓ *i*P P 22 50 58.0 +1.0
MANR Mangalia 81.99 339⇓ *i*P P 22 50 58.4 +1.2
FUORN Ofenpass-Fuorn 82.12 352 *e*P P 22 50 58.5 +0.2
comp=Z,12nm,0.7s
FUORN LR LR
comp=Z,1μm,20.0s
TUE Stuetta 82.34 353 *e*P P 22 50 59.0 -0.3
comp=Z,14nm,0.9s
TUE LR LR
comp=Z,1μm,21.0s
MDVR Moldovita 82.44 344⇓ *i*P P 22 50 59.8 +0.1
KELT Kelkit 82.52 330 *i* P P 22 51 01.0 +0.6
SENIN Lac Senin/Sane 82.60 354 *e*P P 22 51 00.6 -0.1
comp=Z,14nm,1.2s
SENIN *e*pP PcP 22 51 06.6 +0.9
SENIN LR LR
comp=Z,1μm,20.0s
TRI Trieste 82.68 350 PFAKE 22 51 10.0 +9.2
TRI LR LR
comp=Z,2μm,20.0s
BOJS Bojanci 82.70 349 *e*P P 22 51 01.1 +0.2
HYB Hyderabad 83.02 289⇑ *i*P P 22 51 03.0 -0.1
HYB Hyderabad 83.02 289 *e*P P 22 51 02.9 -0.1
AGO Saint Agoulin 83.11 357 *e*P P 22 51 02.8 -0.3
PLDF La Plantade 83.17 357 *e*P P 22 51 03.1 -0.4
CUZAR Zara_SIVAS 83.22 331 *i* P P 22 51 04.3 +0.4
FITZ Fitzroy Crossi 83.28 230 P P 22 51 04.2 +0.1
comp=Z,15nm,0.7s,baz=96,slow=3.5,SNR=19
FITZ LR LR 23 30 02.6
comp=Z,751nm,18.3s,baz=52,slow=37
FITZ Fitzroy Crossi 83.28 230 *e*P P 22 51 04.0 -0.1
comp=Z,37nm,1.2s
HAKT HAKKARI 83.37 326 *i* P P 22 51 04.2 -0.6
DIVS Divibare 83.40 345 P P 22 51 03.7 -1.0
PYM Petit Puy Mans 83.41 357 *e*P P 22 51 04.7 0.0
LPL La Plagne 83.48 355 *e*P P 22 51 07.4 +2.2
LPL pmax pmax
comp=Z,8.0nm,1.0s
LPG La Plagne 83.50 355 *e*P P 22 51 05.0 -0.4
LPG pmax pmax
comp=Z,15nm,0.9s
BHJ Bhuj 83.54 299 IAmb IAmb 22 50 19.4
comp=Z,45nm,1.0s
BHJ *e*P P 22 51 06.5 +0.9
KEMA Kemaliye 83.56 330 *i* P P 22 51 05.8 +0.2
GSI Gunungsitoli 83.64 264 *e*P P 22 51 05.9 -0.3
comp=Z,32nm,0.9s
COAL Corum-Alaca 83.70 333 *i* P P 22 51 06.9 +0.6
SSB Saint Sauveur 83.83 356 *e*P P 22 51 06.9 +0.1
SSB pmax pmax
comp=Z,57nm,1.9s
SSB Saint Sauveur 83.83 356 *e*P P 22 51 06.9 +0.1
comp=Z,57nm,1.9s
SSB LR LR
comp=Z,900nm,20.0s
LBL Lubilhac 83.92 357 *e*P P 22 51 07.5 +0.2
BNI Bardonecchia 83.94 355 PFAKE 22 51 20.0 +12
BNI LR LR
comp=Z,900nm,19.0s
CUALT Altinyayla-SIV 84.09 331 *i* P P 22 51 08.7 +0.3
MTDJ Mount Denham 84.11 68 *e*P P 22 51 09.0 +0.3
comp=Z,128nm,0.9s
MTDJ LR LR
comp=Z,1μm,20.0s
CUSAR Sarkisla-SIVAS 84.11 332 *i* P P 22 51 08.8 +0.4
ORIF Oris-en-Rattie 84.12 355 *e*P P 22 51 09.6 +1.2
ORIF pmax pmax
comp=Z,16nm,1.0s
GTBY Guantanamo Bay 84.17 65 *e*P P 22 51 08.6 -0.2
comp=Z,35nm,0.9s
GTBY LR LR
comp=Z,2μm,21.0s
VIVF Saint-Julien-l 84.24 356 *e*P P 22 51 08.7 -0.2
VIVF pmax pmax
comp=Z,5.0nm,0.8s
CAF Calviac 84.26 358 *e*P P 22 51 08.8 -0.2
CAF pmax pmax
comp=Z,16nm,1.1s
MBDF Montbardon 84.26 354 *e*P P 22 51 09.1 -0.1
MBDF pmax pmax
comp=Z,8.0nm,0.8s
EDRB Edirne 84.28 340 P P 22 51 08.2 -0.9
EDRB Edirne 84.28 340 P P 22 51 08.2 -0.9
RKT Rikitea 84.28 138 *e*S S 23 01 31.0 -2.1
comp=Z,1μm,34.5s
RKT *e*SS SS 23 07 01.7 -1.9
comp=Z,646nm,25.2s
RKT Rikitea 84.28 138 *e*LR LR 23 17 45.8
comp=Z,3μm,24.5s,baz=330
VTS Vitosha 84.29 342 P P 22 51 08.2 -1.2
VTS Vitosha 84.29 342⇑ *i*P P 22 51 09.5 +0.1
VTS Vitosha 84.29 342 *e*P P 22 51 08.7 -0.7
VTS pmax pmax
comp=Z,17nm,0.8s
VTS Vitosha 84.29 342 *e*P P 22 51 08.7 -0.7
comp=Z,17nm,0.8s
VTS LR LR
comp=Z,5μm,20.0s
AS01 Alice Springs 84.41 221 *e*P P 22 51 09.6 -0.2
AS31 Alice Springs 84.42 221 *e*P P 22 51 09.8 -0.1
comp=Z,5.2nm,0.8s
ASAR Alice Springs 84.43 221 P P 22 51 09.8 -0.1
comp=Z,15nm,0.7s,baz=26,slow=4.9,SNR=89
ASAR PKKPbc PKKPbc 23 09 20.6 +0.2
comp=Z,0.3nm,0.6s,baz=187,slow=2.2,SNR=5.6
ASAR LR LR 23 25 59.3
comp=Z,951nm,20.7s,baz=32,slow=34
ISK Istanbul-Kandi 84.49 338 P P 22 51 09.3 -0.9
ISK Istanbul-Kandi 84.49 338 P P 22 51 09.3 -0.9
ISK Istanbul-Kandi 84.49 338 P P 22 51 09.3 -0.9
VLC Villacollemand 84.56 352 PFAKE 22 51 20.0 +9.5
VLC LR LR
comp=Z,900nm,20.0s
BR131 Keskin Array S 84.57 334 *e*P P 22 51 10.8 0.0
BRTR Keskin Array B 84.57 334 P P 22 51 10.8 0.0
comp=Z,20nm,0.7s,baz=53,slow=2.7,SNR=115
BRTR PKKPbc PKKPbc 23 09 19.8 +0.8
comp=Z,0.8nm,0.7s,baz=180,slow=6.8,SNR=5.4
BRTR LR LR 23 35 06.2
comp=Z,926nm,18.7s,baz=26,slow=40
AKCD Akcadag 84.63 330 *i* P P 22 51 11.5 +0.3
BR231 Keskin MP Arra 84.70 335 *e*P P 22 51 10.2 -1.2
ARMA Armidale 84.75 204 PFAKE 22 51 20.0 +8.5
ARMA LR LR
comp=Z,1μm,20.0s
POO Poona 84.91 293 *e*P P 22 51 12.9 +0.2
LUCF Luceram 85.06 354 *e*P P 22 51 12.8 -0.3
MVIF Mont Vial 85.06 354 *e*P P 22 51 13.2 0.0
PDG Podgorica 85.14 345 P P 22 51 12.2 -1.2
PDG Podgorica 85.14 345⇑ *i*P P 22 51 13.7 +0.3
TTG Podgorica 85.14 345 P P 22 51 12.2 -1.2
TTG Podgorica 85.14 345 P P 22 51 12.2 -1.2
GRTK Grand Turk 85.16 62 PFAKE 22 51 30.0 +16
GRTK LR LR
comp=Z,2μm,18.0s
REVF Revere 85.21 354 *e*P P 22 51 12.4 -1.4
SKO Skopje 85.22 343 P P 22 51 13.4 -0.5
SKO Skopje 85.22 343 *i* P P 22 51 13.2 -0.6
SKO Skopje 85.22 343 P P 22 51 13.4 -0.5
SKO Skopje 85.22 343 P P 22 51 13.4 -0.5
ALN Alexandroupoli 85.34 340 P P 22 51 13.6 -0.8
ALN Alexandroupoli 85.34 340 P P 22 51 13.6 -0.8
ALN Alexandroupoli 85.34 340 P P 22 51 13.6 -0.8
NVR Nevrokopi 85.36 342 P P 22 51 13.2 -1.4
NVR Nevrokopi 85.36 342 P P 22 51 13.2 -1.4
MDRS Chennai 85.38 285 *e*P P 22 51 14.3 -0.7
ENEZ Enez 85.47 340 P P 22 51 14.1 -1.0
LEPF PUYLOUBIER 85.52 355 *e*P P 22 51 15.7 +0.4
KAVA Kavala 85.57 341 P P 22 51 14.8 -0.8
KAVA Kavala 85.57 341 P P 22 51 14.8 -0.8
SFNV Sufian 85.63 328 *i* P P 22 51 16.5 +0.4
SRS Serrai 85.64 342 P P 22 51 14.4 -1.6
SRS Serrai 85.64 342 P P 22 51 14.4 -1.6
SRS Serrai 85.64 342 P P 22 51 14.4 -1.6
VAY Valandovo 85.64 342 P P 22 51 15.3 -0.6
VAY Valandovo 85.64 342 *i* P P 22 51 15.4 -0.6
VAY Valandovo 85.64 342 P P 22 51 15.3 -0.6
VAY Valandovo 85.64 342 P P 22 51 15.3 -0.6
KNT Kendrikon 85.73 342 P P 22 51 15.4 -1.0
KNT Kendrikon 85.73 342 P P 22 51 15.4 -1.0
SMTH Samothraki Isl 85.86 340 P P 22 51 15.2 -1.9
SMTH Samothraki Isl 85.86 340 P P 22 51 15.2 -1.9
GRG Griva 86.02 342 P P 22 51 16.7 -1.2
GRG Griva 86.02 342 P P 22 51 16.7 -1.2
GRG Griva 86.02 342 P P 22 51 16.7 -1.2
AQU L'Aquila 86.03 349 *e*P P 22 51 18.2 +0.2
AQU pmax pmax
comp=Z,31nm,0.8s
AQU L'Aquila 86.03 349 *e*P P 22 51 18.2 +0.2
comp=Z,31nm,0.8s
AQU LR LR
comp=Z,2μm,21.0s
GADA Gvkgeada 86.05 340 P P 22 51 16.9 -1.1
GADA Gvkgeada 86.05 340 P P 22 51 16.9 -1.1
TIR Tirane 86.10 344⇓ *i*P P 22 51 18.5 +0.3
TIR Tirane 86.10 344 *e*P P 22 51 18.6 +0.3
TIR pmax pmax
comp=Z,26nm,1.0s
TIR Tirane 86.10 344 *e*P P 22 51 18.6 +0.4
comp=Z,26nm,1.0s
TIR LR LR
comp=Z,3μm,18.0s
KDHN Kadinhani 86.11 335 *i* P P 22 51 15.8 -2.7
OUZ Omahuta 86.14 184 PFAKE 22 51 30.0 +12
OUZ LR LR
comp=Z,2μm,20.0s
OHR Ohrid 86.17 344 *e*P P 22 51 17.3 -1.3
OUR Ouranopolis 86.31 341 P P 22 51 16.9 -2.4
OUR Ouranopolis 86.31 341 P P 22 51 16.9 -2.4
OUR Ouranopolis 86.31 341 P P 22 51 16.9 -2.4
FNA Florina 86.38 343 P P 22 51 18.3 -1.4
FNA Florina 86.38 343 P P 22 51 18.3 -1.4
FNA Florina 86.38 343 P P 22 51 18.3 -1.4
PLG Polygyros 86.38 342 P P 22 51 17.9 -1.8
PLG Polygyros 86.38 342 P P 22 51 17.9 -1.8
PLG Polygyros 86.38 342 P P 22 51 17.9 -1.8
LIA Limnos Island 86.48 340 P P 22 51 18.9 -1.2
LIA Limnos Island 86.48 340 P P 22 51 18.9 -1.2
PAIG Paliouri 86.77 341 P P 22 51 19.4 -2.1
PAIG Paliouri 86.77 341 P P 22 51 19.4 -2.1
PAIG Paliouri 86.77 341 P P 22 51 19.4 -2.1
KZN Kozani 86.77 343 P P 22 51 19.7 -2.0
KZN Kozani 86.77 343 P P 22 51 19.7 -2.0
KZN Kozani 86.77 343 P P 22 51 19.7 -2.0
NEST Nestorio 86.80 343 P P 22 51 18.9 -2.9
LIT Litokhoron 86.83 342 P P 22 51 19.8 -2.1
LIT Litokhoron 86.83 342 P P 22 51 19.8 -2.1
LIT Litokhoron 86.83 342 P P 22 51 19.8 -2.1
PRK Paraskevi 86.87 339 P P 22 51 20.0 -2.0
PRK Paraskevi 86.87 339 P P 22 51 20.0 -2.0
PRK Paraskevi 86.87 339 P P 22 51 20.0 -2.0
SIGR SIGRI 87.00 339 P P 22 51 21.3 -1.3
SIGR SIGRI 87.00 339 P P 22 51 21.3 -1.3
KULA Kula-Manisa 87.01 337 P P 22 51 21.0 -1.8
KULA Kula-Manisa 87.01 337 P P 22 51 21.0 -1.8
PGAV Gavieira, Arco 87.04 5 *e*LR LR 23 20 46.3
comp=Z,1μm,18.0s
SDDR Presa de Saban 87.09 63 *e*P P 22 51 23.9 +0.4
comp=Z,36nm,0.8s
SDDR LR LR
comp=Z,900nm,18.0s
KPRO Kipourio 87.19 343 P P 22 51 21.7 -2.0
ISP Isparta 87.19 336 P P 22 51 22.0 -1.8
ISP Isparta 87.19 336 *e*P P 22 51 22.5 -1.3
ISP pmax pmax
comp=Z,19nm,0.8s
ISP Isparta 87.19 336 P P 22 51 22.0 -1.8
ISP LR LR
comp=Z,1μm,19.0s
PBRG Braganca 87.28 4 *e*P P 22 51 22.2 -1.9
comp=Z,26nm,1.7s
ROSA Rosais 87.35 21 PFAKE 22 51 40.0 +16
ROSA LR LR
comp=Z,1μm,19.0s
XOR Xorichti 87.41 342 P P 22 51 22.7 -2.0
XOR Xorichti 87.41 342 P P 22 51 22.7 -2.0
THL Klokotos Trika 87.44 342 P P 22 51 21.7 -3.1
AOS Alonnisos 87.46 341 P P 22 51 22.6 -2.3
AOS Alonnisos 87.46 341 P P 22 51 22.6 -2.3
NEO Neokhori 87.46 341 P P 22 51 22.6 -2.3
NEO Neokhori 87.46 341 P P 22 51 22.6 -2.3
JAN Janina 87.57 343 P P 22 51 24.6 -0.9
JAN Janina 87.57 343 P P 22 51 24.6 -0.9
JAN Janina 87.57 343 P P 22 51 24.6 -0.9
POLO Lamas de Olo 87.65 5 *e*P P 22 51 24.5 -1.4
comp=Z,23nm,1.9s
KEK Kerkira 87.70 344 P P 22 51 24.6 -1.5
KEK Kerkira 87.70 344 P P 22 51 24.6 -1.5
SGD Sagiada 87.72 344 P P 22 51 24.6 -1.5
PVRL Vila Real 87.75 5 *e*P P 22 51 25.8 -0.6
comp=Z,58nm,1.7s
IGT Igoumenitsa 87.78 344 P P 22 51 24.6 -1.9
IGT Igoumenitsa 87.78 344 P P 22 51 24.6 -1.9
IGT Igoumenitsa 87.78 344 P P 22 51 24.6 -1.9
MVO Moncorvo 87.90 5 *e*P P 22 51 26.4 -0.7
comp=Z,26nm,1.0s
MVO Moncorvo 87.90 5 *e*SKS S 23 02 11.7 +3.1
MVO *e*SS SS 23 08 18.4 +24
MVO Moncorvo 87.90 5 *e*LR LR 23 21 17.7
comp=Z,1μm,22.0s
AGG Agios Georgios 87.91 342 *e*P P 22 51 26.2 -0.9
AGG pmax pmax
comp=Z,19nm,0.8s
AGG Agios Georgios 87.91 342 *e*P P 22 51 26.2 -0.9
comp=Z,19nm,0.8s
AGG LR LR
comp=Z,5μm,19.0s
DSL Palaion Diasel 88.03 343 P P 22 51 26.0 -1.7
DSL Palaion Diasel 88.03 343 P P 22 51 26.0 -1.7
CUC Castrocucco 88.05 347 *e*P P 22 51 26.2 -1.6
comp=Z,9.8nm,0.9s
CUC LR LR
comp=Z,1μm,18.0s
ATAL Atalanti 88.09 341 P P 22 51 25.5 -2.4
ATAL Atalanti 88.09 341 P P 22 51 25.5 -2.4
EVR Evrytania 88.11 342 P P 22 51 26.3 -1.9
EVR Evrytania 88.11 342 P P 22 51 26.3 -1.9
LKR Lokris 88.14 341 P P 22 51 25.2 -2.9
LKR Lokris 88.14 341 P P 22 51 25.2 -2.9
EREA Eretria 88.17 341 P P 22 51 25.5 -2.8
PVIS Viseu 88.30 5 *e*P P 22 51 27.8 -1.2
MXZ Matakaoa Point 88.35 181 PFAKE 22 51 40.0 +11
MXZ LR LR
comp=Z,4μm,22.0s
ANX Ano Chora 88.40 342 P P 22 51 27.0 -2.5
YER Yerkesik 88.41 337 P P 22 51 29.0 -0.6
YER Yerkesik 88.41 337 P P 22 51 29.0 -0.6
YER pmax pmax
comp=Z,41nm,0.8s
YER MLR MLR
comp=Z,3μm,21.0s
YER Yerkesik 88.41 337 P P 22 51 29.0 -0.6
comp=Z,41nm,0.8s
YER LR LR
comp=Z,3μm,21.0s
LKD2 Lefkada island 88.45 343 P P 22 51 28.6 -1.1
LKD2 Lefkada island 88.45 343 P P 22 51 28.6 -1.1
PVO Paravola 88.45 343 P P 22 51 28.4 -1.2
DSF Desfina 88.46 342 P P 22 51 26.6 -3.2
DSF Desfina 88.46 342 P P 22 51 26.6 -3.2
SERG Sergoula 88.55 342 P P 22 51 28.0 -2.2
MTE Manteigas 88.64 5 *e*P P 22 51 30.8 +0.2
comp=Z,37nm,0.8s
MTE Manteigas 88.64 5 *e*LR LR 23 21 41.7
comp=Z,1μm,18.0s
MTE Manteigas 88.64 5 *e*P P 22 51 31.0 +0.4
comp=Z,23nm,0.9s
MTE LR LR
comp=Z,2μm,21.0s
TIP Timpagrande 88.71 346 P P 22 51 29.8 -1.2
TIP Timpagrande 88.71 346 *e*P P 22 51 30.2 -0.7
comp=Z,14nm,0.8s
TIP LR LR
comp=Z,1μm,21.0s
LAKA Lakka 88.73 342 P P 22 51 27.4 -3.6
LAKA Lakka 88.73 342 P P 22 51 27.4 -3.6
LTK Loutraki 88.75 341 P P 22 51 27.9 -3.2
LTK Loutraki 88.75 341 P P 22 51 27.9 -3.2
CMLA Cha da Macela 88.86 19 PFAKE 22 51 40.0 +8.4
CMLA LR LR
comp=Z,1μm,20.0s
KLV Kalavryta, Ach 88.89 342 P P 22 51 29.4 -2.4
KLV Kalavryta, Ach 88.89 342 P P 22 51 29.4 -2.4
PCAS Casmilo, Conde 88.93 6 *e*P P 22 51 31.4 -0.5
comp=Z,35nm,1.1s
PCAS Casmilo, Conde 88.93 6 *e*SKS S 23 02 13.8 -4.4
PCAS *e*SS SS 23 08 33.0 +24
GUR Goura 88.96 342 P P 22 51 29.2 -3.0
GUR Goura 88.96 342 P P 22 51 29.2 -3.0
RLS Riolos of Patr 89.01 342 P P 22 51 31.6 -0.6
RLS Riolos of Patr 89.01 342 P P 22 51 31.6 -0.6
KSL Kastellorizon 89.01 336 P P 22 51 30.5 -1.8
KSL Kastellorizon 89.01 336 P P 22 51 30.5 -1.8
STKA Stephens Creek 89.03 211 P P 22 51 32.5 +0.4
comp=Z,14nm,1.0s,baz=358,slow=5.9,SNR=13
STKA LR LR 23 30 27.3
comp=Z,2μm,18.9s,baz=21,slow=35
STKA Stephens Creek 89.03 211 *e*P P 22 51 33.0 +0.9
comp=Z,7.7nm,1.3s
VLS Valsamata 89.06 343 P P 22 51 30.7 -1.8
VLS Valsamata 89.06 343 P P 22 51 30.7 -1.8
VLS Valsamata 89.06 343 P P 22 51 30.7 -1.8
URZ Urewera 89.06 182 LR LR 23 25 20.7
comp=Z,2μm,21.1s,baz=26,slow=31
CSS Mathiatis 89.10 332 P P 22 51 30.7 -2.1
CSS Mathiatis 89.10 332 P P 22 51 30.7 -2.1
UOSS Minazif 89.10 310 PFAKE 22 51 40.0 +7.1
UOSS LR LR
comp=Z,1μm,20.0s
DID Didima 89.19 341 P P 22 51 29.6 -3.6
DID Didima 89.19 341 P P 22 51 29.6 -3.6
PCBR Castelo Branco 89.20 5 *e*P P 22 51 32.4 -0.7
comp=Z,30nm,2.0s
HATD Hatta, Dubai 89.24 310 P P 22 51 32.4 -1.1
VSL Villasalto 89.27 352 PFAKE 22 51 40.0 +6.5
VSL LR LR
comp=Z,1μm,19.0s
NAZ Nazwa, Dubai 89.32 311 P P 22 51 32.5 -1.5
PTOM Tomar 89.36 6 *e*P P 22 51 33.3 -0.6
comp=Z,32nm,0.9s
HIZ Hauiti 89.37 183 PFAKE 22 51 50.0 +16
HIZ LR LR
comp=Z,2μm,21.0s
ES19 SONSECA Array 89.48 2 *e*P P 22 51 33.5 -1.1
ESDC Sonseca Array 89.51 2 P P 22 51 33.3 -1.4
comp=Z,4.8nm,0.8s,baz=354,slow=4.3,SNR=20
ESDC LR LR 23 33 21.4
comp=Z,730nm,19.2s,baz=345,slow=37
ESLA Sonseca Array 89.51 2 PFAKE 22 51 50.0 +15
ESLA LR LR
comp=Z,1μm,21.0s
FAQ Al Faqa, Dubai 89.56 311 *i* P P 22 51 35.0 -0.1
SNR=8.1
PAB San Pablo 89.62 3 PFAKE 22 51 50.0 +15
PAB LR LR
comp=Z,1μm,20.0s
TOTH TOTAH 89.64 329 *i* P P 22 51 34.4 -1.0
CEL Celeste 89.74 347 *e*P P 22 51 34.2 -1.5
comp=Z,28nm,0.8s
BRBR Barbar 89.74 330 *i* P P 22 51 35.5 -0.6
ZALF Zalf 89.75 329 *i* P P 22 51 35.1 -0.7
SANT Santorini 89.80 339 PFAKE 22 51 50.0 +14
SANT LR LR
comp=Z,2μm,18.0s
AGP Aguadilla 89.86 60 *e*P P 22 51 35.3 -1.3
comp=Z,231nm,1.1s
PMTG Montargil 89.92 6 *e*P P 22 51 36.1 -0.4
comp=Z,21nm,1.3s
PMAFR Mafra 89.97 6 *e*P P 22 51 34.9 -1.9
comp=Z,92nm,1.2s
PMAFR Mafra 89.97 6 *e*SKS S 23 02 27.4 -0.5
PMAFR *e*SS SS 23 08 55.9 +32
BKZ Black Stump Fm 89.97 182 *e*P P 22 51 34.7 -1.7
comp=Z,53nm,1.7s
BKZ LR LR
comp=Z,3μm,21.0s
MPR Mayaguez 90.02 60 PFAKE 22 51 50.0 +13
MPR LR LR
comp=Z,1μm,22.0s
CAN Canberra 90.08 204 PFAKE 22 51 50.0 +13
CAN LR LR
comp=Z,1μm,21.0s
SALA Sala 90.14 329 *i* P P 22 51 37.9 0.0
PESTR Estremoz 90.16 5 *e*P P 22 51 37.0 -0.7
comp=Z,20nm,1.3s
PESTR Estremoz 90.16 5 *e*SKS S 23 02 32.5 +2.8
PESTR *e*SS SS 23 08 55.7 +29
KARP Karpathos 90.19 337 PFAKE 22 51 50.0 +12
KARP LR LR
comp=Z,500nm,20.0s
LIS Lisbon 90.21 6 *e*P P 22 51 38.2 +0.4
LIS AMS AMS 23 29 31.0
comp=N,2μm,26.5s
TCHB Talchebab 90.42 330 *i* P P 22 51 39.0 0.0
EVO Evora 90.47 6 *e*P P 22 51 37.9 -1.2
comp=N,20nm,1.9s
SJG San Juan 90.64 60 *e*P P 22 51 41.3 +1.2
SJG pmax pmax
comp=Z,47nm,1.0s
SJG San Juan 90.64 60 *e*P P 22 51 39.6 -0.5
SJG San Juan 90.64 60 *e*P P 22 51 40.2 0.0
comp=Z,47nm,0.9s
SJG LR LR
comp=Z,1μm,18.0s
CBYP Canovanas 90.67 59 PFAKE 22 51 50.0 +10
CBYP LR LR
comp=Z,2μm,22.0s
HUMP Col San Antoni 90.78 59 *e*P P 22 51 40.8 0.0
comp=Z,65nm,1.0s
HUMP LR LR
comp=Z,2μm,20.0s
PBAR Barrancos 90.88 5 *e*P P 22 51 41.1 +0.1
comp=Z,46nm,0.9s
LAST Lasithi 90.96 339 *e*P P 22 51 40.0 -1.5
comp=Z,34nm,0.8s
LAST LR LR
comp=Z,2μm,19.0s
PBEJ Beja 90.98 5 *e*P P 22 51 40.4 -1.1
comp=Z,27nm,1.3s
ABVI Anegada Island 91.11 58 PFAKE 22 51 50.0 +7.7
ABVI LR LR
comp=Z,2μm,22.0s

MESJ	**Messejana**	**91.15**	**6**	*e*P	**P**	**22 51 42.3**	**+0.1**	
MESJ				*e*S	**SKSac**	**23 02 13.5**	**+0.7**	
MESJ				*e*SS	**SS**	**23 08 45.5**	**+4.4**	
MESJ				AMS	AMS	23 30 21.8		
	comp=Z,1μm,26.6s							
PCVE	**Castro Verde**	**91.36**	**6**	*e*P	**P**	**22 51 43.1**	**-0.2**	
	comp=Z,13nm,1.0s							
BFZ	**Birch Farm**	**91.50**	**182**	PFAKE		22 52 00.0	+17	
BFZ				LR	LR			
	comp=Z,2μm,20.0s							
PVAQ	**Vaqueiros**	**91.61**	**5**	*e*P	**P**	**22 51 44.8**	**+0.4**	
	comp=Z,24nm,1.9s							
PVAQ	**Vaqueiros**	**91.61**	**5**	*e*SKS	**SKSac**	**23 02 24.9**	**+9.4**	
PVAQ				*e*SS	SS	23 09 15.0	+27	
PVAQ	**Vaqueiros**	**91.61**	**5**	*e*LR	LR	23 22 26.7		
	comp=Z,1μm,18.0s							
MORF	**Marmelete**	**91.65**	**6**	*e*P	**P**	**22 51 44.7**	**0.0**	
MORF				AMS	AMS	23 30 40.3		
	comp=Z,2μm,19.1s							
CDVI	**St. Croix**	**91.68**	**59**	*e*P	**P**	**22 51 45.1**	**+0.2**	
	comp=Z,193nm,0.9s							
BBOO	**Buckleboo**	**91.78**	**215**	PFAKE		22 52 00.0	+15	
BBOO				LR	LR			
	comp=Z,2μm,20.0s							
PFVI	**Vila Bisbo**	**91.81**	**6**	PFAKE		22 52 00.0	+15	
PFVI				LR	LR			
	comp=Z,2μm,22.0s							
SJCC	**San Jacinto, C**	**92.06**	**72**	*e*P	**P**	**22 51 47.1**	**+0.3**	
SNZO	**South Karori**	**92.17**	**183**	PFAKE		22 52 00.0	+14	
SNZO				LR	LR			
	comp=Z,2μm,20.0s							
SMRT	**St. Maarten**	**92.34**	**57**	*e*P	**P**	**22 51 47.8**	**-0.3**	
	comp=Z,50nm,0.8s							
SMRT				LR	LR			
	comp=Z,2μm,21.0s							
URIC	**Uribia, Colomb**	**92.51**	**68**	*e*P	**P**	**22 51 47.7**	**-1.2**	
SABA	**Saba**	**92.61**	**58**	PFAKE		22 52 00.0	+11	
SABA				LR	LR			
	comp=Z,2μm,21.0s							
SEUS	**St. Eustatius**	**92.85**	**58**	PFAKE		22 52 00.0	+10	
SEUS				LR	LR			
	comp=Z,2μm,22.0s							
KEST	**Kesra**	**93.01**	**352**	P	**P**	**22 51 50.5**	**-0.5**	
	comp=Z,9.5nm,0.8s,baz=314,slow=5.4,SNR=11							
KEST				LR	LR	23 38 35.7		
	comp=Z,461nm,18.5s,baz=339,slow=39							
KEST	**Kesra**	**93.01**	**352**	*e*P	**P**	**22 51 50.5**	**-0.5**	
	comp=Z,13nm,0.9s							
FORT	**Forrest**	**93.12**	**222**	*e*P	**P**	**22 51 52.0**	**+0.8**	
	comp=Z,307nm,1.0s							
ANWB	**Willy Bob**	**93.34**	**57**	PFAKE		22 52 00.0	+7.4	
ANWB				LR	LR			
	comp=Z,2μm,19.0s							
OXZ	**Oxford**	**94.30**	**185**	PFAKE		22 52 10.0	+14	
OXZ				LR	LR			
	comp=Z,2μm,21.0s							
GDHS	**Morne Mazeau,**	**94.50**	**57**	PFAKE		22 52 10.0	+12	
GDHS				LR	LR			
	comp=Z,2μm,22.0s							
FOZ	**Fox Glacier**	**94.65**	**187**	PFAKE		22 52 10.0	+12	
FOZ				LR	LR			
	comp=Z,2μm,19.0s							
RPZ	**Rata Peaks**	**94.75**	**186**	P	P	22 52 04.5	+6.1	
	comp=Z,5.2nm,0.8s,baz=11,slow=15,SNR=3.7							
RPZ	**Rata Peaks**	**94.75**	**186**	P	P	22 52 04.5	+6.1	
RPZ				LR	LR			
	comp=Z,3μm,20.0s							
HELC	**Santa Helena**	**94.77**	**74**	PFAKE		22 52 10.0	+10	
HELC				LR	LR			
	comp=Z,2μm,20.0s							
RTC	**Rabat Centre**	**95.06**	**5**	PFAKE		22 52 10.0	+10	
RTC				LR	LR			
	comp=Z,4μm,21.0s							
PMOZ	**Porto Moniz, M**	**95.16**	**14**	*e*LR	LR	23 29 27.3		
	comp=Z,844nm,18.0s							
GRMC	**Gramalote, San**	**95.20**	**71**	*e*P	**P**	**22 52 01.2**	**-0.3**	
LBZ	**Lake Benmore**	**95.47**	**186**	PFAKE		22 52 10.0	+8.4	
LBZ				LR	LR			
	comp=Z,3μm,21.0s							
SDV	**Santo Domingo**	**95.55**	**69**	*e*P	**P**	**22 52 03.4**	**+0.2**	
	comp=Z,21nm,0.8s							
SDV				LR	LR			
	comp=Z,1μm,20.0s							
PAMC	**Pamplona, Colo**	**95.56**	**71**	*e*P	**P**	**22 52 03.3**	**-0.2**	
BARC	**Barichara**	**95.87**	**72**	*e*P	**P**	**22 52 05.5**	**+0.9**	
WKZ	**Wanaka**	**96.00**	**187**	PFAKE		22 52 20.0	+16	
WKZ				LR	LR			
	comp=Z,2μm,21.0s							
ODZ	**Otahua Downs**	**96.10**	**186**	PFAKE		22 52 20.0	+16	
ODZ				LR	LR			
	comp=Z,2μm,18.0s							
FDF	**Fort de France**	**96.11**	**58**	PFAKE		22 52 20.0	+15	
FDF				LR	LR			
	comp=Z,2μm,22.0s							
RUSC	**La Rusia**	**96.48**	**72**	*e*P	**P**	**22 52 07.7**	**-0.1**	
RUSC	**La Rusia**	**96.48**	**72**	*e*P	**P**	**22 52 07.6**	**-0.1**	
	comp=Z,5.0nm,0.9s							
PRAC	**Prado**	**97.11**	**75**	PFAKE		22 52 20.0	+10	
PRAC				LR	LR			
	comp=Z,500nm,19.0s							
SVB	**Belmont**	**97.27**	**59**	PFAKE		22 52 20.0	+9.3	
SVB				LR	LR			
	comp=Z,1μm,19.0s							
OTAV	**Otavalo**	**97.64**	**80**	PFAKE		22 52 20.0	+7.0	
OTAV				LR	LR			
	comp=Z,500nm,20.0s							
TAU	**Tasmania Unive**	**97.67**	**203**	PFAKE		22 52 20.0	+8.3	
TAU				LR	LR			
	comp=Z,1μm,20.0s							
GRGR	**Grenville**	**97.99**	**59**	PFAKE		22 52 30.0	+16	
GRGR				LR	LR			
	comp=Z,2μm,22.0s							
DAMY	**Dhamar**	**103.56**	**315**	PFAKE		22 52 50.0	+11	
DAMY				LR	LR			
	comp=Z,2μm,18.0s							
TOA0	**Torodi Ar. Sit**	**115.93**	**357**	*e*PKPdf	**PKPdf**	**22 57 19.3**	**-1.2**	
TOA0				*e*PKPdf	**PKiKP**	**22 57 19.6**	**-0.9**	
TORD	**Torodi Ar. Bea**	**115.93**	**357**	PKP	**PKPdf**	**22 57 18.8**	**-1.7**	
	comp=Z,2.0nm,0.6s,baz=353,slow=2.2,SNR=41							
TORD				PKKPbc	**PKKPbc**	**23 07 48.8**	**-0.7**	
	comp=Z,1.8nm,0.8s,baz=182,slow=2.0,SNR=5.7							
LPAZ	**La Paz**	**116.81**	**83**	PKP	**PKPdf**	**22 57 21.3**	**-1.4**	
	comp=Z,1.4nm,0.8s,baz=29,slow=12,SNR=6.4							
LPAZ	**La Paz**	**116.81**	**83**	*e*PKPdf	**PKPdf**	**22 57 22.2**	**-0.5**	
KMBO	**Kilima Mbogo**	**120.66**	**314**	PKP	**PKPdf**	**22 57 30.7**	**+0.8**	
	comp=Z,6.0nm,0.8s,baz=52,slow=3.7,SNR=15							
DBIC	**Dimbokro**	**122.31**	**5**	PKP	**PKPdf**	**22 57 31.9**	**-0.8**	
	comp=Z,5.3nm,0.5s,baz=347,slow=2.6,SNR=21							
TIC	**Toumodi**	**122.32**	**5**	*e*PKIKP	**PKPdf**	**22 57 31.7**	**-1.1**	
KIC	**Kosan Boka**	**122.62**	**4**	*e*PKIKP	**PKPdf**	**22 57 32.2**	**-1.2**	
	comp=Z,61nm,1.5s							
LIC	**Lamto**	**122.74**	**5**	*e*PKIKP	**PKPdf**	**22 57 32.4**	**-1.2**	
	comp=Z,12nm,0.4s							
ROC1	**El Roble**	**126.96**	**99**	*e*PKPdf	**PKPdf**	**22 57 41.2**	**-0.2**	
BDFB	**Brasilia**	**128.42**	**64**	PKP	**PKPdf**	**22 57 45.2**	**+0.8**	
	comp=Z,9.5nm,0.9s,baz=78,slow=0.0							
BDFB	**Brasilia**	**128.42**	**64**	*e*PKPdf	**PKPdf**	**22 57 45.0**	**+0.6**	
VNDA	**Vanda**	**128.85**	**185**	PKP	**PKPdf**	**22 57 43.7**	**+0.4**	
	comp=Z,2.8nm,0.9s,baz=311,slow=4.1,SNR=14							
VNDA	**Vanda**	**128.85**	**185**	*e*PKPdf	**PKPdf**	**22 57 44.1**	**+0.8**	
SBA	**Scott Base**	**128.97**	**183**	*e*PKIKP	**PKPdf**	**22 57 44.2**	**+0.7**	
SBA	**Scott Base**	**128.97**	**183**	*e*PKPdf	**PKPdf**	**22 57 44.1**	**+0.7**	
CPUP	**Villa Florida**	**130.96**	**82**	PKP	**PKPdf**	**22 57 48.2**	**-0.6**	
	comp=Z,6.6nm,0.9s,baz=334,slow=3.0,SNR=8.8							
CPUP				SKPbc	**SKPbc**	**23 01 10.8**	**-0.7**	
	comp=Z,5.0nm,0.8s,baz=350,slow=2.8,SNR=3.5							
CPUP				SKPab	**SKPab**	**23 01 14.7**	**+2.9**	
	comp=Z,5.0nm,0.8s,baz=270,slow=17,SNR=8.1							
CPUP	**Villa Florida**	**130.96**	**82**	*e*PKPdf	**PKPdf**	**22 57 49.3**	**+0.5**	
CPUP				SKPbc	**SKPbc**	**23 01 10.8**	**-0.7**	
CPUP				SKPab	**SKPab**	**23 01 14.7**	**+2.9**	
PLCA	**Paso Flores**	**132.20**	**106**	PKP	**PKPdf**	**22 57 50.4**	**-0.4**	
	comp=Z,4.9nm,1.0s,baz=236,slow=1.7,SNR=5.6							
PLCA				SKPbc	**SKPab**	**23 01 17.8**	**+1.1**	
	comp=Z,3.5nm,0.9s,baz=314,slow=6.0,SNR=3.5							
PLCA	**Paso Flores**	**132.20**	**106**	PKIKP	**PKPdf**	**22 57 50.4**	**-0.4**	
PLCA				pmax	pmax			
	comp=Z,3.0nm,0.8s							
TRQA	**Tornquist**	**135.86**	**97**	*e*PKPdf	**PKPdf**	**22 57 57.9**	**+0.2**	
MATP	**Matopo**	**141.61**	**312**	PKhKP	PKPpre	22 58 02.5		
	comp=Z,7.0nm,0.9s,baz=31,slow=4.0,SNR=11							
SHEL	**Horse Pasture**	**144.68**	**8**	*e*PKIKP	PKPbc	22 58 13.5	+0.4	
SHEL	**Horse Pasture**	**144.68**	**8**	*e*PKPdf	PKPbc	22 58 13.5	+0.4	
TSUM	**Tsumeb**	**144.91**	**329**	PKP	**PKPdf**	**22 58 14.4**	**-0.4**	
	comp=Z,63nm,0.9s,baz=0.5,slow=5.6,SNR=71							
TSUM	**Tsumeb**	**144.91**	**329**	*e*PKPdf	**PKPab**	**22 58 13.6**	**-0.3**	
EFI	**East Falkland**	**145.16**	**114**	*e*PKIKP	**PKPbc**	**22 58 13.0**	**-0.6**	
EFI	**East Falkland**	**145.16**	**114**	*e*PKPbc	**PKPbc**	**22 58 13.0**	**-0.6**	
MAW	**Mawson**	**145.49**	**217**	PKPbc	**PKPdf**	**22 58 13.6**	**-0.4**	
	comp=Z,19nm,0.9s,baz=82,slow=4.4,SNR=31							
MAW	**Mawson**	**145.49**	**217**	*e*PKPdf	**PKPdf**	**22 58 13.7**	**-0.3**	
LBTB	**Lobatse**	**146.91**	**312**	PKPbc	**PKPdf**	**22 58 18.2**	**+0.3**	
	comp=Z,50nm,0.7s,baz=40,slow=1.7,SNR=72							
BOSA	**Boshof**	**150.10**	**309**	PKPbc	**PKPbc**	**22 58 28.1**	**0.0**	
	comp=Z,46nm,0.9s,baz=32,slow=2.1,SNR=79							
BOSA	**Boshof**	**150.10**	**309**	*e*PKPbc	**PKPbc**	**22 58 27.4**	**-0.8**	
SYO	**Syowa Base**	**153.78**	**212**	*e*X	**PKPdf**	**22 58 24.9**	**-2.2**	
SYO	**Syowa Base**	**153.78**	**212**	*e*PKPbc	**PKPbc**	**22 58 39.0**	**+4.0**	
SUR	**Sutherland**	**155.35**	**311**	PKPbc	PKPbc	22 58 40.4		
	comp=Z,0.5nm,0.8s,baz=140,slow=2.0,SNR=9.7							
SUR				PKPab	**PKPab**	**22 58 57.5**	**+1.3**	
	comp=Z,0.9nm,1.0s,baz=65,slow=7.8,SNR=8.5							
SNAA	**Sanae**	**159.40**	**178**	PKP	**PKPdf**	**22 58 32.8**	**-1.6**	
	comp=Z,3.6nm,0.9s,baz=190,slow=2.5,SNR=13							
SNAA				PKPab	**PKPab**	**22 59 09.1**	**-3.3**	
	comp=Z,3.1nm,0.8s,baz=212,slow=10,SNR=11							

*ISCJB **18** 22:39:03.3±0.8, 37°.57S±0°.08×55°.8W±0°.1, h10km, mb3.7/5, Error ellipse: s-maj=13.4km s-min=9.9km az=40.9*
*IDC **18** 22:39:03.7±0.9, 37°.49S×55°.51W, h0km, mb3.7/5, mb1 4.0/9, mb1mx3.8/30, mbtmp3.9/9, ML4.5/4, Error ellipse: s-maj=27.1km s-min=19.5km az=75.0*

ISC 18 22:39:05.2±0.8, 37°.44S±0°.08×55°.7W±0°.1, h10km, n17, σ1°51/13, mb3.7/5, South Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CPUP	**Villa Florida**	**11.16**	**352**	Pn	**Pn**	**22 41 46.1**	**+1.4**
	0.3nm,0.3s,baz=182,slow=11,SNR=5.8						
CPUP				Sn	**Sn**	**22 43 46.7**	**-2.9**
	0.8nm,0.3s,baz=201,slow=14,SNR=3.4						
PLCA	**Paso Flores**	**12.00**	**250**	Pn	**Pn**	**22 41 56.7**	**+0.4**
	0.4nm,0.3s,baz=46,slow=13,SNR=4.4						
PLCA				Sn	**Sn**	**22 44 08.7**	**-1.5**
	0.2nm,0.3s,baz=240,slow=13,SNR=3.7						
LVC	**Limon Verde**	**18.65**	**319**	P	**Pn**	**22 43 24.2**	**+0.3**
	4.7nm,0.3s,baz=149,slow=18,SNR=2.4						
USHA	**Ushuaia**	**19.45**	**203**	P	**P**	**22 43 31.2**	**-0.5**
	6.1nm,0.3s,baz=17,slow=14,SNR=1.9						
SIV	**San Ignacio**	**21.88**	**346**	P	**P**	**22 44 00.7**	**+2.3**
	1.8nm,0.8s,baz=129,slow=6.5,SNR=2.4						
LPAZ	**La Paz**	**23.76**	**329**	P	**P**	**22 44 19.0**	**+0.5**
	0.7nm,0.6s,baz=186,slow=9.2,SNR=3.0						
H10S3	**ASCENSION HYDR**	**46.63**	**63**	T	T	23 36 29.9	
	baz=225,slow=74,SNR=8.0						
H10S2	**ASCENSION HYDR**	**46.64**	**63**	T	T	23 36 30.9	
	baz=225,slow=74,SNR=5.5						
H10S1	**ASCENSION HYDR**	**46.65**	**63**	T	T	23 36 32.3	
	baz=225,slow=74,SNR=7.0						
H10N3	**ASCENSION HYDR**	**47.51**	**62**	T	T	23 37 41.0	
	baz=224						
H10N1	**ASCENSION HYDR**	**47.53**	**62**	T	T	23 37 40.3	
	baz=224,slow=74						
H10N2	**ASCENSION HYDR**	**47.53**	**62**	T	T	23 37 42.9	
	baz=224,slow=74						
VNDA	**Vanda**	**63.03**	**189**	P	**P**	**22 49 33.2**	**+1.4**
	0.6nm,0.8s,baz=149,slow=7.7,SNR=4.0						
BOSA	**Boshof**	**66.53**	**109**	P	**P**	**22 49 54.2**	**-1.4**
	1.6nm,0.6s,baz=250,slow=7.4,SNR=7.0						
TORD	**Torodi Ar. Bea**	**73.68**	**59**	P	**P**	**22 50 38.8**	**-0.6**
	0.4nm,0.5s,baz=213,slow=6.4,SNR=5.5						
WRA	**Warramunga Arr**	**122.15**	**191**	PKP	**PKPdf**	**22 58 00.5**	**-0.2**
	0.6nm,0.7s,baz=187,slow=1.4,SNR=4.0						
WRA	**Warramunga Arr**	**122.15**	**191**	PKP	**PKPdf**	**22 58 00.5**	**-0.2**

NEIC 18 22:41:46.0, 51°.05N×179°.13E, h10km, ML4.0(AEIC), After AEIC., Rat Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GALAA	**Gareloi Lava P**	**1.50**	**61**	P	Pn	22 42 11.9	-1.0
GAEA	**Gareloi East**	**1.52**	**60**	P	Pn	22 42 12.1	-1.1
GANE	**Gareloi Northe**	**1.52**	**59**	P	Pn	22 42 12.4	-0.8
GANE				S	Sn	22 42 31.5	-1.5
TANO	**Tanaga North**	**1.93**	**62**	P	Pn	22 42 18.0	-0.7
TASE	**Tanaga Southea**	**1.94**	**65**	P	Pn	22 42 19.1	+0.1
TAFP	**Tanaga Falls P**	**2.00**	**64**	P	Pn	22 42 19.5	-0.3
TAFP				S	Sb	22 42 46.4	-0.9
TAPA	**Tanaga Point A**	**2.06**	**67**	P	Pn	22 42 20.8	+0.1
KIKV	**Kanaga Island**	**2.46**	**69**	P	Pn	22 42 27.4	+1.2
KIRH	**Kanaga Island**	**2.51**	**69**	P	Pn	22 42 26.3	-0.5
ETKA	**Kagalaska Isla**	**2.91**	**72**	P	Pn	22 42 33.6	+1.3
SMY	**Shemya**	**3.54**	**300**	P	Pn	22 42 40.9	0.0
SMY				S	Sb	22 43 27.5	-4.0

*IDC **18** 22:42:03.6±1.9, 10°.40S×161°.98E, h0km, mb4.1/6, mb1 4.1/8, mb1mx3.9/39, mbtmp4.1/8, ML3.6/2, Error ellipse: s-maj=48.0km s-min=25.6km az=110.0*
*ISCJB **18** 22:42:08.2±1.1, 10°.6S±0°.1×162°.1E±0°.2, h54km, mb4.0/6, Error ellipse: s-maj=24.1km s-min=17.5km az=169.1*

ISC 18 22:42:10.2±1.2, 10°.6S±0°.1×162°.1E±0°.2, h54km, n8, σ0°57/8, mb4.2/6, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**12.17**	**160**	Pn	**Pn**	**22 45 00.9**	**0.0**
	0.2nm,0.3s,baz=13,slow=8.8,SNR=6.3						
CTA	**Charters Tower**	**17.92**	**236**	P	**Pn**	**22 46 14.8**	**-0.9**
	0.2nm,0.3s,baz=47,slow=19,SNR=2.0						
WRA	**Warramunga Arr**	**28.28**	**247**	P	**P**	**22 47 59.2**	**+0.5**
	0.7nm,0.5s,baz=76,slow=9.4,SNR=6.8						
ASAR	**Alice Springs**	**29.81**	**240**	P	**P**	**22 48 13.0**	**+0.6**
	0.3nm,0.4s,baz=62,slow=10,SNR=6.7						
FITZ	**Fitzroy Crossi**	**36.02**	**254**	P	**P**	**22 49 06.3**	**-0.2**
	2.2nm,0.7s,baz=92,slow=9.9,SNR=4.3						
USRK	**Ussuriysk Ar.**	**60.97**	**336**	P	**P**	**22 52 17.6**	**-0.2**
	3.5nm,0.8s,baz=149,slow=6.1,SNR=4.1						
SONM	**Songino Array**	**76.19**	**325**	P	**P**	**22 53 53.0**	**+0.2**
	2.1nm,0.6s,baz=131,slow=5.9,SNR=3.9						
MKAR	**Makanchi Array**	**90.72**	**317**	P	**P**	**22 55 07.1**	**-0.2**
	0.7nm,0.5s,baz=96,slow=5.9,SNR=3.4						

*IDC **18** 22:48:20.9±1.4, 51°.23N×179°.15E, h17km±7km, mb5.0/34, mb1 5.1/37, mb1mx4.9/48, mbtmp5.0/37, ML4.9/2, MS4.8/7, Ms1 4.8/7, ms1mx4.3/51, Error ellipse: s-maj=13.7km s-min=8.9km az=170.0*
*MOS **18** 22:48:22.3±1.1, 51°.23N×179°.09E, h33km, mb5.5/133, MS5.0/15, Error ellipse: s-maj=7.8km s-min=7.2km az=147.7*
*BJI **18** 22:48:24.7, 51°.38N×178°.84E, h57km, mb5.5/73, mB5.5/41, Ms5.5/49, Ms7 5.3/48*
*ISCJB **18** 22:48:24.2±0.4, 51°.22N±0°.03×179°.17E±0°.02, h57km±3km, mb5.2/394, MS5.1/27, Error ellipse: s-maj=4.6km s-min=1.9km az=1.9*
*NEIC **18** 22:48:25.5±0.3, 51°.27N×179°.05E, h51km±2km, mb5.3/299, ML5.4(AEIC), Error ellipse: s-maj=4.2km s-min=1.9km az=177.0*
*GCMT **18** 22:48:25.5±0.2, 51°.01N×178°.97E, h29km, MW5.4/114, Moment Tensor Solution. s40,c47; s114,c199; Duration: 1⁄3 Moment tensor: Scale 10^17 Nm; Mrr 1.37±.07; Mθθ -1.28±.04; Mφφ -0.09±.03; Mrθ 0.98±.04; Mθφ -0.30±.02; Mφr 0.43±.04; Best double couple: M0 1.73300×10^17 NP1:φs70.00000°, δ64.00000°, λ85.00000°. NP2:φs263.00000°, δ26.00000°, λ101.00000°. Principal axes: T 1.7510, Plg70.0000°, Azm329.0000°; N -0.0360, Plg5.0000°, Azm73.0000°; P -1.7160, Plg19.0000°, Azm164.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 18 22:48:24.2±0.3, 51°.22N±0°.05×179°.03E±0°.03, h40km±3km, h40km:pP-P, n1351, σ1924/1457, mb5.3/410, MS5.2/27, 53C-12D, Rat Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GALAA	**Gareloi Lava P**	**1.48**	**68**	*e*Pn	**Pn**	**22 48 47.9**	**-0.4**
GANE	**Gareloi Northe**	**1.50**	**66**	P	**Pn**	**22 48 48.8**	**+0.2**
GANE				S	**Sn**	**22 49 08.7**	**+1.8**
GAEA	**Gareloi East**	**1.50**	**67**	*e*Pn	**Pn**	**22 48 47.7**	**-0.9**
TANO	**Tanaga North**	**1.91**	**68**	*e*Pn	**Pn**	**22 48 54.0**	**-0.2**
TAFP	**Tanaga Falls P**	**1.99**	**69**	*e*Pn	**Pn**	**22 48 54.8**	**-0.5**
TAFL	**Tanaga Flats**	**2.00**	**73**	*e*Pn	**Pn**	**22 48 54.8**	**-0.6**
KICM	**Kanaga Island**	**2.46**	**72**	*e*Pn	**Pn**	**22 49 01.7**	**0.0**
KIKV	**Kanaga Island**	**2.46**	**73**	*e*Pn	**Pn**	**22 49 01.7**	**-0.1**
KIRH	**Kanaga Island**	**2.52**	**73**	*e*Pn	**Pn**	**22 49 02.5**	**0.0**
ADAG	**Mount Adagdak**	**2.83**	**73**	*e*Pn	**Pn**	**22 49 07.2**	**+0.4**
ETKA	**Kagalaska Isla**	**2.92**	**76**	*e*Pn	**Pn**	**22 49 08.8**	**+0.6**
GSCK	**Great Sitkin C**	**3.10**	**73**	*e*Pn	**Pn**	**22 49 10.6**	**+0.1**
GSTD	**Great Sitkin T**	**3.12**	**73**	*e*Pn	**Pn**	**22 49 10.7**	**-0.2**
GSMY	**Great Sitkin M**	**3.17**	**73**	*e*Pn	**Pn**	**22 49 11.5**	**0.0**
GSTR	**Great Sitkin T**	**3.18**	**72**	*e*Pn	**Pn**	**22 49 12.3**	**+0.6**
GSTR				*e*Sn	**Sn**	**22 49 46.1**	**-2.3**
SMY	**Shemya**	**3.40**	**298**	*e*P	**Pn**	**22 49 16.3**	**+1.7**
SMY				*e*		22 50 01.9	
SMY	**Shemya**	**3.40**	**298**	*e*Pn	**Pn**	**22 49 16.3**	**+1.7**
SMY				*e*Sn	**Sn**	**22 50 01.9**	**+8.3**
KOKL	**Mount Kliuchef**	**4.35**	**73**	*e*Pn	**Pn**	**22 49 28.9**	**+1.2**
KOFP	**Korovin Flat P**	**4.40**	**73**	P	**Pn**	**22 49 29.2**	**+0.7**
NIKH	**Nikolski High**	**7.67**	**72**	*e*Pn	**Pn**	**22 50 13.8**	**+0.6**
NIKH				*e*Sn	**Sn**	**22 51 44.0**	**+5.3**
OKAK	**Okmok**	**8.07**	**68**	*e*Pn	**Pn**	**22 50 20.2**	**+1.5**
OKTU	**Okmok Mt. Tuli**	**8.22**	**70**	P	**Pn**	**22 50 22.7**	**+1.9**
SPIA	**Saint Paul Isl**	**8.66**	**42**	*e*Sn	**Sn**	**22 52 04.6**	**+1.6**
UNV	**Unalaska Valle**	**9.20**	**68**	*e*Pn	**Pn**	**22 50 35.4**	**+1.2**
AKUT	**Akutan**	**9.68**	**67**	*e*Pn	**Pn**	**22 50 43.9**	**+3.2**
PET	**Petropavlovsk**	**12.65**	**286**	*e*P	**Pn**	**22 51 23.9**	**+2.6**
PET				*e*S	**Sn**	**22 53 41.7**	**+1.1**
PET				pmax	pmax		
	comp=Z,87nm,1.1s						
PET				MLR	MLR		
	comp=Z,5μm,14.0s						
PET				MLR	MLR		
	comp=Z,5μm,14.0s						
PET	**Petropavlovsk**	**12.65**	**286**	*e*Pn	**Pn**	**22 51 24.1**	**+2.8**
SDPT	**Sand Point**	**12.93**	**63**	*e*Pn	**Pn**	**22 51 24.3**	**-0.8**
PEA0	**Petropavlovsk-**	**13.22**	**287**	*e*Pn	**Pn**	**22 51 31.1**	**+1.9**
PEA0B	**Petropavlovsk-**	**13.22**	**287**	*e*Pn	**Pn**	**22 51 32.4**	**+3.2**
PEA1	**Petropavlovsk-**	**13.22**	**287**	*e*Pn	**Pn**	**22 51 30.4**	**+1.2**
PEA1				*e*Sn	**Sn**	**22 53 47.0**	**-7.6**
PETK	**Petropavlovsk-**	**13.22**	**287**	Pn	**Pn**	**22 51 30.4**	**+1.2**
	comp=Z,1.0nm,0.3s,baz=91,slow=13,SNR=17						
PETK				Sn	**Sn**	**22 53 47.0**	**-7.6**
	comp=Z,0.3nm,0.3s,baz=107,slow=18,SNR=2.6						
PETK				LR	LR	22 56 42.2	
	comp=Z,3μm,20.2s,baz=95,slow=38						
GAMB	**Gambell**	**13.52**	**18**	*e*Pn	**P**	**22 51 37.4**	**-4.0**
CHGN	**Chignik**	**14.25**	**60**	*e*Pn	**Pn**	**22 51 41.0**	**-2.0**
SKR	**Severo-Kuril's**	**14.44**	**277**	*e*P	**P**	**22 51 53.1**	**+1.3**
SKR				*e*S	**S**	**22 54 36.4**	**-6.4**
SKR				pmax	pmax		
	comp=Z,172nm,1.1s						
SKR				MLR	MLR		
	comp=Z,3μm,17.0s						
SVW2	**Sparrevohn**	**17.14**	**45**	*e*Pn	**P**	**22 52 22.6**	**+1.0**
	comp=Z,63nm,0.8s						
OHAK	**Old Harbor**	**17.19**	**59**	*e*Pn	**Pn**	**22 52 16.8**	**-4.2**
	comp=Z,143nm,0.6s						
OHAK				*e*Sn	**Sn**	**22 55 30.3**	**-0.6**
KDAK	**Kodiak Island**	**17.65**	**57**	*e*P	**Pn**	**22 52 23.3**	**-3.4**
KDAK				*e*		22 55 48.1	
KDAK				pmax	pmax		
	comp=Z,77nm,0.6s						
KDAK	**Kodiak Island**	**17.65**	**57**	*e*Pn	**Pn**	**22 52 23.3**	**-3.4**
	comp=Z,77nm,0.6s						
KDAK				*e*S	**S**	**22 55 48.1**	**-0.1**
TT01	**Tatalina**	**17.77**	**39**	*e*Pn	**P**	**22 52 29.4**	**+0.9**
TTA	**Tatalina**	**17.79**	**39**	*e*P	**P**	**22 52 30.6**	**+1.8**
TTA				pmax	pmax		
	comp=Z,140nm,1.0s						
TTA	**Tatalina**	**17.79**	**39**	*e*Pn	**P**	**22 52 30.6**	**+1.8**
	comp=Z,142nm,1.0s						
MA2	**Magadan**

comp=Z,143nm,0.9s
HDA Harding Lake 22.07 40 *e*P P 22 53 15.5 +0.2
comp=Z,65nm,0.8s
RAGM Ragged Mountai 22.09 51 *e*P P 22 53 15.2 -0.4
comp=Z,89nm,0.8s
COLD Coldfoot 22.10 32 *e*P P 22 53 16.4 +0.8
comp=Z,82nm,0.9s
BMRM Bremner River 22.22 50 *e*P P 22 53 16.3 -0.6
comp=Z,196nm,1.1s
ILAR Eielson Array 22.23 39 P P 22 53 14.6 -2.3
comp=Z,13nm,0.6s,baz=243,slow=8.6,SNR=41
ILAR PcP **PcP** 22 57 11.3 -0.4
comp=Z,6.0nm,0.7s,baz=275,slow=3.5,SNR=10
ILAR ScP **ScP** 23 00 46.5 +0.8
comp=Z,3.9nm,0.6s,baz=283,slow=3.5,SNR=8.4
ILAR Eielson Array 22.23 39 P P 22 53 14.6 -2.3
ILAR 22 57 11.4
ILAR pmax pmax
comp=Z,15nm,0.8s
ILB Eielson Array 22.23 39 *e*P P 22 53 15.2 -1.8
ILB *e*PcP **PcP** 22 57 11.3 -0.4
ILB *e*ScP **ScP** 23 00 46.5 +0.8
IL1 Eielson Array 22.23 39 *e*P P 22 53 14.2 -2.7
IL1 *e*PcP **PcP** 22 57 10.6 -1.1
PAX Paxson 22.25 44 *e*P P 22 53 16.4 -1.0
PAX pmax pmax
comp=Z,82nm,0.8s
PAX Paxson 22.25 44 *e*P P 22 53 16.4 -1.0
comp=Z,82nm,0.8s
TYV Tymovskoe 22.73 283 *e*P P 22 53 22.5 +0.1
TYV pmax pmax
comp=E,170nm,1.4s
TYV pmax pmax
comp=Z,92nm,1.0s
CRQM Cirque 22.90 51 *e*P P 22 53 24.3 0.0
comp=Z,91nm,0.8s
MENT Mentasta 23.02 45 *e*P P 22 53 23.9 -1.5
comp=Z,61nm,0.6s
DOT Dot Lake 23.05 43 *e*P P 22 53 24.3 -1.3
comp=Z,120nm,0.8s
DOT *e*PcP **PcP** 22 57 14.9 +1.4
BALM Baldy 23.32 50 *e*P P 22 53 27.1 -1.3
BALM pmax pmax
comp=Z,36nm,0.8s
BALM Baldy 23.32 50 *e*P P 22 53 27.1 -1.3
comp=Z,36nm,0.8s
YUK Yuzh-Kuril'sk 23.33 265 *e*P P 22 53 30.5 +2.0
NKL Nikolayevsk 23.41 290 *i* P P 22 53 30.0 +0.9
NKL *e* 22 53 47.0
NKL pmax pmax
comp=E,160nm,1.4s
NKL pmax pmax
comp=Z,190nm,1.4s
FYU Fort Yukon 23.54 36 *e*P P 22 53 31.0 +0.6
comp=Z,565nm,1.2s
YSS Yuzh-Sakhalins 23.97 274 *e*P P 22 53 36.5 +1.9
YSS pmax pmax
comp=Z,130nm,1.0s
YSS MLR MLR
comp=Z,2μm,17.0s
YSS Yuzh-Sakhalins 23.97 274 *e*P P 22 53 35.6 +1.0
comp=Z,160nm,1.0s
PCA Pinnacle 24.26 53 *e*P P 22 53 35.7 -1.5
comp=Z,105nm,0.9s
EGAK Eagle 24.56 41 *e*P P 22 53 39.2 -0.6
comp=Z,266nm,1.1s
DAWY Dawson 25.16 43 *e*P P 22 53 44.4 -0.8
comp=Z,198nm,1.0s
ASAJ Asahikawa 25.34 268 *e*P P 22 53 46.6 -0.4
comp=Z,291nm,1.0s
HYT Haines Junctio 25.66 51 *e*P P 22 53 49.4 -0.6
ERM Erimo 26.07 263 *e*P P 22 53 54.6 +0.9
ERM pmax pmax
comp=Z,94nm,1.1s
ERM Erimo 26.07 263 *e*P P 22 53 55.0 +1.3
comp=Z,95nm,1.1s
HABR Khabarovsk 28.17 282 *e*P P 22 54 11.8 -0.7
HABR *e**PP **pP** 22 54 21.4 -2.1
HABR *e**SP **sP** 22 54 25.7 -2.6
HABR *e* 22 55 01.0
HABR *e*PPP PPP 22 55 09.9
HABR *e*S **S** 22 58 56.9 +1.9
HABR *e*SS **SnSn** 23 00 17.3 +4.2
HABR pmax pmax
comp=E,18nm,0.9s
HABR pmax pmax
comp=Z,35nm,0.9s
HABR pmax pmax
comp=N,3.0nm,0.5s
HABR MLR MLR
comp=Z,790nm,19.0s
INK Inuvik 28.37 35 P P 22 54 12.9 -1.2
comp=Z,16nm,0.9s,baz=226,slow=6.2,SNR=12
INK PcP **PcP** 22 57 25.6 +0.2
comp=Z,20nm,1.0s,baz=203,slow=4.3,SNR=5.3
INK ScP **ScP** 23 01 02.1 -1.0
comp=Z,8.5nm,1.0s,baz=266,slow=3.3,SNR=7.8
INK Inuvik 28.37 35 *e*P P 22 54 14.4 +0.4
INK pmax pmax
comp=Z,100nm,1.0s
INK Inuvik 28.37 35 *e*P P 22 54 14.4 +0.4
comp=Z,100nm,0.9s
INK *e*PcP **PcP** 22 57 25.6 +0.2
INK *e*ScP **ScP** 23 01 05.2 +2.2
YAK Yakutsk 28.50 311 P P 22 54 14.6 -0.6
comp=Z,68nm,0.7s,baz=165,slow=1.0,SNR=14
YAK S **S** 22 59 03.4 +3.6
comp=Z,19nm,0.4s,baz=33,slow=1.5,SNR=2.1
YAK Yakutsk 28.50 311 *i* P P 22 54 14.9 -0.3
YAK pmax pmax
comp=Z,99nm,0.8s
YAK Yakutsk 28.50 311 *e*P P 22 54 14.6 -0.6
comp=Z,130nm,1.1s
DLBC Dease Lake 29.58 56 P P 22 54 24.4 -0.5
comp=Z,3.6nm,0.8s,baz=296,slow=8.4,SNR=5.3
DLBC PcP **PcP** 22 57 29.8 +1.0
comp=Z,6.2nm,0.8s,baz=284,slow=4.9,SNR=3.1
DLBC ScP **ScP** 23 01 09.5 +2.3
comp=Z,1.4nm,0.4s,baz=214,slow=3.6,SNR=3.8
DLBC Dease Lake 29.58 56 *e*P P 22 54 26.1 +1.2
comp=Z,40nm,1.9s
DLBC *e*PcP **PcP** 22 57 29.8 +1.0
DLBC *e*ScP **ScP** 23 01 09.5 +2.3
KLR Kul'dur 29.91 285 P P 22 54 28.1 +0.3
comp=Z,140nm,1.0s,baz=63,slow=8.2,SNR=176
TIXI Tiksi 30.11 331 *i* P P 22 54 28.9 -0.5
TIXI pmax pmax
comp=Z,7.0nm,1.2s
CLNS Chul'man 31.56 302 *e*P P 22 54 30.9 -12
CLNS pmax pmax
comp=N,12nm,1.1s
CLNS pmax pmax
comp=E,16nm,1.0s
CLNS pmax pmax
comp=Z,15nm,0.9s
USRK Ussuriysk Ar. 31.96 276 P P 22 54 46.1 +0.2
comp=Z,19nm,0.8s,baz=50,slow=8.1,SNR=20
USRK PcP **PcP** 22 57 36.0 +0.7
comp=Z,15nm,0.8s,baz=70,slow=2.3,SNR=13
USRK ScP **ScP** 23 01 19.0 +3.8
comp=Z,1.4nm,0.8s,baz=79,slow=7.5,SNR=4.7
USRK LR LR 23 06 27.8
comp=Z,889nm,21.7s,baz=40,slow=34
MJAR Matsushiro Arr 32.41 259 P P 22 54 50.5 +0.4
comp=Z,16nm,0.9s,baz=54,slow=8.2,SNR=26
MJAR PcP **PcP** 22 57 36.9 +0.2
comp=Z,8.2nm,0.9s,baz=58,slow=2.1,SNR=11
MJAR ScP **ScP** 23 01 19.8 +2.8
comp=Z,3.5nm,0.9s,baz=87,slow=2.3,SNR=6.4
MJAR LR LR 23 05 59.4
comp=Z,884nm,21.9s,baz=70,slow=33
MAJO Matsushiro 32.41 259 *i* P P 22 54 50.7 +0.6
MAJO pmax pmax
comp=Z,79nm,1.2s
MAJO Matsushiro 32.41 259 *e*P P 22 54 51.4 +1.3
comp=Z,61nm,1.0s
MAT Matsushiro 32.41 259 P P 22 54 50.8 +0.7
MAT S **S** 23 00 01.2 -0.5
MJB9 Matsu-Tunnel 32.41 259 *e*P P 22 54 51.4 +1.3
comp=Z,16nm,1.0s
VLA Vladivostok 32.57 274 *e*P P 22 54 52.7 +1.4
VLA pmax pmax
comp=Z,109nm,1.4s
H11N2 WAKE ISLAND Hy 32.85 201 T T 23 30 05.7
baz=8.7,slow=76,SNR=34
H11N3 WAKE ISLAND Hy 32.86 201 T T 23 30 30.1
baz=8.7,slow=76,SNR=23
H11N1 WAKE ISLAND Hy 32.87 201 T T 23 30 02.2
baz=8.7,slow=76,SNR=26
MDJ Mudanjiang 33.25 278 P P 22 54 57.3 0.0
MDJ pP pP 22 55 10.3 +1.9
MDJ sP sP 22 55 18.3 +5.1
MDJ PP **PP** 22 56 11.8 -1.0
MDJ PcP **PcP** 22 57 39.5 +0.7
MDJ S **S** 23 00 14.5 +0.1
MDJ ScP **ScP** 23 01 20.1 +0.5
MDJ PcS **PcS** 23 01 25.0 +0.7
MDJ pmax pmax
comp=Z,31nm,0.9s
MDJ pmax pmax
comp=Z,410nm,10.1s
MDJ LR LR
comp=Z,1μm,15.0s
MDJ LR LR
comp=Z,2μm,16.4s
MDJ LR LR
comp=Z,3μm,17.9s
MDJ Mudanjiang 33.25 278 *e*P P 22 54 57.7 +0.4
comp=Z,34nm,1.0s
MSHR Mys Shultsa 33.31 274 *c i*P P 22 54 59.3 +1.5
H11S1 WAKE ISLAND Hy 34.08 201 T T 23 31 35.5
baz=19,slow=76,SNR=12
H11S2 WAKE ISLAND Hy 34.09 201 T T 23 31 24.0
baz=19,slow=76,SNR=7.1
H11S3 WAKE ISLAND Hy 34.09 201 T T 23 31 25.7
baz=19,slow=76,SNR=8.6
CN2 Changchun 36.23 280 *e*P P 22 55 21.4 -1.6
CN2 *e*pP pP 22 55 36.6 +2.4
CN2 pmax pmax
comp=Z,20nm,1.1s
CN2 pmax pmax
comp=Z,1μm,6.0s
CN2 LR LR
comp=Z,900nm,17.0s
CN2 LR LR
comp=Z,2μm,17.0s
CN2 LR LR
comp=Z,3μm,18.0s
PGC Sidney 36.30 71 *e*P P 22 55 25.5 +2.0
comp=Z,13nm,0.8s
YKW3 Yellowknife Ar 36.30 46 *e*P P 22 55 22.7 -0.7
comp=Z,33nm,0.7s
YKA Yellowknife Ar 36.32 46 P P 22 55 22.8 -0.8
comp=Z,19nm,0.7s,baz=283,slow=8.5,SNR=33
YKA PcP **PcP** 22 57 47.9 +0.6
comp=Z,14nm,0.8s,baz=290,slow=3.2,SNR=13
YKA ScP **ScP** 23 01 32.5 +2.2
comp=Z,9.6nm,0.7s,baz=293,slow=3.1,SNR=18
YKA Yellowknife Ar 36.32 46 PcP **PcP** 22 57 48.0 +0.6
YKB5 Yellowknife Ar 36.32 46 *e*P P 22 55 21.9 -1.7
YKB5 *e*PcP **PcP** 22 57 47.4 0.0
YKB5 *e*ScP **ScP** 23 01 32.4 +2.1
LLLB Lillooet 36.38 67 *e*P P 22 55 25.1 +0.8
comp=Z,18nm,1.0s
LLLB *e*PcP **PcP** 22 57 49.1 +1.2
NLWA Neilton Lookou 36.63 73 *e*P P 22 55 27.6 +1.2
comp=Z,54nm,1.0s
A04D Lummi Island 36.71 70 P P 22 55 27.5 +0.5
baz=297
BOD Bodaibo 36.97 306 *i* P P 22 55 28.6 -0.6
BOD pmax pmax
comp=Z,116nm,1.2s
HIA Hailar 37.07 291 *c i*P P 22 55 30.5 +0.3
HIA pmax pmax
comp=Z,57nm,1.1s
HIA Hailar 37.07 291 *e*P P 22 55 30.4 +0.2
comp=Z,81nm,1.2s
MBW Mount Baker 37.16 70 P P 22 55 31.3 +0.2
E03A Lebam 37.21 74 *e*P P 22 55 32.5 +1.2
comp=Z,104nm,1.1s
B05A Bryant 37.28 71 P P 22 55 31.8 -0.1
baz=297,SNR=15
F03A Seaside 37.51 75 *e*P P 22 55 35.8 +1.9
comp=Z,84nm,1.0s
KMOR Kings Mountain 37.70 75 P P 22 55 37.0 +1.4
F04D Rainier, OR 37.77 74 P P 22 55 36.3 +0.2
baz=300
D05A Emumclaw 37.85 72 *e*P P 22 55 37.9 +1.1
comp=Z,74nm,0.8s
G03D McMinnville, O 38.05 76 P P 22 55 38.5 0.0
baz=301
FL2 Flat Top 2 38.12 74 *e*P P 22 55 39.7 +0.6
C06D Leavenworth 38.15 71 P P 22 55 39.7 +0.3
baz=298
LON Longmire 38.17 73 *e*P P 22 55 39.8 +0.3
LON pmax pmax
comp=Z,18nm,0.8s
LON Longmire 38.17 73 *e*P P 22 55 39.8 +0.3
comp=Z,18nm,0.8s
F04A Amboy 38.20 74 *e*P P 22 55 40.3 +0.6
comp=Z,56nm,0.8s
KSRS Korea Array 38.27 269 P P 22 55 41.7 +1.3
comp=Z,31nm,0.9s,baz=59,slow=8.4,SNR=60
KSRS PcP **PcP** 22 57 54.7 +0.9
comp=Z,12nm,0.8s,baz=57,slow=2.8,SNR=17
KS01 Wonju Array Si 38.28 269 *e*P P 22 55 39.8 -0.6
KS01 *e*PcP **PcP** 22 57 54.2 +0.4
KS15 Wonju Array Si 38.30 269 *e*P P 22 55 42.2 +1.5
KS15 *e*PcP **PcP** 22 57 54.7 +0.8
KSAR Wonju Array Be 38.30 269 P P 22 55 41.7 +1.1
KSAR Wonju Array Be 38.30 269 P P 22 55 41.7 +1.1
COR Corvallis 38.35 77 *e*P P 22 55 43.1 +2.2
COR pmax pmax
comp=Z,44nm,0.8s
COR Corvallis 38.35 77 *e*P P 22 55 43.1 +2.2
comp=Z,44nm,0.8s
ETW Entiat 38.64 71 *e*P P 22 55 44.0 +0.5
I03D Drain, OR 38.79 78 P P 22 55 45.4 +0.8
baz=302
B08A Colville Reser 38.87 69 *e*P P 22 55 45.1 -0.3
comp=Z,14nm,0.8s
INCN Inchon 39.07 270 *e*P P 22 55 48.7 +1.6
comp=Z,101nm,1.0s
VFP Flag Point 39.09 75 P P 22 55 47.5 +0.1
JNU Nakatsue 39.20 262 *e*P P 22 55 50.3 +2.0
comp=Z,64nm,1.0s
G05D Wamic, OR 39.22 75 P P 22 55 48.8 +0.5
baz=301,SNR=12
IRO Indian Ridge 39.29 77 *e*P P 22 55 49.9 +0.9
I04A Tendick Farm, 39.31 77 P P 22 55 49.4 +0.3
baz=302,SNR=22
HBO Huckleberry Mo 39.34 77 P P 22 55 50.5 +1.1
CIT Chita 39.41 298 *e*P P 22 55 50.5 +0.7
CIT *e* 22 55 57.9
CIT *e* 22 56 09.0
CIT pmax pmax
comp=Z,181nm,1.1s
L02D Cave Junction, 39.46 80 P P 22 55 50.4 +0.1
baz=304,SNR=8.2
HUMO Hull Mountain 39.62 79 *e*P P 22 55 50.7 -0.9
comp=Z,44nm,1.4s
KRMB Red Mountain 39.63 81 *e*P P 22 55 54.4 +2.6
comp=Z,32nm,1.2s
G06A Carlson Farm, 39.64 74 *e*P P 22 55 52.4 +0.6
comp=Z,45nm,1.3s
I05D Terrebonne, OR 39.68 76 P P 22 55 52.2 0.0
baz=302,SNR=10
HAWA Hanford 39.71 72 *e*P P 22 55 52.6 +0.3
comp=Z,45nm,0.8s
D08A Wollman Farm, 39.74 71 *e*P P 22 55 53.0 +0.4
comp=Z,23nm,1.0s
C09A Chrisman Ranch 39.76 69 *e*P P 22 55 52.4 -0.4
comp=Z,14nm,0.8s
J04D Umpqua Nationa 39.79 78 P P 22 55 53.8 +0.5
baz=303
JCC Jacoby Creek, 39.95 82 *e*P P 22 55 57.3 +3.0
comp=Z,94nm,1.6s
EDM Edmonton 40.07 60 *e*P P 22 55 54.3 -1.0
EDM pmax pmax
comp=Z,50nm,0.8s
EDM Edmonton 40.07 60 *e*P P 22 55 54.2 -1.0
comp=Z,50nm,0.8s
KHMM Horse Mountain 40.10 82 *e*P P 22 55 57.5 +1.7
comp=Z,26nm,0.8s
NEW Newport 40.21 68 P P 22 55 56.1 -0.3
comp=Z,24nm,0.8s,baz=299,slow=7.2,SNR=5.6
NEW ScP **ScP** 23 01 48.9 +3.4
comp=Z,3.5nm,0.6s,baz=297,slow=5.8,SNR=5.5
NEW Newport 40.21 68 P P 22 55 55.8 -0.7
baz=299,SNR=17
NEW Newport 40.21 68 *e*P P 22 55 56.2 -0.3
NEW pmax pmax
comp=Z,25nm,0.8s
NEW Newport 40.21 68 *e*P P 22 55 56.2 -0.3
comp=Z,25nm,0.8s
YBH Yreka Blue Hor 40.25 80 *e*P P 22 55 58.1 +1.1
YBH pmax pmax
comp=Z,71nm,1.0s
YBH Yreka Blue Hor 40.25 80 *e*P P 22 55 58.1 +1.1
comp=Z,71nm,1.0s
J05D Fort Rock, OR 40.30 77 P P 22 55 58.0 +0.6
baz=303,SNR=13
K04D Chiloquin, OR 40.35 78 P P 22 55 58.6 +0.8
baz=304
M02C Callahan 40.35 81 P P 22 55 59.1 +1.3
baz=305,SNR=14
RES Resolute Bay 40.45 24 P P 22 55 58.5 +0.5
comp=Z,27nm,0.9s
RES PcP **PcP** 22 58 00.2 +0.2
comp=Z,21nm,0.8s,baz=198,slow=2.1,SNR=5.0
RES ScP **ScP** 23 01 46.2 +0.3
comp=Z,14nm,1.0s,baz=256,slow=5.3,SNR=4.8
RES Resolute Bay 40.45 24 *e*P P 22 55 58.9 +0.9
RES pmax pmax
comp=Z,40nm,1.0s
RES Resolute Bay 40.45 24 *e*P P 22 55 58.9 +0.9
comp=Z,40nm,1.0s
RES *e*PcP **PcP** 22 58 00.2 +0.2
RES *e*ScP **ScP** 23 01 46.2 +0.3
E09A Wood Farm, Sta 40.48 71 *e*P P 22 55 59.2 +0.5
comp=Z,49nm,1.1s
KMRM Mail Ridge 40.49 83 *e*P P 22 56 02.4 +3.5
comp=Z,31nm,0.8s
G08A Pilot Rock 40.62 73 *e*P P 22 55 59.8 -0.2
comp=Z,25nm,1.1s
N02D Trinity Center 40.68 81 P P 22 56 01.5 +0.9
baz=305,SNR=7.7
M04C Macdoel 40.76 79 P P 22 56 01.7 +0.4
baz=304,SNR=15
K05A Summer Lake 40.82 78 *e*P P 22 56 02.9 +1.1
comp=Z,55nm,0.9s
WDC Whiskeytown Da 41.01 81 *e*P P 22 56 04.2 +1.1
WDC pmax pmax
comp=Z,26nm,0.9s
WDC Whiskeytown Da 41.01 81 *e*P P 22 56 04.2 +1.1
comp=Z,26nm,0.9s
F10A Beach Ranch, E 41.30 71 *e*P P 22 56 05.2 -0.4
comp=Z,26nm,0.9s
DL2 Dalian 41.35 276 P P 22 56 06.6 +0.7
DL2 *e*S **S** 23 02 15.8 -1.7
DL2 pmax pmax
comp=Z,94nm,0.9s
DL2 LR LR
comp=Z,2μm,14.3s
DL2 LR LR
comp=Z,2μm,18.0s
DL2 LR LR
comp=Z,4μm,15.9s
HOPS Hopland Field 41.61 84 *e*P P 22 56 09.2 +1.1
comp=Z,34nm,1.1s
O03D Paynes Creek 41.64 81 P P 22 56 08.4 0.0
baz=306,SNR=16
MOD Modoc Plateau 41.64 78 *e*P P 22 56 09.6 +1.1
comp=Z,45nm,0.8s
WALA Waterton Lakes 41.68 66 *e*P P 22 56 08.3 -0.4
comp=Z,42nm,1.0s
BSMT Bassoo Peak 41.78 68 *e*P P 22 56 09.1 -0.5
BMO Blue Mountains 41.85 73 *e*P P 22 56 09.8 -0.3
comp=Z,35nm,1.0s
BLMT Blacktail Moun 41.94 67 *e*P P 22 56 10.8 -0.2
JTMT Jette 42.12 68 *e*P P 22 56 12.3 -0.1
YBMT Yellow Bay 42.22 67 *e*P P 22 56 13.1 -0.1
ORV Oroville 42.26 82 *e*P P 22 56 15.1 +1.8
ORV pmax pmax
comp=Z,15nm,0.8s
ORV Oroville 42.26 82 *e*P P 22 56 15.1 +1.8
comp=Z,15nm,0.8s
WVOR Wild Horse Val 42.37 77 *e*P P 22 56 14.8 +0.4
WVOR pmax pmax
comp=Z,76nm,1.2s
WVOR Wild Horse Val 42.37 77 *e*P P 22 56 14.8 +0.4
comp=Z,76nm,1.3s
SWMT Swartz Lake 42.41 68 *e*P P 22 56 14.4 -0.2
MSO Missoula 42.80 69 P P 22 56 16.7 -1.1
baz=302,SNR=15
MSO Missoula 42.80 69 *e*P P 22 56 16.9 -0.9
comp=Z,19nm,0.7s
SLMT Seeley Lake 42.84 68 *e*P P 22 56 17.9 -0.4
AFDM Forest Hills D 42.95 82 *e*P P 22 56 20.5 +1.5
comp=Z,15nm,0.9s
CHMT Chamberlain Mo 43.16 68 *e*P P 22 56 19.9 -0.9
PAHR Pah Rah Range 43.48 80 *e*P P 22 56 23.9 +0.4
comp=Z,62nm,1.1s
MFID Camas Ranch 43.52 74 *e*P P 22 56 23.7 0.0
comp=Z,27nm,1.0s
PNTR Pine Nut 43.72 81 *e*P P 22 56 26.8 +1.4
comp=Z,78nm,0.7s
NRIK Noril'sk 43.85 329 P P 22 56 26.9 +1.1
comp=Z,78nm,0.9s,baz=84,slow=9.8,SNR=67
NRIK PcP **PcP** 22 58 11.5 +0.1
comp=Z,33nm,0.9s,baz=82,slow=3.4,SNR=7.4
NRIK ScP **ScP** 23 02 02.8 +3.2
comp=Z,2.0nm,0.3s,baz=329,slow=2.6,SNR=4.4
CMB Columbia Colle 43.87 83 *e*P P 22 56 27.6 +1.1
CMB pmax pmax
comp=Z,19nm,1.0s
CMB Columbia Colle 43.87 83 *e*P P 22 56 27.6 +1.1
comp=Z,19nm,1.0s
SAO San Andreas Ge 43.99 85 *e*P P 22 56 29.4 +2.0
SAO pmax pmax
comp=Z,22nm,1.0s
SAO San Andreas Ge 43.99 85 *e*P P 22 56 29.4 +2.0
comp=Z,22nm,0.9s
YERR Yerington 44.01 81 *e*P P 22 56 30.1 +2.4
comp=Z,35nm,0.9s
BJI Beijing 44.07 281 P P 22 56 28.4 +0.5
BJI pmax pmax
comp=Z,8.0nm,0.8s
BJT Baijiatuau 44.09 281 *e*P P 22 56 28.5 +0.4
BJT pmax pmax
comp=Z,62nm,0.9s
BJT Baijiatuau 44.09 281 *e*P P 22 56 28.5 +0.4
comp=Z,62nm,0.9s
HRY Holter Researc 44.09 68 *e*P P 22 56 28.0 -0.2
WAKR Walker 44.17 82 *e*P P 22 56 29.7 +0.6
comp=Z,28nm,0.8s
LRM Limekiln Ridge 44.21 69 *e*P P 22 56 28.9 -0.4
HLID Hailey 44.29 73 P P 22 56 29.4 -0.6
baz=304,SNR=62
HLID Hailey 44.29 73 *e*P P 22 56 29.8 -0.2
comp=Z,102nm,1.3s
IRK Irkutsk 44.37 302 *e*P P 22 56 29.2 -1.0
IRK pmax pmax
comp=Z,67nm,2.4s
DLMT Dillon 44.37 70 *e*P P 22 56 30.9 +0.3
comp=Z,12nm,0.8s
BMN Battle Mountai 44.39 78 *e*P P 22 56 31.3 +0.5
BMN pmax pmax
comp=Z,32nm,0.7s
BMN Battle Mountai 44.39 78 *e*P P 22 56 31.3 +0.5
comp=Z,32nm,0.7s
MCMT McKenzie Canyo 44.52 70 *e*P P 22 56 31.6 -0.2
EGMT Eagleton 44.59 65 P P 22 56 30.6 -1.5
baz=302,SNR=12
EGMT Eagleton 44.59 65 *e*P P 22 56 30.6 -1.5
comp=Z,20nm,0.8s
BOZ Bozeman (W) 44.79 69 P P 22 56 32.8 -1.0
baz=304,SNR=22
BOZ Bozeman (W) 44.79 69 *e*P P 22 56 33.3 -0.5
BOZ pmax pmax
comp=Z,25nm,0.8s
BOZ Bozeman (W) 44.79 69 *e*P P 22 56 33.2 -0.5
comp=Z,25nm,0.8s
TLY Talaya 44.99 302 LR LR 23 16 16.6
comp=Z,3μm,20.1s,baz=44,slow=37
TLY Talaya 44.99 302 *i* P P 22 56 36.3 +1.1
TLY pmax pmax
comp=Z,38nm,1.0s
TLY Talaya 44.99 302 *e*P P 22 56 36.1 +0.9
comp=Z,30nm,0.8s
MLAC Mammoth, Mammo 45.08 82 P P 22 56 35.8 -0.6
baz=308
QLMT Earthquake Lak 45.36 70 *e*P P 22 56 38.7 +0.2
PAGB Antelope Grade 45.39 85 *e*P P 22 56 39.3 +0.7
comp=Z,21nm,0.7s
SONA1 Songino Array 45.48 296 *e*P P 22 56 39.7 +0.4
SONA0 Songino Array 45.49 296 *e*P P 22 56 40.4 +1.1
comp=Z,59nm,1.1s
SONA0 *e*PcP **PcP** 22 58 17.9 +0.3

SONA0 eScP **ScP** 23 02 08.9 +2.0
SONM Songino Array 45.49 296 P **P** 22 56 40.4 +1.1
comp=Z,35nm,0.9s,baz=58,slow=9.4,SNR=81
SONM PcP **PcP** 22 58 17.9 +0.3
comp=Z,13nm,1.0s,baz=71,slow=2.9,SNR=4.9
SONM ScP **ScP** 23 02 08.9 +2.0
comp=Z,2.1nm,0.8s,baz=26,slow=1.9,SNR=4.5
YHB Horse Butte 45.54 70 *e*P **P** 22 56 40.5 +0.6
comp=Z,61nm,0.9s
RCTC Rector, Farmer 45.66 84 P **P** 22 56 40.2 -0.4
baz=309
YHH Holmes Hill 45.72 69 *e*P **P** 22 56 41.6 +0.2
comp=Z,45nm,1.0s
YMR Madison River 45.72 69 *e*P **P** 22 56 42.3 +0.9
comp=Z,57nm,1.1s
SMMC Simmler 45.82 86 P **P** 22 56 42.1 +0.1
baz=310
TIN Tinemaha, Big 45.82 83 P **P** 22 56 42.1 0.0
baz=309
TIA Tai'an 45.83 276 *e*P **P** 22 56 42.5 +0.5
TIA pmax pmax
comp=Z,120nm,1.0s
ZAK Zakamensk 45.86 300 *e*P **P** 22 56 42.8 +0.6
ZAK pmax pmax
comp=Z,32nm,1.5s
YFT Old Faithful 45.92 70 *e*P **P** 22 56 44.8 +1.9
comp=Z,44nm,0.9s
YPP Pitchstone Pla 46.04 70 *e*P **P** 22 56 45.2 +1.2
comp=Z,39nm,1.3s
VES Vestal, Richgr 46.05 85 P **P** 22 56 43.5 -0.2
baz=310
H17A Grant Village 46.10 70 P **P** 22 56 44.4 0.0
baz=305,SNR=9.1
H17A Grant Village 46.10 70 *e*P **P** 22 56 46.0 +1.6
comp=Z,109nm,1.4s
IMW Indian Meadow 46.17 70 *e*P **P** 22 56 45.5 +0.5
comp=Z,27nm,0.9s
PKM Mcpherson Peak 46.20 86 P **P** 22 56 45.3 +0.1
baz=310
FLWY Flagg Ranch 46.21 70 *e*P **P** 22 56 46.2 +1.1
comp=Z,81nm,1.3s
CWC Cottonwood Cre 46.30 83 P **P** 22 56 46.1 +0.2
baz=309
HVU Hansel Valley 46.31 74 *e*P **P** 22 56 46.2 +0.3
HVU pmax pmax
comp=Z,36nm,0.8s
HVU Hansel Valley 46.31 74 *e*P **P** 22 56 46.2 +0.3
comp=Z,36nm,0.8s
MOOW Moose Ponds 46.38 70 *e*P **P** 22 56 47.0 +0.5
comp=Z,18nm,1.2s
GRAC Grapevine Rang 46.40 82 P **P** 22 56 46.7 +0.1
baz=309
TPAW Teton Pass 46.40 71 *e*P **P** 22 56 47.6 +0.8
comp=Z,18nm,0.9s
MOY Mondy 46.41 303 *e*P **P** 22 56 47.8 +1.3
MOY pmax pmax
comp=Z,66nm,1.3s
HHC Hu-ho-hao-te 46.41 285 *e*P **P** 22 56 48.0 +1.3
HHC PP **PP** 22 58 37.3 +1.4
HHC ScP **ScP** 23 02 09.9 -1.0
HHC S **S** 23 03 29.5 -2.0
HHC pmax pmax
comp=Z,94nm,1.3s
HHC pmax pmax
comp=Z,430nm,4.6s
HHC LR LR
comp=Z,2µm,17.4s
HHC LR LR
comp=Z,2µm,14.9s
HHC LR LR
comp=Z,3µm,14.9s
WASM Alta Sierra Ca 46.45 84 *e*P **P** 22 56 47.2 +0.1
RLMT Red Lodge 46.46 68 P **P** 22 56 46.7 -0.4
baz=305,SNR=16
RLMT Red Lodge 46.46 68 *e*P **P** 22 56 47.3 +0.2
comp=Z,29nm,0.8s
REDW Red Top Meadow 46.53 71 *e*P **P** 22 56 48.7 +0.9
comp=Z,74nm,1.5s
LOHW Long Hollow 46.54 70 *e*P **P** 22 56 47.8 0.0
comp=Z,12nm,0.8s
ISA Isabella, Lake 46.55 84 P **P** 22 56 47.6 -0.1
baz=310
ISA Isabella, Lake 46.55 84 *e*P **P** 22 56 47.9 +0.1
ISA pmax pmax
comp=Z,23nm,1.2s
ISA Isabella, Lake 46.55 84 *e*P **P** 22 56 47.9 +0.1
comp=Z,23nm,1.2s
SBC Santa Barbara 46.56 86 P **P** 22 56 48.0 +0.3
baz=311
R11A Troy Canyon, C 46.66 79 P **P** 22 56 48.4 -0.4
baz=308,SNR=31
R11A Troy Canyon, C 46.66 79 *e*P **P** 22 56 48.5 -0.2
comp=Z,46nm,1.3s
BGU Big Grassy Mou 46.66 75 *e*P **P** 22 56 49.6 +0.9
comp=Z,20nm,0.8s
DAC Darwin (Calif) 46.71 83 *e*P **P** 22 56 49.0 -0.1
DAC pmax pmax
comp=Z,13nm,0.8s
DAC Darwin (Calif) 46.71 83 *e*P **P** 22 56 49.0 -0.1
comp=Z,13nm,0.8s
AHID Auburn Hatcher 46.73 72 *e*P **P** 22 56 49.2 0.0
comp=Z,33nm,0.9s
SPUT South Promonto 46.78 74 *e*P **P** 22 56 50.7 +1.0
comp=Z,38nm,1.0s
MPMC Manual Prospec 46.91 83 P **P** 22 56 50.7 -0.1
baz=310,SNR=15
FURC Furnace Creek, 47.04 82 P **P** 22 56 51.6 +0.1
baz=310,SNR=13
FCC Fort Churchill 47.05 45 *e*P **P** 22 56 50.8 -0.4
FCC pmax pmax
comp=Z,56nm,1.3s
FCC Fort Churchill 47.05 45 *e*P **P** 22 56 50.8 -0.4
comp=Z,56nm,1.3s
OSI Osito Audit: C 47.06 86 P **P** 22 56 52.0 +0.2
baz=311
TPNV Topopah Spring 47.12 81 P **P** 22 56 52.0 -0.3
baz=309,SNR=18
TPNV Topopah Spring 47.12 81 *e*P **P** 22 56 52.4 +0.1
TPNV pmax pmax
comp=Z,50nm,0.9s
TPNV Topopah Spring 47.12 81 *e*P **P** 22 56 52.4 +0.1
comp=Z,50nm,0.8s
HWUT Hardware Ranch 47.14 73 *e*P **P** 22 56 53.0 +0.6
comp=Z,50nm,1.3s
BLG Laguna Peak, P 47.18 86 P **P** 22 56 52.4 -0.2
baz=311
DUG Dugway, Tooele 47.23 76 P **P** 22 56 52.8 -0.4
baz=308,SNR=45
DUG Dugway, Tooele 47.23 76 *e*P **P** 22 56 53.1 0.0
DUG pmax pmax
comp=Z,41nm,0.7s
DUG Dugway, Tooele 47.23 76 *e*P **P** 22 56 53.1 0.0
comp=Z,41nm,0.7s
LAO LASA Array 47.33 65 P **P** 22 56 53.1 -0.6
baz=304,SNR=13
LAO LASA Array 47.33 65 *e*P **P** 22 56 53.6 -0.1
comp=Z,25nm,0.8s
EDW2 Edwards Air Fo 47.35 85 P **P** 22 56 53.7 -0.3
baz=311
NJ2 Nanjing 47.45 270 *e*P **P** 22 56 55.1 +0.4
NJ2 S **S** 23 03 48.9 +2.7
NJ2 pmax pmax
comp=Z,55nm,1.0s
NJ2 pmax pmax
comp=Z,960nm,6.5s
NJ2 LR LR
comp=Z,1µm,14.1s
NJ2 LR LR
comp=Z,420nm,13.6s
NJ2 LR LR
comp=Z,2µm,16.3s
TCUT Toone Canyon 47.53 74 *e*P **P** 22 56 56.1 +0.6
comp=Z,67nm,1.0s
DECC Green Verdugo 47.54 86 P **P** 22 56 55.2 -0.2
baz=311
CTU Camp Tracy 47.58 74 *e*P **P** 22 56 56.2 +0.4
comp=Z,80nm,0.9s
PSUT Pine Spring 47.61 78 *e*P **P** 22 57 00.2 +4.0
comp=Z,28nm,0.7s
BW06 Boulder Array 47.65 71 P **P** 22 56 56.0 -0.5
baz=306,SNR=82
PD31 Pinedale Array 47.65 71 *e*P **P** 22 56 56.1 -0.4
PD31 eScP **ScP** 23 02 19.9 +3.7
PDAR Pinedale Array 47.65 71 P **P** 22 56 56.4 -0.1
comp=Z,45nm,0.8s,baz=295,slow=4.0,SNR=182
PDAR ScP **ScP** 23 02 17.1 +0.9
comp=Z,2.2nm,0.8s,baz=311,slow=3.5,SNR=6.8

MWC Mount Wilson 47.74 85 *e*P **P** 22 56 57.3 +0.1
MWC pmax pmax
comp=Z,37nm,1.1s
MWC Mount Wilson 47.74 85 *e*P **P** 22 56 57.3 +0.1
comp=Z,37nm,1.1s
SHOC Shoshone, Teco 47.77 82 P **P** 22 56 57.1 -0.1
baz=310
A25A Svangstu Ranch 47.80 60 P **P** 22 56 56.0 -1.2
baz=304,SNR=6.7
JLU Jordanelle 47.81 74 *e*P **P** 22 56 58.3 +0.6
comp=Z,38nm,1.0s
GSC Goldstone, Bar 47.82 83 P **P** 22 56 57.8 +0.1
baz=310,SNR=24
GSC Goldstone, Bar 47.82 83 *e*P **P** 22 56 57.6 -0.1
GSC pmax pmax
comp=Z,30nm,0.8s
GSC Goldstone, Bar 47.82 83 *e*P **P** 22 56 57.6 -0.1
comp=Z,30nm,0.8s
NLU North Lily Min 47.83 75 *e*P **P** 22 56 58.2 +0.4
comp=Z,24nm,0.9s
BFSC Mount Baldy Ra 47.98 85 P **P** 22 56 58.7 -0.2
baz=311
MPU Maple Canyon 48.06 75 *e*P **P** 22 57 00.6 +1.0
comp=Z,66nm,1.7s
SHPR Sheep Range 48.08 81 *e*P **P** 22 57 00.2 +0.5
comp=Z,12nm,1.0s
B25A Knox Farm, Ray 48.15 61 P **P** 22 56 59.6 -0.4
baz=304
KRAR Krasnoyarsk 48.16 311 *e*P **P** 22 57 00.2 +0.3
SCI2 San Clemente I 48.25 87 P **P** 22 57 00.5 -0.4
baz=312
TUQ Turquoise Moun 48.29 83 P **P** 22 57 01.0 -0.3
baz=310
HEC Hector,Ludlow 48.42 84 P **P** 22 57 02.7 +0.4
baz=311,SNR=11
CCUT Cedar City 48.53 79 *e*P **P** 22 57 02.9 -0.4
comp=Z,12nm,0.7s
SZCU Shutz Canyon 48.67 79 *e*P **P** 22 57 04.9 +0.6
comp=Z,36nm,1.2s
MURC Murrieta 48.69 85 P **P** 22 57 04.1 -0.2
baz=312
TMUT Trail Mountain 48.76 76 *e*P **P** 22 57 05.8 +0.7
comp=Z,48nm,0.9s
A27A Ledoux Ranch, 48.81 60 P **P** 22 57 04.1 -1.0
baz=305
GMRC Granite Mounta 48.87 83 P **P** 22 57 05.4 -0.5
baz=311,SNR=21
P17A Butcher Ranch, 48.94 75 *e*P **P** 22 57 06.9 +0.6
comp=Z,22nm,0.7s
LCMT Little Creek M 48.94 79 *e*P **P** 22 57 06.6 +0.2
comp=Z,30nm,1.0s
MTPU Mount Pierson 48.95 77 *e*P **P** 22 57 07.2 +0.6
comp=Z,26nm,1.0s
Q16A Castle Valley 49.02 76 *e*P **P** 22 57 07.3 +0.3
comp=Z,31nm,1.1s
KULLO Kullorsuaq 49.03 17⇑ *i*P **P** 22 57 06.3 0.0
comp=Z,86nm,0.9s
KULLO Kullorsuaq 49.03 17⇑ *i*P **P** 22 57 06.3 0.0
KULLO pmax pmax
comp=Z,86nm,0.9s
PFO Pinyon Flats O 49.14 85 P **P** 22 57 08.2 +0.2
comp=Z,3.4nm,0.7s,baz=324,slow=5.5
PFO PcP **PcP** 22 58 30.4 -0.5
comp=Z,6.4nm,0.9s,baz=227,slow=4.3,SNR=2.3
PFO ScP **ScP** 23 02 24.9 +2.4
comp=Z,1.5nm,0.6s,baz=252,slow=6.4,SNR=2.9
PFO Pinyon Flats O 49.14 85 P **P** 22 57 07.8 -0.1
baz=312
PFO Pinyon Flats O 49.14 85 *e*P **P** 22 57 08.1 +0.2
PFO pmax pmax
comp=Z,47nm,1.8s
PFO Pinyon Flats O 49.14 85 *e*P **P** 22 57 08.1 +0.2
comp=Z,47nm,1.8s
PFO *e*PcP **PcP** 22 58 30.3 -0.5
PFO *e*ScP **ScP** 23 02 24.9 +2.4
TPFO Pinon Flats 49.15 85 P **P** 22 57 07.6 -0.3
baz=312
BELC Belle Mtn. Jos 49.17 84 P **P** 22 57 07.9 -0.3
baz=311
KNB Kanab 49.20 79 *e*P **P** 22 57 08.9 +0.5
KNB pmax pmax
comp=Z,18nm,0.8s
KNB Kanab 49.20 79 *e*P **P** 22 57 08.9 +0.5
comp=Z,18nm,0.8s
PKCU Pink Cliffs 49.24 78 *e*P **P** 22 57 10.2 +1.3
comp=Z,21nm,0.7s
D26A Manning 49.26 62 P **P** 22 57 07.3 -1.2
baz=306
SRU San Rafael Swe 49.29 75 *e*P **P** 22 57 09.4 +0.3
SRU San Rafael Swe 49.29 75 *e*P **P** 22 57 09.4 +0.3
comp=Z,45nm,0.9s
K22A Casper 49.51 69 P **P** 22 57 09.6 -1.1
baz=307,SNR=7.9
K22A Casper 49.51 69 *e*P **P** 22 57 10.0 -0.7
comp=Z,29nm,1.0s
IRM Iron Mountain 49.60 83 P **P** 22 57 11.1 -0.3
baz=311,SNR=15
BAR Barrett 49.62 86 *e*P **P** 22 57 11.6 +0.1
comp=Z,19nm,0.9s
MONP2 Monument Peak 49.64 86 P **P** 22 57 11.4 -0.5
baz=312
BC3 Big Chuckawall 49.74 84 P **P** 22 57 11.8 -0.7
baz=312
W13A Hualapai Mount 49.77 82 *e*P **P** 22 57 12.7 -0.1
comp=Z,12nm,0.9s
KBS Kingsbay 49.88 357 *e*P **P** 22 57 13.3 +0.5
KBS IAmb IAmb 22 57 14.2
comp=Z,49nm,0.8s
KBS Kingsbay 49.88 357 *e*P **P** 22 57 13.1 +0.3
KBS pmax pmax
comp=Z,48nm,0.8s
KBS Kingsbay 49.88 357 *e*P **P** 22 57 13.1 +0.3
comp=Z,48nm,0.8s
U15A North Rim 49.90 79 *e*P **P** 22 57 13.8 -0.1
comp=Z,33nm,0.8s
A29A Manning Farm, 49.91 59 P **P** 22 57 12.2 -1.3
baz=306,SNR=7.7
SWSC Sam W. Stewart 49.99 85 P **P** 22 57 13.8 -0.4
baz=312
IKP In-Ko-Pah, Jac 50.00 86 P **P** 22 57 13.7 -0.7
baz=312
O20A White River Ci 50.03 73 P **P** 22 57 13.8 -0.9
baz=309,SNR=22
O20A White River Ci 50.03 73 *e*P **P** 22 57 14.4 -0.3
comp=Z,54nm,0.7s
RSSD Black Hills 50.08 66 P **P** 22 57 13.8 -1.3
baz=307
RSSD Black Hills 50.08 66 *e*P **P** 22 57 14.2 -0.8
RSSD Black Hills 50.08 66 *e*P **P** 22 57 14.2 -0.8
comp=Z,8.0nm,0.6s
PDMCI Parker Dam,Lak 50.13 83 P **P** 22 57 14.7 -0.6
baz=311,SNR=11
Y12C Blythe 50.26 83 P **P** 22 57 15.9 -0.4
baz=312
Y12C Blythe 50.26 83 *e*P **P** 22 57 16.2 -0.1
comp=Z,22nm,1.0s
MDND Maddock 50.34 60 P **P** 22 57 15.3 -1.4
baz=306
SPA0 Spitsbergen Ar 50.43 355 *e*P **P** 22 57 16.5 -0.5
SPA0 IAmb IAmb 22 57 17.4
comp=Z,83nm,0.9s
SPA0 Spitsbergen Ar 50.43 355 *e*P **P** 22 57 16.7 -0.2
PV09 Paradox Valley 50.52 75 *e*P **P** 22 57 19.1 +0.5
GLA Glamis 50.53 84 P **P** 22 57 18.1 -0.3
baz=312
GLA Glamis 50.53 84 *e*P **P** 22 57 18.1 -0.3
GLA pmax pmax
comp=Z,27nm,0.8s
GLA Glamis 50.53 84 *e*P **P** 22 57 18.1 -0.3
comp=Z,27nm,0.8s
PV10 Paradox Valley 50.66 75 *e*P **P** 22 57 19.8 +0.3
PV05 Paradox Valley 50.81 75 *e*P **P** 22 57 21.4 +0.8
ULM Lac du Bonnet 50.90 56 P **P** 22 57 19.2 -1.6
comp=Z,5.4nm,0.7s,baz=307,slow=6.4,SNR=6.2
ULM PcP **PcP** 22 58 36.2 -0.6
comp=Z,12nm,0.9s,baz=302,slow=6.2,SNR=4.3
ULM ScP **ScP** 23 02 28.7 -0.9
comp=Z,2.5nm,0.7s,baz=252,slow=8.5,SNR=2.7
ULM Lac du Bonnet 50.90 56 *e*P **P** 22 57 19.7 -1.2
ULM pmax pmax
comp=Z,10.0nm,0.8s
ULM Lac du Bonnet 50.90 56 *e*P **P** 22 57 19.7 -1.2
comp=Z,10nm,0.8s
N23A Red Feather La 50.93 71 P **P** 22 57 21.2 -0.4
baz=309,SNR=13
N23A Red Feather La 50.93 71 *e*P **P** 22 57 21.9 +0.2
comp=Z,40nm,1.2s

PHWY Pilot Hill 50.97 70 *e*P **P** 22 57 21.7 -0.1
comp=Z,18nm,1.4s
WUAZ Wupatki 51.06 79 P **P** 22 57 22.5 0.0
baz=311,SNR=11
WUAZ Wupatki 51.06 79 *e*P **P** 22 57 23.0 +0.5
comp=Z,28nm,0.8s
Y14A Wickenburg 51.08 82 *e*P **P** 22 57 21.8 -0.8
comp=Z,59nm,1.0s
PV01 Paradox Valley 51.09 75 *e*P **P** 22 57 22.4 -0.4
NACB Ninganchiao 51.26 261 *e*P **P** 22 57 24.1 +0.2
comp=Z,63nm,1.3s
WHN Wuhan 51.30 272 P **P** 22 57 24.3 +0.2
A32A Rocking H Ranc 51.37 57 P **P** 22 57 23.1 -1.3
baz=307
C31A Landman Farms, 51.38 59 P **P** 22 57 23.0 -1.6
baz=307,SNR=7.4
113A Mohawk Valley, 51.38 84 *e*P **P** 22 57 26.1 +1.4
comp=Z,10nm,1.1s
HSPB Hornsund (broa 51.62 355 *e*P **P** 22 57 25.9 0.0
HSPB IAmb IAmb 22 57 26.8
comp=Z,55nm,0.9s
B32A Ashes, Strandq 51.66 58 P **P** 22 57 24.9 -1.7
baz=307
MVCO Mesa Verde 51.73 76 P **P** 22 57 27.2 -0.3
baz=310,SNR=6.6
MVCO Mesa Verde 51.73 76 *e*P **P** 22 57 27.3 -0.3
comp=Z,30nm,0.9s
X16A Lo Mia Camp, P 51.74 81 *e*P **P** 22 57 27.8 +0.2
comp=Z,14nm,0.9s
DAG Danmarks Havn 51.78 5 *i*P **P** 22 57 26.0 -1.1
comp=Z,30nm,0.7s
DAG Danmarks Havn 51.78 5 *i*P **P** 22 57 26.0 -1.1
DAG pmax pmax
comp=Z,21nm,0.7s
ISCO Idaho Springs 51.82 71 P **P** 22 57 27.9 -0.3
baz=309,SNR=21
ISCO Idaho Springs 51.82 71 *e*P **P** 22 57 28.4 +0.1
ISCO Idaho Springs 51.82 71 *e*P **P** 22 57 28.4 +0.1
comp=Z,24nm,0.9s
D31A Mcclaflin, Tow 51.84 60 P **P** 22 57 26.6 -1.4
baz=308
SSLB Suanglung 51.94 261 *e*P **P** 22 57 29.6 +0.6
comp=Z,98nm,1.1s
A33A Warroad 51.94 57 P **P** 22 57 28.2 -0.4
baz=307
YULB Yu-li 52.02 260 *e*P **P** 22 57 29.5 -0.1
comp=Z,90nm,1.5s
E31A Nome 52.05 60 P **P** 22 57 28.1 -1.5
baz=308
AGMN Agassiz Nation 52.08 57 P **P** 22 57 28.5 -1.2
baz=308
AGMN Agassiz Nation 52.08 57 *e*P **P** 22 57 28.5 -1.2
comp=Z,24nm,1.4s
B33A Robert and Kas 52.24 57 P **P** 22 57 29.5 -1.4
baz=308
W18A Petrified Fore 52.33 79 P **P** 22 57 31.6 -0.4
baz=311
XAN Xi'an 52.34 280 P **P** 22 57 32.4 +0.5
XAN pP sP 22 57 47.4 -0.8
XAN sP pP 22 57 54.6 +11
XAN PP **PP** 22 59 31.1 +0.5
XAN S **S** 23 04 49.8 -4.8
XAN sS sS 23 05 16.0 +2.2
XAN SS **SS** 23 08 24.8 -7.4
XAN pmax pmax
comp=Z,76nm,1.0s
XAN pmax pmax
comp=Z,190nm,6.7s
XAN LR LR
comp=Z,2µm,14.8s
XAN LR LR
comp=Z,2µm,16.7s
XAN LR LR
comp=Z,2µm,15.1s
S22A 4UR Ranch, Cre 52.40 74 P **P** 22 57 32.5 -0.1
baz=310,SNR=31
S22A 4UR Ranch, Cre 52.40 74 *e*P **P** 22 57 33.1 +0.6
comp=Z,38nm,1.1s
214A Organ Pipe Nat 52.53 84 P **P** 22 57 32.9 -0.4
baz=313
QZH Quanzhou 52.57 264⇑ *i*P **P** 22 57 35.0 +1.4
QZH pmax pmax
comp=Z,180nm,0.9s
X18A Snowflake 52.59 79 *e*P **P** 22 57 34.1 +0.2
comp=Z,14nm,0.8s
B34A Aery, Baudette 52.60 57 P **P** 22 57 32.6 -1.0
baz=308,SNR=12
Q24A Divide 52.63 72 P **P** 22 57 33.1 -1.2
baz=310
Q24A Divide 52.63 72 *e*P **P** 22 57 34.6 +0.4
comp=Z,11nm,0.8s
D33A AnnSam, Waubun 52.80 59 P **P** 22 57 33.6 -1.5
baz=308
C34A RKJ Ranch, Bem 52.98 58 P **P** 22 57 34.9 -1.5
baz=308
H31A Wolsey 53.01 63 P **P** 22 57 35.4 -1.3
baz=309
G32A Webster 53.07 61 P **P** 22 57 36.0 -1.1
baz=309
ZAA1 Zalesovo Array 53.14 313 *e*P **P** 22 57 36.9 -0.5
ZAA1 *e*PcP **PcP** 22 58 46.0 +0.8
ZAA1 *e*ScP **ScP** 23 02 38.5 -0.7
ZALV Zalesovo Beam 53.14 313 P **P** 22 57 36.9 -0.5
comp=Z,15nm,0.8s,baz=52,slow=6.7,SNR=37
ZALV PcP **PcP** 22 58 46.0 +0.8
comp=Z,23nm,0.8s,baz=28,slow=3.4,SNR=9.2
ZALV ScP **ScP** 23 02 38.5 -0.7
comp=Z,0.5nm,0.4s,baz=232,slow=14,SNR=2.5
ZALV Zalesovo Beam 53.14 313 P **P** 22 57 36.9 -0.5
ZALV 22 58 46.0
ZALV pmax pmax
comp=Z,10.0nm,0.6s
ZALV pmax pmax
comp=Z,23nm,0.8s
ZALV pmax pmax
comp=N,1.0nm,0.4s
J30A Dallas 53.16 64 P **P** 22 57 36.5 -1.3
baz=309
B35A Bob, Littlefor 53.17 56 P **P** 22 57 36.1 -1.6
baz=308,SNR=6.6
D34A Park Rapids 53.18 58 P **P** 22 57 36.4 -1.5
baz=309,SNR=6.6
SDCO Great Sand Dun 53.20 73 P **P** 22 57 38.3 -0.2
baz=311,SNR=23
SDCO Great Sand Dun 53.20 73 *e*P **P** 22 57 38.8 +0.2
comp=N,35nm,1.0s
NVS Novosibirsk 53.31 314⇑ *i*P **P** 22 57 39.1 +0.5
NVS *e*S **S** 23 05 13.2 +6.2
NVS *e* 23 07 28.0
NVS pmax pmax
comp=Z,63nm,0.9s
NVS pmax pmax
comp=N,25nm,0.8s
NVS pmax pmax
comp=E,25nm,0.7s
NVS smax smax
comp=N,8.0nm,1.1s
NVS smax smax
comp=E,1.0nm,0.4s
F33A 5 Mile Ranch, 53.36 60 P **P** 22 57 37.5 -1.8
baz=309
C35A Jirik Farms, M 53.45 57 P **P** 22 57 38.0 -1.8
baz=309,SNR=8.2
K30A Basset 53.50 65 P **P** 22 57 39.4 -1.0
baz=310
TUC Tucson 53.55 82 P **P** 22 57 40.5 -0.4
baz=313
TUC Tucson 53.55 82 *e*P **P** 22 57 40.7 -0.2
TUC Tucson 53.55 82 *e*P **P** 22 57 40.7 -0.2
comp=E,13nm,0.9s
H32A Carlson Farm, 53.57 62 P **P** 22 57 39.9 -0.9
baz=309
J31A Geddes 53.61 64 P **P** 22 57 39.9 -1.2
baz=309
G33A Ortonville 53.69 61 P **P** 22 57 40.2 -1.4
baz=309
SUMG Summit 53.77 13 *i*P **P** 22 57 42.0 -0.3
comp=E,104nm,1.0s
SUMG Summit 53.77 13 *e*P **P** 22 57 42.0 -0.3
SUMG pmax pmax
comp=Z,93nm,0.9s
SUMG Summit 53.77 13 *e*P **P** 22 57 42.0 -0.3
comp=Z,93nm,0.9s
D35A Remer 53.79 58 P **P** 22 57 41.1 -1.3
baz=309,SNR=5.4
BJO Bjornoya 53.83 353 *e*P **P** 22 57 42.0 -0.2
BJO IAmb IAmb 22 57 43.5

H33A **Prehn Over Nor** 53.84 62 P P 22 57 41.4 -1.5
baz=309
E35A **Pequot Lakes** 53.94 58 P P 22 57 41.9 -1.5
baz=309
F34A **Alexandria** 53.95 60 P P 22 57 42.2 -1.4
baz=309
C36A **Pine Crest Far** 54.01 56 P P 22 57 42.6 -1.3
baz=309,SNR=10
K31A **O'Neill** 54.02 65 P P 22 57 42.9 -1.2
baz=310
J32A **Parkston** 54.06 63 P P 22 57 42.8 -1.6
baz=310
KSCO **Kaye Shedlock'** 54.10 70 P P 22 57 44.6 -0.2
baz=311,SNR=10
KSCO **Kaye Shedlock'** 54.10 70 *e*P P 22 57 45.3 +0.5
comp=Z,98nm,1.1s
G34A **Benson** 54.10 60 P P 22 57 43.2 -1.4
baz=309
LZH **Lanzhou** 54.11 285 *e*P P 22 57 46.8 +1.8
LZH pP sP 22 58 02.9 +1.5
LZH sP pP 22 58 11.4 +15
LZH pmax pmax
comp=Z,120nm,1.0s
LZH pmax pmax
comp=Z,520nm,5.4s
LZH LR LR
comp=Z,4μm,16.9s
LZH LR LR
comp=Z,6μm,19.9s
LZH LR LR
comp=Z,3μm,20.0s
D36A **Goodland** 54.20 57 P P 22 57 44.4 -1.0
baz=309
T25A **Trinidad** 54.25 73 P P 22 57 46.0 -0.2
baz=311,SNR=54
T25A **Trinidad** 54.25 73 *e*P P 22 57 46.5 +0.4
comp=Z,93nm,1.0s
L31A **Butterfield Fa** 54.26 65 P P 22 57 45.0 -0.9
baz=310
F35A **Swanville** 54.29 59 P P 22 57 44.6 -1.4
baz=310
GTA **Gaotai** 54.35 291 *e*P P 22 57 47.0 +0.3
GTA pP sP 22 58 03.1 +0.1
GTA sP pP 22 58 09.4 +11
GTA S S 23 05 18.1 -3.8
GTA sS sS 23 05 44.3 +3.1
GTA SS SS 23 09 01.1 -2.7
GTA pmax pmax
comp=Z,37nm,0.9s
GTA pmax pmax
comp=Z,460nm,7.8s
GTA LR LR
comp=Z,2μm,16.2s
GTA LR LR
comp=Z,2μm,15.2s
GTA LR LR
comp=Z,2μm,15.0s
C37A **Embarrass** 54.37 56 P P 22 57 45.1 -1.5
baz=309,SNR=13
ILULI **Ilulissat** 54.38 20 *i* P P 22 57 45.4 -0.9
comp=Z,35nm,0.8s
ILULI **Ilulissat** 54.38 20 *i* P P 22 57 45.4 -0.9
ILULI pmax pmax
comp=Z,35nm,0.8s
H34A **Spellman Lake,** 54.39 61 P P 22 57 45.6 -1.1
baz=310
LAZ **Ladron** 54.41 78 *e*P P 22 57 48.4 +1.2
K32A **Verdigre** 54.45 64 P P 22 57 46.3 -0.9
baz=310
ANMO **Albuquerque** 54.46 77 P P 22 57 47.3 -0.3
baz=312
ANMO **Albuquerque** 54.46 77 *c i*P P 22 57 47.6 0.0
ANMO pmax pmax
comp=Z,13nm,1.2s
ANMO **Albuquerque** 54.46 77 *e*P P 22 57 47.9 +0.3
comp=Z,12nm,1.1s
ECSD **EROS Data Cent** 54.52 62 P P 22 57 46.5 -1.3
baz=310,SNR=6.8
ECSD **EROS Data Cent** 54.52 62 *e*P P 22 57 46.3 -1.4
comp=Z,9.1nm,1.0s
ENH **Enshi** 54.54 276 *e*P P 22 57 48.2 +0.1
comp=Z,72nm,0.9s
E36A **McGregor** 54.57 58 P P 22 57 46.6 -1.5
baz=310,SNR=7.1
EYMN **Ely** 54.59 56 P P 22 57 46.7 -1.4
baz=310,SNR=14
EYMN **Ely** 54.59 56 *e*P P 22 57 47.0 -1.2
comp=Z,18nm,0.9s
D37A **Cotton** 54.60 57 P P 22 57 46.6 -1.7
baz=310
M31A **Lambtecht Ranc** 54.72 66 P P 22 57 47.7 -1.5
baz=310
LPM **Los Pinos Moun** 54.78 77 *e*P P 22 57 50.9 +0.9
L32A **Elgin** 54.85 65 P P 22 57 49.5 -0.7
baz=310
F36A **Milaca** 54.85 59 P P 22 57 48.5 -1.5
baz=310
C38A **Sawbill Land.** 54.85 56 P P 22 57 48.6 -1.4
baz=310,SNR=12
H35A **Sunnyside Ranc** 54.89 60 P P 22 57 48.8 -1.5
baz=310
BNM **Barren Site** 54.89 77 *e*P P 22 57 51.8 +1.0
N31A **Bailey Ranch,** 55.07 66 P P 22 57 50.6 -1.2
baz=311
319A **Douglas** 55.12 82 *e*P P 22 57 53.5 +1.1
comp=Z,20nm,1.0s
G36A **St. Michael** 55.13 59 P P 22 57 50.7 -1.4
baz=310
J34A **George** 55.17 62 P P 22 57 51.0 -1.4
baz=310
121A **Cookes Peak, D** 55.27 80 P P 22 57 53.1 -0.4
baz=313
C39A **Grand Marais** 55.38 55 P P 22 57 52.2 -1.6
baz=310
H36A **Jessenland, He** 55.46 60 P P 22 57 53.6 -0.8
baz=310
K34A **Le Mars** 55.48 63 P P 22 57 53.1 -1.6
baz=311
N32A **Stulken Farm,** 55.49 66 P P 22 57 53.8 -0.9
baz=311
J35A **Milford** 55.54 62 P P 22 57 53.9 -1.2
baz=311
SPMN **Marine on St.** 55.65 59 P P 22 57 54.8 -1.0
baz=311
I36A **Fitzsimmons Fa** 55.77 61 P P 22 57 55.7 -1.1
baz=311
L34A **Svendsen Farm,** 55.80 64 P P 22 57 55.7 -1.2
baz=311,SNR=6.4
O32A **Brockman Farm,** 55.83 67 P P 22 57 56.3 -0.9
baz=311
CBKS **Cedar Bluff** 55.93 69 P P 22 57 57.4 -0.6
baz=312,SNR=6.7
CBKS **Cedar Bluff** 55.93 69 *e*P P 22 57 58.5 +0.5
CBKS pmax pmax
comp=Z,58nm,0.9s
CBKS **Cedar Bluff** 55.93 69 *e*P P 22 57 58.5 +0.5
comp=Z,58nm,0.9s
K35A **Storm Lake** 55.94 63 P P 22 57 56.9 -1.1
baz=311
M34A **Aspy Farms, Fr** 55.98 64 P P 22 57 57.3 -1.0
baz=311
N33A **J Bar K, Exete** 55.99 66 P P 22 57 56.8 -1.5
baz=311
H37A **Dierke Farm, C** 56.00 59 P P 22 57 57.5 -0.9
baz=311
J36A **Seneca 1, Swea** 56.04 61 P P 22 57 57.4 -1.3
baz=311
P32A **Huiting Farm,** 56.06 67 P P 22 57 57.7 -1.1
baz=312
I37A **Lemond, Waseca** 56.11 60 P P 22 57 58.1 -1.1
baz=311
SFJD **Kangerlussuaq** 56.29 21 *i* P P 22 57 59.1 -1.0
comp=Z,36nm,1.1s
SFJD **Kangerlussuaq** 56.29 21 *e*P P 22 58 00.0 -0.1
SFJD pmax pmax
comp=Z,41nm,1.1s
SFJD **Kangerlussuaq** 56.29 21 *e*P P 22 58 00.0 -0.1
comp=Z,41nm,1.1s
O33A **Hebron** 56.35 66 P P 22 57 59.8 -1.2
baz=312
N34A **Lincoln** 56.47 65 P P 22 58 00.4 -1.3
baz=312
J37A **Redenius Farm,** 56.49 61 P P 22 58 00.5 -1.4
baz=311
Q32A **Meitler Ranch,** 56.50 68 P P 22 58 01.1 -1.0
baz=312,SNR=6.6
M35A **Neola** 56.51 64 P P 22 58 01.0 -1.1
baz=311
L36A **Harm Buss Farm** 56.67 63 P P 22 58 01.5 -1.6
baz=312
I38A **Scanlan Farm,** 56.68 60 P P 22 58 01.9 -1.3
baz=311
P33A **Williams Farm,** 56.71 67 P P 22 58 02.2 -1.3
baz=312
O34A **Beatrice** 56.79 66 P P 22 58 02.6 -1.4
baz=312
R32A **Long Quarter,** 56.79 68 P P 22 58 02.9 -1.3
baz=312
K37A **Belmond** 56.80 62 P P 22 58 02.5 -1.6
baz=312
Q33A **Connelly Farm,** 56.92 67 P P 22 58 04.2 -0.8
baz=312,SNR=9.2
N35A **Tabor** 56.94 64 P P 22 58 04.2 -0.9
baz=312,SNR=10
COWI **Conover** 57.02 56 *e*P P 22 58 04.6 -1.0
comp=Z,14nm,0.6s
M36A **Felix, Anita** 57.02 63 P P 22 58 04.7 -0.9
baz=312
J38A **Wedel Dairy, R** 57.07 60 P P 22 58 04.8 -1.2
baz=312,SNR=9.1
P34A **Walnut Farm, R** 57.13 66 P P 22 58 05.3 -1.2
baz=312
S32A **Newby Ranch, P** 57.14 69 P P 22 58 05.7 -0.9
baz=312
L37A **Phoenix Point,** 57.16 62 P P 22 58 05.6 -1.0
baz=312,SNR=5.9
O35A **Humboldt** 57.18 65 P P 22 58 05.6 -1.2
baz=312
R33A **Olander Ranch,** 57.29 68 P P 22 58 06.9 -0.7
baz=312
MNTX **Cornudas Mount** 57.32 79 P P 22 58 07.1 -0.8
baz=314,SNR=25
MNTX **Cornudas Mount** 57.32 79 *e*P P 22 58 07.5 -0.5
comp=Z,16nm,0.8s
N36A **Muff Farm, Cla** 57.35 64 P P 22 58 07.0 -1.0
baz=312
K38A **Parkersburg** 57.36 61 P P 22 58 07.4 -0.6
baz=312
MSTX **Muleshoe** 57.36 75 P P 22 58 07.2 -1.1
baz=313,SNR=16
MSTX **Muleshoe** 57.36 75 *e*P P 22 58 08.6 +0.3
comp=Z,78nm,1.4s
AMTX **Amarillo** 57.40 74 P P 22 58 07.4 -1.1
baz=313
AMTX **Amarillo** 57.40 74 *e*P P 22 58 08.6 0.0
comp=Z,38nm,0.9s
M37A **Trindle Farm,** 57.47 63 P P 22 58 07.4 -1.5
baz=312
J39A **Decorah** 57.48 60 P P 22 58 07.1 -1.8
baz=312,SNR=11
Q34A **Chapman** 57.49 67 P P 22 58 07.6 -1.4
baz=312
T32A **Huddler Ranch,** 57.50 70 P P 22 58 08.0 -1.1
baz=313,SNR=7.7
KSU1 **Kansas State U** 57.56 67 P P 22 58 07.9 -1.6
baz=312
L38A **Oak Wood Farm,** 57.59 62 P P 22 58 08.3 -1.3
baz=312,SNR=11
P35A **Duane Minner,** 57.61 66 P P 22 58 08.6 -1.2
baz=312
SCO **Scoresbysund** 57.66 8⇑ *i*P P 22 58 10.0 +0.3
comp=Z,38nm,1.1s
SCO **Scoresbysund** 57.66 8⇑ *i*P P 22 58 10.0 +0.3
SCO pmax pmax
comp=Z,38nm,1.1s
CD2 **Chengdu** 57.66 280 P P 22 58 09.6 -0.8
CD2 sP sP 22 58 31.8 +5.0
CD2 PP PP 23 00 17.8 -0.5
CD2 PcS PcS 23 03 03.8 -0.7
CD2 S S 23 06 03.3 -2.6
CD2 sS sS 23 06 29.8 +4.4
CD2 SS SS 23 09 55.3 -0.8
CD2 pmax pmax
comp=Z,30nm,0.6s
CD2 pmax pmax
comp=Z,660nm,6.4s
CD2 LR LR
comp=Z,2μm,13.1s
CD2 LR LR
comp=Z,2μm,11.9s
CD2 LR LR
comp=Z,2μm,13.9s
CD2 **Chengdu** 57.66 280 SS PP 23 00 17.3 -1.0
R34A **Isabella, Hill** 57.73 68 P P 22 58 09.4 -1.3
baz=312,SNR=6.0
S33A **Kaszmaul Farm,** 57.76 69 P P 22 58 09.6 -1.4
baz=313,SNR=10
K39A **Oelwein** 57.80 61 P P 22 58 09.3 -1.8
baz=312,SNR=6.9
O36A **Bolckow** 57.81 65 P P 22 58 10.1 -1.2
baz=312
N37A **Lee Faris, Mou** 57.82 64 P P 22 58 10.2 -1.1
baz=312,SNR=8.2
M38A **Pleasantville** 57.94 62 P P 22 58 10.8 -1.3
baz=312,SNR=5.5
T33A **Patterson Ranc** 57.96 69 P P 22 58 11.1 -1.3
baz=313
J40A **Soldiers Grove** 57.97 59 P P 22 58 10.6 -1.7
baz=312
ARA0 **ARCESS Array S** 58.00 349 *e*P P 22 58 11.3 -0.8
ARA0 *e*PcP PcP 22 59 03.9 +0.1
ARCES **ARCESS Array B** 58.00 349 P P 22 58 11.6 -0.5
comp=Z,9.1nm,0.7s,baz=29,slow=8.6,SNR=16
ARCES PcP PcP 22 59 03.8 +0.1
comp=Z,13nm,0.8s,baz=15,slow=5.0,SNR=9.1
ARE0 **ARCESS Array S** 58.00 349 *e*P P 22 58 11.6 -0.6
ARE0 IAmb IAmb 22 59 04.9
comp=Z,17nm,0.9s
P36A **Good Intent, A** 58.02 65 P P 22 58 11.2 -1.5
baz=312
Q35A **Mercer Eighty,** 58.05 66 P P 22 58 11.5 -1.4
baz=313
KURK **Kurchatov** 58.13 313 *e*P P 22 58 13.4 +0.1
KURK **Kurchatov** 58.13 313 *e*P P 22 58 13.4 +0.1
L39A **Vinton** 58.13 61 P P 22 58 12.4 -1.0
baz=312,SNR=24
S34A **Willow Spring** 58.21 68 P P 22 58 12.4 -1.7
baz=313
K40A **Colesburg** 58.22 60 P P 22 58 12.7 -1.4
baz=312,SNR=8.0
LVZ **Lovozero** 58.25 345 *e*P P 22 58 12.1 -1.8
LVZ pmax pmax
comp=Z,19nm,0.7s
LVZ **Lovozero** 58.25 345 *e*P P 22 58 12.9 -1.0
comp=Z,22nm,0.8s
O37A **Wolven Farm, M** 58.25 64 P P 22 58 13.1 -1.3
baz=313,SNR=7.8
WMQ **Urumqi** 58.27 302 P P 22 58 15.8 +1.3
WMQ pP sP 22 58 30.4 -0.5
WMQ PP PP 23 00 22.8 -0.6
WMQ S S 23 06 05.9 -7.7
WMQ pmax pmax
comp=Z,29nm,1.1s
WMQ pmax pmax
comp=Z,260nm,4.4s
WMQ LR LR
comp=Z,2μm,19.2s
WMQ LR LR
comp=Z,2μm,17.3s
WMQ LR LR
comp=Z,3μm,20.0s
Q36A **Arnold C. Orve** 58.31 66 P P 22 58 13.1 -1.7
baz=313
R35A **Emporia Munici** 58.32 67 P P 22 58 13.4 -1.4
baz=313
N38A **Joes South For** 58.34 63 P P 22 58 13.3 -1.6
baz=313
J41A **Loganville** 58.38 59 P P 22 58 13.6 -1.6
baz=312,SNR=15
V32A **Arapaho** 58.41 71 P P 22 58 14.6 -1.0
baz=313
M39A **Webster** 58.47 62 P P 22 58 14.3 -1.5
baz=313,SNR=20
U33A **Lingo Farm, Me** 58.48 70 P P 22 58 14.5 -1.5
baz=313
P37A **Lathrop** 58.52 65 P P 22 58 14.7 -1.6
baz=313,SNR=7.9
JFWS **Jewell Farm** 58.56 59 *e*P P 22 58 15.2 -1.2
JFWS pmax pmax
comp=Z,19nm,0.8s
JFWS **Jewell Farm** 58.56 59 *e*P P 22 58 15.2 -1.2
comp=Z,19nm,0.8s
TRO **Tromso** 58.58 352 *e*P P 22 58 14.6 -1.5
TRO IAmb IAmb 22 58 15.0
comp=Z,62nm,1.7s
L40A **Anamosa** 58.60 61 P P 22 58 15.1 -1.6
baz=313,SNR=9.2
T34A **McClaskey Farm** 58.62 69 P P 22 58 15.9 -1.1
baz=313,SNR=11
O38A **Galt** 58.66 64 P P 22 58 15.7 -1.5
baz=313
S35A **Otter Creek Ra** 58.68 68 P P 22 58 16.1 -1.3
baz=313,SNR=6.4
N39A **Derby Farms, D** 58.69 63 P P 22 58 15.9 -1.5
baz=313,SNR=20
W32A **Sentinel** 58.70 72 P P 22 58 17.0 -0.6
baz=313,SNR=15
R36A **Gordon, Harris** 58.72 67 P P 22 58 16.6 -1.0
baz=313
K41A **Shullsburg** 58.73 60 P P 22 58 15.8 -1.9
baz=313,SNR=23
APA **Apatity** 58.75 345⇓ *i*P P 22 58 17.1 -0.2
APA *i* 22 59 06.5
APA *i* S S 23 06 14.0 -4.9
APA pmax pmax
comp=Z,6.0nm,0.8s
APA MLR MLR
comp=Z,1μm,16.0s
V33A **Lossen Ranch,** 58.80 70 P P 22 58 17.3 -0.9
baz=313
U34A **Anderson Ranch** 58.82 69 P P 22 58 17.2 -1.1
baz=313,SNR=14
U34A **Anderson Ranch** 58.82 69 *e*P P 22 58 17.8 -0.5
comp=Z,71nm,0.9s
Q37A **Longview Farm,** 58.95 65 P P 22 58 18.1 -1.1
baz=313
P38A **Dawn** 58.96 64 P P 22 58 18.0 -1.3
baz=313,SNR=14
GYA **Guiyang** 58.98 275⇑ *i*P P 22 58 19.8 +0.1
GYA pP sP 22 58 37.4 +1.3
GYA PP PP 23 00 34.0 +3.9
GYA ScP ScP 23 03 03.3 -2.2
GYA S S 23 06 21.8 -1.5
GYA SS SS 23 10 17.5 +0.4
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.7s
GYA LR LR
comp=Z,520nm,18.8s
GYA LR LR
comp=Z,490nm,19.7s
GYA LR LR
comp=Z,550nm,19.1s
L41A **Preston** 58.99 60 P P 22 58 17.4 -2.0
baz=313,SNR=17
MK31 **Makanchi Array** 59.05 307 *e*P P 22 58 19.5 -0.3
MK31 **Makanchi Array** 59.05 307 *e*P P 22 58 19.5 -0.3
MK32 **Makanchi Array** 59.05 307 *e*P P 22 58 19.7 -0.1
MKAR **Makanchi Array** 59.05 307 P P 22 58 19.7 -0.1
comp=Z,41nm,0.8s,baz=53,slow=6.7,SNR=114
MKAR **Makanchi Array** 59.05 307 *e*P P 22 58 19.6 -0.3
comp=Z,281nm,0.6s
MK01 **Makanchi Array** 59.06 307 *e*P P 22 58 19.2 -0.7
S36A **Lake Cedric, C** 59.08 67 P P 22 58 18.9 -1.2
baz=313
T35A **Sooner Cattle** 59.09 68 P P 22 58 19.1 -1.1
baz=313,SNR=8.2
O39A **Kirksville** 59.09 63 P P 22 58 18.9 -1.3
baz=313
R37A **Teagarden Farm** 59.12 66 P P 22 58 18.7 -1.7
baz=313
W33A **Caddo, Fort Co** 59.15 71 P P 22 58 20.6 0.0
baz=314,SNR=6.7
X32A **Elmer** 59.16 72 P P 22 58 20.2 -0.5
baz=314,SNR=14
MAKZ **Makanchi** 59.20 307 *e*P P 22 58 20.6 -0.3
MAKZ pmax pmax
comp=Z,43nm,0.7s
MAKZ **Makanchi** 59.20 307 *e*P P 22 58 20.6 -0.3
comp=Z,43nm,0.7s
V34A **Guthrie** 59.24 70 P P 22 58 20.4 -0.9
baz=314,SNR=14
V34A **Guthrie** 59.24 70 *e*P P 22 58 21.1 -0.1
comp=Z,60nm,1.0s
WMOK **Wichita Mounta** 59.24 72 P P 22 58 20.4 -0.9
baz=314,SNR=40
WMOK **Wichita Mounta** 59.24 72 *e*P P 22 58 20.8 -0.5
WMOK pmax pmax
comp=Z,33nm,0.9s
WMOK **Wichita Mounta** 59.24 72 *e*P P 22 58 20.8 -0.5
comp=Z,33nm,0.9s
U35A **Pawnee** 59.34 69 P P 22 58 20.7 -1.2
baz=314,SNR=6.0
T36A **Boggs Farm, Ca** 59.36 68 P P 22 58 20.8 -1.3
baz=313
Q38A **Cooks Store, C** 59.37 65 P P 22 58 20.1 -1.9
baz=313,SNR=7.7
S37A **Fort Scott** 59.49 67 P P 22 58 21.3 -1.6
baz=313,SNR=8.1
P39B **Salisbury** 59.50 64 P P 22 58 21.6 -1.4
baz=313,SNR=28
W34A **Bridge Creek,** 59.50 71 P P 22 58 22.4 -0.7
baz=314
W34A **Bridge Creek,** 59.50 71 *e*P P 22 58 23.1 0.0
comp=Z,27nm,0.9s
X33A **Lawton** 59.55 72 P P 22 58 22.7 -0.7
baz=314,SNR=8.1
O40A **La Belle** 59.56 63 P P 22 58 22.4 -1.0
baz=313,SNR=35
Q39A **Willow Grove F** 59.67 64 P P 22 58 22.8 -1.4
baz=313
V35A **Meyer Ranch, C** 59.69 70 P P 22 58 23.5 -0.9
baz=314,SNR=8.1
R38A **Fenwick Farm,** 59.73 66 P P 22 58 22.6 -2.1
baz=314
Y33A **Hilltop Ranch,** 59.84 72 P P 22 58 24.7 -0.7
baz=314,SNR=8.0
P40A **Paris** 59.87 63 P P 22 58 23.8 -1.7
baz=314,SNR=26
T37A **Cheneyville 18** 59.88 67 P P 22 58 23.7 -1.9
baz=314,SNR=7.9
X34A **Smith Ranch, M** 59.90 71 P P 22 58 26.0 +0.1
baz=314,SNR=10
U36A **Oologah** 59.91 68 P P 22 58 24.8 -1.0
baz=314
TX31 **Lajitas Ar. Si** 60.02 80 *e*P P 22 58 26.4 -0.4
LTX **Lajitas** 60.02 80 *e*P P 22 58 25.9 -0.9
LTX *e* 22 59 11.8
LTX **Lajitas** 60.02 80 *e*P P 22 58 25.9 -0.9
LTX *e*PcP PcP 22 59 11.8 -0.7
TXAR **Lajitas Array** 60.02 80 P P 22 58 25.9 -0.9
comp=Z,5.1nm,0.8s,baz=302,slow=4.3,SNR=31
TXAR PcP PcP 22 59 11.8 -0.7
comp=Z,7.0nm,0.8s,baz=308,slow=2.7,SNR=4.3
TXAR PKP2bc 23 27 58.5
comp=Z,0.6nm,0.9s,baz=111,slow=3.2,SNR=4.3
TXAR **Lajitas Array** 60.02 80 P P 22 58 25.9 -0.9
TXAR 22 59 11.8
TXAR pmax pmax
comp=Z,10.0nm,1.1s
TXAR pmax pmax
comp=Z,7.0nm,0.8s
SOKR **Solikamsk** 60.08 330 *c i*P P 22 58 26.5 -0.1
SOKR pmax pmax
comp=Z,56nm,0.9s
VOSK **Vostochnaya** 60.09 318 *e*P P 22 58 27.3 +0.5
VOSK pmax pmax
comp=Z,94nm,1.1s
VOSK **Vostochnaya** 60.09 318 *e*P P 22 58 27.3 +0.5
comp=Z,94nm,1.1s
W35A **Tecumseh** 60.09 70 P P 22 58 26.3 -0.8
baz=314,SNR=21
S38A **Stockton** 60.11 66 P P 22 58 25.3 -2.0
baz=314
O41A **Passleys Farm,** 60.12 62 P P 22 58 25.9 -1.3
baz=314,SNR=31
BRVK **Borovoye** 60.14 319 *c i*P P 22 58 27.9 +0.8
BRVK pmax pmax
comp=Z,267nm,1.0s
BRVK **Borovoye** 60.14 319 *e*P P 22 58 27.6 +0.4
comp=Z,137nm,1.0s
R39A **Chumby, Stover** 60.14 65 P P 22 58 25.6 -1.8
baz=314,SNR=7.6
ABTX **Abilene, Hawle** 60.19 74 P P 22 58 27.6 -0.2
baz=314,SNR=25
ABTX **Abilene, Hawle** 60.19 74 *e*P P 22 58 28.1 +0.3
comp=Z,67nm,1.0s
V36A **Jenks** 60.20 69 P P 22 58 26.8 -1.1
baz=314,SNR=12
TUL1 **Leonard** 60.20 69 P P 22 58 26.9 -0.9

baz=314,SNR=7.6
TUL1 Leonard 60.20 69 *e*P P 22 58 27.7 -0.2
comp=Z,40nm,1.0s
GLMI Grayling 60.22 55 *e*P P 22 58 27.7 -0.1
comp=Z,52nm,0.8s
Q40A Laux Farm, Aux 60.22 64 P P 22 58 26.5 -1.4
baz=314,SNR=13
Z33A Whitaker Ranch 60.26 73 P P 22 58 27.7 -0.6
baz=314,SNR=7.8
U37A Salina 60.26 68 P P 22 58 27.4 -0.8
baz=314,SNR=9.7
T38A Diamond 60.30 67 P P 22 58 27.1 -1.5
baz=314,SNR=6.5
P41A Barry, Barry 60.32 63 P P 22 58 27.6 -1.0
baz=314,SNR=5.7
Y34A Reagan Ranch, 60.39 72 P P 22 58 28.8 -0.4
baz=314,SNR=18
S39A Bolivar 60.41 66 P P 22 58 27.4 -1.8
baz=314
HPIG 60.48 83 *e*P P 22 58 29.6 -0.5
comp=Z,10nm,1.0s
W36A Wetumka 60.48 70 P P 22 58 29.3 -0.5
baz=314,SNR=22
O42A Bath 60.51 62 P P 22 58 28.5 -1.4
baz=314
STEI Steigen 60.55 353 *e*P P 22 58 29.6 -0.1
STEI lAmb lAmb 22 58 29.8
comp=Z,9.2nm,0.7s
X35A Drake 60.55 71 P P 22 58 29.4 -0.9
baz=314,SNR=21
R40A Maddies Statio 60.59 65 P P 22 58 28.3 -2.2
baz=314,SNR=15
V37A Hulbert 60.60 68 P P 22 58 29.5 -1.1
baz=314,SNR=6.6
133A Hamilton Ranch 60.64 74 P P 22 58 30.3 -0.6
baz=315,SNR=25
U38A Gravette 60.66 67 P P 22 58 29.6 -1.4
baz=314
HDIL Hopedale 60.69 61 P P 22 58 29.6 -1.5
baz=314,SNR=13
HDIL Hopedale 60.69 61 *e*P P 22 58 30.4 -0.7
comp=Z,48nm,0.6s
Z34A Collier Ranch, 60.71 72 P P 22 58 30.3 -1.1
baz=314,SNR=6.9
P42A Winchester 60.78 62 P P 22 58 30.5 -1.3
baz=314,SNR=12
X36A Centrahoma 60.80 70 P P 22 58 31.5 -0.5
baz=314,SNR=26
T39A Clever 60.84 66 P P 22 58 30.5 -1.7
baz=314,SNR=10
Y35A Marietta 60.86 71 P P 22 58 31.7 -0.7
baz=314,SNR=14
S40A Lebanon 60.94 65 P P 22 58 31.3 -1.6
baz=314
W37B Quinton 60.95 69 P P 22 58 32.6 -0.4
baz=314,SNR=11
SCHQ Schefferville 60.96 37 P P 22 58 31.4 -1.4
comp=Z,36nm,0.9s,baz=337,slow=7.2,SNR=17
SCHQ Schefferville 60.96 37 *e*P P 22 58 32.0 -0.8
comp=Z,38nm,0.9s
SVE Sverdlovsk 60.98 326 *d i*P P 22 58 34.1 +1.3
SVE *e* 22 59 16.7
SVE pmax pmax
comp=Z,72nm,1.1s
HHAR Hobbs 61.03 67 *e*P P 22 58 32.5 -1.0
comp=Z,12nm,0.8s
V38A Canehill 61.05 68 P P 22 58 32.4 -1.3
baz=314,SNR=8.0
233A Rising Star 61.06 74 P P 22 58 33.3 -0.5
baz=315,SNR=8.4
Z35A Perchaven, San 61.13 72 P P 22 58 33.3 -0.9
baz=315,SNR=6.3
Q42A Golden Eagle 61.14 63 P P 22 58 33.0 -1.2
baz=314,SNR=24
134A White-Moore Ra 61.16 73 P P 22 58 34.2 -0.3
baz=315,SNR=24
U39A Green Forest 61.22 67 P P 22 58 33.4 -1.5
baz=314,SNR=13
T40A Mansfield 61.24 66 P P 22 58 33.0 -1.9
baz=314,SNR=9.3
Y36A Durant 61.31 71 P P 22 58 34.8 -0.6
baz=315
X37A Clayton 61.37 70 P P 22 58 35.1 -0.7
baz=315,SNR=16
S41A Jillco Farms, 61.38 65 P P 22 58 34.1 -1.8
baz=314,SNR=20
VLDQ Val d'Or 61.41 48 *e*P P 22 58 33.0 -2.9
comp=Z,24nm,1.0s
333A Richland Sprin 61.49 75 P P 22 58 36.3 -0.4
baz=315,SNR=14
V39A Pettigrew 61.51 67 P P 22 58 35.8 -1.0
baz=315,SNR=12
234A Clairette 61.53 74 P P 22 58 36.4 -0.5
baz=315,SNR=28
W38A Poteau 61.53 69 P P 22 58 36.2 -0.7
baz=315,SNR=15
135A Vickery Place, 61.58 73 P P 22 58 36.8 -0.5
baz=315,SNR=7.2
Q43A New Douglas 61.59 62 P P 22 58 36.0 -1.3
baz=314,SNR=9.8
JCT Junction City 61.59 76 P P 22 58 35.9 -1.5
baz=315,SNR=6.7
JCT Junction City 61.59 76 *e*P P 22 58 36.9 -0.5
JCT pmax pmax
comp=Z,29nm,1.2s
JCT Junction City 61.59 76 *e*P P 22 58 36.9 -0.5
comp=Z,29nm,1.2s
U40A Yellville 61.60 67 P P 22 58 35.5 -1.9
baz=315,SNR=12
X38A Whitesboro 61.63 69 P P 22 58 36.8 -0.7
baz=315,SNR=9.6
Y37A Hugo 61.65 70 P P 22 58 36.8 -0.9
baz=315
Z36A Blue Ridge 61.66 71 P P 22 58 37.1 -0.7
baz=315,SNR=8.3
T41A Mountain View 61.75 65 P P 22 58 36.5 -1.9
baz=315
433A Art 61.83 75 P P 22 58 38.2 -0.8
baz=315,SNR=20
W39A Magazine 61.88 68 P P 22 58 38.4 -0.8
baz=315,SNR=12
334A Lometa 61.94 74 P P 22 58 38.9 -0.8
baz=315,SNR=26
WHTX Lake Whitney, 61.95 73 P P 22 58 39.3 -0.4
baz=315,SNR=12
WHTX Lake Whitney, 61.95 73 *e*P P 22 58 39.9 +0.2
comp=Z,49nm,0.8s
Q44A Meyer Farm, Va 61.99 62 P P 22 58 38.8 -1.2
baz=315,SNR=6.7
ARU Arti 62.01 327 *c i*P P 22 58 40.4 +0.6
ARU *e* 22 59 20.3
ARU 23 00 56.8
ARU PPP PPP 23 02 23.5
ARU S **S** **23 07 04.9 +4.0**
ARU 23 08 25.5
ARU SS **SS** **23 11 08.4 +5.5**
ARU pmax pmax
comp=Z,97nm,1.0s
ARU Arti 62.01 327 *e*P P 22 58 40.0 +0.2
comp=Z,71nm,0.8s
V40A Witts Springs 62.01 67 P P 22 58 38.7 -1.5
baz=315,SNR=13
SFIN Lafayette 62.01 60 P P 22 58 38.9 -1.2
baz=315,SNR=20
SFIN Lafayette 62.01 60 *e*P P 22 58 39.1 -0.9
comp=Z,51nm,0.8s
U41A Viola 62.15 66 P P 22 58 39.7 -1.3
baz=315,SNR=11
X39A Fountain Ranch 62.16 69 P P 22 58 40.2 -1.0
baz=315,SNR=21
136A Ennis 62.16 72 P P 22 58 41.0 -0.2
baz=315
DAV Davao City (W) 62.17 244 LR LR 23 21 05.5
comp=Z,412nm,20.9s,baz=46,slow=32
Z37A Pogue Cattle C 62.20 71 P P 22 58 41.1 -0.3
baz=315
Y38A Idabel 62.21 70 P P 22 58 40.7 -0.8
baz=315
434A Burnet 62.29 75 P P 22 58 41.3 -0.8
baz=315,SNR=21
STOK Stokkvaagen 62.29 354 *e*P P 22 58 41.2 -0.3
STOK lAmb lAmb 22 58 41.8
comp=Z,38nm,0.8s
W40A Ferguson Farm, 62.29 68 P P 22 58 41.2 -0.8
baz=315,SNR=12
S43A Fulton Ridge, 62.34 64 P P 22 58 41.1 -1.1
baz=315,SNR=12
533A Kerrville 62.35 76 P P 22 58 41.5 -1.0
baz=316
KMI Kunming 62.39 276 P P 22 58 42.9 -0.2
KMI pP sP 22 58 57.8 -1.8
KMI sP pP 22 59 05.5 +11
KMI pmax pmax
comp=Z,21nm,1.0s
KMI LR LR
comp=Z,870nm,15.4s
KMI LR LR
comp=Z,600nm,14.6s
KMI LR LR
comp=Z,740nm,19.0s
QIZ Qiongzhong 62.39 266 P P 22 58 44.3 +1.4
V41A Mountainview 62.41 67 P P 22 58 41.4 -1.4
baz=315,SNR=10
R44A Waltonville 62.42 63 P P 22 58 41.3 -1.5
baz=315
MIAR Mount Ida 62.45 68 P P 22 58 42.6 -0.5
baz=315,SNR=33
MIAR Mount Ida 62.45 68 *e*P P 22 58 42.8 -0.3
MIAR pmax pmax
comp=Z,72nm,1.1s
MIAR Mount Ida 62.45 68 *e*P P 22 58 42.8 -0.3
comp=Z,72nm,1.1s
335A Moody 62.47 74 P P 22 58 42.8 -0.4
baz=315
U42A Revenden 62.53 65 P P 22 58 42.1 -1.5
baz=315,SNR=14
Z38A Mt. Pleasant 62.54 70 P P 22 58 42.6 -1.1
baz=315,SNR=5.4
137A Heron Place, G 62.54 71 P P 22 58 43.4 -0.2
baz=315
Y39A Lockesburg 62.58 69 P P 22 58 42.8 -1.1
baz=315,SNR=6.1
OLIL Olney 62.62 62 *e*P P 22 58 43.7 -0.4
comp=Z,46nm,0.8s
X201 Greenbrier Sit 62.63 67 *e*P P 22 58 43.6 -0.7
comp=Z,22nm,0.8s
X301 Greenbrier Sit 62.65 67 *e*P P 22 58 43.4 -0.9
comp=Z,20nm,0.8s
WHAR Wooly Hollow 62.68 67 *e*P P 22 58 43.9 -0.7
comp=Z,98nm,1.8s
PBMO Poplar Bluff 62.70 65 *e*P P 22 58 43.5 -1.2
comp=Z,32nm,0.8s
633A Saathoff Ranch 62.70 76 P P 22 58 44.0 -0.8
baz=316
S44A Carbondale 62.71 63 P P 22 58 43.3 -1.5
baz=315
SIUC Southern Illin 62.72 63 *e*P P 22 58 44.5 -0.3
comp=Z,23nm,0.8s
534A Blanco 62.72 75 P P 22 58 44.5 -0.5
baz=316,SNR=8.8
435B Jarrell 62.73 74 P P 22 58 44.9 -0.1
baz=316
336A Riesel 62.74 73 P P 22 58 44.8 -0.3
baz=316,SNR=14
W41B Gary Mavity, V 62.78 67 P P 22 58 44.3 -0.9
baz=315,SNR=15
V42A Cord 62.83 66 P P 22 58 44.1 -1.5
baz=315,SNR=9.3
138A Matatall Enter 62.89 71 P P 22 58 46.0 0.0
baz=315,SNR=9.6
X40A Basin Creek Fa 62.93 68 P P 22 58 45.6 -0.7
baz=315,SNR=9.5
237A Washetta, Mont 62.93 72 P P 22 58 46.2 -0.1
baz=316
Y40A Okolona 63.00 69 P P 22 58 46.4 -0.3
baz=315
SADO Sadowa 63.01 51 *e*P P 22 58 45.7 -1.0
comp=Z,14nm,1.0s
Z39A Irene McRaven, 63.02 70 P P 22 58 46.6 -0.3
baz=315
832A Faith Ranch, C 63.05 78 P P 22 58 46.9 -0.2
baz=316
S45A Carrier Mills 63.10 63 P P 22 58 46.1 -1.2
baz=315
X41A Kaden, Bauxite 63.11 68 P P 22 58 47.3 -0.1
baz=315
733A Divot King Ran 63.15 77 P P 22 58 47.2 -0.6
baz=316
PARMO Parma 63.16 64 *e*P P 22 58 47.5 -0.3
BLO Bloomington 63.18 60 *e*P P 22 58 47.3 -0.5
BLO pmax pmax
comp=Z,27nm,0.8s
BLO Bloomington 63.18 60 *e*P P 22 58 47.3 -0.5
comp=Z,26nm,0.8s
436A Wall Ranch, Ga 63.21 74 P P 22 58 47.7 -0.5
baz=316
634A China Grove, S 63.26 76 P P 22 58 48.4 -0.1
baz=316
535A Dale 63.27 75 P P 22 58 48.3 -0.3
baz=316
139A Bunkhouse Ranc 63.29 70 P P 22 58 48.4 -0.3
baz=316,SNR=5.5
BORG Borgarnes 63.29 10 *e*P P 22 58 49.8 +1.6
BORG pmax pmax
comp=Z,18nm,0.8s
BORG Borgarnes 63.29 10 *e*P P 22 58 49.8 +1.6
comp=Z,18nm,0.8s
WLAR White Oak Lake 63.33 69 *e*P P 22 58 49.3 +0.3
comp=Z,94nm,1.0s
238A Jacksonville 63.34 71 P P 22 58 49.6 +0.6
baz=316
337A Centerville 63.37 73 P P 22 58 49.4 +0.2
baz=316
833A Chaparral WMA, 63.37 77 P P 22 58 49.2 -0.1
baz=316
USIN University of 63.41 62 *e*P P 22 58 49.0 -0.4
comp=Z,50nm,0.8s
Z40A Long Farm, Mag 63.47 69 P P 22 58 49.8 -0.1
baz=316
Y41A Eaglette Beard 63.49 68 P P 22 58 49.4 -0.6
baz=316,SNR=8.5
734A La Parita Cree 63.51 76 P P 22 58 50.3 +0.1
baz=316
536A Bastrop 63.54 74 P P 22 58 50.7 +0.4
baz=316
437A Phantom Ranch, 63.56 73 P P 22 58 50.8 +0.3
baz=316
635A Leesville 63.60 75 P P 22 58 50.7 -0.1
baz=316
KLMR Klimovskoe 63.65 339 *e*P P 22 58 49.5 -1.1
KLMR *e* 22 59 25.2
KLMR pmax pmax
comp=Z,26nm,1.0s
V44A Blytheville 63.67 65 P P 22 58 50.0 -1.1
baz=316
338A Crockett 63.69 72 P P 22 58 52.0 +0.7
baz=316
239A Gary 63.72 71 P P 22 58 51.3 -0.2
baz=316
NATX Nacogdoches 63.79 71 P P 22 58 52.1 +0.2
baz=316
NATX Nacogdoches 63.79 71 *e*P P 22 58 52.9 +1.0
comp=Z,50nm,0.8s
140A Cam and Jess, 63.80 70 P P 22 58 51.9 -0.1
baz=316
PLVO Plevna 63.82 50 *e*P P 22 58 51.0 -1.0
comp=Z,56nm,1.7s
Z41A Richland Creek 63.82 69 P P 22 58 52.0 -0.1
baz=316
933A Laredo 63.96 78 P P 22 58 53.2 +0.1
baz=316
735A Kenedy 63.96 76 P P 22 58 53.4 +0.3
baz=316
636A Smothers Creek 63.97 75 P P 22 58 53.4 +0.2
baz=316
WCI Wyandotte Cave 63.98 61 *e*P P 22 58 52.4 -0.8
WCI pmax pmax
comp=Z,21nm,0.8s
WCI Wyandotte Cave 63.98 61 *e*P P 22 58 52.4 -0.8
comp=Z,21nm,0.8s
537A Green Hill Far 63.99 74 P P 22 58 53.7 +0.3
baz=316,SNR=9.1
Y42A Garnett, Star 64.00 68 P P 22 58 52.9 -0.4
baz=316
438A Sam Houston St 64.02 73 P P 22 58 54.0 +0.5
baz=316,SNR=5.6
X43A Marvell 64.04 67 P P 22 58 52.9 -0.7
baz=316
240A Hunter Patters 64.12 71 P P 22 58 54.0 -0.2
baz=316
TRQ Mont Tremblant 64.14 48 *e*P P 22 58 52.4 -1.8
339A Huntington 64.15 72 P P 22 58 54.4 0.0
baz=316
141A Papa Simpson, 64.22 70 P P 22 58 54.6 -0.2
baz=316
V45A Humboldt 64.27 64 P P 22 58 54.7 -0.4
baz=316
Z42A Norrel Spur, H 64.31 68 P P 22 58 54.8 -0.6
baz=316,SNR=9.9
736A Circle Diamond 64.34 75 P P 22 58 55.9 +0.3
baz=316,SNR=5.8
835A Beeville 64.36 76 P P 22 58 55.7 0.0
baz=316
538A Harpers Horsep 64.39 73 P P 22 58 56.4 +0.5
baz=316
439A Center Grove, 64.41 72 P P 22 58 56.6 +0.6
baz=316
934A Benavides 64.43 77 P P 22 58 56.7 +0.4
baz=316
637A Eagle Lake 64.44 74 P P 22 58 56.6 +0.3
baz=316,SNR=5.1
Y43A Makayla and Ka 64.44 67 P P 22 58 56.1 -0.1
baz=316
X44A Crenshaw 64.48 66 P P 22 58 55.9 -0.5
baz=316
340A Bronson 64.49 71 P P 22 58 56.4 -0.2
baz=316,SNR=8.8
W45A Hickory Valley 64.56 65 P P 22 58 56.4 -0.5
baz=316
WVT Waverly 64.63 63 *e*P P 22 58 56.5 -0.9
WVT pmax pmax
comp=Z,16nm,0.8s
WVT Waverly 64.63 63 *e*P P 22 58 56.5 -0.9
comp=Z,16nm,0.8s
241A Mo Tay, Goldon 64.63 70 P P 22 58 57.7 +0.2
baz=316
Z43A Armstrong Fami 64.76 68 P P 22 58 58.0 -0.3
baz=316
Y44A Strider, Charl 64.82 67 P P 22 58 58.2 -0.5
baz=316
737A Port Lavaca 64.86 75 P P 22 58 58.4 -0.6
baz=316
OXF Oxford 64.89 66 *e*P P 22 58 58.7 -0.5
OXF pmax pmax
comp=Z,132nm,1.1s
OXF Oxford 64.89 66 *e*P P 22 58 58.7 -0.5
comp=Z,132nm,1.1s
440A Kirbyville 64.93 72 P P 22 58 59.4 -0.1
baz=316
X45A UM Field Stati 64.96 66 P P 22 58 58.8 -0.8
baz=316
341A Kurthwood 64.98 71 P P 22 58 59.6 -0.2
baz=316,SNR=5.3
143A Socs Landing, 65.03 68 P P 22 58 59.8 -0.3
baz=316
242A Grayson 65.06 69 P P 22 58 60.0 -0.3
baz=316
LMQ La Malbaie 65.06 44 *e*P P 22 58 58.8 -1.2
MMNY Mt. Morris Dam 65.11 52 *e*P P 22 58 59.9 -0.5
Z44A Pea Ridge, Bel 65.19 67 P P 22 59 00.6 -0.5
baz=316
Y45A Yeager Farm, C 65.28 66 P P 22 59 01.1 -0.6
baz=316,SNR=8.8
540A Vidor 65.30 72 P P 22 59 02.1 +0.2
baz=316
LONY Lake Ozonia 65.32 49 *e*P P 22 59 00.3 -1.5
comp=Z,15nm,1.1s
N54A Moraine State 65.35 55 P P 22 59 00.7 -1.4
baz=317
441A DeRidder 65.39 71 P P 22 59 02.4 0.0
baz=316
ZAIG Zacatecas 65.43 84 *e*P P 22 59 04.3 +1.2
comp=Z,11nm,1.1s
342A Flagon Creek P 65.45 70 P P 22 59 02.6 -0.2
baz=316
035Z Hargill 65.53 78 P P 22 59 03.5 +0.1
baz=317
Z45A Winona 65.55 67 P P 22 59 03.0 -0.5
baz=316
243A Waterproof 65.58 69 P P 22 59 03.4 -0.2
baz=316,SNR=6.7
FIA0 FINESS Array S 65.62 346 *e*P P 22 59 02.6 -0.9
FIA0 FINESS Array S 65.62 346 *e*P P 22 59 02.5 -0.9
FINES FINESS Array B 65.62 346 P P 22 59 02.5 -0.9
comp=Z,13nm,0.8s,baz=32,slow=7.5,SNR=30
144A Alexander Plac 65.66 68 P P 22 59 04.1 -0.1
baz=316
Y46A Houston 65.66 66 P P 22 59 03.5 -0.6
baz=317,SNR=17
FRU Bishkek 65.70 309 *i* P P 22 59 04.0 -0.3
FRU pmax pmax
comp=Z,110nm,1.4s
442A Mamou 65.86 71 P P 22 59 06.1 +0.7
baz=317
541A Lake Charles 65.89 72 P P 22 59 05.7 +0.1
baz=317
AAK Ala-Archa 65.90 309 *e*P P 22 59 06.8 +1.0
AAK pmax pmax
comp=Z,49nm,0.8s
AAK Ala-Archa 65.90 309 *e*P P 22 59 06.8 +1.0
comp=Z,49nm,0.8s
VBMS Vicksburg 65.90 68 P P 22 59 05.1 -0.6
baz=317
244A Avery, Jackson 65.93 68 P P 22 59 05.5 -0.4
baz=317,SNR=9.8
145A Houston Renfro 65.97 68 P P 22 59 05.6 -0.5
baz=317
Z46A Louisville 66.11 66 P P 22 59 06.6 -0.4
baz=317
LSA Lhasa 66.20 288 P P 22 59 09.1 +0.8
LSA pmax pmax
comp=Z,15nm,0.9s
LSA Lhasa 66.20 288 *e*P P 22 59 09.7 +1.4
LSA pmax pmax
comp=Z,52nm,0.8s
LSA Lhasa 66.20 288 *e*P P 22 59 09.7 +1.4
comp=Z,52nm,0.8s
542A Morse 66.22 71 P P 22 59 07.9 +0.1
baz=317
Y47A UCPARC, Winfie 66.22 65 P P 22 59 07.0 -0.8
baz=317,SNR=9.1
344A Westbrook Farm 66.33 69 P P 22 59 08.3 -0.2
baz=317,SNR=5.3
SWET Sewanee 66.35 63 *e*P P 22 59 07.8 -0.8
MOL Molde 66.35 356 *e*P P 22 59 08.0 -0.1
MOL lAmb lAmb 22 59 08.8
comp=Z,45nm,0.9s
MOL *e*pP pP 22 59 22.0 +2.0
245A Little AP, Sta 66.40 68 P P 22 59 08.5 -0.4
baz=317
146A Union 66.45 67 P P 22 59 09.0 -0.2
baz=317
BINY Binghamton 66.45 52 *e*P P 22 59 08.2 -0.9
comp=Z,21nm,0.8s
Z47A Carrollton 66.61 66 P P 22 59 09.5 -0.8
baz=317,SNR=12
SSPA Standing Stone 66.67 54 *e*P P 22 59 10.0 -0.5
comp=Z,18nm,0.8s
ACCN Adirondack Com 66.69 49 *e*P P 22 59 09.4 -1.1
comp=Z,12nm,0.6s
TZTN Tazewell 66.70 60 *e*P P 22 59 10.8 -0.1
comp=Z,41nm,1.4s
AKN Aaknes 66.77 356 *e*P P 22 59 10.4 -0.4
AKN lAmb lAmb 22 59 11.8
comp=Z,91nm,1.1s
Z48A Northport 66.77 65 P P 22 59 10.1 -1.2
baz=317,SNR=8.8
DOMB Dombas 66.80 355 *e*P P 22 59 10.8 -0.3
DOMB lAmb lAmb 22 59 11.5
comp=Z,48nm,0.9s
345A Thompson Farm, 66.85 69 P P 22 59 11.5 -0.3
baz=317
444A Pine Grove 66.86 69 P P 22 59 12.1 +0.2
baz=317
147A Livingston 66.88 66 P P 22 59 11.4 -0.5
baz=317,SNR=9.2
CPCT Cooper Cave 66.97 62 *e*P P 22 59 11.5 -1.0
comp=Z,10nm,1.0s
544A White Castle 67.05 70 P P 22 59 13.2 +0.1
baz=317
445A Amite 67.09 69 P P 22 59 13.7 +0.4
baz=317
HNH Hanover 67.09 48 *e*P P 22 59 12.3 -0.8
comp=Z,21nm,0.9s
346A Big Creek Wild 67.12 68 P P 22 59 13.7 +0.2
baz=317
247A Quitman 67.13 67 P P 22 59 13.6 +0.1
baz=317
TKL Tuckaleechee C 67.23 61 *e*P P 22 59 13.8 -0.4
TKL pmax pmax
comp=Z,19nm,1.0s
TKL Tuckaleechee C 67.23 61 *e*P P 22 59 13.8 -0.4
comp=Z,19nm,1.0s
NONG Nongkai 67.32 271 P P 22 59 15.4 +0.5

comp=Z,32nm,1.1s,comp=Z,8µm
LRAL Lakeview Retre 67.34 65 *e*P **P** **22 59 14.0 -0.9**
comp=Z,9.5nm,0.8s
FOO Floro 67.43 357 *e*P **P** **22 59 14.9 0.0**
NC204 NORSAR Array S 67.46 354 *e*P **P** **22 59 14.7 -0.6**
NC303 NORSAR Array S 67.47 354 *e*P **P** **22 59 15.0 -0.3**
KSH Kashi 67.49 305 P **P** **22 59 20.3 +4.4**
KSH *e*pP sP 22 59 36.3 +3.8
KSH *e*PP PP 23 01 52.3 +7.8
KSH *e*ScP 23 03 43.0
KSH S **S** **23 08 12.0 +2.8**
KSH ScS **SKiKP** **23 09 10.5 0.0**
KSH SS **SS** **23 12 34.9 +5.8**
KSH pmax pmax
comp=Z,60nm,0.8s
KSH pmax pmax
comp=Z,270nm,3.3s
KSH LR LR
comp=Z,1µm,14.4s
KSH LR LR
comp=Z,820nm,13.4s
KSH LR LR
comp=Z,1µm,15.8s
N59A State Game Lan 67.52 52 P **P** **22 59 15.1 -0.9**
baz=319,SNR=10
NC405 NORSAR Array S 67.56 353 *e*P **P** **22 59 15.6 -0.2**
248A Dixon Mills 67.60 66 P **P** **22 59 16.0 -0.6**
baz=317
SKNT Sakolnakorn 67.61 269 P **P** **22 59 17.0 +0.2**
comp=Z,28nm,1.3s
446A Poplarville 67.61 68 P **P** **22 59 16.7 +0.1**
baz=317
347A Saraland 67.65 67 P **P** **22 59 16.7 -0.1**
baz=317
NB201 NORSAR Array S 67.65 354 *e*P **P** **22 59 15.9 -0.5**
NB2 NORSAR Subarra 67.66 354 P **P** **22 59 15.8 -0.7**
comp=Z,34nm,0.8s,baz=8.6,slow=6.5
NB2 NORSAR Subarra 67.66 354 P **P** **22 59 15.8 -0.7**
baz=8.6,slow=6.5
NB200 NORSAR Array S 67.66 354 *e*P **P** **22 59 15.8 -0.7**
NOA NORSAR Array B 67.66 354 P **P** **22 59 15.8 -0.7**
comp=Z,38nm,0.9s,baz=9.7,slow=6.3,SNR=94
NBO02 NORSAR Array S 67.68 354 *e*P **P** **22 59 16.6 0.0**
NBO00 NORSAR Array S 67.70 354 *e*P **P** **22 59 17.3 +0.5**
MYLDM Lahad Datu 67.80 249 *e*P **P** **22 59 19.3 +1.4**
comp=Z,60nm,1.1s
645A Chauvin 67.86 70 P **P** **22 59 18.7 +0.5**
baz=317
NAO01 NORSAR Array S 67.88 354 *e*P **P** **22 59 17.6 -0.2**
BLA Blacksburg 67.90 58 *e*P **P** **22 59 18.1 -0.3**
BLA pmax pmax
comp=Z,21nm,1.0s
BLA Blacksburg 67.90 58 *e*P **P** **22 59 18.1 -0.3**
comp=Z,22nm,1.0s
MVL Millersville 67.92 53 *e*P **P** **22 59 17.9 -0.5**
comp=Z,8.5nm,0.7s
NC602 NORSAR Array S 67.94 353 *e*P **P** **22 59 17.7 -0.5**
NC602 NORSAR Array S 67.94 353 *e*P **P** **22 59 17.7 -0.5**
UBPT Khong Chiam 67.95 267 P **P** **22 59 20.2 +1.3**
comp=Z,30nm,0.9s
LUPA Lehigh Univers 67.96 52 *e*P **P** **22 59 18.3 -0.4**
comp=Z,28nm,0.8s
348A Jackson 68.01 67 P **P** **22 59 18.7 -0.4**
baz=318
447A Lucedale 68.03 68 P **P** **22 59 19.2 0.0**
baz=318
VSU Vasula 68.36 345 *e*P **P** **22 59 20.2 -0.6**
VSU pmax pmax
comp=Z,53nm,0.8s
448A Bay Minette 68.39 67 P **P** **22 59 21.7 +0.2**
baz=318
CMAI Chiengmai2 68.50 275 P **P** **22 59 23.4 +0.8**
comp=Z,900nm,1.3s
EMMW East Machias 68.52 45 *e*P **P** **22 59 21.1 -0.9**
comp=Z,43nm,1.0s
ASK Askoy 68.54 357 *e*P **P** **22 59 21.7 -0.2**
WES Weston 68.56 49 *e*P **P** **22 59 21.4 -1.0**
WES pmax pmax
comp=Z,24nm,0.8s
WES Weston 68.56 49 *e*P **P** **22 59 21.4 -1.0**
comp=Z,24nm,0.8s
BER Bergen 68.63 357 *e*P **P** **22 59 22.1 -0.5**
BRAL Brewton 68.68 67 *e*P **P** **22 59 24.8 +1.4**
comp=Z,107nm,0.9s
MOS Moscow 68.70 338 *e*P **P** **22 59 21.6 -1.4**
MOS pmax pmax
comp=Z,74nm,0.8s
LMN Caledonia Moun 68.76 42 *e*P **P** **22 59 22.1 -1.5**
comp=Z,26nm,0.9s
OSL Oslo 68.79 354 *e*P **P** **22 59 23.6 +0.1**
OSL IAmb IAmb 22 59 24.2
comp=Z,42nm,0.9s
DRLN Deer Lake 68.89 36 *e*P **P** **22 59 23.9 -0.4**
comp=Z,46nm,1.0s
LOEI Loei 68.92 272 P **P** **22 59 23.2 -1.8**
comp=Z,22nm,1.1s
KMSC Kings Mountain 68.95 60 P **P** **22 59 24.2 -0.7**
baz=318,SNR=9.4
KMSC Kings Mountain 68.95 60 *e*P **P** **22 59 24.3 -0.7**
comp=Z,25nm,0.8s
LRW Lerwick 69.00 0 *e*P **P** **22 59 23.8 -1.0**
ODD1 Odda 69.05 356 *e*P **P** **22 59 25.5 +0.3**
ODD1 IAmb IAmb 22 59 26.5
comp=Z,71nm,1.1s
GOGA Godfrey 69.06 63 *e*P **P** **22 59 25.0 -0.6**
GOGA pmax pmax
comp=Z,13nm,0.8s
GOGA Godfrey 69.06 63 *e*P **P** **22 59 25.0 -0.6**
comp=Z,13nm,0.8s
KONO Kongsberg 69.15 354 *e*P **P** **22 59 26.2 +0.5**
KONO IAmb IAmb 22 59 26.7
comp=Z,45nm,0.8s
KONO Kongsberg 69.15 354 *i*P **P** **22 59 25.7 -0.1**
KONO pmax pmax
comp=Z,131nm,2.5s
KONO Kongsberg 69.15 354 *e*P **P** **22 59 25.9 +0.1**
comp=Z,42nm,0.8s
LAMP Lampang 69.19 274 P **P** **22 59 27.6 +1.0**
comp=Z,7.2nm,0.9s,comp=Z,279nm
UTTA Uttaradit 69.19 273 P **P** **22 59 26.8 +0.2**
comp=Z,15nm,0.9s,comp=Z,122nm
CMMT Chiang Mai 69.40 275 P **P** **22 59 28.1 +0.1**
comp=Z,29nm,0.9s
CHTO Chiang Mai 69.40 275 P **P** **22 59 28.2 +0.2**
comp=Z,128nm,0.9s
CHTO Chiang Mai 69.40 275 *e*P **P** **22 59 27.8 -0.2**
CHTO pmax pmax
comp=Z,29nm,1.0s
CHTO Chiang Mai 69.40 275 *e*P **P** **22 59 27.8 -0.2**
comp=Z,29nm,1.0s
OBN Obninsk 69.52 338*c i*P **P** **22 59 27.7 -0.3**
OBN *e* 22 59 36.5
OBN *e* 22 59 50.9
OBN *e*S **S** **23 08 24.4 -8.0**
OBN pmax pmax
comp=Z,45nm,1.0s
OBN MLR MLR
comp=Z,2µm,17.0s
OBN Obninsk 69.52 338 *e*P **P** **22 59 27.8 -0.3**
comp=Z,44nm,0.9s
BLS5 Blasjo 69.55 356 *e*P **P** **22 59 28.3 0.0**
JSC Jenkinsville 69.63 61 *e*P **P** **22 59 28.7 -0.5**
JSC Jenkinsville 69.63 61 *e*P **P** **22 59 28.7 -0.5**
CM31 Chiang Mai Arr 69.67 274 *e*P **P** **22 59 29.9 +0.3**
CMAR Chiang Mai Arr 69.67 274 P **P** **22 59 29.8 +0.1**
comp=Z,14nm,0.9s,baz=26,slow=7.0,SNR=70
CM01 Chiang Mai Arr 69.69 274 *e*P **P** **22 59 29.8 +0.1**
PBKT Sadao Pong 69.81 271 P **P** **22 59 31.0 +0.6**
comp=Z,25nm,1.1s
SUKH Sukhothai 69.97 273 P **P** **22 59 32.0 +0.6**
comp=Z,7.9nm,0.9s,comp=Z,61nm
STAV Stavanger 70.07 356 *e*P **P** **22 59 31.5 +0.1**
STAV *e*pP **sP** **22 59 47.0 -1.1**
LUWI Luwuk 70.41 242 *e*P **P** **22 59 33.2 -0.9**
comp=Z,86nm,1.0s
GUN Gumba 70.64 291 *e*P **P** **22 59 37.0 +1.1**
comp=Z,594nm,0.9s
RAMN Ramite 70.93 289 *e*P **P** **22 59 38.3 +0.8**
comp=Z,536nm,0.8s
KKN Kakani 71.08 291 *e*P **P** **22 59 39.1 +0.7**
comp=Z,210nm,0.7s
PKIN Phulchoki 71.17 291 *e*P **P** **22 59 39.9 +0.9**
comp=Z,184nm,0.8s
GKN Gorkha 71.30 291 *e*P **P** **22 59 40.5 +0.8**
comp=Z,359nm,1.0s
DMN Daman 71.32 291 *e*P **P** **22 59 40.5 +0.6**
comp=Z,221nm,0.9s
UMPA Umpang Tak 71.41 273 P **P** **22 59 42.0 +1.7**
comp=Z,23nm,0.9s,comp=Z,156nm
MDO Dochfour 71.66 2 *e*P **P** **22 59 41.1 -0.1**
VRH Novokhopyorsk 71.72 333 *e*P **P** **22 59 40.8 -0.8**
VRH pmax pmax
comp=Z,50nm,0.6s
KPL Plockton 71.73 3 *e*P **P** **22 59 41.6 +0.1**
CHBT CHBT 71.84 268 P **P** **22 59 44.5 +1.7**
comp=Z,39nm,1.5s
MICGM Minsk 71.92 343 *e* **P** **22 59 42.0 -0.7**
MNK Minsk 71.92 343 *e*P **P** **22 59 42.0 -0.7**
KOLN Koldanda 72.08 292 *e*P **P** **22 59 44.7 +0.3**
comp=Z,131nm,0.8s
PYUN Piuthan 72.19 293 *e*P **P** **22 59 45.9 +0.8**
comp=Z,344nm,0.9s
DRUM Mains of Drumt 72.22 1 *e*P **P** **22 59 44.1 -0.4**
DRUM AMB AMB 22 59 47.0
comp=Z,131nm,2.7s
MUD Monsted U'grnd 72.36 354 *i*P **P** **22 59 45.5 +0.2**
comp=Z,36nm,1.0s
MUD Monsted U'grnd 72.36 354 *i*P **P** **22 59 45.5 +0.2**
MUD pmax pmax
comp=Z,36nm,1.0s
VSR Storozhevoye 72.42 335 *e*P **P** **22 59 45.2 -0.5**
VSR pmax pmax
comp=Z,40nm,1.1s
EDU Dundee 72.58 1 *e*P **P** **22 59 46.1 -0.5**
EAB Aberfoyle 72.92 2 *e*P **P** **22 59 48.8 +0.2**
THN Thein Dam 72.99 301 *e*P **P** **22 59 49.0 -0.5**
SUW Suwalki 73.20 345 *e*P **P** **22 59 48.9 -1.4**
SUW Suwalki 73.20 345 *e*P **P** **22 59 48.9 -1.4**
SUW MLR MLR
comp=Z,3µm,24.5s
EDI Edinburgh 73.21 1 *e*P **P** **22 59 50.7 +0.3**
EDI AMB AMB 22 59 51.4
comp=Z,56nm,1.2s
BSD Bornholm Skovb 73.21 351 *i*P **P** **22 59 48.8 -1.6**
BSD Bornholm Skovb 73.21 351 *i*P **P** **22 59 48.8 -1.6**
ESY Stoneypath 73.22 1 *e*P **P** **22 59 50.2 -0.2**
BHK Bhakra 73.39 299 *e*P **P** **22 59 52.0 +0.1**
PHET Kaeng Krachan 73.42 270 P **P** **22 59 53.2 +1.0**
comp=Z,12nm,0.9s
SBUM Sibu 73.71 253 *e*P **P** **22 59 53.5 -0.4**
comp=Z,12nm,0.8s
BOK Bokaro 73.72 288 *ex* **PcP** **23 00 09.2 -0.3**
ESK Eskdalemuir 73.81 1 *e*P **P** **22 59 54.0 0.0**
ECK Cauldkaine Hil 73.95 1 *e*P **P** **22 59 54.6 -0.2**
GAL1 Galloway 74.23 2 *e*P **P** **22 59 55.8 -0.5**
GAL1 AMB AMB 23 00 02.8
comp=Z,32nm,2.5s
RAR Rarotonga 74.49 160 LR LR 23 25 57.7
comp=Z,1µm,19.8s,baz=330,slow=30
KESW Keswick, Cumbr 74.54 1 *e*P **P** **22 59 58.5 +0.2**
KESW AMB AMB 23 00 01.7
comp=Z,90nm,1.8s
GMM Mts of Mourne 74.83 3 *e*P **P** **22 59 59.6 -0.3**
KBL Kabul 74.84 307 *e*P **P** **23 00 00.3 -0.3**
KBL pmax pmax
comp=Z,80nm,0.8s
KBL Kabul 74.84 307 *e*P **P** **23 00 00.3 -0.3**
comp=Z,80nm,0.8s
WIM Isle of Man 74.96 2 *e*P **P** **23 00 00.7 0.0**
NDI New Delhi 75.04 297 *ex* P **P** 22 59 55.0 -6.5
AKASG Malin Array Be 75.26 341 P **P** **23 00 01.6 -0.7**
comp=Z,15nm,0.6s,baz=24,slow=6.1,SNR=45
AKASG Malin Array Be 75.26 341 P **P** **23 00 01.7 -0.7**
AKASG pmax pmax
comp=Z,27nm,0.8s
AKBB Malin Array Si 75.26 341 *e*P **P** **23 00 01.8 -0.6**
AKBB pmax pmax
comp=Z,34nm,0.9s
AKBB Malin Array Si 75.26 341 *e*P **P** **23 00 01.8 -0.6**
comp=Z,34nm,0.9s
KIEV Kiev 75.27 341 *e*P **P** **23 00 02.0 -0.5**
KIEV pmax pmax
comp=Z,43nm,1.1s
AK11 Malin Array Si 75.29 341 *e*P **P** **23 00 02.5 -0.1**
BEL Belsk 75.68 346 *e*P **P** **23 00 05.4 +0.6**
BEL Belsk 75.68 346 *e*P **P** **23 00 05.4 +0.6**
BEL MLR MLR
comp=Z,3µm,17.4s
MTN Manton Dam 76.14 228 *e*P **P** **23 00 07.4 -0.4**
comp=Z,44nm,0.9s
CWF Charnwood Fore 76.41 0 *e*P **P** **23 00 08.4 -0.6**
CWF AMB AMB 23 00 15.2
comp=Z,41nm,2.7s
CTAO Charters Tower 76.61 212 *e*P **P** **23 00 10.2 -0.2**
CTAO pmax pmax
comp=Z,26nm,1.4s
CTAO Charters Tower 76.61 212 *e*P **P** **23 00 10.2 -0.2**
comp=Z,26nm,1.4s
GOF Gofitskoye 76.82 330⇑ *i*P **P** **23 00 12.4 +1.0**
GOF *e*S **S** **23 09 55.7 0.0**
GOF pmax pmax
comp=Z,200nm,0.9s
LVV L'vov 77.10 344 *e*P **P** **23 00 12.4 -0.5**
MCH1 Michaelchurch 77.14 1 *e*P **P** **23 00 12.8 -0.3**
CLL Collm 77.16 351 *e*P **P** **23 00 11.0 -2.2**
comp=Z,6.0nm,0.9s
CLL *e* 23 00 18.0
CLL Collm 77.16 351 *e*P **P** **23 00 12.3 -0.9**
CLL pmax pmax
comp=Z,8.0nm,0.8s
CLL Collm 77.16 351 *e*P **P** **23 00 12.2 -0.9**
comp=Z,7.6nm,0.8s
KSP Ksiaz 77.26 349 *e*P **P** **23 00 13.6 -0.2**
KSP Ksiaz 77.26 349 *e*P **P** **23 00 13.6 -0.2**
KSP MLR MLR
comp=Z,1µm,21.2s
GEYT Alibeck 77.26 316 P **P** **23 00 15.1 +1.0**
comp=Z,43nm,1.0s,baz=340,slow=3.9,SNR=77
GEYT PP **PP** **23 03 08.9 +1.1**
comp=Z,15nm,1.1s,baz=358,slow=7.6,SNR=6.2
MONM Monmouth 77.30 1 *e*P **P** **23 00 13.8 -0.1**
OJC Ojcow 77.40 346 *e*P **P** **23 00 14.7 +0.1**
OJC Ojcow 77.40 346 *e*P **P** **23 00 14.0 -0.6**
OJC pmax pmax
comp=Z,15nm,0.9s
OJC Ojcow 77.40 346 *e*P **P** **23 00 14.0 -0.6**
comp=Z,15nm,0.9s
DGPR DIGLIPUR 77.42 275 *e*P **P** **23 00 15.3 +0.1**
BRG Berggiesshubel 77.49 350 *e*PKP **P** **23 00 14.6 -0.5**
comp=Z,13nm,1.2s
BRG Berggiesshubel 77.49 350 *e*P **P** **23 00 14.6 -0.5**
BRG pmax pmax
comp=Z,13nm,1.2s
KWP Kalwaria Pacla 77.51 344 *e*P **P** **23 00 15.9 +0.7**
KWP Kalwaria Pacla 77.51 344 *e*P **P** **23 00 15.9 +0.7**
KWP MLR MLR
comp=Z,4µm,23.5s
GROC Groznyy 77.56 327 *e*P **P** **23 00 16.8 +1.2**
GROC pmax pmax
comp=Z,35nm,1.0s
DPC Dobruska-Polom 77.74 349 *e*P **P** **23 00 16.8 +0.3**
DPC *ex* x 23 00 21.3
DPC *e*pP **pP** **23 00 29.6 +0.9**
DPC Dobruska-Polom 77.74 349 *e*P **P** **23 00 16.8 +0.3**
DPC *e* 23 00 29.6
PVCC Panska Ves 77.77 350 *e*P **P** **23 00 16.4 -0.2**
PVCC Panska Ves 77.77 350 *e*P **P** **23 00 16.4 -0.2**
WOL Wolverton 77.84 0 *e*P **P** **23 00 16.4 -0.6**
SORM Soroca 77.88 340⇑ *i*P **P** **23 00 17.1 -0.1**
KIV Kislovodsk 77.92 329 *i*P **P** **23 00 18.1 +0.4**
SNR=21
KIV Kislovodsk 77.92 329*c i*P **P** **23 00 18.5 +0.8**
KIV 23 00 26.0
KIV *PP **sP** **23 00 33.0 -1.5**
KIV *e*PPP PPP 23 05 03.5
KIV S **S** **23 10 02.0 -5.8**
KIV pmax pmax
comp=Z,46nm,1.0s
KIV MLR MLR
comp=Z,1µm,17.0s
KIV Kislovodsk 77.92 329 *e*P **P** **23 00 18.6 +0.8**
comp=Z,44nm,1.0s
KRLC Kraliky 77.95 348 *e*P **P** **23 00 17.6 -0.1**
KRLC Kraliky 77.95 348 *e*P **P** **23 00 17.6 -0.1**
OKC Ostrava-Krasne 78.00 347 *e*P **P** **23 00 18.0 +0.1**
OKC Ostrava-Krasne 78.00 347 *e*P **P** **23 00 18.0 +0.1**
NCK Nalchik 78.04 329*c i*P **P** **23 00 19.7 +1.4**
NCK pmax pmax
comp=Z,87nm,0.9s
KBZ Khabaz 78.06 329 P **P** **23 00 19.5 +1.2**
comp=Z,25nm,0.8s,baz=84,slow=2.5,SNR=42
MORC Moravsky Berou 78.15 348⇓ *i*P **P** **23 00 19.1 +0.3**
MORC Moravsky Berou 78.15 348 *e*P **P** **23 00 19.1 +0.3**
MORC pmax pmax
comp=Z,25nm,1.0s
MORC Moravsky Berou 78.15 348 *e*P **P** **23 00 19.1 +0.3**
comp=Z,25nm,1.0s
BEBN Eben Emael 78.20 356 P **P** **23 00 18.8 -0.2**
NKC Novy Kostel 78.28 351 *e*P **P** **23 00 19.5 0.0**
NKC *e*PCP **PcP** **23 00 26.6 -2.2**
NKC Novy Kostel 78.28 351 *e*P **P** **23 00 19.5 0.0**
NKC *e* 23 00 26.6
PRU Pruhonice 78.30 350 *e*P **P** **23 00 19.5 -0.1**
PRU *e*PCP **PcP** **23 00 25.5 -3.4**
PRU Pruhonice 78.30 350 *e*P **P** **23 00 19.5 -0.1**
PRU *e* 23 00 25.5
MEM Membach 78.37 355 P **P** **23 00 20.0 +0.1**
comp=Z,20nm,1.1s
NEY Neytrino 78.54 329 *e*P **P** **23 00 21.8 +0.5**
NEY pmax pmax
comp=Z,1.0nm,0.9s
SNF Seneffe 78.55 357 P **P** **23 00 21.0 +0.1**
UZH Uzhgorod 78.55 344 *e*P **P** **23 00 21.2 +0.3**
UZH *e* 23 00 30.4
UZH *e* 23 00 38.4
ZEI Tsey 78.57 328 *e*P **P** **23 00 20.8 -0.7**
ZEI pmax pmax
comp=Z,110nm,0.7s
BCLA Clavier 78.59 356 P **P** **23 00 21.1 0.0**
KULM Kulim 78.62 264 *e*P **P** **23 00 21.6 -0.2**
comp=Z,20nm,0.9s
GUDG Gudauri 78.66 327 P **P** **23 00 23.3 +1.3**
DYA Yadsworthy 78.69 2 *e*P **P** **23 00 21.4 -0.3**
DYA AMB AMB 23 00 22.2
comp=Z,66nm,1.2s
VRAC Vranov 78.73 348⇑ *i*P **P** **23 00 22.2 +0.2**
KIS Kishinev 78.86 340 *e*P **P** **23 00 22.0 -0.7**
KIS Kishinev 78.86 340 *e*P **P** **23 00 22.0 -0.7**
KIS *e* 23 00 34.0
ONI Oni 78.89 328 P **P** **23 00 25.0 +1.9**
ONI Oni 78.89 328 P **P** **23 00 24.9 +1.9**
GRFO Grafenberg 78.93 352 *e*P **P** **23 00 23.8 +0.7**
GRFO pmax pmax
comp=Z,16nm,0.9s
GRFO Grafenberg 78.93 352 *e*P **P** **23 00 23.8 +0.7**
comp=Z,16nm,0.9s
IAS Iasi 78.94 341⇑ *i*P **P** **23 00 24.0 +0.9**
DOU Dourbes 78.95 356 P **P** **23 00 23.1 -0.1**
BUR08 Bucovina Ar. S 78.98 342 *e*P **P** **23 00 23.8 +0.2**
TRPA Tarpa 78.99 344 *e*P **P** **23 00 24.1 +0.7**
BURAR Bucovina Array 79.00 342⇑ *i*P **P** **23 00 23.6 0.0**
IPM Ipoh 79.01 263 *e*P **P** **23 00 22.8 -1.2**
comp=Z,20nm,0.8s
BHPL Bhopal 79.12 293 *e*P **P** **23 00 24.4 -0.1**
BHPL IAmb IAmb 23 00 25.6
SEAG Tbilisi Sea 79.17 327 P **P** **23 00 26.1 +1.5**
TBLG Delisi 79.23 327 P **P** **23 00 26.0 +1.1**
TBLG Delisi 79.23 327 P **P** **23 00 25.9 +1.1**
CHVG Ch'k'valeri 79.23 329 P **P** **23 00 25.5 +0.7**
KHC Kasperske Hory 79.25 350 *e*P **P** **23 00 25.1 +0.2**
KHC *ex* x 23 00 28.6
KHC Kasperske Hory 79.25 350 *e*P **P** **23 00 24.3 -0.6**
KHC pmax pmax
comp=Z,4.0nm,0.9s
KHC Kasperske Hory 79.25 350 *e*P **P** **23 00 24.3 -0.6**
comp=Z,3.8nm,0.9s
BMR Baia Mare 79.27 343⇑ *i*P **P** **23 00 25.6 +0.7**
WLF Walferdange 79.31 355 P **P** **23 00 25.9 +0.8**
LEOM Leova 79.48 340⇓ *i*P **P** **23 00 26.7 +0.6**
SIM Simferopol' 79.51 335 P **P** **23 00 27.0 +0.7**
SIM pmax pmax
comp=Z,13nm,0.7s
GEC2 GERESS Array S 79.52 350 *e*P **P** **23 00 26.6 +0.2**
GEC2 pmax pmax
comp=Z,11nm,1.3s
GEC2 GERESS Array S 79.52 350 *e*P **P** **23 00 26.6 +0.2**
comp=Z,11nm,1.3s
GERES GERESS Array B 79.52 350 P **P** **23 00 25.9 -0.6**
comp=Z,4.2nm,0.8s,baz=31,slow=5.4,SNR=24
GEA0 GERESS Array S 79.53 350 *e*P **P** **23 00 26.1 -0.3**
PSZ Piszkesteto 79.63 346⇓ *i*P **P** **23 00 28.2 +1.2**
PSZ Piszkesteto 79.63 346 *e*P **P** **23 00 27.8 +0.8**
PSZ pmax pmax
comp=Z,31nm,1.3s
PSZ Piszkesteto 79.63 346 *e*P **P** **23 00 27.8 +0.8**
comp=Z,31nm,1.3s
PSZ Piszkesteto 79.63 346 *e*P **P** **23 00 27.8 +0.8**
ARCR ARCALIA 79.67 343⇑ *i*P **P** **23 00 28.7 +1.5**
TESR Tescani 79.78 341⇑ *i*P **P** **23 00 27.9 +0.2**
NGP Nagpur 79.79 291 *e*P **P** **23 00 27.7 -0.5**
VIS Vishakhapatnam 79.88 286 *e*P **P** **23 00 29.6 +0.9**
VIS IAmb IAmb 23 00 29.8
comp=Z,49nm,0.8s
LANF Langenberg 79.89 354 *e*P **P** **23 00 28.3 0.0**
AKH Akhalkalaki 79.94 328⇓ *i*P **P** **23 00 30.7 +1.8**
AKH Akhalkalaki 79.94 328 P **P** **23 00 31.2 +2.3**
AKH Akhalkalaki 79.94 328 P **P** **23 00 31.2 +2.3**
BGD Bogdanovka 80.03 328 P **P** **23 00 31.3 +1.8**
CJR Cluj-Napoca 80.17 343⇑ *i*P **P** **23 00 31.4 +1.5**
CONA Conrad Observa 80.18 349 *i*P **P** **23 00 30.4 +0.4**
comp=Z,18nm,1.4s,SNR=7.0
DRGR 80.26 344⇑ *i*P **P** **23 00 30.7 +0.3**
SOP Sopron 80.33 348 *e*P **P** **23 00 31.4 +0.7**
ODBI Odobesti 80.41 341⇑ *i*P **P** **23 00 33.2 +2.1**
PLOR Plostina 80.41 341⇑ *i*P **P** **23 00 31.7 +0.5**
MOA Molln 80.44 350 *i* PcP **P** **23 00 34.0 +2.6**
comp=Z,6.9nm,1.0s
WLS Welschbruch 80.49 354 *e*P **P** **23 00 31.5 -0.1**
BFO Black Forest 80.51 354 *e*P **P** **23 00 30.8 -0.9**
BFO pmax pmax
comp=Z,7.0nm,0.8s
BFO Black Forest 80.51 354 *e*P **P** **23 00 30.8 -0.9**
comp=Z,7.4nm,0.8s
DOPR Dopca 80.55 342⇑ *i*P **P** **23 00 33.2 +1.3**
TLCR 80.57 339⇑ *i*P **P** **23 00 32.8 +0.8**
GNI Garni 80.63 326 *i*P **P** **23 00 33.4 +0.7**
SNR=9.3
GNI Garni 80.63 326*c i*P **P** **23 00 33.6 +0.9**
GNI pmax pmax
comp=Z,125nm,1.2s
GNI Garni 80.63 326 *e*P **P** **23 00 35.2 +2.6**
comp=Z,50nm,1.0s
ECH Echery 80.70 354 *e*P **P** **23 00 33.0 +0.3**
CFR Carcaliu 80.73 340⇑ *i*P **P** **23 00 33.0 +0.2**
THEF They Montfort 80.75 355 *e*P **P** **23 00 32.9 -0.1**
GRER 80.79 340⇑ *i*P **P** **23 00 35.3 +2.1**
ARSA Arzberg 80.89 349 *i*P **P** **23 00 34.3 +0.6**
comp=Z,7.4nm,0.8s,SNR=5.1
MLR Muntele Rosu 80.90 341⇓ *i*P **P** **23 00 35.3 +1.4**
MLR Muntele Rosu 80.90 341 *e*P **P** **23 00 34.7 +0.8**
MLR pmax pmax
comp=Z,26nm,0.8s
MLR Muntele Rosu 80.90 341 *e*P **P** **23 00 34.7 +0.8**
comp=Z,26nm,0.8s
SIRR Siria 80.95 344⇑ *i*P **P** **23 00 35.5 +1.5**
WRAB Tennant Creek 80.96 222*c i*P **P** **23 00 33.3 -0.9**
WRAB pmax pmax
comp=Z,24nm,1.0s
WRAB Tennant Creek 80.96 222 *e*P **P** **23 00 33.0 -1.2**
comp=Z,20nm,0.8s
WB2 Warramunga Arr 80.96 222 *e*P **P** **23 00 33.1 -1.2**
comp=Z,24nm,0.9s
WR1 Warramunga Arr 80.97 222 *e*P **P** **23 00 32.9 -1.4**
comp=Z,23nm,0.9s
WRA Warramunga Arr 80.97 222 P **P** **23 00 32.9 -1.4**
comp=Z,14nm,0.8s,baz=36,slow=6.0,SNR=47
WRA PKKPbc **PKKPbc** **23 19 10.8 +0.2**
comp=Z,0.9nm,0.6s,baz=226,slow=2.6,SNR=5.5
LHMI Lhok Sumawe 80.98 267 *e*P **P** **23 00 35.7 +1.0**
comp=Z,154nm,0.9s
MOF Molkenrain 81.06 354 *e*P **P** **23 00 34.3 -0.4**
VOIR 81.13 342⇓ *i*P **P** **23 00 35.9 +0.8**
ISR Istrita 81.13 341⇑ *i*P **P** **23 00 37.5 +2.4**
RETA Reutte 81.15 352 *i*P **P** **23 00 36.2 +1.0**
comp=Z,9.0nm,1.1s
WATA Walderalm 81.23 351 *i*P **P** **23 00 35.9 +0.2**
comp=Z,31nm,1.1s,SNR=9.4
PGOR Pogoanele 81.24 340⇑ *i*P **P** **23 00 36.1 +0.5**
HARR Harsova 81.24 340⇑ *i*P **P** **23 00 36.3 +0.7**
MOTA Moosalm 81.27 352 *i*P **P** **23 00 35.8 -0.1**
comp=Z,27nm,1.2s,SNR=12
ARR Arges 81.27 342⇑ *i*P **P** **23 00 37.1 +1.2**
WTTA Wattenberg 81.30 351 *i*P **P** **23 00 36.4 +0.4**
comp=Z,17nm,0.8s,SNR=6.4

KBA	Koelnbreinsper	81.31	350	*i* P		P	23 00 36.9 +0.7
	comp=Z,39nm,0.8s,SNR=13						
TLB	Topalu	81.32	339	⇑*i* P		P	23 00 36.9 +0.9
MTUR	Matau	81.33	342	⇑*i* P		P	23 00 36.7 +0.5
TIRR	Tirgusor	81.36	339	⇓*i* P		P	23 00 36.9 +0.7
TIRR	Tirgusor	81.36	339	*e*P		P	23 00 36.8 +0.6
TIRR					pmax	pmax	
	comp=Z,29nm,0.9s						
TIRR	Tirgusor	81.36	339	*e*P		P	23 00 36.8 +0.6
	comp=Z,29nm,0.9s						
LOT	Lotru	81.36	343	⇓*i* P		P	23 00 36.8 +0.4
SOKA	Soboth	81.51	349	*i* P		P	23 00 37.5 +0.4
	comp=Z,49nm,1.2s,SNR=14						
PERS	Pernice	81.54	349	*i* P		P	23 00 37.7 +0.5
CVDA	Cernavoda	81.56	339	⇑*i* P		P	23 00 38.2 +1.0
BZS	Buzias	81.58	344	⇑*i* P		P	23 00 37.6 +0.2
SULR		81.61	341	⇓*i* P		P	23 00 37.8 +0.3
FETA	Feichten	81.62	352	*i* P		P	23 00 38.0 +0.3
	comp=Z,24nm,1.0s,SNR=6.9						
PSI	Prapat	81.62	264	*e*P		P	23 00 37.6 -0.6
PSI					pmax	pmax	
	comp=Z,46nm,0.9s						
PSI	Prapat	81.62	264	*e*P		P	23 00 37.6 -0.6
	comp=Z,46nm,0.9s						
MYKA	Terra Mystica	81.72	350	*i* P		P	23 00 39.2 +1.1
	comp=Z,14nm,1.0s						
ABTA	Abfaltersbach	81.72	351	*i* P		P	23 00 38.1 -0.1
	comp=Z,22nm,1.1s,SNR=7.2						
OBKA	Obir	81.73	349	*i* P		P	23 00 38.6 +0.3
	comp=Z,21nm,0.8s,SNR=6.0						
MANR	Mangalia	81.92	339	⇑*i* P		P	23 00 39.9 +0.7
FUORN	Ofenpass-Fuorn	82.06	352	*e*P		P	23 00 40.8 +0.6
	comp=Z,15nm,0.8s						
TUE	Stuetta	82.28	353	*e*P		P	23 00 42.0 +0.7
	comp=Z,15nm,0.8s						
MDVR	Moldovita	82.38	344	⇓*i* P		P	23 00 42.4 +0.7
BOJS	Bojanci	82.64	349	*e*P		P	23 00 43.0 +0.1
ZIMR		82.77	341	⇑*i* P		P	23 00 44.5 +0.9
HYB	Hyderabad	82.98	289	*i* P		P	23 00 45.0 -0.2
HYB	Hyderabad	82.98	289	*e*P		P	23 00 44.9 -0.2
AGO	Saint Agoulin	83.04	357	*e*P		P	23 00 45.6 +0.6
PLDF	La Plantade	83.11	357	*e*P		P	23 00 46.0 +0.5
FITZ	Fitzroy Crossi	83.30	230	*e*P		P	23 00 46.4 -0.1
	comp=Z,20nm,0.9s						
DIVS	Divibare	83.33	345	P		P	23 00 46.9 +0.2
PYM	Petit Puy Mans	83.35	357	*e*P		P	23 00 46.9 +0.2
BHJ	Bhuj	83.49	299	*e*P		P	23 00 47.4 -0.2
GSI	Gunungsitoli	83.62	264	*e*P		P	23 00 47.7 -0.8
	comp=Z,26nm,0.9s						
SSB	Saint Sauveur	83.76	356	*e*P		P	23 00 49.4 +0.6
SSB					pmax	pmax	
	comp=Z,28nm,1.5s						
SSB	Saint Sauveur	83.76	356	*e*P		P	23 00 49.4 +0.6
	comp=Z,28nm,1.5s						
LBL	Lubilhac	83.86	357	*e*P		P	23 00 49.3 0.0
MTDJ	Mount Denham	84.10	68	*e*P		P	23 00 51.6 +0.6
	comp=Z,89nm,0.9s						
GTBY	Guantanamo Bay	84.16	65	*e*P		P	23 00 52.2 +1.0
	comp=Z,28nm,0.9s						
EDRB	Edirne	84.21	340	P		P	23 00 51.4 +0.3
EDRB	Edirne	84.21	340	P		P	23 00 51.4 +0.3
VTS	Vitosha	84.22	342	P		P	23 00 51.1 -0.3
VTS	Vitosha	84.22	342	⇑*i* P		P	23 00 51.3 0.0
VTS	Vitosha	84.22	342	*e*P		P	23 00 51.0 -0.3
VTS					pmax	pmax	
	comp=Z,17nm,0.8s						
VTS	Vitosha	84.22	342	*e*P		P	23 00 51.0 -0.3
	comp=Z,17nm,0.8s						
AS01	Alice Springs	84.44	221	*e*P		P	23 00 51.3 -1.0
AS31	Alice Springs	84.46	221	*e*P		P	23 00 52.1 -0.3
	comp=Z,3.4nm,0.9s						
ASAR	Alice Springs	84.46	221	P		P	23 00 51.8 -0.6
	comp=Z,8.2nm,0.8s,baz=27,slow=4.9,SNR=44						
BR101	Keskin Array S	84.50	334	*e*P		P	23 00 53.0 +0.3
BR131	Keskin Array S	84.50	334	*e*P		P	23 00 52.7 -0.1
BRTR	Keskin Array B	84.50	334	P		P	23 00 53.0 +0.3
	comp=Z,22nm,0.8s,baz=54,slow=2.6,SNR=107						
ANTO	Ankara	84.60	335	*e*P		P	23 00 55.2 +2.0
ANTO					pmax	pmax	
	comp=Z,18nm,0.9s						
ANTO	Ankara	84.60	335	*e*P		P	23 00 55.2 +2.0
	comp=Z,18nm,0.9s						
BR231	Keskin MP Arra	84.63	335	*e*P		P	23 00 53.1 -0.3
POO	Poona	84.87	293	*e*P		P	23 00 54.2 -0.6
POO				⇑*i* P		PcP	23 00 55.0 -3.1
	comp=Z,20nm,1.0s						
KBSD	Kabsdagh	84.89	328	*i* P		P	23 00 55.4 +0.7
LUCF	Luceram	84.99	354	*e*P		P	23 00 55.2 +0.1
MVIF	Mont Vial	85.00	354	*e*P		P	23 00 56.1 +0.9
PDG	Podgorica	85.08	345	P		P	23 00 54.8 -0.6
PDG	Podgorica	85.08	345	⇑*i* P		P	23 00 55.9 +0.5
TTG	Podgorica	85.08	345	P		P	23 00 54.8 -0.6
TTG	Podgorica	85.08	345	P		P	23 00 54.8 -0.6
REVF	Revere	85.14	354	*e*P		P	23 00 56.6 +0.8
SKO	Skopje	85.15	343	*e*P		P	23 00 56.3 +0.5
ALN	Alexandroupoli	85.27	340	P		P	23 00 55.9 -0.5
ALN	Alexandroupoli	85.27	340	P		P	23 00 55.9 -0.5
ALN	Alexandroupoli	85.27	340	P		P	23 00 55.9 -0.5
NVR	Nevrokopi	85.29	342	P		P	23 00 56.6 0.0
NVR	Nevrokopi	85.29	342	P		P	23 00 56.6 0.0
LEPF	PUYLOUBIER	85.46	355	*e*P		P	23 00 58.2 +0.9
SFNV	Sufian	85.57	328	*i* P		P	23 00 58.8 +0.7
KNT	Kendrikon	85.66	342	P		P	23 00 58.3 -0.1
KNT	Kendrikon	85.66	342	P		P	23 00 58.3 -0.1
KNT	Kendrikon	85.66	342	P		P	23 00 58.3 -0.1
MZRK	Al-Mazaregh	85.92	327	*i* P		P	23 01 00.9 +1.1
AQU	L'Aquila	85.97	349	*e*P		P	23 01 00.4 +0.5
AQU					pmax	pmax	
	comp=Z,51nm,1.1s						
AQU	L'Aquila	85.97	349	*e*P		P	23 01 00.4 +0.5
	comp=Z,51nm,1.1s						
TIR	Tirane	86.03	344	⇑*i* P		P	23 01 00.3 +0.1
TIR	Tirane	86.03	344	*e*P		P	23 01 01.5 +1.3
TIR					pmax	pmax	
	comp=Z,14nm,0.7s						
TIR	Tirane	86.03	344	*e*P		P	23 01 01.5 +1.3
	comp=Z,14nm,0.7s						
OHR	Ohrid	86.10	344	*e*P		P	23 01 00.1 -0.5
OUR	Ouranopolis	86.25	341	P		P	23 01 00.6 -0.7
OUR	Ouranopolis	86.25	341	*e*P		P	23 01 00.6 -0.7
OUR	Ouranopolis	86.25	341	*e*P		P	23 01 00.6 -0.7
PLG	Polygyros	86.32	342	P		P	23 01 00.6 -1.1
PLG	Polygyros	86.32	342	P		P	23 01 00.6 -1.1
PLG	Polygyros	86.32	342	P		P	23 01 00.6 -1.1
DRWC	Darouich	86.49	331	*i* P		P	23 01 03.4 +0.7
PAIG	Paliouri	86.70	341	P		P	23 01 02.9 -0.6
PAIG	Paliouri	86.70	341	*e*P		P	23 01 02.9 -0.6
PAIG	Paliouri	86.70	341	*e*P		P	23 01 02.9 -0.6
SDDR	Presa de Saban	87.08	63	*e*P		P	23 01 06.4 +0.7
	comp=Z,43nm,0.9s						
KPRO	Kipourio	87.12	343	P		P	23 01 05.7 0.0
ISP	Isparta	87.12	336	*e*P		P	23 01 05.5 -0.3
ISP					pmax	pmax	
	comp=Z,17nm,0.8s						
XOR	Xorichti	87.34	341	P		P	23 01 04.9 -1.8
XOR	Xorichti	87.34	341	P		P	23 01 04.9 -1.8
KEK	Kerkira	87.64	344	P		P	23 01 06.6 -1.4
KEK	Kerkira	87.64	344	P		P	23 01 06.6 -1.4
SGD	Sagiada	87.66	344	P		P	23 01 07.1 -1.0
IGT	Igoumenitsa	87.72	344	P		P	23 01 07.5 -0.9
IGT	Igoumenitsa	87.72	344	*e*P		P	23 01 07.5 -0.9
IGT	Igoumenitsa	87.72	344	*e*P		P	23 01 07.5 -0.9
AGG	Agios Georgios	87.84	342	*e*P		P	23 01 08.7 -0.4
AGG					pmax	pmax	
	comp=Z,15nm,0.8s						
AGG	Agios Georgios	87.84	342	*e*P		P	23 01 08.7 -0.4
	comp=Z,15nm,0.8s						
DSL	Palaion Diasel	87.97	343	P		P	23 01 18.5 +8.8
DSL	Palaion Diasel	87.97	343	P		P	23 01 18.5 +8.8
CUC	Castrocucco	87.98	347	*e*P		P	23 01 07.8 -1.9
	comp=Z,7.7nm,0.8s						
EVR	Evrytania	88.04	342	P		P	23 01 09.9 -0.2
EVR	Evrytania	88.04	342	P		P	23 01 09.9 -0.2
ANX	Ano Chora	88.34	342	P		P	23 01 11.8 +0.3
TIP	Timpagrande	88.64	346	P		P	23 01 11.8 -1.1
KLV	Kalavryta, Ach	88.82	342	P		P	23 01 11.2 -2.6
KLV	Kalavryta, Ach	88.82	342	*e*P		P	23 01 11.2 -2.6
CSS	Mathiatis	89.03	332	*e*P		P	23 01 16.3 +1.5
	comp=Z,3.2nm,0.8s						
UOSS	Minazif	89.04	310	*e*P		P	23 01 14.5 -0.4
	comp=Z,19nm,1.0s						
STKA	Stephens Creek	89.07	211	P		P	23 01 14.2 -0.4
	comp=Z,7.0nm,1.0s,baz=353,slow=7.4,SNR=6.2						
STKA	Stephens Creek	89.07	211	*e*P		P	23 01 14.6 0.0
STKA				*e*pP		pP	23 01 26.2 -0.7
HATD	Hatta, Dubai	89.18	310	P		P	23 01 15.4 -0.2
NAZ	Nazwa, Dubai	89.27	311	*i* P		P	23 01 16.0 0.0
	SNR=6.0						
ASHO	Ashiyiah	89.33	310	*i* P		P	23 01 16.1 -0.3
	SNR=5.4						
ES19	SONSECA Array	89.42	2	*e*P		P	23 01 16.0 -0.6
ESDC	Sonseca Array	89.44	2	P		P	23 01 15.6 -1.1
	comp=Z,3.8nm,0.9s,baz=355,slow=4.5,SNR=15						
FAQ	Al Faqa, Dubai	89.51	311	*i* P		P	23 01 16.4 -0.8
	SNR=6.1						
TOTH	TOTAH	89.57	329	*i* P		P	23 01 17.9 +0.5
CEL	Celeste	89.67	347	*e*P		P	23 01 15.6 -2.2
	comp=Z,24nm,0.8s						
BRBR	Barbar	89.68	330	*i* P		P	23 01 17.5 -0.6
ZALF	Zalf	89.68	329	*i* P		P	23 01 18.0 +0.2
SALA	Sala	90.07	329	*i* P		P	23 01 20.3 +0.4
TCHB	Talchebab	90.36	330	*i* P		P	23 01 21.9 +0.8
SJG	San Juan	90.62	60	*e*P		P	23 01 22.7 +0.3
SJG					pmax	pmax	
	comp=Z,43nm,1.0s						
SJG	San Juan	90.62	60	*e*P		P	23 01 22.7 +0.3
	comp=Z,43nm,1.0s						
HUMP	Col San Antoni	90.76	59	*e*P		P	23 01 23.1 +0.1
	comp=Z,51nm,1.1s						
LAST	Lasithi	90.89	339	*e*P		P	23 01 21.7 -1.8
	comp=Z,42nm,0.9s						
CDVI	St. Croix	91.66	59	*e*P		P	23 01 27.4 +0.2
	comp=Z,132nm,0.9s						
KEST	Kesra	92.94	352	P		P	23 01 32.9 -0.1
	comp=Z,6.8nm,0.9s,baz=347,slow=8.5,SNR=7.3						
KEST	Kesra	92.94	352	*e*P		P	23 01 33.4 +0.4
	comp=Z,9.4nm,1.0s						
SDV	Santo Domingo	95.55	69	*e*P		P	23 01 45.9 +0.5
	comp=Z,14nm,0.9s						
RUSC	La Rusia	96.48	72	*e*P		P	23 01 50.2 +0.2
	comp=Z,4.6nm,1.1s						
TOA1	Torodi Ar. Sit	115.86	357	*e*PKPdf		PKPdf	23 07 01.2 -1.3
TOA1				*e*PKKPbc		PKKPbc	23 17 32.4 +0.4
TOA0	Torodi Ar. Sit	115.86	357	*e*PKPdf		PKPdf	23 07 01.4 -1.2
TOA0				*e*PKPdf		PKiKP	23 07 02.1 -0.4
TORD	Torodi Ar. Bea	115.86	357	PKP		PKPdf	23 07 01.2 -1.3
	comp=Z,2.0nm,0.6s,baz=358,slow=2.1,SNR=24						
TORD				PKKPbc		PKKPbc	23 17 32.4 +0.4
	comp=Z,1.2nm,1.0s,baz=198,slow=3.4,SNR=4.1						
LPAZ	La Paz	116.82	83	PKP		PKPdf	23 07 04.6 -0.4
	comp=Z,0.9nm,0.8s,baz=357,slow=4.9,SNR=5.0						
KMBO	Kilima Mbogo	120.61	314	PKP		PKPdf	23 07 12.7 +0.7
	comp=Z,7.0nm,0.9s,baz=13,slow=3.2,SNR=14						
KMBO	Kilima Mbogo	120.61	314	*e*PKIKP		PKPdf	23 07 13.0 +1.0
KMBO	Kilima Mbogo	120.61	314	*e*PKPdf		PKPdf	23 07 13.0 +1.0
DBIC	Dimbokro	122.24	5	PKP		PKPdf	23 07 13.9 -0.9
	comp=Z,3.5nm,0.5s,baz=340,slow=3.0,SNR=15						
TIC	Toumodi	122.26	5	*e*PKP1		PKPdf	23 07 14.0 -0.9
KIC	Kosan Boka	122.56	4	*e*PKP1		PKPdf	23 07 14.6 -0.9
	comp=Z,26nm,1.2s						
LIC	Lamto	122.68	5	*e*PKP1		PKPdf	23 07 14.9 -0.8
	comp=Z,45nm,1.5s						
BDFB	Brasilia	128.40	64	PKP		PKPdf	23 07 26.6 0.0
	comp=Z,5.5nm,0.8s						
BDFB	Brasilia	128.40	64	*e*PKPdf		PKPdf	23 07 26.6 0.0
BDFB				*e*PKPdf		PKiKP	23 07 28.3 +1.0
VNDA	Vanda	128.92	185	PKP		PKPdf	23 07 26.0 +0.4
	comp=Z,1.1nm,0.8s,baz=316,slow=4.3,SNR=5.8						
VNDA	Vanda	128.92	185	PKIKP		PKPdf	23 07 26.0 +0.4
VNDA					pmax	pmax	
	comp=Z,1.0nm,0.8s						
SBA	Scott Base	129.03	183	*e*PKIKP		PKPdf	23 07 26.2 +0.4
SBA	Scott Base	129.03	183	*e*PKPdf		PKPdf	23 07 26.2 +0.4
OPO	Ambohidratompo	130.09	293	PKP		PKPdf	23 07 31.0 +1.2
	comp=Z,5.0nm,1.1s,baz=96,slow=9.8,SNR=4.0						
CPUP	Villa Florida	130.97	82	PKP		PKPdf	23 07 31.0 -0.1
	comp=Z,5.4nm,1.0s,baz=306,slow=1.6,SNR=5.5						
CPUP				SKPbc		SKPab	23 10 55.0 +2.8
	comp=Z,4.5nm,0.9s,baz=310,slow=5.0,SNR=6.9						
PLCA	Paso Flores	132.23	106	PKP		PKPdf	23 07 32.8 -0.3
	comp=Z,5.8nm,1.1s,baz=293,slow=4.5,SNR=4.6						
PLCA				SKPbc		SKPab	23 10 57.3 0.0
	comp=Z,4.0nm,0.8s,baz=338,slow=4.8,SNR=3.0						
PLCA	Paso Flores	132.23	106	*e*PKIKP		PKPdf	23 07 35.0 +1.9
PLCA	Paso Flores	132.23	106	*e*PKPdf		PKPdf	23 07 35.0 +1.9
PLCA				*e*SKPbc		SKPab	23 10 58.4 +1.1
QSPA	South Pole Qui	140.97	180	*e*PKPpre		PKPpre	23 07 45.0
MATP	Matopo	141.56	312	PKhKP		PKPpre	23 07 44.0
	comp=Z,5.3nm,0.9s,baz=52,slow=5.7,SNR=11						
SHEL	Horse Pasture	144.62	8	*e*PKIKP		PKPbc	23 07 55.5 +0.3
SHEL	Horse Pasture	144.62	8	*e*PKPdf		PKPbc	23 07 55.5 +0.3
TSUM	Tsumeb	144.84	329	PKP		PKPbc	23 07 56.5 +0.5
	comp=Z,84nm,1.0s,baz=2.2,slow=5.4,SNR=98						
MAW	Mawson	145.53	217	PKPbc		PKPdf	23 07 56.1 -0.2
	comp=Z,11nm,0.9s,baz=85,slow=4.2,SNR=17						
MAW	Mawson	145.53	217	*e*PKPdf		PKPbc	23 07 56.7 +0.2
PMSA	Palmer Station	145.54	138	PKPbc		PKPab	23 07 57.2 +0.2
	comp=Z,36nm,1.2s,baz=306,slow=8.7,SNR=4.2						
LBTB	Lobatse	146.85	312	PKPbc		PKPdf	23 08 00.4 +0.3
	comp=Z,68nm,0.8s,baz=36,slow=1.8,SNR=55						
BOSA	Boshof	150.04	309	PKPbc		PKPbc	23 08 10.7 +0.5
	comp=Z,58nm,0.9s,baz=36,slow=1.8,SNR=53						
SYO	Syowa Base	153.82	212	⇑*e*X		PKPbc	23 08 15.0 -2.3

MEX 18 22:58:15.3±0.6, 14°.36N×92°.39W, h12km±805km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	Comitan	1.92	7	*e*P	Pn	22 58 44.8	-3.3
CCIG				*e*S	Sn	22 59 07.8	-4.6

*ISCJB **18** 23:03:20.2±0.5, 39°.26N±0°.03×28°.09E±0°.04, h6km±5km, Error ellipse: s-maj=5.6km s-min=3.6km az=42.6*
*CSEM **18** 23:03:20.5±0.1, 39°.26N×28°.08E, h8km, MD2.8, Error ellipse: s-maj=2.3km s-min=1.7km az=46.0*
*ISK **18** 23:03:20.2, 39°.28N×28°.06E, h9km, MD2.8*
*DDA **18** 23:03:20.2, 39°.28N×28°.10E, h7km, Md2.9*

ISC 18 23:03:20.4±1.0, 39°.27N±0°.02×28°.09E±0°.02, h11km±9km, n56, σ0°.53/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	Balikesir	0.41	337	*e*PG	Pg	23 03 28.2	-0.2
BALB				*e*SG	Sg	23 03 34.3	+0.5
BALB	Balikesir	0.41	337	*e*Pg	Pg	23 03 28.2	-0.2
BALB				*e*Sg	Sg	23 03 34.3	+0.5
AKS	Akhisar	0.44	209	*e*PG	Pg	23 03 29.5	+0.4
AKS	Akhisar	0.44	209	*e*Pg	Pg	23 03 29.5	+0.4
DEMI	Demirci	0.54	114	*i* P	Pb	23 03 31.8	-0.1
DEMI				*i* S	Sg	23 03 38.8	+0.8
DEMI	Demirci	0.54	114	P	Pb	23 03 31.8	-0.1
DEMI				S	Sg	23 03 38.8	+0.8
BALY	Balya	0.60	323	*i* P	Pb	23 03 32.6	-0.3
BALY	Balya	0.60	323	P	Pb	23 03 32.6	-0.3
GONE	Gonen-Balikesi	0.84	338	*e*PG	Pb	23 03 36.5	-0.5
GONE	Gonen-Balikesi	0.84	338	*e*Pg	Pb	23 03 36.5	-0.5
MANT	Manisa	0.86	155	*i* P	Pg	23 03 36.7	-0.3
MANT				*i* S	Sg	23 03 46.4	-1.8
MANT	Manisa	0.86	155	P	Pg	23 03 36.7	-0.3
MANT				S	Sg	23 03 46.3	-1.8
KULA	Kula-Manisa	0.87	149	*e*PG	Pb	23 03 37.8	+0.1
KULA	Kula-Manisa	0.87	149	*e*Pg	Pb	23 03 37.8	+0.1
DKL	Dikili	0.94	258	*e*PG	Pg	23 03 38.3	-0.2
DKL	Dikili	0.94	258	*e*Pg	Pg	23 03 38.3	-0.2
KCTX	Karacabey (Bur	1.02	12	*e*PG	Pb	23 03 40.0	-0.1
KCTX	Karacabey (Bur	1.02	12	*e*Pg	Pb	23 03 40.0	-0.1
GEDZ	Gediz	1.05	102	*e*PG	Pn	23 03 41.4	+0.2
GEDZ	Gediz	1.05	102	*e*Pg	Pn	23 03 41.4	+0.2
TVSB	Tavsanli	1.08	80	*e*PN	Pn	23 03 41.8	+0.1
TVSB	Tavsanli	1.08	80	*e*Pn	Pn	23 03 41.8	+0.1
AYVA	Ayvalik	1.08	273	*i* P	Pb	23 03 41.1	-0.1
AYVA				*i* S	Sn	23 03 56.5	-0.1
AYVA	Ayvalik	1.08	273	P	Pb	23 03 41.1	-0.1
AYVA				S	Sn	23 03 56.5	-0.1
EDC	Edincik	1.09	351	*e*PG	Pb	23 03 41.3	-0.1
EDC	Edincik	1.09	351	*e*Pg	Pb	23 03 41.3	-0.1
GDZ	Gediz	1.10	99	*i* P	Pb	23 03 41.6	+0.1
GDZ				*i* S	Sg	23 03 55.9	+0.1
GDZ	Gediz	1.10	99	P	Pb	23 03 41.6	+0.1
GDZ				S	Sg	23 03 55.9	+0.1
MDNY	Mudanya-Bursa	1.26	29	*e*PN	Pg	23 03 44.4	-0.2
MDNY	Mudanya-Bursa	1.26	29	*e*Pn	Pg	23 03 44.4	-0.2
KRBG	Karabiga-Canak	1.28	332	*e*Pn	Pb	23 03 44.4	-0.1
KRBG	Karabiga-Canak	1.28	332	*e*PN	Pb	23 03 44.5	+0.2
AYDB	Zeytinkoy-Aydi	1.33	187	*e*PN	Pb	23 03 45.5	+0.2
AYDB	Zeytinkoy-Aydi	1.33	187	*e*Pn	Pb	23 03 45.6	+0.2
MRMT	Marmara Adasi	1.39	344	*e*PN	Pb	23 03 46.2	-0.2
MRMT	Marmara Adasi	1.39	344	*e*Pn	Pb	23 03 46.2	-0.2
ARMT	Armutlu	1.43	24	*e*PN	Pn	23 03 46.1	-0.2
ARMT	Armutlu	1.43	24	*e*Pn	Pn	23 03 46.2	-0.2
LPK	Lapseki	1.50	318	*e*PN	Pb	23 03 47.8	-0.6
LPK	Lapseki	1.50	318	*e*Pn	Pb	23 03 47.8	-0.6
IZI	Iznik	1.51	45	*e*PN	Pb	23 03 48.1	-0.4
IZI	Iznik	1.51	45	*e*Pn	Pb	23 03 48.1	-0.4
RKY	Sarkoy-Tekirda	1.58	334	*e*PN	Pn	23 03 48.9	+0.4
RKY	Sarkoy-Tekirda	1.58	334	*e*Pn	Pn	23 03 48.9	+0.4
SART	Tekirdag	1.58	334	*i* P	Pb	23 03 49.7	-0.1
SART				*i* S	Sb	23 04 09.7	-0.1
SART	Tekirdag	1.58	334	P	Pb	23 03 49.7	-0.1
SART				S	Sb	23 04 09.7	-0.1
CAVI	Cavuskoy	1.64	55	*e*PN	Pb	23 03 50.2	-0.6
CAVI	Cavuskoy	1.64	55	*e*Pn	Pb	23 03 50.2	-0.6
GELI	Tayfur-Gelibol	1.68	313	*e*PN	Pn	23 03 50.2	+0.4
GELI	Tayfur-Gelibol	1.68	313	*e*Pn	Pn	23 03 50.2	+0.4
ERIK	Erikli-Kesan	1.85	320	*e*PN	Pn	23 03 52.6	+0.5
ERIK	Erikli-Kesan	1.85	320	*e*Pn	Pn	23 03 52.6	+0.5
CTKS	Kestanelik-??a	1.99	9	*e*PN	Pn	23 03 55.0	+0.9
CTKS	Kestanelik-??a	1.99	9	*e*Pn	Pn	23 03 55.0	+0.9
GULT	Gulveren	2.20	57	*e*PN	Pn	23 03 58.2	+1.2
GULT	Gulveren	2.20	57	*e*Pn	Pn	23 03 58.2	+1.2

*JMA **18** 23:10:44.9±0.1, 39°.12N×142°.38E, h33km±1km, M4.0*
JMA Felt I J1.
*IDC **18** 23:10:48.9±3.5, 39°.04N×142°.27E, h62km±30km, mb3.7/11, mb1 3.8/13, mb1mx3.6/43, mbtmp3.9/13, ML2.8/2, Error ellipse: s-maj=26.9km s-min=17.0km az=89.0*

ISC 18 23:10:42.9±2.4, 39°.11N±0°.04×142°.47E±0°.07, h13km±13km, n30, σ1°.43/34, mb4.0/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.63	268	P	Pb	23 10 56.2	+0.5
OFUJ				S	Sg	23 11 03.8	+0.4
MIYJ	Miyakonagasawa	0.69	313	P	Pb	23 10 57.1	+0.3
MIYJ				S	Sg	23 11 05.5	+0.1
JTH	Tanohata	0.95	331	P	Pb	23 11 01.3	0.0
JTH				S	Sb	23 11 13.4	-0.5
JOM	Ohasama	0.99	292	P	Pb	23 11 01.8	-0.1
JOM				*i* S	Sb	23 11 13.8	-1.0
JMK	Ichinoseki	0.99	261	P	Pb	23 11 01.6	-0.3
JMK				S	Sb	23 11 13.5	-1.3
JIO	Ouri	1.09	234	P	Pb	23 11 02.7	-1.0
JIO				S	Sb	23 11 15.3	-2.5
JKZ	Kuzumaki	1.24	315	P	Pn	23 11 06.1	0.0
JKZ				S	Sb	23 11 21.3	-0.9
JRG	Rokugo	1.46	282	P	Pn	23 11 08.8	-0.1
JRG				S	Sn	23 11 27.8	-0.1
JANG	Nango	1.46	330	P	Pn	23 11 09.3	+0.3
JANG				S	Sn	23 11 27.5	-0.6
MJAR	Matsushiro Arr	4.24	234	P	Pn	23 11 48.5	+1.3
	2.7nm,0.3s,baz=40,slow=11,SNR=36						
MAT	Matsushiro	4.24	234	P	Pn	23 11 48.9	+1.7
MAT				*e*S	Sn	23 12 42.2	+5.7
USRK	Ussuriysk Ar.	9.35	306	P	Pn	23 12 59.7	+2.4
	0.3nm,0.3s,baz=84,slow=13,SNR=6.6						
SEY	Seymchan	24.60	11	P	P	23 16 03.5	+1.0
	2.1nm,0.6s,ba

SVV	**Soufriere Volc**	**0.88**	**283**	*e*P	Pb	23 36 32.9	+1.4
SVV				*e*S	Sn	23 36 45.0	+2.0
FCV	**Fort Charlotte**	**0.89**	**272**	*e*P	Pb	23 36 32.6	+1.1
FCV				*e*S	Sn	23 36 44.6	+1.5
SVB	**Belmont**	**0.91**	**279**	*e*P	Pb	23 36 32.4	+0.5
SVB				*e*S	Sn	23 36 45.3	+1.6
GRSS	**Sisters**	**1.49**	**237**	*e*P	Pb	23 36 41.4	-0.4
GRSS				*e*S	Sb	23 36 59.3	-1.1
MVM	**Montagne Vaucl**	**1.52**	**339**	*e*P	Pn	23 36 40.8	+0.8
BIM	**Bigot**	**1.56**	**333**	*e*P	Pb	23 36 44.0	+1.0
BIM				*e*S	Sn	23 36 59.9	+0.1
LPMF	**Morne Lapointe**	**1.57**	**337**	*e*P	Pn	23 36 41.6	+1.0
TRMF	**Trois Ilets**	**1.57**	**334**	*e*P	Pn	23 36 41.2	+0.6
ZAM	**Aeronautique**	**1.59**	**335**	*e*P	Pn	23 36 41.6	+0.7
GRW	**Mount Saint Ca**	**1.61**	**234**	*e*P	Pn	23 36 42.5	+1.2
GRW				*e*S	Sb	23 37 03.6	-0.3
GRGR	**Grenville**	**1.62**	**233**	*e*P	Pn	23 36 42.3	+0.9
GRGR				*e*S	Sn	23 37 02.6	+1.3
FDF	**Fort de France**	**1.78**	**334**	*e*P	Pb	23 36 45.2	-1.6
FDF				*e*S	Sn	23 37 06.6	+1.2
TOSP	**Speyside**	**1.83**	**186**	*e*P	Pb	23 36 46.1	-1.4
TOSP				*e*S	Sb	23 37 08.6	-1.4
PML	**Morne Lenard**	**1.84**	**334**	*e*P	Pn	23 36 46.0	+1.6
GBMF	**Grand Be**	**1.85**	**334**	*e*P	Pn	23 36 46.1	+1.5
BAMF	**Morne Balai**	**1.86**	**335**	*e*P	Pb	23 36 46.4	-1.6
CXM	**Morne La Croix**	**1.86**	**334**	*e*P	Pn	23 36 46.3	+1.5
CXM				*e*S	Sn	23 37 08.6	+1.1
PCM	**Pelee Case Pet**	**1.88**	**333**	*e*P	Pn	23 36 45.3	+0.3
PCM	**Pelee Case Pet**	**1.88**	**333**	*e*P	Pn	23 36 46.6	+1.6
BOT	**Bacolet**	**1.98**	**191**	*e*P	Pn	23 36 47.3	+1.0
BOT				*e*S	Sn	23 37 11.2	+1.0

MDD ***18*** *23:42:45.3±2.7, 36°27N×10°67W, h36km±46km, mbLg2.5/6, Error ellipse: s-maj=32.5km s-min=16.4km az=45.0, PRXIMO*

INMG ***18*** *23:42:46.3±1.1, 36°34N×10°50W, h10km, ML1.9, Error ellipse: s-maj=6.4km s-min=4.9km az=103.0*

CSEM ***18*** *23:42:46.9±0.4, 36°44N×10°42W, h20km, ML2.7/6, Error ellipse: s-maj=6.3km s-min=6.0km az=71.0*

IGIL ***18*** *23:42:46.0, 36°39N×10°46W, h2km, ML1.6*

ISC 18 23:42:45.4±4.2, 36°4N±0°1×10°5W±0°1, h23km±20km, n57, σ0ᵒ96/106, 4C-2D, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PFVI	**Vila Bisbo**	**1.54**	**61**	*e*Pn		**Pn**	**23 43 12.0**	**+0.6**
PFVI				*e*Sn		**Sb**	**23 43 31.8**	**-0.5**
PFVI				A		A	23 43 35.9	
	5.6nm,0.3s							
PFVI	**Vila Bisbo**	**1.54**	**61**	P		**Pn**	**23 43 11.7**	**+0.3**
	5.6nm,0.1s,SNR=7.9							
PFVI				S		**Sn**	**23 43 31.2**	**+0.5**
	6.3nm,0.1s,SNR=7.9							
PFVI	**Vila Bisbo**	**1.54**	**61**	P		**Pn**	**23 43 11.7**	**+0.3**
	5.6nm,0.1s,SNR=7.9							
PFVI	**Vila Bisbo**	**1.54**	**61**	*e*Pn		**Pn**	**23 43 12.0**	**+0.6**
PFVI				S		**Sn**	**23 43 31.2**	**+0.5**
	6.3nm,0.1s,SNR=7.9							
PFVI				*e*Sn		**Sb**	**23 43 31.8**	**-0.5**
	5.6nm,0.3s							
MORF	**Marmelete**	**1.75**	**58**	*e*P		**Pn**	**23 43 15.0**	**+0.7**
MORF				*e*S		**Sn**	**23 43 36.2**	**+0.3**
MORF				AML		AML	23 43 38.0	
	comp=N,8.5nm,0.4s							
MORF	**Marmelete**	**1.75**	**58**	*e*Pn		**Pn**	**23 43 15.1**	**+0.7**
MORF				*e*Sn		**Sb**	**23 43 38.0**	**-0.3**
MORF	**Marmelete**	**1.75**	**58**	P		**Pn**	**23 43 15.1**	**+0.7**
MORF				S		**Sb**	**23 43 38.0**	**-0.3**
MORF	**Marmelete**	**1.75**	**58**	P		**Pn**	**23 43 15.1**	**+0.7**
MORF				S		**Sb**	**23 43 38.0**	**-0.3**
PTEO	**Sao Teotonio**	**1.83**	**51**	*e*Pn		**Pn**	**23 43 16.3**	**+0.8**
PTEO				*e*Sn		**Sn**	**23 43 39.0**	**+1.0**
PTEO				A		A	23 43 40.6	
	comp=N,13nm,0.7s							
PTEO	**Sao Teotonio**	**1.83**	**51**	P		**Pn**	**23 43 16.3**	**+0.8**
PTEO				S		**Sn**	**23 43 39.0**	**+1.0**
	comp=N,6.4nm,0.7s							
PTEO	**Sao Teotonio**	**1.83**	**51**	P		**Pn**	**23 43 16.3**	**+0.8**
PTEO				S		**Sn**	**23 43 39.0**	**+1.0**
	comp=N,6.4nm,0.7s							
PBDV	**Barranco-do-Ve**	**2.24**	**67**	*e*Pn	⇑	**Pn**	**23 43 21.8**	**+0.8**
PBDV				*e*Sn		**Sn**	**23 43 48.3**	**+0.4**
PBDV				A		A	23 44 02.2	
	comp=N,4.6nm,0.7s							
PBDV	**Barranco-do-Ve**	**2.24**	**67**	P		**Pn**	**23 43 21.8**	**+0.8**
PBDV				S		**Sn**	**23 43 48.3**	**+0.4**
	comp=N,4.6nm,0.7s							
PBDV	**Barranco-do-Ve**	**2.24**	**67**	P		**Pn**	**23 43 21.8**	**+0.8**
PBDV				S		**Sn**	**23 43 48.3**	**+0.4**
	comp=N,4.6nm,0.7s							
MESJ	**Messejana**	**2.33**	**51**	*e*P		**Pn**	**23 43 23.1**	**+0.8**
MESJ				*e*S		**Sn**	**23 43 50.2**	**0.0**
MESJ				AML		AML	23 43 50.6	
	comp=N,2.2nm,0.5s							
MESJ	**Messejana**	**2.33**	**51**	⇓*e*Pn		**Pn**	**23 43 23.1**	**+0.8**
MESJ				*e*Sn		**Sn**	**23 43 50.6**	**+0.4**
MESJ				A		A	23 43 54.5	
	comp=N,1.5nm,0.2s							
MESJ	**Messejana**	**2.33**	**51**	P		**Pn**	**23 43 23.1**	**+0.8**
MESJ				S		**Sn**	**23 43 50.6**	**+0.4**
	comp=N,1.5nm,0.2s							
MESJ	**Messejana**	**2.33**	**51**	P		**Pn**	**23 43 23.1**	**+0.8**
MESJ				S		**Sn**	**23 43 50.6**	**+0.4**
	comp=N,1.5nm,0.2s							
PCVE	**Castro Verde**	**2.33**	**57**	⇓*e*Pn		**Pn**	**23 43 23.4**	**+1.1**
PCVE				*e*Sn		**Sn**	**23 43 50.8**	**+0.5**
PCVE				A		A	23 43 54.3	
	comp=N,1.8nm,0.4s							
PCVE	**Castro Verde**	**2.33**	**57**	P		**Pn**	**23 43 23.4**	**+1.1**
PCVE				S		**Sn**	**23 43 50.8**	**+0.5**
	comp=N,1.8nm,0.4s							
PCVE	**Castro Verde**	**2.33**	**57**	P		**Pn**	**23 43 23.4**	**+1.1**
PCVE				S		**Sn**	**23 43 50.8**	**+0.5**
	comp=N,1.8nm,0.4s							
PNCL	**Nicolau / Gran**	**2.33**	**42**	*e*Pn		**Pn**	**23 43 23.3**	**+1.0**
PNCL				*e*Sn		**Sn**	**23 43 51.2**	**+0.9**
PNCL				A		A	23 43 54.1	
	comp=N,2.5nm,0.1s							
PNCL	**Nicolau / Gran**	**2.33**	**42**	⇑*e*Pn		**Pn**	**23 43 23.3**	**+1.0**
PNCL				*e*Sn		**Sn**	**23 43 51.2**	**+0.9**
	comp=N,2.5nm,0.1s							
PVAQ	**Vaqueiros**	**2.46**	**65**	⇑*e*Pn		**Pn**	**23 43 24.8**	**+0.8**
PVAQ				*e*Sn		**Sn**	**23 43 53.6**	**+0.3**
PVAQ				A		A	23 43 56.5	
	comp=N,2.0nm,0.3s							
PVAQ	**Vaqueiros**	**2.46**	**65**	P		**Pn**	**23 43 24.8**	**+0.8**
PVAQ				S		**Sn**	**23 43 53.6**	**+0.3**
	comp=N,2.0nm,0.3s							
PVAQ	**Vaqueiros**	**2.46**	**65**	P		**Pn**	**23 43 24.8**	**+0.8**
PVAQ				S		**Sn**	**23 43 53.6**	**+0.3**
	comp=N,2.0nm,0.3s							
EGRO	**El Granado**	**2.68**	**64**	P		**Pn**	**23 43 27.9**	**+0.8**
	comp=N,1.1nm,0.2s,SNR=7.9							
EGRO				S		**Sn**	**23 43 59.8**	**+1.0**
	comp=N,1.2nm,0.1s,SNR=7.9							
EGRO	**El Granado**	**2.68**	**64**	P		**Pn**	**23 43 27.9**	**+0.8**
	comp=N,1.1nm,0.2s,SNR=7.9							
EGRO				S		**Sn**	**23 43 59.8**	**+1.0**
	comp=N,1.2nm,0.1s,SNR=7.9							
PMAFR	**Mafra**	**2.74**	**20**	*e*Sn		**Sn**	**23 44 00.9**	**+0.6**
PMAFR				A		A	23 44 03.0	
	comp=N,11nm,0.7s							
PMAFR	**Mafra**	**2.74**	**20**	P		**Pn**	**23 43 28.8**	**+0.9**
	comp=N,1.2nm,0.1s,SNR=7.9							
PMAFR				S		**Sn**	**23 44 00.0**	**-0.3**
	comp=N,3.9nm,0.1s,SNR=7.9							
PMAFR	**Mafra**	**2.74**	**20**	P		**Pn**	**23 43 28.8**	**+0.9**
	comp=N,1.2nm,0.1s,SNR=7.9							
PMAFR				S		**Sn**	**23 44 00.0**	**-0.3**
	comp=N,3.9nm,0.1s,SNR=7.9							
PMAFR				*e*Sn		**Sn**	**23 44 00.9**	**+0.6**
	comp=N,11nm,0.7s							
PMTG	**Montargil**	**3.23**	**33**	*e*Pn		**Pn**	**23 43 35.9**	**+1.3**
PMTG				*e*Sn		**Sn**	**23 44 12.9**	**+0.5**
PMTG				A		A	23 44 15.4	
	comp=N,1.9nm,0.1s							
PMTG	**Montargil**	**3.23**	**33**	*e*Pn		**Pn**	**23 43 35.9**	**+1.3**
PMTG				*e*Sn		**Sn**	**23 44 12.9**	**+0.5**
	comp=N,1.9nm,0.1s							
PBAR	**Barrancos**	**3.29**	**56**	*e*Pn		**Pn**	**23 43 36.4**	**+0.9**
PBAR				*e*Sn		**Sn**	**23 44 14.5**	**+0.6**
PBAR				A		A	23 44 32.4	
	comp=N,3.8nm,0.8s							
PBAR	**Barrancos**	**3.29**	**56**	P		**Pn**	**23 43 36.4**	**+0.9**
PBAR				S		**Sn**	**23 44 14.5**	**+0.6**
	comp=N,3.8nm,0.8s							
PBAR	**Barrancos**	**3.29**	**56**	P		**Pn**	**23 43 36.4**	**+0.9**
PBAR				S		**Sn**	**23 44 14.5**	**+0.6**
	comp=N,3.8nm,0.8s							
EMIN	**Mina Concepcio**	**3.36**	**65**	P		**Pn**	**23 43 36.8**	**+0.3**
	comp=N,0.8nm,0.1s,SNR=12							
EMIN				S		**Sn**	**23 44 15.2**	**-0.5**
	comp=N,0.6nm,0.1s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.36**	**65**	P		**Pn**	**23 43 36.8**	**+0.3**
	comp=N,0.8nm,0.1s,SNR=12							
EMIN				S		**Sn**	**23 44 15.2**	**-0.5**
	comp=N,0.6nm,0.1s,SNR=7.9							
PESTR	**Estremoz**	**3.39**	**42**	*e*Pn		**Pn**	**23 43 38.0**	**+1.1**
PESTR				*e*Sn		**Sn**	**23 44 16.1**	**-0.2**
PESTR				A		A	23 44 32.4	
	comp=N,2.5nm,0.6s							
PESTR	**Estremoz**	**3.39**	**42**	*e*Pn		**Pn**	**23 43 38.0**	**+1.1**
PESTR				*e*Sn		**Sn**	**23 44 16.1**	**-0.2**
	comp=N,2.5nm,0.6s							
PTOM	**Tomar**	**3.62**	**27**	*e*Sn		**Sn**	**23 44 22.1**	**0.0**
PTOM				A		A	23 44 25.8	
	comp=N,4.4nm,0.7s							
PTOM	**Tomar**	**3.62**	**27**	S		**Sn**	**23 44 22.1**	**0.0**
	comp=N,2.2nm,0.7s							
PTOM	**Tomar**	**3.62**	**27**	S		**Sn**	**23 44 22.1**	**0.0**
	comp=N,2.2nm,0.7s							
EBAD	**Badajoz**	**3.64**	**49**	P		**Pn**	**23 43 40.7**	**+0.3**
	comp=N,1.1nm,0.1s,SNR=7.9							
EBAD				S		**Sn**	**23 44 21.4**	**-1.2**
	comp=N,2.0nm,0.2s,SNR=7.9							
EBAD	**Badajoz**	**3.64**	**49**	P		**Pn**	**23 43 40.7**	**+0.3**
	comp=N,1.1nm,0.1s,SNR=7.9							
EBAD				S		**Sn**	**23 44 21.4**	**-1.2**
	comp=N,2.0nm,0.2s,SNR=7.9							
ESPR	**Espera**	**3.77**	**81**	P		**Pn**	**23 43 42.6**	**+0.5**
	comp=N,0.8nm,0.1s,SNR=4.8							
ESPR				S		**Sn**	**23 44 24.4**	**-1.3**
	comp=N,12nm,0.3s,SNR=7.9							
ESPR	**Espera**	**3.77**	**81**	P		**Pn**	**23 43 42.6**	**+0.5**
	comp=N,0.8nm,0.1s,SNR=4.8							
ESPR				S		**Sn**	**23 44 24.5**	**-1.3**
	comp=N,12nm,0.3s,SNR=7.9							
PCAS	**Casmilo, Conde**	**3.98**	**23**	*e*Sn		**Sn**	**23 44 30.4**	**-0.6**
PCAS				A		A	23 44 37.9	
	comp=N,3.5nm,0.6s							
PCAS	**Casmilo, Conde**	**3.98**	**23**	*e*Sn		**Sn**	**23 44 30.4**	**-0.6**
	comp=N,3.5nm,0.6s							
ECAB	**El Cabril**	**4.39**	**66**	P		**Pn**	**23 43 51.4**	**+0.7**
	comp=N,0.4nm,0.1s,SNR=14							
ECAB				S		**Sn**	**23 44 39.8**	**-1.4**
	comp=N,0.7nm,0.2s,SNR=7.9							
ECAB	**El Cabril**	**4.39**	**66**	P		**Pn**	**23 43 51.4**	**+0.7**
	comp=N,0.4nm,0.1s,SNR=14							
ECAB				S		**Sn**	**23 44 39.8**	**-1.4**
	comp=N,0.7nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**5.05**	**68**	P		**Pn**	**23 44 00.5**	**+0.7**
	comp=N,0.8nm,0.1s,SNR=7.9							
EADA				S		**Sn**	**23 44 54.5**	**-2.9**
	comp=N,0.4nm,0.1s,SNR=7.9							
EPLA	**Plasencia**	**5.06**	**42**	S		**Sn**	**23 44 56.5**	**-1.1**
	comp=N,0.4nm,0.1s,SNR=4.0							
EPLA	**Plasencia**	**5.06**	**42**	S		**Sn**	**23 44 56.5**	**-1.1**
	comp=N,0.4nm,0.1s,SNR=4.0							
MVO	**Moncorvo**	**5.49**	**29**	P		**Pn**	**23 44 06.4**	**+0.7**
	comp=N,0.3nm,0.1s,SNR=4.0							
MVO				S		**Sn**	**23 45 05.8**	**-2.3**
	comp=N,0.6nm,0.1s,SNR=7.9							
MVO	**Moncorvo**	**5.49**	**29**	P		**Pn**	**23 44 06.4**	**+0.7**
	comp=N,0.3nm,0.1s,SNR=4.0							
MVO				S		**Sn**	**23 45 05.8**	**-2.3**
	comp=N,0.6nm,0.1s,SNR=7.9							
ELOB	**Lobios**	**5.79**	**18**	S		**Sn**	**23 45 11.4**	**-4.2**
	comp=N,1.2nm,0.2s,SNR=4.0							

IDC ***19*** *00:02:55.0±1.4, 35°56N×68°78E, h0km, mb3.8/7, mb1 3.9/14, mb1mx3.7/48, mbtmp3.9/14, ML3.7/6, Error ellipse: s-maj=26.5km s-min=16.0km az=146.0*

ISCJB ***19*** *00:02:58.1±0.3, 35°72N±0°03×68°76E±0°04, h33km, mb4.3/15, Error ellipse: s-maj=4.9km s-min=4.2km az=167.8*

NNC ***19*** *00:02:58.7±4.4, 35°96N×68°41E, h0km, mb4.3, mpv4.0, Error ellipse: s-maj=45.4km s-min=32.5km az=142.0*

NEIC ***19*** *00:03:00.4±0.4, 35°74N×68°83E, h35km, mb4.5/8, Error ellipse: s-maj=8.1km s-min=7.5km az=120.0*

ISC 19 00:02:59.8±0.5, 35°65N±0°05×68°80E±0°05, h35km, n63, σ2ᵒ91/75, mb4.2/15, 10C-4D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KBL	**Kabul**	**1.12**	**170**	*e*Pn		**Pn**	**00 03 20.1**	**+0.8**
KBL				*e*Sn		**Sn**	**00 03 33.3**	**-0.3**
THN	**Thein Dam**	**6.58**	**117**	*e*P		**Pn**	**00 04 38.4**	**+4.4**
MNAS	**Manas**	**7.41**	**22**	⇑Pn		**Pn**	**00 04 46.8**	**+1.2**
	4.0nm,0.4s							
MNAS				⇑Sn		**Sn**	**00 06 13.1**	**+4.7**
	14nm,0.6s							
KK31	**Karatay Array**	**7.56**	**10**	Pn		**Pn**	**00 04 48.6**	**+1.1**
	0.9nm,0.2s,baz=205,slow=15,SNR=30							
KK31				⇑Sn		**Sn**	**00 06 10.4**	**-1.6**
	5.8nm,0.5s,baz=196,slow=25							
KKAR	**Karatay Array**	**7.56**	**10**	*e*Pn		**Pn**	**00 04 49.0**	**+1.4**
KKAR				*e*Sn		**Sn**	**00 06 08.1**	**-3.8**
AAK	**Ala-Archa**	**8.26**	**31**	Pn		**Pn**	**00 04 59.5**	**+2.3**
	2.9nm,0.3s,baz=190,slow=7.6,SNR=16							
AAK				Sn		**Sn**	**00 06 31.0**	**+1.6**
	1.7nm,0.3s,baz=126,slow=23,SNR=14							
AAK	**Ala-Archa**	**8.26**	**31**	⇑Pn		**Pn**	**00 04 59.2**	**+1.9**
	8.6nm,0.6s							
AAK				⇓Sn		**Sn**	**00 06 32.3**	**+2.9**
	26nm,0.6s							
AAK	**Ala-Archa**	**8.26**	**31**	*e*Pn		**Pn**	**00 04 59.5**	**+2.3**
AAK				*e*Sn		**Sn**	**00 06 26.2**	**-3.1**
AAK				*e*Sn		Sn	00 06 31.0	+1.6
GEYT	**Alibeck**	**8.87**	**288**	Pn		**Pn**	**00 05 04.0**	**-1.5**
	1.9nm,0.3s,baz=129,slow=9.6,SNR=24							
GEYT				Sn		**Sn**	**00 06 43.7**	**-0.5**
	1.3nm,0.3s,baz=98,slow=20,SNR=4.3							
TKM2	**Tokmak 2**	**8.97**	**34**	⇓Pn		**Pn**	**00 05 08.4**	**+1.4**
	8.6nm,0.6s							
TKM2				⇓Sn		**Sn**	**00 06 48.5**	**+1.6**
	4.6nm,0.6s							
PDGK	**Podgornoye**	**11.26**	**44**	⇑Pn		**Pn**	**00 05 39.3**	**+1.2**
	5.7nm,0.6s							
PYUN	**Piuthan**	**14.20**	**118**	*e*P		**Pn**	**00 06 19.8**	**+1.1**
	11nm,0.4s							
PYUN				*e*S		**Sn**	**00 08 53.1**	**-2.0**
KOLN	**Koldanda**	**14.84**	**118**	*e*P		**Pn**	**00 06 27.7**	**+0.5**
	8.7nm,0.5s							
MAKZ	**Makanchi**	**14.89**	**38**	*e*Pn		**Pn**	**00 06 25.9**	**-1.8**
MK01	**Makanchi Array**	**15.03**	**38**	*e*Pn		**Pn**	**00 06 28.8**	**-0.8**
MK31	**Makanchi Array**	**15.04**	**38**	⇑P		**Pn**	**00 06 28.3**	**-1.4**
	7.9nm,1.1s,baz=229,slow=9.6,SNR=11							
MK31	**Makanchi Array**	**15.04**	**38**	*e*Pn		**Pn**	**00 06 28.9**	**-0.8**
MK32	**Makanchi Array**	**15.04**	**38**	*e*Pn		**Pn**	**00 06 28.1**	**-1.6**
MKAR	**Makanchi Array**	**15.04**	**38**	Pn		**Pn**	**00 06 28.1**	**-1.7**
	0.1nm,0.3s,baz=231,slow=13,SNR=12							
MKAR	**Makanchi Array**	**15.04**	**38**	*e*Pn		**Pn**	**00 06 28.9**	**-0.8**
	33nm,0.8s							
AB31	**Akbulak array**	**15.07**	**337**	⇑P		**Pn**	**00 06 27.1**	**-2.9**
	0.8nm,0.4s							
ABKAR	**Akbulak array**	**15.07**	**337**	*e*Pn		**Pn**	**00 06 26.8**	**-3.2**
	26nm,0.8s							
GKN	**Gorkha**	**15.46**	**115**	*e*P		**Pn**	**00 06 35.2**	**-0.2**
	8.7nm,0.4s							
GKN				*e*S		**Sn**	**00 09 20.7**	**-4.9**
KKN	**Kakani**	**16.05**	**115**	*e*P		**Pn**	**00 06 42.6**	**-0.5**
	12nm,0.6s							
PKIN	**Phulchoki**	**16.25**	**115**	*e*P		**Pn**	**00 06 45.5**	**-0.2**
	25nm,0.6s							
PKIN				*e*S		**Sn**	**00 09 39.5**	**-5.6**
KURBB	**Kurchatov Arra**	**16.54**	**22**	Pn		**Pn**	**00 06 45.2**	**-3.7**
	0.0nm,0.3s,baz=212,slow=12,SNR=8.0							
KURBB	**Kurchatov Arra**	**16.54**	**22**	⇑P		**Pn**	**00 06 45.6**	**-3.3**
	8.9nm,0.7s							
KURK	**Kurchatov**	**16.65**	**22**	⇓P		**P**	**00 06 52.3**	**-0.1**
	7.1nm,0.9s							
KURK	**Kurchatov**	**16.65**	**22**	*e*Pn		**P**	**00 06 53.4**	**+1.0**
AKTO	**Aktyubinsk**	**16.72**	**335**	Pn		**Pn**	**00 06 49.3**	**-1.9**
	0.3nm,0.3s,baz=147,slow=10,SNR=7.9							
AKTO	**Aktyubinsk**	**16.72**	**335**	⇑P		**Pn**	**00 06 51.7**	**+0.5**
	3.7nm,0.8s							
VOSK	**Vostochnaya**	**17.14**	**5**	⇑P		**Pn**	**00 06 53.3**	**-3.2**
	3.2nm,1.0s							
VOSK	**Vostochnaya**	**17.14**	**5**	*e*Pn		**Pn**	**00 06 52.2**	**-4.2**
	2.2nm,0.7s							
ZRNK	**Zerenda**	**17.30**	**0**	*e*Pn		**Pn**	**00 06 56.9**	**-1.5**
	6.1nm,1.0s							
BVA0	**Borovoye Array**	**17.41**	**3**	P		**P**	**00 07 01.2**	**+0.4**
	3.8nm,0.7s,baz=164,slow=13,SNR=10							
BVAR	**Borovoye Array**	**17.41**	**3**	P		**Pn**	**00 06 58.8**	**-1.0**
	0.5nm,0.3s,baz=167,slow=11,SNR=10.0							
RAMN	**Ramite**	**17.49**	**115**	*e*P		**Pn**	**00 07 01.0**	**-0.3**
	10nm,0.5s							
GNI	**Garni**	**19.49**	**291**	P		**P**	**00 07 24.5**	**+0.5**
	0.2nm,0.3s,baz=214,slow=17,SNR=3.8							
ZAA0	**Zalesovo Array**	**21.45**	**26**	*e*P		**P**	**00 07 45.6**	**+0.7**
ZALV	**Zalesovo Beam**	**21.45**	**26**	P		**P**	**00 07 45.2**	**+0.4**
	12nm,0.6s,baz=220,slow=11,SNR=59							
ZAA1	**Zalesovo Array**	**21.45**	**26**	*e*P		**P**	**00 07 45.2**	**+0.3**
ARU	**Arti**	**21.92**	**345**	*e*P		**P**	**00 07 49.6**	**-0.2**
	6.6nm,0.7s							
BR101	**Keskin Array S**	**28.01**	**289**	*e*P		**P**	**00 08 49.5**	**+1.9**
BRTR	**Keskin Array B**	**28.01**	**289**	P		**P**	**00 08 49.5**	**+1.9**
	0.6nm,0.8s,baz=89,slow=13,SNR=3.2							
BR231	**Keskin MP Arra**	**28.67**	**289**	*e*P		**P**	**00 08 54.3**	**+0.9**
AKASG	**Malin Array Be**	**32.11**	**310**	P		**P**	**00 09 24.6**	**+1.0**
	0.4nm,0.4s,baz=88,slow=7.9,SNR=3.1							
AKBB	**Malin Array Si**	**32.11**	**310**	*e*P		**P**	**00 09 24.6**	**+1.0**
	2.5nm,0.6s							
FIA1	**FINESS Array S**	**37.21**	**327**	*e*P		**P**	**00 10 08.7**	**+1.2**
FIA0	**FINESS Array S**	**37.22**	**327**	*e*P		**P**	**00 10 08.8**	**+1.3**
FINES	**FINESS Array B**	**37.22**	**327**	P		**P**	**00 10 08.8**	**+1.3**
	1.0nm,0.6s,baz=140,slow=11,SNR=6.1							
DGAR	**Diego Garcia**	**42.97**	**175**	*e*P		**P**	**00 10 56.2**	**+0.6**
	1μm,1.7s							
NC303	**NORSAR Array S**	**43.95**	**324**	*e*P		**P**	**00 11 03.0**	**-0.2**
NB2	**NORSAR Subarra**	**44.00**	**324**	P		**P**	**00 11 04.0**	**+0.5**
	comp=Z,1.3nm,0.6s,baz=101,slow=8.6							
NB200	**NORSAR Array S**	**44.00**	**324**	*e*P		**P**	**00 11 04.2**	**+0.7**
NOA	**NORSAR Array B**	**44.00**	**324**	P		**P**	**00 11 04.2**	**+0.7**
	comp=Z,0.7nm,0.6s,baz=99,slow=8.1,SNR=4.4							
NBO00	**NORSAR Array S**	**44.21**	**324**	*e*P		**P**	**00 11 05.5**	**+0.4**
MYLDM	**Lahad Datu**	**54.78**	**112**	*e*P		**P**	**00 12 27.3**	**+0.9**
	comp=Z,16nm,1.1s							
MTE	**Manteigas**	**58.57**	**300**	*e*P		**P**	**00 12 52.7**	**-0.4**
	comp=Z,52nm,1.6s							
TOA1	**Torodi Ar. Sit**	**63.91**	**268**	*e*P		**P**	**00 13 28.4**	**-1.1**
	comp=Z,22nm,1.9s							
TOA0	**Torodi Ar. Sit**	**63.91**	**268**	*e*P		**P**	**00 13 27.5**	**-2.0**
	comp=Z,14nm,1.8s							
TORD	**Torodi Ar. Bea**	**63.91**	**268**	P		**P**	**00 13 28.4**	**-1.1**
	comp=Z,0.4nm,0.5s,baz=46,slow=6.5,SNR=9.5							
AS31	**Alice Springs**	**85.25**	**123**	*e*P		**P**	**00 15 34.5**	**+1.4**
	comp=Z,1.3nm,1.1s							
ASAR	**Alice Springs**	**85.25**	**123**	P		**P**	**00 15 34.5**	**+1.4**
	comp=Z,0.3nm,0.4s,baz=330,slow=5.4,SNR=4.6							

ISCJB ***19*** *00:04:48.7±0.6, 37°21N±0°04×28°19E±0°04, h1km±7km, Error ellipse: s-maj=7.7km s-min=3.9km az=30.9*

DDA ***19*** *00:04:48.9, 37°20N×28°20E, h7km, Md2.8*

CSEM ***19*** *00:04:49.2±0.2, 37°23N×28°22E, h2km, MD2.6, Error ellipse: s-maj=5.7km s-min=4.2km az=39.0*

ISK ***19*** *00:04:49.4, 37°20N×28°33E, h7km, MD2.6*

ISC 19 00:04:49.0±0.9, 37°20N±0°04×28°21E±0°03, h9km±6km, n20, σ1ᵒ19/37, Turkey

| Code | Station Name | Δ° | AZ° |

AKO *i* S **Sb** **00 46 06.8 0.0**
KERG Konya-Eregli 0.86 313 *i* P **Pb** **00 45 58.0 -0.3**
KERG *i* S **Sb** **00 46 09.1 -0.5**
KERG Konya-Eregli 0.86 313 P **Pb** **00 45 58.0 -0.3**
KOZT Kozan 0.98 48 *e*PG **Pn** **00 46 00.8 +1.2**
KOZT Kozan 0.98 48 *e*Pg **Pn** **00 46 00.8 +1.2**

IDC 19 00:51:27.2±480.0, 37°23N×13°69E, h0km, Error ellipse: s-maj=196.4km s-min=78.2km az=72.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I48TN	**KESRA INFRASON**	**3.79**	**249**	*i*		01 14 22.4	
	baz=65,slow=330,SNR=10						
I26DE	**FREYUNG INFRAS**	**11.62**	**0**	*i*		02 04 40.0	
	baz=179,slow=318,SNR=2.3						
I42PT	**GRACIOSA ISLAN**	**32.64**	**286**	*i*		04 15 20.0	
	baz=79,slow=310,SNR=0.7						
I17CI	**DIMBOKRO INFRA**	**34.80**	**214**	*i*		04 21 00.0	
	baz=24,slow=319,SNR=1.1						

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*IDC **19** 01:21:49.1±2.7, 51°49N×179°01E, h0km, mb3.7/5, mb1 3.9/5, mb1mx3.6/43, mbtmp3.7/5, Error ellipse: s-maj=86.6km s-min=23.0km az=172.0*
*ISCJB **19** 01:21:50.5±1.1, 50°8N±0°1×179°03E±0°07, h41km, mb3.6/5, Error ellipse: s-maj=19.8km s-min=6.0km az=2.1*
*NEIC **19** 01:21:51.7, 50°93N×179°12E, h20km, ML3.8(AEIC), After AEIC.*

ISC 19 01:21:52.8±1.4, 50°9N±0°2×179°07E±0°06, h41km, n25, σ1°22/24, mb3.8/5, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALAA	**Gareloi Lava P**	**1.59**	**57**	P	**Pn**	**01 22 17.8**	**-0.7**
GALAA				S	**Sn**	**01 22 39.2**	**+1.4**
GALA	**Gareloi East**	**1.62**	**57**	P	**Pn**	**01 22 18.2**	**-0.6**
TASE	**Tanaga Southea**	**2.03**	**62**	P	**Pn**	**01 22 24.4**	**-0.1**
TAPA	**Tanaga Point A**	**2.15**	**64**	P	**Pn**	**01 22 26.7**	**+0.6**
KIKV	**Kanaga Island**	**2.54**	**67**	P	**Pn**	**01 22 32.2**	**+0.7**
KICM	**Kanaga Island**	**2.54**	**66**	P	**Pn**	**01 22 32.4**	**+0.9**
KIRH	**Kanaga Island**	**2.59**	**66**	P	**Pn**	**01 22 32.8**	**+0.6**
ADAG	**Mount Adagdak**	**2.91**	**67**	P	**Pn**	**01 22 37.1**	**+0.6**
ETKA	**Kagalaska Isla**	**2.99**	**70**	P	**Pn**	**01 22 38.0**	**+0.5**
GSMY	**Great Sitkin M**	**3.25**	**68**	P	**Pn**	**01 22 41.5**	**+0.3**
SMY	**Shemya**	**3.57**	**302**	*e*Pn	**Pn**	**01 22 46.4**	**+0.7**
SMY				*e*S	**Sn**	**01 23 28.6**	**+2.1**
KOWE	**Korovin West**	**4.40**	**68**	P	**Pn**	**01 22 58.0**	**+1.0**
KOKL	**Mount Kliuchef**	**4.42**	**69**	P	**Pn**	**01 22 58.1**	**+0.7**
KOFP	**Korovin Flat P**	**4.47**	**70**	P	**Pn**	**01 22 58.6**	**+0.6**
NIKH	**Nikolski High**	**7.74**	**70**	P	**Pn**	**01 23 44.6**	**+1.7**
SPIA	**Saint Paul Isl**	**8.87**	**41**	P	**Pn**	**01 24 00.3**	**+2.1**
UNV	**Unalaska Valle**	**9.30**	**66**	*e*Pn	**Pn**	**01 24 05.0**	**+0.9**
ILAR	**Eielson Array**	**22.44**	**39**	P	**P**	**01 26 45.2**	**-2.6**
	0.4nm,0.6s,baz=242,slow=8.4,SNR=6.4						
KLR	**Kul'dur**	**30.01**	**286**	P	**P**	**01 27 57.9**	**+0.5**
	1.7nm,0.7s,baz=54,slow=9.1,SNR=7.3						
H11N2	**WAKE ISLAND Hy**	**32.58**	**202**	T	T	02 03 24.2	
	baz=18,slow=74						
H11N3	**WAKE ISLAND Hy**	**32.59**	**202**	T	T	02 03 26.7	
	baz=18						
H11N1	**WAKE ISLAND Hy**	**32.60**	**202**	T	T	02 03 28.4	
	baz=18,slow=74						
YKA	**Yellowknife Ar**	**36.51**	**46**	P	**P**	**01 28 52.1**	**-1.6**
	0.8nm,0.6s,baz=283,slow=8.3,SNR=3.2						
PDAR	**Pinedale Array**	**47.73**	**71**	P	**P**	**01 30 26.6**	**+0.9**
	1.3nm,0.7s,baz=287,slow=3.8,SNR=9.9						
MKAR	**Makanchi Array**	**59.25**	**307**	P	**P**	**01 31 49.2**	**-0.6**
	0.3nm,0.5s,baz=53,slow=6.4,SNR=5.1						

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*MOS **19** 01:30:39.9±1.0, 51°31N×179°04E, h38km, mb5.0/81, Error ellipse: s-maj=7.1km s-min=5.4km az=95.8*
*IDC **19** 01:30:39.6±3.1, 51°23N×179°13E, h25km±20km, mb4.4/31, mb1 4.5/32, mb1mx4.4/47, mbtmp4.5/32, ML3.4/1, MS3.9/6, Ms1 3.9/6, ms1mx3.4/48, Error ellipse: s-maj=17.0km s-min=9.7km az=162.0*
*ISCJB **19** 01:30:42.2±0.5, 51°25N±0°04×179°10E±0°02, h61km±3km, mb4.8/190, Error ellipse: s-maj=6.7km s-min=2.5km az=2.4*
*NEIC **19** 01:30:43.0±0.4, 51°25N×179°03E, h50km±3km, mb4.7/144, ML4.8(AEIC), Error ellipse: s-maj=5.3km s-min=2.4km az=182.0*
*BJI **19** 01:30:42.9, 51°48N×178°65E, h56km, mb5.0/50, mB5.2/32, Ms5.3/23, Ms7 4.9/22*

ISC 19 01:30:41.8±0.8, 51°07N±0°07×179°11E±0°03, h45km±5km, n671, σ1°09/697, mb4.8/193, MS4.3/8, 20C-12D, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALAA	**Gareloi Lava P**	**1.50**	**61**	P	**Pn**	**01 31 05.5**	**-0.6**
GAEA	**Gareloi East**	**1.52**	**61**	P	**Pn**	**01 31 05.8**	**-0.6**
TAFL	**Tanaga Flats**	**1.99**	**69**	P	**Pn**	**01 31 12.7**	**-0.2**
TAFP	**Tanaga Falls P**	**2.00**	**64**	P	**Pn**	**01 31 13.3**	**+0.3**
TAFP				S	**Sn**	**01 31 36.7**	**-0.1**
TAPA	**Tanaga Point A**	**2.06**	**68**	P	**Pn**	**01 31 14.3**	**+0.4**
KICM	**Kanaga Island**	**2.46**	**68**	P	**Pn**	**01 31 20.4**	**+1.1**
KIKV	**Kanaga Island**	**2.46**	**69**	P	**Pn**	**01 31 20.3**	**+1.0**
KIRH	**Kanaga Island**	**2.51**	**69**	P	**Pn**	**01 31 20.8**	**+0.8**
ADAG	**Mount Adagdak**	**2.83**	**69**	P	**Pn**	**01 31 25.7**	**+1.3**
ETKA	**Kagalaska Isla**	**2.91**	**72**	P	**Pn**	**01 31 26.6**	**+1.1**
GSCK	**Great Sitkin C**	**3.10**	**70**	P	**Pn**	**01 31 28.8**	**+0.7**
GSTD	**Great Sitkin T**	**3.12**	**70**	P	**Pn**	**01 31 28.8**	**+0.4**
GSTD				S	**Sn**	**01 32 06.8**	**+2.3**
GSMY	**Great Sitkin M**	**3.17**	**70**	P	**Pn**	**01 31 29.4**	**+0.3**
GSTR	**Great Sitkin T**	**3.18**	**69**	*e*Pn	**Pn**	**01 31 30.9**	**+1.6**
SMY	**Shemya**	**3.52**	**300**	*e*P	**Pn**	**01 31 34.3**	**+0.4**
SMY				*e*S	**Sn**	**01 32 16.8**	**+2.5**
SMY	**Shemya**	**3.52**	**300**	*e*Pn	**Pn**	**01 31 34.3**	**+0.4**
SMY				*e*S	**Sn**	**01 32 16.8**	**+2.5**
KOKL	**Mount Kliuchef**	**4.34**	**71**	P	**Pn**	**01 31 46.4**	**+1.2**
KOFP	**Korovin Flat P**	**4.39**	**71**	P	**Pn**	**01 31 46.9**	**+1.0**
KOSE	**Korovin Southe**	**4.44**	**71**	P	**Pn**	**01 31 47.8**	**+1.2**
NIKH	**Nikolski High**	**7.67**	**71**	P	**Pn**	**01 32 32.6**	**+1.9**
NIKH				S	**Sn**	**01 33 57.7**	**+1.6**
OKTU	**Okmok Mt. Tuli**	**8.22**	**69**	P	**Pn**	**01 32 40.1**	**+1.8**
SPIA	**Saint Paul Isl**	**8.74**	**41**	P	**Pn**	**01 32 46.5**	**+1.2**
SPIA				S	**Sn**	**01 34 23.3**	**+0.8**
MTBL	**Makushin Table**	**9.14**	**66**	P	**Pn**	**01 32 52.5**	**+1.6**
UNV	**Unalaska Valle**	**9.21**	**67**	*e*Pn	**Pn**	**01 32 53.1**	**+1.3**
UNV				*e*S	**Sn**	**01 34 38.0**	**+4.0**
LVA	**Lava Point**	**9.55**	**65**	P	**Pn**	**01 32 59.0**	**+2.5**
AKUT	**Akutan**	**9.70**	**66**	*e*Pn	**Pn**	**01 32 59.7**	**+1.3**
PET	**Petropavlovsk**	**12.74**	**287**	*e*P	**Pn**	**01 33 44.5**	**+4.4**
PET				*e*S	**Sn**	**01 36 04.5**	**+4.1**
PET				MLR	MLR		
	comp=Z,300nm,17.0s						
SDPT	**Sand Point**	**12.95**	**63**	*e*Pn	**Pn**	**01 33 41.6**	**-1.2**
PEA0	**Petropavlovsk-**	**13.32**	**287**	*e*Pn	**Pn**	**01 33 48.7**	**+0.7**
PEA0B	**Petropavlovsk-**	**13.32**	**287**	*e*Pn	**Pn**	**01 33 49.2**	**+1.2**
PETK	**Petropavlovsk-**	**13.32**	**287**	Pn	**Pn**	**01 33 47.1**	**-0.9**
	comp=Z,0.9nm,0.3s,baz=94,slow=20,SNR=8.5						
PETK				LR	LR	01 40 10.0	
	comp=Z,322nm,18.1s,baz=96,slow=43						
GAMB	**Gambell**	**13.65**	**17**	*e*Pn	**Pn**	**01 33 54.4**	**+2.0**
CHGN	**Chignik**	**14.28**	**60**	*e*Pn	**Pn**	**01 33 58.7**	**-2.2**
SVW2	**Sparrevohn**	**17.21**	**45**	*e*Pn	**P**	**01 34 39.8**	**+0.1**
	comp=Z,17nm,0.6s						
OHAK	**Old Harbor**	**17.22**	**58**	*e*Pn	**Pn**	**01 34 35.7**	**-3.0**
	comp=Z,50nm,0.5s						
KDAK	**Kodiak Island**	**17.69**	**57**	*e*P	**Pn**	**01 34 41.8**	**-2.7**
KDAK				pmax	pmax		
	comp=Z,50nm,1.4s						
KDAK	**Kodiak Island**	**17.69**	**57**	*e*Pn	**Pn**	**01 34 41.8**	**-2.7**
	comp=Z,50nm,1.4s						
TT01	**Tatalina**	**17.86**	**39**	*e*Pn	**P**	**01 34 47.0**	**+0.3**
TTA	**Tatalina**	**17.87**	**39**	*e*P	**P**	**01 34 47.9**	**+0.9**
TTA				pmax	pmax		
	comp=Z,28nm,1.0s						
TTA	**Tatalina**	**17.87**	**39**	*e*Pn	**P**	**01 34 47.9**	**+0.9**
	comp=Z,28nm,1.0s						
MA2	**Magadan**	**18.11**	**309**	LR	LR	01 41 30.3	
	comp=Z,574nm,19.1s,baz=124,slow=36						
MA2	**Magadan**	**18.11**	**309**	*i* P	**P**	**01 34 47.7**	**-1.9**
BILL	**Bilibino**	**18.15**	**344**	*ic* P	**P**	**01 34 48.9**	**-1.1**
BILL				pmax	pmax		
	comp=Z,30nm,0.8s						
BILL				MLR	MLR		
	comp=Z,380nm,17.0s						
BILL	**Bilibino**	**18.15**	**344**	*e*P	**Pn**	**01 34 50.3**	**+0.2**
	comp=Z,34nm,1.0s						
RSO	**Redoubt South**	**18.27**	**48**	*e*P	**Pn**	**01 34 54.0**	**+2.3**
SPU	**Mount Spurr**	**18.83**	**46**	*e*P	**Pn**	**01 34 58.6**	**+0.2**
SPU				*e*PcP	**PcP**	**01 39 19.1**	**-3.4**
BRLK	**Bradley Lake**	**18.97**	**51**	*e*P	**Pn**	**01 35 00.5**	**+0.4**
	comp=Z,22nm,0.8s						
PPLA	**Purkeypile**	**19.41**	**41**	*e*P	**Pn**	**01 35 05.1**	**-0.4**
	comp=Z,45nm,0.8s						
SUA	**Susitna One**	**19.52**	**46**	*e*P	**P**	**01 35 05.8**	**+0.7**
	comp=Z,34nm,0.9s						
CAST	**Castle Rocks**	**19.68**	**40**	*e*P	**Pn**	**01 35 07.8**	**-0.7**
	comp=Z,24nm,0.8s						
RC01	**Rabbit Creek A**	**19.87**	**48**	*e*P	**P**	**01 35 08.8**	**0.0**
	comp=Z,20nm,1.1s						
KTH	**Kantishna Hill**	**20.21**	**40**	*e*P	**P**	**01 35 12.9**	**+0.4**
	comp=Z,80nm,1.0s						
PMR	**Palmer**	**20.29**	**47**	*e*P	**P**	**01 35 12.8**	**-0.6**
PMR				pmax	pmax		
	comp=Z,11nm,0.5s						
PMR	**Palmer**	**20.29**	**47**	*e*P	**P**	**01 35 12.8**	**-0.6**
	comp=Z,11nm,0.5s						
BPAW	**Bear Paw Mtn.**	**20.41**	**39**	*e*P	**P**	**01 35 14.9**	**+0.2**
	comp=Z,23nm,0.9s						
TRF	**Thorofare Moun**	**20.43**	**41**	*e*P	**P**	**01 35 14.9**	**-0.1**
	comp=Z,24nm,0.8s						
SML	**Sawmill**	**20.72**	**46**	*e*P	**P**	**01 35 16.7**	**-1.4**
SML				pmax	pmax		
	comp=Z,22nm,0.6s						
SML	**Sawmill**	**20.72**	**46**	*e*P	**P**	**01 35 16.7**	**-1.4**
	comp=Z,22nm,0.6s						
MLY	**Manley**	**20.92**	**37**	*e*P	**P**	**01 35 20.9**	**+0.7**
	comp=Z,32nm,1.0s						
RND	**Reindeer**	**21.01**	**42**	*e*P	**P**	**01 35 21.1**	**-0.1**
RND				pmax	pmax		
	comp=Z,20nm,0.8s						
RND	**Reindeer**	**21.01**	**42**	*e*P	**P**	**01 35 21.1**	**-0.1**
	comp=Z,20nm,0.8s						
GLI	**Glacier Island**	**21.07**	**49**	*e*P	**P**	**01 35 19.9**	**-1.9**
	comp=Z,21nm,0.7s						
MCK	**McKinley**	**21.09**	**41**	*e*P	**P**	**01 35 20.9**	**-1.2**
MCK				pmax	pmax		
	comp=Z,22nm,0.8s						
MCK	**McKinley**	**21.09**	**41**	*e*P	**P**	**01 35 20.9**	**-1.2**
	comp=Z,22nm,0.8s						
SCM	**Sheep Creek Mo**	**21.19**	**47**	*e*P	**P**	**01 35 21.8**	**-1.4**
SCM				pmax	pmax		
	comp=Z,43nm,1.0s						
SCM	**Sheep Creek Mo**	**21.19**	**47**	*e*P	**P**	**01 35 21.8**	**-1.4**
	comp=Z,43nm,1.0s						
FID	**Port Fidalgo**	**21.34**	**50**	*e*P	**P**	**01 35 22.7**	**-1.9**
	comp=Z,19nm,0.8s						
DHY	**Denali Highway**	**21.53**	**43**	*e*P	**P**	**01 35 26.0**	**-0.9**
	comp=Z,38nm,0.9s						
DHY				*e*S	**S**	**01 39 24.5**	**+1.6**
KUR	**Kuril'sk**	**21.54**	**267**	*e*P	**P**	**01 35 27.4**	**+0.4**
EYAK	**Cordova Ski Ar**	**21.65**	**50**	*e*P	**P**	**01 35 29.6**	**+1.6**
	comp=Z,11nm,0.6s						
WRH	**Wood River Hil**	**21.72**	**39**	*e*P	**P**	**01 35 26.9**	**-1.8**
	comp=Z,12nm,0.8s						
KLU	**Klutina**	**21.76**	**48**	*e*P	**P**	**01 35 30.1**	**+0.9**
	comp=Z,14nm,0.9s						
KLU				*e*Sn	Sn	01 39 43.4	+5.1
MDM	**Murphy Dome**	**21.85**	**38**	*e*P	**P**	**01 35 29.3**	**-0.9**
	comp=Z,42nm,0.8s						
CCB	**Clear Creek Bu**	**21.90**	**39**	*e*P	**P**	**01 35 28.9**	**-1.7**
	comp=Z,20nm,1.2s						
COLA	**College**	**21.97**	**38**	*e*P	**P**	**01 35 31.4**	**0.0**
COLA				pmax	pmax		
	comp=Z,36nm,1.0s						
COLA	**College**	**21.97**	**38**	*e*P	**P**	**01 35 31.4**	**0.0**
	comp=Z,36nm,1.0s						
RAGM	**Ragged Mountai**	**22.15**	**51**	*e*P	**P**	**01 35 34.5**	**+1.1**
	comp=Z,29nm,0.9s						
HDA	**Harding Lake**	**22.15**	**40**	*e*P	**P**	**01 35 33.7**	**+0.3**
	comp=Z,50nm,1.7s						
COLD	**Coldfoot**	**22.20**	**32**	*e*P	**P**	**01 35 34.8**	**+0.9**
	comp=Z,15nm,0.8s						
BMRM	**Bremner River**	**22.28**	**50**	*e*P	**P**	**01 35 33.8**	**-1.0**
	comp=Z,26nm,1.1s						
IL1	**Eielson Array**	**22.31**	**39**	*e*P	**P**	**01 35 34.5**	**-0.6**
IL1				*e*PcP	**PcP**	**01 39 28.5**	**-0.4**
ILAR	**Eielson Array**	**22.31**	**39**	P	**P**	**01 35 31.6**	**-3.4**
	comp=Z,4.0nm,0.6s,baz=238,slow=8.1,SNR=36						
ILAR				PcP	**PcP**	**01 39 28.2**	**-0.7**
	comp=Z,1.5nm,0.7s,baz=273,slow=3.1,SNR=8.1						
ILAR				ScP	**ScP**	**01 43 03.6**	**+1.1**
	comp=Z,0.6nm,0.7s,baz=283,slow=3.3,SNR=5.6						
ILB	**Eielson Array**	**22.31**	**39**	*e*P	**P**	**01 35 33.8**	**-1.3**
PAX	**Paxson**	**22.33**	**44**	*e*P	**P**	**01 35 34.1**	**-1.2**
PAX				pmax	pmax		
	comp=Z,26nm,1.0s						
PAX	**Paxson**	**22.33**	**44**	*e*P	**P**	**01 35 34.1**	**-1.2**
	comp=Z,26nm,1.0s						
TYV	**Tymovskoe**	**22.82**	**284**	*e*P	**P**	**01 35 37.8**	**-2.7**
TYV				pmax	pmax		
	comp=Z,9.0nm,0.6s						
CRQM	**Cirque**	**22.95**	**50**	*e*P	**P**	**01 35 42.0**	**-0.1**
	comp=Z,32nm,1.2s						
MENT	**Mentasta**	**23.09**	**45**	*e*P	**P**	**01 35 42.9**	**-0.4**
	comp=Z,14nm,0.8s						
MENT				*e*PcP	**PcP**	**01 39 28.0**	**-2.6**
BALM	**Baldy**	**23.38**	**50**	*e*P	**P**	**01 35 45.7**	**-0.5**
BALM				pmax	pmax		
	comp=Z,8.0nm,0.8s						
BALM	**Baldy**	**23.38**	**50**	*e*P	**P**	**01 35 45.7**	**-0.5**
	comp=Z,8.4nm,0.8s						
NKL	**Nikolayevsk**	**23.51**	**290**	*e*P	**P**	**01 35 45.7**	**-1.6**
YSS	**Yuzh-Sakhalins**	**24.04**	**274**	*e*P	**P**	**01 35 53.4**	**+1.1**
YSS				pmax	pmax		
	comp=Z,40nm,0.9s						
YSS				pmax	pmax		
	comp=E,50nm,1.0s						
PCA	**Pinnacle**	**24.31**	**52**	*e*P	**P**	**01 35 54.1**	**-0.7**
	comp=E,28nm,0.9s						
EGAK	**Eagle**	**24.64**	**41**	*e*P	**P**	**01 35 56.7**	**-1.0**
	comp=E,42nm,0.9s						
DAWY	**Dawson**	**25.23**	**43**	*e*P	**P**	**01 36 02.4**	**-0.7**
	comp=E,37nm,0.9s						
ASAJ	**Asahikawa**	**25.39**	**268**	P	**P**	**01 36 05.7**	**+1.1**
	baz=68,slow=6.8						
ASAJ	**Asahikawa**	**25.39**	**268**	*e*P	**P**	**01 36 05.3**	**+0.6**
	comp=E,79nm,1.0s						
HYT	**Haines Junctio**	**25.71**	**51**	*e*P	**P**	**01 36 06.8**	**-0.8**
	comp=E,12nm,1.0s						
ERM	**Erimo**	**26.11**	**264**	*i* P	**P**	**01 36 11.7**	**+0.5**
ERM				pmax	pmax		
	comp=Z,32nm,1.2s						
INK	**Inuvik**	**28.47**	**35**	P	**P**	**01 36 31.1**	**-0.9**
	comp=Z,3.8nm,0.5s,baz=258,slow=11,SNR=11						
INK				PcP	**PcP**	**01 39 42.6**	**-0.1**
	comp=Z,2.3nm,0.6s,baz=311,slow=7.4,SNR=4.1						
INK	**Inuvik**	**28.47**	**35**	*e*P	**P**	**01 36 31.0**	**-1.0**
INK						01 39 42.6	
INK				pmax	pmax		
	comp=E,14nm,0.8s						
INK	**Inuvik**	**28.47**	**35**	*e*P	**P**	**01 36 31.0**	**-1.0**
	comp=E,14nm,0.8s						
INK				PcP	**PcP**	**01 39 42.6**	**-0.1**
YAK	**Yakutsk**	**28.64**	**312**	*e*P	**P**	**01 36 31.1**	**-2.5**
YAK				pmax	pmax		
	comp=E,16nm,0.8s						
YAK				pmax	pmax		
	comp=E,10.0nm,0.9s						
DLBC	**Dease Lake**	**29.62**	**56**	LR	LR	01 49 01.5	
	comp=E,264nm,21.0s,baz=282,slow=37						
KLR	**Kul'dur**	**30.00**	**285**	P	**P**	**01 36 45.6**	**-0.2**
	comp=E,31nm,0.9s,baz=66,slow=8.1,SNR=85						
USRK	**Ussuriysk Ar.**	**32.03**	**276**	P	**P**	**01 37 03.2**	**-0.6**
	comp=E,7.6nm,1.0s,baz=35,slow=7.2,SNR=7.9						
USRK				PcP	**PcP**	**01 39 53.0**	**+0.5**
	comp=E,4.2nm,0.8s,baz=49,slow=2.6,SNR=8.1						
BBB	**Bella Bella**	**32.18**	**67**	LR	LR	01 50 46.8	
	comp=E,132nm,18.1s,baz=260,slow=38						
MAJO	**Matsushiro**	**32.44**	**259**	*i* P	**P**	**01 37 07.7**	**+0.2**
MAJO				pmax	pmax		
	comp=E,17nm,1.0s						
MJAR	**Matsushiro Arr**	**32.44**	**259**	P	**P**	**01 37 07.9**	**+0.5**
	comp=Z,2.0nm,0.4s,baz=50,slow=7.8,SNR=7.0						
MSHR	**Mys Shultsa**	**33.37**	**274**	*c i*P	**P**	**01 37 16.0**	**+0.5**
YKA	**Yellowknife Ar**	**36.39**	**46**	P	**P**	**01 37 40.4**	**-0.9**
	comp=Z,5.9nm,0.6s,baz=282,slow=7.7,SNR=18						
YKA				PcP	**PcP**	**01 40 05.2**	**+0.6**
	comp=Z,2.1nm,0.6s,baz=288,slow=3.1,SNR=7.5						
YKA				ScP	**ScP**	**01 43 49.5**	**+2.3**
	comp=Z,1.5nm,0.8s,baz=288,slow=3.4,SNR=4.3						
A04D	**Lummi Island**	**36.71**	**70**	P	**P**	**01 37 45.4**	**+1.2**
	baz=297						
BOD	**Bodaibo**	**37.11**	**306**	↓*i* P	**P**	**01 37 45.9**	**-1.6**
BOD				pmax	pmax		
	comp=Z,26nm,0.8s						
HIA	**Hailar**	**37.18**	**291**	*e*P	**P**	**01 37 47.0**	**-1.2**
HIA				pmax	pmax		
	comp=Z,14nm,1.3s						
B05A	**Bryant**	**37.28**	**71**	P	**P**	**01 37 49.7**	**+0.7**
	baz=297						
F04D	**Rainier, OR**	**37.76**	**74**	P	**P**	**01 37 54.4**	**+1.2**
	baz=300						
D05A	**Enumclaw**	**37.85**	**72**	*e*P	**P**	**01 37 55.9**	**+2.0**
	comp=Z,19nm,0.7s						
LVP	**Lakeview Peak**	**38.13**	**74**	P	**P**	**01 37 58.0**	**+1.6**
FMW	**Mount Fremont**	**38.16**	**72**	P	**P**	**01 37 58.3**	**+1.6**
LON	**Longmire**	**38.16**	**73**	*e*P	**P**	**01 37 58.1**	**+1.5**
LON				pmax	pmax		
	comp=Z,6.0nm,0.7s						
LON	**Longmire**	**38.16**	**73**	*e*P	**P**	**01 37 58.0**	**+1.5**
	comp=Z,6.0nm,0.7s						
KSRS	**Korea Array**	**38.33**	**270**	P	**P**	**01 37 58.3**	**+0.4**
	comp=Z,8.2nm,0.9s,baz=58,slow=8.3,SNR=17						
KSRS				PcP	**PcP**	**01 40 11.7**	**+0.7**
	comp=Z,3.3nm,0.8s,baz=76,slow=2.5,SNR=7.2						
KS01	**Wonju Array Si**	**38.33**	**270**	*e*P	**P**	**01 37 57.9**	**-0.1**
KS01				*e*PcP	**PcP**	**01 40 11.5**	**+0.5**
KSAR	**Wonju Array Be**	**38.36**	**270**	P	**P**	**01 37 58.4**	**+0.1**
KSAR						01 40 11.7	
KSAR	**Wonju Array Be**	**38.36**	**270**	P	**P**	**01 37 58.4**	**+0.1**
KSAR				PcP	**PcP**	**01 40 11.7**	**+0.6**
TWW	**Teanaway**	**38.54**	**72**	P	**P**	**01 38 01.7**	**+1.9**
NAC	**Naches**	**38.76**	**72**	P	**P**	**01 38 03.0**	**+1.4**
I03D	**Drain, OR**	**38.76**	**78**	P	**P**	**01 38 03.4**	**+1.8**
	baz=302						
B08A	**Colville Reser**	**38.88**	**69**	*e*P	**P**	**01 38 03.1**	**+0.6**
	comp=Z,5.0nm,0.8s						
VFP	**Flag Point**	**39.08**	**74**	P	**P**	**01 38 06.0**	**+1.5**
G05D	**Wamic, OR**	**39.21**	**75**	P	**P**	**01 38 06.2**	**+0.9**
	baz=301						
I04A	**Tendick Farm,**	**39.29**	**77**	P	**P**	**01 38 07.3**	**+1.3**
	baz=302,SNR=7.0						
L02D	**Cave Junction,**	**39.43**	**80**	P	**P**	**01 38 09.0**	**+1.8**
	baz=304						
CROR	**Criterion Ridg**	**39.54**	**75**	P	**P**	**01 38 09.7**	**+1.5**
I05D	**Terrebonne, OR**	**39.66**	**76**	P	**P**	**01 38 10.0**	**+0.9**
	baz=302						
HAWA	**Hanford**	**39.71**	**72**	*e*P	**P**	**01 38 10.2**	**+0.7**
	comp=Z,13nm,0.8s						
C09A	**Chrisman Ranch**	**39.77**	**69**	*e*P	**P**	**01 38 10.3**	**+0.4**
	comp=Z,6.8nm,0.8s						
J04D	**Umpqua Nationa**	**39.77**	**78**	P	**P**	**01 38 11.5**	**+1.2**
	baz=303						
NEW	**Newport**	**40.22**	**68**	P	**P**	**01 38 13.7**	**0.0**
	comp=Z,7.6nm,0.7s,baz=294,slow=7.5,SNR=16						
NEW	**Newport**	**40.22**	**68**	P	**P**	**01 38 13.4**	**-0.3**
	baz=299,SNR=10						
NEW	**Newport**	**40.22**	**68**	*e*P	**P**	**01 38 13.2**	**-0.5**
	comp=Z,8.1nm,0.7s						
YBH	**Yreka Blue Hor**	**40.22**	**80**	*e*P	**P**	**01 38 16.6**	**+2.7**
YBH				pmax	pmax		
	comp=Z,14nm,1.1s						
YBH	**Yreka Blue Hor**	**40.22**	**80**	*e*P	**P**	**01 38 16.6**	**+2.7**
	comp=Z,14nm,1.1s						
J05D	**Fort Rock, OR**	**40.29**	**77**	P	**P**	**01 38 16.0**	**+1.5**
	baz=303						
E09A	**Wood Farm, Sta**	**40.48**	**71**	*e*P	**P**	**01 38 16.5**	**+0.7**
	comp=Z,11nm,1.0s						
RES	**Resolute Bay**	**40.57**	**24**	P	**P**	**01 38 15.9**	**-0.2**
	comp=Z,3.3nm,0.6s,baz=300,slow=8.1,SNR=5.8						
RES				PcP	**PcP**	**01 40 17.9**	**+0.4**
	comp=Z,9.5nm,0.9s,baz=72,slow=1.5,SNR=4.4						
RES				LR	LR	01 57 00.2	
	comp=Z,130nm,20.0s,baz=259,slow=39						
N02D	**Trinity Center**	**40.65**	**81**	P	**P**	**01 38 18.4**	**+1.0**
	baz=305						
M04C	**Macdoel**	**40.74**	**79**	P	**P**	**01 38 19.8**	**+1.6**
	baz=304						
K05A	**Summer Lake**	**40.80**	**78**	*e*P	**P**	**01 38 21.3**	**+2.6**
	comp=Z,12nm,1.0s						
F10A	**Beach Ranch, E**	**41.30**	**71**	*e*P	**P**	**01 38 23.1**	**+0.4**
	comp=Z,5.4nm,0.8s						
O03D	**Paynes Creek**	**41.61**	**81**	P	**P**	**01 38 25.5**	**+0.3**
	baz=306						
MOD	**Modoc Plateau**	**41.62**	**78**	*e*P	**P**	**01 38 27.1**

YFT	Old Faithful	45.92	70	eP		P	01 39 02.5	+2.4
	comp=Z,16nm,0.9s								
ZAK	Zakamensk	45.98	300	eP		P	01 38 59.5	-0.8
ZAK				pmax		pmax			
	comp=Z,7.0nm,1.5s								
VES	Vestal, Richgr	46.01	84	P		P	01 39 01.2	+0.7
	baz=310								
H17A	Grant Village	46.11	69	P		P	01 39 03.1	+1.6
	baz=305								
H17A	Grant Village	46.11	69	eP		P	01 39 03.5	+1.9
	comp=Z,12nm,0.9s								
IMW	Indian Meadow	46.18	70	eP		P	01 39 03.2	+1.1
	comp=Z,8.0nm,0.9s								
FLWY	Flagg Ranch	46.21	70	eP		P	01 39 03.0	+0.6
	comp=Z,11nm,0.8s								
CWC	Cottonwood Cre	46.26	83	P		P	01 39 03.6	+0.9
	baz=309								
HVU	Hansel Valley	46.30	74	eP		P	01 39 04.1	+1.2
HVU				pmax		pmax			
	comp=Z,12nm,0.7s								
HVU	Hansel Valley	46.30	74	eP		P	01 39 04.1	+1.2
	comp=Z,12nm,0.7s								
TPAW	Teton Pass	46.40	71	eP		P	01 39 05.3	+1.4
	comp=Z,4.7nm,0.8s								
RLMT	Red Lodge	46.47	68	P		P	01 39 04.2	-0.1
	baz=305,SNR=7.4								
RLMT	Red Lodge	46.47	68	eP		P	01 39 05.7	+1.4
	comp=Z,16nm,1.0s								
HHC	Hu-ho-hao-te	46.51	285	eP		P	01 39 05.5	+1.0
HHC				S		S	01 45 47.8	-1.8
HHC				pmax		pmax			
	comp=Z,28nm,1.1s								
HHC				pmax		pmax			
	comp=Z,220nm,6.3s								
HHC				LR		LR			
	comp=Z,1μm,15.9s								
HHC				LR		LR			
	comp=Z,900nm,15.5s								
HHC				LR		LR			
	comp=Z,790nm,14.8s								
REDW	Red Top Meadow	46.53	71	eP		P	01 39 05.7	+0.8
	comp=Z,4.5nm,0.8s								
LOHW	Long Hollow	46.54	70	eP		P	01 39 05.0	+0.1
	comp=Z,3.9nm,0.8s								
MOY	Mondy	46.54	303	eP		P	01 39 04.8	+0.2
R11A	Troy Canyon, C	46.63	79	P		P	01 39 06.0	+0.3
	baz=308,SNR=10								
R11A	Troy Canyon, C	46.63	79	eP		P	01 39 06.5	+0.8
	comp=Z,6.9nm,0.9s								
BGU	Big Grassy Mou	46.65	75	eP		P	01 39 07.3	+1.6
	comp=Z,5.2nm,0.9s								
AHID	Auburn Hatcher	46.73	72	eP		P	01 39 07.2	+0.8
	comp=Z,9.3nm,1.0s								
MPMC	Manual Prospec	46.88	83	P		P	01 39 08.2	+0.6
	baz=310								
FURC	Furnace Creek,	47.01	82	P		P	01 39 09.2	+0.9
	baz=310								
TPNV	Topopah Spring	47.09	81	P		P	01 39 09.9	+0.7
	baz=309,SNR=10								
TPNV	Topopah Spring	47.09	81	eP		P	01 39 10.3	+1.1
TPNV				pmax		pmax			
	comp=Z,19nm,0.8s								
TPNV	Topopah Spring	47.09	81	eP		P	01 39 10.3	+1.1
	comp=Z,19nm,0.8s								
HWUT	Hardware Ranch	47.13	73	eP		P	01 39 10.5	+1.0
	comp=Z,6.7nm,0.8s								
DUG	Dugway, Tooele	47.22	76	P		P	01 39 10.8	+0.7
	baz=308,SNR=11								
DUG	Dugway, Tooele	47.22	76	eP		P	01 39 10.8	+0.7
DUG				pmax		pmax			
	comp=Z,14nm,1.0s								
DUG	Dugway, Tooele	47.22	76	eP		P	01 39 10.8	+0.7
	comp=Z,14nm,1.0s								
EDW2	Edwards Air Fo	47.31	85	P		P	01 39 12.1	+1.3
	baz=311								
LAO	LASA Array	47.34	65	P		P	01 39 11.4	+0.5
	baz=304								
LAO	LASA Array	47.34	65	eP		P	01 39 11.2	+0.3
	comp=Z,9.1nm,0.9s								
TCUT	Toone Canyon	47.52	74	eP		P	01 39 13.9	+1.3
	comp=Z,14nm,0.7s								
CTU	Camp Tracy	47.56	74	eP		P	01 39 14.3	+1.4
	comp=Z,22nm,0.9s								
BW06	Boulder Array	47.65	71	P		P	01 39 13.6	0.0
	baz=306,SNR=28								
BW06	Boulder Array	47.65	71	eP		P	01 39 13.7	0.0
PD31	Pinedale Array	47.65	71	eP		P	01 39 13.9	+0.4
PDAR	Pinedale Array	47.65	71	P		P	01 39 13.8	+0.3
	comp=Z,17nm,0.7s,baz=296,slow=4.0,SNR=113								
SHOC	Shoshone, Teco	47.73	82	P		P	01 39 14.4	+0.3
	baz=310								
GSC	Goldstone, Bar	47.78	83	P		P	01 39 15.0	+0.5
	baz=310,SNR=7.7								
GSC	Goldstone, Bar	47.78	83	eP		P	01 39 15.3	+0.8
GSC				pmax		pmax			
	comp=Z,12nm,0.9s								
GSC	Goldstone, Bar	47.78	83	eP		P	01 39 15.3	+0.8
	comp=Z,12nm,0.9s								
JLU	Jordanelle	47.80	74	eP		P	01 39 15.9	+1.1
	comp=Z,8.1nm,0.9s								
A25A	Svangstu Ranch	47.83	60	P		P	01 39 13.3	-1.3
	baz=304								
BFSC	Mount Baldy Ra	47.94	85	P		P	01 39 16.5	+0.7
	baz=311								
CIS	Catalina Islan	48.01	86	P		P	01 39 17.6	+1.4
	baz=312								
TUQ	Turquoise Moun	48.25	83	P		P	01 39 18.8	+0.6
	baz=310								
HEC	Hector,Ludlow	48.38	84	P		P	01 39 20.1	+1.0
	baz=311								
CCUT	Cedar City	48.51	79	eP		P	01 39 20.8	+0.6
	comp=Z,3.8nm,0.9s								
MSU	Marysvale	48.64	77	eP		P	01 39 22.7	+1.5
MSU	Marysvale	48.64	77	eP		P	01 39 22.7	+1.5
TMUT	Trail Mountain	48.74	75	eP		P	01 39 23.4	+1.3
	comp=Z,8.3nm,0.8s								
GMRC	Granite Mounta	48.84	83	P		P	01 39 23.6	+0.9
	baz=311								
P17A	Butcher Ranch,	48.92	75	eP		P	01 39 25.0	+1.6
	comp=Z,7.4nm,0.8s								
MTPU	Mount Pierson	48.92	77	eP		P	01 39 25.2	+1.6
	comp=Z,4.6nm,0.8s								
PFO	Pinyon Flats O	49.10	85	P		P	01 39 25.7	+1.0
	baz=312								
TPFO	Pinon Flats	49.11	85	P		P	01 39 25.3	+0.5
	baz=312								
BELC	Belle Mtn. Jos	49.13	84	P		P	01 39 25.4	+0.4
	baz=311								
KNB	Kanab	49.18	79	eP		P	01 39 27.2	+1.9
KNB				pmax		pmax			
	comp=Z,7.0nm,0.8s								
KNB	Kanab	49.18	79	eP		P	01 39 27.2	+1.9
	comp=Z,7.0nm,0.8s								
PKCU	Pink Cliffs	49.22	78	eP		P	01 39 27.9	+2.0
	comp=Z,10nm,1.2s								
SRU	San Rafael Swe	49.28	75	eP		P	01 39 27.4	+1.3
SRU				pmax		pmax			
	comp=Z,9.0nm,0.7s								
SRU	San Rafael Swe	49.28	75	eP		P	01 39 27.4	+1.3
	comp=Z,8.8nm,0.7s								
K22A	Casper	49.52	69	P		P	01 39 28.0	+0.2
	baz=307								
K22A	Casper	49.52	69	eP		P	01 39 28.2	+0.3
	comp=Z,6.6nm,0.8s								
IRM	Iron Mountain	49.57	83	P		P	01 39 28.5	+0.3
	baz=311								
MONP2	Monument Peak	49.60	86	P		P	01 39 29.5	+0.9
	baz=312								
BC3	Big Chuckawall	49.70	84	P		P	01 39 29.8	+0.5
	baz=312								
W13A	Hualapai Mount	49.74	82	eP		P	01 39 30.8	+1.1
	comp=Z,5.2nm,0.8s								
U15A	North Rim	49.88	79	eP		P	01 39 32.1	+1.3
IKP	In-Ko-Pah, Jac	49.95	86	P		P	01 39 32.0	+0.8
	baz=312								
O20A	White River Ci	50.03	73	P		P	01 39 31.9	+0.1
	baz=309,SNR=15								
O20A	White River Ci	50.03	73	eP		P	01 39 32.1	+0.3
	comp=Z,17nm,0.7s								
KBS	Kingsbay	50.04	357	eP		P	01 39 30.3	-0.8
KBS				pmax		pmax			
	comp=Z,9.0nm,0.8s								
KBS	Kingsbay	50.04	357	eP		P	01 39 30.3	-0.8
	comp=Z,8.8nm,0.8s								
RSSD	Black Hills	50.09	66	P		P	01 39 31.8	-0.4
	baz=307								
PDMCI	Parker Dam,Lak	50.10	82	P		P	01 39 33.0	+0.8
	baz=311								
Y12C	Blythe	50.22	83	P		P	01 39 33.9	+0.8
	baz=312								
Y12C	Blythe	50.22	83	eP		P	01 39 33.9	+0.8
	comp=Z,9.9nm,0.9s								
GLA	Glamis	50.49	84	P		P	01 39 36.0	+0.8
	baz=312								
GLA	Glamis	50.49	84	eP		P	01 39 36.4	+1.2
GLA				pmax		pmax			
	comp=Z,10.0nm,1.0s								
GLA	Glamis	50.49	84	eP		P	01 39 36.4	+1.2
	comp=Z,9.6nm,1.0s								
PV09	Paradox Valley	50.51	75	eP		P	01 39 36.7	+1.1
SPA0	Spitsbergen Ar	50.59	355	eP		P	01 39 34.4	-0.9
SPITS	Spitsbergen Ar	50.59	355	P		P	01 39 33.9	-1.4
	comp=Z,4.7nm,0.3s,baz=63,slow=3.8,SNR=73								
PV10	Paradox Valley	50.64	75	eP		P	01 39 37.9	+1.4
PV04	Paradox Valley	50.71	75	eP		P	01 39 37.5	+0.5
PV05	Paradox Valley	50.79	75	eP		P	01 39 39.2	+1.5
N23A	Red Feather La	50.93	71	P		P	01 39 39.0	+0.3
	baz=309								
N23A	Red Feather La	50.93	71	eP		P	01 39 39.9	+1.1
	comp=Z,5.5nm,0.9s								
ULM	Lac du Bonnet	50.95	55	P		P	01 39 36.5	-1.8
	comp=Z,1.1nm,0.4s,baz=302,slow=10,SNR=2.4								
ULM				PcP		PcP	01 40 53.7	-0.3
	comp=Z,6.6nm,0.9s,baz=353,slow=4.9,SNR=6.3								
ULM				LR		LR	02 00 58.3		
	comp=Z,154nm,21.2s,baz=301,slow=36								
WUAZ	Wupatki	51.03	79	P		P	01 39 40.4	+1.0
	baz=311								
WUAZ	Wupatki	51.03	79	eP		P	01 39 40.2	+0.8
	comp=Z,13nm,0.9s								
Y14A	Wickenburg	51.05	82	eP		P	01 39 40.6	+1.2
B31A	Greenbush Farm	51.09	58	P		P	01 39 40.2	+0.8
	baz=307								
WHN	Wuhan	51.36	272	P		P	01 39 41.8	+0.1
SMCO	Snowmass	51.39	73	eP		P	01 39 42.3	0.0
	comp=Z,57nm,2.0s								
B32A	Ashes, Strandq	51.70	58	P		P	01 39 43.4	-0.6
	baz=307								
X16A	Lo Mia Camp, P	51.71	80	eP		P	01 39 45.8	+1.3
ISCO	Idaho Springs	51.81	71	P		P	01 39 45.7	+0.4
	baz=309,SNR=7.4								
ISCO	Idaho Springs	51.81	71	eP		P	01 39 46.3	+0.9
ISCO				pmax		pmax			
	comp=Z,6.0nm,0.8s								
ISCO	Idaho Springs	51.81	71	eP		P	01 39 46.2	+0.9
	comp=Z,5.6nm,0.8s								
D31A	Mcclaflin, Tow	51.87	60	P		P	01 39 45.2	-0.1
	baz=308								
DAG	Danmarks Havn	51.93	5⇑	iP		P	01 39 44.1	-1.2
	comp=Z,7.5nm,0.6s								
DAG	Danmarks Havn	51.93	5⇑	iP		P	01 39 44.1	-1.2
DAG				pmax		pmax			
	comp=Z,5.0nm,0.6s								
A33A	Warroad	51.98	57	P		P	01 39 45.9	-0.2
	baz=307								
AGMN	Agassiz Nation	52.12	57	P		P	01 39 46.2	-0.9
	baz=308								
W18A	Petrified Fore	52.31	79	P		P	01 39 49.9	+0.9
	baz=311								
S22A	4UR Ranch, Cre	52.39	74	P		P	01 39 50.5	+0.9
	baz=310,SNR=7.7								
S22A	4UR Ranch, Cre	52.39	74	eP		P	01 39 51.1	+1.4
	comp=Z,5.5nm,0.9s								
XAN	Xi'an	52.42	280	P		P	01 39 49.4	-0.2
XAN				pmax		pmax			
	comp=Z,14nm,0.8s								
XAN				pmax		pmax			
	comp=Z,190nm,6.3s								
214A	Organ Pipe Nat	52.49	84	P		P	01 39 50.5	+0.3
	baz=313								
Q24A	Divide	52.62	72	P		P	01 39 50.5	-0.9
	baz=310								
Q24A	Divide	52.62	72	eP		P	01 39 52.1	+0.7
	comp=Z,5.3nm,0.7s								
B34A	Aery, Baudette	52.64	57	P		P	01 39 49.6	-1.4
	baz=308								
SDCO	Great Sand Dun	53.19	73	P		P	01 39 56.2	+0.7
	baz=311,SNR=11								
SDCO	Great Sand Dun	53.19	73	eP		P	01 39 56.3	+0.7
	comp=Z,5.8nm,0.9s								
B35A	Bob, Littlefor	53.21	56	P		P	01 39 53.1	-2.1
	baz=308								
D34A	Park Rapids	53.22	58	P		P	01 39 54.4	-0.9
	baz=308								
ZAA0	Zalesovo Array	53.28	313	eP		P	01 39 54.8	-0.9
ZALV	Zalesovo Beam	53.28	313	P		P	01 39 54.7	-0.9
	comp=Z,3.2nm,0.4s,baz=46,slow=6.3,SNR=14								
ZALV				PcP		PcP	01 41 02.9	+0.1
	comp=Z,5.1nm,0.7s,baz=24,slow=3.3,SNR=6.9								
NVS	Novosibirsk	53.45	314	eP		P	01 39 56.4	-0.4
NVS				pmax		pmax			
	comp=N,5.0nm,0.7s								
NVS				pmax		pmax			
	comp=Z,15nm,0.7s								
NVS				pmax		pmax			
	comp=E,5.0nm,0.5s								
C35A	Jirik Farms, M	53.48	57	P		P	01 39 56.1	-1.1
	baz=309								
TUC	Tucson	53.52	82	P		P	01 39 58.9	+1.2
	baz=313								
TUC	Tucson	53.52	82	eP		P	01 39 58.6	+0.8
TUC				pmax		pmax			
	comp=Z,7.0nm,1.1s								
TUC	Tucson	53.52	82	eP		P	01 39 58.6	+0.8
	comp=Z,6.9nm,1.1s								
J31A	Geddes	53.63	64	P		P	01 39 58.5	+0.2
	baz=309								
D35A	Remer	53.83	58	P		P	01 39 58.9	-0.9
	baz=309								
SUMG	Summit	53.91	13⇑	iP		P	01 40 00.0	-0.4
	comp=Z,17nm,0.9s								
SUMG	Summit	53.91	13⇑	iP		P	01 40 00.0	-0.4
SUMG				pmax		pmax			
	comp=Z,17nm,0.9s								
SUMG	Summit	53.91	13	eP		P	01 39 59.9	-0.4
	comp=Z,32nm,1.1s								
C36A	Pine Crest Far	54.05	56	P		P	01 40 00.4	-0.9
	baz=309								
KSCO	Kaye Shedlock'	54.10	70	eP		P	01 40 03.6	+1.6
	comp=Z,18nm,0.9s								
LZH	Lanzhou	54.20	285	eP		P	01 40 04.1	+1.3
LZH				pP		sP	01 40 19.8	-0.8
LZH				sP		pP	01 40 26.9	+12
LZH				pmax		pmax			
	comp=Z,26nm,1.0s								
LZH				pmax		pmax			
	comp=Z,290nm,5.8s								
D36A	Goodland	54.24	57	P		P	01 40 02.1	-0.7
	baz=309								
T25A	Trinidad	54.24	73	P		P	01 40 03.9	+0.7
	baz=311,SNR=19								
T25A	Trinidad	54.24	73	eP		P	01 40 04.4	+1.2
	comp=Z,17nm,0.9s								
F35A	Swanville	54.32	59	P		P	01 40 03.0	-0.4
	baz=310								
LAZ	Ladron	54.38	78	eP		P	01 40 05.6	+1.4
C37A	Embarrass	54.41	56	P		P	01 40 03.3	-0.7
	baz=309								
ANMO	Albuquerque	54.44	77	P		P	01 40 05.0	+0.3
	baz=312								
ANMO	Albuquerque	54.44	77	iP		P	01 40 04.9	+0.3
ANMO				pmax		pmax			
	comp=Z,3.0nm,1.2s								
ANMO	Albuquerque	54.44	77	eP		P	01 40 06.4	+1.8
	comp=Z,13nm,1.9s								
GTA	Gaotai	54.46	291	⇑P		P	01 40 04.6	0.0
GTA				pP		sP	01 40 19.8	-2.5
GTA				sP		pP	01 40 26.9	+10
GTA				pmax		pmax			
	comp=Z,23nm,1.4s								
ECSD	EROS Data Cent	54.54	62	P		P	01 40 04.7	-0.3
	baz=310								
E36A	McGregor	54.61	58	P		P	01 40 04.5	-0.9
	baz=310								
EYMN	Ely	54.63	56	P		P	01 40 04.9	-0.7
	baz=310								
EYMN	Ely	54.63	56	eP		P	01 40 05.0	-0.7
	comp=Z,5.9nm,0.8s								
D37A	Cotton	54.64	57	P		P	01 40 03.8	-1.9
	baz=310								
C38A	Sawbill Land.	54.89	56	P		P	01 40 06.3	-1.2
	baz=310								
121A	Cookes Peak, D	55.24	80	P		P	01 40 11.1	+0.7
	baz=313								
C39A	Grand Marais	55.42	55	P		P	01 40 10.3	-0.9
	baz=310								
H36A	Jessenland, He	55.49	60	P		P	01 40 11.4	-0.3
	baz=310								
L34A	Svendsen Farm,	55.81	64	P		P	01 40 13.9	-0.3
	baz=311								
CBKS	Cedar Bluff	55.93	69	P		P	01 40 15.0	-0.2
	baz=312								
I37A	Lemond, Waseca	56.14	60	P		P	01 40 15.6	-0.8
	baz=311								
O33A	Hebron	56.36	66	P		P	01 40 17.9	-0.2
	baz=312								
J37A	Redenius Farm,	56.52	61	P		P	01 40 19.1	-0.1
	baz=311								
R32A	Long Quarter,	56.80	68	P		P	01 40 21.3	+0.1
	baz=312								
K37A	Belmond	56.83	61	P		P	01 40 20.1	-1.3
	baz=312								
Q33A	Connelly Farm,	56.93	67	P		P	01 40 22.3	+0.1
	baz=312,SNR=5.9								
N35A	Tabor	56.95	64	P		P	01 40 22.3	0.0
	baz=312,SNR=6.5								
J38A	Wedel Dairy, R	57.10	60	P		P	01 40 23.0	-0.4
	baz=312								
P34A	Walnut Farm, R	57.15	66	P		P	01 40 23.0	-0.7
	baz=312								
L37A	Phoenix Point,	57.18	62	P		P	01 40 23.8	-0.1
	baz=312								
MNTX	Cornudas Mount	57.30	79	P		P	01 40 25.3	+0.5
	baz=314,SNR=6.3								
MNTX	Cornudas Mount	57.30	79	eP		P	01 40 25.5	+0.6
	comp=Z,4.9nm,0.8s								
MSTX	Muleshoe	57.35	75	P		P	01 40 26.0	+0.7
	baz=313								
MSTX	Muleshoe	57.35	75	eP		P	01 40 26.6	+1.3
	comp=Z,16nm,1.4s								
N36A	Muff Farm, Cla	57.37	64	P		P	01 40 25.7	+0.5
	baz=312								
AMTX	Amarillo	57.40	73	P		P	01 40 26.2	+0.7
	baz=313								
AMTX	Amarillo	57.40	73	eP		P	01 40 26.3	+0.7
	comp=Z,8.7nm,0.7s								
M37A	Trindle Farm,	57.49	63	P		P	01 40 26.3	+0.2
	baz=312								
Q34A	Chapman	57.50	67	P		P	01 40 26.2	+0.1
	baz=312								
T32A	Huddler Ranch,	57.50	70	P		P	01 40 25.9	-0.4
	baz=313								
J39A	Decorah	57.51	60	P		P	01 40 25.2	-1.0
	baz=312,SNR=8.6								
L38A	Oak Wood Farm,	57.62	62	P		P	01 40 26.6	-0.4
	baz=312,SNR=6.9								
P35A	Duane Minner,	57.62	66	P		P	01 40 26.1	-0.9
	baz=312								
R34A	Isabella, Hill	57.73	68	P		P	01 40 27.4	-0.4
	baz=312								
CD2	Chengdu	57.75	280	eP		P	01 40 26.8	-1.3
S33A	Kaszmaul Farm,	57.77	69	P		P	01 40 28.4	+0.3
	baz=313								
SCO	Scoresbysund	57.80	8	iP		P	01 40 27.5	-0.3
SCO	Scoresbysund	57.80	8	iP		P	01 40 27.5	-0.3
K39A	Oelwein	57.83	61	P		P	01 40 28.3	-0.1
	baz=312								
M38A	Pleasantville	57.97	62	P		P	01 40 29.4	0.0
	baz=312								
U32A	Winter Ranch,	57.99	70	P		P	01 40 29.6	-0.1
	baz=313								
P36A	Good Intent, A	58.03	65	P		P	01 40 29.7	-0.2
	baz=312								
L39A	Vinton	58.16	61	P		P	01 40 29.9	-0.9
	baz=312,SNR=12								
ARCES	ARCESS Array B	58.17	349	P		P	01 40 28.3	-2.1
	comp=Z,3.1nm,0.7s,baz=24,slow=8.3,SNR=9.0								
ARCES				PcP		PcP	01 41 21.1	-0.3
	comp=Z,1.9nm,0.7s,baz=18,slow=6.0,SNR=3.0								
K40A	Colesburg	58.25	60	P		P	01 40 30.3	-1.1
	baz=312								
O37A	Wolven Farm, M	58.27	64	P		P	01 40 31.1	-0.5
	baz=313								
KURK	Kurchatov	58.28	313	eP		P	01 40 30.9	-0.5
KURK	Kurchatov	58.28	313	eP		P	01 40 30.9	-0.5
	comp=Z,162nm,0.7s								
WMQ	Urumqi	58.40	302	eP		P	01 40 33.1	+0.6
WMQ				pP		pP	01 40 47.0	+1.8
WMQ				pmax		pmax			
	comp=Z,9.0nm,0.6s								
WMQ				pmax		pmax			
	comp=Z,84nm,4.6s								
WMQ				LR		LR			
	comp=Z,730nm,14.2s								
WMQ				LR		LR			
	comp=Z,800nm,14.3s								
WMQ				LR		LR			
	comp=Z,950nm,17.2s								
J41A	Loganville	58.41	59	P		P	01 40 31.8	-0.7
	baz=312,SNR=7.7								
M39A	Webster	58.50	62	P		P	01 40 32.8	-0.3
	baz=313								
P37A	Lathrop	58.54	65	P		P	01 40 32.8	-0.7
	baz=313								
JFWS	Jewell Farm	58.59	59	eP		P	01 40 32.8	-0.9
JFWS				pmax		pmax			
	comp=Z,54nm,1.9s								
JFWS	Jewell Farm	58.59	59	eP		P	01 40 32.8	-0.9
	comp=Z,54nm,1.9s								
L40A	Anamosa	58.63	61	P		P	01 40 33.2	-0.8
	baz=313								
T34A	McClaskey Farm	58.63	69	P		P	01 40 34.2	+0.1
	baz=313								
O38A	Galt	58.68	64	P		P	01 40 34.6	+0.2
	baz=313								
S35A	Otter Creek Ra	58.69	68	P		P	01 40 34.9	+0.3
	baz=313								
W32A	Sentinel	58.70	72	P		P	01 40 35.0	+0.3
	baz=313,SNR=5.5								
N39A	Derby Farms, D	58.72	62	P		P	01 40 33.9	-0.8
	baz=313,SNR=5.9								
R36A	Gordon, Harris	58.73	67	P		P	01 40 33.9	-0.9
	baz=313,SNR=8.2								
K41A	Shullsburg	58.76	60	P		P	01 40 33.6	-1.3
	baz=313,SNR=11								
V33A	Lossen Ranch,	58.80	70	P		P	01 40 35.2	-0.1
	baz=313								
U34A	Anderson Ranch	58.82	69	P		P	01 40 35.8	+0.4
	baz=313								
P38A	Dawn	58.98	64	P		P	01 40 36.0	-0.5
	baz=313								
L41A	Preston	59.02	60	P		P	01 40 36.4	-0.3
	baz=313								
S36A	Lake Cedric, C	59.09	67	P		P	01 40 36.9	-0.4
	baz=313								
T35A	Sooner Cattle	59.10	68	P		P	01 40 37.0	-0.4
	baz=313								
X32A	Elmer	59.15	72	P		P	01 40 38.2	+0.4
	baz=314,SNR=5.9								
MK31	Makanchi Array	59.19	307	iP		P	01 40 36.4	-1.5
MK31				pmax		pmax			
	comp=Z,7.0nm,0.7s								
MK31	Makanchi Array	59.19	307	eP		P	01 40 37.3	-0.6
MKAR	Makanchi Array	59.19	307	P		P	01 40 37.0	-0.9
	comp=Z,5.7nm,0.6s,baz=52,slow=

baz=313
P39B Salisbury 59.52 64 P P 01 40 39.1 -1.1
baz=313,SNR=12
X33A Lawton 59.54 72 P P 01 40 40.9 +0.5
baz=314
O40A La Belle 59.58 63 P P 01 40 39.5 -1.1
baz=313,SNR=11
Q39A Willow Grove F 59.69 64 P P 01 40 40.0 -1.5
baz=313,SNR=11
V35A Meyer Ranch, C 59.69 70 P P 01 40 41.4 -0.1
baz=314
R38A Fenwick Farm, 59.75 66 P P 01 40 40.7 -1.1
baz=314
Y33A Hilltop Ranch, 59.83 72 P P 01 40 43.0 +0.5
baz=314
P40A Paris 59.89 63 P P 01 40 41.5 -1.3
baz=314,SNR=13
T37A Cheneyville 18 59.89 67 P P 01 40 41.9 -0.9
baz=314
X34A Smith Ranch, M 59.90 71 P P 01 40 43.8 +0.9
baz=314
U36A Oologah 59.91 68 P P 01 40 43.1 +0.1
baz=314
TX31 Lajitas Ar. Si 60.00 80 *eP* P 01 40 44.4 +0.6
TXAR Lajitas Array 60.00 80 P P 01 40 44.2 +0.4
comp=Z,1.2nm,0.6s,baz=306,slow=4.9,SNR=6.1
TXAR PcP **PcP** 01 41 30.1 +0.6
comp=Z,4.1nm,0.9s,baz=280,slow=2.2,SNR=5.0
W35A Tecumseh 60.09 70 P P 01 40 44.2 0.0
baz=314,SNR=7.4
S38A Stockton 60.13 66 P P 01 40 42.6 -1.9
baz=314,SNR=13
O41A Passleys Farm, 60.14 62 P P 01 40 43.2 -1.2
baz=314,SNR=9.6
R39A Chumby, Stover 60.16 65 P P 01 40 43.0 -1.6
baz=314
ABTX Abilene, Hawle 60.18 74 P P 01 40 45.6 +0.7
baz=314
ABTX Abilene, Hawle 60.18 74 *eP* P 01 40 45.6 +0.7
comp=Z,8.3nm,1.0s
TUL1 Leonard 60.21 69 P P 01 40 45.2 +0.1
baz=314
Q40A Laux Farm, Aux 60.24 64 P P 01 40 44.4 -0.7
baz=314
SOKR Solikamsk 60.24 330⇑ *iP* P 01 40 43.0 -1.8
SOKR pmax pmax
comp=Z,21nm,1.3s
VOSK Vostochnaya 60.24 318 P P 01 40 43.9 -1.1
VOSK pmax pmax
comp=Z,11nm,0.8s
VOSK Vostochnaya 60.24 318 *eP* P 01 40 44.7 -0.3
comp=Z,31nm,1.4s
Z33A Whitaker Ranch 60.25 73 P P 01 40 45.3 0.0
baz=314,SNR=5.1
U37A Salina 60.27 68 P P 01 40 45.7 +0.4
baz=314
BVA0 Borovoye Array 60.27 319 *i* P P 01 40 44.1 -1.1
BVA0 pmax pmax
comp=Z,16nm,0.7s
BRVK Borovoye 60.29 319 P P 01 40 45.0 -0.2
BRVK pmax pmax
comp=Z,17nm,0.6s
BRVK Borovoye 60.29 319 *eP* P 01 40 45.1 -0.2
comp=Z,20nm,0.6s
T38A Diamond 60.31 67 P P 01 40 45.1 -0.6
baz=314
P41A Barry, Barry 60.34 63 P P 01 40 45.1 -0.7
baz=314
Y34A Reagan Ranch, 60.39 72 P P 01 40 46.5 +0.3
baz=314,SNR=7.5
S39A Bolivar 60.42 66 P P 01 40 45.3 -1.1
baz=314
W36A Wetumka 60.48 70 P P 01 40 46.7 -0.2
baz=314,SNR=6.3
X35A Drake 60.55 71 P P 01 40 47.2 -0.2
baz=314,SNR=5.4
R40A Maddies Statio 60.61 65 P P 01 40 46.2 -1.6
baz=314,SNR=8.5
133A Hamilton Ranch 60.63 74 P P 01 40 48.4 +0.4
baz=315,SNR=8.3
U38A Gravette 60.67 67 P P 01 40 47.8 -0.4
baz=314
HDIL Hopedale 60.72 61 P P 01 40 48.1 -0.3
baz=314
HDIL Hopedale 60.72 61 *eP* P 01 40 48.2 -0.3
comp=Z,20nm,0.6s
X36A Centrahoma 60.80 70 P P 01 40 49.3 +0.3
baz=314,SNR=7.7
P42A Winchester 60.80 62 P P 01 40 48.7 -0.3
baz=314
T39A Clever 60.85 66 P P 01 40 47.9 -1.5
baz=314,SNR=7.0
ZRNK Zerenda 60.90 319 P P 01 40 48.8 -0.6
ZRNK pmax pmax
comp=Z,33nm,0.7s
ZRNK Zerenda 60.90 319 *eP* P 01 40 49.3 -0.1
comp=Z,34nm,0.6s
W37B Quinton 60.95 69 P P 01 40 51.0 +0.9
baz=314
S40A Lebanon 60.96 65 P P 01 40 49.9 -0.2
baz=314
HHAR Hobbs 61.04 67 *eP* P 01 40 50.2 -0.5
comp=Z,3.9nm,0.5s
233A Rising Star 61.05 74 P P 01 40 51.6 +0.7
baz=315
SCHQ Schefferville 61.05 37 P P 01 40 49.6 -0.8
comp=Z,5.5nm,0.6s,baz=292,slow=9.3,SNR=5.0
V38A Canehill 61.05 68 P P 01 40 50.9 +0.1
baz=314
SVE Sverdlovsk 61.14 327 *eP* P 01 40 52.1 +1.1
SVE pmax pmax
comp=Z,21nm,1.0s
134A White-Moore Ra 61.16 73 P P 01 40 51.9 +0.4
baz=315,SNR=8.9
Q42A Golden Eagle 61.16 63 P P 01 40 50.7 -0.8
baz=314,SNR=14
U39A Green Forest 61.23 67 P P 01 40 51.4 -0.6
baz=314
T40A Mansfield 61.26 66 P P 01 40 51.2 -0.9
baz=314
Y36A Durant 61.31 71 P P 01 40 53.2 +0.7
baz=315
X37A Clayton 61.37 70 P P 01 40 53.1 +0.2
baz=315
S41A Jillco Farms, 61.40 65 P P 01 40 52.4 -0.7
baz=314,SNR=7.6
333A Richland Sprin 61.48 75 P P 01 40 53.8 +0.1
baz=315
V39A Pettigrew 61.52 67 P P 01 40 53.4 -0.6
baz=314,SNR=5.2
234A Clairette 61.52 74 P P 01 40 54.2 +0.2
baz=315,SNR=11
W38A Poteau 61.54 69 P P 01 40 53.8 -0.3
baz=315,SNR=6.6
135A Vickery Place, 61.57 73 P P 01 40 53.6 -0.7
baz=315
Q43A New Douglas 61.61 62 P P 01 40 54.0 -0.5
baz=314
U40A Yellville 61.62 66 P P 01 40 54.2 -0.4
baz=315,SNR=6.5
X38A Whitesboro 61.64 69 P P 01 40 54.2 -0.5
baz=315
Z36A Blue Ridge 61.66 71 P P 01 40 54.9 0.0
baz=315,SNR=5.4
T41A Mountain View 61.76 65 P P 01 40 54.6 -0.9
baz=315
W39A Magazine 61.88 68 P P 01 40 56.0 -0.3
baz=315
334A Lometa 61.93 74 P P 01 40 57.0 +0.2
baz=315,SNR=7.2
WHTX Lake Whitney, 61.94 73 P P 01 40 57.6 +0.8
baz=315
WHTX Lake Whitney, 61.94 73 *eP* P 01 40 57.9 +1.1
comp=Z,13nm,0.8s
V40A Witts Springs 62.02 67 P P 01 40 56.3 -1.0
baz=315,SNR=6.6
Q44A Meyer Farm, Va 62.02 62 P P 01 40 57.2 0.0
baz=315
SFIN Lafayette 62.04 60 P P 01 40 56.6 -0.8
baz=315,SNR=9.2
SFIN Lafayette 62.04 60 *eP* P 01 40 57.0 -0.3
comp=Z,15nm,0.7s
ARU Arti 62.17 327 *c iP* P
ARU *PP **sP** 01 41 14.0 -1.8
ARU 01 41 37.5
ARU 01 43 12.8
ARU PPP PPP 01 44 43.9
ARU S **S** 01 49 22.0 +2.3
ARU 01 50 44.0
ARU SS **SS** 01 53 25.4 +3.2
ARU pmax pmax
comp=Z,27nm,1.0s
ARU Arti 62.17 327 *eP* P 01 40 57.7 -0.2
comp=Z,19nm,0.7s
X39A Fountain Ranch 62.17 69 P P 01 40 58.4 +0.1
baz=315,SNR=8.7
434A Burnet 62.28 75 P P 01 40 59.6 +0.6
baz=315
W40A Ferguson Farm, 62.30 68 P P 01 40 58.8 -0.4
baz=315,SNR=6.3
533A Kerrville 62.33 76 P P 01 40 58.9 -0.6
baz=316
S43A Fulton Ridge, 62.36 64 P P 01 40 58.9 -0.6
baz=315,SNR=5.0
V41A Mountainview 62.42 67 P P 01 40 58.8 -1.1
baz=315,SNR=12
R44A Waltonville 62.44 63 P P 01 40 59.6 -0.5
baz=315
MIAR Mount Ida 62.46 68 P P 01 41 00.1 -0.1
baz=315,SNR=13
MIAR Mount Ida 62.46 68 *eP* P 01 41 00.1 -0.1
MIAR pmax pmax
comp=Z,17nm,1.1s
MIAR Mount Ida 62.46 68 *eP* P 01 41 00.1 -0.1
comp=Z,17nm,1.1s
Z38A Mt. Pleasant 62.54 70 P P 01 41 01.2 +0.4
baz=315
U42A Revenden 62.55 65 P P 01 40 59.7 -1.1
baz=315,SNR=9.5
X201 Greenbrier Sit 62.64 67 *eP* P 01 41 01.3 -0.2
comp=Z,6.6nm,0.8s
OLIL Olney 62.65 62 *eP* P 01 41 00.6 -0.8
comp=Z,15nm,1.0s
X301 Greenbrier Sit 62.66 67 *eP* P 01 41 01.1 -0.4
comp=Z,8.8nm,0.7s
WHAR Wly Hollow 62.69 67 *eP* P 01 41 01.6 -0.1
comp=Z,8.9nm,0.7s
534A Blanco 62.71 75 P P 01 41 03.0 +1.1
baz=316
PBMO Poplar Bluff 62.71 65 *eP* P 01 41 01.0 -0.9
comp=Z,13nm,0.6s
336A Riesel 62.74 73 P P 01 41 03.1 +1.0
baz=315
W41B Gary Mavity, V 62.79 67 P P 01 41 01.7 -0.7
baz=315,SNR=8.1
V42A Cord 62.84 66 P P 01 41 02.0 -0.7
baz=315,SNR=7.3
Y40A Okolona 63.01 69 P P 01 41 04.1 +0.2
baz=315
832A Faith Ranch, C 63.02 78 P P 01 41 04.6 +0.5
baz=316
PDGK Podgornoye 63.04 306 P P 01 41 03.1 -0.8
PDGK pmax pmax
comp=Z,12nm,0.9s
PARMO Parma 63.18 64 *eP* P 01 41 05.8 +0.8
436A Wall Ranch, Ga 63.20 74 P P 01 41 05.8 +0.6
baz=316
238A Jacksonville 63.34 71 P P 01 41 06.6 +0.5
baz=316
WLAR White Oak Lake 63.34 69 *eP* P 01 41 07.1 +1.1
comp=Z,25nm,0.9s
NATX Nacogdoches 63.78 71 P P 01 41 10.0 +1.0
baz=316
KLMR Klimovskoe 63.81 339 *eP* P 01 41 06.4 -2.4
KLMR *e* 01 43 26.1
KLMR pmax pmax
comp=Z,6.0nm,1.0s
141A Papa Simpson, 64.23 70 P P 01 41 12.6 +0.7
baz=316
Z42A Norrel Spur, H 64.31 68 P P 01 41 13.2 +0.7
baz=316
439A Center Grove, 64.41 72 P P 01 41 13.9 +0.8
baz=316
340A Bronson 64.49 71 P P 01 41 13.9 +0.3
baz=316
W45A Hickory Valley 64.57 65 P P 01 41 14.0 -0.2
baz=316
WVT Waverly 64.65 63 *eP* P 01 41 13.5 -1.1
WVT pmax pmax
comp=Z,6.0nm,0.8s
WVT Waverly 64.65 63 *eP* P 01 41 13.5 -1.1
comp=Z,6.2nm,0.8s
OXF Oxford 64.90 66 *eP* P 01 41 16.2 -0.1
OXF pmax pmax
comp=Z,59nm,0.9s
OXF Oxford 64.90 66 *eP* P 01 41 16.2 -0.1
comp=Z,59nm,0.9s
X45A UM Field Stati 64.98 66 P P 01 41 16.9 +0.1
baz=316
Z44A Pea Ridge, Bel 65.20 67 P P 01 41 18.9 +0.7
baz=316
TKM2 Tokmak 2 65.29 308 P P 01 41 18.3 -0.7
TKM2 pmax pmax
comp=Z,9.0nm,0.9s
Y45A Yeager Farm, C 65.29 66 P P 01 41 18.5 -0.4
baz=316,SNR=5.7
N54A Moraine State 65.40 55 P P 01 41 18.3 -1.2
baz=317
243A Waterproof 65.58 69 P P 01 41 21.9 +1.2
baz=316
Y46A Houston 65.67 66 P P 01 41 20.9 -0.4
baz=317,SNR=11
FINES FINESS Array B 65.78 346 P P 01 41 19.6 -1.9
comp=Z,3.6nm,0.8s,baz=8.3,slow=7.4,SNR=12
FRU Bishkek 65.84 309 *eP* P 01 41 21.0 -1.3
244A Avery, Jackson 65.94 68 P P 01 41 24.2 +1.2
baz=317
AAK Ala-Archa 66.04 309 P P 01 41 23.3 -0.5
AAK pmax pmax
comp=Z,8.0nm,0.7s
AAK Ala-Archa 66.04 309 *eP* P 01 41 24.5 +0.7
comp=Z,9.5nm,0.6s
Y47A UCPARC, Winfie 66.24 65 P P 01 41 24.3 -0.6
baz=317
LSA Lhasa 66.30 288 *eP* P 01 41 26.9 +0.9
LSA pmax pmax
comp=Z,16nm,0.9s
LSA Lhasa 66.30 288 *eP* P 01 41 26.9 +0.9
comp=Z,16nm,0.9s
344A Westbrook Farm 66.33 69 P P 01 41 26.3 +0.7
baz=317
245A Little AP, Sta 66.41 68 P P 01 41 26.7 +0.7
baz=317
Z47A Carrollton 66.62 66 P P 01 41 26.8 -0.6
baz=317,SNR=11
Z48A Northport 66.79 65 P P 01 41 27.8 -0.7
baz=317,SNR=5.5
147A Livingston 66.89 66 P P 01 41 29.2 +0.2
baz=317
346A Big Creek Wild 67.13 68 P P 01 41 30.6 0.0
baz=317
MNAS Manas 67.13 310 P P 01 41 30.5 -0.2
MNAS pmax pmax
comp=Z,8.0nm,0.7s
AKTO Aktyubinsk 67.17 324 P P 01 41 30.6 0.0
AKTO pmax pmax
comp=Z,46nm,0.8s
AB31 Akbulak array 67.38 322 *i* P P 01 41 31.5 -0.5
AB31 pmax pmax
comp=Z,28nm,1.1s
ABKAR Akbulak array 67.38 322 *eP* P 01 41 32.5 +0.6
comp=Z,7.3nm,0.4s
N59A State Game Lan 67.57 52 P P 01 41 32.1 -1.3
baz=319
KKAR Karatay Array 67.62 311 *eP* P 01 41 33.6 0.0
KKAR pmax pmax
comp=Z,7.0nm,0.6s
KKAR Karatay Array 67.62 311 *eP* P 01 41 33.6 0.0
comp=Z,7.2nm,0.6s
446A Poplarville 67.62 68 P P 01 41 34.9 +1.2
baz=317
NC204 NORSAR Array S 67.62 354 *eP* P 01 41 32.8 -0.6
KSH Kashi 67.62 305 P P 01 41 37.8 +4.0
KSH *ep*P sP 01 41 53.1 +1.2
KSH *e*PcP **PcP** 01 42 03.8 +3.2
KSH *e*PP **PP** 01 44 09.9 +7.1
KSH S **S** 01 50 29.3 +1.8
KSH pmax pmax
comp=Z,13nm,0.8s
KSH pmax pmax
comp=Z,51nm,2.9s
KSH LR LR
comp=Z,120nm,5.1s
KSH LR LR
comp=Z,240nm,7.6s
KSH LR LR
comp=Z,310nm,6.8s
NC303 NORSAR Array S 67.63 354 *eP* P 01 41 32.7 -0.7
347A Saraland 67.66 67 P P 01 41 34.6 +0.7
baz=317
NC405 NORSAR Array S 67.72 353 *eP* P 01 41 33.1 -0.8
NB201 NORSAR Array S 67.81 354 *eP* P 01 41 33.6 -0.9
NB2 NORSAR Subarra 67.82 354 P P 01 41 33.4 -1.2
comp=Z,5.6nm,0.7s,baz=8.9,slow=6.5
NB2 NORSAR Subarra 67.82 354 P P 01 41 33.4 -1.2
NB2 pmax pmax
comp=Z,5.0nm,0.7s
NOA NORSAR Array B 67.82 354 P P 01 41 33.4 -1.2
comp=Z,4.4nm,0.7s,baz=9.2,slow=6.3,SNR=22
348A Jackson 68.02 67 P P 01 41 36.9 +0.7
baz=318
PSUB Penn St. - Bra 68.48 53 *eP* P 01 41 39.6 +0.6
comp=Z,52nm,0.3s
KMSC Kings Mountain 68.98 60 P P 01 41 41.9 -0.2
baz=318
KMSC Kings Mountain 68.98 60 *eP* P 01 41 42.0 -0.2
comp=Z,15nm,1.1s
TAOE Nuku Hiva Isla 69.28 136 *eT* T 02 57 23.8
comp=Z,165nm,0.3s
OBN Obninsk 69.68 338 *i* P P 01 41 43.8 -2.4
OBN *e* 01 42 10.4
OBN *e* 01 44 15.3
OBN pmax pmax
comp=Z,32nm,2.5s
OBN MLR MLR
comp=Z,302nm,19.0s
CMAR Chiang Mai Arr 69.73 274 P P 01 41 47.1 0.0
comp=Z,3.5nm,0.5s,baz=24,slow=7.3,SNR=13
GUN Gumba 70.75 291 *eP* P 01 41 54.5 +0.9
comp=Z,148nm,0.8s
RAMN Ramite 71.03 289 *eP* P 01 41 55.7 +0.5
comp=Z,145nm,0.7s
KKN Kakani 71.19 291 *eP* P 01 41 56.9 +0.7
comp=Z,64nm,0.6s
PKIN Phulchoki 71.28 291 *eP* P 01 41 57.8 +1.0
comp=Z,46nm,0.8s
GKN Gorkha 71.41 292 *eP* P 01 41 57.9 +0.5
comp=Z,83nm,0.8s
DMN Daman 71.43 291 *eP* P 01 41 58.5 +0.9
comp=Z,64nm,0.9s
VRH Novokhopyorsk 71.89 333 *eP* P 01 41 57.4 -2.3
VRH pmax pmax
comp=Z,10.0nm,0.8s
KOLN Koldanda 72.19 292 *eP* P 01 42 02.5 +0.3
comp=Z,34nm,0.7s
PYUN Piuthan 72.30 293 *eP* P 01 42 03.3 +0.5
comp=Z,95nm,0.9s
VSR Storozhevoye 72.58 335 *eP* P 01 42 02.3 -1.5
VSR pmax pmax
comp=Z,10.0nm,1.1s
DZM Mont Dzumac 73.67 192 *eLR* LR 02 04 52.4
comp=Z,471nm,22.8s
PPT2 Papeete2 73.67 149 *eLR* LR 02 04 38.6
comp=Z,182nm,22.0s
PPT2 Papeete2 73.67 149 *eT* T 03 02 58.3
comp=Z,6.2nm,0.3s
MEH Mehetia 74.44 148 *eT* T 03 03 55.1
comp=Z,22nm,0.3s
KBL Kabul 74.98 307 *eP* P 01 42 18.1 -0.3
KBL Kabul 74.98 307 *eP* P 01 42 18.1 -0.3
AKASG Malin Array Be 75.42 341 P P 01 42 19.3 -1.1
comp=Z,2.4nm,0.3s,baz=25,slow=6.1,SNR=14
KIEV Kiev 75.44 341 *eP* P 01 42 19.7 -0.8
KIEV pmax pmax
comp=Z,6.0nm,0.8s
KIEV Kiev 75.44 341 *eP* P 01 42 19.2 -1.3
GOF Gofitskoye 76.98 330⇑ *eP* P 01 42 30.1 +0.7
GOF pmax pmax
comp=Z,50nm,0.9s
CLL Collm 77.32 351 *eP* P 01 42 29.0 -2.2
CLL Collm 77.32 351 *eP* P 01 42 29.0 -2.2
GEYT Alibeck 77.41 316 P P 01 42 32.3 +0.3
comp=Z,7.1nm,1.0s,baz=57,slow=5.3,SNR=12
GEYT PP **PP** 01 45 25.5 -0.7
comp=Z,1.6nm,0.5s,baz=352,slow=6.0,SNR=4.6
OJC Ojcow 77.56 347 *eP* P 01 42 32.4 -0.2
OJC Ojcow 77.56 347 *eP* P 01 42 32.4 -0.2
KWP Kalwaria Pacla 77.68 345 *eP* P 01 42 33.4 +0.2
KWP Kalwaria Pacla 77.68 345 *eP* P 01 42 33.4 +0.2
DPC Dobruska-Polom 77.90 349 *eP* P 01 42 34.6 +0.1
DPC *ex* x 01 42 39.9
DPC Dobruska-Polom 77.90 349 *eP* P 01 42 34.6 +0.1
DPC *e* 01 42 39.9
SORM Soroca 78.04 340⇓ *iP* P 01 42 34.3 -0.9
KIV Kislovodsk 78.08 329 *i* P P 01 42 34.8 -0.9
KIV *e* 01 42 44.0
KIV pmax pmax
comp=Z,10.0nm,1.0s
KIV Kislovodsk 78.08 329 *eP* P 01 42 36.0 +0.3
comp=Z,6.5nm,0.7s
NCK Nalchik 78.20 329 *eP* P 01 42 35.6 -0.6
NCK pmax pmax
comp=Z,19nm,0.9s
KBZ Khabaz 78.22 329 P P 01 42 37.0 +0.7
comp=Z,5.1nm,0.8s,baz=60,slow=2.1,SNR=11
KBZ Khabaz 78.22 329 P P 01 42 37.0 +0.7
KBZ pmax pmax
comp=Z,5.0nm,0.8s
ZEI Tsey 78.73 328 *eP* P 01 42 37.1 -2.3
ZEI pmax pmax
comp=Z,28nm,0.5s
VRAC Vranov 78.89 348⇑ *iP* P 01 42 39.6 -0.3
TBI Tubuai 79.10 151 *eLR* LR 02 07 12.3
comp=Z,246nm,24.5s
BUR08 Bucovina Ar. S 79.14 342 *eP* P 01 42 41.5 +0.1
BURAR Bucovina Array 79.17 342⇑ *iP* P 01 42 40.6 -1.0
TBLG Delisi 79.39 327 P P 01 42 43.8 +1.0
KHC Kasperske Hory 79.42 350 *eP* P 01 42 42.1 -0.7
KHC *ex* x 01 42 46.6
KHC Kasperske Hory 79.42 350 *eP* P 01 42 42.1 -0.7
KHC *e* 01 42 46.6
GERES GERESS Array B 79.69 350 P P 01 42 44.0 -0.4
comp=Z,1.1nm,0.7s,baz=28,slow=6.0,SNR=8.5
GERES GERESS Array B 79.69 350 P P 01 42 44.0 -0.4
GERES pmax pmax
comp=Z,1.0nm,0.7s
PSZ Piszkesteto 79.79 346⇑ *iP* P 01 42 44.7 -0.2
ARCR ARCALIA 79.84 343⇓ *iP* P 01 42 46.2 +1.1
AKH Akhalkalaki 80.10 328⇑ *iP* P 01 42 48.2 +1.4
CJR Cluj-Napoca 80.34 343⇑ *iP* P 01 42 48.7 +0.8
DRGR 80.42 344⇓ *iP* P 01 42 48.0 -0.4
PLOR Plostina 80.57 341⇑ *iP* P 01 42 49.5 +0.3
PLOR Plostina 80.57 341 P P 01 42 49.4 +0.3
GNI Garni 80.79 326 *i* P P 01 42 50.3 -0.3
GNI pmax pmax
comp=Z,18nm,0.7s
WRA Warramunga Arr 80.89 222 P P 01 42 50.6 -0.4
comp=Z,5.7nm,0.8s,baz=31,slow=5.9,SNR=20
WRA Warramunga Arr 80.89 222 P P 01 42 50.6 -0.4
WRA pmax pmax
comp=Z,5.0nm,0.8s
CFR Carcaliu 80.90 340⇓ *iP* P 01 42 50.2 -0.6
MLR Muntele Rosu 81.06 341⇑ *iP* P 01 42 52.9 +1.0
MLR Muntele Rosu 81.06 341 *eP* P 01 42 52.8 +0.9
MLR Muntele Rosu 81.06 341 *eP* P 01 42 52.8 +0.9
SIRR Siria 81.11 344⇑ *iP* P 01 42 51.7 -0.3
VOIR 81.29 342⇓ *iP* P 01 42 53.3 +0.3
VOIR 81.29 342 P P 01 42 53.3 +0.3
HARR Harsova 81.41 340⇓ *iP* P 01 42 54.5 +1.0
TLB Topalu 81.48 340⇓ *iP* P 01 42 52.9 -1.0
TIRR Tirgusor 81.52 339⇓ *iP* P 01 42 54.0 -0.2
TIRR Tirgusor 81.52 339 *eP* P 01 42 53.9 -0.2
TIRR Tirgusor 81.52 339 *eP* P 01 42 53.9 -0.3
PSI Prapat 81.66 264 *eP* P 01 42 54.8 -0.6
PSI Prapat 81.66 264 *eP* P 01 42 54.8 -0.6
BZS Buzias 81.75 344⇓ *iP* P 01 42 54.9 -0.4
HYB Hyderabad 83.08 289 *i* P P 01 43 03.0 +0.2
AS01 Alice Springs 84.36 221 *eP* P 01 43 09.1 +0.2
ASAR Alice Springs 84.38 221 P P 01 43 09.3 +0.3
comp=Z,2.9nm,0.8s,baz=28,slow=5.3,SNR=18
VTS Vitosha 84.39 342⇓ *iP* P 01 43 08.9 -0.3
VTS Vitosha 84.39 342 *eP* P 01 43 08.7 -0.5
VTS Vitosha 84.39 342 *eP* P 01 43 08.7 -0.5
BR131 Keskin Array S 84.67 334 *eP* P 01 43 10.9 +0.2
BRTR Keskin Array B 84.67 334 P P 01 43 10.6 -0.1
comp=Z,5.3nm,0.8s,baz=47,slow=2.5,SNR=32
BR231 Keskin MP Arra 84.79 335 *eP* P 01 43 10.8 -0.4
PDG Podgorica 85.24 345⇑ *iP* P 01 43 13.4 +0.1
MDRS Chennai 85.44 285 *ex* P 01 43 06.8 -7.9

MDRS ex x 01 50 06.8
MDRS ex x 01 53 14.8
MDRS ex x 02 00 40.8
ESDC Soneca Array 89.59 2 P **P 01 43 32.9 -1.5**
comp=Z,0.7nm,0.8s,baz=347,slow=4.8,SNR=4.3
TORD Torodi Ar. Bea 116.02 357 PKP **PKPdf 01 49 19.0 -0.9**
comp=Z,0.4nm,0.5s,baz=358,slow=1.8,SNR=8.6
DBIC Dimbokro 122.39 5 PKP **PKPdf 01 49 32.1 -0.1**
comp=Z,1.5nm,0.4s,baz=342,slow=3.1,SNR=11
TSUM Tsumeb 145.01 329 *e*PKPdf **PKPdf 01 50 14.1 -0.1**
MAW Mawson 145.44 217 PKPbc **PKPab 01 50 14.0 +0.4**
comp=Z,2.5nm,0.8s,baz=119,slow=6.0,SNR=7.4
BOSA Boshof 150.18 309 PKPbc **PKPbc 01 50 28.0 +0.4**
comp=Z,7.6nm,0.5s,baz=39,slow=3.1,SNR=32
BOSA Boshof 150.18 309 PKP2 **PKPbc 01 50 28.0 +0.4**

NIED ***19*** *01:38:00.0, 37.30N×141.80E, h5km, Mw5.1 Best double couple: M0:4.31000×10^16 NP1:φs=88.00000°, δ=46.00000°, λ=-24.00000°. NP2:φs=195.00000°, δ=73.00000°, λ=-133.00000°.*
BJI ***19*** *01:38:45.8, 37.42N×141.82E, h10km, mb4.9/75, mB5.1/62, Ms5.1/82, Ms7 4.8/80*
IDC ***19*** *01:38:46.8±0.4, 37.31N×141.67E, h0km, mb4.7/44, mb1 4.8/48, mb1mx4.7/68, mbtmp4.7/48, ML4.0/3, MS4.4/34, Ms1 4.4/34, ms1mx4.3/43, Error ellipse: s-maj=12.3km s-min=10.0km az=110.0*
MOS ***19*** *01:38:48.6±1.1, 37.46N×141.68E, h23km, mb5.2/98, MS4.6/32, Error ellipse: s-maj=7.2km s-min=5.0km az=97.9*
JMA ***19*** *01:38:48.4±0.1, 37.33N×141.76E, h31km±3km, M5.4*
JMA Felt III J1.
ISCJB ***19*** *01:38:49.7±0.5, 37.41N±0.02×141.64E±0.02, h24km±3km, mb5.0/232, MS4.7/64, Error ellipse: s-maj=3.5km s-min=2.3km az=157.6*
NEIC ***19*** *01:38:51.3±1.2, 37.39N×141.58E, h24km±8km, mb5.2/137, Error ellipse: s-maj=4.4km s-min=2.6km az=142.0*
NEIC Recorded [3 JMA] in Fukushima and Miyagi.
GCMT ***19*** *01:38:51.3±0.2, 37.39N×141.64E, h12km, MW5.2/87, Moment Tensor Solution. s45,c67; s87,c139; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=2.49±.14; Mθθ=1.79±.12; Mφφ=0.69±.14; Mrθ=-0.66±.33; Mθφ=3.90±.10; Mφr=4.92±.37; Best double couple: M0:6.65900×10^16 NP1:φs=191.00000°, δ=76.00000°, λ=-128.00000°. NP2: φs=83.00000°, δ=40.00000°, λ=-23.00000°. Principal axes: T 6.2700, Plg21.0000°, Azm309.0000°; N 0.7730, Plg37.0000°, Azm202.0000°; P -7.0480, Plg46.0000°, Azm62.6000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 19 01:38:49.5±0.5, 37.39N±0.03×141.75E±0.03, h16km±2km, h16km:pP-P, n899, σ1°43/943, mb5.1/235, MS4.7/65, 50C-21D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.69**	**268**	↑P	**Pg**	**01 39 01.6**	**-1.5**
JFK				S	**Sg**	**01 39 10.8**	**-1.5**
ONAJ	**Iwakimizuishiy**	**0.81**	**249**	↑P	**Pg**	**01 39 03.1**	**-2.2**
ONAJ				S	**Sg**	**01 39 14.1**	**-1.9**
JMM	**Marumori**	**0.89**	**302**	↑↑P	**Pg**	**01 39 05.2**	**-1.6**
JMM				S	**Sg**	**01 39 17.4**	**-1.2**
JIO	**Ouri**	**1.11**	**344**	↑↑P	**Pb**	**01 39 08.9**	**-1.3**
JIO				S	**Sb**	**01 39 23.3**	**-1.1**
JFT	**Otama**	**1.13**	**277**	↑↑P	**Pb**	**01 39 09.2**	**-1.4**
JFT				S	**Sb**	**01 39 24.5**	**-0.6**
JHO	**Hitachi**	**1.22**	**231**	↑↑P	**Pn**	**01 39 08.8**	**-3.1**
JHO				S	**Sb**	**01 39 23.5**	**-4.3**
JOU	**Okura**	**1.29**	**319**	↑↑P	**Pn**	**01 39 12.4**	**-0.5**
JOU				S	**Sb**	**01 39 29.6**	**-0.3**
JSB	**Shiboa**	**1.52**	**254**	↑↑P	**Pn**	**01 39 15.0**	**-1.0**
JYS	**Shirataka**	**1.57**	**302**	↑↑P	**Pn**	**01 39 16.4**	**-0.3**
JYS				S	**Sn**	**01 39 36.9**	**+0.3**
JMK	**Ichinoseki**	**1.61**	**345**	↑↑P	**Pn**	**01 39 17.0**	**-0.2**
JMK				S	**Sn**	**01 39 37.8**	**+0.1**
JFY	**Yanaizu**	**1.63**	**271**	↑↑P	**Pn**	**01 39 16.5**	**-1.0**
JFY				S	**Sn**	**01 39 37.4**	**-0.7**
OFUJ	**Ofunato**	**1.69**	**358**	↓↓P	**Pn**	**01 39 17.2**	**-1.1**
JYK	**Kaneyama**	**1.88**	**325**	↑↑P	**Pn**	**01 39 20.8**	**-0.1**
JAG	**Ashikaga**	**2.08**	**243**	↑↑P	**Pn**	**01 39 21.8**	**-1.9**
JOM	**Ohasama**	**2.11**	**350**	↓↓P	**Pn**	**01 39 24.2**	**+0.1**
JHK	**Hiroka**	**2.18**	**267**	↑↑P	**Pn**	**01 39 24.5**	**-0.6**
MIYJ	**Miyakonagasawa**	**2.18**	**1**	↓↓P	**Pn**	**01 39 24.0**	**-1.1**
JRG	**Rokugo**	**2.18**	**337**	↑↑P	**Pn**	**01 39 25.5**	**+0.4**
JAW	**Awa shima**	**2.24**	**299**	↑↑P	**Pn**	**01 39 25.7**	**-0.2**
JTB	**Tobi-shima**	**2.49**	**317**	↑↑P	**Pn**	**01 39 29.2**	**-0.1**
JRY	**Ryogami san**	**2.67**	**240**	↑↑P	**Pn**	**01 39 29.8**	**-2.0**
JAH	**Hinai**	**2.92**	**343**	↑↑P	**Pn**	**01 39 36.4**	**+1.1**
MJAR	**Matsushiro Arr**	**2.96**	**254**	Pn	**Pn**	**01 39 35.1**	**-0.7**
	34nm,0.3s,baz=77,slow=17,SNR=57						
MJAR				Sn	**Sn**	**01 40 11.6**	**+0.6**
	93nm,0.3s,baz=76,slow=16,SNR=6.9						
MJAR				LR	LR	01 40 53.8	
	comp=Z,5μm,19.6s,baz=105,slow=44						
MAJO	**Matsushiro**	**2.96**	**254**	*c* *i*P	**Pn**	**01 39 35.5**	**-0.3**
MAJO				pmax	pmax		
	comp=Z,179nm,0.8s						
MAJO	**Matsushiro**	**2.96**	**254**	*e*Pn	**Pn**	**01 39 35.8**	**0.0**
MAJO				*e*S	**Sn**	**01 40 09.5**	**-1.5**
MAT	**Matsushiro**	**2.96**	**254**	P	**Pn**	**01 39 35.7**	**-0.1**
MAT				S	**Sn**	**01 40 13.3**	**+2.3**
MAT	**Matsushiro**	**2.96**	**254**	P	**Pn**	**01 39 35.6**	**-0.2**
MJB9	**Matsu-Tunnel**	**2.96**	**254**	*e*Pn	**Pn**	**01 39 35.9**	**0.0**
MJB9				*e*Sn	**Sn**	**01 40 11.7**	**+0.6**
JNY	**Yasuok**	**3.73**	**238**	P	**Pn**	**01 39 47.1**	**+0.6**
INU	**Inuyama**	**4.33**	**243**	*e*Pn	**Pn**	**01 39 54.8**	**+0.2**
INU				*e*Sn	**Sn**	**01 40 46.1**	**+1.4**
JHJ2	**Mitsune**	**4.55**	**201**	*e*Pn	**Pn**	**01 39 58.3**	**+0.6**
JHJ	**Hachijo jima 2**	**4.56**	**201**	Pn	**Pn**	**01 39 57.1**	**-0.6**
	comp=Z,51nm,0.3s,baz=318,slow=19,SNR=9.6						
JHJ				Sn	**Sn**	**01 40 47.6**	**-2.8**
	comp=Z,125nm,0.3s,baz=73,slow=19,SNR=3.1						
JHJ				LR	LR	01 42 02.4	
	comp=Z,3μm,19.4s,baz=90,slow=44						
ERM	**Erimo**	**4.74**	**13**	*i* P	**Pn**	**01 39 59.8**	**-0.4**
ERM				pmax	pmax		
	comp=Z,79nm,1.2s						
ERM	**Erimo**	**4.74**	**13**	*e*Pn	**Pn**	**01 39 59.9**	**-0.4**
ERM				*e*S	**Sn**	**01 40 52.2**	**-2.7**
ASAJ	**Asahikawa**	**6.75**	**5**	Pn	**Pn**	**01 40 27.9**	**+0.1**
	baz=202,slow=10						
ASAJ	**Asahikawa**	**6.75**	**5**	*e*Pn	**Pn**	**01 40 27.7**	**-0.1**
ASAJ				*e*S	**Sn**	**01 41 43.9**	**-0.4**
YUK	**Yuzh-Kuril'sk**	**7.33**	**24**	*e*P	**Pn**	**01 40 34.6**	**-1.2**
KUR	**Kuril'sk**	**9.08**	**28**	↑↑P	**Pn**	**01 40 58.3**	**-1.5**
KUR				*i* S	**Sn**	**01 42 36.4**	**-5.3**
KUR				pmax	pmax		
	comp=Z,352nm,7.5s						
KUR				pmax	pmax		
	comp=Z,58nm,0.9s						
KUR				smax	smax		
	comp=N,62nm,0.7s						
KUR				smax	smax		
	comp=E,147nm,0.7s						
KUR				smax	smax		
	comp=N,607nm,5.0s						
KUR				smax	smax		
	comp=E,531nm,5.0s						
KUR				MLR	MLR		
	comp=N,668nm,11.0s						
KUR				MLR	MLR		
	comp=E,813nm,11.0s						
KUR				MLR	MLR		
	comp=Z,756nm,11.0s						
VLA	**Vladivostok**	**9.46**	**310**	*c* *i*P	**Pn**	**01 41 04.9**	**-0.1**
YSS	**Yuzh-Sakhalins**	**9.58**	**4**	↑↑*e*P	**Pn**	**01 41 06.1**	**-0.6**
YSS				pmax	pmax		
	comp=Z,40nm,0.9s						
YSS				MLR	MLR		
	comp=Z,3μm,14.0s						
YSS				MLR	MLR		
	comp=N,2μm,12.0s						
YSS	**Yuzh-Sakhalins**	**9.58**	**4**	*e*Pn	**Pn**	**01 41 07.3**	**+0.6**
MSHR	**Mys Shultsa**	**9.63**	**306**	*c* *i*P	**Pn**	**01 41 08.0**	**+0.6**
JNU	**Nakatsue**	**9.85**	**248**	Pn	Pn	01 41 15.4	+4.9
	comp=N,1.4nm,0.3s,baz=105,slow=7.6,SNR=7.7						
JNU	**Nakatsue**	**9.85**	**248**	*e*Pn	Pn	01 41 16.1	+5.6
USRK	**Ussuriysk Ar.**	**10.04**	**316**	Pn	**Pn**	**01 41 16.6**	**+3.6**
	comp=N,1.4nm,0.3s,baz=132,slow=13,SNR=81						
USRK				LR	LR	01 44 47.8	
	comp=N,4μm,19.5s,baz=139,slow=36						
KSRS	**Korea Array**	**11.00**	**275**	Pn	**Pn**	**01 41 29.8**	**+3.7**
	comp=N,0.2nm,0.3s,baz=87,slow=14,SNR=14						
KSRS				LR	LR	01 45 20.1	
	comp=N,1μm,21.4s,baz=79,slow=36						
KS01	**Wonju Array Si**	**11.02**	**275**	*e*Pn	**Pn**	**01 41 29.2**	**+2.8**
KS15	**Wonju Array Si**	**11.03**	**274**	*e*Pn	Pn	01 41 31.6	+5.1
KSAR	**Wonju Array Be**	**11.03**	**274**	P	**Pn**	**01 41 29.8**	**+3.3**
KSAR	**Wonju Array Be**	**11.03**	**274**	Pn	**Pn**	**01 41 29.8**	**+3.3**
MDJ	**Mudanjiang**	**11.67**	**312**	P	**Pn**	**01 41 38.8**	**+3.5**
MDJ				S	**Sn**	**01 43 45.3**	**+0.1**
MDJ				PcP	**PcP**	**01 47 26.9**	**+2.2**
MDJ				ScP	**ScP**	**01 50 58.5**	**+1.7**
MDJ				ScS	**ScS**	**01 54 34.0**	**+1.7**
MDJ				pmax	pmax		
	comp=N,50nm,1.0s						
MDJ				pmax	pmax		
	comp=N,360nm,4.5s						
MDJ				LR	LR		
	comp=N,2μm,10.8s						
MDJ				LR	LR		
	comp=N,2μm,12.4s						
MDJ				LR	LR		
	comp=N,2μm,13.3s						
MDJ	**Mudanjiang**	**11.67**	**312**	*e*Pn	**Pn**	**01 41 38.8**	**+3.5**
	comp=N,179nm,1.3s						
HABR	**Khabarovsk**	**12.11**	**338**	*e*P	**Pn**	**01 41 38.0**	**-3.2**
HABR				*e*S	**Sn**	**01 43 53.2**	**-2.6**
HABR				pmax	pmax		
	comp=Z,20nm,1.5s						
HABR				MLR	MLR		
	comp=Z,560nm,13.0s						
TYV	**Tymovskoe**	**13.48**	**2**	*e*P	**Pn**	**01 41 58.5**	**-1.5**
TYV				*e*S	**Sn**	**01 44 29.0**	**-0.4**
TYV				pmax	pmax		
	comp=E,13nm,0.8s						
TYV				pmax	pmax		
	comp=Z,51nm,0.8s						
TYV				smax	smax		
	comp=E,1μm,13.0s						
TYV				MLR	MLR		
	comp=E,8μm,14.0s						
TYV				MLR	MLR		
	comp=Z,6μm,14.0s						
KLR	**Kul'dur**	**13.87**	**332**	Pn	**P**	**01 42 10.1**	**-3.5**
	comp=Z,1.1nm,0.3s,baz=141,slow=8.1,SNR=9.7						
CN2	**Changchun**	**13.93**	**302**	*e*P	**Pn**	**01 42 06.5**	**+0.4**
CN2				*e*S	**Sn**	**01 44 39.4**	**-1.0**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.3s						
CN2				pmax	pmax		
	comp=Z,400nm,4.0s						
CN2				LR	LR		
	comp=Z,2μm,13.0s						
CN2				LR	LR		
	comp=Z,2μm,13.0s						
CN2				LR	LR		
	comp=Z,2μm,14.0s						
SNY	**Shenyang**	**14.69**	**293**	P	**P**	**01 42 23.0**	**+0.4**
SNY				S	**Sn**	**01 45 06.9**	**+8.1**
SNY				pmax	pmax		
	comp=Z,730nm,2.5s						
SNY				pmax	pmax		
	comp=Z,470nm,6.0s						
SNY				LR	LR		
	comp=N,6μm,16.5s						
SNY				LR	LR		
	comp=E,2μm,14.7s						
SNY				LR	LR		
	comp=Z,5μm,17.9s						
NKL	**Nikolayevsk**	**15.78**	**358**	*e*P	P	01 42 45.0	+10
NKL				pmax	pmax		
	comp=Z,34nm,1.0s						
NKL				MLR	MLR		
	comp=N,2μm,15.0s						
NKL				MLR	MLR		
	comp=E,2μm,15.0s						
NKL				MLR	MLR		
	comp=Z,2μm,15.0s						
DL2	**Dalian**	**15.90**	**282**	P	**Pn**	**01 42 32.1**	**-0.4**
DL2				S	**Sn**	**01 45 27.1**	**-1.3**
DL2				pmax	pmax		
	comp=Z,66nm,0.8s						
DL2				pmax	pmax		
	comp=Z,530nm,3.9s						
DL2				LR	LR		
	comp=Z,4μm,14.0s						
DL2				LR	LR		
	comp=Z,2μm,18.6s						
DL2				LR	LR		
	comp=Z,3μm,14.6s						
SKR	**Severo-Kuril's**	**16.79**	**33**	*e*P	**Pn**	**01 42 41.1**	**-2.6**
SKR				pmax	pmax		
	comp=Z,500nm,3.4s						
SKR				pmax	pmax		
	comp=Z,116nm,1.0s						
SKR				MLR	MLR		
	comp=Z,2μm,16.0s						
SSE	**Sheshan**	**18.11**	**256**	*e*P	**P**	**01 43 00.8**	**+0.2**
SSE				sP	**sP**	**01 43 07.6**	**+0.4**
SSE				S	**Sn**	**01 46 21.8**	**-0.2**
SSE				pmax	pmax		
	comp=Z,22nm,0.7s						
SSE				pmax	pmax		
	comp=Z,290nm,3.5s						
SSE				LR	LR		
	comp=Z,3μm,20.9s						
SSE				LR	LR		
	comp=Z,2μm,20.9s						
SSE				LR	LR		
	comp=Z,1μm,17.2s						
PEA0	**Petropavlovsk-**	**19.24**	**30**	*e*P	**Pn**	**01 43 13.8**	**-0.1**
PEA0B	**Petropavlovsk-**	**19.24**	**30**	*e*P	**Pn**	**01 43 16.6**	**+2.6**
	comp=Z,114nm,1.4s						
PETK	**Petropavlovsk-**	**19.24**	**30**	P	**P**	**01 43 13.3**	**+0.4**
	comp=Z,0.6nm,0.3s,baz=218,slow=9.4,SNR=9.5						
PETK				LR	LR	01 50 34.1	
	comp=Z,395nm,21.5s,baz=223,slow=37						
NJ2	**Nanjing**	**19.54**	**261**	*e*P	**Pn**	**01 43 17.5**	**-0.1**
NJ2				pmax	pmax		
	comp=Z,18nm,1.0s						
NJ2				LR	LR		
	comp=Z,2μm,14.1s						
NJ2				LR	LR		
	comp=Z,2μm,14.1s						
NJ2				LR	LR		
	comp=Z,2μm,15.7s						
PET	**Petropavlovsk**	**19.57**	**32**	*e*P	**Pn**	**01 43 18.1**	**+0.3**
PET				*e*S	**S**	**01 46 50.9**	**-5.9**
PET				pmax	pmax		
	comp=Z,400nm,14.4s						
PET				pmax	pmax		
	comp=Z,57nm,0.9s						
PET				MLR	MLR		
	comp=Z,800nm,16.0s						
PET	**Petropavlovsk**	**19.57**	**32**	*e*P	**Pn**	**01 43 17.4**	**-0.4**
	comp=Z,49nm,1.0s						
TIA	**Tai'an**	**19.74**	**274**	↓↓P	**P**	**01 43 16.6**	**-1.9**
TIA				pmax	pmax		
	comp=Z,30nm,1.6s						
TIA				pmax	pmax		
	comp=Z,560nm,4.9s						
TIA				LR	LR		
	comp=Z,4μm,10.4s						
TIA				LR	LR		
	comp=Z,2μm,11.6s						
TIA				LR	LR		
	comp=Z,3μm,11.3s						
HIA	**Hailar**	**19.84**	**314**	*e*P	**P**	**01 43 17.9**	**-1.7**
HIA				pmax	pmax		
	comp=Z,7.0nm,0.9s						
HIA	**Hailar**	**19.84**	**314**	*e*P	**P**	**01 43 19.4**	**-0.1**
	comp=Z,9.1nm,0.4s						
BJI	**Beijing**	**20.11**	**285**	P	**P**	**01 43 20.1**	**-2.4**
BJI				S	**S**	**01 47 07.5**	**-0.2**
BJI				pmax	pmax		
	comp=Z,13nm,1.4s						
BJI				LR	LR		
	comp=Z,690nm,11.9s						
BJI				LR	LR		
	comp=Z,2μm,11.4s						
BJI				LR	LR		
	comp=Z,860nm,21.6s						
BJT	**Baijiatuan**	**20.11**	**285**	*e*P	**P**	**01 43 20.8**	**-1.7**
BJT				pmax	pmax		
	comp=Z,24nm,0.6s						
BJT	**Baijiatuau**	**20.11**	**285**	*e*P	**P**	**01 43 20.8**	**-1.7**
	comp=Z,24nm,0.6s						
CLNS	**Chul'man**	**22.46**	**335**	*e*P	**P**	**01 43 44.6**	**-3.2**
CLNS				*e**PP	**sP**	**01 43 54.7**	**+0.3**
CLNS				*e*PPP	PPP	01 44 23.0	
CLNS				*e*S	**S**	**01 47 51.0**	**-2.6**
CLNS				*e*SSS	SSS	01 48 47.5	
CLNS				pmax	pmax		
	comp=Z,22nm,1.1s						
CLNS				pmax	pmax		
	comp=N,21nm,1.0s						
CLNS				pmax	pmax		
	comp=E,28nm,0.9s						
CLNS				smax	smax		
	comp=E,21μm,0.8s						
CLNS				smax	smax		
	comp=N,43μm,0.8s						
CLNS				MLR	MLR		
	comp=Z,717nm,12.0s						
CLNS				MLR	MLR		
	comp=N,568nm,10.0s						
CLNS				MLR	MLR		
	comp=E,298nm,11.0s						
MA2	**Magadan**	**22.95**	**12**	P	**P**	**01 43 53.2**	**+0.4**
	comp=E,19nm,0.7s,baz=182,slow=8.8,SNR=7.6						
MA2				LR	LR	01 53 56.3	
	comp=E,762nm,18.5s,baz=202,slow=40						
QZH	**Quanzhou**	**23.31**	**244**	*e*P	**P**	**01 43 55.9**	**-0.8**
QZH				S	**S**	**01 48 03.5**	**-5.2**
QZH				LR	LR		
	comp=E,1μm,5.1s						
QZH				LR	LR		
	comp=E,3μm,10.3s						
QZH				LR	LR		
	comp=E,2μm,15.6s						
HHC	**Hu-ho-hao-te**	**23.61**	**288**	*e*P	**P**	**01 43 58.6**	**-1.2**
HHC				S	**S**	**01 48 03.8**	**-10**
HHC				pmax	pmax		
	comp=E,21nm,0.9s						
HHC				pmax	pmax		
	comp=E,250nm,4.8s						
HHC				LR	LR		
	comp=E,1μm,12.1s						
HHC				LR	LR		
	comp=E,1μm,10.7s						
HHC				LR	LR		
	comp=E,1μm,11.4s						
WHN	**Wuhan**	**23.68**	**261**	↑↑*i*P	**P**	**01 44 04.3**	**+4.0**
WHN				sP	**sP**	**01 44 10.6**	**+3.5**
WHN				pmax	pmax		
	comp=E,56nm,0.8s						
WHN				LR	LR		
	comp=E,11μm,17.8s						
WHN				LR	LR		
	comp=E,4μm,13.3s						
WHN				LR	LR		
	comp=E,5μm,11.3s						
GUMO	**Guam**	**23.87**	**172**	LR	LR	01 51 39.6	
	comp=E,386nm,21.4s,baz=5.5,slow=32						
CIT	**Chita**	**24.61**	**315**	*e*P	**P**	**01 44 09.1**	**+0.2**
CIT				*e*		01 44 23.1	
CIT				*e*		01 44 49.9	
CIT				pmax	pmax		
	comp=Z,118nm,1.8s						
YAK	**Yakutsk**	**25.78**	**347**	P	**P**	**01 44 19.0**	**-0.3**
	comp=Z,71nm,0.6s,baz=169,slow=0.9,SNR=11						
YAK				LR	LR	01 54 28.6	
	comp=Z,1μm,19.5s,baz=164,slow=36						
YAK	**Yakutsk**	**25.78**	**347**	*e*P	**P**	**01 44 19.1**	**-0.1**
YAK				*e**PP	**sP**	**01 44 27.2**	**+1.1**
YAK				*e*		01 44 55.6	
YAK				*e*PPP	PPP	01 45 04.1	
YAK				*e*		01 47 47.2	
YAK				*e*S	**S**	**01 48 46.0**	**-1.6**
YAK				*e*SS	**SnSn**	**01 49 44.2**	**+1.1**
YAK				*e*SSS	SSS	01 50 00.6	
YAK				pmax	pmax		
	comp=Z,42nm,0.7s						
YAK				pmax	pmax		
	comp=N,20nm,0.9s						
YAK				pmax	pmax		
	comp=Z,88nm,1.3s						
YAK				pmax	pmax		
	comp=N,110nm,1.9s						
YAK				pmax	pmax		
	comp=E,68nm,1.8s						
YAK				smax	smax		
	comp=N,405nm,1.9s						
YAK				smax	smax		
	comp=E,248nm,2.0s						
YAK				MLR	MLR		
	comp=Z,2μm,14.0s						
YAK				MLR	MLR		
	comp=N,2μm,14.0s						
YAK				MLR	MLR		
	comp=E,647nm,12.0s						
YAK	**Yakutsk**	**25.78**	**347**	*e*P	**P**	**01 44 19.1**	**-0.1**
	comp=E,100nm,0.7s						
SEY	**Seymchan**	**26.39**	**11**	P	**P**	**01 44 25.1**	**+0.3**
	comp=E,7.3nm,0.7s,baz=200,slow=9.1,SNR=20						
XAN	**Xi'an**	**26.79**	**273**	P	**P**	**01 44 26.8**	**-2.0**
XAN				PP	**PnPn**	**01 45 11.3**	**+1.1**
XAN				S	**S**	**01 49 00.8**	**-3.4**
XAN				SS	**SnSn**	**01 50 11.8**	**+3.5**
XAN				pmax	pmax		
	comp=E,11nm,1.1s						
XAN				pmax	pmax		
	comp=E,220nm,5.9s						
XAN				LR	LR		
	comp=E,2μm,16.5s						
XAN				LR	LR		
	comp=E,1μm,16.1s						
XAN				LR	LR		
	comp=E,1μm,12.6s						
BOD	**Bodaibo**	**27.37**	**327**	*e*P	**P**	**01 44 32.9**	**-0.8**
BOD				pmax	pmax		
	comp=Z,31nm,1.2s						
ENH	**Enshi**	**27.63**	**265**	*e*P	**P**	**01 44 35.4**	**-0.9**
	comp=Z,42nm,0.6s						
SONA1	**Songino Array**	**27.80**	**303**	*e*P	**P**	**01 44 36.5**	**-1.4**
SONM	**Songino Array**	**27.81**	**303**	P	**P**	**01 44 36.6**	**-1.3**
	comp=Z,9.0nm,0.5s,baz=104,slow=8.7,SNR=42						
SONM				LR	LR	01 56 01.0	
	comp=Z,896nm,18.2s,baz=92,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.11**	**122**	T	T	02 14 03.3	
	baz=315,slow=75,SNR=563						
H11N1	**WAKE ISLAND Hy**	**28.11**	**122**	T	T	02 14 03.9	
	baz=315,slow=75,SNR=530						
H11N3	**WAKE ISLAND Hy**	**28.12**	**122**	T	T	02 14 04.6	
	baz=315,slow=75,SNR=494						
GZH	**Guangzhou**	**28.25**	**248**	P	**P**	**01 44 40.3**	**-1.6**
GZH				S	**S**	**01 49 23.8**	**-3.4**
GZH				LR	LR		
	comp=Z,5μm,14.2s						
H11S1	**WAKE ISLAND Hy**	**28.83**	**124**	T	T	02 14 55.4	
	baz=316,slow=76,SNR=2568						
H11S3	**WAKE ISLAND Hy**	**28.84**	**124**	T	T	02 15 03.0	
	baz=316,slow=76,SNR=3678						
H11S2	**WAKE ISLAND Hy**	**28.85**	**124**	T	T	02 15 01.5	
	baz=316,slow=76,SNR=616						
TGY	**Tagaytay City**	**29.69**	**224**	LR	LR	01 54 25.8	
	comp=Z,250nm,21.4s,baz=144,slow=32						
ZAK	**Zakamensk**	**30.26**	**308**	*e*P	**P**	**01 44 57.9**	**-1.7**
ZAK				pmax	pmax		
	comp=Z,14nm,1.5s						
LZH	**Lanzhou**	**30.27**	**279**	*e*P	**P**	**01 44 59.6**	**-0.3**
LZH				pP	pP	01 45 03.4	-1.4
LZH				sP	sP	01 45 06.9	+0.1
LZH				PP	**PnPn**	**01 45 58.3**	**+0.6**
LZH				*e*S	**S**	**01 49 56.5**	**-2.7**
LZH				SS	**SnSn**	**01 51 34.0**	**+0.6**
LZH				pmax	pmax		
	comp=Z,84nm,1.4s						
LZH				pmax	pmax		
	comp=Z,180nm,5.2s						
LZH				LR	LR		
	comp=Z,4μm,18.0s						
LZH				LR	LR		
	comp=Z,2μm,17.5s						
LZH				LR	LR		
	comp=Z,3μm,16.4s						
TLY	**Talaya**	**30.30**	**310**	P	**P**	**01 45 00.4**	**+0.5**
	comp=Z,10nm,0.7s,baz=126,slow=2.6,SNR=10						
TLY	**Talaya**	**30.30**	**310**	*e*P	**P**	**01 44 59.6**	**-0.3**
TLY				*e*S	**S**	**01 49 59.3**	**+0.2**
TLY				*e*SSS	SSS	01 51 37.0	
TLY				pmax	pmax		

TLY MLR MLR
comp=Z,30nm,1.5s
comp=Z,2µm,18.0s
TLY Talaya 30.30 310 *e*P **P 01 44 59.7 -0.2**
comp=Z,14nm,0.7s
GYA Guiyang 31.54 260⇑ *i*P **P 01 45 09.3 -1.9**
GYA pP sP 01 45 18.8 +0.7
GYA PP **PnPn 01 46 16.4 +1.9**
GYA S **S 01 50 18.3 -0.9**
GYA ScP **ScP 01 51 47.9 +1.7**
GYA SS **SnSn 01 52 07.0 +2.5**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,130nm,5.2s
GYA LR LR
comp=Z,720nm,16.8s
GYA LR LR
comp=Z,690nm,17.7s
GYA LR LR
comp=Z,750nm,17.1s
MOY Mondy 31.91 310 *e*P **P 01 45 15.1 +0.9**
CD2 Chengdu 31.94 270 *e*P **P 01 45 15.0 +0.4**
CD2 pP sP 01 45 19.8 -1.7
CD2 sP pP 01 45 21.9 +2.4
CD2 S **S 01 50 25.4 +0.2**
CD2 sS sS 01 50 33.8 +0.5
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,360nm,7.2s
CD2 LR LR
comp=Z,2µm,14.4s
CD2 LR LR
comp=Z,2µm,17.4s
CD2 LR LR
comp=Z,2µm,10.4s
GTA Gaotai 32.71 287 *e*P **P 01 45 19.6 -1.8**
GTA pP pP 01 45 25.1 -1.2
GTA S **S 01 50 34.3 -3.0**
GTA SS **SnSn 01 52 32.3 -0.4**
GTA pmax pmax
comp=Z,5.0nm,1.0s
GTA pmax pmax
comp=Z,160nm,5.8s
GTA LR LR
comp=Z,2µm,20.4s
GTA LR LR
comp=Z,750nm,20.9s
GTA LR LR
comp=Z,910nm,20.4s
QIZ Qiongzhong 33.32 246 P **P 01 45 28.6 +1.9**
QIZ S **S 01 50 49.3 +2.6**
QIZ pmax pmax
comp=Z,16nm,1.8s
QIZ pmax pmax
comp=Z,110nm,3.8s
QIZ LR LR
comp=Z,1µm,17.0s
QIZ LR LR
comp=Z,1µm,18.9s
QIZ LR LR
comp=Z,750nm,13.6s
BILL Bilibino 33.61 16 *e*P **P 01 45 26.7 -2.0**
BILL *e* 01 46 43.3
BILL pmax pmax
comp=Z,21nm,1.7s
BILL MLR MLR
comp=Z,816nm,16.0s
TIXI Tiksi 34.97 353 *i*P **P 01 45 40.0 -0.3**
TIXI pmax pmax
comp=Z,4.0nm,0.8s
TIXI Tiksi 34.97 353 *e*P **P 01 45 40.0 -0.3**
comp=Z,8.4nm,0.9s
KMI Kunming 35.28 261 P **P 01 45 46.3 +2.4**
KMI pP sP 01 45 50.8 0.0
KMI sP pP 01 45 52.3 +3.5
KMI S **S 01 51 20.3 +2.9**
KMI pmax pmax
comp=Z,36nm,1.1s
KMI pmax pmax
comp=Z,180nm,4.3s
KMI LR LR
comp=Z,2µm,17.3s
KMI LR LR
comp=Z,740nm,14.3s
KMI LR LR
comp=Z,1µm,14.9s
MYLDM Lahad Datu 38.46 219 *e*P P 01 46 15.5 +4.8
comp=Z,50nm,1.1s
NONG Nongkai 38.88 251 P **P 01 46 15.2 +1.0**
comp=Z,32nm,0.7s,comp=Z,9µm
UBPT Khong Chiam 38.92 245 P **P 01 46 15.9 +1.3**
comp=Z,67nm,0.9s
KKM Kota Kinabalu 38.92 223 *e*P **P 01 46 11.5 -3.3**
comp=Z,1.8nm,0.3s
SKNT Sakolnakorn 38.92 249 P **P 01 46 18.7 +4.1**
comp=Z,44nm,1.1s
LOEI Loei 40.63 252 P **P 01 46 26.7 -2.2**
comp=Z,14nm,1.1s,comp=Z,521nm
WMQ Urumqi 40.92 297 P **P 01 46 31.9 +0.9**
WMQ pP sP 01 46 37.6 -0.4
WMQ sP pP 01 46 39.9 +3.9
WMQ PP **PP 01 48 07.1 +1.8**
WMQ S **S 01 52 43.3 +1.2**
WMQ pmax pmax
comp=Z,43nm,1.2s
WMQ pmax pmax
comp=Z,330nm,3.6s
WMQ LR LR
comp=Z,3µm,17.9s
WMQ LR LR
comp=Z,1µm,15.6s
WMQ LR LR
comp=Z,1µm,19.4s
CMAI Chiengmai2 40.92 257 P P 01 46 37.4 +6.0
comp=Z,197nm,1.1s
UTTA Uttaradit 41.03 253 P P 01 46 37.1 +5.0
comp=Z,3.3nm,0.8s
LAMP Lampang 41.28 255 P P 01 46 41.5 +7.3
comp=Z,7.3nm,0.8s
PBKT Sadao Pong 41.43 251 P **P 01 46 39.4 +4.0**
comp=Z,16nm,0.9s
CHTO Chiang Mai 41.64 256 *e*P **P 01 46 35.4 -1.7**
CHTO pmax pmax
comp=Z,1.0nm,0.4s
CHTO Chiang Mai 41.64 256 *e*P **P 01 46 35.4 -1.7**
comp=Z,0.9nm,0.4s
CMAR Chiang Mai Arr 41.84 255 P **P 01 46 37.9 -1.0**
comp=Z,1.5nm,0.5s,baz=50,slow=8.4,SNR=3.9
CMAR LR LR 02 05 14.4
comp=Z,704nm,18.2s,baz=50,slow=38
CM01 Chiang Mai Arr 41.85 255 *e*P **P 01 46 40.1 +1.2**
ZALV Zalesovo Beam 41.87 312 P **P 01 46 38.2 -0.5**
comp=Z,21nm,0.7s,baz=90,slow=7.4,SNR=75
SUKH Sukhothai 41.89 253 P P 01 46 44.0 +4.8
comp=Z,3.8nm,0.9s
LSA Lhasa 42.44 275 P **P 01 46 44.4 +0.2**
LSA pmax pmax
comp=Z,16nm,1.2s
LSA Lhasa 42.44 275 *e*P **P 01 46 44.3 +0.2**
LSA pmax pmax
comp=Z,17nm,0.7s
LSA Lhasa 42.44 275 *e*P **P 01 46 44.3 +0.2**
comp=Z,17nm,0.7s
NVS Novosibirsk 42.79 313⇓ *i*P **P 01 46 46.4 +0.4**
NVS *i* S **S 01 53 09.8 +0.6**
NVS pmax pmax
comp=Z,42nm,0.9s
NVS pmax pmax
comp=N,3.0nm,0.5s
NVS pmax pmax
comp=E,17nm,0.5s
NVS smax smax
comp=N,5.0nm,0.4s
NVS smax smax
comp=E,28nm,1.2s
NRIK Noril'sk 43.05 335 P **P 01 46 48.4 +0.3**
comp=E,6.0nm,0.5s,baz=118,slow=8.8,SNR=7.7
NRIK LR LR 02 04 38.0
comp=E,748nm,18.6s,baz=104,slow=36
UMPA Umpang Tak 43.25 253 P P 01 46 56.9 +6.6
comp=E,9.0nm,0.9s,comp=E,1µm
MK01 Makanchi Array 44.15 302 *e*P **P 01 46 56.1 -1.2**
MK31 Makanchi Array 44.16 302 *e*P **P 01 46 57.5 +0.2**
MK31 Makanchi Array 44.16 302 *e*P **P 01 46 57.5 +0.2**

MKAR Makanchi Array 44.16 302 P **P 01 46 57.2 -0.1**
comp=E,19nm,0.7s,baz=88,slow=9.8,SNR=124
MAKZ Makanchi 44.36 302 *e*P **P 01 46 58.8 -0.2**
MAKZ pmax pmax
comp=Z,33nm,1.0s
MAKZ Makanchi 44.36 302 *e*P **P 01 46 58.8 -0.2**
comp=Z,33nm,1.0s
PHET Kaeng Krachan 44.74 248 P P 01 47 07.6 +5.4
comp=Z,17nm,0.8s,comp=Z,173nm
TT01 Tatalina 44.97 35 *e*P **P 01 47 04.9 +1.4**
SVW2 Sparrevohn 45.08 38 *e*P **P 01 47 06.5 +2.1**
comp=Z,92nm,1.7s
KURK Kurchatov 45.92 308 P **P 01 47 11.4 +0.2**
KURK pmax pmax
comp=Z,29nm,0.6s
KURK Kurchatov 45.92 308 P **P 01 47 11.4 +0.2**
KSM Kuching 45.99 226 *e*P **P 01 47 14.5 +2.4**
comp=Z,30nm,1.0s
KURBB Kurchatov Arra 45.99 308 P **P 01 47 11.4 -0.3**
comp=Z,29nm,0.6s,baz=82,slow=8.2,SNR=152
OHAK Old Harbor 46.31 43 *e*P **P 01 47 14.2 +0.1**
comp=Z,28nm,1.0s
RSO Redoubt South 46.46 38 *e*P **P 01 47 17.2 +1.7**
STKI Sintang 46.48 224 P P 01 47 24.0 +8.0
KDAK Kodiak Island 46.65 42 *e*P **P 01 47 17.5 +0.7**
KDAK pmax pmax
comp=Z,363nm,1.8s
KDAK Kodiak Island 46.65 42 *e*P **P 01 47 17.5 +0.7**
comp=Z,362nm,1.8s
PPLA Pureypile 46.72 35 *e*P **P 01 47 19.7 +2.2**
comp=Z,111nm,1.6s
SPU Mount Spurr 46.79 37 *e*P **P 01 47 19.6 +1.7**
PDGK Podgornoye 46.85 298 P **P 01 47 17.6 -1.0**
PDGK pmax pmax
comp=Z,79nm,1.4s
KAPI Kappang 46.91 211 *e*P **P 01 47 16.4 -2.9**
comp=Z,28nm,1.0s
RAMN Ramite 47.24 274 *e*P **P 01 47 21.9 -0.3**
comp=Z,83nm,0.8s
BPAW Bear Paw Mtn. 47.28 33 *e*P **P 01 47 22.6 +0.9**
comp=Z,16nm,1.1s
KTH Kantishna Hill 47.30 34 *e*P **P 01 47 23.8 +1.8**
comp=Z,107nm,1.7s
GUN Gumba 47.38 276 *e*P **P 01 47 22.4 -1.0**
comp=Z,66nm,0.7s
MLY Manley 47.41 32 *e*P **P 01 47 24.7 +2.0**
comp=Z,69nm,1.7s
SUA Susitna One 47.41 37 *e*P **P 01 47 25.2 +2.3**
comp=Z,19nm,1.0s
TRF Thofare Moun 47.59 34 *e*P **P 01 47 25.2 +1.0**
comp=Z,14nm,0.9s
COLD Coldfoot 47.71 29 *e*P **P 01 47 26.5 +1.5**
comp=Z,20nm,1.4s
SKLT Songkhla 47.91 242 P P 01 47 33.3 +6.1
comp=Z,29nm,0.9s,comp=Z,727nm
KKN Kakani 47.91 276 *e*P **P 01 47 26.7 -0.7**
comp=Z,70nm,0.9s
RC01 Rabbit Creek A 47.91 38 *e*P **P 01 47 27.3 +0.7**
comp=Z,37nm,1.0s
PKIN Phulchoki 47.92 275 *e*P **P 01 47 27.1 -0.4**
comp=Z,48nm,0.7s
TRTT Trang 48.10 243 P P 01 47 35.0 +6.4
comp=Z,21nm,0.9s
DMN Daman 48.13 276 *e*P **P 01 47 28.8 -0.3**
PMR Palmer 48.18 37 *e*P **P 01 47 29.4 +0.7**
PMR pmax pmax
comp=Z,56nm,1.4s
PMR Palmer 48.18 37 *e*P **P 01 47 29.4 +0.7**
comp=Z,56nm,1.4s
MCK McKinley 48.19 34 *e*P **P 01 47 29.8 +1.0**
MCK pmax pmax
comp=Z,54nm,1.6s
MCK McKinley 48.19 34 *e*P **P 01 47 29.8 +1.0**
comp=Z,54nm,1.6s
KRAB Krabi 48.19 244 P P 01 47 34.3 +5.0
comp=Z,90nm,0.8s,comp=Z,706nm
RND Reindeer 48.23 34 *e*P **P 01 47 30.0 +0.8**
RND pmax pmax
comp=Z,133nm,1.8s
RND Reindeer 48.23 34 *e*P **P 01 47 30.0 +0.8**
comp=Z,133nm,1.8s
GKN Gorkha 48.33 276 *e*P **P 01 47 29.9 -0.6**
comp=Z,106nm,0.9s
MDM Murphy Dome 48.47 32 *e*P **P 01 47 32.6 +1.7**
comp=Z,140nm,1.7s
WRH Wood River Hil 48.54 33 *e*P **P 01 47 32.5 +1.1**
comp=Z,8.2nm,0.8s
SML Sawmill 48.55 37 *e*P **P 01 47 32.3 +0.7**
SML pmax pmax
comp=Z,26nm,0.8s
SML Sawmill 48.55 37 *e*P **P 01 47 32.3 +0.7**
comp=Z,26nm,0.8s
COLA College 48.63 32 *e*P **P 01 47 32.9 +0.8**
COLA pmax pmax
comp=Z,89nm,1.8s
COLA College 48.63 32 *e*P **P 01 47 32.9 +0.8**
comp=Z,89nm,1.8s
AAA Alma-Ata 48.65 298 *e*P P 01 47 41.2 +8.6
AAA *e*S S 01 54 53.0 +19
AAA pmax pmax
comp=Z,300nm,4.4s
AAA MLR MLR
comp=Z,2µm,17.0s
CCB Clear Creek Bu 48.66 33 *e*P **P 01 47 33.2 +0.9**
comp=Z,9.2nm,1.0s
DHY Denali Highway 48.92 35 *e*P **P 01 47 35.8 +1.3**
comp=Z,60nm,1.7s
SCM Sheep Creek Mo 49.02 36 *e*P **P 01 47 36.6 +1.4**
SCM pmax pmax
comp=Z,140nm,1.7s
SCM Sheep Creek Mo 49.02 36 *e*P **P 01 47 36.6 +1.4**
comp=Z,140nm,1.7s
PKDT Phuket 49.03 244 P P 01 47 41.9 +6.1
comp=Z,69nm,0.9s
HDA Harding Lake 49.04 33 *e*P **P 01 47 36.2 +0.9**
comp=Z,113nm,1.8s
IL1 Eielson Array 49.05 33 *e*P **P 01 47 34.8 -0.5**
ILAR Eielson Array 49.05 33 P **P 01 47 35.9 +0.6**
comp=Z,10nm,0.7s,baz=267,slow=6.4,SNR=137
ILB Eielson Array 49.05 33 *e*P **P 01 47 36.1 +0.8**
GLI Glacier Island 49.21 38 *e*P **P 01 47 37.6 +0.9**
comp=Z,23nm,0.8s
KOLN Koldanda 49.25 277 *e*P **P 01 47 37.8 +0.1**
comp=Z,45nm,0.9s
FID Port Fidalgo 49.53 38 *e*P **P 01 47 40.1 +1.0**
comp=Z,97nm,1.6s
IPM Ipoh 49.55 239 *e*P **P 01 47 39.6 -0.2**
comp=Z,21nm,0.7s
PYUN Piuthan 49.59 277 *e*P **P 01 47 40.1 -0.1**
comp=Z,235nm,0.9s
SOEI Soe 49.68 203 *e*P **P 01 47 42.6 +1.8**
comp=Z,56nm,1.0s
TKM2 Tokmak 2 49.69 298 P **P 01 47 40.3 -0.6**
TKM2 pmax pmax
comp=Z,57nm,1.1s
KLU Klutina 49.72 37 *e*P **P 01 47 42.2 +1.6**
comp=Z,92nm,1.7s
PAX Paxson 49.79 35 *e*P **P 01 47 42.8 +1.7**
PAX pmax pmax
comp=Z,59nm,2.0s
PAX Paxson 49.79 35 *e*P **P 01 47 42.8 +1.7**
comp=Z,59nm,2.0s
DIV Divide 49.83 37 *e*P **P 01 47 42.4 +0.9**
comp=Z,136nm,1.6s
DIV *e*PP **PP 01 49 30.7 -5.2**
EYAK Cordova Ski Ar 49.91 38 *e*P **P 01 47 43.6 +1.7**
comp=Z,123nm,1.7s
VOSK Vostochnaya 50.24 312 *e*P **P 01 47 44.3 -0.3**
VOSK pmax pmax
comp=Z,34nm,0.9s
VOSK Vostochnaya 50.24 312 *e*P **P 01 47 44.3 -0.3**
comp=Z,34nm,0.9s
DOT Dot Lake 50.36 34 *e*P **P 01 47 45.5 +0.1**
comp=Z,235nm,2.0s
BMRM Bremner River 50.41 37 *e*P **P 01 47 47.4 +1.5**
comp=Z,129nm,1.8s
RAGM Ragged Mountai 50.46 38 *e*P **P 01 47 48.2 +2.1**
comp=Z,146nm,1.8s
KSH Kashi 50.50 294 *e*P **P 01 47 51.3 +4.4**
KSH *e*pP sP 01 47 56.0 +2.0
KSH *e*PP **PP 01 49 47.8 +5.3**
KSH PcS **PcS 01 53 05.1 +2.9**
KSH S **S 01 55 04.0 +3.6**
KSH ScS **ScS 01 57 38.4 +0.9**
KSH SS **SS 01 58 35.8 +1.7**
KSH pmax pmax
comp=Z,5.0nm,0.7s

KSH pmax pmax
comp=Z,110nm,3.4s
KSH LR LR
comp=Z,1µm,15.4s
KSH LR LR
comp=Z,1µm,15.6s
KSH LR LR
comp=Z,1µm,16.0s
BVA0 Borovoye Array 50.53 312 *i*P **P 01 47 46.3 -0.5**
BVA0 pmax pmax
comp=Z,14nm,0.9s
BVAR Borovoye Array 50.53 312 P **P 01 47 46.4 -0.3**
comp=Z,6.4nm,0.5s,baz=76,slow=7.7,SNR=36
AAK Ala-Archa 50.55 298 P **P 01 47 46.9 -0.5**
comp=Z,8.4nm,0.6s,baz=93,slow=6.3,SNR=9.8
AAK Ala-Archa 50.55 298 P **P 01 47 46.7 -0.6**
AAK pmax pmax
comp=Z,11nm,0.8s
AAK Ala-Archa 50.55 298 *e*P **P 01 47 46.8 -0.5**
comp=Z,12nm,0.7s
BRVK Borovoye 50.58 312 P **P 01 47 46.8 -0.3**
BRVK pmax pmax
comp=Z,24nm,1.1s
BRVK Borovoye 50.58 312 *e*P **P 01 47 46.9 -0.3**
comp=Z,22nm,1.0s
MENT Mentasta 50.59 35 *e*P **P 01 47 49.0 +1.8**
comp=Z,21nm,1.0s
CRQM Cirque 51.15 38 *e*P **P 01 47 53.5 +1.9**
comp=Z,118nm,1.5s
ZRNK Zerenda 51.36 312 P **P 01 47 52.1 -0.9**
ZRNK pmax pmax
comp=Z,30nm,0.9s
ZRNK Zerenda 51.36 312 *e*P **P 01 47 53.0 -0.1**
comp=Z,27nm,0.9s
BALM Baldy 51.49 37 *e*P **P 01 47 55.5 +1.5**
BALM pmax pmax
comp=Z,70nm,1.6s
BALM Baldy 51.49 37 *e*P **P 01 47 55.5 +1.5**
comp=Z,70nm,1.6s
EGAK Eagle 51.49 32 *e*P **P 01 47 54.4 +0.6**
comp=Z,74nm,1.9s
MNAS Manas 52.00 299 P **P 01 47 58.2 +0.1**
MNAS pmax pmax
comp=Z,31nm,0.9s
PSI Prapat 52.21 239 *e*P **P 01 48 04.4 +4.5**
PSI pmax pmax
comp=Z,15nm,0.9s
PSI Prapat 52.21 239 *e*P **P 01 48 04.4 +4.5**
comp=Z,15nm,0.9s
DAWY Dawson 52.36 33 *e*P **P 01 48 01.4 +1.1**
comp=Z,1.9nm,0.6s
PCA Pinnacle 52.68 38 *e*P **P 01 48 05.4 +2.6**
comp=Z,48nm,1.4s
KK31 Karatay Array 53.18 300 *i*P **P 01 48 06.4 -0.3**
KK31 pmax pmax
comp=Z,21nm,1.0s
KKAR Karatay Array 53.18 300 *e*P **P 01 48 06.5 -0.2**
KKAR pmax pmax
comp=Z,2.0nm,0.6s
KKAR Karatay Array 53.18 300 *e*P **P 01 48 06.5 -0.2**
comp=Z,1.9nm,0.6s
UGM Wanagama 53.70 220 *e*P **P 01 48 13.1 +2.3**
comp=Z,212nm,1.2s
HYT Haines Junctio 53.85 37 *e*P **P 01 48 14.1 +2.6**
INK Inuvik 53.95 27 P **P 01 48 13.1 +1.2**
comp=Z,10nm,0.9s,baz=294,slow=4.8,SNR=14
INK Inuvik 53.95 27 *e*P **P 01 48 12.9 +1.0**
comp=Z,8.3nm,0.8s
GSI Gunungsitoli 54.21 239 *e*P **P 01 48 14.6 +0.1**
comp=Z,134nm,1.5s
SVE Sverdlovsk 55.05 319⇓ *e*P **P 01 48 20.7 +0.6**
SVE *e*S **S 01 56 01.3 -0.4**
SVE pmax pmax
comp=Z,34nm,0.9s
SVE MLR MLR
comp=Z,968nm,16.0s
SKAG Skagway 55.25 38 *e*P **P 01 48 24.3 +2.9**
comp=Z,54nm,1.4s
SOKR Solikamsk 56.20 322 *c i*P **P 01 48 26.5 -1.8**
SOKR pmax pmax
comp=Z,26nm,1.3s
SOKR MLR MLR
comp=Z,493nm,16.0s
ARU Arti 56.27 318 P **P 01 48 29.1 +0.3**
comp=Z,8.8nm,0.4s,baz=76,slow=3.4,SNR=30
ARU LR LR 02 14 47.2
comp=Z,857nm,19.4s,baz=60,slow=38
ARU Arti 56.27 318 *c i*P **P 01 48 28.8 -0.1**
ARU 01 49 28.7
ARU 01 50 32.2
ARU S **S 01 56 20.7 +2.8**
ARU pmax pmax
comp=Z,66nm,1.7s
ARU MLR MLR
comp=Z,852nm,17.0s
ARU Arti 56.27 318 *e*P **P 01 48 29.1 +0.3**
comp=Z,45nm,1.1s
FITZ Fitzroy Crossi 57.25 198 P **P 01 48 35.3 -0.8**
comp=Z,3.0nm,0.8s,baz=338,slow=6.3,SNR=4.6
WRAB Tennant Creek 57.44 188 *e*P **P 01 48 36.2 -1.3**
WRAB pmax pmax
comp=Z,27nm,0.9s
WRAB Tennant Creek 57.44 188 *e*P **P 01 48 35.9 -1.6**
comp=Z,10nm,0.8s
WB2 Warramunga Arr 57.45 188 *e*P **P 01 48 36.6 -0.9**
WRA Warramunga Arr 57.45 188 P **P 01 48 36.2 -1.4**
comp=Z,11nm,0.7s,baz=5.3,slow=7.4,SNR=76
WRA LR LR 02 13 20.9
comp=Z,97nm,18.2s,baz=320,slow=36
KBL Kabul 57.54 291 *e*P **P 01 48 38.3 -0.2**
KBL pmax pmax
comp=Z,26nm,1.1s
KBL Kabul 57.54 291 *e*P **P 01 48 38.3 -0.2**
comp=Z,26nm,1.1s
WRAK Wrangell Islan 57.70 41 *e*P **P 01 48 41.3 +2.3**
comp=Z,13nm,1.1s
AB31 Akbulak array 57.91 310 *i*P **P 01 48 40.2 -0.4**
AB31 pmax pmax
comp=Z,6.0nm,0.5s
ABKAR Akbulak array 57.91 310 *e*P **P 01 48 40.4 -0.2**
comp=Z,9.0nm,0.4s
DLBC Dease Lake 58.18 38 P **P 01 48 44.5 +2.0**
comp=Z,13nm,0.9s,baz=289,slow=7.5,SNR=21
DLBC Dease Lake 58.18 38 *e*P **P 01 48 44.3 +1.9**
comp=Z,10.0nm,0.8s
HYB Hyderabad 58.48 268 *i*P **P 01 48 49.5 +4.4**
AKTO Aktyubinsk 58.63 312 P **P 01 48 45.3 -0.4**
comp=Z,6.9nm,0.7s,baz=68,slow=11,SNR=12
AKTO LR LR 02 15 14.8
comp=Z,452nm,18.2s,baz=67,slow=37
AKTO Aktyubinsk 58.63 312 P **P 01 48 44.6 -1.0**
AKTO pmax pmax
comp=Z,11nm,0.9s
SPITS Spitsbergen Ar 60.22 349 P **P 01 48 56.5 +0.3**
comp=Z,2.6nm,0.6s,baz=100,slow=5.1,SNR=7.1
SPITS LR LR 02 16 15.0
comp=Z,388nm,19.5s,baz=40,slow=37
KBS Kingsbay 60.35 350 *e*P **P 01 48 58.2 +1.2**
KBS Kingsbay 60.35 350 *e*P **P 01 48 58.2 +1.2**
AS01 Alice Springs 61.17 188 *e*P **P 01 49 02.2 -1.1**
AS31 Alice Springs 61.18 188 *e*P **P 01 49 02.8 -0.5**
ASAR Alice Springs 61.18 188 P **P 01 49 02.2 -1.1**
comp=Z,6.6nm,0.7s,baz=12,slow=7.6,SNR=57
ASAR LR LR 02 13 00.3
comp=Z,165nm,21.3s,baz=19,slow=34
BBB Bella Bella 61.62 44 *e*P **P 01 49 08.6 +2.5**
MBWA Marble Bar 61.82 203 *e*P **P 01 49 06.9 -0.8**
comp=Z,31nm,0.8s
LVZ Lovozero 61.89 336 *e*P **P 01 49 07.4 -0.3**
LVZ pmax pmax
comp=Z,6.0nm,0.6s
RES Resolute Bay 62.19 15 *e*P **P 01 49 10.3 +0.8**
RES pmax pmax
comp=Z,6.0nm,0.7s
RES Resolute Bay 62.19 15 *e*P **P 01 49 10.3 +0.8**
comp=Z,6.1nm,0.7s
APA Apatity 62.47 336⇑ *i*P **P 01 49 07.6 -3.9**
APA *i* 01 51 25.0
APA *i* PPP PPP 01 53 02.5
APA *i* S **S 01 57 30.0 -7.7**
APA pmax pmax
comp=Z,9.0nm,0.7s
APA MLR MLR
comp=Z,800nm,20.0s
YKA Yellowknife Ar 63.36 30 P **P 01 49 17.8 +0.3**
comp=Z,4.2nm,0.6s,baz=304,slow=6.6,SNR=16

YKA LR LR 02 16 49.5
comp=Z,12nm,21.9s,baz=0.0,slow=36
KLMR Klimovskoe 63.60 328 *e*P **P 01 49 16.4 -2.7**
KLMR *e* 01 51 36.5
KLMR pmax pmax
comp=Z,14nm,0.9s
ARCES ARCESS Array B 63.76 339 P **P 01 49 20.1 +0.1**
comp=Z,5.4nm,0.8s,baz=52,slow=7.9,SNR=8.9
ARCES LR LR 02 21 06.5
comp=Z,400nm,18.6s,baz=30,slow=40
GEYT Alibeck 63.89 299 P **P 01 49 21.8 +0.2**
comp=Z,6.5nm,0.9s,baz=45,slow=4.4,SNR=15
DAG Danmarks Havn 65.44 355 *i*P **P 01 49 30.5 -0.4**
comp=Z,8.1nm,0.6s
DAG Danmarks Havn 65.44 355 *i*P **P 01 49 30.5 -0.4**
DAG pmax pmax
comp=Z,5.0nm,0.6s
LLLB Lillooet 65.81 44 *e*P **P 01 49 35.6 +1.8**
NLWA Neilton Lookou 66.28 48 *e*P **P 01 49 38.8 +2.0**
comp=Z,20nm,1.0s
A04D Lummi Island 66.29 46 P **P 01 49 38.6 +1.8**
baz=300
MBW Mount Baker 66.72 46 P **P 01 49 41.1 +1.2**
B05A Bryant 66.87 46 P **P 01 49 42.2 +1.6**
baz=301
JCW Jim Creek 67.00 46 P **P 01 49 42.9 +1.4**
MOS Moscow 67.12 323 *e*P **P 01 49 40.4 -1.6**
MOS MLR MLR
comp=Z,700nm,18.0s
D05A Enumclaw 67.48 47 *e*P **P 01 49 47.1 +2.6**
VRH Novokhopyorsk 67.49 318 *e*P **P 01 49 44.0 -0.4**
VRH pmax pmax
comp=Z,10.0nm,0.5s
LON Longmire 67.81 48 *e*P **P 01 49 48.4 +1.7**
LON Longmire 67.81 48 *e*P **P 01 49 48.4 +1.7**
F04A Amboy 67.88 49 P **P 01 49 48.5 +1.5**
OBN Obninsk 67.97 323 *e*P **P 01 49 44.8 -2.5**
OBN *e* 01 50 11.6
OBN pmax pmax
comp=Z,36nm,1.7s
OBN MLR MLR
comp=Z,334nm,18.0s
VLMM Larch Mountain 68.31 49 P **P 01 49 53.1 +3.3**
WTV Waterville 68.39 46 P **P 01 49 51.6 +1.4**
B08A Colville Reser 68.40 45 *e*P **P 01 49 51.8 +1.5**
I03D Drain, OR 68.48 51 P **P 01 49 52.8 +2.1**
baz=302,SNR=8.8
FINES FINESS Array B 68.62 332 P **P 01 49 51.3 0.0**
comp=Z,9.3nm,0.7s,baz=48,slow=8.5,SNR=29
FINES LR LR 02 22 15.4
comp=Z,555nm,18.5s,baz=24,slow=38
VFP Flag Point 68.77 49 P **P 01 49 54.8 +2.0**
VSR Storozhevoye 68.84 319 *e*P **P 01 49 52.1 -0.8**
EDM Edmonton 68.90 39 *e*P **P 01 49 53.7 +0.4**
EDM Edmonton 68.90 39 *e*P **P 01 49 53.7 +0.4**
G05D Wamic, OR 68.90 49 P **P 01 49 55.4 +2.0**
baz=302
STKA Stephens Creek 68.91 180 P **P 01 49 52.7 -0.7**
comp=Z,5.9nm,0.8s,baz=333,slow=9.0,SNR=11
IRO Indian Ridge 68.99 50 P **P 01 49 55.8 +1.7**
I04A Tendick Farm, 69.00 50 P **P 01 49 55.4 +1.2**
baz=302,SNR=13
FORT Forrest 69.02 193 *e*P **P 01 49 54.1 +0.1**
L02D Cave Junction, 69.12 52 P **P 01 49 56.9 +2.0**
baz=302
HUMO Hull Mountain 69.29 52 *e*P **P 01 49 57.6 +1.6**
comp=Z,15nm,0.8s
C09A Chrisman Ranch 69.30 45 *e*P **P 01 49 57.1 +1.2**
G06A Carlson Farm, 69.31 48 *e*P **P 01 49 58.0 +1.9**
D08A Wollman Farm, 69.33 46 *e*P **P 01 49 57.7 +1.6**
HAWA Hanford 69.34 47 *e*P **P 01 49 56.9 +0.8**
comp=Z,7.0nm,0.9s
I05D Terrebonne, OR 69.37 50 P **P 01 49 58.0 +1.6**
baz=302,SNR=7.5
VTHM Trough 69.38 48 P **P 01 49 58.0 +1.5**
J04D Umpqua Nationa 69.48 51 P **P 01 49 59.0 +1.6**
baz=302,SNR=7.8
NEW Newport 69.69 44 LR LR 02 15 52.1
comp=Z,99nm,21.3s,baz=304,slow=32
NEW Newport 69.69 44 P **P 01 49 59.3 +1.0**
baz=304
NEW Newport 69.69 44 *e*P **P 01 49 58.8 +0.5**
NEW pmax pmax
comp=Z,7.0nm,0.8s
NEW Newport 69.69 44 *e*P **P 01 49 58.8 +0.5**
comp=Z,6.8nm,0.8s
KHMM Horse Mountain 69.72 54 *e*P **P 01 50 01.4 +2.6**
JMIC Jan Mayen 69.84 350 LR LR 02 20 59.1
comp=Z,66nm,20.2s,baz=68,slow=36
YBH Yreka Blue Hor 69.91 52 *e*P **P 01 50 01.8 +2.0**
YBH Yreka Blue Hor 69.91 52 *e*P **P 01 50 01.8 +2.0**
J05D Fort Rock, OR 70.00 50 P **P 01 50 02.3 +1.8**
baz=303,SNR=8.4
M02C Callahan 70.00 53 P **P 01 50 02.4 +2.0**
baz=303,SNR=8.7
K04D Chiloquin, OR 70.03 51 P **P 01 50 02.1 +1.5**
baz=303
GOF Gofitskoye 70.05 312⇑ *e*P **P 01 50 01.7 +1.2**
GOF pmax pmax
comp=Z,48nm,1.2s
E09A Wood Farm, Sta 70.07 46 *e*P **P 01 50 02.5 +1.9**
G08A Pilot Rock 70.27 48 *e*P **P 01 50 03.8 +1.7**
VSU Vasula 70.28 330 *e*P **P 01 50 01.9 +0.3**
VSU pmax pmax
comp=Z,30nm,1.2s
N02D Trinity Center 70.33 53 P **P 01 50 04.2 +1.9**
baz=303,SNR=7.6
SUMG Summit 70.33 0 *i*P **P 01 50 03.4 +1.2**
comp=Z,29nm,1.2s
SUMG Summit 70.33 0 *e*P **P 01 50 03.4 +1.2**
SUMG pmax pmax
comp=Z,29nm,1.2s
SUMG Summit 70.33 0 *e*P **P 01 50 03.2 +1.0**
M04C Macdoel 70.44 52 P **P 01 50 04.7 +1.6**
baz=303
K05A Summer Lake 70.51 51 *e*P **P 01 50 05.8 +2.1**
NCK Nalchik 70.58 310 *i*P **P 01 50 01.7 -2.1**
NCK pmax pmax
comp=Z,6.0nm,1.0s
GUDG Gudauri 70.60 309 P **P 01 50 05.5 +1.3**
WDC Whiskeytown Da 70.64 53 *e*P **P 01 50 06.1 +1.9**
WDC Whiskeytown Da 70.64 53 *e*P **P 01 50 06.1 +1.9**
TBLG Delisi 70.84 308 P **P 01 50 07.1 +1.7**
TBLG Delisi 70.84 308 P **P 01 50 07.1 +1.7**
KVAR Kislovodsk Arr 70.87 311 LR LR 02 22 37.3
comp=Z,420nm,20.0s,baz=40,slow=37
KBZ Khabaz 70.87 311 P **P 01 50 05.8 +0.3**
comp=Z,8.6nm,1.0s,baz=46,slow=5.5,SNR=15
KBZ LR LR 02 26 04.6
comp=Z,364nm,18.1s,baz=42,slow=40
KIV Kislovodsk 70.87 311 *e*P **P 01 50 05.7 0.0**
KIV *e* 01 50 22.6
KIV *e* 01 52 40.2
KIV pmax pmax
comp=Z,42nm,1.2s
KIV MLR MLR
comp=Z,358nm,16.0s
KIV Kislovodsk 70.87 311 *e*P **P 01 50 06.7 +1.0**
comp=Z,12nm,0.8s
F10A Beach Ranch, E 70.90 46 *e*P **P 01 50 07.5 +1.6**
WALA Waterton Lakes 70.99 42 *e*P **P 01 50 07.0 +0.6**
comp=Z,11nm,0.6s
BSMT Bassoo Peak 71.21 44 *e*P **P 01 50 09.4 +1.5**
NEY Neytrino 71.24 310 *e*P **P 01 50 07.4 -0.7**
NEY pmax pmax
comp=Z,1.0nm,0.9s
O03D Paynes Creek 71.27 53 P **P 01 50 08.9 +0.7**
baz=304,SNR=15
MOD Modoc Plateau 71.33 51 *e*P **P 01 50 09.6 +1.0**
comp=Z,5.4nm,0.6s
BLMT Blacktail Moun 71.35 43 *e*P **P 01 50 10.3 +1.6**
BMO Blue Mountains 71.49 47 *e*P **P 01 50 10.8 +1.3**
comp=Z,7.2nm,0.7s
JTMT Jette 71.55 44 *e*P **P 01 50 11.3 +1.5**
YBMT Yellow Bay 71.63 43 *e*P **P 01 50 12.0 +1.7**
GNI Garni 71.70 307 P **P 01 50 12.3 +1.4**
comp=Z,8.3nm,1.0s,baz=233,slow=4.7,SNR=6.5
GNI LR LR 02 24 14.7
comp=Z,293nm,18.8s,baz=64,slow=38
GNI Garni 71.70 307 *e*P **P 01 50 10.6 -0.3**
GNI pmax pmax
comp=Z,40nm,1.1s
GNI Garni 71.70 307 *e*P **P 01 50 12.9 +2.0**
comp=Z,33nm,0.8s
SCO Scoresbysund 71.78 354 *i*P P 01 50 20.2 +10
comp=Z,11nm,1.0s
SCO Scoresbysund 71.78 354 *e*P P 01 50 20.2 +10
SCO pmax pmax
comp=Z,11nm,1.0s
SWMT Swartz Lake 71.84 44 *e*P **P 01 50 12.8 +1.3**
UOSS Minazif 71.95 288 *e*P P 01 50 17.6 +5.2
WVOR Wild Horse Val 72.06 50 *e*P **P 01 50 13.8 +0.9**
WVOR pmax pmax
comp=Z,5.0nm,0.8s
WVOR Wild Horse Val 72.06 50 *e*P **P 01 50 13.8 +0.9**
comp=Z,5.4nm,0.8s
MSO Missoula 72.28 44 P **P 01 50 14.9 +0.8**
baz=306
MSO Missoula 72.28 44 *e*P **P 01 50 15.0 +0.8**
SLMT Seeley Lake 72.28 44 *e*P **P 01 50 15.2 +1.0**
AFDM Forest Hills D 72.55 54 *e*P **P 01 50 17.3 +1.5**
NACGM Naroch 72.57 327 *e* P 01 50 23.0 +7.5
NACGM *e*LQ LQ 02 20 08.0
NACGM *e*LR LR 02 24 06.0
CHMT Chamberlain Mo 72.61 44 *e*P **P 01 50 17.2 +1.0**
PAHR Pah Rah Range 73.14 53 *e*P **P 01 50 17.2 -2.2**
MFID Camas Ranch 73.19 48 *e*P **P 01 50 21.1 +1.5**
comp=Z,6.4nm,0.6s
FFC Flin Flon 73.26 33 *e*P **P 01 50 20.4 +0.8**
FFC pmax pmax
comp=Z,7.0nm,0.7s
FFC Flin Flon 73.26 33 *e*P **P 01 50 20.4 +0.8**
comp=Z,7.4nm,0.7s
CMB Columbia Colle 73.44 55 *e*P **P 01 50 22.4 +1.3**
CMB pmax pmax
comp=Z,38nm,0.7s
CMB Columbia Colle 73.44 55 *e*P **P 01 50 22.4 +1.3**
comp=Z,38nm,0.7s
ANN Anapa 73.47 314 *e*P **P 01 50 17.7 -3.4**
ANN *e*PP **pP 01 50 22.8 -3.5**
ANN *e* 01 53 00.1
ANN *e*S **S 01 59 46.9 -3.0**
ANN pmax pmax
comp=Z,47nm,1.2s
FCC Fort Churchill 73.56 27 *e*P **P 01 50 21.3 0.0**
FCC pmax pmax
comp=Z,68nm,1.7s
FCC Fort Churchill 73.56 27 *e*P **P 01 50 21.2 0.0**
comp=Z,68nm,1.7s
NWAO Narrogin (SRO) 73.60 201 P **P 01 50 21.3 -0.5**
comp=Z,8.4nm,0.8s,baz=260,slow=5.9,SNR=5.2
WAKR Walker 73.79 54 *e*P **P 01 50 25.2 +1.8**
EGMT Eagleton 73.83 42 P **P 01 50 24.5 +1.2**
baz=308
EGMT Eagleton 73.83 42 *e*P **P 01 50 24.2 +0.9**
comp=Z,110nm,1.7s
HFS Hagfors 73.87 336 P **P 01 50 23.4 +0.2**
comp=Z,4.0nm,0.5s,baz=43,slow=4.9,SNR=30
DLMT Dillon 73.90 45 *e*P **P 01 50 25.0 +1.2**
comp=Z,16nm,0.7s
HLID Hailey 73.93 47 P **P 01 50 25.5 +1.5**
baz=307
HLID Hailey 73.93 47 *e*P **P 01 50 25.6 +1.5**
NB2 NORSAR Subarra 73.96 337 P **P 01 50 23.8 +0.1**
comp=Z,6.5nm,0.6s,baz=40,slow=6.2
NOA NORSAR Array B 73.96 337 P **P 01 50 23.5 -0.2**
comp=Z,6.4nm,0.6s,baz=40,slow=5.9,SNR=7.7
NOA LR LR 02 25 54.4
comp=Z,348nm,20.6s,baz=40,slow=38
NOA NORSAR Array B 73.96 337 P **P 01 50 23.5 -0.2**
NOA pmax pmax
comp=Z,2.0nm,0.6s
NOA MLR MLR
comp=Z,348nm,20.7s
LCCM Lewis and Clar 74.01 44 P **P 01 50 25.7 +1.2**
BMN Battle Mountai 74.08 51 *e*P **P 01 50 26.5 +1.6**
BMN pmax pmax
comp=Z,6.0nm,0.7s
BMN Battle Mountai 74.08 51 *e*P **P 01 50 26.5 +1.6**
comp=Z,6.0nm,0.7s
MCMT McKenzie Canyo 74.08 46 *e*P **P 01 50 26.1 +1.1**
AKASG Malin Array Be 74.18 322 P **P 01 50 24.6 -0.5**
comp=Z,5.6nm,0.5s,baz=46,slow=6.2,SNR=21
AKASG LR LR 02 27 27.9
comp=Z,381nm,18.3s,baz=50,slow=39
KIEV Kiev 74.19 322 *i*P **P 01 50 24.5 -0.7**
KIEV pmax pmax
comp=Z,7.0nm,0.5s
KIEV Kiev 74.19 322 *e*P **P 01 50 25.1 -0.1**
comp=Z,4.8nm,0.6s
BOZ Bozeman (W) 74.27 44 P **P 01 50 27.3 +1.4**
baz=308
BOZ Bozeman (W) 74.27 44 *e*P **P 01 50 27.4 +1.4**
BOZ pmax pmax
comp=Z,10.0nm,0.8s
BOZ Bozeman (W) 74.27 44 *e*P **P 01 50 27.4 +1.4**
comp=Z,10nm,0.8s
MLAC Mammoth, Mammo 74.68 54 P **P 01 50 30.5 +1.9**
baz=306
SUW Suwalki 74.73 327 *e*P **P 01 50 29.1 +0.9**
SUW Suwalki 74.73 327 *e*P **P 01 50 29.1 +0.9**
RCTC Rector, Farmer 75.18 56 P **P 01 50 32.5 +1.3**
baz=306
SIM Simferopol' 75.26 316 *e*P **P 01 50 31.6 +0.1**
SIM *e*S **S 02 00 11.0 +1.1**
SIM pmax pmax
comp=Z,17nm,0.9s
SIM MLR MLR
comp=Z,480nm,18.6s
SMMC Simmler 75.26 57 P **P 01 50 33.2 +1.5**
baz=306
GCMT Greycliff 75.26 43 *e*P **P 01 50 33.6 +1.9**
TIN Tinemaha, Big 75.41 54 P **P 01 50 34.1 +1.5**
baz=306
SFJD Kangerlussuaq 75.51 5 LR LR 02 24 55.8
comp=Z,180nm,20.6s,baz=350,slow=37
VES Vestal, Richgr 75.56 56 P **P 01 50 33.9 +0.5**
baz=306
YPP Pitchstone Pla 75.58 45 *e*P **P 01 50 36.7 +3.0**
H17A Grant Village 75.63 45 P **P 01 50 37.2 +3.2**
baz=305
H17A Grant Village 75.63 45 *e*P **P 01 50 36.8 +2.9**
comp=Z,12nm,0.5s
PKM Mcpherson Peak 75.63 57 P **P 01 50 35.7 +1.7**
baz=306
IMW Indian Meadow 75.73 45 *e*P **P 01 50 36.6 +2.0**
comp=Z,19nm,0.8s
FLWY Flagg Ranch 75.75 45 *e*P **P 01 50 36.8 +2.1**
comp=Z,21nm,1.0s
CWC Cottonwood Cre 75.87 55 P **P 01 50 36.8 +1.4**
baz=306
RLMT Red Lodge 75.90 44 P **P 01 50 36.9 +1.5**
baz=309
RLMT Red Lodge 75.90 44 *e*P **P 01 50 36.7 +1.3**
comp=Z,5.9nm,0.6s
MOOW Moose Ponds 75.93 45 *e*P **P 01 50 37.2 +1.6**
comp=Z,5.9nm,0.8s
SBC Santa Barbara 75.95 57 P **P 01 50 37.1 +1.5**
baz=306
TPAW Teton Pass 75.98 46 *e*P **P 01 50 37.7 +1.7**
GRAC Grapevine Rang 76.00 54 P **P 01 50 37.6 +1.7**
baz=306
ISA Isabella, Lake 76.06 56 P **P 01 50 37.1 +0.7**
baz=306
LOHW Long Hollow 76.10 45 *e*P **P 01 50 38.1 +1.5**
comp=Z,49nm,1.8s
SNOW Snow King Moun 76.11 46 *e*P **P 01 50 38.7 +2.0**
comp=Z,9.0nm,0.6s
REDW Red Top Meadow 76.11 46 *e*P **P 01 50 38.2 +1.4**
comp=Z,41nm,1.5s
ARVC Arvin 76.14 56 P **P 01 50 37.9 +1.2**
baz=306
SCZ2 Santa Cruz Isl 76.27 58 P **P 01 50 38.8 +1.3**
baz=306
DAC Darwin (Calif) 76.28 55 *e*P **P 01 50 38.1 +0.3**
DAC pmax pmax
comp=Z,24nm,1.5s
DAC Darwin (Calif) 76.28 55 *e*P **P 01 50 38.1 +0.3**
comp=Z,24nm,1.5s
SORM Soroca 76.28 321⇑ *i*P **P 01 50 36.7 -0.6**
SORM Soroca 76.28 321⇑ P **P 01 50 36.7 -0.6**
R11A Troy Canyon, C 76.33 52 P **P 01 50 39.4 +1.4**
baz=307
R11A Troy Canyon, C 76.33 52 *e*P **P 01 50 39.3 +1.3**
comp=Z,38nm,1.5s
BGU Big Grassy Mou 76.34 49 *e*P **P 01 50 40.0 +2.0**
AHID Auburn Hatcher 76.34 46 *e*P **P 01 50 39.2 +1.2**
comp=Z,35nm,1.4s
DGMT Dagmar 76.39 39 P **P 01 50 38.9 +0.9**
baz=312
DGMT Dagmar 76.39 39 *e*P **P 01 50 38.9 +0.9**
comp=Z,11nm,0.6s
MPMC Manual Prospec 76.48 55 P **P 01 50 40.1 +1.2**
baz=307
OSI Osito Audit: C 76.52 57 P **P 01 50 40.5 +1.6**
baz=306
LAO LASA Array 76.53 41 P **P 01 50 40.3 +1.5**
baz=311
LAO LASA Array 76.53 41 *e*P **P 01 50 40.2 +1.5**
comp=Z,12nm,0.6s
BLG Laguna Peak, P 76.58 57 P **P 01 50 40.4 +1.2**
baz=306
A25A Svangstu Ranch 76.61 38 P **P 01 50 40.7 +1.5**
baz=312
FURC Furnace Creek, 76.64 54 P **P 01 50 41.3 +1.8**
baz=307
LRMC Laurel Mtn Rad 76.69 56 P **P 01 50 41.2 +1.2**
baz=307
TPNV Topopah Spring 76.75 54 P **P 01 50 41.7 +1.4**
baz=307
TPNV Topopah Spring 76.75 54 *e*P **P 01 50 41.7 +1.4**
TPNV Topopah Spring 76.75 54 *e*P **P 01 50 41.7 +1.4**
SNCC San Nicolas Is 76.78 58 P **P 01 50 42.0 +1.6**
baz=306
HWUT Hardware Ranch 76.79 48 *e*P **P 01 50 38.4 -2.2**
EDW2 Edwards Air Fo 76.84 56 P **P 01 50 42.4 +1.6**
baz=307
DUG Dugway, Tooele 76.92 49 P **P 01 50 43.0 +1.8**
baz=308
DUG Dugway, Tooele 76.92 49 *e*P **P 01 50 42.3 +1.1**
DUG pmax pmax
comp=Z,6.0nm,0.6s
DUG Dugway, Tooele 76.92 49 *e*P **P 01 50 42.3 +1.1**
comp=Z,6.4nm,0.6s
DECC Green Verdugo 76.99 57 P **P 01 50 42.6 +1.0**
baz=307
B25A Knox Farm, Ray 77.04 38 P **P 01 50 43.0 +1.4**
baz=312
A26A Wade Farm, Ken 77.16 37 P **P 01 50 43.4 +1.1**
baz=313
BW06 Boulder Array 77.22 46 P **P 01 50 44.0 +1.0**
baz=310
BW06 Boulder Array 77.22 46 *e*P **P 01 50 43.5 +0.4**
comp=Z,140nm,1.4s
PDAR Pinedale Array 77.22 46 P **P 01 50 43.7 +0.7**
comp=Z,5.6nm,0.6s,baz=263,slow=2.5,SNR=60
PDAR LR LR 02 22 18.5
comp=Z,73nm,20.3s,baz=332,slow=34
LVV L'vov 77.25 324 *e*P **P 01 50 41.6 -1.1**
LVV *e* 01 53 41.3
FMP Fort Macarthur 77.33 57 P **P 01 50 44.8 +1.3**
baz=307
SHOC Shoshone, Teco 77.36 54 P **P 01 50 45.0 +1.3**
baz=307
C25A Freed Ranch, W 77.37 39 P **P 01 50 44.7 +1.3**
baz=312
GSC Goldstone, Bar 77.37 55 P **P 01 50 45.2 +1.4**
baz=307
GSC Goldstone, Bar 77.37 55 *e*P **P 01 50 44.9 +1.1**
GSC Goldstone, Bar 77.37 55 *e*P **P 01 50 44.9 +1.1**
B26A Jensen Ranch, 77.42 38 P **P 01 50 45.1 +1.4**
baz=313
CIS Catalina Islan 77.44 58 P **P 01 50 45.5 +1.4**
baz=307
BFSC Mount Baldy Ra 77.45 57 P **P 01 50 45.0 +0.7**
baz=307
A27A Ledoux Ranch, 77.51 37 P **P 01 50 45.4 +1.1**
baz=314
SCI2 San Clemente I 77.60 58 P **P 01 50 46.6 +1.6**
baz=307
SHPR Sheep Range 77.71 53 *e*P **P 01 50 47.5 +1.7**
TUQ Turquoise Moun 77.87 55 P **P 01 50 47.7 +1.1**
baz=308
BBRC Big Bear Solar 77.92 56 P **P 01 50 48.0 +1.0**
baz=307
HEC Hector,Ludlow 77.97 55 P **P 01 50 48.5 +1.4**
baz=307
TLCR 77.99 318⇓ *i*P P 01 50 57.4 +10
TLCR 77.99 318⇓ P P 01 50 57.4 +10
KWP Kalwaria Pacla 77.99 324 *e*P **P 01 50 48.4 +1.5**
KWP Kalwaria Pacla 77.99 324 *e*P **P 01 50 48.4 +1.5**
MURC Murrieta 78.14 57 P **P 01 50 49.1 +1.1**
baz=307
BURAR Bucovina Array 78.19 322⇑ *i*P **P 01 50 48.0 -0.2**
BURAR Bucovina Array 78.19 322 ⇑P **P 01 50 48.0 -0.2**
CCUT Cedar City 78.21 52 *e*P **P 01 50 49.5 +0.9**
TESR Tescani 78.23 320⇑ *i*P **P 01 50 48.7 +0.5**
D26A Manning 78.24 39 P **P 01 50 49.2 +0.9**
baz=313
MSU Marysvale 78.35 50 *e*P **P 01 50 51.2 +1.9**
MSU Marysvale 78.35 50 *e*P **P 01 50 51.2 +1.9**
CFR Carcaliu 78.35 319⇑ *i*P **P 01 50 47.0 -1.9**
CFR Carcaliu 78.35 319 ⇑P **P 01 50 47.0 -1.9**
GMRC Granite Mounta 78.44 55 P **P 01 50 51.1 +1.3**
baz=308
A29A Manning Farm, 78.48 36 P **P 01 50 50.6 +1.0**
baz=315
ODBI Odobesti 78.53 320⇓ *i*P **P 01 50 53.1 +3.2**
PFO Pinyon Flats O 78.62 56 LR LR 02 17 11.6
comp=Z,150nm,21.2s,baz=297,slow=29
PFO Pinyon Flats O 78.62 56 P **P 01 50 52.0 +1.2**
baz=308
PFO Pinyon Flats O 78.62 56 *e*P **P 01 50 51.5 +0.7**
PFO pmax pmax
comp=Z,5.0nm,0.7s
PFO Pinyon Flats O 78.62 56 *e*P **P 01 50 51.5 +0.7**
comp=Z,4.8nm,0.7s
109C Camp Elliot, M 78.62 57 P **P 01 50 51.9 +1.2**
baz=307
TPFO Pinon Flats 78.63 56 P **P 01 50 52.0 +1.1**
baz=308
PLOR Plostina 78.68 320⇑ *i*P **P 01 50 47.6 -3.2**
PLOR Plostina 78.68 320 ⇑P **P 01 50 47.6 -3.2**
TIRR Tirgusor 78.69 318⇓ *i*P **P 01 50 50.7 -0.1**
TIRR Tirgusor 78.69 318⇓ P **P 01 50 50.7 -0.1**
BELC Belle Mtn. Jos 78.69 56 P **P 01 50 51.8 +0.6**
baz=308
B29A Wagenman Farm, 78.75 36 P **P 01 50 52.0 +0.9**
baz=315
TLB Topalu 78.80 318⇑ *i*P **P 01 50 51.5 +0.1**
TLB Topalu 78.80 318 ⇑P **P 01 50 51.5 +0.1**
BRTR Keskin Array B 78.81 312 P **P 01 50 51.2 -0.5**
comp=Z,1.2nm,0.7s,baz=69,slow=4.4,SNR=7.4
OJC Ojcow 78.89 326 *e*P **P 01 50 52.8 +1.0**
OJC Ojcow 78.89 326 *e*P **P 01 50 52.8 +1.0**
UZH Uzhgorod 78.89 324 *e*P P 01 51 03.0 +11
UZH *e* 01 51 05.2
UZH *e* 01 51 07.2
UZH *e* 01 51 16.6
K22A Casper 79.01 44 P **P 01 50 53.9 +1.0**
baz=311
K22A Casper 79.01 44 *e*P **P 01 50 53.3 +0.5**
comp=Z,3.7nm,0.6s
ULM Lac du Bonnet 79.06 34 P **P 01 50 52.7 0.0**
comp=Z,6.1nm,0.7s,baz=300,slow=6.8,SNR=9.8
MDND Maddock 79.06 37 P **P 01 50 53.8 +1.0**
baz=315
MDND Maddock 79.06 37 *e*P **P 01 50 53.8 +1.0**
comp=Z,109nm,1.5s
MONP2 Monument Peak 79.08 57 P **P 01 50 54.5 +1.0**
baz=308
NEE2 Needles Airpor 79.12 55 P **P 01 50 54.6 +1.2**
baz=308
TRPA Tarpa 79.13 323⇑ *e*P **P 01 50 54.2 +1.1**
IRM Iron Mountain 79.15 55 P **P 01 50 55.1 +1.4**
baz=308
DOPR Dopca 79.24 320⇓ *i*P **P 01 50 55.7 +1.9**
NIE Niedzica 79.25 325 *e*P **P 01 50 55.5 +1.7**
NIE Niedzica 79.25 325 *e*P **P 01 50 55.5 +1.7**
BC3 Big Chuckawall 79.26 56 P **P 01 50 55.4 +1.1**
baz=308
H25A Fruitdale 79.28 41 P **P 01 50 55.0 +0.9**
baz=313
MLR Muntele Rosu 79.28 320 P **P 01 50 57.1 +2.9**
comp=Z,0.7nm,0.6s,baz=341,slow=6.6,SNR=5.8
MLR Muntele Rosu 79.28 320⇓ *i*P **P 01 50 54.8 +0.6**
RSSD Black Hills 79.38 42 P **P 01 50 55.5 +0.6**
baz=313
RSSD Black Hills 79.38 42 *e*P **P 01 50 55.2 +0.3**
RSSD Black Hills 79.38 42 *e*P **P 01 50 55.2 +0.3**
A31A Linda, St. Vin 79.42 35 P **P 01 50 54.9 +0.1**
baz=316
IKP In-Ko-Pah, Jac 79.44 57 P **P 01 50 56.4 +1.2**
baz=308
SWSC Sam W. Stewart 79.46 57 P **P 01 50 56.4 +1.2**
baz=308
B31A Greenbush Farm 79.58 36 P **P 01 50 56.2 +0.6**

baz=316
O20A White River Ci 79.67 47 P P 01 50 57.7 +1.2
baz=311
O20A White River Ci 79.67 47 eP P 01 50 57.1 +0.6
comp=Z,11nm,0.9s
PDMCI Parker Dam,Lak 79.72 55 P P 01 50 58.0 +1.4
baz=308
A32A Rocking H Ranc 79.75 35 P P 01 50 56.9 +0.4
baz=317
VOIR 79.78 320⇑ iP P 01 50 57.7 +0.8
VOIR 79.78 320 ⇑P P 01 50 57.7 +0.8
Y12C Blythe 79.81 55 P P 01 50 58.5 +1.4
baz=308
OKC Ostrava-Krasne 79.89 327 eP P 01 50 58.0 +0.7
OKC AMS AMS 02 29 50.0
comp=Z,500nm,13.0s
OKC Ostrava-Krasne 79.89 327 eP P 01 50 58.0 +0.7
OKC MLR MLR
comp=Z,500nm,13.0s
KSP Ksiaz 79.94 328 eP P 01 50 58.5 +1.0
KSP Ksiaz 79.94 328 eP P 01 50 58.5 +1.0
C31A Landman Farms, 79.99 36 P P 01 50 58.2 +0.4
baz=316
DRGR 79.99 322⇓ iP P 01 50 57.8 -0.2
DRGR 79.99 322 ⇓P P 01 50 57.8 -0.2
ARR Arges 80.04 320⇓ iP P 01 50 59.6 +1.4
GLA Glamis 80.04 56 P P 01 50 59.9 +1.5
baz=308
B32A Ashes, Strandq 80.11 35 P P 01 51 00.1 +1.6
baz=317
MORC Moravsky Berou 80.20 327⇑ iP P 01 50 59.8 +0.8
MORC Moravsky Berou 80.20 327 ⇑P P 01 50 59.8 +0.8
A33A Warroad 80.23 34 P P 01 50 59.6 +0.5
baz=317
DPC Dobruska-Polom 80.30 328 eP P 01 51 00.6 +1.1
DPC ex x 01 51 04.4
DPC epP PcP 01 51 08.4 +1.7
DPC ePP PP 01 54 01.4 -0.1
DPC eS S 02 01 04.9 +0.6
DPC AMS AMS 02 29 20.0
comp=Z,500nm,14.3s
DPC Dobruska-Polom 80.30 328 eP P 01 51 00.6 +1.1
DPC e 01 51 08.4
DPC e 01 54 01.4
DPC eS S 02 01 04.9 +0.6
DPC MLR MLR
comp=Z,500nm,14.3s
KRLC Kraliky 80.31 328 eP P 01 51 00.6 +1.0
KRLC epP pP 01 51 03.7 -1.2
KRLC esP PcP 01 51 08.1 +1.4
KRLC Kraliky 80.31 328 eP P 01 51 00.6 +1.0
KRLC e 01 51 08.1
UPC Upice 80.31 328 eS S 02 01 04.8 +0.5
UPC AMS AMS 02 29 30.0
comp=Z,600nm,14.9s
F29A Eureka 80.37 39 P P 01 51 00.7 +0.8
baz=315
PV04 Paradox Valley 80.41 49 eP P 01 51 02.0 +1.5
LOT Lotru 80.42 321⇓ iP P 01 51 00.5 +0.1
AGMN Agassiz Nation 80.49 35 P P 01 51 00.8 +0.2
baz=317
AGMN Agassiz Nation 80.49 35 eP P 01 50 59.5 -1.0
comp=Z,6.8nm,0.8s
N23A Red Feather La 80.49 45 P P 01 51 02.5 +1.4
baz=312
PHWY Pilot Hill 80.50 45 eP P 01 51 01.6 +0.5
comp=Z,24nm,1.4s
PSZ Piszkesteto 80.52 325⇓ iP P 01 51 00.5 -0.3
PSZ Piszkesteto 80.52 325 eP P 01 51 00.9 +0.1
PSZ pmax pmax
comp=Z,14nm,1.0s
PSZ Piszkesteto 80.52 325 eP P 01 51 00.9 +0.1
comp=Z,14nm,1.0s
PSZ Piszkesteto 80.52 325⇑ eP P 01 51 01.7 +0.9
C32A Crookston 80.53 36 P P 01 51 01.2 +0.5
baz=317
D31A Mcclaflin, Tow 80.53 37 P P 01 51 01.4 +0.6
baz=316
B33A Robert and Kas 80.63 35 P P 01 51 01.5 +0.2
baz=317
WUAZ Wupatki 80.73 52 P P 01 51 03.7 +1.4
baz=310
WUAZ Wupatki 80.73 52 eP P 01 51 03.7 +1.4
comp=Z,19nm,1.0s
F30A Leola 80.77 38 P P 01 51 02.6 +0.5
baz=315
PV01 Paradox Valley 80.78 49 eP P 01 51 03.9 +1.3
comp=Z,932nm,1.0s
D32A Dogwood Acres, 80.80 36 P P 01 51 02.4 +0.1
baz=317
E31A Nome 80.80 37 P P 01 51 03.0 +0.8
baz=316
BRG Berggiesshubel 80.88 330 eP P 01 51 02.9 +0.4
comp=Z,4.4nm,1.0s
BRG Berggiesshubel 80.88 330 S S 02 01 10.0 -0.3
BRG SS SS 02 06 23.0 +0.2
comp=N,695nm,15.4s
comp=E,596nm,15.0s
comp=Z,767nm,17.8s
BRG Berggiesshubel 80.88 330 eP P 01 51 02.9 +0.4
BRG S S 02 01 10.0 -0.3
BRG SS SS 02 06 23.0 +0.2
BRG pmax pmax
comp=Z,4.0nm,1.0s
BRG MLR MLR
comp=N,695nm,15.4s
BRG MLR MLR
comp=E,596nm,15.0s
BRG MLR MLR
comp=Z,767nm,17.8s
PVCC Panska Ves 80.89 329 eP P 01 51 03.6 +1.0
PVCC AMS AMS 02 30 40.0
comp=Z,600nm,14.3s
PVCC Panska Ves 80.89 329 eP P 01 51 03.6 +1.0
PVCC MLR MLR
comp=Z,600nm,14.3s
B34A Aery, Baudette 80.90 34 P P 01 51 02.6 -0.2
baz=318
CLL Collm 80.92 330 eP P 01 51 03.0 +0.2
CLL i 01 51 08.6
CLL i 01 51 11.4
comp=Z,13nm,1.1s
CLL i 01 51 28.0
CLL ePP PP 01 55 00.0 +53
CLL eS S 02 01 10.0 -0.6
CLL eSS SS 02 06 42.0 +19
CLL eSSS SSS 02 09 42.0
CLL e 02 10 42.0
CLL LmH 02 24 00.0
comp=N,500nm,19.8s
CLL LmH 02 24 00.0
comp=E,600nm,20.0s
CLL LmV 02 30 00.0
comp=Z,500nm,18.1s
CLL Collm 80.92 330 eP P 01 51 03.0 +0.2
CLL i 01 51 08.6
CLL eS S 02 01 10.0 -0.6
CLL MLR MLR
comp=Z,500nm,18.1s
C33A Trail 80.92 35 P P 01 51 03.0 +0.1
baz=317
SMCO Snowmass 81.04 47 eP P 01 51 05.3 +1.2
comp=Z,26nm,1.5s
F31A Hecla 81.13 38 P P 01 51 04.6 +0.6
baz=316
E32A Braaten, Kindr 81.17 37 P P 01 51 04.8 +0.6
baz=317
GOPC GO Pecny, Ondr 81.27 328 eS S 02 01 14.5 +0.1
GOPC AMS AMS 02 33 40.0
comp=Z,500nm,15.1s
PRU Pruhonice 81.31 329 eP P 01 51 05.8 +0.9
PRU epP PcP 01 51 15.0 +4.0
PRU eS S 02 01 14.9 +0.1
PRU AMS AMS 02 32 30.0
comp=Z,600nm,13.3s
PRU Pruhonice 81.31 329 eP P 01 51 05.8 +0.9
PRU e 01 51 15.0
PRU eS S 02 01 14.9 +0.1
PRU MLR MLR
comp=Z,600nm,13.3s
D33A AnnSam, Waubun 81.34 36 P P 01 51 05.0 -0.2
baz=316
BZS Buzias 81.36 322⇓ iP P 01 51 05.7 +0.5
BZS Buzias 81.36 322 ⇑P P 01 51 05.7 +0.5
C34A RKJ Ranch, Bem 81.40 35 P P 01 51 05.3 -0.2
baz=318
B35A Bob, Littlefor 81.40 34 P P 01 51 05.7 +0.3
baz=319
ISCO Idaho Springs 81.41 46 P P 01 51 07.4 +1.4
baz=312
ISCO Idaho Springs 81.41 46 eP P 01 51 07.0 +1.0
ISCO pmax pmax
comp=Z,3.0nm,0.8s
ISCO Idaho Springs 81.41 46 eP P 01 51 07.0 +1.0
comp=Z,3.5nm,0.8s
MVCO Mesa Verde 81.42 49 P P 01 51 07.2 +1.2
baz=311
ASF Jabal al Asfar 81.53 304 P P 01 51 07.3 +0.8
comp=Z,0.9nm,0.3s,baz=72,slow=3.2,SNR=3.8
G31A Conde 81.60 38 P P 01 51 07.2 +0.6
baz=316
F32A Veblen 81.67 37 P P 01 51 07.2 +0.4
baz=317
D34A Park Rapids 81.69 35 P P 01 51 07.3 +0.3
baz=318
E33A Westby DABS, E 81.74 36 P P 01 51 07.8 +0.6
baz=317
C35A Jirik Farms, M 81.78 34 P P 01 51 07.4 0.0
baz=318
SUSD Miller 81.79 39 P P 01 51 08.1 +0.5
baz=316
G32A Webster 81.93 38 P P 01 51 08.8 +0.5
baz=316
MMAI Mount Meron Ar 81.97 305 P P 01 51 09.0 +0.2
comp=Z,3.8nm,0.7s,baz=46,slow=7.1,SNR=7.7
NKC Novy Kostel 81.98 330 AMS AMS 02 31 10.0
comp=Z,600nm,14.6s
H31A Wolsey 82.00 39 P P 01 51 09.1 +0.4
baz=316
W18A Petrified Fore 82.01 52 P P 01 51 10.4 +1.3
baz=310
214A Organ Pipe Nat 82.05 56 P P 01 51 10.6 +1.4
baz=309
214A Organ Pipe Nat 82.05 56 eP P 01 51 09.9 +0.7
comp=Z,104nm,1.5s
S22A 4UR Ranch, Cre 82.07 48 P P 01 51 11.7 +2.2
baz=312
F33A 5 Mile Ranch, 82.09 37 P P 01 51 09.7 +0.6
baz=317
E34A Wadena 82.12 36 P P 01 51 11.5 +2.2
baz=318
SOP Sopron 82.20 326⇑ eP P 01 51 14.3 +4.7
D35A Remer 82.21 35 P P 01 51 09.7 0.0
baz=318
Q24A Divide 82.24 46 P P 01 51 11.4 +1.0
baz=312
C36A Pine Crest Far 82.25 34 P P 01 51 10.2 +0.3
baz=319
I31A Royce, Wessing 82.30 39 P P 01 51 10.6 +0.4
baz=316
J30A Dallas 82.31 40 P P 01 51 11.0 +0.6
baz=315
CONA Conrad Observa 82.33 327 i P P 01 51 11.5 +1.1
comp=Z,6.6nm,1.2s
KHC Kasperske Hory 82.38 329 eP P 01 51 11.2 +0.6
KHC epP pP 01 51 14.9 -1.0
KHC esP sP 01 51 19.4 +1.6
KHC ePP PP 01 54 20.0 +1.3
KHC eS S 02 01 25.4 -0.5
KHC AMS AMS 02 33 10.0
comp=Z,600nm,16.1s
KHC Kasperske Hory 82.38 329 eP P 01 51 11.0 +0.4
KHC e 01 54 16.9
KHC pmax pmax
comp=Z,3.0nm,0.8s
KHC Kasperske Hory 82.38 329 eP P 01 51 11.0 +0.4
comp=Z,3.0nm,0.8s
KHC ePP PP 01 54 16.9 -1.8
E35A Pequot Lakes 82.44 35 P P 01 51 11.1 +0.2
baz=318
G33A Ortonville 82.49 37 P P 01 51 11.9 +0.8
baz=317
H32A Carlson Farm, 82.50 38 P P 01 51 11.7 +0.4
baz=317
D36A Goodland 82.54 34 P P 01 51 11.4 -0.1
baz=319
GERES GERESS Array B 82.55 328 P P 01 51 11.2 -0.3
comp=Z,1.7nm,0.7s,baz=35,slow=4.9,SNR=15
GERES LR LR 02 33 05.4
comp=Z,353nm,18.5s,baz=13,slow=40
C37A Embarrass 82.56 33 P P 01 51 11.9 +0.4
baz=320
F34A Alexandria 82.61 36 P P 01 51 12.4 +0.6
baz=318
OGNE Ogallala 82.63 43 P P 01 51 12.9 +0.7
baz=314
EYMN Ely 82.69 33 P P 01 51 12.9 +0.7
baz=320
EYMN Ely 82.69 33 eP P 01 51 12.1 -0.1
comp=Z,67nm,1.8s
K30A Basset 82.71 41 P P 01 51 13.3 +0.9
baz=315
H33A Prehn Over Nor 82.72 38 P P 01 51 13.1 +0.7
baz=317
VTS Vitosha 82.72 319⇓ iP P 01 51 13.7 +1.1
VTS Vitosha 82.72 319 ⇓P P 01 51 13.7 +1.1
J31A Geddes 82.72 40 P P 01 51 13.1 +0.6
baz=316
I32A Karley and Nic 82.83 39 P P 01 51 13.4 +0.4
baz=317
G34A Benson 82.84 37 P P 01 51 13.7 +0.7
baz=318
SDCO Great Sand Dun 82.85 47 P P 01 51 15.1 +1.6
baz=312
SDCO Great Sand Dun 82.85 47 eP P 01 51 14.5 +0.9
comp=Z,34nm,1.9s
EKA Eskdalemuir Ar 82.88 341 P P 01 51 13.2 +0.2
comp=Z,0.6nm,0.5s,baz=39,slow=5.2,SNR=5.1
D37A Cotton 82.89 34 P P 01 51 13.3 +0.1
baz=320
F35A Swanville 82.89 36 P P 01 51 13.7 +0.5
baz=318
C38A Sawbill Land. 82.96 33 P P 01 51 13.8 +0.2
baz=320
E36A McGregor 83.00 35 P P 01 51 14.1 +0.3
baz=319
MOA Molln 83.08 327 i P P 01 51 14.7 +0.4
comp=Z,5.1nm,1.4s
I33A Coleman 83.15 38 P P 01 51 14.7 0.0
baz=317
TUC Tucson 83.15 54 P P 01 51 16.0 +1.0
baz=310
TUC Tucson 83.15 54 eP P 01 51 15.4 +0.4
TUC pmax pmax
comp=Z,27nm,1.5s
TUC Tucson 83.15 54 eP P 01 51 15.4 +0.4
comp=Z,27nm,1.5s
K31A O'Neill 83.19 40 P P 01 51 15.7 +0.8
baz=316
H34A Spellman Lake, 83.19 37 P P 01 51 15.2 +0.4
baz=318
C39A Grand Marais 83.38 32 P P 01 51 15.5 -0.2
baz=321
G35A Watkins 83.40 36 P P 01 51 16.5 +0.6
baz=318
L31A Butterfield Fa 83.47 41 P P 01 51 17.1 +0.7
baz=316
ECSD EROS Data Cent 83.47 38 P P 01 51 16.8 +0.5
baz=317
ECSD EROS Data Cent 83.47 38 eP P 01 51 16.5 +0.2
comp=Z,5.6nm,0.6s
I34A Hadley 83.62 38 P P 01 51 17.9 +0.8
baz=318
H35A Sunnyside Ranc 83.63 37 P P 01 51 18.2 +1.1
baz=318
KSCO Kaye Shedlock' 83.64 45 P P 01 51 18.0 +0.6
baz=314
KSCO Kaye Shedlock' 83.64 45 eP P 01 51 18.1 +0.6
comp=Z,7.4nm,0.5s
SOKA Soboth 83.64 326 i P P 01 51 17.4 +0.2
comp=Z,19nm,1.0s
G36A St. Michael 83.73 36 P P 01 51 17.7 +0.1
baz=319
T25A Trinidad 83.90 47 P P 01 51 20.1 +1.1
baz=313
M31A Lambtecht Ranc 83.99 41 P P 01 51 19.1 0.0
baz=316
L32A Elgin 84.02 40 P P 01 51 19.5 +0.3
baz=316
K33A Hardington 84.10 39 P P 01 51 19.9 +0.4
baz=317
J34A George 84.12 38 P P 01 51 19.8 +0.1
baz=318
H36A Jessenland, He 84.14 36 P P 01 51 20.8 +1.1
baz=319
ANMO Albuquerque 84.15 50 P P 01 51 21.9 +1.7
baz=312
ANMO Albuquerque 84.15 50 eP P 01 51 20.4 +0.2
ANMO pmax pmax
comp=Z,35nm,1.6s
ANMO Albuquerque 84.15 50 eP P 01 51 20.4 +0.2
comp=Z,35nm,1.6s
I35A Creekview Farm 84.18 37 P P 01 51 19.8 -0.1
baz=318
SPMN Marine on St. 84.18 35 P P 01 51 20.2 +0.3
baz=320
SPMN Marine on St. 84.18 35 eP P 01 51 20.4 +0.5
comp=Z,12nm,0.9s
EIL Elat 84.40 303 P P 01 51 20.6 -0.7
comp=Z,4.9nm,0.8s,baz=33,slow=4.1,SNR=7.0
J35A Milford 84.43 38 P P 01 51 21.6 +0.4
baz=318
I36A Fitzsimmons Fa 84.52 37 P P 01 51 22.1 +0.5
baz=319
PPT2 Papeete2 84.57 117 eLR LR 02 17 27.6
comp=Z,520nm,29.2s
PPT2 Papeete2 84.57 117 eT T 03 24 29.2
comp=Z,3.8nm,0.2s
H37A Dierke Farm, C 84.62 36 P P 01 51 22.8 +0.7
baz=320
TIAR Tiarei 84.71 117 eT T 03 24 39.1
comp=Z,4.0nm,0.2s
MOTA Moosalm 84.80 329 ePcP PcP 01 51 26.0 -0.6
comp=Z,4.5nm,1.0s
I37A Lemond, Waseca 84.82 36 P P 01 51 24.0 +0.8
baz=319
RETA Reutte 84.83 329 i PcP P 01 51 23.7 +0.5
comp=Z,7.5nm,1.0s
PDG Podgorica 84.85 321⇓ iP P 01 51 21.9 -1.4
J36A Seneca 1, Swea 84.88 37 P P 01 51 23.6 +0.1
baz=319
L34A Svendsen Farm, 84.88 39 P P 01 51 23.8 +0.3
baz=317
K35A Storm Lake 84.90 38 P P 01 51 23.5 -0.1
baz=318
SCHQ Schefferville 84.92 16 P P 01 51 24.2 +0.8
comp=Z,4.8nm,0.7s,baz=334,slow=5.8,SNR=9.5
SCHQ LR LR 02 29 49.7
comp=Z,203nm,21.8s,baz=316,slow=36
121A Cookes Peak, D 84.93 53 P P 01 51 25.2 +1.0
baz=312
121A Cookes Peak, D 84.93 53 eP P 01 51 25.5 +1.3
comp=Z,9.9nm,1.0s
M34A Aspy Farms, Fr 85.12 40 P P 01 51 25.0 +0.3
baz=317
BFO Black Forest 85.12 331 eP P 01 51 24.9 +0.3
BFO pmax pmax
comp=Z,16nm,1.0s
BFO Black Forest 85.12 331 eP P 01 51 24.9 +0.3
comp=Z,16nm,1.0s
COWI Conover 85.14 33 eP P 01 51 24.8 0.0
comp=Z,24nm,1.4s
L35A Bielow Farm, R 85.19 39 P P 01 51 24.8 -0.2
baz=318
FETA Feichten 85.22 329 ePcP P 01 51 25.7 +0.4
comp=Z,6.7nm,1.1s
J37A Redenius Farm, 85.28 37 P P 01 51 26.1 +0.6
baz=319
I38A Scanlan Farm, 85.30 36 P P 01 51 25.9 +0.3
baz=320
DAVA Damuels 85.35 329 ePcP P 01 51 27.1 +1.1
comp=Z,13nm,1.1s
CBKS Cedar Bluff 85.39 44 P P 01 51 25.8 -0.3
baz=316
P32A Huiting Farm, 85.42 42 P P 01 51 26.1 -0.2
baz=316
M35A Neola 85.60 39 P P 01 51 27.5 +0.4
baz=318
O33A Hebron 85.64 41 P P 01 51 27.0 -0.3
baz=317
L36A Harm Buss Farm 85.64 38 P P 01 51 27.9 +0.6
baz=318
K37A Belmond 85.64 37 P P 01 51 27.5 +0.2
baz=319
N34A Lincoln 85.65 40 P P 01 51 27.0 -0.3
baz=317
DAVOX Davos/Dischmat 85.76 329 P P 01 51 27.8 -0.3
comp=Z,1.5nm,0.7s,baz=333,slow=4.6,SNR=2.5
J38A Wedel Dairy, R 85.78 36 P P 01 51 28.2 +0.2
baz=320
MEH Mehetia 85.84 116 eT T 03 26 03.6
comp=Z,40nm,0.3s
Q32A Meitler Ranch, 85.90 43 P P 01 51 28.6 -0.1
baz=316
O34A Beatrice 86.03 41 P P 01 51 28.8 -0.5
baz=317
P33A Williams Farm, 86.04 42 P P 01 51 29.3 -0.1
baz=317
M36A Felix, Anita 86.06 39 P P 01 51 30.0 +0.6
baz=318
N35A Tabor 86.07 40 P P 01 51 30.1 +0.6
baz=318
L37A Phoenix Point, 86.07 38 P P 01 51 29.8 +0.4
baz=319
J39A Decorah 86.13 36 P P 01 51 29.8 +0.1
baz=320
Q33A Connelly Farm, 86.29 42 P P 01 51 30.6 0.0
baz=317
O35A Humboldt 86.37 40 P P 01 51 30.7 -0.2
baz=318
P34A Walnut Farm, R 86.42 41 P P 01 51 31.0 -0.2
baz=317
L38A Oak Wood Farm, 86.45 37 P P 01 51 31.6 +0.4
baz=320
N36A Muff Farm, Cla 86.45 39 P P 01 51 32.0 +0.6
baz=318
M37A Trindle Farm, 86.46 39 P P 01 51 32.1 +0.7
baz=319
K39A Oelwein 86.53 36 P P 01 51 31.5 -0.2
baz=320
S32A Newby Ranch, P 86.62 44 P P 01 51 32.6 +0.3
baz=316
R33A Olander Ranch, 86.71 43 P P 01 51 32.6 -0.1
baz=317
Q34A Chapman 86.82 42 P P 01 51 33.4 +0.2
baz=317
P35A Duane Minner, 86.86 41 P P 01 51 33.4 0.0
baz=318
KSU1 Kansas State U 86.86 42 P P 01 51 33.7 +0.3
baz=317
KSU1 Kansas State U 86.86 42 eP P 01 51 33.8 +0.4
comp=Z,15nm,0.4s
N37A Lee Faris, Mou 86.87 39 P P 01 51 34.0 +0.6
baz=319
M38A Pleasantville 86.88 38 P P 01 51 34.0 +0.6
baz=319
K40A Colesburg 86.89 36 P P 01 51 33.6 +0.2
baz=321
J41A Loganville 86.89 35 P P 01 51 33.8 +0.3
baz=321
L39A Vinton 86.92 37 P P 01 51 34.1 +0.5
baz=320
IDI Anoyia 86.94 313 P P 01 51 34.2 +0.3
comp=Z,4.9nm,0.5s,baz=10,slow=9.9,SNR=8.6
O36A Bolckow 86.96 40 P P 01 51 34.2 +0.4
baz=318
MNTX Cornudas Mount 87.00 52 P P 01 51 35.1 +0.9
baz=313
T32A Huddler Ranch, 87.00 44 P P 01 51 34.7 +0.5
baz=316
MSTX Muleshoe 87.05 49 P P 01 51 34.7 +0.2
baz=314
AMTX Amarillo 87.06 47 P P 01 51 35.6 +1.0
baz=315
AMTX Amarillo 87.06 47 eP P 01 51 35.5 +1.0
comp=Z,13nm,0.8s
R34A Isabella, Hill 87.11 42 P P 01 51 34.8 +0.2
baz=317
S33A Kaszmaul Farm, 87.21 43 P P 01 51 35.5 +0.3
baz=317
P36A Good Intent, A 87.21 40 P P 01 51 35.2 +0.2
baz=318
M39A Webster 87.33 37 P P 01 51 36.1 +0.5
baz=320
N38A Joes South For 87.33 38 P P 01 51 35.9 +0.2
baz=319
L40A Anamosa 87.34 37 P P 01 51 36.0 +0.4
baz=321
Q35A Mercer Eighty, 87.34 41 P P 01 51 36.0 +0.3
baz=318
K41A Shullsburg 87.35 36 P P 01 51 36.0 +0.3

	baz=321							
O37A	**Wolven Farm, M**	**87.35**	**39**	P		**P**	**01 51 36.4**	**+0.6**
	baz=319							
U32A	**Winter Ranch,**	**87.53**	**45**	P		**P**	**01 51 37.6**	**+0.8**
	baz=316							
Q36A	**Arnold C. Orve**	**87.57**	**41**	P		**P**	**01 51 37.1**	**+0.3**
	baz=316							
S34A	**Willow Spring**	**87.62**	**43**	P		**P**	**01 51 37.4**	**+0.3**
	baz=317							
N39A	**Derby Farms, D**	**87.63**	**38**	P		**P**	**01 51 37.7**	**+0.6**
	baz=320							
R35A	**Emporia Munici**	**87.65**	**42**	P		**P**	**01 51 38.0**	**+0.8**
	baz=318							
L41A	**Preston**	**87.67**	**36**	P		**P**	**01 51 37.0**	**-0.3**
	baz=321							
P37A	**Lathrop**	**87.68**	**40**	P		**P**	**01 51 37.7**	**+0.4**
	baz=319							
O38A	**Galt**	**87.72**	**39**	P		**P**	**01 51 37.8**	**+0.3**
	baz=319							
V32A	**Arapaho**	**87.98**	**45**	P		**P**	**01 51 40.2**	**+1.3**
	baz=316							
U33A	**Lingo Farm, Me**	**87.99**	**44**	P		**P**	**01 51 39.4**	**+0.5**
	baz=317							
R36A	**Gordon, Harris**	**88.02**	**41**	P		**P**	**01 51 39.4**	**+0.4**
	baz=318							
S35A	**Otter Creek Ra**	**88.06**	**42**	P		**P**	**01 51 39.5**	**+0.3**
	baz=318							
P38A	**Dawn**	**88.07**	**39**	P		**P**	**01 51 39.6**	**+0.4**
	baz=319							
T34A	**McClaskey Farm**	**88.07**	**43**	P		**P**	**01 51 40.0**	**+0.7**
	baz=317							
O39A	**Kirksville**	**88.08**	**38**	P		**P**	**01 51 39.7**	**+0.5**
	baz=320							
Q37A	**Longview Farm,**	**88.16**	**40**	P		**P**	**01 51 39.7**	**0.0**
	baz=319							
W32A	**Sentinel**	**88.30**	**46**	P		**P**	**01 51 41.3**	**+1.0**
	baz=316							
U34A	**Anderson Ranch**	**88.31**	**44**	P		**P**	**01 51 41.1**	**+0.7**
	baz=317							
R37A	**Teagarden Farm**	**88.38**	**41**	P		**P**	**01 51 40.6**	**-0.1**
	baz=318							
S36A	**Lake Cedric, C**	**88.42**	**42**	P		**P**	**01 51 41.4**	**+0.5**
	baz=318							
TBI	**Tubuai**	**88.48**	**121**	*e*LR		LR	02 19 04.9	
	comp=Z,451nm,29.2s							
TBI	**Tubuai**	**88.48**	**121**	*e*T		T	03 29 19.9	
	comp=Z,63nm,0.3s							
O40A	**La Belle**	**88.52**	**38**	P		**P**	**01 51 42.0**	**+0.7**
	baz=320							
T35A	**Sooner Cattle**	**88.52**	**43**	P		**P**	**01 51 41.8**	**+0.4**
	baz=318							
Q38A	**Cooks Store, C**	**88.52**	**40**	P		**P**	**01 51 41.5**	**+0.2**
	baz=319							
P39B	**Salisbury**	**88.56**	**39**	P		**P**	**01 51 41.8**	**+0.3**
	baz=320							
W33A	**Caddo, Fort Co**	**88.72**	**45**	P		**P**	**01 51 43.6**	**+1.2**
	baz=316							
T36A	**Boggs Farm, Ca**	**88.75**	**43**	P		**P**	**01 51 43.2**	**+0.7**
	baz=318							
V34A	**Guthrie**	**88.76**	**44**	P		**P**	**01 51 43.1**	**+0.6**
	baz=317							
V34A	**Guthrie**	**88.76**	**44**	*e*P		**P**	**01 51 43.3**	**+0.8**
	comp=Z,11nm,0.7s							
X32A	**Elmer**	**88.78**	**46**	P		**P**	**01 51 43.1**	**+0.5**
	baz=316							
Q39A	**Willow Grove F**	**88.79**	**39**	P		**P**	**01 51 43.1**	**+0.5**
	baz=320							
S37A	**Fort Scott**	**88.80**	**41**	P		**P**	**01 51 42.8**	**+0.2**
	baz=319							
U35A	**Pawnee**	**88.80**	**43**	P		**P**	**01 51 43.4**	**+0.7**
	baz=317							
WMOK	**Wichita Mounta**	**88.84**	**46**	P		**P**	**01 51 43.4**	**+0.5**
	baz=316							
WMOK	**Wichita Mounta**	**88.84**	**46**	*e*P		**P**	**01 51 42.9**	**0.0**
WMOK					pmax	pmax		
	comp=Z,27nm,1.7s							
WMOK	**Wichita Mounta**	**88.84**	**46**	*e*P		**P**	**01 51 42.9**	**0.0**
	comp=Z,27nm,1.7s							
P40A	**Paris**	**88.88**	**39**	P		**P**	**01 51 43.6**	**+0.6**
	baz=320							
R38A	**Fenwick Farm,**	**88.96**	**41**	P		**P**	**01 51 44.4**	**+1.0**
	baz=319							
O41A	**Passleys Farm,**	**89.00**	**38**	P		**P**	**01 51 44.1**	**+0.5**
	baz=321							
X33A	**Lawton**	**89.14**	**46**	P		**P**	**01 51 45.1**	**+0.7**
	baz=316							
V35A	**Meyer Ranch, C**	**89.19**	**44**	P		**P**	**01 51 45.1**	**+0.6**
	baz=317							
T37A	**Cheneyville 18**	**89.22**	**42**	P		**P**	**01 51 45.0**	**+0.3**
	baz=318							
P41A	**Barry, Barry**	**89.26**	**38**	P		**P**	**01 51 45.6**	**+0.9**
	baz=321							
Q40A	**Laux Farm, Aux**	**89.28**	**39**	P		**P**	**01 51 45.3**	**+0.4**
	baz=320							
R39A	**Chumby, Stover**	**89.31**	**40**	P		**P**	**01 51 45.1**	**0.0**
	baz=320							
U36A	**Oologah**	**89.33**	**43**	P		**P**	**01 51 45.9**	**+0.7**
	baz=318							
S38A	**Stockton**	**89.38**	**41**	P		**P**	**01 51 45.0**	**-0.3**
	baz=319							
HDIL	**Hopedale**	**89.42**	**36**	P		**P**	**01 51 46.0**	**+0.5**
	baz=322							
HDIL	**Hopedale**	**89.42**	**36**	*e*P		**P**	**01 51 44.6**	**-1.0**
	comp=Z,18nm,0.9s							
Y33A	**Hilltop Ranch,**	**89.45**	**46**	P		**P**	**01 51 46.3**	**+0.5**
	baz=316							
X34A	**Smith Ranch, M**	**89.47**	**45**	P		**P**	**01 51 47.0**	**+1.1**
	baz=317							
W35A	**Tecumseh**	**89.61**	**44**	P		**P**	**01 51 46.9**	**+0.3**
	baz=317							
T38A	**Diamond**	**89.62**	**42**	P		**P**	**01 51 46.7**	**+0.1**
	baz=319							
S39A	**Bolivar**	**89.63**	**41**	P		**P**	**01 51 46.4**	**-0.2**
	baz=319							
U37A	**Salina**	**89.65**	**42**	P		**P**	**01 51 47.4**	**+0.7**
	baz=318							
TUL1	**Leonard**	**89.65**	**43**	P		**P**	**01 51 47.3**	**+0.6**
	baz=318							
TUL1	**Leonard**	**89.65**	**43**	*e*P		**P**	**01 51 47.5**	**+0.7**
	comp=Z,14nm,0.6s							
V36A	**Jenks**	**89.66**	**43**	P		**P**	**01 51 47.4**	**+0.7**
	baz=318							
P42A	**Winchester**	**89.68**	**38**	P		**P**	**01 51 47.3**	**+0.6**
	baz=321							
TXAR	**Lajitas Array**	**89.69**	**53**	P		**P**	**01 51 47.6**	**+0.5**
	comp=Z,4.5nm,0.8s,baz=296,slow=3.3,SNR=34							
TXAR					LR	LR	02 30 29.1	
	comp=Z,53nm,19.2s,baz=0.0,slow=35							
R40A	**Maddies Statio**	**89.72**	**40**	P		**P**	**01 51 47.1**	**+0.1**
	baz=320							
ABTX	**Abilene, Hawle**	**89.85**	**48**	P		**P**	**01 51 48.5**	**+0.7**
	baz=316							
ABTX	**Abilene, Hawle**	**89.85**	**48**	*e*P		**P**	**01 51 48.1**	**+0.4**
	comp=Z,8.4nm,1.0s							
Z33A	**Whitaker Ranch**	**89.89**	**47**	P		**P**	**01 51 48.5**	**+0.6**
	baz=316							
U38A	**Gravette**	**90.02**	**42**	P		**P**	**01 51 48.8**	**+0.4**
	baz=319							
V37A	**Hulbert**	**90.03**	**43**	P		**P**	**01 51 48.9**	**+0.4**
	baz=318							
Q42A	**Golden Eagle**	**90.11**	**38**	P		**P**	**01 51 49.4**	**+0.6**
	baz=321							
X35A	**Drake**	**90.11**	**45**	P		**P**	**01 51 49.1**	**+0.2**
	baz=317							
T39A	**Clever**	**90.11**	**41**	P		**P**	**01 51 49.2**	**+0.4**
	baz=319							
S40A	**Lebanon**	**90.13**	**40**	P		**P**	**01 51 49.0**	**+0.1**
	baz=320							
133A	**Hamilton Ranch**	**90.29**	**47**	P		**P**	**01 51 50.3**	**+0.5**
	baz=316							
Z34A	**Collier Ranch,**	**90.32**	**46**	P		**P**	**01 51 50.0**	**+0.1**
	baz=317							
X36A	**Centrahoma**	**90.33**	**44**	P		**P**	**01 51 50.6**	**+0.7**
	baz=318							
W37B	**Quinton**	**90.42**	**44**	P		**P**	**01 51 51.1**	**+0.8**
	baz=318							
Y35A	**Marietta**	**90.43**	**45**	P		**P**	**01 51 50.6**	**+0.2**
	baz=317							
V38A	**Canehill**	**90.44**	**42**	P		**P**	**01 51 50.9**	**+0.5**
	baz=319							
T40A	**Mansfield**	**90.46**	**40**	P		**P**	**01 51 50.3**	**-0.1**
	baz=320							
U39A	**Green Forest**	**90.54**	**42**	P		**P**	**01 51 51.1**	**+0.2**
	baz=319							
SFIN	**Lafayette**	**90.58**	**35**	P		**P**	**01 51 51.3**	**+0.3**
	baz=323							
LMQ	**La Malbaie**	**90.71**	**21**	*e*P		**P**	**01 51 51.0**	**-0.4**
233A	**Rising Star**	**90.72**	**48**	P		**P**	**01 51 52.5**	**+0.7**
	baz=316							
Z35A	**Perchaven, San**	**90.73**	**46**	P		**P**	**01 51 52.0**	**+0.2**
	baz=317							
134A	**White-Moore Ra**	**90.80**	**47**	P		**P**	**01 51 52.9**	**+0.7**
	baz=317							
Q44A	**Meyer Farm, Va**	**90.85**	**37**	P		**P**	**01 51 52.8**	**+0.6**
	baz=322							
X37A	**Clayton**	**90.86**	**44**	P		**P**	**01 51 53.0**	**+0.7**
	baz=318							
Y36A	**Durant**	**90.86**	**45**	P		**P**	**01 51 52.7**	**+0.3**
	baz=318							
V39A	**Pettigrew**	**90.86**	**42**	P		**P**	**01 51 52.4**	**-0.1**
	baz=319							
U40A	**Yellville**	**90.89**	**41**	P		**P**	**01 51 52.7**	**+0.2**
	baz=320							
T41A	**Mountain View**	**90.93**	**40**	P		**P**	**01 51 52.8**	**+0.1**
	baz=320							
W38A	**Poteau**	**90.97**	**43**	P		**P**	**01 51 53.4**	**+0.6**
	baz=319							
X38A	**Whitesboro**	**91.10**	**43**	P		**P**	**01 51 54.3**	**+0.8**
	baz=319							
333A	**Richland Sprin**	**91.17**	**48**	P		**P**	**01 51 54.8**	**+0.9**
	baz=316							
234A	**Clairette**	**91.18**	**47**	P		**P**	**01 51 54.8**	**+0.9**
	baz=317							
135A	**Vickery Place,**	**91.20**	**46**	P		**P**	**01 51 55.0**	**+1.0**
	baz=317							
Z36A	**Blue Ridge**	**91.24**	**45**	P		**P**	**01 51 54.7**	**+0.6**
	baz=318							
W39A	**Magazine**	**91.27**	**42**	P		**P**	**01 51 54.7**	**+0.4**
	baz=319							
JCT	**Junction City**	**91.28**	**49**	P		**P**	**01 51 55.1**	**+0.6**
	baz=316							
JCT	**Junction City**	**91.28**	**49**	*e*P		**P**	**01 51 54.2**	**-0.3**
JCT					pmax	pmax		
	comp=Z,7.0nm,0.8s							
JCT	**Junction City**	**91.28**	**49**	*e*P		**P**	**01 51 54.2**	**-0.3**
	comp=Z,7.2nm,0.8s							
V40A	**Witts Springs**	**91.33**	**41**	P		**P**	**01 51 54.5**	**0.0**
	baz=320							
R44A	**Waltonville**	**91.34**	**38**	P		**P**	**01 51 54.9**	**+0.5**
	baz=322							
433A	**Art**	**91.51**	**49**	P		**P**	**01 51 55.9**	**+0.4**
	baz=316							
WHTX	**Lake Whitney,**	**91.59**	**47**	P		**P**	**01 51 56.6**	**+0.9**
	baz=317							
WHTX	**Lake Whitney,**	**91.59**	**47**	*e*P		**P**	**01 51 56.8**	**+1.1**
	comp=Z,16nm,0.8s							
334A	**Lometa**	**91.61**	**48**	P		**P**	**01 51 56.5**	**+0.6**
	baz=317							
X39A	**Fountain Ranch**	**91.61**	**43**	P		**P**	**01 51 56.6**	**+0.8**
	baz=319							
W40A	**Ferguson Farm,**	**91.66**	**42**	P		**P**	**01 51 56.2**	**+0.2**
	baz=320							
V41A	**Mountainview**	**91.69**	**41**	P		**P**	**01 51 56.3**	**+0.1**
	baz=320							
U42A	**Revenden**	**91.73**	**40**	P		**P**	**01 51 56.2**	**-0.1**
	baz=321							
Z37A	**Pogue Cattle C**	**91.75**	**45**	P		**P**	**01 51 56.8**	**+0.3**
	baz=318							
136A	**Ennis**	**91.77**	**46**	P		**P**	**01 51 56.8**	**+0.2**
	baz=318							
MIAR	**Mount Ida**	**91.87**	**43**	P		**P**	**01 51 57.6**	**+0.6**
	baz=319							
MIAR	**Mount Ida**	**91.87**	**43**	*e*P		**P**	**01 51 57.6**	**+0.6**
MIAR					pmax	pmax		
	comp=Z,12nm,0.7s							
MIAR	**Mount Ida**	**91.87**	**43**	*e*P		**P**	**01 51 57.6**	**+0.6**
	comp=Z,12nm,0.7s							
434A	**Burnet**	**91.96**	**48**	P		**P**	**01 51 57.5**	**0.0**
	baz=317							
V42A	**Cord**	**92.07**	**41**	P		**P**	**01 51 58.1**	**+0.1**
	baz=321							
W41B	**Gary Mavity, V**	**92.11**	**42**	P		**P**	**01 51 58.6**	**+0.5**
	baz=320							
336A	**Riesel**	**92.38**	**47**	P		**P**	**01 52 00.4**	**+1.0**
	baz=317							
534A	**Blanco**	**92.40**	**49**	P		**P**	**01 51 59.9**	**+0.2**
	baz=316							
Y40A	**Okolona**	**92.44**	**43**	P		**P**	**01 52 00.3**	**+0.7**
	baz=319							
M54A	**Oil Creek Stat**	**92.83**	**30**	P		**P**	**01 52 02.3**	**+0.9**
	baz=328							
N54A	**Moraine State**	**93.17**	**30**	P		**P**	**01 52 03.8**	**+0.9**
	baz=328							
438A	**Sam Houston St**	**93.64**	**46**	P		**P**	**01 52 07.1**	**+1.8**
	baz=318							
933A	**Laredo**	**93.65**	**51**	P		**P**	**01 52 06.9**	**+1.5**
	baz=316							
Z42A	**Norrel Spur, H**	**93.72**	**43**	P		**P**	**01 52 06.6**	**+1.0**
	baz=320							
034A	**Hebbronville**	**94.41**	**51**	P		**P**	**01 52 10.3**	**+1.4**
	baz=316							
KEST	**Kesra**	**94.90**	**323**	LR		LR	02 38 48.4	
	comp=Z,351nm,19.1s,baz=260,slow=38							
ESDC	**Sonseca Array**	**97.08**	**334**	LR		LR	02 39 43.6	
	comp=Z,310nm,21.4s,baz=25,slow=38							
TORD	**Torodi Ar. Bea**	**117.27**	**315**	PKP		**PKPdf**	**01 57 33.6**	**-1.0**
	comp=Z,0.4nm,0.6s,baz=20,slow=2.0,SNR=5.3							
DBIC	**Dimbokro**	**126.21**	**317**	PKP		**PKPdf**	**01 57 51.5**	**-0.2**
	comp=Z,2.0nm,0.7s,baz=8.8,slow=4.9,SNR=3.7							
BOSA	**Boshof**	**126.90**	**260**	PKP		**PKPdf**	**01 57 52.5**	**-0.3**
	comp=Z,2.8nm,0.8s,baz=135,slow=3.9,SNR=4.5							
QSPA	**South Pole Qui**	**127.14**	**180**	*e*PKPdf		**PKPdf**	**01 57 51.4**	**-0.5**
SNAA	**Sanae**	**141.17**	**197**	PKhKP		PKPpre	01 58 10.8	
	comp=Z,1.4nm,0.8s,baz=45,slow=1.4,SNR=6.6							
LPAZ	**La Paz**	**146.28**	**60**	PKPbc		**PKPbc**	**01 58 30.7**	**+0.2**
	comp=Z,9.6nm,0.6s,baz=243,slow=4.8,SNR=40							
LCO	**Las Campanas**	**151.70**	**82**	*e*PKPbc		**PKPbc**	**01 58 44.3**	**+0.6**

*ISCJB **19** 01:59:28.7±0.6, 39.°05N±0.°04×29.°03E±0.°06, h9km, Error ellipse: s-maj=7.4km s-min=4.2km az=39.4*
*ISK **19** 01:59:28.7, 39.°09N×29.°04E, h5km, MD2.8*
*DDA **19** 01:59:28.5, 39.°08N×28.°70E, h30km, Md2.6*
*CSEM **19** 01:59:29.1±0.1, 39.°08N×29.°01E, h5km, MD2.8, Error ellipse: s-maj=4.2km s-min=2.8km az=115.0*

ISC 19 01:59:28.7±1.1, 39.°07N±0.°03×29.°04E±0.°03, h9km, n21, σ0s42/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.25**	**264**	*i* P	**Pg**	**01 59 34.1**	**+0.2**
DEMI				*i* S	**Sg**	**01 59 37.6**	**+0.3**
DEMI	**Demirci**	**0.25**	**264**	P	**Pg**	**01 59 34.1**	**+0.2**
DEMI				S	**Sg**	**01 59 37.6**	**+0.3**
TVSB	**Tavsanli**	**0.50**	**41**	*e*PG	**Pg**	**01 59 38.4**	**-0.1**
TVSB				*e*SG	**Sg**	**01 59 45.2**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**41**	*e*Pg	**Pg**	**01 59 38.4**	**-0.1**
TVSB				*e*Sg	**Sg**	**01 59 45.2**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*PG	**Pg**	**01 59 41.1**	**+0.2**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*Pg	**Pg**	**01 59 41.1**	**+0.2**
MANT	**Manisa**	**0.69**	**213**	*i* P	**Pg**	**01 59 41.1**	**-1.0**
MANT				*i* S	**Sg**	**01 59 49.9**	**-1.2**
KHL	**Karahalli**	**0.84**	**153**	*e*PG	**Pb**	**01 59 46.1**	**+0.6**
KHL	**Karahalli**	**0.84**	**153**	*e*Pg	**Pb**	**01 59 46.1**	**+0.6**
BALB	**Balikesir**	**1.06**	**303**	*e*PG	**Pb**	**01 59 49.4**	**+0.1**
BALB	**Balikesir**	**1.06**	**303**	*e*Pg	**Pb**	**01 59 49.4**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*PN	**Pg**	**01 59 53.8**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*Pn	**Pg**	**01 59 53.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pg**	**01 59 53.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pg**	**01 59 53.7**	**-0.1**
IZI	**Iznik**	**1.31**	**15**	*e*PN	**Pg**	**01 59 54.0**	**+0.2**
IZI	**Iznik**	**1.31**	**15**	*e*Pn	**Pg**	**01 59 54.0**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**219**	*e*PN	**Pb**	**01 59 55.9**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**219**	*e*Pn	**Pb**	**01 59 55.9**	**+0.1**
GULT	**Gulveren**	**1.77**	**39**	*e*PN	**Pb**	**02 00 01.1**	**-0.4**
GULT	**Gulveren**	**1.77**	**39**	*e*Pn	**Pb**	**02 00 01.1**	**-0.4**

*NEIC **19** 02:07:28.0, 18.°33N×102.°96W, h18km, MD4.1(MEX), After MEX.*

MEX 19 02:07:28.0±0.6, 18.°33N×102.°96W, h18km±15km, MD4.1, Michoacan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
R15V		**1.28**	**311**	*i* P	Pn	02 07 47.4	-3.6
R15V				*i* S	Sb	02 08 03.1	-4.7
EZ5V		**1.29**	**332**	*i* P	Pn	02 07 48.7	-2.7
EZ5V				*i* S	Sb	02 08 02.9	-5.4
ZIIG	**Zihuatanejo**	**1.59**	**117**	*i* P	Pn	02 07 52.4	-2.9
ZIIG				*i* S	Sn	02 08 10.3	-5.1
ZIIG	**Zihuatanejo**	**1.59**	**117**	*i* P	Pn	02 07 52.4	-2.9
ZIIG				*i* S	Sn	02 08 10.3	-5.1
MOIG	**Morelia**	**2.14**	**51**	*e*P	Pn	02 08 00.2	-2.8
MOIG				*i* S	Sn	02 08 25.4	-3.9
MOIG	**Morelia**	**2.14**	**51**	*e*P	Pn	02 08 00.2	-2.8
MOIG				*i* S	Sn	02 08 25.4	-3.9
ARIG	**Puente Sto Nin**	**2.48**	**91**	*e*P	Pn	02 08 04.8	-2.7
ARIG				*i* S	Sn	02 08 33.4	-3.9
IGIG	**Irapuato, Guan**	**2.85**	**32**	*i* P	Pn	02 08 10.3	-2.6
IGIG				*i* S	Sn	02 08 43.4	-3.4
CAIG	**El Cayaco**	**2.87**	**116**	*i* P	Pn	02 08 10.2	-2.5
CAIG				*i* S	Sn	02 08 43.4	-3.4
CAIG	**El Cayaco**	**2.87**	**116**	*i* P	Pn	02 08 10.2	-2.5
CAIG				*i* S	Sn	02 08 43.4	-3.4
MEIG	**Mezcala**	**3.20**	**97**	*e*P	Pn	02 08 15.3	-2.2
MEIG				*i* S	Sn	02 08 51.5	-3.7
MEIG	**Mezcala**	**3.20**	**97**	*e*P	Pn	02 08 15.3	-2.2
MEIG				*i* S	Sn	02 08 51.5	-3.7
TUC	**Tucson**	**15.60**	**335**	*e*Pn	Pn	02 11 05.0	-2.1

*IDC **19** 02:20:32.1±0.7, 30.°64S×177.°62W, h0km, mb4.7/11, mb1 4.7/12, mb1mx4.6/17, mbtmp4.6/12, ML4.2/1, MS4.5/19, Ms1 4.5/19, ms1mx4.3/33, Error ellipse: s-maj=27.0km s-min=18.2km az=109.0*
*NEIC **19** 02:20:35.6±2.6, 30.°72S×177.°82W, h17km±16km, mb5.0/46, Error ellipse: s-maj=9.7km s-min=6.3km az=114.0*
*GCMT **19** 02:20:35.7±0.2, 30.°57S×177.°48W, h32km, MW5.3/92, Moment Tensor Solution. s89,c133; s92,c142; Duration: 1s0 Moment tensor: Scale 1017Nm; Mrr0.76±.02; Mθθ0.02±.02; Mϕϕ-0.78±.01; Mrθ0.13±.02; Mθϕ-0.17±.01; Mrϕ0.51±.02; Best double couple: M00.95000×1017 NP1:ϕs13.00000°, δ62.00000°, λ92.00000°. NP2:ϕs190.00000°, δ28.00000°, λ87.00000°. Principal axes: T 0.9210, Plg73.0000°, Azm287.0000°; N 0.0590, Plg1.0000°, Azm192.0000°; P -0.9790, Plg17.0000°, Azm102.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISCJB **19** 02:20:36.6±0.2, 30.°96S±0.°03×177.°79W±0.°05, h33km, mb5.1/63, MS4.7/28 Error ellipse: s-maj=6.5km s-min=2.8km az=26.9*
*MOS **19** 02:20:37.2±1.2, 30.°61S×177.°82W, h33km, mb5.4/17, MS4.9/6, Error ellipse: s-maj=13.7km s-min=9.0km az=88.9*
*BJI **19** 02:20:37.2, 30.°80S×177.°80W, h40km, mb5.2/19, mB5.7/19, Ms5.1/3, Ms7 4.8/10*

ISC 19 02:20:38.2±0.4, 30.°71S±0.°04×177.°76W±0.°07, h35km, n357, σ2s06/351, mb5.2/63, MS4.8/28, 13C-12D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.46**	**355**	P	**Pn**	**02 20 59.0**	**-3.0**
	767nm,0.3s,baz=119,slow=5.0,SNR=47						
RAO				S	**Sn**	**02 21 15.5**	**-4.4**
	4μm,0.3s,baz=90,slow=20,SNR=20						
RAO				LR	LR	02 21 35.2	
	comp=Z,19μm,18.0s,baz=191,slow=45						
RAO	**Raoul Island**	**1.46**	**355**	*e*P	**Pn**	**02 20 59.4**	**-2.6**
RAO				*e*S	**Sn**	**02 21 16.7**	**-3.2**
RAO	**Raoul Island**	**1.46**	**355**	*e*Pn	**Pn**	**02 20 59.4**	**-2.6**
RAO				*e*S	**Sn**	**02 21 16.7**	**-3.2**
MXZ	**Matakaoa Point**	**7.57**	**204**	*e*Pn	**Pn**	**02 22 27.2**	**+1.2**
MXZ	**Matakaoa Point**	**7.57**	**204**	PN	**Pn**	**02 22 22.7**	**-3.3**
MXZ				SN	**Sn**	**02 23 49.0**	**-1.5**
WMGZ	**Waiomatatini S**	**7.76**	**203**	PN	**Pn**	**02 22 26.5**	**-2.2**
HAZ	**Te Kaha**	**7.94**	**206**	PN	**Pn**	**02 22 25.5**	**-2.5**
PKGZ	**Pakihiroa**	**7.94**	**205**	PN	**Pn**	**02 22 27.9**	**-3.3**
PKGZ				SN	**Sn**	**02 23 59.4**	**-0.4**
PUZ	**Puketiti**	**8.05**	**203**	PN	**Pn**	**02 22 29.6**	**-2.9**
RUGZ	**Raukumara Rang**	**8.16**	**206**	PN	**Pn**	**02 22 31.4**	**-2.8**
TWGZ	**Tauwhareparae**	**8.24**	**204**	PN	**Pn**	**02 22 31.7**	**-3.5**
TKGZ	**Te Karaka**	**8.52**	**204**	PN	**Pn**	**02 22 35.8**	**-3.2**
MWZ	**Matawai**	**8.54**	**206**	PN	**Pn**	**02 22 37.1**	**-2.2**
OUZ	**Omahuta**	**8.54**	**236**	*e*Pn	Pn	02 22 45.9	+6.6
OUZ	**Omahuta**	**8.54**	**236**	PN	Pn	02 22 45.9	+6.7
URZ	**Urewera**	**8.64**	**208**	Pn	**Pn**	**02 22 38.3**	**-2.4**
	2.7nm,0.3s,baz=281,slow=4.1,SNR=17						
URZ				Sn	**Sn**	**02 24 16.4**	**-0.4**
	20nm,0.3s,baz=33,slow=22,SNR=8.0						
URZ	**Urewera**	**8.64**	**208**	*e*Pn	**Pn**	**02 22 38.6**	**-2.0**
URZ				*e*S	**Sn**	**02 24 14.7**	**-2.1**
URZ	**Urewera**	**8.64**	**208**	PN	**Pn**	**02 22 38.2**	**-2.4**
RAGZ	**Rawiri**	**8.72**	**206**	PN	**Pn**	**02 22 39.5**	**-2.4**
RIGZ	**Rimuhau**	**8.79**	**204**	PN	**Pn**	**02 22 40.4**	**-2.3**
KNZ	**Kokohu**	**9.10**	**203**	PN	**Pn**	**02 22 44.5**	**-2.4**
MHGZ	**Mahia Peninsul**	**9.14**	**202**	PN	**Pn**	**02 22 43.6**	**-4.0**
NMHZ	**Naumai**	**9.48**	**207**	PN	**Pn**	**02 22 49.2**	**-3.1**
BKZ	**Black Stump Fm**	**9.66**	**208**	*e*Pn	**Pn**	**02 22 56.1**	**+1.4**
BKZ	**Black Stump Fm**	**9.66**	**208**	PN	**Pn**	**02 22 52.5**	**-2.2**
MCHZ	**McNeill Hill**	**9.82**	**206**	PN	**Pn**	**02 22 54.0**	**-2.9**
HIZ	**Hauiti**	**9.88**	**216**	*e*Pn	**Pn**	**02 22 57.5**	**-0.1**
KAHZ	**Kahuranaki**	**10.07**	**204**	PN	Pn	02 22 54.9	-5.3
PXZ	**Pawanui**	**10.28**	**204**	PN	**Pn**	**02 22 59.5**	**-3.6**
PNHZ	**Pukenui**	**10.42**	**207**	PN	**Pn**	**02 23 02.4**	**-2.7**
BFZ	**Birch Farm**	**11.07**	**204**	*e*Pn	**

87nm,1.4s
MGCD Mangrove Creek 26.48 256 P **P** **02 26 15.4 +3.3**
baz=26,SNR=19
CNB Canberra Magne 27.87 252 P **P** **02 26 28.5 +3.7**
baz=28,SNR=4.7
EIDS Eidsvold 27.96 273 P **P** **02 26 28.0 +2.5**
baz=28,SNR=12
EIDS Eidsvold 27.96 273 *e*P **P** **02 26 26.5 +1.0**
27nm,0.8s
CAN Canberra 28.17 252 *e*P **P** **02 26 31.5 +4.1**
CAN *e*S **S** **02 31 08.0 -2.6**
CAN pmax pmax
comp=Z,51nm,1.1s
CAN Canberra 28.17 252 *e*P **P** **02 26 31.5 +4.1**
comp=Z,50nm,1.1s
CAN *e*S **S** **02 31 08.0 -2.6**
PAE Paea 28.71 70 *e*T T 02 56 33.0
comp=Z,13nm,0.3s
PPT2 Papeete2 28.75 69 *e*LQ LQ 02 32 11.6
comp=Z,2µm,25.2s
PPT2 *e*LR LR 02 33 50.4
comp=Z,3µm,26.2s
PPT2 Papeete2 28.75 69 *e*T T 02 56 36.7
comp=Z,9.9nm,0.3s
PPT Papeete 28.76 69 LR LR 02 34 55.3
comp=Z,791nm,21.7s,baz=212,slow=30
TVO Taravao 28.91 70 *e*T T 02 56 48.5
comp=Z,4.9nm,0.3s
RMQ Roma 29.63 270 P **P** **02 26 43.6 +3.2**
baz=29,SNR=11
MEH Mehetia 29.83 72 *e*T T 02 57 57.5
comp=Z,28nm,0.3s
TOO Toolangi 31.03 247 P **P** **02 26 55.6 +2.9**
baz=31,SNR=4.3
CMSA Cobar Meteorol 31.21 259 P **P** **02 26 56.7 +2.4**
baz=31,SNR=22
VAH Vaihoa 31.60 68 *e*T T 03 00 08.3
comp=Z,84nm,0.3s
QLP Quilpie 33.50 267 P **P** **02 27 15.9 +1.5**
baz=33,SNR=19
ARPS Mount Arapiles 33.95 249 P **P** **02 27 20.7 +2.5**
baz=34
CTAO Charters Tower 34.05 279 *e*P **P** **02 27 20.8 +1.5**
CTAO pmax pmax
comp=Z,54nm,0.8s
CTAO Charters Tower 34.05 279 *e*P **P** **02 27 20.8 +1.5**
comp=Z,54nm,0.8s
STKA Stephens Creek 34.61 257 P **P** **02 27 26.0 +2.0**
comp=Z,51nm,0.6s,baz=104,slow=11,SNR=114
STKA LR LR 02 40 33.7
comp=Z,1µm,18.6s,baz=91,slow=35
STKA Stephens Creek 34.61 257 P **P** **02 27 26.2 +2.2**
baz=34,SNR=114
MTSU Mount Surprise 36.56 281 P **P** **02 27 42.8 +2.0**
baz=36,SNR=30
HTT Hallett 36.62 254 P **P** **02 27 43.0 +1.8**
baz=36,SNR=53
RKT Rikitea 38.71 89 *e*LR LR 02 38 32.6
comp=Z,2µm,28.0s
BBOO Buckleboo 39.08 255 P **P** **02 28 03.0 +1.0**
baz=39,SNR=58
BBOO Buckleboo 39.08 255 *e*P **P** **02 28 02.5 +0.5**
comp=Z,31nm,0.6s
QIS Mount Isa 39.54 274 P **P** **02 28 07.1 +1.1**
baz=39,SNR=9.7
COEN Coen 39.55 286 P **P** **02 28 08.2 +2.1**
baz=39,SNR=22
COEN Coen 39.55 286 *e*P **P** **02 28 07.5 +1.4**
comp=Z,81nm,1.5s
TAOE Nuku Hiva Isla 41.24 66 *e*LR LR 02 39 35.5
comp=Z,2µm,25.8s
AS01 Alice Springs 43.26 267 *e*P **P** **02 28 35.5 -1.0**
AS31 Alice Springs 43.30 267 *e*P **P** **02 28 36.8 0.0**
comp=Z,6.9nm,0.5s
ASAR Alice Springs 43.30 267 P **P** **02 28 36.2 -0.6**
comp=Z,14nm,0.5s,baz=105,slow=7.1,SNR=116
ASAR ScP **ScP** **02 34 16.6 +2.5**
comp=Z,1.5nm,0.6s,baz=118,slow=4.0,SNR=4.3
ASAR LR LR 02 46 27.3
comp=Z,2µm,18.4s,baz=112,slow=36
WB2 Warramunga Arr 44.31 272 *e*P **P** **02 28 44.8 -0.1**
comp=Z,47nm,0.4s
WRAB Tennant Creek 44.31 272 *i* P **P** **02 28 45.5 +0.6**
WRAB pmax pmax
comp=Z,83nm,1.2s
WRAB Tennant Creek 44.31 272 *e*P **P** **02 28 44.3 -0.6**
comp=Z,34nm,0.5s
WRA Warramunga Arr 44.32 272 P **P** **02 28 44.1 -0.9**
comp=Z,28nm,0.4s,baz=112,slow=7.9,SNR=139
WRA ScP **ScP** **02 34 21.3 +3.1**
comp=Z,1.4nm,0.9s,baz=103,slow=4.2,SNR=3.8
WRA PKiKP **PKiKP** **02 37 28.3 -1.0**
comp=Z,0.2nm,0.7s,baz=124,slow=0.4,SNR=2.5
WRA LR LR 02 46 38.2
comp=Z,1µm,18.0s,baz=110,slow=35
FORT Forrest 46.17 255 P **P** **02 28 59.9 +0.3**
baz=46,SNR=22
FORT Forrest 46.17 255 *e*P **P** **02 28 59.7 +0.2**
comp=Z,447nm,0.5s
FORT *e*PP **PP** **02 30 46.6 -1.5**
WRKA Warakurna 47.65 263 P **P** **02 29 10.2 -1.0**
baz=47,SNR=9.9
SBA Scott Base 47.74 184 *e*P **P** **02 29 14.2 +3.0**
SBA Scott Base 47.74 184 *e*P **P** **02 29 14.2 +3.0**
VNDA Vanda 47.81 186 P **P** **02 29 14.4 +2.7**
comp=Z,1.6nm,0.7s,baz=18,slow=6.4,SNR=15
VNDA LR LR 02 50 20.1
comp=Z,98nm,18.0s,baz=24,slow=37
MTN Manton Dam 50.23 279 P **P** **02 29 31.5 +0.4**
baz=50,SNR=3.8
MTN Manton Dam 50.23 279 *e*P **P** **02 29 31.7 +0.6**
comp=Z,72nm,1.7s
KNRA Kununurra 50.94 274 P **P** **02 29 37.0 +0.6**
baz=51
KMBL Kambalda 51.13 253 P **P** **02 29 36.7 -1.0**
baz=51
FITZ Fitzroy Crossi 52.57 270 LR LR 02 50 50.0
comp=Z,984nm,20.9s,slow=34
FITZ Fitzroy Crossi 52.57 270 P **P** **02 29 47.9 -0.6**
baz=52,SNR=12
FITZ Fitzroy Crossi 52.57 270 *e*P **P** **02 29 48.7 +0.1**
comp=Z,3.1nm,0.7s
KLBR Kellerberrin 54.45 251 P **P** **02 30 01.4 -0.8**
baz=54,SNR=11
MEEK Meekatharra 55.32 257 P **P** **02 30 08.1 -0.5**
baz=55,SNR=3.0
MUN Mundaring 55.59 250 P **P** **02 30 10.8 +0.3**
baz=55
MBWA Marble Bar 56.40 264 *e*P **P** **02 30 15.1 -1.3**
comp=Z,13nm,0.7s
MBWA *e*PcP **PcP** **02 31 13.5 +0.3**
MBWA *e*PP **PP** **02 32 20.8 -1.3**
MORW Morawa 56.64 254 P **P** **02 30 17.0 -1.0**
baz=56,SNR=3.6
QSPA South Pole Qui 59.40 180 *e*P **P** **02 30 39.1 +2.2**
MIR Mirnyy 61.94 207 *i* P **P** **02 30 55.0 +1.0**
MIR pmax pmax
comp=Z,6.0nm,1.5s
MAW Mawson 72.09 201 P **P** **02 31 59.2 +0.8**
comp=Z,2.3nm,0.7s,baz=149,slow=7.1,SNR=6.5
MAW LR LR 03 02 47.5
comp=Z,430nm,20.1s,baz=76,slow=35
MAW Mawson 72.09 201 P **P** **02 31 59.2 +0.8**
MAW pmax pmax
comp=Z,3.0nm,1.0s
MAW Mawson 72.09 201 P **P** **02 31 59.2 +0.8**
comp=Z,3.0nm,1.0s
KKM Kota Kinabalu 72.85 288 *e*P **P** **02 32 03.7 -0.2**
comp=Z,6.2nm,0.4s
SYO Syowa Base 76.86 193⇓ *e*P **P** **02 32 25.4 -0.7**
SYO Syowa Base 76.86 193⇓ *e*pP **P** **02 32 30.4 +4.3**
SNAA Sanae 77.84 178 P **P** **02 32 32.6 +0.9**
SNAA Sanae 77.84 178 *e*P **P** **02 32 32.3 +0.6**
SNAA pmax pmax
comp=Z,130nm,0.8s
SNAA Sanae 77.84 178 *e*P **P** **02 32 32.2 +0.6**
comp=Z,130nm,0.8s
NVL N'lazarevskaya 78.58 183 *e*P **P** **02 32 38.4 +2.7**
MJAR Matsushiro Arr 78.61 325 P **P** **02 32 36.0 -0.3**
comp=Z,1.0nm,0.3s,baz=168,slow=6.1,SNR=3.0
MJAR LR LR 03 01 49.8
comp=Z,118nm,21.7s,baz=120,slow=32
MJAR Matsushiro Arr 78.61 325 P **P** **02 32 36.0 -0.3**
VNA1 Neumayer–Stat 78.65 176 P **P** **02 32 37.4 +1.4**
PLCA Paso Flores 82.14 133 LR LR 03 00 57.3
comp=Z,443nm,21.5s,baz=291,slow=30
KSRS Korea Array 84.72 320 P **P** **02 33 08.8 +0.5**
comp=Z,1.2nm,0.4s,baz=145,slow=6.5,SNR=4.3
KSAR Wonju Array Be 84.73 319 P **P** **02 33 08.9 +0.4**
KSAR Wonju Array Be 84.73 319 P **P** **02 33 08.8 +0.4**
YSS Yuzh-Sakhalins 85.11 334⇑ *e*P **P** **02 33 10.5 +0.3**
YSS *e**SP **sP** **02 33 23.5 -1.7**
YSS *e*S **S** **02 43 43.0 +6.0**
YSS *e*SSS SSS 02 52 43.0
YSS pmax pmax
comp=Z,30nm,1.7s
YSS MLR MLR
comp=Z,400nm,19.0s
QIZ Qiongzhong 85.31 295 P **P** **02 33 13.0 +1.1**
QIZ S **S** **02 43 46.3 +6.1**
QIZ pmax pmax
comp=Z,270nm,7.8s
QIZ LR LR
comp=Z,150nm,33.4s
GSI Gunungsitoli 86.07 274 *e*P **P** **02 33 16.4 +0.6**
VES Vestal, Richgr 86.12 44 P **P** **02 33 16.2 +0.7**
baz=227
EDW2 Edwards Air Fo 86.14 45 P **P** **02 33 16.7 +1.0**
baz=228
PEA0 Petropavlovsk- 86.16 345 *e*P **P** **02 33 14.9 -0.4**
PEA0B Petropavlovsk- 86.16 345 *e*P **P** **02 33 15.4 +0.2**
comp=Z,103nm,1.7s
PETK Petropavlovsk- 86.16 345 P **P** **02 33 14.9 -0.3**
comp=Z,13nm,0.6s,baz=120,slow=6.7,SNR=20
PETK LR LR 03 05 11.4
comp=Z,261nm,21.8s,baz=145,slow=31
PFO Pinyon Flats O 86.26 47 *e*P **P** **02 33 17.0 +0.6**
PFO pmax pmax
comp=Z,9.0nm,1.0s
PFO Pinyon Flats O 86.26 47 *e*P **P** **02 33 17.0 +0.6**
comp=Z,8.9nm,1.0s
ISA Isabella, Lake 86.37 45 P **P** **02 33 17.7 +0.9**
baz=228
MSHR Mys Shultsa 86.73 325 *e*P **P** **02 33 19.1 +0.8**
BELC Belle Mtn. Jos 86.81 47 P **P** **02 33 20.5 +1.4**
baz=229
CMB Columbia Colle 86.85 42 *e*P **P** **02 33 19.3 +0.2**
CMB pmax pmax
comp=Z,40nm,1.1s
CMB Columbia Colle 86.85 42 *e*P **P** **02 33 19.3 +0.2**
comp=Z,40nm,1.1s
BC3 Big Chuckawall 86.93 48 P **P** **02 33 21.3 +1.6**
baz=230
GLA Glamis 86.94 48 P **P** **02 33 21.3 +1.6**
baz=230
CWC Cottonwood Cre 87.13 44 P **P** **02 33 20.7 +0.1**
baz=228
GSC Goldstone, Bar 87.15 46 P **P** **02 33 21.6 +1.0**
baz=229
MPMC Manual Prospec 87.23 45 P **P** **02 33 21.9 +0.7**
baz=228
IRM Iron Mountain 87.45 47 P **P** **02 33 23.5 +1.5**
baz=230
GMRC Granite Mounta 87.53 47 P **P** **02 33 23.2 +0.6**
baz=230
USRK Ussuriysk Ar. 87.53 326 P **P** **02 33 22.2 +0.1**
comp=Z,5.4nm,1.1s,baz=145,slow=4.0,SNR=7.6
214A Organ Pipe Nat 87.57 50 P **P** **02 33 23.5 +0.8**
baz=231
214A Organ Pipe Nat 87.57 50 *e*P **P** **02 33 23.6 +0.9**
comp=Z,22nm,0.9s
Y12C Blythe 87.58 48 P **P** **02 33 24.1 +1.4**
baz=230
O03D Paynes Creek 87.63 39 P **P** **02 33 24.1 +1.3**
baz=226
M02C Callahan 87.83 38 P **P** **02 33 24.7 +1.0**
baz=225
TYV Tymovskoe 88.42 336 *e*P **P** **02 33 24.8 -1.4**
TYV pmax pmax
comp=Z,13nm,0.8s
TPNV Topopah Spring 88.57 45 P **P** **02 33 29.9 +2.3**
baz=229
TPNV Topopah Spring 88.57 45 *e*P **P** **02 33 29.8 +2.3**
TPNV pmax pmax
comp=Z,9.0nm,1.1s
TPNV Topopah Spring 88.57 45 *e*P **P** **02 33 29.8 +2.3**
comp=Z,9.3nm,1.1s
HUMO Hull Mountain 88.64 37 P **P** **02 33 28.5 +1.0**
comp=Z,80nm,1.6s
Y14A Wickenburg 88.68 49 *e*P **P** **02 33 29.2 +1.3**
comp=Z,85nm,1.4s
WHN Wuhan 88.70 307 P **P** **02 33 31.0 +3.0**
TUC Tucson 89.14 51 P **P** **02 33 31.9 +1.7**
baz=232
TUC Tucson 89.14 51 *e*P **P** **02 33 31.4 +1.2**
TUC pmax pmax
comp=Z,17nm,1.3s
TUC Tucson 89.14 51 *e*P **P** **02 33 31.4 +1.2**
comp=Z,17nm,1.3s
319A Douglas 89.60 53 *e*P **P** **02 33 34.8 +2.4**
comp=Z,12nm,1.0s
I04A Tendick Farm, 89.76 37 P **P** **02 33 33.4 +0.6**
baz=225
R11A Troy Canyon, C 89.88 44 P **P** **02 33 35.1 +1.5**
baz=230
X16A Lo Mia Camp, P 90.00 49 *e*P **P** **02 33 36.0 +1.7**
comp=Z,19nm,1.2s
BMN Battle Mountai 90.28 42 *e*P **P** **02 33 36.2 +0.8**
BMN pmax pmax
comp=Z,13nm,1.4s
BMN Battle Mountai 90.28 42 *e*P **P** **02 33 36.2 +0.8**
comp=Z,13nm,1.4s
TIA Tai'an 90.33 313⇓ **P** **02 33 36.0 +0.4**
TIA pmax pmax
comp=Z,10.0nm,0.8s
LCMT Little Creek M 90.46 46 *e*P **P** **02 33 38.5 +2.1**
comp=Z,5.6nm,1.1s
CN2 Changchun 90.51 323 *e*P **P** **02 33 35.6 -0.6**
CN2 pmax pmax
comp=Z,10.0nm,1.0s
WUAZ Wupatki 90.71 48 *e*P **P** **02 33 38.8 +1.3**
comp=Z,14nm,1.0s
CCUT Cedar City 90.72 46 *e*P **P** **02 33 39.1 +1.4**
comp=Z,6.6nm,1.2s
121A Cookes Peak, D 91.31 53 P **P** **02 33 41.3 +0.9**
KLR Kul'dur 91.41 330 LR LR 03 09 41.3
comp=Z,221nm,20.9s,slow=32
KLR Kul'dur 91.41 330 *e*P **P** **02 33 39.3 -0.9**
MTPU Mount Pierson 91.76 46 *e*P **P** **02 33 44.8 +2.2**
comp=Z,11nm,1.2s
GYA Guiyang 91.88 300 *e*P **P** **02 33 44.3 +1.1**
GYA pP pP 02 33 55.8 +1.5
GYA S **S** **02 44 39.5 -2.8**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.9s
ENH Enshi 91.95 304 *e*P **P** **02 33 43.7 +0.5**
comp=Z,6.5nm,0.3s
MSU Marysvale 92.05 46 *e*P **P** **02 33 47.3 +3.5**
MSU Marysvale 92.05 46 *e*P **P** **02 33 47.3 +3.5**
TX31 Lajitas Ar. Si 92.38 57 *e*P **P** **02 33 46.0 +0.6**
TXAR Lajitas Array 92.38 57 LR LR 03 08 47.3
comp=Z,234nm,19.1s,baz=0.0,slow=31
MNTX Cornudas Mount 92.49 54 *e*P **P** **02 33 45.5 -0.2**
comp=Z,3.4nm,0.9s
BMO Blue Mountains 93.16 38 *e*P **P** **02 33 48.3 -0.2**
comp=Z,1.8nm,0.9s
BJI Beijing 93.29 315 P **P** **02 33 50.3 +1.2**
BJI pmax pmax
comp=Z,9.0nm,0.7s
ANMO Albuquerque 93.61 51 P **P** **02 33 51.7 +0.6**
baz=235
ANMO Albuquerque 93.61 51 *i* P **P** **02 33 47.7 -3.3**
ANMO pmax pmax
comp=Z,1.0nm,1.0s
ANMO Albuquerque 93.61 51 *e*P **P** **02 33 51.3 +0.3**
comp=Z,0.8nm,0.7s
MA2 Magadan 93.64 345 LR LR 03 11 15.3
comp=Z,430nm,21.4s,baz=162,slow=32
CMAR Chiang Mai Arr 93.70 289 P **P** **02 33 52.4 +0.9**
comp=Z,0.7nm,0.3s,baz=126,slow=2.3,SNR=3.4
HLID Hailey 93.91 41 *e*P **P** **02 33 52.9 +0.7**
comp=Z,3.2nm,0.8s
KMI Kunming 94.14 297 P **P** **02 33 55.1 +1.4**
KMI pmax pmax
comp=Z,12nm,0.5s
TTA Tatalina 94.93 10 *e*P **P** **02 33 54.1 -2.1**
TTA pmax pmax
comp=Z,8.0nm,0.4s
TTA Tatalina 94.93 10 *e*P **P** **02 33 54.1 -2.1**
comp=Z,7.6nm,0.4s
NEW Newport 95.50 36 LR LR 03 06 24.9
comp=Z,53nm,21.4s,baz=163,slow=29
CAST Castle Rocks 96.01 11 *e*P P 02 33 51.8 -9.2
comp=Z,13nm,1.0s
PDAR Pinedale Array 96.22 43 P **P** **02 34 02.1 -0.7**
comp=Z,0.2nm,0.5s,baz=205,slow=4.0,SNR=2.0
PDAR LR LR 03 11 42.6
comp=Z,235nm,19.6s,baz=252,slow=32
SEY Seymchan 96.33 347 P **P** **02 34 02.1 -0.4**
comp=Z,1.9nm,0.6s,baz=41,slow=9.3,SNR=5.5
CD2 Chengdu 96.43 302 *e*P **P** **02 34 03.6 -0.2**
CD2 pP pP 02 34 14.6 -0.4
CD2 sP sP 02 34 18.8 -0.2
CD2 SKS **SKSac** **02 44 37.3 -0.7**
CD2 S **S** **02 45 21.3 -0.5**
CD2 sS sS 02 45 40.1 -0.3
CD2 SS **SS** **02 51 56.3 +0.1**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.4s
HHC Hu-ho-hao-te 96.60 314 *e*P **P** **02 34 05.8 +1.4**
HHC pmax pmax
comp=Z,17nm,1.0s
HHC pmax pmax
comp=Z,280nm,7.7s
LPAZ La Paz 97.83 114 LR LR 03 09 56.2
comp=Z,160nm,21.6s,baz=176,slow=30
COLA College 98.09 12 *e*P Pdif 02 34 10.3 -0.1
COLA pmax pmax
comp=Z,1.0nm,0.8s
ILAR Eielson Array 98.18 13 P **P** **02 34 09.8 -1.0**
comp=Z,0.2nm,0.7s,baz=216,slow=4.5,SNR=3.6
LZH Lanzhou 99.07 307 *e*P **Pdif** **02 34 19.5 +3.7**
LZH pP sP 02 34 29.6 -1.3
LZH sP pP 02 34 33.4 +6.5
LZH pmax pmax
comp=Z,18nm,1.0s
BILL Bilibino 99.17 354 *e*P **Pdif** **02 34 16.0 +0.8**
BILL *e* 02 38 17.7
BILL pmax pmax
comp=Z,2.0nm,0.9s
BILL MLR MLR
comp=Z,418nm,20.0s
CPUP Villa Florida 99.63 128 LR LR 03 11 29.1
comp=Z,186nm,21.7s,baz=250,slow=31
WMQ Urumqi 113.58 308 *e*PKP **PKiKP** **02 39 11.6 -1.0**
WMQ SKS **SKSdf** **02 46 20.5 -1.5**
WMQ SKKS **SKKSac** **02 46 55.8 -8.2**
WMQ AMB AMB
comp=Z,91nm,6.5s
WMQ LR LR
comp=Z,170nm,20.0s
WMQ LR LR
comp=Z,210nm,24.2s
WMQ LR LR
comp=Z,310nm,26.6s
BOSA Boshof 117.06 203 PKP **PKPdf** **02 39 20.0 0.0**
comp=Z,1.0nm,0.6s,baz=176,slow=2.9,SNR=4.2
BOSA Boshof 117.06 203 PKiKP **PKPdf** **02 39 20.0 0.0**
MK31 Makanchi Array 118.13 310 *e*PKiKP **PKPdf** **02 39 20.3 -0.9**
MK31 Makanchi Array 118.13 310 *e*PKPdf **PKPdf** **02 39 20.3 -0.9**
MKAR Makanchi Array 118.13 310 PKP **PKPdf** **02 39 20.1 -1.1**
comp=Z,1.4nm,0.6s,baz=143,slow=1.4,SNR=13
MKAR Makanchi Array 118.13 310 *e*PKiKP **PKPdf** **02 39 20.3 -0.9**
MKAR Makanchi Array 118.13 310 *e*PKPdf **PKPdf** **02 39 20.3 -0.9**
MAKZ Makanchi 118.34 310 *e*PKiKP **PKPdf** **02 39 20.6 -1.0**
MAKZ Makanchi 118.34 310 *e*PKPdf **PKPdf** **02 39 20.6 -1.0**
ZALV Zalesovo Beam 118.40 318 PKP **PKPdf** **02 39 20.2 -1.2**
comp=Z,0.7nm,0.4s,baz=144,slow=3.2,SNR=3.4
KSH Kashi 120.58 300 *e*PKP **PKPdf** **02 39 26.4 +0.1**
KSH *es*PKP 02 39 40.8
KSH *e*PP **PP** **02 40 56.6 +2.3**
KSH PKS **PKSdf** **02 43 01.8 -1.2**
KSH SKS **SKSdf** **02 46 33.1 -2.6**
KSH SKKS **SKKSac** **02 47 43.9 -7.0**
KSH AMB AMB
comp=Z,63nm,4.2s
KSH LR LR
comp=Z,110nm,10.1s
AAK Ala-Archa 122.46 304 *i* PKiKP **PKPdf** **02 39 28.7 -1.1**
AAK Ala-Archa 122.46 304 *e*PKPdf **PKPdf** **02 39 29.6 -0.2**
KBL Kabul 124.53 293 *e*PKiKP **PKPdf** **02 39 34.5 +0.4**
KBL Kabul 124.53 293 *e*PKPdf **PKPdf** **02 39 34.5 +0.4**
KKAR Karatay Array 125.42 303 *e*PKiKP **PKPdf** **02 39 35.0 -0.3**
KKAR Karatay Array 125.42 303 *e*PKPdf **PKPdf** **02 39 35.0 -0.3**
VOSK Vostochnaya 126.39 315 *e*PKiKP **PKPdf** **02 39 36.2 -0.6**
VOSK Vostochnaya 126.39 315 *e*PKPdf **PKPdf** **02 39 36.2 -0.6**
BRVK Borovoye 126.84 316 *i* PKiKP **PKPdf** **02 39 37.2 -0.4**
BRVK pmax pmax
comp=Z,30nm,1.2s
BRVK Borovoye 126.84 316 *e*PKPdf **PKPdf** **02 39 37.4 -0.2**
ZRNK Zerenda 127.60 315 *e*PKiKP **PKPdf** **02 39 38.2 -0.9**
ZRNK Zerenda 127.60 315 *e*PKPdf **PKPdf** **02 39 38.2 -0.9**
LSZ Lusaka 127.91 212 *e*PKiKP **PKPdf** **02 39 42.2 +1.1**
LSZ Lusaka 127.91 212 *e*PKPdf **PKPdf** **02 39 42.2 +1.1**
ABKAR Akbulak array 133.27 310 *e*PKPdf **PKPdf** **02 39 50.2 +0.2**
ARU Arti 133.46 320 *i* PKiKP **PKPdf** **02 39 49.1 -1.0**
ARU 02 42 17.0
ARU SS SS 02 59 56.3 -4.9
ARU MLR MLR
comp=Z,273nm,24.0s
ARU Arti 133.46 320 *e*PKPdf **PKPdf** **02 39 50.6 +0.5**
GEYT Alibeck 133.88 295 PKP **PKPdf** **02 39 52.6 +1.1**
comp=Z,3.1nm,0.5s,baz=216,slow=1.2,SNR=6.9
GEYT SKPbc **SKPab** **02 43 20.1 -0.5**
comp=Z,2.6nm,0.8s,baz=256,slow=3.8,SNR=5.2
ARCES ARCESS Array B 138.94 348 PKhKP PKPpre 02 39 51.6
comp=Z,1.5nm,0.6s,baz=72,slow=2.9,SNR=7.4
ARCES PKP **PKPdf** **02 39 59.0 -0.9**
comp=Z,1.9nm,0.4s,baz=35,slow=3.3,SNR=12
KLMR Klimovskoe 141.13 332 *e*PKiKP **PKPdf** **02 40 05.0 +0.9**
KLMR pmax pmax
comp=Z,8.0nm,0.8s
TBLG Delisi 144.32 300 P PKPbc 02 40 09.0 +0.1
TBLG Delisi 144.32 300 PKiKP PKPbc 02 40 08.9 0.0
GNI Garni 144.40 297 *i* PKiKP **PKPab** **02 40 08.7 -0.3**
GNI Garni 144.40 297 *e*PKPdf PKPbc 02 40 09.4 +0.1
VRH Novokhopyorsk 144.41 317 *e*PKiKP **PKPab** **02 40 07.6 -0.9**
VRH pmax pmax
comp=Z,10.0nm,0.5s
MOS Moscow 144.71 325 *e*PKiKP **PKPab** **02 40 08.5 -0.9**
MOS pmax pmax
comp=Z,48nm,1.0s
MOS MLR MLR
comp=Z,800nm,22.0s
ZEI Tsey 144.84 302 *i* PKiKP **PKPab** **02 40 09.2 -1.5**
ZEI pmax pmax
comp=Z,36nm,0.6s
NCK Nalchik 144.98 303 *i* PKiKP PKPbc 02 40 09.1 -1.8
GOF Gofitskoye 145.14 306⇑ *e*PKiKP **PKPdf** **02 40 11.4 -0.3**
GOF pmax pmax
comp=Z,25nm,0.6s
ONI Oni 145.19 302 P **PKPab** **02 40 11.6 -0.2**
ONI Oni 145.19 302 PKiKP **PKPab** **02 40 11.6 -0.2**
BGD Bogdanovka 145.21 299 P **PKPdf** **02 40 12.5 +0.3**
AKH Akhalkalaki 145.28 299⇑ *i* P **PKPdf** **02 40 12.4 +0.1**
AKH Akhalkalaki 145.28 299 P **PKPdf** **02 40 12.6 +0.3**
AKH Akhalkalaki 145.28 299 PKiKP **PKPdf** **02 40 12.5 +0.1**
KBZ Khabaz 145.46 304 PKPbc **PKPab** **02 40 12.2 -0.3**
comp=Z,5.4nm,0.7s,baz=138,slow=1.1,SNR=16
FINES FINESS Array B 145.51 340 PKPbc **PKPdf** **02 40 10.8 -1.0**
comp=Z,46nm,0.5s,baz=60,slow=2.9,SNR=188
OBN Obninsk 145.54 325 *e*PKP2 **PKPdf** **02 40 09.6 -2.4**
OBN *e* 02 43 31.4
OBN pmax pmax
comp=Z,46nm,1.0s
OBN Obninsk 145.54 325 *e*PKPdf **PKPdf** **02 40 11.6 -0.4**
KIV Kislovodsk 145.57 304 *e*PKP2 **PKPdf** **02 40 10.0 -2.6**
KIV *e* 02 43 33.3
KIV pmax pmax
comp=Z,9.0nm,1.0s
KIV Kislovodsk 145.57 304 *e*PKPdf **PKPdf** **02 40 11.6 -1.1**
VSR Storozhevoye 145.90 318 *e*PKiKP **PKPdf** **02 40 11.8 -1.0**
VSR pmax pmax
comp=Z,50nm,0.8s
CHVG Ch'k'valeri 146.18 302 P **PKPab** **02 40 16.9 +1.5**
KBSD Kabsdagh 147.74 292 *e*P **PKPbc** **02 40 19.2 -0.1**
SFNV Sufian 148.08 291 *e*P **PKPbc** **02 40 20.5 +0.2**
KSRV Kasrt alli 148.97 289 *e*P **PKPbc** **02 40 23.3 +0.8**
NB2 NORSAR Subarra 149.09 352 PKP **PKPbc** **02 40 21.2 -0.8**
comp=Z,71nm,2.0s,baz=17,slow=2.6
NB2 NORSAR Subarra 149.09 352 PKP **PKPbc** **02 40 21.2 -0.8**
baz=17,slow=2.6
NOA NORSAR Array B 149.09 352 PKPbc **PKPbc** **02 40 20.9 -1.1**

comp=Z,3.4nm,0.6s,baz=15,slow=4.3,SNR=28

SLMH	**Al Salmeh**	**149.84 290**	*e*P	**PKPbc**	**02 40 24.7**	**+0.1**
MICGM	**Minsk**	**149.96 330**	*e*	**PKPbc**	**02 40 24.0**	**-0.3**
MNK	**Minsk**	**149.96 330**	*e*PKP2	**PKPbc**	**02 40 24.0**	**-0.3**
NACGM	**Naroch**	**150.15 331**	*e*	**PKPbc**	**02 40 24.0**	**-0.7**
ROOS	**tl_alroos**	**150.31 286**	*e*P	**PKPbc**	**02 40 27.0**	**+1.1**
SALA	**Sala**	**150.66 283**	*e*P	**PKPbc**	**02 40 26.8**	**-0.2**
MARH	**Ras Al Marh**	**150.97 286**	*e*P	**PKPbc**	**02 40 27.2**	**-0.6**
TOTH	**TOTAH**	**150.97 284**	*e*P	**PKPbc**	**02 40 27.7**	**+0.2**
SIM	**Simferopol'**	**151.30 309**	*i* PKIKP	**PKPbc**	**02 40 28.2**	**+0.4**
SIM			pmax	pmax			

comp=Z,40nm,0.8s

TCHB	**Talchebab**	**151.30 283**	*e*P	**PKPbc**	**02 40 29.2**	**+0.9**
BRBR	**Barbar**	**151.37 284**	*e*P	**PKPbc**	**02 40 27.7**	**-0.9**
AKASG	**Malin Array Be**	**151.67 323**	PKPbc	**PKPbc**	**02 40 27.5**	**-0.9**

comp=Z,9.9nm,0.6s,baz=48,slow=3.0,SNR=41

KIEV	**Kiev**	**151.68 323**	*c i* PKIKP	**PKPbc**	**02 40 28.0**	**-0.5**
KIEV			pmax	pmax			

comp=Z,43nm,1.2s

KIEV	**Kiev**	**151.68 323**	*e*PKPbc	**PKPbc**	**02 40 27.9**	**-0.6**
SUW	**Suwalki**	**152.25 333**	*e*PKP	**PKPbc**	**02 40 28.7**	**-0.9**
SUW	**Suwalki**	**152.25 333**	*e*PKIKP	**PKPbc**	**02 40 28.7**	**-0.9**
BR131	**Keskin Array S**	**152.93 298**	*e*PKPbc	**PKPbc**	**02 40 31.3**	**-0.6**
BRTR	**Keskin Array B**	**152.93 298**	PKPbc	**PKPbc**	**02 40 30.8**	**-1.1**

comp=Z,3.2nm,0.5s,baz=142,slow=5.5,SNR=28

SORM	**Soroca**	**153.55 319**	⇓*i*P	**PKPbc**	**02 40 31.7**	**-1.0**
SORM	**Soroca**	**153.55 319**	⇓PKIKP	**PKPbc**	**02 40 31.7**	**-1.0**
BR231	**Keskin MP Arra**	**153.56 299**	*e*PKPbc	**PKPbc**	**02 40 32.0**	**-1.2**
CSS	**Mathiatis**	**153.59 288**	*e*PKPdf	**PKPdf**	**02 40 26.9**	**+1.3**
CSS			*e*PKPbc	**PKPbc**	**02 40 33.0**	**-0.3**
MUD	**Monsted U'grnd**	**153.81 351**	*i* P	**PKPab**	**02 40 40.3**	**-5.7**
MUD	**Monsted U'grnd**	**153.81 351**	*e*PKIKP	**PKPab**	**02 40 40.3**	**-5.7**
KIS	**Kishinev**	**153.85 316**	*e*PKP	**PKPbc**	**02 40 32.0**	**-1.4**
KIS			*e*L	L	03 46 20.0		
KIS			LRM	MLR	03 54 40.0		

comp=Z,300nm,20.0s

KIS	**Kishinev**	**153.85 316**	*e*PKIKP	**PKPbc**	**02 40 32.0**	**-1.4**
LVV	**L'vov**	**154.84 326**	*i* PKIKP	**PKPbc**	**02 40 39.5**	**+4.1**
CFR	**Carcaliu**	**155.12 313**	⇓*i*P	PKPdf	02 40 36.8	+10
CFR	**Carcaliu**	**155.12 313**	⇓PKIKP	PKPdf	02 40 36.8	+10
TLB	**Topalu**	**155.44 312**	⇑*i*P	PKPdf	02 40 37.1	+9.4
TLB	**Topalu**	**155.44 312**	⇑PKIKP	PKPdf	02 40 37.1	+9.4
BURAR	**Bucovina Array**	**155.60 320**	⇓*i*P	PKPab	02 40 43.3	-11
BURAR	**Bucovina Array**	**155.60 320**	⇓PKIKP	PKPab	02 40 43.3	-11
KWP	**Kalwaria Pacla**	**155.61 327**	*e*PKP	PKPab	02 40 44.9	-9.1
KWP	**Kalwaria Pacla**	**155.61 327**	*e*PKIKP	PKPab	02 40 44.9	-9.1
PLOR	**Plostina**	**155.72 315**	⇑*i*P	**PKPab**	**02 40 55.5**	**+0.8**
PLOR	**Plostina**	**155.72 315**	⇑PKP2	**PKPab**	**02 40 55.5**	**+0.8**
DOPR	**Dopca**	**156.42 317**	⇑*i*P	PKPab	02 40 45.5	-12
UZH	**Uzhgorod**	**156.49 325**	*e*PKIKP	PKPdf	02 40 16.6	-12
UZH			*e*		02 40 23.0		
UZH			*e*		02 40 30.0		
NIE	**Niedzica**	**156.86 329**	*e*PKP	**PKPab**	**02 40 59.8**	**+0.4**
NIE	**Niedzica**	**156.86 329**	*e*PKP2	**PKPab**	**02 40 59.8**	**+0.4**
ARR	**Arges**	**157.19 316**	⇑*i*P	PKPdf	02 40 38.5	+8.4
KSP	**Ksiaz**	**157.32 336**	*e*PKP	**PKPab**	**02 41 01.2**	**0.0**
KSP	**Ksiaz**	**157.32 336**	*e*PKP2	**PKPab**	**02 41 01.3**	**0.0**
OKC	**Ostrava-Krasne**	**157.45 332**	AMS	AMS	03 55 00.0		

comp=Z,300nm,20.9s

UPC	**Upice**	**157.70 336**	AMS	AMS	03 53 40.0		

comp=Z,300nm,20.5s

DPC	**Dobruska-Polom**	**157.72 336**	*e*PKPDF	**PKPdf**	**02 40 35.7**	**+5.1**
DPC			*ex*	x	02 40 46.5		
DPC			*ex*	x	02 40 50.5		
DPC			*e*PKPAB	**PKPab**	**02 41 02.1**	**-1.0**
DPC			*ep*PKP	**pPKPab**	**02 41 09.5**	**-4.8**
DPC			AMS	AMS	03 54 00.0		

comp=Z,200nm,22.7s

DPC	**Dobruska-Polom**	**157.72 336**	*e*PKIKP	**PKPdf**	**02 40 35.7**	**+5.1**
DPC			*e*		02 40 46.5		
DPC			*e*		02 41 02.1		
DPC			MLR	MLR			

comp=Z,200nm,22.7s

CLL	**Collm**	**157.92 342**	*e*PKPdiff	PKPab	02 40 53.0	-11
CLL			*i*		02 40 57.5		
CLL			*i* PKPab	**PKPab**	**02 41 02.6**	**-1.2**

comp=Z,30nm,1.6s

CLL			*e*		02 41 09.0		
CLL			*i*		02 41 16.4		
CLL			*e*SS	SS	03 04 42.0	+3.5
CLL			*e*PSPS		03 06 30.0		
CLL			*e*SSS	SSS	03 10 48.0		
CLL			LmV		04 04 00.0		

comp=Z,200nm,19.6s

CLL	**Collm**	**157.92 342**	*i* PKP2	**PKPab**	**02 41 02.6**	**-1.2**
CLL			pmax	pmax			

comp=Z,30nm,1.6s

BRG	**Berggiesshubel**	**158.05 340**	*e*PKP	**PKPab**	**02 41 03.6**	**-0.8**

comp=Z,23nm,1.6s

BRG	**Berggiesshubel**	**158.05 340**	*e*PKP2	**PKPab**	**02 41 03.6**	**-0.8**
BRG			pmax	pmax			

comp=Z,23nm,1.5s

PSZ	**Piszkesteto**	**158.13 327**	⇓*i*P	**PKPab**	**02 41 04.5**	**-0.5**
PSZ	**Piszkesteto**	**158.13 327**	⇓PKP2	**PKPab**	**02 41 04.5**	**-0.5**
PVCC	**Panska Ves**	**158.16 339**	*e*PKPAB	**PKPab**	**02 41 05.0**	**+0.1**
PVCC			*ex*	x	02 41 19.4		
PVCC	**Panska Ves**	**158.16 339**	*e*PKP2	**PKPab**	**02 41 05.0**	**+0.1**
VRAC	**Vranov**	**158.48 334**	⇑*i*P	**PKPab**	**02 41 05.9**	**-0.5**
VRAC	**Vranov**	**158.48 334**	⇑PKP2	**PKPab**	**02 41 05.9**	**-0.5**
PRU	**Pruhonice**	**158.63 338**	*e*PKPAB	**PKPab**	**02 41 06.9**	**-0.1**
PRU			AMS	AMS	03 48 00.0		

comp=Z,200nm,22.4s

PRU	**Pruhonice**	**158.63 338**	*e*PKP2	**PKPab**	**02 41 06.9**	**-0.1**
PRU			MLR	MLR			

comp=Z,200nm,22.4s

NKC	**Novy Kostel**	**159.05 341**	*e*PKPAB	**PKPab**	**02 41 08.2**	**-0.6**
NKC	**Novy Kostel**	**159.05 341**	*e*PKP2	**PKPab**	**02 41 08.2**	**-0.6**
VTS	**Vitosha**	**159.48 311**	⇓*i*P	**PKPab**	**02 41 11.9**	**+0.7**
VTS	**Vitosha**	**159.48 311**	*e*PKP2	**PKPab**	**02 41 11.1**	**-0.1**
VTS	**Vitosha**	**159.48 311**	*e*PKPab	**PKPab**	**02 41 11.1**	**-0.1**
KHC	**Kasperske Hory**	**159.69 338**	⇑*e*PKP	PKPdf	02 40 49.9	+17
KHC			*e*PKPAB	**PKPab**	**02 41 10.9**	**-0.8**
KHC			*ep*PKP	pPKPab	02 41 21.2	-1.6
KHC	**Kasperske Hory**	**159.69 338**	*e*PKP2	**PKPab**	**02 41 10.0**	**-1.7**
KHC	**Kasperske Hory**	**159.69 338**	*e*PKPab	**PKPab**	**02 41 09.9**	**-1.7**
CONA	**Conrad Observa**	**159.89 333**	*e*PKPab	**PKPab**	**02 41 11.3**	**-1.3**

comp=Z,13nm,1.7s

GERES	**GERESS Array B**	**159.90 338**	PKPab	**PKPab**	**02 41 10.4**	**-2.3**

comp=Z,1.6nm,0.7s,baz=5.7,slow=4.0,SNR=9.0

MOA	**Molln**	**160.56 335**	*e*PKPab	**PKPab**	**02 41 13.6**	**-1.9**

comp=Z,9.3nm,1.7s

SOKA	**Soboth**	**161.23 332**	*e*PKPab	**PKPab**	**02 41 16.6**	**-1.9**

comp=Z,8.9nm,1.4s

WTTA	**Wattenberg**	**161.95 339**	*i* PKPab	**PKPab**	**02 41 21.9**	**+0.1**

comp=Z,8.0nm,0.7s

RETA	**Reutte**	**162.01 341**	*i* PKPab	**PKPab**	**02 41 22.0**	**+0.1**

comp=Z,14nm,1.4s

MOTA	**Moosalm**	**162.04 340**	*e*PKPab	**PKPab**	**02 41 21.2**	**-0.9**

comp=Z,9.9nm,1.0s

TORD	**Torodi Ar. Bea**	**162.51 178**	PKP	**PKPdf**	**02 40 36.1**	**-0.8**

comp=Z,0.6nm,1.0s,baz=172,slow=1.7,SNR=3.3

TORD			PKPab	**PKPab**	**02 41 24.2**	**-0.4**

comp=Z,2.5nm,0.8s,baz=208,slow=2.8,SNR=6.7

MEX 19 02:25:31.6±0.3, 17.48N×101.38W, h16km±5km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.16**	**327**	*i* P	Pg	02 25 35.0	-0.7
ZIIG				*i* S	Sg	02 25 37.9	-0.5
CAIG	**El Cayaco**	**1.14**	**112**	*i* P	Pn	02 25 49.2	-3.8
CAIG				*i* S	Sb	02 26 03.1	-4.5
ARIG	**Puente Sto Nin**	**1.27**	**51**	*e*P	Pn	02 25 51.3	-3.4
ARIG				*i* S	Sb	02 26 06.0	-5.2
MEIG	**Mezcala**	**1.73**	**75**	*i* P	Pn	02 25 57.7	-3.4
MEIG				*i* S	Sn	02 26 17.9	-5.1
YAIG	**Yautepec**	**2.59**	**58**	*i* P	Pn	02 26 10.5	-2.6
YAIG				*i* S	Sn	02 26 40.8	-3.6
TLIG	**Tlapa**	**2.68**	**88**	*i* P	Pn	02 26 11.3	-2.9
TLIG				*i* S	Sn	02 26 42.9	-3.7

*ISCJB **19** 02:41:03.9±0.7, 17.3S±0.2×179.1W±0.2, h539km, mb4.0/10, Error ellipse: s-maj=27.3km s-min=15.2km az=135.5*

*IDC **19** 02:41:03.9±4.4, 17.27S×178.97W, h530km±47km, mb3.6/10, mb1 3.8/10, mb1mx3.4/29, mbtmp4.5/10, Error ellipse: s-maj=23.7km s-min=19.7km az=111.0*

ISC 19 02:41:04.6±0.7, 17.3S±0.2×179.0W±0.2, h539km, n37, σ0966/37, mb4.1/10, 4C-5D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RPZ	**Rata Peaks**	**27.67**	**196**	P	**P**	**02 46 08.2**	**-1.1**

6.6nm,0.9s,baz=27,slow=16,SNR=4.1

STKA	**Stephens Creek**	**38.44**	**240**	P	**P**	**02 47 41.0**	**+0.6**

4.4nm,0.5s,baz=90,slow=7.5,SNR=19

WRA	**Warramunga Arr**	**44.19**	**259**	P	**P**	**02 48 25.4**	**-0.8**

2.9nm,0.3s,baz=95,slow=7.9,SNR=38

WRA				PcP	**PcP**	**02 49 59.2**	**0.0**

1.1nm,0.6s,baz=95,slow=3.3,SNR=4.9

ASAR	**Alice Springs**	**44.42**	**254**	P	**P**	**02 48 27.9**	**0.0**

34nm,0.5s,baz=77,slow=9.4,SNR=16

ASAR				PcP	**PcP**	**02 50 00.1**	**+0.1**

1.7nm,0.6s,baz=97,slow=4.3,SNR=5.7

FITZ	**Fitzroy Crossi**	**52.57**	**260**	P	**P**	**02 49 29.1**	**+0.6**

3.8nm,0.4s,baz=84,slow=5.5,SNR=22

PETK	**Petropavlovsk-**	**72.93**	**346**	P	**P**	**02 51 39.2**	**+0.3**

1.7nm,0.6s,baz=123,slow=4.0,SNR=2.5

MAW	**Mawson**	**84.26**	**200**	P	**P**	**02 52 39.7**	**+0.5**

3.3nm,0.6s,baz=126,slow=5.8,SNR=16

ILAR	**Eielson Array**	**85.40**	**13**	P	**P**	**02 52 43.6**	**-1.1**

0.6nm,0.4s,baz=224,slow=5.3,SNR=13

TXAR	**Lajitas Array**	**86.14**	**58**	P	**P**	**02 52 51.0**	**+1.8**

0.4nm,0.6s,baz=238,slow=4.4,SNR=4.4

PDAR	**Pinedale Array**	**87.29**	**44**	P	**P**	**02 52 54.6**	**+0.1**

0.6nm,0.5s,baz=220,slow=4.2,SNR=6.5

MKAR	**Makanchi Array**	**108.29**	**314**	PKiKP	**PKiKP**	**02 58 30.8**	**-0.9**

0.3nm,0.5s,baz=77,slow=1.1,SNR=4.0

ARCES	**ARCESS Array B**	**125.59**	**350**	PKP	**PKPdf**	**02 59 03.6**	**-0.5**

2.6nm,0.8s,baz=45,slow=3.6,SNR=4.6

FINES	**FINESS Array B**	**132.43**	**344**	PKP	**PKPdf**	**02 59 16.5**	**-0.8**

1.9nm,0.8s,baz=222,slow=2.6,SNR=3.5

TLCR		**143.73**	**326**	⇓*i*P	**PKPdf**	**02 59 38.0**	**-0.4**
BURAR	**Bucovina Array**	**143.79**	**332**	⇓*i*P	PKPab	02 59 38.1	+0.4
TESR	**Tescani**	**143.93**	**329**	⇓*i*P	**PKPdf**	**02 59 38.5**	**-0.3**
BRTR	**Keskin Array B**	**143.93**	**315**	PKP	PKPbc	02 59 38.5	0.0

1.6nm,0.8s,baz=97,slow=3.4,SNR=10.0

TLB	**Topalu**	**144.54**	**326**	⇑*i*P	**PKPab**	**02 59 48.0**	**+0.3**
CLL	**Collm**	**144.72**	**347**	⇓*i*P	PKPbc	02 59 40.3	0.0

comp=Z,7.0nm,0.7s

UPC	**Upice**	**144.72**	**343**	*e*P	**PKPab**	**02 59 41.1**	**+0.1**
DPC	**Dobruska-Polom**	**144.78**	**343**	*e*P	PKPpre	02 59 29.4	
DPC				*ex*	**PKPdf**	**02 59 41.0**	**+0.8**
BRG	**Berggiesshubel**	**144.92**	**346**	*e*P	**PKPab**	**02 59 41.4**	**-0.3**

comp=Z,3.5nm,0.7s

DOPR	**Dopca**	**144.93**	**330**	⇑*i*P	**PKPab**	**02 59 42.3**	**+0.3**
MORC	**Moravsky Berou**	**144.93**	**341**	⇑*i*P	**PKPab**	**02 59 41.5**	**-0.4**
MLR	**Muntele Rosu**	**145.00**	**329**	⇑*i*P	**PKPdf**	**02 59 41.1**	**+0.3**
KHC	**Kasperske Hory**	**146.62**	**345**	*e*P	**PKPbc**	**02 59 46.5**	**+0.6**
KHC				*ex*	x	02 59 49.8	
GERES	**GERESS Array B**	**146.85**	**345**	PKPbc	**PKPbc**	**02 59 46.4**	**-0.3**

comp=Z,1.8nm,0.5s,baz=19,slow=2.8,SNR=20

CONA	**Conrad Observa**	**147.09**	**341**	*i* PKiKP	**PKPbc**	**02 59 47.7**	**+0.4**

comp=Z,3.7nm,0.6s

WATA	**Walderalm**	**148.78**	**346**	*i* PKPbc	**PKPbc**	**02 59 51.2**	**-0.4**

comp=Z,2.3nm,0.5s

RETA	**Reutte**	**148.81**	**347**	*i* PKPbc	**PKPbc**	**02 59 51.5**	**-0.1**

comp=Z,2.1nm,0.5s

WTTA	**Wattenberg**	**148.83**	**346**	*i* PKPbc	**PKPbc**	**02 59 51.8**	**-0.1**

comp=Z,5.7nm,0.5s

MOTA	**Moosalm**	**148.88**	**347**	*i* PKPbc	**PKPbc**	**02 59 51.2**	**-0.7**

comp=Z,2.0nm,0.4s

MYKA	**Terra Mystica**	**148.91**	**343**	*i* PKPbc	**PKPbc**	**02 59 51.1**	**-0.8**

comp=Z,2.5nm,0.4s

ABTA	**Abfaltersbach**	**149.10**	**344**	*i* PKPbc	**PKPbc**	**02 59 52.0**	**-0.3**

comp=Z,4.7nm,0.6s

FETA	**Feichten**	**149.26**	**347**	*i* PKiKP	**PKPbc**	**02 59 53.0**	**+0.1**

comp=Z,8.2nm,1.3s

PDG	**Podgorica**	**150.47**	**332**	⇓*i*P	**PKPbc**	**02 59 55.3**	**-0.3**
TORD	**Torodi Ar. Bea**	**175.84**	**189**	PKP	**PKPdf**	**03 00 12.3**	**-1.5**

comp=Z,0.5nm,0.7s,baz=180,slow=0.6,SNR=4.7

TORD				PKPab	**PKPab**	**03 01 56.1**	**0.0**

comp=Z,0.3nm,0.7s,baz=182,slow=4.6,SNR=3.2

MAN 19 02:47:02.9±2.52N×122.16E±2.8, h12km±4.3km, mb4.3, ML3.1, MS3.0, 2C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.08**	**99**	⇓*i*P	Pb	02 47 16.9	-5.8
SNPH				*i* S	Sb	02 47 33.1	-3.7
DCPH	**Dipolog City**	**1.50**	**128**	⇑*e*P	Pn	02 47 28.8	0.0
DCPH				*i* S	Sb	02 47 48.7	-0.2
TBP	**Tagbilaran**	**1.69**	**84**	*i* P	Pg	02 47 36.0	+1.5
TBP				*i* S	Sg	02 47 57.0	+0.5
LLP	**Lapu-Lapu**	**1.95**	**66**	*e*P	Pn	02 47 34.2	-0.8
LLP				*e*S	Sb	02 48 01.1	-0.8
RCP	**Roxas**	**2.11**	**16**	⇑*e*P	Pn	02 47 38.1	+0.9
RCP				*e*S	Sn	02 48 04.6	+1.3

WEL 19 03:14:50.4±0.1, 44.41S×168.35E, h5km, ML3.6/9, 2C-2D, Error ellipse: s-maj=1.6km s-min=1.0km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSZ	**Milford Sound**	**0.40**	**229**	PG	Pg	03 14 58.6	+0.4
MSZ				SG	Sg	03 15 04.1	+0.7
MSZ				AML	AML	03 15 05.0	
JCZ	**Jackson Bay**	**0.46**	**43**	PG	Pg	03 14 59.6	+0.3
JCZ				SG	Sg	03 15 05.7	+0.4
JCZ				AML	AML	03 15 07.8	
WKZ	**Wanaka**	**0.64**	**131**	P*	Pg	03 15 03.0	+0.3
WKZ				AML	AML	03 15 12.1	
WKZ				AML	AML	03 15 12.1	
WKZ				AML	AML	03 15 12.7	
WKZ				AML	AML	03 15 12.7	
MLZ	**Mavora Lakes**	**0.97**	**190**	⇑P*	Pg	03 15 08.6	-0.5
MLZ				S*	Sg	03 15 22.2	+0.6
MLZ				AML	AML	03 15 23.6	
EAZ	**Earnscleugh**	**1.07**	**141**	⇑P*	Pg	03 15 10.9	-0.1
EAZ				AML	AML	03 15 30.0	
EAZ				AML	AML	03 15 30.0	
EAZ				AML	AML	03 15 30.2	
EAZ				AML	AML	03 15 30.2	
LBZ	**Lake Benmore**	**1.32**	**90**	⇓P*	Pg	03 15 15.8	+0.1
LBZ				AML	AML	03 15 35.0	
LBZ				AML	AML	03 15 38.2	
LBZ				AML	AML	03 15 38.2	
DCZ	**Deep Cove**	**1.35**	**218**	PN	Pn	03 15 14.6	-1.4
DCZ				S*	Sb	03 15 32.9	-1.0
DCZ				AML	AML	03 15 34.7	
FOZ	**Fox Glacier**	**1.38**	**51**	⇓PN	Pn	03 15 16.0	-0.3
FOZ				AML	AML	03 15 39.6	
FOZ				AML	AML	03 15 39.6	
FOZ				AML	AML	03 15 40.3	
FOZ				AML	AML	03 15 42.8	
WHZ	**Wether Hill Ro**	**1.51**	**191**	PN	Pn	03 15 17.8	-0.3
WHZ				AML	AML	03 15 41.9	
WHZ				AML	AML	03 15 43.2	

*ISCJB **19** 03:16:44.1±0.5, 41.61N±0.03×142.06E±0.06, h77km±5km, mb3.6/5, Error ellipse: s-maj=7.9km s-min=4.7km az=29.4*

*JMA **19** 03:16:44.6±0.1, 41.63N×142.06E, h73km±3km, M3.3*

JMA Felt I J1.

*IDC **19** 03:16:46.5±2.6, 41.68N×141.99E, h81km±19km, mb3.4/5, mb1 3.5/7, mb1mx3.3/50, mbtmp3.7/7, Error ellipse: s-maj=35.2km s-min=17.6km az=119.0*

ISC 19 03:16:45.0±1.0, 41.63N±0.04×142.05E±0.05, h69km±9km, n24, σ1903/34, mb3.6/5, 7C-2D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOT	**Ohata**	**0.79**	**252**	⇑P	**Pn**	**03 17 00.9**	**+0.1**
JOT				*e*S	**Sn**	**03 17 13.1**	**+0.5**
JKB	**Kayabe**	**0.80**	**289**	P	**Pn**	**03 17 00.7**	**-0.3**
JNBK	**Urakawa-nobuka**	**0.84**	**39**	⇑P	**Pn**	**03 17 00.7**	**-0.7**
JEM	**Erimo**	**0.91**	**65**	⇑P	**Pn**	**03 17 01.8**	**-0.5**
JTM	**Tenmabayashi**	**1.12**	**222**	⇑P	**Pn**	**03 17 05.3**	**+0.4**
JTM				*e*S	**Sn**	**03 17 20.6**	**+0.8**
JNB	**Noboribetsu**	**1.13**	**318**	⇓P	**Pn**	**03 17 04.7**	**-0.3**
JNB				*e*S	**Sn**	**03 17 19.7**	**-0.3**
JBT2	**Biratori 2**	**1.17**	**11**	⇑P	**Pn**	**03 17 05.7**	**+0.1**
JSR	**Shiriuchi**	**1.23**	**266**	P	**Pn**	**03 17 06.4**	**+0.1**
JSR				*e*S	**Sn**	**03 17 22.8**	**+0.5**
JEW	**Eniwo**	**1.29**	**340**	P	**Pn**	**03 17 07.4**	**+0.3**
JEW				*e*S	**Sn**	**03 17 24.2**	**+0.5**
JANG	**Nango**	**1.32**	**198**	P	**Pn**	**03 17 07.2**	**-0.3**
JANG				*e*S	**Sn**	**03 17 24.3**	**-0.1**
JYM2	**Yakumo 2**	**1.35**	**292**	⇓P	**Pn**	**03 17 08.3**	**+0.5**
JCH	**Churui**	**1.39**	**44**	⇑P	**Pn**	**03 17 08.2**	**-0.2**
JFR	**Furan**	**1.59**	**15**	⇑P	**Pn**	**03 17 10.9**	**-0.1**
JFR				*e*S	**Sn**	**03 17 31.2**	**+0.5**
JOSM	**Okushiri--Mats**	**1.98**	**284**	P	**Pn**	**03 17 16.1**	**-0.1**
JOSM				*e*S	**Sn**	**03 17 39.8**	**-0.2**
JAR	**Ashorobuto**	**2.10**	**37**	P	**Pn**	**03 17 17.1**	**-0.8**
JHR	**Hokuryu**	**2.13**	**354**	P	**Pn**	**03 17 19.4**	**+1.1**
JHR				*e*S	**Sn**	**03 17 45.3**	**+1.6**
ASAJ	**Asahikawa**	**2.52**	**9**	P	**Pn**	**03 17 24.3**	**+0.7**
ASAJ				S	**Sn**	**03 17 54.9**	**+1.7**
MJAR	**Matsushiro Arr**	**5.89**	**212**	P	**Pn**	**03 18 11.6**	**+2.0**

0.7nm,0.3s,baz=20,slow=15,SNR=4.0

USRK	**Ussuriysk Ar.**	**7.82**	**293**	P	**Pn**	**03 18 31.9**	**-4.0**

0.2nm,0.3s,baz=94,slow=15,SNR=3.2

SONM	**Songino Array**	**25.91**	**296**	P	**P**	**03 22 10.6**	**+0.1**

0.8nm,0.4s,baz=79,slow=7.7,SNR=4.4

ZALV	**Zalesovo Beam**	**39.32**	**308**	P	**P**	**03 24 06.8**	**-0.2**

1.0nm,0.5s,baz=77,slow=7.8,SNR=4.5

MKAR	**Makanchi Array**	**42.24**	**298**	P	**P**	**03 24 30.7**	**-0.5**

0.3nm,0.7s,baz=78,slow=7.5,SNR=3.5

ILAR	**Eielson Array**	**45.40**	**35**	P	**P**	**03 24 56.4**	**+0.2**

0.3nm,0.5s,baz=260,slow=6.1,SNR=8.5

FINES	**FINESS Array B**	**65.00**	**332**	P	**P**	**03 27 16.7**	**-0.5**

3.0nm,1.1s,baz=39,slow=9.0,SNR=3.3

*IDC **19** 03:18:35.8±0.5, 1.18S×137.80E, h0km, mb4.6/21, mb1 4.7/21, mb1mx4.7/33, mbtmp4.6/21, ML5.4/1, MS4.0/20, Ms1 4.0/20, ms1mx3.8/35, Error ellipse: s-maj=19.5km s-min=10.5km az=83.0*

*BJI **19** 03:18:36.6, 1.74S×137.90E, h37km, mb4.7/44, mB5.1/29, Ms4.9/17, Ms7 4.5/16*

*ISCJB **19** 03:18:37.9±0.2, 1.27S±0.02×137.79E±0.03, h24km, mb4.9/107, MS4.0/18, Error ellipse: s-maj=4.1km s-min=3.4km az=173.3*

*DJA **19** 03:18:38.2±0.3, 1.5S±5

TGY	**Tagaytay City**	**22.66**	**313**	LR	LR	03 31 02.8			
	comp=Z,231nm,21.7s,baz=152,slow=33								
KKM	**Kota Kinabalu**	**22.75**	**289**	*eP*	**P**	**03 23 40.0**	**-0.4**		
	comp=Z,73nm,1.2s								
MTKI	**Muara Teweh, K**	**22.90**	**271**	P	**P**	**03 23 43.1**	**+1.2**		
	comp=Z,111nm,0.8s,comp=Z,7µm								
BBKI	**Banjar Baru**	**23.03**	**264**	P	**P**	**03 23 44.8**	**+1.6**		
	comp=Z,119nm,1.2s,comp=Z,5µm								
HNR	**Honiara**	**23.47**	**111**	LR	LR	03 34 19.9			
	comp=Z,156nm,18.2s,baz=317,slow=40								
BLJI	**Banyuglugur**	**24.95**	**254**	P	**P**	**03 24 01.9**	**+0.6**		
	comp=Z,58nm,1.1s,comp=Z,3µm								
GMJI	**Gumukmas**	**25.22**	**253**	P	**P**	**03 24 03.6**	**-0.2**		
	comp=Z,53nm,1.1s								
WRKA	**Warakurna**	**25.31**	**200**	P	**P**	**03 24 05.0**	**+0.4**		
	baz=25,SNR=30								
SBUM	**Sibu**	**25.84**	**278**	*eP*	**P**	**03 24 10.7**	**+1.3**		
	comp=Z,25nm,1.2s								
QLP	**Quilpie**	**25.88**	**167**	P	**P**	**03 24 10.9**	**+1.2**		
	baz=26,SNR=20								
STKI	**Sintang**	**26.35**	**273**	P	**P**	**03 24 18.8**	**+4.7**		
MBWA	**Marble Bar**	**26.45**	**221**	*eP*	**P**	**03 24 15.3**	**+0.4**		
	comp=Z,22nm,0.7s								
PWJI	**Pagerwojo**	**26.73**	**255**	P	**P**	**03 24 15.4**	**-2.1**		
EIDS	**Eidsvold**	**27.14**	**153**	P	**P**	**03 24 22.2**	**+1.1**		
	baz=27,SNR=16								
EIDS	**Eidsvold**	**27.14**	**153**	*eP*	**P**	**03 24 22.3**	**+1.3**		
	comp=Z,108nm,0.9s								
KSM	**Kuching**	**27.62**	**276**	*eP*	**P**	**03 24 24.2**	**-1.3**		
	comp=Z,2.7nm,0.2s								
STKA	**Stephens Creek**	**30.62**	**174**	P	**P**	**03 24 52.1**	**+0.2**		
	comp=Z,27nm,0.8s,baz=346,slow=8.8,SNR=37								
STKA				LR	LR	03 38 28.3			
	comp=Z,593nm,19.9s,baz=350,slow=39								
STKA	**Stephens Creek**	**30.62**	**174**	P	**P**	**03 24 52.1**	**+0.2**		
	baz=31,SNR=26								
STKA	**Stephens Creek**	**30.62**	**174**	*eP*	**P**	**03 24 52.1**	**+0.2**		
	comp=Z,8.5nm,0.8s								
FORT	**Forrest**	**30.73**	**197**	P	**P**	**03 24 54.1**	**+1.1**		
	baz=31,SNR=17								
FORT	**Forrest**	**30.73**	**197**	*eP*	**P**	**03 24 53.8**	**+0.8**		
	comp=Z,434nm,0.7s								
CMSA	**Cobar Meteorol**	**30.98**	**167**	P	**P**	**03 24 56.4**	**+1.3**		
	baz=31,SNR=12								
MEEK	**Meekatharra**	**31.21**	**215**	P	**P**	**03 24 57.5**	**+0.2**		
	baz=31,SNR=12								
BBOO	**Buckleboo**	**31.38**	**183**	P	**P**	**03 24 59.2**	**+0.6**		
	baz=32,SNR=8.5								
BBOO	**Buckleboo**	**31.38**	**183**	*eP*	**P**	**03 24 59.0**	**+0.3**		
	comp=Z,80nm,1.6s								
HTT	**Hallett**	**31.98**	**178**	P	**P**	**03 25 04.8**	**+0.9**		
	baz=32								
KMBL	**Kambalda**	**33.47**	**205**	P	**P**	**03 25 17.9**	**+0.8**		
	baz=34,SNR=8.1								
QIZ	**Qiongzhong**	**34.09**	**308**	P	**P**	**03 25 21.4**	**-1.2**		
QIZ				S	**S**	**03 30 48.5**	**+1.2**		
YNG	**Young**	**34.29**	**164**	P	**P**	**03 25 25.8**	**+1.8**		
	baz=34,SNR=6.3								
LHSI	**Lahat**	**34.33**	**265**	P	**P**	**03 25 25.6**	**+0.9**		
	comp=Z,81nm,1.1s,comp=Z,5µm								
MORW	**Morawa**	**34.53**	**215**	P	**P**	**03 25 27.1**	**+0.9**		
	baz=35,SNR=9.1								
JNU	**Nakatsue**	**34.86**	**350**	P	**P**	**03 25 27.7**	**-1.3**		
	comp=Z,14nm,0.8s,baz=166,slow=8.7,SNR=6.7								
KSI	**Kapahiang**	**35.24**	**266**	P	**P**	**03 25 33.8**	**+1.1**		
BLDU	**Balidu**	**35.35**	**212**	P	**P**	**03 25 33.9**	**+0.6**		
	baz=36,SNR=7.2								
H11N1	**WAKE ISLAND Hy**	**35.37**	**52**	T	T	04 03 20.3			
	baz=229,slow=75,SNR=8.1								
H11N2	**WAKE ISLAND Hy**	**35.38**	**52**	T	T	04 03 21.6			
	baz=229,slow=75,SNR=6.3								
H11N3	**WAKE ISLAND Hy**	**35.39**	**52**	T	T	04 03 17.5			
	baz=229,slow=75,SNR=5.3								
CAN	**Canberra**	**35.41**	**164**	*eP*	P	03 25 40.1	+6.3		
CAN				pmax	pmax				
	comp=Z,195nm,1.9s								
CAN	**Canberra**	**35.41**	**164**	*eP*	P	03 25 40.1	+6.2		
	comp=Z,195nm,1.9s								
ARPS	**Mount Arapiles**	**35.49**	**174**	P	**P**	**03 25 35.4**	**+1.1**		
	baz=36,SNR=13								
KLBR	**Kellerberrin**	**35.58**	**210**	P	**P**	**03 25 36.0**	**+0.8**		
	baz=36,SNR=16								
MUN	**Mundaring**	**36.68**	**212**	P	**P**	**03 25 45.7**	**+1.0**		
	baz=37								
TOO	**Toolangi**	**36.78**	**170**	P	**P**	**03 25 47.5**	**+2.1**		
	baz=37,SNR=4.4								
NWAO	**Narrogin (SRO)**	**36.92**	**209**	P	**P**	**03 25 47.6**	**+0.9**		
	comp=Z,35nm,1.0s,baz=271,slow=8.3,SNR=14								
NWAO	**Narrogin (SRO)**	**36.92**	**209**	P	**P**	**03 25 47.8**	**+1.1**		
	baz=37,SNR=6.0								
NWAO				P	**P**	**03 25 47.8**	**+1.1**		
	baz=37,SNR=6.0								
NWAO	**Narrogin (SRO)**	**36.92**	**209**	*eP*	**P**	**03 25 47.3**	**+0.6**		
NWAO				pmax	pmax				
	comp=Z,30nm,0.8s								
NWAO	**Narrogin (SRO)**	**36.92**	**209**	*eP*	**P**	**03 25 47.3**	**+0.6**		
	comp=Z,30nm,0.8s								
PDSI	**Padang**	**37.33**	**270**	P	**P**	**03 25 48.4**	**-2.1**		
	comp=Z,28nm,1.2s								
MJAR	**Matsushiro Arr**	**37.66**	**1**	P	**P**	**03 25 50.9**	**-1.9**		
	comp=Z,1.4nm,0.6s,baz=176,slow=9.2,SNR=4.6								
MJAR				LR	LR	03 39 21.6			
	comp=Z,181nm,20.0s,baz=180,slow=33								
MAJO	**Matsushiro**	**37.66**	**1**⇑	*eP*	**P**	**03 25 54.3**	**+1.4**		
MAJO				pmax	pmax				
	comp=Z,214nm,2.3s								
SKNT	**Sakolnakorn**	**37.97**	**300**	P	**P**	**03 25 55.2**	**-0.6**		
	comp=Z,25nm,1.2s,comp=Z,5µm								
MNSI	**Mandailing Nat**	**38.27**	**273**	P	**P**	**03 25 58.5**	**+0.1**		
WHN	**Wuhan**	**38.75**	**327**	P	**P**	**03 26 05.6**	**+3.4**		
PSI	**Prapat**	**39.07**	**276**	P	**P**	**03 26 04.2**	**-1.1**		
	comp=Z,40nm,0.9s,baz=124,slow=3.5,SNR=20								
PSI	**Prapat**	**39.07**	**276**	*eP*	**P**	**03 26 04.8**	**-0.5**		
NONG	**Nongkai**	**39.16**	**301**	P	**P**	**03 26 05.7**	**0.0**		
	comp=Z,16nm,0.8s,comp=Z,7µm								
KSAR	**Wonju Array Be**	**39.63**	**348**	P	**P**	**03 26 07.8**	**-1.6**		
KSAR	**Wonju Array Be**	**39.63**	**348**	P	**P**	**03 26 07.8**	**-1.6**		
KSRS	**Korea Array**	**39.63**	**348**	P	**P**	**03 26 07.8**	**-1.6**		
	comp=Z,1.2nm,0.5s,baz=159,slow=7.2,SNR=3.9								
KSRS				LR	LR	03 41 54.6			
	comp=Z,114nm,18.6s,baz=157,slow=35								
GSI	**Gunungsitoli**	**40.30**	**274**	P	**P**	**03 26 14.6**	**-0.8**		
	comp=Z,75nm,1.2s								
GSI	**Gunungsitoli**	**40.30**	**274**	*eP*	**P**	**03 26 13.8**	**-1.6**		
	comp=Z,103nm,1.3s								
LOEI	**Loei**	**40.55**	**299**	P	**P**	**03 26 13.7**	**-3.7**		
	comp=Z,21nm,0.9s								
GYA	**Guiyang**	**40.79**	**315**	*eP*	**P**	**03 26 19.8**	**+0.4**		
GYA				pmax	pmax				
	comp=Z,10.0nm,0.9s								
UTTA	**Uttaradit**	**41.27**	**299**	P	**P**	**03 26 23.7**	**+0.4**		
	comp=Z,4.6nm,0.9s,comp=Z,122nm								
MLSI	**Meulaboh, Aceh**	**41.73**	**278**	P	**P**	**03 26 27.7**	**+0.6**		
	comp=Z,84nm,1.0s								
LAMP	**Lampang**	**42.38**	**300**	P	**P**	**03 26 32.7**	**+0.3**		
	comp=Z,7.0nm,0.9s								
KMI	**Kunming**	**42.92**	**310**	P	**P**	**03 26 38.8**	**+1.9**		
KMI				pmax	pmax				
	comp=Z,12nm,0.7s								
CM01	**Chiang Mai Arr**	**42.93**	**299**	*eP*	**P**	**03 26 36.4**	**-0.4**		
CMAR	**Chiang Mai Arr**	**42.95**	**299**	P	**P**	**03 26 36.8**	**-0.3**		
	comp=Z,3.4nm,0.4s,baz=123,slow=6.9,SNR=20								
CMAR				PcP	**PcP**	**03 28 28.8**	**+1.2**		
	comp=Z,3.8nm,0.8s,baz=138,slow=2.5,SNR=6.1								
CMAR	**Chiang Mai Arr**	**42.95**	**299**	P	**P**	**03 26 36.8**	**-0.3**		
CMAR						03 28 28.8			
CMAR				pmax	pmax				
	comp=Z,6.0nm,0.7s								
CMMT	**Chiang Mai**	**43.09**	**300**	P	**P**	**03 26 38.4**	**+0.2**		
	comp=Z,9.8nm,1.1s								
CHTO	**Chiang Mai**	**43.09**	**300**	P	**P**	**03 26 38.5**	**+0.3**		
	comp=Z,44nm,1.2s								
CHTO	**Chiang Mai**	**43.09**	**300**	*eP*	**P**	**03 26 37.9**	**-0.3**		
CHTO				pmax	pmax				
	comp=Z,9.0nm,1.0s								
CHTO	**Chiang Mai**	**43.09**	**300**	*eP*	**P**	**03 26 37.9**	**-0.3**		
	comp=Z,9.1nm,1.0s								
XAN	**Xi'an**	**44.41**	**325**	P	**P**	**03 26 46.8**	**-1.8**		
XAN				pmax	pmax				
	comp=Z,6.0nm,0.7s								
XAN				pmax	pmax				
	comp=Z,84nm,4.4s								
CD2	**Chengdu**	**45.53**	**318**	*eP*	**P**	**03 26 57.8**	**+0.2**		
CD2				pP	sP	03 27 08.0	+0.1		
CD2				PP	**PP**	**03 28 44.9**	**+0.4**		
CD2				PcS	**PcS**	**03 32 30.1**	**-0.3**		
CD2				S	**S**	**03 33 38.3**	**-0.2**		
CD2				sS	sS	03 33 55.6	+5.0		
CD2				pmax	pmax				
	comp=Z,20nm,0.5s								
CD2				pmax	pmax				
	comp=Z,160nm,5.6s								
USRK	**Ussuriysk Ar.**	**45.60**	**354**	P	**P**	**03 26 56.7**	**-1.1**		
	comp=Z,2.1nm,0.8s,baz=209,slow=5.3,SNR=5.4								
USRK				LR	LR	03 43 14.2			
	comp=Z,239nm,19.5s,baz=163,slow=32								
BJT	**Baijiatuau**	**45.63**	**337**	*eP*	**P**	**03 26 57.1**	**-1.1**		
BJT				pmax	pmax				
	comp=Z,1.0nm,0.4s								
BJT	**Baijiatuau**	**45.63**	**337**	*eP*	**P**	**03 26 57.1**	**-1.1**		
	comp=Z,1.1nm,0.4s								
BJI	**Beijing**	**45.65**	**337**	P	**P**	**03 26 58.5**	**+0.2**		
BJI				pmax	pmax				
	comp=Z,11nm,1.6s								
YSS	**Yuzh-Sakhalins**	**48.26**	**5**⇑	*eP*	**P**	**03 27 17.1**	**-1.4**		
YSS				pmax	pmax				
	comp=Z,36nm,1.5s								
HHC	**Hu-ho-hao-te**	**48.27**	**333**	*eP*	**P**	**03 27 20.5**	**+1.6**		
HHC				pmax	pmax				
	comp=Z,14nm,1.0s								
HHC				pmax	pmax				
	comp=Z,120nm,6.4s								
LZH	**Lanzhou**	**48.82**	**323**	*eP*	**P**	**03 27 25.6**	**+2.3**		
LZH				pP	sP	03 27 34.6	+1.0		
LZH				sP	pP	03 27 39.4	+8.7		
LZH				pmax	pmax				
	comp=Z,19nm,1.0s								
LZH				pmax	pmax				
	comp=Z,170nm,4.7s								
KLR	**Kul'dur**	**50.61**	**355**	P	**P**	**03 27 35.7**	**-0.7**		
	comp=Z,4.0nm,0.6s,baz=162,slow=5.5,SNR=11								
DCZ	**Deep Cove**	**51.00**	**154**	*eP*	**P**	**03 27 41.3**	**+1.8**		
	comp=Z,40nm,0.9s								
MLZ	**Mavora Lakes**	**51.36**	**153**	*eP*	**P**	**03 27 43.6**	**+1.4**		
	comp=Z,55nm,1.2s								
LTZ	**Lake Taylor**	**51.53**	**148**	*eP*	**P**	**03 27 44.2**	**+0.6**		
	comp=Z,39nm,1.3s								
RPZ	**Rata Peaks**	**51.55**	**149**	*eP*	**P**	**03 27 43.9**	**+0.1**		
	comp=Z,57nm,1.1s								
LBZ	**Lake Benmore**	**51.61**	**151**	*eP*	**P**	**03 27 45.3**	**+1.2**		
	comp=Z,59nm,1.4s								
BKZ	**Black Stump Fm**	**51.62**	**142**	*eP*	**P**	**03 27 45.1**	**+0.7**		
	comp=Z,12nm,0.8s								
BFZ	**Birch Farm**	**52.40**	**143**	*eP*	**P**	**03 27 50.5**	**+0.4**		
	comp=Z,26nm,0.8s								
HIA	**Hailar**	**52.73**	**345**⇑	*iP*	**P**	**03 27 53.3**	**+0.9**		
HIA				pmax	pmax				
	comp=Z,6.0nm,0.4s								
GTA	**Gaotai**	**53.40**	**324**	P	**P**	**03 27 57.4**	**-0.3**		
GTA				pP	sP	03 28 07.8	-0.2		
GTA				sP	pP	03 28 11.4	+6.3		
GTA				pmax	pmax				
	comp=Z,6.0nm,1.2s								
LSA	**Lhasa**	**54.13**	**309**	*eP*	**P**	**03 28 03.7**	**+0.2**		
LSA	**Lhasa**	**54.13**	**309**	*eP*	**P**	**03 28 03.7**	**+0.2**		
SONM	**Songino Array**	**56.07**	**335**	P	**P**	**03 28 16.1**	**-0.7**		
	comp=Z,0.6nm,0.3s,baz=142,slow=7.5,SNR=6.1								
SONM				PcP	**PcP**	**03 29 14.8**	**0.0**		
	comp=Z,0.6nm,0.5s,baz=132,slow=2.1,SNR=3.6								
SONM				LR	LR	03 52 11.4			
	comp=Z,147nm,19.4s,baz=150,slow=36								
SONA1	**Songino Array**	**56.07**	**335**	*eP*	**P**	**03 28 16.8**	**-0.1**		
RAMN	**Ramite**	**56.70**	**304**	*eP*	**P**	**03 28 21.4**	**-0.4**		
	comp=Z,32nm,0.8s								
PETK	**Petropavlovsk-**	**56.72**	**14**	P	**P**	**03 28 21.5**	**+0.3**		
	comp=Z,3.2nm,0.8s,baz=172,slow=4.5,SNR=3.7								
PETK				LR	LR	03 49 31.5			
	comp=Z,53nm,21.8s,baz=204,slow=33								
PALK	**Pallekele**	**57.59**	**279**	*eP*	**P**	**03 28 27.7**	**-0.4**		
PALK				pmax	pmax				
	comp=Z,21nm,0.9s								
PALK	**Pallekele**	**57.59**	**279**	*eP*	**P**	**03 28 27.7**	**-0.4**		
	comp=Z,21nm,0.9s								
PKIN	**Phulchoki**	**57.92**	**304**	*eP*	**P**	**03 28 30.0**	**-0.5**		
	comp=Z,17nm,0.6s								
KKN	**Kakani**	**58.09**	**304**	*eP*	**P**	**03 28 30.9**	**-0.8**		
	comp=Z,51nm,0.9s								
DMN	**Daman**	**58.17**	**304**	*eP*	**P**	**03 28 31.8**	**-0.5**		
GKN	**Gorkha**	**58.70**	**304**	*eP*	**P**	**03 28 35.3**	**-0.5**		
	comp=Z,50nm,0.8s								
CLNS	**Chul'man**	**58.89**	**352**	*eP*	P	03 28 31.6	-4.8		
CLNS				pmax	pmax				
	comp=Z,12nm,0.8s								
CLNS				pmax	pmax				
	comp=N,7.0nm,0.9s								
ZAK	**Zakamensk**	**59.34**	**335**	*eP*	**P**	**03 28 38.4**	**-1.3**		
ZAK				pmax	pmax				
	comp=Z,6.0nm,1.2s								
KOLN	**Koldanda**	**59.48**	**303**	*eP*	**P**	**03 28 41.0**	**-0.3**		
	comp=Z,21nm,0.7s								
PYUN	**Piuthan**	**60.10**	**304**	*eP*	**P**	**03 28 45.2**	**-0.4**		
	comp=Z,101nm,0.9s								
TLY	**Talaya**	**60.17**	**336**	*eP*	**P**	**03 28 46.9**	**+1.6**		
TLY				pmax	pmax				
	comp=Z,4.0nm,0.6s								
TLY				MLR	MLR				
	comp=Z,209nm,21.0s								
MOY	**Mondy**	**61.26**	**335**	*eP*	**P**	**03 28 54.8**	**+1.9**		
BOD	**Bodaibo**	**61.94**	**346**	*eP*	**P**	**03 28 56.2**	**-0.9**		
BOD				pmax	pmax				
	comp=Z,18nm,1.7s								
WMQ	**Urumqi**	**63.35**	**322**	*eP*	**P**	**03 29 08.1**	**+1.1**		
WMQ				pP	sP	03 29 17.3	-0.2		
WMQ				sP	pP	03 29 23.3	+8.7		
WMQ				pmax	pmax				
	comp=Z,11nm,0.6s								
WMQ				pmax	pmax				
	comp=Z,150nm,4.4s								
WMQ				LR	LR				
	comp=Z,250nm,19.7s								
WMQ				LR	LR				
	comp=Z,220nm,24.3s								
WMQ				LR	LR				
	comp=Z,200nm,20.4s								
YAK	**Yakutsk**	**63.47**	**356**	*eP*	**P**	**03 29 08.9**	**+1.6**		
YAK				pmax	pmax				
	comp=Z,28nm,0.8s								
YAK				pmax	pmax				
	comp=N,11nm,1.1s								
SEY	**Seymchan**	**65.01**	**7**⇑	*eP*	**P**	**03 29 17.7**	**+0.3**		
MK01	**Makanchi Array**	**68.11**	**322**	*eP*	**P**	**03 29 36.8**	**-0.8**		
MK31	**Makanchi Array**	**68.13**	**322**	*eP*	**P**	**03 29 37.5**	**-0.2**		
MK31	**Makanchi Array**	**68.13**	**322**	*eP*	**P**	**03 29 37.5**	**-0.2**		
MKAR	**Makanchi Array**	**68.13**	**322**		**P**	**03 29 36.9**	**-0.8**		
	comp=N,3.2nm,0.7s,baz=115,slow=8.1,SNR=27								
MKAR				LR	LR	04 01 32.9			
	comp=N,47nm,18.1s,baz=98,slow=38								
MAKZ	**Makanchi**	**68.32**	**322**	*eP*	**P**	**03 29 38.6**	**-0.3**		
MAKZ				pmax	pmax				
	comp=Z,9.0nm,0.9s								
MAKZ	**Makanchi**	**68.32**	**322**	*eP*	**P**	**03 29 38.6**	**-0.3**		
	comp=Z,8.8nm,0.9s								
KSH	**Kashi**	**69.46**	**313**	*eP*	**P**	**03 29 47.5**	**+1.2**		
KSH				*e*pP	sP	03 29 58.5	+1.7		
KSH				*e*PP	**PP**	**03 32 23.9**	**+3.8**		
KSH				*e*ScP		03 34 10.8			
KSH				PcS		03 34 14.6			
KSH				S	**S**	**03 38 50.4**	**-2.2**		
KSH				ScS	**SKSac**	**03 39 42.5**	**-3.0**		
KSH				pmax	pmax				
	comp=Z,41nm,2.8s								
KSH				LR	LR				
	comp=Z,95nm,7.7s								
KSH				LR	LR				
	comp=Z,130nm,5.5s								
KSH				LR	LR				
	comp=Z,110nm,7.0s								
ZALV	**Zalesovo Beam**	**70.27**	**330**	P	**P**	**03 29 49.9**	**-0.9**		
	comp=Z,0.8nm,0.4s,baz=123,slow=7.1,SNR=3.3								
AAK	**Ala-Archa**	**71.57**	**316**⇑	*eP*	**P**	**03 29 58.9**	**-0.2**		
AAK				pmax	pmax				
	comp=Z,16nm,1.4s								
MIR	**Mirnyy**	**72.26**	**197**	*iP*	**P**	**03 30 04.0**	**+1.5**		
MIR				pmax	pmax				
	comp=Z,4.0nm,1.0s								
TIXI	**Tiksi**	**73.06**	**357**⇑	*eP*	**P**	**03 30 09.7**	**+2.5**		
TIXI				pmax	pmax				
	comp=Z,8.0nm,0.9s								
KKAR	**Karatay Array**	**74.49**	**315**	*eP*	**P**	**03 30 15.3**	**-1.0**		
KKAR				pmax	pmax				
	comp=Z,1.0nm,0.7s								
KKAR	**Karatay Array**	**74.49**	**315**	*eP*	**P**	**03 30 15.2**	**-1.0**		
	comp=Z,1.5nm,0.7s								
VOSK	**Vostochnaya**	**77.21**	**325**	*eP*	**P**	**03 30 30.8**	**-0.7**		
VOSK				pmax	pmax				
	comp=Z,14nm,1.5s								
VOSK	**Vostochnaya**	**77.21**	**325**	*eP*	**P**	**03 30 30.8**	**-0.7**		
	comp=Z,14nm,1.5s								
VNDA	**Vanda**	**77.25**	**175**	P	**P**	**03 30 31.9**	**+0.6**		
	comp=Z,6.4nm,0.6s,baz=326,slow=6.3,SNR=35								
VNDA				LR	LR	04 04 27.8			
	comp=Z,386nm,19.7s,baz=344,slow=36								
BRVK	**Borovoye**	**77.72**	**325**⇓	*eP*	**P**	**03 30 34.0**	**-0.3**		
BRVK				pmax	pmax				
	comp=Z,23nm,1.1s								
BRVK	**Borovoye**	**77.72**	**325**	*eP*	**P**	**03 30 33.5**	**-0.8**		
	comp=Z,8.9nm,1.0s								
SBA	**Scott Base**	**78.03**	**174**	*eP*	**P**	**03 30 37.7**	**+2.1**		
SBA				pmax	pmax				
	comp=Z,9.0nm,1.1s								
SBA	**Scott Base**	**78.03**	**174**	*eP*	**P**	**03 30 37.7**	**+2.1**		
	comp=Z,9.0nm,1.1s								
NRIK	**Noril'sk**	**78.12**	**344**	P	**P**	**03 30 35.6**	**-0.7**		
	comp=Z,5.9nm,0.9s,baz=108,slow=5.1,SNR=6.5								
NRIK				LR	LR	04 05 49.0			
	comp=Z,94nm,19.5s,baz=118,slow=36								
ZRNK	**Zerenda**	**78.42**	**325**	*eP*	**P**	**03 30 37.2**	**-1.0**		
ZRNK				pmax	pmax				
	comp=Z,8.0nm,0.8s								
ZRNK	**Zerenda**	**78.42**	**325**	*eP*	**P**	**03 30 37.2**	**-1.0**		
	comp=Z,7.7nm,0.8s								
SVW2	**Sparrevohn**	**80.04**	**27**	*eP*	**P**	**03 30 47.4**	**+0.5**		
	comp=Z,16nm,1.2s								
KDAK	**Kodiak Island**	**80.36**	**31**	*i* P	**P**	**03 30 51.6**	**+2.9**		
TT01	**Tatalina**	**80.52**	**25**	*eP*	**P**	**03 30 49.6**	**+0.1**		
PPLA	**Purkeypile**	**82.16**	**26**	*eP*	**P**	**03 30 57.2**	**-1.2**		
	comp=Z,32nm,1.7s								
GEYT	**Alibeck**	**82.66**	**308**	P	**P**	**03 31 01.3**	**-0.1**		
	comp=Z,7.2nm,0.7s,baz=128,slow=2.4,SNR=14								
ABKAR	**Akbulak array**	**83.06**	**320**	*eP*	**P**	**03 31 02.4**	**-0.8**		
	comp=Z,3.5nm,0.9s								
MAW	**Mawson**	**83.08**	**202**	P	**P**	**03 31 03.6**	**+0.8**		
	comp=Z,9.9nm,0.9s,baz=76,slow=5.5,SNR=19								
MAW				LR	LR	04 05 14.3			
	comp=Z,133nm,20.6s,baz=61,slow=34								
MAW	**Mawson**	**83.08**	**202**	*eP*	**P**	**03 31 03.7**	**+0.8**		
	comp=Z,3.5nm,1.2s								
PMR	**Palmer**	**83.15**	**27**	*eP*	**P**	**03 31 03.3**	**0.0**		
PMR				pmax	pmax				
	comp=Z,6.0nm,0.7s								
PMR	**Palmer**	**83.15**	**27**	*eP*	**P**	**03 31 03.3**	**0.0**		
	comp=Z,6.1nm,0.7s								
MLY	**Manley**	**83.43**	**24**	*eP*	**P**	**03 31 04.5**	**-0.3**		
	comp=Z,6.8nm,0.7s								
SML	**Sawmill**	**83.57**	**27**	*eP*	**P**	**03 31 04.8**	**-0.8**		
SML				pmax	pmax				
	comp=Z,19nm,1.0s								
SML	**Sawmill**	**83.57**	**27**	*eP*	**P**	**03 31 04.8**	**-0.8**		
	comp=Z,19nm,1.0s								
RND	**Reindeer**	**83.76**	**26**	*eP*	**P**	**03 31 05.3**	**-1.3**		
RND				pmax	pmax				
	comp=Z,9.0nm,0.8s								
RND	**Reindeer**	**83.76**	**26**	*eP*	**P**	**03 31 05.3**	**-1.3**		
	comp=Z,9.3nm,0.8s								
MCK	**McKinley**	**83.81**	**25**	*eP*	**P**	**03 31 06.4**	**-0.4**		
MCK				pmax	pmax				
	comp=Z,32nm,1.7s								
MCK	**McKinley**	**83.81**	**25**	*eP*	**P**	**03 31 06.4**	**-0.4**		
	comp=Z,32nm,1.7s								
GLI	**Glacier Island**	**83.92**	**28**	*eP*	**P**	**03 31 08.1**	**+0.7**		
	comp=Z,8.2nm,0.8s								
SCM	**Sheep Creek Mo**	**84.04**	**27**	*eP*	**P**	**03 31 10.1**	**+2.1**		
SCM				pmax	pmax				
	comp=Z,10.0nm,0.8s								
SCM	**Sheep Creek Mo**	**84.04**	**27**	*eP*	**P**	**03 31 10.1**	**+2.1**		
	comp=Z,10nm,0.8s								
FID	**Port Fidalgo**	**84.18**	**29**	*eP*	**P**	**03 31 09.3**	**+0.6**		
	comp=Z,14nm,1.1s								
COLD	**Coldfoot**	**84.30**	**22**	*eP*	**P**	**03 31 08.4**	**-0.7**		
	comp=Z,6.3nm,0.9s								
DHY	**Denali Highway**	**84.32**	**26**	*eP*	**P**	**03 31 08.9**	**-0.7**		
	comp=Z,12nm,0.4s								
WRH	**Wood River Hil**	**84.37**	**25**	*eP*	**P**	**03 31 08.2**	**-1.3**		
	comp=Z,9.4nm,1.0s								
CCB	**Clear Creek Bu**	**84.53**	**25**	*eP*	**P**	**03 31 08.9**	**-1.5**		
	comp=Z,6.5nm,0.8s								
COLA	**College**	**84.57**	**24**⇓	*eP*	**P**	**03 31 10.9**	**+0.4**		
COLA				pmax	pmax				
	comp=Z,4.0nm,0.7s								
DIV	**Divide**	**84.61**	**28**	*eP*	**P**	**03 31 10.5**	**-0.5**		
	comp=Z,26nm,1.0s								
KLU	**Klutina**	**84.61**	**28**

LPAZ	**La Paz**	**149.00**	**125**	*e*PKPdf	**PKPdf**	**03 38 24.7**	**+1.3**
LPAZ				PKPbc	**PKPbc**	**03 38 27.6**	**+0.1**

*ISCJB **19** 03:54:31.2±0.5,22°.29N±0°.03×121°.14E±0°.02,h4km±4km, Error ellipse: s-maj=4.5km s-min=3.8km az=12.2*
*TAP **19** 03:54:32.5,22°.37N×120°.98E,h10km,ML4.3,B*
*JMA **19** 03:54:36.3±0.2,22°.68N×121°.27E,h12km±2km,M3.5*
ISC 19 03:54:32.6±1.0,22°.38N±0°.02×121°.06E±0°.02,h6km±9km, n72,σ1♀26/103,8C-5D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TAW	**Tawu**	**0.15**	**261**	⇓*i*P	**Pg**	**03 54 35.3**	**-0.4**
	baz=264						
TAW				*i* S	**Sg**	**03 54 37.0**	**-0.7**
	baz=264						
EAST	**Anshuo**	**0.19**	**270**	⇑*i*P	**Pg**	**03 54 36.0**	**-0.5**
	baz=278						
ECL	**Taimali**	**0.23**	**336**	*i* P	**Pg**	**03 54 37.8**	**+0.6**
	baz=356						
TTN	**Taitung**	**0.38**	**13**	P	**Pb**	**03 54 42.2**	**+0.5**
	baz=24						
TTN				*e*S	**Sb**	**03 54 49.7**	**+1.9**
	baz=24						
SCZT	**Fangliau**	**0.40**	**269**	⇑*i*P	**Pg**	**03 54 39.8**	**-0.6**
	baz=280						
SCZT				S	**Sg**	**03 54 44.4**	**-1.3**
	baz=280						
TWG	**Pinlang**	**0.44**	**2**	⇓*i*P	**Pb**	**03 54 42.0**	**-0.7**
	baz=360						
TWG				*i* S	**Sb**	**03 54 49.0**	**-0.5**
	baz=360						
HEN	**Hengchun**	**0.48**	**218**	⇓*i*P	**Pg**	**03 54 41.8**	**0.0**
	baz=225						
HEN				S	**Sg**	**03 54 48.5**	**+0.5**
	baz=225						
TSEB	**Hengchuen, Pin**	**0.50**	**197**	P	**Pg**	**03 54 42.9**	**+0.6**
	baz=178						
TSEB				S	**Sg**	**03 54 51.1**	**+2.3**
	baz=178						
SSD	**Sandimen**	**0.53**	**313**	⇑*i*P	**Pg**	**03 54 42.5**	**-0.3**
	baz=327						
SSD				S	**Sg**	**03 54 48.6**	**-1.3**
	baz=327						
LAY	**Lan-yu**	**0.57**	**127**	*e*P	**Pg**	**03 54 44.4**	**+0.9**
	baz=103						
SGLT	**Jiouru**	**0.62**	**303**	*e*P	**Pg**	**03 54 44.6**	**+0.1**
	baz=320						
TWP	**Hsiaoliuchiu**	**0.64**	**267**	*e*P	**Pb**	**03 54 46.4**	**+0.2**
	baz=278						
KAU	**Kaohsiung**	**0.72**	**285**	*e*P	**Pn**	**03 54 48.6**	**-0.6**
	baz=289						
TWM1	**Shoushan**	**0.73**	**307**	⇑*i*P	**Pb**	**03 54 47.7**	**0.0**
	baz=322						
CHKT	**Chengkung**	**0.77**	**22**	*e*P	**Pg**	**03 54 47.5**	**+0.1**
	baz=27						
CHKT				*e*S	**Sb**	**03 54 59.2**	**+0.2**
	baz=27						
ELDTW	**Lidau**	**0.80**	**357**	⇓*i*P	**Pg**	**03 54 47.8**	**-0.3**
	baz=15						
ELDTW				*e*S	**Sg**	**03 54 58.5**	**0.0**
	baz=15						
SGST	**Jiashian**	**0.82**	**328**	*i* P	**Pb**	**03 54 48.8**	**-0.5**
	baz=338						
SGST				*i* S	**Sb**	**03 55 00.7**	**+0.1**
	baz=338						
STYT	**Tauyuan**	**0.82**	**340**	P	**Pg**	**03 54 48.6**	**+0.2**
	baz=352						
STYT				*e*S	**Sb**	**03 55 00.0**	**-0.7**
	baz=352						
CHN1	**Nanshi**	**0.94**	**329**	*i* P	**Pn**	**03 54 52.1**	**-0.2**
	baz=337						
CHN1				S	**Sn**	**03 55 05.7**	**-0.3**
	baz=337						
CHN3	**Shinhua**	**0.94**	**317**	P	**Pn**	**03 54 52.6**	**+0.3**
	baz=336						
CHN3				S	**Sn**	**03 55 08.7**	**+2.6**
	baz=336						
WTP	**Ta-pu**	**0.95**	**335**	⇑*i*P	**Pb**	**03 54 51.7**	**+0.1**
	baz=342						
WTP				*e*S	**Sn**	**03 55 06.8**	**+0.3**
	baz=342						
TWF1	**Yuli**	**0.99**	**13**	*e*P	**Pg**	**03 54 49.8**	**-1.8**
	baz=17						
TAI1	**Yung-k'ang**	**1.01**	**311**	*e*P	**Pn**	**03 54 54.9**	**+1.7**
	baz=316						
TWK	**Hsinying**	**1.02**	**329**	*e*P	**Pn**	**03 54 53.2**	**-0.3**
	baz=334						
TWK				*e*S	**Sn**	**03 55 09.4**	**+1.1**
	baz=334						
CHN4	**Tsaushan**	**1.05**	**336**	⇑*i*P	**Pn**	**03 54 53.7**	**-0.2**
	baz=340						
CHN4				*i* S	**Sn**	**03 55 10.7**	**+1.8**
	baz=340						
YUS	**Yu-Shan**	**1.11**	**355**	P	**Pg**	**03 54 53.4**	**-0.4**
	baz=9.0						
YUS				*e*S	**Sn**	**03 55 11.2**	**+0.3**
	baz=9.0						
SCLT	**Jiali**	**1.12**	**315**	*e*P	**Pn**	**03 54 54.7**	**-0.1**
	baz=320						
EHY	**Hungye**	**1.15**	**12**	*e*P	**Pg**	**03 54 53.5**	**-1.0**
	baz=31						
ALS	**Alishan**	**1.15**	**348**	*e*P	**Pb**	**03 54 54.8**	**-0.2**
	baz=359						
CHN8	**Yiju**	**1.24**	**321**	*e*P	**Pg**	**03 54 55.8**	**-0.5**
	baz=327						
CHY	**Chiayi**	**1.25**	**332**	P	**Pn**	**03 54 56.6**	**0.0**
	baz=336						
CHY				S	**Sn**	**03 55 15.8**	**+2.0**
	baz=336						
CHN5	**Tsauling**	**1.26**	**344**	P	**Pn**	**03 54 57.6**	**+0.9**
	baz=347						
CHN5				*i* S	**Sn**	**03 55 16.5**	**+2.4**
	baz=347						
CHN2	**Minshiung**	**1.26**	**335**	*e*P	**Pn**	**03 54 57.1**	**+0.4**
	baz=338						
CHN2				*e*S	**Sn**	**03 55 16.2**	**+2.1**
	baz=338						
WDT	**Danda**	**1.37**	**3**	*e*P	**Pg**	**03 54 57.3**	**-1.6**
	baz=16						
WGK	**Gukeng**	**1.38**	**341**	*e*P	**Pb**	**03 54 59.1**	**+0.4**
	baz=344						
WGK				*e*S	**Sn**	**03 55 20.1**	**+3.2**
	baz=344						
ESL	**Shilin**	**1.47**	**14**	*e*P	**Pn**	**03 54 58.6**	**-1.0**
	baz=32						
WSF	**Szhu**	**1.47**	**329**	*e*P	**Pn**	**03 54 58.9**	**-0.6**
	baz=332						
WSF				*e*S	**Sn**	**03 55 19.4**	**+0.3**
	baz=332						
SMLT	**Sun Moon Lake**	**1.50**	**355**	P	**Pg**	**03 55 01.4**	**0.0**
	baz=6.0						
SMLT				*e*S	**Sg**	**03 55 24.1**	**+3.2**
	baz=6.0						
TYC	**Yuchr**	**1.53**	**353**	⇑*i*P	**Pg**	**03 55 02.0**	**+0.2**
	baz=5.0						
TYC				*e*S	**Sg**	**03 55 23.8**	**+2.2**
	baz=5.0						
WNT	**Mingjian**	**1.53**	**347**	*e*P	**Pg**	**03 55 01.6**	**-0.2**
	baz=350						
WNT				*e*S	**Sg**	**03 55 24.1**	**+2.4**
	baz=350						
WDGT	**Dungji**	**1.56**	**304**	⇓*i*P	**Pn**	**03 54 59.2**	**-1.6**
	baz=309						
WTCT	**Ta-ch'eng**	**1.64**	**334**	*e*P	**Pn**	**03 55 00.4**	**-1.5**
	baz=339						
HWA	**Hwalien**	**1.67**	**18**	*e*P	**Pn**	**03 55 02.4**	**+0.1**
	baz=20						
TWD	**Chiawan**	**1.76**	**16**	*e*P	**Pn**	**03 55 03.3**	**-0.3**
	baz=33						
WHF	**Hehuan Shan**	**1.77**	**6**	*e*P	**Pb**	**03 55 05.4**	**-0.2**
	baz=25						
TCU	**Taichung**	**1.79**	**349**	*e*P	**Pn**	**03 55 04.6**	**+0.6**
	baz=336						
PNG	**Penghu**	**1.82**	**311**	⇑P	**Pn**	**03 55 02.9**	**-1.5**
	baz=316						
TWT	**Tachien**	**1.87**	**3**	*e*P	**Pb**	**03 55 06.5**	**-0.6**
	baz=13						
TWQ1	**Liyutan**	**1.97**	**352**	*e*P	**Pb**	**03 55 08.2**	**-0.7**
	baz=355						
TWQ1				*e*S	**Sg**	**03 55 36.0**	**-0.1**
	baz=355						
NSY	**Sanyi**	**2.04**	**352**	*e*P	**Pb**	**03 55 09.0**	**-1.1**
	baz=357						
NNS	**Nan Shan**	**2.07**	**8**	*e*P	**Pn**	**03 55 10.3**	**-0.3**
	baz=21						
ENA	**Nanau**	**2.13**	**17**	*e*P	**Pn**	**03 55 09.2**	**+0.5**
	baz=32						
NSTT	**Nanjuang**	**2.24**	**359**	*e*P	**Pn**	**03 55 11.3**	**+1.1**
	baz=4.0						
ENTT	**Nioudou**	**2.29**	**12**	*e*P	**Pn**	**03 55 12.0**	**+1.0**
	baz=28						
NSK	**Sanguang**	**2.30**	**7**	*e*P	**Pn**	**03 55 12.0**	**+0.9**
	baz=11						
TWC	**Suao**	**2.33**	**18**	*e*P	**Pn**	**03 55 12.2**	**+0.7**
	baz=32						
TWE	**Neicheng**	**2.40**	**13**	*e*P	**Pn**	**03 55 13.5**	**+1.2**
	baz=29						
EGS		**2.58**	**18**	*e*P	**Pn**	**03 55 16.7**	**+1.8**
	baz=31						
TWA	**Mucha**	**2.63**	**10**	*e*P	**Pb**	**03 55 18.9**	**-1.3**
	baz=358						
JYNG	**Yonaguni jima**	**2.69**	**40**	P	**Pn**	**03 55 15.9**	**-0.5**
JYNG				S	**Sn**	**03 55 48.3**	**-1.0**
YOJ	**Yonaguni jima**	**2.74**	**41**	P	**Sn**	**03 55 16.3**	**-0.8**
YOJ				*e*S	**Sn**	**03 55 50.0**	**-0.5**
YOJ	**Yonaguni jima**	**2.74**	**41**	*e*P	**Pn**	**03 55 15.9**	**-1.1**
	baz=42						
TWB1	**Santiao Chiao**	**2.75**	**18**	*e*P	**Pn**	**03 55 18.9**	**+1.7**
	baz=31						
NWF	**Wu-fen Shan**	**2.76**	**14**	*e*P	**Pn**	**03 55 18.7**	**+1.3**
	baz=27						
HATJ	**Hateruma jima**	**3.03**	**56**	*e*S	**Sn**	**03 55 56.4**	**-1.2**
IRIF	**Iriomote-Funau**	**3.13**	**51**	P	**Pn**	**03 55 22.7**	**+0.2**
KNM	**Kinmen**	**3.15**	**311**	*e*P	**Pn**	**03 55 23.3**	**+0.6**
	baz=315						
JKRS	**Kuro-shima**	**3.28**	**55**	P	**Pn**	**03 55 24.7**	**+0.2**
QZH	**Quanzhou**	**3.41**	**319**	*e*Pn	**Pn**	**03 55 25.8**	**-0.4**
QZH				Sn	**Sn**	**03 56 02.1**	**-4.8**
QZH				smax	smax		
	comp=N,190nm,0.8s						
QZH				smax	smax		
	comp=E,240nm,0.7s						
JIJ	**Ishigaki jima**	**3.45**	**55**	P	**Pn**	**03 55 26.4**	**-0.5**
JIJ				*e*S	**Sn**	**03 56 04.7**	**-3.4**
JISG	**Ishigakijimahi**	**3.71**	**53**	P	**Pn**	**03 55 29.3**	**-1.1**
JTJ	**Tarama**	**4.03**	**55**	P	**Pn**	**03 55 35.2**	**+0.4**
JTJ				*e*S	**Sn**	**03 56 20.5**	**-1.9**

*NNC **19** 04:14:22.0±3.8,36°.72N×69°.62E,h112km±74km,mb3.5, mpv3.9,Error ellipse: s-maj=28.3km s-min=25.2km az=23.0*
ISC 19 04:14:14.2±1.4,36°.34N±0°.09×69°.6E±0°.1,h48km,n8, σ3♀10/15,9C-4D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
THN	**Thein Dam**	**6.42**	**126**	*e*P	**Pn**	**04 15 47.0**	**+0.8**
THN				*e*S	**Sn**	**04 16 54.0**	**-4.1**
MNAS	**Manas**	**6.55**	**20**	⇓P	**Pn**	**04 15 51.0**	**+2.9**
	2.4nm,0.4s						
MNAS				⇑S	**Sn**	**04 17 02.1**	**+0.6**
	12nm,0.4s						
KK31	**Karatay Array**	**6.79**	**6**	⇓P	**Pn**	**04 15 55.0**	**+3.6**
	13nm,0.5s,baz=201,slow=20,SNR=110						
KK31				⇑S	**Sn**	**04 17 07.1**	**-0.2**
	17nm,0.7s,baz=195,slow=22,SNR=15						
AAK	**Ala-Archa**	**7.36**	**30**	⇑P	**Pn**	**04 16 01.6**	**+2.4**
	2.0nm,0.3s						
AAK				⇓S	**Sn**	**04 17 19.6**	**-1.8**
	15nm,0.7s						
TKM2	**Tokmak 2**	**8.06**	**34**	⇑P	**Pn**	**04 16 10.0**	**+1.2**
	3.6nm,0.5s						
TKM2				⇑S	**Sn**	**04 17 36.6**	**-2.1**
	10nm,0.9s						
MK31	**Makanchi Array**	**14.12**	**38**	⇑P	**Pn**	**04 17 34.8**	**+3.3**
	3.0nm,0.7s,baz=212,slow=11,SNR=14						
AB31	**Akbulak array**	**14.69**	**334**	⇑P	**Pn**	**04 17 40.1**	**+1.2**
	2.0nm,0.4s,baz=149,slow=12,SNR=69						
AB31				⇑S	**Sn**	**04 20 14.7**	**-5.6**
	1.0nm,0.5s,baz=155,slow=23,SNR=4.8						
AKTO	**Aktyubinsk**	**16.36**	**333**	⇓P	**P**	**04 18 03.2**	**+0.5**
	1.7nm,0.7s						
AKTO				⇑S	**Sn**	**04 20 56.7**	**-4.1**
	2.9nm,0.7s						

IDC 19 04:56:30.6±7.3,21°.96N×143°.23E,h264km±74km,mb3.0/6, mb1 3.2/6,mb1mx2.9/42,mbtmpg3.7/6,Error ellipse: s-maj=35.9km s-min=20.4km az=87.0,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSRS	**Korea Array**	**20.33**	**323**	P	P	05 00 47.8	+0.6
	1.3nm,0.7s,baz=142,slow=7.7,SNR=4.3						
KLR	**Kul'dur**	**28.70**	**344**	P	P	05 02 02.7	-0.7
	0.7nm,0.4s,baz=161,slow=9.5,SNR=4.1						
WRA	**Warramunga Arr**	**42.54**	**192**	P	P	05 04 00.7	-0.1
	0.4nm,0.4s,baz=17,slow=9.0,SNR=5.3						
KURBB	**Kurchatov Arra**	**57.37**	**317**	P	P	05 05 51.5	0.0
	0.6nm,0.7s,baz=96,slow=8.5,SNR=3.5						
ILAR	**Eielson Array**	**61.79**	**27**	P	P	05 06 21.6	+0.3
	0.5nm,0.6s,baz=260,slow=5.3,SNR=7.3						
BVAR	**Borovoye Array**	**62.50**	**319**	P	P	05 06 26.1	-0.2
	0.4nm,0.5s,baz=80,slow=12,SNR=2.4						

*IDC **19** 05:15:08.3±0.6,9°.70N×126°.02E,h0km,mb4.0/14, mb1 4.2/14,mb1mx3.9/46,mbtmpg4.0/14,MS2.9/1, Ms1 2.9/1,ms1mx2.4/36,Error ellipse: s-maj=40.2km s-min=14.2km az=77.0*
*ISCJB **19** 05:15:15.4±0.5,9°.66N±0°.04×126°.24E±0°.05,h67km, mb3.9/14,Error ellipse: s-maj=8.0km s-min=5.6km az=155.7*
*MAN **19** 05:15:15,9°.65N×126°.13E,h15km,mb4.7,ML3.6,MS3.6*
ISC 19 05:15:17.0±0.6,9°.66N±0°.05×126°.22E±0°.08,h67km,n31, σ0♀96/30,mb3.9/14,4C-2D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**1.48**	**175**	⇓*e*P	**Pn**	**05 15 40.1**	**-1.5**
BIPH				*i* S	**Sn**	**05 15 59.2**	**-0.9**
CGP	**Cagayan de Oro**	**1.93**	**232**	⇑*e*P	**Pn**	**05 15 46.4**	**-1.3**
CGP				*e*S	**Sn**	**05 16 09.8**	**-1.1**
PLP	**Palo**	**1.93**	**321**	⇑*e*P	**Pn**	**05 15 45.0**	**-2.7**
PLP				*i* S	**Sn**	**05 16 11.4**	**+0.4**
LLP	**Lapu-Lapu**	**2.31**	**287**	*e*P	**Pn**	**05 15 52.2**	**-0.6**
LLP				*e*S	**Sn**	**05 16 20.5**	**+0.2**
DAV	**Davao City (W)**	**2.65**	**194**	Lg	Lg	05 16 34.2	
	69nm,0.3s,baz=23,slow=21,SNR=3.7						
DAV				LR	LR	05 17 18.7	
	comp=Z,212nm,20.1s,baz=10,slow=49						
DCPH	**Dipolog City**	**3.03**	**249**	⇑*e*P	**Pn**	**05 16 02.1**	**-0.5**
CTBH	**Cotabato--PC H**	**3.11**	**219**	⇓*i*P	**Pn**	**05 16 03.9**	**+0.1**
RCP	**Roxas**	**3.90**	**299**	⇑*e*P	**Pn**	**05 16 15.1**	**+0.6**
FITZ	**Fitzroy Crossi**	**27.59**	**181**	P	**P**	**05 20 58.4**	**+0.3**
	1.8nm,0.7s,baz=6.1,slow=5.4,SNR=7.0						
WRA	**Warramunga Arr**	**30.49**	**165**	P	**P**	**05 21 22.8**	**-1.1**
	0.8nm,0.7s,baz=343,slow=8.2,SNR=7.0						
WRA				PcP	**PcP**	**05 24 22.2**	**+0.4**
	0.7nm,0.6s,baz=347,slow=3.1,SNR=4.5						
ASAR	**Alice Springs**	**33.97**	**167**	P	**P**	**05 21 54.2**	**-0.1**
	0.6nm,0.5s,baz=355,slow=7.0,SNR=12						
ASAR				PcP	**PcP**	**05 24 31.6**	**+0.3**
	0.6nm,0.6s,baz=2.8,slow=2.7,SNR=5.1						
KLR	**Kul'dur**	**39.71**	**6**	P	**P**	**05 22 43.0**	**+0.2**
	1.0nm,0.6s,baz=207,slow=7.5,SNR=4.3						
H11S3	**WAKE ISLAND Hy**	**40.14**	**73**	T	T	06 05 42.7	
	baz=265,slow=73,SNR=17						
H11S1	**WAKE ISLAND Hy**	**40.16**	**73**	T	T	06 05 37.2	
	baz=265,slow=73,SNR=9.5						
H11S2	**WAKE ISLAND Hy**	**40.16**	**73**	T	T	06 05 36.8	
	baz=265,slow=73,SNR=18						
H11N1	**WAKE ISLAND Hy**	**40.50**	**71**	T	T	06 06 01.2	
	baz=262,slow=74,SNR=36						
H11N2	**WAKE ISLAND Hy**	**40.50**	**71**	T	T	06 06 01.9	
	baz=262,slow=74,SNR=34						
H11N3	**WAKE ISLAND Hy**	**40.52**	**71**	T	T	06 06 02.7	
	baz=262,slow=74,SNR=61						
STKA	**Stephens Creek**	**43.85**	**161**	P	**P**	**05 23 17.6**	**+0.8**
	2.3nm,0.6s,baz=328,slow=7.9,SNR=7.6						
MKAR	**Makanchi Array**	**52.48**	**323**	P	**P**	**05 24 22.4**	**-0.8**
	1.0nm,0.6s,baz=118,slow=8.4,SNR=8.1						
KURBB	**Kurchatov Arra**	**56.54**	**326**	P	**P**	**05 24 51.5**	**-1.1**
	0.3nm,0.3s,baz=125,slow=7.6,SNR=4.4						
ILAR	**Eielson Array**	**80.01**	**26**	P	**P**	**05 27 18.9**	**-0.1**
	0.2nm,0.5s,baz=254,slow=3.4,SNR=3.8						
ARCES	**ARCESS Array B**	**84.74**	**340**	P	**P**	**05 27 43.2**	**-0.3**
	3.6nm,0.8s,baz=77,slow=6.4,SNR=7.0						
BRTR	**Keskin Array B**	**85.88**	**309**	P	**P**	**05 27 49.4**	**-0.6**
	0.6nm,0.8s,baz=104,slow=4.6,SNR=2.4						
FINES	**FINESS Array B**	**86.40**	**332**	P	**P**	**05 27 51.1**	**-0.8**
	1.6nm,0.6s,baz=74,slow=5.8,SNR=7.9						
MAW	**Mawson**	**89.11**	**200**	P	**P**	**05 28 05.0**	**+0.4**
	1.4nm,0.7s,baz=76,slow=4.2,SNR=3.7						
VNDA	**Vanda**	**89.34**	**173**	P	**P**	**05 28 06.5**	**+1.0**
	0.5nm,0.7s,baz=322,slow=9.0,SNR=3.6						
YKA	**Yellowknife Ar**	**94.33**	**24**	P	**P**	**05 28 30.1**	**+1.0**
	1.4nm,1.0s,baz=327,slow=5.1,SNR=3.3						
TXAR	**Lajitas Array**	**118.26**	**49**	PKP	**PKPdf**	**05 33 59.1**	**+1.6**
	0.1nm,0.6s,baz=248,slow=1.0,SNR=2.7						
TORD	**Torodi Ar. Bea**	**120.44**	**291**	PKP	**PKPdf**	**05 34 01.7**	**-0.2**
	0.6nm,1.0s,baz=2.7,slow=3.0,SNR=2.9						
PLCA	**Paso Flores**	**145.67**	**157**	PKPbc	**PKPab**	**05 34 49.9**	**+0.9**
	1.3nm,0.7s,baz=260,slow=6.5,SNR=5.5						

*NDI **19** 05:17:58.0±2.6,33°.62N×71°.95E,h15km±241km,ML3.6*
*ISCJB **19** 05:18:01.8±0.4,33°.50N±0°.03×72°.63E±0°.07,h33km, mb3.8/10,Error ellipse: s-maj=8.7km s-min=3.4km az=155.1*
*NNC **19** 05:18:05.9±9.1,33°.91N×71°.42E,h0km,mb4.1,mpv4.1, Error ellipse: s-maj=113.1km s-min=63.1km az=123.0*
*IDC **19** 05:18:09.5±4.4,33°.67N×72°.51E,h81km±38km,mb3.5/10, mb1 3.7/14,mb1mx3.5/51,mbtmpg3.9/14,MS2.9/1, Ms1 2.9/1,ms1mx2.3/35,Error ellipse: s-maj=26.7km s-min=19.4km az=26.0*
ISC 19 05:18:04.1±0.6,33°.46N±0°.06×72°.56E±0°.06,h35km,n41, σ2♀54/54,mb3.8/10,6C-5D,Pakistan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
THN	**Thein Dam**	**2.85**	**110**	*e*P	**Pn**	**05 18 52.0**	**+4.9**
THN				*ex*	x	05 19 34.0	
DHRM	**DHARAMSHALA**	**3.38**	**110**	*e*P	**Pn**	**05 18 57.8**	**+3.3**
DHRM				*e*S	**Sn**	**05 19 40.7**	**+7.2**
DHRM				IAML		05 20 01.8	
	comp=N,596nm,0.7s						
DHRM				IAML		05 20 04.0	
	comp=E,614nm,0.7s						
BHK	**Bhakra**	**3.85**	**121**	*ex*	**Sn**	**05 19 47.4**	**+2.5**
SDNR	**Sundarnagar**	**4.21**	**116**	*e*P	**Pn**	**05 19 07.0**	**+1.1**
SDNR				*ex*	x	05 20 20.0	
SMLA	**Simla**	**4.55**	**120**	*e*P	**Pn**	**05 19 13.1**	**+2.7**
SMLA				*e*S	**Sn**	**05 20 09.1**	**+7.1**
SMLA				IAML		05 20 39.9	
	comp=E,245nm,0.6s						
SMLA				IAML		05 20 41.1	
	comp=N,247nm,0.2s						
RTK	**Rohtak**	**5.51**	**142**	*e*P	**Pn**	**05 19 25.9**	**+2.1**
RTK				*ex*	x	05 20 19.4	
KHET	**Khetri**	**6.06**	**152**	*e*P	**Pn**	**05 19 31.4**	**+0.2**
KHET				*e*S	**Sn**	**05 20 39.8**	**+0.5**
KHET				IAML		05 21 27.9	
	comp=E,26nm,0.8s						
KHET				IAML		05 21 30.2	
	comp=N,23nm,0.3s						
NDI	**New Delhi**	**6.22**	**139**	*e*P	**Pn**	**05 19 29.5**	**-3.9**
NDI				*e*S	**Sn**	**05 20 38.5**	**-4.8**
KUDL	**Kundal**	**6.29**	**146**	*e*P	**Pn**	**05 19 35.7**	**+1.4**
KUDL				*e*S	**Sn**	**05 20 47.0**	**+2.1**
KUDL				IAML		05 21 31.5	
	comp=N,25nm,0.3s						
KUDL				IAML		05 21 32.5	
	comp=E,44nm,0.7s						
SONA	**Sohna**	**6.49**	**142**	*e*P	**Pn**	**05 19 37.5**	**+0.3**
SONA				*e*S	**Sn**	**05 20 52.6**	**+2.6**
MNAS	**Manas**	**9.01**	**360**	⇓Pn	**Pn**	**05 20 12.7**	**+0.8**
	comp=E,4.3nm,0.5s						
MNAS				⇑Sn	**Sn**	**05 21 55.2**	**+3.2**
	comp=E,6.8nm,0.6s						
AAK	**Ala-Archa**	**9.29**	**9**	P	**Pn**	**05 20 18.1**	**+2.5**
	comp=E,3.4nm,0.3s,baz=160,slow=3.7,SNR=9.1						
AAK				S	**Sn**	**05 22 01.2**	**+2.3**
	comp=E,1.9nm,0.3s,baz=183,slow=18,SNR=3.2						
AAK				LR	LR	05 24 02.9	
	comp=E,69nm,18.6s,baz=208,slow=39						
AAK	**Ala-Archa**	**9.29**	**9**	⇓Pn	**Pn**	**05 20 17.0**	**+1.4**
	comp=E,4.1nm,0.5s						
AAK				⇓Sn	**Sn**	**05 22 01.0**	**+2.1**
	comp=E,6.5nm,0.7s						
TKM2	**Tokmak 2**	**9.74**	**13**	⇓Pn	**Pn**	**05 20 22.5**	**+0.7**
	comp=E,2.0nm,0.5s						
TKM2				⇑Sn	**Sn**	**05 22 07.0**	**-3.1**
	comp=E,11nm,1.1s						
KK31	**Karatay Array**	**9.76**	**351**	⇑Pn	**Pn**	**05 20 21.4**	**-0.5**
	comp=E,2.5nm,0.3s,baz=180,slow=13,SNR=38						
KK31				⇑Sn	**Sn**	**05 22 08.1**	**-2.2**
	comp=E,2.8nm,0.5s,baz=185,slow=28						
PYUN	**Piuthan**	**10.44**	**118**	*e*P	**Pn**	**05 20 31.0**	**-0.6**
	comp=E,14nm,0.3s						
PYUN				*e*S	**Sn**	**05 22 24.8**	**-2.6**
KOLN	**Koldanda**	**11.07**	**118**	*e*P	**Pn**	**05 20 39.9**	**-0.3**
	comp=E,5.6nm,0.3s						
KOLN				*e*S	**Sn**	**05 22 40.1**	**-2.8**
GKN	**Gorkha**	**11.73**	**114**	*e*P	**Pn**	**05 20 47.6**	**-1.5**
	comp=E,14nm,0.4s						
DMN	**Daman**	**12.29**	**115**	*e*P	**Pn**	**05 20 55.7**	**-1.1**
	comp=E,21nm,0.6s						
KKN	**Kakani**	**12.33**	**114**	*e*P	**Pn**	**05 20 55.6**	**-1.8**
PKIN	**Phulchoki**	**12.53**	**115**	*e*P	**Pn**	**05 20 58.7**	**-1.4**
	comp=E,19nm,0.4s						
PKIN				*e*S	**Sn**	**05 23 13.8**	**-4.7**
GEYT	**Alibeck**	**12.55**	**295**	P	**Pn**	**05 21 03.3**	**+3.1**
	baz=96,slow=40,SNR=2.5						
RAMN	**Ramite**	**13.77**	**114**	*e*P	**Pn**	**05 21 14.8**	**-2.2**
MKAR	**Makanchi Array**	**15.24**	**26**	P	**Pn**	**05 21 34.2**	**-2.4**
	comp=E,0.1nm,0.3s,baz=219,slow=11,SNR=4.2						
KURBB	**Kurchatov Arra**	**17.70**	**13**	P	**Pn**	**05 22 04.1**	**-3.6**
	comp=E,0.1nm,0.3s,baz=205,slow=11,SNR=12						
AB31	**Akbulak array**	**18.36**	**333**	⇑P	**P**	**05 22 12.5**	**-3.0**
	comp=E,1.8nm,0.4s,baz=143,slow=12,SNR=68			

JYK			*e*S	Sn	05 30 15.1	+3.0	
JFT	**Otama**	**3.31 259**	S	Sn	05 30 15.8	+2.5	
JAH	**Hinai**	**3.54 305**	S	Sn	05 30 22.4	+3.5	
JTM	**Tenmabayashi**	**3.65 316**	S	Sn	05 30 22.6	+1.0	
JCH	**Churui**	**4.46 350**	P	Pn	05 29 51.3	+0.3	
JCH			*e*S	Sn	05 30 39.2	-2.4	
JRY	**Ryogami san**	**4.94 245**	P	Pn	05 29 59.0	+1.5	
JRY			*e*S	Sn	05 30 52.2	-1.1	

IDC ***19*** *05:31:28.4±2.4, 37.°56N×142.°29E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.4/49, mbtmp3.7/4, ML3.7/2, Error ellipse: s-maj=44.8km s-min=33.0km az=61.0*

JMA ***19*** *05:31:35.7±0.1, 37.°44N×141.°76E, h40km±2km, M3.6*

ISC 19 05:31:31.8±2.1, 37.°38N±0.°05×141.°77E±0.°07, h8km±13km, n18,σ1§26/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.71**	**269**	P	**Pn**	**05 31 49.3**	**+1.0**
JFK				S	**Sn**	**05 31 58.7**	**-0.8**
ONAJ	**Iwakimizuishiy**	**0.82**	**251**	P	**Pn**	**05 31 51.0**	**+1.2**
ONAJ				S	**Sn**	**05 32 01.6**	**-0.6**
JIO	**Ouri**	**1.12**	**343**	P	**Pn**	**05 31 54.3**	**+0.4**
JIO				S	**Sg**	**05 32 07.1**	**-0.9**
JFT	**Otama**	**1.15**	**277**	P	**Pn**	**05 31 56.0**	**+1.7**
JFT				S	**Sn**	**05 32 10.4**	**+0.2**
JOU	**Okura**	**1.32**	**319**	P	**Pg**	**05 31 57.6**	**+0.5**
JOU				S	**Sg**	**05 32 13.8**	**-0.4**
JMK	**Ichinoseki**	**1.63**	**345**	P	**Pb**	**05 32 02.0**	**-0.1**
JYK	**Kaneyama**	**1.90**	**325**	P	**Pb**	**05 32 06.3**	**-0.4**
MJAR	**Matsushiro Arr**	**2.97**	**255**	Pn	**Pb**	**05 32 23.5**	**-1.6**
	2.6nm,0.3s,baz=78,slow=14,SNR=7.3						
MJAR				Sn	**Sb**	**05 33 03.2**	**+1.7**
	2.6nm,0.3s,baz=253,slow=30,SNR=2.2						
MAT	**Matsushiro**	**2.97**	**255**	P	**Pb**	**05 32 23.0**	**-2.1**
MAT				S	**Sb**	**05 33 02.6**	**+1.0**
JHJ	**Hachijo jima 2**	**4.55**	**202**	Pn	**Pn**	**05 32 43.2**	**+2.2**
	26nm,0.3s,baz=84,slow=21,SNR=1.7						
JHJ				Sn	**Sn**	**05 33 33.0**	**-1.1**
	17nm,0.3s,baz=264,slow=18,SNR=1.3						
H11N2	**WAKE ISLAND Hy**	**28.08**	**122**	T	T	06 06 59.0	
	baz=316						
H11N1	**WAKE ISLAND Hy**	**28.09**	**122**	T	T	06 07 02.5	
	baz=316						
H11N3	**WAKE ISLAND Hy**	**28.10**	**122**	T	T	06 07 01.7	
	baz=316						
H11S1	**WAKE ISLAND Hy**	**28.81**	**124**	T	T	06 07 52.1	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**28.81**	**124**	T	T	06 07 53.0	
	baz=314						
H11S2	**WAKE ISLAND Hy**	**28.83**	**124**	T	T	06 07 53.6	
	baz=314						
MKAR	**Makanchi Array**	**44.18**	**302**	P	**P**	**05 39 40.8**	**-0.3**
	0.2nm,0.2s,baz=88,slow=9.4,SNR=2.3						
WRA	**Warramunga Arr**	**57.44**	**188**	P	**P**	**05 41 20.6**	**-0.7**
	0.3nm,0.5s,baz=5.8,slow=7.2,SNR=6.9						

MEX 19 05:33:46.0±0.4, 15.°16N×92.°53W, h111km±9km, MD3.5, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.18**	**19**	*i* P	Pn	05 34 08.4	-1.0
CCIG				*i* S	Sn	05 34 25.2	-1.9

AUST ***19*** *05:52:58.7±0.8, 31.°29S×138.°62E, h0km, Error ellipse: s-maj=12.7km s-min=3.8km az=162.0*

ISCJB ***19*** *05:52:59.3±0.8, 31.°22S±0.°08×138.°68E±0.°08, h17km, Error ellipse: s-maj=12.2km s-min=8.6km az=28.4*

IDC ***19*** *05:53:00.1±4.5, 31.°15S×138.°82E, h0km, mb1 3.1/3, mb1mx3.0/26, mbtmp2.8/3, ML2.3/2, Error ellipse: s-maj=96.6km s-min=17.1km az=33.0*

ISC 19 05:53:01.0±1.1, 31.°29S±0.°09×138.°70E±0.°06, h17km, n8,σ1§09/10, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HTT	**Hallett**	**2.15**	**175**	P	**Pn**	**05 53 36.4**	**+0.3**
	baz=2.2						
STKA	**Stephens Creek**	**2.54**	**104**	Pn	**Pn**	**05 53 41.5**	**+0.1**
	0.2nm,0.3s,baz=293,slow=16,SNR=6.9						
STKA				Pg	**Pb**	**05 53 44.9**	**-1.2**
	1.7nm,0.3s,baz=288,slow=16,SNR=16						
STKA				Sn	**Sn**	**05 54 12.9**	**+1.0**
	1.1nm,0.3s,baz=313,slow=19,SNR=4.2						
STKA				Lg	Lg	05 54 20.1	
	3.4nm,0.3s,baz=353,slow=22,SNR=8.5						
STKA	**Stephens Creek**	**2.54**	**104**	P	**Pn**	**05 53 41.4**	**-0.1**
	baz=2.6						
BBOO	**Buckleboo**	**2.71**	**235**	P	**Pn**	**05 53 43.7**	**-0.2**
	baz=2.7						
CMSA	**Cobar Meteorol**	**5.98**	**94**	P	**Pn**	**05 54 29.5**	**+0.7**
	baz=6.0						
ARPS	**Mount Arapiles**	**6.06**	**155**	P	**Pn**	**05 54 30.2**	**+0.4**
	baz=6.1						
ASAR	**Alice Springs**	**8.70**	**330**	Pn	**Pn**	**05 55 08.0**	**+1.8**
	baz=153,slow=13,SNR=2.9						
WRA	**Warramunga Arr**	**11.96**	**340**	Pn	**Pn**	**05 55 49.5**	**-1.4**
	0.0nm,0.3s,baz=150,slow=12,SNR=3.0						

IDC ***19*** *06:15:45.9±1.2, 2.°77S×137.°89E, h0km, mb3.9/2, mb1 4.1/5, mb1mx3.7/30, mbtmp3.9/5, ML4.0/3, MS3.3/2, Ms1 3.3/2, ms1mx2.7/37, Error ellipse: s-maj=25.3km s-min=22.6km az=101.0*

ISCJB ***19*** *06:15:48.6±1.2, 2.°95S±0.°1×137.°88E±0.°09, h33km, mb3.8/2, MS3.5/1, Error ellipse: s-maj=20.5km s-min=9.7km az=155.8*

ISC 19 06:15:50.8±1.2, 2.°95S±0.°1×137.°9E±0.°1, h35km, n8,σ1§21/8, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**2.78**	**83**	Pn	**Pn**	**06 16 31.1**	**-1.8**
	0.6nm,0.3s,baz=260,slow=22,SNR=15						
JAY				Sn	**Sn**	**06 17 07.2**	**+1.8**
	0.6nm,0.3s,baz=271,slow=24,SNR=2.5						
WRA	**Warramunga Arr**	**17.35**	**191**	P	**Pn**	**06 19 50.2**	**-0.2**
	1.4nm,0.3s,baz=4.5,slow=12,SNR=46						
CTA	**Charters Tower**	**18.96**	**155**	P	**Pn**	**06 20 10.4**	**+0.4**
	0.2nm,0.3s,baz=326,slow=11,SNR=1.9						
FITZ	**Fitzroy Crossi**	**19.37**	**218**	P	**P**	**06 20 13.7**	**0.0**
	0.1nm,0.3s,baz=42,slow=15,SNR=2.4						
FITZ				LR	LR	06 28 13.5	
	comp=Z,53nm,21.6s,baz=46,slow=38						
ASAR	**Alice Springs**	**21.06**	**190**	P	**P**	**06 20 32.1**	**0.0**
	9.6nm,0.7s,baz=21,slow=11,SNR=57						
MJAR	**Matsushiro Arr**	**39.19**	**0**	LR	LR	06 38 04.1	
	comp=Z,58nm,18.1s,baz=230,slow=34						
MKAR	**Makanchi Array**	**69.43**	**323**	P	**P**	**06 26 55.9**	**+0.4**
	0.2nm,0.4s,baz=116,slow=6.6,SNR=3.8						
LPAZ	**La Paz**	**147.98**	**127**	PKPbc	**PKPbc**	**06 35 34.9**	**+0.5**
	1.5nm,0.8s,baz=155,slow=1.9,SNR=6.1						

IDC 19 06:17:29.8±2.9, 53.°44N×87.°48E, h0km, mb1 2.8/2, mb1mx2.8/44, mbtmp2.8/2, ML2.4/2, Error ellipse: s-maj=24.2km s-min=15.5km az=63.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.66**	**289**	*i*		06 27 50.0	
	baz=106,slow=317,SNR=20						
ZALV	**Zalesovo Beam**	**1.66**	**289**	Pg	Pn	06 18 00.6	+0.5
	1.4nm,0.3s,baz=108,slow=14,SNR=12						
ZALV				Lg	Lg	06 18 21.6	
	1.9nm,0.3s,baz=107,slow=29,SNR=8.1						
ZALV				Rg	Rg	06 18 29.4	
	1.8nm,0.3s,baz=111,slow=24,SNR=5.3						
KURBB	**Kurchatov Arra**	**6.20**	**247**	Pn	Pn	06 19 02.1	-0.3
	0.1nm,0.3s,baz=62,slow=14,SNR=4.3						
KURBB				Sn	Sn	06 20 14.6	+0.6
	0.0nm,0.3s,baz=334,slow=17,SNR=1.7						
KURBB				Lg	Lg	06 20 46.1	
	0.1nm,0.3s,baz=63,slow=33,SNR=10.0						
MKAR	**Makanchi Array**	**7.44**	**209**	Pn	Pn	06 19 21.2	+1.6
	0.1nm,0.3s,baz=28,slow=13,SNR=4.4						
MKAR				Lg	Lg	06 21 25.1	
	0.1nm,0.3s,baz=40,slow=30,SNR=7.9						

NIED ***19*** *06:34:00, 35.°80N×141.°80E, h11km, Mw3.8 Best double couple: M0 6.29000×10^14 NP1:φs57.00000°, δ33.00000°, λ-97.00000°. NP2:φs246.00000°, δ57.00000°, λ-85.00000°.*

ISCJB ***19*** *06:34:06.9±0.7, 35.°76N±0.°04×141.°84E±0.°07, h26km, mb3.8/8, Error ellipse: s-maj=7.9km s-min=6.4km az=177.8*

JMA ***19*** *06:34:07.8±0.1, 35.°85N×141.°75E, h31km±2km, M3.5*

IDC ***19*** *06:34:11.9±2.7, 35.°68N×141.°72E, h48km±24km, mb3.5/8, mb1 3.6/11, mb1mx3.5/50, mbtmp3.7/11, ML3.1/3, Error ellipse: s-maj=26.0km s-min=10.5km az=74.0*

ISC 19 06:34:09.5±0.9, 35.°80N±0.°05×141.°70E±0.°07, h26km, n24,σ1§48/23, mb3.7/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.69**	**262**	P	**Pb**	**06 34 21.7**	**-1.2**
CHOJ				S	**Sb**	**06 34 31.6**	**-0.5**
JHO	**Hitachi**	**1.22**	**312**	P	**Pn**	**06 34 29.3**	**-1.6**
BSO1	**Boso 1**	**1.29**	**207**	P	**Pn**	**06 34 30.8**	**-0.5**
JYT	**Yasato**	**1.29**	**290**	P	**Pn**	**06 34 30.3**	**-1.5**
JFK	**Kawauchi**	**1.70**	**337**	P	**Pn**	**06 34 35.9**	**-1.5**
JFK				*e*S	**Sn**	**06 34 57.4**	**-0.9**
MJAR	**Matsushiro Arr**	**2.92**	**286**	P	**Pn**	**06 34 54.8**	**+0.5**
	3.1nm,0.3s,baz=105,slow=8.3,SNR=21						
MJAR				S	**Sn**	**06 35 30.9**	**+2.5**
	1.9nm,0.3s,baz=45,slow=48,SNR=5.6						
MAT	**Matsushiro**	**2.92**	**286**	P	**Pn**	**06 34 55.0**	**+0.7**
MAT				S	**Sb**	**06 35 33.0**	**-3.2**
JHJ	**Hachijo jima 2**	**3.11**	**211**	P	**Pn**	**06 34 57.0**	**+0.1**
	28nm,0.3s,baz=138,slow=21,SNR=3.8						
JHJ				S	**Sn**	**06 35 32.5**	**-0.7**
	42nm,0.3s,baz=134,slow=24,SNR=2.9						
USRK	**Ussuriysk Ar.**	**11.21**	**321**	P	**Pn**	**06 36 51.3**	**+3.3**
	0.2nm,0.3s,baz=134,slow=12,SNR=2.6						
H11N2	**WAKE ISLAND Hy**	**27.33**	**119**	T	T	07 08 18.8	
	baz=311,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy**	**27.34**	**119**	T	T	07 08 18.8	
	baz=311,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**27.35**	**119**	T	T	07 08 18.6	
	baz=311,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy**	**28.01**	**121**	T	T	07 09 15.3	
	baz=314,slow=76,SNR=26						
H11S3	**WAKE ISLAND Hy**	**28.01**	**121**	T	T	07 09 08.8	
	baz=314,slow=76,SNR=20						
H11S2	**WAKE ISLAND Hy**	**28.03**	**121**	T	T	07 09 08.3	
	baz=314,slow=76,SNR=13						
SONM	**Songino Array**	**28.68**	**306**	P	**P**	**06 40 05.2**	**+0.9**
	0.6nm,0.5s,baz=108,slow=6.9,SNR=3.4						
ZALV	**Zalesovo Beam**	**42.92**	**313**	P	**P**	**06 42 06.2**	**+0.4**
	0.6nm,0.4s,baz=101,slow=6.0,SNR=3.4						
MKAR	**Makanchi Array**	**44.98**	**303**	P	**P**	**06 42 22.0**	**-0.4**
	0.4nm,0.7s,baz=91,slow=9.8,SNR=3.9						
KURBB	**Kurchatov Arra**	**46.95**	**309**	P	**P**	**06 42 38.2**	**+0.3**
	1.4nm,0.8s,baz=84,slow=8.0,SNR=14						
ILAR	**Eielson Array**	**50.41**	**32**	P	**P**	**06 43 04.5**	**+0.2**
	0.5nm,0.7s,baz=273,slow=6.3,SNR=9.0						
BVAR	**Borovoye Array**	**51.58**	**313**	P	**P**	**06 43 14.1**	**+0.9**
	0.3nm,0.3s,baz=70,slow=12,SNR=3.8						
WRA	**Warramunga Arr**	**55.88**	**188**	P	**P**	**06 43 43.4**	**-1.6**
	2.4nm,0.7s,baz=6.2,slow=7.4,SNR=15						
ASAR	**Alice Springs**	**59.60**	**188**	P	**P**	**06 44 10.3**	**-0.8**
	0.7nm,0.7s,baz=11,slow=7.4,SNR=8.1						
LPAZ	**La Paz**	**147.09**	**62**	PKPbc	**PKPbc**	**06 53 51.2**	**-0.1**
	0.8nm,0.8s,baz=357,slow=5.2,SNR=5.0						

IDC ***19*** *06:42:21.8±3.2, 42.°11N×111.°23W, h0km, mb3.0/1, mb1 3.9/3, mb1mx3.4/54, mbtmp3.7/3, ML3.2/2, MS2.6/1, Ms1 2.6/1, ms1mx2.2/11, Error ellipse: s-maj=45.3km s-min=11.5km az=178.0*

ISCJB ***19*** *06:42:30.7±0.2, 43.°13N±0.°01×110.°82W±0.°03, h9km, Error ellipse: s-maj=3.3km s-min=1.8km az=1.8*

NEIC ***19*** *06:42:31.2±0.2, 43.°14N×110.°86W, h5km, MW3.5, Error ellipse: s-maj=3.5km s-min=1.8km az=92.0, Moment Tensor Solution. s13 Moment tensor: Scale 10^14Nm; Mrr=2.17; Mθθ=0.00; Mφφ=2.17; Mrθ=-0.30; Mθφ=0.25; Mφr=0.38; Best double couple: M0 2.20000×10^14 NP1:φs180.00000°, δ40.00000°, λ-100.00000°. NP2:φs13.00000°, δ51.00000°, λ-82.00000°. Principal axes: T 2.2400, Plg5.0000°, Azm97.0000°; N 0.0000, Plg6.0000°, Azm188.0000°; P -2.2400, Plg82.0000°, Azm327.0000°;*

NEIC Felt [IV] at Etna and [II] at Thayne. Also felt at Jackson.

ISC 19 06:42:29.9±0.7, 43.°14N±0.°02×110.°97W±0.°03, h9km, n134,σ1§86/133, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
REDW	**Red Top Meadow**	**0.24**	**21**	*e*Pg	**Pg**	**06 42 35.1**	**+0.3**
TPAW	**Teton Pass**	**0.35**	**2**	*e*Pg	**Pb**	**06 42 37.5**	**-1.0**
SNOW	**Snow King Moun**	**0.36**	**26**	*e*Pg	**Pb**	**06 42 37.4**	**-1.2**
AHID	**Auburn Hatcher**	**0.39**	**194**	*e*Pg	**Pg**	**06 42 37.8**	**+0.3**
LOHW	**Long Hollow**	**0.54**	**29**	*e*Pg	**Pg**	**06 42 40.3**	**-0.1**
MOOW	**Moose Ponds**	**0.63**	**15**	*e*Pg	**Pg**	**06 42 42.0**	**-0.1**
IMW	**Indian Meadow**	**0.76**	**2**	*e*Pg	**Pg**	**06 42 45.1**	**-0.3**
FLWY	**Flagg Ranch**	**0.96**	**12**	*e*Pg	**Pb**	**06 42 48.4**	**-0.5**
MCID	**Moose Creek**	**1.06**	**352**	*e*Pg	**Pn**	**06 42 51.4**	**+0.2**
BW06	**Boulder Array**	**1.10**	**109**	P	**Pg**	**06 42 49.7**	**-1.3**
	baz=295						
BW06	**Boulder Array**	**1.10**	**109**	*e*Pg	**Pg**	**06 42 49.6**	**-1.5**
BW06				*e*Pg	**Pg**	**06 42 49.8**	**-1.3**
PD31	**Pinedale Array**	**1.10**	**109**	*e*Pg	**Pg**	**06 42 50.2**	**-0.9**
PDAR	**Pinedale Array**	**1.10**	**109**	Pg	**Pg**	**06 42 49.6**	**-1.5**
	81nm,0.3s,baz=291,slow=14,SNR=667						
PDAR				Lg	Lg	06 43 05.8	
	86nm,0.3s,baz=299,slow=13,SNR=5.2						
PDAR				LR	LR	06 43 36.1	
	comp=Z,351nm,18.8s,baz=144,slow=53						
YPP	**Pitchstone Pla**	**1.14**	**6**	*e*Pg	**Pn**	**06 42 51.7**	**-0.5**
YMS	**Mount Sheridan**	**1.17**	**16**	*e*Pg	**Pn**	**06 42 52.8**	**0.0**
BMUT	**Black Mountain**	**1.20**	**189**	*e*Pg	**Pn**	**06 42 53.3**	**+0.3**
H17A	**Grant Village**	**1.29**	**13**	P	**Pg**	**06 42 54.3**	**-0.3**
	baz=183						
H17A				S	**Sn**	**06 43 11.5**	**-0.3**
	baz=183						
H17A	**Grant Village**	**1.29**	**13**	*e*Pg	**Pg**	**06 42 54.5**	**-0.2**
YFT	**Old Faithful**	**1.31**	**4**	*e*Pn	**Pg**	**06 42 55.7**	**+0.6**
YLT	**Little Thumb C**	**1.33**	**12**	*e*Pn	**Pg**	**06 42 55.2**	**-0.2**
YTP	**Tuff Promontory**	**1.35**	**21**	*e*Pn	**Pg**	**06 42 55.3**	**-0.4**
HDU	**Hyde Park**	**1.46**	**204**	*e*Pn	**Pg**	**06 42 57.4**	**-0.4**
LKWY	**Lake**	**1.48**	**16**	*e*Pn	**Pg**	**06 42 58.3**	**0.0**
YML	**Mary Lake**	**1.48**	**9**	*e*Pn	**Pg**	**06 42 57.6**	**-0.8**
YPM	**Purple Mountai**	**1.52**	**3**	*e*Pn	**Pg**	**06 42 58.2**	**-0.8**
YMR	**Madison River**	**1.53**	**0**	*e*Pn	**Pg**	**06 42 58.5**	**-0.7**
RSUT	**Red Spur Mount**	**1.54**	**193**	*e*Pn	**Pb**	**06 42 58.4**	**-0.3**
YNR	**Norris Junctio**	**1.59**	**8**	*e*Pn	**Pn**	**06 42 59.1**	**-0.4**
HWUT	**Hardware Ranch**	**1.59**	**196**	*e*Pn	**Pb**	**06 42 59.9**	**+0.3**
YHB	**Horse Butte**	**1.62**	**354**	*e*Pn	**Pg**	**06 42 59.8**	**-1.1**
YMC	**Maple Creek**	**1.62**	**359**	*e*Pn	**Pb**	**06 42 59.8**	**-0.3**
YHH	**Holmes Hill**	**1.65**	**3**	*e*Pn	**Pb**	**06 43 00.1**	**-0.5**
TPMT	**Tepee Creek**	**1.67**	**343**	*e*Pn	**Pg**	**06 43 00.7**	**-1.1**
HONU	**Honeyville**	**1.68**	**205**	*e*Pn	**Pb**	**06 43 01.4**	**+0.3**
WVUT	**Wellsville**	**1.69**	**206**	*e*Pn	**Pb**	**06 43 01.0**	**-0.4**
YMP	**Mirror Lake Pl**	**1.71**	**20**	*e*Pn	**Pb**	**06 43 00.6**	**-0.9**
QLMT	**Earthquake Lak**	**1.72**	**349**	*e*Pn	**Pg**	**06 43 01.8**	**-1.1**
MCU	**Monte Cristo P**	**1.72**	**194**	*e*Pn	**Pb**	**06 43 01.2**	**-0.7**
MOMT	**Monida**	**1.78**	**325**	*e*Pn	**Pb**	**06 43 02.7**	**-0.2**
MTUT	**Morton Thiokol**	**1.80**	**218**	*e*Pn	**Pb**	**06 43 02.8**	**-0.4**
LTU	**Little Mountai**	**1.81**	**212**	*e*Pn	**Pb**	**06 43 02.8**	**-0.5**
YMV	**Mammoth Vault**	**1.84**	**6**	*e*Pn	**Pb**	**06 43 03.0**	**-0.9**
GZU	**Grizzly Peak**	**1.87**	**204**	*e*Pn	**Pb**	**06 43 03.5**	**-0.8**
HVU	**Hansel Valley**	**1.91**	**225**	*e*Pn	**Pb**	**06 43 04.4**	**-0.5**
TCUT	**Toone Canyon**	**2.05**	**189**	*e*Pn	**Pb**	**06 43 06.7**	**-0.7**
SPUT	**South Promonto**	**2.13**	**211**	*e*Pn	**Pn**	**06 43 07.1**	**+1.2**
MCMT	**McKenzie Canyo**	**2.17**	**322**	*e*Pn	**Pb**	**06 43 09.3**	**-0.1**
FPU	**Francis Peak**	**2.21**	**197**	*e*Pn	**Pn**	**06 43 08.4**	**+1.4**
BGMT	**Barton Gulch**	**2.23**	**340**	*e*Pn	**Pb**	**06 43 09.1**	**-1.4**
N16A	**Rees Ranch, Co**	**2.28**	**189**	*e*Pn	**Pn**	**06 43 09.3**	**+1.4**
NAIU	**Northern Antel**	**2.32**	**204**	*e*Pn	**Pb**	**06 43 10.2**	**-1.8**
RLMT	**Red Lodge**	**2.33**	**31**	Pb	**Pb**	**06 43 10.9**	**-1.3**
	baz=208						
RLMT	**Red Lodge**	**2.33**	**31**	*e*Pn	**Pb**	**06 43 11.2**	**-1.0**
CRMT	**Chrome Mountai**	**2.39**	**14**	*e*Pn	**Pb**	**06 43 10.9**	**-2.4**
RBU	**Red Butte Cany**	**2.44**	**195**	*e*Pn	**Pn**	**06 43 11.8**	**+1.7**
HRU	**Hogsback Ridge**	**2.45**	**196**	*e*Pn	**Pn**	**06 43 11.8**	**+1.7**
SAIU	**Southern Antel**	**2.46**	**202**	*e*Pn	**Pb**	**06 43 12.1**	**-2.1**
HTU	**Hoyt Peak**	**2.47**	**184**	*e*Pn	**Pn**	**06 43 12.0**	**+1.5**
RCJ	**Ross Creek**	**2.50**	**188**	*e*Sn	**Sg**	**06 43 48.8**	**-1.5**
DLMT	**Dillon**	**2.51**	**333**	*e*Pn	**Pb**	**06 43 14.8**	**-0.5**
CTU	**Camp Tracy**	**2.51**	**194**	*e*Pn	**Pn**	**06 43 12.9**	**+1.8**
KLJ	**Keetly**	**2.53**	**188**	*e*Pn	**Pn**	**06 43 12.9**	**+1.6**
SNUT	**Stansbury Nort**	**2.53**	**207**	*e*Pn	**Pb**	**06 43 13.2**	**-2.3**
HLID	**Hailey**	**2.55**	**281**	P	**Pb**	**06 43 13.9**	**-1.9**
	baz=98						
HLID	**Hailey**	**2.55**	**281**	*e*Pn	**Pb**	**06 43 13.8**	**-2.1**
HLJ	**Hailstone**	**2.55**	**187**	*e*Pn	**Pn**	**06 43 13.2**	**+1.6**
BOZ	**Bozeman (W)**	**2.55**	**350**	P	**Pb**	**06 43 14.3**	**-1.6**
	baz=164						
BOZ	**Bozeman (W)**	**2.55**	**350**	*e*Pn	**Pb**	**06 43 14.2**	**-1.6**
JLU	**Jordanelle**	**2.56**	**188**	*e*Pn	**Pn**	**06 43 13.5**	**+1.7**
GMU	**Granite Mounta**	**2.63**	**193**	*e*Pn	**Pn**	**06 43 14.4**	**+1.8**
BGU	**Big Grassy Mou**	**2.69**	**215**	*e*Pn	**Pn**	**06 43 15.0**	**+1.5**
DAU	**Daniels Canyon**	**2.73**	**185**	*e*Pn	**Pn**	**06 43 15.8**	**+1.5**
LCCM	**Lewis and Clar**	**2.77**	**347**	*e*Pn	**Pb**	**06 43 19.3**	**-0.5**
GCMT	**Greycliff**	**2.81**	**19**	*e*Pn	**Pb**	**06 43 19.2**	**-1.2**
CWU	**Camp Williams**	**2.82**	**198**	*e*Pn	**Pn**	**06 43 17.2**	**+1.9**
LRM	**Limekiln Ridge**	**2.88**	**339**	*e*Pn	**Pb**	**06 43 20.5**	**-1.1**
DUG	**Dugway, Tooele**	**3.25**	**206**	P	**Pn**	**06 43 22.8**	**+1.6**
	baz=28						
DUG	**Dugway, Tooele**	**3.25**	**206**	*e*Pn	**Pn**	**06 43 22.8**	**+1.6**
DUG				*e*Pn	**Pb**	**06 43 23.4**	**-4.4**
NLU	**North Lily Min**	**3.29**	**195**	*e*Pn	**Pn**	**06 43 23.8**	**+2.0**
K22A	**Casper**	**3.30**	**97**	Pb	**Pn**	**06 43 23.8**	**+1.9**
	baz=281						
K22A				Sb	**Sb**	**06 44 05.9**	**-3.2**
	baz=281						
K22A	**Casper**	**3.30**	**97**	*e*Pn	**Pn**	**06 43 23.7**	**+1.8**
ARGU	**Argyle Ridge**	**3.33**	**174**	*e*Pn	**Pn**	**06 43 24.0**	**+1.5**
DCM	**Dugout Coal Mi**	**3.45**	**175**	*e*Pn	**Pn**	**06 43 25.7**	**+1.6**
ROA	**Roan Cliffs**	**3.50**	**172**	*e*Pn	**Pn**	**06 43 26.4**	**+1.5**
MFID	**Camas Ranch**	**3.56**	**276**	*e*Pn	**Pb**	**06 43 29.1**	**-3.9**
HRY	**Holter Researc**	**3.62**	**351**	*e*Pn	**Pn**	**06 43 27.6**	**+1.3**
O20A	**White River Ci**	**3.63**	**145**	P	**Pn**	**06 43 28.5**	**+2.0**
	baz=330						
O20A	**White River Ci**	**3.63**	**145**	*e*Pn	**Pn**	**06 43 28.5**	**+2.0**
P17A	**Butcher Ranch,**	**3.67**	**177**	*e*Pn	**Pn**	**06 43 28.9**	**+2.0**
TMUT	**Trail Mountain**	**3.84**	**183**	*e*Pn	**Pn**	**06 43 31.5**	**+2.0**
SRU	**San Rafael Swe**	**4.04**	**175**	*e*Pn	**Pn**	**06 43 33.7**	**+1.7**
CHMT	**Chamberlain Mo**	**4.11**	**338**	*e*Pn	**Pn**	**06 43 36.4**	**+3.4**
Q16A	**Castle Valley**	**4.22**	**182**	*e*Pn	**Pn**	**06 43 36.9**	**+2.3**
N23A	**Red Feather La**	**4.37**	**119**	P	**Pn**	**06 43 38.1**	**+1.5**
	baz=304						
N23A	**Red Feather La**	**4.37**	**119**	*e*Pn	**Pn**	**06 43 38.0**	**+1.4**
SLMT	**Seeley Lake**	**4.47**	**337**	*e*Pn	Pn	06 43 42.5	+4.5
PHWY	**Pilot Hill**	**4.49**	**112**	*e*Pn	**Pn**	**06 43 39.5**	**+1.2**
MSU	**Marysvale**	**4.71**	**192**	*e*Pn	**Pn**	**06 43 43.5**	**+2.2**
PV09	**Paradox Valley**	**4.84**	**163**	*e*Pn	**Pn**	**06 43 45.3**	**+2.1**
SWMT	**Swartz Lake**	**4.86**	**335**	*e*Pn	Pb	06 43 48.8	-6.4
BMO	**Blue Mountains**	**4.88**	**293**	*e*Pn	Pb	06 43 49.5	-6.1
LAO	**LASA Array**	**4.89**	**42**	*e*Pn	**Pn**	**06 43 46.5**	**+2.8**
MMU	**Miners Mountai**	**4.94**	**183**	*e*Pn	**Pn**	**06 43 46.8**	**+2.3**
SMCO	**Snowmass**	**4.98**	**141**	*e*Pn	**Pn**	**06 43 46.9**	**+1.8**
PV10	**Paradox Valley**	**4.98**	**162**	*e*Pn	**Pn**	**06 43 46.8**	**+3.8**
PV04	**Paradox Valley**	**4.99**	**161**	*e*Pn	**Pn**	**06 43 47.1**	**+1.9**
RSSD	**Black Hills**	**5.13**	**77**	*e*Pn	**Pn**	**06 43 49.8**	**+2.7**
JTMT	**Jette**	**5.16**	**334**	*e*Pn	**Pn**	**06 43 51.1**	**+3.6**
MTPU	**Mount Pierson**	**5.18**	**191**	*e*Pn	**Pn**	**06 43 51.3**	**+3.4**
YBMT	**Yellow B

ML4.9/5,Error ellipse: s-maj=2.3km s-min=1.6km az=11.0
ISC 19 07:13:17.9±0.8,**37.39N**±0.02,**20.18E**±0.02,**h15**km±4km,
n1625,σ1§**42**/1775,**mb5.0**/222,**MS4.3**/44,**55C-30D,Ionian Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
ZKS	**Zakynthos**	**0.57**	**58**	P	**Pg**	**07 13 28.2**	**-1.0**
ZKS				S	**Sb**	**07 13 39.3**	**+1.7**
ZKS	**Zakynthos**	**0.57**	**58**	P	**Pg**	**07 13 28.2**	**-1.0**
ZKS				S	**Sb**	**07 13 39.3**	**+1.7**
ZKS	**Zakynthos**	**0.57**	**58**	P	**Pg**	**07 13 28.3**	**-1.0**
ZKS				S	**Sn**	**07 13 41.5**	**+0.8**
ZKS				AML	AML	07 13 42.7	
ZKS				AML	AML	07 13 42.8	
VLS	**Valsamata**	**0.85**	**23**	P	**Pg**	**07 13 32.8**	**-1.6**
VLS	**Valsamata**	**0.85**	**23**	P	**Pg**	**07 13 32.8**	**-1.6**
VLS	**Valsamata**	**0.85**	**23**	P	**Pg**	**07 13 32.9**	**-1.5**
VLS	**Valsamata**	**0.85**	**23**	P	**Pg**	**07 13 32.8**	**-1.6**
KFL	**Anninata**	**0.86**	**34**	P	**Pg**	**07 13 33.2**	**-1.5**
KFL				S	**Sn**	**07 13 49.3**	**+1.4**
KFL	**Anninata**	**0.86**	**34**	P	**Pg**	**07 13 33.3**	**-1.5**
KFL				S	**Sn**	**07 13 48.3**	**+0.4**
KFL	**Anninata**	**0.86**	**34**	P	**Pg**	**07 13 32.7**	**-2.0**
KFL				S	**Sn**	**07 13 48.3**	**+0.4**
VTN	**Vitineika**	**0.96**	**57**	P	**Pg**	**07 13 35.3**	**-1.2**
VTN	**Vitineika**	**0.96**	**57**	P	**Pg**	**07 13 35.3**	**-1.2**
VTN				S	**Sn**	**07 13 54.1**	**+4.0**
RLS	**Riolos of Patr**	**1.22**	**57**	P	**Pn**	**07 13 39.3**	**-1.1**
RLS				S	**Sn**	**07 13 59.2**	**+2.6**
RLS	**Riolos of Patr**	**1.22**	**57**	P	**Pn**	**07 13 39.5**	**-0.9**
RLS				S	**Sn**	**07 13 57.8**	**+1.2**
RLS	**Riolos of Patr**	**1.22**	**57**	P	**Pn**	**07 13 39.3**	**-1.1**
RLS				S	**Sn**	**07 13 59.2**	**+2.6**
AMT	**Artemida-Makis**	**1.23**	**83**	P	**Pn**	**07 13 40.1**	**-0.4**
AMT				S	**Sn**	**07 14 00.2**	**+3.3**
AMT	**Artemida-Makis**	**1.23**	**83**	P	**Pn**	**07 13 40.2**	**-0.4**
AMT				S	**Sn**	**07 14 00.2**	**+3.3**
AMT	**Artemida-Makis**	**1.23**	**83**	P	**Pn**	**07 13 40.2**	**-0.4**
AMT				S	**Sn**	**07 14 01.2**	**+4.3**
AMT				AML	AML	07 14 13.6	
AMT				AML	AML	07 14 15.4	
AXS	**Araxos**	**1.24**	**50**	P	**Pn**	**07 13 39.7**	**-1.0**
AXS	**Araxos**	**1.24**	**50**	P	**Pn**	**07 13 39.8**	**-1.0**
DRO	**Drossia**	**1.34**	**65**	P	**Pn**	**07 13 41.4**	**-0.6**
DRO				S	**Sg**	**07 14 01.8**	**+0.6**
DRO	**Drossia**	**1.34**	**65**	P	**Pn**	**07 13 41.5**	**-0.6**
DRO				S	**Sg**	**07 14 01.8**	**+0.6**
PYL	**PYLOS**	**1.35**	**111**	P	**Pn**	**07 13 40.9**	**-1.3**
PYL				S	**Sb**	**07 13 59.3**	**-0.6**
PYL	**PYLOS**	**1.35**	**111**	P	**Pn**	**07 13 41.4**	**-0.8**
PYL				S	**Sb**	**07 13 59.3**	**-0.6**
PYL	**PYLOS**	**1.35**	**111**	P	**Pn**	**07 13 40.9**	**-1.3**
PYL				S	**Sb**	**07 13 59.3**	**-0.6**
PYL	**PYLOS**	**1.35**	**111**	P	**Pn**	**07 13 41.4**	**-0.8**
PYL				S	**Sb**	**07 13 59.1**	**-0.8**
PYL				AML	AML	07 14 06.0	
	comp=N,78644µm,1.0s						
PYL				AML	AML	07 14 12.0	
	comp=E,77662µm,0.6s						
ITM	**Ithomi**	**1.41**	**98**	P	**Pn**	**07 13 42.4**	**-0.6**
ITM				S	**Sb**	**07 14 01.8**	**0.0**
ITM	**Ithomi**	**1.41**	**98**	P	**Pn**	**07 13 42.5**	**-0.6**
ITM				S	**Sb**	**07 14 01.8**	**0.0**
ITM	**Ithomi**	**1.41**	**98**	P	**Pn**	**07 13 42.4**	**-0.6**
ITM	**Ithomi**	**1.41**	**98**	P	**Pn**	**07 13 42.5**	**-0.6**
ITM				S	**Sg**	**07 14 03.3**	**-0.2**
ITM				AML	AML	07 14 15.2	
	comp=N,46681µm,1.1s						
ITM				AML	AML	07 14 16.7	
	comp=E,57155µm,0.7s						
PDO	**Prodromos**	**1.44**	**33**	P	**Pn**	**07 13 43.2**	**-0.3**
PDO				S	**Sg**	**07 14 05.2**	**+0.7**
PDO	**Prodromos**	**1.44**	**33**	P	**Pn**	**07 13 43.2**	**-0.3**
PDO				S	**Sg**	**07 14 05.2**	**+0.7**
LKD2	**Lefkada island**	**1.45**	**15**	P	**Pb**	**07 13 44.3**	**-0.2**
LKD2				S	**Sg**	**07 14 07.2**	**+2.6**
LKD2	**Lefkada island**	**1.45**	**15**	P	**Pb**	**07 13 44.3**	**-0.2**
LKD2	**Lefkada island**	**1.45**	**15**	P	**Pb**	**07 13 44.3**	**-0.2**
LKD2	**Lefkada island**	**1.45**	**15**	P	**Pg**	**07 13 44.7**	**-1.0**
LKD2				S	**Sg**	**07 14 07.5**	**+3.0**
LKD2				AML	AML	07 14 21.2	
	comp=N,65005µm,0.8s						
LKD2				AML	AML	07 14 21.2	
	comp=E,54112µm,0.7s						
UPR	**University Cam**	**1.56**	**55**	P	**Pn**	**07 13 45.5**	**+0.5**
UPR	**University Cam**	**1.56**	**55**	P	**Pn**	**07 13 45.5**	**+0.5**
PVO	**Paravola**	**1.62**	**41**	P	**Pn**	**07 13 46.6**	**+0.7**
PVO	**Paravola**	**1.62**	**41**	P	**Pn**	**07 13 46.6**	**+0.7**
KLV	**Kalavryta, Ach**	**1.69**	**67**	P	**Pn**	**07 13 46.7**	**-0.3**
KLV				S	**Sg**	**07 14 12.4**	**-0.2**
KLV	**Kalavryta, Ach**	**1.69**	**67**	P	**Pn**	**07 13 46.7**	**-0.3**
KLV				S	**Sg**	**07 14 12.4**	**-0.2**
KLV	**Kalavryta, Ach**	**1.69**	**67**	P	**Pn**	**07 13 46.7**	**-0.3**
KLV				S	**Sg**	**07 14 12.4**	**-0.2**
KLV	**Kalavryta, Ach**	**1.69**	**67**	P	**Pn**	**07 13 47.3**	**+0.3**
VLX	**Vlachokerasia**	**1.76**	**90**	P	**Pn**	**07 13 47.2**	**-0.7**
VLX				S	**Sg**	**07 14 13.1**	**-1.4**
VLX	**Vlachokerasia**	**1.76**	**90**	P	**Pn**	**07 13 47.4**	**-0.5**
VLX				S	**Sg**	**07 14 13.1**	**-1.4**
VLX	**Vlachokerasia**	**1.76**	**90**	P	**Pn**	**07 13 47.2**	**-0.7**
VLX				S	**Sg**	**07 14 13.1**	**-1.4**
GUR	**Goura**	**1.80**	**72**	P	**Pn**	**07 13 48.7**	**+0.2**
GUR	**Goura**	**1.80**	**72**	P	**Pn**	**07 13 48.7**	**+0.2**
GUR	**Goura**	**1.80**	**72**	P	**Pn**	**07 13 48.7**	**+0.2**
SERG	**Sergoula**	**1.80**	**55**	P	**Pn**	**07 13 48.8**	**+0.3**
SERG	**Sergoula**	**1.80**	**55**	P	**Pn**	**07 13 48.8**	**+0.3**
ANX	**Ano Chora**	**1.83**	**48**	P	**Pb**	**07 13 50.5**	**-0.6**
ANX	**Ano Chora**	**1.83**	**48**	P	**Pb**	**07 13 50.5**	**-0.6**
DSL	**Palaion Diasel**	**1.88**	**22**	P	**Pn**	**07 13 50.6**	**+1.0**
DSL	**Palaion Diasel**	**1.88**	**22**	P	**Pn**	**07 13 50.6**	**+1.0**
DSL	**Palaion Diasel**	**1.88**	**22**	P	**Pn**	**07 13 50.6**	**+1.0**
EVR	**Evrytania**	**1.99**	**40**	P	**Pb**	**07 13 53.0**	**-0.9**
EVR	**Evrytania**	**1.99**	**40**	P	**Pb**	**07 13 53.0**	**-0.9**
EVR	**Evrytania**	**1.99**	**40**	P	**Pb**	**07 13 53.0**	**-0.9**
EVR	**Evrytania**	**1.99**	**40**	P	**Pb**	**07 13 53.8**	**-0.2**
DSF	**Desfina**	**2.12**	**61**	P	**Pn**	**07 13 53.6**	**+0.8**
DSF	**Desfina**	**2.12**	**61**	P	**Pn**	**07 13 53.6**	**+0.8**
DSF	**Desfina**	**2.12**	**61**	P	**Pn**	**07 13 53.6**	**+0.8**
IGT	**Igoumenitsa**	**2.14**	**3**	P	**Pn**	**07 13 52.9**	**-0.2**
IGT	**Igoumenitsa**	**2.14**	**3**	P	**Pn**	**07 13 52.9**	**-0.2**
IGT	**Igoumenitsa**	**2.14**	**3**	P	**Pn**	**07 13 52.9**	**-0.2**
IGT	**Igoumenitsa**	**2.14**	**3**	P	**Pn**	**07 13 52.9**	**-0.2**
SGD	**Sagiada**	**2.22**	**1**	P	**Pn**	**07 13 54.3**	**+0.2**
SGD	**Sagiada**	**2.22**	**1**	P	**Pn**	**07 13 54.3**	**+0.2**
LTK	**Loutraki**	**2.30**	**73**	P	**Pn**	**07 13 55.2**	**-0.1**
LTK				S	**Sn**	**07 14 23.8**	**+0.4**
LTK	**Loutraki**	**2.30**	**73**	P	**Pn**	**07 13 55.2**	**-0.1**
LTK				S	**Sn**	**07 14 23.8**	**+0.4**
LTK	**Loutraki**	**2.30**	**73**	P	**Pn**	**07 13 55.2**	**-0.1**
LTK				S	**Sn**	**07 14 23.8**	**+0.4**
VLI	**Veliai**	**2.31**	**106**	P	**Pn**	**07 13 55.7**	**+0.3**
VLI	**Veliai**	**2.31**	**106**	P	**Pn**	**07 13 55.7**	**+0.3**
VLI	**Veliai**	**2.31**	**106**	P	**Pn**	**07 13 55.7**	**+0.3**
JAN	**Janina**	**2.32**	**13**	P	**Pn**	**07 13 56.5**	**+0.9**
JAN	**Janina**	**2.32**	**13**	P	**Pn**	**07 13 56.5**	**+0.9**
JAN	**Janina**	**2.32**	**13**	P	**Pn**	**07 13 56.4**	**+0.9**
JAN	**Janina**	**2.32**	**13**	P	**Pn**	**07 13 56.5**	**+0.9**
KEK	**Kerkira**	**2.33**	**353**	P	**Pn**	**07 13 55.5**	**-0.3**
KEK	**Kerkira**	**2.33**	**353**	P	**Pn**	**07 13 55.5**	**-0.3**
KEK	**Kerkira**	**2.33**	**353**	P	**Pn**	**07 13 55.5**	**-0.3**
AGG	**Agios Georgios**	**2.35**	**46**	P	**Pn**	**07 13 57.2**	**+1.2**
AGG	**Agios Georgios**	**2.35**	**46**	P	**Pn**	**07 13 57.2**	**+1.2**
AGG	**Agios Georgios**	**2.35**	**46**	*e*P	**Pn**	**07 13 57.7**	**+1.7**
AGG	**Agios Georgios**	**2.35**	**46**	P	**Pn**	**07 13 57.2**	**+1.2**
AGG	**Agios Georgios**	**2.35**	**46**	*e*Pn	**Pn**	**07 13 57.7**	**+1.7**
AGG	**Agios Georgios**	**2.35**	**46**	*e*Pn	**Pn**	**07 13 57.7**	**+1.7**
DID	**Didima**	**2.44**	**86**	P	**Pn**	**07 13 56.9**	**-0.3**
DID				S	**Sn**	**07 14 26.6**	**-0.2**
DID	**Didima**	**2.44**	**86**	P	**Pn**	**07 13 56.9**	**-0.3**
DID				S	**Sn**	**07 14 26.6**	**-0.2**
DID	**Didima**	**2.44**	**86**	P	**Pn**	**07 13 56.9**	**-0.3**
DID				S	**Sn**	**07 14 26.6**	**-0.2**
LKR	**Lokris**	**2.56**	**60**	P	**Pn**	**07 13 58.9**	**+0.1**
LKR	**Lokris**	**2.56**	**60**	P	**Pn**	**07 13 58.9**	**+0.1**
LKR	**Lokris**	**2.56**	**60**	P	**Pn**	**07 13 58.9**	**+0.1**
LKR	**Lokris**	**2.56**	**60**	P	**Pn**	**07 13 57.6**	**-1.2**
THL	**Klokotos Trika**	**2.60**	**33**	P	**Pn**	**07 14 00.9**	**+1.5**
THL	**Klokotos Trika**	**2.60**	**33**	P	**Pn**	**07 14 00.9**	**+1.5**
KPRO	**Kipourio**	**2.72**	**20**	P	**Pn**	**07 14 03.1**	**+2.0**
KPRO	**Kipourio**	**2.72**	**20**	P	**Pn**	**07 14 03.1**	**+2.0**
ATH	**Athens Observa**	**2.87**	**77**	P	**Pn**	**07 14 02.1**	**-1.0**
ATH	**Athens Observa**	**2.87**	**77**	P	**Pn**	**07 14 02.1**	**-1.0**
ATH	**Athens Observa**	**2.87**	**77**	P	**Pn**	**07 14 02.1**	**-1.0**
ATH	**Athens Observa**	**2.87**	**77**	P	**Pn**	**07 14 02.1**	**-1.0**
PENT	**Pentalofos**	**2.90**	**15**	P	**Pn**	**07 14 04.6**	**+1.0**
PENT	**Pentalofos**	**2.90**	**15**	P	**Pn**	**07 14 04.6**	**+1.0**
VLY	**Voula,Athens**	**2.91**	**80**	P	**Pn**	**07 14 02.7**	**-1.0**
VLY	**Voula,Athens**	**2.91**	**80**	P	**Pn**	**07 14 02.7**	**-1.0**
VLY	**Voula,Athens**	**2.91**	**80**	P	**Pn**	**07 14 02.7**	**-1.0**
ANKY	**Antikythira Is**	**2.94**	**120**	P	**Pn**	**07 14 04.1**	**+0.1**
ANKY	**Antikythira Is**	**2.94**	**120**	P	**Pn**	**07 14 04.1**	**+0.1**
ANKY	**Antikythira Is**	**2.94**	**120**	P	**Pn**	**07 14 04.1**	**+0.1**
PTL	**Penteli**	**3.00**	**76**	P	**Pn**	**07 14 04.0**	**-0.9**
PTL	**Penteli**	**3.00**	**76**	P	**Pn**	**07 14 04.0**	**-0.9**
PTL	**Penteli**	**3.00**	**76**	P	**Pn**	**07 14 04.0**	**-0.9**
NEO	**Neokhori**	**3.06**	**50**	P	**Pn**	**07 14 05.6**	**-0.2**
NEO	**Neokhori**	**3.06**	**50**	P	**Pn**	**07 14 05.6**	**-0.2**
NEO	**Neokhori**	**3.06**	**50**	P	**Pn**	**07 14 05.6**	**-0.2**
XOR	**Xorichti**	**3.08**	**49**	P	**Pn**	**07 14 06.0**	**-0.1**
XOR	**Xorichti**	**3.08**	**49**	P	**Pn**	**07 14 06.0**	**-0.1**
XOR	**Xorichti**	**3.08**	**49**	P	**Pn**	**07 14 06.0**	**-0.1**
NEST	**Nestorio**	**3.09**	**12**	P	**Pn**	**07 14 07.5**	**+1.2**
NEST	**Nestorio**	**3.09**	**12**	P	**Pn**	**07 14 07.5**	**+1.2**
PLAC	**Placanica**	**3.14**	**291**	Pn	**Pn**	**07 14 06.7**	**-0.1**
PLAC				Sn	**Sn**	**07 14 42.2**	**-1.8**
	comp=E,1µm,0.7s						
PLAC	**Placanica**	**3.14**	**291**	Pn	**Pn**	**07 14 06.7**	**-0.1**
PLAC				Sn	**Sn**	**07 14 42.2**	**-1.8**
	comp=E,1µm,0.7s						
KZN	**Kozani**	**3.17**	**23**	P	**Pn**	**07 14 08.5**	**+1.3**
KZN	**Kozani**	**3.17**	**23**	P	**Pn**	**07 14 08.5**	**+1.3**
KZN	**Kozani**	**3.17**	**23**	P	**Pn**	**07 14 08.5**	**+1.3**
KZN	**Kozani**	**3.17**	**23**	P	**Pn**	**07 14 08.5**	**+1.3**
SERS	**Sersale**	**3.20**	**302**	Pn	**Pn**	**07 14 07.6**	**-0.1**
SERS				Sn	**Sn**	**07 14 42.9**	**-2.7**
	comp=E,575nm,0.7s						
SERS	**Sersale**	**3.20**	**302**	Pn	**Pn**	**07 14 07.6**	**-0.1**
SERS				Sn	**Sn**	**07 14 42.9**	**-2.7**
	comp=E,575nm,0.7s						
TIP	**Timpagrande**	**3.23**	**305**	Pn	**Pn**	**07 14 08.0**	**-0.1**
TIP				Sn	**Sn**	**07 14 44.2**	**-2.0**
	comp=E,798nm,0.9s						
TIP	**Timpagrande**	**3.23**	**305**	Pn	**Pn**	**07 14 08.0**	**-0.1**
TIP				Sn	**Sn**	**07 14 44.2**	**-2.0**
	comp=E,798nm,0.9s						
TIP	**Timpagrande**	**3.23**	**305**	*e*Pn	**Pn**	**07 14 08.0**	**-0.1**
LIT	**Litokhoron**	**3.25**	**33**	P	**Pn**	**07 14 08.7**	**+0.3**
LIT	**Litokhoron**	**3.25**	**33**	P	**Pn**	**07 14 08.7**	**+0.3**
LIT	**Litokhoron**	**3.25**	**33**	P	**Pn**	**07 14 08.7**	**+0.3**
LIT	**Litokhoron**	**3.25**	**33**	P	**Pn**	**07 14 08.7**	**+0.3**
GRI	**Girifalco**	**3.29**	**297**	Pn	**Pn**	**07 14 09.1**	**+0.2**
	comp=E,570nm,0.6s						
GRI	**Girifalco**	**3.29**	**297**	Pn	**Pn**	**07 14 09.1**	**+0.2**
	comp=E,570nm,0.6s						
SOI	**Samo**	**3.34**	**283**	Pn	**Pn**	**07 14 09.5**	**0.0**
	comp=E,1µm,0.9s						
SOI	**Samo**	**3.34**	**283**	Pn	**Pn**	**07 14 09.5**	**0.0**
	comp=E,1µm,0.9s						
MPAZ	**Palizzi**	**3.35**	**281**	Pn	**Pn**	**07 14 09.8**	**0.0**
	comp=E,3µm,0.8s						
MPAZ	**Palizzi**	**3.35**	**281**	Pn	**Pn**	**07 14 09.8**	**0.0**
	comp=E,3µm,0.8s						
KTI	**Kastanea**	**3.36**	**26**	P	**Pn**	**07 14 11.0**	**+1.1**
KTI	**Kastanea**	**3.36**	**26**	P	**Pn**	**07 14 11.0**	**+1.1**
PIPA	**Pietrapaola**	**3.37**	**309**	Pn	**Pn**	**07 14 09.8**	**-0.1**
	comp=E,820nm,0.7s						
PIPA	**Pietrapaola**	**3.37**	**309**	Pn	**Pn**	**07 14 09.8**	**-0.1**
	comp=E,820nm,0.7s						
AOS	**Alonnisos**	**3.41**	**58**	*e*P	**Pn**	**07 14 11.1**	**+0.5**
AOS	**Alonnisos**	**3.41**	**58**	P	**Pn**	**07 14 10.0**	**-0.6**
AOS	**Alonnisos**	**3.41**	**58**	P	**Pn**	**07 14 10.0**	**-0.6**
AOS	**Alonnisos**	**3.41**	**58**	P	**Pn**	**07 14 10.0**	**-0.6**
MHLO	**Agia Marina, M**	**3.45**	**100**	P	**Pn**	**07 14 10.0**	**-1.1**
MHLO	**Agia Marina, M**	**3.45**	**100**	P	**Pn**	**07 14 10.0**	**-1.1**
CEL	**Celeste**	**3.50**	**286**	Pn	**Pn**	**07 14 11.8**	**0.0**
	comp=E,1µm,0.7s						
CEL	**Celeste**	**3.50**	**286**	*e*Pn	**Pn**	**07 14 11.9**	**+0.1**
CEL				*e*Sn	**Sn**	**07 14 52.0**	**-0.9**
CEL	**Celeste**	**3.50**	**286**	*e*Pn	**Pn**	**07 14 11.9**	**+0.1**
CEL				*e*Sn	**Sn**	**07 14 52.0**	**-0.9**
FNA	**Florina**	**3.51**	**15**	P	**Pn**	**07 14 13.0**	**+1.0**
FNA	**Florina**	**3.51**	**15**	P	**Pn**	**07 14 13.0**	**+1.0**
FNA	**Florina**	**3.51**	**15**	P	**Pn**	**07 14 13.0**	**+1.0**
FNA	**Florina**	**3.51**	**15**	P	**Pn**	**07 14 13.0**	**+1.0**
GMB	**Gambarie**	**3.53**	**284**	Pn	**Pn**	**07 14 12.1**	**-0.2**
	comp=E,5µm,0.8s						
GMB	**Gambarie**	**3.53**	**284**	Pn	**Pn**	**07 14 12.1**	**-0.2**
	comp=E,5µm,0.8s						
MSCL	**Scilla**	**3.57**	**285**	Pn	**Pn**	**07 14 12.8**	**0.0**
	comp=E,5µm,1.1s						
MSCL	**Scilla**	**3.57**	**285**	Pn	**Pn**	**07 14 12.8**	**0.0**
	comp=E,5µm,1.1s						
JOPP	**Joppolo**	**3.60**	**291**	Pn	**Pn**	**07 14 13.0**	**-0.2**
	comp=E,1µm,0.7s						
JOPP	**Joppolo**	**3.60**	**291**	Pn	**Pn**	**07 14 13.0**	**-0.2**
	comp=E,1µm,0.7s						
IMMV	**Iera Moni Meta**	**3.62**	**121**	P	**Pn**	**07 14 13.4**	**-0.1**
IMMV	**Iera Moni Meta**	**3.62**	**121**	P	**Pn**	**07 14 13.4**	**-0.1**
CAR1	**CAROLEI**	**3.63**	**302**	Pn	**Pn**	**07 14 14.1**	**+0.5**
	comp=E,4µm,1.0s						
CAR1	**CAROLEI**	**3.63**	**302**	Pn	**Pn**	**07 14 14.1**	**+0.5**
	comp=E,4µm,1.0s						
MESG	**Mesagne**	**3.67**	**331**	Pn	**Pn**	**07 14 13.7**	**-0.4**
	comp=E,4µm,0.9s						
MESG	**Mesagne**	**3.67**	**331**	Pn	**Pn**	**07 14 13.7**	**-0.4**
	comp=E,4µm,0.9s						
PAIG	**Paliouri**	**3.73**	**46**	P	**Pn**	**07 14 14.6**	**-0.3**
PAIG	**Paliouri**	**3.73**	**46**	P	**Pn**	**07 14 14.6**	**-0.3**
PAIG	**Paliouri**	**3.73**	**46**	P	**Pn**	**07 14 14.6**	**-0.3**
PAIG	**Paliouri**	**3.73**	**46**	P	**Pn**	**07 14 14.6**	**-0.3**
OHR	**Ohrid**	**3.75**	**7**	*i* Pn	**Pn**	**07 14 16.6**	**+1.3**
OHR				*e*Sn	**Sg**	**07 15 17.7**	**-0.5**
OHR	**Ohrid**	**3.75**	**7**	*i* Pn	**Pn**	**07 14 16.5**	**+1.3**
MSRU	**Castanea**	**3.79**	**285**	Pn	**Pn**	**07 14 15.6**	**-0.2**
	comp=E,4µm,1.2s						
MSRU	**Castanea**	**3.79**	**285**	Pn	**Pn**	**07 14 15.6**	**-0.2**
	comp=E,4µm,1.2s						
VAM	**Vamos**	**3.80**	**120**	P	**Pn**	**07 14 14.7**	**-1.2**
VAM	**Vamos**	**3.80**	**120**	P	**Pn**	**07 14 14.7**	**-1.2**
VAM	**Vamos**	**3.80**	**120**	P	**Pn**	**07 14 14.7**	**-1.2**
VAM	**Vamos**	**3.80**	**120**	P	**Pn**	**07 14 14.7**	**-1.2**
ATN	**Antennamare**	**3.81**	**283**	Pn	**Pn**	**07 14 16.1**	**0.0**
	comp=E,3µm,1.0s						
ATN	**Antennamare**	**3.81**	**283**	Pn	**Pn**	**07 14 16.1**	**0.0**
	comp=E,3µm,1.0s						
TAR1	**Taranto**	**3.85**	**325**	*e*Pn	**Pn**	**07 14 16.4**	**-0.2**
SALB	**San Lorenzo Be**	**3.89**	**311**	Pn	**Pn**	**07 14 17.6**	**+0.3**
	comp=E,639nm,0.8s						
SALB	**San Lorenzo Be**	**3.89**	**311**	Pn	**Pn**	**07 14 17.6**	**+0.3**
	comp=E,639nm,0.8s						
MPNC	**Port Mandanici**	**3.90**	**283**	Pn	**Pn**	**07 14 17.2**	**0.0**
	comp=E,3µm,0.9s						
MPNC	**Port Mandanici**	**3.90**	**283**	Pn	**Pn**	**07 14 17.2**	**0.0**
	comp=E,3µm,0.9s						
THE	**Thessaloniki**	**3.90**	**33**	P	**Pn**	**07 14 17.2**	**0.0**
THE	**Thessaloniki**	**3.90**	**33**	P	**Pn**	**07 14 17.2**	**0.0**
THE	**Thessaloniki**	**3.90**	**33**	P	**Pn**	**07 14 17.2**	**0.0**
THE	**Thessaloniki**	**3.90**	**33**	P	**Pn**	**07 14 17.2**	**0.0**
PLG	**Polygyros**	**3.92**	**40**	P	**Pn**	**07 14 17.1**	**-0.5**
PLG	**Polygyros**	**3.92**	**40**	P	**Pn**	**07 14 17.1**	**-0.5**
PLG	**Polygyros**	**3.92**	**40**	P	**Pn**	**07 14 17.1**	**-0.5**
PLG	**Polygyros**	**3.92**	**40**	P	**Pn**	**07 14 17.1**	**-0.5**
HORT	**Hortiatis**	**3.93**	**35**	*e*P	**Pn**	**07 14 17.8**	**+0.2**
HORT	**Hortiatis**	**3.93**	**35**	P	**Pn**	**07 14 17.9**	**+0.2**
HORT	**Hortiatis**	**3.93**	**35**	P	**Pn**	**07 14 17.9**	**+0.2**
HORT	**Hortiatis**	**3.93**	**35**	P	**Pn**	**07 14 17.9**	**+0.2**
MMME	**Mongiuffi-Meli**	**3.94**	**279**	Pn	**Pn**	**07 14 17.7**	**-0.2**
	comp=E,2µm,1.1s						
MMME	**Mongiuffi-Meli**	**3.94**	**279**	Pn	**Pn**	**07 14 17.7**	**-0.2**
	comp=E,2µm,1.1s						
AGST	**Augusta-Monte**	**3.95**	**270**	Pn	**Pn**	**07 14 16.3**	**-1.6**
	comp=E,1µm,0.8s						
AGST	**Augusta-Monte**	**3.95**	**270**	Pn	**Pn**	**07 14 16.3**	**-1.6**
	comp=E,1µm,0.8s						
GRG	**Griva**	**3.96**	**25**	P	**Pn**	**07 14 18.3**	**+0.2**
GRG	**Griva**	**3.96**	**25**	P	**Pn**	**07 14 18.3**	**+0.2**
GRG	**Griva**	**3.96**	**25**	P	**Pn**	**07 14 18.3**	**+0.2**
GRG	**Griva**	**3.96**	**25**	P	**Pn**	**07 14 18.3**	**+0.2**
TIR	**Tirane**	**3.96**	**357**	Pn	**Pn**	**07 14 18.3**	**+0.3**
	comp=E,6µm,1.3s						
TIR	**Tirane**	**3.96**	**357**	*e*P	**Pn**	**07 14 19.4**	**+1.4**
TIR	**Tirane**	**3.96**	**357**	Pn	**Pn**	**07 14 18.3**	**+0.3**
	comp=E,6µm,1.3s						
TIR	**Tirane**	**3.96**	**357**	*e*P	**Pn**	**07 14 19.4**	**+1.4**
TIR	**Tirane**	**3.96**	**357**	*e*Pn	**Pn**	**07 14 19.4**	**+1.4**
MCSR	**Castroreale**	**3.96**	**281**	Pn	**Pn**	**07 14 18.7**	**+0.5**
MCSR				Sn	**Sn**	**07 15 02.7**	**-1.7**
	comp=E,2µm,0.8s						
MCSR	**Castroreale**	**3.96**	**281**	Pn	**Pn**	**07 14 18.7**	**+0.5**
MCSR				Sn	**Sn**	**07 15 02.7**	**-1.7**
	comp=E,2µm,0.8s						
HAGA	**Augusta**	**4.00**	**270**	Pn	**Pn**	**07 14 16.7**	**-2.0**
	comp=E,1µm,0.8s						
HAGA	**Augusta**	**4.00**	**270**	Pn	**Pn**	**07 14 16.7**	**-2.0**
	comp=E,1µm,0.8s						
MILZ	**Milazzo**	**4.01**	**284**	Pn	**Pn**	**07 14 18.6**	**-0.2**
	comp=E,3µm,1.2s						
MILZ	**Milazzo**	**4.01**	**284**	Pn	**Pn**	**07 14 18.6**	**-0.2**
	comp=E,3µm,1.2s						
NOV	**Novara**	**4.05**	**281**	Pn	**Pn**	**07 14 19.5**	**+0.2**
	comp=E,7µm,1.4s						
NOV	**Novara**	**4.05**	**281**	Pn	**Pn**	**07 14 19.5**	**+0.2**
	comp=E,7µm,1.4s						
HAVL	**Avola**	**4.06**	**265**	Pn	**Pn**	**07 14 18.0**	**-1.4**
	comp=E,2µm,0.8s						
HAVL	**Avola**	**4.06**	**265**	Pn	**Pn**	**07 14 18.0**	**-1.4**
	comp=E,2µm,0.8s						
GVD	**Gavdhos**	**4.07**	**128**	P	**Pn**	**07 14 18.8**	**-0.7**
GVD	**Gavdhos**	**4.07**	**128**	P	**Pn**	**07 14 18.8**	**-0.7**
GVD	**Gavdhos**	**4.07**	**128**	P	**Pn**	**07 14 18.8**	**-0.7**
SSY	**Sortino**	**4.08**	**268**	Pn	**Pn**	**07 14 18.2**	**-1.5**
	comp=E,2µm,1.0s						
SSY	**Sortino**	**4.08**	**268**	Pn	**Pn**	**07 14 18.2**	**-1.5**
	comp=E,2µm,1.0s						
HCRL	**Carlentini**	**4.10**	**270**	Pn	**Pn**	**07 14 18.6**	**-1.4**
HCRL				Sn	**Sn**	**07 15 03.8**	**-3.9**
	comp=E,6µm,0.8s						
HCRL	**Carlentini**	**4.10**	**270**	Pn	**Pn**	**07 14 18.6**	**-1.4**
HCRL				Sn	**Sn**	**07 15 03.8**	**-3.9**
	comp=E,6µm,0.8s						
LTRZ	**Laterza**	**4.14**	**322**	Pn	**Pn**	**07 14 20.0**	**-0.5**
	comp=E,2µm,1.0s						
LTRZ	**Laterza**	**4.14**	**322**	Pn	**Pn**

CHOS	Chios island	4.75	76	eP	Pn	07 14 30.0	+0.9	ARMT	Armutlu	7.47	62	eP	Pn	07 15 08.8	+2.5
CHOS	Chios island	4.75	76	P	Pn	07 14 28.8	-0.3	GOLH	Golhisar	7.48	88	i P	Pn	07 15 09.5	+2.9
CHOS	Chios island	4.75	76	P	Pn	07 14 28.8	-0.3	GOLH	Golhisar	7.48	88	P	Pn	07 15 09.5	+2.9
CHOS	Chios island	4.75	76	P	Pn	07 14 28.8	-0.3	CTKS	Kestanelik-??a	7.51	57	eP	Pn	07 15 09.6	+2.8
CDT	Castel del Mon	4.77	322	ePn	Pn	07 14 29.3	+0.1	TVSB	Tavsanli	7.57	71	eP	Pn	07 15 10.2	+2.4
WDD	Wied Dalam	4.80	253	Pn	Pn	07 14 29.2	-0.5	TVSB	Tavsanli	7.57	71	eP	Pn	07 15 10.2	+2.4
	comp=E,3µm,0.8s							AKAS	Kas	7.65	96	i P	Pn	07 15 10.4	+1.4
WDD	Wied Dalam	4.80	253	ePn	Pn	07 14 29.9	+0.2	AKAS				i S	Sn	07 16 32.0	-3.4
WDD	Wied Dalam	4.80	253	ePn	Pn	07 14 29.9	+0.2	AKAS	Kas	7.65	96	P	Pn	07 15 10.4	+1.4
LAST	Lasithi	4.83	116	P	Pn	07 14 28.2	-1.9	AKAS				S	Sn	07 16 32.0	-3.4
LAST	Lasithi	4.83	116	P	Pn	07 14 28.2	-1.9	KSL	Kastellorizon	7.65	96	P	Pn	07 15 09.2	+0.4
LAST	Lasithi	4.83	116	ePn	Pn	07 14 30.0	-0.1	KSL	Kastellorizon	7.65	96	P	Pn	07 15 09.2	+0.4
LAST	Lasithi	4.83	116	ePn	Pn	07 14 30.0	-0.1	KSL	Kastellorizon	7.65	96	P	Pn	07 15 09.2	+0.4
DRME	Dracevica, Mon	4.85	351	⇑iPn	Pn	07 14 29.9	-0.4	BLY	Banja Luka	7.69	344	ePn	Pn	07 15 09.1	-0.2
DRME				eSn	Sn	07 15 25.9	-0.2	FGSL	Fruska Gora	7.76	358	ePn	Pn	07 15 09.6	-0.7
DRME	Dracevica, Mon	4.85	351	⇑iPn	Pn	07 14 29.9	-0.4	ELL	Elmali	7.81	92	eP	Pn	07 15 12.8	+1.8
DRME				eSn	Sn	07 15 25.9	-0.2	ELL	Elmali	7.81	92	eP	Pn	07 15 12.8	+1.8
NVR	Nevrokopi	4.88	35	P	Pn	07 14 30.5	-0.2	UDBI	Udbina	7.87	336	ePn	Pn	07 15 10.8	-1.1
NVR	Nevrokopi	4.88	35	P	Pn	07 14 30.5	-0.2	UDBI				Sn	Sn	07 16 38.5	-2.2
NVR	Nevrokopi	4.88	35	P	Pn	07 14 30.5	-0.2	UDBI	Udbina	7.87	336	ePn	Pn	07 15 10.7	-1.1
BUM	Brajici-Budva	5.00	349	⇓iPn	Pn	07 14 32.0	-0.4	UDBI				Sn	Sn	07 16 38.4	-2.2
BUM				eSn	Sn	07 15 28.9	-1.1	HUMR	Humele	8.00	25	⇑iP	Pn	07 15 14.4	+0.9
BUM	Brajici-Budva	5.00	349	⇓iPn	Pn	07 14 32.0	-0.4	HUMR	Humele	8.00	25	⇑iP	Pn	07 15 14.4	+0.9
BUM				eSn	Sn	07 15 28.9	-1.1	PRD	Provadia	8.01	41	i P	Pn	07 15 14.5	+0.9
KKB	Krupnik	5.00	26	i P	Pn	07 14 32.7	+0.3	KORT	Korkueli	8.13	90	i P	Pn	07 15 19.9	+4.4
MMB	Musomiste	5.01	32	i P	Pn	07 14 32.7	+0.1	KORT				i S	Sn	07 16 52.0	+4.8
PDG	Podgorica	5.08	352	⇑iPn	Pn	07 14 33.6	+0.1	KORT	Korkueli	8.13	90	P	Pn	07 15 19.9	+4.4
PDG				eSn	Sn	07 15 31.7	-0.1	KORT				S	Sn	07 16 52.0	+4.8
TTG	Podgorica	5.08	352	⇑iPn	Pn	07 14 33.6	+0.1	NVLJ	Novalja	8.21	332	ePn	Pn	07 15 16.4	0.0
TTG				eSn	Sn	07 15 31.7	-0.1	NVLJ				Sn	Sn	07 16 43.7	-5.1
MCRV	Calabrutti - M	5.16	313	Pn	Pn	07 14 36.7	+2.0	NVLJ	Novalja	8.21	332	ePn	Pn	07 15 16.3	0.0
	comp=E,446nm,0.7s							ISP	Isparta	8.22	84	‖eP	Pn	07 15 19.0	+2.2
MCRV	Calabrutti - M	5.16	313	Pn	Pn	07 14 36.7	+2.0	ISP				pmax	pmax		
	comp=E,446nm,0.7s								comp=Z,40nm,0.8s						
PVY	Plav	5.20	358	⇓iPn	Pn	07 14 35.3	+0.1	ISP	Isparta	8.22	84	ePn	Pn	07 15 17.6	+0.9
PVY				eSn	Sn	07 15 34.2	-0.7	ISP	Isparta	8.22	84	eP	Pn	07 15 19.0	+2.2
PVY	Plav	5.20	358	⇓iPn	Pn	07 14 35.3	+0.1		comp=Z,40nm,0.8s						
PVY				eSn	Sn	07 15 34.2	-0.7	ISP	Isparta	8.22	84	ePn	Pn	07 15 17.6	+0.9
HCY	Herceg Novi	5.21	346	⇑iPn	Pn	07 14 34.9	-0.4	BZS	Buzias	8.29	7	⇓iP	Pn	07 15 18.3	+0.8
HCY				eSn	Sn	07 15 33.1	-2.0	BZS	Buzias	8.29	7	⇓iP	Pn	07 15 18.3	+0.8
HCY	Herceg Novi	5.21	346	⇑iPn	Pn	07 14 34.9	-0.4	ARR	Arges	8.64	21	⇓iP	Pn	07 15 22.7	+0.3
HCY				eSn	Sn	07 15 33.1	-2.0	ARR	Arges	8.64	21	⇓iP	Pn	07 15 22.7	+0.3
SNAL	S. Angelo Dei	5.23	314	Pn	Pn	07 14 37.5	+1.9	VSL	Villasalto	8.73	287	ePn	Pn	07 15 22.8	-0.8
	comp=E,1µm,1.1s							VSL	Villasalto	8.73	287	ePn	Pn	07 15 22.8	-0.8
SNAL	S. Angelo Dei	5.23	314	Pn	Pn	07 14 37.5	+1.9	PSN	Preselentsi	8.75	42	i P	Pn	07 15 23.1	-0.7
	comp=E,1µm,1.1s							VOIR		8.83	23	⇑iP	Pn	07 15 25.2	+0.2
CEME	Cevo	5.24	350	⇓iPn	Pn	07 14 35.2	-0.5	VOIR		8.83	23	⇑iP	Pn	07 15 25.2	+0.2
CEME				eSn	Sn	07 15 34.9	-0.9	KEST	Kesra	8.87	262	Pn	Pn	07 15 26.4	+0.8
CEME	Cevo	5.24	350	⇓iPn	Pn	07 14 35.2	-0.5		comp=Z,1.0nm,0.3s,baz=59,slow=5.4,SNR=20						
CEME				eSn	Sn	07 15 34.9	-0.9	KEST				Sn	Sn	07 17 03.2	-2.1
GADA	Gvkgeada	5.27	56	P	Pn	07 14 38.3	+2.2		baz=44,slow=21,SNR=2.6						
GADA	Gvkgeada	5.27	56	i P	Pn	07 14 38.3	+2.2	KEST				LR	LR	07 19 09.8	
CAFE	Carife	5.28	315	Pn	Pn	07 14 37.7	+1.4		comp=Z,1µm,21.4s,baz=31,slow=39						
CAFE	Carife	5.28	315	Pn	Pn	07 14 37.7	+1.4	KEST	Kesra	8.87	262	ePn	Pn	07 15 25.9	+0.3
EZN	Ezine	5.39	61	P	Pn	07 14 40.8	+3.0	KEST	Kesra	8.87	262	ePn	Pn	07 15 25.9	+0.3
EZN	Ezine	5.39	61	i P	Pn	07 14 40.8	+3.0	KEST				Sn	Sn	07 17 03.2	-2.1
MS1	Monte Sant'Ang	5.41	324	ePn	Pn	07 14 38.0	0.0	ISR	Istrita	9.08	30	⇑iP	Pn	07 15 30.2	+1.7
MSAG	Monte S. Angel	5.43	324	Pn	Pn	07 14 38.0	-0.3	ISR	Istrita	9.08	30	⇑iP	Pn	07 15 30.2	+1.7
	comp=E,2µm,1.0s							CRES	Cresnjev	9.13	339	⇑iPn	Pn	07 15 27.5	-1.6
MSAG	Monte S. Angel	5.43	324	Pn	Pn	07 14 38.0	-0.3	MLR	Muntele Rosu	9.17	26	Pn	Pn	07 15 30.3	+0.5
	comp=E,2µm,1.0s								comp=Z,1.3nm,0.3s,baz=203,slow=6.3,SNR=73						
NKME	Niksic	5.45	350	⇓iPn	Pn	07 14 38.3	-0.3	MLR				LR	LR	07 19 21.6	
NKME				eSn	Sn	07 15 39.9	-1.1		comp=Z,544nm,18.2s,baz=202,slow=41						
NKME	Niksic	5.45	350	⇓iPn	Pn	07 14 38.3	-0.3	MLR	Muntele Rosu	9.17	26	⇑iP	Pn	07 15 30.3	+0.5
NKME				eSn	Sn	07 15 39.9	-1.1	MLR	Muntele Rosu	9.17	26	ePn	Pn	07 15 30.7	+0.9
BEY	Berane	5.48	358	⇓iPn	Pn	07 14 39.5	+0.5	MLR	Muntele Rosu	9.17	26	ePn	Pn	07 15 30.7	+0.9
BEY				eSn	Sn	07 15 40.6	-1.1	SWA2		9.25	150	P	Pn	07 15 26.3	-4.4
IVA	Berane	5.48	358	⇓iPn	Pn	07 14 39.5	+0.5		baz=153						
IVA				eSn	Sn	07 15 40.6	-1.1	SWA2				AMP		07 17 00.0	
NKY	Niksic	5.49	351	⇑iPn	Pn	07 14 38.9	-0.3		comp=N,3660µm,0.5s,logA/T=6.9,baz=153						
NKY				eSn	Sn	07 15 41.4	-0.7	SWA2				S	Sn	07 17 03.2	-11
NKY	Niksic	5.49	351	⇑iPn	Pn	07 14 38.9	-0.3		baz=153						
NKY				eSn	Sn	07 15 41.4	-0.7	SWA2		9.25	150	P	Pn	07 15 26.3	-4.4
TREB	Trebinje	5.50	346	ePn	Pn	07 14 37.5	-1.7	SWA2				S	Sn	07 17 03.2	-11
CLTB	Caltabellotta	5.54	274	ePn	Pn	07 14 41.1	+1.2	GOLS	Golise	9.26	340	ePn	Pn	07 15 29.4	-1.4
	comp=E,70nm,0.5s								comp=Z,2µm,4.1s						
CLTB	Caltabellotta	5.54	274	ePn	Pn	07 14 41.1	+1.2	GOLS	Golise	9.26	340	ePn	Pn	07 15 29.4	-1.4
	comp=E,70nm,0.5s								comp=Z,2µm,4.1s						
SGRT	San Giovanni R	5.54	323	Pn	Pn	07 14 39.5	-0.4	TLB	Topalu	9.32	37	⇑iP	Pn	07 15 31.5	-0.2
	comp=E,1µm,1.1s							TLB	Topalu	9.32	37	⇑iP	Pn	07 15 31.5	-0.2
SGRT	San Giovanni R	5.54	323	Pn	Pn	07 14 39.5	-0.4	SKDS	Skadanscina	9.36	332	i Pn	Pn	07 15 31.7	-0.6
	comp=E,1µm,1.1s							SKDS				eSn	Sn	07 17 09.0	-8.3
RZN	Rozhen	5.54	38	i P	Pn	07 14 40.4	+0.4		comp=Z,1µm,4.8s						
BARS	Barje	5.56	13	⇑iPn	Pn	07 14 39.9	-0.2	SKDS	Skadanscina	9.36	332	i Pn	Pn	07 15 31.7	-0.6
BRY	Bratogost	5.64	348	⇑iPn	Pn	07 14 40.8	-0.5	CEY	Cerknica	9.38	335	ePn	Pn	07 15 32.3	-0.2
BRY				eSn	Sn	07 15 44.4	-1.5	TIRR	Tirgusor	9.41	39	⇑iP	Pn	07 15 32.5	-0.4
BRY	Bratogost	5.64	348	⇑iPn	Pn	07 14 40.8	-0.5	TIRR	Tirgusor	9.41	39	eP	Pn	07 15 33.0	+0.1
BRY				eSn	Sn	07 15 44.4	-1.5	TIRR	Tirgusor	9.41	39	⇑iP	Pn	07 15 32.5	-0.4
NIS1	Nisyros Isl.	5.66	96	eP	Pn	07 14 41.2	-0.3	TIRR	Tirgusor	9.41	39	ePn	Pn	07 15 33.0	+0.1
NIS1	Nisyros Isl.	5.66	96	eP	Pn	07 14 41.2	-0.3	TIRR	Tirgusor	9.41	39	ePn	Pn	07 15 33.0	+0.1
VTS	Vitosha	5.69	23	⇑iP	Pn	07 14 42.9	+0.9	BEHE	Becsehely	9.42	345	ePn	Pn	07 15 26.2	-6.8
VTS	Vitosha	5.69	23	eP	Pn	07 14 42.8	+0.8	TRI	Trieste	9.59	332	eP	Pn	07 15 34.9	-0.5
VTS	Vitosha	5.69	23	i P	Pn	07 14 43.5	+1.5	TRI	Trieste	9.59	332	ePn	Pn	07 15 34.8	-0.6
VTS	Vitosha	5.69	23	ePn	Pn	07 14 42.8	+0.8	TRI	Trieste	9.59	332	ePn	Pn	07 15 34.9	-0.6
VTS	Vitosha	5.69	23	ePn	Pn	07 14 42.8	+0.8	LJU	Ljubljana	9.62	336	ePn	Pn	07 15 35.5	-0.2
BODT	Bodrum	5.70	91	eP	Pn	07 14 40.4	-1.7	LJU	Ljubljana	9.62	336	ePn	Pn	07 15 34.7	-1.0
BODT	Bodrum	5.70	91	eP	Pn	07 14 40.4	-1.7	PLOR	Plostina	9.74	28	⇑iP	Pn	07 15 38.9	+1.5
ENEZ	Enez	5.72	52	eP	Pn	07 14 45.0	+2.7	PLOR	Plostina	9.74	28	⇑iP	Pn	07 15 38.9	+1.5
ALN	Alexandroupoli	5.75	51	eP	Pn	07 14 43.4	+0.7	GAZI	Gazipasa	9.80	93	i P	Pn	07 15 36.8	-1.5
ALN	Alexandroupoli	5.75	51	eP	Pn	07 14 43.4	+0.7	GAZI				i S	Sn	07 17 17.9	-10
GELI	Tayfur-Gelibol	5.76	57	eP	Pn	07 14 43.2	+0.4	GAZI	Gazipasa	9.80	93	P	Pn	07 15 36.8	-1.5
GELI	Tayfur-Gelibol	5.76	57	eP	Pn	07 14 43.2	+0.4	GAZI				S	Sn	07 17 17.9	-10
PLD	Plovdiv	5.86	35	i P	Pn	07 14 45.5	+1.4	OBKA	Obir	10.02	337	ePn	Pn	07 15 41.7	+0.3
KDZ	Kurdzhali	5.87	42	i P	Pn	07 14 43.8	-0.6		comp=Z,11nm,0.5s						
UPM	Unac-Piva	5.88	351	⇑iPn	Pn	07 14 45.2	+0.5	OBKA				eSn	Sn	07 17 29.0	-4.5
UPM				eSn	Sn	07 15 50.9	-1.0		comp=Z,45nm,0.6s						
UPM	Unac-Piva	5.88	351	⇑iPn	Pn	07 14 45.2	+0.5	OBKA	Obir	10.02	337	Pn	Pn	07 15 41.7	+0.3
UPM				eSn	Sn	07 15 50.9	-1.0		comp=Z,11nm,0.5s						
ERIK	Erikli-Kesan	5.92	54	P	Pn	07 14 44.8	-0.2	SOKA	Soboth	10.03	339	ePn	Pn	07 15 40.0	-1.5
ERIK	Erikli-Kesan	5.92	54	i P	Pn	07 14 44.8	-0.2		comp=Z,76nm,1.0s,SNR=25						
KARP	Karpathos	5.92	106	ePn	Pn	07 14 45.2	+0.1	SOKA				eSn	Sn	07 17 30.6	-3.2
KARP	Karpathos	5.92	106	ePn	Pn	07 14 45.2	+0.1		comp=Z,3µm,0.0s						
LPK	Lapseki	5.94	58	eP	Pn	07 14 46.7	+1.5	SOKA	Soboth	10.03	339	Pn	Pn	07 15 40.0	-1.5
LPK	Lapseki	5.94	58	eP	Pn	07 14 46.7	+1.5		comp=Z,76nm,1.0s,SNR=25						
PLE	Pljevlja	5.96	354	⇑iPn	Pn	07 14 45.9	+0.2	BUD	Budapest	10.12	356	eP	Pn	07 15 43.0	+0.4
PLE				eSn	Sn	07 15 52.6	-1.1	BUD	Budapest	10.12	356	ePn	Pn	07 15 43.0	+0.4
PLE	Pljevlja	5.96	354	⇑iPn	Pn	07 14 45.9	+0.2	BR231	Keskin MP Arra	10.16	72	ePn	Pn	07 15 44.4	+1.1
PLE				eSn	Sn	07 15 52.6	-1.1	BR231	Keskin MP Arra	10.16	72	ePn	Pn	07 15 44.4	+1.1
PGB	Panagyurishte	5.99	30	i P	Pn	07 14 46.8	+0.7	TESR	Tescani	10.30	26	‖iP	Pn	07 15 47.1	+2.0
AYDB	Zeytinkoy-Aydi	6.14	82	eP	Pn	07 14 49.7	+1.5	TESR	Tescani	10.30	26	‖iP	Pn	07 15 47.1	+2.0
AYDB	Zeytinkoy-Aydi	6.14	82	eP	Pn	07 14 49.7	+1.5	MYKA	Terra Mystica	10.43	334	Pn	Pn	07 15 48.0	+1.1
IVAS	Ivanjica	6.18	360	⇑iPn	Pn	07 14 48.2	-0.4		comp=Z,14nm,0.7s						
DIM	Dimitrovgrad	6.22	40	i P	Pn	07 14 49.0	-0.1	MYKA				eSn	Sn	07 17 37.5	-5.9
KRBG	Karabiga-Canak	6.31	59	eP	Pn	07 14 52.6	+2.2		comp=Z,21nm,0.9s						
KRBG	Karabiga-Canak	6.31	59	eP	Pn	07 14 52.6	+2.2	MYKA	Terra Mystica	10.43	334	Pn	Pn	07 15 48.0	+1.1
RKY	Sarkoy-Tekirda	6.37	57	eP	Pn	07 14 53.2	+2.0		comp=Z,14nm,0.7s						
RKY	Sarkoy-Tekirda	6.37	57	eP	Pn	07 14 53.2	+2.0	ARSA	Arzberg	10.43	342	ePn	Pn	07 15 45.7	-1.2
BALB	Balikesir	6.44	67	eP	Pn	07 14 54.2	+2.1		comp=Z,16nm,0.6s,SNR=15						
BALB	Balikesir	6.44	67	eP	Pn	07 14 54.3	+2.1	ARSA	Arzberg	10.43	342	Pn	Pn	07 15 45.7	-1.2
YER	Yerkesik	6.47	90	eP	Pn	07 14 53.8	+1.2		comp=Z,16nm,0.6s,SNR=15						
YER	Yerkesik	6.47	90	P	Pn	07 14 53.8	+1.2	PSZ	Piszkesteto	10.52	359	⇑iP	Pn	07 15 48.1	-0.1
YER	Yerkesik	6.47	90	eP	Pn	07 14 53.8	+1.2	PSZ	Piszkesteto	10.52	359	eP	Pn	07 15 48.0	-0.1
ARG	Arkhangelos	6.49	98	eP	Pn	07 14 53.0	+0.2	PSZ	Piszkesteto	10.52	359	ePn	Pn	07 15 48.0	-0.1
ARG	Arkhangelos	6.49	98	eP	Pn	07 14 53.0	+0.2	PSZ	Piszkesteto	10.52	359	‖iP	Pn	07 15 48.3	+0.1
BBLS	Lazići	6.49	355	ePn	Pn	07 14 51.6	-1.3	PSZ	Piszkesteto	10.52	359	‖ePn	Pn	07 15 48.3	+0.1
GRUS	Gruza	6.50	3	⇑iPn	Pn	07 14 52.8	-0.2	SOP	Sopron	10.62	347	eP	Pn	07 15 46.8	-2.7
MPEP	Malo Peshtene	6.55	23	i P	Pn	07 14 54.5	+0.9	SOP	Sopron	10.62	347	ePn	Pn	07 15 46.8	-2.7
BOLS	Boljevac	6.57	11	ePn	Pn	07 14 52.3	-1.6	BR131	Keskin Array S	10.80	73	ePn	Pn	07 15 52.5	+0.4
ZAGS	Zajecar	6.60	13	ePn	Pn	07 14 53.6	-0.7	BR131	Keskin Array S	10.80	73	ePn	Pn	07 15 52.5	+0.4
MRMT	Marmara Adasi	6.61	59	eP	Pn	07 14 57.1	+2.6	BRTR	Keskin Array B	10.80	73	Pn	Pn	07 15 53.4	+1.3
EDC	Edincik	6.68	61	eP	Pn	07 14 57.8	+2.3		comp=Z,0.1nm,0.3s,baz=258,slow=11,SNR=16						
EDC	Edincik	6.68	61	eP	Pn	07 14 57.8	+2.3	BRTR				LR	LR	07 20 11.2	
DIVS	Divibare	6.70	359	⇑iPn	Pn	07 14 54.1	-1.7		comp=Z,2µm,19.9s,baz=253,slow=39						
EDRB	Edirne	6.74	47	eP	Pn	07 14 57.9	+1.6	BURAR	Bucovina Array	10.87	18	⇓iP	Pn	07 15 54.4	+1.5
EDRB	Edirne	6.74	47	eP	Pn	07 14 57.9	+1.6	BURAR	Bucovina Array	10.87	18	P	Pn	07 15 54.4	+1.5
TURN	Turunc	6.75	92	i P	Pn	07 15 00.5	+4.1	BURAR	Bucovina Array	10.87	18	⇓iP	Pn	07 15 54.4	+1.5
KULA	Kula-Manisa	6.80	78	eP	Pn	07 14 58.4	+1.2	BUR08	Bucovina Ar. S	10.89	18	ePn	Pn	07 15 53.3	+0.1
KULA	Kula-Manisa	6.80	78	eP	Pn	07 14 58.4	+1.2	BUR08	Bucovina Ar. S	10.89	18	ePn	Pn	07 15 53.3	+0.1
TRUS	Trudelj	6.83	1	⇑iPn	Pn	07 14 56.7	-0.8	CSS	Mathiatis	10.91	99	ePn	Pn	07 15 52.8	-0.6
PVL	Pavlikeni	7.03	33	i P	Pn	07 14 58.3	-1.9	CSS	Mathiatis	10.91	99	ePn	Pn	07 15 52.8	-0.6
KUBS	Kucevo	7.10	9	ePn	Pn	07 14 59.0	-2.3	KBA	Koelnbreinsper	10.92	335	ePn	Pn	07 15 54.5	+0.8
TEKS	Tekeris	7.17	356	⇑iPn	Pn	07 15 00.8	-1.3		comp=Z,46nm,1.2s,SNR=9.8						
FETY	Fethiye	7.17	93	eP	Pn	07 15 04.4	+2.2	KBA				eSn	Sn	07 17 48.9	-6.7
FETY	Fethiye	7.17	93	eP	Pn	07 15 04.4	+2.2		comp=Z,13nm,0.5s						
AQU	L'Aquila	7.19	316	eP	Pn	07 15 01.8	-0.7	KBA	Koelnbreinsper	10.92	335	P	Pn	07 15 55.5	+1.8
AQU	L'Aquila	7.19	316	ePn	Pn	07 15 01.8	-0.7	KBA				pmax	pmax		
AQU	L'Aquila	7.19	316	ePn	Pn	07 15 01.8	-0.7		comp=Z,45nm,1.0s						
SLUM	Salum	7.21	143	AMP		07 16 00.0		KBA	Koelnbreinsper	10.92	335	Pn	Pn	07 15 54.5	+0.8
	comp=N,3610µm,0.8s,logA/T=6.7,baz=147								comp=Z,46nm,1.2s,SNR=9.8						
SZH	Strazhica	7.33	35	i P	Pn	07 15 05.2	+0.8	KBA	Koelnbreinsper	10.92	335	P	Pn	07 15 55.5	+1.8
									comp=Z,45nm,1.0s						
								PRAR	RASCA	10.92	22	⇑iP	Pn	07 15 55.9	+2.4

ABTA	Abfaltersbach	10.94	331	Pn	Pn	07 15 53.7	-0.2
	comp=Z,16nm,0.9s						
ABTA				eSn	Sn	07 17 53.8	-2.2
	comp=Z,34nm,0.6s						
ABTA	Abfaltersbach	10.94	331	Pn	Pn	07 15 53.7	-0.2
	comp=Z,16nm,0.9s						
ABTA				Sn	Sn	07 17 53.8	-2.2
	comp=Z,34nm,0.6s						
CONA	Conrad Observa	10.99	345	Pn	Pn	07 15 54.9	+0.2
	comp=Z,12nm,1.0s						
CONA	Conrad Observa	10.99	345	Pn	Pn	07 15 54.9	+0.2
	comp=Z,12nm,1.0s						
KECS	Kecovo	11.09	1	eP	Pn	07 15 55.8	0.0
KECS	Kecovo	11.09	1	ePn	Pn	07 15 55.8	0.0
KECS	Kecovo	11.09	1	ePN	Pn	07 15 55.8	0.0
KECS				eSN	Sn	07 17 43.5	-16
VYHS	Vyhne	11.14	355	eP	Pn	07 15 55.1	-1.4
VYHS	Vyhne	11.14	355	ePn	Pn	07 15 55.1	-1.4
VYHS	Vyhne	11.14	355	ePN	Pn	07 15 55.1	-1.4
VYHS				eSN	Sn	07 17 46.5	-14
SMOL	Smolenice	11.29	351	eP	Pn	07 16 00.8	+2.1
SMOL	Smolenice	11.29	351	ePn	Pn	07 16 00.8	+2.1
SMOL	Smolenice	11.29	351	ePN	Pn	07 16 00.8	+2.1
MOA	Molln	11.32	339	ePn	Pn	07 15 57.9	-1.1
	comp=Z,13nm,0.4s,SNR=11						
MOA				eSn	Sn	07 18 00.8	-4.3
	comp=Z,27nm,0.7s						
MOA	Molln	11.32	339	Pn	Pn	07 15 57.9	-1.1
	comp=Z,13nm,0.4s,SNR=11						
UZH	Uzhgorod	11.34	7	eP	Pn	07 15 58.2	-1.0
UZH				eS	Sn	07 18 03.2	-2.4
UZH				MLR	MLR		
	comp=N,3µm,12.0s						
UZH				MLR	MLR		
	comp=E,4µm,12.0s						
UZH				MLR	MLR		
	comp=Z,500nm,12.0s						
UZH	Uzhgorod	11.34	7	eP	Pn	07 15 58.2	-1.0
UZH				eS	Sn	07 18 03.2	-2.4
KIS	Kishinev	11.53	31	eP	Pn	07 16 02.0	+0.1
	comp=Z,450nm,5.0s						
KIS	Kishinev	11.53	31	ePP	Pn	07 16 13.0	+11
KIS				eS	Sn	07 18 11.0	+0.6
KIS				i Li		07 19 10.0	
KIS				eLg1		07 19 23.0	
KIS				eLg2		07 19 38.0	
KIS				eRg	Rg	07 20 06.0	
KIS				LRM	MLR	07 21 19.0	
	comp=Z,5µm,12.0s						
KIS	Kishinev	11.53	31	eP	Pn	07 16 02.0	+0.1
KIS				eS	Sn	07 18 11.0	+0.6
KIS				pmax	pmax		
	comp=Z,450nm,5.0s						
KIS				MLR	MLR		
	comp=N,5µm,12.0s						
KIS				MLR	MLR		
	comp=E,2µm,12.0s						
KIS				MLR	MLR		
	comp=Z,8µm,12.0s						
KIS				MLR	MLR		
	comp=Z,8µm,12.0s						
KIS	Kishinev	11.53	31	eP	Pn	07 16 02.0	+0.1
	comp=Z,450nm,5.0s						
KIS				eS	Sn	07 18 11.0	+0.6
	comp=Z,8µm,12.0s						
CRVS	Cervenica-Dubn	11.54	4	eP	Pn	07 16 01.4	-0.7
CRVS	Cervenica-Dubn	11.54	4	eP	Pn	07 16 01.4	-0.7
CRVS	Cervenica-Dubn	11.54	4	ePN	Pn	07 16 01.4	-0.7
CRVS				eSN	Sn	07 17 49.1	-22
SBF	Sospel	11.63	308	P	Pn	07 16 04.8	+1.4
SBF				pmax	pmax		
	comp=Z,50nm,1.0s						
SBF	Sospel	11.63	308	P	Pn	07 16 04.8	+1.4
	comp=Z,50nm,1.0s						
WTTA	Wattenberg	11.71	330	ePn	Pn	07 16 06.5	+2.0
	comp=Z,24nm,1.

MORC Moravsky Berou 12.52 352 *e*P **Pn** 07 16 15.4 -0.1
MORC Moravsky Berou 12.52 352 *e*Pn **Pn** 07 16 15.4 -0.1
MORC Moravsky Berou 12.52 352 *e*Pn **Pn** 07 16 15.4 -0.1
OKC Ostrava-Krasne 12.53 354 *e*P **Pn** 07 16 14.5 -1.0
OKC *ex* x 07 16 30.2
OKC *ex* x 07 16 37.4
OKC AMS AMS 07 22 40.0
comp=Z,3μm,12.5s
OKC Ostrava-Krasne 12.53 354 *e*P **Pn** 07 16 14.5 -1.0
OKC MLR MLR
comp=Z,3μm,12.5s
OKC Ostrava-Krasne 12.53 354 P **Pn** 07 16 14.5 -1.0
KHC Kasperske Hory 12.67 340 *e*P **Pn** 07 16 15.7 -1.8
KHC *ex* x 07 16 24.1
KHC *e*S **Sn** 07 18 32.3 -6.0
KHC AMS AMS 07 23 40.0
comp=Z,2μm,12.3s
KHC Kasperske Hory 12.67 340 *e*P **Pn** 07 16 15.7 -1.8
KHC *e*S **Sn** 07 18 32.3 -6.0
KHC MLR MLR
comp=Z,2μm,12.3s
KHC Kasperske Hory 12.67 340 P **Pn** 07 16 15.7 -1.8
KHC Kasperske Hory 12.67 340 *e*Pn **Pn** 07 16 17.8 +0.2
KHC *e*S **Sn** 07 18 32.3 -6.0
comp=Z,2μm,12.3s
KHC Kasperske Hory 12.67 340 *e*Pn **Pn** 07 16 17.8 +0.2
LVV L'vov 12.73 11 *e*P **Pn** 07 16 20.4 +2.1
LVV *e*S **Sn** 07 18 41.9 +2.3
LVV MLR MLR
comp=Z,1μm,11.0s
LVV L'vov 12.73 11 *e*P **Pn** 07 16 20.4 +2.1
comp=Z,1μm,11.0s
LVV *e*S **Sn** 07 18 41.9 +2.3
NBNS Bani Suef 12.78 130 P Pn 07 16 14.2 -4.9
baz=132
NBNS Bani Suef 12.78 130 P Pn 07 16 14.1 -5.0
OJC Ojcow 12.83 359 *e*P **Pn** 07 16 18.4 -1.2
OJC *e*S Sn 07 18 53.0 +11
OJC Ojcow 12.83 359 *e*P **Pn** 07 16 20.1 +0.5
OJC Ojcow 12.83 359 *e*P **Pn** 07 16 18.4 -1.2
OJC Ojcow 12.83 359 *e*Pn **Pn** 07 16 20.1 +0.5
OJC Ojcow 12.83 359 *e*Pn **Pn** 07 16 20.1 +0.5
WET Wettzell 12.88 338 P **Pn** 07 16 17.5 -2.9
WET pmax pmax
comp=Z,53nm,0.9s
WET Wettzell 12.88 338 P **Pn** 07 16 17.5 -2.9
comp=Z,53nm,0.9s
RSH 12.91 116 P Pn 07 16 15.3 -5.6
baz=117
RSH 12.91 116 P Pn 07 16 15.3 -5.6
SIM Simferopol' 12.92 50 *e*P **Pn** 07 16 22.1 +1.2
SIM *e*S **Sn** 07 18 49.0 +4.6
SIM pmax pmax
comp=Z,29nm,0.9s
SIM MLR MLR
comp=Z,2μm,12.7s
SIM Simferopol' 12.92 50 *e*P **Pn** 07 16 22.1 +1.2
comp=Z,29nm,0.9s
SIM *e*S **Sn** 07 18 49.0 +4.6
comp=Z,2μm,12.7s
GOPC GO Pecny, Ondr 13.11 344 *e*P **Pn** 07 16 22.5 -0.9
GOPC *ex* x 07 16 59.7
GOPC AMS AMS 07 22 20.0
comp=Z,2μm,14.0s
GOPC GO Pecny, Ondr 13.11 344 *e*P **Pn** 07 16 22.5 -0.9
GOPC MLR MLR
comp=Z,2μm,14.0s
GOPC GO Pecny, Ondr 13.11 344 P **Pn** 07 16 22.5 -0.9
SENIN Lac Senin/Sane 13.12 317 *e*Pn **Pn** 07 16 23.8 0.0
SENIN Lac Senin/Sane 13.12 317 *e*Pn **Pn** 07 16 23.8 0.0
MMAI Mount Meron Ar 13.19 105 Pn **Pn** 07 16 22.3 -2.5
comp=Z,4.9nm,0.3s,baz=297,slow=11,SNR=9.1
MMAI Sn **Sn** 07 18 45.4 -5.9
comp=Z,9.8nm,0.3s,baz=295,slow=24,SNR=7.8
MMAI LR LR 07 21 42.9
comp=Z,550nm,20.8s,baz=290,slow=39
PRU Pruhonice 13.23 344 *e*P **Pn** 07 16 24.1 -1.0
PRU *ex* x 07 16 35.5
PRU AMS AMS 07 22 30.0
comp=Z,3μm,14.3s
PRU Pruhonice 13.23 344 *e*P **Pn** 07 16 24.1 -1.0
PRU MLR MLR
comp=Z,3μm,14.3s
PRU Pruhonice 13.23 344 P **Pn** 07 16 24.1 -1.0
DPC Dobruska-Polom 13.24 349 *e*P Pn 07 16 30.0 +4.6
DPC *ex* x 07 16 36.0
DPC AMS AMS 07 22 50.0
comp=Z,4μm,11.9s
DPC Dobruska-Polom 13.24 349 *e*P Pn 07 16 30.0 +4.6
DPC MLR MLR
comp=Z,4μm,11.9s
DPC Dobruska-Polom 13.24 349 *e*P Pn 07 16 30.0 +4.6
comp=Z,4μm,11.9s
UPC Upice 13.45 348 *e*P **Pn** 07 16 27.4 -0.6
UPC *ex* x 07 16 39.7
UPC *ex* x 07 16 53.4
UPC AMS AMS 07 23 00.0
comp=Z,3μm,12.1s
UPC Upice 13.45 348 *e*P **Pn** 07 16 27.4 -0.6
UPC MLR MLR
comp=Z,3μm,12.0s
UPC Upice 13.45 348 P **Pn** 07 16 27.4 -0.6
SPAK Spaichingen-Ko 13.57 326 *e*P **Pn** 07 16 30.2 +0.4
HNKL Nakhl 13.69 119 P Pn 07 16 26.4 -5.1
baz=120
HNKL AMP 07 18 23.2
comp=E,460μm,0.7s,logA/T=5.8,baz=120
HNKL Nakhl 13.69 119 P Pn 07 16 26.4 -5.1
KSP Ksiaz 13.73 350 *e*P **Pn** 07 16 34.6 +2.7
KSP *e*S **S** 07 19 28.0 +1.4
KSP Ksiaz 13.73 350 *e*P **Pn** 07 16 34.6 +2.7
KSP Ksiaz 13.73 350 *e*P **Pn** 07 16 34.6 +2.7
PVCC Panska Ves 13.73 345 AMS AMS 07 22 50.0
comp=E,2μm,14.2s
FELD Feldberg im Sc 13.77 323 *e*P **Pn** 07 16 32.1 -0.5
VIVF Saint-Julien-l 13.85 307 *e*P **Pn** 07 16 36.7 +3.1
VIVF pmax pmax
comp=Z,14nm,1.1s
VIVF Saint-Julien-l 13.85 307 *e*P **Pn** 07 16 36.7 +3.1
comp=Z,14nm,1.1s
GRFO Grafenberg 13.89 335 *e*P **Pn** 07 16 34.4 +0.3
GRFO Grafenberg 13.89 335 *e*P **Pn** 07 16 34.4 +0.3
GRFO Grafenberg 13.89 335 *e*Pn **Pn** 07 16 34.4 +0.3
STU Stuttgart 13.90 328 *e*P **Pn** 07 16 34.2 -0.1
STU Stuttgart 13.90 328 *e*Pn **Pn** 07 16 34.2 -0.1
STU Stuttgart 13.90 328 *e*Pn **Pn** 07 16 34.2 -0.1
BFO Black Forest 13.94 325 *i* P **Pn** 07 16 35.5 +0.6
BFO Black Forest 13.94 325 *e*Pn **Pn** 07 16 35.1 +0.2
BFO Black Forest 13.94 325 *i* P **Pn** 07 16 35.5 +0.6
BFO Black Forest 13.94 325 *e*Pn **Pn** 07 16 35.1 +0.2
NKC Novy Kostel 13.98 339 *e*P **Pn** 07 16 35.3 -0.1
NKC *ex* x 07 16 45.1
NKC *ex* x 07 16 53.0
NKC AMS AMS 07 23 20.0
comp=Z,2μm,13.8s
NKC Novy Kostel 13.98 339 *e*P **Pn** 07 16 35.3 -0.1
NKC MLR MLR
comp=Z,2μm,13.8s
NKC Novy Kostel 13.98 339 P **Pn** 07 16 35.3 -0.1
MOF Molkenrain 14.17 322 *e*P **Pn** 07 16 38.3 +0.2
MOF Molkenrain 14.17 322 *e*P **Pn** 07 16 38.3 +0.2
BRG Berggiesshubel 14.19 344 *i* P **Pn** 07 16 39.0 +0.8
comp=Z,14nm,0.9s
BRG *i* PP **PnPn** 07 16 47.5 +1.4
comp=Z,35nm,0.9s
BRG S **Sn** 07 19 11.0 -4.3
comp=N,2μm,11.1s
comp=E,2μm,12.9s
comp=Z,2μm,15.4s
BRG Berggiesshubel 14.19 344 *i* P **Pn** 07 16 39.0 +0.8
BRG S **Sn** 07 19 11.0 -4.3
BRG pmax pmax
comp=Z,14nm,0.9s
BRG MLR MLR
comp=N,2μm,11.1s
BRG MLR MLR
comp=E,2μm,12.9s
BRG MLR MLR
comp=Z,2μm,15.4s
BRG Berggiesshubel 14.19 344 *i* P **Pn** 07 16 39.0 +0.8
comp=Z,14nm,0.9s
BRG S **Sn** 07 19 11.0 -4.3
comp=Z,2μm,15.4s
ECH Echery 14.41 323 *e*P **Pn** 07 16 40.6 -0.7

BEL Belsk 14.45 2 *e*P **P** 07 16 50.1 +1.7
BEL *e*S **S** 07 19 46.5 +5.3
BEL Belsk 14.45 2 *e*P **P** 07 16 50.1 +1.7
BEL Belsk 14.45 2 *e*P **P** 07 16 50.1 +1.7
WLS Welschbruch 14.46 324 *e*P **Pn** 07 16 41.5 -0.4
EIL Elat 14.52 118 Pn **Pn** 07 16 39.5 -3.3
comp=Z,1.8nm,0.3s,baz=325,slow=6.0,SNR=24
EIL Sn Sn 07 19 11.3 -12
comp=Z,4.7nm,0.3s,baz=255,slow=2.5,SNR=6.8
LANF Langenberg 14.66 326 *e*P **Pn** 07 16 44.6 0.0
ASF Jabal al Asfar 14.69 106 Pn **Pn** 07 16 45.3 +0.1
comp=Z,0.8nm,0.3s,baz=228,slow=7.6,SNR=14
ASF Sn **Sn** 07 19 20.6 -7.2
comp=Z,0.6nm,0.3s,baz=7.0,slow=22,SNR=3.6
AKRG Al Kharijah 14.75 141 P **Pn** 07 16 43.0 -3.0
baz=142
AK11 Malin Array Si 14.76 23 *e*Pn **Pn** 07 16 44.2 -1.7
AK11 Malin Array Si 14.76 23 *e*Pn **Pn** 07 16 44.2 -1.7
AK11 *e*S **S** 07 19 42.9 -4.7
KIEV Kiev 14.78 23*c i*P **Pn** 07 16 43.7 -2.6
KIEV pmax pmax
comp=Z,21nm,1.0s
KIEV Kiev 14.78 23 *i* P **Pn** 07 16 43.7 -2.6
comp=Z,21nm,1.0s
KIEV Kiev 14.78 23 *e*Pn **Pn** 07 16 43.5 -2.7
AKASG Malin Array Be 14.79 23 Pn **Pn** 07 16 43.2 -3.2
comp=Z,1.1nm,0.3s,baz=212,slow=12,SNR=8.4
AKASG LR LR 07 22 44.1
comp=Z,1μm,19.2s,baz=200,slow=39
AKBB Malin Array Si 14.79 23 *e*P **Pn** 07 16 44.2 -2.2
AKBB Malin Array Si 14.79 23 *e*Pn **Pn** 07 16 44.2 -2.2
AKBB Malin Array Si 14.79 23 *e*Pn **Pn** 07 16 44.2 -2.2
CLL Collm 14.82 342 *e*P **Pn** 07 16 47.0 +0.3
CLL *e* 07 16 54.0
CLL *e* 07 17 03.0
CLL *e* 07 17 18.0
CLL *e* 07 17 25.0
CLL *e*(S) **S** 07 19 41.0 -7.8
CLL *e* 07 20 48.0
CLL Lmax 07 23 00.0
CLL Collm 14.82 342 *e*P **Pn** 07 16 47.0 +0.3
CLL Collm 14.82 342 *e*Pn **Pn** 07 16 46.8 +0.1
CLL Collm 14.82 342 *e*Pn **Pn** 07 16 46.8 +0.1
LBL Lubilhac 14.92 307 *e*P **P** 07 16 51.2 -2.7
ANN Anapa 14.95 55 *e*P Pn 07 16 41.1 -7.5
ANN *e*S Sn 07 19 23.6 -10
ANN pmax pmax
comp=Z,11nm,0.6s
ANN Anapa 14.95 55 *e*P Pn 07 16 41.1 -7.5
comp=Z,11nm,0.6s
ANN *e*S Sn 07 19 23.6 -10
THEF They Montfort 14.99 321 *e*P **Pn** 07 16 47.4 -1.8
PLDF La Plantade 15.03 310 *e*P **P** 07 16 52.6 -2.4
PYM Petit Puy Mans 15.30 308 *e*P **Pn** 07 16 55.2 +1.9
CAF Calviac 15.56 305 *e*P **P** 07 17 00.5 -0.4
CAF Calviac 15.56 305 *e*P **P** 07 17 00.5 -0.4
WLF Walferdange 15.90 325 P **P** 07 17 07.5 +2.9
comp=Z,52nm,1.4s
WLF Walferdange 15.90 325 *e*P **P** 07 17 06.4 +1.8
WLF pmax pmax
comp=Z,70nm,1.0s
WLF Walferdange 15.90 325 *e*P **P** 07 17 06.4 +1.8
comp=Z,70nm,1.0s
WLF Walferdange 15.90 325 *e*Pn **P** 07 17 06.4 +1.8
comp=Z,70nm,1.0s
GKP Gorka Klasztor 16.01 354 *e*P **P** 07 17 07.1 +1.3
GKP Gorka Klasztor 16.01 354 *e*P **P** 07 17 07.1 +1.3
GKP Gorka Klasztor 16.01 354 *e*P **P** 07 17 07.1 +1.3
SOC Sochi 16.09 61 *e*P **Pn** 07 17 01.3 -2.1
SOC *e* 07 20 01.5
SOC pmax pmax
comp=Z,21nm,0.9s
SOC MLR MLR
comp=Z,745nm,13.0s
SOC Sochi 16.09 61 *e*P **Pn** 07 17 01.3 -2.1
comp=Z,21nm,0.9s
SOC *e*S **Sn** 07 20 01.5 0.0
comp=Z,745nm,13.0s
MEM Membach 16.65 327 P **P** 07 17 15.8 +2.9
comp=Z,34nm,1.5s
SUW Suwalki 16.75 6 *e*P **Pn** 07 17 09.8 -2.0
SUW *e*S **S** 07 20 26.9 -1.4
SUW Suwalki 16.75 6 *e*P **Pn** 07 17 09.8 -2.0
SUW Suwalki 16.75 6 *e*P **Pn** 07 17 09.8 -2.0
SUW *e*S **S** 07 20 26.9 -1.4
BCLA Clavier 16.82 325 P **P** 07 17 16.0 +1.1
comp=Z,16nm,1.6s
BCLA Clavier 16.82 325 P **P** 07 17 15.9 +1.1
comp=Z,16nm,1.6s
DOU Dourbes 16.92 324 P **P** 07 17 16.1 +0.2
comp=Z,21nm,1.4s
DOU Dourbes 16.92 324 P **P** 07 17 16.1 +0.2
comp=Z,21nm,1.4s
BEBN Eben Emael 16.93 327 P **P** 07 17 18.6 +2.7
comp=Z,23nm,1.9s
BEBN Eben Emael 16.93 327 P **P** 07 17 18.6 +2.7
comp=Z,23nm,1.9s
KLNR Kaliningrad 17.21 0*i i*P **Pn** 07 17 17.3 -0.3
KLNR Kaliningrad 17.21 0 *i* P **Pn** 07 17 17.3 -0.3
SNF Seneffe 17.35 324 P **P** 07 17 22.1 +1.4
SNF Seneffe 17.35 324 P **P** 07 17 22.0 +1.4
MFF Saint Martin d 17.65 308 *e*P **P** 07 17 24.0 0.0
MFF pmax pmax
comp=Z,72nm,1.3s
MFF Saint Martin d 17.65 308 *e*P **P** 07 17 24.0 0.0
comp=Z,72nm,1.3s
MICGM Minsk 17.91 15*i e*P **Pn** 07 17 21.0 -5.3
MICGM PM 07 17 24.0
comp=Z,0.3nm,2.0s
MICGM PM 07 17 24.0
comp=N,0.6nm,2.0s
MICGM *e*PP **PnPn** 07 17 35.0 -2.1
MICGM *e*S Sn 07 20 35.0 -11
MICGM *e*SS **SnSn** 07 21 04.0 +4.8
MICGM *e*SSS SSS 07 21 21.0
MICGM *e*LR LR 07 23 34.0
MICGM LRM MLR 07 25 50.0
comp=Z,2.5nm,10.0s
MNK Minsk 17.91 15*i e*P **Pn** 07 17 21.0 -5.3
MNK *e*S Sn 07 20 35.0 -11
MNK pmax pmax
comp=N,630nm,2.0s
MNK pmax pmax
comp=Z,340nm,2.0s
MNK MLR MLR
comp=Z,3μm,10.0s
BSD Bornholm Skovb 18.09 350 *i* P **P** 07 17 29.9 +1.2
comp=Z,23nm,0.9s
BSD Bornholm Skovb 18.09 350 *i* P **P** 07 17 29.9 +1.2
BSD pmax pmax
comp=Z,23nm,0.9s
BSD Bornholm Skovb 18.09 350 *i* P **P** 07 17 29.9 +1.2
comp=Z,23nm,0.9s
NACGM Naroch 18.09 12 *e*P **Pn** 07 17 26.0 -2.4
NACGM PM 07 17 37.0
comp=Z,0.3nm,0.8s
NACGM *e*S **Sn** 07 20 51.0 +1.2
NACGM *e*LQ LQ 07 23 26.0
NACGM *e*LR LR 07 24 28.0
NACGM LRM MLR 07 25 19.0
comp=Z,2.7nm,16.0s
NEY Neytrino 18.14 64*d i*P **P** 07 17 30.3 +0.7
NEY pmax pmax
comp=Z,10.0nm,1.0s
NEY Neytrino 18.14 64 *i* P **P** 07 17 30.3 +0.7
comp=Z,10.0nm,1.0s
KIV Kislovodsk 18.26 62 *i* P **Pn** 07 17 30.3 -0.5
SNR=17
KIV Kislovodsk 18.26 62*c i*P **Pn** 07 17 29.6 -1.2
KIV pmax pmax
comp=Z,61nm,1.7s
KIV MLR MLR
comp=Z,396nm,13.0s
KIV Kislovodsk 18.26 62 P **Pn** 07 17 29.9 -0.8
SNR=14
KIV Kislovodsk 18.26 62 *i* P **Pn** 07 17 29.6 -1.2
comp=Z,396nm,13.0s
KIV Kislovodsk 18.26 62 *e*Pn **P** 07 17 31.4 +0.5
comp=Z,102nm,1.2s
KIV Kislovodsk 18.26 62 *e*Pn **P** 07 17 31.4 +0.5
comp=Z,102nm,1.2s
KVAR Kislovodsk Arr 18.27 62 P **Pn** 07 17 30.3 -0.6
baz=69,slow=2.2,SNR=17
KBZ Khabaz 18.36 63 P **Pn** 07 17 31.6 -0.2
comp=Z,1.1nm,0.3s,baz=268,slow=9.8,SNR=16

AKH Akhalkalaki 18.45 70*i i*P **P** 07 17 32.3 -0.7
AKH Akhalkalaki 18.45 70 P **P** 07 17 32.2 -0.9
AKH Akhalkalaki 18.45 70 P **P** 07 17 32.1 -0.9
AKH Akhalkalaki 18.45 70 P **P** 07 17 32.1 -0.9
IDID Didziasalis 18.47 12 *e*P **P** 07 17 29.4 -3.6
IDID IAmb IAmb 07 17 46.2
comp=Z,27nm,1.1s
BGD Bogdanovka 18.51 71 P **P** 07 17 33.0 -0.8
ONI Oni 18.55 67 P **P** 07 17 33.3 -0.9
ONI Oni 18.55 67 P **P** 07 17 33.2 -0.9
ONI Oni 18.55 67 P **P** 07 17 33.2 -0.9
ISAL Salakas 18.63 11 *e*P **P** 07 17 30.8 -3.8
ISAL IAmb IAmb 07 17 49.4
comp=Z,43nm,0.8s
LLD Lille Linde 18.74 346 *i* P **Pn** 07 17 38.5 +2.1
comp=Z,70nm,0.9s
LLD Lille Linde 18.74 346 *e*P **Pn** 07 17 38.5 +2.1
LLD pmax pmax
comp=Z,70nm,0.9s
LLD Lille Linde 18.74 346 *e*P **Pn** 07 17 38.5 +2.1
comp=Z,70nm,0.9s
GOF Gofitskoye 18.79 59*i e*P **P** 07 17 36.4 -0.2
GOF pmax pmax
comp=Z,60nm,0.6s
GOF Gofitskoye 18.79 59 *e*P **P** 07 17 36.4 -0.2
comp=Z,60nm,0.6s
NCK Nalchik 18.81 64*i e*P **P** 07 17 36.8 0.0
NCK pmax pmax
comp=Z,85nm,0.9s
NCK Nalchik 18.81 64 *e*P **P** 07 17 36.8 0.0
comp=Z,85nm,0.9s
IZAR Zarasai 18.82 11 *e*P **P** 07 17 33.4 -3.4
IZAR IAmb IAmb 07 17 51.7
comp=Z,44nm,1.1s
ZEI Tsey 18.91 66 *e*P **P** 07 17 34.5 -3.7
ZEI pmax pmax
comp=Z,155nm,0.6s
ZEI Tsey 18.91 66 *e*P **P** 07 17 34.5 -3.7
comp=Z,155nm,0.6s
ES19 SONSECA Array 18.96 284 *e*P **P** 07 17 38.6 0.0
ES19 SONSECA Array 18.96 284 *e*P **P** 07 17 38.6 0.0
ESDC Sonseca Array 19.01 284 P **Pn** 07 17 40.1 +0.2
comp=Z,0.3nm,0.3s,baz=81,slow=12,SNR=27
ESLA Sonseca Array 19.01 284 *e*P **P** 07 17 38.6 -0.5
comp=Z,27nm,1.1s
ESLA Sonseca Array 19.01 284 *e*P **P** 07 17 38.6 -0.5
comp=Z,27nm,1.1s
COP Copenhagen 19.04 346 *i* P **Pn** 07 17 40.9 +1.0
comp=Z,36nm,0.8s
COP Copenhagen 19.04 346 *i* P **Pn** 07 17 40.9 +1.0
COP pmax pmax
comp=Z,36nm,0.8s
COP Copenhagen 19.04 346 *i* P **Pn** 07 17 40.9 +1.0
comp=Z,36nm,0.8s
GUD Guadarrama 19.17 287 P **Pn** 07 17 43.4 +1.6
GUD pmax pmax
comp=Z,44nm,1.3s
GUD Guadarrama 19.17 287 P **Pn** 07 17 43.4 +1.6
comp=Z,44nm,1.3s
TAM Tamanrasset 19.26 225 *e*P **P** 07 17 41.0 -1.1
TAM pmax pmax
comp=Z,22nm,1.3s
TAM Tamanrasset 19.26 225 *e*P **P** 07 17 41.0 -1.1
comp=Z,22nm,1.3s
TAM Tamanrasset 19.26 225 *e*P **P** 07 17 41.0 -1.1
comp=Z,22nm,1.3s
GUDG Gudauri 19.29 67 P **P** 07 17 41.9 -0.4
VSR Storozhevoye 19.30 38 *e*P **P** 07 17 40.5 -1.6
VSR pmax pmax
comp=Z,40nm,0.6s
VSR MLR MLR
comp=Z,8μm,11.0s
VSR Storozhevoye 19.30 38 *e*P **P** 07 17 40.5 -1.6
comp=Z,8μm,11.0s
PAB San Pablo 19.31 284 *e*P **P** 07 17 42.2 -0.2
PAB pmax pmax
comp=Z,44nm,1.3s
PAB San Pablo 19.31 284 *e*P **P** 07 17 42.2 -0.2
comp=Z,44nm,1.3s
PAB San Pablo 19.31 284 *e*P **P** 07 17 42.2 -0.2
comp=Z,44nm,1.3s
GNI Garni 19.34 74 P **P** 07 17 41.8 -1.0
comp=Z,3.4nm,0.3s,baz=188,slow=2.2,SNR=44
GNI LR LR 07 25 16.2
comp=Z,979nm,20.4s,baz=280,slow=38
GNI Garni 19.34 74 *i* P **P** 07 17 42.2 -0.7
SNR=14
GNI Garni 19.34 74*c i*P **P** 07 17 42.0 -0.8
GNI pmax pmax
comp=Z,528nm,1.4s
GNI Garni 19.34 74 P **P** 07 17 42.1 -0.7
SNR=42
GNI Garni 19.34 74 *e*P **P** 07 17 42.8 0.0
comp=Z,125nm,1.1s
GNI Garni 19.34 74 *e*P **P** 07 17 42.8 0.0
comp=Z,125nm,1.1s
TBLG Delisi 19.41 69 P **P** 07 17 42.0 -1.4
TBLG Delisi 19.41 69 P **P** 07 17 41.9 -1.4
TBLG Delisi 19.41 69 P **P** 07 17 42.0 -1.4
DUS Dusheti 19.41 68 P **Pn** 07 17 45.7 +0.9
DUS Dusheti 19.41 68 P **Pn** 07 17 45.6 +0.9
DUS Dusheti 19.41 68 P **Pn** 07 17 45.6 +0.9
DGRG David-gareji 19.86 70 P **P** 07 17 47.7 -0.7
ROSF Rostrenen 20.29 310 *e*P **P** 07 17 53.4 +0.5
ROSF pmax pmax
comp=Z,62nm,1.1s
ROSF Rostrenen 20.29 310 *e*P **P** 07 17 53.4 +0.5
comp=Z,62nm,1.1s
GROC Groznyy 20.34 65 *e*P **P** 07 17 53.1 -0.5
GROC pmax pmax
comp=Z,354nm,1.9s
GROC Groznyy 20.34 65 *e*P **P** 07 17 53.1 -0.5
comp=Z,354nm,1.9s
MUD Monsted U'grnd 20.45 342 *i* P **P** 07 17 55.3 +0.8
comp=Z,52nm,0.9s
MUD Monsted U'grnd 20.45 342 *i* P **P** 07 17 55.3 +0.8
MUD pmax pmax
comp=Z,52nm,0.9s
MUD Monsted U'grnd 20.45 342 *i* P **P** 07 17 55.3 +0.8
comp=Z,52nm,0.9s
VRH Novokhopyorsk 20.59 41 *e*P **P** 07 17 56.4 +0.2
VRH pmax pmax
comp=Z,100nm,0.6s
VRH Novokhopyorsk 20.59 41 *e*P **P** 07 17 56.4 +0.2
comp=Z,100nm,0.6s
MDT Midelt 20.77 265 P **P** 07 17 59.3 +1.0
comp=Z,13nm,0.9s,baz=90,slow=10,SNR=12
MDT LR LR 07 27 36.5
comp=Z,266nm,20.7s,baz=72,slow=41
OBN Obninsk 20.95 27 P **P** 07 17 58.6 -1.3
comp=Z,64nm,0.6s,baz=225,slow=5.6,SNR=12
OBN Obninsk 20.95 27*c e*P **P** 07 17 58.0 -1.9
OBN *e* 07 18 15.1
OBN pmax pmax
comp=Z,170nm,1.7s
OBN MLR MLR
comp=Z,1μm,12.0s
OBN Obninsk 20.95 27 *e*P **P** 07 17 58.8 -1.1
comp=Z,128nm,1.1s
OBN Obninsk 20.95 27 *e*P **P** 07 17 58.8 -1.1
comp=Z,128nm,1.1s
PBRG Braganca 21.17 290 *e*P **P** 07 18 04.1 +1.6
comp=Z,44nm,3.2s
PBRG Braganca 21.17 290 *e*P **P** 07 18 04.1 +1.6
comp=Z,44nm,3.2s
MVO Moncorvo 21.36 289 *e*P **P** 07 18 05.1 +0.5
comp=Z,94nm,1.8s
MVO *e*S **S** 07 22 02.9 +1.6
MVO Moncorvo 21.36 289 *e*P **P** 07 18 05.1 +0.5
comp=Z,94nm,1.8s
MVO *e*S **S** 07 22 02.9 +1.6
CWF Charnwood Fore 21.45 322 *e*P **P** 07 18 06.3 +0.9
CWF Charnwood Fore 21.45 322 *e*P **P** 07 18 05.7 +0.3
comp=Z,161nm,1.8s
CWF Charnwood Fore 21.45 322 *e*P **P** 07 18 05.7 +0.3
comp=Z,161nm,1.8s
OLDB Oldbury-Upon-S 21.46 319 *e*P **P** 07 18 06.0 +0.4
OLDB AMB AMB 07 18 07.0
comp=Z,94nm,1.7s
OLDB Oldbury-Upon-S 21.46 319 *e*P **P** 07 18 06.0 +0.4
PBAR Barrancos 21.50 280 *e*P **P** 07 18 06.8 +0.7
comp=Z,100nm,1.6s
PBAR *e*S **S** 07 22 01.9 -2.1
PBAR Barrancos 21.50 280 *e*P **P** 07 18 06.8 +0.7
comp=Z,100nm,1.6s
VSU Vasula 21.52 9*c e*P **P** 07 18 05.1 -0.9

VSU	**Vasula**	21.52	9	*e*P		P	07 18 05.1	-0.9	
HGH	**Gray Hill**	21.59	319	*e*P		P	07 18 06.9	0.0	
HGH	**Gray Hill**	21.59	319	*e*P		P	07 18 06.9	0.0	
DYA	**Yadsworthy**	21.60	315	*e*P		P	07 18 08.0	+1.0	
	comp=Z,78nm,1.2s								
DYA	**Yadsworthy**	21.60	315	*e*P		P	07 18 08.0	+1.0	
	comp=Z,78nm,1.2s								
PCBR	**Castelo Branco**	21.71	285	*e*P		P	07 18 07.6	-0.8	
PCBR	**Castelo Branco**	21.71	285	*e*P		P	07 18 07.6	-0.8	
MTE	**Manteigas**	21.75	287	*e*P		P	07 18 09.6	+0.8	
	comp=Z,57nm,1.1s								
MTE				*e*S		S	07 22 07.1	-1.9	
MTE	**Manteigas**	21.75	287	*e*P		P	07 18 08.8	0.0	
	comp=Z,44nm,1.0s								
MTE				*e*S		S	07 22 07.1	-1.9	
MTE	**Manteigas**	21.75	287	*e*P		P	07 18 08.8	0.0	
	comp=Z,44nm,1.0s								
MOS	**Moscow**	21.81	27	*e*P		P	07 18 06.2	-3.0	
MOS				*e*			07 18 41.6		
MOS				*e*S		S	07 22 09.1	-0.6	
MOS				pmax		pmax			
	comp=Z,278nm,1.8s								
MOS				pmax		pmax			
	comp=Z,900nm,2.3s								
MOS				MLR		MLR			
	comp=Z,3μm,12.0s								
MOS				MLR		MLR			
	comp=E,3μm,13.0s								
PESTR	**Estremoz**	21.86	282	*e*P		P	07 18 11.8	+1.8	
	comp=E,81nm,1.9s								
PESTR				*e*S		S	07 22 13.9	+2.8	
PESTR	**Estremoz**	21.86	282	*e*P		P	07 18 11.8	+1.8	
	comp=E,81nm,1.9s								
PESTR				*e*S		S	07 22 13.9	+2.8	
MCH1	**Michaelchurch**	21.88	319	*e*P		P	07 18 10.1	+0.1	
MCH1				AMB		AMB	07 18 14.1		
	comp=Z,77nm,1.1s								
MCH1	**Michaelchurch**	21.88	319	*e*P		P	07 18 10.1	+0.1	
POLO	**Lamas de Olo**	21.94	289	*e*P		P	07 18 14.1	+3.2	
	comp=Z,21nm,2.2s								
PVIS	**Viseu**	22.01	287	*e*P		P	07 18 12.4	+0.8	
	comp=Z,47nm,1.1s								
PVIS	**Viseu**	22.01	287	*e*P		P	07 18 12.4	+0.8	
	comp=Z,47nm,1.1s								
HLM1	**Long Mynd**	22.11	321	*e*P		P	07 18 12.8	+0.3	
HLM1				AMB		AMB	07 18 15.5		
	comp=Z,74nm,0.9s								
HLM1	**Long Mynd**	22.11	321	*e*P		P	07 18 12.8	+0.3	
PVAQ	**Vaqueiros**	22.13	279	*e*P		P	07 18 11.9	-1.0	
	comp=Z,46nm,1.9s								
PVAQ				*e*S		S	07 22 12.8	-3.5	
PVAQ				*e*LR		LR	07 30 10.1		
	comp=Z,163nm,18.0s								
PVAQ	**Vaqueiros**	22.13	279	*e*P		P	07 18 11.9	-1.0	
	comp=Z,46nm,1.9s								
RTC	**Rabat Centre**	22.19	269	*e*P		P	07 18 12.2	-1.3	
	comp=Z,598nm,0.4s								
RTC	**Rabat Centre**	22.19	269	*e*P		P	07 18 12.2	-1.3	
	comp=Z,598nm,0.4s								
EVO	**Evora**	22.22	282	*e*P		P	07 18 15.7	+1.8	
	comp=Z,32nm,2.1s								
EVO	**Evora**	22.22	282	*e*P		P	07 18 15.7	+1.8	
	comp=Z,32nm,2.1s								
PGAV	**Gavieira, Arco**	22.31	291	*e*P		P	07 18 17.8	+2.9	
	comp=Z,53nm,2.0s								
PMTG	**Montargil**	22.34	283	*e*P		P	07 18 14.6	-0.5	
	comp=Z,42nm,1.8s								
PMTG				*e*S		S	07 22 18.4	-1.7	
PMTG	**Montargil**	22.34	283	*e*P		P	07 18 14.6	-0.5	
	comp=Z,42nm,1.8s								
PCVE	**Castro Verde**	22.35	279	*e*S		S	07 22 15.2	-5.2	
PTOM	**Tomar**	22.44	285	*e*P		P	07 18 16.2	0.0	
	comp=Z,64nm,1.9s								
PTOM	**Tomar**	22.44	285	*e*P		P	07 18 16.2	0.0	
	comp=Z,64nm,1.9s								
FOEL	**Foel Wylfa**	22.48	321	*e*P		P	07 18 16.5	0.0	
FOEL				AMB		AMB	07 18 19.2		
	comp=Z,90nm,0.9s								
FOEL	**Foel Wylfa**	22.48	321	*e*P		P	07 18 16.5	0.0	
PCAS	**Casmilo, Conde**	22.49	286	*e*S		S	07 22 21.1	-1.8	
PNCL	**Nicolau / Gran**	22.67	281	*e*P		P	07 18 22.8	+4.1	
	comp=Z,34nm,1.7s								
MORF	**Marmelete**	22.88	279	*e*S		S	07 22 32.0	+1.9	
MORF	**Marmelete**	22.88	279	*e*S		S	07 22 32.0	+1.9	
WPM1	**Penmaenmawr**	23.04	321	*e*P		P	07 18 21.9	-0.4	
WPM1	**Penmaenmawr**	23.04	321	*e*P		P	07 18 21.9	-0.4	
PFVI	**Vila Bisbo**	23.05	278	*e*S		S	07 22 31.5	-1.4	
PFVI	**Vila Bisbo**	23.05	278	*e*S		S	07 22 31.5	-1.4	
HFS	**Hagfors**	23.13	352	P		P	07 18 21.6	-1.6	
	comp=Z,48nm,0.7s,baz=162,slow=11,SNR=74								
HFS				LR		LR	07 27 46.8		
	comp=Z,540nm,21.3s,baz=166,slow=38								
PMAFR	**Mafra**	23.17	283	*e*S		S	07 22 35.4	+0.5	
PMAFR	**Mafra**	23.17	283	*e*S		S	07 22 35.4	+0.5	
KONO	**Kongsberg**	23.29	346	*e*P		P	07 18 23.5	-1.3	
KONO	**Kongsberg**	23.29	346‖	*e*P		P	07 18 24.2	-0.6	
KONO				pmax		pmax			
	comp=Z,191nm,0.8s								
KONO	**Kongsberg**	23.29	346	*e*P		P	07 18 24.2	-0.6	
	comp=Z,191nm,0.8s								
KONO	**Kongsberg**	23.29	346	*e*P		P	07 18 24.2	-0.6	
	comp=Z,33nm,0.8s								
OSL	**Oslo**	23.36	348	*e*P		P	07 18 24.4	-1.1	
OSL				IAmb		IAmb	07 18 25.2		
	comp=Z,164nm,0.8s								
OSL	**Oslo**	23.36	348	*e*P		P	07 18 24.4	-1.1	
	SNR=34								
KESW	**Keswick, Cumbr**	23.43	325	*e*P		P	07 18 25.9	-0.3	
KESW				AMB		AMB	07 18 27.6		
	comp=Z,86nm,1.0s								
KESW	**Keswick, Cumbr**	23.43	325	*e*P		P	07 18 26.0	-0.3	
STAV	**Stavanger**	23.52	341	*e*P		P	07 18 27.7	+0.6	
STAV	**Stavanger**	23.52	341	*e*P		P	07 18 27.7	+0.6	
	SNR=34								
BBO1	**Bothel**	23.59	325	*e*P		P	07 18 27.5	-0.3	
BBO1	**Bothel**	23.59	325	*e*P		P	07 18 27.5	-0.3	
BLS5	**Blasjo**	23.76	342	*e*P		P	07 18 29.7	+0.3	
BLS5				IAmb		IAmb	07 18 31.2		
	comp=Z,472nm,2.2s								
BLS5	**Blasjo**	23.76	342	*e*P		P	07 18 29.7	+0.3	
	SNR=34								
ECK	**Cauldkaine Hil**	23.81	326	*e*P		P	07 18 30.1	+0.1	
ECK	**Cauldkaine Hil**	23.81	326	*e*P		P	07 18 30.1	+0.1	
EKA	**Eskdalemuir Ar**	23.92	326	P		P	07 18 30.6	-0.4	
	comp=Z,31nm,0.7s,baz=124,slow=8.5,SNR=50								
ESK	**Eskdalemuir**	23.93	326	*e*P		P	07 18 29.9	-1.1	
ESK				AMB		AMB	07 18 30.7		
	comp=Z,76nm,1.8s								
ESK	**Eskdalemuir**	23.93	326	*e*P		P	07 18 31.8	+0.7	
ESK				pmax		pmax			
	comp=Z,106nm,1.4s								
ESK	**Eskdalemuir**	23.93	326	*e*P		P	07 18 31.8	+0.7	
	comp=Z,106nm,1.4s								
ESK	**Eskdalemuir**	23.93	326	*e*P		P	07 18 31.8	+0.7	
	comp=Z,106nm,1.4s								
NC602	**NORSAR Array S**	24.00	350	*e*P		P	07 18 30.4	-1.2	
NC602				IAmb		IAmb	07 18 59.6		
	comp=Z,365nm,2.2s								
NC602	**NORSAR Array S**	24.00	350	*e*P		P	07 18 30.4	-1.2	
	SNR=34								
NC602	**NORSAR Array S**	24.00	350	*e*P		P	07 18 31.3	-0.4	
ESY	**Stoneypath**	24.06	328	*e*P		P	07 18 31.7	-0.6	
ESY	**Stoneypath**	24.06	328	*e*P		P	07 18 31.7	-0.6	
ODD1	**Odda**	24.15	343	*e*P		P	07 18 33.1	-0.1	
ODD1	**Odda**	24.15	343	*e*P		P	07 18 33.1	-0.1	
	SNR=34								
NAO01	**NORSAR Array S**	24.20	349	*e*P		P	07 18 33.6	+0.1	
NAO01	**NORSAR Array S**	24.20	349	*e*P		P	07 18 33.6	+0.1	
EDI	**Edinburgh**	24.30	327	*e*P		P	07 18 34.9	+0.3	
EDI				AMB		AMB	07 18 35.1		
	comp=Z,130nm,2.2s								
EDI	**Edinburgh**	24.30	327	*e*P		P	07 18 34.9	+0.3	
NB201	**NORSAR Array S**	24.33	349	*e*P		P	07 18 34.2	-0.6	
NB201	**NORSAR Array S**	24.33	349	*e*P		P	07 18 34.2	-0.6	
NC405	**NORSAR Array S**	24.33	350	*e*P		P	07 18 35.2	+0.4	
NC405	**NORSAR Array S**	24.33	350	*e*P		P	07 18 35.2	+0.4	
NB2	**NORSAR Subarra**	24.34	349	P		P	07 18 33.8	-1.0	
	comp=Z,27nm,0.6s,baz=159,slow=9.3								
NB2	**NORSAR Subarra**	24.34	349	P		P	07 18 33.8	-1.0	
	baz=159,slow=9.3								
NB2	**NORSAR Subarra**	24.34	349	P		P	07 18 33.8	-1.0	
	SNR=33								
NOA	**NORSAR Array B**	24.34	349	P		P	07 18 33.9	-1.0	
	comp=Z,31nm,0.8s,baz=159,slow=9.5,SNR=128								
NOA				LR		LR	07 29 04.3		
	comp=Z,293nm,18.8s,baz=155,slow=39								
FINES	**FINESS Array B**	24.36	7	P		P	07 18 33.4	-1.6	
	comp=Z,46nm,0.6s,baz=166,slow=8.8,SNR=152								
FINES				LR		LR	07 28 42.5		
	comp=Z,564nm,18.9s,baz=192,slow=38								
FIA1	**FINESS Array S**	24.36	7	*e*P		P	07 18 34.3	-0.7	
	comp=Z,86nm,0.9s								
FIA1	**FINESS Array S**	24.36	7	*e*P		P	07 18 34.3	-0.7	
	comp=Z,86nm,0.9s								
NBO00	**NORSAR Array S**	24.39	349	*e*P		P	07 18 35.8	+0.4	
NBO00	**NORSAR Array S**	24.39	349	*e*P		P	07 18 35.8	+0.4	
NBO02	**NORSAR Array S**	24.40	349	*e*P		P	07 18 35.0	-0.4	
NBO02	**NORSAR Array S**	24.40	349	*e*P		P	07 18 35.0	-0.4	
NC303	**NORSAR Array S**	24.49	350	*e*P		P	07 18 35.7	-0.5	
NC303	**NORSAR Array S**	24.49	350	*e*P		P	07 18 35.7	-0.5	
NC204	**NORSAR Array S**	24.63	349	*e*P		P	07 18 37.5	-0.1	
NC204	**NORSAR Array S**	24.63	349	*e*P		P	07 18 37.5	-0.1	
DRUM	**Mains of Drumt**	24.67	330	*e*P		P	07 18 37.9	0.0	
DRUM				AMB		AMB	07 18 40.3		
	comp=Z,166nm,2.5s								
DRUM	**Mains of Drumt**	24.67	330	*e*P		P	07 18 37.8	0.0	
BER	**Bergen**	24.87	342	*e*P		P	07 18 40.8	+1.1	
BER				IAmb		IAmb	07 18 42.2		
	comp=Z,783nm,2.6s								
BER	**Bergen**	24.87	342	*e*P		P	07 18 40.8	+1.1	
	SNR=29								
EAB	**Aberfoyle**	24.98	327	*e*P		P	07 18 40.5	-0.1	
EAB	**Aberfoyle**	24.98	327	*e*P		P	07 18 40.5	-0.1	
ASK	**Askoy**	25.00	342	*e*P		P	07 18 42.2	+1.5	
SUE	**Sulen**	25.60	343	*e*P		P	07 18 47.4	+1.2	
SUE	**Sulen**	25.60	343	*e*P		P	07 18 47.4	+1.2	
	SNR=28								
SUF	**Sumiainen**	25.62	6	*e*P		P	07 18 45.8	-0.6	
SUF				pmax		pmax			
	comp=Z,200nm,0.9s								
SUF	**Sumiainen**	25.62	6	*e*P		P	07 18 45.8	-0.6	
	comp=Z,200nm,0.9s								
VAF	**Ylistaro**	25.72	3	*e*P		P	07 18 47.1	-0.2	
VAF				pmax		pmax			
	comp=Z,116nm,1.0s								
VAF	**Ylistaro**	25.72	3	*e*P		P	07 18 47.1	-0.2	
	comp=Z,116nm,1.0s								
FOO	**Floro**	26.01	343	*e*P		P	07 18 51.2	+1.3	
FOO	**Floro**	26.01	343	*e*P		P	07 18 51.2	+1.3	
	SNR=28								
AKN	**Aaknes**	26.12	346	*e*P		P	07 18 50.5	-0.5	
AKN	**Aaknes**	26.12	346	*e*P		P	07 18 50.5	-0.5	
	SNR=28								
KPL	**Plockton**	26.26	328	*e*P		P	07 18 51.5	-0.7	
KPL	**Plockton**	26.26	328	*e*P		P	07 18 51.5	-0.7	
MOL	**Molde**	26.38	347	*e*P		P	07 18 54.2	+1.0	
MOL				IAmb		IAmb	07 18 57.4		
	comp=Z,41nm,1.1s								
MOL	**Molde**	26.38	347	*e*P		P	07 18 54.2	+1.0	
	SNR=28								
JOF	**Joensuu**	26.45	11	*e*P		P	07 18 53.5	-0.4	
JOF	**Joensuu**	26.45	11	*e*P		P	07 18 53.5	-0.4	
KLMR	**Klimovskoe**	26.47	21	*e*P		P	07 18 50.8	-3.3	
KLMR				pmax		pmax			
	comp=Z,75nm,1.4s								
TOA0	**Torodi Ar. Sit**	29.25	219	*e*P		P	07 19 19.8	+0.4	
	comp=Z,13nm,0.8s								
TOA0	**Torodi Ar. Sit**	29.25	219	*e*P		P	07 19 19.8	+0.4	
	comp=Z,13nm,0.8s								
TORD	**Torodi Ar. Bea**	29.25	219	P		P	07 19 19.7	+0.3	
	comp=Z,9.4nm,0.7s,baz=32,slow=9.0,SNR=39								
TORD				PP		PnPn	07 20 13.5	+1.0	
	comp=Z,5.3nm,0.9s,baz=32,slow=10,SNR=3.6								
TORD				LR		LR	07 31 44.7		
	comp=Z,288nm,19.2s,baz=15,slow=38								
STOK	**Stokkvaagen**	29.28	354	*e*P		P	07 19 19.2	+0.1	
STOK				IAmb		IAmb	07 19 19.4		
	comp=Z,31nm,0.8s								
STOK	**Stokkvaagen**	29.28	354	*e*P		P	07 19 19.2	+0.1	
	SNR=28								
KONS	**Konsvik**	29.43	354	*e*P		P	07 19 20.4	-0.1	
KONS				IAmb		IAmb	07 19 20.7		
	comp=Z,19nm,0.7s								
KONS	**Konsvik**	29.43	354	*e*P		P	07 19 20.4	-0.1	
	SNR=28								
AKTK	**Aktyubinsk**	29.88	52	P		P	07 19 22.6	-2.1	
	comp=Z,13nm,0.9s								
AKTO	**Aktyubinsk**	29.88	52	P		P	07 19 22.9	-1.7	
	comp=Z,2.9nm,0.4s,baz=268,slow=10,SNR=12								
AKTO				LR		LR	07 33 40.7		
	comp=Z,354nm,19.3s,baz=311,slow=41								
AKTO	**Aktyubinsk**	29.88	52	P		P	07 19 22.6	-2.1	
AKTO				pmax		pmax			
	comp=Z,13nm,0.9s								
AKTO	**Aktyubinsk**	29.88	52	P		P	07 19 23.0	-1.7	
GEYT	**Alibeck**	29.91	77	P		P	07 19 24.9	-0.2	
	comp=Z,12nm,0.5s,baz=269,slow=9.3,SNR=14								
GEYT				LR		LR	07 32 50.2		
	comp=Z,216nm,19.0s,baz=0.0,slow=40								
STEI	**Steigen**	30.71	356	*e*P		P	07 19 31.5	-0.3	
STEI				IAmb		IAmb	07 19 32.6		
	comp=Z,37nm,0.9s								
STEI	**Steigen**	30.71	356	*e*P		P	07 19 31.5	-0.3	
	SNR=28								
AB31	**Akbulak array**	30.91	55	*e*P		P	07 19 32.2	-1.6	
AB31				pmax		pmax			
	comp=Z,3.0nm,0.6s								
AB31	**Akbulak array**	30.91	55	*e*P		P	07 19 32.2	-1.6	
	comp=Z,3.0nm,0.6s								
LOF	**Lofoten**	31.01	355	*e*P		P	07 19 33.5	-1.0	
LOF	**Lofoten**	31.01	355	*e*P		P	07 19 33.5	-1.0	
	SNR=28								
APA	**Apatity**	31.14	10‖	*i*P		P	07 19 26.3	-9.3	
APA				pmax		pmax			
	comp=Z,9.0nm,0.8s								
APA				MLR		MLR			
	comp=Z,1μm,12.0s								
DAMY	**Dhamar**	31.30	130	*e*P		P	07 19 37.7	-0.2	
	comp=Z,96nm,1.3s								
DAMY	**Dhamar**	31.30	130	*e*P		P	07 19 37.7	-0.2	
	comp=Z,96nm,1.3s								
LVZ	**Lovozero**	31.62	10‖	*e*P		P	07 19 39.4	-0.4	
LVZ				pmax		pmax			
	comp=Z,55nm,2.1s								
LVZ	**Lovozero**	31.62	10	*e*P		P	07 19 39.4	-0.4	
	comp=Z,55nm,2.1s								
LVZ	**Lovozero**	31.62	10	*e*P		P	07 19 39.5	-0.4	
	comp=Z,40nm,1.0s								
ARU	**Arti**	31.83	41	P		P	07 19 40.1	-1.7	
	comp=Z,16nm,0.5s,baz=251,slow=5.2,SNR=27								
ARU				LR		LR	07 32 49.0		
	comp=Z,483nm,18.2s,baz=264,slow=37								
ARU	**Arti**	31.83	41	*c i*P		P	07 19 39.4	-2.4	
ARU							07 20 40.7		
ARU							07 22 30.7		
ARU				S		S	07 24 50.1	-1.4	
ARU				SS		SnSn	07 26 33.8	-5.3	
ARU				pmax		pmax			
	comp=Z,41nm,1.7s								
ARU				MLR		MLR			
	comp=Z,1μm,13.0s								
ARU	**Arti**	31.83	41	*e*P		P	07 19 39.9	-1.9	
	comp=Z,19nm,0.8s								
ARU	**Arti**	31.83	41	PcP		PcP	07 22 30.7	-1.7	
ARU				S		S	07 24 50.1	-1.4	
	comp=Z,1μm,13.0s								
ARU	**Arti**	31.83	41	*e*P		P	07 19 39.9	-1.9	
	comp=Z,19nm,0.8s								
SOKR	**Solikamsk**	32.24	35	*c i*P		P	07 19 41.8	-3.5	
SOKR				S		S	07 25 02.1	+4.3	
SOKR				SS		SnSn	07 26 46.2	-2.8	
SOKR				pmax		pmax			
	comp=Z,21nm,1.3s								
SOKR				MLR		MLR			
	comp=Z,1μm,16.0s								
TRO	**Tromso**	32.31	359	*e*P		P	07 19 45.5	-0.3	
TRO				IAmb		IAmb	07 19 45.7		
	comp=Z,25nm,0.7s								
TRO	**Tromso**	32.31	359	*e*P		P	07 19 45.5	-0.3	
	SNR=27								
ARA0	**ARCESS Array S**	32.33	4	*e*P		P	07 19 45.2	-0.9	
ARA0	**ARCESS Array S**	32.33	4	*e*P		P	07 19 45.2	-0.9	
ARCES	**ARCESS Array B**	32.33	4	P		P	07 19 44.9	-1.2	
	comp=Z,17nm,0.6s,baz=187,slow=8.6,SNR=60								
ARCES				LR		LR	07 35 39.4		
	comp=Z,358nm,20.9s,baz=164,slow=42								
ARE0	**ARCESS Array S**	32.33	4	*e*P		P	07 19 44.9	-1.2	
ARE0				IAmb		IAmb	07 19 51.9		
	comp=Z,20nm,0.9s								
ARE0	**ARCESS Array S**	32.33	4	*e*P		P	07 19 44.9	-1.2	
	SNR=27								
ARE0	**ARCESS Array S**	32.33	4	*e*P		P	07 19 45.3	-0.8	
	comp=Z,18nm,0.6s								
NAZ	**Nazwa, Dubai**	32.59	102	P		P	07 19 48.0	-0.8	
NAZ	**Nazwa, Dubai**	32.59	102	P		P	07 19 48.0	-0.8	
BANOM	**Banah**	32.62	100	P		P	07 19 48.2	-0.9	
BANOM	**Banah**	32.62	100	P		P	07 19 48.2	-0.9	
ATD	**Arta Tunnel**	32.82	136	P		P	07 19 51.3	+0.4	
	comp=Z,6.6nm,0.2s,baz=191,slow=20,SNR=2.1								
UOSS	**Minazif**	33.03	102	*e*P		P	07 19 51.8	-0.9	
	comp=Z,35nm,1.0s								
UOSS	**Minazif**	33.03	102	*e*P		P	07 19 51.8	-0.9	
	comp=Z,35nm,1.0s								
HATD	**Hatta, Dubai**	33.04	102	*i* P		P	07 19 52.2	-0.5	
	SNR=8.8								
HATD	**Hatta, Dubai**	33.04	102	P		P	07 19 52.2	-0.5	
	SNR=8.8								
SVE	**Sverdlovsk**	33.04	41‖	*e*P		P	07 19 50.9	-1.5	
SVE				pmax		pmax			
	comp=Z,53nm,0.6s								
SVE				MLR		MLR			
	comp=Z,2μm,11.0s								
SVE	**Sverdlovsk**	33.04	41	*e*P		P	07 19 50.9	-1.5	
	comp=Z,2μm,11.0s								
ASHO	**Ashiyiah**	33.05	102	*i* P		P	07 19 51.7	-1.2	
	SNR=7.3								
ASHO	**Ashiyiah**	33.05	102	P		P	07 19 51.7	-1.2	
	SNR=7.3								
HAMF	**Hammerfest**	33.37	2	*e*P		P	07 19 55.0	-0.1	
HAMF	**Hammerfest**	33.37	2	*e*P		P	07 19 55.0	-0.1	
	SNR=27								
ARQ	**Araqi**	34.12	104	P		P	07 20 01.9	-0.4	
	SNR=8.2								
ARQ	**Araqi**	34.12	104	P		P	07 20 01.9	-0.4	
	SNR=8.2								
SMDO	**Samad**	35.46	103	P		P	07 20 12.9	-1.0	
	SNR=7.7								
SMDO	**Samad**	35.46	103	P		P	07 20 12.9	-1.0	
	SNR=7.7								
WSAR	**Wadi Sarin**	35.81	102	P		P	07 20 15.3	-1.5	
	comp=Z,6.9nm,0.9s,baz=294,slow=14,SNR=3.2								
WSAR				LR		LR	07 38 08.1		
	comp=Z,147nm,18.5s,baz=327,slow=42								
BORG	**Borgarnes**	36.67	332	P		P	07 20 25.3	+1.8	
	comp=Z,8.0nm,0.8s,baz=120,slow=8.2,SNR=5.1								
ZRNK	**Zerenda**	36.99	49	P		P	07 20 24.9	-1.7	
ZRNK				pmax		pmax			
	comp=Z,18nm,1.1s								
ZRNK	**Zerenda**	36.99	49	P		P	07 20 24.9	-1.7	
	comp=Z,18nm,1.1s								
ZRNK	**Zerenda**	36.99	49	*e*P		P	07 20 25.1	-1.4	
	comp=Z,57nm,1.7s								
BRVK	**Borovoye**	37.77	49	*c i*P		P	07 20 31.5	-1.7	
BRVK				pmax		pmax			
	comp=Z,79nm,1.7s								
BRVK	**Borovoye**	37.77	49	*e*P		P	07 20 32.7	-0.5	
	comp=Z,12nm,0.8s								
BRVK	**Borovoye**	37.77	49	*e*P		P	07 20 32.7	-0.5	
	comp=Z,12nm,0.8s								
BVA0	**Borovoye Array**	37.83	49	P		P	07 20 31.8	-1.9	
BVA0				pmax		pmax			
	comp=Z,10.0nm,0.6s								
BVA0	**Borovoye Array**	37.83	49	P		P	07 20 31.8	-1.9	
	comp=Z,10.0nm,0.6s								
BVAR	**Borovoye Array**	37.83	49	P		P	07 20 31.8	-1.9	
	comp=Z,7.9nm,0.5s,baz=259,slow=6.4,SNR=44								
BVAR				LR		LR	07 37 17.6		
	comp=Z,137nm,19.8s,baz=259,slow=38								
DBIC	**Dimbokro**	38.13	223	P		P	07 20 36.8	+0.3	
	comp=Z,15nm,0.9s,baz=7.1,slow=11,SNR=14								
DBIC				LR		LR	07 37 58.3		
	comp=Z,297nm,18.4s,baz=16,slow=39								
DBIC	**Dimbokro**	38.13	223	*e*P		P	07 20 36.8	+0.3	
	comp=Z,17nm,0.8s								
DBIC	**Dimbokro**	38.13	223	*e*P		P	07 20 36.9	+0.3	
	comp=Z,17nm,0.8s								
VOSK	**Vostochnaya**	38.17	50	P		P	07 20 34.2	-2.4	
VOSK				pmax		pmax			
	comp=Z,6.0nm,0.7s								
VOSK	**Vostochnaya**	38.17	50	P		P	07 20 34.2	-2.4	
	comp=Z,6.0nm,0.7s								
VOSK	**Vostochnaya**	38.17	50	*e*P		P	07 20 35.0	-1.6	
	comp=Z,11nm,0.9s								
TIC	**Toumodi**	38.24	223	*e*P		P	07 20 36.6	-0.9	
KIC	**

KSH S **S** **07 27 36.9 -7.0**
KSH ScS **ScS** **07 31 15.3 -2.7**
KSH pmax pmax
comp=Z,4.0nm,0.8s
KSH pmax pmax
comp=Z,220nm,3.8s
KSH LR LR
comp=Z,460nm,11.8s
KSH LR LR
comp=Z,430nm,13.9s
KSH LR LR
comp=Z,370nm,10.8s
PDGK Podgornoye 44.76 63 P **P** **07 21 29.5 -1.4**
PDGK Podgornoye 44.76 63 P **P** **07 21 29.5 -1.4**
NVS Novosibirsk 45.41 46 *i* P **P** **07 21 35.0 -0.7**
NVS *e* 07 23 27.4
NVS pmax pmax
comp=E,6.0nm,0.4s
NVS pmax pmax
comp=Z,20nm,0.4s
NVS pmax pmax
comp=N,6.0nm,0.5s
NVS Novosibirsk 45.41 46 *i* P **P** **07 21 35.0 -0.7**
comp=N,6.0nm,0.5s
SUMG Summit 45.45 339 *i* P **P** **07 21 36.2 -0.1**
comp=N,11nm,1.0s
SUMG Summit 45.45 339 *i* P **P** **07 21 36.2 -0.1**
SUMG pmax pmax
comp=Z,11nm,1.0s
SUMG Summit 45.45 339 *i* P **P** **07 21 36.2 -0.1**
comp=Z,11nm,1.0s
SUMG Summit 45.45 339 *e*P **P** **07 21 37.0 +0.8**
comp=Z,19nm,1.1s
MAKZ Makanchi 45.73 58 P **P** **07 21 36.9 -1.5**
MAKZ pmax pmax
comp=Z,7.0nm,1.0s
MAKZ Makanchi 45.73 58 *e*P **P** **07 21 36.9 -1.5**
comp=Z,5.9nm,0.8s
MAKZ Makanchi 45.73 58 *e*P **P** **07 21 36.9 -1.5**
comp=Z,5.9nm,0.8s
MK31 Makanchi Array 45.95 58 *e*P **P** **07 21 38.2 -1.9**
MK31 pmax pmax
comp=Z,7.0nm,0.5s
MK31 Makanchi Array 45.95 58 *e*P **P** **07 21 38.2 -1.9**
MK31 Makanchi Array 45.95 58 *e*P **P** **07 21 38.2 -1.9**
MKAR Makanchi Array 45.95 58 P **P** **07 21 37.9 -2.3**
comp=Z,8.8nm,0.5s,baz=272,slow=7.1,SNR=179
MKAR PcP **PcP** **07 23 17.4 +0.6**
comp=Z,3.8nm,0.6s,baz=286,slow=3.5,SNR=5.0
MKAR LR LR 07 42 56.3
comp=Z,257nm,21.7s,baz=278,slow=39
MK01 Makanchi Array 45.96 58 *e*P **P** **07 21 38.3 -1.9**
MK01 Makanchi Array 45.96 58 *e*P **P** **07 21 38.3 -1.9**
ZAA0 Zalesovo Array 46.42 48 *e*P **P** **07 21 42.0 -1.6**
ZAA0 Zalesovo Array 46.42 48 *e*P **P** **07 21 42.0 -1.6**
ZALV Zalesovo Beam 46.42 48 P **P** **07 21 41.6 -2.0**
comp=Z,25nm,0.6s,baz=277,slow=8.6,SNR=79
ZALV LR LR 07 41 51.9
comp=Z,233nm,21.8s,baz=250,slow=37
SDNR Sundarnagar 46.61 80 *e*P **P** **07 21 43.6 -1.9**
NRIK Noril'sk 47.62 26 P **P** **07 21 52.8 0.0**
comp=Z,12nm,0.5s,baz=199,slow=1.7,SNR=19
NRIK LR LR 07 44 05.0
comp=Z,414nm,18.7s,baz=266,slow=39
NDI New Delhi 47.98 83 *e*P P 07 21 48.0 -8.1
SFJD Kangerlussuaq 48.78 330 P **P** **07 22 02.4 +0.7**
comp=Z,7.3nm,0.6s,baz=63,slow=4.6,SNR=3.1
WMQ Urumqi 50.38 60 *e*P **P** **07 22 16.9 +2.4**
WMQ pP sP 07 22 22.4 +1.2
WMQ PcP **PcP** **07 23 27.5 -5.3**
WMQ S **S** **07 29 23.3 -3.8**
WMQ pmax pmax
comp=Z,13nm,0.7s
WMQ pmax pmax
comp=Z,96nm,3.9s
WMQ LR LR
comp=Z,550nm,12.0s
WMQ LR LR
comp=Z,540nm,12.0s
WMQ LR LR
comp=Z,580nm,20.8s
PYUN Piuthan 52.79 81 *e*P **P** **07 22 31.4 -1.4**
comp=Z,170nm,0.7s
LSZ Lusaka 52.93 170 P **P** **07 22 35.6 +1.9**
comp=Z,6.0nm,0.8s,baz=6.6,slow=9.3,SNR=8.3
KOLN Koldanda 53.42 81 *e*P **P** **07 22 35.7 -1.8**
comp=Z,85nm,0.9s
GKN Gorkha 54.12 80 *e*P **P** **07 22 40.6 -2.0**
comp=Z,115nm,0.8s
HYB Hyderabad 54.65 95 *i* P **P** **07 22 45.5 -0.9**
DMN Daman 54.67 80 *e*P **P** **07 22 44.8 -1.9**
comp=Z,164nm,0.8s
KKN Kakani 54.73 80 *e*P **P** **07 22 45.3 -1.7**
comp=Z,55nm,0.7s
PKIN Phulchoki 54.92 80 *e*P **P** **07 22 46.8 -1.7**
comp=Z,50nm,1.0s
GUN Gumba 55.14 79 *e*P **P** **07 22 48.7 -1.5**
comp=Z,78nm,0.5s
DRLN Deer Lake 55.38 309 *e*P **P** **07 22 51.7 +0.5**
comp=Z,35nm,0.7s
DRLN Deer Lake 55.38 309 *e*P **P** **07 22 51.7 +0.5**
comp=Z,35nm,0.7s
RAMN Ramite 56.16 80 *e*P **P** **07 22 55.3 -2.1**
comp=Z,126nm,0.8s
TSUM Tsumeb 56.34 183 P **P** **07 22 59.8 +1.4**
comp=Z,4.2nm,1.0s,baz=70,slow=6.4,SNR=4.6
TSUM Tsumeb 56.34 183 *e*P **P** **07 22 58.8 +0.3**
comp=Z,6.1nm,0.9s
TSUM Tsumeb 56.34 183 *e*P **P** **07 22 58.8 +0.3**
comp=Z,6.1nm,0.9s
MOY Mondy 56.48 48 *e*P **P** **07 22 59.3 +0.1**
MOY Mondy 56.48 48 *e*P **P** **07 22 59.3 +0.1**
FRB Frobisher Bay 56.67 328 P **P** **07 23 00.5 +0.4**
comp=Z,15nm,0.8s,baz=79,slow=7.1,SNR=6.2
TLY Talaya 58.02 47 P **P** **07 23 09.3 -0.7**
comp=Z,3.7nm,0.6s,baz=259,slow=5.9,SNR=11
TLY LR LR 07 49 10.5
comp=Z,213nm,20.2s,baz=302,slow=37
TLY Talaya 58.02 47 *e*P **P** **07 23 09.5 -0.5**
TLY pmax pmax
comp=Z,19nm,1.6s
TLY MLR MLR
comp=Z,548nm,11.0s
TLY Talaya 58.02 47 *e*P **P** **07 23 10.1 +0.1**
comp=Z,43nm,1.9s
TLY Talaya 58.02 47 *e*P **P** **07 23 10.1 +0.1**
comp=Z,43nm,1.9s
MATP Matopo 58.04 171 P **P** **07 23 11.5 +1.1**
comp=Z,6.8nm,0.8s,baz=358,slow=8.6,SNR=14
IRK Irkutsk 58.18 46 *e*P **P** **07 23 10.2 -0.8**
IRK pmax pmax
comp=Z,50nm,3.0s
IRK Irkutsk 58.18 46 *e*P **P** **07 23 10.2 -0.8**
comp=Z,50nm,3.0s
ZAK Zakamensk 58.28 48 *e*P **P** **07 23 10.2 -1.7**
ZAK pmax pmax
comp=Z,6.0nm,1.6s
ZAK Zakamensk 58.28 48 *e*P **P** **07 23 10.2 -1.7**
comp=Z,6.0nm,1.6s
LSA Lhasa 58.40 75 P **P** **07 23 12.4 -1.1**
LSA pmax pmax
comp=Z,23nm,1.4s
LSA Lhasa 58.40 75 P **P** **07 23 12.6 -0.9**
SCHQ Schefferville 58.85 318 P **P** **07 23 15.8 +0.2**
comp=Z,18nm,0.7s,baz=65,slow=6.0,SNR=22
SCHQ Schefferville 58.85 318 *e*P **P** **07 23 16.1 +0.4**
comp=Z,20nm,0.8s
SCHQ Schefferville 58.85 318 *e*P **P** **07 23 16.1 +0.4**
comp=Z,20nm,0.8s
GTA Gaotai 60.44 61 *e*P **P** **07 23 25.4 -1.6**
GTA pP pP 07 23 30.3 -1.7
GTA sP sP 07 23 32.4 -1.4
GTA S **S** **07 31 38.8 -2.9**
GTA sS sS 07 31 47.1 -2.8
GTA SS **SS** **07 35 38.4 -0.8**
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,230nm,6.3s
GTA LR LR
comp=Z,250nm,16.2s
GTA LR LR
comp=Z,340nm,15.7s
GTA LR LR
comp=Z,330nm,16.2s
RES Resolute Bay 60.45 344 P **P** **07 23 27.4 +1.1**
comp=Z,8.7nm,0.8s,baz=51,slow=9.5,SNR=9.0
RES Resolute Bay 60.45 344 *e*P **P** **07 23 27.8 +1.5**
comp=Z,8.9nm,0.8s
TIXI Tiksi 60.48 20⇑ *e*P **P** **07 23 26.1 -0.5**
TIXI pmax pmax
comp=Z,24nm,2.5s
TIXI Tiksi 60.48 20 *e*P **P** **07 23 26.5 -0.1**
comp=Z,12nm,0.8s
TIXI Tiksi 60.48 20 *e*P **P** **07 23 26.5 -0.1**
comp=Z,12nm,0.8s
BOD Bodaibo 61.16 38 *e*P **P** **07 23 29.3 -2.1**
BOD pmax pmax
comp=Z,19nm,1.0s
BOD Bodaibo 61.16 38 *e*P **P** **07 23 29.3 -2.1**
comp=Z,19nm,1.0s
SONA1 Songino Array 61.17 50 *e*P **P** **07 23 30.7 -1.2**
SONA1 Songino Array 61.17 50 *e*P **P** **07 23 30.7 -1.2**
SONM Songino Array 61.17 50 P **P** **07 23 30.7 -1.2**
comp=Z,4.8nm,0.5s,baz=281,slow=7.9,SNR=34
SONM PcP **PcP** **07 24 15.3 +0.7**
comp=Z,4.4nm,0.9s,baz=294,slow=5.4,SNR=3.5
SONM LR LR 07 53 57.2
comp=Z,78nm,21.2s,baz=292,slow=40
OPO Ambohidratompo 61.21 151 P **P** **07 23 34.9 +2.6**
comp=Z,5.4nm,0.9s,baz=329,slow=4.0,SNR=4.3
OPO LR LR 07 49 48.6
comp=Z,87nm,20.8s,baz=317,slow=36
LMN Caledonia Moun 61.24 307 *e*P **P** **07 23 32.8 +0.6**
comp=Z,17nm,0.9s
LMN Caledonia Moun 61.24 307 *e*P **P** **07 23 32.8 +0.6**
comp=Z,17nm,0.9s
LBTB Lobatse 62.28 174 P **P** **07 23 41.1 +1.7**
comp=Z,3.8nm,0.6s,baz=7.9,slow=7.8,SNR=8.6
LBTB Lobatse 62.28 174 *e*P **P** **07 23 41.1 +1.7**
LBTB pmax pmax
comp=Z,11nm,1.0s
LBTB Lobatse 62.28 174 *e*P **P** **07 23 41.1 +1.7**
comp=Z,11nm,1.0s
LBTB Lobatse 62.28 174 *e*P **P** **07 23 41.1 +1.7**
comp=Z,11nm,1.0s
PALK Pallekele 62.30 103 P **P** **07 23 39.9 +0.1**
comp=Z,14nm,1.0s,baz=296,slow=12,SNR=3.5
GGN Saint George 62.85 307 *e*P **P** **07 23 43.2 +0.2**
comp=Z,53nm,1.7s
GGN Saint George 62.85 307 *e*P **P** **07 23 43.2 +0.2**
comp=Z,53nm,1.7s
EMMW East Machias 63.42 307 *e*P **P** **07 23 47.9 +1.1**
comp=Z,66nm,1.4s
EMMW East Machias 63.42 307 *e*P **P** **07 23 47.9 +1.1**
comp=Z,66nm,1.4s
LZH Lanzhou 64.80 63 *e*P **P** **07 23 58.1 +1.9**
LZH pP sP 07 24 01.1 -2.0
LZH sP pP 07 24 04.1 +2.9
LZH pmax pmax
comp=Z,16nm,1.0s
BOSA Boshof 65.83 175 P **P** **07 24 04.2 +1.5**
comp=Z,1.9nm,0.6s,baz=1.8,slow=8.8,SNR=5.3
BOSA LR LR 07 54 55.4
comp=Z,310nm,18.2s,baz=358,slow=38
BOSA Boshof 65.83 175 *e*P **P** **07 24 03.8 +1.1**
comp=Z,19nm,1.4s
YAK Yakutsk 65.93 29 P **P** **07 24 02.8 0.0**
comp=Z,27nm,0.5s,baz=199,slow=0.9,SNR=7.4
YAK Yakutsk 65.93 29 *e*P **P** **07 24 02.3 -0.5**
YAK pmax pmax
comp=Z,19nm,0.6s
YAK Yakutsk 65.93 29 *e*P **P** **07 24 02.3 -0.5**
comp=Z,19nm,0.6s
YAK Yakutsk 65.93 29 *e*P **P** **07 24 02.8 0.0**
comp=Z,39nm,0.7s
WES Weston 67.00 306 *e*P **P** **07 24 10.4 +0.4**
WES pmax pmax
comp=Z,57nm,1.4s
WES Weston 67.00 306 *e*P **P** **07 24 10.4 +0.4**
comp=Z,57nm,1.4s
WES Weston 67.00 306 *e*P **P** **07 24 10.4 +0.4**
comp=Z,57nm,1.4s
TRQ Mont Tremblant 67.07 311 *e*P **P** **07 24 12.2 +1.6**
TRQ Mont Tremblant 67.07 311 *e*P **P** **07 24 12.2 +1.6**
CD2 Chengdu 67.32 68 *e*P **P** **07 24 12.0 -0.4**
CD2 pP pP 07 24 16.4 -0.9
CD2 PP **PP** **07 26 39.8 -0.7**
CD2 S **S** **07 33 06.6 -0.7**
CD2 sS sS 07 33 14.3 -1.2
CD2 SKS **SKSac** **07 34 08.8 -0.8**
CD2 SS **SS** **07 37 26.9 +0.3**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.8s
RCBR Riachuelo 67.59 243 P **P** **07 24 16.6 +2.4**
comp=Z,8.8nm,1.0s,baz=29,slow=5.0,SNR=2.0
HHC Hu-ho-hao-te 67.71 55 *e*P **P** **07 24 13.8 -0.9**
HHC pmax pmax
comp=Z,21nm,1.3s
HHC pmax pmax
comp=Z,260nm,6.1s
VLDQ Val d'Or 67.79 314 *e*P **P** **07 24 16.4 +1.4**
comp=Z,10.0nm,0.8s
VLDQ Val d'Or 67.79 314 *e*P **P** **07 24 16.4 +1.4**
comp=Z,10.0nm,0.8s
ACCN Adirondack Com 67.98 308 *e*P **P** **07 24 18.3 +2.0**
comp=Z,15nm,1.0s
ACCN Adirondack Com 67.98 308 *e*P **P** **07 24 18.3 +2.0**
comp=Z,15nm,1.0s
PLVO Plevna 69.20 311 *e*P **P** **07 24 25.6 +1.8**
comp=Z,15nm,1.1s
PLVO Plevna 69.20 311 *e*P **P** **07 24 25.6 +1.8**
comp=Z,15nm,1.1s
SUR Sutherland 69.42 179 P **P** **07 24 26.8 +1.4**
comp=Z,0.5nm,1.0s,baz=327,slow=15,SNR=3.3
XAN Xi'an 69.43 62 P **P** **07 24 24.9 -0.6**
XAN pmax pmax
comp=Z,17nm,1.4s
XAN pmax pmax
comp=Z,220nm,5.7s
KMI Kunming 69.59 74 P **P** **07 24 27.3 +0.5**
KMI pmax pmax
comp=Z,12nm,0.6s
FCC Fort Churchill 69.78 330 *e*P **P** **07 24 28.3 +1.2**
FCC pmax pmax
comp=Z,43nm,1.4s
FCC Fort Churchill 69.78 330 *e*P **P** **07 24 28.3 +1.2**
comp=Z,43nm,1.4s
FCC Fort Churchill 69.78 330 *e*P **P** **07 24 28.3 +1.2**
comp=Z,43nm,1.4s
CHTO Chiang Mai 70.08 81 *e*P **P** **07 24 29.0 -0.6**
CHTO pmax pmax
comp=Z,17nm,1.1s
CHTO Chiang Mai 70.08 81 P **P** **07 24 29.3 -0.3**
SNR=5.5
CHTO P **P** **07 24 29.3 -0.3**
SNR=5.5
CHTO Chiang Mai 70.08 81 P **P** **07 24 29.3 -0.3**
SNR=5.5
CHTO Chiang Mai 70.08 81 *e*P **P** **07 24 29.0 -0.6**
comp=Z,17nm,1.1s
CMAR Chiang Mai Arr 70.27 82 P **P** **07 24 29.9 -1.0**
comp=Z,4.6nm,0.6s,baz=304,slow=7.9,SNR=14
CMAR LR LR 07 58 55.1
comp=Z,66nm,18.8s,baz=298,slow=39
CM01 Chiang Mai Arr 70.31 82 *e*P **P** **07 24 29.8 -1.2**
CM01 Chiang Mai Arr 70.31 82 *e*P **P** **07 24 29.8 -1.2**
SADO Sadowa 70.58 312 P **P** **07 24 32.8 +0.5**
comp=Z,7.3nm,0.8s,baz=51,slow=8.0,SNR=11
SADO Sadowa 70.58 312 *e*P **P** **07 24 33.6 +1.3**
comp=Z,7.5nm,0.8s
SADO Sadowa 70.58 312 *e*P **P** **07 24 33.6 +1.3**
comp=Z,7.5nm,0.8s
N59A State Game Lan 70.61 307 P **P** **07 24 33.6 +0.9**
baz=57
BJI Beijing 71.12 54 P **P** **07 24 34.8 -0.9**
BJI pmax pmax
comp=Z,11nm,1.0s
GYA Guiyang 71.84 70 P **P** **07 24 41.3 +0.9**
GYA PP **PP** **07 27 21.4 +1.7**
GYA S **S** **07 33 59.0 -1.7**
GYA SKS **SKSac** **07 34 40.5 -3.6**
GYA SS **SS** **07 38 37.8 +1.2**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.2s
GYA LR LR
comp=Z,520nm,19.8s
GYA LR LR
comp=Z,490nm,19.7s
GYA LR LR
comp=Z,450nm,20.1s
BILL Bilibino 71.84 13⇓ *e*P **P** **07 24 39.5 -0.1**
BILL *e* 07 24 57.0
BILL *e* 07 27 21.8
BILL MLR MLR
comp=Z,205nm,19.0s
BILL Bilibino 71.84 13 *e*P **P** **07 24 39.5 -0.1**
BILL Bilibino 71.84 13 *e*PcP **PcP** **07 24 57.0 -1.4**
SSPA Standing Stone 72.11 308 *e*P **P** **07 24 43.2 +1.6**
comp=Z,6.7nm,0.8s
SSPA Standing Stone 72.11 308 *e*P **P** **07 24 43.2 +1.6**
comp=Z,6.7nm,0.8s
M54A Oil Creek Stat 72.72 309 P **P** **07 24 46.0 +0.7**
baz=56
O56A Blue Knob Stat 72.74 308 P **P** **07 24 46.5 +1.0**
baz=56
INK Inuvik 72.79 350 P **P** **07 24 45.2 0.0**
comp=Z,3.2nm,0.7s,baz=258,slow=2.0,SNR=5.7
INK Inuvik 72.79 350 *e*P **P** **07 24 45.7 +0.5**
comp=Z,3.9nm,0.8s
INK Inuvik 72.79 350 *e*P **P** **07 24 45.7 +0.5**
comp=Z,3.9nm,0.8s
SEY Seymchan 72.97 21 P **P** **07 24 46.5 +0.2**
comp=Z,2.9nm,0.7s,baz=301,slow=5.0,SNR=6.8
N54A Moraine State 73.23 309 P **P** **07 24 49.5 +1.2**
baz=55
GLMI Grayling 73.73 314 *e*P **P** **07 24 52.7 +1.5**
comp=Z,24nm,0.7s
GLMI Grayling 73.73 314 *e*P **P** **07 24 52.6 +1.5**
comp=Z,24nm,0.7s
YKA Yellowknife Ar 74.03 340 P **P** **07 24 52.8 +0.2**
comp=Z,3.4nm,0.8s,baz=35,slow=5.4,SNR=12
YKA LR LR 07 59 55.6
comp=Z,5.5nm,18.0s,baz=0.0,slow=38
CN2 Changchun 74.62 46 *e*P **P** **07 24 55.8 -0.6**
CN2 *e*S **SKiKP** **07 34 23.1 +1.6**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
CN2 pmax pmax
comp=Z,100nm,4.0s
CN2 LR LR
comp=Z,400nm,13.0s
CN2 LR LR
comp=Z,500nm,13.0s
CN2 LR LR
comp=Z,900nm,14.0s
KLR Kul'dur 74.65 39 P **P** **07 24 55.6 -0.9**
comp=Z,3.0nm,0.5s,baz=315,slow=5.0,SNR=16
C39A Grand Marais 74.90 319 P **P** **07 24 58.3 +0.3**
baz=51
MA2 Magadan 75.12 24 P **P** **07 24 58.5 -0.5**
comp=Z,5.9nm,0.4s,baz=355,slow=22,SNR=3.0
WHN Wuhan 75.18 63 P **P** **07 24 59.3 -0.5**
COLD Coldfoot 75.44 356 *e*P **P** **07 25 01.6 +0.9**
comp=Z,7.3nm,0.9s
COLD Coldfoot 75.44 356 *e*P **P** **07 25 01.6 +0.9**
comp=Z,7.3nm,0.9s
COWI Conover 75.46 317 *e*P **P** **07 25 02.3 +1.0**
comp=Z,8.9nm,0.8s
COWI Conover 75.46 317 *e*P **P** **07 25 02.3 +1.0**
comp=Z,8.9nm,0.8s
EYMN Ely 75.53 320 P **P** **07 25 01.8 +0.3**
baz=50
EYMN Ely 75.53 320 *e*P **P** **07 25 02.8 +1.2**
comp=Z,5.6nm,0.8s
EYMN Ely 75.53 320 *e*P **P** **07 25 02.8 +1.2**
comp=Z,5.6nm,0.8s
C38A Sawbill Land. 75.56 320 P **P** **07 25 01.8 0.0**
baz=50
FFC Flin Flon 75.72 330 *e*P **P** **07 25 03.9 +1.4**
FFC pmax pmax
comp=Z,18nm,1.5s
FFC Flin Flon 75.72 330 *e*P **P** **07 25 03.9 +1.4**
comp=Z,18nm,1.5s
FFC Flin Flon 75.72 330 *e*P **P** **07 25 03.9 +1.4**
comp=Z,18nm,1.5s
C37A Embarrass 76.02 320 P **P** **07 25 04.4 0.0**
baz=50
ULM Lac du Bonnet 76.17 324 P **P** **07 25 05.5 +0.3**
comp=Z,8.2nm,0.7s,baz=43,slow=5.6,SNR=17
ULM LR LR 07 57 37.2
comp=Z,136nm,21.7s,baz=336,slow=35
ULM Lac du Bonnet 76.17 324 *e*P **P** **07 25 06.0 +0.8**
comp=Z,9.1nm,0.8s
C36A Pine Crest Far 76.34 320 P **P** **07 25 06.2 0.0**
baz=49,SNR=7.1
B35A Bob, Littlefor 76.39 321 P **P** **07 25 06.4 -0.1**
baz=49
D37A Cotton 76.52 320 P **P** **07 25 07.3 0.0**
baz=49
B34A Aery, Baudette 76.76 322 P **P** **07 25 08.7 +0.1**
baz=48,SNR=11
A33A Warroad 76.82 322 P **P** **07 25 09.1 +0.1**
baz=48,SNR=6.0
D36A Goodland 76.89 320 P **P** **07 25 09.5 +0.1**
baz=49
C35A Jirik Farms, M 76.95 321 P **P** **07 25 09.7 0.0**
baz=48
EGAK Eagle 77.11 352 *e*P **P** **07 25 10.8 +0.6**
comp=Z,4.3nm,0.9s
EGAK Eagle 77.11 352 *e*P **P** **07 25 10.8 +0.6**
comp=Z,4.3nm,0.9s
E36A McGregor 77.37 320 P **P** **07 25 12.3 +0.3**
baz=49
AGMN Agassiz Nation 77.49 322 P **P** **07 25 12.7 0.0**
baz=47
KMSC Kings Mountain 77.51 305 P **P** **07 25 13.1 +0.1**
baz=53
MDM Murphy Dome 77.58 355 *e*P **P** **07 25 13.9 +1.0**
comp=Z,15nm,1.0s
MDM Murphy Dome 77.58 355 *e*P **P** **07 25 13.8 +1.0**
comp=Z,15nm,1.0s
DAWY Dawson 77.59 351 *e*P **P** **07 25 13.6 +0.6**
comp=Z,9.5nm,0.9s
DAWY Dawson 77.59 351 *e*P **P** **07 25 13.7 +0.6**
comp=Z,9.5nm,0.9s
COLA College 77.63 355 *e*P **P** **07 25 13.7 +0.6**
COLA pmax pmax
comp=Z,2.0nm,0.8s
COLA College 77.63 355 *e*P **P** **07 25 13.7 +0.6**
comp=Z,2.1nm,0.8s
COLA College 77.63 355 *e*P **P** **07 25 13.7 +0.6**
comp=Z,2.1nm,0.8s
MLY Manley 77.66 356 *e*P **P** **07 25 14.5 +1.1**
comp=Z,7.6nm,1.0s
MLY Manley 77.66 356 *e*P **P** **07 25 14.5 +1.1**
comp=Z,7.6nm,1.0s
IL1 Eielson Array 77.66 354 *e*P **P** **07 25 14.4 +1.1**
IL1 Eielson Array 77.66 354 *e*P **P** **07 25 14.4 +1.1**
ILAR Eielson Array 77.66 354 P **P** **07 25 13.4 +0.1**
comp=Z,2.0nm,0.8s,baz=358,slow=4.1,SNR=27
ILAR LR LR 08 01 41.8
comp=Z,74nm,19.2s,baz=360,slow=38
ILB Eielson Array 77.66 354 *e*P **P** **07 25 14.4 +1.0**
ILB Eielson Array 77.66 354 *e*P **P** **07 25 14.3 +1.0**
J41A Loganville 77.69 316 P **P** **07 25 13.9 0.0**
baz=50
B32A Ashes, Strandq 77.75 322 P **P** **07 25 14.4 +0.3**
baz=47
CCB Clear Creek Bu 77.86 355 *e*P **P** **07 25 14.7 +0.3**
comp=Z,11nm,0.9s
CCB Clear Creek Bu 77.86 355 *e*P **P** **07 25 14.7 +0.3**
comp=Z,11nm,0.9s
SFIN Lafayette 77.90 312 P **P** **07 25 15.2 +0.1**
baz=51
E35A Pequot Lakes 77.93 320 P **P** **07 25 15.2 0.0**
baz=48
F36A Milaca 77.94 319 P **P** **07 25 15.2 -0.1**
baz=48,SNR=11
D34A Park Rapids 77.98 321 P **P** **07 25 15.6 +0.1**
baz=48
SPMN Marine on St. 77.99 318 P **P** **07 25 15.7 +0.2**
baz=49
SPMN Marine on St. 77.99 318 *e*P **P** **07 25 16.3 +0.8**
comp=Z,17nm,1.5s
SPMN Marine on St. 77.99 318 *e*P **P** **07 25 16.3 +0.8**
comp=Z,17nm,1.5s
HDA Harding Lake 78.03 354 *e*P **P** **07 25 15.9 +0.5**
comp=Z,14nm,0.8s
HDA Harding Lake 78.03 354 *e*P **P** **07 25 15.9 +0.5**
comp=Z,14nm,0.8s
USRK Ussuriysk Ar. 78.04 43 P **P** **07 25 14.8 -0.9**
comp=Z,3.1nm,0.5s,baz=265,slow=8.1,SNR=8.7
USRK LR LR 08 02 16.0
comp=Z,256nm,18.8s,baz=306,slow=38
WRH Wood River Hil 78.05 355 *e*P **P** **07 25 16.1 +0.6**
comp=Z,39nm,1.4s

WRH Wood River Hil 78.05 355 eP P 07 25 16.1 +0.6
comp=Z,39nm,1.4s
J40A Soldiers Grove 78.07 316 P P 07 25 16.2 +0.2
baz=50
JFWS Jewell Farm 78.11 315 eP P 07 25 16.0 -0.2
JFWS pmax pmax
comp=Z,6.0nm,0.8s
JFWS Jewell Farm 78.11 315 eP P 07 25 16.0 -0.2
comp=Z,6.3nm,0.8s
JFWS Jewell Farm 78.11 315 eP P 07 25 16.0 -0.2
comp=Z,6.3nm,0.8s
B31A Greenbush Farm 78.27 323 P P 07 25 17.1 +0.1
baz=46
K41A Shullsburg 78.34 315 P P 07 25 17.8 +0.3
baz=50
QIZ Qiongzhong 78.44 75 P P 07 25 19.3 +0.9
QIZ S S 07 35 12.3 -1.8
QIZ pmax pmax
comp=Z,34nm,2.0s
H37A Dierke Farm, C 78.48 318 P P 07 25 18.6 +0.4
baz=49
F35A Swanville 78.49 320 P P 07 25 18.2 -0.1
baz=48
I38A Scanlan Farm, 78.52 317 P P 07 25 18.5 0.0
baz=49,SNR=5.3
BPAW Bear Paw Mtn. 78.60 356 eP P 07 25 19.0 +0.4
comp=Z,5.8nm,0.9s
BPAW Bear Paw Mtn. 78.60 356 eP P 07 25 19.0 +0.4
comp=Z,5.8nm,0.9s
J39A Decorah 78.64 316 P P 07 25 19.3 +0.1
baz=49
A29A Manning Farm, 78.66 324 P P 07 25 19.1 -0.1
baz=45
K40A Colesburg 78.74 316 P P 07 25 20.3 +0.5
baz=49
TKL Tuckaleechee C 78.78 306 P P 07 25 20.8 +0.6
comp=Z,1.7nm,0.7s,baz=88,slow=10,SNR=4.6
TKL Tuckaleechee C 78.78 306 eP P 07 25 20.7 +0.6
TKL pmax pmax
comp=Z,12nm,0.8s
TKL Tuckaleechee C 78.78 306 eP P 07 25 20.7 +0.6
comp=Z,12nm,0.8s
TKL Tuckaleechee C 78.78 306 eP P 07 25 20.7 +0.6
comp=Z,12nm,0.8s
E33A Westby DABS, E 78.78 321 P P 07 25 20.4 +0.5
baz=47
L41A Preston 78.79 315 P P 07 25 20.4 +0.4
baz=50
MCK McKinley 78.84 355 eP P 07 25 20.1 +0.2
MCK pmax pmax
comp=Z,27nm,1.2s
MCK McKinley 78.84 355 eP P 07 25 20.1 +0.2
comp=Z,26nm,1.2s
MCK McKinley 78.84 355 eP P 07 25 20.1 +0.2
comp=Z,26nm,1.2s
B29A Wagenman Farm, 79.05 324 P P 07 25 21.6 +0.4
baz=45
J38A Wedel Dairy, R 79.08 317 P P 07 25 21.4 -0.1
baz=49
HDIL Hopedale 79.08 313 P P 07 25 21.9 +0.3
baz=50
K39A Oelwein 79.16 316 P P 07 25 21.8 -0.2
baz=49
RND Reindeer 79.16 355 eP P 07 25 21.8 +0.1
RND pmax pmax
comp=Z,41nm,1.0s
RND Reindeer 79.16 355 eP P 07 25 21.8 +0.1
comp=Z,41nm,1.0s
RND Reindeer 79.16 355 eP P 07 25 21.8 +0.1
comp=Z,41nm,1.0s
MENT Mentasta 79.18 353 eP P 07 25 25.1 +3.3
comp=Z,13nm,0.8s
TRF Thorofare Moun 79.21 356 eP P 07 25 22.3 +0.2
comp=Z,28nm,0.9s
TRF Thorofare Moun 79.21 356 eP P 07 25 22.3 +0.2
comp=Z,28nm,0.9s
L40A Anamosa 79.21 315 P P 07 25 22.1 -0.2
baz=49
CAST Castle Rocks 79.34 356 eP P 07 25 24.0 +1.4
comp=Z,31nm,0.9s
CAST Castle Rocks 79.34 356 eP P 07 25 24.0 +1.4
comp=Z,31nm,0.9s
PSI Prapat 79.36 95 P P 07 25 23.4 -0.2
comp=Z,11nm,0.7s,baz=300,slow=10,SNR=9.5
PSI Prapat 79.36 95 eP P 07 25 23.2 -0.5
PSI pmax pmax
comp=Z,50nm,0.8s
PSI Prapat 79.36 95 eP P 07 25 23.2 -0.5
comp=Z,50nm,0.8s
DHY Denali Highway 79.38 354 eP P 07 25 23.1 +0.1
comp=Z,54nm,1.8s
DHY Denali Highway 79.38 354 eP P 07 25 23.1 +0.1
comp=Z,54nm,1.8s
F33A 5 Mile Ranch, 79.38 320 P P 07 25 23.3 +0.1
baz=47
CPCT Cooper Cave 79.39 307 eP P 07 25 25.2 +1.8
comp=Z,4.4nm,0.5s
CPCT Cooper Cave 79.39 307 eP P 07 25 25.2 +1.8
comp=Z,4.4nm,0.5s
H35A Sunnyside Ranc 79.41 319 P P 07 25 23.9 +0.5
baz=47,SNR=9.5
I36A Fitzsimmons Fa 79.44 318 P P 07 25 23.4 -0.1
baz=48
L39A Vinton 79.60 316 P P 07 25 24.6 +0.2
baz=49
J37A Redenius Farm, 79.67 317 P P 07 25 24.9 +0.1
baz=48,SNR=7.2
E31A Nome 79.68 322 P P 07 25 24.8 0.0
baz=46
K38A Parkersburg 79.68 316 P P 07 25 24.5 -0.3
baz=48
PPLA Purkeypile 79.86 356 eP P 07 25 26.1 +0.5
comp=Z,6.9nm,0.7s
PPLA Purkeypile 79.86 356 eP P 07 25 26.1 +0.5
comp=Z,6.9nm,0.7s
G33A Ortonville 79.90 320 P P 07 25 26.6 +0.6
baz=46
H34A Spellman Lake, 79.92 319 P P 07 25 27.1 +1.0
baz=47
A26A Wade Farm, Ken 79.97 325 P P 07 25 27.4 +1.1
baz=43
TT01 Tatalina 80.00 358 eP P 07 25 26.9 +0.7
TT01 Tatalina 80.00 358 eP P 07 25 26.9 +0.7
KS01 Wonju Array Si 80.01 50 eP P 07 25 27.0 +0.3
KS01 Wonju Array Si 80.01 50 eP P 07 25 27.1 +0.3
KSAR Wonju Array Be 80.02 50 P P 07 25 26.5 -0.3
KSAR Wonju Array Be 80.02 50 P P 07 25 26.5 -0.3
KSAR Wonju Array Be 80.02 50 P P 07 25 26.5 -0.3
KSRS Korea Array 80.04 50 P P 07 25 26.5 -0.3
comp=Z,6.1nm,0.8s,baz=307,slow=4.3,SNR=6.5
KSRS LR LR 08 04 14.2
comp=Z,136nm,20.8s,baz=318,slow=38
I35A Creekview Farm 80.06 318 P P 07 25 27.7 +0.7
baz=47
J36A Seneca 1, Swea 80.08 318 P P 07 25 26.9 -0.1
baz=48,SNR=10
K37A Belmond 80.08 317 P P 07 25 26.7 -0.4
baz=48
L38A Oak Wood Farm, 80.12 316 P P 07 25 26.5 -0.7
baz=48,SNR=6.8
M39A Webster 80.13 315 P P 07 25 27.4 +0.2
baz=49
O41A Passleys Farm, 80.29 313 P P 07 25 28.4 +0.2
baz=49
P42A Winchester 80.33 313 P P 07 25 28.3 -0.1
baz=49
H33A Prehn Over Nor 80.41 320 P P 07 25 28.4 -0.4
baz=46
HYT Haines Junctio 80.44 349 eP P 07 25 30.1 +1.3
comp=Z,10nm,1.1s
HYT Haines Junctio 80.44 349 eP P 07 25 30.1 +1.3
comp=Z,10nm,1.1s
L37A Phoenix Point, 80.57 316 P P 07 25 29.8 +0.1
baz=48
SCM Sheep Creek Mo 80.60 354 eP P 07 25 30.8 +1.3
SCM pmax pmax
comp=Z,50nm,0.9s
SCM Sheep Creek Mo 80.60 354 eP P 07 25 30.8 +1.3
comp=Z,50nm,0.9s
SCM Sheep Creek Mo 80.60 354 eP P 07 25 30.8 +1.3
comp=Z,50nm,0.9s
SML Sawmill 80.70 354 eP P 07 25 31.4 +1.3
SML pmax pmax
comp=Z,23nm,1.2s
SML Sawmill 80.70 354 eP P 07 25 31.4 +1.3
comp=Z,23nm,1.2s
SML Sawmill 80.70 354 eP P 07 25 31.4 +1.3
comp=Z,23nm,1.2s

M38A Pleasantville 80.74 316 P P 07 25 30.7 +0.2
baz=48
KLU Klutina 80.81 353 eP P 07 25 31.8 +1.1
comp=Z,18nm,1.0s
KLU Klutina 80.81 353 eP P 07 25 31.8 +1.1
comp=Z,18nm,1.0s
O40A La Belle 80.86 314 P P 07 25 30.9 -0.3
baz=49,SNR=5.3
BALM Baldy 80.88 351 eP P 07 25 32.7 +1.6
BALM pmax pmax
comp=Z,26nm,0.9s
BALM Baldy 80.88 351 eP P 07 25 32.7 +1.6
comp=Z,26nm,0.9s
BALM Baldy 80.88 351 eP P 07 25 32.7 +1.6
comp=Z,26nm,0.9s
S44A Carbondale 80.91 311 P P 07 25 31.4 -0.2
baz=50
J34A George 80.97 318 P P 07 25 32.4 +0.6
baz=47
PMR Palmer 80.98 355 eP P 07 25 32.0 +0.6
PMR pmax pmax
comp=Z,40nm,1.0s
PMR Palmer 80.98 355 eP P 07 25 32.0 +0.6
comp=Z,40nm,1.0s
PMR Palmer 80.98 355 eP P 07 25 31.9 +0.6
comp=Z,40nm,1.0s
ECSD EROS Data Cent 81.00 319 P P 07 25 31.7 -0.3
baz=46,SNR=13
ECSD EROS Data Cent 81.00 319 eP P 07 25 32.6 +0.6
comp=Z,8.3nm,0.8s
ECSD EROS Data Cent 81.00 319 eP P 07 25 32.6 +0.6
comp=Z,8.3nm,0.8s
WVT Waverly 81.04 309 eP P 07 25 31.3 -1.0
WVT pmax pmax
comp=Z,21nm,0.6s
WVT Waverly 81.04 309 eP P 07 25 31.3 -1.0
comp=Z,21nm,0.6s
WVT Waverly 81.04 309 eP P 07 25 31.3 -1.0
comp=Z,21nm,0.6s
O39A Kirksville 81.15 314 P P 07 25 33.3 +0.5
baz=48
EDM Edmonton 81.18 334 eP P 07 25 33.4 +0.6
EDM pmax pmax
comp=Z,8.0nm,0.8s
EDM Edmonton 81.18 334 eP P 07 25 33.4 +0.6
comp=Z,8.2nm,0.8s
EDM Edmonton 81.18 334 eP P 07 25 33.4 +0.6
comp=Z,8.2nm,0.8s
SUA Susitna One 81.21 356 eP P 07 25 33.9 +1.0
comp=Z,37nm,0.9s
SUA Susitna One 81.21 356 eP P 07 25 33.9 +1.0
comp=Z,37nm,0.9s
M37A Trindle Farm, 81.23 316 P P 07 25 33.7 +0.5
baz=48
CRQM Cirque 81.25 352 eP P 07 25 36.0 +2.8
comp=Z,42nm,1.1s
CRQM Cirque 81.25 352 eP P 07 25 36.0 +2.8
comp=Z,42nm,1.1s
DLBC Dease Lake 81.33 345 P P 07 25 35.4 +1.9
comp=Z,1.9nm,0.7s,baz=5.5,slow=0.3,SNR=6.0
DLBC Dease Lake 81.33 345 eP P 07 25 35.4 +1.9
comp=Z,7.5nm,1.1s
DLBC Dease Lake 81.33 345 eP P 07 25 35.4 +1.9
comp=Z,7.5nm,1.1s
P40A Paris 81.35 314 P P 07 25 34.0 +0.2
baz=48
S43A Fulton Ridge, 81.48 311 P P 07 25 34.8 +0.2
baz=49,SNR=6.3
D26A Manning 81.52 324 P P 07 25 35.2 +0.5
baz=43
RC01 Rabbit Creek A 81.52 355 eP P 07 25 34.8 +0.4
comp=Z,84nm,1.2s
RC01 Rabbit Creek A 81.52 355 eP P 07 25 34.8 +0.4
comp=Z,84nm,1.2s
YSS Yuzh-Sakhalins 81.56 36 eP P 07 25 34.4 -0.4
YSS eS S 07 35 53.0 +6.9
YSS MLR MLR
comp=Z,600nm,15.0s
YSS MLR MLR
comp=N,300nm,16.0s
YSS MLR MLR
comp=E,500nm,13.0s
YSS Yuzh-Sakhalins 81.56 36 eP P 07 25 34.4 -0.4
comp=E,600nm,15.0s
M36A Felix, Anita 81.60 316 P P 07 25 35.4 +0.2
baz=47
Q40A Laux Farm, Aux 81.72 313 P P 07 25 36.3 +0.4
baz=48
N37A Lee Faris, Mou 81.75 316 P P 07 25 36.6 +0.6
baz=47
P39B Salisbury 81.79 314 P P 07 25 36.5 +0.3
baz=48
SVW2 Sparrevohn 81.80 358 eP P 07 25 37.2 +1.3
comp=E,6.0nm,0.8s
SVW2 Sparrevohn 81.80 358 eP P 07 25 37.2 +1.3
comp=E,6.0nm,0.8s
L34A Svendsen Farm, 82.11 318 P P 07 25 38.1 +0.2
baz=46
O37A Wolven Farm, M 82.12 315 P P 07 25 38.3 +0.4
baz=47
N36A Muff Farm, Cla 82.13 316 P P 07 25 38.3 +0.4
baz=47
P38A Dawn 82.14 314 P P 07 25 38.4 +0.4
baz=48
Q39A Willow Grove F 82.21 314 P P 07 25 38.8 +0.4
baz=48
R40A Maddies Statio 82.31 313 P P 07 25 39.5 +0.5
baz=48,SNR=8.3
RSO Redoubt South 82.32 356 eP P 07 25 39.8 +0.9
RSO Redoubt South 82.32 356 eP P 07 25 39.8 +0.9
L33A Hoskins 82.44 318 P P 07 25 39.7 +0.1
baz=46
K32A Verdigre 82.47 319 P P 07 25 39.8 +0.1
baz=45
S41A Jillco Farms, 82.47 312 P P 07 25 40.0 +0.1
baz=48,SNR=9.0
Y47A UCPARC, Winfie 82.49 307 P P 07 25 39.9 0.0
baz=50
W45A Hickory Valley 82.51 309 P P 07 25 40.1 +0.1
baz=49
O36A Bolckow 82.60 316 P P 07 25 40.3 -0.1
baz=47
PTGA Pitinga 82.61 263 P P 07 25 42.4 +1.5
comp=E,1.7nm,0.7s,baz=53,slow=10.0,SNR=6.2
PTGA Pitinga 82.61 263 eP P 07 25 41.7 +0.9
comp=E,13nm,1.3s
PTGA Pitinga 82.61 263 eP P 07 25 41.7 +0.9
comp=E,13nm,1.3s
P37A Lathrop 82.63 315 P P 07 25 41.1 +0.5
baz=47
PETK Petropavlovsk- 82.63 24 LR LR 08 07 35.4
comp=E,173nm,18.6s,baz=319,slow=40
Q38A Cooks Store, C 82.64 314 P P 07 25 41.2 +0.5
baz=48
Z48A Northport 82.64 307 P P 07 25 41.1 +0.4
baz=50
R39A Chumby, Stover 82.74 313 P P 07 25 41.8 +0.6
baz=48,SNR=7.9
J30A Dallas 82.78 320 P P 07 25 41.6 +0.3
baz=44
M33A Taylor Creek F 82.82 318 P P 07 25 41.2 -0.4
baz=46
T41A Mountain View 82.84 312 P P 07 25 42.4 +0.6
baz=48,SNR=14
S40A Lebanon 82.91 312 P P 07 25 42.7 +0.6
baz=48,SNR=9.9
BRLK Bradley Lake 82.91 355 eP P 07 25 42.2 +0.5
comp=E,60nm,1.2s
BRLK Bradley Lake 82.91 355 eP P 07 25 42.2 +0.5
comp=E,60nm,1.2s
BDFB Brasilia 82.93 244 P P 07 25 43.8 +1.3
comp=E,2.3nm,0.6s
BDFB LR LR 08 04 22.9
comp=E,212nm,18.7s,baz=168,slow=37
N34A Lincoln 82.96 317 P P 07 25 42.9 +0.6
baz=46
U42A Revenden 82.99 311 P P 07 25 40.5 -1.9
baz=48
O35A Humboldt 83.03 316 P P 07 25 43.2 +0.5
baz=46
P36A Good Intent, A 83.08 315 P P 07 25 43.2 +0.3
baz=47
X45A UM Field Stati 83.12 308 P P 07 25 43.2 0.0
baz=49
Y46A Houston 83.14 308 P P 07 25 43.5 +0.2
baz=50
Q37A Longview Farm, 83.17 314 P P 07 25 44.2 +0.8
baz=47

CNPM China Poot 83.17 356 eP P 07 25 44.3 +1.2
comp=E,43nm,0.8s
CNPM China Poot 83.17 356 eP P 07 25 44.3 +1.2
comp=E,43nm,0.8s
T40A Mansfield 83.22 312 P P 07 25 44.3 +0.6
baz=48,SNR=19
K30A Basset 83.31 320 P P 07 25 44.0 -0.1
baz=44
S39A Bolivar 83.33 313 P P 07 25 43.9 -0.4
baz=48
R38A Fenwick Farm, 83.33 314 P P 07 25 44.9 +0.6
baz=47
LAO LASA Array 83.50 326 P P 07 25 45.9 +0.8
baz=40
LAO LASA Array 83.50 326 eP P 07 25 45.8 +0.8
comp=E,6.5nm,0.7s
LAO LASA Array 83.50 326 eP P 07 25 45.8 +0.8
comp=E,6.5nm,0.7s
O34A Beatrice 83.52 317 P P 07 25 45.4 +0.2
baz=46
ASAJ Asahikawa 83.57 38 P P 07 25 44.8 -0.6
comp=E,2.0nm,0.3s,baz=346,slow=5.7,SNR=5.1
ASAJ Asahikawa 83.57 38 eP P 07 25 45.8 +0.4
comp=E,36nm,0.9s
ASAJ Asahikawa 83.57 38 eP P 07 25 45.8 +0.4
comp=E,36nm,0.9s
JKA Kamikawa-asahi 83.58 38 P P 07 25 44.8 -0.6
comp=E,2.0nm,0.3s
Y45A Yeager Farm, C 83.58 308 P P 07 25 45.8 +0.2
baz=49
P35A Duane Minner, 83.60 316 P P 07 25 46.0 +0.4
baz=46
YHNB Yeheng 83.67 64 eP P 07 25 46.4 +0.1
comp=E,40nm,0.7s
YHNB Yeheng 83.67 64 eP P 07 25 46.4 +0.1
comp=E,40nm,0.7s
S38A Stockton 83.71 313 P P 07 25 46.7 +0.5
baz=47
R37A Teagarden Farm 83.77 314 P P 07 25 47.1 +0.6
baz=47
T39A Clever 83.81 312 P P 07 25 47.5 +0.8
baz=47
H25A Fruitdale 83.85 323 P P 07 25 47.8 +0.8
baz=42
V41A Mountainview 83.92 311 P P 07 25 47.5 +0.1
baz=48,SNR=8.3
M31A Lambtecht Ranc 83.93 319 P P 07 25 48.5 +1.2
baz=44
U40A Yellville 83.95 312 P P 07 25 47.6 +0.1
baz=48,SNR=5.7
EGMT Eagleton 83.97 329 P P 07 25 48.5 +1.1
baz=38
EGMT Eagleton 83.97 329 eP P 07 25 47.9 +0.4
comp=E,20nm,1.0s
EGMT Eagleton 83.97 329 eP P 07 25 47.9 +0.4
comp=E,20nm,1.0s
P34A Walnut Farm, R 84.04 316 P P 07 25 48.0 +0.1
baz=46
Q35A Mercer Eighty, 84.08 315 P P 07 25 48.2 +0.1
baz=46
O33A Hebron 84.08 317 P P 07 25 48.1 0.0
baz=45
R36A Gordon, Harris 84.15 315 P P 07 25 48.3 -0.1
baz=46
S37A Fort Scott 84.15 314 P P 07 25 48.5 0.0
baz=47
KSU1 Kansas State U 84.23 316 eP P 07 25 49.1 +0.3
comp=E,14nm,0.8s
KSU1 Kansas State U 84.23 316 eP P 07 25 49.1 +0.3
comp=E,14nm,0.8s
U39A Green Forest 84.30 312 P P 07 25 49.4 +0.1
baz=47
T38A Diamond 84.34 313 P P 07 25 49.9 +0.5
baz=47
X201 Greenbrier Sit 84.37 311 eP P 07 25 50.0 +0.4
comp=E,18nm,1.2s
X201 Greenbrier Sit 84.37 311 eP P 07 25 50.0 +0.4
comp=E,18nm,1.2s
W41B Gary Mavity, V 84.38 310 P P 07 25 50.1 +0.4
baz=48
RSSD Black Hills 84.43 323 P P 07 25 50.5 +0.4
baz=42
S36A Lake Cedric, C 84.61 314 P P 07 25 50.9 +0.1
baz=46
T37A Cheneyville 18 84.64 313 P P 07 25 51.1 +0.1
baz=47,SNR=5.3
HHAR Hobbs 84.64 312 eP P 07 25 51.6 +0.6
comp=E,7.5nm,1.1s
HHAR Hobbs 84.64 312 eP P 07 25 51.6 +0.6
comp=E,7.5nm,1.1s
JNU Nakatsue 84.69 52 P P 07 25 51.1 -0.2
comp=E,6.3nm,0.8s,baz=9.3,slow=4.3,SNR=2.4
V39A Pettigrew 84.77 312 P P 07 25 45.8 -5.9
baz=47
WALA Waterton Lakes 84.78 332 eP P 07 25 51.5 -0.1
comp=E,6.8nm,0.9s
WALA Waterton Lakes 84.78 332 eP P 07 25 51.5 -0.1
comp=E,6.9nm,0.9s
Q33A Connelly Farm, 84.98 316 P P 07 25 52.9 +0.2
baz=45
KDAK Kodiak Island 84.99 356 P P 07 25 52.3 0.0
comp=E,26nm,0.7s,baz=7.2,slow=5.4,SNR=8.8
KDAK Kodiak Island 84.99 356 eP P 07 25 53.0 +0.7
comp=E,35nm,1.0s
KDAK Kodiak Island 84.99 356 eP P 07 25 53.0 +0.7
comp=E,35nm,1.0s
S35A Otter Creek Ra 85.06 315 P P 07 25 53.8 +0.7
baz=46
R34A Isabella, Hill 85.14 316 P P 07 25 54.3 +0.8
baz=45
X40A Basin Creek Fa 85.20 310 P P 07 25 54.1 +0.3
baz=48
T36A Boggs Farm, Ca 85.24 314 P P 07 25 54.5 +0.5
baz=46
U37A Salina 85.25 313 P P 07 25 54.5 +0.5
baz=46
W39A Magazine 85.29 311 P P 07 25 54.5 +0.3
baz=47
SDV Santo Domingo 85.31 278 P P 07 25 56.8 +1.9
comp=E,12nm,0.3s,baz=27,slow=3.0,SNR=3.7
SDV Santo Domingo 85.31 278 eP P 07 25 56.3 +1.4
comp=E,18nm,0.8s
SDV Santo Domingo 85.31 278 eP P 07 25 56.3 +1.4
comp=E,18nm,0.8s
Y41A Eaglette Beard 85.47 310 P P 07 25 56.0 +0.8
baz=48
S34A Willow Spring 85.49 315 P P 07 25 56.0 +0.7
baz=45
244A Avery, Jackson 85.50 307 P P 07 25 56.3 +1.0
baz=48
143A Socs Landing, 85.52 308 P P 07 25 56.2 +0.8
baz=48
R33A Olander Ranch, 85.55 316 P P 07 25 56.0 +0.4
baz=45
OHAK Old Harbor 85.58 356 eP P 07 25 55.3 +0.1
comp=E,42nm,1.0s
OHAK Old Harbor 85.58 356 eP P 07 25 55.4 +0.1
comp=E,42nm,1.0s
MIAR Mount Ida 85.61 311 P P 07 25 56.3 +0.4
baz=47
MIAR Mount Ida 85.61 311 eP P 07 25 57.0 +1.1
MIAR pmax pmax
comp=Z,8.0nm,0.8s
MIAR Mount Ida 85.61 311 eP P 07 25 57.0 +1.1
comp=Z,8.2nm,0.8s
MIAR Mount Ida 85.61 311 eP P 07 25 57.0 +1.1
comp=Z,8.2nm,0.8s
U36A Oologah 85.62 313 P P 07 25 56.5 +0.6
baz=46
V37A Hulbert 85.62 313 P P 07 25 56.0 0.0
baz=46
T35A Sooner Cattle 85.70 314 P P 07 25 56.5 +0.2
baz=46,SNR=13
Y40A Okolona 85.79 310 P P 07 25 57.3 +0.6
baz=47
YBMT Yellow Bay 85.80 331 eP P 07 25 58.1 +1.4
YBMT Yellow Bay 85.80 331 eP P 07 25 58.1 +1.4
W38A Poteau 85.82 312 P P 07 25 57.5 +0.7
baz=47
R32A Long Quarter, 85.87 316 P P 07 25 57.9 +0.8
baz=44
X39A Fountain Ranch 85.96 311 P P 07 25 58.2 +0.6
baz=47
TUL1 Leonard 85.99 313 P P 07 25 58.2 +0.5
baz=46
TUL1 Leonard 85.99 313 eP P 07 25 58.8 +1.1
comp=Z,7.7nm,0.9s
TUL1 Leonard 85.99 313 eP P 07 25 58.8 +1.1

comp=Z,7.7nm,0.9s
JTMT Jette 86.00 331 eP P 07 25 58.9 +1.2
JTMT Jette 86.00 331 eP P 07 25 58.9 +1.2
T34A McClaskey Farm 86.01 315 P P 07 25 58.1 +0.2
baz=45,SNR=7.1
S33A Kaszmaul Farm, 86.07 315 P P 07 25 58.6 +0.4
baz=45
SWMT Swartz Lake 86.08 331 eP P 07 25 59.3 +1.1
SWMT Swartz Lake 86.08 331 eP P 07 25 59.3 +1.1
BSMT Bassoo Peak 86.11 331 eP P 07 25 59.4 +1.0
BSMT Bassoo Peak 86.11 331 eP P 07 25 59.4 +1.0
SLMT Seeley Lake 86.11 330 eP P 07 25 59.2 +0.9
SLMT Seeley Lake 86.11 330 eP P 07 25 59.2 +0.9
U35A Pawnee 86.21 314 P P 07 25 59.4 +0.6
baz=46,SNR=9.8
X38A Whitesboro 86.28 312 P P 07 26 00.6 +1.4
baz=46
W37B Quinton 86.31 312 P P 07 26 00.6 +1.2
baz=46
242A Grayson 86.41 308 P P 07 26 01.2 +1.3
baz=48
MSO Missoula 86.62 330 P P 07 26 01.4 +0.6
baz=35
U34A Anderson Ranch 86.62 314 P P 07 26 01.7 +0.8
baz=45
NEW Newport 86.63 333 P P 07 26 00.8 +0.1
comp=Z,3.0nm,0.8s,baz=66,slow=6.6,SNR=6.0
NEW Newport 86.63 333 P P 07 26 01.4 +0.7
baz=33
NEW Newport 86.63 333 eP P 07 26 01.3 +0.6
comp=Z,13nm,1.4s
NEW Newport 86.63 333 eP P 07 26 01.3 +0.6
comp=Z,13nm,1.4s
BOZ Bozeman (W) 86.64 328 P P 07 26 01.5 +0.6
baz=37
BOZ Bozeman (W) 86.64 328 eP P 07 26 02.0 +1.0
BOZ Bozeman (W) 86.64 328 eP P 07 26 02.0 +1.0
comp=Z,7.9nm,0.9s
BOZ Bozeman (W) 86.64 328 eP P 07 26 02.0 +1.0
comp=Z,7.9nm,0.9s
X37A Clayton 86.66 312 P P 07 26 02.3 +1.3
baz=46
V35A Meyer Ranch, C 86.70 313 P P 07 26 02.3 +1.1
baz=45
K22A Casper 86.73 324 P P 07 26 01.7 +0.2
baz=40
MJAR Matsushiro Arr 86.73 45 P P 07 26 01.4 0.0
comp=Z,2.5nm,0.8s,baz=316,slow=5.5,SNR=4.8
MJAR Matsushiro Arr 86.73 45 P P 07 26 01.4 0.0
MJAR pmax pmax
comp=Z,2.0nm,0.8s
U33A Lingo Farm, Me 86.95 315 P P 07 26 02.3 -0.2
baz=45
V34A Guthrie 87.04 314 P P 07 26 03.2 +0.4
baz=45
443A Delano Plantat 87.05 307 P P 07 26 03.5 +0.5
baz=48
W35A Tecumseh 87.15 313 P P 07 26 03.9 +0.5
baz=45
X36A Centrahoma 87.25 312 P P 07 26 04.5 +0.6
baz=46
V33A Lossen Ranch, 87.49 314 P P 07 26 05.0 0.0
baz=45
KSCO Kaye Shedlock' 87.54 319 P P 07 26 05.9 +0.5
baz=42
KSCO Kaye Shedlock' 87.54 319 eP P 07 26 07.1 +1.7
comp=Z,36nm,1.0s
KSCO Kaye Shedlock' 87.54 319 eP P 07 26 07.1 +1.7
comp=Z,36nm,1.0s
SDPT Sand Point 87.62 0 eP P 07 26 05.5 +0.2
comp=Z,1μm,0.3s
SDPT Sand Point 87.62 0 eP P 07 26 05.5 +0.2
comp=Z,1μm,0.3s
X35A Drake 87.73 313 P P 07 26 07.1 +0.9
baz=45
340A Bronson 87.94 309 P P 07 26 07.7 +0.4
baz=47
PDAR Pinedale Array 88.04 325 P P 07 26 07.0 -0.9
comp=Z,0.8nm,0.8s,baz=76,slow=6.3,SNR=5.2
PDAR LR LR 08 07 10.1
comp=Z,123nm,19.1s,baz=48,slow=37
BW06 Boulder Array 88.04 325 eP P 07 26 07.3 -0.6
BW06 Boulder Array 88.04 325 eP P 07 26 07.3 -0.6
WMOK Wichita Mounta 88.54 314 P P 07 26 11.1 +0.9
baz=44
WMOK Wichita Mounta 88.54 314 eP P 07 26 10.7 +0.6
WMOK pmax pmax
comp=Z,11nm,1.4s
WMOK Wichita Mounta 88.54 314 eP P 07 26 10.7 +0.6
comp=Z,11nm,1.4s
WMOK Wichita Mounta 88.54 314 eP P 07 26 10.7 +0.6
comp=Z,11nm,1.4s
Z35A Perchaven, San 88.65 312 P P 07 26 11.7 +1.1
baz=45
136A Ennis 88.82 311 P P 07 26 12.4 +1.0
baz=46
KSM Kuching 89.22 89 eP P 07 26 14.9 +1.3
comp=Z,70nm,0.8s
KSM Kuching 89.22 89 eP P 07 26 14.9 +1.3
comp=Z,70nm,0.8s
O20A White River Ci 89.49 323 P P 07 26 14.2 -0.5
baz=39
O20A White River Ci 89.49 323 eP P 07 26 15.1 +0.4
comp=Z,19nm,0.9s
O20A White River Ci 89.49 323 eP P 07 26 15.1 +0.4
comp=Z,19nm,0.9s
134A White-Moore Ra 89.68 312 P P 07 26 15.9 +0.5
baz=45
HWUT Hardware Ranch 89.86 326 eP P 07 26 16.8 +0.4
comp=Z,17nm,0.8s
HWUT Hardware Ranch 89.86 326 eP P 07 26 16.8 +0.4
comp=Z,17nm,0.8s
SDCO Great Sand Dun 89.98 320 P P 07 26 17.3 +0.2
baz=40
SDCO Great Sand Dun 89.98 320 eP P 07 26 17.5 +0.4
comp=Z,16nm,0.9s
SDCO Great Sand Dun 89.98 320 eP P 07 26 17.5 +0.4
comp=Z,16nm,0.9s
MFID Camas Ranch 90.19 330 eP P 07 26 18.4 +0.5
comp=Z,0.6nm,0.6s
MFID Camas Ranch 90.19 330 eP P 07 26 18.4 +0.5
comp=Z,0.6nm,0.6s
HVU Hansel Valley 90.26 327 eP P 07 26 19.9 +1.7
HVU Hansel Valley 90.26 327 eP P 07 26 19.9 +1.7
comp=Z,45nm,0.8s
HVU Hansel Valley 90.26 327 eP P 07 26 19.9 +1.7
comp=Z,45nm,0.8s
233A Rising Star 90.56 312 P P 07 26 20.4 +0.8
baz=44
ABTX Abilene, Hawle 90.56 313 P P 07 26 20.7 +1.0
baz=44
ABTX Abilene, Hawle 90.56 313 eP P 07 26 20.0 +0.4
comp=Z,16nm,1.0s
ABTX Abilene, Hawle 90.56 313 eP P 07 26 20.0 +0.4
comp=Z,16nm,1.0s
JLU Jordanelle 90.62 325 eP P 07 26 20.5 +0.4
comp=Z,37nm,1.1s
JLU Jordanelle 90.62 325 eP P 07 26 20.4 +0.4
comp=Z,37nm,1.1s
334A Lometa 90.65 311 P P 07 26 21.4 +1.3
baz=45
S22A 4UR Ranch, Cre 90.65 321 P P 07 26 20.9 +0.6
baz=40
ROSC El Rosal 90.66 277 P P 07 26 23.7 +2.9
comp=Z,4.5nm,0.8s,baz=160,slow=13,SNR=4.9
434A Burnet 91.04 311 P P 07 26 22.9 +1.1
baz=45
333A Richland Sprin 91.10 312 P P 07 26 23.0 +0.8
baz=44
PV01 Paradox Valley 91.22 322 eP P 07 26 23.3 +0.5
comp=Z,159nm,0.8s
PV01 Paradox Valley 91.22 322 eP P 07 26 23.3 +0.5
comp=Z,159nm,0.8s
MSTX Muleshoe 91.36 316 P P 07 26 23.9 +0.5
baz=42
SRU San Rafael Swe 91.38 324 eP P 07 26 23.8 +0.3
SRU San Rafael Swe 91.38 324 eP P 07 26 23.8 +0.3
comp=Z,73nm,0.8s
SRU San Rafael Swe 91.38 324 eP P 07 26 23.8 +0.3
comp=Z,73nm,0.8s
PV05 Paradox Valley 91.52 322 eP P 07 26 24.7 +0.5
PV05 Paradox Valley 91.52 322 eP P 07 26 24.7 +0.5
TMUT Trail Mountain 91.56 324 eP P 07 26 25.5 +1.0
comp=Z,94nm,0.8s
TMUT Trail Mountain 91.56 324 eP P 07 26 25.5 +1.0
comp=Z,94nm,0.8s
DUG Dugway, Tooele 91.56 326 P P 07 26 25.2 +0.9
baz=36
DUG Dugway, Tooele 91.56 326 eP P 07 26 24.9 +0.6
DUG pmax pmax
comp=Z,2.0nm,0.8s
DUG Dugway, Tooele 91.56 326 eP P 07 26 24.9 +0.6
comp=Z,2.4nm,0.8s
DUG Dugway, Tooele 91.56 326 eP P 07 26 24.9 +0.6
comp=Z,2.4nm,0.8s
433A Art 91.58 311 P P 07 26 25.2 +0.8
baz=44
534A Blanco 91.72 310 P P 07 26 25.9 +0.8
baz=44
JCT Junction City 92.20 312 eP P 07 26 27.3 0.0
JCT pmax pmax
comp=Z,44nm,1.9s
JCT Junction City 92.20 312 eP P 07 26 27.3 0.0
comp=Z,45nm,1.9s
JCT Junction City 92.20 312 eP P 07 26 27.3 0.0
comp=Z,45nm,1.9s
ANMO Albuquerque 92.61 319 P P 07 26 28.9 -0.4
baz=40
MSU Marysvale 92.63 325 eP P 07 26 31.3 +1.9
MSU Marysvale 92.63 325 eP P 07 26 31.3 +1.9
MSU Marysvale 92.63 325 eP P 07 26 31.3 +1.9
MTPU Mount Pierson 93.02 324 eP P 07 26 32.5 +1.2
comp=Z,89nm,1.3s
MTPU Mount Pierson 93.02 324 eP P 07 26 32.5 +1.2
comp=Z,89nm,1.3s
MNTX Cornudas Mount 94.51 316 P P 07 26 37.7 -0.2
baz=41
TX31 Lajitas Ar. Si 95.31 313 eP P 07 26 43.0 +1.3
TX31 Lajitas Ar. Si 95.31 313 eP P 07 26 43.0 +1.3
TXAR Lajitas Array 95.31 313 P P 07 26 42.9 +1.2
comp=Z,1.1nm,0.7s,baz=66,slow=4.3,SNR=18
CPUP Villa Florida 96.44 242 LR LR 08 10 27.3
comp=Z,274nm,21.1s,baz=56,slow=36
LPAZ La Paz 98.39 256 LR LR 08 12 05.6
comp=Z,47nm,21.7s,baz=52,slow=36
WRA Warramunga Arr 120.78 92 PKP PKPdf 07 32 09.5 -0.2
comp=Z,1.0nm,0.7s,baz=324,slow=1.9,SNR=3.2
FORT Forrest 121.22 107 ePKIKP PKPdf 07 32 11.6 +1.4
FORT Forrest 121.22 107 ePKPdf PKPdf 07 32 11.6 +1.4
ASAR Alice Springs 122.36 96 PKP PKPdf 07 32 12.6 -0.1
comp=Z,1.6nm,0.6s,baz=311,slow=1.8,SNR=6.6
AS01 Alice Springs 122.40 96 ePKIKP PKPdf 07 32 13.2 +0.4
AS01 Alice Springs 122.40 96 ePKPdf PKPdf 07 32 13.2 +0.4
STKA Stephens Creek 132.15 102 PKP PKPdf 07 32 31.6 +0.5
comp=Z,1.4nm,0.6s,baz=186,slow=2.3,SNR=3.2
STKA Stephens Creek 132.15 102 PKIKP PKPdf 07 32 31.6 +0.5
STKA pmax pmax
comp=Z,2.0nm,0.7s
STKA Stephens Creek 132.15 102 ePKIKP PKPdf 07 32 33.2 +2.1
STKA Stephens Creek 132.15 102 ePKPdf PKPdf 07 32 33.2 +2.1
MSVF Nonsavu 152.41 51 ePKIKP PKPdf 07 33 07.1 +0.1
MSVF Nonsavu 152.41 51 ePKIKP PKPdf 07 33 07.1 +0.1
MSVF Nonsavu 152.41 51 ePKPdf PKPdf 07 33 07.1 +0.1
OXZ Oxford 157.81 114 ePKPab PKPab 07 33 48.0 +1.6
OXZ Oxford 157.81 114 ePKPab PKPab 07 33 48.0 +1.6
URZ Urewera 161.76 100 PKPab PKPab 07 34 02.6 -1.1
comp=Z,6.3nm,0.8s,baz=233,slow=5.2,SNR=5.2

*BJI **19** 07:15:52.0,23°.57S×179°.58E,h546km,mb5.1/50, mB5.2/35*

*ISCJB **19** 07:15:52.2±0.4,23°.69S±0°.02×179°.07E±0°.02,h533km±5km, mb5.2/336,Error ellipse: s-maj=3.6km s-min=3.0km az=146.9*

*IDC **19** 07:15:53.8±0.3,23°.62S×179°.05E,h542km±3km,mb4.6/44, mb1 4.6/46,mb1mx4.6/49,mbtmp5.5/46,Error ellipse: s-maj=6.0km s-min=5.3km az=6.0*

*MOS **19** 07:15:53.2±0.8,23°.56S×179°.07E,h546km,mb5.4/53, Error ellipse: s-maj=11.8km s-min=10.0km az=20.6*

*GCMT **19** 07:15:55.6±0.2,23°.69S×179°.18E,h558km±1km, MW5.5/112,Moment Tensor Solution. s112,c186; Duration: 1s4 Moment tensor: Scale 10^17^Nm; Mrr-1.98±.04; Mθθ1.78±.06; Mφφ0.20±.06; Mrθ0.67±.06; Mθφ-0.36±.06; Mφr0.91±.06; Best double couple: M₀2.18100×10^17^ NP1:φs260.00000°,δ56.00000°, λ-115.00000°. NP2:φs120.00000°,δ41.00000°, λ-57.00000°. Principal axes: T 1.9210, Plg8.0000°, Azm8.0000°; N 0.5230, Plg21.0000°, Azm275.0000°; P -2.4410, Plg67.0000°, Azm117.0000°; nsta1 refers to body waves, cutoff=40s.*

*NEIC **19** 07:15:55.6±0.4,23°.72S×179°.03E,h566km±4km, mb5.2/262 Error ellipse: s-maj=3.7km s-min=2.8km az=148.0*

ISC 19 07:15:54.0±0.2,23°.60S±0°.03×179°.19E±0°.03,h548km±2km, h549km;pP-P,n1390,σ1s52/1626,mb5.2/335,31C-52D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	5.94	349	*d*	iP	P		07 17 31.3	-0.9
MSVF					pmax	pmax			
	comp=Z,189nm,1.2s								
MSVF	Nonsavu	5.94	349	*e*	P	P		07 17 31.4	-0.7
MSVF					eS	S		07 18 52.4	+0.1
RAO	Raoul Island	6.20	156		P	P		07 17 35.8	+1.6
	comp=Z,510nm,0.3s,baz=90,slow=5.7,SNR=33								
RAO					S	S		07 18 56.9	+0.7
	comp=Z,188nm,0.3s,baz=105,slow=22,SNR=8.9								
RAO	Raoul Island	6.20	156	*e*	P	P		07 17 35.1	+0.9
RAO					eS	S		07 18 57.0	+0.7
DZM	Mont Dzumac	11.86	275		P	P		07 18 30.9	-0.3
	comp=Z,5.5nm,0.3s,baz=78,slow=19,SNR=29								
DZM					S	S		07 20 45.1	+4.6
	baz=359,slow=18,SNR=1.9								
DZM					ScP	ScP		07 26 12.6	+3.0
	comp=Z,0.3nm,0.3s,baz=216,slow=23,SNR=6.1								
OUZ	Omahuta	12.56	202	*e*	P	P		07 18 40.0	+1.9
OUZ	Omahuta	12.56	202		PN	P		07 18 39.5	+1.4
OUZ					SN	S		07 20 57.9	+4.6
AFI	Afiamalu	12.88	43		P	P		07 18 38.3	-3.5
	comp=Z,62nm,0.3s,baz=98,slow=1.2,SNR=71								
AFI					S	S		07 20 52.2	-7.8
	comp=Z,11nm,0.3s,baz=41,slow=21,SNR=6.4								
AFI	Afiamalu	12.88	43	*e*	P	P		07 18 38.1	-3.8
AFI					eS	S		07 20 54.9	-5.1
WCZ	Waipu Caves	12.99	198		PN	P		07 18 44.1	+1.5
WCZ					SN	S		07 21 07.5	+6.0
KUZ	Kuaotunu	13.44	192		PN	P		07 18 47.2	0.0
KUZ					SN	S		07 21 18.1	+8.3
WIAZ	Waiheke Island	13.61	194		PN	P		07 18 49.7	+0.8
ETAZ	East Tamaki Re	13.81	194		PN	P		07 18 52.0	+1.0
WTAZ	Waiatarua	13.87	196		PN	P		07 18 52.7	+1.0
MKAZ	Moumakai	13.90	194		PN	P		07 18 52.5	+0.5
MXZ	Matakaoa Point	13.94	183	*e*	P	P		07 18 49.7	-2.6
MXZ	Matakaoa Point	13.94	183		PN	P		07 18 49.4	-3.0
MXZ					SN	S		07 21 11.7	-7.5
AWAZ	Awhitu Peninsu	13.98	195		PN	P		07 18 53.4	+0.6
HAZ	Te Kaha	14.16	185		PN	P		07 18 50.9	-3.7
HAZ					SN	S		07 21 15.6	-7.9
HAZ					SN			07 21 16.7	
WMGZ	Waiomatatini S	14.19	183		PN	P		07 18 52.1	-2.8
PKGZ	Pakihiroa	14.27	184		PN	P		07 18 51.8	-4.1
WHRZ	Whale Island	14.34	187	*e*	PN	P		07 18 55.1	-1.4
OPRZ	Ohinepanea	14.38	188		PN	P		07 18 56.4	-0.5
RUGZ	Raukumara Rang	14.38	185		PN	P		07 18 53.4	-3.7
TOZ	Tahuroa Road	14.44	192		PN	P		07 18 57.6	+0.1
PUZ	Puketiti	14.45	183		PN	P		07 18 54.6	-3.1
KMRZ	Kaimai	14.47	190	*e*	PN	P		07 18 57.5	-0.4
MARZ	Manawahe	14.50	188		PN	P		07 18 56.6	-1.4
TWGZ	Tauwhareparae	14.57	184		PN	P		07 18 55.5	-3.4
OMRZ	Omania	14.66	189	*e*	PN	P		07 18 58.4	-1.4
URZ	Urewera	14.72	186		P	P		07 18 56.1	-4.3
	comp=Z,162nm,0.3s,baz=288,slow=1.9,SNR=365								
URZ					S	S		07 21 26.5	-7.5
	comp=Z,12nm,0.3s,baz=197,slow=21,SNR=16								
URZ	Urewera	14.72	186	*e*	P	P		07 18 57.0	-3.5
URZ					S	S		07 21 26.5	-7.5
URZ	Urewera	14.72	186		PN	P		07 18 56.3	-4.1
URZ					SN	S		07 21 26.6	-7.5
UTU	Utuhina	14.76	189	*e*	PN	P		07 19 00.0	-0.8
MWZ	Matawai	14.76	185		PN	P		07 18 56.9	-4.0
MWZ					SN	S		07 21 27.6	-7.3
TARZ	Mount Tarawera	14.77	188		PN	P		07 18 59.2	-1.4
TKGZ	Te Karaka	14.84	184		PN	P		07 18 58.2	-3.4
CNGZ	Carnagh Statio	14.86	183		PN	P		07 18 58.9	-2.9
RRRZ	Republican Roa	14.87	188		PN	P		07 19 00.1	-1.9
HSRZ	Hossack Road	14.88	189		PN	P		07 19 00.8	-1.3
RAGZ	Rawiri	14.93	185		PN	P		07 18 59.0	-3.7
HRRZ	Handcock Road	14.95	189		PN	P		07 19 01.2	-1.6
MUGZ	Murupara	14.97	187		PN	P		07 18 59.7	-3.3
FUNA	Funafuti	14.99	0	*e*	P	P		07 19 01.5	-2.0
TLZ	Tolley Road	15.01	191		PN	P		07 19 03.2	-0.3
RIGZ	Rimuhau	15.11	184		PN	P		07 19 00.9	-3.6
KUTZ	Kaahu Road	15.12	190		PN	P		07 19 03.5	-1.0
SNGZ	Shannon Statio	15.22	186		PN	P		07 19 01.7	-3.9
PRGZ	Paritu Road	15.32	184		PN	P		07 19 04.0	-2.6
HIZ	Hauiti	15.32	193	*e*	P	P		07 19 07.1	+0.5
	comp=Z,254nm,0.7s								
HIZ	Hauiti	15.32	193		PN	P		07 19 06.8	+0.2
WATZ	Wairara	15.35	190		PN	P		07 19 06.1	-0.8
MRHZ	Matea Rd	15.37	188		PN	P		07 19 03.7	-3.5
KNZ	Kokohu	15.43	184		PN	P		07 19 04.3	-3.4
KNZ					SN	S		07 21 38.2	-8.4
RATZ	Rangitukua	15.49	190		PN	P		07 19 05.9	-2.6
WHHZ	Waihua	15.52	186		PN	P		07 19 06.4	-2.2
MHGZ	Mahia Peninsul	15.54	184		PN	P		07 19 05.8	-3.1
NMHZ	Naumai	15.58	187		PN	P		07 19 06.2	-3.1
KATZ	Kakaramea	15.61	190		PN	P		07 19 08.4	-1.4
BKZ	Black Stump Fm	15.69	188	*e*	P	P		07 19 06.7	-3.7
	comp=Z,234nm,0.5s								
BKZ	Black Stump Fm	15.69	188		PN	P		07 19 05.8	-4.6
ARHZ	Aropaoanui	15.73	186		PN	P		07 19 08.0	-2.7
WTVZ	West Tongariro	15.77	190		PN	P		07 19 08.5	-2.8
OTVZ	Oturere	15.80	190		PN	P		07 19 08.8	-2.8
NGZ	Ngauruhoe	15.82	190		PN	P		07 19 09.3	-2.5
VRZ	Vera Road	15.93	193		PN	P		07 19 12.6	-0.2
MCHZ	McNeill Hill	15.94	187		PN	P		07 19 09.0	-3.8
KWHZ	Kaweka Forest	15.95	188	*e*	PN	P		07 19 08.1	-4.9
WNVZ	Wahianoa	15.97	190		PN	P		07 19 10.1	-3.3
MHEZ	Mangahewa	15.97	194		PN	P		07 19 14.5	+1.4
PKVZ	Pokaka	15.98	191		PN	P		07 19 10.9	-2.3
MOVZ	Moawhango	16.03	190		PN	P		07 19 09.7	-4.0
KRHZ	Kereru	16.17	188		PN	P		07 19 10.4	-4.7
KHEZ	Kahui Hut	16.25	194		PN	P		07 19 17.6	+1.7
KAHZ	Kahuranaki	16.26	186		PN	P		07 19 12.0	-3.9
NMEZ	Namu Road	16.40	195		PN	P		07 19 18.6	+1.5
PNHZ	Pukenui	16.46	188		PN	P		07 19 13.2	-4.5
WAZ	Wanganui	16.50	191		PN	P		07 19 15.6	-2.5
PXZ	Pawanui	16.50	186		PN	P		07 19 10.5	-7.5
TSZ	Takapari Road	16.64	189		PN	P		07 19 15.2	-4.1
DVHZ	Dannevirke	16.84	188		PN	P		07 19 17.2	-4.0
OHWZ	Ohakea	16.88	190		PN	P		07 19 20.0	-1.5
ANWZ	Angora Road	16.97	187		PN	P		07 19 19.0	-3.3
POWZ	Post Office Ro	16.99	189		PN	P		07 19 19.6	-2.9
BFZ	Birch Farm	17.21	188	*e*	P	P		07 19 22.2	-2.3
	comp=Z,213nm,0.5s								
BFZ	Birch Farm	17.21	188		PN	P		07 19 21.6	-2.9
MRZ	Mangatainoka R	17.28	189		PN	P		07 19 21.2	-3.9
TIWZ	Tintock	17.35	188		PN	P		07 19 22.4	-3.5
OGWZ	Otaki Gorge	17.50	190		PN	P		07 19 23.9	-3.3
HOWZ	Holdsworth Sta	17.52	189		PN	P		07 19 24.5	-2.9
KIW	Kapiti Island	17.58	191		PN	P		07 19 24.9	-3.0
TMWZ	Te Maipa	17.68	188		PN	P		07 19 25.7	-3.1
DUWZ	D'Urville Isla	17.71	193		PN	P		07 19 27.1	-2.0
MTW	Mount Morrison	17.78	189		PN	P		07 19 26.3	-3.4
CAW	Cannon Point	17.80	190		PN	P		07 19 26.9	-3.0
TRWZ	Traveller	17.99	189		PN	P		07 19 29.3	-2.3
PAWZ	Paruwai Farm	18.01	189		PN	P		07 19 29.6	-2.3
TCW	Tory Channel	18.04	192		PN	P		07 19 30.8	-1.3
SNZO	South Karori	18.06	191	*e*	P	P		07 19 29.9	-2.3
	comp=Z,448nm,0.9s								
SNZO					eS	S		07 22 28.0	-1.8
QRZ	Quartz Range	18.07	196		PN	P		07 19 32.2	-0.1
MSWZ	Moikau Station	18.07	190		PN	P		07 19 29.8	-2.6
PLWZ	Palliser	18.22	189		PN	P		07 19 31.6	-2.2
NNZ	Nelson	18.23	194		PN	P		07 19 32.3	-1.5
TUWZ	Tuamarina	18.31	193		PN	P		07 19 32.4	-2.2
CMWZ	Cape Campbell	18.57	192		PN	P		07 19 36.2	-0.8
BSWZ	Blackbirch Sta	18.60	193		PN	P		07 19 36.5	-0.8
DSZ	Denniston Nort	19.12	197		PN	P		07 19 41.3	-0.7
KHZ	Kahutara	19.34	193	*e*	P	P		07 19 42.2	-1.8
	comp=Z,248nm,0.9s								
KHZ	Kahutara	19.34	193		PN	P		07 19 41.9	-2.1
LHI	Lord Howe Isla	19.49	242	*e*	P	P		07 19 47.2	+1.7
	comp=Z,198nm,0.8s								
RAR	Rarotonga	19.59	87		P	P		07 19 46.8	+0.3
	comp=Z,1.3nm,0.3s,baz=246,slow=11,SNR=3.7								
RAR	Rarotonga	19.59	87	*e*	P	P		07 19 46.6	+0.1
	comp=Z,260nm,1.8s								
LTZ	Lake Taylor	19.97	195	*e*	P	P		07 19 48.3	-1.4
	comp=Z,303nm,0.6s								
LTZ	Lake Taylor	19.97	195		PN	P		07 19 47.4	-2.3
INZ	Inchbonnie	20.13	197		PN	P		07 19 49.1	-1.9
OXZ	Oxford	20.54	195	*e*	P	P		07 19 53.1	-1.7
	comp=Z,472nm,1.0s								
OXZ	Oxford	20.54	195		PN	P		07 19 52.4	-2.4
WVZ	Waitaha Valley	20.64	198		PN	P		07 19 54.4	-1.4
CRLZ	Canterbury Las	20.65	194	*e*	P	P		07 19 53.8	-1.9
	comp=Z,166nm,0.9s								
MQZ	McQueen's Vall	20.77	193	*e*	P	P		07 19 55.4	-1.5
	comp=Z,142nm,1.0s								
MQZ	McQueen's Vall	20.77	193		PN	P		07 19 54.9	-1.9
RPZ	Rata Peaks	21.15	197		P	P		07 19 59.1	-1.3
	comp=Z,98nm,0.4s,baz=358,slow=2.0,SNR=45								
RPZ					S	S		07 23 16.7	-2.8
	comp=Z,45nm,0.9s,baz=163,slow=22,SNR=4.8								
RPZ	Rata Peaks	21.15	197	*e*	P	P		07 19 59.2	-1.1
	comp=Z,186nm,0.5s								
RPZ					S	S		07 23 16.7	-2.8
RPZ	Rata Peaks	21.15	197		PN	P		07 19 57.9	-2.5
FOZ	Fox Glacier	21.33	199	*e*	P	P		07 20 00.5	-1.4
	comp=Z,120nm,1.0s								
FOZ					eS	S		07 23 22.0	-0.3
FOZ	Fox Glacier	21.33	199		PN	P		07 20 00.1	-1.9
LBZ	Lake Benmore	22.01	197	*e*	P	P		07 20 06.1	-1.9
	comp=Z,71nm,1.2s								
LBZ	Lake Benmore	22.01	197		PN	P		07 20 05.8	-2.3
JCZ	Jackson Bay	22.14	200		PN	P		07 20 08.2	-1.1
ODZ	Otahua Downs	22.50	196	*e*	P	P		07 20 10.5	-1.9
	comp=Z,24nm,0.8s								
ODZ	Otahua Downs	22.50	196		PN	P		07 20 10.1	-2.3
WKZ	Wanaka	22.75	199	*e*	P	P		07 20 13.2	-1.5
	comp=Z,76nm,0.5s								
EAZ	Earnscleugh	23.03	198		PN	P		07 20 15.7	-1.4
HNR	Honiara	23.17	304		P	P		07 20 17.4	-1.4
	comp=Z,101nm,0.6s,baz=206,slow=4.2,SNR=3.5								
HNR					S	S		07 23 48.8	-3.2
	comp=Z,67nm,0.4s,baz=270,slow=8.9,SNR=2.3								
HNR	Honiara	23.17	304		P	P		07 20 17.4	-1.4
HNR					S	S		07 23 48.8	-3.2
HNR					pmax	pmax			
	comp=Z,170nm,0.7s								
HNR					smax	smax			
	comp=N,67nm,0.4s								
HNR	Honiara	23.17	304	*e*	P	P		07 20 18.8	0.0
	comp=N,251nm,1.0s								
HNR					S	S		07 23 48.8	-3.2
MLZ	Mavora Lakes	23.51	200	*e*	P	P		07 20 21.0	-0.4
	comp=N,92nm,0.5s								
MLZ	Mavora Lakes	23.51	200		PN	P		07 20 20.7	-0.7
TUZ	Tuapeka	23.61	197		PN	P		07 20 21.3	-1.0
DCZ	Deep Cove	23.91	201	*e*	P	P		07 20 24.1	-0.8
	comp=N,200nm,1.5s								
WHZ	Wether Hill Ro	24.04	200	*e*	P	P		07 20 25.6	-0.5
	comp=N,234nm,0.5s								
WHZ	Wether Hill Ro	24.04	200		PN	P		07 20 25.2	-0.9
APZ	The Paps	24.87	198		PN	P		07 20 32.8	-0.7
ARMA	Armidale	25.44	249	*e*	P	P		07 20 39.8	+0.9
	comp=N,30nm,0.6s								
TARA	Tarawa	25.55	345	*e*	P	P		07 20 39.4	-0.4
	comp=N,417nm,0.8s								
EIDS	Eidsvold	25.63	260	*e*	P	P		07 20 40.4	-0.1
	comp=N,59nm,1.4s								
CAN	Canberra	28.66	239	*e*	P	P		07 21 07.6	+0.7
CAN					pmax	pmax			
	comp=Z,150nm,0.6s								
CAN	Canberra	28.66	239	*e*	P	P		07 21 07.6	+0.7
	comp=Z,153nm,0.6s								
TBI	Tubuai	28.73	96	*e*	P	P		07 21 08.6	+1.0
	comp=Z,456nm,1.3s						

CTA **Charters Tower** 30.74 270 P **P** 07 21 25.2 +0.1
comp=Z,85nm,0.5s,baz=98,slow=11,SNR=119
CTA PcP **PcP** 07 24 06.4 +0.8
comp=Z,23nm,0.7s,baz=69,slow=4.8,SNR=6.2
CTA S **S** 07 25 49.4 -0.5
comp=Z,31nm,1.2s,baz=279,slow=16,SNR=14
CTA ScP **ScP** 07 26 59.5 +3.0
comp=Z,24nm,1.0s,baz=38,slow=1.1,SNR=8.1
CTAO Charters Tower 30.74 270 *e*P **P** 07 21 25.2 +0.1
CTAO *e*S **S** 07 25 50.6 +0.7
CTAO pmax pmax
comp=Z,95nm,0.6s
CTAO Charters Tower 30.74 270 *e*P **P** 07 21 25.2 +0.1
comp=Z,95nm,0.6s
MEH Mehetia 31.10 86 *e*P **P** 07 21 28.4 +0.2
comp=Z,59nm,1.2s
VAH Vaihoa 32.32 81 *e*P **P** 07 21 38.8 +0.3
comp=Z,172nm,1.1s
TAU Tasmania Unive 32.60 226 *e*P **P** 07 21 41.1 +0.5
TAU pmax pmax
comp=Z,66nm,1.1s
TAU Tasmania Unive 32.60 226 *e*P **P** 07 21 41.1 +0.5
comp=Z,66nm,1.1s
PMG Port Moresby 33.70 289 P **P** 07 21 50.1 -0.1
comp=Z,179nm,0.7s,baz=99,slow=5.1,SNR=33
PMG S **S** 07 26 34.9 -0.1
comp=Z,20nm,0.9s,baz=312,slow=17,SNR=3.0
PMG ScP **ScP** 07 27 10.1 +3.2
comp=Z,24nm,0.9s,baz=41,slow=16,SNR=3.7
PMG Port Moresby 33.70 289*c* *i*P **P** 07 21 49.8 -0.4
PMG pmax pmax
comp=Z,842nm,0.8s
PMG Port Moresby 33.70 289 *e*P **P** 07 21 50.3 +0.1
comp=Z,205nm,0.8s
PMG S **S** 07 26 34.9 -0.1
PMG ScP **ScP** 07 27 10.1 +3.2
STKA Stephens Creek 34.15 248 P **P** 07 21 54.0 +0.1
comp=Z,58nm,0.6s,baz=94,slow=10,SNR=193
STKA PcP **PcP** 07 24 16.2 +1.1
STKA comp=Z,23nm,0.6s,baz=98,slow=4.7,SNR=5.8
STKA S **S** 07 26 40.4 -1.2
comp=Z,4.9nm,0.7s,baz=336,slow=14,SNR=3.7
STKA ScP **ScP** 07 27 11.1 +2.9
comp=Z,9.1nm,0.9s,baz=25,slow=5.1,SNR=3.2
STKA PKiKP **PKiKP** 07 31 36.1 -1.3
comp=Z,2.0nm,0.6s,baz=243,slow=2.3,SNR=4.3
STKA P3KPbc 07 52 45.4
comp=Z,1.4nm,0.7s,baz=277,slow=9.9,SNR=4.4
STKA Stephens Creek 34.15 248 *e*P **P** 07 21 54.0 +0.1
STKA pmax pmax
comp=Z,13nm,0.7s
STKA Stephens Creek 34.15 248 *e*P **P** 07 21 54.0 +0.1
comp=Z,13nm,0.6s
STKA PcP **PcP** 07 24 16.2 +1.1
STKA S **S** 07 26 40.4 -1.2
STKA ScP **ScP** 07 27 11.1 +2.9
STKA PKiKP **PKiKP** 07 31 36.1 -1.3
STKA *e* 07 52 45.4
XMAS Kiritimati 34.16 45 *e*P **P** 07 21 55.0 +1.0
comp=Z,259nm,0.8s
COEN Coen 35.34 279 *e*P **P** 07 22 04.2 +0.3
comp=Z,35nm,0.7s
PATS Pohnpei 36.49 323 *e*P **P** 07 22 13.3 -0.1
comp=Z,112nm,1.0s
BBOO Buckleboo 38.88 247 *e*P **P** 07 22 31.9 -0.9
comp=Z,54nm,0.8s
AS01 Alice Springs 41.31 260 *e*P **P** 07 22 52.0 -0.3
AS31 Alice Springs 41.35 260 *e*P **P** 07 22 52.2 -0.5
comp=Z,38nm,1.1s
ASAR Alice Springs 41.35 260 P **P** 07 22 52.1 -0.6
comp=Z,69nm,0.7s,baz=91,slow=8.3,SNR=380
ASAR pP **pP** 07 24 28.2 -1.5
comp=Z,6.2nm,0.6s,baz=90,slow=7.3,SNR=1.6
ASAR PcP **PcP** 07 24 38.4 +0.4
comp=Z,19nm,0.7s,baz=99,slow=4.6,SNR=11
ASAR ScP **ScP** 07 27 39.4 +3.5
comp=Z,21nm,1.0s,baz=114,slow=4.0,SNR=16
ASAR S **S** 07 28 25.8 -2.4
comp=Z,6.9nm,0.7s,baz=99,slow=14,SNR=10
ASAR PKiKP **PKiKP** 07 31 42.2 -1.4
comp=Z,1.2nm,0.6s,baz=135,slow=0.7,SNR=4.1
ASAR P3KPbc 07 52 13.1
comp=Z,1.2nm,0.8s,baz=286,slow=4.3,SNR=8.8
ASAR P4KPbc 08 00 49.1
comp=Z,0.2nm,0.7s,baz=132,slow=3.4,SNR=4.1
JOHN Johnston Islan 41.57 16 *e*P **P** 07 22 55.2 +0.9
comp=Z,204nm,0.9s
WB2 Warramunga Arr 41.68 266 *e*P **P** 07 22 54.3 -0.9
comp=Z,130nm,1.0s
WRAB Tennant Creek 41.68 266*c* *i*P **P** 07 22 53.9 -1.4
WRAB pmax pmax
comp=Z,275nm,1.1s
WRAB Tennant Creek 41.68 266 *e*P **P** 07 22 54.3 -1.0
comp=Z,116nm,1.0s
WRA Warramunga Arr 41.69 266 P **P** 07 22 53.9 -1.5
comp=Z,50nm,0.2s,baz=90,slow=5.8,SNR=1448
WRA pP **pP** 07 24 30.3 -2.4
comp=Z,5.9nm,0.6s,baz=101,slow=7.5,SNR=1.2
WRA PcP **PcP** 07 24 39.2 +0.1
comp=Z,27nm,0.9s,baz=99,slow=3.8,SNR=11
WRA ScP **ScP** 07 27 39.9 +2.6
comp=Z,32nm,0.9s,baz=101,slow=4.1,SNR=24
WRA S **S** 07 28 29.4 -3.7
comp=Z,16nm,1.1s,baz=97,slow=14,SNR=15
WRA PKiKP **PKiKP** 07 31 42.5 -1.4
comp=Z,1.7nm,0.6s,baz=78,slow=0.5,SNR=6.7
WRA P3KPbc 07 52 13.7
comp=Z,1.1nm,0.7s,baz=304,slow=3.1,SNR=10
JAY Jayapura 42.72 294 P **P** 07 23 02.9 -0.7
comp=Z,3.2nm,0.5s,baz=274,slow=24,SNR=12
JAY S **S** 07 28 47.2 -0.7
comp=Z,0.4nm,0.4s,baz=259,slow=23,SNR=2.8
JAY Jayapura 42.72 294 P **P** 07 23 02.4 -1.1
comp=Z,44nm,1.2s,comp=Z,526nm
GENI Genyem 43.13 293 P **P** 07 23 06.6 -0.1
comp=Z,54nm,0.6s
FORT Forrest 45.72 249 *e*P **P** 07 23 25.3 -1.1
comp=Z,2µm,0.7s
MTN Manton Dam 46.70 274 *e*P **P** 07 23 32.8 -1.2
comp=Z,54nm,1.1s
MLOA Mauna Loa Obse 49.44 32 *e*P **P** 07 23 55.4 +0.6
KEKH Kekaha 49.74 26 *e*P **P** 07 23 57.5 +1.0
comp=Z,145nm,0.9s
FAKI Fak Fak 49.79 287 *e*P **P** 07 23 56.4 -0.6
comp=Z,37nm,0.9s
HPAH Hawaii Prepara 49.80 31 *e*P **P** 07 23 58.1 +1.1
comp=Z,170nm,0.7s
GUMO Guam 49.93 314 P **P** 07 23 57.3 -0.7
comp=Z,82nm,0.7s,baz=161,slow=11,SNR=5.0
GUMO S **S** 07 30 27.2 -0.8
comp=Z,44nm,0.8s,baz=58,slow=11,SNR=2.3
GUMO Guam 49.93 314 *e*P **P** 07 23 57.6 -0.4
comp=Z,298nm,1.5s
GUMO S **S** 07 30 27.2 -0.8
KIP Kipapa 49.95 28 *e*P **P** 07 23 58.7 +0.7
KIP pmax pmax
comp=Z,84nm,0.9s
KIP Kipapa 49.95 28 *e*P **P** 07 23 58.7 +0.7
comp=Z,84nm,0.9s
FITZ Fitzroy Crossi 50.12 266 P **P** 07 23 59.0 -0.4
comp=Z,20nm,0.4s,baz=87,slow=5.8,SNR=158
FITZ pP **pP** 07 25 40.8 -1.2
comp=Z,13nm,1.0s,baz=96,slow=8.1,SNR=3.5
FITZ ScP **ScP** 07 28 15.5 +3.0
comp=Z,9.5nm,0.9s,baz=82,slow=4.0,SNR=6.1
FITZ S **S** 07 30 29.7 -0.9
comp=Z,2.4nm,0.8s,baz=85,slow=18,SNR=7.3
FITZ Fitzroy Crossi 50.12 266 *e*P **P** 07 23 59.2 -0.2
comp=Z,60nm,1.0s
FITZ pP **pP** 07 25 40.8 -1.2
FITZ ScP **ScP** 07 28 15.5 +3.0
FITZ S **S** 07 30 29.7 -0.9
HLK Haleakala 50.16 30 *e*P **P** 07 24 01.0 +1.1
comp=Z,447nm,1.5s
OPA Opana 50.19 28 *e*P **P** 07 24 00.9 +1.2
OPA pmax pmax
comp=Z,173nm,1.3s
OPA Opana 50.19 28 *e*P **P** 07 24 00.9 +1.2
comp=Z,173nm,1.3s
MIDW Midway 51.62 4 *e*P **P** 07 24 09.9 -0.1
comp=Z,64nm,0.7s
SIJI Sorong 51.64 289 P **P** 07 24 10.0 -0.5
comp=Z,72nm,0.3s,baz=282,slow=22,SNR=2.7
SOEI Soe 54.08 275 P **P** 07 24 29.1 +1.0
comp=Z,172nm,0.9s,comp=Z,2µm
SOEI Soe 54.08 275 *e*P **P** 07 24 29.1 +1.0
comp=Z,180nm,1.0s

NLAI Namlea 54.20 284 P **P** 07 24 29.2 +0.5
comp=Z,56nm,0.7s
BATI Baumata 54.47 274 P **P** 07 24 31.9 +1.2
comp=Z,21nm,0.3s,baz=316,slow=24,SNR=4.6
VNDA Vanda 54.62 185 P **P** 07 24 31.6 +0.9
comp=Z,9.7nm,0.7s,baz=2.4,slow=8.4,SNR=63
VNDA PcP **PcP** 07 25 26.2 +1.0
comp=Z,19nm,0.9s,baz=342,slow=4.5,SNR=8.7
VNDA S **S** 07 31 31.2 +2.4
comp=Z,1.7nm,1.1s,baz=103,slow=23,SNR=6.6
VNDA Vanda 54.62 185 *e*P **P** 07 24 31.5 +0.9
VNDA pmax pmax
comp=Z,17nm,0.9s
VNDA Vanda 54.62 185 *e*P **P** 07 24 31.5 +0.9
comp=Z,17nm,0.8s
VNDA PcP **PcP** 07 25 26.2 +1.0
VNDA S **S** 07 31 31.2 +2.4
NWAO Narrogin (SRO) 54.69 245 P **P** 07 24 31.5 -0.4
comp=Z,14nm,0.4s,baz=342,slow=7.2,SNR=20
NWAO Narrogin (SRO) 54.69 245 *e*P **P** 07 24 31.1 -0.8
comp=Z,50nm,1.0s
MBWA Marble Bar 54.70 260 P **P** 07 24 31.3 -0.9
SNR=8.2
MBWA Marble Bar 54.70 260 *e*P **P** 07 24 31.1 -1.1
comp=Z,113nm,1.1s
LBMI Labuha 55.04 287 P **P** 07 24 37.6 +2.9
EDFI Ende, Flores 56.82 275 P **P** 07 24 46.4 -0.7
comp=Z,162nm,0.8s,comp=Z,1µm
KAPI Kappang 60.05 278 P **P** 07 25 08.3 -0.4
comp=Z,13nm,0.6s,baz=169,slow=4.3,SNR=5.7
KAPI S **S** 07 32 40.3 +0.2
comp=Z,12nm,1.1s,baz=85,slow=19,SNR=2.3
KAPI Kappang 60.05 278 *e*P **P** 07 25 08.7 -0.1
comp=Z,196nm,1.9s
KAPI S **S** 07 32 40.3 +0.2
PLAI Plampang 60.37 273 P **P** 07 25 10.1 -0.7
comp=Z,293nm,0.9s,comp=Z,3µm
MRSI Marisa 60.47 285 P **P** 07 25 11.2 -0.3
comp=Z,25nm,0.5s,comp=Z,3µm
DAV Davao City (W) 60.57 293 P **P** 07 25 10.7 -1.4
comp=Z,276nm,0.4s,baz=44,slow=9.0,SNR=2.9
TTSI Tana Toraja 60.81 280 P **P** 07 25 15.0 +1.2
comp=Z,29nm,0.9s
PCI Palu 61.72 282 P **P** 07 25 21.9 +2.2
comp=Z,55nm,0.5s
IGBI Denpasar 62.78 272 P **P** 07 25 26.9 +0.3
comp=Z,261nm,1.2s
JAGI Jajag, Banyuwa 63.82 272 P **P** 07 25 32.4 -0.9
comp=Z,131nm,1.1s,comp=Z,2µm
JAGI Jajag, Banyuwa 63.82 272 *e*P **P** 07 25 32.1 -1.2
comp=Z,81nm,0.9s
RPN Rapa Nui 63.87 110 *e*P **P** 07 25 35.7 +2.3
RPN pmax pmax
comp=Z,223nm,0.9s
RPN Rapa Nui 63.87 110 *e*P **P** 07 25 35.7 +2.3
comp=Z,222nm,0.9s
GMJI Gumxmas 64.55 272 P **P** 07 25 37.5 -0.3
comp=Z,75nm,0.8s
BBKI Banjar Baru 65.15 277 P **P** 07 25 42.1 +0.4
MYLDM Lahad Datu 65.70 288 *e*P **P** 07 25 44.7 -0.4
comp=Z,57nm,1.2s
PWJI Pagerwojo 66.14 272 P **P** 07 25 47.3 -0.5
comp=Z,118nm,0.8s
QSPA South Pole Qui 66.48 180 *e*P **P** 07 25 50.0 +0.8
PCJI Pacitan 66.65 271 P **P** 07 25 50.9 -0.1
comp=Z,448nm,0.7s,comp=Z,4µm
MIR Mirnyy 67.09 206 *i*P **P** 07 25 53.0 +0.3
MIR pmax pmax
comp=Z,8.0nm,1.2s
UGM Wanagama 67.36 271 *e*P **P** 07 25 55.1 -0.2
comp=Z,117nm,0.9s
JHJ2 Mitsune 67.75 325 *e*P **P** 07 25 57.4 +0.1
comp=Z,3µm,1.9s
JHJ Hachijo jima 2 67.77 325 P **P** 07 25 57.9 +0.5
comp=Z,200nm,0.6s,baz=234,slow=23,SNR=3.5
KKM Kota Kinabalu 68.11 287 *e*P **P** 07 25 59.8 -0.3
comp=Z,170nm,1.5s
TGY Tagaytay City 68.17 297 P **P** 07 25 58.9 -1.4
comp=Z,256nm,0.4s,baz=189,slow=9.1,SNR=3.6
PBKI Pangkalan Bun 68.35 277 P **P** 07 26 02.6 +1.2
comp=Z,308nm,1.0s,comp=Z,6µm
STKI Sintang 69.67 279 P **P** 07 26 09.9 +0.5
CISI Cisompet, Garu 69.98 270 P **P** 07 26 10.4 -0.8
comp=Z,138nm,0.9s
CISI Cisompet, Garu 69.98 270 *e*P **P** 07 26 10.2 -1.0
comp=Z,92nm,0.8s
SBUM Sibu 70.03 282 *e*P **P** 07 26 11.5 0.0
comp=Z,34nm,1.3s
JOW Kunigami 70.25 313 *e*P **P** 07 26 12.8 +0.4
comp=Z,97nm,0.8s
LEM Lembang 70.43 271 P **P** 07 26 19.8 +5.7
comp=Z,179nm,0.7s,baz=82,slow=5.6,SNR=17
XMIS Christmas Isla 70.88 267 *e*P **P** 07 26 16.7 +0.2
comp=Z,81nm,0.8s
MJAR Matsushiro Arr 71.24 326 P **P** 07 26 17.7 -0.4
comp=Z,89nm,0.8s,baz=160,slow=5.4,SNR=51
MAJO Matsushiro 71.24 326 *e*P **P** 07 26 18.0 -0.1
MAJO Matsushiro 71.24 326 *e*P **P** 07 26 18.0 -0.1
comp=Z,49nm,0.8s
MAT Matsushiro 71.24 326 P **P** 07 26 17.9 -0.2
MJB9 Matsu-Tunnel 71.24 326 *e*P **P** 07 26 18.2 0.0
comp=Z,13nm,0.8s
KSM Kuching 71.33 280 *e*P **P** 07 26 18.7 -0.4
comp=Z,81nm,0.9s
DBJI Dramaga 71.33 271 P **P** 07 26 18.9 -0.3
YOJ Yonaguni jima 72.46 307 *e*P **P** 07 26 25.1 -0.3
YOJ pmax pmax
comp=Z,386nm,1.6s
YOJ Yonaguni jima 72.46 307 *e*P **P** 07 26 25.1 -0.3
comp=Z,386nm,1.6s
JNU Nakatsue 72.82 319 P **P** 07 26 27.4 0.0
comp=Z,23nm,0.6s,baz=69,slow=2.9,SNR=16
JNU Nakatsue 72.82 319 *e*P **P** 07 26 27.4 0.0
comp=Z,31nm,0.7s
TWG Pinlang 72.94 305 *e*P **P** 07 26 26.6 -1.6
comp=Z,153nm,0.6s
YULB Yu-li 73.10 306 *e*P **P** 07 26 28.3 -0.9
comp=Z,124nm,2.0s
ERM Erimo 73.30 333*ce*P **P** 07 26 32.0 +2.2
ERM pmax pmax
comp=Z,29nm,0.9s
NACB Ninganchiao 73.33 306 *e*P **P** 07 26 29.6 -0.9
comp=Z,71nm,0.9s
SSLB Suanglung 73.58 306 *e*P **P** 07 26 30.4 -1.5
comp=Z,40nm,0.8s
YHNB Yeong 73.78 307 *e*P **P** 07 26 33.0 -0.1
comp=Z,40nm,0.7s
KASI Kota Agung 73.80 271 P **P** 07 26 32.0 -1.3
comp=Z,145nm,0.9s
TATO Taipei 73.88 307 *e*P **P** 07 26 33.0 -0.5
comp=Z,195nm,0.9s
LWLI Liwa 74.39 271 P **P** 07 26 36.1 -0.8
comp=Z,147nm,0.7s
ASAJ Asahikawa 75.27 334 P **P** 07 26 42.5 +1.7
comp=Z,23nm,0.7s,baz=272,slow=6.3,SNR=14
ASAJ Asahikawa 75.27 334 *e*P **P** 07 26 42.7 +1.8
comp=Z,36nm,0.9s
KSI Kapahiang 76.27 272 P **P** 07 26 46.1 -1.2
NIKH Nikolski High 76.96 7 *e*P **P** 07 26 49.9 0.0
comp=Z,108nm,0.7s
MYKOM Kota Tinggi 77.31 278 *e*P **P** 07 26 52.6 -0.3
comp=Z,57nm,0.9s
KSRS Korea Array 77.55 321 P **P** 07 26 54.0 +0.5
comp=Z,17nm,0.8s,baz=135,slow=5.8,SNR=28
YSS Yuzh-Sakhalins 77.55 335⇑ *e*P **P** 07 26 54.9 +1.6
YSS pmax pmax
comp=Z,70nm,0.7s
YSS Yuzh-Sakhalins 77.55 335 *e*P **P** 07 26 55.0 +1.6
comp=Z,60nm,0.6s
KS15 Wonju Array Si 77.56 320 *e*P **P** 07 26 55.0 +1.3
KSAR Wonju Array Be 77.56 320 P **P** 07 26 54.0 +0.4
KSAR Wonju Array Be 77.56 320 *e*P **P** 07 26 54.0 +0.4
KS01 Wonju Array Si 77.58 321 *e*P **P** 07 26 54.4 +0.7
MAW Mawson 77.77 201 P **P** 07 26 54.5 +0.2
comp=Z,95nm,0.7s,baz=123,slow=5.8,SNR=327
MAW S **S** 07 36 01.2 -0.7
comp=Z,0.7nm,0.7s,baz=44,slow=9.8,SNR=1.9
MAW Mawson 77.77 201 *e*P **P** 07 26 55.0 +0.7
MAW S **S** 07 36 01.2 -0.7
MAW pmax pmax
comp=Z,23nm,0.7s
MAW Mawson 77.77 201 *e*P **P** 07 26 55.0 +0.7
comp=Z,22nm,0.7s
MAW S **S** 07 36 01.2 -0.7
UNV Unalaska Valle 78.11 9 *e*P **P** 07 26 55.6 -0.5
comp=Z,29nm,0.9s
PET Petropavlovsk 78.37 348⇑ *i*P **P** 07 26 57.5 -0.1

PET *e**PP **pP** 07 28 55.7 +1.8
PET *e**SP **sP** 07 29 50.6 +0.6
PET *e* 07 30 09.2
PET *e*S **S** 07 36 08.8 +0.6
PET *e*SP **SPn** 07 36 55.4 +0.9
PET *e*SPP SPP 07 37 10.2
PET *e*SS **SS** 07 41 31.4 +3.8
PET *e*SSS SSS 07 44 56.5
PET pmax pmax
comp=Z,69nm,0.7s
PET MLR MLR
comp=Z,200nm,16.0s
PET Petropavlovsk 78.37 348 *e*P **P** 07 26 57.5 -0.1
comp=Z,42nm,0.7s
AKUT Akutan 78.49 9 *e*P **P** 07 26 58.5 +0.4
comp=Z,157nm,1.3s
PEA0 Petropavlovsk- 78.64 347 *e*P **P** 07 26 59.6 +0.6
PEA0B Petropavlovsk- 78.64 347 *e*P **P** 07 26 59.6 +0.5
comp=Z,129nm,1.4s
PETK Petropavlovsk- 78.64 347 P **P** 07 26 59.5 +0.4
comp=Z,43nm,0.6s,baz=123,slow=6.7,SNR=49
MSHR Mys Shultsa 79.36 326*c* *i*P **P** 07 27 04.3 +1.2
VLA Vladivostok 79.38 327⇓ *e*P **P** 07 27 03.6 +0.4
VLA pmax pmax
comp=Z,29nm,0.7s
PMSA Palmer Station 79.47 157 P **P** 07 27 04.7 +1.3
comp=Z,146nm,0.9s,baz=234,slow=4.0,SNR=28
PMSA Palmer Station 79.47 157 *e*P **P** 07 27 04.6 +1.2
comp=Z,208nm,1.0s
NJ2 Nanjing 79.91 311 *e*P **P** 07 27 07.3 +1.1
NJ2 pmax pmax
comp=Z,40nm,1.0s
USRK Ussuriysk Ar. 80.11 328 P **P** 07 27 07.8 +0.8
comp=Z,22nm,0.7s,baz=129,slow=4.1,SNR=28
TYV Tymovskoe 80.84 338 *e*P **P** 07 27 10.8 +0.2
TYV pmax pmax
comp=E,18nm,0.8s
TYV pmax pmax
comp=Z,44nm,0.8s
IPM Ipoh 80.99 279 *e*P **P** 07 27 12.2 -0.2
comp=Z,66nm,0.7s
SNCC San Nicolas Is 81.25 48 P **P** 07 27 14.4 +1.2
baz=234
MDJ Mudanjiang 81.61 327 P **P** 07 27 15.8 +1.1
MDJ pP pP 07 29 11.1 -1.2
MDJ sP sP 07 30 06.0 -2.1
MDJ S **S** 07 36 42.1 +0.3
MDJ sS sS 07 40 12.8 +1.4
MDJ SS **SS** 07 42 16.6 +0.8
MDJ pmax pmax
comp=Z,42nm,0.9s
MDJ pmax pmax
comp=Z,55nm,3.6s
MDJ Mudanjiang 81.61 327 *e*P **P** 07 27 15.8 +1.1
comp=Z,38nm,0.8s
SCZ2 Santa Cruz Isl 81.61 47 P **P** 07 27 16.5 +1.5
baz=234
KULM Kulim 81.67 279 *e*P **P** 07 27 15.3 -0.5
comp=Z,54nm,1.1s
UBPT Khong Chiam 81.73 291 P **P** 07 27 17.6 +1.6
comp=Z,29nm,1.0s
SCI2 San Clemente I 81.77 49 P **P** 07 27 17.0 +1.1
baz=235
SBC Santa Barbara 81.81 47 P **P** 07 27 18.0 +2.0
baz=234
CHGN Chignik 81.82 12 *e*P **P** 07 27 16.3 +0.8
HABR Khabarovsk 81.90 332 *e*P **P** 07 27 15.6 -0.5
HABR *e**PP **pP** 07 29 13.4 -0.4
HABR *e* 07 32 33.6
HABR *e*S **S** 07 36 42.0 -2.5
HABR *e*SS **SS** 07 42 19.6 -0.3
HABR *e*SSS SSS 07 45 54.4
HABR pmax pmax
comp=E,8.0nm,0.5s
HABR pmax pmax
comp=N,11nm,1.0s
HABR pmax pmax
comp=Z,53nm,1.0s
HABR MLR MLR
comp=Z,142nm,18.0s
PKM Mcpherson Peak 82.01 47 P **P** 07 27 18.8 +1.5
baz=234
SAO San Andreas Ge 82.06 44 *e*P **P** 07 27 19.1 +1.9
SAO pmax pmax
comp=Z,44nm,0.9s
SAO San Andreas Ge 82.06 44 *e*P **P** 07 27 19.1 +1.9
comp=Z,44nm,0.9s
BLG Laguna Peak, P 82.06 48 P **P** 07 27 18.3 +1.0
baz=235
CIS Catalina Islan 82.10 48 P **P** 07 27 18.6 +1.0
baz=235
SMMC Simmler 82.14 46 P **P** 07 27 19.4 +1.6
baz=234
PSI Prapat 82.21 276 P **P** 07 27 16.8 -1.9
comp=Z,54nm,0.9s,baz=145,slow=3.7,SNR=21
PSI pP **pP** 07 29 13.7 -2.8
comp=Z,2.0nm,0.4s,baz=164,slow=10,SNR=1.2
PSI PKKPbc **PKKPbc** 07 45 41.9 +0.5
comp=Z,2.3nm,0.4s,baz=309,slow=8.3,SNR=4.7
PSI Prapat 82.21 276 *e*P **P** 07 27 17.4 -1.3
PSI *PP **pP** 07 29 13.7 -2.8
PSI pmax pmax
comp=Z,50nm,0.8s
PSI Prapat 82.21 276 *e*P **P** 07 27 17.4 -1.3
comp=Z,50nm,0.8s
PSI pP **pP** 07 29 13.7 -2.8
PSI PKKPbc **PKKPbc** 07 45 41.9 +0.5
WHN Wuhan 82.23 308⇑ *i*P **P** 07 27 19.3 +1.1
WHN pmax pmax
comp=Z,87nm,0.9s
FMP Fort Macarthur 82.36 48 P **P** 07 27 20.2 +1.4
baz=235
HOPS Hopland Field 82.41 42 *e*P **P** 07 27 20.4 +1.5
comp=Z,68nm,1.1s
SKLT Songkhla 82.47 281 P **P** 07 27 20.6 +0.7
comp=Z,56nm,1.0s,comp=Z,1µm
OSI Osito Audit: C 82.58 47 P **P** 07 27 21.6 +1.6
baz=235
DECC Green Verdugo 82.64 48 P **P** 07 27 21.3 +1.0
baz=235
PASC Pasadena Art C 82.69 48 *e*P **P** 07 27 21.7 +1.1
comp=Z,31nm,0.9s
109C Camp Elliot, M 82.71 50 P **P** 07 27 21.4 +0.8
baz=236,SNR=7.3
KMRM Mail Ridge 82.79 40 *e*P **P** 07 27 23.2 +2.2
comp=Z,101nm,1.1s
ARVC Arvin 82.80 47 P **P** 07 27 22.2 +1.2
baz=235
MWC Mount Wilson 82.81 48 *e*P **P** 07 27 21.5 +0.2
MWC pmax pmax
comp=Z,57nm,1.3s
MWC Mount Wilson 82.81 48 *e*P **P** 07 27 21.5 +0.2
comp=Z,57nm,1.3s
GSI Gunungsitoli 82.84 275 *e*P **P** 07 27 22.2 +0.5
comp=Z,81nm,0.7s
BAR Barrett 82.90 50 *e*P **P** 07 27 23.2 +1.6
comp=Z,112nm,1.8s
USHA Ushuaia 82.95 147 P **P** 07 27 22.3 +0.8
comp=Z,189nm,1.0s,baz=212,slow=5.5,SNR=9.6
JCC Jacoby Creek, 82.98 40 *e*P **P** 07 27 23.3 +1.5
comp=Z,74nm,1.4s
VES Vestal, Richgr 83.05 46 P **P** 07 27 23.1 +0.8
baz=234
MURC Murrieta 83.05 49 P **P** 07 27 23.6 +1.2
baz=236,SNR=9.8
BFSC Mount Baldy Ra 83.09 48 P **P** 07 27 23.2 +0.5
baz=235,SNR=5.1
SYO Syowa Base 83.13 194⇑ *e*P **P** 07 27 19.8 -2.3
SYO Syowa Base 83.13 194⇑ *e*pP pP 07 29 22.4 +2.3
KHMM Horse Mountain 83.19 40 *e*P **P** 07 27 25.0 +2.0
comp=Z,44nm,0.8s
MONP2 Monument Peak 83.19 50 P **P** 07 27 24.7 +1.3
baz=236,SNR=23
CN2 Changchun 83.21 324 *e*P **P** 07 27 23.4 +0.5
CN2 *e*pP pP 07 29 21.8 +0.8
CN2 *e*S **S** 07 36 59.5 +1.7
CN2 pmax pmax
comp=Z,70nm,1.2s
CN2 pmax pmax
comp=Z,100nm,4.0s
RCTC Rector, Farmer 83.21 46 P **P** 07 27 23.8 +0.7
baz=234
EDW2 Edwards Air Fo 83.23 47 P **P** 07 27 24.1 +0.9
baz=235,SNR=21
IKP In-Ko-Pah, Jac 83.28 50 P **P** 07 27 25.2 +1.6
baz=236,SNR=27

SLBS **Sierra La Lagu** 83.30 61 *eP* P 07 27 25.7 +1.9
comp=Z,98nm,0.8s
SRIG **Santa Rosalia** 83.31 56 *eP* P 07 27 24.8 +1.1
comp=Z,137nm,1.1s
CHBT **CHBT** 83.33 287 P P 07 27 25.2 +1.1
comp=Z,63nm,0.9s,comp=Z,6µm
ISA **Isabella, Lake** 83.35 47 P P 07 27 25.1 +1.3
baz=235,SNR=24
ISA **Isabella, Lake** 83.35 47 *eP* P 07 27 25.6 +1.7
ISA pmax pmax
comp=Z,72nm,0.9s
ISA **Isabella, Lake** 83.35 47 *eP* P 07 27 25.6 +1.7
comp=Z,72nm,0.9s
NKL **Nikolayevsk** 83.42 338 *eP* P 07 27 23.9 +0.3
CMB **Columbia Colle** 83.49 44 *eP* P 07 27 25.5 +1.0
CMB pmax pmax
comp=Z,51nm,0.9s
CMB **Columbia Colle** 83.49 44 *eP* P 07 27 25.5 +1.0
comp=Z,51nm,0.9s
TIA **Tai'an** 83.49 314 ⇑P P 07 27 25.3 +0.8
TIA pmax pmax
comp=Z,10.0nm,0.8s
KRMB **Red Mountain** 83.50 39 *eP* P 07 27 26.4 +1.9
comp=Z,51nm,1.1s
PFO **Pinyon Flats O** 83.56 49 P P 07 27 26.6 +1.5
comp=Z,19nm,0.9s,baz=218,slow=6.4,SNR=25
PFO **Pinyon Flats O** 83.56 49 P P 07 27 26.5 +1.5
baz=236,SNR=11
PFO **Pinyon Flats O** 83.56 49 *eP* P 07 27 26.7 +1.7
PFO pmax pmax
comp=Z,44nm,1.3s
PFO **Pinyon Flats O** 83.56 49 *eP* P 07 27 26.7 +1.7
comp=Z,44nm,1.3s
TPFO **Pinon Flats** 83.56 49 P P 07 27 26.1 +1.1
baz=236,SNR=13
TRTT **Trang** 83.59 281 P P 07 27 26.0 +0.6
comp=Z,111nm,0.9s
BBRC **Big Bear Solar** 83.61 48 P P 07 27 26.6 +1.2
baz=236,SNR=7.2
SWSC **Sam W. Stewart** 83.66 50 P P 07 27 26.7 +1.4
baz=237,SNR=27
AFDM **Forest Hills D** 83.67 43 *eP* P 07 27 26.7 +1.4
comp=Z,53nm,1.1s
WDC **Whiskeytown Da** 83.71 41 *eP* P 07 27 27.3 +1.9
WDC pmax pmax
comp=Z,46nm,1.0s
WDC **Whiskeytown Da** 83.71 41 *eP* P 07 27 27.3 +1.9
comp=Z,46nm,1.0s
ORV **Oroville** 83.71 42 *eP* P 07 27 26.5 +1.1
ORV pmax pmax
comp=Z,45nm,1.0s
ORV **Oroville** 83.71 42 *eP* P 07 27 26.5 +1.1
comp=Z,45nm,1.0s
SKNT **Sakolnakorn** 83.77 291 P P 07 27 26.7 +0.5
comp=Z,312nm,0.8s,comp=Z,3µm
OHAK **Old Harbor** 83.77 15 *eP* P 07 27 25.6 +0.3
comp=Z,42nm,1.0s
LRMC **Laurel Mtn Rad** 83.78 47 P P 07 27 27.1 +1.1
baz=235
N02D **Trinity Center** 83.86 40 P P 07 27 28.0 +1.7
baz=232,SNR=25
RRX **Edison Barstow** 83.90 48 P P 07 27 27.6 +1.1
baz=236
KLR **Kul'dur** 83.91 331 P P 07 27 27.6 +1.4
comp=Z,8.5nm,0.6s,baz=153,slow=4.4,SNR=20
KLR pP **pP** 07 29 24.2 -0.4
comp=Z,1.0nm,0.6s,baz=142,slow=12,SNR=1.7
KLR PKiKP **PKiKP** 07 32 37.2 +0.1
comp=Z,0.6nm,0.4s,baz=278,slow=0.7,SNR=4.3
PAF **Port-aux-Franc** 83.91 218 *eP* P 07 27 27.1 +0.7
PAF pmax pmax
comp=Z,493nm,1.5s
PAF **Port-aux-Franc** 83.91 218 *eP* P 07 27 27.1 +0.7
comp=Z,492nm,1.5s
O03D **Paynes Creek** 83.98 41 P P 07 27 27.8 +0.9
baz=232,SNR=24
M02C **Callahan** 84.03 40 P P 07 27 29.1 +2.0
baz=231,SNR=41
CWC **Cottonwood Cre** 84.06 46 P P 07 27 28.5 +1.0
baz=235
L02D **Cave Junction,** 84.07 39 P P 07 27 28.9 +1.7
baz=231,SNR=11
BELC **Belle Mtn. Jos** 84.10 49 P P 07 27 29.0 +1.3
baz=236,SNR=15
SURA **Surathani** 84.20 283 P P 07 27 30.6 +2.2
MPMC **Manual Prospec** 84.23 47 P P 07 27 29.3 +1.0
baz=235,SNR=26
MLAC **Mammoth, Mamma** 84.25 45 P P 07 27 29.8 +1.3
baz=234
GSC **Goldstone, Bar** 84.27 48 P P 07 27 29.5 +1.0
baz=236,SNR=31
GSC **Goldstone, Bar** 84.27 48 *eP* P 07 27 29.4 +1.0
GSC pmax pmax
comp=Z,46nm,1.0s
GSC **Goldstone, Bar** 84.27 48 *eP* P 07 27 29.4 +1.0
comp=Z,46nm,1.0s
DAC **Darwin (Calif)** 84.29 46 *eP* P 07 27 29.9 +1.2
DAC pmax pmax
comp=Z,42nm,1.5s
DAC **Darwin (Calif)** 84.29 46 *eP* P 07 27 29.9 +1.2
comp=Z,42nm,1.5s
BC3 **Big Chuckawall** 84.29 50 P P 07 27 30.1 +1.5
baz=237,SNR=22
TIN **Tinemaha, Big** 84.31 46 P P 07 27 29.9 +1.3
baz=235
HEC **Hector,Ludlow** 84.33 48 P P 07 27 29.5 +0.8
baz=236,SNR=44
YBH **Yreka Blue Hor** 84.33 40 *eP* P 07 27 30.0 +1.5
YBH pmax pmax
comp=Z,79nm,1.2s
YBH **Yreka Blue Hor** 84.33 40 *eP* P 07 27 30.0 +1.5
comp=Z,79nm,1.2s
WAKR **Walker** 84.37 44 *eP* P 07 27 30.8 +1.8
comp=Z,80nm,1.2s
GLA **Glamis** 84.40 50 P P 07 27 30.6 +1.5
baz=237,SNR=27
GLA **Glamis** 84.40 50 *eP* P 07 27 31.0 +1.9
GLA pmax pmax
comp=Z,90nm,0.9s
GLA **Glamis** 84.40 50 *eP* P 07 27 31.0 +1.9
comp=Z,90nm,0.9s
KDAK **Kodiak Island** 84.44 15 P P 07 27 29.8 +1.3
comp=Z,51nm,0.7s,baz=149,slow=4.0,SNR=6.9
KDAK pP **pP** 07 29 27.0 -0.2
comp=Z,15nm,0.6s,baz=164,slow=3.7,SNR=2.1
KDAK **Kodiak Island** 84.44 15 P P 07 27 29.8 +1.3
KDAK *PP **pP** 07 29 27.0 -0.2
KDAK pmax pmax
comp=Z,45nm,0.6s
KDAK pmax pmax
comp=Z,24nm,0.8s
KDAK **Kodiak Island** 84.44 15 *eP* P 07 27 29.4 +0.8
comp=Z,35nm,1.0s
KDAK pP **pP** 07 29 27.0 -0.2
CHRN **Cochrane** 84.49 139 *eP* P 07 27 30.6 +1.3
comp=Z,14nm,0.7s
PATY **Pattaya** 84.69 286 P P 07 27 33.3 +2.5
comp=Z,20nm,0.9s,comp=Z,3µm
HUMO **Hull Mountain** 84.73 39 *eP* P 07 27 32.2 +1.7
comp=Z,74nm,1.2s
GMRC **Granite Mounta** 84.76 49 P P 07 27 31.9 +1.0
baz=237,SNR=25
IRM **Iron Mountain** 84.78 49 P P 07 27 32.3 +1.4
baz=237,SNR=42
GRAC **Grapevine Rang** 84.84 46 P P 07 27 32.3 +1.2
baz=235,SNR=6.9
SURT **Suratani** 84.86 282 P P 07 27 33.0 +1.3
comp=Z,22nm,1.1s
M04C **Macdoel** 84.87 40 P P 07 27 32.4 +1.1
baz=232,SNR=12
FURC **Furnace Creek,** 84.88 47 P P 07 27 32.2 +1.0
baz=236,SNR=14
TUQ **Turquoise Moun** 84.94 48 P P 07 27 32.9 +1.1
baz=236,SNR=23
SHOC **Shoshone, Teco** 84.96 47 P P 07 27 32.5 +0.8
baz=236,SNR=19
NONG **Nongkai** 84.97 292 P P 07 27 32.8 +0.7
comp=Z,97nm,1.1s
SNAA **Sanae** 84.97 179 P P 07 27 30.4 -0.9
SNAA **Sanae** 84.97 179 P P 07 27 30.5 -0.9
comp=Z,19nm,0.4s,baz=212,slow=8.9,SNR=361
SNAA **Sanae** 84.97 179 *eP* P 07 27 30.6 -0.7
SNAA pmax pmax
comp=Z,29nm,0.9s
SNAA **Sanae** 84.97 179 *eP* P 07 27 30.6 -0.7
comp=Z,29nm,0.9s
Y12C **Blythe** 84.99 50 P P 07 27 33.3 +1.5
baz=237,SNR=15
Y12C **Blythe** 84.99 50 *eP* P 07 27 33.9 +2.0
comp=Z,52nm,1.0s
113A **Mohawk Valley,** 85.01 51 *eP* P 07 27 32.1 +0.1
comp=Z,61nm,1.2s
PAHR **Pah Rah Range** 85.11 43 *eP* P 07 27 34.0 +1.4
comp=Z,30nm,1.1s
HSIG 85.15 56 *eP* P 07 27 34.1 +1.4
comp=Z,79nm,0.9s
I03D **Drain, OR** 85.19 38 P P 07 27 33.9 +1.4
baz=231,SNR=8.6
214A **Organ Pipe Nat** 85.27 52 P P 07 27 35.0 +1.7
baz=238
214A **Organ Pipe Nat** 85.27 52 *eP* P 07 27 34.7 +1.3
comp=Z,227nm,1.1s
LDFC **Landfair** 85.30 49 *eP* P 07 27 35.1 +1.6
comp=Z,90nm,0.8s
K04D **Chiloquin, OR** 85.44 39 P P 07 27 35.1 +1.1
baz=232
NEE2 **Needles Airpor** 85.47 49 P P 07 27 35.9 +1.7
baz=237,SNR=5.8
PDMCI **Parker Dam,Lak** 85.56 50 P P 07 27 36.2 +1.6
baz=238,SNR=26
TPNV **Topopah Spring** 85.56 47 P P 07 27 35.7 +1.0
baz=236,SNR=32
TPNV **Topopah Spring** 85.56 47 *eP* P 07 27 35.7 +1.0
TPNV pmax pmax
comp=Z,26nm,0.8s
TPNV **Topopah Spring** 85.56 47 *eP* P 07 27 35.7 +1.0
comp=Z,26nm,0.8s
J04D **Umpqua Nationa** 85.61 39 P P 07 27 36.3 +1.4
baz=232,SNR=19
ENH **Enshi** 85.67 306 *eP* P 07 27 36.1 +0.9
comp=Z,51nm,0.9s
PHET **Kaeng Krachan** 85.78 286 P P 07 27 37.8 +1.8
comp=Z,35nm,1.0s,comp=Z,382nm
I04A **Tendick Farm,** 85.78 38 P P 07 27 36.4 +0.9
baz=232,SNR=9.0
MOD **Modoc Plateau** 85.85 41 *eP* P 07 27 37.8 +1.7
comp=Z,41nm,1.0s
VNA1 **Neumayer--Stat** 85.86 178 P P 07 27 35.2 -0.3
GYA **Guiyang** 85.96 301 P P 07 27 38.0 +1.1
GYA pP pP 07 29 38.6 +2.6
GYA sP sP 07 30 33.0 +1.6
GYA PP **PP** 07 31 10.3 +3.0
GYA SKS **SKSac** 07 37 08.9 -1.9
GYA S **S** 07 37 25.4 0.0
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.9s
K05A **Summer Lake** 86.00 40 *eP* P 07 27 38.2 +1.4
comp=Z,80nm,1.1s
SHPR **Sheep Range** 86.04 47 *eP* P 07 27 38.2 +1.1
comp=Z,19nm,1.0s
MA2 **Magadan** 86.11 346 P P 07 27 36.6 0.0
comp=Z,42nm,0.8s,baz=151,slow=3.8,SNR=17
J05D **Fort Rock, OR** 86.14 39 P P 07 27 38.8 +1.4
baz=232,SNR=33
W13A **Hualapai Mount** 86.16 49 *eP* P 07 27 38.9 +1.2
comp=Z,21nm,0.8s
Y14A **Wickenburg** 86.16 50 *eP* P 07 27 39.1 +1.5
comp=Z,132nm,1.3s
PBKT **Sadao Pong** 86.17 290 P P 07 27 39.1 +1.2
comp=Z,45nm,1.0s
G03D **McMinnville, O** 86.19 37 P P 07 27 38.9 +1.6
baz=231
BJT **Baijiatuau** 86.30 317 *eP* P 07 27 38.7 +0.7
BJT pmax pmax
comp=Z,29nm,0.9s
BJT **Baijiatuau** 86.30 317 *eP* P 07 27 38.7 +0.7
comp=Z,28nm,0.9s
BJI **Beijing** 86.31 317 P P 07 27 38.9 +0.9
BJI pP **pP** 07 29 38.8 +1.5
BJI S **S** 07 37 29.3 +1.6
BJI pmax pmax
comp=Z,32nm,0.8s
CNPM **China Poot** 86.32 15 *eP* P 07 27 38.1 +0.5
comp=Z,43nm,0.8s
HOM **Homer** 86.35 14 *eP* P 07 27 38.4 +0.7
comp=Z,251nm,1.1s
BRLK **Bradley Lake** 86.62 15 *eP* P 07 27 39.5 +0.5
I05D **Terrebonne, OR** 86.72 38 P P 07 27 41.0 +1.1
baz=232,SNR=15
R11A **Troy Canyon, C** 86.77 46 P P 07 27 41.1 +0.6
baz=236,SNR=11
R11A **Troy Canyon, C** 86.77 46 *eP* P 07 27 41.5 +1.0
comp=Z,94nm,1.1s
RSO **Redoubt South** 86.83 13 *eP* P 07 27 40.1 -0.1
SRDT **SRDT** 86.83 287 P P 07 27 42.8 +1.8
comp=Z,228nm,0.9s
SVW2 **Sparrevohn** 86.84 12 *eP* P 07 27 39.9 -0.2
comp=Z,24nm,1.4s
E03A **Lebam** 86.88 36 *eP* P 07 27 42.5 +2.1
comp=Z,86nm,1.1s
F04D **Rainier, OR** 86.88 36 P P 07 27 42.2 +1.7
baz=231
BMN **Battle Mountai** 86.89 43 *eP* P 07 27 42.0 +1.0
BMN pmax pmax
comp=Z,50nm,1.0s
BMN **Battle Mountai** 86.89 43 *eP* P 07 27 42.0 +1.0
comp=Z,50nm,1.0s
TUC **Tucson** 86.92 53 P P 07 27 43.3 +2.1
baz=240
TUC **Tucson** 86.92 53 *eP* P 07 27 43.0 +1.8
TUC pmax pmax
comp=Z,86nm,1.3s
TUC **Tucson** 86.92 53 *eP* P 07 27 43.0 +1.8
comp=Z,86nm,1.3s
UTTA **Uttaradit** 87.04 291 P P 07 27 43.3 +1.4
comp=Z,8.7nm,0.9s
F04A **Amboy** 87.11 37 *eP* P 07 27 42.8 +1.2
comp=Z,118nm,1.2s
WVOR **Wild Horse Val** 87.17 41 *eP* P 07 27 43.4 +1.2
WVOR pmax pmax
comp=Z,79nm,1.1s
WVOR **Wild Horse Val** 87.17 41 *eP* P 07 27 43.4 +1.2
comp=Z,79nm,1.1s
DIB **Dawson Inlet,** 87.20 27 *eP* P 07 27 43.5 +1.7
comp=Z,65nm,1.1s
NLWA **Neilton Lookou** 87.25 35 *eP* P 07 27 43.7 +1.4
comp=Z,63nm,1.2s
G05D **Wamic, OR** 87.29 38 P P 07 27 43.9 +1.4
baz=232
ERK **Elk Rock** 87.38 36 P P 07 27 44.8 +1.7
SMW **South Mountain** 87.48 35 P P 07 27 45.4 +1.9
X16A **Lo Mia Camp, P** 87.52 51 *eP* P 07 27 45.7 +1.6
comp=Z,41nm,1.0s
GULW **Guler Mountain** 87.55 37 P P 07 27 45.5 +1.6
319A **Douglas** 87.57 54 *eP* P 07 27 46.5 +2.1
comp=Z,113nm,0.9s
LCMT **Little Creek M** 87.61 48 *eP* P 07 27 46.1 +1.7
comp=Z,33nm,1.0s
SPU **Mount Spurr** 87.63 13 *eP* P 07 27 43.4 -0.3
G06A **Carlson Farm,** 87.67 38 *eP* P 07 27 45.9 +1.6
comp=Z,46nm,1.0s
SUKH **Sukhothai** 87.72 290 P P 07 27 46.5 +1.4
comp=Z,20nm,0.8s,comp=Z,167nm
CCUT **Cedar City** 87.82 47 *eP* P 07 27 46.1 +0.6
comp=Z,40nm,1.2s
UMPA **Umpang Tak** 87.85 289 P P 07 27 47.4 +1.6
comp=Z,13nm,1.1s
LON **Longmire** 87.94 36 *eP* P 07 27 46.6 +1.0
LON pmax pmax
comp=Z,23nm,0.8s
LON **Longmire** 87.94 36 *eP* P 07 27 46.6 +1.0
comp=Z,23nm,0.8s
U15A **North Rim** 87.96 49 *eP* P 07 27 47.7 +1.5
comp=Z,59nm,0.8s
XAN **Xi'an** 87.98 309 P P 07 27 47.5 +1.4
XAN pmax pmax
comp=Z,62nm,0.9s
XAN pmax pmax
comp=Z,57nm,4.0s
RC01 **Rabbit Creek A** 88.06 15 *eP* P 07 27 46.4 +0.7
comp=Z,373nm,0.2s
D05A **Emmclaw** 88.12 36 *eP* P 07 27 48.0 +1.6
comp=Z,172nm,1.1s
WUAZ **Wupatki** 88.13 50 P P 07 27 48.2 +1.3
baz=239,SNR=24
WUAZ **Wupatki** 88.13 50 *eP* P 07 27 47.2 +0.3
comp=Z,58nm,1.3s
SUA **Susitna One** 88.16 14 *eP* P 07 27 46.8 +0.5
comp=Z,37nm,0.9s
LAMP **Lampang** 88.17 291 P P 07 27 48.7 +1.5
comp=Z,22nm,0.8s,comp=Z,208nm
GSM **Grass Mountain** 88.23 36 P P 07 27 48.1 +1.1
GSM **Grass Mountain** 88.23 36 P P 07 27 48.1 +1.1
HPIG 88.24 60 *eP* P 07 27 49.2 +1.5
comp=Z,58nm,0.8s
PGC **Sidney** 88.27 34 *eP* P 07 27 48.5 +1.5
comp=Z,64nm,0.9s
BBB **Bella Bella** 88.36 29 P P 07 27 48.3 +1.0
comp=Z,39nm,1.0s,baz=263,slow=3.3,SNR=18
BBB **Bella Bella** 88.36 29 *eP* P 07 27 48.7 +1.4
comp=Z,40nm,0.9s
TT01 **Tatalina** 88.43 11 *eP* P 07 27 47.6 +0.2
TTA **Tatalina** 88.45 11 *eP* P 07 27 48.0 +0.4
TTA pmax pmax
comp=Z,32nm,1.2s
TTA **Tatalina** 88.45 11 *eP* P 07 27 48.0 +0.4
comp=Z,32nm,1.2s
KMI **Kunming** 88.47 298 P P 07 27 50.3 +1.5
KMI pP pP 07 29 52.6 +3.8
KMI SKS **SKSac** 07 37 26.4 +0.3
KMI S **S** 07 37 49.8 +0.7
KMI pmax pmax
comp=Z,24nm,0.8s
KMI pmax pmax
comp=Z,130nm,4.4s
PKCU **Pink Cliffs** 88.47 48 *eP* P 07 27 50.3 +1.7
comp=Z,28nm,0.9s
FID **Port Fidalgo** 88.55 16 *eP* P 07 27 48.0 0.0
comp=Z,44nm,1.1s
EYAK **Cordova Ski Ar** 88.57 16 *eP* P 07 27 48.5 +0.4
comp=Z,36nm,0.9s
CRAG **Craig** 88.60 25 *eP* P 07 27 49.3 +0.9
comp=Z,51nm,1.3s
HTW **Haystack Looko** 88.62 35 P P 07 27 50.0 +1.2
PMR **Palmer** 88.64 15 *eP* P 07 27 48.5 +0.1
PMR pmax pmax
comp=Z,40nm,1.0s
PMR **Palmer** 88.64 15 *eP* P 07 27 48.5 +0.1
comp=Z,40nm,1.0s
G08A **Pilot Rock** 88.65 39 P P 07 27 49.8 +0.8
A04D **Lummi Island** 88.70 34 P P 07 27 50.3 +1.4
baz=231
CM01 **Chiang Mai Arr** 88.70 291 *eP* P 07 27 50.9 +1.2
MOIG **Morelia** 88.71 68 *eP* P 07 27 51.5 +1.5
comp=Z,92nm,1.0s
RAGM **Ragged Mountai** 88.71 17 *eP* P 07 27 49.6 +0.7
comp=Z,38nm,1.0s
B05A **Bryant** 88.73 35 P P 07 27 50.4 +1.3
baz=232
CMAR **Chiang Mai Arr** 88.73 291 P P 07 27 51.0 +1.2
comp=Z,20nm,0.9s,baz=135,slow=3.3,SNR=37
CMAR pP **pP** 07 29 47.0 -3.0
comp=Z,1.4nm,0.3s,baz=355,slow=24,SNR=2.0
CMAR PP **PP** 07 31 29.8 +0.7
comp=Z,1.4nm,0.4s,baz=123,slow=6.4,SNR=5.6
CMAR PKKPbc **PKKPbc** 07 45 27.6 +1.2
comp=Z,6.4nm,0.7s,baz=290,slow=4.3,SNR=17
SEY **Seymchan** 88.82 348 P P 07 27 49.9 +0.7
comp=Z,31nm,0.8s,baz=162,slow=5.4,SNR=26
SEY **Seymchan** 88.82 348 ⇑*i*P P 07 27 49.6 +0.4
MTPU **Mount Pierson** 88.87 47 *eP* P 07 27 53.0 +2.4
comp=Z,89nm,1.3s
LTY **Liberty** 88.87 36 *eP* P 07 27 50.8 +0.8
comp=Z,33nm,0.8s
CMMT **Chiang Mai** 88.88 291 P P 07 27 51.7 +1.1
comp=Z,40nm,1.4s,comp=Z,622nm
CHTO **Chiang Mai** 88.88 291 P P 07 27 51.8 +1.2
comp=Z,218nm,1.3s,comp=Z,2µm
CHTO **Chiang Mai** 88.88 291 *eP* P 07 27 51.8 +1.2
CHTO pmax pmax
comp=Z,61nm,1.3s
CHTO **Chiang Mai** 88.88 291 P P 07 27 51.3 +0.8
SNR=6.8
CHTO **Chiang Mai** 88.88 291 *eP* P 07 27 51.8 +1.2
comp=Z,61nm,1.3s
ZAIG **Zacatecas** 88.89 65 *eP* P 07 27 52.3 +1.4
comp=Z,52nm,1.0s
E07A **Sunnyside** 88.90 37 *eP* P 07 27 52.4 +2.4
comp=Z,57nm,0.9s
HAWA **Hanford** 88.98 37 *eP* P 07 27 51.8 +1.4
comp=Z,52nm,0.9s
MDW **Midway** 88.98 37 P P 07 27 52.1 +1.7
MDW **Midway** 88.98 37 P P 07 27 52.1 +1.7
PLCA **Paso Flores** 89.00 135 P P 07 27 52.4 +1.4
comp=Z,28nm,0.9s,baz=261,slow=4.9,SNR=46
PLCA PKKPbc **PKKPbc** 07 45 23.5 -2.9
comp=Z,1.3nm,0.6s,baz=7.5,slow=2.6,SNR=7.1
PLCA PKPPKP **P'P'df** 07 53 32.6 -2.7
comp=Z,3.8nm,1.1s,baz=48,slow=6.0,SNR=3.7
PLCA **Paso Flores** 89.00 135 *eP* P 07 27 52.3 +1.4
PLCA pmax pmax
comp=Z,67nm,1.1s
PLCA **Paso Flores** 89.00 135 *eP* P 07 27 52.3 +1.4
comp=Z,67nm,1.1s
PLCA PKKPbc **PKKPbc** 07 45 23.5 -2.9
PLCA P'P' 07 53 32.6
SML **Sawmill** 89.02 15 *eP* P 07 27 50.6 +0.4
SML pmax pmax
comp=Z,23nm,1.2s
SML **Sawmill** 89.02 15 *eP* P 07 27 50.6 +0.4
comp=Z,23nm,1.2s
DIV **Divide** 89.06 16 *eP* P 07 27 50.4 0.0
comp=Z,29nm,0.9s
W18A **Petrified Fore** 89.08 51 P P 07 27 52.5 +1.2
baz=240
W18A **Petrified Fore** 89.08 51 *eP* P 07 27 52.8 +1.4
comp=Z,51nm,1.3s
MSU **Marysvale** 89.12 47 *eP* P 07 27 53.3 +1.8
MSU **Marysvale** 89.12 47 *eP* P 07 27 53.3 +1.8
PPLA **Purkeypile** 89.14 13 *eP* P 07 27 50.0 -0.9
comp=Z,27nm,1.5s
C06D **Leavenworth** 89.16 36 P P 07 27 51.9 +0.7
baz=232
B06A **Marblemount** 89.21 35 *eP* P 07 27 52.4 +1.0
comp=Z,30nm,0.8s
BMRM **Bremner River** 89.22 17 *eP* P 07 27 52.0 +0.8
comp=Z,51nm,1.1s
121A **Cookes Peak, D** 89.24 54 P P 07 27 53.9 +1.7
baz=241
121A **Cookes Peak, D** 89.24 54 *eP* P 07 27 53.8 +1.7
comp=Z,45nm,1.1s
ETW **Entiat** 89.27 36 P P 07 27 53.1 +1.3
CMAI **Chiengmai2** 89.27 292 P P 07 27 53.7 +1.1
SCM **Sheep Creek Mo** 89.28 15 *eP* P 07 27 51.8 +0.3
SCM pmax pmax
comp=Z,50nm,0.9s
SCM **Sheep Creek Mo** 89.28 15 *eP* P 07 27 51.8 +0.3
comp=Z,50nm,0.9s
KLU **Klutina** 89.33 16 *eP* P 07 27 52.4 +0.7
comp=Z,18nm,1.0s
BMO **Blue Mountains** 89.35 40 *eP* P 07 27 53.7 +1.4
comp=Z,54nm,1.6s
MFID **Camas Ranch** 89.42 41 *eP* P 07 27 54.0 +1.3
comp=Z,43nm,1.0s
CRQM **Cirque** 89.44 17 *eP* P 07 27 53.8 +1.4
comp=Z,42nm,1.1s
WTV **Waterville** 89.53 36 P P 07 27 54.1 +1.1
DHAK **Deception Hill** 89.56 20 *eP* P 07 27 54.0 +1.2
comp=Z,36nm,1.0s
DUG **Dugway, Tooele** 89.58 45 P P 07 27 54.2 +0.7
baz=238,SNR=11
DUG **Dugway, Tooele** 89.58 45 *eP* P 07 27 54.7 +1.2
DUG pmax pmax
comp=Z,31nm,1.2s
DUG **Dugway, Tooele** 89.58 45 *eP* P 07 27 54.7 +1.2
comp=Z,31nm,1.2s
WRAK **Wrangell Islan** 89.59 25 *eP* P 07 27 54.2 +1.2
comp=Z,33nm,0.8s
CAST **Castle Rocks** 89.64 12 *eP* P 07 27 52.4 -0.6
comp=Z,31nm,0.9s
HHC **Hu-ho-hao-te** 89.69 315 *eP* P 07 27 55.0 +1.1
HHC SKS **SKSac** 07 37 29.4 -2.8
HHC S **ScS** 07 38 02.3 +0.5
HHC pmax pmax
comp=Z,30nm,1.3s
HHC pmax pmax
comp=Z,240nm,8.0s
D08A **Wollman Farm,** 89.71 37 *eP* P 07 27 55.2 +1.5
comp=Z,50nm,1.1s
HIA **Hailar** 89.74 326 *ceP* P 07 27 54.9 +1.1
BGU **Big Grassy Mou** 89.82 45 *eP* P 07 27 56.0 +1.3
comp=Z,40nm,1.4s
E09A **Wood Farm, Sta** 89.83 38 *eP* P 07 27 55.5 +1.2
comp=Z,28nm,1.0s
EFI **East Falkland** 89.85 148 *diP* P 07 27 55.1 +0.6
EFI pmax pmax
comp=Z,131nm,0.8s
EFI **East Falkland** 89.85 148 *eP* P 07 27 55.6 +1.1
comp=Z,117nm,0.8s

BALM	**Baldy**	**89.89**	**18**	*e*P		**P**		**07 27 55.4**	**+1.0**
BALM	comp=Z,26nm,0.9s			pmax		pmax			
BALM	**Baldy**	**89.89**	**18**	*e*P		**P**		**07 27 55.4**	**+1.0**
	comp=Z,26nm,0.9s								
NLU	**North Lily Min**	**89.94**	**46**	*e*P		**P**		**07 27 56.6**	**+1.3**
	comp=Z,21nm,1.0s								
KTH	**Kantishna Hill**	**89.99**	**13**	*e*P		**P**		**07 27 55.6**	**+0.8**
	comp=Z,13nm,0.8s								
Q16A	**Castle Valley**	**90.00**	**47**	*e*P		**P**		**07 27 57.6**	**+2.0**
	comp=Z,48nm,0.9s								
TRF	**Thorofare Moun**	**90.03**	**13**	*e*P		**P**		**07 27 54.9**	**-0.2**
	comp=Z,28nm,0.9s								
F10A	**Beach Ranch, E**	**90.04**	**39**	*e*P		**P**		**07 27 55.6**	**+0.2**
	comp=Z,25nm,0.8s								
TLIG	**Tlapa**	**90.07**	**71**	*e*P		**P**		**07 27 57.6**	**+1.4**
	comp=Z,62nm,0.9s								
TMUT	**Trail Mountain**	**90.17**	**47**	*e*P		**P**		**07 27 58.1**	**+1.6**
	comp=Z,94nm,0.8s								
B08A	**Colville Reser**	**90.25**	**36**	*e*P		**P**		**07 27 57.0**	**+0.7**
	comp=Z,23nm,1.0s								
LLLB	**Lillooet**	**90.29**	**33**	*e*P		**P**		**07 27 57.1**	**+0.7**
	comp=Z,21nm,1.1s								
RND	**Reindeer**	**90.30**	**14**	*e*P		**P**		**07 27 56.5**	**+0.3**
RND				pmax		pmax			
	comp=Z,41nm,1.0s								
RND	**Reindeer**	**90.30**	**14**	*e*P		**P**		**07 27 56.5**	**+0.3**
	comp=Z,41nm,1.0s								
CD2	**Chengdu**	**90.30**	**304**	P		**P**		**07 27 56.4**	**-0.5**
CD2				pP		pP		07 29 55.8	-1.5
CD2				sP		sP		07 30 50.8	-1.6
CD2				SKS		**SKSac**		**07 37 35.3**	**-0.7**
CD2				S		**S**		**07 38 05.3**	**+0.3**
CD2				sS		sS		07 41 39.8	-0.3
CD2				SS		**SS**		**07 44 24.0**	**+1.8**
CD2				pmax		pmax			
	comp=Z,10.0nm,0.5s								
CD2				pmax		pmax			
	comp=Z,120nm,5.6s								
DHY	**Denali Highway**	**90.34**	**15**	*e*P		**P**		**07 27 56.8**	**+0.3**
	comp=Z,54nm,1.8s								
HLID	**Hailey**	**90.36**	**42**	P		**P**		**07 27 58.5**	**+1.4**
	baz=237,SNR=18								
HLID	**Hailey**	**90.36**	**42**	*e*P		**P**		**07 27 58.2**	**+1.2**
	comp=Z,26nm,1.4s								
SPUT	**South Promonto**	**90.40**	**44**	*e*P		**P**		**07 27 58.8**	**+1.5**
	comp=Z,60nm,1.1s								
HVU	**Hansel Valley**	**90.43**	**44**	*e*P		**P**		**07 27 58.9**	**+1.4**
HVU				pmax		pmax			
	comp=Z,45nm,0.8s								
HVU	**Hansel Valley**	**90.43**	**44**	*e*P		**P**		**07 27 58.9**	**+1.4**
	comp=Z,45nm,0.8s								
BPAW	**Bear Paw Mtn.**	**90.47**	**13**	*e*P		**P**		**07 27 58.5**	**+1.6**
	comp=Z,22nm,1.4s								
C09A	**Chrisman Ranch**	**90.50**	**37**	*e*P		**P**		**07 27 58.6**	**+1.2**
	comp=Z,34nm,1.4s								
CTU	**Camp Tracy**	**90.53**	**45**	*e*P		**P**		**07 27 59.2**	**+1.3**
	comp=Z,127nm,0.9s								
SRU	**San Rafael Swe**	**90.53**	**47**	*e*P		**P**		**07 27 59.4**	**+1.4**
SRU				pmax		pmax			
	comp=Z,73nm,0.8s								
SRU	**San Rafael Swe**	**90.53**	**47**	*e*P		**P**		**07 27 59.4**	**+1.4**
	comp=Z,73nm,0.8s								
MCK	**McKinley**	**90.57**	**14**	*e*P		**P**		**07 27 58.5**	**+1.1**
MCK				pmax		pmax			
	comp=Z,27nm,1.2s								
MCK	**McKinley**	**90.57**	**14**	*e*P		**P**		**07 27 58.5**	**+1.1**
	comp=Z,26nm,1.2s								
P17A	**Butcher Ranch,**	**90.57**	**47**	*e*P		**P**		**07 27 59.8**	**+1.6**
	comp=Z,58nm,1.2s								
LAZ	**Ladron**	**90.61**	**53**	*e*P		**P**		**07 27 59.9**	**+1.4**
MNTX	**Cornudas Mount**	**90.65**	**56**	P		**P**		**07 27 59.8**	**+1.3**
	baz=242								
MNTX	**Cornudas Mount**	**90.65**	**56**	*e*P		**P**		**07 27 59.7**	**+1.2**
	comp=Z,37nm,0.9s								
JLU	**Jordanelle**	**90.68**	**45**	*e*P		**P**		**07 28 00.1**	**+1.4**
	comp=Z,37nm,1.1s								
BNM	**Barren Site**	**90.86**	**53**	*e*P		**P**		**07 28 00.9**	**+1.2**
TX31	**Lajitas Ar. Si**	**90.90**	**58**	*e*P		**P**		**07 28 01.6**	**+1.8**
TXAR	**Lajitas Array**	**90.90**	**58**	P		**P**		**07 28 01.0**	**+1.2**
	comp=Z,24nm,0.8s,baz=212,slow=6.6,SNR=126								
TXAR				pP		**pP**		**07 30 01.9**	**+1.6**
	comp=Z,0.7nm,1.0s,baz=37,slow=25,SNR=1.6								
TXAR				PKKPbc		**PKKPbc**		**07 45 22.6**	**+1.0**
	comp=Z,3.1nm,0.8s,baz=90,slow=3.8,SNR=11								
TXAR				PKPPKP		**P'P'df**		**07 53 30.8**	**+0.1**
	comp=Z,0.7nm,1.0s,baz=67,slow=3.3,SNR=3.7								
LPM	**Los Pinos Moun**	**90.93**	**53**	*e*P		**P**		**07 28 01.5**	**+1.5**
TCUT	**Toone Canyon**	**90.97**	**45**	*e*P		**P**		**07 28 01.7**	**+1.7**
	comp=Z,103nm,1.0s								
P18A	**Preston Nutter**	**90.98**	**47**	*e*P		**P**		**07 28 01.6**	**+1.3**
	comp=Z,27nm,0.9s								
MVCO	**Mesa Verde**	**90.98**	**50**	P		**P**		**07 28 00.8**	**+0.6**
	baz=241								
MVCO	**Mesa Verde**	**90.98**	**50**	*e*P		**P**		**07 28 01.3**	**+1.1**
	comp=Z,5.9nm,0.8s								
PV05	**Paradox Valley**	**90.99**	**49**	*e*P		**P**		**07 28 01.8**	**+1.6**
MENT	**Mentasta**	**91.11**	**16**	*e*P		**P**		**07 28 00.3**	**+0.4**
	comp=Z,13nm,0.8s								
HWUT	**Hardware Ranch**	**91.12**	**45**	*e*P		**P**		**07 28 01.6**	**+1.0**
	comp=Z,17nm,0.8s								
HYT	**Haines Junctio**	**91.14**	**20**	*e*P		**P**		**07 28 01.8**	**+1.6**
	comp=Z,10nm,1.1s								
PV09	**Paradox Valley**	**91.17**	**48**	*e*P		**P**		**07 28 01.9**	**+0.8**
PV10	**Paradox Valley**	**91.18**	**48**	*e*P		**P**		**07 28 01.7**	**+0.6**
PV04	**Paradox Valley**	**91.28**	**48**	*e*P		**P**		**07 28 02.3**	**+0.8**
MLY	**Manley**	**91.34**	**12**	*e*P		**P**		**07 28 00.4**	**-0.5**
	comp=Z,9.0nm,1.1s								
ANMO	**Albuquerque**	**91.36**	**52**	P		**P**		**07 28 02.6**	**+0.7**
	baz=242								
ANMO	**Albuquerque**	**91.36**	**52**	*d iP*		**P**		**07 28 02.5**	**+0.6**
ANMO				pmax		pmax			
	comp=Z,34nm,1.2s								
ANMO	**Albuquerque**	**91.36**	**52**	*e*P		**P**		**07 28 02.7**	**+0.7**
	comp=Z,29nm,1.1s								
PV01	**Paradox Valley**	**91.38**	**49**	*e*P		**P**		**07 28 03.0**	**+1.0**
WRH	**Wood River Hil**	**91.39**	**14**	*e*P		**P**		**07 28 00.7**	**-0.4**
	comp=Z,39nm,1.4s								
NEW	**Newport**	**91.40**	**37**	P		**P**		**07 28 02.1**	**+0.6**
	comp=Z,3.1nm,0.7s,baz=135,slow=4.3,SNR=3.2								
NEW				PKKPbc		**PKKPbc**		**07 45 20.1**	**-1.0**
	comp=Z,1.2nm,0.5s,baz=64,slow=8.5,SNR=3.4								
NEW	**Newport**	**91.40**	**37**	P		**P**		**07 28 01.9**	**+0.3**
	baz=235								
NEW	**Newport**	**91.40**	**37**	*e*P		**P**		**07 28 02.0**	**+0.4**
NEW				pmax		pmax			
	comp=Z,17nm,1.6s								
NEW	**Newport**	**91.40**	**37**	*e*P		**P**		**07 28 02.0**	**+0.4**
	comp=Z,17nm,1.6s								
NEW				PKKPbc		**PKKPbc**		**07 45 20.1**	**-1.0**
HDA	**Harding Lake**	**91.59**	**14**	*e*P		**P**		**07 28 01.6**	**-0.4**
	comp=Z,11nm,0.6s								
CCB	**Clear Creek Bu**	**91.61**	**14**	*e*P		**P**		**07 28 01.4**	**-0.6**
	comp=Z,20nm,1.1s								
DOT	**Dot Lake**	**91.62**	**15**	*e*P		**P**		**07 28 02.3**	**+0.1**
	comp=Z,62nm,0.8s								
MDM	**Murphy Dome**	**91.79**	**13**	*e*P		**P**		**07 28 03.0**	**0.0**
	comp=Z,24nm,1.0s								
COLA	**College**	**91.80**	**13**	*e*P		**P**		**07 28 02.7**	**-0.2**
COLA				pmax		pmax			
	comp=Z,29nm,1.0s								
COLA	**College**	**91.80**	**13**	*e*P		**P**		**07 28 02.7**	**-0.2**
	comp=Z,29nm,1.0s								
BILL	**Bilibino**	**91.87**	**355**	*e*P		**P**		**07 28 04.2**	**+1.0**
BILL				*e**PP		**pP**		**07 30 04.9**	**+1.1**
BILL				*e*				07 31 50.5	
BILL				pmax		pmax			
	comp=Z,22nm,0.9s								
ILAR	**Eielson Array**	**91.92**	**14**	P		**P**		**07 28 02.8**	**-0.7**
	comp=Z,3.7nm,0.8s,baz=226,slow=4.8,SNR=38								
ILAR				pP		**pP**		**07 30 05.2**	**+1.1**
	comp=Z,12nm,1.0s,baz=228,slow=5.4,SNR=21								
ILAR				PP		**PP**		**07 31 47.8**	**-5.2**
	comp=Z,7.2nm,1.2s,baz=223,slow=7.1,SNR=7.2								
ILAR				PKiKP		**PKiKP**		**07 32 49.5**	**-0.5**
	comp=Z,0.6nm,0.5s,baz=215,slow=4.5,SNR=7.5								
ILAR				S		**SKSac**		**07 37 42.4**	**-1.0**
	comp=Z,0.6nm,1.0s,baz=191,slow=3.6,SNR=5.3								
ILAR				PKKP		**PKKPdf**		**07 45 16.9**	**-0.8**
	comp=Z,1.5nm,0.9s,baz=2.6,slow=2.9,SNR=8.3								
ILAR				PKPPKP		**P'P'df**		**07 53 24.0**	**-1.8**
	comp=Z,0.9nm,1.0s,baz=347,slow=2.6,SNR=6.5								
ILB	**Eielson Array**	**91.92**	**14**	*e*P		**P**		**07 28 02.8**	**-0.7**
IL1	**Eielson Array**	**91.92**	**14**	*e*P		**P**		**07 28 02.8**	**-0.7**
DLBC	**Dease Lake**	**91.92**	**24**	P		**P**		**07 28 04.8**	**+1.0**
	comp=Z,2.9nm,0.8s,baz=238,slow=6.6,SNR=4.2								
DLBC				pP		**pP**		**07 30 09.1**	**+4.8**
	comp=Z,2.8nm,1.0s,baz=217,slow=7.0,SNR=3.9								
DLBC				PP		**PP**		**07 31 51.9**	**-1.5**
	comp=Z,1.6nm,0.4s,baz=11,slow=26,SNR=5.0								
DLBC	**Dease Lake**	**91.92**	**24**	*e*P		**P**		**07 28 04.0**	**+0.2**
	comp=Z,23nm,1.6s								
DLBC				pP		**pP**		**07 30 09.1**	**+4.8**
DLBC				PP		**PP**		**07 31 51.9**	**-1.5**
MCMT	**McKenzie Canyo**	**91.99**	**41**	*e*P		**P**		**07 28 06.0**	**+1.4**
AHID	**Auburn Hatcher**	**92.01**	**44**	*e*P		**P**		**07 28 05.6**	**+0.9**
	comp=Z,25nm,1.1s								
S22A	**4UR Ranch, Cre**	**92.40**	**50**	P		**P**		**07 28 07.6**	**+0.8**
	baz=242,SNR=25								
S22A	**4UR Ranch, Cre**	**92.40**	**50**	*e*P		**P**		**07 28 07.8**	**+1.0**
	comp=Z,39nm,1.1s								
MSO	**Missoula**	**92.41**	**39**	*e*P		**P**		**07 28 07.4**	**+1.0**
	comp=Z,24nm,2.0s								
REDW	**Red Top Meadow**	**92.47**	**43**	*e*P		**P**		**07 28 07.6**	**+0.7**
	comp=Z,18nm,1.1s								
TPAW	**Teton Pass**	**92.47**	**43**	*e*P		**P**		**07 28 08.2**	**+1.3**
	comp=Z,8.6nm,1.1s								
BSMT	**Bassoo Peak**	**92.47**	**38**	*e*P		**P**		**07 28 07.5**	**+0.8**
O20A	**White River Ci**	**92.57**	**47**	P		**P**		**07 28 08.2**	**+0.8**
	baz=241,SNR=9.7								
O20A	**White River Ci**	**92.57**	**47**	*e*P		**P**		**07 28 08.4**	**+1.0**
	comp=Z,19nm,0.9s								
SNOW	**Snow King Moun**	**92.58**	**43**	*e*P		**P**		**07 28 08.8**	**+1.4**
	comp=Z,31nm,1.5s								
LZH	**Lanzhou**	**92.61**	**308**	⇑P		**P**		**07 28 09.4**	**+1.8**
LZH				pP		pP		07 30 09.8	+1.6
LZH				sP		sP		07 31 04.1	+0.9
LZH				SKS		**SKSac**		**07 37 50.0**	**+1.1**
LZH				*e*S		**ScS**		**07 38 26.0**	**-0.5**
LZH				sS		sS		07 41 58.9	-3.0
LZH				pmax		pmax			
	comp=Z,50nm,1.0s								
LZH				pmax		pmax			
	comp=Z,150nm,4.0s								
IMW	**Indian Meadow**	**92.68**	**43**	*e*P		**P**		**07 28 09.4**	**+1.5**
	comp=Z,9.7nm,1.0s								
LOHW	**Long Hollow**	**92.75**	**43**	*e*P		**P**		**07 28 09.3**	**+1.2**
	comp=Z,17nm,1.5s								
LRM	**Limekiln Ridge**	**92.75**	**41**	*e*P		**P**		**07 28 08.9**	**+0.8**
CHMT	**Chamberlain Mo**	**92.85**	**39**	*e*P		**P**		**07 28 08.9**	**+0.4**
QLMT	**Earthquake Lak**	**92.85**	**42**	*e*P		**P**		**07 28 10.4**	**+1.8**
SLMT	**Seeley Lake**	**92.88**	**39**	*e*P		**P**		**07 28 08.6**	**0.0**
YHB	**Horse Butte**	**92.96**	**42**	*e*P		**P**		**07 28 08.8**	**-0.3**
	comp=Z,29nm,1.6s								
SMCO	**Snowmass**	**92.98**	**48**	*e*P		**P**		**07 28 10.6**	**+1.1**
	comp=Z,14nm,0.9s								
BW06	**Boulder Array**	**92.99**	**44**	P		**P**		**07 28 09.3**	**0.0**
	baz=240								
BW06	**Boulder Array**	**92.99**	**44**	*e*P		**P**		**07 28 09.9**	**+0.6**
	comp=Z,7.6nm,1.0s								
PD31	**Pinedale Array**	**92.99**	**44**	*e*P		**P**		**07 28 09.9**	**+0.6**
PDAR	**Pinedale Array**	**92.99**	**44**	P		**P**		**07 28 09.3**	**+0.1**
	comp=Z,4.8nm,0.7s,baz=202,slow=3.0,SNR=24								
PDAR				pP		**pP**		**07 30 10.7**	**+0.8**
	comp=Z,1.0nm,0.8s,baz=222,slow=2.0,SNR=2.7								
PDAR				S		**SKSac**		**07 37 51.9**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=140,slow=51,SNR=2.2								
PDAR				PKKP		**PKKPdf**		**07 45 15.2**	**0.0**
	comp=Z,1.0nm,0.7s,baz=84,slow=5.9,SNR=10								
PDAR				PKPPKP		**P'P'df**		**07 53 23.0**	**-2.9**
	comp=Z,0.8nm,1.0s,baz=75,slow=1.7,SNR=4.2								
CMIG	**Matias Romero**	**93.09**	**73**	P		**P**		**07 28 11.2**	**+1.3**
	comp=Z,12nm,1.0s,baz=253,slow=4.1,SNR=7.0								
BOZ	**Bozeman (W)**	**93.12**	**41**	P		**P**		**07 28 10.5**	**+0.7**
	baz=239,SNR=8.6								
BOZ	**Bozeman (W)**	**93.12**	**41**	*e*P		**P**		**07 28 10.8**	**+1.1**
BOZ				pmax		pmax			
	comp=Z,8.0nm,0.9s								
BOZ	**Bozeman (W)**	**93.12**	**41**	*e*P		**P**		**07 28 10.8**	**+1.1**
	comp=Z,7.9nm,0.9s								
DAWY	**Dawson**	**93.16**	**17**	*e*P		**P**		**07 28 09.7**	**+0.4**
	comp=Z,14nm,0.8s								
H17A	**Grant Village**	**93.16**	**43**	P		**P**		**07 28 11.8**	**+1.8**
	baz=240								
H17A	**Grant Village**	**93.16**	**43**	*e*P		**P**		**07 28 11.0**	**+0.9**
	comp=Z,6.2nm,0.8s								
YHH	**Holmes Hill**	**93.19**	**42**	*e*P		**P**		**07 28 10.8**	**+0.5**
	comp=Z,6.6nm,0.9s								
EGAK	**Eagle**	**93.27**	**16**	*e*P		**P**		**07 28 09.9**	**+0.2**
	comp=Z,14nm,0.8s								
SDCO	**Great Sand Dun**	**93.34**	**50**	P		**P**		**07 28 11.5**	**+0.4**
	baz=243,SNR=22								
SDCO	**Great Sand Dun**	**93.34**	**50**	*e*P		**P**		**07 28 12.0**	**+0.9**
	comp=Z,16nm,0.9s								
832A	**Faith Ranch, C**	**93.37**	**61**	P		**P**		**07 28 11.5**	**+0.5**
	baz=245,SNR=14								
COLD	**Coldfoot**	**93.40**	**11**	*e*P		**P**		**07 28 10.4**	**+0.1**
	comp=Z,9.2nm,1.1s								
HRY	**Holter Researc**	**93.58**	**40**	*e*P		**P**		**07 28 12.0**	**+0.3**
WALA	**Waterton Lakes**	**93.61**	**37**	*e*P		**P**		**07 28 13.0**	**+1.2**
	comp=Z,16nm,1.3s								
MSTX	**Muleshoe**	**93.63**	**55**	P		**P**		**07 28 12.4**	**+0.1**
	baz=244,SNR=8.9								
MSTX	**Muleshoe**	**93.63**	**55**	*e*P		**P**		**07 28 13.1**	**+0.8**
	comp=Z,24nm,1.1s								
933A	**Lado**	**93.65**	**62**	P		**P**		**07 28 13.3**	**+0.9**
	baz=245,SNR=9.9								
FYU	**Fort Yukon**	**93.81**	**13**	*e*P		**P**		**07 28 13.7**	**+1.6**
	comp=Z,19nm,1.4s								
T25A	**Trinidad**	**93.83**	**51**	P		**P**		**07 28 13.6**	**+0.3**
	baz=243,SNR=5.3								
T25A	**Trinidad**	**93.83**	**51**	*e*P		**P**		**07 28 14.1**	**+0.9**
	comp=Z,13nm,0.9s								
833A	**Chaparral WMA,**	**93.85**	**61**	P		**P**		**07 28 13.6**	**+0.4**
	baz=245								
034A	**Hebbronville**	**93.90**	**62**	P		**P**		**07 28 15.0**	**+1.5**
	baz=246,SNR=14								
YAK	**Yakutsk**	**94.03**	**339**	P		**P**		**07 28 13.7**	**+0.5**
	comp=Z,20nm,0.3s,baz=31,slow=2.0,SNR=2.6								
YAK	**Yakutsk**	**94.03**	**339**	*e*P		**P**		**07 28 13.8**	**+0.6**
YAK				pmax		pmax			
	comp=Z,13nm,0.5s								
733A	**Divot King Ran**	**94.09**	**61**	P		**P**		**07 28 15.0**	**+0.7**
	baz=245								
Q24A	**Divide**	**94.14**	**49**	P		**P**		**07 28 15.5**	**+0.8**
	baz=243,SNR=6.1								
Q24A	**Divide**	**94.14**	**49**	*e*P		**P**		**07 28 15.9**	**+1.2**
	comp=Z,18nm,1.0s								
035Z	**Hargill**	**94.16**	**63**	P		**P**		**07 28 15.5**	**+0.9**
	baz=246								
ISCO	**Idaho Springs**	**94.20**	**48**	P		**P**		**07 28 15.6**	**+0.6**
	baz=243								
ISCO	**Idaho Springs**	**94.20**	**48**	*e*P		**P**		**07 28 16.1**	**+1.1**
ISCO				pmax		pmax			
	comp=Z,4.0nm,0.9s								
ISCO	**Idaho Springs**	**94.20**	**48**	*e*P		**P**		**07 28 16.1**	**+1.1**
	comp=Z,3.9nm,0.9s								
934A	**Benavides**	**94.26**	**62**	P		**P**		**07 28 16.6**	**+1.5**
	baz=246								
035A	**Encino**	**94.32**	**63**	P		**P**		**07 28 16.7**	**+1.3**
	baz=246								
RLMT	**Red Lodge**	**94.33**	**42**	P		**P**		**07 28 16.0**	**+0.7**
	baz=241								
RLMT	**Red Lodge**	**94.33**	**42**	*e*P		**P**		**07 28 16.2**	**+0.9**
	comp=Z,18nm,1.7s								
JCT	**Junction City**	**94.42**	**59**	P		**P**		**07 28 16.2**	**+0.4**
	baz=245								
JCT	**Junction City**	**94.42**	**59**	*e*P		**P**		**07 28 16.1**	**+0.2**
JCT				pmax		pmax			
	comp=Z,45nm,1.9s								
JCT	**Junction City**	**94.42**	**59**	*e*P		**P**		**07 28 16.1**	**+0.2**
	comp=Z,45nm,1.9s								
834A	**Tilden**	**94.44**	**61**	P		**P**		**07 28 17.1**	**+1.2**
	baz=246,SNR=5.6								
N23A	**Red Feather La**	**94.47**	**47**	P		**P**		**07 28 16.8**	**+0.6**
	baz=243								
N23A	**Red Feather La**	**94.47**	**47**	*e*P		**P**		**07 28 16.4**	**+0.3**
	comp=Z,11nm,1.1s								
633A	**Saathoff Ranch**	**94.49**	**60**	P		**P**		**07 28 17.1**	**+0.9**
	baz=245,SNR=5.8								
734A	**La Parita Cree**	**94.73**	**61**	P		**P**		**07 28 18.0**	**+0.8**
	baz=246								
LCO	**Las Campanas**	**94.83**	**124**	*e*P		**P**		**07 28 19.0**	**+0.9**
	comp=Z,54nm,0.8s								
AMTX	**Amarillo**	**94.84**	**54**	P		**P**		**07 28 17.9**	**+0.2**
	baz=245								
AMTX	**Amarillo**	**94.84**	**54**	*e*P		**P**		**07 28 18.3**	**+0.6**
	comp=Z,33nm,2.0s								
533A	**Kerrville**	**94.86**	**59**	P		**P**		**07 28 18.2**	**+0.4**
	baz=246,SNR=16								
K22A	**Casper**	**94.90**	**45**	P		**P**		**07 28 18.1**	**+0.2**
	baz=242								
K22A	**Casper**	**94.90**	**45**	*e*P		**P**		**07 28 18.2**	**+0.3**
	comp=Z,9.9nm,1.3s								
835A	**Beeville**	**95.09**	**61**	P		**P**		**07 28 20.1**	**+1.2**
	baz=246								
433A	**Art**	**95.09**	**59**	P		**P**		**07 28 19.0**	**+0.2**
	baz=246,SNR=13								
634A	**China Grove, S**	**95.12**	**60**	P		**P**		**07 28 19.7**	**+0.8**
	baz=246								
534A	**Blanco**	**95.28**	**60**	P		**P**		**07 28 19.8**	**0.0**
	baz=246,SNR=13								
735A	**Kenedy**	**95.34**	**61**	P		**P**		**07 28 21.1**	**+1.1**
	baz=246								
333A	**Richland Sprin**	**95.41**	**58**	P		**P**		**07 28 20.6**	**+0.3**
	baz=246								
ABTX	**Abilene, Hawle**	**95.43**	**57**	P		**P**		**07 28 20.7**	**+0.3**
	baz=246,SNR=6.2								
ABTX	**Abilene, Hawle**	**95.43**	**57**	*e*P		**P**		**07 28 21.2**	**+0.9**
	comp=Z,16nm,1.0s								
EGMT	**Eagleton**	**95.46**	**40**	P		**P**		**07 28 21.7**	**+1.5**
	baz=241								
635A	**Leesville**	**95.58**	**61**	P		**P**		**07 28 21.8**	**+0.7**
	baz=246								
233A	**Rising Star**	**95.76**	**58**	P		**P**		**07 28 22.3**	**+0.4**
	baz=246								
434A	**Burnet**	**95.76**	**59**	P		**P**		**07 28 22.0**	**+0.1**
	baz=246,SNR=5.2								
KSCO	**Kaye Shedlock'**	**95.92**	**50**	P		**P**		**07 28 23.2**	**+0.6**
	baz=244								
KSCO	**Kaye Shedlock'**	**95.92**	**50**	*e*P		**P**		**07 28 23.8**	**+1.2**
	comp=Z,36nm,1.0s								
736A	**Circle Diamond**	**95.97**	**61**	P		**P**		**07 28 23.6**	**+0.8**
	baz=246								
133A	**Hamilton Ranch**	**95.99**	**57**	P		**P**		**07 28 23.1**	**+0.3**
	baz=246								
334A	**Lometa**	**96.00**	**59**	P		**P**		**07 28 23.4**	**+0.5**
	baz=246,SNR=5.7								
535A	**Dale**	**96.00**	**60**	P		**P**		**07 28 23.5**	**+0.5**
	baz=246								
TRQA	**Tornquist**	**96.01**	**136**	*e*P		**P**		**07 28 23.6**	**+0.6**
	comp=Z,31nm,1.4s								
636A	**Smothers Creek**	**96.19**	**61**	P		**P**		**07 28 24.1**	**+0.3**
	baz=246								
435B	**Jarrell**	**96.29**	**59**	Pdiff		**P**		**07 28 24.5**	**+0.2**
	baz=246								
234A	**Clairette**	**96.34**	**58**	Pdiff		**P**		**07 28 24.6**	**+0.2**
	baz=246								
Z33A	**Whitaker Ranch**	**96.38**	**57**	Pdiff		**P**		**07 28 25.1**	**+0.5**
	baz=246								
SONA1	**Songino Array**	**96.40**	**320**	*e*P		**P**		**07 28 24.2**	**-0.3**
SONM	**Songino Array**	**96.40**	**320**	P		**P**		**07 28 24.2**	**-0.3**
	comp=Z,4.2nm,1.0s,baz=134,slow=5.2,SNR=13								
SONM				pP		**pP**		**07 30 28.1**	**+2.6**
	comp=Z,2.1nm,1.1s,baz=155,slow=3.4,SNR=3.5								
SONM				PP		**PP**		**07 32 23.1**	**-4.8**
	comp=Z,1.2nm,0.9s,baz=120,slow=5.0,SNR=3.8								
SONM				S		**SKSac**		**07 38 07.7**	**-0.6**
	comp=Z,0.2nm,0.4s,baz=12,slow=7.7,SNR=4.0								
SONM				PKKPbc		**PKKPbc**		**07 45 06.8**	**-1.2**
	comp=Z,5.5nm,0.9s,baz=278,slow=3.0,SNR=18								
SONM				PKKPab		PKKPab		07 45 42.2	
	comp=Z,3.2nm,0.9s,baz=286,slow=4.6,SNR=10								
SONM				PKPPKP		**P'P'df**		**07 53 18.4**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=236,slow=1.6,SNR=4.2								
536A	**Bastrop**	**96.42**	**60**	Pdiff		**P**		**07 28 25.6**	**+0.8**
	baz=246								
X32A	**Elmer**	**96.44**	**55**	Pdiff		**P**		**07 28 25.2**	**+0.3**
	baz=246								
335A	**Moody**	**96.61**	**59**	Pdiff	

comp=Z,0.7nm,0.7s,baz=236,slow=4.4,SNR=2.7
YKA pP pP 07 30 45.8 +2.7
comp=Z,0.7nm,0.7s,baz=233,slow=4.9,SNR=2.2
YKA PKiKP **PKiKP** **07 33 04.4 -0.6**
comp=Z,1.0nm,0.6s,baz=240,slow=1.4,SNR=8.8
YKA PKKPbc **PKKPbc** **07 44 54.2 -3.0**
comp=Z,1.8nm,0.6s,baz=45,slow=2.4,SNR=13
YKA PKKPab PKKPab 07 45 21.3
comp=Z,2.5nm,0.8s,baz=56,slow=4.9,SNR=7.3
PALK Pallekele 100.63 273 PKKPbc PKKPbc 07 44 53.4 -1.7
comp=Z,6.3nm,0.9s,baz=119,slow=2.1,SNR=2.5
T38A Diamond 101.19 55 Pdiff **Pdif** **07 28 47.1 +1.2**
baz=249
U39A Green Forest 101.57 55 Pdiff **Pdif** **07 28 48.4 +0.7**
baz=249
P37A Lathrop 102.06 52 Pdiff **Pdif** **07 28 51.0 +1.3**
baz=249
W41B Gary Mavity, V 102.09 57 Pdiff **Pdif** **07 28 50.4 +0.5**
baz=250
A29A Manning Farm, 102.16 42 Pdiff **Pdif** **07 28 51.0 +1.1**
baz=248
346A Big Creek Wild 102.98 61 Pdiff **Pdif** **07 28 55.1 +1.1**
baz=250
I35A Creekview Farm 103.09 48 Pdiff **Pdif** **07 28 55.3 +1.0**
baz=250
P39B Salisbury 103.18 53 Pdiff **Pdif** **07 28 55.5 +0.8**
baz=250
LPAZ La Paz 103.22 114 Pdiff **Pdif** **07 29 00.1 +3.9**
comp=Z,3.0nm,0.9s,baz=236,slow=5.1,SNR=11
LPAZ PKiKP **PKiKP** **07 33 12.2 -0.1**
comp=Z,1.4nm,0.9s,baz=66,slow=5.0,SNR=4.3
LPAZ PP **PP** **07 33 19.7 +0.2**
comp=Z,7.1nm,1.4s,baz=225,slow=4.8,SNR=4.6
LPAZ PKKPbc **PKKPbc** **07 44 48.2 -0.5**
comp=Z,0.8nm,0.9s,baz=42,slow=16,SNR=3.8
D33A AnnSam, Wauburn 103.64 44 Pdiff **Pdif** **07 28 57.4 +0.8**
baz=250
ULM Lac du Bonnet 104.67 41 PKiKP **PKiKP** **07 33 14.7 +1.6**
comp=Z,2.8nm,0.5s,baz=232,slow=1.1,SNR=6.8
B34A Aery, Baudette 104.85 43 PKiKP **PKiKP** **07 33 12.8 -0.7**
baz=251
Y47A UCPARC, Winfie 105.09 59 PKiKP **PKiKP** **07 33 13.1 -1.3**
baz=252
E36A McGregor 105.12 46 PKiKP **PKiKP** **07 33 13.3 -0.8**
baz=252
Z48A Northport 105.16 60 PKiKP **PKiKP** **07 33 13.3 -1.2**
baz=252
J39A Decorah 105.17 49 PKiKP **PKiKP** **07 33 13.1 -1.2**
baz=252
D36A Goodland 105.39 45 PKiKP **PKiKP** **07 33 13.6 -1.0**
baz=252
B35A Bob, Littlefor 105.39 44 PKiKP **PKiKP** **07 33 13.4 -1.2**
baz=252
D37A Cotton 105.86 45 PKiKP **PKiKP** **07 33 14.8 -0.7**
baz=252
K41A Shullsburg 105.93 50 PKiKP **PKiKP** **07 33 14.9 -0.8**
baz=252
CPUP Villa Florida 106.17 129 Pdiff **Pdif** **07 29 10.2 +1.8**
comp=Z,1.8nm,0.8s,baz=159,slow=4.6,SNR=3.5
CPUP PKiKP **PKiKP** **07 33 16.5 -0.3**
comp=Z,1.1nm,0.8s,baz=236,slow=5.5,SNR=3.0
CPUP PKKPbc **PKKPbc** **07 44 38.4 -1.2**
comp=Z,1.3nm,1.0s,baz=60,slow=4.7,SNR=3.5
CPUP PKKP **PKKPdf** **07 44 51.8 +2.9**
comp=Z,0.9nm,0.6s,baz=24,slow=4.1,SNR=4.6
C37A Embarrass 106.19 45 PKiKP **PKiKP** **07 33 15.2 -0.9**
baz=253
J41A Loganville 106.36 49 PKiKP **PKiKP** **07 33 15.4 -1.1**
baz=253
EYMN Ely 106.70 45 PKiKP **PKiKP** **07 33 16.0 -1.0**
baz=253
C39A Grand Marais 107.54 45 PKiKP **PKiKP** **07 33 17.3 -1.3**
baz=254
TKL Tuckaleechee C 108.81 59 PKiKP **PKiKP** **07 33 20.6 -0.8**
comp=Z,2.5nm,0.6s,baz=181,slow=6.6,SNR=5.7
SIV San Ignacio 109.18 118 PKiKP **PKiKP** **07 33 22.1 -0.6**
comp=Z,3.3nm,1.0s,baz=246,slow=2.5,SNR=4.8
KMSC Kings Mountain 110.60 60 PKiKP **PKiKP** **07 33 24.1 -0.6**
baz=255
ZAA0 Zalesovo Array 111.25 321 *e*PKiKP **PKiKP** **07 33 24.5 -0.8**
ZALV Zalesovo Beam 111.25 321 PKKPbc PKKPbc 07 44 23.1 -0.9
comp=Z,1.3nm,0.6s,baz=283,slow=2.3,SNR=4.4
ZALV PKKPab **PKKPab** **07 44 34.1 +0.7**
comp=Z,1.6nm,0.6s,baz=246,slow=7.4,SNR=4.1
MK01 Makanchi Array 111.40 313 *e*PKiKP **PKiKP** **07 33 25.0 -0.9**
MK31 Makanchi Array 111.41 313 *e*PKiKP **PKiKP** **07 33 25.0 -1.0**
MKAR Makanchi Array 111.41 313 Pdiff **Pdif** **07 29 32.5 +1.3**
comp=Z,0.7nm,0.5s,baz=99,slow=5.5,SNR=5.8
MKAR PKiKP **PKiKP** **07 33 24.8 -1.1**
comp=Z,3.7nm,0.5s,baz=144,slow=0.6,SNR=29
MKAR PKKPbc **PKKPbc** **07 44 23.1 -0.3**
comp=Z,5.1nm,0.8s,baz=260,slow=3.6,SNR=18
MKAR PKKPab **PKKPab** **07 44 34.2 +1.3**
comp=Z,9.3nm,0.7s,baz=275,slow=4.1,SNR=27
MKAR PKPPKP **P'P'df** **07 52 49.9 -0.9**
comp=Z,0.2nm,0.3s,baz=323,slow=1.8,SNR=6.2
RES Resolute Bay 111.49 17 PKiKP **PKiKP** **07 33 24.7 -0.5**
comp=Z,7.4nm,0.8s,baz=209,slow=3.1,SNR=11
RES PKKPab **PKKPab** **07 44 33.4 +1.5**
comp=Z,6.5nm,0.9s,baz=345,slow=21,SNR=3.9
SDV Santo Domingo 111.94 90 Pdiff **Pdif** **07 29 35.1 +0.7**
comp=Z,27nm,0.7s,baz=243,slow=2.4,SNR=2.8
NVS Novosibirsk 112.32 322 *e*PKiKP **PKiKP** **07 33 26.8 -0.5**
NRIK Noril'sk 112.43 337 PKiKP **PKiKP** **07 33 26.5 -0.6**
comp=Z,5.6nm,0.8s,baz=146,slow=2.8,SNR=4.4
NRIK SKiKP **SKiKP** **07 36 12.9 +2.2**
comp=Z,2.0nm,0.6s,baz=95,slow=5.8,SNR=3.8
PDGK Podgornoye 112.65 309 PKiKP **PKiKP** **07 33 27.4 -1.1**
PDGK pmax pmax
comp=Z,12nm,1.0s
N54A Moraine State 112.98 54 PKiKP **PKiKP** **07 33 28.2 -0.9**
baz=258
M54A Oil Creek Stat 113.33 53 PKiKP **PKiKP** **07 33 29.1 -0.7**
baz=258
O56A Blue Knob Stat 113.90 55 PKiKP **PKiKP** **07 33 30.5 -0.4**
baz=259
SADO Sadowa 114.30 50 PKP PKPdf 07 33 30.6 -0.9
comp=Z,2.3nm,0.7s,baz=268,slow=8.8,SNR=6.5
SADO PKKPbc **PKKPbc** **07 44 12.9 -0.7**
comp=Z,2.6nm,0.5s,baz=336,slow=9.7,SNR=4.6
SADO PKKPab **PKKPab** **07 44 20.5 +0.4**
comp=Z,4.8nm,0.8s,baz=88,slow=7.1,SNR=5.4
SADO PKPPKP **P'P'df** **07 52 42.5 -3.0**
comp=Z,1.6nm,0.4s,baz=308,slow=7.8,SNR=3.0
KURK Kurchatov 114.48 317 PKKPbc PKKPbc 07 44 12.3 -0.9
KURK PKKPab **PKKPab** **07 44 20.1 +0.9**
KSH Kashi 114.49 304 PKP PKPdf 07 33 32.5 +0.3
KSH *e*PP **PP** **07 34 42.4 +2.8**
KSH *es*PKP 07 36 30.9
KSH PKS **PKSdf** **07 37 07.4 -1.6**
KSH SKS **SKSdf** **07 39 53.4 +0.8**
KSH SKKS **SKKSac** **07 40 37.9 -5.8**
KSH AMB AMB
comp=Z,160nm,7.0s
KURBB Kurchatov Arra 114.52 317 PKKPbc PKKPbc 07 44 12.3 -0.8
comp=Z,5.9nm,0.8s,baz=279,slow=4.0,SNR=25
KURBB PKKPab **PKKPab** **07 44 20.1 +1.1**
comp=Z,5.2nm,0.8s,baz=275,slow=4.9,SNR=14
TKM2 Tokmak 2 115.38 308 PKIKP **PKPdf** **07 33 32.6 -1.3**
TKM2 pmax pmax
comp=Z,11nm,0.6s
MVL Millersville 115.52 56 *e*PKPdf **PKPdf** **07 33 33.3 -0.7**
PLVO Plevna 115.79 50 *e*PKPdf **PKPdf** **07 33 33.5 -0.9**
FRU Bishkek 116.07 308 *e*PKIKP **PKPdf** **07 33 34.0 -1.0**
N59A State Game Lan 116.11 55 PKiKP **PKPdf** **07 33 34.7 -0.4**
baz=261
AAK Ala-Archa 116.13 307 PKP **PKPdf** **07 33 35.2 -0.1**
comp=Z,5.7nm,0.4s,baz=130,slow=5.4,SNR=9.4
AAK PKKPbc **PKKPbc** **07 44 07.8 +0.2**
comp=Z,12nm,0.9s,baz=222,slow=3.1,SNR=16
AAK Ala-Archa 116.13 307*c* *i*PKIKP **PKPdf** **07 33 35.1 -0.2**
OPO Ambohidratompo 117.15 232 PKP **PKPdf** **07 33 38.4 +0.4**
comp=Z,11nm,0.7s,baz=152,slow=1.7,SNR=13
LONY Lake Ozonia 117.50 51 *e*PKPdf **PKPdf** **07 33 36.6 -1.1**
NCB Newcomb 117.67 51 *e*PKPdf **PKPdf** **07 33 37.1 -0.9**
PTGA Pitinga 117.72 104 PKP **PKPdf** **07 33 38.4 -0.6**
comp=Z,9.7nm,0.7s,baz=254,slow=3.0,SNR=26
PTGA Pitinga 117.72 104 *e*PKPdf **PKPdf** **07 33 38.3 -0.7**
ACCN Adirondack Com 118.01 52 *e*PKPdf **PKPdf** **07 33 37.6 -1.0**
KBL Kabul 119.05 298 *e*PKIKP **PKPdf** **07 33 41.3 +0.1**
KBL Kabul 119.05 298 *e*PKPdf **PKPdf** **07 33 41.3 +0.1**
KK31 Karatay Array 119.10 307 *i* PKIKP **PKPdf** **07 33 40.1 -0.7**
KK31 pmax pmax
comp=Z,15nm,0.6s
KKAR Karatay Array 119.10 307 *e*PKIKP **PKPdf** **07 33 40.1 -0.7**
KKAR Karatay Array 119.10 307 *eP* **PKPdf** **07 33 40.1 -0.7**
SJG San Juan 119.14 82 PKP **PKPdf** **07 33 40.5 -1.0**
comp=Z,23nm,0.5s,baz=82,slow=3.4,SNR=12
VOSK Vostochnaya 119.37 318 PKIKP **PKPdf** **07 33 40.2 -0.8**
VOSK pmax pmax
comp=Z,29nm,0.7s
VOSK Vostochnaya 119.37 318 *e*PKPdf **PKPdf** **07 33 40.1 -0.9**
HUMP Col San Antoni 119.42 82 *e*PKPdf **PKPdf** **07 33 41.2 -0.9**
BDFB Brasilia 119.59 126 PKP **PKPdf** **07 33 43.6 +1.0**
comp=Z,18nm,0.7s
BDFB PKKPab **PKKPbc** **07 43 57.4 +2.0**
BVA0 Borovoye Array 119.73 319 PKIKP **PKPdf** **07 33 40.4 -1.3**
BVA0 pmax pmax
comp=Z,18nm,0.7s
BVAR Borovoye Array 119.73 319 PKP **PKPdf** **07 33 40.9 -0.8**
comp=Z,16nm,0.5s,baz=81,slow=2.0,SNR=70
BVAR PKKPbc **PKKPbc** **07 43 54.7 -0.3**
comp=Z,1.4nm,0.6s,baz=250,slow=7.7,SNR=5.8
BRVK Borovoye 119.79 319 PKIKP **PKPdf** **07 33 40.8 -1.0**
BRVK pmax pmax
comp=Z,24nm,0.9s
BRVK Borovoye 119.79 319 *e*PKPdf **PKPdf** **07 33 41.6 -0.2**
ZRNK Zerenda 120.57 319 PKIKP **PKPdf** **07 33 41.9 -1.4**
ZRNK pmax pmax
comp=Z,23nm,0.7s
ZRNK Zerenda 120.57 319 *e*PKPdf **PKPdf** **07 33 42.3 -1.0**
SUR Sutherland 120.63 201 PKP **PKPdf** **07 33 44.8 +0.4**
comp=Z,0.0nm,0.3s,baz=147,slow=1.8,SNR=6.6
LMQ La Malbaie 120.68 48 *e*PKPdf **PKPdf** **07 33 42.7 -1.0**
FRB Frobisher Bay 120.74 29 PKP **PKPdf** **07 33 42.3 -0.9**
comp=Z,38nm,0.6s,baz=285,slow=2.3,SNR=48
WVL Waterville 121.00 51 *e*PKPdf **PKPdf** **07 33 43.2 -1.2**
KULLO Kullorsuaq 121.29 15 *i* P **PKPdf** **07 33 43.4 -0.6**
comp=Z,36nm,0.7s
KULLO pmax pmax
comp=Z,36nm,0.7s
PKME Peaks-Kenny Pk 121.30 50 *e*PKPdf **PKPdf** **07 33 44.5 -0.4**
SMRT St. Maarten 121.92 83 *e*PKPdf **PKPdf** **07 33 45.3 -1.6**
SVB Belmont 122.10 89 *e*PKPdf **PKPdf** **07 33 45.9 -1.4**
BOSA Boshof 122.33 207 PKP **PKPdf** **07 33 48.0 +0.3**
comp=Z,30nm,0.8s,baz=147,slow=1.8,SNR=40
BOSA PKKPbc **PKKPbc** **07 43 44.6 -1.3**
comp=Z,3.8nm,0.8s,baz=319,slow=4.3,SNR=7.4
EMMW East Machias 122.57 51 *e*PKPdf **PKPdf** **07 33 46.6 -0.7**
GDHS Morne Mazeau, 122.58 85 *e*PKPdf **PKPdf** **07 33 47.3 -1.0**
FDF Fort de France 122.67 87 *e*PKIKP **PKPdf** **07 33 47.9 -0.6**
FDF Fort de France 122.67 87 *e*PKPdf **PKPdf** **07 33 47.9 -0.6**
SCHQ Schefferville 122.71 39 PKP **PKPdf** **07 33 46.7 -0.7**
comp=Z,15nm,0.8s,baz=271,slow=3.7,SNR=14
SCHQ PKKPbc **PKKPab** **07 43 43.3 +0.3**
comp=Z,5.3nm,0.8s,baz=50,slow=0.4,SNR=6.1
ANWB Willy Bob 122.98 84 *e*PKPdf **PKPdf** **07 33 48.0 -0.9**
GGN Saint George 123.02 50 *e*PKPdf **PKPdf** **07 33 47.8 -0.4**
BBSR BB Station 123.62 66 *e*PKPdf **PKPdf** **07 33 49.9 +0.2**
KBS Kingsbay 124.30 357 *e*PKIKP **PKPdf** **07 33 50.1 +0.3**
KBS Kingsbay 124.30 357 *e*PKPdf **PKPdf** **07 33 50.1 +0.3**
LMN Caledonia Moun 124.46 50 *e*PKPdf **PKPdf** **07 33 50.6 -0.4**
SPA0 Spitsbergen Ar 124.77 356 *eP* **PKPdf** **07 33 50.5 -0.2**
SPA0 Spitsbergen Ar 124.77 356 *e*PKPdf **PKPdf** **07 33 50.6 -0.1**
SPITS Spitsbergen Ar 124.77 356 PKP **PKPdf** **07 33 50.5 -0.2**
comp=Z,37nm,0.6s,baz=116,slow=3.8,SNR=59
SPITS SKP 07 36 35.2
comp=Z,20nm,1.1s,baz=150,slow=10,SNR=4.1
SPITS PKKPbc **PKKPab** **07 43 34.7 +1.2**
comp=Z,2.5nm,0.4s,baz=167,slow=7.7,SNR=24
SVE Sverdlovsk 125.00 324 *e*PKIKP **PKPdf** **07 33 51.8 +0.1**
SVE pmax pmax
comp=Z,49nm,0.9s
LBTB Lobatse 125.31 210 PKP **PKPdf** **07 33 53.6 +0.1**
LBTB Lobatse 125.31 210 *e*PKPdf **PKPdf** **07 33 53.1 -0.4**
ILULI Ilulissat 125.53 20 *i* P **PKPdf** **07 33 51.6 -0.7**
comp=Z,36nm,0.7s
ILULI Ilulissat 125.53 20 *i* PKIKP **PKPdf** **07 33 51.6 -0.7**
ILULI pmax pmax
comp=Z,36nm,0.7s
WSAR Wadi Sarin 125.82 282 PKP **PKPdf** **07 33 53.9 -0.4**
DAG Danmarks Havn 126.05 5 ⇓*i* P **PKPdf** **07 33 51.7 -1.4**
comp=Z,22nm,0.7s
DAG Danmarks Havn 126.05 5 ⇓*i* PKIKP **PKPdf** **07 33 51.7 -1.4**
DAG pmax pmax
comp=Z,15nm,0.7s
JMDO Jabal Madar 126.09 281 P **PKPdf** **07 33 54.7 -0.1**
ARU Arti 126.21 324 PKP **PKPdf** **07 33 53.7 -0.2**
comp=Z,35nm,0.5s,baz=98,slow=1.0,SNR=50
ARU pPKP **pPKPdf** **07 36 05.8 +3.5**
comp=Z,2.7nm,0.4s,baz=76,slow=1.4,SNR=2.1
ARU PKKPab **PKKPbc** **07 43 30.1 -0.2**
comp=Z,2.8nm,0.4s,baz=167,slow=1.6,SNR=7.1
ARU Arti 126.21 324 *i* PKIKP **PKPdf** **07 33 53.9 -0.1**
ARU 07 35 57.8
ARU 07 40 12.7
ARU SP SP 07 45 03.4 -2.5
SMDO Samad 126.30 282 PKPdf **PKPdf** **07 33 55.4 +0.1**
SNR=5.2
SMDO Samad 126.30 282 P **PKPdf** **07 33 55.4 +0.1**
SNR=5.2
AB31 Akbulak array 126.47 315 PKIKP **PKPdf** **07 33 53.6 -1.1**
AB31 pmax pmax
comp=Z,22nm,1.0s
ABKAR Akbulak array 126.47 315 *eP* **PKPdf** **07 33 54.2 -0.5**
SUMG Summit 126.76 13 ⇓*i* P **PKPdf** **07 33 55.0 -0.1**
comp=Z,54nm,1.1s
SUMG Summit 126.76 13 ⇓*i* PKIKP **PKPdf** **07 33 55.0 -0.1**
SUMG pmax pmax
comp=Z,54nm,1.1s
SUMG Summit 126.76 13 *e*PKPdf **PKPdf** **07 33 54.8 -0.3**
SFJD Kangerlussuaq 126.78 22 PKP **PKPdf** **07 33 54.1 -0.7**
SFJD Kangerlussuaq 126.78 22 *i* P **PKPdf** **07 33 53.9 -0.8**
comp=Z,24nm,0.6s
SFJD Kangerlussuaq 126.78 22 *i* PKIKP **PKPdf** **07 33 53.9 -0.8**
SFJD pmax pmax
comp=Z,24nm,0.6s
AKTO Aktyubinsk 127.57 316 PKP **PKPdf** **07 33 56.8 0.0**
comp=Z,22nm,0.7s,baz=93,slow=3.0,SNR=75
AKTO pPKP **PP** **07 36 09.0 +2.2**
comp=Z,3.6nm,0.9s,baz=110,slow=4.8,SNR=3.0
AKTO SKPab SKPab 07 36 25.4
comp=Z,3.4nm,0.9s,baz=257,slow=7.9,SNR=2.6
AKTO SKP 07 36 41.1
comp=Z,2.8nm,0.8s,baz=5.2,slow=4.1,SNR=3.5
MATP Matopo 127.74 215 PKP **PKPdf** **07 33 58.1 -0.1**
GEYT Alibek 128.18 301 PKP **PKPdf** **07 33 58.7 +0.3**
comp=Z,27nm,0.8s,baz=236,slow=1.1,SNR=36
GEYT pPKP **PP** **07 36 11.2 0.0**
comp=Z,1.5nm,0.4s,baz=90,slow=40,SNR=2.3
GEYT SKPbc SKPbc 07 36 27.6
comp=Z,7.4nm,0.9s,baz=5.7,slow=1.5,SNR=6.8
UOSS Minazif 128.35 284 *e*PKPdf **PKPdf** **07 33 58.3 -0.8**
HATD Hatta, Dubai 128.39 284 *i* P **PKPdf** **07 33 58.9 -0.2**
SNR=9.1
ASHO Ashiyiah 128.43 284 *i* P **PKPdf** **07 33 59.1 -0.2**
SNR=9.4
NAZ Nazwa, Dubai 128.84 284 P **PKPdf** **07 33 59.9 -0.1**
FAQ Al Faqa, Dubai 128.85 283 P **PKPdf** **07 33 59.6 -0.4**
DRLN Deer Lake 129.10 45 *e*PKPdf **PKPdf** **07 33 58.9 -0.8**
LVZ Lovozero 130.64 343 *e*PKIKP **PKPdf** **07 34 02.3 +0.1**
LVZ Lovozero 130.64 343 *e*PKPdf **PKPdf** **07 34 02.3 +0.1**
HAMF Hammerfest 130.82 349 *eP* **PKPdf** **07 34 01.9 -0.4**
ARA0 ARCESS Array S 131.44 348 *e*PKPpre PKPpre 07 33 53.8
ARA0 *e*PKPdf **PKPdf** **07 34 03.1 -0.5**
ARCES ARCESS Array B 131.44 348 PKhKP PKPpre 07 33 53.5
comp=Z,1.3nm,0.6s,baz=180,slow=0.1,SNR=8.3
ARCES PKP **PKPdf** **07 34 03.1 -0.5**
comp=Z,31nm,0.8s,baz=51,slow=1.1,SNR=37
ARCES SKPbc **SKPbc** **07 36 38.4 +0.5**
comp=Z,34nm,0.9s,baz=42,slow=3.8,SNR=21
ARCES PKKP **PKKPdf** **07 44 00.3 -2.5**
comp=Z,1.5nm,0.7s,baz=153,slow=0.3,SNR=3.6
ARE0 ARCESS Array S 131.44 348 *eP* **PKPdf** **07 34 03.4 -0.2**
ARE0 ARCESS Array S 131.44 348 *e*PKPdf **PKPdf** **07 34 03.4 -0.2**
SCO Scoresbysund 131.49 9 *i* P **PKPdf** **07 34 03.7 +0.1**
comp=Z,10.0nm,0.7s
SCO Scoresbysund 131.49 9 *i* PKIKP **PKPdf** **07 34 03.7 +0.1**
SCO pmax pmax
comp=Z,10.0nm,0.7s
NRS Narsarsuaq 131.67 27 *i* P **PKPdf** **07 34 04.0 -0.2**
comp=Z,46nm,0.8s
NRS Narsarsuaq 131.67 27 *i* PKIKP **PKPdf** **07 34 04.0 -0.2**
NRS pmax pmax
comp=Z,46nm,0.8s
TRO Tromso 132.47 351 *eP* **PKPdf** **07 34 05.4 -0.1**
KIF Kilpisjarvi 132.74 350 *eP* **PKPdf** **07 34 05.6 -0.4**
HEF Hetta 132.76 348 *eP* **PKPdf** **07 34 06.0 -0.1**
KLMR Klimovskoe 133.59 334 *e*PKIKP **PKPdf** **07 34 06.2 -1.6**
KLMR *e* 07 36 43.5
KLMR pmax pmax
comp=Z,19nm,0.9s
TSUM Tsumeb 133.83 204 *eP* **PKPdf** **07 34 09.8 +0.1**
STEI Steigen 134.57 352 *eP* **PKPdf** **07 34 09.3 -0.1**
RCBR Riachuelo 134.96 126 *e*PKPdf **PKPdf** **07 34 13.2 +1.3**
KMBO Kilima Mbogo 135.59 242 PKP **PKPdf** **07 34 13.9 +0.5**
comp=Z,14nm,1.0s,baz=53,slow=4.3,SNR=14
KMBO SKP 07 36 56.3
comp=Z,2.3nm,0.5s,baz=72,slow=4.7,SNR=5.5
STOK Stokkvaagen 136.37 352 *eP* **PKPdf** **07 34 12.6 -0.2**
DAMY Dhamar 136.50 266 *e*PKPdf **PKPdf** **07 34 16.3 +1.3**
BORG Borgarnes 136.73 13 SKPbc **SKPbc** **07 36 57.2 +2.3**
comp=Z,18nm,1.0s,baz=296,slow=4.2,SNR=7.1
BORG Borgarnes 136.73 13 *e*PKIKP **PKPdf** **07 34 16.7 +3.2**
BORG Borgarnes 136.73 13 *e*PKPdf **PKPdf** **07 34 16.7 +3.2**
BORG SKPbc **SKPbc** **07 36 57.2 +2.3**
MOS Moscow 137.28 329 *e*PKIKP **PKPdf** **07 34 14.7 -0.1**
MOS pmax pmax
comp=Z,61nm,1.1s
VRH Novokhopyorsk 137.29 321 *e*PKIKP **PKPdf** **07 34 14.8 -0.2**
VRH pmax pmax
comp=Z,40nm,0.7s
DGRG David-gareji 137.73 306 P PKPpre 07 34 05.8
DGRG David-gareji 137.73 306 PKHKP PKPpre 07 34 05.8
FIA1 FINESS Array S 137.93 341 *e*PKPpre PKPpre 07 34 09.0
FIA1 *e*PKPdf **PKiKP** **07 34 17.1 -0.9**
FINES FINESS Array B 137.93 341 PKhKP PKPpre 07 34 05.2
comp=Z,5.1nm,0.5s,baz=59,slow=4.3,SNR=18
FINES PKP **PKPdf** **07 34 16.7 +0.9**
comp=Z,14nm,0.6s,baz=48,slow=2.5,SNR=18
FINES SKPbc **SKPbc** **07 36 59.1 +0.6**
comp=Z,31nm,0.8s,baz=64,slow=4.4,SNR=23
OBN Obninsk 138.13 328 PKP **PKPdf** **07 34 16.7 +0.3**
comp=Z,20nm,0.4s,baz=38,slow=4.1,SNR=7.9
OBN pPKP **pPKPdf** **07 36 27.5 +2.7**
comp=Z,18nm,0.4s,baz=353,slow=23,SNR=1.5
OBN SKPbc **SKPbc** **07 37 00.2 +1.0**
comp=Z,22nm,0.4s,baz=154,slow=23,SNR=7.2
OBN SKPab **SKPab** **07 37 09.1 +0.4**
comp=Z,15nm,0.4s,baz=190,slow=24,SNR=3.5
OBN Obninsk 138.13 328‖ *e*PKIKP **PKPdf** **07 34 14.9 -1.5**
OBN *e* 07 36 21.3
OBN pmax pmax
comp=Z,22nm,0.9s
GUDG Gudauri 138.19 308 P **PKPdf** **07 34 16.8 -0.5**
GNI Garni 138.43 304 PKP **PKPdf** **07 34 17.6 -0.1**
comp=Z,20nm,0.7s,baz=205,slow=5.6,SNR=9.0
GNI Garni 138.43 304 P **PKPdf** **07 34 17.7 -0.1**
GNI Garni 138.43 304 PKPdf **PKPdf** **07 34 17.7 0.0**
SNR=7.1
GNI Garni 138.43 304 *e*PKPdf **PKPdf** **07 34 17.8 0.0**
VSR Storozhevoye 138.73 322 *e*PKIKP **PKPdf** **07 34 15.6 -2.0**
VSR pmax pmax
comp=Z,30nm,0.7s
ONI Oni 138.90 308 P PKPpre 07 34 12.7
ONI Oni 138.90 308 PKHKP PKPpre 07 34 12.7
KBZ Khabaz 139.02 310 PKhKP PKPpre 07 34 09.9
comp=Z,1.8nm,0.7s,baz=97,slow=4.7,SNR=4.3
KBZ PKP **PKPdf** **07 34 18.9 +0.6**
comp=Z,7.6nm,0.9s,baz=91,slow=2.9,SNR=8.8
KBZ pPKP pPKPdf 07 36 30.3 +3.5
comp=Z,1.4nm,0.5s,baz=35,slow=4.6,SNR=1.7
KBZ SKPbc **SKiKP** **07 37 03.8 -1.2**
comp=Z,4.1nm,0.9s,baz=73,slow=6.2,SNR=3.7
KBZ SKPab **SKPab** **07 37 12.0 -1.2**
comp=Z,3.1nm,0.8s,baz=224,slow=1.9,SNR=3.5
KVAR Kislovodsk Arr 139.11 311 PKP **PKPdf** **07 34 18.7 0.0**
comp=Z,12nm,0.8s,baz=300,slow=4.9,SNR=10
KIV Kislovodsk 139.11 311 P **PKPdf** **07 34 18.2 -0.5**
KIV Kislovodsk 139.11 311*d* *i*PKIKP **PKPdf** **07 34 17.2 -1.5**
KIV *e* 07 36 23.4
KIV pmax pmax
comp=Z,15nm,1.1s
NEY Neytrino 139.27 310⇑ *i*PKIKP **PKPdf** **07 34 20.1 +1.0**
VSU Vasula 140.01 338⇓ *i*PKIKP **PKPdf** **07 34 18.0 -1.7**
SHEL Horse Pasture 140.39 173 *e*PKHKP PKPpre 07 34 16.9
SHEL Horse Pasture 140.39 173 *e*PKPpre PKPpre 07 34 16.9
DOMB Dombas 140.99 353 *eP* PKPpre 07 34 16.0
MBAR Mbarara 141.04 236 *e*PKHKP PKPpre 07 34 17.5
MBAR Mbarara 141.04 236 *e*PKPpre PKPpre 07 34 17.5
AKN Aaknes 141.08 354 *eP* PKPpre 07 34 16.5
NC303 NORSAR Array S 141.47 351 *e*PKPpre PKPpre 07 34 17.4
NC204 NORSAR Array S 141.51 351 *e*PKPpre PKPpre 07 34 18.3
NC405 NORSAR Array S 141.52 350 *e*PKPpre PKPpre 07 34 17.4
NB201 NORSAR Array S 141.65 351 *e*PKPpre PKPpre 07 34 18.1
NB2 NORSAR Subarra 141.67 351 PKP PKPpre 07 34 17.9
comp=Z,17nm,0.8s,baz=16,slow=3.2
NB2 NORSAR Subarra 141.67 351 PKP PKPpre 07 34 17.9
baz=16,slow=3.2
NOA NORSAR Array B 141.67 351 PKhKP PKPpre 07 34 17.0
comp=Z,24nm,0.7s,baz=16,slow=4.8,SNR=80
NOA SKP 07 37 06.8
comp=Z,12nm,0.9s,baz=14,slow=4.2,SNR=13
NOA SKPbc **SKiKP** **07 37 09.4 -0.6**
comp=Z,12nm,0.8s,baz=13,slow=4.2,SNR=12
NOA SKPab **SKPab** **07 37 24.4 +0.1**
comp=Z,6.3nm,0.9s,baz=17,slow=3.2,SNR=5.8
NBO02 NORSAR Array S 141.71 351 *e*PKPpre PKPpre 07 34 18.2
NBO00 NORSAR Array S 141.74 351 *e*PKPpre PKPpre 07 34 18.4
FOO Floro 141.81 355 *eP* PKPpre 07 34 18.9
NAO01 NORSAR Array S 141.91 351 *e*PKPpre PKPpre 07 34 18.9
NC602 NORSAR Array S 141.91 350 *eP* PKPpre 07 34 18.7
NC602 NORSAR Array S 141.91 350 *e*PKPpre PKPpre 07 34 18.5
HFS Hagfors 142.11 348 PKhKP PKPpre 07 34 18.9
comp=Z,61nm,0.5s,baz=66,slow=3.7,SNR=334
HFS SKPbc **SKPbc** **07 37 09.2 -0.3**
comp=Z,19nm,0.8s,baz=253,slow=1.5,SNR=12
SUE Sulen 142.37 356 *eP* **PKPdf** **07 34 20.6 -3.2**
ANN Anapa 142.42 314 *i* PKHKP PKPpre 07 34 21.1
ANN pmax pmax
comp=Z,84nm,1.3s
MICGM Minsk 142.44 333⇑ *i*PKP **PKPdf** **07 34 21.0 -3.2**
MICGM PKPM 07 34 22.0
comp=Z,0.2nm,1.8s
MICGM *ep*PKP **pPKPdf** **07 36 28.0 -4.7**
MICGM *e*PP PP 07 37 11.0 -28
MICGM *e*PPP PPP 07 40 34.0
MNK Minsk 142.44 333⇑ *i*PKIKP **PKPdf** **07 34 21.0 -3.2**
MNK *e* 07 36 28.0
MNK *e*PPP PPP 07 40 34.0
MNK pmax pmax
comp=Z,220nm,1.8s
NACGM Naroch 142.61 334 *eP* **PKPdf** **07 34 22.0 -2.5**
NACGM PM 07 34 24.0
comp=Z,0.2nm,0.6s
OSL Oslo 142.80 350 *eP* **PKPdf** **07 34 22.2 -2.5**
ASK Askoy 142.91 355 *eP* **PKPdf** **07 34 22.4 -2.4**
BER Bergen 142.99 355 *eP* **PKPdf** **07 34 22.7 -2.2**
BER lAmb lAmb 07 34 23.8
comp=Z,143nm,0.7s
KONO Kongsberg 143.24 351 *eP* PKPab 07 34 23.3 -0.1
KONO Kongsberg 143.24 351 *e*PKIKP PKPab 07 34 23.4 -0.1
KONO Kongsberg 143.24 351 *e*PKPpre PKPab 07 34 23.4 -0.1
SUSE Susehri 143.31 306 *i* P PKPab 07 34 24.7 +0.1
ODD1 Odda 143.34 354 *eP* PKPbc 07 34 24.1 -0.1
LRW Lerwick 143.49 0 *eP* PKPab 07 34 24.2 -0.2
KSRV Kasrt alli 143.57 299 *eP* **PKPdf** **07 34 26.3 -0.5**
CUZAR Zara_SIVAS 143.72 306 *i* P **PKPdf** **07 34 27.1 0.0**
BLS5 Blasjo 143.84 354 *eP* PKPab 07 34 25.9 +0.1
AKCD Akcadag 143.98 303 *i* P **PKPdf** **07 34 28.2 +0.6**
JHLN Al Jahlan 144.05 299 *eP* **PKPdf** **07 34 29.0 +1.3**
KMY Karmoy 144.16 355 *eP* PKPbc 07 34 26.7 +0.1
ERBA Erbaa 144.25 307 *i* P **PKPab** **07 34 28.0 0.0**
AKASG Malin Array Be 144.32 327 PKP PKPbc 07 34 26.5 -1.0
comp=Z,42nm,0.6s,baz=45,slow=4.3,SNR=244
AKASG pPKP pPKPdf 07 36 38.8 +2.6
comp=Z,1.0nm,0.5s,baz=309,slow=20,SNR=2.4
AKASG SKPbc **SKiKP** **07 37 15.6 -0.1**
comp=Z,3.5nm,0.4s,baz=44,slow=3.0,SNR=12
AKBB Malin Array Si 144.32 327 *e*PKIKP PKPbc 07 34 26.8 -0.6
AKBB Malin Array Si 144.32 327 *e*PKPbc PKPbc 07 34 26.8 -0.6
KIEV Kiev 144.33 327*d* *i*PKIKP P

RABH Abou Rabah 145.23 297 eP PKPab 07 34 46.7 +15
MLA1 Latheron 145.28 2 eP PKPdf 07 34 29.4 +0.4
KLNR Kaliningrad 145.29 339 ⇓ePKP2 PKPbc 07 34 30.0 -0.2
DRWC Darouich 145.30 301 eP PKPbc 07 34 31.2 +0.2
ZALF Zalf 145.30 294 eP PKPab 07 34 31.9 -0.4
COAL Corum-Alaca 145.66 307 iP PKPab 07 34 32.8 -0.7
CTAK Corum_Osmancik 145.68 308 iP PKPbc 07 34 32.7 +0.6
ASF Jabal al Asfar 145.74 293 PKP PKPdf 07 34 30.3 -0.4
comp=Z,34nm,0.8s,baz=56,slow=1.8,SNR=47
ASF PKPbc PKPbc 07 34 33.2 +0.7
comp=Z,34nm,0.8s,baz=55,slow=1.9,SNR=45
ASF pPKPbc pPKPbc 07 36 36.1 -2.4
comp=Z,2.3nm,0.6s,baz=296,slow=9.9,SNR=1.7
SALA Sala 145.83 294 eP PKPdf 07 34 31.2 +0.2
YAYL Yayladag 145.86 300 iP PKPdf 07 34 31.0 +0.1
MARH Ras Al Marh 145.88 296 eP PKPab 07 34 34.2 -0.7
ASCN Ascension 145.97 155 ePKPdf PKPdf 07 34 30.7 -0.9
KAC Achnashellach 145.98 4 eP PKPbc 07 34 31.8 -0.3
YAHY KAYSERI_Yahyal 145.99 304 iP PKPbc 07 34 33.4 +0.4
MCD Coleburn Disti 146.00 2 eP PKPbc 07 34 31.7 -0.5
TOTH TOTAH 146.01 295 eP PKPdf 07 34 31.6 +0.5
MDO Dochfour 146.09 3 eP PKPbc 07 34 32.3 -0.2
KPL Plockton 146.11 5 eP PKPbc 07 34 32.2 -0.3
KPL Plockton 146.11 5 eP PKPbc 07 34 32.7 +0.2
MME1 Meikle Cairn 146.28 2 eP PKPbc 07 34 32.2 -0.8
ILGA Ilgaz 146.31 309 iP PKPbc 07 34 34.8 +0.9
SORM Soroca 146.33 324 ⇓iP PKPbc 07 34 33.2 -0.2
SORM Soroca 146.33 324 ⇓PKP2 PKPbc 07 34 33.2 -0.2
MUD Monsted U'grnd 146.38 350 eP PKPbc 07 34 32.6 -0.6
MUD Monsted U'grnd 146.38 350 iP PKPbc 07 34 33.2 0.0
MUD Monsted U'grnd 146.38 350 iPKP2 PKPbc 07 34 33.2 0.0
BSD Bornholm Skovb 146.43 344 ⇓iP PKPbc 07 34 33.2 -0.2
comp=Z,165nm,0.9s
BSD Bornholm Skovb 146.43 344 ⇓iPKP2 PKPbc 07 34 33.2 -0.2
BSD pmax pmax
comp=Z,160nm,0.9s
TCHB Talchebab 146.47 294 eP PKPbc 07 34 35.4 +1.0
COP Copenhagen 146.49 346 ⇓iP PKPbc 07 34 33.8 +0.2
comp=Z,62nm,0.8s
COP Copenhagen 146.49 346 ⇓iPKP2 PKPbc 07 34 33.8 +0.2
COP pmax pmax
comp=Z,62nm,0.8s
GULE Gulek 146.63 302 iP PKPbc 07 34 34.6 -0.3
DED Mersin 146.69 302 iP PKPbc 07 34 34.0 -0.8
DRUM Mains of Drumt 146.70 2 eP PKPbc 07 34 33.6 -0.5
ELDT Eldivan 146.71 309 iP PKPbc 07 34 35.3 +0.4
KIS Kishinev 146.73 322 ⇓iP PKPdf 07 34 33.0 +1.2
KIS XM 07 34 34.0
comp=Z,300nm,1.3s
KIS Kishinev 146.73 322 ⇓iPKIKP PKPdf 07 34 33.0 +1.2
KIS i 07 34 37.0
KIS e 07 36 37.0
KIS pmax pmax
comp=Z,290nm,1.3s
BR131 Keskin Array S 146.81 307 ePKPdf PKPdf 07 34 31.8 -0.6
BR131 ePKPbc PKPbc 07 34 35.1 -0.1
BRTR Keskin Array B 146.81 307 PKP PKPdf 07 34 31.8 -0.6
comp=Z,31nm,0.7s,baz=129,slow=1.8,SNR=72
BRTR PKPbc PKPbc 07 34 35.1 -0.1
comp=Z,36nm,0.7s,baz=138,slow=4.7,SNR=84
BRTR pPKPbc pPKPbc 07 36 38.5 -3.1
comp=Z,4.9nm,1.0s,baz=50,slow=2.1,SNR=3.7
BRTR SKPbc SKiKP 07 37 22.6 +1.1
comp=Z,5.6nm,0.9s,baz=134,slow=3.6,SNR=4.3
LLD Lille Linde 146.87 346 iP PKPbc 07 34 34.8 +0.2
comp=Z,191nm,0.9s
LLD Lille Linde 146.87 346 iPKP2 PKPbc 07 34 34.8 +0.2
LLD pmax pmax
comp=Z,190nm,0.9s
MMAI Mount Meron Ar 146.91 295 PKP PKPdf 07 34 32.6 -0.1
comp=Z,66nm,0.5s,baz=248,slow=43,SNR=30
MMAI PKPbc PKPbc 07 34 35.9 +0.3
comp=Z,67nm,0.5s,baz=72,slow=5.4,SNR=92
MMAI pPKPbc pPKPbc 07 36 39.9 -2.0
comp=Z,14nm,0.9s,baz=102,slow=3.5,SNR=6.0
AKSY AKSARAY - Alti 147.05 305 iP PKPbc 07 34 35.5 -0.3
EDU Dundee 147.05 2 eP PKPbc 07 34 34.8 -0.3
KERG Konya-Eregli 147.11 303 iP PKPbc 07 34 35.6 -0.5
BTIN Bart¨–n 147.12 311 iP PKPbc 07 34 35.5 -0.3
BEL Belsk 147.29 335 ePKPdf PKPbc 07 34 36.0 +0.2
BEL Belsk 147.29 335 ⇓ePKP2 PKPbc 07 34 36.1 +0.2
EAB Aberfoyle 147.35 4 eP PKPbc 07 34 35.0 -0.9
LEOM Leova 147.35 322 ⇓iP PKPbc 07 34 36.6 +0.4
LEOM Leova 147.35 322 ⇓PKP2 PKPbc 07 34 36.6 +0.4
GKP Gorka Klasztor 147.37 340 ePKPdf PKPbc 07 34 36.3 +0.3
GKP Gorka Klasztor 147.37 340 ⇓ePKP2 PKPbc 07 34 36.3 +0.3
BR231 Keskin MP Arra 147.40 308 ePKPdf PKPbc 07 34 32.5 -0.8
BR231 ePKPbc PKPbc 07 34 36.1 -0.7
LVV L'vov 147.41 330 iPKIKP PKPdf 07 34 34.1 +1.2
KKUL Konya-Kulu 147.51 307 iP PKPbc 07 34 37.2 +0.2
EIL Elat 147.56 289 PKP PKPdf 07 34 33.1 -0.7
comp=Z,34nm,1.0s,baz=136,slow=2.0,SNR=9.8
EIL PKPbc PKPbc 07 34 37.5 +0.2
comp=Z,84nm,0.8s,baz=0.8,slow=2.3,SNR=57
EIL PKPab PKPab 07 34 40.5 -0.9
comp=Z,29nm,0.7s,baz=340,slow=4.3,SNR=12
EDI Edinburgh 147.67 3 eP PKPbc 07 34 36.9 +0.2
EDI Edinburgh 147.67 3 eP PKPbc 07 34 36.6 0.0
ESY Stoneypath 147.69 2 eP PKPbc 07 34 36.5 -0.3
PGBU Glenifferbraes 147.71 4 eP PKPbc 07 34 36.5 -0.3
PRAR RASCA 147.94 324 ⇓iP PKPbc 07 34 37.9 +0.2
GMK Mull of Kintyr 148.09 5 eP PKPbc 07 34 37.6 -0.1
CFR Carcaliu 148.13 320 ⇓iP PKPbc 07 34 38.2 0.0
CFR Carcaliu 148.13 320 ⇓PKP2 PKPbc 07 34 38.2 0.0
KWP Kalwaria Pacla 148.15 331 ePKPdf PKPbc 07 34 38.2 +0.1
KWP Kalwaria Pacla 148.15 331 ⇓ePKP2 PKPbc 07 34 38.2 +0.1
TESR Tescani 148.22 323 ⇓iP PKPbc 07 34 38.5 +0.1
ERMK Ermenek 148.24 302 iP PKPbc 07 34 39.7 +0.6
EKA Eskdalemuir Ar 148.26 3 PKP PKPdf 07 34 33.4 -0.6
comp=Z,16nm,0.5s,baz=319,slow=1.4,SNR=11
EKA PKPbc PKPbc 07 34 37.6 -0.6
comp=Z,16nm,0.5s,baz=310,slow=1.6,SNR=46
EKA PKPab PKPab 07 34 43.2 -0.2
comp=Z,7.6nm,0.5s,baz=352,slow=5.4,SNR=13
EKA pPKPbc pPKPbc 07 36 48.1 +3.0
comp=Z,19nm,0.9s,baz=350,slow=3.0,SNR=13
ESK Eskdalemuir 148.27 3 eP PKPbc 07 34 37.2 -1.0
ESK Eskdalemuir 148.27 3 ePKPbc PKPbc 07 34 37.8 -0.4
CSS Mathiatis 148.29 299 P PKPbc 07 34 39.2 +0.2
CSS Mathiatis 148.29 299 P PKPdf 07 34 33.8 -1.0
CSS Mathiatis 148.29 299 P PKPdf 07 34 33.8 -1.0
CSS ePKPbc PKPbc 07 34 38.9 -0.1
BUR08 Bucovina Ar. S 148.30 326 ePKPdf PKPdf 07 34 35.4 +0.8
BUR08 ePKPbc PKiKP 07 34 39.8 -0.2
BURAR Bucovina Array 148.31 326 ⇑iP PKPdf 07 34 35.0 +0.5
TIRR Tirgusor 148.34 318 ⇓iP PKPbc 07 34 38.8 0.0
TIRR Tirgusor 148.34 318 ePKPdf PKPbc 07 34 39.2 +0.1
TIRR ePKPbc PKPbc 07 34 39.2 +0.5
ECK Cauldkaine Hil 148.41 3 eP PKPbc 07 34 38.1 -0.5
BHH Howats Hill 148.50 3 eP PKPbc 07 34 38.4 -0.4
TLB Topalu 148.50 319 ⇓iP PKPbc 07 34 39.2 +0.1
TLB Topalu 148.50 319 ⇓PKP2 PKPbc 07 34 39.2 +0.1
HARR Harsova 148.51 319 ⇓iP PKPbc 07 34 39.9 +0.7
HARR Harsova 148.51 319 ⇓PKP2 PKPbc 07 34 39.9 +0.7
PLOR Plostina 148.61 322 ⇓iP PKPbc 07 34 39.3 -0.2
PLOR Plostina 148.61 322 ⇓PKP2 PKPbc 07 34 39.3 -0.2
GAL1 Galloway 148.64 4 eP PKPbc 07 34 38.8 -0.4
SZAC Souni 148.69 298 P PKPbc 07 34 40.4 +0.4
GAZI Gazipasa 148.81 301 iP PKPbc 07 34 39.4 -0.9
BBO1 Bothel 148.85 3 eP PKPbc 07 34 39.4 -0.3
PSN Preselentsi 148.88 317 iP PKPbc 07 34 40.2 +0.1
OJC Ojcow 148.95 334 ePKPdf PKPbc 07 34 40.0 -0.1
OJC Ojcow 148.95 334 ePKPdf PKPdf 07 34 35.3 -0.1
OJC ePKPbc PKPbc 07 34 40.2 +0.1
STHS Stebnicka Huta 148.95 332 ePKP2 PKPbc 07 34 40.9 +0.7
STHS Stebnicka Huta 148.95 332 ePKP PKPbc 07 34 40.9 +0.7
KESW Keswick, Cumbr 149.00 3 eP PKPbc 07 34 39.9 -0.1
UZH Uzhgorod 149.06 330 ePKIKP PKPdf 07 34 34.2 -1.3
UZH e 07 34 47.4
AKMC Akamas 149.08 299 P PKPbc 07 34 40.8 -0.1
PPCY Paphos 149.10 299 P PKPbc 07 34 41.0 +0.1
MLR Muntele Rosu 149.22 322 PKP PKPdf 07 34 34.8 -1.3
comp=Z,2.3nm,1.1s,baz=8.1,slow=2.9,SNR=14
MLR PKPbc PKPbc 07 34 40.9 -0.3
comp=Z,9.0nm,0.6s,baz=23,slow=4.0,SNR=42
MLR pPKPbc pPKPbc 07 36 47.8 -0.5
comp=Z,1.1nm,0.8s,baz=49,slow=1.5,SNR=1.6
MLR Muntele Rosu 149.22 322 ⇓iP PKPbc 07 34 40.8 -0.3
CRVS Cervenica-Dubn 149.24 331 ePKP2 PKPbc 07 34 41.5 +0.6
CRVS Cervenica-Dubn 149.24 331 ePKP PKPbc 07 34 41.5 +0.6
WIM Isle of Man 149.36 4 eP PKPbc 07 34 41.1 +0.1
NIE Niedzica 149.36 333 ePKPdf PKPbc 07 34 41.9 +0.7

NIE Niedzica 149.36 333 ⇓ePKP2 PKPbc 07 34 41.9 +0.7
ISK Istanbul-Kandi 149.55 312 P PKPdf 07 34 33.1 -3.5
ISK Istanbul-Kandi 149.55 312 PKIKP PKPdf 07 34 33.1 -3.5
ISK Istanbul-Kandi 149.55 312 P PKPdf 07 34 33.1 -3.5
ISP Isparta 149.73 305 P PKPdf 07 34 31.6 -5.5
ISP Isparta 149.73 305 ⇓iP PKPbc 07 34 41.7 -0.8
ISP Isparta 149.73 305 P PKPdf 07 34 31.6 -5.5
ISP ePKPbc PKPbc 07 34 41.9 -0.6
CJR Cluj-Napoca 149.73 326 ⇑iP PKPbc 07 34 42.7 +0.5
KSP Ksiaz 149.74 338 ePKPdf PKPbc 07 34 42.4 +0.5
VOIR 149.76 322 ⇓iP PKPdf 07 34 37.9 +1.0
H07N1 FLORES T-PHASE 149.80 51 ePKPdf PKPdf 07 34 37.2 +0.1
H07S1 FLORES T-PHASE 149.86 51 ePKPdf PKPdf 07 34 39.1 +1.9
OKC Ostrava-Krasne 149.90 335 ePKPDF PKPdf 07 34 34.2 +0.4
OKC ⇑ePKP PKiKP 07 34 43.1 +0.1
OKC ePKPAB PKPab 07 34 50.2 -0.1
KECS Kecovo 149.98 331 ePKP PKPbc 07 34 42.3 -0.3
DSB Dublin 150.10 7 ePKPdf PKPdf 07 34 37.2 +0.2
DSB ePKPbc PKPbc 07 34 42.4 -0.3
WPS Cemaes, Angles 150.11 4 eP PKPbc 07 34 42.3 -0.4
KORT Korkueli 150.12 304 iP PKPbc 07 34 43.3 -0.2
UPC Upice 150.12 338 ePKPDF PKPdf 07 34 37.4 +0.2
UPC ⇑ePKP PKiKP 07 34 43.3 -0.2
UPC ex x 07 34 46.5
UPC ePKPAB PKPab 07 34 52.5 +1.2
UPC epPKP pPKPdf 07 36 49.9 +3.9
UPC Upice 150.12 338 ePKIKP PKPdf 07 34 37.4 +0.2
UPC e 07 34 52.5
DPC Dobruska-Polom 150.15 338 ePKPDF PKPdf 07 34 37.5 +0.2
DPC ⇑ePKP PKiKP 07 34 43.5 -0.1
DPC ePKPAB PKPab 07 34 52.6 +1.2
DPC epPKP pPKPdf 07 36 50.8 +4.7
DPC ex x 07 36 54.6
DPC Dobruska-Polom 150.15 338 ePKIKP PKPdf 07 34 37.5 +0.2
DPC e 07 34 52.6
MORC Moravsky Berou 150.18 336 ⇓iP PKPbc 07 34 43.6 +0.5
MORC Moravsky Berou 150.18 336 ePKIKP PKPdf 07 34 37.6 +0.3
MORC Moravsky Berou 150.18 336 ePKPdf PKPdf 07 34 37.6 +0.3
MORC ePKPbc PKPbc 07 34 43.5 +0.5
LMK Market Rasen 150.19 359 eP PKPbc 07 34 42.4 -0.4
KRLC Kraliky 150.21 337 ⇑ePKP PKPbc 07 34 43.4 +0.2
KRLC ePKPAB PKPab 07 34 52.1 +0.4
KRLC Kraliky 150.21 337 ePKIKP PKPbc 07 34 43.4 +0.2
KRLC e 07 34 52.1
WPM1 Penmaenmawr 150.29 4 eP PKPbc 07 34 42.7 -0.5
HUMR Humele 150.34 321 ⇑iP PKPbc 07 34 43.5 -0.1
CLL Collm 150.35 342 ePKPdf PKPdf 07 34 37.0 -0.5
CLL i PKPbc PKiKP 07 34 43.7 -0.2
comp=Z,242nm,0.9s
CLL ⇑iPKPab PKPab 07 34 52.7 +0.5
comp=Z,57nm,1.1s
CLL epPKPdf pPKPdf 07 36 47.0 +0.7
CLL epPKPbc pPKPbc 07 36 50.0 -0.8
CLL iPKPab pPKPab 07 36 54.8 0.0
CLL i 07 36 58.4
CLL e 07 37 30.0
CLL ePP PP 07 38 23.0 -1.2
CLL Collm 150.35 342 ePKIKP PKPdf 07 34 37.5 0.0
CLL Collm 150.35 342 ePKPdf PKPdf 07 34 37.5 0.0
CLL ePKPbc PKPbc 07 34 43.4 0.0
LOT Lotru 150.46 324 ⇑iP PKPbc 07 34 43.8 -0.2
BRG Berggiesshubel 150.47 341 iPKP PKPdf 07 34 37.8 +0.1
comp=Z,42nm,1.7s
BRG i 07 34 44.0
comp=Z,198nm,1.1s
BRG epPKP pPKPdf 07 36 50.5 +4.0
comp=Z,105nm,2.0s
BRG eSKP 07 37 30.0
comp=Z,12nm,1.2s
BRG Berggiesshubel 150.47 341 iPKIKP PKPdf 07 34 37.8 +0.1
BRG pmax pmax
comp=Z,42nm,1.7s
SZH Strazhica 150.50 318 iP PKPbc 07 34 43.6 -0.4
PVCC Panska Ves 150.58 340 ePKPDF PKPdf 07 34 38.2 +0.3
PVCC ⇑ePKP PKiKP 07 34 44.3 -0.1
PVCC ePKPAB PKPab 07 34 54.2 +1.0
PVCC Panska Ves 150.58 340 ePKIKP PKPdf 07 34 38.2 +0.3
PVCC e 07 34 54.2
GOLH Golhisar 150.64 305 iP PKPbc 07 34 44.6 0.0
PSZ Piszkesteto 150.67 331 ⇓iP PKPbc 07 34 44.3 0.0
PSZ Piszkesteto 150.67 331 ePKIKP PKPdf 07 34 37.7 -0.5
PSZ Piszkesteto 150.67 331 ePKPdf PKPdf 07 34 37.7 -0.5
PSZ ePKPbc PKiKP 07 34 44.6 -0.1
PSZ Piszkesteto 150.67 331 ex PKPdf 07 34 37.4 -0.8
PSZ ex x 07 34 44.3
VYHS Vyhne 150.69 333 ePKIKP PKPbc 07 34 44.7 +0.4
VYHS e 07 36 50.8
VYHS Vyhne 150.69 333 ePKP PKPbc 07 34 44.7 +0.4
VYHS e 07 36 50.8
FOEL Foel Wylfa 150.70 3 eP PKPbc 07 34 43.7 -0.4
EDRB Edirne 150.72 315 P PKPdf 07 34 36.4 -2.0
EDRB Edirne 150.72 315 P PKPdf 07 34 36.4 -2.0
KULA Kula-Manisa 150.86 308 P PKPdf 07 34 37.7 -1.1
KULA Kula-Manisa 150.86 308 P PKPdf 07 34 37.7 -1.1
CWF Charnwood Fore 150.90 1 eP PKPbc 07 34 43.7 -0.9
CWF Charnwood Fore 150.90 1 ePKPbc PKPbc 07 34 44.7 +0.1
AKAS Kas 150.92 303 iP PKPbc 07 34 45.0 -0.4
VRAC Vranov 150.92 336 PKP PKPdf 07 34 37.9 -0.5
comp=Z,2.0nm,0.3s,baz=50,slow=1.7,SNR=5.9
VRAC PKPbc PKPbc 07 34 44.7 -0.1
comp=Z,28nm,0.9s,baz=75,slow=1.2,SNR=23
VRAC PKPab PKPab 07 34 55.0 +0.4
comp=Z,14nm,0.6s,baz=29,slow=5.5,SNR=9.0
VRAC pPKPbc pPKPbc 07 36 49.9 -2.4
comp=Z,4.4nm,0.5s,baz=137,slow=2.6,SNR=1.2
VRAC Vranov 150.92 336 ⇓iP PKPbc 07 34 45.0 +0.2
KSL Kastellorizon 150.96 302 P PKPdf 07 34 39.1 +0.2
KSL Kastellorizon 150.96 302 P PKPdf 07 34 39.1 +0.2
SART Tekirdag 150.99 313 iP PKPbc 07 34 44.7 -0.6
GOPC GO Pecny, Ondr 151.04 339 ePKPDF PKPdf 07 34 38.7 +0.1
GOPC ⇑ePKP PKPbc 07 34 45.2 +0.2
GOPC ePKPAB PKPab 07 34 56.2 +1.0
GOPC epPKP pPKPdf 07 36 52.6 +5.1
GOPC ex x 07 36 56.7
GOPC GO Pecny, Ondr 151.04 339 ePKIKP PKPdf 07 34 38.7 +0.1
GOPC e 07 34 56.2
PRU Pruhonice 151.05 339 ePKPDF PKPdf 07 34 38.5 -0.1
PRU ⇑ePKP PKPbc 07 34 45.0 0.0
PRU ePKPAB PKPab 07 34 56.0 +0.8
PRU epPKP pPKPdf 07 36 51.6 +4.1
PRU ex x 07 36 56.7
PRU Pruhonice 151.05 339 ePKIKP PKPdf 07 34 38.5 -0.1
PRU e 07 34 56.0
HLM1 Long Mynd 151.08 3 eP PKPbc 07 34 43.9 -1.1
BALY Balya 151.11 311 iP PKPbc 07 34 45.1 -0.5
SRE Strehaia 151.27 323 ⇓iP PKPbc 07 34 46.1 +0.4
SRE Strehaia 151.27 323 ⇓PKIKP PKPbc 07 34 46.1 +0.4
BUD Budapest 151.38 331 ex PKPbc 07 34 46.2 +0.4
LPW Lampeter 151.42 4 eP PKPbc 07 34 45.2 -0.6
NKC Novy Kostel 151.47 342 ePKPDF PKPdf 07 34 39.5 +0.2
NKC ⇑ePKP PKiKP 07 34 46.6 +0.3
NKC ePKPAB PKPab 07 34 58.0 +1.0
NKC epPKP pPKPdf 07 36 52.9 +4.7
NKC ex x 07 36 57.8
NKC Novy Kostel 151.47 342 ePKIKP PKPdf 07 34 39.5 +0.2
NKC e 07 34 58.0
TURN Turunc 151.48 304 iP PKPbc 07 34 47.5 +1.1
BZS Buzias 151.49 326 ⇓iP PKPbc 07 34 46.0 -0.1
BZS Buzias 151.49 326 ⇓PKIKP PKPbc 07 34 46.0 -0.1
MCH1 Michaelchurch 151.60 3 eP PKPbc 07 34 45.5 -0.6
ALN Alexandroupoli 151.65 314 P PKPdf 07 34 38.1 -1.7
ALN Alexandroupoli 151.65 314 PKIKP PKPdf 07 34 38.1 -1.7
ALN Alexandroupoli 151.65 314 P PKPdf 07 34 38.1 -1.7
MPEP Malo Peshtene 151.76 320 iP PKPbc 07 34 47.1 +0.3
MONM Monmouth 151.76 3 eP PKPbc 07 34 45.5 -1.0
HGH Gray Hill 151.97 3 eP PKPbc 07 34 46.3 -0.7
PGB Panagyurishte 151.97 318 iP PKPbc 07 34 47.5 +0.1
RZN Rozhen 152.11 316 iP PKPbc 07 34 47.9 0.0
KHC Kasperske Hory 152.11 340 ePKPDF PKPdf 07 34 40.3 0.0
KHC ⇑ePKP PKPbc 07 34 47.4 -0.1
KHC ePKPAB PKPab 07 35 00.7 +1.0
KHC epPKP pPKPdf 07 36 55.4 +6.2
KHC ex x 07 37 06.5
KHC Kasperske Hory 152.11 340 ePKIKP PKPdf 07 34 40.3 0.0
KHC e 07 34 47.4
KHC e 07 35 00.7
KHC Kasperske Hory 152.11 340 ePKPdf PKPdf 07 34 40.4 0.0
KHC ePKPbc PKiKP 07 34 47.7 +0.1
PCAN Candelaria 152.17 51 ePKPdf PKPdf 07 34 40.4 -0.3
SMTH Samothraki Isl 152.20 313 P PKPdf 07 34 38.7 -1.9

SMTH Samothraki Isl 152.20 313 P PKPdf 07 34 38.7 -1.9
ROSA Rosais 152.24 51 ePKPbc PKPbc 07 34 48.1 0.0
SOP Sopron 152.26 334 ex PKPdf 07 34 40.3 -0.2
SOP ex x 07 34 48.1
PRK Paraskevi 152.26 311 P PKPdf 07 34 39.9 -0.8
PRK Paraskevi 152.26 311 PKIKP PKPdf 07 34 39.9 -0.8
PRK Paraskevi 152.26 311 P PKPdf 07 34 39.9 -0.8
PGRA Graciosa 152.29 50 ePKPdf PKPdf 07 34 40.1 -0.7
GRFO Grafenberg 152.30 343 ePKIKP PKPbc 07 34 48.0 +0.2
GRFO Grafenberg 152.30 343 ePKPbc PKPbc 07 34 48.0 +0.2
GEC2 GERESS Array S 152.32 339 ePKIKP PKPdf 07 34 40.5 -0.2
GEC2 e 07 34 48.1
GEC2 GERESS Array S 152.32 339 ePKPdf PKPdf 07 34 40.5 -0.2
GEC2 ePKPbc PKiKP 07 34 48.1 0.0
GERES GERESS Array B 152.32 339 PKP PKPdf 07 34 40.1 -0.5
comp=Z,2.9nm,0.8s,baz=48,slow=2.0,SNR=16
GERES PKPbc PKiKP 07 34 48.2 0.0
comp=Z,18nm,0.8s,baz=48,slow=2.0,SNR=46
GERES PKPab PKPab 07 35 00.5 -0.2
comp=Z,9.1nm,0.7s,baz=41,slow=4.3,SNR=10
GERES pPKPbc pPKPbc 07 36 53.0 -2.8
comp=Z,0.8nm,0.7s,baz=222,slow=27,SNR=2.6
GEA0 GERESS Array S 152.33 339 ePKPdf PKPdf 07 34 39.9 -0.8
GEA0 ePKPbc PKPbc 07 34 47.9 -0.1
CONA Conrad Observa 152.33 335 iPKPdf PKPdf 07 34 39.8 -0.9
comp=Z,16nm,1.2s,SNR=7.1
CONA iPKiKP PKPbc 07 34 47.9 -0.1
comp=Z,41nm,0.8s
CONA iPKPab PKPab 07 35 01.9 +1.1
comp=Z,34nm,0.9s
WOL Wolverton 152.33 1 eP PKPbc 07 34 47.3 -0.5
BEBN Eben Emael 152.39 351 PKPab PKPab 07 35 01.1 +0.3
ELSH Elham, Standar 152.46 357 eP PKPbc 07 34 48.1 0.0
MEM Membach 152.52 351 PKP PKPdf 07 34 40.9 +0.2
MEM PKPbc PKiKP 07 34 48.6 +0.2
MEM PKPab PKPab 07 35 02.7 +1.3
VTS Vitosha 152.53 319 P PKPdf 07 34 39.7 -1.5
VTS Vitosha 152.53 319 ePKIKP PKPdf 07 34 40.7 -0.5
VTS e 07 34 48.7
VTS Vitosha 152.53 319 iP PKPbc 07 34 48.8 0.0
VTS Vitosha 152.53 319 ePKPdf PKPdf 07 34 40.7 -0.5
VTS ePKPbc PKPbc 07 34 48.7 0.0
SIGR SIGRI 152.57 311 P PKPdf 07 34 39.3 -1.9
SIGR SIGRI 152.57 311 P PKPdf 07 34 39.3 -1.9
KAVA Kavala 152.60 315 P PKPdf 07 34 39.4 -1.8
KAVA Kavala 152.60 315 P PKPdf 07 34 39.4 -1.8
LIA Limnos Island 152.71 313 P PKPdf 07 34 39.6 -1.8
LIA Limnos Island 152.71 313 P PKPdf 07 34 39.6 -1.8
MMB Musomiste 152.78 317 iP PKPbc 07 34 48.8 -0.4
CHOS Chios island 152.79 309 P PKPdf 07 34 40.2 -1.5
CHOS Chios island 152.79 309 P PKPdf 07 34 40.2 -1.5
BCLA Clavier 152.81 351 PKPbc PKPbc 07 34 48.8 -0.1
BCLA PKPab PKPab 07 35 02.7 +0.1
NVR Nevrokopi 152.83 317 P PKPdf 07 34 39.8 -1.8
NVR Nevrokopi 152.83 317 P PKPdf 07 34 39.8 -1.8
SNF Seneffe 152.85 353 PKPbc PKPbc 07 34 49.3 +0.4
SNF PKPab PKPab 07 35 03.2 +0.5
MOA Molln 152.98 337 iPKPdf PKPdf 07 34 40.5 -1.0
comp=Z,10.0nm,1.1s
MOA iPKPbc PKPbc 07 34 49.2 -0.2
comp=Z,11nm,0.7s
MOA iPKPab PKPab 07 35 04.4 +0.9
comp=Z,15nm,1.0s
KARP Karpathos 153.01 303 ePKPbc PKPbc 07 34 49.7 -0.2
ARSA Arzberg 153.02 335 iPKPdf PKPdf 07 34 40.4 -1.2
comp=Z,8.6nm,1.1s
ARSA iPKPbc PKPbc 07 34 48.8 -0.7
comp=Z,12nm,1.1s
DYA Yadsworthy 153.10 4 eP PKPbc 07 34 49.2 -0.3
DYA Yadsworthy 153.10 4 ePKPdf PKPdf 07 34 41.8 +0.2
DYA ePKPbc PKPbc 07 34 49.4 -0.2
SRS Serrai 153.12 316 P PKPdf 07 34 43.4 +1.4
SRS Serrai 153.12 316 PKIKP PKPdf 07 34 43.4 +1.4
SRS Serrai 153.12 316 P PKPdf 07 34 43.4 +1.4
BEHE Becsehely 153.14 332 ex PKPbc 07 34 49.8 +0.1
DOU Doubes 153.22 352 PKPbc PKPbc 07 34 50.2 +0.4
DOU PKPab PKPab 07 35 04.2 -0.1
OUR Ouranopolis 153.29 315 P PKPdf 07 34 43.4 +1.2
OUR Ouranopolis 153.29 315 PKIKP PKPdf 07 34 43.4 +1.2
OUR Ouranopolis 153.29 315 P PKPdf 07 34 43.4 +1.2
DIVS Divibare 153.37 325 P PKPdf 07 34 41.2 -1.1
WLF Walferdange 153.42 350 PKP PKPdf 07 34 43.4 +1.3
WLF PKPbc PKiKP 07 34 51.4 +1.2
VAY Valandovo 153.65 318 P PKPdf 07 34 41.4 -1.3
VAY Valandovo 153.65 318 iPKP PKPbc 07 34 50.3 -0.7
VAY Valandovo 153.65 318 PKIKP PKPdf 07 34 41.4 -1.3
VAY Valandovo 153.65 318 P PKPdf 07 34 41.4 -1.3
SOKA Soboth 153.68 335 iPKPdf PKPdf 07 34 41.4 -1.3
comp=Z,22nm,1.3s,SNR=6.0
SOKA ePKPbc PKPbc 07 34 49.7 -1.3
comp=Z,22nm,1.0s
SOKA iPKPab PKPab 07 35 06.9 +0.3
comp=Z,25nm,1.3s
PERS Pernice 153.68 335 iPKPdf PKPdf 07 34 41.4 -1.3
PERS ePKPbc PKPbc 07 34 50.3 -0.6
PERS ePKPab PKPab 07 35 06.7 +0.2
PAIG Paliouri 153.70 314 P PKPdf 07 34 40.4 -2.4
PAIG Paliouri 153.70 314 PKIKP PKPdf 07 34 40.4 -2.4
PAIG Paliouri 153.70 314 P PKPdf 07 34 40.4 -2.4
LANF Langenberg 153.77 347 PKP PKPdf 07 34 43.1 +0.5
AOS Alonnisos 153.94 312 P PKPdf 07 34 41.0 -2.2
AOS Alonnisos 153.94 312 P PKPdf 07 34 41.0 -2.2
SKO Skopje 153.95 320 ePKP PKPbc 07 34 51.7 +0.1
KBA Koelnbreinsper 153.97 338 iPKPdf PKPdf 07 34 41.4 -1.8
comp=Z,20nm,1.3s,SNR=7.0
KBA ePKPab PKPab 07 35 08.3 +0.4
comp=Z,17nm,0.8s
KBA Koelnbreinsper 153.97 338 PKIKP PKPdf 07 34 42.1 -1.1
OBKA Obir 154.01 335 iPKPdf PKPdf 07 34 41.9 -1.2
comp=Z,8.3nm,1.1s
OBKA iPKPab PKPab 07 35 07.8 -0.2
comp=Z,17nm,0.9s
MYKA Terra Mystica 154.25 337 iPKPdf PKPdf 07 34 42.1 -1.3
comp=Z,9.6nm,1.1s
MYKA ePKPbc PKiKP 07 34 51.1 -1.1
comp=Z,12nm,0.6s
MYKA iPKPab PKPab 07 35 08.9 -0.1
comp=Z,26nm,0.8s
BFO Black Forest 154.28 346 ePKIKP PKPdf 07 34 43.1 -0.3
BFO e 07 35 09.1
BFO Black Forest 154.28 346 ePKPdf PKPdf 07 34 43.1 -0.3
BFO ePKPab PKPab 07 35 09.1 +0.2
XOR Xorichti 154.31 313 P PKPdf 07 34 41.4 -2.3
XOR Xorichti 154.31 313 P PKPdf 07 34 41.4 -2.3
NEO Neokhori 154.32 313 P PKPdf 07 34 41.5 -2.2
NEO Neokhori 154.32 313 P PKPdf 07 34 41.5 -2.2
WATA Walderalm 154.32 340 iPKPdf PKPdf 07 34 43.0 -0.6
comp=Z,6.1nm,0.7s
WATA iPKPab PKPab 07 35 09.6 +0.2
comp=Z,13nm,0.6s
WTTA Wattenberg 154.37 340 iPKPdf PKPdf 07 34 42.5 -1.3
comp=Z,22nm,1.3s,SNR=5.7
WTTA iPKiKP PKiKP 07 34 52.3 -0.3
comp=Z,15nm,0.7s
WTTA iPKPab PKPab 07 35 10.5 +0.9
comp=Z,20nm,0.6s
LIT Litokhoron 154.38 315 P PKPdf 07 34 41.2 -2.6
LIT Litokhoron 154.38 315 PKIKP PKPdf 07 34 41.2 -2.6
LIT Litokhoron 154.38 315 P PKPdf 07 34 41.2 -2.6
LJU Ljubljana 154.40 335 iPKPdf PKPdf 07 34 43.0 -0.5
LJU iPKPbc PKiKP 07 34 52.4 -0.1
LJU iPKPab PKPab 07 35 09.7 +0.1
PSET Sete Cidades 154.41 51 ePKPdf PKPdf 07 34 43.3 -0.6
RETA Reutte 154.43 342 iPKPdf PKPdf 07 34 42.7 -0.9
comp=Z,7.9nm,0.9s
RETA iPKPab PKPab 07 35 10.6 +0.9
comp=Z,27nm,0.9s
LAST Lasithi 154.44 303 P PKPdf 07 34 42.4 -1.7
LAST Lasithi 154.44 303 P PKPdf 07 34 42.4 -1.7
LAST ePKPbc PKPbc 07 34 53.3 +0.3
MOTA Moosalm 154.46 341 iPKPdf PKPdf 07 34 43.1 -0.8
comp=Z,18nm,1.0s,SNR=5.3
MOTA iPKPab PKPab 07 35 10.4 +0.5
comp=Z,19nm,1.0s
PTL Penteli 154.48 310 P PKPdf 07 34 42.1 -1.9
PTL Penteli 154.48 310 P PKPdf 07 34 42.1 -1.9
ABTA Abfaltersbach 154.54 338 iPKPdf PKPdf 07 34 42.6 -1.3
comp=Z,41nm,1.0s,SNR=12
ABTA iPKPab PKPab 07 35 10.1 -0.2
comp=Z,22nm,0.8s
ECH Echery 154.63 348 PKP PKPdf 07 34 42.4 -1.5
FNA Florina 154.70 318 P PKPdf 07 34 43.2 -1.0
FNA Florina 154.70 318 PKIKP PKPdf 07 34 43.2 -1.0

FNA	**Florina**	**154.70**	**318**	P	**PKPdf**	07 34 43.2	-1.0	
LKR	**Lokris**	**154.80**	**312**	P	**PKPdf**	07 34 42.4	-1.9	
LKR	**Lokris**	**154.80**	**312**	P	**PKPdf**	07 34 42.4	-1.9	
IDI	**Anoyia**	**154.85**	**303**	PKP	**PKPdf**	07 34 44.7	0.0	
	comp=Z,9.8nm,0.7s							
IDI				PKPbc	**PKiKP**	07 34 53.7	-0.1	
	comp=Z,23nm,0.9s,baz=28,slow=10,SNR=4.6							
IDI				pPKPbc	**pPKPbc**	07 36 55.8	-6.0	
	comp=Z,4.0nm,0.7s,baz=273,slow=6.4,SNR=1.6							
OHR	**Ohrid**	**154.85**	**319**	*i* PKP	**PKPbc**	07 34 53.5	-0.2	
DAVA	**Damuels**	**154.86**	**343**	*i* PKPdf	**PKPdf**	07 34 43.0	-1.4	
	comp=Z,13nm,0.9s							
DAVA				*i* PKPab	**PKPab**	07 35 12.4	+0.7	
	comp=Z,37nm,1.1s							
FETA	**Feichten**	**154.86**	**341**	*i* PKPdf	**PKPdf**	07 34 43.7	-0.7	
	comp=Z,35nm,1.0s,SNR=13							
THL	**Klokotos Trika**	**154.98**	**315**	P	**PKPdf**	07 34 41.6	-2.9	
MOF	**Molkenrain**	**154.99**	**347**	PKP	**PKPdf**	07 34 44.6	+0.2	
AGG	**Agios Georgios**	**155.06**	**313**	P	**PKPdf**	07 34 42.9	-1.8	
AGG	**Agios Georgios**	**155.06**	**313**	*e*PKIKP	**PKPdf**	07 34 44.1	-0.7	
AGG	**Agios Georgios**	**155.06**	**313**	*e*PKPdf	**PKPdf**	07 34 44.1	-0.7	
KPRO	**Kipourio**	**155.18**	**316**	P	**PKPdf**	07 34 45.6	+0.7	
PSMA	**Santa Maria**	**155.20**	**52**	*e*PKPdf	**PKPdf**	07 34 43.3	-1.6	
DSF	**Desfina**	**155.24**	**312**	P	**PKPdf**	07 34 43.6	-1.4	
DSF	**Desfina**	**155.24**	**312**	P	**PKPdf**	07 34 43.6	-1.4	
PSMN	**Pico do Norte,**	**155.24**	**52**	*e*PKPdf	**PKPdf**	07 34 44.4	-0.6	
TIR	**Tirane**	**155.26**	**321**	*e*PKP2	**PKPab**	07 35 13.4	0.0	
TIR	**Tirane**	**155.26**	**321**	*e*PKPab	**PKPab**	07 35 13.4	0.0	
DAVOX	**Davos/Dischmat**	**155.32**	**342**	PKP	**PKPdf**	07 34 44.8	-0.3	
	comp=Z,11nm,0.9s							
DAVOX				PKPab	**PKPab**	07 35 14.1	+0.4	
	comp=Z,17nm,0.6s,baz=34,slow=4.4,SNR=5.4							
FUORN	**Ofenpass-Fuorn**	**155.36**	**341**	*e*PKPdf	**PKPdf**	07 34 45.0	-0.2	
FUORN				*e*PKPab	**PKPab**	07 35 15.0	+1.0	
ANX	**Ano Chora**	**155.55**	**313**	P	**PKPdf**	07 34 44.7	-0.8	
GUR	**Goura**	**155.60**	**311**	P	**PKPdf**	07 34 43.9	-1.7	
GUR	**Goura**	**155.60**	**311**	P	**PKPdf**	07 34 43.9	-1.7	
KLV	**Kalavryta, Ach**	**155.68**	**312**	P	**PKPdf**	07 34 44.0	-1.6	
KLV	**Kalavryta, Ach**	**155.68**	**312**	P	**PKPdf**	07 34 44.0	-1.6	
TUE	**Stuetta**	**155.75**	**343**	*e*PKPdf	**PKPdf**	07 34 45.0	-0.7	
TUE				*e*PKPab	**PKPab**	07 35 16.9	+1.2	
DSL	**Palaion Diasel**	**155.81**	**315**	P	**PKPdf**	07 34 44.7	-1.0	
DSL	**Palaion Diasel**	**155.81**	**315**	P	**PKPdf**	07 34 44.7	-1.0	
SENIN	**Lac Senin/Sane**	**156.37**	**346**	*e*PKPdf	**PKPdf**	07 34 47.0	+0.5	
SENIN				*e*PKPab	**PKPab**	07 35 19.0	+0.8	
SSB	**Saint Sauveur**	**157.94**	**350**	*e*PKP2	**PKPab**	07 35 25.3	+0.4	
SSB	**Saint Sauveur**	**157.94**	**350**	*e*PKPab	**PKPab**	07 35 25.3	+0.4	
CUC	**Castrocucco**	**158.46**	**323**	*e*PKPab	**PKPab**	07 35 27.2	-0.2	
TIP	**Timpagrande**	**158.47**	**320**	P	PKPpre	07 34 38.0		
TIP	**Timpagrande**	**158.47**	**320**	*e*PKPdf	**PKPdf**	07 34 48.7	-0.4	
TIP				*e*PKPab	**PKPab**	07 35 28.8	+1.2	
CEL	**Celeste**	**159.59**	**320**	*e*PKPab	**PKPab**	07 35 32.8	+0.3	
PGAV	**Gavieira, Arco**	**160.66**	**17**	*e*PKPdf	**PKPdf**	07 34 52.4	+0.9	
PBRG	**Braganca**	**161.18**	**14**	*e*PKPab	**PKPab**	07 35 39.7	+0.5	
POLO	**Lamas de Olo**	**161.34**	**17**	*e*PKPdf	**PKPdf**	07 34 52.0	-0.2	
POLO	**Lamas de Olo**	**161.34**	**17**	*e*PKPab	**PKPab**	07 35 40.8	+0.9	
PVRL	**Vila Real**	**161.45**	**17**	*e*PKPab	**PKPab**	07 35 41.1	+0.8	
MVO	**Moncorvo**	**161.72**	**15**	*e*PKPdf	**PKPdf**	07 34 53.7	+1.1	
MVO	**Moncorvo**	**161.72**	**15**	*e*PKPab	**PKPab**	07 35 43.0	+1.4	
PVIS	**Viseu**	**161.92**	**18**	*e*PKPab	**PKPab**	07 35 43.0	+0.5	
VSL	**Villasalto**	**161.95**	**334**	*e*PKPdf	**PKPdf**	07 34 53.7	+0.9	
LIC	**Lamto**	**162.25**	**166**	*e*PKIKP	**PKPdf**	07 34 52.2	-1.6	
	comp=Z,188nm,1.1s							
LIC	**Lamto**	**162.25**	**166**	*e*PKP1	**PKPab**	07 35 44.7	+0.3	
MTE	**Manteigas**	**162.31**	**17**	*e*PKPdf	**PKPdf**	07 34 52.4	+1.0	
MTE	**Manteigas**	**162.31**	**17**	*e*PKPab	**PKPab**	07 35 44.8	+0.6	
MTE	**Manteigas**	**162.31**	**17**	*e*PKPdf	**PKPdf**	07 34 53.5	+0.3	
PCAS	**Casmilo, Conde**	**162.36**	**20**	*e*PKPdf	**PKPdf**	07 34 54.1	+0.9	
KIC	**Kosan Boka**	**162.45**	**167**	*e*PKIKP	**PKPdf**	07 34 52.3	-1.7	
	comp=Z,135nm,1.0s							
KIC	**Kosan Boka**	**162.45**	**167**	*e*PKP1	**PKPab**	07 35 45.6	+0.3	
TIC	**Toumodi**	**162.66**	**166**	*e*PKIKP	**PKPdf**	07 34 52.9	-1.4	
TIC	**Toumodi**	**162.66**	**166**	*e*PKP1	**PKPab**	07 35 46.5	+0.3	
DBIC	**Dimbokro**	**162.72**	**166**	PKP	**PKPdf**	07 34 54.1	-0.2	
	comp=Z,40nm,1.0s,baz=152,slow=1.0,SNR=31							
DBIC				PKPab	**PKPab**	07 35 46.5	0.0	
	comp=Z,40nm,1.0s,baz=176,slow=4.0,SNR=13							
PTOM	**Tomar**	**162.78**	**20**	*e*PKPdf	**PKPdf**	07 34 54.5	+0.9	
PTOM	**Tomar**	**162.78**	**20**	*e*PKPab	**PKPab**	07 35 46.7	+0.5	
PCBR	**Castelo Branco**	**162.85**	**18**	*e*PKPdf	**PKPdf**	07 34 54.5	+0.9	
PCBR	**Castelo Branco**	**162.85**	**18**	*e*PKPab	**PKPab**	07 35 47.5	+1.0	
PMTG	**Montargil**	**163.34**	**21**	*e*PKPdf	**PKPdf**	07 34 54.4	+0.3	
PESTR	**Estremoz**	**163.72**	**19**	*e*PKPdf	**PKPdf**	07 34 55.5	+1.0	
ES19	**SONSECA Array**	**163.74**	**9**	*e*PKPdf	**PKPdf**	07 34 56.0	+1.4	
ES19				*e*PKPab	**PKPab**	07 35 50.4	-0.1	
ESDC	**Sonseca Array**	**163.75**	**9**	PKP	**PKPdf**	07 34 54.3	-0.3	
	comp=Z,0.9nm,0.5s,baz=343,slow=2.4,SNR=6.5							
ESDC				PKPab	**PKPab**	07 35 50.8	+0.3	
	comp=Z,6.9nm,0.8s,baz=348,slow=4.1,SNR=17							
ESLA	**Sonseca Array**	**163.75**	**9**	*e*PKPab	**PKPab**	07 35 51.3	+0.8	
PAB	**San Pablo**	**163.82**	**10**	*e*PKIKP	**PKPdf**	07 34 56.1	+1.4	
PAB	**San Pablo**	**163.82**	**10**	*e*PKPdf	**PKPdf**	07 34 56.1	+1.4	
EVO	**Evora**	**163.90**	**21**	*e*PKPdf	**PKPdf**	07 34 55.4	+0.8	
PNCL	**Nicolau / Gran**	**164.10**	**23**	*e*PKPdf	**PKPdf**	07 34 56.1	+1.3	
PNCL	**Nicolau / Gran**	**164.10**	**23**	*e*PKPab	**PKPab**	07 35 52.6	+0.6	
MESJ	**Messejana**	**164.45**	**22**	*e*P	**PKPdf**	07 34 55.2	0.0	
MESJ	**Messejana**	**164.45**	**22**	*e*PKPdf	**PKPdf**	07 34 56.1	+1.0	
PBAR	**Barrancos**	**164.53**	**19**	*e*PKPdf	**PKPdf**	07 34 56.3	+1.1	
PBAR	**Barrancos**	**164.53**	**19**	*e*PKPab	**PKPab**	07 35 54.6	+0.7	
PTEO	**Sao Teotonio**	**164.53**	**24**	*e*PKPdf	**PKPdf**	07 34 56.7	+1.5	
PCVE	**Castro Verde**	**164.70**	**22**	*e*PKPdf	**PKPdf**	07 34 56.6	+1.2	
MORF	**Marmelete**	**164.77**	**24**	*e*P	**PKPdf**	07 34 55.4	-0.2	
MORF	**Marmelete**	**164.77**	**24**	*e*PKPdf	**PKPdf**	07 34 56.6	+1.1	
MORF	**Marmelete**	**164.77**	**24**	*e*PKPab	**PKPab**	07 35 56.0	+0.9	
PFVI	**Vila Bisbo**	**164.85**	**25**	*e*PKPdf	**PKPdf**	07 34 57.3	+1.8	
PFVI	**Vila Bisbo**	**164.85**	**25**	*e*PKPdf	**PKPdf**	07 34 57.4	+1.9	
PVAQ	**Vaqueiros**	**165.02**	**22**	*e*PKPdf	**PKPdf**	07 34 57.0	+1.4	
PVAQ	**Vaqueiros**	**165.02**	**22**	*e*PKPab	**PKPab**	07 35 56.9	+0.8	
KEST	**Kesra**	**165.05**	**326**	PKP	**PKPdf**	07 34 56.0	+0.1	
	comp=Z,6.7nm,0.7s,baz=338,slow=4.4,SNR=8.4							
KEST				PKPab	**PKPab**	07 35 57.3	+0.8	
	comp=Z,5.5nm,0.6s,baz=11,slow=4.2,SNR=4.9							
KEST	**Kesra**	**165.05**	**326**	*e*PKPdf	**PKPdf**	07 34 56.0	+0.1	
KEST				*e*PKPab	**PKPab**	07 35 56.6	+0.2	
PBDV	**Barranco-do-Ve**	**165.09**	**23**	*e*PKPdf	**PKPdf**	07 34 56.2	+0.4	
PBDV	**Barranco-do-Ve**	**165.09**	**23**	*e*PKPab	**PKPab**	07 35 57.2	+0.7	
TOA0	**Torodi Ar. Sit**	**169.34**	**193**	*e*PKPdf	**PKPdf**	07 34 58.9	-0.5	
TORD	**Torodi Ar. Bea**	**169.34**	**193**	PKP	**PKPdf**	07 34 58.5	-0.8	
	comp=Z,25nm,1.0s,baz=29,slow=0.6,SNR=91							
TORD				PKPab	**PKPab**	07 36 15.5	-0.1	
	comp=Z,51nm,0.8s,baz=164,slow=4.7,SNR=56							
TORD				pPKPab	**pPKPab**	07 38 15.8	-1.1	
	comp=Z,1.6nm,0.7s,baz=187,slow=3.9,SNR=2.9							
TORD				PP	**PP**	07 40 04.8	-0.2	
	comp=Z,14nm,1.1s,baz=140,slow=3.0,SNR=12							
TAM	**Tamanrasset**	**174.12**	**263**	*e*PKIKP	**PKPdf**	07 35 02.2	+0.6	
TAM	**Tamanrasset**	**174.12**	**263**	*e*PKPdf	**PKPdf**	07 35 02.2	+0.6	

MEX 19 07:22:42.2±0.3, 16°38N×97°83W, h6km±7km, MD3.5, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.28**	**272**	*i* P	Pg	07 22 47.6	-0.2
PNIG				*e*S	Sg	07 22 51.5	-0.1
VHO	**Vista Hermosa**	**1.25**	**57**	*i* P	Pg	07 23 02.5	-3.8
VHO				*i* S	Sg	07 23 18.6	-4.0
TLIG	**Tlapa**	**1.37**	**329**	*i* P	Pn	07 23 04.2	-3.7
TLIG				*e*S	Sb	07 23 21.3	-4.8
HUIG	**Huatulco**	**1.77**	**110**	*i* P	Pn	07 23 10.6	-2.7
HUIG				*i* S	Sn	07 23 31.3	-4.8

WEL 19 07:32:32.0±0.6, 45°17S×166°79E, h5km, ML3.6/10, 1C-2D, Error ellipse: s-maj=6.0km s-min=1.7km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DCZ	**Deep Cove**	**0.40**	**139**	⇓PG	Pb	07 32 40.9	-0.7
DCZ				AML	AML	07 32 48.9	
DCZ				AML	AML	07 32 49.0	
DCZ				AML	AML	07 32 49.9	
MSZ	**Milford Sound**	**0.95**	**59**	P*	Pg	07 32 49.7	-0.4
MSZ				S*	Sb	07 33 03.5	-0.2
MSZ				AML	AML	07 33 04.7	
MSZ				AML	AML	07 33 04.7	
MSZ				AML	AML	07 33 06.5	
MLZ	**Mavora Lakes**	**0.96**	**103**	⇑P*	Pg	07 32 50.4	0.0
MLZ				AML	AML	07 33 07.6	
MLZ				AML	AML	07 33 09.6	
WHZ	**Wether Hill Ro**	**1.09**	**132**	P*	Pg	07 32 52.2	-0.8
WHZ				S*	Sg	07 33 06.7	-0.5
WHZ				AML	AML	07 33 07.2	
WKZ	**Wanaka**	**1.62**	**79**	PN	Pb	07 33 01.8	-0.6
WKZ				AML	AML	07 33 27.3	
WKZ				AML	AML	07 33 27.4	
EAZ	**Earnscleugh**	**1.79**	**93**	PN	Pn	07 33 03.9	+0.4
EAZ				AML	AML	07 33 30.0	
EAZ				AML	AML	07 33 30.7	
JCZ	**Jackson Bay**	**1.80**	**53**	PN	Pb	07 33 05.4	-0.1
JCZ				AML	AML	07 33 34.0	
JCZ				AML	AML	07 33 34.0	
APZ	**The Paps**	**1.87**	**154**	PN	Pn	07 33 04.9	+0.2
SYZ	**Scrubby Hill**	**2.14**	**131**	PN	Pn	07 33 07.8	-0.6
SYZ				AML	AML	07 33 38.0	
SYZ				AML	AML	07 33 38.7	
TUZ	**Tuapeka**	**2.15**	**113**	PN	Pn	07 33 08.3	-0.2
TUZ				AML	AML	07 33 39.5	
TUZ				AML	AML	07 33 39.5	
TUZ				AML	AML	07 33 40.7	
TUZ				AML	AML	07 33 40.7	
LBZ	**Lake Benmore**	**2.54**	**73**	PN	Pn	07 33 13.8	-0.1
FOZ	**Fox Glacier**	**2.72**	**54**	AML	AML	07 34 01.7	
FOZ				AML	AML	07 34 01.7	
ODZ	**Otahua Downs**	**2.73**	**89**	⇓PN	Pn	07 33 16.0	-0.6
HHSZ	**Highcliff Hill**	**2.77**	**106**	PN	Pn	07 33 17.3	+0.2
RPZ	**Rata Peaks**	**3.38**	**66**	PN	Pn	07 33 24.5	-1.0

NNC 19 07:32:35.4±2.8, 50°21N×79°10E, h0km, mb3.6, mpv3.4, 12C-2D, Error ellipse: s-maj=49.6km s-min=20.4km az=49.0, Suspected Mining explosion., Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUR14	**Kurchatov Arra**	**0.52**	**321**	⇑P	Pg	07 32 44.8	-0.4
KUR07	**Kurchatov Arra**	**0.53**	**315**	⇑P	Pg	07 32 44.7	-0.8
KUR15	**Kurchatov Arra**	**0.53**	**320**	⇑P	Pg	07 32 45.3	-0.3
KUR06	**Kurchatov Arra**	**0.54**	**317**	⇑P	Pg	07 32 45.1	-0.5
KURBB	**Kurchatov Arra**	**0.55**	**319**	⇑P	Pg	07 32 45.4	-0.5
	84nm,0.4s						
KUR05	**Kurchatov Arra**	**0.56**	**320**	⇑P	Pg	07 32 45.7	-0.4
KUR16	**Kurchatov Arra**	**0.56**	**318**	⇑P	Pg	07 32 45.6	-0.6
KUR17	**Kurchatov Arra**	**0.58**	**317**	⇑P	Pg	07 32 45.8	-0.7
MK31	**Makanchi Array**	**4.03**	**147**	⇓Pg	Pb	07 33 46.3	-0.8
	1.5nm,0.2s,baz=324,slow=16						
MK31				⇑Lg	Lg	07 34 42.4	
	28nm,0.6s,baz=331,slow=26						
VOSK	**Vostochnaya**	**5.66**	**299**	⇑Sn	Sn	07 35 01.7	-4.7
	2.5nm,0.4s						
VOSK				⇑Lg	Lg	07 35 28.7	
	1.7nm,0.5s						
BVA0	**Borovoye Array**	**6.11**	**301**	⇓Sn	Sn	07 35 13.0	-4.4
	3.9nm,0.6s,baz=116,slow=23,SNR=5.8						
BVA0				⇑Lg	Lg	07 35 49.7	
	13nm,1.1s,baz=94,slow=24,SNR=4.7						

ISCJB ***19*** *07:34:39.0±0.6, 36°.81N±0°.04×71°.31E±0°.07, h200km, mb3.5/5, Error ellipse: s-maj=8.9km s-min=5.1km az=150.7*

NNC ***19*** *07:34:42.8±2.5, 37°.06N×71°.21E, h191km±16km, mb3.0, mpv3.9, Error ellipse: s-maj=23.0km s-min=10.8km az=149.0*

IDC ***19*** *07:34:42.1±5.8, 36°.97N×71°.22E, h194km±43km, mb3.4/5, mb1 3.4/9, mb1mx3.1/58, mbtmp4.0/9, MS3.9/1, Ms1 3.9/1, ms1mx2.7/28, Error ellipse: s-maj=49.5km s-min=23.2km az=12.0*

ISC 19 07:34:41.2±1.0, 36°92N±0°.08×71°21E±0°.07, h200km, n24, σ1s89/27, mb3.7/5, 6C-3D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZET	**Dzherino**	**2.67**	**316**	⇓P	**Pn**	**07 35 26.1**	**-0.9**
	14nm,0.2s						
DZET				⇓S	**Sn**	**07 36 02.1**	**-0.7**
	42nm,0.2s						
MNAS	**Manas**	**5.65**	**10**	⇑P	**Pn**	**07 36 04.4**	**+0.5**
	7.2nm,0.3s						
MNAS				⇑S	**Sn**	**07 37 07.9**	**-1.5**
	11nm,0.4s						
KK31	**Karatay Array**	**6.20**	**355**	P	**Pn**	**07 36 11.1**	**+0.2**
	2.3nm,0.3s,baz=171,slow=11,SNR=32						
KK31				⇓S	**Sn**	**07 37 19.8**	**-2.3**
	19nm,0.5s,baz=172,slow=24,SNR=4.1						
AAK	**Ala-Archa**	**6.24**	**23**	P	**Pn**	**07 36 11.7**	**+0.1**
	2.0nm,0.3s,baz=173,slow=9.5,SNR=4.4						
AAK				S	**Sn**	**07 37 23.0**	**-0.2**
	1.6nm,0.3s,baz=134,slow=23,SNR=6.5						
AAK	**Ala-Archa**	**6.24**	**23**	⇑S	**Sn**	**07 37 21.6**	**-1.7**
	14nm,0.6s						
TKM2	**Tokmak 2**	**6.87**	**28**	⇑S	**Sn**	**07 37 37.4**	**-0.7**
	11nm,0.8s						
PYUN	**Pinan**	**13.26**	**128**	*e*P	Pn	07 37 37.7	-4.5
	16nm,0.3s						
KOLN	**Koldanda**	**13.88**	**128**	*e*P	Pn	07 37 46.2	-3.6
	3.7nm,0.3s						
GKN	**Gorkha**	**14.39**	**124**	*e*P	Pn	07 37 52.3	-3.8
	13nm,0.4s						
AB31	**Akbulak array**	**14.80**	**330**	P	**P**	**07 38 03.2**	**+1.6**
	1.5nm,0.5s,baz=142,slow=10,SNR=22						
AB31				S	**S**	**07 40 39.1**	**-5.9**
	1.6nm,0.5s,baz=149,slow=22,SNR=9.9						
KKN	**Kakani**	**14.96**	**123**	*e*P	Pn	07 37 59.1	-4.0
PKIN	**Phulchoki**	**15.18**	**124**	*e*P	**Pn**	**07 38 02.5**	**-3.3**
	14nm,0.4s						
BVAR	**Borovoye Array**	**16.11**	**358**	P	**Pn**	**07 38 18.8**	**+2.2**
	0.3nm,0.3s,baz=165,slow=12,SNR=4.5						
BVAR				S	**S**	**07 41 13.5**	**-1.2**
	0.1nm,0.3s,baz=251,slow=39,SNR=2.0						
RAMN	**Ramite**	**16.39**	**123**	*e*P	**P**	**07 38 18.2**	**-1.5**
	5.9nm,0.2s						
AKTO	**Aktyubinsk**	**16.50**	**329**	P	**Pn**	**07 38 22.5**	**+1.2**
	2.7nm,0.3s,baz=134,slow=9.8,SNR=20						
AKTO				S	**S**	**07 41 24.7**	**+2.0**
	0.2nm,0.3s,baz=150,slow=22,SNR=1.9						
AKTO	**Aktyubinsk**	**16.50**	**329**	⇑P	**Pn**	**07 38 21.7**	**+0.4**
	5.4nm,0.4s						
AKTO				⇑S	**Sn**	**07 41 25.2**	**-1.6**
	2.1nm,0.7s						
ZALV	**Zalesovo Beam**	**19.46**	**25**	P	**P**	**07 38 53.5**	**+1.1**
	0.9nm,0.3s,baz=215,slow=12,SNR=2.7						
SONM	**Songino Array**	**27.96**	**56**	P	**P**	**07 40 14.3**	**+1.3**
	0.3nm,0.4s,baz=263,slow=5.7,SNR=2.5						
PALK	**Pallekele**	**30.75**	**161**	LR	LR	07 53 27.7	
	comp=Z,215nm,18.7s,baz=296,slow=37						
FINES	**FINESS Array B**	**37.23**	**326**	P	**P**	**07 41 34.4**	**+1.4**
	0.8nm,0.4s,baz=132,slow=8.5,SNR=5.5						
ARCES	**ARCESS Array B**	**40.82**	**337**	P	**P**	**07 42 04.0**	**+1.3**
	2.2nm,0.7s,baz=116,slow=8.4,SNR=6.4						
HFS	**Hagfors**	**42.84**	**322**	P	**P**	**07 42 20.1**	**+0.9**
	1.8nm,0.5s,baz=104,slow=11,SNR=9.6						
NB2	**NORSAR Subarra**	**44.15**	**323**	P	**P**	**07 42 30.2**	**+0.6**
	comp=Z,0.7nm,0.5s,baz=97,slow=7.9						
NOA	**NORSAR Array B**	**44.15**	**323**	P	**P**	**07 42 30.4**	**+0.8**
	comp=Z,0.8nm,0.5s,baz=97,slow=7.7,SNR=4.4						

GUC 19 08:28:13.9±0.7, 32°04S×71°50W, h49km±10km, ML3.6, 5C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ROCH	**El Roble**	**1.02**	**156**	⇑*i* P	Pn	08 28 33.7	+1.6
ROCH				*i* S	Sn	08 28 48.6	+3.1
ROCH				AML	AML	08 28 50.1	
	comp=N,4μm,0.4s						
PEL	**Peldehue**	**1.30**	**148**	⇑*i* P	Pn	08 28 37.8	+2.1
PEL				*i* S	Sn	08 28 55.2	+3.1
CLCH	**Cerro Calan**	**1.58**	**149**	⇑*i* P	Pn	08 28 41.8	+2.2
CLCH				*i* S	Sn	08 29 02.5	+3.5
CLCH				IAML		08 29 04.5	
	comp=E,1μm,0.8s						
FSR	**Penalolen**	**1.66**	**151**	*e*P	Pn	08 28 43.5	+2.8
FSR				*i* S	Sn	08 29 04.9	+4.1
ANTU	**Antumapu**	**1.69**	**155**	*e*P	Pn	08 28 42.7	+1.5
ANTU				*i* S	Sn	08 29 04.9	+3.2
ANTU				AML	AML	08 29 14.8	
	comp=E,492nm,0.6s						
TLL	**Tololo Astrono**	**1.96**	**18**	⇑*i* P	Pn	08 28 47.1	+2.2
TLL				*e*S	Sn	08 29 12.5	+4.1
TLL				AML	AML	08 29 16.5	
	comp=E,839nm,0.2s						
LCO	**Las Campanas**	**3.09**	**13**	⇑*i* P	Pn	08 29 02.8	+2.3
LCO				*i* S	Sn	08 29 40.7	+4.3

KRSC 19 08:41:28.8±0.9, 55°43N×162°59E, h41km±18km, ML3.6, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KBG	**Krutoberegovo**	**0.83**	**4**	*e*P	Pn	08 41 44.2	+0.2
KBG				S	Sn	08 41 55.7	+0.7
MKZ	**Mys Kozlova**	**1.01**	**210**	*e*P	Pn	08 41 47.3	+0.9
MKZ				S	Sn	08 42 01.5	+2.2
ZLN	**Zelenaya**	**1.17**	**301**	*e*P	Pn	08 41 50.1	+1.3
ZLN				S	Sn	08 42 05.2	+1.6
CIRR	**Tsirk**	**1.25**	**304**	P	Pn	08 41 51.1	+1.2
CIRR				S	Sn	08 42 06.9	+1.4
LGNR	**Loginova**	**1.26**	**302**	P	Pn	08 41 50.6	+0.5
LGNR				S	Sn	08 42 06.5	+0.5
TUMD	**Tumrok D**	**1.27**	**261**	*i* P	Pn	08 41 53.0	+2.9
TUMD				*i* S	Sn	08 42 09.1	+3.1
BZMR	**Bezymyannaya**	**1.29**	**294**	*e*P	Pn	08 41 52.8	+2.3
BZMR				*e*S	Sn	08 42 09.4	+2.8
SMKR	**Semkarok**	**1.32**	**332**	*e*P	Pn	08 41 52.1	+1.4
SMKR				*e*S	Sn	08 42 08.3	+1.2
KZV	**Kizimen**	**1.35**	**257**	P	Pn	08 41 53.8	+2.5
KMNR	**Kamenistaya**	**1.38**	**285**	*i* P	Pn	08 41 53.8	+2.2
KMNR				*i* S	Sn	08 42 11.4	+2.8
BDR	**Baidarnaya**	**1.38**	**326**	*i* P	Pn	08 41 53.4	+1.8
BDR				*i* S	Sn	08 42 10.6	+1.9
KRSR	**Krestovskiy**	**1.39**	**305**	*e*P	Pn	08 41 52.5	+0.7
KRSR				*e*S	Sn	08 42 09.6	+0.7
KLY	**Klyuchi**	**1.41**	**310**	*e*P	Pn	08 41 52.1	+0.2
KLY				*i* S	Sn	08 42 08.6	-0.6
KPT	**Kopyto**	**1.44**	**293**	*e*P	Pn	08 41 54.6	+2.1
KPT				*e*S	Sn	08 42 13.1	+2.8
SRKR	**Sorokina**	**1.46**	**328**	*e*P	Pn	08 41 54.4	+1.6
SRKR				*e*S	Sn	08 42 12.8	+2.1
BKI	**Bering**	**1.95**	**95**	*e*P	Pn	08 42 01.9	+2.6
BKI				*e*S	Sn	08 42 25.7	+3.2
SPN	**Mys Shipunski**	**2.78**	**214**	*e*P	Pn	08 42 12.6	+1.8
SPN				*e*S	Sn	08 42 42.8	-0.2
NLC	**Nalytchevo**	**2.96**	**221**	*e*S	Sn	08 42 50.0	+2.7
SDLR	**Sedlovina**	**3.06**	**227**	P	Pn	08 42 17.8	+3.1
SDLR				*e*S	Sn	08 42 53.7	+3.6
KRER	**Koryakskii**	**3.10**	**228**	P	Pn	08 42 19.5	+4.2
KRER				S	Sn	08 42 56.1	+5.0
AVH	**Avacha**	**3.13**	**228**	P	Pn	08 42 20.8	+5.2
AVH				S	Sn	08 42 55.1	+3.4
UGLR	**Uglovaya**	**3.13**	**226**	P	Pn	08 42 19.0	+3.3
GNL	**Ganaly**	**3.22**	**239**	*e*P	Pn	08 42 20

AAK				⇑S		Sn	08 53 36.0	-0.7	
	9.6nm,0.6s								
TKM2	**Tokmak 2**	7.36	26	⇑P		Pn	08 52 31.8	+3.6	
	2.1nm,0.6s								
TKM2				⇑S		Sn	08 53 51.0	-0.5	
	11nm,0.8s								
MKAR	**Makanchi Array**	13.31	35	P		Pn	08 53 47.5	+2.6	
	0.1nm,0.3s,baz=221,slow=9.1,SNR=4.9								
KURBB	**Kurchatov Arra**	15.18	18	P		Pn	08 54 08.4	+0.5	
	0.1nm,0.3s,baz=208,slow=11,SNR=4.7								
AB31	**Akbulak array**	15.23	331	⇑P		P	08 54 10.1	+0.9	
	0.2nm,0.4s,baz=148,slow=12,SNR=12								
BVAR	**Borovoye Array**	16.64	358	P		P	08 54 25.5	+0.9	
	0.4nm,0.3s,baz=160,slow=14,SNR=5.6								
AKTO	**Aktyubinsk**	16.93	330	P		P	08 54 27.5	-0.4	
	0.2nm,0.3s,baz=137,slow=9.9,SNR=6.4								
AKTO	**Aktyubinsk**	16.93	330	⇑P		Pn	08 54 29.9	+0.8	
	1.5nm,0.6s								
ZALV	**Zalesovo Beam**	19.96	24	P		P	08 55 01.3	+0.6	
	0.9nm,0.3s,baz=222,slow=11,SNR=4.3								
FINES	**FINESS Array B**	37.63	326	P		P	08 57 39.2	-0.3	
	1.1nm,0.8s,baz=130,slow=9.6,SNR=6.4								
ARCES	**ARCESS Array B**	41.28	338	P		P	08 58 08.2	-1.4	
	0.7nm,0.5s,baz=108,slow=7.8,SNR=5.5								
NOA	**NORSAR Array B**	44.53	323	P		P	08 58 35.2	-0.7	
	0.6nm,0.5s,baz=96,slow=7.6,SNR=3.2								
TORD	**Torodi Ar. Bea**	65.83	269	P		P	09 01 07.0	-1.7	
	0.7nm,0.6s,baz=48,slow=5.9,SNR=11								
ILAR	**Eielson Array**	74.85	16	P		P	09 02 01.5	-1.0	
	0.2nm,0.8s,baz=311,slow=5.5,SNR=3.2								
YKA	**Yellowknife Ar**	81.34	3	P		P	09 02 37.9	-0.3	
	0.4nm,0.5s,baz=351,slow=5.8,SNR=5.1								
WRA	**Warramunga Arr**	81.84	122	P		P	09 02 40.6	-0.8	
	0.8nm,1.1s,baz=319,slow=4.3,SNR=3.6								
ASAR	**Alice Springs**	84.10	125	P		P	09 02 53.5	+0.4	
	0.2nm,0.6s,baz=308,slow=5.0,SNR=4.5								

*MOS **19** 08:58:07.9±1.1,49.°17N×156.°06E,h11km,mb4.5/1,Error ellipse: s-maj=31.4km s-min=5.3km az=77.0*
*IDC **19** 08:58:09.1±2.3,49.°43N×155.°68E,h0km,mb3.4/3, mb1 3.9/5,mb1mx3.5/71,mbtmp3.6/5,ML4.9/1,MS2.4/1, Ms1 2.4/1,ms1mx2.1/33,Error ellipse: s-maj=42.4km s-min=30.3km az=31.0*
*KRSC **19** 08:58:15.8±2.8,49.°65N×157.°05E,h16km±10km,ML4.3*
*ISCJB **19** 08:58:17.9±1.0,49.°66N±0.°06×156.°4E±0.°1,h54km, mb3.8/4,Error ellipse: s-maj=13.6km s-min=8.0km az=19.0*
ISC 19 08:58:17.1±1.5,49.°6N±0.°1×156.°25E±0.°10,h54km,n48, σ1§62/55,mb3.5/4,1D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.13**	**356**	⇓*i*	PN	**Pn**	**08 58 35.7**	**-0.9**
SKR					pmax	pmax		
	comp=Z,300nm,0.4s							
SKR	**Severo-Kuril's**	**1.13**	**356**	*eP*		**Pn**	**08 58 35.7**	**-0.9**
SKR				*eS*		**Sn**	**08 58 49.1**	**-1.9**
PAU	**Pauzhetka**	**1.94**	**10**	PN		**Pn**	**08 58 47.4**	**-0.2**
PAU	**Pauzhetka**	**1.94**	**10**	*eP*		**Pn**	**08 58 47.4**	**-0.2**
PAU				*eS*		**Sn**	**08 59 09.6**	**-1.2**
ASAK	**Asacha**	**3.01**	**20**	PN		**Pn**	**08 59 03.1**	**+0.8**
ASAK	**Asacha**	**3.01**	**20**	*eP*		**Pn**	**08 59 03.1**	**+0.8**
RUS	**Russkaya**	**3.21**	**26**	PN		**Pn**	**08 59 04.4**	**-0.6**
RUS	**Russkaya**	**3.21**	**26**	*eP*		**Pn**	**08 59 04.4**	**-0.6**
RUS				*eS*		**Sn**	**08 59 39.5**	**-2.4**
KRMR	**Karymshinskiy**	**3.48**	**19**	PN		**Pn**	**08 59 10.6**	**+1.9**
KRMR	**Karymshinskiy**	**3.48**	**19**	P		**Pn**	**08 59 10.6**	**+1.9**
KRMR				S		**Sn**	**08 59 50.5**	**+2.0**
PETK	**Petropavlovsk-**	**3.67**	**14**	Pn		**Pn**	**08 59 12.2**	**+1.0**
	comp=Z,2.9nm,0.3s,baz=199,slow=12,SNR=15							
PETK				LR		LR	09 00 55.3	
	comp=Z,46nm,18.6s,baz=150,slow=43							
PET	**Petropavlovsk**	**3.78**	**23**	*e*PN		**Pn**	**08 59 14.0**	**+1.3**
PET	**Petropavlovsk**	**3.78**	**23**	P		**Pn**	**08 59 14.1**	**+1.3**
PET				*e*S		**Sn**	**08 59 55.2**	**-0.7**
DALK	**Dalny**	**3.81**	**23**	PN		**Pn**	**08 59 13.8**	**+0.6**
DALK	**Dalny**	**3.81**	**23**	P		**Pn**	**08 59 13.8**	**+0.6**
DALK				S		**Sn**	**08 59 55.1**	**-1.6**
UGLR	**Uglovaya**	**3.99**	**23**	PN		**Pn**	**08 59 17.0**	**+1.2**
UGLR	**Uglovaya**	**3.99**	**23**	*e*P		**Pn**	**08 59 17.0**	**+1.2**
UGLR				S		**Sn**	**09 00 01.7**	**+0.4**
AVH	**Avacha**	**4.02**	**22**	PN		**Pn**	**08 59 18.0**	**+1.8**
AVH	**Avacha**	**4.02**	**22**	*e*P		**Pn**	**08 59 18.0**	**+1.8**
KRER	**Koryakskii**	**4.06**	**22**	PN		**Pn**	**08 59 18.4**	**+1.6**
KRER	**Koryakskii**	**4.06**	**22**	*e*P		**Pn**	**08 59 18.4**	**+1.6**
KRER				S		**Sn**	**09 00 04.7**	**+1.6**
SDLR	**Sedlovina**	**4.07**	**23**	PN		**Pn**	**08 59 17.4**	**+0.5**
SDLR	**Sedlovina**	**4.07**	**23**	*e*P		**Pn**	**08 59 17.4**	**+0.5**
SDLR				S		**Sn**	**09 00 02.5**	**-0.7**
KRX	**Arik**	**4.09**	**21**	PN		**Pn**	**08 59 18.7**	**+1.6**
KRX	**Arik**	**4.09**	**21**	*e*P		**Pn**	**08 59 18.7**	**+1.6**
KRX				S		**Sn**	**09 00 05.0**	**+1.3**
NLC	**Nalytchevo**	**4.10**	**27**	PN		**Pn**	**08 59 17.0**	**-0.1**
NLC	**Nalytchevo**	**4.10**	**27**	P		**Pn**	**08 59 17.0**	**-0.1**
NLC				S		**Sn**	**09 00 01.6**	**-2.2**
SPN	**Mys Shipunski**	**4.26**	**32**	PN		**Pn**	**08 59 19.6**	**+0.3**
SPN	**Mys Shipunski**	**4.26**	**32**	*e*P		**Pn**	**08 59 19.6**	**+0.3**
SPN				*e*S		**Sn**	**09 00 06.5**	**-1.2**
GNL	**Ganaly**	**4.27**	**14**	PN		**Pn**	**08 59 22.3**	**+2.7**
GNL	**Ganaly**	**4.27**	**14**	*e*P		**Pn**	**08 59 22.3**	**+2.7**
MKZ	**Mys Kozlova**	**6.03**	**32**	PN		**Pn**	**08 59 42.6**	**-1.0**
MKZ	**Mys Kozlova**	**6.03**	**32**	*e*P		**Pn**	**08 59 42.6**	**-1.0**
MKZ				S		**Sn**	**09 00 46.6**	**-4.6**
SMKR	**Semkarok**	**7.70**	**22**	PN		**Pn**	**09 00 09.4**	**+2.9**
SMKR	**Semkarok**	**7.70**	**22**	P		**Pn**	**09 00 09.4**	**+2.9**
BKI	**Bering**	**8.20**	**43**	PN		**Pn**	**09 00 13.6**	**+0.4**
BKI	**Bering**	**8.20**	**43**	P		**Pn**	**09 00 13.6**	**+0.4**
MA2	**Magadan**	**10.52**	**345**	Pn		**Pn**	**09 00 45.5**	**+0.5**
	comp=Z,0.9nm,0.3s,baz=158,slow=22,SNR=4.0							
H11N2	**WAKE ISLAND Hy**	**30.96**	**160**	T		T	09 37 17.4	
	baz=347,slow=76,SNR=9.4							
H11N1	**WAKE ISLAND Hy**	**30.97**	**160**	T		T	09 37 17.4	
	baz=347,slow=76,SNR=7.7							
H11N3	**WAKE ISLAND Hy**	**30.97**	**160**	T		T	09 37 18.4	
	baz=347,slow=76,SNR=7.5							
H11S1	**WAKE ISLAND Hy**	**32.10**	**161**	T		T	09 38 45.0	
	baz=347,slow=76,SNR=36							
H11S3	**WAKE ISLAND Hy**	**32.11**	**161**	T		T	09 38 44.5	
	baz=347,slow=76,SNR=70							
H11S2	**WAKE ISLAND Hy**	**32.12**	**161**	T		T	09 38 43.9	
	baz=347,slow=76,SNR=33							
ILAR	**Eielson Array**	**33.04**	**41**	P		**P**	**09 04 47.9**	**+1.0**
	comp=Z,0.4nm,0.8s,baz=246,slow=7.1,SNR=5.7							
KURK	**Kurchatov**	**47.59**	**303**	P		**P**	**09 06 45.1**	**-2.0**
KURK				pmax		pmax		
	comp=Z,4.0nm,0.5s							
KURBB	**Kurchatov Arra**	**47.68**	**303**	P		**P**	**09 06 45.1**	**-2.7**
	comp=Z,0.3nm,0.5s,baz=64,slow=8.1,SNR=4.2							
TXAR	**Lajitas Array**	**74.31**	**63**	P		**P**	**09 09 50.9**	**+2.1**
	comp=Z,0.4nm,0.7s,baz=299,slow=4.5,SNR=5.9							

*JMA **19** 08:58:34.4±0.1,23.°14N×121.°57E,h6km±3km,M3.4*
*ISCJB **19** 08:58:36.0±0.4,23.°13N±0.°02×121.°51E±0.°02,h19km±4km, Error ellipse: s-maj=3.9km s-min=3.1km az=146.4*
*TAP **19** 08:58:36.9,23.°19N×121.°38E,h19km,ML3.8,B*
ISC 19 08:58:35.7±1.0,23.°17N±0.°02×121.°48E±0.°02,h15km±8km, n64,σ0§73/97,10C-3D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHKT	**Chengkung**	**0.13**	**237**	⇓*i*	P	**Pb**	**08 58 41.1**	**+1.2**
CHKT								
	baz=183			*i*	S	**Sb**	**08 58 44.0**	**+1.3**
	baz=183							
TWF1	**Yuli**	**0.25**	**317**	⇑*i*	P	**Pb**	**08 58 42.2**	**+0.2**
	baz=330							
TWF1				*i*	S	**Sb**	**08 58 46.0**	**-0.2**
	baz=330							
EHY	**Hungye**	**0.37**	**336**	⇑P		**Pb**	**08 58 44.1**	**+0.1**
	baz=337							
EHY				*i*	S	**Sg**	**08 58 49.1**	**+0.8**
	baz=337							
ELDTW	**Lidau**	**0.43**	**273**	⇑*i*	P	**Pg**	**08 58 44.1**	**-0.3**
	baz=269							
ELDTW				S		**Sg**	**08 58 48.9**	**-1.4**
	baz=269							
TWG	**Pinlang**	**0.51**	**227**	⇓*i*	P	**Pg**	**08 58 46.1**	**+0.2**
	baz=228							
TWG				*i*	S	**Sg**	**08 58 52.9**	**+0.1**
	baz=228							
TTN	**Taitung**	**0.52**	**217**	*e*P		**Pb**	**08 58 46.9**	**+0.4**
	baz=210							
TEGC	**Jichi Village**	**0.54**	**6**	*e*P		**Pn**	**08 58 48.7**	**-0.3**
	baz=21							
YUS	**Yu-Shan**	**0.58**	**303**	⇑*i*P		**Pg**	**08 58 47.3**	**0.0**
	baz=301							
YUS				S		**Sg**	**08 58 54.3**	**-0.9**
	baz=301							
ESL	**Shilin**	**0.64**	**356**	*e*P		**Pn**	**08 58 50.0**	**-0.4**
	baz=352							
STYT	**Tauyuan**	**0.67**	**270**	⇑*i*P		**Pg**	**08 58 48.4**	**-0.4**
	baz=267							
STYT				*i*	S	**Sg**	**08 58 56.0**	**-1.6**
	baz=267							
ALS	**Alishan**	**0.71**	**299**	⇑*i*P		**Pg**	**08 58 49.6**	**0.0**
	baz=294							
ALS				*e*S		**Sg**	**08 58 59.3**	**+0.2**
	baz=294							
ECL	**Taimali**	**0.75**	**221**	*e*P		**Pb**	**08 58 49.0**	**-1.5**
	baz=215							
WTP	**Ta-pu**	**0.80**	**276**	⇑*i*P		**Pb**	**08 58 51.3**	**-0.1**
	baz=274							
WTP				*e*S		**Sb**	**08 59 01.6**	**-0.5**
	baz=274							
HWA	**Hwalien**	**0.81**	**8**	*e*P		**Pn**	**08 58 52.6**	**-0.1**
	baz=359							
SGST	**Jiashian**	**0.83**	**264**	P		**Pb**	**08 58 51.6**	**-0.4**
	baz=259							
SGST				*e*S		**Sb**	**08 59 02.5**	**-0.5**
	baz=259							
CHN4	**Tsaushan**	**0.84**	**283**	⇑*i*P		**Pb**	**08 58 52.0**	**0.0**
	baz=282							
CHN4				*e*S		**Sg**	**08 59 03.7**	**+0.7**
	baz=282							
CHN5	**Tsauling**	**0.85**	**300**	⇑*i*P		**Pg**	**08 58 52.5**	**+0.2**
	baz=301							
CHN5				*e*S		**Sn**	**08 59 04.9**	**-0.7**
	baz=301							
CHN1	**Nanshi**	**0.88**	**271**	⇑*i*P		**Pb**	**08 58 52.8**	**+0.1**
	baz=269							
CHN1				*e*S		**Sg**	**08 59 04.7**	**+0.4**
	baz=269							
SMLT	**Sun Moon Lake**	**0.89**	**323**	*e*P		**Pb**	**08 58 52.7**	**-0.3**
	baz=333							
SMLT				*e*S		**Sb**	**08 59 03.8**	**-1.0**
	baz=333							
SSD	**Sandimen**	**0.89**	**242**	*e*P		**Pb**	**08 58 51.6**	**-1.3**
	baz=234							
TWD	**Chiawan**	**0.91**	**7**	*e*P		**Pg**	**08 58 53.8**	**+0.3**
	baz=357							
TWK	**Hsinying**	**0.92**	**276**	*e*P		**Pb**	**08 58 53.0**	**-0.4**
	baz=275							
TWK				*e*S		**Sg**	**08 59 06.0**	**+0.4**
	baz=275							
TYC	**Yuchr**	**0.93**	**322**	*e*P		**Pb**	**08 58 53.5**	**0.0**
	baz=336							
TYC				*e*S		**Sb**	**08 59 05.4**	**-0.4**
	baz=336							
TAW	**Tawu**	**0.97**	**214**	*e*P		**Pb**	**08 58 53.0**	**-1.3**
	baz=212							
EAST	**Anshuo**	**0.98**	**217**	⇓*i*P		**Pb**	**08 58 53.1**	**-1.3**
	baz=215							
WGK	**Gukeng**	**0.99**	**301**	*e*P		**Pn**	**08 58 55.1**	**0.0**
	baz=303							
WHF	**Hehuan Shan**	**0.99**	**348**	*e*P		**Pb**	**08 58 54.3**	**-0.6**
	baz=3.0							
CHN2	**Minshiung**	**0.99**	**291**	*e*P		**Pn**	**08 58 55.0**	**-0.2**
	baz=292							
CHN2				S		**Sn**	**08 59 09.0**	**0.0**
	baz=292							
SGLT	**Jiouru**	**1.01**	**244**	*e*P		**Pg**	**08 58 56.9**	**+1.6**
	baz=241							
WNT	**Mingjian**	**1.02**	**314**	*e*P		**Pg**	**08 58 55.8**	**+0.4**
	baz=316							
WNT				*e*S		**Sn**	**08 59 09.7**	**+0.1**
	baz=316							
CHY	**Chiayi**	**1.03**	**289**	*i* P		**Pn**	**08 58 55.6**	**0.0**
	baz=289							
CHY				S		**Sg**	**08 59 09.3**	**+0.4**
	baz=289							
CHN3	**Shinhua**	**1.03**	**265**	*e*P		**Pg**	**08 58 56.8**	**+1.1**
	baz=272							
CHN3				*e*S		**Sn**	**08 59 11.7**	**+1.7**
	baz=272							
TWM1	**Shoushan**	**1.03**	**251**	*e*P		**Pg**	**08 58 56.0**	**+0.3**
	baz=250							
TWT	**Tachien**	**1.11**	**345**	*e*P		**Pn**	**08 58 57.0**	**-0.1**
	baz=346							
SCZT	**Fangliau**	**1.12**	**225**	*e*P		**Pn**	**08 58 56.2**	**-0.8**
	baz=219							
TAI1	**Yung-k'ang**	**1.16**	**264**	*e*P		**Pg**	**08 58 59.2**	**+1.0**
	baz=264							
CHN8	**Yiju**	**1.18**	**279**	*e*P		**Pb**	**08 58 58.3**	**+0.4**
	baz=278							
CHN8				S		**Sg**	**08 59 14.5**	**+0.5**
	baz=278							
SCLT	**Jiali**	**1.19**	**271**	*e*P		**Pg**	**08 58 59.8**	**+1.2**
	baz=269							
SCLT				*e*S		**Sg**	**08 59 14.6**	**+0.5**
	baz=269							
TCU	**Taichung**	**1.22**	**323**	*e*P		**Pg**	**08 58 59.9**	**+0.6**
	baz=324							
TCU				*e*S		**Sg**	**08 59 15.6**	**+0.4**
	baz=324							
WSF	**Szhu**	**1.25**	**292**	*e*P		**Pn**	**08 58 58.6**	**0.0**
	baz=292							
WSF				*e*S		**Sn**	**08 59 15.2**	**-0.1**
	baz=292							
NNS	**Nan Shan**	**1.27**	**356**	*e*P		**Pb**	**08 58 59.6**	**+0.1**
	baz=8.0							
TWQ1	**Liyutan**	**1.34**	**331**	*e*P		**Pg**	**08 59 01.6**	**0.0**
	baz=332							
TWQ1				*e*S		**Sg**	**08 59 19.6**	**+0.5**
	baz=332							
TWK1	**Hengchun**	**1.37**	**207**	*e*P		**Pn**	**08 58 59.8**	**-0.6**
	baz=198							
NSY	**Sanyi**	**1.41**	**332**	*e*P		**Pb**	**08 59 02.1**	**+0.4**
	baz=335							
ENTT	**Nioudou**	**1.47**	**3**	*e*P		**Pb**	**08 59 02.4**	**-0.4**
	baz=2.0							
TWC	**Suao**	**1.47**	**13**	*e*P		**Pb**	**08 59 03.3**	**+0.5**
	baz=360							
NSK	**Sanguang**	**1.50**	**356**	*e*P		**Pb**	**08 59 03.0**	**-0.4**
	baz=8.0							
NSTT	**Nanjuang**	**1.52**	**343**	*e*P		**Pb**	**08 59 03.3**	**-0.4**
	baz=343							
TWE	**Neicheng**	**1.55**	**6**	*e*P		**Pg**	**08 59 05.2**	**-0.4**
	baz=5.0							
WDGT	**Dungji**	**1.68**	**273**	*e*P		**Pn**	**08 59 05.3**	**+0.7**
	baz=273							
WDGT				*e*S		**Sn**	**08 59 24.1**	**-1.7**
	baz=273							
EGS		**1.72**	**14**	*e*P		**Pg**	**08 59 08.0**	**-0.7**
	baz=359							
TWA	**Mucha**	**1.81**	**3**	*e*P		**Pb**	**08 59 07.9**	**-0.6**
	baz=12							
PNG	**Penghu**	**1.81**	**283**	*e*P		**Pn**	**08 59 06.6**	**+0.2**
	baz=283							
JYNG	**Yonagunijimaku**	**1.85**	**46**	P		**Pn**	**08 59 07.4**	**+0.4**
JYNG				S		**Sn**	**08 59 30.4**	**+0.3**
YOJ	**Yonaguni jima**	**1.90**	**47**	P		**Pn**	**08 59 08.5**	**+0.8**
YOJ				S		**Sn**	**08 59 32.1**	**+0.7**
YOJ	**Yonaguni jima**	**1.90**	**47**	*e*P		**Pn**	**08 59 08.7**	**+1.1**
	baz=49							
NWF	**Wu-fen Shan**	**1.91**	**8**	*e*P		**Pb**	**08 59 09.2**	**-1.2**
	baz=5.0							
HATJ	**Hateruma jima**	**2.31**	**67**	S		**Sn**	**08 59 41.1**	**-0.3**
IRIF	**Iriomote-Funau**	**2.36**	**60**	P		**Pn**	**08 59 15.0**	**+1.0**
IRIF				S		**Sn**	**08 59 43.3**	**+0.5**
JKRS	**Kuro-shima**	**2.55**	**65**	P		**Pn**	**08 59 17.6**	**+1.0**
JKRS				*e*S		**Sn**	**08 59 47.8**	**+0.4**
JIJ	**Ishigaki jima**	**2.71**	**63**	P		**Pn**	**08 59 19.2**	**+0.4**
JIJ				S		**Sn**	**08 59 50.4**	**-1.0**
JISG	**Ishigakijimahi**	**2.95**	**61**	P		**Pn**	**08 59 22.6**	**+0.5**
JISG				*e*S		**Sn**	**08 59 56.1**	**-1.2**
JTJ	**Tarama**	**3.29**	**63**	P		**Pn**	**08 59 27.7**	**+0.9**
JTJ				S		**Sn**	**09 00 06.1**	**+0.4**
JIRB	**Irabujima**	**3.76**	**63**	P		**Pn**	**08 59 33.1**	**-0.1**

*ISK **19** 09:01:31.9,40.°45N×25.°81E,h5km,MD2.7*
*CSEM **19** 09:01:32.6±0.1,40.°45N×25.°81E,h8km,ML2.3,Error ellipse: s-maj=2.2km s-min=1.8km az=171.0*
*ISCJB **19** 09:01:32.4±0.4,40.°45N±0.°02×25.°82E±0.°02,h6km±3km, Error ellipse: s-maj=3.4km s-min=3.1km az=169.8*
*ATH **19** 09:01:32.1,40.°44N×25.°82E,h25km±2km,ML2.3/4,Error ellipse: s-maj=2.4km s-min=1.3km az=313.0*

*THE **19** 09:01:33.0,40.°44N×25.°83E,h9km,ML2.4/10,Error ellipse: s-maj=0.7km s-min=0.4km az=297.0*
*DDA **19** 09:01:36.4,40.°29N×26.°15E,h7km,Md3.3*
ISC 19 09:01:32.8±0.8,40.°44N±0.°02×25.°82E±0.°02,h11km±6km, n75,σ0§53/110,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SMTH	**Samothraki Isl**	**0.22**	**278**	P		**Pg**	**09 01 37.5**	**0.0**
SMTH				S		**Sg**	**09 01 41.3**	**+0.6**
SMTH	**Samothraki Isl**	**0.22**	**278**	P		**Pg**	**09 01 37.5**	**0.0**
SMTH				S		**Sg**	**09 01 41.3**	**+0.6**
SMTH	**Samothraki Isl**	**0.22**	**278**	P		**Pg**	**09 01 36.9**	**-0.7**
SMTH				S		**Sg**	**09 01 39.9**	**-0.8**
SMTH				AML		AML	09 01 41.8	
	comp=E,1359μm,0.1s							
SMTH				AML		AML	09 01 42.0	
	comp=N,1772μm,0.1s							
GADA	**Gvkgeada**	**0.26**	**166**	*e*PG		**Pg**	**09 01 37.8**	**-0.3**
GADA				*e*SG		**Sg**	**09 01 42.4**	**+0.7**
GADA	**Gvkgeada**	**0.26**	**166**	*e*P		**Pg**	**09 01 38.3**	**+0.2**
GADA	**Gvkgeada**	**0.26**	**166**	*e*Pg		**Pg**	**09 01 37.8**	**-0.3**
GADA	**Gvkgeada**	**0.26**	**166**	P		**Pg**	**09 01 38.3**	**+0.2**
GADA				*e*Sg		**Sg**	**09 01 42.4**	**+0.7**
ENEZ	**Enez**	**0.39**	**41**	*e*PG		**Pg**	**09 01 39.9**	**-0.7**
ENEZ	**Enez**	**0.39**	**41**	P		**Pg**	**09 01 40.3**	**-0.3**
ENEZ	**Enez**	**0.39**	**41**	*e*Pg		**Pg**	**09 01 39.9**	**-0.7**
ENEZ	**Enez**	**0.39**	**41**	P		**Pg**	**09 01 40.3**	**-0.3**
ALN	**Alexandroupoli**	**0.49**	**21**	*e*PG		**Pg**	**09 01 42.2**	**-0.1**
ALN	**Alexandroupoli**	**0.49**	**21**	P		**Pg**	**09 01 42.1**	**-0.3**
ALN				S		**Sg**	**09 01 49.2**	**+0.3**
ALN	**Alexandroupoli**	**0.49**	**21**	P		**Pg**	**09 01 42.1**	**-0.3**
ALN				S		**Sg**	**09 01 48.3**	**-0.6**
ALN	**Alexandroupoli**	**0.49**	**21**	P		**Pg**	**09 01 42.3**	**-0.1**
ALN				S		**Sg**	**09 01 48.3**	**-0.6**
ALN				AML		AML	09 01 49.4	
	comp=N,993μm,0.4s							
ALN				AML		AML	09 01 50.1	
	comp=E,582μm,0.2s							
ERIK	**Erikli-Kesan**	**0.58**	**66**	*e*PG		**Pg**	**09 01 43.2**	**-0.9**
ERIK				*e*SG		**Sg**	**09 01 51.4**	**-0.3**
ERIK	**Erikli-Kesan**	**0.58**	**66**	*e*Pg		**Pg**	**09 01 43.2**	**-0.9**
ERIK				*e*Sg		**Sg**	**09 01 51.4**	**-0.3**
BOZC	**Bozcaada**	**0.62**	**163**	*i* P		**Pg**	**09 01 44.6**	**-0.3**
BOZC				*i* S		**Sg**	**09 01 53.2**	**0.0**
LPK	**Lapseki**	**0.72**	**95**	*e*PG		**Pg**	**09 01 46.5**	**-0.3**
LPK	**Lapseki**	**0.72**	**95**	*e*Pg		**Pg**	**09 01 46.5**	**-0.3**
EZN	**Ezine**	**0.73**	**148**	*e*PG		**Pg**	**09 01 46.0**	**-0.9**
EZN	**Ezine**	**0.73**	**148**	*e*Pg		**Pg**	**09 01 46.0**	**-0.9**
LIA	**Limnos Island**	**0.73**	**222**	P		**Pg**	**09 01 47.0**	**+0.1**
LIA				S		**Sb**	**09 01 57.5**	**0.0**
LIA	**Limnos Island**	**0.73**	**222**	P		**Pg**	**09 01 47.0**	**+0.1**
LIA				S		**Sb**	**09 01 57.2**	**+0.3**
RKY	**Sarkoy-Tekirda**	**1.06**	**76**	*e*PG		**Pb**	**09 01 53.5**	**+0.2**
RKY	**Sarkoy-Tekirda**	**1.06**	**76**	*e*Pg		**Pb**	**09 01 53.5**	**+0.2**
SART	**Tekirdag**	**1.07**	**76**	*i* P		**Pg**	**09 01 53.1**	**-0.3**
SART				*i* S		**Sb**	**09 02 07.7**	**+0.4**
SART	**Tekirdag**	**1.07**	**76**	P		**Pg**	**09 01 53.1**	**-0.3**
SART				S		**Sb**	**09 02 07.7**	**+0.4**
KAVA	**Kavala**	**1.14**	**300**	P		**Pg**	**09 01 54.2**	**-0.5**
KAVA				S		**Sn**	**09 02 10.7**	**+0.5**
KAVA	**Kavala**	**1.14**	**300**	P		**Pg**	**09 01 54.2**	**-0.5**
KAVA				S		**Sn**	**09 02 10.7**	**+0.5**
KAVA	**Kavala**	**1.14**	**300**	P		**Pb**	**09 01 54.6**	**+0.1**
SIGR	**SIGRI**	**1.23**	**179**	*e*PN		**Pn**	**09 01 55.9**	**0.0**
SIGR	**SIGRI**	**1.23**	**179**	P		**Pn**	**09 01 55.5**	**-0.4**
SIGR				S		**Sn**	**09 02 12.6**	**+0.2**
SIGR	**SIGRI**	**1.23**	**179**	P		**Pn**	**09 01 55.5**	**-0.4**
SIGR	**SIGRI**	**1.23**	**179**	*e*Pn		**Pn**	**09 01 55.9**	**0.0**
SIGR				S		**Sn**	**09 02 12.6**	**+0.2**
SIGR	**SIGRI**	**1.23**	**179**	P		**Pn**	**09 01 55.5**	**-0.4**
SIGR				S		**Sb**	**09 02 11.1**	**-0.7**
SIGR				AML		AML	09 02 13.5	
	comp=N,312μm,0.4s							
SIGR				AML		AML	09 02 15.5	
	comp=E,283μm,0.3s							
PRK	**Paraskevi**	**1.24**	**164**	P		**Pn**	**09 01 56.1**	**0.0**
PRK				S		**Sg**	**09 02 12.7**	**-0.1**
PRK	**Paraskevi**	**1.24**	**164**	P		**Pn**	**09 01 56.1**	**0.0**
PRK				S		**Sg**	**09 02 12.7**

	1.0nm,0.6s,baz=113,slow=2.2,SNR=7.4							
FINES	**FINESS Array B**	**144.45**	**340**	PKP		**PKPab**	**09 21 25.2**	**-0.5**
	3.2nm,0.5s,baz=55,slow=3.2,SNR=24							
NB2	**NORSAR Subarra**	**148.05**	**351**	PKP		**PKPbc**	**09 21 36.0**	**-0.5**
	comp=Z,1.0nm,0.5s,baz=11,slow=2.9							
NOA	**NORSAR Array B**	**148.05**	**351**	PKPbc		**PKPbc**	**09 21 36.3**	**-0.2**
	comp=Z,1.4nm,0.6s,baz=14,slow=4.4,SNR=6.0							
AKASG	**Malin Array Be**	**150.68**	**323**	PKPbc		**PKPbc**	**09 21 43.4**	**+0.1**
	comp=Z,3.0nm,0.6s,baz=46,slow=3.2,SNR=9.2							
EIL	**Elat**	**151.31**	**278**	PKPbc		**PKPbc**	**09 21 46.4**	**+1.0**
	comp=Z,3.0nm,0.5s,baz=63,slow=6.8,SNR=3.3							
BRTR	**Keskin Array B**	**152.16**	**300**	PKPbc		**PKPbc**	**09 21 47.6**	**+0.4**
	comp=Z,1.0nm,0.4s,baz=123,slow=4.6,SNR=4.8							

IDC 19 09:04:56.3±2.1, 0.53N×126.63E, h0km, mb3.8/3, mb1 4.1/3, mb1mx3.5/54, mbtmp3.9/3, Error ellipse: s-maj=171.6km s-min=26.3km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
WRA	**Warramunga Arr**	**21.70**	**160**	P	P	09	09 48.2	-0.8
	1.9nm,0.4s,baz=338,slow=11,SNR=43							
ASAR	**Alice Springs**	**25.07**	**164**	P	P	09	10 23.2	+0.6
	1.4nm,0.4s,baz=344,slow=11,SNR=44							
MKAR	**Makanchi Array**	**60.13**	**326**	P	P	09	15 05.6	-0.1
	0.2nm,0.3s,baz=116,slow=7.6,SNR=4.5							

IDC 19 09:06:39.0±1.6,31.5N×139.76E, h0km, mb3.3/2, mb1 3.6/3, mb1mx3.3/63, mbtmp3.3/3, ML3.6/1, Error ellipse: s-maj=143.8km s-min=21.1km az=90.0
ISCJB 19 09:06:40.8±1.0,32.05N±0.06×141.1E±0.1, h57km, mb3.2/2, Error ellipse: s-maj=15.4km s-min=7.3km az=163.9
JMA 19 09:06:43.9±0.2,32.50N×141.11E, h0km, M3.6

ISC 19 09:06:42.0±1.5, 32.01N±0.09×141.1E±0.1, h57km, n10, σ1§96/18, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
JHJ2	**Mitsune**	**1.56**	**315**	P	**Pn**	**09**	**07 07.8**	**+0.3**
JHJ2				S	**Sn**	**09**	**07 25.0**	**-1.7**
JHJ	**Hachijo jima 2**	**1.59**	**314**	Pn	**Pn**	**09**	**07 07.3**	**-0.6**
	36nm,0.3s,baz=118,slow=23,SNR=14							
JHJ				Sn	**Sn**	**09**	**07 23.9**	**-3.4**
	139nm,0.3s,baz=297,slow=23,SNR=14							
BSO1	**Boso 1**	**2.64**	**357**	P	**Pn**	**09**	**07 21.5**	**-0.2**
BSO1				S	**Sn**	**09**	**07 49.6**	**-2.6**
BSO3	**Boso 3**	**2.83**	**350**	P	**Pn**	**09**	**07 25.5**	**+0.9**
BSO3				S	**Sn**	**09**	**07 55.4**	**-1.9**
JHU	**Hanno**	**4.13**	**339**	P	**Pn**	**09**	**07 43.6**	**+1.0**
JHU				S	**Sn**	**09**	**08 27.6**	**-2.0**
JRY	**Ryogami san**	**4.40**	**336**	P	**Pn**	**09**	**07 48.2**	**+1.8**
JRY				S	**Sn**	**09**	**08 36.5**	**+0.1**
MJAR	**Matsushiro Arr**	**5.13**	**333**	Pn	**Pn**	**09**	**07 59.3**	**+3.1**
	2.1nm,0.3s,baz=167,slow=14,SNR=13							
MJAR				Sn	**Sn**	**09**	**08 55.3**	**+1.2**
	0.5nm,0.3s,baz=143,slow=22,SNR=6.6							
MAT	**Matsushiro**	**5.13**	**333**	P	**Pn**	**09**	**07 59.6**	**+3.3**
MAT				S	**Sn**	**09**	**08 55.2**	**+1.1**
WRA	**Warramunga Arr**	**52.07**	**188**	P	**P**	**09**	**15 46.5**	**+0.3**
	0.2nm,0.4s,baz=5.1,slow=7.6,SNR=7.5							
ASAR	**Alice Springs**	**55.79**	**188**	P	**P**	**09**	**16 12.6**	**-0.7**
	0.1nm,0.5s,baz=7.0,slow=16,SNR=2.9							

ISK 19 09:10:16.7, 40.45N×25.77E, h8km, ML3.0
ISCJB 19 09:10:17.4±0.4, 40.45N±0.02×25.80E±0.02, h7km±3km, Error ellipse: s-maj=2.8km s-min=2.4km az=18.3
CSEM 19 09:10:17.7±0.1, 40.43N×25.81E, h8km, MD3.6, Error ellipse: s-maj=2.0km s-min=1.6km az=11.0
ATH 19 09:10:17.3, 40.45N×25.82E, h22km±2km, ML2.9/4, Error ellipse: s-maj=2.7km s-min=1.1km az=349.0
THE 19 09:10:17.9, 40.44N×25.82E, h6km, ML3.0/16, Error ellipse: s-maj=0.8km s-min=0.5km az=43.0

ISC 19 09:10:18.0±0.9, 40.43N±0.02×25.81E±0.01, h11km±6km, n123, σ0§77/179, 4C-5D, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
SMTH	**Samothraki Isl**	**0.21**	**280**	P	**Pg**	**09**	**10 22.6**	**+0.1**
SMTH				S	**Sg**	**09**	**10 25.2**	**-0.4**
SMTH	**Samothraki Isl**	**0.21**	**280**	P	**Pg**	**09**	**10 22.3**	**-0.3**
SMTH				S	**Sg**	**09**	**10 25.2**	**-0.4**
SMTH	**Samothraki Isl**	**0.21**	**280**	P	**Pg**	**09**	**10 22.3**	**-0.3**
SMTH				S	**Sg**	**09**	**10 25.6**	**0.0**
SMTH				AML	AML	09	10 26.8	
	comp=N,5529μm,0.3s							
SMTH				AML	AML	09	10 27.4	
	comp=E,3701μm,0.4s							
GADA	**Gvkgeada**	**0.25**	**164**	*e*PG	**Pg**	**09**	**10 23.0**	**-0.2**
GADA				*e*SG	**Sg**	**09**	**10 27.4**	**+0.8**
GADA	**Gvkgeada**	**0.25**	**164**	P	**Pg**	**09**	**10 23.4**	**+0.2**
GADA	**Gvkgeada**	**0.25**	**164**	*e*Pg	**Pg**	**09**	**10 23.0**	**-0.2**
GADA	**Gvkgeada**	**0.25**	**164**	P	**Pg**	**09**	**10 23.4**	**+0.2**
GADA				*e*Sg	**Sg**	**09**	**10 27.4**	**+0.8**
ENEZ	**Enez**	**0.40**	**41**	*e*PG	**Pg**	**09**	**10 25.4**	**-0.6**
ENEZ				*e*SG	**Sg**	**09**	**10 31.6**	**+0.4**
ENEZ	**Enez**	**0.40**	**41**	P	**Pg**	**09**	**10 25.3**	**-0.6**
ENEZ	**Enez**	**0.40**	**41**	*e*Pg	**Pg**	**09**	**10 25.4**	**-0.6**
ENEZ				*e*Sg	**Sg**	**09**	**10 31.7**	**+0.4**
ALN	**Alexandroupoli**	**0.50**	**21**	*e*PG	**Pg**	**09**	**10 26.9**	**-0.8**
ALN				*e*SG	**Sg**	**09**	**10 34.1**	**-0.3**
ALN	**Alexandroupoli**	**0.50**	**21**	P	**Pg**	**09**	**10 27.2**	**-0.6**
ALN				S	**Sg**	**09**	**10 34.1**	**-0.3**
ALN	**Alexandroupoli**	**0.50**	**21**	*e*Pg	**Pg**	**09**	**10 26.9**	**-0.8**
ALN	**Alexandroupoli**	**0.50**	**21**	P	**Pg**	**09**	**10 27.2**	**-0.6**
ALN				S	**Sg**	**09**	**10 34.0**	**-0.3**
ALN	**Alexandroupoli**	**0.50**	**21**	P	**Pg**	**09**	**10 27.4**	**-0.4**
ALN				S	**Sg**	**09**	**10 34.0**	**-0.3**
ALN				AML	AML	09	10 34.5	
	comp=N,4566μm,0.4s							
ALN				AML	AML	09	10 35.2	
	comp=E,1834μm,0.2s							
GELI	**Tayfur-Gelibol**	**0.51**	**94**	*e*PG	**Pg**	**09**	**10 28.1**	**+0.1**
GELI	**Tayfur-Gelibol**	**0.51**	**94**	*e*Pg	**Pg**	**09**	**10 28.1**	**+0.1**
ERIK	**Erikli-Kesan**	**0.59**	**66**	*e*PG	**Pg**	**09**	**10 28.3**	**-1.2**
ERIK	**Erikli-Kesan**	**0.59**	**66**	*e*Pg	**Pg**	**09**	**10 28.3**	**-1.2**
BOZC	**Bozcaada**	**0.62**	**162**	*i* P	**Pg**	**09**	**10 29.8**	**-0.3**
BOZC				*i* S	**Sg**	**09**	**10 38.5**	**+0.3**
LIA	**Limnos Island**	**0.72**	**222**	P	**Pg**	**09**	**10 32.0**	**+0.1**
LIA				S	**Sb**	**09**	**10 42.9**	**+0.5**
LIA	**Limnos Island**	**0.72**	**222**	P	**Pg**	**09**	**10 32.0**	**+0.1**
LIA				S	**Sb**	**09**	**10 42.9**	**+0.5**
EZN	**Ezine**	**0.72**	**147**	*e*PG	**Pg**	**09**	**10 30.7**	**-1.3**
EZN	**Ezine**	**0.72**	**147**	*e*Pg	**Pg**	**09**	**10 30.7**	**-1.3**
LPK	**Lapseki**	**0.73**	**94**	*e*PG	**Pg**	**09**	**10 31.4**	**-0.7**
LPK	**Lapseki**	**0.73**	**94**	*e*Pg	**Pg**	**09**	**10 31.4**	**-0.7**
RKY	**Sarkoy-Tekirda**	**1.07**	**76**	*e*PN	**Pg**	**09**	**10 38.0**	**-0.7**
RKY	**Sarkoy-Tekirda**	**1.07**	**76**	*e*Pn	**Pg**	**09**	**10 38.0**	**-0.7**
SART	**Tekirdag**	**1.08**	**76**	*i* P	**Pg**	**09**	**10 37.6**	**-1.1**
SART				*i* S	**Sb**	**09**	**10 53.3**	**+0.5**
SART	**Tekirdag**	**1.08**	**76**	P	**Pg**	**09**	**10 37.6**	**-1.1**
SART				S	**Sb**	**09**	**10 53.3**	**+0.5**
KAVA	**Kavala**	**1.13**	**300**	P	**Pb**	**09**	**10 39.1**	**-0.6**
KAVA				S	**Sn**	**09**	**10 55.2**	**-0.2**
KAVA	**Kavala**	**1.13**	**300**	P	**Pb**	**09**	**10 39.1**	**-0.6**
KAVA				S	**Sn**	**09**	**10 55.2**	**-0.2**
KAVA	**Kavala**	**1.13**	**300**	P	**Pb**	**09**	**10 39.5**	**-0.1**
KRBG	**Karabiga-Canak**	**1.14**	**92**	*e*PN	**Pb**	**09**	**10 39.3**	**-0.4**
KRBG	**Karabiga-Canak**	**1.14**	**92**	*e*Pn	**Pb**	**09**	**10 39.3**	**-0.4**
SIGR	**SIGRI**	**1.22**	**178**	P	**Pn**	**09**	**10 40.3**	**-0.8**
SIGR				S	**Sn**	**09**	**10 57.6**	**0.0**
SIGR	**SIGRI**	**1.22**	**178**	P	**Pn**	**09**	**10 40.3**	**-0.8**
SIGR				S	**Sn**	**09**	**10 57.6**	**0.0**
SIGR	**SIGRI**	**1.22**	**178**	P	**Pn**	**09**	**10 40.6**	**-0.4**
SIGR				S	**Sn**	**09**	**10 58.3**	**+0.7**
SIGR				AML	AML	09	10 58.4	
	comp=N,1548μm,0.6s							
SIGR				AML	AML	09	11 00.7	
	comp=E,1158μm,0.5s							
PRK	**Paraskevi**	**1.24**	**163**	P	**Pn**	**09**	**10 40.9**	**-0.4**
PRK				S	**Sn**	**09**	**10 58.3**	**+0.3**
PRK	**Paraskevi**	**1.24**	**163**	P	**Pn**	**09**	**10 40.9**	**-0.4**
PRK				S	**Sn**	**09**	**10 58.1**	**+0.1**
PRK	**Paraskevi**	**1.24**	**163**	P	**Pn**	**09**	**10 40.9**	**-0.4**
PRK				S	**Sn**	**09**	**10 58.1**	**+0.1**
PRK				AML	AML	09	10 58.8	
	comp=E,1031μm,0.9s							
PRK				AML	AML	09	10 59.1	
	comp=N,1250μm,0.9s							
AYVA	**Ayvalik**	**1.31**	**149**	*i* P	**Pn**	**09**	**10 42.5**	**+0.1**
AYVA				*i* S	**Sb**	**09**	**10 59.5**	**-0.1**
AYVA	**Ayvalik**	**1.31**	**149**	P	**Pn**	**09**	**10 42.5**	**+0.1**
AYVA				S	**Sb**	**09**	**10 59.5**	**-0.1**
KNL	**Bal¯–kesir**	**1.32**	**96**	*i* P	**Pn**	**09**	**10 41.4**	**-1.1**
KNL				*i* S	**Sb**	**09**	**10 59.9**	**+0.1**
MRMT	**Marmara Adasi**	**1.37**	**82**	*e*PN	**Pn**	**09**	**10 42.4**	**-0.8**
MRMT	**Marmara Adasi**	**1.37**	**82**	*e*Pn	**Pn**	**09**	**10 42.4**	**-0.8**
OUR	**Ouranopolis**	**1.40**	**267**	*e*PN	**Pn**	**09**	**10 42.4**	**-1.1**
OUR	**Ouranopolis**	**1.40**	**267**	P	**Pn**	**09**	**10 42.8**	**-0.7**
OUR				S	**Sg**	**09**	**11 02.8**	**-0.2**
OUR	**Ouranopolis**	**1.40**	**267**	*e*Pn	**Pn**	**09**	**10 42.4**	**-1.1**
OUR	**Ouranopolis**	**1.40**	**267**	P	**Pn**	**09**	**10 42.8**	**-0.7**
OUR				S	**Sg**	**09**	**11 02.8**	**-0.2**
TKR	**Tekirdag**	**1.43**	**66**	*e*PN	**Pn**	**09**	**10 44.1**	**+0.2**
TKR	**Tekirdag**	**1.43**	**66**	*e*Pn	**Pn**	**09**	**10 44.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.49**	**104**	*e*PN	**Pn**	**09**	**10 45.0**	**+0.2**
GONE	**Gonen-Balikesi**	**1.49**	**104**	*e*Pn	**Pn**	**09**	**10 45.0**	**+0.2**
BALY	**Balya**	**1.55**	**116**	*i* P	**Pn**	**09**	**10 45.3**	**-0.4**
BALY				*i* S	**Sb**	**09**	**11 07.2**	**+0.7**
BALY	**Balya**	**1.55**	**116**	P	**Pn**	**09**	**10 45.3**	**-0.4**
BALY				S	**Sb**	**09**	**11 07.2**	**+0.7**
EDC	**Edincik**	**1.57**	**92**	*e*PN	**Pn**	**09**	**10 46.1**	**+0.2**
EDC	**Edincik**	**1.57**	**92**	*e*Pn	**Pn**	**09**	**10 46.1**	**+0.2**
EDRB	**Edirne**	**1.58**	**26**	*e*PN	**Pn**	**09**	**10 45.9**	**-0.1**
EDRB	**Edirne**	**1.58**	**26**	P	**Pn**	**09**	**10 44.9**	**-1.1**
EDRB				S	**Sb**	**09**	**11 07.4**	**+0.1**
EDRB	**Edirne**	**1.58**	**26**	P	**Pn**	**09**	**10 44.9**	**-1.1**
EDRB	**Edirne**	**1.58**	**26**	*e*Pn	**Pn**	**09**	**10 45.9**	**-0.1**
EDRB				S	**Sb**	**09**	**11 07.4**	**+0.1**
DKL	**Dikili**	**1.60**	**148**	*e*PN	**Pn**	**09**	**10 46.3**	**0.0**
DKL	**Dikili**	**1.60**	**148**	*e*Pn	**Pn**	**09**	**10 46.3**	**0.0**
PAIG	**Paliouri**	**1.71**	**253**	P	**Pn**	**09**	**10 46.8**	**-1.0**
PAIG				S	**Sn**	**09**	**11 09.7**	**+0.1**
PAIG	**Paliouri**	**1.71**	**253**	P	**Pn**	**09**	**10 46.8**	**-1.0**
PAIG				S	**Sn**	**09**	**11 09.7**	**+0.1**
BALB	**Balikesir**	**1.78**	**116**	*e*PN	**Pn**	**09**	**10 49.2**	**+0.5**
BALB	**Balikesir**	**1.78**	**116**	*e*Pn	**Pn**	**09**	**10 49.2**	**+0.5**
PLG	**Polygyros**	**1.81**	**269**	P	**Pn**	**09**	**10 48.5**	**-0.7**
PLG				S	**Sb**	**09**	**11 13.7**	**-0.1**
PLG	**Polygyros**	**1.81**	**269**	P	**Pn**	**09**	**10 48.5**	**-0.7**
PLG				S	**Sb**	**09**	**11 13.7**	**-0.1**
SRS	**Serrai**	**1.82**	**293**	P	**Pn**	**09**	**10 48.7**	**-0.6**
SRS				S	**Sn**	**09**	**11 12.7**	**+0.4**
SRS	**Serrai**	**1.82**	**293**	P	**Pn**	**09**	**10 48.7**	**-0.6**
SRS				S	**Sn**	**09**	**11 12.7**	**+0.4**
SOH	**Sokhos**	**1.91**	**283**	P	**Pn**	**09**	**10 50.0**	**-0.6**
SOH				S	**Sn**	**09**	**11 15.7**	**+1.1**
SOH	**Sokhos**	**1.91**	**283**	P	**Pn**	**09**	**10 50.0**	**-0.6**
SOH				S	**Sn**	**09**	**11 15.7**	**+1.1**
AOS	**Alonnisos**	**1.95**	**230**	*e*PN	**Pn**	**09**	**10 51.2**	**+0.1**
AOS	**Alonnisos**	**1.95**	**230**	P	**Pn**	**09**	**10 51.0**	**-0.1**
AOS				S	**Sn**	**09**	**11 16.3**	**+0.7**
AOS	**Alonnisos**	**1.95**	**230**	P	**Pn**	**09**	**10 50.7**	**-0.4**
AOS	**Alonnisos**	**1.95**	**230**	*e*Pn	**Pn**	**09**	**10 51.2**	**+0.1**
AOS				S	**Sn**	**09**	**11 16.3**	**+0.7**
AOS	**Alonnisos**	**1.95**	**230**	P	**Pn**	**09**	**10 50.6**	**-0.4**
KCTX	**Karacabey (Bur**	**1.96**	**94**	*e*PN	**Pn**	**09**	**10 51.6**	**+0.4**
KCTX	**Karacabey (Bur**	**1.96**	**94**	*e*Pn	**Pn**	**09**	**10 51.6**	**+0.4**
CHOS	**Chios island**	**2.05**	**175**	*e*PN	**Pn**	**09**	**10 52.1**	**-0.5**
CHOS	**Chios island**	**2.05**	**175**	P	**Pn**	**09**	**10 52.1**	**-0.5**
CHOS				S	**Sn**	**09**	**11 18.9**	**+0.7**
CHOS	**Chios island**	**2.05**	**175**	P	**Pn**	**09**	**10 52.1**	**-0.5**
CHOS				S	**Sn**	**09**	**11 18.9**	**+0.7**
HORT	**Hortiatis**	**2.07**	**275**	*e*PN	**Pn**	**09**	**10 52.2**	**-0.6**
HORT	**Hortiatis**	**2.07**	**275**	P	**Pn**	**09**	**10 52.6**	**-0.3**
HORT				S	**Sn**	**09**	**11 20.1**	**+1.4**
HORT	**Hortiatis**	**2.07**	**275**	*e*Pn	**Pn**	**09**	**10 52.2**	**-0.6**
HORT	**Hortiatis**	**2.07**	**275**	P	**Pn**	**09**	**10 52.6**	**-0.3**
HORT				S	**Sn**	**09**	**11 20.1**	**+1.4**
URLA	**Izmir**	**2.16**	**163**	*i* P	**Pn**	**09**	**10 54.1**	**+0.1**
URLA				*i* S	**Sn**	**09**	**11 22.0**	**+1.2**
URLA	**Izmir**	**2.16**	**163**	P	**Pn**	**09**	**10 54.1**	**+0.1**
URLA				S	**Sn**	**09**	**11 22.0**	**+1.2**
AKS	**Akhisar**	**2.19**	**134**	*e*PN	**Pn**	**09**	**10 54.5**	**+0.1**
AKS	**Akhisar**	**2.19**	**134**	*e*Pn	**Pn**	**09**	**10 54.5**	**+0.1**
CTKS	**Kestanelik-??a**	**2.20**	**68**	*e*PN	**Pn**	**09**	**10 55.0**	**+0.5**
CTKS	**Kestanelik-??a**	**2.20**	**68**	*e*Pn	**Pn**	**09**	**10 55.0**	**+0.5**
XOR	**Xorichti**	**2.28**	**243**	P	**Pn**	**09**	**10 55.2**	**-0.4**
XOR				S	**Sn**	**09**	**11 24.6**	**+0.9**
XOR	**Xorichti**	**2.28**	**243**	P	**Pn**	**09**	**10 55.2**	**-0.4**
XOR				S	**Sn**	**09**	**11 24.6**	**+0.9**
KNT	**Kendrikon**	**2.33**	**289**	*e*PN	**Pn**	**09**	**10 56.2**	**-0.1**
KNT	**Kendrikon**	**2.33**	**289**	P	**Pn**	**09**	**10 56.1**	**-0.2**
KNT				S	**Sn**	**09**	**11 25.8**	**+0.9**
KNT	**Kendrikon**	**2.33**	**289**	*e*Pn	**Pn**	**09**	**10 56.2**	**-0.1**
KNT				S	**Sn**	**09**	**11 25.8**	**+0.9**
ARMT	**Armutlu**	**2.33**	**86**	*e*PN	**Pn**	**09**	**10 57.5**	**+1.1**
ARMT	**Armutlu**	**2.33**	**86**	*e*Pn	**Pn**	**09**	**10 57.5**	**+1.1**
ISK	**Istanbul-Kandi**	**2.55**	**75**	*e*PN	**Pn**	**09**	**11 00.0**	**+0.7**
ISK	**Istanbul-Kandi**	**2.55**	**75**	P	**Pn**	**09**	**10 59.1**	**-0.2**
ISK	**Istanbul-Kandi**	**2.55**	**75**	P	**Pn**	**09**	**10 59.1**	**-0.2**
ISK	**Istanbul-Kandi**	**2.55**	**75**	*e*Pn	**Pn**	**09**	**11 00.0**	**+0.7**
DEMI	**Demirci**	**2.64**	**121**	*i* P	**Pn**	**09**	**11 00.3**	**-0.4**
DEMI				*i* S	**Sg**	**09**	**11 40.7**	**-2.0**
DEMI	**Demirci**	**2.64**	**121**	P	**Pn**	**09**	**11 00.3**	**-0.4**
GRG	**Griva**	**2.64**	**283**	P	**Pn**	**09**	**11 01.1**	**+0.4**
GRG	**Griva**	**2.64**	**283**	P	**Pn**	**09**	**11 01.1**	**+0.4**
VTS	**Vitosha**	**2.91**	**319**	P	**Pn**	**09**	**11 04.3**	**-0.1**
VTS				S	**Sn**	**09**	**11 40.4**	**+0.9**
VTS	**Vitosha**	**2.91**	**319**	P	**Pn**	**09**	**11 04.3**	**-0.1**
VTS				S	**Sn**	**09**	**11 40.4**	**+0.9**
BARS	**Barje**	**3.82**	**310**	*e*Pn	**Pn**	**09**	**11 17.3**	**+0.4**
ZAGS	**Zajecar**	**4.30**	**323**	⇑*i*Pn	**Pn**	**09**	**11 23.5**	**+0.1**
TIRR	**Tirgusor**	**4.46**	**25**	⇓*i*P	**Pg**	**09**	**11 42.7**	**-0.7**
TIRR	**Tirgusor**	**4.46**	**25**	⇓*i*P	**Pg**	**09**	**11 42.7**	**-0.7**
MLR	**Muntele Rosu**	**5.06**	**1**	⇓*i*P	**Pn**	**09**	**11 35.9**	**+2.0**
MLR	**Muntele Rosu**	**5.06**	**1**	⇓*i*P	**Pn**	**09**	**11 35.9**	**+2.0**
GRUS	**Gruza**	**5.12**	**314**	⇑*i*Pn	**Pn**	**09**	**11 35.1**	**+0.4**
IVAS	**Ivanjica**	**5.25**	**309**	*e*Pn	**Pn**	**09**	**11 33.6**	**-3.0**
PLOR	**Plostina**	**5.45**	**6**	⇑*i*P	**Pn**	**09**	**11 42.6**	**+3.3**
PLOR	**Plostina**	**5.45**	**6**	⇑*i*P	**Pn**	**09**	**11 42.6**	**+3.3**
TRUS	**Trudelj**	**5.51**	**315**	*e*Pn	**Pn**	**09**	**11 39.8**	**-0.2**
DIVS	**Divibare**	**5.66**	**312**	⇓*i*Pn	**Pn**	**09**	**11 42.3**	**+0.1**

JMA 19 09:11:07.4±0.2, 38.08N×143.35E, h33km, M3.3
IDC 19 09:11:08.4±1.5, 38.57N×143.15E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/61, mbtmp3.4/5, ML3.2/1, Error ellipse: s-maj=36.7km s-min=29.9km az=114.0

ISC 19 09:11:08.7±1.4, 38.09N±0.07×143.02E±0.09, h18km, n14, σ1§69/16, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
JIO	**Ouri**	**1.36**	**286**	P	**Pg**	**09**	**11 34.6**	**-0.4**
OFUJ	**Ofunato**	**1.44**	**313**	P	**Pb**	**09**	**11 35.1**	**0.0**
OFUJ				*e*S	**Sg**	**09**	**11 55.2**	**-0.2**
JMK	**Ichinoseki**	**1.65**	**302**	P	**Pb**	**09**	**11 38.5**	**-0.1**
JMK				*e*S	**Sg**	**09**	**12 01.4**	**-0.5**
JOU	**Okura**	**1.87**	**279**	P	**Pb**	**09**	**11 42.5**	**+0.1**
JOM	**Ohasama**	**1.93**	**316**	P	**Pb**	**09**	**11 42.1**	**-1.2**
JOM				*e*S	**Sb**	**09**	**12 07.6**	**+0.6**
JFT	**Otama**	**2.20**	**256**	P	**Pb**	**09**	**11 46.7**	**-1.3**
JRG	**Rokugo**	**2.27**	**306**	P	**Pb**	**09**	**11 48.2**	**-1.0**
JRY	**Ryogami san**	**3.89**	**239**	P	**Pn**	**09**	**12 08.9**	**+1.3**
MJAR	**Matsushiro Arr**	**4.13**	**249**	Pn	**Pn**	**09**	**12 14.5**	**+3.5**
	1.1nm,0.3s,baz=72,slow=15,SNR=7.0							
MJAR				Sn	**Sn**	**09**	**12 55.5**	**-3.3**
	1.3nm,0.3s,baz=144,slow=32,SNR=4.6							
USRK	**Ussuriysk Ar.**	**10.31**	**310**	Pn	Pn	09	13 40.3	+4.6
	0.1nm,0.3s,baz=115,slow=13,SNR=3.0							
MKAR	**Makanchi Array**	**44.64**	**301**	P	**P**	**09**	**19 22.0**	**+1.9**
	0.2nm,0.3s,baz=82,slow=8.2,SNR=3.2							
KURBB	**Kurchatov Arra**	**46.36**	**307**	P	**P**	**09**	**19 34.4**	**+0.8**
	1.1nm,0.6s,baz=84,slow=8.2,SNR=7.2							
ILAR	**Eielson Array**	**47.92**	**33**	P	**P**	**09**	**19 43.8**	**-1.8**
	0.2nm,0.8s,baz=258,slow=7.1,SNR=4.2							
WRA	**Warramunga Arr**	**58.30**	**190**	P	P	09	21 08.7	+6.2
	0.3nm,0.5s,baz=7.5,slow=7.3,SNR=4.9							

IDC 19 09:15:17.8±1.6, 28.24S×177.50W, h0km, mb4.1/3, mb1 4.3/3, mb1mx3.8/28, mbtmp4.1/3, MS3.1/3, Ms1 3.1/3, ms1mx2.8/32, Error ellipse: s-maj=43.1km s-min=21.6km az=105.0
NEIC 19 09:15:18.7±1.1, 28.36S×177.26W, h10km, mb4.4/3, Error ellipse: s-maj=27.2km s-min=15.4km az=108.0
ISCJB 19 09:15:23.5±1.8, 28.5S±0.1×177.4W±0.3, h54km, mb4.2/7, MS2.9/1, Error ellipse: s-maj=33.0km s-min=15.2km az=178.4

ISC 19 09:15:24.3±1.1, 28.5S±0.1×177.3W±0.2, h54km, n20, σ1§85/18, mb4.3/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
RAO	**Raoul Island**	**0.94**	**218**	Pn	**Pn**	**09**	**15 39.6**	**-1.8**
	219nm,0.3s,baz=82,slow=19,SNR=7.2							
RAO				Sn	**Sn**	**09**	**15 58.4**	**+4.5**
	394nm,0.3s,baz=84,slow=19,SNR=13							
RAO	**Raoul Island**	**0.94**	**218**	*e*Pg	**Pn**	**09**	**15 39.3**	**-2.0**
RAO				*e*Sg	**Sn**	**09**	**15 53.0**	**-0.9**
URZ	**Urewera**	**10.80**	**204**	*e*Pn	**Pn**	**09**	**17 55.3**	**-0.9**
DZM	**Mont Dzumac**	**16.06**	**290**	LR	LR	09	23 36.3	
	comp=Z,48nm,18.8s,baz=78,slow=32							
DZM	**Mont Dzumac**	**16.06**	**290**	*e*LR	LR	09	22 41.5	
	168nm,26.3s							
RAR	**Rarotonga**	**17.44**	**69**	LR	LR	09	25 06.0	
	comp=Z,119nm,18.5s,baz=270,slow=34							
TBI	**Tubuai**	**25.50**	**85**	*e*LR	LR	09	26 35.0	
	89nm,29.8s							
PPT	**Papeete**	**27.64**	**73**	LR	LR	09	30 05.4	
	comp=Z,35nm,19.7s,baz=260,slow=32							
CTA	**Charters Tower**	**34.19**	**276**	P	**P**	**09**	**22 07.2**	**+2.5**
	3.0nm,0.7s,baz=84,slow=17,SNR=6.0							
STKA	**Stephens Creek**	**35.57**	**254**	P	**P**	**09**	**22 14.6**	**-2.0**
	1.8nm,0.6s,baz=85,slow=8.8,SNR=6.6							
ASAR	**Alice Springs**	**43.89**	**265**	P	**P**	**09**	**23 24.9**	**-1.0**
	0.8nm,0.5s,baz=106,slow=7.8,SNR=17							
ASAR				PcP	**PcP**	**09**	**25 11.1**	**-0.2**
	0.3nm,0.6s,baz=103,slow=4.1,SNR=4.4							
WRAB	**Tennant Creek**	**44.70**	**270**	*e*P	**P**	**09**	**23 32.0**	**-0.3**
	3.1nm,0.6s							
WRA	**Warramunga Arr**	**44.71**	**270**	P	**P**	**09**	**23 31.9**	**-0.4**
	3.1nm,0.6s,baz=110,slow=7.7,SNR=24							
FITZ	**Fitzroy Crossi**	**53.03**	**268**	*e*P	**P**	**09**	**24 37.0**	**+0.8**
	4.9nm,1.1s							
QSPA	**South Pole

DZET					smax	smax			
	comp=N,1μm,0.3s								
KBL	**Kabul**	**4.12**	**187**		*e*PN	**Pn**	**09 23 08.6 +2.3**		
KBL	**Kabul**	**4.12**	**187**		*e*Pn	**Pn**	**09 23 08.6 +2.3**		
KBL					*e*Sn	**Sn**	**09 23 47.7 -6.8**		
MNAS	**Manas**	**4.41**	**28**	⇑	Pn	**Pn**	**09 23 12.0 +1.8**		
	comp=N,35nm,0.8s								
MNAS				⇑	Sn	**Sb**	**09 24 09.0 -4.9**		
	comp=N,48nm,0.8s								
MNAS	**Manas**	**4.41**	**28**		PN	**Pn**	**09 23 12.0 +1.8**		
MNAS					S	**Sb**	**09 24 09.0 -4.9**		
MNAS					pmax	pmax			
	comp=Z,35nm,0.8s								
MNAS					smax	smax			
	comp=N,48nm,0.8s								
KK31	**Karatay Array**	**4.51**	**8**	⇓	Pn	**Pn**	**09 23 13.8 +2.3**		
	comp=N,28nm,0.9s,baz=187,slow=11,SNR=103								
KK31					Lg	Lg	09 24 24.5		
	comp=N,121nm,0.8s,baz=186,slow=28,SNR=8.5								
KKAR	**Karatay Array**	**4.51**	**8**		*e*PN	**Pn**	**09 23 13.5 +2.0**		
KKAR	**Karatay Array**	**4.51**	**8**		*e*Pn	**Pn**	**09 23 13.5 +2.0**		
KKAR					*e*Sn	**Sn**	**09 23 59.2 -4.7**		
KSH	**Kashi**	**4.97**	**78**		*e*Pn	**Pn**	**09 23 14.5 -3.4**		
KSH					Sn	Sn	09 24 03.3 -12		
KSH					smax	smax			
	comp=N,160nm,1.0s								
KSH					smax	smax			
	comp=N,140nm,1.2s								
CEP	**Cherat**	**5.12**	**159**		P	Pn	09 23 24.7 +4.7		
AAK	**Ala-Archa**	**5.42**	**41**		Pn	**Pn**	**09 23 27.9 +3.9**		
	comp=N,17nm,0.3s,baz=219,slow=8.0,SNR=17								
AAK					Sn	**Sn**	**09 24 31.4 +5.0**		
	comp=N,1.2nm,0.3s,baz=195,slow=10,SNR=3.9								
AAK					Lg	Lg	09 24 59.3		
	comp=N,1.2nm,0.3s,baz=66,slow=22,SNR=2.4								
AAK					LR	LR	09 25 47.8		
	comp=N,89nm,18.7s,baz=196,slow=40								
AAK	**Ala-Archa**	**5.42**	**41**	⇓	Pn	Pn	09 23 29.1 +5.0		
	comp=N,14nm,0.8s								
AAK				⇓	Lg	Lg	09 24 56.2		
	comp=N,50nm,0.8s								
AAK	**Ala-Archa**	**5.42**	**41**		*e*Pn	**Pn**	**09 23 26.2 +2.2**		
AAK					*e*Sn	**Sn**	**09 24 31.4 +5.0**		
FRU	**Bishkek**	**5.62**	**40**		*e*PN	**Pn**	**09 23 31.0 +4.2**		
FRU					*i*		09 23 48.0		
CHCP	**Chirak Chowk**	**5.75**	**149**		P	Pn	09 23 32.4 +3.9		
THW	**Thamme Wali**	**6.06**	**163**		P	**Pn**	**09 23 33.5 +0.7**		
TKM2	**Tokmak 2**	**6.20**	**44**	⇓	Pn	**Pn**	**09 23 36.0 +1.1**		
	comp=N,17nm,0.8s								
TKM2				⇑	Sn	**Sn**	**09 24 53.2 +7.4**		
	comp=N,35nm,0.8s								
TKM2	**Tokmak 2**	**6.20**	**44**		PN	**Pn**	**09 23 36.0 +1.1**		
TKM2					S	**Sn**	**09 24 53.2 +7.4**		
TKM2					pmax	pmax			
	comp=Z,17nm,0.8s								
TKM2					smax	smax			
	comp=N,36nm,0.8s								
PDGK	**Podgornoye**	**8.77**	**55**		P	**Pn**	**09 24 09.5 -0.4**		
PDGK					pmax	pmax			
	comp=Z,7.0nm,0.9s								
GEYT	**Alibeck**	**9.12**	**269**		Pn	**Pn**	**09 24 13.7 -1.1**		
	comp=Z,1.3nm,0.3s,baz=87,slow=12,SNR=3.6								
GEYT					Sn	**Sn**	**09 25 56.0 -1.5**		
	comp=Z,1.4nm,0.3s,baz=75,slow=17,SNR=3.3								
MK01	**Makanchi Array**	**12.33**	**45**		*e*Pn	**Pn**	**09 24 58.7 +0.1**		
MK31	**Makanchi Array**	**12.34**	**45**		*e*P	**Pn**	**09 24 59.0 +0.3**		
MK31	**Makanchi Array**	**12.34**	**45**		*e*Pn	**Pn**	**09 24 59.0 +0.3**		
MK32	**Makanchi Array**	**12.34**	**45**		*e*Pn	**Pn**	**09 24 59.3 +0.6**		
MKAR	**Makanchi Array**	**12.34**	**45**		*e*Pn	**Pn**	**09 24 59.3 +0.6**		
	comp=Z,0.1nm,0.3s,baz=225,slow=14,SNR=12								
MKAR	**Makanchi Array**	**12.34**	**45**		*e*Pn	**Pn**	**09 24 59.0 +0.2**		
AB31	**Akbulak array**	**12.72**	**330**	⇓	P	**Pn**	**09 25 02.7 -1.2**		
	comp=Z,1.9nm,0.4s,baz=145,slow=12,SNR=57								
AB31				⇓	S	**Sn**	**09 27 23.3 -2.0**		
	comp=Z,6.8nm,0.7s,baz=144,slow=23,SNR=8.4								
AB31	**Akbulak array**	**12.72**	**330**		P	**Pn**	**09 25 02.7 -1.2**		
AB31					S	**Sn**	**09 27 23.3 -2.0**		
AB31					pmax	pmax			
	comp=Z,2.0nm,0.4s								
AB31					smax	smax			
	comp=N,7.0nm,0.7s								
ABKAR	**Akbulak array**	**12.72**	**330**		*e*Pn	**Pn**	**09 25 02.5 -1.4**		
ABKAR					*e*Sn	**Sn**	**09 27 23.9 -1.4**		
KURBB	**Kurchatov Arra**	**13.53**	**25**		Pn	**Pn**	**09 25 15.0 +0.1**		
	comp=N,0.0nm,0.3s,baz=213,slow=12,SNR=5.0								
KURBB					Lg	Lg	09 29 07.8		
	comp=N,0.0nm,0.3s,baz=212,slow=33,SNR=4.6								
KURK	**Kurchatov**	**13.64**	**25**		*e*P	**Pn**	**09 25 15.0 -1.4**		
KURK	**Kurchatov**	**13.64**	**25**		*e*Pn	**Pn**	**09 25 15.0 -1.4**		
VOSK	**Vostochnaya**	**14.12**	**3**	⇑	P	**Pn**	**09 25 21.1 -1.9**		
	comp=N,3.5nm,0.8s								
VOSK	**Vostochnaya**	**14.12**	**3**		*e*P	**Pn**	**09 25 23.0 -0.1**		
VOSK					*e*		09 27 55.2		
VOSK	**Vostochnaya**	**14.12**	**3**		*e*Pn	**Pn**	**09 25 23.0 -0.1**		
VOSK					*e*Sn	**Sn**	**09 27 55.2 -4.3**		
ZRNK	**Zerenda**	**14.33**	**358**		*e*P	**Pn**	**09 25 26.7 +0.8**		
ZRNK					*e*		09 27 59.8		
ZRNK	**Zerenda**	**14.33**	**358**		*e*Pn	**Pn**	**09 25 26.7 +0.8**		
ZRNK					*e*Sn	**Sn**	**09 27 59.8 -4.9**		
BVA0	**Borovoye Array**	**14.40**	**2**	⇑	P	**Pn**	**09 25 25.5 -1.4**		
	comp=N,2.2nm,0.5s								
BVAR	**Borovoye Array**	**14.40**	**2**		Pn	**Pn**	**09 25 25.3 -1.6**		
	comp=N,0.2nm,0.3s,baz=157,slow=8.0,SNR=4.7								
AKTO	**Aktyubinsk**	**14.42**	**329**		Pn	**Pn**	**09 25 27.6 +0.5**		
	comp=N,0.6nm,0.3s,baz=130,slow=17,SNR=8.1								
AKTO					Sn	**Sn**	**09 28 04.8 -2.0**		
	comp=N,0.2nm,0.3s,baz=90,slow=20,SNR=3.4								
BRVK	**Borovoye**	**14.43**	**1**		*e*P	**P**	**09 25 34.5 +0.3**		
BRVK	**Borovoye**	**14.43**	**1**		*e*P	**P**	**09 25 34.5 +0.3**		
WMQ	**Urumqi**	**14.50**	**63**		*e*P	**Pn**	**09 25 30.5 +2.1**		
WMQ					pP	P	09 25 36.3 +1.2		
WMQ					sP		09 25 42.1		
WMQ					pmax	pmax			
	comp=N,12nm,0.9s								
WMQ					pmax	pmax			
	comp=N,120nm,4.4s								
PYUN	**Piuthan**	**15.28**	**129**		*e*P	**Pn**	**09 25 33.4 -5.6**		
KOLN	**Koldanda**	**15.89**	**129**		*e*P	**Pn**	**09 25 41.9 -5.1**		
	comp=N,14nm,0.6s								
GKN	**Gorkha**	**16.37**	**126**		*e*P	**Pn**	**09 25 48.8 -4.3**		
	comp=N,41nm,0.4s								
DMN	**Daman**	**16.94**	**126**		*e*P	**Pn**	**09 25 55.8 -4.6**		
	comp=N,45nm,0.8s								
GUN	**Gumba**	**17.23**	**124**		*e*P	**Pn**	**09 26 00.0 -4.2**		
	comp=N,101nm,1.0s								
RAMN	**Ramite**	**18.35**	**124**		*e*P	**Pn**	**09 26 12.1 -5.8**		
	comp=N,32nm,0.6s								
ZAA0	**Zalesovo Array**	**18.48**	**29**		*e*P	**P**	**09 26 18.0 -1.0**		
ZALV	**Zalesovo Beam**	**18.48**	**29**		P	**P**	**09 26 18.6 -0.4**		
	baz=230,slow=12,SNR=6.6								
ZALV					LR	LR	09 33 52.4		
	comp=N,30nm,21.6s,baz=250,slow=38								
ZAA1	**Zalesovo Array**	**18.49**	**29**		*e*P	**P**	**09 26 18.6 -0.5**		
NVS	**Novosibirsk**	**18.63**	**25**		*e*P	**Pn**	**09 26 21.7 +0.9**		
ARU	**Arti**	**19.28**	**341**		*e*P	**P**	**09 26 27.2 -0.5**		
ARU					pmax	pmax			
	comp=Z,6.0nm,0.9s								
ARU	**Arti**	**19.28**	**341**		*e*P	**P**	**09 26 27.2 -0.5**		
	comp=Z,5.8nm,0.9s								
KBZ	**Khabaz**	**20.75**	**293**		P	**P**	**09 26 43.0 -0.8**		
	comp=Z,3.4nm,0.7s,baz=183,slow=5.3,SNR=6.4								
KVAR	**Kislovodsk Arr**	**20.92**	**293**		P	**P**	**09 26 44.8 -1.0**		
	comp=Z,4.2nm,0.5s,baz=210,slow=8.0,SNR=2.4								
KIV	**Kislovodsk**	**20.93**	**293**		*e*P	Pn	09 26 49.7 +1.3		
KIV					pmax	pmax			
	comp=Z,6.0nm,0.9s								
GTA	**Gaotai**	**23.37**	**79**		*e*P	**P**	**09 27 12.5 +0.6**		
GTA					pP	sP	09 27 19.5 +2.5		
GTA					sP	pP	09 27 22.9 +7.5		
GTA					pmax	pmax			
	comp=Z,6.0nm,1.1s								
LZH	**Lanzhou**	**27.18**	**85**		*e*P	**P**	**09 27 50.5 +3.6**		
LZH					pP	sP	09 27 56.3 +4.2		
LZH					sP	pP	09 27 59.8 +9.3		
LZH					pmax	pmax			
	comp=Z,15nm,1.1s								
LZH					pmax	pmax			
	comp=Z,120nm,5.5s								
OBN	**Obninsk**	**27.65**	**317**		*e*P	**P**	**09 27 53.8 +3.1**		
OBN					*e*		09 28 40.7		
OBN					pmax	pmax			
	comp=Z,3.0nm,0.7s								
BR101	**Keskin Array S**	**27.85**	**284**		*e*P	**P**	**09 27 54.3 +1.5**		
BRTR	**Keskin Array B**	**27.85**	**284**		P	**P**	**09 27 54.3 +1.5**		
	comp=Z,1.4nm,0.9s,baz=101,slow=6.5,SNR=5.4								
SONA0	**Songino Array**	**28.06**	**59**		*e*P	**P**	**09 27 54.3 -0.3**		
	comp=Z,1.4nm,0.8s								
SONA0					*e*PcP	**PcP**	**09 31 08.2 -0.7**		
SONM	**Songino Array**	**28.06**	**59**		P	**P**	**09 27 54.3 -0.3**		
	comp=Z,0.3nm,0.4s,baz=249,slow=7.8,SNR=4.4								
SONM					PcP	**PcP**	**09 31 08.2 -0.7**		
	comp=Z,0.3nm,0.3s,baz=289,slow=4.4,SNR=2.8								
BR231	**Keskin MP Arra**	**28.49**	**284**		*e*P	**P**	**09 27 54.8 -3.7**		
CD2	**Chengdu**	**28.91**	**95**		*e*P	**P**	**09 28 03.0 +0.8**		
CD2					pP	sP	09 28 11.1 +3.7		
CD2					sP	pP	09 28 14.8 +8.9		
CD2					S	**S**	**09 32 52.9 +0.4**		
CD2					sS	sS	09 33 06.8 +8.2		
CD2					pmax	pmax			
	comp=Z,20nm,0.5s								
CD2					pmax	pmax			
	comp=Z,160nm,5.0s								
AKASG	**Malin Array Be**	**30.82**	**306**		P	**P**	**09 28 19.2 +0.3**		
	comp=Z,4.3nm,0.8s,baz=79,slow=7.4,SNR=8.9								
KMI	**Kunming**	**30.95**	**106**		P	**P**	**09 28 24.8 +4.2**		
KMI					pmax	pmax			
	comp=Z,11nm,0.5s								
HHC	**Hu-ho-hao-te**	**32.06**	**73**		*e*P	**P**	**09 28 32.6 +2.5**		
HHC					pmax	pmax			
	comp=Z,15nm,0.9s								
HHC					pmax	pmax			
	comp=Z,110nm,4.6s								
PLOR	**Plostina**	**32.35**	**297**	⇓	*i*P	**P**	**09 28 34.9 +2.4**		
MLR	**Muntele Rosu**	**32.86**	**296**	⇓	*i*P	**P**	**09 28 40.0 +2.9**		
MLR	**Muntele Rosu**	**32.86**	**296**		*e*P	**P**	**09 28 39.8 +2.7**		
MLR					pmax	pmax			
	comp=Z,12nm,0.9s								
MLR	**Muntele Rosu**	**32.86**	**296**		*e*P	**P**	**09 28 39.8 +2.7**		
	comp=Z,12nm,0.9s								
GYA	**Guiyang**	**33.24**	**100**		*e*P	**P**	**09 28 44.3 +3.8**		
GYA					pmax	pmax			
	comp=Z,10.0nm,0.8s								
BURAR	**Bucovina Array**	**33.28**	**300**	⇓	*i*P	**P**	**09 28 42.5 +1.9**		
BUR08	**Bucovina Ar. S**	**33.29**	**300**		*e*P	**P**	**09 28 41.7 +0.9**		
ALN	**Alexandroupoli**	**33.37**	**288**		P	**P**	**09 28 42.5 +1.2**		
ALN					pmax	pmax			
	comp=Z,2.0nm,1.2s								
LVV	**L'vov**	**34.08**	**304**		*e*P	P	09 28 42.3 -5.1		
KWP	**Kalwaria Pacla**	**34.93**	**304**		P	**P**	**09 28 56.2 +1.4**		
FIA0	**FINESS Array S**	**35.14**	**325**		*e*P	**P**	**09 28 57.3 +0.9**		
FIA0	**FINESS Array S**	**35.14**	**325**		*e*P	**P**	**09 28 57.3 +0.9**		
FINES	**FINESS Array B**	**35.14**	**325**		P	**P**	**09 28 57.3 +0.9**		
	comp=Z,3.1nm,0.7s,baz=93,slow=12,SNR=9.8								
FINES					LR	LR	09 45 55.4		
	comp=Z,6.4nm,18.0s,baz=32,slow=40								
ARCES	**ARCESS Array B**	**38.78**	**337**		P	**P**	**09 29 27.4 +0.1**		
	comp=Z,3.3nm,0.7s,baz=118,slow=7.4,SNR=9.5								
ARCES					LR	LR	09 46 29.5		
	comp=Z,50nm,19.2s,baz=132,slow=38								
BRG	**Berggiesshubel**	**40.50**	**306**		*e*P	**P**	**09 29 43.5 +1.6**		
	comp=Z,5.9nm,0.8s								
BRG	**Berggiesshubel**	**40.50**	**306**		P	**P**	**09 29 43.2 +1.3**		
BRG					pmax	pmax			
	comp=Z,7.0nm,1.2s								
GERES	**GERESS Array B**	**40.87**	**303**		P	**P**	**09 29 46.3 +1.2**		
	comp=Z,0.8nm,0.8s,baz=72,slow=8.9,SNR=5.0								
GERES					LR	LR	09 49 40.4		
	comp=Z,29nm,18.1s,baz=53,slow=40								
NC303	**NORSAR Array S**	**42.00**	**322**		*e*P	**P**	**09 29 54.5 +0.4**		
NB2	**NORSAR Subarra**	**42.06**	**322**		P	**P**	**09 29 53.9 -0.7**		
	comp=Z,1.7nm,0.6s,baz=96,slow=8.6								
NB200	**NORSAR Array S**	**42.06**	**322**		*e*P	**P**	**09 29 54.5 -0.1**		
NOA	**NORSAR Array B**	**42.06**	**322**		P	**P**	**09 29 54.5 -0.1**		
	comp=Z,3.9nm,0.8s,baz=95,slow=8.2,SNR=13								
TIXI	**Tiksi**	**44.20**	**23**		P	**P**	**09 30 11.1 -0.6**		
TIXI					pmax	pmax			
	comp=Z,7.0nm,0.8s								
DAG	**Danmarks Havn**	**52.39**	**343**		*i* P	**P**	**09 31 15.1 +0.3**		
	comp=Z,4.1nm,0.9s								
DAG	**Danmarks Havn**	**52.39**	**343**		*e*P	**P**	**09 31 15.1 +0.3**		
DAG					pmax	pmax			
	comp=Z,3.0nm,0.9s								
ESDC	**Sonseca Array**	**55.56**	**296**		P	**P**	**09 31 39.1 +0.5**		
	comp=Z,0.2nm,0.3s,baz=59,slow=6.6,SNR=4.6								
SUMG	**Summit**	**58.71**	**340**		*i* P	**P**	**09 32 01.6 +0.8**		
	comp=Z,7.1nm,0.8s								
SUMG	**Summit**	**58.71**	**340**		*i* P	**P**	**09 32 01.6 +0.8**		
SUMG					pmax	pmax			
	comp=Z,7.0nm,0.8s								
TOA1	**Torodi Ar. Sit**	**64.76**	**267**		*e*P	**P**	**09 32 41.2 -0.7**		
	comp=Z,17nm,1.8s								
TORD	**Torodi Ar. Bea**	**64.76**	**267**		P	**P**	**09 32 41.2 -0.7**		
	comp=Z,0.7nm,0.6s,baz=44,slow=5.3,SNR=7.3								
INK	**Inuvik**	**71.97**	**9**		P	**P**	**09 33 26.4 +0.2**		
	comp=Z,2.2nm,0.7s,baz=1.5,slow=11,SNR=3.9								
ILAR	**Eielson Array**	**73.01**	**15**		P	**P**	**09 33 32.1 -0.4**		
	comp=Z,1.1nm,0.8s,baz=330,slow=4.7,SNR=13								
ILB	**Eielson Array**	**73.01**	**15**		*e*P	**P**	**09 33 32.1 -0.4**		
YKA	**Yellowknife Ar**	**79.16**	**2**		P	**P**	**09 34 07.4 -0.1**		
	comp=Z,1.8nm,0.8s,baz=350,slow=5.6,SNR=6.5								
WR1	**Warramunga Arr**	**84.00**	**121**		*e*P	**P**	**09 34 31.3 -2.4**		
	comp=Z,21nm,1.6s								
WRA	**Warramunga Arr**	**84.00**	**121**		P	**P**	**09 34 31.3 -2.4**		
	comp=Z,2.1nm,0.8s,baz=321,slow=4.9,SNR=12								
ASAR	**Alice Springs**	**86.32**	**124**		P	**P**	**09 34 43.9 -1.4**		
	comp=Z,1.1nm,0.8s,baz=306,slow=5.3,SNR=11								

IDC 19 09:45:14.5±4.5, 16°09S×174°03W, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.7/34, mbtmp3.9/4, Error ellipse: s-maj=197.0km s-min=32.3km az=136.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**43.17**	**240**	P	P	09 53 17.6	+0.3
	1.2nm,0.5s,baz=88,slow=8.7,SNR=7.3						
WRA	**Warramunga Arr**	**49.10**	**257**	P	P	09 54 03.5	-0.6
	0.5nm,0.5s,baz=96,slow=7.2,SNR=13						
ASAR	**Alice Springs**	**49.32**	**252**	P	P	09 54 05.8	0.0
	5.1nm,0.6s,baz=88,slow=8.3,SNR=99						
ILAR	**Eielson Array**	**83.24**	**11**	P	P	09 57 42.4	0.0
	0.1nm,0.4s,baz=199,slow=5.2,SNR=4.3						

*NEIC **19** 09:55:10.6, 45°.14S×167°.27E, h114km, MG4.1(WEL), After WEL.*

WEL 19 09:55:10.7±0.3, 45°.13S×167°.28E, h114km±2km, ML4.1/14, 1C-7D, Error ellipse: s-maj=3.1km s-min=1.3km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DCZ	**Deep Cove**	**0.35**	**194**	Pn	Pn	09 55 26.8	-0.3
DCZ				Sn	Sn	09 55 38.7	-0.8
DCZ	**Deep Cove**	**0.35**	**194**	PN	Pn	09 55 26.8	-0.3
DCZ				SN	Sn	09 55 38.7	-0.8
DCZ				AML	AML	09 55 38.9	
DCZ				AML	AML	09 55 39.1	
DCZ				AML	AML	09 55 39.2	
MLZ	**Mavora Lakes**	**0.64**	**112**	Pn	Pn	09 55 28.8	-0.2
MLZ				Sn	Sn	09 55 42.2	-0.6
MLZ	**Mavora Lakes**	**0.64**	**112**	PN	Pn	09 55 28.8	-0.2
MLZ				SN	Sn	09 55 42.2	-0.6
MLZ				AML	AML	09 55 42.9	
MSZ	**Milford Sound**	**0.65**	**46**	Pn	Pn	09 55 29.1	+0.2
MSZ	**Milford Sound**	**0.65**	**46**	⇓PN	Pn	09 55 29.1	+0.2
MSZ				SN	Sn	09 55 42.2	-0.5
MSZ				AML	AML	09 55 43.3	
MSZ				AML	AML	09 55 43.3	
WHZ	**Wether Hill Ro**	**0.90**	**149**	Pn	Pn	09 55 31.2	0.0
WHZ	**Wether Hill Ro**	**0.90**	**149**	⇓PN	Pn	09 55 31.2	0.0
WHZ				SN	Sn	09 55 46.2	-0.6
WHZ				AML	AML	09 55 46.8	
WKZ	**Wanaka**	**1.27**	**77**	Pn	Pn	09 55 35.1	+0.1
WKZ	**Wanaka**	**1.27**	**77**	PN	Pn	09 55 35.1	+0.1
WKZ				AML	AML	09 55 53.6	
WKZ				AML	AML	09 55 53.6	
WKZ				AML	AML	09 55 56.5	
WKZ				AML	AML	09 55 56.5	
EAZ	**Earnscleugh**	**1.44**	**95**	Pn	Pn	09 55 36.7	-0.3
EAZ	**Earnscleugh**	**1.44**	**95**	PN	Pn	09 55 36.7	-0.3
EAZ				AML	AML	09 55 55.6	
EAZ				AML	AML	09 55 55.9	
EAZ				AML	AML	09 55 56.6	
EAZ				AML	AML	09 55 56.6	
JCZ	**Jackson Bay**	**1.51**	**46**	Pn	Pn	09 55 37.2	-0.7
JCZ	**Jackson Bay**	**1.51**	**46**	⇓PN	Pn	09 55 37.2	-0.7
JCZ				AML	AML	09 55 57.1	
JCZ				AML	AML	09 55 59.5	
APZ	**The Paps**	**1.78**	**164**	Pn	Pn	09 55 41.0	-0.1
APZ	**The Paps**	**1.78**	**164**	PN	Pn	09 55 41.0	-0.1
APZ				AML	AML	09 56 05.5	
APZ				AML	AML	09 56 06.6	
TUZ	**Tuapeka**	**1.85**	**117**	Pn	Pn	09 55 41.6	-0.2
TUZ	**Tuapeka**	**1.85**	**117**	⇑PN	Pn	09 55 41.6	-0.2
TUZ				AML	AML	09 56 03.1	
TUZ				AML	AML	09 56 05.1	
TUZ				AML	AML	09 56 06.4	
TUZ				AML	AML	09 56 06.4	
SYZ	**Scrubby Hill**	**1.92**	**138**	Pn	Pn	09 55 42.7	-0.1
SYZ	**Scrubby Hill**	**1.92**	**138**	PN	Pn	09 55 42.7	-0.1
SYZ				AML	AML	09 56 06.0	
SYZ				AML	AML	09 56 06.0	
SYZ				AML	AML	09 56 06.1	
SYZ				AML	AML	09 56 06.1	
LBZ	**Lake Benmore**	**2.20**	**71**	Pn	Pn	09 55 44.9	-1.5
LBZ	**Lake Benmore**	**2.20**	**71**	⇓PN	Pn	09 55 44.9	-1.5
LBZ				AML	AML	09 56 10.5	
LBZ				AML	AML	09 56 10.6	
LBZ				AML	AML	09 56 10.8	
LBZ				AML	AML	09 56 10.8	
ODZ	**Otahua Downs**	**2.39**	**89**	Pn	Pn	09 55 47.5	-1.2
ODZ	**Otahua Downs**	**2.39**	**89**	PN	Pn	09 55 47.5	-1.2
ODZ				AML	AML	09 56 14.9	
ODZ				AML	AML	09 56 15.1	
ODZ				AML	AML	09 56 15.9	
ODZ				AML	AML	09 56 15.9	
FOZ	**Fox Glacier**	**2.42**	**50**	Pn	Pn	09 55 47.6	-1.6
FOZ	**Fox Glacier**	**2.42**	**50**	PN	Pn	09 55 47.6	-1.6
HHSZ	**Highcliff Hill**	**2.46**	**109**	Pn	Pn	09 55 49.1	-0.5
HHSZ	**Highcliff Hill**	**2.46**	**109**	⇓PN	Pn	09 55 49.1	-0.5
HHSZ				AML	AML	09 56 17.8	
HHSZ				AML	AML	09 56 17.9	
RPZ	**Rata Peaks**	**3.05**	**64**	Pn	Pn	09 55 55.4	-2.1
RPZ	**Rata Peaks**	**3.05**	**64**	PN	Pn	09 55 55.4	-2.1
RPZ				AML	AML	09 56 30.9	
RPZ				AML	AML	09 56 33.8	
WVZ	**Waitaha Valley**	**3.23**	**52**	Pn	Pn	09 55 57.4	-2.3
WVZ	**Waitaha Valley**	**3.23**	**52**	PN	Pn	09 55 57.4	-2.3
INZ	**Inchbonnie**	**3.85**	**53**	⇓PN	Pn	09 56 05.8	-2.2
OXZ	**Oxford**	**3.87**	**64**	Pn	Pn	09 56 05.3	-2.9
OXZ	**Oxford**	**3.87**	**64**	PN	Pn	09 56 05.3	-2.9
MQZ	**McQueen's Vall**	**4.11**	**72**	Pn	Pn	09 56 09.2	-2.2
MQZ	**McQueen's Vall**	**4.11**	**72**	PN	Pn	09 56 09.2	-2.2
LTZ	**Lake Taylor**	**4.30**	**59**	Pn	Pn	09 56 11.4	-2.7
LTZ	**Lake Taylor**	**4.30**	**59**	PN	Pn	09 56 11.4	-2.7
DSZ	**Denniston Nort**	**4.72**	**46**	Pn	Pn	09 56 17.3	-2.4
DSZ	**Denniston Nort**	**4.72**	**46**	⇓PN	Pn	09 56 17.3	-2.4
KHZ	**Kahutara**	**5.28**	**61**	*e*Pn	Pn	09 56 26.4	-0.9
KHZ				*e*Sn	Sn	09 57 27.3	+0.4
QRZ	**Quartz Range**	**5.77**	**44**	Pn	Pn	09 56 32.5	-1.4
QRZ	**Quartz Range**	**5.77**	**44**	PN	Pn	09 56 32.5	-1.4

IDC 19 10:05:26.3±4.3, 28°.80S×178°.88W, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.5/26, mbtmp3.4/2, Error ellipse: s-maj=222.9km s-min=52.8km az=161.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**42.45**	**266**	P	P	10 13 22.5	-0.7
	0.3nm,0.8s,baz=104,slow=7.7,SNR=3.5						
WRA	**Warramunga Arr**	**43.29**	**271**	P	P	10 13 30.5	+0.4
	0.4nm,0.4s,baz=110,slow=8.0,SNR=11						
FINES	**FINESS Array B**	**143.38**	**340**	PKP	PKPdf	10 25 00.8	-1.2
	4.8nm,0.7s,baz=33,slow=3.3,SNR=14						
AKASG	**Malin Array Be**	**149.56**	**324**	PKPbc	PKPbc	10 25 16.9	-0.4
	0.4nm,0.4s,baz=55,slow=2.1,SNR=3.4

DZM	**Mont Dzumac**	**17.36**	**291**	P		**P**	**10 30 18.5**	**+2.1**	
	0.3nm,0.3s,baz=106,slow=17,SNR=6.1								
DZM				LR		LR	10 36 04.5		
	comp=Z,181nm,18.1s,baz=87,slow=34								
DZM	**Mont Dzumac**	**17.36**	**291**	*e*P		**P**	**10 30 18.8**	**+2.3**	
	64nm,1.2s								
DZM				*e*LR		LR	10 34 28.7		
	423nm,26.8s								
DZM	**Mont Dzumac**	**17.36**	**291**	*e*Pn		**Pn**	**10 30 15.8**	**+0.4**	
	132nm,1.9s								
RPZ	**Rata Peaks**	**17.45**	**212**	Pn		**Pn**	**10 30 14.6**	**-1.6**	
	0.5nm,0.3s,baz=65,slow=6.6,SNR=3.5								
RPZ				Sn		Sn	10 33 13.0	-17	
	0.1nm,0.3s,baz=360,slow=19,SNR=2.5								
TBI	**Tubuai**	**24.63**	**82**	*e*LR		LR	10 37 24.2		
	218nm,28.2s								
PPT2	**Papeete2**	**27.02**	**70**	*e*LR		LR	10 38 25.6		
	208nm,28.5s								
PPT	**Papeete**	**27.03**	**70**	LR		LR	10 39 22.1		
	comp=Z,48nm,21.7s,baz=243,slow=29								
HNR	**Honiara**	**30.04**	**307**	LR		LR	10 43 51.6		
	comp=Z,39nm,18.4s,baz=116,slow=35								
CTA	**Charters Tower**	**35.29**	**277**	P		**P**	**10 33 08.1**	**+0.5**	
	2.4nm,0.5s,baz=101,slow=12,SNR=3.1								
STKA	**Stephens Creek**	**36.26**	**255**	P		**P**	**10 33 16.4**	**+0.6**	
	8.4nm,0.8s,baz=96,slow=11,SNR=16								
STKA				LR		LR	10 46 04.9		
	comp=Z,79nm,21.2s,baz=28,slow=33								
STKA	**Stephens Creek**	**36.26**	**255**	*e*P		**P**	**10 33 17.3**	**+1.5**	
	2.2nm,0.9s								
RKT	**Rikitea**	**37.29**	**90**	*e*LR		LR	10 42 56.2		
	188nm,35.2s								
ASAR	**Alice Springs**	**44.79**	**265**	P		**P**	**10 34 26.3**	**-0.1**	
	8.6nm,1.3s,baz=101,slow=6.2,SNR=18								
WB2	**Warramunga Arr**	**45.70**	**270**	*e*P		**P**	**10 34 33.9**	**+0.2**	
	33nm,1.8s								
WR1	**Warramunga Arr**	**45.70**	**270**	*e*P		**P**	**10 34 33.3**	**-0.4**	
	42nm,2.0s								
WRA	**Warramunga Arr**	**45.71**	**270**	P		**P**	**10 34 33.3**	**-0.4**	
	4.4nm,0.7s,baz=110,slow=7.8,SNR=27								
FITZ	**Fitzroy Crossi**	**54.00**	**268**	*e*P		**P**	**10 35 36.9**	**+0.2**	
	8.0nm,1.1s								
QSPA	**South Pole Qui**	**60.56**	**180**	*e*P		**P**	**10 36 24.9**	**+2.4**	
MAW	**Mawson**	**73.66**	**200**	P		**P**	**10 37 48.2**	**+2.7**	
	3.4nm,1.1s,baz=147,slow=9.7,SNR=4.1								
MAW	**Mawson**	**73.66**	**200**	*e*P		**P**	**10 37 47.9**	**+2.4**	
	1.0nm,1.0s								
SYO	**Syowa Base**	**78.30**	**192**	‖ *e*pP		**P**	**10 38 14.4**	**+2.6**	
MJAR	**Matsushiro Arr**	**78.49**	**324**	P		**P**	**10 38 12.8**	**-0.6**	
	2.7nm,0.7s,baz=150,slow=6.1,SNR=4.3								
PFO	**Pinyon Flats O**	**84.44**	**46**	P		**P**	**10 38 44.2**	**-0.9**	
	1.1nm,0.4s,baz=270,slow=13,SNR=3.9								
PFO	**Pinyon Flats O**	**84.44**	**46**	*e*P		**P**	**10 38 44.2**	**-0.9**	
	11nm,1.4s								
KSRS	**Korea Array**	**84.78**	**319**	P		**P**	**10 38 48.0**	**+1.6**	
	2.7nm,0.9s,baz=143,slow=6.0,SNR=5.2								
KS15	**Wonju Array Si**	**84.79**	**319**	*e*P		**P**	**10 38 47.8**	**+1.3**	
USRK	**Ussuriysk Ar.**	**87.37**	**325**	P		**P**	**10 39 00.4**	**+1.3**	
	4.7nm,1.1s,baz=162,slow=7.6,SNR=6.3								
X16A	**Lo Mia Camp, P**	**88.17**	**48**	*e*P		**P**	**10 39 05.4**	**+1.9**	
	2.6nm,1.0s								
LCMT	**Little Creek M**	**88.64**	**45**	*e*P		**P**	**10 39 06.8**	**+1.3**	
	2.2nm,1.0s								
U15A	**North Rim**	**88.87**	**46**	*e*P		**P**	**10 39 08.4**	**+1.6**	
	3.3nm,0.8s								
LTX	**Lajitas**	**90.56**	**56**	*e*P		**P**	**10 39 14.8**	**+0.1**	
TX31	**Lajitas Ar. Si**	**90.56**	**56**	*e*P		**P**	**10 39 15.6**	**+0.9**	
TXAR	**Lajitas Array**	**90.56**	**56**	P		**P**	**10 39 14.8**	**+0.1**	
	0.9nm,1.0s,baz=210,slow=7.2,SNR=6.8								
TXAR				LR		LR	11 12 23.9		
	comp=Z,20nm,19.8s,baz=0.0,slow=31								
HLID	**Hailey**	**92.11**	**40**	*e*P		**P**	**10 39 22.6**	**+0.9**	
	2.6nm,1.1s								
F10A	**Beach Ranch, E**	**92.17**	**37**	*e*P		**P**	**10 39 22.4**	**+0.7**	
	6.0nm,1.2s								
TTA	**Tatalina**	**93.56**	**9**	*e*P		**P**	**10 39 27.5**	**-0.2**	
	7.2nm,0.7s								
PD31	**Pinedale Array**	**94.41**	**43**	*e*P		**P**	**10 39 30.9**	**-1.4**	
PDAR	**Pinedale Array**	**94.41**	**43**	P		**P**	**10 39 32.4**	**+0.1**	
	0.3nm,0.7s,baz=234,slow=5.5,SNR=2.9								
KMI	**Kunming**	**94.90**	**296**	P		**P**	**10 39 36.0**	**+1.0**	
ILAR	**Eielson Array**	**96.75**	**12**	P		**P**	**10 39 41.0**	**-1.2**	
	0.7nm,0.8s,baz=215,slow=5.5,SNR=7.2								
ILB	**Eielson Array**	**96.75**	**12**	*e*P		**P**	**10 39 40.9**	**-1.2**	
HHC	**Hu-ho-hao-te**	**96.83**	**313**	*e*P		**P**	**10 39 43.8**	**+0.6**	
HHC				pmax		pmax			
	comp=Z,13nm,1.5s								
HHC				pmax		pmax			
	comp=Z,98nm,7.7s								
YKA	**Yellowknife Ar**	**103.99**	**25**	Pdiff		**Pdif**	**10 40 13.4**	**-1.0**	
	0.5nm,0.7s,baz=238,slow=4.6,SNR=3.4								
WMQ	**Urumqi**	**113.98**	**308**	*e*PKP			10 44 53.9		
MK32	**Makanchi Array**	**118.47**	**310**	*e*PKPdf		**PKPdf**	**10 44 59.5**	**-0.1**	
MKAR	**Makanchi Array**	**118.47**	**310**	PKP		**PKPdf**	**10 44 59.5**	**-0.1**	
	0.2nm,0.3s,baz=62,slow=3.3,SNR=4.8								
KURK	**Kurchatov**	**121.64**	**314**	*e*PKPdf		**PKPdf**	**10 45 05.5**	**-0.1**	
KURBB	**Kurchatov Arra**	**121.68**	**314**	PKP		**PKPdf**	**10 45 05.5**	**-0.2**	
	1.0nm,0.8s,baz=104,slow=1.9,SNR=9.4								
BVAR	**Borovoye Array**	**126.93**	**316**	PKP		**PKPdf**	**10 45 15.7**	**0.0**	
	5.3nm,1.3s,baz=62,slow=3.5,SNR=5.6								
ARU	**Arti**	**133.46**	**321**	PKP		**PKPdf**	**10 45 27.4**	**-0.6**	
	1.2nm,0.2s,baz=92,slow=3.3,SNR=4.7								
FIA0	**FINESS Array S**	**144.88**	**342**	*e*PKPbc		**PKPab**	**10 45 47.6**	**0.0**	
FINES	**FINESS Array B**	**144.88**	**342**	PKPbc		**PKPab**	**10 45 47.6**	**0.0**	
	7.3nm,0.8s,baz=105,slow=4.5,SNR=13								
OBN	**Obninsk**	**145.38**	**327**	PKPbc		**PKPab**	**10 45 50.1**	**+0.4**	
	23nm,0.3s,baz=5.3,slow=17,SNR=4.0								
KBZ	**Khabaz**	**145.97**	**305**	PKPbc		**PKPab**	**10 45 53.0**	**+0.7**	
	1.3nm,0.7s,baz=36,slow=3.9,SNR=3.8								
NB2	**NORSAR Subarra**	**148.13**	**353**	PKP		**PKPbc**	**10 45 57.3**	**-0.1**	
	comp=Z,9.1nm,1.0s,baz=11,slow=2.9								
NB200	**NORSAR Array S**	**148.13**	**353**	*e*PKPbc		**PKPbc**	**10 45 57.5**	**+0.1**	
NOA	**NORSAR Array B**	**148.13**	**353**	PKPbc		**PKPbc**	**10 45 57.5**	**+0.1**	
	comp=Z,4.4nm,0.8s,baz=15,slow=4.5,SNR=9.3								
AKASG	**Malin Array Be**	**151.58**	**325**	PKPbc		**PKPbc**	**10 46 04.8**	**-1.2**	
	comp=Z,3.4nm,0.6s,baz=44,slow=2.6,SNR=10								
AKBB	**Malin Array Si**	**151.58**	**325**	*e*PKPbc		**PKPbc**	**10 46 06.5**	**+0.4**	
KIEV	**Kiev**	**151.59**	**325**	*e*PKPbc		**PKPbc**	**10 46 06.5**	**+0.4**	
BR101	**Keskin Array S**	**153.60**	**301**	*e*PKPbc		**PKPbc**	**10 46 11.7**	**+0.6**	
BRTR	**Keskin Array B**	**153.60**	**301**	PKPbc		**PKPbc**	**10 46 11.7**	**+0.6**	
	comp=Z,0.5nm,0.6s,baz=27,slow=3.0,SNR=4.2								
TORD	**Torodi Ar. Bea**	**163.55**	**172**	PKPab		**PKPab**	**10 47 07.7**	**+0.7**	
	comp=Z,1.5nm,0.9s,baz=188,slow=4.4,SNR=7.1								
TOA1	**Torodi Ar. Sit**	**163.56**	**172**	*e*PKPab		**PKPab**	**10 47 07.7**	**+0.7**	

MEX 19 10:33:01.3±0.6, 14°.56N × 92°.36W, h70^{km}±20^{km}, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
CCIG	**Comitan**	**1.72**	**7**	*i*	P	Pn	10 33 28.0		-1.4
CCIG				*i*	S	Sn	10 33 49.5		-1.2

*ISCJB **19** 10:47:28.8±0.5, 4°.18S±0°.04 × 122°.86E±0°.05, h10^{km}, mb4.1/11, MS3.5/5, Error ellipse: s-maj=7.7km s-min=5.2km az=152.7*
*IDC **19** 10:47:29.1±0.8, 4°.13S × 122°.78E, h0^{km}, mb4.1/10, mb1 4.2/13, mb1mx4.0/38, mbtmp4.1/13, ML3.9/3, MS3.4/6, Ms1 3.5/6, ms1mx3.0/40, Error ellipse: s-maj=26.2km s-min=15.4km az=59.0*
*DJA **19** 10:47:33.8±0.4, 4°.S±3°.3 × 12°.3E±°, h10^{km}, M4.4/8, MLv4.4/8*
*NEIC **19** 10:47:33.8±0.5, 4°.19S × 122°.80E, h35^{km}, mb4.1/2, Error ellipse: s-maj=14.2km s-min=7.3km az=61.0*
ISC 19 10:47:31.3±0.7, 4°.11S±0°.04 × 122°.73E±0°.05, h10^{km}, n34, σ1^{s}44/30, mb4.2/11, MS3.4/5, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
KDI	**Kendari**	**0.19**	**323**	P		**Pg**	**10 47 35.6**	**+0.3**	
KDI				S		**Sg**	**10 47 38.6**	**+0.5**	
BSSI	**Bau Bau, Buton**	**3.01**	**228**	P		**Pg**	**10 48 29.6**	**+0.5**	
LUWI	**Luwuk**	**3.05**	**1**	P		**Pn**	**10 48 20.7**	**+1.1**	
LUWI	**Luwuk**	**3.05**	**1**	*e*Pn		**Pn**	**10 48 19.4**	**-0.2**	
LUWI				*e*Sn		**Sn**	**10 48 56.4**	**+0.2**	
TTSI	**Tana Toraja**	**3.10**	**290**	P		**Pn**	**10 48 22.2**	**+1.9**	
KAPI	**Kappang**	**3.10**	**253**	Pn		**Pn**	**10 48 21.2**	**+0.9**	
	32nm,0.3s,baz=111,slow=6.2,SNR=60								
KAPI				Sn		**Sn**	**10 48 58.2**	**+0.7**	
	19nm,0.3s,baz=29,slow=23,SNR=13								
KAPI				LR		LR	10 49 19.8		
	comp=Z,355nm,18.4s,baz=89,slow=35								
KAPI	**Kappang**	**3.10**	**253**	*e*Pn		**Pn**	**10 48 20.9**	**+0.5**	
KAPI				*e*Sn		**Sn**	**10 48 59.1**	**+1.5**	

PCI	**Palu**	**4.30**	**318**	P		**Pn**	**10 48 38.9**	**+2.0**	
NLAI	**Namlea**	**4.44**	**79**	P		**Pn**	**10 48 41.8**	**+3.0**	
MMRI	**Maumere**	**4.52**	**186**	P		**Pn**	**10 48 43.7**	**+3.8**	
MRSI	**Marisa**	**4.62**	**350**	P		**Pn**	**10 48 43.5**	**+2.2**	
EDFI	**Ende, Flores**	**4.72**	**193**	P		**Pn**	**10 48 42.2**	**-0.6**	
KMSI	**Cibinong**	**4.82**	**15**	P		Pg	10 49 11.5	+7.8	
SOEI	**Soe**	**5.81**	**165**	P		Pn	10 49 04.8	+7.1	
LBMI	**Labuha**	**5.88**	**54**	P		Pn	10 49 04.4	+5.8	
MTKI	**Muara Teweh, K**	**8.44**	**292**	P		Pb	10 49 48.1	-9.5	
FITZ	**Fitzroy Crossi**	**14.19**	**169**	Pn		Pn	10 50 49.1	-3.4	
	0.1nm,0.3s,baz=329,slow=8.9,SNR=5.4								
FITZ	**Fitzroy Crossi**	**14.19**	**169**	*e*P		Pn	10 50 49.3	-3.3	
WRAB	**Tennant Creek**	**19.38**	**145**	*e*P		**P**	**10 51 55.3**	**-2.2**	
	9.2nm,0.8s								
WRA	**Warramunga Arr**	**19.38**	**145**	P		**P**	**10 51 55.8**	**-1.7**	
	0.4nm,0.3s,baz=315,slow=13,SNR=42								
ASAR	**Alice Springs**	**22.23**	**152**	P		**P**	**10 52 27.6**	**-0.8**	
	3.4nm,0.7s,baz=328,slow=8.9,SNR=28								
ASAR				LR		LR	11 01 05.5		
	comp=Z,92nm,21.6s,baz=338,slow=37								
KULM	**Kulim**	**23.95**	**293**	*e*P		**P**	**10 52 46.4**	**+0.3**	
	3.6nm,0.6s								
PSI	**Prapat**	**24.76**	**286**	P		**P**	**10 52 53.1**	**-0.5**	
	19nm,1.1s,baz=64,slow=7.2,SNR=4.1								
CMAR	**Chiang Mai Arr**	**32.44**	**314**	P		**P**	**10 54 02.5**	**+0.6**	
	1.4nm,0.4s,baz=140,slow=7.5,SNR=7.1								
CMAR				LR		LR	11 09 30.7		
	comp=Z,68nm,18.7s,baz=135,slow=41								
STKA	**Stephens Creek**	**32.81**	**149**	P		**P**	**10 54 04.5**	**-0.6**	
	1.2nm,0.5s,baz=322,slow=11,SNR=6.3								
STKA				LR		LR	11 07 46.9		
	comp=Z,77nm,20.3s,baz=26,slow=37								
USRK	**Ussuriysk Ar.**	**48.81**	**9**	P		**P**	**10 56 16.4**	**-0.3**	
	2.0nm,0.6s,baz=174,slow=7.7,SNR=4.9								
SONM	**Songino Array**	**53.68**	**346**	P		**P**	**10 56 53.7**	**+0.3**	
	0.7nm,0.5s,baz=170,slow=7.8,SNR=5.1								
MKAR	**Makanchi Array**	**61.98**	**330**	P		**P**	**10 57 50.6**	**-1.0**	
	1.0nm,0.6s,baz=136,slow=7.5,SNR=10								
ZALV	**Zalesovo Beam**	**65.94**	**337**	P		**P**	**10 58 16.9**	**-0.6**	
	3.2nm,0.9s,baz=142,slow=5.1,SNR=6.2								
KURBB	**Kurchatov Arra**	**66.39**	**331**	P		**P**	**10 58 20.1**	**-0.3**	
	1.4nm,0.9s,baz=141,slow=5.8,SNR=5.4								
KURK	**Kurchatov**	**66.40**	**331**	P		**P**	**10 58 20.1**	**-0.4**	
VNDA	**Vanda**	**76.24**	**172**	LR		LR	11 31 36.4		
	comp=Z,33nm,20.3s,baz=326,slow=35								
BRTR	**Keskin Array B**	**91.90**	**310**	P		**P**	**11 00 38.7**	**-1.7**	
	0.3nm,0.3s,baz=63,slow=5.7,SNR=2.4								
BOSA	**Boshof**	**94.60**	**241**	LR		LR	11 37 51.2		
	comp=Z,28nm,19.9s,baz=48,slow=32								

*CSEM **19** 10:50:11.6±0.1, 42°.87N × 19°.20E, h2^{km}, ML1.7, Error ellipse: s-maj=1.6km s-min=1.2km az=127.0*
*BEO **19** 10:50:12.3±0.3, 42°.81N × 19°.22E, h0^{km}, M1.7/3*
PDG 19 10:50:10.5±0.2, 42°.87N × 19°.18E, h18^{km}, MD1.8/1, ML1.7/12, 12C-8D, Error ellipse: s-maj=0.3km s-min=0.3km az=0.0, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
NKY	**Niksic**	**0.15**	**250**	↓ *i*	Pg	Pg	10 50 14.8		0.0
NKY				*e*	Sg	Sg	10 50 17.7		-0.1
NKY	**Niksic**	**0.15**	**250**	↓ *i*	Pg	Pg	10 50 14.8		0.0
NKY				*e*	Sg	Sg	10 50 17.7		-0.1
NKME	**Niksic**	**0.20**	**240**	↑ *i*	Pg	Pb	10 50 15.8		+0.4
NKME				*e*	Sg	Sg	10 50 19.1		+0.4
NKME	**Niksic**	**0.20**	**240**	↑ *i*	Pg	Pb	10 50 15.8		+0.4
NKME				*e*	Sg	Sg	10 50 19.1		+0.4
CEME	**Cevo**	**0.37**	**212**	↑ *i*	Pg	Pb	10 50 18.6		-0.1
CEME				*e*	Sg	Sb	10 50 24.2		0.0
CEME	**Cevo**	**0.37**	**212**	↑ *i*	Pg	Pb	10 50 18.6		-0.1
CEME				*e*	Sg	Sb	10 50 24.2		0.0
UPM	**Unac-Piva**	**0.40**	**329**	↑ *i*	Pg	Pb	10 50 19.6		+0.5
UPM				*e*	Sg	Sb	10 50 25.3		+0.3
UPM	**Unac-Piva**	**0.40**	**329**	↑ *i*	Pg	Pb	10 50 19.6		+0.5
UPM				*e*	Sg	Sb	10 50 25.3		+0.3
PDG	**Podgorica**	**0.44**	**173**	*e*	Pg	Pb	10 50 19.8		+0.1
PDG	**Podgorica**	**0.44**	**173**	↓ *i*	Pg	Pb	10 50 19.8		+0.1
PDG				*e*	Sg	Sb	10 50 26.5		+0.6
TTG	**Podgorica**	**0.44**	**173**	↓ *i*	Pg	Pb	10 50 19.8		+0.1
TTG				*e*	Sg	Sb	10 50 26.5		+0.6
BRY	**Bratogost**	**0.47**	**275**	↓ *i*	Pg	Pb	10 50 20.5		0.0
BRY				*e*	Sg	Sb	10 50 27.3		+0.1
BRY	**Bratogost**	**0.47**	**275**	↓ *i*	Pg	Pb	10 50 20.5		0.0
BRY				*e*	Sg	Sb	10 50 27.3		+0.1
PLE	**Pljevlja**	**0.49**	**18**	↓ *i*	Pg	Pb	10 50 20.7		0.0
PLE				*e*	Sg	Sb	10 50 27.7		+0.1
PLE	**Pljevlja**	**0.49**	**18**	↓ *i*	Pg	Pb	10 50 20.7		0.0
PLE				*e*	Sg	Sb	10 50 27.7		+0.1
BEY	**Berane**	**0.52**	**89**	*e*	Pg	Pb	10 50 21.4		+0.2
BEY				*e*	Sg	Sb	10 50 28.8		+0.4
IVA	**Berane**	**0.52**	**89**	*e*	Pg	Pb	10 50 21.4		+0.2
IVA				*e*	Sg	Sb	10 50 28.8		+0.4
BUM	**Brajici-Budva**	**0.60**	**201**	↑ *i*	Pg	Pb	10 50 22.7		+0.1
BUM				*e*	Sg	Sb	10 50 31.8		+1.1
BUM	**Brajici-Budva**	**0.60**	**201**	↑ *i*	Pg	Pb	10 50 22.7		+0.1
BUM				*e*	Sg	Sb	10 50 31.8		+1.1
PVY	**Plav**	**0.63**	**115**	↑ *i*	Pg	Pb	10 50 23.6		+0.5
PVY				*e*	Sg	Sb	10 50 32.1		+0.5
PVY	**Plav**	**0.63**	**115**	↑ *i*	Pg	Pb	10 50 23.6		+0.5
PVY				*e*	Sg	Sb	10 50 32.1		+0.5
TREB	**Trebinje**	**0.63**	**257**	*e*	Pg	Pn	10 50 24.2		-0.4
TREB				*i*	Sg	Sb	10 50 32.1		+0.6
HCY	**Herceg Novi**	**0.66**	**231**	*e*	Pg	Pg	10 50 24.0		+0.5
HCY				*e*	Sg	Sb	10 50 32.8		+0.5
HCY	**Herceg Novi**	**0.66**	**231**	*e*	Pg	Pg	10 50 24.0		+0.5
HCY				*e*	Sg	Sb	10 50 32.8		+0.5
DRME	**Dracevica, Mon**	**0.68**	**180**	↑ *i*	Pg	Pn	10 50 24.7		-0.5
DRME				*e*	Sg	Sg	10 50 34.0		+1.1
DRME	**Dracevica, Mon**	**0.68**	**180**	↑ *i*	Pg	Pn	10 50 24.7		-0.5
DRME				*e*	Sg	Sg	10 50 34.0		+1.1
ULC	**Ulcinj**	**0.90**	**177**	*e*	Pg	Pn	10 50 29.3		+1.0
ULC				*e*	Sg	Sn	10 50 41.3		+0.4
ULC	**Ulcinj**	**0.90**	**177**	*e*	Pg	Pn	10 50 29.3		+1.0
ULC				*e*	Sg	Sn	10 50 41.3		+0.4
IVAS	**Ivanjica**	**1.00**	**45**	*e*	Pg	Pg	10 50 30.8		+0.8
IVAS				*e*	Sg	Sn	10 50 43.4		-0.1
IVAS	**Ivanjica**	**1.00**	**45**	*e*	Pg	Pg	10 50 30.8		+0.8
IVAS				*e*	Sg	Sn	10 50 43.4		-0.1
BBLS	**Lazići**	**1.01**	**9**	*e*	Pg	Pg	10 50 31.7		+1.5
BBLS				*e*	Sg	Sn	10 50 47.3		+3.5
BBLS	**Lazići**	**1.01**	**9**	*e*	Pg	Pg	10 50 31.7		+1.5
BBLS				*e*	Sg	Sn	10 50 47.3		+3.5
SELS	**Selova**	**1.46**	**75**	*e*	Pn	Pg	10 50 39.2		+0.5
SELS	**Selova**	**1.46**	**75**	*e*	Pn	Pg	10 50 39.2		+0.5
TRUS	**Trudelj**	**1.62**	**33**	*e*	Pg	Pg	10 50 42.6		+0.9
TRUS	**Trudelj**	**1.62**	**33**	*e*	Pg	Pg	10 50 42.6		+0.9

*ISCJB **19** 11:02:50.9±0.6, 36°.62N±0°.04 × 71°.02E±0°.08, h188^{km}, mb3.1/5, Error ellipse: s-maj=9.9km s-min=5.2km az=158.5*
*IDC **19** 11:02:52.5±4.0, 36°.59N × 71°.05E, h207^{km}±35^{km}, mb3.1/5, mb1 3.2/11, mb1mx3.0/58, mbtmp3.6/11, MS2.7/1, Ms1 2.7/1, ms1mx2.0/25, Error ellipse: s-maj=30.4km s-min=26.0km az=23.0*
*NNC **19** 11:02:58.1±1.7, 37°.06N × 70°.92E, h199^{km}±21^{km}, mb2.6, mpv3.7, Error ellipse: s-maj=22.2km s-min=9.9km az=136.0*
ISC 19 11:02:51.4±0.8, 36°.62N±0°.07 × 71°.05E±0°.08, h188^{km}, n25, σ1^{s}58/30, mb3.2/5, 4C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
DZET	**Dzherino**	**2.81**	**322**	↓	P	**Pn**	**11 03 41.0**	**+2.8**	
	32nm,0.2s								
DZET				↓	S	**Sn**	**11 04 14.8**	**-0.1**	
	602nm,0.5s								
MNAS	**Manas**	**5.97**	**10**	↓	P	**Pn**	**11 04 19.9**	**+1.7**	
	2.7nm,0.4s								
MNAS				↑	S	**Sn**	**11 05 25.1**	**-1.5**	
	58nm,0.6s								
KK31	**Karatay Array**	**6.49**	**356**	P		**Pn**	**11 04 26.3**	**+1.5**	
	1.8nm,0.3s,baz=180,slow=12,SNR=36								
KK31				↓	S	**Sn**	**11 05 35.6**	**-3.1**	
	8.6nm,0.5s,baz=178,slow=22,SNR=17								
AAK	**Ala-Archa**	**6.57**	**23**	P		**Pn**	**11 04 28.6**	**+2.6**	
	2.0nm,0.3s,baz=131,slow=5.4,SNR=4.5								
AAK				S		**Sn**	**11 05 41.1**	**+0.3**	
	1.0nm,0.3s,baz=124,slow=22,SNR=14								
AAK	**Ala-Archa**	**6.57**	**23**	↓	P	**Pn**	**11 04 28.8**	**+2.7**	
	1.7nm,0.4s								
AAK				↑	S	**Sn**	**11 05 41.0**	**+0.3**	
	11nm,0.6s								
TKM2	**Tokmak 2**	**7.20**	**28**	↑	P	**Pn**	**11 04 35.9**	**+1.6**	
	2.5nm,0.5s								
TKM2				↑	S	**Sn**	**11 05 53.5**	**-2.3**	
	5.7nm,0.9s								
GEYT	**Alibeck**	**10.39**	**281**	P		**P**	**11 05 24.3**	**+0.4**	
	0.6nm,0.3s,baz=96,slow=11,SNR=4.7								
MKAR	**Makanchi Array**	**13.17**	**36**	P		**Pn**	**11 05 52.9**	**+1.5**	
	0.1nm,0.3s,baz=231,slow=13,SNR=3.3								
PYUN	**Piuthan**	**13.18**	**127**	*e*P		**Pn**	**11 05 52.3**	**+0.5**	
	14nm,0.3s								
PYUN				*e*	S	Sn	11 08 09.9	-8.8	
KOLN	**Koldanda**	**13.80**	**126**	*e*P		**Pn**	**11 06 00.0**	**+0.4**	
	9.5nm,0.3s								
KOLN				*e*	S	Sn	11 08 25.0	-8.5	
GKN	**Gorkha**	**14.33**	**123**	*e*P		**Pn**	**11 06 06.4**	**+0.3**	
	9.4nm,0.3s								
DMN	**Daman**	**14.90**	**123**	*e*P		**Pn**	**11 06 14.6**	**+1.3**	
	6.7nm,0.3s								
KURBB	**Kurchatov Arra**	**15.00**	**19**	P		**Pn**	**11 06 14.5**	**+0.6**	
	0.2nm,0.3s,baz=16,slow=2.2,SNR=7.9								
AB31	**Akbulak array**	**15.00**	**331**	P		**Pn**	**11 06 14.2**	**+0.2**	
	0.8nm,0.5s,baz=140,slow=12,SNR=17								
PKIN	**Phulchoki**	**15.12**	**123**	*e*P		**Pn**	**11 06 17.0**	**+1.1**	
	23nm,0.6s								
RAMN	**Ramite**	**16.34**	**122**	*e*P		**Pn**	**11 06 32.7**	**+2.0**	
	11nm,0.3s								
BVAR	**Borovoye Array**	**16.41**	**359**	P		**Pn**	**11 06 31.6**	**+0.6**	
	0.1nm,0.3s,baz=148,slow=12,SNR=3.2								
AKTO	**Aktyubinsk**	**16.70**	**330**	P		**Pn**	**11 06 35.6**	**+1.1**	
	0.3nm,0.3s,baz=146,slow=9.6,SNR=6.0								
ZALV	**Zalesovo Beam**	**19.79**	**25**	P		**P**	**11 07 08.0**	**+0.9**	
	0.5nm,0.3s,baz=200,slow=12,SNR=3.9								
GNI	**Garni**	**20.90**	**288**	LR		LR	11 19 28.9		
	comp=Z,19nm,19.8s,baz=54,slow=48								
TORD	**Torodi Ar. Bea**	**65.76**	**269**	P		**P**	**11 13 14.9**	**-1.6**	
	0.1nm,0.4s,baz=

LAKA				S	Sb	11 05 14.2	-0.6
LAKA	**Lakka**	**1.77**	**57**	P	Pb	11 04 52.6	+0.4
KLV	**Kalavryta, Ach**	**1.80**	**64**	P	Pb	11 04 51.6	-1.0
KLV				S	Sb	11 05 15.6	0.0
KLV	**Kalavryta, Ach**	**1.80**	**64**	P	Pb	11 04 51.6	-1.0
KLV				S	Sb	11 05 15.6	0.0
KLV	**Kalavryta, Ach**	**1.80**	**64**	P	Pb	11 04 51.9	-0.8
KLV				AML	AML	11 05 29.0	
	comp=N,1169μm,0.8s						
KLV				AML	AML	11 05 30.9	
	comp=E,1398μm,0.7s						
VLX	**Vlachokerasia**	**1.82**	**87**	P	Pb	11 04 52.0	-1.1
VLX				S	Sb	11 05 16.2	-0.1
VLX	**Vlachokerasia**	**1.82**	**87**	P	Pb	11 04 52.0	-1.1
VLX				S	Sb	11 05 16.2	-0.1
VLX	**Vlachokerasia**	**1.82**	**87**	P	Pn	11 04 51.8	+0.4
TRIZ	**Trizonia**	**1.90**	**55**	P	Pb	11 04 54.5	+0.1
SERG	**Sergoula**	**1.92**	**53**	P	Pb	11 04 54.1	-0.6
SERG				S	Sb	11 05 18.7	-0.3
SERG	**Sergoula**	**1.92**	**53**	P	Pb	11 04 54.1	-0.6
SERG				S	Sb	11 05 18.7	-0.3
ANX	**Ano Chora**	**1.94**	**47**	P	Pb	11 04 54.8	-0.4
ANX				S	Sg	11 05 20.3	-1.3
ANX	**Ano Chora**	**1.94**	**47**	P	Pb	11 04 54.8	-0.4
ANX				S	Sg	11 05 20.3	-1.3
KALE	**Kalithea**	**1.96**	**55**	P	Pb	11 04 54.9	-0.5
KALE				S	Sb	11 05 19.5	-0.7
KALE	**Kalithea**	**1.96**	**55**	P	Pb	11 04 54.9	-0.5
KALE				S	Sb	11 05 19.5	-0.7
KALE	**Kalithea**	**1.96**	**55**	P	Pb	11 04 55.3	-0.1
KALE				AML	AML	11 05 36.3	
	comp=E,1736μm,0.5s						
KALE				AML	AML	11 05 37.2	
	comp=N,2579μm,0.8s						
DSL	**Palaion Diasel**	**2.01**	**23**	P	Pb	11 04 54.9	-1.4
DSL				S	Sb	11 05 19.9	-1.7
DSL	**Palaion Diasel**	**2.01**	**23**	P	Pb	11 04 54.9	-1.4
DSL				S	Sb	11 05 19.9	-1.7
DSL	**Palaion Diasel**	**2.01**	**23**	P	Pb	11 04 55.6	-0.6
EVR	**Evrytania**	**2.12**	**39**	P	Pb	11 04 57.6	-0.5
EVR				S	Sb	11 05 24.7	-0.1
EVR	**Evrytania**	**2.12**	**39**	P	Pb	11 04 57.6	-0.5
EVR				S	Sb	11 05 24.7	-0.1
EVR	**Evrytania**	**2.12**	**39**	P	Pb	11 04 58.5	+0.4
EVR				AML	AML	11 05 37.7	
	comp=N,1381μm,1.0s						
THAL	**Thalero**	**2.17**	**69**	P	Pn	11 04 56.0	-0.1
THAL				S	Sb	11 05 24.0	-2.2
THAL	**Thalero**	**2.17**	**69**	P	Pn	11 04 56.0	-0.1
THAL				S	Sb	11 05 24.0	-2.2
THAL	**Thalero**	**2.17**	**69**	P	Pb	11 04 57.9	-1.1
THAL				AML	AML	11 05 48.3	
	comp=E,3682μm,0.9s						
THAL				AML	AML	11 05 51.2	
	comp=N,4269μm,0.8s						
DSF	**Desfina**	**2.23**	**59**	P	Pn	11 04 57.5	+0.6
DSF				S	Sb	11 05 25.9	-2.1
DSF	**Desfina**	**2.23**	**59**	P	Pn	11 04 57.5	+0.6
DSF				S	Sb	11 05 25.9	-2.1
DSF	**Desfina**	**2.23**	**59**	P	Pb	11 04 58.7	-1.3
DSF				AML	AML	11 05 32.8	
	comp=N,727μm,0.2s						
DSF				AML	AML	11 05 38.7	
	comp=E,730μm,0.4s						
IGT	**Igoumenitsa**	**2.25**	**5**	P	Pb	11 04 59.1	-1.3
IGT	**Igoumenitsa**	**2.25**	**5**	P	Pb	11 04 59.1	-1.3
SGD	**Sagiada**	**2.33**	**3**	P	Pn	11 04 59.7	+1.5
SGD	**Sagiada**	**2.33**	**3**	P	Pn	11 04 59.8	+1.5
SGD	**Sagiada**	**2.33**	**3**	P	Pn	11 04 59.8	+1.5
VLI	**Veliai**	**2.34**	**103**	P	Pn	11 04 59.9	+1.5
VLI				S	Sb	11 05 29.1	-2.0
VLI	**Veliai**	**2.34**	**103**	P	Pn	11 04 59.9	+1.5
VLI				S	Sb	11 05 29.1	-2.0
VLI	**Veliai**	**2.34**	**103**	P	Pb	11 05 00.8	-1.1
LOUT	**Loutraki**	**2.39**	**72**	P	Pn	11 04 58.8	-0.3
LOUT	**Loutraki**	**2.39**	**72**	P	Pn	11 04 58.8	-0.3
LOUT	**Loutraki**	**2.39**	**72**	P	Pn	11 04 58.8	-0.3
LTK	**Loutraki**	**2.39**	**71**	P	Pn	11 04 59.7	+0.5
LTK				S	Sn	11 05 29.2	+0.2
LTK	**Loutraki**	**2.39**	**71**	P	Pn	11 04 59.7	+0.5
LTK				S	Sn	11 05 29.2	+0.2
LTK	**Loutraki**	**2.39**	**71**	P	Pn	11 04 59.0	-0.2
PROD	**Prodromos**	**2.42**	**65**	P	Pn	11 04 59.9	+0.3
PROD	**Prodromos**	**2.42**	**65**	P	Pn	11 04 59.9	+0.3
KEK	**Kerkira**	**2.44**	**355**	P	Pn	11 05 00.4	+0.6
KEK				S	Sb	11 05 33.2	-0.8
KEK	**Kerkira**	**2.44**	**355**	P	Pn	11 05 00.4	+0.6
KEK				S	Sb	11 05 33.2	-0.8
JAN	**Janina**	**2.44**	**14**	P	Pb	11 05 01.6	-2.1
JAN	**Janina**	**2.44**	**14**	P	Pb	11 05 01.6	-2.1
AGG	**Agios Georgios**	**2.47**	**45**	P	Pn	11 05 01.4	+1.1
AGG				S	Sn	11 05 31.5	+0.6
AGG	**Agios Georgios**	**2.47**	**45**	P	Pn	11 05 01.4	+1.1
AGG				S	Sn	11 05 31.5	+0.6
AGG	**Agios Georgios**	**2.47**	**45**	P	Pn	11 05 01.4	+1.1
DID	**Didima**	**2.51**	**84**	P	Pn	11 05 00.8	0.0
DID				S	Sn	11 05 32.4	+0.6
DID	**Didima**	**2.51**	**84**	P	Pn	11 05 00.8	0.0
DID				S	Sn	11 05 32.4	+0.6
DID	**Didima**	**2.51**	**84**	P	Pn	11 05 00.8	0.0
LKR	**Lokris**	**2.67**	**58**	P	Pn	11 05 04.0	+1.1
LKR				S	Sn	11 05 35.9	+0.2
LKR	**Lokris**	**2.67**	**58**	P	Pn	11 05 03.6	+0.7
LKR				S	Sn	11 05 35.9	+0.2
LKR	**Lokris**	**2.67**	**58**	P	Pn	11 05 03.6	+0.7
VIL2	**Platees**	**2.68**	**69**	P	Pn	11 05 03.0	-0.1
VIL2				AML	AML	11 05 58.8	
	comp=E,640μm,1.1s						
VIL2				AML	AML	11 05 59.3	
	comp=N,932μm,1.0s						
VILL	**Villia**	**2.69**	**70**	P	Pn	11 05 03.5	+0.2
VILL				S	Sn	11 05 37.5	+1.0
VILL	**Villia**	**2.69**	**70**	P	Pn	11 05 03.5	+0.2
VILL				S	Sn	11 05 37.5	+1.0
ATAL	**Atalanti**	**2.70**	**58**	P	Pn	11 05 03.6	+0.2
ATAL				S	Sb	11 05 38.4	-3.2
ATAL	**Atalanti**	**2.70**	**58**	P	Pn	11 05 04.0	+0.6
ATAL				S	Sb	11 05 38.4	-3.2
ATAL	**Atalanti**	**2.70**	**58**	P	Pn	11 05 04.0	+0.6
ATAL				AML	AML	11 05 56.8	
	comp=E,765μm,1.2s						
ATAL				AML	AML	11 05 58.0	
	comp=N,844μm,1.7s						
THL	**Klokotos Trika**	**2.73**	**33**	P	Pn	11 05 05.1	+1.3
THL				S	Sn	11 05 37.5	+0.3
THL	**Klokotos Trika**	**2.73**	**33**	P	Pn	11 05 05.0	+1.3
THL				S	Sn	11 05 37.5	+0.3
KPRO	**Kipourio**	**2.85**	**20**	P	Pn	11 05 07.5	+2.1
KPRO	**Kipourio**	**2.85**	**20**	P	Pn	11 05 07.5	+2.1
KPRO	**Kipourio**	**2.85**	**20**	P	Pb	11 05 08.6	-2.0
ANKY	**Antikythira Is**	**2.94**	**118**	P	Pn	11 05 08.7	+2.1
ANKY				S	Sb	11 05 45.1	-3.3
ANKY	**Antikythira Is**	**2.94**	**118**	P	Pn	11 05 08.7	+2.1
ANKY				S	Sb	11 05 45.1	-3.3
ANKY	**Antikythira Is**	**2.94**	**118**	P	Pb	11 05 10.0	-2.1
VLY	**Voula,Athens**	**2.99**	**78**	P	Pn	11 05 07.4	+0.1
VLY				S	Sn	11 05 45.8	+2.1
VLY	**Voula,Athens**	**2.99**	**78**	P	Pn	11 05 07.5	+0.1
VLY				S	Sn	11 05 45.8	+2.1
VLY	**Voula,Athens**	**2.99**	**78**	P	Pn	11 05 07.5	+0.1
ATHU	**Athens Univers**	**3.00**	**76**	P	Pn	11 05 07.8	+0.3
ATHU	**Athens Univers**	**3.00**	**76**	P	Pn	11 05 07.9	+0.3
ATHU	**Athens Univers**	**3.00**	**76**	P	Pn	11 05 07.9	+0.3
PENT	**Pentalofos**	**3.02**	**15**	P	Pn	11 05 10.2	+2.3
PENT	**Pentalofos**	**3.02**	**15**	P	Pn	11 05 10.2	+2.3
PENT	**Pentalofos**	**3.02**	**15**	P	Pb	11 05 11.1	-2.5
FYTO	**Fytoko, Volos**	**3.08**	**46**	P	Pn	11 05 09.0	+0.4
FYTO				S	Sn	11 05 46.9	+1.0
FYTO	**Fytoko, Volos**	**3.08**	**46**	P	Pn	11 05 09.0	+0.4
FYTO				S	Sn	11 05 46.9	+1.0
FYTO	**Fytoko, Volos**	**3.08**	**46**	P	Pn	11 05 07.8	-0.7
PTL	**Penteli**	**3.08**	**74**	P	Pn	11 05 08.3	-0.4
PTL	**Penteli**	**3.08**	**74**	P	Pn	11 05 08.3	-0.4
XOR	**Xorichti**	**3.20**	**49**	P	Pn	11 05 10.4	+0.1
XOR				S	Sn	11 05 50.4	+1.5
XOR	**Xorichti**	**3.20**	**49**	P	Pn	11 05 11.0	+0.7
XOR				S	Sn	11 05 50.4	+1.5
XOR	**Xorichti**	**3.20**	**49**	P	Pn	11 05 11.0	+0.7
NEST	**Nestorio**	**3.21**	**13**	P	Pn	11 05 12.8	+2.3
NEST	**Nestorio**	**3.21**	**13**	P	Pn	11 05 12.8	+2.3
NEST	**Nestorio**	**3.21**	**13**	P	Pn	11 05 13.3	+2.8
EREA	**Eretria**	**3.24**	**68**	P	Pn	11 05 11.0	+0.2
EREA	**Eretria**	**3.24**	**68**	P	Pn	11 05 11.0	+0.2
TIP	**Timpagrande**	**3.24**	**307**	P	Pn	11 05 12.7	+1.8
TIP				S	Sn	11 05 52.8	+2.8
TIP	**Timpagrande**	**3.24**	**307**	P	Pn	11 05 12.7	+1.8
TIP				S	Sn	11 05 52.8	+2.8
TIP	**Timpagrande**	**3.24**	**307**	P	Pn	11 05 13.0	+2.1
SKIA	**Skiathos**	**3.25**	**54**	P	Pn	11 05 14.3	-3.1
SKIA	**Skiathos**	**3.25**	**54**	P	Pb	11 05 14.3	-3.1
KZN	**Kozani**	**3.29**	**23**	P	Pn	11 05 13.2	+1.7
KZN	**Kozani**	**3.29**	**23**	P	Pn	11 05 13.2	+1.7
LIT	**Litokhoron**	**3.38**	**33**	P	Pn	11 05 13.2	+0.5
LIT	**Litokhoron**	**3.38**	**33**	P	Pn	11 05 13.2	+0.5
LIT	**Litokhoron**	**3.38**	**33**	P	Pn	11 05 12.4	-0.3
MHLO	**Agia Marina, M**	**3.50**	**98**	P	Pn	11 05 14.7	+0.4
MHLO	**Agia Marina, M**	**3.50**	**98**	P	Pn	11 05 14.7	+0.4
MHLO	**Agia Marina, M**	**3.50**	**98**	P	Pn	11 05 13.6	-0.7
SERI	**Serifos**	**3.50**	**91**	P	Pn	11 05 13.4	-1.0
SERI	**Serifos**	**3.50**	**91**	P	Pn	11 05 13.4	-1.0
AOS	**Alonnisos**	**3.52**	**57**	P	Pn	11 05 15.1	+0.4
AOS				S	Sn	11 05 59.0	+2.2
AOS	**Alonnisos**	**3.52**	**57**	P	Pn	11 05 15.1	+0.4
AOS				S	Sn	11 05 59.0	+2.2
AOS	**Alonnisos**	**3.52**	**57**	P	Pn	11 05 13.9	-0.8
IMMV	**Iera Moni Meta**	**3.62**	**119**	P	Pn	11 05 17.4	+1.4
IMMV	**Iera Moni Meta**	**3.62**	**119**	P	Pn	11 05 17.4	+1.4
IMMV	**Iera Moni Meta**	**3.62**	**119**	P	Pn	11 05 18.4	+2.4
FNA	**Florina**	**3.63**	**15**	P	Pn	11 05 17.0	+0.7
FNA	**Florina**	**3.63**	**15**	P	Pn	11 05 17.0	+0.7
FNA	**Florina**	**3.63**	**15**	P	Pn	11 05 17.2	+0.9
PAIG	**Paliouri**	**3.85**	**46**	P	Pn	11 05 19.3	+0.1
PAIG	**Paliouri**	**3.85**	**46**	P	Pn	11 05 19.7	+0.5
PAIG	**Paliouri**	**3.85**	**46**	P	Pn	11 05 19.7	+0.5
OHR	**Ohrid**	**3.86**	**8**	*e*Pn	Pn	11 05 20.3	+0.9
OHR	**Ohrid**	**3.86**	**8**	*e*Pn	Pn	11 05 20.3	+0.9
PLG	**Polygyros**	**4.04**	**39**	P	Pn	11 05 22.2	+0.3
PLG	**Polygyros**	**4.04**	**39**	P	Pn	11 05 22.2	+0.3
GVD	**Gavdhos**	**4.05**	**126**	P	Pn	11 05 23.5	+1.6
GVD	**Gavdhos**	**4.05**	**126**	P	Pn	11 05 23.5	+1.6
HORT	**Hortiatis**	**4.05**	**34**	P	Pn	11 05 22.3	+0.3
HORT	**Hortiatis**	**4.05**	**34**	P	Pn	11 05 22.3	+0.3
TIR	**Tirane**	**4.06**	**358**	⇑ *i*P	Pg	11 05 45.7	+8.7
TIR	**Tirane**	**4.06**	**358**	⇑ *i*P	Pg	11 05 45.7	+8.7
GRG	**Griva**	**4.08**	**25**	P	Pn	11 05 22.9	+0.5
GRG	**Griva**	**4.08**	**25**	P	Pn	11 05 22.9	+0.5
SOH	**Sokhos**	**4.35**	**35**	P	Pn	11 05 27.1	+1.0
SOH	**Sokhos**	**4.35**	**35**	P	Pn	11 05 27.1	+1.0
IDI	**Anoyia**	**4.35**	**116**	P	Pn	11 05 27.6	+1.5
IDI	**Anoyia**	**4.35**	**116**	P	Pn	11 05 27.6	+1.5
IDI	**Anoyia**	**4.35**	**116**	P	Pn	11 05 28.4	+2.3
KNT	**Kendrikon**	**4.44**	**28**	P	Pn	11 05 27.9	+0.6
KNT	**Kendrikon**	**4.44**	**28**	P	Pn	11 05 27.9	+0.6
VAY	**Valandovo**	**4.46**	**25**	P	Pn	11 05 28.3	+0.7
VAY	**Valandovo**	**4.46**	**25**	*e*Pn	Pn	11 05 23.9	-3.8
VAY	**Valandovo**	**4.46**	**25**	*e*Pn	Pn	11 05 23.8	-3.8
VAY	**Valandovo**	**4.46**	**25**	P	Pn	11 05 28.3	+0.7
SRS	**Serrai**	**4.69**	**34**	P	Pn	11 05 31.0	+0.2
SRS	**Serrai**	**4.69**	**34**	P	Pn	11 05 31.0	+0.2
CDT	**Castel del Mon**	**4.82**	**323**	*e*Pn	Pn	11 05 33.6	+1.1
LAST	**Lasithi**	**4.84**	**114**	P	Pn	11 05 36.1	+3.3
LAST	**Lasithi**	**4.84**	**114**	P	Pn	11 05 36.1	+3.3
KKB	**Krupnik**	**5.12**	**26**	P	Pn	11 05 37.8	+1.1
MMB	**Musomiste**	**5.14**	**32**	*i* P	Pn	11 05 37.2	+0.3
RZN	**Rozhen**	**5.67**	**38**	P	Pn	11 05 45.4	+1.1
BARS	**Barje**	**5.68**	**13**	*e*Pn	Pn	11 05 44.3	0.0
VTS	**Vitosha**	**5.81**	**23**	P	Pn	11 05 47.3	+1.0
VTS	**Vitosha**	**5.81**	**23**	P	Pn	11 05 47.3	+1.5
VTS	**Vitosha**	**5.81**	**23**	*i* P	Pn	11 05 47.5	+1.2
VTS	**Vitosha**	**5.81**	**23**	P	Pn	11 05 47.3	+1.0
BOVS	**Bovan**	**6.46**	**10**	*e*Pn	Pn	11 05 54.3	-0.7
MPEP	**Malo Peshtene**	**6.67**	**23**	P	Pn	11 05 51.3	-6.6
ZAGS	**Zajecar**	**6.72**	**13**	*e*Pn	Pn	11 05 58.8	+0.2
MLR	**Muntele Rosu**	**9.30**	**26**	⇑ *i*P	Pn	11 06 37.4	+3.3
MLR	**Muntele Rosu**	**9.30**	**26**	⇑ *i*P	Pn	11 06 37.4	+3.3
PLOR	**Plostina**	**9.86**	**28**	⇑ *i*P	Pn	11 06 44.8	+3.1
PLOR	**Plostina**	**9.86**	**28**	⇑ *i*P	Pn	11 06 44.8	+3.1

ISK ***19*** *11:13:39.1,38°.63N×39°.36E,h31km, MD2.5*
CSEM ***19*** *11:13:39.6±0.2,38°.60N×39°.63E,h15km, MD2.5, Error ellipse: s-maj=5.1km s-min=3.3km az=64.0*
ISCJB ***19*** *11:13:40.1±0.6,38°.60N±0°.03×39°.63E±0°.05,h13km±6km, Error ellipse: s-maj=7.1km s-min=4.4km az=149.1*
DDA ***19*** *11:13:40.1,38°.61N×39°.61E,h7km, Ml2.9*
ISC 19 11:13:39.6±1.3, 38°.60N±0°.03×39°.60E±0°.04, h12km±11km, n14, σ1°48/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.32**	**227**	*e*PG	**Pg**	**11 13 46.6**	**+0.3**
SVRC				*e*SG	**Sb**	**11 13 52.1**	**-0.5**
SVRC	**Sivrice-ELAZID**	**0.32**	**227**	*e*Pg	**Pg**	**11 13 46.6**	**+0.3**
SVRC				*e*Sg	**Sb**	**11 13 52.1**	**-0.5**
PTK	**Pertek**	**0.34**	**330**	*e*PG	**Pg**	**11 13 46.8**	**+0.3**
PTK				*e*SG	**Sb**	**11 13 52.3**	**-0.8**
PTK	**Pertek**	**0.34**	**330**	*e*Pg	**Pg**	**11 13 46.8**	**+0.3**
PTK				*e*Sg	**Sb**	**11 13 52.3**	**-0.8**
ELZG	**Elazig**	**0.50**	**258**	*i* P	**Pg**	**11 13 49.6**	**+0.2**
ELZG				*i* S	**Sb**	**11 13 57.9**	**+0.2**
ELZG	**Elazig**	**0.50**	**258**	P	**Pg**	**11 13 49.6**	**+0.2**
ELZG				S	**Sb**	**11 13 57.8**	**+0.2**
TNCL	**Tunceli-Merkez**	**0.52**	**355**	*i* P	**Pg**	**11 13 49.9**	**+0.1**
TNCL				*i* S	**Sb**	**11 13 58.5**	**+0.3**
TNCL	**Tunceli-Merkez**	**0.52**	**355**	P	**Pg**	**11 13 49.9**	**+0.1**
TNCL				S	**Sb**	**11 13 58.5**	**+0.3**
DYBB	**Diyarbakir**	**0.77**	**147**	*e*PG	**Pn**	**11 13 56.1**	**-0.3**
DYBB				*e*SG	**Sn**	**11 14 08.4**	**+0.5**
DIY	**Diyarbakir**	**0.86**	**145**	*e*Pg	**Pb**	**11 13 56.1**	**-0.4**
DIY				*e*Sg	**Sb**	**11 14 08.4**	**+0.4**
KEMA	**Kemaliye**	**1.09**	**308**	*i* P	**Pb**	**11 14 00.2**	**-0.3**
KEMA				*i* S	**Sn**	**11 14 16.8**	**+0.9**
KEMA	**Kemaliye**	**1.09**	**308**	P	**Pb**	**11 14 00.2**	**-0.3**
KEMA				S	**Sn**	**11 14 16.8**	**+0.9**
MAZI	**Mazidag**	**1.32**	**149**	*e*PN	**Pn**	**11 14 03.7**	**-0.3**
MAZI	**Mazidag**	**1.32**	**149**	*e*Pn	**Pn**	**11 14 03.7**	**-0.3**

DDA ***19*** *11:16:07.4,37°.47N×36°.19E,h8km,Md2.6*
ISK ***19*** *11:16:07.8,37°.60N×36°.24E,h11km, MD2.8*
CSEM ***19*** *11:16:07.1±0.4,37°.72N×36°.27E,h8km, MD2.6, Error ellipse: s-maj=9.4km s-min=6.9km az=5.0*
ISCJB ***19*** *11:16:08.3±0.5,37°.57N±0°.05×36°.26E±0°.03,h13km±5km, Error ellipse: s-maj=8.5km s-min=4.5km az=6.1*
ISC 19 11:16:08.1±0.8, 37°.59N±0°.04×36°.23E±0°.02, h16km±5km, n24, σ0°86/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANDN	**Andirin**	**0.09**	**93**	*i* P	**Pg**	**11 16 11.1**	**-0.5**
ANDN				*i* S	**Sg**	**11 16 14.4**	**+0.6**
ANDN	**Andirin**	**0.09**	**93**	P	**Pg**	**11 16 11.1**	**-0.5**
ANDN				S	**Sg**	**11 16 14.4**	**+0.6**
KOZT	**Kozan**	**0.34**	**252**	*e*PG	**Pg**	**11 16 14.8**	**-0.5**
KOZT				*e*SG	**Sb**	**11 16 20.7**	**-0.3**
KOZT	**Kozan**	**0.34**	**252**	*e*Pg	**Pg**	**11 16 14.8**	**-0.5**
KOZT				*e*Sg	**Sb**	**11 16 20.7**	**-0.3**
KMRS	**Kahramanmaras**	**0.54**	**98**	*e*PG	**Pg**	**11 16 18.3**	**-0.5**
KMRS				*e*SG	**Sb**	**11 16 26.4**	**-0.3**
KMRS	**Kahramanmaras**	**0.54**	**98**	*e*Pg	**Pg**	**11 16 18.3**	**-0.5**
KMRS				*e*Sg	**Sb**	**11 16 26.4**	**-0.3**
HCB	**Kahramanmara¯**	**0.59**	**114**	*i* P	**Pg**	**11 16 18.9**	**-0.9**
HCB				*i* S	**Sb**	**11 16 27.4**	**-0.8**
CEYT	**Ceyhan**	**0.69**	**214**	*e*PG	**Pn**	**11 16 22.8**	**-0.5**
CEYT	**Ceyhan**	**0.69**	**214**	*e*Pg	**Pn**	**11 16 22.8**	**-0.5**
SARI	**SarD1z-Kayseri**	**0.83**	**10**	*e*PG	**Pb**	**11 16 24.6**	**+0.2**
YAHY	**KAYSERI_Yahyal**	**0.86**	**307**	*i* P	**Pb**	**11 16 24.3**	**-0.4**
YAHY				*i* S	**Sn**	**11 16 38.1**	**+0.1**
YAHY	**KAYSERI_Yahyal**	**0.86**	**307**	P	**Pb**	**11 16 24.3**	**-0.4**
YAHY				S	**Sn**	**11 16 38.1**	**+0.1**
GAZ	**Gaziantep**	**0.88**	**118**	*e*PG	**Pn**	**11 16 25.7**	**-0.2**
GAZ	**Gaziantep**	**0.88**	**118**	*e*Pg	**Pn**	**11 16 25.7**	**-0.2**
KARA	**Karaisali**	**0.99**	**251**	*e*PG	**Pb**	**11 16 27.1**	**+0.1**
KARA	**Karaisali**	**0.99**	**251**	*e*Pg	**Pb**	**11 16 27.1**	**+0.1**
GULE	**Gulek**	**1.20**	**256**	*i* P	**Pg**	**11 16 29.7**	**-1.6**
GULE				*i* S	**Sn**	**11 16 48.8**	**+2.4**
GULE	**Gulek**	**1.20**	**256**	P	**Pg**	**11 16 29.7**	**-1.6**
GULE				S	**Sn**	**11 16 48.8**	**+2.4**
TAHT	**Tahtakopru-Hat**	**1.21**	**182**	*e*PN	**Pg**	**11 16 31.1**	**-0.3**
TAHT	**Tahtakopru-Hat**	**1.21**	**182**	*e*Pn	**Pg**	**11 16 31.1**	**-0.3**
NIG	**Nigde**	**1.39**	**293**	*e*PN	**Pg**	**11 16 34.3**	**-0.6**
NIG	**Nigde**	**1.39**	**293**	*e*Pn	**Pg**	**11 16 34.3**	**-0.6**
GULA	**Gulagac**	**1.75**	**296**	*e*PN	**Pn**	**11 16 38.5**	**+0.6**
GULA	**Gulagac**	**1.75**	**296**	*e*Pn	**Pn**	**11 16 38.5**	**+0.6**

ISK ***19*** *11:21:03.2,38°.47N×34°.14E,h2km,MD2.9*
ISCJB ***19*** *11:21:04.3±0.5,38°.46N±0°.03×34°.16E±0°.04,h10km, Error ellipse: s-maj=5.6km s-min=4.3km az=139.4*
CSEM ***19*** *11:21:04.0±0.2,38°.48N×34°.15E,h2km, MD2.9, Error ellipse: s-maj=4.1km s-min=3.0km az=60.0*
DDA ***19*** *11:21:09.4,38°.90N×33°.79E,h7km, Md2.8*
ISC 19 11:21:05.1±0.8, 38°.48N±0°.03×34°.13E±0°.03, h10km, n29, σ1°79/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GULA	**Gulagac**	**0.15**	**149**	*e*PG	**Pg**	**11 21 06.9**	**-1.7**
GULA				*e*SG	**Sg**	**11 21 09.4**	**-1.5**
GULA	**Gulagac**	**0.15**	**149**	*e*Pg	**Pg**	**11 21 06.9**	**-1.6**
GULA				*e*Sg	**Sg**	**11 21 09.5**	**-1.5**
AKSY	**AKSARAY - Alti**	**0.34**	**301**	*i* P	**Pg**	**11 21 10.1**	**-1.8**
AKSY				*i* S	**Sb**	**11 21 20.6**	**+1.8**
AKSY	**AKSARAY - Alti**	**0.34**	**301**	P	**Pg**	**11 21 10.1**	**-1.8**
AKSY				S	**Sb**	**11 21 20.6**	**+1.8**
NIG	**Nigde**	**0.52**	**134**	*e*PG	**Pg**	**11 21 14.4**	**-0.9**
NIG	**Nigde**	**0.52**	**134**	*e*Pg	**Pg**	**11 21 14.4**	**-0.9**
SULT	**Sultanhani-AKS**	**0.56**	**241**	*e*PG	**Pg**	**11 21 14.9**	**-1.0**
SULT				*e*SG	**Sg**	**11 21 23.7**	**+0.4**
SULT	**Sultanhani-AKS**	**0.56**	**241**	*e*Pg	**Pg**	**11 21 14.9**	**-1.0**
SULT				*e*Sg	**Sg**	**11 21 23.7**	**+0.4**
SERE	**Sereflikochisa**	**0.65**	**317**	*e*PG	**Pg**	**11 21 16.5**	**-1.2**
SERE				*e*SG	**Sb**	**11 21 26.8**	**-0.9**
SERE	**Sereflikochisa**	**0.65**	**317**	*e*Pg	**Pg**	**11 21 16.5**	**-1.2**
SERE				*e*Sg	**Sb**	**11 21 26.8**	**-0.9**
AVNS	**Nevsehir-Avano**	**0.65**	**59**	*i* P	Pn	11 21 25.4	+4.9
AVNS				*i* S	**Sn**	**11 21 38.0**	**+7.2**
YESY	**Yesilyurt**	**0.76**	**204**	*e*PG	**Pg**	**11 21 19.2**	**-0.5**
YESY	**Yesilyurt**	**0.76**	**204**	*e*Pg	**Pg**	**11 21 19.2**	**-0.5**
KAMT	**Kaman**	**0.95**	**340**	*e*PG	**Pg**	**11 21 21.9**	**-1.5**
KAMT	**Kaman**	**0.95**	**340**	*e*Pg	**Pg**	**11 21 21.9**	**-1.5**
CDAG	**Cicekdag**	**1.16**	**9**	*i* P	Pn	**11 21 27.2**	**-0.3**
CDAG				*i* S	**Sn**	**11 21 46.4**	**+2.9**
CDAG	**Cicekdag**	**1.16**	**9**	P	Pn	**11 21 27.2**	**-0.3**
CDAG				S	**Sn**	**11 21 46.4**	**+2.9**
KKUL	**Konya-Kulu**	**1.18**	**307**	*i* P	**Pb**	**11 21 26.3**	**-1.3**
KKUL				*i* S	**Sn**	**11 21 46.3**	**+2.4**
KKUL	**Konya-Kulu**	**1.18**	**307**	P	**Pb**	**11 21 26.3**	**-1.3**
KKUL				S	**Sn**	**11 21 46.3**	**+2.4**
AFSR	**Af¯ar-Bala (A**	**1.28**	**320**	*e*PN	**Pg**	**11 21 28.8**	**-0.8**
**AF

TAFP	**Tanaga Falls P**	**3.96**	**269**	*e*Pn		**Pn**		**11 55 51.0**	**-0.4**
AKUT	**Akutan**	**4.04**	**58**	*e*Pn		**Pn**		**11 55 53.5**	**+1.0**
AKUT				*e*Sn		**Sn**		**11 56 42.2**	**+3.7**
AKSA	**Akutan Strait**	**4.08**	**58**	*e*Pn		**Pn**		**11 55 53.6**	**+0.5**
WESP	**Westdahl Peak**	**4.75**	**57**	P		**Pn**		**11 56 03.4**	**+1.0**
SPIA	**Saint Paul Isl**	**5.12**	**8**	*e*Pn		**Pn**		**11 56 08.3**	**+0.9**
SPIA				*e*Sn		**Sn**		**11 57 06.0**	**+0.9**
DT1	**Dutton Round H**	**6.29**	**58**	*e*Pn		**Pn**		**11 56 23.0**	**-0.4**
DTNA	**Dutton South F**	**6.33**	**58**	*e*Pn		**Pn**		**11 56 23.7**	**-0.1**
SDPT	**Sand Point**	**7.34**	**60**	*e*Pn		**Pn**		**11 56 37.6**	**-0.1**
SDPT				*e*Sn		**Sn**		**11 57 57.8**	**-1.8**
CHGN	**Chignik**	**8.78**	**56**	*e*Pn		**Pn**		**11 56 56.8**	**-0.6**
SVW2	**Sparrevohn**	**12.56**	**38**	*e*Pn		**Pn**		**11 57 51.7**	**+2.7**
CNPM	**China Poot**	**13.59**	**49**	*e*Pn		**Pn**		**11 58 01.8**	**-1.3**
TT01	**Tatalina**	**13.62**	**31**	*e*Pn		**Pn**		**11 58 05.2**	**+1.7**
TTA	**Tatalina**	**13.64**	**31**	*e*P		**Pn**		**11 58 03.9**	**+0.1**
TTA	**Tatalina**	**13.64**	**31**	*e*Pn		**Pn**		**11 58 03.9**	**+0.1**
BRLK	**Bradley Lake**	**13.85**	**48**	*e*Pn		**Pn**		**11 58 07.3**	**+0.6**
SPU	**Mount Spurr**	**14.01**	**42**	*e*Pn		**Pn**		**11 58 08.9**	**+0.2**
SUA	**Susitna One**	**14.70**	**42**	*e*Pn		**Pn**		**11 58 17.9**	**-0.1**
PPLA	**Purkeypile**	**14.93**	**36**	*e*Pn		**Pn**		**11 58 20.0**	**-1.1**
RC01	**Rabbit Creek A**	**14.94**	**45**	*e*Pn		**Pn**		**11 58 19.5**	**-1.6**
PMR	**Palmer**	**15.43**	**43**	*e*P		**Pn**		**11 58 26.6**	**-0.8**
PMR					pmax	pmax			
	comp=Z,17nm,1.2s								
PMR	**Palmer**	**15.43**	**43**	*e*Pn		**Pn**		**11 58 26.6**	**-0.8**
	comp=Z,17nm,1.2s								
KTH	**Kantishna Hill**	**15.79**	**36**	*e*Pn		**Pn**		**11 58 32.5**	**+0.4**
	comp=Z,57nm,1.2s								
KTH				*e*Sn		**Sn**		**12 01 25.7**	**0.0**
TRF	**Thorofare Moun**	**15.96**	**36**	*e*Pn		**Pn**		**11 58 35.5**	**+1.2**
	comp=Z,79nm,1.4s								
BPAW	**Bear Paw Mtn.**	**16.10**	**34**	*e*Pn		**P**		**11 58 37.4**	**-1.2**
	comp=Z,101nm,1.8s								
SCM	**Sheep Creek Mo**	**16.31**	**44**	*e*P		**Pn**		**11 58 36.5**	**-2.2**
SCM					pmax	pmax			
	comp=Z,71nm,1.4s								
SCM	**Sheep Creek Mo**	**16.31**	**44**	*e*Pn		**Pn**		**11 58 36.5**	**-2.2**
	comp=Z,71nm,1.4s								
RND	**Reindeer**	**16.46**	**38**	*e*P		**Pn**		**11 58 38.9**	**-1.7**
RND					pmax	pmax			
	comp=Z,31nm,1.0s								
RND	**Reindeer**	**16.46**	**38**	*e*Pn		**Pn**		**11 58 38.9**	**-1.7**
	comp=Z,31nm,1.0s								
MCK	**McKinley**	**16.61**	**37**	*e*P		**Pn**		**11 58 42.7**	**+0.2**
MCK					pmax	pmax			
	comp=Z,38nm,1.2s								
MCK	**McKinley**	**16.61**	**37**	*e*Pn		**Pn**		**11 58 42.6**	**+0.2**
	comp=Z,38nm,1.2s								
KLU	**Klutina**	**16.78**	**46**	*e*Pn		**Pn**		**11 58 42.8**	**-1.9**
	comp=Z,52nm,1.6s								
DHY	**Denali Highway**	**16.87**	**40**	*e*Pn		**Pn**		**11 58 45.9**	**+0.1**
	comp=Z,26nm,1.4s								
RAGM	**Ragged Mountai**	**16.98**	**50**	*e*Pn		**Pn**		**11 58 45.3**	**-1.8**
	comp=Z,32nm,0.9s								
BMRM	**Bremner River**	**17.20**	**48**	*e*Pn		**P**		**11 58 50.4**	**-0.4**
	comp=Z,29nm,1.1s								
WRH	**Wood River Hil**	**17.34**	**35**	*e*Pn		**Pn**		**11 58 50.5**	**-0.9**
	comp=Z,18nm,1.0s								
CCB	**Clear Creek Bu**	**17.54**	**35**	*e*Pn		**Pn**		**11 58 52.1**	**-1.7**
	comp=Z,34nm,1.6s								
MDM	**Murphy Dome**	**17.57**	**34**	*e*Pn		**Pn**		**11 58 53.6**	**-0.7**
	comp=Z,22nm,1.0s								
PAX	**Paxson**	**17.59**	**42**	*e*P		**Pn**		**11 58 54.7**	**+0.1**
PAX					pmax	pmax			
	comp=Z,9.0nm,0.9s								
PAX	**Paxson**	**17.59**	**42**	*e*Pn		**Pn**		**11 58 54.7**	**+0.1**
	comp=Z,9.3nm,0.9s								
COLA	**College**	**17.65**	**35**	*e*P		**Pn**		**11 58 55.3**	**+0.1**
COLA				*e*				12 02 09.8	
COLA					pmax	pmax			
	comp=Z,14nm,1.0s								
COLA	**College**	**17.65**	**35**	*e*Pn		**Pn**		**11 58 55.3**	**+0.1**
	comp=Z,14nm,1.0s								
COLA				*e*Sn		**Sn**		**12 02 09.8**	**-0.9**
HDA	**Harding Lake**	**17.71**	**37**	*e*Pn		**Pn**		**11 58 55.2**	**-0.9**
	comp=Z,72nm,1.7s								
CRQM	**Cirque**	**17.82**	**50**	*e*P		**P**		**11 58 58.0**	**+0.3**
	comp=Z,17nm,0.6s								
IL1	**Eielson Array**	**17.93**	**36**	*e*Pn		**Pn**		**11 58 57.2**	**-1.5**
ILAR	**Eielson Array**	**17.93**	**36**	P		**Pn**		**11 58 56.3**	**-2.5**
	comp=Z,0.9nm,0.3s,baz=239,slow=10,SNR=56								
ILAR					PcP	**PcP**		**12 03 31.3**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=278,slow=3.7,SNR=5.1								
ILAR					LR	LR		12 06 32.9	
	comp=Z,543nm,19.1s,baz=241,slow=39								
ILAR					ScP	**ScP**		**12 07 02.6**	**-0.1**
	baz=282,slow=3.1,SNR=8.5								
ILB	**Eielson Array**	**17.93**	**36**	*e*Pn		**Pn**		**11 58 56.5**	**-2.2**
BALM	**Baldy**	**18.27**	**49**	*e*P		**Pn**		**11 59 02.9**	**-0.1**
BALM					pmax	pmax			
	comp=Z,19nm,0.8s								
BALM	**Baldy**	**18.27**	**49**	*e*P		**Pn**		**11 59 02.9**	**-0.1**
	comp=Z,19nm,0.8s								
MENT	**Mentasta**	**18.30**	**43**	*e*P		**P**		**11 59 02.5**	**-0.3**
	comp=Z,8.3nm,0.8s								
COLD	**Coldfoot**	**18.43**	**27**	*e*P		**Pn**		**11 59 05.1**	**+0.3**
	comp=Z,23nm,1.3s								
DOT	**Dot Lake**	**18.45**	**41**	*e*P		**Pn**		**11 59 05.2**	**+0.1**
	comp=Z,55nm,1.2s								
PEA1	**Petropavlovsk-**	**18.61**	**285**	*e*P		**Pn**		**11 59 07.2**	**+0.2**
PETK	**Petropavlovsk-**	**18.61**	**285**	P		**Pn**		**11 59 07.2**	**+0.2**
	comp=Z,0.9nm,0.3s,baz=84,slow=14,SNR=15								
PCA	**Pinnacle**	**19.05**	**53**	*e*P		**P**		**11 59 11.6**	**+0.4**
	comp=Z,58nm,0.6s								
BILL	**Bilibino**	**19.21**	**334**	*e*P		**Pn**		**11 59 15.8**	**+1.7**
BILL					pmax	pmax			
	comp=Z,21nm,1.1s								
BILL					MLR	MLR			
	comp=Z,191nm,17.0s								
BILL	**Bilibino**	**19.21**	**334**	*e*P		**Pn**		**11 59 15.7**	**+1.6**
	comp=Z,24nm,1.1s								
FYU	**Fort Yukon**	**19.51**	**32**	*e*P		**P**		**11 59 16.7**	**+0.6**
	comp=Z,22nm,0.8s								
DHAK	**Deception Hill**	**19.93**	**56**	*e*P		**Pn**		**11 59 22.5**	**-0.3**
	comp=Z,145nm,1.3s								
EGAK	**Eagle**	**20.09**	**39**	*e*P		**P**		**11 59 21.9**	**-0.4**
	comp=Z,14nm,0.7s								
DAWY	**Dawson**	**20.52**	**42**	*e*P		**P**		**11 59 26.5**	**-0.6**
	comp=Z,42nm,1.9s								
HYT	**Haines Junctio**	**20.52**	**52**	*e*P		**P**		**11 59 27.9**	**+0.6**
	comp=Z,104nm,1.4s								
SKAG	**Skagway**	**21.44**	**56**	*e*P		**P**		**11 59 37.0**	**0.0**
	comp=Z,27nm,0.8s								
SEY	**Seymchan**	**21.84**	**314**	P		**P**		**11 59 41.5**	**+0.3**
	comp=Z,2.9nm,0.5s,baz=105,slow=13,SNR=10								
SEY					PcP	**PcP**		**12 03 38.5**	**-0.5**
	comp=Z,1.5nm,0.5s,baz=65,slow=16,SNR=6.5								
SEY					ScP	**ScP**		**12 07 12.0**	**+0.1**
	comp=Z,1.9nm,0.6s,baz=98,slow=12,SNR=6.6								
SEY	**Seymchan**	**21.84**	**314**	*e*P		**P**		**11 59 42.9**	**+1.7**
MA2	**Magadan**	**22.15**	**304**	LR		LR		12 08 35.7	
	comp=Z,152nm,19.4s,baz=108,slow=37								
H02N1	**VAN INLET T-PH**	**23.50**	**72**	T		T		12 24 41.1	
H02S1	**DAWSON INLET T**	**23.55**	**72**	T		T		12 24 48.1	
	SNR=12								
DLBC	**Dease Lake**	**24.18**	**58**	P		**P**		**12 00 06.9**	**+2.2**
	comp=Z,22nm,0.7s,baz=252,slow=6.7,SNR=46								
DLBC					LR	LR		12 09 21.1	
	comp=Z,208nm,20.1s,baz=281,slow=36								
DLBC	**Dease Lake**	**24.18**	**58**	*e*P		**P**		**12 00 07.0**	**+2.2**
	comp=Z,113nm,1.3s								
INK	**Inuvik**	**24.31**	**34**	P		**P**		**12 00 04.9**	**-0.8**
	comp=Z,6.3nm,0.3s,baz=221,slow=9.2,SNR=59								
INK					PcP	**PcP**		**12 03 43.6**	**-0.4**
	comp=Z,3.4nm,0.6s,baz=184,slow=1.8,SNR=5.6								
INK					LR	LR		12 10 41.9	
	comp=Z,330nm,21.2s,baz=230,slow=39								
INK	**Inuvik**	**24.31**	**34**	*e*P		**P**		**12 00 05.1**	**-0.6**
INK					pmax	pmax			
	comp=Z,37nm,1.4s								
INK	**Inuvik**	**24.31**	**34**	*e*P		**P**		**12 00 05.1**	**-0.6**
	comp=Z,37nm,1.4s								
BBB	**Bella Bella**	**26.38**	**72**	P		**P**		**12 00 25.6**	**+1.0**
	comp=Z,20nm,1.0s,baz=275,slow=9.4,SNR=6.7								
BBB					LR	LR		12 08 56.2	
	comp=Z,196nm,20.8s,baz=274,slow=32								
LLLB	**Lillooet**	**30.59**	**73**	*e*P		**P**		**12 01 04.0**	**+1.8**
	comp=Z,23nm,1.1s								
A04D	**Lummi Island**	**30.86**	**77**	P		**P**		**12 01 05.8**	**+1.3**
	baz=295								
E03A	**Lebam**	**31.32**	**81**	*e*P		**P**		**12 01 09.8**	**+1.2**
	comp=Z,34nm,1.1s								
YKW3	**Yellowknife Ar**	**31.41**	**48**	*e*P		**P**		**12 01 09.4**	**+0.1**
	comp=Z,7.8nm,0.3s								
B05A	**Bryant**	**31.42**	**77**	P		**P**		**12 01 11.0**	**+1.5**
	baz=296,SNR=6.1								
YKA	**Yellowknife Ar**	**31.43**	**48**	P		**P**		**12 01 09.1**	**-0.3**
	comp=Z,4.6nm,0.3s,baz=274,slow=9.2,SNR=186								
YKA					PcP	**PcP**		**12 04 01.7**	**+0.2**
	comp=Z,1.7nm,0.6s,baz=288,slow=2.9,SNR=8.0								
YKA					ScP	**ScP**		**12 07 40.4**	**+0.2**
	comp=Z,0.6nm,0.7s,baz=280,slow=3.2,SNR=4.2								
YKA					LR	LR		12 15 38.3	
	comp=Z,63nm,18.5s,baz=0.0,slow=40								
YKB5	**Yellowknife Ar**	**31.43**	**48**	*e*P		**P**		**12 01 08.0**	**-1.4**
HTW	**Haystack Looko**	**31.82**	**78**	P		**P**		**12 01 14.4**	**+1.3**
F04D	**Rainier, OR**	**31.87**	**81**	P		**P**		**12 01 15.2**	**+1.7**
	baz=299								
TDL	**Tradedollar La**	**32.23**	**80**	*e*P		**P**		**12 01 13.1**	**-3.7**
TDL				*e*PcP		**PcP**		**12 04 07.1**	**+3.0**
F04A	**Amboy**	**32.31**	**81**	*e*P		**P**		**12 01 18.9**	**+1.6**
	comp=Z,13nm,0.7s								
PNT	**Penticton**	**32.45**	**74**	*e*P		**P**		**12 01 19.6**	**+1.1**
PNT	**Penticton**	**32.45**	**74**	*e*P		**P**		**12 01 19.6**	**+1.1**
I03D	**Drain, OR**	**32.88**	**85**	P		**P**		**12 01 23.5**	**+1.2**
	baz=302								
B08A	**Colville Reser**	**33.03**	**75**	*e*P		**P**		**12 01 24.8**	**+1.1**
	comp=Z,25nm,1.0s								
VFP	**Flag Point**	**33.19**	**82**	P		**P**		**12 01 26.9**	**+1.6**
G05D	**Wamic, OR**	**33.32**	**82**	P		**P**		**12 01 27.3**	**+1.1**
	baz=301								
I04A	**Tendick Farm,**	**33.40**	**85**	P		**P**		**12 01 28.3**	**+1.4**
	baz=302,SNR=7.9								
L02D	**Cave Junction,**	**33.56**	**88**	P		**P**		**12 01 30.1**	**+1.8**
	baz=304,SNR=5.1								
I05D	**Terrebonne, OR**	**33.77**	**83**	P		**P**		**12 01 31.5**	**+1.3**
	baz=302,SNR=8.0								
VTHM	**Trough**	**33.81**	**81**	P		**P**		**12 01 31.6**	**+1.1**
HAWA	**Hanford**	**33.83**	**79**	*e*P		**P**		**12 01 32.0**	**+1.3**
	comp=Z,17nm,0.6s								
D08A	**Wollman Farm,**	**33.88**	**77**	*e*P		**P**		**12 01 31.7**	**+0.6**
	comp=Z,8.8nm,0.7s								
J04D	**Umpqua Nationa**	**33.88**	**85**	P		**P**		**12 01 32.4**	**+1.0**
	baz=303								
C09A	**Chrisman Ranch**	**33.92**	**76**	*e*P		**P**		**12 01 32.4**	**+1.0**
	comp=Z,19nm,1.0s								
YBH	**Yreka Blue Hor**	**34.35**	**88**	*e*P		**P**		**12 01 37.3**	**+2.1**
YBH					pmax	pmax			
	comp=Z,15nm,1.4s								
YBH	**Yreka Blue Hor**	**34.35**	**88**	*e*P		**P**		**12 01 37.3**	**+2.1**
	comp=Z,15nm,1.4s								
NEW	**Newport**	**34.39**	**74**	P		**P**		**12 01 36.2**	**+0.7**
	comp=Z,27nm,0.9s,baz=296,slow=7.2,SNR=35								
NEW	**Newport**	**34.39**	**74**	P		**P**		**12 01 36.5**	**+1.0**
	baz=298,SNR=31								
J05D	**Fort Rock, OR**	**34.40**	**84**	P		**P**		**12 01 36.7**	**+1.0**
	baz=303								
M02C	**Callahan**	**34.46**	**88**	P		**P**		**12 01 37.5**	**+1.3**
	baz=305								
EDM	**Edmonton**	**34.49**	**65**	*e*P		**P**		**12 01 37.1**	**+0.8**
EDM					pmax	pmax			
	comp=Z,104nm,1.3s								
EDM	**Edmonton**	**34.49**	**65**	*e*P		**P**		**12 01 37.1**	**+0.8**
	comp=Z,104nm,1.3s								
N02D	**Trinity Center**	**34.79**	**89**	P		**P**		**12 01 40.0**	**+1.0**
	baz=306								
M04C	**Macdoel**	**34.86**	**87**	P		**P**		**12 01 41.1**	**+1.4**
	baz=305,SNR=9.3								
WDC	**Whiskeytown Da**	**35.12**	**89**	*e*P		**P**		**12 01 43.6**	**+1.8**
WDC					pmax	pmax			
	comp=Z,28nm,1.7s								
WDC	**Whiskeytown Da**	**35.12**	**89**	*e*P		**P**		**12 01 43.6**	**+1.8**
	comp=Z,28nm,1.7s								
MOD	**Modoc Plateau**	**35.74**	**86**	*e*P		**P**		**12 01 48.6**	**+1.3**
	comp=Z,22nm,1.3s								
O03D	**Paynes Creek**	**35.74**	**89**	P		**P**		**12 01 48.3**	**+1.1**
	baz=307,SNR=10.0								
WALA	**Waterton Lakes**	**35.92**	**71**	*e*P		**P**		**12 01 49.4**	**+0.7**
	comp=Z,32nm,1.1s								
BMO	**Blue Mountains**	**35.96**	**80**	*e*P		**P**		**12 01 49.7**	**+0.6**
	comp=Z,21nm,1.8s								
BSMT	**Bassoo Peak**	**35.97**	**74**	P		**P**		**12 01 50.0**	**+0.8**
BLMT	**Blacktail Moun**	**36.14**	**73**	*e*P		**P**		**12 01 51.5**	**+0.7**
ORV	**Oroville**	**36.37**	**90**	*e*P		**P**		**12 01 53.4**	**+0.8**
ORV					pmax	pmax			
	comp=Z,3.0nm,0.8s								
ORV	**Oroville**	**36.37**	**90**	*e*P		**P**		**12 01 53.4**	**+0.8**
	comp=Z,3.0nm,0.8s								
H11N2	**WAKE ISLAND Hy**	**36.43**	**216**	T		T		12 40 20.0	
	baz=21,slow=76,SNR=175								
H11N3	**WAKE ISLAND Hy**	**36.44**	**216**	T		T		12 40 22.0	
	baz=21,slow=76,SNR=558								
H11N1	**WAKE ISLAND Hy**	**36.45**	**216**	T		T		12 40 21.5	
	baz=21,slow=76,SNR=172								
WVOR	**Wild Horse Val**	**36.46**	**84**	*e*P		**P**		**12 01 54.5**	**+1.1**
WVOR					pmax	pmax			
	comp=Z,17nm,0.9s								
WVOR	**Wild Horse Val**	**36.46**	**84**	*e*P		**P**		**12 01 54.5**	**+1.1**
	comp=Z,17nm,0.9s								
SWMT	**Swartz Lake**	**36.60**	**74**	*e*P		**P**		**12 01 55.1**	**+0.5**
MSO	**Missoula**	**36.97**	**75**	P		**P**		**12 01 58.2**	**+0.5**
	baz=300,SNR=19								
AFDM	**Forest Hills D**	**37.06**	**90**	*e*P		**P**		**12 01 59.4**	**+0.9**
	comp=Z,10nm,1.5s								
RES	**Resolute Bay**	**37.18**	**25**	P		**P**		**12 01 58.0**	**-1.0**
	comp=Z,1.5nm,0.3s,baz=262,slow=8.4,SNR=19								
RES					PcP	**PcP**		**12 04 17.2**	**-0.6**
	comp=Z,3.0nm,0.9s,baz=285,slow=8.4,SNR=3.1								
RES	**Resolute Bay**	**37.18**	**25**	*e*P		**P**		**12 01 58.0**	**-1.0**
RES					pmax	pmax			
	comp=Z,6.0nm,0.9s								
RES	**Resolute Bay**	**37.18**	**25**	*e*P		**P**		**12 01 58.0**	**-1.0**
	comp=Z,6.2nm,0.9s								
PAHR	**Pah Rah Range**	**37.58**	**88**	*e*P		**P**		**12 02 04.2**	**+1.2**
	comp=Z,38nm,1.3s								
USRK	**Ussuriysk Ar.**	**37.60**	**281**	P		**P**		**12 02 02.8**	**-0.1**
	comp=Z,1.8nm,0.7s,baz=76,slow=7.2,SNR=3.6								
USRK					LR	LR		12 16 21.0	
	comp=Z,60nm,21.4s,baz=44,slow=34								
MFID	**Camas Ranch**	**37.63**	**81**	*e*P		**P**		**12 02 03.7**	**+0.4**
	comp=Z,7.7nm,0.9s								
H11S1	**WAKE ISLAND Hy**	**37.63**	**215**	T		T		12 41 53.1	
	baz=10,slow=74								
H11S2	**WAKE ISLAND Hy**	**37.65**	**215**	T		T		12 41 52.8	
	baz=10								
H11S3	**WAKE ISLAND Hy**	**37.65**	**215**	T		T		12 41 52.3	
	baz=10,slow=74,SNR=185								
PNTR	**Pine Nut**	**37.83**	**89**	*e*P		**P**		**12 02 06.9**	**+1.7**
	comp=Z,22nm,0.9s								
CMB	**Columbia Colle**	**37.99**	**91**	*e*P		**P**		**12 02 07.6**	**+1.3**
CMB					pmax	pmax			
	comp=Z,5.0nm,0.8s								
CMB	**Columbia Colle**	**37.99**	**91**	*e*P		**P**		**12 02 07.6**	**+1.3**
	comp=Z,4.6nm,0.8s								
WAKR	**Walker**	**38.28**	**90**	*e*P		**P**		**12 02 10.6**	**+1.6**
	comp=Z,10nm,0.7s								
MAJO	**Matsushiro**	**38.32**	**266**	*e*P		**P**		**12 02 09.2**	**+0.1**
MAJO					pmax	pmax			
	comp=Z,167nm,1.7s								
MJAR	**Matsushiro Arr**	**38.32**	**266**	P		**P**		**12 02 08.3**	**-0.8**
	comp=Z,3.1nm,0.7s,baz=38,slow=6.1,SNR=9.1								
MJAR					LR	LR		12 15 54.4	
	comp=Z,168nm,21.5s,baz=65,slow=33								
HLID	**Hailey**	**38.41**	**80**	P		**P**		**12 02 10.1**	**+0.2**
	baz=304,SNR=12								
HLID	**Hailey**	**38.41**	**80**	*e*P		**P**		**12 02 10.7**	**+0.7**
	comp=Z,17nm,1.4s								
HLID				*e*S		**S**		**12 08 07.8**	**+6.4**
BMN	**Battle Mountai**	**38.48**	**86**	*e*P		**P**		**12 02 11.7**	**+1.1**
BMN					pmax	pmax			
	comp=Z,6.0nm,0.6s								
BMN	**Battle Mountai**	**38.48**	**86**	*e*P		**P**		**12 02 11.7**	**+1.1**
	comp=Z,5.9nm,0.6s								
DLMT	**Dillon**	**38.53**	**76**	*e*P		**P**		**12 02 11.5**	**+0.6**
	comp=Z,9.3nm,1.1s								
MCMT	**McKenzie Canyo**	**38.66**	**77**	*e*P		**P**		**12 02 12.5**	**+0.4**
TVH2	**Borealis Mine**	**38.78**	**89**	*e*P		**P**		**12 02 14.4**	**+1.2**
	comp=Z,15nm,1.5s								
EGMT	**Eagleton**	**38.84**	**71**	P		**P**		**12 02 13.5**	**+0.1**
	baz=300,SNR=21								
EGMT	**Eagleton**	**38.84**	**71**	*e*P		**P**		**12 02 13.7**	**+0.3**
	comp=Z,53nm,1.0s								
BOZ	**Bozeman (W)**	**38.96**	**75**	P		**P**		**12 02 14.9**	**+0.4**
	baz=302,SNR=24								
BOZ	**Bozeman (W)**	**38.96**	**75**	*e*P		**P**		**12 02 14.9**	**+0.4**
BOZ					pmax	pmax			
	comp=Z,23nm,1.1s								
BOZ	**Bozeman (W)**	**38.96**	**75**	*e*P		**P**		**12 02 14.9**	**+0.4**
	comp=Z,22nm,1.1s								
RCTC	**Rector, Farmer**	**39.79**	**92**	P		**P**		**12 02 21.9**	**+0.6**
	baz=311								
YMR	**Madison River**	**39.88**	**76**	*e*P		**P**		**12 02 23.4**	**+1.2**
	comp=Z,19nm,0.9s								
YHH	**Holmes Hill**	**39.88**	**76**	*e*P		**P**		**12 02 23.1**	**+0.7**
	comp=Z,36nm,1.1s								
SMMC	**Simmler**	**39.98**	**94**	P		**P**		**12 02 23.3**	**+0.4**
	baz=312								
GCMT	**Greycliff**	**40.04**	**74**	*e*P		**P**		**12 02 24.4**	**+0.9**
VES	**Vestal, Richgr**	**40.19**	**93**	P		**P**		**12 02 25.2**	**+0.6**
	baz=311,SNR=6.4								
H17A	**Grant Village**	**40.26**	**76**	P		**P**		**12 02 26.1**	**+0.7**
	baz=304,SNR=8.7								
H17A	**Grant Village**	**40.26**	**76**	*e*P		**P**		**12 02 27.9**	**+2.4**
	comp=Z,32nm,1.3s								
IMW	**Indian Meadow**	**40.32**	**77**	*e*P		**P**		**12 02 27.0**	**+1.0**
	comp=Z,11nm,0.9s								
FLWY	**Flagg Ranch**	**40.36**	**76**	*e*P		**P**		**12 02 27.3**	**+1.0**
	comp=Z,8.1nm,0.9s								
PKM	**Mcpherson Peak**	**40.37**	**94**	P		**P**		**12 02 27.3**	**+1.0**
	baz=312								
HVU	**Hansel Valley**	**40.41**	**81**	*e*P		**P**		**12 02 27.5**	**+0.8**
HVU					pmax	pmax			
	comp=Z,10.0nm,0.8s								
HVU	**Hansel Valley**	**40.41**	**81**	*e*P		**P**		**12 02 27.4**	**+0.8**
	comp=Z,9.9nm,0.8s								
CWC	**Cottonwood Cre**	**40.42**	**91**	P		**P**		**12 02 27.5**	**+0.7**
	baz=310								
MOOW	**Moose Ponds**	**40.52**	**77**	*e*P		**P**		**12 02 28.1**	**+0.6**
	comp=Z,9nm,1.0s								
TPAW	**Teton Pass**	**40.54**	**77**	*e*P		**P**		**12 02 28.8**	**+1.0**
	comp=Z,11nm,1.1s								
RLMT	**Red Lodge**	**40.64**	**74**	P		**P**		**12 02 29.2**	**+0.7**
	baz=303,SNR=17								
RLMT	**Red Lodge**	**40.64**	**74**	*e*P		**P**		**12 02 29.4**	**+0.9**
	comp=Z,35nm,1.0s								
REDW	**Red Top Meadow**	**40.67**	**77**	*e*P		**P**		**12 02 30.0**	**+1.1**
	comp=Z,16nm,1.1s								
SNOW	**Snow King Moun**	**40.67**	**77**	*e*P		**P**		**12 02 30.1**	**+1.2**
	comp=Z,6.1nm,1.0s								
LOHW	**Long Hollow**	**40.68**	**77**	*e*P		**P**		**12 02 29.5**	**+0.6**
	comp=Z,2.5nm,0.7s								
ISA	**Isabella, Lake**	**40.68**	**92**	P		**P**		**12 02 29.4**	**+0.6**
	baz=311								
ISA	**Isabella, Lake**	**40.68**	**92**	*e*P		**P**		**12 02 29.5**	**+0.7**
ISA					pmax	pmax			
	comp=Z,10.0nm,1.0s								
ISA	**Isabella, Lake**	**40.68**	**92**	*e*P		**P**		**12 02 29.5**	**+0.7**
	comp=Z,10.0nm,1.0s								
SBC	**Santa Barbara**	**40.73**	**95**	P		**P**		**12 02 29.9**	**+0.8**
	baz=312								
R11A	**Troy Canyon, C**	**40.75**	**87**	P		**P**		**12 02 30.0**	**+0.5**
	baz=309								
R11A	**Troy Canyon, C**	**40.75**	**87**	*e*P		**P**		**12 02 30.1**	**+0.6**
	comp=Z,15nm,1.4s								
BGU	**Big Grassy Mou**	**40.76**	**82**	*e*P		**P**		**12 02 30.1**	**+0.6**
	comp=Z,12nm,1.3s								
DAC	**Darwin (Calif)**	**40.83**	**91**	*e*P		**P**		**12 02 31.

K22A	**Casper**	43.68	76	P		P	12 02 52.8	-0.4
	baz=306							
K22A	**Casper**	43.68	76	*e*P		P	12 02 53.3	0.0
	comp=Z,25nm,1.3s							
IRM	**Iron Mountain**	43.73	91	P		P	12 02 54.2	+0.6
	baz=312,SNR=5.5							
MONP2	**Monument Peak**	43.79	94	P		P	12 02 54.9	+0.5
	baz=313							
BC3	**Big Chuckawall**	43.88	92	P		P	12 02 54.4	-0.5
	baz=313							
W13A	**Hualapai Mount**	43.88	89	*e*P		P	12 02 55.5	+0.5
	comp=Z,6.3nm,0.6s							
U15A	**North Rim**	44.00	87	*e*P		P	12 02 57.0	+1.0
	comp=Z,9.8nm,0.6s							
SWSC	**Sam W. Stewart**	44.14	93	P		P	12 02 57.1	+0.3
	baz=313							
O20A	**White River Ci**	44.15	80	P		P	12 02 57.1	0.0
	baz=308,SNR=19							
O20A	**White River Ci**	44.15	80	*e*P		P	12 02 57.4	+0.3
	comp=Z,24nm,0.8s							
IKP	**In-Ko-Pah, Jac**	44.15	94	P		P	12 02 57.1	+0.1
	baz=314							
PDMCI	**Parker Dam,Lak**	44.25	90	P		P	12 02 57.7	0.0
	baz=312							
H25A	**Fruitdale**	44.26	72	P		P	12 02 57.5	-0.3
	baz=305,SNR=8.8							
RSSD	**Black Hills**	44.30	72	P		P	12 02 57.9	-0.3
	baz=306							
RSSD	**Black Hills**	44.30	72	*e*P		P	12 02 57.9	-0.3
RSSD				pmax		pmax		
	comp=Z,15nm,1.1s							
RSSD	**Black Hills**	44.30	72	*e*P		P	12 02 57.9	-0.3
	comp=Z,15nm,1.1s							
A29A	**Manning Farm,**	44.35	64	P		P	12 02 58.0	-0.4
	baz=303,SNR=8.3							
Y12C	**Blythe**	44.38	91	P		P	12 02 58.6	-0.2
	baz=313							
Y12C	**Blythe**	44.38	91	*e*P		P	12 02 59.4	+0.6
	comp=Z,10.0nm,0.9s							
B29A	**Wagenman Farm,**	44.54	65	P		P	12 02 59.1	-0.8
	baz=303							
PV09	**Paradox Valley**	44.62	82	*e*P		P	12 03 01.6	+0.6
GLA	**Glamis**	44.67	92	P		P	12 03 01.3	+0.2
	baz=313							
MDND	**Maddock**	44.74	66	P		P	12 03 01.5	+0.1
	baz=304,SNR=6.4							
MDND	**Maddock**	44.74	66	*e*P		P	12 03 01.6	+0.1
	comp=Z,144nm,1.4s							
PV10	**Paradox Valley**	44.75	82	*e*P		P	12 03 02.8	+0.8
PV04	**Paradox Valley**	44.82	82	*e*P		P	12 03 02.2	-0.2
PV05	**Paradox Valley**	44.90	83	*e*P		P	12 03 03.4	+0.2
N23A	**Red Feather La**	45.07	77	P		P	12 03 04.9	+0.4
	baz=308,SNR=9.2							
N23A	**Red Feather La**	45.07	77	*e*P		P	12 03 05.1	+0.6
	comp=Z,23nm,1.2s							
PHWY	**Pilot Hill**	45.12	77	*e*P		P	12 03 04.5	-0.4
	comp=Z,6.0nm,0.9s							
WUAZ	**Wupatki**	45.16	87	P		P	12 03 05.8	+0.8
	baz=311,SNR=10							
WUAZ	**Wupatki**	45.16	87	*e*P		P	12 03 05.9	+0.8
	comp=Z,10nm,0.6s							
PV01	**Paradox Valley**	45.19	82	*e*P		P	12 03 05.5	+0.1
Y14A	**Wickenburg**	45.20	90	*e*P		P	12 03 05.7	+0.4
	comp=Z,22nm,0.8s							
ULM	**Lac du Bonnet**	45.47	61	P		P	12 03 06.8	-0.4
	comp=Z,6.1nm,0.5s,baz=304,slow=8.7,SNR=17							
ULM				PcP		PcP	12 04 44.6	-0.8
	comp=Z,3.7nm,0.5s,baz=254,slow=5.4,SNR=4.1							
ULM				LR		LR	12 24 39.3	
	comp=Z,147nm,18.2s,baz=297,slow=39							
ULM	**Lac du Bonnet**	45.47	61	*e*P		P	12 03 06.8	-0.4
ULM				pmax		pmax		
	comp=Z,10.0nm,0.6s							
ULM	**Lac du Bonnet**	45.47	61	*e*P		P	12 03 06.8	-0.4
	comp=Z,9.7nm,0.6s							
A31A	**Linda, St. Vin**	45.48	63	P		P	12 03 07.1	-0.1
	baz=304							
B31A	**Greenbush Farm**	45.51	64	P		P	12 03 07.2	-0.3
	baz=304							
F29A	**Eureka**	45.75	68	P		P	12 03 09.1	-0.4
	baz=305							
C31A	**Landman Farms,**	45.81	65	P		P	12 03 09.0	-0.9
	baz=305							
MVCO	**Mesa Verde**	45.82	83	P		P	12 03 10.3	-0.2
	baz=310,SNR=5.5							
MVCO	**Mesa Verde**	45.82	83	*e*P		P	12 03 10.5	0.0
	comp=Z,14nm,1.4s							
X16A	**Lo Mia Camp, P**	45.84	88	*e*P		P	12 03 11.6	+1.0
	comp=Z,5.5nm,0.9s							
A32A	**Rocking H Ranc**	45.87	63	P		P	12 03 09.9	-0.4
	baz=304							
ISCO	**Idaho Springs**	45.95	78	P		P	12 03 11.5	+0.1
	baz=309,SNR=5.9							
ISCO	**Idaho Springs**	45.95	78	*e*P		P	12 03 12.2	+0.7
ISCO				pmax		pmax		
	comp=Z,7.0nm,1.1s							
ISCO	**Idaho Springs**	45.95	78	*e*P		P	12 03 12.2	+0.7
	comp=Z,7.0nm,1.1s							
NRIK	**Noril'sk**	45.98	331	LR		LR	12 25 58.2	
	comp=Z,54nm,18.3s,baz=74,slow=41							
B32A	**Ashes, Strandq**	46.14	63	P		P	12 03 11.8	-0.7
	baz=304,SNR=11							
W18A	**Petrified Fore**	46.42	86	P		P	12 03 15.4	+0.2
	baz=312							
E31A	**Nome**	46.43	66	P		P	12 03 14.2	-0.7
	baz=306							
A33A	**Warroad**	46.46	62	P		P	12 03 14.6	-0.4
	baz=305,SNR=10							
S22A	**4UR Ranch, Cre**	46.50	81	P		P	12 03 16.0	+0.1
	baz=310,SNR=14							
S22A	**4UR Ranch, Cre**	46.50	81	*e*P		P	12 03 16.6	+0.7
	comp=Z,17nm,1.4s							
AGMN	**Agassiz Nation**	46.56	63	P		P	12 03 15.2	-0.7
	baz=305,SNR=13							
AGMN	**Agassiz Nation**	46.56	63	*e*P		P	12 03 15.3	-0.5
	comp=Z,30nm,1.0s							
214A	**Organ Pipe Nat**	46.66	92	P		P	12 03 16.8	0.0
	baz=314							
214A	**Organ Pipe Nat**	46.66	92	*e*P		P	12 03 17.4	+0.6
	comp=Z,27nm,1.0s							
X18A	**Snowflake**	46.68	87	*e*P		P	12 03 18.1	+0.9
	comp=Z,4.6nm,0.8s							
B33A	**Robert and Kas**	46.73	63	P		P	12 03 16.8	-0.3
	baz=305							
C33A	**Trail**	46.92	64	P		P	12 03 17.8	-0.8
	baz=305							
SUSD	**Miller**	47.06	69	P		P	12 03 19.4	-0.4
	baz=307							
B34A	**Aery, Baudette**	47.12	62	P		P	12 03 19.5	-0.7
	baz=305,SNR=18							
D33A	**AnnSam, Waubun**	47.24	64	P		P	12 03 20.3	-0.8
	baz=306							
F32A	**Veblen**	47.26	66	P		P	12 03 20.2	-1.2
	baz=306							
SDCO	**Great Sand Dun**	47.31	80	P		P	12 03 22.5	+0.4
	baz=310,SNR=23							
SDCO	**Great Sand Dun**	47.31	80	*e*P		P	12 03 22.7	+0.6
	comp=Z,12nm,1.1s							
H31A	**Wolsey**	47.31	69	P		P	12 03 21.1	-0.7
	baz=307							
OGNE	**Ogallala**	47.38	75	P		P	12 03 22.8	+0.4
	baz=309							
J30A	**Dallas**	47.42	71	P		P	12 03 22.3	-0.3
	baz=307							
C34A	**RKJ Ranch, Bem**	47.46	63	P		P	12 03 22.1	-0.7
	baz=306							
D34A	**Park Rapids**	47.63	64	P		P	12 03 23.5	-0.7
	baz=306							
TUC	**Tucson**	47.66	90	P		P	12 03 25.0	+0.3
	baz=314							
TUC	**Tucson**	47.66	90	*e*P		P	12 03 25.4	+0.7
TUC				pmax		pmax		
	comp=Z,7.0nm,0.8s							
TUC	**Tucson**	47.66	90	*e*P		P	12 03 25.4	+0.7
	comp=Z,6.9nm,0.8s							
B35A	**Bob, Littlefor**	47.69	62	P		P	12 03 23.7	-0.9
	baz=306,SNR=14							
K30A	**Basset**	47.75	71	P		P	12 03 25.1	-0.1
	baz=308,SNR=5.8							
F33A	**5 Mile Ranch,**	47.75	66	P		P	12 03 25.1	0.0
	baz=307							
J31A	**Geddes**	47.88	70	P		P	12 03 25.5	-0.7
	baz=308							
H32A	**Carlson Farm,**	47.90	68	P		P	12 03 25.4	-0.9
	baz=307							
C35A	**Jirik Farms, M**	47.94	63	P		P	12 03 25.5	-1.1
	baz=306,SNR=9.5							
G33A	**Ortonville**	48.05	67	P		P	12 03 26.8	-0.7
	baz=307							
H33A	**Prehn Over Nor**	48.19	68	P		P	12 03 27.6	-0.9
	baz=307,SNR=7.0							
KSCO	**Kaye Shedlock'**	48.24	77	P		P	12 03 29.4	+0.3
	baz=310							
KSCO	**Kaye Shedlock'**	48.24	77	*e*P		P	12 03 30.2	+1.1
	comp=Z,60nm,1.3s							
D35A	**Remer**	48.26	63	P		P	12 03 28.2	-0.8
	baz=306,SNR=10							
K31A	**O'Neill**	48.28	71	P		P	12 03 28.6	-0.7
	baz=308							
J32A	**Parkston**	48.35	70	P		P	12 03 28.9	-0.9
	baz=308							
F34A	**Alexandria**	48.36	65	P		P	12 03 28.8	-1.1
	baz=307							
T25A	**Trinidad**	48.36	80	P		P	12 03 30.7	+0.5
	baz=311,SNR=20							
T25A	**Trinidad**	48.36	80	*e*P		P	12 03 31.3	+1.1
	comp=Z,36nm,1.0s							
E35A	**Pequot Lakes**	48.38	64	P		P	12 03 29.2	-0.8
	baz=307,SNR=6.7							
LAZ	**Ladron**	48.50	85	*e*P		P	12 03 32.1	+0.9
L31A	**Butterfield Fa**	48.50	71	P		P	12 03 30.7	-0.3
	baz=308							
C36A	**Pine Crest Far**	48.53	62	P		P	12 03 30.3	-0.8
	baz=306,SNR=12							
I33A	**Coleman**	48.54	68	P		P	12 03 30.2	-1.0
	baz=308							
ANMO	**Albuquerque**	48.55	84	P		P	12 03 31.5	-0.2
	baz=312							
ANMO	**Albuquerque**	48.55	84	*c i*P		P	12 03 32.3	+0.6
ANMO				pmax		pmax		
	comp=Z,7.0nm,1.2s							
ANMO	**Albuquerque**	48.55	84	*e*P		P	12 03 32.5	+0.8
	comp=Z,7.3nm,1.2s							
D36A	**Goodland**	48.70	63	P		P	12 03 31.7	-0.7
	baz=307							
F35A	**Swanville**	48.70	65	P		P	12 03 31.7	-0.8
	baz=307,SNR=6.2							
K32A	**Verdigre**	48.71	70	P		P	12 03 32.0	-0.5
	baz=308							
H34A	**Spellman Lake,**	48.74	67	P		P	12 03 31.7	-1.0
	baz=308							
ECSD	**EROS Data Cent**	48.84	68	P		P	12 03 32.2	-1.3
	baz=308,SNR=10							
ECSD	**EROS Data Cent**	48.84	68	*e*P		P	12 03 32.6	-1.0
	comp=Z,18nm,1.3s							
LPM	**Los Pinos Moun**	48.87	85	*e*P		P	12 03 35.1	+1.0
J33A	**Davis**	48.89	69	P		P	12 03 32.8	-1.1
	baz=308							
C37A	**Embarrass**	48.90	62	P		P	12 03 32.9	-1.1
	baz=307,SNR=9.6							
M31A	**Lambtecht Ranc**	48.94	72	P		P	12 03 33.7	-0.7
	baz=309							
BNM	**Barren Site**	48.98	85	*e*P		P	12 03 36.1	+1.1
E36A	**McGregor**	49.04	64	P		P	12 03 34.2	-0.8
	baz=307,SNR=7.1							
D37A	**Cotton**	49.11	62	P		P	12 03 34.4	-1.2
	baz=307,SNR=6.2							
G35A	**Watkins**	49.14	66	P		P	12 03 35.0	-0.8
	baz=308							
EYMN	**Ely**	49.15	61	P		P	12 03 35.0	-0.8
	baz=307,SNR=13							
EYMN	**Ely**	49.15	61	*e*P		P	12 03 35.0	-0.8
	comp=Z,20nm,1.0s							
H35A	**Sunnyside Ranc**	49.26	66	P		P	12 03 36.1	-0.7
	baz=308							
F36A	**Milaca**	49.29	64	P		P	12 03 36.2	-0.7
	baz=308							
K33A	**Hardington**	49.31	70	P		P	12 03 36.7	-0.4
	baz=309							
121A	**Cookes Peak, D**	49.36	87	P		P	12 03 38.0	+0.1
	baz=314,SNR=6.8							
121A	**Cookes Peak, D**	49.36	87	*e*P		P	12 03 38.5	+0.6
	comp=Z,3.2nm,0.6s							
TLY	**Talaya**	49.37	305	*e*P		P	12 03 38.1	+0.6
TLY				pmax		pmax		
	comp=Z,5.0nm,0.8s							
BGNE	**Belgrade**	49.38	72	P		P	12 03 37.5	-0.3
	baz=309							
BGNE	**Belgrade**	49.38	72	*e*P		P	12 03 37.9	+0.2
	comp=Z,88nm,1.2s							
C38A	**Sawbill Land.**	49.40	61	P		P	12 03 36.9	-0.8
	baz=307,SNR=7.4							
G36A	**St. Michael**	49.54	65	P		P	12 03 38.7	-0.2
	baz=308							
K34A	**Le Mars**	49.78	69	P		P	12 03 40.1	-0.7
	baz=309							
M33A	**Taylor Creek F**	49.84	71	P		P	12 03 40.3	-0.9
	baz=309							
H36A	**Jessenland, He**	49.84	66	P		P	12 03 40.3	-0.9
	baz=308							
SPITS	**Spitsbergen Ar**	49.87	358	P		P	12 03 39.8	-1.2
	comp=Z,2.5nm,0.7s,baz=28,slow=3.8,SNR=5.1							
C39A	**Grand Marais**	49.96	61	P		P	12 03 40.9	-1.1
	baz=308,SNR=9.0							
FRB	**Frobisher Bay**	49.96	34	P		P	12 03 40.4	-1.4
	comp=Z,5.6nm,0.7s,baz=306,slow=9.9,SNR=4.0							
O32A	**Brockman Farm,**	50.04	73	P		P	12 03 41.8	-0.9
	baz=310							
L34A	**Svendsen Farm,**	50.07	70	P		P	12 03 41.9	-1.0
	baz=309							
SPMN	**Marine on St.**	50.08	65	P		P	12 03 42.0	-0.9
	baz=308							
CBKS	**Cedar Bluff**	50.10	75	P		P	12 03 43.3	+0.1
	baz=310,SNR=7.6							
CBKS	**Cedar Bluff**	50.10	75	*e*P		P	12 03 43.5	+0.3
CBKS				pmax		pmax		
	comp=Z,41nm,0.8s							
CBKS	**Cedar Bluff**	50.10	75	*e*P		P	12 03 43.5	+0.3
	comp=Z,41nm,0.8s							
SONA0	**Songino Array**	50.24	300	*e*P		P	12 03 44.4	+0.1
	comp=Z,12nm,2.0s							
SONM	**Songino Array**	50.24	300	P		P	12 03 44.4	+0.1
	comp=Z,0.5nm,0.5s,baz=49,slow=12,SNR=3.5							
SONM				ScP		ScP	12 08 54.1	-0.1
	comp=Z,1.1nm,0.7s,baz=38,slow=3.1,SNR=5.8							
SONM				LR		LR	12 26 54.6	
	comp=Z,184nm,19.4s,baz=54,slow=38							
P32A	**Huiting Farm,**	50.25	74	P		P	12 03 43.7	-0.6
	baz=310							
J36A	**Seneca 1, Swea**	50.38	68	P		P	12 03 44.8	-0.5
	baz=309							
H37A	**Dierke Farm, C**	50.41	65	P		P	12 03 45.0	-0.4
	baz=309							
L35A	**Bielow Farm, R**	50.46	69	P		P	12 03 44.5	-1.4
	baz=309							
I37A	**Lemond, Waseca**	50.49	66	P		P	12 03 45.4	-0.7
	baz=309,SNR=8.3							
O33A	**Hehn**	50.56	73	P		P	12 03 45.7	-1.0
	baz=310,SNR=6.5							
Q32A	**Meitler Ranch,**	50.68	74	P		P	12 03 47.4	-0.2
	baz=311,SNR=7.9							
M35A	**Neola**	50.78	70	P		P	12 03 47.7	-0.6
	baz=310							
J37A	**Redenius Farm,**	50.84	67	P		P	12 03 47.8	-0.9
	baz=309,SNR=8.4							
P33A	**Williams Farm,**	50.91	73	P		P	12 03 48.8	-0.5
	baz=310							
R32A	**Long Quarter,**	50.96	75	P		P	12 03 48.9	-0.9
	baz=311							
O34A	**Beatrice**	51.02	72	P		P	12 03 49.2	-0.9
	baz=310							
I38A	**Scanlan Farm,**	51.08	66	P		P	12 03 49.4	-1.1
	baz=309							
Q33A	**Connelly Farm,**	51.11	74	P		P	12 03 50.1	-0.7
	baz=311,SNR=6.7							
K37A	**Belmond**	51.14	68	P		P	12 03 49.8	-1.2
	baz=310,SNR=6.8							
N35A	**Tabor**	51.20	71	P		P	12 03 50.5	-0.9
	baz=310							
S32A	**Newby Ranch, P**	51.30	76	P		P	12 03 51.8	-0.5
	baz=311							
M36A	**Felix, Anita**	51.30	70	P		P	12 03 51.5	-0.8
	baz=310							
P34A	**Walnut Farm, R**	51.35	73	P		P	12 03 51.9	-0.7
	baz=311							
SUMG	**Summit**	51.41	16	*e*P		P	12 03 52.3	-0.7
SUMG				pmax		pmax		
	comp=Z,29nm,1.7s							
SUMG	**Summit**	51.41	16	*e*P		P	12 03 52.3	-0.7
	comp=Z,29nm,1.7s							
MNTX	**Cornudas Mount**	51.41	86	P		P	12 03 53.4	+0.2
	baz=314,SNR=9.3							
MNTX	**Cornudas Mount**	51.41	86	*e*P		P	12 03 53.7	+0.5
	comp=Z,4.7nm,0.8s							
J38A	**Wedel Dairy, R**	51.45	66	P		P	12 03 52.2	-1.0
	baz=310,SNR=7.3							
MSTX	**Muleshoe**	51.46	82	P		P	12 03 53.0	-0.6
	baz=313,SNR=11							
MSTX	**Muleshoe**	51.46	82	*e*P		P	12 03 54.1	+0.5
	comp=Z,21nm,1.1s							
R33A	**Olander Ranch,**	51.47	75	P		P	12 03 52.7	-0.9
	baz=311							
L37A	**Phoenix Point,**	51.48	68	P		P	12 03 52.8	-0.8
	baz=310							
AMTX	**Amarillo**	51.51	81	P		P	12 03 53.6	-0.4
	baz=313							
AMTX	**Amarillo**	51.51	81	*e*P		P	12 03 54.5	+0.5
	comp=Z,8.3nm,0.9s							
COWI	**Conover**	51.55	62	*e*P		P	12 03 53.0	-1.0
	comp=Z,20nm,1.4s							
N36A	**Muff Farm, Cla**	51.62	70	P		P	12 03 53.9	-0.8
	baz=310							
T32A	**Huddler Ranch,**	51.65	76	P		P	12 03 54.4	-0.5
	baz=312							
Q34A	**Chapman**	51.69	73	P		P	12 03 54.5	-0.6
	baz=311,SNR=5.6							
K38A	**Parkersburg**	51.71	67	P		P	12 03 54.7	-0.5
	baz=310							
HHC	**Hu-ho-hao-te**	51.73	290	*e*P		P	12 03 56.5	+1.0
HHC				pmax		pmax		
	comp=Z,13nm,1.2s							
HHC				pmax		pmax		
	comp=Z,150nm,6.9s							
KSU1	**Kansas State U**	51.77	73	P		P	12 03 54.7	-1.0
	baz=311							
KSU1	**Kansas State U**	51.77	73	*e*P		P	12 03 55.4	-0.3
	comp=Z,27nm,1.2s							
M37A	**Trindle Farm,**	51.77	69	P		P	12 03 55.2	-0.5
	baz=310							
P35A	**Duane Minner,**	51.84	72	P		P	12 03 55.4	-0.9
	baz=311,SNR=6.3							
J39A	**Decorah**	51.87	66	P		P	12 03 55.1	-1.3
	baz=310,SNR=6.9							
R34A	**Isabella, Hill**	51.91	74	P		P	12 03 56.1	-0.7
	baz=311,SNR=5.4							
L38A	**Oak Wood Farm,**	51.92	68	P		P	12 03 56.1	-0.8
	baz=310,SNR=6.0							
S33A	**Kaszmaul Farm,**	51.93	75	P		P	12 03 56.4	-0.6
	baz=312,SNR=6.9							
O36A	**Bolckow**	52.06	71	P		P	12 03 57.1	-0.7
	baz=311							
N37A	**Lee Faris, Mou**	52.09	70	P		P	12 03 57.4	-0.8
	baz=311,SNR=6.9							
T33A	**Patterson Ranc**	52.12	76	P		P	12 03 57.4	-0.9
	baz=312							
U32A	**Winter Ranch,**	52.13	77	P		P	12 03 58.2	-0.3
	baz=312							
K39A	**Oelwein**	52.17	67	P		P	12 03 57.1	-1.5
	baz=310,SNR=7.0							
P36A	**Good Intent, A**	52.25	72	P		P	12 03 58.2	-1.1
	baz=311,SNR=8.2							
M38A	**Pleasantville**	52.25	69	P		P	12 03 58.3	-1.0
	baz=310							
Q35A	**Mercer Eighty,**	52.26	73	P		P	12 03 58.2	-1.2
	baz=311							
J40A	**Soldiers Grove**	52.38	65	P		P	12 03 58.9	-1.3
	baz=310							
S34A	**Willow Spring**	52.39	75	P		P	12 03 59.6	-0.7
	baz=312							
L39A	**Vinton**	52.48	67	P		P	12 03 59.8	-1.1
	baz=310,SNR=7.1							
O37A	**Wolven Farm, M**	52.52	70	P		P	12 04 00.5	-0.7
	baz=311							
R35A	**Emporia Munici**	52.52	74	P		P	12 04 00.6	-0.7
	baz=312							
Q36A	**Arnold C. Orve**	52.53	72	P		P	12 04 00.6	-0.8
	baz=311							
V32A	**Arapaho**	52.55	78	P		P	12 04 01.5	-0.1
	baz=312							
K40A	**Colesburg**	52.60	66	P		P	12 04 00.5	-1.3
	baz=310							
U33A	**Lingo Farm, Me**	52.63	77	P		P	12 04 01.6	-0.6
	baz=312							
N38A	**Joes South For**	52.63	69	P		P	12 04 01.5	-0.6
	baz=311							
P37A	**Lathrop**	52.77	71	P		P	12 04 01.9	-1.2
	baz=311,SNR=8.6							
T34A	**McClaskey Farm**	52.79	75	P		P	12 04 02.3	-1.1
	baz=312,SNR=7.4							
M39A	**Webster**	52.80	68	P		P	12 04 02.3	-1.0
	baz=311,SNR=14							
J41A	**Loganville**	52.80	65	P		P	12 04 02.1	-1.2
	baz=310							
W32A	**Sentinel**	52.83	79	P		P	12 04 04.0	+0.3
	baz=313							
S35A	**Otter Creek Ra**	52.87	74	P		P	12 04 03.1	-0.8
	baz=312,SNR=5.6							
R36A	**Gordon, Harris**	52.93	73	P		P	12 04 03.5	-0.8
	baz=312,SNR=8.6							
O38A	**Galt**	52.94	70	P		P	12 04 03.5	-0.9
	baz=311							
V33A	**Lossen Ranch,**	52.94	77	P		P	12 04 03.5	-0.9
	baz=312							
JFWS	**Jewell Farm**	52.96	65	*e*P		P	12 04 03.1	-1.4
JFWS				pmax		pmax		
	comp=Z,10.0nm,0.8s							
JFWS	**Jewell Farm**	52.96	65	*e*P		P	12 04 03.1	-1.4
	comp=Z,9.7nm,0.8s							
L40A	**Anamosa**	52.96	67	P		P	12 04 03.2	-1.3
	baz=311							
U34A	**Anderson Ranch**	52.97	76	P		P	12 04 03.8	-0.9
	baz=312,SNR=7.8							
U34A	**Anderson Ranch**	52.97	76	*e*P		P	12 04 04.3	-0.4
	comp=Z,30nm,0.8s							
N39A	**Derby Farms, D**	53.00	69	P		P	12 04 03.6	-1.3
	baz=311,SNR=8.4							
K41A	**Shullsburg**	53.13	66	P		P	12 04 04.3	-1.4
	baz=311,SNR=7.2							
Q37A	**Longview Farm,**	53.18	72	P		P	12 04 04.7	-1.5
	baz=312							
P38A	**Dawn**	53.23	71	P		P	12 04 05.3	-1.2
	baz=311,SNR=8.0							
T35A	**Sooner Cattle**	53.27	75	P		P	12 04 06.0	-0.8
	baz=312							
S36A	**Lake Cedric, C**	53.27	74	P		P	12 04 05.8	-1.1
	baz=312							
W33A	**Caddo, Fort Co**	53.28	78	P		P	12 04 07.0	+0.1
	baz=313,SNR=5.0							
X32A	**Elmer**	53.28	79	P		P	12 04 06.6	-0.4
	baz=313,SNR=5.5							
R37A	**Teagarden Farm**	53.33	73	P		P	12 04 06.0	-1.3
	baz=312							
L41A	**Preston**	53.37	66	P		P	12 04 06.4	-1.0
	baz=311							
WMOK	**Wichita Mounta**	53

LTX	**Lajitas**	**54.12**	**87**	*eP*		**P**		**12 04 13.2**	**0.0**
TXAR	**Lajitas Array**	**54.12**	**87**	P		**P**		**12 04 13.3**	**0.0**
	comp=Z,6.1nm,0.7s,baz=294,slow=4.8,SNR=40								
TXAR				ScP		**ScP**		**12 09 11.7**	**+0.4**
	comp=Z,0.9nm,0.8s,baz=290,slow=4.4,SNR=7.1								
TXAR				LR		LR		12 25 09.9	
	comp=Z,104nm,20.4s,baz=0.0,slow=34								
P40A	**Paris**	**54.15**	**70**	P		**P**		**12 04 11.9**	**-1.4**
	baz=312,SNR=20								
W35A	**Tecumseh**	**54.23**	**77**	P		**P**		**12 04 13.0**	**-0.9**
	baz=313,SNR=6.4								
ABTX	**Abilene, Hawle**	**54.29**	**81**	P		**P**		**12 04 14.2**	**-0.2**
	baz=314								
ABTX	**Abilene, Hawle**	**54.29**	**81**	*eP*		**P**		**12 04 14.5**	**+0.1**
	comp=Z,18nm,1.1s								
S38A	**Stockton**	**54.33**	**73**	P		**P**		**12 04 12.8**	**-1.8**
	baz=312,SNR=18								
V36A	**Jenks**	**54.36**	**76**	P		**P**		**12 04 14.1**	**-0.8**
	baz=313								
Z33A	**Whitaker Ranch**	**54.37**	**80**	P		**P**		**12 04 14.3**	**-0.6**
	baz=314								
TUL1	**Leonard**	**54.37**	**76**	P		**P**		**12 04 14.1**	**-0.8**
	baz=313								
TUL1	**Leonard**	**54.37**	**76**	*eP*		**P**		**12 04 14.4**	**-0.5**
	comp=Z,18nm,1.0s								
R39A	**Chumby, Stover**	**54.38**	**72**	P		**P**		**12 04 13.6**	**-1.3**
	baz=312								
O41A	**Passleys Farm,**	**54.43**	**68**	P		**P**		**12 04 14.0**	**-1.2**
	baz=312,SNR=11								
U37A	**Salina**	**54.44**	**75**	P		**P**		**12 04 14.5**	**-0.9**
	baz=313,SNR=13								
Q40A	**Laux Farm, Aux**	**54.49**	**70**	P		**P**		**12 04 14.2**	**-1.5**
	baz=312,SNR=12								
T38A	**Diamond**	**54.50**	**74**	P		**P**		**12 04 14.5**	**-1.3**
	baz=313,SNR=8.3								
Y34A	**Reagan Ranch,**	**54.52**	**79**	P		**P**		**12 04 15.8**	**-0.2**
	baz=314,SNR=8.0								
P41A	**Barry, Barry**	**54.62**	**69**	P		**P**		**12 04 15.3**	**-1.4**
	baz=312,SNR=5.6								
S39A	**Bolivar**	**54.63**	**72**	P		**P**		**12 04 14.5**	**-2.3**
	baz=312,SNR=7.3								
W36A	**Wetumka**	**54.63**	**77**	P		**P**		**12 04 16.4**	**-0.4**
	baz=313								
X35A	**Drake**	**54.69**	**78**	P		**P**		**12 04 16.7**	**-0.5**
	baz=314								
133A	**Hamilton Ranch**	**54.74**	**81**	P		**P**		**12 04 17.6**	**-0.1**
	baz=314								
V37A	**Hulbert**	**54.78**	**75**	P		**P**		**12 04 16.7**	**-1.2**
	baz=313,SNR=8.2								
Z34A	**Collier Ranch,**	**54.83**	**79**	P		**P**		**12 04 17.9**	**-0.4**
	baz=314								
O42A	**Bath**	**54.84**	**68**	P		**P**		**12 04 16.6**	**-1.6**
	baz=312								
R40A	**Maddies Statio**	**54.85**	**71**	P		**P**		**12 04 16.4**	**-2.0**
	baz=312,SNR=11								
U38A	**Gravette**	**54.85**	**74**	P		**P**		**12 04 16.9**	**-1.4**
	baz=313,SNR=6.9								
X36A	**Centrahoma**	**54.95**	**77**	P		**P**		**12 04 18.8**	**-0.3**
	baz=314,SNR=5.0								
Y35A	**Marietta**	**54.99**	**78**	P		**P**		**12 04 19.0**	**-0.4**
	baz=314,SNR=9.1								
HDIL	**Hopedale**	**55.05**	**67**	P		**P**		**12 04 18.5**	**-1.3**
	baz=312								
HDIL	**Hopedale**	**55.05**	**67**	*eP*		**P**		**12 04 18.9**	**-0.9**
	comp=Z,34nm,1.0s								
T39A	**Clever**	**55.05**	**73**	P		**P**		**12 04 17.9**	**-2.0**
	baz=313,SNR=11								
P42A	**Winchester**	**55.09**	**69**	P		**P**		**12 04 18.7**	**-1.4**
	baz=312								
W37B	**Quinton**	**55.11**	**76**	P		**P**		**12 04 20.0**	**-0.3**
	baz=313,SNR=10.0								
233A	**Rising Star**	**55.16**	**81**	P		**P**		**12 04 20.4**	**-0.4**
	baz=314,SNR=6.5								
S40A	**Lebanon**	**55.18**	**72**	P		**P**		**12 04 19.6**	**-1.1**
	baz=313								
HHAR	**Hobbs**	**55.22**	**74**	*eP*		**P**		**12 04 19.9**	**-1.1**
	comp=Z,7.4nm,0.6s								
V38A	**Canehill**	**55.23**	**75**	P		**P**		**12 04 20.1**	**-1.1**
	baz=313,SNR=12								
Z35A	**Perchaven, San**	**55.25**	**79**	P		**P**		**12 04 20.6**	**-0.7**
	baz=314								
134A	**White-Moore Ra**	**55.28**	**80**	P		**P**		**12 04 21.3**	**-0.2**
	baz=314,SNR=6.5								
U39A	**Green Forest**	**55.42**	**74**	P		**P**		**12 04 21.0**	**-1.6**
	baz=313,SNR=8.7								
Y36A	**Durant**	**55.45**	**78**	P		**P**		**12 04 22.3**	**-0.4**
	baz=314								
T40A	**Mansfield**	**55.47**	**72**	P		**P**		**12 04 20.8**	**-2.1**
	baz=313								
X37A	**Clayton**	**55.52**	**76**	P		**P**		**12 04 23.2**	**0.0**
	baz=314,SNR=14								
333A	**Richland Sprin**	**55.59**	**82**	P		**P**		**12 04 23.1**	**-0.7**
	baz=315,SNR=5.3								
S41A	**Jillco Farms,**	**55.63**	**71**	P		**P**		**12 04 21.9**	**-2.1**
	baz=313,SNR=18								
234A	**Clairette**	**55.64**	**81**	P		**P**		**12 04 23.9**	**-0.2**
	baz=315								
JCT	**Junction City**	**55.69**	**83**	P		**P**		**12 04 23.6**	**-0.9**
	baz=315								
135A	**Vickery Place,**	**55.69**	**80**	P		**P**		**12 04 24.4**	**-0.1**
	baz=314								
V39A	**Pettigrew**	**55.70**	**74**	P		**P**		**12 04 23.2**	**-1.4**
	baz=313,SNR=7.6								
W38A	**Poteau**	**55.70**	**75**	P		**P**		**12 04 23.9**	**-0.6**
	baz=314,SNR=12								
Z36A	**Blue Ridge**	**55.79**	**78**	P		**P**		**12 04 24.2**	**-1.0**
	baz=314								
X38A	**Whitesboro**	**55.79**	**76**	P		**P**		**12 04 25.0**	**-0.1**
	baz=314,SNR=8.2								
U40A	**Yellville**	**55.81**	**73**	P		**P**		**12 04 23.5**	**-1.8**
	baz=313,SNR=15								
Q43A	**New Douglas**	**55.90**	**69**	P		**P**		**12 04 24.5**	**-1.4**
	baz=313,SNR=6.6								
433A	**Art**	**55.93**	**82**	P		**P**		**12 04 25.4**	**-0.8**
	baz=315,SNR=5.1								
T41A	**Mountain View**	**55.98**	**72**	P		**P**		**12 04 25.3**	**-1.2**
	baz=313								
334A	**Lometa**	**56.04**	**81**	P		**P**		**12 04 26.5**	**-0.6**
	baz=315,SNR=11								
W39A	**Magazine**	**56.05**	**75**	P		**P**		**12 04 25.9**	**-1.1**
	baz=314,SNR=10								
WHTX	**Lake Whitney,**	**56.06**	**80**	P		**P**		**12 04 26.7**	**-0.4**
	baz=315,SNR=6.0								
WHTX	**Lake Whitney,**	**56.06**	**80**	*eP*		**P**		**12 04 27.6**	**+0.5**
	comp=Z,35nm,1.3s								
V40A	**Witts Springs**	**56.21**	**74**	P		**P**		**12 04 26.5**	**-1.7**
	baz=314,SNR=14								
VLDQ	**Val d'Or**	**56.32**	**53**	*eP*		**P**		**12 04 26.6**	**-2.1**
	comp=Z,23nm,1.1s								
X39A	**Fountain Ranch**	**56.33**	**76**	P		**P**		**12 04 28.2**	**-0.8**
	baz=314,SNR=19								
U41A	**Viola**	**56.37**	**73**	P		**P**		**12 04 27.8**	**-1.4**
	baz=314								
434A	**Burnet**	**56.39**	**82**	P		**P**		**12 04 28.9**	**-0.6**
	baz=315,SNR=6.9								
SFIN	**Lafayette**	**56.41**	**66**	P		**P**		**12 04 28.6**	**-0.9**
	baz=313								
SFIN	**Lafayette**	**56.41**	**66**	*eP*		**P**		**12 04 28.8**	**-0.7**
	comp=Z,18nm,0.9s								
533A	**Kerrville**	**56.44**	**83**	P		**P**		**12 04 29.1**	**-0.8**
	baz=315								
W40A	**Ferguson Farm,**	**56.48**	**74**	P		**P**		**12 04 29.3**	**-0.8**
	baz=314,SNR=6.2								
SCHQ	**Schefferville**	**56.54**	**42**	LR		LR		12 29 55.0	
	comp=Z,216nm,18.0s,baz=279,slow=37								
S43A	**Fulton Ridge,**	**56.61**	**70**	P		**P**		**12 04 29.5**	**-1.5**
	baz=313,SNR=17								
V41A	**Mountainview**	**56.61**	**73**	P		**P**		**12 04 29.2**	**-1.8**
	baz=314,SNR=11								
MIAR	**Mount Ida**	**56.62**	**75**	P		**P**		**12 04 30.3**	**-0.8**
	baz=314,SNR=17								
MIAR	**Mount Ida**	**56.62**	**75**	*eP*		**P**		**12 04 30.7**	**-0.4**
MIAR				pmax		pmax			
	comp=Z,25nm,0.9s								
MIAR	**Mount Ida**	**56.62**	**75**	*eP*		**P**		**12 04 30.7**	**-0.4**
	comp=Z,25nm,0.9s								
ZALV	**Zalesovo Beam**	**56.67**	**317**	PcP		**PcP**		**12 05 26.2**	**-0.6**
	comp=Z,2.0nm,0.7s,baz=24,slow=4.3,SNR=6.2								
ZALV				ScP		**ScP**		**12 09 20.9**	**-1.0**
	comp=Z,1.2nm,0.6s,baz=46,slow=5.0,SNR=5.1								
R44A	**Waltonville**	**56.72**	**69**	P		**P**		**12 04 30.5**	**-1.2**
	baz=313								
U42A	**Revenden**	**56.77**	**72**	P		**P**		**12 04 30.9**	**-1.2**
	baz=314,SNR=5.6								
633A	**Saathoff Ranch**	**56.79**	**84**	P		**P**		**12 04 31.4**	**-1.0**
	baz=316								
534A	**Blanco**	**56.82**	**83**	P		**P**		**12 04 32.0**	**-0.5**
	baz=316								
X201	**Greenbrier Sit**	**56.83**	**74**	*eP*		**P**		**12 04 32.0**	**-0.5**
	comp=Z,14nm,1.1s								
X301	**Greenbrier Sit**	**56.84**	**74**	*eP*		**P**		**12 04 31.4**	**-1.2**
	comp=Z,12nm,0.8s								
336A	**Riesel**	**56.85**	**80**	P		**P**		**12 04 32.7**	**0.0**
	baz=315								
WHAR	**Wooly Hollow**	**56.88**	**74**	*eP*		**P**		**12 04 32.2**	**-0.7**
	comp=Z,11nm,0.9s								
PBMO	**Poplar Bluff**	**56.95**	**71**	*eP*		**P**		**12 04 32.5**	**-0.8**
	comp=Z,16nm,1.0s								
OLIL	**Olney**	**56.96**	**68**	*eP*		**P**		**12 04 32.6**	**-0.7**
	comp=Z,26nm,0.9s								
W41B	**Gary Mavity, V**	**56.98**	**74**	P		**P**		**12 04 32.1**	**-1.5**
	baz=314,SNR=7.5								
S44A	**Carbondale**	**57.00**	**70**	P		**P**		**12 04 32.5**	**-1.2**
	baz=314								
138A	**Matatall Enter**	**57.03**	**78**	P		**P**		**12 04 33.8**	**-0.2**
	baz=315								
WHN	**Wuhan**	**57.03**	**279**	P		**P**		**12 04 33.1**	**-0.9**
V42A	**Cord**	**57.05**	**73**	P		**P**		**12 04 32.8**	**-1.3**
	baz=314								
X40A	**Basin Creek Fa**	**57.11**	**75**	P		**P**		**12 04 33.4**	**-1.1**
	baz=314,SNR=6.3								
832A	**Faith Ranch, C**	**57.14**	**85**	P		**P**		**12 04 34.2**	**-0.6**
	baz=316								
Z39A	**Irene McRaven,**	**57.17**	**77**	P		**P**		**12 04 34.6**	**-0.3**
	baz=314								
Y40A	**Okolona**	**57.17**	**75**	P		**P**		**12 04 34.5**	**-0.5**
	baz=314								
436A	**Wall Ranch, Ga**	**57.32**	**81**	P		**P**		**12 04 36.3**	**+0.2**
	baz=315								
H06N1	**SOCORRO T-PHAS**	**57.34**	**101**	T		T		13 06 53.8	
	SNR=8.2								
535A	**Dale**	**57.37**	**82**	P		**P**		**12 04 35.7**	**-0.7**
	baz=316								
S45A	**Carrier Mills**	**57.40**	**69**	P		**P**		**12 04 35.5**	**-1.1**
	baz=314								
139A	**Bunkhouse Ranc**	**57.43**	**77**	P		**P**		**12 04 36.7**	**-0.1**
	baz=315								
H06E1	**SOCORRO T-PHAS**	**57.44**	**102**	T		T		13 07 01.1	
	SNR=7.8								
238A	**Jacksonville**	**57.47**	**78**	P		**P**		**12 04 37.3**	**+0.2**
	baz=315								
833A	**Chaparral WMA,**	**57.47**	**85**	P		**P**		**12 04 37.2**	**+0.1**
	baz=316								
WLAR	**White Oak Lake**	**57.50**	**76**	*eP*		**P**		**12 04 37.2**	**0.0**
	comp=Z,60nm,0.9s								
Z40A	**Long Farm, Mag**	**57.62**	**76**	P		**P**		**12 04 37.6**	**-0.6**
	baz=315								
Y41A	**Eaglette Beard**	**57.66**	**75**	P		**P**		**12 04 38.5**	**+0.1**
	baz=314								
SADO	**Sadowa**	**57.73**	**57**	P		**P**		**12 04 37.7**	**-1.1**
	comp=Z,6.4nm,0.6s,baz=323,slow=7.2,SNR=6.9								
SADO	**Sadowa**	**57.73**	**57**	*eP*		**P**		**12 04 38.3**	**-0.5**
	comp=Z,9.9nm,0.8s								
ARCES	**ARCESS Array B**	**58.01**	**353**	P		**P**		**12 04 38.6**	**-1.8**
	comp=Z,3.1nm,0.8s,baz=27,slow=11,SNR=4.9								
ARCES				LR		LR		12 29 16.4	
	comp=Z,86nm,22.0s,baz=25,slow=36								
ARCES	**ARCESS Array B**	**58.01**	**353**	P		**P**		**12 04 38.6**	**-1.8**
ARCES				pmax		pmax			
	comp=Z,2.0nm,0.7s								
ARCES				MLR		MLR			
	comp=Z,86nm,22.0s								
933A	**Laredo**	**58.05**	**85**	P		**P**		**12 04 41.5**	**+0.3**
	baz=316								
438A	**Sam Houston St**	**58.13**	**80**	P		**P**		**12 04 41.6**	**-0.1**
	baz=316								
CCAR	**Cane Creek**	**58.13**	**75**	*eP*		**P**		**12 04 41.9**	**+0.1**
	comp=Z,77nm,1.5s								
X43A	**Marvell**	**58.24**	**73**	P		**P**		**12 04 41.9**	**-0.6**
	baz=315								
339A	**Huntington**	**58.28**	**79**	P		**P**		**12 04 42.4**	**-0.4**
	baz=315								
Z42A	**Norrel Spur, H**	**58.48**	**75**	P		**P**		**12 04 43.6**	**-0.6**
	baz=315								
934A	**Benavides**	**58.52**	**85**	P		**P**		**12 04 45.1**	**+0.6**
	baz=316								
PLVO	**Plevna**	**58.61**	**56**	*eP*		**P**		**12 04 44.6**	**-0.3**
	comp=Z,21nm,1.2s								
340A	**Bronson**	**58.62**	**78**	P		**P**		**12 04 44.2**	**-0.9**
	baz=315								
Y43A	**Hakakaia and Ka**	**58.64**	**74**	P		**P**		**12 04 44.9**	**-0.4**
	baz=315								
034A	**Hebbronville**	**58.81**	**85**	P		**P**		**12 04 46.7**	**+0.2**
	baz=317								
WVT	**Waverly**	**58.91**	**70**	*eP*		**P**		**12 04 46.2**	**-0.9**
WVT				pmax		pmax			
	comp=Z,14nm,0.9s								
WVT	**Waverly**	**58.91**	**70**	*eP*		**P**		**12 04 46.2**	**-0.9**
	comp=Z,14nm,0.9s								
Y44A	**Strider, Charl**	**59.03**	**73**	P		**P**		**12 04 47.6**	**-0.4**
	baz=315								
TRQ	**Mont Tremblant**	**59.05**	**53**	*eP*		**P**		**12 04 47.1**	**-0.9**
OXF	**Oxford**	**59.12**	**72**	*eP*		**P**		**12 04 48.1**	**-0.4**
OXF				pmax		pmax			
	comp=Z,77nm,1.1s								
OXF	**Oxford**	**59.12**	**72**	*eP*		**P**		**12 04 48.1**	**-0.4**
	comp=Z,77nm,1.1s								
X45A	**UM Field Stati**	**59.19**	**72**	P		**P**		**12 04 48.3**	**-0.8**
	baz=315								
143A	**Socs Landing,**	**59.20**	**75**	P		**P**		**12 04 49.0**	**-0.2**
	baz=315								
Z44A	**Pea Ridge, Bel**	**59.38**	**74**	P		**P**		**12 04 49.5**	**-0.8**
	baz=315								
LZH	**Lanzhou**	**59.40**	**290**	*eP*		**P**		**12 04 51.0**	**+0.3**
LZH				pP		pP		12 05 01.8	-2.5
LZH				sP		sP		12 05 06.4	-3.5
LZH				pmax		pmax			
	comp=Z,15nm,1.0s								
LZH				pmax		pmax			
	comp=Z,110nm,7.5s								
035Z	**Hargill**	**59.62**	**85**	P		**P**		**12 04 52.4**	**+0.3**
	baz=317								
M54A	**Oil Creek Stat**	**59.72**	**60**	P		**P**		**12 04 51.9**	**-0.7**
	baz=315								
Z45A	**Winona**	**59.75**	**74**	P		**P**		**12 04 52.6**	**-0.4**
	baz=315								
Y46A	**Houston**	**59.88**	**73**	P		**P**		**12 04 53.2**	**-0.6**
	baz=315								
N54A	**Moraine State**	**59.93**	**61**	P		**P**		**12 04 53.5**	**-0.6**
	baz=315								
244A	**Avery, Jackson**	**60.10**	**75**	P		**P**		**12 04 55.2**	**-0.2**
	baz=316								
145A	**Houston Renfro**	**60.15**	**74**	P		**P**		**12 04 55.4**	**-0.3**
	baz=316								
LMQ	**La Malbaie**	**60.16**	**50**	*eP*		**P**		**12 04 55.0**	**-0.6**
LONY	**Lake Ozonia**	**60.17**	**55**	*eP*		**P**		**12 04 55.7**	**0.0**
	comp=Z,12nm,1.1s								
Y47A	**UCPARC, Winfie**	**60.46**	**72**	P		**P**		**12 04 56.7**	**-1.1**
	baz=316,SNR=11								
344A	**Westbrook Farm**	**60.49**	**76**	P		**P**		**12 04 57.9**	**-0.2**
	baz=316								
245A	**Little AP, Sta**	**60.58**	**75**	P		**P**		**12 04 57.8**	**-0.8**
	baz=316								
SWET	**Sewanee**	**60.65**	**70**	*eP*		**P**		**12 04 58.0**	**-1.1**
	comp=Z,8.4nm,1.6s								
146A	**Union**	**60.65**	**74**	P		**P**		**12 04 58.4**	**-0.7**
	baz=316								
Z47A	**Carrollton**	**60.83**	**73**	P		**P**		**12 04 59.2**	**-1.1**
	baz=316								
MCWV	**Mont Chateau**	**60.92**	**62**	*eP*		**P**		**12 05 00.6**	**-0.3**
Z48A	**Northport**	**61.01**	**72**	P		**P**		**12 05 00.3**	**-1.2**
	baz=316,SNR=10.0								
TZTN	**Tazewell**	**61.07**	**67**	*eP*		**P**		**12 05 01.4**	**-0.5**
	comp=Z,30nm,1.4s								
147A	**Livingston**	**61.09**	**73**	P		**P**		**12 05 01.1**	**-1.0**
	baz=316								
BINY	**Binghamton**	**61.17**	**58**	*eP*		**P**		**12 05 02.6**	**0.0**
	comp=Z,50nm,1.5s								
O56A	**Blue Knob Stat**	**61.18**	**61**	P		**P**		**12 05 01.6**	**-1.1**
	baz=316								
445A	**Amite**	**61.24**	**76**	P		**P**		**12 05 03.1**	**0.0**
	baz=316								
SSPA	**Standing Stone**	**61.28**	**60**	*eP*		**P**		**12 05 03.2**	**-0.1**
	comp=Z,77nm,1.9s								
CPCT	**Cooper Cave**	**61.29**	**68**	*eP*		**P**		**12 05 02.4**	**-1.0**
	comp=Z,10nm,1.6s								
346A	**Big Creek Wild**	**61.30**	**75**	P		**P**		**12 05 03.1**	**-0.4**
	baz=316								
247A	**Quitman**	**61.33**	**74**	P		**P**		**12 05 03.6**	**-0.1**
	baz=316								
ACCN	**Adirondack Com**	**61.51**	**55**	*eP*		**P**		**12 05 04.9**	**0.0**
	comp=Z,31nm,1.4s								
TKL	**Tuckaleechee C**	**61.57**	**68**	P		**P**		**12 05 04.0**	**-1.4**
	comp=Z,8.4nm,1.0s,baz=239,slow=6.1,SNR=6.0								
TKL	**Tuckaleechee C**	**61.57**	**68**	*eP*		**P**		**12 05 04.6**	**-0.7**
TKL				pmax		pmax			
	comp=Z,14nm,1.1s								
TKL	**Tuckaleechee C**	**61.57**	**68**	*eP*		**P**		**12 05 04.6**	**-0.7**
	comp=Z,14nm,1.1s								
LRAL	**Lakeview Retre**	**61.58**	**72**	*eP*		**P**		**12 05 04.3**	**-1.1**
	comp=Z,8.9nm,0.9s								
KURK	**Kurchatov**	**61.64**	**317**	P		**P**		**12 05 05.6**	**+0.1**
KURK								12 05 46.3	
KURK				pmax		pmax			
	comp=Z,2.0nm,0.6s								
KURK	**Kurchatov**	**61.64**	**317**	*eP*		**P**		**12 05 05.1**	**-0.4**
	comp=Z,3.6nm,0.7s								
KURK				*e*PcP		**PcP**		**12 05 46.3**	**-0.3**
KURBB	**Kurchatov Arra**	**61.74**	**317**	P		**P**		**12 05 05.6**	**-0.6**
	comp=Z,2.0nm,0.7s,baz=46,slow=6.7,SNR=13								
KURBB				PcP		**PcP**		**12 05 46.3**	**-0.7**
	comp=Z,1.6nm,0.4s,baz=39,slow=3.7,SNR=6.6								
KURBB				ScP		**ScP**		**12 09 44.6**	**+0.1**
	comp=Z,1.2nm,0.8s,baz=40,slow=4.6,SNR=6.8								
248A	**Dixon Mills**	**61.81**	**73**	P		**P**		**12 05 06.4**	**-0.6**
	baz=316								
347A	**Saraland**	**61.83**	**74**	P		**P**		**12 05 06.8**	**-0.3**
	baz=316								
N59A	**State Game Lan**	**62.20**	**58**	P		**P**		**12 05 08.6**	**-1.0**
	baz=316								
PKME	**Peaks-Kenny Pk**	**62.31**	**51**	*eP*		**P**		**12 05 09.5**	**-0.6**
	comp=Z,14nm,1.0s								
BLA	**Blacksburg**	**62.35**	**64**	*eP*		**P**		**12 05 10.9**	**+0.3**
BLA				pmax		pmax			
	comp=Z,29nm,0.9s								
BLA	**Blacksburg**	**62.35**	**64**	*eP*		**P**		**12 05 10.8**	**+0.3**
	comp=Z,29nm,0.9s								
WMQ	**Urumqi**	**62.59**	**307**	*eP*		P		12 05 04.3	-7.9
WMQ				pP		pP		12 05 16.3	-10
WMQ				pmax		pmax			
	comp=Z,8.0nm,0.6s								
WMQ				pmax		pmax			
	comp=Z,130nm,5.5s								
WMQ				LR		LR			
	comp=N,270nm,21.4s								
WMQ				LR		LR			
	comp=E,260nm,26.0s								
WMQ				LR		LR			
	comp=Z,230nm,20.2s								
LUPA	**Lehigh Univers**	**62.64**	**58**	*eP*		**P**		**12 05 12.6**	**+0.2**
	comp=Z,13nm,0.8s								
MK32	**Makanchi Array**	**62.97**	**312**	*eP*		**P**		**12 05 13.7**	**-0.9**
MKAR	**Makanchi Array**	**62.97**	**312**	P		**P**		**12 05 13.7**	**-0.9**
	comp=Z,0.5nm,0.3s,baz=45,slow=7.0,SNR=6.2								
BVAR	**Borovoye Array**	**63.09**	**323**	P		**P**		**12 05 15.1**	**-0.2**
	comp=Z,3.9nm,0.5s,baz=50,slow=7.2,SNR=25								
BRVK	**Borovoye**	**63.11**	**323**	*i*P		**P**		**12 05 15.0**	**-0.3**
BRVK				pmax		pmax			
	comp=Z,9.0nm,0.9s								
BRVK	**Borovoye**	**63.11**	**323**	*eP*		**P**		**12 05 15.2**	**-0.1**
CD2	**Chengdu**	**63.14**	**286**	*eP*		**P**		**12 05 15.4**	**-0.5**
CD2				pP		pP		12 05 28.3	-1.3
CD2				PP		**PP**		**12 07 34.1**	**-0.8**
CD2				PcS				12 09 52.3	
CD2				S		**S**		**12 13 42.8**	**-0.6**
CD2				sS		sS		12 14 04.8	-1.6
CD2				SS		**SS**		**12 17 49.9**	**+0.5**
CD2				pmax		pmax			
	comp=Z,10.0nm,0.5s								
CD2				pmax		pmax			
	comp=Z,120nm,5.4s								
KMSC	**Kings Mountain**	**63.33**	**67**	P		**P**		**12 05 16.0**	**-1.1**
	baz=317,SNR=6.9								
KMSC	**Kings Mountain**	**63.33**	**67**	*eP*		**P**		**12 05 16.5**	**-0.6**
	comp=Z,23nm,0.9s								
GOGA	**Godfrey**	**63.36**	**69**	*eP*		**P**		**12 05 15.9**	**-1.3**
GOGA				pmax		pmax			
	comp=Z,14nm,0.8s								
GOGA	**Godfrey**	**63.36**	**69**	*eP*		**P**		**12 05 15.9**	**-1.3**
	comp=Z,14nm,0.8s								
ZRNK	**Zerenda**	**63.66**	**324**	*eP*		**P**		**12 05 18.7**	**-0.3**
ZRNK				pmax		pmax			
	comp=Z,7.0nm,0.4s								
ZRNK	**Zerenda**	**63.66**	**324**	*eP*		**P**		**12 05 18.7**	**-0.3**
	comp=Z,7.2nm,0.4s								
LMN	**Caledonia Moun**	**63.98**	**48**	*eP*		**P**		**12 05 20.6**	**-0.5**
	comp=Z,24nm,0.7s								
JSC	**Jenkinsville**	**63.99**	**67**	*eP*		**P**		**12 05 20.8**	**-0.6**
JSC				pmax		pmax			
	comp=Z,31nm,1.3s								
JSC	**Jenkinsville**	**63.99**	**67**	*eP*		**P**		**12 05 20.8**	**-0.6**
	comp=Z,31nm,1.3s								
ARU	**Arti**	**64.20**	**332**	LR		LR		12 36 03.1	
	comp=Z,45nm,21.6s,baz=30,slow=38								
ARU	**Arti**	**64.20**	**332**	*d i*P		**P**		**12 05 21.5**	**-1.0**
ARU								12 05 54.4	
ARU								12 07 40.3	
ARU				S		**S**		**12 13 57.9**	**+2.1**
ARU				SS		**SS**

comp=Z,40nm,4.0s
KSH LR LR
comp=Z,99nm,5.9s
KSH LR LR
comp=Z,160nm,7.2s
KSH LR LR
comp=Z,130nm,8.7s
PPT Papeete 72.00 158 LR LR 12 31 08.9
comp=Z,52nm,20.3s,baz=344,slow=30
PPT2 Papeete2 72.02 158 eLR LR 12 28 02.8
comp=Z,59nm,22.8s
PPT2 Papeete2 72.02 158 eT T 13 24 53.9
comp=Z,3.8nm,0.3s
TIAR Tiarei 72.04 158 eT T 13 24 55.2
comp=Z,4.4nm,0.2s
CM31 Chiang Mai Arr 75.33 281 eP **P** **12 06 30.6 -0.8**
CMAR Chiang Mai Arr 75.33 281 P **P** **12 06 31.6 +0.2**
comp=Z,4.8nm,0.7s,baz=26,slow=7.0,SNR=22
CMAR LR LR 12 40 35.4
comp=Z,28nm,20.8s,baz=70,slow=36
CM01 Chiang Mai Arr 75.35 281 eP **P** **12 06 31.5 0.0**
AKASG Malin Array Be 76.05 347 LR LR 12 41 37.2
comp=Z,97nm,21.8s,baz=355,slow=37
KIEV Kiev 76.05 347 eP **P** **12 06 35.7 +0.7**
KIEV pmax pmax
comp=Z,8.0nm,2.0s
DZM Mont Dzumac 76.34 201 eLR LR 12 30 13.3
comp=Z,163nm,21.3s
TBI Tubuai 77.61 159 eT T 13 31 51.5
comp=Z,9.4nm,0.2s
DPC Dobruska-Polom 77.68 355 eP **P** **12 06 43.7 -0.6**
DPC Dobruska-Polom 77.68 355 eP **P** **12 06 43.7 -0.6**
VRAC Vranov 78.70 355 LR LR 12 41 28.2
comp=Z,37nm,21.7s,baz=3.0,slow=36
GERES GERESS Array B 79.31 356 P **P** **12 06 52.9 -0.4**
comp=Z,1.0nm,0.7s,baz=16,slow=6.9,SNR=5.0
GEA0 GERESS Array S 79.32 356 eP **P** **12 06 53.0 -0.4**
KVAR Kislovodsk Arr 79.82 336 LR LR 12 47 26.0
comp=Z,37nm,18.3s,baz=15,slow=40
WR1 Warramunga Arr 85.79 230 eP **P** **12 07 26.1 -1.1**
comp=Z,22nm,1.7s
WRA Warramunga Arr 85.79 230 P **P** **12 07 26.1 -1.1**
comp=Z,0.9nm,0.7s,baz=34,slow=5.6,SNR=8.2
WRA LR LR 12 41 52.0
comp=Z,83nm,21.5s,baz=325,slow=33
BR101 Keskin Array S 85.92 341 eP **P** **12 07 27.3 -0.7**
BRTR Keskin Array B 85.92 341 P **P** **12 07 27.3 -0.7**
comp=Z,0.8nm,0.6s,baz=74,slow=1.3,SNR=4.3
BRTR LR LR 12 51 15.5
comp=Z,38nm,19.6s,baz=5.0,slow=39
PSI Prapat 87.49 271 eP **P** **12 07 35.9 0.0**
PSI pmax pmax
comp=Z,12nm,0.8s
PSI Prapat 87.49 271 eP **P** **12 07 35.9 0.0**
comp=Z,12nm,0.8s
ESDC Sonseca Array 87.94 10 P **P** **12 07 36.7 -1.0**
comp=Z,0.2nm,0.3s,baz=355,slow=4.7,SNR=4.2
AS01 Alice Springs 89.18 226 eP **P** **12 07 43.1 -0.4**
AS31 Alice Springs 89.20 228 eP **P** **12 07 43.5 0.0**
comp=Z,1.9nm,0.9s
ASAR Alice Springs 89.20 228 P **P** **12 07 43.4 -0.2**
comp=Z,4.6nm,0.7s,baz=28,slow=4.8,SNR=53
ASAR LR LR 12 42 15.5
comp=Z,80nm,21.9s,baz=52,slow=32
RUSC La Rusia 90.60 80 eP **P** **12 07 50.8 -0.2**
comp=Z,10nm,1.5s
IDI Anoyia 91.77 347 LR LR 12 51 20.5
comp=Z,22nm,21.9s,baz=62,slow=37
STKA Stephens Creek 93.14 218 LR LR 12 44 26.0
comp=Z,151nm,21.2s,baz=25,slow=32
TOA1 Torodi Ar. Sit 114.73 7 ePKiKP **PKiKP** **12 13 27.2 -1.2**
TORD Torodi Ar. Bea 114.74 7 PKP PKPdf 12 13 27.2 -1.2
comp=Z,0.3nm,0.6s,baz=336,slow=3.8,SNR=3.1
TSUM Tsumeb 146.37 344 ePKPdf **PKPbc** **12 14 28.6 -0.2**
MAW Mawson 149.83 218 PKPbc **PKPbc** **12 14 36.4 +0.2**
comp=Z,1.3nm,0.6s,baz=78,slow=4.3,SNR=3.8
MAW Mawson 149.83 218 ePKPbc **PKPbc** **12 14 38.3 +2.0**
LBTB Lobatse 149.94 328 ePKP2 **PKPbc** **12 14 38.2 +0.1**
LBTB Lobatse 149.94 328 ePKPbc **PKPbc** **12 14 38.2 +0.1**
BOSA Boshof 153.37 325 PKPbc **PKPbc** **12 14 45.8 -0.1**
comp=Z,1.9nm,0.4s,baz=2.3,slow=2.3,SNR=8.4

*ISCJB **19** 12:04:44.8±0.6,39.07N±0.05×29.12E±0.05,h4km,9km, Error ellipse: s-maj=9.4km s-min=4.3km az=144.2*
*CSEM **19** 12:04:44.8±0.1,39.07N×29.13E,h5km,MD2.6, Error ellipse: s-maj=5.3km s-min=2.5km az=128.0*
*ISK **19** 12:04:44.2,39.06N×29.19E,h5km,MD2.5*
*DDA **19** 12:04:44.8,39.08N×29.12E,h7km,Md2.6*
ISC 19 12:04:45.0±0.9, 39.07N±0.03×29.13E±0.03, h12km±9km, n20, σ0.56/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**86**	*i* P	**Pg**	**12 04 51.0**	**+0.1**
GDZ				*i* S	**Sg**	**12 04 55.0**	**+0.2**
GDZ	**Gediz**	**0.28**	**86**	P	**Pg**	**12 04 51.0**	**+0.1**
GDZ				S	**Sg**	**12 04 55.0**	**+0.2**
DEMI	**Demirci**	**0.32**	**265**	*i* P	**Pg**	**12 04 51.6**	**0.0**
DEMI				*i* S	**Sg**	**12 04 56.0**	**0.0**
DEMI	**Demirci**	**0.32**	**265**	P	**Pg**	**12 04 51.6**	**0.0**
DEMI				S	**Sg**	**12 04 56.0**	**0.0**
TVSB	**Tavsanli**	**0.46**	**35**	*e*PG	**Pg**	**12 04 53.3**	**-0.8**
TVSB				*e*SG	**Sg**	**12 04 59.5**	**-0.8**
TVSB	**Tavsanli**	**0.46**	**35**	*e*Pg	**Pg**	**12 04 53.3**	**-0.8**
TVSB				*e*Sg	**Sg**	**12 04 59.5**	**-0.8**
KULA	**Kula-Manisa**	**0.66**	**213**	*e*PG	**Pg**	**12 04 57.7**	**-0.3**
KULA				*e*SG	**Sb**	**12 05 07.6**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**213**	*e*Pg	**Pg**	**12 04 57.7**	**-0.3**
KULA				*e*Sg	**Sb**	**12 05 07.6**	**-0.2**
MANT	**Manisa**	**0.73**	**218**	*i* P	**Pg**	**12 04 58.5**	**-0.7**
MANT				*i* S	**Sg**	**12 05 07.9**	**-0.9**
MANT	**Manisa**	**0.73**	**218**	P	**Pg**	**12 04 58.5**	**-0.7**
MANT				S	**Sg**	**12 05 07.9**	**-0.9**
BALB	**Balikesir**	**1.12**	**301**	*e*PN	**Pn**	**12 05 07.2**	**+0.7**
BALB	**Balikesir**	**1.12**	**301**	*e*Pn	**Pn**	**12 05 07.2**	**+0.7**
CAVI	**Cavuskoy**	**1.26**	**26**	*e*PN	**Pg**	**12 05 08.6**	**-0.6**
CAVI	**Cavuskoy**	**1.26**	**26**	*e*Pn	**Pg**	**12 05 08.6**	**-0.6**
IZI	**Iznik**	**1.29**	**12**	*e*PN	**Pb**	**12 05 09.8**	**+0.5**
IZI	**Iznik**	**1.29**	**12**	*e*Pn	**Pb**	**12 05 09.8**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.31**	**352**	*e*PN	**Pg**	**12 05 10.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.31**	**352**	*e*Pn	**Pg**	**12 05 10.0**	**-0.2**
ARMT	**Armutlu**	**1.51**	**352**	*e*PN	**Pb**	**12 05 13.1**	**+0.2**
ARMT	**Armutlu**	**1.51**	**352**	*e*Pn	**Pb**	**12 05 13.1**	**+0.2**

*DDA **19** 12:11:36.6,34.89N×29.14E,h18km,Md3.4*
*ATH **19** 12:11:38.5,34.97N×28.96E,h20km±4km,ML2.7/1, Error ellipse: s-maj=5.0km s-min=1.2km az=27.0*
*CSEM **19** 12:11:38.2±0.2,34.75N×29.13E,h20km,ML2.7, Error ellipse: s-maj=4.5km s-min=4.4km az=45.0*
*HLW **19** 12:11:39.2,34.64N×29.14E,h24km±6km,Md3.9,Ml3.7*
*ISK **19** 12:11:42.9,35.29N×28.96E,h13km,MD3.6*
ISC 19 12:11:36.8±1.4, 34.80N±0.03×29.17E±0.03, h23km±14km, n92, σ1.87/114, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSL	**Kastellorizon**	**1.39**	**14**	P	**Pb**	**12 12 03.0**	**+0.9**
KSL				S	**Sb**	**12 12 19.8**	**+0.4**
KSL				AML	AML	12 12 22.9	
	comp=N,338μm,0.4s						
KSL				AML	AML	12 12 23.4	
	comp=E,308μm,0.3s						
AKAS	**Kas**	**1.48**	**14**	*i* P	**Pb**	**12 12 03.6**	**0.0**
AKAS				*i* S	**Sb**	**12 12 21.6**	**-0.4**
AKAS	**Kas**	**1.48**	**14**	P	**Pb**	**12 12 03.6**	**0.0**
AKAS				S	**Sb**	**12 12 21.6**	**-0.4**
ARG	**Arkhangelos**	**1.65**	**329**	P	**Pb**	**12 12 06.0**	**-0.5**
ARG				S	**Sn**	**12 12 25.2**	**+0.3**
KARP	**Karpathos**	**1.81**	**295**	*e*PN	**Pb**	**12 12 10.0**	**+0.8**
KARP				*e*SN	**Sn**	**12 12 29.0**	**+0.3**
KARP	**Karpathos**	**1.81**	**295**	P	**Pb**	**12 12 08.4**	**-0.8**
KARP	**Karpathos**	**1.81**	**295**	*e*Pn	**Pb**	**12 12 10.0**	**+0.8**
KARP				S	**Sn**	**12 12 29.2**	**+0.5**
KARP	**Karpathos**	**1.81**	**295**	P	**Pb**	**12 12 08.4**	**-0.8**
KARP				S	**Sn**	**12 12 29.2**	**+0.5**
FETY	**Fethiye**	**1.83**	**358**	*e*PN	**Pn**	**12 12 08.1**	**+1.2**
FETY				*e*SN	**Sn**	**12 12 27.1**	**-2.4**
FETY	**Fethiye**	**1.83**	**358**	*e*Pn	**Pn**	**12 12 08.1**	**+1.2**
FETY				*e*Sn	**Sn**	**12 12 27.1**	**-2.4**
ELL	**Elmali**	**2.04**	**17**	*e*PN	**Pb**	**12 12 12.5**	**-0.7**
ELL	**Elmali**	**2.04**	**17**	*e*Pn	**Pb**	**12 12 12.5**	**-0.7**
DALY	**Dalyan (Mu¨la**	**2.06**	**348**	*e*PN	**Pb**	**12 12 11.8**	**-1.6**
DALY	**Dalyan (Mu¨la**	**2.06**	**348**	*e*Pn	**Pb**	**12 12 11.8**	**-1.6**
TURN	**Turunc**	**2.12**	**348**	*i* P	**Pn**	**12 12 12.1**	**+1.3**
GLHS	**Glhisar (BURDU**	**2.37**	**6**	*e*PN	**Pn**	**12 12 16.4**	**+2.1**
GLHS	**Glhisar (BURDU**	**2.37**	**6**	*e*Pn	**Pn**	**12 12 16.5**	**+2.1**
KORT	**Korkueli**	**2.40**	**23**	*i* P	**Pb**	**12 12 17.8**	**-1.6**
KORT				*i* S	**Sb**	**12 12 46.9**	**-1.6**
KORT	**Korkueli**	**2.40**	**23**	P	**Pb**	**12 12 17.8**	**-1.6**
KORT				S	**Sb**	**12 12 46.9**	**-1.6**
ANTB	**Antalya**	**2.42**	**29**	*e*PN	**Pb**	**12 12 19.4**	**-0.2**
ANTB	**Antalya**	**2.42**	**29**	*e*Pn	**Pb**	**12 12 19.4**	**-0.2**
NIS1	**Nisyros Isl.**	**2.42**	**319**	*e*PN	**Pn**	**12 12 16.9**	**+1.9**
NIS1	**Nisyros Isl.**	**2.42**	**319**	*e*Pn	**Pn**	**12 12 16.9**	**+1.9**
YER	**Yerkesik**	**2.44**	**343**	*e*PN	**Pn**	**12 12 17.0**	**+1.7**
YER	**Yerkesik**	**2.44**	**343**	*e*Pn	**Pn**	**12 12 17.0**	**+1.7**
GOLH	**Golhisar**	**2.46**	**7**	*i* P	**Pb**	**12 12 18.9**	**-1.4**
GOLH				*i* S	**Sb**	**12 12 47.7**	**-2.4**
GOLH	**Golhisar**	**2.46**	**7**	P	**Pb**	**12 12 18.9**	**-1.4**
BDRM	**Kayabasi**	**2.66**	**329**	*i* P	**Pn**	**12 12 19.2**	**+0.9**
BDRM				*i* S	**Sn**	**12 12 47.0**	**-2.8**
BDRM	**Kayabasi**	**2.66**	**329**	P	**Pn**	**12 12 19.2**	**+0.9**
BODT	**Bodrum**	**2.72**	**327**	*e*PN	**Pn**	**12 12 20.4**	**+1.4**
BODT	**Bodrum**	**2.72**	**327**	*e*Pn	**Pn**	**12 12 20.4**	**+1.4**
MLSB	**Milas**	**2.74**	**336**	*e*PN	**Pn**	**12 12 20.4**	**+1.2**
MLSB	**Milas**	**2.74**	**336**	*e*Pn	**Pn**	**12 12 20.5**	**+1.2**
GAZI	**Gazipasa**	**2.94**	**60**	*i* P	**Pn**	**12 12 23.6**	**+1.5**
GAZI				*i* S	**Sn**	**12 12 55.1**	**-1.7**
GAZI	**Gazipasa**	**2.94**	**60**	P	**Pn**	**12 12 23.6**	**+1.5**
GAZI				S	**Sn**	**12 12 55.1**	**-1.7**
LAST	**Lasithi**	**3.05**	**278**	P	**Pn**	**12 12 26.2**	**+2.5**
LAST				S	**Sn**	**12 12 59.3**	**-0.2**
LAST	**Lasithi**	**3.05**	**278**	P	**Pn**	**12 12 26.2**	**+2.5**
SUTC	**Sutluce-Ispart**	**3.06**	**28**	*e*PN	**Pb**	**12 12 28.2**	**-2.4**
SUTC	**Sutluce-Ispart**	**3.06**	**28**	*e*Pn	**Pb**	**12 12 28.2**	**-2.4**
LEF	**Lefka**	**3.08**	**83**	*e*PN	**Pb**	**12 12 35.1**	**+4.3**
ISP	**Isparta**	**3.21**	**20**	*e*PN	**Pn**	**12 12 29.2**	**+3.3**
ISP	**Isparta**	**3.21**	**20**	*e*Pn	**Pn**	**12 12 29.2**	**+3.3**
GCAM	**G?zelcaml?**	**3.29**	**332**	*i* P	**Pn**	**12 12 29.1**	**+2.2**
GCAM				*i* S	**Sn**	**12 13 04.7**	**-0.6**
GCAM	**G?zelcaml?**	**3.29**	**332**	P	**Pn**	**12 12 29.1**	**+2.2**
GCAM				S	**Sn**	**12 13 04.7**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**3.31**	**342**	*e*PN	**Pn**	**12 12 28.9**	**+1.6**
AYDB	**Zeytinkoy-Aydi**	**3.31**	**342**	*e*Pn	**Pn**	**12 12 28.9**	**+1.6**
SMG	**Samos**	**3.46**	**328**	P	**Pn**	**12 12 30.3**	**+1.0**
SMG	**Samos**	**3.46**	**328**	P	**Pn**	**12 12 30.3**	**+1.0**
KHL	**Karahalli**	**3.53**	**5**	*e*PN	**Pn**	**12 12 31.6**	**+1.3**
KHL	**Karahalli**	**3.53**	**5**	*e*Pn	**Pn**	**12 12 31.6**	**+1.3**
IDI	**Anoyia**	**3.54**	**279**	P	**Pn**	**12 12 32.5**	**+2.0**
IDI	**Anoyia**	**3.54**	**279**	P	**Pn**	**12 12 32.5**	**+2.0**
SIVA	**Sivas**	**3.59**	**275**	P	**Pn**	**12 12 32.6**	**+1.6**
SIVA	**Sivas**	**3.59**	**275**	P	**Pn**	**12 12 32.6**	**+1.6**
KULA	**Kula-Manisa**	**3.73**	**354**	*e*PN	**Pn**	**12 12 34.4**	**+1.4**
KULA	**Kula-Manisa**	**3.73**	**354**	*e*Pn	**Pn**	**12 12 34.4**	**+1.4**
AKKU	**Akkuyu-Mersin**	**3.83**	**68**	*e*PN	**Pb**	**12 12 43.1**	**-0.4**
KONT	**Konya--Tatoy**	**4.06**	**38**	*e*PN	Pb	12 12 42.8	-4.9
KONT	**Konya--Tatoy**	**4.06**	**38**	*e*Pn	Pb	12 12 42.8	-4.8
VAM	**Vamos**	**4.12**	**280**	P	**Pn**	**12 12 40.1**	**+1.8**
GVD	**Gavdhos**	**4.18**	**272**	P	**Pn**	**12 12 40.7**	**+1.6**
GVD	**Gavdhos**	**4.18**	**272**	P	**Pn**	**12 12 40.7**	**+1.6**
IMMV	**Iera Moni Meta**	**4.30**	**280**	P	**Pn**	**12 12 42.5**	**+1.7**
IMMV	**Iera Moni Meta**	**4.30**	**280**	P	**Pn**	**12 12 42.5**	**+1.7**
KDHN	**Kadinhani**	**4.41**	**32**	*i* P	**Pn**	**12 12 45.4**	**+3.0**
KDHN				*i* S	**Sn**	**12 13 34.0**	**+1.0**
KDHN	**Kadinhani**	**4.41**	**32**	P	**Pn**	**12 12 45.4**	**+3.0**
KDHN				S	**Sn**	**12 13 34.0**	**+1.0**
KIZT	**Kizilcal**	**4.62**	**27**	*e*PN	**Pn**	**12 12 48.4**	**+3.1**
KIZT	**Kizilcal**	**4.62**	**27**	*e*Pn	**Pn**	**12 12 48.4**	**+3.1**
TVSB	**Tavsanli**	**4.65**	**3**	*e*PN	**Pn**	**12 12 47.1**	**+1.4**
TVSB	**Tavsanli**	**4.65**	**3**	*e*Pn	**Pn**	**12 12 47.1**	**+1.4**
SLUM	**Salum**	**4.68**	**226**	P	**Pn**	**12 12 46.3**	**+0.4**
	baz=228						
SLUM				AMP		12 13 00.0	
	comp=N,160μm,0.3s,logA/T=5.7,baz=228						
SLUM				S	**Sn**	**12 13 35.7**	**-3.8**
	baz=228						
SLUM	**Salum**	**4.68**	**226**	P	**Pn**	**12 12 46.3**	**+0.4**
SLUM				S	**Sn**	**12 13 35.7**	**-3.8**
KERG	**Konya-Eregli**	**4.79**	**56**	*i* P	**Pn**	**12 12 50.3**	**+2.7**
KERG				*i* S	**Sn**	**12 13 40.7**	**-1.8**
KERG	**Konya-Eregli**	**4.79**	**56**	P	**Pn**	**12 12 50.3**	**+2.7**
KERG				S	**Sn**	**12 13 40.7**	**-1.8**
KOT	**Kottamia**	**5.35**	**154**	S	**Sn**	**12 13 51.5**	**-4.8**
	baz=153						
KOT	**Kottamia**	**5.35**	**154**	S	**Sn**	**12 13 51.5**	**-4.8**
RSH		**5.41**	**134**	P	**Pn**	**12 12 57.1**	**+1.0**
	baz=132						
RSH		**5.41**	**134**	P	**Pn**	**12 12 57.1**	**+1.0**
DID	**Didima**	**5.51**	**301**	P	**Pn**	**12 12 59.7**	**+2.3**
DID	**Didima**	**5.51**	**301**	P	**Pn**	**12 12 59.7**	**+2.3**
GLL	**Jalalah**	**5.63**	**157**	P	**Pn**	**12 12 59.6**	**+0.4**
	baz=155						
GLL	**Jalalah**	**5.63**	**157**	P	**Pn**	**12 12 59.6**	**+0.4**
HNKL	**Nakhl**	**6.33**	**139**	P	**Pn**	**12 13 09.9**	**+1.1**
	baz=137						
HNKL				AMP		12 14 00.0	
	comp=N,130μm,0.2s,logA/T=5.7,baz=137						
HNKL	**Nakhl**	**6.33**	**139**	P	**Pn**	**12 13 09.9**	**+1.1**
KLV	**Kalavryta, Ach**	**6.52**	**302**	P	**Pn**	**12 13 13.7**	**+2.4**
KLV	**Kalavryta, Ach**	**6.52**	**302**	P	**Pn**	**12 13 13.7**	**+2.4**
HBST	**Basata**	**7.30**	**138**	P	**Pn**	**12 13 23.2**	**+1.2**
	baz=137						
HBST	**Basata**	**7.30**	**138**	P	**Pn**	**12 13 23.2**	**+1.2**
TR2	**Tor 2**	**7.48**	**147**	P	**Pn**	**12 13 25.7**	**+1.2**
	baz=146						
TR2	**Tor 2**	**7.48**	**147**	P	**Pn**	**12 13 25.7**	**+1.2**
HDHB	**Dhahab**	**7.63**	**141**	P	**Pn**	**12 13 27.8**	**+1.3**
	baz=140						
HDHB	**Dhahab**	**7.63**	**141**	P	**Pn**	**12 13 27.8**	**+1.3**

*ISCJB **19** 12:26:16.9±0.4,57.22N±0.04×153.00W±0.04,h65km±6km, mb3.1/1, Error ellipse: s-maj=6.3km s-min=3.6km az=162.2*
*NEIC **19** 12:26:19.6,57.25N×153.11W,h50km,ML3.3(AEIC), After AEIC.*
*IDC **19** 12:26:24.9±4.5,57.38N×151.26W,h0km,mb3.3/1, mb1 3.6/3,mb1mx3.3/45,mbtmp3.2/3,ML3.3/2, Error ellipse: s-maj=80.6km s-min=22.4km az=80.0*
ISC 19 12:26:18.4±1.3, 57.26N±0.07×153.03W±0.05, h56km±10km, n86, σ0.90/95, Kodiak Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHAK	**Old Harbor**	**0.14**	**254**	P	**Pn**	**12 12 27.1**	**+0.1**
OHAK				S	**Sn**	**12 12 36.2**	**-0.8**
KDAK	**Kodiak Island**	**0.57**	**25**	P	**Pn**	**12 12 31.4**	**+0.6**
KDAK				S	**Sn**	**12 12 40.4**	**+0.5**
KABR	**Katmai Barrier**	**1.36**	**311**	P	**Pn**	**12 12 40.9**	**-0.2**
KAWH	**Katmai**	**1.47**	**321**	P	**Pn**	**12 12 42.7**	**+0.1**
KAKN	**Katmai Knife C**	**1.50**	**315**	P	**Pn**	**12 12 43.3**	**+0.2**
KAKN				S	**Sn**	**12 12 01.4**	**-0.2**
KAPH	**Katmai Pasha**	**1.51**	**333**	P	**Pn**	**12 12 43.7**	**+0.6**
KAPH				S	**Sn**	**12 12 02.4**	**+0.7**
FOPK	**Fourpeaked Vol**	**1.52**	**351**	P	**Pn**	**12 12 43.6**	**+0.4**
ACHA	**Angle Creek He**	**1.55**	**309**	P	**Pn**	**12 12 44.4**	**+0.6**
ACHA				S	**Sn**	**12 12 02.1**	**-0.7**
FOSS	**Fourpeaked Sta**	**1.58**	**347**	P	**Pn**	**12 12 44.4**	**+0.4**
KVTA	**Katmai Vly 10**	**1.65**	**314**	P	**Pn**	**12 12 45.2**	**+0.2**
CDD	**Cape Douglas**	**1.70**	**349**	P	**Pn**	**12 12 46.6**	**+0.9**
KAHC	**Katmai Hardscr**	**1.74**	**324**	P	**Pn**	**12 12 46.7**	**+0.3**
PLK3	**Peulik 3**	**1.80**	**285**	P	**Pn**	**12 12 47.0**	**0.0**
PLK3				S	**Sn**	**12 12 08.5**	**-0.2**
PLK4	**Peulik 4**	**1.83**	**283**	P	**Pn**	**12 12 47.4**	**-0.1**
PLK2	**Peulik 2**	**1.85**	**287**	P	**Pn**	**12 12 47.8**	**+0.2**
KELA	**Mount Kelaz**	**1.87**	**310**	P	**Pn**	**12 12 48.2**	**+0.2**
PLK1	**Peulik 1**	**2.00**	**287**	P	**Pn**	**12 12 49.9**	**+0.1**
MCNL	**McNeil River**	**2.05**	**341**	P	**Pn**	**12 12 50.8**	**+0.4**
AUI	**Augustine Isla**	**2.09**	**354**	P	**Pn**	**12 12 52.1**	**+1.2**
AUI				S	**Sn**	**12 12 15.7**	**-0.1**
PLBL	**Peulik Blue Cr**	**2.09**	**284**	P	**Pn**	**12 12 51.2**	**+0.2**
AUH	**Augustine H**	**2.12**	**354**	P	**Pn**	**12 12 52.7**	**+1.3**
CNPM	**China Poot**	**2.46**	**22**	P	**Pn**	**12 12 57.1**	**+1.1**
HOM	**Homer**	**2.51**	**16**	P	**Pn**	**12 12 58.0**	**+1.3**
HOM				S	**Sn**	**12 12 27.6**	**+0.7**
ILS	**Iliamna Low So**	**2.70**	**360**	P	**Pn**	**12 12 27.0**	**+0.9**
BRLK	**Bradley Lake**	**2.75**	**23**	P	**Pn**	**12 12 00.5**	**+0.5**
ANNE	**Aniakchak Nort**	**2.77**	**265**	P	**Pn**	**12 12 59.9**	**-0.3**
ANPK	**Aniakchak Peak**	**2.81**	**264**	P	**Pn**	**12 12 00.7**	**-0.3**
ANPB	**Aniakchak Plen**	**2.91**	**263**	P	**Pn**	**12 12 02.0**	**-0.2**
CHGN	**Chignik**	**3.11**	**254**	P	**Pn**	**12 12 04.4**	**-0.5**
RDWB	**Redoubt West**	**3.24**	**2**	P	**Pn**	**12 12 07.4**	**+0.7**
RDJH	**Redoubt Jeurge**	**3.34**	**2**	P	**Pn**	**12 12 09.5**	**+1.4**
VNHG	**Veniaminof 1**	**3.54**	**255**	P	**Pn**	**12 12 11.2**	**+0.4**
SLKM	**Skilak Lake**	**3.57**	**23**	P	**Pn**	**12 12 11.5**	**+0.3**
CKL	**Chakachamna La**	**3.96**	**5**	P	**Pn**	**12 12 18.3**	**+1.7**
SVW2	**Sparrevohn**	**4.06**	**342**	P	**Pn**	**12 12 18.3**	**+0.4**
MID	**Middleton Isla**	**4.14**	**56**	P	**Pn**	**12 12 19.9**	**+0.9**
RC01	**Rabbit Creek A**	**4.20**	**22**	P	**Pn**	**12 12 20.3**	**+0.5**
STLK	**Strandline Lak**	**4.29**	**8**	P	**Pn**	**12 12 21.7**	**+0.6**
PWL	**Port Wells**	**4.35**	**32**	P	**Pn**	**12 12 22.1**	**+0.3**
SDPT	**Sand Point**	**4.57**	**248**	P	**Pn**	**12 12 24.1**	**-0.8**
HIN	**Hinchinbrook I**	**4.62**	**44**	P	**Pn**	**12 12 26.3**	**+0.6**
KNK	**Knik Glacier**	**4.78**	**27**	P	**Pn**	**12 12 28.0**	**+0.3**
PMR	**Palmer**	**4.78**	**23**	P	**Pn**	**12 12 28.0**	**+0.3**
SKT	**Skwentna**	**4.79**	**9**	P	**Pn**	**12 12 28.7**	**+0.8**
FID	**Port Fidalgo**	**4.87**	**41**	P	**Pn**	**12 12 28.5**	**-0.5**
GHO	**Glory Hole Cre**	**4.98**	**23**	P	**Pn**	**12 12 30.5**	**-0.1**
EYAK	**Cordova Ski Ar**	**5.01**	**46**	P	**Pn**	**12 12 31.5**	**+0.6**
JPK	**Jack Peak**	**5.04**	**38**	P	**Pn**	**12 12 31.5**	**+0.2**
SML	**Sawmill**	**5.15**	**26**	P	**Pn**	**12 12 33.2**	**+0.4**
VLZ	**Valdez**	**5.19**	**39**	P	**Pn**	**12 12 33.9**	**+0.6**
RAGM	**Ragged Mountai**	**5.35**	**51**	P	**Pn**	**12 12 36.5**	**+0.9**
DIV	**Divide**	**5.38**	**41**	P	**Pn**	**12 12 36.5**	**+0.5**
SCM	**Sheep Creek Mo**	**5.42**	**30**	P	**Pn**	**12 12 37.5**	**+0.9**
DTNA	**Dutton South F**	**5.56**	**252**	P	**Pn**	**12 12 38.9**	**+0.3**
NICHA	**Nichawak Mount**	**5.58**	**54**	P	**Pn**	**12 12 39.5**	**+0.8**
KLU	**Klutina**	**5.58**	**38**	P	**Pn**	**12 12 39.5**	**+0.7**
DT1	**Dutton Round H**	**5.60**	**251**	P	**Pn**	**12 12 39.8**	**+0.9**
BMRM	**Bremner River**	**5.71**	**46**	P	**Pn**	**12 12 41.0**	**+0.5**
BERG	**Berg Lake**	**5.77**	**53**	P	**Pn**	**12 12 41.9**	**+0.5**
TT01	**Tatalina**	**5.86**	**346**	P	**Pn**	**12 12 42.8**	**+0.3**
KHIT	**Khitrov Hills**	**5.99**	**54**	P	**Pn**	**12 12 45.1**	**+0.6**
KULT	**Kultieth River**	**6.14**	**57**	P	**Pn**	**12 12 47.3**	**+0.8**
CRQM	**Cirque**	**6.19**	**51**	P	**Pn**	**12 12 48.5**	**+1.2**
BARK	**Barkley Ridge**	**6.31**	**56**	P	**Pn**	**12 12 49.5**	**+0.7**
VRDI	**Verde Repeater**	**6.32**	**47**	P	**Pn**	**12 12 49.6**	**+0.6**
TRF	**Thorofare Moun**	**6.36**	**11**	P	**Pn**	**12 12 49.9**	**+0.4**
ISLE	**Juniper Island**	**6.47**	**54**	P	**Pn**	**12 12 51.9**	**+0.9**
MESA	**MESA**	**6.47**	**59**	P	**Pn**	**12 12 51.8**	**+0.7**
BAGL	**Bagley Icefiel**	**6.53**	**56**	P	**Pn**	**12 12 52.4**	**+0.8**
KIAG	**Kiagna River**	**6.61**	**52**	P	**Pn**	**12 12 53.5**	**+0.5**
BALM	**Baldy**	**6.67**	**51**	P	**Pn**	**12 12 54.5**	**+0.8**
PTPK	**Patty Peak**	**6.70**	**50**	P	**Pn**	**12 12 55.0**	**+0.8**
GRNC	**Granite Creek**	**6.78**	**54**	P	**Pn**	**12 12 56.2**	**+0.9**
BPAW	**Bear Paw Mtn.**	**6.93**	**7**	*e*Pn	**Pn**	**12 12 59.2**	**+1.9**
	0.6nm,0.6s						
BPAW				*e*Sn	**Sn**	**12 29 14.6**	**0.0**
TABL	**Table Mountain**	**6.94**	**58**	P	**Pn**	**12 12 58.0**	**+0.5**
BARN	**Barnard Glacie**	**6.97**	**52**	P	**Pn**	**12 12 58.8**	**+0.9**
CTGM	**Chitina Glacie**	**7.07**	**53**	P	**Pn**	**12 12 00.5**	**+1.3**
LOGN	**Logan Glacier**	**7.16**	**55**	P	**Pn**	**12 12 01.5**	**+1.1**
PCA	**Pinnacle**	**7.24**	**62**	P	**Pn**	**12 12 02.5**	**+1.0**
DHAK	**Deception Hill**	**8.04**	**71**	P	**Pn**	**12 12 12.2**	**-0.2**
ILAR	**Eielson Array**	**8.10**	**19**	Pn	**Pn**	**12 12 13.4**	**+0.2**
	0.3nm,0.3s,baz=203,slow=14,SNR=14						
ILAR				Sn	**Sn**	**12 29 37.8**	**-5.3**
	0.8nm,0.3s,baz=200,slow=24,

ellipse: s-maj=13.4km s-min=11.4km az=19.7
MOS Felt (II-III) at Sochi.

ISC 19 12:39:17.3±0.9, 43°69N±0°06×39°77E±0°04, h10km, n30, σ1§79/32, 3C-3D, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SOC	**Sochi**	**0.11**	**198**	*c iPG*	**Pg**	**12 39 18.9**	**-1.2**
SOC				pmax	pmax		
	comp=Z,364nm,0.6s						
SOC	**Sochi**	**0.11**	**198**	*i* Pg	**Pg**	**12 39 18.9**	**-1.2**
	comp=Z,364nm,0.6s						
RPOR	**Krasnaya Polya**	**0.36**	**88**	*i* PG	Pg	12 39 20.1	-4.4
RPOR	**Krasnaya Polya**	**0.36**	**88**	*i* Pg	Pg	12 39 20.1	-4.4
CHVG	**Ch'k'valeri**	**1.95**	**119**	P	**Pn**	**12 39 51.3**	**+0.8**
CHVG				S	**Sn**	**12 40 16.8**	**+1.7**
ANN	**Anapa**	**2.01**	**304**	*e*PN	**Pn**	**12 39 52.4**	**+1.1**
ANN				*e*		12 39 53.4	
ANN				pmax	pmax		
	comp=Z,18nm,0.6s						
ANN	**Anapa**	**2.01**	**304**	*e*Pn	**Pn**	**12 39 52.4**	**+1.1**
	comp=Z,18nm,0.6s						
ANN	**Anapa**	**2.01**	**304**	*e*P*	**Pn**	**12 39 53.4**	**+2.1**
KIV	**Kislovodsk**	**2.13**	**82**	*de*PN	**Pn**	**12 39 53.0**	**0.0**
KIV				pmax	pmax		
	comp=Z,145nm,0.6s						
KIV	**Kislovodsk**	**2.13**	**82**	*e*Pn	**Pn**	**12 39 53.0**	**0.0**
	comp=Z,145nm,0.6s						
KVAR	**Kislovodsk Arr**	**2.14**	**82**	Pn	Pn	12 39 50.7	-2.4
	baz=237,slow=7.7,SNR=12						
KVAR				Sn	**Sn**	**12 40 17.8**	**-1.9**
	baz=4.9,slow=4.8,SNR=12						
NEY	**Neytrino**	**2.20**	**101**	*e*PN	**Pn**	**12 39 54.5**	**+0.5**
NEY	**Neytrino**	**2.20**	**101**	*e*Pn	**Pn**	**12 39 54.5**	**+0.5**
KBZ	**Khabaz**	**2.27**	**88**	Pn	**Pn**	**12 39 54.1**	**-0.7**
	comp=Z,1.6nm,0.3s,baz=273,slow=9.4,SNR=14						
KBZ				Sn	**Sn**	**12 40 21.9**	**-0.9**
	comp=Z,2.5nm,0.3s,baz=233,slow=9.9,SNR=5.6						
ONI	**Oni**	**2.91**	**111**	P	**Pn**	**12 40 03.8**	**-0.1**
ONI				S	**Sn**	**12 40 43.5**	**+4.6**
ONI	**Oni**	**2.91**	**111**	PN	**Pn**	**12 40 03.7**	**-0.1**
ONI				S	**Sn**	**12 40 43.5**	**+4.6**
ONI	**Oni**	**2.91**	**111**	Pn	**Pn**	**12 40 03.7**	**-0.1**
ONI				Sn	**Sn**	**12 40 43.5**	**+4.6**
ARTV	**Artvin**	**2.97**	**147**	*i* P	**Pn**	**12 40 04.2**	**-0.6**
DAGI	**Agillar**	**3.06**	**148**	*i* P	Pn	12 40 03.9	-1.9
KELT	**Kelkit**	**3.56**	**186**	*i* P	**Pn**	**12 40 12.2**	**-0.5**
SUSE	**Susehri**	**3.67**	**199**	*i* P	**Pn**	**12 40 13.6**	**-0.6**
GROC	**Groznyy**	**4.42**	**94**	*e*PN	**Pn**	**12 40 23.5**	**-0.9**
GROC	**Groznyy**	**4.42**	**94**	*e*Pn	**Pn**	**12 40 23.5**	**-0.9**
GNBR	**Gunib**	**5.43**	**101**	*e*P	**Pn**	**12 40 39.4**	**+1.0**
GNBR	**Gunib**	**5.43**	**101**	*e*P	**Pn**	**12 40 39.4**	**+1.0**
BRTR	**Keskin Array B**	**6.06**	**231**	Pn	**Pn**	**12 40 48.2**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=39,slow=14,SNR=2.6						
ARU	**Arti**	**17.48**	**37**	*e*P	**Pn**	**12 43 20.8**	**-0.1**
ARU				pmax	pmax		
	comp=Z,3.0nm,1.1s						
ARU	**Arti**	**17.48**	**37**	*e*P	**Pn**	**12 43 20.8**	**-0.1**
	comp=Z,3.0nm,1.1s						
FINES	**FINESS Array B**	**19.56**	**340**	P	**P**	**12 43 43.8**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=146,slow=12,SNR=7.3						
HFS	**Hagfors**	**22.77**	**325**	P	**P**	**12 44 17.9**	**-1.7**
	comp=Z,0.9nm,0.5s,baz=118,slow=15,SNR=4.3						

IDC 19 12:45:43.6±2.8, 55°40N×86°09E, h0km, mb1 3.0/3, mb1mx2.9/43, mbtmp3.0/3, ML2.8/3, Error ellipse: s-maj=25.4km s-min=17.8km az=57.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.63**	**207**	*i*		12 56 47.4	
	baz=23,slow=312,SNR=47						
ZALV	**Zalesovo Beam**	**1.63**	**207**	Pg	Pn	12 46 11.4	-2.1
	2.4nm,0.3s,baz=28,slow=15,SNR=30						
ZALV				Lg	Lg	12 46 36.0	
	2.4nm,0.3s,baz=29,slow=29,SNR=12						
KURBB	**Kurchatov Arra**	**6.61**	**227**	Pn	Pn	12 47 22.3	+0.4
	0.1nm,0.3s,baz=43,slow=14,SNR=4.1						
KURBB				Lg	Lg	12 49 13.7	
	0.1nm,0.3s,baz=39,slow=28,SNR=3.9						
MKAR	**Makanchi Array**	**8.94**	**197**	Pn	Pn	12 47 54.2	+0.2
	0.1nm,0.3s,baz=21,slow=12,SNR=2.7						
BVAR	**Borovoye Array**	**9.51**	**262**	Pn	Pn	12 48 00.5	-1.1
	0.4nm,0.3s,baz=74,slow=13,SNR=5.4						

MEX 19 12:46:48.8±0.5, 14°49N×91°24W, h20km, MD3.6, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.98**	**334**	*e*P	Pn	12 47 19.0	-2.3
CCIG				*i* S	Sn	12 47 41.3	-4.4

IDC 19 12:49:23.5±3.0, 53°53N×87°16E, h0km, mb1 2.7/2, mb1mx2.7/36, mbtmp2.7/2, ML2.3/2, Error ellipse: s-maj=29.8km s-min=17.6km az=69.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.45**	**288**	*i*		12 58 20.5	
	baz=104,slow=318,SNR=4.2						
ZALV	**Zalesovo Beam**	**1.45**	**288**	Pg	Pn	12 49 49.6	-1.4
	0.6nm,0.3s,baz=110,slow=12,SNR=7.1						
ZALV				Lg	Lg	12 50 09.4	
	0.5nm,0.3s,baz=109,slow=29,SNR=3.7						
KURBB	**Kurchatov Arra**	**6.06**	**245**	Pn	Pn	12 50 55.7	+1.3
	0.1nm,0.3s,baz=61,slow=14,SNR=3.7						
MKAR	**Makanchi Array**	**7.43**	**207**	Pn	Pn	12 51 14.0	+0.8
	0.1nm,0.3s,baz=17,slow=14,SNR=2.4						

IDC 19 12:53:33.6±2.3, 23°85S×179°54W, h483km±24km, mb3.3/5, mb1 3.5/7, mb1mx3.2/21, mbtmp4.2/7, Error ellipse: s-maj=29.5km s-min=20.7km az=140.0
ISCJB 19 12:53:34.0±0.8, 23°83S±0°10×179°5W±0°2, h512km, mb3.9/5, Error ellipse: s-maj=21.6km s-min=11.5km az=20.4

ISC 19 12:53:34.9±0.8, 24°0S±0°1×179°3W±0°2, h512km, n10, σ1§47/14, mb3.9/5, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**12.29**	**37**	P	**P**	**12 56 15.2**	**-1.5**
	0.8nm,0.3s,baz=253,slow=19,SNR=2.1						
URZ	**Urewera**	**14.56**	**191**	P	**P**	**12 56 40.9**	**+0.8**
	1.9nm,0.3s,baz=21,slow=14,SNR=11						
URZ				S	**S**	**12 59 11.0**	**-1.8**
	0.4nm,0.3s,baz=41,slow=19,SNR=7.3						
RPZ	**Rata Peaks**	**21.22**	**200**	P	**P**	**12 57 45.1**	**+1.4**
	4.6nm,0.7s,baz=353,slow=19,SNR=4.1						
STKA	**Stephens Creek**	**35.27**	**248**	P	**P**	**12 59 45.8**	**-0.5**
	1.5nm,0.8s,baz=85,slow=7.1,SNR=5.4						
ASAR	**Alice Springs**	**42.63**	**261**	P	**P**	**13 00 45.4**	**-0.7**
	1.2nm,0.3s,baz=98,slow=7.1,SNR=55						
ASAR				PcP	**PcP**	**13 02 26.2**	**-0.4**
	0.5nm,0.9s,baz=91,slow=6.8,SNR=3.5						
ASAR				ScP	**ScP**	**13 05 31.8**	**+3.1**
	0.4nm,0.7s,baz=108,slow=4.4,SNR=5.9						
WRA	**Warramunga Arr**	**43.02**	**266**	P	**P**	**13 00 47.9**	**-1.3**
	5.8nm,0.6s,baz=97,slow=8.4,SNR=138						
WRA				PcP	**PcP**	**13 02 27.7**	**-0.3**
	0.5nm,0.7s,baz=99,slow=2.9,SNR=4.0						
PDAR	**Pinedale Array**	**92.32**	**44**	P	**P**	**13 05 51.1**	**+0.7**
	0.2nm,0.5s,baz=258,slow=4.5,SNR=2.3						
HFS	**Hagfors**	**142.74**	**349**	PKP	**PKPdf**	**13 12 09.0**	**-0.1**
	2.5nm,0.4s,baz=64,slow=3.4,SNR=20						
AKASG	**Malin Array Be**	**145.37**	**328**	PKPbc	**PKPab**	**13 12 17.1**	**+0.9**
	0.8nm,0.3s,baz=46,slow=4.4,SNR=5.0						
BRTR	**Keskin Array B**	**148.12**	**307**	PKPbc	**PKPbc**	**13 12 24.4**	**+1.3**
	0.6nm,0.6s,baz=104,slow=4.0,SNR=3.1						

NIED 19 13:08:00, 38°00N×143°20E, h11km, Mw4.5 Best double couple: M₀6.13000×10¹⁵ NP1:φ=116.00000°, δ40.00000°, λ106.00000°. NP2:φ=275.00000°, δ52.00000°, λ77.00000°.
IDC 19 13:08:28.7±0.4, 38°00N×143°33E, h0km, mb4.5/30, mb1 4.6/36, mb1mx4.6/47, mbtmp4.5/36, ML3.5/5, MS3.6/22, Ms1 3.6/22, ms1mx3.4/39, Error ellipse: s-maj=13.6km s-min=10.4km az=98.0

ISCJB 19 13:08:30.0±0.9, 37°98N±0°03×143°25E±0°02, h18km±6km, mb4.7/160, MS4.0/37, Error ellipse: s-maj=4.6km s-min=3.0km az=160.8
BJI 19 13:08:30.3, 38°06N×143°31E, h28km, mb4.7/64, mB4.9/49, Ms4.5/47, Ms7 4.2/50
NEIC 19 13:08:31.7±1.6, 37°99N×143°25E, h20km±10km, mb4.8/88, Error ellipse: s-maj=4.4km s-min=2.9km az=137.0
NEIC Recorded [1 JMA] in Fukushima and Miyagi.
JMA 19 13:08:32.6±0.2, 38°09N×143°20E, h41km, M4.6
JMA Felt I J1.
MOS 19 13:08:32.6±0.9, 38°09N×143°20E, h33km, mb4.9/55, Error ellipse: s-maj=7.6km s-min=5.2km az=107.9

ISC 19 13:08:32.8±0.5, 38°07N±0°04×143°28E±0°04, h26km±3km, h25km:pP-P, n347, σ1§27/377, mb4.7/166, MS4.0/37, 18C-12D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.57**	**285**	P	**Pn**	**13 08 58.0**	**-1.0**
JIO				*e*S	**Sn**	**13 09 16.0**	**-2.5**
OFUJ	**Ofunato**	**1.62**	**309**	P	**Pn**	**13 08 58.7**	**-1.0**
OFUJ				*e*S	**Sn**	**13 09 17.7**	**-2.0**
JMK	**Ichinoseki**	**1.84**	**299**	P	**Pn**	**13 09 02.0**	**-0.8**
JMK				*e*S	**Sn**	**13 09 23.6**	**-1.6**
JMM	**Marumori**	**1.98**	**265**	P	**Pn**	**13 09 03.4**	**-1.2**
JMM				*e*S	**Sn**	**13 09 26.0**	**-2.5**
JFK	**Kawauchi**	**2.03**	**251**	P	**Pn**	**13 09 03.5**	**-1.9**
JFK				S	**Sn**	**13 09 26.5**	**-3.5**
JOU	**Okura**	**2.08**	**279**	P	**Pn**	**13 09 05.7**	**-0.4**
JOM	**Ohasama**	**2.10**	**313**	P	**Pn**	**13 09 05.8**	**-0.4**
JOM				*e*S	**Sn**	**13 09 30.5**	**-1.0**
JFT	**Otama**	**2.40**	**258**	P	**Pn**	**13 09 10.0**	**-0.4**
JFT				*e*S	**Sn**	**13 09 37.5**	**-1.4**
JYK	**Kaneyama**	**2.45**	**291**	P	**Pn**	**13 09 10.8**	**-0.3**
JRG	**Rokugo**	**2.46**	**303**	P	**Pn**	**13 09 11.3**	**0.0**
JANG	**Nango**	**2.68**	**330**	P	**Pn**	**13 09 13.8**	**-0.5**
JAH	**Hinai**	**2.96**	**317**	P	**Pn**	**13 09 17.8**	**-0.2**
JNS	**Sasagawa**	**3.15**	**267**	P	**Pn**	**13 09 20.6**	**-0.1**
JAW	**Awa shima**	**3.20**	**278**	P	**Pn**	**13 09 21.5**	**+0.1**
JAG	**Ashikaga**	**3.47**	**243**	P	**Pn**	**13 09 24.0**	**-1.1**
JOT	**Ohata**	**3.73**	**333**	P	**Pn**	**13 09 29.1**	**+0.4**
ERM	**Erimo**	**3.94**	**359**	*c iP*	**Pn**	**13 09 30.2**	**-1.4**
ERM				pmax	pmax		
	comp=Z,45nm,0.5s						
ERM	**Erimo**	**3.94**	**359**	*e*Pn	**Pn**	**13 09 30.2**	**-1.4**
MJAR	**Matsushiro Arr**	**4.32**	**251**	Pn	**Pn**	**13 09 36.4**	**-0.5**
	comp=Z,14nm,0.3s,baz=88,slow=15,SNR=79						
MJAR				Sn	**Sn**	**13 10 26.8**	**+0.4**
	comp=Z,27nm,0.3s,baz=93,slow=28,SNR=5.8						
MJAR				LR	LR	13 11 32.0	
	comp=Z,573nm,19.1s,baz=85,slow=42						
MAJO	**Matsushiro**	**4.32**	**251**	*d iP*	**Pn**	**13 09 38.0**	**+1.1**
MAJO	**Matsushiro**	**4.32**	**251**	*e*Pn	**Pn**	**13 09 37.0**	**+0.1**
MAT	**Matsushiro**	**4.32**	**251**	P	**Pn**	**13 09 36.8**	**-0.1**
MAT				S	**Sn**	**13 10 26.1**	**-0.4**
MJB9	**Matsu-Tunnel**	**4.33**	**251**	*e*Pn	**Pn**	**13 09 37.1**	**+0.1**
JHJ2	**Mitsune**	**5.69**	**211**	*e*Pn	Pn	13 09 52.8	-2.9
JHJ2				*e*Sn	Sn	13 10 55.1	-5.1
JHJ	**Hachijo jima 2**	**5.70**	**211**	Pn	Pn	13 09 52.9	-2.9
	comp=Z,123nm,0.3s,baz=323,slow=16,SNR=19						
JHJ				Sn	Sn	13 10 51.6	-8.7
	comp=Z,368nm,0.3s,baz=107,slow=19,SNR=8.7						
INU	**Inuyama**	**5.72**	**244**	*e*Pn	**Pn**	**13 09 56.6**	**+0.5**
ASAJ	**Asahikawa**	**6.07**	**355**	Pn	**Pn**	**13 10 00.5**	**-0.3**
	baz=180,slow=8.0						
YUK	**Yuzh-Kuril'sk**	**6.27**	**17**	*i* P	**Pn**	**13 10 01.4**	**-2.2**
KUR	**Kuril'sk**	**7.94**	**24**	*d iP*	**Pn**	**13 10 24.3**	**-2.1**
KUR				*i* S	**Sn**	**13 11 49.8**	**-5.5**
KUR				pmax	pmax		
	comp=Z,58nm,0.6s						
KUR				pmax	pmax		
	comp=N,30nm,0.3s						
KUR				pmax	pmax		
	comp=E,20nm,0.3s						
KUR				pmax	pmax		
	comp=Z,230nm,3.1s						
KUR				smax	smax		
	comp=N,136nm,0.4s						
KUR				smax	smax		
	comp=E,216nm,0.4s						
KUR				smax	smax		
	comp=E,503nm,3.7s						
KUR				smax	smax		
	comp=N,453nm,3.6s						
YSS	**Yuzh-Sakhalins**	**8.89**	**358**	*e*P	**Pn**	**13 10 37.8**	**-1.7**
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
YSS				MLR	MLR		
	comp=Z,600nm,15.0s						
YSS				MLR	MLR		
	comp=N,400nm,11.0s						
YSS				MLR	MLR		
	comp=E,500nm,14.0s						
YSS	**Yuzh-Sakhalins**	**8.89**	**358**	*e*Pn	**Pn**	**13 10 35.8**	**-3.7**
VLA	**Vladivostok**	**10.03**	**304**	*e*P	**Pn**	**13 10 58.7**	**+3.6**
USRK	**Ussuriysk Ar.**	**10.49**	**309**	Pn	**Pn**	**13 11 01.2**	**-0.2**
	comp=E,1.0nm,0.3s,baz=123,slow=15,SNR=13						
USRK				LR	LR	13 15 02.4	
	comp=E,627nm,18.5s,baz=123,slow=37						
JNU	**Nakatsue**	**11.24**	**248**	Pn	**Pn**	**13 11 10.3**	**-1.5**
	comp=E,0.3nm,0.3s,baz=101,slow=5.2,SNR=3.5						
MDJ	**Mudanjiang**	**12.19**	**307**	P	**Pn**	**13 11 24.3**	**-0.3**
MDJ				S	**Sn**	**13 13 38.8**	**-0.8**
MDJ				PcP	**PcP**	**13 17 05.8**	**-1.2**
MDJ				ScP	**ScP**	**13 20 39.8**	**+1.7**
MDJ				ScS	**ScS**	**13 24 12.5**	**-1.4**
MDJ				pmax	pmax		
	comp=E,3.0nm,0.5s						
MDJ				pmax	pmax		
	comp=E,55nm,5.4s						
MDJ				LR	LR		
	comp=E,410nm,13.1s						
MDJ				LR	LR		
	comp=E,370nm,15.1s						
MDJ				LR	LR		
	comp=E,570nm,16.7s						
MDJ	**Mudanjiang**	**12.19**	**307**	*e*Pn	**Pn**	**13 11 24.8**	**+0.2**
TYV	**Tymovskoe**	**12.80**	**358**	*e*P	**Pn**	**13 11 30.5**	**-2.5**
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
TYV				MLR	MLR		
	comp=N,1μm,14.0s						
TYV				MLR	MLR		
	comp=E,1μm,16.0s						
KLR	**Kul'dur**	**13.92**	**327**	Pn	**Pn**	**13 11 46.9**	**-1.3**
	comp=E,0.6nm,0.3s,baz=131,slow=13,SNR=24						
KLR	**Kul'dur**	**13.92**	**327**	*d iP*	**Pn**	**13 11 46.4**	**-1.8**
CN2	**Changchun**	**14.64**	**299**	*e*P	**Pn**	**13 11 58.9**	**+0.8**
CN2				LR	LR		
	comp=E,400nm,18.0s						
SNY	**Shenyang**	**15.57**	**290**	⇑P	**P**	**13 12 13.9**	**-0.6**
SNY				pmax	pmax		
	comp=E,21nm,0.6s						
SNY				pmax	pmax		
	comp=E,550nm,5.3s						
SNY				LR	LR		
	comp=E,530nm,5.5s						
SNY				LR	LR		
	comp=E,980nm,14.3s						
SNY				LR	LR		
	comp=E,1μm,14.3s						
DL2	**Dalian**	**16.98**	**280**	P	**Pn**	**13 12 28.0**	**-0.4**
DL2				*e*S	**Sn**	**13 15 37.3**	**+1.1**
DL2				pmax	pmax		
	comp=E,61nm,1.1s						
DL2				LR	LR		
	comp=E,460nm,13.3s						
DL2				LR	LR		
	comp=E,720nm,15.1s						
DL2				LR	LR		
	comp=E,530nm,14.5s						
PEA0	**Petropavlovsk-**	**18.06**	**29**	*e*P	**P**	**13 12 42.2**	**+0.3**
PETK	**Petropavlovsk-**	**18.06**	**29**	P	**Pn**	**13 12 39.4**	**-2.3**
	comp=E,0.2nm,0.3s,baz=207,slow=9.1,SNR=5.3						
PETK				LR	LR	13 19 31.3	
	comp=E,79nm,21.0s,baz=212,slow=37						
PET	**Petropavlovsk**	**18.37**	**31**	*e*P	**P**	**13 12 47.3**	**+2.0**
PET				*e*S	**Sn**	**13 16 09.1**	**-0.6**
PET				pmax	pmax		
	comp=Z,30nm,1.3s						
PET				MLR	MLR		
	comp=Z,200nm,17.0s						
PET				MLR	MLR		
	comp=Z,200nm,19.0s						
HIA	**Hailar**	**20.29**	**311**	*e*P	**P**	**13 13 07.1**	**+0.6**
HIA				pmax	pmax		
	comp=Z,16nm,0.9s						
HIA	**Hailar**	**20.29**	**311**	*e*P	**P**	**13 13 07.0**	**+0.6**
	comp=Z,16nm,0.9s						
TIA	**Tai'an**	**20.92**	**273**	⇓P	**P**	**13 13 10.9**	**-2.5**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.7s						
BJI	**Beijing**	**21.12**	**284**	P	**P**	**13 13 12.8**	**-2.6**
BJI				S	**S**	**13 17 05.9**	**-3.1**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.8s						
BJI				LR	LR		
	comp=Z,380nm,5.5s						
BJI				LR	LR		
	comp=Z,500nm,17.1s						
BJI				LR	LR		
	comp=Z,230nm,14.7s						
BJT	**Baijiatuau**	**21.12**	**284**	*e*P	**P**	**13 13 14.6**	**-0.9**
BJT				pmax	pmax		
	comp=Z,20nm,0.8s						
BJT	**Baijiatuau**	**21.12**	**284**	*e*P	**P**	**13 13 14.6**	**-0.9**
	comp=Z,20nm,0.8s						
MA2	**Magadan**	**22.05**	**10**	P	**P**	**13 13 23.6**	**-1.7**
	comp=Z,8.1nm,0.7s,baz=198,slow=19,SNR=3.3						
CLNS	**Chul'man**	**22.39**	**333**	*e*P	**P**	**13 13 28.9**	**-0.1**
CLNS				pmax	pmax		
	comp=Z,13nm,0.9s						
CLNS				pmax	pmax		
	comp=N,7.0nm,1.0s						
CLNS				pmax	pmax		
	comp=E,3.0nm,0.7s						
SSLB	**Suanglung**	**23.78**	**240**	*e*P	**P**	**13 13 41.3**	**-2.1**
	comp=E,21nm,1.0s						
GUMO	**Guam**	**24.42**	**176**	LR	LR	13 21 47.6	
	comp=E,75nm,21.4s,baz=348,slow=33						
HHC	**Hu-ho-hao-te**	**24.58**	**286**	*e*P	**P**	**13 13 52.5**	**+1.8**
HHC				S	**S**	**13 18 14.4**	**+4.2**
HHC				SS	**SnSn**	**13 18 58.3**	**+2.2**
HHC				pmax	pmax		
	comp=E,28nm,0.7s						
HHC				pmax	pmax		
	comp=E,140nm,4.1s						
HHC				LR	LR		
	comp=E,230nm,10.3s						
HHC				LR	LR		
	comp=E,670nm,10.2s						
HHC				LR	LR		
	comp=E,670nm,11.5s						
WHN	**Wuhan**	**24.98**	**261**	*i*P	**P**	**13 13 54.1**	**-0.2**
WHN				pmax	pmax		
	comp=E,86nm,0.9s						
WHN				LR	LR		
	comp=E,2μm,12.9s						
YAK	**Yakutsk**	**25.42**	**345**	P	**P**	**13 13 57.1**	**-0.8**
	comp=E,14nm,0.4s,baz=131,slow=1.2,SNR=2.3						
YAK				LR	LR	13 24 33.7	
	comp=E,210nm,19.3s,baz=105,slow=38						
YAK	**Yakutsk**	**25.42**	**345**	*e*P	**P**	**13 14 00.9**	**+2.9**
YAK				*e**PP	**sP**	**13 14 11.1**	**+2.2**
YAK				*e*		13 14 33.8	
YAK				*e*PPP	PPP	13 14 45.3	
YAK				*e*S	**S**	**13 18 21.6**	**-1.4**
YAK				*e**SS	**sS**	**13 18 32.5**	**-3.2**
YAK				*e*SSS	SSS	13 19 29.2	
YAK				*e*		13 24 59.5	
YAK				pmax	pmax		
	comp=Z,21nm,0.9s						
YAK				pmax	pmax		
	comp=N,14nm,1.2s						
YAK				pmax	pmax		
	comp=Z,21nm,1.2s						
YAK				pmax	pmax		
	comp=N,33nm,1.3s						
YAK				pmax	pmax		
	comp=E,35nm,1.6s						
YAK				smax	smax		
	comp=N,76nm,3.1s						
YAK				smax	smax		
	comp=E,47nm,2.0s						
YAK	**Yakutsk**	**25.42**	**345**	*e*P	**P**	**13 14 00.3**	**+2.4**
	comp=E,55nm,0.9s						
SEY	**Seymchan**	**25.51**	**10**	P	**P**	**13 14 00.6**	**+1.9**
	comp=E,7.1nm,0.6s,baz=192,slow=9.4,SNR=16						
SEY	**Seymchan**	**25.51**	**10**	*ce*P	**P**	**13 14 00.3**	**+1.5**
SMY	**Shemya**	**25.89**	**46**	*e*P	**P**	**13 14 02.7**	**+0.4**
SMY				pmax	pmax		
	comp=Z,190nm,1.1s						
SMY	**Shemya**	**25.89**	**46**	*e*P	**P**	**13 14 02.7**	**+0.4**
	comp=Z,190nm,1.1s						
H11N2	**WAKE ISLAND Hy**	**27.46**	**125**	T	T	13 42 56.6	
	baz=316,slow=76,SNR=56						
H11N1	**WAKE ISLAND Hy**	**27.47**	**125**	T	T	13 42 59.4	
	baz=316,slow=76,SNR=61						
H11N3	**WAKE ISLAND Hy**	**27.48**	**125**	T	T	13 42 56.0	
	baz=316,slow=76,SNR=61						
BOD	**Bodaibo**	**27.49**	**325**	*e*P	**P**	**13 14 18.9**	**+2.2**
BOD				pmax	pmax		
	comp=Z,20nm,1.0s						
XAN	**Xi'an**	**27.97**	**272**	P	**P**	**13 14 21.1**	**-0.3**
XAN				pmax	pmax		
	comp=Z,11nm,0.6s						
XAN				pmax	pmax		
	comp=Z,21nm,4.4s						
H11S1	**WAKE ISLAND Hy**	**28.23**	**127**	T	T	13 44 00.7	
	baz=318,slow=76,SNR=42						
H11S3	**WAKE ISLAND Hy**	**28.23**	**127**	T	T	13 44 00.2	
	baz=318,slow=76,SNR=40						
H11S2	**WAKE ISLAND Hy**	**28.25**	**127**	T	T	13 44 01.9	
	baz=318,slow=76,SNR=29						
SONA1	**Songino Array**	**28.47**	**302**	*e*P	**P**	**13 14 25.9**	**+0.2**
SONA1				*e*PcP	**PcP**	**13 17 37.4**	**+0.2**
SONM	**Songino Array**	**28.47**	**302**	P	**P**	**13 14 26.7**	**+0.9**
	comp=Z,3.2nm,0.6s,baz=98,slow=9.1,SNR=14						
SONM				PcP	**PcP**	**13 17 37.6**	**+0.5**
	comp=Z,2.8nm,0.7s,baz=139,slow=2.4,SNR=6.6						
SONM				LR	LR	13 26 11.7	
	comp=Z,194nm,18.3s,baz=96,slow=37						
ENH	**Enshi**	**28.91**	**265**	*e*P	**P**	**13 14 29.1**	**-0.6**
	comp=Z,43nm,0.8s						
TLY	**Talaya**	**30.81**	**309**	P	**P**	**13 14 47.7**	**+1.5**
	comp=Z,1.7nm,0.6s,baz=341,slow=3.2,SNR=4.3						
TLY				PcP	**PcP**	**13 17 43.6**	**+0.7**
	comp=Z,2.3nm,0.5s,baz=268,slow=5.7,SNR=3.3						
TLY	**Talaya**	**30.81**	**309**	*e*P	**P**	**13 14 50.6**	**+4.3**
TLY				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,269nm,15.0s						
ZAK	**Zakamensk**	**30.82**	**307**	*e*P	**P**	**13 14 46.5**	**0.0**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.2s						
LZH	**Lanzhou**	**31.37**	**279**	*e*P	**P**	**13 14 52.3**	**+0.7**
LZH				pP	pP	13 15 01.8

GTA sP sP 13 15 21.3 -1.5
GTA PcP **PcP** **13 17 52.1 +0.9**
GTA S **S** **13 20 34.8 +1.3**
GTA sS sS 13 20 44.6 -1.7
GTA SS **SnSn** **13 22 42.0 +3.8**
GTA pmax pmax
comp=Z,21nm,1.3s
GTA pmax pmax
comp=Z,120nm,5.3s
GTA LR LR
comp=Z,150nm,17.6s
GTA LR LR
comp=Z,400nm,18.1s
GTA LR LR
comp=Z,420nm,17.6s
TIXI **Tiksi** **34.46 352**↓ *e*P **P** **13 15 21.5 +3.6**
TIXI pmax pmax
comp=Z,3.0nm,0.9s
QIZ **Qiongzhong** **34.71 246** P **P** **13 15 24.3 +3.7**
QIZ S **S** **13 20 51.1 +1.9**
QIZ LR LR
comp=Z,330nm,14.8s
QIZ LR LR
comp=Z,380nm,13.5s
DAV **Davao City (W)** **34.78 212** LR LR 13 29 05.4
comp=Z,46nm,21.8s,baz=2.5,slow=36
KMI **Kunming** **36.59 261** P **P** **13 15 36.8 -0.2**
KMI pP pP 13 15 45.3 +0.5
KMI sP sP 13 15 49.5 +1.5
KMI S **S** **13 21 18.1 -0.3**
KMI pmax pmax
comp=Z,22nm,0.9s
KMI pmax pmax
comp=Z,120nm,4.5s
KMI LR LR
comp=Z,230nm,5.2s
KMI LR LR
comp=Z,130nm,4.3s
KMI LR LR
comp=Z,150nm,5.4s
WMQ **Urumqi** **41.71 296** *e*P **P** **13 16 19.3 -0.2**
WMQ pP pP 13 16 28.6 +1.2
WMQ sP sP 13 16 33.1 +2.6
WMQ S **S** **13 22 35.1 +0.3**
WMQ pmax pmax
comp=Z,16nm,1.0s
WMQ pmax pmax
comp=Z,170nm,5.1s
WMQ LR LR
comp=Z,190nm,9.8s
WMQ LR LR
comp=Z,160nm,8.8s
WMQ LR LR
comp=Z,250nm,15.4s
ZAA0 **Zalesovo Array** **42.33 312** *e*P **P** **13 16 24.2 -0.1**
ZALV **Zalesovo Beam** **42.33 312** P **P** **13 16 24.9 +0.6**
comp=Z,7.9nm,0.8s,baz=87,slow=7.1,SNR=23
ZALV PcP **PcP** **13 18 17.6 +0.2**
comp=Z,8.0nm,0.5s,baz=94,slow=3.3,SNR=11
ZALV LR LR 13 34 43.6
comp=Z,160nm,19.1s,baz=70,slow=37
NRIK **Noril'sk** **42.96 335** LR LR 13 35 47.5
comp=Z,195nm,19.4s,baz=118,slow=38
CHTO **Chiang Mai** **42.98 256** *e*P **P** **13 16 28.5 -1.5**
CHTO pmax pmax
comp=Z,11nm,0.7s
CHTO **Chiang Mai** **42.98 256** *e*P **P** **13 16 28.5 -1.5**
comp=Z,11nm,0.7s
CMAR **Chiang Mai Arr** **43.19 256** P **P** **13 16 32.0 +0.3**
comp=Z,4.8nm,0.7s,baz=44,slow=6.9,SNR=11
CMAR PcP **PcP** **13 18 21.6 +0.7**
comp=Z,0.9nm,0.4s,baz=15,slow=4.8,SNR=4.2
CM01 **Chiang Mai Arr** **43.20 256** *e*P **P** **13 16 31.6 -0.2**
NVS **Novosibirsk** **43.21 313** *e*P **P** **13 16 32.0 +0.6**
LSA **Lhasa** **43.60 275** *e*P **P** **13 16 34.8 -0.6**
LSA pmax pmax
comp=Z,7.0nm,0.6s
LSA **Lhasa** **43.60 275** *e*P **P** **13 16 34.8 -0.6**
comp=Z,7.2nm,0.6s
SVW2 **Sparrevohn** **43.80 38** *e*P **P** **13 16 37.2 +1.2**
comp=Z,6.6nm,0.8s
MK01 **Makanchi Array** **44.84 302** *e*P **P** **13 16 44.3 -0.4**
MK31 **Makanchi Array** **44.84 302** *i* P **P** **13 16 44.4 -0.3**
MK31 pmax pmax
comp=Z,6.0nm,0.8s
MK31 **Makanchi Array** **44.84 302** *e*P **P** **13 16 44.3 -0.3**
MKAR **Makanchi Array** **44.84 302** P **P** **13 16 44.9 +0.3**
comp=Z,3.1nm,0.7s,baz=86,slow=10,SNR=26
MKAR PcP **PcP** **13 18 26.5 +0.4**
comp=Z,3.5nm,0.9s,baz=72,slow=4.7,SNR=2.6
MKAR LR LR 13 36 09.5
comp=Z,96nm,18.9s,baz=77,slow=37
MKAR **Makanchi Array** **44.84 302** *e*P **P** **13 16 44.7 +0.1**
MKAR pmax pmax
comp=Z,3.0nm,0.7s
MAKZ **Makanchi** **45.05 302** P **P** **13 16 45.7 -0.6**
MAKZ pmax pmax
comp=Z,10.0nm,1.1s
MAKZ **Makanchi** **45.05 302** *e*P **P** **13 16 45.4 -0.9**
comp=Z,6.6nm,0.8s
RSO **Redoubt South** **45.17 39** *e*P **P** **13 16 48.0 +0.8**
KDAK **Kodiak Island** **45.34 43** *e*P **P** **13 16 48.9 +0.6**
KDAK pmax pmax
comp=Z,93nm,1.8s
KDAK **Kodiak Island** **45.34 43** *e*P **P** **13 16 48.9 +0.6**
comp=Z,93nm,1.8s
BPAW **Bear Paw Mtn.** **46.04 34** *e*P **P** **13 16 55.2 +1.2**
comp=Z,8.5nm,0.4s
KTH **Kantishna Hill** **46.06 35** *e*P **P** **13 16 55.5 +1.4**
comp=Z,9.5nm,0.5s
MLY **Manley** **46.18 32** *e*P **P** **13 16 56.2 +1.1**
comp=Z,6.3nm,0.9s
TRF **Thorofare Moun** **46.34 35** *e*P **P** **13 16 58.0 +1.5**
comp=Z,30nm,1.8s
KURK **Kurchatov** **46.47 308** P **P** **13 16 58.2 +0.8**
KURK **Kurchatov** **46.47 308** P **P** **13 16 58.2 +0.8**
KURBB **Kurchatov Arra** **46.55 307** P **P** **13 16 58.2 +0.2**
comp=Z,23nm,0.6s,baz=82,slow=8.0,SNR=114
PMR **Palmer** **46.91 37** *e*P **P** **13 17 01.0 +0.3**
PMR pmax pmax
comp=Z,7.0nm,0.8s
PMR **Palmer** **46.91 37** *e*P **P** **13 17 00.9 +0.3**
comp=Z,7.4nm,0.8s
MCK **McKinley** **46.95 34** *e*P **P** **13 17 01.9 +0.9**
MCK pmax pmax
comp=Z,8.0nm,0.6s
MCK **McKinley** **46.95 34** *e*P **P** **13 17 01.9 +0.9**
comp=Z,7.7nm,0.6s
RND **Reindeer** **46.99 35** *e*P **P** **13 17 02.1 +0.7**
RND pmax pmax
comp=Z,8.0nm,0.9s
RND **Reindeer** **46.99 35** *e*P **P** **13 17 02.1 +0.7**
comp=Z,7.7nm,0.9s
MDM **Murphy Dome** **47.25 33** *e*P **P** **13 17 04.4 +1.1**
comp=Z,11nm,0.9s
WRH **Wood River Hil** **47.31 33** *e*P **P** **13 17 04.4 +0.7**
comp=Z,5.5nm,0.8s
KSM **Kuching** **47.34 228** *e*P **P** **13 17 04.8 +0.2**
comp=Z,4.6nm,0.8s
COLA **College** **47.41 33** *e*P **P** **13 17 05.5 +1.0**
COLA pmax pmax
comp=Z,15nm,0.3s
COLA **College** **47.41 33** *e*P **P** **13 17 05.5 +1.0**
comp=Z,15nm,0.3s
PDGK **Podgornoye** **47.61 298** P **P** **13 17 05.3 -1.1**
PDGK pmax pmax
comp=Z,10.0nm,0.9s
IL1 **Eielson Array** **47.83 33** *e*P **P** **13 17 08.0 +0.2**
ILAR **Eielson Array** **47.83 33** P **P** **13 17 08.5 +0.7**
comp=Z,3.7nm,0.8s,baz=266,slow=6.4,SNR=47
ILAR LR LR 13 38 06.8
comp=Z,22nm,19.9s,baz=264,slow=37
ILB **Eielson Array** **47.83 33** *e*P **P** **13 17 08.2 +0.4**
RAMN **Ramite** **48.41 274** *e*P **P** **13 17 13.2 +0.1**
comp=Z,58nm,0.8s
KLU **Klutina** **48.45 37** *e*P **P** **13 17 12.8 0.0**
comp=Z,13nm,1.0s
GUN **Gumba** **48.53 276** *e*P **P** **13 17 14.6 +0.4**
comp=Z,25nm,0.3s
EYAK **Cordova Ski Ar** **48.62 39** *e*P **P** **13 17 15.2 +1.2**
comp=Z,24nm,1.3s
KKN **Kakani** **49.06 276** *e*P **P** **13 17 18.3 +0.2**
comp=Z,36nm,0.7s
PKIN **Phulchoki** **49.07 276** *e*P **P** **13 17 18.4 +0.2**
comp=Z,23nm,0.6s
BMRM **Bremner River** **49.14 38** *e*P **P** **13 17 19.0 +1.0**
comp=Z,12nm,1.0s
RAGM **Ragged Mountai** **49.17 39** *e*P **P** **13 17 19.4 +1.1**
comp=Z,13nm,0.6s
DMN **Daman** **49.28 276** *e*P **P** **13 17 20.0 +0.2**
MENT **Mentasta** **49.34 35** *e*P **P** **13 17 20.7 +1.2**
comp=Z,10.0nm,0.8s
GKN **Gorkha** **49.47 277** *e*P **P** **13 17 21.3 +0.2**
comp=Z,81nm,0.9s
CRQM **Cirque** **49.87 38** *e*P **P** **13 17 24.1 +0.3**
comp=Z,18nm,1.0s
BALM **Baldy** **50.22 38** *e*P **P** **13 17 26.4 +0.1**
BALM pmax pmax
comp=Z,7.0nm,0.8s
BALM **Baldy** **50.22 38** *e*P **P** **13 17 26.4 +0.1**
comp=Z,6.6nm,0.8s
KOLN **Koldanda** **50.39 277** *e*P **P** **13 17 28.4 +0.2**
comp=Z,7.3nm,0.3s
TKM2 **Tokmak 2** **50.45 298** P **P** **13 17 28.7 +0.2**
TKM2 pmax pmax
comp=Z,18nm,1.1s
VOSK **Vostochnaya** **50.71 312** P **P** **13 17 29.4 -0.6**
VOSK pmax pmax
comp=Z,8.0nm,0.9s
VOSK **Vostochnaya** **50.71 312** *e*P **P** **13 17 29.6 -0.4**
comp=Z,7.4nm,0.8s
PYUN **Piuthan** **50.71 278** *e*P **P** **13 17 30.8 +0.2**
IPM **Ipoh** **50.95 240** *e*P **P** **13 17 30.9 -1.4**
comp=Z,12nm,0.8s
BVA0 **Borovoye Array** **50.98 312** P **P** **13 17 31.6 -0.5**
BVA0 pmax pmax
comp=Z,4.0nm,0.6s
BRVK **Borovoye** **51.04 312** *c i*P **P** **13 17 32.8 +0.4**
BRVK pmax pmax
comp=Z,22nm,1.0s
BRVK **Borovoye** **51.04 312** *e*P **P** **13 17 32.5 0.0**
comp=Z,9.6nm,1.0s
FRU **Bishkek** **51.16 298** *e*P **P** **13 17 34.0 +0.4**
AAK **Ala-Archa** **51.31 298**↓ *i*P **P** **13 17 35.5 +0.6**
AAK pmax pmax
comp=Z,17nm,1.2s
KSH **Kashi** **51.34 294** *e*P **P** **13 17 39.5 +4.4**
KSH *e*pP sP 13 17 49.4 +3.1
KSH *e*sP pP 13 17 53.8 +11
KSH *e*ScP **ScP** **13 22 45.8 +1.4**
KSH S **S** **13 24 58.1 +5.2**
KSH ScS **ScS** **13 27 23.3 -0.6**
KSH pmax pmax
comp=Z,6.0nm,0.7s
KSH pmax pmax
comp=Z,87nm,3.5s
KSH LR LR
comp=Z,120nm,6.9s
KSH LR LR
comp=Z,160nm,11.5s
KSH LR LR
comp=Z,220nm,13.7s
COEN **Coen** **51.75 180** *e*P **P** **13 17 38.0 -0.1**
ZRNK **Zerenda** **51.81 312** P **P** **13 17 38.2 -0.1**
ZRNK pmax pmax
comp=Z,7.0nm,0.8s
ZRNK **Zerenda** **51.81 312** *e*P **P** **13 17 38.2 -0.1**
comp=Z,8.2nm,0.9s
MTN **Manton Dam** **51.91 195** *e*P **P** **13 17 38.0 -1.3**
comp=Z,23nm,1.0s
MNAS **Manas** **52.74 299** P **P** **13 17 45.6 +0.1**
MNAS pmax pmax
comp=Z,20nm,0.8s
INK **Inuvik** **52.79 28** LR LR 13 41 44.8
comp=Z,63nm,20.5s,baz=268,slow=38
KK31 **Karatay Array** **53.90 300** *i* P **P** **13 17 54.0 +0.2**
KK31 pmax pmax
comp=Z,8.0nm,0.9s
SVE **Sverdlovsk** **55.36 318** *e*P **P** **13 18 04.0 -0.2**
SVE pmax pmax
comp=Z,10.0nm,0.6s
SVE MLR MLR
comp=Z,273nm,15.0s
ARU **Arti** **56.57 318** *c i*P **P** **13 18 13.1 +0.2**
ARU *PP **pP** **13 18 23.1 +2.1**
ARU 13 19 08.7
ARU 13 20 19.9
ARU S **S** **13 26 03.7 +0.9**
ARU SS **SS** **13 29 50.2 +0.4**
ARU pmax pmax
comp=Z,19nm,1.7s
ARU MLR MLR
comp=Z,264nm,17.0s
ARU **Arti** **56.57 318** *e*P **P** **13 18 12.8 0.0**
comp=Z,8.0nm,0.6s
DLBC **Dease Lake** **56.89 39** *e*P **P** **13 18 16.9 +1.7**
comp=Z,6.2nm,0.9s
FITZ **Fitzroy Crossi** **58.28 200** P **P** **13 18 25.0 -0.3**
comp=Z,4.9nm,0.8s,baz=19,slow=8.0
FITZ **Fitzroy Crossi** **58.28 200** *e*P **P** **13 18 24.4 -0.8**
WRAB **Tennant Creek** **58.30 190** *c i*P **P** **13 18 23.9 -1.5**
WRAB pmax pmax
comp=Z,61nm,0.8s
WRAB **Tennant Creek** **58.30 190** *e*P **P** **13 18 23.7 -1.7**
comp=Z,23nm,0.8s
WB2 **Warramunga Arr** **58.31 190** *e*P **P** **13 18 23.9 -1.6**
comp=Z,23nm,0.8s
WRA **Warramunga Arr** **58.31 190** P **P** **13 18 24.3 -1.2**
comp=Z,22nm,0.6s,baz=8.0,slow=7.2,SNR=202
WRA PcP **PcP** **13 19 16.4 0.0**
comp=Z,6.6nm,0.6s,baz=2.0,slow=4.3,SNR=8.6
WRA LR LR 13 42 59.1
comp=Z,34nm,22.0s,baz=125,slow=36
WRA **Warramunga Arr** **58.31 190** *i* P **P** **13 18 24.0 -1.4**
WRA pmax pmax
comp=Z,23nm,0.6s
AB31 **Akbulak array** **58.41 310** P **P** **13 18 25.4 -0.5**
AB31 pmax pmax
comp=Z,5.0nm,0.6s
KBL **Kabul** **58.43 291** *e*P **P** **13 18 26.1 -0.5**
KBL pmax pmax
comp=Z,15nm,0.9s
KBL **Kabul** **58.43 291** *e*P **P** **13 18 26.1 -0.5**
comp=Z,15nm,0.9s
AKTO **Aktyubinsk** **59.09 312** P **P** **13 18 30.6 -0.1**
comp=Z,8.2nm,0.8s,baz=71,slow=10,SNR=22
SPITS **Spitsbergen Ar** **59.80 349** P **P** **13 18 35.5 +0.4**
comp=Z,1.7nm,0.7s,baz=90,slow=2.6,SNR=4.2
SPITS PcP **PcP** **13 19 21.8 +0.2**
comp=Z,3.4nm,0.6s,baz=98,slow=6.1,SNR=4.7
RES **Resolute Bay** **61.23 15** LR LR 13 47 36.7
comp=Z,20nm,18.2s,baz=46,slow=38
AS01 **Alice Springs** **62.03 190** *e*P **P** **13 18 49.1 -1.7**
AS31 **Alice Springs** **62.03 190** *e*P **P** **13 18 49.6 -1.3**
comp=Z,2.2nm,0.8s
ASAR **Alice Springs** **62.03 190** P **P** **13 18 50.0 -0.9**
comp=Z,6.3nm,0.7s,baz=12,slow=6.8,SNR=68
ASAR PcP **PcP** **13 19 31.4 +0.2**
comp=Z,2.0nm,0.6s,baz=11,slow=4.4,SNR=6.3
YKA **Yellowknife Ar** **62.16 31** P **P** **13 18 51.8 +0.4**
comp=Z,1.5nm,0.7s,baz=304,slow=6.7,SNR=7.1
ARCES **ARCESS Array B** **63.55 340** P **P** **13 19 01.0 +0.5**
comp=Z,1.8nm,0.6s,baz=48,slow=7.4,SNR=9.4
KLMR **Klimovskoe** **63.67 328** *e*P **P** **13 19 00.7 -0.7**
KLMR *e* 13 19 34.8
KLMR *e* 13 21 22.3
KLMR pmax pmax
comp=Z,7.0nm,0.9s
GEYT **Alibeck** **64.63 299** P **P** **13 19 08.5 +0.3**
comp=Z,10nm,0.9s,baz=17,slow=2.0,SNR=12
GEYT LR LR 13 49 08.6
comp=Z,88nm,18.2s,baz=75,slow=38
DAG **Danmarks Havn** **64.87 355** *i* P **P** **13 19 09.1 +0.1**
comp=Z,5.5nm,0.5s
DAG **Danmarks Havn** **64.87 355** *i* P **P** **13 19 09.1 +0.1**
DAG pmax pmax
comp=Z,4.0nm,0.5s
VRH **Novokhopyorsk** **67.81 318** *e*P **P** **13 19 27.6 -0.6**
VRH pmax pmax
comp=Z,20nm,0.6s
OBN **Obninsk** **68.15 324**↑ *e*P **P** **13 19 30.8 +0.5**
OBN pmax pmax
comp=Z,14nm,0.5s
FIA1 **FINESS Array S** **68.59 333** *e*P **P** **13 19 33.0 +0.1**
comp=Z,20nm,0.8s
FINES **FINESS Array B** **68.59 333** P **P** **13 19 33.2 +0.3**
comp=Z,9.6nm,0.6s,baz=46,slow=8.2,SNR=28
FINES LR LR 13 51 44.5
comp=Z,94nm,18.6s,baz=70,slow=38
VSR **Storozhevoye** **69.13 319** *e*P **P** **13 19 36.1 -0.4**
VSR pmax pmax
comp=Z,10.0nm,0.5s
K05A **Summer Lake** **69.14 52** *e*P **P** **13 19 38.8 +1.7**
comp=Z,14nm,1.0s
STKA **Stephens Creek** **69.60 182** P **P** **13 19 39.1 -0.4**
comp=Z,3.9nm,0.7s,baz=3.2,slow=6.8,SNR=15
STKA LR LR 13 53 31.2
comp=Z,19nm,19.0s,baz=26,slow=39
SUMG **Summit** **69.65 1** *i* P **P** **13 19 41.1 +1.2**
comp=Z,12nm,0.6s
SUMG *i* 13 19 51.7
SUMG **Summit** **69.65 1** *e*P **P** **13 19 40.8 +0.9**
SUMG pmax pmax
comp=Z,13nm,0.8s
SUMG **Summit** **69.65 1** *e*P **P** **13 19 40.8 +0.9**
comp=Z,13nm,0.8s
FORT **Forrest** **69.95 194** *e*P **P** **13 19 40.9 -0.7**
comp=Z,363nm,0.6s
ORV **Oroville** **70.49 55** *e*P **P** **13 19 45.3 +0.2**
ORV pmax pmax
comp=Z,3.0nm,0.8s
ORV **Oroville** **70.49 55** *e*P **P** **13 19 45.3 +0.2**
comp=Z,3.0nm,0.8s
GOF **Gofitskoye** **70.51 312**↑ *e*P **P** **13 19 45.7 +0.6**
NCK **Nalchik** **71.07 311**↑ *i*P **P** **13 19 49.2 +0.6**
NCK pmax pmax
comp=Z,32nm,0.7s
SCO **Scoresbysund** **71.23 355** *i* P **P** **13 19 48.8 -0.2**
comp=Z,3.4nm,0.9s
SCO **Scoresbysund** **71.23 355** *i* P **P** **13 19 48.8 -0.2**
SCO pmax pmax
comp=Z,3.0nm,0.9s
KIV **Kislovodsk** **71.35 311** *c i*P **P** **13 19 51.1 +0.7**
KIV pmax pmax
comp=Z,28nm,1.0s
KIV **Kislovodsk** **71.35 311** *e*P **P** **13 19 51.0 +0.7**
comp=Z,28nm,1.0s
KBZ **Khabaz** **71.35 311** P **P** **13 19 51.1 +0.9**
comp=Z,10nm,0.8s,baz=41,slow=3.3,SNR=19
KBZ LR LR 13 54 13.1
comp=Z,47nm,18.4s,baz=47,slow=38
NEY **Neytrino** **71.73 311**↑ *e*P **P** **13 19 53.9 +1.1**
NEY pmax pmax
comp=Z,1.0nm,0.7s
PAHR **Pah Rah Range** **71.76 54** *e*P **P** **13 19 53.5 +0.5**
comp=Z,3.8nm,0.9s
FFC **Flin Flon** **72.03 34** *e*P **P** **13 19 54.5 +0.3**
FFC pmax pmax
comp=Z,10.0nm,0.9s
FFC **Flin Flon** **72.03 34** *e*P **P** **13 19 54.5 +0.3**
comp=Z,10.0nm,0.9s
CMB **Columbia Colle** **72.06 56** *e*P **P** **13 19 55.2 +0.5**
CMB pmax pmax
comp=Z,5.0nm,0.8s
CMB **Columbia Colle** **72.06 56** *e*P **P** **13 19 55.2 +0.5**
comp=Z,4.8nm,0.8s
LRM **Limekiln Ridge** **72.37 45** *e*P **P** **13 19 56.9 +0.3**
DLMT **Dillon** **72.56 46** *e*P **P** **13 19 58.6 +0.9**
comp=Z,3.5nm,0.7s
HLID **Hailey** **72.58 48** *e*P **P** **13 19 58.8 +0.9**
comp=Z,2.2nm,0.9s
BMN **Battle Mountai** **72.71 52** *e*P **P** **13 19 59.4 +0.8**
BMN pmax pmax
comp=Z,5.0nm,1.0s
BMN **Battle Mountai** **72.71 52** *e*P **P** **13 19 59.4 +0.8**
comp=Z,4.6nm,1.0s
NC405 **NORSAR Array S** **73.59 338** *e*P **P** **13 20 03.6 +0.3**
NC204 **NORSAR Array S** **73.75 338** *e*P **P** **13 20 04.5 +0.3**
HFS **Hagfors** **73.75 336** P **P** **13 20 04.8 +0.6**
comp=Z,7.1nm,0.6s,baz=57,slow=5.5,SNR=24
NB201 **NORSAR Array S** **73.77 338** *e*P **P** **13 20 04.3 -0.1**
NB2 **NORSAR Subarra** **73.80 338** P **P** **13 20 04.5 -0.1**
comp=Z,6.1nm,0.7s,baz=40,slow=6.2
NOA **NORSAR Array B** **73.80 338** P **P** **13 20 04.9 +0.3**
comp=Z,5.6nm,0.7s,baz=39,slow=5.9,SNR=9.7
NOA LR LR 13 59 24.4
comp=Z,45nm,18.1s,baz=25,slow=41
ANN **Anapa** **73.88 315** *e*P **P** **13 20 01.3 -3.9**
ANN *e**PP **pP** **13 20 11.2 -2.4**
ANN *e*S **SKiKP** **13 29 29.0 -3.2**
ANN *e*SS **SS** **13 34 14.8 -3.9**
ANN pmax pmax
comp=Z,21nm,1.0s
NBO02 **NORSAR Array S** **73.90 338** *e*P **P** **13 20 05.0 -0.1**
AKASG **Malin Array Be** **74.38 323** P **P** **13 20 08.1 0.0**
comp=Z,2.6nm,0.5s,baz=45,slow=5.8,SNR=18
AKBB **Malin Array Si** **74.38 323** *e*P **P** **13 20 07.9 -0.2**
AKBB pmax pmax
comp=Z,15nm,0.8s
AKBB **Malin Array Si** **74.38 323** *e*P **P** **13 20 07.9 -0.2**
comp=Z,15nm,0.8s
IMW **Indian Meadow** **74.39 46** *e*P **P** **13 20 09.6 +0.9**
comp=Z,3.8nm,0.8s
KIEV **Kiev** **74.39 323**↑ *e*P **P** **13 20 08.1 0.0**
KIEV pmax pmax
comp=Z,10.0nm,1.1s
KIEV **Kiev** **74.39 323** *e*P **P** **13 20 07.8 -0.4**
comp=Z,15nm,0.8s
MOOW **Moose Ponds** **74.59 46** *e*P **P** **13 20 10.8 +1.0**
comp=Z,3.1nm,0.8s
DAC **Darwin (Calif)** **74.89 56** *e*P **P** **13 20 11.6 0.0**
DAC pmax pmax
comp=Z,5.0nm,1.0s
DAC **Darwin (Calif)** **74.89 56** *e*P **P** **13 20 11.6 0.0**
comp=Z,4.6nm,1.0s
R11A **Troy Canyon, C** **74.95 53** *e*P **P** **13 20 12.7 +0.8**
comp=Z,7.1nm,1.3s
TPNV **Topopah Spring** **75.37 55** *e*P **P** **13 20 14.9 +0.6**
TPNV pmax pmax
comp=Z,8.0nm,1.0s
TPNV **Topopah Spring** **75.37 55** *e*P **P** **13 20 14.9 +0.6**
comp=Z,8.0nm,1.0s
HWUT **Hardware Ranch** **75.44 48** *e*P **P** **13 20 15.9 +1.3**
comp=Z,8.7nm,1.2s
DUG **Dugway, Tooele** **75.56 50** *e*P **P** **13 20 16.2 +0.9**
DUG pmax pmax
comp=Z,4.0nm,0.7s
DUG **Dugway, Tooele** **75.56 50** *e*P **P** **13 20 16.2 +0.9**
comp=Z,4.2nm,0.7s
SIM **Simferopol'** **75.62 316** *e*P **P** **13 20 16.9 +1.5**
SIM *e* 13 20 27.0
SIM pmax pmax
comp=Z,15nm,0.7s
SIM MLR MLR
comp=Z,200nm,19.9s
BW06 **Boulder Array** **75.88 47** *e*P **P** **13 20 17.2 0.0**
comp=Z,2.7nm,0.7s
PD31 **Pinedale Array** **75.88 47** *e*P **P** **13 20 17.5 +0.3**
PDAR **Pinedale Array** **75.88 47** P **P** **13 20 17.9 +0.7**
comp=Z,2.1nm,0.6s,baz=266,slow=2.1,SNR=24
PDAR LR LR 13 51 50.2
comp=Z,13nm,20.6s,baz=298,slow=34
SHPR **Sheep Range** **76.33 54** *e*P **P** **13 20 20.4 +0.6**
comp=Z,6.0nm,1.1s
CCUT **Cedar City** **76.83 53** *e*P **P** **13 20 22.7 0.0**
comp=Z,4.1nm,0.9s
LCMT **Little Creek M** **77.24 53** *e*P **P** **13 20 25.0 +0.1**
comp=Z,5.5nm,1.0s
MTPU **Mount Pierson** **77.27 52** *e*P **P** **13 20 26.5 +1.2**
comp=Z,3.7nm,0.7s
SRU **San Rafael Swe** **77.61 50** *e*P **P** **13 20 27.6 +0.6**
SRU pmax pmax
comp=Z,7.0nm,0.9s
SRU **San Rafael Swe** **77.61 50** *e*P **P** **13 20 27.6 +0.6**
comp=Z,6.9nm,0.9s
ULM **Lac du Bonnet** **77.82 34** P **P** **13 20 27.4 -0.2**
comp=Z,2.5nm,0.7s,baz=310,slow=9.2,SNR=3.9
RSSD **Black Hills** **78.07 43** *e*P **P** **13 20 30.0 +0.5**
RSSD pmax pmax
comp=Z,3.0nm,0.8s
RSSD **Black Hills** **78.07 43** *e*P **P** **13 20 30.0 +0.5**
comp=Z,3.4nm,0.8s
KWP **Kalwaria Pacla** **78.15 325** *e*P **P** **13 20 31.1 +1.6**
KWP **Kalwaria Pacla** **78.15 325** *e*P **P** **13 20 31.1 +1.6**
U15A **North Rim** **78.20 53** *e*P **P** **13 20 31.3 +0.8**
comp=Z,3.4nm,0.8s
BUR08 **Bucovina Ar. S** **78.40 322** *e*P **P** **13 20 31.4 +0.3**
BURAR **Bucovina Array** **78.41 322**↑ *i*P **P** **13 20 31.8 +0.6**
PLOR **Plostina** **78.94 320**↓ *i*P **P** **13 20 32.8 -1.2**
PV10 **Paradox Valley** **78.97 50** *e*P **P** **13 20 35.6 +1.0**
OJC **Ojcow** **79.00 327** *e*P **P** **13 20 35.6 +1.4**
OJC **Ojcow** **79.00 327** *e*P **P** **13 20 34.8 +0.6**
OJC pmax pmax
comp=Z,15nm,0.8s
OJC **Ojcow** **79.00 327** *e*P **P** **13 20 34.8 +0.6**
comp=Z,15nm,0.8s
HARR **Harsova** **79.09 319**↑ *i*P P 13 20 45.4 +11
PV05 **Paradox Valley** **79.13 50** *e*P **P** **13 20 36.4 +0.9**

N23A	**Red Feather La**	**79.15**	**46**	*e*P		**P**		**13 20 36.2**	**+0.7**
	comp=Z,9.9nm,1.0s								
AGMN	**Agassiz Nation**	**79.24**	**36**	*e*P		**P**		**13 20 35.1**	**-0.5**
	comp=Z,6.1nm,1.0s								
BRTR	**Keskin Array B**	**79.27**	**312**	P		**P**		**13 20 36.5**	**+0.4**
	comp=Z,1.4nm,0.7s,baz=70,slow=4.1,SNR=7.4								
BRTR				LR		LR		14 00 10.6	
	comp=Z,35nm,18.8s,baz=82,slow=39								
Y14A	**Wickenburg**	**79.30**	**55**	*e*P		**P**		**13 20 36.4**	**+0.2**
	comp=Z,22nm,1.0s								
WUAZ	**Wupatki**	**79.35**	**53**	*e*P		**P**		**13 20 37.0**	**+0.4**
	comp=Z,6.2nm,0.9s								
NIE	**Niedzica**	**79.38**	**326**	*e*P		**P**		**13 20 37.4**	**+1.1**
NIE	**Niedzica**	**79.38**	**326**	*e*P		**P**		**13 20 37.4**	**+1.1**
PV01	**Paradox Valley**	**79.41**	**50**	*e*P		**P**		**13 20 37.4**	**+0.4**
MLR	**Muntele Rosu**	**79.55**	**321**	⇑*i*P		P		13 20 44.2	+6.8
BR231	**Keskin MP Arra**	**79.69**	**313**	*e*P		**P**		**13 20 36.9**	**-1.5**
KSP	**Ksiaz**	**80.00**	**329**	*e*P		**P**		**13 20 40.9**	**+1.3**
KSP	**Ksiaz**	**80.00**	**329**	*e*P		**P**		**13 20 40.9**	**+1.3**
X16A	**Lo Mia Camp, P**	**80.00**	**54**	*e*P		**P**		**13 20 40.7**	**+0.5**
	comp=Z,4.7nm,1.0s								
ARR	**Arges**	**80.29**	**321**	⇑*i*P		**P**		**13 20 42.4**	**+1.0**
MORC	**Moravsky Berou**	**80.29**	**328**	⇓*i*P		**P**		**13 20 40.4**	**-0.9**
MORC	**Moravsky Berou**	**80.29**	**328**	*e*P		**P**		**13 20 40.7**	**-0.6**
MORC				pmax		pmax			
	comp=Z,40nm,0.8s								
MORC	**Moravsky Berou**	**80.29**	**328**	*e*P		**P**		**13 20 40.6**	**-0.6**
	comp=Z,40nm,0.8s								
DPC	**Dobruska-Polom**	**80.36**	**329**	*e*P		**P**		**13 20 43.3**	**+1.6**
DPC				*ep*P		**PcP**		**13 20 48.6**	**-0.1**
DPC				*es*P		**sP**		**13 20 53.2**	**+0.1**
DPC				AMS		AMS		13 59 50.0	
DPC	**Dobruska-Polom**	**80.36**	**329**	*e*P		**P**		**13 20 43.3**	**+1.6**
DPC				*e*				13 20 53.2	
BRG	**Berggiesshubel**	**80.91**	**330**	*e*P		P		13 20 35.1	-9.4
	comp=Z,5.1nm,0.9s								
BRG				*e*				13 20 55.7	
	comp=Z,7.1nm,1.0s								
	comp=N,109nm,11.5s								
	comp=E,108nm,14.2s								
	comp=Z,174nm,13.6s								
BRG	**Berggiesshubel**	**80.91**	**330**	*e*P		P		13 20 35.1	-9.4
BRG				pmax		pmax			
	comp=Z,5.0nm,0.9s								
BRG				MLR		MLR			
	comp=N,109nm,11.5s								
BRG				MLR		MLR			
	comp=E,108nm,14.2s								
BRG				MLR		MLR			
	comp=Z,174nm,13.6s								
CLL	**Collm**	**80.93**	**331**	*i* P		**P**		**13 20 44.9**	**+0.3**
	comp=Z,10.0nm,1.0s								
CLL				*i*				13 20 55.4	
	comp=Z,17nm,1.0s								
CLL	**Collm**	**80.93**	**331**	*e*P		**P**		**13 20 44.6**	**0.0**
CLL				pmax		pmax			
	comp=Z,12nm,0.8s								
CLL	**Collm**	**80.93**	**331**	*e*P		**P**		**13 20 44.6**	**0.0**
	comp=Z,12nm,0.8s								
PVCC	**Panska Ves**	**80.93**	**330**	AMS		AMS		14 00 00.0	
	comp=Z,100nm,13.0s								
GOPC	**GO Pecny, Ondr**	**81.33**	**329**	AMS		AMS		14 04 20.0	
	comp=Z,100nm,10.1s								
PRU	**Pruhonice**	**81.37**	**329**	*e*P		**P**		**13 20 48.2**	**+1.2**
PRU				*ep*P		**PcP**		**13 20 53.4**	**+0.4**
PRU				*es*P		**pP**		**13 20 58.0**	**+2.6**
PRU				AMS		AMS		14 01 20.0	
	comp=Z,100nm,11.2s								
PRU	**Pruhonice**	**81.37**	**329**	*e*P		**P**		**13 20 48.2**	**+1.2**
PRU				*e*				13 20 58.0	
PRU				MLR		MLR			
	comp=Z,100nm,11.2s								
EYMN	**Ely**	**81.46**	**34**	*e*P		**P**		**13 20 46.9**	**-0.6**
	comp=Z,6.0nm,0.9s								
ECSD	**EROS Data Cent**	**82.18**	**39**	*e*P		**P**		**13 20 50.9**	**-0.5**
	comp=Z,5.4nm,0.8s								
CONA	**Conrad Observa**	**82.42**	**327**	*i* P		P		13 20 47.0	-5.7
	comp=Z,7.4nm,1.0s								
KHC	**Kasperske Hory**	**82.43**	**329**	*e*P		**P**		**13 20 53.3**	**+0.7**
KHC				*ep*P		**PcP**		**13 20 58.2**	**+0.4**
KHC				*es*P		**pP**		**13 21 03.4**	**+2.3**
KHC				AMS		AMS		14 03 00.0	
	comp=Z,100nm,13.1s								
KHC	**Kasperske Hory**	**82.43**	**329**	*e*P		**P**		**13 20 52.7**	**+0.1**
KHC				pmax		pmax			
	comp=Z,3.0nm,0.9s								
KHC	**Kasperske Hory**	**82.43**	**329**	*e*P		**P**		**13 20 52.7**	**+0.1**
	comp=Z,3.4nm,0.9s								
GERES	**GERESS Array B**	**82.60**	**329**	P		**P**		**13 20 53.9**	**+0.2**
	comp=Z,1.6nm,0.6s,baz=35,slow=4.9,SNR=10								
GEA0	**GERESS Array S**	**82.61**	**329**	*e*P		**P**		**13 20 53.4**	**-0.2**
ANMO	**Albuquerque**	**82.78**	**51**	⇓*i*P		**P**		**13 20 56.4**	**+1.4**
ANMO				pmax		pmax			
	comp=Z,6.0nm,1.2s								
ANMO	**Albuquerque**	**82.78**	**51**	*e*P		**P**		**13 20 54.8**	**-0.1**
	comp=Z,6.6nm,1.3s								
ARSA	**Arzberg**	**83.10**	**327**	*i* pP		pP		13 21 02.2	-2.4
	comp=Z,4.3nm,0.6s								
MOA	**Molln**	**83.16**	**328**	*i* sP		P		13 21 04.1	+7.6
	comp=Z,4.0nm,0.8s								
319A	**Douglas**	**83.35**	**55**	*e*P		**P**		**13 20 56.9**	**-0.9**
	comp=Z,7.7nm,0.9s								
SOKA	**Soboth**	**83.75**	**327**	*i* PcP		**P**		**13 21 00.2**	**+0.6**
	comp=Z,9.3nm,0.6s								
SCHQ	**Schefferville**	**83.93**	**17**	P		**P**		**13 21 00.8**	**+0.6**
	comp=Z,5.1nm,0.6s,baz=293,slow=4.8,SNR=3.8								
OBKA	**Obir**	**84.09**	**327**	*i* PcP		**PcP**		**13 21 04.9**	**-0.3**
	comp=Z,6.9nm,1.0s								
KBA	**Koelnbreinsper**	**84.15**	**328**	*i* PcP		**P**		**13 21 02.1**	**+0.4**
	comp=Z,7.2nm,0.8s								
MYKA	**Terra Mystica**	**84.38**	**328**	*i* P		**P**		**13 21 02.6**	**-0.2**
	comp=Z,5.5nm,0.6s								
WATA	**Walderalm**	**84.67**	**329**	*i* P		**P**		**13 21 04.1**	**-0.2**
	comp=Z,4.3nm,0.4s								
WTTA	**Wattenberg**	**84.70**	**329**	*i* P		P		13 20 59.7	-4.8
	comp=Z,1.3nm,0.4s								
ABTA	**Abfaltersbach**	**84.76**	**328**	*i* P		**P**		**13 21 04.4**	**-0.3**
	comp=Z,8.4nm,1.0s								
MOTA	**Moosalm**	**84.85**	**330**	*i* PcP		**P**		**13 21 06.0**	**+0.8**
	comp=Z,3.4nm,0.6s								
RETA	**Reutte**	**84.87**	**330**	*i* PcP		**P**		**13 21 05.8**	**+0.5**
	comp=Z,12nm,0.8s								
BFO	**Black Forest**	**85.12**	**332**	*e*P		**P**		**13 21 06.1**	**-0.3**
BFO				pmax		pmax			
	comp=Z,15nm,1.0s								
BFO	**Black Forest**	**85.12**	**332**	*e*P		**P**		**13 21 06.1**	**-0.3**
	comp=Z,15nm,1.0s								
FETA	**Feichten**	**85.26**	**330**	*i* PcP		**P**		**13 21 07.7**	**+0.4**
	comp=Z,7.6nm,0.9s								
DAVA	**Damuels**	**85.38**	**330**	*i* P		**P**		**13 21 06.9**	**-1.0**
	comp=Z,17nm,1.0s								
MNTX	**Cornudas Mount**	**85.62**	**53**	*e*P		**P**		**13 21 08.6**	**-0.6**
	comp=Z,8.3nm,1.6s								
FUORN	**Ofenpass-Fuorn**	**85.78**	**330**	*e*P		**P**		**13 21 09.8**	**-0.2**
	comp=Z,20nm,0.8s								
WMOK	**Wichita Mounta**	**87.49**	**47**	*e*P		**P**		**13 21 18.1**	**-0.2**
WMOK				pmax		pmax			
	comp=Z,2.0nm,0.8s								
WMOK	**Wichita Mounta**	**87.49**	**47**	*e*P		**P**		**13 21 18.1**	**-0.2**
	comp=Z,2.2nm,0.8s								
TX31	**Lajitas Ar. Si**	**88.31**	**53**	*e*P		**P**		**13 21 22.2**	**-0.2**
TXAR	**Lajitas Array**	**88.31**	**53**	P		**P**		**13 21 22.7**	**+0.2**
	comp=Z,1.1nm,0.6s,baz=303,slow=3.4,SNR=17								
MIAR	**Mount Ida**	**90.55**	**44**	*e*P		**P**		**13 21 32.6**	**-0.1**
MIAR				pmax		pmax			
	comp=Z,8.0nm,0.9s								
MIAR	**Mount Ida**	**90.55**	**44**	*e*P		**P**		**13 21 32.6**	**-0.1**
	comp=Z,7.7nm,0.9s								
WHAR	**Wooly Hollow**	**90.68**	**42**	*e*P		**P**		**13 21 33.0**	**-0.3**
	comp=Z,6.5nm,0.8s								
HRV	**Adam Dziewonsk**	**93.77**	**25**	*e*P		**P**		**13 21 45.6**	**-1.8**
HRV				pmax		pmax			
	comp=Z,18nm,0.6s								
HRV	**Adam Dziewonsk**	**93.77**	**25**	*e*P		**P**		**13 21 45.6**	**-1.8**
	comp=Z,18nm,0.6s								
ESDC	**Sonseca Array**	**97.00**	**335**	P		**P**		**13 22 02.0**	**-0.2**
	comp=Z,0.3nm,0.4s,baz=16,slow=11,SNR=3.8								
ESDC				LR		LR		14 10 57.8	
	comp=Z,40nm,18.8s,baz=25,slow=39								
TOA0	**Torodi Ar. Sit**	**117.63**	**317**	*e*PKPdf		**PKPdf**		**13 27 15.6**	**-1.4**
TORD	**Torodi Ar. Bea**	**117.63**	**317**	PKP		**PKPdf**		**13 27 16.2**	**-0.8**
	comp=Z,1.1nm,0.5s,baz=30,slow=1.9,SNR=17								
TORD				PP		PP		13 28 20.6	-8.1
	comp=Z,0.9nm,0.9s,baz=30,slow=8.6,SNR=4.3								
TORD				PKKPbc		**PKKPbc**		**13 37 38.4**	**+0.9**
	comp=Z,0.7nm,0.7s,baz=214,slow=3.9,SNR=4.7								
MAW	**Mawson**	**121.11**	**206**	PKP		**PKPdf**		**13 27 21.8**	**-0.2**
	comp=Z,1.8nm,0.7s,baz=46,slow=2.5,SNR=7.0								
DBIC	**Dimbokro**	**126.52**	**319**	PKP		**PKPdf**		**13 27 33.9**	**-0.2**
	comp=Z,2.9nm,0.5s,baz=1.8,slow=2.2,SNR=11								
QSPA	**South Pole Qui**	**127.81**	**180**	*e*PKPdf		**PKPdf**		**13 27 34.0**	**-1.0**
SNAA	**Sanae**	**142.17**	**197**	*e*PKHKP		PKPpre		13 27 54.9	
SNAA	**Sanae**	**142.17**	**197**	*e*PKPpre		PKPpre		13 27 54.9	
LPAZ	**La Paz**	**144.89**	**60**	PKP		**PKPab**		**13 28 07.5**	**-0.3**
	comp=Z,3.3nm,0.6s,baz=346,slow=3.0,SNR=15								
LPAZ	**La Paz**	**144.89**	**60**	*e*PKPbc		**PKPab**		**13 28 06.3**	**-1.5**
PB11	**IPOC Station P**	**146.12**	**67**	*e*PKPdf		**PKPdf**		**13 28 11.1**	**+0.9**
PLCA	**Paso Flores**	**153.81**	**107**	PKPbc		**PKPbc**		**13 28 29.4**	**0.0**
	comp=Z,1.0nm,0.5s,baz=339,slow=3.2,SNR=3.3								

IDC 19 13:55:41.0± 3.3, 35°33S × 179°38W, h0^km, mb 3.7/2, mb1 4.0/3, mb1mx3.6/31, mbtmp3.8/3, ML 4.0/1, Error ellipse: s-maj=76.8km s-min=36.8km az=125.0, East of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**4.06**	**223**	Pn	Pn	13 56 44.0	-0.4
	10nm,0.3s,baz=18,slow=20,SNR=64						
URZ				Sn	Sn	13 57 31.8	-0.9
	6.8nm,0.3s,baz=107,slow=19,SNR=15						
ASAR	**Alice Springs**	**41.95**	**273**	P	P	14 03 34.0	+0.2
	0.5nm,0.5s,baz=114,slow=7.7,SNR=28						
WRA	**Warramunga Arr**	**43.38**	**278**	P	P	14 03 45.3	-0.2
	0.6nm,0.4s,baz=118,slow=7.7,SNR=24						
FINES	**FINESS Array B**	**149.28**	**336**	PKPbc	PKPbc	14 15 30.1	-0.7
	1.5nm,0.8s,baz=64,slow=3.2,SNR=4.1						

*NIED **19** 14:01:00.24˚00N × 121˚.60E, h8^km, Mw4.5 Best double couple: M0 5.33000 × 10^15 NP1: φs 205.00000°, δ 24.00000°, λ 41.00000°. NP2: φs 76.00000°, δ 75.00000°, λ 109.00000°.*
*BJI **19** 14:01:07.8, 24˚.00N × 121˚.61E, h8^km, mb4.4/38, mB4.7/35, ML4.6/11, Ms4.4/38, Ms7 4.2/35*
*JMA **19** 14:01:08.8± 0.1, 23˚.97N × 121˚.57E, h9^km ± 3^km, M4.3*
*NEIC **19** 14:01:09.3± 0.6, 23˚.97N × 121˚.63E, h16^km ± 4^km, mb4.7/29, ML4.8(TAP), Error ellipse: s-maj=6.0km s-min=4.1km az=119.0*
NEIC Felt at Hualien and Taipei. Recorded [4 TAP] in Hualien and Nantou; [3 TAP] in Yilan; [2 TAP] in Taichung and Yunlin; [1 TAP] in Changhua, Hsinchu, Miaoli, Taoyuan and Taitung.
*MOS **19** 14:01:10.2± 1.1, 24˚.01N × 121˚.66E, h33^km, mb4.8/24, Error ellipse: s-maj=10.1km s-min=7.3km az=91.7*
*ISCJB **19** 14:01:10.2± 0.2, 23˚.99N ± 0˚.01 × 121˚.65E ± 0˚.02, h27^km ± 1^km, mb4.4/61, MS3.6/12, Error ellipse: s-maj=2.8km s-min=1.8km az=44.9*
*TAP **19** 14:01:10.3, 24˚.01N × 121˚.55E, h14^km, ML4.8, B*
*IDC **19** 14:01:15.7± 3.6, 24˚.00N × 121˚.77E, h72^km ± 34^km, mb3.9/19, mb1 4.0/21, mb1mx3.8/60, mbtmp4.2/21, ML3.4/2, MS3.4/9, Ms1 3.5/9, ms1mx3.1/35, Error ellipse: s-maj=17.0km s-min=12.6km az=73.0*

ISC 19 14:01:09.9± 0.7, 23°99N ± 0°.02 × 121°62E ± 0°.02, h15^km ± 4^km, n21, σ1 § 68/274, mb4.5/61, MS3.7/12, 25C-25D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HWA	**Hwalien**	**0.02**	**244**	⇓*i*P	**Pg**	**14 01 13.7**	**+1.1**
	baz=123						
TWD	**Chiawan**	**0.10**	**346**	⇓*i*P	**Pg**	**14 01 13.5**	**+0.3**
	baz=35						
ESF	**Shoufeng Towns**	**0.15**	**223**	*e*P	**Pb**	**14 01 14.9**	**+0.4**
	baz=204						
ESF				*e*S	**Sg**	**14 01 17.6**	**+1.0**
	baz=204						
NACB	**Ninganchiao**	**0.19**	**352**	*e*Pg	**Pg**	**14 01 14.2**	**-0.3**
ESL	**Shilin**	**0.24**	**226**	⇓*i*P	**Pg**	**14 01 15.2**	**-0.1**
	baz=202						
TEGC	**Jichi Village**	**0.28**	**195**	⇑*e*P	**Pb**	**14 01 18.1**	**+1.3**
	baz=181						
EHP	**Heping Village**	**0.34**	**18**	*e*P	**Pb**	**14 01 18.3**	**+0.5**
	baz=31						
EHP				S	**Sb**	**14 01 23.1**	**+0.1**
	baz=31						
WHF	**Hehuan Shan**	**0.36**	**296**	⇑*i*P	**Pg**	**14 01 16.9**	**-0.7**
	baz=297						
ENA	**Nanau**	**0.45**	**14**	⇑*i*P	**Pb**	**14 01 19.4**	**-0.3**
	baz=23						
TWT	**Tachien**	**0.49**	**303**	⇑*i*P	**Pg**	**14 01 19.6**	**-0.2**
	baz=303						
NNS	**Nan Shan**	**0.51**	**333**	⇑*i*P	**Pg**	**14 01 19.9**	**-0.2**
	baz=339						
EHY	**Hungye**	**0.55**	**210**	⇓*e*P	**Pg**	**14 01 20.6**	**-0.3**
	baz=203						
EHY				*e*S	**Sg**	**14 01 28.6**	**+0.4**
	baz=203						
SSLB	**Suanglung**	**0.64**	**252**	*e*Pg	**Pg**	**14 01 22.2**	**-0.3**
ENTT	**Nioudou**	**0.65**	**355**	⇑*i*P	**Pg**	**14 01 22.8**	**0.0**
	baz=1.0						
TWC	**Suao**	**0.66**	**18**	⇑*i*P	**Pb**	**14 01 23.1**	**0.0**
	baz=18						
TWC				*e*S	**Sb**	**14 01 31.5**	**-0.4**
	baz=18						
YULB	**Yu-li**	**0.66**	**207**	*e*Pg	**Pg**	**14 01 22.1**	**-0.8**
SMLT	**Sun Moon Lake**	**0.67**	**261**	⇑*i*P	**Pg**	**14 01 22.7**	**-0.4**
	baz=258						
TWF1	**Yuli**	**0.70**	**205**	⇑*e*P	**Pg**	**14 01 22.6**	**-0.9**
	baz=199						
TYC	**Yuchr**	**0.70**	**264**	⇑*i*P	**Pg**	**14 01 23.1**	**-0.6**
	baz=260						
YHNB	**Yeheng**	**0.72**	**342**	*e*Pg	**Pg**	**14 01 23.5**	**-0.5**
NSK	**Sanguang**	**0.73**	**341**	⇑*i*P	**Pg**	**14 01 24.0**	**-0.2**
	baz=337						
NSK				*e*S	**Sg**	**14 01 33.0**	**-0.9**
	baz=337						
TWE	**Neicheng**	**0.73**	**3**	P	**Pb**	**14 01 24.4**	**0.0**
	baz=18						
TWE				S	**Sb**	**14 01 33.9**	**-0.3**
	baz=18						
ILA	**Ilan**	**0.79**	**8**	P	**Pg**	**14 01 25.5**	**+0.2**
	baz=14						
ILA				S	**Sg**	**14 01 36.4**	**+0.8**
	baz=14						
YUS	**Yu-Shan**	**0.79**	**231**	⇓*i*P	**Pg**	**14 01 25.6**	**+0.2**
	baz=236						
TWQ1	**Liyutan**	**0.86**	**295**	⇑*i*P	**Pb**	**14 01 26.7**	**+0.2**
	baz=295						
NSTT	**Nanjuang**	**0.86**	**319**	⇑*i*P	**Pb**	**14 01 26.4**	**-0.1**
	baz=321						
NSTT				S	**Sb**	**14 01 37.8**	**-0.1**
	baz=321						
WNT	**Mingjian**	**0.86**	**263**	⇑*i*P	**Pg**	**14 01 27.3**	**+0.5**
	baz=261						
WNT				S	**Sg**	**14 01 39.1**	**+1.0**
	baz=261						
TCU	**Taichung**	**0.88**	**281**	⇑*i*P	**Pg**	**14 01 27.5**	**+0.5**
	baz=278						
TCU				*i* S	**Sg**	**14 01 39.6**	**+1.0**
	baz=278						
ALS	**Alishan**	**0.89**	**238**	⇓*i*P	**Pb**	**14 01 27.1**	**-0.1**
	baz=233						
NSY	**Sanyi**	**0.90**	**299**	⇑*i*P	**Pg**	**14 01 27.8**	**+0.4**
	baz=299						
EGS		**0.90**	**18**	*i* P	**Pn**	**14 01 27.7**	**-0.3**
	baz=23						
CHKT	**Chengkung**	**0.91**	**195**	*e*P	**Pb**	**14 01 27.0**	**-0.4**
	baz=191						
CHN5	**Tsauling**	**0.95**	**246**	⇑P	**Pg**	**14 01 28.8**	**+0.5**
	baz=242						
ELDTW	**Lidau**	**0.97**	**215**	⇓*e*P	**Pb**	**14 01 27.1**	**-1.4**
	baz=198						
TWA	**Mucha**	**0.99**	**358**	⇓*i*P	**Pn**	**14 01 29.4**	**+0.1**
	baz=354						
TWA				*e*S	**Sb**	**14 01 41.5**	**-0.2**
	baz=354						
TATO	**Taipei**	**0.99**	**353**	*e*Pn	**Pb**	**14 01 28.8**	**-0.1**
HSN	**Hsinchu**	**1.01**	**324**	⇓*i*P	**Pg**	**14 01 30.4**	**+0.9**
	baz=337						
HSN				*e*S	**Sn**	**14 01 44.3**	**+0.8**
	baz=337						
WGK	**Gukeng**	**1.02**	**253**	⇑P	**Pn**	**14 01 29.8**	**+0.2**
	baz=249						
TAP1	**Taipei**	**1.05**	**355**	⇓P	**Pn**	**14 01 29.9**	**-0.2**
	baz=357						
TAP1				*i* S	**Sg**	**14 01 43.9**	**-0.2**
	baz=357						
TAP	**Taipei**	**1.05**	**354**	*e*P	**Pg**	**14 01 30.3**	**-0.1**
	baz=357						
TAP				*e*S	**Sg**	**14 01 43.8**	**-0.4**
	baz=357						
NCU	**National Centr**	**1.06**	**338**	⇓*i*P	**Pg**	**14 01 30.8**	**+0.3**
	baz=348						
NCU				*e*S	**Sn**	**14 01 46.1**	**+1.4**
	baz=348						
TWB1	**Santiao Chiao**	**1.07**	**18**	P	**Pg**	**14 01 30.7**	**0.0**
	baz=15						
TWB1				*e*S	**Sb**	**14 01 43.6**	**-0.4**
	baz=15						
NWF	**Wu-fen Shan**	**1.09**	**8**	⇓*i*P	**Pn**	**14 01 30.7**	**0.0**
	baz=11						
NWF				*e*S	**Sn**	**14 01 46.1**	**+0.5**
	baz=11						
TWS1	**Kuangyinshan**	**1.13**	**351**	*e*P	**Pn**	**14 01 31.2**	**0.0**
	baz=353						
TWS1				*e*S	**Sg**	**14 01 48.2**	**+1.7**
	baz=353						
CHN4	**Tsaushan**	**1.14**	**236**	⇓*i*P	**Pg**	**14 01 32.2**	**+0.3**
	baz=222						
CHN4				*i* S	**Sg**	**14 01 47.9**	**+1.2**
	baz=222						
TPUB	**Ta-pu**	**1.14**	**233**	*e*Pn	**Pn**	**14 01 31.3**	**0.0**
STYT	**Tauyuan**	**1.14**	**224**	*e*P	**Pn**	**14 01 31.4**	**0.0**
	baz=214						
STYT				*e*S	**Sn**	**14 01 47.1**	**+0.4**
	baz=214						
CHN2	**Minshiung**	**1.14**	**247**	*e*P	**Pb**	**14 01 32.0**	**+0.6**
	baz=243						
WTP	**Ta-pu**	**1.18**	**232**	⇓P	**Pb**	**14 01 32.5**	**+0.4**
	baz=217						
WTP				*e*S	**Sg**	**14 01 48.7**	**+0.5**
	baz=217						
CHY	**Chiayi**	**1.20**	**246**	⇓*i*P	**Pb**	**14 01 32.9**	**+0.6**
	baz=257						
CHY				*e*S	**Sn**	**14 01 49.0**	**+0.8**
	baz=257						
WTCT	**Ta-ch'eng**	**1.23**	**265**	⇑*i*P	**Pn**	**14 01 32.9**	**+0.3**
	baz=263						
WTCT				*i* S	**Sn**	**14 01 49.6**	**+0.6**
	baz=263						
TWK	**Hsinying**	**1.26**	**236**	*e*P	**Pb**	**14 01 34.3**	**+0.9**
	baz=217						
TWK				*e*S	**Sg**	**14 01 51.3**	**+0.6**
	baz=217						
TWG	**Pinlang**	**1.26**	**204**	⇓*e*P	**Pn**	**14 01 30.8**	**-2.2**
	baz=190						
TWG	**Pinlang**	**1.26**	**204**	*e*Pn	**Pn**	**14 01 30.8**	**-2.2**
CHN1	**Nanshi**	**1.28**	**232**	⇓P	**Pb**	**14 01 34.4**	**+0.7**
	baz=220						
CHN1				S	**Sg**	**14 01 51.9**	**+0.5**
	baz=220						
TWY	**Chenhua**	**1.29**	**359**	*e*P	**Pn**	**14 01 33.3**	**0.0**
	baz=359						
JYNG	**Yonagunijimaku**	**1.29**	**69**	P	**Pb**	**14 01 34.0**	**+0.1**
JYNG				S	**Sg**	**14 01 52.4**	**+0.6**
TTN	**Taitung**	**1.30**	**200**	*e*P	**Pb**	**14 01 34.5**	**+0.4**
	baz=196						
SGST	**Jiashian**	**1.31**	**227**	*e*P	**Pb**	**14 01 34.9**	**+0.6**
	baz=223						
WSF	**Szhu**	**1.33**	**255**	*e*P	**Pn**	**14 01 34.5**	**+0.6**
	baz=253						
WSF				*e*S	**Sb**	**14 01 52.3**	**+0.9**
	baz=253						
YOJ	**Yonaguni jima**	**1.35**	**69**	P	**Pb**	**14 01 35.0**	**+0.1**
YOJ				S	**Sg**	**14 01 53.7**	**0.0**
YOJ	**Yonaguni jima**	**1.35**	**69**	⇑*i*P	**Pb**	**14 01 35.0**	**+0.1**
	baz=69						
YOJ				*e*S	**Sg**	**14 01 53.8**	**+0.2**
	baz=69						
YOJ	**Yonaguni jima**	**1.35**	**69**	*e*P	**Pn**	**14 01 34.1**	**-0.2**
YOJ	**Yonaguni jima**	**1.35**	**69**	*e*Pn	**Pn**	**14 01 34.1**	**-0.2**
CHN8	**Yiju**	**1.44**	**244**	P	**Pb**	**14 01 36.6**	**+0.1**
	baz=242						
CHN8				*e*S	**Sg**	**14 01 56.5**	**+0.1**
	baz=242						
CHN3	**Shinhua**	**1.47**	**232**	*e*P	**Pg**	**14 01 38.1**	**-0.1**
	baz=227						
ECL	**Taimali**	**1.51**	**204**	*e*P	**Pn**	**14 01 36.0**	**-0.5**
	baz=191						
SSD	**Sandimen**	**1.53**	**217**	*e*P	**Pn**	**14 01 36.8**	**+0.1**
	baz=201						
SCLT	**Jiali**	**1.54**	**239**	*e*P	**Pb**	**14 01 38.0**	**-0.2**
	baz=236						
SCLT				*e*S	**Sg**	**14 01 59.4**	**-0.1**
	baz=236						
TAI1	**Yung-k'ang**	**1.59**	**234**	*e*P	**Pb**	**14 01 39.1**	**+0.1**
	baz=229						
TWM1	**Shoushan**	**1.60**	**224**	*e*P	**Pg**	**14 01 40.6**	**-0.1**
	baz=219						
SGLT	**Jiouru**	**1.63**	**220**	*e*P	**Pb**	**14 01 39.9**	**+0.3**
	baz=204						
PCYT	**Pengchaiyu**	**1.69**	**14**	*e*P	**Pn**	**14 01 39.2**	**+0.3**
	baz=13						
EAST	**Anshuo**	**1.75**	**204**	*e*P	**Pn**	**14 01 38.1**	**-1.6**
	baz=192						
TAW	**Tawu**	**1.75**	**203**	*e*P	**Pn**	**14 01 40.5**	**+0.8**
	baz=192						
SCZT	**Fangliau**	**1.85**	**210**	*e*P	**Pb

NJ2	comp=Z,2µm,6.1s			LR	LR				
	comp=Z,2µm,13.0s								
JAM	**Amami Oshima**	**8.41**	**57**	P	**Pn**	**14 03 09.6**	**-1.7**		
WHN	**Wuhan**	**9.19**	**317**	P	**Pn**	**14 03 21.0**	**-1.0**		
WHN				S	**Sn**	**14 05 04.3**	**-0.9**		
WHN				LR	LR				
	comp=Z,3µm,11.5s								
WHN				LR	LR				
	comp=Z,2µm,12.1s								
WHN				LR	LR				
	comp=Z,3µm,10.9s								
QIZ	**Qiongzhong**	**12.02**	**248**	P	**Pn**	**14 04 00.8**	**0.0**		
QIZ				S	**Sn**	**14 06 14.6**	**0.0**		
JNU	**Nakatsue**	**12.20**	**40**	P	**Pn**	**14 04 06.4**	**+3.2**		
	comp=Z,0.3nm,0.3s,baz=180,slow=6.1,SNR=4.1								
GYA	**Guiyang**	**13.76**	**283**	P	**Pn**	**14 04 24.8**	**+0.1**		
GYA				PP	**P**	**14 04 36.0**	**+2.8**		
GYA				SS	**S**	**14 07 14.5**	**-5.3**		
GYA				pmax	pmax				
	comp=Z,1.0nm,1.0s								
GYA				pmax	pmax				
	comp=Z,90nm,4.5s								
GYA				LR	LR				
	comp=Z,420nm,10.8s								
GYA				LR	LR				
	comp=Z,400nm,11.4s								
GYA				LR	LR				
	comp=Z,510nm,12.0s								
KS15	**Wonju Array Si**	**14.45**	**20**	*e*P	**P**	**14 04 41.0**	**+0.4**		
KS01	**Wonju Array Si**	**14.48**	**20**	*e*P	**P**	**14 04 38.5**	**-2.5**		
XAN	**Xi'an**	**14.95**	**315**	P	**P**	**14 04 45.8**	**-0.5**		
XAN				pP	Pn	14 04 49.3	+8.6		
XAN				S	**Sn**	**14 07 30.3**	**+4.2**		
XAN				sS	S	14 07 35.5	-8.4		
XAN				pmax	pmax				
	comp=Z,5.0nm,0.9s								
XAN				pmax	pmax				
	comp=Z,15nm,4.5s								
XAN				LR	LR				
	comp=Z,230nm,8.9s								
XAN				LR	LR				
	comp=Z,600nm,10.0s								
XAN				LR	LR				
	comp=Z,680nm,10.7s								
KMI	**Kunming**	**17.22**	**278**	P	**Pn**	**14 05 10.8**	**+0.6**		
KMI				pmax	pmax				
	comp=Z,17nm,0.5s								
CD2	**Chengdu**	**17.28**	**297**	*e*P	**Pn**	**14 05 09.8**	**-1.0**		
CD2				pP	pP	14 05 16.0	-0.5		
CD2				sP	sP	14 05 18.3	-0.2		
CD2				S	**Sn**	**14 08 22.6**	**-0.3**		
CD2				pmax	pmax				
	comp=Z,30nm,0.5s								
CD2				pmax	pmax				
	comp=Z,220nm,4.8s								
CD2				LR	LR				
	comp=Z,430nm,9.1s								
CD2				LR	LR				
	comp=Z,560nm,8.7s								
CD2				LR	LR				
	comp=Z,950nm,7.1s								
HHC	**Hu-ho-hao-te**	**18.81**	**336**	*e*P	**Pn**	**14 05 30.3**	**+0.7**		
HHC				S	**Sn**	**14 08 49.4**	**-10**		
HHC				SS	**SnSn**	**14 09 21.8**	**+7.8**		
HHC				pmax	pmax				
	comp=Z,10.0nm,0.6s								
HHC				pmax	pmax				
	comp=Z,150nm,4.2s								
HHC				LR	LR				
	comp=Z,450nm,11.5s								
HHC				LR	LR				
	comp=Z,320nm,10.0s								
MJAR	**Matsushiro Arr**	**18.99**	**45**	P	**P**	**14 05 29.6**	**-1.3**		
	comp=Z,0.0nm,0.3s,baz=229,slow=9.5,SNR=5.5								
MJAR				LR	LR	14 13 15.5			
	comp=Z,70nm,18.2s,baz=210,slow=38								
LZH	**Lanzhou**	**19.52**	**312**	*e*P	**Pn**	**14 05 40.8**	**+2.6**		
LZH				pP	sP	14 05 46.0	+2.8		
LZH				sP	pP	14 05 48.4	+7.2		
LZH				S	**Sn**	**14 09 15.0**	**-2.0**		
LZH				sS	sS	14 09 23.1	-0.9		
LZH				SS	**SnSn**	**14 09 38.3**	**+7.0**		
LZH				pmax	pmax				
	comp=Z,69nm,1.7s								
LZH				pmax	pmax				
	comp=Z,210nm,4.0s								
LZH				LR	LR				
	comp=Z,510nm,11.3s								
LZH				LR	LR				
	comp=Z,610nm,12.6s								
LZH				LR	LR				
	comp=Z,780nm,12.9s								
MDJ	**Mudanjiang**	**21.59**	**16**	P	**P**	**14 05 59.4**	**+0.4**		
MDJ				pP	pP	14 06 02.3	-1.1		
MDJ				sP	sP	14 06 03.8	-1.6		
MDJ				S	**S**	**14 10 00.0**	**+2.3**		
MDJ				sS	sS	14 10 04.8	+0.1		
MDJ				pmax	pmax				
	comp=Z,5.0nm,0.7s								
MDJ				pmax	pmax				
	comp=Z,100nm,6.6s								
MDJ				LR	LR				
	comp=Z,170nm,15.7s								
MDJ				LR	LR				
	comp=Z,340nm,15.7s								
MDJ				LR	LR				
	comp=Z,210nm,13.1s								
CHTO	**Chiang Mai**	**21.72**	**261**	*e*P	**P**	**14 06 01.9**	**+1.2**		
CHTO				pmax	pmax				
	comp=Z,15nm,1.4s								
CHTO	**Chiang Mai**	**21.72**	**261**	*e*P	**P**	**14 06 01.9**	**+1.2**		
	comp=Z,15nm,1.4s								
CM01	**Chiang Mai Arr**	**21.83**	**260**	*e*P	**P**	**14 06 00.5**	**-1.4**		
CMAR	**Chiang Mai Arr**	**21.83**	**260**	P	**P**	**14 06 03.8**	**+1.9**		
	comp=Z,2.2nm,0.7s,baz=69,slow=8.7,SNR=10								
CMAR				LR	LR	14 14 56.1			
	comp=Z,69nm,18.2s,baz=75,slow=37								
USRK	**Ussuriysk Ar.**	**21.88**	**20**	P	**P**	**14 06 01.1**	**-1.1**		
	comp=Z,2.1nm,0.6s,baz=207,slow=12,SNR=5.5								
USRK				LR	LR	14 15 18.9			
	comp=Z,61nm,18.5s,baz=159,slow=39								
SBUM	**Sibu**	**23.26**	**204**	*e*P	**P**	**14 06 16.0**	**-1.0**		
	comp=Z,7.6nm,0.8s								
GTA	**Gaotai**	**24.01**	**315**	P	**P**	**14 06 25.8**	**+1.5**		
GTA				pP	pP	14 06 29.9	+1.0		
GTA				sP	sP	14 06 32.8	+2.0		
GTA				S	**S**	**14 10 43.3**	**+2.5**		
GTA				pmax	pmax				
	comp=Z,6.0nm,1.1s								
GTA				pmax	pmax				
	comp=Z,110nm,4.2s								
GTA				LR	LR				
	comp=Z,210nm,11.4s								
GTA				LR	LR				
	comp=Z,320nm,10.9s								
GTA				LR	LR				
	comp=Z,520nm,13.3s								
GUMO	**Guam**	**24.28**	**111**	LR	LR	14 16 35.9			
	comp=Z,32nm,18.1s,baz=262,slow=38								
KSM	**Kuching**	**24.92**	**208**	*e*P	**P**	**14 06 31.6**	**-1.0**		
	comp=Z,9.8nm,0.9s								
HIA	**Hailar**	**25.28**	**357**	⫴*e*P	**P**	**14 06 35.3**	**-0.3**		
HIA				pmax	pmax				
	comp=Z,4.0nm,0.6s								
HIA	**Hailar**	**25.28**	**357**	*e*P	**P**	**14 06 35.5**	**0.0**		
	comp=Z,9.4nm,1.0s								
ERM	**Erimo**	**25.37**	**40**	⫯*e*P	**P**	**14 06 34.5**	**-1.9**		
ERM				pmax	pmax				
	comp=Z,35nm,1.6s								
ASAJ	**Asahikawa**	**26.42**	**35**	*e*P	**P**	**14 06 44.4**	**-1.6**		
	comp=Z,18nm,1.1s								
KLR	**Kul'dur**	**26.43**	**15**	P	**P**	**14 06 45.9**	**-0.1**		
	comp=Z,3.6nm,0.8s,baz=234,slow=7.3,SNR=9.5								
KLR	**Kul'dur**	**26.43**	**15**	⫯*e*P	**P**	**14 06 46.2**	**+0.3**		
SONM	**Songino Array**	**26.71**	**337**	P	**P**	**14 06 48.3**	**-0.4**		
	comp=Z,3.1nm,0.8s,baz=150,slow=9.7,SNR=11								
SONM				LR	LR	14 18 45.3			
	comp=Z,177nm,19.1s,baz=147,slow=39								
SONA1	**Songino Array**	**26.71**	**337**	*e*P	**P**	**14 06 46.3**	**-2.5**		
LSA	**Lhasa**	**27.73**	**289**	P	**P**	**14 06 59.2**	**+0.7**		
LSA				pmax	pmax				
	comp=Z,8.0nm,0.6s								
LSA	**Lhasa**	**27.73**	**289**	P	**P**	**14 06 59.2**	**+0.7**		
	comp=Z,8.0nm,0.6s								
YSS	**Yuzh-Sakhalins**	**28.49**	**31**	⫴*e*P	**P**	**14 07 06.4**	**+2.0**		
YSS				pmax	pmax				
	comp=Z,10.0nm,0.9s								
WMQ	**Urumqi**	**34.08**	**314**	*e*P	**P**	**14 07 56.1**	**+2.2**		
WMQ				pP	sP	14 08 02.0	+1.5		
WMQ				sP	pP	14 08 04.8	+6.2		
WMQ				S	**S**	**14 13 26.4**	**+7.3**		
WMQ				pmax	pmax				
	comp=Z,20nm,0.6s								
WMQ				pmax	pmax				
	comp=Z,98nm,5.4s								
WMQ				LR	LR				
	comp=Z,280nm,10.0s								
WMQ				LR	LR				
	comp=Z,220nm,11.8s								
WMQ				LR	LR				
	comp=Z,260nm,14.2s								
YAK	**Yakutsk**	**38.42**	**6**	⫴*e*P	**P**	**14 08 31.2**	**+0.6**		
YAK				pmax	pmax				
	comp=Z,8.0nm,0.8s								
MK01	**Makanchi Array**	**38.74**	**316**	*e*P	**P**	**14 08 33.0**	**-0.6**		
MK31	**Makanchi Array**	**38.76**	**316**	*e*P	**P**	**14 08 33.1**	**-0.6**		
MK31	**Makanchi Array**	**38.76**	**316**	*e*P	**P**	**14 08 33.1**	**-0.6**		
MKAR	**Makanchi Array**	**38.76**	**316**	P	**P**	**14 08 33.4**	**-0.3**		
	comp=Z,3.0nm,0.6s,baz=106,slow=10,SNR=20								
MAKZ	**Makanchi**	**38.96**	**316**	*e*P	**P**	**14 08 34.8**	**-0.6**		
MAKZ				pmax	pmax				
	comp=Z,10.0nm,1.0s								
MAKZ	**Makanchi**	**38.96**	**316**	*e*P	**P**	**14 08 34.8**	**-0.6**		
	comp=Z,9.7nm,1.0s								
PETK	**Petropavlovsk-**	**39.81**	**34**	LR	LR	14 24 38.6			
	comp=Z,46nm,21.9s,baz=226,slow=35								
ZAA0	**Zalesovo Array**	**40.63**	**327**	*e*P	**P**	**14 08 48.0**	**-1.1**		
ZALV	**Zalesovo Beam**	**40.63**	**327**	P	**P**	**14 08 48.0**	**-1.1**		
	comp=Z,2.7nm,0.5s,baz=115,slow=8.1,SNR=13								
ZALV				LR	LR	14 27 07.8			
	comp=Z,91nm,19.0s,baz=70,slow=38								
KSH	**Kashi**	**41.34**	**303**	*e*P	**P**	**14 08 58.8**	**+3.4**		
KSH				*es*P	sP	14 09 06.8	+4.7		
KSH				*e*PP	**PnPn**	**14 10 38.8**	**+3.3**		
KSH				*e*ScP	**ScP**	**14 14 44.6**	**+1.4**		
KSH				S	**S**	**14 15 13.9**	**+4.4**		
KSH				sS	sS	14 15 22.3	+4.9		
KSH				ScS	**ScS**	**14 18 59.4**	**+0.1**		
KSH				pmax	pmax				
	comp=Z,63nm,3.7s								
KSH				LR	LR				
	comp=Z,180nm,10.3s								
KSH				LR	LR				
	comp=Z,100nm,6.2s								
KSH				LR	LR				
	comp=Z,190nm,11.7s								
H11S3	**WAKE ISLAND Hy**	**42.22**	**89**	T	T	14 54 15.2			
	baz=284,slow=74,SNR=90								
H11S1	**WAKE ISLAND Hy**	**42.23**	**88**	T	T	14 54 15.2			
	baz=284,slow=74,SNR=52								
H11S2	**WAKE ISLAND Hy**	**42.24**	**89**	T	T	14 54 16.4			
	baz=284,slow=74,SNR=40								
KURK	**Kurchatov**	**42.50**	**320**	P	**P**	**14 09 04.7**	**+0.2**		
KURK	**Kurchatov**	**42.50**	**320**	P	**P**	**14 09 04.7**	**+0.2**		
KURBB	**Kurchatov Arra**	**42.52**	**320**	P	**P**	**14 09 04.7**	**+0.1**		
	comp=Z,3.3nm,0.2s,baz=112,slow=8.9,SNR=13								
SEY	**Seymchan**	**44.03**	**20**	*i* P	**P**	**14 09 15.0**	**-1.7**		
WRAB	**Tennant Creek**	**45.38**	**163**	⫴*e*P	**P**	**14 09 28.9**	**+1.0**		
WRAB				pmax	pmax				
	comp=Z,19nm,1.1s								
WRA	**Warramunga Arr**	**45.39**	**163**	P	**P**	**14 09 26.3**	**-1.6**		
	comp=Z,2.3nm,0.6s,baz=346,slow=8.6,SNR=22								
WRA	**Warramunga Arr**	**45.39**	**163**	*i* P	**P**	**14 09 26.6**	**-1.4**		
WRA				pmax	pmax				
	comp=Z,2.0nm,0.6s								
VOSK	**Vostochnaya**	**47.65**	**320**	*e*P	**P**	**14 09 44.3**	**-1.2**		
VOSK				pmax	pmax				
	comp=Z,5.0nm,1.0s								
VOSK	**Vostochnaya**	**47.65**	**320**	*e*P	**P**	**14 09 44.3**	**-1.2**		
	comp=Z,5.0nm,1.0s								
TIXI	**Tiksi**	**47.87**	**3**	⫴*e*P	**P**	**14 09 44.6**	**-2.2**		
TIXI				pmax	pmax				
	comp=Z,11nm,1.6s								
BRVK	**Borovoye**	**48.15**	**321**	⫯*e*P	**P**	**14 09 53.4**	**+4.1**		
BRVK				pmax	pmax				
	comp=Z,14nm,0.9s								
ASAR	**Alice Springs**	**48.84**	**165**	P	**P**	**14 09 53.8**	**-1.2**		
	comp=Z,1.0nm,0.5s,baz=344,slow=6.7,SNR=38								
AS01	**Alice Springs**	**48.85**	**165**	*e*P	**P**	**14 09 53.8**	**-1.2**		
ZRNK	**Zerenda**	**48.87**	**320**	*e*P	**P**	**14 09 53.4**	**-1.4**		
ZRNK				pmax	pmax				
	comp=Z,7.0nm,0.9s								
ZRNK	**Zerenda**	**48.87**	**320**	*e*P	**P**	**14 09 53.4**	**-1.4**		
	comp=Z,6.9nm,0.9s								
BILL	**Bilibino**	**51.73**	**20**	⫴*e*P	**P**	**14 10 15.5**	**-0.8**		
BILL				pmax	pmax				
	comp=Z,3.0nm,0.7s								
GEYT	**Alibeck**	**55.24**	**301**	P	**P**	**14 10 43.6**	**+1.0**		
	comp=Z,1.9nm,0.6s,baz=102,slow=6.2,SNR=4.3								
GEYT				LR	LR	14 38 15.9			
	comp=Z,66nm,18.7s,baz=25,slow=40								
ARU	**Arti**	**55.51**	**323**	*d* iP	**P**	**14 10 44.1**	**0.0**		
ARU						14 11 42.3			
ARU						14 12 47.0			
ARU				S	**S**	**14 18 28.9**	**+0.2**		
ARU				SS	**SS**	**14 22 12.9**	**-0.4**		
ARU				pmax	pmax				
	comp=Z,6.0nm,1.2s								
STKA	**Stephens Creek**	**58.74**	**160**	P	**P**	**14 11 06.1**	**-1.1**		
	comp=Z,2.1nm,0.7s,baz=337,slow=9.1,SNR=7.1								
TT01	**Tatalina**	**65.48**	**30**	*e*P	**P**	**14 11 51.7**	**-0.4**		
KLMR	**Klimovskoe**	**65.55**	**328**	*e*P	**P**	**14 11 50.8**	**-1.8**		
KLMR				*e*		14 12 23.2			
KLMR				pmax	pmax				
	comp=Z,11nm,1.4s								
KIV	**Kislovodsk**	**66.02**	**309**	*e*P	**P**	**14 11 55.3**	**-0.8**		
KIV				pmax	pmax				
	comp=Z,3.0nm,0.8s								
CAST	**Castle Rocks**	**67.19**	**29**	*e*P	**P**	**14 12 03.0**	**-0.2**		
	comp=Z,6.8nm,0.8s								
PPLA	**Purkeypile**	**67.22**	**30**	*e*P	**P**	**14 12 04.2**	**+0.7**		
	comp=Z,8.0nm,1.0s								
BPAW	**Bear Paw Mtn.**	**67.58**	**28**	*e*P	**P**	**14 12 05.0**	**-0.6**		
	comp=Z,11nm,1.3s								
KDAK	**Kodiak Island**	**67.84**	**35**	*i* P	**P**	**14 12 07.6**	**+0.4**		
OBN	**Obninsk**	**67.90**	**322**	*e*P	**P**	**14 12 06.9**	**-0.8**		
OBN				pmax	pmax				
	comp=Z,3.0nm,0.8s								
TRF	**Thorofare Moun**	**67.99**	**29**	*e*P	**P**	**14 12 09.1**	**+0.7**		
	comp=Z,3.8nm,0.7s								
MCK	**McKinley**	**68.53**	**29**	*e*P	**P**	**14 12 11.8**	**+0.2**		
MCK				pmax	pmax				
	comp=Z,7.0nm,1.0s								
MCK	**McKinley**	**68.53**	**29**	*e*P	**P**	**14 12 11.8**	**+0.2**		
	comp=Z,6.6nm,1.0s								
MDM	**Murphy Dome**	**68.61**	**27**	*e*P	**P**	**14 12 11.4**	**-0.7**		
	comp=Z,11nm,1.0s								
RND	**Reindeer**	**68.63**	**29**	*e*P	**P**	**14 12 10.6**	**-1.7**		
RND				pmax	pmax				
	comp=Z,12nm,0.8s								
RND	**Reindeer**	**68.63**	**29**	*e*P	**P**	**14 12 10.6**	**-1.7**		
	comp=Z,12nm,0.8s								
WRH	**Wood River Hil**	**68.76**	**28**	*e*P	**P**	**14 12 12.4**	**-0.6**		
	comp=Z,3.7nm,0.8s								
CCB	**Clear Creek Bu**	**68.84**	**27**	*e*P	**P**	**14 12 13.8**	**+0.4**		
	comp=Z,12nm,2.0s								
PMR	**Palmer**	**68.85**	**31**	*e*P	**P**	**14 12 13.0**	**-0.6**		
PMR				pmax	pmax				
	comp=Z,7.0nm,0.6s								
PMR	**Palmer**	**68.85**	**31**	*e*P	**P**	**14 12 13.0**	**-0.6**		
	comp=Z,7.4nm,0.6s								
SML	**Sawmill**	**69.18**	**31**	*e*P	**P**	**14 12 15.0**	**-0.7**		
SML				pmax	pmax				
	comp=Z,6.0nm,0.8s								
SML	**Sawmill**	**69.18**	**31**	*e*P	**P**	**14 12 15.0**	**-0.7**		
	comp=Z,6.0nm,0.8s								
ILAR	**Eielson Array**	**69.21**	**27**	P	**P**	**14 12 13.9**	**-1.8**		
	comp=Z,0.7nm,0.5s,baz=278,slow=5.5,SNR=20								
SCM	**Sheep Creek Mo**	**69.64**	**30**	*e*P	**P**	**14 12 18.8**	**+0.2**		
SCM				pmax	pmax				
	comp=Z,16nm,0.6s								
SCM	**Sheep Creek Mo**	**69.64**	**30**	*e*P	**P**	**14 12 18.8**	**+0.2**		
	comp=Z,16nm,0.6s								
KLU	**Klutina**	**70.38**	**31**	*e*P	**P**	**14 12 22.8**	**-0.3**		
	comp=Z,9.1nm,1.0s								
MENT	**Mentasta**	**71.00**	**29**	*e*P	**P**	**14 12 26.7**	**-0.1**		
	comp=Z,22nm,1.6s								
EGAK	**Eagle**	**71.58**	**27**	*e*P	**P**	**14 12 29.5**	**-0.7**		
	comp=Z,4.8nm,0.7s								
FINES	**FINESS Array B**	**71.82**	**330**	P	**P**	**14 12 30.4**	**-1.3**		
	comp=Z,1.9nm,0.8s,baz=45,slow=10.0,SNR=4.8								
DAWY	**Dawson**	**72.53**	**27**	*e*P	**P**	**14 12 34.8**	**-1.2**		
	comp=Z,7.0nm,0.8s								
INK	**Inuvik**	**73.26**	**22**	P	**P**	**14 12 38.8**	**-1.3**		
	comp=Z,4.1nm,0.7s,baz=280,slow=4.0,SNR=6.4								
INK	**Inuvik**	**73.26**	**22**	*e*P	**P**	**14 12 39.0**	**-1.2**		
INK				pmax	pmax				
	comp=Z,5.0nm,0.8s								
INK	**Inuvik**	**73.26**	**22**	*e*P	**P**	**14 12 39.0**	**-1.2**		
	comp=Z,4.7nm,0.8s								
BRTR	**Keskin Array B**	**73.61**	**307**	P	**P**	**14 12 42.6**	**-0.4**		
	comp=Z,0.9nm,0.6s,baz=188,slow=4.5,SNR=5.2								
BR231	**Keskin MP Arra**	**74.21**	**307**	*e*P	**P**	**14 12 43.2**	**-3.2**		
HFS	**Hagfors**	**77.94**	**331**	P	**P**	**14 13 04.8**	**-2.3**		
	comp=Z,1.1nm,0.7s,baz=116,slow=6.6,SNR=3.2								
NB2	**NORSAR Subarra**	**78.59**	**332**	P	**P**	**14 13 09.1**	**-1.7**		
	comp=Z,0.7nm,0.7s,baz=59,slow=5.6								
NOA	**NORSAR Array B**	**78.59**	**332**	P	**P**	**14 13 09.0**	**-1.7**		
	comp=Z,1.1nm,0.7s,baz=59,slow=5.6,SNR=4.5								
NOA				LR	LR	14 50 45.0			
	comp=Z,42nm,18.1s,baz=60,slow=38								
YKA	**Yellowknife Ar**	**83.00**	**23**	P	**P**	**14 13 32.9**	**-1.3**		
	comp=Z,4.2nm,0.7s,baz=312,slow=4.7,SNR=15								
GERES	**GERESS Array B**	**83.25**	**321**	P	**P**	**14 13 34.9**	**-1.1**		
	comp=Z,0.3nm,0.2s,baz=69,slow=5.4,SNR=4.6								
WALA	**Waterton Lakes**	**92.06**	**33**	*e*P	**P**	**14 14 18.5**	**-0.2**		
	comp=Z,3.7nm,0.8s								
BMO	**Blue Mountains**	**92.96**	**38**	*e*P	**P**	**14 14 22.4**	**-0.4**		
	comp=Z,1.3nm,0.6s								
FFC	**Flin Flon**	**93.15**	**24**	*i* P	**P**	**14 14 23.6**	**+0.3**		
ORV	**Oroville**	**93.63**	**44**	*e*P	**P**	**14 14 25.7**	**-0.2**		
ORV				pmax	pmax				
	comp=Z,2.0nm,0.9s								
ORV	**Oroville**	**93.63**	**44**	*e*P	**P**	**14 14 25.7**	**-0.2**		
	comp=Z,2.3nm,0.9s								

DDA ***19*** *14:10:15.8, 37.°18N×28.°25E, h7km, Md2.6*
ISCJB ***19*** *14:10:16.4±0.6, 37.°17N±0.°06×28.°25E±0.°06, h15km±4km, Error ellipse: s-maj=11.5km s-min=6.0km az=28.3*
CSEM ***19*** *14:10:16.7±0.1, 37.°18N×28.°23E, h15km, MD2.5, Error ellipse: s-maj=4.6km s-min=2.9km az=25.0*
ISK ***19*** *14:10:16.8, 37.°17N×28.°23E, h13km, MD2.5*
ISC 19 14:10:16.8±0.9, 37.°18N±0.°05×28.°20E±0.°03, h12km±6km, n19, σ0°92/25, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.08**	**124**	*e*PG	**Pg**	**14 10 19.6**	**+0.1**
YER				*e*SG	**Sg**	**14 10 21.4**	**0.0**
YER	**Yerkesik**	**0.08**	**124**	*e*Pg	**Pg**	**14 10 19.6**	**+0.1**
YER				*e*Sg	**Sg**	**14 10 21.4**	**0.0**
MLSB	**Milas**	**0.36**	**289**	*e*PG	**Pg**	**14 10 24.7**	**+0.6**
MLSB	**Milas**	**0.36**	**289**	*e*Pg	**Pg**	**14 10 24.7**	**+0.6**
TURN	**Turunc**	**0.44**	**133**	*i* P	**Pg**	**14 10 24.2**	**-1.4**
TURN				*i* S	**Sg**	**14 10 30.1**	**-1.2**
DALY	**Dalyan (Mu¨la**	**0.51**	**135**	*e*PG	**Pg**	**14 10 26.9**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.51**	**135**	*e*Pg	**Pg**	**14 10 26.9**	**+0.1**
BDRM	**Kayabasi**	**0.62**	**260**	*i* P	**Pg**	**14 10 28.8**	**-0.1**
BDRM				*i* S	**Sb**	**14 10 37.9**	**-0.3**
BDRM	**Kayabasi**	**0.62**	**260**	P	**Pg**	**14 10 28.8**	**-0.1**
BDRM				S	**Sb**	**14 10 37.9**	**-0.3**
BODT	**Bodrum**	**0.72**	**261**	*e*PG	**Pb**	**14 10 31.6**	**+0.2**
BODT	**Bodrum**	**0.72**	**261**	*e*Pg	**Pb**	**14 10 31.6**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.81**	**342**	*e*PG	**Pb**	**14 10 33.2**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.81**	**342**	*e*Pg	**Pb**	**14 10 33.2**	**+0.3**
FETY	**Fethiye**	**0.89**	**127**	*e*PG	**Pg**	**14 10 33.8**	**-0.2**
FETY	**Fethiye**	**0.89**	**127**	*e*Pg	**Pg**	**14 10 33.8**	**-0.2**
MANT	**Manisa**	**1.34**	**12**	*i* P	**Pn**	**14 10 40.7**	**-0.9**
MANT	**Manisa**	**1.34**	**12**	P	**Pn**	**14 10 40.7**	**-0.9**
AKAS	**Kas**	**1.47**	**129**	*i* P	**Pg**	**14 10 46.3**	**+1.2**
AKAS				*i* S	**Sg**	**14 11 07.0**	**+2.9**
AKAS	**Kas**	**1.47**	**129**	P	**Pg**	**14 10 46.3**	**+1.2**

MEX 19 14:11:35.4±0.7, 14.°48N×91.°70W, h86km±29km, MD3.7, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.85**	**347**	*e*P	Pn	14 12 04.6	-1.0
CCIG				*e*S	Sn	14 12 26.9	-1.7

ISCJB ***19*** *14:44:18.2±5.3, 32.°8S±0.°2×178.°0W±0.°8, h20km, mb4.0/4, Error ellipse: s-maj=94.3km s-min=14.0km az=13.1*
IDC ***19*** *14:44:18.0±3.0, 32.°70S×178.°05W, h0km, mb4.0/3, mb1 4.1/4, mb1mx3.8/31, mbtmp4.0/4, ML3.4/1, Error ellipse: s-maj=63.8km s-min=36.2km az=115.0*
NEIC ***19*** *14:44:22.6±2.3, 32.°77S×178.°00W, h35km, mb4.5/2, Error ellipse: s-maj=45.8km s-min=24.5km az=100.0*
ISC 19 14:44:20.3±2.9, 32.°7S±0.°2×177.°9W±0.°4, h20km, n8, σ1°03/10, mb4.0/4, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.84**	**215**	Pn	**Pn**	**14 45 59.2**	**-0.3**
	0.7nm,0.3s,baz=68,slow=19,SNR=4.5						
URZ				Sn	**Sn**	**14 47 16.8**	**+0.1**
	2.9nm,0.3s,baz=355,slow=24,SNR=17						
URZ	**Urewera**	**6.84**	**215**	*e*Pn	**Pn**	**14 45 59.8**	**+0.3**
URZ				Sn	**Sn**	**14 47 16.8**	**+0.1**
CTA	**Charters Tower**	**34.29**	**283**	P	**P

0.3nm,0.3s,baz=90,slow=8.6,SNR=2.9
ILAR Eielson Array 50.30 32 P **P** **15 03 48.1 +0.1**
0.4nm,0.7s,baz=282,slow=7.2,SNR=6.9
WRA Warramunga Arr 56.23 188 P **P** **15 04 32.4 +0.4**
0.3nm,0.4s,baz=5.6,slow=7.4,SNR=9.7

MEX 19 15:08:58.5±0.8, 14°50N×91°25W, h32km±72km, MD3.5, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.97**	**334**	*eP*	Pn	15 09 28.4	-1.4
CCIG				*eS*	Sn	15 09 50.4	-3.2

*ISCJB **19** 15:17:18.3±1.0, 23°.4S±0°.1×179°.9W±0°.2, h535km, mb4.2/5, Error ellipse: s-maj=20.1km s-min=11.2km az=150.7*
*IDC **19** 15:17:19.1±2.0, 23°.50S×180°.00W, h527km±23km, mb3.6/5, mb1 3.8/7, mb1mx3.3/28, mbtmp4.4/7, Error ellipse: s-maj=34.1km s-min=18.8km az=179.0*
ISC 19 15:17:19.5±1.0, 23°.5S±0°.1×180°.0W±0°.1, h535km, n10, σ1°06/13, mb4.4/5, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**5.98**	**163**	P	**P**	**15 18 57.7**	**+0.6**
RAO	111nm,0.3s,baz=45,slow=19,SNR=8.6			S	**S**	**15 20 16.4**	**-0.6**
DZM	**Mont Dzumac**	**12.63**	**274**	P	**P**	**15 20 04.9**	**+0.2**
	0.4nm,0.3s,baz=77,slow=19,SNR=5.3						
URZ	**Urewera**	**14.89**	**189**	P	**P**	**15 20 27.8**	**0.0**
URZ	0.6nm,0.3s,baz=5.7,slow=10,SNR=5.2			S	**S**	**15 23 03.3**	**+0.1**
STKA	**Stephens Creek**	**34.90**	**248**	P	**P**	**15 23 26.6**	**+0.2**
	5.9nm,0.6s,baz=87,slow=10,SNR=17						
ASAR	**Alice Springs**	**42.14**	**260**	P	**P**	**15 24 24.8**	**-0.5**
ASAR	11nm,0.8s,baz=100,slow=6.9,SNR=78			ScP	**ScP**	**15 29 07.8**	**+0.7**
WRA	**Warramunga Arr**	**42.48**	**266**	P	**P**	**15 24 26.7**	**-1.2**
	13nm,0.7s,baz=92,slow=8.4,SNR=193						
CMAR	**Chiang Mai Arr**	**89.44**	**290**	P	**P**	**15 29 20.1**	**+0.3**
	1.3nm,0.9s,baz=159,slow=2.3,SNR=5.5						
TXAR	**Lajitas Array**	**90.20**	**58**	P	**P**	**15 29 23.1**	**-0.2**
	1.0nm,0.8s,baz=216,slow=6.3,SNR=12						
AKASG	**Malin Array Be**	**144.68**	**328**	PKP	**PKPdf**	**15 35 53.0**	**-2.0**
	0.7nm,0.4s,baz=42,slow=3.8,SNR=6.0						
BRTR	**Keskin Array B**	**147.39**	**308**	PKPbc	**PKPbc**	**15 36 05.5**	**+2.0**
	0.8nm,0.6s,baz=82,slow=3.1,SNR=3.9						

*ISCJB **19** 15:37:46.8±0.6, 15°.38N±0°.08×119°.30E±0°.06, h31km, mb4.0/11, MS3.1/3, Error ellipse: s-maj=11.9km s-min=8.3km az=17.3*
*IDC **19** 15:37:55.2±2.4, 15°.44N×119°.45E, h95km±24km, mb3.7/10, mb1 3.8/11, mb1mx3.6/42, mbtmp4.0/11, MS3.2/4, Ms1 3.3/4, ms1mx2.8/38, Error ellipse: s-maj=28.0km s-min=13.7km az=68.0*
ISC 19 15:37:49.0±0.7, 15°.49N±0°.07×119°.46E±0°.07, h31km, n20, σ1°39/19, mb4.1/11, MS3.2/3, 3C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCPH	**Palayan**	**1.58**	**87⇑**	*eP*	**Pb**	**15 38 17.6**	**0.0**
PCPH				*eS*	**Sb**	**15 38 37.5**	**+0.3**
TGY	**Tagaytay City**	**1.99**	**134**	P	**Pb**	**15 38 27.3**	**+2.8**
	64nm,0.3s,baz=302,slow=6.8,SNR=5.8						
TGY				LR	LR	15 38 53.1	
	comp=Z,378nm,18.1s,baz=170,slow=30						
LQP	**Lukban**	**2.44**	**124⇑**	*eP*	**Pb**	**15 38 34.0**	**+1.8**
PIP	**Pasuquin**	**3.03**	**21⇑**	*eP*	**Pn**	**15 38 36.3**	**+1.5**
GQP	**Guinayangan**	**3.29**	**118⇓**	*eP*	**Pn**	**15 38 37.7**	**-0.8**
CMAR	**Chiang Mai Arr**	**19.84**	**281**	P	**Pn**	**15 42 18.9**	**-0.4**
	0.2nm,0.3s,baz=102,slow=8.4,SNR=10.0						
CMAR				LR	LR	15 49 33.0	
	comp=Z,97nm,20.1s,baz=100,slow=35						
PSI	**Prapat**	**23.84**	**240**	LR	LR	15 51 06.9	
	comp=Z,330nm,20.0s,baz=26,slow=33						
SONM	**Songino Array**	**34.01**	**344**	P	**P**	**15 44 29.5**	**-0.7**
	0.8nm,0.5s,baz=166,slow=7.4,SNR=4.1						
KLR	**Kul'dur**	**35.12**	**14**	P	**P**	**15 44 40.0**	**+0.5**
	1.4nm,0.8s,baz=203,slow=9.0,SNR=4.7						
WRA	**Warramunga Arr**	**38.13**	**157**	P	**P**	**15 45 04.3**	**-1.2**
	1.5nm,0.6s,baz=328,slow=10,SNR=21						
PALK	**Pallekele**	**38.84**	**262**	LR	LR	16 00 49.3	
	comp=Z,37nm,18.3s,baz=116,slow=35						
ASAR	**Alice Springs**	**41.40**	**160**	P	**P**	**15 45 32.2**	**-0.5**
	1.9nm,0.6s,baz=338,slow=7.1,SNR=34						
MKAR	**Makanchi Array**	**43.89**	**323**	P	**P**	**15 45 52.6**	**-0.1**
	0.5nm,0.6s,baz=122,slow=9.4,SNR=5.7						
PETK	**Petropavlovsk-**	**48.06**	**30**	P	**P**	**15 46 25.2**	**-0.3**
	4.9nm,0.7s,baz=255,slow=4.2,SNR=8.1						
STKA	**Stephens Creek**	**51.66**	**156**	P	**P**	**15 46 52.1**	**-0.9**
	2.6nm,0.8s,baz=339,slow=12,SNR=4.3						
GEYT	**Ailbeck**	**56.12**	**305**	P	**P**	**15 47 42.5**	**+2.6**
	1.2nm,0.6s,baz=81,slow=8.9,SNR=2.3						
ARCES	**ARCESS Array B**	**76.99**	**339**	P	**P**	**15 49 37.9**	**-0.5**
	2.5nm,0.8s,baz=69,slow=6.6,SNR=6.6						
FINES	**FINESS Array B**	**78.14**	**331**	P	**P**	**15 49 44.0**	**-0.9**
	1.3nm,0.6s,baz=80,slow=5.7,SNR=7.1						
NB2	**NORSAR Subarra**	**85.12**	**332**	P	**P**	**15 50 19.8**	**-2.1**
	comp=Z,1.2nm,0.7s,baz=66,slow=5.1						
NOA	**NORSAR Array B**	**85.12**	**332**	P	**P**	**15 50 20.8**	**-1.1**
	comp=Z,0.6nm,0.6s,baz=42,slow=6.0,SNR=4.2						
NOA				LR	LR	16 33 26.0	
	comp=Z,12nm,21.1s,baz=60,slow=39						

*IDC **19** 15:43:05.7±1.9, 52°.76N×169°.33W, h0km, mb3.6/4, mb1 4.0/5, mb1mx3.5/47, mbtmp3.7/5, ML3.0/1, Error ellipse: s-maj=102.2km s-min=23.2km az=9.0*
*ISCJB **19** 15:43:09.6±0.8, 52°.33N±0°.10×169°.41W±0°.10, h40km, mb3.6/4, Error ellipse: s-maj=15.5km s-min=5.4km az=151.7*
*NEIC **19** 15:43:09.5, 52°.37N×169°.34W, h10km, ML3.3(AEIC), After AEIC.*
ISC 19 15:43:11.2±1.0, 52°.4N±0°.1×169°.38W±0°.07, h40km, n26, σ1°24/23, mb3.6/4, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NIKH	**Nikolski High**	**0.65**	**30**	P	**Pn**	**15 43 22.5**	**-1.4**
NIKH				S	**Sn**	**15 43 33.0**	**0.0**
OKWR	**Okmok West Rim**	**1.25**	**34**	P	**Pn**	**15 43 33.0**	**+0.8**
OKTU	**Okmok Mt. Tuli**	**1.27**	**39**	P	**Pn**	**15 43 32.5**	**0.0**
OKER	**Okmok East Rim**	**1.32**	**37**	P	**Pn**	**15 43 33.7**	**+0.5**
OKAK	**Okmok**	**1.32**	**28**	P	**Pn**	**15 43 31.5**	**-1.6**
MSOM	**Makushin Julie**	**2.03**	**45**	P	**Pn**	**15 43 43.2**	**+0.3**
MGOD	**Makushin Gods**	**2.05**	**47**	P	**Pn**	**15 43 43.4**	**+0.2**
MTBL	**Makushin Table**	**2.25**	**45**	P	**Pn**	**15 43 47.0**	**+1.0**
UNV	**Unalaska Valle**	**2.25**	**49**	P	**Pn**	**15 43 45.7**	**-0.2**
UNV				S	**Sn**	**15 44 14.1**	**+1.7**
AKRB	**Akutan Reef Bi**	**2.63**	**48**	P	**Pn**	**15 43 52.9**	**+1.8**
AKMO	**Akutan Morgan**	**2.63**	**49**	P	**Pn**	**15 43 52.1**	**+1.0**
AKMO				S	**Sn**	**15 44 24.9**	**+3.0**
KOFP	**Korovin Flat P**	**2.90**	**269**	P	**Pn**	**15 43 55.6**	**+0.8**
KOKL	**Mount Kliuchef**	**2.96**	**270**	P	**Pn**	**15 43 56.5**	**+0.8**
GSTD	**Great Sitkin T**	**4.17**	**268**	P	**Pn**	**15 44 13.1**	**+0.8**
SPIA	**Saint Paul Isl**	**4.80**	**354**	P	**Pn**	**15 44 22.6**	**+1.7**
PETK	**Petropavlovsk-**	**19.84**	**265**	P	**P**	**15 47 37.7**	**-0.7**
	0.2nm,0.3s,baz=83,slow=14,SNR=6.0						
H11N2	**WAKE ISLAND Hy**	**37.48**	**219**	T	T	16 30 13.3	
	baz=25,slow=75,SNR=7.8						
H11N3	**WAKE ISLAND Hy**	**37.49**	**218**	T	T	16 30 17.2	
	baz=25,SNR=12						
H11N1	**WAKE ISLAND Hy**	**37.50**	**219**	T	T	16 30 09.5	
	baz=25,slow=75,SNR=6.7						
H11S1	**WAKE ISLAND Hy**	**38.67**	**218**	T	T	16 31 39.7	
	baz=22,slow=76,SNR=74						
H11S2	**WAKE ISLAND Hy**	**38.69**	**218**	T	T	16 31 40.6	
	baz=22,slow=76,SNR=65						
H11S3	**WAKE ISLAND Hy**	**38.69**	**218**	T	T	16 31 41.6	
	baz=22,slow=76,SNR=54						
PDAR	**Pinedale Array**	**40.40**	**79**	P	**P**	**15 50 44.6**	**-0.9**
	0.6nm,0.7s,baz=320,slow=3.9,SNR=3.9						
TXAR	**Lajitas Array**	**52.76**	**89**	P	**P**	**15 52 22.0**	**-0.1**
	0.5nm,0.8s,baz=300,slow=5.7,SNR=5.2						
KURBB	**Kurchatov Arra**	**62.44**	**318**	P	**P**	**15 53 28.5**	**-1.3**
	0.6nm,0.9s,baz=45,slow=7.4,SNR=5.8						
CMAR	**Chiang Mai Arr**	**76.60**	**283**	P	**P**	**15 54 57.7**	**+0.1**
	0.6nm,0.4s,baz=38,slow=6.2,SNR=4.5						

*VIE **19** 16:06:40.8±2.5, 49°.64N×19°.27E, h0km, mb2.1/2, ML2.3/4, Error ellipse: s-maj=12.6km s-min=8.2km az=78.0, Suspected Mining induced.*
*ISCJB **19** 16:06:41.3±0.5, 50°.35N±0°.04×18°.83E±0°.03, h0km, Error ellipse: s-maj=5.6km s-min=2.2km az=15.9*
*IPEC **19** 16:06:42.8±0.3, 50°.38N×18°.89E, h0km±2km, ML2.0/3, Error ellipse: s-maj=2.7km s-min=1.1km az=171.0*
*CSEM **19** 16:06:42.3±0.3, 50°.38N×18°.85E, h2km, ML2.9/9, Error ellipse: s-maj=7.2km s-min=2.7km az=15.0*
*PRU **19** 16:06:43.0, 50°.38N×18°.85E, h0km*
*WAR **19** 16:06:43.7, 50°.35N×18°.92E, h1km, Mw2.6*
ISC 19 16:06:43.2±0.8, 50°.28N±0°.04×18°.84E±0°.02, h0km, n39, σ0°71/73, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OJC	**Ojcow**	**0.62**	**96**	*e*Pg	**Pg**	**16 06 54.7**	**-0.4**
OJC				*e*Sg	**Sg**	**16 07 02.7**	**-0.4**
OJC	**Ojcow**	**0.62**	**96**	*e*Pg	**Pg**	**16 06 54.7**	**-0.4**
OJC				*e*Sg	**Sg**	**16 07 02.7**	**-0.4**
OKC	**Ostrava-Krasne**	**0.63**	**225**	*e*PG	**Pb**	**16 06 57.4**	**+0.4**
OKC				*e*SG	**Sb**	**16 07 07.7**	**+1.3**
	comp=Z,21nm,0.3s						
OKC	**Ostrava-Krasne**	**0.63**	**225**	Pg	**Pb**	**16 06 57.4**	**+0.4**
OKC				Sg	**Sb**	**16 07 07.7**	**+1.3**
	21nm,0.3s						
MORC	**Moravsky Berou**	**0.98**	**239**	*e*Pg	**Pb**	**16 07 02.9**	**-0.1**
MORC				*e*Sg	**Sb**	**16 07 15.9**	**-0.5**
	28nm,0.3s						
LANS	**Liptovska Anna**	**1.21**	**160**	*e*Pg	**Pn**	**16 07 07.6**	**+0.2**
LANS				*e*Sg	**Sn**	**16 07 24.4**	**0.0**
LANS	**Liptovska Anna**	**1.21**	**160**	*e*PG	**Pn**	**16 07 07.6**	**+0.2**
LANS				*e*SG	**Sn**	**16 07 24.4**	**0.0**
NIE	**Niedzica**	**1.28**	**132**	*e*Pg	**Pn**	**16 07 08.7**	**+0.3**
NIE				*e*Sg	**Sn**	**16 07 25.9**	**-0.4**
NIE	**Niedzica**	**1.28**	**132**	*e*Pg	**Pn**	**16 07 08.7**	**+0.3**
NIE				*e*Sg	**Sn**	**16 07 25.9**	**-0.4**
KRLC	**Kraliky**	**1.34**	**262**	*e*PG	**Pg**	**16 07 08.5**	**-0.3**
KRLC				*e*SG	**Sb**	**16 07 26.9**	**+0.1**
KRLC	**Kraliky**	**1.34**	**262**	Pg	**Pg**	**16 07 08.5**	**-0.3**
KRLC				Sg	**Sb**	**16 07 26.9**	**+0.1**
DPC	**Dobruska-Polom**	**1.61**	**273**	*e*PG	**Pn**	**16 07 12.9**	**0.0**
DPC				*e*SG	**Sg**	**16 07 35.8**	**+0.8**
	comp=Z,10nm,0.2s						
DPC	**Dobruska-Polom**	**1.61**	**273**	Pg	**Pn**	**16 07 12.9**	**0.0**
DPC				Sg	**Sg**	**16 07 35.8**	**+0.8**
	10nm,0.2s						
KSP	**Ksiaz**	**1.71**	**290**	*e*P	**Pn**	**16 07 14.0**	**-0.3**
KSP				*e*Pg	**Pb**	**16 07 15.4**	**-0.2**
KSP				*e*Sg	**Sg**	**16 07 39.3**	**+1.1**
KSP	**Ksiaz**	**1.71**	**290**	*e*P	**Pn**	**16 07 14.0**	**-0.3**
VRAC	**Vranov**	**1.75**	**237**	*e*Pn	**Pn**	**16 07 15.4**	**+0.6**
VRAC				*e*Sg	**Sg**	**16 07 40.2**	**+0.8**
	12nm,0.4s						
STHS	**Stebnicka Huta**	**1.78**	**118**	*e*Pg	**Pg**	**16 07 17.2**	**-0.2**
STHS				*e*Sg	**Sg**	**16 07 41.3**	**+0.8**
STHS	**Stebnicka Huta**	**1.78**	**118**	*e*PG	**Pg**	**16 07 17.2**	**-0.2**
STHS				*e*SG	**Sg**	**16 07 41.3**	**+0.8**
STHS				*e*LG	Lg	16 07 55.8	
VYHS	**Vyhne**	**1.79**	**180**	*e*Pn	**Pn**	**16 07 15.7**	**+0.3**
VYHS				*e*Sn	**Sn**	**16 07 38.6**	**-0.2**
VYHS	**Vyhne**	**1.79**	**180**	*e*PN	**Pn**	**16 07 15.7**	**+0.3**
VYHS				*e*SN	**Sn**	**16 07 38.6**	**-0.2**
VYHS				*e*LG	Lg	16 07 46.4	
UPC	**Upice**	**1.82**	**278**	*e*PG	**Pn**	**16 07 16.2**	**+0.4**
UPC	**Upice**	**1.82**	**278**	Pg	**Pn**	**16 07 16.2**	**+0.4**
KRUC	**Moravsky**	**2.00**	**233**	*e*Pn	**Pn**	**16 07 19.1**	**+0.9**
KRUC				*e*Sg	**Sg**	**16 07 48.2**	**+0.7**
	5.7nm,0.3s						
KECS	**Kecovo**	**2.10**	**148**	*e*Pn	**Pn**	**16 07 19.4**	**-0.2**
KECS	**Kecovo**	**2.10**	**148**	*e*PN	**Pn**	**16 07 19.4**	**-0.2**
KECS				*e*PG	**Sn**	**16 07 46.1**	**-0.3**
KECS				*e*LG	Lg	16 07 57.0	
CRVS	**Cervenica-Dubn**	**2.20**	**128**	*e*Pg	**Pg**	**16 07 24.7**	**-0.6**
CRVS				*e*Sg	**Sg**	**16 07 54.2**	**+0.4**
CRVS	**Cervenica-Dubn**	**2.20**	**128**	*e*PG	**Pg**	**16 07 24.7**	**-0.6**
CRVS				*e*SG	**Sg**	**16 07 54.2**	**+0.4**
CRVS				*e*LG	Lg	16 08 07.2	
KOLS	**Kolonicke sedl**	**2.61**	**120**	*e*Pg	**Pg**	**16 07 33.2**	**0.0**
KOLS				*e*Sg	**Sg**	**16 08 05.9**	**-1.2**
KOLS	**Kolonicke sedl**	**2.61**	**120**	*e*PG	**Pg**	**16 07 33.2**	**0.0**
KOLS				*e*SG	**Sg**	**16 08 05.9**	**-1.2**
KOLS				*e*LG	Lg	16 08 20.9	
GOPC	**GO Pecny, Ondr**	**2.63**	**263**	*e*PN	**Pn**	**16 07 26.5**	**-0.4**
GOPC				*e*PG	**Pb**	**16 07 31.2**	**0.0**
GOPC				*e*SG	**Sg**	**16 08 06.5**	**-1.2**
	comp=Z,4.1nm,0.2s						
GOPC	**GO Pecny, Ondr**	**2.63**	**263**	Pn	**Pn**	**16 07 26.5**	**-0.4**
PVCC	**Panska Ves**	**2.74**	**277**	*e*PG	**Pg**	**16 07 35.9**	**+0.2**
PVCC				*e*SG	**Sg**	**16 08 11.7**	**+0.5**
	comp=Z,8.0nm,0.2s						
PVCC	**Panska Ves**	**2.74**	**277**	Pg	**Pg**	**16 07 35.9**	**+0.2**
PVCC				Sg	**Sg**	**16 08 11.7**	**+0.5**
	8.0nm,0.2s						
PRU	**Pruhonice**	**2.78**	**266**	*e*PG	**Pb**	**16 07 34.9**	**+1.2**
PRU				*e*SG	**Sg**	**16 08 11.4**	**-1.0**
	comp=Z,4.2nm,0.4s						
PRU	**Pruhonice**	**2.78**	**266**	Pg	**Pb**	**16 07 34.9**	**+1.2**
PRU				Sg	**Sg**	**16 08 11.4**	**-1.0**
	4.2nm,0.4s						
BRG	**Berggiesshubel**	**3.17**	**283**	SG	**Sg**	**16 08 24.4**	**-0.7**
	4.9nm,0.6s						
KHC	**Kasperske Hory**	**3.60**	**253**	*e*PN	**Pn**	**16 07 40.6**	**+0.3**
KHC				*e*PG	**Pg**	**16 07 50.2**	**-2.0**
KHC				*ex*	x	16 08 35.9	
KHC				*e*SG	**Sg**	**16 08 38.0**	**-0.8**
	comp=Z,5.4nm,0.4s						
KHC	**Kasperske Hory**	**3.60**	**253**	Pn	**Pn**	**16 07 40.6**	**+0.3**
MOA	**Molln**	**3.87**	**233**	Sg	**Sg**	**16 08 44.9**	**-2.5**
	1.7nm,0.3s						

*ISCJB **19** 16:09:44.6±0.3, 43°.92N±0°.03×11°.89E±0°.03, h14km±3km, Error ellipse: s-maj=6.2km s-min=3.2km az=28.4*
*ROM **19** 16:09:44.7±0.1, 43°.91N×11°.90E, h8km, Ml2.3/16, Error ellipse: s-maj=1.8km s-min=0.9km az=20.0*
*CSEM **19** 16:09:45.2±0.1, 43°.90N×11°.88E, h10km, ML2.6/14, Error ellipse: s-maj=3.3km s-min=2.6km az=50.0*
ISC 19 16:09:45.0±0.8, 43°.92N±0°.03×11°.89E±0°.02, h9km±5km, n70, σ0°92/103, 4C, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SFI	**Santa Sofia**	**0.03**	**247⇑**	*i*Pg	**Pg**	**16 09 46.5**	**-0.2**
SFI				Sg	**Sg**	**16 09 47.7**	**-0.3**
	15µm,0.1s						
SFI	**Santa Sofia**	**0.03**	**247⇑**	*i*Pg	**Pg**	**16 09 46.5**	**-0.2**
SFI				Sg	**Sg**	**16 09 47.7**	**-0.3**
	15µm,0.1s						
ASQU	**Asqua**	**0.14**	**211⇑**	*i*Pg	**Pg**	**16 09 48.4**	**+0.3**
ASQU				Sg	**Sg**	**16 09 51.4**	**+1.1**
	2µm,0.3s						
ASQU	**Asqua**	**0.14**	**211⇑**	*i*Pg	**Pg**	**16 09 48.4**	**+0.3**
ASQU				Sg	**Sg**	**16 09 51.4**	**+1.1**
	2µm,0.3s						
T0502	**Localit˜ San**	**0.18**	**95**	Pg	**Pg**	**16 09 48.9**	**+0.1**
T0502				Sg	**Sg**	**16 09 52.1**	**+0.7**
	1µm,0.3s						
VMG	**Vicchio**	**0.25**	**280**	Pg	**Pg**	**16 09 50.7**	**+0.6**
VMG				Sg	**Sb**	**16 09 55.2**	**-1.0**
VMG	**Vicchio**	**0.25**	**280**	Pg	**Pg**	**16 09 50.7**	**+0.6**
VMG				Sg	**Sb**	**16 09 55.2**	**-1.0**
CPGN	**Carpegna, Ital**	**0.33**	**110**	Pg	**Pb**	**16 09 52.5**	**-0.7**
	5µm,3.6s						
CPGN	**Carpegna, Ital**	**0.33**	**110**	Pg	**Pb**	**16 09 52.5**	**-0.7**
	5µm,3.6s						
PARC	**Parchiule**	**0.37**	**137**	Pg	**Pg**	**16 09 52.2**	**0.0**
PARC				Sg	**Sb**	**16 09 58.6**	**-1.0**
	263nm,0.6s						
PARC	**Parchiule**	**0.37**	**137**	Pg	**Pg**	**16 09 52.2**	**0.0**
PARC				Sg	**Sb**	**16 09 58.6**	**-1.0**
	263nm,0.6s						
SEI	**Scarperia**	**0.41**	**290**	Pg	**Pg**	**16 09 53.2**	**+0.2**
SEI				Sg	**Sb**	**16 09 59.9**	**-0.8**
SEI	**Scarperia**	**0.41**	**290**	Pg	**Pg**	**16 09 53.2**	**+0.2**
SEI				Sg	**Sb**	**16 09 59.9**	**-0.8**
BADI	**Badiali**	**0.48**	**148**	Pg	**Pg**	**16 09 54.2**	**-0.1**
BADI				Sg	**Sb**	**16 10 02.2**	**-0.6**
	197nm,0.4s						
BADI	**Badiali**	**0.48**	**148**	Pg	**Pg**	**16 09 54.2**	**-0.1**
BADI				Sg	**Sb**	**16 10 02.2**	**-0.6**
	197nm,0.4s						
ATMC	**Monte Cedrone**	**0.52**	**155**	Pg	**Pg**	**16 09 55.0**	**-0.1**
	267nm,0.5s						
ATMC	**Monte Cedrone**	**0.52**	**155**	Pg	**Pg**	**16 09 55.0**	**-0.1**
	267nm,0.5s						
MTRZ	**Monterenzio**	**0.55**	**327**	Pg	**Pb**	**16 09 56.4**	**-0.4**
	288nm,0.5s						
MTRZ	**Monterenzio**	**0.55**	**327**	Pg	**Pb**	**16 09 56.4**	**-0.4**
	288nm,0.5s						
CAFI	**Castiglion Fio**	**0.59**	**174**	Pg	**Pg**	**16 09 56.4**	**0.0**
	100nm,0.4s						
CAFI	**Castiglion Fio**	**0.59**	**174**	Pg	**Pg**	**16 09 56.4**	**0.0**
	100nm,0.4s						
PTF	**Prato**	**0.59**	**274**	Pg	**Pg**	**16 09 56.4**	**0.0**
PTF	**Prato**	**0.59**	**274**	Pg	**Pg**	**16 09 56.4**	**0.0**
ATPC	**Poggio Castell**	**0.60**	**136**	Pg	**Pg**	**16 09 56.4**	**-0.2**
	146nm,0.5s						
ATPC	**Poggio Castell**	**0.60**	**136**	Pg	**Pg**	**16 09 56.4**	**-0.2**
	146nm,0.5s						
FNVD	**Fontana Vidola**	**0.61**	**295**	Pg	**Pg**	**16 09 57.1**	**+0.4**
	187nm,0.6s						
FNVD	**Fontana Vidola**	**0.61**	**295**	Pg	**Pg**	**16 09 57.1**	**+0.4**
	187nm,0.6s						
CSNT	**Castellina Chi**	**0.62**	**224**	Pg	**Pg**	**16 09 57.0**	**0.0**
	93nm,0.4s						
CSNT	**Castellina Chi**	**0.62**	**224**	Pg	**Pg**	**16 09 57.0**	**0.0**
	93nm,0.4s						
ATVO	**AVT- Monte Val**	**0.65**	**145**	Pg	**Pg**	**16 09 57.3**	**-0.3**
	190nm,0.7s						
ATVO	**AVT- Monte Val**	**0.65**	**145**	Pg	**Pg**	**16 09 57.3**	**-0.3**
	190nm,0.7s						
CRMI	**Carmignano**	**0.68**	**259**	Pg	**Pg**	**16 09 58.3**	**+0.3**
	116nm,0.5s						
CRMI	**Carmignano**	**0.68**	**259**	Pg	**Pg**	**16 09 58.3**	**+0.3**
	116nm,0.5s						
FSSB	**Fossombrone**	**0.68**	**109**	Pg	**Pg**	**16 09 57.8**	**-0.3**
	116nm,0.3s						
FSSB	**Fossombrone**	**0.68**	**109**	Pg	**Pg**	**16 09 57.8**	**-0.3**
	116nm,0.3s						
FRON	**Frontone**	**0.73**	**123**	Pg	**Pg**	**16 09 58.8**	**-0.2**
	72nm,0.7s						
FRON	**Frontone**	**0.73**	**123**	Pg	**Pg**	**16 09 58.8**	**-0.2**
	72nm,0.7s						
PZZT	**Monte Pizzetto**	**0.77**	**286**	Pg	**Pb**	**16 10 00.5**	**-0.1**
PZZT	**Monte Pizzetto**	**0.77**	**286**	Pg	**Pb**	**16 10 00.5**	**-0.1**
BDI	**Bagni Di Lucca**	**0.94**	**279**	Pg	**Pb**	**16 10 03.8**	**+0.3**
BDI	**Bagni Di Lucca**	**0.94**	**279**	Pg	**Pb**	**16 10 03.8**	**+0.3**
MGAB	**Montegabbione**	**1.02**	**171**	Pg	**Pg**	**16 10 04.1**	**-0.4**
	125nm,0.5s						
MGAB	**Montegabbione**	**1.02**	**171**	Pg	**Pg**	**16 10 04.1**	**-0.4**
	125nm,0.5s						
NVLJ	**Novalja**	**2.24**	**72**	*e*Pn	**Pn**	**16 10 23.2**	**+1.1**
NVLJ				Sn	**Sn**	**16 10 51.3**	**+1.4**
NVLJ	**Novalja**	**2.24**	**72**	*e*Pn	**Pn**	**16 10 23.2**	**+1.1**
NVLJ				Sn	**Sn**	**16 10 51.3**	**+1.4**
ABTA	**Abfaltersbach**	**2.86**	**9**	Pn	**Pn**	**16 10 32.7**	**+1.8**
	4.1nm,0.5s						
ABTA				*i* Sn	**Sn**	**16 11 06.4**	**+0.9**
	11nm,0.7s						
ABTA	**Abfaltersbach**	**2.86**	**9**	Pn	**Pn**	**16 10 32.7**	**+1.8**
	4.1nm,0.5s						
ABTA				Sn	**Sn**	**16 11 06.4**	**+0.9**
	11nm,0.7s						
MYKA	**Terra Mystica**	**2.98**	**24**	*i* Pn	**Pn**	**16 10 34.0**	**+1.5**
	1.8nm,0.4s						
MYKA				*i* Sn	**Sn**	**16 11 08.0**	**-0.4**
	0.2nm,0.1s						
MYKA	**Terra Mystica**	**2.98**	**24**	Pn	**Pn**	**16 10 34.0**	**+1.5**
	1.8nm,0.4s						
MYKA				Sn	**Sn**	**16 11 08.0**	**-0.4**
	0.2nm,0.1s						
OBKA	**Obir**	**3.20**	**35**	*i* Pn	**Pn**	**16 10 37.7**	**+2.2**
	0.5nm,0.2s						
OBKA				*i* Sn	**Sn**	**16 11 13.3**	**-0.5**
	3.2nm,0.3s						
OBKA	**Obir**	**3.20**	**35**	Pn	**Pn**	**16 10 37.7**	**+2.2**
	0.5nm,0.2s						
OBKA				Sn	**Sn**	**16 11 13.3**	**-0.5**
	3.2nm,0.3s						
FETA	**Feichten**	**3.21**	**346**	*i* Pn	**Pn**	**16 10 34.6**	**-1.1**
	1.2nm,0.4s						
FETA				*i* Sn	**Sn**	**16 11 13.0**	**-1.1**
FETA	**Feichten**	**3.21**	**346**	Pn	**Pn**	**16 10 34.6**	**-1.1**
	1.2nm,0.4s						
FETA				Sn	**Sn**	**16 11 13.0**	**-1.1**

MOTA				*i* Sn		**Sn**	**16 11 19.6**	**-0.9**
	1.4nm,0.4s								
MOTA	**Moosalm**	**3.47**	**351**	Pn		**Pn**	**16 10 41.9**	**+2.6**
	0.5nm,0.2s								
MOTA				Sn		**Sn**	**16 11 19.6**	**-0.9**
	1.4nm,0.4s								
SOKA	**Soboth**	**3.54**	**38**	*i* Pn		**Pn**	**16 10 40.8**	**+0.6**
	1.3nm,0.4s								
SOKA				*i* Sn		**Sn**	**16 11 23.2**	**+1.0**
	0.9nm,0.3s								
SOKA	**Soboth**	**3.54**	**38**	Pn		**Pn**	**16 10 40.8**	**+0.6**
	1.3nm,0.4s								
SOKA				Sn		**Sn**	**16 11 23.2**	**+1.0**
	0.9nm,0.3s								
DAVA	**Damuels**	**3.65**	**338**	*i* Sn		**Sn**	**16 11 24.0**	**-1.0**
	3.7nm,0.4s								
DAVA	**Damuels**	**3.65**	**338**	Sn		**Sn**	**16 11 24.0**	**-1.0**
	3.7nm,0.4s								
RETA	**Reutte**	**3.66**	**348**	*i* Pn		**Pn**	**16 10 40.7**	**-1.0**
	0.6nm,0.2s								
RETA				*i* Sn		**Sn**	**16 11 26.4**	**+1.4**
	1.0nm,0.3s								
RETA	**Reutte**	**3.66**	**348**	Pn		**Pn**	**16 10 40.7**	**-1.0**
	0.6nm,0.2s								
RETA				Sn		**Sn**	**16 11 26.4**	**+1.4**
	1.0nm,0.3s								
MOA	**Mollη**	**4.27**	**22**	*i* Sn		**Sn**	**16 11 40.7**	**+0.7**
	0.9nm,0.3s								
MOA	**Mollη**	**4.27**	**22**	Sn		**Sn**	**16 11 40.7**	**+0.7**
	0.9nm,0.3s								
CONA	**Conrad Observa**	**4.88**	**33**	*i* Sn		**Sn**	**16 11 54.1**	**-0.9**
	1.3nm,0.3s								
CONA	**Conrad Observa**	**4.88**	**33**	Sn		**Sn**	**16 11 54.1**	**-0.9**
	1.3nm,0.3s								
KHC	**Kasperske Hory**	**5.34**	**12**	*e*SN		**Sn**	**16 12 05.1**	**-1.4**

*CSEM **19** 16:10:51.3, 43.78N×20.70E, h0km, ML1.3*
BEO 19 16:10:51.3±0.2, 43.78N×20.70E, h0km, M1.3/7, 2C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GRUS	**Gruza**	**0.11**	**6**	*i* Pg	Pg	16 10 53.3	-0.1
GRUS	**Gruza**	**0.11**	**6**	*i* Pg	Pg	16 10 53.3	-0.1
IVAS	**Ivanjica**	**0.45**	**243**	*e*Pg	Pg	16 10 58.7	-1.1
IVAS				*e*Sg	Sg	16 11 04.7	-0.9
IVAS	**Ivanjica**	**0.45**	**243**	*e*Pg	Pg	16 10 58.7	-1.1
IVAS				*e*Sg	Sg	16 11 04.7	-0.9
TRUS	**Trudelj**	**0.49**	**335**	*e*Pg	Pg	16 10 59.9	-0.8
TRUS				*e*Sg	Sg	16 11 06.4	-0.7
TRUS	**Trudelj**	**0.49**	**335**	*e*Pg	Pg	16 10 59.9	-0.8
TRUS				*e*Sg	Sg	16 11 06.4	-0.7
DIVS	**Divibare**	**0.60**	**302**	*e*Pg	Pg	16 11 02.0	-0.8
DIVS				*e*Sg	Sg	16 11 10.8	+0.1
DIVS	**Divibare**	**0.60**	**302**	*e*Pg	Pg	16 11 02.0	-0.8
DIVS				*e*Sg	Sg	16 11 10.8	+0.1
SELS	**Selova**	**0.64**	**151**	*e*Pg	Pg	16 11 01.6	-1.9
SELS				*e*Sg	Sg	16 11 10.5	-1.3
BOVS	**Bovan**	**0.74**	**101**	*e*Pg	Pg	16 11 05.3	-0.2
BOVS				*e*Sg	Sg	16 11 14.0	-1.2
BOVS	**Bovan**	**0.74**	**101**	*e*Pg	Pg	16 11 05.3	-0.2
BOVS				*e*Sg	Sg	16 11 14.0	-1.2
BBLS	**Lazi?i**	**0.94**	**276**	*e*Pg	Pg	16 11 08.1	-1.2
BBLS				*e*Sg	Sb	16 11 23.2	-0.4
BBLS	**Lazi?i**	**0.94**	**276**	*e*Pg	Pg	16 11 08.1	-1.2
BBLS				*e*Sg	Sb	16 11 23.2	-0.4
ZAGS	**Zajecar**	**1.11**	**88**	*e*Sg	Sg	16 11 26.2	-0.8
ZAGS	**Zajecar**	**1.11**	**88**	*e*Sg	Sg	16 11 26.2	-0.8
TEKS	**Tekeris**	**1.14**	**313**	*e*Pg	Pg	16 11 13.0	-0.2
TEKS				*e*Sg	Sg	16 11 26.2	-1.8
TEKS	**Tekeris**	**1.14**	**313**	*e*Pg	Pg	16 11 13.0	-0.2
TEKS				*e*Sg	Sg	16 11 26.2	-1.8
BARS	**Barje**	**1.26**	**139**	*e*Pg	Pg	16 11 13.9	-1.6
BARS				*e*Sg	Sb	16 11 32.7	0.0
BARS	**Barje**	**1.26**	**139**	*e*Pg	Pg	16 11 13.9	-1.6
BARS				*e*Sg	Sb	16 11 32.7	0.0
ZAPS	**Zavoj**	**1.50**	**109**	*e*Pg	Pn	16 11 19.5	+0.1
ZAPS				*e*Sg	Sg	16 11 38.1	-1.2

*ISCJB **19** 16:11:19.5±0.7, 6.83N±0.05×73.06W±0.06, h155km±5km, Error ellipse: s-maj=11.4km s-min=4.7km az=34.8*
*FUNV **19** 16:11:21.4, 6.87N×73.08W, h159km, MW2.5*
*RSNC **19** 16:11:22.2±0.6, 6.80N×73.14W, h141km±3km, ML2.9*
ISC 19 16:11:19.0±1.4, 6.84N±0.05×73.08W±0.06, h161km±8km, n21, σ1§30/37, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BTLC	**Betulia, Santa**	**0.20**	**293**	*e*P	**Pn**	**16 11 41.5**	**+0.6**
BTLC				*e*S	**Sn**	**16 11 56.1**	**-1.5**
BARC	**Barichara**	**0.27**	**203**	*e*P	**Pn**	**16 11 41.1**	**+0.1**
BARC				*e*S	**Sn**	**16 11 55.8**	**-2.1**
BARC				*i*		16 11 57.1	
	comp=Z,202nm,0.3s						
GIRC	**Giron, Santand**	**0.27**	**334**	*e*P	**Pn**	**16 11 41.1**	**+0.2**
GIRC				*e*S	**Sn**	**16 11 55.7**	**-2.0**
PAMC	**Pamplona, Colo**	**0.62**	**37**	*e*P	**Pn**	**16 11 44.0**	**+1.2**
PAMC				*e*S	**Sn**	**16 12 01.0**	**0.0**
BRRC	**Barranca, Sant**	**0.68**	**293**	*i* P	**Pn**	**16 11 42.9**	**+0.3**
BRRC				*e*S	**Sn**	**16 11 59.7**	**-0.9**
BRRC				*i*		16 12 00.9	
	comp=Z,311nm,0.1s						
CBRI	**Barrientos, No**	**0.92**	**18**	*e*P	**Pn**	**16 11 45.5**	**+1.2**
CBRI				*e*S	**Sn**	**16 12 04.2**	**+0.4**
CBRI				*i*		16 12 08.9	
	comp=Z,193nm,0.4s						
GRMC	**Gramalote, San**	**0.92**	**17**	*i* P	**Pn**	**16 11 46.8**	**+2.5**
GRMC				*e*S	**Sn**	**16 12 06.0**	**+2.2**
GRMC				*i*		16 12 07.4	
	comp=Z,154nm,0.3s						
RUSC	**La Rusia**	**0.94**	**180**	*e*P	**Pn**	**16 11 45.3**	**+0.4**
RUSC				*e*S	**Sn**	**16 12 03.4**	**-1.4**
RUSC				*i*		16 12 05.6	
	comp=Z,63nm,0.2s						
CAPV	**Capacho**	**1.27**	**37**	*e*P	**Pn**	**16 11 48.8**	**+1.4**
CAPV				*e*S	**Sn**	**16 12 09.0**	**-0.2**
OCAC	**Ocana**	**1.41**	**350**	*e*P	**Pn**	**16 11 49.5**	**+0.9**
OCAC				*e*S	**Sn**	**16 12 11.8**	**+0.2**
OCAC				*i*		16 12 14.5	
	comp=Z,123nm,0.2s						
NORC	**Norcasia**	**2.19**	**235**	*e*P	**Pn**	**16 11 57.6**	**+0.6**
NORC				*e*S	**Sn**	**16 12 24.9**	**-1.3**
CHIC	**Chingaza**	**2.29**	**197**	*e*P	**Pn**	**16 11 59.9**	**+1.4**
CHIC				*e*S	**Sn**	**16 12 29.3**	**+0.2**
CHIC				*i*		16 12 34.5	
	comp=Z,30nm,0.5s						
HELC	**Santa Helena**	**2.52**	**255**	*e*P	**Pn**	**16 12 02.3**	**+1.1**
VIGV	**El Vigia**	**2.62**	**40**	*e*P	**Pn**	**16 12 02.9**	**+0.8**
VIGV				*e*S	**Sn**	**16 12 33.8**	**-1.7**
SOCV	**Socops**	**2.63**	**57**	*e*P	**Pn**	**16 12 03.5**	**+1.2**
SOCV				*e*S	**Sn**	**16 12 34.3**	**-1.5**
PRAC	**Prado**	**3.59**	**210**	*e*P	**Pn**	**16 12 15.8**	**+1.5**
PRAC				*e*S	**Sn**	**16 12 57.0**	**-0.4**
VIRV	**Villa del Rosa**	**3.70**	**10**	*e*P	**Pn**	**16 12 15.7**	**0.0**
VIRV				*e*S	**Sn**	**16 12 57.0**	**-2.9**
CURV	**Curarigua**	**4.41**	**44**	*e*P	**Pn**	**16 12 26.2**	**+1.3**
BAUV	**El Baul**	**5.41**	**67**	*e*P	**Pn**	**16 12 37.8**	**-0.2**
MAPV	**Macapo**	**5.45**	**57**	*e*P	**Pn**	**16 12 39.1**	**+0.5**
MONV	**Montecano**	**5.94**	**31**	*e*P	**Pn**	**16 12 45.4**	**+0.4**

*ISCJB **19** 16:19:51.9±1.2, 39.90N±0.07×28.76E±0.1, h10km, Error ellipse: s-maj=14.0km s-min=9.0km az=162.6*
*CSEM **19** 16:19:52.0, 39.92N×28.69E, h16km, MD2.5*
*ISK **19** 16:19:52.0, 39.92N×28.69E, h16km, MD2.5*
ISC 19 16:19:52.1±1.7, 39.92N±0.09×28.69E±0.09, h10km, n10, σ0§50/12, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KCTX	**Karacabey (Bur**	**0.43**	**324**	*e*PG	**Pg**	**16 20 01.5**	**+0.9**
KCTX	**Karacabey (Bur**	**0.43**	**324**	*e*Pg	**Pg**	**16 20 01.5**	**+0.9**
ARMT	**Armutlu**	**0.66**	**11**	*e*PG	**Pb**	**16 20 05.4**	**-0.4**
ARMT				*e*SG	**Sb**	**16 20 14.9**	**-0.1**
ARMT	**Armutlu**	**0.66**	**11**	*e*Pg	**Pb**	**16 20 05.4**	**-0.4**
ARMT				*e*Sg	**Sb**	**16 20 14.9**	**-0.1**
TVSB	**Tavsanli**	**0.76**	**128**	*e*PG	**Pg**	**16 20 07.1**	**+0.4**
TVSB	**Tavsanli**	**0.76**	**128**	*e*Pg	**Pg**	**16 20 07.1**	**+0.4**
MRMT	**Marmara Adasi**	**1.08**	**310**	*e*PN	**Pg**	**16 20 12.8**	**-0.1**
MRMT	**Marmara Adasi**	**1.08**	**310**	*e*Pn	**Pg**	**16 20 12.8**	**-0.1**
KLYT	**Kilyos**	**1.36**	**11**	*e*PN	**Pn**	**16 20 17.1**	**-0.1**
KLYT	**Kilyos**	**1.36**	**11**	*e*Pn	**Pn**	**16 20 17.1**	**-0.1**

DDA 19 16:20:38.0, 38.51N×28.72E, h7km, Ml2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MANT	**Manisa**	**0.13**	**262**	*i* P	Pg	16 20 41.1	+0.2
MANT				*i* S	Sg	16 20 43.3	+0.5
DEMI	**Demirci**	**0.53**	**360**	*i* P	Pb	16 20 49.4	-0.4
DEMI				*i* S	Sg	16 20 56.5	+1.1

*ISCJB **19** 16:43:10.2±1.4, 36.35N±0.06×141.21E±0.06, h4km±7km, mb3.5/5, Error ellipse: s-maj=9.7km s-min=8.4km az=153.3*
*JMA **19** 16:43:13.3, 36.43N×141.09E, h21km±1km, M3.6*
JMA Felt I J1.
*IDC **19** 16:43:14.0±1.2, 35.98N×140.99E, h0km, mb3.5/5, mb1 3.6/6, mb1mx3.4/38, mbtmp3.4/6, ML2.8/1, Error ellipse: s-maj=30.0km s-min=21.3km az=57.0*
ISC 19 16:43:13.0±2.0, 36.44N±0.07×141.07E±0.08, h8km±11km, n20, σ1§30/18, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.44**	**293**	P	**Pb**	**16 43 22.3**	**-0.7**
JHO				S	**Sb**	**16 43 29.6**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.70**	**342**	P	**Pg**	**16 43 26.9**	**+0.5**
JYT	**Yasato**	**0.74**	**254**	P	**Pg**	**16 43 27.4**	**+0.2**
JYT				S	**Sg**	**16 43 37.1**	**+0.3**
JFK	**Kawauchi**	**0.94**	**350**	P	**Pb**	**16 43 30.2**	**-1.4**
JSB	**Shiboa**	**1.07**	**300**	P	**Pb**	**16 43 33.5**	**-0.2**
JFT	**Otama**	**1.23**	**332**	P	**Pn**	**16 43 35.9**	**-0.6**
JFT				S	**Sn**	**16 43 52.5**	**-0.8**
JAG	**Ashikaga**	**1.30**	**270**	P	**Pn**	**16 43 36.4**	**-1.1**
JAG				S	**Sb**	**16 43 53.6**	**-1.0**
MJAR	**Matsushiro Arr**	**2.31**	**273**	Pn	**Pn**	**16 43 51.6**	**+0.3**
	2.4nm,0.3s,baz=98,slow=8.6,SNR=30						
MJAR				Sn	**Sb**	**16 44 22.6**	**-1.0**
	10nm,0.3s,baz=94,slow=28,SNR=6.8						
MAT	**Matsushiro**	**2.31**	**273**	P	**Pn**	**16 43 51.8**	**+0.4**
MAT				S	**Sb**	**16 44 22.7**	**-0.9**
H11N2	**WAKE ISLAND Hy**	**28.09**	**119**	T	T	17 18 29.0	
	baz=312,slow=75,SNR=30						
H11N1	**WAKE ISLAND Hy**	**28.10**	**119**	T	T	17 18 26.8	
	baz=312,slow=75,SNR=31						
H11N3	**WAKE ISLAND Hy**	**28.11**	**119**	T	T	17 18 27.7	
	baz=312,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**28.78**	**121**	T	T	17 19 13.9	
	baz=314,slow=75,SNR=72						
H11S3	**WAKE ISLAND Hy**	**28.78**	**122**	T	T	17 19 16.6	
	baz=314,slow=75,SNR=55						
H11S2	**WAKE ISLAND Hy**	**28.79**	**122**	T	T	17 19 18.5	
	baz=314,slow=75,SNR=35						
ZALV	**Zalesovo Beam**	**42.12**	**313**	P	**P**	**16 51 09.1**	**+3.6**
	1.3nm,0.6s,baz=97,slow=6.8,SNR=5.4						
MKAR	**Makanchi Array**	**44.20**	**303**	P	P	16 51 27.8	+5.3
	0.4nm,0.7s,baz=88,slow=8.8,SNR=3.3						
ILAR	**Eielson Array**	**50.15**	**32**	P	P	16 52 13.6	+5.1
	0.2nm,0.6s,baz=291,slow=7.6,SNR=4.7						
WRA	**Warramunga Arr**	**56.43**	**188**	P	**P**	**16 52 54.1**	**-1.1**
	0.3nm,0.4s,baz=5.2,slow=7.2,SNR=16						
ASAR	**Alice Springs**	**60.16**	**188**	P	**P**	**16 53 20.2**	**-1.0**
	0.3nm,0.9s,baz=0.5,slow=5.4,SNR=7.6						

*ISK **19** 16:46:11.9, 39.68N×39.75E, h18km, MD2.5*
*CSEM **19** 16:46:12.6±0.5, 39.65N×39.60E, h8km, ML2.2, Error ellipse: s-maj=10.5km s-min=6.4km az=81.0*
*DDA **19** 16:46:13.2, 39.63N×39.56E, h7km, Ml2.2*
ISC 19 16:46:13.0±1.0, 39.63N±0.03×39.53E±0.03, h6km±9km, n18, σ0§80/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EUZM	**Uzumlu**	**0.15**	**58**	*i* P	**Pg**	**16 46 16.1**	**0.0**
EUZM				*i* S	**Sg**	**16 46 18.9**	**+0.7**
EUZM	**Uzumlu**	**0.15**	**58**	P	**Pg**	**16 46 16.1**	**0.0**
EUZM				S	**Sg**	**16 46 18.9**	**+0.7**
ERZN	**Erzincan**	**0.15**	**106**	*e*PG	**Pg**	**16 46 15.8**	**-0.3**
ERZN				*e*SG	**Sg**	**16 46 18.4**	**+0.2**
EZC	**Erzincan**	**0.19**	**311**	*e*Pg	**Pg**	**16 46 15.8**	**-1.0**
EZC				*e*Sg	**Sg**	**16 46 18.5**	**-0.8**
TNCL	**Tunceli-Merkez**	**0.51**	**179**	*i* P	**Pg**	**16 46 22.1**	**-0.8**
TNCL				*i* S	**Sb**	**16 46 31.6**	**-0.6**
TNCL	**Tunceli-Merkez**	**0.51**	**179**	P	**Pg**	**16 46 22.1**	**-0.8**
TNCL				S	**Sb**	**16 46 31.6**	**-0.6**
KELT	**Kelkit**	**0.56**	**338**	*i* P	**Pg**	**16 46 24.2**	**+0.3**
KELT				*i* S	**Sb**	**16 46 32.7**	**-1.1**
KELT	**Kelkit**	**0.56**	**338**	P	**Pg**	**16 46 24.2**	**+0.3**
KELT				S	**Sb**	**16 46 32.7**	**-1.1**
PTK	**Pertek**	**0.74**	**189**	*e*PG	**Pb**	**16 46 28.4**	**-0.1**
PTK	**Pertek**	**0.74**	**189**	*e*Pg	**Pb**	**16 46 28.4**	**-0.1**
ILIC	**ilic-Erzincan**	**0.77**	**257**	*e*PG	**Pn**	**16 46 30.5**	**0.0**
ILIC	**ilic-Erzincan**	**0.77**	**257**	*e*Pg	**Pn**	**16 46 30.5**	**0.0**
GUMT	**Gumushane**	**0.83**	**357**	*e*PG	**Pg**	**16 46 28.1**	**-0.9**
GUMT	**Gumushane**	**0.83**	**357**	*e*Pg	**Pg**	**16 46 28.1**	**-0.9**
KEMA	**Kemaliye**	**0.88**	**246**	*i* P	**Pg**	**16 46 29.6**	**-0.4**
KEMA				*i* S	**Sg**	**16 46 43.2**	**+1.8**
KEMA	**Kemaliye**	**0.88**	**246**	P	**Pg**	**16 46 29.6**	**-0.4**
KEMA				S	**Sg**	**16 46 43.2**	**+1.8**
SUSE	**Susehri**	**1.18**	**300**	*i* P	**Pn**	**16 46 36.6**	**+0.4**
SUSE				*i* S	**Sn**	**16 46 53.2**	**+0.6**
SUSE	**Susehri**	**1.18**	**300**	P	**Pn**	**16 46 36.6**	**+0.4**
SUSE				S	**Sn**	**16 46 53.2**	**+0.6**

*CSEM **19** 16:55:41.6, 38.68N×29.04W, h5km, ML3.0*
PDA 19 16:55:41.6±0.5, 38.68N×29.04W, h5km±2km, MD3.5, ML3.0, 2D, Error ellipse: s-maj=5.7km s-min=3.6km az=27.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCED	**Cedros**	**0.27**	**101**	*e*P	Pg	16 55 46.5	-0.3
PCED				*e*S	Sg	16 55 50.2	-0.1
PCED				A	A	16 55 57.5	
	1µm,0.3s						
PCED	**Cedros**	**0.27**	**101**	*e*P	Pg	16 55 46.5	-0.3
PCED				*e*S	Sg	16 55 50.2	-0.1
CALA	**Caldeira**	**0.28**	**111**	*e*P	Pg	16 55 47.1	0.0
CALA	**Caldeira**	**0.28**	**111**	*e*P	Pg	16 55 47.1	0.0
HOR	**Horta**	**0.35**	**116**	*e*P	Pg	16 55 47.8	-0.6
HOR				*e*S	Sg	16 55 52.6	-0.5
HOR				A	A	16 55 57.4	
	1µm,0.3s						
HOR	**Horta**	**0.35**	**116**	*e*P	Pg	16 55 47.8	-0.6
HOR				*e*S	Sg	16 55 52.6	-0.5
PCAN	**Candelaria**	**0.48**	**116**	*i* P	Pg	16 55 49.9	-1.0
PCAN				*e*S	Sg	16 55 56.3	-0.9
PCAN				A	A	16 55 56.7	
	596nm,0.3s						
PCAN	**Candelaria**	**0.48**	**116**	*i* P	Pg	16 55 49.9	-1.0
PCAN				*e*S	Sg	16 55 56.3	-0.9
PPNO	**Prainha do Nor**	**0.64**	**109**	*e*P	Pg	16 55 52.5	-1.4
PPNO				*e*S	Sg	16 56 00.7	-1.5
PPNO				A	A	16 56 10.6	
	511nm,0.3s						
PPNO	**Prainha do Nor**	**0.64**	**109**	*e*P	Pg	16 55 52.5	-1.4
PPNO				*e*S	Sg	16 56 00.7	-1.5
PMAN	**Manadas**	**0.74**	**93**	*e*P	Pg	16 55 53.7	-2.2
PMAN				*e*S	Sg	16 56 03.0	-2.5
PMAN				A	A	16 56 07.3	
	265nm,0.3s						
PMAN	**Manadas**	**0.74**	**93**	*e*P	Pg	16 55 53.7	-2.2
PMAN				*e*S	Sg	16 56 03.0	-2.5
PGRA	**Graciosa**	**0.89**	**67**	*e*P	Pg	16 55 57.8	-1.0

*ISCJB **19** 17:06:07.4±1.1, 36.70N±0.1×140.31E±0.07, h47km±11km, mb3.4/3, Error ellipse: s-maj=21.3km s-min=9.9km az=177.3*
*JMA **19** 17:06:08.4±0.1, 35.99N×140.23E, h41km±1km, M2.8*
*IDC **19** 17:06:08.8±6.5, 36.07N×140.37E, h46km±53km, mb3.2/3, mb1 3.4/3, mb1mx3.1/37, mbtmp3.5/3, Error ellipse: s-maj=65.3km s-min=32.2km az=52.0*
ISC 19 17:06:08.8±1.4, 36.1N±0.1×140.28E±0.07, h43km±10km, n8, σ0§68/13, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.19**	**338**	P	**Pn**	**17 06 16.3**	**+0.1**
JYT				S	**Sn**	**17 06 21.5**	**+0.1**
JHO	**Hitachi**	**0.60**	**23**	P	**Pn**	**17 06 21.1**	**+0.1**
JHO				S	**Sn**	**17 06 29.8**	**+0.1**
JAG	**Ashikaga**	**0.76**	**299**	P	**Pn**	**17 06 22.6**	**-0.5**
JAG				S	**Sn**	**17 06 32.3**	**-1.2**
MJAR	**Matsushiro Arr**	**1.74**	**287**	P	**Pn**	**17 06 36.6**	**0.0**
	5.5nm,0.3s,baz=99,slow=8.7,SNR=32						
MJAR				S	**Sn**	**17 06 58.9**	**+1.3**
	2.8nm,0.3s,baz=275,slow=37,SNR=6.6						
MAT	**Matsushiro**	**1.74**	**287**	P	**Pn**	**17 06 36.8**	**+0.3**
MAT				S	**Sn**	**17 06 58.1**	**+0.5**
MKAR	**Makanchi Array**	**43.87**	**303**	P	**P**	**17 14 11.0**	**+0.1**
	0.4nm,0.6s,baz=84,slow=11,SNR=3.2						
WRA	**Warramunga Arr**	**55.97**	**187**	P	**P**	**17 15 42.4**	**-0.5**
	0.6nm,1.0s,baz=0.5,slow=7.4,SNR=5.6						
ASAR	**Alice Springs**	**59.70**	**187**	P	**P**	**17 16 09.0**	**0.0**
	0.4nm,0.9s,baz=6.7,slow=8.7,SNR=3.4						

*IDC **19** 17:18:45.0±3.6, 17.32S×168.27E, h0km, mb4.0/5, mb1 4.2/6, mb1mx3.9/23, mbtmp4.1/6, ML4.3/1, MS3.4/13, Ms1 3.4/13, ms1mx3.3/21, Error ellipse: s-maj=70.4km s-min=33.0km az=99.0*
*NEIC **19** 17:18:48.5±0.7, 17.55S×168.47E, h35km, mb4.7/9, Error ellipse: s-maj=19.5km s-min=11.3km az=135.0*
*ISCJB **19** 17:18:52.5±0.8, 17.68S±0.09×168.5E±0.1, h93km, mb4.5/13, Error ellipse: s-maj=18.9km s-min=10.4km az=31.7*
ISC 19 17:18:53.9±0.9, 17.70S±0.10×168.6E±0.2, h93km, n33, σ1§97/25, mb4.5/13, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.79**	**204**	Pn	**Pn**	**17 20 01.2**	**-2.5**
	12nm,0.3s,baz=41,slow=20,SNR=109						
DZM				LR	LR	17 20 55.1	
	comp=Z,173nm,19.8s,baz=38,slow=26						
DZM				Sn	**Sn**	**17 21 02.7**	**+4.7**
	3.7nm,0.3s,baz=117,slow=23,SNR=7.9						
DZM	**Mont Dzumac**	**4.79**	**204**	*e*Pn	**Pn**	**17 20 00.5**	**-3.2**
	37nm,0.3s						
DZM				*e*Sn	**Sn**	**17 20 56.4**	**-1.6**
	22nm,0.3s						
DZM				*e*LR	LR	17 21 12.0	
	1µm,25.9s						
DZM	**Mont Dzumac**	**4.79**	**204**	*e*Pn	**Pn**	**17 20 00.2**	**-3.5**
DZM				*e*Sn	**Sn**	**17 20 59.8**	**+1.8**
HNR	**Honiara**	**11.72**	**313**	LR	LR	17 25 36.0	
	comp=Z,84nm,18.9s,baz=162,slow=36						
AFI	**Afiamalu**	**19.29**	**82**	LR	LR	17 28 47.0	
	comp=Z,120nm,20.8s,baz=249,slow=31						
ARMA	**Armidale**	**19.95**	**227**	*e*P	**Pn**	**17 23 22.7**	**+1.5**
	58nm,1.8s						
CTA	**Charters Tower**	**21.24**	**260**	P	**P**	**17 23 31.7**	**-0.8**
	6.5nm,0.9s,baz=100,slow=11,SNR=9.5						
PMG	**Port Moresby**	**22.36**	**289**	LR	LR	17 31 03.5	
	comp=Z,91nm,18.2s,baz=65,slow=34						
RPZ	**Rata Peaks**	**26.02**	**176**	LR	LR	17 33 23.6	
	comp=Z,107nm,19.1s,baz=338,slow=33						
STKA	**Stephens Creek**	**28.16**	**235**	P	**P**	**17 24 39.5**	**+2.0**
	1.3nm,0.7s,baz=60,slow=10.0,SNR=4.2						
STKA				LR	LR	17 35 31.6	
	comp=Z,105nm,19.7s,baz=32,slow=36						
STKA	**Stephens Creek**	**28.16**	**235**	*e*P	**P**	**17 24 40.0**	**+2.4**
	7.7nm,1.8s						
WB2	**Warramunga Arr**	**32.42**	**261**	*e*P	**P**	**17 25 12.8**	**-2.5**
WRAB	**Tennant Creek**	**32.43**	**261**	*e*P	**P**	**17 25 14.7**	**-0.7**
	12nm,1.4s						
WR1	**Warramunga Arr**	**32.44**	**261**	*e*P	**P**	**17 25 14.8**	**-0.6**
	29nm,1.8s						
WRA	**Warramunga Arr**	**32.44**	**261**	P	**P**	**17 25 14.8**	**-0.6**
	1.3nm,1.1s,baz=88,slow=8.3,SNR=5.1						
AS01	**Alice Springs**	**32.86**	**254**	*e*P	**P**	**17 25 18.7**	**-0.4**
BBOO	**Buckleboo**	**32.86**	**236**	*e*P	**P**	**17 25 19.0**	**0.0**
	51nm,1.6s						
AS31	**Alice Springs**	**32.91**	**254**	*e*P	**P**	**17 25 18.8**	**-0.7**
	1.4nm,0.4s						
ASAR	**Alice Springs**	**32.91**	**254**	P	**P**	**17 25 19.0**	**-0.5**
	2.2nm,0.5s,baz=82,slow=8.6,SNR=38						
ASAR				LR	LR	17 38 00.3	
	comp=Z,155nm,18.4s,baz=89,slow=35						
PPT2	**Papeete2**	**39.84**	**96**	*e*LQ	LQ	17 35 49.3	
	255nm,27.5s						
PPT2				*e*LR	LR	17 37 15.8	
	87nm,28.0s						
JOHN	**Johnston Islan**	**40.45**	**33**	*e*P	**P**	**17 26 23.9**	**+0.5**
	159nm,1.0s						
FITZ	**Fitzroy Crossi**	**40.78**	**263**	*e*P	**P**	**17 26 26.7**	**+0.4**
	7.8nm,1.0s						
KAPI	**Kappang**	**49.33**	**279**	*e*P	**P**	**17 27 33.2**	**-0.9**
	16nm,1.1s						
KEKH	**Kekaha**	**50.20**	**39**	*e*P	**P**	**17 27 39.5**	**-1.0**

	50nm,1.5s								
STKA	**Stephens Creek**	**42.43**	**241**	P	**P**		**17 45 08.0**	**+0.1**
	1.3nm,0.7s,baz=56,slow=7.3,SNR=5.2								
STKA	**Stephens Creek**	**42.43**	**241**	*e*P	**P**		**17 45 07.7**	**-0.2**
	2.5nm,1.4s								
WB2	**Warramunga Arr**	**48.44**	**258**	*e*P	**P**		**17 45 54.9**	**-0.7**
WR1	**Warramunga Arr**	**48.45**	**258**	*e*P	**P**		**17 45 55.6**	**0.0**
	38nm,1.9s								
WRA	**Warramunga Arr**	**48.45**	**258**	P	**P**		**17 45 55.6**	**0.0**
	0.5nm,0.4s,baz=94,slow=6.9,SNR=21								
AS01	**Alice Springs**	**48.60**	**253**	*e*P	**P**		**17 45 56.3**	**-0.5**
AS31	**Alice Springs**	**48.64**	**253**	*e*P	**P**		**17 45 57.5**	**+0.5**
	3.3nm,0.6s								
ASAR	**Alice Springs**	**48.64**	**253**	P	**P**		**17 45 57.3**	**+0.2**
	10nm,0.5s,baz=88,slow=8.6,SNR=309								
FITZ	**Fitzroy Crossi**	**56.84**	**259**	*e*P	**P**		**17 46 58.0**	**+0.5**
	6.9nm,1.2s								
SOEI	**Soe**	**59.73**	**268**	*e*P	**P**		**17 47 19.3**	**+1.5**
	38nm,1.4s								
MBWA	**Marble Bar**	**61.92**	**255**	*e*P	**P**		**17 47 31.2**	**-1.2**
	26nm,1.6s								
ERM	**Erimo**	**70.17**	**328**	*e*P	**P**		**17 48 24.1**	**-0.5**
	41nm,1.1s								
SAO	**San Andreas Ge**	**73.01**	**42**	*e*P	**P**		**17 48 41.4**	**-0.5**
	44nm,1.9s								
EKH	**Elkhorn Ranch**	**73.12**	**42**	*e*P	**P**		**17 48 42.9**	**+0.3**
QSPA	**South Pole Qui**	**73.43**	**180**	*e*P	**P**		**17 48 40.7**	**-3.4**
PEA0	**Petropavlovsk-**	**73.45**	**343**	*e*P	**P**		**17 48 45.5**	**+1.4**
PEA0B	**Petropavlovsk-**	**73.45**	**343**	*e*P	**P**		**17 48 42.7**	**-1.4**
	25nm,1.3s								
GLA	**Glamis**	**75.46**	**49**	*e*PcP	**PcP**		**17 49 12.8**	**+3.9**
PHWY	**Pilot Hill**	**85.97**	**45**	*e*pP	pP		17 50 21.4	+2.7
BR101	**Keskin Array S**	**146.34**	**319**	*e*PKPdf	**PKPdf**		**17 56 51.8**	**+0.6**
BRTR	**Keskin Array B**	**146.34**	**319**	PKPbc	**PKPdf**		**17 56 51.8**	**+0.6**
	0.8nm,0.7s,baz=44,slow=4.4,SNR=5.5								

NIED ***19*** *17:55:00.37±0.90N×143.40E±0.09,h5km,Mw3.5 Best double couple: M0=2.01000×10^14 NP1:φs=64.00000°,δs=54.00000°, λ=26.00000°. NP2:φs=318.00000°,δs=69.00000°,λ=141.00000°.*

ISCJB ***19*** *17:55:08.4±1.1,37.89N±0.06×143.45E±0.09,h19km, mb3.6/3,MS2.7/1,Error ellipse: s-maj=11.0km s-min=8.2km az=155.3*

IDC ***19*** *17:55:08.3±2.5,37.64N×143.54E,h0km,mb3.5/3, mb1 3.6/4,mb1mx3.4/26,mbtmp3.4/4,ML3.1/1,MS2.8/1, Ms1 2.8/1,ms1mx2.3/44,Error ellipse: s-maj=53.9km s-min=33.8km az=42.0*

JMA ***19*** *17:55:10.4±0.2,37.90N×143.39E,h45km,M3.5*

ISC 19 17:55:10.6±1.6,37.90N±0.07×143.4E±0.1,h19km,n13, σ1§53/18,mb3.6/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.69**	**290**	P	P	**Pn**	**17 55 38.5**	**-0.6**
JIO				*e*S	S	**Sn**	**17 55 59.3**	**-1.0**
OFUJ	**Ofunato**	**1.79**	**312**	P	P	**Pn**	**17 55 39.8**	**-0.6**
OFUJ				*e*S	S	**Sn**	**17 56 01.1**	**-1.5**
JMK	**Ichinoseki**	**2.00**	**302**	P	P	**Pn**	**17 55 42.8**	**-0.5**
JOM	**Ohasama**	**2.27**	**315**	P	P	**Pn**	**17 55 46.9**	**-0.1**
JOM				*e*S	S	**Sn**	**17 56 13.5**	**-0.9**
JFT	**Otama**	**2.44**	**262**	P	P	**Pn**	**17 55 49.7**	**+0.2**
JFT				*e*S	S	**Sn**	**17 56 18.2**	**-0.6**
JYK	**Kaneyama**	**2.58**	**294**	P	P	**Pn**	**17 55 51.6**	**+0.3**
JAG	**Ashikaga**	**3.46**	**246**	P	P	**Pn**	**17 56 03.1**	**-0.4**
JRY	**Ryogami san**	**4.05**	**244**	P	P	**Pn**	**17 56 11.2**	**-0.4**
JRY				*e*S	S	**Sn**	**17 56 54.8**	**-3.7**
MJAR	**Matsushiro Arr**	**4.34**	**253**	Pn	P	**Pn**	**17 56 16.6**	**+1.0**
	1.1nm,0.3s,baz=68,slow=9.4,SNR=8.1							
MJAR				Sn	S	**Sn**	**17 57 08.2**	**+2.5**
	0.5nm,0.3s,baz=194,slow=40,SNR=3.2							
TGY	**Tagaytay City**	**30.96**	**226**	LR	LR		18 13 58.0	
	comp=Z,16nm,19.0s,baz=120,slow=37							
MKAR	**Makanchi Array**	**44.99**	**302**	P	P		**18 03 27.2**	**+2.6**
	0.6nm,0.7s,baz=76,slow=6.1,SNR=3.8							
WRA	**Warramunga Arr**	**58.16**	**190**	P	P		**18 05 02.1**	**-1.1**
	0.4nm,0.7s,baz=2.7,slow=6.4,SNR=3.5							
ASAR	**Alice Springs**	**61.88**	**190**	P	P		**18 05 27.8**	**-1.0**
	0.6nm,1.0s,baz=0.5,slow=6.7,SNR=3.4							

ISK ***19*** *17:58:58.8,39.12N×29.10E,h5km,ML3.2*

CSEM ***19*** *17:58:59.9±0.1,39.10N×29.11E,h2km,ML3.2,Error ellipse: s-maj=2.4km s-min=2.2km az=167.0*

DDA ***19*** *17:58:59.2,39.11N×29.11E,h7km,Ml3.5*

ISC 19 17:59:00.0±0.9,39.10N±0.02×29.12E±0.02,h14km±7km, n108,σ1§00/122,Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.23**	**103**	*e*PG	**Pg**		**17 59 05.7**	**+0.5**
GEDZ				*e*SG	**Sg**		**17 59 09.4**	**+0.8**
GEDZ	**Gediz**	**0.23**	**103**	*e*Pg	**Pg**		**17 59 05.7**	**+0.5**
GEDZ				*e*Sg	**Sg**		**17 59 09.5**	**+0.8**
GDZ	**Gediz**	**0.28**	**92**	*i* P	**Pg**		**17 59 05.6**	**-0.4**
GDZ				*i* S	**Sg**		**17 59 10.0**	**-0.1**
GDZ	**Gediz**	**0.28**	**92**	P	**Pg**		**17 59 05.6**	**-0.4**
GDZ				S	**Sg**		**17 59 10.0**	**-0.1**
DEMI	**Demirci**	**0.32**	**260**	*i* P	**Pg**		**17 59 06.1**	**-0.5**
DEMI				*i* S	**Sg**		**17 59 10.5**	**-0.5**
DEMI	**Demirci**	**0.32**	**260**	P	**Pg**		**17 59 06.1**	**-0.5**
DEMI				S	**Sg**		**17 59 10.5**	**-0.5**
TVSB	**Tavsanli**	**0.44**	**37**	*e*PG	**Pg**		**17 59 08.0**	**-0.9**
TVSB	**Tavsanli**	**0.44**	**37**	*e*Pg	**Pg**		**17 59 08.0**	**-0.9**
KULA	**Kula-Manisa**	**0.68**	**212**	*e*PG	**Pg**		**17 59 12.9**	**-0.5**
KULA	**Kula-Manisa**	**0.68**	**212**	*e*Pg	**Pg**		**17 59 12.9**	**-0.5**
MANT	**Manisa**	**0.75**	**216**	*i* P	**Pg**		**17 59 12.9**	**-1.7**
MANT				*i* S	**Sg**		**17 59 22.6**	**-1.9**
MANT	**Manisa**	**0.75**	**216**	P	**Pg**		**17 59 12.9**	**-1.7**
MANT				S	**Sg**		**17 59 22.6**	**-1.9**
KHL	**Karahalli**	**0.84**	**158**	*e*PG	**Pg**		**17 59 16.2**	**0.0**
KHL	**Karahalli**	**0.84**	**158**	*e*Pg	**Pg**		**17 59 16.2**	**0.0**
AKS	**Akhisar**	**1.04**	**258**	*e*PG	**Pg**		**17 59 19.9**	**-0.2**
AKS	**Akhisar**	**1.04**	**258**	*e*Pg	**Pg**		**17 59 19.9**	**-0.2**
BALB	**Balikesir**	**1.10**	**300**	*e*PN	**Pn**		**17 59 20.9**	**-0.2**
BALB	**Balikesir**	**1.10**	**300**	*e*Pn	**Pn**		**17 59 20.9**	**-0.2**
IGD	**Bursa**	**1.17**	**3**	*i* P	**Pb**		**17 59 19.9**	**-2.0**
IGD				*i* S	**Sn**		**17 59 37.5**	**-0.2**
SHUT	**Suhut-Afyon**	**1.25**	**116**	*e*PN	**Pg**		**17 59 24.2**	**+0.2**
SHUT	**Suhut-Afyon**	**1.25**	**116**	*e*Pn	**Pg**		**17 59 24.2**	**+0.2**
IZI	**Iznik**	**1.27**	**12**	*e*PN	**Pg**		**17 59 23.9**	**-0.5**
IZI	**Iznik**	**1.27**	**12**	*e*Pn	**Pg**		**17 59 24.0**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*PN	**Pg**		**17 59 24.2**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*Pn	**Pg**		**17 59 24.2**	**-0.5**
BORA	**Eskisehir**	**1.29**	**53**	*i* P	**Pn**		**17 59 23.9**	**+0.1**
BORA				*i* S	**Sg**		**17 59 41.5**	**-0.3**
BORA	**Eskisehir**	**1.29**	**53**	P	**Pn**		**17 59 23.9**	**+0.1**
BORA				S	**Sg**		**17 59 41.5**	**-0.3**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*PN	**Pn**		**17 59 23.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*Pn	**Pn**		**17 59 23.9**	**0.0**
BALY	**Balya**	**1.32**	**299**	*i* P	**Pb**		**17 59 24.5**	**-0.2**
BALY				*i* S	**Sg**		**17 59 43.1**	**+0.3**
BALY	**Balya**	**1.32**	**299**	P	**Pb**		**17 59 24.5**	**-0.2**
BALY				S	**Sg**		**17 59 43.1**	**+0.3**
GEMT	**Gemlik**	**1.34**	**2**	*e*PN	**Pg**		**17 59 25.3**	**-0.5**
GEMT	**Gemlik**	**1.34**	**2**	*e*Pn	**Pg**		**17 59 25.3**	**-0.5**
DENT	**Denizli**	**1.34**	**183**	*e*PN	**Pg**		**17 59 25.8**	**-0.1**
DENT	**Denizli**	**1.34**	**183**	*e*Pn	**Pg**		**17 59 25.8**	**-0.1**
ESKT	**Eskisehir**	**1.41**	**72**	*e*PN	**Pg**		**17 59 27.1**	**-0.1**
ESKT	**Eskisehir**	**1.41**	**72**	*i* P	**Pn**		**17 59 25.6**	**+0.2**
ESKT	**Eskisehir**	**1.41**	**72**	*e*Pn	**Pg**		**17 59 27.1**	**-0.1**
SEYT	**Eskypehyr**	**1.41**	**72**	P	**Pn**		**17 59 25.6**	**+0.2**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*PN	**Pg**		**17 59 26.8**	**-0.5**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*Pn	**Pg**		**17 59 26.8**	**-0.5**
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*PN	**Pb**		**17 59 27.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*Pn	**Pb**		**17 59 27.1**	**+0.1**
ARMT	**Armutlu**	**1.48**	**352**	*e*PN	**Pb**		**17 59 27.1**	**-0.3**
ARMT	**Armutlu**	**1.48**	**352**	*e*Pn	**Pb**		**17 59 27.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**220**	*e*PN	**Pg**		**17 59 28.4**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**220**	*e*Pn	**Pg**		**17 59 28.4**	**-0.5**
EDC	**Edincik**	**1.58**	**323**	*e*PN	**Pb**		**17 59 29.2**	**+0.2**
EDC	**Edincik**	**1.58**	**323**	*e*Pn	**Pb**		**17 59 29.2**	**+0.2**
IZM	**Izmir**	**1.61**	**245**	*e*PN	**Pb**		**17 59 29.3**	**-0.3**
IZM	**Izmir**	**1.61**	**245**	*e*Pn	**Pb**		**17 59 29.3**	**-0.3**
ISP	**Isparta**	**1.69**	**139**	*e*PN	**Pb**		**17 59 30.8**	**-0.1**
ISP	**Isparta**	**1.69**	**139**	*e*Pn	**Pb**		**17 59 30.8**	**-0.1**
KNL	**Bal¨–kesir**	**1.70**	**314**	*i* P	**Pb**		**17 59 30.4**	**-0.7**
KNL				*i* S	**Sb**		**17 59 53.0**	**+0.7**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pb**		**17 59 30.8**	**-0.6**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pb**		**17 59 30.8**	**-0.6**
DKL	**Dikili**	**1.72**	**270**	*e*PN	**Pb**		**17 59 30.9**	**-0.5**
DKL	**Dikili**	**1.72**	**270**	*e*Pn	**Pb**		**17 59 30.9**	**-0.5**
BUY	**Buyukada**	**1.75**	**0**	*i* P	**Pg**		**17 59 33.0**	**-0.7**
BUY	**Buyukada**	**1.75**	**0**	P	**Pg**		**17 59 33.0**	**-0.7**
HRT	**Hereke**	**1.77**	**14**	*e*PN	**Pb**		**17 59 31.3**	**-1.1**
HRT	**Hereke**	**1.77**	**14**	*e*Pn	**Pb**		**17 59 31.3**	**-1.1**
SPNC	**Sapanca-Adapaz**	**1.83**	**30**	*e*PN	**Pb**		**17 59 32.6**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.83**	**30**	*e*Pn	**Pb**		**17 59 32.6**	**-0.7**
GOLH	**Golhisar**	**1.89**	**169**	*i* P	**Pb**		**17 59 33.5**	**-0.9**
GOLH	**Golhisar**	**1.89**	**169**	P	**Pb**		**17 59 33.5**	**-0.9**
SVRH	**Sivrihisar-ESK**	**1.90**	**79**	*e*PN	**Pb**		**17 59 33.9**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.90**	**79**	*e*Pn	**Pb**		**17 59 33.9**	**-0.6**
MRMT	**Marmara Adasi**	**1.91**	**323**	*e*PN	**Pb**		**17 59 33.9**	**-0.7**
MRMT	**Marmara Adasi**	**1.91**	**323**	*e*Pn	**Pb**		**17 59 33.9**	**-0.7**
KRBG	**Karabiga-Canak**	**1.91**	**313**	*e*PN	**Pb**		**17 59 33.6**	**-1.0**
KRBG	**Karabiga-Canak**	**1.91**	**313**	*e*Pn	**Pb**		**17 59 33.6**	**-1.0**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*PN	**Pb**		**17 59 34.7**	**-0.9**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*Pn	**Pb**		**17 59 34.7**	**-0.9**
YER	**Yerkesik**	**2.07**	**199**	*e*PN	**Pb**		**17 59 36.3**	**-1.1**
YER	**Yerkesik**	**2.07**	**199**	*e*Pn	**Pb**		**17 59 36.3**	**-1.1**
SILT	**Sile**	**2.09**	**11**	*e*PN	**Pn**		**17 59 35.8**	**+1.1**
SILT	**Sile**	**2.09**	**11**	*e*Pn	**Pn**		**17 59 35.8**	**+1.1**
MDUB	**Mudurnu**	**2.11**	**49**	*e*PN	**Pb**		**17 59 36.9**	**-1.3**
MDUB	**Mudurnu**	**2.11**	**49**	*e*Pn	**Pb**		**17 59 36.9**	**-1.3**
KLYT	**Kilyos**	**2.15**	**358**	*e*PN	**Pn**		**17 59 36.6**	**+1.1**
KLYT	**Kilyos**	**2.15**	**358**	*e*Pn	**Pn**		**17 59 36.6**	**+1.1**
KIZT	**Kizilcal**	**2.16**	**95**	*e*PN	**Pn**		**17 59 37.1**	**+1.3**
KIZT	**Kizilcal**	**2.16**	**95**	*e*Pn	**Pn**		**17 59 37.1**	**+1.3**
RKY	**Sarkoy-Tekirda**	**2.18**	**317**	*e*PN	**Pn**		**17 59 37.4**	**+1.4**
RKY	**Sarkoy-Tekirda**	**2.18**	**317**	*e*Pn	**Pn**		**17 59 37.4**	**+1.4**
CTKS	**Kestanelik-??a**	**2.19**	**348**	*e*PN	**Pn**		**17 59 37.4**	**+1.4**
CTKS	**Kestanelik-??a**	**2.19**	**348**	*e*Pn	**Pn**		**17 59 37.4**	**+1.4**
SUTC	**Sutluce-Ispart**	**2.19**	**137**	*e*PN	**Pb**		**17 59 38.2**	**-1.4**
SUTC	**Sutluce-Ispart**	**2.19**	**137**	*e*Pn	**Pb**		**17 59 38.2**	**-1.4**
SAHE	**Sakarya_HENDEK**	**2.20**	**37**	*e*PN	**Pn**		**17 59 36.5**	**+0.2**
SAHE	**Sakarya_HENDEK**	**2.20**	**37**	P	**Pn**		**17 59 36.5**	**+0.2**
LPK	**Lapseki**	**2.22**	**306**	*e*PN	**Pn**		**17 59 37.9**	**+1.5**
LPK	**Lapseki**	**2.22**	**306**	*e*Pn	**Pn**		**17 59 37.9**	**+1.5**
GELI	**Tayfur-Gelibol**	**2.42**	**303**	*e*PN	**Pn**		**17 59 40.8**	**+1.7**
GELI	**Tayfur-Gelibol**	**2.42**	**303**	*e*Pn	**Pn**		**17 59 40.8**	**+1.7**
CHOS	**Chios island**	**2.50**	**254**	*e*PN	**Pn**		**17 59 42.1**	**+1.7**
CHOS	**Chios island**	**2.50**	**254**	*e*Pn	**Pn**		**17 59 42.1**	**+1.7**
SIGR	**SIGRI**	**2.54**	**274**	*e*PN	**Pn**		**17 59 42.9**	**+2.1**
SIGR	**SIGRI**	**2.54**	**274**	*e*Pn	**Pn**		**17 59 42.9**	**+2.1**
GADA	**Gvkgeada**	**2.71**	**295**	*e*PN	**Pn**		**17 59 45.1**	**+1.8**
GADA	**Gvkgeada**	**2.71**	**295**	*e*Pn	**Pn**		**17 59 45.1**	**+1.8**
ENEZ	**Enez**	**2.81**	**307**	*e*PN	**Pn**		**17 59 46.2**	**+1.7**
ENEZ	**Enez**	**2.81**	**307**	*e*Pn	**Pn**		**17 59 46.2**	**+1.7**
ALN	**Alexandroupoli**	**2.96**	**308**	*e*PN	**Pn**		**17 59 48.5**	**+1.8**
ALN	**Alexandroupoli**	**2.96**	**308**	*e*Pn	**Pn**		**17 59 48.5**	**+1.8**
EDRB	**Edirne**	**3.29**	**327**	*e*PN	**Pn**		**17 59 53.3**	**+2.1**
EDRB	**Edirne**	**3.29**	**327**	*e*Pn	**Pn**		**17 59 53.3**	**+2.1**

ISCJB ***19*** *18:00:08.9±0.4,39.09N±0.01×21.51E±0.02,h4km±3km, mb3.7/7,MS3.6/1,Error ellipse: s-maj=2.6km s-min=2.1km az=165.5*

ATH ***19*** *18:00:08.8,39.09N×21.52E,h18km±1km,ML3.2/21,Error ellipse: s-maj=1.2km s-min=0.7km az=233.0*

IDC ***19*** *18:00:08.2±1.4,38.99N×21.70E,h0km,mb3.6/6, mb1 3.6/8,mb1mx3.5/31,mbtmp3.5/8,ML3.1/2,MS3.0/2, Ms1 3.0/2,ms1mx2.3/45,Error ellipse: s-maj=25.3km s-min=21.5km az=34.0*

CSEM ***19*** *18:00:09.5±0.1,39.08N×21.52E,h2km,ML3.2,Error ellipse: s-maj=3.2km s-min=2.3km az=79.0*

THE ***19*** *18:00:09.3,39.08N×21.51E,h1km±1km,ML3.4/16,Error ellipse: s-maj=1.5km s-min=0.5km az=312.0*

ISC 19 18:00:09.5±0.9,39.08N±0.01×21.51E±0.01,h9km±7km, n187,σ1§15/242,mb3.6/7,4D,Greece

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
EVR	**Evrytania**	**0.28**	**126**	P	P	**Pg**	**18 00 14.9**	**-0.3**
EVR				S	S	**Sg**	**18 00 19.8**	**+0.7**
EVR	**Evrytania**	**0.28**	**126**	P	P	**Pg**	**18 00 14.8**	**-0.5**
EVR				S	S	**Sg**	**18 00 19.8**	**+0.7**
EVR	**Evrytania**	**0.28**	**126**	P	P	**Pg**	**18 00 14.8**	**-0.5**
EVR				S	S	**Sg**	**18 00 20.3**	**+1.2**
EVR				AML	AML		18 00 23.9	
	comp=N,9625μm,0.4s							
PVO	**Paravola**	**0.47**	**179**	P	P	**Pg**	**18 00 17.7**	**-0.9**
PVO				S	S	**Sg**	**18 00 24.8**	**+0.1**
PVO	**Paravola**	**0.47**	**179**	P	P	**Pg**	**18 00 17.7**	**-0.9**
PVO				S	S	**Sg**	**18 00 24.8**	**+0.1**
PVO	**Paravola**	**0.47**	**179**	P	P	**Pg**	**18 00 17.7**	**-0.9**
PVO				S	S	**Sg**	**18 00 23.4**	**-1.3**
PDO	**Prodromos**	**0.55**	**208**	P	P	**Pg**	**18 00 20.1**	**-0.1**
PDO				S	S	**Sg**	**18 00 28.2**	**+0.9**
PDO	**Prodromos**	**0.55**	**208**	P	P	**Pg**	**18 00 20.1**	**-0.1**
PDO				S	S	**Sg**	**18 00 28.0**	**+0.6**
PDO	**Prodromos**	**0.55**	**208**	P	P	**Pg**	**18 00 20.2**	**+0.1**
PDO				S	S	**Sg**	**18 00 28.0**	**+0.6**
PDO				AML	AML		18 00 30.1	
	comp=N,29075μm,0.3s							
PDO				AML	AML		18 00 32.8	
	comp=E,19894μm,0.3s							
ANX	**Ano Chora**	**0.58**	**147**	P	P	**Pg**	**18 00 20.2**	**-0.6**
ANX	**Ano Chora**	**0.58**	**147**	P	P	**Pg**	**18 00 20.3**	**-0.6**
ANX				S	S	**Sg**	**18 00 27.9**	**-0.6**
ANX	**Ano Chora**	**0.58**	**147**	S	S	**Sg**	**18 00 27.9**	**-0.6**
ANX				AML	AML		18 00 31.7	
	comp=E,6014μm,0.3s							
ANX				AML	AML		18 00 35.4	
	comp=N,8475μm,0.5s							
THL	**Klokotos Trika**	**0.62**	**39**	P	P	**Pg**	**18 00 20.9**	**-0.6**
THL				S	S	**Sb**	**18 00 31.1**	**-0.2**
THL	**Klokotos Trika**	**0.62**	**39**	P	P	**Pg**	**18 00 21.0**	**-0.6**
THL				S	S	**Sg**	**18 00 29.7**	**+0.1**
AGG	**Agios Georgios**	**0.64**	**95**	P	P	**Pg**	**18 00 21.6**	**-0.3**
AGG				S	S	**Sg**	**18 00 29.8**	**+0.5**
AGG	**Agios Georgios**	**0.64**	**95**	P	P	**Pg**	**18 00 21.6**	**-0.3**
AGG				S	S	**Sg**	**18 00 30.3**	**0.0**
AGG	**Agios Georgios**	**0.64**	**95**	P	P	**Pg**	**18 00 21.6**	**-0.3**
AGG				S	S	**Sg**	**18 00 30.3**	**0.0**
AGG				AML	AML		18 00 33.2	
	comp=N,21602μm,0.4s							
AGG				AML	AML		18 00 33.2	
	comp=E,26182μm,0.3s							
LKD2	**Lefkada island**	**0.73**	**246**	P	P	**Pg**	**18 00 22.9**	**-0.7**
LKD2				S	S	**Sb**	**18 00 34.0**	**-0.5**
LKD2	**Lefkada island**	**0.73**	**246**	P	P	**Pg**	**18 00 22.9**	**-0.7**
LKD2				S	S	**Sb**	**18 00 34.0**	**-0.5**
LKD2				AML	AML		18 00 38.2	
	comp=E,11829μm,0.7s							
LKD2				AML	AML		18 00 39.6	
	comp=N,10795μm,0.4s							
JAN	**Janina**	**0.77**	**318**	P	P	**Pg**	**18 00 24.0**	**-0.4**
JAN				S	S	**Sg**	**18 00 34.8**	**+0.4**
JAN	**Janina**	**0.77**	**318**	P	P	**Pg**	**18 00 24.0**	**-0.4**
JAN				S	S	**Sg**	**18 00 34.8**	**+0.4**
JAN	**Janina**	**0.77**	**318**	S	S	**Sg**	**18 00 34.8**	**+0.4**
JAN				AML	AML		18 00 40.4	
	comp=E,4677μm,0.3s							
SERG	**Sergoula**	**0.79**	**147**	P	P	**Pg**	**18 00 23.8**	**-1.0**
SERG				S	S	**Sb**	**18 00 35.8**	**-0.6**
UPR	**University Cam**	**0.83**	**165**	P	P	**Pn**	**18 00 26.1**	**-1.0**
UPR	**University Cam**	**0.83**	**165**	P	P	**Pn**	**18 00 26.8**	**-0.6**
UPR	**University Cam**	**0.83**	**165**	P	P	**Pn**	**18 00 26.8**	**-0.6**
KPRO	**Kipourio**	**0.88**	**352**	P	P	**Pg**	**18 00 26.2**	**-0.3**
KPRO	**Kipourio**	**0.88**	**352**	P	P	**Pg**	**18 00 26.2**	**-0.3**
KPRO				S	S	**Sg**	**18 00 36.2**	**-1.7**
KPRO	**Kipourio**	**0.88**	**352**	P	P	**Pb**	**18 00 27.0**	**0.0**
KPRO				S	S	**Sg**	**18 00 36.1**	**-1.7**
KPRO				AML	AML		18 00 42.0	
	comp=E,4875μm,0.3s							
KPRO				AML	AML		18 00 42.4	
	comp=N,3972μm,0.4s							
AXS	**Araxos**	**0.89**	**187**	P	P	**Pg**	**18 00 26.1**	**-0.6**
AXS				S	S	**Sb**	**18 00 38.9**	**-0.3**
AXS	**Araxos**	**0.89**	**187**	P	P	**Pg**	**18 00 26.1**	**-0.6**
AXS				S	S	**Sg**	**18 00 38.7**	**+0.4**
AXS	**Araxos**	**0.89**	**187**	P	P	**Pg**	**18 00 25.6**	**-1.1**
AXS				S	S	**Sg**	**18 00 38.7**	**+0.4**
IGT	**Igoumenitsa**	**1.02**	**296**	P	P	**Pg**	**18 00 28.4**	**-0.7**
IGT				S	S	**Sb**	**18 00 43.3**	**+0.4**
IGT	**Igoumenitsa**	**1.02**	**296**	P	P	**Pg**	**18 00 28.4**	**-0.7**
IGT				S	S	**Sg**	**18 00 41.9**	**-0.5**
IGT	**Igoumenitsa**	**1.02**	**296**	P	P	**Pg**	**18 00 27.8**	**-1.4**
IGT				S	S	**Sg**	**18 00 41.9**	**-0.5**
IGT				AML	AML		18 00 48.1	
	comp=E,1414μm,0.3s							
IGT				AML	AML		18 00 48.3	
	comp=N,1596μm,0.5s							
RLS	**Riolos of Patr**	**1.02**	**182**	P	P	**Pg**	**18 00 28.3**	**-0.9**
RLS				S	S	**Sb**	**18 00 42.9**	**-0.1**
RLS	**Riolos of Patr**	**1.02**	**182**	P	P	**Pg**	**18 00 28.3**	**-0.9**
RLS				S	S	**Sg**	**18 00 41.6**	**-0.9**
RLS	**Riolos of Patr**	**1.02**	**182**	S	S	**Sg**	**18 00 41.6**	**-0.9**
RLS				AML	AML		18 00 46.8	
	comp=N,1517μm,0.6s							
RLS				AML	AML		18 00 48.3	
	comp=E,1750μm,0.4s							
DSF	**Desfina**	**1.04**	**130**	P	P	**Pg**	**18 00 28.1**	**-1.4**
DSF	**Desfina**	**1.04**	**130**	P	P	**Pg**	**18 00 28.1**	**-1.4**
DSF	**Desfina**	**1.04**	**130**	P	P	**Pg**	**18 00 27.4**	**-2.1**
DSF				AML	AML		18 00 47.2	
	comp=E,1160μm,0.3s							
DSF				AML	AML		18 00 47.9	
	comp=N,1417μm,0.3s							
SGD	**Sagiada**	**1.12**	**298**	P	P	**Pg**	**18 00 30.6**	**-0.5**
SGD	**Sagiada**	**1.12**	**298**	P	P	**Pg**	**18 00 30.6**	**-0.5**
SGD	**Sagiada**	**1.12**	**298**	P	P	**Pg**	**18 00 30.0**	**-1.1**
KFL	**Anninata**	**1.13**	**211**	P	P	**Pg**	**18 00 29.7**	**-1.5**
KFL	**Anninata**	**1.13**	**211**	P	P	**Pg**	**18 00 29.7**	**-1.5**
KFL	**Anninata**	**1.13**	**211**	P	P	**Pg**	**18 00 28.9**	**-2.2**
DRO	**Drossia**	**1.14**	**172**	P	P	**Pg**	**18 00 30.3**	**-1.1**
DRO				S	S	**Sn**	**18 00 47.3**	**-0.2**
DRO	**Drossia**	**1.14**	**172**	P	P	**Pg**	**18 00 30.0**	**-1.4**
DRO				S	S	**Sn**	**18 00 47.3**	**-0.2**
DRO	**Drossia**	**1.14**	**172**	P	P	**Pg**	**18 00 30.0**	**-1.4**
DRO				AML	AML		18 00 56.0	
	comp=N,3779μm,0.4s							
DRO				AML	AML		18 00 56.6	
	comp=E,4839μm,0.4s							
PENT	**Pentalofos**	**1.15**	**346**	P	P	**Pg**	**18 00 30.9**	**-0.7**
PENT	**Pentalofos**	**1.15**	**346**	P	P	**Pg**	**18 00 31.2**	**-0.4**

VLY	Voula,Athens	2.17	124	P		Pn	18 00 46.1	+0.2
VLY	Voula,Athens	2.17	124	P		Pn	18 00 46.1	+0.2
VLY	Voula,Athens	2.17	124	P		Pn	18 00 45.6	-0.3
PYL	PYLOS	2.19	175	P		Pb	18 00 48.9	-0.4
PYL	PYLOS	2.19	175	P		Pb	18 00 48.9	-0.4
SOH	Sokhos	2.24	39	P		Pn	18 00 46.8	-0.1
SOH	Sokhos	2.24	39	P		Pn	18 00 47.1	+0.2
SOH	Sokhos	2.24	39	P		Pn	18 00 47.1	+0.2
OUR	Ouranopolis	2.28	56	P		Pn	18 00 47.0	-0.3
OUR	Ouranopolis	2.28	56	P		Pn	18 00 47.0	-0.3
OUR	Ouranopolis	2.28	56	P		Pn	18 00 46.7	-0.7
KNT	Kendrikon	2.33	27	P		Pn	18 00 49.7	+1.6
KNT	Kendrikon	2.33	27	P		Pn	18 00 49.7	+1.6
VAY	Valandovo	2.38	20	*e*Pn		Pb	18 00 50.6	-1.9
VAY				*e*Sn		Sb	18 01 21.7	-0.3
VAY	Valandovo	2.38	20	*e*Pn		Pb	18 00 50.6	-1.9
VAY				*e*Sn		Sb	18 01 21.7	-0.3
SRS	Serrai	2.58	37	P		Pn	18 00 51.3	-0.3
SRS	Serrai	2.58	37	P		Pn	18 00 51.3	-0.3
SRS	Serrai	2.58	37	P		Pn	18 00 50.6	-0.9
VLI	Veliai	2.62	154	P		Pn	18 00 53.7	+1.7
VLI	Veliai	2.62	154	P		Pn	18 00 53.7	+1.7
SKO	Skopje	2.89	359	*e*Pn		Pb	18 00 59.3	-2.0
SKO	Skopje	2.89	359	*e*Pn		Pb	18 00 59.2	-2.0
ANKY	Antikythira Is	3.51	156	P		Pn	18 01 07.1	+2.8
ANKY	Antikythira Is	3.51	156	P		Pn	18 01 07.1	+2.8
TAR1	Taranto	3.56	295	*e*Pn		Pn	18 01 06.6	+1.6
TIP	Timpagrande	3.70	273	P		Pn	18 01 06.7	-0.3
TIP	Timpagrande	3.70	273	P		Pn	18 01 06.7	-0.3
VTS	Vitosha	3.73	20	⇓*i*P		Pn	18 01 08.5	+1.0
VTS	Vitosha	3.73	20	⇓*i*P		Pn	18 01 08.5	+1.0
VTS				S		Sn	18 01 52.2	+0.5
BARS	Barje	3.74	3	*e*Pn		Pn	18 01 08.3	+0.9
PDG	Podgorica	3.76	334	⇓*i*P		Pn	18 01 09.9	+2.2
PDG	Podgorica	3.76	334	⇓*i*P		Pn	18 01 09.9	+2.2
PDG				S		Sn	18 01 55.0	+3.0
NOCI	Noci	3.82	298	P		Pn	18 01 10.1	+1.5
NOCI	Noci	3.82	298	P		Pn	18 01 10.1	+1.5
IMMV	Iera Moni Meta	4.12	151	P		Pn	18 01 14.9	+2.3
IMMV	Iera Moni Meta	4.12	151	P		Pn	18 01 14.9	+2.3
VAM	Vamos	4.25	149	P		Pn	18 01 17.2	+2.7
CDT	Castel del Mon	4.49	298	*e*Pn		Pn	18 01 18.6	+0.9
BOVS	Bovan	4.55	2	*e*Pn		Pn	18 01 19.5	+0.9
IVAS	Ivanjica	4.60	348	*e*Pn		Pn	18 01 21.8	+2.4
IDI	Anoyia	4.65	144	P		Pn	18 01 22.7	+2.7
IDI	Anoyia	4.65	144	P		Pn	18 01 22.7	+2.7
ZAGS	Zajecar	4.76	6	*e*Pn		Pn	18 01 24.8	+3.4
GRUS	Gruza	4.84	353	*e*Pn		Pn	18 01 22.4	-0.1
BBLS	Lazići	5.03	342	*e*Pn		Pn	18 01 27.7	+2.4
DIVS	Divibare	5.14	348	*e*Pn		Pn	18 01 28.8	+2.0
TRUS	Trudelj	5.20	351	*e*Pn		Pn	18 01 27.6	+0.1
TEKS	Tekeris	5.66	345	*e*Pn		Pn	18 01 35.4	+1.6
VOIR		6.87	21	S		Pn	18 01 55.3	+4.8
UDBI	Udbina	6.93	324	*e*Pn		Pn	18 01 52.2	+0.8
UDBI				Sn		Sn	18 03 08.8	-1.5
UDBI	Udbina	6.93	324	*e*Pn		Pn	18 01 52.1	+0.8
MLR	Muntele Rosu	7.20	26	S		Pn	18 02 01.9	+6.9
NVLJ	Novalja	7.39	320	*e*Pn		Pn	18 01 58.7	+1.2
NVLJ				Sn		Sn	18 03 18.1	-3.3
NVLJ	Novalja	7.39	320	*e*Pn		Pn	18 01 58.7	+1.2
BRTR	Keskin Array B	9.41	82	Pn		Pn	18 02 26.8	+1.4
	comp=N,0.1nm,0.3s,baz=268,slow=13,SNR=2.3							
GERES	GERESS Array B	11.26	333	Pn		Pn	18 02 55.3	+4.6
	comp=N,0.1nm,0.3s,baz=295,slow=35,SNR=2.7							
GERES				LR		LR	18 08 45.1	
	comp=N,23nm,19.2s,baz=102,slow=45							
FINES	FINESS Array B	22.56	6	P		P	18 05 08.7	-1.1
	comp=N,2.0nm,0.8s,baz=164,slow=9.5,SNR=5.2							
NB2	NORSAR Subarra	22.90	347	P		P	18 05 13.1	-0.3
	comp=Z,1.4nm,0.8s,baz=144,slow=10							
NB2	NORSAR Subarra	22.90	347	P		P	18 05 13.1	-0.3
	comp=Z,1.4nm,0.8s,SNR=5.4							
NOA	NORSAR Array B	22.90	347	P		P	18 05 12.8	-0.6
	comp=Z,0.7nm,0.7s,baz=157,slow=9.1,SNR=6.4							
ARCES	ARCESS Array B	30.59	3	P		P	18 06 23.0	-0.3
	comp=Z,2.0nm,0.9s,baz=194,slow=9.3,SNR=3.1							
TORD	Torodi Ar. Bea	31.22	220	P		P	18 06 29.3	-0.1
	comp=Z,0.3nm,0.4s,baz=26,slow=7.8,SNR=4.4							
MKAR	Makanchi Array	44.17	59	P		P	18 08 18.3	-0.3
	comp=Z,0.8nm,0.6s,baz=285,slow=7.3,SNR=12							
ZALV	Zalesovo Beam	44.51	49	P		P	18 08 20.8	-0.3
	comp=Z,6.0nm,0.5s,baz=275,slow=8.6,SNR=27							
SONM	Songino Array	59.28	51	P		P	18 10 11.5	-0.1
	comp=Z,0.3nm,0.8s,baz=270,slow=8.6,SNR=2.2							
NEW	Newport	85.59	334	LR		LR	18 54 30.1	
	comp=Z,22nm,18.1s,baz=298,slow=38							

GUC ***19*** *18:00:47.0±0.5,34°.53S×73°.76W,h45km±10km, ML3.8*
ISC 19 18:00:47.8±3.5**,34°.63S**±0°.08×**73°.9W**±0°.2**,h35km**,**n21,**
σ1=32/32,1D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	Pichilemu	1.56	82	*i* P	Pn	18 01 11.9	-1.1
CHPI				*i* S	Sn	18 01 30.7	-1.2
TALC	Talca	1.98	113	*i* P	Pn	18 01 18.4	-0.5
TALC				*i* S	Sn	18 01 43.2	+0.7
NICH	Los Niches	2.20	100	*i* P	Pn	18 01 21.6	-0.3
NICH				*i* S	Sn	18 01 48.2	+0.4
NICH				IAML		18 01 51.4	
	comp=N,2μm,0.3s						
RCDM	Rinconada Maip	2.78	67	*i* P	Pn	18 01 28.6	-1.3
RCDM				*i* S	Sn	18 02 00.3	-2.0
RCDM				IAML		18 02 03.7	
	comp=E,444nm,0.1s						
ROC1	El Roble	2.89	56	*i* P	Pn	18 01 31.4	-0.2
ROC1				⇓*i*S	Sn	18 02 06.5	+1.2
ROCH	El Roble	2.90	56	*i* P	Pn	18 01 30.8	-0.8
ROCH				*i* S	Sn	18 02 04.1	-1.3
ROCH				IAML		18 02 06.6	
	comp=N,235nm,0.4s						
CLCH	Cerro Calan	3.03	67	*i* P	Pn	18 01 32.4	-0.9
CLCH				*i* S	Sn	18 02 06.7	-1.7
CLCH				IAML		18 02 24.6	
	comp=E,183nm,0.4s						
PEL	Peldehue	3.03	62	*i* P	Pn	18 01 32.6	-0.8
PEL				*i* S	Sn	18 02 06.6	-1.9
PEL				IAML		18 02 11.0	
	comp=N,246nm,0.5s						
FCH	Farellones	3.24	67	*e*P	Pn	18 01 36.5	0.0
FCH				*i* S	Sn	18 02 12.9	-1.1
FCH				IAML		18 02 16.1	
	comp=N,414nm,0.3s						
AUSP	Uspallata	4.45	59	*i* P	Pn	18 01 54.3	+1.3
AUSP				*i* S	Sn	18 02 46.6	+2.9
ARCO	CERRO ARCO	4.48	68	*i* P	Pn	18 01 55.0	+1.6
ARCO				IAML		18 02 55.7	
	comp=Z,20nm,0.4s						
ASAL	Salagasta	4.67	66	*i* P	Pn	18 01 57.5	+1.7
ASAL				*i* S	Sn	18 02 52.0	+3.2
RTLS	Leoncito	4.76	55	*i* P	Pn	18 01 58.2	+0.9
RTLS				*i* S	Sn	18 02 53.8	+2.4
RTLL	Cerro Villicun	5.60	55	*i* P	Pn	18 02 09.2	+0.6
ACCO	Cerro Coronel	5.71	46	*i* P	Pn	18 02 10.7	+0.2
ACCO				*i* S	Sn	18 03 15.2	+0.1
ACCO				IAML		18 03 25.6	
	comp=Z,22nm,0.6s						
AROD	Rodeo	5.80	41	*i* P	Pn	18 02 11.5	-0.1
AMOG	MOGNA	5.83	52	*i* P	Pn	18 02 12.1	+0.2
ACDV	Cuesta del Vie	5.99	43	*i* P	Pn	18 02 13.8	-0.3
ACDV				*i* S	Sn	18 03 20.9	-0.7
AVFE	Valle Fertil	6.70	56	*i* P	Pn	18 02 24.1	+0.3
AVFE				IAML		18 03 44.7	
	comp=Z,12nm,0.6s						
AGUA	GUANDACOL	6.86	43	*i* P	Pn	18 02 25.5	-0.6
MRA	San Martin	7.15	74	*i* P	Pn	18 02 31.4	+1.4

ISCJB ***19*** *18:07:38.6±0.5,39°.09N±0°.04×29°.09E±0°.04, h6km±7km, Error ellipse: s-maj=7.9km s-min=4.3km az=153.6*
CSEM ***19*** *18:07:38.7±0.1,39°.11N×29°.07E, h5km, MD2.7, Error ellipse: s-maj=3.6km s-min=2.8km az=132.0*
ISK ***19*** *18:07:38.4,39°.14N×29°.08E, h6km, MD2.7*
DDA ***19*** *18:07:38.5,39°.13N×29°.10E, h7km, Ml2.9*
ISC 19 18:07:38.6±1.0**,39°.11N**±0°.03×**29°.09E**±0°.02**,h15km**±9**km,**
n29,σ=949/40,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	Gediz	0.25	104	*e*PG	Pb	18 07 45.0	+0.1
GEDZ	Gediz	0.25	104	*e*Pg	Pb	18 07 45.0	+0.1
DEMI	Demirci	0.30	258	*i* P	Pg	18 07 45.2	+0.2
DEMI				*i* S	Sg	18 07 49.5	+0.2
DEMI	Demirci	0.30	258	P	Pg	18 07 45.2	+0.2
DEMI				S	Sg	18 07 49.5	+0.2
GDZ	Gediz	0.30	93	*i* P	Pg	18 07 45.0	0.0
GDZ				*i* S	Sg	18 07 49.4	0.0
GDZ	Gediz	0.30	93	P	Pg	18 07 45.0	0.0
GDZ				S	Sg	18 07 49.4	0.0
TVSB	Tavsanli	0.45	40	*e*PG	Pg	18 07 47.2	-0.3
TVSB				*e*SG	Sg	18 07 53.0	-0.7
TVSB	Tavsanli	0.45	40	*e*Pg	Pg	18 07 47.3	-0.3
TVSB				*e*Sg	Sg	18 07 53.0	-0.7
KULA	Kula-Manisa	0.68	210	*e*PG	Pg	18 07 52.1	+0.2
KULA	Kula-Manisa	0.68	210	*e*Pg	Pg	18 07 52.1	+0.2
MANT	Manisa	0.74	214	*i* P	Pg	18 07 52.2	-0.9
MANT				*i* S	Sg	18 08 01.8	-1.1
MANT	Manisa	0.74	214	P	Sg	18 07 52.2	-0.9
MANT				S	Sg	18 08 01.8	-1.1
KHL	Karahalli	0.85	157	*e*PG	Pb	18 07 55.5	+0.5
KHL	Karahalli	0.85	157	*e*Pg	Pb	18 07 55.6	+0.5
IGD	Bursa	1.16	4	*i* P	Pb	18 08 00.2	-0.1
IGD				*i* S	Sn	18 08 16.8	+1.0
MDNY	Mudanya-Bursa	1.27	353	*e*PN	Pb	18 08 02.5	+0.2
MDNY	Mudanya-Bursa	1.27	353	*e*Pn	Pb	18 08 02.5	+0.2
KCTX	Karacabey (Bur	1.29	334	*e*PN	Pb	18 08 03.0	+0.4
KCTX	Karacabey (Bur	1.29	334	*e*Pn	Pb	18 08 03.0	+0.4
BORA	Eskisehir	1.31	53	*i* P	Pb	18 08 03.3	+0.4
BORA				*i* S	Sg	18 08 20.8	0.0
BORA	Eskisehir	1.31	53	P	Pb	18 08 03.3	+0.4
BORA				S	Sg	18 08 20.8	0.0
GONE	Gonen-Balikesi	1.44	311	*e*PN	Pb	18 08 05.4	+0.3
GONE	Gonen-Balikesi	1.44	311	*e*Pn	Pb	18 08 05.4	+0.3
ARMT	Armutlu	1.47	353	*e*PN	Pg	18 08 06.5	-0.4
ARMT	Armutlu	1.47	353	*e*Pn	Pg	18 08 06.5	-0.4
EDC	Edincik	1.56	323	*e*PN	Pb	18 08 07.0	-0.2
EDC	Edincik	1.56	323	*e*Pn	Pb	18 08 07.0	-0.2
GULT	Gulveren	1.72	39	*e*PN	Pb	18 08 09.7	-0.3
GULT	Gulveren	1.72	39	*e*Pn	Pb	18 08 09.7	-0.3

ISCJB ***19*** *18:20:29.4±0.4,25°.15S±0°.03×178°.43E±0°.03, h566km±5km, mb4.9/194, Error ellipse: s-maj=4.2km s-min=3.4km az=148.5*
MOS ***19*** *18:20:29.8±0.9,25°.04S×178°.45E, h568km, mb4.8/29, Error ellipse: s-maj=9.8km s-min=8.4km az=64.6*
GCMT ***19*** *18:20:30.5±0.3,25°.01S×178°.48E, h583km±2km, MW5.3/50, Moment Tensor Solution. s50,c69; Duration: 1s1 Moment tensor: Scale 10^17 Nm; Mrr-0.54±.03; Mθθ0.53±.06; Mϕϕ0.00±.05; Mrθ0.11±.06; Mrϕ-0.47±.05; Mθϕ-0.72±.05; Best double couple: Mo1.01400×10^17 NP1:ϕs91.00000°,δ36.00000°,λ-147.00000°. NP2: ϕs91.00000°,δ36.00000°,λ-147.00000°. Principal axes: T 0.9730, Plg20.0000°, Azm40.0000°; N 0.0830, Plg30.0000°, Azm142.0000°; P -1.0560, Plg53.0000°, Azm281.0000°; nsta1 refers to body waves, cutoff=40s.*
NEIC ***19*** *18:20:30.5±0.1,25°.09S×178°.46E, mb5.0/145 Error ellipse: s-maj=5.0km s-min=3.7km az=135.0*
BJI ***19*** *18:20:30.5,24°.94S×178°.88E, h591km, mb4.9/40, mB5.1/28*
IDC ***19*** *18:20:31.1±0.7,25°.06S×178°.46E, h573km±7km, mb4.2/22, mb1 4.3/24, mb1mx4.2/28, mbtmp5.1/24, Error ellipse: s-maj=8.9km s-min=7.7km az=2.0*
ISC 19 18:20:30.4±0.3**,25°.07S**±0°.04×**178°.57E**±0°.04**,h575km**±3**km,**
h576km:pP-P,n710,σ1=65/882,mb4.9/194**,39C-37D,**
South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	5.21	144	P	P	18 22 05.0	+1.8
	1μm,0.3s,baz=283,slow=2.9,SNR=100						
RAO				S	S	18 23 21.0	+1.7
	108nm,0.3s,baz=59,slow=19,SNR=2.4						
RAO	Raoul Island	5.21	144	*e*P	P	18 22 04.3	+1.0
RAO				*e*S	S	18 23 18.2	-1.1
RAO				*e*S	S	18 23 21.0	+1.7
RAO	Raoul Island	5.21	144	*e*P	P	18 22 04.3	+1.0
RAO				*e*S	S	18 23 18.2	-1.1
RAO				*e*S	S	18 23 21.0	+1.7
MSVF	Nonsavu	7.32	356	*e*P	P	18 22 22.3	-0.3
MSVF	Nonsavu	7.32	356	*e*P	P	18 22 22.2	-0.4
OUZ	Omahuta	10.99	202	*e*P	P	18 23 00.7	+2.2
OUZ	Omahuta	10.99	202	PN	P	18 23 00.6	+2.2
WCZ	Waipu Caves	11.43	198	PN	P	18 23 05.5	+2.6
DZM	Mont Dzumac	11.52	283	P	P	18 23 05.7	+1.5
	12nm,0.3s,baz=146,slow=8.4,SNR=123						
DZM				S	S	18 25 13.3	+2.6
	baz=198,slow=19,SNR=3.7						
DZM	Mont Dzumac	11.52	283	*e*P	P	18 23 04.6	+0.4
	453nm,1.0s						
DZM	Mont Dzumac	11.52	283	*e*P	P	18 23 04.2	0.0
KUZ	Kuaotunu	11.89	191	PN	P	18 23 09.3	+1.6
MKAZ	Moumakai	12.34	193	PN	P	18 23 14.0	+1.7
MXZ	Matakaoa Point	12.45	181	PN	P	18 23 10.9	-2.5
HAZ	Te Kaha	12.66	183	PN	P	18 23 13.3	-2.3
HAZ				SN	S	18 25 24.0	-7.6
WMGZ	Waiomatatini S	12.71	181	*e*PN	P	18 23 13.8	-2.2
WMGZ				SN	S	18 25 24.4	-8.0
PKGZ	Pakihiroa	12.78	182	PN	P	18 23 14.0	-2.9
RUGZ	Raukumara Rang	12.88	183	PN	P	18 23 15.4	-2.5
RUGZ				SN	S	18 25 29.3	-6.6
PUZ	Puketiti	12.96	181	PN	P	18 23 16.1	-2.6
PUZ				SN	S	18 25 30.3	-7.0
TWGZ	Tauwhareparae	13.07	182	PN	P	18 23 17.7	-2.2
URZ	Urewera	13.21	185	P	P	18 23 18.3	-2.8
	11nm,0.3s,baz=6.5,slow=5.3,SNR=49						
URZ				S	S	18 25 35.4	-6.2
	2.2nm,0.3s,baz=95,slow=23,SNR=25						
URZ	Urewera	13.21	185	PN	P	18 23 18.7	-2.4
MWZ	Matawai	13.25	184	PN	P	18 23 19.4	-2.3
RAGZ	Rawiri	13.42	184	PN	P	18 23 21.4	-2.0
MUGZ	Murupara	13.45	186	PN	P	18 23 21.3	-2.4
TLZ	Tolley Road	13.47	190	PN	P	18 23 24.8	+0.9
RIGZ	Rimuhau	13.61	183	PN	P	18 23 22.4	-3.0
RIGZ				SN	S	18 25 41.2	-7.9
SNGZ	Shannon Statio	13.71	184	PN	P	18 23 24.2	-2.2
HIZ	Hauiti	13.77	192	*e*P	P	18 23 27.9	+1.0
HIZ	Hauiti	13.77	192	PN	P	18 23 28.1	+1.2
NMHZ	Naumai	14.06	186	PN	P	18 23 28.4	-1.6
BKZ	Black Stump Fm	14.16	187	*e*P	P	18 23 28.9	-2.1
BKZ	Black Stump Fm	14.16	187	PN	P	18 23 28.4	-2.6
AFI	Afiamalu	14.35	41	P	P	18 23 29.1	-4.0
	16nm,0.3s,baz=176,slow=0.3,SNR=21						
AFI				S	S	18 25 55.1	-8.0
	2.7nm,0.3s,baz=218,slow=19,SNR=3.9						
MCHZ	McNeill Hill	14.42	186	PN	P	18 23 31.2	-2.2
KAHZ	Kahuranaki	14.75	185	PN	P	18 23 34.5	-2.2
WAZ	Wanganui	14.95	191	PN	P	18 23 39.9	+1.3
PXZ	Pawanui	14.99	185	PN	P	18 23 36.5	-2.4
PXZ				SN	S	18 26 05.7	-7.7
TSZ	Takapari Road	15.10	188	PN	P	18 23 37.5	-2.6
BFZ	Birch Farm	15.69	187	*e*P	P	18 23 44.1	-1.6
	45nm,0.6s						
BFZ				*e*S	S	18 26 21.8	-3.4
BFZ	Birch Farm	15.69	187	PN	P	18 23 43.5	-2.2
MRZ	Mangatainoka R	15.75	188	PN	P	18 23 43.6	-2.7
MRZ				SN	S	18 26 20.4	-5.8
OGWZ	Otaki Gorge	15.96	189	PN	P	18 23 45.7	-2.5
KIW	Kapiti Island	16.04	190	PN	P	18 23 47.1	-1.9
DUWZ	D'Urville Isla	16.16	193	PN	P	18 23 49.5	-0.7
MTW	Mount Morrison	16.25	188	PN	P	18 23 48.6	-2.3
CAW	Cannon Point	16.26	189	PN	P	18 23 50.2	-0.8
FUNA	Funafuti	16.46	2	*e*P	P	18 23 51.5	-1.8
	408nm,1.3s						
TCW	Tory Channel	16.49	191	PN	P	18 23 52.8	-0.3
QRZ	Quartz Range	16.50	196	PN	P	18 23 54.1	+0.9
SNZO	South Karori	16.51	190	*e*P	P	18 23 51.9	-1.4
	102nm,0.8s						
NNZ	Nelson	16.67	194	PN	P	18 23 55.0	+0.3
TUWZ	Tuamarina	16.76	192	PN	P	18 23 54.8	-0.7
KHZ	Kahutara	17.79	192	*e*P	P	18 24 05.0	+0.1
	111nm,0.9s						
KHZ	Kahutara	17.79	192	PN	P	18 24 03.9	-1.0
LHI	Lord Howe Isla	18.33	245	*e*P	P	18 24 09.2	-0.8
	162nm,0.8s						
LTZ	Lake Taylor	18.41	195	*e*P	P	18 24 09.3	-1.4
	170nm,1.3s						
LTZ				*e*S	S	18 27 04.4	-5.2
INZ	Inchbonnie	18.56	197	PN	P	18 24 11.6	-0.4
OXZ	Oxford	18.98	195	*e*P	P	18 24 14.4	-1.3
	294nm,1.3s						
OXZ				*e*S	S	18 27 16.6	-2.0
OXZ	Oxford	18.98	195	PN	P	18 24 14.7	-1.1
WVZ	Waitaha Valley	19.08	198	PN	P	18 24 16.6	0.0
CRLZ	Canterbury Las	19.09	193	*e*P	P	18 24 16.4	-0.3
	76nm,1.1s						
MQZ	McQueen's Vall	19.21	193	*e*P	P	18 24 16.9	-0.9
	45nm,0.9s						
MQZ	McQueen's Vall	19.21	193	PN	P	18 24 16.9	-0.9
RPZ	Rata Peaks	19.59	196	P	P	18 24 21.7	+0.4
	3.7nm,0.3s,baz=10,slow=4.1,SNR=18						
RPZ				S	S	18 27 25.9	-2.5
	0.4nm,0.3s,baz=157,slow=17,SNR=4.5						
RPZ	Rata Peaks	19.59	196	*e*P	P	18 24 21.5	+0.2
	23nm,0.6s						
RPZ				*e*S	S	18 27 25.9	-2.5
FOZ	Fox Glacier	19.76	199	*e*P	P	18 24 23.3	+0.4
	50nm,1.0s						
FOZ	Fox Glacier	19.76	199	PN	P	18 24 22.5	-0.3
RAR	Rarotonga	20.28	83	P	P	18 24 28.4	+0.6
	32nm,0.9s,baz=221,slow=11,SNR=3.5						
RAR	Rarotonga	20.28	83	*e*P	P	18 24 27.8	0.0
RAR				pmax	pmax		
	comp=Z,135nm,1.2s						
RAR	Rarotonga	20.28	83	*e*P	P	18 24 27.8	0.0
	comp=Z,136nm,1.2s						
LBZ	Lake Benmore	20.44	197	*e*P	P	18 24 29.2	+0.2
	comp=Z,30nm,1.2s						
JCZ	Jackson Bay	20.57	200	PN	P	18 24 30.6	+0.3
ODZ	Otahua Downs	20.93	196	*e*P	P	18 24 32.5	-0.9
	comp=Z,48nm,1.8s						
WKZ	Wanaka	21.18	199	*e*P	P	18 24 34.9	-0.8
	comp=Z,23nm,0.9s						
WKZ				*e*S	S	18 27 49.6	-3.9
MLZ	Mavora Lakes	21.94	200	*e*P	P	18 24 43.0	+0.6
	comp=Z,46nm,0.8s						
MLZ				*e*S	S	18 28 09.8	+4.2
TUZ	Tuapeka	22.04	197	PN	P	18 24 42.9	-0.4
DCZ	Deep Cove	22.34	202	*e*P	P	18 24 46.7	+0.8
	comp=Z,33nm,1.1s						
WHZ	Wether Hill Ro	22.46	200	*e*P	P	18 24 48.4	+1.3
	comp=Z,79nm,0.7s						
HNR	Honiara	23.58	308	P	P	18 24 56.7	-0.7
	comp=Z,127nm,0.6s,baz=162,slow=1.2,SNR=12						
ARMA	Armidale	24.40	251	*e*P	P	18 25 06.6	+1.9
	comp=Z,56nm,0.9s						
EIDS	Eidsvold	24.86	263	*e*P	P	18 25 09.7	+1.1
	comp=Z,53nm,0.7s						
TARA	Tarawa	26.83	347	*e*P	P	18 25 26.8	+0.7
	comp=Z,330nm,1.5s						
CAN	Canberra	27.43	241	*e*P	P	18 25 33.0	+1.8
CAN				pmax	pmax		
	comp=Z,211nm,1.8s						
CAN	Canberra	27.43	241	*e*P	P	18 25 33.0	+1.8
	comp=Z,211nm,1.8s						
TBI	Tubuai	29.17	93	*e*P	P	18 25 48.3	+1.9
	comp=Z,121nm,0.9s						
CTAO	Charters Tower	30.21	273	*e*P	P	18 25 56.7	+1.4
CTAO	Charters Tower	30.21	273	*e*P	P	18 25 56.7	+1.4
	comp=Z,312nm,1.4s						
PAE	Paea	30.51	82	*e*P	P	18 25 59.3	+1.4
	comp=Z,17nm,1.0s						
PPT2	Papeete2	30.54	82	*e*P	P	18 25 59.9	+1.6
	comp=Z,152nm,1.3s						
PPT	Papeete	30.54	82	P	P	18 26 00.0	+1.7
	comp=Z,121nm,1.1s,baz=94,slow=18,SNR=5.4						
PPT	Papeete	30.54	82	*e*P	P	18 25 59.5	+1.2
PPT	Papeete	30.54	82	*e*P	P	18 25 59.5	+1.2
TIAR	Tiarei	30.75	82	*e*P	P	18 26 01.6	+1.5
	comp=Z,52nm,1.0s						
TAU	Tasmania Unive	31.19	227	*e*P	P	18 26 04.7	+1.3
TAU				pmax	pmax		
	comp=Z,152nm,1.6s						
TAU	Tasmania Unive	31.19	227	*e*P	P	18 26 04.7	+1.3
	comp=Z,152nm,1.6s						
RABL	Rabaul	32.79	305	*e*P	P	18 26 16.6	-0.8
	comp=Z,122nm,0.5s						
MCQ	Macquarie Isla	32.80	201	*e*P	P	18 26 17.1	+0.2
MCQ				pmax	pmax		
	comp=Z,399nm,1.8s						
MCQ	Macquarie Isla	32.80	201	*e*P	P	18 26 17.1	+0.2
	comp=Z,399nm,1.8s						
STKA	Stephens Creek	33.09	250	P	P	18 26 20.6	+0.9
	comp=Z,19nm,0.4s,baz=96,slow=10,SNR=112						
STKA				PcP	PcP	18 28 46.9	+1.

comp=Z,183nm,1.5s,comp=Z,3µm
FORT Forrest 44.69 251 *e*P P **18 27 52.8 -0.3**
comp=Z,2µm,1.1s
MTN Manton Dam 46.27 276 *e*P P **18 28 04.9 -0.4**
comp=Z,28nm,1.1s
SAUI Saumlaki 48.12 282 *e*P P **18 28 19.8 +0.6**
comp=Z,484nm,0.9s
FITZ Fitzroy Crossi 49.45 267 S S **18 34 55.2 +0.6**
comp=Z,2.9nm,1.0s,baz=318,slow=15,SNR=5.4
FITZ Fitzroy Crossi 49.45 267 *e*P P **18 28 29.1 +0.1**
comp=Z,182nm,1.2s
FITZ *e*S **S 18 34 55.1 +0.6**
FAKI Fak Fak 49.70 289 P P **18 28 30.8 -0.1**
FAKI Fak Fak 49.70 289 *e*P P **18 28 30.1 -0.8**
comp=Z,45nm,0.9s
GUMO Guam 50.56 316 *e*P P **18 28 36.7 -0.4**
GUMO Guam 50.56 316 *e*P P **18 28 36.7 -0.4**
comp=Z,511nm,0.8s
KKH Kailua Kona 50.87 31 *e*P P **18 28 39.3 +0.1**
KKH Kailua Kona 50.87 31 *e*P P **18 28 39.2 +0.1**
MLOA Mauna Loa Obse 50.98 32 *e*P P **18 28 40.4 -0.1**
POHA Pohakuloa 51.19 32 *e*P P **18 28 41.9 +0.1**
comp=Z,131nm,1.0s
KEKH Kekaha 51.31 26 *e*P P **18 28 42.9 +0.6**
comp=Z,170nm,1.1s
HPAH Hawaii Prepara 51.34 32 *e*P P **18 28 44.0 +1.3**
comp=Z,175nm,0.8s
SWI Sorong 51.60 290 P P **18 28 45.2 +0.5**
VNDA Vanda 53.11 184 P P **18 28 55.9 +1.4**
comp=Z,6.1nm,0.8s,baz=3.2,slow=8.0,SNR=34
VNDA PcP **PcP 18 29 54.1 +1.0**
comp=Z,5.6nm,0.8s,baz=327,slow=3.6,SNR=6.8
VNDA ScP **ScP 18 32 57.4 +1.4**
comp=Z,1.1nm,1.0s,baz=42,slow=4.8,SNR=3.1
VNDA Vanda 53.11 184 *e*P P **18 28 55.7 +1.3**
VNDA *e* 18 29 54.1
VNDA pmax pmax
comp=Z,7.0nm,0.8s
VNDA Vanda 53.11 184 *e*P P **18 28 55.7 +1.3**
comp=Z,6.6nm,0.8s
VNDA *e*PcP **PcP 18 29 54.1 +1.0**
VNDA *e*ScP **ScP 18 32 57.4 +1.4**
NWAO Narrogin (SRO) 53.57 247 *e*P P **18 28 58.2 -0.3**
NWAO pmax pmax
comp=Z,38nm,0.9s
NWAO Narrogin (SRO) 53.57 247 *e*P P **18 28 58.2 -0.3**
comp=Z,38nm,0.9s
SOEI Soe 53.66 276 P P **18 29 01.2 +1.7**
SOEI Soe 53.66 276 *e*P P **18 29 01.2 +1.7**
comp=Z,214nm,1.2s
MBWA Marble Bar 53.90 261 *e*P P **18 29 00.5 -0.4**
comp=Z,93nm,1.2s
MBWA *e*pP **pP 18 30 48.8 -0.8**
NLAI Namlea 54.01 285 P P **18 29 02.2 +0.4**
LBMI Labuha 54.94 288 P P **18 29 10.2 +1.9**
comp=Z,74nm,1.4s,comp=Z,800nm
SANI Sanana 55.55 286 P P **18 29 12.8 +0.2**
comp=Z,68nm,1.1s,comp=Z,1µm
MMRI Maumere 55.95 277 P P **18 29 16.2 +0.9**
comp=Z,114nm,1.0s,comp=Z,1µm
MMRI Maumere 55.95 277 *e*P P **18 29 14.9 -0.3**
comp=Z,210nm,1.4s
EDFI Ende, Flores 56.39 276 P P **18 29 18.5 0.0**
comp=Z,87nm,1.1s,comp=Z,1µm
WSI Waingapu 57.28 275 P P **18 29 25.8 +1.4**
comp=Z,474nm,1.2s,comp=Z,6µm
KDI Kendari 57.63 282 P P **18 29 28.2 +1.4**
comp=Z,50nm,1.3s
LUWI Luwuk 58.85 285 P P **18 29 35.7 +0.7**
comp=Z,165nm,1.3s,comp=Z,2µm
LUWI Luwuk 58.85 285 *e*P P **18 29 34.9 -0.1**
comp=Z,147nm,1.0s
KAPI Kappang 59.71 279 *e*P P **18 29 40.8 0.0**
comp=Z,86nm,1.4s
PLAI Plampang 59.90 274 P P **18 29 41.9 -0.1**
comp=Z,225nm,1.0s,comp=Z,3µm
MRSI Marisa 60.31 286 P P **18 29 44.5 -0.2**
comp=Z,33nm,1.0s
TTSI Tana Toraja 60.53 281 P P **18 29 46.4 +0.3**
DAV Davao City (W) 60.64 295 *e*P P **18 29 45.6 -1.2**
comp=Z,342nm,0.4s
TWSI Taliwang, Sumb 60.74 274 P P **18 29 47.7 +0.2**
PCI Palu 61.50 283 P P **18 29 53.8 +1.3**
comp=Z,84nm,1.2s,comp=Z,1µm
IGBI Denpasar 62.28 273 P P **18 29 58.0 +0.4**
JAGI Jajag, Banyuwa 63.32 273 P P **18 30 03.4 -0.9**
JAGI Jajag, Banyuwa 63.32 273 *e*P P **18 30 02.8 -1.5**
comp=Z,116nm,1.1s
GMJI Gumukmas 64.04 273 P P **18 30 08.5 -0.3**
BLJI Banyuglugur 64.11 274 P P **18 30 11.2 +1.9**
comp=Z,81nm,0.6s
QSPA South Pole Qui 65.02 180 *e*P P **18 30 15.3 +1.0**
MIR Mirnyy 65.52 206 *i*P P **18 30 17.0 -0.2**
MIR pmax pmax
comp=Z,6.0nm,1.0s
MYLDM Lahad Datu 65.62 289 *e*P P **18 30 19.3 +0.6**
comp=Z,50nm,1.3s
PWJI Pagerwojo 65.62 272 P P **18 30 18.9 +0.1**
UGM Wanagama 66.83 272 *e*P P **18 30 25.9 -0.4**
comp=Z,519nm,1.8s
KKM Kota Kinabalu 68.02 288 *e*P P **18 30 32.0 -1.6**
comp=Z,46nm,0.9s
JHJ2 Mitsune 68.63 326 *e*P P **18 30 37.4 +0.7**
comp=Z,4µm,2.0s
CISI Cisompet, Garu 69.43 271 *e*P P **18 30 40.8 -1.3**
comp=Z,84nm,1.1s
CISI *e*pP **pP 18 32 34.9 -4.1**
SBUM Sibu 69.78 283 *e*P P **18 30 44.0 -0.1**
comp=Z,37nm,1.1s
XMIS Christmas Isla 70.24 267 *e*P P **18 30 46.1 -0.7**
comp=Z,172nm,1.4s
JOW Kunigami 70.83 313 *e*P P **18 30 49.3 -0.7**
comp=Z,142nm,1.5s
KSM Kuching 71.03 281 *e*P P **18 30 51.2 -0.3**
comp=Z,119nm,1.2s
MJAR Matsushiro Arr 72.14 327 P P **18 30 57.1 -0.3**
comp=Z,12nm,1.0s,baz=161,slow=5.6,SNR=15
MAJO Matsushiro 72.14 327⇑ *i*P P **18 30 57.3 -0.2**
MAJO pmax pmax
comp=Z,143nm,1.1s
MAJO Matsushiro 72.14 327 *e*P P **18 30 56.8 -0.7**
comp=Z,21nm,1.0s
MJB9 Matsu-Tunnel 72.15 327 *e*P P **18 30 57.1 -0.4**
comp=Z,5.2nm,1.0s
YOJ Yonaguni jima 72.91 308 *e*P P **18 31 01.8 -0.3**
YOJ pmax pmax
comp=Z,302nm,1.4s
YOJ Yonaguni jima 72.91 308 *e*P P **18 31 01.8 -0.3**
comp=Z,302nm,1.4s
TWG Pinlang 73.32 306 *e*P P **18 31 02.2 -2.2**
comp=Z,704nm,1.9s
YULB Yu-li 73.50 306 *e*P P **18 31 03.9 -1.6**
comp=Z,40nm,1.5s
JNU Nakatsue 73.56 320 *e*P P **18 31 04.9 -0.8**
NACB Ninganchiao 73.75 307 *e*P P **18 31 06.1 -0.8**
comp=Z,60nm,1.2s
TPUB Ta-pu 73.93 306 *e*P P **18 31 06.5 -1.5**
comp=Z,145nm,1.5s
SSLB Suanglung 73.98 306 *e*P P **18 31 06.6 -1.6**
comp=Z,24nm,1.0s
YHNB Yeheng 74.21 307 *e*P P **18 31 09.4 -0.2**
comp=Z,133nm,1.7s
MAW Mawson 76.20 201 P P **18 31 20.5 +0.7**
comp=Z,21nm,0.6s,baz=136,slow=5.1,SNR=84
MAW Mawson 76.20 201 *e*P P **18 31 20.3 +0.5**
MAW pmax pmax
comp=Z,11nm,1.1s
MAW Mawson 76.20 201 *e*P P **18 31 20.3 +0.5**
comp=Z,11nm,1.1s
ASAJ Asahikawa 76.33 334 P P **18 31 23.1 +2.3**
comp=Z,5.5nm,0.4s,baz=212,slow=8.0
ASAJ Asahikawa 76.33 334 *e*P P **18 31 22.7 +1.9**
comp=Z,44nm,1.5s
MYKOM Kota Tinggi 76.95 278 *e*P P **18 31 24.7 -0.2**
comp=Z,50nm,1.1s
KS01 Wonju Array Si 78.35 321 *e*P P **18 31 31.8 -0.1**
KS01 *e*pP **pP 18 33 32.0 -0.8**
YSS Yuzh-Sakhalins 78.65 336⇓ *i*P P **18 31 35.1 +1.9**
YSS pmax pmax
comp=Z,40nm,1.3s
YSS Yuzh-Sakhalins 78.65 336 *e*P P **18 31 34.7 +1.5**
comp=Z,63nm,1.2s
PET Petropavlovsk 79.68 348 *e*P P **18 31 39.0 +0.5**
PET pmax pmax
comp=Z,14nm,0.6s
PEA0 Petropavlovsk- 79.94 347 *e*P P **18 31 40.0 +0.1**
PEA0B Petropavlovsk- 79.94 347 *e*P P **18 31 40.6 +0.6**
comp=Z,59nm,1.4s
PEA0B *e*pP **pP 18 33 39.6 -1.9**
PETK Petropavlovsk- 79.94 347 P P **18 31 40.6 +0.7**
comp=Z,11nm,0.6s,baz=121,slow=7.1,SNR=24
PEA1 Petropavlovsk- 79.95 347 *e*P P **18 31 40.6 +0.7**
MSHR Mys Shultsa 80.26 327⇑ *e*P P **18 31 42.4 +0.6**
IPM Ipoh 80.66 279 *e*P P **18 31 44.1 -0.5**
comp=Z,91nm,1.3s
USRK Usuriysk Ar. 81.05 328 P P **18 31 46.9 +1.0**
comp=Z,9.0nm,0.7s,baz=147,slow=3.7,SNR=27
KULM Kulim 81.35 280 *e*P P **18 31 48.3 +0.2**
comp=Z,72nm,1.6s
SYO Syowa Base 81.57 194⇑ *e*P P **18 31 46.6 -1.6**
SYO Syowa Base 81.57 194⇓ *e*PcP **PcP 18 31 52.4 +0.1**
UBPT Khong Chiam 81.72 291 P P **18 31 52.0 +2.1**
comp=Z,30nm,1.0s
PSI Prapat 81.82 277 P P **18 31 49.8 -0.9**
comp=Z,25nm,1.0s,baz=171,slow=3.3,SNR=17
PSI Prapat 81.82 277 *e*P P **18 31 49.4 -1.3**
PSI pmax pmax
comp=Z,45nm,1.1s
PSI Prapat 81.82 277 *e*P P **18 31 49.4 -1.3**
comp=Z,45nm,1.1s
GSI Gunungsitoli 82.39 275 *e*P P **18 31 52.8 -0.7**
comp=Z,130nm,1.4s
GSI *e*PP **PP 18 35 09.4 -3.8**
MDJ Mudanjiang 82.52 327 P P **18 31 54.8 +1.4**
MDJ pP pP 18 33 57.8 +1.8
MDJ sP sP 18 34 56.6 +2.5
MDJ S **S 18 41 23.9 +0.9**
MDJ sS sS 18 45 04.4 +2.8
MDJ SS **SS 18 47 03.1 +0.6**
MDJ pmax pmax
comp=Z,23nm,1.3s
MDJ pmax pmax
comp=Z,110nm,5.3s
MDJ Mudanjiang 82.52 327 *e*P P **18 31 54.2 +0.8**
comp=Z,43nm,1.3s
WHN Wuhan 82.69 308⇑ *i*P P **18 31 55.6 +1.1**
WHN pmax pmax
comp=Z,76nm,1.1s
HABR Khabarovsk 82.93 332 *e*P P **18 31 55.5 +0.2**
HABR *e**PP **pP 18 33 57.1 -0.9**
HABR *e**SP **sP 18 34 55.1 -1.0**
HABR *e* 18 35 16.2
HABR *e*PPP PPP 18 37 12.8
HABR *e*S **S 18 41 21.8 -5.0**
HABR *e*SS **SS 18 47 08.1 -0.1**
HABR *e*SSS SSS 18 50 43.9
HABR pmax pmax
comp=E,8.0nm,0.7s
HABR pmax pmax
comp=N,6.0nm,0.7s
HABR pmax pmax
comp=Z,27nm,1.1s
HABR MLR MLR
comp=Z,27nm,22.0s
SCZ2 Santa Cruz Isl 83.02 48 P P **18 31 58.1 +2.0**
baz=234
SCI2 San Clemente I 83.16 49 P P **18 31 58.8 +2.0**
baz=234
TRTT Trang 83.33 282 P P **18 31 59.7 +1.6**
comp=Z,41nm,0.9s
PKM Mcpherson Peak 83.43 47 P P **18 32 00.3 +2.0**
baz=233
SAO San Andreas Ge 83.50 44 *e*P P **18 32 00.0 +1.5**
SAO pmax pmax
comp=Z,15nm,0.8s
SAO San Andreas Ge 83.50 44 *e*P P **18 31 60.0 +1.5**
comp=Z,15nm,0.8s
SNAA Sanae 83.52 180 P P **18 31 58.5 +0.5**
SNAA Sanae 83.52 180 *d*/P P **18 31 57.6 -0.5**
SNAA Sanae 83.52 180 *e*P P **18 31 58.2 +0.1**
SKNT Sakolnakorn 83.78 292 P P **18 32 01.2 +1.0**
comp=Z,101nm,1.2s
NVL N'lazarevskaya 83.97 184 *e*P P **18 32 00.5 +0.3**
CN2 Changchun 84.07 324⇓ P P **18 32 01.6 +0.6**
CN2 pmax pmax
comp=Z,70nm,1.1s
109C Camp Elliot, M 84.10 50 P P **18 32 03.7 +2.2**
baz=235
TIA Tai'an 84.11 314⇓ P P **18 32 02.5 +1.1**
TIA pmax pmax
comp=Z,50nm,1.1s
ARVC Arvin 84.22 47 P P **18 32 04.0 +2.0**
baz=234
MURC Murrieta 84.44 49 P P **18 32 04.9 +1.7**
baz=235
VES Vestal, Richgr 84.47 46 P P **18 32 04.8 +1.6**
baz=234
BFSC Mount Baldy Ra 84.49 48 P P **18 32 05.2 +1.6**
baz=235
SLBS Sierra La Lagu 84.51 61 *e*P P **18 32 05.1 +1.3**
comp=Z,88nm,1.8s
MONP2 Monument Peak 84.57 50 P P **18 32 06.2 +2.1**
baz=236,SNR=13
EDW2 Edwards Air Fo 84.63 48 P P **18 32 06.0 +1.9**
baz=234
IKP In-Ko-Pah, Jac 84.65 50 P P **18 32 06.4 +2.1**
baz=236,SNR=8.7
KHMM Horse Mountain 84.68 40 *e*P P **18 32 06.3 +1.9**
comp=Z,14nm,0.9s
ISA Isabella, Lake 84.77 47 P P **18 32 06.7 +1.9**
baz=234,SNR=6.9
ISA Isabella, Lake 84.77 47 *e*P P **18 32 06.9 +2.1**
ISA pmax pmax
comp=Z,21nm,0.9s
ISA Isabella, Lake 84.77 47 *e*P P **18 32 06.8 +2.1**
comp=Z,21nm,0.9s
KLR Kul'dur 84.92 331 P P **18 32 06.6 +1.5**
comp=Z,4.0nm,0.6s,baz=134,slow=3.8,SNR=20
KLR Kul'dur 84.92 331 *d*/P P **18 32 06.3 +1.2**
CMB Columbia Colle 84.94 44 *e*P P **18 32 06.8 +1.2**
CMB pmax pmax
comp=Z,16nm,1.0s
CMB Columbia Colle 84.94 44 *e*P P **18 32 06.8 +1.2**
comp=Z,16nm,1.0s
PFO Pinyon Flats O 84.95 49 P P **18 32 07.5 +1.8**
baz=236
PFO Pinyon Flats O 84.95 49 *e*P P **18 32 07.6 +1.8**
PFO pmax pmax
comp=Z,20nm,1.4s
PFO Pinyon Flats O 84.95 49 *e*P P **18 32 07.6 +1.8**
comp=Z,20nm,1.4s
TPFO Pinon Flats 84.95 49 P P **18 32 07.5 +1.7**
baz=236
NONG Nongkai 85.00 292 P P **18 32 07.4 +1.2**
comp=Z,53nm,1.2s,comp=Z,6µm
AFDM Forest Hills D 85.13 43 *e*P P **18 32 07.1 +0.7**
comp=Z,12nm,0.9s
ORV Oroville 85.18 42 *e*P P **18 32 08.0 +1.4**
ORV pmax pmax
comp=Z,12nm,1.0s
ORV Oroville 85.18 42 *e*P P **18 32 08.0 +1.4**
comp=Z,12nm,1.0s
LRMC Laurel Mtn Rad 85.19 47 P P **18 32 08.7 +1.8**
baz=235
WDC Whiskeytown Da 85.19 41 *e*P P **18 32 08.1 +1.5**
WDC pmax pmax
comp=Z,18nm,1.2s
WDC Whiskeytown Da 85.19 41 *e*P P **18 32 08.1 +1.5**
comp=Z,18nm,1.2s
N02D Trinity Center 85.34 40 P P **18 32 09.9 +2.5**
baz=231
O03D Paynes Creek 85.45 41 P P **18 32 09.8 +1.8**
baz=232
CWC Cottonwood Cre 85.48 46 P P **18 32 10.2 +1.9**
baz=234
BELC Belle Mtn. Jos 85.49 49 P P **18 32 10.5 +2.1**
baz=236,SNR=12
M02C Callahan 85.52 40 P P **18 32 11.0 +2.7**
baz=231
L02D Cave Junction, 85.57 39 P P **18 32 10.7 +2.2**
baz=230
PHET Kaeng Krachan 85.64 286 P P **18 32 11.6 +2.3**
comp=Z,19nm,1.2s,comp=Z,199nm
MPMC Manual Prospec 85.65 47 P P **18 32 10.9 +1.7**
baz=235,SNR=6.3
BC3 Big Chuckawall 85.67 50 P P **18 32 11.4 +2.1**
baz=236,SNR=6.6
GSC Goldstone, Bar 85.67 48 P P **18 32 11.1 +1.9**
baz=235
DAC Darwin (Calif) 85.71 47 *e*P P **18 32 09.9 +0.4**
DAC pmax pmax
comp=Z,3.0nm,0.8s
DAC Darwin (Calif) 85.71 47 *e*P P **18 32 09.9 +0.4**
comp=Z,3.4nm,0.8s
HEC Hector,Ludlow 85.72 48 P P **18 32 11.2 +1.8**
baz=236,SNR=18
GLA Glamis 85.77 51 P P **18 32 12.1 +2.5**
baz=236,SNR=6.1
GLA Glamis 85.77 51 *e*P P **18 32 12.1 +2.5**
GLA pmax pmax
comp=Z,18nm,0.9s
GLA Glamis 85.77 51 *e*P P **18 32 12.1 +2.5**
comp=Z,18nm,0.9s
YBH Yreka Blue Hor 85.81 40 *e*P P **18 32 11.7 +2.0**
YBH *e**PP **pP 18 34 15.1 +1.5**
YBH pmax pmax
comp=Z,15nm,1.0s
YBH Yreka Blue Hor 85.81 40 *e*P P **18 32 11.7 +2.0**
comp=Z,15nm,1.0s
YBH *e*pP **pP 18 34 15.1 +1.5**
WAKR Walker 85.82 44 *e*P P **18 32 11.0 +1.0**
comp=Z,12nm,1.0s
KDAK Kodiak Island 86.00 15 *i*P P 18 32 15.5 +5.5
ENH Enshi 86.06 306 *e*P P **18 32 10.7 -0.4**
comp=Z,56nm,1.3s
PNTR Pine Nut 86.07 43 *e*P P **18 32 12.9 +1.8**
comp=Z,23nm,0.8s
PBKT Sadao Pong 86.14 290 P P **18 32 13.3 +1.7**
comp=Z,28nm,1.4s,comp=Z,1µm
GMRC Granite Mounta 86.16 49 P P **18 32 13.2 +1.7**
baz=236,SNR=6.0
IRM Iron Mountain 86.16 50 P P **18 32 13.7 +2.2**
baz=236,SNR=8.3
HUMO Hull Mountain 86.22 39 *e*P P **18 32 13.8 +2.3**
comp=Z,39nm,1.5s
GYA Guiyang 86.23 301 P P **18 32 13.3 +1.2**
GYA pP pP 18 34 20.4 +4.3
GYA sP sP 18 35 18.0 +4.1
GYA PP **PP 18 35 47.8 +3.7**
GYA SKS **SKSac 18 41 42.3 -1.8**
GYA S **S 18 41 59.3 -0.7**
GYA pmax pmax
comp=Z,20nm,1.0s
GRAC Grapevine Rang 86.27 46 P P **18 32 14.2 +2.2**
baz=235
FURC Furnace Creek, 86.30 47 P P **18 32 13.8 +1.9**
baz=235
LOEI Loei 86.32 291 P P **18 32 12.7 +0.2**
comp=Z,21nm,0.9s,comp=Z,2µm
TUQ Turquoise Moun 86.34 48 P P **18 32 14.2 +1.8**
baz=236,SNR=5.3
M04C Macdoel 86.36 40 P P **18 32 14.5 +2.1**
baz=232
113A Mohawk Valley, 86.37 51 *e*P P **18 32 14.3 +2.0**
comp=Z,14nm,1.3s
SHOC Shoshone, Teco 86.37 48 P P **18 32 14.3 +1.9**
baz=236
Y12C Blythe 86.37 50 P P **18 32 14.4 +2.0**
baz=237
HSIG 86.44 56 *e*P P **18 32 14.7 +1.9**
comp=Z,18nm,0.9s
PAHR Pah Rah Range 86.57 43 *e*P P **18 32 14.9 +1.5**
comp=Z,11nm,0.9s
214A Organ Pipe Nat 86.61 52 P P **18 32 15.4 +1.7**
baz=238
I03D Drain, OR 86.69 38 P P **18 32 16.2 +2.6**
baz=230
SRDT SRDT 86.72 287 P P **18 32 16.9 +2.5**
comp=Z,135nm,1.1s
NEE2 Needles Airpor 86.86 49 P P **18 32 16.6 +2.0**
baz=236
K04D Chiloquin, OR 86.93 40 P P **18 32 16.6 +1.7**
baz=232
PDMCI Parker Dam,Lak 86.94 50 P P **18 32 16.9 +1.9**
baz=237
TPNV Topopah Spring 86.98 47 P P **18 32 17.0 +1.6**
baz=235
TPNV Topopah Spring 86.98 47 *e*P P **18 32 16.5 +1.1**
TPNV pmax pmax
comp=Z,12nm,0.8s
TPNV Topopah Spring 86.98 47 *e*P P **18 32 16.5 +1.1**
comp=Z,12nm,0.8s
BJI Beijing 86.99 317 P P **18 32 16.3 +1.2**
BJI pmax pmax
comp=Z,16nm,1.1s
UTTA Uttaradit 87.03 291 P P **18 32 17.6 +1.8**
comp=Z,6.1nm,1.1s,comp=Z,61nm
J04D Umpqua Nationa 87.11 39 P P **18 32 18.2 +2.3**
baz=231
I04A Tendick Farm, 87.28 38 P P **18 32 18.2 +1.7**
baz=231
MOD Modoc Plateau 87.33 41 *e*P P **18 32 18.6 +1.7**
comp=Z,17nm,0.8s
MA2 Magadan 87.39 346⇑ *e*P P **18 32 17.3 +0.8**
SHPR Sheep Range 87.45 48 *e*P P **18 32 18.2 +0.6**
comp=Z,10nm,1.3s
Y14A Wickenburg 87.53 51 *e*P P **18 32 19.3 +1.4**
comp=Z,28nm,1.1s
Y14A *e*pP **pP 18 34 25.2 +2.7**
W13A Hualapai Mount 87.55 49 *e*P P **18 32 20.0 +1.8**
comp=Z,7.5nm,1.1s
J05D Fort Rock, OR 87.64 39 P P **18 32 20.6 +2.3**
baz=232
G03D McMinnville, O 87.70 37 P P **18 32 20.8 +2.4**
baz=230
LAMP Lampang 88.17 291 P P **18 32 23.2 +2.1**
comp=Z,12nm,1.0s
R11A Troy Canyon, C 88.20 46 P P **18 32 22.7 +1.5**
baz=236
I05D Terrebonne, OR 88.22 38 P P **18 32 23.1 +2.2**
baz=232
TUC Tucson 88.26 53 P P **18 32 24.0 +2.5**
baz=239
TUC Tucson 88.26 53 *e*P P **18 32 23.9 +2.5**
TUC *e**PP **pP 18 34 28.6 +2.4**
TUC pmax pmax
comp=Z,14nm,1.0s
TUC Tucson 88.26 53 *e*P P **18 32 23.9 +2.5**
comp=Z,14nm,1.0s
TUC *e*pP **pP 18 34 28.6 +2.4**
BMN Battle Mountai 88.34 43 *e*P P **18 32 23.3 +1.6**
BMN *e* 18 35 59.3
BMN pmax pmax
comp=Z,23nm,1.1s
BMN Battle Mountai 88.34 43 *e*P P **18 32 23.3 +1.6**
comp=Z,23nm,1.1s
BMN *e*PP **PP 18 35 59.3 -1.2**
PLCA Paso Flores 88.38 135 P P **18 32 23.9 +1.9**
comp=Z,1.5nm,0.6s,baz=263,slow=5.7,SNR=5.3
PLCA Paso Flores 88.38 135 *e*P P **18 32 23.7 +1.8**
PLCA pmax pmax
comp=Z,35nm,1.8s
PLCA Paso Flores 88.38 135 *e*P P **18 32 23.7 +1.8**
comp=Z,35nm,1.8s
XAN Xi'an 88.45 309 P P **18 32 23.4 +1.2**
XAN pmax pmax
comp=Z,22nm,1.1s
XAN pmax pmax
comp=Z,83nm,4.3s
WVOR Wild Horse Val 88.64 41 *e*P P **18 32 24.3 +1.3**
WVOR pmax pmax
comp=Z,19nm,0.9s
WVOR Wild Horse Val 88.64 41 *e*P P **18 32 24.3 +1.3**
comp=Z,18nm,0.9s
KMI Kunming 88.67 298 P P **18 32 25.0 +1.4**
KMI pmax pmax
comp=Z,30nm,1.1s
CM01 Chiang Mai Arr 88.69 291 *e*P P **18 32 25.1 +1.5**
CM01 *e*PP **PP 18 36 02.6 -0.8**
CM31 Chiang Mai Arr 88.72 291 *e*P P **18 32 25.3 +1.6**
CM31 *e*PP **PP 18 36 03.4 -0.2**
CM31 *e*PKKPdf **PKKPbc 18 50 01.8 +1.7**
CMAR Chiang Mai Arr 88.72 291 P P **18 32 25.6 +1.9**
comp=Z,13nm,1.0s,baz=139,slow=3.2,SNR=52
CMAR PP **PP 18 36 03.4 -0.2**
comp=Z,5.3nm,1.1s,baz=125,slow=5.7,SNR=9.5
CMAR PKKPbc **PKKPbc 18 50 01.8 +1.7**
comp=Z,2.7nm,1.3s,baz=273,slow=4.0,SNR=4.2
CMAR Chiang Mai Arr 88.72 291 *i*P P **18 32 25.8 +2.1**
CMAR pmax pmax
comp=Z,13nm,1.0s
CMMT Chiang Mai 88.87 291 P P **18 32 26.0 +1.5**
comp=Z,27nm,1.3s
CHTO Chiang Mai 88.88 291 P P **18 32 26.1 +1.6**
comp=Z,118nm,1.3s
CHTO Chiang Mai 88.88 291 *e*P P **18 32 26.1 +1.6**
CHTO pmax pmax
comp=Z,28nm,1.0s
CHTO Chiang Mai 88.88 291 *e*P P **18 32 26.1 +1.6**
comp=Z,28nm,1.0s

X16A Lo Mia Camp, P 88.89 51 *e*P **P** 18 32 26.4 +2.0
comp=Z,11nm,0.9s
X16A *e*pP **pP** 18 34 31.0 +1.6
319A Douglas 88.89 55 *e*P **P** 18 32 25.3 +0.9
comp=Z,21nm,1.0s
319A *e*pP **pP** 18 34 30.8 +1.5
TDL Tradedollar La 88.99 37 *e*P **P** 18 32 26.5 +1.9
LCMT Little Creek M 89.02 48 *e*P **P** 18 32 25.4 +0.5
comp=Z,8.2nm,1.0s
CCUT Cedar City 89.23 48 *e*P **P** 18 32 26.8 +0.8
comp=Z,8.4nm,1.0s
CMAI Chiengmai2 89.30 292 P **P** 18 32 28.1 +1.5
KNB Kanab 89.31 48 *e*P **P** 18 32 27.8 +1.5
KNB pmax pmax
comp=Z,11nm,0.9s
KNB Kanab 89.31 48 *e*P **P** 18 32 27.8 +1.5
comp=Z,11nm,0.9s
U15A North Rim 89.35 49 *e*P **P** 18 32 28.3 +1.6
comp=Z,18nm,0.8s
SZCU Shurtz Canyon 89.44 48 *e*P **P** 18 32 29.2 +2.3
comp=Z,14nm,1.0s
LON Longmire 89.46 36 *e*P **P** 18 32 27.3 +0.7
LON pmax pmax
comp=Z,4.0nm,0.8s
LON Longmire 89.46 36 *e*P **P** 18 32 27.3 +0.7
comp=Z,3.8nm,0.8s
HPIG 89.47 60 *e*P **P** 18 32 28.2 +0.9
comp=Z,7.7nm,0.8s
WUAZ Wupatki 89.51 50 P **P** 18 32 29.2 +1.9
baz=238
WUAZ Wupatki 89.51 50 *e*P **P** 18 32 28.3 +1.1
comp=Z,9.5nm,0.9s
RC01 Rabbit Creek A 89.62 15 *e*P **P** 18 32 27.6 +0.7
comp=Z,13nm,1.0s
RC01 *e*pP **pP** 18 34 33.5 +1.5
SUA Susitna One 89.72 14 *e*P **P** 18 32 26.9 -0.7
SUA *e*pP **pP** 18 34 32.9 +0.2
TT01 Tatalina 89.98 11 *e*P **P** 18 32 29.2 +0.7
X18A Snowflake 90.00 52 *e*P **P** 18 32 31.0 +1.5
comp=Z,7.1nm,0.8s
SEY Seymchan 90.00 52 P **P** 18 32 29.9 +0.7
comp=Z,4.4nm,0.6s,baz=125,slow=6.1,SNR=18
SEY Seymchan 90.14 348⇑ *i*P **P** 18 32 30.5 +1.3
G08A Pilot Rock 90.15 39 *e*P **P** 18 32 31.1 +1.3
comp=Z,4.3nm,0.8s
B05A Bryant 90.26 35 P **P** 18 32 32.2 +2.1
baz=231
MTPU Mount Pierson 90.28 48 *e*P **P** 18 32 33.5 +2.5
comp=Z,15nm,0.8s
HHC Hu-ho-hao-te 90.33 316 *e*P **P** 18 32 32.4 +1.5
HHC pmax pmax
comp=Z,23nm,1.3s
HHC pmax pmax
comp=Z,87nm,7.2s
MSU Marysvale 90.53 47 *e*P **P** 18 32 33.2 +1.2
MSU Marysvale 90.53 47 *e*P **P** 18 32 33.2 +1.2
121A Cookes Peak, D 90.56 54 P **P** 18 32 34.3 +2.1
baz=240
CD2 Chengdu 90.64 304 *e*P **P** 18 32 32.5 +0.1
CD2 pP pP 18 34 40.0 +2.3
CD2 sP sP 18 35 39.0 +3.9
CD2 SKS **SKSac** 18 42 07.8 -1.7
CD2 S **S** 18 42 39.3 -0.7
CD2 sS sS 18 46 28.4 +4.4
CD2 SS **SS** 18 49 01.5 +1.3
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.6s
SCM Sheep Creek Mo 90.84 15 *e*P **P** 18 32 33.2 +0.6
SCM pmax pmax
comp=Z,14nm,0.8s
SCM Sheep Creek Mo 90.84 15 *e*P **P** 18 32 33.2 +0.6
comp=Z,14nm,0.8s
BMO Blue Mountains 90.84 40 *e*P **P** 18 32 33.9 +0.9
comp=Z,26nm,2.0s
MFID Camas Ranch 90.89 42 *e*P **P** 18 32 34.3 +0.9
comp=Z,4.9nm,0.9s
DUG Dugway, Tooele 91.01 46 P **P** 18 32 35.4 +1.3
baz=238
DUG Dugway, Tooele 91.01 46 *e*P **P** 18 32 35.3 +1.3
DUG pmax pmax
comp=Z,4.0nm,0.9s
DUG Dugway, Tooele 91.01 46 *e*P **P** 18 32 35.2 +1.2
comp=Z,4.1nm,0.9s
CAST Castle Rocks 91.19 13 *e*P **P** 18 32 32.9 -1.2
comp=Z,12nm,1.4s
CAST *e*pP **pP** 18 34 43.4 +3.9
D08A Wollman Farm, 91.22 37 *e*P **P** 18 32 35.7 +1.0
D08A *e*pP **pP** 18 34 45.4 +5.4
NLU North Lily Min 91.36 46 *e*P **P** 18 32 37.4 +1.6
comp=Z,3.9nm,0.8s
F10A Beach Ranch, E 91.53 39 *e*P **P** 18 32 37.1 +0.9
comp=Z,6.6nm,0.8s
F10A *e*pP **pP** 18 34 45.1 +3.5
TRF Thorofare Moun 91.59 13 *e*P **P** 18 32 36.1 0.0
comp=Z,5.8nm,0.8s
TMUT Trail Mountain 91.59 47 *e*P **P** 18 32 38.3 +1.4
comp=Z,18nm,0.7s
TMUT *e*pP **pP** 18 34 43.0 +0.7
HLID Hailey 91.83 42 P **P** 18 32 39.2 +1.4
baz=237
HLID Hailey 91.83 42 *e*P **P** 18 32 39.3 +1.5
comp=Z,2.0nm,0.8s
MNTX Cornudas Mount 91.95 56 P **P** 18 32 39.8 +1.5
baz=242
MNTX Cornudas Mount 91.95 56 *e*P **P** 18 32 40.0 +1.6
MNTX *e*pP **pP** 18 34 47.3 +3.5
SRU San Rafael Swe 91.95 47 *e*P **P** 18 32 40.3 +1.8
SRU pmax pmax
comp=Z,24nm,0.7s
SRU San Rafael Swe 91.95 47 *e*P **P** 18 32 40.2 +1.8
comp=Z,24nm,0.7s
CTU Camp Tracy 91.96 46 *e*P **P** 18 32 39.6 +1.2
comp=Z,28nm,0.7s
P17A Butcher Ranch, 91.99 47 *e*P **P** 18 32 40.4 +1.8
comp=Z,52nm,0.9s
P17A *e*S **S** 18 42 50.1 -1.6
TX31 Lajitas Ar. Si 92.15 59 *e*P **P** 18 32 40.8 +1.3
TX31 *e*pP **pP** 18 34 45.5 +0.6
LTX Lajitas 92.15 59 *e*P **P** 18 32 41.5 +2.0
LTX Lajitas 92.15 59 *e*P **P** 18 32 41.5 +2.0
LTX *e*PKKPdf **PKKPbc** 18 49 52.6 +0.7
TXAR Lajitas Array 92.15 59 P **P** 18 32 41.5 +2.0
comp=Z,3.1nm,0.8s,baz=214,slow=6.7,SNR=30
TXAR PKKPbc **PKKPbc** 18 49 52.6 +0.7
comp=Z,0.6nm,0.6s,baz=117,slow=2.6,SNR=6.6
PAX Paxson 92.26 16 *e*P **P** 18 32 43.9 +4.7
PAX pmax pmax
comp=Z,18nm,0.8s
PAX Paxson 92.26 16 *e*P **P** 18 32 43.9 +4.7
comp=Z,18nm,0.8s
PV09 Paradox Valley 92.57 48 *e*P **P** 18 32 42.6 +1.1
ANMO Albuquerque 92.70 53 P **P** 18 32 43.3 +1.3
baz=241
ANMO Albuquerque 92.70 53 *de*P **P** 18 32 44.0 +2.0
ANMO pmax pmax
comp=Z,4.0nm,0.9s
ANMO Albuquerque 92.70 53 *e*P **P** 18 32 42.1 +0.1
comp=Z,3.4nm,0.8s
ANMO *e*pP **pP** 18 34 49.5 +2.0
WRH Wood River Hil 92.95 14 *e*P **P** 18 32 42.0 -0.2
comp=Z,4.1nm,0.8s
LZH Lanzhou 93.08 309 *e*P **P** 18 32 45.1 +1.5
LZH sP sP 18 35 49.0 +2.5
LZH pmax pmax
comp=Z,32nm,1.2s
CCB Clear Creek Bu 93.17 14 *e*P **P** 18 32 42.4 -0.7
comp=Z,3.7nm,0.8s
CCB *e*pP **pP** 18 34 51.3 +2.6
BILL Bilibino 93.28 355 *e*P **P** 18 32 43.4 -0.2
BILL *e* 18 36 38.3
BILL pmax pmax
comp=Z,4.0nm,1.0s
COLA College 93.35 14⇓ *e*P **P** 18 32 43.6 -0.3
COLA pmax pmax
comp=Z,6.0nm,1.0s
MCMT McKenzie Canyo 93.46 42 *e*P **P** 18 32 47.6 +2.3
MCMT *e*pP **pP** 18 34 56.8 +5.9
IL1 Eielson Array 93.47 14 *e*P **P** 18 32 44.2 -0.3
IL1 *e*pP **pP** 18 34 50.3 +0.2
ILAR Eielson Array 93.47 14 P **P** 18 32 44.6 0.0
comp=Z,1.2nm,0.7s,baz=229,slow=5.6,SNR=10
ILAR PP **PP** 18 36 33.9 -5.8
comp=Z,0.8nm,0.8s,baz=221,slow=8.0,SNR=4.5

ILB Eielson Array 93.47 14 *e*P **P** 18 32 43.6 -0.9
ILB *e*PP **PP** 18 36 33.9 -5.8
S22A 4UR Ranch, Cre 93.78 50 *e*P **P** 18 32 46.1 -0.9
comp=Z,9.7nm,1.3s
S22A *e*pP **pP** 18 34 56.9 +4.3
BW06 Boulder Array 94.43 45 *e*P **P** 18 32 50.1 +0.3
BW06 *e*pP **pP** 18 34 56.1 +0.7
PD31 Pinedale Array 94.44 45 *e*P **P** 18 32 50.4 +0.6
PD31 *e*pP **pP** 18 34 55.7 +0.3
PD31 *e*PP **PP** 18 36 47.9 +0.1
PDAR Pinedale Array 94.44 45 P **P** 18 32 50.6 +0.9
comp=Z,0.9nm,0.7s,baz=214,slow=3.1,SNR=6.1
PDAR PP **PP** 18 36 46.2 -1.5
comp=Z,2.1nm,1.0s,baz=242,slow=6.2,SNR=10
BOZ Bozeman (W) 94.60 41 *e*P **P** 18 32 50.7 +0.4
BOZ *e**PP **pP** 18 34 55.4 -0.6
BOZ Bozeman (W) 94.60 41 *e*P **P** 18 32 50.7 +0.4
BOZ *e*pP **pP** 18 34 55.4 -0.6
SDCO Great Sand Dun 94.71 50 P **P** 18 32 52.4 +1.2
baz=242
SDCO Great Sand Dun 94.71 50 *e*P **P** 18 32 51.4 +0.2
comp=Z,2.5nm,0.9s
DAWY Dawson 94.72 17 *e*P **P** 18 32 50.4 +0.1
comp=Z,3.7nm,0.9s
DAWY *e*pP **pP** 18 34 56.5 +0.5
EGAK Eagle 94.83 16 *e*P **P** 18 32 50.7 0.0
comp=Z,3.9nm,0.8s
YAK Yakutsk 95.19 339⇑ *i*P **P** 18 32 52.7 +0.3
YAK pmax pmax
comp=Z,10.0nm,1.1s
T25A Trinidad 95.19 51 P **P** 18 32 54.5 +1.2
baz=242
534A Blanco 96.51 60 P **P** 18 32 60.0 +0.8
baz=245
SONA0 Songino Array 97.15 320 *e*P **P** 18 33 02.0 +0.3
comp=Z,3.3nm,1.1s
SONA0 *e*PP **PP** 18 37 04.6 -3.5
SONA0 *e*PKKPbc **PKKPbc** 18 49 39.4 -0.2
SONM Songino Array 97.15 320 P **P** 18 33 02.0 +0.3
comp=Z,1.0nm,0.7s,baz=132,slow=4.3,SNR=9.8
SONM PP **PP** 18 37 04.6 -3.5
comp=Z,0.5nm,0.8s,baz=141,slow=7.3,SNR=4.2
SONM PKKPbc **PKKPbc** 18 49 39.4 -0.2
comp=Z,0.5nm,0.7s,baz=274,slow=2.4,SNR=3.5
SONA1 Songino Array 97.15 320 *e*P Pdif 18 33 01.3 -0.4
SONA1 *e*PP **PP** 18 37 04.1 -4.0
GTA Gaotai 97.44 310 P **P** 18 33 04.4 +1.2
GTA pP pP 18 35 13.3 +4.1
GTA sP sP 18 36 08.6 +2.2
GTA pmax pmax
comp=Z,6.0nm,1.1s
YKA Yellowknife Ar 101.98 26 PKiKP **PKiKP** 18 37 38.9 -2.6
comp=Z,0.4nm,0.5s,baz=248,slow=1.4,SNR=4.7
YKA PKKPbc **PKKPbc** 18 49 24.7 -1.6
comp=Z,0.9nm,0.6s,baz=36,slow=2.7,SNR=6.3
MK32 Makanchi Array 111.98 313 *e*Pdif **Pdif** 18 34 10.4 +2.8
MK32 *e*PKiKP **PKiKP** 18 38 00.2 -0.5
MK32 *e*PKKPbc **PKKPbc** 18 48 55.2 +0.1
MKAR Makanchi Array 111.98 313 Pdiff **Pdif** 18 34 10.4 +2.8
comp=Z,0.6nm,0.5s,baz=85,slow=6.8,SNR=9.2
MKAR PKiKP **PKiKP** 18 38 00.2 -0.5
comp=Z,1.8nm,0.6s,baz=164,slow=0.6,SNR=19
MKAR PKKPbc **PKKPbc** 18 48 55.2 +0.1
comp=Z,0.4nm,0.5s,baz=266,slow=4.7,SNR=7.9
ZALV Zalesovo Beam 112.02 320 PKiKP **PKiKP** 18 38 00.0 -0.4
comp=Z,1.4nm,0.4s,baz=125,slow=1.7,SNR=9.9
ZAA1 Zalesovo Array 112.03 320 *e*PKiKP **PKiKP** 18 38 00.0 -0.4
NVS Novosibirsk 113.11 321 *i* PKiKP **PKiKP** 18 38 02.3 -0.2
KSH Kashi 114.84 304 *e*PKP PKPdf 18 38 07.1 +0.6
KSH *e*PP PP 18 39 27.4 +11
KSH SKS **SKSdf** 18 44 23.4 -1.2
KSH SKKS **SKKSac** 18 45 18.4 +0.8
KSH AMB AMB
comp=Z,42nm,4.1s
KURK Kurchatov 115.15 316 *e*PKiKP **PKPdf** 18 38 06.1 -0.4
KURK Kurchatov 115.15 316 *e*PKPdf **PKPdf** 18 38 06.1 -0.4
KURK *e*PKPdf **PKiKP** 18 38 06.2 -0.3
KURK *e*PP **PP** 18 39 12.1 -5.8
KURBB Kurchatov Arra 115.19 316 PKP **PKPdf** 18 38 06.2 -0.4
comp=Z,5.4nm,0.9s,baz=102,slow=1.9,SNR=39
KURBB PP **PP** 18 39 12.1 -6.1
comp=Z,0.8nm,1.0s,baz=105,slow=5.6,SNR=3.5
AAK Ala-Archa 116.56 307⇑ *i*PKiKP **PKPdf** 18 38 09.9 +0.1
OTUK Ortayu 118.88 313 PKiKP **PKPdf** 18 38 13.6 -0.3
OTUK pmax pmax
comp=Z,4.0nm,0.6s
KBL Kabul 119.22 297 *e*PKiKP **PKPdf** 18 38 15.6 +0.4
KBL Kabul 119.22 297 *e*PKPdf **PKPdf** 18 38 15.6 +0.4
KK31 Karatay Array 119.53 307 *i* PKiKP **PKPdf** 18 38 14.9 -0.4
KK31 pmax pmax
comp=Z,4.0nm,0.8s
KKAR Karatay Array 119.53 307 *e*PKiKP **PKPdf** 18 38 15.3 0.0
KKAR Karatay Array 119.53 307 *e*PKPdf **PKPdf** 18 38 15.3 0.0
VOSK Vostochnaya 120.08 318 PKiKP **PKPdf** 18 38 15.3 -0.7
VOSK pmax pmax
comp=Z,11nm,0.7s
VOSK Vostochnaya 120.08 318 *e*PKPdf **PKPdf** 18 38 15.2 -0.7
BVA0 Borovoye Array 120.45 318 *i* PKiKP **PKPdf** 18 38 16.5 -0.2
BVA0 pmax pmax
comp=Z,8.0nm,0.6s
BVAR Borovoye Array 120.45 318 PKP **PKPdf** 18 38 16.6 -0.1
comp=Z,9.0nm,0.5s,baz=127,slow=1.4,SNR=55
BRVK Borovoye 120.52 318 PKiKP **PKPdf** 18 38 15.4 -1.4
BRVK pmax pmax
comp=Z,6.0nm,0.7s
BRVK Borovoye 120.52 318 *e*PKPdf **PKPdf** 18 38 16.4 -0.5
BOSA Boshof 120.77 207 PKP **PKPdf** 18 38 18.8 +0.4
comp=Z,5.5nm,0.8s,baz=117,slow=1.7,SNR=10
BOSA Boshof 120.77 207 *e*PKiKP **PKPdf** 18 38 17.5 -0.9
BOSA Boshof 120.77 207 *e*PKPdf **PKPdf** 18 38 17.5 -0.9
BOSA *e*PKPdf **PKPdf** 18 38 18.8 +0.4
FRB Frobisher Bay 122.30 29 PKP **PKPdf** 18 38 20.0 +0.1
comp=Z,6.8nm,0.6s,baz=294,slow=4.1,SNR=7.4
FRB Frobisher Bay 122.30 29 *e*PKiKP **PKPdf** 18 38 20.0 +0.1
LBTB Lobatse 123.76 210 *e*PKiKP **PKPdf** 18 38 24.3 +0.1
LBTB Lobatse 123.76 210 *e*PKPdf **PKPdf** 18 38 24.3 +0.1
LMN Caledonia Moun 125.83 50 *e*PKPdf **PKPdf** 18 38 26.4 -0.8
SVE Sverdlovsk 125.84 323 *e*PKiKP **PKPdf** 18 38 27.4 +0.5
SVE pmax pmax
comp=Z,18nm,1.3s
SPA0 Spitsbergen Ar 126.19 356 *e*PKPdf **PKPdf** 18 38 26.5 -0.5
SPITS Spitsbergen Ar 126.19 356 PKP **PKPdf** 18 38 27.5 +0.4
comp=Z,7.0nm,0.6s,baz=142,slow=4.2,SNR=21
ARU Arti 127.04 323 *i* PKiKP **PKPdf** 18 38 29.7 +0.5
ARU 18 40 33.3
ARU 18 44 46.8
ARU Arti 127.04 323 *e*PKPdf **PKPdf** 18 38 29.2 0.0
AB31 Akbulak array 127.09 314 *i* PKiKP **PKPdf** 18 38 29.2 -0.3
AB31 pmax pmax
comp=Z,8.0nm,1.2s
ABKAR Akbulak array 127.09 314 *e*PKPdf **PKPdf** 18 38 28.3 -1.3
ABKAR *e*PP **PP** 18 40 35.1 -2.8
DAG Danmarks Havn 127.56 5 *i* P **PKPdf** 18 38 29.1 -0.6
comp=Z,5.9nm,0.6s
DAG Danmarks Havn 127.56 5 *i* PKiKP **PKPdf** 18 38 29.1 -0.6
DAG pmax pmax
comp=Z,4.0nm,0.6s
AKTO Aktyubinsk 128.23 315 PKiKP **PKPdf** 18 38 32.3 +0.6
AKTO pmax pmax
comp=Z,6.0nm,1.3s
SUMG Summit 128.31 13 *i* P **PKPdf** 18 38 32.8 +1.1
comp=Z,23nm,1.4s
SUMG Summit 128.31 13 *i* PKiKP **PKPdf** 18 38 32.8 +1.1
SUMG pmax pmax
comp=Z,23nm,1.4s
SUMG Summit 128.31 13 *e*PKPdf **PKPdf** 18 38 32.6 +0.9
GEYT Alibeck 128.42 300 PKP **PKPdf** 18 38 33.0 +0.4
comp=Z,5.0nm,0.8s,baz=221,slow=1.3,SNR=13
DRLN Deer Lake 130.54 46 *e*SKPbc **SKPbc** 18 41 07.0 +0.3
LSZ Lusaka 130.58 219 *e*PKiKP **PKPdf** 18 38 37.4 0.0
LSZ *e* 18 41 09.2
LSZ Lusaka 130.58 219 *e*PKPdf **PKPdf** 18 38 37.4 0.0
LSZ *e*SKPbc **SKPab** 18 41 09.2 +0.6
TSUM Tsumeb 132.26 205 *e*PKPdf **PKPdf** 18 38 40.0 -0.5
ARA0 ARCESS Array S 132.75 347 *e*PP PP 18 41 15.2 +1.9
ARCES ARCESS Array B 132.75 347 PKhKP PKPpre 18 38 31.3
comp=Z,1.0nm,0.5s,baz=108,slow=0.9,SNR=13
ARCES PKP **PKPdf** 18 38 39.7 -0.1
comp=Z,5.9nm,0.7s,baz=46,slow=3.5,SNR=12
ARCES SKPbc **SKPbc** 18 41 14.6 +0.8
comp=Z,18nm,0.9s,baz=23,slow=4.9,SNR=14
SCO Scoresbysund 133.03 9 *i* P **PKPdf** 18 38 41.0 +0.8
comp=Z,8.0nm,1.2s
SCO Scoresbysund 133.03 9 *i* PKiKP **PKPdf** 18 38 41.0 +0.8

SCO pmax pmax
comp=Z,8.0nm,1.2s
KMBO Kilima Mbogo 134.39 241 PKP **PKPdf** 18 38 46.9 +2.1
comp=Z,1.9nm,0.5s,baz=26,slow=3.7,SNR=6.7
KMBO SKPbc **SKPbc** 18 41 22.7 +1.5
comp=Z,1.4nm,0.5s,baz=74,slow=3.5,SNR=5.8
KLMR Klimovskoe 134.65 333 *e*PKiKP **PKPdf** 18 38 42.3 -1.1
KLMR pmax pmax
comp=Z,8.0nm,0.8s
VRH Novokhopyorsk 138.06 320 *e*PKiKP **PKPdf** 18 38 51.3 +1.3
VRH pmax pmax
comp=Z,20nm,0.6s
NCK Nalchik 139.07 308⇑ *e*PKiKP **PKPdf** 18 38 54.2 +2.0
OBN Obninsk 139.07 327⇓ *e*PKiKP **PKPdf** 18 38 50.2 -1.5
OBN pmax pmax
comp=Z,5.0nm,0.9s
FIA1 FINESS Array S 139.12 340 *e*PKPpre PKPpre 18 38 42.7
FIA1 *e*SKPbc **SKPbc** 18 41 34.4 +1.2
FIA0 FINESS Array S 139.12 340 *e*PKHKP PKPpre 18 38 42.8
FIA0 FINESS Array S 139.12 340 *e*PKPpre PKPpre 18 38 42.8
FIA0 *e*SKPbc **SKPbc** 18 41 34.5 +1.4
FINES FINESS Array B 139.12 340 PKhKP PKPpre 18 38 42.8
comp=Z,2.4nm,0.5s,baz=57,slow=3.7,SNR=32
FINES SKPbc **SKPbc** 18 41 34.5 +1.4
comp=Z,8.9nm,0.9s,baz=59,slow=7.4,SNR=10
KBZ Khabaz 139.51 309 PKP **PKPdf** 18 38 53.3 +0.4
comp=Z,2.1nm,0.7s,baz=53,slow=1.2,SNR=4.4
VSR Storozhevoye 139.53 321 *e*PKiKP **PKPdf** 18 38 51.6 -1.1
VSR pmax pmax
comp=Z,7.0nm,0.7s
KVAR Kislovodsk Arr 139.61 309 PKP **PKPdf** 18 38 53.5 +0.2
comp=Z,2.1nm,0.4s,baz=292,slow=3.7,SNR=6.4
KIV Kislovodsk 139.61 309 *c i* PKiKP **PKPdf** 18 38 52.5 -0.8
KIV pmax pmax
comp=Z,8.0nm,1.1s
KIV Kislovodsk 139.61 309 *e*PKPdf **PKPdf** 18 38 52.8 -0.5
NEY Neytrino 139.74 308⇓ *e*PKiKP **PKPdf** 18 38 51.8 -1.9
DOMB Dombas 142.37 352 *e*P **PKPdf** 18 38 54.8 -2.8
AKN Aaknes 142.47 354 *e*P **PKPdf** 18 38 55.4 -2.4
SFNV Sufian 142.81 298 *e*P **PKPdf** 18 38 57.5 -1.7
NC303 NORSAR Array S 142.82 350 *e*PKPpre **PKPdf** 18 38 56.2 -2.1
NC204 NORSAR Array S 142.86 350 *e*PKPpre **PKPdf** 18 38 56.5 -2.0
NC405 NORSAR Array S 142.87 349 *e*PKPpre **PKPdf** 18 38 55.7 -2.7
NB201 NORSAR Array S 142.99 350 *e*PKPpre **PKPdf** 18 38 56.4 -2.3
ANN Anapa 143.00 312 *i* PKHKP **PKPdf** 18 38 56.7 -2.4
ANN pmax pmax
comp=Z,97nm,1.4s
NB2 NORSAR Subarra1 143.02 350 PKP PKPab 18 38 56.6 +0.2
comp=Z,21nm,0.8s,baz=16,slow=3.2
NB2 NORSAR Subarra1 143.02 350 PKP PKPab 18 38 56.6 +0.2
baz=16,slow=3.2
NB200 NORSAR Array S 143.02 350 *e*PKPpre **PKPdf** 18 38 56.7 -2.0
NB200 *e*SKPbc **SKiKP** 18 41 44.4 +0.2
NOA NORSAR Array B 143.02 350 PKP PKPbc 18 38 56.7 -0.2
comp=Z,34nm,0.8s,baz=16,slow=4.9,SNR=114
NOA SKPbc **SKiKP** 18 41 44.4 +0.2
comp=Z,1.3nm,0.6s,baz=15,slow=4.1,SNR=4.3
NBO02 NORSAR Array S 143.06 350 *e*PKPpre **PKPdf** 18 38 56.5 -2.3
NBO00 NORSAR Array S 143.09 350 *e*PKPpre **PKPdf** 18 38 56.9 -1.9
FOO Floro 143.22 355 *e*P PKPbc 18 38 57.3 -0.1
NC602 NORSAR Array S 143.25 349 *e*P PKPab 18 38 57.3 0.0
NC602 NORSAR Array S 143.25 349 *e*PKPdf PKPab 18 38 57.1 -0.1
NAO01 NORSAR Array S 143.25 350 *e*PKPdf PKPab 18 38 57.1 -0.2
IDID Didziasalis 143.40 333 *e*P **PKPdf** 18 38 58.8 -0.7
IDID IAmb IAmb 18 38 59.5
comp=Z,40nm,1.1s
HFS Hagfors 143.42 347 PKP PKPab 18 38 57.8 -0.1
comp=Z,49nm,0.5s,baz=8.5,slow=2.9,SNR=529
ISAL Salakas 143.47 334 *e*P PKPbc 18 38 58.7 +0.4
ISAL IAmb IAmb 18 38 59.9
comp=Z,50nm,1.1s
MICGM Minsk 143.47 331 *e* **PKPdf** 18 39 01.0 +1.4
MNK Minsk 143.47 331 *e*PKiKP **PKPdf** 18 39 01.0 +1.4
NACGM Naroch 143.66 333 *e*P PKPbc 18 38 59.0 0.0
NACGM PM 18 39 00.0
comp=Z,0.4nm,0.8s
OSL Oslo 144.14 350 *e*P **PKPab** 18 39 00.7 0.0
OSL IAmb IAmb 18 39 01.8
comp=Z,29nm,0.7s
ASK Askoy 144.31 354 *e*P **PKPab** 18 39 01.2 -0.1
KONO Kongsberg 144.59 350 *e*P **PKPab** 18 39 02.1 -0.3
KONO IAmb IAmb 18 39 03.1
comp=Z,46nm,0.8s
KONO Kongsberg 144.59 350 *e*PKiKP **PKPdf** 18 39 01.1 -0.3
KONO Kongsberg 144.59 350 *e*PKPdf **PKPdf** 18 39 01.1 -0.3
ODD1 Odda 144.73 353 *e*P **PKPab** 18 39 02.6 -0.4
ODD1 IAmb IAmb 18 39 03.9
comp=Z,55nm,1.1s
AKASG Malin Array Be 145.22 325 PKPbc **PKPdf** 18 39 03.0 +0.2
comp=Z,11nm,0.5s,baz=44,slow=3.6,SNR=64
AKASG SKPbc **SKiKP** 18 41 49.6 +0.6
comp=Z,1.0nm,0.4s,baz=50,slow=2.6,SNR=4.4
AKBB Malin Array Si 145.22 325 *e*PKiKP **PKPdf** 18 39 02.5 -0.3
AKBB Malin Array Si 145.22 325 *e*PKPdf **PKPdf** 18 39 02.5 -0.3
AKBB *e*SKPbc **SKiKP** 18 41 49.6 +0.6
BLS5 Blasjo 145.23 353 *e*P **PKPab** 18 39 04.3 -0.6
KIEV Kiev 145.23 325⇑ *i* PKiKP **PKPdf** 18 39 02.9 +0.1
KIEV Kiev 145.23 325 *e*PKPdf **PKPdf** 18 39 02.6 -0.2
AK11 Malin Array Si 145.26 325 *e*PKPdf **PKPdf** 18 39 02.4 -0.4
AK11 *e*SKPbc **SKiKP** 18 41 50.3 +1.2
ROOS tl_alroos 145.31 294 *e*P **PKPab** 18 39 07.5 +1.4
DRWC Darouich 145.53 299 *e*P **PKPab** 18 39 06.2 -0.7
KMY Karmoy 145.56 354 *e*P **PKPbc** 18 39 05.3 +0.7
KMY IAmb IAmb 18 39 06.2
comp=Z,24nm,0.8s
ASF Abal al Asfar 145.76 291 PKPbc **PKPbc** 18 39 06.4 +0.2
comp=Z,21nm,0.9s,baz=81,slow=2.4,SNR=25
SUW Suwalki 145.77 334 *e*PKP **PKPbc** 18 39 05.7 +0.3
SUW Suwalki 145.77 334 *e*PKP2 **PKPbc** 18 39 05.7 +0.3
SALA Sala 145.87 292 *e*P **PKPbc** 18 39 07.0 +0.4
MARH Ras Al Marh 145.99 294 *e*P **PKPbc** 18 39 06.8 -0.3
HOMB Homborsund 146.08 351 *e*P **PKPbc** 18 39 06.8 +0.7
TOTH TOTAH 146.09 293 *e*P **PKPdf** 18 39 05.7 +0.8
MMAI Mount Meron Ar 146.97 292 PKPbc **PKPbc** 18 39 10.5 +1.0
comp=Z,26nm,0.5s,baz=66,slow=3.6,SNR=85
SORM Soroca 147.16 322⇓ *i* P **PKPbc** 18 39 09.4 +0.1
SORM Soroca 147.16 322⇓ PKP2 **PKPbc** 18 39 09.4 +0.1
BR101 Keskin Array S 147.21 305 *e*PKPbc **PKPbc** 18 39 10.1 +0.1
BR101 Keskin Array S 147.21 305 *e*PKPdf **PKPbc** 18 39 10.6 -0.6
BR131 *e*PKPbc **PKPbc** 18 39 10.0 +0.1
BRTR Keskin Array B 147.21 305 PKPbc **PKPbc** 18 39 10.1 +0.1
comp=Z,7.7nm,0.5s,baz=127,slow=3.3,SNR=33
EIL Elat 147.46 286 PKPbc **PKPbc** 18 39 10.4 -0.3
comp=Z,28nm,0.9s,baz=80,slow=1.7,SNR=26
KIS Kishinev 147.51 320 *e*P **PKPbc** 18 39 10.0 -0.3
KIS Kishinev 147.51 320 *e*PKiKP **PKPbc** 18 39 10.0 -0.3
KIS *e* 18 39 15.0
KPL Plockton 147.62 4 *e*P **PKPbc** 18 39 10.4 +0.2
BSD Bornholm Skovb 147.66 342 *i* PKP2 **PKPbc** 18 39 10.8 +0.4
MUD Monsted U'grnd 147.71 349 *i* PKHKP **PKPbc** 18 39 11.1 +0.6
COP Copenhagen 147.77 345 *i* PKP2 **PKPbc** 18 39 11.4 +0.8
ANTO Ankara 147.80 306 *e*PKiKP **PKPbc** 18 39 08.0 +0.4
ANTO Ankara 147.80 306 *e*PKPdf **PKPbc** 18 39 08.0 +0.4
BR231 Keskin MP Arra 147.82 306 *e*PKPdf **PKPdf** 18 39 06.7 -1.0
BR231 *e*PKPbc **PKPbc** 18 39 11.0 -0.5
LEOM Leova 148.12 320⇑ *i* P **PKPbc** 18 39 12.9 +1.1
LEOM Leova 148.12 320⇑ PKP2 **PKPbc** 18 39 12.9 +1.1
LLD Lille Linde 148.15 345 *i* P **PKPbc** 18 39 12.3 +0.7
LLD Lille Linde 148.15 345 *e*PKP2 **PKPbc** 18 39 12.3 +0.7
BEL Belsk 148.37 333 *e*PKPdf **PKPbc** 18 39 13.3 +1.0
BEL Belsk 148.37 333⇓ *e*PKP2 **PKPbc** 18 39 13.3 +1.0
LVV L'vov 148.37 328 *i* PKHKP **PKPbc** 18 39 12.4 0.0
TLCR 148.43 317⇓ *i* P **PKPbc** 18 39 12.6 0.0
TLCR 148.43 317⇓ PKHKP **PKPbc** 18 39 12.6 0.0
CSS Mathiatis 148.47 296 *e*PKPbc **PKPbc** 18 39 13.0 -0.1
GKP Gorka Klasztor 148.54 338 *e*PKPdf **PKPbc** 18 39 13.5 +0.9
GKP Gorka Klasztor 148.54 338⇓ *e*PKP2 **PKPbc** 18 39 13.5 +0.9
CFR Carcaliu 148.85 318⇓ *i* P **PKPbc** 18 39 14.3 +0.6
CFR Carcaliu 148.85 318⇓ PKHKP **PKPbc** 18 39 14.3 +0.6
TESR Tescani 149.02 321⇑ *i* P **PKPbc** 18 39 14.6 +0.5
TIRR Tirgusor 149.03 316⇑ *i* P **PKPbc** 18 39 14.8 +0.7
TIRR Tirgusor 149.03 316 *e*PKPbc **PKPbc** 18 39 14.6 +0.4
TIRR *e*PKPab **PKPab** 18 39 21.4 +0.7
KWP Kalwaria Pacla 149.12 329 *e*PKPdf **PKPbc** 18 39 15.3 +1.1
KWP Kalwaria Pacla 149.12 329⇓ *e*PKHKP **PKPbc** 18 39 15.3 +1.1
EDI Edinburgh 149.15 2 *e*P **PKPbc** 18 39 14.8 +0.7
BUR08 Bucovina Ar. S 149.16 324 *e*PKPdf **PKPbc** 18 39 11.3 +1.7
BUR08 *e*PKPbc **PKiKP** 18 39 15.9 +0.5
BURAR Bucovina Array 149.17 324⇓ *i* P **PKPbc** 18 39 15.6 +1.1
BURAR Bucovina Array 149.17 324⇓ PKHKP **PKPbc** 18 39 15.6 +1.1
TLB Topalu 149.20 317⇑ *i* P **PKPbc** 18 39 15.5 +1.0
TLB Topalu 149.20 317⇑ PKHKP **PKPbc** 18 39 15.5 +1.0
HARR Harsova 149.22 317⇓ *i* P **PKPbc** 18 39 15.6 +1.0

HARR	**Harsova**	**149.22 317**	⇓PKHKP	**PKPbc**	**18 39 15.6 +1.0**
MANR	**Mangalia**	**149.22 315**	⇑*i*P	**PKPbc**	**18 39 16.0 +1.4**
PLOR	**Plostina**	**149.39 320**	⇓*i*P	**PKPbc**	**18 39 15.1 +0.1**
PLOR	**Plostina**	**149.39 320**	⇓PKHKP	**PKPbc**	**18 39 15.1 +0.1**
EKA	**Eskdalemuir Ar**	**149.75 2**	PKPbc	**PKPbc**	**18 39 15.6 +0.1**
	comp=Z,4.9nm,0.4s,baz=348,slow=2.8,SNR=50				
ISR	**Istrita**	**149.84 319**	⇓*i*P	**PKPbc**	**18 39 14.1 -2.1**
ISR	**Istrita**	**149.84 319**	⇓PKHKP	**PKPbc**	**18 39 14.1 -2.1**
STHS	**Stebnicka Huta**	**149.95 330**	*e*PKHKP	**PKPbc**	**18 39 17.4 +1.2**
STHS	**Stebnicka Huta**	**149.95 330**	*e*PKP	**PKPbc**	**18 39 17.4 +1.2**
STHS			*e*		18 41 26.3
STHS			*e*		18 41 29.5
STHS			*e*		18 41 33.5
OJC	**Ojcow**	**150.00 332**	*i*PKPdf	**PKPbc**	**18 39 17.1 +0.9**
OJC	**Ojcow**	**150.00 332**	*e*PKIKP	**PKPdf**	**18 39 10.2 -0.5**
OJC	**Ojcow**	**150.00 332**	*e*PKPdf	**PKPdf**	**18 39 10.2 -0.5**
OJC			*e*PKPbc	**PKiKP**	**18 39 16.9 0.0**
MLR	**Muntele Rosu**	**150.00 320**	PKPbc	**PKPbc**	**18 39 16.7 +0.1**
	comp=Z,3.7nm,0.5s,baz=331,slow=2.3,SNR=40				
MLR	**Muntele Rosu**	**150.00 320**	⇓*i*P	**PKPbc**	**18 39 16.7 +0.1**
MLR	**Muntele Rosu**	**150.00 320**	*e*PKIKP	**PKPdf**	**18 39 09.2 -1.8**
MLR	**Muntele Rosu**	**150.00 320**	*e*PKPdf	**PKPdf**	**18 39 09.2 -1.8**
MLR			*e*PKPbc	**PKPbc**	**18 39 16.6 +0.1**
UZH	**Uzhgorod**	**150.01 328**	⇑*i*PKHKP	**PKPbc**	**18 39 16.4 +0.1**
UZH			*e*		18 39 25.2
DOPR	**Dopca**	**150.05 321**	⇓*i*P	**PKPbc**	**18 39 17.7 +1.1**
ISP	**Isparta**	**150.08 303**	*e*PKIKP	**PKPdf**	**18 39 11.9 +0.6**
ISP			*e*		18 39 25.1
ISP	**Isparta**	**150.08 303**	*e*PKPdf	**PKPdf**	**18 39 11.9 +0.6**
ISP			*e*PKPbc	**PKPbc**	**18 39 16.1 -0.9**
ISP			*e*PKPab	**PKPab**	**18 39 25.1 -0.5**
CRVS	**Cervenica-Dubn**	**150.22 329**	*e*PKIKP	**PKPbc**	**18 39 17.7 +0.8**
CRVS			*e*		18 39 26.4
CRVS	**Cervenica-Dubn**	**150.22 329**	*e*PKP	**PKPbc**	**18 39 17.7 +0.8**
CRVS			*e*		18 39 26.4
SULR		**150.25 318**	⇑*i*P	**PKPbc**	**18 39 17.6 +0.6**
NIE	**Niedzica**	**150.38 331**	*i*PKPdf	**PKPbc**	**18 39 18.6 +1.4**
NIE	**Niedzica**	**150.38 331**	⇓*i*PKIKP	**PKPbc**	**18 39 18.6 +1.4**
VOIR		**150.55 320**	⇑*i*P	**PKPbc**	**18 39 18.5 +0.7**
VOIR		**150.55 320**	⇑PKIKP	**PKPbc**	**18 39 18.5 +0.7**
CJR	**Cluj-Napoca**	**150.60 324**	⇑*i*P	**PKPbc**	**18 39 18.9 +1.0**
CJR	**Cluj-Napoca**	**150.60 324**	⇑PKIKP	**PKPbc**	**18 39 18.9 +1.0**
ARR	**Arges**	**150.83 321**	⇓*i*P	**PKPbc**	**18 39 20.4 +2.0**
KSP	**Ksiaz**	**150.88 337**	*i*PKPdf	**PKPbc**	**18 39 19.6 +1.3**
KSP	**Ksiaz**	**150.88 337**	⇓*i*PKIKP	**PKPbc**	**18 39 19.6 +1.3**
LANS	**Liptovska Anna**	**150.94 331**	*e*PKIKP	**PKPbc**	**18 39 19.4 +1.4**
LANS			*e*		18 39 29.8
LANS			*e*		18 41 28.2
LANS	**Liptovska Anna**	**150.94 331**	*e*PKP	**PKPbc**	**18 39 19.8 +1.3**
LANS			*e*		18 39 29.8
LANS			*e*		18 41 28.2
LANS			*e*		18 41 31.6
KECS	**Kecovo**	**150.97 329**	*e*PKIKP	**PKPbc**	**18 39 19.1 +0.5**
KECS			*e*		18 39 29.7
KECS			*e*		18 41 28.8
KECS	**Kecovo**	**150.97 329**	*e*PKP	**PKPbc**	**18 39 19.1 +0.5**
KECS			*e*		18 39 29.7
KECS			*e*		18 41 28.8
KECS			*e*		18 41 33.2
KECS			*e*		18 41 37.3
OKC	**Ostrava-Krasne**	**150.97 333**	⇑*e*PKP	**PKPbc**	**18 39 19.5 +1.0**
OKC			*e*PKPAB	**PKPab**	**18 39 30.2 +1.5**
OKC			*e*pPKP	pPKPdf	18 41 37.8 +11
OKC	**Ostrava-Krasne**	**150.97 333**	*e*PKIKP	**PKPbc**	**18 39 19.5 +1.0**
OKC			*e*		18 39 30.2
UPC	**Upice**	**151.25 337**	⇑*e*PKP	**PKPbc**	**18 39 20.3 +1.1**
UPC	**Upice**	**151.25 337**	*e*PKIKP	**PKPbc**	**18 39 20.3 +1.1**
MORC	**Moravsky Berou**	**151.26 334**	⇑*i*P	**PKPbc**	**18 39 20.1 +0.8**
MORC	**Moravsky Berou**	**151.26 334**	*e*PKIKP	**PKPdf**	**18 39 13.2 +0.5**
MORC			*e*		18 39 29.9
MORC	**Moravsky Berou**	**151.26 334**	*e*PKPdf	**PKPdf**	**18 39 13.2 +0.5**
MORC			*e*PKPbc	**PKPbc**	**18 39 20.0 +0.8**
MORC			*e*PKPab	**PKPab**	**18 39 29.9 -0.1**
DPC	**Dobruska-Polom**	**151.27 336**	*e*PKPDF	**PKPdf**	**18 39 13.4 +0.8**
DPC			⇑*i*PKP	**PKiKP**	**18 39 20.5 +0.9**
DPC			*e*PKPAB	**PKPab**	**18 39 30.3 +0.3**
DPC			*e*pPKP	**pPKPdf**	**18 41 32.9 +6.0**
DPC			*ex*	x	18 41 38.1
DPC	**Dobruska-Polom**	**151.27 336**	*e*PKIKP	**PKPdf**	**18 39 13.4 +0.8**
DPC			*e*		18 39 30.3
LOT	**Lotru**	**151.28 321**	⇑*i*P	**PKPbc**	**18 39 19.1 -0.2**
KRLC	**Kraliky**	**151.32 335**	⇑*e*PKP	**PKPbc**	**18 39 20.4 +1.0**
KRLC			*e*PKPAB	**PKPab**	**18 39 31.1 +0.8**
KRLC	**Kraliky**	**151.32 335**	*e*PKIKP	**PKPbc**	**18 39 20.4 +1.0**
KRLC			*e*		18 39 31.1
CLL	**Collm**	**151.56 341**	*e*PKIKP	**PKPdf**	**18 39 13.1 +0.1**
CLL			*e*		18 39 31.7
CLL	**Collm**	**151.56 341**	*e*PKPdf	**PKPdf**	**18 39 13.1 +0.1**
CLL			*e*PKPbc	**PKiKP**	**18 39 19.9 -0.1**
CLL			*e*PKPab	**PKPab**	**18 39 31.7 +0.5**
BRG	**Berggiesshubel**	**151.65 339**	*e*PKIKP	**PKPdf**	**18 39 14.0 +0.9**
BRG			pmax	pmax	
	comp=Z,15nm,1.6s				
PSZ	**Piszkesteto**	**151.65 329**	⇓*i*P	**PKPbc**	**18 39 20.8 +0.6**
PSZ	**Piszkesteto**	**151.65 329**	*e*PKIKP	**PKPdf**	**18 39 10.7 -2.6**
PSZ			*e*		18 39 32.9
PSZ	**Piszkesteto**	**151.65 329**	*e*PKPdf	**PKPdf**	**18 39 10.7 -2.6**
PSZ			*e*PKPbc	**PKPbc**	**18 39 20.1 -0.2**
PSZ			*e*PKPab	**PKPab**	**18 39 32.9 +1.1**
VYHS	**Vyhne**	**151.71 331**	*e*PKIKP	**PKPbc**	**18 39 20.8 +0.5**
VYHS			*e*		18 39 32.7
VYHS	**Vyhne**	**151.71 331**	*e*PKP	**PKPbc**	**18 39 20.8 +0.5**
VYHS			*e*		18 39 32.7
PVCC	**Panska Ves**	**151.74 338**	⇑*e*PKP	**PKPbc**	**18 39 21.5 +1.3**
PVCC			*e*PKPAB	**PKPab**	**18 39 33.4 +1.5**
PVCC			*e*pPKP	**pPKPab**	**18 41 39.1 -0.2**
PVCC	**Panska Ves**	**151.74 338**	*e*PKIKP	**PKPbc**	**18 39 21.5 +1.3**
PVCC			*e*		18 39 33.4
SIRR	**Siria**	**151.91 325**	⇓*i*P	**PKPbc**	**18 39 21.1 +0.3**
VRAC	**Vranov**	**152.01 334**	PKPbc	**PKPbc**	**18 39 21.3 +0.4**
	comp=Z,1.9nm,0.3s,baz=82,slow=4.3,SNR=4.4				
VRAC			PKPab	**PKPab**	**18 39 33.6 +0.5**
	comp=Z,4.5nm,0.6s,baz=26,slow=4.4,SNR=7.8				
GOPC	**GO Pecny, Ondr**	**152.18 337**	⇑*e*PKP	**PKPbc**	**18 39 22.2 +0.9**
GOPC			*e*PKPAB	**PKPab**	**18 39 35.1 +1.2**
GOPC	**GO Pecny, Ondr**	**152.18 337**	*e*PKIKP	**PKPbc**	**18 39 22.2 +0.9**
GOPC			*e*		18 39 35.1
PRU	**Pruhonice**	**152.21 338**	⇑*e*PKP	**PKPbc**	**18 39 22.0 +0.7**
PRU			*e*PKPAB	**PKPab**	**18 39 35.1 +1.2**
PRU	**Pruhonice**	**152.21 338**	*e*PKIKP	**PKPbc**	**18 39 22.0 +0.7**
PRU			*e*		18 39 35.1
SMOL	**Smolenice**	**152.30 332**	*e*PKIKP	**PKPbc**	**18 39 22.8 +1.3**
SMOL			*e*		18 39 35.7
SMOL	**Smolenice**	**152.30 332**	*e*PKP	**PKPbc**	**18 39 22.8 +1.3**
SMOL			*e*		18 39 35.7
BZS	**Buzias**	**152.36 324**	⇓*i*PKP	**PKPbc**	**18 39 22.1 +0.4**
BZS	**Buzias**	**152.36 324**	⇓PKIKP	**PKPbc**	**18 39 22.2 +0.5**
TREC	**Trest**	**152.45 336**	*e*PKPDF	**PKPdf**	**18 39 14.9 +0.5**
TREC			⇑*e*PKP	**PKiKP**	**18 39 22.6 +0.6**
TREC			*e*PKPAB	**PKPab**	**18 39 35.6 +0.6**
TREC	**Trest**	**152.45 336**	*e*PKIKP	**PKPdf**	**18 39 14.9 +0.5**
TREC			*e*		18 39 35.6
NKC	**Novy Kostel**	**152.68 340**	*e*PKPDF	**PKPdf**	**18 39 15.4 +0.7**
NKC			⇑*e*PKP	**PKiKP**	**18 39 23.5 +1.1**
NKC			*e*PKPAB	**PKPab**	**18 39 37.2 +1.3**
NKC	**Novy Kostel**	**152.68 340**	*e*PKIKP	**PKPdf**	**18 39 15.4 +0.7**
NKC			*e*		18 39 37.2
VTS	**Vitosha**	**153.24 317**	⇓*i*P	**PKPbc**	**18 39 21.5 -2.5**
VTS	**Vitosha**	**153.24 317**	*e*PKIKP	**PKPdf**	**18 39 15.1 -0.8**
VTS			*e*		18 39 39.6
VTS	**Vitosha**	**153.24 317**	*e*PKPdf	**PKPdf**	**18 39 15.1 -0.8**
VTS			*e*PKPbc	**PKiKP**	**18 39 24.4 +0.4**
VTS			*e*PKPab	**PKPab**	**18 39 39.6 +0.8**
KHC	**Kasperske Hory**	**153.27 338**	*e*PKPDF	**PKPdf**	**18 39 16.2 +0.6**
KHC			⇑*e*PKP	**PKiKP**	**18 39 24.5 +0.8**
KHC			*e*PKPAB	**PKPab**	**18 39 39.8 +1.3**
KHC			*e*pPKP	**pPKPab**	**18 41 42.7 -3.0**
KHC	**Kasperske Hory**	**153.27 338**	*e*PKIKP	**PKPdf**	**18 39 15.7 +0.1**
KHC			*e*		18 39 23.6
KHC			*e*		18 39 39.1
KHC	**Kasperske Hory**	**153.27 338**	*e*PKPdf	**PKPdf**	**18 39 15.7 +0.1**
KHC			*e*PKPbc	**PKPbc**	**18 39 23.6 0.0**
KHC			*e*PKPab	**PKPab**	**18 39 39.1 +0.6**
CONA	**Conrad Observa**	**153.41 333**	*i*PKPab	**PKPab**	**18 39 40.4 +1.1**
	comp=Z,8.0nm,0.6s				
GEC2	**GERESS Array S**	**153.47 337**	*e*PKIKP	**PKPdf**	**18 39 15.8 -0.1**
GEC2			*e*		18 39 40.0
GEC2	**GERESS Array S**	**153.47 337**	*e*PKPdf	**PKPdf**	**18 39 15.8 -0.1**
GEC2			*e*PKPbc	**PKiKP**	**18 39 24.7 +0.5**
GEC2			*e*PKPab	**PKPab**	**18 39 40.0 +0.5**
GERES	**GERESS Array B**	**153.47 337**	PKP	**PKPdf**	**18 39 15.6 -0.4**
	comp=Z,0.7nm,0.7s,baz=299,slow=2.7,SNR=8.8				
GERES			PKPbc	**PKiKP**	**18 39 24.6 +0.4**
	comp=Z,2.1nm,0.6s,baz=333,slow=1.5,SNR=15				
GERES			PKPab	**PKPab**	**18 39 40.1 +0.6**
	comp=Z,1.6nm,0.5s,baz=34,slow=4.4,SNR=8.1				
GEA0	**GERESS Array S**	**153.47 337**	*e*PKPdf	**PKPdf**	**18 39 14.9 -1.0**
GEA0			*e*PKPbc	**PKiKP**	**18 39 24.2 0.0**
GEA0			*e*PKPab	**PKPab**	**18 39 39.8 +0.3**
ARSA	**Arzberg**	**154.09 333**	*i*PKPab	**PKPab**	**18 39 43.1 +1.0**
	comp=Z,2.3nm,0.6s				
MOA	**Molln**	**154.10 335**	*i*PKPab	**PKPab**	**18 39 43.3 +1.2**
	comp=Z,11nm,1.3s				
SOKA	**Soboth**	**154.75 333**	*i*PKPab	**PKPab**	**18 39 45.7 +0.7**
	comp=Z,14nm,1.4s				
OBKA	**Obir**	**155.08 333**	*i*PKPab	**PKPab**	**18 39 46.6 +0.1**
	comp=Z,3.5nm,0.7s				
KBA	**Koelnbreinsper**	**155.09 336**	*i*PKPab	**PKPab**	**18 39 46.9 +0.3**
	comp=Z,4.3nm,0.9s				
IDI	**Anoyia**	**155.14 300**	PKPab	**PKPab**	**18 39 47.4 +0.3**
	comp=Z,5.9nm,0.5s,baz=80,slow=6.1,SNR=9.6				
IDI	**Anoyia**	**155.14 300**	*e*PKPab	**PKPab**	**18 39 47.8 +0.6**
MYKA	**Terra Mystica**	**155.34 335**	*i*PKPab	**PKPab**	**18 39 47.6 0.0**
	comp=Z,6.9nm,0.5s				
WATA	**Walderalm**	**155.49 338**	*i*PKPab	**PKPab**	**18 39 48.6 +0.3**
	comp=Z,2.9nm,0.5s				
WTTA	**Wattenberg**	**155.54 338**	*i*PKPab	**PKPab**	**18 39 47.0 -1.5**
	comp=Z,3.1nm,0.6s				
GBAS	**Gorenja Brezov**	**155.59 332**	*e*PKPab	**PKPab**	**18 39 48.5 -0.1**
AGG	**Agios Georgios**	**155.62 311**	*e*PKIKP	**PKPdf**	**18 39 17.8 -1.3**
AGG			*e*		18 39 47.9
AGG	**Agios Georgios**	**155.62 311**	*e*PKPdf	**PKPdf**	**18 39 17.8 -1.3**
AGG			*e*PKPab	**PKPab**	**18 39 47.9 -1.1**
RETA	**Reutte**	**155.63 340**	*i*PKPab	**PKPab**	**18 39 49.7 +1.0**
	comp=Z,15nm,1.4s				
MOTA	**Moosalm**	**155.64 339**	*i*PKPab	**PKPab**	**18 39 50.0 +1.1**
	comp=Z,12nm,1.2s				
ABTA	**Abfaltersbach**	**155.67 336**	*i*PKPab	**PKPab**	**18 39 49.5 +0.5**
	comp=Z,8.1nm,0.7s				
CEY	**Cerknica**	**155.75 332**	*i*PKPab	**PKPab**	**18 39 49.2 0.0**
FETA	**Feichten**	**156.05 339**	*i*PKPab	**PKPab**	**18 39 51.9 +1.2**
	comp=Z,9.0nm,1.1s				
DAVA	**Damuels**	**156.07 341**	*i*PKPab	**PKPab**	**18 39 52.0 +1.2**
	comp=Z,14nm,0.7s				
DAVOX	**Davos/Dischmat**	**156.53 340**	PKPab	**PKPab**	**18 39 53.6 +0.8**
	comp=Z,6.3nm,0.7s,baz=249,slow=1.4,SNR=7.6				
FUORN	**Ofenpass-Fuorn**	**156.55 339**	*e*PKPdf	**PKPdf**	**18 39 19.0 -1.3**
FUORN			*e*PKPab	**PKPab**	**18 39 53.3 +0.3**
TUE	**Stuetta**	**156.97 341**	*e*PKPdf	**PKPdf**	**18 39 19.7 -1.1**
TUE			*e*PKPab	**PKPab**	**18 39 55.3 +0.5**
SENIN	**Lac Senin/Sane**	**157.63 344**	*e*PKPdf	**PKPdf**	**18 39 21.1 -0.6**
SENIN			*e*PKPab	**PKPab**	**18 39 58.2 +0.6**
CUC	**Castrocucco**	**159.25 320**	*e*PKPdf	**PKPdf**	**18 39 21.8 -1.7**
CUC			*e*PKPab	**PKPab**	**18 40 04.1 -0.6**
CEL	**Celeste**	**160.29 316**	*e*PKPdf	**PKPdf**	**18 39 21.5 -3.3**
CEL			*e*PKPab	**PKPab**	**18 40 09.3 -0.1**
LIC	**Lamto**	**160.94 169**	*e*PKP1	**PKPab**	**18 40 13.3 +0.8**
	comp=Z,75nm,2.1s				
KIC	**Kosan Boka**	**161.13 170**	*e*PKP1	**PKPab**	**18 40 14.2 +0.9**
	comp=Z,25nm,1.0s				
TIC	**Toumodi**	**161.36 169**	*e*PKP1	**PKPab**	**18 40 14.6 +0.2**
DBIC	**Dimbokro**	**161.41 169**	PKP	**PKPdf**	**18 39 26.6 0.0**
	comp=Z,3.8nm,0.9s,baz=228,slow=2.5,SNR=3.9				
DBIC			PKPab	**PKPab**	**18 40 15.2 +0.7**
	comp=Z,6.2nm,0.8s,baz=207,slow=4.0,SNR=7.0				
DBIC	**Dimbokro**	**161.41 169**	*e*PKIKP	**PKPdf**	**18 39 26.5 0.0**
DBIC			*e*		18 40 12.7
DBIC	**Dimbokro**	**161.41 169**	*e*PKPdf	**PKPdf**	**18 39 26.5 -0.1**
DBIC			*e*PKPab	**PKPab**	**18 40 12.7 -1.8**
ES19	**SONSECA Array**	**165.26 8**	*e*PKPdf	**PKPdf**	**18 39 28.4 -1.1**
ES19			*e*PKPab	**PKPab**	**18 40 30.8 -0.3**
ESDC	**Sonseca Array**	**165.28 8**	PKPab	**PKPab**	**18 40 31.4 +0.3**
	comp=Z,1.3nm,0.6s,baz=350,slow=3.6,SNR=7.5				
KEST	**Kesra**	**165.89 321**	PKPab	**PKPab**	**18 40 35.1 +1.0**
	comp=Z,13nm,1.0s,baz=340,slow=2.6,SNR=6.1				
TORD	**Torodi Ar. Bea**	**167.78 195**	PKP	**PKPdf**	**18 39 31.5 -0.5**
	comp=Z,2.4nm,0.6s,baz=356,slow=0.6,SNR=23				
TORD			PKPab	**PKPab**	**18 40 43.0 +0.4**
	comp=Z,11nm,0.6s,baz=163,slow=4.3,SNR=46				
TORD			PP	**PP**	**18 44 30.7 -0.5**
	comp=Z,2.5nm,1.1s,baz=152,slow=3.6,SNR=6.9				
TOA1	**Torodi Ar. Sit**	**167.78 195**	*e*PKPdf	**PKPdf**	**18 39 31.5 -0.5**
TOA1			*e*PKPab	**PKPab**	**18 40 43.0 +0.4**
TOA1			*e*PP	**PP**	**18 44 30.7 -0.5**
MDT	**Midelt**	**171.79 19**	PKP	**PKPdf**	**18 39 35.0 +1.0**
	comp=Z,12nm,1.2s,baz=348,slow=3.0,SNR=6.4				
MDT			PKPab	**PKPab**	**18 41 01.6 +1.3**
	comp=Z,5.7nm,0.8s,baz=358,slow=6.3,SNR=6.5				
TAM	**Tamanrasset**	**173.25 252**	*e*PKIKP	**PKPdf**	**18 39 35.1 +0.2**
TAM			*e*		18 41 07.8
TAM	**Tamanrasset**	**173.25 252**	*e*PKPdf	**PKPdf**	**18 39 35.1 +0.2**
TAM			*e*PKPab	**PKPab**	**18 41 07.8 +0.5**

*CSEM **19** 18:22:40.0, 39.22N×24.30E, h20km, ML1.6/4*
ATH 19 18:22:40.0, 39.22N×24.30E, h20km±3km, ML1.6/3, Error ellipse: s-maj=4.0km s-min=1.4km az=296.0, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AOS	**Alonnisos**	**0.33**	**262**	P	Pb	18 22 47.0	-0.1
AOS				S	Sb	18 22 51.5	-0.4
AOS	**Alonnisos**	**0.33**	**262**	P	Pb	18 22 47.0	0.0
AOS				S	Sb	18 22 51.5	-0.4
AOS				AML	AML	18 22 52.4	
	comp=E,312μm,0.2s						
AOS				AML	AML	18 22 52.7	
	comp=N,246μm,0.2s						
NEO	**Neokhori**	**0.84**	**276**	P	Pb	18 22 53.3	-2.6
NEO	**Neokhori**	**0.84**	**276**	P	Pb	18 22 53.3	-2.5
PAIG	**Paliouri**	**0.85**	**326**	P	Pn	18 22 57.3	+0.5
PAIG				S	Sn	18 23 08.7	0.0
PAIG	**Paliouri**	**0.85**	**326**	P	Pn	18 22 57.3	+0.5
PAIG				S	Sn	18 23 08.7	0.0
PAIG				AML	AML	18 23 11.8	
	comp=N,46μm,0.4s						
PAIG				AML	AML	18 23 12.9	
	comp=E,42μm,0.2s						
XOR	**Xorichti**	**0.87**	**280**	P	Pn	18 22 57.5	+0.4
XOR	**Xorichti**	**0.87**	**280**	P	Pn	18 22 57.5	+0.4
XOR				AML	AML	18 23 09.8	
	comp=E,86μm,0.3s						
XOR				AML	AML	18 23 10.4	
	comp=N,88μm,0.3s						
LIA	**Limnos Island**	**0.96**	**45**	P	Pn	18 22 58.4	+0.1
LIA				S	Sn	18 23 11.9	+0.5
VLY	**Voula,Athens**	**1.42**	**196**	P	Pb	18 23 08.3	+2.5
VLY	**Voula,Athens**	**1.42**	**196**	P	Pb	18 23 08.3	+2.5
SMTH	**Samothraki Isl**	**1.57**	**37**	P	Pb	18 23 07.9	-0.4
SMTH	**Samothraki Isl**	**1.57**	**37**	P	Pb	18 23 07.9	-0.4

*ISCJB **19** 18:25:12.9±0.5, 39.09N±0.04×29.09E±0.04, h10km±5km, Error ellipse: s-maj=7.2km s-min=4.3km az=140.1*
*CSEM **19** 18:25:12.9±0.1, 39.11N×29.07E, h8km, ML2.7, Error ellipse: s-maj=4.2km s-min=2.6km az=124.0*
*ISK **19** 18:25:12.5, 39.14N×29.08E, h5km, MD2.7*
*DDA **19** 18:25:12.6, 39.12N×29.10E, h7km, Ml2.7*
ISC 19 18:25:12.4±1.1, 39.12N±0.03×29.04E±0.03, h7km±10km, n27, σ0.829/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**253**	*i*P	**Pb**	**18 25 19.5**	**0.0**
DEMI				*i*S	**Sb**	**18 25 23.9**	**-0.3**
DEMI	**Demirci**	**0.26**	**253**	P	**Pb**	**18 25 19.5**	**0.0**
DEMI				S	**Sb**	**18 25 23.9**	**-0.3**
GDZ	**Gediz**	**0.35**	**95**	*i*P	**Pg**	**18 25 19.2**	**0.0**
GDZ				*i*S	**Sg**	**18 25 23.7**	**-0.2**
GDZ	**Gediz**	**0.35**	**95**	P	**Pg**	**18 25 19.2**	**0.0**
GDZ				S	**Sg**	**18 25 23.7**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**45**	*e*PG	**Pg**	**18 25 21.6**	**+0.1**
TVSB				*e*SG	**Sg**	**18 25 27.3**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**45**	*e*Pg	**Pg**	**18 25 21.6**	**+0.1**
TVSB				*e*Sg	**Sg**	**18 25 27.3**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG	**Pb**	**18 25 26.4**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg	**Pb**	**18 25 26.4**	**-0.1**
MANT	**Manisa**	**0.73**	**211**	*i*P	**Pg**	**18 25 26.5**	**0.0**
MANT				*i*S	**Sg**	**18 25 36.1**	**+0.1**
MANT	**Manisa**	**0.73**	**211**	P	**Pg**	**18 25 26.5**	**0.0**
MANT				S	**Sg**	**18 25 36.1**	**+0.1**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pb**	**18 25 30.4**	**+0.3**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pb**	**18 25 30.4**	**+0.3**
IGD	**Bursa**	**1.15**	**6**	*i*P	**Pg**	**18 25 34.6**	**+0.1**
IGD				*i*S	**Sb**	**18 25 50.3**	**+0.5**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pn**	**18 25 36.9**	**+0.6**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pn**	**18 25 36.9**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pn**	**18 25 36.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pn**	**18 25 36.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pn**	**18 25 36.8**	**+0.3**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pn**	**18 25 36.8**	**+0.3**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pn**	**18 25 36.5**	**-0.1**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pn**	**18 25 36.5**	**-0.1**
BORA	**Eskisehir**	**1.33**	**55**	*i*P	**Pg**	**18 25 37.7**	**-0.3**
BORA				*i*S	**Sn**	**18 25 55.2**	**-0.4**
BORA	**Eskisehir**	**1.33**	**55**	P	**Pg**	**18 25 37.7**	**-0.3**
BORA				S	**Sn**	**18 25 55.2**	**-0.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**18 25 40.0**	**+0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**18 25 40.0**	**+0.2**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pn**	**18 25 43.5**	**+0.4**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pn**	**18 25 43.5**	**+0.4**

KRSC 19 18:29:40.7±2.3, 49.21N×156.74E, h6km±3km, ML4.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.53**	**345**	*e*P	Pn	18 30 06.7	-1.8
SKR				*e*S	Sn	18 30 26.4	-2.3
PAU	**Pauzhetka**	**2.26**	**1**	*e*S	Sb	18 30 48.9	-1.2
ASAK	**Asacha**	**3.26**	**13**	P	Pn	18 30 34.3	+1.8
RUS	**Russkaya**	**3.42**	**19**	P	Pn	18 30 37.1	+2.6
RUS				S	Sb	18 31 19.6	-3.8
PET	**Petropavlovsk**	**4.00**	**17**	S	Sb	18 31 35.7	-4.6
DALK	**Dalny**	**4.03**	**18**	P	Pn	18 30 47.1	+4.2
DALK				S	Sb	18 31 36.0	-5.0
UGLR	**Uglovaya**	**4.21**	**17**	P	Pn	18 30 49.6	+4.0
AVH	**Avacha**	**4.25**	**16**	P	Pn	18 30 50.2	+4.2
KRER	**Koryakskii**	**4.29**	**16**	P	Pn	18 30 51.2	+4.5
SDLR	**Sedlovina**	**4.29**	**18**	P	Pn	18 30 48.8	+2.2
SPN	**Mys Shipunski**	**4.41**	**27**	P	Pn	18 30 52.8	+4.7
SPN				S	Sn	18 31 45.7	+6.0
GNL	**Ganaly**	**4.55**	**9**	P	Pb	18 30 56.0	-5.1
MKZ	**Mys Kozlova**	**6.18**	**28**	P	Pn	18 31 17.1	+4.7

*ISCJB **19** 18:34:23.2±0.7, 5.70N±0.10×121.8E±0.1, h35km, mb4.5/1, MS3.2/1, Error ellipse: s-maj=18.1km s-min=11.8km az=143.8*
*NEIC **19** 18:34:25.4±0.7, 5.70N×121.80E, h35km, mb4.9/9, Error ellipse: s-maj=17.4km s-min=11.4km az=54.0*
*IDC **19** 18:34:27.3±31.0, 5.16N×122.38E, h0km, mb3.8/4, mb1 3.9/4, mb1mx3.5/60, mbtmp3.8/4, MS3.2/1, Ms1 3.2/1, ms1mx2.4/42, Error ellipse: s-maj=553.8km s-min=137.3km az=138.0*
**ISC 19 18:34:

H11N2 WAKE ISLAND Hy 28.07 121 T T 19 37 09.1
baz=314,slow=75,SNR=34

H11N1 WAKE ISLAND Hy 28.08 121 T T 19 37 13.6
baz=314,slow=75,SNR=35

H11N3 WAKE ISLAND Hy 28.09 121 T T 19 37 12.4
baz=314,slow=75,SNR=23

ZALV Zalesovo Beam 41.97 312 P **P** **19 09 34.8 -0.9**
0.2nm,0.2s,baz=69,slow=7.9,SNR=4.4

MKAR Makanchi Array 44.20 302 P **P** **19 09 54.1 +0.2**
1.1nm,0.7s,baz=92,slow=7.8,SNR=7.1

KURBB Kurchatov Arra 46.07 308 P **P** **19 10 08.7 +0.1**
1.9nm,0.5s,baz=82,slow=7.7,SNR=20

WRA Warramunga Arr 57.12 188 P **P** **19 11 30.7 -0.8**
0.2nm,0.4s,baz=6.2,slow=7.3,SNR=9.8

ASAR Alice Springs 60.85 188 P **P** **19 11 56.9 -0.4**
0.3nm,0.7s,baz=1.4,slow=7.4,SNR=3.9

AKASG Malin Array Be 74.33 322 P **P** **19 13 22.0 -0.2**
0.6nm,0.5s,baz=45,slow=6.5,SNR=3.5

IDC 19 19:18:35.0±2.4, 1°60N×124°93E, h0km, mb3.6/3, mb1 3.9/3, mb1mx3.4/36, mbtmp3.6/3, Error ellipse: s-maj=278.9km s-min=27.2km az=64.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.31**	**157**	P		19 23 44.8	0.0
	1.7nm,0.4s,baz=335,slow=9.9,SNR=58						
ASAR	**Alice Springs**	**26.59**	**161**	P		19 24 14.4	-0.7
	0.2nm,0.3s,baz=341,slow=7.6,SNR=7.8						
MKAR	**Makanchi Array**	**58.31**	**327**	P		19 28 32.4	+0.7
	0.5nm,0.8s,baz=124,slow=7.2,SNR=2.7						

MOS ***19*** *19:35:40.8±1.0, 39°98N×71°41E, h15km, mb6.2/125, MS6.2/90, Error ellipse: s-maj=4.0km s-min=3.2km az=44.4 Broadband fault plane solution: P waves. $M_0$1.90000×10^{18} NP1:ϕ_s279.00000°, δ59.00000°, λ108.00000°. NP2:ϕ_s67.00000°, δ35.00000°, λ63.00000°. Principal axes: T Plg70.0000°, Azm229.0000°; N Plg15.0000°, Azm90.0000°; P Plg12.0000°, Azm357.0000°;*

MOS Fault plane solution: P-wave C115, D29 . Felt (VII-VIII) at Sovetskiy; (VII) at Khaydarkan; (VI) at Batken; (V-VI) at Kyzyl-Kia, Naukat; (V) at Tashkent, Fergana, Osh; (IV) at Termez; (III-IV) at Shymkent; (III) at Dushanbe, Samarkand, Taraz; (II-III) at Bishkek; (II) at Almaty.

BJI ***19*** *19:35:40.8, 40°15N×71°35E, h10km, mb5.8/73, mB6.0/72, ML6.3/5, Ms6.3/92, Ms7 6.2/84*

NEIC ***19*** *19:35:40.0±0.0, 40°23N×71°42E, h19km, Moment Tensor Solution. s42 Moment tensor: Scale 10^{18}Nm; M_{rr}1.43; $M_{\theta\theta}$-1.08; $M_{\phi\phi}$-0.34; $M_{r\theta}$-0.76; $M_{\theta\phi}$-0.05; $M_{\phi r}$0.09; Best double couple: M_o1.50000×10^{18} NP1:ϕ_s271.00000°, δ61.00000°, λ94.00000°. NP2:ϕ_s84.00000°, δ30.00000°, λ84.00000°. Principal axes: T 1.6400, Plg74.0000°, Azm190.0000°; N -0.3500, Plg3.0000°, Azm89.0000°; P -1.3000, Plg15.0000°, Azm358.0000°;*

NNC ***19*** *19:35:40.0±2.3, 39°87N×71°48E, h0km, mb6.5, mpv6.2 Error ellipse: s-maj=22.1km s-min=14.4km az=162.0*

SOME ***19*** *19:35:41.5, 39°92N×71°45E, h10km, MS6.1*

KRNET ***19*** *19:35:43.9±0.1, 40°12N×71°45E, h17km, mb6.5*

IDC ***19*** *19:35:43.4±1.4, 40°12N×71°51E, h19km±8km, mb5.6/44, mb1 5.7/50, mb1mx5.7/50, mbtmp5.7/50, ML5.3/6, MS6.1/48, Ms1 6.1/48, ms1mx6.1/49, Error ellipse: s-maj=7.6km s-min=6.1km az=154.0*

NEIC ***19*** *19:35:43.5±0.1, 40°08N×71°41E, h20km, mb6.1/296, ME6.2, MS6.2/159, MW6.1, MW6.0, Error ellipse: s-maj=2.8km s-min=1.9km az=188.0, Moment Tensor Solution. s75 Moment tensor: Scale 10^{18}Nm; M_{rr}0.88; $M_{\theta\theta}$-1.27; $M_{\phi\phi}$0.39; $M_{r\theta}$-0.58; $M_{\theta\phi}$-0.03; $M_{\phi r}$0.11; Best double couple: M_o1.30000×10^{18} NP1:ϕ_s77.00000°, δ32.00000°, λ72.00000°. NP2:ϕ_s278.00000°, δ60.00000°, λ101.00000°. Principal axes: T 1.0500, Plg73.0000°, Azm215.0000°; N 0.3700, Plg10.0000°, Azm92.0000°; P -1.4200, Plg14.0000°, Azm0.0000°; Broadband fault plane solution: P waves. NP1:ϕ_s90.00000°, δ30.00000°, λ90.00000°. NP2:ϕ_s270.00000°, δ60.00000°, λ90.00000°. Principal axes: T Plg75.0000°, Azm180.0000°; N Plg0.0000°, Azm0.0000°; P Plg15.0000°, Azm360.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC At least 13 people killed, 86 people injured and several buildings destroyed in Farg'ona, Uzbekistan. Felt [IV] at Tashkent. Also felt at Andijon and Urgut. At least one person killed in Khujand, Tajikistan. Felt [III] at Dushanbe. Also felt at Chkalovsk and Gharm. Power outages occurred at Batken, Kyrgyzstan. Felt [IV] at Osh. Also felt at Bishkek and Jalal-Abad. Felt at Shymkent, Kazakhstan.

ISCJB ***19*** *19:35:43.4±0.3, 40°05N±0°01×71°43E±0°01, h30km±2km, mb5.9/539, MS6.2/298 Error ellipse: s-maj=2.0km s-min=1.4km az=9.3*

GCMT ***19*** *19:35:43.5±0.1, 40°28N×71°36E, h29km, MW6.2/133, Moment Tensor Solution. s132,c284; s133,c447; Duration: 29 Moment tensor: Scale 10^{18}Nm; M_{rr}1.33±.02; $M_{\theta\theta}$-1.68±.01; $M_{\phi\phi}$0.35±.01; $M_{r\theta}$-1.47±.03; $M_{\theta\phi}$-0.29±.01; $M_{\phi r}$0.01±.02; Best double couple: M_o2.12100×10^{18} NP1:ϕ_s269.00000°, δ67.00000°, λ97.00000°. NP2:ϕ_s72.00000°, δ24.00000°, λ75.00000°. Principal axes: T 1.9370, Plg67.0000°, Azm191.0000°; N 0.3680, Plg6.0000°, Azm86.0000°; P -2.3050, Plg22.0000°, Azm354.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISC 19 19:35:43.4±0.3, 40°16N±0°02×71°50E±0°02, h19km±1km, h19km:pP-P, n2247, σ1°81/2502, mb6.0/539, MS6.2/303, 146C-82D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTK	**Batken**	**0.53**	**260**	⇓*i*	P		**Pb**	19 35 53.5	-0.6
	baz=264								
BTK				⇓	*i* S		**Sb**	19 36 00.5	-0.9
	baz=264								
BTK	**Batken**	**0.53**	**260**	⇓*i*	PG		**Pb**	19 35 53.5	-0.6
BTK					*i* S		**Sb**	19 36 00.5	-0.9
BTK					pmax	pmax			
	comp=Z,32nm,0.4s								
BTK					smax	smax			
	comp=N,380nm,0.5s								
DRK	**Karamyk**	**0.71**	**161**	⇓*i*	P		**Pg**	19 35 57.5	0.0
	baz=156								
DRK				⇓	*i* S		**Sg**	19 36 07.0	-0.1
	baz=156								
ARK	**Arkit**	**1.68**	**12**	⇓*i*	P		**Pg**	19 36 14.8	-1.0
	baz=13								
ARK				⇓	*i* S		**Sg**	19 36 38.4	+0.8
	baz=13								
ARK	**Arkit**	**1.68**	**12**	⇓*i*	PG		**Pg**	19 36 14.7	-1.0
ARK					pmax	pmax			
	comp=Z,65nm,0.6s								
IUG	**Iuzhnay**	**2.28**	**331**	*e*	P		**Pg**	19 36 25.9	-1.3
	comp=Z,179μm,0.6s								
IUG				*e*	S		**Sg**	19 36 56.0	-0.7
	comp=Z,162μm,1.1s								
MNAS	**Manas**	**2.45**	**18**	⇓*i*	P		**Pb**	19 36 26.2	-0.6
	baz=18								
MNAS				⇓	*i* S		**Sb**	19 36 58.1	+1.4
	baz=18								
MNAS	**Manas**	**2.45**	**18**	⇓	Pn		**Pb**	19 36 25.5	-1.4
	comp=Z,3μm,0.6s								
MNAS				⇓	Lg		Lg	19 37 01.8	
	comp=Z,86μm,0.7s								
MNAS	**Manas**	**2.45**	**18**	⇓*i*	PN		**Pb**	19 36 26.1	-0.7
MNAS					*i* S		**Sb**	19 36 58.0	+1.4
MNAS					pmax	pmax			
	comp=Z,13nm,0.5s								
MNAS					smax	smax			
	comp=N,157nm,1.0s								
AML	**Almayashu**	**2.58**	**39**	⇓*i*	P		**Pb**	19 36 28.0	-1.2
	baz=39								
AML				⇓	*i* S		**Sb**	19 37 01.3	+0.7
	baz=39								
AML	**Almayashu**	**2.58**	**39**	⇓*i*	PN		**Pb**	19 36 29.0	-0.2
AML					*i* S		**Sb**	19 37 01.3	+0.7
AML					pmax	pmax			
	comp=Z,22nm,0.6s								
AML					smax	smax			
	comp=N,120nm,0.6s								
CHM	**Chimkent**	**2.59**	**327**	⇓*i*	PN		Pg	19 36 43.7	+11
CHM					pmax	pmax			
	comp=Z,4.0nm,0.5s								
CHM	**Chimkent**	**2.59**	**327**	*e*	P		**Pg**	**19 36 32.1**	**-1.0**
	comp=Z,56μm,0.5s								
CHM				*e*	S		**Sg**	**19 37 06.7**	**-0.1**
	comp=Z,86μm,0.5s								
ARLS	**Aral**	**2.73**	**51**	⇓*i*	P		**Pb**	**19 36 30.4**	**-1.3**
	baz=50								
ARLS				⇓	*i* S		**Sb**	**19 37 05.5**	**+0.7**
	baz=50								
DZA	**Taraz**	**2.74**	**357**	*e*	P		**Pg**	**19 36 34.9**	**-0.9**
	comp=Z,101μm,0.5s								
DZA				*e*	S		**Sg**	**19 37 11.5**	**+0.1**
	comp=Z,169μm,0.8s								
MRKS	**Merke**	**2.89**	**26**	*e*	P		**Pg**	**19 36 37.3**	**-1.6**
	comp=Z,19μm,0.5s								
MRKS				*e*	S		**Sg**	**19 37 15.0**	**-1.4**
	comp=Z,59μm,0.3s								
BRLS	**Borolday**	**2.96**	**333**	*e*	P		**Pg**	**19 36 39.9**	**-0.3**
	comp=Z,10μm,0.4s								
BRLS				*e*	S		**Sg**	**19 37 19.4**	**+0.9**
	comp=Z,77μm,1.0s								
KK07	**Karatay Array**	**3.02**	**346**	⇑	Pn		**Pn**	**19 36 33.0**	**+2.8**
	comp=Z,18μm,0.7s								
KK07				⇓	Sn		**Sg**	**19 37 18.3**	**-2.3**
	comp=Z,23μm,0.6s								
EKS2	**Erkin-Say**	**3.03**	**34**	⇓*i*	P		**Pb**	**19 36 34.6**	**-2.2**
	baz=34								
EKS2				⇓	*i* S		**Sb**	**19 37 12.3**	**-1.1**
	baz=34								
EKS2	**Erkin-Say**	**3.03**	**34**	⇓*i*	PN		**Pb**	**19 36 34.6**	**-2.2**
EKS2					*i* S		**Sb**	**19 37 12.3**	**-1.1**
EKS2					pmax	pmax			
	comp=Z,7.0nm,0.5s								
EKS2					smax	smax			
	comp=N,19nm,0.7s								
KK31	**Karatay Array**	**3.04**	**346**	*e*	PN		**Pn**	**19 36 32.9**	**+2.5**
KK31					pmax	pmax			
	comp=Z,1μm,0.5s								
KKAR	**Karatay Array**	**3.04**	**346**	*e*	PN		**Pn**	**19 36 32.5**	**+2.1**
KKAR	**Karatay Array**	**3.04**	**346**	*e*	Pn		**Pn**	**19 36 32.5**	**+2.1**
UCH	**Uchtor**	**3.07**	**47**	⇑*i*	P		**Pb**	**19 36 35.0**	**-2.7**
	baz=47								
UCH				⇑	*i* S		**Sb**	**19 37 12.8**	**-2.2**
	baz=47								
UCH	**Uchtor**	**3.07**	**47**	*i*	PN		**Pb**	**19 36 36.0**	**-1.7**
UCH					*i* S		**Sb**	**19 37 13.8**	**-1.2**
UCH					pmax	pmax			
	comp=Z,1.0nm,0.6s								
UCH					smax	smax			
	comp=N,29nm,0.7s								
AAK	**Ala-Archa**	**3.35**	**41**		Pn		**Pn**	**19 36 38.3**	**+3.6**
	comp=N,408nm,0.3s,baz=202,slow=8.7,SNR=871								
AAK					Lg		Lg	19 37 31.4	
	comp=N,4μm,0.3s,baz=152,slow=21,SNR=14								
AAK					LR		LR	19 37 54.2	
	comp=N,41μm,19.6s,baz=214,slow=39								
AAK	**Ala-Archa**	**3.35**	**41**	⇓*i*	P		**Pn**	**19 36 38.4**	**+3.6**
	baz=41								
AAK				⇓	*i* S		**Sb**	**19 37 19.2**	**-3.4**
	baz=41								
AAK	**Ala-Archa**	**3.35**	**41**	⇑	Pn		**Pb**	**19 36 38.7**	**-3.5**
	comp=N,2μm,0.6s								
AAK				⇑	Lg		Lg	19 37 32.1	
	comp=N,25μm,0.5s								
AAK	**Ala-Archa**	**3.35**	**41**		PN		**Pb**	**19 36 38.7**	**-3.5**
AAK					pmax	pmax			
	comp=Z,2μm,0.6s								
AAK	**Ala-Archa**	**3.35**	**41**		Pn		**Pn**	**19 36 38.5**	**+3.7**
SNR=6823									
AAK	**Ala-Archa**	**3.35**	**41**		P		**Pn**	**19 36 38.5**	**+3.7**
SNR=6823									
KSH	**Kashi**	**3.50**	**99**	⇑*i*	Pn		**Pn**	**19 36 38.1**	**+1.2**
KSH					Sn		**Sn**	**19 37 18.8**	**+1.0**
KSH					smax	smax			
	comp=Z,97μm,1.1s								
KSH					smax	smax			
	comp=Z,67μm,0.8s								
FRU1	**Bishkek**	**3.54**	**41**	⇓*e*	P		**Pb**	**19 36 41.6**	**-3.9**
	baz=41								
FRU1				⇓	*e* S		**Sb**	**19 37 24.4**	**-3.7**
	baz=41								
FRU	**Bishkek**	**3.55**	**40**	⇓*i*	PN		**Pn**	**19 36 40.0**	**+2.5**
FRU					*i* S		**Sb**	**19 37 24.0**	**-4.4**
FRU					pmax	pmax			
	comp=E,35μm,4.0s								
FRU					smax	smax			
	comp=E,130μm,2.0s								
KBK	**Karagaybulak**	**3.60**	**45**	⇓*i*	P		**Pb**	**19 36 42.4**	**-4.1**
	baz=45								
KBK				⇓	*i* S		**Sb**	**19 37 25.4**	**-4.4**
	baz=45								
KBK	**Karagaybulak**	**3.60**	**45**	⇓*i*	PN		**Pb**	**19 36 42.4**	**-4.1**
KBK					*i* S		**Sb**	**19 37 25.4**	**-4.4**
KBK					pmax	pmax			
	comp=Z,3.0nm,0.5s								
KBK					smax	smax			
	comp=N,21nm,0.5s								
CHMS	**Chumysh**	**3.74**	**40**	⇓*i*	P		**Pn**	**19 36 43.7**	**+3.6**
	baz=40								
CHMS				⇓	*i* S		**Sn**	**19 37 28.6**	**+5.0**
	baz=40								
USP	**Ospenovka**	**3.83**	**35**	⇓*i*	P		**Pn**	**19 36 44.5**	**+3.1**
	baz=35								
USP				⇓	*i* S		**Sn**	**19 37 31.0**	**+5.1**
	baz=35								
USP	**Ospenovka**	**3.83**	**35**	⇓*i*	PN		**Pn**	**19 36 45.5**	**+4.1**
USP					*i* S		**Sb**	**19 37 32.0**	**-4.4**
USP					pmax	pmax			
	comp=Z,1.0nm,0.7s								
USP					smax	smax			
	comp=N,26nm,0.9s								
BOOM	**Boomskoye usch**	**4.08**	**54**	⇓*i*	P		**Pn**	**19 36 48.2**	**+3.4**
	baz=53								
BOOM				⇓	*e* S		**Sn**	**19 37 36.8**	**+4.8**
	baz=53								
TKM2	**Tokmak 2**	**4.13**	**47**	⇓*i*	P		**Pn**	**19 36 49.4**	**+3.8**
	baz=47								
TKM2				⇓	*i* S		**Sn**	**19 37 38.0**	**+4.5**
	baz=47								
TKM2	**Tokmak 2**	**4.13**	**47**	⇓	Pn		**Pn**	**19 36 49.5**	**+3.8**
	comp=N,5μm,0.5s								
TKM2				⇓	Sn		**Sn**	**19 37 38.8**	**+5.3**
	comp=N,44μm,0.9s								
TKM2				⇑	Lg		Lg	19 37 54.4	
	comp=N,50μm,0.9s								
TKM2	**Tokmak 2**	**4.13**	**47**	⇓*i*	PN		**Pn**	**19 36 49.4**	**+3.8**
TKM2					*i* S		**Sn**	**19 37 38.0**	**+4.5**
TKM2					pmax	pmax			
	comp=Z,3.0nm,0.5s								
TKM2					smax	smax			
	comp=N,43nm,0.9s								
ULHL	**Ulahol**	**4.14**	**58**	⇓*i*	P		**Pn**	**19 36 48.9**	**+3.2**
	baz=58								
ULHL				⇓	*i* S		**Sn**	**19 37 37.5**	**+3.8**
	baz=58								
ULHL	**Ulahol**	**4.14**	**58**	⇓*i*	PN		**Pn**	**19 36 48.9**	**+3.2**
ULHL					*i* S		**Sn**	**19 37 37.5**	**+3.8**
ULHL					pmax	pmax			
	comp=Z,1.0nm,0.6s								
ULHL					smax	smax			
	comp=N,7.0nm,0.7s								
BMNS	**Besmoynak**	**4.30**	**45**	*e*	P		**Pg**	**19 37 04.9**	**-0.8**
	comp=N,18μm,0.8s								
BMNS				*e*	S		**Sg**	**19 38 01.6**	**+0.3**
	comp=N,119μm,0.8s								
KST	**Kastek**	**4.42**	**48**	*e*	P		**Pg**	**19 37 05.9**	**-2.0**
	comp=N,2μm,0.5s								
KST				*e*	S		**Sg**	**19 38 03.5**	**-1.7**
	comp=N,34μm,0.8s								
KDJ	**Kajisay**	**4.72**	**63**	⇑	*e* P		**Pn**	**19 36 57.5**	**+3.8**
	baz=63								
KDJ				⇑	*i* S		**Sn**	**19 37 51.6**	**+3.7**
	baz=63								
TNSS	**Tian-Shan**	**5.00**	**53**	*e*	P		**Pg**	**19 37 17.3**	**-1.8**
	comp=N,4μm,0.7s								
TNSS				*e*	S		**Sg**	**19 38 22.0**	**-1.8**
	comp=N,16μm,0.8s								
KNDC	**Almaty**	**5.11**	**51**	⇓	Pn		**Pn**	**19 37 02.9**	**+4.0**
	comp=N,7μm,0.7s								
KNDC				⇑	Lg		Lg	19 38 24.8	
	comp=N,80μm,1.1s								
MDOK	**Medeo**	**5.13**	**52**	*e*	P		**Pg**	**19 37 19.3**	**-2.2**
	comp=N,3μm,0.5s								
MDOK				*e*	S		**Sg**	**19 38 25.8**	**-2.1**
	comp=N,37μm,1.1s								
AAA	**Alma-Ata**	**5.13**	**51**	*e*	PN		**Pg**	**19 37 19.9**	**-1.6**
AAA	**Alma-Ata**	**5.13**	**51**	*e*	P		**Pg**	**19 37 18.6**	**-2.9**
	comp=N,8μm,0.5s								
AAA				*e*	S		**Sg**	**19 38 25.3**	**-2.7**
	comp=N,49μm,1.1s								
KUU	**Kurty**	**5.19**	**42**	*e*	P		**Pg**	**19 37 18.3**	**-4.4**
	comp=N,8μm,0.8s								
KUU				*e*	S		**Sg**	**19 38 23.9**	**-5.9**
	comp=N,29μm,0.7s								
ANVS	**Anan'yevo**	**5.32**	**58**	⇓*e*	P		**Pn**	**19 37 04.9**	**+2.9**
	baz=58								
ANVS				⇓	*i* S		**Sn**	**19 38 06.6**	**+3.8**
	baz=58								
CHKK	**Chushkaly**	**5.53**	**46**	*e*	P		**Pg**	**19 37 25.6**	**-3.6**
	comp=N,4μm,0.8s								
CHKK				*e*	S		**Sg**	**19 38 36.0**	**-4.6**
	comp=N,20μm,0.8s								
SATY	**Saty**	**5.93**	**58**	*e*	P		**Pg**	**19 37 33.2**	**-3.8**
	comp=N,9μm,1.3s								
SATY				*e*	S		**Sg**	**19 38 48.1**	**-5.6**
	comp=N,24μm,1.3s								
KBL	**Kabul**	**5.94**	**200**	*e*	PN		**Pn**	**19 37 14.3**	**+3.9**
KBL	**Kabul**	**5.94**	**200**	*e*	Pn		**Pn**	**19 37 14.3**	**+3.9**
KURS	**Kuram**	**5.99**	**54**	⇓*i*	P		**Pg**	**19 37 37.5**	**-0.6**
	comp=N,4μm,1.0s								
KURS				⇓	*i* S		**Sg**	**19 38 57.2**	**+1.6**
	comp=N,7μm,1.1s								
ZHN	**Zhinishke**	**6.00**	**58**	*e*	P		**Pg**	**19 37 36.3**	**-1.9**
	comp=N,3μm,0.9s								
ZHN				*e*	S		**Sg**	**19 38 54.8**	**-1.1**
	comp=N,6μm,0.3s								
CEP	**Cherat**	**6.33**	**177**	⇑	P		**Pn**	**19 37 19.7**	**+3.9**
SRNI	**Srinagar**	**6.61**	**155**	*e*	P		Pn	19 37 28.0	+8.6
SRNI				*e*	S		**Sn**	**19 38 33.5**	**-0.7**
CHCP	**Chirah Chowk**	**6.64**	**167**	⇑	P		**Pn**	**19 37 24.3**	**+4.4**
PDGK	**Podgornoye**	**6.76**	**59**	⇑	Pn		**Pn**	**19 37 24.4**	**+2.9**
	comp=N,941nm,0.9s								
PDGK				⇑	Lg		Lg	19 39 16.0	
	comp=N,19μm,0.8s								
PDGK	**Podgornoye**	**6.76**	**59**		PN		**Pn**	**19 37 24.3**	**+2.9**
PDGK								19 39 13.4	
PDGK					pmax	pmax			
	comp=Z,941nm,0.9s								
THW	**Thamme Wali**	**7.35**	**178**	⇑	P		**Pn**	**19 37 32.5**	**+2.8**
OTUK	**Ortayu**	**8.11**	**4**	⇑	Pn		**Pn**	**19 37 42.0**	**+1.9**
	comp=Z,307nm,1.1s								
OTUK				⇑	Lg		Lg	19 40 02.7	
	comp=Z,3μm,0.7s								
OTUK	**Ortayu**	**8.11**	**4**		P		**Pn**	**19 37 41.9**	**+1.9**
OTUK					pmax	pmax			
	comp=Z,2μm,0.6s								
SARP	**Sargodha**	**8.27**	**173**	⇑	P		**Pn**	**19 37 43.7**	**+1.4**
THN	**Thein Dam**	**8.42**	**155**	*e*	P		**Pn**	**19 37 45.2**	**+0.9**
THN				*ex*			**Sn**	**19 39 18.0**	**-0.8**
PONG	**Pong**	**8.94**	**155**	*e*	P		**Pn**	**19 37 53.0**	**+1.6**
PONG				*ex*			x	19 39 07.0	
JWA	**Jwalamukhi**	**9.15**	**153**	*e*	P		**Pn**	**19 37 54.0**	**-0.3**
JWA				*ex*			**Sn**	**19 39 37.0**	**+0.3**
BHK	**Bhakra**	**9.59**	**154**	*e*	P		**Pn**	**19 38 00.6**	**+0.2**
BHK				*ex*			**Sn**	**19 39 44.2**	**-3.4**
SDNR	**Sundarnagar**	**9.71**	**151**	*e*	P		**Pn**	**19 38 01.0**	**-1.0**
SDNR				*ex*			x	19 39 12.0	
MAKZ	**Makanchi**	**10.10**	**45**	⇑	Pn		**Pn**	**19 38 09.5**	**+2.1**
	comp=Z,361nm,0.8s								
MAKZ				⇓	Lg		Lg	19 41 03.1	
	comp=Z,6μm,1.3s								
MAKZ	**Makanchi**	**10.10**	**45**		P		**Pn**	**19 38 09.4**	**+2.1**
MAKZ					pmax	pmax			
	comp=Z,386nm,0.9s								
MAKZ	**Makanchi**	**10.10**	**45**	*e*	Pn		**Pn**	**19 38 08.6**	**+1.3**
SMLA	**Simla**	**10.12**	**151**	*e*	P		**Pn**	**19 38 08.1**	**+0.5**
SMLA				*ex*			**Sn**	**19 39 55.1**	**-5.3**
MK01	**Makanchi Array**	**10.26**	**46**	*e*	Pn		**Pn**	**19 38 10.7**	**+1.2**
MK31	**Makanchi Array**	**10.27**	**46**		Pn		**Pn**	**19 38 11.4**	**+1.8**
	comp=Z,333nm,0.6s,baz=228,slow=12,SNR=1702								
MK31				⇓	Lg		Lg	19 41 14.5	
	comp=Z,2μm,0.7s,baz=226,slow=29,SNR=5.3								
MK31	**Makanchi Array**	**10.27**	**46**	*e*	P		**Pn**	**19 38 11.4**	**+1.8**
MK31	**Makanchi Array**	**10.27**	**46**	*e*	Pn		**Pn**	**19 38 11.4**	**+1.8**
MK32	**Makanchi Array**	**10.27**	**46**	*e*	Pn		**Pn**	**19 38 11.5**	**+1.9**
MK32				*e*	Lg		Lg	19 41 05.7	
MK32				*e*				19 42 44.9	
MK32				*e*				20 15 00.8	
MKAR	**Makanchi Array**	**10.27**	**46**		Pn		**Pn**	**19 38 11.5**	**+1.9**
	comp=Z,49nm,0.3s,baz=228,slow=13,SNR=561								
MKAR					Lg		Lg	19 41 05.7	
	comp=Z,49nm,0.3s,baz=231,slow=28,SNR=5.0								
MKAR					LR		LR	19 42 44.9	
	comp=Z,119μm,21.1s,baz=236,slow=41								
MKAR					P3KPbc			20 15 00.8	
	comp=Z,0.1nm,0.3s,baz=70,slow=5.0,SNR=3.2								
ASHT	**Ashkhabad**	**10.44**	**262**	⇑	Pn		**Pn**	**19 38 11.4**	**-0.6**
	comp=Z,2μm,1.0s								
ASHT				⇑	Sn		**Sn**	**19 40 02.9**	**-5.5**
	comp=Z,13μm,1.1s								
ASHT	**Ashkhabad**	**10.44**	**262**	*i*	P		**Pn**	**19 38 11.4**	**-0.6**
ASHT					pmax	pmax			
	comp=Z,2μm,0.9s								
GEYT	**Alibeck**	**10.65**	**262**		Pn		**Pn**	**19 38 11.6**	**-3.3**
	comp=Z,51nm,0.3s,baz=83,slow=7.9,SNR=286								
GEYT					Sn		**Sn**	**19 40 07.6**	**-5.9**
	comp=Z,121nm,0.3s,baz=131,slow=16,SNR=6.9								
GEYT					LR		LR	19 43 10.4	
	comp=Z,147μm,18.5s,baz=65,slow=42								
KKR	**Kurukshetra**	**11.06**	**155**	*e*	P		**Pn**	**19 38 21.3**	**+0.8**
DDI	**Dehra Dun**	**11.17**	**149**	*e*	P		**Pn**	**19 38 21.5**	**-0.6**
DDI				*e*	P		**Pn**	**19 38 22.7**	**+0.6**
DDI				*e*	S		**Sn**	**19 40 18.0**	**-8.5**
DDI					IAML			19 42 06.7	
	comp=E,4μm,2.5s								
DDI					IAML			19 42 11.9	
	comp=N,4μm,1.3s								
KURBB	**Kurchatov Arra**	**11.57**	**23**		Pn		**Pn**	**19 38 25.9**	**-1.4**
	comp=N,9.1nm,0.3s,baz=215,slow=13,SNR

comp=Z,63μm,6.8s
WMQ LR LR
comp=Z,66μm,16.6s
KUDL Kundal 12.67 160 *e*P **Pn** **19 38 41.1 -1.3**
KUDL *e*S **Sn** **19 40 55.1 -7.9**
PTH Pithoragarh 12.77 143 *e*P **Pn** **19 38 42.2 -1.8**
PTH *e*S Sn 19 40 53.6 -12
BVA0 Borovoye Array 12.90 357 ⇑Pn **Pn** **19 38 44.3 -1.2**
comp=Z,1μm,0.8s
BVA0 ⇑Lg Lg 19 42 40.4
comp=Z,6μm,1.2s,baz=163,slow=24,SNR=3.9
BVA0 Borovoye Array 12.90 357 P **Pn** **19 38 44.2 -1.2**
BVA0 pmax pmax
comp=Z,1μm,0.9s
BVAR Borovoye Array 12.90 357 Pn **Pn** **19 38 44.0 -1.5**
comp=Z,49nm,0.3s,baz=157,slow=12,SNR=324
BVAR Sn **Sn** **19 41 02.7 -5.7**
comp=Z,44nm,0.3s,baz=175,slow=18,SNR=3.3
BVAR Lg Lg 19 42 31.5
comp=Z,52nm,0.3s,baz=172,slow=23,SNR=4.7
BVAR LR LR 19 44 13.2
comp=Z,218μm,21.1s,baz=181,slow=39
BVAR P3KPbc 20 14 48.4
comp=Z,0.1nm,0.3s,baz=336,slow=3.2,SNR=3.1
BVAR Borovoye Array 12.90 357 P **Pn** **19 38 44.0 -1.5**
BRVK Borovoye 12.93 357 ⇓Pn **Pn** **19 38 44.6 -1.4**
comp=Z,1μm,0.8s
BRVK Borovoye 12.93 357 *d iP* **Pn** **19 38 44.1 -1.9**
BRVK pmax pmax
comp=Z,1μm,1.7s
BRVK Borovoye 12.93 357 *e*Pn **Pn** **19 38 43.9 -2.1**
I31KZ AKTYUBINSK INF 13.94 322 Pn **Pn** **19 38 55.9 -3.8**
baz=121,slow=9.5,SNR=1.2
I31KZ *i* 20 44 00.0
baz=134,slow=314,SNR=1.9
AKTO Aktyubinsk 13.97 322 Pn **Pn** **19 38 58.0 -2.1**
comp=Z,28nm,0.3s,baz=125,slow=13,SNR=293
AKTO Sn **Sn** **19 41 27.5 -6.9**
comp=Z,62nm,0.3s,baz=186,slow=19,SNR=3.9
AKTO LR LR 19 45 17.1
comp=Z,99μm,19.8s,baz=138,slow=41
AKTO Aktyubinsk 13.97 322 ⇑Pn **Pn** **19 38 58.2 -1.9**
comp=Z,2μm,0.7s
AKTO Aktyubinsk 13.97 322 *i* P **Pn** **19 38 58.2 -1.9**
AKTO pmax pmax
comp=Z,1μm,0.6s
PYUN Piuthan 15.32 138 *e*P **Pn** **19 39 14.6 -4.1**
comp=Z,4μm,0.9s
PYUN *e*S **Sn** **19 41 57.4 -10**
KOLN Koldanda 15.90 137 *e*P **Pn** **19 39 22.2 -4.0**
comp=Z,3μm,0.7s
KOLN Koldanda 15.90 137 *e*P **Pn** **19 39 22.4 -3.8**
KOLN *e*S Sn 19 42 11.2 -11
GKN Gorkha 16.27 134 *e*P **Pn** **19 39 27.2 -3.7**
GKN *e*S **Sn** **19 42 20.9 -10**
ZAA0 Zalesovo Array 16.47 29 *e*Pn **Pn** **19 39 31.3 -1.9**
ZALV Zalesovo Beam 16.47 29 Pn **Pn** **19 39 31.6 -1.5**
comp=Z,6.5nm,0.3s,baz=226,slow=12,SNR=173
ZALV Sn **Sn** **19 42 39.1 +3.8**
comp=Z,9.0nm,0.3s,baz=222,slow=15,SNR=2.9
ZALV LR LR 19 46 28.5
comp=Z,152μm,19.2s,baz=206,slow=39
ZALV P3KPbc 20 14 40.3
comp=Z,0.1nm,0.3s,baz=63,slow=3.5,SNR=3.1
ZAA1 Zalesovo Array 16.48 29 *e*Pn **Pn** **19 39 31.6 -1.6**
ZAA1 *e*Sn **Sn** **19 42 39.1 +3.7**
ZAA1 *e* 20 14 40.3
NVS Novosibirsk 16.66 24 *e*P **Pn** **19 39 35.3 -0.2**
NVS *i* S **Sn** **19 42 38.6 -1.2**
NVS pmax pmax
comp=N,1μm,0.9s
NVS pmax pmax
comp=Z,2μm,0.9s
NVS pmax pmax
comp=E,394nm,0.7s
NVS smax smax
comp=N,1μm,1.5s
NVS smax smax
comp=E,344nm,0.4s
KKN Kakani 16.79 133 *e*P **Pn** **19 39 33.2 -4.4**
KKN Kakani 16.79 133 *e*P **Pn** **19 39 34.8 -2.8**
comp=E,2μm,0.5s
KKN *e*S **Sn** **19 42 33.2 -10**
DMN Daman 16.83 134 *e*P **Pn** **19 39 34.6 -3.6**
BHJ Bhuj 16.92 186 *e*P **Pn** **19 39 38.3 -0.8**
GUN Gumba 17.04 131 *e*P **Pn** **19 39 37.3 -3.5**
GUN Gumba 17.04 131 *e*P **Pn** **19 39 38.1 -2.7**
comp=E,4μm,1.0s
BHPL Bhopal 17.59 162 *e*P **Pn** **19 39 47.6 +0.1**
BHPL IAmb IAmb 19 39 52.8
comp=Z,1μm,1.0s
SVE Sverdlovsk 18.13 341 *c e*P **Pn** **19 39 52.0 -1.8**
SVE *e*S **Sn** **19 43 16.9 +1.4**
SVE pmax pmax
comp=Z,1μm,1.3s
SVE MLR MLR
comp=E,83μm,12.0s
SVE MLR MLR
comp=Z,295μm,12.0s
SVE MLR MLR
comp=N,171μm,13.0s
ARU Arti 18.36 337 P **P** **19 39 55.4 -1.3**
ARU LR LR 19 47 34.8
comp=N,160μm,19.8s,baz=144,slow=39
ARU Arti 18.36 337 *d iP* **P** **19 39 55.2 -1.4**
ARU *e* 19 40 06.7
ARU *e*S **Sn** **19 43 21.8 +0.7**
ARU *e*SSS SSS 19 43 50.0
ARU pmax pmax
comp=Z,1μm,1.3s
ARU MLR MLR
comp=Z,164μm,17.4s
ARU Arti 18.36 337 *e*P **P** **19 39 55.3 -1.4**
comp=Z,2μm,0.9s
BANOM Banah 19.04 226 *i* P **P** **19 40 04.1 -0.1**
SNR=17
BANOM Banah 19.04 226 *i* P **P** **19 40 04.1 -0.1**
SNR=17
BANOM Banah 19.04 226 P **P** **19 40 03.4 -0.9**
SNR=22
BANOM Banah 19.04 226 P **P** **19 40 03.4 -0.9**
SNR=22
BANOM P **P** **19 40 03.4 -0.9**
SNR=22
LSA Lhasa 19.15 117 P **Pn** **19 40 08.8 +1.9**
LSA S **Sn** **19 43 38.5 -2.7**
LSA LR LR
comp=Z,17μm,25.1s
LSA LR LR
comp=Z,23μm,26.3s
LSA LR LR
comp=Z,17μm,14.3s
LSA Lhasa 19.15 117 *e*P **Pn** **19 40 07.7 +0.7**
LSA pmax pmax
comp=Z,509nm,0.8s
LSA Lhasa 19.15 117 *e*P **Pn** **19 40 07.7 +0.7**
comp=Z,509nm,0.8s
GROC Groznyy 19.42 287 *e*P **P** **19 40 08.6 +0.3**
GROC pmax pmax
comp=Z,768nm,0.9s
DGRG David-gareji 19.80 282 P **P** **19 40 13.0 +0.4**
DGRG David-gareji 19.80 282 P **P** **19 40 13.0 +0.4**
UOSS Minazif 19.86 225 *e*P **P** **19 40 11.9 -1.4**
comp=Z,2μm,1.8s
HATD Hatta, Dubai 20.00 225 *i* P **P** **19 40 14.4 -0.4**
SNR=84
HATD Hatta, Dubai 20.00 225 *i* P **P** **19 40 14.4 -0.4**
SNR=84
HATD Hatta, Dubai 20.00 225 P **P** **19 40 14.2 -0.6**
SNR=46
HATD Hatta, Dubai 20.00 225 P **P** **19 40 14.2 -0.6**
SNR=46
HATD P **P** **19 40 14.2 -0.6**
SNR=46
NGP Nagpur 20.01 159 *e*P **P** **19 40 15.2 +0.3**
BIDO Bidbid 20.06 218 P **P** **19 40 14.4 -1.1**
SNR=49
BIDO Bidbid 20.06 218 P **P** **19 40 14.4 -1.1**
SNR=49
BIDO P **P** **19 40 14.4 -1.1**
SNR=49
WSAR Wadi Sarin 20.07 217 P Pn 19 40 16.7 -0.8
comp=Z,221nm,0.8s,baz=64,slow=9.9,SNR=89
WSAR LR LR 19 49 48.4
comp=Z,88μm,20.5s,baz=62,slow=42
NAZ Nazwa, Dubai 20.12 226 *i* P **P** **19 40 16.8 +0.6**
SNR=144
NAZ Nazwa, Dubai 20.12 226 P Pn 19 40 17.2 -0.9
SNR=130
NAZ Nazwa, Dubai 20.12 226 P Pn 19 40 17.2 -0.9
SNR=130
NAZ P Pn 19 40 17.2 -0.9
SNR=130
ASHO Ashiyiah 20.15 225 *i* P Pn 19 40 17.5 -0.9
SNR=51
ASHO Ashiyiah 20.15 225 *i* P Pn 19 40 17.5 -0.9
SNR=51
ASHO Ashiyiah 20.15 225 P **P** **19 40 17.3 +0.8**
SNR=105
ASHO Ashiyiah 20.15 225 P **P** **19 40 17.3 +0.8**
SNR=105
ASHO P **P** **19 40 17.3 +0.8**
SNR=105
SEAG Tbilisi Sea 20.20 283 P **P** **19 40 17.0 +0.1**
TBLG Delisi 20.25 283 P **P** **19 40 17.4 -0.1**
TBLG Delisi 20.25 283 P **P** **19 40 17.3 -0.1**
DUS Dusheti 20.25 284 P Pn 19 40 20.9 +1.3
DUS Dusheti 20.25 284 P Pn 19 40 20.9 +1.3
BOK Bokaro 20.33 139 *e*P **P** **19 40 18.1 -0.2**
BOK IAmb IAmb 19 40 23.2
comp=Z,1μm,0.8s
FAQ Al Faqa, Dubai 20.36 226 *i* P **P** **19 40 19.3 +0.7**
SNR=49
FAQ Al Faqa, Dubai 20.36 226 *i* P **P** **19 40 19.3 +0.7**
SNR=49
FAQ Al Faqa, Dubai 20.36 226 P **P** **19 40 19.3 +0.7**
SNR=89
FAQ Al Faqa, Dubai 20.36 226 P **P** **19 40 19.3 +0.7**
SNR=89
FAQ P **P** **19 40 19.3 +0.7**
SNR=89
GUDG Gudauri 20.40 285 P **P** **19 40 20.0 +0.7**
HOQ Hoqain 20.41 220 P **P** **19 40 18.9 -0.4**
SNR=100
HOQ Hoqain 20.41 220 P **P** **19 40 18.9 -0.4**
SNR=100
GNI Garni 20.43 279 P **P** **19 40 20.0 +0.4**
comp=Z,146nm,0.5s,baz=69,slow=1.7,SNR=110
GNI LR LR 19 49 41.8
comp=Z,29μm,20.3s,baz=94,slow=41
GNI Garni 20.43 279 P Pn 19 40 21.1 -0.6
GNI Garni 20.43 279 P Pn 19 40 21.1 -0.6
GNI Garni 20.43 279 *e*P **P** **19 40 20.0 +0.4**
SMDO Samad 20.50 218 P Pn 19 40 21.4 -1.1
SNR=76
SMDO Samad 20.50 218 P Pn 19 40 21.4 -1.1
SNR=76
ZEI Tsey 20.81 286 *e*P **P** **19 40 19.3 -4.4**
ZEI *e*S **S** **19 44 09.9 -5.3**
ZEI pmax pmax
comp=Z,1μm,0.6s
ZEI pmax pmax
comp=N,1μm,0.8s
ZEI pmax pmax
comp=E,2μm,0.9s
ZEI MLR MLR
comp=Z,109μm,14.0s
ZEI MLR MLR
comp=N,21μm,10.0s
ZEI MLR MLR
comp=E,20μm,10.0s
ARQ Araqi 21.01 222 P **P** **19 40 26.8 +1.1**
SNR=180
ARQ Araqi 21.01 222 P **P** **19 40 26.8 +1.1**
SNR=180
NCK Nalchik 21.02 288 *c iP* **P** **19 40 25.1 -0.7**
NCK pmax pmax
comp=Z,902nm,0.8s
NCK MLR MLR
comp=Z,77μm,17.0s
JMDO Jabal Madar 21.06 217 P **P** **19 40 27.6 +1.3**
SNR=180
JMDO Jabal Madar 21.06 217 P **P** **19 40 27.6 +1.3**
SNR=180
BGD Bogdanovka 21.15 282 P **P** **19 40 28.5 +1.1**
ONI Oni 21.15 286 P **P** **19 40 28.3 +1.1**
ONI Oni 21.15 286 P **P** **19 40 28.3 +1.1**
KRAR Krasnoyarsk 21.20 34 ⇑*e*P **P** **19 40 28.8 +1.2**
KRAR MLR MLR
comp=Z,309μm,17.0s
AKH Akhalkalaki 21.21 283 P **P** **19 40 29.1 +1.1**
AKH Akhalkalaki 21.21 283 P **P** **19 40 29.1 +1.1**
EAK Akyaka 21.21 281 *i* P **P** **19 40 30.2 +2.2**
BOM Bombay 21.22 177 *ex* P 19 40 37.6 +10
BOM *ex* x 19 40 37.9
BOM *ex* x 19 44 33.1
BASK Baskale_VAN 21.41 273 *i* P **P** **19 40 32.7 +2.5**
DIGO Kars 21.43 280 *i* P **P** **19 40 31.7 +1.3**
GOF Gofitskoye 21.45 293 ⇑*i*P **P** **19 40 30.6 +0.2**
GOF *e*S **S** **19 44 28.8 +1.3**
GOF pmax pmax
comp=Z,2μm,0.8s
GOF smax smax
comp=E,2μm,1.5s
GOF smax smax
comp=N,787nm,1.0s
KBZ Khabaz 21.53 289 P **P** **19 40 29.8 -1.3**
comp=N,164nm,0.9s,baz=121,slow=7.6,SNR=122
KBZ S Sn 19 44 33.9 -3.5
comp=N,125nm,0.8s,baz=305,slow=23,SNR=3.7
KBZ LR LR 19 51 12.1
comp=N,70μm,18.0s,baz=96,slow=43
VMUR Van-Muradiye 21.53 276 *i* P **P** **19 40 33.6 +2.1**
SOKR Solikamsk 21.55 339 *d iP* **P** **19 40 29.5 -1.7**
SOKR S **S** **19 44 23.6 -5.4**
SOKR pmax pmax
comp=Z,368nm,1.2s
POO Poona 21.65 174 ⇑*iP* **P** **19 40 30.0 -2.7**
comp=Z,85nm,1.0s
POO *i* PP **PnPn** **19 40 59.0 +5.4**
POO *i* PPP PPP 19 41 09.0
POO *e*PCP PcP 19 44 24.0 -10
POO *i* S **S** **19 44 35.0 +3.4**
POO *e*LQ LQ 19 44 58.0
POO *i* SS SnSn 19 45 17.5 +21
POO *i* SSS SSS 19 45 32.0
POO *e*LR LR 19 46 03.5
POO *i* PCS PcS 19 48 02.0 -10
POO Poona 21.65 174 *e*P **P** **19 40 32.3 -0.4**
POO IAmb IAmb 19 40 37.2
comp=Z,619nm,0.9s
NEY Neytrino 21.66 288 *i* P **P** **19 40 32.9 +0.1**
NEY pmax pmax
comp=Z,153nm,0.7s
NEY MLR MLR
comp=Z,27μm,16.0s
KVAR Kislovodsk Arr 21.67 290 P **P** **19 40 32.2 -0.7**
comp=Z,204nm,0.8s,baz=99,slow=11,SNR=110
KVAR LR LR 19 51 07.5
comp=Z,47μm,19.3s,baz=81,slow=43
KIV Kislovodsk 21.68 290 *i* P **P** **19 40 32.0 -0.9**
SNR=258
KIV Kislovodsk 21.68 290 *i* P **P** **19 40 32.0 -0.9**
SNR=258
KIV Kislovodsk 21.68 290 *c iP* **P** **19 40 31.8 -1.0**
KIV *e* 19 40 53.5
KIV *e*S **S** **19 44 27.7 -4.4**
KIV pmax pmax
comp=Z,538nm,1.0s
KIV MLR MLR
comp=Z,48μm,17.0s
KIV Kislovodsk 21.68 290 P **P** **19 40 31.9 -1.0**
SNR=272
KIV Kislovodsk 21.68 290 P **P** **19 40 31.9 -1.0**
SNR=272
KIV P **P** **19 40 31.9 -1.0**
SNR=272
KIV P **P** **19 40 31.9 -1.0**
SNR=272
KIV Kislovodsk 21.68 290 *e*P **P** **19 40 31.2 -1.7**
comp=Z,1μm,0.8s
KIV LR LR
comp=Z,38μm,21.0s
GTA Gaotai 21.74 83 ⇑P **P** **19 40 34.8 +1.2**
GTA pP pP 19 40 39.5 +0.3
GTA sP sP 19 40 41.8 +0.1
GTA S **S** **19 44 33.8 +0.4**
GTA pmax pmax
comp=Z,190nm,1.4s
GTA pmax pmax
comp=Z,5μm,7.7s
GTA LR LR
comp=Z,31μm,15.7s
GTA LR LR
comp=Z,26μm,13.8s
GTA LR LR
comp=Z,34μm,18.5s
TVAN Van 21.76 275 *i* P **P** **19 40 36.6 +2.7**
SRSP Sriramsagar 21.96 162 *e*P **P** **19 40 35.6 -0.4**
SRSP IAmb IAmb 19 40 39.7
comp=Z,476nm,0.6s
TUTA Tutak 22.02 277 *i* P **P** **19 40 37.9 +1.0**
GEVA Gevas 22.07 274 *i* P **P** **19 40 38.8 +1.5**
CHVG Ch'k'valeri 22.15 286 P **P** **19 40 38.8 +0.9**
RPR Rampur 22.26 160 *e*P **P** **19 40 41.4 +2.1**
RPR IAmb IAmb 19 40 46.6
comp=Z,701nm,0.7s
SHL Shillong 22.39 124 *e*P **P** **19 40 41.1 +0.3**
SHL IAmb IAmb 19 40 43.4
comp=Z,346nm,0.7s
SHL *e*S **S** **19 44 45.5 -0.6**
ARTV Artvin 22.41 282 *i* P **P** **19 40 42.0 +1.1**
DAGI Agillar 22.43 282 *i* P **P** **19 40 42.4 +1.3**
KLRI Killari 22.45 167 *e*P **P** **19 40 40.6 -0.7**
KLRI IAmb IAmb 19 40 50.2
comp=Z,717nm,0.7s
DDEM Demirkent 22.58 282 *i* P **P** **19 40 43.9 +1.2**
DBOC Borcka 22.59 283 *i* P **P** **19 40 43.5 +0.9**
HOMI Horasan 22.60 279 *i* P **P** **19 40 44.8 +1.8**
SIRN S¨–rnak 22.77 273 *i* P **P** **19 40 45.5 +0.8**
ERZM Erzurum 23.03 279 *i* P **P** **19 40 50.4 +2.9**
BWNR Bhubaneshwar 23.28 144 *e*P **P** **19 40 51.3 +1.5**
MOY Mondy 23.36 51 *e*P **P** **19 40 52.3 +1.7**
MOY pmax pmax
comp=Z,803nm,2.9s
BNGL BINGOL 23.38 277 *i* P **P** **19 40 54.7 +3.6**
VRH Novokhopyorsk 23.39 308 *e*P **P** **19 40 51.2 +0.4**
VRH pmax pmax
comp=Z,260nm,0.6s
VRH MLR MLR
comp=Z,4μm,11.0s
HYBB Hyderabad (bro 23.47 163 *e*P **P** **19 40 53.1 +1.3**
HYBB IAmb IAmb 19 40 55.8
comp=Z,316nm,1.1s
HYB Hyderabad 23.47 163 ⇑*i*P **P** **19 40 50.5 -1.3**
comp=Z,400nm,1.0s
HYB *e*S **S** **19 45 02.0 -2.4**
HYB LR LR
comp=Z,116nm,16.0s
HYB Hyderabad 23.47 163 *e*P **P** **19 40 51.3 -0.5**
BTMN Batman 23.54 274 *i* P **P** **19 40 55.2 +2.7**
KOPT Kop Dagi 23.66 280 *i* P **P** **19 40 56.9 +3.0**
SOC Sochi 23.84 289 *c iP* **P** **19 40 54.7 -0.5**
SOC *e*PPP PPP 19 41 28.1
SOC *i* S **S** **19 45 10.8 +0.8**
SOC *e*SSS SSS 19 46 05.3
SOC pmax pmax
comp=Z,207nm,0.7s
SOC MLR MLR
comp=Z,41μm,16.0s
MACK Trabzon 24.06 282 *i* P **P** **19 41 00.2 +2.8**
MARD Mardin 24.07 273 *i* P **P** **19 40 59.3 +1.7**
CHLP Challavanipeta 24.14 150 *e*P **P** **19 41 00.1 +1.9**
CHLP IAmb IAmb 19 41 02.1
comp=Z,2μm,1.5s
DIYA Diyarbakir 24.41 275 *i* P **P** **19 41 02.9 +2.3**
ZAK Zakamensk 24.42 55 *e*P **P** **19 41 03.2 +2.6**
ZAK pmax pmax
comp=Z,349nm,1.0s
PVM Polavaram 24.45 156 *e*P **P** **19 41 02.1 +1.1**
PVM IAmb IAmb 19 41 07.4
comp=Z,503nm,0.9s
NJS Nagarjunasagar 24.48 162 *e*P **P** **19 41 01.5 +0.3**
NJS IAmb IAmb 19 41 08.5
comp=Z,432nm,0.9s
TNCL Tunceli-Merkez 24.57 278 *i* P **P** **19 41 03.7 +1.6**
KELT Kelkit 24.58 281 *i* P **P** **19 41 03.8 +1.6**
VIS Vishakhapatnam 24.59 152 *i* P **P** **19 41 02.0 -0.2**
VIS *i* S **S** **19 45 22.8 +0.5**
VIS *i* S S 19 45 24.9 +2.6
MZRK Al-Mazaregh 24.63 270 *e*P **P** **19 41 05.2 +2.7**
SRLM Srisailam 24.82 163 *e*P **P** **19 41 04.1 -0.3**
SRLM IAmb IAmb 19 41 08.1
comp=Z,367nm,0.8s
SFNV Sufian 24.85 271 *e*P **P** **19 41 06.1 +1.5**
TLY Talaya 24.95 52 P **P** **19 41 07.3 +1.9**
comp=Z,24nm,0.5s,baz=252,slow=8.7,SNR=48
TLY Lg Lg 19 48 58.6
comp=Z,26nm,1.1s,baz=357,slow=17,SNR=3.7
TLY LR LR 19 51 51.9
comp=Z,70μm,19.6s,baz=260,slow=39
TLY Talaya 24.95 52 *c iP* **P** **19 41 07.0 +1.7**
TLY *e*S **S** **19 45 26.2 -1.5**
TLY *e*SSS SSS 19 46 21.6
TLY pmax pmax
comp=Z,280nm,1.3s
TLY MLR MLR
comp=Z,59μm,19.0s
TLY Talaya 24.95 52 *e*P **P** **19 41 07.2 +1.9**
comp=Z,312nm,1.1s
TLY *e* 19 48 58.6
VSR Storozhevoye 24.95 307 *e*P **P** **19 41 03.7 -1.6**
VSR *e*S **S** **19 45 24.5 -3.2**
VSR pmax pmax
comp=Z,240nm,0.6s
VSR smax smax
comp=N,9μm,6.0s
VSR MLR MLR
comp=Z,80μm,16.0s
REFA Refahiye_ERZ¨ **25.10 279** *i* P **P** **19 41 08.2 +1.3**
ELZG Elazig 25.14 277 *i* P **P** **19 41 09.2 +1.9**
GRSN GIRESUNGRSN 25.19 283 *i* P **P** **19 41 10.4 +2.8**
ADKI Addanki 25.32 161 *e*P **P** **19 41 09.6 +0.7**
ADKI IAmb IAmb 19 41 14.9
comp=Z,385nm,0.8s
KEMA Kemaliye 25.33 279 *i* P **P** **19 41 10.8 +1.9**
SUSE Susehri 25.36 281 *i* P **P** **19 41 10.9 +1.6**
ANN Anapa 25.43 292 *e*P **P** **19 41 07.3 -2.4**
ANN *i* *PP **pP** **19 41 10.6 -5.0**
ANN *i* S **S** **19 45 34.8 -0.7**
ANN pmax pmax
comp=Z,568nm,1.3s
ANN pmax pmax
comp=N,169nm,1.4s
ANN pmax pmax
comp=E,165nm,1.4s
ANN MLR MLR
comp=E,46μm,20.0s
ANN MLR MLR
comp=Z,38μm,20.0s
ANN MLR MLR
comp=N,55μm,20.0s
RCLA Racherla 25.45 163 *e*P **P** **19 41 09.9 -0.2**
RCLA IAmb IAmb 19 41 19.3
comp=Z,407nm,0.7s
IRK Irkutsk 25.47 51 ⇓*iP* **P** **19 41 11.8 +1.8**
IRK *e* 19 41 51.7
IRK *e*S **S** **19 45 44.4 +8.4**
IRK *e* 19 46 41.1
IRK pmax pmax
comp=Z,511nm,1.3s
ORDU Ordu-Boztepe 25.48 283 *i* P **P** **19 41 13.0 +2.8**
URV Uravakonda 25.61 167 *e*P **P** **19 41 12.6 +1.0**
URV IAmb IAmb 19 41 17.1
comp=Z,130nm,0.6s
LZH Lanzhou 25.69 89 ⇑P **P** **19 41 14.3 +2.0**
LZH pP sP 19 41 21.0 +0.4
LZH sP pP 19 41 24.1 +5.9
LZH PP **PnPn** **19 41 53.0 +4.3**
LZH S **S** **19 45 42.0 +2.0**
LZH sS sS 19 45 50.0 +0.2
LZH SS **SnSn** **19 46 45.3 +11**
LZH pmax pmax
comp=Z,310nm,1.0s
LZH pmax pmax
comp=Z,5μm,8.3s
LZH LR LR
comp=Z,34μm,11.4s
LZH LR LR
comp=Z,28μm,11.7s
LZH LR LR
comp=Z,72μm,14.0s
CUZAR Zara_SIVAS 25.75 280 *i* P **P** **19 41 14.7 +1.9**
KSRV Kasrt alli 25.88 271 *e*P **P** **19 41 15.6 +1.7**

ATAB	**Bozova**	**25.93**	**275**	*i*	P	**P**	**19 41 16.4 +2.1**
SHAO	**Shalim**	**25.97**	**216**		P	**P**	**19 41 16.1 +1.2**
	SNR=12						
SHAO	**Shalim**	**25.97**	**216**		P	**P**	**19 41 16.1 +1.2**
	SNR=12						
AKCD	**Akcadag**	**25.99**	**277**	*i*	P	**P**	**19 41 17.4 +2.3**
SONA0	**Songino Array**	**26.08**	**61**	*e*	P	**P**	**19 41 16.7 +1.0**
	comp=Z,177nm,0.8s						
SONA0				*e*	PcP	**PcP**	**19 44 43.2 +0.2**
SONA0				*e*	ScP	**ScP**	**19 48 22.0 +0.5**
SONA0				*e*			20 14 03.6
SONM	**Songino Array**	**26.08**	**61**		P	**P**	**19 41 16.7 +1.0**
	comp=Z,92nm,0.6s,baz=270,slow=7.0,SNR=262						
SONM					PcP	**PcP**	**19 44 43.2 +0.2**
	comp=Z,19nm,0.9s,baz=226,slow=2.2,SNR=3.8						
SONM					ScP	**ScP**	**19 48 22.0 +0.5**
	comp=Z,19nm,0.9s,baz=253,slow=2.8,SNR=5.0						
SONM					LR	LR	19 52 45.3
	comp=Z,32µm,20.2s,baz=272,slow=39						
SONM					P3KPbc		20 14 03.6
	comp=Z,1.3nm,0.9s,baz=96,slow=3.8,SNR=2.9						
SONA1	**Songino Array**	**26.08**	**61**	*e*	P	**P**	**19 41 16.1 +0.3**
CUKAN	**kangal_SIVAS**	**26.10**	**279**	*i*	P	**P**	**19 41 17.8 +1.8**
SCER	**sogukcermik**	**26.24**	**281**	*i*	P	**P**	**19 41 19.2 +1.9**
ERBA	**Erbaa**	**26.36**	**283**	*i*	P	**P**	**19 41 19.4 +1.1**
JHLN	**Al Jahlan**	**26.37**	**271**	*e*	P	**P**	**19 41 21.2 +2.8**
GZT	**Gaziantep**	**26.52**	**275**	*i*	P	**P**	**19 41 21.7 +1.9**
TOKA	**Tokat**	**26.63**	**282**	*i*	P	**P**	**19 41 24.4 +3.7**
CUALT	**Altinyayla-SIV**	**26.64**	**279**	*i*	P	**P**	**19 41 22.7 +1.8**
SAMS	**Samsun-Alacam**	**26.67**	**284**	*i*	P	**P**	**19 41 21.9 +1.0**
CUSAR	**Sarkisla-SIVAS**	**27.00**	**280**	*i*	P	**P**	**19 41 25.8 +1.7**
HCB	**Kahramanmara˜**	**27.02**	**275**	*i*	P	**P**	**19 41 25.5 +1.3**
HAVZ	**Havza**	**27.07**	**284**	*i*	P	**P**	**19 41 26.0 +1.5**
KUZU	**Kuzuini**	**27.07**	**274**	*i*	P	**P**	**19 41 26.5 +1.8**
RBK	**Rabkut**	**27.09**	**219**		P	**P**	**19 41 25.5 +0.6**
	SNR=37						
RBK	**Rabkut**	**27.09**	**219**		P	**P**	**19 41 25.5 +0.6**
	SNR=37						
MOS	**Moscow**	**27.18**	**316**	*c*	*i*P	**P**	**19 41 25.7 +0.4**
MOS					*e*		19 41 34.3
MOS					*e*		19 42 09.7
MOS					*e*		19 44 47.5
MOS					*e*S	**S**	**19 46 01.3 -1.5**
MOS					pmax	pmax	
	comp=E,190nm,0.9s						
MOS					pmax	pmax	
	comp=N,104nm,0.9s						
MOS					pmax	pmax	
	comp=Z,357nm,1.1s						
MOS					pmax	pmax	
	comp=Z,900nm,1.8s						
MOS					smax	smax	
	comp=E,4µm,5.2s						
MOS					smax	smax	
	comp=N,7µm,5.2s						
MOS					MLR	MLR	
	comp=N,41µm,15.0s						
MOS					MLR	MLR	
	comp=Z,128µm,15.0s						
SKHT	**Srikalahasti**	**27.28**	**162**	*e*	P	**P**	**19 41 27.4 +0.8**
SKHT					IAmb	IAmb	19 41 34.4
	comp=Z,146nm,0.7s						
ANDN	**Andirin**	**27.39**	**276**	*i*	P	**P**	**19 41 29.0 +1.4**
DRWC	**Darouich**	**27.43**	**274**	*e*	P	**P**	**19 41 28.2 +0.4**
OBN	**Obninsk**	**27.53**	**315**		P	**P**	**19 41 28.6 +0.1**
	comp=Z,161nm,0.5s,baz=49,slow=3.1,SNR=28						
OBN					LR	LR	19 53 38.5
	comp=Z,61µm,19.0s,baz=98,slow=39						
OBN	**Obninsk**	**27.53**	**315**	*c*	*i*P	**P**	**19 41 28.5 0.0**
OBN					*e*		19 42 14.2
OBN					*e*PPP	PPP	19 42 24.2
OBN					*e*S	**S**	**19 46 05.2 -3.2**
OBN					pmax	pmax	
	comp=Z,353nm,1.2s						
OBN					MLR	MLR	
	comp=Z,80µm,16.0s						
OBN	**Obninsk**	**27.53**	**315**	*e*	P	**P**	**19 41 28.1 -0.4**
	comp=Z,1µm,1.2s						
OBN					LR	LR	
	comp=Z,74µm,22.0s						
BOYT	**Boyabat**	**27.61**	**285**	*i*	P	**P**	**19 41 31.7 +2.2**
CD2	**Chengdu**	**27.70**	**99**	⇑	P	**P**	**19 41 32.3 +1.9**
CD2					pP	pP	19 41 34.4 -1.9
CD2					PcP	**PcP**	**19 44 49.3 +2.3**
CD2					S	**S**	**19 46 17.0 +5.3**
CD2					sS	sS	19 46 19.9 -1.5
CD2					pmax	pmax	
	comp=Z,170nm,0.9s						
CD2					pmax	pmax	
	comp=Z,4µm,7.7s						
CD2					LR	LR	
	comp=Z,53µm,15.1s						
CD2					LR	LR	
	comp=Z,35µm,12.9s						
CD2					LR	LR	
	comp=Z,31µm,13.1s						
I43RU	**DUBNA INFRASON**	**27.75**	**318**	*i*			22 15 20.0
	baz=115,slow=316,SNR=0.5						
COAL	**Corum-Alaca**	**27.77**	**282**	*i*	P	**P**	**19 41 32.9 +1.9**
SIM	**Simferopol'**	**27.79**	**292**	*c*	*i*P	**P**	**19 41 30.2 -0.7**
SIM					*e*S	**S**	**19 46 12.0 -0.7**
SIM					pmax	pmax	
	comp=Z,525nm,1.0s						
ROOS	**tl_alroos**	**27.80**	**269**	*e*	P	**P**	**19 41 32.8 +1.5**
CTAK	**Corum_Osmancik**	**27.83**	**283**	*i*	P	**P**	**19 41 33.0 +1.4**
YAHY	**KAYSERI_Yahyal**	**27.99**	**278**	*i*	P	**P**	**19 41 34.6 +1.6**
YAYL	**Yayladag**	**28.04**	**273**	*i*	P	**P**	**19 41 32.9 -0.6**
MDRS	**Chennai**	**28.06**	**162**	*e*	P	**P**	**19 41 34.1 +0.6**
MDRS					IAmb	IAmb	19 41 44.7
	comp=Z,96nm,0.9s						
AKO	**Adana**	**28.11**	**276**	*i*	P	**P**	**19 41 35.6 +1.7**
YURE	**YUREGIR**	**28.15**	**275**	*i*	P	**P**	**19 41 36.3 +1.9**
ZALF	**Zalf**	**28.26**	**266**	*e*	P	**P**	**19 41 36.4 +1.1**
CDAG	**Cicekdag**	**28.36**	**281**	*i*	P	**P**	**19 41 37.6 +1.3**
FKH	**Fakeheh**	**28.44**	**269**	*e*	P	**P**	**19 41 38.2 +1.2**
MARH	**Ras Al Marh**	**28.47**	**269**	*e*	P	**P**	**19 41 39.5 +2.0**
KLMR	**Klimovskoe**	**28.56**	**327**	*e*	P	**P**	**19 41 36.0 -1.6**
KLMR					pmax	pmax	
	comp=Z,442nm,1.5s						
ILGA	**Ilgaz**	**28.56**	**284**	*i*	P	**P**	**19 41 39.6 +1.5**
DED	**Mersin**	**28.75**	**276**	*i*	P	**P**	**19 41 41.5 +1.8**
TOTH	**TOTAH**	**28.77**	**268**	*e*	P	**P**	**19 41 41.5 +1.5**
HWQ	**Hawqa**	**28.78**	**270**	*e*	P	**P**	**19 41 41.2 +1.2**
SALA	**Sala**	**28.81**	**266**	*e*	P	**P**	**19 41 42.3 +1.9**
QASN	**Qassioun**	**28.82**	**268**	*e*	P	**P**	**19 41 41.7 +1.4**
ELDT	**Eldivan**	**28.88**	**283**	*i*	P	**P**	**19 41 43.0 +2.1**
BR101	**Keskin Array S**	**28.89**	**282**	*e*	P	**P**	**19 41 41.4 +0.3**
BR131	**Keskin Array S**	**28.89**	**282**	*e*	P	**P**	**19 41 41.2 +0.1**
BRTR	**Keskin Array B**	**28.89**	**282**		P	**P**	**19 41 41.4 +0.3**
	comp=Z,70nm,0.7s,baz=90,slow=6.2,SNR=165						
BRTR					LR	LR	19 55 02.0
	comp=Z,12µm,18.6s,baz=62,slow=40						
ASF	**Jabal al Asfar**	**28.91**	**265**		P	**P**	**19 41 41.9 +0.7**
	comp=Z,31nm,0.8s,baz=17,slow=4.5,SNR=39						
ASF					LR	LR	19 54 55.5
	comp=Z,9µm,20.8s,baz=27,slow=40						
AKSY	**AKSARAY - Alti**	**29.06**	**279**	*i*	P	**P**	**19 41 44.0 +1.5**
KERG	**Konya-Eregli**	**29.12**	**277**	*i*	P	**P**	**19 41 44.2 +1.1**
BHL	**Bhannes**	**29.15**	**269**	*e*	P	**P**	**19 41 45.0 +1.7**
RCY	**Rachaya**	**29.17**	**268**	*e*	P	**P**	**19 41 44.9 +1.3**
BTO	**Baotou**	**29.19**	**76**	*e*	P	**P**	**19 41 44.9 +1.3**
DQRL	**Deir Qamar**	**29.29**	**269**	*e*	P	**P**	**19 41 46.0 +1.4**
BBAL	**Bala**	**29.32**	**281**	*i*	P	**P**	**19 41 46.0 +1.2**
KIZK	**Mersin**	**29.40**	**275**	*i*	P	**P**	**19 41 46.6 +1.2**
TCHB	**Talchebab**	**29.41**	**267**	*e*	P	**P**	**19 41 47.9 +2.4**
ANTO	**Ankara**	**29.49**	**282**	*e*	P	**P**	**19 41 46.8 +0.5**
ANTO					pmax	pmax	
	comp=Z,539nm,1.3s						
ANTO	**Ankara**	**29.49**	**282**	*e*	P	**P**	**19 41 46.8 +0.5**
	comp=Z,539nm,1.3s						
BR231	**Keskin MP Arra**	**29.51**	**282**	*e*	P	**P**	**19 41 41.7 -4.8**
BTIN	**Bart¨–n**	**29.54**	**286**	*i*	P	**P**	**19 41 47.6 +1.1**
KKUL	**Konya-Kulu**	**29.57**	**281**	*i*	P	**P**	**19 41 48.2 +1.2**
MMAI	**Mount Meron Ar**	**29.70**	**268**		P	**P**	**19 41 49.3 +1.2**
	comp=Z,14nm,0.5s,baz=64,slow=9.4,SNR=35						
MMAI					PcP	**PcP**	**19 44 52.2 +0.2**
	comp=Z,21nm,0.7s,baz=41,slow=2.9,SNR=5.0						
MMAI					ScP	**ScP**	**19 48 32.0 -0.8**
	comp=Z,31nm,1.1s,baz=68,slow=4.9,SNR=3.8						
MMAI					LR	LR	19 56 43.9
	comp=Z,15µm,19.5s,baz=55,slow=42						
BCAM	**Yenicaga**	**29.83**	**284**	*i*	P	**P**	**19 41 50.7 +1.4**
PHNC	**Paralimni**	**29.98**	**272**		P	**P**	**19 41 51.1 +0.5**
KMI	**Kunming**	**30.09**	**110**		P	**P**	**19 41 53.3 +1.5**
KMI					pP	pP	19 41 58.4 +0.6
KMI					PP	**PnPn**	**19 42 47.5 -1.5**
KMI					S	**S**	**19 46 48.5 -1.1**
KMI					pmax	pmax	
	comp=Z,53nm,1.6s						
KMI					pmax	pmax	
	comp=Z,2µm,13.5s						
KMI					LR	LR	
	comp=Z,18µm,16.5s						
KMI					LR	LR	
	comp=Z,22µm,15.4s						
KMI					LR	LR	
	comp=Z,27µm,16.5s						
ERMK	**Ermenek**	**30.29**	**276**	*i*	P	**P**	**19 41 54.5 +1.0**
HHC	**Hu-ho-hao-te**	**30.29**	**75**	⇑	P	**P**	**19 41 54.9 +1.6**
HHC					S	**S**	**19 46 53.0 +0.7**
HHC					pmax	pmax	
	comp=Z,2µm,5.3s						
HHC					LR	LR	
	comp=N,28µm,16.3s						
HHC					LR	LR	
	comp=E,30µm,11.2s						
HHC	**Hu-ho-hao-te**	**30.29**	**75**	*e*	P	**P**	**19 41 54.8 +1.5**
HHC					S	**S**	**19 46 53.6 +1.3**
HHC					SS	**ScP**	**19 48 33.8 -0.9**
HHC					pmax	pmax	
	comp=E,38nm,1.0s						
HHC					pmax	pmax	
	comp=E,2µm,4.5s						
HHC					LR	LR	
	comp=E,28µm,12.2s						
HHC					LR	LR	
	comp=E,29µm,12.6s						
HHC					LR	LR	
	comp=E,31µm,12.3s						
XAN	**Xi'an**	**30.30**	**90**		P	**P**	**19 41 53.9 +0.4**
XAN					pP	pP	19 41 58.9 -0.5
XAN					sP	sP	19 42 01.4 -0.5
XAN					PP	**PnPn**	**19 42 54.9 +3.3**
XAN					S	**S**	**19 46 53.9 +1.3**
XAN					sS	sS	19 47 01.4 -1.0
XAN					SS	**ScP**	**19 48 34.6 -0.1**
XAN					pmax	pmax	
	comp=E,130nm,1.2s						
XAN					pmax	pmax	
	comp=E,2µm,9.9s						
XAN					LR	LR	
	comp=E,24µm,13.2s						
XAN					LR	LR	
	comp=E,32µm,17.2s						
XAN					LR	LR	
	comp=E,36µm,17.9s						
KDHN	**Kadinhani**	**30.34**	**280**	*i*	P	**P**	**19 41 54.5 +0.7**
KMER	**Konya-Meram**	**30.36**	**278**	*i*	P	**P**	**19 41 55.1 +1.1**
NRIK	**Noril'sk**	**30.47**	**11**		P	**P**	**19 41 55.5 +1.1**
	comp=E,149nm,0.8s,baz=198,slow=6.3,SNR=33						
NRIK					LR	LR	19 55 55.6
	comp=E,82µm,19.9s,baz=204,slow=40						
NRIK	**Noril'sk**	**30.47**	**11**		P	**P**	**19 41 55.5 +1.1**
NRIK					pmax	pmax	
	comp=Z,149nm,0.8s						
NRIK					MLR	MLR	
	comp=Z,82µm,19.9s						
CSS	**Mathiatis**	**30.54**	**273**		P	**P**	**19 41 56.9 +1.4**
CSS	**Mathiatis**	**30.54**	**273**		P	**P**	**19 41 54.6 -0.9**
CSS	**Mathiatis**	**30.54**	**273**	*e*	P	**P**	**19 41 54.3 -1.2**
	comp=Z,19nm,0.9s						
CSS					LR	LR	
	comp=Z,3µm,20.0s						
MAMC	**Mammari**	**30.55**	**273**		P	**P**	**19 41 57.5 +1.9**
BTAS	**Taskesti**	**30.67**	**284**	*i*	P	**P**	**19 41 57.8 +1.1**
SAHE	**Sakarya_HENDEK**	**30.72**	**285**	*i*	P	**P**	**19 41 58.0 +0.9**
GAZI	**Gazipasa**	**30.87**	**275**	*i*	P	**P**	**19 41 58.9 +0.5**
SZAC	**Souni**	**30.95**	**272**		P	**P**	**19 41 59.7 +0.5**
CMAI	**Chiengmai2**	**31.02**	**122**		P	**P**	**19 42 00.3 +0.3**
	comp=Z,1µm,0.9s,comp=Z,46µm						
ALFC	**Alefka**	**31.03**	**273**		P	**P**	**19 42 00.4 +0.6**
ESKT	**Eskisehir**	**31.03**	**282**	*i*	P	**P**	**19 42 00.9 +1.0**
CIT	**Chita**	**31.05**	**53**	*e*	P	**P**	**19 42 01.0 +1.1**
CIT				*e*			19 43 04.2
CIT				*e*			19 43 24.0
CIT					pmax	pmax	
	comp=Z,346nm,0.9s						
AKASG	**Malin Array Be**	**31.09**	**304**		P	**P**	**19 41 60.0 -0.2**
	comp=Z,60nm,0.5s,baz=78,slow=7.4,SNR=123						
AKASG					LR	LR	19 57 18.9
	comp=Z,44µm,18.1s,baz=100,slow=42						
AKASG	**Malin Array Be**	**31.09**	**304**		P	**P**	**19 42 00.0 -0.2**
AKBB	**Malin Array Si**	**31.09**	**304**	*e*	P	**P**	**19 41 59.6 -0.6**
AKBB					pmax	pmax	
	comp=Z,306nm,0.8s						
AKBB	**Malin Array Si**	**31.09**	**304**	*e*	P	**P**	**19 41 59.6 -0.6**
	comp=Z,306nm,0.8s						
KIEV	**Kiev**	**31.10**	**304**	*c*	*i*P	**P**	**19 41 59.7 -0.5**
KIEV					pmax	pmax	
	comp=Z,90nm,0.6s						
KIEV					MLR	MLR	
	comp=Z,58µm,15.0s						
KIEV	**Kiev**	**31.10**	**304**	*e*	P	**P**	**19 41 59.6 -0.7**
	comp=Z,298nm,0.7s						
KIEV					LR	LR	
	comp=Z,35µm,20.0s						
AK11	**Malin Array Si**	**31.13**	**304**	*e*	P	**P**	**19 41 59.5 -0.9**
KAND	**Kocaeli-Kandir**	**31.16**	**285**	*i*	P	**P**	**19 42 02.5 +1.6**
BOLV	**Bolvadin**	**31.16**	**281**	*i*	P	**P**	**19 42 03.0 +1.8**
BORA	**Eskisehir**	**31.24**	**283**	*i*	P	**P**	**19 42 02.5 +0.8**
AKMC	**Akamas**	**31.28**	**273**		P	**P**	**19 42 01.9 -0.1**
PPCY	**Paphos**	**31.32**	**273**		P	**P**	**19 42 02.7 +0.4**
KIS	**Kishinev**	**31.36**	**297**	*e*	P	**P**	**19 42 01.0 -1.6**
	comp=Z,2µm,10.0s						
KIS	**Kishinev**	**31.36**	**297**	*i*	PP	**PnPn**	**19 43 00.0 -5.1**
KIS	**Kishinev**	**31.36**	**297**	*e*	PcP	**PcP**	**19 44 53.0 -3.0**
KIS				*i*	S	**S**	**19 47 06.0 -2.7**
	comp=Z,6µm,12.0s						
KIS	**Kishinev**	**31.36**	**297**	⇑	*i*P	**P**	**19 42 02.6 0.0**
KIS	**Kishinev**	**31.36**	**297**	*e*	P	**P**	**19 42 01.0 -1.6**
KIS				*i*			19 43 00.0
KIS				*e*	PPP	PPP	19 43 15.0
KIS				*e*			19 44 53.0
KIS				*i*	S	**S**	**19 47 06.0 -2.7**
KIS				*i*	SS	**SnSn**	**19 49 00.0 +7.5**
KIS					pmax	pmax	
	comp=Z,2µm,10.0s						
KIS					pmax	pmax	
	comp=Z,2µm,16.0s						
KIS					pmax	pmax	
	comp=Z,2µm,1.0s						
KIS					smax	smax	
	comp=N,6µm,12.0s						
KIS					smax	smax	
	comp=E,5µm,12.0s						
BAGO	**Egridir - ISPA**	**31.49**	**279**	*i*	P	**P**	**19 42 05.0 +1.0**
EIL	**Elat**	**31.55**	**262**		P	**P**	**19 42 05.5 +1.0**
	comp=E,244nm,0.7s,baz=38,slow=4.7,SNR=116						
EIL					LR	LR	19 57 38.8
	comp=E,22µm,19.1s,baz=73,slow=42						
SORM	**Soroca**	**31.63**	**299**	⇑	*i*P	**P**	**19 42 04.7 -0.2**
TIY	**Taiyuan**	**31.74**	**81**	*e*	P	**P**	**19 42 07.3 +1.2**
TIY					S	**S**	**19 47 07.8 -7.2**
TIY					ScS	**ScS**	**19 52 33.0 -4.7**
TIY					pmax	pmax	
	comp=E,120nm,0.9s						
TIY					pmax	pmax	
	comp=E,2µm,9.3s						
TIY					LR	LR	
	comp=E,28µm,13.0s						
TIY					LR	LR	
	comp=E,15µm,11.7s						
TIY					LR	LR	
	comp=E,31µm,13.6s						
ISP	**Isparta**	**31.74**	**279**		PFAKE		19 42 20.0 +14
ISP					LR	LR	
	comp=Z,17µm,19.0s						
CHTO	**Chiang Mai**	**31.77**	**124**		P	**P**	**19 42 06.8 +0.4**
	comp=Z,200nm,1.5s,comp=Z,7µm						
CHTO	**Chiang Mai**	**31.77**	**124**	*e*	P	**P**	**19 42 05.3 -1.1**
CHTO					pmax	pmax	
	comp=Z,62nm,0.9s						
CHTO					MLR	MLR	
	comp=Z,32µm,22.0s						
CHTO	**Chiang Mai**	**31.77**	**124**	*e*	P	**P**	**19 42 05.3 -1.1**
	comp=Z,62nm,0.9s						
CHTO					LR	LR	
	comp=Z,32µm,22.0s						
CMMT	**Chiang Mai**	**31.77**	**124**		P	**P**	**19 42 06.7 +0.2**
	comp=Z,88nm,1.2s,comp=Z,2µm						
LEOM	**Leova**	**31.79**	**296**	⇑	*i*P	**P**	**19 42 06.9 +0.6**
TIRR	**Tirgusor**	**31.88**	**292**	⇑	*i*P	**P**	**19 42 07.6 +0.4**
TIRR	**Tirgusor**	**31.88**	**292**	*e*	P	**P**	**19 42 07.3 +0.1**
TIRR					pmax	pmax	
	comp=Z,85nm,0.9s						
TIRR	**Tirgusor**	**31.88**	**292**	*e*	P	**P**	**19 42 07.3 +0.1**
	comp=Z,86nm,0.9s						
TRD	**Trivandrum**	**31.89**	**170**	*e*	P	**P**	**19 42 06.8 -0.7**
TRD					IAmb	IAmb	19 42 18.7
	comp=Z,176nm,0.7s						
CFR	**Carcaliu**	**31.99**	**294**	⇓	*i*P	**P**	**19 42 08.5 +0.4**
ISK	**Istanbul-Kandi**	**32.00**	**286**		P	**P**	**19 42 08.6 +0.3**
ISK	**Istanbul-Kandi**	**32.00**	**286**		P	**P**	**19 42 08.6 +0.3**
ISK	**Istanbul-Kandi**	**32.00**	**286**		P	**P**	**19 42 08.6 +0.3**
BUY	**Buyukada**	**32.01**	**285**	*i*	P	**P**	**19 42 09.3 +0.9**
CM31	**Chiang Mai Arr**	**32.03**	**124**	*e*	P	**P**	**19 42 08.3 -0.5**
CMAR	**Chiang Mai Arr**	**32.03**	**124**		P	**P**	**19 42 08.6 -0.1**
	comp=Z,15nm,0.9s,baz=315,slow=9.1,SNR=49						
CMAR					PcP	**PcP**	**19 44 59.2 +1.0**
	comp=Z,35nm,0.9s,baz=308,slow=3.5,SNR=6.1						
CMAR					LR	LR	19 57 35.3
	comp=Z,27µm,21.4s,baz=315,slow=41						
CMAR					P3KPbc		20 13 40.3
	comp=Z,5.3nm,0.7s,baz=158,slow=3.2,SNR=33						
CM01	**Chiang Mai Arr**	**32.07**	**124**	*e*	P	**P**	**19 42 08.1 -1.0**
IGD	**Bursa**	**32.08**	**284**	*i*	P	**P**	**19 42 09.5 +0.6**
KORT	**Korkueli**	**32.12**	**278**	*i*	P	**P**	**19 42 12.4 +2.8**
TLB	**Topalu**	**32.12**	**292**	⇑	*i*P	**P**	**19 42 09.8 +0.5**
PSN	**Preselentsi**	**32.15**	**291**	*i*	P	**P**	**19 42 11.0 +1.4**
GDZ	**Gediz**	**32.17**	**282**	*i*	P	**P**	**19 42 10.6 +0.7**
GYA	**Guiyang**	**32.19**	**104**	⇑	*i*P	**P**	**19 42 11.1 +0.9**
GYA					PP	**PnPn**	**19 43 19.0 +2.8**
GYA					PcP	**PcP**	**19 45 00.8 +2.1**
GYA					S	**S**	**19 47 18.4 -3.8**
GYA					ScP	**ScP**	**19 48 42.0 +0.8**
GYA					SS	**SnSn**	**19 49 16.8 +3.5**
GYA					ScS	**ScS**	**19 52 38.9 -1.4**
GYA					pmax	pmax	
	comp=Z,110nm,1.1s						
GYA					pmax	pmax	
	comp=Z,2µm,9.6s						
GYA					LR	LR	
	comp=Z,17µm,15.8s						
GYA					LR	LR	
	comp=Z,11µm,14.6s						
GYA					LR	LR	
	comp=Z,18µm,13.7s						
HARR	**Harsova**	**32.19**	**293**	⇑	*i*P	**P**	**19 42 11.6 +1.7**
MICGM	**Minsk**	**32.29**	**311**	⇓	*e*P	**P**	**19 42 11.0 +0.4**
MICGM					PM		19 42 13.0
	comp=Z,0.2nm,1.0s						
MICGM					*e*PP	**PnPn**	**19 43 20.0 +3.0**
MICGM					*e*PPP	PPP	19 43 32.0
MICGM					*e*S	**S**	**19 47 22.0 -1.0**
MICGM					*e*SS	**SnSn**	**19 49 20.0 +5.1**
MICGM					*e*SSS	SSS	19 49 44.0
MICGM					*e*LR	LR	19 52 26.0
MICGM					LRM	MLR	19 56 16.0
	comp=N,44nm,16.0s						
MICGM					LRM	MLR	19 56 18.0
	comp=E,134nm,16.0s						
MICGM					LRM	MLR	19 56 20.0
	comp=Z,198nm,10.0s						
MICGM					LRM	MLR	19 56 26.0
	comp=Z,129nm,14.0s						
MICGM					LRM	MLR	19 56 26.0
	comp=E,133nm,10.0s						
MNK	**Minsk**	**32.29**	**311**	⇓	*e*P	**P**	**19 42 11.0 +0.4**
MNK					*e*		19 43 20.0
MNK					*e*PPP	PPP	19 43 32.0
MNK					*e*S	**S**	**19 47 22.0 -1.0**
MNK					*e*SS	**SnSn**	**19 49 20.0 +5.1**
MNK					*e*SSS	SSS	19 49 44.0
MNK					pmax	pmax	
	comp=Z,150nm,1.0s						
MNK					MLR	MLR	
	comp=N,44µm,16.0s						
MNK					MLR	MLR	
	comp=E,134µm,16.0s						
MNK					MLR	MLR	
	comp=Z,198µm,10.0s						
MNK					MLR	MLR	
	comp=E,133µm,13.0s						
MNK					MLR	MLR	
	comp=Z,129µm,14.0s						
BOD	**Bodaibo**	**32.33**	**43**	⇓	*i*P	**P**	**19 42 12.1 +1.1**
BOD					pmax	pmax	
	comp=Z,1µm,0.8s						
ENH	**Enshi**	**32.35**	**96**	*e*	P	**P**	**19 42 12.2 +0.7**
	comp=Z,143nm,0.8s						
ENH					LR	LR	
	comp=Z,17µm,19.0s						
LAMP	**Lampang**	**32.42**	**123**		P	**P**	**19 42 12.4 +0.2**
	comp=Z,84nm,0.8s,comp=Z,670nm						
GOLH	**Golhisar**	**32.65**	**279**	*i*	P	**P**	**19 42 14.9 +0.8**
ODBI	**Odobesti**	**32.68**	**295**	⇑	*i*P	**P**	**19 42 17.4 +3.3**
DEMI	**Demirci**	**32.75**	**282**	*i*	P	**P**	**19 42 15.7 +0.7**
PRD	**Provadia**	**32.80**	**290**	*i*	P	**P**	**19 42 15.3 +0.1**
DGPR	**DIGLIPUR**	**32.82**	**139**	*e*	P	**P**	**19 42 17.3 +1.7**
DGPR					IAmb	IAmb	19 42 25.5
	comp=Z,229nm,0.7s						
TESR	**Tescani**	**32.88**	**296**	⇑	*i*P	**P**	**19 42 16.6 +0.6**
AKAS	**Kas**	**32.94**	**277**	*i*	P	**P**	**19 42 16.3 -0.4**
KULA	**Kula-Manisa**	**32.94**	**281**		P	**P**	**19 42 16.1 -0.6**
KULA	**Kula-Manisa**	**32.94**	**281**		P	**P**	**19 42 16.1 -0.6**
PLOR	**Plostina**	**32.95**	**295**	⇓	*i*P	**P**	**19 42 17.9 +1.3**
JOF	**Joensuu**	**32.96**	**327**		P	**P**	**19 42 16.8 +0.4**
JOF					pmax	pmax	
	comp=Z,793nm,0.8s						
NACGM	**Naroch**	**32.98**	**312**	*e*	P	**P**	**19 42 16.0 -0.6**
NACGM				*e*	P	**P**	**19 42 16.0 -0.6**
NACGM					PM		19 42 39.0
	comp=Z,2.1nm,1.0s						
NACGM				*e*	PP	PnPn	19 43 09.0 -17
NACGM				*e*	PPP	PPP	19 44 04.0
NACGM				*e*	S	**S**	**19 47 33.0 -0.7**
NACGM				*e*	SS	**SnSn**	**19 49 36.0 +4.4**
NACGM				*e*	SSS	SSS	19 50 28.0
NACGM				*e*	LQ	LQ	19 52 36.0
NACGM				*e*	LR	LR	19 54 00.0
NACGM					LRM	MLR	19 58

PALK pmax pmax
comp=Z,52nm,0.8s
PALK MLR MLR
comp=Z,70µm,18.6s
PALK Pallekele 33.76 163 *eP* **P 19 42 24.3 +0.4**
comp=Z,97nm,0.8s
BUR08 Bucovina Ar. S 33.77 298 *eP* **P 19 42 24.0 +0.2**
DOPR Dopca 33.81 295⇑*iP* **P 19 42 25.4 +1.3**
KESN Edirne-Kesan 33.81 286 *iP* **P 19 42 25.6 +1.1**
SZH Strazhica 33.84 290 *iP* **P 19 42 24.5 +0.2**
BJI Beijing 33.90 75 P **P 19 42 25.9 +1.0**
BJI PP **PP 19 43 42.3 +0.7**
BJI S **S 19 47 50.3 +2.0**
BJI pmax pmax
comp=Z,2µm,6.3s
BJI LR LR
comp=Z,28µm,18.9s
BJI LR LR
comp=Z,39µm,17.2s
BJI LR LR
comp=Z,40µm,20.4s
BJT Baijiatuau 33.90 75 *eP* **P 19 42 25.6 +0.7**
BJT pmax pmax
comp=Z,89nm,0.7s
BJT MLR MLR
comp=Z,55µm,20.0s
BJT Baijiatuau 33.90 75 *eP* **P 19 42 25.6 +0.7**
comp=Z,89nm,0.7s
BJT *e*ScP **ScP 19 48 46.6 -0.2**
BJT LR LR
comp=Z,55µm,20.0s
PBA Port Blair 34.03 141 *eP* P 19 42 25.7 -0.5
ARG Arkhangelos 34.07 278 P **P 19 42 26.2 -0.2**
ARG Arkhangelos 34.07 278 P **P 19 42 26.2 -0.2**
ARG Arkhangelos 34.07 278 P **P 19 42 26.2 -0.2**
VOIR 34.11 295⇑*iP* **P 19 42 27.7 +0.9**
AYVA Ayvalik 34.20 283 *iP* **P 19 42 28.1 +0.7**
GCAM G?zelcaml? 34.26 280 *iP* **P 19 42 29.0 +1.0**
ALN Alexandroupoli 34.26 286 P **P 19 42 27.7 -0.3**
ALN Alexandroupoli 34.26 286 P **P 19 42 27.7 -0.3**
ALN Alexandroupoli 34.26 286 P **P 19 42 27.7 -0.3**
HUMR Humele 34.30 293⇑*iP* **P 19 42 29.3 +1.0**
BDRM Kayabasi 34.30 279 *iP* **P 19 42 28.9 +0.5**
DIM Dimitrovgrad 34.37 288 *iP* **P 19 42 30.7 +1.7**
ARCR ARCALIA 34.40 298⇑*iP* **P 19 42 31.0 +1.9**
HAJJ Hajjah 34.40 233⇓*eP* **P 19 42 31.1 +1.5**
ARR Arges 34.41 294⇑*iP* **P 19 42 30.6 +1.2**
DGB Izmir 34.42 281 *iP* **P 19 42 30.2 +0.8**
LVV L'vov 34.42 302 *eP* **P 19 42 29.5 +0.2**
LVV *e*S **S 19 47 53.3 -2.9**
APA Apatity 34.45 335⇓*iP* **P 19 42 29.8 +0.5**
APA *i* 19 43 41.0
APA *i* 19 45 12.0
APA *i* S **S 19 47 57.0 +0.7**
APA *i* SS **SnSn 19 50 15.0 +8.0**
APA pmax pmax
comp=Z,91nm,0.8s
APA MLR MLR
comp=Z,94µm,19.0s
BOZC Bozcaada 34.52 285 *iP* **P 19 42 31.5 +1.2**
PRK Paraskevi 34.52 283 P **P 19 42 30.4 +0.1**
PRK Paraskevi 34.52 283 P **P 19 42 30.4 +0.1**
PRK Paraskevi 34.52 283 P **P 19 42 30.4 +0.1**
URLA Izmir 34.54 282 *iP* **P 19 42 31.1 +0.6**
SMG Samos 34.56 281 P **P 19 42 30.0 -0.6**
SMG Samos 34.56 281 P **P 19 42 30.0 -0.6**
BDHA Al Bayda' 34.59 228⇑*eP* **P 19 42 32.1 +0.7**
PBKT Sadao Pong 34.72 124 P **P 19 42 33.1 +1.0**
comp=Z,222nm,1.4s,comp=Z,4µm
FIA1 FINESS Array S 34.73 323 *eP* **P 19 42 31.9 +0.1**
comp=Z,378nm,0.6s
FIA0 FINESS Array S 34.73 323 *eP* **P 19 42 32.3 +0.4**
FIA0 FINESS Array S 34.73 323 *eP* **P 19 42 32.2 +0.4**
FINES FINESS Array B 34.73 323 P **P 19 42 32.2 +0.4**
comp=Z,163nm,0.5s,baz=110,slow=7.1,SNR=260
FINES LR LR 19 57 29.0
comp=Z,87µm,19.4s,baz=104,slow=38
SMTH Samothraki Isl 34.75 286 P **P 19 42 32.2 -0.1**
SMTH Samothraki Isl 34.75 286 *eP* **P 19 42 32.2 -0.1**
DAMY Dhamar 34.80 231 *eP* **P 19 42 34.7 +1.4**
comp=Z,134nm,1.0s
SIGR SIGRI 34.84 284 P **P 19 42 32.6 -0.5**
SIGR SIGRI 34.84 284 *eP* **P 19 42 32.6 -0.5**
BMR Baia Mare 34.91 299⇑*iP* **P 19 42 34.8 +1.2**
CHOS Chios island 34.94 282 P **P 19 42 33.7 -0.3**
CHOS Chios island 34.94 282 P **P 19 42 33.7 -0.3**
HIA Hailar 34.95 59 *eP* **P 19 42 34.1 +0.2**
HIA pmax pmax
comp=Z,76nm,0.9s
HIA MLR MLR
comp=Z,25µm,20.0s
HIA Hailar 34.95 59 *eP* **P 19 42 34.1 +0.2**
comp=Z,76nm,0.9s
HIA LR LR
comp=Z,25µm,20.0s
CJR Cluj-Napoca 34.95 297⇑*iP* **P 19 42 35.5 +1.5**
PLD Plovdiv 34.96 289 P **P 19 42 35.0 +0.9**
PLD Plovdiv 34.96 289 *iP* **P 19 42 33.5 -0.6**
SUW Suwalki 34.98 310 *eP* **P 19 42 34.1 0.0**
SUW *e*S **S 19 48 04.7 -0.1**
SUW LMZ LR 19 59 45.0
comp=Z,79µm,16.8s
SUW Suwalki 34.98 310⇑*eP* **P 19 42 34.1 0.0**
SUW *e*S **S 19 48 04.7 -0.1**
SUW MLR MLR
comp=Z,79µm,16.8s
LOT Lotru 35.01 295⇑*iP* **P 19 42 35.4 +0.9**
KARP Karpathos 35.04 277 P **P 19 42 33.7 -1.1**
KARP Karpathos 35.04 277 *eP* **P 19 42 34.6 -0.2**
comp=Z,244nm,0.9s
NONG Nongkai 35.05 120 P **P 19 42 35.5 +0.5**
comp=Z,202nm,0.9s,comp=Z,8µm
SUF Sumiainen 35.09 325 P **P 19 42 35.6 +0.7**
SUF pmax pmax
comp=Z,1µm,0.8s
MSF Maaselka 35.13 331 P **P 19 42 35.8 +0.5**
MSF pmax pmax
comp=Z,303nm,1.0s
LIA Limnos Island 35.16 285 P **P 19 42 34.9 -0.8**
LIA Limnos Island 35.16 285 P **P 19 42 34.9 -0.8**
CRAR CRAIOVA 35.17 293 P **P 19 42 38.6 +2.8**
CRAR pmax pmax
comp=Z,856nm,0.9s
SRDT SRDT 35.28 129 P **P 19 42 38.9 +1.9**
comp=Z,516nm,1.1s,comp=Z,10µm
KWP Kalwaria Pacla 35.28 302 *eP* **P 19 42 37.5 +0.7**
KWP *e*S **S 19 48 09.5 -0.1**
KWP LMZ LR 20 00 18.7
comp=Z,82nm,16.2s
KWP Kalwaria Pacla 35.28 302⇑*eP* **P 19 42 37.5 +0.7**
KWP *e*S **S 19 48 09.5 -0.1**
KWP MLR MLR
comp=Z,82nm,16.2s
KAVA Kavala 35.36 287 P **P 19 42 37.9 +0.4**
KAVA Kavala 35.36 287 *eP* **P 19 42 37.9 +0.4**
DEV Deva 35.54 296⇑*iP* **P 19 42 40.8 +1.8**
KOLS Kolonicke sedl 35.62 301 *eP* **P 19 42 40.3 +0.7**
KOLS pmax pmax
comp=Z,68nm,1.4s
KOLS Kolonicke sedl 35.62 301 *eP* **P 19 42 40.3 +0.7**
KOLS *e*S **S 19 48 13.5 -1.2**
UZH Uzhgorod 35.63 300 *eP* **P 19 42 39.2 -0.5**
UZH *e*S **S 19 48 10.8 -4.0**
UZH MLR MLR
comp=N,20µm,13.0s
UZH MLR MLR
comp=E,46µm,13.0s
UZH MLR MLR
comp=Z,8µm,13.0s
APE Apeiranthos 35.75 280 P **P 19 42 38.6 -2.3**
APE Apeiranthos 35.75 280⇑*iP* **P 19 42 40.4 -0.5**
APE Apeiranthos 35.75 280*c iP* **P 19 42 41.2 +0.3**
APE pmax pmax
comp=Z,277nm,1.4s
APE MLR MLR
comp=Z,8µm,17.0s
APE Apeiranthos 35.75 280 *eP* **P 19 42 38.6 -2.3**
NVR Nevrokopi 35.75 288 P **P 19 42 40.1 -0.8**
NVR Nevrokopi 35.75 288 P **P 19 42 40.1 -0.8**
TIA Tai'an 35.78 81⇑P **P 19 42 42.4 +1.2**
TIA S **S 19 48 14.5 -2.9**
TIA pmax pmax
comp=Z,220nm,0.8s

TIA pmax pmax
comp=Z,3µm,3.5s
TIA LR LR
comp=Z,22µm,17.8s
TIA LR LR
comp=Z,14µm,19.0s
TIA LR LR
comp=Z,9µm,11.3s
ZKR Zakros 35.91 277 P **P 19 42 42.8 +0.5**
ZKR Zakros 35.91 277 *eP* **P 19 42 42.8 +0.5**
OUR Ouranopolis 35.92 286 P **P 19 42 40.9 -1.4**
OUR Ouranopolis 35.92 286 *eP* **P 19 42 40.9 -1.4**
OUR Ouranopolis 35.92 286 *eP* **P 19 42 40.9 -1.4**
VTS Vitosha 35.94 290 P **P 19 42 42.8 +0.2**
VTS Vitosha 35.94 290⇑*iP* **P 19 42 43.5 +0.9**
VTS Vitosha 35.94 290 *eP* **P 19 42 43.5 +0.9**
VTS pmax pmax
comp=Z,110nm,0.9s
VTS Vitosha 35.94 290 *eP* **P 19 42 42.8 +0.2**
WHN Wuhan 35.95 92⇓*eP* **P 19 42 44.0 +1.4**
WHN *s*P **sP 19 42 53.3 +2.3**
WHN PP **PP 19 44 10.4 +6.1**
WHN S **S 19 48 20.8 +0.8**
WHN pmax pmax
comp=Z,610nm,1.4s
WHN pmax pmax
comp=Z,5µm,10.6s
WHN LR LR
comp=Z,40µm,13.8s
WHN LR LR
comp=Z,19µm,7.6s
WHN LR LR
comp=Z,58µm,20.2s
OUL Oulu 36.00 329 P **P 19 42 43.3 +0.6**
OUL pmax pmax
comp=Z,763nm,0.8s
SRS Serrai 36.01 287 P **P 19 42 43.1 0.0**
SRS Serrai 36.01 287 *eP* **P 19 42 43.1 0.0**
SRS Serrai 36.01 287 *eP* **P 19 42 43.1 0.0**
SANT Santorini 36.04 279 *eP* **P 19 42 42.2 -1.2**
comp=Z,565nm,1.4s
SANT LR LR
comp=Z,14µm,20.0s
THR5 Thira Island, 36.11 279 P **P 19 42 42.8 -1.2**
CRVS Cervenica-Dubn 36.15 301 *eP* **P 19 42 44.6 +0.4**
CRVS *e*S **S 19 48 21.7 -1.2**
CRVS Cervenica-Dubn 36.15 301 *eP* **P 19 42 44.6 +0.4**
CRVS *e*S **S 19 48 21.7 -1.2**
STHS Stebnicka Huta 36.25 302 *eP* **P 19 42 45.2 +0.1**
STHS pmax pmax
comp=Z,39nm,0.6s
STHS Stebnicka Huta 36.25 302 *eP* **P 19 42 45.2 +0.1**
SOH Sokhos 36.26 287 P **P 19 42 46.6 +1.3**
SOH pmax pmax
comp=Z,54nm,1.2s
PAIG Paliouri 36.26 286 P **P 19 42 44.6 -0.6**
PAIG Paliouri 36.26 286 *eP* **P 19 42 44.6 -0.6**
PAIG Paliouri 36.26 286 *eP* **P 19 42 44.6 -0.6**
PLG Polygyros 36.31 286 P **P 19 42 45.8 +0.1**
PLG Polygyros 36.31 286 P **P 19 42 45.8 +0.1**
PLG Polygyros 36.31 286 P **P 19 42 45.8 +0.1**
AOS Alonnisos 36.33 284 P **P 19 42 45.8 0.0**
AOS Alonnisos 36.33 284 *eP* **P 19 42 45.8 0.0**
SIRR Siria 36.34 297⇓*iP* **P 19 42 47.6 +1.7**
SKNT Sakolnakorn 36.38 120 P **P 19 42 46.6 +0.1**
comp=Z,650nm,0.7s,comp=Z,7µm
BEL Belsk 36.40 306 *eP* **P 19 42 46.9 +0.6**
BEL *e*S **S 19 48 28.8 +2.2**
BEL LMZ LR 20 00 09.6
comp=Z,59µm,21.6s
BEL Belsk 36.40 306⇑*eP* **P 19 42 46.9 +0.6**
BEL *e*S **S 19 48 28.8 +2.2**
BEL MLR MLR
comp=Z,59µm,21.6s
LAST Lasithi 36.46 277 P **P 19 42 45.0 -2.1**
LAST Lasithi 36.46 277 *eP* **P 19 42 47.0 -0.1**
comp=Z,395nm,1.0s
BZS Buzias 36.47 295⇓*iP* **P 19 42 48.1 +1.1**
KNT Kendrikon 36.50 288 P **P 19 42 47.6 +0.3**
KNT Kendrikon 36.50 288 P **P 19 42 47.6 +0.3**
KNT Kendrikon 36.50 288 P **P 19 42 47.6 +0.3**
HORT Hortiatis 36.50 287 P **P 19 42 47.3 -0.1**
HORT Hortiatis 36.50 287 P **P 19 42 47.3 -0.1**
THE Thessaloniki 36.59 287 P **P 19 42 50.6 +2.6**
THE pmax pmax
comp=Z,66nm,1.1s
PTL Penteli 36.68 282 P **P 19 42 49.1 +0.2**
PTL Penteli 36.68 282 *eP* **P 19 42 49.1 +0.2**
VAY Valandovo 36.70 288 P **P 19 42 49.5 +0.5**
VAY Valandovo 36.70 288 *eP* **P 19 42 49.5 +0.5**
VAY Valandovo 36.70 288 *eP* **P 19 42 49.5 +0.5**
VAF Ylistaro 36.71 325 P **P 19 42 49.6 +0.9**
VAF pmax pmax
comp=Z,833nm,0.8s
NEO Neokhori 36.77 285 P **P 19 42 49.1 -0.6**
NEO Neokhori 36.77 285 P **P 19 42 49.1 -0.6**
XOR Xorichti 36.78 285 P **P 19 42 48.4 -1.3**
XOR Xorichti 36.78 285 P **P 19 42 48.4 -1.3**
VLY Voula,Athens 36.80 282 P **P 19 42 51.0 +1.1**
VLY Voula,Athens 36.80 282 *eP* **P 19 42 51.0 +1.1**
ATH Athens Observa 36.82 282 P **P 19 42 49.1 -0.9**
ATH Athens Observa 36.82 282 P **P 19 42 49.1 -0.9**
ATH Athens Observa 36.82 282 P **P 19 42 49.1 -0.9**
KECS Kecovo 36.84 300 *eP* **P 19 42 50.6 +0.5**
KECS pmax pmax
comp=Z,29nm,0.8s
KECS Kecovo 36.84 300 *eP* **P 19 42 50.6 +0.5**
BANR Banloc 36.84 295⇑*iP* **P 19 42 51.9 +1.8**
IDI Anoyia 36.86 278 P **P 19 42 50.5 0.0**
comp=Z,34nm,0.4s,baz=37,slow=12,SNR=48
IDI LR LR 20 00 51.2
comp=Z,10µm,20.8s,baz=55,slow=41
IDI Anoyia 36.86 278 P **P 19 42 49.9 -0.6**
IDI Anoyia 36.86 278 *eP* **P 19 42 49.1 -1.3**
comp=Z,166nm,0.6s
NIE Niedzica 36.86 302 *eP* **P 19 42 51.5 +1.2**
NIE *e*S **S 19 48 37.0 +3.2**
NIE LMZ LR 20 01 24.1
comp=Z,47µm,17.2s
NIE Niedzica 36.86 302⇑*eP* **P 19 42 51.5 +1.2**
NIE *e*S **S 19 48 37.0 +3.2**
NIE MLR MLR
comp=Z,47µm,17.2s
GRG Griva 36.92 288 P **P 19 42 50.3 -0.6**
GRG Griva 36.92 288 *eP* **P 19 42 50.3 -0.6**
GRG Griva 36.92 288 *eP* **P 19 42 50.3 -0.6**
SIVA Sivas 37.02 277 P **P 19 42 49.9 -1.9**
SIVA Sivas 37.02 277 P **P 19 42 49.9 -1.9**
LIT Litokhoron 37.09 286 P **P 19 42 49.9 -2.4**
LIT Litokhoron 37.09 286 *eP* **P 19 42 49.9 -2.4**
LIT Litokhoron 37.09 286 *eP* **P 19 42 49.9 -2.4**
OJC Ojcow 37.12 303 *eP* **P 19 42 52.8 +0.4**
OJC *e*S **S 19 48 38.8 +1.2**
OJC LMZ LR 20 01 24.3
comp=Z,53µm,17.2s
OJC Ojcow 37.12 303 *eP* **P 19 42 52.1 -0.3**
OJC pmax pmax
comp=Z,453nm,1.0s
OJC Ojcow 37.12 303 *eP* **P 19 42 52.1 -0.3**
comp=Z,453nm,1.0s
PSZ Piszkesteto 37.30 300⇑*iP* **P 19 42 54.9 +0.9**
PSZ Piszkesteto 37.30 300 *eP* **P 19 42 54.4 +0.3**
PSZ pmax pmax
comp=Z,275nm,1.0s
PSZ MLR MLR
comp=Z,20µm,21.0s
PSZ Piszkesteto 37.30 300 *eP* **P 19 42 54.4 +0.3**
comp=Z,275nm,1.0s
PSZ LR LR
comp=Z,20µm,21.0s
PSZ Piszkesteto 37.30 300⇑*eP* **P 19 42 55.0 +0.9**
DID Didima 37.33 282 P **P 19 42 52.1 -2.3**
DID Didima 37.33 282 *eP* **P 19 42 52.1 -2.3**
VAM Vamos 37.34 278 P **P 19 42 52.5 -2.0**
VAM Vamos 37.34 278 P **P 19 42 52.5 -2.0**
VAM Vamos 37.34 278 P **P 19 42 52.5 -2.0**
LTK Loutraki 37.36 283 P **P 19 42 52.9 -1.8**
LTK Loutraki 37.36 283 *eP* **P 19 42 52.9 -1.8**
LANS Liptovska Anna 37.43 302 *eP* **P 19 42 56.3 +1.1**
LANS Liptovska Anna 37.43 302 *eP* **P 19 42 56.3 +1.1**
PATY Pattaya 37.44 128 P **P 19 42 57.4 +1.9**
comp=Z,50nm,0.8s
IMMV Iera Moni Meta 37.48 278 P **P 19 42 54.4 -1.3**

AGG Agios Georgios 37.52 285 P **P 19 42 54.8 -1.2**
AGG Agios Georgios 37.52 285 *eP* **P 19 42 55.4 -0.6**
AGG pmax pmax
comp=Z,510nm,1.1s
AGG Agios Georgios 37.52 285 *eP* **P 19 42 54.8 -1.2**
KZN Kozani 37.56 287 P **P 19 42 55.1 -1.3**
KZN Kozani 37.56 287 P **P 19 42 55.1 -1.3**
KZN Kozani 37.56 287 P **P 19 42 55.1 -1.3**
DSF Desfina 37.56 284 P **P 19 42 58.3 +1.9**
DSF Desfina 37.56 284 *eP* **P 19 42 58.3 +1.9**
THL Klokotos Trika 37.59 286 P **P 19 42 54.4 -2.2**
GVD Gavdhos 37.64 277 P **P 19 42 55.5 -1.5**
GVD Gavdhos 37.64 277 *eP* **P 19 42 55.5 -1.5**
FNA Florina 37.71 288 P **P 19 42 57.0 -0.7**
FNA Florina 37.71 288 P **P 19 42 57.0 -0.7**
FNA Florina 37.71 288 P **P 19 42 57.0 -0.7**
VLI Veliai 37.82 281 P **P 19 42 54.4 -4.1**
VLI Veliai 37.82 281 *eP* **P 19 42 54.4 -4.1**
ANKY Antikythira Is 37.85 279 P **P 19 42 57.4 -1.4**
ANKY Antikythira Is 37.85 279 *eP* **P 19 42 57.4 -1.4**
DIVS Divibare 37.90 293 P **P 19 42 59.7 +0.5**
SERG Sergoula 37.91 284 P **P 19 42 57.4 -2.0**
VYHS Vyhne 37.93 301 *eP* **P 19 43 00.1 +0.8**
VYHS pmax pmax
comp=Z,48nm,1.3s
VYHS Vyhne 37.93 301 *eP* **P 19 43 00.1 +0.8**
VYHS *e*S **S 19 48 49.1 -0.8**
VYHS *e*L L 20 01 16.4
EVR Evrytania 37.94 285 P **P 19 42 57.4 -2.3**
EVR Evrytania 37.94 285 P **P 19 42 57.4 -2.3**
BUD Budapest 37.94 299 P **P 19 43 01.2 +1.8**
BUD pmax pmax
comp=Z,455nm,0.9s
BUD Budapest 37.94 299⇑*eP* **P 19 43 00.4 +1.0**
ARA0 ARCESS Array S 37.95 336 *eP* **P 19 42 59.7 +0.5**
ARCES ARCESS Array B 37.95 336 P **P 19 42 59.9 +0.6**
comp=Z,109nm,0.5s,baz=111,slow=6.8,SNR=304
ARCES LR LR 19 59 45.4
comp=Z,89µm,19.1s,baz=118,slow=38
ARE0 ARCESS Array S 37.95 336⇑*iP* **P 19 43 00.2 +1.0**
ARE0 IVmB_BB 19 43 10.8
comp=Z,3µm,0.7s
ARE0 *e*S **S 19 48 48.5 -1.3**
ARE0 IVMs_BB IVMs_BB 19 59 15.1
comp=Z,61µm,11.1s
ARE0 ARCESS Array S 37.95 336 *eP* **P 19 42 59.8 +0.6**
comp=Z,330nm,0.8s
KPRO Kipourio 37.96 286 P **P 19 42 59.3 -0.5**
ANX Ano Chora 37.96 284 P **P 19 42 57.8 -2.0**
KLV Kalavryta, Ach 37.96 283 P **P 19 42 58.1 -1.7**
KLV Kalavryta, Ach 37.96 283 *eP* **P 19 42 58.1 -1.7**
VLX Vlachokerasia 38.02 282 P **P 19 42 56.3 -4.0**
VLX Vlachokerasia 38.02 282 *eP* **P 19 42 56.3 -4.0**
CLNS Chul'man 38.02 46 *eP* **P 19 43 00.9 -0.9**
CLNS *e**PP **sP 19 43 11.1 +2.6**
CLNS *e* 19 44 25.5
CLNS *e* 19 45 14.7
CLNS *e*S **S 19 48 50.0 -1.2**
CLNS *e*SS **SnSn 19 51 31.2 -2.5**
CLNS pmax pmax
comp=Z,12nm,0.8s
CLNS pmax pmax
comp=N,75nm,1.0s
CLNS pmax pmax
comp=E,36nm,0.8s
CLNS pmax pmax
comp=N,45nm,0.9s
CLNS pmax pmax
comp=E,50nm,0.9s
CLNS pmax pmax
comp=Z,61nm,0.9s
CLNS smax smax
comp=N,2µm,11.4s
CLNS smax smax
comp=E,2µm,12.4s
CLNS MLR MLR
comp=Z,15µm,11.0s
CLNS MLR MLR
comp=N,62µm,16.0s
CLNS MLR MLR
comp=E,42µm,14.0s
PENT Pentalofos 38.05 287 P **P 19 42 59.3 -1.3**
NEST Nestorio 38.06 287 P **P 19 42 58.9 -1.7**
HEF Hetta 38.08 334 *eP* **P 19 43 01.2 +0.8**
ATD Arta Tunnel 38.12 230 P **P 19 43 01.9 +0.7**
comp=E,120nm,0.9s,baz=16,slow=7.5,SNR=37
RAC Raciborz 38.16 303 *eP* **P 19 43 02.3 +1.1**
RAC *e*S **S 19 48 54.4 +1.1**
RAC MLR MLR
comp=Z,33µm,16.0s
OKC Ostrava-Krasne 38.21 303⇑*eP* **P 19 43 02.2 +0.5**
OKC *e*pP **sP 19 43 09.3 -0.8**
OKC *e*PP **PP 19 44 28.4 -0.6**
OKC *e*S **S 19 48 50.6 -3.6**
OKC AMS AMS 20 02 20.0
comp=Z,36µm,15.7s
OKC Ostrava-Krasne 38.21 303 *eP* **P 19 43 02.2 +0.5**
OKC *e* 19 43 09.3
OKC *e* 19 44 28.4
OKC *e*S **S 19 48 50.6 -3.6**
OKC MLR MLR
comp=Z,36µm,15.7s
PVO Paravola 38.24 284 P **P 19 43 01.2 -0.9**
IVA Berane 38.25 291⇑*iP* **P 19 43 02.7 +0.5**
DL2 Dalian 38.27 75⇑*iP* **P 19 43 02.6 +0.4**
DL2 PP **PnPn 19 44 34.8 +3.4**
DL2 S **S 19 48 57.8 +2.6**
DL2 SS **SnSn 19 51 35.4 -4.7**
DL2 pmax pmax
comp=Z,160nm,0.9s
DL2 pmax pmax
comp=Z,2µm,6.8s
DL2 LR LR
comp=Z,14µm,16.2s
DL2 LR LR
comp=Z,18µm,16.9s
DL2 LR LR
comp=Z,28µm,21.2s
PVY Plav 38.27 291 *eP* **P 19 43 02.6 +0.2**
DRO Drossia 38.32 283 P **P 19 43 01.5 -1.3**
DSL Palaion Diasel 38.40 285 P **P 19 43 01.2 -2.3**
DSL Palaion Diasel 38.40 285 *eP* **P 19 43 01.2 -2.3**
ITM Ithomi 38.42 282 P **P 19 43 01.2 -2.4**
ITM Ithomi 38.42 282 P **P 19 43 01.2 -2.4**
JAN Janina 38.42 286 P **P 19 43 02.7 -0.9**
JAN Janina 38.42 286 P **P 19 43 02.7 -0.9**
JAN Janina 38.42 286 P **P 19 43 02.7 -0.9**
AMT Artemida-Makis 38.46 283 P **P 19 43 00.4 -3.6**
CHBT CHBT 38.47 127 P **P 19 43 06.3 +2.2**
comp=Z,227nm,1.2s,comp=Z,3µm
RLS Riolos of Patr 38.47 283 P **P 19 43 01.9 -2.1**
RLS Riolos of Patr 38.47 283 P **P 19 43 01.9 -2.1**
AXS Araxos 38.49 284 P **P 19 43 03.4 -0.8**
PLE Pljevlja 38.49 292 *eP* **P 19 43 04.6 +0.3**
PDO Prodromos 38.51 284 P **P 19 43 03.4 -0.9**
GKP Gorka Klasztor 38.52 308 *eP* **P 19 43 04.7 +0.5**
GKP *e*S **S 19 48 59.5 +0.8**
GKP LMZ LR 20 01 58.5
comp=Z,96µm,18.4s
GKP Gorka Klasztor 38.52 308⇑*eP* **P 19 43 04.7 +0.5**
GKP *e*S **S 19 48 59.5 +0.8**
GKP MLR MLR
comp=Z,96µm,18.4s
UBPT Khong Chiam 38.59 120 P **P 19 43 05.5 +0.4**
comp=Z,189nm,1.1s,comp=Z,3µm
MORC Moravsky Berou 38.61 303⇑*iP* **P 19 43 05.7 +0.6**
MORC Moravsky Berou 38.61 303 *eP* **P 19 43 04.9 -0.2**
MORC pmax pmax
comp=Z,872nm,1.0s
MORC Moravsky Berou 38.61 303 *eP* **P 19 43 04.9 -0.2**
comp=Z,872nm,1.0s
CMBY CAMPBELL BAY 38.64 143 *eP* **P 19 43 06.3 +0.7**
PYL PYLOS 38.66 282 P **P 19 43 03.4 -2.2**
PYL PYLOS 38.66 282 *eP* **P 19 43 03.4 -2.2**
TIR Tirane 38.66 289⇑*iP* **P 19 43 04.8 -0.7**
TIR Tirane 38.66 289 *eP* **P 19 43 04.4 -1.2**
TIR pmax pmax
comp=Z,81nm,0.8s
TIR MLR MLR
comp=Z,12µm,19.0s
TIR Tirane 38.66 289 *eP* **P 19 43 04.4 -1.2**
comp=Z,82nm,0.8s
TIR LR LR

	comp=Z,12µm,19.0s									
NJ2	**Nanjing**	**38.73**	**87**	*e*P		**P**	**19 43 07.8**	**+1.6**		
NJ2				pP		**pP**	**19 43 11.0**	**-1.2**		
NJ2				sP		**sP**	**19 43 13.0**	**-1.6**		
NJ2				PcP		**PcP**	**19 45 19.5**	**+1.8**		
NJ2				S		**S**	**19 49 03.8**	**+1.5**		
NJ2				pmax		pmax				
	comp=Z,91nm,1.4s									
NJ2				pmax		pmax				
	comp=Z,3µm,6.3s									
NJ2				LR		LR				
	comp=Z,25µm,15.2s									
NJ2				LR		LR				
	comp=Z,31nm,16.8s									
NJ2				LR		LR				
	comp=Z,39µm,17.9s									
PDG	**Podgorica**	**38.81**	**291**	P		**P**	**19 43 06.8**	**0.0**		
PDG	**Podgorica**	**38.81**	**291**	⇑*i*P		**P**	**19 43 07.1**	**+0.3**		
TTG	**Podgorica**	**38.81**	**291**	⇑*i*P		**P**	**19 43 07.1**	**+0.3**		
TTG	**Podgorica**	**38.81**	**291**	P		**P**	**19 43 06.8**	**0.0**		
TTG	**Podgorica**	**38.81**	**291**	P		**P**	**19 43 06.8**	**0.0**		
IGT	**Igoumenitsa**	**38.84**	**286**	P		**P**	**19 43 05.3**	**-1.8**		
IGT	**Igoumenitsa**	**38.84**	**286**	*e*P		**P**	**19 43 05.3**	**-1.8**		
IGT	**Igoumenitsa**	**38.84**	**286**	*e*P		**P**	**19 43 05.3**	**-1.8**		
SNY	**Shenyang**	**38.85**	**70**	⇑P		**P**	**19 43 08.0**	**+0.9**		
SNY				S		**S**	**19 49 03.6**	**-0.3**		
SNY				pmax		pmax				
	comp=Z,110nm,1.5s									
SNY				pmax		pmax				
	comp=Z,2µm,8.6s									
SNY				LR		LR				
	comp=Z,16µm,15.9s									
SNY				LR		LR				
	comp=Z,52µm,14.3s									
SNY				LR		LR				
	comp=Z,60µm,15.1s									
SMOL	**Smolenice**	**38.85**	**301**	*e*P		**P**	**19 43 08.9**	**+1.8**		
SMOL	**Smolenice**	**38.85**	**301**	*e*P		**P**	**19 43 08.9**	**+1.8**		
UPM	**Unac-Piva**	**38.87**	**292**	*e*P		**P**	**19 43 07.6**	**+0.1**		
SGD	**Sagiada**	**38.89**	**286**	P		**P**	**19 43 05.3**	**-2.2**		
NKY	**Niksic**	**38.90**	**292**	⇑*i*P		**P**	**19 43 07.7**	**0.0**		
DRME	**Dracevica, Mon**	**38.92**	**291**	⇑*i*P		**P**	**19 43 07.5**	**-0.3**		
ULC	**Ulcinj**	**38.94**	**290**	⇑*i*P		**P**	**19 43 08.2**	**+0.3**		
NKME	**Niksic**	**38.94**	**292**	⇑*i*P		**P**	**19 43 08.3**	**+0.3**		
KFL	**Anninata**	**38.96**	**284**	P		**P**	**19 43 06.8**	**-1.3**		
HAMF	**Hammerfest**	**39.00**	**337**	*e*P		**P**	**19 43 09.5**	**+1.5**		
HAMF				IVmB_BB			19 43 19.8			
	comp=Z,8µm,0.6s									
HAMF				*e*S		**S**	**19 49 05.7**	**+0.2**		
HAMF				IVMs_BB		IVMs_BB	19 59 44.2			
	comp=Z,83µm,11.8s									
CEME	**Cevo**	**39.02**	**291**	⇑*i*P		**P**	**19 43 08.8**	**+0.1**		
QIZ	**Qiongzhong**	**39.03**	**111**	P		**P**	**19 43 10.3**	**+1.5**		
QIZ				PP		**PnPn**	**19 44 40.3**	**-0.6**		
QIZ				S		**S**	**19 49 04.3**	**-2.7**		
QIZ				LR		LR				
	comp=Z,11µm,15.7s									
QIZ				LR		LR				
	comp=Z,16µm,16.1s									
QIZ				LR		LR				
	comp=Z,26µm,15.0s									
QIZ	**Qiongzhong**	**39.03**	**111**	*e*P		**P**	**19 43 09.2**	**+0.4**		
	comp=Z,105nm,0.8s									
QIZ				LR		LR				
	comp=Z,9µm,21.0s									
KRLC	**Kraliky**	**39.06**	**303**	⇑*i*P		**P**	**19 43 09.5**	**+0.6**		
KRLC				*e*pP		**sP**	**19 43 16.6**	**-0.7**		
KRLC	**Kraliky**	**39.06**	**303**	⇑*i*P		**P**	**19 43 09.5**	**+0.6**		
KRLC				*e*			19 43 16.6			
VLS	**Valsamata**	**39.08**	**284**	P		**P**	**19 43 05.7**	**-3.5**		
VLS	**Valsamata**	**39.08**	**284**	P		**P**	**19 43 05.7**	**-3.5**		
VLS	**Valsamata**	**39.08**	**284**	P		**P**	**19 43 05.7**	**-3.5**		
GZH	**Guangzhou**	**39.08**	**103**	P		**P**	**19 43 09.8**	**+0.5**		
GZH				PP		**PnPn**	**19 44 46.4**	**+4.9**		
GZH				PcP		**PcP**	**19 45 19.6**	**+0.7**		
GZH				S		**S**	**19 49 08.8**	**+1.0**		
GZH				SS		**SnSn**	**19 51 53.9**	**-6.3**		
BUM	**Brajici-Budva**	**39.10**	**291**	⇑*i*P		**P**	**19 43 09.1**	**-0.3**		
KEK	**Kerkira**	**39.18**	**287**	P		**P**	**19 43 07.9**	**-2.0**		
KEK	**Kerkira**	**39.18**	**287**	P		**P**	**19 43 07.9**	**-2.0**		
BRY	**Bratogost**	**39.20**	**292**	⇑*i*P		**P**	**19 43 10.6**	**+0.3**		
BRY	**Bratogost**	**39.20**	**292**	P		**P**	**19 43 12.5**	**+2.2**		
KIF	**Kilpisjarvi**	**39.27**	**334**	⇑*i*P		**P**	**19 43 10.8**	**+0.5**		
VRAC	**Vranov**	**39.28**	**302**	⇑*i*P		**P**	**19 43 11.7**	**+1.0**		
KSP	**Ksiaz**	**39.28**	**305**	*e*P		**P**	**19 43 11.3**	**+0.6**		
KSP				*e*PP		**PnPn**	**19 44 44.4**	**+0.9**		
KSP				*e*S		**S**	**19 49 12.4**	**+2.1**		
KSP				LMZ		LR	20 01 27.5			
	comp=Z,32µm,20.5s									
KSP	**Ksiaz**	**39.28**	**305**	⇑*e*P		**P**	**19 43 11.3**	**+0.6**		
KSP				*e*			19 44 44.3			
KSP				*e*S		**S**	**19 49 12.4**	**+2.1**		
KSP				MLR		MLR				
	comp=Z,32µm,20.5s									
DPC	**Dobruska-Polom**	**39.32**	**304**	*i* P		**P**	**19 43 12.0**	**+0.9**		
DPC				*e*pP		**sP**	**19 43 19.2**	**-0.3**		
DPC				*e*PP		**PP**	**19 44 37.9**	**-3.3**		
DPC				*e*S		**S**	**19 49 09.1**	**-1.9**		
DPC				AMS		AMS	20 02 40.0			
	comp=Z,36µm,15.9s									
DPC	**Dobruska-Polom**	**39.32**	**304**	*i* P		**P**	**19 43 12.0**	**+0.9**		
DPC				*e*			19 43 19.2			
DPC				*e*			19 44 37.9			
DPC				*e*S		**S**	**19 49 09.1**	**-1.9**		
DPC				MLR		MLR				
	comp=Z,36µm,15.9s									
HCY	**Herceg Novi**	**39.35**	**291**	⇑*i*P		**P**	**19 43 11.2**	**-0.1**		
SURT	**Suratani**	**39.44**	**135**	P		**P**	**19 43 14.0**	**+1.7**		
	comp=Z,178nm,1.4s,comp=Z,2µm									
UPC	**Upice**	**39.50**	**304**	⇑*e*P		**P**	**19 43 13.4**	**+0.9**		
UPC				*e*pP		**sP**	**19 43 20.6**	**-0.3**		
UPC				*e*PP		**PP**	**19 44 38.2**	**-4.9**		
UPC				*e*S		**S**	**19 49 13.1**	**-0.5**		
UPC				AMS		AMS	20 02 50.0			
	comp=Z,46µm,16.1s									
UPC	**Upice**	**39.50**	**304**	*e*P		**P**	**19 43 13.4**	**+0.9**		
UPC				*e*			19 43 20.6			
UPC				*e*S		**S**	**19 49 13.1**	**-0.5**		
UPC				MLR		MLR				
	comp=Z,46µm,16.1s									
SOP	**Sopron**	**39.56**	**300**	P		**P**	**19 43 14.2**	**+1.2**		
SOP				pmax		pmax				
	comp=Z,371nm,1.1s									
SOP	**Sopron**	**39.56**	**300**	⇑*e*P		**P**	**19 43 13.7**	**+0.7**		
BEHE	**Becsehely**	**39.63**	**298**	⇑*e*P		**P**	**19 43 14.5**	**+0.9**		
CN2	**Changchun**	**39.68**	**66**	⇓P		**P**	**19 43 15.6**	**+1.6**		
CN2				SS		SS	19 52 07.9	-3.8		
CN2				pmax		pmax				
	comp=Z,50nm,0.7s									
CN2				pmax		pmax				
	comp=Z,1µm,7.0s									
CN2				LR		LR				
	comp=Z,24µm,18.0s									
CN2				LR		LR				
	comp=Z,39µm,18.0s									
CN2				LR		LR				
	comp=Z,47µm,19.0s									
SURA	**Surathani**	**39.73**	**133**	P		**P**	**19 43 16.3**	**+1.6**		
	comp=Z,178nm,1.0s,comp=Z,6µm									
BSD	**Bornholm Skovb**	**39.80**	**311**	*i* P		**P**	**19 43 13.9**	**-1.0**		
	comp=Z,181nm,0.8s									
BSD				*i*			19 43 23.3			
BSD				*i* S		**S**	**19 49 17.9**	**-0.1**		
	comp=Z,74µm,15.0s									
BSD	**Bornholm Skovb**	**39.80**	**311**	*i* P		**P**	**19 43 13.9**	**-1.0**		
BSD				*i*			19 43 23.3			
BSD				*i* S		**S**	**19 49 17.9**	**-0.1**		
BSD				pmax		pmax				
	comp=Z,180nm,0.8s									
BSD				MLR		MLR				
	comp=Z,74µm,15.0s									
CONA	**Conrad Observa**	**39.98**	**300**	*i* P		**P**	**19 43 17.2**	**+0.6**		
	comp=Z,227nm,0.9s,SNR=81									
KOGS	**Kog**	**39.99**	**298**	*e*P		**P**	**19 43 16.7**	**+0.1**		
KOGS				*e*PP		**PnPn**	**19 44 51.1**	**-0.9**		
KOGS				*e*S		**S**	**19 49 21.9**	**+0.8**		
TREC	**Trest**	**40.00**	**302**	⇑*e*P		**P**	**19 43 17.5**	**+0.8**		
TREC				*e*pP		**sP**	**19 43 24.7**	**-0.4**		
TREC				*e*PP		**PP**	**19 44 43.5**	**-5.1**		
TREC				*e*S		**S**	**19 49 17.1**	**-4.1**		
TREC				AMS		AMS	20 03 30.0			
	comp=Z,50µm,17.0s									
TREC	**Trest**	**40.00**	**302**	*e*P		**P**	**19 43 17.5**	**+0.8**		
TREC				*e*			19 43 24.7			
TREC				*e*S		**S**	**19 49 17.1**	**-4.1**		
TREC				MLR		MLR				
	comp=Z,50µm,17.0s									
PKDT	**Phuket**	**40.08**	**136**	P		**P**	**19 43 19.5**	**+1.9**		
	comp=Z,288nm,1.2s,comp=Z,4µm									
TRO	**Tromso**	**40.11**	**334**	*e*P		**P**	**19 43 18.3**	**+1.0**		
TRO				IVmBBB			19 43 27.7			
	comp=Z,2µm,1.6s									
TRO				*e*S		**S**	**19 49 21.5**	**-0.8**		
TRO				IVMs_BB		IVMs_BB	20 00 31.2			
	comp=Z,64µm,12.6s									
KRAB	**Krabi**	**40.27**	**135**	P		**P**	**19 43 22.0**	**+2.8**		
	comp=Z,305nm,0.9s,comp=Z,4µm									
ARSA	**Arzberg**	**40.33**	**299**	*i* P		**P**	**19 43 19.8**	**+0.4**		
	comp=Z,111nm,0.9s,SNR=25									
GOPC	**GO Pecny, Ondr**	**40.36**	**303**	*e*P		**P**	**19 43 20.4**	**+0.7**		
GOPC				*e*pP		**sP**	**19 43 27.6**	**-0.5**		
GOPC				*e*PP		**PnPn**	**19 44 55.0**	**-1.3**		
GOPC				*e*x		x	19 49 07.5			
GOPC				*e*S		**S**	**19 49 25.9**	**-0.6**		
GOPC				AMS		AMS	20 03 30.0			
	comp=Z,45µm,17.6s									
GOPC	**GO Pecny, Ondr**	**40.36**	**303**	*e*P		**P**	**19 43 20.4**	**+0.7**		
GOPC				*e*			19 43 27.6			
GOPC				*e*			19 44 55.0			
GOPC				*e*S		**S**	**19 49 25.9**	**-0.6**		
GOPC				MLR		MLR				
	comp=Z,45µm,17.6s									
PVCC	**Panska Ves**	**40.41**	**304**	⇑*e*P		**P**	**19 43 21.0**	**+1.0**		
PVCC				*e*PP		**PnPn**	**19 44 55.9**	**-0.9**		
PVCC				*e*SCP		**ScP**	**19 49 08.9**	**-2.0**		
PVCC				*e*S		**S**	**19 49 20.3**	**-6.9**		
PVCC				AMS		AMS	20 03 30.0			
	comp=Z,38µm,15.3s									
PVCC	**Panska Ves**	**40.41**	**304**	*e*P		**P**	**19 43 21.0**	**+1.0**		
PVCC				*e*			19 44 55.9			
PVCC				*e*S		**S**	**19 49 20.3**	**-6.9**		
PVCC				MLR		MLR				
	comp=Z,38µm,15.3s									
PRU	**Pruhonice**	**40.51**	**304**	⇑*i*P		**P**	**19 43 21.6**	**+0.8**		
PRU				*e*pP		**sP**	**19 43 28.7**	**-0.6**		
PRU				*e*PP		**PnPn**	**19 44 57.0**	**-0.9**		
PRU				*e*x		x	19 49 04.9			
PRU				*e*S		**S**	**19 49 27.9**	**-0.7**		
PRU				AMS		AMS	20 03 30.0			
	comp=Z,47µm,17.5s									
PRU	**Pruhonice**	**40.51**	**304**	⇑*i*P		**P**	**19 43 21.6**	**+0.8**		
PRU				*e*			19 43 28.7			
PRU				*e*			19 44 57.0			
PRU				*e*S		**S**	**19 49 27.9**	**-0.7**		
PRU				MLR		MLR				
	comp=Z,47µm,17.5s									
OZLJ	**Ozalj**	**40.70**	**297**	P		**P**	**19 43 23.1**	**+0.6**		
PERS	**Pernice**	**40.72**	**298**	*i* P		**P**	**19 43 23.1**	**+0.3**		
PERS				*e*PP		**PnPn**	**19 44 59.8**	**-0.9**		
UDBI	**Udbina**	**40.75**	**295**	P		**P**	**19 43 21.9**	**-1.2**		
RGN	**Rugen**	**40.76**	**311**	*e*P		**P**	**19 43 23.5**	**+0.7**		
	comp=Z,2µm,0.9s									
BRG	**Berggiesshubel**	**40.76**	**305**	⇑*i*P		**P**	**19 43 23.3**	**+0.4**		
	comp=Z,118nm,0.7s									
BRG				*i*			19 43 32.7			
	comp=Z,296nm,0.7s									
BRG				PP		**PnPn**	**19 45 02.0**	**+1.1**		
BRG				S		**S**	**19 49 34.0**	**+1.6**		
BRG				SS		**SnSn**	**19 52 51.0**	**+11**		
	comp=N,26µm,14.0s									
	comp=E,29µm,15.3s									
	comp=Z,38µm,15.2s									
BRG	**Berggiesshubel**	**40.76**	**305**	⇑*i*P		**P**	**19 43 23.3**	**+0.4**		
BRG				*i*			19 43 32.7			
BRG							19 45 02.0			
BRG				S		**S**	**19 49 34.0**	**+1.6**		
BRG				pmax		pmax				
	comp=Z,118nm,0.7s									
BRG				MLR		MLR				
	comp=N,26µm,14.0s									
BRG				MLR		MLR				
	comp=E,29µm,15.3s									
BRG				MLR		MLR				
	comp=Z,38µm,15.2s									
SOKA	**Soboth**	**40.77**	**298**	*i* P		**P**	**19 43 23.7**	**+0.5**		
	comp=Z,190nm,0.9s,SNR=61									
YAK	**Yakutsk**	**40.80**	**38**	P		**P**	**19 43 23.9**	**+0.8**		
	comp=Z,324nm,0.6s,baz=205,slow=0.5,SNR=91									
YAK	**Yakutsk**	**40.80**	**38***c*	*i*P		**P**	**19 43 23.8**	**+0.8**		
YAK				*e**PP		**sP**	**19 43 33.2**	**+1.7**		
YAK				*e*			19 44 57.1			
YAK				*e*PPP		PPP	19 45 25.1			
YAK				*e*S		**S**	**19 49 32.7**	**0.0**		
YAK				*e*			19 53 23.2			
YAK				pmax		pmax				
	comp=Z,300nm,0.9s									
YAK				pmax		pmax				
	comp=N,15nm,0.9s									
YAK				pmax		pmax				
	comp=E,196nm,1.4s									
YAK				pmax		pmax				
	comp=Z,288nm,1.3s									
YAK				pmax		pmax				
	comp=N,200nm,1.5s									
YAK				pmax		pmax				
	comp=E,275nm,1.9s									
YAK				smax		smax				
	comp=N,6µm,4.7s									
YAK				smax		smax				
	comp=E,4µm,4.3s									
YAK				MLR		MLR				
	comp=Z,60µm,12.0s									
YAK				MLR		MLR				
	comp=N,16µm,13.0s									
YAK				MLR		MLR				
	comp=E,24µm,13.0s									
YAK	**Yakutsk**	**40.80**	**38**	*e*P		**P**	**19 43 23.7**	**+0.7**		
	comp=E,2µm,0.8s									
YAK				LR		LR				
	comp=Z,60µm,19.0s									
TRTT	**Trang**	**40.86**	**134**	P		**P**	**19 43 25.3**	**+1.2**		
	comp=Z,332nm,1.2s,comp=Z,5µm									
BOJS	**Bojanci**	**40.88**	**297**	*i* P		**P**	**19 43 24.6**	**+0.6**		
STEI	**Steigen**	**40.92**	**331**	*e*P		**P**	**19 43 24.7**	**+0.7**		
STEI				IVMs_BB		IVMs_BB	20 01 04.8			
	comp=Z,26µm,17.7s									
SSE	**Sheshan**	**40.93**	**87**	⇑P		**P**	**19 43 26.0**	**+1.5**		
SSE				PcP		**PcP**	**19 45 26.4**	**+1.7**		
SSE				S		**S**	**19 49 37.3**	**+2.0**		
SSE				sS		**sS**	**19 49 47.6**	**+2.3**		
SSE				ScS		**ScS**	**19 53 29.5**	**+1.0**		
SSE				pmax		pmax				
	comp=Z,180nm,1.1s									
SSE				pmax		pmax				
	comp=Z,2µm,8.0s									
SSE				LR		LR				
	comp=Z,18µm,19.5s									
SSE				LR		LR				
	comp=Z,8µm,19.5s									
SSE				LR		LR				
	comp=Z,25µm,17.2s									
MOA	**Molln**	**41.05**	**300**	*i* P		**P**	**19 43 25.7**	**+0.4**		
	comp=Z,58nm,0.8s,SNR=18									
OBKA	**Obir**	**41.13**	**298**	*i* P		**P**	**19 43 26.8**	**+0.6**		
	comp=Z,44nm,1.0s,SNR=33									
COP	**Copenhagen**	**41.19**	**312**	*i* P		**P**	**19 43 27.9**	**+1.6**		
	comp=Z,193nm,0.7s									
COP				*i*			19 43 35.7			
COP				*i* S		**S**	**19 49 38.4**	**-0.2**		
	comp=Z,27µm,16.0s									
COP	**Copenhagen**	**41.19**	**312**	*i* P		**P**	**19 43 27.9**	**+1.6**		
COP				*i*			19 43 35.7			
COP				*i* S		**S**	**19 49 38.4**	**-0.2**		
COP				pmax		pmax				
	comp=Z,190nm,0.7s									
COP				MLR		MLR				
	comp=Z,27µm,16.0s									
GEC2	**GERESS Array S**	**41.23**	**302**	*e*P		**P**	**19 43 27.3**	**+0.4**		
GEC2				pmax		pmax				
	comp=Z,288nm,0.9s									
GEC2	**GERESS Array S**	**41.23**	**302**	*e*P		**P**	**19 43 27.3**	**+0.4**		
	comp=Z,288nm,0.9s									
GERES	**GERESS Array B**	**41.23**	**302**	P		**P**	**19 43 27.4**	**+0.4**		
	comp=Z,42nm,0.5s,baz=63,slow=7.8,SNR=208									
GERES				LR		LR	20 04 31.0			
	comp=Z,27µm,18.0s,baz=78,slow=42									
GEA0	**GERESS Array S**	**41.23**	**302**	*e*P		**P**	**19 43 27.2**	**+0.3**		
LJU	**Ljubljana**	**41.25**	**298**	*i* P		**P**	**19 43 27.6**	**+0.6**		
LJU				*e*			19 43 38.7			
LJU				*e*			19 49 14.7			
LJU				*e*S		**S**	**19 49 42.4**	**+2.6**		
LJU				*e*SS		**SS**	**19 52 44.9**	**+1.9**		
KHC	**Kasperske Hory**	**41.26**	**302**	⇑*i*P		**P**	**19 43 27.9**	**+0.8**		
KHC				*e*pP		**sP**	**19 43 35.2**	**-0.4**		
KHC				*e*x		x	19 44 53.5			
KHC				*e*PP		**PnPn**	**19 45 04.9**	**-2.0**		
KHC				*e*x		x	19 49 20.2			
KHC				*e*S		**S**	**19 49 39.3**	**-0.7**		
KHC				AMS		AMS	20 04 20.0			
	comp=Z,43µm,17.3s									
KHC	**Kasperske Hory**	**41.26**	**302**	⇑*i*P		**P**	**19 43 27.9**	**+0.8**		
KHC				*e*			19 43 35.2			
KHC				*e*			19 45 04.9			
KHC				*e*S		**S**	**19 49 39.3**	**-0.7**		
KHC				MLR		MLR				
	comp=Z,43µm,17.3s									
KHC	**Kasperske Hory**	**41.26**	**302**	*e*P		**P**	**19 43 27.5**	**+0.3**		
	comp=Z,104nm,0.7s									
CLL	**Collm**	**41.29**	**306**	*e*P		**P**	**19 43 28.0**	**+0.8**		
	comp=Z,117nm,0.6s									
CLL				*i*			19 43 35.8			
	comp=Z,281nm,0.7s									
CLL				*e*PP		**PnPn**	**19 45 09.0**	**+1.9**		
CLL				*e*			19 45 13.0			
CLL				*e*			19 45 20.0			
CLL				*e*			19 45 35.0			
CLL				*e*PPPP			19 45 37.0			
CLL				*e*S		**S**	**19 49 41.0**	**+0.8**		
CLL				*e*			19 50 07.0			
CLL				*e*SS		**SS**	**19 52 42.0**	**-1.5**		
CLL				*e*SSS		SSS	19 53 12.0			
CLL				*e*SSSS			19 53 26.0			
CLL				Lm		MLR	20 02 00.0			
	comp=Z,74µm,19.9s									
CLL	**Collm**	**41.29**	**306**	*e*P		**P**	**19 43 28.0**	**+0.8**		
CLL				*i*			19 43 35.8			
CLL				*e*S		**S**	**19 49 41.0**	**+0.8**		
CLL				pmax		pmax				
	comp=Z,117nm,0.6s									
CLL				MLR		MLR				
	comp=Z,74µm,19.9s									
CLL	**Collm**	**41.29**	**306**	*e*P		**P**	**19 43 27.2**	**-0.1**		
	comp=Z,263nm,0.7s									
LLD	**Lille Linde**	**41.34**	**312**	*i* P		**P**	**19 43 28.7**	**+1.1**		
	comp=Z,407nm,0.8s									
LLD				*i*			19 43 37.3			
LLD	**Lille Linde**	**41.34**	**312**	*i* P		**P**	**19 43 28.7**	**+1.1**		
LLD				*i*			19 43 37.3			
LLD				pmax		pmax				
	comp=Z,410nm,0.8s									
NVLJ	**Novalja**	**41.36**	**295**	P		**P**	**19 43 25.5**	**-2.4**		
NC405	**NORSAR Array S**	**41.51**	**321**	*e*P		**P**	**19 43 28.9**	**-0.1**		
GORS	**Gorjuse**	**41.55**	**298**	*e*P		**P**	**19 43 29.6**	**+0.1**		
HOPEN	**Hopen**	**41.56**	**345**	⇑*i*P		**P**	**19 43 31.3**	**+2.2**		
HOPEN				IVmB_BB			19 43 39.9			
	comp=Z,3µm,2.8s									
HOPEN				*e*S		**S**	**19 49 45.0**	**+1.3**		
HOPEN				IVMs_BB		IVMs_BB	20 03 03.0			
	comp=Z,62µm,12.7s									
TIP	**Timpagrande**	**41.58**	**287**	P		**P**	**19 43 28.6**	**-1.3**		
TIP	**Timpagrande**	**41.58**	**287**	*e*P		**P**	**19 43 28.6**	**-1.3**		
TIP				LR		LR				
	comp=Z,8µm,19.0s									
NC602	**NORSAR Array S**	**41.59**	**320**	*e*P		**P**	**19 43 29.7**	**+0.1**		
NC602				IVmB_BB			19 43 46.4			
	comp=Z,2µm,2.1s									
NC602				*e*S		**S**	**19 49 42.6**	**-1.8**		
NC602				IVMs_BB		IVMs_BB	20 01 30.0			
	comp=Z,36µm,13.9s									
NC602	**NORSAR Array S**	**41.59**	**320**	*e*P		**P**	**19 43 29.3**	**-0.2**		
LOF	**Lofoten**	**41.59**	**331**	*e*P		**P**	**19 43 29.9**	**+0.4**		
LOF				IVmB_BB			19 43 49.1			
	comp=Z,3µm,3.0s									
LOF				*e*S		**S**	**19 49 42.6**	**-1.6**		
LOF				IVMs_BB		IVMs_BB	20 01 27.3			
	comp=Z,48µm,11.3s									
LHMI	**Lhok Sumawe**	**41.64**	**140**	P		**P**	**19 43 31.7**	**+1.3**		
LHMI	**Lhok Sumawe**	**41.64**	**140**	*e*P		**P**	**19 43 31.4**	**+1.0**		
	comp=Z,362nm,0.9s									
NC303	**NORSAR Array S**	**41.68**	**321**	*e*P		**P**	**19 43 30.1**	**-0.2**		
WET	**Wettzell**	**41.71**	**303**	P		**P**	**19 43 31.3**	**+0.5**		
WET				pmax		pmax				
	comp=Z,465nm,1.1s									
NB201	**NORSAR Array S**	**41.72**	**321**	*e*P		**P**	**19 43 31.1**	**+0.4**		
MYKA	**Terra Mystica**	**41.72**	**299**	*i* P		**P**	**19 43 31.3**	**+0.4**		
	comp=Z,22nm,0.6s,SNR=14									
CADS	**Cadrg**	**41.74**	**298**	*i* P		**P**	**19 43 31.0**	**-0.1**		
CADS				*e*			19 49 15.4			
NB2	**NORSAR Subarra**	**41.75**	**321**	P		**P**	**19 43 30.6**	**-0.4**		
	comp=Z,221nm,0.8s,baz=92,slow=8.6									
NB2	**NORSAR Subarra**	**41.75**	**321**	P		**P**	**19 43 30.6**	**-0.4**		
	baz=92,slow=8.6									
NB200	**NORSAR Array S**	**41.75**	**321**	*e*P		**P**	**19 43 31.0**	**0.0**		
NOA	**NORSAR Array B**	**41.75**	**321**	P		**P**	**19 43 31.0**	**0.0**		
	comp=Z,98nm,0.7s,baz=91,slow=8.2,SNR=312									
NOA				LR		LR	20 01 57.2			
	comp=Z,50µm,20.9s,baz=90,slow=38									
NOA	**NORSAR Array B**	**41.75**	**321**	P		**P**	**19 43 31.0**	**0.0**		
NKC	**Novy

comp=Z,39nm,0.8s,baz=318,slow=2.8,SNR=4.9
TIXI Tiksi 42.25 23 *de* P **P 19 43 35.5 +0.7**
TIXI pmax pmax
comp=Z,350nm,0.8s
TIXI MLR MLR
comp=Z,45µm,18.0s
TIXI Tiksi 42.25 23 *e* P **P 19 43 35.2 +0.4**
comp=Z,738nm,1.0s
TIXI *e* ScP **ScP 19 49 17.2 -0.7**
TIXI LR LR
comp=Z,48µm,19.0s
MOX Moxa 42.26 305 P **P 19 43 35.7 +0.5**
MOX pmax pmax
comp=Z,252nm,1.1s
MDJ Mudanjiang 42.36 64 P **P 19 43 36.5 +0.4**
MDJ pP pP 19 43 39.6 -2.6
MDJ PcP **PcP 19 45 29.0 -0.2**
MDJ S **S 19 49 56.8 +0.6**
MDJ SS **SS 19 53 07.8 +2.9**
MDJ ScS **ScS 19 53 39.4 +2.6**
MDJ pmax pmax
comp=Z,76nm,0.7s
MDJ pmax pmax
comp=Z,2µm,9.1s
MDJ LR LR
comp=Z,24µm,22.4s
MDJ LR LR
comp=Z,10µm,19.7s
MDJ LR LR
comp=Z,5µm,24.1s
MDJ Mudanjiang 42.36 64 *e* P **P 19 43 36.8 +0.7**
comp=Z,142nm,0.8s
MDJ LR LR
comp=Z,27µm,22.0s
ABTA Abfaltersbach 42.45 299 *i* P **P 19 43 36.8 -0.1**
comp=Z,98nm,1.3s,SNR=20
INCN Inchon 42.46 75 *e* P **P 19 43 37.5 +0.4**
comp=Z,123nm,0.8s
INCN LR LR
comp=Z,11µm,22.0s
CEL Celeste 42.53 286 *e* P **P 19 43 37.6 -0.1**
comp=Z,256nm,0.9s
CEL LR LR
comp=Z,9µm,20.0s
KONO Kongsberg 42.55 319 *e* P **P 19 43 37.8 +0.4**
KONO IVmB_BB 19 43 52.7
comp=Z,4µm,3.3s
KONO *e* S **S 19 49 56.6 -2.1**
KONO IVMs_BB IVMs_BB 20 01 51.6
comp=Z,43µm,14.5s
KONO Kongsberg 42.55 319 *e* P **P 19 43 37.1 -0.3**
KONO pmax pmax
comp=Z,190nm,0.9s
KONO MLR MLR
comp=Z,49µm,21.0s
KONO Kongsberg 42.55 319 *e* P **P 19 43 37.1 -0.3**
comp=Z,190nm,0.9s
KONO LR LR
comp=Z,49µm,21.0s
GRF Grafenberg Arr 42.67 304 P **P 19 43 40.6 +2.0**
GRF pmax pmax
comp=Z,789nm,0.8s
GRFO Grafenberg 42.68 304 *e* P **P 19 43 39.4 +0.8**
GRFO pmax pmax
comp=Z,423nm,0.8s
GRFO Grafenberg 42.68 304 *e* P **P 19 43 39.4 +0.8**
comp=Z,423nm,0.8s
KLR Kul'dur 42.74 57 P **P 19 43 39.7 +0.5**
comp=Z,53nm,0.6s,baz=284,slow=7.8,SNR=114
KLR ScP **ScP 19 49 18.4 -1.9**
comp=Z,17nm,0.9s,baz=242,slow=4.0,SNR=5.9
KLR LR LR 20 04 46.6
comp=Z,9µm,18.1s,baz=278,slow=41
KLR Kul'dur 42.74 57 *c i* P **P 19 43 40.0 +0.8**
DOMB Dombas 42.80 322 *e* P **P 19 43 40.0 +0.5**
DOMB IVmBBB 19 43 56.9
comp=Z,3µm,4.1s
DOMB *e* S **S 19 50 01.2 -1.2**
DOMB IVMs_BB IVMs_BB 20 02 06.0
comp=Z,31µm,21.2s
WTTA Wattenberg 42.91 300 *i* P **P 19 43 40.5 -0.3**
comp=Z,291nm,1.1s,SNR=29
WATA Walderalm 42.94 300 *i* P **P 19 43 40.7 -0.3**
comp=Z,126nm,0.6s,SNR=36
FUR Furstenfeldbru 42.95 301 P **P 19 43 42.6 +1.7**
FUR pmax pmax
comp=Z,894nm,1.0s
MUD Monsted U'grnd 42.96 314 *e* P **P 19 43 42.2 +1.5**
MUD Monsted U'grnd 42.96 314 *i* P **P 19 43 41.4 +0.7**
comp=Z,81nm,0.8s
MUD Monsted U'grnd 42.96 314 *i* P **P 19 43 41.4 +0.7**
MUD pmax pmax
comp=Z,81nm,0.8s
AQU L'Aquila 43.00 293 *e* P **P 19 43 42.0 +0.6**
AQU MLR MLR
comp=Z,21µm,19.0s
AQU L'Aquila 43.00 293 *e* P **P 19 43 42.0 +0.6**
AQU LR LR
comp=Z,21µm,19.0s
HOMB Homborsund 43.18 317 *e* P **P 19 43 43.1 +0.6**
HOMB IVmB_BB 19 43 57.7
comp=Z,3µm,3.5s
HOMB *e* S **S 19 50 06.1 -1.8**
HOMB IVMs_BB IVMs_BB 20 02 29.9
comp=Z,34µm,14.8s
MOTA Moosalm 43.25 300 *i* P **P 19 43 43.0 -0.5**
comp=Z,183nm,0.7s,SNR=75
KS01 Wonju Array Si 43.39 75 *e* P **P 19 43 44.9 +0.3**
KS15 Wonju Array Si 43.40 75 *e* P **P 19 43 45.4 +0.8**
KS15 *e* ScP **ScP 19 49 21.9 -1.2**
KSAR Wonju Array Be 43.40 75 P **P 19 43 45.3 +0.7**
KSAR Wonju Array Be 43.40 75 P **P 19 43 45.2 +0.7**
KSRS Korea Array 43.42 75 P **P 19 43 45.2 +0.5**
comp=Z,22nm,0.4s,baz=283,slow=6.8,SNR=61
KSRS ScP **ScP 19 49 21.9 -1.3**
comp=Z,22nm,1.0s,baz=296,slow=4.1,SNR=7.0
KSRS LR LR 20 03 58.1
comp=Z,14µm,18.6s,baz=292,slow=39
RETA Reutte 43.44 301 *i* P **P 19 43 44.8 -0.2**
comp=Z,173nm,1.1s,SNR=16
TPTI 43.46 141 P **P 19 43 44.6 -0.6**
KULM Kulim 43.50 135 ⇓P **P 19 43 46.6 +1.0**
KULM Kulim 43.50 135 *e* P **P 19 43 46.0 +0.4**
comp=Z,410nm,1.5s
KULM LR LR
comp=Z,15µm,19.0s
MOL Molde 43.52 323 *e* P **P 19 43 47.0 +1.8**
MOL IVmB_BB 19 44 01.6
comp=Z,2µm,3.8s
MOL *e* S **S 19 50 11.6 -1.2**
MOL IVMs_BB IVMs_BB 20 02 41.4
comp=Z,39µm,16.5s
FETA Feichten 43.57 300 *i* P **P 19 43 45.6 -0.5**
comp=Z,80nm,0.9s,SNR=23
HSPB Hornsund (broa 43.72 344 ⇑*i* P **P 19 43 48.6 +1.9**
HSPB IVmB_BB 19 44 02.1
comp=Z,3µm,0.9s
HSPB *e* S **S 19 50 18.0 +2.7**
HSPB IVMs_BB IVMs_BB 20 04 17.0
comp=Z,60µm,12.6s
HSPB Hornsund (broa 43.72 344 *e* P **P 19 43 48.5 +1.9**
HSPB *e* S **S 19 50 19.0 +3.6**
HSPB MLR MLR
comp=Z,128µm,15.5s
AKN Aaknes 43.78 322 *e* P **P 19 43 48.8 +1.5**
AKN IVmB_BB 19 44 03.3
comp=Z,4µm,4.5s
AKN *e* S **S 19 50 17.4 +0.8**
AKN IVMs_BB IVMs_BB 20 02 55.4
comp=Z,31µm,22.7s
SNART Snartemo 43.86 317 *e* P **P 19 43 49.0 +1.0**
SNART IVmB_BB 19 44 03.4
comp=Z,2µm,4.0s
SNART *e* S **S 19 50 18.3 +0.5**
SNART IVMs_BB IVMs_BB 20 02 51.0
comp=Z,18µm,16.1s
FUORN Ofenpass-Fuorn 43.98 300 *e* P **P 19 43 48.9 -0.6**
MSHR Mys Shultsa 44.03 67 *c i* P **P 19 43 51.2 +1.6**
SPA0 Spitsbergen Ar 44.04 346 ⇑*i* P **P 19 43 50.9 +1.7**
SPA0 IVmB_BB 19 44 10.3
comp=Z,4µm,1.5s
SPA0 *e* S **S 19 50 22.9 +2.8**
SPA0 IVMs_BB IVMs_BB 20 04 30.8
comp=Z,42µm,13.6s
SPA0 Spitsbergen Ar 44.04 346 *e* P **P 19 43 50.6 +1.4**
SPITS Spitsbergen Ar 44.04 346 P **P 19 43 50.5 +1.2**
comp=Z,82nm,0.9s,baz=114,slow=10,SNR=71
ODD1 Odda 44.04 319 *e* P **P 19 43 50.9 +1.3**
ODD1 IVmBBB 19 44 07.8
comp=Z,3µm,4.5s
ODD1 *e* S **S 19 50 21.8 +1.2**
ODD1 IVMs_BB IVMs_BB 20 02 46.3
comp=Z,42µm,13.6s
DAVA Damuels 44.07 301 *i* P **P 19 43 50.1 0.0**
comp=Z,407nm,0.8s,SNR=43
USRK Ussuriysk Ar. 44.12 64 P **P 19 43 50.5 +0.2**
comp=Z,80nm,0.6s,baz=285,slow=6.4,SNR=50
USRK ScP **ScP 19 49 25.0 -0.9**
comp=Z,16nm,0.8s,baz=294,slow=3.9,SNR=5.2
USRK LR LR 20 03 40.5
comp=Z,30µm,19.2s,baz=278,slow=38
BLS5 Blasjo 44.16 318 *e* P **P 19 43 52.4 +1.9**
BLS5 IVmBBB 19 44 21.9
comp=Z,3µm,3.6s
BLS5 *e* S **S 19 50 23.2 +0.9**
BLS5 IVMs_BB IVMs_BB 20 02 51.3
comp=Z,32µm,13.4s
STU Stuttgart 44.17 303 *e* P **P 19 43 50.9 +0.2**
STU pmax pmax
comp=Z,203nm,0.8s
STU Stuttgart 44.17 303 *e* P **P 19 43 50.9 +0.2**
comp=Z,203nm,0.8s
TATO Taipei 44.20 94 PFAKE 19 44 00.0 +8.9
TATO LR LR
comp=Z,18µm,21.0s
YHNB Yeheng 44.28 95 *e* P **P 19 43 53.4 +1.5**
comp=Z,184nm,1.1s
YHNB LR LR
comp=Z,16µm,20.0s
IPM Ipoh 44.38 135 ⇑P **P 19 43 53.2 +0.5**
IPM Ipoh 44.38 135 *e* P **P 19 43 52.7 0.0**
comp=Z,1µm,1.9s
SSLB Suanglung 44.44 96 *e* P **P 19 43 54.7 +1.5**
comp=Z,200nm,0.8s
WDD Wied Dalam 44.45 283 *e* P **P 19 43 52.3 -0.8**
comp=Z,167nm,0.9s
WDD LR LR
comp=Z,4µm,21.0s
TPUB Ta-pu 44.46 97 *e* P **P 19 43 54.5 +1.2**
comp=Z,69nm,0.7s
VLC Villacollemand 44.57 296 *e* P **P 19 43 54.0 0.0**
comp=Z,248nm,1.0s
VLC LR LR
comp=Z,7µm,20.0s
STAV Stavanger 44.59 318 *e* P **P 19 43 55.1 +1.3**
STAV IVmB_BB 19 44 14.5
comp=Z,3µm,3.4s
STAV IVMs_BB IVMs_BB 20 03 12.6
comp=Z,35µm,14.5s
TUE Stuetta 44.63 300 *e* P **P 19 43 53.8 -0.8**
comp=Z,88nm,0.8s
TUE LR LR
comp=Z,30µm,20.0s
BER Bergen 44.66 320 *e* P **P 19 43 54.9 +0.5**
BER *e* S **S 19 50 30.1 +0.7**
BER IVMs_BB IVMs_BB 20 03 22.7
comp=Z,30µm,15.5s
PSI Prapat 44.71 139 P **P 19 43 55.1 -0.3**
comp=Z,65nm,0.6s,baz=297,slow=7.6,SNR=40
PSI Prapat 44.71 139 *e* P **P 19 43 55.2 -0.2**
PSI pmax pmax
comp=Z,130nm,0.9s
PSI Prapat 44.71 139 *e* P **P 19 43 55.0 -0.5**
comp=Z,128nm,0.9s
NACB Ninganchiao 44.71 95 *e* P **P 19 43 57.0 +1.7**
comp=Z,411nm,1.6s
ASK Askoy 44.72 320 *e* P **P 19 43 56.0 +1.2**
ASK IVMs_BB IVMs_BB 20 03 32.9
comp=Z,25µm,13.7s
FOO Floro 44.72 321 *e* P **P 19 43 56.0 +1.2**
FOO *e* S **S 19 50 31.2 +0.9**
FOO IVMs_BB IVMs_BB 20 03 16.8
comp=Z,24µm,17.1s
CLTB Caltabellotta 44.75 286 PFAKE 19 44 10.0 +14
CLTB LR LR
comp=Z,5µm,20.0s
KMY Karmoy 44.80 318 *e* P **P 19 43 56.7 +1.2**
KMY IVMs_BB IVMs_BB 20 03 13.1
comp=Z,10µm,12.3s
BUG Bochum--Univer 44.80 307 P **P 19 43 56.9 +1.2**
BUG pmax pmax
comp=Z,304nm,1.2s
BFO Black Forest 44.83 302 *e* P **P 19 43 55.6 -0.4**
BFO pmax pmax
comp=Z,180nm,0.9s
BFO MLR MLR
comp=Z,14µm,21.0s
BFO Black Forest 44.83 302 *e* P **P 19 43 55.6 -0.4**
comp=Z,180nm,0.9s
BFO LR LR
comp=Z,14µm,21.0s
KTGM Kuala Trenggan 44.84 132 ⇓P **P 19 43 58.0 +1.6**
SUE Sulen 44.89 321 *e* P **P 19 43 57.5 +1.3**
SUE *e* S **S 19 50 34.0 +1.3**
SUE IVMs_BB IVMs_BB 20 03 30.5
comp=Z,32µm,13.0s
YULB Yu-li 44.92 96 *e* P **P 19 43 58.5 +1.6**
comp=Z,64nm,0.8s
WTSB Winterswijk 44.99 308 *e* P **P 19 43 57.6 +0.6**
comp=Z,104nm,0.6s
WTSB *ep* P **sP 19 44 08.3 +2.7**
WTSB *es* P pP 19 44 13.9 +11
LANF Langenberg 45.01 303 ⇑*e* P **P 19 43 58.0 +0.6**
LANF Langenberg 45.01 303 P **P 19 43 58.2 +0.8**
HABR Khabarovsk 45.04 57 *c i* P **P 19 43 57.0 -0.6**
HABR *e* *PP **pP 19 44 00.1 -3.6**
HABR *e* *SP **sP 19 44 01.4 -4.7**
HABR *e* 19 45 37.1
HABR *e* 19 45 42.6
HABR *e* PPP PPP 19 46 21.0
HABR *es* **S 19 50 37.4 +2.2**
HABR *e* *SS **sS 19 50 42.6 -2.6**
HABR *e* 19 53 54.2
HABR *es SSS SSS 19 54 46.2
HABR pmax pmax
comp=E,66nm,2.0s
HABR pmax pmax
comp=Z,129nm,2.0s
HABR pmax pmax
comp=N,28nm,2.0s
HABR pmax pmax
comp=Z,639nm,2.0s
HABR MLR MLR
comp=Z,35µm,13.0s
TWG Pinlang 45.07 97 *e* P **P 19 44 00.8 +2.7**
comp=Z,910nm,1.0s
STR Strasbourg 45.13 303 *e* P **P 19 43 58.9 +0.6**
KBS Kingsbay 45.15 346 ⇑*i* P **P 19 43 59.6 +1.5**
KBS IVmB_BB 19 44 10.1
comp=Z,7µm,0.6s
KBS *es* **S 19 50 35.3 -0.8**
KBS IVMs_BB IVMs_BB 20 05 15.4
comp=Z,31µm,14.0s
KBS Kingsbay 45.15 346 *e* P **P 19 43 59.6 +1.5**
KBS pmax pmax
comp=Z,722nm,0.7s
KBS MLR MLR
comp=Z,49µm,19.0s
KBS Kingsbay 45.15 346 *e* P **P 19 43 59.5 +1.5**
comp=Z,722nm,0.7s
KBS LR LR
comp=Z,49µm,19.0s
GSI Gunungsitoli 45.35 142 P **P 19 44 01.8 +1.4**
GSI Gunungsitoli 45.35 142 *e* P **P 19 44 01.8 +1.4**
comp=Z,603nm,0.8s
WLS Welschbruch 45.44 303 *e* P **P 19 44 00.7 -0.2**
CDF Champ du Feu 45.49 303 *e* P **P 19 44 00.8 -0.5**
ECH Echery 45.62 302 ⇑*e* P **P 19 44 02.0 -0.2**
YOJ Yonaguni jima 45.64 94 *e* P **P 19 44 02.8 +0.2**
YOJ pmax pmax
comp=Z,155nm,1.1s
YOJ Yonaguni jima 45.64 94 *e* P **P 19 44 02.8 +0.2**
comp=Z,154nm,1.1s
MOF Molkenrain 45.73 302 ⇑*e* P **P 19 44 03.1 -0.1**
FRIM Kepong 45.74 136 ⇓P **P 19 44 04.6 +1.1**
MEM Membach 45.76 306 P **P 19 44 05.0 +1.7**
MEM XP **sP 19 44 13.0 +1.2**
comp=Z,156nm,1.1s
HGN Heimansgroeve 45.77 306 *e* P **P 19 44 03.5 +0.1**
comp=Z,61nm,1.1s
HGN *ep* P **sP 19 44 13.6 +1.8**
HGN *es* P pP 19 44 19.8 +10
HGN *e* S **S 19 50 49.8 +4.0**
HGN *es* S **SS 19 54 11.2 +1.3**
WLF Walferdange 45.90 305 P **P 19 44 06.0 +1.6**
WLF XP **sP 19 44 14.5 +1.6**
comp=Z,228nm,1.1s
WLF Walferdange 45.90 305 *e* P **P 19 44 05.1 +0.7**
WLF pmax pmax
comp=Z,331nm,0.8s
WLF MLR MLR
comp=Z,48µm,20.0s
WLF Walferdange 45.90 305 *e* P **P 19 44 05.0 +0.7**
comp=Z,331nm,0.8s
WLF LR LR
comp=Z,48µm,20.0s
HINF Hinteralfeld 45.92 302 *e* P **P 19 44 04.3 -0.3**
HINF pmax pmax
comp=Z,46nm,0.6s
BEBN Eben Emael 45.92 306 P **P 19 44 06.1 +1.6**
BEBN XP **sP 19 44 13.8 +0.8**
comp=Z,55nm,1.2s
SENIN Lac Senin/Sane 46.02 300 *e* P **P 19 44 05.2 -0.5**
comp=Z,204nm,0.8s
BCLA Clavier 46.24 306 P **P 19 44 07.5 +0.4**
BCLA XP **sP 19 44 16.8 +1.2**
comp=Z,72nm,1.3s
THEF They Montfort 46.37 303 *e* P **P 19 44 08.6 +0.5**
OG01 Vacheresse 46.44 300 *e* P **P 19 44 08.5 -0.3**
GIVF Givet 46.62 306 *e* P **P 19 44 11.2 +1.1**
GIVF pmax pmax
comp=Z,96nm,0.9s
RSL Roselend 46.67 299 *e* P **P 19 44 10.6 -0.1**
OG22 Abries 46.72 298 *e* P **P 19 44 11.0 -0.1**
LUCF Luceram 46.74 297 *e* P **P 19 44 10.2 -1.0**
CABF La Chapelle 46.75 301 *e* P **P 19 44 10.8 -0.5**
CABF pmax pmax
comp=Z,69nm,1.0s
MNSI Mandailing Nat 46.76 140 P **P 19 44 12.3 +0.8**
DOU Dourbes 46.77 306 P **P 19 44 11.8 +0.6**
DOU XP **sP 19 44 21.1 +1.4**
comp=Z,131nm,1.2s
REVF Revere 46.77 296 *e* P **P 19 44 11.3 -0.1**
BNI Bardonecchia 46.83 298 PFAKE 19 44 20.0 +8.1
BNI LR LR
comp=Z,29µm,22.0s
VSL Villasalto 46.83 290 *e* P **P 19 44 11.3 -0.5**
comp=Z,77nm,0.9s
VSL LR LR
comp=Z,7µm,21.0s
SNF Seneffe 46.85 306 P **P 19 44 12.3 +0.4**
SNF XP **sP 19 44 21.6 +1.2**
MVIF Mont Vial 46.87 297 *e* P **P 19 44 11.6 -0.7**
BAIF Baives 47.02 306 *e* P **P 19 44 13.6 +0.5**
BAIF pmax pmax
comp=Z,114nm,1.0s
GDM Grand'Maison 47.16 299 *e* P **P 19 44 14.2 -0.3**
DGAR Diego Garcia 47.34 179 PFAKE 19 44 30.0 +14
DGAR LR LR
comp=Z,23µm,21.0s
JNU Nakatsue 47.39 79 LR LR 20 05 02.0
comp=Z,36nm,18.5s,baz=292,slow=37
JNU Nakatsue 47.39 79 *e* P **P 19 44 16.8 +0.5**
comp=Z,226nm,1.0s
GRN Grenoble 47.40 299 *e* P **P 19 44 16.3 0.0**
NKL Nikolayevsk 47.40 50 *i* P **P 19 44 16.0 -0.1**
NKL *e* 19 46 13.0
NKL *i* S **S 19 51 10.0 +1.0**
NKL pmax pmax
comp=E,60nm,1.0s
NKL pmax pmax
comp=Z,180nm,1.0s
NKL pmax pmax
comp=E,1µm,8.0s
NKL pmax pmax
comp=Z,2µm,8.0s
NKL smax smax
comp=N,5µm,17.0s
NKL smax smax
comp=E,6µm,17.0s
NKL MLR MLR
comp=E,32µm,18.0s
NKL MLR MLR
comp=Z,62µm,18.0s
KGM Kluang 47.68 135 ⇑P **P 19 44 20.2 +1.6**
BKNI Bangkinang 47.90 138 P **P 19 44 20.6 +0.2**
BKNI Bangkinang 47.90 138 *e* P **P 19 44 20.3 -0.1**
comp=Z,584nm,0.8s
OG26 St.-Nazaire-De 47.91 298 *e* P **P 19 44 20.4 +0.2**
LRW Lerwick 47.91 320 *e* P **P 19 44 20.3 +0.4**
LRW Lerwick 47.91 320 *e* P **P 19 44 20.3 +0.4**
LRW AMS AMS 20 05 29.7
comp=Z,55µm,15.3s
LEPF PUYLOUBIER 47.98 297 *e* P **P 19 44 20.1 -0.7**
MYKOM Kota Tinggi 48.16 134 ⇑P **P 19 44 23.5 +1.1**
MYKOM Kota Tinggi 48.16 134 *e* P **P 19 44 23.2 +0.9**
comp=Z,365nm,1.3s
SSB Saint Sauveur 48.19 299 *e* P **P 19 44 22.4 0.0**
SSB Saint Sauveur 48.19 299 *e* P **P 19 44 21.7 -0.7**
SSB pmax pmax
comp=Z,267nm,1.0s
SSB MLR MLR
comp=Z,14µm,21.0s
SSB Saint Sauveur 48.19 299 *e* P **P 19 44 21.6 -0.7**
comp=Z,267nm,1.0s
SSB LR LR
comp=Z,14µm,21.0s
VIVF Saint-Julien-l 48.24 299 *e* P **P 19 44 22.7 -0.1**
VIVF pmax pmax
comp=Z,128nm,1.0s
KEST Kesra 48.34 286 P **P 19 44 23.8 0.0**
comp=Z,74nm,1.1s,baz=288,slow=2.3,SNR=27
KEST LR LR 20 10 11.7
comp=Z,7µm,19.1s,baz=360,slow=43
KEST Kesra 48.34 286 *e* P **P 19 44 24.0 +0.3**
comp=Z,196nm,1.0s
JOW Kunigami 48.42 88 P **P 19 44 24.8 +0.4**
comp=Z,266nm,1.3s
AVF Avril sur Loir 48.49 302 *e* P **P 19 44 23.7 -1.0**
AVF pmax pmax
comp=Z,115nm,1.0s
WACR West Acre 48.50 310 *e* P **P 19 44 25.7 +1.1**
WACR AMB AMB 19 44 27.2
comp=Z,422nm,1.0s
WACR *e* 19 50 57.4
WACR AMS AMS 20 09 21.9
comp=Z,49µm,17.1s
PLDF La Plantade 48.58 300 *e* P **P 19 44 25.4 0.0**
ELSH Elham, Standar 48.62 308 *e* P **P 19 44 25.5 0.0**
ELSH AMB AMB 19 44 35.6
comp=Z,508nm,0.9s
ELSH AMS AMS 20 07 38.7
comp=Z,62µm,18.0s
PDSI Padang 48.67 140 P **P 19 44 26.3 -0.1**
comp=Z,412nm,1.0s,comp=Z,7µmcomp=Z,450µm
COLF Collangettes 48.68 300 *e* P **P 19 44 26.5 +0.3**
LMK Market Rasen 48.87 311 *e* P **P 19 44 27.0 -0.4**
LMK *e* 19 51 13.5
LMK AMS AMS 20 07 40.4
comp=Z,37µm,14.9s
AGO Saint Agoulin 48.87 301 *e* P **P 19 44 28.6 +1.0**
PYM Petit Puy Mans 49.05 300 *e* P **P 19 44 29.8 +0.7**
LBL Lubilhac 49.07 300 *e* P **P 19 44 29.6 +0.4**
TYV Tymovskoe 49.17 52 *e* P **P 19 44 30.2 +0.4**
TYV pmax pmax
comp=Z,46nm,0.8s
SDSI Sungai Dareh 49.17 139 P **P 19 44 29.7 -0.5**
comp=Z,131nm,0.9s,comp=Z,46µm
HMNX Herstmonceux 49.18 308 *e* P **P 19 44 31.1 +1.3**
HMNX AMS AMS 20 08 07.4
comp=Z,57µm,17.1s
DRUM Mains of Drumt 49.23 316 *e* P **P 19 44 29.7 -0.4**
DRUM AMB AMB 19 44 41.0
comp=Z,146nm,1.5s
DRUM *e* 19 51 19.0
DRUM AMS AMS 20 06 42.6
comp=Z,28µm,15.9s
TPRI Tanjung Pinang 49.25 134 P **P 19 44 32.4 +1.6**
MLA1 Latheron 49.37 318 *e* P **P 19 44 31.3 +0.1**
CMAH Djebel Manchou 49.38 288 P **P 19 44 31.4 -0.3**
MME1 Meikle Cairn 49.39 316 *e* P **P 19 44 31.3 -0.1**
VERF Verneugheol 49.40 301 *e* P **P 19 44 31.9 +0.2**
JMIC Jan Mayen 49.42 335 *e* P **P 19 44 33.8 +2.4**
JMIC IVmBBB 19 44 43.4
comp=Z,4µm,2.5s
JMIC *e* S **S 19 51 39.8 +2.7**
JMIC IVMs_BB IVMs_BB 20 05 25.9

comp=Z,13µm,17.7s
FRNF Fournols 49.47 300 *e*P **P** **19 44 32.5 +0.3**
MCD Coleburn Disti 49.48 317 *e*P **P** **19 44 32.3 +0.3**
ABSA Djebel Ababsia 49.48 287 P **P** **19 44 33.0 +0.5**
HPK Haverah Park 49.48 312 *e*P **P** **19 44 32.0 -0.2**
HPK AMS AMS 20 07 32.8
comp=Z,29µm,16.0s
BIGH Upper Bighouse 49.61 318 *e*P **P** **19 44 33.4 +0.4**
BIGH AMB AMB 19 44 44.2
comp=Z,612nm,1.5s
BIGH *e* 19 51 25.6
BIGH AMS AMS 20 06 39.8
comp=Z,108µm,15.4s
CWF Charnwood Fore 49.63 310 *e*P **P** **19 44 33.2 -0.1**
CWF AMB AMB 19 44 43.5
comp=Z,135nm,1.1s
CWF *e* 19 51 31.8
CWF AMS AMS 20 09 22.9
comp=Z,31µm,15.3s
CWF Charnwood Fore 49.63 310 *e*P **P** **19 44 32.8 -0.5**
comp=Z,150nm,0.9s
CAEH 'Ain El Ouahch 49.73 288 P **P** **19 44 33.8 -0.5**
EDI Edinburgh 49.85 315 *e*P **P** **19 44 34.1 -0.8**
EDI Edinburgh 49.85 315 *e*P **P** **19 44 34.0 -0.8**
EDI AMB AMB 19 44 45.7
comp=Z,165nm,0.9s
EDI *e* 19 51 29.6
EDI AMS AMS 20 07 27.7
comp=Z,33µm,15.7s
CAF Calviac 49.96 300 *e*P **P** **19 44 35.6 -0.4**
CAF pmax pmax
comp=Z,59nm,1.1s
CKFL Kef-Lekhel 49.99 288 P **P** **19 44 39.3 +2.9**
WOL Wolverton 49.99 309 *e*P **P** **19 44 37.1 +1.0**
WOL AMB AMB 19 44 47.3
comp=Z,507nm,1.1s
WOL *e* 19 51 32.6
WOL AMS AMS 20 08 21.7
comp=Z,60µm,17.4s
ESK Eskdalemuir 50.01 314 *e*P **P** **19 44 36.1 0.0**
ESK AMB AMB 19 44 46.6
comp=Z,195nm,0.9s
ESK *e* 19 51 32.3
ESK AMS AMS 20 08 03.7
comp=Z,47µm,15.0s
ESK Eskdalemuir 50.01 314 *e*P **P** **19 44 36.3 +0.2**
ESK pmax pmax
comp=Z,217nm,0.9s
ESK MLR MLR
comp=Z,39µm,22.0s
ESK Eskdalemuir 50.01 314 *e*P **P** **19 44 36.3 +0.2**
comp=Z,217nm,0.9s
ESK LR LR
comp=Z,39µm,22.0s
STNC Stoke 50.06 311 *e*P **P** **19 44 37.1 +0.6**
STNC AMB AMB 19 44 39.4
comp=Z,122nm,1.2s
STNC *e* 19 51 35.5
STNC AMS AMS 20 08 25.5
comp=Z,29µm,15.1s
PPSI Pulau Pagai 50.06 142 P **P** **19 44 39.0 +2.1**
comp=Z,727nm,1.0s,comp=Z,9µm
BHH Howats Hill 50.08 314 *e*P **P** **19 44 37.7 +1.0**
MDO Dochfour 50.09 317 *e*P **P** **19 44 36.8 0.0**
KESW Keswick, Cumbr 50.15 313 *e*P **P** **19 44 37.6 +0.4**
KESW AMB AMB 19 44 39.5
comp=Z,217nm,1.2s
KESW *e* 19 51 34.5
KESW AMS AMS 20 10 05.4
comp=Z,28µm,14.7s
SWN1 Swindon 50.28 309 AMS AMS 20 09 46.2
comp=Z,47µm,18.3s
SJAF Saint Jean de 50.29 296 *e*P **P** **19 44 39.3 +0.8**
SOFL Sornfelli, Far 50.30 323 *e*P **P** **19 44 40.0 +1.7**
SOFL Sornfelli, Far 50.30 323 AMS AMS 20 07 27.0
comp=Z,60µm,18.3s
FLN La Foliniere 50.32 305 *e*P **P** **19 44 37.8 -0.8**
FLN pmax pmax
comp=Z,43nm,0.8s
LRDF Laroque-de-Fa 50.35 297 *e*P **P** **19 44 39.1 +0.2**
CTEI Djebel Teioual 50.36 287 P **P** **19 44 40.0 +0.8**
STRD Stroud 50.41 309 *e*P **P** **19 44 39.7 +0.5**
STRD AMB AMB 19 44 40.8
comp=Z,116nm,0.9s
STRD *e* 19 51 37.2
STRD AMS AMS 20 09 41.5
comp=Z,53µm,17.9s
YSS Yuzh-Sakhalins 50.45 57 *αe*P **P** **19 44 40.4 +0.8**
YSS *e**SP **sP** **19 44 47.5 -0.6**
YSS *e* 19 46 39.0
YSS *e*PPP PPP 19 47 37.0
YSS *e*S **S** **19 51 51.0 -1.1**
YSS *e*SS **ScS** **19 54 26.0 -3.4**
YSS pmax pmax
comp=Z,250nm,1.2s
YSS pmax pmax
comp=Z,2µm,13.0s
YSS pmax pmax
comp=E,900nm,14.0s
YSS pmax pmax
comp=E,700nm,13.0s
YSS pmax pmax
comp=Z,1µm,13.0s
YSS smax smax
comp=N,3µm,18.0s
YSS smax smax
comp=E,2µm,16.0s
YSS MLR MLR
comp=Z,16µm,14.0s
YSS MLR MLR
comp=N,6µm,16.0s
YSS MLR MLR
comp=E,20µm,15.0s
YSS Yuzh-Sakhalins 50.45 57 *e*P **P** **19 44 40.0 +0.4**
comp=E,335nm,1.0s
YSS LR LR
comp=Z,5µm,19.0s
FILF Fillols 50.48 297 *e*P **P** **19 44 41.8 +1.8**
DFRA Djebel Bou Aff 50.54 288 P **P** **19 44 40.6 0.0**
PGBU Glenifferbraes 50.58 315 *e*P **P** **19 44 40.3 -0.2**
PGBU *e* 19 51 38.5
PGBU AMS AMS 20 10 58.9
comp=Z,39µm,14.3s
BATH Bath 50.61 309 AMS AMS 20 09 57.8
comp=Z,48µm,17.8s
HLM1 Long Mynd 50.61 310 *e*P **P** **19 44 41.2 +0.5**
OLDB Oldbury-Upon-S 50.68 309 *e*P **P** **19 44 41.6 +0.5**
OLDB *e* 19 51 38.5
OLDB AMS AMS 20 09 59.2
comp=Z,48µm,19.4s
GRR Gorron 50.68 305 *e*P **P** **19 44 40.3 -1.0**
GRR pmax pmax
comp=Z,93nm,1.0s
FOEL Foel Wylfa 50.69 311 *e*P **P** **19 44 42.2 +0.9**
FOEL AMB AMB 19 44 51.9
comp=Z,138nm,1.2s
FOEL AMS AMS 20 08 24.6
comp=Z,26µm,15.7s
MONM Monmouth 50.77 310 *e*P **P** **19 44 42.3 +0.4**
MONM AMB AMB 19 44 43.7
comp=Z,120nm,1.2s
MONM *e* 19 51 41.0
MONM AMS AMS 20 10 32.4
comp=Z,55µm,16.6s
KPL Plockton 50.79 317 *e*P **P** **19 44 42.0 0.0**
KPL Plockton 50.79 317 *e*P **P** **19 44 41.6 -0.4**
KPL *e* 19 51 38.5
KPL AMS AMS 20 07 27.3
comp=Z,40µm,16.4s
MCH1 Michaelchurch 50.84 310 *e*P **P** **19 44 43.1 +0.6**
MCH1 AMB AMB 19 44 44.3
comp=Z,151nm,1.1s
MCH1 *e* 19 51 43.5
MCH1 AMS AMS 20 10 43.6
comp=Z,53µm,17.1s
JMBI JAMBI 50.91 137 P **P** **19 44 46.0 +2.6**
VALF Valcebollere 50.91 297 *e*P **P** **19 44 43.6 +0.2**
GAL1 Galloway 50.97 314 *e*P **P** **19 44 44.1 +0.7**
GAL1 AMB AMB 19 44 54.0
comp=Z,93nm,0.9s
GAL1 *e* 19 51 50.8
GAL1 AMS AMS 20 08 33.2
comp=Z,27µm,14.8s
LLW Llanuwychllyn 50.97 311 *e*P **P** **19 44 44.0 +0.5**
LLW AMB AMB 19 44 54.0
comp=Z,976nm,0.9s
LLW *e* 19 51 42.3
INU Inuyama 50.98 73 *e*P **P** **19 44 43.4 -0.3**
comp=Z,189nm,0.8s
CKHR Kef el Ahmar 51.03 288 P **P** **19 44 44.1 -0.2**
SET Setif 51.03 288 P **P** **19 44 45.0 +0.7**
SEY Seymchan 51.19 35 ScP **ScP** **19 49 55.2 -0.1**
comp=Z,19nm,0.8s,baz=252,slow=3.3,SNR=4.2
SEY Seymchan 51.19 35 *ce*P **P** **19 44 45.9 +1.0**
JSA Saint Aubin 51.23 306 *e*P **P** **19 44 45.4 0.0**
JSA AMB AMB 19 44 48.3
comp=Z,81nm,1.1s
JSA AMS AMS 20 09 52.0
comp=Z,25µm,14.3s
WLF1 Llynfaes 51.26 312 *e*P **P** **19 44 46.3 +0.7**
WLF1 *e* 19 51 52.8
WLF1 AMS AMS 20 10 51.2
comp=Z,56µm,14.0s
MA2 Magadan 51.28 40 ScP **ScP** **19 49 55.0 -0.8**
comp=Z,23nm,0.9s,baz=296,slow=7.3,SNR=3.9
MA2 Magadan 51.28 40 *i* P **P** **19 44 46.2 +0.6**
MA2 Magadan 51.28 40 PFAKE **19 45 00.0 +14**
MA2 LR LR
comp=Z,2µm,20.0s
WPS Cemaes, Angles 51.28 312 AMS AMS 20 08 45.7
comp=Z,26µm,15.9s
MJB9 Matsu-Tunnel 51.32 71 *e*P **P** **19 44 46.4 +0.1**
comp=Z,56nm,0.9s
MAJO Matsushiro 51.33 71 *e*P **P** **19 44 45.9 -0.5**
MAJO pmax pmax
comp=Z,225nm,0.9s
MAJO MLR MLR
comp=Z,13µm,19.0s
MAJO Matsushiro 51.33 71 *e*P **P** **19 44 45.9 -0.5**
comp=Z,225nm,0.9s
MAJO LR LR
comp=Z,13µm,19.0s
MAT Matsushiro 51.33 71 P **P** **19 44 45.0 -1.4**
MAT S **S** **19 52 04.2 -0.3**
MJAR Matsushiro Arr 51.33 71 P **P** **19 44 46.5 +0.1**
comp=Z,152nm,0.9s,baz=292,slow=9.0,SNR=118
MJAR ScP **ScP** **19 49 55.4 -1.1**
comp=Z,18nm,1.0s,baz=290,slow=4.9,SNR=5.6
MJAR LR LR 20 08 06.0
comp=Z,12µm,18.5s,baz=340,slow=38
DAG Danmarks Havn 51.35 343 *i*P **P** **19 44 47.0 +1.1**
comp=Z,134nm,0.9s
DAG *i* S **S** **19 51 59.5 -4.2**
comp=Z,20µm,17.0s
DAG Danmarks Havn 51.35 343 ⇑*i*P **P** **19 44 47.0 +1.1**
DAG *i* S **S** **19 51 59.5 -4.2**
DAG pmax pmax
comp=Z,110nm,0.9s
DAG MLR MLR
comp=Z,20µm,17.0s
ASAJ Asahikawa 51.36 61 *e*P **P** **19 44 46.1 -0.3**
comp=Z,151nm,0.8s
LPW Lampeter 51.43 310 *e*P **P** **19 44 46.7 -0.2**
LPW *e* 19 51 56.2
LPW AMS AMS 20 11 11.6
comp=Z,42µm,16.2s
KMBO Kilima Mbogo 51.62 226 P **P** **19 44 49.5 +0.5**
comp=Z,52nm,1.0s,baz=26,slow=10.0,SNR=56
KMBO LR LR 20 08 13.4
comp=Z,14µm,21.9s,baz=37,slow=38
KMBO Kilima Mbogo 51.62 226 *e*P **P** **19 44 49.9 +0.8**
comp=Z,102nm,1.1s
DYA Yadsworthy 51.90 308 *e*P **P** **19 44 50.6 +0.2**
DYA AMB AMB 19 45 00.5
comp=Z,130nm,0.9s
DYA *e* 19 51 59.3
DYA AMS AMS 20 09 41.9
comp=Z,61µm,18.0s
DYA Yadsworthy 51.90 308 *e*P **P** **19 44 49.6 -0.8**
comp=Z,123nm,0.8s
RESF Ens 51.90 298 *e*P **P** **19 44 50.7 0.0**
LABF Labassere 51.99 298 *e*P **P** **19 44 53.1 +1.8**
HTL Hartland 52.04 309 AMS AMS 20 10 41.3
comp=Z,21µm,17.8s
VIEF Viey 52.08 298 *e*P **P** **19 44 53.1 +1.1**
KSI Kapahiang 52.09 139 P **P** **19 44 52.8 +0.5**
comp=Z,1µm,0.9s,comp=Z,9µm
KSM Kuching 52.16 128 ⇓P **P** **19 44 54.4 +1.6**
KSM Kuching 52.16 128 *e*P **P** **19 44 53.5 +0.8**
comp=Z,237nm,1.3s
KSM LR LR
comp=Z,14µm,19.0s
QUIF Quistinic 52.29 305 *e*P **P** **19 44 52.7 -0.7**
QUIF pmax pmax
comp=Z,54nm,0.7s
REYF Montagne du Re 52.29 298 *e*P **P** **19 44 56.3 +2.7**
DSB Dublin 52.40 312 *e*P **P** **19 44 54.0 -0.1**
comp=Z,120nm,0.9s
KKM Kota Kinabalu 52.49 118 ⇑P **P** **19 44 57.4 +2.0**
KKM Kota Kinabalu 52.49 118 *e*P **P** **19 44 56.5 +1.2**
comp=Z,202nm,1.0s
KKM LR LR
comp=Z,12µm,21.0s
ATE Arette 52.49 298 *e*P **P** **19 44 57.2 +2.2**
ERM Erimo 52.55 63 *de*P **P** **19 44 55.9 +0.5**
ERM pmax pmax
comp=Z,249nm,1.3s
ERM MLR MLR
comp=Z,25µm,18.0s
ERM Erimo 52.55 63 *e*P **P** **19 44 55.8 +0.5**
comp=Z,124nm,0.7s
ERM LR LR
comp=Z,26µm,19.0s
SBUM Sibu 52.58 125 ⇑P **P** **19 44 57.6 +1.7**
SBUM Sibu 52.58 125 *e*P **P** **19 44 57.2 +1.3**
comp=Z,120nm,1.1s
PMBI Palembang 52.60 136 P **P** **19 44 57.6 +1.6**
comp=Z,1µm,1.2s,comp=Z,13µm,comp=Z,11µm
PPBI Pangkal Pinang 52.69 134 P **P** **19 44 57.5 +0.8**
LARF Larrau 52.71 298 *e*P **P** **19 44 57.4 +0.8**
LHSI Lahat 52.71 138 P **P** **19 44 58.2 +1.4**
CCA1 Carnmenellis 52.76 308 *e*P **P** **19 44 56.7 -0.1**
CCA1 AMB AMB 19 45 07.5
comp=Z,281nm,1.0s
CCA1 *e* 19 52 11.7
CCA1 AMS AMS 20 10 07.1
comp=Z,46µm,18.7s
OSSF Osses 52.80 299 *e*P **P** **19 44 57.7 +0.5**
EMHD Djebel Mahouad 52.81 289 P **P** **19 44 57.8 +0.2**
MNAI Manna 52.88 139 P **P** **19 44 58.6 +0.5**
MNAI Manna 52.88 139 *e*P **P** **19 44 56.7 -1.4**
comp=Z,637nm,1.3s
SDKM Sandakan 53.45 118 ⇑P **P** **19 45 04.2 +1.9**
YUK Yuzh-Kuril'sk 53.56 60 *i* P **P** **19 45 03.9 +1.1**
EBNR Beni Rached 53.80 290 P **P** **19 45 05.7 +1.0**
SCO Scoresbysund 53.88 335 *i* P **P** **19 45 06.1 +1.4**
comp=Z,30nm,0.8s
SCO *i* S **S** **19 52 40.6 +2.2**
comp=Z,50µm,18.0s
SCO Scoresbysund 53.88 335 *i* P **P** **19 45 06.1 +1.4**
SCO *i* S **S** **19 52 40.6 +2.2**
SCO pmax pmax
comp=Z,30nm,0.8s
SCO MLR MLR
comp=Z,50µm,18.0s
ECHA Ech Chlef 53.98 290 P **P** **19 45 07.4 +1.4**
STKI Sintang 53.98 127 P **P** **19 45 08.4 +2.2**
comp=Z,229nm,0.9s,comp=Z,4µm
LWLI Liwa 54.00 138 P **P** **19 45 05.2 -1.2**
JHJ2 Mitsune 54.06 74 *e*P **P** **19 45 08.3 +1.7**
comp=Z,1µm,1.4s
EANR 'Ain N'Sour 54.27 290 P **P** **19 45 08.2 +0.1**
KUR Kuril'sk 54.40 58 *e*P P 19 45 01.9 -6.9
KUR *e* 19 47 20.4
KUR pmax pmax
comp=N,35nm,1.7s
KUR pmax pmax
comp=E,20nm,1.7s
KUR pmax pmax
comp=Z,99nm,1.7s
KUR pmax pmax
comp=Z,701nm,11.7s
KUR MLR MLR
comp=N,8µm,13.0s
KUR MLR MLR
comp=E,8µm,13.0s
KUR MLR MLR
comp=Z,9µm,13.0s
KASI Kota Agung 54.66 138 P **P** **19 45 08.6 -2.4**
comp=Z,518nm,0.6s,comp=Z,5µm
MYLDM Lahad Datu 54.67 117 *e*P **P** **19 45 13.3 +2.0**
comp=Z,290nm,1.0s
BLSI Bandar Lampung 54.91 137 P **P** **19 45 11.1 -1.8**
comp=Z,206nm,0.5s,comp=Z,3µm
MBAR Mbarara 54.99 233 *e*P **P** **19 45 13.0 -0.7**
MBAR pmax pmax
comp=Z,130nm,1.2s
MBAR Mbarara 54.99 233 *e*P **P** **19 45 12.9 -0.8**
comp=Z,128nm,1.2s
VAL Valentia 55.07 312 *e*P **P** **19 45 12.5 -1.1**
VAL *e*S **S** **19 52 54.2 -0.7**
VAL *e*SS **SS** **19 56 45.0 +6.8**
BILL Bilibino 55.17 27 *c i*P **P** **19 45 15.4 +1.3**
BILL *i* 19 45 23.7
BILL *e* 19 46 15.0
BILL *e* 19 47 18.3
BILL *e*S **S** **19 52 57.8 +2.0**
BILL *e*SS **SS** **19 56 38.0 -1.2**
BILL *e*SSS SSS 19 58 51.3
BILL pmax pmax
comp=Z,129nm,1.1s
BILL MLR MLR
comp=Z,64µm,17.0s
BILL Bilibino 55.17 27 *e*P **P** **19 45 15.5 +1.3**
comp=Z,189nm,0.8s
BILL LR LR
comp=Z,65µm,19.0s
BORG Borgarnes 55.67 329 *e*P **P** **19 45 19.6 +1.9**
BORG pmax pmax
comp=Z,104nm,0.8s
BORG MLR MLR
comp=Z,42µm,19.0s
BORG Borgarnes 55.67 329 *e*P **P** **19 45 19.6 +1.9**
comp=Z,104nm,0.8s
BORG LR LR
comp=Z,42µm,19.0s
GUD Guadarrama 55.86 297 P **P** **19 45 18.9 -0.8**
SBJI Serang 56.01 137 P P 19 45 27.0 +6.2
comp=Z,159nm,0.9s
ES19 SONSECA Array 56.10 296 *e*P **P** **19 45 20.8 -0.5**
ESDC Sonseca Array 56.16 296 P **P** **19 45 21.5 -0.2**
comp=Z,8.8nm,0.5s,baz=58,slow=7.1,SNR=59
ESDC LR LR 20 12 52.0
comp=Z,7µm,19.2s,baz=65,slow=40
ESLA Sonseca Array 56.16 296 *e*P **P** **19 45 21.1 -0.7**
comp=Z,175nm,1.3s
CGJI Cibinong 56.20 138 P **P** **19 45 20.0 -2.1**
comp=Z,209nm,0.7s,comp=Z,3µm
PBKI Pangkalan Bun 56.30 129 P **P** **19 45 25.5 +2.6**
comp=Z,634nm,1.0s,comp=Z,6µm
PAB San Pablo 56.48 296 *e*P **P** **19 45 23.5 -0.6**
PAB pmax pmax
comp=Z,115nm,1.1s
PAB MLR MLR
comp=Z,12µm,19.0s
PAB San Pablo 56.48 296 *e*P **P** **19 45 23.5 -0.6**
comp=Z,115nm,1.1s
PAB LR LR
comp=Z,12µm,19.0s
DBJI Dramaga 56.70 137 P **P** **19 45 23.3 -2.4**
comp=Z,243nm,1.0s,comp=Z,2µm
MTKI Muara Teweh, K 56.88 125 P P 19 45 32.8 +5.7
comp=Z,73nm,0.4s,comp=Z,7µm
SKJI Sukabumi 56.98 137 P **P** **19 45 25.5 -2.2**
comp=Z,241nm,0.5s,comp=Z,3µm
PBRG Braganca 57.09 299 *e*P **P** **19 45 29.6 +1.3**
comp=Z,97nm,1.7s
PBRG *e*pP **sP** **19 45 37.2 +0.3**
PBRG *e*S **S** **19 53 23.4 +1.2**
PEA1 Petropavlovsk- 57.10 46 *e*P **P** **19 45 28.7 +0.5**
PEA0 Petropavlovsk- 57.10 46 *e*P **P** **19 45 28.0 -0.2**
PEA0B Petropavlovsk- 57.10 46 *e*P **P** **19 45 28.1 -0.1**
comp=Z,140nm,1.1s
PETK Petropavlovsk- 57.10 46 P **P** **19 45 28.7 +0.5**
comp=Z,48nm,0.9s,baz=339,slow=2.1,SNR=46
PETK LR LR 20 11 18.6
comp=Z,28µm,18.2s,baz=293,slow=37
COCO West Island 57.14 150 *e*P **P** **19 45 29.1 +0.3**
COCO pmax pmax
comp=Z,632nm,1.4s
COCO MLR MLR
comp=Z,8µm,22.0s
COCO West Island 57.14 150 *e*P **P** **19 45 29.1 +0.3**
comp=Z,632nm,1.4s
COCO LR LR
comp=Z,8µm,22.0s
SKR Severo-Kuril's 57.22 49 *e*P **P** **19 45 26.8 -2.2**
SKR *e* 19 47 38.6
SKR *e*S **S** **19 53 20.1 -3.5**
SKR *e*PS **PnS** **19 53 35.2 0.0**
SKR *e*SS **SS** **19 57 20.8 +8.6**
SKR MLR MLR
comp=Z,42µm,17.0s
CTBH Cotabato--PC H 57.28 110 ⇑*i*P **P** **19 45 31.6 +1.7**
JCJI Jatiwangi 57.46 135 P **P** **19 45 31.8 +0.7**
comp=Z,300nm,1.0s
CNJI Cibinong 57.53 137 P **P** **19 45 28.7 -2.9**
comp=Z,282nm,0.9s,comp=Z,2µm
MVO Moncorvo 57.57 299 *e*P **P** **19 45 33.2 +1.4**
comp=Z,108nm,1.4s
MVO *e*pP **pP** **19 45 39.1 +1.1**
MVO *e*S **S** **19 53 31.5 +2.9**
MVO Moncorvo 57.57 299 *e*LQ LQ 20 04 44.3
MVO *e*LR LR 20 08 45.2
comp=Z,13µm,18.0s
TAM Tamanrasset 57.63 274 *e*P **P** **19 45 32.3 -0.3**
TAM pmax pmax
comp=Z,54nm,0.9s
TAM MLR MLR
comp=Z,4µm,22.0s
TAM Tamanrasset 57.63 274 *e*P **P** **19 45 32.2 -0.3**
comp=Z,54nm,0.9s
TAM LR LR
comp=Z,4µm,22.0s
PET Petropavlovsk 57.66 46 *j i*P **P** **19 45 32.0 -0.1**
PET *e* 19 47 48.7
PET *e*PPP PPP 19 49 12.3
PET *e*S **S** **19 53 23.9 -5.4**
PET pmax pmax
comp=Z,114nm,1.4s
PET pmax pmax
comp=Z,2µm,16.5s
PET pmax pmax
comp=Z,1µm,10.1s
PET MLR MLR
comp=Z,29µm,16.0s
PET Petropavlovsk 57.66 46 *e*P **P** **19 45 31.2 -0.9**
comp=Z,89nm,0.9s
PET LR LR
comp=Z,22µm,19.0s
SUMG Summit 57.74 340 *i* P **P** **19 45 34.3 +1.4**
comp=Z,175nm,0.8s
SUMG *i* 19 45 43.0
SUMG *i* S **S** **19 53 34.7 +4.0**
comp=Z,15µm,17.0s
SUMG Summit 57.74 340 *e*P **P** **19 45 33.6 +0.7**
SUMG pmax pmax
comp=Z,722nm,0.9s
SUMG Summit 57.74 340 *e*P **P** **19 45 33.6 +0.7**
comp=Z,722nm,0.9s
PVRL Vila Real 57.98 299 *e*P **P** **19 45 36.0 +1.4**
comp=Z,27nm,1.3s
PVRL *e*pP **sP** **19 45 43.2 0.0**
POLO Lamas de Olo 57.99 299 *e*P **P** **19 45 34.5 -0.2**
comp=Z,33nm,1.8s
POLO *e*pP **sP** **19 45 43.4 +0.1**
POLO *e*S **S** **19 53 33.9 -0.2**
PCAB Cabril 57.99 300 *e*P **P** **19 45 36.5 +1.9**
comp=Z,149nm,1.5s
PCAB *e*pP **sP** **19 45 44.0 +0.7**
PGAV Gavieira, Arco 58.03 300 *e*P **P** **19 45 36.4 +1.4**
comp=Z,107nm,1.6s
PGAV *e*pP **sP** **19 45 44.5 +0.9**
PGAV *e*S **S** **19 53 34.7 0.0**
PGAV Gavieira, Arco 58.03 300 *e*LQ LQ 20 04 39.0
PGAV *e*LR LR 20 08 07.3
comp=Z,9µm,16.0s
CISI Cisompet, Garu 58.10 136 P **P** **19 45 34.3 -1.4**
CISI Cisompet, Garu 58.10 136 *e*P **P** **19 45 33.3 -2.4**
comp=Z,161nm,0.6s
MTE Manteigas 58.27 298 *e*P **P** **19 45 37.8 +1.1**
comp=Z,142nm,1.8s
MTE *e*pP **pP** **19 45 43.8 +0.9**
MTE *e*S **S** **19 53 38.4 +0.6**
MTE Manteigas 58.27 298 *e*LQ LQ 20 07 37.2
MTE *e*LR LR 20 09 14.0
comp=Z,11µm,18.0s

MTE Manteigas 58.27 298 *e*P **P 19 45 36.1 -0.6**
comp=Z,178nm,1.3s
MTE LR LR
comp=Z,9µm,19.0s
DAV Davao City (W) 58.34 109⇑ *i*P **P 19 45 37.7 +0.3**
DAV Davao City (W) 58.34 109 *e*P **P 19 45 37.5 +0.1**
comp=Z,269nm,0.5s
DAV LR LR
comp=Z,8µm,20.0s
PVIS Viseu 58.36 299 *e*P **P 19 45 38.8 +1.5**
comp=Z,95nm,1.3s
PVIS *e*pP **sP 19 45 44.9 -1.0**
PCBR Castelo Branco 58.49 298 *e*P **P 19 45 40.0 +1.9**
comp=Z,59nm,1.8s
PCBR *e*pP **sP 19 45 45.5 -1.2**
PMRV Marv??o 58.62 297 *e*P **P 19 45 40.4 +1.3**
comp=Z,106nm,1.6s
PMRV *e*pP **sP 19 45 46.8 -0.9**
PMRV *e*S **S 19 53 45.8 +3.5**
PMRV Marv??o 58.62 297 *e*LQ LQ 20 06 17.2
PMRV *e*LR LR 20 07 35.1
comp=Z,7µm,20.0s
CMJI Cimerak 58.63 136 P **P 19 45 39.4 +0.1**
comp=Z,150nm,0.7s
PTO Porto 58.64 299 *e*P **P 19 45 40.7 +1.6**
comp=Z,48nm,1.4s
PTO *e*pP **sP 19 45 48.4 +0.7**
BBKI Banjar Baru 58.81 127 P **P 19 45 42.9 +2.3**
comp=Z,251nm,0.9s,comp=Z,5µm
CBIJ Chichi jima 58.87 79 *e*P **P 19 45 39.9 -1.0**
comp=Z,223nm,1.3s
UWJI Ujung Watu 58.88 132 P **P 19 45 44.0 +3.0**
comp=Z,446nm,1.2s,comp=Z,7µm
PBAR Barrancos 58.98 296 *e*P **P 19 45 42.3 +0.8**
comp=Z,248nm,1.9s
PBAR *e*pP **pP 19 45 48.9 +1.1**
PBAR *e*S **S 19 53 46.9 0.0**
PESTR Estremoz 59.02 297 *e*P **P 19 45 43.3 +1.4**
comp=Z,79nm,1.6s
PESTR *e*pP **sP 19 45 50.3 -0.2**
PESTR *e*S **S 19 53 47.7 +0.1**
PCAS Casmilo, Conde 59.08 298 *e*P **P 19 45 43.3 +1.1**
comp=Z,61nm,1.0s
PCAS *e*S **S 19 53 50.1 +1.9**
PTOM Tomar 59.23 298 *e*P **P 19 45 43.9 +0.7**
comp=Z,80nm,1.7s
PTOM *e*pP **sP 19 45 51.2 -0.7**
PMTG Montargil 59.36 297 *e*P **P 19 45 45.3 +1.1**
comp=Z,59nm,1.5s
PMTG *e*pP **sP 19 45 52.9 +0.1**
PMTG *e*S **S 19 53 53.5 +1.6**
XMIS Christmas Isla 59.49 140 *e*P **P 19 45 44.3 -0.9**
comp=Z,143nm,0.7s
PBEJ Beja 59.62 296 *e*P **P 19 45 46.8 +0.8**
PBEJ *e*pP **pP 19 45 52.1 -0.2**
PVAQ Vaqueiros 59.82 295 *e*P **P 19 45 48.1 +0.7**
comp=Z,128nm,1.8s
PVAQ *e*pP **sP 19 45 56.0 0.0**
PVAQ *e*S **S 19 53 58.3 +0.5**
PVAQ Vaqueiros 59.82 295 *e*LQ LQ 20 10 44.5
PVAQ *e*LR LR 20 12 04.5
comp=Z,10µm,18.0s
UGM Wanagama 59.87 134 *e*P **P 19 45 47.0 -0.9**
comp=Z,271nm,1.4s
PCVE Castro Verde 59.93 296 *e*P **P 19 45 49.3 +1.2**
comp=Z,105nm,1.7s
PCVE *e*pP **sP 19 45 55.9 -0.9**
PCVE *e*S **S 19 54 00.5 +1.2**
NGJI Ngawi 59.94 133 P P 19 45 53.8 +5.4
MESJ Messejana 59.95 296 *e*P **P 19 45 48.2 -0.1**
MESJ *e*S **S 19 54 01.3 +1.8**
MESJ AMS AMS 20 18 04.9
comp=Z,12µm,16.8s
MESJ Messejana 59.95 296 *e*P **P 19 45 49.1 +0.8**
comp=Z,118nm,1.3s
PNCL Nicolau / Gran 60.03 296 *e*P **P 19 45 51.5 +2.7**
comp=Z,60nm,1.3s
PNCL *e*S **S 19 54 01.4 +0.9**
PCI Palu 60.04 120 P **S 19 45 50.9 +1.8**
comp=Z,186nm,1.1s,comp=Z,3µm
PBDV Barranco-do-Ve 60.05 295 *e*P **P 19 45 50.1 +1.1**
comp=Z,118nm,1.9s
PBDV *e*S **S 19 54 01.6 +0.8**
PMAFR Mafra 60.14 297 *e*P **P 19 45 52.7 +3.2**
comp=Z,108nm,1.2s
PMAFR *e*S **S 19 54 02.2 +0.3**
LIS Lisbon 60.16 297 *e*P **P 19 45 49.7 0.0**
LIS *e*S **S 19 54 04.0 +1.9**
LIS AMS AMS 20 20 00.0
comp=Z,9µm,18.2s
MRSI Marisa 60.43 118 P **P 19 45 52.5 +0.7**
comp=Z,279nm,0.9s,comp=Z,4µm
PTEO Sao Teotonio 60.45 296 *e*P **P 19 45 55.0 +3.3**
comp=Z,182nm,1.3s
PCJI Pacitan 60.46 133 P **P 19 45 51.1 -0.8**
MORF Marmelete 60.52 296 *e*P **P 19 45 52.3 +0.1**
MORF *e*S **S 19 54 08.7 +1.8**
MORF AMS AMS 20 16 42.8
comp=Z,13µm,21.0s
MORF Marmelete 60.52 296 *e*S **S 19 54 06.8 -0.1**
KULLO Kullorsuaq 60.62 346 *i*P **P 19 45 52.5 +0.3**
KULLO *i*S **S 19 54 03.4 -3.5**
comp=Z,21µm,19.0s
KULLO Kullorsuaq 60.62 346 *i*P **P 19 45 52.5 +0.3**
KULLO *i*S **S 19 54 03.4 -3.5**
KULLO MLR MLR
comp=Z,21µm,19.0s
PWJI Pagerwojo 60.67 133 P **P 19 45 51.0 -2.4**
comp=Z,66nm,0.7s
PFVI Vila Bisbo 60.72 295 *e*S **S 19 54 10.1 +0.7**
PFVI Vila Bisbo 60.72 295 *e*P **P 19 45 53.8 +0.2**
comp=Z,107nm,1.0s
RTC Rabat Centre 60.93 291 *e*P **P 19 45 54.3 -0.6**
comp=Z,2µm,1.3s
RTC LR LR
comp=Z,19µm,22.0s
BLJI Banyuglugur 61.47 131 P **P 19 45 59.0 +0.2**
comp=Z,565nm,0.8s,comp=Z,6µm
TTSI Tana Toraja 61.64 122 P **P 19 46 01.7 +1.8**
comp=Z,179nm,1.1s,comp=Z,2µm
KMSI Cibinong 61.76 116 P **P 19 46 04.8 +4.0**
GMJI Gumukmas 61.81 131 P **P 19 45 59.4 -1.7**
ABJI Asem Bagus 61.88 130 P **P 19 46 02.1 +0.5**
LUWI Luwuk 62.11 118 *e*P **P 19 46 01.8 -1.4**
comp=Z,140nm,0.9s
JAGI Jajag, Banyuwa 62.38 131 P **P 19 46 04.2 -0.7**
comp=Z,220nm,1.3s,comp=Z,3µm
JAGI Jajag, Banyuwa 62.38 131 *e*P **P 19 46 03.0 -1.9**
comp=Z,142nm,0.8s
RER Riviere de l'E 62.74 197 *e*P **P 19 46 07.8 +0.5**
comp=Z,511nm,1.0s
RER LR LR
comp=Z,11nm,19.0s
ABPO Ambohimpanom 63.07 206 *e*P **P 19 46 10.2 +0.6**
ABPO pmax pmax
comp=Z,133nm,0.8s
ABPO MLR MLR
comp=Z,9µm,21.0s
ABPO Ambohimpanom 63.07 206 *e*P **P 19 46 10.2 +0.6**
comp=Z,133nm,0.8s
ABPO LR LR
comp=Z,9µm,21.0s
KAPI Kappang 63.09 124 *e*P **P 19 46 08.7 -1.0**
comp=Z,123nm,1.2s
KAPI LR LR
comp=Z,5µm,20.0s
ILULI Ilulissat 63.09 340 *i*P **P 19 46 10.2 +1.3**
comp=Z,131nm,0.8s
comp=Z,13µm,17.0s
ILULI Ilulissat 63.09 340 *i*P **P 19 46 10.2 +1.3**
ILULI pmax pmax
comp=Z,130nm,0.8s
ILULI MLR MLR
comp=Z,13µm,17.0s
DNP Denpasar 63.16 130 P **P 19 46 13.8 +3.7**
comp=Z,561nm,0.9s,comp=Z,6µm
IGBI Denpasar 63.24 130 P **P 19 46 10.9 +0.3**
comp=Z,308nm,0.8s,comp=Z,2µm
TWSI Taliwang, Sumb 64.20 129 P **P 19 46 17.7 +0.7**
comp=Z,48nm,0.9s,comp=Z,1µm
SFJD Kangerlussuaq 64.50 338 *i*P **P 19 46 19.5 +1.3**
comp=Z,104nm,0.9s
comp=Z,12µm,15.0s
SFJD Kangerlussuaq 64.50 338 *e*P **P 19 46 18.8 +0.6**
SFJD pmax pmax
comp=Z,264nm,0.9s
SFJD MLR MLR
comp=Z,9µm,21.0s
SFJD Kangerlussuaq 64.50 338 *e*P **P 19 46 18.8 +0.6**
SFJD LR LR
comp=Z,9µm,21.0s
PLAI Plampang 64.81 128 P **P 19 46 20.8 -0.2**
comp=Z,160nm,0.9s,comp=Z,2µm
SANI Sanana 65.03 116 P **P 19 46 21.9 -0.6**
GAMB Gambell 65.04 26 *e*P **P 19 46 22.2 +0.4**
comp=Z,74nm,0.8s
LBMI Labuha 65.07 114 P **P 19 46 25.0 +2.2**
RES Resolute Bay 65.08 356 *e*P **P 19 46 22.6 +0.6**
RES pmax pmax
comp=Z,103nm,1.0s
RES Resolute Bay 65.08 356 *e*P **P 19 46 22.6 +0.6**
comp=Z,103nm,1.0s
SMY Shemya 65.91 41 *e*P **P 19 46 28.1 +0.5**
SMY pmax pmax
comp=Z,454nm,1.4s
SMY Shemya 65.91 41 *e*P **P 19 46 28.1 +0.5**
comp=Z,454nm,1.4s
TOA1 Torodi Ar. Sit 66.24 267 *e*P **P 19 46 29.2 -1.1**
comp=Z,356nm,0.7s
TOA1 *e* 20 15 00.1
TORD Torodi Ar. Bea 66.24 267 P **P 19 46 29.2 -1.1**
comp=Z,263nm,0.5s,baz=48,slow=5.3,SNR=1238
TORD PKPPKP **P'P'df 20 15 00.1 -5.5**
comp=Z,6.8nm,1.2s,baz=237,slow=2.9,SNR=8.8
TORD LR LR 20 19 37.2
comp=Z,2µm,18.4s,baz=60,slow=40
NRS Narsarsuaq 66.83 332 *i*P **P 19 46 34.1 +0.8**
comp=Z,14µm,16.0s
NRS Narsarsuaq 66.83 332 *i*P **P 19 46 34.1 +0.8**
NRS MLR MLR
comp=Z,14µm,16.0s
WSI Waingapu 67.01 126 P **P 19 46 35.3 +0.2**
comp=Z,575nm,0.8s,comp=Z,5µm
EDFI Ende, Flores 67.17 125 P **P 19 46 35.3 -1.0**
MMRI Maumere 67.43 124 P **P 19 46 37.1 -0.7**
MMRI Maumere 67.43 124 *e*P **P 19 46 35.1 -2.7**
comp=Z,153nm,1.0s
BASI Baing, Sumba 67.61 126 P **P 19 46 39.6 +0.7**
SWI Sorong 67.89 111 P **P 19 46 41.4 +0.6**
MSAI Masohi 68.00 115 P **P 19 46 44.0 +2.6**
PMPS Porto Santo 68.10 295 *e*P **P 19 46 43.3 +1.4**
comp=Z,276nm,1.6s
LSZ Lusaka 68.28 225 *e*P **P 19 46 42.7 -0.6**
LSZ pmax pmax
comp=Z,70nm,0.6s
LSZ MLR MLR
comp=Z,12µm,19.0s
LSZ Lusaka 68.28 225 *e*P **P 19 46 42.7 -0.6**
comp=Z,70nm,0.6s
LSZ LR LR
comp=Z,12µm,19.0s
COLD Coldfoot 68.35 16 *e*P **P 19 46 43.8 +0.9**
comp=Z,642nm,0.8s
PMAR Madeira 68.69 295 *e*P **P 19 46 47.5 +1.7**
comp=Z,413nm,1.4s
GUMO Guam 68.70 90 P **P 19 46 45.7 -0.1**
GUMO Guam 68.70 90 PFAKE 19 47 00.0 +14
GUMO LR LR
comp=Z,4µm,20.0s
PMOZ Porto Moniz, M 68.83 295 *e*P **P 19 46 48.8 +2.2**
PMOZ *e*S **S 19 55 52.5 +2.9**
PMOZ Porto Moniz, M 68.83 295 *e*LQ LQ 20 15 02.8
PMOZ *e*LR LR 20 16 46.4
comp=Z,5µm,18.0s
BATI Baumata 69.53 124 P **P 19 46 53.8 +2.8**
comp=Z,55nm,1.3s,comp=Z,959nm
SOEI Soe 69.58 123 P **P 19 46 51.8 +0.4**
SOEI Soe 69.58 123 *e*P **P 19 46 49.3 -2.1**
comp=Z,270nm,1.0s
FYU Fort Yukon 69.94 15 *e*P **P 19 46 53.4 +0.7**
comp=Z,322nm,0.8s
FAKI Fak Fak 70.03 112 P **P 19 46 55.3 +1.2**
comp=Z,280nm,1.2s,comp=Z,4µm
FAKI Fak Fak 70.03 112 *e*P **P 19 46 54.1 0.0**
comp=Z,187nm,0.8s
SPIA Saint Paul Isl 70.05 31 *e*P **P 19 46 53.6 0.0**
comp=Z,571nm,1.6s
MLY Manley 70.08 18 *e*P **P 19 46 54.1 +0.4**
comp=Z,157nm,0.8s
INK Inuvik 70.24 10 LR LR 20 22 29.5
comp=Z,8µm,19.3s,baz=354,slow=40
INK Inuvik 70.24 10 *e*P **P 19 46 55.3 +0.7**
INK *e*S **S 19 56 00.0 -4.8**
INK pmax pmax
comp=Z,440nm,0.8s
INK Inuvik 70.24 10 *e*P **P 19 46 55.2 +0.7**
comp=Z,440nm,0.8s
INK *e*S **S 19 55 60.0 -4.8**
TTA Tatalina 70.47 21 *e*P **P 19 46 56.6 +0.4**
TTA pmax pmax
comp=Z,155nm,1.2s
TTA Tatalina 70.47 21 *e*P **P 19 46 56.6 +0.4**
comp=Z,155nm,1.2s
TT01 Tatalina 70.48 21 *e*P **P 19 46 56.9 +0.7**
TT01 *e*S **S 19 56 06.6 -1.3**
MDM Murphy Dome 70.71 17 *e*P **P 19 46 58.0 +0.5**
comp=Z,192nm,0.7s
BPAW Bear Paw Mtn. 70.80 18 *e*P **P 19 46 58.1 0.0**
comp=Z,160nm,0.8s
COLA College 70.86 17 *e*P **P 19 46 58.8 +0.4**
COLA pmax pmax
comp=Z,723nm,0.8s
COLA MLR MLR
comp=Z,17µm,19.0s
COLA College 70.86 17 *e*P **P 19 46 58.8 +0.4**
comp=Z,722nm,0.8s
COLA LR LR
comp=Z,17µm,19.0s
CCB Clear Creek Bu 71.07 17 *e*P **P 19 47 00.4 +0.7**
comp=Z,126nm,1.0s
BWN Browne 71.10 18 *e*P **P 19 47 00.1 +0.2**
comp=Z,608nm,0.9s
CAST Castle Rocks 71.10 19 *e*P **P 19 47 00.8 +0.8**
comp=Z,259nm,1.1s
WRH Wood River Hil 71.16 17 *e*P **P 19 47 00.4 +0.2**
comp=Z,117nm,0.8s
IL1 Eielson Array 71.16 16 *e*P **P 19 47 00.6 +0.3**
ILAR Eielson Array 71.16 16 P **P 19 47 00.5 +0.3**
comp=Z,76nm,0.9s,baz=331,slow=4.3,SNR=295
ILAR PKPPKP P'P'df 20 14 41.2 -21
comp=Z,1.6nm,1.0s,baz=145,slow=0.4,SNR=5.1
ILAR LR LR 20 23 33.0
comp=Z,13µm,19.0s,baz=327,slow=40
ILB Eielson Array 71.16 16 *e*P **P 19 47 00.4 +0.2**
BART Pico Bartolome 71.26 304 *e*P **P 19 47 01.4 0.0**
comp=Z,110nm,1.0s
KTH Kantishna Hill 71.28 19 *e*P **P 19 47 01.6 +0.6**
comp=Z,464nm,0.9s
HDA Harding Lake 71.46 17 *e*P **P 19 47 01.1 -1.0**
comp=Z,148nm,0.8s
CMLA Cha da Macela 71.49 304 *e*P **P 19 47 02.6 -0.1**
comp=Z,234nm,1.4s
CMLA Cha da Macela 71.49 304 PFAKE 19 47 10.0 +7.3
CMLA LR LR
comp=Z,11µm,20.0s
PPLA Purkeypile 71.51 19 *e*P **P 19 47 03.0 +0.4**
comp=Z,230nm,0.6s
TRF Thorofare Moun 71.52 18 *e*P **P 19 47 02.0 -0.6**
comp=Z,69nm,0.8s
PSET Sete Cidades 71.58 304 *e*P **P 19 47 03.3 0.0**
comp=Z,267nm,1.4s
MCK McKinley 71.60 18 *e*P **P 19 47 02.6 -0.3**
MCK pmax pmax
comp=Z,102nm,1.0s
MCK McKinley 71.60 18 *e*P **P 19 47 02.6 -0.3**
comp=Z,102nm,1.0s
PSMN Pico do Norte, 71.65 303 *e*P **P 19 47 04.0 +0.3**
comp=Z,267nm,1.6s
RND Reindeer 71.90 18 *e*P **P 19 47 04.6 -0.2**
RND pmax pmax
comp=Z,129nm,1.0s
RND Reindeer 71.90 18 *e*P **P 19 47 04.6 -0.2**
comp=Z,129nm,1.0s
SVW2 Sparrevohn 72.07 22 *e*P **P 19 47 06.9 +1.1**
comp=Z,115nm,0.9s
PGRA Graciosa 72.27 306 *e*P **P 19 47 07.6 +0.2**
comp=Z,225nm,1.4s
EGAK Eagle 72.31 14 *e*P **P 19 47 07.5 +0.4**
comp=Z,148nm,0.8s
EGAK LR LR
comp=Z,15µm,20.0s
MATP Matopo 72.37 222 *i*P **P 19 47 08.3 +0.1**
MATP *i* 19 47 08.4
baz=13,slow=3.7
DHY Denali Highway 72.52 17 *e*P **P 19 47 08.6 -0.1**
comp=Z,220nm,0.6s
PMAN Manadas 72.58 306 *e*P **P 19 47 09.2 0.0**
comp=Z,377nm,1.4s
ROSA Rosais 72.62 306 *e*P **P 19 47 09.6 +0.1**
comp=Z,229nm,1.5s
ROSA Rosais 72.62 306 *e*P **P 19 47 10.1 +0.6**
comp=Z,124nm,1.0s
DOT Dot Lake 72.75 16 *e*P **P 19 47 10.4 +0.5**
comp=Z,348nm,0.8s
PCAN Candelaria 72.93 306 *e*P **P 19 47 11.4 +0.1**
comp=Z,322nm,1.8s
SAUI Saumlaki 72.95 116 P **P 19 47 16.2 +4.6**
SAUI Saumlaki 72.95 116 *e*P **P 19 47 11.6 0.0**
comp=Z,863nm,0.7s
PCED Cedros 72.96 306 *e*P **P 19 47 10.9 -0.6**
comp=Z,353nm,1.8s
SPU Mount Spurr 72.97 20 *e*P **P 19 47 11.4 +0.2**
PAX Paxson 73.04 17 *e*P **P 19 47 11.4 -0.3**
PAX pmax pmax
comp=Z,230nm,0.9s
PAX Paxson 73.04 17 *e*P **P 19 47 11.4 -0.3**
comp=Z,230nm,0.9s
SUA Susitna One 73.08 20 *e*P **P 19 47 12.0 +0.1**
comp=Z,415nm,1.1s
DAWY Dawson 73.28 14 *e*P **P 19 47 13.6 +0.6**
comp=Z,258nm,0.9s
PMR Palmer 73.38 19 *e*P **P 19 47 13.7 +0.2**
PMR pmax pmax
comp=Z,333nm,0.8s
PMR Palmer 73.38 19 *e*P **P 19 47 13.7 +0.2**
comp=Z,333nm,0.8s
RSO Redoubt South 73.39 21 *e*P **P 19 47 13.5 -0.4**
SML Sawmill 73.39 19 *e*P **P 19 47 14.1 +0.4**
SML pmax pmax
comp=Z,612nm,0.8s
SML Sawmill 73.39 19 *e*P **P 19 47 14.1 +0.4**
comp=Z,612nm,0.8s
MENT Mentasta 73.45 16 *e*P **P 19 47 14.7 +0.7**
comp=Z,77nm,0.9s
NIKH Nikolski High 73.60 33 *e*P **P 19 47 14.6 -0.4**
comp=Z,72nm,0.7s
RC01 Rabbit Creek A 73.66 20 *e*P **P 19 47 15.6 +0.4**
comp=Z,285nm,0.7s
H07N1 FLORES T-PHASE 73.78 308 *e*P **P 19 47 17.3 +1.0**
UNV Unalaska Valle 73.93 32 *e*P **P 19 47 17.2 +0.3**
comp=Z,131nm,1.0s
AKUT Akutan 74.01 31 *e*P **P 19 47 17.9 +0.6**
comp=Z,111nm,0.8s
KLU Klutina 74.24 18 *e*P **P 19 47 19.1 +0.4**
comp=Z,296nm,0.9s
BRLK Bradley Lake 74.48 21 *e*P **P 19 47 19.9 -0.1**
comp=Z,280nm,0.8s
CNPM China Poot 74.59 21 *e*P **P 19 47 19.8 -0.9**
comp=Z,89nm,0.8s
DIV Divide 74.60 18 *e*P **P 19 47 21.4 +0.6**
comp=Z,197nm,0.7s
FID Port Fidalgo 74.76 18 *e*P **P 19 47 22.7 +1.0**
comp=Z,629nm,1.4s
BMRM Bremner River 75.01 17 *e*P **P 19 47 24.2 +1.1**
comp=Z,492nm,1.2s
CHGN Chignik 75.04 26 *e*P **P 19 47 23.2 -0.1**
SDPT Sand Point 75.07 28 *e*P **P 19 47 23.2 -0.3**
comp=Z,104nm,1.0s
EYAK Cordova Ski Ar 75.11 18 *e*P **P 19 47 24.9 +1.3**
comp=Z,239nm,0.8s
DBIC Dimbokro 75.31 266 P **P 19 47 24.9 -0.6**
comp=Z,99nm,0.8s,baz=32,slow=7.6,SNR=84
DBIC LR LR 20 25 07.6
comp=Z,7µm,19.4s,baz=32,slow=39
DBIC Dimbokro 75.31 266 *e*P **P 19 47 24.8 -0.7**
comp=Z,166nm,0.8s
KIC Kosan Boka 75.41 266 *e*P **P 19 47 23.9 -2.2**
comp=Z,515nm,1.0s
TIC Toumodi 75.45 266 *e*P **P 19 47 24.5 -1.8**
BALM Baldy 75.45 16 *e*P **P 19 47 26.9 +1.2**
BALM pmax pmax
comp=Z,214nm,1.1s
BALM Baldy 75.45 16 *e*P **P 19 47 26.9 +1.2**
comp=Z,214nm,1.1s
RAGM Ragged Mountai 75.51 18 *e*P **P 19 47 27.6 +1.6**
comp=Z,135nm,0.8s
CRQM Cirque 75.53 17 *e*P **P 19 47 27.5 +1.2**
comp=Z,604nm,1.6s
GENI Genyem 75.54 106 P **P 19 47 30.7 +3.9**
KDAK Kodiak Island 75.67 23 *e*P **P 19 47 27.6 +0.7**
KDAK pmax pmax
comp=Z,181nm,0.8s
KDAK MLR MLR
comp=Z,4µm,20.0s
KDAK Kodiak Island 75.67 23 *e*P **P 19 47 27.6 +0.7**
comp=Z,181nm,0.8s
KDAK LR LR
comp=Z,4µm,20.0s
LIC Lamto 75.72 266 *e*P **P 19 47 26.1 -1.8**
comp=Z,555nm,1.0s
MBWA Marble Bar 75.76 134 *e*P **P 19 47 27.5 -0.3**
comp=Z,102nm,0.8s
MBWA LR LR
comp=Z,6µm,19.0s
JAY Jayapura 75.89 106 P **P 19 47 30.3 +1.5**
comp=Z,48nm,0.9s,comp=Z,1µm
OHAK Old Harbor 75.93 23 *e*P **P 19 47 29.2 +0.8**
comp=Z,450nm,1.0s
MID Middleton Isla 75.95 19 *e*P **P 19 47 28.7 +0.2**
MID pmax pmax
comp=Z,338nm,1.2s
MID Middleton Isla 75.95 19 *e*P **P 19 47 28.7 +0.2**
comp=Z,338nm,1.2s
MTN Manton Dam 76.35 120 *e*P **P 19 47 30.7 -0.6**
comp=Z,42nm,0.8s
HYT Haines Junctio 76.61 14 *e*P **P 19 47 33.3 +0.9**
comp=Z,275nm,0.8s
PCA Pinnacle 76.74 16 *e*P **P 19 47 33.8 +0.7**
comp=Z,497nm,0.8s
POGA Pongola 76.75 216 *i*P **P 19 47 28.9 -4.5**
FITZ Fitzroy Crossi 76.78 128 *e*P **P 19 47 33.4 -0.2**
comp=Z,71nm,0.9s
YKU2 Yakutat 77.40 16 *e*P **P 19 47 36.0 -0.5**
comp=Z,910nm,1.2s
TSUM Tsumeb 77.49 231 *e*P **P 19 47 37.3 -0.6**
comp=Z,175nm,1.3s
TSUM LR LR
comp=Z,7µm,22.0s
YKW3 Yellowknife Ar 77.51 3 *e*P **P 19 47 37.2 0.0**
comp=Z,345nm,1.3s
YKA Yellowknife Ar 77.58 3 P **P 19 47 38.1 +0.5**
comp=Z,102nm,0.8s,baz=351,slow=5.7,SNR=213
YKA PKKPbc **PKKPbc 20 06 38.0 -2.4**
comp=Z,1.0nm,0.6s,baz=169,slow=2.1,SNR=6.6
YKA PKPPKP **P'P'df 20 14 43.6 -7.0**
comp=Z,0.3nm,0.3s,baz=151,slow=2.5,SNR=5.0
YKA LR LR 20 26 13.3
comp=Z,2µm,18.0s,baz=0.0,slow=39
YKA Yellowknife Ar 77.58 3 P **P 19 47 38.1 +0.5**
YKA pmax pmax
comp=Z,70nm,0.6s
YKA MLR MLR
comp=Z,2µm,18.0s
YKB5 Yellowknife Ar 77.58 3 *e*P **P 19 47 37.2 -0.4**
LBTB Lobatse 77.66 222 *i*P P 19 47 30.8 -7.8
LBTB Lobatse 77.66 222 *e*P **P 19 47 38.1 -0.5**
LBTB pmax pmax
comp=Z,100nm,0.9s
LBTB Lobatse 77.66 222 *e*P **P 19 47 38.1 -0.5**
comp=Z,100nm,0.9s
DHAK Deception Hill 78.08 15 *e*P **P 19 47 41.9 +1.3**
comp=Z,259nm,1.0s
SKAG Skagway 78.29 14 *e*P **P 19 47 42.5 +0.9**
comp=Z,158nm,1.0s
SCHQ Schefferville 78.89 337 P **P 19 47 45.0 -0.1**
comp=Z,84nm,0.7s,baz=38,slow=5.6,SNR=54
SCHQ LR LR 20 22 15.8
comp=Z,24µm,20.3s,baz=40,slow=35
SCHQ Schefferville 78.89 337 *e*P **P 19 47 44.9 -0.2**
comp=Z,106nm,0.8s
DLBC Dease Lake 80.14 11 LR LR 20 30 24.4
comp=Z,9µm,18.2s,baz=341,slow=41
DLBC Dease Lake 80.14 11 *e*P **P 19 47 52.7 +0.9**
comp=Z,176nm,1.0s
DRLN Deer Lake 80.26 329 *e*P **P 19 47 52.5 -0.1**
comp=Z,61nm,0.8s
MANU Manus Island 80.54 101 *e*P **P 19 47 55.3 +0.6**
comp=Z,212nm,1.3s
FCC Fort Churchill 80.71 352 *e*P **P 19 47 55.3 +0.5**

FCC pmax pmax
comp=Z,281nm,1.1s
FCC Fort Churchill 80.71 352 *e*P **P 19 47 55.3 +0.5**
comp=Z,281nm,1.1s
BOSA Boshof 80.79 220 *i* P **P 19 47 56.3 +0.6**
BOSA *i* 19 47 56.4
baz=26,slow=4.4
BOSA Boshof 80.79 220 *i* P P 19 47 48.0 -7.7
BOSA Boshof 80.79 220 P **P 19 47 54.9 -0.8**
comp=Z,64nm,0.9s,baz=19,slow=3.5,SNR=76
BOSA LR LR 20 25 06.0
comp=Z,4µm,19.2s,baz=30,slow=37
WRAK Wrangell Islan 81.69 13 *e*P **P 19 48 01.0 +1.0**
comp=Z,225nm,1.0s
WRAK LR LR
comp=Z,10µm,20.0s
CRAG Craig 82.46 14 *e*P **P 19 48 05.6 +1.5**
comp=Z,166nm,1.2s
WRA Warramunga Arr 83.61 123 P **P 19 48 10.0 -0.5**
comp=Z,56nm,0.7s,baz=328,slow=4.4,SNR=256
WRA PKKPbc **PKKPbc 20 06 28.1 +0.6**
comp=Z,3.5nm,0.5s,baz=132,slow=2.5,SNR=26
WRA PKPPKP **P'P'df 20 14 31.0 0.0**
comp=Z,2.9nm,1.1s,baz=144,slow=1.7,SNR=6.8
WRA Warramunga Arr 83.61 123 *i* P **P 19 48 09.8 -0.7**
WRA pmax pmax
comp=Z,48nm,0.6s
WR1 Warramunga Arr 83.61 123 *e*P **P 19 48 10.0 -0.5**
comp=Z,108nm,0.8s
WR1 *e*PKKPbc **PKKPbc 20 06 28.1 +0.6**
WR1 *e*P'P'df **P'P'df 20 14 31.0 0.0**
WRAB Tennant Creek 83.61 123 *c i*P **P 19 48 10.5 0.0**
WRAB pmax pmax
comp=Z,264nm,0.7s
WRAB Tennant Creek 83.61 123 *e*P **P 19 48 09.7 -0.8**
comp=Z,103nm,0.8s
WRAB LR LR
comp=Z,4µm,21.0s
WB2 Warramunga Arr 83.61 123 *e*P **P 19 48 08.8 -1.8**
NWAO Narrogin (SRO) 84.12 143 *e*P **P 19 48 12.3 -0.5**
NWAO pmax pmax
comp=Z,76nm,0.9s
NWAO MLR MLR
comp=Z,7µm,21.0s
NWAO Narrogin (SRO) 84.12 143 *e*P **P 19 48 12.3 -0.5**
comp=Z,76nm,0.9s
NWAO LR LR
comp=Z,7µm,21.0s
SACV Santiago Islan 84.32 285 *e*P **P 19 48 13.5 -0.9**
comp=Z,81nm,0.9s
SACV LR LR
comp=Z,2µm,20.0s
DIB Dawson Inlet, 84.73 14 *e*P **P 19 48 17.0 +1.2**
comp=Z,119nm,1.4s
PMG Port Moresby 85.24 106 *c i*P **P 19 48 19.0 +0.1**
PMG pmax pmax
comp=Z,420nm,1.0s
PMG MLR MLR
comp=Z,5µm,20.0s
PMG Port Moresby 85.24 106 *e*P **P 19 48 18.6 -0.3**
comp=Z,109nm,0.9s
PMG LR LR
comp=Z,2µm,20.0s
FFC Flin Flon 85.33 356 *e*P **P 19 48 18.5 -0.3**
FFC pmax pmax
comp=Z,163nm,0.8s
FFC MLR MLR
comp=Z,11µm,22.0s
FFC Flin Flon 85.33 356 *e*P **P 19 48 18.5 -0.3**
comp=Z,163nm,0.8s
FFC LR LR
comp=Z,11µm,22.0s
COEN Coen 85.41 112 *e*P **P 19 48 19.2 -0.5**
comp=Z,157nm,0.9s
RABL Rabaul 85.56 99 *e*P **P 19 48 20.2 -0.4**
comp=Z,529nm,1.7s
LMN Caledonia Moun 85.87 331 *e*P **P 19 48 21.8 +0.1**
comp=Z,104nm,0.8s
AS31 Alice Springs 86.03 125 *e*P **P 19 48 21.9 -0.8**
comp=Z,40nm,1.3s
ASAR Alice Springs 86.03 125 P **P 19 48 22.1 -0.6**
comp=Z,53nm,0.8s,baz=317,slow=4.8,SNR=296
ASAR PKKPbc **PKKPbc 20 06 22.4 +0.5**
comp=Z,2.0nm,0.5s,baz=129,slow=2.9,SNR=16
ASAR PKPPKP **P'P'df 20 14 27.1 +0.8**
comp=Z,3.0nm,1.1s,baz=139,slow=2.2,SNR=5.1
ASAR LR LR 20 29 38.3
comp=Z,3µm,21.3s,baz=306,slow=38
AS01 Alice Springs 86.06 125 *e*P **P 19 48 21.8 -1.0**
SUR Sutherland 86.07 221 *e*P **P 19 48 22.8 -0.1**
comp=Z,110nm,1.1s
SUR LR LR
comp=Z,20µm,19.0s
PQI Presque Isle 86.31 333 *e*P **P 19 48 23.6 -0.2**
comp=Z,0.9nm,0.7s
LMQ La Malbaie 86.31 335 *e*P **P 19 48 24.1 +0.3**
BBB Bella Bella 86.47 12 *e*P **P 19 48 25.1 +0.7**
comp=Z,73nm,1.1s
MIDW Midway 86.66 56 *e*P **P 19 48 26.0 +0.2**
comp=Z,182nm,1.1s
MIDW LR LR
comp=Z,5µm,22.0s
EDM Edmonton 86.90 3 *e*P **P 19 48 26.9 +0.2**
EDM pmax pmax
comp=Z,207nm,0.8s
EDM Edmonton 86.90 3 *e*P **P 19 48 26.9 +0.2**
comp=Z,207nm,0.8s
GGN Saint George 87.24 332 *e*P **P 19 48 28.9 +0.6**
comp=Z,32nm,0.9s
VLDQ Val d'Or 87.90 340 *e*P **P 19 48 31.7 +0.2**
comp=Z,237nm,0.9s
FORT Forrest 87.91 134 *e*P **P 19 48 31.3 -0.2**
comp=Z,3µm,0.7s
PKME Peaks-Kenny Pk 87.97 333 *e*P **P 19 48 33.1 +1.2**
comp=Z,185nm,1.7s
PKME LR LR
comp=Z,13µm,20.0s
WVL Waterville 88.71 333 *e*P **P 19 48 36.4 +1.0**
comp=Z,37nm,0.8s
TRQ Mont Tremblant 88.81 337 *e*P **P 19 48 36.5 +0.6**
LLLB Lillooet 88.85 8 *e*P **P 19 48 37.0 +0.9**
comp=Z,159nm,1.1s
PAF Port-aux-Franc 89.13 181 PFAKE 19 48 50.0 +13
PAF LR LR
comp=Z,7µm,19.0s
ULM Lac du Bonnet 89.29 352 P **P 19 48 37.8 -0.2**
comp=Z,56nm,0.9s,baz=12,slow=4.8,SNR=3.0
ULM LR LR 20 33 49.1
comp=Z,27µm,18.0s,baz=7.0,slow=39
ULM Lac du Bonnet 89.29 352 *e*P **P 19 48 38.0 0.0**
comp=Z,118nm,0.9s
FRNY Flat Rock 89.76 336 *e*P **P 19 48 40.7 +0.4**
comp=Z,44nm,0.9s
LONY Lake Ozonia 90.26 337 *e*P **P 19 48 42.8 +0.1**
comp=Z,101nm,1.0s
LONY LR LR
comp=Z,13µm,22.0s
HNH Hanover 90.35 335 *e*P **P 19 48 44.5 +1.4**
comp=Z,52nm,1.0s
PNT Penticton 90.37 7 *e*P **P 19 48 44.0 +0.9**
PNT Penticton 90.37 7 *e*P **P 19 48 44.0 +0.9**
MDV Middlebury 90.38 335 *e*P **P 19 48 43.5 +0.3**
A33A Warroad 90.53 351 P **P 19 48 43.6 -0.2**
baz=10,SNR=26
A33A SKSac **SKSac 19 59 09.3 -4.9**
baz=10
A33A S **S 19 59 36.8 -1.2**
baz=10
PGC Sidney 90.59 10 *e*P **P 19 48 45.4 +1.4**
comp=Z,189nm,1.0s
PLVO Plevna 90.61 338 *e*P **P 19 48 44.9 +0.6**
comp=Z,58nm,1.0s
A04D Lummi Island 90.61 9 P **P 19 48 45.1 +0.9**
baz=349,SNR=16
A32A Rocking H Ranc 90.67 352 P **P 19 48 44.0 -0.5**
baz=9.2,SNR=11
A31A Linda, St. Vin 90.73 353 P **P 19 48 44.2 -0.6**
baz=8.7
SHEL Horse Pasture 90.73 250 *e*P **P 19 48 46.0 +0.8**
SHEL pmax pmax
comp=Z,122nm,1.2s
SHEL MLR MLR
comp=Z,5µm,20.0s
SHEL Horse Pasture 90.73 250 *e*P **P 19 48 46.0 +0.8**
comp=Z,122nm,1.2s
SHEL LR LR
comp=Z,5µm,20.0s

NCB Newcomb 90.74 336 *e*P **P 19 48 46.0 +1.0**
comp=Z,0.3nm,0.9s
B34A Aery, Baudette 90.89 351 P **P 19 48 45.3 -0.2**
baz=11,SNR=20
B35A Bob, Littlefor 90.90 350 P **P 19 48 44.8 -0.7**
baz=11,SNR=26
C39A Grand Marais 90.90 348 P **P 19 48 45.0 -0.6**
baz=14,SNR=18
B06A Marblemount 90.96 9 *e*P **P 19 48 46.3 +0.5**
comp=Z,165nm,0.9s
EYMN Ely 90.99 349 P **P 19 48 45.7 -0.3**
baz=13
EYMN Ely 90.99 349 *e*P **P 19 48 45.8 -0.3**
comp=Z,168nm,0.9s
EYMN LR LR
comp=Z,23µm,19.0s
WALA Waterton Lakes 91.04 4 *e*P **P 19 48 46.4 0.0**
comp=Z,148nm,0.9s
ACCN Adirondack Com 91.09 335 *e*P **P 19 48 46.9 +0.3**
comp=Z,48nm,1.0s
B05A Bryant 91.14 9 P **P 19 48 46.9 +0.2**
baz=350,SNR=68
A26A Wade Farm, Ken 91.14 356 P **P 19 48 47.0 +0.2**
baz=5.0,SNR=13
A25A Svangstu Ranch 91.16 356 P **P 19 48 47.1 +0.4**
baz=4.2,SNR=7.4
C38A Sawbill Land. 91.18 348 P **P 19 48 46.6 -0.3**
baz=13,SNR=28
HRV Adam Dziewonsk 91.18 334 *e*P **P 19 48 48.1 +1.2**
HRV pmax pmax
comp=Z,30nm,0.8s
HRV Adam Dziewonsk 91.18 334 *e*P **P 19 48 48.1 +1.2**
comp=Z,30nm,0.8s
B32A Ashes, Strandq 91.19 352 P **P 19 48 46.6 -0.4**
baz=9.2
B33A Robert and Kas 91.21 351 P **P 19 48 46.9 -0.1**
baz=9.9,SNR=19
AGMN Agassiz Nation 91.22 352 P **P 19 48 46.9 -0.1**
baz=9.7
AGMN Agassiz Nation 91.22 352 *e*P **P 19 48 46.9 -0.1**
AGMN LR LR
comp=Z,20µm,20.0s
JCW Jim Creek 91.23 9 *e*P **P 19 48 48.1 +0.9**
B31A Greenbush Farm 91.28 353 P **P 19 48 46.6 -0.7**
baz=8.3,SNR=7.3
C37A Embarrass 91.30 349 P **P 19 48 46.0 -1.5**
baz=12,SNR=24
B08A Colville Reser 91.34 7 *e*P **P 19 48 48.2 +0.5**
comp=Z,169nm,1.2s
C36A Pine Crest Far 91.37 350 P **P 19 48 47.2 -0.5**
baz=12,SNR=27
SADO Sadowa 91.43 340 LR LR 20 30 11.4
comp=Z,18µm,19.7s,baz=32,slow=36
SADO Sadowa 91.43 340 *e*P **P 19 48 47.9 -0.2**
comp=Z,126nm,1.5s
C35A Jirik Farms, M 91.58 350 P **P 19 48 48.2 -0.5**
baz=11
C06D Leavenworth 91.61 8 P **P 19 48 48.7 -0.2**
baz=351
NEW Newport 91.63 6 P **P 19 48 49.9 +0.9**
baz=354
NEW Newport 91.63 6 *e*P **P 19 48 49.6 +0.6**
NEW pmax pmax
comp=Z,156nm,0.9s
NEW MLR MLR
comp=Z,24µm,19.0s
NEW Newport 91.63 6 *e*P **P 19 48 49.6 +0.6**
comp=Z,156nm,0.9s
NEW LR LR
comp=Z,24µm,19.0s
QUA2 Belchertown 91.65 334 *e*P **P 19 48 49.3 +0.2**
comp=Z,34nm,0.9s
DGMT Dagmar 91.67 357 P **P 19 48 50.0 +0.8**
baz=3.4
DGMT Dagmar 91.67 357 *e*P **P 19 48 50.4 +1.2**
comp=Z,203nm,1.0s
DGMT LR LR
comp=Z,9µm,19.0s
B26A Jensen Ranch, 91.67 356 P **P 19 48 50.2 +0.9**
baz=4.9
TRY Troy 91.68 335 *e*P **P 19 48 49.2 0.0**
comp=Z,59nm,1.1s
BRYW Bryant College 91.69 333 *e*P **P 19 48 49.8 +0.4**
comp=Z,67nm,1.0s
CTAO Charters Tower 91.71 115 *e*P **P 19 48 49.7 +0.1**
CTAO pmax pmax
comp=Z,88nm,0.9s
CTAO MLR MLR
comp=Z,4µm,20.0s
CTAO Charters Tower 91.71 115 *e*P **P 19 48 49.7 +0.1**
comp=Z,88nm,0.9s
CTAO LR LR
comp=Z,4µm,20.0s
GNW Green Mountain 91.73 10 *e*P **P 19 48 51.0 +1.6**
C33A Trail 91.74 351 P **P 19 48 49.0 -0.5**
baz=9.8,SNR=8.1
C34A RKJ Ranch, Bem 91.74 351 P **P 19 48 48.7 -0.8**
baz=10,SNR=9.1
C32A Crookston 91.75 352 P **P 19 48 49.4 -0.1**
baz=9.2
NLWA Neilton Lookou 91.77 10 *e*P **P 19 48 51.1 +1.5**
comp=Z,152nm,0.9s
NLWA LR LR
comp=Z,14µm,19.0s
B25A Knox Farm, Ray 91.83 356 P **P 19 48 51.0 +1.1**
baz=4.2
D37A Cotton 91.89 349 P **P 19 48 49.4 -0.8**
baz=12,SNR=9.9
ASCN Ascension 91.91 261 PFAKE 19 49 00.0 +9.3
ASCN LR LR
comp=Z,4µm,20.0s
C31A Landman Farms, 91.91 353 P **P 19 48 49.9 -0.4**
baz=8.3,SNR=13
D36A Goodland 91.98 350 P **P 19 48 50.3 -0.3**
baz=12
C09A Chrisman Ranch 91.99 7 *e*P **P 19 48 51.6 +0.9**
comp=Z,203nm,1.1s
MDND Maddock 92.02 354 P **P 19 48 50.5 -0.3**
baz=6.9,SNR=6.3
MDND Maddock 92.02 354 *e*P **P 19 48 51.3 +0.5**
comp=Z,130nm,1.1s
BLMT Blackfail Moun 92.06 4 *e*P **P 19 48 51.9 +0.6**
D35A Remer 92.19 350 P **P 19 48 50.7 -0.9**
baz=11
EGMT Eagleton 92.19 1 P **P 19 48 52.0 +0.3**
baz=359
EGMT Eagleton 92.19 1 *e*P **P 19 48 52.6 +0.9**
comp=Z,141nm,1.1s
EGMT LR LR
comp=Z,34µm,19.0s
BSMT Basson Peak 92.19 4 *e*P **P 19 48 52.6 +0.7**
D05A Emmaclaw 92.21 9 *e*P **P 19 48 53.0 +1.4**
comp=Z,354nm,1.4s
YBMT Yellow Bay 92.22 4 *e*P **P 19 48 53.5 +1.6**
LTY Liberty 92.29 8 *e*P **P 19 48 52.6 +0.5**
comp=Z,63nm,1.0s
JTMT Jette 92.33 4 *e*P **P 19 48 53.0 +0.6**
D34A Park Rapids 92.33 351 P **P 19 48 51.6 -0.7**
baz=10,SNR=12
D33A AnnSam, Waubun 92.36 351 P **P 19 48 51.7 -0.7**
baz=9.7,SNR=5.5
C25A Freed Ranch, W 92.39 356 P **P 19 48 53.1 +0.6**
baz=4.1
COWI Conover 92.39 347 *e*P **P 19 48 52.3 -0.2**
COWI LR LR
comp=Z,17µm,19.0s
E37A Wrenshall 92.47 349 P **P 19 48 52.0 -0.9**
baz=12
D32A Dogwood Acres, 92.49 352 P **P 19 48 51.8 -1.1**
baz=8.8
SWMT Swartz Lake 92.58 4 *e*P **P 19 48 53.9 +0.3**
E03A Lebam 92.64 10 *e*P **P 19 48 55.0 +1.4**
comp=Z,123nm,0.9s
E36A McGregor 92.64 350 P **P 19 48 53.5 -0.2**
baz=12,SNR=31
D31A Mcclaflin, Tow 92.65 353 P **P 19 48 53.2 -0.5**
baz=8.3,SNR=5.9
LON Longmire 92.66 9 *e*P **P 19 48 54.5 +0.7**
LON pmax pmax
comp=Z,106nm,0.8s
LON Longmire 92.66 9 *e*P **P 19 48 54.5 +0.7**
comp=Z,106nm,0.8s
D08A Wollman Farm, 92.67 7 *e*P **P 19 48 54.7 +0.9**
comp=Z,91nm,0.9s
E35A Pequot Lakes 92.75 350 P **P 19 48 53.3 -0.9**
baz=11,SNR=7.7
SLMT Seeley Lake 92.87 3 *e*P **P 19 48 55.1 +0.1**
BINY Binghamton 92.89 336 *e*P **P 19 48 55.2 +0.3**
comp=Z,36nm,1.0s
BINY LR LR
comp=Z,11µm,19.0s
E34A Wadena 92.89 351 P **P 19 48 53.8 -1.0**
baz=10
MMNY Mt. Morris Dam 92.97 338 *e*P **P 19 48 55.3 +0.1**
E33A Westby DABS, E 93.00 351 P **P 19 48 55.3 0.0**
baz=9.6,SNR=6.3
D26A Manning 93.03 356 P **P 19 48 55.9 +0.4**
baz=4.7,SNR=25
E32A Braaten, Kindr 93.03 352 P **P 19 48 55.1 -0.4**
baz=8.8
BUF Buffalo 93.06 339 *e*P **P 19 48 56.6 +1.0**
E07A Sunnyside 93.07 8 *e*P **P 19 48 56.3 +0.6**
comp=Z,40nm,0.8s
E31A Nome 93.15 353 P **P 19 48 56.0 0.0**
baz=8.2,SNR=12
F04D Rainier, OR 93.17 10 P **P 19 48 56.6 +0.6**
baz=349
CHMT Chamberlain Mo 93.21 3 *e*P **P 19 48 56.7 +0.1**
F03A Seaside 93.24 10 *e*P **P 19 48 58.9 +2.4**
comp=Z,139nm,0.8s
MSO Missoula 93.26 4 P **P 19 48 56.5 -0.1**
baz=356
MSO Missoula 93.26 4 *e*P **P 19 48 56.7 +0.1**
comp=Z,45nm,0.9s
HAWA Hanford 93.27 8 *e*P **P 19 48 57.2 +0.7**
comp=Z,190nm,1.9s
HAWA LR LR
comp=Z,11µm,21.0s
E09A Wood Farm, Sta 93.28 7 *e*P **P 19 48 57.1 +0.5**
comp=Z,122nm,0.9s
F36A Milaca 93.32 350 P **P 19 48 56.8 0.0**
baz=12,SNR=24
F04A Amboy 93.39 10 *e*P **P 19 48 58.1 +1.0**
comp=Z,128nm,0.8s
KSPA Keystone Colle 93.40 336 *e*P **P 19 48 56.0 -1.2**
comp=Z,26nm,1.1s
HRY Holter Researc 93.46 2 *e*P **P 19 48 58.4 +0.8**
F35A Swanville 93.46 350 P **P 19 48 56.5 -0.9**
baz=11
ODNJ Ogdensburg 93.46 335 *e*P **P 19 48 57.6 +0.1**
comp=Z,77nm,1.9s
LAO LASA Array 93.51 358 P **P 19 48 58.6 +0.9**
baz=1.8
LAO LASA Array 93.51 358 *e*P **P 19 48 58.9 +1.1**
comp=Z,226nm,0.9s
LAO LR LR
comp=Z,12µm,19.0s
F34A Alexandria 93.61 351 P **P 19 48 57.3 -0.8**
baz=10
F33A 5 Mile Ranch, 93.69 351 P **P 19 48 58.3 -0.2**
baz=9.4,SNR=14
F32A Veblen 93.75 352 P **P 19 48 58.1 -0.7**
baz=8.8
BRNJ Basking Ridge 93.81 335 *e*P **P 19 48 59.3 +0.2**
comp=Z,20nm,0.7s
SPMN Marine on St. 93.84 349 P **P 19 48 58.5 -0.7**
baz=12
SPMN Marine on St. 93.84 349 *e*P **P 19 48 59.4 +0.2**
comp=Z,61nm,0.7s
F31A Hecla 93.88 353 P **P 19 48 59.1 -0.3**
baz=7.9,SNR=7.0
F10A Beach Ranch, E 93.90 6 *e*P **P 19 49 00.1 +0.5**
comp=Z,64nm,0.9s
BBOO Buckleboo 93.96 130 *e*P **P 19 48 58.8 -0.9**
comp=Z,52nm,1.0s
G36A St. Michael 93.97 350 P **P 19 48 59.3 -0.4**
baz=11
F30A Leola 93.97 353 P **P 19 48 59.7 -0.1**
baz=7.3
G03D McMinnville, O 93.99 10 P **P 19 49 00.6 +0.8**
baz=349,SNR=7.1
N59A State Game Lan 93.99 336 P **P 19 48 59.9 -0.1**
baz=25,SNR=6.4
F29A Eureka 94.04 354 P **P 19 48 59.7 -0.5**
baz=6.7,SNR=7.9
G35A Watkins 94.08 350 P **P 19 48 59.9 -0.4**
baz=11
ERPA Erie 94.12 339 *e*P **P 19 49 01.0 +0.5**
comp=Z,52nm,0.8s
LUPA Lehigh Univers 94.15 335 *e*P **P 19 49 01.2 +0.5**
comp=Z,25nm,0.9s
G34A Benson 94.20 351 P **P 19 48 59.8 -1.1**
baz=9.9
G05D Wamic, OR 94.21 9 P **P 19 49 01.8 +0.8**
baz=350
G06A Carlson Farm, 94.29 9 *e*P **P 19 49 02.4 +1.0**
comp=Z,62nm,1.1s
LRM Limekiln Ridge 94.33 3 *e*P **P 19 49 02.2 +0.5**
G33A Ortonville 94.34 351 P **P 19 49 01.2 -0.3**
baz=9.3
G32A Webster 94.40 352 P **P 19 49 01.3 -0.5**
baz=8.5
G08A Pilot Rock 94.42 7 *e*P **P 19 49 02.9 +0.8**
comp=Z,15nm,0.8s
GCMT Greycliff 94.43 1 *e*P **P 19 49 03.2 +1.1**
H37A Dierke Farm, C 94.49 349 P **P 19 49 01.5 -0.7**
baz=12,SNR=11
G31A Conde 94.50 353 P **P 19 49 02.2 -0.1**
baz=7.9
BOZ Bozeman (W) 94.53 2 P **P 19 49 02.8 +0.2**
baz=358
BOZ Bozeman (W) 94.53 2 *e*P **P 19 49 03.7 +1.1**
BOZ pmax pmax
comp=Z,85nm,0.9s
BOZ MLR MLR
comp=Z,13µm,19.0s
BOZ Bozeman (W) 94.53 2 *e*P **P 19 49 03.7 +1.1**
comp=Z,85nm,0.9s
BOZ LR LR
comp=Z,13µm,19.0s
COR Corvallis 94.59 11 *e*P **P 19 49 03.5 +0.9**
COR pmax pmax
comp=Z,133nm,0.9s
COR Corvallis 94.59 11 *e*P **P 19 49 03.5 +0.9**
comp=Z,133nm,0.9s
M54A Oil Creek Stat 94.60 339 P **P 19 49 02.7 -0.1**
baz=22,SNR=18
ALLY Alegheny Colle 94.60 339 *e*P **P 19 49 00.7 -2.1**
comp=Z,46nm,0.8s
H36A Jessenland, He 94.64 350 P **P 19 49 03.3 +0.4**
baz=11
H35A Sunnyside Ranc 94.64 350 P **P 19 49 03.3 +0.4**
baz=10,SNR=8.8
DLMT Dillon 94.78 3 *e*P **P 19 49 04.5 +0.8**
comp=Z,80nm,1.0s
H34A Spellman Lake, 94.79 351 P **P 19 49 03.5 -0.1**
baz=9.8,SNR=12
HNR Honiara 94.82 98 PFAKE 19 49 20.0 +16
HNR LR LR
comp=Z,3µm,22.0s
H33A Prehn Over Nor 94.89 352 P **P 19 49 03.9 -0.1**
baz=9.1,SNR=9.4
AAM Ann Arbor 94.89 342 *e*P **P 19 49 04.4 +0.3**
AAM pmax pmax
comp=Z,87nm,1.2s
AAM MLR MLR
comp=Z,11µm,19.0s
AAM Ann Arbor 94.89 342 *e*P **P 19 49 04.4 +0.3**
comp=Z,87nm,1.2s
AAM LR LR
comp=Z,11µm,19.0s
SSPA Standing Stone 94.89 337 *e*P **P 19 49 04.2 +0.1**
comp=Z,36nm,0.8s
I38A Scanlan Farm, 94.93 348 P **P 19 49 04.0 -0.2**
baz=12,SNR=12
BMO Blue Mountains 95.00 6 *e*P **P 19 49 04.5 -0.2**
comp=Z,22nm,0.9s
BMO LR LR
comp=Z,14µm,21.0s
MVL Millersville 95.00 336 *e*P **P 19 49 05.4 +0.8**
comp=Z,20nm,0.9s
I05D Terrebonne, OR 95.09 9 P **P 19 49 05.5 +0.4**
baz=350,SNR=13
RLMT Red Lodge 95.10 1 P **P 19 49 05.3 0.0**
baz=360
RLMT Red Lodge 95.10 1 *e*P **P 19 49 06.0 +0.7**
comp=Z,137nm,1.5s
RLMT LR LR
comp=Z,21µm,21.0s
I37A Lemond, Waseca 95.11 349 P **P 19 49 04.7 -0.4**
baz=12
H32A Carlson Farm, 95.14 352 P **P 19 49 05.1 -0.1**
baz=8.5,SNR=23
I36A Fitzsimmons Fa 95.19 350 P **P 19 49 05.6 +0.1**
baz=11,SNR=6.4
J41A Loganville 95.20 347 P **P 19 49 05.1 -0.4**

baz=14
H31A Wolsey 95.26 353 P **P** 19 49 05.3 -0.5
baz=7.7,SNR=5.0
J40A Soldiers Grove 95.30 347 P **P** 19 49 05.2 -0.7
baz=14,SNR=9.3
MCMT McKenzie Canyo 95.31 3 eP **P** 19 49 07.2 +0.9
SUSD Miller 95.34 353 P **P** 19 49 05.8 -0.4
baz=7.4
QLMT Earthquake Lak 95.35 2 eP **P** 19 49 07.2 +0.8
YHH Holmes Hill 95.41 2 eP **P** 19 49 07.9 +1.1
comp=Z,42nm,1.0s
I34A Hadley 95.42 351 P **P** 19 49 06.0 -0.5
baz=9.7
O56A Blue Knob Stat 95.43 337 P **P** 19 49 06.5 -0.2
baz=23
YHB Horse Butte 95.44 2 eP **P** 19 49 07.8 +1.0
comp=Z,61nm,1.0s
I03D Drain, OR 95.46 11 P **P** 19 49 07.1 +0.5
baz=349,SNR=8.7
I35A Creekview Farm 95.48 350 P **P** 19 49 06.3 -0.5
baz=10
I04A Tendick Farm, 95.49 10 P **P** 19 49 06.6 -0.2
baz=349,SNR=22
J39A Decorah 95.52 348 P **P** 19 49 06.3 -0.6
baz=13,SNR=19
I33A Coleman 95.52 352 P **P** 19 49 06.4 -0.5
baz=9.0
I32A Karley and Nic 95.61 352 P **P** 19 49 06.7 -0.6
baz=8.5
LKWY Lake 95.64 1 PFAKE 19 49 20.0 +12
LKWY LR LR
comp=Z,86µm,19.0s
J38A Wedel Dairy, R 95.65 348 P **P** 19 49 07.2 -0.4
baz=12
JFWS Jewell Farm 95.68 347 eP **P** 19 49 07.3 -0.4
JFWS pmax pmax
comp=Z,114nm,0.8s
JFWS MLR MLR
comp=Z,13µm,20.0s
JFWS Jewell Farm 95.68 347 eP **P** 19 49 07.3 -0.4
comp=Z,114nm,0.8s
JFWS LR LR
comp=Z,13µm,20.0s
SDMD Soldier's Deli 95.69 336 eP **P** 19 49 08.5 +0.7
comp=Z,12nm,0.9s
I31A Royce, Wessing 95.72 353 P **P** 19 49 07.6 -0.3
baz=7.7
YFT Old Faithful 95.75 2 eP **P** 19 49 09.8 +1.5
comp=Z,57nm,1.0s
ECSD EROS Data Cent 95.81 351 P **P** 19 49 08.0 -0.3
baz=9.2
ECSD EROS Data Cent 95.81 351 eP **P** 19 49 08.5 +0.2
comp=Z,97nm,0.9s
ECSD LR LR
comp=Z,12µm,20.0s
H17A Grant Village 95.81 1 P **P** 19 49 09.4 +0.8
baz=358
H17A Grant Village 95.81 1 eP **P** 19 49 11.1 +2.5
comp=Z,96nm,1.1s
J37A Redenius Farm, 95.82 349 P **P** 19 49 07.9 -0.4
baz=12,SNR=19
J36A Seneca 1, Swea 95.92 350 P **P** 19 49 09.0 +0.2
baz=11,SNR=16
YPP Pitchstone Pla 95.93 2 eP **P** 19 49 11.9 +2.8
comp=Z,50nm,1.1s
K41A Shullsburg 95.99 347 P **P** 19 49 08.3 -0.8
baz=14,SNR=7.5
J35A Milford 96.00 350 P **P** 19 49 09.0 -0.2
baz=10
MCID Moose Creek 96.00 2 eP **P** 19 49 11.4 +2.0
RSSD Black Hills 96.01 357 P **P** 19 49 09.3 -0.2
baz=3.5
RSSD Black Hills 96.01 357 eP **P** 19 49 10.1 +0.7
RSSD pmax pmax
comp=Z,54nm,0.9s
RSSD Black Hills 96.01 357 eP **P** 19 49 10.1 +0.7
comp=Z,54nm,0.9s
K40A Colesburg 96.04 347 P **P** 19 49 08.8 -0.5
baz=13,SNR=19
J04D Umpqua Nationa 96.08 10 P **P** 19 49 09.4 -0.3
baz=350,SNR=13
FLWY Flagg Ranch 96.12 2 eP **P** 19 49 11.6 +1.7
comp=Z,86nm,1.1s
J05D Fort Rock, OR 96.15 9 P **P** 19 49 10.2 +0.2
baz=350,SNR=7.4
K39A Oelwein 96.16 348 P **P** 19 49 09.1 -0.8
baz=13,SNR=24
J34A George 96.17 351 P **P** 19 49 09.5 -0.4
baz=9.7,SNR=7.5
J33A Davis 96.26 352 P **P** 19 49 10.0 -0.3
baz=8.9
J32A Parkston 96.30 352 P **P** 19 49 10.0 -0.5
baz=8.2
IMW Indian Meadow 96.30 2 eP **P** 19 49 12.8 +1.9
comp=Z,53nm,1.0s
K38A Parkersburg 96.36 348 P **P** 19 49 10.6 -0.1
baz=12,SNR=12
MCWV Mont Chateau 96.37 338 eP **P** 19 49 11.3 +0.4
comp=Z,27nm,0.9s
K37A Belmond 96.37 349 P **P** 19 49 10.3 -0.5
baz=11,SNR=11
MOOW Moose Ponds 96.45 2 eP **P** 19 49 12.9 +1.5
comp=Z,29nm,1.0s
J31A Geddes 96.47 353 P **P** 19 49 10.6 -0.7
baz=7.6
HLID Hailey 96.49 4 P **P** 19 49 12.0 +0.4
baz=356
HLID Hailey 96.49 4 eP **P** 19 49 12.6 +1.0
HLID LR LR
comp=Z,27µm,21.0s
J30A Dallas 96.50 353 P **P** 19 49 11.3 -0.2
baz=7.0
L41A Preston 96.54 347 P **P** 19 49 10.7 -0.9
baz=14,SNR=20
MFID Camas Ranch 96.55 5 eP **P** 19 49 12.5 +0.8
comp=Z,46nm,1.0s
HUMO Hull Mountain 96.58 11 eP **P** 19 49 13.1 +1.2
comp=Z,37nm,1.1s
LOHW Long Hollow 96.59 2 eP **P** 19 49 13.7 +1.6
comp=Z,25nm,1.1s
K35A Storm Lake 96.63 350 P **P** 19 49 11.5 -0.5
baz=10
STKA Stephens Creek 96.64 126 P **P** 19 49 11.8 -0.2
comp=Z,5.9nm,0.5s,baz=314,slow=6.8,SNR=2.9
STKA LR LR 20 38 54.2
comp=Z,5µm,20.3s,baz=301,slow=39
STKA Stephens Creek 96.64 126 eP **P** 19 49 11.9 -0.1
comp=Z,13nm,1.6s
L40A Anamosa 96.67 347 P **P** 19 49 11.2 -1.0
baz=13,SNR=6.0
ACSO Alum Creek Sta 96.68 341 eP **P** 19 49 12.2 -0.1
comp=Z,42nm,0.8s
ACSO LR LR
comp=Z,10µm,19.0s
TPAW Teton Pass 96.71 2 eP **P** 19 49 13.9 +1.2
comp=Z,37nm,1.2s
K04D Chiloquin, OR 96.73 10 P **P** 19 49 12.2 -0.4
baz=350
SNOW Snow King Moun 96.74 2 eP **P** 19 49 14.1 +1.2
comp=Z,31nm,1.1s
K05A Summer Lake 96.74 9 eP **P** 19 49 13.8 +1.0
comp=Z,58nm,1.0s
L39A Vinton 96.75 348 P **P** 19 49 11.9 -0.7
baz=13,SNR=13
K34A Le Mars 96.78 351 P **P** 19 49 12.9 +0.2
baz=9.6
REDW Red Top Meadow 96.84 2 eP **P** 19 49 14.4 +1.2
comp=Z,27nm,0.9s
L38A Oak Wood Farm, 96.88 348 P **P** 19 49 12.3 -0.8
baz=12,SNR=15
L02D Cave Junction, 96.93 11 P **P** 19 49 13.3 -0.1
baz=348
CBN Corbin Frederi 96.96 336 PFAKE 19 49 30.0 +16
CBN LR LR
comp=Z,16µm,19.0s
K33A Hardington 96.96 351 P **P** 19 49 13.2 -0.3
baz=8.9
L37A Phoenix Point, 97.02 349 P **P** 19 49 12.8 -0.9
baz=11,SNR=6.2
K32A Verdigre 97.02 352 P **P** 19 49 13.5 -0.3
baz=8.2
K31A O'Neill 97.13 353 P **P** 19 49 14.1 -0.2
baz=7.6
K30A Basset 97.16 353 P **P** 19 49 14.3 -0.1
baz=6.9
L36A Harm Buss Farm 97.17 350 P **P** 19 49 14.1 -0.3
baz=11

BBSR BB Station 97.23 324 PFAKE 19 49 30.0 +15
BBSR LR LR
comp=Z,7µm,22.0s
L35A Bielow Farm, R 97.27 350 P **P** 19 49 13.9 -1.1
baz=10.0
WVOR Wild Horse Val 97.28 8 eP Pdif 19 49 16.0 +0.8
WVOR pmax pmax
comp=Z,29nm,1.0s
WVOR MLR MLR
comp=Z,20µm,20.0s
WVOR Wild Horse Val 97.28 8 eP Pdif 19 49 16.0 +0.8
comp=Z,29nm,1.0s
WVOR LR LR
comp=Z,20µm,20.0s
M39A Webster 97.40 348 P **P** 19 49 15.4 -0.1
baz=13,SNR=7.5
AHID Auburn Hatcher 97.43 2 eP Pdif 19 49 16.4 +0.4
comp=Z,42nm,1.0s
AHID LR LR
comp=Z,31µm,19.0s
L33A Hoskins 97.43 352 P **P** 19 49 15.2 -0.5
baz=8.7
BW06 Boulder Array 97.45 1 P **P** 19 49 15.9 -0.1
baz=359
BW06 Boulder Array 97.45 1 eP **P** 19 49 15.9 -0.1
BW06 LR LR
comp=Z,16µm,19.0s
PD31 Pinedale Array 97.45 1 eP Pdif 19 49 17.1 +1.0
PDAR Pinedale Array 97.45 1 P Pdif 19 49 16.6 +0.5
comp=Z,9.4nm,0.8s,baz=29,slow=3.1,SNR=49
PDAR PKKPbc **PKKPbc** 20 05 52.5 -0.1
comp=Z,1.8nm,0.8s,baz=152,slow=4.1,SNR=5.5
PDAR LR LR 20 38 45.5
comp=Z,12µm,18.1s,baz=18,slow=39
SFIN Lafayette 97.50 344 P **P** 19 49 15.7 -0.3
baz=16
SFIN Lafayette 97.50 344 eP **P** 19 49 15.7 -0.3
comp=Z,34nm,1.0s
L34A Svendsen Farm, 97.52 351 P **P** 19 49 15.5 -0.6
baz=9.4
M04C Macdoel 97.55 10 P Pdif 19 49 16.5 +0.1
baz=350,SNR=13
K22A Casper 97.56 359 eP Pdif 19 49 16.9 +0.5
comp=Z,27nm,0.8s
L31A Butterfield Fa 97.58 353 P **P** 19 49 16.2 -0.1
baz=7.5
URVA University of 97.60 336 eP Pdif 19 49 16.9 +0.4
MOD Modoc Plateau 97.62 9 eP Pdif 19 49 17.9 +1.2
comp=Z,67nm,1.0s
M38A Pleasantville 97.62 348 P **P** 19 49 16.3 -0.2
baz=12,SNR=6.0
L32A Elgin 97.67 352 P **P** 19 49 16.1 -0.6
baz=8.1
M37A Trindle Farm, 97.77 349 P **P** 19 49 16.9 -0.2
baz=11
HDIL Hopedale 97.78 345 P **P** 19 49 16.5 -0.7
baz=15
HDIL Hopedale 97.78 345 eP Pdif 19 49 18.8 +1.5
comp=Z,66nm,1.1s
HDIL LR LR
comp=Z,17µm,20.0s
M02C Callahan 97.79 11 P Pdif 19 49 18.0 +0.6
baz=349,SNR=17
TARA Tarawa 97.85 82 PFAKE 19 49 30.0 +12
TARA LR LR
comp=Z,192nm,19.0s
M35A Neola 97.93 350 P **P** 19 49 17.7 -0.2
baz=9.9
M34A Aspy Farms, Fr 98.00 351 P **P** 19 49 17.9 -0.4
baz=9.2
M33A Taylor Creek F 98.01 351 P **P** 19 49 17.6 -0.6
baz=8.8
N39A Derby Farms, D 98.04 348 P **P** 19 49 17.9 -0.5
baz=12,SNR=11
KHMM Horse Mountain 98.17 12 eP Pdif 19 49 20.1 +0.9
comp=Z,14nm,1.0s
JCC Jacoby Creek, 98.17 12 eP Pdif 19 49 20.8 +1.8
comp=Z,38nm,1.1s
N02D Trinity Center 98.22 11 P **P** 19 49 19.2 -0.1
baz=349,SNR=10
N38A Joes South For 98.24 348 P **P** 19 49 18.4 -0.8
baz=12
BGNE Belgrade 98.27 352 P Pdif 19 49 19.6 +0.1
baz=8.0
BGNE Belgrade 98.27 352 eP Pdif 19 49 21.2 +1.7
comp=Z,243nm,1.1s
HVU Hansel Valley 98.35 3 eP Pdif 19 49 21.4 +1.4
HVU pmax pmax
comp=Z,48nm,1.1s
HVU Hansel Valley 98.35 3 eP Pdif 19 49 21.4 +1.4
comp=Z,48nm,1.1s
M31A Lambtecht Ranc 98.42 353 P **P** 19 49 19.6 -0.5
baz=7.4
N37A Lee Faris, Mou 98.42 349 P **P** 19 49 19.4 -0.7
baz=11
N36A Muff Farm, Cla 98.47 350 P **P** 19 49 20.1 -0.2
baz=10
O41A Passleys Farm, 98.51 346 P **P** 19 49 19.6 -0.8
baz=14
N35A Tabor 98.52 350 P **P** 19 49 20.4 -0.1
baz=10.0
EIDS Eidsvold 98.53 116 eP Pdif 19 49 21.1 +0.5
comp=Z,58nm,1.5s
BLO Bloomington 98.53 343 eP **P** 19 49 20.6 -0.1
BLO pmax pmax
comp=Z,22nm,1.0s
BLO Bloomington 98.53 343 eP **P** 19 49 20.6 -0.1
comp=Z,22nm,1.0s
HWUT Hardware Ranch 98.57 2 eP Pdif 19 49 22.3 +1.3
comp=Z,61nm,0.9s
HWUT LR LR
comp=Z,30µm,19.0s
WDC Whiskeytown Da 98.63 11 eP Pdif 19 49 21.5 +0.4
WDC pmax pmax
comp=Z,33nm,1.6s
WDC Whiskeytown Da 98.63 11 eP Pdif 19 49 21.5 +0.5
comp=Z,33nm,1.6s
N34A Lincoln 98.65 351 P **P** 19 49 20.8 -0.4
baz=9.3
O39A Kirksville 98.66 348 P **P** 19 49 20.8 -0.4
baz=12
O40A La Belle 98.67 347 P **P** 19 49 21.0 -0.2
baz=13
BLA Blacksburg 98.80 338 eP **P** 19 49 21.6 -0.3
BLA MLR MLR
comp=Z,24µm,22.0s
BLA Blacksburg 98.80 338 eP **P** 19 49 21.6 -0.3
BLA LR LR
comp=Z,24µm,22.0s
KMRM Mail Ridge 98.81 12 eP Pdif 19 49 23.0 +1.1
comp=Z,42nm,1.3s
SPUT South Promonto 98.84 3 eP Pdif 19 49 23.1 +0.9
comp=Z,61nm,1.4s
PHWY Pilot Hill 98.88 358 eP Pdif 19 49 23.2 +0.7
comp=Z,22nm,1.0s
P42A Winchester 98.92 346 Pdiff **P** 19 49 20.7 -1.6
baz=14
N32A Stulken Farm, 98.92 352 Pdiff **P** 19 49 21.6 -0.8
baz=7.9
N31A Bailey Ranch, 98.93 353 Pdiff **P** 19 49 21.7 -0.8
baz=7.4
O38A Galt 98.93 348 Pdiff **P** 19 49 21.2 -1.2
baz=12
P41A Barry, Barry 98.97 346 Pdiff **P** 19 49 22.1 -0.5
baz=14
O37A Wolven Farm, M 98.99 349 Pdiff **P** 19 49 21.7 -1.0
baz=11
O03D Paynes Creek 99.02 10 Pdiff **Pdif** 19 49 21.8 -1.1
baz=350
TCUT Toone Canyon 99.06 2 eP **Pdif** 19 49 24.2 +0.9
comp=Z,72nm,1.1s
OGNE Ogallala 99.06 355 Pdiff **Pdif** 19 49 22.0 -1.1
baz=5.1
OGNE Ogallala 99.06 355 eP **Pdif** 19 49 23.6 +0.5
OGNE LR LR
comp=Z,13µm,19.0s
O35A Humboldt 99.14 350 Pdiff **Pdif** 19 49 21.7 -1.6
baz=9.8
O36A Bolckow 99.14 350 Pdiff **Pdif** 19 49 22.5 -0.9
baz=10
BGU Big Grassy Mou 99.19 3 eP **Pdif** 19 49 24.9 +1.1
comp=Z,35nm,1.6s
P40A Paris 99.28 347 Pdiff **Pdif** 19 49 23.1 -0.9
baz=13
N23A Red Feather La 99.30 358 Pdiff **Pdif** 19 49 24.7 +0.3
baz=2.0
N23A Red Feather La 99.30 358 eP **Pdif** 19 49 26.7 +2.4
comp=Z,18nm,1.1s

OLIL Olney 99.30 344 eP **Pdif** 19 49 24.4 +0.3
comp=Z,127nm,0.6s
O34A Beatrice 99.32 351 Pdiff **Pdif** 19 49 23.1 -1.0
baz=9.2
Q44A Meyer Farm, Va 99.32 345 Pdiff **Pdif** 19 49 23.4 -0.8
baz=15
WCI Wyandotte Cave 99.38 342 eP **Pdif** 19 49 25.0 +0.5
WCI pmax pmax
comp=Z,19nm,0.8s
WCI Wyandotte Cave 99.38 342 eP **Pdif** 19 49 25.0 +0.5
comp=Z,19nm,0.8s
BMN Battle Mountai 99.40 7 eP **Pdif** 19 49 27.0 +2.3
BMN pmax pmax
comp=Z,17nm,0.9s
BMN Battle Mountai 99.40 7 eP **Pdif** 19 49 27.0 +2.3
comp=Z,16nm,0.9s
O32A Brockman Farm, 99.42 352 Pdiff **Pdif** 19 49 23.6 -1.1
baz=8.0
Q43A New Douglas 99.42 345 Pdiff **Pdif** 19 49 23.7 -0.9
baz=14
P38A Dawn 99.43 348 Pdiff **Pdif** 19 49 23.6 -1.0
baz=12
P39B Salisbury 99.44 348 Pdiff **Pdif** 19 49 23.5 -1.1
baz=12
CTU Camp Tracy 99.48 3 eP **Pdif** 19 49 27.6 +2.6
comp=Z,26nm,1.1s
O33A Hebron 99.53 352 Pdiff **Pdif** 19 49 24.4 -0.7
baz=8.5
JLU Jordanelle 99.58 2 eP **Pdif** 19 49 28.2 +2.6
comp=Z,25nm,1.1s
P37A Lathrop 99.59 349 Pdiff **Pdif** 19 49 24.7 -0.7
baz=11
Q42A Golden Eagle 99.61 346 Pdiff **Pdif** 19 49 24.5 -0.9
baz=14
O31A Woolen Ranch, 99.63 353 Pdiff **Pdif** 19 49 24.3 -1.3
baz=7.2
P36A Good Intent, A 99.68 350 Pdiff **Pdif** 19 49 25.1 -0.7
baz=10
ORV Oroville 99.78 10 eP **Pdif** 19 49 25.4 -0.8
ORV pmax pmax
comp=Z,5.0nm,0.8s
ORV Oroville 99.78 10 ePdif **Pdif** 19 49 25.4 -0.8
comp=Z,5.2nm,0.8s
Q40A Laux Farm, Aux 99.81 347 Pdiff **Pdif** 19 49 25.9 -0.4
baz=13
CNNC Cliffs of the 99.84 335 PFAKE 19 49 40.0 +13
CNNC LR LR
comp=Z,11µm,20.0s
P35A Duane Minner, 99.88 350 Pdiff **Pdif** 19 49 25.8 -0.8
baz=9.7
PAHR Pah Rah Range 99.90 9 ePdif **Pdif** 19 49 28.1 +1.2
comp=Z,19nm,1.2s
Q39A Willow Grove F 99.91 348 Pdiff **Pdif** 19 49 25.7 -1.0
baz=12
DUG Dugway, Tooele 99.93 3 Pdiff **Pdif** 19 49 27.4 +0.4
baz=357
DUG Dugway, Tooele 99.93 3 eP **Pdif** 19 49 28.9 +1.8
DUG pmax pmax
comp=Z,28nm,1.3s
DUG MLR MLR
comp=Z,16µm,20.0s
DUG Dugway, Tooele 99.93 3 ePdif **Pdif** 19 49 28.9 +1.8
comp=Z,28nm,1.3s
DUG LR LR
comp=Z,16µm,20.0s
P34A Walnut Farm, R 99.96 351 Pdiff **Pdif** 19 49 26.0 -1.1
baz=9.1
R44A Waltonville 99.97 345 Pdiff **Pdif** 19 49 26.8 -0.3
baz=15
P32A Huiting Farm, 100.09 352 Pdiff **Pdif** 19 49 27.3 -0.3
baz=7.7
O20A White River Ci 100.09 360 Pdiff **Pdif** 19 49 27.3 -0.6
baz=0.3
Q20A White River Ci 100.09 360 ePdif **Pdif** 19 49 29.8 +2.0
Q38A Cooks Store, C 100.09 348 Pdiff **Pdif** 19 49 26.8 -0.8
baz=12
HOPS Hopland Field 100.11 11 ePdif **Pdif** 19 49 29.3 +1.6
P33A Williams Farm, 100.17 352 Pdiff **Pdif** 19 49 27.7 -0.3
baz=8.4
NLU North Lily Min 100.20 3 ePdif **Pdif** 19 49 31.0 +2.6
TZTN Tazewell 100.30 340 ePdif **Pdif** 19 49 28.3 -0.3
Q37A Longview Farm, 100.30 349 Pdiff **Pdif** 19 49 27.5 -1.1
baz=11
Q36A Arnold C. Orve 100.36 350 Pdiff **Pdif** 19 49 27.7 -1.1
baz=10
KSU1 Kansas State U 100.38 351 Pdiff **Pdif** 19 49 27.6 -1.3
baz=9.3
KSU1 Kansas State U 100.38 351 ePdif **Pdif** 19 49 29.3 +0.4
KSU1 LR LR
comp=Z,13µm,20.0s
ISCO Idaho Springs 100.38 358 Pdiff **Pdif** 19 49 28.9 -0.3
baz=2.3
ISCO Idaho Springs 100.38 358 eP **Pdif** 19 49 30.3 +1.0
ISCO MLR MLR
comp=Z,13µm,19.0s
ISCO Idaho Springs 100.38 358 ePdif **Pdif** 19 49 30.3 +1.0
ISCO LR LR
comp=Z,13µm,19.0s
S45A Carrier Mills 100.42 344 Pdiff **Pdif** 19 49 28.5 -0.5
baz=15
AFDM Forest Hills D 100.45 10 ePdif **Pdif** 19 49 29.3 +0.1
PNTR Pine Nut 100.48 9 ePdif **Pdif** 19 49 31.4 +1.8
SIUC Southern Illin 100.51 345 ePdif **Pdif** 19 49 30.8 +1.4
R40A Maddies Statio 100.53 347 Pdiff **Pdif** 19 49 29.3 -0.3
baz=13
S44A Carbondale 100.54 345 Pdiff **Pdif** 19 49 28.4 -1.2
baz=15
Q35A Mercer Eighty, 100.54 350 Pdiff **Pdif** 19 49 27.9 -1.7
baz=9.7
P18A Preston Nutter 100.58 1 ePdif **Pdif** 19 49 32.0 +1.8
Q34A Chapman 100.59 351 Pdiff **Pdif** 19 49 28.0 -1.9
baz=9.0
Q33A Connelly Farm, 100.62 352 Pdiff **Pdif** 19 49 27.3 -2.7
baz=8.3
YERR Yerington 100.62 8 ePdif **Pdif** 19 49 30.8 +0.5
R39A Chumby, Stover 100.63 348 Pdiff **Pdif** 19 49 28.6 -1.4
baz=12
Q32A Meitler Ranch, 100.71 352 Pdiff **Pdif** 19 49 28.0 -2.3
baz=7.8
P17A Butcher Ranch, 100.72 2 ePdif **Pdif** 19 49 32.0 +1.4
S43A Fulton Ridge, 100.82 345 Pdiff **Pdif** 19 49 29.4 -1.4
baz=14
TMUT Trail Mountain 100.89 2 ePdif **Pdif** 19 49 33.8 +2.2
R38A Fenwick Farm, 100.89 348 Pdiff **Pdif** 19 49 29.0 -2.2
baz=11
R37A Teagarden Farm 100.91 349 Pdiff **Pdif** 19 49 29.7 -1.6
baz=11
R36A Gordon, Harris 100.99 350 Pdiff **Pdif** 19 49 30.6 -1.1
baz=10
KMSC Kings Mountain 101.00 338 Pdiff **Pdif** 19 49 30.5 -1.2
baz=21
KMSC Kings Mountain 101.00 338 ePdif **Pdif** 19 49 31.1 -0.6
CBKS Cedar Bluff 101.00 353 Pdiff **Pdif** 19 49 30.5 -1.2
baz=6.9
CBKS Cedar Bluff 101.00 353 PFAKE 19 49 40.0 +8.3
CBKS LR LR
comp=Z,32µm,19.0s
KSCO Kaye Shedlock' 101.03 355 Pdiff **Pdif** 19 49 31.0 -1.0
baz=4.6
KSCO Kaye Shedlock' 101.03 355 ePdif **Pdif** 19 49 33.7 +1.8
SMCO Snowmass 101.03 359 ePdif **Pdif** 19 49 33.1 +0.8
WAKR Walker 101.08 9 ePdif **Pdif** 19 49 33.7 +1.4
R35A Emporia Munici 101.09 350 Pdiff **Pdif** 19 49 31.4 -0.7
baz=9.6
SRU San Rafael Swe 101.09 2 eP **Pdif** 19 49 33.4 +1.1
SRU San Rafael Swe 101.09 2 ePdif **Pdif** 19 49 33.4 +1.1
S41A Jillco Farms, 101.12 347 Pdiff **Pdif** 19 49 31.2 -1.0
baz=13
TKL Tuckaleechee C 101.19 340 eP **Pdif** 19 49 27.9 -4.7
TKL Tuckaleechee C 101.19 340 ePdif **Pdif** 19 49 27.9 -4.7
Q24A Divide 101.20 357 Pdiff **Pdif** 19 49 31.7 -1.2
baz=2.7
Q24A Divide 101.20 357 ePdif **Pdif** 19 49 33.0 +0.1
TVH1 TV Hill, Hawth 101.20 8 ePdif **Pdif** 19 49 30.9 -2.1
S40A Lebanon 101.24 347 Pdiff **Pdif** 19 49 31.9 -0.8
baz=12
R34A Isabella, Hill 101.24 351 Pdiff **Pdif** 19 49 31.9 -0.8
baz=8.8
TVH2 Borealis Mine 101.28 8 ePdif **Pdif** 19 49 33.8 +0.6
R32A Long Quarter, 101.29 352 Pdiff **Pdif** 19 49 31.8 -1.1
baz=7.7
S39A Bolivar 101.29 348 Pdiff **Pdif** 19 49 31.9 -1.1
baz=12
TVH3 East Aurora ar 101.30 8 ePdif **Pdif** 19 49 34.0 +0.8
R33A Olander Ranch, 101.32 352 Pdiff **Pdif** 19 49 31.5 -1.6
baz=8.2
CMB Columbia Colle 101.43 10 eP **Pdif** 19 49 34.3 +0.7

CMB	Columbia Colle	101.43	10	ePdif	Pdif	19 49 34.3	+0.7		
S38A	Stockton	101.44	348	Pdiff	Pdif	19 49 32.5	-1.1		
	baz=11								
S37A	Fort Scott	101.45	349	Pdiff	Pdif	19 49 32.7	-0.9		
	baz=11								
TCRU	Three Creeks R	101.53	3	ePdif	Pdif	19 49 35.6	+1.2		
PSUT	Pine Spring	101.53	4	ePdif	Pdif	19 49 33.3	-1.0		
CPCT	Cooper Cave	101.59	340	ePdif	Pdif	19 49 34.8	+0.5		
S36A	Lake Cedric, C	101.60	350	Pdiff	Pdif	19 49 32.9	-1.4		
	baz=10								
R11A	Troy Canyon, C	101.60	6	Pdiff	Pdif	19 49 33.3	-1.3		
	baz=354								
R11A	Troy Canyon, C	101.60	6	ePdif	Pdif	19 49 36.2	+1.6		
MSU	Marysvale	101.64	3	eP	Pdif	19 49 35.1	+0.3		
MSU	Marysvale	101.64	3	ePdif	Pdif	19 49 35.1	+0.3		
T41A	Mountain View	101.65	346	Pdiff	Pdif	19 49 33.9	-0.7		
	baz=13								
PBMO	Poplar Bluff	101.66	345	ePdif	Pdif	19 49 35.0	+0.4		
T40A	Mansfield	101.68	347	Pdiff	Pdif	19 49 33.0	-1.7		
	baz=12								
S35A	Otter Creek Ra	101.73	350	Pdiff	Pdif	19 49 33.7	-1.2		
	baz=9.5								
WVT	Waverly	101.74	343	eP	Pdif	19 49 34.6	-0.4		
WVT	Waverly	101.74	343	ePdif	Pdif	19 49 34.6	-0.4		
S34A	Willow Spring	101.82	351	Pdiff	Pdif	19 49 33.0	-2.3		
	baz=8.9								
T39A	Clever	101.95	348	Pdiff	Pdif	19 49 34.6	-1.3		
	baz=12								
MLAC	Mammoth, Mammt	102.01	8	Pdiff	Pdif	19 49 34.8	-1.7		
	baz=352								
S32A	Newby Ranch, P	102.02	352	Pdiff	Pdif	19 49 35.1	-1.1		
	baz=7.5								
S33A	Kaszmaul Farm,	102.03	351	Pdiff	Pdif	19 49 34.3	-2.0		
	baz=8.2								
T38A	Diamond	102.08	348	Pdiff	Pdif	19 49 35.0	-1.5		
	baz=11								
PV01	Paradox Valley	102.09	0	ePdif	Pdif	19 49 37.1	+0.3		
T37A	Cheneyville 18	102.09	349	Pdiff	Pdif	19 49 34.6	-2.0		
	baz=11								
MTPU	Mount Pierson	102.11	3	ePdif	Pdif	19 49 39.3	+2.3		
PV05	Paradox Valley	102.14	0	ePdif	Pdif	19 49 39.6	+2.6		
U42A	Revenden	102.23	346	Pdiff	Pdif	19 49 35.7	-1.4		
	baz=14								
T36A	Boggs Farm, Ca	102.29	350	Pdiff	Pdif	19 49 36.4	-1.0		
	baz=9.9								
U41A	Viola	102.36	346	Pdiff	Pdif	19 49 36.9	-0.8		
	baz=13								
V45A	Humboldt	102.36	344	Pdiff	Pdif	19 49 35.2	-2.6		
	baz=15								
SDCO	Great Sand Dun	102.42	358	Pdiff	Pdif	19 49 37.4	-1.0		
	baz=2.4								
SDCO	Great Sand Dun	102.42	358	ePdif	Pdif	19 49 40.3	+1.9		
SDCO				LR	LR				
	comp=Z,21µm,20.0s								
S22A	4UR Ranch, Cre	102.46	359	ePdif	Pdif	19 49 41.2	+2.7		
V44A	Blytheville	102.47	345	Pdiff	Pdif	19 49 37.4	-0.8		
	baz=14								
T34A	McClaskey Farm	102.50	351	Pdiff	Pdif	19 49 37.6	-0.7		
	baz=8.9								
SZCU	Shurtz Canyon	102.51	4	ePdif	Pdif	19 49 41.0	+2.3		
U40A	Yellville	102.51	347	Pdiff	Pdif	19 49 37.1	-1.4		
	baz=12								
T35A	Sooner Cattle	102.52	350	Pdiff	Pdif	19 49 37.7	-0.7		
	baz=9.4								
NHSC	New Hope	102.54	336	ePdif	Pdif	19 49 37.5	-1.1		
NHSC				LR	LR				
	comp=Z,17µm,19.0s								
T32A	Huddler Ranch,	102.54	352	Pdiff	Pdif	19 49 37.8	-0.8		
	baz=7.5								
CCUT	Cedar City	102.54	4	ePdif	Pdif	19 49 39.9	+1.1		
T33A	Patterson Ranc	102.56	352	Pdiff	Pdif	19 49 37.8	-0.9		
	baz=8.1								
U39A	Green Forest	102.59	348	Pdiff	Pdif	19 49 37.7	-1.1		
	baz=12								
TIN	Tinemaha, Big	102.64	8	Pdiff	Pdif	19 49 38.0	-1.2		
	baz=352								
U38A	Gravette	102.68	348	Pdiff	Pdif	19 49 38.4	-0.7		
	baz=11								
PKCU	Pink Cliffs	102.70	3	ePdif	Pdif	19 49 40.5	+0.9		
HHAR	Hobbs	102.76	348	ePdif	Pdif	19 49 39.8	+0.3		
V42A	Cord	102.78	346	Pdiff	Pdif	19 49 39.3	-0.3		
	baz=13								
GRAC	Grapevine Rang	102.79	7	Pdiff	Pdif	19 49 39.1	-0.6		
	baz=353								
U37A	Salina	102.82	349	Pdiff	Pdif	19 49 38.8	-1.0		
	baz=10								
U36A	Oologah	102.92	349	Pdiff	Pdif	19 49 39.0	-1.2		
	baz=10.0								
TPNV	Topopah Spring	102.94	6	Pdiff	Pdif	19 49 39.8	-0.8		
	baz=354								
TPNV	Topopah Spring	102.94	6	eP	Pdif	19 49 40.0	-0.5		
TPNV	Topopah Spring	102.94	6	ePdif	Pdif	19 49 40.0	-0.5		
V41A	Mountainview	102.95	346	Pdiff	Pdif	19 49 39.2	-1.1		
	baz=13								
W45A	Hickory Valley	102.97	344	Pdiff	Pdif	19 49 39.6	-0.8		
	baz=15								
T25A	Trinidad	102.99	357	Pdiff	Pdif	19 49 39.4	-1.4		
	baz=3.3								
T25A	Trinidad	102.99	357	ePdif	Pdif	19 49 42.6	+1.8		
MVCO	Mesa Verde	103.01	360	Pdiff	Pdif	19 49 40.4	-0.5		
	baz=0.1								
MVCO	Mesa Verde	103.01	360	PFAKE		19 49 50.0	+9.1		
MVCO				LR	LR				
	comp=Z,19µm,21.0s								
V40A	Witts Springs	103.05	347	Pdiff	Pdif	19 49 40.1	-0.8		
	baz=12								
U35A	Pawnee	103.08	350	Pdiff	Pdif	19 49 40.3	-0.6		
	baz=9.3								
LCMT	Little Creek M	103.08	4	ePdif	Pdif	19 49 41.8	+0.7		
KNB	Kanab	103.10	4	eP	Pdif	19 49 42.6	+1.3		
KNB	Kanab	103.10	4	ePdif	Pdif	19 49 42.5	+1.3		
U34A	Anderson Ranch	103.12	351	Pdiff	Pdif	19 49 40.1	-1.0		
	baz=8.7								
W44A	Shelby Farms P	103.12	344	Pdiff	Pdif	19 49 39.5	-1.6		
	baz=15								
V39A	Pettigrew	103.15	348	Pdiff	Pdif	19 49 40.1	-1.2		
	baz=12								
U33A	Lingo Farm, Me	103.19	351	Pdiff	Pdif	19 49 40.4	-1.0		
	baz=8.2								
GOGA	Godfrey	103.23	339	PFAKE		19 49 50.0	+8.4		
GOGA				LR	LR				
	comp=Z,22µm,21.0s								
V38A	Canehill	103.25	348	Pdiff	Pdif	19 49 40.9	-0.8		
	baz=11								
CWC	Cottonwood Cre	103.27	8	Pdiff	Pdif	19 49 39.7	-2.3		
	baz=353								
RCTC	Rector, Farmer	103.27	9	Pdiff	Pdif	19 49 39.2	-2.6		
	baz=352								
KIP	Kipapa	103.32	47	PFAKE		19 49 50.0	+7.8		
KIP				LR	LR				
	comp=Z,7µm,20.0s								
U32A	Winter Ranch,	103.34	352	Pdiff	Pdif	19 49 37.4	-4.7		
	baz=7.5								
V37A	Hulbert	103.34	349	Pdiff	Pdif	19 49 40.4	-1.7		
	baz=10								
FURC	Furnace Creek,	103.36	7	Pdiff	Pdif	19 49 41.3	-0.9		
	baz=354								
TUL1	Leonard	103.41	349	Pdiff	Pdif	19 49 40.8	-1.6		
	baz=10.0								
WHAR	Wooly Hollow	103.45	346	ePdif	Pdif	19 49 42.7	+0.1		
WHAR				ePP	PP	19 53 58.8	+1.6		
X201	Greenbrier Sit	103.46	346	ePdif	Pdif	19 49 43.3	+0.7		
SHPR	Sheep Range	103.47	6	ePdif	Pdif	19 49 44.6	+1.7		
SHPR				ePKKPbc	PKKPbc	20 05 37.0	+1.6		
DAC	Darwin (Calif)	103.48	8	eP	Pdif	19 49 45.6	+2.6		
DAC	Darwin (Calif)	103.48	8	ePdif	Pdif	19 49 45.6	+2.6		
X301	Greenbrier Sit	103.52	346	ePdif	Pdif	19 49 43.0	+0.1		
CAN	Canberra	103.53	125	PFAKE		19 49 50.0	+7.2		
CAN				LR	LR				
	comp=Z,6µm,21.0s								
V36A	Jenks	103.55	350	Pdiff	Pdif	19 49 40.8	-2.2		
	baz=9.9								
W41B	Gary Mavity, V	103.56	346	Pdiff	Pdif	19 49 42.0	-1.1		
	baz=13								
OXF	Oxford	103.64	344	eP	Pdif	19 49 41.7	-1.7		
OXF	Oxford	103.64	344	ePdif	Pdif	19 49 41.7	-1.7		
W40A	Ferguson Farm,	103.68	347	Pdiff	Pdif	19 49 40.5	-3.1		
	baz=12								
V35A	Meyer Ranch, C	103.69	350	Pdiff	Pdif	19 49 42.4	-1.2		
	baz=9.2								
MPMC	Manual Prospec	103.71	7	Pdiff	Pdif	19 49 41.9	-2.1		
	baz=353								
V34A	Guthrie	103.71	351	Pdiff	Pdif	19 49 39.1	-4.7		
	baz=8.7								
V34A	Guthrie	103.71	351	ePdif	Pdif	19 49 43.1	-0.7		
U15A	North Rim	103.71	3	ePdif	Pdif	19 49 45.8	+1.7		
U15A				ePKKPbc	PKKPbc	20 05 34.8	0.0		
X45A	UM Field Stati	103.72	344	Pdiff	Pdif	19 49 39.2	-4.7		
	baz=15								
VES	Vestal, Richgr	103.75	9	Pdiff	Pdif	19 49 41.5	-2.4		
	baz=352								
W39A	Magazine	103.80	348	Pdiff	Pdif	19 49 42.7	-1.5		
	baz=12								
X44A	Crenshaw	103.81	344	Pdiff	Pdif	19 49 39.5	-4.6		
	baz=14								
V33A	Lossen Ranch,	103.81	351	Pdiff	Pdif	19 49 40.3	-3.9		
	baz=8.1								
Y47A	UCPARC, Winfie	103.88	342	Pdiff	Pdif	19 49 40.6	-3.9		
	baz=16								
X43A	Marvell	103.94	345	Pdiff	Pdif	19 49 38.6	-6.2		
	baz=14								
SHOC	Shoshone, Teco	103.98	6	Pdiff	Pdif	19 49 43.7	-1.3		
	baz=354								
ISA	Isabella, Lake	104.00	8	Pdiff	Pdif	19 49 43.3	-1.8		
	baz=352								
W38A	Poteau	104.04	348	Pdiff	Pdif	19 49 43.9	-1.3		
	baz=11								
W37B	Quinton	104.11	349	Pdiff	Pdif	19 49 41.6	-3.9		
	baz=10								
Y46A	Houston	104.12	343	Pdiff	Pdif	19 49 43.3	-2.4		
	baz=15								
SMMC	Simmler	104.16	10	Pdiff	Pdif	19 49 44.0	-1.8		
	baz=351								
W36A	Wetumka	104.22	350	Pdiff	Pdif	19 49 42.1	-3.9		
	baz=9.7								
LRMC	Laurel Mtn Rad	104.26	8	Pdiff	Pdif	19 49 45.9	-0.5		
	baz=353								
X41A	Kaden, Bauxite	104.27	346	Pdiff	Pdif	19 49 41.6	-4.7		
	baz=13								
Y45A	Yeager Farm, C	104.29	344	Pdiff	Pdif	19 49 42.5	-3.9		
	baz=15								
W35A	Tecumseh	104.30	350	Pdiff	Pdif	19 49 44.0	-2.4		
	baz=9.2								
Z48A	Northport	104.31	342	Pdiff	Pdif	19 49 44.9	-1.6		
	baz=16								
W34A	Bridge Creek,	104.33	351	Pdiff	Pdif	19 49 46.1	-0.4		
	baz=8.5								
X40A	Basin Creek Fa	104.33	347	Pdiff	Pdif	19 49 41.1	-5.4		
	baz=12								
Y44A	Strider, Charl	104.34	344	Pdiff	Pdif	19 49 42.7	-3.9		
	baz=14								
MIAR	Mount Ida	104.40	347	Pdiff	Pdif	19 49 46.0	-0.9		
	baz=12								
MIAR	Mount Ida	104.40	347	eP	Pdif	19 49 47.5	+0.6		
MIAR				MLR	MLR				
	comp=Z,20µm,19.0s								
MIAR	Mount Ida	104.40	347	ePdif	Pdif	19 49 47.5	+0.6		
MIAR				LR	LR				
	comp=Z,20µm,19.0s								
TUQ	Turquoise Moun	104.47	6	Pdiff	Pdif	19 49 46.4	-0.9		
	baz=354								
X38A	Whitesboro	104.48	348	Pdiff	Pdif	19 49 47.1	-0.1		
	baz=11								
ARVC	Arvin	104.48	9	Pdiff	Pdif	19 49 46.4	-0.8		
	baz=352								
W33A	Caddo, Fort Co	104.49	352	Pdiff	Pdif	19 49 46.8	-0.4		
	baz=8.0								
LRAL	Lakeview Retre	104.51	341	ePdif	Pdif	19 49 48.5	+1.2		
GSC	Goldstone, Bar	104.52	7	Pdiff	Pdif	19 49 45.2	-2.3		
	baz=354								
GSC	Goldstone, Bar	104.52	7	eP	Pdif	19 49 47.4	-0.1		
GSC	Goldstone, Bar	104.52	7	ePdif	Pdif	19 49 47.4	-0.1		
X39A	Fountain Ranch	104.53	348	Pdiff	Pdif	19 49 47.3	-0.1		
	baz=11								
PKM	Mcpherson Peak	104.60	10	Pdiff	Pdif	19 49 46.0	-2.0		
	baz=351								
Z47A	Carrollton	104.60	342	Pdiff	Pdif	19 49 46.2	-1.6		
	baz=16								
W32A	Sentinel	104.61	352	Pdiff	Pdif	19 49 47.7	-0.1		
	baz=7.4								
X37A	Clayton	104.64	349	Pdiff	Pdif	19 49 46.3	-1.6		
	baz=10								
WUAZ	Wupatki	104.65	2	Pdiff	Pdif	19 49 46.2	-2.0		
	baz=358								
WUAZ	Wupatki	104.65	2	ePdif	Pdif	19 49 46.8	-1.4		
WUAZ				LR	LR				
	comp=Z,14µm,19.0s								
Z45A	Winona	104.80	344	Pdiff	Pdif	19 49 46.3	-2.4		
	baz=15								
X36A	Centrahoma	104.80	350	Pdiff	Pdif	19 49 47.0	-1.6		
	baz=9.6								
Z46A	Louisville	104.81	343	Pdiff	Pdif	19 49 45.5	-3.1		
	baz=15								
EDW2	Edwards Air Fo	104.82	8	Pdiff	Pdif	19 49 48.4	-0.4		
	baz=353								
Y40A	Okolona	104.87	347	Pdiff	Pdif	19 49 45.8	-3.1		
	baz=12								
Y41A	Eaglette Beard	104.88	346	Pdiff	Pdif	19 49 45.8	-3.1		
	baz=13								
RRX	Edison Barstow	104.93	7	Pdiff	Pdif	19 49 47.9	-1.3		
	baz=353								
WMOK	Wichita Mounta	104.94	352	Pdiff	Pdif	19 49 48.8	-0.5		
	baz=7.7								
WMOK	Wichita Mounta	104.94	352	eP	Pdif	19 49 50.4	+1.1		
WMOK				MLR	MLR				
	comp=Z,20µm,20.0s								
WMOK	Wichita Mounta	104.94	352	ePdif	Pdif	19 49 50.4	+1.1		
WMOK				ePKKPbc	PKKPbc	20 05 28.9	-1.9		
WMOK				LR	LR				
	comp=Z,20µm,20.0s								
W13A	Hualapai Mount	104.95	5	ePdif	Pdif	19 49 48.0	-1.5		
X34A	Smith Ranch, M	104.96	351	Pdiff	Pdif	19 49 47.0	-2.4		
	baz=8.5								
OSI	Osito Audit: C	105.00	9	Pdiff	Pdif	19 49 49.2	-0.4		
	baz=352								
HEC	Hector,Ludlow	105.03	7	Pdiff	Pdif	19 49 47.9	-1.9		
	baz=354								
Z44A	Pea Ridge, Bel	105.05	344	Pdiff	Pdif	19 49 46.6	-3.1		
	baz=14								
SBC	Santa Barbara	105.05	10	Pdiff	Pdif	19 49 47.6	-2.2		
	baz=351								
X35A	Drake	105.05	350	Pdiff	Pdif	19 49 48.1	-1.6		
	baz=9.2								
AMTX	Amarillo	105.06	354	Pdiff	Pdif	19 49 48.0	-1.9		
	baz=5.5								
AMTX	Amarillo	105.06	354	ePdif	Pdif	19 49 49.7	-0.3		
Y39A	Lockesburg	105.08	348	Pdiff	Pdif	19 49 49.0	-0.8		
	baz=11								
W18A	Petrified Fore	105.09	1	Pdiff	Pdif	19 49 48.6	-1.6		
	baz=19								
W18A	Petrified Fore	105.09	1	ePdif	Pdif	19 49 52.8	+2.7		
X33A	Lawton	105.10	351	Pdiff	Pdif	19 49 46.8	-3.2		
	baz=8.0								
TIGA	Tifton	105.11	338	Pdiff	Pdif	19 49 47.8	-2.2		
	baz=20								
GMRC	Granite Mounta	105.14	6	Pdiff	Pdif	19 49 47.4	-2.9		
	baz=354								
147A	Livingston	105.15	342	Pdiff	Pdif	19 49 48.6	-1.6		
	baz=16								
Y38A	Idabel	105.19	348	Pdiff	Pdif	19 49 45.7	-4.7		
	baz=11								
NEE2	Needles Airpor	105.23	5	Pdiff	Pdif	19 49 49.2	-1.3		
	baz=355								
ANMO	Albuquerque	105.24	358	Pdiff	Pdif	19 49 49.7	-1.1		
	baz=1.7								
ANMO	Albuquerque	105.24	358	eP	Pdif	19 49 52.2	+1.3		
ANMO				MLR	MLR				
	comp=Z,21nm,20.0s								
ANMO	Albuquerque	105.24	358	ePdif	Pdif	19 49 52.2	+1.3		
ANMO				LR	LR				
	comp=Z,21µm,20.0s								
Z43A	Armstrong Fami	105.28	345	Pdiff	Pdif	19 49 48.4	-2.4		
	baz=14								
Y37A	Hugo	105.28	349	Pdiff	Pdif	19 49 48.4	-2.4		
	baz=10								
X32A	Elmer	105.31	352	Pdiff	Pdif	19 49 49.2	-1.7		
	baz=7.3								
146A	Union	105.37	343	Pdiff	PKiKP	19 54 05.2	+0.3		
	baz=15								
DECC	Green Verdugo	105.40	8	Pdiff	Pdif	19 49 49.4	-2.0		
	baz=352								
Y36A	Durant	105.45	349	Pdiff	Pdif	19 49 49.0	-2.5		
	baz=9.7								
BLG	Laguna Peak, P	105.46	9	Pdiff	Pdif	19 49 49.5	-2.1		
	baz=352								
BFSC	Mount Baldy Ra	105.49	8	Pdiff	Pdif	19 49 50.5	-1.4		
	baz=353								
SCZ2	Santa Cruz Isl	105.50	10	Pdiff	Pdif	19 49 51.9	+0.1		
	baz=351								
Z41A	Richland Creek	105.52	346	Pdiff	Pdif	19 49 47.6	-4.2		
	baz=12								
BBRC	Big Bear Solar	105.54	7	Pdiff	Pdif	19 49 52.0	-0.3		
	baz=353								
248A	Dixon Mills	105.58	342	Pdiff	Pdif	19 49 53.9	+1.8		
	baz=16								
Y34A	Reagan Ranch,	105.59	351	Pdiff	Pdif	19 49 53.1	+1.0		
	baz=8.6								
145A	Houston Renfro	105.59	344	Pdiff	Pdif	19 49 52.4	+0.2		
	baz=15								
Z40A	Long Farm, Mag	105.63	347	Pdiff	Pdif	19 49 51.7	-0.6		
	baz=12								
144A	Alexander Plac	105.67	344	Pdiff	Pdif	19 49 51.0	-1.5		
	baz=14								
X18A	Snowflake	105.67	1	ePdif	Pdif	19 49 54.8	+2.0		
PDMCI	Parker Dam,Lak	105.73	5	Pdiff	Pdif	19 49 50.9	-1.8		
	baz=356								
X16A	Lo Mia Camp, P	105.75	3	ePdif	Pdif	19 49 54.2	+1.1		
Z39A	Irene McRaven,	105.78	348	Pdiff	Pdif	19 49 50.4	-2.6		
	baz=11								
143A	Socs Landing,	105.80	345	Pdiff	Pdif	19 49 52.0	-1.1		
	baz=14								
IRM	Iron Mountain	105.80	6	Pdiff	Pdif	19 49 52.0	-1.2		
	baz=355								
LAZ	Ladron	105.80	359	ePdif	Pdif	19 49 54.3	+1.0		
247A	Quitman	105.83	343	Pdiff	Pdif	19 49 49.8	-3.5		
	baz=16								
BELC	Belle Mtn. Jos	105.89	6	Pdiff	Pdif	19 49 53.1	-0.6		
	baz=354								
Z38A	Mt. Pleasant	105.90	348	Pdiff	Pdif	19 49 49.9	-3.7		
	baz=11								
FMP	Fort Macarthur	105.94	8	Pdiff	Pdif	19 49 53.2	-0.5		
	baz=352								
POHA	Pohakuloa	106.03	46	PFAKE		19 54 20.0			
POHA				LR	LR				
	comp=Z,4µm,19.0s								
BNM	Barren Site	106.04	358	ePdif	Pdif	19 49 54.4	-0.1		
Z37A	Pogue Cattle C	106.05	349	Pdiff	Pdif	19 49 53.2	-1.0		
	baz=10								
MSTX	Muleshoe	106.05	355	ePdif	Pdif	19 49 57.1	+2.7		
142A	Monroe	106.05	346	Pdiff	Pdif	19 49 50.2	-4.0		
	baz=13								
VBMS	Vicksburg	106.09	344	Pdiff	Pdif	19 49 53.9	-0.5		
	baz=14								
Z36A	Blue Ridge	106.09	349	Pdiff	Pdif	19 49 53.3	-1.1		
	baz=9.6								
Z35A	Perchaven, San	106.14	350	Pdiff	Pdif	19 49 53.4	-1.2		
	baz=9.0								
Y14A	Wickenburg	106.16	4	ePdif	Pdif	19 49 56.8	+2.1		
Y14A				ePKKPbc	PKKPbc	20 05 27.7	+0.6		
MURC	Murrieta	106.17	8	Pdiff	Pdif	19 49 54.5	-0.3		
	baz=353								
141A	Papa Simpson,	106.18	346	Pdiff	Pdif	19 49 51.2	-3.6		
	baz=12								
Z34A	Collier Ranch,	106.19	351	Pdiff	Pdif	19 49 54.2	-0.6		
	baz=8.5								
PFO	Pinyon Flats O	106.23	7	Pdiff	Pdif	19 49 53.2	-1.9		
	baz=354								
PFO	Pinyon Flats O	106.23	7	PFAKE		19 54 20.0			
PFO				LR	LR				
	comp=Z,6µm,21.0s								
CIS	Catalina Islan	106.24	9	Pdiff	Pdif	19 49 53.7	-1.4		
	baz=352								
TPFO	Pinon Flats	106.24	7	Pdiff	Pdif	19 49 54.4	-0.9		
	baz=354								
Y12C	Blythe	106.25	5	Pdiff	Pdif	19 49 53.6	-1.5		
	baz=355								
SNCC	San Nicolas Is	106.25	10	Pdiff	Pdif	19 49 55.6	+0.5		
	baz=351								
140A	Cam and Jess,	106.26	347	Pdiff	Pdif	19 49 54.4	-0.8		
	baz=12								
348A	Jackson	106.27	342	Pdiff	Pdif	19 49 53.6	-1.6		
	baz=16								
BC3	Big Chuckawall	106.28	6	Pdiff	Pdif	19 49 54.7	-0.6		
	baz=354								
244A	Avery, Jackson	106.29	344	Pdiff	Pdif	19 49 49.1	-6.2		
	baz=14								
BRAL	Brewton	106.30	341	PFAKE		19 54 20.0			
BRAL				LR	LR				
	comp=Z,11µm,19.0s								
139A	Bunkhouse Ranc	106.36	348	Pdiff	Pdif	19 49 49.2	-6.4		
	baz=11								
Z33A	Whitaker Ranch	106.37	352	Pdiff	Pdif	19 49 50.0	-5.7		
	baz=7.8								
347A	Saraland	106.44	342	Pdiff	Pdif	19 49 50.1	-5.8		
	baz=16								
138A	Matatall Enter	106.49	348	Pdiff	Pdif	19 49 51.7	-4.4		
	baz=11								
242A	Grayson	106.56	346	Pdiff	Pdif	19 49 52.6	-3.9		
	baz=13								
SCI2	San Clemente I	106.64	9	Pdiff	Pdif	19 49 50.5	-6.3		
	baz=352								
137A	Heron Place, G	106.66	349	Pdiff	Pdif	19 49 49.0	-7.9		
	baz=10								
346A	Big Creek Wild	106.66	343	Pdiff	Pdif	19 49 53.6	-3.3		
	baz=15								
448A	Bay Minette	106.72	342	Pdiff	Pdif	19 49 52.2	-5.0		
	baz=16								
241A	Mo Tay, Goldon	106.75	346	Pdiff	Pdif	19 49 54.5	-2.8		
	baz=12								
345A	Thompson Farm,	106.86	344	Pdiff	Pdif	19 49 52.4	-5.4		
	baz=15								
344A	Westbrook Farm	106.87	344	Pdiff	Pdif	19 49 54.0	-3.9		
	baz=14								

MAW PKKPbc **PKKPbc** 20 05 23.2 -0.4
comp=Z,2.5nm,0.7s,baz=180,slow=5.7,SNR=3.6
MAW **Mawson** 107.63 183 *e*Pdif **Pdif** 19 50 01.8 +1.7
MAW *e*PKiKP **PKiKP** 19 54 08.8 +1.0
233A **Rising Star** 107.64 351 Pdiff **Pdif** 19 49 59.2 -2.1
baz=7.8
121A **Cookes Peak, D** 107.67 359 Pdiff **Pdif** 19 49 58.5 -3.1
baz=0.6
339A **Huntington** 107.70 348 Pdiff **Pdif** 19 49 58.6 -3.0
baz=11
338A **Crockett** 107.80 348 Pdiff **Pdif** 19 49 59.6 -2.5
baz=11
TUC **Tucson** 107.87 2 Pdiff **Pdif** 19 50 01.8 -0.6
baz=358
TUC **Tucson** 107.87 2 PFAKE 19 54 20.0
TUC LR LR
comp=Z,21µm,20.0s
ANWB **Willy Bob** 107.89 313 PFAKE 19 54 20.0
ANWB LR LR
comp=Z,5µm,20.0s
337A **Centerville** 107.93 349 Pdiff **Pdif** 19 49 59.0 -3.6
baz=10
336A **Riesel** 108.00 350 Pdiff **Pdif** 19 50 02.2 -0.7
baz=9.4
441A **DeRidder** 108.04 346 Pdiff **Pdif** 19 50 01.5 -1.5
baz=12
214A **Organ Pipe Nat** 108.14 4 Pdiff **Pdif** 19 50 02.5 -1.1
baz=357
440A **Kirbyville** 108.18 347 Pdiff **Pdif** 19 50 03.3 -0.4
baz=12
335A **Moody** 108.18 350 Pdiff **Pdif** 19 50 02.6 -1.2
baz=8.9
334A **Lometa** 108.24 351 Pdiff **Pdif** 19 50 03.4 -0.6
baz=8.3
439A **Center Grove,** 108.27 348 Pdiff **Pdif** 19 50 04.3 +0.2
baz=11
333A **Richland Sprin** 108.33 351 Pdiff **Pdif** 19 50 03.6 -0.8
baz=7.7
438A **Sam Houston St** 108.42 348 Pdiff **Pdif** 19 50 02.2 -2.5
baz=10
437A **Phantom Ranch,** 108.45 349 Pdiff **Pdif** 19 50 03.8 -1.1
baz=10.0
MNTX **Cornudas Mount** 108.45 357 Pdiff **Pdif** 19 50 04.3 -0.6
baz=2.6
MNTX **Cornudas Mount** 108.45 357 *e*Pdif **Pdif** 19 50 08.4 +3.5
MNTX LR LR
comp=Z,19µm,19.0s
542A **Morse** 108.52 345 Pdiff **Pdif** 19 50 04.7 -0.5
baz=13
436A **Wall Ranch, Ga** 108.60 349 Pdiff **Pdif** 19 50 04.9 -0.7
baz=9.5
TRIS **Tristan da Cun** 108.63 237 PFAKE 19 54 20.0
TRIS LR LR
comp=Z,5µm,20.0s
435B **Jarrell** 108.70 350 Pdiff **Pdif** 19 50 07.4 +1.3
baz=8.8
540A **Vidor** 108.70 347 Pdiff **Pdif** 19 50 07.4 +1.3
baz=12
434A **Burnet** 108.75 351 Pdiff **Pdif** 19 50 04.4 -1.9
baz=8.3
433A **Art** 108.91 351 Pdiff **Pdif** 19 50 08.5 +1.5
baz=7.7
538A **Harpers Horsep** 108.94 348 Pdiff **Pdif** 19 50 05.5 -1.6
baz=10
FUNA **Funafuti** 108.97 85 PFAKE 19 54 20.0
FUNA LR LR
comp=Z,5µm,20.0s
537A **Green Hill Far** 109.21 349 Pdiff **Pdif** 19 50 05.3 -3.0
baz=9.9
JCT **Junction City** 109.26 352 Pdiff **Pdif** 19 50 05.8 -2.8
baz=7.1
JCT **Junction City** 109.26 352 PFAKE 19 54 20.0
JCT LR LR
comp=Z,27µm,20.0s
535A **Dale** 109.44 350 Pdiff **Pdif** 19 50 09.5 +0.2
baz=8.9
GRTK **Grand Turk** 109.45 323 PFAKE 19 54 20.0
GRTK LR LR
comp=Z,7µm,20.0s
533A **Kerrville** 109.58 351 Pdiff **Pdif** 19 50 10.6 +0.5
baz=7.7
637A **Eagle Lake** 109.84 349 Pdiff **Pdif** 19 50 09.5 -1.6
baz=9.9
FDF **Fort de France** 109.88 311 PFAKE 19 54 30.0
FDF LR LR
comp=Z,6µm,20.0s
SJG **San Juan** 109.89 317 PFAKE 19 54 30.0
SJG LR LR
comp=Z,9µm,22.0s
635A **Leesville** 110.09 350 Pdiff **Pdif** 19 50 13.1 +0.8
baz=8.8
BBGH **Gun Hill** 110.20 308 PFAKE 19 54 30.0
BBGH LR LR
comp=Z,12µm,22.0s
633A **Saathoff Ranch** 110.20 351 Pdiff **Pdif** 19 50 11.7 -1.0
baz=7.6
736A **Circle Diamond** 110.42 349 Pdiff **Pdif** 19 50 17.5 +3.8
baz=9.4
735A **Kenedy** 110.62 350 Pdiff **Pdif** 19 50 16.4 +1.8
baz=8.8
LTX **Lajitas** 110.72 355 *e*P **Pdif** 19 50 17.2 +2.0
LTX *i* 19 54 14.0
LTX *e* 19 54 52.2
LTX **Lajitas** 110.72 355 *e*Pdif **Pdif** 19 50 17.2 +2.0
LTX *e*PKiKP **PKiKP** 19 54 13.9 -1.2
LTX *e*PP **PP** 19 54 52.2 +1.6
LTX *e*PKKPbc **PKKPbc** 20 05 13.3 +0.5
TX31 **Lajitas Ar. Si** 110.72 355 *e*Pdif **Pdif** 19 50 16.5 +1.3
TX31 *e*PKKPbc **PKKPbc** 20 05 12.4 -0.4
TXAR **Lajitas Array** 110.72 355 Pdiff **Pdif** 19 50 17.2 +2.0
comp=Z,0.7nm,0.5s,baz=30,slow=2.7,SNR=11
TXAR PKiKP **PKiKP** 19 54 13.9 -1.2
comp=Z,2.0nm,0.8s,baz=27,slow=2.2,SNR=4.2
TXAR PP **PP** 19 54 52.2 +1.6
comp=Z,11nm,0.9s,baz=35,slow=4.6,SNR=4.4
TXAR PKKPbc **PKKPbc** 20 05 13.3 +0.5
comp=Z,3.0nm,0.7s,baz=189,slow=4.8,SNR=13
734A **La Parita Cree** 110.73 351 Pdiff **Pdif** 19 50 18.9 +3.8
baz=8.2
733A **Divot King Ran** 110.94 351 Pdiff **Pdif** 19 50 18.5 +2.5
baz=7.6
835A **Beeville** 111.19 350 Pdiff **Pdif** 19 50 18.2 +1.1
baz=8.8
833A **Chaparral WMA,** 111.35 351 Pdiff **Pdif** 19 50 21.6 +3.7
baz=7.5
SYO **Syowa Base** 111.39 192 ||*e*X **PKiKP** 19 54 13.0 -1.8
SYO **Syowa Base** 111.39 192 ||*e*X pPKiKP 19 54 22.2 +0.7
SYO **Syowa Base** 111.39 192 ||*e*P **PKKPab** 20 05 16.2 -0.3
834A **Tilden** 111.44 351 Pdiff **Pdif** 19 50 21.8 +3.5
baz=8.2
832A **Faith Ranch, C** 111.45 352 Pdiff **Pdif** 19 50 20.2 +1.9
baz=7.0
SDDR **Presa de Saban** 111.71 322 PFAKE 19 54 30.0
SDDR LR LR
comp=Z,8µm,21.0s
KVTX **Kingsville** 111.92 350 PFAKE 19 54 30.0
KVTX LR LR
comp=Z,10µm,20.0s
934A **Benavides** 111.95 350 Pdiff **Pdif** 19 50 25.8 +5.2
baz=8.3
933A **Laredo** 112.03 351 Pdiff **Pdif** 19 50 24.4 +3.5
baz=7.7
GRGR **Grenville** 112.24 310 PFAKE 19 54 30.0
GRGR LR LR
comp=Z,5µm,22.0s
035A **Encino** 112.55 350 Pdiff **Pdif** 19 50 26.2 +3.0
baz=8.7
GTBY **Guantanamo Bay** 112.61 326 PFAKE 19 54 30.0
GTBY LR LR
comp=Z,9µm,22.0s
035Z **Hargill** 113.02 350 Pdiff **Pdif** 19 50 26.3 +1.0
baz=8.7
MSVF **Nonsavu** 113.74 94 PFAKE 19 54 30.0
MSVF LR LR
comp=Z,2µm,20.0s
MTDJ **Mount Denham** 115.15 327 PFAKE 19 54 40.0 +16
MTDJ LR LR
comp=Z,5µm,19.0s
ZAIG **Zacatecas** 117.16 354 *e*PKPdf **PKPdf** 19 54 25.6 -2.3
NVL **N'lazarevskaya** 118.54 199 *e*PKiKP **PKPdf** 19 54 29.6 +1.1
NVL *e* 19 55 50.2
NVL *e*SP SP 20 05 28.7 -0.9
NVL *e*PS **PS** 20 05 35.7 +3.0
NVL MLR MLR
comp=Z,5µm,24.0s
AFI **Afiamalu** 119.22 84 PFAKE 19 54 40.0 +8.4
AFI LR LR
comp=Z,2µm,20.0s
SDV **Santo Domingo** 119.95 316 PKP **PKPdf** 19 54 33.3 0.0
comp=Z,25nm,0.8s,baz=288,slow=0.6,SNR=3.0
SDV **Santo Domingo** 119.95 316 PKP **PKPdf** 19 54 33.3 0.0
SDV LR LR
comp=Z,3µm,20.0s
PTGA **Pitinga** 121.04 299 PKP **PKPdf** 19 54 34.8 -0.3
comp=Z,3.9nm,0.5s,baz=347,slow=2.4,SNR=11
PTGA **Pitinga** 121.04 299 *e*PKPdf **PKPdf** 19 54 35.0 -0.1
PTGA *e*PKKPbc **PKKPbc** 20 04 34.8 -1.5
FOZ **Fox Glacier** 121.43 122 *e*PKPdf **PKPdf** 19 54 34.4 -0.4
CMIG **Matias Romero** 121.65 345 PKP **PKPdf** 19 54 35.8 -0.4
comp=Z,3.0nm,0.6s,baz=358,slow=1.2,SNR=2.4
CCIG **Comitan** 121.82 341 *e*PKPdf **PKPdf** 19 54 38.0 +1.2
LBZ **Lake Benmore** 122.05 123 *e*PKPdf **PKPdf** 19 54 35.9 -0.2
CBRI **Barrientos, No** 122.08 317 *e*P **PKPdf** 19 54 37.6 +0.2
GRMC **Gramalote, San** 122.08 317 *e*P **PKPdf** 19 54 35.2 -2.1
RPZ **Rata Peaks** 122.31 122 *e*PKPdf **PKPdf** 19 54 36.8 +0.1
BDFB **Brasilia** 122.40 277 PKP **PKPdf** 19 54 38.1 +0.4
comp=Z,1.7nm,0.4s,baz=163,slow=20,SNR=3.3
ODZ **Otahua Downs** 122.64 124 *e*PKPdf **PKPdf** 19 54 38.1 +0.9
LTZ **Lake Taylor** 122.69 121 *e*PKPdf **PKPdf** 19 54 36.4 -1.0
OXZ **Oxford** 122.78 121 *e*PKPdf **PKPdf** 19 54 37.6 +0.1
SNAA **Sanae** 122.95 201 PKP **PKPdf** 19 54 38.3 +1.3
SNAA **Sanae** 122.95 201 PKKPbc PKKPbc 20 04 28.7 -1.4
comp=Z,2.3nm,0.6s,baz=234,slow=6.7,SNR=15
SNAA **Sanae** 122.95 201 *e*PKIKP **PKPdf** 19 54 36.9 -0.2
SNAA **Sanae** 122.95 201 *e*PKPdf **PKPdf** 19 54 36.9 -0.2
SNAA *e*PKKPbc **PKKPbc** 20 04 29.0 -1.1
BRRC **Barranca, Sant** 123.07 317 *e*P **PKPdf** 19 54 39.0 0.0
RAO **Raoul Island** 123.21 102 PFAKE 19 54 50.0 +11
RAO LR LR
comp=Z,2µm,22.0s
CRLZ **Canterbury Las** 123.28 121 *e*PKPdf **PKPdf** 19 54 38.9 +0.5
MQZ **McQueen's Vall** 123.35 122 *e*PKPdf **PKPdf** 19 54 38.3 -0.3
KHZ **Kahutara** 123.37 120 *e*PKPdf **PKPdf** 19 54 38.0 -0.6
SNZO **South Karori** 123.66 118 PFAKE 19 54 50.0 +11
SNZO LR LR
comp=Z,3µm,20.0s
RUSC **La Rusia** 123.77 316 *e*P **PKPdf** 19 54 37.1 -3.9
RUSC **La Rusia** 123.77 316 *e*PKPdf **PKPdf** 19 54 39.3 -1.7
BKZ **Black Stump Fm** 123.93 115 *e*PKPdf **PKPdf** 19 54 38.5 -1.4
URZ **Urewera** 123.95 114 *e*PKPdf **PKPdf** 19 54 37.7 -2.1
VNA1 **Neumayer--Stat** 124.07 203 PKP **PKPdf** 19 54 41.0 +1.9
BFZ **Birch Farm** 124.43 117 *e*PKPdf **PKPdf** 19 54 40.7 0.0
HELC **Santa Helena** 124.78 319 *e*PKPdf **PKPdf** 19 54 41.5 -1.3
NORC **Norcasia** 124.98 318 *e*P **PKPdf** 19 54 43.2 +0.4
CHIC **Chingaza** 125.17 316 *e*P **PKPdf** 19 54 41.8 -1.8
ROSC **El Rosal** 125.31 317 PKP **PKPdf** 19 54 44.3 +0.5
comp=Z,29nm,0.7s,baz=161,slow=4.2,SNR=12
ROSC **El Rosal** 125.31 317 *e*P PKPpre 19 54 33.8
ROSC **El Rosal** 125.31 317 *e*PKPdf **PKPdf** 19 54 42.9 -0.9
TOLC **Tolima** 126.05 318 *e*P **PKPdf** 19 54 42.8 -2.4
SJAC **San Juan de Ar** 126.43 315 *e*P **PKPdf** 19 54 42.3 -3.3
PRAC **Prado** 126.56 317 *e*P **PKPdf** 19 54 46.5 +0.8
PRAC **Prado** 126.56 317 *e*PKPdf **PKPdf** 19 54 45.2 -0.6
SPB **Sao Paulo** 126.57 269 PFAKE 19 55 00.0 +15
SPB LR LR
comp=Z,6µm,19.0s
POPC **Popayan, Colom** 128.48 318 *e*P **PKPdf** 19 54 48.9 -0.8
VNDA **Vanda** 128.90 164 PKP **PKPdf** 19 54 48.6 +0.4
comp=Z,9.7nm,1.0s,baz=305,slow=3.8,SNR=16
VNDA **Vanda** 128.90 164 *e*PKPdf **PKPdf** 19 54 48.3 +0.1
SAML **Samuel** 129.18 295 *e*PKPdf **PKPdf** 19 54 49.6 -1.0
SAML LR LR
comp=Z,5µm,22.0s
QSPA **South Pole Qui** 129.95 180 *e*PKPpre PKPpre 19 54 39.7
QSPA *e*PKPdf **PKPdf** 19 54 50.3 -0.3
QSPA LR LR
comp=Z,7µm,20.0s
CMBC **Cumbal** 130.44 318 *e*P **PKPdf** 19 54 52.2 -1.5
HOPE **Hope Point** 131.23 228 *e*PKPdf **PKPdf** 19 54 53.9 +0.7
HOPE LR LR
comp=Z,3µm,20.0s
OTAV **Otavalo** 131.36 318 *e*PKPdf **PKPdf** 19 54 52.3 -3.1
OTAV LR LR
comp=Z,4µm,20.0s
SIV **San Ignacio** 132.42 286 PKP **PKPdf** 19 54 56.1 -0.6
comp=Z,12nm,1.0s,baz=70,slow=2.0,SNR=6.7
RAR **Rarotonga** 132.72 82 PFAKE 19 55 10.0 +13
RAR LR LR
comp=Z,3µm,21.0s
CPUP **Villa Florida** 135.61 272 PKhKP PKPpre 19 54 48.5
comp=Z,1.8nm,0.7s,baz=62,slow=4.3,SNR=3.6
CPUP PKP **PKPdf** 19 55 02.7 +0.3
comp=Z,17nm,0.7s,baz=67,slow=2.9,SNR=19
CPUP **Villa Florida** 135.61 272 *e*PKIKP PKPpre 19 54 54.6
CPUP *e* 19 55 02.2
CPUP **Villa Florida** 135.61 272 *e*PKPpre PKPpre 19 54 54.6
CPUP *e*PKPdf **PKPdf** 19 55 02.1 -0.2
PAYG **Puerto Ayora** 137.35 333 PFAKE 19 55 20.0 +14
PAYG LR LR
comp=Z,3µm,21.0s
ATAH **Atahualpa** 137.50 313 PKP **PKPdf** 19 55 08.8 +2.0
comp=Z,12nm,0.7s,baz=165,slow=2.0,SNR=5.5
ATAH SKPbc **SKPbc** 19 58 38.9 -0.3
comp=Z,25nm,1.0s,baz=70,slow=3.8,SNR=6.6
LPAZ **La Paz** 137.72 292 PKP **PKPdf** 19 55 07.1 -0.2
comp=Z,12nm,0.9s,baz=21,slow=1.9,SNR=30
LPAZ **La Paz** 137.72 292 *e*PKPpre PKPpre 19 55 01.3
LPAZ *e*PKPdf **PKPdf** 19 55 05.9 -1.4
TAOE **Nuku Hiva Isla** 137.99 51 *e*PP PP 19 57 59.6 +4.9
comp=Z,1µm,26.2s
TAOE **Nuku Hiva Isla** 137.99 51 *e*LR LR 20 39 51.8
comp=Z,11µm,25.9s
PPT2 **Papeete2** 138.07 70 *e*PP PP 19 57 58.0 +2.3
comp=Z,864nm,28.0s
PPT2 **Papeete2** 138.07 70 *e*SS SS 20 16 08.0 +1.8
comp=Z,2µm,28.5s
PPT2 **Papeete2** 138.07 70 *e*LR LR 20 39 52.8
comp=Z,4µm,25.5s
LPA **La Plata** 140.00 261 *ce*PKIKP **PKPdf** 19 55 12.0 +1.8
LPA pPP 19 58 11.0
NNA **Nana** 140.43 306 PKhKP PKPpre 19 55 08.9
comp=Z,8.1nm,0.6s,baz=31,slow=5.9,SNR=3.5
NNA **Nana** 140.43 306 *e*PKIKP **PKPdf** 19 55 08.9 -2.8
NNA MLR MLR
comp=Z,2µm,21.0s
NNA **Nana** 140.43 306 *e*PKPdf **PKPdf** 19 55 08.9 -2.8
NNA LR LR
comp=Z,2µm,21.0s
PB11 **IPOC Station P** 141.09 290 *e*PKPpre PKPpre 19 55 08.4
PB11 *e*PKPdf **PKPdf** 19 55 14.0 +1.1
TBI **Tubuai** 141.73 77 *e*PP PP 19 58 25.3 +7.2
comp=Z,610nm,28.2s
TBI **Tubuai** 141.73 77 *e*SS SS 20 16 39.4 -10
comp=Z,1µm,36.8s
TBI **Tubuai** 141.73 77 *e*LR LR 20 41 30.5
comp=Z,5µm,26.8s
PB01 **IPOC Station P** 141.78 288 *e*PKPpre PKPpre 19 55 07.4
LVC **Limon Verde** 142.31 286 PKhKP PKPpre 19 55 11.3
comp=Z,23nm,0.7s,baz=351,slow=1.4,SNR=1.7
LVC **Limon Verde** 142.31 286 *e*PKPpre PKPpre 19 55 10.5
LVC *e*PKPpre PKPpre 19 55 11.3
LVC LR LR
comp=Z,2µm,20.0s
TCA **Tanti** 143.60 270 *e*P PKPab 19 55 13.1 -0.4
EFI **East Falkland** 143.76 234 *e*PKIKP PKPpre 19 55 12.5
EFI MLR MLR
comp=Z,4µm,22.0s
EFI **East Falkland** 143.76 234 *e*PKPpre PKPpre 19 55 12.5
EFI LR LR
comp=Z,4µm,22.0s
PB10 **IPOC Station P** 144.06 286 *e*PKPdf **PKPdf** 19 55 17.1 -0.7
TRQA **Tornquist** 144.16 258 *e*PKPdf **PKPab** 19 55 14.8 -0.5
TRQA LR LR
comp=Z,5µm,20.0s
PMSA **Palmer Station** 144.57 211 *e*PKPdf PKPbc 19 55 16.3 +0.2
PMSA LR LR
comp=Z,3µm,19.0s
SUCO **SUCO** 144.68 267 *e*P **PKPab** 19 55 15.9 -1.6
ACHE **Chepes** 145.11 272 *e*P **PKPbc** 19 55 18.7 -0.5
VCA **Vinchina** 145.15 276 *e*P **PKPdf** 19 55 19.8 0.0
AVFE **Valle Fertil** 145.49 273 *e*P **PKPdf** 19 55 20.0 -0.2
AGUA **GUANDACOL** 145.73 275 *e*P **PKPdf** 19 55 20.8 +0.1
ACAN **Cantantal** 146.00 270 *e*P **PKPdf** 19 55 21.3 +0.3
AMOG **MOGNA** 146.41 273 *e*P **PKPbc** 19 55 22.6 -0.5
ACDV **Cuesta del Vie** 146.54 275 *e*P **PKPbc** 19 55 23.8 +0.2
RTLL **Cerro Villicun** 146.57 273 *e*P **PKPbc** 19 55 23.4 -0.1
ACCO **Cerro Coronel** 146.69 274 ||*e*P **PKPbc** 19 55 24.2 0.0
AROD **Rodeo** 146.80 275 *e*P **PKPbc** 19 55 25.0 +0.4
RTCV **Cerro Valdivia** 146.86 272 *e*P **PKPbc** 19 55 23.8 -0.5
LCO **Las Campanas** 147.18 278 *e*PKPdf **PKPbc** 19 55 24.7 -0.9
LCO LR LR
comp=Z,2µm,20.0s
ASAL **Salagasta** 147.39 271 *e*P **PKPbc** 19 55 25.7 -0.2
RTLS **Leoncito** 147.41 272 *e*P **PKPbc** 19 55 25.5 -0.7
ARCO **CERRO ARCO** 147.57 270 *e*P **PKPbc** 19 55 26.0 -0.5
AAGR **Agrelo** 147.59 270 *e*P **PKPbc** 19 55 25.6 -0.8
AUSP **Uspallata** 147.66 272 *e*P **PKPbc** 19 55 26.1 -0.8
CLCH **Cerro Calan** 149.03 270 *e*P **PKPdf** 19 55 27.7 +1.7
PEL **Peldehue** 149.04 271 *e*P **PKPbc** 19 55 29.6 -0.5
ROCH **El Roble** 149.22 271 *e*P **PKPdf** 19 55 26.9 +0.3
ROC1 **El Roble** 149.22 271 ||*e*P **PKPdf** 19 55 27.9 +1.3
ROC1 **El Roble** 149.22 271 *e*PKPdf **PKPdf** 19 55 26.4 -0.1
PLCA **Paso Flores** 151.26 256 PKP **PKPdf** 19 55 30.4 +1.1
comp=Z,29nm,0.9s,baz=116,slow=0.7,SNR=15
PLCA PKPbc **PKiKP** 19 55 35.7 -0.1
comp=Z,134nm,0.9s,baz=78,slow=2.2,SNR=66
PLCA **Paso Flores** 151.26 256 *e*PKPdf **PKPdf** 19 55 29.9 +0.6
PLCA *e*PKPbc **PKiKP** 19 55 36.8 +1.0
PLCA *e*PKPab **PKPab** 19 55 47.0 +3.6
RKT **Rikitea** 151.93 61 *e*PP PP 19 59 20.9 +2.9
comp=Z,664nm,28.0s
RKT **Rikitea** 151.93 61 *e*SS SS 20 18 39.8 -4.4
comp=Z,2µm,32.0s
RKT **Rikitea** 151.93 61 *e*LR LR 20 46 19.2
comp=Z,4µm,25.5s
CHRN **Cochrane** 153.27 243 *e*PKPdf **PKPdf** 19 55 32.2 +0.3
CHRN *e*PKPbc **PKiKP** 19 55 41.6 +2.1
CHRN *e*PKPab **PKPab** 19 55 51.2 -0.2
PTCN **Pitcairn Islan** 156.48 57 PFAKE 19 55 50.0 +13
PTCN LR LR
comp=Z,5µm,20.0s
RPN **Rapa Nui** 166.99 3 PFAKE 19 56 00.0 +12
RPN LR LR
comp=Z,1µm,20.0s

KRNET ***19*** *19:57:15.6±0.1, 40°.18N×71°.49E, h11km, mb3.6*
SOME ***19*** *19:57:18.5, 40°.27N×71°.50E, h10km*
NNC ***19*** *19:57:21.2±3.3, 40°.19N×71°.93E, h0km, mb4.0, mpv3.6,*
Error ellipse: s-maj=27.4km s-min=15.9km az=169.0
ISC 19 19:57:14.9±1.4, **40°.09N**±0°.04×**71°.35E**±0°.03, **h3**km±11km,
n31, σ**2**s**23**/56, **27C-8D, Tajikistan**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**0.41**	**266**	⇑*i*P		**Pb**	**19 57 25.9**	**+1.1**
BTK	baz=257			⇑*i*S		**Sb**	**19 57 33.5**	**+2.1**
DRK	**Karamyk**	**0.70**	**150**	⇑*i*P		**Pb**	**19 57 30.0**	**+0.1**
DRK	baz=161			⇑*i*S		**Sb**	**19 57 40.6**	**+0.5**
OHH	**Osh**	**1.18**	**68**	⇑*i*P		**Pg**	**19 57 36.1**	**-1.5**
OHH	baz=70			⇑*i*S		**Sg**	**19 57 50.1**	**-2.8**
ARK	**Arkit**	**1.77**	**15**	⇑*i*P		**Pn**	**19 57 46.8**	**+0.3**
ARK	baz=13			⇑*i*S		**Sn**	**19 58 08.5**	**-1.1**
IUG	**Iuzhnay**	**2.28**	**335**	*e*P		**Pg**	**19 57 58.9**	**+0.2**
IUG	129nm,0.5s			*e*S		**Sg**	**19 58 27.2**	**-1.0**
MNAS	**Manas**	**2.55**	**20**	⇑*i*P		**Pn**	**19 57 58.9**	**+1.6**
MNAS	baz=18			⇑*i*S		**Sn**	**19 58 28.3**	**-0.6**
MNAS	**Manas**	**2.55**	**20**	⇑Pn		**Pb**	**19 58 00.9**	**-0.5**
MNAS	baz=18 8.7nm,0.5s			⇓Sn		**Sb**	**19 58 32.2**	**-1.0**
CHM	**Chimkent**	**2.59**	**330**	*e*P		**Pg**	**19 58 04.8**	**+0.4**
CHM	114nm,0.4s 125nm,0.3s			*e*S		**Sg**	**19 58 37.5**	**-0.5**
AML	**Almayashu**	**2.70**	**40**	⇑*i*P		**Pn**	**19 57 58.9**	**-0.7**
AML	522nm,0.4s baz=40			⇑*i*S		**Sn**	**19 58 30.9**	**-2.2**
DZA	**Taraz**	**2.80**	**360**	*e*P		**Pb**	**19 58 06.2**	**+0.6**
DZA	104nm,0.5s 201nm,0.3s			*e*S		**Sb**	**19 58 39.7**	**-0.6**
ARLS	**Aral**	**2.87**	**51**	⇓*i*P		**Pn**	**19 58 02.3**	**+0.7**
ARLS	baz=51			⇓*i*S		**Sn**	**19 58 35.9**	**-0.8**
BRLS	**Boroldaу**	**2.97**	**336**	*e*P		**Pg**	**19 58 11.5**	**-0.3**
BRLS	18nm,0.3s 28nm,0.2s			*e*S		**Sg**	**19 58 48.9**	**-1.5**
MRKS	**Merke**	**3.01**	**27**	*e*P		**Pb**	**19 58 09.0**	**-0.1**
MRKS	20nm,0.6s 104nm,0.4s			*e*S		**Sb**	**19 58 45.0**	**-1.3**
KK31	**Karatay Array**	**3.08**	**349**	⇑Pn		**Pb**	**19 58 10.9**	**+0.6**
KK31	9.2nm,0.4s,baz=158,slow=14,SNR=16 25nm,0.5s,baz=155,slow=26,SNR=6.1			⇓Lg		Lg	19 58 57.7	
EKS2	**Erkin-Say**	**3.15**	**35**	⇑*i*P		**Pn**	**19 58 05.4**	**-0.2**
EKS2	baz=34 baz=34			⇑*i*S		**Sn**	**19 58 41.8**	**-2.0**
AAK	**Ala-Archa**	**3.48**	**42**	⇑*i*P		**Pn**	**19 58 09.6**	**-0.5**
AAK	baz=42 baz=42			⇑*i*S		**Sn**	**19 58 48.9**	**-2.9**
AAK	**Ala-Archa**	**3.48**	**42**	⇓Pg		**Pg**	**19 58 21.3**	**-0.2**
AAK	19nm,0.7s 42nm,0.5s			⇑Lg		Lg	19 59 01.9	
KZA	**Kyzart**	**3.56**	**55**	⇑*i*P		**Pn**	**19 58 10.6**	**-0.8**
KZA	baz=55 baz=55			⇑*i*S		**Sn**	**19 58 51.4**	**-2.7**
USP	**Ospenovka**	**3.96**	**36**	⇑*i*P		**Pn**	**19 58 16.0**	**-0.5**
USP	baz=35 baz=35			⇑*i*S		**Sn**	**19 59 00.4**	**-3.1**
TKM2	**Tokmak 2**	**4.26**	**47**	⇑*i*P		**Pn**	**19 58 20.4**	**-0.5**
TKM2	baz=47 baz=47			⇑*i*S		**Sn**	**19 59 07.6**	**-3.7**
TKM2	**Tokmak 2**	**4.26**	**47**	⇓Pn		**Pn**	**19 58 20.8**	**-0.1**
TKM2	12nm,0.5s 26nm,0.8s			⇓Sn		**Sn**	**19 59 09.3**	**-2.0**
TKM2	29nm,0.7s			⇑Lg		Lg	19 59 25.3	
BMNS	**Besmoynak**	**4.43**	**46**	*e*P		**Pb**	**19 58 33.0**	**-0.3**
BMNS	54nm,0.6s 111nm,0.6s			*e*S		**Sb**	**19 59 25.7**	**-1.5**
KST	**Kastek**	**4.55**	**48**	*e*P		**Pb**	**19 58 37.9**	**+2.5**
KST	5.5nm,1.6s 36nm,0.6s			⇑*i*S		**Sb**	**19 59 33.8**	**+3.1**
IZV	**Izvestkoviy**	**4.93**	**52**	*e*P		**Pb**	**19 58 44.2**	**+2.3**
IZV	13nm,0.4s 24nm,0.5s			*e*S		**Sb**	**19 59 44.7**	**+3.1**
TNSS	**Tian-Shan**	**5.13**	**53**	*e*P		**Pb**	**19 58 47.9**	**+2.4**
TNSS	8.6nm,0.7s 24nm,0.6s			*e*S		**Sb**	**19 59 51.0**	**+3.2**
MDOK	**Medeo**	**5.26**	**52**	*e*P		**Pb**	**19 58 51.4**	**+3.8**
MDOK	6.8nm,1.2s 25nm,0.7s			*e*S		**Sb**	**19 59 56.9**	**+5.7**
KUU	**Kurty**	**5.32**	**43**	*e*P		**Pb**	**19 58 51.4**	**+2.9**
KUU	6.7nm,0.3s 34nm,0.6s			*e*S		**Sb**	**19 59 56.2**	**+3.5**
KOTS	**Kotyrbulak**	**5.34**	**52**	*e*P		**Pb**	**19 58 52.8**	**+3.8**
KOTS				*e*S		**Sb**	**19 59 58.7**	**+5.2**
KTBS	**Karatobe**	**5.38**	**46**	*e*P		**Pb**	**19 58 52.2**	**+2.6**
KTBS	18nm,0.9s			*e*S		**Sb**	**19 59 57.8**	**+3.3**
PDGK	**Podgornoye**	**6.90**	**59**	⇓Lg		Lg	20 00 48.0	
OTUK	**Ortayu**	**8.19**	**5**	Lg		Lg	20 01 36.9	
	11nm,0.9s							

ISCJB ***19*** *20:01:02.2±0.5, 37°.91N±0°.03×27°.45E±0°.03, h9km±5km,*

Error ellipse: s-maj=4.7km s-min=4.5km az=160.0
*CSEM **19** 20:01:02.5±0.2,37.91N×27.44E,h5km,ML2.8,Error ellipse: s-maj=3.9km s-min=3.4km az=79.0*
*ISK **19** 20:01:02.2,37.95N×27.48E,h14km,MD2.5*
*DDA **19** 20:01:02.4,37.91N×27.40E,h7km,Ml2.8*

ISC 19 20:01:02.4±1.0,37.91N±0.02×27.45E±0.02,h10km±10km, n21,σ0s51/35,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.27**	**219**	*i* P	**Pg**	**20 01 07.5**	**-0.4**
GCAM				*i* S	**Sg**	**20 01 11.5**	**0.0**
GCAM	**G?zelcaml?**	**0.27**	**219**	P	**Pg**	**20 01 07.5**	**-0.4**
GCAM				S	**Sg**	**20 01 11.5**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.35**	**84**	*e*PG	**Pg**	**20 01 09.4**	**-0.1**
AYDB				*e*SG	**Sg**	**20 01 14.4**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.35**	**84**	*e*Pg	**Pg**	**20 01 09.4**	**-0.1**
AYDB				*e*Sg	**Sg**	**20 01 14.5**	**+0.3**
DGB	**˙zmir**	**0.47**	**288**	*i* P	**Pg**	**20 01 11.4**	**-0.2**
DGB				*i* S	**Sg**	**20 01 17.5**	**-0.2**
IZM	**Izmir**	**0.51**	**343**	*e*PG	**Pg**	**20 01 12.2**	**-0.1**
IZM				*e*SG	**Sg**	**20 01 19.4**	**+0.4**
IZM	**Izmir**	**0.51**	**343**	*e*Pg	**Pg**	**20 01 12.2**	**-0.1**
IZM				*e*Sg	**Sg**	**20 01 19.4**	**+0.4**
URLA	**Izmir**	**0.81**	**304**	*i* P	**Pg**	**20 01 18.1**	**0.0**
URLA				*i* S	**Sg**	**20 01 28.6**	**+0.1**
URLA	**Izmir**	**0.81**	**304**	P	**Pg**	**20 01 18.0**	**0.0**
URLA				S	**Sg**	**20 01 28.6**	**+0.1**
BDRM	**Kayabasi**	**0.84**	**180**	*i* P	**Pg**	**20 01 18.3**	**-0.4**
BDRM				*i* S	**Sg**	**20 01 29.8**	**+0.1**
BDRM	**Kayabasi**	**0.84**	**180**	P	**Pg**	**20 01 18.3**	**-0.4**
BDRM				S	**Sg**	**20 01 29.8**	**+0.1**
BODT	**Bodrum**	**0.85**	**187**	*e*PG	**Pb**	**20 01 19.9**	**+0.5**
BODT	**Bodrum**	**0.85**	**187**	*e*Pg	**Pb**	**20 01 19.9**	**+0.5**
YER	**Yerkesik**	**1.02**	**139**	*e*PG	**Pg**	**20 01 22.2**	**+0.1**
YER	**Yerkesik**	**1.02**	**139**	*e*Pg	**Pg**	**20 01 22.2**	**+0.1**
MANT	**Manisa**	**1.05**	**56**	*i* P	**Pg**	**20 01 22.6**	**0.0**
MANT				*i* S	**Sg**	**20 01 33.9**	**-2.4**
MANT	**Manisa**	**1.05**	**56**	P	**Pg**	**20 01 22.6**	**0.0**
CHOS	**Chios island**	**1.20**	**294**	*e*PN	**Pg**	**20 01 25.1**	**-0.3**
CHOS	**Chios island**	**1.20**	**294**	*e*Pn	**Pg**	**20 01 25.1**	**-0.3**
DEMI	**Demirci**	**1.50**	**41**	*i* P	**Pg**	**20 01 31.5**	**+0.2**
DEMI				*i* S	**Sn**	**20 01 48.9**	**-0.4**
DEMI	**Demirci**	**1.50**	**41**	P	**Pg**	**20 01 31.5**	**+0.2**
DEMI				S	**Sn**	**20 01 48.9**	**-0.4**

*JMA **19** 20:06:38.4±0.2,36.75N×141.74E,h31km±3km,M3.6*
*IDC **19** 20:06:43.0±5.4,36.55N×141.64E,h57km±44km,mb3.4/3, mb1 3.6/5,mb1mx3.2/60,mbtmp3.7/5,ML2.7/2,Error ellipse: s-maj=39.6km s-min=27.3km az=77.0*

ISC 19 20:06:36.2±2.3,36.82N±0.07×141.82E±0.08,h10km±12km, n17,σ0s80/22,mb3.7/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.86**	**290**	P	**Pn**	**20 06 53.9**	**-0.6**
ONAJ				*e*S	**Sg**	**20 07 04.6**	**+0.5**
JFK	**Kawauchi**	**0.93**	**306**	P	**Pn**	**20 06 55.2**	**-0.2**
JHO	**Hitachi**	**1.02**	**259**	P	**Pb**	**20 06 55.5**	**-0.5**
JMM	**Marumori**	**1.33**	**322**	P	**Pg**	**20 07 01.4**	**-0.3**
JFT	**Otama**	**1.37**	**301**	P	**Pg**	**20 07 02.6**	**0.0**
JFT				*e*S	**Sb**	**20 07 19.2**	**-0.4**
JIO	**Ouri**	**1.68**	**347**	P	**Pb**	**20 07 06.6**	**-0.5**
JIO				*e*S	**Sn**	**20 07 26.8**	**-0.3**
JFY	**Yanaizu**	**1.79**	**290**	P	**Pb**	**20 07 08.2**	**-0.8**
JOU	**Okura**	**1.80**	**330**	P	**Pb**	**20 07 09.1**	**-0.1**
JAG	**Ashikaga**	**1.94**	**259**	P	**Pn**	**20 07 09.0**	**-0.2**
JYS	**Shirataka**	**1.98**	**316**	P	**Pb**	**20 07 11.6**	**-0.6**
JYS				*e*S	**Sb**	**20 07 37.0**	**+0.1**
JKT	**Katashina**	**2.06**	**269**	P	**Pn**	**20 07 11.5**	**+0.5**
MJAR	**Matsushiro Arr** 6.2nm,0.3s,baz=90,slow=15,SNR=42	**2.91**	**266**	P	**Pn**	**20 07 23.4**	**+0.9**
MJAR	2.5nm,0.3s,baz=88,slow=16,SNR=4.0			S	**Sn**	**20 07 57.1**	**-0.5**
MAT	**Matsushiro**	**2.91**	**266**	P	**Pn**	**20 07 24.3**	**+1.7**
MAT				S	**Sn**	**20 07 56.8**	**-0.9**
USRK	**Ussuriysk Ar.** 0.1nm,0.3s,baz=154,slow=14,SNR=4.5	**10.50**	**318**	P	Pn	20 09 13.2	+6.5
SONM	**Songino Array** 0.9nm,0.7s,baz=100,slow=8.4,SNR=6.2	**28.17**	**304**	P	**P**	**20 12 30.2**	**+1.4**
MKAR	**Makanchi Array** 0.9nm,0.8s,baz=82,slow=11,SNR=3.7	**44.51**	**302**	P	**P**	**20 14 48.5**	**+0.7**
WRA	**Warramunga Arr** 0.5nm,0.9s,baz=6.5,slow=7.2,SNR=3.2	**56.89**	**188**	P	**P**	**20 16 20.1**	**-1.2**

*ISCJB **19** 20:07:48.8±0.5,32.89N±0.03×115.50W±0.02,h12km±4km, Error ellipse: s-maj=5.9km s-min=3.4km az=174.6*
*NEIC **19** 20:07:50.3,32.87N×115.51W,h12km,ML2.8(PAS),After PAS.*
NEIC Felt at Imperial.

ISC 19 20:07:49.2±1.0,32.91N±0.03×115.51W±0.02,h16km±8km, n28,σ1s41/43,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SWSC	**Sam W. Stewart** baz=107,SNR=136	**0.25**	**278**	P	**Pg**	**20 07 55.3**	**+0.6**
SWSC				S	**Sg**	**20 07 58.3**	**-0.2**
IKP	**In-Ko-Pah, Jac** baz=66,SNR=44	**0.57**	**243**	P	**Pg**	**20 08 00.6**	**0.0**
IKP				S	**Sb**	**20 08 09.2**	**+0.5**
GLA	**Glamis** baz=252,SNR=62	**0.59**	**76**	P	**Pg**	**20 08 01.3**	**+0.3**
GLA				S	**Sg**	**20 08 09.1**	**+0.3**
GLA	**Glamis**	**0.59**	**76**	*e*Pg	**Pg**	**20 08 01.2**	**+0.3**
BC3	**Big Chuckawall** baz=183,SNR=66	**0.75**	**3**	P	**Pg**	**20 08 04.4**	**+0.6**
BC3				S	**Sg**	**20 08 15.0**	**+1.2**
MONP2	**Monument Peak** baz=92,SNR=83	**0.77**	**269**	P	**Pg**	**20 08 04.4**	**+0.1**
MONP2				S	**Sg**	**20 08 14.6**	**+0.1**
BAR	**Barrett**	**1.01**	**257**	*e*Pg	**Pg**	**20 08 08.0**	**-0.7**
BAR				*e*Sg	**Sg**	**20 08 21.5**	**-0.5**
PFO	**Pinyon Flats O** baz=133,SNR=32	**1.06**	**312**	P	**Pb**	**20 08 08.5**	**-0.8**
PFO				S	**Sb**	**20 08 22.8**	**-0.2**
PFO	**Pinyon Flats O**	**1.06**	**312**	*e*Pg	**Pb**	**20 08 08.4**	**-0.8**
PFO				*e*Sn	**Sb**	**20 08 23.0**	**0.0**
BELC	**Belle Mtn. Jos** baz=160	**1.16**	**339**	P	**Pn**	**20 08 10.4**	**-0.5**
BELC				S	**Sb**	**20 08 25.9**	**-0.1**
Y12C	**Blythe**	**1.18**	**44**	*e*Pg	**Pn**	**20 08 11.5**	**+0.5**
Y12C				*e*Sn	**Sb**	**20 08 28.8**	**+2.7**
IRM	**Iron Mountain** baz=193,SNR=41	**1.28**	**14**	P	**Pn**	**20 08 12.4**	**-0.1**
IRM				Sb	**Sb**	**20 08 30.4**	**+1.2**
113A	**Mohawk Valley,**	**1.47**	**95**	*e*Pn	**Pn**	**20 08 14.2**	**-0.9**
MURC	**Murrieta** baz=117	**1.57**	**296**	Sb	**Sn**	**20 08 38.9**	**+2.4**
SPX	**San Pedro Mart**	**1.86**	**179**	*e*Pn	**Pn**	**20 08 22.3**	**+1.6**
NEE2	**Needles Airpor** baz=202	**2.00**	**22**	S	**Sn**	**20 08 47.3**	**+0.3**
Y14A	**Wickenburg**	**2.33**	**63**	*e*Pn	**Pn**	**20 08 28.7**	**+1.7**
214A	**Organ Pipe Nat**	**2.47**	**112**	*e*Pn	**Pn**	**20 08 27.6**	**-1.2**
MWC	**Mount Wilson**	**2.50**	**302**	*e*Pn	**Pn**	**20 08 28.4**	**-1.0**
MWC				*e*Sn	**Sb**	**20 09 08.0**	**+3.5**
W13A	**Hualapai Mount**	**2.57**	**31**	*e*Pn	**Pn**	**20 08 32.2**	**+1.9**
W13A				*e*Sn	**Sn**	**20 08 59.0**	**-2.3**
GSC	**Goldstone, Bar**	**2.62**	**336**	*e*Pn	**Pg**	**20 08 39.7**	**+0.2**
WSHM	**Spangler Hills**	**3.15**	**329**	*e*Sn	**Sn**	**20 09 16.0**	**+0.5**
X16A	**Lo Mia Camp, P**	**3.71**	**65**	*e*Pn	**Pn**	**20 08 45.2**	**-0.9**
DAC	**Darwin (Calif)**	**3.77**	**333**	*e*Pn	**Pb**	**20 08 53.4**	**-2.2**
TUC	**Tucson**	**4.03**	**97**	*e*Pn	**Pn**	**20 08 50.8**	**+0.5**
U15A	**North Rim**	**4.40**	**36**	*e*Pn	**Pn**	**20 08 58.2**	**+2.6**
U15A				*e*Sg	**Sg**	**20 10 08.5**	**-2.0**
LCMT	**Little Creek M**	**4.50**	**24**	*e*Pn	**Pn**	**20 08 58.0**	**+1.3**
LCMT				*e*Sg	**Sg**	**20 10 10.5**	**-3.1**
KNB	**Kanab**	**4.65**	**28**	*e*Pn	**Pn**	**20 08 59.6**	**+0.6**

JMA 19 20:08:12.3±0.2,37.99N×142.22E,h37km±2km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.83**	**304**	P	Pn	20 08 27.8	+0.4
JIO				S	Sn	20 08 38.4	0.0
JMM	**Marumori**	**1.14**	**264**	P	Pn	20 08 32.1	+0.5
JMM				S	Sn	20 08 46.1	+0.2
JFK	**Kawauchi**	**1.24**	**240**	P	Pn	20 08 33.1	+0.1
JFK				S	Sn	20 08 47.8	-0.7
JMK	**Ichinoseki**	**1.24**	**321**	P	Pn	20 08 34.0	+0.9
JOU	**Okura**	**1.28**	**287**	P	Pn	20 08 35.0	+1.3
JOU				S	Sn	20 08 51.1	+1.5
JFT	**Otama**	**1.56**	**253**	P	Pn	20 08 39.2	+1.7
JFT				S	Sn	20 08 58.4	+1.8
JOM	**Ohasama**	**1.65**	**334**	P	Pn	20 08 40.2	+1.5
JOM				S	Sn	20 09 00.8	+2.2
JYS	**Shirataka**	**1.71**	**278**	P	Pn	20 08 41.5	+1.9
JYS				S	Sn	20 09 02.7	+2.4
JYK	**Kaneyama**	**1.73**	**303**	P	Pn	20 08 41.5	+1.7
JRG	**Rokugo**	**1.87**	**319**	P	Pn	20 08 43.9	+2.1

*KRNET **19** 20:08:35.0±0.1,39.22N×71.66E,mb3.4*
*SOME **19** 20:08:37.2,39.30N×72.25E,h30km*
*NNC **19** 20:08:40.9±3.0,39.42N×71.73E,h0km,mb3.9,mpv3.6, Error ellipse: s-maj=26.1km s-min=19.2km az=161.0*

ISC 19 20:08:30.4±2.4,39.1N±0.1×71.88E±0.05,h34km,n23, σ2s08/35,22C-13D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRK	**Karamyk** baz=23	**0.44**	**352**	⇓*i* P	**Pn**	**20 08 40.6**	**0.0**
DRK	baz=23			⇓*i* S	**Sn**	**20 08 45.0**	**-2.4**
BTK	**Batken** baz=323	**1.30**	**321**	⇓*i* P	**Pb**	**20 08 56.0**	**+1.6**
BTK	baz=323			⇓*i* S	**Sb**	**20 09 11.1**	**+0.2**
ARK	**Arkit** baz=5.0	**2.75**	**1**	⇑*i* P	**Pb**	**20 09 20.6**	**+1.7**
ARK	baz=5.0			⇑*i* S	**Sb**	**20 09 53.2**	**+1.0**
ARLS	**Aral** baz=37	**3.37**	**33**	⇑*i* P	**Pb**	**20 09 30.8**	**+1.3**
ARLS	baz=37			⇑*i* S	**Sb**	**20 10 11.4**	**+1.2**
AML	**Almayashu** baz=27	**3.38**	**24**	⇑*i* P	**Pb**	**20 09 31.6**	**+1.8**
AML	baz=27			⇑*i* S	**Sb**	**20 10 12.2**	**+1.7**
IUG	**Iuzhnay** 64nm,0.3s	**3.40**	**336**	*e*P	**Pb**	**20 09 32.3**	**+2.3**
IUG	240nm,0.9s			*e*S	**Sb**	**20 10 13.1**	**+2.1**
MNAS	**Manas** baz=11	**3.47**	**8**	⇑*i* P	**Pb**	**20 09 31.1**	**-0.1**
MNAS	baz=11			⇑*i* S	**Sb**	**20 10 11.6**	**-1.3**
MNAS	**Manas** 6.5nm,0.3s	**3.47**	**8**	⇓Pn	**Pb**	**20 09 32.3**	**+1.1**
MNAS	18nm,0.4s			⇑Sn	**Sb**	**20 10 11.6**	**-1.3**
UCH	**Uchtor** baz=35	**3.75**	**31**	⇓*i* P	**Pb**	**20 09 37.0**	**+0.8**
UCH	baz=35			⇓*i* S	**Sb**	**20 10 21.9**	**+0.5**
MRKS	**Merke** 22nm,0.5s	**3.83**	**15**	*e*P	**Pb**	**20 09 38.8**	**+1.4**
MRKS	21nm,0.5s			*e*S	**Sb**	**20 10 25.2**	**+1.9**
DZA	**Taraz** 19nm,0.1s	**3.86**	**354**	*e*P	Pb	20 09 43.6	+5.8
DZA	87nm,0.5s			*e*S	Sb	20 10 33.1	+9.0
EKS2	**Erkin-Say** baz=24	**3.88**	**21**	⇑*i* P	**Pb**	**20 09 37.9**	**-0.4**
EKS2	baz=24			⇑*i* S	**Sb**	**20 10 23.6**	**-1.3**
KZA	**Kyzart** baz=43	**3.97**	**39**	⇑*i* P	**Pb**	**20 09 40.5**	**+0.7**
KZA	baz=43			⇑*i* S	**Sb**	**20 10 28.0**	**+0.5**
BRLS	**Borolday** 4.7nm,0.2s	**4.09**	**337**	*e*P	Pb	20 09 47.2	+5.5
BRLS	26nm,0.5s			*e*S	Sb	20 10 39.2	+8.6
AAK	**Ala-Archa** baz=31	**4.10**	**28**	⇑*i* P	**Pb**	**20 09 41.7**	**-0.2**
AAK	baz=31			⇑*i* S	**Sb**	**20 10 29.8**	**-1.2**
AAK	**Ala-Archa** 6.8nm,0.4s	**4.10**	**28**	⇓Pn	**Pb**	**20 09 41.6**	**-0.2**
AAK	21nm,0.7s			⇓Lg	Lg	20 10 39.5	
KK31	**Karatay Array** 6.9nm,0.4s,baz=163,slow=12,SNR=3.5	**4.18**	**346**	⇓Pn	**Pb**	**20 09 41.0**	**-2.2**
KK31	12nm,0.5s,baz=166,slow=26,SNR=9.4			⇓Lg	Lg	20 10 42.6	
KBK	**Karagaybulak** baz=35	**4.29**	**32**	⇑*i* P	**Pb**	**20 09 44.4**	**-0.8**
KBK	baz=35			⇑*i* S	**Sb**	**20 10 34.5**	**-2.0**
CHMS	**Chumysh** baz=31	**4.50**	**28**	⇑*i* P	Pb	20 09 46.4	-2.3
CHMS	baz=31			⇑*i* S	**Sb**	**20 10 39.2**	**-3.4**
TKM2	**Tokmak 2** 6.2nm,0.6s	**4.78**	**35**	⇓Pn	Pb	20 09 50.6	-2.9
TKM2	4.4nm,0.5s			⇑Lg	Lg	20 11 02.3	
BMNS	**Besmoynak** 15nm,0.4s	**4.96**	**34**	*e*P	Pb	20 10 03.0	+6.4
BMNS	32nm,0.5s			*e*S	Sb	20 11 06.8	+11
KST	**Kastek** 2.8nm,0.6s	**5.04**	**36**	*e*P	**Pb**	**20 10 01.2**	**+3.2**
KST	6.7nm,0.8s			⇑*i* S	**Sb**	**20 11 03.9**	**+5.7**
AB31	**Akbulak array** 0.4nm,0.5s	**13.31**	**324**	⇑P	**P**	**20 11 42.9**	**-3.1**
AB31	1.1nm,0.5s			⇓S	**Sn**	**20 14 07.8**	**+4.3**

*ISCJB **19** 20:15:13.5±0.8,34.90S±0.04×71.91W±0.08,h28km±6km, Error ellipse: s-maj=11.1km s-min=6.1km az=167.4*
*GUC **19** 20:15:13.7±0.6,34.88S×71.83W,h40km±2km,ML3.9*

ISC 19 20:15:13.9±1.6,34.87S±0.03×71.81W±0.07,h14km±14km, n25,σ1s15/38,10D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NICH	**Los Niches**	**0.49**	**106**	*i* P	**Pb**	**20 15 24.3**	**-0.1**
NICH				*i* S	**Sb**	**20 15 32.1**	**+0.6**
CHPI	**Pichilemu**	**0.50**	**341**	*i* P	**Pg**	**20 15 24.1**	**+0.3**
CHPI				*i* S	**Sb**	**20 15 32.1**	**+0.4**
TALC	**Talca**	**0.55**	**165**	*i* P	**Pb**	**20 15 25.0**	**-0.4**
TALC				*i* S	**Sb**	**20 15 33.0**	**-0.1**
ANTU	**Antumapu**	**1.62**	**37**	*i* P	**Pn**	**20 15 41.6**	**-0.5**
ANTU				*i* S	**Sn**	**20 16 03.3**	**+0.5**
ANTU	comp=E,3μm,0.6s			IAML		20 16 06.1	
FSR	**Penalolen**	**1.74**	**38**	*e*P	**Pn**	**20 15 44.6**	**+0.8**
FSR				*e*S	**Sb**	**20 16 08.9**	**+1.4**
CLCH	**Cerro Calan**	**1.81**	**36**	*i* P	**Pn**	**20 15 44.1**	**-0.6**
CLCH				*i* S	**Sn**	**20 16 07.8**	**+0.4**
CLCH	comp=N,2μm,0.6s			IAML		20 16 11.5	
PEL	**Peldehue**	**1.95**	**29**	*i* P	**Pn**	**20 15 46.3**	**-0.4**
PEL				*i* S	**Sn**	**20 16 11.6**	**+0.4**
PEL	comp=N,901nm,0.1s			IAML		20 16 19.2	
FCH	**Farellones**	**1.98**	**40**	*i* P	**Pn**	**20 15 46.9**	**-0.6**
FCH				*i* S	**Sn**	**20 16 12.6**	**+0.4**
FCH	comp=N,2μm,0.2s			IAML		20 16 19.1	
ROC1	**El Roble**	**2.00**	**19**	⇓*e*P	**Pn**	**20 15 46.9**	**-0.6**
ROCH	**El Roble**	**2.00**	**19**	*i* P	**Pn**	**20 15 46.8**	**-0.8**
ROCH				*i* S	**Sn**	**20 16 12.9**	**+0.4**
ROCH	comp=N,1μm,0.3s			IAML		20 16 18.8	
AAGR	**Agrelo**	**3.04**	**55**	⇓*e*P	**Pn**	**20 16 02.8**	**+1.0**
CANA	**Caviahue**	**3.07**	**169**	*e*P	**Pn**	**20 16 02.4**	**+0.1**
CANA				⇓*e*P	**Pn**	**20 16 02.6**	**+0.4**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARCO	**CERRO ARCO**	**3.13**	**51**	*e*P	**Pn**	**20 16 04.9**	**+1.9**
ARCO	comp=Z,56nm,0.6s			IAML		20 16 25.3	
AUSP	**Uspallata**	**3.32**	**38**	*e*P	**Pn**	**20 16 07.2**	**+1.4**
ASAL	**Salagasta**	**3.36**	**48**	*e*P	**Pn**	**20 16 08.0**	**+1.9**
RTLS	**Leoncito**	**3.71**	**35**	*e*P	**Pn**	**20 16 12.3**	**+1.1**
RTLS				*e*S	**Sb**	**20 17 07.0**	**+2.6**
ACAN	**Cantantal**	**4.64**	**57**	⇓*e*P	**Pn**	**20 16 23.7**	**0.0**
ACAN				⇓*e*S	**Sb**	**20 17 28.0**	**-3.0**
AMOG	**MOGNA**	**4.81**	**36**	*e*P	**Pn**	**20 16 25.5**	**-0.5**
ACCO	**Cerro Coronel**	**4.85**	**29**	⇓*e*P	**Pn**	**20 16 26.1**	**-0.7**
ACCO				⇓*e*S	**Sb**	**20 17 36.4**	**-0.9**
ACCO	comp=Z,52nm,0.5s			IAML		20 17 41.3	
AROD	**Rodeo**	**5.08**	**23**	⇓*e*P	**Pn**	**20 16 29.9**	**-0.2**
ACDV	**Cuesta del Vie**	**5.20**	**27**	⇓*e*P	**Pn**	**20 16 30.8**	**-0.7**
AVFE	**Valle Fertil**	**5.57**	**42**	*e*P	**Pn**	**20 16 34.8**	**-1.7**
ACHE	**Chepes**	**5.68**	**51**	⇓*e*P	**Pn**	**20 16 37.2**	**-0.9**
AGUA	**GUANDACOL**	**6.05**	**29**	*e*P	**Pn**	**20 16 41.8**	**-1.4**
TCA	**Tanti**	**7.00**	**62**	*e*P	**Pn**	**20 16 54.1**	**-2.1**

*ISCJB **19** 20:29:15.9±1.8,39.09N±0.05×143.58E±0.07, h30km±15km,mb3.7/9, Error ellipse: s-maj=8.7km s-min=8.1km az=23.2*
*JMA **19** 20:29:15.2±0.2,39.15N×143.45E,h9km±3km,M4.2*
*IDC **19** 20:29:19.7±2.9,39.10N×143.46E,h44km±26km,mb3.5/9, mb1 3.6/12,mb1mx3.3/63,mbtmp3.7/12,ML2.9/2,Error ellipse: s-maj=27.1km s-min=19.7km az=109.0*

ISC 19 20:29:17.6±3.5,39.18N±0.07×143.42E±0.10,h23km±23km, n28,σ0s97/34,mb3.7/9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.30**	**288**	P	**Pn**	**20 29 39.6**	**-0.8**
MIYJ				S	**Sn**	**20 29 57.4**	**+0.3**
OFUJ	**Ofunato**	**1.37**	**267**	P	**Pn**	**20 29 40.6**	**-0.7**
JTH	**Tanohata**	**1.43**	**303**	P	**Pn**	**20 29 41.4**	**-0.7**
JTH				S	**Sb**	**20 30 01.2**	**-0.1**
JOM	**Ohasama**	**1.68**	**281**	P	**Pn**	**20 29 45.5**	**0.0**
JOM				S	**Sb**	**20 30 08.8**	**+0.3**
JMK	**Ichinoseki**	**1.73**	**263**	P	**Pn**	**20 29 46.2**	**0.0**
JIO	**Ouri**	**1.77**	**247**	P	**Pn**	**20 29 46.3**	**-0.5**
JANG	**Nango**	**1.89**	**310**	P	**Pn**	**20 29 48.3**	**-0.2**
JRG	**Rokugo**	**2.17**	**277**	P	**Pn**	**20 29 52.9**	**+0.5**
JOU	**Okura**	**2.30**	**250**	P	**Pn**	**20 29 54.7**	**+0.6**
JAH	**Hinai**	**2.38**	**296**	P	**Pn**	**20 29 55.1**	**0.0**
JAH				S	**Sb**	**20 30 28.2**	**-0.4**
JYK	**Kaneyama**	**2.40**	**265**	P	**Pn**	**20 29 56.0**	**+0.5**
JTM	**Tenmabayashi**	**2.42**	**312**	P	**Pn**	**20 29 56.7**	**+1.0**
JTM				S	**Sb**	**20 30 28.3**	**-1.6**
JMM	**Marumori**	**2.44**	**238**	P	**Pn**	**20 29 55.7**	**-0.3**
JOT	**Ohata**	**2.85**	**321**	P	**Pn**	**20 30 03.1**	**+1.4**
JFT	**Otama**	**2.94**	**237**	P	**Pn**	**20 30 03.4**	**+0.5**
MJAR	**Matsushiro Arr** 1.8nm,0.3s,baz=43,slow=11,SNR=17	**4.89**	**239**	P	**Pn**	**20 30 31.3**	**+1.5**
MAT	**Matsushiro**	**4.89**	**239**	P	**Pn**	**20 30 31.8**	**+2.0**
MAT				*e*S	**Sn**	**20 31 26.5**	**+0.9**
ASAJ	**Asahikawa** baz=232,slow=12	**4.97**	**353**	P	**Pn**	**20 30 31.0**	**+0.1**
USRK	**Ussuriysk Ar.** 0.3nm,0.3s,baz=100,slow=12,SNR=3.8	**9.91**	**304**	P	**Pn**	**20 31 41.4**	**+2.8**
YAK	**Yakutsk** 5.2nm,0.3s,baz=72,slow=2.4,SNR=3.7	**24.38**	**344**	P	**P**	**20 34 33.2**	**-0.5**
SEY	**Seymchan** 1.5nm,0.6s,baz=243,slow=14,SNR=3.3	**24.40**	**10**	P	**P**	**20 34 34.1**	**+0.2**
SONM	**Songino Array** 0.5nm,0.5s,baz=99,slow=8.5,SNR=5.5	**27.99**	**300**	P	**P**	**20 35 06.0**	**-0.6**
ZALV	**Zalesovo Beam** 0.8nm,0.4s,baz=90,slow=8.6,SNR=3.8	**41.68**	**311**	P	**P**	**20 37 04.8**	**+0.6**
MKAR	**Makanchi Array** 0.2nm,0.7s,baz=86,slow=8.8,SNR=2.2	**44.36**	**301**	P	**P**	**20 37 26.0**	**0.0**
KURBB	**Kurchatov Arra** 1.5nm,0.8s,baz=82,slow=8.7,SNR=15	**45.97**	**307**	P	**P**	**20 37 38.5**	**-0.1**
ILAR	**Eielson Array** 0.6nm,0.9s,baz=263,slow=6.0,SNR=6.1	**46.84**	**33**	P	**P**	**20 37 46.1**	**+0.9**
BVAR	**Borovoye Array** 0.3nm,0.4s,baz=90,slow=4.5,SNR=4.0	**50.33**	**311**	P	**P**	**20 38 12.3**	**0.0**
WRA	**Warramunga Arr** 0.4nm,0.5s,baz=7.8,slow=6.9,SNR=7.2	**59.42**	**190**	P	**P**	**20 39 16.6**	**-1.7**

*IDC **19** 20:32:01.8±0.9,27.07N×44.45W,h0km,mb3.8/16, mb1 4.0/16,mb1mx3.8/62,mbtmp3.8/16,MS4.4/1, Ms1 4.4/1,ms1mx3.6/48,Error ellipse: s-maj=29.1km s-min=17.9km az=172.0*
*ISCJB **19** 20:32:02.5±0.5,27.19N±0.10×44.40W±0.05,h16km, mb4.5/69,MS4.4/1,Error ellipse: s-maj=14.0km s-min=6.2km az=177.4*
*NEIC **19** 20:32:03.0±0.3,27.07N×44.39W,h10km,mb4.7/54,Error ellipse: s-maj=10.0km s-min=4.9km az=175.0*

ISC 19 20:32:04.0±0.7,27.0N±0.1×44.41W±0.09,h16km,n94, σ0s93/87,mb4.6/69,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVB	**Belmont** 54nm,1.0s	**20.89**	**232**	*e*P	**P**	**20 36 43.6**	**-2.2**
CBYP	**Canovanas** 31nm,1.0s	**21.61**	**251**	*e*P	**P**	**20 36 55.6**	**+2.1**
SDDR	**Presa de Saban** 48nm,1.6s	**25.97**	**258**	*e*P	**P**	**20 37 37.9**	**+1.7**
TRQ	**Mont Tremblant**	**30.58**	**317**	*e*P	**P**	**20 38 16.0**	**-1.1**
MCWV	**Mont Chateau** 6.8nm,0.6s	**31.96**	**302**	*e*P	**P**	**20 38 29.6**	**+0.3**
ESDC	**Sonseca Array** 0.7nm,0.9s,baz=121,slow=39,SNR=3.5	**35.76**	**59**	P	**P**	**20 39 03.5**	**+1.2**
DBIC	**Dimbokro** comp=Z,421nm,18.0s,baz=22,slow=36	**42.66**	**111**	LR	LR	20 57 38.8	
H10N2	**ASCENSION HYDR** baz=321,slow=75,SNR=405	**45.19**	**136**	T	T	21 28 21.6	
H10N3	**ASCENSION HYDR** baz=321,slow=75,SNR=291	**45.19**	**136**	T	T	21 28 21.9	
TOA1	**Torodi Ar. Sit** 8.9nm,1.4s	**45.19**	**98**	*e*P	**P**	**20 40 20.2**	**-0.4**
TOA0	**Torodi Ar. Sit**	**45.20**	**98**	*e*P	**P**	**20 40 19.5**	**-1.1**
TORD	**Torodi Ar. Bea** 0.7nm,0.8s,baz=294,slow=6.6,SNR=4.4	**45.20**	**98**	P	**P**	**20 40 20.2**	**-0.4**
H10N1	**ASCENSION HYDR** baz=321,slow=75,SNR=394	**45.21**	**136**	T	T	21 28 23.0	
H10S1	**ASCENSION HYDR** baz=322,slow=75,SNR=276	**45.96**	**137**	T	T	21 29 20.

	5.4nm,0.6s								
FLWY	**Flagg Ranch**	**55.12**	**306**	*e*P		**P**	**20 41 35.5**	**-0.3**
	27nm,1.4s								
REDW	**Red Top Meadow**	**55.30**	**306**	*e*P		**P**	**20 41 36.7**	**-0.4**
	6.9nm,0.6s								
IMW	**Indian Meadow**	**55.31**	**306**	*e*P		**P**	**20 41 37.6**	**+0.3**
	12nm,1.3s								
P18A	**Preston Nutter**	**55.31**	**301**	*e*P		**P**	**20 41 36.9**	**-0.4**
	18nm,1.8s								
TPAW	**Teton Pass**	**55.36**	**306**	*e*P		**P**	**20 41 37.1**	**-0.5**
	7.0nm,0.8s								
YHB	**Horse Butte**	**55.41**	**307**	*e*P		**P**	**20 41 38.4**	**+0.5**
	9.3nm,0.9s								
AHID	**Auburn Hatcher**	**55.54**	**305**	*e*P		**P**	**20 41 38.2**	**-0.6**
	4.4nm,0.8s								
SRU	**San Rafael Swe**	**55.60**	**300**	*e*P		**P**	**20 41 38.6**	**-0.7**
	3.0nm,0.7s								
P17A	**Butcher Ranch,**	**55.71**	**301**	*e*P		**P**	**20 41 39.5**	**-0.5**
	6.3nm,0.9s								
JLU	**Jordanelle**	**56.08**	**302**	*e*P		**P**	**20 41 43.0**	**+0.1**
	6.1nm,1.1s								
TMUT	**Trail Mountain**	**56.09**	**301**	*e*P		**P**	**20 41 42.1**	**-0.9**
	2.6nm,0.5s								
LRM	**Limekiln Ridge**	**56.19**	**309**	*e*P		**P**	**20 41 42.0**	**-1.5**
VTS	**Vitosha**	**56.24**	**55**	*e*P		**P**	**20 41 42.3**	**-1.5**
	4.7nm,1.5s								
MPU	**Maple Canyon**	**56.31**	**302**	*e*P		**P**	**20 41 45.0**	**+0.6**
	3.7nm,1.0s								
EDM	**Edmonton**	**56.36**	**318**	*e*P		**P**	**20 41 43.3**	**-1.0**
	20nm,1.5s								
WUAZ	**Wupatki**	**56.89**	**296**	*e*P		**P**	**20 41 49.1**	**+0.6**
	4.9nm,1.0s								
MSU	**Marysvale**	**56.97**	**300**	*e*P		**P**	**20 41 49.9**	**+0.8**
TUC	**Tucson**	**57.10**	**292**	*e*P		**P**	**20 41 50.2**	**+0.2**
	5.5nm,1.4s								
DUG	**Dugway, Tooele**	**57.17**	**302**	*e*P		**P**	**20 41 50.5**	**0.0**
	10nm,1.5s								
YKA	**Yellowknife Ar**	**57.26**	**329**	P		**P**	**20 41 49.4**	**-1.1**
	1.5nm,1.0s,baz=93,slow=7.7,SNR=3.7								
YKB5	**Yellowknife Ar**	**57.26**	**329**	*e*P		**P**	**20 41 49.2**	**-1.3**
YKW3	**Yellowknife Ar**	**57.27**	**329**	*e*P		**P**	**20 41 49.6**	**-1.0**
	21nm,1.9s								
HLID	**Hailey**	**57.85**	**306**	*e*P		**P**	**20 41 55.3**	**+0.1**
	2.7nm,1.1s								
ARCES	**ARCESS Array B**	**57.92**	**23**	P		**P**	**20 41 55.2**	**+0.1**
	3.3nm,0.8s,baz=260,slow=7.3,SNR=7.0								
CCUT	**Cedar City**	**58.06**	**299**	*e*P		**P**	**20 41 55.9**	**-1.0**
	20nm,1.9s								
Y14A	**Wickenburg**	**58.54**	**295**	*e*P		**P**	**20 42 00.6**	**+0.6**
	9.6nm,0.6s								
MFID	**Camas Ranch**	**58.89**	**306**	*e*P		**P**	**20 42 02.6**	**+0.2**
	8.1nm,1.1s								
KIEV	**Kiev**	**59.40**	**45**	*e*P		**P**	**20 42 04.6**	**-1.0**
	4.4nm,1.0s								
AKASG	**Malin Array Be**	**59.41**	**45**	P		**P**	**20 42 04.7**	**-1.0**
	0.7nm,0.5s,baz=274,slow=6.2,SNR=4.2								
AKBB	**Malin Array Si**	**59.41**	**45**	*e*P		**P**	**20 42 04.5**	**-1.2**
	4.2nm,1.0s								
F10A	**Beach Ranch, E**	**59.48**	**309**	*e*P		**P**	**20 42 05.9**	**-0.5**
	4.9nm,0.8s								
BMO	**Blue Mountains**	**59.71**	**308**	*e*P		**P**	**20 42 08.1**	**+0.1**
	3.5nm,1.2s								
GLA	**Glamis**	**60.23**	**294**	*e*P		**P**	**20 42 12.4**	**+0.7**
	4.4nm,0.8s								
D08A	**Wollman Farm,**	**60.48**	**311**	*e*P		**P**	**20 42 12.7**	**-0.4**
	4.1nm,0.8s								
TVH1	**TV Hill, Hawth**	**62.04**	**301**	*e*P		**P**	**20 42 23.7**	**-0.6**
	6.0nm,0.5s								
K05A	**Summer Lake**	**62.66**	**306**	*e*P		**P**	**20 42 28.3**	**+0.1**
	12nm,1.3s								
BR101	**Keskin Array S**	**64.51**	**57**	*e*P		**P**	**20 42 39.7**	**-0.7**
BRTR	**Keskin Array B**	**64.51**	**57**	P		**P**	**20 42 39.7**	**-0.7**
	0.5nm,0.6s,baz=250,slow=4.2,SNR=3.3								
INK	**Inuvik**	**64.86**	**336**	*e*P		**P**	**20 42 42.3**	**+0.4**
	18nm,1.6s								
DLBC	**Dease Lake**	**65.14**	**325**	*e*P		**P**	**20 42 43.9**	**-0.2**
	19nm,1.8s								
IL1	**Eielson Array**	**70.98**	**334**	*e*P		**P**	**20 43 19.5**	**-1.1**
ILAR	**Eielson Array**	**70.98**	**334**	P		**P**	**20 43 20.6**	**0.0**
	2.2nm,1.0s,baz=66,slow=4.4,SNR=15								
ILB	**Eielson Array**	**70.98**	**334**	*e*P		**P**	**20 43 20.0**	**-0.5**
PAX	**Paxson**	**71.09**	**332**	*e*P		**P**	**20 43 23.6**	**+2.3**
	26nm,0.7s								
CCB	**Clear Creek Bu**	**71.39**	**334**	*e*P		**P**	**20 43 22.8**	**-0.2**
	11nm,1.6s								
WRH	**Wood River Hil**	**71.57**	**334**	*e*P		**P**	**20 43 23.2**	**-0.9**
	5.2nm,1.1s								
MLY	**Manley**	**72.36**	**335**	*e*P		**P**	**20 43 28.6**	**-0.3**
	13nm,1.9s								
TRF	**Thorofare Moun**	**72.89**	**333**	*e*P		**P**	**20 43 31.3**	**-0.9**
	24nm,1.8s								
KTH	**Kantishna Hill**	**73.09**	**333**	*e*P		**P**	**20 43 32.7**	**-0.6**
	6.5nm,1.1s								
AKTO	**Aktyubinsk**	**77.00**	**40**	P		**P**	**20 43 57.1**	**+1.1**
	0.8nm,0.6s,baz=320,slow=7.8,SNR=2.8								
BVAR	**Borovoye Array**	**82.27**	**34**	P		**P**	**20 44 25.2**	**+0.6**
	0.6nm,0.7s,baz=298,slow=9.4,SNR=4.9								
KURK	**Kurchatov**	**87.70**	**32**	*e*P		**P**	**20 44 52.8**	**+0.9**
KURBB	**Kurchatov Arra**	**87.72**	**32**	P		**P**	**20 44 52.8**	**+0.8**
	0.3nm,0.7s,baz=313,slow=4.8,SNR=5.7								
ZAA1	**Zalesovo Array**	**88.20**	**27**	*e*P		**P**	**20 44 55.0**	**+0.7**
ZALV	**Zalesovo Beam**	**88.20**	**27**	P		**P**	**20 44 55.0**	**+0.7**
	0.6nm,0.7s,baz=276,slow=2.8,SNR=5.1								
CMAR	**Chiang Mai Arr**	**122.47**	**42**	PKP		**PKPdf**	**20 50 58.9**	**-0.5**
	1.2nm,0.8s,baz=304,slow=3.8,SNR=5.9								

MEX 19 20:33:52.7±0.4, 15.36N×93.72W, h17km±999km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.77**	**59**	*i* P	Pn	20 34 19.5	-3.3
CCIG				*i* S	Sn	20 34 40.4	-4.7

MAN 19 20:37:51.8±3.4, 3.43N×124.56E, h29km, mb4.1, ML3.0, MS2.7, 2C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGP	**Cagayan de Oro**	**0.13**	**78**	*e*P	Pn	20 37 58.0	+0.8
CGP				*i* S	Sb	20 38 03.6	+3.4
DCPH	**Dipolog City**	**1.21**	**277**	*e*P	Pn	20 38 12.1	+0.2
CTBH	**Cotabato--PC H**	**1.24**	**195**	*i* P	Pb	20 38 19.1	+5.3
CTBH				*i* S	Sb	20 38 39.9	+10
TBP	**Tagbilaran**	**1.43**	**331**	*i* P	Pn	20 38 15.4	+0.3

*NNC **19** 20:45:55.7±2.3, 39.81N×71.41E, h0km, mb4.3, mpv4.0, Error ellipse: s-maj=18.0km s-min=13.6km az=19.0*
*MOS **19** 20:45:56.4±1.7, 40.11N×71.16E, h12km, mb4.0/4, Error ellipse: s-maj=13.1km s-min=6.7km az=86.3*
*KRNET **19** 20:46:00.1±0.1, 40.15N×71.42E, h10km, mb4.0*
*SOME **19** 20:46:01.1, 40.15N×71.50E, h10km, MS3.0*
*IDC **19** 20:46:01.2±4.3, 40.12N×71.41E, h31km±32km, mb3.5/12, mb1 3.7/19, mb1mx3.5/56, mbtmp3.7/19, ML3.3/7, Error ellipse: s-maj=22.1km s-min=11.7km az=11.0*
*BJI **19** 20:46:02.1, 39.80N×71.60E, h5km, ML3.7/5*

ISC 19 20:45:57.4±1.1, 40.07N±0.03×71.68E±0.02, h13km±7km, n97, σ22/140, mb3.7/13, 34C-29D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRK	**Karamyk**	**0.60**	**171**	⇑*i* P	**Pn**	**20 46 14.8**	**+2.9**
	baz=156						
DRK				⇑*i* S	**Sn**	**20 46 25.0**	**+3.4**
	baz=156						
BTK	**Batken**	**0.67**	**269**	⇑*i* P	**Pg**	**20 46 09.4**	**-1.0**
	baz=259						
BTK				⇑*i* S	**Sg**	**20 46 16.3**	**-2.9**
	baz=259						
ARK	**Arkit**	**1.74**	**7**	⇑*i* P	**Pg**	**20 46 31.5**	**+0.8**
	baz=14						
ARK				⇑*i* S	**Sg**	**20 46 55.2**	**+1.9**
	baz=14						
IUG	**Iuzhnay**	**2.42**	**329**	*e*P	**Pb**	**20 46 42.1**	**+1.3**
	757nm,0.7s						
IUG				*e*S	**Sb**	**20 47 10.9**	**+0.3**
	998nm,0.8s						
MNAS	**Manas**	**2.49**	**14**	⇓*i* P	**Pg**	**20 46 44.6**	**-0.5**
	baz=19						
MNAS				⇓*i* S	**Sg**	**20 47 15.6**	**-1.8**
	baz=19						
MNAS	**Manas**	**2.49**	**14**	⇓Pn	**Pb**	**20 46 41.6**	**-0.5**
	7.7nm,0.6s						
MNAS				⇑Pg	**Pg**	**20 46 46.2**	**+1.1**
	111nm,0.3s						
MNAS				⇓Sn	**Sg**	**20 47 17.8**	**+0.4**
	264nm,0.4s						
MNAS	**Manas**	**2.49**	**14**	PN	**Pb**	**20 46 41.6**	**-0.5**
MNAS						20 46 46.2	
MNAS						20 47 17.4	
MNAS				pmax	pmax		
	comp=Z,8.0nm,0.6s						
MNAS				pmax	pmax		
	comp=Z,111nm,0.3s						
MNAS				smax	smax		
	comp=N,264nm,0.4s						
AML	**Almayashu**	**2.56**	**36**	⇑*i* P	**Pg**	**20 46 45.8**	**-0.6**
	baz=40						
AML				⇑*i* S	**Sg**	**20 47 20.9**	**+1.3**
	baz=40						
ARLS	**Aral**	**2.68**	**47**	⇑*e*P	**Pg**	**20 46 49.0**	**+0.2**
	baz=51						
ARLS				⇑*i* S	**Sg**	**20 47 24.0**	**+0.5**
	baz=51						
MRKS	**Merke**	**2.91**	**23**	*e*P	**Pg**	**20 46 54.4**	**+1.2**
	comp=N,116nm,0.3s						
MRKS				*e*S	**Sg**	**20 47 31.8**	**+0.9**
	comp=N,490nm,0.5s						
EKS2	**Erkin-Say**	**3.03**	**31**	⇓*i* P	**Pb**	**20 46 50.6**	**-0.6**
	baz=35						
EKS2				⇓*i* S	**Sb**	**20 47 28.2**	**+0.1**
	baz=35						
UCH	**Uchtor**	**3.03**	**44**	⇑*i* P	**Pb**	**20 46 51.4**	**-0.1**
	baz=47						
UCH				⇑*i* S	**Sb**	**20 47 29.5**	**+0.9**
	baz=47						
BRLS	**Borolday**	**3.10**	**332**	*e*P	**Pb**	**20 46 54.3**	**+1.9**
	comp=N,49nm,0.3s						
BRLS				*e*S	**Sb**	**20 47 32.0**	**+1.8**
	comp=N,212nm,0.2s						
KK31	**Karatay Array**	**3.15**	**344**	⇓Pn	**Pn**	**20 46 49.4**	**+2.6**
	comp=N,1.9nm,0.2s,baz=163,slow=14,SNR=552						
KK31				⇑Pg	**Pb**	**20 46 55.4**	**+2.0**
	comp=N,27nm,0.3s,baz=167,slow=16						
KK31				⇓Sn	**Sb**	**20 47 33.5**	**+1.9**
	comp=N,88nm,0.5s,baz=167,slow=26,SNR=7.3						
KK31				⇑Lg	Lg	20 47 43.5	
	comp=N,164nm,0.5s,baz=154,slow=28,SNR=4.5						
KK31	**Karatay Array**	**3.15**	**344**	PN	**Pb**	**20 46 55.3**	**+2.0**
KK31						20 47 34.6	
KK31						20 47 43.2	
KK31				pmax	pmax		
	comp=Z,27nm,0.3s						
KK31				smax	smax		
	comp=N,164nm,0.5s						
AAK	**Ala-Archa**	**3.32**	**39**	Pn	**Pb**	**20 46 55.4**	**-0.8**
	comp=N,12nm,0.3s,baz=197,slow=2.5,SNR=18						
AAK				Lg	Lg	20 47 45.8	
	comp=N,35nm,0.3s,baz=309,slow=24,SNR=14						
AAK	**Ala-Archa**	**3.32**	**39**	⇑*i* P	**Pb**	**20 46 55.5**	**-0.8**
	baz=42						
AAK				⇑*i* S	**Sb**	**20 47 34.8**	**-1.8**
	baz=42						
AAK	**Ala-Archa**	**3.32**	**39**	⇑Pn	**Pb**	**20 46 55.5**	**-0.8**
	comp=N,70nm,0.5s						
AAK				⇑Lg	Lg	20 47 46.5	
	comp=N,154nm,0.5s						
AAK	**Ala-Archa**	**3.32**	**39**	PN	**Pb**	**20 46 54.6**	**-1.7**
AAK						20 47 44.5	
AAK				pmax	pmax		
	comp=Z,39nm,0.4s						
KSH	**Kashi**	**3.35**	**98**	Pn	**Pb**	**20 46 54.9**	**-1.8**
KSH				Sn	**Sb**	**20 47 37.8**	**+0.4**
KSH				smax	smax		
	comp=Z,250nm,0.5s						
KSH				smax	smax		
	comp=Z,360nm,0.7s						
KZA	**Kyzart**	**3.36**	**52**	⇓*i* P	**Pb**	**20 46 56.8**	**-0.2**
	baz=55						
KZA				⇓*i* S	**Sb**	**20 47 37.4**	**-0.5**
	baz=55						
FRU1	**Bishkek**	**3.52**	**38**	⇑*i* P	**Pb**	**20 46 59.2**	**-0.3**
	baz=41						
FRU1				⇑*i* S	**Sb**	**20 47 40.9**	**-1.3**
	baz=41						
KBK	**Karagaybulak**	**3.56**	**43**	⇓*i* P	**Pb**	**20 46 59.6**	**-0.8**
	baz=46						
KBK				⇓*i* S	**Sb**	**20 47 42.1**	**-1.5**
	baz=46						
CHMS	**Chumysh**	**3.72**	**37**	⇓*i* P	**Pb**	**20 47 00.4**	**-2.6**
	baz=40						
CHMS				⇓*i* S	**Sb**	**20 47 44.4**	**-3.6**
	baz=40						
USP	**Ospenovka**	**3.82**	**33**	⇓*i* P	**Pb**	**20 47 01.3**	**-3.5**
	baz=35						
USP				⇓*i* S	**Sb**	**20 47 46.8**	**-4.2**
	baz=35						
BOOM	**Boomskoye usch**	**4.01**	**52**	⇑*i* P	**Pb**	**20 47 07.3**	**-0.8**
	baz=54						
BOOM				⇑*i* S	**Sb**	**20 47 55.7**	**-0.9**
	baz=54						
ULHL	**Ulahol**	**4.07**	**56**	⇑*i* P	**Pb**	**20 47 06.3**	**-2.7**
	baz=59						
ULHL				⇑*i* S	**Sb**	**20 47 54.6**	**-3.5**
	baz=59						
TKM2	**Tokmak 2**	**4.09**	**45**	⇓*i* P	**Pb**	**20 47 06.3**	**-3.1**
	baz=47						
TKM2				⇓*i* S	**Sb**	**20 47 55.3**	**-3.5**
	baz=47						
TKM2	**Tokmak 2**	**4.09**	**45**	⇓Pn	**Pb**	**20 47 06.2**	**-3.2**
	comp=Z,58nm,0.6s						
TKM2				⇓Lg	Lg	20 48 10.4	
	comp=Z,153nm,0.6s						
TKM2	**Tokmak 2**	**4.09**	**45**	PN	**Pb**	**20 47 06.1**	**-3.2**
TKM2						20 48 10.4	
TKM2				pmax	pmax		
	comp=Z,58nm,0.6s						
BMNS	**Besmoynak**	**4.26**	**43**	*e*P	**Pg**	**20 47 20.1**	**+1.1**
	comp=Z,120nm,0.5s						
BMNS				*e*S	**Sg**	**20 48 16.3**	**+2.2**
	comp=Z,1μm,1.0s						
KST	**Kastek**	**4.37**	**46**	*e*P	**Pg**	**20 47 23.2**	**+2.1**
	comp=Z,9.8nm,0.3s						
KST				*e*S	**Sg**	**20 48 20.6**	**+2.9**
	comp=Z,132nm,0.5s						
IZV	**Izvestkoviy**	**4.74**	**50**	*e*P	**Pg**	**20 47 29.7**	**+1.6**
	comp=Z,35nm,0.3s						
IZV				*e*S	**Sg**	**20 48 32.3**	**+2.9**
	comp=Z,112nm,0.6s						
TNSS	**Tian-Shan**	**4.94**	**51**	*e*P	**Pg**	**20 47 33.3**	**+1.4**
	comp=Z,20nm,0.3s						
TNSS				*e*S	**Sg**	**20 48 39.0**	**+3.2**
	comp=Z,99nm,0.5s						
KNDC	**Almaty**	**5.05**	**50**	⇑Pn	Pb	20 47 19.9	-5.8
	comp=Z,32nm,0.7s						
KNDC				⇓Lg	Lg	20 48 42.6	
	comp=Z,176nm,0.8s						
MDOK	**Medeo**	**5.07**	**51**	*e*P	**Pg**	**20 47 35.2**	**+0.8**
	comp=Z,39nm,0.6s						
MDOK				*e*S	**Sg**	**20 48 42.4**	**+2.3**
	comp=Z,123nm,0.8s						
AAA	**Alma-Ata**	**5.07**	**49**	*e*P	**Pg**	**20 47 35.0**	**+0.5**
	comp=Z,50nm,0.4s						
AAA				*e*S	**Sg**	**20 48 41.1**	**+0.9**
	comp=Z,186nm,0.7s						
KOTS	**Kotyrbulak**	**5.15**	**50**	*e*P	**Pg**	**20 47 37.5**	**+1.5**
KOTS				*e*S	**Sg**	**20 48 45.2**	**+2.6**
KUU	**Kurty**	**5.16**	**41**	*e*P	**Pg**	**20 47 36.5**	**+0.4**
	comp=Z,37nm,0.8s						
KUU				*e*S	**Sg**	**20 48 43.4**	**+0.5**
	comp=Z,86nm,0.6s						
KTBS	**Karatobe**	**5.21**	**44**	*e*P	**Pg**	**20 47 37.2**	**+0.1**
KTBS				*e*S	**Sg**	**20 48 44.5**	**0.0**
BTLS	**Baital**	**5.26**	**19**	*e*P	**Pg**	**20 47 36.0**	**-2.1**
	comp=Z,39nm,0.7s						
BTLS				*e*S	**Sg**	**20 48 42.8**	**-3.4**
	comp=Z,75nm,0.8s						
CHKK	**Chushkaly**	**5.49**	**45**	*e*P	**Pg**	**20 47 42.4**	**0.0**
	comp=Z,7.0nm,0.5s						
CHKK				*e*S	**Sg**	**20 48 53.8**	**+0.3**
	comp=Z,120nm,0.5s						
SATY	**Saty**	**5.86**	**57**	*e*P	**Pg**	**20 47 51.7**	**+2.2**
	comp=Z,22nm,0.1s						
SATY				*e*S	**Sg**	**20 49 09.9**	**+4.5**
	comp=Z,66nm,0.3s						
KURS	**Kuram**	**5.93**	**53**	*e*P	**Pg**	**20 47 47.9**	**-3.0**
	comp=Z,3.1nm,0.8s						
KURS				*e*S	**Sg**	**20 49 02.9**	**-4.7**
	comp=Z,51nm,0.8s						
KPKS	**Kokpek**	**6.23**	**55**	*e*P	**Pg**	**20 47 56.1**	**-0.7**
	comp=Z,16nm,0.6s						
KPKS				*e*S	**Sg**	**20 49 17.1**	**-0.3**
	comp=Z,76nm,0.6s						
UZB	**Uzynbulak**	**6.30**	**58**	*e*P	**Pg**	**20 47 59.6**	**+1.6**
	comp=Z,7.6nm,0.5s						
UZB				*e*S	**Sg**	**20 49 22.9**	**+3.4**
	comp=Z,32nm,0.7s						
PDGK	**Podgornoye**	**6.68**	**58**	⇓Pn	**Pn**	**20 47 39.8**	**+4.6**
	comp=Z,9.9nm,0.6s						
PDGK				⇑Lg	Lg	20 49 39.8	
	comp=Z,62nm,0.8s						
PDGK	**Podgornoye**	**6.68**	**58**	PN	**Pn**	**20 47 34.9**	**-0.3**
PDGK						20 49 29.5	
PDGK				pmax	pmax		
	comp=Z,10.0nm,0.6s						
SHLS	**Shalkode**	**6.87**	**61**	*e*P	**Pg**	**20 48 09.1**	**+0.2**
	comp=Z,9.4nm,0.7s						
SHLS				*e*S	**Sg**	**20 49 38.9**	**+1.0**
	comp=Z,36nm,0.8s						
DJR	**Jarkent**	**7.37**	**52**	*e*P	**Pg**	**20 48 15.8**	**-2.6**
	comp=Z,3.6nm,0.4s						
DJR				*e*S	**Sg**	**20 49 50.9**	**-2.9**
	comp=Z,38nm,1.0s						
OTUK	**Ortayu**	**8.18**	**3**	⇑Pn	**Pn**	**20 47 58.2**	**+2.4**
	comp=Z,1.2nm,0.5s						
OTUK				⇑Lg	Lg	20 50 19.8	
	comp=Z,22nm,0.6s						
OTUK	**Ortayu**	**8.18**	**3**	P	Pn	20 48 01.2	+5.4
OTUK				pmax	pmax		
	comp=Z,10.0nm,0.8s						
THN	**Thein Dam**	**8.29**	**156**	*e*P	Pn	20 48 04.0	+6.7
THN				*e*S	**Sn**	**20 49 33.7**	**+3.0**
MK31	**Makanchi Array**	**10.22**	**45**	Pn	**Pn**	**20 48 28.4**	**+4.7**
	comp=Z,1.8nm,0.8s,baz=227,slow=12,SNR=14						
MK31				⇑Lg	Lg	20 51 26.3	
	comp=Z,3.7nm,0.7s,baz=235,slow=17,SNR=4.3						
MK31	**Makanchi Array**	**10.22**	**45**	*i* P	**Pn**	**20 48 28.4**	**+4.7**
MK31				pmax	pmax		
	comp=Z,2.0nm,0.6s						
MKAR	**Makanchi Array**	**10.22**	**45**	Pn	Pn	20 48 28.8	+5.0
	comp=Z,0.3nm,0.3s,baz=230,slow=14,SNR=15						
MKAR				Lg	Lg	20 51 23.0	
	comp=Z,0.4nm,0.3s,baz=237,slow=29,SNR=3.6						
GEYT	**Alibeck**	**10.78**	**263**	Pn	**Pn**	**20 48 29.3**	**-2.1**
	comp=Z,0.4nm,0.3s,baz=74,slow=11,SNR=5.2						
KURBB	**Kurchatov Arra**	**11.59**	**22**	Pn	**Pn**	**20 48 43.1**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=214,slow=12,SNR=26						
KURBB				Lg	Lg	20 52 05.2	
	comp=Z,0.2nm,0.3s,baz=211,slow=33,SNR=8.0						
KURBB	**Kurchatov Arra**	**11.59**	**22**	⇓Pn	**Pn**	**20 48 42.1**	**-0.3**
	comp=Z,3.4nm,0.7s						
KURBB				⇓Lg	Lg	20 52 10.4	
	comp=Z,55nm,0.8s						
KURK	**Kurchatov**	**11.70**	**22**	P	**Pn**	**20 48 43.1**	**-0.8**
AB31	**Akbulak array**	**12.40**	**322**	⇓Pn	**Pn**	**20 48 50.8**	**-2.7**
	comp=Z,3.1nm,0.6s,baz=130,slow=13,SNR=41						
AB31				⇓Sn	**Sn**	**20 51 12.7**	**+1.3**
	comp=Z,1.8nm,0.5s,baz=133,slow=20,SNR=7.1						
AB31	**Akbulak array**	**12.40**	**322**	*i* P	**Pn**	**20 48 50.2**	**-3.3**
AB31				pmax	pmax		
	comp=Z,3.0nm,0.5s						
VOSK	**Vostochnaya**	**12.66**	**358**	⇑Pn	**Pn**	**20 48 56.6**	**-0.5**
	comp=Z,0.3nm,0.6s						
VOSK				⇑Lg	Lg	20 52 46.5	
	comp=Z,18nm,1.1s						
VOSK	**Vostochnaya**	**12.66**	**358**	P	**Pn**	**20 48 56.6**	**-0.5**
VOSK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
BVA0	**Borovoye Array**	**12.99**	**357**	⇓Pn	**Pn**	**20 49 00.0**	**-1.5**
	comp=Z,2.7nm,0.7s,baz=158,slow=12,SNR=7.4						
BVA0				⇓Lg	Lg	20 52 52.6	
	comp=Z,14nm,0.8s,baz=183,slow=28,SNR=3.6						
BVA0	**Borovoye Array**	**12.99**	**357**	P	**Pn**	**20 49 00.5**	**-1.0**
BVA0				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BVAR	**Borovoye Array**	**12.99**	**357**	Pn	**Pn**	**20 49 00.8**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=160,slow=11,SNR=9.4						
BVAR				Lg	Lg	20 52 51.3	
	comp=Z,0.2nm,0.3s,baz=166,slow=25,SNR=3.7						
I31KZ	**AKTYUBINSK INF**	**14.09**	**322**	*i*		22 20 20.0	
	baz=134,slow=317,SNR=0.3						
AKTO	**Aktyubinsk**	**14.12**	**322**	Pn	**Pn**	**20 49 14.6**	**-2.4**
	comp=Z,0.1nm,0.3s,baz=133,slow=14,SNR=8.2						
AKTO	**Aktyubinsk**	**14.12**	**322**	⇓Pn	**Pn**	**20 49 14.0**	**-2.9**
	comp=Z,7.6nm,0.8s						
AKTO				⇑Sn	**Sn**	**20 51 50.7**	**-2.7**
	comp=Z,6.8nm,0.8s						
AKTO	**Aktyubinsk**	**14.12**	**322**	P	**Pn**	**20 49 14.0**	**-2.9**
AKTO				S	**Sn**	**20 51 50.7**	**-2.7**
AKTO				pmax	pmax		
	comp=Z,8.0nm,0.8s						
AKTO				smax	smax		
	comp=N,7.0nm,0.8s						
PYUN	**Piuthan**	**15.16**	**139**	*e*P	**Pn**	**20 49 32.3**	**+0.9**
PYUN				*e*S	**Sn**	**20 52 12.1**	**-7.2**
KOLN	**Koldanda**	**15.74**	**138**	*e*P	**Pn**	**20 49 40.5**	**+1.5**
	comp=N,12nm,0.5s						
KOLN				*e*S	**Sn**	**20 52 27.1**	**-6.3**
GKN	**Gorkha**	**16.11**	**134**	*e*P	**P**	**20 49 45.5**	**-1.5**
	comp=N,27nm,0.4s						
ZALV	**Zalesovo Beam**	**16.48**	**28**	Pn	**Pn**	**20 49 49.4**	**+1.3**
	comp=N,0.2nm,0.3s,baz=218,slow=14,SNR=7.4						
KKN	**Kakani**	**16.63**	**133**	*e*P	**P**	**20 49 52.3**	**-0.5**
	comp=N,22nm,0.5s						
DMN	**Daman**	**16.67**	**134**	*e*P	**P**	**20 49 52.8**	**-0.6**
	comp=N,9.1nm,0.5s	

SOME ***19*** *21:04:21.3, 40˚.20N×71˚.48E, h10km*
NNC ***19*** *21:04:22.4±2.6, 40˚.03N×71˚.91E, h0km, mb3.7, mpv3.4, Error ellipse: s-maj=19.8km s-min=12.5km az=175.0*

ISC 19 21:04:17.0±1.5, 40˚.11N±0˚.05×71˚.50E±0˚.03, h3km±12km, n29, σ1↟44/50, 18C-9D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTK	**Batken**	**0.52**	**264**	⇑ *i* P	**Pb**	**21 04 29.1**	**+0.3**
	baz=255						
BTK				⇑ *i* S	**Sb**	**21 04 36.1**	**-0.7**
	baz=255						
DRK	**Karamyk**	**0.67**	**160**	⇑ *i* P	**Pn**	**21 04 34.1**	**+0.4**
	baz=160						
DRK				⇑ *i* S	**Sn**	**21 04 44.2**	**-0.6**
	baz=160						
OHH	**Osh**	**1.07**	**67**	⇑ *i* P	**Pn**	**21 04 38.8**	**-0.1**
	baz=71						
OHH				⇑ *i* S	**Sn**	**21 04 54.0**	**-0.3**
	baz=71						
ARK	**Arkit**	**1.72**	**12**	⇑ *i* P	**Pg**	**21 04 49.8**	**-0.1**
	baz=13						
ARK				⇑ *i* S	**Sg**	**21 05 11.9**	**-0.3**
	baz=13						
IUG	**Iuzhnay**	**2.31**	**332**	*e* P	**Pg**	**21 05 02.5**	**+1.2**
	222nm,0.6s						
IUG				*e* S	**Sg**	**21 05 30.9**	**-0.4**
	562nm,0.9s						
MNAS	**Manas**	**2.49**	**17**	⇓ *i* P	**Pb**	**21 05 01.7**	**-0.7**
	baz=18						
MNAS				⇓ *i* S	**Sb**	**21 05 33.2**	**-0.3**
	baz=18						
MNAS	**Manas**	**2.49**	**17**	⇓ Pn	**Pg**	**21 05 04.8**	**+0.1**
	12nm,0.7s						
MNAS				⇑ Sn	**Sg**	**21 05 37.3**	**+0.3**
	38nm,0.6s						
CHM	**Chimkent**	**2.63**	**328**	*e* P	**Pg**	**21 05 08.7**	**+1.4**
	58nm,0.5s						
CHM				*e* S	**Sg**	**21 05 41.2**	**-0.1**
	973nm,0.3s						
ARLS	**Aral**	**2.76**	**50**	⇓ *i* P	**Pb**	**21 05 06.1**	**-0.9**
	baz=51						
ARLS				⇓ *i* S	**Sb**	**21 05 40.5**	**-0.8**
	baz=51						
DZA	**Taraz**	**2.78**	**357**	⇑ *i* P	**Pg**	**21 05 10.8**	**+0.6**
	69nm,0.5s						
DZA				*e* S	**Sg**	**21 05 44.9**	**-1.3**
	238nm,0.4s						
MRKS	**Merke**	**2.93**	**26**	*e* P	**Pg**	**21 05 13.6**	**+0.4**
	11nm,0.4s						
MRKS				*e* S	**Sg**	**21 05 50.0**	**-1.2**
	56nm,0.4s						
BRLS	**Boroldav**	**3.00**	**334**	*e* P	**Pg**	**21 05 15.4**	**+1.0**
	7.6nm,0.3s						
BRLS				*e* S	**Sg**	**21 05 52.6**	**-0.7**
	94nm,0.4s						
KK31	**Karatay Array**	**3.08**	**346**	⇑ Pn	**Pg**	**21 05 14.9**	**-1.0**
	7.1nm,0.5s,baz=170,slow=17,SNR=51						
KK31				⇓ Sn	**Sg**	**21 05 54.6**	**-1.2**
	23nm,0.4s,baz=168,slow=29,SNR=14						
UCH	**Uchtor**	**3.11**	**46**	⇑ *i* P	**Pb**	**21 05 13.8**	**+0.7**
	baz=47						
UCH				⇑ *i* S	**Sb**	**21 05 52.9**	**+1.4**
	baz=47						
AAK	**Ala-Archa**	**3.38**	**41**	Pg	**Pg**	**21 05 23.2**	**+1.4**
	5.6nm,0.5s						
AAK				Lg	Lg	21 06 06.5	
	15nm,0.5s						
KZA	**Kyzart**	**3.45**	**54**	⇑ *i* P	**Pb**	**21 05 18.2**	**-0.7**
	baz=55						
KZA				⇑ *i* S	**Sb**	**21 06 01.3**	**-0.1**
	baz=55						
TKM2	**Tokmak 2**	**4.17**	**46**	⇓ Pn	**Pn**	**21 05 25.3**	**+3.8**
	4.7nm,0.4s						
TKM2				⇑ Sn	**Sn**	**21 06 11.6**	**+0.7**
	11nm,0.8s						
TKM2				⇓ Lg	Lg	21 06 30.8	
	7.1nm,0.5s						
BMNS	**Besmoynak**	**4.33**	**45**	*e* P	**Pg**	**21 05 42.0**	**+2.1**
	20nm,0.3s						
BMNS				*e* S	**Sg**	**21 06 37.9**	**+2.0**
	366nm,0.8s						
KST	**Kastek**	**4.45**	**47**	*e* P	**Pg**	**21 05 43.3**	**+1.1**
	2.2nm,0.3s						
KST				*e* S	**Sg**	**21 06 40.1**	**+0.3**
	14nm,0.4s						
TNSS	**Tian-Shan**	**5.03**	**53**	*e* P	**Pg**	**21 05 55.4**	**+2.2**
TNSS				*e* S	**Sg**	**21 06 59.9**	**+1.6**
MDOK	**Medeo**	**5.16**	**52**	*e* P	**Pg**	**21 05 56.6**	**+0.8**
MDOK				*e* S	**Sg**	**21 07 02.1**	**-0.4**
	7.5nm,0.8s						
KUU	**Kurty**	**5.22**	**42**	*e* P	**Pg**	**21 05 56.2**	**-0.8**
	3.1nm,0.4s						
KUU				*e* S	**Sg**	**21 07 02.9**	**-1.8**
	8.5nm,0.6s						
KOTS	**Kotyrbulak**	**5.24**	**52**	*e* P	**Pg**	**21 05 57.2**	**-0.1**
KOTS				*e* S	**Sg**	**21 07 04.7**	**-0.4**
KTBS	**Karatobe**	**5.28**	**45**	*e* P	**Pg**	**21 05 56.2**	**-1.9**
KTBS				*e* S	**Sg**	**21 07 01.1**	**-5.5**
CHKK	**Chushkaly**	**5.56**	**46**	*e* P	**Pg**	**21 06 02.9**	**-0.6**
	1.4nm,0.5s						
CHKK				*e* S	**Sg**	**21 07 13.5**	**-1.9**
	7.1nm,0.5s						
PDGK	**Podgornoye**	**6.78**	**59**	⇑ Lg	Lg	21 07 53.0	
	5.6nm,0.8s						
OTUK	**Ortayu**	**8.15**	**4**	⇑ Lg	Lg	21 08 37.2	
	5.0nm,0.9s						
AB31	**Akbulak array**	**12.28**	**322**	P	Pn	21 07 20.5	+7.9
	0.2nm,0.3s,baz=128,slow=14,SNR=8.6						
AKTO	**Aktyubinsk**	**14.00**	**322**	⇓ P	**P**	**21 07 43.0**	**-1.2**
	1.5nm,0.6s						

NIED ***19*** *21:07:00, 36˚.40N×144˚.40E, h8km, Mw4.4 Best double couple: M₀4.18000×10¹⁵ NP1:φ₀=0.00000°, δ35.00000°, λ-90.00000°. NP2:φ₀=180.00000°, δ55.00000°, λ-90.00000°.*
IDC ***19*** *21:07:37.0±0.6, 36˚.24N×144˚.65E, h0km, mb4.4/31, mb1 4.5/38, mb1mx4.4/65, mbtmp4.4/38, ML4.4/5, MS3.6/2, Ms1 3.6/2, ms1mx3.2/48, Error ellipse: s-maj=13.8km s-min=12.8km az=144.0*
MOS ***19*** *21:07:40.4±1.0, 36˚.27N×144˚.52E, h33km, mb4.9/34, Error ellipse: s-maj=8.6km s-min=5.7km az=112.5*
JMA ***19*** *21:07:40.4±0.3, 36˚.36N×144˚.40E, h42km, M5.0*
BJI ***19*** *21:07:40.6, 36˚.60N×144˚.50E, h11km, mb4.5/28, mB5.1/15, Ms4.5/11, Ms7 4.4/11*
ISCJB ***19*** *21:07:40.8±0.2, 36˚.33N±0˚.03×144˚.41E±0˚.02, h33km, mb4.6/97, MS4.5/2, Error ellipse: s-maj=4.7km s-min=2.6km az=167.8*
NEIC ***19*** *21:07:42.4±0.2, 36˚.24N×144˚.55E, h35km, mb4.8/47, Error ellipse: s-maj=6.4km s-min=4.5km az=158.0*

ISC 19 21:07:42.8±0.4, 36˚.33N±0˚.04×144˚.57E±0˚.05, h35km, n219, σ1↟92/238, mb4.7/97, 10C-13D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**3.07**	**259**	P	**Pn**	**21 08 26.4**	**-2.5**
CHOJ				*e* S	**Sn**	**21 09 01.0**	**-3.4**
JFK	**Kawauchi**	**3.14**	**290**	P	**Pn**	**21 08 26.8**	**-3.0**
JFK				*e* S	**Sn**	**21 09 01.7**	**-4.4**
JHO	**Hitachi**	**3.24**	**276**	⇑ P	**Pn**	**21 08 28.3**	**-2.8**
JHO				*e* S	**Sn**	**21 09 04.2**	**-4.3**
JIO	**Ouri**	**3.33**	**311**	⇑ P	**Pn**	**21 08 29.6**	**-2.7**
BSO1	**Boso 1**	**3.38**	**241**	⇓ P	**Pn**	**21 08 29.5**	**-3.0**
BSO1				*e* S	**Sn**	**21 09 08.7**	**-2.4**
JMM	**Marumori**	**3.39**	**298**	P	**Pn**	**21 08 30.3**	**-2.9**
JMM				S	**Sn**	**21 09 08.0**	**-4.1**
JFT	**Otama**	**3.59**	**290**	⇑ P	**Pn**	**21 08 34.0**	**-2.0**
JFT				S	**Sn**	**21 09 13.4**	**-3.9**
BSO3	**Boso 3**	**3.65**	**246**	P	**Pn**	**21 08 34.6**	**-1.9**
BSO4	**Boso 4**	**3.70**	**250**	P	**Pn**	**21 08 35.5**	**-1.9**
JMK	**Ichinoseki**	**3.73**	**316**	P	**Pn**	**21 08 35.4**	**-2.5**
JAG	**Ashikaga**	**4.13**	**273**	P	**Pn**	**21 08 40.8**	**-2.6**
JAG				*e* S	**Sn**	**21 09 26.7**	**-3.8**
JHU	**Hanno**	**4.31**	**265**	P	**Pn**	**21 08 43.3**	**-2.6**
JRG	**Rokugo**	**4.37**	**316**	P	**Pn**	**21 08 45.2**	**-1.4**
JRG				S	**Sn**	**21 09 32.4**	**-3.9**
JKZ	**Kuzumaki**	**4.45**	**326**	P	**Pn**	**21 08 45.8**	**-2.1**
JHK	**Hiroka**	**4.55**	**283**	P	**Pn**	**21 08 47.9**	**-1.3**
JHK				*e* S	**Sn**	**21 09 36.9**	**-3.9**
JOD2	**Odawara 2**	**4.58**	**258**	P	**Pn**	**21 08 47.7**	**-1.9**
JRY	**Ryogami san**	**4.60**	**268**	P	**Pn**	**21 08 47.5**	**-2.4**
JRY				*e* S	**Sn**	**21 09 37.6**	**-4.4**
JHJ2	**Mitsune**	**5.06**	**232**	*e* Pn	**Pn**	**21 08 52.4**	**-3.9**
JHJ2				*e* Sn	**Sn**	**21 09 46.0**	**-7.5**
JHJ	**Hachijo jima 2**	**5.08**	**232**	Pn	**Pn**	**21 08 52.6**	**-3.8**
	90nm,0.3s,baz=121,slow=23,SNR=22						
JHJ				Sn	**Sn**	**21 09 46.5**	**-7.4**
	127nm,0.3s,baz=65,slow=23,SNR=7.0						
MJA0	**Matsu Arr-Jizo**	**5.10**	**274**	*e* P	**Pn**	**21 08 55.8**	**-1.0**
MJA0				pmax	pmax		
	comp=Z,17nm,0.3s						
MJAR	**Matsushiro Arr**	**5.13**	**274**	Pn	**Pn**	**21 08 55.8**	**-1.4**
	comp=Z,17nm,0.3s,baz=93,slow=12,SNR=86						
MJAR				Sn	**Sn**	**21 09 56.1**	**+0.8**
	comp=Z,6.1nm,0.3s,baz=112,slow=9.2,SNR=4.5						
MJAR				LR	LR	21 11 01.4	
	comp=Z,298nm,21.6s,baz=35,slow=40						
MAJO	**Matsushiro**	**5.13**	**274**	*d* iP	**Pn**	**21 08 56.3**	**-0.9**
MAJO	**Matsushiro**	**5.13**	**274**	*e* Pn	**Pn**	**21 08 56.5**	**-0.7**
MAT	**Matsushiro**	**5.13**	**274**	P	**Pn**	**21 08 56.3**	**-0.9**
MAT				S	**Sn**	**21 09 53.2**	**-2.1**
MAT	**Matsushiro**	**5.13**	**274**	P	**Pn**	**21 08 56.4**	**-0.8**
MJB9	**Matsu-Tunnel**	**5.14**	**274**	*e* Pn	**Pn**	**21 08 56.6**	**-0.7**
JNT	**Takato**	**5.23**	**267**	P	**Pn**	**21 08 58.1**	**-0.5**
ERM	**Erimo**	**5.78**	**349**	*de* P	**Pn**	**21 09 03.4**	**-2.6**
ERM				pmax	pmax		
	comp=Z,53nm,0.7s						
ERM	**Erimo**	**5.78**	**349**	*e* Pn	**Pn**	**21 09 03.0**	**-3.0**
ERM				*e* Sn	Sn	21 10 02.3	-8.7
INU	**Inuyama**	**6.21**	**263**	*e* Pn	**Pn**	**21 09 11.4**	**-0.6**
INU				*e* Sn	**Sn**	**21 10 17.9**	**-4.0**
YUK	**Yuzh-Kuril'sk**	**7.76**	**7**	*i* P	Pn	21 09 28.6	-4.6
ASAJ	**Asahikawa**	**7.92**	**350**	Pn	**Pn**	**21 09 32.8**	**-2.6**
	comp=Z,10nm,0.3s,baz=196,slow=8.2,SNR=35						
ASAJ				Sn	**Sn**	**21 10 56.1**	**-7.7**
	comp=Z,3.4nm,0.3s,baz=105,slow=33,SNR=3.3						
ASAJ	**Asahikawa**	**7.92**	**350**	*e* Pn	**Pn**	**21 09 31.9**	**-3.5**
ASAJ				*e* Sn	**Sn**	**21 10 56.1**	**-7.7**
KUR	**Kuril'sk**	**9.24**	**15**	⇓ *e* P	**Pn**	**21 09 51.5**	**-1.9**
YSS	**Yuzh-Sakhalins**	**10.70**	**353**	⇑ *e* P	**Pn**	**21 10 14.2**	**+0.7**
YSS				pmax	pmax		
	comp=Z,28nm,1.7s						
USRK	**Ussuriysk Ar.**	**12.40**	**313**	Pn	**Pn**	**21 10 35.5**	**-1.3**
	comp=Z,0.8nm,0.3s,baz=121,slow=13,SNR=11						
KSRS	**Korea Array**	**13.38**	**280**	Pn	**Pn**	**21 10 48.5**	**-1.6**
	comp=Z,0.4nm,0.3s,baz=96,slow=15,SNR=6.4						
KSRS				LR	LR	21 15 44.6	
	comp=Z,437nm,18.4s,baz=328,slow=36						
KS15	**Wonju Array Si**	**13.41**	**280**	*e* Pn	**Pn**	**21 10 48.5**	**-2.1**
KSAR	**Wonju Array Be**	**13.41**	**280**	P	**Pn**	**21 10 48.5**	**-2.0**
KSAR	**Wonju Array Be**	**13.41**	**280**	Pn	**Pn**	**21 10 48.5**	**-2.0**
MDJ	**Mudanjiang**	**14.07**	**311**	P	**Pn**	**21 10 57.5**	**-2.1**
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,160nm,5.6s						
KLR	**Kul'dur**	**15.93**	**328**	Pn	**Pn**	**21 11 24.8**	**+0.6**
	comp=Z,0.5nm,0.3s,baz=133,slow=11,SNR=32						
KLR	**Kul'dur**	**15.93**	**328**	⇑ *e* P	**Pn**	**21 11 23.3**	**-0.9**
PETK	**Petropavlovsk-**	**19.14**	**25**	P	**P**	**21 12 03.1**	**+0.3**
	baz=191,slow=7.1,SNR=4.1						
PEA1	**Petropavlovsk-**	**19.14**	**25**	*e* P	**P**	**21 12 03.1**	**+0.2**
PET	**Petropavlovsk**	**19.40**	**26**	⇓ *e* P	**P**	**21 12 05.3**	**-0.3**
GUMO	**Guam**	**22.65**	**179**	*e* P	**P**	**21 12 40.1**	**-0.9**
GUMO				pmax	pmax		
	comp=Z,518nm,1.7s						
GUMO	**Guam**	**22.65**	**179**	*e* P	**P**	**21 12 40.1**	**-0.9**
	comp=Z,518nm,1.7s						
H11N2	**WAKE ISLAND Hy**	**25.63**	**124**	T	T	21 40 09.1	
	baz=316,slow=75,SNR=62						
H11N1	**WAKE ISLAND Hy**	**25.64**	**124**	T	T	21 40 11.5	
	baz=316,slow=75,SNR=42						
H11N3	**WAKE ISLAND Hy**	**25.65**	**124**	T	T	21 40 14.9	
	baz=316,slow=75,SNR=51						
WHN	**Wuhan**	**25.81**	**266**	P	**P**	**21 13 17.4**	**+6.7**
HHC	**Hu-ho-hao-te**	**26.10**	**290**	*e* P	**P**	**21 13 13.3**	**-0.1**
HHC				pmax	pmax		
	comp=Z,29nm,0.8s						
HHC				pmax	pmax		
	comp=Z,210nm,4.3s						
SEY	**Seymchan**	**27.06**	**8**	P	**P**	**21 13 21.7**	**0.0**
	comp=Z,6.6nm,0.8s,baz=182,slow=5.5,SNR=13						
SEY	**Seymchan**	**27.06**	**8**	⇑ *e* P	**P**	**21 13 22.5**	**+0.8**
YAK	**Yakutsk**	**27.36**	**345**	P	**P**	**21 13 23.8**	**-0.5**
	comp=Z,18nm,0.6s,baz=127,slow=0.5,SNR=7.7						
YAK	**Yakutsk**	**27.36**	**345**	*i* P	**P**	**21 13 23.6**	**-0.8**
YAK				pmax	pmax		
	comp=Z,19nm,0.7s						
YAK	**Yakutsk**	**27.36**	**345**	*e* P	**P**	**21 13 23.6**	**-0.8**
	comp=Z,20nm,0.7s						
XAN	**Xi'an**	**29.13**	**276**	P	P	21 13 48.4	+7.9
XAN				pmax	pmax		
	comp=Z,9.0nm,1.1s						
ENH	**Enshi**	**29.83**	**269**	*e* P	**P**	**21 13 48.2**	**+1.5**
	comp=Z,12nm,0.9s						
SONA1	**Songino Array**	**30.27**	**304**	*e* P	**P**	**21 13 51.7**	**+1.1**
SONA0	**Songino Array**	**30.28**	**304**	*e* P	**P**	**21 13 51.4**	**+0.8**
	comp=Z,5.1nm,1.2s						
SONM	**Songino Array**	**30.28**	**304**	P	**P**	**21 13 51.4**	**+0.8**
	comp=Z,1.1nm,0.8s,baz=109,slow=7.6,SNR=8.2						
SONM	**Songino Array**	**30.28**	**304**	*e* P	**P**	**21 13 52.1**	**+1.5**
SONM				pmax	pmax		
	comp=Z,1.0nm,0.8s						
LZH	**Lanzhou**	**32.69**	**282**	*e* P	**P**	**21 14 13.5**	**+1.5**
LZH				pP	pP	21 14 18.0	-4.1
LZH				sP	sP	21 14 21.1	-5.2
LZH				pmax	pmax		
	comp=Z,20nm,1.1s						
ZAK	**Zakamensk**	**32.69**	**309**	*e* P	**P**	**21 14 12.0**	**+0.2**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
TLY	**Talaya**	**32.71**	**311**	⇓ *e* P	**P**	**21 14 12.4**	**+0.6**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.8s						
GYA	**Guiyang**	**33.64**	**264**	P	**P**	**21 14 22.5**	**+2.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
BILL	**Bilibino**	**34.03**	**14**	*e* P	**P**	**21 14 22.8**	**-0.3**
BILL				*e*		21 15 37.4	
BILL				*e* PPP	PPP	21 15 50.0	
BILL				pmax	pmax		
	comp=Z,3.0nm,0.9s						
BILL				MLR	MLR		
	comp=Z,514nm,18.0s						
CD2	**Chengdu**	**34.23**	**273**	*e* P	**P**	**21 14 25.0**	**-0.3**
CD2				PP	**PP**	**21 15 42.3**	**-0.8**
CD2				S	**S**	**21 19 51.6**	**+1.7**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.2s						
GTA	**Gaotai**	**35.19**	**289**	P	**P**	**21 14 35.0**	**+1.3**
GTA				pP	pP	21 14 42.8	-1.0
GTA				sP	sP	21 14 46.0	-2.0
GTA				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KMI	**Kunming**	**37.39**	**265**	P	**P**	**21 14 53.3**	**+0.6**
KMI				pmax	pmax		
	comp=Z,11nm,0.5s						
RABL	**Rabaul**	**40.93**	**168**	*e* P	**P**	**21 15 23.9**	**+1.9**
	comp=Z,93nm,0.4s						
WMQ	**Urumqi**	**43.41**	**298**	*e* P	**P**	**21 15 43.8**	**+1.7**
WMQ				pP	pP	21 15 47.5	-4.9
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
CM31	**Chiang Mai Arr**	**43.81**	**259**	*e* P	**P**	**21 15 46.5**	**+1.0**
CMAR	**Chiang Mai Arr**	**43.81**	**259**	P	**P**	**21 15 46.5**	**+1.0**
	comp=Z,0.7nm,0.4s,baz=51,slow=7.1,SNR=2.9						
ZAA0	**Zalesovo Array**	**44.26**	**313**	*e* P	**P**	**21 15 48.9**	**+0.2**
ZAA1	**Zalesovo Array**	**44.26**	**313**	*e* P	**P**	**21 15 48.8**	**+0.2**
ZALV	**Zalesovo Beam**	**44.26**	**313**	P	**P**	**21 15 48.8**	**+0.2**
	comp=Z,3.4nm,0.6s,baz=97,slow=7.3,SNR=17						
TT01	**Tatalina**	**44.55**	**34**	*e* P	**P**	**21 15 52.8**	**+1.9**
NRIK	**Noril'sk**	**44.97**	**335**	P	**P**	**21 15 54.9**	**+0.8**
	comp=Z,5.4nm,0.6s,baz=112,slow=7.9,SNR=4.6						
SBUM	**Sibu**	**45.04**	**229**	*e* P	**P**	**21 15 58.0**	**+2.7**
	comp=Z,4.3nm,0.7s						
NVS	**Novosibirsk**	**45.15**	**314**	*e* P	**P**	**21 15 56.2**	**+0.5**
NVS				pmax	pmax		
	comp=Z,7.0nm,1.1s						
NVS				pmax	pmax		
	comp=E,7.0nm,1.5s						
KDAK	**Kodiak Island**	**45.93**	**42**	*e* P	**P**	**21 16 01.2**	**-0.6**
KDAK				pmax	pmax		
	comp=Z,41nm,1.6s						
KDAK	**Kodiak Island**	**45.93**	**42**	*e* P	**P**	**21 16 01.2**	**-0.6**
	comp=Z,41nm,1.6s						
PPLA	**Purkeypile**	**46.30**	**34**	*e* P	**P**	**21 16 06.6**	**+1.7**
	comp=Z,12nm,1.3s						
CAST	**Castle Rocks**	**46.39**	**34**	*e* P	**P**	**21 16 06.1**	**+0.6**
	comp=Z,4.1nm,0.9s						
MK01	**Makanchi Array**	**46.63**	**303**	*e* P	**P**	**21 16 07.5**	**-0.1**
MK31	**Makanchi Array**	**46.63**	**303**	*e* P	**P**	**21 16 08.0**	**+0.4**
MK31	**Makanchi Array**	**46.63**	**303**	*e* P	**P**	**21 16 08.0**	**+0.4**
MK32	**Makanchi Array**	**46.63**	**303**	*e* P	**P**	**21 16 08.0**	**+0.4**
MKAR	**Makanchi Array**	**46.63**	**303**	P	**P**	**21 16 08.0**	**+0.4**
	comp=Z,3.6nm,0.8s,baz=83,slow=9.9,SNR=20						
MKAR	**Makanchi Array**	**46.63**	**303**	*e* P	**P**	**21 16 08.0**	**+0.4**
MKAR				pmax	pmax		
	comp=Z,42nm,0.8s						
MKAR	**Makanchi Array**	**46.63**	**303**	*e* P	**P**	**21 16 08.0**	**+0.4**
	comp=Z,42nm,0.8s						
KTH	**Kantishna Hill**	**46.92**	**34**	*e* P	**P**	**21 16 11.1**	**+1.5**
	comp=Z,6.2nm,0.8s						
MLY	**Manley**	**47.11**	**32**	*e* P	**P**	**21 16 12.2**	**+1.1**
	comp=Z,7.6nm,1.0s						
TRF	**Thorofare Moun**	**47.20**	**34**	*e* P	**P**	**21 16 13.6**	**+1.6**
	comp=Z,26nm,1.7s						
SEW	**Seward**	**47.53**	**38**	*e* P	**P**	**21 16 16.4**	**+2.1**
	comp=Z,39nm,1.5s						
SML	**Sawmill**	**48.06**	**36**	*e* P	**P**	**21 16 19.7**	**+1.2**
SML				pmax	pmax		
	comp=Z,13nm,1.2s						
SML	**Sawmill**	**48.06**	**36**	*e* P	**P**	**21 16 19.7**	**+1.2**
	comp=Z,13nm,1.2s						
MDM	**Murphy Dome**	**48.17**	**32**	*e* P	**P**	**21 16 17.3**	**-1.9**
	comp=Z,13nm,1.0s						
WRH	**Wood River Hil**	**48.21**	**32**	*e* P	**P**	**21 16 20.3**	**+0.8**
	comp=Z,6.3nm,1.3s						
COLA	**College**	**48.32**	**32**	⇑ *e* P	**P**	**21 16 20.1**	**-0.3**
COLA				pmax	pmax		
	comp=Z,5.0nm,0.0s						
CCB	**Clear Creek Bu**	**48.34**	**32**	*e* P	**P**	**21 16 21.3**	**+0.8**
	comp=Z,3.2nm,0.9s						
KURK	**Kurchatov**	**48.35**	**309**	P	**P**	**21 16 21.1**	**+0.2**
KURK				pmax	pmax		
	comp=Z,6.0nm,0.6s						
KURK	**Kurchatov**	**48.35**	**309**	*e* P	**P**	**21 16 20.6**	**-0.3**
	comp=Z,8.8nm,0.7s						
KURBB	**Kurchatov Arra**	**48.42**	**309**	P	**P**	**21 16 21.1**	**-0.3**
	comp=Z,6.0nm,0.6s,baz=83,slow=7.8,SNR=80						
IL1	**Eielson Array**	**48.73**	**32**	*e* P	**P**	**21 16 22.9**	**-0.7**
ILAR	**Eielson Array**	**48.73**	**32**	P	**P**	**21 16 23.3**	**-0.3**
	comp=Z,4.3nm,0.8s,baz=264,slow=6.4,SNR=38						
ILB	**Eielson Array**	**48.73**	**32**	*e* P	**P**	**21 16 23.6**	**0.0**
PDGK	**Podgornoye**	**49.34**	**299**	P	**P**	**21 16 27.7**	**-0.8**
PDGK				pmax	pmax		
	comp=Z,5.0nm,1.2s						
RAGM	**Ragged Mountai**	**49.90**	**38**	*e* P	**P**	**21 16 30.8**	**-1.8**
	comp=Z,23nm,1.2s						
DOT	**Dot Lake**	**49.98**	**34**	*e* P	**P**	**21 16 32.4**	**-0.8**
	comp=Z,120nm,1.6s						
CRQM	**Cirque**	**50.62**	**37**	*e* P	**P**	**21 16 39.8**	**+1.6**
	comp=Z,24nm,1.1s						
IPM	**Ipoh**	**51.00**	**242**	*e* P	**P**	**21 16 39.2**	**-2.3**
	comp=Z,15nm,1.3s						
DAWY	**Dawson**	**52.02**	**33**	*e* P	**P**	**21 16 47.2**	**-1.2**
	comp=Z,12nm,1.4s						
VOSK	**Vostochnaya**	**52.63**	**313**	*e* P	**P**	**21 16 53.0**	**-0.1**
VOSK				pmax	pmax		
	comp=Z,8.0nm,0.8s						
VOSK	**Vostochnaya**	**52.63**	**313**	*e* P	**P**	**21 16 53.0**	**-0.1**
	comp=Z,7.5nm,0.8s						
OTUK	**Ortayu**	**52.88**	**307**	P	**P**	**21 16 56.0**	**+0.9**
OTUK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
FRU	**Bishkek**	**52.90**	**300**	*e* P	**P**	**21 16 55.0**	**-0.4**
BVAR	**Borovoye Array**	**52.91**	**313**	P	**P**	**21 16 55.5**	**+0.2**
	comp=Z,2.7nm,0.7s,baz=78,slow=9.2,SNR=25						
BRVK	**Borovoye**	**52.97**	**313**	*d* iP	**P**	**21 16 55.3**	**-0.3**
BRVK				pmax	pmax		
	comp=Z,18nm,0.9s						
BRVK	**Borovoye**	**52.97**	**313**	*e* P	**P**	**21 16 56.0**	**+0.4**
	comp=Z,6.6nm,0.9s						
KSH	**Kashi**	**53.00**	**296**	*e* P	**P**	**21 16 59.0**	**+2.7**
KSH				*e* PP	**PP**	**21 18 59.8**	**+3.8**
KSH				PcS	**PcS**	**21 22 04.8**	**+1.3**
KSH				S	**S**	**21 24 26.6**	**+2.9**
KSH				ScS	**ScS**	**21 26 45.3**	**+2.0**
KSH				SS	**SS**	**21 28 06.5**	**+3.8**
KSH				pmax	pmax		
	comp=Z,120nm,5.1s						
KSH				LR	LR		
	comp=Z,130nm,9.6s						
KSH				LR	LR		
	comp=Z,170nm,5.8s						
KSH				LR	LR		
	comp=Z,420nm,13.1s						
HYT	**Haines Junctio**	**53.35**	**37**	*e* P	**P**	**21 17 00.3**	**+1.8**
	comp=Z,20nm,1.0s						
INK	**Inuvik**	**53.85**	**27**	P	**P**	**21 17 01.9**	**+0.1**
	comp=Z,6.9nm,0.9s,baz=251,sl

NEW	**Newport**	**68.84**	**45**	*e*P	**P**	**21 18 43.5**	**-0.1**
	comp=Z,6.8nm,0.9s							
K05A	**Summer Lake**	**69.41**	**52**	*e*P	**P**	**21 18 48.8**	**+1.4**
	comp=Z,14nm,1.0s							
SUF	**Sumiainen**	**69.73**	**334**	P	**P**	**21 18 49.6**	**+0.8**
SUF				pmax	pmax			
	comp=Z,17nm,2.1s							
OBN	**Obninsk**	**70.16**	**324**	⇑*i*P	**P**	**21 18 51.8**	**+0.3**
OBN				*e*		21 19 16.0		
OBN				*i*		21 21 25.0		
OBN				pmax	pmax			
	comp=Z,10.0nm,1.2s							
FIA1	**FINESS Array S**	**70.59**	**333**	*e*P	**P**	**21 18 53.9**	**-0.2**
FIA0	**FINESS Array S**	**70.60**	**333**	*e*P	**P**	**21 18 54.2**	**+0.1**
FIA0	**FINESS Array S**	**70.60**	**333**	*e*P	**P**	**21 18 54.2**	**+0.1**
FINES	**FINESS Array B**	**70.60**	**333**	P	**P**	**21 18 54.2**	**+0.1**
	comp=Z,9.6nm,0.7s,baz=57,slow=7.0,SNR=31							
ORV	**Oroville**	**70.65**	**55**	*e*P	**P**	**21 18 55.1**	**+0.2**
ORV				pmax	pmax			
	comp=Z,7.0nm,1.2s							
ORV	**Oroville**	**70.65**	**55**	*e*P	**P**	**21 18 55.1**	**+0.2**
	comp=Z,6.9nm,1.2s							
SWMT	**Swartz Lake**	**71.03**	**45**	*e*P	**P**	**21 18 57.7**	**+0.6**
SUMG	**Summit**	**71.36**	**1**	*e*P	**P**	**21 18 58.4**	**-0.7**
SUMG				pmax	pmax			
	comp=Z,7.0nm,0.8s							
SUMG	**Summit**	**71.36**	**1**	*e*P	**P**	**21 18 58.4**	**-0.7**
	comp=Z,6.6nm,0.8s							
CMB	**Columbia Colle**	**72.19**	**56**	*e*P	**P**	**21 19 04.0**	**-0.3**
CMB				pmax	pmax			
	comp=Z,7.0nm,1.1s							
CMB	**Columbia Colle**	**72.19**	**56**	*e*P	**P**	**21 19 04.0**	**-0.3**
	comp=Z,7.3nm,1.1s							
GOF	**Gofitskoye**	**72.44**	**313**	⇑*e*P	P	21 19 16.2	+11	
LRM	**Limekiln Ridge**	**72.85**	**45**	*e*P	**P**	**21 19 08.6**	**+0.3**
FFC	**Flin Flon**	**72.90**	**34**	*e*P	**P**	**21 19 08.2**	**+0.1**
FFC				pmax	pmax			
	comp=Z,10.0nm,1.0s							
FFC	**Flin Flon**	**72.90**	**34**	*e*P	**P**	**21 19 08.2**	**+0.1**
	comp=Z,9.9nm,1.0s							
NCK	**Nalchik**	**72.98**	**312**	⇓*e*P	**P**	**21 19 09.7**	**+0.9**
NCK				pmax	pmax			
	comp=Z,6.0nm,0.6s							
KVAR	**Kislovodsk Arr**	**73.26**	**312**	P	**P**	**21 19 11.6**	**+1.1**
	comp=Z,14nm,1.1s,baz=199,slow=5.7,SNR=11							
KIV	**Kislovodsk**	**73.27**	**312**	*d i*P	**P**	**21 19 10.9**	**+0.3**
KIV				*e*		21 19 28.3		
KIV				pmax	pmax			
	comp=Z,27nm,1.2s							
KIV	**Kislovodsk**	**73.27**	**312**	*e*P	**P**	**21 19 11.2**	**+0.6**
	comp=Z,17nm,0.9s							
KBZ	**Khabaz**	**73.27**	**312**	P	**P**	**21 19 11.4**	**+1.0**
	comp=Z,7.6nm,0.8s,baz=65,slow=1.6,SNR=14							
NEY	**Neytrino**	**73.64**	**312**	⇓*e*P	**P**	**21 19 13.0**	**+0.1**
NEY				pmax	pmax			
	comp=Z,1.0nm,1.2s							
NC204	**NORSAR Array S**	**75.73**	**339**	*e*P	**P**	**21 19 24.3**	**-0.2**
HFS	**Hagfors**	**75.73**	**337**	P	**P**	**21 19 24.8**	**+0.2**
	comp=Z,3.5nm,0.7s,baz=54,slow=7.5,SNR=11							
NB201	**NORSAR Array S**	**75.76**	**339**	*e*P	**P**	**21 19 24.1**	**-0.5**
NB2	**NORSAR Subarra**	**75.79**	**339**	P	**P**	**21 19 24.5**	**-0.3**
	comp=Z,10.0nm,1.0s,baz=38,slow=5.9							
NB2	**NORSAR Subarra**	**75.79**	**339**	P	**P**	**21 19 24.5**	**-0.3**
NB2				pmax	pmax			
	comp=Z,9.0nm,1.1s							
NB200	**NORSAR Array S**	**75.79**	**339**	*e*P	**P**	**21 19 24.9**	**0.0**
NOA	**NORSAR Array B**	**75.79**	**339**	P	**P**	**21 19 24.9**	**0.0**
	comp=Z,4.4nm,0.8s,baz=39,slow=5.7,SNR=17							
BW06	**Boulder Array**	**76.32**	**47**	*e*P	**P**	**21 19 26.4**	**-2.1**
PD31	**Pinedale Array**	**76.32**	**47**	*e*P	**P**	**21 19 27.1**	**-1.4**
PDAR	**Pinedale Array**	**76.32**	**47**	P	**P**	**21 19 27.0**	**-1.4**
	comp=Z,0.9nm,0.6s,baz=309,slow=4.7,SNR=7.8							
AKASG	**Malin Array Be**	**76.38**	**324**	P	**P**	**21 19 27.9**	**-0.4**
	comp=Z,6.6nm,0.8s,baz=44,slow=5.8,SNR=18							
AKASG	**Malin Array Be**	**76.38**	**324**	*i* P	**P**	**21 19 27.8**	**-0.5**
AKASG				pmax	pmax			
	comp=Z,7.0nm,0.8s							
AKBB	**Malin Array Si**	**76.38**	**324**	*e*P	**P**	**21 19 26.9**	**-1.4**
AKBB				pmax	pmax			
	comp=Z,9.0nm,0.9s							
AKBB	**Malin Array Si**	**76.38**	**324**	*e*P	**P**	**21 19 26.9**	**-1.4**
	comp=Z,9.3nm,0.9s							
KIEV	**Kiev**	**76.39**	**324**	*e*P	**P**	**21 19 27.9**	**-0.5**
KIEV				pmax	pmax			
	comp=Z,10.0nm,1.0s							
KIEV	**Kiev**	**76.39**	**324**	*e*P	**P**	**21 19 27.9**	**-0.5**
	comp=Z,10.0nm,1.0s							
AK11	**Malin Array Si**	**76.42**	**324**	*e*P	**P**	**21 19 28.3**	**-0.3**
X16A	**Lo Mia Camp, P**	**80.18**	**54**	*e*P	**P**	**21 19 49.6**	**-0.3**
	comp=Z,15nm,1.0s							
DPC	**Dobruska-Polom**	**82.38**	**329**	*e*P	**P**	**21 20 01.0**	**-0.1**
DPC				*ex*	x	21 20 08.0		
DPC	**Dobruska-Polom**	**82.38**	**329**	*e*P	**P**	**21 20 01.0**	**-0.1**
DPC				*e*		21 20 08.0		
BRG	**Berggiesshubel**	**82.92**	**331**	*e*P	P	21 20 14.1	+10	
	comp=Z,3.0nm,0.8s							
BRG	**Berggiesshubel**	**82.92**	**331**	*e*P	P	21 20 14.1	+10	
BRG				pmax	pmax			
	comp=Z,3.0nm,0.8s							
CLL	**Collm**	**82.94**	**332**	*e*P	**P**	**21 20 03.0**	**-0.9**
	comp=Z,6.0nm,0.9s							
CLL				*i*		21 20 13.6		
CLL				*e*		21 20 22.0		
CLL	**Collm**	**82.94**	**332**	*e*P	**P**	**21 20 03.0**	**-0.9**
CLL				*i*		21 20 13.6		
CLL				pmax	pmax			
	comp=Z,6.0nm,0.9s							
PVCC	**Panska Ves**	**82.94**	**330**	*e*P	**P**	**21 20 04.4**	**+0.4**
PVCC	**Panska Ves**	**82.94**	**330**	*e*P	**P**	**21 20 04.4**	**+0.4**
ANMO	**Albuquerque**	**83.07**	**51**	⇓*e*P	**P**	**21 20 06.3**	**+1.1**
ANMO				pmax	pmax			
	comp=Z,3.0nm,1.7s							
KHC	**Kasperske Hory**	**84.44**	**330**	*e*P	**P**	**21 20 11.7**	**0.0**
KHC				*ep*P	**pP**	**21 20 21.9**	**-0.9**
KHC	**Kasperske Hory**	**84.44**	**330**	*e*P	**P**	**21 20 11.7**	**0.0**
KHC				*e*		21 20 21.9		
EKA	**Eskdalemuir Ar**	**84.61**	**342**	P	**P**	**21 20 12.8**	**+0.4**
	comp=Z,1.1nm,0.7s,baz=33,slow=3.2,SNR=6.4							
GERES	**GERESS Array B**	**84.62**	**330**	P	**P**	**21 20 12.3**	**-0.4**
	comp=Z,0.7nm,0.6s,baz=46,slow=5.8,SNR=6.7							
GEA0	**GERESS Array S**	**84.62**	**330**	*e*P	**P**	**21 20 11.1**	**-1.6**
TXAR	**Lajitas Array**	**88.50**	**54**	P	**P**	**21 20 31.3**	**-0.8**
	comp=Z,0.3nm,0.6s,baz=337,slow=2.9,SNR=3.7							
TXAR	**Lajitas Array**	**88.50**	**54**	*e*P	**P**	**21 20 32.9**	**+0.8**
LPAZ	**La Paz**	**144.78**	**64**	PKP	**PKPab**	**21 27 16.1**	**-0.1**
	comp=Z,1.4nm,0.7s,baz=26,slow=3.7,SNR=4.9							
PLCA	**Paso Flores**	**152.29**	**110**	PKPab	**PKPab**	**21 27 45.0**	**+0.1**
	comp=Z,2.6nm,0.7s,baz=354,slow=1.1,SNR=5.2							
CPUP	**Villa Florida**	**158.84**	**68**	PKPab	**PKPab**	**21 28 14.1**	**+0.9**
	comp=Z,0.8nm,0.6s,baz=307,slow=5.1,SNR=3.1							

JMA 19 21:08:07.7±0.1, 31.64N×130.02E, h2km±1km, M2.3, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSJ	**Shimokoshiki**	**0.26**	**278**	P	Pg	21 08 12.9	+0.2
JSJ				S	Sg	21 08 16.9	+0.7
JSU	**Suzuyama**	**0.40**	**110**	P	Pg	21 08 15.8	+0.5
JSU				S	Sg	21 08 21.1	+0.7
JZO	**Okuchi**	**0.70**	**44**	P	Pg	21 08 21.5	+0.4
JZO				S	Sg	21 08 31.0	+0.8
JHD	**Hondo**	**0.83**	**7**	P	Pg	21 08 23.8	+0.2
JHD				S	Sg	21 08 35.3	+0.9
JTSR	**Tashiro 2**	**0.90**	**121**	P	Pg	21 08 25.3	+0.3
JTSR				S	Sg	21 08 37.2	+0.4

NNC ***19*** *21:15:11.1±7.2, 36.87N×70.79E, h0km, mb4.1, mpv3.8, Error ellipse: s-maj=64.7km s-min=46.1km az=144.0*
SOME ***19*** *21:15:12.4, 37.87N×71.42E, h15km*
ISC 19 21:15:12.2±2.1, 37.9N±0.1×71.48E±0.06, h10km, n11, σ3.925/19, 5C-4D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**3.88**	**64**	Pn	**Pb**	**21 16 19.8**	**-1.0**
KSH				Sn	**Sn**	**21 17 02.5**	**+4.7**
KSH				smax	smax		
	comp=N,95nm,1.3s						
KSH				smax	smax		
	comp=E,85nm,1.2s						
IUG	**luzhnay**	**4.41**	**346**	*e*P	**Pg**	**21 16 34.8**	**-1.9**
	comp=E,10nm,0.2s						
IUG				*e*S	**Sg**	**21 17 36.0**	**+2.1**
	comp=E,110nm,0.4s						
CHM	**Chimkent**	**4.67**	**343**	*e*P	**Pg**	**21 16 38.2**	**-3.5**
	comp=E,36nm,0.3s						
CHM				*e*S	**Sg**	**21 17 42.0**	**-0.1**
	comp=E,95nm,0.6s						
MNAS	**Manas**	**4.68**	**9**	⇓P	**Pg**	**21 16 40.2**	**-1.6**
	comp=E,5.5nm,0.8s						
MNAS				⇓S	**Sg**	**21 17 45.8**	**+3.5**
	comp=E,6.4nm,0.3s						
MRKS	**Merke**	**5.05**	**15**	*e*P	**Pg**	**21 16 45.5**	**-3.4**
	comp=E,16nm,0.5s						
MRKS				*e*S	**Sg**	**21 17 54.9**	**+0.7**
	comp=E,15nm,0.4s						
BRLS	**Boroldoy**	**5.10**	**345**	*e*P	**Pb**	**21 16 43.0**	**+1.5**
	comp=E,2.1nm,0.4s						
BRLS				*e*S	**Sg**	**21 17 50.7**	**-5.2**
	comp=E,12nm,0.3s						
KK31	**Karatay Array**	**5.28**	**352**	P	**Pb**	**21 16 47.3**	**+2.7**
	comp=E,4.8nm,0.3s,baz=179,slow=12,SNR=78						
KK31				⇑S	**Sg**	**21 17 58.4**	**-3.3**
	comp=E,16nm,0.6s,baz=184,slow=24,SNR=12						
AAK	**Ala-Archa**	**5.29**	**25**	⇑P	**Pb**	**21 16 48.1**	**+3.2**
	comp=E,3.5nm,0.5s						
AAK				⇓S	**Sg**	**21 18 02.0**	**-0.1**
	comp=E,5.4nm,0.7s						
TKM2	**Tokmak 2**	**5.94**	**31**	⇓P	Pb	21 16 51.2	-4.8
	comp=E,7.7nm,0.9s						
TKM2				⇑S	**Sg**	**21 18 17.5**	**-5.5**
	comp=E,3.3nm,0.8s						
AB31	**Akbulak array**	**14.10**	**327**	⇑P	**P**	**21 18 38.7**	**-1.0**
	comp=E,1.1nm,0.7s,baz=163,slow=11,SNR=4.8						
AKTO	**Aktyubinsk**	**15.81**	**327**	⇑P	**P**	**21 19 01.9**	**+3.2**
	comp=E,3.2nm,0.9s						

NEIC ***19*** *21:16:52.7, 39.11N×29.06E, h5km, mb4.4/7, ML4.2(THE), ML4.2(ISK), After ISK.*
IDC ***19*** *21:16:52.7±0.6, 39.07N×29.10E, h0km, mb4.1/20, mb1 4.1/27, mb1mx4.0/50, mbtmp4.1/27, ML3.9/6, Error ellipse: s-maj=12.3km s-min=11.1km az=4.0*
DDA ***19*** *21:16:52.7, 39.11N×29.09E, h18km, Ml4.1*
ISK ***19*** *21:16:52.7, 39.12N×29.06E, h3km, ML4.2*
CSEM ***19*** *21:16:53.6±0.1, 39.11N×29.09E, h2km, mb4.5/14, Error ellipse: s-maj=1.8km s-min=1.7km az=12.0*
ISCJB ***19*** *21:16:53.6±0.3, 39.12N±0.01×29.07E±0.01, h11km±2km, mb4.2/30, Error ellipse: s-maj=2.0km s-min=1.7km az=8.7*
MOS ***19*** *21:16:53.7±1.1, 39.16N×29.11E, h14km, mb4.5/13, Error ellipse: s-maj=5.3km s-min=3.6km az=93.8*
THE ***19*** *21:16:54.5, 39.08N×29.01E, h1km±1km, ML4.2/7, Error ellipse: s-maj=1.8km s-min=1.0km az=80.0*
ISC 19 21:16:54.3±0.9, 39.12N±0.02×29.04E±0.01, h9km±6km, n557, σ1.150/654, mb4.3/30, 34C-35D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**253**	⇑*i*P	**Pg**	**21 16 59.3**	**-0.3**
DEMI				*i* S	**Sg**	**21 17 03.1**	**0.0**
DEMI	**Demirci**	**0.26**	**253**	P	**Pg**	**21 16 59.3**	**-0.3**
DEMI				S	**Sg**	**21 17 03.1**	**0.0**
GEDZ	**Gediz**	**0.30**	**104**	PG	**Pg**	**21 16 59.3**	**-1.0**
GEDZ				SG	**Sg**	**21 17 04.5**	**+0.1**
GEDZ	**Gediz**	**0.30**	**104**	*i* Pg	**Pg**	**21 16 59.3**	**-1.0**
GDZ	**Gediz**	**0.35**	**95**	⇑*i*P	**Pg**	**21 16 59.9**	**-1.4**
GDZ				*i* S	**Sg**	**21 17 04.7**	**-1.2**
GDZ	**Gediz**	**0.35**	**95**	P	**Pg**	**21 16 59.9**	**-1.4**
GDZ				S	**Sg**	**21 17 04.7**	**-1.2**
TVSB	**Tavsanli**	**0.47**	**45**	*e*PG	**Pg**	**21 17 02.2**	**-1.2**
TVSB	**Tavsanli**	**0.47**	**45**	*e*Pg	**Pg**	**21 17 02.2**	**-1.2**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG	**Pg**	**21 17 06.3**	**-1.0**
KULA	**Kula-Manisa**	**0.67**	**206**	P	**Pg**	**21 17 06.2**	**-1.0**
KULA				S	**Sg**	**21 17 15.2**	**-0.8**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg	**Pg**	**21 17 06.3**	**-1.0**
KULA				S	**Sg**	**21 17 15.2**	**-0.8**
KULA	**Kula-Manisa**	**0.67**	**206**	P	**Pg**	**21 17 06.2**	**-1.0**
KULA				S	**Sg**	**21 17 15.2**	**-0.8**
MANT	**Manisa**	**0.73**	**211**	⇑*i*P	**Pg**	**21 17 06.2**	**-2.2**
MANT				*i* S	**Sg**	**21 17 15.6**	**-2.3**
MANT	**Manisa**	**0.73**	**211**	P	**Pg**	**21 17 06.2**	**-2.2**
MANT				S	**Sg**	**21 17 15.6**	**-2.3**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pg**	**21 17 10.5**	**-0.7**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pg**	**21 17 10.5**	**-0.7**
AKS	**Akhisar**	**0.98**	**256**	*e*PG	**Pg**	**21 17 12.9**	**-0.3**
AKS	**Akhisar**	**0.98**	**256**	*e*Pg	**Pg**	**21 17 12.9**	**-0.3**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**21 17 14.1**	**-0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**21 17 14.1**	**-0.1**
IGD	**Bursa**	**1.15**	**6**	⇑*i*P	**Pb**	**21 17 13.8**	**-2.5**
IGD				*i* S	**Sg**	**21 17 31.2**	**-0.2**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pn**	**21 17 16.6**	**-1.4**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pn**	**21 17 16.6**	**-1.4**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pn**	**21 17 17.5**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pn**	**21 17 17.5**	**-0.5**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pn**	**21 17 17.7**	**-0.4**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pn**	**21 17 17.7**	**-0.4**
BALY	**Balya**	**1.26**	**300**	⇓*i*P	**Pn**	**21 17 18.0**	**-0.2**
BALY				*i* S	**Sn**	**21 17 36.4**	**+1.2**
BALY	**Balya**	**1.26**	**300**	P	**Pn**	**21 17 18.0**	**-0.2**
BALY				S	**Sn**	**21 17 36.4**	**+1.2**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pn**	**21 17 17.4**	**-0.8**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pn**	**21 17 17.4**	**-0.8**
SHUT	**Suhut-Afyon**	**1.31**	**115**	*e*PN	**Pn**	**21 17 18.2**	**-0.7**
SHUT	**Suhut-Afyon**	**1.31**	**115**	*e*Pn	**Pn**	**21 17 18.2**	**-0.7**
GEMT	**Gemlik**	**1.32**	**5**	*e*PN	**Pn**	**21 17 18.5**	**-0.4**
GEMT	**Gemlik**	**1.32**	**5**	*e*Pn	**Pn**	**21 17 18.5**	**-0.4**
BORA	**Eskisehir**	**1.33**	**55**	⇑*i*P	**Pn**	**21 17 17.6**	**-1.6**
BORA				*i* S	**Sb**	**21 17 36.7**	**-0.1**
BORA	**Eskisehir**	**1.33**	**55**	P	**Pn**	**21 17 17.6**	**-1.6**
BORA				S	**Sb**	**21 17 36.7**	**-0.1**
DENT	**Denizli**	**1.36**	**180**	*e*PN	**Pn**	**21 17 18.9**	**-0.7**
DENT	**Denizli**	**1.36**	**180**	*e*Pn	**Pn**	**21 17 18.9**	**-0.7**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pn**	**21 17 20.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pn**	**21 17 20.1**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pn**	**21 17 19.9**	**-0.4**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pn**	**21 17 19.9**	**-0.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**21 17 20.4**	**-0.3**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**21 17 20.4**	**-0.3**
ESKT	**Eskisehir**	**1.46**	**74**	*e*PN	**Pn**	**21 17 20.0**	**-1.0**
ESKT	**Eskisehir**	**1.46**	**74**	⇑*i*P	**Pn**	**21 17 19.4**	**-1.6**
ESKT				*i* S	**Sg**	**21 17 49.0**	**+7.6**
ESKT	**Eskisehir**	**1.46**	**74**	*e*Pn	**Pn**	**21 17 20.0**	**-1.0**
SEYT	**Eskypehyr**	**1.46**	**74**	P	**Pn**	**21 17 19.4**	**-1.6**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*PN	**Pn**	**21 17 20.9**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*Pn	**Pn**	**21 17 20.9**	**-0.3**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pn**	**21 17 22.0**	**+0.3**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pn**	**21 17 22.0**	**+0.3**
BOLV	**Bolvadin**	**1.55**	**104**	⇓*i*P	**Pn**	**21 17 21.6**	**-0.6**
BOLV				*i* S	**Sn**	**21 17 42.0**	**-0.4**
BOLV	**Bolvadin**	**1.55**	**104**	P	**Pn**	**21 17 21.5**	**-0.6**
BOLV				S	**Sn**	**21 17 42.0**	**-0.4**
IZM	**Izmir**	**1.56**	**243**	*e*PN	**Pb**	**21 17 23.0**	**-0.4**
IZM	**Izmir**	**1.56**	**243**	P	**Pb**	**21 17 23.3**	**-0.1**
IZM	**Izmir**	**1.56**	**243**	*e*Pn	**Pb**	**21 17 23.0**	**-0.4**
IZM	**Izmir**	**1.56**	**243**	P	**Pb**	**21 17 23.3**	**-0.1**
KNL	**Bal¯–kesir**	**1.64**	**315**	*i* P	**Pn**	**21 17 23.4**	**+0.1**
KNL				*i* S	**Sg**	**21 17 46.8**	**-0.1**
DKL	**Dikili**	**1.66**	**269**	*e*PN	**Pn**	**21 17 24.1**	**+0.5**
DKL	**Dikili**	**1.66**	**269**	*e*Pn	**Pn**	**21 17 24.1**	**+0.5**
BUY	**Buyukada**	**1.73**	**2**	⇑*i*P	**Pn**	**21 17 23.8**	**-0.8**
BUY				*i* S	**Sn**	**21 17 46.9**	**+0.1**
BUY	**Buyukada**	**1.73**	**2**	P	**Pn**	**21 17 23.8**	**-0.8**
BUY				S	**Sn**	**21 17 46.9**	**+0.1**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pn**	**21 17 24.4**	**-0.4**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pn**	**21 17 24.4**	**-0.4**
ISP	**Isparta**	**1.74**	**137**	P	**Pn**	**21 17 23.5**	**-1.3**
ISP				S	**Sn**	**21 17 47.0**	**-0.2**
ISP	**Isparta**	**1.74**	**137**	⇓*i*P	**Pn**	**21 17 23.6**	**-1.3**
ISP				S	**Sn**	**21 17 45.6**	**-1.6**
ISP	**Isparta**	**1.74**	**137**	⇓*e*P	**Pn**	**21 17 22.5**	**-2.3**
ISP	**Isparta**	**1.74**	**137**	*e*P	**Pn**	**21 17 22.5**	**-2.3**
ISP	**Isparta**	**1.74**	**137**	*e*Pn	**Pn**	**21 17 23.6**	**-1.3**
ISP				S	**Sn**	**21 17 47.0**	**-0.2**
ISP				*e*Sn	**Sb**	**21 17 48.8**	**+0.3**
ISP	**Isparta**	**1.74**	**137**	*e*Pn	**Pn**	**21 17 23.6**	**-1.3**
ISP				*e*Sn	**Sb**	**21 17 48.8**	**+0.3**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pn**	**21 17 24.3**	**-0.9**
HRT	**Hereke**	**1.77**	**16**	P	**Pn**	**21 17 24.3**	**-0.9**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pn**	**21 17 24.3**	**-0.9**
BAGO	**Egridir - ISPA**	**1.78**	**129**	⇓*i*P	**Pn**	**21 17 24.4**	**-0.9**
BAGO				*i* S	**Sg**	**21 17 52.0**	**+0.6**
AYVA	**Ayvalik**	**1.83**	**277**	*i* P	**Pn**	**21 17 26.0**	**+0.1**
AYVA				*i* S	**Sg**	**21 17 52.6**	**-0.6**
AYVA	**Ayvalik**	**1.83**	**277**	P	**Pn**	**21 17 26.0**	**+0.1**
AYVA				S	**Sg**	**21 17 52.6**	**-0.6**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	*e*PN	**Pn**	**21 17 25.9**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	*e*Pn	**Pn**	**21 17 25.9**	**-0.3**
KRBG	**Karabiga-Canak**	**1.85**	**314**	*e*PN	**Pn**	**21 17 26.3**	**+0.1**
KRBG	**Karabiga-Canak**	**1.85**	**314**	*e*Pn	**Pn**	**21 17 26.3**	**+0.1**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*PN	**Pn**	**21 17 26.5**	**+0.2**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*Pn	**Pn**	**21 17 26.5**	**+0.2**
GOLH	**Golhisar**	**1.92**	**167**	⇓*i*P	**Pn**	**21 17 26.7**	**-0.6**
GOLH				*i* S	**Sg**	**21 18 00.6**	**+4.5**
GOLH	**Golhisar**	**1.92**	**167**	P	**Pn**	**21 17 26.7**	**-0.6**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN	**Pn**	**21 17 27.7**	**+0.2**
ISK	**Istanbul-Kandi**	**1.94**	**1**	P	**Pn**	**21 17 26.8**	**-0.7**
ISK				S	**Sn**	**21 17 53.0**	**+0.9**
ISK	**Istanbul-Kandi**	**1.94**	**1**	P	**Pn**	**21 17 26.8**	**-0.7**
ISK				S	**Sn**	**21 17 53.0**	**+0.9**
ISK	**Istanbul-Kandi**	**1.94**	**1**	P	**Pn**	**21 17 26.8**	**-0.7**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*Pn	**Pn**	**21 17 27.7**	**+0.2**
ISK				S	**Sn**	**21 17 53.0**	**+0.9**
ISK	**Istanbul-Kandi**	**1.94**	**1**	P	**Pn**	**21 17 26.8**	**-0.7**
ISK				S	**Sn**	**21 17 53.0**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*PN	**Pn**	**21 17 27.7**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*Pn	**Pn**	**21 17 27.7**	**-0.1**
GLHS	**Glhisar (BURDU**	**1.99**	**169**	*e*PN	**Pn**	**21 17 27.7**	**-0.6**
GLHS	**Glhisar (BURDU**	**1.99**	**169**	*e*Pn	**Pn**	**21 17 27.7**	**-0.6**
DGB	**¯zmir**	**2.00**	**238**	*i* P	**Pn**	**21 17 28.4**	**+0.2**
DGB				*i* S	**Sb**	**21 17 56.9**	**+1.2**
GCAM	**G?zelcaml?**	**2.00**	**226**	*i* P	**Pn**	**21 17 28.7**	**+0.4**
GCAM				*i* S	**Sg**	**21 17 59.5**	**+0.9**
GCAM	**G?zelcaml?**	**2.00**	**226**	P	**Pn**	**21 17 28.7**	**+0.4**
URLA	**Izmir**	**2.05**	**249**	⇑*i*P	**Pn**	**21 17 30.0**	**+1.0**
URLA				*i* S	**Sg**	**21 18 01.2**	**+1.0**
URLA	**Izmir**	**2.05**	**249**	P	**Pn**	**21 17 30.0**	**+1.0**
BCK	**Bucak**	**2.06**	**143**	*e*PN	**Pn**	**21 17 28.9**	**-0.2**
BCK	**Bucak**	**2.06**	**143**	*e*Pn	**Pn**	**21 17 28.9**	**-0.2**
YER	**Yerkesik**	**2.07**	**197**	*e*PN	**Pn**	**21 17 30.0**	**+0.7**
YER	**Yerkesik**	**2.07**	**197**	P	**Pn**	**21 17 28.7**	**-0.6**
YER	**Yerkesik**	**2.07**	**197**	P	**Pn**	**21 17 28.7**	**-0.6**
YER	**Yerkesik**	**2.07**	**197**	*e*Pn	**Pn**	**21 17 30.0**	**+0.7**
MLSB	**Milas**	**2.07**	**209**	*e*PN	**Pn**	**21 17 29.1**	**-0.2**
MLSB	**Milas**	**2.07**	**209**	*e*Pn	**Pn**	**21 17 29.1**	**-0.2**
ELBA	**Catalca**	**2.08**	**347**	*i* P	**Pn**	**21 17 29.5**	**+0.1**
ELBA				*i* S	**Sn**	**21 17 54.3**	**-1.1**
ELBA	**Catalca**	**2.08**	**

ALN Alexandroupoli 2.90 309 P Pn 21 17 40.9 +0.2
ALN Alexandroupoli 2.90 309 ePn Pn 21 17 41.9 +1.2
ALN S Sn 21 18 17.4 +1.7
ALN Alexandroupoli 2.90 309 P Pn 21 17 40.9 +0.2
ALN S Sn 21 18 17.4 +1.7
NIS1 Nisyros Isl. 2.91 211 ePN Pn 21 17 41.7 +0.9
NIS1 Nisyros Isl. 2.91 211 ePn Pn 21 17 41.7 +0.9
AKAS Kas 2.92 171 iP Pn 21 17 41.4 +0.4
AKAS iS Sg 21 18 30.3 +2.3
AKAS Kas 2.92 171 P Pn 21 17 41.4 +0.4
KMER Konya-Meram 2.94 116 iP Pn 21 17 41.8 +0.4
KMER Konya-Meram 2.94 116 P Pn 21 17 41.8 +0.4
ARG Arkhangelos 2.99 194 P Pn 21 17 42.4 +0.6
ARG S Sn 21 18 18.5 +0.8
ARG Arkhangelos 2.99 194 P Pn 21 17 42.4 +0.6
ARG S Sn 21 18 18.5 +0.8
ARG Arkhangelos 2.99 194 P Pn 21 17 42.4 +0.6
ARG S Sn 21 18 18.5 +0.8
ARG Arkhangelos 2.99 194 P Pn 21 17 42.4 +0.6
ARG S Sn 21 18 18.5 +0.8
LOD Lodumlu 2.99 74 ePN Pn 21 17 42.6 +0.7
LOD Lodumlu 2.99 74 ePn Pn 21 17 42.6 +0.7
KSL Kastellorizon 3.00 171 P Pn 21 17 41.6 -0.3
KSL Kastellorizon 3.00 171 ePn Pn 21 17 41.6 -0.3
ANTO Ankara 3.00 74 eP Pn 21 17 43.4 +1.3
ANTO e 21 18 16.3
ANTO Ankara 3.00 74 ePn Pn 21 17 43.4 +1.3
ANTO eSn Sn 21 18 16.3 -2.0
ANTO Ankara 3.00 74 ePn Pn 21 17 43.4 +1.3
ANTO eSn Sn 21 18 16.3 -2.0
KKUL Konya-Kulu 3.02 88 iP Pn 21 17 42.8 +0.4
KKUL iS Sg 21 18 30.9 -0.4
KKUL Konya-Kulu 3.02 88 P Pn 21 17 42.8 +0.4
SMTH Samothraki Isl 3.02 298 P Pn 21 17 42.6 +0.3
SMTH S Sn 21 18 18.6 0.0
SMTH Samothraki Isl 3.02 298 P Pn 21 17 42.6 +0.3
SMTH S Sn 21 18 18.6 0.0
SMTH Samothraki Isl 3.02 298 ePn Pn 21 17 42.6 +0.3
SMTH eSn Sn 21 18 18.6 0.0
CHBY Cihanbeyli 3.06 99 ePN Pn 21 17 42.9 0.0
CHBY Cihanbeyli 3.06 99 ePn Pn 21 17 42.9 0.0
LIA Limnos Island 3.08 286 P Pn 21 17 43.6 +0.5
LIA Limnos Island 3.08 286 P Pn 21 17 43.6 +0.5
LIA Limnos Island 3.08 286 P Pn 21 17 43.6 +0.5
AFSR Af˜ar-Bala (A 3.15 83 ePN Pn 21 17 44.8 +0.6
AFSR Af˜ar-Bala (A 3.15 83 ePn Pn 21 17 44.8 +0.6
BBAL Bala 3.20 81 iP Pn 21 17 45.7 +0.8
BBAL iS Sg 21 18 37.8 +0.8
BBAL Bala 3.20 81 P Pn 21 17 45.7 +0.8
EDRB Edirne 3.24 328 ePN Pn 21 17 46.7 +1.4
EDRB Edirne 3.24 328 P Pn 21 17 45.4 +0.1
EDRB Edirne 3.24 328 P Pn 21 17 45.4 +0.1
EDRB Edirne 3.24 328 ePn Pn 21 17 46.7 +1.4
EDRB Edirne 3.24 328 P Pn 21 17 45.4 +0.1
APE Apeiranthos 3.44 235 ePN Pn 21 17 49.0 +1.0
APE Apeiranthos 3.44 235 P Pn 21 17 47.3 -0.8
APE Apeiranthos 3.44 235⇑iP Pn 21 17 49.5 +1.4
APE Apeiranthos 3.44 235⇑iP Pn 21 17 48.0 -0.1
APE Apeiranthos 3.44 235 iP Pn 21 17 48.0 -0.1
APE Apeiranthos 3.44 235 ePn Pn 21 17 49.1 +1.0
APE Apeiranthos 3.44 235 ePn Pn 21 17 47.3 -0.8
SAFT Safranbolu 3.51 52 ePN Pn 21 17 50.0 +1.0
SAFT Safranbolu 3.51 52 ePn Pn 21 17 50.0 +1.0
BTIN Bart˜–n 3.52 43 iP Pn 21 17 48.7 -0.4
BTIN Bart˜–n 3.52 43 P Pn 21 17 48.7 -0.4
SERE Sereflikochisa 3.53 91 ePN Pn 21 17 50.6 +1.2
SERE Sereflikochisa 3.53 91 ePn Pn 21 17 50.6 +1.2
BR101 Keskin Array S 3.62 79 ePn Pn 21 17 50.8 +0.2
BR101 Keskin Array S 3.62 79 ePn Pn 21 17 50.9 +0.2
BR101 ePg Pb 21 18 00.5 +2.0
BR101 eSn Sn 21 18 32.2 -1.4
BR131 Keskin Array S 3.62 79 ePn Pn 21 17 50.1 -0.6
BR131 Keskin Array S 3.62 79 ePn Pn 21 17 50.1 -0.6
BRTR Keskin Array B 3.62 79 Pn Pn 21 17 50.9 +0.2
4.9nm,0.3s,baz=254,slow=13,SNR=55
BRTR Pg Pb 21 18 00.5 +2.0
14nm,0.3s,baz=250,slow=16,SNR=83
BRTR Sn Sn 21 18 32.2 -1.3
6.1nm,0.3s,baz=253,slow=23,SNR=5.1
BRTR Lg Lg 21 18 51.5
10nm,0.3s,baz=269,slow=24,SNR=7.7
SULT Sultanhani-AKS 3.63 103 ePN Pn 21 17 51.6 +0.9
SULT Sultanhani-AKS 3.63 103 ePn Pn 21 17 51.6 +0.9
KAMT Kaman 3.64 85 ePN Pn 21 17 51.6 +0.7
KAMT Kaman 3.64 85 ePn Pn 21 17 51.6 +0.7
JMB Yambol 3.83 332 P Pn 21 17 56.1 +2.7
JMB Yambol 3.83 332 P Pn 21 17 56.1 +2.7
CANT Cankiri 3.83 66 ePN Pn 21 17 54.8 +1.4
KARP Karpathos 3.87 203 ePN Pn 21 17 54.5 +0.5
KARP Karpathos 3.87 203 P Pn 21 17 53.5 -0.5
KARP Karpathos 3.87 203 P Pn 21 17 53.5 -0.5
KARP Karpathos 3.87 203 ePn Pn 21 17 54.5 +0.5
KARP Karpathos 3.87 203 ePn Pn 21 17 53.5 -0.5
GAZI Gazipasa 3.88 137 iP Pn 21 17 53.4 -0.8
GAZI Gazipasa 3.88 137 P Pn 21 17 53.3 -0.8
ERMK Ermenek 3.94 128 iP Pn 21 17 55.5 +0.4
ERMK Ermenek 3.94 128 P Pn 21 17 55.5 +0.4
KAVA Kavala 3.94 300 P Pn 21 17 55.3 +0.3
KAVA Kavala 3.94 300 P Pn 21 17 55.3 +0.3
KAVA Kavala 3.94 300 ePn Pn 21 17 55.3 +0.3
SANT Santorini 3.94 227 ePn Pn 21 17 52.5 -2.5
SANT Santorini 3.94 227 ePn Pn 21 17 52.5 -2.5
SANT ePg Pg 21 18 09.5 -0.4
AOS Alonnisos 4.01 272 ePN Pn 21 17 57.7 +1.8
AOS Alonnisos 4.01 272 ePn Pn 21 17 57.7 +1.8
OUR Ouranopolis 4.08 289 ePN Pn 21 17 58.1 +1.3
OUR Ouranopolis 4.08 289 P Pn 21 17 56.9 0.0
OUR Ouranopolis 4.08 289 eP Pn 21 17 56.9 0.0
OUR Ouranopolis 4.08 289 P Pn 21 17 56.9 0.0
OUR Ouranopolis 4.08 289 ePn Pn 21 17 58.1 +1.3
OUR Ouranopolis 4.08 289 ePn Pn 21 17 56.9 0.0
PAIG Paliouri 4.22 283 P Pn 21 17 59.5 +0.7
PAIG Paliouri 4.22 283 P Pn 21 17 59.5 +0.7
TOS Tosya 4.28 62 ePN Pn 21 18 00.4 +0.7
TOS Tosya 4.28 62 ePn Pn 21 18 00.4 +0.7
CORM Corum 4.45 74 ePN Pn 21 18 02.5 +0.5
CORM Corum 4.45 74 ePn Pn 21 18 02.5 +0.5
NIG Nigde 4.48 101 ePN Pn 21 18 03.8 +1.1
NIG Nigde 4.48 101 ePn Pn 21 18 03.8 +1.1
PLG Polygyros 4.49 288 P Pn 21 18 03.2 +0.7
PLG Polygyros 4.49 288 P Pn 21 18 03.2 +0.7
SOH Sokhos 4.68 293 P Pn 21 18 08.6 +3.4
SOH Sokhos 4.68 293 P Pn 21 18 08.6 +3.4
MANR Mangalia 4.71 356⇓iP Pn 21 18 06.8 +1.4
MANR Mangalia 4.71 356 S Sn 21 18 52.6 -7.5
MANR Mangalia 4.71 356⇓iP Pn 21 18 06.8 +1.4
NPS Neapolis 4.72 216 P Pn 21 18 08.2 +2.5
NPS Neapolis 4.72 216 P Pn 21 18 08.2 +2.5
COAL Corum-Alaca 4.73 74 iP Pn 21 18 07.1 +1.2
COAL Corum-Alaca 4.73 74 P Pn 21 18 07.1 +1.2
BZK Bozkurt 4.73 52 ePN Pn 21 18 07.1 +1.3
BZK Bozkurt 4.73 52 ePn Pn 21 18 07.1 +1.3
AKMC Akamas 4.86 146 P Pn 21 18 08.1 +0.5
LAST Lasithi 4.87 217 ePn Pn 21 18 09.5 +1.8
LAST Lasithi 4.87 217 ePn Pn 21 18 09.5 +1.8
ALFC Alefka 4.87 143 P Pn 21 18 07.6 -0.2
PPCY Paphos 4.99 147 P Pn 21 18 10.7 +1.4
IDI Anoyia 5.06 222 Pn Pn 21 18 10.5 +0.2
2.8nm,0.3s,baz=49,slow=14,SNR=31
MAMC Mammari 5.17 138 P Pn 21 18 12.3 +0.5
AGG Agios Georgios 5.22 271 eP Pn 21 18 13.9 +1.3
AGG Agios Georgios 5.22 271 ePn Pn 21 18 13.9 +1.3
AGG Agios Georgios 5.22 271 ePn Pn 21 18 13.9 +1.3
SZAC Souni 5.33 144 P Pn 21 18 14.8 +0.6
TIRR Tirgusor 5.36 355⇑iP Pn 21 18 14.2 -0.1
TIRR Tirgusor 5.36 355 eP Pn 21 18 14.3 -0.1
TIRR Tirgusor 5.36 355 ePn Pn 21 18 14.3 -0.1
TIRR Tirgusor 5.36 355 ePn Pn 21 18 14.3 -0.1
CSS Mathiatis 5.39 139 P Pn 21 18 14.6 -0.2
CSS Mathiatis 5.39 139 ePn Pn 21 18 14.3 -0.5
CSS Mathiatis 5.39 139 ePn Pn 21 18 14.3 -0.5
GRG Griva 5.41 292 P Pn 21 18 18.7 +3.5
GRG pmax pmax
comp=Z,20nm,0.8s
GRG Griva 5.41 292 P Pn 21 18 18.7 +3.5
comp=Z,20nm,0.8s
TLB Topalu 5.51 353⇑iP Pn 21 18 16.2 -0.3
TLB Topalu 5.51 353⇑iP Pn 21 18 16.2 -0.3
VTS Vitosha 5.62 310⇑iP Pn 21 18 20.4 +2.3
VTS Vitosha 5.62 310 eP Pn 21 18 17.6 -0.5
VTS e 21 19 15.2
VTS Vitosha 5.62 310 ePn Pn 21 18 17.6 -0.5
VTS Vitosha 5.62 310⇑iP Pn 21 18 20.4 +2.3
VTS eS Sn 21 19 15.2 -7.6
VTS Vitosha 5.62 310 ePn Pn 21 18 17.6 -0.5
VTS eSn Sn 21 19 15.2 -7.6
HARR Harsova 5.63 352⇓iP Pn 21 18 19.0 +0.9
HARR Harsova 5.63 352⇓iP Pn 21 18 19.0 +0.9
SULR 5.93 340⇑iP Pn 21 18 24.3 +2.1
SULR 5.93 340⇑iP Pn 21 18 24.3 +2.1
TLCR 6.07 359⇓iP Pn 21 18 24.5 +0.4
TLCR 6.07 359⇓iP Pn 21 18 24.5 +0.4
CFR Carcaliu 6.09 354⇑iP Pn 21 18 24.0 -0.5
CFR Carcaliu 6.09 354 P Pn 21 18 25.7 +1.2
CFR pmax pmax
comp=Z,25nm,0.6s
CFR Carcaliu 6.09 354⇑iP Pn 21 18 24.0 -0.5
FNA Florina 6.12 288 P Pn 21 18 27.5 +2.6
FNA Florina 6.12 288 P Pn 21 18 27.5 +2.6
ISR Istrita 6.28 344⇑iP Pn 21 18 28.7 +1.6
ISR Istrita 6.28 344⇑iP Pn 21 18 28.7 +1.6
SEV Sevastopol’ 6.43 31⇑eP Pn 21 18 27.4 -1.7
SEV eS Sn 21 19 38.1 -4.5
SEV pmax pmax
comp=Z,7.0nm,0.3s
SEV smax smax
comp=E,27nm,0.5s
SEV smax smax
comp=N,33nm,0.5s
SEV Sevastopol’ 6.43 31 eP Pn 21 18 27.4 -1.7
comp=N,7.0nm,0.3s
SEV eS Sn 21 19 38.1 -4.5
comp=N,33nm,0.5s
YAL Yalta 6.59 34 eP Pn 21 18 31.7 +0.4
YAL iS Sn 21 19 43.3 -3.2
YAL pmax pmax
comp=Z,27nm,0.2s
YAL smax smax
comp=E,31nm,0.4s
YAL smax smax
comp=N,16nm,0.3s
YAL Yalta 6.59 34 eP Pn 21 18 31.7 +0.4
comp=N,27nm,0.2s
YAL iS Sn 21 19 43.3 -3.2
comp=N,16nm,0.3s
BARS Barje 6.59 306 ePn Pn 21 18 32.4 +1.0
MLR Muntele Rosu 6.77 341 Pn Pn 21 18 35.5 +1.7
baz=199,slow=5.0
MLR Muntele Rosu 6.77 341⇓iP Pn 21 18 35.1 +1.2
MLR Muntele Rosu 6.77 341 ePn Pn 21 18 34.3 +0.4
MLR Muntele Rosu 6.77 341⇓iP Pn 21 18 35.1 +1.2
MLR Muntele Rosu 6.77 341 ePn Pn 21 18 34.3 +0.4
MTUR Matau 6.78 335⇓iP Pn 21 18 36.3 +2.2
MTUR Matau 6.78 335 P Pn 21 18 36.2 +2.2
MTUR Matau 6.78 335 P Pn 21 18 36.2 +2.2
ALU Alushta 6.85 34 eP Pn 21 18 38.1 +3.2
ALU eS Sn 21 19 52.1 -0.8
ALU pmax pmax
comp=N,91nm,0.4s
ALU smax smax
comp=E,20nm,0.4s
ALU Alushta 6.85 34 eP Pn 21 18 38.1 +3.2
ALU eS Sn 21 19 52.1 -0.8
ZAGS Zajecar 6.93 315 ePn Pn 21 18 36.9 +0.9
SIM Simferopol’ 6.95 31 eP Pn 21 18 35.9 -0.3
SIM eS Sn 21 19 51.0 -4.3
SIM pmax pmax
comp=Z,44nm,0.5s
SIM smax smax
comp=E,89nm,0.8s
SIM smax smax
comp=N,47µm,0.4s
SIM Simferopol’ 6.95 31 eP Pn 21 18 35.9 -0.3
comp=N,44nm,0.5s
SIM eS Sn 21 19 51.0 -4.3
comp=N,47µm,0.4s
PLOR Plostina 6.96 346⇓iP Pn 21 18 37.4 +1.0
PLOR Plostina 6.96 346 P Pn 21 18 37.4 +1.0
PLOR Plostina 6.96 346⇓iP Pn 21 18 37.4 +1.0
VOIR 6.97 336⇓iP Pn 21 18 38.5 +1.9
VOIR 6.97 336 P Pn 21 18 37.4 +0.8
VOIR pmax pmax
comp=Z,26nm,1.0s
VOIR 6.97 336 P Pn 21 18 37.4 +0.8
comp=Z,26nm,1.0s
ARR Arges 7.05 334⇑iP Pn 21 18 40.1 +2.4
ARR Arges 7.05 334⇑iP Pn 21 18 40.1 +2.4
BOLS Boljevac 7.10 314 ePn Pn 21 18 37.5 -0.8
BOVS Bovan 7.12 312 ePn Pn 21 18 39.4 +0.8
SELS Selova 7.24 307 ePn Pn 21 18 40.7 +0.4
SUDU Sudak 7.28 36 eP Pn 21 18 40.4 -0.3
SUDU eS Sn 21 20 00.5 -3.0
SUDU pmax pmax
comp=Z,5.0nm,0.2s
SUDU smax smax
comp=E,59nm,0.6s
SUDU smax smax
comp=N,47nm,0.7s
SUDU Sudak 7.28 36 eP Pn 21 18 40.4 -0.3
comp=N,5.0nm,0.2s
SUDU eS Sn 21 20 00.5 -3.0
comp=N,47nm,0.7s
DOPR Dopca 7.35 340⇓iP Pn 21 18 43.3 +1.5
DOPR Dopca 7.35 340⇓iP Pn 21 18 43.3 +1.5
LOT Lotru 7.43 330⇓iP Pn 21 18 44.3 +1.3
LOT Lotru 7.43 330⇓iP Pn 21 18 44.3 +1.3
TESR Tescani 7.59 347⇓iP Pn 21 18 45.1 0.0
TESR Tescani 7.59 347⇓iP Pn 21 18 45.1 0.0
GRUS Gruza 7.85 310 ePn Pn 21 18 48.8 +0.1
KIS Kishinev 7.88 359 e Pn 21 18 49.0 0.0
MMAI Mount Meron Ar 7.98 138 Pn Pn 21 18 50.0 -0.5
comp=N,8.8nm,0.3s,baz=320,slow=12,SNR=56
IVAS Ivanjica 8.03 307 ePn Pn 21 18 51.6 +0.5
PDG Podgorica 8.12 297⇑iP Pn 21 18 55.3 +2.9
TRUS Trudelj 8.23 311 ePn Pn 21 18 55.9 +2.1
DIVS Divibare 8.40 309 ePn Pn 21 18 57.6 +1.3
ANN Anapa 8.45 45 eP Pn 21 18 51.3 -5.5
ANN eS Sn 21 20 24.8 -7.4
ANN pmax pmax
comp=Z,9.0nm,0.9s
ANN Anapa 8.45 45 eP Pn 21 18 51.3 -5.5
comp=Z,9.0nm,0.9s
ANN eS Sn 21 20 24.8 -7.4
BZS Buzias 8.50 322⇓iP Pn 21 18 59.0 +1.5
BZS Buzias 8.50 322 P Pn 21 18 59.0 +1.5
BZS pmax pmax
comp=Z,11nm,0.7s
BZS Buzias 8.50 322⇓iP Pn 21 18 59.0 +1.5
BURAR Bucovina Array 8.94 343⇓iP Pn 21 19 04.9 +1.3
BURAR Bucovina Array 8.94 343 P Pn 21 19 04.9 +1.3
BURAR Bucovina Array 8.94 343⇓iP Pn 21 19 04.9 +1.3
BUR08 Bucovina Ar. S 8.97 343 ePn Pn 21 19 05.1 +1.1
BUR08 Bucovina Ar. S 8.97 343 ePn Pn 21 19 05.0 +1.1
SORM Soroca 9.03 357⇓iP Pn 21 19 04.0 -0.8
SORM Soroca 9.03 357 P Pn 21 19 03.9 -0.8
SORM Soroca 9.03 357⇓iP Pn 21 19 04.0 -0.8
ASF Jabal al Asfar 9.43 135 Pn Pn 21 19 13.2 +2.8
comp=Z,0.5nm,0.3s,baz=259,slow=11,SNR=6.8
TIP Timpagrande 9.54 274 ePn Pn 21 19 12.1 +0.2
TIP Timpagrande 9.54 274 ePn Pn 21 19 12.1 +0.2
CUC Castrocucco 10.25 279 ePn Pn 21 19 24.1 +2.6
CUC Castrocucco 10.25 279 ePn Pn 21 19 24.1 +2.6
EIL Elat 10.61 151 Pn Pn 21 19 23.1 -3.5
comp=Z,0.9nm,0.3s,baz=334,slow=6.8,SNR=8.7
EIL Sn Sn 21 21 20.2 -5.4
comp=Z,1.0nm,0.3s,baz=60,slow=13,SNR=6.5
NEY Neytrino 11.11 64⇑eP Pn 21 19 35.8 +2.4
NEY pmax pmax
comp=Z,2.0nm,1.4s
NEY Neytrino 11.11 64 eP Pn 21 19 35.8 +2.4
comp=Z,2.0nm,1.4s
LVV L’vov 11.28 343 eP Pn 21 19 36.1 +0.6
LVV L’vov 11.28 343 eP Pn 21 19 36.1 +0.6
AK11 Malin Array Si 11.56 0 ePn Pn 21 19 38.7 -0.7
AK11 Malin Array Si 11.56 0 ePn Pn 21 19 38.7 -0.7
KIEV Kiev 11.58 1 eP Pn 21 19 38.3 -1.3
KIEV Kiev 11.58 1 ePn Pn 21 19 38.3 -1.3
KIEV Kiev 11.58 1 ePn Pn 21 19 38.3 -1.3
AKASG Malin Array Be 11.58 1 Pn Pn 21 19 38.5 -1.2
comp=Z,1.1nm,0.3s,baz=190,slow=11,SNR=9.1
AKASG Sn Sn 21 21 56.5 +7.4
comp=Z,0.8nm,0.3s,baz=184,slow=25,SNR=4.9
AKBB Malin Array Si 11.58 1 eP Pn 21 19 39.0 -0.7
AKBB Malin Array Si 11.58 1 ePn Pn 21 19 39.0 -0.7
AKBB Malin Array Si 11.58 1 ePn Pn 21 19 39.0 -0.7
ARSA Arzberg 12.77 314 iPn Pn 21 19 57.8 +1.8
comp=Z,0.5nm,0.3s
ARSA Arzberg 12.77 314 Pn Pn 21 19 57.8 +1.8
comp=Z,0.5nm,0.3s
OJC Ojcow 12.89 332 eP Pn 21 19 54.4 -3.1
OJC Ojcow 12.89 332 eP Pn 21 19 54.4 -3.1
OBKA Obir 12.94 309 iPn Pn 21 20 01.5 +3.2
comp=Z,0.5nm,0.1s
CONA Conrad Observa 12.98 317 iPn Pn 21 20 01.9 +2.9
comp=Z,0.9nm,0.4s
MORC Moravsky Berou 13.43 326 eP P 21 20 11.4 -3.1
MORC Moravsky Berou 13.43 326 eP P 21 20 11.4 -3.1
MORC Moravsky Berou 13.43 326 ePn P 21 20 11.4 -3.1
MYKA Terra Mystica 13.54 309 iPn Pn 21 20 08.9 +2.3
comp=Z,0.8nm,0.4s
MYKA Terra Mystica 13.54 309 Pn Pn 21 20 08.9 +2.3
comp=Z,0.8nm,0.4s
MOA Molln 13.81 314 iPn Pn 21 20 11.0 +0.9
comp=Z,0.3nm,0.2s
MOA Molln 13.81 314 Pn Pn 21 20 11.0 +0.9
comp=Z,0.3nm,0.2s
VSR Storozhevoye 14.03 27 eP Pn 21 20 14.6 +1.5
VSR pmax pmax
comp=Z,8.0nm,0.6s
VSR Storozhevoye 14.03 27 eP Pn 21 20 14.6 +1.5
comp=Z,8.0nm,0.6s
ABTA Abfaltersbach 14.29 308 iPn Pn 21 20 16.4 -0.4
comp=Z,7.4nm,1.2s
ABTA Abfaltersbach 14.29 308 Pn Pn 21 20 16.4 -0.4
comp=Z,7.4nm,1.2s
GERES GERESS Array B 14.68 316 Pn Pn 21 20 22.4 +0.1
comp=Z,0.1nm,0.3s,baz=122,slow=14,SNR=4.3
VRH Novokhopyorsk 15.01 32 eP Pn 21 20 25.6 -0.8
VRH pmax pmax
comp=Z,8.0nm,0.6s
VRH Novokhopyorsk 15.01 32 eP Pn 21 20 25.6 -0.8
comp=Z,8.0nm,0.6s
WTTA Wattenberg 15.05 308 iPn P 21 20 31.8 -0.9
comp=Z,4.6nm,0.8s
WATA Walderalm 15.12 309 iP Pn 21 20 29.3 +1.1
comp=Z,4.7nm,0.5s
WATA Walderalm 15.12 309 Pn Pn 21 20 29.3 +1.1
comp=Z,4.7nm,0.5s
MOTA Moosalm 15.41 308 iP Pn 21 20 32.8 +0.7
comp=Z,4.3nm,1.0s
MOTA Moosalm 15.41 308 Pn Pn 21 20 32.8 +0.7
comp=Z,4.3nm,1.0s
SUW Suwalki 15.42 347 eP P 21 20 38.4 +1.9
SUW Suwalki 15.42 347 P P 21 20 39.5 +3.0
SUW Suwalki 15.42 347 eP P 21 20 38.4 +1.9
RETA Reutte 15.69 308 iP Pn 21 20 37.1 +1.6
comp=Z,12nm,1.5s
RETA Reutte 15.69 308 Pn Pn 21 20 37.1 +1.6
comp=Z,12nm,1.5s
DAVA Damuels 16.15 307 iPn P 21 20 44.0 -0.8
comp=Z,10nm,1.0s
DAVA Damuels 16.15 307 Pn P 21 20 44.0 -0.8
comp=Z,10nm,1.0s
OBN Obninsk 16.79 15 Pn P 21 20 50.6 -0.9
comp=Z,1.6nm,0.3s,baz=205,slow=17,SNR=3.1
OBN Obninsk 16.79 15⇓eP Pn 21 20 47.9 -1.5
OBN pmax pmax
comp=Z,19nm,1.2s
OBN Obninsk 16.79 15 ePn P 21 20 50.7 -0.9
comp=Z,21nm,1.2s
OBN Obninsk 16.79 15 ePn P 21 20 50.6 -0.9
comp=Z,21nm,1.2s
SBF Sospel 16.85 293 eP P 21 20 52.8 +0.3
SBF pmax pmax
comp=Z,22nm,0.9s
SBF Sospel 16.85 293 eP P 21 20 52.8 +0.3
comp=Z,22nm,0.9s
BFO Black Forest 17.53 308 eP P 21 21 00.2 +0.3
BFO pmax pmax
comp=Z,10.0nm,1.1s
BFO Black Forest 17.53 308 eP P 21 21 00.2 +0.3
comp=Z,10nm,1.1s
BFO Black Forest 17.53 308 eP P 21 21 00.2 +0.3
comp=Z,10nm,1.1s
MOS Moscow 17.59 16 eP P 21 21 01.2 +0.7
MOS Moscow 17.59 16 eP P 21 21 01.2 +0.7
CDF Champ du Feu 18.20 308 eP P 21 21 10.0 +2.5
CDF pmax pmax
comp=Z,8.0nm,1.1s
CDF Champ du Feu 18.20 308 eP P 21 21 10.0 +2.5
comp=Z,8.0nm,1.1s
VSU Vasula 19.42 356⇓eP Pn 21 21 21.4 -0.3
VSU pmax pmax
comp=Z,65nm,0.9s
VSU Vasula 19.42 356 eP Pn 21 21 21.4 -0.3
comp=Z,65nm,0.9s
AVF Avril sur Loir 20.24 301 eP P 21 21 29.5 -0.2
AVF pmax pmax
comp=Z,21nm,1.3s
AVF Avril sur Loir 20.24 301 eP P 21 21 29.5 -0.2
comp=Z,21nm,1.3s
BGF Bois d’Agland 20.53 300 eP Pn 21 21 34.3 -0.7
BGF pmax pmax
comp=Z,7.0nm,0.9s
BGF Bois d’Agland 20.53 300 eP Pn 21 21 34.3 -0.7
comp=Z,7.0nm,0.9s
CAF Calviac 20.81 295 eP Pn 21 21 39.6 +1.3
CAF pmax pmax
comp=Z,18nm,1.3s
CAF Calviac 20.81 295 eP Pn 21 21 39.6 +1.3
comp=Z,18nm,1.3s
FIA0 FINESS Array S 22.43 356 eP P 21 21 53.1 +0.1
FIA0 FINESS Array S 22.43 356 eP P 21 21 53.1 +0.1
FIA0 FINESS Array S 22.43 356 eP P 21 21 53.1 +0.1
FINES FINESS Array B 22.43 356 P P 21 21 53.1 +0.1
comp=Z,4.6nm,0.7s,baz=152,slow=13,SNR=9.5
KLMR Klimovskoe 22.72 13 eP P 21 21 53.0 -3.2
KLMR pmax pmax
comp=Z,36nm,1.3s
GEYT Alibeck 22.75 84 P P 21 21 56.8 0.0
comp=Z,10nm,0.8s,baz=289,slow=9.2,SNR=15
HFS Hagfors 23.15 340 P P 21 22 02.3 +1.7
comp=Z,7.0nm,1.0s,baz=155,slow=14,SNR=5.9
AKTK Aktyubinsk 23.33 51 P P 21 22 02.2 -0.4
AKTO Aktyubinsk 23.33 51 P P 21 22 02.2 -0.4
comp=Z,7.4nm,0.9s,baz=258,slow=13,SNR=9.4
GRR Gorron 23.37 303 eP P 21 22 02.1 -0.9
GRR pmax pmax
comp=Z,41nm,1.3s
GRR Gorron 23.37 303 eP P 21 22 02.1 -0.9
comp=Z,41nm,1.3s
ABKAR Akbulak array 24.21 55 eP P 21 22 12.9 +1.8
comp=Z,29nm,0.8s
ABKAR Akbulak array 24.21 55 eP P 21 22 12.9 +1.8
comp=Z,29nm,0.8s
NAO01 NORSAR Array S 24.51 338 eP P 21 22 15.9 +2.1
NAO01 NORSAR Array S 24.51 338 eP P 21 22 15.9 +2.1
NB2 NORSAR Subarra 24.58 339 P P 21 22 13.9 -0.5
comp=Z,9.6nm,1.1s,baz=143,slow=10
NB2 NORSAR Subarra 24.58 339 P P 21 22 13.9 -0.5
comp=Z,9.6nm,1.1s,SNR=9.4
NB200 NORSAR Array S 24.58 339 eP P 21 22 13.2 -1.2
NB200 NORSAR Array S 24.58 339 eP P 21 22 13.2 -1.2
NOA NORSAR Array B 24.58 339 P P 21 22 13.2 -1.2
comp=Z,5.2nm,0.9s,baz=143,slow=9.3,SNR=10
ESDC Sonseca Array 25.43 282 P P 21 22 22.9 +0.6
comp=Z,1.2nm,0.9s,baz=93,slow=12,SNR=3.8
ARU Arti 26.04 39 P P 21 22 28.0 +0.4
comp=Z,5.6nm,0.7s,baz=239,slow=6.5,SNR=14
ARU Arti 26.04 39 d iP P 21 22 30.4 +2.8
ARU 21 23 10.4
ARU 21 25 54.6
ARU SS 21 28 07.8
ARU pmax pmax
comp=Z,24nm,1.7s
ARU Arti 26.04 39 eP P 21 22 27.4 -0.2
comp=Z,11nm,0.9s
ARU Arti 26.04 39 PcP PcP 21 25 54.6 -0.7
ARU Arti 26.04 39 eP P 21 22 27.4 -0.2
comp=Z,11nm,0.9s
EKA Eskdalemuir Ar 26.89 318 P P 21 22 36.0 +0.7
comp=Z,2.2nm,0.8s,baz=112,slow=12,SNR=4.7
ARCES ARCESS Array B 30.54 358 P P 21 23 09.6 +1.9
comp=Z,1.9nm,0.7s,baz=173,slow=11,SNR=5.6
BRVK Borovoye 31.35 50⇑iP P 21 23 14.2 -0.7
BRVK pmax pmax
comp=Z,9.0nm,1.7s
BRVK Borovoye 31.35 50 iP P 21 23 14.2 -0.7
comp=Z,9.0nm,1.7s

AAK	**Ala-Archa**	**34.24**	**69**	*e*P		**P**	**21 23 40.6**	**+0.1**
AAK					pmax	pmax		
	comp=Z,10.0nm,1.0s							
AAK	**Ala-Archa**	**34.24**	**69**	*e*P		**P**	**21 23 40.6**	**+0.1**
	comp=Z,10.0nm,1.0s							
FRU	**Bishkek**	**34.29**	**69**	*e*P		**P**	**21 23 41.0**	**+0.1**
FRU	**Bishkek**	**34.29**	**69**	*e*P		**P**	**21 23 41.0**	**+0.1**
TOA1	**Torodi Ar. Sit**	**35.40**	**231**	*e*P		**P**	**21 23 50.5**	**-0.1**
	comp=Z,2.5nm,0.8s							
TOA1	**Torodi Ar. Sit**	**35.40**	**231**	*e*P		**P**	**21 23 50.5**	**-0.1**
	comp=Z,2.5nm,0.8s							
TOA0	**Torodi Ar. Sit**	**35.40**	**231**	*e*P		**P**	**21 23 50.5**	**-0.1**
TOA0	**Torodi Ar. Sit**	**35.40**	**231**	*e*P		**P**	**21 23 50.5**	**-0.1**
TORD	**Torodi Ar. Bea**	**35.40**	**231**	P		**P**	**21 23 50.5**	**-0.1**
	comp=Z,1.9nm,0.8s,baz=38,slow=9.3,SNR=16							
KURBB	**Kurchatov Arra**	**36.27**	**55**	P		**P**	**21 23 57.3**	**-0.4**
	comp=Z,0.9nm,0.6s,baz=276,slow=9.0,SNR=8.5							
KURBB					PcP	**PcP**	**21 26 21.4**	**-1.1**
	comp=Z,0.5nm,0.8s,baz=269,slow=3.9,SNR=4.1							
KURK	**Kurchatov**	**36.33**	**55**	*e*P		**P**	**21 23 57.3**	**-0.9**
KURK				*e*			21 26 21.5	
KURK	**Kurchatov**	**36.33**	**55**	*e*P		**P**	**21 23 57.3**	**-0.9**
KURK	**Kurchatov**	**36.33**	**55**	*e*P		**P**	**21 23 57.3**	**-0.9**
KURK				*e*PcP		**PcP**	**21 26 21.4**	**-1.3**
MK32	**Makanchi Array**	**39.08**	**61**	*e*P		**P**	**21 24 21.5**	**-0.1**
MK32	**Makanchi Array**	**39.08**	**61**	*e*P		**P**	**21 24 21.5**	**-0.1**
MKAR	**Makanchi Array**	**39.08**	**61**	P		**P**	**21 24 21.5**	**-0.1**
	comp=Z,2.3nm,0.8s,baz=282,slow=6.1,SNR=9.1							
MK01	**Makanchi Array**	**39.09**	**61**	*e*P		**P**	**21 24 21.6**	**-0.1**
MK01	**Makanchi Array**	**39.09**	**61**	*e*P		**P**	**21 24 21.6**	**-0.1**
NVS	**Novosibirsk**	**39.12**	**48**	*e*P		**P**	**21 24 21.7**	**-0.1**
NVS	**Novosibirsk**	**39.12**	**48**	*e*P		**P**	**21 24 21.7**	**-0.1**
ZAA0	**Zalesovo Array**	**40.06**	**49**	*e*P		**P**	**21 24 29.3**	**-0.3**
ZAA0	**Zalesovo Array**	**40.06**	**49**	*e*P		**P**	**21 24 29.3**	**-0.3**
ZAA1	**Zalesovo Array**	**40.06**	**49**	*e*P		**P**	**21 24 29.1**	**-0.5**
ZAA1	**Zalesovo Array**	**40.06**	**49**	*e*P		**P**	**21 24 29.1**	**-0.5**
ZALV	**Zalesovo Beam**	**40.06**	**49**	P		**P**	**21 24 29.1**	**-0.5**
	comp=Z,1.7nm,0.6s,baz=270,slow=8.9,SNR=8.8							
DBIC	**Dimbokro**	**44.44**	**232**	P		**P**	**21 25 05.6**	**-0.2**
	comp=Z,3.5nm,0.9s,baz=86,slow=5.4,SNR=3.0							
DBIC	**Dimbokro**	**44.44**	**232**	*e*P		**P**	**21 25 05.6**	**-0.2**
DBIC					pmax	pmax		
	comp=Z,12nm,1.2s							
DBIC	**Dimbokro**	**44.44**	**232**	*e*P		**P**	**21 25 05.6**	**-0.2**
	comp=Z,12nm,1.2s							
DBIC	**Dimbokro**	**44.44**	**232**	*e*P		**P**	**21 25 05.6**	**-0.2**
	comp=Z,12nm,1.2s							
TLY	**Talaya**	**51.66**	**50**	*e*P		**P**	**21 26 02.5**	**+1.2**
TLY					pmax	pmax		
	comp=Z,7.0nm,1.3s							
TLY	**Talaya**	**51.66**	**50**	*e*P		**P**	**21 26 02.5**	**+1.2**
	comp=Z,7.0nm,1.3s							
ZAK	**Zakamensk**	**51.83**	**52**	*e*P		**P**	**21 26 02.8**	**+0.1**
ZAK					pmax	pmax		
	comp=Z,3.0nm,1.6s							
ZAK	**Zakamensk**	**51.83**	**52**	*e*P		**P**	**21 26 02.8**	**+0.1**
	comp=Z,3.0nm,1.6s							
SONA0	**Songino Array**	**54.62**	**54**	*e*P		**P**	**21 26 22.9**	**-0.3**
	comp=Z,2.6nm,0.8s							
SONA0	**Songino Array**	**54.62**	**54**	*e*P		**P**	**21 26 22.9**	**-0.3**
	comp=Z,2.6nm,0.8s							
SONM	**Songino Array**	**54.62**	**54**	P		**P**	**21 26 22.9**	**-0.3**
	comp=Z,1.5nm,0.7s,baz=285,slow=6.5,SNR=11							
CM31	**Chiang Mai Arr**	**63.17**	**87**	*e*P		**P**	**21 27 21.4**	**-1.5**
CM31	**Chiang Mai Arr**	**63.17**	**87**	*e*P		**P**	**21 27 21.4**	**-1.5**
CMAR	**Chiang Mai Arr**	**63.17**	**87**	P		**P**	**21 27 21.4**	**-1.5**
	comp=Z,1.3nm,0.5s,baz=297,slow=6.3,SNR=5.4							
CMAR	**Chiang Mai Arr**	**63.17**	**87**	*ce*P		**P**	**21 27 22.7**	**-0.2**
CMAR					pmax	pmax		
	comp=Z,1.0nm,0.5s							
CMAR	**Chiang Mai Arr**	**63.17**	**87**	*e*P		**P**	**21 27 22.7**	**-0.2**
	comp=Z,1.0nm,0.5s							
BOSA	**Boshof**	**67.47**	**184**	P		**P**	**21 27 50.6**	**+0.1**
	comp=Z,2.3nm,0.7s,baz=5.4,slow=4.8,SNR=4.4							
BILL	**Bilibino**	**68.44**	**16**	*e*P		**P**	**21 27 55.4**	**-0.7**
BILL					pmax	pmax		
	comp=Z,3.0nm,1.1s							
BILL	**Bilibino**	**68.44**	**16**	*e*P		**P**	**21 27 55.4**	**-0.7**
	comp=Z,3.0nm,1.1s							
KLR	**Kul'dur**	**68.76**	**43**	P		**P**	**21 27 57.9**	**-0.5**
	comp=Z,0.6nm,0.5s,baz=321,slow=4.5,SNR=3.8							
KS15	**Wonju Array Si**	**73.43**	**55**	*e*P		**P**	**21 28 26.3**	**-0.6**
KS15	**Wonju Array Si**	**73.43**	**55**	*e*P		**P**	**21 28 26.3**	**-0.6**
KSAR	**Wonju Array Be**	**73.43**	**55**	P		**P**	**21 28 26.3**	**-0.6**
KSAR	**Wonju Array Be**	**73.43**	**55**	P		**P**	**21 28 26.3**	**-0.6**
KSAR	**Wonju Array Be**	**73.43**	**55**	P		**P**	**21 28 26.3**	**-0.6**
KSRS	**Korea Array**	**73.45**	**55**	P		**P**	**21 28 26.3**	**-0.7**
	comp=Z,4.6nm,0.8s,baz=308,slow=5.5,SNR=8.0							
ILAR	**Eielson Array**	**76.40**	**358**	P		**P**	**21 28 44.5**	**+0.9**
	comp=Z,0.2nm,0.5s,baz=358,slow=3.0,SNR=2.9							
ILB	**Eielson Array**	**76.40**	**358**	*e*P		**P**	**21 28 44.5**	**+0.9**
ILB	**Eielson Array**	**76.40**	**358**	*e*P		**P**	**21 28 44.5**	**+0.9**

*ISK **19** 21:20:34.7, 39.°15N×29.°01E, h6km, MD2.6*
*ISCJB **19** 21:20:35.7±0.5, 39.°13N±0.°04×29.°05E±0.°05, h14km±5km, Error ellipse: s-maj=7.3km s-min=4.7km az=140.0*
*CSEM **19** 21:20:35.4±0.2, 39.°14N×29.°03E, h10km, ML2.6, Error ellipse: s-maj=4.4km s-min=3.4km az=146.0*
*DDA **19** 21:20:36.0, 39.°11N×29.°04E, h7km, Ml2.6*
ISC 19 21:20:35.4±1.0, **39.°14N**±0.°03×**29.°02E**±0.°03, **h13**km±11km, **n19**, σ0**52**/30, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**248**	*i* P	**Pb**	**21 20 42.2**	**+0.2**
DEMI				*i* S	**Sb**	**21 20 46.1**	**-0.3**
DEMI	**Demirci**	**0.26**	**248**	P	**Pb**	**21 20 42.2**	**+0.2**
DEMI				S	**Sb**	**21 20 46.1**	**-0.3**
GEDZ	**Gediz**	**0.32**	**108**	*e*PG	**Pg**	**21 20 41.0**	**-0.9**
GEDZ				*e*SG	**Sb**	**21 20 47.2**	**-0.9**
GEDZ	**Gediz**	**0.32**	**108**	*e*Pg	**Pg**	**21 20 41.0**	**-0.9**
GEDZ				*e*Sg	**Sb**	**21 20 47.2**	**-0.9**
GDZ	**Gediz**	**0.36**	**98**	*i* P	**Pg**	**21 20 43.2**	**+0.5**
GDZ				*i* S	**Sg**	**21 20 48.2**	**+0.6**
GDZ	**Gediz**	**0.36**	**98**	P	**Pg**	**21 20 43.2**	**+0.5**
GDZ				S	**Sg**	**21 20 48.2**	**+0.6**
TVSB	**Tavsanli**	**0.46**	**48**	*e*PG	**Pg**	**21 20 44.2**	**-0.3**
TVSB				*e*SG	**Sg**	**21 20 50.9**	**+0.2**
TVSB	**Tavsanli**	**0.46**	**48**	*e*Pg	**Pg**	**21 20 44.2**	**-0.3**
TVSB				*e*Sg	**Sg**	**21 20 50.9**	**+0.2**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*PG	**Pg**	**21 20 48.5**	**-0.3**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*Pg	**Pg**	**21 20 48.5**	**-0.3**
MANT	**Manisa**	**0.74**	**209**	*i* P	**Pg**	**21 20 49.7**	**-0.2**
MANT				*i* S	**Sg**	**21 20 59.7**	**+0.1**
MANT	**Manisa**	**0.74**	**209**	P	**Pg**	**21 20 49.7**	**-0.2**
MANT				S	**Sg**	**21 20 59.7**	**+0.1**
IGD	**Bursa**	**1.13**	**7**	*i* P	**Pb**	**21 20 57.5**	**+0.6**
IGD				*i* S	**Sg**	**21 21 11.4**	**-0.5**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pb**	**21 20 58.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pb**	**21 20 58.3**	**-0.3**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*PN	**Pn**	**21 21 00.9**	**+0.6**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*Pn	**Pn**	**21 21 00.9**	**+0.6**
ARMT	**Armutlu**	**1.43**	**355**	*e*PN	**Pn**	**21 21 01.4**	**+0.4**
ARMT	**Armutlu**	**1.43**	**355**	*e*Pn	**Pn**	**21 21 01.5**	**+0.4**

*ISCJB **19** 21:21:05.0±0.7, 39.°10N±0.°05×29.°06E±0.°06, h25km±9km, Error ellipse: s-maj=10.4km s-min=5.2km az=139.3*
*ISK **19** 21:21:04.0, 39.°15N×28.°95E, h10km, MD2.4*
*CSEM **19** 21:21:04.8±0.3, 39.°13N×29.°00E, h10km, ML2.6, Error ellipse: s-maj=7.8km s-min=5.1km az=134.0*
*DDA **19** 21:21:05.8, 39.°06N×29.°07E, h7km, Ml2.6*
ISC 19 21:21:04.9±1.1, **39.°10N**±0.°04×**29.°07E**±0.°04, **h27**km±9km, **n16**, σ0**55**/26, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.27**	**101**	*e*PG	**Pb**	**21 21 12.2**	**+0.4**
GEDZ	**Gediz**	**0.27**	**101**	*e*Pg	**Pb**	**21 21 12.2**	**+0.4**
DEMI	**Demirci**	**0.28**	**259**	*i* P	**Pb**	**21 21 12.0**	**+0.2**
DEMI				*i* S	**Sb**	**21 21 16.0**	**-0.6**
DEMI	**Demirci**	**0.28**	**259**	P	**Pb**	**21 21 12.0**	**+0.2**
DEMI				S	**Sb**	**21 21 16.0**	**-0.6**
GDZ	**Gediz**	**0.32**	**91**	*i* P	**Pb**	**21 21 12.5**	**-0.1**
GDZ				*i* S	**Sb**	**21 21 17.1**	**-0.6**
GDZ	**Gediz**	**0.32**	**91**	P	**Pb**	**21 21 12.5**	**-0.1**
GDZ				S	**Sb**	**21 21 17.1**	**-0.6**
TVSB	**Tavsanli**	**0.47**	**41**	*e*PG	**Pb**	**21 21 14.2**	**-0.5**
TVSB				*e*SG	**Sb**	**21 21 21.0**	**-0.4**
TVSB	**Tavsanli**	**0.47**	**41**	*e*Pg	**Pb**	**21 21 14.2**	**-0.5**
TVSB				*e*Sg	**Sb**	**21 21 21.0**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*PG	**Pb**	**21 21 17.2**	**-0.7**
KULA				*e*SG	**Sb**	**21 21 27.2**	**+0.4**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*Pg	**Pb**	**21 21 17.2**	**-0.7**
KULA				*e*Sg	**Sb**	**21 21 27.2**	**+0.4**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pb**	**21 21 18.5**	**-0.6**
MANT				*i* S	**Sb**	**21 21 28.4**	**-0.3**
MANT	**Manisa**	**0.72**	**213**	P	**Pb**	**21 21 18.5**	**-0.6**
MANT				S	**Sb**	**21 21 28.4**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pn**	**21 21 27.5**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pn**	**21 21 27.5**	**+0.6**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pn**	**21 21 27.7**	**+0.6**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pn**	**21 21 27.7**	**+0.6**

*ISCJB **19** 21:21:50.5±0.8, 51.°46N±0.°04×16.°14E±0.°04, h0km, Error ellipse: s-maj=5.4km s-min=3.1km az=16.5*
*WAR **19** 21:21:52.4, 51.°50N×16.°13E, h1km, Mw2.4*
*VIE **19** 21:21:52.1±0.7, 51.°29N×15.°93E, h0km, mb2.5/1, ML2.3/6, Error ellipse: s-maj=5.9km s-min=3.7km az=165.0, Suspected Mining induced.*
*CSEM **19** 21:21:52.3±0.4, 51.°44N×16.°15E, h2km, ML2.9/13, Error ellipse: s-maj=6.4km s-min=4.0km az=4.0*
*PRU **19** 21:21:53.0, 51.°46N×16.°13E, h0km*
ISC 19 21:21:53.0±1.1, **51.°40N**±0.°05×**16.°15E**±0.°02, **h0**km, **n33**, σ0**80**/64, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.56**	**171**	*e*Pg	**Pb**	**21 22 04.9**	**-0.7**
KSP				*e*Sg	**Sb**	**21 22 14.2**	**0.0**
KSP	**Ksiaz**	**0.56**	**171**	*e*Pg	**Pb**	**21 22 04.9**	**-0.7**
KSP				*e*Sg	**Sb**	**21 22 14.2**	**0.0**
UPC	**Upice**	**0.89**	**186**	*e*PG	**Pb**	**21 22 11.1**	**-0.2**
UPC				*e*SG	**Sb**	**21 22 24.3**	**+0.5**
	comp=Z,43nm,0.2s						
UPC	**Upice**	**0.89**	**186**	Pg	**Pb**	**21 22 11.1**	**-0.2**
UPC				Sg	**Sb**	**21 22 24.3**	**+0.5**
	43nm,0.2s						
DPC	**Dobruska-Polom**	**1.05**	**174**	*i* PG	**Pb**	**21 22 13.9**	**-0.2**
DPC				*e*SG	**Sb**	**21 22 29.1**	**+0.7**
	comp=Z,19nm,0.3s						
DPC	**Dobruska-Polom**	**1.05**	**174**	Pg	**Pb**	**21 22 13.9**	**-0.2**
DPC				Sg	**Sb**	**21 22 29.1**	**+0.7**
	19nm,0.3s						
PVCC	**Panska Ves**	**1.32**	**230**	*e*PG	**Pb**	**21 22 18.6**	**-0.1**
PVCC				*e*SG	**Sn**	**21 22 37.4**	**+0.4**
	comp=Z,59nm,0.4s						
PVCC	**Panska Ves**	**1.32**	**230**	Pg	**Pb**	**21 22 18.6**	**-0.1**
PVCC				Sg	**Sn**	**21 22 37.4**	**+0.4**
	59nm,0.4s						
KRLC	**Kraliky**	**1.38**	**163**	*e*PG	**Pg**	**21 22 19.3**	**-0.1**
KRLC				*e*SG	**Sn**	**21 22 38.9**	**+0.4**
KRLC	**Kraliky**	**1.38**	**163**	Pg	**Pg**	**21 22 19.3**	**-0.1**
KRLC				Sg	**Sn**	**21 22 38.9**	**+0.4**
BRG	**Berggiesshubel**	**1.49**	**250**	PN	**Pn**	**21 22 19.6**	**-1.3**
BRG				PG	**Pg**	**21 22 21.1**	**-0.4**
BRG				SG	**Sn**	**21 22 41.5**	**+0.4**
	28nm,0.5s						
GOPC	**GO Pecny, Ondr**	**1.72**	**211**	*e*PN	**Pn**	**21 22 24.1**	**-0.1**
GOPC				*e*PG	**Pg**	**21 22 26.1**	**+0.2**
GOPC				*e*SG	**Sg**	**21 22 48.8**	**+0.7**
	comp=Z,8.3nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.72**	**211**	Pn	**Pn**	**21 22 24.1**	**-0.1**
PRU	**Pruhonice**	**1.74**	**217**	*e*PG	**Pb**	**21 22 25.3**	**-0.5**
PRU				*e*SG	**Sg**	**21 22 49.6**	**+0.7**
	comp=Z,26nm,0.4s						
PRU	**Pruhonice**	**1.74**	**217**	Pg	**Pb**	**21 22 25.3**	**-0.5**
PRU				Sg	**Sg**	**21 22 49.6**	**+0.7**
	26nm,0.4s						
MORC	**Moravsky Berou**	**1.85**	**151**	*e*Pn	**Pn**	**21 22 25.4**	**-0.5**
MORC				*e*Sg	**Sg**	**21 22 53.0**	**+0.7**
CLL	**Collm**	**1.98**	**269**	*e*Pg	**Pn**	**21 22 28.0**	**+0.3**
CLL				*i*		21 22 32.4	
CLL				*i*		21 22 34.1	
CLL				*e*Sg	**Sb**	**21 22 55.0**	**+0.1**
	comp=Z,7.0nm,0.4s						
OKC	**Ostrava-Krasne**	**2.01**	**140**	*e*PG	**Pb**	**21 22 30.6**	**+0.2**
OKC				*e*SG	**Sg**	**21 22 57.7**	**+0.1**
	comp=Z,9.6nm,0.4s						
OKC	**Ostrava-Krasne**	**2.01**	**140**	Pg	**Pb**	**21 22 30.6**	**+0.2**
OKC				Sg	**Sg**	**21 22 57.7**	**+0.1**
	comp=Z,9.6nm,0.4s						
VRAC	**Vranov**	**2.11**	**172**	*e*Pn	**Pn**	**21 22 29.7**	**+0.2**
VRAC				*e*Sg	**Sg**	**21 23 01.5**	**+0.8**
TREC	**Trest**	**2.15**	**192**	*e*SG	**Sg**	**21 23 03.3**	**+1.5**
	comp=Z,12nm,0.2s						
TREC	**Trest**	**2.15**	**192**	Sg	**Sg**	**21 23 03.3**	**+1.5**
	comp=Z,12nm,0.2s						
OJC	**Ojcow**	**2.60**	**116**	*e*Pg	**Pg**	**21 22 42.2**	**-0.5**
OJC				*e*Sg	**Sg**	**21 23 17.1**	**+0.8**
OJC	**Ojcow**	**2.60**	**116**	*e*Pg	**Pg**	**21 22 42.2**	**-0.5**
OJC				*e*Sg	**Sg**	**21 23 17.1**	**+0.8**
OJC	**Ojcow**	**2.60**	**116**	*e*Pg	**Pg**	**21 22 42.2**	**-0.5**
OJC				*e*Sg	**Sg**	**21 23 17.1**	**+0.8**
NKC	**Novy Kostel**	**2.62**	**245**	*e*PN	**Pn**	**21 22 36.3**	**-0.3**
NKC				*e*PG	**Pg**	**21 22 43.4**	**+0.2**
NKC				*e*SG	**Sg**	**21 23 16.9**	**-0.2**
	comp=Z,16nm,0.3s						
NKC	**Novy Kostel**	**2.62**	**245**	Pn	**Pn**	**21 22 36.3**	**-0.3**
KHC	**Kasperske Hory**	**2.80**	**217**	*e*PN	**Pn**	**21 22 39.2**	**+0.1**
KHC				*e*PG	**Pb**	**21 22 45.0**	**+1.1**
KHC				*e*SN	**Sn**	**21 23 13.2**	**-0.4**
KHC				*e*SG	**Sg**	**21 23 23.0**	**0.0**
	comp=Z,5.2nm,0.4s						
KHC	**Kasperske Hory**	**2.80**	**217**	Pn	**Pn**	**21 22 39.2**	**+0.1**
CONA	**Conrad Observa**	**3.48**	**183**	Pg	**Pb**	**21 22 56.7**	**+1.3**
CONA				Sg	**Sg**	**21 23 42.9**	**-1.7**
	comp=Z,0.7nm,0.2s						
MOA	**Molln**	**3.75**	**200**	Pn	**Pn**	**21 22 48.5**	**-3.6**
	comp=Z,0.1nm,0.1s						
MOA				Sg	**Sg**	**21 23 51.8**	**-1.7**
	comp=Z,0.5nm,0.1s						
ARSA	**Arzberg**	**4.17**	**186**	Sg	**Sg**	**21 24 06.2**	**-0.6**
	comp=Z,0.2nm,0.1s						
KBA	**Koelnbreinsper**	**4.70**	**204**	Sg	**Sg**	**21 24 23.8**	**+0.1**
	comp=Z,0.1nm,0.1s						

*ISCJB **19** 21:24:46.9±0.5, 39.°08N±0.°04×29.°07E±0.°04, h8km±6km, Error ellipse: s-maj=6.8km s-min=4.3km az=147.3*
*ISK **19** 21:24:46.8, 39.°13N×29.°08E, h5km, MD2.7*
*DDA **19** 21:24:47.0, 39.°10N×29.°09E, h7km, Ml2.7*
*CSEM **19** 21:24:47.1±0.1, 39.°10N×29.°06E, h8km, MD2.7, Error ellipse: s-maj=3.7km s-min=2.8km az=132.0*
ISC 19 21:24:47.2±0.9, **39.°10N**±0.°03×**29.°07E**±0.°02, **h13**km±9km, **n31**, σ0**56**/40, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.27**	**102**	*e*PG	**Pg**	**21 24 52.7**	**-0.2**
GEDZ	**Gediz**	**0.27**	**102**	*e*Pg	**Pg**	**21 24 52.7**	**-0.2**
DEMI	**Demirci**	**0.28**	**258**	*i* P	**Pg**	**21 24 53.2**	**+0.1**
DEMI				*i* S	**Sg**	**21 24 57.3**	**+0.2**
DEMI	**Demirci**	**0.28**	**258**	P	**Pg**	**21 24 53.2**	**+0.1**
DEMI				S	**Sg**	**21 24 57.3**	**+0.2**
GDZ	**Gediz**	**0.32**	**92**	*i* P	**Pg**	**21 24 53.7**	**-0.1**
GDZ				*i* S	**Sg**	**21 24 58.2**	**0.0**
GDZ	**Gediz**	**0.32**	**92**	P	**Pg**	**21 24 53.7**	**-0.1**
GDZ				S	**Sg**	**21 24 58.2**	**0.0**
TVSB	**Tavsanli**	**0.46**	**41**	*e*PG	**Pg**	**21 24 56.0**	**-0.3**
TVSB				*e*SG	**Sg**	**21 25 02.0**	**-0.6**
TVSB	**Tavsanli**	**0.46**	**41**	*e*Pg	**Pg**	**21 24 56.0**	**-0.3**
TVSB				*e*Sg	**Sg**	**21 25 02.0**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG	**Pg**	**21 25 00.4**	**+0.2**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*Pg	**Pg**	**21 25 00.4**	**+0.2**
MANT	**Manisa**	**0.73**	**214**	*i* P	**Pg**	**21 25 00.3**	**-1.1**
MANT				*i* S	**Sg**	**21 25 09.5**	**-1.5**
MANT	**Manisa**	**0.73**	**214**	P	**Pg**	**21 25 00.3**	**-1.1**
MANT				S	**Sg**	**21 25 09.5**	**-1.5**
KHL	**Karahalli**	**0.85**	**155**	*e*PG	**Pb**	**21 25 04.3**	**+0.4**
KHL	**Karahalli**	**0.85**	**155**	*e*Pg	**Pb**	**21 25 04.3**	**+0.4**
AKS	**Akhisar**	**1.00**	**258**	*e*PG	**Pb**	**21 25 06.6**	**+0.2**
AKS	**Akhisar**	**1.00**	**258**	*e*Pg	**Pb**	**21 25 06.6**	**+0.2**
IGD	**Bursa**	**1.17**	**5**	*i* P	**Pg**	**21 25 08.5**	**-1.1**
IGD				*i* S	**Sb**	**21 25 25.1**	**+0.9**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pg**	**21 25 10.9**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pg**	**21 25 11.0**	**-0.3**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pn**	**21 25 10.9**	**+0.2**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pn**	**21 25 11.0**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pn**	**21 25 10.9**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pn**	**21 25 11.0**	**+0.3**
SHUT	**Suhut-Afyon**	**1.28**	**115**	*e*PN	**Pg**	**21 25 11.5**	**-0.3**
SHUT	**Suhut-Afyon**	**1.28**	**115**	*e*Pn	**Pg**	**21 25 11.5**	**-0.3**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pn**	**21 25 11.2**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pn**	**21 25 11.2**	**+0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**21 25 14.7**	**+0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**21 25 14.7**	**+0.3**
GULT	**Gulveren**	**1.73**	**39**	*e*PN	**Pb**	**21 25 18.7**	**-0.2**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn	**Pb**	**21 25 18.7**	**-0.2**

*ISK **19** 21:32:50.2, 39.°09N×29.°10E, h5km, ML3.3*
*DDA **19** 21:32:50.2, 39.°10N×29.°08E, h21km, Ml3.8*
*CSEM **19** 21:32:51.4±0.1, 39.°09N×29.°11E, h2km, ML3.3, Error ellipse: s-maj=2.8km s-min=2.7km az=40.0*
ISC 19 21:32:51.3±1.0, **39.°10N**±0.°02×**29.°08E**±0.°02, **h4**km±11km, **n157**, σ0**91**/168, **10C-6D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.26**	**103**	*e*PG	**Pg**	**21 32 56.7**	**+0.2**
GEDZ				*e*SG	**Sg**	**21 33 00.7**	**+0.8**
GEDZ	**Gediz**	**0.26**	**103**	*e*Pg	**Pg**	**21 32 56.7**	**+0.2**
GEDZ				*e*Sg	**Sg**	**21 33 00.7**	**+0.8**
DEMI	**Demirci**	**0.29**	**258**	*i* P	**Pg**	**21 32 56.8**	**-0.2**
DEMI				*i* S	**Sg**	**21 33 00.9**	**+0.1**
DEMI	**Demirci**	**0.29**	**258**	P	**Pg**	**21 32 56.8**	**-0.2**
DEMI				S	**Sg**	**21 33 00.9**	**+0.1**
GDZ	**Gediz**	**0.31**	**93**	*i* P	**Pg**	**21 32 57.3**	**-0.1**
GDZ				*i* S	**Sg**	**21 33 02.0**	**+0.5**
GDZ	**Gediz**	**0.31**	**93**	P	**Pg**	**21 32 57.3**	**-0.1**
GDZ				S	**Sg**	**21 33 02.0**	**+0.5**
TVSB	**Tavsanli**	**0.46**	**40**	*e*PG	**Pg**	**21 32 59.7**	**-0.4**
TVSB	**Tavsanli**	**0.46**	**40**	*e*Pg	**Pg**	**21 32 59.7**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG	**Pg**	**21 33 03.8**	**-0.5**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*Pg	**Pg**	**21 33 03.8**	**-0.5**
MANT	**Manisa**	**0.73**	**214**	*i* P	**Pg**	**21 33 03.8**	**-1.7**
MANT				*i* S	**Sg**	**21 33 13.2**	**-1.8**
MANT	**Manisa**	**0.73**	**214**	P	**Pg**	**21 33 03.8**	**-1.7**
MANT				S	**Sg**	**21 33 13.2**	**-1.8**
KHL	**Karahalli**	**0.85**	**156**	*e*PG	**Pg**	**21 33 07.5**	**-0.2**
KHL	**Karahalli**	**0.85**	**156**	*e*Pg	**Pg**	**21 33 07.5**	**-0.2**
AKS	**Akhisar**	**1.01**	**258**	*e*PG	**Pg**	**21 33 10.7**	**-0.1**
AKS	**Akhisar**	**1.01**	**258**	*e*Pg	**Pg**	**21 33 10.7**	**-0.1**
BALB	**Balikesir**	**1.07**	**300**	*e*PN	**Pb**	**21 33 12.7**	**+0.2**
BALB	**Balikesir**	**1.07**	**300**	*e*Pn	**Pb**	**21 33 12.7**	**+0.2**
IGD	**Bursa**	**1.16**	**5**	*i* P	**Pg**	**21 33 11.8**	**-1.8**
IGD				*i* S	**Sg**	**21 33 27.9**	**-0.9**
**

ENEZ	**Enez**	**2.78**	**307**	*e*Pn		**Pn**	**21 33 38.2**	**+1.6**
KONT	**Konya--Tatoy**	**2.82**	**113**	*e*PN		**Pn**	**21 33 37.7**	**+0.5**
KONT	**Konya--Tatoy**	**2.82**	**113**	*e*Pn		**Pn**	**21 33 37.7**	**+0.5**
ALN	**Alexandroupoli**	**2.94**	**309**	*e*PN		**Pn**	**21 33 40.2**	**+1.4**
ALN	**Alexandroupoli**	**2.94**	**309**	*e*Pn		**Pn**	**21 33 40.2**	**+1.4**
KKUL	**Konya-Kulu**	**2.98**	**87**	*i* P		**Pg**	**21 33 49.5**	**+1.0**
CHBY	**Cihanbeyli**	**3.02**	**99**	*e*PN		**Pn**	**21 33 40.1**	**+0.1**
CHBY	**Cihanbeyli**	**3.02**	**99**	*e*Pn		**Pn**	**21 33 40.1**	**+0.1**
AFSR	**Af˙ar-Bala (A**	**3.12**	**82**	*e*PN		**Pn**	**21 33 42.3**	**+1.0**
AFSR	**Af˙ar-Bala (A**	**3.12**	**82**	*e*Pn		**Pn**	**21 33 42.3**	**+1.0**
EDRB	**Edirne**	**3.27**	**328**	*e*PN		**Pn**	**21 33 44.9**	**+1.6**
EDRB	**Edirne**	**3.27**	**328**	*e*Pn		**Pn**	**21 33 44.9**	**+1.6**
CORM	**Corum**	**4.42**	**74**	*e*PN		**Pn**	**21 34 00.9**	**+1.7**
CORM	**Corum**	**4.42**	**74**	*e*Pn		**Pn**	**21 34 00.9**	**+1.7**
TIRR	**Tirgusor**	**5.37**	**355**	⇑*i*P		**Pn**	**21 34 12.0**	**-0.2**
TIRR	**Tirgusor**	**5.37**	**355**	⇑*i*P		**Pn**	**21 34 12.0**	**-0.2**
TLB	**Topalu**	**5.53**	**352**	⇑*i*P		**Pn**	**21 34 13.8**	**-0.6**
TLB	**Topalu**	**5.53**	**352**	⇑*i*P		**Pn**	**21 34 13.8**	**-0.6**
CFR	**Carcaliu**	**6.11**	**354**	⇓*i*P		**Pn**	**21 34 20.8**	**-1.5**
CFR	**Carcaliu**	**6.11**	**354**	⇓*i*P		**Pn**	**21 34 20.8**	**-1.5**
MLR	**Muntele Rosu**	**6.79**	**341**	⇑*i*P		**Pn**	**21 34 34.6**	**+2.7**
MLR	**Muntele Rosu**	**6.79**	**341**	⇑*i*P		**Pn**	**21 34 34.6**	**+2.7**
PLOR	**Plostina**	**6.98**	**346**	⇓*i*P		**Pn**	**21 34 37.4**	**+3.1**
PLOR	**Plostina**	**6.98**	**346**	⇓*i*P		**Pn**	**21 34 37.4**	**+3.1**
VOIR		**7.00**	**336**	⇑*i*P		**Pn**	**21 34 36.1**	**+1.5**
VOIR		**7.00**	**336**	⇑*i*P		**Pn**	**21 34 36.1**	**+1.5**
TESR	**Tescani**	**7.62**	**347**	⇑*i*P		**Pn**	**21 34 42.9**	**-0.1**
TESR	**Tescani**	**7.62**	**347**	⇑*i*P		**Pn**	**21 34 42.9**	**-0.1**

CASC 19 21:32:54.9±1.8, 12°.86N×88°.95W, h27km±7km, ML3.6, 1C, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
SNVI	**San Vicente**	**0.76**	**8**	*e*P		Pb	21 33 09.5	-0.2
LFRS	**El Faro**	**0.77**	**352**	*e*P		Pb	21 33 09.6	-0.3
LCY	**Lacayo**	**0.85**	**48**	*e*P		Pb	21 33 10.5	-0.7
SNET	**Serv Nac Est T**	**0.87**	**342**	*e*P		Pb	21 33 11.0	-0.5
SNET				AML		AML	21 33 11.6	
	comp=Z,6μm,0.2s							
SNET				*e*S		Sb	21 33 23.1	+0.3
VSM	**San Miguel**	**0.87**	**49**	*e*P		Pb	21 33 11.2	-0.4
COLS	**Colinas**	**0.87**	**337**	*e*P		Pb	21 33 11.2	-0.3
COLS				*e*S		Sn	21 33 23.5	0.0
LBRS	**Las Brisas**	**0.88**	**354**	*e*P		Pn	21 33 11.5	-0.2
LFU	**La Fuente**	**0.90**	**350**	*e*P		Pn	21 33 11.6	-0.4
LFU				*e*S		Sn	21 33 24.3	+0.2
BOQS	**Boqueron**	**0.93**	**340**	⇑*i*P		Pn	21 33 12.3	-0.1
BOQS				*e*S		Sn	21 33 25.9	+0.9
CAHU	**Cacacuatique**	**1.16**	**38**	*i* P		Pn	21 33 15.7	+0.1
CNCH	**Conchagua**	**1.17**	**69**	*i* P		Pn	21 33 14.7	-0.9
CNCH				*e*S		Sb	21 33 32.6	+1.3
SBLS	**San Blas**	**1.18**	**326**	*e*P		Pn	21 33 15.8	-0.1
SNJE	**San Jose**	**1.19**	**328**	*e*P		Pn	21 33 15.9	-0.1
SNJE				*e*S		Sb	21 33 32.7	+0.6
MONT	**Ecomontaæa**	**1.21**	**326**	*e*P		Pn	21 33 16.1	-0.2
CUS1	**Cusmapa**	**1.43**	**317**	*e*P		Pn	21 33 18.8	-0.4
RBDL	**Robledal**	**1.44**	**330**	*i* P		Pn	21 33 19.9	+0.4
CNGN	**Cerro Negro**	**2.23**	**99**	*e*P		Pn	21 33 28.3	-1.8
CNGN				AML		AML	21 33 57.1	
	comp=N,167nm,0.3s							
MOMN	**Momotombo**	**2.39**	**100**	*e*P		Pn	21 33 30.7	-1.7
JCR	**Jicaral**	**4.80**	**128**	*e*P		Pn	21 34 06.3	+0.7
CGA2	**Cerro Gallo 2**	**5.22**	**122**	*e*P		Pn	21 34 14.2	+2.7
URSC	**Urasca**	**5.89**	**120**	*e*P		Pn	21 34 24.2	+3.6
URSC				*e*S		Sn	21 35 28.3	+0.8
BUS	**Buena Vista**	**6.06**	**122**	*e*P		Pn	21 34 25.5	+2.3

*ISCJB **19** 21:33:08.7±0.6, 39°.04N±0°.03×29°.12E±0°.03, h0km±6km, Error ellipse: s-maj=6.2km s-min=3.4km az=148.8*
*ISK **19** 21:33:08.5, 39°.03N×29°.19E, h5km, ML3.3*
*DDA **19** 21:33:08.3, 39°.05N×29°.10E, h7km, Md3.4*
*CSEM **19** 21:33:09.2±0.2, 39°.01N×29°.16E, h5km, ML3.3, Error ellipse: s-maj=5.0km s-min=3.4km az=142.0*

ISC 19 21:33:08.8±1.0, 39°.03N±0°.02×29°.11E±0°.02, h6km±9km, n63, σ0s85/76, Turkey

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
GDZ	**Gediz**	**0.29**	**79**	*i* P		**Pg**	**21 33 15.3**	**+0.7**
GDZ				*i* S		**Sg**	**21 33 19.8**	**+1.3**
GDZ	**Gediz**	**0.29**	**79**	P		**Pg**	**21 33 15.3**	**+0.7**
GDZ				S		**Sg**	**21 33 19.8**	**+1.3**
DEMI	**Demirci**	**0.31**	**272**	*i* P		**Pg**	**21 33 14.8**	**-0.1**
DEMI				*i* S		**Sg**	**21 33 19.0**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**33**	*e*PG		**Pg**	**21 33 17.7**	**-0.7**
TVSB				*e*SG		**Sg**	**21 33 23.6**	**-1.3**
TVSB	**Tavsanli**	**0.50**	**33**	*e*Pg		**Pg**	**21 33 17.7**	**-0.7**
TVSB				*e*Sg		**Sg**	**21 33 23.6**	**-1.3**
KULA	**Kula-Manisa**	**0.62**	**214**	*e*PG		**Pb**	**21 33 21.7**	**-0.4**
KULA				*e*SG		**Sb**	**21 33 30.6**	**-0.6**
KULA	**Kula-Manisa**	**0.62**	**214**	*e*Pg		**Pb**	**21 33 21.7**	**-0.4**
KULA				*e*Sg		**Sb**	**21 33 30.6**	**-0.6**
MANT	**Manisa**	**0.69**	**219**	*e*P		**Pg**	**21 33 21.9**	**-0.2**
MANT				*i* S		**Sg**	**21 33 31.2**	**+0.1**
MANT	**Manisa**	**0.69**	**219**	P		**Pg**	**21 33 21.9**	**-0.2**
MANT				S		**Sg**	**21 33 31.2**	**+0.1**
AKS	**Akhisar**	**1.02**	**262**	*e*PN		**Pn**	**21 33 29.6**	**0.0**
AKS				*e*SN		**Sn**	**21 33 44.9**	**+0.6**
AKS	**Akhisar**	**1.02**	**262**	*e*Pn		**Pn**	**21 33 29.6**	**0.0**
AKS				*e*Sn		**Sn**	**21 33 44.9**	**+0.6**
BALB	**Balikesir**	**1.13**	**303**	*e*PN		**Pn**	**21 33 32.2**	**+1.1**
BALB	**Balikesir**	**1.13**	**303**	*e*Pn		**Pn**	**21 33 32.2**	**+1.1**
SHUT	**Suhut-Afyon**	**1.22**	**113**	*e*PN		**Pg**	**21 33 31.5**	**-0.7**
SHUT	**Suhut-Afyon**	**1.22**	**113**	*e*Pn		**Pg**	**21 33 31.5**	**-0.7**
CAVI	**Cavuskoy**	**1.30**	**26**	*e*PN		**Pg**	**21 33 33.4**	**-0.3**
CAVI	**Cavuskoy**	**1.30**	**26**	*e*Pn		**Pg**	**21 33 33.4**	**-0.3**
IZI	**Iznik**	**1.33**	**12**	*e*PN		**Pg**	**21 33 35.0**	**+0.7**
IZI	**Iznik**	**1.33**	**12**	*e*Pn		**Pg**	**21 33 35.0**	**+0.7**
BORA	**Eskisehir**	**1.34**	**50**	*e*P		**Pg**	**21 33 36.1**	**+1.6**
BORA				*i* S		**Sn**	**21 33 52.1**	**-0.2**
BORA	**Eskisehir**	**1.34**	**50**	P		**Pg**	**21 33 36.1**	**+1.6**
BORA				S		**Sn**	**21 33 52.1**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.35**	**353**	*e*PN		**Pg**	**21 33 34.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.35**	**353**	*e*Pn		**Pg**	**21 33 34.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.36**	**335**	*e*PN		**Pg**	**21 33 34.4**	**-0.5**
KCTX	**Karacabey (Bur**	**1.36**	**335**	*e*Pn		**Pg**	**21 33 34.4**	**-0.5**
GEMT	**Gemlik**	**1.40**	**2**	*e*PN		**Pb**	**21 33 35.0**	**-0.3**
GEMT	**Gemlik**	**1.40**	**2**	*e*Pn		**Pb**	**21 33 35.0**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**222**	*e*PN		**Pg**	**21 33 36.8**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**222**	*e*Pn		**Pg**	**21 33 36.8**	**+0.3**
ADVT	**Abdulvahap**	**1.48**	**19**	*e*PN		**Pn**	**21 33 35.6**	**-0.3**
ADVT	**Abdulvahap**	**1.48**	**19**	*e*Pn		**Pn**	**21 33 35.6**	**-0.3**
GONE	**Gonen-Balikesi**	**1.50**	**313**	*e*PN		**Pb**	**21 33 36.8**	**-0.2**
GONE	**Gonen-Balikesi**	**1.50**	**313**	*e*Pn		**Pb**	**21 33 36.8**	**-0.2**
ARMT	**Armutlu**	**1.54**	**353**	*e*PN		**Pb**	**21 33 37.3**	**-0.4**
ARMT	**Armutlu**	**1.54**	**353**	*e*Pn		**Pb**	**21 33 37.3**	**-0.4**
EDC	**Edincik**	**1.63**	**324**	*e*PN		**Pb**	**21 33 39.1**	**-0.1**
EDC	**Edincik**	**1.63**	**324**	*e*Pn		**Pb**	**21 33 39.1**	**-0.1**
DKL	**Dikili**	**1.72**	**272**	*e*PN		**Pb**	**21 33 40.8**	**+0.1**
DKL	**Dikili**	**1.72**	**272**	*e*Pn		**Pb**	**21 33 40.8**	**+0.1**
GULT	**Gulveren**	**1.77**	**37**	*e*PN		**Pn**	**21 33 40.3**	**+0.3**
GULT	**Gulveren**	**1.77**	**37**	*e*Pn		**Pn**	**21 33 40.3**	**+0.3**
HRT	**Hereke**	**1.84**	**13**	*e*PN		**Pn**	**21 33 41.4**	**+0.5**
HRT	**Hereke**	**1.84**	**13**	*e*Pn		**Pn**	**21 33 41.4**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.92**	**77**	*e*PN		**Pn**	**21 33 41.4**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.92**	**77**	*e*Pn		**Pn**	**21 33 41.4**	**-0.6**
KRBG	**Karabiga-Canak**	**1.95**	**315**	*e*PN		**Pb**	**21 33 43.8**	**-0.9**
KRBG	**Karabiga-Canak**	**1.95**	**315**	*e*Pn		**Pb**	**21 33 43.8**	**-0.9**
MRMT	**Marmara Adasi**	**1.96**	**324**	*e*PN		**Pb**	**21 33 44.9**	**+0.1**
MRMT	**Marmara Adasi**	**1.96**	**324**	*e*Pn		**Pb**	**21 33 44.9**	**+0.1**
ISK	**Istanbul-Kandi**	**2.03**	**359**	*e*PN		**Pb**	**21 33 44.8**	**-1.3**
ISK	**Istanbul-Kandi**	**2.03**	**359**	*e*Pn		**Pb**	**21 33 44.8**	**-1.3**
KLYT	**Kilyos**	**2.22**	**359**	*e*PN		**Pn**	**21 33 47.2**	**+1.2**
KLYT	**Kilyos**	**2.22**	**359**	*e*Pn		**Pn**	**21 33 47.3**	**+1.2**
RKY	**Sarkoy-Tekirda**	**2.22**	**319**	*e*PN		**Pb**	**21 33 48.4**	**-1.0**
RKY	**Sarkoy-Tekirda**	**2.22**	**319**	*e*Pn		**Pb**	**21 33 48.4**	**-1.0**
LPK	**Lapseki**	**2.25**	**307**	*e*PN		**Pn**	**21 33 47.8**	**+1.3**
LPK	**Lapseki**	**2.25**	**307**	*e*Pn		**Pn**	**21 33 47.8**	**+1.3**
SIGR	**SIGRI**	**2.54**	**275**	*e*PN		**Pb**	**21 33 52.6**	**-2.1**
SIGR	**SIGRI**	**2.54**	**275**	*e*Pn		**Pb**	**21 33 52.6**	**-2.1**
GADA	**Gvkgeada**	**2.74**	**296**	*e*PN		**Pn**	**21 33 54.8**	**+1.6**
GADA	**Gvkgeada**	**2.74**	**296**	*e*Pn		**Pn**	**21 33 54.8**	**+1.6**
CHBY	**Cihanbeyli**	**2.99**	**97**	*e*PN		**Pn**	**21 33 57.6**	**+0.9**
CHBY	**Cihanbeyli**	**2.99**	**97**	*e*Pn		**Pn**	**21 33 57.6**	**+0.9**

*NEIC **19** 21:35:42.7±0.4, 30°.30S×177°.43W, h10km, mb4.6/15, Error ellipse: s-maj=11.6km s-min=6.4km az=109.0*
*ISCJB **19** 21:35:44.4±0.8, 30°.37S±0°.06×177°.44W±0°.1, h35km, mb4.5/12, Error ellipse: s-maj=18.6km s-min=7.9km az=9.7*
*IDC **19** 21:35:49.4±2.9, 29°.92S×177°.58W, h46km±20km, mb4.2/5, mb1 4.4/5, mb1mx3.8/32, mbtmp4.4/5, Error ellipse: s-maj=36.5km s-min=23.2km az=132.0*

ISC 19 21:35:47.3±0.7, 30°.07S±0°.07×177°.6W±0°.1, h35km, n48, σ2s26/53, mb4.6/11, 1C, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
RAO	**Raoul Island**	**0.85**	**343**	P		**Pn**	**21 36 02.5**	**-0.3**
	2μm,0.3s,baz=95,slow=9.7,SNR=72							
RAO				S		**Sn**	**21 36 15.1**	**+1.0**
	2μm,0.3s,baz=104,slow=24,SNR=21							
RAO				LR		LR	21 36 26.2	
	comp=Z,1μm,18.3s,baz=122,slow=51							
RAO	**Raoul Island**	**0.85**	**343**	*e*Pg		**Pn**	**21 36 02.5**	**-0.3**
RAO				*e*Sn		**Sn**	**21 36 12.3**	**-1.8**
RAO				*e*Sn		Sn	21 36 15.1	+1.0
OUZ	**Omahuta**	**9.00**	**233**	*e*Pn		Pn	21 38 02.0	+7.3
HIZ	**Hauiti**	**10.46**	**214**	*e*Pn		**Pn**	**21 38 15.6**	**+0.9**
KHZ	**Kahutara**	**14.22**	**208**	*e*Pn		**Pn**	**21 39 01.7**	**-4.3**
OXZ	**Oxford**	**15.59**	**209**	*e*Pn		**Pn**	**21 39 20.4**	**-3.9**
	113nm,1.8s							
MQZ	**McQueen's Vall**	**15.65**	**207**	*e*Pn		**Pn**	**21 39 22.0**	**-3.1**
	51nm,1.5s							
RPZ	**Rata Peaks**	**16.32**	**210**	*e*Pn		**Pn**	**21 39 29.5**	**-4.3**
	25nm,1.2s							
FOZ	**Fox Glacier**	**16.75**	**213**	*e*Pn		**Pn**	**21 39 34.9**	**-4.1**
	76nm,1.8s							
ODZ	**Otahua Downs**	**17.57**	**208**	*e*Pn		**Pn**	**21 39 45.0**	**-4.3**
	30nm,1.5s							
WKZ	**Wanaka**	**18.11**	**212**	*e*Pn		**Pn**	**21 39 50.5**	**-5.5**
	66nm,1.5s							
MLZ	**Mavora Lakes**	**18.93**	**212**	*e*P		**P**	**21 40 01.3**	**-3.9**
	57nm,1.5s							
ARMA	**Armidale**	**26.52**	**261**	*e*P		**P**	**21 41 22.7**	**+1.0**
	44nm,1.6s							
CTAO	**Charters Tower**	**34.06**	**278**	*e*P		**P**	**21 42 29.8**	**+1.3**
STKA	**Stephens Creek**	**34.86**	**256**	P		**P**	**21 42 38.0**	**+2.7**
	3.8nm,0.4s,baz=100,slow=12,SNR=29							
STKA	**Stephens Creek**	**34.86**	**256**	*e*P		**P**	**21 42 38.0**	**+2.7**
	1.5nm,1.0s							
BBOO	**Buckleboo**	**39.36**	**254**	*e*P		**P**	**21 43 14.6**	**+1.1**
	27nm,1.3s							
AS01	**Alice Springs**	**43.40**	**266**	*e*P		**P**	**21 43 47.3**	**+0.5**
AS31	**Alice Springs**	**43.44**	**266**	*e*P		**P**	**21 43 48.4**	**+1.3**
	1.1nm,0.6s							
ASAR	**Alice Springs**	**43.44**	**266**	P		**P**	**21 43 48.4**	**+1.3**
	1.9nm,0.4s,baz=105,slow=6.9,SNR=28							
WB2	**Warramunga Arr**	**44.39**	**272**	*e*P		**P**	**21 43 55.4**	**+0.7**
	7.0nm,0.7s							
WRAB	**Tennant Creek**	**44.40**	**272**	*e*P		**P**	**21 43 54.3**	**-0.5**
	7.7nm,0.7s							
WR1	**Warramunga Arr**	**44.40**	**272**	*e*P		**P**	**21 43 55.2**	**+0.4**
	16nm,1.3s							
WRA	**Warramunga Arr**	**44.40**	**272**	P		**P**	**21 43 55.2**	**+0.4**
	5.3nm,0.3s,baz=110,slow=8.1,SNR=170							
FITZ	**Fitzroy Crossi**	**52.68**	**269**	*e*P		**P**	**21 44 59.0**	**+0.5**
	17nm,1.6s							
QSPA	**South Pole Qui**	**60.04**	**180**	*e*P		**P**	**21 45 52.4**	**+2.0**
SYO	**Syowa Base**	**77.50**	**193**	⇓*e*P		**P**	**21 47 43.2**	**+4.4**
LRC	**Lone Oak Road**	**84.70**	**43**	*e*P		**P**	**21 48 16.4**	**-1.2**
PETK	**Petropavlovsk-**	**85.58**	**345**	P		**P**	**21 48 21.9**	**+0.4**
	2.4nm,0.7s,baz=104,slow=6.5,SNR=4.1							
PEA1	**Petropavlovsk-**	**85.58**	**345**	*e*P		**P**	**21 48 21.9**	**+0.4**
ILAR	**Eielson Array**	**97.54**	**13**	P		Pdif	21 49 18.6	+1.4
	0.2nm,0.7s,baz=227,slow=4.8,SNR=2.5							
ILB	**Eielson Array**	**97.54**	**13**	*e*P		Pdif	21 49 18.6	+1.4
ARCES	**ARCESS Array B**	**138.34**	**348**	PKP		**PKPdf**	**21 55 08.3**	**+0.3**
	2.7nm,0.8s,baz=82,slow=1.9,SNR=3.6							
FIA0	**FINESS Array S**	**144.94**	**340**	*e*PKPbc		**PKPab**	**21 55 18.9**	**-0.4**
FINES	**FINESS Array B**	**144.94**	**340**	PKP		**PKPab**	**21 55 18.9**	**-0.4**
	4.0nm,0.4s,baz=54,slow=3.9,SNR=76							
KBZ	**Khabaz**	**145.19**	**304**	PKPbc		**PKPdf**	**21 55 21.2**	**+0.3**
	2.3nm,0.9s,baz=229,slow=6.7,SNR=4.0							
NB2	**NORSAR Subarra**	**148.47**	**352**	PKP		**PKPbc**	**21 55 28.9**	**-0.7**
	comp=Z,1.9nm,0.8s,baz=19,slow=4.4							
NB200	**NORSAR Array S**	**148.47**	**352**	*e*PKPbc		**PKPbc**	**21 55 29.2**	**-0.4**
NOA	**NORSAR Array B**	**148.47**	**352**	PKPbc		**PKPbc**	**21 55 29.2**	**-0.4**
	comp=Z,1.2nm,0.6s,baz=14,slow=4.4,SNR=6.0							
AKASG	**Malin Array Be**	**151.23**	**323**	PKP		**PKPdf**	**21 55 31.2**	**+0.7**
	comp=Z,0.7nm,0.4s,baz=43,slow=3.6,SNR=4.8							
AKASG				PKPbc		**PKPbc**	**21 55 36.2**	**-0.3**
	comp=Z,0.7nm,0.3s,baz=49,slow=3.5,SNR=5.0							
AKASG				PKPab		**PKPab**	**21 55 43.4**	**-1.2**
	comp=Z,1.4nm,0.4s,baz=50,slow=3.6,SNR=12							
AKBB	**Malin Array Si**	**151.23**	**323**	*e*PKPdf		**PKPdf**	**21 55 31.2**	**+0.7**
AKBB				*e*PKPbc		**PKPbc**	**21 55 36.2**	**-0.3**
AKBB				*e*PKPab		**PKPab**	**21 55 43.4**	**-1.2**
BR101	**Keskin Array S**	**152.72**	**299**	*e*PKPbc		**PKPbc**	**21 55 40.3**	**-0.2**
BRTR	**Keskin Array B**	**152.72**	**299**	PKPbc		**PKPbc**	**21 55 40.3**	**-0.2**
	comp=Z,1.2nm,0.9s,baz=131,slow=3.8,SNR=5.7							
DPC	**Dobruska-Polom**	**157.19**	**337**	*e*PKPAB		**PKPab**	**21 56 10.9**	**+1.0**
DPC				*e*pPKP		**pPKPab**	**21 56 16.1**	**-5.0**
KHC	**Kasperske Hory**	**159.14**	**339**	*e*PKPAB		**PKPab**	**21 56 19.2**	**+0.8**
KHC				*e*pPKP		**pPKPab**	**21 56 25.3**	**-4.3**
GERES	**GERESS Array B**	**159.35**	**338**	PKPab		**PKPab**	**21 56 18.8**	**-0.5**
	comp=Z,0.6nm,0.7s,baz=90,slow=5.3,SNR=5.3							
TORD	**Torodi Ar. Bea**	**163.15**	**178**	PKPab		**PKPab**	**21 56 38.8**	**+2.2**
	comp=Z,0.5nm,0.5s,baz=168,slow=3.7,SNR=9.6							
TOA1	**Torodi Ar. Sit**	**163.15**	**178**	*e*PKPab		**PKPab**	**21 56 38.8**	**+2.2**

WEL 19 21:49:34.4±0.4, 36°.80S×179°.77E, h5km, ML3.5/7, 2D, Error ellipse: s-maj=5.4km s-min=4.0km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
MXZ	**Matakaoa Point**	**1.40**	**237**	PN		Pn	21 49 59.3	-1.2
WMGZ	**Waiomatatini S**	**1.48**	**227**	⇓PN		Pn	21 50 01.4	-0.4
PKGZ	**Pakihiroa**	**1.73**	**231**	⇓PN		Pn	21 50 04.6	-0.7
PKGZ				SN		Sn	21 50 26.6	-1.1
PUZ	**Puketiti**	**1.75**	**223**	PN		Pn	21 50 04.7	-0.7
PUZ				AML		AML	21 50 33.4	
PUZ				AML		AML	21 50 46.4	
HAZ	**Te Kaha**	**1.85**	**239**	PN		Pn	21 50 06.0	-0.8
HAZ				AML		AML	21 50 39.1	
HAZ				AML		AML	21 50 40.5	
TWGZ	**Tauwhareparae**	**1.98**	**226**	PN		Pn	21 50 08.2	-0.4
TWGZ				SN		Sn	21 50 32.8	-1.0
TWGZ				AML		AML	21 50 33.5	
RUGZ	**Raukumara Rang**	**2.03**	**235**	PN		Pn	21 50 09.3	-0.1
MWZ	**Matawai**	**2.35**	**229**	PN		Pn	21 50 12.7	-1.0
RIGZ	**Rimuhau**	**2.48**	**219**	PN		Pn	21 50 14.4	-1.1
RIGZ				AML		AML	21 50 45.4	
RIGZ				AML		AML	21 50 46.2	
RAGZ	**Rawiri**	**2.52**	**227**	PN		Pn	21 50 15.1	-1.0
RAGZ				AML		AML	21 50 44.7	
RAGZ				AML		AML	21 50 50.4	
URZ	**Urewera**	**2.57**	**235**	PN		Pn	21 50 16.1	-0.5
URZ				AML		AML	21 50 53.6	
SNGZ	**Shannon Statio**	**2.76**	**224**	PN		Pn	21 50 18.5	-0.8
SNGZ				AML		AML	21 50 52.2	
SNGZ				AML		AML	21 50 52.8	

*ISCJB **19** 21:49:39.4±0.5, 19°.16S±0°.05×66°.97W±0°.05, h246km, mb3.5/6, Error ellipse: s-maj=7.9km s-min=4.7km az=41.2*
*IDC **19** 21:49:39.8±0.8, 19°.11S×66°.87W, h237km±7km, mb3.3/6, mb1 3.6/10, mb1mx3.4/28, mbtmp4.0/10, Error ellipse: s-maj=13.6km s-min=9.3km az=100.0*
*GUC **19** 21:49:41.2±0.5, 19°.31S×67°.25W, h250km, ML4.1*

ISC 19 21:49:40.4±0.7, 19°.09S±0°.06×67°.07W±0°.08, h246km, n22, σ1s64/33, mb3.6/6, 8C, Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
PB08	**IPOC Station P**	**2.23**	**242**	⇑*i*P		**Pn**	**21 50 26.2**	**+1.1**
PB08				IAML			21 51 05.3	
	comp=N,160nm,0.2s							
PB08				IAML			21 51 06.0	
	comp=E,170nm,0.2s							
MNMC	**Minye Minye**	**2.39**	**268**	⇑*i*P		**Pn**	**21 50 27.4**	**+0.8**
MNMC				*e*S		**S**	**21 51 03.5**	**+0.6**
MNMC				IAML			21 51 08.9	
	comp=E,518nm,0.1s							
PB11	**IPOC Station P**	**2.53**	**254**	⇑*i*P		**Pn**	**21 50 28.2**	**+0.3**
PB11				*i* S		**S**	**21 51 04.8**	**-0.5**
HMBC	**Humberstone**	**2.91**	**245**	⇑*i*P		**Pn**	**21 50 31.4**	**-0.4**
HMBC				*i* S		**S**	**21 51 10.3**	**-2.1**
HMBC				IAML			21 51 11.2	
	comp=N,1μm,0.6s							
PSGC	**Pisagua**	**2.93**	**259**	*e*P		**Pn**	**21 50 31.8**	**-0.2**
PSGC				*i* S		**S**	**21 51 10.8**	**-1.9**
PSGC				IAML			21 51 11.4	
	comp=N,411nm,0.2s							
LPAZ	**La Paz**	**2.96**	**340**	P		**Pn**	**21 50 34.2**	**+1.2**
	comp=N,2.5nm,0.3s,baz=124,slow=5.5,SNR=67							
LPAZ				S		**S**	**21 51 14.8**	**+0.4**
	comp=N,2.2nm,0.3s,baz=34,slow=18,SNR=14							
PB01	**IPOC Station P**	**2.99**	**229**	⇑*i*P		**Pn**	**21 50 32.8**	**+0.1**
PB01				*i* S		**S**	**21 51 12.3**	**-1.6**
PB01				IAML			21 51 13.8	
	comp=N,437nm,0.3s							
PB07	**IPOC Station P**	**3.73**	**225**	⇑*i*P		**Pn**	**21 50 41.7**	**+0.7**
PB07				*i* S		**S**	**21 51 26.9**	**-2.1**
LVC	**Limon Verde**	**3.91**	**206**	P		**Pn**	**21 50 44.4**	**+1.0**
	comp=N,114nm,0.3s,baz=48,slow=11,SNR=48							
LVC				S		**S**	**21 51 32.1**	**-1.1**
	comp=N,315nm,0.3s,baz=95,slow=19,SNR=16							
PB06	**IPOC Station P**	**4.29**	**213**	⇑*i*P		**Pn**	**21 50 48.1**	**+0.4**
PB06				*i* S		**S**	**21 51 38.3**	**-2.9**
PB04	**IPOC Station P**	**4.33**	**221**	⇑*i*P		**Pn**	**21 50 48.6**	**+0.4**
PB04				*i* S		**S**	**21 51 39.1**	**-2.8**
SIV	**San Ignacio**	**6.50**	**63**	P		**Pn**	**21 51 13.6**	**-1.3**
	comp=N,2.4nm,0.3s,baz=261,slow=10,SNR=25							
SIV				S		**S**	**21 52 25.1**	**-5.3**
	comp=N,0.1nm,0.3s,baz=344,slow=20,SNR=3.9							
NNA	**Nana**	**11.76**	**305**	P		**P**	**21

PCM	**Pelee Case Pet**	**4.79**	**157**	*e*P		**Pn**	**22 07 12.1**	**+1.6**
CXM	**Morne La Croix**	**4.81**	**156**	*e*P		**Pn**	**22 07 13.0**	**+2.1**
FDF	**Fort de France**	**4.88**	**156**	*e*P		**Pn**	**22 07 11.2**	**-0.6**
FDF	**Fort de France**	**4.88**	**156**	*e*S		**Sn**	**22 08 04.8**	**-2.8**
FDF	**Fort de France**	**4.88**	**156**	*e*Pn		**Pn**	**22 07 11.0**	**-0.8**
MVM	**Montagne Vaucl**	**5.15**	**155**	*e*P		**Pn**	**22 07 16.7**	**+1.2**
BANI	**BANI**	**6.87**	**264**	*e*Pn		**Pn**	**22 07 40.4**	**+1.3**
SDDR	**Presa de Saban**	**7.69**	**269**	*e*P		**Pn**	**22 07 51.4**	**+1.0**
SDDR	**Presa de Saban**	**7.69**	**269**	*e*S		**Sn**	**22 09 16.9**	**+0.2**
SDDR	**Presa de Saban**	**7.69**	**269**	*e*Pn		**Pn**	**22 07 51.1**	**+0.8**
SDDR					*e*Sn	**Sn**	**22 09 17.3**	**+0.6**
GRTK	**Grand Turk**	**7.81**	**288**	*e*Pn		Pn	22 07 47.7	-4.3
GRTK					*e*Sn	**Sn**	**22 09 13.6**	**-6.0**
PCRV	**Puerto La Cruz**	**9.13**	**189**	LR		LR	22 12 16.4	
	comp=Z,354nm,18.8s,baz=30,slow=42							
GTBY	**Guantanamo Bay**	**11.28**	**275**	*e*Pn		**Pn**	**22 08 36.5**	**-3.2**
BBSR	**BB Station**	**13.14**	**354**	*e*Pn		Pn	22 08 59.9	-5.0
MTDJ	**Mount Denham**	**13.65**	**268**	*e*Pn		Pn	22 09 05.8	-6.4
ROSC	**El Rosal**	**17.99**	**219**	LR		LR	22 18 12.3	
	comp=Z,345nm,18.3s,baz=43,slow=41							
PTGA	**Pitinga**	**20.10**	**171**	P		**P**	**22 10 32.3**	**+0.4**
	1.6nm,0.5s,baz=356,slow=16,SNR=4.6							
PTGA	**Pitinga**	**20.10**	**171**	*e*P		Pn	22 10 33.6	-0.2
	4.9nm,0.8s							
TEIG	**Tepich**	**23.66**	**277**	P		**P**	**22 11 10.6**	**+1.1**
	2.4nm,0.6s,baz=87,slow=23,SNR=5.5							
TEIG	**Tepich**	**23.66**	**277**	*e*P		**P**	**22 11 10.6**	**+1.1**
	4.6nm,0.9s							
LUPA	**Lehigh Univers**	**23.72**	**336**	*e*P		**P**	**22 11 09.4**	**-0.4**
	13nm,1.0s							
OTAV	**Otavalo**	**24.12**	**220**	*e*P		**P**	**22 11 15.1**	**+0.7**
	9.1nm,0.9s							
CPCT	**Cooper Cave**	**24.82**	**315**	*e*P		**P**	**22 11 21.5**	**+1.3**
	9.0nm,1.3s							
WVT	**Waverly**	**27.45**	**313**	*e*P		**P**	**22 11 43.7**	**-0.2**
	24nm,1.8s							
WCI	**Wyandotte Cave**	**27.60**	**318**	*e*P		**P**	**22 11 46.9**	**+1.7**
	12nm,0.7s							
CCIG	**Comitan**	**27.74**	**269**	*e*P		**P**	**22 11 45.0**	**-1.8**
	17nm,0.4s							
LMQ	**La Malbaie**	**28.83**	**350**	*e*P		**P**	**22 11 56.5**	**+0.5**
	6.8nm,1.1s							
V34A	**Guthrie**	**34.43**	**306**	*e*P		**P**	**22 12 44.8**	**-0.6**
	51nm,1.9s							
SCHQ	**Schefferville**	**35.63**	**356**	P		**P**	**22 12 55.9**	**+0.4**
	3.7nm,0.6s,baz=189,slow=10,SNR=3.7							
SCHQ	**Schefferville**	**35.63**	**356**	*e*P		**P**	**22 12 55.9**	**+0.4**
	41nm,1.6s							
LPAZ	**La Paz**	**35.65**	**188**	P		**P**	**22 12 55.8**	**-0.9**
	0.7nm,0.7s,baz=14,slow=8.3,SNR=3.7							
LTX	**Lajitas**	**38.10**	**293**	*e*P		**P**	**22 13 18.5**	**+1.5**
TXAR	**Lajitas Array**	**38.10**	**293**	P		**P**	**22 13 18.5**	**+1.5**
	0.6nm,0.8s,baz=108,slow=11,SNR=4.3							
BW06	**Boulder Array**	**45.45**	**312**	*e*P		**P**	**22 14 17.0**	**-0.1**
PD31	**Pinedale Array**	**45.45**	**312**	*e*P		**P**	**22 14 17.4**	**+0.2**
PDAR	**Pinedale Array**	**45.45**	**312**	P		**P**	**22 14 17.4**	**+0.2**
	0.6nm,0.5s,baz=97,slow=12,SNR=4.6							
CSR	**Chase Ranch**	**53.67**	**302**	*e*P		**P**	**22 15 17.0**	**-2.5**
YKA	**Yellowknife Ar**	**55.69**	**334**	P		**P**	**22 15 33.7**	**-0.1**
	2.0nm,0.7s,baz=108,slow=7.6,SNR=11							
YKB5	**Yellowknife Ar**	**55.69**	**334**	*e*P		**P**	**22 15 33.7**	**-0.1**
DBIC	**Dimbokro**	**57.94**	**94**	P		**P**	**22 15 49.9**	**-0.6**
	3.9nm,0.9s,baz=288,slow=8.7,SNR=5.0							
DBIC	**Dimbokro**	**57.94**	**94**	*e*P		**P**	**22 15 49.9**	**-0.6**
	24nm,1.5s							
TOA1	**Torodi Ar. Sit**	**62.28**	**85**	*e*P		**P**	**22 16 19.4**	**-0.9**
	26nm,2.0s							
TOA0	**Torodi Ar. Sit**	**62.28**	**85**	*e*P		**P**	**22 16 19.7**	**-0.6**
TORD	**Torodi Ar. Bea**	**62.28**	**85**	P		**P**	**22 16 19.4**	**-0.9**
	1.8nm,0.7s,baz=288,slow=6.6,SNR=15							
NB200	**NORSAR Array S**	**65.79**	**31**	*e*P		**P**	**22 16 44.0**	**+1.4**
NOA	**NORSAR Array B**	**65.79**	**31**	P		**P**	**22 16 44.0**	**+1.4**
	0.8nm,0.7s,baz=267,slow=6.4,SNR=4.7							
GERES	**GERESS Array B**	**67.18**	**40**	P		**P**	**22 16 51.8**	**0.0**
	0.4nm,0.7s,baz=282,slow=6.7,SNR=3.8							
PAX	**Paxson**	**69.56**	**331**	*e*P		**P**	**22 17 08.1**	**+1.6**
	70nm,0.6s							
IL1	**Eielson Array**	**70.10**	**333**	*e*P		**P**	**22 17 08.9**	**-0.7**
ILAR	**Eielson Array**	**70.10**	**333**	P		**P**	**22 17 10.0**	**+0.3**
	0.8nm,0.8s,baz=96,slow=5.3,SNR=8.2							
ILB	**Eielson Array**	**70.10**	**333**	*e*P		**P**	**22 17 10.0**	**+0.3**
BR101	**Keskin Array S**	**82.97**	**50**	*e*P		**P**	**22 18 23.9**	**+0.6**
BRTR	**Keskin Array B**	**82.97**	**50**	P		**P**	**22 18 23.9**	**+0.6**
	0.6nm,0.7s,baz=281,slow=6.3,SNR=3.8							
WR1	**Warramunga Arr**	**163.49**	**265**	*e*PKPab		**PKPab**	**22 26 53.1**	**+0.4**
WRA	**Warramunga Arr**	**163.49**	**265**	PKPab		**PKPab**	**22 26 53.1**	**+0.4**
	1.1nm,1.1s,baz=91,slow=4.2,SNR=4.9							
AS31	**Alice Springs**	**163.52**	**252**	*e*PKPab		**PKPab**	**22 26 52.9**	**+0.1**
ASAR	**Alice Springs**	**163.52**	**252**	PKPab		**PKPab**	**22 26 52.9**	**+0.1**
	0.7nm,0.8s,baz=111,slow=4.5,SNR=4.4							

IDC 19 22:06:01.9±1.4, 5.885°S×151.16°E, h0km, mb3.9/5, mb1 4.2/5, mb1mx3.6/39, mbtmp4.0/5, Error ellipse: s-maj=72.0km s-min=23.7km az=123.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**21.51**	**228**	P	P	22 10 52.8	+0.1
	2.2nm,0.5s,baz=53,slow=11,SNR=40						
ASAR	**Alice Springs**	**24.26**	**221**	P	P	22 11 20.9	-0.1
	2.5nm,0.7s,baz=55,slow=9.4,SNR=22						
STKA	**Stephens Creek**	**27.37**	**198**	P	P	22 11 49.0	0.0
	1.0nm,0.7s,baz=4.1,slow=14,SNR=2.3						
FITZ	**Fitzroy Crossi**	**27.71**	**242**	P	P	22 11 52.2	0.0
	1.8nm,0.7s,baz=51,slow=11,SNR=5.8						
ILAR	**Eielson Array**	**83.77**	**22**	P	P	22 18 32.7	0.0
	0.8nm,0.6s,baz=250,slow=5.0,SNR=8.2						
GERES	**GERESS Array B**	**124.10**	**327**	PKP	PKPdf	22 25 02.5	-0.2
	0.5nm,0.6s,baz=39,slow=0.6,SNR=4.4						
TORD	**Torodi Ar. Bea**	**149.06**	**286**	PKPbc	PKPbc	22 25 52.7	-0.5
	0.9nm,0.5s,baz=77,slow=2.1,SNR=9.9						

*ISCJB **19** 22:07:56.7±0.6, 6.82N±0.04°×73.06W±0.05, h162km±5km, Error ellipse: s-maj=9.5km s-min=4.0km az=35.8*
*FUNV **19** 22:07:58.1, 6.83N×73.04W, h180km, MW2.9*
*RSNC **19** 22:07:59.8±0.9, 6.79N×73.14W, h142km±5km, ML3.3*
ISC 19 22:07:56.4±1.4, 6.82N±0.04°×73.06W±0.05, h165km±8km, n24, σ1s37/40, 1C-3D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.25**	**208**	⇓*i*P	**Pn**	**22 08 18.8**	**-0.2**
BARC				*e*S	**Sn**	**22 08 33.4**	**-2.9**
BARC				*i*		22 08 34.9	
	comp=Z,390nm,0.2s						
PAMC	**Pamplona, Colo**	**0.63**	**35**	*e*P	**Pn**	**22 08 21.6**	**+0.9**
PAMC				*e*S	**Sn**	**22 08 38.6**	**-0.9**
BRRC	**Barranca, Sant**	**0.71**	**294**	*e*P	**Pn**	**22 08 20.7**	**+0.1**
BRRC				*e*S	**Sn**	**22 08 37.6**	**-1.5**
BRRC				*i*		22 08 40.1	
	comp=Z,513nm,0.1s						
RUSC	**La Rusia**	**0.92**	**181**	*e*P	**Pn**	**22 08 22.8**	**+0.2**
RUSC				*e*S	**Sn**	**22 08 41.2**	**-1.5**
CBRI	**Barrientos, No**	**0.93**	**16**	⇑*i*P	**Pn**	**22 08 23.5**	**+1.1**
CBRI				*e*S	**Sn**	**22 08 41.9**	**-0.5**
CBRI				*i*		22 08 47.1	
	comp=Z,246nm,0.5s						
GRMC	**Gramalote, San**	**0.93**	**16**	*e*P	**Pn**	**22 08 24.7**	**+2.4**
GRMC				*e*S	**Sn**	**22 08 44.1**	**+1.8**
GRMC				*i*		22 08 45.2	
	comp=Z,240nm,0.4s						
CAPV	**Capacho**	**1.28**	**35**	*e*P	**Pn**	**22 08 26.7**	**+1.4**
CAPV				*e*S	**Sn**	**22 08 49.1**	**+1.6**
OCAC	**Ocana**	**1.44**	**350**	*e*P	**Pn**	**22 08 27.5**	**+0.8**
OCAC				*e*S	**Sn**	**22 08 50.1**	**0.0**
OCAC				*i*		22 08 53.1	
	comp=Z,216nm,0.4s						
NORC	**Norcasia**	**2.19**	**235**	*e*P	**Pn**	**22 08 34.6**	**-0.1**
NORC				*e*S	**Sn**	**22 09 02.1**	**-2.2**
CHIC	**Chingaza**	**2.27**	**197**	*e*P	**Pn**	**22 08 37.1**	**+1.0**
CHIC				*e*S	**Sn**	**22 09 07.0**	**+0.3**
CHIC				*i*		22 09 12.7	
	comp=Z,34nm,0.3s						
ROSC	**El Rosal**	**2.33**	**213**	*e*P	**Pn**	**22 08 38.4**	**+1.7**
ROSC				*e*S	**Sn**	**22 09 07.6**	**-0.2**
ROSC				*i*		22 09 14.7	
	comp=Z,129nm,0.4s						
HELC	**Santa Helena**	**2.53**	**256**	*e*P	**Pn**	**22 08 40.5**	**+1.4**
HELC				*e*S	**Sn**	**22 09 10.5**	**-1.4**
HELC				*i*		22 09 17.9	
	comp=Z,142nm,0.6s						
VIGV	**El Vigia**	**2.62**	**40**	⇓*e*P	**Pn**	**22 08 41.7**	**+1.8**
VIGV				*e*S	**Sn**	**22 09 12.4**	**-1.1**
SOCV	**Socops**	**2.63**	**56**	*e*P	**Pn**	**22 08 41.6**	**+1.7**
SOCV				*e*S	**Sn**	**22 09 12.8**	**-0.9**
VILC	**Villavicencio,**	**2.76**	**193**	*e*S	**Sn**	**22 09 16.2**	**-0.4**
DBBC	**Dabeiba**	**3.13**	**274**	*e*P	**Pn**	**22 08 47.2**	**+1.0**
TOLC	**Tolima**	**3.16**	**226**	*e*P	**Pn**	**22 08 48.6**	**+1.9**
PRAC	**Prado**	**3.58**	**211**	*e*P	**Pn**	**22 08 53.1**	**+1.3**
PRAC				*e*S	**Sn**	**22 09 34.9**	**+0.1**
PRAC				*i*		22 09 41.7	
	comp=Z,178nm,0.2s						
VIRV	**Villa del Rosa**	**3.72**	**10**	*e*P	**Pn**	**22 08 53.8**	**+0.2**
VIRV				*e*S	**Sn**	**22 09 35.5**	**-2.6**
CURV	**Curarigua**	**4.42**	**44**	⇓*e*P	**Pn**	**22 09 03.6**	**+1.0**
TEPV	**Terepaima**	**4.94**	**50**	*e*P	**Pn**	**22 09 09.1**	**-0.4**
BAUV	**El Baul**	**5.40**	**67**	*e*P	**Pn**	**22 09 15.1**	**-0.4**
MAPV	**Macapo**	**5.45**	**56**	*e*P	**Pn**	**22 09 15.1**	**-1.1**
MONV	**Montecano**	**5.95**	**31**	*e*P	**Pn**	**22 09 23.1**	**+0.5**

MEX 19 22:17:28.1±0.7, 16.15N×95.92W, h67km±10km, MD3.5, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.42**	**206**	*e*P	Pn	22 17 38.3	-1.7
HUIG				*e*S	Sn	22 17 47.1	-1.4
VHO	**Vista Hermosa**	**1.20**	**320**	*e*P	Pn	22 17 48.0	-1.3
VHO				*e*S	Sn	22 18 03.3	-1.8
PNIG	**Pinotepa**	**2.13**	**277**	*e*P	Pn	22 18 00.9	-0.7
PNIG				*e*S	Sn	22 18 25.0	-2.0

*IDC **19** 22:44:49.8±4.3, 35.42N×141.31E, h0km, mb3.6/2, mb1 3.7/3, mb1mx3.4/36, mbtmp3.4/3, ML3.2/1, Error ellipse: s-maj=130.1km s-min=30.0km az=57.0*
*ISCJB **19** 22:44:53.4±1.4, 35.43N±0.07°×141.2E±0.1, h33km, mb3.6/2, Error ellipse: s-maj=14.9km s-min=9.4km az=162.5*
*JMA **19** 22:44:55.2±0.2, 35.48N×141.07E, h32km±1km, M3.1*
ISC 19 22:44:54.4±1.6, 35.42N±0.06°×141.2E±0.1, h33km, n10, σ1s37/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.38**	**318**	P	**Pb**	**22 45 02.4**	**-0.9**
CHOJ				S	**Sb**	**22 45 07.5**	**-1.8**
KTR	**Katsuura**	**0.75**	**249**	P	**Pn**	**22 45 07.4**	**-1.3**
KTR				S	**Sn**	**22 45 17.3**	**-1.7**
JCN	**Nagara**	**0.79**	**270**	P	**Pb**	**22 45 10.0**	**+0.2**
BSO4	**Boso 4**	**0.81**	**238**	P	**Pn**	**22 45 09.8**	**+0.4**
BSO3	**Boso 3**	**0.82**	**222**	P	**Pb**	**22 45 10.1**	**0.0**
JYT	**Yasato**	**1.13**	**316**	P	**Pn**	**22 45 13.2**	**-0.8**
MJAR	**Matsushiro Arr**	**2.65**	**296**	Pn	**Pn**	**22 45 36.0**	**+1.1**
	4.3nm,0.3s,baz=112,slow=7.6,SNR=25						
MAT	**Matsushiro**	**2.65**	**296**	P	**Pn**	**22 45 36.6**	**+1.7**
MAT				*e*S	**Sn**	**22 46 08.2**	**+2.2**
MKAR	**Makanchi Array**	**44.83**	**303**	P	**P**	**22 53 05.6**	**+0.4**
	0.2nm,0.4s,baz=93,slow=7.2,SNR=2.9						
WRA	**Warramunga Arr**	**55.44**	**188**	P	**P**	**22 54 26.3**	**+0.5**
	0.4nm,0.4s,baz=2.5,slow=7.7,SNR=8.1						

IDC 19 22:54:23.8±53.0, 23.25S×177.66W, h0km, mb4.3/3, mb1 4.4/3, mb1mx3.8/22, mbtmp4.3/3, Error ellipse: s-maj=974.7km s-min=149.9km az=87.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**36.95**	**247**	P	P	23 01 33.9	-1.0
	1.6nm,0.4s,baz=84,slow=7.7,SNR=8.1						
ASAR	**Alice Springs**	**44.26**	**259**	P	P	23 02 35.4	-0.1
	0.9nm,0.3s,baz=100,slow=7.1,SNR=12						
WRA	**Warramunga Arr**	**44.60**	**265**	P	P	23 02 38.8	+0.6
	2.6nm,0.4s,baz=100,slow=8.4,SNR=61						

*ATH **19** 23:10:14.4, 38.70N×26.58E, h32km±1km, ML1.7/3, Error ellipse: s-maj=3.6km s-min=1.1km az=266.0*
*DDA **19** 23:10:14.5, 38.70N×26.65E, h7km, Ml2.5*
*ISCJB **19** 23:10:15.5±0.5, 38.67N±0.03°×26.57E±0.06, h25km±8km, Error ellipse: s-maj=8.6km s-min=4.6km az=161.2*
*CSEM **19** 23:10:15.0±0.3, 38.69N×26.60E, h18km±2km, ML1.7, Error ellipse: s-maj=7.2km s-min=4.1km az=80.0*
ISC 19 23:10:14.8±1.0, 38.69N±0.02°×26.58E±0.04, h17km±9km, n21, σ0s38/34, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URLA	**Izmir**	**0.32**	**178**	*i* P	**Pg**	**23 10 21.8**	**+0.2**
URLA				*i* S	**Sb**	**23 10 27.4**	**+0.3**
URLA	**Izmir**	**0.32**	**178**	P	**Pg**	**23 10 21.8**	**+0.2**
URLA				S	**Sb**	**23 10 27.4**	**+0.3**
CHOS	**Chios island**	**0.51**	**234**	P	**Pn**	**23 10 26.5**	**-0.8**
CHOS				S	**Sb**	**23 10 32.9**	**+0.5**
CHOS	**Chios island**	**0.51**	**234**	P	**Pn**	**23 10 26.5**	**-0.8**
CHOS				S	**Sb**	**23 10 32.9**	**+0.5**
CHOS				AML	AML	23 10 37.2	
	comp=N,100μm,0.2s						
CHOS				AML	AML	23 10 38.1	
	comp=E,171μm,0.2s						
PRK	**Paraskevi**	**0.61**	**337**	P	**Pb**	**23 10 27.0**	**0.0**
PRK				S	**Sg**	**23 10 34.7**	**-0.2**
PRK	**Paraskevi**	**0.61**	**337**	P	**Pb**	**23 10 27.0**	**0.0**
PRK				S	**Sg**	**23 10 34.7**	**-0.2**
PRK				AML	AML	23 10 38.6	
	comp=N,156μm,0.3s						
PRK				AML	AML	23 10 39.6	
	comp=E,166μm,0.3s						
DGB	**zmir**	**0.68**	**159**	*i* P	**Pb**	**23 10 27.6**	**-0.5**
DGB				*i* S	**Sg**	**23 10 37.0**	**+0.1**
SIGR	**SIGRI**	**0.77**	**313**	P	**Pn**	**23 10 30.9**	**0.0**
SIGR	**SIGRI**	**0.77**	**313**	P	**Pn**	**23 10 30.9**	**0.0**
SIGR				AML	AML	23 10 43.5	
	comp=E,89μm,0.3s						
SIGR				AML	AML	23 10 44.0	
	comp=N,114μm,0.4s						
SMG	**Samos**	**0.99**	**168**	P	**Pb**	**23 10 33.6**	**0.0**
SMG				S	**Sn**	**23 10 47.8**	**+0.1**
SMG	**Samos**	**0.99**	**168**	P	**Pb**	**23 10 33.6**	**0.0**
SMG				S	**Sn**	**23 10 47.8**	**+0.1**
BOZC	**Bozcaada**	**1.23**	**341**	*i* P	**Pg**	**23 10 37.9**	**-0.5**
BOZC				*i* S	**Sg**	**23 10 55.1**	**+0.6**
BALY	**Balya**	**1.33**	**37**	*i* P	**Pn**	**23 10 38.3**	**-0.3**
BALY				*i* S	**Sg**	**23 10 57.5**	**-0.2**
BALY	**Balya**	**1.33**	**37**	P	**Pn**	**23 10 38.3**	**-0.3**
BALY				S	**Sg**	**23 10 57.5**	**-0.2**
LIA	**Limnos Island**	**1.63**	**319**	P	**Pn**	**23 10 42.0**	**-0.6**
LIA				S	**Sn**	**23 11 03.0**	**-0.2**
APE	**Apeiranthos**	**1.81**	**208**	P	**Pn**	**23 10 45.2**	**-0.1**
APE	**Apeiranthos**	**1.81**	**208**	P	**Pn**	**23 10 45.2**	**-0.1**
SMTH	**Samothraki Isl**	**1.96**	**336**	P	**Pn**	**23 10 47.7**	**+0.4**
SMTH	**Samothraki Isl**	**1.96**	**336**	P	**Pn**	**23 10 47.7**	**+0.4**
ALN	**Alexandroupoli**	**2.25**	**350**	P	**Pn**	**23 10 51.5**	**+0.3**
ALN	**Alexandroupoli**	**2.25**	**350**	P	**Pn**	**23 10 51.5**	**+0.3**

IDC 19 23:10:48.3±7.4, 30.64S×177.24W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.6/24, mbtmp3.6/2, Error ellipse: s-maj=314.5km s-min=55.5km az=156.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**43.75**	**267**	P	P	23 18 54.2	-1.6
	0.2nm,0.4s,baz=104,slow=8.4,SNR=3.8						
WRA	**Warramunga Arr**	**44.76**	**272**	P	P	23 19 05.0	+1.1
	0.5nm,0.3s,baz=111,slow=8.1,SNR=13						
FINES	**FINESS Array B**	**145.59**	**340**	PKPbc	PKPdf	23 30 27.1	-0.7
	0.6nm,0.6s,baz=58,slow=3.6,SNR=8.1						

*CSEM **19** 23:19:18.7±0.3, 67.81N×20.35E, h2km, ML1.9, Error ellipse: s-maj=6.0km s-min=4.9km az=62.0, Mining explosion.*
*HEL **19** 23:19:19.4±0.1, 67.82N×20.21E, h0km, ML1.6, ML1.9(UPP), Explosion*
UPP 19 23:19:18.8±0.1, 67.82N×20.20E, h0km, ML1.9, Explosion, Sweden

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

KUA	**Kurravaara**	**0.15**	**20**	P		Pg	23 19 21.9	+0.2
KUA				S		Sg	23 19 23.8	+0.2
KUA	**Kurravaara**	**0.15**	**20**	*i* P		Pg	23 19 21.9	+0.2
KUA				*i* S		Sg	23 19 23.8	+0.2
KUA	**Kurravaara**	**0.15**	**20**	P		Pg	23 19 25.0	+3.4
KUA				S		Sg	23 19 26.9	+3.4
KUA	**Kurravaara**	**0.15**	**20**	P		Pg	23 19 21.9	+0.3
KUA				S		Sg	23 19 23.8	+0.3
NIKU	**Nikkaluokta**	**0.45**	**277**	P		Pg	23 19 27.4	+0.1
NIKU	**Nikkaluokta**	**0.45**	**277**	*i* P		Pg	23 19 27.4	+0.1
NIKU	**Nikkaluokta**	**0.45**	**277**	P		Pb	23 19 30.9	+1.4
NIKU				S		Sb	23 19 36.8	+0.1
NIKU	**Nikkaluokta**	**0.45**	**277**	P		Pg	23 19 27.4	+0.1
DUNU	**Dundret**	**0.71**	**168**	P		Pg	23 19 32.2	-0.2
DUNU	**Dundret**	**0.71**	**168**	*i* P		Pg	23 19 32.2	-0.2
DUNU	**Dundret**	**0.71**	**168**	P		Pg	23 19 32.2	-0.2
LANU	**Lannavaara**	**0.71**	**70**	P		Pg	23 19 32.3	-0.2
LANU	**Lannavaara**	**0.71**	**70**	*e*P		Pg	23 19 32.1	-0.4
	baz=257							
LANU				*e*S		Sb	23 19 45.0	+0.6
LANU	**Lannavaara**	**0.71**	**70**	Sb		Sb	23 19 45.0	+0.5
LANU	**Lannavaara**	**0.71**	**70**	Pg		Pg	23 19 32.1	-0.4
MASU	**Masugnsbyn**	**0.78**	**117**	P		Pg	23 19 33.5	-0.2
MASU	**Masugnsbyn**	**0.78**	**117**	*i* P		Pg	23 19 33.5	-0.2
MASU	**Masugnsbyn**	**0.78**	**117**	P		Pg	23 19 33.5	-0.1
KIF	**Kilpisjarvi**	**1.22**	**10**	*e*PB		Pg	23 19 42.2	+0.2
KIF				*e*SB		Sb	23 19 58.4	-0.4
KIF	**Kilpisjarvi**	**1.22**	**10**	Pg		Pg	23 19 42.2	+0.2
KIF				Sb		Sb	23 19 58.4	-0.4
HEF	**Hetta**	**1.43**	**64**	*e*P		Pn	23 19 44.8	-1.1
HEF				MSG			23 20 03.8	
	comp=Z,5.8nm,0.2s							
HEF				*e*SN		Sn	23 20 08.7	+3.3
HEF	**Hetta**	**1.43**	**64**	Pg		Pn	23 19 44.8	-1.1
HEF				Sn		Sn	23 20 08.7	+3.3
ERTU	**Ertsjaerv**	**1.49**	**148**	P		Pn	23 19 46.0	-0.7
ERTU	**Ertsjaerv**	**1.49**	**148**	*e*P		Pn	23 19 46.0	-0.7
ERTU	**Ertsjaerv**	**1.49**	**148**	P		Pn	23 19 46.0	-0.7
HARU	**Harads**	**1.69**	**169**	P		Pn	23 19 49.6	+0.2
HARU	**Harads**	**1.69**	**169**	*e*P		Pn	23 19 49.6	+0.2
HARU	**Harads**	**1.69**	**169**	P		Pn	23 19 49.6	+0.1
TOF	**Tornio**	**2.38**	**135**	*e*PB		Pn	23 20 00.5	+1.5
TOF				*e*SG		Sb	23 20 32.3	0.0
TOF	**Tornio**	**2.38**	**135**	Pb		Pn	23 20 00.5	+1.5
RNF	**Rovaniemi**	**2.57**	**115**	*e*PB		Pb	23 20 03.6	-2.0
	baz=303							
RNF				*e*SG		Sb	23 20 37.4	-0.3
RNF	**Rovaniemi**	**2.57**	**115**	Pb		Pb	23 20 03.6	-2.0
ARE0	**ARCESS Array S**	**2.60**	**46**	*e*P		Pn	23 20 02.9	+0.9
	baz=225							
ARE0				*e*SG		Sb	23 20 38.1	-0.4
ARE0	**ARCESS Array S**	**2.60**	**46**	Pb		Pn	23 20 02.9	+0.9
KU6	**Riekki**	**4.22**	**111**	*e*SG		Sg	23 21 30.3	-3.8
KU6	**Riekki**	**4.22**	**111**	Sg		Sg	23 21 30.3	-3.8

*IDC **19** 23:22:31.4±2.6, 20.66S×168.51E, h0km, mb4.0/5, mb1 4.2/6, mb1mx3.9/37, mbtmp4.0/6, ML3.7/1, MS3.1/2, Ms1 3.1/2, ms1mx2.7/32, Error ellipse: s-maj=97.2km s-min=26.5km az=141.0*
*ISCJB **19** 23:22:33.2±2.2, 20.75S±0.4°×168.5E±0.4, h26km, mb3.9/5, MS3.3/1, Error ellipse: s-maj=76.3km s-min=12.9km az=136.6*
ISC 19 23:22:35.4±2.1, 20.9S±0.5°×168.5E±0.4, h26km, n19, σ0s94/19, mb3.9/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.28**	**238**	Pn		**Pn**	**23 23 10.5**	**-1.0**
	16nm,0.3s,baz=110,slow=12,SNR=142							
DZM					Sn	**Sn**	**23 23 38.8**	**0.0**
	45nm,0.3s,baz=99,slow=20,SNR=6.8							
DZM				LR	LR	23 23 48.2		
	comp=Z,184nm,19.6s,baz=33,slow=32							
CTA	**Charters Tower**	**20.88**	**268**	P	Pn	23 27 21.5	+3.1
	8.0nm,0.9s,baz=102,slow=15,SNR=6.1							
STKA	**Stephens Creek**	**26.44**	**240**	P	**P**	**23 28 11.2**	**+1.0**
	3.3nm,1.1

PB06					IAML			23 32 22.6	
	comp=E,588nm,0.3s								
PB04	**IPOC Station P**	**1.91**	**232**	⇑	*i*P		**Pn**	**23 31 57.0**	**+0.6**
PB04					*i* S		**Sn**	**23 32 21.7**	**+0.1**
PB04					IAML			23 32 28.9	
	comp=N,841nm,0.3s								
PB04	**IPOC Station P**	**1.91**	**232**		*e*Pn		**Pn**	**23 31 56.9**	**+0.5**
PB04					*e*Sn		**Sn**	**23 32 21.3**	**-0.3**
PSGC	**Pisagua**	**2.15**	**316**		*i* P		**Pn**	**23 31 59.1**	**-0.2**
PSGC					*i* S		**Sn**	**23 32 25.5**	**-1.3**
PSGC					IAML			23 32 31.8	
	comp=E,663nm,0.7s								
MNMC	**Minye Minye**	**2.25**	**333**	⇑	*i*P		**Sn**	**23 32 01.6**	**+0.9**
MNMC					*i* S		**Sn**	**23 32 30.1**	**+0.8**
MNMC					IAML			23 32 30.6	
	comp=E,3μm,0.3s								
PB10	**IPOC Station P**	**3.00**	**218**		*e*Pn		**Pn**	**23 32 10.6**	**+0.5**
PB10					*e*Sn		**Sn**	**23 32 45.3**	**-0.8**
LPAZ	**La Paz**	**4.86**	**5**		P		**Pn**	**23 32 37.0**	**+1.7**
	comp=E,6.8nm,0.3s,baz=181,slow=4.8,SNR=132								
LPAZ					S		**Sn**	**23 33 32.6**	**+1.6**
	comp=E,0.5nm,0.3s,baz=66,slow=18,SNR=2.1								
LPAZ					LR		LR	23 34 18.8	
	comp=E,43nm,19.0s,baz=62,slow=36								
LCO	**Las Campanas**	**8.06**	**194**		*e*Pn		**Pn**	**23 33 15.0**	**-3.1**
LCO					*e*Sn		Sn	23 34 37.9	-10
SIV	**San Ignacio**	**8.74**	**55**		P		**Pn**	**23 33 24.6**	**-2.5**
	comp=E,7.4nm,0.3s,baz=256,slow=14,SNR=74								
TRQA	**Tornquist**	**17.77**	**163**		*e*P		**Pn**	**23 35 22.9**	**+0.1**
	comp=E,39nm,1.8s								
PLCA	**Paso Flores**	**19.59**	**185**		P		**Pn**	**23 35 44.5**	**+0.2**
	comp=E,0.2nm,0.3s,baz=33,slow=13,SNR=5.7								
PLCA	**Paso Flores**	**19.59**	**185**		*e*P		**Pn**	**23 35 44.5**	**+0.2**
	comp=E,29nm,1.8s								
BDFB	**Brasilia**	**20.22**	**78**		*e*P		**P**	**23 35 48.5**	**-0.2**
	comp=E,33nm,1.7s								
PTGA	**Pitinga**	**21.96**	**23**		P		**P**	**23 36 05.8**	**-1.3**
	comp=E,3.9nm,0.4s,baz=204,slow=15,SNR=19								
PTGA	**Pitinga**	**21.96**	**23**		*e*P		**P**	**23 36 05.8**	**-1.3**
	comp=E,6.5nm,0.7s								
RUSC	**La Rusia**	**27.25**	**350**		*e*P		**P**	**23 36 56.7**	**+0.4**
	comp=E,2.7nm,0.5s								
HOPE	**Hope Point**	**41.01**	**152**		*e*P		**P**	**23 38 52.0**	**-1.8**
	comp=E,192nm,1.6s								
SHEL	**Horse Pasture**	**59.43**	**96**		*e*P		**P**	**23 41 11.1**	**-2.1**
	comp=E,98nm,1.4s								
DBIC	**Dimbokro**	**68.30**	**73**		P		**P**	**23 42 11.8**	**+0.6**
	comp=E,3.2nm,0.8s,baz=252,slow=6.4,SNR=3.6								
DBIC	**Dimbokro**	**68.30**	**73**		*e*P		**P**	**23 42 11.8**	**+0.6**
	comp=E,26nm,1.6s								
TOA1	**Torodi Ar. Sit**	**76.91**	**70**		*e*P		**P**	**23 43 02.5**	**+0.4**
	comp=E,6.1nm,1.4s								
TORD	**Torodi Ar. Bea**	**76.91**	**70**		P		**P**	**23 43 02.5**	**+0.4**
	comp=E,0.5nm,0.4s,baz=257,slow=5.4,SNR=12								
WR1	**Warramunga Arr**	**133.43**	**210**		*e*PKPdf		**PKPdf**	**23 50 27.6**	**+2.3**
WRA	**Warramunga Arr**	**133.43**	**210**		PKP		**PKPdf**	**23 50 27.6**	**+2.3**
	comp=E,0.5nm,0.7s,baz=165,slow=1.8,SNR=5.9								
MK32	**Makanchi Array**	**145.15**	**36**		*e*PKPbc		**PKPdf**	**23 50 47.6**	**+1.8**
MKAR	**Makanchi Array**	**145.15**	**36**		PKP		**PKPdf**	**23 50 47.6**	**+1.8**
	comp=E,0.3nm,0.5s,baz=313,slow=3.0,SNR=5.9								

NNC 19 23:38:45.0±4.4, 38°.90N×69°.65E, h0km, mb3.8, mpv3.3, 3C-2D, Error ellipse: s-maj=44.0km s-min=25.9km az=157.0, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MNAS	**Manas**	**4.19**	**30**	⇓	Pn		Pn	23 39 50.4	+0.2
	4.4nm,0.5s								
MNAS				⇓	Sn		Sn	23 40 39.9	-0.1
	4.7nm,0.7s								
KK31	**Karatay Array**	**4.25**	**9**		Pn		Pn	23 39 51.0	+0.1
	3.0nm,0.7s,baz=196,slow=16,SNR=16								
KK31						Pg	Pg	23 40 03.6	-2.8
	3.0nm,0.6s,baz=195,slow=19,SNR=7.6								
KK31						Lg	Lg	23 41 02.0	
	12nm,0.7s,baz=186,slow=29,SNR=8.5								
TKM2	**Tokmak 2**	**6.03**	**46**	⇑	Pn		Pn	23 40 15.1	-0.6
	3.1nm,0.8s								
TKM2				⇑	Sn		Sn	23 41 28.2	+2.7
	3.6nm,0.8s								
AB31	**Akbulak array**	**12.47**	**329**		P		Pn	23 41 39.6	-4.0
	0.6nm,0.6s,baz=68,slow=41,SNR=13								
AKTO	**Aktyubinsk**	**14.17**	**328**	⇑	P		P	23 42 11.0	-3.7
	3.3nm,0.8s								

IDC 19 23:48:11.6±1.6, 5°.13S×145°.83E, h0km, mb4.0/4, mb1 4.2/6, mb1mx3.8/40, mbtmp4.0/6, ML4.1/1, MS2.9/2, Ms1 2.9/2, ms1mx2.5/30, Error ellipse: s-maj=43.6km s-min=25.9km az=116.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.45**	**163**		Pn		Pn	23 49 19.6	-0.7
	7.1nm,0.3s,baz=312,slow=7.3,SNR=6.9								
PMG					Sn		Sn	23 50 06.9	-6.0
	12nm,0.3s,baz=125,slow=20,SNR=5.3								
PMG					LR		LR	23 51 12.1	
	comp=Z,93nm,20.8s,baz=244,slow=41								
WRA	**Warramunga Arr**	**18.49**	**216**		P		Pn	23 52 30.1	+0.7
	0.6nm,0.3s,baz=36,slow=12,SNR=19								
ASAR	**Alice Springs**	**21.72**	**211**		P		P	23 53 03.9	-0.7
	0.6nm,0.4s,baz=41,slow=8.5,SNR=8.8								
ASAR					LR		LR	00 01 04.9	
	comp=Z,63nm,20.9s,baz=326,slow=36								
FITZ	**Fitzroy Crossi**	**23.57**	**235**		P		P	23 53 24.7	+0.7
	11nm,0.7s,baz=55,slow=9.0,SNR=25								
STKA	**Stephens Creek**	**26.90**	**188**		P		P	23 53 54.0	-0.4
	1.3nm,0.7s,baz=16,slow=9.8,SNR=3.6								
ILAR	**Eielson Array**	**85.15**	**23**		P		P	00 00 49.3	-0.1
	1.4nm,0.7s,baz=249,slow=5.4,SNR=5.8								

*OBM **19** 23:55:55.7±0.2, 49°.59N×87°.16E, h2km, Ml3.8/2, Error ellipse: s-maj=3.8km s-min=2.0km az=165.0*
*ISCJB **19** 23:55:55.8±0.4, 50°.18N±0°.03×87°.59E±0°.05, h10km, mb3.8/12, Error ellipse: s-maj=4.7km s-min=3.7km az=32.5*
*MOS **19** 23:55:56.0±1.7, 50°.10N×87°.59E, h13km, mb4.2/4, Error ellipse: s-maj=9.6km s-min=7.5km az=79.8*
*ASRS **19** 23:55:57.1±1.0, 50°.03N×87°.62E, h15km, Ms3.5/3*
*NNC **19** 23:55:57.4±2.5, 50°.10N×87°.57E, h0km, mb4.4, mpv4.3, Error ellipse: s-maj=20.9km s-min=14.1km az=91.0*
*IDC **19** 23:56:00.9±1.7, 50°.14N×87°.61E, h38km±15km, mb3.6/12, mb1 3.8/20, mb1mx3.7/51, mbtmp3.9/20, ML3.6/8, MS2.9/4, Ms1 2.9/4, ms1mx2.5/37, Error ellipse: s-maj=12.7km s-min=12.0km az=43.0*
*SOME **19** 23:56:02.6, 49°.65N×87°.25E, h5km*

ISC 19 23:55:57.4±0.5, 50°.12N±0°.04×87°.54E±0°.03, h10km, n84, σ2s 20/87, mb3.9/12, 24C-12D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**0.21**	**15**	*i*	PG		**Pg**	**23 56 03.3**	**+1.5**
AKAR				*i*				23 56 07.6	
BYO	**Bayan-Olgiy**	**1.90**	**125**		*e*Pn		Pn	23 56 28.6	-1.0
BYO					*e*Sg		Sn	23 56 52.9	-0.8
UKR	**Ust'-Kan**	**1.94**	**296**		*e*Pg		**Pg**	**23 56 34.6**	**0.0**
UKR					*e*Sg		**Sg**	**23 57 00.2**	**+0.4**
UKR	**Ust'-Kan**	**1.94**	**296**		*e*PN		**Pg**	**23 56 34.6**	**0.0**
UKR					*e*			23 57 00.2	
TASR	**Tashtagol**	**2.65**	**5**		*e*Pg		**Pb**	**23 56 46.5**	**+1.5**
TASR					*e*Sg		**Sg**	**23 57 22.1**	**-0.4**
TASR	**Tashtagol**	**2.65**	**5**		*e*PN		**Pb**	**23 56 46.5**	**+1.5**
TASR					*e*			23 57 22.1	
ULG	**Ulaangom**	**2.87**	**91**		*e*Pn		Pn	23 56 43.8	+0.9
ULG					*e*Sg		Sb	23 57 25.7	+2.2
HBD	**Hovd**	**3.37**	**126**		*e*Pn		Pn	23 56 50.9	+1.1
HBD					*e*Sg		Sb	23 57 40.2	+2.3
ZSN	**Zaisan**	**3.38**	**219**		*e*P		**Pb**	**23 56 56.0**	**-1.4**
	87nm,0.5s								
ZSN					*e*S		**Sb**	**23 57 36.4**	**-2.2**
	683nm,0.6s								
TBTR	**Tabat**	**3.44**	**34**	*i*	PN		**Pb**	**23 56 59.5**	**+1.1**
CERR	**Cheremushki**	**3.66**	**40**		*e*Sg		**Sg**	**23 57 51.8**	**-2.9**
CERR	**Cheremushki**	**3.66**	**40**	*i*	PN		**Pb**	**23 57 03.1**	**+1.1**
ZALV	**Zalesovo Beam**	**4.18**	**337**		Pn		**Pn**	**23 57 03.4**	**+2.2**
	10nm,0.3s,baz=155,slow=13,SNR=94								
ZALV					Sn		**Sn**	**23 57 49.2**	**-0.9**
	17nm,0.3s,baz=159,slow=17,SNR=4.6								
ZALV					Lg		Lg	23 58 11.0	
	47nm,0.3s,baz=154,slow=27,SNR=18								
ZALV					LR		LR	23 58 57.2	
	comp=Z,117nm,20.1s,baz=243,slow=42								
BLRR	**Bol'shaya Rech**	**4.22**	**44**	*i*	PN		**Pn**	**23 57 03.4**	**+1.6**
ABNR	**Abakan**	**4.34**	**32**	*i*	PN		**Pb**	**23 57 15.4**	**+1.7**
KZLR	**Kyzyl**	**4.66**	**67**	*i*	PN		**Pb**	**23 57 21.2**	**+2.1**
SEM	**Semipalatinsk**	**4.68**	**276**		*e*P		**Pg**	**23 57 26.3**	**-0.7**
	17nm,0.5s								
SEM					*e*S		**Sg**	**23 58 30.2**	**+2.6**
	97nm,0.3s								
MK31	**Makanchi Array**	**4.82**	**228**		Pn		**Pn**	**23 57 12.9**	**+2.9**
	38nm,0.7s,baz=50,slow=10,SNR=362								
MK31				⇑	Sn		**Sn**	**23 58 09.8**	**+3.9**
	31nm,0.4s,baz=74,slow=30,SNR=5.5								
MK31				⇓	Lg		Lg	23 58 28.6	
	53nm,0.5s,baz=49,slow=29,SNR=6.6								
MK31	**Makanchi Array**	**4.82**	**228**		PN		**Pn**	**23 57 12.9**	**+2.9**
MK31					S		**Sn**	**23 58 09.8**	**+3.9**
MK31					pmax	pmax			
	comp=Z,38nm,0.7s								
MK31					smax	smax			
	comp=N,31nm,0.4s								
MKAR	**Makanchi Array**	**4.82**	**228**		Pn		**Pn**	**23 57 12.7**	**+2.7**
	comp=N,15nm,0.3s,baz=51,slow=13,SNR=276								
MKAR					Sn		**Sn**	**23 58 07.2**	**+1.3**
	comp=N,24nm,0.3s,baz=75,slow=29,SNR=10.0								
MKAR					Lg		Lg	23 58 29.3	
	comp=N,33nm,0.3s,baz=46,slow=29,SNR=10.0								
MKAR					LR		LR	23 59 14.6	
	comp=N,145nm,19.2s,baz=358,slow=40								
MKAR	**Makanchi Array**	**4.82**	**228**	*i*	PN		**Pn**	**23 57 12.6**	**+2.6**
MKAR					pmax	pmax			
	comp=Z,32nm,0.4s								
MAKZ	**Makanchi**	**4.96**	**230**	⇑	Pn		**Pn**	**23 57 14.4**	**+2.4**
	comp=Z,14nm,0.4s								
MAKZ				⇑	Sn		**Sn**	**23 58 11.5**	**+2.1**
	comp=Z,50nm,0.4s								
MAKZ				⇑	Lg		Lg	23 58 33.5	
	comp=Z,86nm,0.7s								
MAKZ	**Makanchi**	**4.96**	**230**		PN		**Pn**	**23 57 14.4**	**+2.4**
MAKZ					S		**Sn**	**23 58 11.5**	**+2.1**
MAKZ					pmax	pmax			
	comp=Z,15nm,0.4s								
MAKZ					smax	smax			
	comp=N,50nm,0.4s								
NVS	**Novosibirsk**	**5.41**	**333**		*e*Pn		**Pn**	**23 57 20.5**	**+2.5**
NVS					*e*Pg		**Pb**	**23 57 36.5**	**+4.6**
NVS					*e*Sn		**Sn**	**23 58 21.2**	**+1.0**
NVS					*e*Sg		**Sg**	**23 58 49.2**	**-1.7**
NVS	**Novosibirsk**	**5.41**	**333**		*e*PN		**Pn**	**23 57 20.5**	**+2.5**
NVS					*e*			23 57 36.5	
NVS					*e*			23 58 21.2	
BRCR	**Berchikul'**	**5.55**	**5**	*i*	PN		**Pb**	**23 57 36.3**	**+2.0**
KURK	**Kurchatov**	**5.73**	**279**		PN		**Pn**	**23 57 25.3**	**+2.9**
KURK								23 58 30.2	
KURK					pmax	pmax			
	comp=Z,2.0nm,0.3s								
KURK					smax	smax			
	comp=N,2.0nm,0.3s								
KURBB	**Kurchatov Arra**	**5.79**	**278**		Pn		**Pn**	**23 57 25.2**	**+2.1**
	comp=N,2.4nm,0.3s,baz=91,slow=15,SNR=95								
KURBB					Sn		**Sn**	**23 58 30.2**	**+0.7**
	comp=N,2.1nm,0.3s,baz=92,slow=27,SNR=5.7								
KURBB					Lg		Lg	23 58 59.9	
	comp=N,3.1nm,0.3s,baz=81,slow=34,SNR=9.0								
KURBB	**Kurchatov Arra**	**5.79**	**278**	⇑	Pn		**Pn**	**23 57 25.1**	**+2.0**
	comp=N,30nm,0.5s								
KURBB				⇑	Sn		**Sn**	**23 58 33.8**	**+4.2**
	comp=N,93nm,0.5s								
KURBB				⇓	Lg		Lg	23 59 03.2	
	comp=N,322nm,0.6s								
KRAR	**Krasnoyarsk**	**6.72**	**27**	⇑	*e*PN		**Pn**	**23 57 36.1**	**+0.1**
TSC	**Tosontsengel**	**7.06**	**97**		*e*Pn		Pb	23 58 01.4	+1.7
TSC					*e*Sg		Sg	23 59 35.9	-7.6
HTG	**Hatgal**	**8.06**	**82**		*e*Sg		Sg	00 00 10.3	-5.1
PDGK	**Podgornoye**	**8.76**	**222**	⇑	P		**Pn**	**23 58 04.1**	**+0.2**
	comp=N,4.7nm,0.5s								
PDGK	**Podgornoye**	**8.76**	**222**		P		**Pn**	**23 58 04.1**	**+0.2**
PDGK					pmax	pmax			
	comp=Z,5.0nm,0.5s								
TTS	**Tsetserleg**	**9.49**	**101**		*e*Sg		Sn	00 00 53.1	+52
OTUK	**Ortayu**	**10.13**	**265**	⇑	P		**Pn**	**23 58 23.0**	**+0.2**
	comp=Z,3.2nm,0.6s								
OTUK	**Ortayu**	**10.13**	**265**		P		**Pn**	**23 58 23.0**	**+0.2**
OTUK					pmax	pmax			
	comp=Z,3.0nm,0.6s								
TLY	**Talaya**	**10.30**	**75**		LR		LR	00 02 27.0	
	comp=Z,61nm,21.9s,baz=276,slow=38								
BLGM	**Bulgan**	**10.45**	**91**		*e*Sg			00 01 26.5	
TKM2	**Tokmak 2**	**10.92**	**233**	⇑	P		**Pn**	**23 58 33.5**	**-0.4**
	comp=Z,1.1nm,0.4s								
BVA0	**Borovoye Array**	**11.06**	**292**		P		**Pn**	**23 58 35.6**	**+0.1**
	comp=Z,1.0nm,0.3s,baz=106,slow=14,SNR=19								
BVA0	**Borovoye Array**	**11.06**	**292**		P		**Pn**	**23 58 35.6**	**+0.1**
BVA0					pmax	pmax			
	comp=Z,1.0nm,0.4s								
BVAR	**Borovoye Array**	**11.06**	**292**		Pn		**Pn**	**23 58 35.0**	**-0.5**
	comp=Z,1.3nm,0.3s,baz=114,slow=14,SNR=14								
BVAR					Sn		**Sn**	**00 00 33.8**	**-5.3**
	comp=Z,1.1nm,0.3s,baz=98,slow=23,SNR=6.1								
BRVK	**Borovoye**	**11.13**	**292**	*i*	*e*P		**Pn**	**23 58 37.3**	**+0.9**
AAK	**Ala-Archa**	**11.70**	**235**		Pn		**Pn**	**23 58 45.8**	**+1.4**
	comp=Z,1.0nm,0.3s,baz=101,slow=8.3,SNR=4.9								
AAK					Lg		Lg	00 02 08.8	
	baz=159,slow=18,SNR=2.7								
AAK					LR		LR	00 03 28.0	
	comp=Z,57nm,21.3s,baz=198,slow=38								
SONB5	**Songino Array**	**12.53**	**93**		*e*Sg			00 02 35.8	
	comp=Z,30nm,0.9s								
SONB4	**Songino Array**	**12.53**	**93**		*e*Sg			00 02 36.1	
	comp=Z,29nm,1.1s								
SONA2	**Songino Array**	**12.54**	**93**		*e*Sg			00 02 35.8	
SONB1	**Songino Array**	**12.54**	**93**		*e*Sg			00 02 36.2	
	comp=Z,39nm,1.5s								
SONA3	**Songino Array**	**12.55**	**93**		*e*Sg			00 02 33.9	
	comp=Z,52nm,1.5s								
SONA1	**Songino Array**	**12.55**	**93**		*e*Sg			00 02 35.9	
SONA4	**Songino Array**	**12.55**	**93**		*e*Sg			00 02 36.1	
SONA3	**Songino Array**	**12.55**	**93**		*e*Sg			00 02 35.8	
SONB3	**Songino Array**	**12.56**	**93**		*e*Sg			00 02 36.3	
	comp=Z,50nm,1.4s								
SONB2	**Songino Ar. Si**	**12.56**	**93**		*e*Sg			00 02 36.2	
	comp=Z,38nm,1.4s								
SONM	**Songino Array**	**12.60**	**93**		Pn		**Pn**	**23 58 56.7**	**0.0**
	comp=Z,0.1nm,0.3s,baz=253,slow=9.9,SNR=3.7								
SONM					Lg			00 02 31.9	
	comp=Z,0.2nm,0.3s,baz=283,slow=30,SNR=6.3								
ALFM		**12.75**	**92**		*e*Sg			00 02 45.0	
	comp=Z,31nm,1.0s								
SEMM		**13.01**	**94**		*e*Sg		S	00 02 50.4	+58
DZBM		**13.12**	**112**		*e*Sg		S	00 02 46.7	+52
KK31	**Karatay Array**	**13.63**	**246**	⇑	P		**Pn**	**23 59 08.6**	**-2.0**
	comp=Z,0.6nm,0.3s,baz=52,slow=14,SNR=4.9								
KK31	**Karatay Array**	**13.63**	**246**		P		**Pn**	**23 59 08.6**	**-2.0**
KK31					pmax	pmax			
	comp=Z,6.0nm,0.4s								
SVE	**Sverdlovsk**	**17.28**	**303**		*e*P		**P**	**00 00 00.8**	**+0.8**
SVE					*e*S		**Sn**	**00 03 00.7**	**-10**
SVE					pmax	pmax			
	comp=Z,7.0nm,1.2s								
ARU	**Arti**	**18.35**	**301**		P		**P**	**00 00 12.5**	**+0.7**
	comp=Z,0.0nm,0.3s,baz=112,slow=12,SNR=5.7								
ARU					S		**Sn**	**00 03 30.8**	**-5.6**
	comp=Z,0.0nm,0.3s,baz=317,slow=15,SNR=5.1								
ARU	**Arti**	**18.35**	**301**	*d*	*i*P		**P**	**00 00 12.6**	**+0.9**
ARU					S		**S**	**00 03 42.5**	**+1.3**
ARU					pmax	pmax			
	comp=Z,6.0nm,1.6s								
AKTO	**Aktyubinsk**	**18.82**	**282**		P		**Pn**	**00 00 18.0**	**+0.6**
	comp=Z,0.3nm,0.3s,baz=88,slow=11,SNR=8.5								
HIA	**Hailar**	**20.77**	**80**	*de*	P		**P**	**00 00 38.5**	**+0.2**
HIA					pmax	pmax			
	comp=Z,4.0nm,0.8s								
GEYT	**Alibeck**	**24.24**	**251**		P		**P**	**00 01 14.6**	**+0.3**
	comp=Z,1.3nm,0.5s,baz=20,slow=4.7,SNR=6.1								
FINES	**FINESS Array B**	**35.02**	**313**		P		**P**	**00 02 49.6**	**-0.1**
	comp=Z,0.4nm,0.4s,baz=66,slow=5.8,SNR=5.5								
FINES	**FINESS Array B**	**35.02**	**313**		*e*P		**P**	**00 02 50.6**	**+0.9**
AKASG	**Malin Array Be**	**36.33**	**294**		P		**P**	**00 03 00.6**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=58,slow=9.4,SNR=3.6								
KIS	**Kishinev**	**38.12**	**289**	⇓	*i*P		P	00 03 21.6	+5.3
KIS	**Kishinev**	**38.12**	**289**	⇓	P		P	00 03 21.6	+5.3
BRTR	**Keskin Array B**	**38.77**	**276**		P		**P**	**00 03 22.7**	**+0.7**
	comp=Z,1.8nm,0.6s,baz=79,slow=6.3,SNR=12								
CFR	**Carcaliu**	**39.40**	**286**	⇑	*i*P		**P**	**00 03 29.3**	**+2.3**
CFR	**Carcaliu**	**39.40**	**286**	⇑	P		**P**	**00 03 29.3**	**+2.3**
PRAR	**RASCA**	**39.53**	**290**	⇓	*i*P		P	00 03 33.4	+5.3
TIRR	**Tirgusor**	**39.58**	**285**	⇑	*i*P		P	00 03 35.8	+7.3
TIRR	**Tirgusor**	**39.58**	**285**	⇑	P		P	00 03 35.8	+7.3
TESR	**Tescani**	**39.67**	**289**	⇑	*i*P		**P**	**00 03 29.6**	**+0.3**
TLB	**Topalu**	**39.75**	**286**	⇓	*i*P		P	00 03 35.9	+6.0
TLB	**Topalu**	**39.75**	**286**	⇓	P		P	00 03 35.9	+6.0
PLOR	**Plostina**	**39.98**	**288**	⇓	*i*P		P	00 03 38.9	+7.0
PLOR	**Plostina**	**39.98**	**288**	⇓	P		P	00 03 38.9	+7.0
BURAR	**Bucovina Array**	**40.02**	**291**	⇑	*i*P		P	00 03 27.2	-5.1
BURAR	**Bucovina Array**	**40.02**	**291**	⇑	P		P	00 03 27.2	-5.1
ISR	**Istrita**	**40.41**	**287**	⇑	*i*P		P	00 03 43.1	+7.6
ISR	**Istrita**	**40.41**	**287**	⇑	P		P	00 03 43.1	+7.6
MLR	**Muntele Rosu**	**40.59**	**288**	⇑	*i*P		**P**	**00 03 38.1**	**+1.0**
MLR	**Muntele Rosu**	**40.59**	**288**	⇑	P		**P**	**00 03 38.1**	**+1.0**
VOIR		**41.17**	**288**	⇑	*i*P		P	00 03 48.1	+6.3
VOIR		**41.17**	**288**	⇑	P		P	00 03 48.1	+6.3
NB2	**NORSAR Subarra**	**42.05**	**315**		P		**P**	**00 03 47.8**	**-0.9**
	comp=Z,0.7nm,0.5s,baz=64,slow=7.9								
NOA	**NORSAR Array B**	**42.05**	**315**		*e*P		**P**	**00 03 47.3**	**-1.4**
	comp=Z,0.7nm,0.8s,baz=65,slow=7.8,SNR=4.0								
NOA	**NORSAR Array B**	**42.05**	**315**		*e*P		**P**	**00 03 48.4**	**-0.3**
NOA					pmax	pmax			
	comp=Z,1.0nm,0.7s								
PETK	**Petropavlovsk-**	**42.08**	**58**		P		**P**	**00 03 48.1**	**-0.9**
	comp=Z,1.0nm,0.6s,baz=309,slow=9.1,SNR=3.1								
PALK	**Pallekele**	**43.09**	**190**	*i*	P		**P**	**00 03 59.0**	**+1.4**
ILAR	**Eielson Array**	**57.93**	**24**		P		**P**	**00 05 48.4**	**-0.9**
	comp=Z,0.7nm,0.5s,baz=323,slow=6.1,SNR=12								
KDAK	**Kodiak Island**	**61.68**	**32**	*i*	P		**P**	**00 06 14.5**	**-0.5**
ESDC	**Sonseca Array**	**61.73**	**299**		P		**P**	**00 06 15.4**	**-0.3**
	comp=Z,1.1nm,0.6s,baz=48,slow=6.5,SNR=10								
YKA	**Yellowknife Ar**	**66.36**	**11**		P		**P**	**00 06 44.6**	**-1.1**
	comp=Z,1.1nm,0.7s,baz=342,slow=6.9,SNR=5.8								
TORD	**Torodi Ar. Bea**	**77.38**	**275**		P		**P**	**00 07 51.6**	**-1.0**
	comp=Z,1.6nm,0.6s,baz=24,slow=5.0,SNR=35								
WRA	**Warramunga Arr**	**81.08**	**136**		P		**P**	**00 08 12.6**	**0.0**
	comp=Z,0.3nm,0.3s,baz=324,slow=5.9,SNR=5.0								
ASAR	**Alice Springs**	**84.16**	**138**		P		**P**	**00 08 28.1**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=330,slow=5.6,SNR=2.7								
CPUP	**Villa Florida**	**144.10**	**298**		PKP		**PKPab**	**00 15 29.7**	**-0.9**
	comp=Z,1.7nm,0.5s,baz=23,slow=5.2,SNR=6.4								

*ISCJB **20** 00:01:06.8±0.4, 32°.91N±0°.03×115°.52W±0°.03, h14km±3km, Error ellipse: s-maj=5.2km s-min=3.5km az=159.4*
*ECX **20** 00:01:07.8±0.6, 32°.88N×115°.53W, h10km, MD2.8, ML3.0*
*MEX **20** 00:01:07.7±1.2, 33°.02N×115°.41W, h17km±23km, MD3.6*

ISC 20 00:01:05.6±1.0, 32°.92N±0°.03×115°.46W±0°.03, h18km±3km, n29, σ0s 84/43, 16C-3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DREC	**Desert Rsrch C**	**0.12**	**176**	⇑	*e*P		**Pg**	**00 01 10.1**	**+0.7**
DREC					*e*S		**Sg**	**00 01 12.2**	**+0.3**
CLIC	**Calipatria**	**0.23**	**345**	⇓	*i*P		**Pg**	**00 01 12.9**	**+2.0**

MTW	**Mount Morrison**	**11.54**	**200**	*e*PN	**P**	**00 08 33.4 +0.8**
DUWZ	**D'Urville Isla**	**11.75**	**206**	*e*PN	**P**	**00 08 34.4 -0.5**
NNZ	**Nelson**	**12.32**	**206**	*e*PN	**P**	**00 08 42.0 +0.9**
KHZ	**Kahutara**	**13.30**	**203**	PN	**Pn**	**00 08 54.5 +2.1**
RPZ	**Rata Peaks**	**15.34**	**207**	P	**Pn**	**00 09 15.4 -1.1**
	0.5nm,0.3s,baz=41,slow=20,SNR=3.7					
STKA	**Stephens Creek**	**33.32**	**257**	P	**P**	**00 12 05.9 +2.4**
	1.5nm,0.3s,baz=95,slow=12,SNR=8.9					
ASAR	**Alice Springs**	**41.91**	**268**	P	**P**	**00 13 15.5 +0.4**
	0.7nm,0.5s,baz=105,slow=7.5,SNR=5.2					
WRA	**Warramunga Arr**	**42.90**	**273**	P	**P**	**00 13 23.0 0.0**
	1.9nm,0.5s,baz=111,slow=8.1,SNR=11					
PETK	**Petropavlovsk-**	**85.48**	**346**	P	**P**	**00 17 56.0 -0.5**
	2.8nm,0.7s,baz=134,slow=6.4,SNR=3.9					
KLR	**Kul'dur**	**90.40**	**330**	P	**P**	**00 18 19.9 +0.1**
	1.0nm,0.5s,baz=135,slow=10.0,SNR=4.0					
MKAR	**Makanchi Array**	**116.83**	**310**	PKP	**PKPdf**	**00 23 59.8 -1.3**
	0.1nm,0.4s,baz=194,slow=2.1,SNR=3.4					
ARCES	**ARCESS Array B**	**138.29**	**347**	PKhKP	PKPpre	00 24 33.0
	2.3nm,0.9s,baz=70,slow=1.2,SNR=7.8					
ARCES				PKP	**PKPdf**	**00 24 40.0 -1.1**
	1.2nm,0.9s,baz=29,slow=2.8,SNR=3.9					
ARCES				SKPbc	**SKPbc**	**00 27 41.9 -2.7**
	2.2nm,0.8s,baz=33,slow=7.2,SNR=3.9					
FINES	**FINESS Array B**	**144.69**	**339**	PKP	PKPbc	00 24 51.5 -1.0
	7.7nm,0.4s,baz=55,slow=4.3,SNR=95					
NB2	**NORSAR Subarra**	**148.52**	**350**	PKP	**PKPbc**	**00 25 02.0 -1.3**
	comp=Z,1.1nm,0.5s,baz=17,slow=2.6					
NOA	**NORSAR Array B**	**148.52**	**350**	PKPbc	**PKPbc**	**00 25 02.5 -0.8**
	comp=Z,1.5nm,0.6s,baz=14,slow=4.1,SNR=8.4					
AKASG	**Malin Array Be**	**150.53**	**322**	PKPbc	**PKPbc**	**00 25 07.7 -0.7**
	comp=Z,2.3nm,0.6s,baz=49,slow=2.0,SNR=4.5					
BRTR	**Keskin Array B**	**151.52**	**298**	PKPbc	**PKPbc**	**00 25 11.0 -0.3**
	comp=Z,0.3nm,0.5s,baz=137,slow=4.8,SNR=4.2					
TORD	**Torodi Ar. Bea**	**162.84**	**184**	PKPab	**PKPab**	**00 26 11.6 +1.5**
	comp=Z,0.4nm,0.5s,baz=176,slow=4.4,SNR=13					

*IDC **20** 00:06:32.5±0.7, 0°.33S×132°.58E, h0km, mb4.1/11, mb1 4.2/13, mb1mx4.0/37, mbtmp4.1/13, ML3.7/2, MS2.9/3, Ms1 2.9/3, ms1mx2.5/38, Error ellipse: s-maj=15.4km s-min=12.2km az=90.0*

*NEIC **20** 00:06:37.6±0.3, 0°.44S×132°.56E, h35km, mb4.2/6, Error ellipse: s-maj=16.2km s-min=5.5km az=78.0*

ISC 20 00:06:37.7±0.7, 0°.62S±0°.06×132°.4E±0°.1, h33km, n32, σ3§33/36, mb4.0/13, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**1.12**	**257**	Pg		**Pn**	**00 06 58.8**	**+1.7**
	23nm,0.3s,baz=89,slow=24,SNR=13							
SIJI				Lg		Lg	00 07 17.8	
	17nm,0.3s,baz=90,slow=24,SNR=17							
MTN	**Manton Dam**	**12.20**	**186**	*e*Pn		**Pn**	**00 09 31.1**	**+1.8**
MTN				*e*Sn		**Sn**	**00 11 47.7**	**+3.3**
FITZ	**Fitzroy Crossi**	**18.58**	**200**	P		**Pn**	**00 10 54.1**	**+1.5**
	0.1nm,0.3s,baz=14,slow=8.3,SNR=3.4							
FITZ				S		**Sn**	**00 14 12.8**	**-6.8**
	0.1nm,0.3s,baz=54,slow=19,SNR=2.2							
FITZ				LR		LR	00 19 14.2	
	comp=Z,21nm,18.7s,baz=50,slow=40							
FITZ	**Fitzroy Crossi**	**18.58**	**200**	*e*P		**Pn**	**00 10 54.1**	**+1.5**
	25nm,1.8s							
FITZ				*e*Sn		**Sn**	**00 14 12.8**	**-6.8**
WR1	**Warramunga Arr**	**19.30**	**174**	*e*P		**Pn**	**00 11 01.8**	**+0.5**
	54nm,2.0s							
WR1				*e*S		**S**	**00 14 29.6**	**-7.3**
WRA	**Warramunga Arr**	**19.30**	**174**	P		**Pn**	**00 11 01.8**	**+0.5**
	0.4nm,0.3s,baz=354,slow=12,SNR=14							
WRA				S		**S**	**00 14 29.6**	**-7.3**
	0.2nm,0.3s,baz=354,slow=23,SNR=5.0							
AS31	**Alice Springs**	**22.96**	**176**	*e*P		**P**	**00 11 43.1**	**+3.6**
	2.2nm,0.8s							
AS31				*e*Sn		Sn	00 15 57.3	-7.4
ASAR	**Alice Springs**	**22.96**	**176**	P		**P**	**00 11 41.0**	**+1.5**
	3.4nm,0.9s,baz=9.3,slow=8.5,SNR=22							
ASAR				S		**S**	**00 15 57.3**	**+10**
	0.5nm,0.6s,baz=357,slow=27,SNR=3.2							
AS01	**Alice Springs**	**22.96**	**176**	*e*P		**P**	**00 11 40.5**	**+1.0**
CTA	**Charters Tower**	**23.65**	**146**	P		**P**	**00 11 48.4**	**+2.0**
	3.3nm,0.7s,baz=342,slow=9.6,SNR=4.0							
STKA	**Stephens Creek**	**32.29**	**165**	P		**P**	**00 13 03.6**	**0.0**
	1.2nm,0.7s,baz=308,slow=18,SNR=3.4							
STKA	**Stephens Creek**	**32.29**	**165**	*e*P		**P**	**00 13 03.6**	**0.0**
	6.3nm,1.8s							
CM31	**Chiang Mai Arr**	**37.92**	**302**	*e*P		**P**	**00 13 52.8**	**+0.5**
CMAR	**Chiang Mai Arr**	**37.92**	**302**	P		**P**	**00 13 52.8**	**+0.5**
	0.7nm,0.3s,baz=121,slow=6.7,SNR=6.0							
KSRS	**Korea Array**	**38.11**	**354**	LR		LR	00 27 51.1	
	comp=Z,20nm,19.6s,baz=192,slow=34							
SONA0	**Songino Array**	**53.29**	**338**	*e*P		**P**	**00 15 53.1**	**-0.5**
	4.7nm,1.4s							
SONM	**Songino Array**	**53.29**	**338**	P		**P**	**00 15 53.1**	**-0.5**
	0.5nm,0.5s,baz=142,slow=7.3,SNR=5.0							
SONA1	**Songino Array**	**53.30**	**338**	*e*P		**P**	**00 15 56.0**	**+2.4**
PETK	**Petropavlovsk-**	**57.57**	**18**	LR		LR	00 40 03.3	
	comp=Z,10nm,19.2s,baz=237,slow=35							
MK01	**Makanchi Array**	**64.31**	**324**	*e*P		**P**	**00 17 10.1**	**0.0**
MK31	**Makanchi Array**	**64.33**	**324**	*e*P		**P**	**00 17 10.0**	**-0.2**
MK32	**Makanchi Array**	**64.33**	**324**	*e*P		**P**	**00 17 09.7**	**-0.5**
MKAR	**Makanchi Array**	**64.33**	**324**	P		**P**	**00 17 09.7**	**-0.5**
	3.7nm,0.7s,baz=117,slow=7.8,SNR=28							
MKAR	**Makanchi Array**	**64.33**	**324**	*e*P		**P**	**00 17 09.8**	**-0.5**
	29nm,0.8s							
ZALV	**Zalesovo Beam**	**67.02**	**332**	P		**P**	**00 17 26.2**	**-1.2**
	1.7nm,0.6s,baz=123,slow=7.3,SNR=8.1							
ZAA1	**Zalesovo Array**	**67.03**	**332**	*e*P		**P**	**00 17 26.2**	**-1.2**
TIXI	**Tiksi**	**72.19**	**359**	P		**P**	**00 17 57.2**	**-1.7**
	1.3nm,0.3s,baz=117,slow=2.3,SNR=3.1							
GEYT	**Alibeck**	**77.98**	**309**	P		**P**	**00 18 32.0**	**-1.1**
	2.2nm,0.9s,baz=40,slow=7.5,SNR=4.8							
MAW	**Mawson**	**81.71**	**201**	P		**P**	**00 18 54.3**	**+1.7**
	1.2nm,0.8s,baz=60,slow=8.1,SNR=3.8							
MAW	**Mawson**	**81.71**	**201**	*e*P		**P**	**00 18 54.3**	**+1.7**
	2.9nm,1.8s							
ILAR	**Eielson Array**	**86.61**	**25**	P		**P**	**00 19 15.1**	**-2.6**
	0.7nm,0.9s,baz=262,slow=5.3,SNR=6.4							
ILB	**Eielson Array**	**86.61**	**25**	*e*P		**P**	**00 19 15.1**	**-2.6**

*ISCJB **20** 00:44:46.7±0.8, 36°.39N±0°.07×70°.99E±0°.08, h188km, mb3.4/7, Error ellipse: s-maj=11.6km s-min=6.5km az=143.4*

*IDC **20** 00:44:48.6±2.9, 36°.35N×71°.10E, h200km±26km, mb3.2/8, mb1 3.3/14, mb1mx3.1/46, mbtmp3.8/14, Error ellipse: s-maj=21.7km s-min=16.9km az=9.0*

*NNC **20** 00:44:58.5±4.1, 37°.40N×70°.87E, h320km±183km, mb2.4, mpv3.8, Error ellipse: s-maj=106.8km s-min=33.6km az=175.0*

ISC 20 00:44:48.2±1.0, 36°.49N±0°.09×70°.97E±0°.08, h188km, n19, σ1§87/26, mb3.4/7, 1C-6D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MNAS	**Manas**	**6.11**	**11**	⇓P		**Pn**	**00 46 19.2**	**+2.4**
	5.5nm,0.4s							
MNAS				⇓S		**Sn**	**00 47 24.9**	**-1.8**
	20nm,0.5s							
KK31	**Karatay Array**	**6.62**	**357**	⇓P		**Pn**	**00 46 26.5**	**+3.2**
	1.7nm,0.5s,baz=177,slow=13,SNR=18							
KK31				S		**Sn**	**00 47 34.2**	**-4.4**
	7.5nm,0.5s,baz=178,slow=17,SNR=11							
AAK	**Ala-Archa**	**6.72**	**23**	P		**Pn**	**00 46 26.8**	**+2.1**
	4.1nm,0.3s,baz=118,slow=3.1,SNR=16							
AAK				S		**Sn**	**00 47 41.5**	**+0.4**
	1.0nm,0.3s,baz=313,slow=23,SNR=21							
AAK	**Ala-Archa**	**6.72**	**23**	⇑P		**Pn**	**00 46 26.3**	**+1.5**
	6.7nm,0.4s							
AAK				⇓S		**Sn**	**00 47 41.4**	**+0.2**
	27nm,0.9s							
TKM2	**Tokmak 2**	**7.35**	**28**	⇓P		**Pn**	**00 46 35.1**	**+2.0**
	16nm,0.9s							
TKM2				⇓S		**Sn**	**00 47 53.9**	**-2.2**
	11nm,0.9s							
GEYT	**Alibeck**	**10.35**	**282**	P		**Pn**	**00 47 13.8**	**+1.6**
	0.5nm,0.3s,baz=76,slow=6.3,SNR=5.8							
GEYT				S		**Sn**	**00 49 05.0**	**-2.6**
	0.2nm,0.3s,baz=94,slow=18,SNR=2.6							
MKAR	**Makanchi Array**	**13.32**	**36**	P		**Pn**	**00 47 51.3**	**+1.4**
	0.1nm,0.3s,baz=222,slow=16,SNR=5.7							
MKAR				S		**Sn**	**00 50 15.9**	**-2.2**
	0.0nm,0.3s,baz=219,slow=20,SNR=2.6							
KURBB	**Kurchatov Arra**	**15.14**	**19**	P		**Pn**	**00 48 12.2**	**-0.3**
	0.0nm,0.3s,baz=208,slow=11,SNR=9.0							
BVAR	**Borovoye Array**	**16.54**	**359**	P		**P**	**00 48 29.7**	**+1.1**
	0.5nm,0.3s,baz=164,slow=12,SNR=12							
AKTO	**Aktyubinsk**	**16.78**	**330**	P		**Pn**	**00 48 33.0**	**+0.8**
	0.8nm,0.3s,baz=136,slow=11,SNR=22							
ZALV	**Zalesovo Beam**	**19.94**	**25**	P		**P**	**00 49 05.9**	**+0.4**
	1.4nm,0.3s,baz=223,slow=12,SNR=8.7							
FINES	**FINESS Array B**	**37.48**	**326**	P		**P**	**00 51 44.2**	**+0.9**
	0.9nm,0.4s,baz=123,slow=9.0,SNR=13							
ARCES	**ARCESS Array B**	**41.15**	**338**	P		**P**	**00 52 14.3**	**+0.8**
	1.0nm,0.5s,baz=108,slow=7.8,SNR=7.9							
NB2	**NORSAR Subarra**	**44.38**	**323**	P		**P**	**00 52 39.6**	**0.0**
	comp=Z,0.5nm,0.5s,baz=98,slow=7.9							
NOA	**NORSAR Array B**	**44.38**	**323**	P		**P**	**00 52 40.0**	**+0.3**
	comp=Z,0.6nm,0.5s,baz=96,slow=7.7,SNR=4.4							
TORD	**Torodi Ar. Bea**	**65.69**	**269**	P		**P**	**00 55 12.5**	**-0.4**
	comp=Z,0.2nm,0.4s,baz=52,slow=6.0,SNR=8.5							
YKA	**Yellowknife Ar**	**81.26**	**3**	P		**P**	**00 56 42.4**	**-0.5**
	comp=Z,0.2nm,0.5s,baz=348,slow=5.5,SNR=3.0							
WRA	**Warramunga Arr**	**82.00**	**122**	P		**P**	**00 56 45.0**	**-2.4**
	comp=Z,0.9nm,1.0s,baz=324,slow=4.7,SNR=3.2							
ASAR	**Alice Springs**	**84.27**	**125**	P		**P**	**00 56 58.2**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=320,slow=4.1,SNR=4.0							

*IDC **20** 00:45:08.9±14.0, 53°.42N×166°.51W, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.4/38, mbtmp3.4/4, ML3.3/1, Error ellipse: s-maj=272.9km s-min=45.0km az=85.0*

*ISCJB **20** 00:45:19.0±0.6, 53°.51N±0°.07×166°.11W±0°.07, h71km, mb3.4/3, Error ellipse: s-maj=10.2km s-min=4.7km az=159.2*

*NEIC **20** 00:45:20.2, 53°.67N×166°.29W, h69km, ML3.5(AEIC), After AEIC.*

ISC 20 00:45:19.3±1.0, 53°.67N±0°.09×166°.28W±0°.05, h71km, n35, σ1§45/35, mb3.5/3, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
UNV	**Unalaska Valle**	**0.22**	**324**	P		**Pn**	**00 45 31.2**	**+1.1**
UNV				S		**Sn**	**00 45 39.7**	**+1.7**
MTBL	**Makushin Table**	**0.38**	**322**	P		**Pn**	**00 45 32.3**	**+1.0**
MSW	**Makushin Switc**	**0.39**	**310**	P		**Pn**	**00 45 32.2**	**+0.9**
AKMO	**Akutan Morgan**	**0.45**	**21**	P		**Pn**	**00 45 33.0**	**+1.2**
AKMO				S		**Sn**	**00 45 42.9**	**+2.0**
MCIR	**Makushin Cirqu**	**0.46**	**309**	P		**Pn**	**00 45 33.1**	**+1.2**
AKRB	**Akutan Reef Bi**	**0.48**	**15**	P		**Pn**	**00 45 33.2**	**+1.2**
AKRB				S		**Sn**	**00 45 43.6**	**+2.2**
AKUT	**Akutan**	**0.56**	**33**	P		**Pn**	**00 45 33.7**	**+1.0**
AKUT				S		**Sn**	**00 45 44.4**	**+1.8**
AKSA	**Akutan Strait**	**0.58**	**36**	P		**Pn**	**00 45 34.0**	**+1.0**
OKER	**Okmok East Rim**	**1.08**	**259**	P		**Pn**	**00 45 40.3**	**+1.4**
OKTU	**Okmok Mt. Tuli**	**1.09**	**256**	P		**Pn**	**00 45 40.4**	**+1.4**
OKWR	**Okmok West Rim**	**1.17**	**259**	P		**Pn**	**00 45 41.5**	**+1.4**
OKAK	**Okmok**	**1.24**	**267**	P		**Pn**	**00 45 42.4**	**+1.5**
WESP	**Westdahl Peak**	**1.24**	**47**	P		**Pn**	**00 45 42.6**	**+1.6**
WESE	**West Dahl East**	**1.28**	**50**	P		**Pn**	**00 45 42.9**	**+1.3**
WEBT	**Westdahl Beart**	**1.29**	**44**	P		**Pn**	**00 45 43.4**	**+1.8**
WESN	**West Dahl Nort**	**1.35**	**47**	P		**Pn**	**00 45 43.9**	**+1.5**
NIKH	**Nikolski High**	**1.69**	**247**	P		**Pn**	**00 45 47.5**	**+0.7**
SSLS	**Shishaldin Sou**	**1.70**	**51**	P		**Pn**	**00 45 48.5**	**+1.5**
BALA	**Baldy Mountain**	**2.55**	**52**	P		**Pn**	**00 46 00.4**	**+2.0**
DT1	**Dutton Round H**	**2.75**	**57**	P		**Pn**	**00 46 02.5**	**+1.4**
DTNA	**Dutton South F**	**2.79**	**56**	P		**Pn**	**00 46 03.2**	**+1.7**
DOL	**Dolgoi Island**	**2.98**	**58**	P		**Pn**	**00 46 05.7**	**+1.5**
SDPT	**Sand Point**	**3.78**	**61**	*e*Pn		**Pn**	**00 46 16.1**	**+1.0**
SDPT				*e*Sn		**Sn**	**00 46 59.0**	**+0.7**
SPIA	**Saint Paul Isl**	**4.18**	**329**	P		**Pn**	**00 46 20.8**	**+0.3**
CHGN	**Chignik**	**5.24**	**57**	*e*Pn		**Pn**	**00 46 36.1**	**+1.1**
CHGN				*e*Sn		**Sn**	**00 47 33.8**	**-0.3**
ILAR	**Eielson Array**	**14.83**	**34**	Pn		**Pn**	**00 48 42.0**	**-2.8**
	0.1nm,0.3s,baz=225,slow=8.9,SNR=2.3							
YKA	**Yellowknife Ar**	**17.98**	**51**	P		**P**	**00 51 02.5**	**-0.3**
	0.7nm,0.4s,baz=275,slow=8.4,SNR=9.4							
PDAR	**Pinedale Array**	**38.36**	**83**	P		**P**	**00 52 32.5**	**-1.0**
	0.4nm,0.7s,baz=328,slow=5.3,SNR=3.9							
H11N2	**WAKE ISLAND Hy**	**39.65**	**222**	T		T	01 35 05.0	
	baz=25,slow=76,SNR=30							
H11N3	**WAKE ISLAND Hy**	**39.66**	**222**	T		T	01 35 07.4	
	baz=25,slow=76,SNR=22							
H11N1	**WAKE ISLAND Hy**	**39.67**	**222**	T		T	01 35 09.4	
	baz=25,slow=76,SNR=24							
H11S1	**WAKE ISLAND Hy**	**40.83**	**221**	T		T	01 36 17.7	
	baz=24,slow=76,SNR=26							
H11S2	**WAKE ISLAND Hy**	**40.85**	**221**	T		T	01 36 23.9	
	baz=24,slow=76,SNR=24							
H11S3	**WAKE ISLAND Hy**	**40.85**	**221**	T		T	01 36 23.3	
	baz=24,slow=76,SNR=19							
TXAR	**Lajitas Array**	**50.90**	**92**	P		**P**	**00 54 13.2**	**+0.1**
	0.2nm,0.5s,baz=291,slow=4.0,SNR=4.6							

*IDC **20** 00:46:15.3±0.9, 24°.02S×115°.49W, h0km, mb3.9/4, mb1 4.3/4, mb1mx3.9/26, mbtmp3.9/4, MS3.5/5, Ms1 3.5/5, ms1mx3.2/22, Error ellipse: s-maj=90.5km s-min=27.2km az=102.0*

ISC 20 00:46:16.3±1.0, 24°.2S±0°.2×114°.2W±0°.7, h10km, n19, σ0§79/10, mb4.1/4, MS3.4/5, Easter Island region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PPT2	**Papeete2**	**33.64**	**274**	*e*LR		LR	01 00 53.7	
	95nm,26.8s							
PLCA	**Paso Flores**	**39.89**	**125**	LR		LR	01 07 08.5	
	comp=Z,47nm,19.4s,baz=288,slow=31							
LPAZ	**La Paz**	**43.78**	**89**	LR		LR	01 08 45.9	
	comp=Z,41nm,21.4s,baz=289,slow=30							
CPUP	**Villa Florida**	**51.11**	**105**	LR		LR	01 14 01.9	
	comp=Z,31nm,18.1s,baz=202,slow=32							
PMSA	**Palmer Station**	**51.73**	**155**	LR		LR	01 11 46.9	
	comp=Z,33nm,20.4s,baz=255,slow=29							
TXAR	**Lajitas Array**	**54.21**	**11**	P		**P**	**00 55 42.5**	**+0.3**
	0.5nm,0.9s,baz=194,slow=14,SNR=4.0							
VNDA	**Vanderhoof**	**65.21**	**194**	P		**P**	**00 56 56.6**	**-0.7**
	0.5nm,0.3s,baz=90,slow=2.0,SNR=6.8							
PDAR	**Pinedale Array**	**66.80**	**4**	P		**P**	**00 57 07.0**	**-1.1**
	0.8nm,0.6s,baz=177,slow=7.0,SNR=8.6							
YKA	**Yellowknife Ar**	**86.42**	**360**	P		**P**	**00 58 58.1**	**-0.3**
	3.0nm,1.1s,baz=172,slow=4.8,SNR=8.1							
H11S2	**WAKE ISLAND Hy**	**87.98**	**291**	T		T	02 34 43.6	
	baz=116							
H11S1	**WAKE ISLAND Hy**	**87.99**	**291**	T		T	02 34 50.5	
	baz=116,slow=74							
H11S3	**WAKE ISLAND Hy**	**88.00**	**291**	T		T	02 34 40.0	
	baz=116,slow=74							
STKA	**Stephens Creek**	**88.63**	**236**	LR		LR	01 32 42.5	
	comp=Z,97nm,18.6s,baz=27,slow=32							
SONM	**Songino Array**	**140.23**	**317**	PKP		**PKPdf**	**01 05 46.1**	**+0.6**
	0.6nm,0.9s,baz=74,slow=2.1,SNR=3.4							
ZALV	**Zalesovo Beam**	**147.07**	**339**	PKPbc		**PKPdf**	**01 05 57.8**	**+0.8**
	1.5nm,0.7s,baz=34,slow=1.8,SNR=7.9							
CMAR	**Chiang Mai Arr**	**148.65**	**266**	PKPbc		**PKPdf**	**01 06 01.8**	**+1.1**
	1.2nm,0.4s,baz=113,slow=1.9,SNR=4.2							
BRTR	**Keskin Array B**	**148.85**	**53**	PKPbc		**PKPab**	**01 06 08.6**	**+0.2**
	2.1nm,0.9s,baz=237,slow=1.8,SNR=11							
KBZ	**Khabaz**	**152.97**	**38**	PKPbc		**PKPbc**	**01 06 14.2**	**+0.4**
	1.3nm,0.6s,baz=297,slow=2.3,SNR=2.5							
MKAR	**Makanchi Array**	**153.89**	**334**	PKPbc		**PKPbc**	**01 06 15.7**	**-0.2**
	1.0nm,0.7s,baz=29,slow=2.0,SNR=7.6							

*CSEM **20** 00:50:15.6, 34°.86N×32°.71E, h10km, ML3.5*

NIC 20 00:50:15.7±0.2, 34°.86N×32°.71E, h10km, ML3.5, Cyprus region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SZAC	**Souni**	**0.17**	**126**	P		Pg	00 50 19.8	+0.4
	baz=305							
SZAC				S		Sg	00 50 23.5	+1.4
SZAC	**Souni**	**0.17**	**126**	P		Pg	00 50 19.8	+0.4
SZAC				S		Sg	00 50 23.5	+1.4
PPCY	**Paphos**	**0.30**	**275**	P		Pg	00 50 21.9	+0.2
	baz=94							
PPCY	**Paphos**	**0.30**	**275**	P		Pg	00 50 21.9	+0.2
ALFC	**Alefka**	**0.31**	**343**	P		Pg	00 50 22.2	+0.3
	baz=162							
ALFC				S		Sg	00 50 26.8	+0.7
ALFC	**Alefka**	**0.31**	**343**	P		Pg	00 50 22.2	+0.3
ALFC				S		Sg	00 50 26.8	+0.7
AKMC	**Akamas**	**0.35**	**298**	P		Pg	00 50 23.2	+0.5
	baz=118							
AKMC	**Akamas**	**0.35**	**298**	P		Pg	00 50 23.2	+0.5
CSS	**Mathiatis**	**0.52**	**78**	P		Pg	00 50 25.8	0.0
	baz=258							
CSS				S		Sb	00 50 34.0	-0.5
CSS	**Mathiatis**	**0.52**	**78**	P		Pg	00 50 25.8	0.0
						S	Sb	00 50 34.0	-0.5
MAMC	**Mammari**	**0.52**	**53**	P		Pg	00 50 26.3	+0.5
	baz=233							
MAMC	**Mammari**	**0.52**	**53**	P		Pg	00 50 26.3	+0.5

*ISCJB **20** 00:52:07.8±0.5, 49°.84N±0°.03×18°.45E±0°.03, h0km, Error ellipse: s-maj=4.7km s-min=2.5km az=19.3*

*IPEC **20** 00:52:08.7±0.2, 49°.81N×18°.56E, h1km±3km, ML1.7/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*

*CSEM **20** 00:52:08.9±0.3, 49°.84N×18°.48E, h2km, ML2.7/6, Error ellipse: s-maj=6.7km s-min=3.6km az=13.0*

*PRU **20** 00:52:09.9, 49°.84N×18°.47E, h0km*

ISC 20 00:52:08.9±0.8, 49°.82N±0°.04×18°.53E±0°.02, h0km, n31, σ0§97/55, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.25**	**275**	*i* Pg		**Pg**	**00 52 14.5**	**+0.9**
OKC				*e*SG		**Sg**	**00 52 18.7**	**+1.9**
	comp=Z,27nm,0.3s							
OKC	**Ostrava-Krasne**	**0.25**	**275**	Pg		**Pg**	**00 52 14.5**	**+0.9**
OKC				Sg		**Sg**	**00 52 18.7**	**+1.9**
	27nm,0.3s							
MORC	**Moravsky Berou**	**0.64**	**267**	*e*Pg		**Pg**	**00 52 21.6**	**+0.5**
MORC				*e*Sg		**Sg**	**00 52 29.3**	**-0.1**
	17nm,0.3s							
LANS	**Liptovska Anna**	**0.91**	**137**	*e*PG		**Pg**	**00 52 26.4**	**+0.2**
LANS				*e*SG		**Sb**	**00 52 40.4**	**+0.3**
OJC	**Ojcow**	**0.91**	**63**	*e*Pg		**Pg**	**00 52 25.9**	**-0.4**
OJC				*e*Sg		**Sg**	**00 52 38.2**	**0.0**
OJC	**Ojcow**	**0.91**	**63**	*e*Pg		**Pg**	**00 52 25.9**	**-0.4**
OJC				*e*Sg		**Sg**	**00 52 38.2**	**0.0**
KRLC	**Kraliky**	**1.16**	**283**	*e*PG		**Pg**	**00 52 30.5**	**-0.5**
KRLC				*e*SG		**Sg**	**00 52 45.7**	**-0.3**
KRLC	**Kraliky**	**1.16**	**283**	Pg		**Pg**	**00 52 30.5**	**-0.5**
KRLC				Sg		**Sg**	**00 52 45.7**	**-0.3**
VYHS	**Vyhne**	**1.34**	**171**	*e*Pg		**Pg**	**00 52 34.1**	**-0.4**
VYHS				*e*Sg		**Sb**	**00 52 52.8**	**+0.2**
VYHS	**Vyhne**	**1.34**	**171**	*e*PG		**Pg**	**00 52 34.1**	**-0.4**
VYHS				*e*SG		**Sb**	**00 52 52.8**	**+0.2**
VYHS				*e*LG		Lg	00 52 56.0	
VRAC	**Vranov**	**1.36**	**249**	*e*Pg		**Pg**	**00 52 34.4**	**-0.5**
VRAC				*e*Sg		**Sg**	**00 52 51.6**	**-0.9**
	10nm,0.2s							
DPC	**Dobruska-Polom**	**1.52**	**291**	*e*PG		**Pn**	**00 52 36.9**	**-0.4**
DPC				*e*SG		**Sg**	**00 52 57.0**	**-0.6**
	comp=Z,6.3nm,0.3s							
DPC	**Dobruska-Polom**	**1.52**	**291**	Pg		**Pn**	**00 52 36.9**	**-0.4**
DPC				Sg		**Sg**	**00 52 57.0**	**-0.6**
	6.3nm,0.3s							
KRUC	**Moravsky**	**1.58**	**242**	*e*Pg		**Pn**	**00 52 37.7**	**-0.5**
KRUC				*e*Sg		**Sn**	**00 52 58.8**	**-0.6**
	6.0nm,0.2s							
UPC	**Upice**	**1.76**	**294**	*e*PG		**Pn**	**00 52 40.4**	**-0.2**
UPC				*e*SG		**Sg**	**00 53 05.3**	**-0.1**
	comp=Z,5.3nm,0.3s							
UPC	**Upice**	**1.76**	**294**	Pg		**Pn**	**00 52 40.4**	**-0.2**
UPC				Sg		**Sg**	**00 53 05.3**	**-0.1**
	5.3nm,0.3s							
STHS	**Stebnicka Huta**	**1.81**	**102**	*e*Pn		**Pg**	**00 52 43.5**	**0.0**
STHS				*e*Sn		**Sg**	**

baz=194,slow=76,SNR=22
H08S2 Diego Garcia H 19.44 14 T T 01 58 49.0
baz=194,slow=76,SNR=23
H08S3 Diego Garcia H 19.45 14 T T 01 58 50.2
baz=194,slow=76,SNR=21
BOSA Boshof 37.49 257 P **P** **01 41 28.1 -0.8**
3.0nm,1.0s,baz=117,slow=4.5,SNR=3.1
H01W2 Cape Leeuwin H 40.47 113 T T 02 24 46.2
baz=268,slow=74,SNR=46
H01W3 Cape Leeuwin H 40.47 113 T T 02 24 46.3
baz=268,slow=74,SNR=11
H01W1 Cape Leeuwin H 40.48 113 T T 02 24 47.4
baz=268,slow=74,SNR=54
MAW Mawson 41.09 183 P **P** **01 41 58.5 +0.3**
1.5nm,0.9s,baz=25,slow=11,SNR=2.7
MAW LR LR 01 55 51.3
comp=Z,40nm,20.2s,baz=58,slow=32
KULM Kulim 45.02 50 *e*P **P** **01 42 29.9 -0.9**
8.2nm,0.8s
CMAR Chiang Mai Arr 54.14 37 P **P** **01 43 41.9 +1.7**
0.5nm,0.3s,baz=235,slow=7.6,SNR=5.7
SNAA Sanae 58.84 200 P **P** **01 44 13.6 +0.5**
1.3nm,0.8s,baz=108,slow=9.6,SNR=4.6
ASAR Alice Springs 59.42 103 P **P** **01 44 17.2 -0.6**
0.7nm,0.6s,baz=251,slow=6.5,SNR=8.7
WRA Warramunga Arr 61.01 99 P **P** **01 44 27.9 -0.8**
0.9nm,0.8s,baz=253,slow=6.1,SNR=3.8
WRAB Tennant Creek 61.02 99 *e*P **P** **01 44 28.0 -0.9**
3.9nm,1.0s
VNDA Vanda 65.10 166 P **P** **01 44 55.5 +0.4**
0.8nm,0.7s,baz=276,slow=6.8,SNR=2.9
VNDA LR LR 02 09 28.9
comp=Z,23nm,19.2s,baz=165,slow=32
BRTR Keskin Array B 73.25 333 P **P** **01 45 47.6 +1.5**
0.6nm,0.7s,baz=145,slow=5.3,SNR=4.3
KVAR Kislovodsk Arr 73.89 341 LR LR 02 17 18.0
comp=Z,33nm,18.8s,slow=35
MKAR Makanchi Array 74.27 10 P **P** **01 45 51.3 -0.5**
0.5nm,0.8s,baz=182,slow=4.3,SNR=3.0
TORD Torodi Ar. Bea 75.28 293 P **P** **01 45 57.8 -0.5**
0.4nm,0.9s,baz=130,slow=6.0,SNR=2.6
ABKAR Akbulak array 75.86 355 *e*P **P** **01 46 00.2 -0.7**
1.5nm,0.7s
ZALV Zalesovo Beam 81.61 10 P **P** **01 46 32.1 -0.3**
1.2nm,0.7s,baz=184,slow=9.5,SNR=2.1
SONM Songino Array 81.90 25 P **P** **01 46 34.5 +0.2**
0.7nm,0.9s,baz=212,slow=5.1,SNR=2.4
DZM Mont Dzumac 87.71 113 LR LR 02 22 57.8
comp=Z,48nm,18.0s,baz=24,slow=33

*NIED **20** 01:35:00,44.°60N×145.°40E,h5km,Mw4.1 Best double couple: M₀1.79000×10¹⁵ NP1:φ₀118.00000°,δ36.00000°, λ128.00000°. NP2:φ₀254.00000°,δ62.00000°,λ66.00000°.*
*IDC **20** 01:35:46.9±0.8,44.°58N×145.°51E,h0km,mb3.8/9, mb1 4.0/12,mb1mx3.7/53,mbtmp3.8/12,ML3.3/3,MS3.3/8, Ms1 3.3/8,ms1mx2.9/42,Error ellipse: s-maj=23.5km s-min=18.9km az=118.0*
*ISCJB **20** 01:35:47.0±1.6,44.°63N±0.°03×145.°40E±0.°04, h11km±11km,mb3.8/12,MS3.5/4,Error ellipse: s-maj=4.7km s-min=4.3km az=149.6*
*JMA **20** 01:35:48.2±0.1,44.°62N×145.°38E,h19km±1km,M4.0 JMA Felt II J1.*
*NEIC **20** 01:35:48.4±4.7,44.°63N×145.°41E,h10km±29km,mb4.1/1, Error ellipse: s-maj=15.2km s-min=8.2km az=94.0*
NEIC Recorded [2 JMA] in eastern Hokkaido.
*MOS **20** 01:35:48.7±1.4,44.°64N×145.°39E,h26km,mb4.0/4,Error ellipse: s-maj=12.9km s-min=7.8km az=101.5*
*SKHL **20** 01:35:49.0±0.4,44.°55N×145.°34E,h31km±3km,mb4.7/6, Ms3.5/2*
ISC 20 01:35:48.6±1.4,**44.°58N**±0.°04×**145.°41E**±0.°03,**h12**km±10km, **n63**,σ1**930**/64,**mb3.9**/12,**MS3.3**/4,**3C-1D**,**Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
YUK	**Yuzh-Kuril'sk**	**0.64**	**149**	*e*PN		**Pg**	**01 36 00.7**	**-0.3**
YUK				*e*S		**Sg**	**01 36 09.7**	**+0.4**
YUK				pmax	pmax			
	comp=N,544nm,0.2s							
YUK				pmax	pmax			
	comp=Z,3μm,0.2s							
YUK				pmax	pmax			
	comp=E,942nm,0.1s							
YUK				smax	smax			
	comp=N,3μm,0.4s							
YUK				smax	smax			
	comp=E,14μm,0.4s							
YUK	**Yuzh-Kuril'sk**	**0.64**	**149**	*e*P		**Pg**	**01 36 00.7**	**-0.3**
YUK				AMB	AMB	01 36 01.4		
	comp=E,540nm,0.4s							
YUK				AMB	AMB	01 36 01.4		
	comp=E,940nm,0.4s							
YUK				AMB	AMB	01 36 01.4		
	comp=E,3μm,0.4s							
YUK				*e*S		**Sg**	**01 36 09.7**	**+0.4**
YUK				A	A	01 36 12.4		
	comp=E,3μm,0.2s							
YUK				A	A	01 36 12.4		
	comp=E,1μm,0.2s							
JRA	**Rausu**	**0.68**	**198**	P		**Pg**	**01 36 01.5**	**-0.3**
JRA				*e*S		**Sg**	**01 36 11.5**	**+0.8**
JNK	**Nakash**	**1.12**	**207**	P		**Pb**	**01 36 08.7**	**-1.1**
JNK				*e*S		**Sb**	**01 36 23.6**	**-0.7**
NEM2	**Nemuro 2**	**1.24**	**169**	P		**Pn**	**01 36 10.3**	**-1.4**
NEM2				*e*S		**Sb**	**01 36 26.6**	**-1.3**
JTKR	**Abashiri--Toko**	**1.24**	**241**	P		**Pn**	**01 36 10.4**	**-1.4**
JTKR				*e*S		**Sb**	**01 36 27.1**	**-0.8**
SHO	**Shikotan**	**1.24**	**125**	*e*PN		**Pn**	**01 36 10.3**	**-1.5**
SHO				*e*S		**Sb**	**01 36 26.8**	**-1.2**
SHO				pmax	pmax			
	comp=E,987nm,0.3s							
SHO				pmax	pmax			
	comp=Z,2μm,0.3s							
SHO				smax	smax			
	comp=N,11μm,0.4s							
SHO				smax	smax			
	comp=E,20μm,0.3s							
SHO	**Shikotan**	**1.24**	**125**	*e*P		**Pn**	**01 36 10.5**	**-1.3**
SHO				AMB	AMB	01 36 11.3		
	comp=E,800nm,0.3s							
SHO				AMB	AMB	01 36 11.3		
	comp=E,840nm,0.3s							
SHO				AMB	AMB	01 36 11.3		
	comp=E,1μm,0.3s							
SHO				*e*S		**Sb**	**01 36 26.8**	**-1.2**
SHO				A	A	01 36 28.3		
	comp=E,1μm,0.3s							
SHO				A	A	01 36 28.3		
	comp=E,2μm,0.3s							
JMP	**Maruseppu**	**1.58**	**249**	P		**Pn**	**01 36 15.7**	**-0.8**
JMP				*e*S		**Sn**	**01 36 35.5**	**-1.4**
JAK	**Akkeshi**	**1.67**	**198**	P		**Pn**	**01 36 17.1**	**-0.5**
JAR	**Ashorobuto**	**1.75**	**223**	P		**Pn**	**01 36 18.0**	**-0.8**
KUR	**Kuril'sk**	**1.86**	**69**	*e*PN		**Pn**	**01 36 19.5**	**-0.7**
KUR				*e*S		**Sn**	**01 36 41.8**	**-1.9**
KUR				pmax	pmax			
	comp=E,40nm,0.2s							
KUR				pmax	pmax			
	comp=N,76nm,0.3s							
KUR				pmax	pmax			
	comp=Z,76nm,0.3s							
KUR				smax	smax			
	comp=N,407nm,0.5s							
KUR				smax	smax			
	comp=E,236nm,0.5s							
KUR	**Kuril'sk**	**1.86**	**69**	*e*P		**Pn**	**01 36 19.6**	**-0.7**
KUR				AMB	AMB	01 36 20.8		
	comp=E,90nm,0.3s							
KUR				AMB	AMB	01 36 20.8		
	comp=E,150nm,0.3s							
KUR				*e*S		**Sn**	**01 36 43.8**	**+0.1**
KUR				A	A	01 36 44.2		
	comp=E,810nm,0.4s							
KUR				A	A	01 36 44.2		
	comp=E,460nm,0.4s							
ASAJ	**Asahikawa**	**2.07**	**258**	*e*Pn		**Pn**	**01 36 22.7**	**-0.5**
YSS	**Yuzh-Sakhalins**	**3.01**	**323**	⇑*e*PN		**Pn**	**01 36 35.4**	**-0.7**
YSS				*e*S		**Sn**	**01 37 10.8**	**-1.3**
YSS				pmax	pmax			
	comp=N,40nm,0.7s							
YSS				pmax	pmax			
	comp=E,60nm,0.7s							
YSS				pmax	pmax			
	comp=Z,60nm,0.7s							
YSS				smax	smax			
	comp=N,280nm,0.7s							
YSS				smax	smax			
	comp=E,170nm,1.1s							
YSS				MLR	MLR			
	comp=N,420nm,13.0s							
YSS				MLR	MLR			
	comp=Z,440nm,13.0s							
YSS	**Yuzh-Sakhalins**	**3.01**	**323**	*e*Pn		**Pn**	**01 36 34.8**	**-1.3**
YSS	**Yuzh-Sakhalins**	**3.01**	**323**	*i* P		**Pn**	**01 36 35.4**	**-0.7**
YSS				AMB	AMB	01 36 36.0		
	comp=Z,50nm,0.5s							
YSS				*e*S		**Sn**	**01 37 08.2**	**-3.9**
YSS				A	A	01 37 12.0		
	comp=Z,250nm,0.6s							
YSS				A	A	01 37 12.0		
	comp=Z,140nm,0.6s							
YSS				AMS	AMS	01 38 27.0		
	comp=Z,420nm,13.0s							
YSS				AMS	AMS	01 38 27.0		
	comp=Z,440nm,13.0s							
ERM	**Erimo**	**3.05**	**213**	⇑*e*PN		**Pn**	**01 36 40.3**	**+3.7**
ERM				pmax	pmax			
	comp=Z,68nm,1.2s							
ERM	**Erimo**	**3.05**	**213**	*e*Pn		**Pn**	**01 36 36.8**	**+0.2**
TYV	**Tymovskoe**	**6.55**	**345**	*e*PN		**Pn**	**01 37 20.8**	**-3.9**
TYV				pmax	pmax			
	comp=Z,22nm,0.8s							
TYV				MLR	MLR			
	comp=E,500nm,12.0s							
TYV	**Tymovskoe**	**6.55**	**345**	*e*P		**Pn**	**01 37 24.7**	**0.0**
TYV				AMB	AMB	01 37 26.2		
	comp=E,20nm,0.8s							
TYV				AMS	AMS	01 40 28.0		
	comp=E,500nm,12.0s							
HABR	**Khabarovsk**	**8.13**	**302**	*e*PN		**Pn**	**01 37 46.5**	**+0.1**
HABR				*e*SS		Sn	01 39 31.4	+13
HABR				pmax	pmax			
	comp=N,4.0nm,0.6s							
HABR				pmax	pmax			
	comp=Z,15nm,1.3s							
HABR				pmax	pmax			
	comp=E,8.0nm,0.6s							
HABR				MLR	MLR			
	comp=Z,62nm,11.0s							
HABR	**Khabarovsk**	**8.13**	**302**	*e*P		**Pn**	**01 37 46.5**	**+0.1**
MAJO	**Matsushiro**	**9.72**	**217**	*e*PN		**Pn**	**01 38 09.1**	**+0.8**
MAJO	**Matsushiro**	**9.72**	**217**	*e*Pn		**Pn**	**01 38 09.1**	**+0.8**
MJAR	**Matsushiro Arr**	**9.72**	**217**	Pn		**Pn**	**01 38 10.0**	**+1.8**
	comp=Z,0.3nm,0.3s,baz=28,slow=12,SNR=3.6							
MJAR				LR		LR	01 42 14.2	
	comp=Z,195nm,19.0s,baz=20,slow=40							
KLR	**Kul'dur**	**10.44**	**301**	Pn		**Pn**	**01 38 17.9**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=340,slow=11,SNR=2.3							
KLR				LR		LR	01 42 09.3	
	comp=Z,74nm,20.5s,baz=113,slow=36							
PETK	**Petropavlovsk-**	**11.74**	**39**	LR		LR	01 42 56.0	
	comp=Z,92nm,20.4s,baz=227,slow=37							
EKMR	**Ekimchan**	**11.80**	**320**	*e*P		**Pn**	**01 38 37.3**	**+0.7**
EKMR				AMB	AMB	01 38 45.5		
	comp=Z,5.0nm,0.7s							
KSRS	**Korea Array**	**14.98**	**248**	LR		LR	01 44 33.7	
	comp=Z,50nm,22.0s,baz=100,slow=35							
SEY	**Seymchan**	**18.82**	**10**	P		**P**	**01 40 08.2**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=210,slow=18,SNR=7.3							
SEY	**Seymchan**	**18.82**	**10**	⇓*e*P		**Pn**	**01 40 10.3**	**+2.0**
SEY	**Seymchan**	**18.82**	**10**	*e*P		**Pn**	**01 40 10.3**	**+2.0**
SONM	**Songino Array**	**27.00**	**291**	P		**P**	**01 41 32.2**	**+1.9**
	comp=Z,1.3nm,0.6s							
TIXI	**Tiksi**	**28.30**	**349**	⇑*e*P		**P**	**01 41 41.8**	**+0.3**
TIXI				pmax	pmax			
	comp=Z,3.0nm,1.8s							
TIXI	**Tiksi**	**28.30**	**349**	*e*P		**P**	**01 41 41.8**	**+0.3**
H11N2	**WAKE ISLAND Hy**	**30.56**	**137**	T		T	02 13 09.9	
	baz=329,slow=75,SNR=83							
H11N1	**WAKE ISLAND Hy**	**30.57**	**137**	T		T	02 13 11.1	
	baz=329,slow=75,SNR=64							
H11N3	**WAKE ISLAND Hy**	**30.57**	**137**	T		T	02 13 09.1	
	baz=329,slow=75,SNR=67							
NRIK	**Noril'sk**	**37.91**	**331**	LR		LR	02 00 22.0	
	comp=Z,33nm,19.7s,baz=360,slow=39							
ILAR	**Eielson Array**	**41.56**	**37**	P		**P**	**01 43 34.5**	**-1.1**
	comp=Z,0.9nm,0.8s,baz=273,slow=9.0,SNR=9.0							
ILAR	**Eielson Array**	**41.56**	**37**	*e*P		**P**	**01 43 35.0**	**-0.6**
ILAR				pmax	pmax			
	comp=Z,1.0nm,0.8s							
ILAR	**Eielson Array**	**41.56**	**37**	*e*P		**P**	**01 43 35.0**	**-0.6**
MKAR	**Makanchi Array**	**43.09**	**296**	P		**P**	**01 43 47.6**	**-0.8**
	comp=Z,0.9nm,0.8s,baz=79,slow=11,SNR=4.7							
MKAR	**Makanchi Array**	**43.09**	**296**	*e*P		**P**	**01 43 49.9**	**+1.5**
MKAR				pmax	pmax			
	comp=Z,1.0nm,0.8s							
MKAR	**Makanchi Array**	**43.09**	**296**	*e*P		**P**	**01 43 49.9**	**+1.5**
KURK	**Kurchatov**	**44.03**	**303**	*e*P		**P**	**01 43 54.9**	**-0.9**
KURK	**Kurchatov**	**44.03**	**303**	*e*P		**P**	**01 43 54.9**	**-0.9**
KURK	**Kurchatov**	**44.03**	**303**	*e*P		**P**	**01 43 54.9**	**-0.9**
SPITS	**Spitsbergen Ar**	**53.72**	**349**	LR		LR	02 08 22.0	
	comp=Z,18nm,21.1s,baz=180,slow=36							
FINES	**FINESS Array B**	**63.56**	**332**	LR		LR	02 17 13.7	
	comp=Z,27nm,18.9s,baz=50,slow=39							
CTA	**Charters Tower**	**64.36**	**179**	LR		LR	02 11 33.0	
	comp=Z,152nm,20.0s,baz=224,slow=33							
WRAB	**Tennant Creek**	**64.99**	**191**	*e*P		**P**	**01 46 28.1**	**-0.3**
WRAB				pmax	pmax			
	comp=Z,1.0nm,0.6s							
WRAB	**Tennant Creek**	**64.99**	**191**	*e*P		**P**	**01 46 28.1**	**-0.3**
	comp=Z,0.8nm,0.6s							
WRA	**Warramunga Arr**	**65.00**	**192**	P		**P**	**01 46 28.1**	**-0.4**
	comp=Z,2.0nm,0.9s,baz=7.8,slow=6.8,SNR=7.5							
KBZ	**Khabaz**	**68.31**	**310**	P		P	01 46 53.6	+4.2
	comp=Z,2.1nm,0.8s,baz=63,slow=4.7,SNR=4.2							
HFS	**Hagfors**	**68.43**	**336**	P		**P**	**01 46 51.3**	**+1.4**
	comp=Z,0.3nm,0.4s,baz=338,slow=3.4,SNR=2.8							
ASAR	**Alice Springs**	**68.73**	**191**	P		**P**	**01 46 52.6**	**+0.5**
	comp=Z,0.9nm,0.8s,baz=6.8,slow=5.0,SNR=6.0							
PDAR	**Pinedale Array**	**70.32**	**49**	P		**P**	**01 47 02.5**	**+0.3**
	comp=Z,0.7nm,0.6s,baz=310,slow=4.2,SNR=4.7							
CLL	**Collm**	**75.99**	**331**	*e*(P)		P	01 47 40.0	+4.8
CLL	**Collm**	**75.99**	**331**	*e*P		P	01 47 40.0	+4.8
GERES	**GERESS Array B**	**77.81**	**330**	P		**P**	**01 47 45.6**	**-0.1**
	comp=Z,0.4nm,0.6s,baz=13,slow=6.0,SNR=3.5							
TXAR	**Lajitas Array**	**83.21**	**55**	P		**P**	**01 48 15.5**	**+0.5**
	comp=Z,0.6nm,0.6s,baz=284,slow=3.7,SNR=10							

*ISCJB **20** 01:50:14.2±0.6,18.°2S±0.°1×178.°4W±0.°1,h579km, mb3.9/13,Error ellipse: s-maj=17.9km s-min=11.3km az=142.0*
*IDC **20** 01:50:14.4±1.5,18.°08S×178.°46W,h556km±20km, mb3.4/14,mb1 3.6/16,mb1mx3.4/37,mbtmp4.4/16,Error ellipse: s-maj=16.4km s-min=11.6km az=143.0*
ISC 20 01:50:15.7±0.7,**18.°1S**±0.°1×**178.°4W**±0.°1,**h579**km,**n16**, σ1**949**/17,**mb3.7**/13,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.61**	**58**	P		**P**	**01 52 07.8**	**-2.8**
	8.4nm,0.3s,baz=277,slow=8.1,SNR=8.7							
AFI				S		S	01 53 36.2	-8.6
	3.2nm,0.3s,baz=72,slow=20,SNR=2.2							
DZM	**Mont Dzumac**	**14.77**	**252**	P		**P**	**01 53 21.2**	**-1.2**
	2.1nm,0.3s,baz=81,slow=21,SNR=17							
URZ	**Urewera**	**20.50**	**190**	P		**P**	**01 54 12.3**	**-2.4**
	20nm,0.7s,baz=61,slow=2.1,SNR=12							
RPZ	**Rata Peaks**	**27.08**	**197**	P		**P**	**01 55 11.6**	**-1.4**
	6.6nm,0.4s,baz=185,slow=0.6,SNR=11							
CTA	**Charters Tower**	**33.41**	**261**	P		**P**	**01 56 07.7**	**0.0**
	3.7nm,0.5s,baz=95,slow=11,SNR=8.1							
STKA	**Stephens Creek**	**38.55**	**241**	P		**P**	**01 56 51.0**	**+1.2**
	8.8nm,0.5s,baz=90,slow=10,SNR=26							
JAY	**Jayapura**	**42.94**	**286**	P		**P**	**01 57 24.9**	**0.0**
	1.2nm,0.7s,baz=89,slow=24,SNR=5.4							
WRA	**Warramunga Arr**	**44.59**	**260**	P		**P**	**01 57 37.1**	**-0.5**
	3.4nm,0.5s,baz=94,slow=7.1,SNR=101							
ASAR	**Alice Springs**	**44.74**	**254**	P		**P**	**01 57 39.0**	**+0.3**
	30nm,0.5s,baz=88,slow=8.4,SNR=412							
ASAR				S		**S**	**02 03 33.5**	**-0.9**
	2.9nm,0.9s,baz=89,slow=16,SNR=13							
FITZ	**Fitzroy Crossi**	**52.99**	**261**	P		**P**	**01 58 40.1**	**+0.5**
	1.0nm,0.3s,baz=122,slow=5.1,SNR=15							
VNDA	**Vanda**	**60.30**	**185**	P		**P**	**01 59 30.6**	**+2.0**
	0.9nm,0.8s,baz=356,slow=5.9,SNR=3.7							
PETK	**Petropavlovsk-**	**73.82**	**345**	P		**P**	**02 00 52.1**	**+0.4**
	1.4nm,0.6s,baz=128,slow=8.2,SNR=2.6							
SEY	**Seymchan**	**83.92**	**347**	P		**P**	**02 01 44.8**	**-0.1**
	1.4nm,0.5s,baz=146,slow=11,SNR=4.2							
ILAR	**Eielson Array**	**86.04**	**13**	P		**P**	**02 01 54.6**	**-0.6**
	0.6nm,0.4s,baz=224,slow=5.1,SNR=13							
TXAR	**Lajitas Array**	**86.09**	**58**	P		**P**	**02 01 58.6**	**+2.2**
	0.7nm,0.7s,baz=227,slow=5.4,SNR=10							
PDAR	**Pinedale Array**	**87.47**	**43**	P		**P**	**02 02 04.0**	**+1.3**
	0.4nm,0.6s,baz=233,slow=4.4,SNR=4.4							

*ISCJB **20** 01:50:36.1±0.9,18.°1S±0.°2×178.°5W±0.°2,h579km,mb3.9/8, Error ellipse: s-maj=23.8km s-min=16.5km az=42.5*
*IDC **20** 01:50:39.1±3.6,18.°18S×178.°48W,h604km±50km,mb3.3/9, mb1 3.5/9,mb1mx3.1/36,mbtmp4.3/9,Error ellipse: s-maj=32.6km s-min=16.8km az=154.0*
ISC 20 01:50:37.2±1.0,**18.°1S**±0.°2×**178.°5W**±0.°2,**h579**km,**n9**, σ1**908**/10,**mb3.7**/8,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
URZ	**Urewera**	**20.48**	**190**	P		**P**	**01 54 35.0**	**-1.1**
	8.0nm,0.4s,baz=263,slow=3.5,SNR=6.0							
RPZ	**Rata Peaks**	**27.04**	**197**	P		**P**	**01 55 34.1**	**-0.2**
	5.9nm,0.4s,baz=354,slow=10,SNR=3.9							
STKA	**Stephens Creek**	**38.46**	**241**	P		**P**	**01 57 11.2**	**+0.6**
	6.7nm,0.7s,baz=72,slow=7.2,SNR=6.9							
WRA	**Warramunga Arr**	**44.49**	**260**	P		**P**	**01 57 58.3**	**-0.1**
	0.8nm,0.4s,baz=90,slow=7.7,SNR=6.3							
ASAR	**Alice Springs**	**44.64**	**254**	P		**P**	**01 58 00.0**	**+0.5**
	10nm,0.6s,baz=87,slow=8.4,SNR=12							
ASAR				S		**S**	**02 03 53.6**	**-0.9**
	0.2nm,0.5s,baz=89,slow=16,SNR=4.9							
FITZ	**Fitzroy Crossi**	**52.89**	**261**	P		**P**	**01 59 02.0**	**+1.5**
	1.5nm,0.9s,baz=108,slow=6.4,SNR=1.0							
SEY	**Seymchan**	**83.90**	**347**	P		**P**	**02 02 06.2**	**-0.2**
	1.0nm,0.4s,baz=154,slow=7.0,SNR=3.1							
ILAR	**Eielson Array**	**86.06**	**13**	P		**P**	**02 02 15.4**	**-1.4**
	0.4nm,0.4s,baz=225,slow=5.1,SNR=6.5							
TXAR	**Lajitas Array**	**86.17**	**58**	P		**P**	**02 02 19.5**	**+1.2**
	0.9nm,0.8s,baz=213,slow=5.6,SNR=7.7							

*SJA **20** 01:51:57.3±0.9,31.°86S×70.°95W,h14km±4km,MD2.9*
*GUC **20** 01:51:59.0±0.4,31.°95S×71.°13W,h79km±10km,ML3.0*
ISC 20 01:51:58.0±2.2,**31.°94S**±0.°06×**70.°95W**±0.°09,**h7**km±13km, **n12**,σ0**974**/23,**1C-3D**,**Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ROCH	**El Roble**	**1.03**	**183**	⇓*e*P		**Pn**	**01 52 18.9**	**-0.2**
ROCH				*e*S		**Sn**	**01 52 34.2**	**+0.3**
ROCH				IAML			01 52 35.6	
	comp=N,966nm,0.2s							
ROC1	**El Roble**	**1.03**	**183**	*e*P		**Pn**	**01 52 19.0**	**-0.1**
ROC1				*e*S		**Sb**	**01 52 34.1**	**+1.9**
PEL	**Peldehue**	**1.22**	**169**	⇓*e*P		**Pg**	**01 52 21.1**	**-0.2**
PEL				*e*S		**Sg**	**01 52 38.2**	**+1.0**
PEL				IAML			01 52 39.8	
	comp=E,433nm,0.5s							
RTLS	**Leoncito**	**1.42**	**85**	*e*P		**Pb**	**01 52 24.9**	**-0.1**
RTLS				*e*S		**Sn**	**01 52 44.2**	**+0.6**
FCH	**Farellones**	**1.49**	**158**	⇑*e*P		**Pb**	**01 52 26.0**	**-0.2**
FCH				*e*S		**Sn**	**01 52 46.1**	**+0.6**
FCH				IAML			01 52 47.4	
	comp=N,154nm,1.7s							
CLCH	**Cerro Calan**	**1.49**	**166**	⇓*e*P		**Pn**	**01 52 25.1**	**-0.2**
CLCH				*e*S		**Sn**	**01 52 44.7**	**-0.4**
CLCH				IAML			01 52 46.5	
	comp=N,309nm,0.6s							
RCDM	**Rinconada Maip**	**1.55**	**175**	*e*P		**Pn**	**01 52 25.2**	**-0.8**
RCDM				*e*S		**Sn**	**01 52 45.3**	**-1.1**
ASAL	**Salagasta**	**1.91**	**110**	*e*P		**Pb**	**01 52 32.6**	**-0.6**
ASAL				*e*S		**Sb**	**01 52 57.6**	**+0.3**
RTCV	**Cerro Valdivia**	**2.06**	**88**	*e*P		**Pn**	**01 52 33.5**	**+0.5**
RTCV				*e*S		**Sb**	**01 53 00.7**	**-0.8**
AAGR	**Agrelo**	**2.13**	**123**	*e*P		**Pb**	**01 52 35.9**	**-1.0**
AAGR				*e*S		**Sb**	**01 53 03.7**	**+0.1**
AMOG	**MOGNA**	**2.33**	**65**	*e*P		**Pn**	**01 52 37.1**	**+0.2**
AMOG				*e*S		**Sn**	**01 53 06.2**	**+0.4**
AGUA	**GUANDACOL**	**3.24**	**42**	*e*P		**Pn**	**01 52 49.2**	**-0.2**

*ISCJB **20** 01:53:35.1±0.5,39.°10N±0.°02×29.°05E±0.°02,h2km±4km, Error ellipse: s-maj=3.2km s-min=2.5km az=153.4*
*DDA **20** 01:53:35.1,39.°10N×29.°08E,h16km,MI3.6*
*ISK **20** 01:53:35.5,39.°09N×29.°09E,h7km,ML3.3*
*THE **20** 01:53:35.9,39.°02N×29.°08E,h0km,ML3.2/6,Error ellipse: s-maj=1.9km s-min=0.9km az=99.0*
*CSEM **20** 01:53:35.7±0.1,39.°08N×29.°07E,h2km,ML3.3,Error ellipse: s-maj=1.9km s-min=1.7km az=159.0*
ISC 20 01:53:35.8±1.0,**39.°10N**±0.°02×**29.°07E**±0.°02,**h3**km±9km, **n130**,σ0**879**/164,**9C-6D**,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.27**	**102**	*e*PG		**Pg**	**01 53 41.0**	**-0.1**
GEDZ	**Gediz**	**0.27**	**102**	*e*Pg		**Pg**	**01 53 41.0**	**-0.1**
DEMI	**Demirci**	**0.28**	**258**	*i* P		**Pg**	**01 53 41.6**	**+0.3**
DEMI				*i* S		**Sg**	**01 53 45.6**	**+0.7**
DEMI	**Demirci**	**0.28**	**258**	P		**Pg**	**01 53 41.6**	**+0.3**
DEMI				S		**Sg**	**01 53 45.7**	**+0.7**
GDZ	**Gediz**	**0.32**	**92**	*i* P		**Pg**	**01 53 42.1**	**+0.1**
GDZ				*i* S		**Sg**	**01 53 46.7**	**+0.4**
GDZ	**Gediz**	**0.32**	**92**	P		**Pg**	**01 53 42.1**	**+0.1**
GDZ				S		**Sg**	**01 53 46.7**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**41**	*e*PG		**Pg**	**01 53 44.7**	**0.0**
TVSB				*e*SG		**Sg**	**01 53 51.0**	**+0.3**
TVSB	**Tavsanli**	**0.46**	**41**	*e*Pg		**Pg**	**01 53 44.7**	**0.0**
TVSB				*e*Sg		**Sg**	**01 53 51.0**	**+0.3**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG		**Pg**	**01 53 48.4**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**209**	P		**Pg**	**01 53 48.4**	**-0.2**
KULA				S		**Sg**	**01 53 57.1**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**209**

AYVA	**Ayvalik**	**1.86**	**277**	*i* P	**Pn**	**01 54 08.8**	**+0.3**
AYVA	**Ayvalik**	**1.86**	**277**	P	**Pn**	**01 54 08.8**	**+0.3**
GOLH	**Golhisar**	**1.90**	**168**	*i* P	**Pn**	**01 54 09.4**	**+0.2**
GOLH	**Golhisar**	**1.90**	**168**	P	**Pn**	**01 54 09.4**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	**Pn**	**01 54 09.5**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	**Pn**	**01 54 09.5**	**-0.2**
ISK	**Istanbul-Kandi**	**1.96**	**360**	P	**Pn**	**01 54 09.3**	**-0.6**
ISK				S	**Sb**	**01 54 37.7**	**+0.8**
ISK	**Istanbul-Kandi**	**1.96**	**360**	P	**Pn**	**01 54 09.3**	**-0.6**
ISK				S	**Sb**	**01 54 37.7**	**+0.8**
GLHS	**Glhisar (BURDU**	**1.97**	**170**	*e*PN	**Pn**	**01 54 10.0**	**-0.2**
GLHS	**Glhisar (BURDU**	**1.97**	**170**	*e*Pn	**Pn**	**01 54 10.0**	**-0.2**
BCK	**Bucak**	**2.03**	**143**	*e*PN	**Pn**	**01 54 10.6**	**-0.3**
BCK	**Bucak**	**2.03**	**143**	*e*Pn	**Pn**	**01 54 10.6**	**-0.3**
YER	**Yerkesik**	**2.06**	**198**	*e*PN	**Pn**	**01 54 11.4**	**0.0**
YER	**Yerkesik**	**2.06**	**198**	*e*Pn	**Pn**	**01 54 11.4**	**0.0**
MLSB	**Milas**	**2.07**	**210**	*e*PN	**Pn**	**01 54 11.6**	**+0.1**
MLSB	**Milas**	**2.07**	**210**	*e*Pn	**Pn**	**01 54 11.6**	**+0.1**
BTAS	**Taskesti**	**2.09**	**45**	*i* P	**Pb**	**01 54 13.2**	**-1.1**
BTAS	**Taskesti**	**2.09**	**45**	P	**Pb**	**01 54 13.2**	**-1.1**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	*i* P	**Pn**	**01 54 12.7**	**0.0**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	P	**Pn**	**01 54 12.7**	**0.0**
PRK	**Paraskevi**	**2.18**	**275**	P	**Pn**	**01 54 12.8**	**-0.1**
PRK				S	**Sb**	**01 54 41.8**	**-1.4**
PRK	**Paraskevi**	**2.18**	**275**	P	**Pn**	**01 54 12.8**	**-0.1**
KIZT	**Kizilcal**	**2.20**	**95**	*e*PN	**Pn**	**01 54 13.3**	**-0.1**
KIZT	**Kizilcal**	**2.20**	**95**	*e*Pn	**Pn**	**01 54 13.3**	**-0.1**
SAHE	**Sakarya_HENDEK**	**2.22**	**38**	*i* P	**Pn**	**01 54 13.4**	**-0.1**
SAHE	**Sakarya_HENDEK**	**2.22**	**38**	P	**Pn**	**01 54 13.4**	**-0.1**
SUTC	**Sutluce-Ispart**	**2.22**	**136**	*e*PN	**Pn**	**01 54 13.5**	**-0.1**
SUTC	**Sutluce-Ispart**	**2.22**	**136**	*e*Pn	**Pn**	**01 54 13.5**	**-0.1**
SMG	**Samos**	**2.24**	**232**	P	**Pn**	**01 54 12.6**	**-1.1**
SMG				S	**Sn**	**01 54 41.3**	**-0.6**
SMG	**Samos**	**2.24**	**232**	P	**Pn**	**01 54 12.6**	**-1.1**
SMG				S	**Sn**	**01 54 41.3**	**-0.6**
DALY	**Dalyan (Mu˘la**	**2.31**	**188**	*e*PN	**Pn**	**01 54 14.9**	**+0.3**
DALY	**Dalyan (Mu˘la**	**2.31**	**188**	*e*Pn	**Pn**	**01 54 14.9**	**+0.3**
ELL	**Elmali**	**2.44**	**164**	*e*PN	**Pn**	**01 54 16.5**	**-0.1**
ELL	**Elmali**	**2.44**	**164**	*e*Pn	**Pn**	**01 54 16.5**	**-0.1**
CHOS	**Chios island**	**2.46**	**254**	*e*PN	**Pn**	**01 54 17.4**	**+0.5**
CHOS	**Chios island**	**2.46**	**254**	P	**Pn**	**01 54 16.5**	**-0.4**
CHOS				S	**Sn**	**01 54 47.1**	**-0.4**
CHOS	**Chios island**	**2.46**	**254**	P	**Pn**	**01 54 16.5**	**-0.4**
CHOS	**Chios island**	**2.46**	**254**	*e*Pn	**Pn**	**01 54 17.4**	**+0.5**
CHOS				S	**Sn**	**01 54 47.1**	**-0.4**
FETY	**Fethiye**	**2.46**	**180**	*e*PN	**Pn**	**01 54 17.1**	**+0.2**
FETY	**Fethiye**	**2.46**	**180**	*e*Pn	**Pn**	**01 54 17.1**	**+0.2**
BODT	**Bodrum**	**2.46**	**215**	*e*PN	**Pn**	**01 54 16.8**	**-0.1**
BODT	**Bodrum**	**2.46**	**215**	*e*Pn	**Pn**	**01 54 16.8**	**-0.1**
SIGR	**SIGRI**	**2.50**	**273**	P	**Pn**	**01 54 16.9**	**-0.4**
SIGR				S	**Sn**	**01 54 48.6**	**+0.3**
SIGR	**SIGRI**	**2.50**	**273**	P	**Pn**	**01 54 16.9**	**-0.4**
SIGR				S	**Sn**	**01 54 48.6**	**+0.3**
ANTB	**Antalya**	**2.53**	**150**	*e*PN	**Pn**	**01 54 18.2**	**+0.5**
ANTB	**Antalya**	**2.53**	**150**	*e*Pn	**Pn**	**01 54 18.2**	**+0.5**
LADK	**Ladik-KONYA**	**2.73**	**108**	*e*PN	**Pn**	**01 54 20.9**	**+0.2**
LADK	**Ladik-KONYA**	**2.73**	**108**	*e*Pn	**Pn**	**01 54 20.9**	**+0.2**
KONT	**Konya--Tatoy**	**2.83**	**113**	*e*PN	**Pn**	**01 54 22.0**	**+0.1**
KONT	**Konya--Tatoy**	**2.83**	**113**	*e*Pn	**Pn**	**01 54 22.0**	**+0.1**
NIS1	**Nisyros Isl.**	**2.91**	**212**	*e*PN	**Pn**	**01 54 23.7**	**+0.7**
NIS1	**Nisyros Isl.**	**2.91**	**212**	*e*Pn	**Pn**	**01 54 23.7**	**+0.7**
ALN	**Alexandroupoli**	**2.93**	**309**	P	**Pn**	**01 54 23.1**	**-0.2**
ALN				S	**Sn**	**01 55 00.5**	**+1.5**
ALN	**Alexandroupoli**	**2.93**	**309**	P	**Pn**	**01 54 23.1**	**-0.2**
ALN				S	**Sn**	**01 55 00.5**	**+1.5**
KSL	**Kastellorizon**	**2.98**	**172**	P	**Pn**	**01 54 22.7**	**-1.2**
CHBY	**Cihanbeyli**	**3.03**	**99**	*e*PN	**Pn**	**01 54 24.9**	**+0.2**
CHBY	**Cihanbeyli**	**3.03**	**99**	*e*Pn	**Pn**	**01 54 24.9**	**+0.2**
SMTH	**Samothraki Isl**	**3.05**	**298**	P	**Pn**	**01 54 24.9**	**0.0**
SMTH	**Samothraki Isl**	**3.05**	**298**	P	**Pn**	**01 54 24.9**	**0.0**
LIA	**Limnos Island**	**3.11**	**286**	P	**Pn**	**01 54 25.4**	**-0.3**
LIA				S	**Sn**	**01 55 04.4**	**+1.1**
LIA	**Limnos Island**	**3.11**	**286**	P	**Pn**	**01 54 25.4**	**-0.3**
LIA				S	**Sn**	**01 55 04.4**	**+1.1**
EDRB	**Edirne**	**3.26**	**328**	P	**Pn**	**01 54 27.9**	**+0.1**
EDRB	**Edirne**	**3.26**	**328**	P	**Pn**	**01 54 27.9**	**+0.1**
APE	**Apeiranthos**	**3.45**	**235**	*e*PN	**Pn**	**01 54 31.3**	**+0.8**
APE	**Apeiranthos**	**3.45**	**235**	⇑*i*P	**Pb**	**01 54 38.9**	**+1.3**
APE	**Apeiranthos**	**3.45**	**235**	*e*Pn	**Pn**	**01 54 31.3**	**+0.8**
NVR	**Nevrokopi**	**4.57**	**301**	P	**Pn**	**01 54 46.1**	**+0.2**
NVR	**Nevrokopi**	**4.57**	**301**	P	**Pn**	**01 54 46.1**	**+0.2**
SRS	**Serrai**	**4.66**	**297**	P	**Pn**	**01 54 47.0**	**0.0**
SRS	**Serrai**	**4.66**	**297**	P	**Pn**	**01 54 47.0**	**0.0**
TIRR	**Tirgusor**	**5.37**	**355**	⇑*i*P	**Pn**	**01 54 57.1**	**+0.3**
TIRR	**Tirgusor**	**5.37**	**355**	⇑*i*P	**Pn**	**01 54 57.1**	**+0.3**
TLB	**Topalu**	**5.53**	**352**	⇑*i*P	**Pn**	**01 54 59.2**	**+0.2**
TLB	**Topalu**	**5.53**	**352**	⇑*i*P	**Pn**	**01 54 59.2**	**+0.2**
TLCR		**6.08**	**358**	⇓*i*P	**Pn**	**01 55 08.5**	**+2.0**
TLCR		**6.08**	**358**	⇓*i*P	**Pn**	**01 55 08.5**	**+2.0**
CFR	**Carcaliu**	**6.11**	**354**	⇓*i*P	**Pn**	**01 55 06.7**	**-0.2**
CFR	**Carcaliu**	**6.11**	**354**	⇓*i*P	**Pn**	**01 55 06.7**	**-0.2**
MLR	**Muntele Rosu**	**6.79**	**341**	⇑*i*P	**Pn**	**01 55 18.3**	**+1.9**
MLR	**Muntele Rosu**	**6.79**	**341**	⇑*i*P	**Pn**	**01 55 18.3**	**+1.9**
VOIR		**7.00**	**336**	⇓*i*P	**Pn**	**01 55 19.6**	**+0.5**
VOIR		**7.00**	**336**	⇓*i*P	**Pn**	**01 55 19.6**	**+0.5**
ARR	**Arges**	**7.07**	**334**	⇑*i*P	**Pn**	**01 55 21.3**	**+1.1**
ARR	**Arges**	**7.07**	**334**	⇑*i*P	**Pn**	**01 55 21.3**	**+1.1**

NIED ***20*** *02:00:00,36˚.80N×140˚.60E,h5km,Mw3.9 Best double couple: M₀8.13000×10¹⁴ NP1:φs323.00000°,δ37.00000°, λ-106.00000°. NP2:φs163.00000°,δ54.00000°, λ-78.00000°.*

IDC ***20*** *02:00:14.6±0.6,36˚.82N×140˚.51E,h0km,mb3.9/20, mb1 4.1/20,mb1mx3.9/53,mbtmp3.9/20,Error ellipse: s-maj=15.8km s-min=13.2km az=165.0*

ISCJB ***20*** *02:00:15.9±0.5,36˚.79N±0˚.03×140˚.65E±0˚.05,h20km±3km, mb4.0/27,Error ellipse: s-maj=6.9km s-min=4.1km az=22.2*

JMA ***20*** *02:00:16.6,36˚.81N×140˚.56E,h7km±1km,M4.0 Broadband fault plane solution: P waves. NP1: φs325.00000°,δ48.00000°,λ-110.00000°. NP2: φs174.00000°,δ46.00000°,λ-69.00000°. Principal axes: T Plg1.0000°, Azm69.0000°; N Plg15.0000°, Azm339.0000°; P Plg75.0000°, Azm163.0000°;*

JMA Felt II J1.

NEIC ***20*** *02:00:20.2±0.9,36˚.81N×140˚.45E,h38km±8km,mb4.4/7 Error ellipse: s-maj=8.6km s-min=7.1km az=128.0*

NEIC Recorded [2 JMA] in Fukushima and Ibaraki.

ISC 20 02:00:15.7±1.3,36˚.85N±0˚.05×140˚.54E±0˚.04,h5km±9km, n51,σ1ş06/51,mb4.2/27,6C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.24**	**175**	⇑P	**Pg**	**02 00 20.6**	**+0.2**
JHO				S	**Sg**	**02 00 22.6**	**-1.0**
ONAJ	**Iwakimizuishiy**	**0.33**	**39**	⇑P	**Pb**	**02 00 23.3**	**-0.7**
ONAJ				S	**Sb**	**02 00 28.4**	**-1.2**
JSB	**Shiboa**	**0.51**	**284**	⇑P	**Pb**	**02 00 27.6**	**+0.4**
JSB				S	**Sb**	**02 00 35.3**	**+0.4**
JFK	**Kawauchi**	**0.58**	**27**	⇑P	**Pb**	**02 00 28.0**	**-0.4**
JFK				S	**Sb**	**02 00 36.1**	**-0.8**
JYT	**Yasato**	**0.68**	**204**	⇑P	**Pg**	**02 00 28.8**	**0.0**
JYT				S	**Sg**	**02 00 37.4**	**-0.2**
JFT	**Otama**	**0.69**	**346**	⇑P	**Pb**	**02 00 30.6**	**+0.4**
JFT				S	**Sb**	**02 00 40.6**	**+0.6**
MJAR	**Matsushiro Arr**	**1.90**	**261**	Pn	**Pn**	**02 00 49.6**	**+0.8**
	65nm,0.3s,baz=87,slow=15,SNR=167						
MJAR				Lg	Lg	02 01 14.2	
	50nm,0.3s,baz=80,slow=26,SNR=7.8						
MAJO	**Matsushiro**	**1.90**	**261**	*e*Pn	**Pn**	**02 00 49.6**	**+0.8**
MAT	**Matsushiro**	**1.90**	**261**	P	**Pb**	**02 00 49.9**	**-1.0**
MAT				S	**Sb**	**02 01 15.5**	**+0.6**
JHJ	**Hachijo jima 2**	**3.77**	**190**	Pn	**Pn**	**02 01 16.6**	**+2.1**
	40nm,0.3s,baz=288,slow=13,SNR=3.6						
JHJ				Sn	**Sn**	**02 02 00.0**	**+0.7**
	23nm,0.3s,baz=65,slow=18,SNR=1.8						
ERM	**Erimo**	**5.54**	**21**	*e*Pn	**Pn**	**02 01 40.3**	**+1.5**
USRK	**Ussuriysk Ar.**	**9.81**	**321**	Pn	Pn	02 02 42.6	+5.3
	0.1nm,0.3s,baz=139,slow=42,SNR=4.3						
KSRS	**Korea Array**	**10.09**	**277**	Pn	Pn	02 02 46.5	+5.3
	0.2nm,0.3s,baz=96,slow=14,SNR=8.8						
KSAR	**Wonju Array Be**	**10.12**	**277**	Pn	Pn	02 02 46.5	+4.9
SEY	**Seymchan**	**27.11**	**12**	P	**P**	**02 06 00.8**	**+1.7**
	2.0nm,0.7s,baz=220,slow=5.5,SNR=4.7						
SONM	**Songino Array**	**27.31**	**304**	P	**P**	**02 06 00.6**	**-0.7**
	1.6nm,0.8s,baz=97,slow=8.8,SNR=7.9						
H11N2	**WAKE ISLAND Hy**	**28.66**	**119**	T	T	02 35 58.7	
	baz=312,slow=75,SNR=983						
H11N1	**WAKE ISLAND Hy**	**28.67**	**119**	T	T	02 35 59.3	
	baz=312,slow=75,SNR=870						
H11N3	**WAKE ISLAND Hy**	**28.68**	**119**	T	T	02 36 00.2	
	baz=312,slow=75,SNR=889						
H11S1	**WAKE ISLAND Hy**	**29.35**	**121**	T	T	02 36 50.2	
	baz=314,slow=76						
H11S3	**WAKE ISLAND Hy**	**29.35**	**121**	T	T	02 36 50.8	
	baz=314,slow=76						
H11S2	**WAKE ISLAND Hy**	**29.37**	**121**	T	T	02 36 53.9	
	baz=314,slow=76						
TLY	**Talaya**	**29.93**	**311**	P	**P**	**02 06 22.6**	**-1.9**
	1.1nm,0.5s,baz=131,slow=20,SNR=2.7						
ZALV	**Zalesovo Beam**	**41.52**	**313**	P	**P**	**02 08 03.2**	**-0.5**
	1.5nm,0.7s,baz=81,slow=9.2,SNR=5.0						
ZALV				PcP	**PcP**	**02 10 00.2**	**-0.9**
	0.7nm,0.5s,baz=100,slow=1.8,SNR=2.5						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**02 08 20.9**	**0.0**
	0.5nm,0.6s,baz=89,slow=11,SNR=4.5						
KURK	**Kurchatov**	**45.50**	**308**	*e*P	**P**	**02 08 35.1**	**-0.6**
KURBB	**Kurchatov Arra**	**45.56**	**308**	P	**P**	**02 08 34.4**	**-1.9**
	1.6nm,0.5s,baz=82,slow=8.1,SNR=7.8						
ILAR	**Eielson Array**	**50.02**	**32**	P	**P**	**02 09 10.6**	**-0.1**
	0.8nm,0.8s,baz=270,slow=6.3,SNR=7.6						
BVAR	**Borovoye Array**	**50.18**	**312**	P	**P**	**02 09 11.8**	**-0.3**
	1.0nm,0.8s,baz=97,slow=10,SNR=4.8						
BRVK	**Borovoye**	**50.24**	**312**	*e*P	**P**	**02 09 12.3**	**-0.1**
	4.7nm,0.7s						
ARU	**Arti**	**56.03**	**318**	P	**P**	**02 09 54.6**	**-0.6**
	1.1nm,0.3s,baz=112,slow=12,SNR=4.2						
ARU	**Arti**	**56.03**	**318**	*e*P	**P**	**02 09 54.1**	**-1.1**
	2.0nm,0.3s						
FITZ	**Fitzroy Crossi**	**56.44**	**197**	P	**P**	**02 09 57.2**	**-1.1**
	3.0nm,1.0s,baz=34,slow=7.3,SNR=2.9						
WRAB	**Tennant Creek**	**56.78**	**187**	*e*P	**P**	**02 09 59.7**	**-1.0**
	3.5nm,0.8s						
WRA	**Warramunga Arr**	**56.79**	**187**	P	**P**	**02 09 59.6**	**-1.2**
	2.0nm,0.5s,baz=3.6,slow=7.3,SNR=28						
ABKAR	**Akbulak array**	**57.52**	**310**	*e*P	**P**	**02 10 05.2**	**-0.6**
	1.9nm,0.7s						
AKTO	**Aktyubinsk**	**58.28**	**312**	P	**P**	**02 10 11.3**	**+0.2**
	1.1nm,0.6s,baz=70,slow=7.5,SNR=5.0						
ASAR	**Alice Springs**	**60.52**	**187**	P	**P**	**02 10 26.6**	**-0.2**
	1.2nm,0.8s,baz=10,slow=6.5,SNR=9.5						
ARCES	**ARCESS Array B**	**63.92**	**339**	P	**P**	**02 10 49.3**	**+0.2**
	1.9nm,0.9s,baz=50,slow=7.2,SNR=3.2						
FINES	**FINESS Array B**	**68.65**	**332**	P	**P**	**02 11 18.2**	**-1.3**
	1.2nm,0.8s,baz=33,slow=3.3,SNR=4.3						
BMO	**Blue Mountains**	**72.56**	**47**	*e*P	**P**	**02 11 42.6**	**-1.2**
	1.1nm,0.5s						
HFS	**Hagfors**	**73.97**	**335**	P	**P**	**02 11 52.2**	**+0.5**
	baz=48,slow=6.4						
NOA	**NORSAR Array B**	**74.08**	**337**	P	**P**	**02 11 52.3**	**-0.2**
	0.4nm,0.5s,baz=24,slow=5.3,SNR=2.6						
R11A	**Troy Canyon, C**	**77.42**	**51**	*e*P	**P**	**02 12 12.9**	**+0.8**
	1.3nm,0.6s						
PDAR	**Pinedale Array**	**78.29**	**45**	P	**P**	**02 12 17.6**	**+0.6**
	0.6nm,0.7s,baz=236,slow=3.8,SNR=5.9						
BRTR	**Keskin Array B**	**78.45**	**311**	P	**P**	**02 12 17.8**	**+0.1**
	0.5nm,0.8s,baz=15,slow=6.0,SNR=2.6						
WUAZ	**Wupatki**	**81.82**	**52**	*e*P	**P**	**02 12 37.1**	**+1.0**
	4.1nm,0.9s						
GERES	**GERESS Array B**	**82.50**	**328**	P	**P**	**02 12 38.8**	**-0.5**
	0.3nm,0.5s,baz=39,slow=7.0,SNR=2.9						
SCHQ	**Schefferville**	**85.70**	**15**	P	**P**	**02 12 58.8**	**+3.4**
	5.4nm,0.5s,baz=346,slow=4.2,SNR=7.2						
TXAR	**Lajitas Array**	**90.78**	**52**	P	**P**	**02 13 20.6**	**+0.3**
	1.1nm,0.8s,baz=300,slow=3.3,SNR=13						
LPAZ	**La Paz**	**147.39**	**59**	PKPbc	**PKPab**	**02 20 01.9**	**-1.7**
	1.5nm,0.7s,baz=352,slow=3.4,SNR=4.7						

ISCJB ***20*** *02:14:39.8±0.5,42˚.31N±0˚.05×135˚.62E±0˚.06,h350km, mb3.2/9,Error ellipse: s-maj=6.9km s-min=5.4km az=38.9*

IDC ***20*** *02:14:41.7±1.6,42˚.27N×135˚.55E,h368km±17km,mb2.9/9, mb1 3.1/12,mb1mx3.0/42,mbtmp3.6/12,Error ellipse: s-maj=21.7km s-min=15.9km az=83.0*

JMA ***20*** *02:14:44.3±0.4,42˚.23N×136˚.09E,h365km,M3.5*

ISC 20 02:14:40.3±0.6,42˚.29N±0˚.06×135˚.74E±0˚.07,h350km,n26, σ1ş92/29,mb3.3/9,Sea of Japan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
USRK	**Ussuriysk Ar.**	**3.34**	**306**	P	**Pn**	**02 15 44.9**	**+2.2**
	2.2nm,0.3s,baz=115,slow=9.1,SNR=27						
JKB	**Kayabe**	**3.96**	**94**	P	**Pn**	**02 15 51.5**	**+2.7**
JRG	**Rokugo**	**4.70**	**126**	P	**Pn**	**02 15 59.7**	**+3.0**
JMK	**Ichinoseki**	**5.34**	**127**	P	**Pn**	**02 16 05.0**	**+1.3**
JWK2	**Keihoku**	**5.38**	**54**	P	**Pn**	**02 16 07.7**	**+3.7**
JCH	**Churui**	**5.65**	**84**	P	**Pn**	**02 16 09.2**	**+2.2**
JCH				*e*S	**S**	**02 17 16.0**	**-1.3**
JMM	**Marumori**	**5.88**	**137**	P	**Pn**	**02 16 12.0**	**+2.3**
JMM				*e*S	**S**	**02 17 21.9**	**-0.3**
JTKR	**Abashiri--Toko**	**6.21**	**72**	P	**Pn**	**02 16 15.4**	**+2.1**
JFK	**Kawauchi**	**6.31**	**140**	*e*S	**S**	**02 17 30.1**	**-1.2**
JAK	**Akkeshi**	**6.64**	**81**	*e*S	**S**	**02 17 35.6**	**-2.5**
JNK	**Nakash**	**6.71**	**76**	*e*S	**S**	**02 17 39.9**	**+0.2**
JHU	**Hanno**	**7.00**	**156**	*e*S	**S**	**02 17 45.6**	**-0.3**
JRA	**Rausu**	**7.06**	**73**	P	**Pn**	**02 16 25.3**	**+2.1**
NEM2	**Nemuro 2**	**7.43**	**78**	S	**S**	**02 17 50.5**	**-4.5**
KLR	**Kul'dur**	**7.48**	**339**	P	**Pn**	**02 16 28.7**	**+0.6**
	0.5nm,0.3s,baz=144,slow=9.2,SNR=7.3						
KSRS	**Korea Array**	**7.71**	**234**	P	**Pn**	**02 16 32.1**	**+1.1**
	0.3nm,0.3s,baz=53,slow=9.6,SNR=1.5						
BSO4	**Boso 4**	**8.13**	**152**	P	**Pn**	**02 16 37.0**	**+1.1**
BSO4				*e*S	**S**	**02 18 08.5**	**-1.7**
SONM	**Songino Array**	**21.38**	**295**	P	**P**	**02 18 59.4**	**-1.4**
	0.8nm,0.5s,baz=100,slow=10.0,SNR=3.9						
ZALV	**Zalesovo Beam**	**35.19**	**307**	P	**P**	**02 21 01.0**	**-1.1**
	1.1nm,0.5s,baz=70,slow=8.3,SNR=5.8						
MKAR	**Makanchi Array**	**37.75**	**296**	P	**P**	**02 21 22.7**	**-1.0**
	0.3nm,0.5s,baz=82,slow=10,SNR=3.1						
ILAR	**Eielson Array**	**47.52**	**35**	P	**P**	**02 22 41.3**	**+0.2**
	0.2nm,0.6s,baz=283,slow=8.0,SNR=2.7						
WRA	**Warramunga Arr**	**61.93**	**181**	P	**P**	**02 24 23.1**	**-0.8**
	0.2nm,0.3s,baz=349,slow=7.6,SNR=12						
KBZ	**Khabaz**	**64.21**	**306**	P	**P**	**02 24 37.7**	**-0.8**
	1.2nm,0.5s,baz=61,slow=7.4,SNR=2.7						
ASAR	**Alice Springs**	**65.65**	**182**	P	**P**	**02 24 47.4**	**-0.5**
	0.5nm,0.5s,baz=358,slow=6.2,SNR=5.3						
PDAR	**Pinedale Array**	**76.98**	**43**	P	**P**	**02 25 55.5**	**+0.2**
	0.4nm,0.5s,baz=66,slow=1.8,SNR=3.6						
TXAR	**Lajitas Array**	**90.17**	**49**	P	**P**	**02 27 02.3**	**+0.5**
	0.1nm,0.5s,baz=236,slow=1.4,SNR=3.7						

MOS ***20*** *02:28:23.4±1.6,52˚.86N×108˚.67E,h11km,mb4.3/1,Error ellipse: s-maj=15.1km s-min=10.7km az=64.9*

BYKL 20 02:28:24.6±0.2,52˚.86N×108˚.52E,h24km±3km,6C-5D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELR	**Kotokel**	**0.28**	**250**	⇓*i*Pg	Pb	02 28 31.4	+0.1
KELR				*i* Sg	Sb	02 28 36.1	+0.2
MXMB	**Maximikha**	**0.43**	**18**	⇑*i*Pg	Pb	02 28 33.3	-0.3
MXMB				*e*Sg	Sb	02 28 39.4	-0.3
ZRHB	**Zarechye**	**0.89**	**250**	*e*Sg	Sn	02 28 53.4	-0.3
OGRR	**Ongureny**	**0.96**	**325**	⇑*i*Pg	Pb	02 28 42.3	-0.3
OGRR				*e*		02 28 46.9	
OGRR				*e*Sg	Sn	02 28 55.3	-0.3
OGRR				Pmax			
	369nm,0.4s						
OGRR				Smax			
	925nm,0.2s						
OGRR	**Ongureny**	**0.96**	**325**	⇑*i*PG	Pb	02 28 42.3	-0.3
OGRR				*e*		02 28 55.0	
OGRR				pmax	pmax		
	comp=Z,359nm,0.3s						
OGRR				smax	smax		
	comp=E,1μm,0.2s						
UUDB	**Ulan-Yde**	**1.12**	**208**	⇓*i*Pg	Pb	02 28 45.6	+0.2
UUDB				*e*Sg	Sn	02 29 01.1	+1.5
UUDB				Pmax			
	comp=E,90nm,0.2s						
UUDB				Smax			
	comp=E,941nm,0.4s						
SYVR	**Suvo**	**1.20**	**47**	⇓*i*Pg	Pb	02 28 46.2	-0.4
SYVR				⇑*i*Pb	Pn	02 28 47.3	+1.5
SYVR				*e*Sg	Sb	02 29 02.5	+0.9
SYVR				*e*Sb	Sn	02 29 04.5	+3.2
SYVR				max			
	comp=E,407nm,0.3s						
SYVR				max			
	comp=E,805nm,0.4s						
SYVR	**Suvo**	**1.20**	**47**	*e*PG	Pn	02 28 46.1	+0.3
SYVR				*e*		02 29 02.3	
SYVR				pmax	pmax		
	comp=Z,425nm,0.3s						
SYVR				smax	smax		
	comp=E,821nm,0.4s						
TRG	**Tyrgan**	**1.32**	**267**	⇑*i*Pg	Pn	02 28 48.0	+0.4
TRG				⇓*i*Pb	Pb	02 28 48.9	+0.2
TRG				*e*Sg	Sb	02 29 07.0	+1.7
TRG				max			
	comp=E,120nm,0.2s						
TRG				Smax			
	comp=E,1μm,0.4s						
TRG	**Tyrgan**	**1.32**	**267**	⇑*i*PG	Pn	02 28 48.1	+0.5
TRG				*e*		02 29 06.9	
TRG				pmax	pmax		
	comp=Z,119nm,0.2s						
TRG				smax	smax		
	comp=N,1μm,0.4s						
KAB	**Kabansk**	**1.40**	**235**	*e*Pg	Pn	02 28 49.0	+0.4
KAB				*e*Sg	Sb	02 29 09.4	+1.9
KAB				Smax			
	comp=N,2μm,0.4s						
STDB	**Stepnoy Dvoret**	**1.49**	**243**	*e*Pg	Pb	02 28 51.8	+0.3
STDB				*e*Sg	Sb	02 29 13.6	+3.6
HRMR	**Khuramsha**	**1.56**	**219**	*e*Pg	Pb	02 28 52.9	0.0
HRMR				*e*		02 28 54.9	
HRMR				*e*		02 28 57.4	
HRMR				*e*Sg	Sb	02 29 14.3	+2.1
HRMR				max			
	comp=N,248nm,0.5s						
HRMR				Smax			
	comp=N,2μm,0.4s						
BGT	**Bolshoye Golou**	**2.07**	**248**	*e*Pn	Pn	02 28 56.3	-1.6
BGT				*e*		02 28 59.2	
BGT				*e*Pg	Pb	02 29 02.1	+0.6
BGT				*e*		02 29 28.7	
BGT				*e*Sg	Sb	02 29 30.0	+3.2
BGT				Pmax			
	comp=N,16nm,0.3s						
BGT				Smax			
	comp=N,75nm,0.5s						
LSTR	**Listvyanka**	**2.47**	**248**	*e*Pn	Pn	02 29 04.4	+1.1
LSTR				*e*Pg	Pb	02 29 08.3	0.0
LSTR				*e*		02 29 31.7	
LSTR				*e*Sg	Sb	02 29 40.2	+2.0
LSTR				Pmax			
	comp=N,22nm,0.4s						
LSTR				Smax			
	comp=N,184nm,0.4s						
YLYR	**Ulyunkhan**	**2.56**	**37**	⇓*i*Pn	Pn	02 29 05.6	+1.1
YLYR				*e*Pg	Pb	02 29 09.5	-0.2
YLYR				*e*		02 29 13.3	
YLYR				*e*Sg	Sb	02 29 43.2	+2.5
YLYR				max			
	comp=N,41nm,0.7s						
YLYR				Smax			
	comp=N,190nm,1.1s						
YLYR	**Ulyunkhan**	**2.56**	**37**	*e*PN	Pn	02 29 05.6	+1.1
YLYR				*e*		02 29 08.9	
YLYR				*e*		02 29 43.1	
YLYR				pmax	pmax		
	comp=Z,41nm,0.2s						
YLYR				smax	smax		

KPC				smax	smax				
	comp=E,130nm,0.4s								
ZAK	**Zakamensk**	**4.10**	**235**	*e*Pn	Pn	02 29 29.4	+3.6		
ZAK				*e*Pg	Pb	02 29 38.7	+2.6		
ZAK				*e*Sg	Sb	02 30 32.1	+6.9		
ZAK				Pmax					
	comp=E,8.0nm,0.4s								
ZAK				Smax					
	comp=E,76nm,0.9s								
SVKR	**Severomuysk**	**4.39**	**40**	*e*Sg	Sb	02 30 41.1	+7.6		
SVKR				Smax					
	comp=E,256nm,0.9s								
MOY	**Mondy**	**4.78**	**259**	*e*Pn	Pn	02 29 38.1	+3.0		
MOY				*e*Pg	Pb	02 29 48.8	+1.2		
MOY				*e*		02 30 32.4			
MOY				*e*Sg	Sb	02 30 50.5	+5.9		
MOY				Pmax					
	comp=E,10.0nm,0.7s								
MOY				Smax					
	comp=E,126nm,1.1s								
MOY	**Mondy**	**4.78**	**259**	*e*PN	Pn	02 29 38.0	+2.9		
MOY				*e*		02 29 50.0			
MOY				*e*S	Sn	02 30 32.5	+2.8		
MOY				*e*		02 30 51.1			
MOY				pmax	pmax				
	comp=Z,8.0nm,0.4s								
MOY				smax	smax				
	comp=N,127nm,0.9s								
ORL	**Orlik**	**5.31**	**270**	*e*Pn	Pn	02 29 44.4	+2.0		
ORL				*e*		02 29 53.8			
ORL				*e*		02 30 44.5			
ORL				*e*Sg	Sb	02 31 08.3	+8.4		
ORL				max					
	comp=N,17nm,0.5s								
ORL				Smax					
	comp=N,83nm,1.0s								
NLYR	**Nelyaty**	**5.53**	**46**	*e*Pn	Pn	02 29 46.5	+1.1		
NLYR				*e*		02 29 52.7			
NLYR				*e*Pg	Pb	02 30 05.0	+4.6		
NLYR				*e*Sg	Sb	02 31 17.7	+11		
NLYR				Pmax					
	comp=N,10.0nm,1.0s								
NLYR				Smax					
	comp=N,102nm,1.1s								
BOD	**Bodaibo**	**5.87**	**30**	*e*	Pb	02 30 28.9	+23		
BOD				*e*		02 30 35.6			
BOD				*e*Sg	Sb	02 31 27.3	+11		
BOD				Smax					
	comp=N,38nm,1.7s								
CRS	**Chara**	**6.93**	**50**	*e*Sg	Sb	02 31 58.5	+12		
TUP	**Tupik**	**6.98**	**72**	*e*Pn	Pn	02 30 04.3	-0.9		
TUP				*e*Pg	Pb	02 30 30.5	+5.5		
TUP				*e*Sg	Sb	02 32 00.9	+13		
TUP				Smax					
	comp=N,72nm,1.0s								
TUP	**Tupik**	**6.98**	**72**	*e*PN	Pn	02 30 04.9	-0.3		
TUP				*e*		02 30 28.1			
TUP				*e*		02 31 59.2			
TUP				pmax	pmax				
	comp=Z,4.0nm,0.5s								
TUP				smax	smax				
	comp=N,72nm,1.0s								

OBM ***20*** *02:31:09.6±0.1,52°.90N×108°.68E, h2km, MI3.5/3, Error ellipse: s-maj=2.2km s-min=2.1km az=156.0*
BYKL ***20*** *02:31:10.4±0.2,52°.85N×108°.53E, h24km±4km*
MOS ***20*** *02:31:10.6±2.2,52°.87N×108°.53E, h10km, mb4.4/1, Error ellipse: s-maj=15.1km s-min=10.6km az=68.3*

ISC 20 02:31:08.9±1.1,52°.86N±0°.02×108°.59E±0°.02, h2km±10km, n42, σ1≤81/87, 4C-9D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
KELR	**Kotokel**	**0.32**	**252**	⇓*i*Pg		**Pb**	**02 31 17.5**	**+0.1**
KELR				*e*Sg		**Sb**	**02 31 22.2**	**-0.8**
MXMB	**Maximikha**	**0.41**	**13**	⇑*i*Pg		**Pb**	**02 31 19.3**	**+0.4**
MXMB				*e*Sg		**Sb**	**02 31 25.4**	**-0.3**
ZRHB	**Zarechye**	**0.93**	**251**	⇓*i*Pg		**Pb**	**02 31 27.5**	**-0.1**
ZRHB				*e*Sg		**Sg**	**02 31 39.8**	**+1.2**
OGRR	**Ongureny**	**0.98**	**323**	⇑*i*Pg		**Pb**	**02 31 28.4**	**-0.3**
	364nm,0.3s							
OGRR				⇓*i*Pg		**Pb**	**02 31 28.4**	**-0.3**
	140nm,0.3s							
OGRR				⇑*i*Pg		**Pb**	**02 31 28.4**	**-0.3**
	413nm,0.3s							
OGRR				*e*Sg		**Sb**	**02 31 41.2**	**-0.9**
OGRR				Pmax				
	434nm,0.3s							
OGRR				Smax				
	1μm,0.2s							
OGRR	**Ongureny**	**0.98**	**323**	⇑*i*PG		**Pb**	**02 31 28.4**	**-0.3**
OGRR				*e*			02 31 41.3	
OGRR				pmax	pmax			
	comp=Z,431nm,0.3s							
OGRR				smax	smax			
	comp=E,1μm,0.2s							
UUDB	**Ulan-Yde**	**1.15**	**210**	⇓*i*Pg		**Pg**	**02 31 31.8**	**+1.0**
UUDB				*e*Sg		**Sn**	**02 31 47.2**	**-0.9**
UUDB				Pmax				
	comp=E,137nm,0.2s							
UUDB				Smax				
	comp=E,1μm,0.3s							
SYVR	**Suvo**	**1.17**	**46**	⇓*i*Pg		**Pg**	**02 31 32.3**	**+1.1**
SYVR				*e*Pb		**Pb**	**02 31 33.4**	**+1.7**
SYVR				*e*Sg		**Sg**	**02 31 49.1**	**+2.8**
SYVR				max				
	comp=E,576nm,0.3s							
SYVR				Smax				
	comp=E,1μm,0.2s							
SYVR	**Suvo**	**1.17**	**46**	*e*PG		**Pb**	**02 31 32.1**	**+0.4**
SYVR				*e*			02 31 48.1	
SYVR				pmax	pmax			
	comp=Z,590nm,0.2s							
SYVR				smax	smax			
	comp=E,1μm,0.1s							
TRG	**Tyrgan**	**1.36**	**267**	*e*Pg		**Pn**	**02 31 34.3**	**-0.6**
TRG				*e*			02 31 49.2	
TRG				*e*Sg		**Sg**	**02 31 53.2**	**+0.6**
TRG				Pmax				
	comp=E,119nm,0.2s							
TRG				Smax				
	comp=E,2μm,0.3s							
TRG	**Tyrgan**	**1.36**	**267**	*e*PG		**Pn**	**02 31 34.5**	**-0.4**
TRG				*e*			02 31 53.1	
TRG				pmax	pmax			
	comp=Z,153nm,0.2s							
TRG				smax	smax			
	comp=E,2μm,0.3s							
KAB	**Kabansk**	**1.43**	**236**	*e*Pg		**Pn**	**02 31 35.6**	**-0.3**
KAB				*e*Sg		**Sg**	**02 31 56.1**	**+1.2**
KAB				Smax				
	comp=E,2μm,0.4s							
STDB	**Stepnoy Dvoret**	**1.52**	**244**	⇓*i*Pg		**Pn**	**02 31 36.6**	**-0.5**
STDB				*e*			02 31 38.6	
STDB				*i* Sg		**Sb**	**02 31 56.7**	**-0.8**
STDB				*e*			02 32 00.1	
HRMR	**Khuramsha**	**1.59**	**220**	⇓*i*Pg		**Pn**	**02 31 37.5**	**-0.5**
HRMR				*e*			02 31 45.4	
HRMR				Sg		**Sb**	**02 31 58.6**	**-0.9**
HRMR				max				
	comp=E,365nm,0.4s							
HRMR				Smax				
	comp=E,2μm,0.4s							
BGT	**Bolshoye Golou**	**2.11**	**249**	*e*Pg		**Pb**	**02 31 47.3**	**-0.5**
BGT				*e*Sg		**Sg**	**02 32 16.3**	**-0.3**
BGT				Pmax				
	comp=E,39nm,0.3s							
BGT				Smax				
	comp=E,454nm,0.5s							
LSTR	**Listvyanka**	**2.51**	**248**	*e*Pn		**Pn**	**02 31 50.0**	**-0.6**
LSTR				*e*Pg		**Pb**	**02 31 54.0**	**-0.6**
LSTR				*e*			02 32 19.0	
LSTR				*e*Sg		**Sb**	**02 32 26.5**	**+0.7**
LSTR				Pmax				
	comp=E,183nm,0.5s							
LSTR				Smax				
	comp=E,219nm,0.5s							
YLYR	**Ulyunkhan**	**2.53**	**36**	⇓*i*Pn		**Pn**	**02 31 51.7**	**+0.8**
YLYR				*e*Pg		**Pb**	**02 31 55.4**	**+0.4**
YLYR				*e*PgPg		**Pg**	**02 31 59.8**	**+2.4**
YLYR				*e*Sg		**Sg**	**02 32 29.7**	**-0.4**
YLYR				max				
	comp=E,54nm,0.7s							
YLYR				Smax				
	comp=E,152nm,0.2s							
YLYR	**Ulyunkhan**	**2.53**	**36**	⇓*i*PN		**Pn**	**02 31 51.7**	**+0.8**
YLYR				*e*			02 31 54.9	
YLYR				*e*			02 32 29.0	
YLYR				pmax	pmax			
	comp=Z,54nm,0.4s							
YLYR				smax	smax			
	comp=N,152nm,0.3s							
IRK	**Irkutsk**	**2.71**	**259**	*e*Sg		**Sg**	**02 32 34.1**	**-1.6**
IRK				*e*			02 32 37.6	
IRK				max				
	comp=N,1μm,0.4s							
IRK	**Irkutsk**	**2.71**	**259**	*e*PN		**Pb**	**02 31 58.8**	**+0.8**
IRK				*e*			02 32 32.8	
IRK				pmax	pmax			
	comp=Z,273nm,0.1s							
IRK				smax	smax			
	comp=N,1μm,0.4s							
IVK	**Ivanovka**	**2.77**	**249**	*e*Pn		**Pn**	**02 31 54.1**	**-0.1**
IVK				*e*Pg		**Pb**	**02 31 58.9**	**-0.2**
IVK				*e*Sg		**Sb**	**02 32 34.9**	**+1.5**
IVK				Pmax				
	comp=N,22nm,0.3s							
IVK				Smax				
	comp=N,274nm,0.5s							
NIZ	**Nizh Angarsk**	**2.97**	**10**	*e*Pn		**Pn**	**02 31 58.1**	**+1.1**
NIZ				*e*Pg		**Pb**	**02 32 02.7**	**+0.2**
NIZ				*e*Sn		**Sn**	**02 32 32.3**	**-0.9**
NIZ				*e*Sg		**Sb**	**02 32 41.2**	**+1.9**
NIZ				Pmax				
	comp=N,35nm,0.3s							
NIZ				Smax				
	comp=N,140nm,0.5s							
NIZ	**Nizh Angarsk**	**2.97**	**10**	*e*PN		**Pn**	**02 31 59.0**	**+2.0**
NIZ				*e*			02 32 03.3	
NIZ				*e*S		**Sn**	**02 32 33.6**	**+0.4**
NIZ				*e*			02 32 41.3	
NIZ				pmax	pmax			
	comp=Z,33nm,0.3s							
NIZ				smax	smax			
	comp=N,167nm,0.5s							
CIT	**Chita**	**3.15**	**103**	*e*Pn		**Pn**	**02 31 57.4**	**-2.1**
CIT				*e*Pg		**Pb**	**02 32 07.4**	**+1.8**
CIT				*e*Sg		**Sg**	**02 32 49.4**	**-0.7**
CIT				*e*			02 32 53.0	
CIT				Pmax				
	comp=N,84nm,0.1s							
CIT				max				
	comp=N,772nm,0.2s							
CIT	**Chita**	**3.15**	**103**	*e*PN		**Pn**	**02 32 01.4**	**+1.9**
CIT				*e*			02 32 08.8	
CIT				*e*S		**Sn**	**02 32 39.3**	**+1.6**
CIT				*e*			02 32 49.4	
CIT				pmax	pmax			
	comp=Z,91nm,0.2s							
CIT				smax	smax			
	comp=E,773nm,0.2s							
TLY	**Talaya**	**3.26**	**251**	*e*Pg		**Pb**	**02 32 08.1**	**+0.7**
TLY				*e*			02 32 16.6	
TLY				*e*			02 32 25.9	
TLY				*e*Sg		**Sb**	**02 32 49.5**	**+2.0**
TLY				max				
	comp=E,14nm,0.4s							
TLY				Smax				
	comp=E,166nm,0.4s							
TLY	**Talaya**	**3.26**	**251**	*e*PN		**Pb**	**02 32 08.4**	**+1.0**
TLY				*e*			02 32 48.7	
TLY				pmax	pmax			
	comp=Z,7.0nm,0.1s							
TLY				smax	smax			
	comp=N,142nm,0.3s							
KMO	**Kumora**	**3.40**	**26**	*e*Pn		**Pn**	**02 32 03.2**	**+0.4**
KMO				*e*Pg		**Pb**	**02 32 10.7**	**+1.0**
KMO				*e*Sn		**Sn**	**02 32 42.5**	**-1.1**
KMO				*e*Sg		**Sg**	**02 32 55.4**	**-2.5**
KMO				Pmax				
	comp=N,46nm,0.5s							
KMO				Smax				
	comp=N,219nm,1.1s							
KMO	**Kumora**	**3.40**	**26**	*e*PN		**Pn**	**02 32 03.7**	**+0.9**
KMO				*e*			02 32 11.2	
KMO				*e*S		**Sn**	**02 32 44.0**	**+0.4**
KMO				*e*			02 32 55.3	
KMO				pmax	pmax			
	comp=Z,27nm,0.3s							
KMO				smax	smax			
	comp=N,213nm,0.8s							
YOA	**Uoyan**	**3.75**	**28**	*e*		Pn	02 31 55.9	-12
YOA				*e*			02 32 19.9	
YOA				*e*Sg		**Sg**	**02 33 08.6**	**-0.8**
YOA				Smax				
	comp=N,611nm,1.6s							
KPC	**Khapcheranga**	**3.96**	**142**	*e*Pn		**Pn**	**02 32 12.3**	**+1.7**
KPC				*e*Pg		**Pb**	**02 32 21.3**	**+2.0**
KPC				*e*Sn		**Sn**	**02 32 54.3**	**-3.2**
KPC				*e*Sg		**Sg**	**02 33 13.5**	**-2.4**
KPC				Pmax				
	comp=N,35nm,0.8s							
KPC				Smax				
	comp=N,146nm,0.6s							
KPC	**Khapcheranga**	**3.96**	**142**	*e*PN		**Pn**	**02 32 11.1**	**+0.5**
KPC				*e*			02 32 21.5	
KPC				*e*S		**Sn**	**02 32 55.3**	**-2.2**
KPC				*e*			02 33 14.1	
KPC				pmax	pmax			
	comp=Z,32nm,0.4s							
KPC				smax	smax			
	comp=E,147nm,0.4s							
ZAK	**Zakamensk**	**4.13**	**235**	*e*Pg		**Pb**	**02 32 23.8**	**+1.5**
ZAK				*e*			02 32 58.5	
ZAK				*e*Sg		**Sg**	**02 33 18.3**	**-3.3**
ZAK				Pmax				
	comp=E,11nm,0.5s							
ZAK				Smax				
	comp=E,95nm,1.2s							
SVKR	**Severomuysk**	**4.37**	**40**	*e*		**Pb**	**02 32 27.7**	**+1.5**
SVKR				*e*Sg		**Sg**	**02 33 26.6**	**-2.4**
SVKR				Smax				
	comp=E,329nm,1.3s							
MOY	**Mondy**	**4.81**	**259**	*e*Pn		**Pn**	**02 32 23.8**	**+1.4**
MOY				*e*Pg		**Pb**	**02 32 34.8**	**+0.8**
MOY				*e*			02 33 18.5	
MOY				*e*Sg		**Sb**	**02 33 37.2**	**+4.9**
MOY				Pmax				
	comp=E,16nm,1.3s							
MOY				Smax				
	comp=E,143nm,1.3s							
MOY	**Mondy**	**4.81**	**259**	*e*PN		**Pn**	**02 32 24.2**	**+1.8**
MOY				*e*			02 32 37.2	
MOY				*e*			02 33 37.4	
MOY				pmax	pmax			
	comp=Z,10.0nm,0.5s							
MOY				smax	smax			
	comp=N,143nm,0.9s							
ARTM		**5.01**	**190**	*e*Pn		Pn	02 32 26.9	+1.4
ARTM				*e*Sg		Sg	02 33 45.8	-3.9
	comp=N,189nm,0.5s							
ALFM		**5.01**	**194**	*e*Pn		Pn	02 32 26.8	+1.3
ALFM				*e*Sg		Sg	02 33 47.2	-2.6
	comp=N,134nm,0.4s							
UB1M		**5.10**	**195**	*e*Pn		Pn	02 32 26.5	-0.2
UB1M				*e*Sg		Sg	02 33 50.2	-2.6
	comp=N,60nm,0.3s							
BLGM	**Bulgan**	**5.17**	**220**	*e*Sg		Sg	02 33 51.5	-3.4
	comp=N,92nm,0.5s							
UB5M		**5.17**	**193**	*e*Pn		Pn	02 32 28.9	+1.2
UB5M				*e*Sg		Sg	02 33 52.1	-3.0
	comp=N,34nm,0.3s							
SONB1	**Songino Array**	**5.19**	**196**	*e*Pn		Pn	02 32 29.2	+1.2
SONB1				*e*Sg		Sg	02 33 53.3	-2.3
	comp=N,213nm,1.1s							
SONB2	**Songino Ar. Si**	**5.20**	**196**	*e*Pn		Pn	02 32 29.2	+1.1
SONB2				*e*Sg		Sg	02 33 53.1	-2.9
	comp=N,143nm,0.5s							
SONA2	**Songino Array**	**5.20**	**196**	*e*Pn		Pn	02 32 29.4	+1.3
SONA2				*e*Sg		Sg	02 33 53.9	-2.1
	comp=N,212nm,1.1s							
SONA3	**Songino Array**	**5.20**	**196**	*e*Pn		Pn	02 32 29.2	+1.0
SONA3				*e*Sg		Sg	02 33 54.0	-2.0
	comp=N,205nm,1.0s							
SONB5	**Songino Array**	**5.21**	**196**	*e*Pn		Pn	02 32 29.3	+1.1
SONB5				*e*Sg		Sg	02 33 54.6	-1.5
	comp=N,211nm,0.8s							
SONA1	**Songino Array**	**5.21**	**196**	*e*Pn		Pn	02 32 29.4	+1.2
SONA1				*e*Sg		Sg	02 33 54.2	-1.9
	comp=N,211nm,1.2s							
SONA4	**Songino Array**	**5.21**	**196**	*e*Pn		Pn	02 32 29.3	+1.0
SONA4				*e*Sg		Sg	02 33 54.0	-2.3
	comp=N,228nm,1.0s							
SONB3	**Songino Array**	**5.22**	**196**	*e*Pn		Pn	02 32 29.2	+0.9
SONB3				*e*Sg		Sg	02 33 54.0	-2.5
	comp=N,120nm,0.4s							
SONA0	**Songino Array**	**5.22**	**196**	*e*Pn		Pn	02 32 29.4	+1.0
SONA0				*e*Sg		Sg	02 33 53.5	-3.0
	comp=N,87nm,0.5s							
SONB4	**Songino Array**	**5.23**	**196**	*e*Pn		Pn	02 32 29.1	+0.7
SONB4				*e*Sg		Sg	02 33 54.9	-1.8
	comp=N,198nm,0.8s							
UGDM		**5.28**	**188**	*e*Pn		Pn	02 32 30.6	+1.3
UGDM				*e*Sg		Sg	02 33 55.0	-3.5
	comp=N,160nm,0.9s							
ORL	**Orlik**	**5.35**	**270**	*e*Pn		**Pn**	**02 32 30.2**	**+0.5**
ORL				Pg		**Pb**	**02 32 45.7**	**+2.7**
ORL				*e*Sn		**Sn**	**02 33 28.7**	**-3.2**
ORL				*e*Sg		**Sg**	**02 33 55.1**	**-5.4**
ORL				Pmax				
	comp=N,18nm,0.5s							
ORL				Smax				
	comp=N,87nm,1.2s							
ORL	**Orlik**	**5.35**	**270**	*e*PN		**Pn**	**02 32 30.9**	**+1.2**
ORL				*e*			02 32 46.1	
ORL				*e*			02 33 54.8	
ORL				pmax	pmax			
	comp=Z,19nm,0.6s							
ORL				smax	smax			
	comp=E,87nm,1.2s							
SEMM		**5.40**	**191**	*e*Pn		Pn	02 32 32.2	+1.3
SEMM				*e*Sg		Sg	02 34 00.8	-1.7
	comp=E,51nm,0.6s							
NLYR	**Nelyaty**	**5.50**	**46**	*e*Sg		**Sg**	**02 34 02.1**	**-3.3**
NLYR				*e*			02 34 05.0	
NLYR				max				
	comp=E,119nm,1.0s							
NLYR	**Nelyaty**	**5.50**	**46**	*e*PN		**Pg**	**02 32 50.8**	**-3.4**
NLYR				*e*			02 34 01.6	
NLYR				pmax	pmax			
	comp=Z,24nm,0.4s							
NLYR				smax	smax			
	comp=E,119nm,1.1s							
HTG	**Hatgal**	**5.74**	**249**	*e*Sg		Sg	02 34 09.5	-3.7
	comp=E,50nm,0.5s							
BOD	**Bodaibo**	**5.85**	**30**	*e*		**Pg**	**02 33 01.2**	**+0.3**
BOD				*e*Sg		**Sg**	**02 34 13.3**	**-3.3**
BOD				Smax				
	comp=E,52nm,0.8s							
CRS	**Chara**	**6.90**	**50**	*e*Sg		**Sg**	**02 34 46.6**	**-3.5**
TUP	**Tupik**	**6.94**	**72**	*e*		Sn	02 34 20.5	+10
TUP				*e*Sg		**Sg**	**02 34 46.8**	**-4.7**
TUP				Smax				
	comp=E,109nm,1.3s							
TTS	**Tsetserleg**	**7.06**	**223**	*e*Sg		Sg	02 34 49.6	-5.9
	comp=E,55nm,0.7s							
TSC	**Tosontsengel**	**7.70**	**242**	*e*Sg		Sg	02 35 12.7	-3.3
	comp=E,14nm,0.6s							
DZBM		**9.45**	**198**	*e*Sg		Sn	02 36 10.4	+57
	comp=E,278nm,1.6s							
ULG	**Ulaangom**	**10.70**	**261**	*e*Sg		Sn	02 36 42.8	+59
BYO	**Bayan-Olgiy**	**12.36**	**259**	*e*Sg			02 37 34.3	

ISCJB ***20*** *02:36:26.7±0.4,37°.46N±0°.03×72°.27E±0°.06, h176km, mb3.5/8, Error ellipse: s-maj=7.4km s-min=3.7km az=157.4*
IDC ***20*** *02:36:26.6±2.9,37°.30N×72°.38E, h171km±24km, mb3.3/8, mb1 3.5/15, mb1mx3.2/61, mbtmp4.0/15, Error ellipse: s-maj=23.7km s-min=18.6km az=178.0*
NNC ***20*** *02:36:36.8±4.6,38°.16N×72°.39E, h246km±46km, mb2.8, mpv4.1, Error ellipse: s-maj=45.6km s-min=29.8km az=11.0*

ISC 20 02:36:26.6±0.6,37°.38N±0°.05×72°.26E±0°.06, h176km, n37, σ2≤81/45, mb3.5/8, 8C-4D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
CEP	**Cherat**	**3.56**	**185**	P		Pn	02 37 28.1	+5.9
CHCP	**Chirah Chowk**	**3.80**	**167**	P		Pn	02 37 31.5	+6.3
THW	**Thamme Wali**	**4.59**	**185**	P		Pn	02 37 40.7	+5.4
MNAS	**Manas**	**5.11**	**2**	⇓P		**Pn**	**02 37 44.0**	**+2.1**
	24nm,0.4s							
MNAS				⇓S		**Sn**	**02 38 38.4**	**-2.7**
	74nm,0.7s							
AAK	**Ala-Archa**	**5.53**	**17**	P		**Pn**	**02 37 49.6**	**+2.2**
	8.7nm,0.3s,baz=177,slow=5.2,SNR=62							
AAK				S		**Sn**	**02 38 49.5**	**-1.4**
	4.1nm,0.3s,baz=318,slow=22,SNR=14							
AAK	**Ala-Archa**	**5.53**	**17**	⇑P		**Pn**	**02 37 49.3**	**+1.9**
	33nm,0.6s							
AAK				⇑S		**Sn**	**02 38 49.1**	**-1.9**
	49nm,0.9s							
THN	**Thein Dam**	**5.69**	**149**	*e*P		**Pn**	**02 37 53.6**	**+4.0**
THN				*e*S		**Sn**	**02 38 56.0**	**+1.3**
KK31	**Karatay Array**	**5.87**	**347**	⇑P		**Pn**	**02 37 53.6**	**+1.8**
	1.9nm,0.5s,baz=150,slow=12,SNR=67							
KK31				⇑S		**Sn**	**02 38 55.5**	**-3.4**
	48nm,0.5s,baz=161,slow=25,SNR=35							
TKM2	**Tokmak 2**	**6.10**	**24**	⇓P		**Pn**	**02 37 56.3**	**+1.3**
	44nm,0.6s							
TKM2				⇑S		**Sn**	**02 39 02.1**	**-2.4**
	6.6nm,0.6s							
PONG	**Pong**	**6.21**	**150**	*e*S		**Sn**	**02 39 07.0**	**+0.1**
SDNR	**Sundarnagar**	**7.04**	**145**	*e*P		**Pn**	**02 38 09.6**	**+2.3**
SDNR				*ex*		x	02 39 24.0	
NDI	**New Delhi**	**9.62**	**153**	*e*S		**Sn**	**02 40 25.0**	**-3.3**
KHET	**Khetri**	**9.75**	**161**	*e*S		Sn	02 40 22.5	-9.0
KHET				IAML			02 40 30.8	
	comp=N,16nm,0.4s							
KHET				IAML			02 40 31.8	
	comp=E,18nm,0.6s							
KUDL	**Kundal**	**9.87**	**158**	*e*P		**Pn**	**02 38 41.8**	**-2.7**
KUDL				*e*S		**Sn**	**02 40 28.2**	**-6.2**
KUDL				IAML			02 40 33.7	
	comp=N,16nm,0.1s							
KUDL				IAML			02 40 33.8	
	comp=E,26nm,0.6s							
GEYT	**Alibeck**	**11.23**	**277**	P		**Pn**	**02 39 03.4**	**+1.3**
	comp=E,1.5nm,0.3s,baz=81,slow=8.8,SNR=8.8							
GEYT				S		**Sn**	**02 41 02.8**	**-4.0**
	comp=E,1.1nm,0.3s,baz=83,slow=25,SNR=3.2							
MKAR	**Makanchi Array**	**11.99**	**35**	P		**Pn**	**02 39 10.8**	**-1.2**
	comp=E,0.2nm,0.3s,baz=218,slow=13,SNR=7.7							
PYUN	**Piuthan**	**12.92**	**133**	*e*P		**Pn**	**02 39 24.9**	**+0.8**
	comp=E,38nm,0.5s							
PYUN				*e*S		**Sn**	**02 41 40.7**	**-7.1**
KOLN	**Koldanda**	**13.53**	**132**	*e*P		**Pn**	**02 39 33.1**	**+1.3**
	comp=E,33nm,0.6s							
KOLN				*e*S		**Sn**	**02 41 55.6**	**-6.7**
KURBB	**Kurchatov Arra**	**13.98**	**17**	P		**Pn**	**02 39 36.5**	**-0.5**
	comp=E,0.4nm,0.3s,baz=205,slow=10,SNR=46							
GKN	**Gorkha**	**13.99**	**128**	*e*P		**Pn**	**02 39 38.9**	**+1.4**
	comp=E,94nm,0.5s							
KKN	**Kakani**	**14.54**	**127**	*e*P		**P**	**02 39 46.0**	**-0.2**
	comp=E,37nm,0.6s							
PKIN	**Phulchoki**	**14.77**	**128**	*e*P		**P**	**02 39 50.0**	**+1.2**
	comp=E,16nm,0.4s							
GUN	**Gumba**	**14.85**	**126**	*e*P		**P**	**02 39 51.0**	**+1.3**
AB31	**Akbulak array**	**14.85**	**327**	⇑P		**Pn**	**02 39 48.4**	**+0.7**
	comp=E,1.0nm,0.4s,baz=133,slow=13,SNR=46							
AB31				⇑S		Sn	02 42 23.2	-10
	comp=E,1.6nm,0.4s,baz=142,slow=21,SNR=10.0							
BVAR	**Borovoye Array**	**15.70**	**356**	P		**P**	**02 39 58.8**	**+0.2**
	comp=E,0.9nm,0.3s,baz=171,slow=10,SNR=12							
AKTO	**Aktyubinsk**	**16.56**	**327**	P		**Pn**	**

comp=Z,0.4nm,0.5s,baz=92,slow=7.9
NOA NORSAR Array B 44.29 322 P **P 02 44 19.4 +0.9**
comp=Z,0.6nm,0.6s,baz=94,slow=7.8,SNR=4.2
TORD Torodi Ar. Bea 66.74 269 P **P 02 47 00.0 +0.9**
comp=Z,0.1nm,0.4s,baz=45,slow=6.0,SNR=10
YKA Yellowknife Ar 80.32 3 P **P 02 48 18.4 +0.8**
comp=Z,0.6nm,0.6s,baz=351,slow=5.5,SNR=7.0
WRA Warramunga Arr 81.61 123 P **P 02 48 25.1 +0.1**
comp=Z,0.2nm,0.5s,baz=331,slow=5.6,SNR=3.7
ULM Lac du Bonnet 92.12 352 P **P 02 49 17.1 +1.3**
comp=Z,0.6nm,0.4s,baz=336,slow=10.0,SNR=2.2

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*IDC **20** 02:46:11.7±0.5,52.58N×31.85W,h0km,mb4.3/33, mb1 4.4/35,mb1mx4.3/51,mbtmp4.3/35,ML4.8/2,MS3.9/36, Ms1 3.9/36,ms1mx3.9/41,Error ellipse: s-maj=15.8km s-min=10.1km az=10.0*
*MOS **20** 02:46:12.1±1.0,52.64N×31.71W,h10km,mb4.8/49,Error ellipse: s-maj=9.3km s-min=5.9km az=145.5*
*BJI **20** 02:46:12.1,52.86N×31.47W,h5km,mb4.8/18,mB5.0/14, Ms4.8/12,Ms7 4.5/12*
*ISCJB **20** 02:46:12.4±0.2,52.59N±0.04×31.75W±0.03,h12km, mb4.6/156,MS4.0/55,Error ellipse: s-maj=5.8km s-min=2.7km az=5.8*
*NEIC **20** 02:46:13.7±0.2,52.58N×31.73W,h10km,mb4.7/88,Error ellipse: s-maj=6.3km s-min=2.9km az=2.0*
*CSEM **20** 02:46:16.6±0.1,52.65N×31.70W,h30km,mb4.7/99,Error ellipse: s-maj=6.3km s-min=3.0km az=7.0*

ISC 20 02:46:14.1±0.3,52.63N±0.06×31.81W±0.04,h12km,n493, σ1ᵍ31/484,mb4.6/157,MS4.0/56,36C-13D,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
H07N1	**FLORES T-PHASE**	**12.96**	**178**	T		T	03 02 30.5	
	SNR=13							
BORG	**Borgarnes**	**13.29**	**20**	Pn		**Pn**	**02 49 24.0**	**+1.7**
	2.0nm,0.3s,baz=199,slow=11,SNR=12							
BORG				Sn		Sn	02 51 41.2	-8.5
	0.3nm,0.3s,baz=222,slow=18,SNR=2.3							
BORG				LR		LR	02 52 54.8	
	comp=Z,411nm,20.8s,baz=296,slow=30							
BORG	**Borgarnes**	**13.29**	**20**	*e*Pn		**Pn**	**02 49 22.7**	**+0.4**
BORG	**Borgarnes**	**13.29**	**20**	*e*Pn		**Pn**	**02 49 22.7**	**+0.4**
BORG				Sn		Sn	02 51 41.2	-8.5
ESK	**Eskdalemuir**	**16.99**	**70**	*e*P		**Pn**	**02 50 11.3**	**0.0**
ESK				pmax		pmax		
	comp=Z,44nm,0.8s							
ESK	**Eskdalemuir**	**16.99**	**70**	*e*Pn		**Pn**	**02 50 11.3**	**0.0**
	comp=Z,44nm,0.8s							
ESK	**Eskdalemuir**	**16.99**	**70**	*e*Pn		**Pn**	**02 50 11.3**	**0.0**
	comp=Z,44nm,0.8s							
EKA	**Eskdalemuir Ar**	**17.01**	**69**	P		**Pn**	**02 50 09.6**	**-2.1**
	baz=272,slow=9.1,SNR=61							
EKA				S		Sn	02 53 06.8	-14
	baz=279,slow=24,SNR=3.5							
CWF	**Charnwood Fore**	**18.43**	**77**	*e*P		**P**	**02 50 28.5**	**-0.6**
	comp=Z,51nm,1.4s							
CWF	**Charnwood Fore**	**18.43**	**77**	*e*P		**P**	**02 50 28.5**	**-0.6**
	comp=Z,51nm,1.4s							
PGAV	**Gavieira, Arco**	**19.11**	**115**	*e*P		**Pn**	**02 50 38.5**	**+0.8**
	comp=Z,51nm,1.8s							
PGAV				*e*pP		**sP**	**02 50 41.7**	**-0.1**
PGAV				*e*S		**S**	**02 54 15.9**	**+2.5**
PGAV	**Gavieira, Arco**	**19.11**	**115**	*e*P		**Pn**	**02 50 38.5**	**+0.8**
	comp=Z,51nm,1.8s							
POLO	**Lamas de Olo**	**19.78**	**115**	*e*S		**Sn**	**02 54 34.4**	**+6.8**
PBRG	**Braganca**	**20.07**	**113**	*e*P		**P**	**02 50 45.8**	**-1.5**
	comp=Z,24nm,1.8s							
PBRG	**Braganca**	**20.07**	**113**	*e*P		**P**	**02 50 45.8**	**-1.5**
	comp=Z,24nm,1.8s							
SUMG	**Summit**	**20.22**	**354**	*i* P		**P**	**02 50 49.7**	**+0.7**
	comp=Z,19nm,1.0s							
SUMG	**Summit**	**20.22**	**354**	*e*P		**P**	**02 50 49.7**	**+0.7**
SUMG				pmax		pmax		
	comp=Z,34nm,1.2s							
SUMG	**Summit**	**20.22**	**354**	*e*P		**P**	**02 50 49.7**	**+0.7**
	comp=Z,34nm,1.2s							
SUMG	**Summit**	**20.22**	**354**	*e*P		**P**	**02 50 49.7**	**+0.7**
	comp=Z,34nm,1.2s							
PCAS	**Casmilo, Conde**	**20.32**	**119**	*e*S		Sn	02 54 44.7	+4.2
MVO	**Moncorvo**	**20.34**	**114**	*e*P		Pn	02 50 51.3	-0.9
	comp=Z,54nm,1.5s							
MVO				*e*pP		sP	02 50 56.2	+1.0
MVO				*e*S		Sn	02 54 40.4	-0.8
MVO	**Moncorvo**	**20.34**	**114**	*e*P		Pn	02 50 51.3	-0.9
	comp=Z,54nm,1.5s							
MTE	**Manteigas**	**20.59**	**117**	*e*P		Pn	02 50 54.9	-0.2
	comp=Z,46nm,2.1s							
MTE				*e*S		Sn	02 54 44.4	-2.6
MTE	**Manteigas**	**20.59**	**117**	*e*P		Pn	02 50 54.9	-0.2
	comp=Z,46nm,2.1s							
SCHQ	**Schefferville**	**20.70**	**290**	P		**P**	**02 50 52.6**	**-1.4**
	comp=Z,4.2nm,0.5s,baz=77,slow=7.1,SNR=9.8							
SCHQ				LR		LR	02 57 27.4	
	comp=Z,300nm,20.3s,baz=80,slow=33							
SCHQ	**Schefferville**	**20.70**	**290**	*e*P		**P**	**02 50 53.2**	**-0.8**
	comp=Z,74nm,1.9s							
SCHQ	**Schefferville**	**20.70**	**290**	*e*P		**P**	**02 50 53.2**	**-0.8**
	comp=Z,74nm,1.9s							
PMAFR	**Mafra**	**20.71**	**122**	*e*S		Sn	02 54 50.7	+0.7
PCBR	**Castelo Branco**	**21.02**	**118**	*e*P		**P**	**02 50 55.2**	**-2.2**
	comp=Z,32nm,2.0s							
PCBR				*e*pP			02 50 59.5	
PCBR	**Castelo Branco**	**21.02**	**118**	*e*P		**P**	**02 50 55.2**	**-2.2**
	comp=Z,32nm,2.0s							
JMIC	**Jan Mayen**	**21.18**	**21**	LR		LR	02 56 56.9	
	comp=Z,219nm,20.5s,baz=248,slow=30							
PMTG	**Montargil**	**21.18**	**120**	*e*P		**P**	**02 50 59.4**	**+0.2**
	comp=Z,32nm,2.0s							
PMTG				*e*S		Sn	02 54 59.7	-1.5
PMTG	**Montargil**	**21.18**	**120**	*e*P		**P**	**02 50 59.4**	**+0.2**
	comp=Z,32nm,2.0s							
MFF	**Saint Martin d**	**21.27**	**94**	*e*P		**P**	**02 50 58.9**	**-1.2**
MFF				pmax		pmax		
	comp=Z,28nm,1.0s							
MFF	**Saint Martin d**	**21.27**	**94**	*e*P		**P**	**02 50 58.9**	**-1.2**
	comp=Z,28nm,1.0s							
PMRV	**Marv??o**	**21.36**	**118**	*e*P		**P**	**02 51 01.4**	**+0.3**
	comp=Z,40nm,1.8s							
PMRV				*e*S		Sn	02 55 01.5	-4.0
PMRV	**Marv??o**	**21.36**	**118**	*e*P		**P**	**02 51 01.4**	**+0.3**
	comp=Z,40nm,1.8s							
PESTR	**Estremoz**	**21.66**	**120**	*e*S		**S**	**02 55 04.6**	**+0.7**
PESTR	**Estremoz**	**21.66**	**120**	*e*S		**S**	**02 55 04.6**	**+0.7**
PNCL	**Nicolau / Gran**	**21.74**	**123**	*e*P		**P**	**02 51 05.5**	**+0.3**
	comp=Z,36nm,1.7s							
PNCL				*e*S		Sn	02 55 16.7	+2.1
PNCL	**Nicolau / Gran**	**21.74**	**123**	*e*P		**P**	**02 51 05.5**	**+0.3**
	comp=Z,36nm,1.7s							
FRB	**Frobisher Bay**	**21.98**	**315**	P		**P**	**02 51 08.5**	**+1.0**
	comp=Z,23nm,1.2s,baz=99,slow=9.8,SNR=3.2							
FRB				LR		LR	02 57 53.9	
	comp=Z,346nm,18.6s,baz=82,slow=32							
PCVE	**Castro Verde**	**22.35**	**123**	*e*P		**P**	**02 51 13.1**	**+1.3**
	comp=Z,62nm,1.6s							
PCVE				*e*S		Sn	02 55 23.1	-6.2
PCVE	**Castro Verde**	**22.35**	**123**	*e*P		**P**	**02 51 13.1**	**+1.3**
	comp=Z,62nm,1.6s							
SNF	**Seneffe**	**22.39**	**81**	P		**P**	**02 51 11.1**	**-1.0**
LMN	**Caledonia Moun**	**22.44**	**266**	*e*P		**P**	**02 51 09.6**	**-3.0**
	comp=Z,29nm,1.1s							
PBAR	**Barrancos**	**22.46**	**120**	*e*S		Sn	02 55 28.0	-4.0
PVAQ	**Vaqueiros**	**22.69**	**123**	*e*P		**P**	**02 51 17.6**	**+2.2**
	comp=Z,53nm,1.5s							
PVAQ				*e*S		Sn	02 55 29.8	-7.7
PVAQ	**Vaqueiros**	**22.69**	**123**	*e*P		**P**	**02 51 17.6**	**+2.2**
	comp=Z,53nm,1.5s							
PBDV	**Barranco-do-Ve**	**22.70**	**123**	*e*S		**S**	**02 55 22.6**	**-1.1**
PBDV	**Barranco-do-Ve**	**22.70**	**123**	*e*S		**S**	**02 55 22.6**	**-1.1**
DOU	**Dourbes**	**22.72**	**82**	P		**P**	**02 51 14.7**	**-0.9**
	comp=Z,17nm,1.4s							
TCF	**Toulx Ste Croi**	**22.85**	**92**	*e*P		**P**	**02 51 16.0**	**-1.1**
TCF				pmax		pmax		
	comp=Z,16nm,1.1s							
TCF	**Toulx Ste Croi**	**22.85**	**92**	*e*P		**P**	**02 51 16.0**	**-1.1**
	comp=Z,16nm,1.1s							
BCLA	**Clavier**	**23.03**	**81**	P		**P**	**02 51 18.8**	**-0.1**
ESDC	**Sonseca Array**	**23.07**	**113**	P		**P**	**02 51 18.1**	**-1.3**
	comp=Z,1.0nm,0.5s,baz=317,slow=9.3,SNR=12							
ESDC				LR		LR	02 58 34.4	
	comp=Z,241nm,19.1s,baz=320,slow=32							
ES19	**SONSECA Array**	**23.09**	**113**	*e*P		**P**	**02 51 20.1**	**+0.5**
ES19	**SONSECA Array**	**23.09**	**113**	*e*P		**P**	**02 51 20.1**	**+0.5**
BGF	**Bois d'Agland**	**23.11**	**91**	*e*P		**P**	**02 51 19.5**	**-0.2**
BGF				pmax		pmax		
	comp=Z,15nm,0.6s							
BGF	**Bois d'Agland**	**23.11**	**91**	*e*P		**P**	**02 51 19.5**	**-0.2**
	comp=Z,15nm,0.6s							
SSF	**Saint Saulge**	**23.28**	**90**	*e*P		**P**	**02 51 19.1**	**-2.3**
SSF				pmax		pmax		
	comp=Z,32nm,1.3s							
SSF	**Saint Saulge**	**23.28**	**90**	*e*P		**P**	**02 51 19.1**	**-2.3**
	comp=Z,32nm,1.3s							
AVF	**Avril sur Loir**	**23.31**	**90**	*e*P		**P**	**02 51 19.3**	**-2.4**
AVF				pmax		pmax		
	comp=Z,29nm,1.3s							
AVF	**Avril sur Loir**	**23.31**	**90**	*e*P		**P**	**02 51 19.3**	**-2.4**
	comp=Z,29nm,1.3s							
MEM	**Membach**	**23.39**	**80**	P		**P**	**02 51 22.2**	**-0.3**
CAF	**Calviac**	**23.44**	**96**	*e*P		**P**	**02 51 24.1**	**+1.0**
CAF				pmax		pmax		
	comp=Z,22nm,1.4s							
CAF	**Calviac**	**23.44**	**96**	*e*P		**P**	**02 51 24.1**	**+1.0**
	comp=Z,22nm,1.4s							
SMF	**Signal de Mont**	**23.68**	**90**	*e*P		**P**	**02 51 23.1**	**-2.3**
SMF				pmax		pmax		
	comp=Z,5.0nm,0.6s							
SMF	**Signal de Mont**	**23.68**	**90**	*e*P		**P**	**02 51 23.1**	**-2.3**
	comp=Z,5.0nm,0.6s							
KONO	**Kongsberg**	**23.78**	**56**⇑	*e*P		**P**	**02 51 25.5**	**-0.7**
KONO				pmax		pmax		
	comp=Z,155nm,1.7s							
KONO	**Kongsberg**	**23.78**	**56**	*e*P		**P**	**02 51 25.5**	**-0.7**
	comp=Z,155nm,1.7s							
KONO	**Kongsberg**	**23.78**	**56**	*e*P		**P**	**02 51 25.3**	**-0.9**
	comp=Z,23nm,1.0s							
WLF	**Walferdange**	**23.82**	**82**	P		**P**	**02 51 24.1**	**-2.5**
	comp=Z,20nm,2.0s							
WLF	**Walferdange**	**23.82**	**82**	*e*P		**P**	**02 51 25.7**	**-0.9**
WLF				pmax		pmax		
	comp=Z,48nm,1.4s							
WLF	**Walferdange**	**23.82**	**82**	*e*P		**P**	**02 51 25.7**	**-0.9**
	comp=Z,48nm,1.4s							
WLF	**Walferdange**	**23.82**	**82**	*e*P		**P**	**02 51 25.7**	**-0.9**
	comp=Z,48nm,1.4s							
MUD	**Monsted U'grnd**	**23.82**	**64**	*i* P		**P**	**02 51 25.8**	**-0.8**
	comp=Z,40nm,1.2s							
MUD	**Monsted U'grnd**	**23.82**	**64**	*i* P		**P**	**02 51 25.8**	**-0.8**
MUD				pmax		pmax		
	comp=Z,40nm,1.2s							
MUD	**Monsted U'grnd**	**23.82**	**64**	*i* P		**P**	**02 51 25.8**	**-0.8**
	comp=Z,40nm,1.2s							
GGN	**Saint George**	**24.05**	**266**	*e*P		**P**	**02 51 26.4**	**-2.5**
	comp=Z,21nm,1.0s							
THEF	**They Montfort**	**24.28**	**85**	*e*P		**P**	**02 51 30.0**	**-1.1**
THEF	**They Montfort**	**24.28**	**85**	*e*P		**P**	**02 51 30.0**	**-1.1**
RUP	**Ruppelstein**	**24.35**	**81**	*e*P		**P**	**02 51 31.6**	**-0.1**
NC204	**NORSAR Array S**	**24.36**	**52**	*e*P		**P**	**02 51 32.1**	**+0.4**
NC204	**NORSAR Array S**	**24.36**	**52**	*e*P		**P**	**02 51 32.1**	**+0.4**
NBO00	**NORSAR Array S**	**24.36**	**53**	*e*P		**P**	**02 51 31.2**	**-0.5**
NBO00	**NORSAR Array S**	**24.36**	**53**	*e*P		**P**	**02 51 31.2**	**-0.5**
ABH	**Alteburg**	**24.57**	**81**	*e*P		**P**	**02 51 34.3**	**+0.6**
NB2	**NORSAR Subarra**	**24.57**	**53**	P		**P**	**02 51 32.8**	**-0.8**
	comp=Z,7.1nm,0.8s,baz=271,slow=10							
NB2	**NORSAR Subarra**	**24.57**	**53**	P		**P**	**02 51 32.8**	**-0.8**
	comp=Z,7.1nm,0.8s,SNR=8.2							
NOA	**NORSAR Array B**	**24.57**	**53**	P		**P**	**02 51 33.0**	**-0.6**
	comp=Z,2.8nm,0.8s,baz=271,slow=9.8,SNR=8.7							
NOA				LR		LR	03 00 33.2	
	comp=Z,331nm,18.5s,baz=270,slow=35							
NC303	**NORSAR Array S**	**24.65**	**53**	*e*P		**P**	**02 51 33.9**	**-0.4**
NC303	**NORSAR Array S**	**24.65**	**53**	*e*P		**P**	**02 51 33.9**	**-0.4**
NC405	**NORSAR Array S**	**24.82**	**53**	*e*P		**P**	**02 51 35.8**	**0.0**
NC405	**NORSAR Array S**	**24.82**	**53**	*e*P		**P**	**02 51 35.9**	**0.0**
HINF	**Hinteralfeld**	**24.98**	**86**	*e*P		**P**	**02 51 36.1**	**-1.4**
HINF				pmax		pmax		
	comp=Z,7.0nm,0.6s							
HINF	**Hinteralfeld**	**24.98**	**86**	*e*P		**P**	**02 51 36.1**	**-1.4**
	comp=Z,7.0nm,0.6s							
ECH	**Echery**	**25.00**	**84**	*e*P		**P**	**02 51 36.8**	**-0.8**
ECH	**Echery**	**25.00**	**84**	*e*P		**P**	**02 51 36.8**	**-0.8**
LMQ	**La Malbaie**	**25.01**	**274**	*e*P		**P**	**02 51 38.1**	**+0.4**
LMQ	**La Malbaie**	**25.01**	**274**	*e*P		**P**	**02 51 38.1**	**+0.4**
LANF	**Langenberg**	**25.08**	**82**	*e*P		**P**	**02 51 38.0**	**-0.2**
LANF	**Langenberg**	**25.08**	**82**	*e*P		**P**	**02 51 38.0**	**-0.2**
KTD	**Kalmit**	**25.11**	**81**	*e*P		**P**	**02 51 38.3**	**-0.3**
MOF	**Molkenrain**	**25.14**	**85**	*e*P		**P**	**02 51 37.2**	**-1.7**
MOF	**Molkenrain**	**25.14**	**85**	*e*P		**P**	**02 51 37.2**	**-1.7**
FELD	**Feldberg im Sc**	**25.66**	**85**	*e*P		**P**	**02 51 42.7**	**-1.0**
BFO	**Black Forest**	**25.66**	**83**	*e*P		**P**	**02 51 42.4**	**-1.2**
BFO				pmax		pmax		
	comp=Z,16nm,1.1s							
BFO	**Black Forest**	**25.66**	**83**	*e*P		**P**	**02 51 42.4**	**-1.2**
	comp=Z,16nm,1.1s							
BFO	**Black Forest**	**25.66**	**83**	*e*P		**P**	**02 51 42.4**	**-1.2**
	comp=Z,16nm,1.1s							
LLD	**Lille Linde**	**25.71**	**66**	*i* P		**P**	**02 51 43.4**	**-0.4**
	comp=Z,45nm,1.1s							
LLD	**Lille Linde**	**25.71**	**66**	*e*P		**P**	**02 51 43.4**	**-0.4**
LLD				pmax		pmax		
	comp=Z,45nm,1.1s							
LLD	**Lille Linde**	**25.71**	**66**	*e*P		**P**	**02 51 43.4**	**-0.4**
	comp=Z,45nm,1.1s							
COP	**Copenhagen**	**25.75**	**65**	*i* P		**P**	**02 51 44.4**	**+0.2**
COP	**Copenhagen**	**25.75**	**65**	*e*P		**P**	**02 51 44.4**	**+0.2**
COP	**Copenhagen**	**25.75**	**65**	*e*P		**P**	**02 51 44.4**	**+0.2**
HFS	**Hagfors**	**25.82**	**55**	P		**P**	**02 51 44.3**	**-0.6**
	comp=Z,4.7nm,1.0s,baz=240,slow=8.0,SNR=8.2							
HFS				LR		LR	03 00 44.4	
	comp=Z,413nm,20.4s,baz=282,slow=34							
SENIN	**Lac Senin/Sane**	**25.92**	**88**	*e*P		**P**	**02 51 48.1**	**+2.0**
	comp=Z,15nm,1.1s							
SENIN	**Lac Senin/Sane**	**25.92**	**88**	*e*P		**P**	**02 51 48.1**	**+2.0**
	comp=Z,15nm,1.1s							
STU	**Stuttgart**	**26.00**	**82**	*e*P		**P**	**02 51 46.6**	**0.0**
STU				pmax		pmax		
	comp=Z,24nm,0.8s							
STU	**Stuttgart**	**26.00**	**82**	*e*P		**P**	**02 51 46.6**	**0.0**
	comp=Z,24nm,0.8s							
STU	**Stuttgart**	**26.00**	**82**	*e*P		**P**	**02 51 46.6**	**0.0**
	comp=Z,24nm,0.8s							
WVL	**Waterville**	**26.05**	**267**	*e*P		**P**	**02 51 46.3**	**-0.7**
	comp=Z,17nm,0.8s							
WVL	**Waterville**	**26.05**	**267**	*e*P		**P**	**02 51 46.3**	**-0.7**
	comp=Z,17nm,0.8s							
MOX	**Moxa**	**26.73**	**77**	P		**P**	**02 51 52.9**	**-0.3**
MOX				pmax		pmax		
	comp=Z,12nm,1.1s							
MOX	**Moxa**	**26.73**	**77**	P		**P**	**02 51 52.9**	**-0.3**
	comp=Z,12nm,1.1s							
DAVA	**Damuels**	**27.06**	**85**	*i* P		**P**	**02 51 56.7**	**+0.3**
	comp=Z,11nm,1.0s							
DAVOX	**Davos/Dischmat**	**27.29**	**86**	P		**P**	**02 51 58.8**	**+0.3**
	comp=Z,4.5nm,0.6s,baz=330,slow=8.5,SNR=5.2							
DAVOX				LR		LR	03 01 28.8	
	comp=Z,144nm,18.2s,baz=300,slow=34							
CLL	**Collm**	**27.31**	**75**⇑	*i* P		**P**	**02 51 57.6**	**-0.7**
	comp=Z,11nm,0.7s							
CLL				*i*			02 52 00.4	
CLL				*i*			02 52 05.0	
	comp=Z,17nm,0.9s							
CLL				*e*S		**S**	**02 56 39.0**	**+1.6**
CLL				*e*			02 57 12.0	
CLL				Lm		MLR	07 05 00.0	
	comp=Z,200nm,18.6s							
CLL	**Collm**	**27.31**	**75**⇑	*i* P		**P**	**02 51 57.6**	**-0.7**
CLL				*i*			02 52 00.4	
CLL				*i*			02 52 05.0	
CLL				*e*S		**S**	**02 56 39.0**	**+1.6**
CLL				pmax		pmax		
	comp=Z,11nm,0.7s							
CLL	**Collm**	**27.31**	**75**	*e*P		**P**	**02 51 57.7**	**-0.7**
	comp=Z,15nm,0.8s							
CLL	**Collm**	**27.31**	**75**	*e*P		**P**	**02 51 57.6**	**-0.7**
	comp=Z,15nm,0.8s							
NKC	**Novy Kostel**	**27.37**	**77**	*e*pP		**pP**	**02 52 07.6**	**+5.0**
NKC				AMS		AMS	03 02 00.0	
	comp=Z,400nm,13.3s							
NKC	**Novy Kostel**	**27.37**	**77**	*e*P		P	02 52 07.6	+8.6
NKC				MLR		MLR		
	comp=Z,400nm,13.3s							
RETA	**Reutte**	**27.50**	**84**	*i* P		**P**	**02 52 00.4**	**+0.1**
	comp=Z,18nm,1.3s							
FETA	**Feichten**	**27.69**	**84**	*i* P		**P**	**02 52 02.4**	**+0.3**
	comp=Z,7.2nm,0.8s							
MOTA	**Moosalm**	**27.77**	**84**	*i* P		**P**	**02 52 03.6**	**+0.8**
	comp=Z,9.9nm,1.0s							
MDT	**Midelt**	**27.86**	**125**	P		**P**	**02 52 02.8**	**-0.8**
	comp=Z,3.0nm,0.9s,baz=332,slow=15,SNR=4.2							
MDT				LR		LR	03 02 01.1	
	comp=Z,82nm,19.1s,baz=351,slow=34							
WATA	**Walderalm**	**28.06**	**83**	*i* P		**P**	**02 52 05.6**	**+0.3**
	comp=Z,11nm,0.8s							
WTTA	**Wattenberg**	**28.13**	**83**	*i* P		**P**	**02 52 06.3**	**+0.3**
	comp=Z,7.9nm,0.7s							
KHC	**Kasperske Hory**	**28.49**	**79**	*e*P		**P**	**02 52 08.3**	**-0.7**
KHC				*ex*		x	02 52 16.0	
KHC				AMS		AMS	03 02 30.0	
	comp=Z,300nm,17.2s							
KHC	**Kasperske Hory**	**28.49**	**79**	*e*P		**P**	**02 52 08.3**	**-0.7**
KHC				*e*			02 52 16.0	
KHC				MLR		MLR		
	comp=Z,300nm,17.2s							
KHC	**Kasperske Hory**	**28.49**	**79**	*e*P		**P**	**02 52 08.3**	**-0.7**
	comp=Z,300nm,17.2s							
KHC	**Kasperske Hory**	**28.49**	**79**	*e*P		**P**	**02 52 07.6**	**-1.3**
	comp=Z,9.3nm,1.9s							
PVCC	**Panska Ves**	**28.52**	**75**	*e*P		**P**	**02 52 09.0**	**-0.2**
PVCC				*ex*		x	02 52 16.4	
PVCC				AMS		AMS	03 03 20.0	
	comp=Z,600nm,16.3s							
PVCC	**Panska Ves**	**28.52**	**75**	*e*P		**P**	**02 52 09.0**	**-0.2**
PVCC				*e*			02 52 16.4	
PVCC				MLR		MLR		
	comp=Z,600nm,16.3s							
PVCC	**Panska Ves**	**28.52**	**75**	*e*P		**P**	**02 52 09.0**	**-0.2**
	comp=Z,600nm,16.3s							
GEC2	**GERESS Array S**	**28.68**	**79**	*e*P		**P**	**02 52 10.7**	**-0.1**
GEC2				pmax		pmax		
	comp=Z,8.0nm,1.0s							
GEC2	**GERESS Array S**	**28.68**	**79**	*e*P		**P**	**02 52 10.7**	**-0.1**
	comp=Z,8.0nm,1.0s							
GEC2	**GERESS Array S**	**28.68**	**79**	*e*P		**P**	**02 52 10.7**	**-0.1**
	comp=Z,8.0nm,1.0s							
GERES	**GERESS Array B**	**28.68**	**79**	P		**P**	**02 52 09.8**	**-1.0**
	comp=Z,3.9nm,0.8s,baz=294,slow=9.8,SNR=21							
GERES				LR		LR	03 03 10.4	
	comp=Z,204nm,19.1s,baz=282,slow=36							
GEA0	**GERESS Array S**	**28.68**	**79**	*e*P		**P**	**02 52 10.1**	**-0.7**
GEA0	**GERESS Array S**	**28.68**	**79**	*e*P		**P**	**02 52 10.1**	**-0.7**
PRU	**Pruhonice**	**28.71**	**76**	AMS		AMS	03 03 30.0	
	comp=Z,400nm,15.4s							
GOPC	**GO Pecny, Ondr**	**28.89**	**76**	AMS		AMS	03 03 50.0	
	comp=Z,400nm,12.6s							
KBA	**Koelnbreinsper**	**29.25**	**83**	*i* P		**P**	**02 52 16.1**	**+0.1**
	comp=Z,9.0nm,0.9s							
UPC	**Upice**	**29.37**	**75**	*e*P		**P**	**02 52 16.7**	**-0.1**
UPC				AMS		AMS	03 03 50.0	
	comp=Z,500nm,14.4s							
UPC	**Upice**	**29.37**	**75**	*e*P		**P**	**02 52 16.7**	**-0.1**
UPC				MLR		MLR		
	comp=Z,500nm,14.4s							
UPC	**Upice**	**29.37**	**75**	*e*P		**P**	**02 52 16.7**	**-0.1**
	comp=Z,500nm,14.4s							
KSP	**Ksiaz**	**29.41**	**74**	*e*P		P	02 52 25.1	+8.1
KSP	**Ksiaz**	**29.41**	**74**	*e*P		P	02 52 25.2	+8.1
MOA	**Molln**	**29.45**	**81**	*i* P		**P**	**02 52 17.7**	**+0.2**
	comp=Z,14nm,1.4s							
TREC	**Trest**	**29.55**	**77**	*e*P		**P**	**02 52 18.3**	**-0.1**
TREC				*ex*		x	02 52 25.7	
TREC				AMS		AMS	03 03 50.0	
	comp=Z,400nm,16.1s							
TREC	**Trest**	**29.55**	**77**	*e*P		**P**	**02 52 18.3**	**-0.1**
TREC				*e*			02 52 25.7	
TREC				MLR		MLR		
	comp=Z,400nm,16.1s							
TREC	**Trest**	**29.55**	**77**	*e*P		**P**	**02 52 18.3**	**-0.1**
	comp=Z,400nm,16.1s							
DPC	**Dobruska-Polom**	**29.62**	**75**	*e*P		**P**	**02 52 18.6**	**-0.4**
DPC				*ex*		x	02 52 26.4	
DPC				AMS		AMS	03 03 50.0	
	comp=Z,400nm,15.3s							
DPC	**Dobruska-Polom**	**29.62**	**75**	*e*P		**P**	**02 52 18.6**	**-0.4**
DPC				*e*			02 52 26.4	
DPC				MLR		MLR		
	comp=Z,400nm,15.3s							
DPC	**Dobruska-Polom**	**29.62**	**75**	*e*P		**P**	**02 52 18.6**	**-0.4**
	comp=Z,400nm,15.3s							
MYKA	**Terra Mystica**	**29.64**	**83**	*i* P		**P**	**02 52 19.4**	**+0.1**
	comp=Z,25nm,0.7s							
OBKA	**Obir**	**

DIVS Divibare 34.78 83⇑ *i*P P 02 53 03.7 -0.7
BZS Buzias 34.95 80⇑ *i*P P 02 53 04.9 -0.8
BZS Buzias 34.95 80 ⇑P P 02 53 04.9 -0.8
BZS Buzias 34.95 80⇑ *i*P P 02 53 04.9 -0.8
TRUS Trudelj 34.97 83⇑ *i*P P 02 53 05.4 -0.4
DRGR 35.01 77⇑ *i*P P 02 53 06.6 +0.3
DRGR 35.01 77 ⇑P P 02 53 06.6 +0.3
DRGR 35.01 77⇑ *i*P P 02 53 06.6 +0.3
IVAS Ivanjica 35.17 84 *e*P P 02 53 06.8 -0.8
GRUS Gruza 35.34 83⇑ *i*P P 02 53 09.0 0.0
BUR08 Bucovina Ar. S 36.05 75 *e*P P 02 53 16.0 +0.7
BUR08 Bucovina Ar. S 36.05 75 *e*P P 02 53 16.0 +0.7
BURAR Bucovina Array 36.08 75⇑ *i*P P 02 53 15.8 +0.3
BURAR Bucovina Array 36.08 75 ⇑P P 02 53 15.8 +0.3
BURAR Bucovina Array 36.08 75⇑ *i*P P 02 53 15.8 +0.3
BARS Barje 36.60 84 *e*P P 02 53 19.6 -0.3
AK11 Malin Array Si 36.89 68 *e*P P 02 53 21.4 -0.9
AK11 Malin Array Si 36.89 68 *e*P P 02 53 21.4 -0.9
KIEV Kiev 36.91 68⇓ *i*P P 02 53 21.7 -0.7
KIEV pmax pmax
comp=Z,17nm,1.1s
KIEV MLR MLR
comp=Z,367nm,16.0s
KIEV Kiev 36.91 68 *i* P P 02 53 21.7 -0.7
comp=Z,367nm,16.0s
KIEV Kiev 36.91 68 *e*P P 02 53 21.3 -1.1
comp=Z,18nm,0.9s
AKASG Malin Array Be 36.91 68 P P 02 53 21.2 -1.2
comp=Z,6.2nm,0.8s,baz=301,slow=8.4,SNR=24
AKASG LR LR 03 09 22.6
comp=Z,355nm,18.1s,baz=295,slow=38
AKBB Malin Array Si 36.91 68 *e*P P 02 53 21.4 -1.0
AKBB pmax pmax
comp=Z,18nm,0.9s
AKBB Malin Array Si 36.91 68 *e*P P 02 53 21.4 -1.0
comp=Z,18nm,0.9s
AKBB Malin Array Si 36.91 68 *e*P P 02 53 21.4 -1.0
comp=Z,18nm,0.9s
COWI Conover 37.03 283 *e*P P 02 53 24.8 +1.3
comp=Z,5.4nm,1.0s
COWI Conover 37.03 283 *e*P P 02 53 24.8 +1.3
comp=Z,5.5nm,1.0s
VOIR 37.10 78⇓ *i*P P 02 53 23.4 -0.8
VOIR 37.10 78 ⇓P P 02 53 23.4 -0.8
VOIR 37.10 78⇓ *i*P P 02 53 23.4 -0.8
VTS Vitosha 37.57 83⇑ *i*P P 02 53 27.8 -0.5
VTS Vitosha 37.57 83 *e*P P 02 53 27.8 -0.5
VTS pmax pmax
comp=Z,6.0nm,0.9s
VTS Vitosha 37.57 83 *e*P P 02 53 27.8 -0.5
comp=Z,6.3nm,0.9s
VTS Vitosha 37.57 83 *e*P P 02 53 27.8 -0.5
comp=Z,6.3nm,0.9s
MLR Muntele Rosu 37.60 77 P P 02 53 28.2 -0.4
comp=Z,0.4nm,0.6s,baz=186,slow=14,SNR=5.1
MLR Muntele Rosu 37.60 77⇑ *i*P P 02 53 28.6 +0.1
MLR Muntele Rosu 37.60 77 *e*P P 02 53 28.7 +0.2
MLR pmax pmax
comp=Z,9.0nm,1.1s
MLR Muntele Rosu 37.60 77 *e*P P 02 53 28.7 +0.2
comp=Z,8.6nm,1.1s
MLR Muntele Rosu 37.60 77 *e*P P 02 53 28.7 +0.2
comp=Z,8.6nm,1.1s
KLMR Klimovskoe 38.11 49 *e*P P 02 53 30.5 -1.9
KLMR pmax pmax
comp=Z,19nm,1.0s
KLMR Klimovskoe 38.11 49 *e*P P 02 53 30.5 -1.9
comp=Z,19nm,1.0s
ULM Lac du Bonnet 38.83 293 P P 02 53 37.1 -1.5
comp=Z,2.8nm,0.9s,baz=86,slow=7.2,SNR=3.1
ULM LR LR 03 07 53.6
comp=Z,97nm,21.8s,baz=60,slow=34
OBN Obninsk 38.93 58 P P 02 53 38.1 -1.3
comp=Z,15nm,0.7s,baz=127,slow=23,SNR=7.4
OBN Obninsk 38.93 58⇓ *i*P P 02 53 39.0 -0.4
OBN pmax pmax
comp=Z,43nm,1.7s
OBN MLR MLR
comp=Z,162nm,15.0s
OBN Obninsk 38.93 58 *i* P P 02 53 39.0 -0.4
comp=Z,162nm,15.0s
CFR Carcaliu 39.07 76⇑ *i*P P 02 53 38.8 -1.9
CFR Carcaliu 39.07 76 ⇑P P 02 53 38.8 -1.9
CFR Carcaliu 39.07 76⇑ *i*P P 02 53 38.8 -1.9
AGG Agios Georgios 39.17 88 *e*P P 02 53 41.7 0.0
AGG pmax pmax
comp=Z,44nm,0.7s
AGG Agios Georgios 39.17 88 *e*P P 02 53 41.7 0.0
comp=Z,44nm,0.7s
AGG Agios Georgios 39.17 88 *e*P P 02 53 41.7 0.0
comp=Z,44nm,0.7s
TLB Topalu 39.34 77⇓ *i*P P 02 53 40.9 -2.1
TLB Topalu 39.34 77 ⇓P P 02 53 40.9 -2.1
TLB Topalu 39.34 77⇓ *i*P P 02 53 40.9 -2.1
TIRR Tirgusor 39.64 77⇑ *i*P P 02 53 43.4 -1.9
TIRR Tirgusor 39.64 77 *e*P P 02 53 43.5 -1.9
TIRR pmax pmax
comp=Z,5.0nm,0.8s
TIRR Tirgusor 39.64 77 *e*P P 02 53 43.5 -1.9
comp=Z,5.1nm,0.8s
TIRR Tirgusor 39.64 77 *e*P P 02 53 43.5 -1.9
comp=Z,5.1nm,0.8s
FFC Flin Flon 40.03 302 *e*P P 02 53 49.8 +1.3
FFC pmax pmax
comp=Z,2.0nm,0.7s
FFC Flin Flon 40.03 302 *e*P P 02 53 49.8 +1.3
comp=Z,2.0nm,0.7s
FFC Flin Flon 40.03 302 *e*P P 02 53 49.8 +1.3
comp=Z,2.0nm,0.7s
TAM Tamanrasset 41.19 122 *e*P P 02 53 59.7 +1.1
TAM pmax pmax
comp=Z,8.0nm,1.3s
TAM Tamanrasset 41.19 122 *e*P P 02 53 59.7 +1.1
comp=Z,8.2nm,1.3s
TAM Tamanrasset 41.19 122 *e*P P 02 53 59.7 +1.1
comp=Z,8.2nm,1.3s
VSR Storozhevoye 42.16 62 *e*P P 02 54 04.9 -1.2
VSR pmax pmax
comp=Z,20nm,1.0s
VSR Storozhevoye 42.16 62 *e*P P 02 54 04.9 -1.2
comp=Z,20nm,1.0s
APE Apeiranthos 42.36 88⇑ *i*P P 02 54 07.8 -0.2
APE Apeiranthos 42.36 88 *i* P P 02 54 07.8 -0.2
YKA Yellowknife Ar 42.47 317 P P 02 54 07.3 -1.2
comp=Z,3.4nm,1.1s,baz=64,slow=8.2,SNR=8.0
YKA PcP **PcP 02 56 01.5 +0.5**
comp=Z,1.8nm,0.8s,baz=55,slow=4.1,SNR=3.8
YKA LR LR 03 09 54.4
comp=Z,13nm,20.2s,baz=0.0,slow=34
YKA Yellowknife Ar 42.47 317 *ce*P P 02 54 10.8 +2.3
YKA pmax pmax
comp=Z,2.0nm,1.0s
YKA Yellowknife Ar 42.47 317 *e*P P 02 54 10.8 +2.3
comp=Z,2.0nm,1.0s
ECSD EROS Data Cent 42.76 285 *e*P P 02 54 10.9 -0.2
comp=Z,5.8nm,0.9s
ECSD EROS Data Cent 42.76 285 *e*P P 02 54 10.9 -0.2
comp=Z,5.8nm,0.9s
H05N1 Guadeloupe/Mar 42.95 224 T T 03 39 35.3
SNR=17
IDI Anoyia 43.14 90 P P 02 54 13.0 -1.4
comp=Z,4.6nm,0.7s,baz=275,slow=13,SNR=8.2
VRH Novokhopyorsk 43.54 61 *e*P P 02 54 16.6 -0.7
VRH pmax pmax
comp=Z,20nm,0.6s
VRH Novokhopyorsk 43.54 61 *e*P P 02 54 16.6 -0.7
comp=Z,20nm,0.6s
BR131 Keskin Array S 45.58 79 *e*P P 02 54 34.7 +0.8
BR131 Keskin Array S 45.58 79 *e*P P 02 54 34.6 +0.8
BRTR Keskin Array B 45.58 79 P P 02 54 34.5 +0.6
comp=Z,13nm,0.8s,baz=304,slow=6.1,SNR=68
BRTR LR LR 03 15 39.1
comp=Z,64nm,18.4s,baz=305,slow=39
SOKR Solikamsk 46.36 45⇑ *i*P P 02 54 37.8 -1.8
SOKR S **S 03 01 27.6 +1.4**
SOKR pmax pmax
comp=Z,11nm,0.9s
SOKR MLR MLR
comp=Z,169nm,23.0s
LAO LASA Array 46.54 294 *e*P P 02 54 42.1 +0.7
comp=Z,12nm,0.9s
LAO LASA Array 46.54 294 *e*P P 02 54 42.1 +0.7
comp=Z,12nm,0.9s
TOA0 Torodi Ar. Sit 47.60 133 *e*P P 02 54 48.8 -1.1
comp=Z,12nm,0.8s
TOA0 Torodi Ar. Sit 47.60 133 *e*P P 02 54 48.8 -1.1
comp=Z,12nm,0.8s
TORD Torodi Ar. Bea 47.60 133 P P 02 54 48.6 -1.2
comp=Z,10nm,0.8s,baz=337,slow=7.8,SNR=119
TORD LR LR 03 11 50.8
comp=Z,100nm,21.6s,baz=315,slow=32
GOF Gofitskoye 47.77 68⇑ *e*P P 02 54 51.5 +0.7
GOF pmax pmax
comp=Z,37nm,0.7s
GOF Gofitskoye 47.77 68 *e*P P 02 54 51.5 +0.7
comp=Z,37nm,0.7s
KIV Kislovodsk 48.24 69 *ce*P P 02 54 56.3 +1.7
KIV *e* 02 56 48.7
KIV pmax pmax
comp=Z,10.0nm,1.7s
KIV MLR MLR
comp=Z,169nm,18.0s
KIV Kislovodsk 48.24 69 *e*P P 02 54 53.8 -0.8
comp=Z,7.3nm,0.7s
KIV Kislovodsk 48.24 69 *e*P P 02 54 53.8 -0.8
comp=Z,7.3nm,0.7s
CSS Mathiatis 48.49 84 *e*P P 02 54 55.6 -1.0
comp=Z,5.0nm,0.8s
CSS Mathiatis 48.49 84 *e*P P 02 54 55.6 -1.0
comp=Z,5.0nm,0.8s
KBZ Khabaz 48.50 69 P P 02 54 57.3 +0.8
comp=Z,3.9nm,0.9s,baz=309,slow=13,SNR=5.0
KBZ LR LR 03 15 13.4
comp=Z,171nm,20.5s,baz=290,slow=36
NEY Neytrino 48.70 70⇑ *e*P P 02 55 01.5 +3.2
NEY pmax pmax
comp=Z,2.0nm,1.0s
ARU Arti 48.93 47 P P 02 54 59.2 -0.4
comp=Z,5.2nm,0.2s,baz=292,slow=4.8,SNR=13
ARU Arti 48.93 47 *d i*P P 02 54 59.7 +0.1
ARU 02 56 52.4
ARU S **S 03 02 06.2 +3.3**
ARU SS **SS 03 05 28.2 -4.8**
ARU pmax pmax
comp=Z,16nm,1.0s
ARU MLR MLR
comp=Z,343nm,19.0s
ARU Arti 48.93 47 *i* P P 02 54 59.7 +0.1
comp=Z,16nm,1.0s
ARU Arti 48.93 47 *e*P P 02 54 59.8 +0.1
comp=Z,16nm,1.0s
NCK Nalchik 49.04 69⇑ *e*P P 02 55 02.5 +1.8
NCK pmax pmax
comp=Z,6.0nm,0.4s
NCK Nalchik 49.04 69 *e*P P 02 55 02.5 +1.8
comp=Z,6.0nm,0.4s
K22A Casper 49.17 290 *e*P P 02 55 02.3 +0.4
comp=Z,11nm,1.1s
K22A Casper 49.17 290 *e*P P 02 55 02.3 +0.4
comp=Z,11nm,1.1s
WALA Waterton Lakes 49.29 301 *e*P P 02 55 04.8 +2.1
comp=Z,18nm,1.3s
WALA Waterton Lakes 49.29 301 *e*P P 02 55 04.8 +2.1
comp=Z,18nm,1.3s
ZEI Tsey 49.66 69 *e*P P 02 55 05.3 -0.4
ZEI pmax pmax
comp=Z,18nm,0.4s
WMOK Wichita Mounta 49.75 277 *e*P P 02 55 06.6 +0.4
WMOK pmax pmax
comp=Z,3.0nm,1.0s
WMOK Wichita Mounta 49.75 277 *e*P P 02 55 06.6 +0.4
comp=Z,2.9nm,1.0s
WMOK Wichita Mounta 49.75 277 *e*P P 02 55 06.6 +0.4
comp=Z,2.9nm,1.0s
N23A Red Feather La 49.96 288 *e*P P 02 55 08.3 +0.3
comp=Z,15nm,1.0s
N23A Red Feather La 49.96 288 *e*P P 02 55 08.3 +0.3
comp=Z,15nm,1.0s
BOZ Bozeman (W) 50.16 296 *e*P P 02 55 08.5 -0.9
BOZ pmax pmax
comp=Z,4.0nm,0.8s
BOZ Bozeman (W) 50.16 296 *e*P P 02 55 08.5 -0.9
comp=Z,4.2nm,0.8s
BOZ Bozeman (W) 50.16 296 *e*P P 02 55 08.5 -0.9
comp=Z,4.2nm,0.8s
NRIK Noril'sk 50.57 24 P P 02 55 11.9 0.0
comp=Z,1.9nm,0.3s,baz=343,slow=7.3,SNR=2.8
NRIK LR LR 03 17 15.4
comp=Z,141nm,18.4s,baz=324,slow=37
NRIK Noril'sk 50.57 24 P P 02 55 12.0 0.0
NRIK pmax pmax
comp=Z,2.0nm,0.3s
NRIK MLR MLR
comp=Z,141nm,18.4s
PD31 Pinedale Array 50.83 292 *e*P P 02 55 13.2 -1.4
PD31 Pinedale Array 50.83 292 *e*P P 02 55 13.2 -1.4
PDAR Pinedale Array 50.83 292 P P 02 55 13.1 -1.5
comp=Z,0.9nm,0.6s,baz=57,slow=7.6,SNR=10
PDAR LR LR 03 15 49.2
comp=Z,114nm,18.5s,baz=62,slow=35
BW06 Boulder Array 50.83 292 *e*P P 02 55 13.3 -1.3
comp=Z,4.7nm,1.1s
BW06 Boulder Array 50.83 292 *e*P P 02 55 13.3 -1.3
comp=Z,4.7nm,1.1s
TIC Toumodi 50.83 145 *e*P P 02 55 13.7 -0.8
DBIC Dimbokro 50.87 145 P P 02 55 14.2 -0.6
comp=Z,5.4nm,1.0s,baz=310,slow=7.8,SNR=7.7
DBIC LR LR 03 14 52.6
comp=Z,250nm,18.6s,baz=324,slow=34
DBIC Dimbokro 50.87 145 *e*P P 02 55 14.0 -0.7
comp=Z,11nm,0.8s
DAWY Dawson 50.87 327 *e*P P 02 55 14.9 +0.5
comp=Z,5.9nm,1.2s
DAWY Dawson 50.87 327 *e*P P 02 55 14.8 +0.5
comp=Z,5.9nm,1.2s
LOHW Long Hollow 50.88 293 *e*P P 02 55 15.8 +0.9
comp=Z,4.3nm,1.1s
LOHW Long Hollow 50.88 293 *e*P P 02 55 15.8 +0.9
comp=Z,4.4nm,1.1s
DLBC Dease Lake 51.06 318 *e*P P 02 55 16.8 +0.9
comp=Z,9.5nm,1.1s
DLBC Dease Lake 51.06 318 *e*P P 02 55 16.8 +0.9
comp=Z,9.5nm,1.1s
MMAI Mount Meron Ar 51.08 85 P P 02 55 15.1 -1.2
baz=320,slow=13
KIC Kosan Boka 51.20 145 *e*P P 02 55 13.9 -3.4
comp=Z,38nm,1.4s
LIC Lamto 51.22 145 *e*P P 02 55 16.5 -0.9
comp=Z,26nm,0.9s
AMTX Amarillo 51.41 279 *e*P P 02 55 20.4 +1.6
comp=Z,6.9nm,0.8s
AMTX Amarillo 51.41 279 *e*P P 02 55 20.4 +1.6
comp=Z,6.9nm,0.8s
NEW Newport 51.45 302 *e*P P 02 55 19.8 +0.9
NEW pmax pmax
comp=Z,6.0nm,1.1s
NEW Newport 51.45 302 *e*P P 02 55 19.8 +0.9
comp=Z,6.1nm,1.1s
NEW Newport 51.45 302 *e*P P 02 55 19.8 +0.9
comp=Z,6.1nm,1.1s
GNI Garni 51.84 71 P P 02 55 23.2 +1.1
comp=Z,2.2nm,0.4s,baz=215,slow=9.3,SNR=3.0
GNI Garni 51.84 71 *ce*P P 02 55 24.5 +2.4
GNI pmax pmax
comp=Z,47nm,2.5s
GNI Garni 51.84 71 *e*P P 02 55 22.9 +0.8
comp=Z,62nm,0.9s
GNI Garni 51.84 71 *e*P P 02 55 22.9 +0.8
comp=Z,62nm,0.9s
LLLB Lillooet 52.37 306 *e*P P 02 55 27.3 +1.6
comp=Z,11nm,1.3s
LLLB Lillooet 52.37 306 *e*P P 02 55 27.3 +1.6
comp=Z,11nm,1.3s
B08A Colville Reser 52.53 303 *e*P P 02 55 28.4 +1.4
comp=Z,10nm,1.1s
B08A Colville Reser 52.53 303 *e*P P 02 55 28.4 +1.4
comp=Z,10nm,1.1s
ASF Jabal al Asfar 52.57 84 P P 02 55 28.5 +1.0
baz=326,slow=1.5
MSTX Muleshoe 52.69 279 *e*P P 02 55 27.9 -0.5
comp=Z,4.7nm,0.8s
MSTX Muleshoe 52.69 279 *e*P P 02 55 27.9 -0.5
comp=Z,4.7nm,0.8s
HWUT Hardware Ranch 52.72 292 *e*P P 02 55 27.9 -0.7
comp=Z,12nm,0.8s
HWUT Hardware Ranch 52.72 292 *e*P P 02 55 27.9 -0.7
comp=Z,12nm,0.8s
IL1 Eielson Array 52.73 331 *e*P P 02 55 27.7 -0.4
IL1 Eielson Array 52.73 331 *e*P P 02 55 27.7 -0.4
ILAR Eielson Array 52.73 331 P P 02 55 28.5 +0.3
comp=Z,0.5nm,0.8s,baz=39,slow=5.9,SNR=5.8
ILAR PcP **PcP 02 56 39.0 +1.4**
comp=Z,0.6nm,0.8s,baz=29,slow=2.1,SNR=2.5
ILAR LR LR 03 17 26.9
comp=Z,213nm,18.7s,baz=74,slow=36
HLID Hailey 53.02 296 *e*P P 02 55 33.0 +2.1
comp=Z,5.1nm,1.3s
HLID Hailey 53.02 296 *e*P P 02 55 33.0 +2.1
comp=Z,5.1nm,1.3s
EIL Elat 53.15 88 P P 02 55 31.9 +0.2
comp=Z,1.1nm,0.4s,baz=358,slow=8.1,SNR=3.9
PV10 Paradox Valley 53.41 287 *e*P P 02 55 36.5 +2.6
PV10 Paradox Valley 53.41 287 *e*P P 02 55 36.5 +2.6
PV05 Paradox Valley 53.65 287 *e*P P 02 55 35.9 +0.4
PV05 Paradox Valley 53.65 287 *e*P P 02 55 35.9 +0.4
SRU San Rafael Swe 53.78 289 *e*P P 02 55 39.9 +3.5
SRU pmax pmax
comp=Z,3.0nm,0.8s
SRU San Rafael Swe 53.78 289 *e*P P 02 55 39.9 +3.5
comp=Z,3.0nm,0.8s
SRU San Rafael Swe 53.78 289 *e*P P 02 55 39.9 +3.5
comp=Z,3.2nm,0.8s
MVCO Mesa Verde 53.88 286 *e*P P 02 55 37.6 +0.3
comp=Z,17nm,1.6s
MVCO Mesa Verde 53.88 286 *e*P P 02 55 37.6 +0.3
comp=Z,17nm,1.6s
ABKAR Akbulak array 54.08 54 *e*P P 02 55 38.2 0.0
comp=Z,7.7nm,1.0s
ABKAR Akbulak array 54.08 54 *e*P P 02 55 38.2 0.0
comp=Z,7.7nm,1.0s
MCK McKinley 54.10 331 *e*P P 02 55 37.8 -0.5
MCK pmax pmax
comp=Z,11nm,1.2s
MCK McKinley 54.10 331 *e*P P 02 55 37.8 -0.5
comp=Z,11nm,1.2s
MCK McKinley 54.10 331 *e*P P 02 55 37.8 -0.5
comp=Z,11nm,1.2s
ANMO Albuquerque 54.22 282⇑ *e*P P 02 55 41.8 +2.0
ANMO pmax pmax
comp=Z,8.0nm,2.5s
ANMO Albuquerque 54.22 282 *e*P P 02 55 39.7 0.0
comp=Z,10nm,1.8s
ANMO Albuquerque 54.22 282 *e*P P 02 55 39.7 0.0
comp=Z,10nm,1.8s
DUG Dugway, Tooele 54.36 291 *e*P P 02 55 40.8 +0.2
DUG pmax pmax
comp=Z,3.0nm,0.6s
DUG Dugway, Tooele 54.36 291 *e*P P 02 55 40.8 +0.2
comp=Z,2.5nm,0.6s
DUG Dugway, Tooele 54.36 291 *e*P P 02 55 40.8 +0.2
comp=Z,2.5nm,0.6s
CRQM Cirque 54.42 326 *e*P P 02 55 42.8 +2.0
comp=Z,72nm,1.2s
CRQM Cirque 54.42 326 *e*P P 02 55 42.8 +2.0
comp=Z,72nm,1.2s
CAST Castle Rocks 55.26 332 *e*P P 02 55 49.1 +2.4
comp=Z,8.7nm,1.2s
CAST Castle Rocks 55.26 332 *e*P P 02 55 49.1 +2.4
comp=Z,8.7nm,1.2s
TIXI Tiksi 55.26 7 *e*P P 02 55 47.0 +0.5
TIXI pmax pmax
comp=Z,13nm,1.0s
TIXI Tiksi 55.26 7 *e*P P 02 55 47.0 +0.5
comp=Z,13nm,1.0s
TIXI Tiksi 55.26 7 *e*P P 02 55 47.0 +0.5
comp=Z,13nm,1.0s
MTPU Mount Pierson 55.46 289 *e*P P 02 55 50.9 +2.0
comp=Z,8.0nm,1.3s
MTPU Mount Pierson 55.46 289 *e*P P 02 55 50.9 +2.0
comp=Z,8.0nm,1.3s
NLWA Neilton Lookou 55.47 304 *e*P P 02 55 50.3 +1.9
comp=Z,23nm,1.2s
NLWA Neilton Lookou 55.47 304 *e*P P 02 55 50.3 +1.9
comp=Z,23nm,1.2s
WVOR Wild Horse Val 56.09 297 *e*P P 02 55 53.7 +0.7
WVOR pmax pmax
comp=Z,7.0nm,0.9s
WVOR Wild Horse Val 56.09 297 *e*P P 02 55 53.7 +0.7
comp=Z,7.1nm,0.9s
WVOR Wild Horse Val 56.09 297 *e*P P 02 55 53.7 +0.7
comp=Z,7.1nm,0.9s
BRVK Borovoye 56.29 45 *c i*P P 02 55 54.1 0.0
BRVK pmax pmax
comp=Z,33nm,1.7s
BRVK Borovoye 56.29 45 *i* P P 02 55 54.1 0.0
comp=Z,33nm,1.7s
BRVK Borovoye 56.29 45 *e*P P 02 55 54.5 +0.4
comp=Z,19nm,1.3s
CCUT Cedar City 56.47 289 *e*P P 02 55 56.6 +0.6
comp=Z,3.8nm,1.0s
CCUT Cedar City 56.47 289 *e*P P 02 55 56.6 +0.6
comp=Z,3.8nm,1.0s
TX31 Lajitas Ar. Si 56.49 276 *e*P P 02 55 56.3 +0.3
TX31 Lajitas Ar. Si 56.49 276 *e*P P 02 55 56.3 +0.3
TXAR Lajitas Array 56.49 276 P P 02 55 54.4 -1.6
comp=Z,0.2nm,0.5s,baz=65,slow=5.3,SNR=6.5
TXAR LR LR 03 21 32.7
comp=Z,70nm,19.7s,baz=0.0,slow=38
KNB Kanab 56.53 289 *e*P P 02 55 57.7 +1.3
KNB pmax pmax
comp=Z,6.0nm,1.2s
KNB Kanab 56.53 289 *e*P P 02 55 57.7 +1.3
comp=Z,6.1nm,1.2s
KNB Kanab 56.53 289 *e*P P 02 55 57.7 +1.3
comp=Z,6.1nm,1.2s
U15A North Rim 56.63 288 *e*P P 02 55 58.0 +0.8
comp=Z,3.7nm,0.9s
U15A North Rim 56.63 288 *e*P P 02 55 58.0 +0.8
comp=Z,3.7nm,0.9s
WUAZ Wupatki 56.73 286 *e*P P 02 55 57.9 +0.2
comp=Z,5.2nm,1.1s
WUAZ Wupatki 56.73 286 *e*P P 02 55 57.9 +0.2
comp=Z,5.2nm,1.1s
LCMT Little Creek M 56.78 289 *e*P P 02 55 59.6 +1.5
comp=Z,2.2nm,0.9s
LCMT Little Creek M 56.78 289 *e*P P 02 55 59.6 +1.5
comp=Z,2.2nm,0.9s
K05A Summer Lake 57.10 299 *e*P P 02 56 01.6 +1.3
comp=Z,34nm,1.5s
K05A Summer Lake 57.10 299 *e*P P 02 56 01.6 +1.3
comp=Z,34nm,1.5s
R11A Troy Canyon, C 57.19 292 *e*P P 02 56 01.8 +0.8
comp=Z,2.2nm,0.8s
R11A Troy Canyon, C 57.19 292 *e*P P 02 56 01.8 +0.8
comp=Z,2.2nm,0.8s
MOD Modoc Plateau 57.35 298 *e*P P 02 56 03.2 +1.2
comp=Z,5.7nm,0.9s
MOD Modoc Plateau 57.35 298 *e*P P 02 56 03.2 +1.2
comp=Z,5.7nm,0.9s
X16A Lo Mia Camp, P 57.54 285 *e*P P 02 56 04.2 +0.7
comp=Z,5.2nm,0.8s
X16A Lo Mia Camp, P 57.54 285 *e*P P 02 56 04.2 +0.7
comp=Z,5.2nm,0.8s
PAHR Pah Rah Range 58.37 295 *e*P P 02 56 11.4 +2.1
comp=Z,8.6nm,1.2s
PAHR Pah Rah Range 58.37 295 *e*P P 02 56 11.4 +2.1
comp=Z,8.6nm,1.2s
ROSC El Rosal 59.06 232 P P 02 56 14.0 -0.5
comp=Z,9.2nm,0.5s,baz=70,slow=15,SNR=5.9
ROSC LR LR 03 18 41.4
comp=Z,90nm,21.6s,baz=261,slow=33
ROSC El Rosal 59.06 232 *e*P P 02 56 15.1 +0.6
comp=Z,9.4nm,0.6s
ROSC El Rosal 59.06 232 *e*P P 02 56 15.1 +0.6
comp=Z,9.4nm,0.6s
Y12C Blythe 59.81 287 *e*P P 02 56 21.4 +2.3
comp=Z,12nm,0.9s
Y12C Blythe 59.81 287 *e*P P 02 56 21.4 +2.3
comp=Z,12nm,0.9s
NVS Novosibirsk 60.17 37⇓ *i*P P 02 56 22.3 +1.1
NVS pmax pmax
comp=Z,30nm,1.4s
NVS pmax pmax
comp=N,14nm,1.8s
NVS pmax pmax
comp=E,5.0nm,1.8s
NVS Novosibirsk 60.17 37 *i* P P 02 56 22.3 +1.1
comp=E,30nm,1.4s
PRAC Prado 60.31 232 *e*P P 02 56 21.6 -1.1
comp=E,14nm,1.0s
GEYT Alibeck 60.93 65 P P 02 56 25.9 -0.9
comp=E,1.0nm,0.3s,baz=310,slow=9.0,SNR=4.8
GEYT LR LR 03 25 19.7
comp=E,104nm,18.8s,baz=25,slow=38
ZAA0 Zalesovo Array 61.45 37 *e*P P 02 56 30.3 +0.4
ZAA0 Zalesovo Array 61.45 37 *e*P P 02 56 30.3 +0.4
ZALV Zalesovo Beam 61.45 37 P P 02 56 30.0 +0.1
comp=E,3.5nm,0.7s,baz=316,slow=8.0,SNR=11
ZALV LR LR 03 23 16.6
comp=E,53nm,18.7s,baz=259,slow=36

KKAR	**Karatay Array**	**63.61**	**53**	*e*P		**P**		**02 56 44.3**	**-0.3**
KKAR					pmax	pmax			
	comp=Z,2.0nm,0.6s								
KKAR	**Karatay Array**	**63.61**	**53**	*e*P		**P**		**02 56 44.3**	**-0.3**
	comp=Z,2.4nm,0.6s								
KKAR	**Karatay Array**	**63.61**	**53**	*e*P		**P**		**02 56 44.3**	**-0.3**
	comp=Z,2.4nm,0.6s								
SEY	**Seymchan**	**64.73**	**358**↓	*e*P		P		02 56 58.5	+6.9
OTAV	**Otavalo**	**65.06**	**233**	*e*P		**P**		**02 56 54.3**	**-0.6**
	comp=Z,2.7nm,0.7s								
OTAV	**Otavalo**	**65.06**	**233**	*e*P		**P**		**02 56 54.3**	**-0.6**
	comp=Z,2.7nm,0.7s								
AAK	**Ala-Archa**	**65.88**	**51**↑	*e*P		**P**		**02 57 01.5**	**+1.9**
AAK					pmax	pmax			
	comp=Z,12nm,1.4s								
AAK	**Ala-Archa**	**65.88**	**51**	*e*P		**P**		**02 56 59.5**	**-0.1**
	comp=Z,4.5nm,0.8s								
AAK	**Ala-Archa**	**65.88**	**51**	*e*P		**P**		**02 56 59.5**	**-0.1**
	comp=Z,4.5nm,0.8s								
MAKZ	**Makanchi**	**65.96**	**43**	*e*P		**P**		**02 57 00.1**	**+0.2**
MAKZ					pmax	pmax			
	comp=Z,17nm,1.3s								
MAKZ	**Makanchi**	**65.96**	**43**	*e*P		**P**		**02 57 00.1**	**+0.2**
	comp=Z,17nm,1.3s								
MAKZ	**Makanchi**	**65.96**	**43**	*e*P		**P**		**02 57 00.1**	**+0.2**
	comp=Z,17nm,1.3s								
MK31	**Makanchi Array**	**66.11**	**43**	*e*P		**P**		**02 57 00.8**	**0.0**
MK31	**Makanchi Array**	**66.11**	**43**	*e*P		**P**		**02 57 00.8**	**0.0**
MK31	**Makanchi Array**	**66.11**	**43**	*e*P		**P**		**02 57 00.8**	**0.0**
MKAR	**Makanchi Array**	**66.11**	**43**	P		**P**		**02 57 00.7**	**-0.1**
	comp=Z,3.7nm,0.6s,baz=328,slow=5.2,SNR=30								
MKAR					LR		LR	03 24 51.3	
	comp=Z,197nm,21.1s,baz=316,slow=35								
MK01	**Makanchi Array**	**66.13**	**43**	*e*P		**P**		**02 57 00.8**	**-0.2**
MK01	**Makanchi Array**	**66.13**	**43**	*e*P		**P**		**02 57 00.8**	**-0.2**
SAML	**Samuel**	**66.94**	**214**	*e*P		**P**		**02 57 05.2**	**-1.2**
	comp=Z,3.6nm,1.0s								
SAML	**Samuel**	**66.94**	**214**	*e*P		**P**		**02 57 05.2**	**-1.2**
	comp=Z,3.6nm,1.0s								
KSH	**Kashi**	**69.00**	**52**	*e*P		**P**		**02 57 20.5**	**+1.2**
KSH				*es*P		sP		02 57 27.1	+2.4
KSH				*e*ScP				03 01 46.8	
KSH				S		**S**		**03 06 23.0**	**-0.8**
KSH				ScS		**SKSac**		**03 07 17.1**	**-1.7**
KSH				pmax		pmax			
	comp=Z,46nm,3.4s								
KSH				LR		LR			
	comp=Z,67nm,5.9s								
KSH				LR		LR			
	comp=Z,110nm,7.8s								
KSH				LR		LR			
	comp=Z,190nm,9.3s								
UOSS	**Minazif**	**69.41**	**76**	*e*P		**P**		**02 57 20.9**	**-1.0**
	comp=Z,97nm,2.0s								
UOSS	**Minazif**	**69.41**	**76**	*e*P		**P**		**02 57 20.9**	**-1.0**
	comp=Z,97nm,2.0s								
BDFB	**Brasilia**	**69.42**	**197**	LR		LR		03 24 14.2	
	comp=Z,48nm,18.6s,baz=343,slow=33								
WMQ	**Urumqi**	**70.75**	**42**	*e*P		**P**		**02 57 31.8**	**+1.9**
WMQ				pP		sP		02 57 39.3	+4.0
WMQ				S		**S**		**03 06 40.6**	**-3.5**
WMQ				pmax		pmax			
	comp=Z,7.0nm,0.6s								
WMQ				pmax		pmax			
	comp=Z,99nm,3.8s								
WMQ				LR		LR			
	comp=Z,210nm,23.2s								
WMQ				LR		LR			
	comp=Z,360nm,19.4s								
WMQ				LR		LR			
	comp=Z,300nm,21.1s								
SONA1	**Songino Array**	**73.75**	**28**	*e*P		**P**		**02 57 47.9**	**0.0**
SONA1	**Songino Array**	**73.75**	**28**	*e*P		**P**		**02 57 47.9**	**0.0**
SONM	**Songino Array**	**73.76**	**28**	P		**P**		**02 57 47.7**	**-0.2**
	comp=Z,3.2nm,0.9s,baz=334,slow=8.2,SNR=14								
SONM					LR		LR	03 31 56.7	
	comp=Z,109nm,19.2s,baz=356,slow=37								
PETK	**Petropavlovsk-**	**74.33**	**354**	LR		LR		03 30 53.6	
	comp=Z,37nm,18.5s,baz=358,slow=36								
NNA	**Nana**	**75.06**	**226**	*e*P		**P**		**02 57 55.4**	**-0.3**
NNA					pmax	pmax			
	comp=Z,18nm,0.6s								
NNA	**Nana**	**75.06**	**226**	*e*P		**P**		**02 57 55.4**	**-0.3**
	comp=Z,18nm,0.6s								
NNA	**Nana**	**75.06**	**226**	*e*P		**P**		**02 57 55.4**	**-0.3**
	comp=Z,18nm,0.6s								
LPAZ	**La Paz**	**75.48**	**216**	LR		LR		03 29 15.3	
	comp=Z,71nm,18.2s,baz=359,slow=34								
KLR	**Kul'dur**	**77.56**	**11**↑	*e*P		P		02 58 16.6	+7.1
GTA	**Gaotai**	**79.18**	**36**	P		**P**		**02 58 19.3**	**+0.5**
GTA				pP		PcP		02 58 27.3	+0.1
GTA				sP		sP		02 58 30.4	+6.2
GTA				S		**S**		**03 08 20.1**	**+1.8**
GTA				pmax		pmax			
	comp=Z,7.0nm,0.8s								
GTA				pmax		pmax			
	comp=Z,66nm,7.3s								
GTA				LR		LR			
	comp=Z,150nm,19.0s								
GTA				LR		LR			
	comp=Z,140nm,17.6s								
GTA				LR		LR			
	comp=Z,190nm,19.5s								
YSS	**Yuzh-Sakhalins**	**80.68**	**4**↑	*e*P		P		02 58 35.2	+8.6
HHC	**Hu-ho-hao-te**	**81.64**	**27**	*e*P		**P**		**02 58 28.8**	**-3.2**
HHC				S		**S**		**03 08 36.8**	**-7.1**
HHC				SS		**SS**		**03 13 59.6**	**0.0**
HHC				pmax		pmax			
	comp=Z,19nm,1.1s								
HHC				pmax		pmax			
	comp=Z,120nm,4.6s								
HHC				LR		LR			
	comp=Z,99nm,12.3s								
HHC				LR		LR			
	comp=Z,130nm,13.6s								
HHC				LR		LR			
	comp=Z,100nm,17.3s								
CPUP	**Villa Florida**	**81.73**	**203**	LR		LR		03 32 27.1	
	comp=Z,32nm,18.4s,baz=16,slow=34								
CN2	**Changchun**	**81.96**	**16**	*e*P		**P**		**02 58 33.3**	**-0.2**
TSUM	**Tsumeb**	**83.36**	**134**	*e*P		**P**		**02 58 41.3**	**+0.3**
	comp=Z,7.1nm,1.2s								
TSUM	**Tsumeb**	**83.36**	**134**	*e*P		**P**		**02 58 41.3**	**+0.3**
	comp=Z,7.1nm,1.2s								
LZH	**Lanzhou**	**83.58**	**35**	*e*P		**P**		**02 58 41.8**	**-0.4**
LZH				*e*PP		**PP**		**03 01 55.8**	**+1.9**
LZH				pmax		pmax			
	comp=Z,15nm,1.4s								
LZH				pmax		pmax			
	comp=Z,63nm,9.3s								
LZH				LR		LR			
	comp=Z,150nm,17.5s								
LZH				LR		LR			
	comp=Z,150nm,18.0s								
LZH				LR		LR			
	comp=Z,200nm,19.6s								
LSZ	**Lusaka**	**85.04**	**123**	*e*P		**P**		**02 58 49.2**	**-0.5**
LSZ				pmax		pmax			
	comp=Z,3.0nm,0.7s								
LSZ	**Lusaka**	**85.04**	**123**	*e*P		**P**		**02 58 49.2**	**-0.5**
	comp=Z,2.9nm,0.7s								
LSZ	**Lusaka**	**85.04**	**123**	*e*P		**P**		**02 58 49.2**	**-0.5**
	comp=Z,2.9nm,0.7s								
CD2	**Chengdu**	**88.21**	**37**	*e*P		**P**		**02 59 04.5**	**-0.6**
KSRS	**Korea Array**	**88.56**	**16**	LR		LR		03 40 44.8	
	comp=Z,58nm,18.4s,baz=342,slow=37								
WHN	**Wuhan**	**92.06**	**29**	*e*P		**P**		**02 59 25.8**	**+2.9**
KMI	**Kunming**	**93.03**	**40**	P		**P**		**02 59 28.3**	**+0.5**
KMI				pmax		pmax			
	comp=Z,14nm,0.5s								
BOSA	**Boshof**	**94.96**	**132**	LR		LR		03 41 00.1	
	comp=Z,114nm,18.9s,baz=357,slow=35								
CMAR	**Chiang Mai Arr**	**97.36**	**46**	LR		LR		03 46 24.4	
	comp=Z,42nm,20.1s,baz=310,slow=37								
PLCA	**Paso Flores**	**98.86**	**209**	LR		LR		03 42 42.3	
	comp=Z,51nm,18.9s,baz=23,slow=34								
WRA	**Warramunga Arr**	**145.64**	**24**	PKPbc		**PKPdf**		**03 05 51.8**	**-0.5**
	comp=Z,3.2nm,0.9s,baz=318,slow=3.2,SNR=15								
ASAR	**Alice Springs**	**149.09**	**26**	PKPbc		**PKPbc**		**03 06 00.9**	**-1.2**
	comp=Z,0.7nm,0.5s,baz=346,slow=2.0,SNR=7.9								

ISCJB ***20*** *03:00:43.3±0.6, 6.°82N±0.°04×73.°04W±0.°05, h157km±5km, Error ellipse: s-maj=9.1km s-min=4.0km az=32.8*
FUNV ***20*** *03:00:43.6, 6.°68N×73.°10W, h160km, MW3.0*

RSNC ***20*** *03:00:45.5±0.9, 6.°78N×73.°06W, h146km±5km, ML3.0*
ISC 20 03:00:43.4±1.4, **6.°80N**±0.°04×**73.°04W**±0.°05, **h158**km±8km, **n25**, σ0**°85**/40, **3C, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BARC	**Barichara**	**0.25**	**214**	*i* P		**Pn**	**03 01 05.2**	**+0.1**
BARC				*e*S		**Sn**	**03 01 20.3**	**-1.4**
BARC				*i*			03 01 23.3	
	comp=Z,285nm,0.4s							
GIRC	**Giron, Santand**	**0.31**	**331**	*i* P		**Pn**	**03 01 05.4**	**+0.2**
GIRC				*e*S		**Sn**	**03 01 20.5**	**-1.4**
PAMC	**Pamplona, Colo**	**0.63**	**32**	*i* P		**Pn**	**03 01 08.1**	**+1.0**
PAMC				*e*S		**Sn**	**03 01 24.7**	**-0.4**
BRRC	**Barranca, Sant**	**0.73**	**294**↑	*i* P		**Pn**	**03 01 07.1**	**+0.1**
BRRC				*e*S		**Sn**	**03 01 24.2**	**-0.8**
BRRC				*i*			03 01 27.0	
	comp=Z,221nm,0.2s							
RUSC	**La Rusia**	**0.91**	**183**	*e*P		**Pn**	**03 01 09.1**	**+0.2**
RUSC				*e*S		**Sn**	**03 01 27.1**	**-1.2**
RUSC				*i*			03 01 29.2	
	comp=Z,144nm,0.3s							
CBRI	**Barrientos, No**	**0.94**	**15**	*i* P		**Pn**	**03 01 09.8**	**+1.0**
CBRI				*e*S		**Sn**	**03 01 27.6**	**-0.6**
GRMC	**Gramalote, San**	**0.94**	**14**	*i* P		**Pn**	**03 01 11.1**	**+2.3**
GRMC				*i*			03 01 35.9	
	comp=Z,142nm,0.4s							
CAPV	**Capacho**	**1.28**	**34**↑	*e*P		**Pn**	**03 01 13.1**	**+1.4**
CAPV				*e*P		**Sn**	**03 01 33.7**	**+0.2**
OCAC	**Ocana**	**1.45**	**349**	*e*P		**Pn**	**03 01 13.7**	**+0.3**
OCAC				*e*S		**Sn**	**03 01 36.6**	**+0.2**
OCAC				*i*			03 01 42.0	
	comp=Z,143nm,0.4s							
CHIC	**Chingaza**	**2.27**	**198**	*e*P		**Pn**	**03 01 22.9**	**+0.3**
CHIC				*e*S		**Sn**	**03 01 52.8**	**0.0**
CHIC				*i*			03 02 00.4	
	comp=Z,57nm,0.4s							
ROSC	**El Rosal**	**2.33**	**213**	*e*S		**Sn**	**03 01 54.9**	**+0.8**
HELC	**Santa Helena**	**2.55**	**256**	*e*P		**Pn**	**03 01 25.8**	**-0.1**
HELC				*e*S		**Sn**	**03 01 59.6**	**+0.9**
VIGV	**El Vigia**	**2.62**	**39**	*e*P		**Pn**	**03 01 27.5**	**+1.0**
VIGV				*e*S		**Sn**	**03 02 00.0**	**+0.2**
SOCV	**Socops**	**2.62**	**56**↑	*e*P		**Pn**	**03 01 27.4**	**+0.9**
SOCV				*e*S		**Sn**	**03 01 58.9**	**-0.8**
VILC	**Villavicencio,**	**2.75**	**194**	*e*P		**Pn**	**03 01 28.2**	**-0.1**
VILC				*e*S		**Sn**	**03 02 03.8**	**+0.9**
VILC				*i*			03 02 13.7	
	comp=Z,41nm,0.6s							
DBBC	**Dabeiba**	**3.15**	**274**	*e*P		**Pn**	**03 01 33.3**	**+0.1**
TOLC	**Tolima**	**3.16**	**226**	*e*P		**Pn**	**03 01 34.6**	**+1.1**
PRAC	**Prado**	**3.58**	**211**	*e*P		**Pn**	**03 01 38.7**	**+0.2**
PRAC				*e*S		**Sn**	**03 02 21.0**	**-0.4**
VIRV	**Villa del Rosa**	**3.73**	**10**	*e*P		**Pn**	**03 01 40.2**	**-0.2**
VIRV				*e*S		**Sn**	**03 02 23.6**	**-1.2**
CURV	**Curarigua**	**4.41**	**43**	*e*P		**Pn**	**03 01 50.1**	**+0.7**
TEPV	**Terepaima**	**4.94**	**50**	*e*P		**Pn**	**03 01 56.5**	**+0.3**
SIQV	**Siquisique**	**4.98**	**40**	*e*P		**Pn**	**03 01 56.1**	**-0.7**
BAUV	**El Baul**	**5.39**	**66**	*e*P		**Pn**	**03 02 01.5**	**-0.7**
MAPV	**Macapo**	**5.44**	**56**	*e*P		**Pn**	**03 02 03.2**	**+0.4**
MONV	**Montecano**	**5.95**	**30**	*e*P		**Pn**	**03 02 09.7**	**+0.1**

TEH ***20*** *03:17:49.2, 39.°48N×45.°12E, h4km, ML3.2*
CSEM ***20*** *03:17:49.2, 39.°48N×45.°12E, h4km, ML3.2*
ISC 20 03:17:49.1±1.5, **39.°34N**±0.°06×**44.°98E**±0.°10, **h6**km±13km, **n14**, σ0**°58**/23, **1C, Iran-Armenia-Azerbaijan border region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
IMRD	**Marand**	**0.85**	**138**	*e*AMB		AMB	03 18 19.3	
	comp=Z,42μm,0.1s							
IMRD				*e*Pg		**Pg**	**03 18 05.5**	**+0.2**
ISHB	**Shabestar**	**1.17**	**155**↑	*e*Pg		**Pb**	**03 18 11.9**	**0.0**
ISHB				*e*AMB		AMB	03 18 12.9	
	comp=Z,9μm,0.0s							
ISHB				*e*Sg		**Sn**	**03 18 28.5**	**-0.2**
ITBZ	**Tabriz**	**1.44**	**140**	*e*Pg		**Pn**	**03 18 15.5**	**-0.4**
ITBZ				*e*AMB		AMB	03 18 17.5	
	comp=Z,4μm,0.0s							
ITBZ				*e*Sg		**Sg**	**03 18 35.3**	**0.0**
ITBZ	**Tabriz**	**1.44**	**140**	*e*Pg		**Pn**	**03 18 15.5**	**-0.4**
ITBZ				*e*Sg		**Sg**	**03 18 35.3**	**0.0**
IHRS	**Heris**	**1.91**	**122**	*e*Pn		**Pn**	**03 18 22.4**	**0.0**
IHRS				*e*AMB		AMB	03 18 28.1	
	comp=Z,2μm,0.1s							
IHRS				*e*Sg		**Sb**	**03 18 48.4**	**-0.3**
IHRS	**Heris**	**1.91**	**122**	*e*Pn		**Pn**	**03 18 22.4**	**0.0**
IHRS				*e*Sg		**Sb**	**03 18 48.4**	**-0.3**
BGD	**Bogdanovka**	**2.19**	**332**	P		**Pg**	**03 18 31.0**	**-0.1**
BGD				S		**Sb**	**03 18 57.9**	**+1.2**
IBST	**Bostanabad**	**2.23**	**137**	*e*Pn		**Pb**	**03 18 30.0**	**+0.2**
IBST				*e*AMB		AMB	03 18 32.9	
	comp=Z,585nm,0.1s							
IBST	**Bostanabad**	**2.23**	**137**	*e*Pn		**Pb**	**03 18 30.0**	**+0.2**
AKH	**Akhalkalaki**	**2.35**	**332**	P		**Pb**	**03 18 31.4**	**-0.7**
AKH				S		**Sb**	**03 19 01.6**	**+0.2**
TBLG	**Delisi**	**2.39**	**356**	P		**Pb**	**03 18 31.7**	**-0.9**
TBLG				S		**Sb**	**03 19 03.0**	**+0.7**
ISRB	**Sarab**	**2.60**	**125**	*e*Pn		**Pb**	**03 18 36.1**	**-0.1**
ISRB	**Sarab**	**2.60**	**125**	*e*Pn		**Pb**	**03 18 36.1**	**-0.1**
GUDG	**Gudauri**	**3.14**	**353**	P		**Pb**	**03 18 45.1**	**-0.4**
GUDG				S		**Sb**	**03 19 25.7**	**+1.6**

ISK ***20*** *03:20:01.6, 39.°10N×29.°04E, h5km, ML3.2*
DDA ***20*** *03:20:01.7, 39.°11N×29.°01E, h7km, Ml3.1*
CSEM ***20*** *03:20:02.8±0.1, 39.°09N×29.°04E, h2km, ML3.1, Error ellipse: s-maj=2.5km s-min=2.1km az=1.0*
ISC 20 03:20:02.1±1.0, **39.°09N**±0.°02×**29.°02E**±0.°02, **h7**km±9km, **n102**, σ1**°12**/118, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DEMI	**Demirci**	**0.24**	**259**	*i* P		**Pg**	**03 20 07.2**	**+0.3**
DEMI				*i* S		**Sg**	**03 20 10.6**	**+0.5**
DEMI	**Demirci**	**0.24**	**259**	P		**Pg**	**03 20 07.2**	**+0.3**
DEMI				S		**Sg**	**03 20 10.6**	**+0.5**
GEDZ	**Gediz**	**0.31**	**98**	*e*PG		**Pb**	**03 20 09.1**	**-0.8**
GEDZ				*e*SG		**Sb**	**03 20 14.0**	**-1.2**
GEDZ	**Gediz**	**0.31**	**98**	*e*Pg		**Pb**	**03 20 09.1**	**-0.8**
GEDZ				*e*Sg		**Sb**	**03 20 14.0**	**-1.2**
GDZ	**Gediz**	**0.36**	**90**	*i* P		**Pb**	**03 20 09.7**	**-1.1**
GDZ				*i* S		**Sb**	**03 20 14.9**	**-1.8**
GDZ	**Gediz**	**0.36**	**90**	P		**Pb**	**03 20 09.7**	**-1.1**
GDZ				S		**Sb**	**03 20 14.9**	**-1.8**
TVSB	**Tavsanli**	**0.50**	**43**	*e*PG		**Pb**	**03 20 11.9**	**-1.3**
TVSB	**Tavsanli**	**0.50**	**43**	*e*Pg		**Pb**	**03 20 11.9**	**-1.3**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*PG		**Pb**	**03 20 15.4**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*Pg		**Pb**	**03 20 15.4**	**-0.2**
MANT	**Manisa**	**0.70**	**211**	*i* P		**Pg**	**03 20 14.9**	**-0.6**
MANT				*i* S		**Sg**	**03 20 24.4**	**-0.2**
MANT	**Manisa**	**0.70**	**211**	P		**Pg**	**03 20 14.9**	**-0.6**
MANT				S		**Sg**	**03 20 24.4**	**-0.2**
KHL	**Karahalli**	**0.86**	**153**	*e*PG		**Pb**	**03 20 19.5**	**+0.1**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg		**Pb**	**03 20 19.5**	**+0.1**
AKS	**Akhisar**	**0.96**	**258**	*e*PG		**Pb**	**03 20 21.6**	**+0.5**
AKS	**Akhisar**	**0.96**	**258**	*e*Pg		**Pb**	**03 20 21.6**	**+0.5**
BALB	**Balikesir**	**1.04**	**302**	*e*PG		**Pn**	**03 20 22.8**	**-0.3**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg		**Pn**	**03 20 22.8**	**-0.3**
IGD	**Bursa**	**1.18**	**7**	*i* P		**Pg**	**03 20 22.8**	**-2.0**
IGD				*i* S		**Sb**	**03 20 40.1**	**-0.2**
BALY	**Balya**	**1.27**	**301**	*i* P		**Pg**	**03 20 25.9**	**-0.4**
BALY				*i* S		**Sn**	**03 20 43.3**	**-0.2**
BALY	**Balya**	**1.27**	**301**	P		**Pg**	**03 20 25.9**	**-0.4**
BALY				S		**Sn**	**03 20 43.3**	**-0.2**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN		**Pn**	**03 20 26.8**	**+0.4**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn		**Pn**	**03 20 26.8**	**+0.4**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN		**Pb**	**03 20 26.8**	**+0.3**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*Pn		**Pb**	**03 20 26.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN		**Pb**	**03 20 27.2**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn		**Pb**	**03 20 27.2**	**+0.6**
IZI	**Iznik**	**1.29**	**15**	*e*PN		**Pb**	**03 20 27.2**	**+0.4**
IZI	**Iznik**	**1.29**	**15**	*e*Pn		**Pb**	**03 20 27.2**	**+0.4**
SHUT	**Suhut-Afyon**	**1.31**	**114**	*e*PN		**Pb**	**03 20 27.8**	**+0.8**
SHUT	**Suhut-Afyon**	**1.31**	**114**	*e*Pn		**Pb**	**03 20 27.8**	**+0.8**
GEMT	**Gemlik**	**1.35**	**5**	*e*PN		**Pg**	**03 20 28.5**	**+0.5**
GEMT	**Gemlik**	**1.35**	**5**	*e*Pn		**Pg**	**03 20 28.5**	**+0.5**
BORA	**Eskisehir**	**1.36**	**54**	*i* P		**Pg**	**03 20 27.6**	**-0.6**
BORA				*i* S		**Sn**	**03 20 46.7**	**+0.8**
BORA	**Eskisehir**	**1.36**	**54**	P		**Pg**	**03 20 27.6**	**-0.6**
BORA				S		**Sn**	**03 20 46.7**	**+0.8**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN		**Pg**	**03 20 29.5**	**+0.4**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn		**Pg**	**03 20 29.5**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**218**	*e*PN		**Pg**	**03 20 30.2**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**218**	*e*Pn		**Pg**	**03 20 30.2**	**+0.4**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN		**Pg**	**03 20 30.2**	**+0.3**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn		**Pg**	**03 20 30.2**	**+0.3**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN		**Pg**	**03 20 30.5**	**0.0**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn		**Pg**	**03 20 30.5**	**0.0**
ESKT	**Eskisehir**	**1.48**	**73**	*e*PN		**Pg**	**03 20 29.9**	**-0.6**
ESKT	**Eskisehir**	**1.48**	**73**	*i* P		**Pb**	**03 20 29.6**	**-0.4**
ESKT	**Eskisehir**	**1.48**	**73**	*e*Pn		**Pg**	**03 20 29.9**	**-0.6**
SEYT	**Eskypehyr**	**1.48**	**73**	P		**Pb**	**03 20 29.6**	**-0.4**
EDC	**Edincik**	**1.54**	**325**	*e*PN		**Pg**	**03 20 31.2**	**-0.5**
EDC	**Edincik**	**1.54**	**325**	*e*Pn		**Pg**	**03 20 31.2**	**-0.5**
BOLV	**Bolvadin**	**1.55**	**103**	*i* P		**Pb**	**03 20 30.6**	**-0.5**
BOLV				*i* S		**Sg**	**03 20 53.2**	**+1.3**
BOLV	**Bolvadin**	**1.55**	**103**	P		**Pb**	**03 20 30.6**	**-0.5**
BOLV				S		**Sg**	**03 20 53.2**	**+1.3**
DKL	**Dikili**	**1.65**	**270**	*e*PN		**Pg**	**03 20 33.2**	**-0.4**
DKL	**Dikili**	**1.65**	**270**	*e*Pn		**Pg**	**03 20 33.2**	**-0.4**
KNL	**Bal¯–kesir**	**1.65**	**316**	*i* P		**Pn**	**03 20 31.6**	**+0.2**
KNL				*i* S		**Sn**	**03 20 53.2**	**+0.3**
GULT	**Gulveren**	**1.77**	**40**	*e*PN		**Pb**	**03 20 34.5**	**-0.4**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn		**Pb**	**03 20 34.5**	**-0.4**
HRT	**Hereke**	**1.80**	**16**	*e*PN		**Pb**	**03 20 35.3**	**-0.1**
HRT	**Hereke**	**1.80**	**16**	*e*Pn		**Pb**	**03 20 35.3**	**-0.1**
KRBG	**Karabiga-Canak**	**1.86**	**315**	*e*PN		**Pb**	**03 20 35.8**	**-0.6**
KRBG	**Karabiga-Canak**	**1.86**	**315**	*e*Pn		**Pb**	**03 20 35.8**	**-0.6**
MRMT	**Marmara Adasi**	**1.87**	**325**	*e*PN		**Pb**	**03 20 36.5**	**-0.1**
MRMT	**Marmara Adasi**	**1.87**	**325**	*e*Pn		**Pb**	**03 20 36.5**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.88**	**31**	*e*PN		**Pb**	**03 20 35.8**	**-0.9**
SPNC	**Sapanca-Adapaz**	**1.88**	**31**	*e*Pn		**Pb**	**03 20 35.8**	**-0.9**
ISK	**Istanbul-Kandi**	**1.98**	**1**	*e*PN		**Pb**	**03 20 37.8**	**-0.5**
ISK	**Istanbul-Kandi**	**1.98**	**1**	*e*Pn		**Pb**	**03 20 37.8**	**-0.5**
YER	**Yerkesik**	**2.04**	**197**	*e*PN		**Pb**	**03 20 38.8**	**-0.6**
YER	**Yerkesik**	**2.04**	**197**	*e*Pn		**Pb**	**03 20 38.8**	**-0.6**
RKY	**Sarkoy-Tekirda**	**2.14**	**319**	*e*PN		**Pb**	**03 20 40.1**	**-1.0**
RKY	**Sarkoy-Tekirda**	**2.14**	**319**	*e*Pn		**Pb**	**03 20 40.1**	**-1.0**
KLYT	**Kilyos**	**2.16**	**0**	*e*PN		**Pb**	**03 20 40.5**	**-1.0**
KLYT	**Kilyos**	**2.16**	**0**	*e*Pn		**Pb**	**03 20 40.5**	**-1.0**
LPK	**Lapseki**	**2.17**	**307**	*e*PN		**Pb**	**03 20 40.1**	**-1.4**
LPK	**Lapseki**	**2.17**	**307**	*e*Pn		**Pb**	**03 20 40.1**	**-1.4**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN		**Pb**	**03 20 40.5**	**-1.3**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn		**Pb**	**03 20 40.5**	**-1.3**
CTKS	**Kestanelik-??a**	**2.18**	**350**	*e*PN		**Pb**	**03 20 40.3**	**-1.5**
CTKS	**Kestanelik-??a**	**2.18**	**350**	*e*Pn		**Pb**	**03 20 40.3**	**-1.5**
EZN	**Ezine**	**2.21**	**290**	*e*PN		**Pb**	**03 20 41.1**	**-1.3**
EZN	**Ezine**	**2.21**	**290**	*e*Pn		**Pb**	**03 20 41.1**	**-1.3**
KIZT	**Kizilcal**	**2.24**	**94**	*e*PN		**Pn**	**03 20 40.6**	**+1.0**
KIZT	**Kizilcal**	**2.24**	**94**	*e*Pn		**Pn**	**03 20 40.6**	**+1.0**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e

BOLV	**Bolvadin**	**1.56**	**104**	P		**Pb**	**03 30 43.7**	**-0.4**
BOLV				S		**Sg**	**03 31 05.0**	**0.0**
KNL	**Bal¯–kesir**	**1.63**	**316**	*i* P		**Pn**	**03 30 42.7**	**-1.1**
KNL				*i* S		**Sg**	**03 31 06.8**	**-0.2**
DKL	**Dikili**	**1.64**	**269**	*e*PN		**Pn**	**03 30 44.5**	**+0.5**
DKL	**Dikili**	**1.64**	**269**	*e*Pn		**Pn**	**03 30 44.5**	**+0.5**
BUY	**Buyukada**	**1.73**	**3**	*i* P		**Pn**	**03 30 44.7**	**-0.6**
BUY	**Buyukada**	**1.73**	**3**	P		**Pn**	**03 30 44.7**	**-0.6**
GULT	**Gulveren**	**1.75**	**41**	*e*PN		**Pn**	**03 30 45.8**	**+0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn		**Pn**	**03 30 45.8**	**+0.2**
HRT	**Hereke**	**1.77**	**16**	*e*PN		**Pn**	**03 30 45.9**	**0.0**
HRT	**Hereke**	**1.77**	**16**	*e*Pn		**Pn**	**03 30 45.9**	**0.0**
BAGO	**Egridir - ISPA**	**1.79**	**128**	*i* P		**Pn**	**03 30 46.6**	**+0.5**
KRBG	**Karabiga-Canak**	**1.84**	**314**	*e*PN		**Pn**	**03 30 47.5**	**+0.8**
KRBG	**Karabiga-Canak**	**1.84**	**314**	*e*Pn		**Pn**	**03 30 47.5**	**+0.8**
MRMT	**Marmara Adasi**	**1.84**	**324**	*e*PN		**Pn**	**03 30 47.5**	**+0.6**
MRMT	**Marmara Adasi**	**1.84**	**324**	*e*Pn		**Pn**	**03 30 47.5**	**+0.6**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	*e*PN		**Pn**	**03 30 47.5**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	*e*Pn		**Pn**	**03 30 47.5**	**+0.5**
GOLH	**Golhisar**	**1.93**	**167**	*i* P		**Pn**	**03 30 48.6**	**+0.5**
GOLH	**Golhisar**	**1.93**	**167**	P		**Pn**	**03 30 48.6**	**+0.5**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN		**Pn**	**03 30 48.5**	**+0.3**
ISK	**Istanbul-Kandi**	**1.94**	**1**	P		**Pn**	**03 30 47.5**	**-0.7**
ISK				S		**Sn**	**03 31 12.6**	**-0.3**
ISK	**Istanbul-Kandi**	**1.94**	**1**	P		**Pn**	**03 30 47.5**	**-0.7**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*Pn		**Pn**	**03 30 48.5**	**+0.3**
ISK				S		**Sn**	**03 31 12.6**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*PN		**Pn**	**03 30 48.9**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*Pn		**Pn**	**03 30 48.9**	**+0.2**
GLHS	**Glhisar (BURDU**	**2.00**	**169**	*e*PN		**Pn**	**03 30 49.5**	**+0.5**
GLHS	**Glhisar (BURDU**	**2.00**	**169**	*e*Pn		**Pn**	**03 30 49.5**	**+0.5**
YER	**Yerkesik**	**2.06**	**196**	*e*PN		**Pn**	**03 30 50.8**	**+0.9**
YER	**Yerkesik**	**2.06**	**196**	*e*Pn		**Pn**	**03 30 50.8**	**+0.9**
BTAS	**Taskesti**	**2.11**	**46**	*i* P		**Pn**	**03 30 50.7**	**+0.2**
BTAS	**Taskesti**	**2.11**	**46**	P		**Pn**	**03 30 50.7**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.11**	**319**	*e*PN		**Pn**	**03 30 51.6**	**+1.1**
RKY	**Sarkoy-Tekirda**	**2.11**	**319**	*e*Pn		**Pn**	**03 30 51.6**	**+1.1**
KLYT	**Kilyos**	**2.13**	**1**	*e*PN		**Pn**	**03 30 50.5**	**-0.3**
KLYT	**Kilyos**	**2.13**	**1**	*e*Pn		**Pn**	**03 30 50.5**	**-0.3**
PRK	**Paraskevi**	**2.14**	**274**	P		**Pn**	**03 30 51.1**	**+0.3**
PRK				S		**Sn**	**03 31 18.8**	**+1.2**
PRK	**Paraskevi**	**2.14**	**274**	P		**Pn**	**03 30 51.1**	**+0.3**
PRK				S		**Sn**	**03 31 18.8**	**+1.2**
LPK	**Lapseki**	**2.14**	**306**	*e*PN		**Pn**	**03 30 52.2**	**+1.3**
LPK	**Lapseki**	**2.14**	**306**	*e*Pn		**Pn**	**03 30 52.2**	**+1.3**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*PN		**Pn**	**03 30 51.0**	**0.0**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*Pn		**Pn**	**03 30 51.0**	**0.0**
MDUB	**Mudurnu**	**2.16**	**51**	*e*PN		**Pn**	**03 30 51.6**	**+0.4**
MDUB	**Mudurnu**	**2.16**	**51**	*e*Pn		**Pn**	**03 30 51.6**	**+0.4**
KAND	**Kocaeli-Kandir**	**2.17**	**24**	*i* P		**Pn**	**03 30 51.3**	**0.0**
KAND	**Kocaeli-Kandir**	**2.17**	**24**	P		**Pn**	**03 30 51.3**	**0.0**
TKR	**Tekirdag**	**2.19**	**329**	*e*PN		**Pn**	**03 30 52.5**	**+0.9**
TKR	**Tekirdag**	**2.19**	**329**	*e*Pn		**Pn**	**03 30 52.5**	**+0.9**
EZN	**Ezine**	**2.20**	**290**	*e*PN		**Pn**	**03 30 52.9**	**+1.2**
EZN	**Ezine**	**2.20**	**290**	*e*Pn		**Pn**	**03 30 52.9**	**+1.2**
SMG	**Samos**	**2.22**	**231**	P		**Pn**	**03 30 50.1**	**-1.9**
SMG				S		**Sn**	**03 31 19.0**	**-0.6**
SMG	**Samos**	**2.22**	**231**	P		**Pn**	**03 30 50.1**	**-1.9**
SMG				S		**Sn**	**03 31 19.0**	**-0.6**
CRLT	**Corlu**	**2.23**	**334**	*e*PN		**Pn**	**03 30 53.1**	**+0.9**
CRLT	**Corlu**	**2.23**	**334**	*e*Pn		**Pn**	**03 30 53.1**	**+0.9**
SAHE	**Sakarya_HENDEK**	**2.23**	**39**	*i* P		**Pn**	**03 30 52.2**	**0.0**
SAHE	**Sakarya_HENDEK**	**2.23**	**39**	P		**Pn**	**03 30 52.2**	**0.0**
KIZT	**Kizilcal**	**2.25**	**95**	*e*PN		**Pn**	**03 30 53.2**	**+0.7**
KIZT	**Kizilcal**	**2.25**	**95**	*e*Pn		**Pn**	**03 30 53.2**	**+0.7**
DALY	**Dalyan (Mu¯la**	**2.32**	**187**	*e*PN		**Pn**	**03 30 54.0**	**+0.7**
DALY	**Dalyan (Mu¯la**	**2.32**	**187**	*e*Pn		**Pn**	**03 30 54.0**	**+0.7**
GELI	**Tayfur-Gelibol**	**2.34**	**304**	*e*PN		**Pn**	**03 30 54.6**	**+1.0**
GELI	**Tayfur-Gelibol**	**2.34**	**304**	*e*Pn		**Pn**	**03 30 54.6**	**+1.0**
CHOS	**Chios island**	**2.43**	**253**	*e*PN		**Pn**	**03 30 56.0**	**+1.2**
CHOS	**Chios island**	**2.43**	**253**	P		**Pn**	**03 30 54.8**	**-0.1**
CHOS				S		**Sn**	**03 31 24.5**	**-0.4**
CHOS	**Chios island**	**2.43**	**253**	P		**Pn**	**03 30 54.8**	**-0.1**
CHOS	**Chios island**	**2.43**	**253**	*e*Pn		**Pn**	**03 30 56.1**	**+1.2**
CHOS				S		**Sn**	**03 31 24.5**	**-0.4**
BODT	**Bodrum**	**2.46**	**214**	*e*PN		**Pn**	**03 30 56.0**	**+0.8**
BODT	**Bodrum**	**2.46**	**214**	*e*Pn		**Pn**	**03 30 56.1**	**+0.8**
SIGR	**SIGRI**	**2.46**	**273**	*e*PN		**Pn**	**03 30 56.0**	**+0.8**
SIGR	**SIGRI**	**2.46**	**273**	P		**Pn**	**03 30 54.8**	**-0.5**
SIGR				S		**Sn**	**03 31 25.4**	**-0.1**
SIGR	**SIGRI**	**2.46**	**273**	P		**Pn**	**03 30 54.8**	**-0.5**
SIGR	**SIGRI**	**2.46**	**273**	*e*Pn		**Pn**	**03 30 56.1**	**+0.8**
SIGR				S		**Sn**	**03 31 25.4**	**-0.1**
ELL	**Elmali**	**2.47**	**163**	*e*PN		**Pn**	**03 30 56.2**	**+0.6**
ELL	**Elmali**	**2.47**	**163**	*e*Pn		**Pn**	**03 30 56.2**	**+0.6**
ERIK	**Erikli-Kesan**	**2.47**	**310**	*e*PN		**Pn**	**03 30 56.8**	**+1.4**
ERIK	**Erikli-Kesan**	**2.47**	**310**	*e*Pn		**Pn**	**03 30 56.8**	**+1.4**
FETY	**Fethiye**	**2.48**	**179**	*e*PN		**Pn**	**03 30 56.2**	**+0.6**
FETY	**Fethiye**	**2.48**	**179**	*e*Pn		**Pn**	**03 30 56.2**	**+0.6**
GADA	**Gvkgeada**	**2.63**	**295**	*e*PN		**Pn**	**03 30 59.2**	**+1.5**
GADA	**Gvkgeada**	**2.63**	**295**	*e*Pn		**Pn**	**03 30 59.2**	**+1.5**
ENEZ	**Enez**	**2.73**	**307**	*e*PN		**Pn**	**03 31 00.2**	**+1.2**
ENEZ	**Enez**	**2.73**	**307**	*e*Pn		**Pn**	**03 31 00.2**	**+1.2**
KONT	**Konya--Tatoy**	**2.87**	**113**	*e*PN		**Pn**	**03 31 01.9**	**+0.9**
KONT	**Konya--Tatoy**	**2.87**	**113**	*e*Pn		**Pn**	**03 31 01.9**	**+0.9**
ALN	**Alexandroupoli**	**2.89**	**309**	*e*PN		**Pn**	**03 31 02.1**	**+0.9**
ALN	**Alexandroupoli**	**2.89**	**309**	P		**Pn**	**03 31 01.1**	**-0.1**
ALN				S		**Sn**	**03 31 37.0**	**+0.8**
ALN	**Alexandroupoli**	**2.89**	**309**	P		**Pn**	**03 31 01.1**	**-0.1**
ALN	**Alexandroupoli**	**2.89**	**309**	*e*Pn		**Pn**	**03 31 02.1**	**+0.9**
ALN				S		**Sn**	**03 31 37.0**	**+0.8**
LOD	**Lodumlu**	**3.00**	**74**	*e*PN		**Pn**	**03 31 03.7**	**+0.9**
LOD	**Lodumlu**	**3.00**	**74**	*e*Pn		**Pn**	**03 31 03.7**	**+0.9**
SMTH	**Samothraki Isl**	**3.00**	**298**	P		**Pn**	**03 31 03.2**	**+0.4**
SMTH				S		**Sn**	**03 31 40.2**	**+1.1**
SMTH	**Samothraki Isl**	**3.00**	**298**	P		**Pn**	**03 31 03.2**	**+0.4**
SMTH				S		**Sn**	**03 31 40.2**	**+1.1**
LIA	**Limnos Island**	**3.06**	**286**	P		**Pn**	**03 31 04.3**	**+0.7**
LIA				S		**Sn**	**03 31 41.5**	**+1.0**
LIA	**Limnos Island**	**3.06**	**286**	P		**Pn**	**03 31 04.3**	**+0.7**
LIA				S		**Sn**	**03 31 41.5**	**+1.0**
CHBY	**Cihanbeyli**	**3.07**	**99**	*e*PN		**Pn**	**03 31 04.5**	**+0.7**
CHBY	**Cihanbeyli**	**3.07**	**99**	*e*Pn		**Pn**	**03 31 04.5**	**+0.7**
AFSR	**Af¯ar-Bala (A**	**3.17**	**83**	*e*PN		**Pn**	**03 31 05.9**	**+0.8**
AFSR	**Af¯ar-Bala (A**	**3.17**	**83**	*e*Pn		**Pn**	**03 31 05.9**	**+0.8**
EDRB	**Edirne**	**3.23**	**328**	*e*PN		**Pn**	**03 31 07.0**	**+1.1**
EDRB	**Edirne**	**3.23**	**328**	*e*Pn		**Pn**	**03 31 07.0**	**+1.1**
SAFT	**Safranbolu**	**3.52**	**52**	*e*PN		**Pn**	**03 31 11.4**	**+1.5**
SAFT	**Safranbolu**	**3.52**	**52**	*e*Pn		**Pn**	**03 31 11.4**	**+1.5**
KAMT	**Kaman**	**3.66**	**85**	*e*PN		**Pn**	**03 31 12.7**	**+0.8**
KAMT	**Kaman**	**3.66**	**85**	*e*Pn		**Pn**	**03 31 12.7**	**+0.8**
TIRR	**Tirgusor**	**5.35**	**355**	⇑ *i*P		**Pn**	**03 31 35.1**	**+0.1**
TIRR	**Tirgusor**	**5.35**	**355**	⇑ *i*P		**Pn**	**03 31 35.1**	**+0.1**
TIRR				S		**Sn**	**03 32 33.9**	**-3.0**
TLB	**Topalu**	**5.51**	**353**	⇓ *i*P		**Pn**	**03 31 38.6**	**+1.4**
TLB	**Topalu**	**5.51**	**353**	⇓ *i*P		**Pn**	**03 31 38.6**	**+1.4**
TLB				S		**Sn**	**03 32 38.6**	**-2.2**
CFR	**Carcaliu**	**6.09**	**354**	⇑ *i*P		**Pn**	**03 31 45.1**	**-0.1**
CFR	**Carcaliu**	**6.09**	**354**	⇑ *i*P		**Pn**	**03 31 45.1**	**-0.1**
CFR				S		**Sn**	**03 32 52.5**	**-2.5**
MLR	**Muntele Rosu**	**6.76**	**341**	⇑ *i*P		**Pn**	**03 31 56.5**	**+2.0**
MLR	**Muntele Rosu**	**6.76**	**341**	⇑ *i*P		**Pn**	**03 31 56.5**	**+2.0**
MLR				S		**Sn**	**03 33 14.3**	**+2.5**
VRI	**Vrincioaia**	**6.95**	**347**	⇓ *i*P		**Pn**	**03 31 58.1**	**+1.1**
VRI	**Vrincioaia**	**6.95**	**347**	⇓ *i*P		**Pn**	**03 31 58.1**	**+1.1**
VOIR		**6.96**	**336**	⇓ *i*P		**Pn**	**03 31 59.3**	**+2.0**
VOIR		**6.96**	**336**	⇓ *i*P		**Pn**	**03 31 59.3**	**+2.0**

*DDA **20** 03:48:13.9, 39˚.12N×29˚.09E, h7km, Ml2.8*
*ISCJB **20** 03:48:14.3±0.6, 39˚.10N±0˚.04×29˚.09E±0˚.03, h1km±7km, Error ellipse: s-maj=6.4km s-min=3.9km az=151.8*
*ISK **20** 03:48:14.4, 39˚.10N×29˚.16E, h5km, MD2.7*
*CSEM **20** 03:48:14.5±0.2, 39˚.10N×29˚.11E, h2km, ML2.8, Error ellipse: s-maj=4.4km s-min=3.2km az=127.0*

ISC 20 03:48:14.5±1.0, 39˚10N±0˚02×29˚10E±0˚02, h8km±9km, n41, σ0s70/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GDZ	**Gediz**	**0.30**	**92**	*i* P	**Pg**	**03 48 21.1**	**+0.6**
GDZ				*i* S	**Sb**	**03 48 25.8**	**-1.5**
GDZ	**Gediz**	**0.30**	**92**	P	**Pg**	**03 48 21.0**	**+0.6**
GDZ				S	**Sb**	**03 48 25.8**	**-1.5**
DEMI	**Demirci**	**0.30**	**259**	*i* P	**Pg**	**03 48 20.4**	**-0.1**
DEMI				*i* S	**Sg**	**03 48 24.9**	**+0.4**
DEMI	**Demirci**	**0.30**	**259**	P	**Pg**	**03 48 20.4**	**-0.1**
DEMI				S	**Sg**	**03 48 25.0**	**+0.4**
TVSB	**Tavsanli**	**0.45**	**39**	*e*PG	**Pg**	**03 48 23.2**	**0.0**
TVSB				*e*SG	**Sg**	**03 48 29.4**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**39**	*e*Pg	**Pg**	**03 48 23.2**	**0.0**
TVSB				*e*Sg	**Sg**	**03 48 29.4**	**+0.3**
KULA	**Kula-Manisa**	**0.68**	**211**	*e*PG	**Pg**	**03 48 27.7**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**211**	*e*Pg	**Pg**	**03 48 27.7**	**+0.2**
MANT	**Manisa**	**0.74**	**215**	*i* P	**Pg**	**03 48 27.6**	**-1.2**
MANT				*i* S	**Sg**	**03 48 37.3**	**-1.1**
MANT	**Manisa**	**0.74**	**215**	P	**Pg**	**03 48 27.6**	**-1.2**
MANT				S	**Sg**	**03 48 37.3**	**-1.1**
KHL	**Karahalli**	**0.84**	**157**	*e*PG	**Pg**	**03 48 30.7**	**0.0**
KHL	**Karahalli**	**0.84**	**157**	*e*Pg	**Pg**	**03 48 30.7**	**0.0**
AKS	**Akhisar**	**1.03**	**258**	*e*PG	**Pn**	**03 48 35.6**	**+0.4**
AKS	**Akhisar**	**1.03**	**258**	*e*Pg	**Pn**	**03 48 35.6**	**+0.4**
BALB	**Balikesir**	**1.09**	**300**	*e*PN	**Pn**	**03 48 36.6**	**+0.5**
BALB	**Balikesir**	**1.09**	**300**	*e*Pn	**Pn**	**03 48 36.6**	**+0.5**
IGD	**Bursa**	**1.17**	**4**	*i* P	**Pg**	**03 48 35.4**	**-1.4**
IGD				*i* S	**Sg**	**03 48 51.2**	**-0.7**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*PN	**Pg**	**03 48 38.2**	**-0.1**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*Pn	**Pg**	**03 48 38.2**	**-0.1**
IZI	**Iznik**	**1.27**	**13**	*e*PN	**Pn**	**03 48 39.1**	**+0.5**
IZI	**Iznik**	**1.27**	**13**	*e*Pn	**Pn**	**03 48 39.1**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*PN	**Pb**	**03 48 39.2**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*Pn	**Pb**	**03 48 39.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*PN	**Pg**	**03 48 39.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*Pn	**Pg**	**03 48 39.3**	**-0.1**
BORA	**Eskisehir**	**1.30**	**53**	*i* P	**Pn**	**03 48 38.5**	**-0.6**
BORA				*i* S	**Sn**	**03 48 57.2**	**+0.4**
BORA	**Eskisehir**	**1.30**	**53**	P	**Pn**	**03 48 38.5**	**-0.6**
BORA				S	**Sn**	**03 48 57.2**	**+0.4**
BALY	**Balya**	**1.31**	**300**	*i* P	**Pn**	**03 48 38.3**	**-0.9**
BALY				*i* S	**Sn**	**03 48 58.0**	**+1.1**
BALY	**Balya**	**1.31**	**300**	P	**Pn**	**03 48 38.3**	**-0.9**
BALY				S	**Sn**	**03 48 58.0**	**+1.1**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*PN	**Pb**	**03 48 41.1**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*Pn	**Pb**	**03 48 41.1**	**-0.1**
ARMT	**Armutlu**	**1.48**	**353**	*e*PN	**Pg**	**03 48 42.7**	**-0.1**
ARMT	**Armutlu**	**1.48**	**353**	*e*Pn	**Pg**	**03 48 42.7**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**220**	*e*PN	**Pg**	**03 48 43.4**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**220**	*e*Pn	**Pg**	**03 48 43.4**	**+0.3**
EDC	**Edincik**	**1.57**	**323**	*e*PN	**Pg**	**03 48 44.5**	**-0.1**
EDC	**Edincik**	**1.57**	**323**	*e*Pn	**Pg**	**03 48 44.5**	**-0.1**
GLHS	**Glhisar (BURDU**	**1.97**	**171**	*e*PN	**Pn**	**03 48 49.2**	**+1.0**
GLHS	**Glhisar (BURDU**	**1.97**	**171**	*e*Pn	**Pn**	**03 48 49.2**	**+1.0**
CTKS	**Kestanelik-??a**	**2.18**	**348**	*e*PN	**Pn**	**03 48 52.0**	**+0.9**
CTKS	**Kestanelik-??a**	**2.18**	**348**	*e*Pn	**Pn**	**03 48 52.0**	**+0.9**

BUC 20 03:50:23.0±0.5, 44˚.60N×26˚.93E, h11km±4km, MD2.4/2, 16C-2D, Error ellipse: s-maj=6.6km s-min=2.7km az=23.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AMRR	**Amara**	**0.29**	**89**	⇑ *i*P	Pg	03 50 29.0	+0.1
AMRR				S	Sb	03 50 34.5	-0.5
AMRR	**Amara**	**0.29**	**89**	⇑ *i*P	Pg	03 50 29.0	+0.1
AMRR				*i* S	Sb	03 50 34.5	-0.5
SULR		**0.49**	**279**	⇑ *i*P	Pg	03 50 32.7	+0.2
SULR		**0.49**	**279**	S	Sb	03 50 40.5	-0.2
SULR		**0.49**	**279**	⇑ *i*P	Pg	03 50 32.7	+0.2
SULR				*i* S	Sb	03 50 40.5	-0.2
ISR	**Istrita**	**0.58**	**332**	⇓ *i*P	Pb	03 50 34.9	-0.3
ISR	**Istrita**	**0.58**	**332**	⇓ *i*P	Pb	03 50 34.9	-0.3
ISR				*i* S	Sb	03 50 44.0	+0.5
HARR	**Harsova**	**0.72**	**83**	⇑ *i*P	Pb	03 50 38.1	+0.6
HARR	**Harsova**	**0.72**	**83**	⇑ *i*P	Pb	03 50 38.1	+0.6
TLB	**Topalu**	**0.80**	**91**	⇑ *i*P	Pb	03 50 39.0	+0.2
TLB	**Topalu**	**0.80**	**91**	⇑ *i*P	Pb	03 50 39.0	+0.2
TLB				*i* S	Sb	03 50 50.1	+0.6
CFR	**Carcaliu**	**1.03**	**56**	⇑ *i*P	Pg	03 50 43.1	+0.2
CFR	**Carcaliu**	**1.03**	**56**	⇑ *i*P	Pg	03 50 43.1	+0.2
CFR				*i* S	Sb	03 50 56.4	0.0
TIRR	**Tirgusor**	**1.07**	**97**	⇑ *i*P	Pg	03 50 43.7	+0.1
TIRR	**Tirgusor**	**1.07**	**97**	⇑ *i*P	Pg	03 50 43.7	+0.1
TIRR				*i* S	Sn	03 50 58.3	-0.4
MLR	**Muntele Rosu**	**1.13**	**322**	⇑ *i*P	Pn	03 50 45.1	+0.3
MLR	**Muntele Rosu**	**1.13**	**322**	⇑ *i*P	Pn	03 50 45.1	+0.3
MLR				*i* S	Sn	03 51 00.8	+0.4
VRI	**Vrincioaia**	**1.27**	**354**	⇑ *i*P	Pn	03 50 46.8	+0.1
VRI	**Vrincioaia**	**1.27**	**354**	⇑ *i*P	Pn	03 50 46.8	+0.1
VRI				*i* S	Sn	03 51 03.6	-0.1

IDC 20 03:52:12.2±10.0, 7˚.73S×124˚.11E, h75km±112km, mb3.3/1, mb1 3.6/4, mb1mx3.3/48, mbtmp3.7/4, ML3.8/3, Error ellipse: s-maj=148.3km s-min=47.8km az=48.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.42**	**172**	P	Pn	03 54 38.2	-0.6
	0.2nm,0.3s,baz=0.9,slow=11,SNR=9.0						
FITZ				S	Sn	03 56 25.6	-8.4
	1.2nm,0.3s,baz=128,slow=18,SNR=11						
WRA	**Warramunga Arr**	**15.68**	**142**	P	Pn	03 55 49.6	+0.8
	0.5nm,0.3s,baz=317,slow=12,SNR=26						
WRA				S	Sn	03 58 33.8	-8.0
	0.2nm,0.3s,baz=316,slow=24,SNR=3.4						
ASAR	**Alice Springs**	**18.43**	**150**	P	P	03 56 21.7	0.0
	0.4nm,0.3s,baz=325,slow=11,SNR=12						
MKAR	**Makanchi Array**	**65.77**	**330**	P	P	04 02 49.3	0.0
	0.3nm,0.5s,baz=140,slow=5.6,SNR=2.6						

*DDA **20** 03:55:48.8, 39˚.10N×29˚.09E, h7km, Ml2.6*
*ISK **20** 03:55:49.0, 39˚.10N×29˚.01E, h5km, MD2.7*
*CSEM **20** 03:55:49.2±0.2, 39˚.11N×29˚.05E, h2km, ML2.6, Error ellipse: s-maj=5.3km s-min=3.6km az=125.0*

ISC 20 03:55:49.3±1.0, 39˚.10N±0˚.03×29˚.05E±0˚.03, h8km±12km, n28, σ0s72/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.27**	**259**	*i* P	**Pb**	**03 55 55.4**	**-1.0**
DEMI				*i* S	**Sg**	**03 55 59.5**	**+1.2**
DEMI	**Demirci**	**0.27**	**259**	P	**Pb**	**03 55 55.4**	**-1.0**
DEMI				S	**Sg**	**03 55 59.5**	**+1.2**
GDZ	**Gediz**	**0.33**	**91**	*i* P	**Pg**	**03 55 55.4**	**-0.5**
GDZ				*i* S	**Sg**	**03 56 00.1**	**-0.2**
GDZ	**Gediz**	**0.33**	**91**	P	**Pg**	**03 55 55.4**	**-0.5**
GDZ				S	**Sg**	**03 56 00.1**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**03 55 58.1**	**-0.4**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**03 55 58.1**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**03 56 02.4**	**+0.4**
KULA				*e*SG	**Sg**	**03 56 11.2**	**+0.7**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**03 56 02.4**	**+0.4**
KULA				*e*Sg	**Sg**	**03 56 11.2**	**+0.7**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**03 56 02.3**	**-0.8**
MANT				*i* S	**Sg**	**03 56 12.1**	**-0.4**
MANT	**Manisa**	**0.72**	**213**	P	**Pg**	**03 56 02.3**	**-0.8**
MANT				S	**Sg**	**03 56 12.1**	**-0.4**
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pb**	**03 56 06.6**	**+0.1**
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pb**	**03 56 06.6**	**+0.1**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pg**	**03 56 08.9**	**-0.7**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pg**	**03 56 09.0**	**-0.7**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pn**	**03 56 14.6**	**+1.3**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pn**	**03 56 14.6**	**+1.3**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pb**	**03 56 13.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pb**	**03 56 13.7**	**+0.1**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pn**	**03 56 14.3**	**+0.7**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pn**	**03 56 14.3**	**+0.7**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pg**	**03 56 13.4**	**-0.6**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pg**	**03 56 13.4**	**-0.6**
BORA	**Eskisehir**	**1.34**	**54**	*i* P	**Pn**	**03 56 13.4**	**-1.0**
BORA				*i* S	**Sb**	**03 56 32.2**	**+0.2**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pn**	**03 56 13.4**	**-1.0**
BORA				S	**Sb**	**03 56 32.2**	**+0.2**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pg**	**03 56 17.0**	**-0.6**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pg**	**03 56 17.0**	**-0.6**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**03 56 21.8**	**+0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**03 56 21.8**	**+0.1**

*ROM **20** 04:16:45.4±0.4, 46˚.96N×13˚.29E, h5km, Md2.4/6, Ml1.9/8, Error ellipse: s-maj=5.2km s-min=2.0km az=46.0*
*CSEM **20** 04:16:45.4±0.1, 47˚.02N×13˚.28E, h2km, ML2.6/18, Error ellipse: s-maj=2.1km s-min=1.8km az=178.0*
*VIE **20** 04:16:45.3±0.1, 47˚.00N×13˚.29E, h8km±1km, mb1.8/10, ML2.3/17, Error ellipse: s-maj=1.5km s-min=0.9km az=178.0*

*PRU **20** 04:16:47.1, 47˚.01N×13˚.31E, h0km*
ISC 20 04:16:45.7±0.9, 47˚.01N±0˚.02×13˚.29E±0˚.02, h9km±6km, n53, σ0s53/91, 1C, Austria

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KBA	**Koelnbreinsper**	**0.08**	**29**	Pg	**Pg**	**04 16 48.2**	**+0.1**
	36nm,0.1s						
KBA				Sg	**Sg**	**04 16 49.7**	**-0.2**
	89nm,0.1s						
MYKA	**Terra Mystica**	**0.45**	**147**	Pg	**Pg**	**04 16 54.3**	**-0.2**
	0.3nm,0.0s,SNR=11						
MYKA				Sg	**Sg**	**04 17 00.0**	**-0.4**
	12nm,0.1s						
PLRO	**Paularo**	**0.47**	**192**	⇑ *e*Pg	**Pg**	**04 16 54.9**	**-0.1**
PLRO				*e*Sg	**Sg**	**04 17 01.1**	**0.0**
PLRO	**Paularo**	**0.47**	**192**	*

comp=Z,203nm,18.2s,baz=128,slow=33
DZM Mont Dzumac 16.64 290 *e*LR LR 04 34 24.5
258nm,25.2s
TBI Tubuai 25.09 84 *e*LR LR 04 38 10.6
75nm,25.5s
PPT2 Papeete2 27.33 72 *e*LR LR 04 39 01.1
144nm,27.5s
STKA Stephens Creek 35.89 255 P **P 04 33 32.3 -0.8**
2.5nm,0.8s,baz=113,slow=7.7,SNR=4.7
STKA LR LR 04 47 59.7
comp=Z,75nm,18.0s,baz=29,slow=36
ASAR Alice Springs 44.30 265 P **P 04 34 41.4 -1.6**
1.6nm,0.6s,baz=98,slow=7.0,SNR=17
ASAR PcP **PcP 04 36 28.5 +1.6**
0.7nm,0.7s,baz=112,slow=4.3,SNR=4.4
ASAR LR LR 04 52 23.8
comp=Z,103nm,18.2s,baz=92,slow=35
WRAB Tennant Creek 45.16 270 *e*P **P 04 34 47.8 -2.0**
3.0nm,0.8s
WRA Warramunga Arr 45.16 270 P **P 04 34 47.3 -2.6**
3.4nm,1.0s,baz=110,slow=8.4,SNR=9.8
QSPA South Pole Qui 61.16 180 *e*P **P 04 36 49.1 +2.1**
7.9nm,0.7s
MAW Mawson 74.04 200 P **P 04 38 09.5 +1.4**
1.2nm,0.7s,baz=146,slow=8.9,SNR=5.8
FINES FINESS Array B 144.14 341 PKP **PKPab 04 46 04.1 -1.2**
0.9nm,0.8s,baz=46,slow=4.2,SNR=3.2
NB2 NORSAR Subarra147.47 353 PKP **PKPdf 04 46 14.6 +1.3**
comp=Z,1.0nm,1.0s,baz=17,slow=2.6
NOA NORSAR Array B147.47 353 PKPbc **PKPdf 04 46 14.0 +0.7**
comp=Z,0.5nm,0.7s,baz=12,slow=4.4,SNR=3.5
AKASG Malin Array Be 150.77 325 PKPbc **PKPbc 04 46 23.0 -1.4**
comp=Z,1.1nm,0.4s,baz=46,slow=2.9,SNR=6.4
BRTR Keskin Array B 152.83 301 PKPbc **PKPbc 04 46 28.7 -1.1**
comp=Z,0.5nm,0.5s,baz=76,slow=5.2,SNR=3.6
TORD Torodi Ar. Bea 164.21 174 PKPab **PKPab 04 47 30.5 +0.3**
comp=Z,0.5nm,1.0s,baz=177,slow=4.7,SNR=3.0

IDC 20 05:22:22.3±13.0, 17°27'S×178°27'W, h548km±159km, mb2.6/4, mb1 3.0/4, mb1mx2.8/24, mbtmp3.5/4, Error ellipse: s-maj=122.3km s-min=46.2km az=164.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**44.88**	**259**	P	P	05 29 48.5	-0.1
	0.5nm,0.8s,baz=93,slow=7.4,SNR=6.9						
ASAR	**Alice Springs**	**45.10**	**254**	P	P	05 29 49.9	-0.3
	0.6nm,0.6s,baz=87,slow=7.8,SNR=6.7						
ILAR	**Eielson Array**	**85.24**	**13**	P	P	05 34 00.8	+0.1
	0.2nm,0.4s,baz=219,slow=4.7,SNR=4.9						
TXAR	**Lajitas Array**	**85.54**	**58**	P	P	05 34 03.0	-0.1
	0.2nm,0.7s,baz=221,slow=6.8,SNR=3.1						
GERES	**GERESS Array B 147.04 345**			PKPbc	PKPbc	05 41 03.1	-0.7
	0.3nm,0.3s,baz=3.8,slow=2.9,SNR=2.5						

*IDC **20** 05:24:17.4±14.0, 17°13'S×179°17'W, h486km±168km, mb3.0/5, mb1 3.3/5, mb1mx3.0/27, mbtmp3.9/5, Error ellipse: s-maj=102.5km s-min=46.9km az=167.0*
*ISCJB **20** 05:24:20.4±1.6, 17°12'S±0°6×179°3'W±0°4, h533km, mb3.5/5, Error ellipse: s-maj=94.9km s-min=22.1km az=148.6*
ISC 20 05:24:21.3±1.7, 17°12'S±0°6×179°3'W±0°4, h533km, n6, σ0s56/6, mb3.3/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**38.26**	**240**	P	**P**	**05 30 55.5**	**-0.5**
	2.1nm,0.5s,baz=106,slow=8.9,SNR=5.7						
WRA	**Warramunga Arr**	**43.95**	**259**	P	**P**	**05 31 41.2**	**-0.1**
	0.4nm,0.4s,baz=96,slow=7.5,SNR=8.6						
ASAR	**Alice Springs**	**44.19**	**254**	P	**P**	**05 31 44.0**	**+0.8**
	5.4nm,0.5s,baz=88,slow=8.1,SNR=75						
ILAR	**Eielson Array**	**85.36**	**13**	P	**P**	**05 36 01.6**	**-0.1**
	0.2nm,0.7s,baz=223,slow=5.1,SNR=4.6						
TXAR	**Lajitas Array**	**86.31**	**58**	P	**P**	**05 36 07.3**	**+0.1**
	0.2nm,0.6s,baz=218,slow=5.7,SNR=3.2						
GERES	**GERESS Array B 146.69 344**			PKPbc	**PKPbc**	**05 43 03.4**	**0.0**
	0.3nm,0.2s,baz=20,slow=6.5,SNR=1.9						

*CSEM **20** 05:39:36.9±0.4, 38°16'N×20°44'E, h2km, ML2.5, Error ellipse: s-maj=7.8km s-min=4.7km az=64.0*
*ATH **20** 05:39:36.0, 38°13'N×20°37'E, h4km±2km, ML2.2/11, Error ellipse: s-maj=2.8km s-min=0.9km az=47.0*
*THE **20** 05:39:36.5, 38°13'N×20°42'E, h9km, ML2.5/9, Error ellipse: s-maj=1.0km s-min=0.6km az=77.0*
ISC 20 05:39:36.2±1.1, 38°16'N±0°02×20°41'E±0°04, h9km±6km, n60, σ0s79/104, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VLS	**Valsamata**	**0.14**	**81**	P	**Pg**	**05 39 39.8**	**+0.5**
VLS				S	**Sg**	**05 39 41.7**	**+0.2**
VLS	**Valsamata**	**0.14**	**81**	P	**Pg**	**05 39 39.8**	**+0.5**
VLS				S	**Sg**	**05 39 41.7**	**+0.2**
KFL	**Anninata**	**0.30**	**99**	P	**Pg**	**05 39 42.1**	**-0.1**
KFL				S	**Sg**	**05 39 45.9**	**-0.3**
KFL	**Anninata**	**0.30**	**99**	P	**Pg**	**05 39 42.1**	**-0.1**
KFL				S	**Sg**	**05 39 45.9**	**-0.3**
KFL	**Anninata**	**0.30**	**99**	P	**Pg**	**05 39 42.0**	**-0.1**
KFL				S	**Sg**	**05 39 45.5**	**-0.7**
ZKS	**Zakynthos**	**0.54**	**147**	P	**Pg**	**05 39 46.6**	**-0.1**
ZKS				S	**Sg**	**05 39 54.5**	**+0.6**
ZKS	**Zakynthos**	**0.54**	**147**	P	**Pg**	**05 39 46.6**	**-0.1**
ZKS				S	**Sg**	**05 39 54.5**	**+0.6**
ZKS	**Zakynthos**	**0.54**	**147**	P	**Pg**	**05 39 47.0**	**+0.2**
ZKS				S	**Sb**	**05 39 54.9**	**-0.9**
ZKS				AML	AML	05 40 01.1	
	comp=N,2094μm,0.4s						
ZKS				AML	AML	05 40 02.4	
	comp=E,1206μm,0.4s						
VTN	**Vitineika**	**0.66**	**111**	P	**Pb**	**05 39 49.5**	**-0.2**
VTN				S	**Sb**	**05 39 59.4**	**+0.4**
VTN	**Vitineika**	**0.66**	**111**	P	**Pb**	**05 39 49.5**	**-0.2**
VTN				S	**Sb**	**05 39 59.4**	**+0.4**
LKD2	**Lefkada island**	**0.66**	**17**	P	**Pb**	**05 39 49.4**	**-0.5**
LKD2				S	**Sb**	**05 39 59.0**	**-0.2**
LKD2	**Lefkada island**	**0.66**	**17**	P	**Pb**	**05 39 49.4**	**-0.5**
LKD2				S	**Sb**	**05 39 59.0**	**-0.2**
LKD2	**Lefkada island**	**0.66**	**17**	P	**Pb**	**05 39 49.6**	**-0.3**
LKD2				S	**Sb**	**05 39 59.4**	**+0.2**
LKD2				AML	AML	05 40 03.8	
	comp=E,505μm,0.3s						
LKD2				AML	AML	05 40 08.1	
	comp=N,434μm,0.3s						
PDO	**Prodromos**	**0.75**	**54**	P	**Pg**	**05 39 50.4**	**-0.2**
PDO				S	**Sb**	**05 40 02.0**	**+0.3**
PDO	**Prodromos**	**0.75**	**54**	P	**Pg**	**05 39 50.4**	**-0.2**
PDO				S	**Sb**	**05 40 02.0**	**+0.3**
PDO	**Prodromos**	**0.75**	**54**	P	**Pg**	**05 39 49.9**	**-0.8**
PDO				S	**Sb**	**05 40 02.2**	**+0.5**
PDO				AML	AML	05 40 03.4	
	comp=N,710μm,0.3s						
PDO				AML	AML	05 40 06.4	
	comp=E,553μm,0.3s						
AXS	**Araxos**	**0.76**	**87**	P	**Pg**	**05 39 50.2**	**-0.6**
AXS				S	**Sb**	**05 40 01.9**	**-0.1**
AXS	**Araxos**	**0.76**	**87**	P	**Pg**	**05 39 50.2**	**-0.6**
AXS				S	**Sb**	**05 40 01.9**	**-0.1**
AXS	**Araxos**	**0.76**	**87**	P	**Pg**	**05 39 49.8**	**-1.1**
AXS				S	**Sb**	**05 40 01.9**	**-0.1**
RLS	**Riolos of Patr**	**0.84**	**96**	P	**Pg**	**05 39 51.6**	**-0.7**
RLS				S	**Sb**	**05 40 04.4**	**+0.2**
RLS	**Riolos of Patr**	**0.84**	**96**	P	**Pg**	**05 39 51.6**	**-0.7**
RLS				S	**Sb**	**05 40 04.4**	**+0.2**
RLS	**Riolos of Patr**	**0.84**	**96**	S	**Sb**	**05 40 04.7**	**+0.5**
RLS				AML	AML	05 40 06.2	
	comp=E,174μm,0.3s						
RLS				AML	AML	05 40 09.3	
	comp=N,234μm,0.5s						
PVO	**Paravola**	**0.99**	**62**	P	**Pb**	**05 39 55.1**	**-0.4**
PVO				S	**Sn**	**05 40 09.8**	**-0.5**
PVO	**Paravola**	**0.99**	**62**	P	**Pb**	**05 39 55.1**	**-0.4**
PVO				S	**Sn**	**05 40 09.8**	**-0.5**
PVO	**Paravola**	**0.99**	**62**	P	**Pb**	**05 39 55.1**	**-0.4**
PVO				S	**Sn**	**05 40 11.0**	**+0.7**
DRO	**Drossia**	**1.04**	**101**	P	**Pb**	**05 39 55.7**	**-0.7**
DRO				S	**Sg**	**05 40 10.7**	**+0.9**
DRO	**Drossia**	**1.04**	**101**	P	**Pb**	**05 39 55.7**	**-0.7**
DRO				S	**Sg**	**05 40 10.7**	**+0.9**
DRO	**Drossia**	**1.04**	**101**	P	**Pb**	**05 39 55.3**	**-1.2**
DRO				S	**Sn**	**05 40 12.8**	**+1.1**
DRO				AML	AML	05 40 13.8	
	comp=E,530μm,0.3s						
DRO				AML	AML	05 40 14.0	
	comp=N,428μm,0.2s						
DSL	**Palaion Diasel**	**1.11**	**28**	P	**Pn**	**05 39 57.3**	**-0.7**
DSL				S	**Sn**	**05 40 14.6**	**+1.1**
DSL	**Palaion Diasel**	**1.11**	**28**	P	**Pn**	**05 39 57.3**	**-0.7**
DSL				S	**Sn**	**05 40 14.6**	**+1.1**
DSL	**Palaion Diasel**	**1.11**	**28**	P	**Pn**	**05 39 57.3**	**-0.7**
DSL				S	**Sn**	**05 40 15.3**	**+1.8**
DSL				AML	AML	05 40 18.3	
	comp=N,428μm,0.3s						
DSL				AML	AML	05 40 19.2	
	comp=E,319μm,0.6s						
ANX	**Ano Chora**	**1.26**	**69**	P	**Pn**	**05 39 58.7**	**-1.4**
ANX	**Ano Chora**	**1.26**	**69**	AML	AML	05 40 23.4	
	comp=N,319μm,0.5s						
ANX				AML	AML	05 40 31.2	
	comp=E,125μm,0.5s						
SERG	**Sergoula**	**1.32**	**78**	P	**Pn**	**05 39 59.8**	**-1.0**
SERG				S	**Sb**	**05 40 18.1**	**0.0**
SERG	**Sergoula**	**1.32**	**78**	P	**Pn**	**05 39 59.8**	**-1.0**
SERG				S	**Sb**	**05 40 18.1**	**0.0**
KLV	**Kalavryta, Ach**	**1.38**	**94**	P	**Pn**	**05 40 01.0**	**-0.6**
KLV				S	**Sb**	**05 40 20.0**	**+0.2**
KLV	**Kalavryta, Ach**	**1.38**	**94**	P	**Pn**	**05 40 01.0**	**-0.6**
KLV				S	**Sb**	**05 40 20.0**	**+0.2**
KLV	**Kalavryta, Ach**	**1.38**	**94**	P	**Pn**	**05 40 00.3**	**-1.3**
KLV				S	**Sg**	**05 40 23.8**	**+3.3**
KLV				AML	AML	05 40 26.4	
	comp=E,48μm,0.5s						
KLV				AML	AML	05 40 30.4	
	comp=N,49μm,1.2s						
IGT	**Igoumenitsa**	**1.38**	**357**	P	**Pg**	**05 40 01.9**	**-0.7**
IGT	**Igoumenitsa**	**1.38**	**357**	P	**Pg**	**05 40 01.9**	**-0.7**
IGT				AML	AML	05 40 27.7	
	comp=E,81μm,0.4s						
IGT				AML	AML	05 40 29.0	
	comp=N,81μm,0.4s						
SGD	**Sagiada**	**1.46**	**355**	P	**Pg**	**05 40 04.9**	**+0.7**
SGD				S	**Sg**	**05 40 23.6**	**+0.4**
SGD	**Sagiada**	**1.46**	**355**	P	**Pg**	**05 40 04.9**	**+0.7**
SGD				S	**Sg**	**05 40 23.6**	**+0.4**
ITM	**Ithomi**	**1.55**	**129**	P	**Pg**	**05 40 06.2**	**+0.3**
ITM				S	**Sg**	**05 40 28.3**	**+2.4**
ITM	**Ithomi**	**1.55**	**129**	P	**Pg**	**05 40 06.2**	**+0.3**
ITM				S	**Sg**	**05 40 28.3**	**+2.4**
ITM				AML	AML	05 40 35.6	
	comp=E,50μm,0.4s						
ITM				AML	AML	05 40 35.8	
	comp=N,56μm,0.3s						
KEK	**Kerkira**	**1.63**	**343**	P	**Pg**	**05 40 07.2**	**-0.2**
PYL	**PYLOS**	**1.64**	**140**	P	**Pb**	**05 40 05.8**	**-0.8**
PYL				S	**Sg**	**05 40 29.3**	**+0.3**
PYL	**PYLOS**	**1.64**	**140**	P	**Pb**	**05 40 05.8**	**-0.8**
PYL				S	**Sg**	**05 40 29.3**	**+0.3**
DSF	**Desfina**	**1.68**	**81**	P	**Pg**	**05 40 08.4**	**0.0**
DSF	**Desfina**	**1.68**	**81**	P	**Pg**	**05 40 08.4**	**0.0**
AGG	**Agios Georgios**	**1.73**	**59**	P	**Pg**	**05 40 09.6**	**+0.2**
AGG				S	**Sg**	**05 40 32.9**	**+1.0**
AGG	**Agios Georgios**	**1.73**	**59**	P	**Pg**	**05 40 09.6**	**+0.2**
AGG				S	**Sg**	**05 40 32.9**	**+1.0**
VLX	**Vlachokerasia**	**1.74**	**116**	P	**Pb**	**05 40 07.6**	**-0.8**
VLX	**Vlachokerasia**	**1.74**	**116**	P	**Pb**	**05 40 07.6**	**-0.8**
THL	**Klokotos Trika**	**1.88**	**41**	P	**Pg**	**05 40 12.9**	**+0.6**
LTK	**Loutraki**	**2.02**	**93**	P	**Pg**	**05 40 14.1**	**-0.8**
LTK	**Loutraki**	**2.02**	**93**	P	**Pg**	**05 40 14.1**	**-0.8**
DID	**Didima**	**2.33**	**105**	P	**Pb**	**05 40 17.6**	**-0.7**
DID				S	**Sb**	**05 40 46.8**	**-0.4**
DID	**Didima**	**2.33**	**105**	P	**Pb**	**05 40 17.6**	**-0.7**
DID				S	**Sb**	**05 40 46.8**	**-0.4**
DID				AML	AML	05 40 59.6	
	comp=E,28μm,0.4s						
DID				AML	AML	05 41 13.3	
	comp=N,32μm,0.6s						
VLI	**Veliai**	**2.47**	**125**	P	**Pb**	**05 40 21.5**	**+0.8**
VLI	**Veliai**	**2.47**	**125**	P	**Pb**	**05 40 21.5**	**+0.8**

*DJA **20** 05:52:32.5±0.7, 4°S±5°×99°E±°, h10km, M5.0/13, mb5.1/8, mB5.4/5, MLv5.0/13, Mw(mB)4.8/5*
*IDC **20** 05:52:33.6±0.8, 3°37'S×99°36'E, h0km, mb4.3/17, mb1 4.4/17, mb1mx4.2/38, mbtmp4.3/17, MS3.3/4, Ms1 3.4/4, ms1mx2.9/40, Error ellipse: s-maj=29.6km s-min=14.8km az=47.0*
*NEIC **20** 05:52:35.2±0.5, 3°42'S×99°40'E, h10km, mb4.4/5, Error ellipse: s-maj=14.8km s-min=5.7km az=47.0*
*ISCJB **20** 05:52:36.4±0.5, 3°47'S±0°06×99°38'E±0°06, h33km, mb4.5/30, MS3.4/5, Error ellipse: s-maj=10.9km s-min=5.2km az=43.0*
*BJI **20** 05:52:37.2, 3°50'S×99°30'E, h31km, mb4.8/18, mB4.9/14, Ms4.6/5, Ms7 4.3/5*
ISC 20 05:52:38.4±0.7, 3°45'S±0°10×99°3'E±0°1, h35km, n146, σ1s33/131, mb4.5/30, MS3.3/5, 1C, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PPSI	**Pulau Pagai**	**0.96**	**44**	P	**Pn**	**05 52 53.5**	**-1.9**
PDSI	**Padang**	**2.76**	**24**	P	**Pn**	**05 53 18.2**	**-2.1**
KSI	**Kapahiang**	**3.25**	**94**	P	**Pn**	**05 53 26.7**	**-0.3**
SDSI	**Sungai Dareh**	**3.26**	**40**	P	**Pn**	**05 53 25.6**	**-1.5**
MNAI	**Manna**	**3.72**	**104**	P	**Pn**	**05 53 31.8**	**-1.6**
MNAI	**Manna**	**3.72**	**104**	*e*Pn	**Pn**	**05 53 32.4**	**-1.0**
BKNI	**Bangkinang**	**4.12**	**24**	P	Pn	05 53 45.4	+6.4
BKNI	**Bangkinang**	**4.12**	**24**	*e*Pn	**Pn**	**05 53 42.0**	**+3.0**
LHSI	**Lahat**	**4.19**	**95**	P	**Pn**	**05 53 39.3**	**-0.6**
MNSI	**Mandailing Nat**	**4.23**	**3**	P	**Pn**	**05 53 40.8**	**+0.4**
LWLI	**Liwa**	**4.95**	**108**	P	**Pn**	**05 53 49.2**	**-1.3**
SBSI	**Sibolga**	**4.99**	**355**	P	Pn	05 53 45.4	-5.5
GSI	**Gunungsitoli**	**5.04**	**339**	P	**Pn**	**05 53 51.9**	**+0.2**
GSI	**Gunungsitoli**	**5.04**	**339**	*e*Pn	**Pn**	**05 53 51.2**	**-0.4**
GSI				*e*Sn	**Sn**	**05 54 44.3**	**-4.5**
KASI	**Kota Agung**	**5.54**	**112**	P	**Pn**	**05 53 56.9**	**-1.5**
TPTI		**7.01**	**342**	P	**Pn**	**05 54 16.8**	**-1.9**
CGJI	**Cibinong**	**7.06**	**117**	P	**Pn**	**05 54 16.6**	**-2.8**
CNJI	**Cibinong**	**8.65**	**117**	P	**Pn**	**05 54 37.4**	**-3.7**
CISI	**Cisompet, Garu**	**9.37**	**116**	P	**Pn**	**05 54 47.9**	**-3.2**
CISI	**Cisompet, Garu**	**9.37**	**116**	*e*Pn	**Pn**	**05 54 48.0**	**-3.0**
CMJI	**Cimerak**	**10.03**	**116**	P	**Pn**	**05 54 56.4**	**-3.7**
KAPI	**Kappang**	**20.41**	**95**	*e*P	**P**	**05 57 13.4**	**+0.7**
	56nm,1.6s						
SUKH	**Sukhothai**	**20.80**	**1**	P	**P**	**05 57 17.9**	**+1.0**
	9.9nm,0.8s,81nm						
UTTA	**Uttaradit**	**21.10**	**3**	P	**P**	**05 57 24.8**	**+4.8**
	2.9nm,1.0s						
PALK	**Pallekele**	**21.44**	**300**	LR	LR	06 05 24.0	
	comp=Z,71nm,18.0s,baz=116,slow=36						
NONG	**Nongkai**	**21.71**	**10**	P	**P**	**05 57 28.7**	**+2.1**
	70nm,1.2s,5μm						
CM01	**Chiang Mai Arr**	**21.74**	**359**	*e*P	**P**	**05 57 27.2**	**+0.3**
CM31	**Chiang Mai Arr**	**21.78**	**359**	*e*P	**P**	**05 57 28.6**	**+1.2**
CMAR	**Chiang Mai Arr**	**21.78**	**359**	P	**P**	**05 57 25.5**	**-1.9**
	20nm,0.7s,baz=186,slow=10,SNR=72						
CMAR				LR	LR	06 07 17.2	
	comp=Z,102nm,18.5s,baz=185,slow=41						
LAMP	**Lampang**	**21.84**	**1**	P	**P**	**05 57 31.5**	**+3.5**
	11nm,0.8s						
CHTO	**Chiang Mai**	**22.13**	**359**	*e*P	**P**	**05 57 31.0**	**-0.1**
	7.6nm,0.9s						
CMAI	**Chiengmai2**	**23.24**	**359**	P	**P**	**05 57 44.2**	**+1.2**
H08S2	**Diego Garcia H**	**27.04**	**260**	T	T	06 27 26.6	
	baz=81,slow=75,SNR=77						
H08S3	**Diego Garcia H**	**27.05**	**260**	T	T	06 27 27.7	
	baz=81,slow=75,SNR=41						
H08S1	**Diego Garcia H**	**27.06**	**260**	T	T	06 27 26.6	
	baz=81,slow=75,SNR=57						
KMI	**Kunming**	**28.60**	**6**	P	**P**	**05 58 36.3**	**+4.5**
KMI				pmax	pmax		
	comp=Z,21nm,0.6s						
FITZ	**Fitzroy Crossi**	**29.58**	**121**	LR	LR	06 09 44.2	
	comp=Z,49nm,21.7s,baz=308,slow=35						
H01W3	**Cape Leeuwin H**	**34.16**	**158**	T	T	06 35 59.9	
	baz=336,slow=76,SNR=19						
H01W2	**Cape Leeuwin H**	**34.17**	**158**	T	T	06 36 00.5	
	baz=336,slow=76,SNR=17						
H01W1	**Cape Leeuwin H**	**34.17**	**158**	T	T	06 36 02.7	
	baz=336,slow=76,SNR=14						
WRA	**Warramunga Arr**	**37.85**	**118**	P	**P**	**05 59 52.2**	**-0.1**
	1.7nm,0.5s,baz=297,slow=8.3,SNR=23						
XAN	**Xi'an**	**38.37**	**13**	P	**P**	**05 59 55.6**	**-0.8**
XAN				pmax	pmax		
	comp=Z,14nm,0.9s						
XAN				pmax	pmax		
	comp=Z,82nm,5.4s						
ASAR	**Alice Springs**	**38.96**	**124**	P	**P**	**06 00 02.0**	**+0.5**
	1.5nm,0.5s,baz=298,slow=7.9,SNR=17						
AS31	**Alice Springs**	**38.96**	**124**	*e*P	**P**	**06 00 02.0**	**+0.4**
	1.6nm,0.7s						
LZH	**Lanzhou**	**39.56**	**6**	*e*P	**P**	**06 00 07.0**	**+0.5**
LZH				pP	pP	06 00 16.3	-0.4
LZH				sP	sP	06 00 20.3	-0.6
LZH				*e*PP	**PnPn**	**06 01 43.1**	**+2.2**
LZH				pmax	pmax		
	comp=Z,18nm,1.1s						
LZH				pmax	pmax		
	comp=Z,45nm,5.2s						
LZH				LR	LR		
	comp=N,120nm,13.0s						
LZH				LR	LR		
	comp=E,110nm,13.5s						
LZH				LR	LR		
	comp=Z,160nm,17.2s						
HHC	**Hu-ho-hao-te**	**45.49**	**13**	*e*P	**P**	**06 00 57.0**	**+2.5**
HHC				pmax	pmax		
	comp=Z,13nm,0.9s						
KSH	**Kashi**	**47.87**	**336**	*e*P	**P**	**06 01 12.4**	**-0.8**
KSH				*es*P	pP	06 01 25.0	+1.4
KSH				*e*ScP	**ScP**	**06 06 32.1**	**-1.3**
KSH				S	**S**	**06 08 04.3**	**-3.8**
KSH				pmax	pmax		
	comp=Z,37nm,2.6s						
WMQ	**Urumqi**	**48.21**	**349**	P	**P**	**06 01 16.3**	**+0.6**
WMQ				pP	sP	06 01 29.8	-0.5
WMQ				pmax	pmax		
	comp=Z,30nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,110nm,4.3s						
KSAR	**Wonju Array Be**	**48.57**	**30**	P	**P**	**06 01 18.4**	**0.0**
KSRS	**Korea Array**	**48.60**	**31**	P	**P**	**06 01 18.4**	**-0.2**
	3.5nm,0.8s,baz=214,slow=9.2,SNR=6.5						
STKA	**Stephens Creek**	**48.70**	**130**	P	**P**	**06 01 20.5**	**+0.9**
	1.1nm,0.5s,baz=303,slow=11,SNR=2.4						
SONM	**Songino Array**	**51.45**	**6**	P	**P**	**06 01 40.5**	**+0.1**
	6.0nm,0.8s,baz=189,slow=8.9,SNR=26						
SONA1	**Songino Array**	**51.46**	**6**	*e*P	**P**	**06 01 41.2**	**+0.8**
MK01	**Makanchi Array**	**52.23**	**345**	*e*P	**P**	**06 01 46.1**	**+0.1**
MK31	**Makanchi Array**	**52.25**	**345**	*e*P	**P**	**06 01 46.7**	**+0.5**
MKAR	**Makanchi Array**	**52.25**	**345**	P	**P**	**06 01 46.6**	**+0.4**
	8.6nm,0.7s,baz=151,slow=8.6,SNR=64						
MKAR	**Makanchi Array**	**52.25**	**345**	*e*P	**P**	**06 01 46.7**	**+0.5**
MAKZ	**Makanchi**	**52.34**	**345**	*e*P	**P**	**06 01 47.3**	**+0.4**
	9.9nm,1.4s						
CN2	**Changchun**	**52.57**	**24**	*e*P	**P**	**06 01 50.9**	**+2.3**
MJAR	**Matsushiro Arr**	**53.81**	**39**	P	**P**	**06 01 56.6**	**-1.3**
	1.3nm,0.6s,baz=201,slow=6.5,SNR=4.5						
USRK	**Ussuriysk Ar.**	**55.74**	**28**	P	**P**	**06 02 11.6**	**-0.1**
	4.2nm,0.9s,baz=227,slow=2.3,SNR=4.3						
GEYT	**Alibeck**	**56.15**	**321**	P	**P**	**06 02 14.5**	**-0.3**
	1.5nm,0.3s,baz=147,slow=2.9,SNR=3.7						
ZAA0	**Zalesovo Array**	**58.47**	**350**	*e*P	**P**	**06 02 31.0**	**+0.2**
ZAA0				*e*P	**P**	**06 02 31.1**	**+0.3**
ZALV	**Zalesovo Beam**	**58.47**	**350**	P	**P**	**06 02 31.1**	**+0.3**
	12nm,0.7s,baz=187,slow=5.2,SNR=37						
ABKAR	**Abdulak array**	**62.60**	**332**	*e*P	**P**	**06 02 58.6**	**-0.5**
KBZ	**Khabaz**	**68.98**	**320**	P	**P**	**06 03 40.8**	**+0.5**
	5.0nm,0.8s,baz=95,slow=2.8,SNR=11						
BRTR	**Keskin Array B**	**73.82**	**313**	P	**P**	**06 04 09.6**	**-0.2**
	1.8nm,0.6s,baz=134,slow=6.7,SNR=8.9						
RPZ	**Rata Peaks**	**74.44**	**134**	LR	LR	06 33 35.0	
	comp=Z,21nm,19.8s,baz=265,slow=33						
PETK	**Petropavlovsk-**	**74.46**	**32**	P	**P**	**06 04 12.7**	**-0.4**
	1.3nm,0.5s,baz=223,slow=3.6,SNR=2.6						
SYO	**Syowa Base**	**76.29**	**199**	*e*P	pP	06 04 29.0	-5.2
TIXI	**Tiksi**	**77.39**	**9**	*e*P	**P**	**06 04 28.6**	**-0.8**
	3.3nm,0.8s						
AKASG	**Malin Array Be**	**80.23**	**323**	P	**P**	**06 04 45.2**	**-0.2**
	2.7nm,0.5s,baz=90,slow=4.1,SNR=2.5						
BUR08	**Bucovina Ar. S**	**81.93**	**319**	*e*P	**P**	**06 04 56.3**	**+1.5**
FINES	**FINESS Array B**	**85.09**	**332**	P	**P**	**06 05 11.0**	**+0.6**
	1.1nm,0.4s,baz=110,slow=4.9,SNR=11						
ARCES	**ARCESS Array B**	**87.61**	**340**	P	**P**	**06 05 23.1**	**+0.4**
	3.4nm,0.9s,baz=134,slow=5.2,SNR=6.2						
S39A	**Bolivar**	**144.00**	**17**	P	**PKPab**	**06 12 08.4**	**+0.3**
	baz=338						
T37A	**Cheneyville 18**	**144.02**	**20**	P	PKPbc	06 12 08.7	0.0
	baz=335						
U35A	**Pawnee**	**144.05**	**22**	P	PKPbc	06 12 08.8	-0.1
	baz=332						
W32A	**Sentinel**	**144.08**	**26**	P	PKPbc	06 12 08.8	-0.2
	baz=327						
V34A	**Guthrie**	**144.21**	**24**	P	PKPbc	06 12 09.4	+0.1
	baz=330						
T38A	**Diamond**	**144.31**	**19**	P	**PKPab**	**06 12 09.1**	**-0.2**
	baz=336						
S40A	**Lebanon**	**144.32**	**16**	P	**PKPab**	**06 12 09.3**	**0.0**
	baz=339,SNR=5.8						
W33A	**Caddo, Fort Co**	**144.40**	**26**	P	PKPbc	06 12 10.4	+0.4
	baz=328						
V35A	**Meyer Ranch, C**	**144.54**	**23**	P	**PKPab**	**06 12 10.1**	**-0.1**
	baz=331						
S41A	**Jillco Farms,**	**144.54**	**15**	P	**PKPab**	**06 12 10.1**	**-0.1**
	baz=341,SNR

	baz=335,SNR=5.4							
MIAR	**Mount Ida**	**146.81**	**20**	P	**PKPbc**	**06 12 17.8**	**+0.3**	
	baz=336,SNR=6.9							
233A	**Rising Star**	**146.82**	**29**	P	**PKPbc**	**06 12 17.8**	**+0.2**	
	baz=325							
Z36A	**Blue Ridge**	**146.87**	**25**	P	**PKPab**	**06 12 19.0**	**0.0**	
	baz=330							
TZTN	**Tazewell**	**146.96**	**4**	*e*PKPdf	**PKPbc**	**06 12 17.6**	**-0.3**	
333A	**Richland Sprin**	**147.34**	**30**	P	**PKPbc**	**06 12 19.5**	**+0.3**	
	baz=324,SNR=5.3							
JCT	**Junction City**	**147.60**	**32**	P	**PKPbc**	**06 12 20.1**	**+0.3**	
	baz=322							
334A	**Lometa**	**147.70**	**29**	P	**PKPbc**	**06 12 20.0**	**0.0**	
	baz=326							
434A	**Burnet**	**148.11**	**30**	P	**PKPbc**	**06 12 21.3**	**+0.1**	
	baz=325							
335A	**Moody**	**148.13**	**28**	P	**PKPbc**	**06 12 21.5**	**+0.3**	
	baz=327							
X45A	**UM Field Stati**	**148.13**	**14**	P	**PKPbc**	**06 12 21.1**	**0.0**	
	baz=343							
KMSC	**Kings Mountain**	**148.46**	**1**	P	**PKPbc**	**06 12 22.0**	**0.0**	
	baz=359							
Y46A	**Houston**	**148.78**	**13**	P	**PKPbc**	**06 12 22.6**	**-0.2**	
	baz=344							
Z44A	**Pea Ridge, Bel**	**148.96**	**16**	P	**PKPbc**	**06 12 23.5**	**+0.3**	
	baz=341							
Z45A	**Winona**	**149.06**	**15**	P	**PKPbc**	**06 12 23.8**	**+0.3**	
	baz=342							
832A	**Faith Ranch, C**	**149.21**	**35**	P	**PKPbc**	**06 12 24.6**	**+0.5**	
	baz=320							
Z46A	**Louisville**	**149.42**	**14**	P	**PKPbc**	**06 12 24.6**	**+0.2**	
	baz=344							
Z48A	**Northport**	**149.54**	**11**	P	**PKPbc**	**06 12 24.3**	**-0.4**	
	baz=346							
Z47A	**Carrollton**	**149.61**	**12**	P	**PKPbc**	**06 12 24.8**	**-0.1**	
	baz=345							
145A	**Houston Renfro**	**149.73**	**16**	P	**PKPbc**	**06 12 25.9**	**+0.7**	
	baz=341							
636A	**Smothers Creek**	**149.80**	**29**	P	**PKPbc**	**06 12 26.3**	**+0.8**	
	baz=326							
146A	**Union**	**149.92**	**14**	P	**PKPbc**	**06 12 26.3**	**+0.6**	
	baz=343							
147A	**Livingston**	**150.07**	**13**	P	**PKPbc**	**06 12 27.3**	**+1.2**	
	baz=345							
933A	**Laredo**	**150.12**	**35**	P	**PKPbc**	**06 12 27.7**	**+1.3**	
	baz=320							
834A	**Tilden**	**150.12**	**33**	P	**PKPbc**	**06 12 27.4**	**+1.1**	
	baz=322							
347A	**Saraland**	**151.22**	**14**	P	**PKPbc**	**06 12 28.6**	**-0.2**	
	baz=344							
035Z	**Hargill**	**151.68**	**34**	P	**PKPbc**	**06 12 30.0**	**0.0**	
	baz=321							
544A	**White Castle**	**151.69**	**19**	P	**PKPbc**	**06 12 30.0**	**+0.1**	
	baz=338							

CASC 20 05:57:34.9±1.1, 10.76N×85.10W, h13km±7km, MD3.7, ML3.0,1D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCR	**Jicaral**	**0.90**	**181**	*e*P	Pg	05 57 51.3	-1.0
JCR				*e*S	Sg	05 58 03.4	-0.8
CONN	**Concepcion**	**0.95**	**327**	*e*P	Pb	05 57 52.8	-0.6
CGA2	**Cerro Gallo 2**	**0.97**	**140**	*e*P	Pg	05 57 52.6	-1.0
ACON	**Acoyapa**	**1.21**	**357**	*e*P	Pn	05 57 56.0	-1.5
ACON				*e*S	Sb	05 58 12.8	-0.3
ACON				AML	AML	05 58 15.2	
	comp=N,211nm,0.7s						
URSC	**Urasca**	**1.59**	**125**	*e*P	Pn	05 58 02.8	-0.2
URSC				*e*S	Sb	05 58 24.7	+0.3
QCR	**Quepos**	**1.61**	**145**	*e*P	Pn	05 58 03.2	+0.1
ESPN	**Las Esperanzas**	**1.63**	**29**	*e*P	Pn	05 58 02.3	-1.0
ESPN				*e*S	Sn	05 58 24.1	-0.1
ESPN				AML	AML	05 58 27.3	
	comp=N,263nm,0.3s						
BUS	**Buena Vista**	**1.78**	**132**⇓	*e*P	Pn	05 58 05.8	0.0
COPN	**Copaltepe**	**2.03**	**314**	*e*P	Pn	05 58 08.8	-0.1

MAN 20 05:58:50, 9.53N×121.97E, h77km, mb4.5, ML3.4, MS3.3, 1C-1D, Sulu Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.27**	**98**	*i* P	Pn	05 59 13.2	+0.9
SNPH				*i* S	Sn	05 59 31.3	+2.3
DCPH	**Dipolog City**	**1.66**	**124**⇑	*e*P	Pn	05 59 20.0	+2.7
RCP	**Roxas**	**2.16**	**21**⇓	*e*P	Pn	05 59 25.4	+1.4
RCP				*e*S	Sn	05 59 52.3	+2.3

NIED ***20*** *06:12:00, 24.00N×122.30E, h20km, Mw4.6 Best double couple: M₀1.05000×10¹⁶ NP1:φ₀29.00000°, δ33.00000°, λ-120.00000°. NP2:φ₀243.00000°, δ61.00000°, λ-72.00000°.*

JMA ***20*** *06:12:17.1±0.1, 24.00N×122.28E, h19km±3km, M4.8*

TAP ***20*** *06:12:17.8, 24.10N×122.29E, h24km, ML4.8, C*

BJI ***20*** *06:12:17.1, 24.19N×122.09E, h5km, mb4.4/36, mB4.8/37, ML4.5/8, Ms4.5/51, Ms7 4.4/48*

MOS ***20*** *06:12:17.0±0.9, 24.16N×122.27E, h33km, mb4.7/22, Error ellipse: s-maj=11.7km s-min=7.1km az=105.1*

NEIC ***20*** *06:12:18.2±0.8, 24.12N×122.25E, h29km±5km, mb4.8/23, ML5.2(TAP), Error ellipse: s-maj=5.1km s-min=4.0km az=92.0*

NEIC Felt [II] at Taipei. Also felt at Hsinchu and Taoyuan. Recorded [2 TAP] in Yilan and [1 TAP] in Hualien, Nantou, Taipei and Taitung.

ISCJB ***20*** *06:12:18.5±0.2, 24.08N±0.01×122.30E±0.01, h47km±2km, mb4.5/56, MS4.1/28, Error ellipse: s-maj=2.6km s-min=1.9km az=152.0*

IDC ***20*** *06:12:18.7±2.5, 24.18N×122.28E, h31km±17km, mb4.1/21, mb1 4.3/22, mb1mx4.2/36, mbtmp4.3/22, ML3.5/1, MS4.1/25, Ms1 4.1/25, ms1mx3.8/46, Error ellipse: s-maj=19.2km s-min=12.6km az=72.0*

ISC 20 06:12:17.7±0.7, 24.05N±0.02×122.28E±0.02, h26km±4km, n244, σ1s65/309, mb4.6/56, MS4.1/28, 25C-19D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.56**	**298**	*e*P	**Pn**	**06 12 29.3**	**-0.6**
	baz=301						
ENA	**Nanau**	**0.62**	**308**	P	**Pb**	**06 12 29.2**	**-0.7**
	baz=308						
HWA	**Hwalien**	**0.62**	**264**	*e*P	**Pn**	**06 12 30.5**	**-0.3**
	baz=244						
TWD	**Chiawan**	**0.63**	**273**	*e*P	**Pb**	**06 12 30.2**	**+0.1**
	baz=268						
NACB	**Ningamchiao**	**0.64**	**281**	*e*Pg	**Pn**	**06 12 30.4**	**-0.7**
TWC	**Suao**	**0.68**	**325**⇓	*i*P	**Pb**	**06 12 30.1**	**-1.0**
	baz=327						
JYNG	**Yonaguni jima**	**0.73**	**56**	P	**Pb**	**06 12 31.1**	**-0.6**
JYNG				S	**Sn**	**06 12 41.8**	**-0.7**
ESF	**Shoufeng Towns**	**0.73**	**256**	*e*P	**Pb**	**06 12 31.8**	**+0.1**
	baz=241						
YOJ	**Yonaguni jima**	**0.78**	**58**	P	**Pn**	**06 12 32.5**	**-0.5**
YOJ				S	**Sn**	**06 12 43.1**	**-0.8**
YOJ	**Yonaguni jima**	**0.78**	**58**⇓	*i*P	**Pn**	**06 12 32.6**	**-0.4**
	baz=60						
YOJ				S	**Sn**	**06 12 42.9**	**-1.0**
	baz=60						
YOJ	**Yonaguni jima**	**0.78**	**58**	*e*P	**Pn**	**06 12 32.8**	**-0.2**
YOJ				*e*		06 12 43.7	
YOJ	**Yonaguni jima**	**0.78**	**58**	*e*Pg	**Pn**	**06 12 32.8**	**-0.2**
YOJ				*e*Sg	**Sn**	**06 12 43.7**	**-0.1**
ESL	**Shilin**	**0.81**	**253**	*e*P	**Pb**	**06 12 32.5**	**-0.6**
	baz=239						
EGS		**0.85**	**338**⇓	*i*P	**Pb**	**06 12 33.3**	**-0.6**
	baz=327						
EGS				*i* S	**Sn**	**06 12 45.1**	**-0.6**
	baz=327						
ILA	**Ilan**	**0.86**	**326**	⇓P	**Pb**	**06 12 33.5**	**-0.5**
	baz=323						
ILA				*e*S	**Sn**	**06 12 45.7**	**-0.2**
	baz=323						
TWE	**Neicheng**	**0.87**	**320**	P	**Pn**	**06 12 33.8**	**-0.4**
	baz=324						
TWE				S	**Sb**	**06 12 44.3**	**-1.2**
	baz=324						
ENTT	**Nioudou**	**0.88**	**312**⇓	*i*P	**Pn**	**06 12 34.1**	**-0.3**
	baz=320						
ENTT				*e*S	**Sb**	**06 12 44.1**	**-1.6**
	baz=320						
NNS	**Nan Shan**	**0.92**	**295**⇓	P	**Pn**	**06 12 34.9**	**-0.1**
	baz=278						
WHF	**Hehuan Shan**	**0.93**	**276**⇓	*i*P	**Pb**	**06 12 35.1**	**-0.4**
	baz=259						
TWB1	**Santiao Chiao**	**0.99**	**344**⇓	*i*P	**Pb**	**06 12 35.3**	**-0.9**
	baz=329						
TWB1				*i* S	**Sn**	**06 12 48.4**	**-0.7**
	baz=329						
EHY	**Hungye**	**1.03**	**239**⇑	*i*P	**Pn**	**06 12 36.0**	**-0.4**
	baz=252						
TWT	**Tachien**	**1.03**	**282**	⇓P	**Pb**	**06 12 37.4**	**+0.4**
	baz=266						
YHNB	**Yeheng**	**1.03**	**307**	*e*Pn	**Pb**	**06 12 36.5**	**-0.4**
NSK	**Sanguang**	**1.05**	**307**⇓	*i*P	**Pb**	**06 12 36.9**	**-0.3**
	baz=291						
NSK				S	**Sn**	**06 12 50.2**	**-0.4**
	baz=291						
WDT	**Danda**	**1.09**	**255**⇑	*i*P	**Pn**	**06 12 37.6**	**0.0**
	baz=240						
WDT				*e*S	**Sb**	**06 12 51.5**	**-0.5**
	baz=240						
YULB	**Yu-li**	**1.11**	**234**	*e*Pn	**Pn**	**06 12 37.0**	**-0.6**
YULB				*e*Sn	**Sb**	**06 12 47.4**	**-5.0**
NWF	**Wu-fen Shan**	**1.12**	**336**	⇓P	**Pb**	**06 12 37.8**	**-0.6**
	baz=332						
NWF				S	**Sn**	**06 12 52.6**	**+0.3**
	baz=332						
TWA	**Mucha**	**1.12**	**326**⇓	*i*P	**Pb**	**06 12 38.5**	**0.0**
	baz=322						
TWA				*i* S	**Sn**	**06 12 53.7**	**+1.3**
	baz=322						
TWF1	**Yuli**	**1.14**	**233**⇑	*i*P	**Pn**	**06 12 37.8**	**-0.1**
	baz=248						
TWF1				*e*S	**Sb**	**06 12 52.7**	**-0.4**
	baz=248						
TATO	**Taipei**	**1.17**	**322**	*e*Pn	**Pb**	**06 12 39.1**	**-0.2**
TAP1	**Taipei**	**1.20**	**325**	*e*P	**Pb**	**06 12 39.6**	**-0.2**
	baz=321						
TAP1				S	**Sb**	**06 12 55.5**	**+0.5**
	baz=321						
TAP	**Taipei**	**1.21**	**325**	*e*P	**Pb**	**06 12 40.7**	**+0.8**
	baz=321						
SSLB	**Suanglung**	**1.24**	**258**	*e*Pn	**Pn**	**06 12 39.4**	**0.0**
CHKT	**Chengkung**	**1.26**	**222**	P	**Pn**	**06 12 38.9**	**-0.8**
	baz=210						
CHKT				*e*S	**Sn**	**06 12 54.0**	**-1.8**
	baz=210						
SMLT	**Sun Moon Lake**	**1.27**	**263**⇑	*i*P	**Pb**	**06 12 40.6**	**-0.4**
	baz=261						
SMLT				*e*S	**Sn**	**06 12 55.5**	**-0.7**
	baz=261						
NSTT	**Nanjuang**	**1.30**	**297**	⇓P	**Pb**	**06 12 41.5**	**0.0**
	baz=294						
NSTT				*e*S	**Sb**	**06 12 58.0**	**+0.1**
	baz=294						
TWS1	**Kuangyinshan**	**1.31**	**323**	*e*P	**Pb**	**06 12 41.3**	**-0.4**
	baz=320						
TYC	**Yuchr**	**1.31**	**264**⇑	*i*P	**Pb**	**06 12 41.1**	**-0.5**
	baz=262						
YUS	**Yu-Shan**	**1.34**	**246**⇑	*i*P	**Pb**	**06 12 41.8**	**-0.6**
	baz=244						
YUS				*e*S	**Sn**	**06 12 57.8**	**-0.5**
	baz=244						
IRIF	**Iriomote-Funau**	**1.35**	**78**	P	**Pb**	**06 12 41.6**	**-0.7**
IRIF				*e*S	**Sb**	**06 12 59.9**	**+0.7**
NCU	**National Centr**	**1.35**	**313**	*e*P	**Pb**	**06 12 41.9**	**-0.5**
	baz=310						
TWY	**Chenhua**	**1.37**	**333**	*e*P	**Pb**	**06 12 41.6**	**-1.0**
	baz=346						
HATJ	**Hateruma jima**	**1.39**	**89**	P	**Pb**	**06 12 42.5**	**-0.5**
TWQ1	**Liyutan**	**1.41**	**283**	*e*P	**Pb**	**06 12 43.6**	**+0.3**
	baz=280						
HSN	**Hsinchu**	**1.41**	**302**	*e*P	**Pb**	**06 12 42.9**	**-0.5**
	baz=301						
NSY	**Sanyi**	**1.44**	**285**	*e*P	**Pb**	**06 12 43.9**	**+0.2**
	baz=283						
NSY				*e*S	**Sb**	**06 13 02.5**	**+0.8**
	baz=283						
ELDTW	**Lidau**	**1.44**	**234**	⇑P	**Pn**	**06 12 42.0**	**-0.2**
	baz=232						
ALS	**Alishan**	**1.46**	**249**⇑	*i*P	**Pb**	**06 12 43.7**	**-0.6**
	baz=247						
ALS				S	**Sn**	**06 13 01.1**	**+0.2**
	baz=247						
TCU	**Taichung**	**1.47**	**274**	⇓P	**Pb**	**06 12 44.4**	**0.0**
	baz=272						
TCU				*e*S	**Sb**	**06 13 03.1**	**+0.5**
	baz=272						
WNT	**Mingjian**	**1.47**	**264**⇑	*i*P	**Pb**	**06 12 44.5**	**+0.2**
	baz=262						
WNT				*e*S	**Sb**	**06 13 03.4**	**+0.7**
	baz=262						
CHN5	**Tsauling**	**1.54**	**253**⇑	*i*P	**Pb**	**06 12 45.2**	**-0.3**
	baz=252						
PCYT	**Pengchaiyu**	**1.59**	**353**	*i* P	**Pn**	**06 12 44.6**	**+0.5**
	baz=350						
JKRS	**Kuro-shima**	**1.59**	**83**	P	**Pb**	**06 12 45.5**	**-0.9**
WGK	**Gukeng**	**1.61**	**257**	*e*P	**Pb**	**06 12 46.0**	**-0.8**
	baz=256						
TWG	**Pinlang**	**1.65**	**223**	P	**Pn**	**06 12 44.5**	**-0.5**
	baz=234						
TWG				*e*S	**Sn**	**06 13 03.3**	**-2.1**
	baz=234						
TWG	**Pinlang**	**1.65**	**223**	*e*Pn	**Pn**	**06 12 44.5**	**-0.5**
STYT	**Tauyuan**	**1.65**	**238**	⇑P	**Pn**	**06 12 46.2**	**+1.2**
	baz=227						
STYT				*e*S	**Sb**	**06 13 07.1**	**-0.8**
	baz=227						
TTN	**Taitung**	**1.66**	**219**	*e*P	**Pn**	**06 12 44.2**	**-0.8**
	baz=209						
TTN				*e*S	**Sb**	**06 13 07.1**	**-0.9**
	baz=209						
TPUB	**Ta-pu**	**1.69**	**244**	*e*Pn	**Pb**	**06 12 47.0**	**-1.0**
CHN4	**Tsaushan**	**1.70**	**246**⇑	*i*P	**Pb**	**06 12 47.5**	**-0.7**
	baz=246						
CHN4				*e*S	**Sb**	**06 13 09.6**	**+0.5**
	baz=246						
WTP	**Ta-pu**	**1.73**	**243**⇑	*i*P	**Pb**	**06 12 47.7**	**-1.0**
	baz=242						
WTP				*e*S	**Sb**	**06 13 09.4**	**-0.6**
	baz=242						
JIJ	**Ishigaki jima**	**1.73**	**79**	P	**Pn**	**06 12 46.7**	**+0.7**
JIJ				S	**Sb**	**06 13 08.4**	**-1.6**
CHN2	**Minshiung**	**1.73**	**253**	*e*P	**Pb**	**06 12 48.1**	**-0.7**
	baz=252						
CHN2				*e*S	**Sb**	**06 13 10.3**	**+0.1**
	baz=252						
CHY	**Chiayi**	**1.79**	**253**	*e*P	**Pb**	**06 12 48.3**	**-1.5**
	baz=251						
TWK	**Hsinying**	**1.82**	**245**	*e*P	**Pb**	**06 12 49.5**	**-0.8**
	baz=244						
CHN1	**Nanshi**	**1.82**	**242**⇑	*i*P	**Pb**	**06 12 49.6**	**-0.8**
	baz=242						
CHN1				*e*S	**Sb**	**06 13 13.1**	**+0.2**
	baz=242						
SGST	**Jiashian**	**1.83**	**239**	*e*P	**Pb**	**06 12 49.5**	**-1.0**
	baz=238						
SGST				*e*S	**Sb**	**06 13 12.6**	**-0.4**
	baz=238						
WTCT	**Ta-ch'eng**	**1.84**	**265**	*e*P	**Pb**	**06 12 49.4**	**-1.3**
	baz=263						
WTCT				*e*S	**Sb**	**06 13 13.5**	**+0.3**
	baz=263						
ECL	**Taimali**	**1.89**	**220**	*e*P	**Pn**	**06 12 47.6**	**-0.6**
	baz=230						
JISG	**Ishigakijimahi**	**1.93**	**73**	P	**Pn**	**06 12 49.3**	**+0.5**
JISG				*e*S	**Sn**	**06 13 13.2**	**+1.1**
WSF	**Szhu**	**1.93**	**258**	*e*P	**Pb**	**06 12 50.8**	**-1.4**
	baz=257						
WSF				*e*S	**Sb**	**06 13 15.9**	**+0.1**
	baz=257						
SSD	**Sandimen**	**1.99**	**230**	*e*P	**Pn**	**06 12 50.7**	**+1.0**
	baz=223						
SSD				*e*S	**Sb**	**06 13 17.1**	**-0.6**
	baz=223						
CHN3	**Shinhua**	**2.01**	**242**	*e*P	**Pb**	**06 12 52.4**	**-1.1**
	baz=241						
CHN8	**Yiju**	**2.02**	**250**	*e*P	**Pn**	**06 12 51.4**	**+1.4**
	baz=249						
TWM1	**Shoushan**	**2.10**	**235**⇓	*i*P	**Pb**	**06 12 55.2**	**+0.1**
	baz=233						
SCLT	**Jiali**	**2.10**	**246**	*e*P	**Pn**	**06 12 53.0**	**+1.8**
	baz=246						
SCLT				*e*S	**Sb**	**06 13 19.2**	**-1.6**
	baz=246						
SGLT	**Jiouru**	**2.11**	**232**	*e*P	**Pb**	**06 12 54.0**	**-1.2**
	baz=231						
LAY	**Lan-yu**	**2.11**	**199**	*e*P	**Pn**	**06 12 50.5**	**-0.8**
	baz=200						
TAW	**Tawu**	**2.11**	**217**	*e*P	**Pn**	**06 12 50.4**	**-0.9**
	baz=218						
EAST	**Anshuo**	**2.12**	**219**	⇑P	**Pn**	**06 12 51.3**	**-0.1**
	baz=219						
TAI1	**Yung-k'ang**	**2.13**	**242**	*e*P	**Pb**	**06 12 53.8**	**-1.8**
	baz=242						
SCZT	**Fangliau**	**2.26**	**223**	*e*P	**Pb**	**06 12 55.6**	**-2.2**
	baz=218						
SCZT				*e*S	**Sn**	**06 13 22.5**	**+2.1**
	baz=218						
JTJ	**Tarama**	**2.29**	**75**	P	**Pn**	**06 12 55.1**	**+1.4**
JTJ				S	**Sn**	**06 13 22.5**	**+1.5**
TWP	**Hsiaoliuchiu**	**2.45**	**227**	*e*P	**Pb**	**06 12 59.0**	**-2.0**
	baz=227						
HEN	**Hengchun**	**2.48**	**215**	*e*P	**Pn**	**06 12 57.1**	**+0.7**
	baz=215						
TSEB	**Hengchuen, Pin**	**2.49**	**211**	*e*P	**Pn**	**06 12 57.2**	**+0.8**
	baz=214						
TSEB				*e*S	**Sn**	**06 13 27.4**	**+1.4**
	baz=214						
TWK1	**Hengchun**	**2.50**	**213**	*e*P	**Pn**	**06 12 56.6**	**0.0**
	baz=214						
WDGT	**Dungji**	**2.53**	**252**	*e*P	**Pn**	**06 12 58.0**	**+0.9**
	baz=240						
WDGT				*e*S	**Sn**	**06 13 28.4**	**+1.4**
	baz=240						
PNG	**Penghu**	**2.54**	**260**	*e*P	**Pn**	**06 12 57.3**	**+0.1**
	baz=259						
JIRB	**Irabujima**	**2.75**	**73**	P	**Pn**	**06 13 01.4**	**+1.4**
JIRB				S	**Sn**	**06 13 33.3**	**+0.9**
JIKM	**Ikemajima**	**2.84**	**72**	P	**Pn**	**06 13 03.0**	**+1.7**
JIKM				S	**Sn**	**06 13 36.8**	**+2.1**
JMJ	**Miyako jima 2**	**2.85**	**74**	P	**Pn**	**06 13 03.9**	**+2.5**
JMJ				*e*S	**Sn**	**06 13 35.4**	**+0.5**
JMJ	**Miyako jima 2**	**2.85**	**74**	*e*P	**Pn**	**06 13 02.0**	**+0.6**
	baz=75						
JOGS	**Gusukube**	**2.94**	**75**	P	**Pn**	**06 13 04.7**	**+2.1**
JOGS				S	**Sn**	**06 13 39.3**	**+2.3**
QZH	**Quanzhou**	**3.48**	**286**⇓	*i*Pn	**Pn**	**06 13 10.1**	**0.0**
QZH				Sn	**Sn**	**06 13 47.6**	**-2.8**
QZH				smax	smax		
	comp=N,2μm,0.9s						
QZH				smax	smax		
	comp=E,1μm,0.8s						
QZH				LR	LR		
	comp=Z,8μm,14.1s						
KNM	**Kinmen**	**3.53**	**277**	*e*P	**Pn**	**06 13 10.8**	**0.0**
	baz=275						
JKE	**Kume jima 2**	**4.67**	**60**	P	**Pn**	**06 13 27.1**	**+0.6**
JAGN	**Aguni-jima**	**5.15**	**60**	P	**Pn**	**06 13 34.8**	**+1.7**
JNTH	**Nagotoyohara**	**5.75**	**63**	P	**Pn**	**06 13 41.5**	**+0.2**
JOW	**Kunigami**	**6.08**	**62**	P	**Pn**	**06 13 45.3**	**-0.7**
JOW	**Kunigami**	**6.08**	**62**	*e*P	**Pn**	**06 13 45.3**	**-0.7**
	baz=61						
JTK	**Tokunoshima**	**7.06**	**57**	P	**Pn**	**06 13 58.6**	**-0.8**
SSE	**Sheshan**	**7.09**	**352**	⇓P	**Pn**	**06 13 59.5**	**-0.2**
SSE				S	**Sn**	**06 15 16.4**	**-3.0**
SSE				smax	smax		
	comp=E,190nm,1.0s						
SSE				LR	LR		
	comp=N,820nm,17.7s						
SSE				LR	LR		
	comp=E,120nm,17.7s						
JAMN	**Amaminishikomi**	**7.47**	**55**	P	**Pn**	**06 14 03.8**	**-1.2**
JAM	**Amami Oshima**	**7.88**	**55**	P	**Pn**	**06 14 09.4**	**-1.2**
GZH	**Guangzhou**	**8.26**	**265**	Pn	**Pn**	**06 14 12.3**	**-3.4**
GZH				Sn	**Sn**	**06 15 43.6**	**-4.6**
GZH				pmax	pmax		
	comp=Z,18nm,0.5s						
NJ2	**Nanjing**	**8.53**	**340**	*e*P	**Pn**	**06 14 19.0**	**-0.5**
NJ2				S	Sn	06 16 05.0	+10
NJ2				pmax	pmax		
	comp=Z,35nm,0.6s						
NJ2				pmax	pmax		
	comp=Z,360nm,4.9s						
NJ2				LR	LR		
	comp=Z,3μm,11.9s						
NJ2				LR	LR		
	comp=Z,2μm,12.5s						
NJ2				LR	LR		
	comp=Z,4μm,13.0s						
WHN	**Wuhan**	**9.57**	**314**	P	Pn	06 14 39.8	+6.1
WHN				S	**Sn**	**06 16 20.9**	**+0.5**
WHN				LR	LR		
	comp=Z,5μm,14.4s						
WHN				LR	LR		
	comp=Z,4μm,12.0s						
WHN				LR	LR		
	comp=Z,5μm,12.1s						
TGY	**Tagaytay City**	**9.97**	**188**	LR	LR	06 18 46.1	
	comp=Z,532nm,20.3s,baz=344,slow=38						
QIZ	**Qiongzhong**	**12.60**	**249**	P	**Pn**	**06 15 18.5**	**+0.4**
QIZ				S	**Sn**	**06 17 38.1**	**+3.2**
QIZ				LR	LR		
	comp=Z,600nm,15.3s						
QIZ				LR	LR		
	comp=Z,720nm,14.4s						
KSAR	**Wonju Array Be**	**14.19**	**18**	P	**Pn**	**06 15 35.5**	**-1.4**
KSAR	**Wonju Array Be**	**14.19**	**18**	Pn	**Pn**	**06 15 35.5**	**-1.4**
KSRS	**Korea Array**	**14.21**	**19**	Pn	**Pn**	**06 15 35.5**	**-1.6**
	comp=Z,0.2nm,0.3s,baz=200,slow=14,SNR=2.9						
GYA	**Guiyang**	**14.34**	**283**⇑	*i*P	**Pn**	**06 15 40.3**	**+1.2**
GYA				pP	P	06 15 46.0	+0.1
GYA				PP	**PnPn**	**06 15 51.6**	**+4.5**
GYA				S	**Sn**	**06 18 18.1**	**+0.8**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,110nm,4.2s						
GYA				LR	LR		
	comp=Z,1μm,13.0s						
GYA				LR	LR		
	comp=Z,1μm,13.3s						
GYA				LR	LR		
	comp=Z,2μm,13.6s						
XAN	**Xi'an**	**15.34**	**313**	P	**P**	**06 15 55.8**	**-1.1**
XAN				pP	pP	06 16 02.0	-2.0
XAN				sP	sP	06 16 06.1	-1.3
XAN				S	**Sn**	**06 18 35.8**	**-5.7**
XAN				pmax	pmax		
	comp=Z,10.0nm,0.8s						
XAN				pmax	pmax		
	comp=Z,96nm,3.9s						
XAN				LR	LR		
	comp=Z,540nm,13.6s						
XAN				LR	LR		
	comp=Z,940nm,13.6s						
XAN				LR	LR		
	comp=Z,1μm,13.6s						
BJI	**Beijing**	**16.76**	**344**	P	**P**	**06 16 11.3**	**-1.3**
BJI				S	**Sn**	**06 19 17.4**	**+1.6**
BJI				pmax	pmax		
	comp=Z,240nm,4.0s						
BJI				LR	LR		
	comp=Z,1μm,13.4s						
BJI				LR	LR		
	comp=Z,250nm,10.2s						
BJI				LR	LR		
	comp=Z,600nm,19.0s						
DAV	**Davao City (W)**	**17.18**	**169**	LR	LR	06 22 41.0	
	comp=Z,408nm,19.6s,baz=347,slow=36						
CD2	**Chengdu**	**17.79**	**297**	*e*P	**P**	**06 16 24.8**	**+0.7**
CD2				pP	sP	06 16 33.0	-1.6
CD2				sP	pP	06 16 36.8	+5.6
CD2				S	**Sn**	**06 19 42.3**	**+1.2**
CD2				pmax	p

HHC SS **SnSn** **06 20 33.0 +8.1**
HHC pmax pmax
comp=Z,13nm,1.2s
HHC pmax pmax
comp=Z,110nm,4.3s
HHC LR LR
comp=Z,1μm,12.9s
HHC LR LR
comp=Z,710nm,12.2s
HHC LR LR
comp=Z,1μm,13.9s
MYLDM Lahad Datu 19.11 192 ⇓P **Pn** **06 16 43.8 +4.1**
MYLDM Lahad Datu 19.11 192 *e*P **Pn** **06 16 39.4 -0.2**
comp=Z,77nm,1.4s
CN2 Changchun 19.88 7 *e*P **Pn** **06 16 51.0 +2.4**
MSHR Mys Shultsa 19.89 20 *ce*P **P** **06 16 46.1 -0.9**
LZH Lanzhou 19.93 311 *e*P **Pn** **06 16 50.5 +1.1**
LZH pP sP 06 16 57.8 -0.4
LZH sP pP 06 17 02.0 +7.2
LZH PP **PnPn** **06 17 09.6 +5.8**
LZH *e*S **S** **06 20 27.0 -3.7**
LZH sS sS 06 20 37.5 -4.6
LZH *e*SS **SnSn** **06 20 54.6 +7.2**
LZH pmax pmax
comp=Z,110nm,1.5s
LZH pmax pmax
comp=Z,260nm,4.8s
LZH LR LR
comp=Z,540nm,13.2s
LZH LR LR
comp=Z,740nm,12.5s
LZH LR LR
comp=Z,1μm,15.3s
TSM Tawau 20.09 193 ⇑P **P** **06 16 49.7 +0.2**
MDJ Mudanjiang 21.37 14 P P 06 16 51.8 -11
MDJ S **S** **06 20 53.1 -5.8**
MDJ pmax pmax
comp=Z,15nm,2.3s
MDJ pmax pmax
comp=Z,88nm,3.6s
MDJ LR LR
comp=N,120nm,16.9s
MDJ LR LR
comp=E,300nm,18.2s
MDJ LR LR
comp=Z,300nm,15.1s
USRK Ussuriysk Ar. 21.62 19 P **P** **06 17 04.1 -1.5**
comp=Z,1.6nm,0.6s,baz=191,slow=11,SNR=5.3
CHTO Chiang Mai 22.33 261 *e*P **P** **06 17 16.9 +3.3**
CHTO pmax pmax
comp=Z,29nm,1.4s
CHTO Chiang Mai 22.33 261 *e*P **P** **06 17 16.9 +3.3**
comp=Z,29nm,1.4s
CMAR Chiang Mai Arr 22.44 260 P **P** **06 17 15.4 +0.7**
comp=Z,2.0nm,0.8s,baz=59,slow=8.0,SNR=12
CMAR PcP **PcP** **06 21 09.4 +0.5**
comp=Z,1.0nm,0.6s,baz=52,slow=0.5,SNR=5.1
SBUM Sibu 23.57 206 ⇑P **P** **06 17 26.5 +0.2**
SBUM Sibu 23.57 206 *e*P **P** **06 17 26.3 0.0**
comp=Z,16nm,0.8s
GUMO Guam 23.74 112 LR LR 06 26 48.8
comp=Z,270nm,18.1s,baz=292,slow=37
GTA Gaotai 24.39 314 P **P** **06 17 35.3 +1.3**
GTA pP pP 06 17 39.8 -2.0
GTA sP sP 06 17 42.3 -2.7
GTA S **S** **06 21 54.4 +2.1**
GTA sS sS 06 22 02.3 -2.6
GTA pmax pmax
comp=Z,6.0nm,1.0s
GTA pmax pmax
comp=Z,90nm,5.0s
GTA LR LR
comp=Z,250nm,15.2s
GTA LR LR
comp=Z,600nm,15.3s
GTA LR LR
comp=Z,680nm,15.2s
HIA Hailar 25.25 356 *i* P **P** **06 17 39.8 -1.7**
HIA pmax pmax
comp=Z,4.0nm,0.7s
KSM Kuching 25.26 209 ⇑P **P** **06 17 42.6 +0.7**
KSM Kuching 25.26 209 *e*P **P** **06 17 42.6 +0.7**
comp=Z,97nm,1.9s
MTKI Muara Teweh, K 25.86 197 P **P** **06 17 51.2 +3.9**
KLR Kul'dur 26.21 14 P **P** **06 17 49.9 -0.4**
comp=Z,0.9nm,0.6s,baz=212,slow=6.6,SNR=4.1
KLR Kul'dur 26.21 14 *i* P **P** **06 17 51.4 +1.2**
SONM Songino Array 26.89 336 P **P** **06 17 55.0 -1.5**
comp=Z,14nm,0.7s,baz=150,slow=8.8,SNR=49
SONM ScP **ScP** **06 24 55.8 -1.1**
comp=Z,0.7nm,0.6s,baz=172,slow=2.9,SNR=6.9
SONM LR LR 06 29 28.5
comp=Z,421nm,21.7s,baz=162,slow=38
SONM Songino Array 26.89 336 P **P** **06 17 55.0 -1.5**
SONA1 Songino Array 26.90 336 *e*P **P** **06 17 55.7 -0.9**
YSS Yuzh-Sakhalins 28.12 31 *i* P **P** **06 18 07.0 -0.4**
YSS pmax pmax
comp=Z,11nm,1.6s
TLY Talaya 31.08 337 LR LR 06 32 04.1
comp=Z,247nm,21.1s,baz=140,slow=38
TLY Talaya 31.08 337 ⇑*e*P **P** **06 18 32.5 -1.1**
TLY pmax pmax
comp=Z,5.0nm,0.8s
MNSI Mandalling Nat 31.91 227 P **P** **06 18 42.4 +1.2**
comp=Z,18nm,1.1s,comp=Z,5μm
EDFI Ende, Flores 32.60 181 P **P** **06 18 47.2 -0.2**
comp=Z,42nm,0.7s
WMQ Urumqi 34.47 313 *e*P **P** **06 19 05.4 +2.0**
WMQ pP sP 06 19 11.9 -2.6
WMQ S **S** **06 24 25.4 -5.0**
WMQ pmax pmax
comp=Z,8.0nm,0.9s
WMQ pmax pmax
comp=Z,90nm,4.0s
WMQ LR LR
comp=Z,190nm,9.4s
WMQ LR LR
comp=Z,300nm,11.0s
WMQ LR LR
comp=Z,310nm,15.2s
MTN Manton Dam 37.67 166 *e*P **P** **06 19 30.3 -0.6**
comp=Z,124nm,1.8s
YAK Yakutsk 38.30 6 *i* P **P** **06 19 35.1 -0.6**
YAK pmax pmax
comp=Z,8.0nm,0.8s
MK01 Makanchi Array 39.12 316 *e*P **P** **06 19 42.5 -0.3**
MK01 *e*S **S** **06 25 38.2 -2.8**
MK31 Makanchi Array 39.13 316 *e*P **P** **06 19 43.1 +0.1**
MK31 Makanchi Array 39.13 316 *e*P **P** **06 19 43.1 +0.1**
MKAR Makanchi Array 39.13 316 P **P** **06 19 43.0 0.0**
comp=Z,2.6nm,0.6s,baz=104,slow=10.0,SNR=20
MKAR ScP **ScP** **06 25 37.7 -1.4**
comp=Z,1.1nm,0.8s,baz=100,slow=6.3,SNR=5.9
MKAR LR LR 06 37 26.5
comp=Z,359nm,18.0s,baz=107,slow=39
MKAR Makanchi Array 39.13 316 *ce*P **P** **06 19 43.0 0.0**
MKAR pmax pmax
comp=Z,3.0nm,0.6s
MKAR Makanchi Array 39.13 316 *e*P **P** **06 19 43.1 +0.1**
MAKZ Makanchi 39.34 316 *e*P **P** **06 19 44.6 -0.1**
MAKZ pmax pmax
comp=Z,23nm,1.4s
MAKZ Makanchi 39.34 316 *e*P **P** **06 19 44.6 -0.1**
comp=Z,23nm,1.4s
PDGK Podgornoye 39.95 309 P **P** **06 19 50.5 +0.7**
PDGK pmax pmax
comp=Z,22nm,0.9s
NDI New Delhi 40.46 287 *ex* **P** **06 19 50.0 -4.3**
ZAA0 Zalesovo Array 40.91 327 *e*P **P** **06 19 56.0 -1.6**
ZAA0 *e*P **P** **06 19 56.1 -1.4**
ZALV Zalesovo Beam 40.91 327 P **P** **06 19 56.1 -1.4**
comp=Z,6.4nm,0.7s,baz=110,slow=8.0,SNR=22
ZALV ScP **ScP** **06 25 43.6 -2.1**
comp=Z,0.5nm,0.3s,baz=123,slow=5.5,SNR=3.8
ZALV LR LR 06 38 07.0
comp=Z,417nm,18.9s,baz=70,slow=38
KSH Kashi 41.81 303 *e*P **P** **06 20 09.1 +3.7**
KSH *e*pP sP 06 20 17.0 +0.5
KSH *e*sP pP 06 20 19.8 +6.5
KSH S **S** **06 26 26.3 +4.7**
KSH SS **SS** **06 29 28.4 +0.3**
KSH ScS **ScS** **06 30 08.0 +1.1**
KSH pmax pmax
comp=Z,34nm,3.3s
KSH LR LR
comp=Z,280nm,6.8s
KSH LR LR
comp=Z,380nm,14.5s
KSH LR LR
comp=Z,310nm,17.6s
COEN Coen 42.94 149 *e*P **P** **06 20 16.0 +1.4**
comp=Z,55nm,0.6s
AAK Ala-Archa 43.39 307 *i* P **P** **06 20 16.7 -1.5**
AAK pmax pmax
comp=Z,5.0nm,0.9s
MNAS Manas 44.82 307 P **P** **06 20 31.5 +1.9**
MNAS pmax pmax
comp=Z,6.0nm,1.0s
MBWA Marble Bar 45.00 183 *e*P **P** **06 20 30.5 -0.5**
comp=Z,14nm,0.7s
WRAB Tennant Creek 45.27 164 *ce*P **P** **06 20 33.4 +0.2**
WRAB pmax pmax
comp=Z,31nm,0.9s
WRAB Tennant Creek 45.27 164 *e*P **P** **06 20 33.9 +0.7**
comp=Z,13nm,0.8s
WRA Warramunga Arr 45.28 164 P **P** **06 20 33.6 +0.3**
comp=Z,7.3nm,0.5s,baz=345,slow=8.7,SNR=66
WB2 Warramunga Arr 45.28 164 *e*P **P** **06 20 34.0 +0.8**
comp=Z,19nm,0.8s
KKAR Karatay Array 46.35 307 *e*P **P** **06 20 42.5 +0.9**
KKAR Karatay Array 46.35 307 *e*P **P** **06 20 42.5 +0.9**
TIXI Tiksi 47.78 3 LR LR 06 43 29.9
comp=Z,541nm,18.6s,baz=186,slow=39
TIXI Tiksi 47.78 3 *i* P **P** **06 20 51.0 -1.2**
TIXI pmax pmax
comp=Z,3.0nm,0.9s
TIXI Tiksi 47.78 3 *e*P **P** **06 20 51.2 -1.0**
comp=Z,6.5nm,0.8s
BRVK Borovoye 48.48 321 *ce*P **P** **06 20 58.1 +0.1**
BRVK pmax pmax
comp=Z,7.0nm,0.7s
BRVK Borovoye 48.48 321 *e*P **P** **06 20 57.6 -0.4**
comp=Z,9.8nm,1.1s
AS31 Alice Springs 48.75 166 *e*P **P** **06 21 01.6 +1.2**
comp=Z,4.7nm,1.0s
ASAR Alice Springs 48.75 166 P **P** **06 21 01.2 +0.9**
comp=Z,21nm,1.2s,baz=345,slow=6.7,SNR=41
ASAR PcP **PcP** **06 22 24.8 -0.4**
comp=Z,1.1nm,0.6s,baz=345,slow=3.5,SNR=4.0
ASAR LR LR 06 45 04.3
comp=Z,42nm,18.2s,baz=338,slow=40
AS01 Alice Springs 48.76 166 *e*P **P** **06 21 01.1 +0.6**
HNR Honiara 49.60 128 LR LR 06 40 22.1
comp=Z,72nm,19.3s,baz=290,slow=34
CTAO Charters Tower 49.70 150 *e*P **P** **06 21 09.6 +1.9**
CTAO pmax pmax
comp=Z,11nm,0.9s
CTAO Charters Tower 49.70 150 *e*P **P** **06 21 09.6 +1.9**
comp=Z,11nm,0.9s
NRIK Noril'sk 49.80 345 LR LR 06 44 13.1
comp=Z,350nm,18.2s,baz=134,slow=38
BILL Bilibino 51.47 20 *e*P **P** **06 21 20.6 +0.1**
BILL pmax pmax
comp=Z,3.0nm,1.2s
ABKAR Akbulak array 54.25 314 *e*P **P** **06 21 41.5 +0.2**
AKTO Aktyubinsk 55.57 316 LR LR 06 48 15.2
comp=Z,137nm,18.1s,slow=39
GEYT Alibeck 55.73 301 P **P** **06 21 53.3 +1.1**
comp=Z,1.9nm,0.3s,baz=354,slow=1.5,SNR=4.0
GEYT LR LR 06 50 01.8
comp=Z,198nm,19.0s,baz=80,slow=41
ARU Arti 55.82 323 *c* /P **P** **06 21 51.5 -1.0**
ARU *PP **sP** **06 22 01.4 -2.3**
ARU 06 22 49.7
ARU 06 23 54.5
ARU S **S** **06 29 36.7 -1.2**
ARU SS **SS** **06 33 22.1 -1.3**
ARU pmax pmax
comp=Z,2.0nm,0.6s
ARU Arti 55.82 323 *e*P **P** **06 21 52.4 -0.1**
comp=Z,5.6nm,0.9s
BBOO Buckleboo 58.05 166 *e*P **P** **06 22 09.6 +1.1**
comp=Z,36nm,0.9s
STKA Stephens Creek 58.60 161 P **P** **06 22 13.6 +1.3**
comp=Z,16nm,0.6s,baz=342,slow=7.0,SNR=31
STKA Stephens Creek 58.60 161 *e*P **P** **06 22 13.6 +1.3**
STKA pmax pmax
comp=Z,4.0nm,0.7s
STKA Stephens Creek 58.60 161 *e*P **P** **06 22 13.6 +1.3**
comp=Z,4.1nm,0.7s
DZM Mont Dzumac 62.81 133 LR LR 06 44 57.1
comp=Z,112nm,21.2s,baz=285,slow=31
KBZ Khabaz 66.35 309 P **P** **06 23 04.2 0.0**
comp=Z,2.4nm,0.9s,baz=124,slow=5.9,SNR=4.1
KBZ LR LR 06 57 18.8
comp=Z,114nm,18.1s,baz=57,slow=41
KIV Kislovodsk 66.45 309 *e*P **P** **06 23 03.7 -1.2**
KIV pmax pmax
comp=Z,5.0nm,1.0s
CAST Castle Rocks 66.85 29 *e*P **P** **06 23 07.5 +0.4**
comp=Z,3.0nm,0.6s
MLY Manley 67.21 27 *e*P **P** **06 23 10.5 +1.1**
comp=Z,3.9nm,1.0s
OBN Obninsk 68.23 322 *e*P **P** **06 23 15.4 -0.4**
OBN pmax pmax
comp=Z,4.0nm,0.8s
MDM Murphy Dome 68.27 27 *e*P **P** **06 23 16.5 +0.4**
comp=Z,28nm,2.0s
RND Reindeer 68.28 29 *e*P **P** **06 23 15.8 -0.4**
RND pmax pmax
comp=Z,7.0nm,0.9s
RND Reindeer 68.28 29 *e*P **P** **06 23 15.8 -0.4**
comp=Z,6.6nm,0.9s
ILAR Eielson Array 68.87 27 P **P** **06 23 19.9 +0.2**
comp=Z,0.4nm,0.5s,baz=268,slow=5.8,SNR=7.9
ILAR LR LR 06 56 30.5
comp=Z,62nm,18.1s,baz=258,slow=39
ILAR Eielson Array 68.87 27 P **P** **06 23 20.0 +0.2**
ARCES ARCESS Array B 70.04 338 P **P** **06 23 26.1 -0.7**
comp=Z,2.8nm,0.9s,baz=60,slow=5.3,SNR=3.5
ARCES LR LR 06 59 05.8
comp=Z,90nm,18.8s,baz=103,slow=40
FINES FINESS Array B 72.07 330 P **P** **06 23 38.9 -0.4**
comp=Z,1.4nm,0.7s,baz=90,slow=5.7,SNR=5.6
FINES LR LR 06 58 39.3
comp=Z,420nm,18.6s,baz=68,slow=39
DAWY Dawson 72.20 27 *e*P **P** **06 23 40.2 +0.2**
comp=Z,5.5nm,1.2s
AKASG Malin Array Be 73.64 319 P **P** **06 23 47.6 -1.1**
comp=Z,3.3nm,0.8s,baz=58,slow=6.6,SNR=5.6
AKASG LR LR 07 00 07.1
comp=Z,81nm,18.7s,baz=90,slow=39
KIEV Kiev 73.65 319 *i* P **P** **06 23 47.1 -1.7**
KIEV pmax pmax
comp=Z,2.0nm,0.9s
BRTR Keskin Array B 74.06 307 P **P** **06 23 51.8 +0.1**
comp=Z,4.5nm,0.8s,baz=101,slow=6.4,SNR=21
BRTR LR LR 07 02 29.2
comp=Z,31nm,18.3s,baz=78,slow=41
BR231 Keskin MP Arra 74.65 307 *e*P **P** **06 23 52.2 -2.9**
HFS Hagfors 78.17 331 LR LR 07 02 09.9
comp=Z,491nm,18.3s,baz=67,slow=38
NB2 NORSAR Subarra 78.81 332 P **P** **06 24 16.8 -1.2**
comp=Z,1.1nm,0.8s,baz=60,slow=5.6
NOA NORSAR Array B 78.81 332 P **P** **06 24 16.8 -1.2**
comp=Z,1.9nm,0.8s,baz=58,slow=5.5,SNR=6.1
NOA LR LR 07 02 43.6
comp=Z,241nm,18.3s,baz=75,slow=38
LAST Lasithi 81.75 305 *e*P **P** **06 24 33.1 -1.3**
YKA Yellowknife Ar 82.70 23 P **P** **06 24 37.9 -0.8**
comp=Z,1.5nm,0.7s,baz=311,slow=5.0,SNR=10
YKA LR LR 07 04 14.9
comp=Z,5.7nm,19.9s,baz=0.0,slow=38
GERES GERESS Array B 83.58 321 P **P** **06 24 43.0 -0.7**
comp=Z,0.6nm,0.2s,baz=56,slow=5.0,SNR=7.8
GERES LR LR 07 06 00.2
comp=Z,114nm,19.6s,baz=74,slow=39
GEA0 GERESS Array S 83.59 321 *e*P **P** **06 24 43.5 -0.3**
KMBO Kilima Mbogo 85.91 267 P **P** **06 24 57.1 +0.9**
comp=Z,1.3nm,0.3s,baz=45,slow=7.1,SNR=7.8
KMBO Kilima Mbogo 85.91 267 *i* P **P** **06 24 56.0 -0.3**
KMBO pmax pmax
comp=Z,1.0nm,0.3s
LON Longmire 88.88 38 *e*P **P** **06 25 09.9 +0.1**
LON Longmire 88.88 38 *e*P **P** **06 25 09.9 +0.1**
B08A Colville Reser 89.31 36 *e*P **P** **06 25 12.1 +0.3**
NEW Newport 90.54 35 P **P** **06 25 17.5 0.0**
comp=Z,3.9nm,0.9s,baz=336,slow=5.8,SNR=4.8
NEW Newport 90.54 35 *e*P **P** **06 25 17.9 +0.4**
NEW Newport 90.54 35 *e*P **P** **06 25 17.9 +0.4**
BMO Blue Mountains 92.54 38 *e*P **P** **06 25 27.2 +0.3**
ULM Lac du Bonnet 98.67 24 LR LR 07 14 41.7
comp=Z,41nm,18.1s,baz=300,slow=38
ESDC Sonseca Array 99.18 321 LR LR 07 16 02.4
comp=Z,49nm,19.7s,baz=345,slow=39
TORD Torodi Ar. Bea 111.20 296 PKiKP **PKiKP** **06 30 48.0 -1.9**
comp=Z,0.4nm,0.7s,baz=82,slow=1.8,SNR=3.0
CBRI Barrientos, No 145.16 27 *e*P **PKPbc** **06 31 52.9 -0.6**
BRRC Barranca, Sant 145.32 29 *e*P **PKPbc** **06 31 53.6 -0.2**
GIRC Giron, Santand 145.57 28 *e*P **PKPdf** **06 31 54.2 -0.4**
BARC Barichara 146.01 28 *e*P **PKPdf** **06 31 54.5 -1.1**
RUSC La Rusia 146.68 29 *e*P **PKPdf** **06 31 56.9 -0.1**
ROSC El Rosal 147.04 32 PKiPbc **PKPab** **06 32 00.7 -0.3**
comp=Z,1.7nm,0.3s,baz=279,slow=19,SNR=4.0
CHIC Chingaza 147.50 31 *e*P **PKPdf** **06 31 59.0 +0.7**
LPAZ La Paz 167.55 54 PKP **PKPdf** **06 32 23.7 +0.7**
comp=Z,1.9nm,0.9s,baz=341,slow=7.0,SNR=5.8

IDC 20 06:28:09.7±0.9, 31.12S×178.73W, h0km, mb3.6/3, mb1 3.9/3, mb1mx3.7/22, mbtmp3.6/3, Error ellipse: s-maj=36.9km s-min=31.8km az=78.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**42.45**	**268**	P	P	06 36 06.5	-0.1
	0.2nm,0.4s,baz=108,slow=7.6,SNR=3.1						
WRA	**Warramunga Arr**	**43.50**	**273**	P	P	06 36 15.3	+0.2
	0.2nm,0.4s,baz=112,slow=7.9,SNR=9.7						
VNDA	**Vanda**	**47.32**	**186**	P	P	06 36 44.4	-0.3
	0.9nm,0.3s,baz=5.5,slow=6.0,SNR=13						
KURBB	**Kurchatov Arra**	**121.12**	**313**	PKP	PKPdf	06 47 02.4	-1.7
	0.5nm,0.4s,baz=89,slow=1.6,SNR=5.8						
BVAR	**Borovoye Array**	**126.47**	**315**	PKP	PKPdf	06 47 13.5	-0.8
	0.7nm,0.4s,baz=72,slow=1.9,SNR=4.0						
FINES	**FINESS Array B**	**145.59**	**339**	PKPbc	PKPab	06 47 49.6	-0.1
	2.6nm,0.5s,baz=38,slow=4.2,SNR=30						
NOA	**NORSAR Array B**	**149.36**	**351**	PKPbc	PKPbc	06 48 00.5	+0.5
	0.5nm,0.5s,baz=15,slow=4.1,SNR=3.4						
HFS	**Hagfors**	**149.81**	**348**	PKPbc	PKPbc	06 48 00.9	-0.1
	0.6nm,0.5s,baz=95,slow=7.7,SNR=3.2						
AKASG	**Malin Array Be**	**151.48**	**321**	PKPbc	PKPbc	06 48 04.4	-0.9
	0.3nm,0.4s,baz=54,slow=1.5,SNR=3.4						
BRTR	**Keskin Array B**	**152.37**	**297**	PKPbc	PKPbc	06 48 06.9	-1.0
	0.2nm,0.3s,baz=142,slow=3.5,SNR=3.6						
TORD	**Torodi Ar. Bea**	**162.11**	**181**	PKPab	PKPab	06 49 00.6	+0.5
	0.2nm,0.3s,baz=163,slow=4.5,SNR=4.8						

*NEIC **20** 06:29:36.3, 35.29S×177.81E, h308km, MG4.2(WEL), After WEL.*

WEL 20 06:29:51.7±0.5, 36.19S×177.71E, h214km±3km, ML3.8/13, 2C-4D, Error ellipse: s-maj=6.3km s-min=5.2km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**1.46**	**161**	Pn	Pn	06 30 26.2	+0.1
MXZ	**Matakaoa Point**	**1.46**	**161**	PN	Pn	06 30 26.2	+0.1
MXZ				*e*SN	S	06 30 52.3	-0.7
HAZ	**Te Kaha**	**1.57**	**178**	PN	Pn	06 30 27.3	+0.2
HAZ				*e*SN	S	06 30 54.8	+0.1
HAZ				AML	AML	06 31 03.5	
PKGZ	**Pakihiroa**	**1.72**	**170**	PN	Pn	06 30 28.9	+0.3
WMGZ	**Waiomatatini S**	**1.73**	**161**	AML	AML	06 30 59.3	
WMGZ				AML	AML	06 31 00.4	
RUGZ	**Raukumara Rang**	**1.78**	**181**	PN	Pn	06 30 28.9	-0.2
PUZ	**Puketiti**	**1.93**	**167**	Pn	Pn	06 30 30.5	0.0
PUZ	**Puketiti**	**1.93**	**167**	⇑PN	Pn	06 30 30.5	0.0
PUZ				*e*SN	S	06 30 59.8	-0.9
TWGZ	**Tauwhareparae**	**2.00**	**174**	Pn	Pn	06 30 32.0	+0.8
TWGZ	**Tauwhareparae**	**2.00**	**174**	PN	Pn	06 30 31.9	+0.7
TWGZ				AML	AML	06 31 05.5	
TWGZ				AML	AML	06 31 05.8	
URZ	**Urewera**	**2.12**	**193**	Pn	Pn	06 30 32.8	+0.4
URZ	**Urewera**	**2.12**	**193**	⇓PN	Pn	06 30 32.8	+0.4
URZ				SN	S	06 31 04.7	+0.7
URZ				AML	AML	06 31 07.4	
MWZ	**Matawai**	**2.15**	**184**	Pn	Pn	06 30 33.0	+0.3
MWZ	**Matawai**	**2.15**	**184**	PN	Pn	06 30 33.0	+0.3
MWZ				AML	AML	06 31 18.6	
TKGZ	**Te Karaka**	**2.25**	**177**	Pn	Pn	06 30 33.8	+0.1
TKGZ	**Te Karaka**	**2.25**	**177**	PN	Pn	06 30 33.8	+0.1
RAGZ	**Rawiri**	**2.32**	**186**	Pn	Pn	06 30 35.1	+0.6
RAGZ	**Rawiri**	**2.32**	**186**	PN	Pn	06 30 35.1	+0.6
RAGZ				AML	AML	06 31 10.8	
RAGZ				AML	AML	06 31 13.2	
CNGZ	**Carnagh Statio**	**2.33**	**170**	Pn	Pn	06 30 34.9	+0.4
CNGZ	**Carnagh Statio**	**2.33**	**170**	PN	Pn	06 30 34.9	+0.4
MUGZ	**Murupara**	**2.41**	**198**	PN	Pn	06 30 35.8	+0.4
RIGZ	**Rimuhau**	**2.52**	**179**	⇑PN	Pn	06 30 36.5	-0.1
RIGZ				AML	AML	06 31 12.7	
RIGZ				AML	AML	06 31 14.2	
SNGZ	**Shannon Statio**	**2.61**	**186**	Pn	Pn	06 30 37.7	+0.1
SNGZ	**Shannon Statio**	**2.61**	**186**	PN	Pn	06 30 37.7	+0.1
SNGZ				AML	AML	06 31 18.0	
SNGZ				AML	AML	06 31 26.4	
KNZ	**Kokohu**	**2.83**	**181**	Pn	Pn	06 30 39.5	-0.5
KNZ	**Kokohu**	**2.83**	**181**	⇓PN	Pn	06 30 39.5	-0.5
MRHZ	**Matea Rd**	**2.83**	**201**	PN	Pn	06 30 40.2	+0.1
WHHZ	**Waihua**	**2.91**	**187**	PN	Pn	06 30 41.1	+0.2
WHHZ				AML	AML	06 31 21.4	
WHHZ				AML	AML	06 31 23.8	
MHGZ	**Mahia Peninsul**	**2.97**	**177**	Pn	Pn	06 30 41.3	-0.3
MHGZ	**Mahia Peninsul**	**2.97**	**177**	PN	Pn	06 30 41.3	-0.3
ARHZ	**Aropaoanui**	**3.12**	**190**	Pn	Pn	06 30 43.4	0.0
ARHZ	**Aropaoanui**	**3.12**	**190**	PN	Pn	06 30 43.4	0.0
ARHZ				AML	AML	06 31 26.2	
ARHZ				AML	AML	06 31 26.5	
BKZ	**Black Stump Fm**	**3.13**	**198**	Pn	Pn	06 30 43.2	-0.3
BKZ	**Black Stump Fm**	**3.13**	**198**	PN	Pn	06 30 43.2	-0.3
MCHZ	**McNeill Hill**	**3.35**	**194**	Pn	Pn	06 30 42.6	-3.4
KWHZ	**Kaweka Forest**	**3.39**	**197**	⇓PN	Pn	06 30 46.2	-0.4
KWHZ				AML	AML	06 31 32.8	
KWHZ				AML	AML	06 31 45.0	
WNVZ	**Wahianoa**	**3.55**	**207**	Pn	Pn	06 30 48.4	-0.3
WNVZ	**Wahianoa**	**3.55**	**207**	PN	Pn	06 30 48.3	-0.3
KRHZ	**Kereru**	**3.61**	**197**	PN	Pn	06 30 48.1	-1.1
KAHZ	**Kahuranaki**	**3.66**	**190**	Pn	Pn	06 30 49.2	-0.6
KAHZ	**Kahuranaki**	**3.66**	**190**	PN	Pn	06 30 49.2	-0.6
PXZ	**Pawanui**	**3.90**	**190**	Pn	Pn	06 30 51.3	-1.3
PXZ	**Pawanui**	**3.90**	**190**	⇓PN	Pn	06 30 51.3	-1.3
PNHZ	**Pukenui**	**3.91**	**197**	Pn	Pn	06 30 51.6	-1.1
PNHZ	**Pukenui**	**3.91**	**197**	PN	Pn	06 30 51.6	-1.1
TSZ	**Takapari Road**	**4.10**	**199**	Pn	Pn	06 30 53.5	-1.6
TSZ	**Takapari Road**	**4.10**	**199**	PN	Pn	06 30 53.5	-1.7
PRHZ	**Porangahau**	**4.16**	**191**	Pn	Pn	06 30 54.4	-1.5
PRHZ	**Porangahau**	**4.16**	**191**	PN	Pn	06 30 54.4	-1.5
ANWZ	**Angora Road**	**4.38**	**192**	PN	Pn	06 30 57.0	-1.5
BFZ	**Birch Farm**	**4.63**	**194**	Pn	Pn	06 30 59.8	-1.9
BFZ	**Birch Farm**	**4.63**	**194**	PN	Pn	06 30 59.8	-1.9
MRZ	**Mangatainoka R**	**4.77**	**200**	Pn	Pn	06 31 00.9	-2.5
MRZ	**Mangatainoka R**	**4.77**	**200**	PN	Pn	06 31 00.9	-2.5
TIWZ	**Tintock**	**4.80**	**197**	Pn	Pn	06 31 01.7	-2.1
TIWZ	**Tintock**	**4.80**	**197**	PN	Pn	06 31 01.7	-2.1
TIWZ				AML	AML	06 32 00.7	
OGWZ	**Otaki Gorge**	**5.03**	**203**	Pn	Pn	06 31 04.3	-2.5
OGWZ	**Otaki Gorge**	**5.03**	**203**	PN	Pn	06 31 04.3	-2.5
OGWZ				AML	AML	06 32 05.6	
OGWZ				AML	AML	06 32 07.7	
TMWZ	**Te Maipa**	**5.11**	**196**	Pn	Pn	06 31 03.7	-4.1

*KRNET **20** 07:01:20.6±0.1, 40.38N×70.08E, mb2.6*
*NNC **20** 07:01:26.8±1.5, 40.55N×70.30E, h16km±18km, mb3.0, mpv2.6, Error ellipse: s-maj=12.9km s-min=11.6km az=28.0*

ISC 20 07:01:23.3±1.3, 40.45N±0.04×70.27E±0.06, h6km±15km, n7, σ1s09/12, 11C-3D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTK	**Batken**	**0.58**	**133**	⇓*i*P	**Pg**	**07 01 34.0**	**-0.4**
	baz=119						
BTK				⇓*i*S	**Sg**	**07 01 42.5**	**+0.6**
	baz=119						
DRK	**Karamyk**	**1.53**	**129**	⇑*i*P	**Pn**	**07 01 50.2**	**-1.2**
	baz=123						
DRK				⇑*i*S	**Sb**	**07 02 13.1**	**+1.2**
	baz=123						
ARK	**Arkit**	**1.86**	**43**	⇑*i*P	**Pb**	**07 01 56.9**	**-0.8**
	baz=45						
ARK				⇑*i*S	**Sg**	**07 02 24.3**	**+1.3**
	baz=45						

DZET	**Dzherino**	**1.98**	**215**	⇑Pn	**Pg**	**07 02 01.4**	**+0.1**
	3.6nm,0.5s							
DZET				⇑S	**Sg**	**07 02 27.5**	**+0.5**
	45nm,0.6s							
MNAS	**Manas**	**2.64**	**39**	⇑*i*P	**Pn**	**07 02 08.1**	**+1.6**
	baz=40							
MNAS				⇑*i*S	**Sb**	**07 02 43.3**	**-0.5**
	baz=40							
MNAS	**Manas**	**2.64**	**39**	⇑Pg	**Pg**	**07 02 13.4**	**-0.4**
	1.0nm,0.5s							
MNAS				⇓Lg	Lg	07 02 48.1		
	9.7nm,0.3s							
KK31	**Karatay Array**	**2.66**	**4**	⇑Pg	**Pg**	**07 02 13.3**	**-0.8**
	1.4nm,0.3s,baz=185,slow=14,SNR=8.0							
KK31				⇑Lg	Lg	07 02 48.9		
	2.7nm,0.4s,baz=188,slow=33,SNR=15							

IDC ***20*** *07:23:08.0±3.2, 30.56S×177.67W, h0km, mb4.0/3, mb1 4.1/4, mb1mx3.8/24, mbtmp4.0/4, ML3.3/1, Error ellipse: s-maj=70.6km s-min=25.0km az=110.0*

ISC 20 07:23:11.3±2.4, 30°55S±0.08×177°6W±0.4, h33km, n12, σ2°25/17, mb4.1/3, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.32**	**348**	Pn	**Pn**	**07 23 33.9**	**+0.5**
	153nm,0.3s,baz=74,slow=20,SNR=12						
RAO				Sn	**Sn**	**07 23 46.4**	**-3.5**
	436nm,0.3s,baz=80,slow=14,SNR=15						
RAO				LR	LR	07 24 02.5	
	comp=Z,391nm,19.5s,baz=139,slow=41						
HAZ	**Te Kaha**	**8.15**	**207**	*e*PN	**Pn**	**07 25 08.0**	**+0.8**
HAZ				*e*SN	**Sn**	**07 26 41.3**	**+3.2**
PUZ	**Puketiti**	**8.25**	**203**	PN	**Pn**	**07 25 08.0**	**-0.7**
PUZ				*e*SN	**Sn**	**07 26 39.7**	**-1.1**
RUGZ	**Raukumara Rang**	**8.37**	**207**	*e*PN	**Pn**	**07 25 10.5**	**+0.1**
TWGZ	**Tauwhareparae**	**8.44**	**204**	*e*PN	**Pn**	**07 25 10.6**	**-0.7**
URZ	**Urewera**	**8.85**	**208**	Pn	**Pn**	**07 25 16.1**	**-0.7**
	0.4nm,0.3s,baz=117,slow=6.8,SNR=5.9						
URZ				Sn	**Sn**	**07 26 53.5**	**-1.8**
	1.3nm,0.3s,baz=194,slow=23,SNR=8.1						
URZ	**Urewera**	**8.85**	**208**	*e*PN	**Pn**	**07 25 16.5**	**-0.3**
URZ				SN	**Sn**	**07 26 55.6**	**+0.2**
BFZ	**Birch Farm**	**11.28**	**205**	*e*SN	**Sn**	**07 27 49.1**	**-6.0**
STKA	**Stephens Creek**	**34.79**	**257**	P	**P**	**07 30 00.7**	**+1.8**
	2.1nm,0.5s,baz=100,slow=12,SNR=4.9						
ASAR	**Alice Springs**	**43.45**	**267**	P	**P**	**07 31 12.4**	**+1.0**
	0.5nm,0.5s,baz=103,slow=7.7,SNR=11						
WRA	**Warramunga Arr**	**44.45**	**272**	P	**P**	**07 31 19.7**	**+0.2**
	1.4nm,0.4s,baz=111,slow=8.1,SNR=11						
FINES	**FINESS Array B**	**145.40**	**340**	PKPbc	**PKPab**	**07 42 46.2**	**+0.9**
	0.5nm,0.3s,baz=62,slow=4.5,SNR=4.3						

IDC ***20*** *07:32:18.6±2.2, 19.95S×177.44W, h354km±25km, mb3.6/10, mb1 3.7/13, mb1mx3.5/42, mbtmp4.4/13, Error ellipse: s-maj=27.1km s-min=13.3km az=141.0*

ISC 20 07:32:17.5±0.7, 19.99S±0.10×177.3W±0.1, h350km, n20, σ2°00/23, mb4.0/10, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**8.02**	**42**	P	**Pn**	**07 34 13.9**	**+1.8**
	5.8nm,0.3s,baz=151,slow=4.9,SNR=8.2						
AFI				S	**S**	**07 35 41.4**	**-4.1**
	1.8nm,0.3s,baz=284,slow=19,SNR=2.6						
DZM	**Mont Dzumac**	**15.33**	**259**	P	**P**	**07 35 37.0**	**+1.1**
	0.7nm,0.3s,baz=78,slow=19,SNR=9.7						
HAZ	**Te Kaha**	**18.21**	**193**	*e*PN	**P**	**07 36 09.2**	**+2.6**
RUGZ	**Raukumara Rang**	**18.44**	**193**	*e*PN	**P**	**07 36 12.1**	**+3.0**
TWGZ	**Tauwhareparae**	**18.58**	**192**	*e*PN	**P**	**07 36 11.6**	**+1.0**
TWGZ				*e*SN	**S**	**07 39 22.9**	**-1.0**
URZ	**Urewera**	**18.84**	**194**	P	**P**	**07 36 13.6**	**+0.3**
	2.5nm,0.3s,baz=357,slow=17,SNR=24						
URZ				S	**S**	**07 39 23.3**	**-5.4**
	0.2nm,0.3s,baz=343,slow=19,SNR=2.4						
URZ	**Urewera**	**18.84**	**194**	*e*PN	**P**	**07 36 14.0**	**+0.7**
RAGZ	**Rawiri**	**19.00**	**193**	*e*PN	**P**	**07 36 16.8**	**+1.7**
CTA	**Charters Tower**	**34.21**	**263**	P	**P**	**07 38 31.3**	**-0.3**
	10.0nm,0.4s,baz=90,slow=10.0,SNR=18						
STKA	**Stephens Creek**	**38.61**	**244**	P	**P**	**07 39 08.6**	**+0.3**
	4.5nm,0.5s,baz=90,slow=11,SNR=9.0						
ASAR	**Alice Springs**	**45.29**	**256**	P	**P**	**07 40 01.4**	**-0.6**
	6.6nm,0.6s,baz=95,slow=8.3,SNR=11.4						
WRA	**Warramunga Arr**	**45.34**	**261**	P	**P**	**07 40 01.1**	**-1.2**
	1.0nm,0.3s,baz=97,slow=7.3,SNR=35						
FITZ	**Fitzroy Crossi**	**53.76**	**262**	P	**P**	**07 41 04.7**	**-0.6**
	0.9nm,0.5s,baz=72,slow=9.6,SNR=4.1						
MJAR	**Matsushiro Arr**	**70.20**	**323**	P	**P**	**07 42 52.6**	**-0.7**
	2.5nm,0.6s,baz=165,slow=6.1,SNR=3.2						
PETK	**Petropavlovsk-**	**75.95**	**345**	P	**P**	**07 43 27.0**	**+0.7**
	1.8nm,0.6s,baz=116,slow=6.6,SNR=2.6						
SEY	**Seymchan**	**86.03**	**347**	P	**P**	**07 44 18.9**	**+0.1**
	1.2nm,0.5s,baz=124,slow=10,SNR=5.6						
TXAR	**Lajitas Array**	**86.22**	**57**	P	**P**	**07 44 22.7**	**+2.0**
	0.6nm,0.7s,baz=224,slow=6.3,SNR=9.6						
ILAR	**Eielson Array**	**87.67**	**13**	P	**P**	**07 44 25.7**	**-0.9**
	0.4nm,0.7s,baz=230,slow=4.6,SNR=4.8						
BRTR	**Keskin Array B**	**146.99**	**313**	PKPbc	**PKPbc**	**07 51 19.6**	**-0.2**
	1.1nm,0.7s,baz=123,slow=4.6,SNR=4.8						
GERES	**GERESS Array B**	**149.89**	**345**	PKPbc	**PKPbc**	**07 51 26.9**	**+0.1**
	0.7nm,0.6s,baz=5.7,slow=1.3,SNR=4.5						

ISCJB ***20*** *07:38:36.3±0.5, 21.63N±0.09×144.25E±0.09, h114km, mb4.4/35, Error ellipse: s-maj=12.3km s-min=11.7km az=31.1*

IDC ***20*** *07:38:43.2±4.1, 21.71N×144.17E, h161km±37km, mb4.0/22, mb1 4.1/24, mb1mx3.9/58, mbtmp4.4/24, Error ellipse: s-maj=17.3km s-min=12.4km az=86.0*

NEIC ***20*** *07:38:43.6±2.0, 21.70N×144.17E, h165km±18km, mb4.4/13, Error ellipse: s-maj=9.6km s-min=8.1km az=128.0*

ISC 20 07:38:36.6±1.0, 21°4N±0.2×144°3E±0.1, h114km, n43, σ1°91/44, mb4.5/34, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**15.98**	**342**	P	**Pn**	**07 42 14.2**	**-0.6**
	1.0nm,0.3s,baz=162,slow=10,SNR=8.1						
MAT	**Matsushiro**	**15.98**	**342**	P	**Pn**	**07 42 15.5**	**+0.7**
JNU	**Nakatsue**	**16.67**	**317**	P	**P**	**07 42 25.0**	**+1.2**
	1.6nm,0.3s,baz=86,slow=5.9,SNR=11						
SSLB	**Suanglung**	**21.70**	**281**	*e*P	**P**	**07 43 20.7**	**+2.1**
	15nm,0.6s						
USRK	**Ussuriysk Ar.**	**24.91**	**339**	P	**P**	**07 43 48.8**	**0.0**
	2.2nm,0.6s,baz=140,slow=8.3,SNR=5.6						
KLR	**Kul'dur**	**29.50**	**343**	P	**P**	**07 44 29.9**	**+0.1**
	14nm,0.5s,baz=164,slow=11,SNR=55						
SONM	**Songino Array**	**40.23**	**320**	P	**P**	**07 46 02.0**	**-0.1**
	2.0nm,0.5s,baz=136,slow=7.5,SNR=16						
SEY	**Seymchan**	**41.84**	**6**	P	**P**	**07 46 15.8**	**+0.9**
	3.5nm,0.8s,baz=156,slow=7.9,SNR=7.7						
WRA	**Warramunga Arr**	**42.26**	**194**	P	P	07 46 22.5	+3.7
	0.7nm,0.3s,baz=16,slow=8.9,SNR=19						
ASAR	**Alice Springs**	**45.96**	**193**	P	P	07 46 51.5	+3.2
	0.3nm,0.5s,baz=10,slow=7.5,SNR=6.7						
LSA	**Lhasa**	**48.33**	**291**	P	**P**	**07 47 07.4**	**+0.1**
	4.6nm,0.4s						
ZALV	**Zalesovo Beam**	**55.08**	**322**	P	**P**	**07 47 55.3**	**-1.3**
	2.3nm,0.3s,baz=102,slow=7.4,SNR=7.2						
ZALV				PcP	**PcP**	**07 48 55.8**	**-0.8**
	1.5nm,0.5s,baz=98,slow=5.1,SNR=4.0						
MKAR	**Makanchi Array**	**55.66**	**313**	P	**P**	**07 48 00.9**	**0.0**
	3.7nm,0.6s,baz=91,slow=9.6,SNR=40						
MKAR				PcP	**PcP**	**07 48 58.9**	**-0.2**
	1.9nm,0.6s,baz=81,slow=6.8,SNR=7.9						
KURK	**Kurchatov**	**58.40**	**317**	*e*P	**P**	**07 48 19.1**	**-0.9**
	32nm,0.7s						
KURK				P	**P**	**07 48 20.0**	**-0.1**
KURBB	**Kurchatov Arra**	**58.45**	**317**	P	**P**	**07 48 20.0**	**-0.4**
	10nm,0.5s,baz=93,slow=7.7,SNR=82						
NRIK	**Noril'sk**	**58.62**	**340**	P	**P**	**07 48 19.9**	**-1.3**
	3.8nm,0.7s,baz=142,slow=7.3,SNR=4.9						
PPLA	**Purkeypile**	**59.11**	**29**	*e*P	**P**	**07 48 25.5**	**+0.6**
BPAW	**Bear Paw Mtn.**	**59.92**	**27**	*e*P	**P**	**07 48 31.2**	**+0.9**
	1.4nm,0.7s						
TRF	**Thorofare Moun**	**60.07**	**28**	*e*P	**P**	**07 48 31.8**	**+0.2**
	5.2nm,0.8s						
ILAR	**Eielson Array**	**61.79**	**27**	P	**P**	**07 48 42.4**	**-0.6**
	3.6nm,0.7s,baz=258,slow=5.6,SNR=53						
BVAR	**Borovoye Array**	**63.57**	**320**	P	**P**	**07 48 54.7**	**-0.3**
	4.5nm,0.4s,baz=88,slow=7.2,SNR=21						
BVAR				PcP	**PcP**	**07 49 29.2**	**-1.2**
	1.4nm,0.5s,baz=80,slow=6.1,SNR=3.8						
EGAK	**Eagle**	**64.23**	**27**	*e*P	**P**	**07 48 59.5**	**+0.4**
	2.6nm,0.7s						
DAWY	**Dawson**	**64.95**	**28**	*e*P	**P**	**07 49 04.7**	**+0.8**
	2.8nm,0.8s						
INK	**Inuvik**	**67.39**	**24**	P	**P**	**07 49 19.7**	**+0.5**
	4.5nm,0.6s,baz=289,slow=7.9,SNR=11						
ABKAR	**Akbulak array**	**70.48**	**316**	*e*P	**P**	**07 49 38.2**	**-0.5**
	5.4nm,0.5s						
AKTO	**Aktyubinsk**	**71.49**	**318**	P	**P**	**07 49 43.4**	**-1.4**
	1.8nm,0.6s,baz=92,slow=7.8,SNR=6.8						
YKA	**Yellowknife Ar**	**76.19**	**28**	P	**P**	**07 50 12.4**	**+0.5**
	3.6nm,0.7s,baz=292,slow=5.6,SNR=15						
SPITS	**Spitsbergen Ar**	**76.28**	**350**	P	**P**	**07 50 12.1**	**-0.2**
	4.9nm,0.9s,baz=97,slow=6.1,SNR=4.8						
ARCES	**ARCESS Array B**	**79.51**	**342**	P	**P**	**07 50 29.8**	**-0.5**
	3.0nm,0.5s,baz=73,slow=7.4,SNR=29						
BMO	**Blue Mountains**	**80.86**	**45**	*e*P	**P**	**07 50 39.2**	**+1.1**
	7.9nm,1.4s						
CMB	**Columbia Colle**	**81.08**	**53**	*e*P	**P**	**07 50 40.3**	**+1.0**
	14nm,0.9s						
MFID	**Camas Ranch**	**82.38**	**46**	*e*P	**P**	**07 50 47.4**	**+1.2**
	4.2nm,0.9s						
KBZ	**Khabaz**	**83.32**	**314**	P	**P**	**07 50 51.4**	**+0.5**
	7.9nm,0.8s,baz=90,slow=4.5,SNR=17						
FINES	**FINESS Array B**	**83.88**	**335**	P	**P**	**07 50 52.1**	**-1.2**
	6.7nm,0.5s,baz=70,slow=5.0,SNR=61						
HWUT	**Hardware Ranch**	**85.99**	**47**	*e*P	**P**	**07 51 05.7**	**+1.2**
	8.3nm,1.4s						
SUMG	**Summit**	**86.22**	**1**	*e*P	**P**	**07 51 05.8**	**+0.4**
	3.9nm,0.5s						
PDAR	**Pinedale Array**	**86.83**	**45**	P	**P**	**07 51 09.2**	**+0.5**
	0.2nm,0.4s,baz=242,slow=3.2,SNR=4.4						
NB2	**NORSAR Subarra**	**89.58**	**339**	P	**P**	**07 51 19.4**	**-1.7**
	comp=Z,1.5nm,0.7s,baz=44,slow=5.1						
NOA	**NORSAR Array B**	**89.58**	**339**	P	**P**	**07 51 19.1**	**-2.0**
	comp=Z,1.0nm,0.6s,baz=46,slow=4.9,SNR=6.4						
TXAR	**Lajitas Array**	**97.34**	**55**	P	Pdif	07 51 58.2	+0.6
	comp=Z,0.1nm,0.5s,baz=265,slow=4.3,SNR=3.3						
TORD	**Torodi Ar. Bea**	**129.74**	**310**	PKP	**PKPdf**	**07 57 33.5**	**+0.3**
	comp=Z,0.7nm,0.4s,baz=32,slow=1.4,SNR=17						
PLCA	**Paso Flores**	**144.78**	**131**	PKPbc	**PKPdf**	**07 58 01.9**	**+1.6**
	comp=Z,2.2nm,0.5s,baz=271,slow=4.4,SNR=9.0						
LPAZ	**La Paz**	**148.89**	**86**	PKPbc	**PKPab**	**07 58 14.4**	**-2.4**
	comp=Z,2.7nm,0.5s,baz=325,slow=1.8,SNR=19						

IDC ***20*** *07:43:18.4±1.2, 7.45N×91.83E, h0km, mb3.8/8, mb1 4.0/10, mb1mx3.7/58, mbtmp3.9/10, ML4.2/2, MS2.9/2, Ms1 3.0/2, ms1mx2.6/45, Error ellipse: s-maj=37.6km s-min=17.4km az=58.0*

ISCJB ***20*** *07:43:19.7±0.8, 7.4N±0.1×91.8E±0.1, h24km, mb3.7/8, Error ellipse: s-maj=16.9km s-min=13.9km az=136.0*

ISC 20 07:43:21.9±0.9, 7.4N±0.1×91.8E±0.1, h24km, n10, σ0°50/10, mb3.7/8, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PALK	**Pallekele**	**11.01**	**270**	Pn	**Pn**	**07 45 57.7**	**-0.4**
	2.9nm,0.3s,baz=116,slow=12,SNR=12						
PALK				LR	LR	07 49 37.4	
	comp=Z,72nm,20.2s,baz=116,slow=34						
CMAR	**Chiang Mai Arr**	**12.97**	**32**	Pn	**Pn**	**07 46 24.5**	**-0.3**
	0.3nm,0.3s,baz=230,slow=14,SNR=11						
CMAR				LR	LR	07 51 56.2	
	comp=Z,49nm,18.9s,baz=230,slow=40						
MKAR	**Makanchi Array**	**40.06**	**350**	P	**P**	**07 50 55.1**	**-0.1**
	0.9nm,0.8s,baz=176,slow=8.4,SNR=4.7						
FITZ	**Fitzroy Crossi**	**41.95**	**128**	P	**P**	**07 51 11.1**	**0.0**
	3.8nm,0.9s,baz=240,slow=4.5,SNR=4.6						
SONM	**Songino Array**	**42.13**	**15**	P	**P**	**07 51 12.4**	**0.0**
	2.3nm,0.7s,baz=194,slow=8.9,SNR=12						
KURBB	**Kurchatov Arra**	**44.45**	**348**	P	**P**	**07 51 31.1**	**+0.2**
	0.6nm,0.5s,baz=173,slow=7.5,SNR=6.8						
ZALV	**Zalesovo Beam**	**46.72**	**354**	P	**P**	**07 51 48.0**	**-0.8**
	0.5nm,0.4s,baz=177,slow=7.2,SNR=2.9						
BVAR	**Borovoye Array**	**48.69**	**343**	P	**P**	**07 52 05.0**	**+0.9**
	0.3nm,0.4s,baz=131,slow=8.4,SNR=2.4						
WRA	**Warramunga Arr**	**49.92**	**124**	P	**P**	**07 52 14.1**	**0.0**
	0.4nm,0.6s,baz=305,slow=8.7,SNR=11						
ASAR	**Alice Springs**	**51.44**	**128**	P	**P**	**07 52 25.7**	**+0.2**
	0.5nm,0.8s,baz=310,slow=8.1,SNR=5.1						

ISCJB ***20*** *07:43:42.5±1.0, 32.66N±0.07×141.01E±0.09, h48km, mb3.8/3, Error ellipse: s-maj=12.0km s-min=9.3km az=143.0*

IDC ***20*** *07:43:42.3±1.2, 32.16N×139.59E, h0km, mb3.8/3, mb1 4.0/4, mb1mx3.5/60, mbtmp3.7/4, ML3.2/1, Error ellipse: s-maj=83.5km s-min=18.4km az=95.0*

JMA ***20*** *07:43:44.4±0.2, 32.93N×141.00E, h22km, M3.0*

ISC 20 07:43:45.6±1.4, 32.7N±0.1×140.95E±0.09, h48km, n13, σ1°84/15, mb4.0/3, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ2	**Mitsune**	**1.02**	**291**	P	**Pn**	**07 44 03.0**	**-0.6**
JHCJ	**Hachijojimakas**	**1.02**	**289**	P	**Pn**	**07 44 02.8**	**-0.8**
JHCJ				*e*S	**Sn**	**07 44 15.7**	**-1.2**
JHJ	**Hachijo jima 2**	**1.05**	**291**	Pn	**Pn**	**07 44 03.0**	**-0.9**
	74nm,0.3s,baz=325,slow=23,SNR=42						
JHJ				Sn	**Sn**	**07 44 14.5**	**-3.0**
	105nm,0.3s,baz=96,slow=22,SNR=7.7						
BSO1	**Boso 1**	**1.91**	**1**	P	**Pn**	**07 44 13.7**	**-1.5**
BSO3	**Boso 3**	**2.09**	**350**	P	**Pn**	**07 44 16.6**	**-1.3**
BSO4	**Boso 4**	**2.30**	**347**	P	**Pn**	**07 44 19.9**	**-1.0**
JIM2	**Oshima 3**	**2.34**	**328**	P	**Pn**	**07 44 21.2**	**-0.4**
KTJJ	**Kamata 2**	**2.69**	**325**	P	**Pn**	**07 44 26.0**	**-0.3**
KTJJ				S	**Sn**	**07 44 57.0**	**-0.6**
TK04	**Tokai 4**	**3.05**	**303**	P	**Pn**	**07 44 32.6**	**+1.4**
MJAR	**Matsushiro Arr**	**4.41**	**330**	Pn	**Pn**	**07 44 50.9**	**+0.8**
	1.1nm,0.3s,baz=172,slow=14,SNR=7.8						
WRA	**Warramunga Arr**	**52.77**	**188**	P	P	07 52 53.5	-2.4
	0.6nm,0.4s,baz=5.8,slow=7.7,SNR=8.8						
ASAR	**Alice Springs**	**56.49**	**188**	P	**P**	**07 53 20.9**	**-1.9**
	0.2nm,0.6s,baz=2.8,slow=9.0,SNR=5.0						
GERES	**GERESS Array B**	**86.15**	**328**	P	**P**	**07 56 25.7**	**+4.1**
	1.0nm,0.7s,baz=66,slow=2.5,SNR=3.7						

IDC ***20*** *07:44:23.4±1.2, 7.42N×91.85E, h0km, mb3.9/7, mb1 4.1/10, mb1mx3.7/61, mbtmp4.0/10, ML4.3/3, MS3.1/2, Ms1 3.1/2, ms1mx2.6/44, Error ellipse: s-maj=38.1km s-min=16.9km az=58.0*

ISCJB ***20*** *07:44:24.6±0.7, 7.4N±0.1×91.8E±0.1, h24km, mb3.9/7, MS3.2/1, Error ellipse: s-maj=16.8km s-min=11.7km az=135.0*

ISC 20 07:44:27.0±0.9, 7.4N±0.1×91.8E±0.1, h24km, n11, σ0°32/10, mb4.1/7, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PSI	**Prapat**	**8.42**	**123**	Pn	**Pn**	**07 46 27.9**	**+0.2**
	0.6nm,0.3s,baz=312,slow=12,SNR=3.6						
PSI				LR	LR	07 49 39.2	
	comp=Z,106nm,19.1s,baz=300,slow=37						
PALK	**Pallekele**	**11.04**	**270**	Pn	**Pn**	**07 47 03.7**	**+0.2**
	5.2nm,0.3s,baz=116,slow=13,SNR=8.8						
CMAR	**Chiang Mai Arr**	**12.97**	**32**	Pn	**Pn**	**07 47 30.1**	**+0.2**
	0.7nm,0.3s,baz=231,slow=14,SNR=8.7						
MKAR	**Makanchi Array**	**40.08**	**350**	P	**P**	**07 52 00.1**	**-0.3**
	1.1nm,0.7s,baz=161,slow=9.2,SNR=2.7						
FITZ	**Fitzroy Crossi**	**41.91**	**128**	P	**P**	**07 52 16.3**	**+0.3**
	3.4nm,0.9s,baz=334,slow=9.8,SNR=3.5						
SONM	**Songino Array**	**42.14**	**15**	P	**P**	**07 52 17.5**	**0.0**
	2.8nm,0.7s,baz=194,slow=9.3,SNR=8.1						
KURBB	**Kurchatov Arra**	**44.47**	**348**	P	**P**	**07 52 36.1**	**0.0**
	0.7nm,0.6s,baz=172,slow=7.3,SNR=3.0						
ZALV	**Zalesovo Beam**	**46.74**	**354**	P	**P**	**07 52 53.9**	**-0.2**
	1.1nm,0.4s,baz=184,slow=5.8,SNR=2.4						
WRA	**Warramunga Arr**	**49.89**	**124**	P	**P**	**07 53 18.4**	**-0.5**
	0.8nm,0.4s,baz=304,slow=9.1,SNR=3.8						
ASAR	**Alice Springs**	**51.41**	**128**	P	**P**	**07 53 30.1**	**-0.3**
	0.7nm,0.7s,baz=298,slow=7.6,SNR=4.3						
AKASG	**Malin Array Be**	**67.10**	**322**	LR	LR	08 27 43.7	
	comp=Z,18nm,21.3s,baz=270,slow=39						

NNC 20 07:45:20.5±3.1, 37.67N×71.52E, h8km±46km, mb3.9, mpv3.4, 3C-5D, Error ellipse: s-maj=61.2km s-min=8.8km az=154.0, Afghanistan-Tajikistan border region

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

DZET	**Dzherino**	**2.41**	**299**	⇑P	Pn	07 45 59.9	-0.5	
	2.9nm,0.2s							
DZET				⇑S	Sn	07 46 31.4	+1.2	
	42nm,0.2s							
MNAS	**Manas**	**4.87**	**9**	⇑P	Pn	07 46 34.9	+0.6	
	3.3nm,0.3s							
MNAS				⇓S	Sn	07 47 32.0	+1.0	
	34nm,0.6s							
AAK	**Ala-Archa**	**5.46**	**24**	⇓P	Pn	07 46 42.8	+0.4	
	3.1nm,0.3s							
AAK				⇓S	Sn	07 47 46.0	+0.4	
	14nm,0.5s							
KK31	**Karatay Array**	**5.49**	**352**	⇓P	Pn	07 46 42.5	-0.1	
	1.0nm,0.3s,baz=180,slow=15,SNR=36							
KK31				⇓S	Sn	07 47 47.0	+1.1	
	3.3nm,0.3s,baz=182,slow=24,SNR=7.6							

NNC ***20*** *07:49:45.8±9.2, 42.46N×81.42E, h0km, mb3.1, mpv2.8, Error ellipse: s-maj=80.2km s-min=42.4km az=170.0*

SOME ***20*** *07:49:50.3, 42.20N×80.58E, h10km*

ISC 20 07:49:51.7±3.4, 42°2N±0.1×80°70E±0.08, h14km±18km, n14, σ1°27/26, 2C-4D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SHLS	**Shalkode**	**1.15**	**329**	*e*P	**Pb**	**07 50 11.8**	**-1.7**
	6.9nm,0.2s						
SHLS				*e*S	**Sb**	**07 50 26.6**	**-1.7**
	22nm,0.3s						
KTMS	**Ketmen**	**1.29**	**349**	*e*P	**Pn**	**07 50 14.3**	**-1.1**
	2.9nm,0.2s						
KTMS				*e*S	**Sb**	**07 50 31.1**	**-1.3**
	14nm,0.3s						
PDGK	**Podgornoye**	**1.45**	**322**	⇓Pn	**Pn**	**07 50 15.7**	**-1.8**
	1.6nm,0.3s						
PDGK				⇓Sn	**Sg**	**07 50 40.1**	**+1.6**
	9.3nm,0.4s						
UZB	**Uzynbulak**	**1.57**	**309**	*e*P	**Pn**	**07 50 19.6**	**+0.3**
	5.4nm,0.1s						
UZB				*e*S	**Sb**	**07 50 40.2**	**-0.2**
	12nm,0.2s						
ZHN	**Zhinishke**	**1.94**	**301**	*e*P	**Pb**	**07 50 26.1**	**-0.8**
	17nm,0.1s						
ZHN				*e*S	**Sb**	**07 50 51.5**	**+0.5**
	66nm,0.2s						
KPKS	**Kokpek**	**1.96**	**312**	*e*P	**Pb**	**07 50 26.5**	**-0.8**
	21nm,0.2s						
KPKS				*e*S	**Sb**	**07 50 52.0**	**+0.4**
	48nm,0.3s						
DJR	**Jarkent**	**2.25**	**343**	*e*P	**Pb**	**07 50 31.3**	**-0.9**
	6.7nm,0.3s						
DJR				*e*S	**Sb**	**07 51 00.2**	**+0.3**
	14nm,0.3s						
KURS	**Kuram**	**2.27**	**306**	*e*P	**Pb**	**07 50 31.4**	**-1.1**
	4.7nm,0.5s						
KURS				*e*S	**Sb**	**07 51 00.3**	**-0.2**
	12nm,0.6s						
MNBS	**Baschi**	**2.54**	**319**	*e*P	**Pn**	**07 50 33.8**	**+1.2**
	8.5nm,0.2s						
MNBS				*e*S	**Sn**	**07 51 04.6**	**+1.3**
	37nm,0.3s						
TNSS	**Tian-Shan**	**2.90**	**288**	*e*P	**Pb**	**07 50 41.3**	**-2.2**
	6.2nm,0.3s						
TNSS				*e*S	**Sb**	**07 51 17.7**	**-1.3**
	15nm,0.3s						
ARXS	**Arharly**	**2.92**	**315**	*e*P	**Pb**	**07 50 42.5**	**-1.1**
	3.6nm,0.3s						
ARXS				*e*S	**Sb**	**07 51 19.6**	**+0.4**
	9.3nm,0.3s						
DGS	**Degeres**	**3.78**	**288**	*e*P	**Pb**	**07 50 58.0**	**-0.3**
	3.2nm,0.5s						
DGS				*e*S	**Sb**	**07 51 45.6**	**+1.6**
	12nm,0.4s						
MAKZ	**Makanchi**	**4.71**	**11**	⇓Pg	**Pn**	**07 51 03.7**	**+1.3**
	0.8nm,0.4s						
MAKZ				⇑Lg	Lg	07 52 04.5		
	2.0nm,0.6s							
MK31	**Makanchi Array**	**4.75**	**13**	⇑Pg	**Pn**	**07 51 04.3**	**+1.5**	
	2.5nm,0.8s,baz=199,slow=13,SNR=34							
MK31				⇓Lg	Lg	07 52 05.2		
	2.0nm,0.6s,baz=198,slow=25,SNR=10							

ISCJB ***20*** *07:55:43.0±0.6, 6.80N±0.04×73.03W±0.05, h157km±5km, Error ell

0.1nm,0.3s,baz=147,slow=26,SNR=3.1
I26DE FREYUNG INFRAS14.20 264 *i* 09 26 50.0
baz=69,slow=306,SNR=0.4
AKTO Aktyubinsk 14.24 89 Pn Pn 08 03 33.0 -5.8
0.1nm,0.3s,baz=297,slow=14,SNR=5.0
ARCES ARCESS Array B 17.82 349 P Pn 08 04 24.1 -1.0
0.2nm,0.3s,baz=166,slow=11,SNR=7.3

CSEM ***20*** *08:01:09.8, 62.93N×27.72E, h0km, ML1.1, Mining explosion.*
HEL 20 08:01:09.8±0.1, 62.93N×27.72E, h0km, ML1.1, Explosion, Finland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SUF	**Sumiainen**	**0.75**	**254**	*e*P	Pg	08 01 23.3	-0.9
SUF				*e*S	Sg	08 01 32.8	-1.1
SUF	**Sumiainen**	**0.75**	**254**	P	Pg	08 01 23.2	-1.0
SUF				S	Sg	08 01 32.7	-1.2
KEF	**Keuruu**	**1.53**	**241**	*e*P	Pn	08 01 37.1	-1.2
KEF				MSG		08 01 56.2	
	comp=Z,1.4nm,0.2s						
KEF				*e*S	Sg	08 01 57.6	-1.1
KEF	**Keuruu**	**1.53**	**241**	P	Pn	08 01 37.1	-1.2
KEF				S	Sg	08 01 57.6	-1.2
JOF	**Joensuu**	**1.64**	**89**	*e*P	Pn	08 01 38.7	-1.2
JOF				*e*S	Sn	08 02 00.3	-1.4
JOF				MSG		08 02 01.7	
	comp=Z,1.0nm,0.1s						
JOF	**Joensuu**	**1.64**	**89**	P	Pn	08 01 38.6	-1.3
JOF				S	Sn	08 02 00.3	-1.4
FIA0	**FINESS Array S**	**1.68**	**208**	*e*P	Pn	08 01 39.2	-1.2
FIA0				*e*SG	Sn	08 02 01.7	-0.9
FIA0	**FINESS Array S**	**1.68**	**208**	P	Pn	08 01 39.2	-1.2
FIA0				Sg	Sn	08 02 01.7	-0.9
OUFX	**Oulainen**	**1.97**	**318**	*e*PB	Pn	08 01 44.4	0.0
OUFX				*e*S	Sn	08 02 08.4	-1.3
OUFX	**Oulainen**	**1.97**	**318**	Pb	Pn	08 01 44.4	0.0
OUFX				S	Sn	08 02 08.4	-1.3
VAF	**Ylistaro**	**2.31**	**275**	*e*PB	Pn	08 01 50.0	+1.0
VAF				*e*SB	Sn	08 02 18.9	+0.9
VAF	**Ylistaro**	**2.31**	**275**	Pb	Pn	08 01 50.0	+1.0
VAF				Sb	Sn	08 02 18.9	+0.9

ATH ***20*** *08:03:15.2, 40.66N×23.72E, h16km±6km, ML1.4/2, Error ellipse: s-maj=6.2km s-min=1.1km az=241.0*
CSEM ***20*** *08:03:15.0±0.1, 40.69N×23.72E, h15km, ML1.4, Error ellipse: s-maj=1.8km s-min=1.6km az=68.0*
THE 20 08:03:15.6, 40.69N×23.73E, h2km±33km, ML1.4/7, Error ellipse: s-maj=33.3km s-min=0.6km az=121.0, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SOH	**Sokhos**	**0.31**	**295**	P	Pg	08 03 21.9	+0.3
SOH				S	Sg	08 03 26.4	+0.7
SOH	**Sokhos**	**0.31**	**295**	P	Pg	08 03 21.9	+0.3
SOH				S	Sg	08 03 26.4	+0.7
SOH	**Sokhos**	**0.31**	**295**	P	Pg	08 03 21.7	+0.1
SOH				S	Sg	08 03 26.2	+0.5
SOH				AML	AML	08 03 26.5	
	comp=E,170μm,0.2s						
SOH				AML	AML	08 03 26.9	
	comp=N,120μm,0.3s						
PLG	**Polygyros**	**0.38**	**214**	P	Pg	08 03 23.1	+0.2
PLG				S	Sg	08 03 28.1	+0.3
PLG	**Polygyros**	**0.38**	**214**	P	Pg	08 03 23.1	+0.2
PLG				S	Sg	08 03 28.1	+0.3
PLG	**Polygyros**	**0.38**	**214**	P	Pg	08 03 23.2	+0.3
PLG				S	Sg	08 03 27.9	+0.1
OUR	**Ouranopolis**	**0.40**	**151**	P	Pg	08 03 23.5	+0.2
OUR				S	Sg	08 03 29.0	+0.4
OUR	**Ouranopolis**	**0.40**	**151**	P	Pg	08 03 23.5	+0.2
OUR				S	Sg	08 03 29.0	+0.4
OUR	**Ouranopolis**	**0.40**	**151**	P	Pg	08 03 23.1	-0.2
OUR				S	Sg	08 03 28.5	-0.1
OUR				AML	AML	08 03 29.8	
	comp=N,198μm,0.2s						
OUR				AML	AML	08 03 29.8	
	comp=E,181μm,0.3s						
SRS	**Serrai**	**0.44**	**347**	P	Pg	08 03 23.9	-0.2
SRS				S	Sg	08 03 30.0	+0.2
SRS	**Serrai**	**0.44**	**347**	P	Pg	08 03 23.9	-0.2
SRS				S	Sg	08 03 30.0	+0.2
SRS	**Serrai**	**0.44**	**347**	P	Pg	08 03 24.4	+0.3
HORT	**Hortiatis**	**0.49**	**259**	P	Pg	08 03 24.9	0.0
HORT				S	Sg	08 03 31.6	+0.4
HORT	**Hortiatis**	**0.49**	**259**	P	Pg	08 03 24.9	0.0
HORT				S	Sg	08 03 31.4	+0.2
HORT	**Hortiatis**	**0.49**	**259**	P	Pg	08 03 25.0	+0.1
HORT				S	Sg	08 03 31.4	+0.2
KAVA	**Kavala**	**0.67**	**62**	P	Pg	08 03 28.7	+0.2
KAVA				S	Sg	08 03 37.4	+0.2
KAVA	**Kavala**	**0.67**	**62**	P	Pg	08 03 28.2	-0.3
KAVA				S	Sg	08 03 37.4	+0.2
KAVA	**Kavala**	**0.67**	**62**	P	Pg	08 03 28.2	-0.3
PAIG	**Paliouri**	**0.76**	**183**	P	Pg	08 03 30.0	-0.2
PAIG	**Paliouri**	**0.76**	**183**	P	Pg	08 03 30.0	-0.2
KNT	**Kendrikon**	**0.79**	**307**	P	Pg	08 03 30.5	-0.2
KNT				S	Sg	08 03 41.1	+0.2
KNT	**Kendrikon**	**0.79**	**307**	P	Pg	08 03 30.5	-0.2
KNT				S	Sg	08 03 41.1	+0.2
KNT	**Kendrikon**	**0.79**	**307**	P	Pg	08 03 30.7	0.0
XOR	**Xorichti**	**1.38**	**197**	P	Pn	08 03 39.1	-2.9
XOR	**Xorichti**	**1.38**	**197**	P	Pn	08 03 39.1	-2.9

ISCJB ***20*** *08:05:00.5±0.7, 24.05N±0.02×122.30E±0.02, h10km±5km, Error ellipse: s-maj=3.6km s-min=2.5km az=157.9*
TAP ***20*** *08:05:01.3, 24.10N×122.25E, h20km±1km, ML3.4, D*
JMA ***20*** *08:05:01.1, 24.02N×122.27E, h29km±2km, M3.1*
ISC 20 08:05:01.1±1.2, 24.05N±0.03×122.27E±0.02, h23km±14km, n46, σ0s67/72, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.61**	**308**	P	**Pb**	**08 05 12.7**	**-0.5**
	baz=305						
ENA				*e*S	**Sb**	**08 05 22.0**	**+0.6**
	baz=305						
TWD	**Chiawan**	**0.61**	**273**	*e*P	**Pn**	**08 05 14.0**	**-0.4**
	baz=268						
TWD				*e*S	**Sn**	**08 05 22.7**	**-0.9**
	baz=268						
TWC	**Suao**	**0.68**	**326**	P	**Pb**	**08 05 13.3**	**-0.9**
	baz=324						
TWC				*e*S	**Sb**	**08 05 21.9**	**-1.4**
	baz=324						
JYNG	**Yonagunijimaku**	**0.74**	**57**	P	**Pb**	**08 05 15.2**	**-0.1**
JYNG				*e*S	**Sb**	**08 05 25.5**	**+0.6**
YOJ	**Yonaguni jima**	**0.80**	**59**	P	**Pb**	**08 05 16.1**	**-0.1**
YOJ				*e*S	**Sb**	**08 05 26.5**	**-0.1**
ESL	**Shilin**	**0.80**	**253**	*e*S	**Sn**	**08 05 28.0**	**-0.1**
	baz=248						
EGS		**0.85**	**339**	*e*P	**Pb**	**08 05 17.2**	**0.0**
	baz=339						
EGS				*e*S	**Sb**	**08 05 27.8**	**-0.4**
	baz=339						
TWE	**Neicheng**	**0.87**	**321**	*e*P	**Pn**	**08 05 17.7**	**-0.2**
	baz=319						
TWE				*e*S	**Sb**	**08 05 28.6**	**0.0**
	baz=319						
ENTT	**Nioudou**	**0.87**	**313**	*i* P	**Pb**	**08 05 17.5**	**0.0**
	baz=310						
ENTT				*e*S	**Sn**	**08 05 29.1**	**-0.9**
	baz=310						
NNS	**Nan Shan**	**0.91**	**296**	*e*P	**Pb**	**08 05 18.2**	**0.0**
	baz=292						
WHF	**Hehuan Shan**	**0.92**	**276**	*e*P	**Pb**	**08 05 18.5**	**-0.1**
	baz=272						
WHF				*e*S	**Sn**	**08 05 31.1**	**-0.6**
	baz=272						
TWB1	**Santiao Chiao**	**0.99**	**345**	*e*P	**Pn**	**08 05 19.1**	**-0.5**
	baz=345						
TWB1				*e*S	**Sb**	**08 05 31.7**	**-0.5**
	baz=345						
TWT	**Tachien**	**1.02**	**282**	*e*P	**Pb**	**08 05 20.9**	**+0.7**
	baz=278						
TWT				*e*S	**Sn**	**08 05 34.3**	**+0.5**
	baz=278						
EHY	**Hungye**	**1.02**	**238**	*e*P	**Pn**	**08 05 19.6**	**-0.4**
	baz=234						
NSK	**Sanguang**	**1.04**	**307**	*e*P	**Pn**	**08 05 19.6**	**-0.7**
	baz=305						
NSK				*e*S	**Sn**	**08 05 34.3**	**0.0**
	baz=305						
WDT	**Danda**	**1.08**	**255**	*e*P	**Pn**	**08 05 20.8**	**-0.2**
	baz=251						
WDT				*e*S	**Sn**	**08 05 35.4**	**-0.1**
	baz=251						
TWA	**Mucha**	**1.12**	**326**	*e*P	**Pb**	**08 05 22.6**	**+0.8**
	baz=325						
TWA				*e*S	**Sb**	**08 05 36.7**	**+0.8**
	baz=325						
TWF1	**Yuli**	**1.13**	**232**	*e*P	**Pn**	**08 05 21.1**	**-0.3**
	baz=229						
TWF1				*e*S	**Sb**	**08 05 36.5**	**+0.4**
	baz=229						
CHKT	**Chengkung**	**1.25**	**221**	*e*P	**Pn**	**08 05 22.1**	**-1.1**
	baz=218						
SMLT	**Sun Moon Lake**	**1.26**	**263**	*e*P	**Pb**	**08 05 24.0**	**-0.3**
	baz=259						
SMLT				*e*S	**Sb**	**08 05 39.9**	**-0.1**
	baz=259						
NSTT	**Nanjuang**	**1.29**	**297**	*e*P	**Pb**	**08 05 25.3**	**+0.6**
	baz=294						
TYC	**Yuchr**	**1.30**	**264**	*e*P	**Pb**	**08 05 24.4**	**-0.4**
	baz=261						
TWS1	**Kuangyinshan**	**1.30**	**324**	*e*P	**Pb**	**08 05 24.6**	**-0.3**
	baz=322						
TWS1				*e*S	**Sb**	**08 05 43.4**	**+2.2**
	baz=322						
YUS	**Yu-Shan**	**1.33**	**246**	*e*P	**Pb**	**08 05 25.3**	**-0.3**
	baz=242						
YUS				*e*S	**Sn**	**08 05 42.1**	**+0.2**
	baz=242						
TWY	**Chenhua**	**1.37**	**334**	*e*P	**Pb**	**08 05 26.1**	**+0.2**
	baz=333						
IRIF	**Iriomote-Funau**	**1.37**	**78**	P	**Pn**	**08 05 25.0**	**+0.2**
TWQ1	**Liyutan**	**1.40**	**283**	*e*P	**Pb**	**08 05 26.7**	**+0.3**
	baz=280						
HATJ	**Hateruma jima**	**1.41**	**89**	P	**Pn**	**08 05 25.4**	**+0.1**
ELDTW	**Lidau**	**1.43**	**234**	*e*P	**Pn**	**08 05 25.8**	**+0.1**
	baz=231						
ALS	**Alishan**	**1.44**	**249**	*e*P	**Pb**	**08 05 27.1**	**-0.3**
	baz=245						
ALS				*e*S	**Sn**	**08 05 44.9**	**+0.5**
	baz=245						
WNT	**Mingjian**	**1.46**	**264**	*e*P	**Pb**	**08 05 27.6**	**+0.1**
	baz=261						
CHN5	**Tsauling**	**1.52**	**253**	*e*P	**Pb**	**08 05 28.6**	**0.0**
	baz=250						
JKRS	**Kuro-shima**	**1.60**	**83**	P	**Pb**	**08 05 29.3**	**-0.7**
JKRS				*e*S	**Sb**	**08 05 49.5**	**-0.3**
STYT	**Tauyuan**	**1.64**	**238**	*e*S	**Sb**	**08 05 50.5**	**-0.4**
	baz=235						
TWG	**Pinlang**	**1.64**	**222**	*e*P	**Pn**	**08 05 28.8**	**+0.3**
	baz=220						
TWG				*e*S	**Sb**	**08 05 50.8**	**-0.1**
	baz=220						
CHN4	**Tsaushan**	**1.68**	**246**	*e*P	**Pb**	**08 05 32.0**	**+0.6**
	baz=243						
CHN4				*e*S	**Sb**	**08 05 53.9**	**+1.8**
	baz=243						
WTP	**Ta-pu**	**1.71**	**243**	*e*P	**Pb**	**08 05 31.3**	**-0.6**
	baz=240						
JIJ	**Ishigaki jima**	**1.74**	**79**	P	**Pn**	**08 05 30.0**	**+0.1**
JIJ				*e*S	**Sn**	**08 05 51.8**	**+0.3**
TWK	**Hsinying**	**1.81**	**245**	*e*P	**Pb**	**08 05 33.5**	**0.0**
	baz=242						
CHN1	**Nanshi**	**1.81**	**242**	*e*P	**Pb**	**08 05 33.0**	**-0.6**
	baz=240						
SGST	**Jiashian**	**1.82**	**238**	*e*P	**Pb**	**08 05 33.0**	**-0.7**
	baz=236						
SGST				*e*S	**Sb**	**08 05 57.9**	**+1.8**
	baz=236						
JISG	**Ishigakijimahi**	**1.94**	**73**	P	**Pn**	**08 05 32.9**	**+0.2**
JISG				S	**Sn**	**08 05 56.3**	**-0.1**
SSD	**Sandimen**	**1.98**	**230**	*e*P	**Pb**	**08 05 35.8**	**-0.7**
	baz=227						
SSD				*e*S	**Sb**	**08 06 01.5**	**+0.7**
	baz=227						
EAST	**Anshuo**	**2.11**	**219**	*e*P	**Pn**	**08 05 36.1**	**+1.0**
	baz=216						
SCZT	**Fangliau**	**2.25**	**223**	*e*P	**Pb**	**08 05 39.7**	**-1.4**
	baz=220						
JTJ	**Tarama**	**2.30**	**75**	P	**Pn**	**08 05 38.5**	**+0.9**

ISK ***20*** *08:05:21.8, 39.69N×29.61E, h5km, MD2.7*
ISCJB ***20*** *08:05:22.5±0.6, 39.57N±0.04×29.82E±0.05, h0km, Error ellipse: s-maj=6.3km s-min=3.8km az=136.5*
CSEM ***20*** *08:05:22.2±0.4, 39.63N×29.65E, h2km, MD2.7, Error ellipse: s-maj=11.0km s-min=7.6km az=121.0, Suspected Mining explosion.*
DDA ***20*** *08:05:22.6, 39.57N×29.74E, h7km, Md2.7, Suspected Mining explosion.*
ISC 20 08:05:22.2±0.9, 39.66N±0.03×29.76E±0.03, h0km, n17, σ1s07/25, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TVSB	**Tavsanli**	**0.31**	**228**	*e*PG	**Pg**	**08 05 27.7**	**-0.3**
TVSB				*e*SG	**Sg**	**08 05 33.5**	**+1.5**
TVSB	**Tavsanli**	**0.31**	**228**	*e*Pg	**Pg**	**08 05 27.7**	**-0.3**
BORA	**Eskisehir**	**0.58**	**67**	*i* P	**Pg**	**08 05 32.1**	**-1.3**
BORA				*i* S	**Sg**	**08 05 41.4**	**+0.5**
BORA	**Eskisehir**	**0.58**	**67**	P	**Pg**	**08 05 32.1**	**-1.3**
BORA				S	**Sg**	**08 05 41.4**	**+0.5**
GDZ	**Gediz**	**0.60**	**201**	*i* P	**Pg**	**08 05 32.0**	**-1.8**
GDZ				*i* S	**Sg**	**08 05 41.2**	**-0.4**
GDZ	**Gediz**	**0.60**	**201**	P	**Pg**	**08 05 32.0**	**-1.8**
GDZ				S	**Sg**	**08 05 41.2**	**-0.4**
IGD	**Bursa**	**0.74**	**325**	*i* P	**Pb**	**08 05 38.2**	**+0.2**
IGD				*i* S	**Sn**	**08 05 51.8**	**-0.1**
ESKT	**Eskisehir**	**0.86**	**99**	*i* P	**Pb**	**08 05 39.5**	**-0.6**
SEYT	**Eskypehyr**	**0.86**	**99**	P	**Pb**	**08 05 39.5**	**-0.5**
GULT	**Gulveren**	**0.97**	**37**	*e*PG	**Pb**	**08 05 42.3**	**+0.3**
GULT				*e*SG	**Sn**	**08 05 57.9**	**+0.2**
GULT	**Gulveren**	**0.97**	**37**	*e*Pg	**Pb**	**08 05 42.3**	**+0.3**
GULT				*e*Sg	**Sn**	**08 05 57.9**	**+0.2**
ARMT	**Armutlu**	**1.14**	**323**	*e*PG	**Pg**	**08 05 42.8**	**-1.3**
ARMT	**Armutlu**	**1.14**	**323**	*e*Pg	**Pg**	**08 05 42.8**	**-1.3**
SVRH	**Sivrihisar-ESK**	**1.38**	**98**	*e*PN	**Pb**	**08 05 51.0**	**+2.0**
SVRH	**Sivrihisar-ESK**	**1.38**	**98**	*e*Pn	**Pb**	**08 05 51.0**	**+2.0**
SILT	**Sile**	**1.50**	**357**	*e*PN	**Pn**	**08 05 50.8**	**+0.5**
SILT	**Sile**	**1.50**	**357**	*e*Pn	**Pn**	**08 05 50.8**	**+0.5**

ISCJB ***20*** *08:07:35.5±1.3, 34.10S±0.03×72.25W±0.09, h11km±8km, Error ellipse: s-maj=12.8km s-min=5.8km az=1.7*
GUC ***20*** *08:07:35.2±0.4, 34.09S×72.18W, h20km±3km, ML2.7*
ISC 20 08:07:36.1±2.2, 34.14S±0.04×72.3W±0.1, h16km±9km, n22, σ1s71/30, 1C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.33**	**140**	*e*P	**Pg**	**08 07 42.7**	**-0.2**
CHPI				*e*S	**Sg**	**08 07 48.4**	**+0.8**
CHPI				IAML		08 07 49.8	
	comp=N,1μm,0.8s						
NICH	**Los Niches**	**1.21**	**136**	*e*P	**Pn**	**08 07 57.4**	**-0.9**
NICH				*e*S	**Sb**	**08 08 14.3**	**+0.3**
TALC	**Talca**	**1.36**	**158**⇓	*e*P	**Pn**	**08 07 60.0**	**-0.4**
TALC				*e*S	**Sn**	**08 08 19.4**	**+1.3**
RCDM	**Rinconada Maip**	**1.37**	**62**	*e*P	**Pn**	**08 07 59.0**	**-1.6**
RCDM				*e*S	**Sn**	**08 08 16.9**	**-1.4**
ROC1	**El Roble**	**1.55**	**42**	*e*P	**Pn**	**08 08 01.9**	**-1.3**
ROCH	**El Roble**	**1.56**	**42**	*e*P	**Pn**	**08 08 02.0**	**-1.4**
ROCH				*e*S	**Sn**	**08 08 22.6**	**-0.7**
ROCH				IAML		08 08 32.3	
	comp=N,194nm,1.1s						
CLCH	**Cerro Calan**	**1.61**	**63**	*e*P	**Pn**	**08 08 03.1**	**-0.8**
CLCH				*e*S	**Sn**	**08 08 24.2**	**-0.2**
CLCH				IAML		08 08 37.2	
	comp=E,229nm,0.4s						
PEL	**Peldehue**	**1.64**	**53**	*e*P	**Pn**	**08 08 03.7**	**-0.6**
PEL				*e*S	**Sn**	**08 08 25.0**	**-0.2**
PEL				IAML		08 08 33.2	
	comp=N,172nm,0.8s						
FCH	**Farellones**	**1.83**	**64**	*e*P	**Pn**	**08 08 07.1**	**0.0**
AAGR	**Agrelo**	**3.05**	**71**⇓	*e*P	**Pb**	**08 08 29.4**	**-0.6**
ARCO	**CERRO ARCO**	**3.06**	**66**⇓	*e*P	**Pb**	**08 08 29.1**	**-1.2**
ARCO				IAML		08 08 34.1	
	comp=Z,19nm,0.3s						
AUSP	**Uspallata**	**3.07**	**52**	*e*P	**Pb**	**08 08 28.9**	**-1.6**
AUSP				⇓*e*S	**Sb**	**08 09 10.0**	**+2.1**
ASAL	**Salagasta**	**3.25**	**63**	*e*P	**Pb**	**08 08 32.4**	**-1.1**
ASAL				*e*S	**Sb**	**08 09 11.6**	**-1.3**
RTLS	**Leoncito**	**3.41**	**48**	*e*P	**Pn**	**08 08 32.2**	**+3.4**
RTLL	**Cerro Villicun**	**4.24**	**50**	*e*P	**Pn**	**08 08 43.7**	**+3.6**
ACCO	**Cerro Coronel**	**4.45**	**38**	*e*P	**Pn**	**08 08 46.1**	**+2.9**
ACCO				IAML		08 10 02.2	
	comp=Z,7.5nm,0.4s						
AMOG	**MOGNA**	**4.50**	**46**	*e*P	**Pn**	**08 08 44.2**	**+0.5**
ACAN	**Cantantal**	**4.64**	**68**	*e*P	**Pn**	**08 08 49.4**	**+3.9**
ACDV	**Cuesta del Vie**	**4.76**	**35**	*e*P	**Pn**	**08 08 48.4**	**+1.0**
AVFE	**Valle Fertil**	**5.34**	**51**	*e*P	Pn	08 09 01.1	+5.9
ACHE	**Chepes**	**5.57**	**59**	*e*P	**Pn**	**08 08 59.9**	**+1.4**
AGUA	**GUANDACOL**	**5.63**	**36**	*e*P	**Pn**	**08 08 59.7**	**+0.4**

NIED ***20*** *08:14:00, 37.70N×141.90E, h47km, Mw3.7 Best double couple: M0=4.08000×10^14 NP1:φs=277.00000°, δ56.00000°, λ174.00000°. NP2:φs 10.00000°, δ85.00000°, λ35.00000°.*
IDC ***20*** *08:14:39.4±1.2, 37.73N×142.04E, h0km, mb3.6/5, mb1 3.8/7, mb1mx3.5/50, mbtmp3.7/7, ML3.8/2, Error ellipse: s-maj=27.7km s-min=23.6km az=81.0*
ISCJB ***20*** *08:14:41.1±1.1, 37.66N±0.03×141.98E±0.06, h19km±7km, mb3.5/5, Error ellipse: s-maj=8.7km s-min=5.3km az=10.8*
JMA ***20*** *08:14:43.3±0.1, 37.70N×141.88E, h33km±3km, M3.9*
ISC 20 08:14:41.3±1.9, 37.69N±0.04×141.94E±0.07, h14km±11km, n25, σ1s22/32, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.90**	**329**	P	**Pn**	**08 14 59.1**	**-0.4**
JIO				S	**Sb**	**08 15 09.6**	**-0.8**
JFK	**Kawauchi**	**0.91**	**249**	P	**Pg**	**08 14 59.1**	**+0.2**
JFK				S	**Sb**	**08 15 09.7**	**-1.2**
JMM	**Marumori**	**0.93**	**281**	P	**Pg**	**08 14 59.4**	**+0.2**
JMM				S	**Sb**	**08 15 10.3**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.08**	**238**	P	**Pb**	**08 15 01.6**	**-0.3**
ONAJ				S	**Sb**	**08 15 13.3**	**-2.0**
JOU	**Okura**	**1.21**	**304**	P	**Pb**	**08 15 04.2**	**+0.1**
JOU				S	**Sb**	**08 15 18.6**	**-1.0**
JFT	**Otama**	**1.29**	**263**	P	**Pb**	**08 15 05.5**	**+0.2**
JFT				S	**Sb**	**08 15 20.6**	**-1.1**
JMK	**Ichinoseki**	**1.38**	**336**	P	**Pb**	**08 15 06.5**	**-0.4**
JMK				S	**Sn**	**08 15 23.1**	**-1.1**
JYS	**Shirataka**	**1.58**	**290**	P	**Pb**	**08 15 09.7**	**-0.5**
JYS				S	**Sb**	**08 15 29.4**	**-0.6**
JYK	**Kaneyama**	**1.75**	**315**	P	**Pn**	**08 15 11.4**	**+0.2**
JFY	**Yanaizu**	**1.80**	**262**	P	**Pn**	**08 15 12.8**	**+0.8**
JFY				*e*S	**Sn**	**08 15 34.0**	**-0.7**
JOM	**Ohasama**	**1.85**	**344**	P	**Pn**	**08 15 13.5**	**+0.9**
JOM				*e*S	**Sn**	**08 15 35.5**	**-0.3**
MJAR	**Matsushiro Arr**	**3.20**	**250**	**Pn**	**Pn**	**08 15 32.8**	**+1.6**
	5.3nm,0.3s,baz=82,slow=15,SNR=39						
MJAR					Sn	**Sb**	**08 16 13.6**	**-3.1**
	1.1nm,0.3s,baz=79,slow=19,SNR=2.9						
MAT	**Matsushiro**	**3.20**	**250**	P	**Pn**	**08 15 32.8**	**+1.6**
MAT				*e*S	**Sn**	**08 16 11.8**	**+2.7**
JHJ	**Hachijo jima 2**	**4.89**	**202**	Pn	**Pn**	**08 15 54.2**	**-0.2**
	20nm,0.3s,baz=90,slow=20,SNR=3.9						
JHJ					Sn	**Sn**	**08 16 49.2**	**-1.6**
	16nm,0.3s,baz=240,slow=20,SNR=1.9						
H11N2	**WAKE ISLAND Hy 28.13 123**			T	T	08 50 08.6	
	baz=315,slow=75,SNR=91						
H11N1	**WAKE ISLAND Hy 28.14 123**			T	T	08 50 10.7	
	baz=315,slow=75,SNR=76						
H11N3	**WAKE ISLAND Hy 28.15 123**			T	T	08 50 08.6	
	baz=315,slow=75,SNR=80						
H11S1	**WAKE ISLAND Hy 28.87 125**			T	T	08 51 04.5	
	baz=317,slow=76,SNR=33						
H11S3	**WAKE ISLAND Hy 28.87 125**			T	T	08 51 02.8	
	baz=317,slow=76,SNR=90						
H11S2	**WAKE ISLAND Hy 28.89 125**			T	T	08 51 04.5	
	baz=317,slow=76,SNR=81						
MKAR	**Makanchi Array**	**44.13**	**302**	P	**P**	**08 22 50.2**	**+1.0**
	0.2nm,0.4s,baz=75,slow=6.1,SNR=2.9						
KURBB	**Kurchatov Arra**	**45.93**	**308**	P	**P**	**08 23 02.9**	**-0.6**
	1.3nm,0.6s,baz=81,slow=7.3,SNR=6.8						
WRA	**Warramunga Arr**	**57.77**	**188**	P	**P**	**08 24 32.0**	**0.0**
	0.2nm,0.4s,baz=6.0,slow=7.1,SNR=9.5						
ASAR	**Alice Springs**	**61.50**	**188**	P	**P**	**08 24 58.6**	**+1.0**
	0.2nm,0.5s,baz=12,slow=9.5,SNR=2.8						
TXAR	**Lajitas Array**	**89.39**	**53**	P	**P**	**08 27 38.3**	**+0.4**
	0.2nm,0.8s,baz=324,slow=4.5,SNR=3.0						

IDC 20 08:20:27.1±2.5, 53.55N×87.90E, h0km, mb1 3.4/3, mb1mx3.2/49, mbtmp3.4/3, ML3.0/3, Error ellipse: s-maj=22.0km s-min=14.2km az=67.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZALV	**Zalesovo Beam**	**1.87**	**283**	Pn	Pn	08 20 59.5	-0.9
	3.2nm,0.3s,baz=98,slow=16,SNR=21						
ZALV				Lg	Lg	08 21 26.4	
	5.1nm,0.3s,baz=97,slow=25,SNR=13						
I46RU	**ZALESOVO INFRA**	**1.87**	**283**	*i*		08 32 00.0	
	baz=98,slow=318,SNR=1.2						
KURBB	**Kurchatov Arra**	**6.48**	**247**	Pn	Pn	08 22 03.5	-0.1
	0.1nm,0.3s,baz=60,slow=14,SNR=4.9						
KURBB					Sn	Sn	08 23 16.7	-1.5
	0.0nm,0.3s,baz=66,slow=25,SNR=3.0						
KURBB					Lg	Lg	08 23 51.4	
	0.0nm,0.3s,baz=63,slow=31,SNR=5.2						
MKAR	**Makanchi Array**	**7.66**	**210**	Pn	Pn	08 22 20.9	+0.9
	0.3nm,0.3s,baz=27,slow=13,SNR=20						
MKAR					Sn	Sn	08 23 47.9	+0.5
	0.1nm,0.3s,baz=23,slow=30,SNR=5.7						
MKAR					Lg	Lg	08 24 29.6	
	0.1nm,0.3s,baz=26,slow=30,SNR=5.6						
BVAR	**Borovoye Array**	**10.50**	**274**	Pn	Pn	08 22 59.0	+0.3

MERV			*e*S	**Sn**	08 36 20.8	-0.3
LUEV	**Luepa**	**5.08 175**	*e*P	**Pn**	08 35 35.5	-0.1
LUEV			*e*S	**Sn**	08 36 26.8	-6.3
BAUV	**El Baul**	**6.33 252**	*e*P	**Pn**	08 35 53.9	+1.5
BAUV			*e*S	**Sn**	08 37 00.2	-3.1

*ISCJB **20** 08:45:26.6±1.9, 40.0°N±0.1°×71.4°E±0.1, h39km, Error ellipse: s-maj=21.7km s-min=8.1km az=148.1*
*KRNET **20** 08:45:26.5±0.1, 40.05°N×71.40°E, mb2.7*
*NNC **20** 08:45:26.9±2.1, 40.38°N×71.05°E, h20km±40km, mb3.4, mpv3.0, Error ellipse: s-maj=33.2km s-min=13.0km az=130.0*

ISC 20 08:45:27.1±2.8, 40.0°N±0.2°×71.4°E±0.1, h39km, n8, σ0s78/8, 10C-6D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
BTK	**Batken**	**0.43**	**282**	⇑	*i*P	**Pn**		**08 45 36.7**	**-0.2**
	baz=272								
BTK				⇑	*i*S	**Sn**		**08 45 44.2**	**+0.3**
	baz=272								
ARK	**Arkit**	**1.89**	**14**	⇑	*i*P	**Pn**		**08 45 56.9**	**0.0**
	baz=14								
ARK				⇑	*i*S	**Sn**		**08 46 19.1**	**-0.4**
	baz=14								
DZET	**Dzherino**	**2.28**	**240**	⇑	Pg	Pn		08 46 09.6	+7.2
	12nm,0.5s								
DZET				⇑	Lg	Lg		08 46 41.5	
	12nm,0.4s								
MNAS	**Manas**	**2.66**	**18**	⇓	*i*P	**Pn**		**08 46 08.1**	**+0.5**
	baz=19								
MNAS				⇓	*i*S	**Sn**		**08 46 37.8**	**-0.9**
	baz=19								
MNAS	**Manas**	**2.66**	**18**	⇓	Pg	**Pn**		**08 46 08.9**	**+1.3**
	1.7nm,0.3s								
MNAS				⇓	Lg	Lg		08 46 42.3	
	12nm,0.5s								
KK31	**Karatay Array**	**3.20**	**349**	⇑	Pg	Pn		08 46 19.2	+4.3
	1.3nm,0.3s,baz=168,slow=14,SNR=12								
KK31				⇑	Lg	Lg		08 46 56.0	
	8.2nm,0.6s,baz=177,slow=30,SNR=6.5								
AAK	**Ala-Archa**	**3.56**	**40**	⇑	Pg	Pn		08 46 30.7	+11
	3.6nm,0.7s								
AAK				⇓	Lg	Lg		08 47 12.9	
	5.2nm,0.7s								
TKM2	**Tokmak 2**	**4.34**	**46**	⇓	Pn	**Pn**		**08 46 30.6**	**-0.1**
	2.6nm,0.7s								
TKM2				⇑	Lg	Lg		08 47 38.3	
	2.2nm,0.4s								

*ISK **20** 09:11:56.3, 38.97°N×40.29°E, h5km, MD2.9*
*CSEM **20** 09:11:57.7±0.3, 38.96°N×40.22°E, h2km, MD2.9, Error ellipse: s-maj=9.6km s-min=6.6km az=168.0*
*DDA **20** 09:11:57.4, 38.94°N×40.25°E, h7km, Md2.9*

ISC 20 09:11:57.9±1.0, 38.96°N±0.04°×40.27°E±0.03, h15km±10km, n19, σ1s20/26, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
BINT	**Bingol**	**0.19**	**118**	*e*Pg		**Pg**		**09 12 02.7**	**+0.2**
BINT				*e*Sg		**Sg**		**09 12 07.6**	**+2.0**
BNGB	**Bing¨¶l**	**0.32**	**85**	*e*PG		**Pg**		**09 12 02.7**	**-1.8**
BNGB				*e*SG		**Sg**		**09 12 07.6**	**-1.5**
YEDI	**Yedisu-Bingol**	**0.52**	**24**	*e*PG		**Pg**		**09 12 07.0**	**-1.2**
YEDI	**Yedisu-Bingol**	**0.52**	**24**	*e*Pg		**Pg**		**09 12 07.0**	**-1.2**
TNCL	**Tunceli-Merkez**	**0.59**	**285**	*i*P		**Pg**		**09 12 08.6**	**-0.9**
TNCL				*i*S		**Sb**		**09 12 18.7**	**+0.5**
TNCL	**Tunceli-Merkez**	**0.59**	**285**	P		**Pg**		**09 12 08.6**	**-0.9**
TNCL				S		**Sb**		**09 12 18.7**	**+0.5**
PTK	**Pertek**	**0.69**	**264**	*e*PG		**Pg**		**09 12 10.3**	**-1.1**
PTK	**Pertek**	**0.69**	**264**	*e*Pg		**Pg**		**09 12 10.3**	**-1.1**
ERZN	**Erzincan**	**0.75**	**326**	*e*PG		**Pg**		**09 12 11.1**	**-1.5**
SVRC	**Sivrice-ELAZID**	**0.96**	**233**	*e*PG		**Pg**		**09 12 15.9**	**-0.5**
SVRC	**Sivrice-ELAZID**	**0.96**	**233**	*e*Pg		**Pg**		**09 12 15.9**	**-0.5**
ELZG	**Elazig**	**1.11**	**246**	*i*P		**Pg**		**09 12 17.1**	**-2.2**
ELZG	**Elazig**	**1.11**	**246**	P		**Pg**		**09 12 17.1**	**-2.2**
ERZM	**Erzurum**	**1.27**	**42**	*i*P		**Pn**		**09 12 22.0**	**+0.7**
ERZM	**Erzurum**	**1.27**	**42**	P		**Pn**		**09 12 22.0**	**+0.7**
KEMA	**Kemaliye**	**1.42**	**283**	*i*P		**Pb**		**09 12 24.0**	**-0.1**
KEMA				*i*S		**Sg**		**09 12 44.3**	**+0.7**
KEMA	**Kemaliye**	**1.42**	**283**	P		**Pb**		**09 12 24.0**	**-0.1**
KELT	**Kelkit**	**1.42**	**327**	*i*P		**Pg**		**09 12 25.3**	**+0.1**
KELT				*i*S		**Sg**		**09 12 44.2**	**+0.4**
KELT	**Kelkit**	**1.42**	**327**	P		**Pg**		**09 12 25.3**	**+0.1**
KELT				S		**Sg**		**09 12 44.2**	**+0.4**

DDA 20 09:15:03.8, 40.13N×38.02E, h7km, Md2.4, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
SUSE	**Susehri**	**0.16**	**62**	*i*P		Pg		09 15 07.2	0.0
SUSE				*i*S		Sg		09 15 10.5	+1.0
CUZAR	**Zara_SIVAS**	**0.31**	**218**	*i*P		Pg		09 15 09.9	+0.1
CUZAR				*i*S		Sg		09 15 15.2	+1.2
KELT	**Kelkit**	**0.95**	**89**	*i*P		Pg		09 15 20.5	-1.6

*IDC **20** 09:19:47.8±1.2, 35.63°N×140.84°E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.4/50, mbtmp3.4/6, ML3.4/2, MS2.4/1, Ms1 2.4/1, ms1mx2.1/35, Error ellipse: s-maj=33.2km s-min=21.3km az=90.0*
*ISCJB **20** 09:19:52.6±0.6, 35.69°N±0.04°×140.79°E±0.08, h54km±5km, mb3.5/4, Error ellipse: s-maj=10.9km s-min=7.0km az=165.2*
*JMA **20** 09:19:53.1±0.1, 35.72°N×140.69°E, h48km±1km, M3.1*
JMA Felt I J1.

ISC 20 09:19:53.8±1.0, 35.70°N±0.04°×140.76°E±0.07, h46km±7km, n17, σ0s86/19, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
CHOJ	**Chosi**	**0.08**	**89**	P		**Pn**		**09 20 00.8**	**-0.2**
CHOJ				*e*S		**Sn**		**09 20 06.7**	**+0.6**
JCN	**Nagara**	**0.54**	**238**	P		**Pn**		**09 20 04.9**	**-0.3**
JCN				S		**Sn**		**09 20 14.0**	**+0.6**
JYT	**Yasato**	**0.70**	**319**	P		**Pn**		**09 20 06.2**	**-1.1**
JYT				*e*S		**Sn**		**09 20 15.8**	**-1.3**
BSO4	**Boso 4**	**0.79**	**206**	P		**Pn**		**09 20 08.3**	**-0.1**
BSO3	**Boso 3**	**0.92**	**193**	P		**Pn**		**09 20 09.8**	**-0.3**
JHO	**Hitachi**	**0.92**	**353**	P		**Pn**		**09 20 09.9**	**-0.4**
BSO1	**Boso 1**	**1.06**	**170**	P		**Pn**		**09 20 11.9**	**+0.2**
MJAR	**Matsushiro Arr**	**2.23**	**293**	Pn		**Pn**		**09 20 28.2**	**0.0**
	6.4nm,0.3s,baz=98,slow=7.6,SNR=54								
MJAR				LR		LR		09 21 28.8	
	comp=Z,92nm,20.2s,baz=150,slow=44								
MAT	**Matsushiro**	**2.23**	**293**	P		**Pn**		**09 20 28.5**	**+0.2**
MAT				*e*S		**Sn**		**09 20 56.4**	**+1.8**
JHJ	**Hachijo jima 2**	**2.70**	**198**	Pn		**Pn**		**09 20 33.8**	**-0.9**
	25nm,0.3s,baz=245,slow=16,SNR=2.8								
JHJ				Sn		**Sn**		**09 21 05.2**	**-0.9**
	38nm,0.3s,baz=268,slow=23,SNR=1.4								
H11N2	**WAKE ISLAND Hy**	**27.96**	**118**	T		T		09 54 55.9	
	baz=309,slow=75,SNR=11								
H11N1	**WAKE ISLAND Hy**	**27.97**	**118**	T		T		09 55 03.5	
	baz=309,slow=75,SNR=9.6								
H11N3	**WAKE ISLAND Hy**	**27.98**	**118**	T		T		09 54 58.6	
	baz=309,slow=75,SNR=9.2								
MKAR	**Makanchi Array**	**44.39**	**303**	P		**P**		**09 27 59.5**	**-0.2**
	0.3nm,0.5s,baz=92,slow=7.4,SNR=2.3								
ILAR	**Eielson Array**	**50.30**	**32**	P		**P**		**09 28 50.9**	**+1.0**
	0.4nm,0.8s,baz=270,slow=5.3,SNR=5.4								
WRA	**Warramunga Arr**	**55.67**	**187**	P		**P**		**09 29 24.4**	**-1.0**
	0.4nm,0.4s,baz=2.5,slow=7.7,SNR=8.6								
ASAR	**Alice Springs**	**59.40**	**187**	P		**P**		**09 29 52.0**	**+0.4**
	0.4nm,1.0s,baz=22,slow=11,SNR=4.8								

*IDC **20** 09:30:32.1±5.1, 14.58°N×93.58W, h0km, mb3.5/3, mb1 3.9/6, mb1mx3.7/50, mbtmp3.6/6, ML3.9/3, MS3.1/8, Ms1 3.1/8, ms1mx2.9/22, Error ellipse: s-maj=88.1km s-min=49.4km az=2.0*
*MEX **20** 09:30:36.9±0.7, 14.54°N×93.70W, h16km±12km, MD4.0*
*ISCJB **20** 09:30:38.8±1.5, 14.8°N±0.1°×93.76W±0.05, h57km, mb3.6/3, MS3.1/6, Error ellipse: s-maj=16.8km s-min=7.2km az=178.1*
*NEIC **20** 09:30:38.3, 14.48°N×93.58W, h20km, MD4.0(MEX), After MEX.*

ISC 20 09:30:42.1±2.0, 15.0°N±0.2°×93.72W±0.05, h57km, n16, σ1s77/14, mb3.7/3, MS3.1/6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
CCIG	**Comitan**	**2.00**	**49**	*e*P		**Pn**		**09 31 11.5**	**-2.2**
CCIG				*e*S		**Sn**		**09 31 38.2**	**+0.4**
CCIG	**Comitan**	**2.00**	**49**	*e*P		**Pn**		**09 31 13.0**	**-0.7**
CCIG				*e*S		**Sn**		**09 31 38.2**	**+0.4**
CMIG	**Matias Romero**	**2.38**	**332**	Pn		**Pn**		**09 31 16.7**	**-2.0**
	17nm,0.3s,baz=168,slow=12,SNR=198								
CMIG				Sn		**Sn**		**09 31 46.3**	**-0.4**
	30nm,0.3s,baz=136,slow=15,SNR=6.5								
CMIG				LR		LR		09 32 34.2	
	comp=Z,371nm,21.3s,baz=201,slow=44								
HUIG	**Huatulco**	**2.43**	**289**	*i*P		Pn		09 31 15.0	-4.4
HUIG				*e*S		**Sn**		**09 31 45.6**	**-2.5**
VHO	**Vista Hermosa**	**3.57**	**306**	*i*P		**Pn**		**09 31 34.0**	**-1.2**
VHO				*i*S		**Sn**		**09 32 17.2**	**+1.0**
TEIG	**Tepich**	**7.36**	**44**	Pn		**Pn**		**09 32 24.0**	**-3.0**
	3.2nm,0.3s,baz=89,slow=24,SNR=50								
TEIG				Sn		Sn		09 33 41.9	-7.2
	3.7nm,0.3s,baz=261,slow=23,SNR=1.8								
TXAR	**Lajitas Array**	**16.98**	**329**	P		**P**		**09 34 38.1**	**+1.0**
	0.1nm,0.3s,baz=151,slow=11,SNR=7.9								
TXAR				LR		LR		09 41 55.3	
	comp=Z,41nm,19.3s,baz=0.0,slow=39								
SJG	**San Juan**	**26.60**	**79**	LR		LR		09 47 20.9	
	comp=Z,20nm,19.7s,baz=240,slow=38								
ATAH	**Atahualpa**	**26.71**	**144**	LR		LR		09 45 06.0	
	comp=Z,44nm,18.3s,baz=307,slow=33								
PDAR	**Pinedale Array**	**30.86**	**337**	P		**P**		**09 36 55.6**	**+2.4**
	0.2nm,0.6s,baz=140,slow=7.1,SNR=2.0								
NNA	**Nana**	**31.58**	**147**	LR		LR		09 46 57.2	
	comp=Z,46nm,20.2s,baz=340,slow=32								
ULM	**Lac du Bonnet**	**35.22**	**358**	LR		LR		09 55 38.4	
	comp=Z,25nm,18.3s,baz=17,slow=42								
YKA	**Yellowknife Ar**	**49.71**	**347**	P		**P**		**09 39 28.4**	**+0.2**
	0.5nm,0.6s,baz=152,slow=8.1,SNR=3.4								
INK	**Inuvik**	**59.04**	**344**	LR		LR		10 08 24.8	
	comp=Z,45nm,18.1s,baz=94,slow=38								
ILAR	**Eielson Array**	**61.29**	**337**	P		**P**		**09 40 51.5**	**+0.1**
	0.4nm,0.4s,baz=124,slow=5.5,SNR=9.6								
TORD	**Torodi Ar. Bea**	**91.77**	**76**	LR		LR		10 21 45.1	
	comp=Z,9.5nm,21.8s,baz=135,slow=34								

MEX 20 09:33:56.4±0.8, 14.02°N×93.73W, h18km±41km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
CCIG	**Comitan**	**2.73**	**34**	*e*P		Pn		09 34 36.5	-2.9
CCIG				*i*S		Sn		09 35 09.1	-2.9
HUIG	**Huatulco**	**2.88**	**307**	*i*P		Pn		09 34 39.7	-1.7
HUIG				*i*S		Sn		09 35 11.2	-4.4
VHO	**Vista Hermosa**	**4.19**	**317**	*i*P		Pn		09 34 57.5	-2.2
VHO				*e*S		Sn		09 35 45.2	-3.0

*IDC **20** 09:36:25.1±3.7, 24.20°N×125.08E, h0km, mb3.5/5, mb1 3.6/5, mb1mx3.4/60, mbtmp3.5/5, Error ellipse: s-maj=250.7km s-min=23.2km az=63.0*
*ISCJB **20** 09:36:29.7±0.9, 24.31°N±0.08°×125.27°E±0.07, h51km±8km, mb3.4/5, Error ellipse: s-maj=15.2km s-min=7.7km az=151.3*
*JMA **20** 09:36:29.9±0.2, 24.26°N×125.26E, h34km, M3.0*

ISC 20 09:36:30.5±1.6, 24.3N±0.1°×125.27E±0.08, h42km±16km, n16, σ0s49/22, mb3.5/5, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
JOGS	**Gusukube**	**0.46**	**16**	P		**Pn**		**09 36 40.6**	**-0.2**
JOGS				S		**Sn**		**09 36 48.9**	**+0.8**
JMJ	**Miyako jima 2**	**0.50**	**3**	*e*S		**Sn**		**09 36 49.4**	**+0.5**
JIRB	**Irabujima**	**0.52**	**350**	P		**Pn**		**09 36 41.2**	**-0.4**
JIRB				S		**Sn**		**09 36 49.5**	**+0.1**
JIKM	**Ikemajima**	**0.61**	**358**	P		**Pn**		**09 36 42.7**	**0.0**
JIKM				*e*S		**Sn**		**09 36 51.4**	**-0.1**
JTJ	**Tarama**	**0.61**	**303**	P		**Pn**		**09 36 42.1**	**-0.6**
JTJ				S		**Sn**		**09 36 51.3**	**-0.2**
JISG	**Ishigakijimahi**	**0.91**	**288**	P		**Pn**		**09 36 47.0**	**+0.2**
JISG				*e*S		**Sn**		**09 36 58.5**	**-0.3**
JIJ	**Ishigaki jima**	**1.03**	**273**	P		**Pn**		**09 36 48.4**	**0.0**
JIJ				*e*S		**Sn**		**09 37 01.7**	**+0.1**
JKRS	**Kuro-shima**	**1.15**	**267**	P		**Pn**		**09 36 50.5**	**+0.4**
HATJ	**Hateruma jima**	**1.36**	**260**	P		**Pn**		**09 36 52.2**	**-0.7**
IRIF	**Iriomote-Funau**	**1.40**	**271**	P		**Pn**		**09 36 53.5**	**0.0**
JYNG	**Yonagunijimaku**	**2.12**	**274**	P		**Pn**		**09 37 04.5**	**+1.1**
MKAR	**Makanchi Array**	**40.88**	**314**	P		**P**		**09 44 09.0**	**+0.6**
	0.6nm,0.5s,baz=101,slow=9.4,SNR=7.5								
ZALV	**Zalesovo Beam**	**42.22**	**325**	P		**P**		**09 44 18.6**	**-0.5**
	0.5nm,0.4s,baz=104,slow=12,SNR=1.9								
KURBB	**Kurchatov Arra**	**44.45**	**319**	P		**P**		**09 44 37.4**	**+0.1**
	0.3nm,0.6s,baz=106,slow=9.8,SNR=2.4								
WRA	**Warramunga Arr**	**44.87**	**168**	P		**P**		**09 44 40.8**	**0.0**
	0.3nm,0.6s,baz=348,slow=8.6,SNR=2.8								
ASAR	**Alice Springs**	**48.42**	**169**	P		**P**		**09 45 08.4**	**-0.3**
	0.3nm,0.5s,baz=354,slow=8.6,SNR=2.3								

*IDC **20** 09:47:04.5±1.3, 29.36°S×176.39W, h0km, mb4.2/4, mb1 4.4/4, mb1mx3.9/30, mbtmp4.2/4, MS3.5/5, Ms1 3.5/5, ms1mx2.9/24, Error ellipse: s-maj=57.4km s-min=30.7km az=172.0*
*NEIC **20** 09:47:06.2±0.8, 29.80°S×176.36W, h10km, mb4.6/1, Error ellipse: s-maj=19.1km s-min=15.2km az=55.0*

ISC 20 09:47:08.4±1.0, 29.82S±0.08°×176.44W±0.09, h24km, n23, σ1s68/25, mb4.5/6, MS3.5/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
RAO	**Raoul Island**	**1.41**	**293**	Pn		**Pb**		**09 47 34.6**	**+0.6**
	230nm,0.3s,baz=79,slow=12,SNR=10								
RAO				Sn		**Sb**		**09 47 53.1**	**+1.5**
	482nm,0.3s,baz=200,slow=22,SNR=7.5								
RAO	**Raoul Island**	**1.41**	**293**	*e*Pn		**Pb**		**09 47 34.1**	**0.0**
RAO				*e*Sn		**Sn**		**09 47 47.1**	**-3.3**
RAO				Sn		**Sb**		**09 47 53.1**	**+1.5**
PKGZ	**Pakihiroa**	**9.24**	**208**	*e*PN		**Pn**		**09 49 18.4**	**-1.8**
HAZ	**Te Kaha**	**9.26**	**210**	*e*PN		**Pn**		**09 49 19.8**	**-0.6**
HAZ				*e*SN		**Sn**		**09 51 07.2**	**+3.5**
PUZ	**Puketiti**	**9.33**	**207**	*e*PN		**Pn**		**09 49 18.8**	**-2.6**
PUZ				*e*SN		**Sn**		**09 51 05.7**	**+0.2**
MWZ	**Matawai**	**9.85**	**209**	*e*PN		**Pn**		**09 49 25.0**	**-3.6**
URZ	**Urewera**	**9.97**	**211**	Pn		**Pn**		**09 49 29.7**	**-0.4**
	0.5nm,0.3s,baz=304,slow=3.6,SNR=5.0								
URZ				Sn		**Sn**		**09 51 21.0**	**-0.2**
	1.1nm,0.3s,baz=127,slow=20,SNR=5.1								
URZ	**Urewera**	**9.97**	**211**	*e*PN		**Pn**		**09 49 27.7**	**-2.4**
DZM	**Mont Dzumac**	**17.21**	**293**	LR		LR		09 56 51.6	
	comp=Z,124nm,18.2s,baz=107,slow=34								
CTA	**Charters Tower**	**35.05**	**277**	P		**P**		**09 53 60.0**	**+0.3**
	2.5nm,0.5s,baz=106,slow=10,SNR=6.8								
STKA	**Stephens Creek**	**35.93**	**256**	P		**P**		**09 54 07.8**	**+0.8**
	3.5nm,0.6s,baz=102,slow=9.9,SNR=9.2								
STKA				LR		LR		10 07 32.2	
	comp=Z,54nm,18.3s,baz=26,slow=34								
ASAR	**Alice Springs**	**44.50**	**266**	P		**P**		**09 55 18.1**	**0.0**
	0.6nm,0.4s,baz=105,slow=7.4,SNR=16								
ASAR				LR		LR		10 13 48.1	
	comp=Z,92nm,18.2s,baz=85,slow=36								
WRA	**Warramunga Arr**	**45.44**	**271**	P		**P**		**09 55 25.1**	**-0.5**
	3.3nm,0.6s,baz=110,slow=6.0,SNR=47								
FITZ	**Fitzroy Crossi**	**53.72**	**269**	LR		LR		10 18 04.7	
	comp=Z,22nm,18.3s,slow=35								
NWAO	**Narrogin (SRO)**	**55.87**	**249**	LR		LR		10 16 45.5	
	comp=Z,50nm,18.9s,slow=32								
QSPA	**South Pole Qui**	**60.29**	**180**	*e*P		**P**		**09 57 15.3**	**+0.5**
	22nm,1.2s								
SML	**Sawmill**	**94.10**	**13**	*e*P		P		10 00 15.6	-8.6
	2.4nm,0.9s								
MKAR	**Makanchi Array**	**118.44**	**310**	PKP		**PKPdf**		**10 05 53.4**	**-0.3**
	0.4nm,0.8s,baz=45,slow=4.3,SNR=3.1								
FINES	**FINESS Array B**	**145.05**	**341**	PKP		**PKPbc**		**10 06 41.9**	**-0.5**
	2.7nm,0.6s,baz=48,slow=2.8,SNR=4.8								
NB2	**NORSAR Subarra**	**148.37**	**353**	PKP		**PKPbc**		**10 06 51.7**	**-0.4**
	comp=Z,0.8nm,0.7s,baz=9.8,slow=2.9								
NOA	**NORSAR Array B**	**148.37**	**353**	PKPbc		**PKPdf**		**10 06 49.1**	**+0.4**
	comp=Z,1.5nm,0.8s,baz=14,slow=4.4,SNR=4.7								
AKASG	**Malin Array Be**	**151.64**	**325**	PKPbc		**PKPbc**		**10 07 00.2**	**-0.1**
	comp=Z,0.8nm,0.4s,baz=50,slow=3.1,SNR=9.5								
TORD	**Torodi Ar. Bea**	**163.32**	**174**	PKPab		**PKPab**		**10 08 01.8**	**+1.8**
	comp=Z,1.5nm,0.9s,baz=174,slow=3.5,SNR=7.1								

NEIC 20 10:00:16.9, 52.70N×169.45W, h5km, ML3.5(AEIC), After AEIC., Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
NIKH	**Nikolski High**	**0.45**	**53**	P		Pg		10 00 26.2	+0.7
NIKH				S		Sb		10 00 34.1	-0.3
OKWR	**Okmok West Rim**	**1.05**	**45**	P		Pb		10 00 37.5	-0.1
OKTU	**Okmok Mt. Tuli**	**1.09**	**51**	P		Pg		10 00 37.3	-0.5
OKTU				S		Sb		10 00 52.6	-0.2
OKAK	**Okmok**	**1.10**	**36**	P		Pg		10 00 35.6	-2.4
OKRE	**Okmok R'deer P**	**1.13**	**43**	P		Pg		10 00 38.6	+0.1
OKER	**Okmok East Rim**	**1.13**	**48**	P		Pg		10 00 38.6	0.0
MSOM	**Makushin Julie**	**1.87**	**52**	P		Pn		10 00 49.4	-0.1
MSOM				S		Sb		10 01 14.7	-0.5
MCIR	**Makushin Cirqu**	**1.98**	**50**	P		Pn		10 00 51.2	0.0
MTBL	**Makushin Table**	**2.09**	**51**	P		Pn		10 00 52.3	-0.3
UNV	**Unalaska Valle**	**2.11**	**56**	P		Pn		10 00 51.6	-1.2
UNV				S		Sn		10 01 20.2	+0.8

IDC 20 10:10:30.9±2.4, 5.85S×129.02E, h308km±35km, mb2.9/2, mb1 3.3/6, mb1mx3.0/40, mbtmp4.0/6, Error ellipse: s-maj=61.2km s-min=15.1km az=88.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
SIJI	**Sorong**	**5.44**	**24**	P		Pn		10 11 55.5	+1.5
	14nm,0.3s,baz=4.4,slow=2.9,SNR=1.6								
SIJI				S		S		10 12 60.0	-0.8
	27nm,0.3s,baz=270,slow=21,SNR=1.9								
FITZ	**Fitzroy Crossi**	**12.61**	**195**	P		Pn		10 13 20.3	-0.4
	0.2nm,0.3s,baz=26,slow=10,SNR=2.0								
FITZ				S		S		10 15 36.9	-3.8
	0.1nm,0.3s,baz=360,slow=22,SNR=2.0								
WRA	**Warramunga Arr**	**14.93**	**160**	P		P		10 13 47.1	+0.2
	1.2nm,0.3s,baz=341,slow=11,SNR=32								
ASAR	**Alice Springs**	**18.32**	**166**	P		P		10 14 24.1	+0.4
	1.0nm,0.3s,baz=346,slow=12,SNR=32								
MKAR	**Makanchi Array**	**66.74**	**327**	P		P		10 20 49.7	+0.1
	0.3nm,0.5s,baz=111,slow=8.0,SNR=1.8								
KURBB	**Kurchatov Arra**	**71.03**	**329**	P		P		10 21 15.6	-0.2
	0.3nm,0.6s,baz=124,slow=4.8,SNR=4.2								

MEX 20 10:43:39.7±0.7, 14.75N×93.66W, h20km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
CCIG	**Comitan**	**2.12**	**44**	*e*P		Pn		10 44 12.2	-2.0
CCIG				*e*S		Sn		10 44 35.7	-4.4

IDC 20 10:43:49.4±1.7, 14.54S×173.96W, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.5/38, mbtmp3.6/4, ML3.1/1, Error ellipse: s-maj=194.8km s-min=26.5km az=162.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
AFI	**Afiamalu**	**2.21**	**74**	Pn		Pn		10 44 27.4	0.0
	5.8nm,0.3s,baz=75,slow=1.1,SNR=8.8								
AFI				Sn		Sn		10 44 50.2	-5.3
	15nm,0.3s,baz=109,slow=20,SNR=12								
STKA	**Stephens Creek**	**44.00**	**239**	P		P		10 51 58.8	0.0
	1.1nm,0.6s,baz=124,slow=3.6,SNR=3.8								
WRA	**Warramunga Arr**	**49.51**	**256**	P		P		10 52 42.4	+0.1
	0.4nm,1.0s,baz=91,slow=6.9,SNR=5.0								
ASAR	**Alice Springs**	**49.86**	**251**	P		P		10 52 44.4	-0.4
	0.6nm,0.6s,baz=88,slow=8.0,SNR=12								

*KRSC **20** 10:53:33.9±1.7, 51.23N×154.54E, h527km±21km, ML4.3*
*MOS **20** 10:53:35.9±0.6, 51.24N×154.61E, h517km, mb3.8/5, Error ellipse: s-maj=41.5km s-min=7.3km az=64.3*
*IDC **20** 10:53:38.9±1.4, 52.10N×152.80E, h436km±16km, mb3.1/8, mb1 3.4/11, mb1mx3.0/62, mbtmp4.0/11, Error ellipse: s-maj=30.6km s-min=12.1km az=120.0*

ISC 20 10:53:40.4±1.0, 51.6N±0.1°×154.5E±0.2, h479km±9km, n71, σ1s75/84, mb3.6/8, 1C, Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res
SKR	**Severo-Kuril's**	**1.36**	**130**	*e*P		**P**		**10 54 39.6**	**-1.2**
SKR				*e*S		**S**		**10 55 28.1**	**-1.6**
SKR				pmax		pmax			
	comp=Z,59nm,0.7s								
SKR				smax		smax			
	comp=E,48nm,1.0s	

BDR	**Baidarnaya**	**6.38**	**36**	*e*P		**P**	10 55 20.1	+0.6
BDR				*e*S		**S**	**10 56 44.4**	**+3.7**
SRKR	**Sorokina**	**6.43**	**35**	P		P	**10 55 20.1**	**+0.1**
SRKR				S		**S**	**10 56 41.8**	**+0.2**
SRKR	**Sorokina**	**6.43**	**35**	*e*P		P	**10 55 20.1**	**+0.1**
SRKR				*e*S		**S**	**10 56 41.8**	**+0.2**
SMKR	**Semkarok**	**6.49**	**37**	P		P	**10 55 21.4**	**+0.8**
SMKR				S		**S**	**10 56 45.6**	**+2.9**
SMKR	**Semkarok**	**6.49**	**37**	*e*P		P	**10 55 21.4**	**+0.8**
SMKR				*e*S		**S**	**10 56 45.6**	**+2.9**
KBG	**Krutoberegovo**	**6.75**	**43**	P		P	**10 55 22.0**	**-1.1**
KBG				S		**S**	**10 56 44.0**	**-3.4**
KBG	**Krutoberegovo**	**6.75**	**43**	*e*P		P	**10 55 22.0**	**-1.1**
KBG				*e*S		**S**	**10 56 44.0**	**-3.4**
KUR	**Kuril'sk**	**7.72**	**217**	*e*P		P	10 55 28.3	-5.0
KUR				*e*S		S	10 56 51.2	-15
KUR				pmax		pmax		
	comp=Z,33nm,0.5s							
BKI	**Bering**	**7.77**	**58**	*e*S		**S**	**10 57 06.3**	**-0.5**
YSS	**Yuzh-Sakhalins**	**8.95**	**243**⇑	*e*P		P	10 55 39.0	-7.3
YSS				pmax		pmax		
	comp=Z,30nm,0.8s							
SHO	**Shikotan**	**9.27**	**217**	*e*P		P	10 55 43.9	-5.8
SHO				*e*S		S	10 57 22.0	-14
SHO				pmax		pmax		
	comp=Z,147nm,0.6s							
YUK	**Yuzh-Kuril'sk**	**9.51**	**221**	P		P	10 55 47.3	-5.0
YUK				S		S	10 57 24.2	-17
ASAJ	**Asahikawa**	**10.92**	**232**	P		P	10 56 03.1	-4.3
	comp=Z,0.6nm,0.3s,baz=71,slow=14,SNR=5.9							
SEY	**Seymchan**	**11.45**	**355**	P		P	10 56 06.8	-6.0
	comp=Z,1.8nm,0.3s,baz=177,slow=9.7,SNR=41							
BILL	**Bilibino**	**17.49**	**15**	*e*P		**P**	**10 57 11.7**	**-4.7**
BILL				pmax		pmax		
	comp=Z,3.0nm,1.0s							
ILAR	**Eielson Array**	**32.31**	**43**	P		P	10 59 32.2	+3.8
	comp=Z,1.3nm,0.6s,baz=276,slow=10,SNR=26							
INK	**Inuvik**	**37.15**	**36**	P		**P**	**11 00 11.8**	**+3.0**
	comp=Z,1.9nm,0.3s,baz=296,slow=8.5,SNR=17							
YKA	**Yellowknife Ar**	**46.58**	**40**	P		P	11 01 26.9	+3.4
	comp=Z,1.5nm,0.6s,baz=305,slow=7.0,SNR=8.0							
PDAR	**Pinedale Array**	**61.26**	**57**	P		P	11 03 14.2	+6.0
	comp=Z,0.2nm,0.4s,baz=340,slow=1.7,SNR=3.4							
EKA	**Eskdalemuir Ar**	**71.85**	**347**	P		**P**	**11 04 10.5**	**-3.0**
	comp=Z,0.2nm,0.3s,baz=27,slow=3.3,SNR=3.0							
WRA	**Warramunga Arr**	**73.36**	**200**	P		**P**	**11 04 25.4**	**+2.7**
	comp=Z,1.4nm,0.5s,baz=14,slow=6.0,SNR=16							
TXAR	**Lajitas Array**	**74.40**	**63**	P		P	11 04 35.3	+6.6
	comp=Z,0.2nm,0.3s,baz=299,slow=5.8,SNR=6.5							
ASAR	**Alice Springs**	**77.07**	**199**	P		P	11 04 47.0	+3.6
	comp=Z,1.4nm,0.7s,baz=10,slow=5.2,SNR=17							
ASAR	**Alice Springs**	**77.07**	**199**	P		P	11 04 47.0	+3.7
ASAR				pmax		pmax		
	comp=Z,1.0nm,0.7s							

IDC 20 10:55:52.3±1.8, 3°93N×128°08E, h0km, mb3.7/5, mb1 3.9/5, mb1mx3.6/52, mbtmp3.7/5, Error ellipse: s-maj=102.4km s-min=23.4km az=69.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**22.02**	**186**	P	P	11 00 48.2	-0.3
	2.6nm,1.0s,baz=350,slow=12,SNR=2.2						
WRA	**Warramunga Arr**	**24.50**	**166**	P	P	11 01 14.0	+0.4
	2.1nm,0.8s,baz=346,slow=11,SNR=1.2						
ASAR	**Alice Springs**	**28.01**	**169**	P	P	11 01 45.2	+0.1
	0.3nm,0.6s,baz=345,slow=7.0,SNR=7.1						
STKA	**Stephens Creek**	**37.85**	**161**	P	P	11 03 10.4	-0.5
	1.6nm,0.8s,baz=332,slow=14,SNR=2.2						
MKAR	**Makanchi Array**	**58.17**	**325**	P	P	11 05 48.0	-0.1
	0.5nm,0.4s,baz=125,slow=6.4,SNR=3.3						

*NIED **20** 10:59:00, 39°.90N×143°.70E, h11km, Mw4.0 Best double couple: M0 1.26000×10^15 NP1:φs167.00000°, δ38.00000°, λ46.00000°. NP2:φs38.00000°, δ64.00000°, λ118.00000°.*
*IDC **20** 10:59:32.5±0.9, 39°.80N×143°.80E, h0km, mb4.0/12, mb1 4.1/16, mb1mx3.9/59, mbtmp4.0/16, ML3.1/3, MS2.9/6, Ms1 3.0/6, ms1mx2.7/33, Error ellipse: s-maj=22.9km s-min=17.1km az=98.0*
*JMA **20** 10:59:34.9±0.2, 39°.91N×143°.67E, h28km, M4.1*
*NEIC **20** 10:59:35.8±2.2, 39°.83N×143°.77E, h21km±15km, mb4.6/1, Error ellipse: s-maj=12.9km s-min=5.6km az=103.0*

ISC 20 10:59:33.7±3.5, 39°.89N±0°.06×143°.66E±0°.08, h5km±21km, n43, σ1s12/40, mb4.0/13, MS2.9/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.38**	**273**	P	**Pn**	**10 59 58.9**	**-0.7**
JTH				*e*S	**Sg**	**11 00 16.6**	**-1.4**
MIYJ	**Miyakonagasawa**	**1.45**	**258**	P	**Pn**	**11 00 00.3**	**-0.3**
MIYJ				S	**Sb**	**11 00 18.4**	**-1.6**
JANG	**Nango**	**1.71**	**287**	P	**Pn**	**11 00 03.6**	**-0.6**
JOM	**Ohasama**	**1.87**	**258**	P	**Pn**	**11 00 06.8**	**+0.4**
JMK	**Ichinoseki**	**2.11**	**244**	P	**Pn**	**11 00 09.6**	**0.0**
ERM	**Erimo**	**2.15**	**350**	*e*Pn	**Pn**	**11 00 11.4**	**+1.1**
JAH	**Hinai**	**2.34**	**278**	P	**Pn**	**11 00 13.6**	**+0.8**
JRG	**Rokugo**	**2.39**	**259**	P	**Pn**	**11 00 14.1**	**+0.6**
JOT	**Ohata**	**2.48**	**308**	P	**Pn**	**11 00 15.3**	**+0.5**
JOT				*e*S	**Sn**	**11 00 44.5**	**-1.0**
JNBK	**Urakawa-nobuka**	**2.48**	**344**	P	**Pn**	**11 00 15.1**	**+0.3**
JNBK				*e*S	**Sn**	**11 00 44.6**	**-0.9**
JCH	**Churui**	**2.73**	**355**	P	**Pn**	**11 00 17.6**	**-0.6**
JCH				*e*S	**Sn**	**11 00 49.4**	**-2.2**
JYK	**Kaneyama**	**2.73**	**250**	P	**Pn**	**11 00 18.8**	**+0.5**
JKB	**Kayabe**	**2.82**	**316**	P	**Pn**	**11 00 20.9**	**+1.5**
JAK	**Akkeshi**	**3.20**	**14**	P	**Pn**	**11 00 23.5**	**-1.1**
JAK				*e*S	**Sn**	**11 01 00.6**	**-2.5**
ASAJ	**Asahikawa**	**4.29**	**350**	Pn	**Pn**	**11 00 40.7**	**+1.0**
MJAR	**Matsushiro Arr**	**5.44**	**234**	Pn	**Pn**	**11 00 56.1**	**+0.6**
	2.7nm,0.3s,baz=43,slow=11,SNR=16						
MAJO	**Matsushiro**	**5.44**	**234**	*e*Pn	**Pn**	**11 00 56.2**	**+0.8**
	22nm,0.4s						
JHJ2	**Mitsune**	**7.44**	**206**	*e*Pn	**Pn**	**11 01 22.9**	**0.0**
USRK	**Ussuriysk Ar.**	**9.69**	**300**	Pn	**Pn**	**11 01 56.0**	**+2.3**
	0.4nm,0.3s,baz=108,slow=12,SNR=7.1						
KLR	**Kul'dur**	**12.61**	**322**	Pn	**Pn**	**11 02 35.8**	**+2.2**
	0.1nm,0.3s,baz=135,slow=13,SNR=5.1						
KLR				LR	LR	11 07 11.2	
	comp=Z,26nm,20.3s,baz=130,slow=36						
SEY	**Seymchan**	**23.66**	**10**	P	**P**	**11 04 45.6**	**-0.2**
	2.5nm,0.5s,baz=351,slow=15,SNR=8.7						
YAK	**Yakutsk**	**23.75**	**344**	LR	LR	11 13 48.5	
	comp=Z,34nm,18.4s,baz=44,slow=36						
YAK	**Yakutsk**	**23.75**	**344**	*e*P	**P**	**11 04 46.9**	**+0.3**
	14nm,0.8s						
SONM	**Songino Array**	**27.80**	**299**	P	**P**	**11 05 24.3**	**+0.5**
	1.2nm,0.5s,baz=77,slow=8.4,SNR=8.5						
SONM				LR	LR	11 16 26.1	
	comp=Z,27nm,18.0s,baz=120,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.32**	**128**	T	T	11 35 10.0	
	baz=318,slow=76,SNR=20						
H11N1	**WAKE ISLAND Hy**	**28.33**	**128**	T	T	11 35 10.0	
	baz=318,slow=76,SNR=20						
H11N3	**WAKE ISLAND Hy**	**28.34**	**128**	T	T	11 35 10.0	
	baz=318,slow=76,SNR=16						
H11S1	**WAKE ISLAND Hy**	**29.15**	**130**	T	T	11 36 09.2	
	baz=3.6,slow=74,SNR=4.5						
H11S3	**WAKE ISLAND Hy**	**29.15**	**130**	T	T	11 36 02.7	
H11S2	**WAKE ISLAND Hy**	**29.16**	**130**	T	T	11 36 04.4	
	baz=326,slow=74,SNR=4.0						
TLY	**Talaya**	**29.92**	**307**	LR	LR	11 17 24.4	
	comp=Z,18nm,18.4s,baz=152,slow=36						
ZALV	**Zalesovo Beam**	**41.36**	**310**	P	**P**	**11 07 20.8**	**+0.4**
	1.3nm,0.4s,baz=97,slow=8.7,SNR=5.3						
ZALV				LR	LR	11 25 19.4	
	comp=Z,26nm,19.7s,baz=70,slow=37						
CMAR	**Chiang Mai Arr**	**43.95**	**254**	LR	LR	11 26 55.1	
	comp=Z,14nm,18.5s,baz=200,slow=37						
MKAR	**Makanchi Array**	**44.16**	**300**	P	**P**	**11 07 42.9**	**-0.3**
	0.7nm,0.4s,baz=91,slow=7.2,SNR=11						
ILAR	**Eielson Array**	**46.14**	**34**	P	**P**	**11 07 58.7**	**-0.1**
	0.3nm,0.7s,baz=263,slow=7.2,SNR=3.1						
INK	**Inuvik**	**51.04**	**28**	P	**P**	**11 08 36.4**	**0.0**
	0.8nm,0.4s,baz=341,slow=7.7,SNR=3.1						
WRA	**Warramunga Arr**	**60.16**	**190**	P	**P**	**11 09 40.7**	**-1.7**
	0.8nm,0.5s,baz=9.1,slow=6.8,SNR=8.6						
ASAR	**Alice Springs**	**63.88**	**190**	P	**P**	**11 10 07.1**	**-0.3**
	0.2nm,0.6s,baz=8.6,slow=8.0,SNR=5.6						
FINES	**FINESS Array B**	**67.10**	**332**	P	**P**	**11 10 27.7**	**-0.1**
	1.5nm,0.7s,baz=64,slow=8.7,SNR=4.8						
KVAR	**Kislovodsk Arr**	**70.36**	**311**	P	**P**	**11 10 50.2**	**+1.6**
	3.6nm,0.4s,baz=283,slow=6.3,SNR=3.8						
KBZ	**Khabaz**	**70.37**	**311**	P	**P**	**11 10 49.7**	**+1.2**
	2.2nm,0.8s,baz=44,slow=6.1,SNR=4.4						
NB2	**NORSAR Subarra**	**72.22**	**338**	P	**P**	**11 10 59.3**	**-0.2**
	comp=Z,1.3nm,0.6s,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**72.22**	**338**	P	**P**	**11 10 59.5**	**0.0**
	comp=Z,1.0nm,0.8s,baz=38,slow=6.0,SNR=2.7						

*BJI **20** 11:01:06.0, 11°.00N×87°.90W, h19km, mB5.2/2, Ms5.1/4, Ms7 4.7/4*
*NEIC **20** 11:01:08.5±0.7, 11°.01N×87°.87W, mb4.6/64, Error ellipse: s-maj=13.2km s-min=7.1km az=193.0*
NEIC Felt at San Salvador, El Salvador.
*ISCJB **20** 11:01:11.7±0.6, 11°.61N±0°.06×87°.99W±0°.04, h21km, mb4.5/70, MS3.6/16, Error ellipse: s-maj=8.8km s-min=6.1km az=1.8*
*CASC **20** 11:01:20.8±1.8, 12°.14N×88°.20W, h54km±204km, MD4.1, ML3.6, mb4.6(NEIC)*
*IDC **20** 11:01:27.9±6.6, 12°.38N×88°.01W, h98km±47km, mb4.0/11, mb1 4.2/12, mb1mx3.9/40, mbtmp4.3/12, MS3.4/15, Ms1 3.4/15, ms1mx3.3/26, Error ellipse: s-maj=47.5km s-min=30.6km az=17.0*

ISC 20 11:01:14.6±0.7, 11°.67N±0°.06×88°.14W±0°.06, h23km±4km, n427, σ1s23/423, mb4.5/70, MS3.5/16, 5C-3D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**1.63**	**10**⇑	*e*P	**Pn**	**11 01 41.9**	**-0.2**
CNGN	**Cerro Negro**	**1.63**	**59**	*e*P	**Pb**	**11 01 44.7**	**+0.5**
CNGN				*e*S	**Sn**	**11 01 59.3**	**-3.2**
CNGN				AML	AML	11 02 11.7	
	comp=N,595nm,0.6s						
MOMN	**Momotombo**	**1.73**	**65**	*e*P	**Pb**	**11 01 46.4**	**+0.7**
LCY	**Lacayo**	**1.75**	**355**⇑	*e*P	**Pn**	**11 01 43.1**	**-0.7**
LCY				*e*S	**Sn**	**11 02 01.2**	**-4.3**
VSM	**San Miguel**	**1.76**	**356**	*e*P	**Pn**	**11 01 43.3**	**-0.7**
BLLM	**Bellamira**	**1.77**	**357**‖	*i*P	**Pn**	**11 01 43.5**	**-0.5**
PACA	**Pacayal**	**1.80**	**354**⇑	*i*P	**Pn**	**11 01 43.7**	**-0.8**
PACA				*e*P	**Pn**	**11 01 44.0**	**-0.5**
PACA				*e*S	**Sn**	**11 02 02.8**	**-3.9**
XAVN	**Gruta Xavier**	**1.84**	**75**	*e*P	**Pb**	**11 01 49.3**	**+1.7**
TISN	**Laguna Tiscapa**	**1.89**	**75**	*e*P	**Pb**	**11 01 50.1**	**+1.6**
MGAN	**Managua**	**1.91**	**75**	*e*P	**Pb**	**11 01 50.3**	**+1.4**
CAHU	**Cacacuatique**	**2.09**	**358**	*e*P	**Pn**	**11 01 48.4**	**-0.1**
LFRS	**El Faro**	**2.15**	**335**	*e*P	**Pn**	**11 01 47.8**	**-1.4**
LBRS	**Las Brisas**	**2.24**	**337**	*e*P	**Pn**	**11 01 49.0**	**-1.5**
SNET	**Serv Nac Est T**	**2.28**	**332**	*e*Pn	**Pn**	**11 01 49.5**	**-1.4**
SNET	**Serv Nac Est T**	**2.28**	**332**	*e*P	**Pn**	**11 01 49.5**	**-1.4**
SNET				*e*S	**Sn**	**11 02 12.6**	**-5.8**
SNET				AML	AML	11 02 18.4	
	comp=Z,860nm,0.3s						
LFU	**La Fuente**	**2.28**	**335**	*e*P	**Pn**	**11 01 50.1**	**-0.9**
BOQS	**Boqueron**	**2.34**	**332**	*e*P	**Pn**	**11 01 51.0**	**-0.9**
BOQS				*e*S	**Sn**	**11 02 15.2**	**-5.0**
SBLS	**San Blas**	**2.60**	**326**	*e*P	**Pn**	**11 01 55.1**	**-0.5**
MONT	**Ecomontaæa**	**2.63**	**326**⇑	*e*P	**Pn**	**11 01 55.6**	**-0.4**
RTR	**El Retiro**	**2.66**	**327**	*e*P	**Pn**	**11 01 56.0**	**-0.3**
CGA2	**Cerro Gallo 2**	**3.96**	**114**	*e*P	**Pb**	**11 02 23.7**	**-0.2**
QCR	**Quepos**	**4.50**	**119**⇑	*i*P	**Pb**	**11 02 30.9**	**-2.0**
URSC	**Urasca**	**4.65**	**113**‖	*e*P	**Pb**	**11 02 34.6**	**-1.1**
BUS	**Buena Vista**	**4.79**	**116**‖	*e*P	Pb	11 02 35.6	-2.6
CCIG	**Comitan**	**6.01**	**320**	*e*Pn	**Pn**	**11 02 45.3**	**+2.9**
CMIG	**Matias Romero**	**8.47**	**310**	P	**Pn**	**11 03 17.8**	**+1.7**
	comp=Z,1.5nm,0.3s,baz=134,slow=9.9,SNR=26						
CMIG				S	**Sn**	**11 04 46.5**	**-4.5**
	comp=Z,0.7nm,0.3s,baz=234,slow=20,SNR=3.1						
TEIG	**Tepich**	**8.51**	**359**	P	**Pn**	**11 03 19.2**	**+2.6**
	comp=Z,0.7nm,0.3s,baz=89,slow=23,SNR=16						
TEIG				LR	LR	11 06 41.5	
	comp=Z,172nm,19.8s,baz=177,slow=40						
HELC	**Santa Helena**	**13.59**	**113**	*e*Pn	Pn	11 04 11.8	-15
035Z	**Hargill**	**17.44**	**329**	P	**P**	**11 05 19.8**	**+2.1**
	baz=146,SNR=8.5						
ZAIG	**Zacatecas**	**17.64**	**311**	*e*P	**Pn**	**11 05 19.2**	**-0.2**
	comp=Z,22nm,1.7s						
035A	**Encino**	**17.85**	**330**	P	**P**	**11 05 24.6**	**+2.4**
	baz=147						
034A	**Hebbronville**	**18.25**	**329**	P	**P**	**11 05 28.0**	**+1.4**
	baz=146,SNR=9.5						
835A	**Beeville**	**18.86**	**333**	P	**Pn**	**11 05 35.8**	**+1.9**
	baz=150						
933A	**Laredo**	**19.00**	**328**	P	**Pn**	**11 05 36.2**	**+0.6**
	baz=145,SNR=8.5						
834A	**Tilden**	**19.06**	**331**	P	**Pn**	**11 05 36.8**	**+0.5**
	baz=148,SNR=17						
736A	**Circle Diamond**	**19.12**	**335**	P	**Pn**	**11 05 38.0**	**+1.0**
	baz=153						
636A	**Smothers Creek**	**19.58**	**336**	P	**Pn**	**11 05 43.0**	**+0.4**
	baz=153,SNR=11						
833A	**Chaparral WMA,**	**19.64**	**329**	P	**Pn**	**11 05 42.6**	**-0.7**
	baz=146,SNR=32						
734A	**La Parita Cree**	**19.67**	**332**	P	**Pn**	**11 05 42.9**	**-0.8**
	baz=149						
635A	**Leesville**	**19.79**	**334**	P	**P**	**11 05 43.7**	**+0.3**
	baz=151						
537A	**Green Hill Far**	**19.84**	**339**	P	**Pn**	**11 05 44.8**	**-0.8**
	baz=156,SNR=7.0						
832A	**Faith Ranch, C**	**19.90**	**328**	P	**P**	**11 05 45.1**	**+0.3**
	baz=144,SNR=15						
733A	**Divot King Ran**	**19.91**	**330**	P	**Pn**	**11 05 46.0**	**-0.6**
	baz=147,SNR=67						
439A	**Center Grove,**	**20.00**	**343**	P	**Pn**	**11 05 47.3**	**-0.3**
	baz=161						
634A	**China Grove, S**	**20.03**	**333**	P	**P**	**11 05 47.0**	**+0.9**
	baz=150						
536A	**Bastrop**	**20.11**	**337**	P	**P**	**11 05 47.8**	**+0.8**
	baz=154						
341A	**Kurthwood**	**20.12**	**347**	P	**Pn**	**11 05 48.6**	**-0.3**
	baz=165,SNR=5.3						
TIGA	**Tifton**	**20.12**	**11**	P	**P**	**11 05 47.9**	**+0.8**
	baz=192,SNR=5.3						
TIGA	**Tifton**	**20.12**	**11**	*e*P	**Pn**	**11 05 49.0**	**0.0**
	comp=Z,34nm,0.8s						
438A	**Sam Houston St**	**20.17**	**341**	P	Pn	11 05 49.0	-0.5
	baz=159						
535A	**Dale**	**20.27**	**336**	P	Pn	11 05 49.7	-1.0
	baz=153						
248A	**Dixon Mills**	**20.34**	**1**	P	**P**	**11 05 50.0**	**+0.6**
	baz=180						
340A	**Bronson**	**20.36**	**346**	P	Pn	11 05 51.3	-0.5
	baz=163,SNR=8.8						
244A	**Avery, Jackson**	**20.42**	**354**	P	Pn	11 05 51.8	-0.7
	baz=172,SNR=9.5						
339A	**Huntington**	**20.45**	**344**	P	Pn	11 05 51.9	-0.9
	baz=162,SNR=6.7						
633A	**Saathoff Ranch**	**20.48**	**331**	P	**P**	**11 05 51.1**	**+0.2**
	baz=148,SNR=18						
VBMS	**Vicksburg**	**20.57**	**354**	P	Pn	11 05 53.6	-0.7
	baz=173						
242A	**Grayson**	**20.63**	**350**	P	Pn	11 05 54.7	-0.2
	baz=168						
436A	**Wall Ranch, Ga**	**20.64**	**338**	P	**P**	**11 05 53.1**	**+0.4**
	baz=155						
534A	**Blanco**	**20.64**	**334**	P	**P**	**11 05 52.5**	**-0.3**
	baz=150,SNR=26						
338A	**Crockett**	**20.69**	**342**	P	Pn	11 05 55.0	-0.6
	baz=160						
241A	**Mo Tay, Goldon**	**20.73**	**348**	P	Pn	11 05 55.3	-0.9
	baz=166						
NATX	**Nacogdoches**	**20.89**	**344**	P	**P**	**11 05 56.1**	**+0.7**
	baz=162						
NATX	**Nacogdoches**	**20.89**	**344**	*e*P	**P**	**11 05 56.6**	**+1.3**
	comp=Z,24nm,0.8s						
240A	**Hunter Patters**	**20.93**	**347**	P	Pn	11 05 57.1	-1.3
	baz=164						
533A	**Kerrville**	**20.93**	**333**	P	**P**	**11 05 56.0**	**+0.1**
	baz=149,SNR=57						
435B	**Jarrell**	**20.94**	**337**	P	**P**	**11 05 56.1**	**+0.1**
	baz=153						
239A	**Gary**	**21.08**	**345**	P	**P**	**11 05 58.3**	**+0.9**
	baz=162						
336A	**Riesel**	**21.21**	**339**	P	**P**	**11 05 59.4**	**+0.5**
	baz=156						
238A	**Jacksonville**	**21.24**	**343**	P	**P**	**11 05 59.9**	**+0.7**
	baz=161						
434A	**Burnet**	**21.24**	**335**	P	**P**	**11 05 58.8**	**-0.5**
	baz=152,SNR=14						
LRAL	**Lakeview Retre**	**21.30**	**3**	*e*P	**P**	**11 06 00.9**	**+1.1**
	comp=Z,13nm,0.9s						
335A	**Moody**	**21.33**	**338**	P	**P**	**11 06 00.8**	**+0.7**
	baz=154						
Z47A	**Carrollton**	**21.43**	**0**	P	**P**	**11 06 01.6**	**+0.4**
	baz=180						
237A	**Washetta, Mont**	**21.44**	**342**	P	P	11 06 03.8	+2.5
	baz=159						
140A	**Cam and Jess,**	**21.47**	**347**	P	P	11 06 02.1	+0.6
	baz=165						
433A	**Art**	**21.54**	**334**	P	**P**	**11 06 02.2**	**-0.3**
	baz=150,SNR=34						
Z44A	**Pea Ridge, Bel**	**21.61**	**355**	P	P	11 06 04.2	+1.1
	baz=173						
Z48A	**Northport**	**21.62**	**1**	P	**P**	**11 06 04.1**	**+0.9**
	baz=181,SNR=5.7						
JCT	**Junction City**	**21.62**	**332**	P	**P**	**11 06 03.5**	**+0.2**
	baz=148,SNR=6.5						
JCT	**Junction City**	**21.62**	**332**	*e*P	**P**	**11 06 04.0**	**+0.6**
	comp=Z,21nm,0.6s						
334A	**Lometa**	**21.69**	**336**	P	**P**	**11 06 03.5**	**-0.5**
	baz=152,SNR=16						
139A	**Bunkhouse Ranc**	**21.69**	**346**	P	P	11 06 04.9	+0.9
	baz=163						
Z42A	**Norrel Spur, H**	**21.79**	**351**	P	P	11 06 05.5	+0.4
	baz=170						
138A	**Matatall Enter**	**21.85**	**344**	P	P	11 06 06.9	+1.2
	baz=161						
Z41A	**Richland Creek**	**21.91**	**349**	P	P	11 06 07.5	+1.1
	baz=167						
WHTX	**Lake Whitney,**	**21.98**	**338**	P	P	11 06 06.8	-0.3
	baz=155						
137A	**Heron Place, G**	**21.98**	**343**	P	P	11 06 09.5	+2.4
	baz=160,SNR=5.3						
333A	**Richland Sprin**	**21.98**	**335**	P	P	11 06 06.6	-0.7
	baz=151,SNR=43						
Z40A	**Long Farm, Mag**	**22.03**	**348**	P	P	11 06 08.2	+0.6
	baz=166						
GOGA	**Godfrey**	**22.07**	**10**	*e*P	**P**	**11 06 09.0**	**+1.0**
	comp=Z,9.3nm,0.7s						
136A	**Ennis**	**22.10**	**341**	P	P	11 06 08.3	-0.1
	baz=158,SNR=5.1						
Y46A	**Houston**	**22.13**	**358**	P	P	11 06 09.1	+0.4
	baz=178						
Y45A	**Yeager Farm, C**	**22.14**	**357**	P	P	11 06 09.4	+0.6
	baz=176						
Y47A	**UCPARC, Winfie**	**22.14**	**1**	P	P	11 06 09.1	+0.3
	baz=180						
234A	**Clairette**	**22.24**	**337**	P	P	11 06 09.9	0.0
	baz=153,SNR=7.4						
Y44A	**Strider, Charl**	**22.28**	**355**	P	P	11 06 09.9	-0.3
	baz=174						
Z38A	**Mt. Pleasant**	**22.38**	**345**	P	P	11 06 11.9	+0.4
	baz=162						
WLAR	**White Oak Lake**	**22.39**	**349**	*e*P	P	11 06 14.5	+3.0
	comp=Z,70nm,0.7s						
135A	**Vickery Place,**	**22.47**	**339**	P	P	11 06 12.9	+0.5
	baz=156						
Y41A	**Eaglette Beard**	**22.49**	**350**	P	P	11 06 12.9	+0.3
	baz=168						
Z37A	**Pogue Cattle C**	**22.50**	**343**	P	P	11 06 13.1	+0.3
	baz=160						
233A	**Rising Star**	**22.55**	**336**	P	P	11 06 12.7	-0.6
	baz=152,SNR=20						
X45A	**UM Field Stati**	**22.68**	**357**	P	P	11 06 14.6	0.0
	baz=176						
134A	**White-Moore Ra**	**22.73**	**338**	P	P	11 06 15.8	+0.6
	baz=154						
Y40A	**Okolona**	**22.74**	**349**	P	P	11 06 15.7	+0.6
	baz=167,SNR=8.4						
TXAR	**Lajitas Array**	**22.77**	**323**	P	P	11 06 17.1	+1.4
	comp=Z,6.9nm,0.7s,baz=140,slow=9.1,SNR=93						
TXAR				PcP	**PcP**	**11 10 09.6**	**+2.4**
	comp=Z,0.8nm,0.9s,baz=167,slow=6.3,SNR=3.6						
TXAR				LR	LR	11 16 58.2	
	comp=Z,47nm,20.2s,baz=0.0,slow=42						
TX31	**Lajitas Ar. Si**	**22.77**	**323**	*e*P	**P**	**11 06 16.8**	**+1.0**
X44A	**Crenshaw**	**22.80**	**356**	P	**P**	**11 06 16.1**	**+0.3**
	baz=174						
Z36A	**Blue Ridge**	**22.81**	**342**	P	P	11 06 17.4	+1.4
	baz=159,SNR=5.1						
Y39A	**Lockesburg**	**22.83**	**347**	P	P	11 06 16.9	+0.7
	baz=165						
Y38A	**Idabel**	**22.96**	**346**	P	P	11 06 17.8	+0.2
	baz=163						
X41A	**Kaden, Bauxite**	**23.07**	**351**	P	P	11 06 18.8	+0.1
	baz=169						
133A	**Hamilton Ranch**	**23.08**	**336**	P	P	11 06 18.1	-0.7
	baz=152,SNR=9.9						
H06E1	**SOCORRO T-PHAS**	**23.08**	**291**	T	T	11 29 51.9	
	SNR=4.0						
X40A	**Basin Creek Fa**	**23.12**	**350**	P	P	11 06 19.6	+0.4
	baz=168,SNR=5.8						
Z35A	**Perchaven, San**	**23.13**	**340**	P	P	11 06 19.0	-0.2
	baz=157,SNR=7.3					

baz=159,SNR=5.9
U42A Revenden 24.74 354 P P 11 06 34.0 -0.5
baz=172
V38A Canehill 24.75 348 P P 11 06 34.5 -0.1
baz=165,SNR=11
U41A Viola 24.81 353 P P 11 06 35.2 +0.1
baz=171
X32A Elmer 24.83 338 P P 11 06 35.3 0.0
baz=153,SNR=22
WMOK Wichita Mounta 24.93 339 P P 11 06 36.2 0.0
baz=155,SNR=18
WMOK Wichita Mounta 24.93 339 eP P 11 06 36.8 +0.6
comp=Z,15nm,1.0s
V37A Hulbert 24.93 346 P P 11 06 35.9 -0.3
baz=163,SNR=25
U40A Yellville 24.95 351 P P 11 06 36.1 -0.3
baz=169,SNR=25
V36A Jenks 25.03 345 P P 11 06 36.6 -0.5
baz=162,SNR=8.0
W34A Bridge Creek, 25.04 341 P P 11 06 37.5 +0.2
baz=157,SNR=20
W34A Bridge Creek, 25.04 341 eP P 11 06 37.9 +0.6
comp=Z,86nm,0.7s
U39A Green Forest 25.08 350 P P 11 06 37.6 0.0
baz=167,SNR=14
TUL1 Leonard 25.11 345 P P 11 06 37.4 -0.5
baz=162,SNR=6.6
TZTN Tazewell 25.11 9 eP P 11 06 38.2 +0.3
comp=Z,8.0nm,0.9s
W33A Caddo, Fort Co 25.20 340 P P 11 06 38.6 0.0
baz=156,SNR=9.4
V35A Meyer Ranch, C 25.25 343 P P 11 06 38.8 -0.4
baz=160,SNR=11
U38A Gravette 25.30 348 P P 11 06 39.6 +0.1
baz=165
U37A Salina 25.43 347 P P 11 06 41.5 +0.8
baz=164,SNR=9.6
W32A Sentinel 25.44 338 P P 11 06 41.5 +0.6
baz=154,SNR=12
T41A Mountain View 25.48 353 P P 11 06 41.1 -0.1
baz=171,SNR=10
MNTX Cornudas Mount 25.51 324 P P 11 06 43.5 +2.0
baz=138,SNR=9.6
MNTX Cornudas Mount 25.51 324 eP P 11 06 41.8 +0.3
comp=Z,5.9nm,0.9s
V34A Guthrie 25.52 342 P P 11 06 41.4 -0.2
baz=158,SNR=8.0
V34A Guthrie 25.52 342 eP P 11 06 41.3 -0.2
comp=Z,58nm,0.6s
U36A Oologah 25.56 346 P P 11 06 41.5 -0.4
baz=162
T40A Mansfield 25.68 352 P P 11 06 42.6 -0.4
baz=170,SNR=11
T39A Clever 25.69 350 P P 11 06 42.4 -0.6
baz=168,SNR=18
V33A Lossen Ranch, 25.75 341 P P 11 06 43.1 -0.5
baz=157,SNR=9.4
U35A Pawnee 25.79 344 P P 11 06 43.6 -0.4
baz=160,SNR=8.3
S43A Fulton Ridge, 25.86 356 P P 11 06 43.9 -0.7
baz=175
T38A Diamond 25.86 349 P P 11 06 44.6 -0.1
baz=166,SNR=13
S45A Carrier Mills 25.91 359 P P 11 06 43.8 -1.2
baz=178
V32A Arapaho 25.91 339 P P 11 06 45.9 +0.8
baz=155
MSTX Muleshoe 25.91 331 eP P 11 06 45.9 +0.5
comp=Z,16nm,0.6s
S44A Carbondale 25.94 358 P P 11 06 44.3 -1.0
baz=177
SIUC Southern Illin 25.96 358 eP P 11 06 45.0 -0.5
comp=Z,16nm,0.8s
S41A Jillco Farms, 26.02 353 P P 11 06 45.6 -0.5
baz=172
T37A Cheneyville 18 26.07 348 P P 11 06 46.5 -0.1
baz=165,SNR=15
U34A Anderson Ranch 26.08 343 P P 11 06 46.0 -0.7
baz=159,SNR=11
S40A Lebanon 26.12 352 P P 11 06 46.3 -0.7
baz=170,SNR=15
AMTX Amarillo 26.19 334 P P 11 06 47.7 -0.1
baz=149
AMTX Amarillo 26.19 334 eP P 11 06 48.6 +0.8
comp=Z,35nm,1.1s
T36A Boggs Farm, Ca 26.23 346 P P 11 06 47.5 -0.4
baz=162,SNR=13
T35A Sooner Cattle 26.25 345 P P 11 06 48.1 -0.1
baz=161
U33A Lingo Farm, Me 26.25 342 P P 11 06 47.9 -0.3
baz=157
S39A Bolivar 26.33 351 P P 11 06 48.5 -0.4
baz=168,SNR=77
BLA Blacksburg 26.37 14 eP P 11 06 48.1 -1.2
comp=Z,8.2nm,0.9s
S38A Stockton 26.37 350 P P 11 06 48.9 -0.4
baz=167,SNR=19
R44A Waltonville 26.48 358 P P 11 06 49.8 -0.4
baz=177
U32A Winter Ranch, 26.49 340 P P 11 06 50.3 -0.1
baz=156
T34A McClaskey Farm 26.53 344 P P 11 06 49.9 -0.8
baz=160,SNR=7.9
S37A Fort Scott 26.67 348 P P 11 06 51.3 -0.6
baz=165,SNR=14
R40A Maddies Statio 26.77 353 P P 11 06 52.3 -0.6
baz=171,SNR=9.1
S36A Lake Cedric, C 26.80 347 P P 11 06 52.4 -0.7
baz=164,SNR=14
T33A Patterson Ranc 26.89 342 P P 11 06 52.9 -1.1
baz=158
R39A Chumby, Stover 26.90 351 P P 11 06 53.2 -0.8
baz=169,SNR=35
R38A Fenwick Farm, 26.91 350 P P 11 06 53.6 -0.5
baz=167,SNR=17
S35A Otter Creek Ra 26.93 346 P P 11 06 53.9 -0.3
baz=162
Q44A Meyer Farm, Va 27.14 358 P P 11 06 55.6 -0.6
baz=178
T32A Huddler Ranch, 27.19 341 P P 11 06 56.6 -0.1
baz=156
R37A Teagarden Farm 27.20 348 P P 11 06 56.2 -0.5
baz=165
S33A Kaszmaul Farm, 27.29 343 P P 11 06 57.2 -0.4
baz=158
R36A Gordon, Harris 27.35 347 P P 11 06 57.6 -0.5
baz=164,SNR=7.4
Q40A Laux Farm, Aux 27.44 353 P P 11 06 58.4 -0.5
baz=171
R35A Emporia Munici 27.51 346 P P 11 06 59.2 -0.2
baz=163
121A Cookes Peak, D 27.52 322 eP P 11 06 59.2 -0.7
comp=Z,4.3nm,0.8s
Q39A Willow Grove F 27.61 352 P P 11 06 59.5 -0.8
baz=169,SNR=20
Q38A Cooks Store, C 27.62 351 P P 11 07 00.1 -0.3
baz=168
S32A Newby Ranch, P 27.67 341 P P 11 07 00.8 -0.3
baz=157
Q37A Longview Farm, 27.68 349 P P 11 07 00.7 -0.3
baz=166
R34A Isabella, Hill 27.75 344 P P 11 07 01.4 -0.2
baz=160
P42A Winchester 27.88 356 P P 11 07 02.1 -0.6
baz=175
R33A Olander Ranch, 27.95 343 P P 11 07 03.0 -0.5
baz=159
Q36A Arnold C. Orve 27.95 348 P P 11 07 03.0 -0.5
baz=164
P40A Paris 27.97 354 P P 11 07 03.7 +0.1
baz=171
Q35A Mercer Eighty, 27.98 347 P P 11 07 03.2 -0.5
baz=163
P39B Salisbury 28.01 352 P P 11 07 03.0 -1.0
baz=170,SNR=6.6
P41A Barry, Barry 28.02 355 P P 11 07 02.3 -1.7
baz=174
BNM Barren Site 28.03 326 eP P 11 07 05.1 +0.6
Q34A Chapman 28.25 345 P P 11 07 05.3 -0.9
baz=161,SNR=5.1
P38A Dawn 28.25 351 P P 11 07 05.8 -0.3
baz=168,SNR=12
KSU1 Kansas State U 28.34 346 P P 11 07 06.3 -0.6
baz=162
KSU1 Kansas State U 28.34 346 eP P 11 07 06.8 -0.2
comp=Z,12nm,0.6s
P37A Lathrop 28.35 350 P P 11 07 05.9 -1.1
baz=167,SNR=9.2

O41A Passleys Farm, 28.44 356 P P 11 07 06.8 -1.0
baz=174
O42A Bath 28.47 357 P P 11 07 06.9 -1.1
baz=176
O40A La Belle 28.54 354 P P 11 07 08.1 -0.5
baz=172
ANMO Albuquerque 28.54 327 eP P 11 07 10.3 +1.3
comp=Z,3.7nm,1.1s
P36A Good Intent, A 28.54 349 P P 11 07 08.1 -0.5
baz=165
Q33A Connelly Farm, 28.56 344 P P 11 07 06.4 -2.5
baz=160
SFIN Lafayette 28.61 2 P P 11 07 07.9 -1.4
baz=182
P35A Duane Minner, 28.62 347 P P 11 07 08.6 -0.8
baz=164,SNR=5.6
O38A Galt 28.73 351 P P 11 07 09.7 -0.7
baz=169
O39A Kirksville 28.74 353 P P 11 07 09.7 -0.8
baz=171
Q32A Meitler Ranch, 28.75 343 P P 11 07 09.3 -1.3
baz=158
ACSO Alum Creek Sta 28.82 8 eP P 11 07 10.9 -0.2
comp=Z,9.9nm,0.7s
P34A Walnut Farm, R 28.82 346 P P 11 07 10.9 -0.3
baz=162,SNR=8.6
O37A Wolvin Farm, M 28.88 350 P P 11 07 10.6 -1.1
baz=168
P33A Williams Farm, 28.93 345 P P 11 07 10.8 -1.4
baz=160
CBKS Cedar Bluff 28.95 341 P P 11 07 11.4 -0.9
baz=156
O36A Bolckow 28.99 349 P P 11 07 11.9 -0.8
baz=166
TUC Tucson 29.26 318 eP P 11 07 15.2 -0.1
comp=Z,2.3nm,0.8s
TUC epP pP 11 07 21.6 -0.5
T25A Trinidad 29.28 333 eP P 11 07 17.7 +2.2
comp=Z,4.7nm,0.7s
O35A Humboldt 29.30 348 P P 11 07 14.4 -1.0
baz=164
N39A Derby Farms, D 29.35 353 P P 11 07 15.3 -0.5
baz=171
P32A Huiting Farm, 29.35 343 P P 11 07 15.5 -0.4
baz=159
N38A Joes South For 29.36 352 P P 11 07 14.8 -1.1
baz=170
O34A Beatrice 29.39 347 P P 11 07 15.9 -0.4
baz=163
N37A Lee Faris, Mou 29.47 351 P P 11 07 16.4 -0.5
baz=168,SNR=6.3
O33A Hebron 29.51 345 P P 11 07 16.7 -0.5
baz=161,SNR=8.0
N36A Muff Farm, Cla 29.65 349 P P 11 07 18.2 -0.3
baz=166
M39A Webster 29.91 354 P P 11 07 20.6 -0.2
baz=172
M38A Pleasantville 29.97 352 P P 11 07 20.9 -0.4
baz=170
N34A Lincoln 29.98 347 P P 11 07 21.0 -0.4
baz=163
O31A Woolen Ranch, 30.05 343 P P 11 07 22.5 +0.4
baz=158
M37A Trindle Farm, 30.07 351 P P 11 07 22.6 +0.4
baz=168
KSCO Kaye Shedlock' 30.13 337 P P 11 07 23.1 +0.2
baz=151
SSPA Standing Stone 30.24 16 eP P 11 07 22.7 -1.0
comp=Z,7.6nm,0.9s
SSPA epP pP 11 07 28.4 -2.2
M36A Felix, Anita 30.25 350 P P 11 07 23.4 -0.4
baz=167,SNR=13
SDCO Great Sand Dun 30.27 332 eP P 11 07 26.7 +2.2
comp=Z,11nm,1.5s
SDCO epP sP 11 07 36.0 +2.0
L40A Anamosa 30.40 355 P P 11 07 24.4 -0.8
baz=174
M35A Neola 30.42 349 P P 11 07 25.0 -0.3
baz=165
M34A Aspy Farms, Fr 30.63 347 P P 11 07 27.6 +0.4
baz=163
L38A Oak Wood Farm, 30.65 353 P P 11 07 26.5 -0.8
baz=170,SNR=5.8
L37A Phoenix Point, 30.74 352 P P 11 07 27.7 -0.4
baz=169
BGNE Belgrade 30.90 345 P P 11 07 28.9 -0.7
baz=160
L35A Bielow Farm, R 31.02 349 P P 11 07 30.1 -0.5
baz=166
K40A Colesburg 31.03 356 P P 11 07 29.6 -1.0
baz=174
L34A Svendsen Farm, 31.04 348 P P 11 07 30.0 -0.7
baz=164
M31A Lambtecht Ranc 31.06 344 P P 11 07 31.3 +0.3
baz=159
K39A Oelwein 31.10 355 P P 11 07 30.3 -1.0
baz=172,SNR=5.4
K38A Parkersburg 31.13 353 P P 11 07 31.4 -0.2
baz=171
K37A Belmond 31.35 352 P P 11 07 32.7 -0.8
baz=169,SNR=23
K34A Le Mars 31.67 349 P P 11 07 36.1 -0.3
baz=165
J40A Soldiers Grove 31.70 356 P P 11 07 35.6 -1.0
baz=175
J39A Decorah 31.71 355 P P 11 07 35.7 -0.9
baz=173
J38A Wedel Dairy, R 31.76 354 P P 11 07 36.5 -0.6
baz=172
J37A Redenius Farm, 31.88 353 P P 11 07 37.2 -1.0
baz=170,SNR=12
J36A Seneca 1, Swea 32.00 351 P P 11 07 38.3 -1.0
baz=168,SNR=13
ISCO Idaho Springs 32.01 334 eP P 11 07 40.3 +0.6
comp=Z,2.6nm,1.0s
K32A Verdigre 32.05 346 P P 11 07 39.5 -0.1
baz=162
SAML Samuel 32.17 128 eP P 11 07 28.6 -13
comp=Z,4.7nm,0.8s
SAML eScP ScP 11 14 04.5 -7.8
J35A Milford 32.17 350 P P 11 07 40.9 +0.2
baz=167
K31A O'Neill 32.20 345 P P 11 07 41.1 +0.1
baz=160
J33A Davis 32.45 348 P P 11 07 43.4 +0.2
baz=164
I38A Scanlan Farm, 32.46 354 P P 11 07 43.5 +0.2
baz=172
K30A Basset 32.47 344 P P 11 07 44.4 +0.9
baz=159
I37A Lemond, Waseca 32.55 353 P P 11 07 44.0 0.0
baz=170
I35A Creekview Farm 32.62 351 P P 11 07 44.2 -0.5
baz=167
I36A Fitzsimmons Fa 32.63 352 P P 11 07 44.3 -0.5
baz=169
ECSD EROS Data Cent 32.78 349 P P 11 07 45.0 -1.1
baz=164,SNR=7.2
ECSD EROS Data Cent 32.78 349 eP P 11 07 45.6 -0.5
comp=Z,6.7nm,0.8s
I34A Hadley 32.94 350 P P 11 07 46.7 -0.7
baz=166
J30A Dallas 33.04 345 P P 11 07 48.1 -0.3
baz=159
H37A Dierke Farm, C 33.06 354 P P 11 07 47.6 -0.8
baz=171
I33A Coleman 33.12 349 P P 11 07 48.3 -0.7
baz=164
H36A Jessenland, He 33.17 352 P P 11 07 48.8 -0.7
baz=169,SNR=11
H35A Sunnyside Ranc 33.42 351 P P 11 07 51.0 -0.7
baz=168,SNR=32
O20A White River Ci 33.46 331 eP P 11 07 51.5 -0.8
comp=Z,11nm,1.2s
H34A Spellman Lake, 33.53 350 P P 11 07 52.1 -0.5
baz=166
SPMN Marine on St. 33.68 354 P P 11 07 53.2 -0.7
baz=171,SNR=13
SPMN Marine on St. 33.68 354 eP P 11 07 53.2 -0.7
comp=Z,31nm,0.7s
H32A Carlson Farm, 33.69 348 P P 11 07 53.4 -0.6
baz=163
H33A Prehn Over Nor 33.72 349 P P 11 07 53.6 -0.7
baz=164
G36A St. Michael 33.80 353 P P 11 07 54.2 -0.7
baz=170
G35A Watkins 33.88 352 P P 11 07 54.7 -0.9
baz=168

SADO Sadowa 33.88 12 eP P 11 07 54.5 -1.1
comp=Z,9.6nm,0.8s
H31A Wolsey 33.89 347 P P 11 07 55.2 -0.5
baz=162
SUSD Miller 33.96 346 P P 11 07 56.0 -0.4
baz=161
G34A Benson 34.07 351 P P 11 07 56.8 -0.5
baz=167
LPAZ La Paz 34.10 144 LR LR 11 22 55.6
comp=Z,45nm,20.1s,baz=241,slow=37
G33A Ortonville 34.16 350 P P 11 07 57.3 -0.8
baz=165
COWI Conover 34.33 359 eP P 11 07 58.6 -1.0
comp=Z,6.6nm,0.8s
F36A Milaca 34.39 353 P P 11 07 59.3 -0.8
baz=170,SNR=10
G32A Webster 34.42 348 P P 11 07 59.6 -0.8
baz=164
F35A Swanville 34.52 352 P P 11 08 00.2 -1.0
baz=169,SNR=8.9
G31A Conde 34.54 347 P P 11 08 00.5 -0.9
baz=162
F34A Alexandria 34.55 351 P P 11 08 00.7 -0.7
baz=167
F33A 5 Mile Ranch, 34.76 350 P P 11 08 02.2 -1.1
baz=166,SNR=35
LONY Lake Ozonia 34.84 17 eP P 11 08 03.4 -0.6
comp=Z,6.5nm,0.8s
E36A McGregor 35.01 354 P P 11 08 04.3 -1.1
baz=171,SNR=8.9
RSSD Black Hills 35.12 340 P P 11 08 08.0 +1.3
baz=152
RSSD Black Hills 35.12 340 eP P 11 08 07.5 +0.8
comp=Z,6.5nm,0.6s
F31A Hecla 35.15 348 P P 11 08 05.8 -0.8
baz=162
E35A Pequot Lakes 35.18 352 P P 11 08 06.5 -0.4
baz=169
E34A Wadena 35.24 352 P P 11 08 06.9 -0.5
baz=168
E33A Westby DABS, E 35.36 351 P P 11 08 07.5 -0.9
baz=166,SNR=5.2
F29A Eureka 35.48 346 P P 11 08 08.8 -0.7
baz=160
D37A Cotton 35.56 355 P P 11 08 09.1 -1.0
baz=172,SNR=6.7
D36A Goodland 35.65 354 P P 11 08 09.7 -1.2
baz=171,SNR=10.0
D35A Remer 35.65 353 P P 11 08 09.6 -1.3
baz=170,SNR=5.1
E31A Nome 35.75 348 P P 11 08 10.8 -1.0
baz=163
D34A Park Rapids 35.80 352 P P 11 08 11.3 -0.9
baz=164
D33A AnnSam, Waubun 35.95 351 P P 11 08 12.8 -0.7
baz=167
C39A Grand Marais 36.08 358 P P 11 08 13.4 -1.1
baz=176
C37A Embarrass 36.11 355 P P 11 08 14.4 -0.4
baz=173
DAC Darwin (Calif) 36.14 318 eP P 11 08 15.5 0.0
comp=Z,3.3nm,0.9s
DAC eS S 11 13 60.0 +5.8
D32A Dogwood Acres, 36.14 350 P P 11 08 14.5 -0.6
baz=165
BW06 Boulder Array 36.15 333 eP P 11 08 16.0 +0.5
PDAR Pinedale Array 36.15 333 P P 11 08 15.9 +0.4
comp=Z,0.3nm,0.3s,baz=120,slow=9.0,SNR=5.8
PDAR PcP PcP 11 10 44.1 +3.0
comp=Z,0.6nm,0.5s,baz=143,slow=3.3,SNR=5.8
PDAR LR LR 11 27 19.9
comp=Z,52nm,18.1s,baz=122,slow=44
D31A Mcclaflin, Tow 36.19 349 P P 11 08 14.7 -0.8
baz=164
C36A Pine Crest Far 36.19 355 P P 11 08 14.7 -0.9
baz=172,SNR=5.8
HWUT Hardware Ranch 36.20 330 eP P 11 08 16.2 +0.3
comp=Z,3.6nm,0.9s
C35A Jirik Farms, M 36.25 353 P P 11 08 15.0 -1.1
baz=170,SNR=16
EYMN Ely 36.27 356 P P 11 08 14.8 -1.5
baz=174
C34A RKJ Ranch, Bem 36.32 352 P P 11 08 15.9 -0.7
baz=168
AHID Auburn Hatcher 36.86 331 eP P 11 08 22.6 +1.1
comp=Z,5.4nm,0.8s
B35A Bob, Littlefor 36.88 354 P P 11 08 20.5 -0.9
baz=171,SNR=8.6
C31A Landman Farms, 36.90 349 P P 11 08 21.1 -0.6
baz=164
B33A Robert and Kas 37.02 352 P P 11 08 21.4 -1.2
baz=168
AGMN Agassiz Nation 37.09 351 P P 11 08 22.3 -0.9
baz=167,SNR=17
AGMN Agassiz Nation 37.09 351 eP P 11 08 22.5 -0.6
comp=Z,20nm,0.6s
B34A Aery, Baudette 37.11 353 P P 11 08 21.9 -1.4
baz=169,SNR=22
REDW Red Top Meadow 37.20 332 eP P 11 08 25.7 +1.2
comp=Z,21nm,1.3s
SNOW Snow King Moun 37.24 332 eP P 11 08 25.8 +0.9
comp=Z,10.0nm,0.7s
B32A Ashes, Strandq 37.28 351 P P 11 08 24.2 -0.6
baz=166,SNR=32
LOHW Long Hollow 37.29 333 eP P 11 08 26.1 +0.9
comp=Z,3.9nm,1.0s
MDND Maddock 37.33 347 P P 11 08 25.3 +0.1
baz=161
MDND Maddock 37.33 347 eP P 11 08 25.7 +0.4
comp=Z,35nm,0.8s
TPAW Teton Pass 37.35 332 eP P 11 08 27.1 +1.3
comp=Z,5.1nm,0.8s
MOOW Moose Ponds 37.46 333 eP P 11 08 27.1 +0.4
comp=Z,3.0nm,0.8s
B31A Greenbush Farm 37.50 350 P P 11 08 26.2 -0.5
baz=164
A33A Warroad 37.65 352 P P 11 08 27.1 -0.8
baz=168,SNR=36
A32A Rocking H Ranc 37.78 351 P P 11 08 27.8 -1.3
baz=166,SNR=9.2
C25A Freed Ranch, W 38.11 343 P P 11 08 32.6 +0.7
baz=156
LAO LASA Array 38.12 340 eP P 11 08 32.8 +0.8
LAO esP pP 11 08 39.9 +1.0
LAO eS S 11 14 24.5 +0.7
YMR Madison River 38.28 333 eP P 11 08 34.1 +0.5
YMR epP pP 11 08 40.3 -0.2
YMR ePP PP 11 10 13.3 +12
LMQ La Malbaie 38.78 19 eP P 11 08 36.2 -1.3
A26A Wade Farm, Ken 38.88 345 P P 11 08 38.0 -0.3
baz=158
ULM Lac du Bonnet 39.00 352 P P 11 08 38.0 -1.3
comp=Z,22nm,0.6s,baz=169,slow=9.1,SNR=46
ULM LR LR 11 25 40.2
comp=Z,61nm,20.8s,baz=225,slow=38
ULM Lac du Bonnet 39.00 352 eP P 11 08 38.1 -1.1
comp=Z,22nm,0.6s
HLID Hailey 39.06 329 eP P 11 08 40.2 0.0
comp=Z,4.4nm,1.4s
DGMT Dagmar 39.06 343 P P 11 08 40.8 +0.9
baz=154
A25A Svangstu Ranch 39.19 344 P P 11 08 42.0 +1.1
baz=156
MCMT McKenzie Canyo 39.25 332 eP P 11 08 43.0 +1.2
BOZ Bozeman (W) 39.34 334 P P 11 08 43.4 +1.0
baz=142
BOZ Bozeman (W) 39.34 334 eP P 11 08 42.4 0.0
comp=Z,3.2nm,0.8s
LMN Caledonia Moun 39.43 26 eP P 11 08 42.9 -0.1
comp=Z,9.4nm,0.9s
DLMT Dillon 39.55 333 P P 11 08 45.8 +1.7
comp=Z,8.8nm,1.4s
LRM Limekiln Ridge 39.84 333 eP P 11 08 46.8 +0.1
EGMT Eagleton 40.51 338 P P 11 08 53.1 +1.1
baz=146
EGMT Eagleton 40.51 338 eP P 11 08 52.5 +0.5
comp=Z,4.8nm,0.9s
WVOR Wild Horse Val 40.54 325 eP P 11 08 52.1 -0.3
comp=Z,2.4nm,0.9s
MSO Missoula 41.27 333 eP P 11 08 58.5 +0.2
comp=Z,5.3nm,1.0s
FFC Flin Flon 44.32 349 eP P 11 09 23.2 +0.4
comp=Z,5.6nm,0.9s
EDM Edmonton 46.10 339 eP P 11 09 37.3 +0.4
comp=Z,15nm,0.8s
EDM epP pP 11 09 41.7 -2.3
SCHQ Schefferville 46.22 17 P P 11 09 36.6 -1.3
comp=Z,12nm,0.8s,baz=199,slow=7.3,SNR=7.0

SCHQ				LR	LR	11 30 11.3			
	comp=Z,125nm,18.7s,baz=283,slow=38								
SCHQ	**Schefferville**	**46.22**	**17**	*e*P	**P**	**11 09 37.5**	**-0.3**		
	comp=Z,12nm,0.8s								
CPUP	**Villa Florida**	**48.21**	**142**	LR	LR	11 31 52.2			
	comp=Z,38nm,20.4s,baz=320,slow=38								
YKA	**Yellowknife Ar**	**54.19**	**345**	P	**P**	**11 10 37.7**	**-0.4**		
	comp=Z,3.1nm,0.7s,baz=136,slow=8.1,SNR=18								
YKA				PcP	**PcP**	**11 11 43.2**	**+0.9**		
	comp=Z,1.6nm,0.7s,baz=144,slow=4.1,SNR=6.2								
YKA				LR	LR	11 35 53.5			
	comp=Z,5.0nm,19.8s,baz=180,slow=38								
DLBC	**Dease Lake**	**56.33**	**335**	P	**P**	**11 10 52.9**	**-0.9**		
	comp=Z,6.5nm,0.8s								
RES	**Resolute Bay**	**63.12**	**358**	P	**P**	**11 11 40.0**	**-0.1**		
	comp=Z,4.0nm,0.6s,baz=183,slow=10,SNR=5.3								
INK	**Inuvik**	**63.75**	**343**	P	**P**	**11 11 45.3**	**+1.0**		
	comp=Z,1.7nm,0.4s,baz=198,slow=6.7,SNR=5.2								
IL1	**Eielson Array**	**66.47**	**336**	*e*P	**P**	**11 12 02.0**	**0.0**		
ILAR	**Eielson Array**	**66.47**	**336**	P	**P**	**11 12 03.1**	**+1.0**		
	comp=Z,1.4nm,1.0s,baz=117,slow=4.0,SNR=12								
ILAR				LR	LR	11 44 50.8			
	comp=Z,30nm,18.2s,baz=138,slow=40								
ESK	**Eskdalemuir**	**77.63**	**36**	*e*P	P	11 13 04.8	-4.3		
	comp=Z,28nm,1.3s								
DBIC	**Dimbokro**	**82.12**	**85**	LR	LR	11 46 15.6			
	comp=Z,25nm,19.8s,baz=284,slow=33								
NOA	**NORSAR Array B**	**84.38**	**29**	LR	LR	11 47 34.2			
	comp=Z,22nm,21.4s,baz=265,slow=33								
ARCES	**ARCESS Array B**	**87.14**	**19**	P	**P**	**11 13 59.2**	**+0.6**		
	comp=Z,1.0nm,0.8s,baz=341,slow=8.1,SNR=2.6								
ARCES				LR	LR	11 51 23.9			
	comp=Z,22nm,19.9s,baz=287,slow=35								
TORD	**Torodi Ar. Bea**	**87.24**	**77**	P	**P**	**11 14 02.6**	**+2.5**		
	comp=Z,0.2nm,0.6s,baz=304,slow=3.3,SNR=2.7								
FINES	**FINESS Array B**	**90.97**	**26**	LR	LR	11 56 05.3			
	comp=Z,33nm,18.2s,baz=316,slow=36								
AKASG	**Malin Array Be**	**97.54**	**35**	LR	LR	11 56 21.7			
	comp=Z,23nm,21.0s,baz=105,slow=34								
NRIK	**Noril'sk**	**99.14**	**2**	LR	LR	12 03 56.8			
	comp=Z,26nm,18.1s,baz=82,slow=38								
CN2	**Changchun**	**116.89**	**333**	*e*PKP	PKPdf	11 19 50.3	-7.5		
WMQ	**Urumqi**	**124.65**	**4**	*e*PKP	PKPdf	11 20 05.1	-7.7		
HHC	**Hu-ho-hao-te**	**124.66**	**342**	*e*PKP	PKPdf	11 20 05.3	-7.7		
HHC				PP	**PP**	**11 21 58.8**	**+0.1**		
HHC				AMB	AMB				
	comp=Z,35nm,4.6s								
HHC				LR	LR				
	comp=Z,94nm,17.3s								
HHC				LR	LR				
	comp=Z,51nm,14.8s								
HHC				LR	LR				
	comp=Z,62nm,16.0s								
KSH	**Kashi**	**126.98**	**15**	*e*PKP	**PKPdf**	**11 20 10.9**	**-6.6**		
KSH				*e*PP	**PP**	**11 22 18.3**	**+4.2**		
LZH	**Lanzhou**	**131.18**	**347**	*e*PKP	**PKPdf**	**11 20 21.3**	**-4.3**		
LZH				sPKP		11 20 31.3			
LZH				LR	LR				
	comp=Z,110nm,18.0s								
LZH				LR	LR				
	comp=Z,110nm,18.1s								
LZH				LR	LR				
	comp=Z,170nm,20.2s								
ASAR	**Alice Springs**	**138.35**	**248**	PKP	**PKPdf**	**11 20 42.7**	**+3.6**		
	comp=Z,0.5nm,0.9s,baz=88,slow=2.1,SNR=4.6								
WRA	**Warramunga Arr**	**138.40**	**253**	PKP	**PKPdf**	**11 20 42.6**	**+3.4**		
	comp=Z,0.4nm,0.9s,baz=90,slow=2.9,SNR=4.7								
CMAR	**Chiang Mai Arr**	**149.26**	**347**	PKPbc	**PKPbc**	**11 21 03.4**	**+0.9**		
	comp=Z,4.0nm,0.8s,baz=340,slow=3.3,SNR=16								

*ISCJB **20** 11:05:23.6±0.8, 18°.9N±0°.1×145°.7E±0°.2, h214km, mb3.5/11, Error ellipse: s-maj=28.0km s-min=13.8km az=4.2*

*IDC **20** 11:05:31.2±5.7, 18°.86N×145°.58E, h274km±57km, mb3.2/11, mb1 3.4/12, mb1mx3.2/49, mbtmp3.8/12, Error ellipse: s-maj=26.4km s-min=12.2km az=91.0*

ISC 20 11:05:25.2±1.0, 18°.9N±0°.1×145°.6E±0°.2, h214km, n12, σ0.975/12, mb3.5/11, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**18.74**	**341**	P	**Pn**	**11 09 30.2**	**-0.9**
	0.4nm,0.3s,baz=174,slow=12,SNR=4.1						
WRA	**Warramunga Arr**	**40.16**	**197**	P	**P**	**11 12 40.4**	**-0.3**
	1.1nm,0.6s,baz=22,slow=9.1,SNR=16						
FITZ	**Fitzroy Crossi**	**41.69**	**209**	P	**P**	**11 12 53.0**	**-0.1**
	1.3nm,0.7s,baz=29,slow=6.7,SNR=12						
SONM	**Songino Array**	**42.93**	**321**	P	**P**	**11 13 03.6**	**+0.5**
	0.4nm,0.4s,baz=111,slow=7.9,SNR=3.2						
ASAR	**Alice Springs**	**43.83**	**196**	P	**P**	**11 13 10.2**	**-0.1**
	0.3nm,0.6s,baz=10,slow=6.0,SNR=6.2						
CMAR	**Chiang Mai Arr**	**44.12**	**277**	P	**P**	**11 13 13.5**	**+0.8**
	0.5nm,0.4s,baz=72,slow=8.6,SNR=3.7						
ZALV	**Zalesovo Beam**	**57.80**	**322**	P	**P**	**11 14 54.0**	**0.0**
	0.4nm,0.3s,baz=110,slow=8.3,SNR=2.7						
MKAR	**Makanchi Array**	**58.26**	**314**	P	**P**	**11 14 57.2**	**-0.2**
	1.2nm,0.7s,baz=86,slow=9.5,SNR=7.0						
ILAR	**Eielson Array**	**63.49**	**26**	P	**P**	**11 15 32.0**	**-0.2**
	1.3nm,0.8s,baz=260,slow=4.9,SNR=5.1						
YKA	**Yellowknife Ar**	**77.84**	**28**	P	**P**	**11 16 59.7**	**+1.0**
	1.1nm,0.5s,baz=286,slow=5.7,SNR=6.0						
ARCES	**ARCESS Array B**	**82.27**	**342**	P	**P**	**11 17 22.4**	**+0.1**
	1.1nm,0.8s,baz=25,slow=4.0,SNR=4.0						
FINES	**FINESS Array B**	**86.67**	**335**	P	**P**	**11 17 42.9**	**-1.5**
	0.8nm,0.4s,baz=64,slow=4.3,SNR=11						

*ISK **20** 11:22:39.4, 39°.16N×27°.47E, h10km, MD2.7*

*ISCJB **20** 11:22:40.0±0.7, 39°.15N±0°.04×27°.47E±0°.06, h11km, Error ellipse: s-maj=7.7km s-min=5.6km az=147.7*

*CSEM **20** 11:22:40.1±0.1, 39°.17N×27°.48E, h12km, MD2.7, Error ellipse: s-maj=3.5km s-min=2.2km az=66.0*

*DDA **20** 11:22:41.0, 39°.10N×27°.70E, h7km, Md2.7*

ISC 20 11:22:40.2±1.1, 39°.15N±0°.04×27°.48E±0°.04, h11km, n19, σ1.916/26, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKS	**Akhisar**	**0.38**	**136**	*e*PG	**Pg**	**11 22 47.9**	**+0.2**
AKS				*e*SG	**Sg**	**11 22 53.4**	**+0.7**
AKS	**Akhisar**	**0.38**	**136**	*e*Pg	**Pg**	**11 22 47.9**	**+0.2**
AKS				*e*Sg	**Sg**	**11 22 53.4**	**+0.7**
IZM	**Izmir**	**0.77**	**193**	*e*PG	**Pb**	**11 22 55.8**	**+0.1**
IZM				*e*SG	**Sg**	**11 23 05.6**	**+0.4**
IZM	**Izmir**	**0.77**	**193**	*e*Pg	**Pb**	**11 22 55.8**	**+0.1**
IZM				*e*Sg	**Sg**	**11 23 05.6**	**+0.4**
DEMI	**Demirci**	**0.97**	**96**	*i* P	Pg	11 22 52.0	-6.8
MANT	**Manisa**	**1.07**	**128**	*i* P	**Pn**	**11 23 01.2**	**-0.1**
MANT				*i* S	**Sg**	**11 23 11.5**	**-3.2**
MANT	**Manisa**	**1.07**	**128**	P	**Pn**	**11 23 01.2**	**-0.1**
MANT				S	**Sg**	**11 23 11.5**	**-3.2**
KULA	**Kula-Manisa**	**1.12**	**124**	*e*PN	**Pb**	**11 23 01.3**	**-0.3**
KULA				*e*SN	**Sn**	**11 23 17.7**	**+0.4**
KULA	**Kula-Manisa**	**1.12**	**124**	*e*Pn	**Pb**	**11 23 01.3**	**-0.3**
KULA				*e*Sn	**Sn**	**11 23 17.7**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.24**	**165**	*e*PN	**Pn**	**11 23 03.8**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.24**	**165**	*e*Pn	**Pn**	**11 23 03.8**	**+0.1**
KRBG	**Karabiga-Canak**	**1.25**	**354**	*e*PN	**Pn**	**11 23 03.1**	**-0.5**
KRBG	**Karabiga-Canak**	**1.25**	**354**	*e*Pn	**Pn**	**11 23 03.1**	**-0.5**
SIGR	**SIGRI**	**1.27**	**273**	*e*PN	**Pn**	**11 23 03.5**	**-0.3**
SIGR	**SIGRI**	**1.27**	**273**	*e*Pn	**Pn**	**11 23 03.5**	**-0.3**
MRMT	**Marmara Adasi**	**1.45**	**3**	*e*PN	**Pn**	**11 23 06.2**	**-0.3**
MRMT	**Marmara Adasi**	**1.45**	**3**	*e*Pn	**Pn**	**11 23 06.2**	**-0.3**
GDZ	**Gediz**	**1.56**	**92**	*i* S	**Sg**	**11 23 32.2**	**+1.9**
GDZ	**Gediz**	**1.56**	**92**	S	**Sg**	**11 23 32.2**	**+1.9**

*NIED **20** 11:30:00, 37°.30N×141°.50E, h44km, Mw3.9 Best double couple: M0 6.89000×10^14 NP1:φs215.00000°, δ41.00000°, λ79.00000°. NP2:φs49.00000°, δ50.00000°, λ99.00000°.*

*ISCJB **20** 11:30:25.1±0.9, 37°.22N±0°.03×141°.62E±0°.08, h40km±9km, mb3.8/8, MS2.6/2, Error ellipse: s-maj=10.4km s-min=5.2km az=14.0*

*JMA **20** 11:30:26.9±0.1, 37°.28N×141°.47E, h45km±2km, M4.1*

JMA Felt II J1.

*IDC **20** 11:30:29.2±2.8, 37°.20N×141°.56E, h65km±26km, mb3.5/8, mb1 3.8/12, mb1mx3.6/35, mbtmp3.9/12, ML3.3/4, MS2.9/3, Ms1 2.9/3, ms1mx2.5/38, Error ellipse: s-maj=21.9km s-min=16.3km az=92.0*

ISC 20 11:30:24.7±1.7, 37°.25N±0°.04×141°.64E±0°.07, h26km±12km, n30, σ1.938/35, mb3.8/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.62**	**281**	P	**Pb**	**11 30 37.6**	**+0.5**
JFK				S	**Sb**	**11 30 44.8**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.69**	**258**	P	**Pb**	**11 30 38.6**	**+0.4**
ONAJ				S	**Sb**	**11 30 46.8**	**-0.6**
JMM	**Marumori**	**0.91**	**312**	P	**Pn**	**11 30 41.6**	**-0.2**
JMM				*e*S	**Sb**	**11 30 52.5**	**-1.1**
JFT	**Otama**	**1.07**	**285**	P	**Pn**	**11 30 44.5**	**+0.4**
JFT				S	**Sn**	**11 30 56.7**	**-1.4**
JHO	**Hitachi**	**1.07**	**234**	P	**Pn**	**11 30 43.7**	**-0.4**
JHO				*e*S	**Sn**	**11 30 55.9**	**-2.2**
JIO	**Ouri**	**1.22**	**349**	P	**Pn**	**11 30 46.6**	**+0.5**
JIO				S	**Sn**	**11 31 01.1**	**-0.6**
JOU	**Okura**	**1.35**	**325**	P	**Pn**	**11 30 48.4**	**+0.4**
JOU				S	**Sn**	**11 31 05.0**	**-0.1**
JFY	**Yanaizu**	**1.55**	**276**	P	**Pn**	**11 30 50.9**	**+0.2**
JYS	**Shirataka**	**1.58**	**308**	P	**Pn**	**11 30 51.5**	**+0.5**
JYS				*e*S	**Sn**	**11 31 10.3**	**-0.3**
JMK	**Ichinoseki**	**1.73**	**349**	P	**Pn**	**11 30 54.0**	**+0.9**
JMK				S	**Sn**	**11 31 14.6**	**+0.3**
MJAR	**Matsushiro Arr**	**2.84**	**257**	P	**Pn**	**11 31 09.6**	**+1.2**
	3.9nm,0.3s,baz=75,slow=9.1,SNR=26						
MJAR				S	**Sn**	**11 31 44.4**	**+2.6**
	7.0nm,0.3s,baz=80,slow=30,SNR=3.4						
MAT	**Matsushiro**	**2.84**	**257**	P	**Pn**	**11 31 10.0**	**+1.6**
MAT				S	**Sn**	**11 31 44.3**	**+2.5**
JHJ	**Hachijo jima 2**	**4.40**	**201**	P	**Pn**	**11 31 30.6**	**+0.8**
	26nm,0.3s,baz=149,slow=23,SNR=6.6						
JHJ				S	**Sn**	**11 32 18.9**	**-1.3**
	45nm,0.3s,baz=90,slow=20,SNR=3.8						
USRK	**Ussuriysk Ar.**	**10.08**	**316**	P	**Pn**	**11 32 51.8**	**+4.1**
	0.4nm,0.3s,baz=136,slow=13,SNR=8.8						
KLR	**Kul'dur**	**13.96**	**332**	P	**P**	**11 33 45.5**	**-3.0**
	0.1nm,0.3s,baz=124,slow=13,SNR=5.4						
KLR				LR	LR	11 38 58.3	
	comp=Z,95nm,22.0s,baz=28,slow=36						
SONM	**Songino Array**	**27.81**	**304**	P	**P**	**11 36 12.0**	**+0.2**
	0.8nm,0.5s,baz=102,slow=8.5,SNR=5.1						
SONM				LR	LR	11 48 05.0	
	comp=Z,11nm,18.1s,baz=97,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.11**	**121**	T	T	12 06 31.8	
	baz=314,slow=75,SNR=134						
H11N1	**WAKE ISLAND Hy**	**28.11**	**121**	T	T	12 06 34.3	
	baz=314,slow=75,SNR=97						
H11N3	**WAKE ISLAND Hy**	**28.12**	**121**	T	T	12 06 33.2	
	baz=314,slow=75,SNR=64						
H11S1	**WAKE ISLAND Hy**	**28.83**	**124**	T	T	12 07 30.9	
	baz=316,slow=75,SNR=43						
H11S3	**WAKE ISLAND Hy**	**28.83**	**124**	T	T	12 07 33.6	
	baz=316,slow=75,SNR=54						
H11S2	**WAKE ISLAND Hy**	**28.84**	**124**	T	T	12 07 32.1	
	baz=316,slow=75,SNR=40						
TLY	**Talaya**	**30.32**	**311**	LR	LR	11 49 51.2	
	comp=Z,18nm,19.1s,baz=172,slow=38						
ZALV	**Zalesovo Beam**	**41.90**	**312**	P	**P**	**11 38 12.2**	**-0.5**
	0.8nm,0.4s,baz=98,slow=7.6,SNR=5.0						
MKAR	**Makanchi Array**	**44.16**	**302**	P	**P**	**11 38 30.2**	**-0.9**
	0.9nm,0.6s,baz=86,slow=10,SNR=11						
ILAR	**Eielson Array**	**49.21**	**32**	P	**P**	**11 39 11.4**	**+1.0**
	1.1nm,0.7s,baz=268,slow=6.5,SNR=16						
WRA	**Warramunga Arr**	**57.30**	**188**	P	**P**	**11 40 10.2**	**-0.1**
	1.4nm,0.5s,baz=6.0,slow=7.4,SNR=33						
ASAR	**Alice Springs**	**61.03**	**188**	P	**P**	**11 40 36.0**	**-0.1**
	0.7nm,0.8s,baz=7.4,slow=6.9,SNR=6.7						
PDAR	**Pinedale Array**	**77.38**	**46**	P	**P**	**11 42 17.9**	**+0.3**
	0.3nm,0.5s,baz=242,slow=3.2,SNR=3.6						
TXAR	**Lajitas Array**	**89.84**	**52**	P	**P**	**11 43 22.1**	**+0.5**
	0.2nm,0.6s,baz=300,slow=3.0,SNR=4.8						

*IDC **20** 11:50:03.8±2.1, 40°.37N×71°.15E, h0km, mb3.8/1, mb1 3.4/5, mb1mx3.2/45, mbtmp3.4/5, ML2.9/3, MS1.8/1, Ms1 1.8/1, ms1mx1.7/31, Error ellipse: s-maj=63.6km s-min=16.0km az=143.0*

*NNC **20** 11:50:06.2±1.8, 40°.05N×71°.71E, h0km, mb4.0, mpv3.8, Error ellipse: s-maj=27.5km s-min=11.3km az=138.0*

*KRNET **20** 11:50:07.4±0.1, 40°.17N×71°.44E, h21km, mb3.5*

*SOME **20** 11:50:09.3, 40°.27N×71°.53E, h5km*

ISC 20 11:50:08.5±1.2, 40°.11N±0°.05×71°.40E±0°.04, h16km±12km, n32, σ2.903/50, 22C-14D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTK	**Batken**	**0.45**	**264**	⇓*i*P	**Pg**	**11 50 16.9**	**-0.7**
	baz=257						
BTK				⇓*i*S	**Sg**	**11 50 24.4**	**+0.6**
	baz=257						
DRK	**Karamyk**	**0.70**	**154**	⇓*i*P	**Pg**	**11 50 21.4**	**-0.9**
	baz=157						
DRK				⇓*i*S	**Sb**	**11 50 33.0**	**+0.9**
	baz=157						
ARSB	**Arslanbob**	**1.71**	**44**	⇑*i*P	**Pn**	**11 50 37.1**	**-0.7**
	baz=45						
ARSB				⇑*i*S	**Sn**	**11 50 59.8**	**+0.3**
	baz=45						
ARK	**Arkit**	**1.74**	**14**	⇑*i*P	**Pn**	**11 50 36.9**	**-1.4**
	baz=14						
ARK				⇑*i*S	**Sn**	**11 50 59.8**	**-0.4**
	baz=14						
IUG	**luzhnay**	**2.28**	**334**	*e*P	**Pb**	**11 50 49.5**	**+0.1**
	177nm,0.2s						
IUG				*e*S	**Sb**	**11 51 18.4**	**+0.9**
	257nm,0.3s						
DZET	**Dzherino**	**2.38**	**238**	⇑Pn	**Pn**	**11 50 49.0**	**+2.0**
	33nm,0.5s						
DZET				⇓Lg	Lg	11 51 25.1	
	113nm,0.4s						
MNAS	**Manas**	**2.52**	**19**	⇓*i*P	**Pn**	**11 50 49.9**	**+0.9**
	baz=19						
MNAS				⇓*i*S	**Sn**	**11 51 21.5**	**+2.1**
	baz=19						
MNAS	**Manas**	**2.52**	**19**	⇑Pn	**Pn**	**11 50 48.0**	**-0.9**
	20nm,0.4s						
MNAS				⇑Lg	Lg	11 51 24.2	
	42nm,0.3s						
CHM	**Chimkent**	**2.59**	**329**	*e*P	**Pb**	**11 50 55.8**	**+1.1**
	113nm,0.3s						
CHM				*e*S	**Sb**	**11 51 29.6**	**+3.3**
	362nm,0.3s						
AML	**Almayashu**	**2.66**	**40**	⇓*i*P	**Pn**	**11 50 50.8**	**-0.4**
	baz=40						
AML				⇓*i*S	**Sn**	**11 51 21.9**	**-1.4**
	baz=40						
ARLS	**Aral**	**2.82**	**51**	⇑*i*P	**Pn**	**11 50 53.5**	**+0.4**
	baz=51						
ARLS				⇑*i*S	**Sn**	**11 51 26.1**	**-0.8**
	baz=51						
MRKS	**Merke**	**2.97**	**27**	*e*P	**Pb**	**11 51 00.4**	**-0.8**
	66nm,0.2s						
MRKS				*e*S	**Sb**	**11 51 37.6**	**+0.3**
	169nm,0.4s						
BRLS	**Borolday**	**2.97**	**335**	*e*P	**Pb**	**11 51 02.6**	**+1.5**
	23nm,0.2s						
BRLS				*e*S	**Sb**	**11 51 40.9**	**+3.7**
	100nm,0.3s						
KK31	**Karatay Array**	**3.06**	**348**	⇓Pn	**Pn**	**11 50 55.6**	**-0.8**
	11nm,0.3s,baz=163,slow=15,SNR=40						
KK31				⇑Sn	**Sb**	**11 51 40.7**	**+0.8**
	14nm,0.3s,baz=158,slow=29,SNR=6.1						
EKS2	**Erkin-Say**	**3.11**	**34**	⇑*i*P	**Pn**	**11 50 56.8**	**-0.3**
	baz=35						
EKS2				⇑*i*S	**Sn**	**11 51 32.1**	**-2.0**
	baz=35						
AAK	**Ala-Archa**	**3.43**	**42**	Pn	**Pn**	**11 51 00.8**	**-0.7**
	1.9nm,0.3s,baz=257,slow=1.6,SNR=5.6						
AAK				LR	LR	11 51 46.7	
	comp=Z,15nm,20.1s,baz=229,slow=30						
AAK				Lg	Lg	11 51 52.9	
	31nm,0.3s,baz=70,slow=16,SNR=15						
AAK	**Ala-Archa**	**3.43**	**42**	⇑*i*P	**Pn**	**11 51 01.4**	**-0.2**
	baz=42						
AAK				⇑*i*S	**Sn**	**11 51 40.1**	**-1.9**
	baz=42						
AAK	**Ala-Archa**	**3.43**	**42**	⇓Pn	**Pn**	**11 51 00.5**	**-1.0**
	12nm,0.5s						
AAK				⇑Lg	Lg	11 51 53.1	
	37nm,0.4s						
KZA	**Kyzart**	**3.51**	**55**	⇑*i*P	**Pn**	**11 51 02.9**	**0.0**
	baz=55						
KZA				⇑*i*S	**Sn**	**11 51 43.5**	**-0.8**
	baz=55						
BOOM	**Boomskoye usch**	**4.17**	**54**	⇑*e*P	**Pn**	**11 51 12.2**	**+0.6**
	baz=54						
BOOM				⇑*i*S	**Sn**	**11 52 00.8**	**+0.7**
TKM2	**Tokmak 2**	**4.22**	**47**	⇓Pn	**Pn**	**11 51 12.0**	**-0.4**
	5.1nm,0.3s						
TKM2				⇑Lg	Lg	11 52 16.3	
	2.1nm,0.3s						
BMNS	**Besmoynak**	**4.38**	**45**	*e*P	**Pb**	**11 51 26.0**	**+0.8**
BMNS				*e*S	**Sb**	**11 52 21.4**	**+3.4**
KST	**Kastek**	**4.50**	**48**	*e*P	**Pb**	**11 51 28.1**	**+0.8**
	3.4nm,0.3s						
KST				*e*S	**Sb**	**11 52 24.8**	**+3.3**
	43nm,0.4s						
DGS	**Degeres**	**4.53**	**45**	*e*P	**Pb**	**11 51 27.6**	**-0.1**
	8.5nm,0.4s						
DGS				*e*S	**Sb**	**11 52 23.9**	**+1.8**
	30nm,0.5s						
MTBS	**Maitube**	**4.83**	**50**	*e*P	**Pb**	**11 51 35.1**	**+2.3**
	5.5nm,0.4s						
MTBS				*e*S	**Sb**	**11 52 36.4**	**+5.7**
	20nm,0.3s						
TNSS	**Tian-Shan**	**5.09**	**53**	*e*P	**Pb**	**11 51 38.6**	**+1.2**
	9.5nm,0.5s						
TNSS				*e*S	**Sb**	**11 52 42.6**	**+4.1**
	38nm,0.7s						
OTUK	**Ortayu**	**8.16**	**4**	⇑Pg	Pb	11 52 36.0	+6.5
	1.8nm,0.5s						
OTUK				⇓Lg	Lg	11 54 23.4	
	14nm,0.9s						
MK31	**Makanchi Array**	**10.35**	**46**	⇓Pn	**Pn**	**11 52 33.1**	**-3.3**
	0.8nm,0.6s,baz=240,slow=13,SNR=4.4						
MK31				⇑Lg	Lg	11 55 33.0	
	2.2nm,0.8s,baz=192,slow=4.0,SNR=3.4						
MKAR	**Makanchi Array**	**10.35**	**46**	Pn	**Pn**	**11 52 35.0**	**-1.4**
	0.1nm,0.3s,baz=233,slow=14,SNR=3.6						
MKAR				Lg	Lg	11 55 28.5	
	0.1nm,0.3s,baz=242,slow=34,SNR=3.6						
KURBB	**Kurchatov Arra**	**11.64**	**23**	Pn	Pn	11 52 47.5	-6.4
	0.1nm,0.3s,baz=215,slow=13,SNR=4.3						
KURBB				Lg	Lg	11 56 10.4	
	0.1nm,0.3s,baz=209,slow=30,SNR=2.8						
ZALV	**Zalesovo Beam**	**16.55**	**29**	Pn	**Pn**	**11 53 54.1**	**-5.7**
	baz=204,slow=13,SNR=1.6						
TORD	**Torodi Ar. Bea**	**66.16**	**267**	P	P	12 00 52.4	-3.2
	0.5nm,0.5s,baz=52,slow=5.9,SNR=5.9						

*IDC **20** 11:54:48.0±0.5, 29°.02S×176°.74W, h0km, mb4.8/19, mb1 4.9/21, mb1mx4.7/37, mbtmp4.8/21, ML4.1/2, MS4.6/21, Ms1 4.6/21, ms1mx4.5/26, Error ellipse: s-maj=16.8km s-min=14.1km az=157.0*

*GCMT **20** 11:54:48.7±0.2, 29°.06S×176°.42W, h17km, MW5.2/92, Moment Tensor Solution. s70,c98; s92,c144; Duration: 1s0 Moment tensor: Scale 10^16Nm; Mrr4.99±.17; Mθθ0.75±.13; Mϕϕ-5.74±.12; Mrθ0.99±.35; Mϕθ-1.14±.09; Mϕr5.74±.36; Best double couple: Mo7.98500×10^16 NP1:φs10.00000°, δ68.00000°, λ90.00000°. NP2: φs190.00000°, δ22.00000°, λ90.00000°. Principal axes: T 7.5130, Plg67.0000°, Azm280.0000°; N 0.9410, Plg0.0000°, Azm190.0000°; P -8.4570, Plg23.0000°, Azm100.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **20** 11:54:48.9±0.2, 29°.62S±0°.03×176°.66W±0°.04, h21km, mb5.0/58, MS4.7/35 Error ellipse: s-maj=6.0km s-min=2.8km az=34.5*

*NEIC **20** 11:54:48.7±0.2, 29°.47S×176°.71W, h10km, mb4.9/32, Error ellipse: s-maj=7.7km s-min=5.1km az=132.0*

*BJI **20** 11:54:50.6, 29°.18S×176°.35W, h34km, mb5.2/30, mB5.6/25, Ms5.1/19, Ms7 4.8/21*

*MOS **20** 11:54:54.4±0.9, 29°.11S×176°.94W, h51km, mb5.3/12, MS4.7/7, Error ellipse: s-maj=12.6km s-min=10.6km az=113.2*

ISC 20 11:54:50.7±0.3, 29°.47S±0°.04×176°.65W±0°.05, h21km, n325, σ1.994/331, mb5.0/57, MS4.7/35, 22C-5D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.12**	**281**	Pn	**Pn**	**11 55 11.8**	**+0.6**
	2μm,0.3s,baz=85,slow=4.7,SNR=44						
RAO				Sn	**Sn**	**11 55 29.2**	**+3.2**
	5μm,0.3s,baz=99,slow=23,SNR=22						
RAO	**Raoul Island**	**1.12**	**281**	*e*P	**Pn**	**11 55 11.6**	**+0.4**
RAO				*e*		11 55 26.9	
RAO	**Raoul Island**	**1.12**	**281**	*e*Pn	**Pn**	**11 55 11.6**	**+0.4**
RAO				*e*Sn	**Sb**	**11 55 26.9**	**+1.3**
MXZ	**Matakaoa Point**	**9.10**	**206**	*e*PN	**Pn**	**11 56 58.7**	**-2.1**
MXZ				*e*SN	**Sn**	**11 58 45.7**	**+3.1**
WMGZ	**Waiomatatini S**	**9.29**	**205**	*e*PN	**Pn**	**11 57 02.4**	**-0.9**
PKGZ	**Pakihiroa**	**9.47**	**206**	*e*PN	**Pn**	**11 57 03.0**	**-3.0**
HAZ	**Te Kaha**	**9.48**	**208**	*e*PN	**Pn**	**11 57 04.5**	**-1.4**
PUZ	**Puketiti**	**9.57**	**205**	*e*PN	**Pn**	**11 57 04.7**	**-2.6**
PUZ				*e*SN	**Sn**	**11 58 53.0**	**-1.1**
TWGZ	**Tauwhareparae**	**9.76

RAR LR LR 12 06 29.0
comp=Z,851nm,18.2s,baz=244,slow=41
RAR Rarotonga 17.32 66 P **Pn 11 58 50.0 -1.3**
FOZ Fox Glacier 17.72 214 *e*Pn **P 11 58 56.1 -0.8**
29nm,0.9s
ODZ Otahua Downs 18.51 209 *e*P **Pn 11 59 06.5 +0.8**
42nm,0.9s
TBI Tubuai 25.07 82 *e*S **S 12 04 39.6 +2.3**
320nm,28.0s
TBI *e*LR LR 12 06 19.3
2µm,29.2s,baz=247
TBI Tubuai 25.07 82 *e*T T 12 25 59.8
16nm,0.4s
PAE Paea 27.39 71 *e*T T 12 28 43.6
6.8nm,0.3s
PPT2 Papeete2 27.43 71 *e*LQ LQ 12 06 05.3
2µm,25.6s
PPT2 *e*LR LR 12 07 18.6
3µm,28.5s
PPT2 Papeete2 27.43 71 *e*T T 12 28 47.4
4.0nm,0.3s
PPT Papeete 27.44 70 LR LR 12 11 02.9
comp=Z,570nm,18.4s,baz=188,slow=36
HNR Honiara 29.62 308 P **P 12 00 51.5 -3.2**
43nm,0.6s,baz=322,slow=3.5,SNR=4.2
HNR LR LR 12 11 59.7
comp=Z,812nm,18.2s,baz=158,slow=35
VAH Vaihoa 30.25 68 *e*T T 12 32 15.9
12nm,0.3s
CTA Charters Tower 34.82 277 LR LR 12 14 47.5
comp=Z,3µm,18.0s,baz=115,slow=35
CTAO Charters Tower 34.82 277 *e*P **P 12 01 40.8 +0.5**
CTAO pmax pmax
comp=Z,30nm,1.0s
CTAO Charters Tower 34.82 277 *e*P **P 12 01 40.8 +0.5**
comp=Z,30nm,1.0s
STKA Stephens Creek 35.83 255 P **P 12 01 49.6 +0.6**
comp=Z,8.6nm,0.8s,baz=98,slow=10,SNR=12
STKA LR LR 12 15 51.7
comp=Z,2µm,18.1s,baz=93,slow=35
STKA Stephens Creek 35.83 255 *e*P **P 12 01 49.5 +0.6**
STKA pmax pmax
comp=Z,4.0nm,1.0s
STKA Stephens Creek 35.83 255 *e*P **P 12 01 49.5 +0.6**
comp=Z,4.1nm,1.0s
RKT Rikitea 37.75 90 *e*S **S 12 07 58.6 +3.7**
comp=Z,123nm,28.5s
RKT *e*LR LR 12 12 10.4
comp=Z,1µm,28.8s,baz=257
RABL Rabaul 38.77 304 *e*P **P 12 02 14.0 0.0**
RABL *e*pP **sP 12 02 28.6 +5.6**
TAOE Nuku Hiva Isla 39.87 67 *e*LR LR 12 13 01.3
comp=Z,1µm,27.9s
BBOO Buckleboo 40.35 253 *e*P **P 12 02 26.4 -0.6**
comp=Z,27nm,1.0s
AS01 Alice Springs 44.30 265 *e*P **P 12 02 58.3 -1.0**
AS31 Alice Springs 44.34 265 *e*P **P 12 02 58.8 -0.8**
comp=Z,5.0nm,0.6s
ASAR Alice Springs 44.34 265 P **P 12 02 58.6 -1.0**
comp=Z,12nm,0.6s,baz=101,slow=6.4,SNR=108
ASAR LR LR 12 21 10.3
comp=Z,3µm,18.4s,baz=112,slow=36
WB2 Warramunga Arr 45.23 271 *e*P **P 12 03 06.4 -0.4**
WRAB Tennant Creek 45.24 271 *ce*P **P 12 03 05.6 -1.2**
WRAB pmax pmax
comp=Z,55nm,1.0s
WRAB Tennant Creek 45.24 271 *e*P **P 12 03 06.3 -0.5**
comp=Z,30nm,1.0s
WRA Warramunga Arr 45.24 271 P **P 12 03 06.1 -0.8**
comp=Z,22nm,0.9s,baz=109,slow=7.5,SNR=62
WRA LR LR 12 21 14.6
comp=Z,1µm,18.2s,baz=105,slow=35
FORT Forrest 47.42 254 *e*P **P 12 03 23.3 -0.5**
SBA Scott Base 49.05 185 *e*P P 12 03 40.0 +4.3
SBA pmax pmax
comp=Z,19nm,1.2s
SBA Scott Base 49.05 185 *e*P P 12 03 40.0 +4.3
comp=Z,19nm,1.2s
VNDA Vanda 49.14 186 P P 12 03 41.4 +5.0
comp=Z,7.5nm,1.0s,baz=9.3,slow=7.4,SNR=20
VNDA LR LR 12 20 50.5
comp=Z,388nm,20.9s,baz=22,slow=32
VNDA Vanda 49.14 186 P P 12 03 41.4 +5.0
VNDA *e*pP pP 12 03 41.9 -1.2
FITZ Fitzroy Crossi 53.54 269 P **P 12 04 09.4 -0.8**
comp=Z,21nm,1.1s,baz=131,slow=6.3,SNR=13
MBWA Marble Bar 57.50 263 *e*P **P 12 04 37.9 -0.8**
SOEI Soe 58.39 277 P **P 12 04 41.0 -4.2**
QSPA South Pole Qui 60.64 180 *e*P **P 12 05 03.5 +3.5**
comp=Z,117nm,1.0s
MIR Mirnyy 63.48 207 *e*P **P 12 05 22.0 +3.2**
MIR pmax pmax
comp=Z,8.0nm,1.6s
MAW Mawson 73.59 200 P **P 12 06 25.1 +3.3**
comp=Z,11nm,0.9s,baz=128,slow=6.1,SNR=19
MAW LR LR 12 39 27.3
comp=Z,689nm,18.6s,baz=78,slow=36
STKI Sintang 74.29 279 P **P 12 06 30.6 +3.7**
KSM Kuching 76.00 280 *e*P **P 12 06 35.6 -1.1**
comp=Z,5.6nm,0.8s
MJAR Matsushiro Arr 78.16 324 P **P 12 06 46.6 -1.7**
comp=Z,6.5nm,0.9s,baz=158,slow=5.6,SNR=9.3
MJAR LR LR 12 37 14.2
comp=Z,99nm,20.7s,baz=125,slow=33
MAJO Matsushiro 78.16 324 *e*P **P 12 06 47.4 -1.0**
MAT Matsushiro 78.16 324 P **P 12 06 46.7 -1.7**
SYO Syowa Base 78.28 193⇑ *e*P **P 12 06 49.3 +0.7**
SYO Syowa Base 78.28 193⇓ *e*pP pP 12 06 52.2 -3.3
SNAA Sanae 79.05 178 P **P 12 06 55.2 +2.2**
SNAA Sanae 79.05 178 *e*P **P 12 06 55.2 +2.2**
JNU Nakatsue 79.65 317 P **P 12 06 56.4 -0.3**
comp=Z,15nm,1.1s,baz=73,slow=2.6,SNR=4.3
VNA1 Neumayer--Stat 79.82 176 P **P 12 06 59.8 +2.8**
NVL N'lazarevskaya 79.87 183 *e*P **P 12 07 00.3 +3.0**
KUR Kuril'sk 81.06 335 P **P 12 07 03.2 -0.6**
KUR *e*S **S 12 17 11.1 -0.8**
KUR *e*SS **SS 12 22 22.4 -5.1**
KUR *e*SSS SSS 12 25 38.5
KUR MLR MLR
comp=Z,565nm,18.0s
PLCA Paso Flores 82.28 133 P **P 12 07 12.9 +2.0**
comp=Z,6.3nm,1.0s,baz=341,slow=4.5,SNR=4.8
PLCA LR LR 12 34 53.9
comp=Z,202nm,21.4s,baz=296,slow=29
EFI East Falkland 82.93 147 *e*P **P 12 07 11.9 -2.0**
SMMC Simmler 83.67 43 P **P 12 07 17.9 +0.1**
baz=227
ARVC Arvin 84.24 44 P **P 12 07 20.8 +0.1**
baz=228
MURC Murrieta 84.25 46 P **P 12 07 20.5 -0.4**
baz=229
MONP2 Monument Peak 84.28 47 P **P 12 07 21.5 +0.2**
baz=229,SNR=5.3
IKP In-Ko-Pah, Jac 84.32 48 P **P 12 07 21.2 -0.1**
baz=230
BFSC Mount Baldy Ra 84.37 46 P **P 12 07 21.3 -0.3**
baz=229
YSS Yuzh-Sakhalins 84.43 333 *e*P **P 12 07 21.8 +0.5**
YSS *e*S **S 12 17 47.9 +1.7**
YSS pmax pmax
comp=Z,10.0nm,1.3s
YSS smax smax
comp=N,240nm,12.0s
YSS MLR MLR
comp=Z,250nm,17.0s
YSS Yuzh-Sakhalins 84.43 333 *e*P **P 12 07 21.9 +0.6**
comp=Z,29nm,1.1s
VES Vestal, Richgr 84.57 44 P **P 12 07 22.4 +0.1**
baz=228,SNR=5.2
EDW2 Edwards Air Fo 84.59 45 P **P 12 07 22.6 0.0**
baz=228,SNR=6.3
SWSC Sam W. Stewart 84.71 48 P **P 12 07 23.3 +0.2**
baz=230
TPFO Pinon Flats 84.72 47 P **P 12 07 23.7 +0.4**
baz=229
PFO Pinyon Flats O 84.72 47 P **P 12 07 23.6 +0.2**
comp=Z,3.5nm,0.7s,baz=252,slow=3.5,SNR=5.5
PFO Pinyon Flats O 84.72 47 P **P 12 07 23.6 +0.2**
baz=229
ISA Isabella, Lake 84.82 44 P **P 12 07 24.0 +0.3**
baz=228
BBRC Big Bear Solar 84.85 46 P **P 12 07 24.5 +0.4**
baz=229
PET Petropavlovsk 84.92 345 *e*P **P 12 07 23.6 0.0**
PET *e*S **S 12 17 49.8 -1.0**
PET pmax pmax
comp=Z,100nm,8.9s
PET MLR MLR
comp=Z,300nm,21.0s
PET MLR MLR
comp=Z,300nm,20.0s
LRMC Laurel Mtn Rad 85.18 45 P **P 12 07 25.6 -0.1**
baz=228,SNR=7.8
RRX Edison Barstow 85.20 45 P **P 12 07 25.6 -0.1**
baz=229
PETK Petropavlovsk- 85.21 345 P **P 12 07 24.1 -1.0**
comp=Z,7.8nm,0.8s,baz=119,slow=7.3,SNR=9.2
PETK LR LR 12 43 52.4
comp=Z,177nm,18.3s,baz=167,slow=35
BELC Belle Mtn. Jos 85.26 47 P **P 12 07 26.7 +0.6**
baz=230,SNR=8.9
BC3 Big Chuckawall 85.39 47 P **P 12 07 26.9 +0.2**
baz=230,SNR=6.8
GLA Glamis 85.41 48 P **P 12 07 27.3 +0.6**
baz=230,SNR=5.2
CWC Cottonwood Cre 85.57 44 P **P 12 07 27.4 -0.2**
baz=228
HEC Hector,Ludlow 85.59 46 P **P 12 07 27.8 +0.2**
baz=229
GSC Goldstone, Bar 85.60 45 P **P 12 07 27.9 +0.2**
baz=229,SNR=6.8
QIZ Qiongzhong 85.66 295 P **P 12 07 27.3 -0.9**
QIZ S **S 12 17 59.5 -0.2**
QIZ SS **SS 12 23 34.3 -2.4**
QIZ pmax pmax
comp=Z,160nm,4.1s
QIZ LR LR
comp=Z,130nm,39.8s
MPMC Manual Prospec 85.68 44 P **P 12 07 28.3 +0.1**
baz=229,SNR=15
TIN Tinemaha, Big 85.89 43 P **P 12 07 28.8 -0.3**
baz=228
IRM Iron Mountain 85.90 47 P **P 12 07 29.7 +0.6**
baz=230,SNR=13
MLAC Mammoth, Mammo 85.92 42 P **P 12 07 29.8 +0.4**
baz=228
GMRC Granite Mounta 85.98 46 P **P 12 07 29.7 +0.1**
baz=230,SNR=5.6
214A Organ Pipe Nat 86.04 50 P **P 12 07 30.2 +0.3**
baz=232,SNR=5.4
214A Organ Pipe Nat 86.04 50 *e*P **P 12 07 30.8 +0.9**
comp=Z,99nm,1.5s
214A *e*PP **PP 12 10 49.1 -1.4**
Y12C Blythe 86.04 48 P **P 12 07 30.2 +0.4**
baz=230
N02D Trinity Center 86.05 38 P **P 12 07 30.4 +0.7**
baz=225
O03D Paynes Creek 86.06 39 P **P 12 07 30.0 +0.1**
baz=226
TUQ Turquoise Moun 86.23 46 P **P 12 07 31.5 +0.7**
baz=230
M02C Callahan 86.27 37 P **P 12 07 31.6 +0.8**
baz=225
SHOC Shoshone, Teco 86.32 45 P **P 12 07 31.7 +0.6**
baz=229
FURC Furnace Creek, 86.33 44 P **P 12 07 31.6 +0.6**
baz=229
GRAC Grapevine Rang 86.37 44 P **P 12 07 31.8 +0.4**
baz=229,SNR=6.9
PSI Prapat 86.51 275 P **P 12 07 30.5 -2.2**
comp=Z,9.6nm,0.9s,baz=155,slow=6.1,SNR=5.5
NEE2 Needles Airpor 86.63 47 P **P 12 07 33.5 +0.9**
baz=230
PDMCI Parker Dam,Lak 86.64 47 P **P 12 07 33.8 +1.1**
baz=231
GSI Gunungsitoli 86.95 273 *e*P **P 12 07 35.0 +0.3**
comp=Z,15nm,0.3s
TPNV Topopah Spring 87.01 44 P **P 12 07 34.7 0.0**
baz=229,SNR=8.8
USRK Ussuriysk Ar. 87.04 326 P **P 12 07 33.1 -1.3**
comp=Z,6.6nm,1.0s,baz=128,slow=3.1,SNR=8.0
HUMO Hull Mountain 87.07 37 *e*P **P 12 07 33.4 -1.3**
comp=Z,90nm,1.5s
TUC Tucson 87.62 51 P **P 12 07 38.3 +0.7**
baz=233
TUC Tucson 87.62 51 *e*P **P 12 07 38.3 +0.7**
TUC pmax pmax
comp=Z,28nm,1.2s
TUC Tucson 87.62 51 *e*P **P 12 07 38.3 +0.7**
comp=Z,28nm,1.2s
I03D Drain, OR 87.65 36 P **P 12 07 38.1 +0.7**
baz=224
J04D Umpqua Nationa 87.96 37 P **P 12 07 38.9 -0.2**
baz=225
MOD Modoc Plateau 87.99 38 *e*P **P 12 07 39.1 -0.1**
comp=Z,20nm,1.7s
I04A Tendick Farm, 88.20 36 P **P 12 07 39.0 -1.0**
baz=225
R11A Troy Canyon, C 88.32 44 P **P 12 07 42.0 +1.0**
baz=230
R11A Troy Canyon, C 88.32 44 *e*P **P 12 07 41.7 +0.7**
comp=Z,1.3nm,1.0s
J05D Fort Rock, OR 88.45 37 P **P 12 07 42.2 +0.8**
baz=226
MDJ Mudanjiang 88.53 325 P **P 12 07 41.9 +0.4**
MDJ PP **PP 12 11 11.8 +1.5**
MDJ S **S 12 18 25.8 -0.5**
MDJ pmax pmax
comp=Z,13nm,1.3s
MDJ pmax pmax
comp=Z,150nm,6.4s
MDJ LR LR
comp=Z,110nm,31.6s
MDJ LR LR
comp=Z,100nm,31.6s
MDJ LR LR
comp=Z,130nm,27.3s
BMN Battle Mountai 88.72 41 *e*P **P 12 07 43.0 +0.2**
BMN pmax pmax
comp=Z,4.0nm,1.0s
BMN Battle Mountai 88.72 41 *e*P **P 12 07 43.0 +0.2**
comp=Z,4.1nm,1.0s
WHN Wuhan 88.73 306 P **P 12 07 44.4 +1.6**
WHN S S 12 18 17.3 -11
WHN LR LR
comp=Z,830nm,21.2s
I05D Terrebonne, OR 89.13 36 P **P 12 07 44.5 +0.1**
baz=226
WUAZ Wupatki 89.17 48 P **P 12 07 45.2 +0.2**
baz=232
WUAZ Wupatki 89.17 48 *e*P **P 12 07 46.0 +1.0**
comp=Z,11nm,1.0s
WVOR Wild Horse Val 89.26 39 *e*P **P 12 07 45.1 -0.1**
WVOR pmax pmax
comp=Z,10.0nm,1.3s
WVOR Wild Horse Val 89.26 39 *e*P **P 12 07 45.1 -0.1**
comp=Z,9.8nm,1.3s
G05D Wamic, OR 89.77 36 P **P 12 07 48.4 +1.0**
baz=226
121A Cooks Peak, D 89.79 52 P **P 12 07 48.0 0.0**
baz=234
TIA Tai'an 90.20 312 ⇑P **P 12 07 50.3 +0.7**
TIA pmax pmax
comp=Z,50nm,1.1s
KLR Kul'dur 90.83 329 P **P 12 07 51.2 -1.0**
comp=Z,3.4nm,0.8s,baz=184,slow=1.4,SNR=10
KLR LR LR 12 43 50.1
comp=Z,213nm,20.4s,slow=32
KLR Kul'dur 90.83 329 *e*P **P 12 07 52.1 -0.1**
TXAR Lajitas Array 90.90 57 P **P 12 07 53.5 +0.4**
comp=Z,3.6nm,1.1s,baz=216,slow=6.2,SNR=21
TXAR LR LR 12 42 01.1
comp=Z,106nm,19.7s,baz=0.0,slow=31
MNTX Cornudas Mount 90.99 54 P **P 12 07 53.4 0.0**
baz=236
DUG Dugway, Tooele 91.15 43 P **P 12 07 53.7 -0.4**
baz=231
MFID Camas Ranch 91.46 40 *e*P **P 12 07 55.5 +0.1**
comp=Z,4.1nm,0.9s
B05A Brynt 91.50 33 P **P 12 07 55.2 -0.1**
baz=225
BMO Blue Mountains 91.59 38 *e*P **P 12 07 55.7 -0.3**
comp=Z,21nm,1.9s
BMO *e*PP **PP 12 11 31.5 -3.3**
ENH Enshi 92.05 304 *e*P **P 12 07 59.5 +1.1**
comp=Z,74nm,1.2s
ANMO Albuquerque 92.08 51 P **P 12 07 58.3 -0.3**
baz=235
ANMO Albuquerque 92.08 51 *e*P **P 12 07 58.8 +0.2**
ANMO pmax pmax
comp=Z,22nm,1.7s
ANMO Albuquerque 92.08 51 *e*P **P 12 07 58.8 +0.2**
comp=Z,22nm,1.7s
GYA Guiyang 92.11 299 P **P 12 07 58.6 -0.2**
GYA pmax pmax
comp=Z,10.0nm,1.0s
HLID Hailey 92.34 40 P **P 12 07 59.4 -0.1**
baz=230
HLID Hailey 92.34 40 *e*P **P 12 07 60.0 +0.4**
comp=Z,4.1nm,1.1s
PV01 Paradox Valley 92.54 47 *e*P **P 12 08 00.7 0.0**
comp=Z,191nm,0.9s
BJT Baijiatuan 93.08 315 *e*P **P 12 08 01.9 -0.9**
BJT pmax pmax
comp=Z,16nm,1.3s
BJT Baijiatuan 93.08 315 *e*P **P 12 08 01.9 -0.9**
comp=Z,16nm,1.3s
BJI Beijing 93.09 315 P **P 12 08 03.0 +0.2**
BJI S **S 12 19 08.3 +0.1**
BJI SS **SS 12 25 25.6 +1.7**
BJI pmax pmax
comp=Z,11nm,1.1s
BJI pmax pmax
comp=Z,190nm,4.3s
BJI LR LR
comp=Z,250nm,16.3s
BJI LR LR
comp=Z,250nm,16.7s
BJI LR LR
comp=Z,180nm,27.9s
S22A 4UR Ranch, Cre 93.44 48 P **P 12 08 05.5 +0.6**
baz=235
MSTX Muleshoe 94.07 53 P **P 12 08 07.8 +0.1**
baz=237
MSTX Muleshoe 94.07 53 *e*P **P 12 08 07.6 -0.1**
comp=Z,4.1nm,0.8s
CMAR Chiang Mai Arr 94.20 289 P **P 12 08 09.2 +0.6**
comp=Z,0.4nm,0.3s,baz=227,slow=31,SNR=3.2
CMAR LR LR 12 50 28.4
comp=Z,100nm,21.0s,baz=139,slow=36
SDCO Great Sand Dun 94.30 49 P **P 12 08 09.2 +0.3**
baz=236
JCT Junction City 94.34 57 *e*P P 12 08 03.0 -6.0
JCT pmax pmax
comp=Z,6.0nm,0.7s
JCT Junction City 94.34 57 *e*P P 12 08 03.0 -6.0
comp=Z,6.2nm,0.7s
KMI Kunming 94.45 296 P **P 12 08 10.8 +1.0**
KMI pmax pmax
comp=Z,9.0nm,0.5s
XAN Xi'an 94.49 307 P **P 12 08 10.3 +0.8**
XAN pP sP 12 08 20.9 +1.9
XAN sP pP 12 08 24.8 +8.2
XAN SKS **SKSac 12 18 38.0 -5.7**
XAN pmax pmax
comp=Z,7.0nm,1.1s
XAN LR LR
comp=Z,150nm,17.3s
XAN LR LR
comp=Z,230nm,18.0s
XAN LR LR
comp=Z,310nm,19.7s
BW06 Boulder Array 94.66 43 P **P 12 08 09.8 -0.5**
baz=234
PDAR Pinedale Array 94.66 43 P **P 12 08 08.8 -1.5**
comp=Z,0.7nm,0.7s,baz=243,slow=1.7,SNR=5.4
PDAR PKKP **PKKPdf 12 25 09.8 +0.4**
comp=Z,0.6nm,0.6s,baz=72,slow=4.8,SNR=5.9
PDAR LR LR 12 45 43.4
comp=Z,248nm,18.6s,baz=252,slow=32
T25A Trinidad 94.69 50 P **P 12 08 09.5 -1.1**
baz=236
TRF Thorofare Moun 94.94 12 *e*P **P 12 08 09.1 -1.9**
comp=Z,3.4nm,0.7s
BOZ Bozeman (W) 95.19 40 P **P 12 08 12.2 -0.4**
baz=232
BOZ Bozeman (W) 95.19 40 *e*P **P 12 08 12.6 0.0**
BOZ pmax pmax
comp=Z,9.0nm,1.4s
BOZ Bozeman (W) 95.19 40 *e*P **P 12 08 12.6 0.0**
comp=Z,8.7nm,1.4s
HHC Hu-ho-hao-te 96.43 314 *e*P **P 12 08 19.3 +1.0**
HHC SKS **SKSac 12 18 51.6 -2.2**
HHC S **S 12 19 36.0 -1.6**
HHC sS sS 12 19 53.3 +4.0
HHC SS **SS 12 26 11.4 -0.4**
HHC pmax pmax
comp=Z,13nm,1.0s
HHC pmax pmax
comp=Z,69nm,5.2s
HHC LR LR
comp=Z,130nm,14.8s
HHC LR LR
comp=Z,190nm,16.7s
HHC LR LR
comp=Z,250nm,20.4s
CD2 Chengdu 96.59 302 *e*P **P 12 08 18.5 -0.7**
CD2 pP sP 12 08 29.4 +0.7
CD2 PP **PP 12 12 13.6 -0.5**
CD2 SKS **SKSac 12 18 52.3 -2.7**
CD2 S **S 12 19 37.6 -1.7**
CD2 sS sS 12 19 56.5 +5.6
CD2 SS **SS 12 26 14.8 +0.6**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.6s
ILAR Eielson Array 96.76 12 P **P 12 08 17.7 -1.4**
comp=Z,1.2nm,0.7s,baz=220,slow=5.3,SNR=19
LPAZ La Paz 97.45 113 P Pdif 12 08 25.9 +1.7
comp=Z,0.6nm,0.4s,baz=155,slow=2.1,SNR=3.6
LPAZ LR LR 12 46 19.3
comp=Z,91nm,18.4s,baz=291,slow=32
LPAZ La Paz 97.45 113 P Pdif 12 08 26.0 +1.7
BILL Bilibino 98.04 354 *e*P **P 12 08 25.3 +0.5**
BILL pmax pmax
comp=Z,2.0nm,1.0s
BILL MLR MLR
comp=Z,176nm,19.0s
CPUP Villa Florida 99.64 127 LR LR 12 49 17.9
comp=Z,106nm,18.8s,baz=234,slow=33
SONM Songino Array 103.24 318 P **Pdif 12 08 47.2 -1.4**
comp=Z,0.5nm,0.4s,baz=111,slow=3.2,SNR=4.2
WMQ Urumqi 113.57 308 *e*PKP **PKiKP 12 13 27.0 -0.3**
WMQ PP **PP 12 14 22.3 +2.6**
WMQ SKS **SKSdf 12 20 29.1 -9.1**
WMQ AMB AMB
comp=Z,52nm,5.9s
WMQ LR LR
comp=Z,180nm,18.6s
WMQ LR LR
comp=Z,280nm,23.4s
WMQ LR LR
comp=Z,330nm,24.3s
MKAR Makanchi Array 118.07 310 PKP **PKPdf 12 13 35.1 -0.7**
comp=Z,1.9nm,0.6s,baz=72,slow=4.0,SNR=7.6
ZALV Zalesovo Beam 118.11 318 PKP **PKPdf 12 13 34.6 -1.0**
comp=Z,1.6nm,0.7s,baz=130,slow=4.4,SNR=5.4
BOSA Boshof 118.57 202 PKP **PKPdf 12 13 39.4 +1.8**
comp=Z,3.6nm,0.9s,baz=115,slow=10.0,SNR=3.7
KSH Kashi 120.77 301 *e*PKP **PKPdf 12 13 42.4 +1.0**
KSH *es*PKP 12 13 57.3
KSH PKS **PKSdf 12 17 18.1 0.0**
KSH SKS **SKSdf 12 20 49.8 -2.5**
KSH AMB AMB
comp=Z,51nm,3.6s
KSH LR LR
comp=Z,82nm,6.7s
KSH LR LR
comp=Z,81nm,6.0s
KSH LR LR
comp=Z,67nm,7.8s
KKAR Karatay Array 125.53 304 *e*PKIKP **PKPdf 12 13 50.2 -0.1**
KKAR Karatay Array 125.53 304 *e*PKPdf **PKPdf 12 13 50.1 -0.1**
BRVK Borovoye 126.61 316 *c i*PKIKP **PKPdf 12 13 51.7 -0.2**
BRVK pmax pmax
comp=Z,42nm,1.7s
BRVK Borovoye 126.61 316 *e*PKPdf **PKPdf 12 13 51.9 0.0**
ARU Arti 133.10 321 *i* PKIKP **PKPdf 12 14 04.1 -0.1**
ARU 12 16 27.2
ARU SS SS 12 33 59.7 -13
GEYT Alibeck 134.22 296 PKP **PKPdf 12 14 08.2 +1.2**
comp=Z,2.1nm,0.3s,baz=349,slow=3.0,SNR=5.6
ARCES ARCESS Array B 137.92 349 PKP **PKPdf 12 14 12.2 -0.6**
comp=Z,0.8nm,0.5s,baz=354,slow=1.2,SNR=5.9
H10S3 ASCENSION HYDR 138.05 153 T T 14 49 52.8
baz=204,slow=74,SNR=11
H10S2 ASCENSION HYDR 138.05 153 T T 14 49 52.2
baz=204,slow=74,SNR=10
H10S1 ASCENSION HYDR 138.06 153 T T 14 49 53.3

baz=204,slow=74,SNR=9.7
H10N3 ASCENSION HYDR 39.12 152 T T 14 51 06.3
baz=204,slow=75,SNR=8.8
H10N1 ASCENSION HYDR 39.12 152 T T 14 51 09.9
baz=204,slow=75,SNR=11
H10N2 ASCENSION HYDR 39.14 152 T T 14 51 07.6
baz=204,slow=75,SNR=10
KLMR Klimovskoe 140.48 333 *e*PKHKP PKPpre 12 14 09.2
KLMR pmax pmax
comp=Z,4.0nm,0.6s
DGRG David-gareji 144.07 301 P PKPbc 12 14 23.6 +0.8
DGRG David-gareji 144.07 301 PKIKP PKPbc 12 14 23.5 +0.7
VRH Novokhopyorsk 144.15 318 *e*PKIKP **PKPab 12 14 22.3 +0.1**
VRH pmax pmax
comp=Z,10.0nm,0.6s
TBLG Delisi 144.51 302 P **PKPab 12 14 24.6 +0.7**
TBLG Delisi 144.51 302 PKIKP **PKPab 12 14 24.6 +0.7**
FINES FINESS Array B 144.66 341 PKP **PKPab 12 14 22.8 -1.0**
comp=Z,17nm,0.8s,baz=60,slow=4.6,SNR=54
GNI Garni 144.66 299*c i*PKIKP **PKPdf 12 14 26.6 +0.6**
GNI pmax pmax
comp=Z,148nm,1.7s
GNI Garni 144.66 299 *e*PKPdf **PKPdf 12 14 26.1 +0.1**
ZEI Tsey 144.98 303 *i* PKIKP **PKPbc 12 14 25.7 -0.2**
ZEI pmax pmax
comp=Z,61nm,0.7s
OBN Obninsk 145.06 327*c i*PKIKP **PKPbc 12 14 24.8 -0.5**
OBN pmax pmax
comp=Z,113nm,1.5s
OBN MLR MLR
comp=Z,108nm,21.0s
OBN Obninsk 145.06 327 *e*PKPbc **PKPbc 12 14 24.8 -0.5**
GOF Gofitskoye 145.17 308⇑ *e*PKIKP **PKPbc 12 14 26.6 +0.5**
GOF pmax pmax
comp=Z,43nm,0.6s
ONI Oni 145.34 303 P **PKPab 12 14 28.1 +1.0**
ONI Oni 145.34 303 PKIKP **PKPab 12 14 28.0 +1.0**
BGD Bogdanovka 145.42 301 P **PKPab 12 14 29.0 +1.4**
AKH Akhalkalaki 145.48 301 P **PKPab 12 14 28.9 +1.1**
AKH Akhalkalaki 145.48 301 PKIKP **PKPab 12 14 28.8 +1.1**
KBZ Khabaz 145.54 305 PKPbc **PKPdf 12 14 27.6 +0.5**
comp=Z,9.0nm,0.9s,baz=119,slow=1.5,SNR=30
VSR Storozhevoye 145.61 319 *e*PKIKP **PKPdf 12 14 26.0 -1.0**
VSR pmax pmax
comp=Z,60nm,0.6s
KIV Kislovodsk 145.65 306*c i*PKIKP **PKPdf 12 14 27.9 +0.4**
KIV *e* 12 17 44.6
KIV pmax pmax
comp=Z,56nm,1.3s
KIV Kislovodsk 145.65 306 *e*PKPbc **PKPbc 12 14 28.3 +0.5**
CHVG Ch'k'valeri 146.31 304 P **PKPbc 12 14 30.8 +1.0**
VSU Vasula 146.83 338 *e*PKIKP **PKPdf 12 14 27.7 -1.1**
NB2 NORSAR Subarra 147.99 353 PKP **PKPdf 12 14 32.8 +2.0**
comp=Z,3.6nm,0.6s,baz=8.2,slow=2.9
NOA NORSAR Array B 147.99 353 PKPbc **PKPbc 12 14 33.0 -0.9**
comp=Z,4.7nm,0.6s,baz=13,slow=4.4,SNR=16
MZRK Al-Mazaregh 148.09 291 *e*P **PKPbc 12 14 36.3 +1.3**
SFNV Sufian 148.51 292 *e*P **PKPbc 12 14 36.0 -0.1**
ANN Anapa 149.08 309*ce*PKHKP PKPpre 12 14 31.7
ANN *i* 12 14 37.2
ANN pmax pmax
comp=Z,71nm,1.1s
KSRV Kasrt alli 149.43 291 *e*P **PKPdf 12 14 36.5 +2.6**
NACGM Naroch 149.50 333 *e* **PKPbc 12 14 37.0 -0.9**
KONO Kongsberg 149.52 354 *i* PKIKP **PKPdf 12 14 35.4 +2.1**
KONO pmax pmax
comp=Z,270nm,2.5s
JHLN Al Jahlan 149.89 291 *e*P **PKPbc 12 14 38.6 -0.9**
ZALF Zalf 150.79 286 *e*P **PKPbc 12 14 43.1 +1.3**
ROOS tl_alroos 150.86 288 *e*P **PKPbc 12 14 42.3 +0.3**
AKASG Malin Array Be 151.24 325 PKPbc **PKPbc 12 14 41.4 -0.7**
comp=Z,11nm,0.6s,baz=46,slow=2.9,SNR=54
SIM Simferopol' 151.24 311 *i* PKIKP **PKPbc 12 14 43.6 +1.2**
SIM pmax pmax
comp=Z,17nm,0.9s
KIEV Kiev 151.25 325 *e*PKIKP **PKPbc 12 14 41.8 -0.4**
KIEV Kiev 151.25 325 *e*PKPdf **PKPbc 12 14 41.8 -0.4**
SALA Sala 151.29 285 *e*P **PKPbc 12 14 44.5 +1.3**
MARH Ras Al Marh 151.53 288 *e*P **PKPbc 12 14 42.8 -1.1**
SUW Suwalki 151.55 335 *e*PKP **PKPbc 12 14 43.2 +0.4**
SUW Suwalki 151.55 335 *e*PKIKP **PKPbc 12 14 43.2 +0.4**
TOTH TOTAH 151.57 286 *e*P **PKPbc 12 14 44.9 +1.3**
QASN Qassioun 151.70 287 *e*P **PKPbc 12 14 43.2 -0.7**
BRTR Keskin Array B 153.16 301 PKPbc **PKPbc 12 14 47.1 0.0**
comp=Z,5.2nm,0.8s,baz=129,slow=3.3,SNR=19
BRTR PKPab **PKPab 12 14 58.3 -0.5**
comp=Z,7.8nm,0.8s,baz=118,slow=4.6,SNR=11
SORM Soroca 153.22 321⇑ *i*P **PKPbc 12 14 46.4 -0.3**
SORM Soroca 153.22 321⇑ PKIKP **PKPbc 12 14 46.4 -0.3**
TESR Tescani 155.11 320⇑ *i*P **PKPab 12 15 06.4 -0.2**
BURAR Bucovina Array 155.22 323⇑ *i*P PKPab 12 14 58.4 -8.8
BURAR Bucovina Array 155.22 323⇑ PKIKP PKPab 12 14 58.4 -8.8
VRI Vrincioaia 155.43 318⇑ *i*P **PKPab 12 15 08.2 +0.2**
VRI Vrincioaia 155.43 318⇑ PKP2 **PKPab 12 15 08.2 +0.2**
PLOR Plostina 155.48 318⇓ *i*P **PKPab 12 15 08.6 +0.3**
PLOR Plostina 155.48 318⇓ PKP2 **PKPab 12 15 08.6 +0.3**
OJC Ojcow 155.83 334 *e*PKP **PKPab 12 15 09.0 -0.5**
OJC Ojcow 155.83 334 *e*PKP2 **PKPab 12 15 09.0 -0.5**
UZH Uzhgorod 155.98 328 *e*PKIKP PKPab 12 14 59.2 -11
UZH *i* 12 15 04.8
UZH *e* 12 15 11.4
DBIC Dimbokro 156.04 160 PKPab **PKPab 12 15 12.8 +1.4**
comp=Z,12nm,1.2s,baz=156,slow=5.9,SNR=4.0
KSP Ksiaz 156.53 339 *e*PKP **PKPab 12 15 12.7 +0.2**
KSP Ksiaz 156.53 339 *e*PKP2 **PKPab 12 15 12.7 +0.2**
VOIR 156.64 319⇑ *i*P **PKPab 12 15 13.5 +0.2**
VOIR 156.64 319⇑ PKP2 **PKPab 12 15 13.5 +0.2**
UPC Upice 156.92 339 AMS AMS 13 29 30.0
comp=Z,200nm,18.3s
DPC Dobruska-Polom 156.96 338 *e*PKPAB **PKPab 12 15 14.2 -0.2**
DPC AMS AMS 13 35 20.0
comp=Z,200nm,13.2s
DPC Dobruska-Polom 156.96 338 *e*PKP2 **PKPab 12 15 14.2 -0.2**
DPC MLR MLR
comp=Z,200nm,13.2s
CLL Collm 157.02 344 *e*PKPab **PKPab 12 15 13.0 -1.6**
comp=Z,13nm,1.2s
CLL *e* 12 15 18.0
CLL *e*PP **PP 12 18 54.0 +1.4**
CLL *e*PSKS 12 29 30.0
CLL LmV 13 28 00.0
comp=Z,100nm,21.8s
CLL Collm 157.02 344 *e*PKP2 **PKPab 12 15 13.0 -1.6**
CLL pmax pmax
comp=Z,13nm,1.2s
MORC Moravsky Berou 157.03 336⇑ *i*P **PKPab 12 15 14.8 0.0**
MORC Moravsky Berou 157.03 336⇑ PKP2 **PKPab 12 15 14.8 0.0**
BRG Berggiesshubel 157.18 343 *e*P **PKPab 12 15 14.3 -1.0**
comp=Z,15nm,1.4s
BRG Berggiesshubel 157.18 343 *e*PKP2 **PKPab 12 15 14.3 -1.0**
BRG pmax pmax
comp=Z,15nm,1.4s
VRAC Vranov 157.76 337⇑ *i*P **PKPab 12 15 18.2 +0.3**
VRAC Vranov 157.76 337⇑ PKP2 **PKPab 12 15 18.2 +0.3**
GOPC GO Pecny, Ondr 157.81 340 AMS AMS 13 36 20.0
comp=Z,200nm,15.2s
PRU Pruhonice 157.82 341 AMS AMS 13 32 30.0
comp=Z,200nm,15.7s
TREC Trest 158.14 338 AMS AMS 13 35 00.0
comp=Z,200nm,12.1s
KHC Kasperske Hory 158.86 341 *e*PKPAB **PKPab 12 15 22.2 -0.5**
KHC *e*pPKP **pPKPab 12 15 25.5 -4.2**
KHC AMS AMS 13 36 50.0
comp=Z,300nm,18.0s
KHC Kasperske Hory 158.86 341 *e*PKP2 **PKPab 12 15 22.2 -0.5**
KHC MLR MLR
comp=Z,300nm,18.0s
GERES GERESS Array B 159.09 341 PKPab **PKPab 12 15 21.6 -2.2**
comp=Z,0.5nm,0.2s,baz=4.8,slow=3.2,SNR=4.4
CONA Conrad Observa 159.19 336 *i* PKPab **PKPab 12 15 24.3 0.0**
comp=Z,14nm,1.2s
VTS Vitosha 159.34 315⇓ *i*P **PKPab 12 15 25.9 +0.7**
VTS Vitosha 159.34 315⇓ PKP2 **PKPab 12 15 25.9 +0.7**
MOA Molln 159.80 338 *i* PKPab **PKPab 12 15 26.9 +0.1**
comp=Z,6.9nm,1.0s
ARSA Arzberg 159.88 335 *i* PKPab **PKPab 12 15 26.4 -0.8**
comp=Z,8.7nm,1.4s
SOKA Soboth 160.55 335 *i* PKPab **PKPab 12 15 29.1 -1.0**
comp=Z,7.9nm,1.0s
OBKA Obir 160.87 336 *i* PKPab **PKPab 12 15 30.4 -1.1**
comp=Z,0.8nm,0.1s
WATA Walderalm 161.05 343 *i* PKPab **PKPab 12 15 32.6 +0.2**
comp=Z,2.6nm,0.4s
MYKA Terra Mystica 161.07 338 *i* PKPab **PKPab 12 15 31.2 -1.2**
comp=Z,9.2nm,1.0s
WTTA Wattenberg 161.10 342 *i* PKPab **PKPab 12 15 32.3 -0.4**
comp=Z,4.6nm,0.6s
RETA Reutte 161.11 344 *i* PKPab **PKPab 12 15 32.5 -0.1**
comp=Z,1.9nm,0.4s
MOTA Moosalm 161.16 343 *i* PKPab **PKPab 12 15 33.0 +0.1**
comp=Z,1.9nm,0.4s
ABTA Abfaltersbach 161.32 340 *i* PKPab **PKPab 12 15 32.4 -1.2**
comp=Z,4.0nm,0.9s
DAVA Damuels 161.50 346 *i* sPKPdf **PKPdf 12 14 57.5 +7.6**
comp=Z,3.6nm,0.7s
FETA Feichten 161.56 344 *i* PKPdf **PKPdf 12 14 50.2 +0.2**
comp=Z,8.7nm,1.5s
TORD Torodi Ar. Bea 163.69 174 PKP **PKPdf 12 14 53.5 +0.7**
comp=Z,2.2nm,1.0s,baz=105,slow=0.5,SNR=8.7
TORD PKPab **PKPab 12 15 46.2 +1.7**
comp=Z,14nm,1.0s,baz=190,slow=3.4,SNR=27
ESDC Sonseca Array 168.18 29 PKP **PKPdf 12 14 57.6 +1.8**
comp=Z,0.1nm,0.3s,baz=267,slow=5.9,SNR=4.1
ESDC PKPab **PKPab 12 16 02.4 -1.5**
comp=Z,0.4nm,0.4s,baz=314,slow=4.3,SNR=5.6

CSEM ***20*** *11:58:47.8, 41.16N×35.97E, h7km, MD2.3*
DDA 20 11:58:47.8, 41.16N×35.97E, h7km, Md2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HAVZ	**Havza**	**0.20**	**247**	*i*	P		Pg	11 58 53.4	+1.5
HAVZ	**Havza**	**0.20**	**247**		P		Pg	11 58 53.4	+1.5
SAMS	**Samsun-Alacam**	**0.27**	**39**	*i*	P		Pg	11 58 53.5	+0.5
SAMS				*i*	S		Sg	11 58 57.8	+1.1
SAMS	**Samsun-Alacam**	**0.27**	**39**		P		Pg	11 58 53.5	+0.4
SAMS					S		Sg	11 58 57.8	+1.2
ERBA	**Erbaa**	**0.76**	**128**	*i*	P		Pn	11 59 06.1	+1.0
ERBA				*i*	S		Sg	11 59 07.9	-4.5
ERBA	**Erbaa**	**0.76**	**128**		P		Pn	11 59 06.1	+1.1
ERBA					S		Sg	11 59 07.9	-4.5
BOYT	**Boyabat**	**0.84**	**289**	*i*	P		Pg	11 59 02.7	-1.3
BOYT				*i*	S		Sg	11 59 12.0	-3.0
BOYT	**Boyabat**	**0.84**	**289**		P		Pg	11 59 02.7	-1.3
BOYT					S		Sg	11 59 12.0	-3.0

IDC ***20*** *12:03:12.8s3.0, 11.97N×87.94W, h0km, mb3.9/6, mb1 4.2/7, mb1mx3.9/36, mbtmp3.9/7, ML3.6/1, MS3.8/2, Ms1 3.8/2, ms1mx2.9/25, Error ellipse: s-maj=61.2km s-min=48.4km az=23.0*
CASC ***20*** *12:03:19.9s1.5, 12.10N×88.24W, h21km±11km, MD4.0, ML3.5, mb4.3(NEIC)*
NEIC ***20*** *12:03:19.3s1.3, 12.11N×88.04W, h35km, mb4.3/5, Error ellipse: s-maj=27.2km s-min=21.5km az=218.0*
ISC 20 12:03:20.5±0.8, 12.15N±0.07×88.27W±0.07, h33km, n131, σ0.97/132, mb4.0/11, 4C-1D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**1.20**	**21**⇑	*e*	P		**Pn**	**12 03 41.8**	**+0.6**
LCY	**Lacayo**	**1.27**	**359**	*e*	P		**Pn**	**12 03 42.8**	**+0.7**
VSM	**San Miguel**	**1.27**	**360**	*e*	P		**Pn**	**12 03 43.5**	**+1.2**
BLLM	**Bellamira**	**1.29**	**1**⇓	*i*	P		**Pn**	**12 03 43.3**	**+1.0**
PACA	**Pacayal**	**1.31**	**358**⇑	*e*	P		**Pn**	**12 03 43.6**	**+0.9**
PACA				*e*	S		**Sb**	**12 04 02.6**	**+1.2**
CNGN	**Cerro Negro**	**1.58**	**77**	*e*	P		**Pn**	**12 03 45.3**	**-0.9**
CAHU	**Cacaucatique**	**1.61**	**2**	*e*	P		**Pn**	**12 03 48.3**	**+1.4**
LFRS	**El Faro**	**1.66**	**332**	*e*	P		**Pn**	**12 03 48.0**	**+0.5**
LFRS				*e*	S		**Sb**	**12 04 10.3**	**-0.9**
LBRS	**Las Brisas**	**1.75**	**335**	*e*	P		**Pn**	**12 03 49.8**	**+1.1**
SNET	**Serv Nac Est T**	**1.79**	**329**	AML		AML		12 04 17.3	
comp=Z,507nm,0.3s									
RBDL	**Robledal**	**2.39**	**325**	*e*	P		**Pn**	**12 03 59.4**	**+1.8**
JCR	**Jicaral**	**3.85**	**126**	*e*	P		**Pn**	**12 04 16.4**	**-1.2**
CGA2	**Cerro Gallo 2**	**4.29**	**119**	*e*	P		**Pn**	**12 04 24.7**	**+1.0**
QCR	**Quepos**	**4.86**	**123**	*e*	P		**Pn**	**12 04 31.0**	**-0.4**
URSC	**Urasca**	**4.97**	**117**⇑	*i*	P		**Pn**	**12 04 34.8**	**+1.7**
URSC				*e*	S		**Sn**	**12 05 30.8**	**+1.2**
BUS	**Buena Vista**	**5.13**	**120**⇑	*e*	P		**Pn**	**12 04 35.8**	**+0.3**
CMIG	**Matias Romero**	**8.07**	**308**	Pn			**Pn**	**12 05 16.4**	**+1.0**
comp=Z,0.7nm,0.3s,baz=142,slow=11,SNR=10									
CMIG				Sn			**Sn**	**12 06 45.1**	**-0.5**
comp=Z,0.2nm,0.3s,baz=144,slow=8.1,SNR=1.8									
034A	**Hebbronville** baz=144	**17.77**	**328**	P			**P**	**12 07 28.5**	**+2.5**
834A	**Tilden** baz=146	**18.58**	**330**	P			**Pn**	**12 07 37.0**	**+1.7**
736A	**Circle Diamond** baz=152	**18.63**	**335**	P			**Pn**	**12 07 39.1**	**+3.2**
833A	**Chaparral WMA,** baz=144,SNR=7.4	**19.16**	**329**	P			**Pn**	**12 07 42.8**	**+0.5**
832A	**Faith Ranch, C** baz=143	**19.43**	**327**	P			**Pn**	**12 07 45.2**	**-0.3**
733A	**Divot King Ran** baz=145,SNR=11	**19.43**	**330**	P			**Pn**	**12 07 45.6**	**0.0**
340A	**Bronson** baz=163	**19.87**	**346**	P			**Pn**	**12 07 51.4**	**+0.7**
244A	**Avery, Jackson** baz=172	**19.93**	**354**	P			**Pn**	**12 07 51.9**	**+0.5**
633A	**Saathoff Ranch** baz=147	**19.99**	**331**	P			**P**	**12 07 51.3**	**+1.0**
534A	**Blanco** baz=149	**20.16**	**334**	P			**P**	**12 07 53.0**	**+0.8**
533A	**Kerrville** baz=148,SNR=13	**20.44**	**332**	P			**P**	**12 07 55.9**	**+0.6**
434A	**Burnet** baz=151	**20.75**	**335**	P			**P**	**12 07 59.5**	**+0.9**
433A	**Art** baz=149,SNR=5.6	**21.05**	**333**	P			**P**	**12 08 01.9**	**+0.1**
JCT	**Junction City** baz=147	**21.14**	**331**	P			**P**	**12 08 03.5**	**+0.7**
334A	**Lometa** baz=152	**21.20**	**336**	P			**P**	**12 08 04.6**	**+1.2**
333A	**Richland Sprin** baz=150	**21.50**	**334**	P			**P**	**12 08 07.5**	**+0.9**
ATAH	**Atahualpa**	**21.53**	**152**	LR		LR		12 15 28.0	
comp=Z,40nm,18.0s,baz=1,slow=35									
233A	**Rising Star** baz=151	**22.07**	**335**	P			**P**	**12 08 13.4**	**+0.6**
TXAR	**Lajitas Array**	**22.31**	**322**	P			**P**	**12 08 17.0**	**+1.6**
comp=Z,3.3nm,0.9s,baz=143,slow=11,SNR=15									
X40A	**Basin Creek Fa** baz=168	**22.62**	**350**	P			**P**	**12 08 18.6**	**-0.1**
MIAR	**Mount Ida** baz=166,SNR=8.8	**22.82**	**349**	P			**P**	**12 08 22.6**	**+2.0**
X39A	**Fountain Ranch** baz=165	**22.89**	**348**	P			**P**	**12 08 22.6**	**+1.2**
Y35A	**Marietta** baz=157	**23.09**	**341**	P			**P**	**12 08 24.7**	**+1.2**
X38A	**Whitesboro** baz=163	**23.20**	**346**	P			**P**	**12 08 25.4**	**+0.8**
W41B	**Gary Mavity, V** baz=170	**23.21**	**352**	P			**P**	**12 08 24.9**	**+0.2**
X37A	**Clayton** baz=162	**23.26**	**345**	P			**P**	**12 08 25.9**	**+0.7**
W39A	**Magazine** baz=166	**23.49**	**349**	P			**P**	**12 08 27.8**	**+0.4**
X36A	**Centrahoma** baz=159,SNR=6.5	**23.50**	**343**	P			**P**	**12 08 28.4**	**+0.8**
W38A	**Poteau** baz=164	**23.52**	**347**	P			**P**	**12 08 28.5**	**+0.8**
TKL	**Tuckaleechee C**	**23.76**	**9**	P			**P**	**12 08 29.7**	**-0.3**
comp=Z,4.2nm,0.8s,baz=175,slow=12,SNR=4.3									
W37B	**Quinton** baz=162	**23.79**	**345**	P			**P**	**12 08 31.4**	**+1.0**
V41A	**Mountainview** baz=170	**23.80**	**352**	P			**P**	**12 08 30.6**	**+0.3**
V40A	**Witts Springs** baz=168	**23.91**	**351**	P			**P**	**12 08 32.2**	**+0.7**
X34A	**Smith Ranch, M** baz=156,SNR=6.1	**23.99**	**340**	P			**P**	**12 08 34.0**	**+1.9**
W36A	**Wetumka** baz=160	**24.00**	**344**	P			**P**	**12 08 32.8**	**+0.5**
V39A	**Pettigrew** baz=167	**24.08**	**349**	P			**P**	**12 08 34.0**	**+0.8**
X33A	**Lawton** baz=154	**24.16**	**339**	P			**P**	**12 08 34.3**	**+0.5**
V38A	**Canehill** baz=165	**24.25**	**348**	P			**P**	**12 08 35.5**	**+0.9**
X32A	**Elmer** baz=153	**24.34**	**337**	P			**P**	**12 08 36.2**	**+0.8**
V37A	**Hulbert** baz=163	**24.43**	**346**	P			**P**	**12 08 37.0**	**+0.7**
WMOK	**Wichita Mounta** baz=154	**24.43**	**339**	P			**P**	**12 08 36.9**	**+0.6**
WMOK	**Wichita Mounta**	**24.43**	**339**	*e*	P		**P**	**12 08 35.9**	**-0.4**
comp=Z,2.0nm,0.7s									
U40A	**Yellville** baz=169	**24.46**	**351**	P			**P**	**12 08 36.7**	**+0.2**
W34A	**Bridge Creek,** baz=157	**24.55**	**341**	P			**P**	**12 08 38.1**	**+0.8**
U39A	**Green Forest** baz=167	**24.58**	**350**	P			**P**	**12 08 37.9**	**+0.3**
TUL1	**Leonard** baz=162	**24.62**	**345**	P			**P**	**12 08 39.0**	**+1.1**
W33A	**Caddo, Fort Co** baz=155	**24.70**	**340**	P			**P**	**12 08 39.6**	**+0.9**
V35A	**Meyer Ranch, C** baz=159	**24.76**	**343**	P			**P**	**12 08 39.0**	**-0.2**
U38A	**Gravette** baz=165	**24.81**	**348**	P			**P**	**12 08 40.6**	**+0.9**
U37A	**Salina** baz=164	**24.93**	**347**	P			**P**	**12 08 41.1**	**+0.4**
W32A	**Sentinel** baz=153,SNR=5.2	**24.95**	**338**	P			**P**	**12 08 40.9**	**-0.1**
T41A	**Mountain View** baz=171	**24.99**	**353**	P			**P**	**12 08 40.7**	**-0.5**
V34A	**Guthrie** baz=158	**25.02**	**342**	P			**P**	**12 08 41.6**	**0.0**
V34A	**Guthrie** comp=Z,9.0nm,0.6s	**25.02**	**342**	*e*P			**P**	**12 08 41.3**	**-0.3**
T40A	**Mansfield** baz=170	**25.19**	**352**	P			**P**	**12 08 43.4**	**+0.3**
T39A	**Clever** baz=168	**25.19**	**350**	P			**P**	**12 08 43.1**	**0.0**
V33A	**Lossen Ranch,** baz=156	**25.25**	**341**	P			**P**	**12 08 43.8**	**+0.1**
U35A	**Pawnee** baz=160	**25.30**	**344**	P			**P**	**12 08 44.0**	**0.0**
T38A	**Diamond** baz=166	**25.37**	**349**	P			**P**	**12 08 44.9**	**+0.2**
V32A	**Arapaho** baz=154	**25.41**	**339**	P			**P**	**12 08 45.8**	**+0.6**
S44A	**Carbondale** baz=177	**25.45**	**358**	P			**P**	**12 08 44.8**	**-0.7**
T37A	**Cheneyville 18** baz=164	**25.58**	**348**	P			**P**	**12 08 46.6**	**0.0**
U34A	**Anderson Ranch** baz=158	**25.59**	**343**	P			**P**	**12 08 46.7**	**0.0**
U34A	**Anderson Ranch** comp=Z,8.9nm,0.6s	**25.59**	**343**	*e*P			**P**	**12 08 46.4**	**-0.3**
S40A	**Lebanon** baz=170	**25.63**	**352**	P			**P**	**12 08 47.1**	**0.0**
T36A	**Boggs Farm, Ca** baz=162	**25.73**	**346**	P			**P**	**12 08 47.9**	**-0.1**
S39A	**Bolivar** baz=168,SNR=14	**25.84**	**351**	P			**P**	**12 08 49.1**	**+0.2**
S38A	**Stockton** baz=167	**25.87**	**350**	P			**P**	**12 08 49.4**	**+0.1**
T34A	**McCluskey Farm** baz=159	**26.03**	**344**	P			**P**	**12 08 51.1**	**+0.3**
S37A	**Fort Scott** baz=165	**26.17**	**348**	P			**P**	**12 08 52.0**	**0.0**
R40A	**Maddies Statio** baz=171	**26.28**	**353**	P			**P**	**12 08 52.4**	**-0.5**
S36A	**Lake Cedric, C** baz=163	**26.30**	**347**	P			**P**	**12 08 52.8**	**-0.3**
R39A	**Chumby, Stover** baz=169,SNR=8.4	**26.40**	**352**	P			**P**	**12 08 53.6**	**-0.4**
R38A	**Fenwick Farm,** baz=167	**26.42**	**350**	P			**P**	**12 08 54.0**	**-0.2**
S35A	**Otter Creek Ra** baz=162	**26.43**	**346**	P			**P**	**12 08 54.7**	**+0.3**
R36A	**Gordon, Harris** baz=164	**26.86**	**347**	P			**P**	**12 08 57.3**	**-0.9**
Q39A	**Willow Grove F** baz=169	**27.11**	**352**	P			**P**	**12 09 00.2**	**-0.3**
P40A	**Paris** baz=172	**27.48**	**354**	P			**P**	**12 09 02.8**	**-0.9**
P39B	**Salisbury** baz=170	**27.52**	**352**	P			**P**	**12 09 03.7**	**-0.4**
P38A	**Dawn** baz=168	**27.76**	**351**	P			**P**	**12 09 05.7**	**-0.6**
P34A	**Walnut Farm, R** baz=162	**28.32**	**346**	P			**P**	**12 09 11.3**	**0.0**
O34A	**Beatrice** baz=162	**28.90**	**347**	P			**P**	**12 09 16.3**	**-0.1**
N36A	**Muff Farm, Cla** baz=166	**29.16**	**350**	P			**P**	**12 09 18.5**	**-0.2**
M36A	**Felix, Anita** baz=167	**29.75**	**350**	P			**P**	**12 09 23.9**	**0.0**
SDCO	**Great Sand Dun** comp=Z,2.8nm,1.3s	**29.79**	**332**	P			**P**	**12 09 27.1**	**+2.4**
L38A	**Oak Wood Farm,** baz=170	**30.16**	**353**	P			**P**	**12 09 27.0**	**-0.6**
K37A	**Belmond** baz=169,SNR=5.0	**30.86**	**352**	P			**P**	**12 09 32.9**	**-0.9**
J37A	**Redenius Farm,** baz=170	**31.39**	**353**	P			**P**	**12 09 37.7**	**-0.7**
J36A	**Seneca 1, Swea** baz=168	**31.51**	**352**	P			**P**	**12 09 38.8**	**-0.6**
ECSD	**EROS Data Cent** baz=164	**32.29**	**349**	P			**P**	**12 09 45.3**	**-1.0**
H35A	**Sunnyside Ranc** baz=168,SNR=5.8	**32.92**	**351**	P			**P**	**12 09 50.7**	**-1.1**
SPMN	**Marine on St.** baz=172	**33.19**	**354**	P			**P**	**12 09 53.5**	**-0.6**
G36A	**St. Michael** baz=170	**33.30**	**353**	P			**P**	**12 09 54.1**	**-1.1**
F36A	**Milaca** baz=170	**33.90**	**353**	P			**P**	**12 09 59.1**	**-1.2**
F35A	**Swanville** baz=169	**34.02**	**352**	P			**P**	**12 10 00.6**	**-0.8**
F33A	**5 Mile Ranch,** baz=166,SNR=10	**34.27**	**350**	P			**P**	**12 10 02.4**	**-1.1**
E36A	**McGregor** baz=171	**34.52**	**354**	P			**P**	**12 10 04.2**	**-1.5**
D37A	**Cotton** baz=173	**35.07**	**355**	P			**P**	**12 10 08.9**	**-1.6**
D36A	**Goodland** baz=171	**35.16**	**354**	P			**P**	**12 10 09.5**	**-1.7**
PDAR	**Pinedale Array**	**35.67**	**333**	P			**P**	**12 10 14.2**	**-1.8**
comp=Z,0.2nm,0.5s,baz=130,slow=11,SNR=1.2									
C35A	**Jirik Farms, M** baz=170,SNR=5.3	**35.76**	**353**	P			**P**	**12 10 15.0**	**-1.4**
B35A	**Bob, Littlefor** baz=171	**36.39**	**354**	P			**P**	**12 10 20.7**	**-1.0**
AGMN	**Agassiz Nation** baz=167	**36.59**	**351**	P			**P**	**12 10 22.6**	**-0.8**
AGMN	**Agassiz Nation** comp=Z,4.0nm,0.4s	**36.59**	**351**	*e*P			**P**	**12 10 22.3**	**-1.2**
B34A	**Aery, Baudette** baz=169	**36.62**	**353**	P			**P**	**12 10 22.4**	**-1.2**
B32A	**Ashes, Strandq** baz=166,SNR=9.2	**36.79**	**351**	P			**P**	**12 10 24.2**	**-0.9**
A33A	**Warroad** baz=168,SNR=9.2	**37.15**	**352**	P			**P**	**12 10 27.2**	**-1.0**
A31A	**Linda, St. Vin** baz=165	**37.41**	**350**	P			**P**	**12 10 28.9**	**-1.5**
ULM	**Lac du Bonnet** comp=Z,5.5nm,0.5s,baz=168,slow=11,SNR=11	**38.50**	**352**	P			**P**	**12 10 37.8**	**-1.8**
YKA	**Yellowknife Ar** comp=Z,1.2nm,0.7s,baz=143,slow=7.6,SNR=5.9	**53.70**	**345**	P			**P**	**12 12 37.6**	**-1.3**
ILAR	**Eielson Array** comp=Z,0.3nm,0.8s,baz=126,slow=4.6,SNR=2.7	**65.97**	**336**	P			**P**	**12 14 02.5**	**-0.8**
NRIK	**Noril'sk** comp=Z,211nm,20.8s,baz=106,slow=37	**98.67**	**1**	LR		LR		13 04 15.6	
WRA	**Warramunga Arr** comp=Z,0.5nm,1.0s,baz=84,slow=1.9,SNR=2.1	**138.41**	**254**	PKP			**PKPdf**	**12 22 43.4**	**-0.2**
CMAR	**Chiang Mai Arr** comp=Z,0.3nm,0.3s,baz=316,slow=2.5,SNR=2.2	**148.77**	**347**	PKPbc			**PKPdf**	**12 23 03.1**	**+1.4**

KRNET ***20*** *12:04:09.3s0.1, 40.15N×71.48E, h11km, mb2.9*
ISCJB ***20*** *12:04:10.4s0.6, 40.09N±0.04×71.45E±0.05, h10km, Error ellipse: s-maj=6.2km s-min=4.3km az=43.9*
NNC ***20*** *12:04:11.8s2.0, 40.14N×71.69E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=30.7km s-min=12.9km az=137.0*
ISC 20 12:04:10.4±0.9, 40.15N±0.04×71.48E±0.04, h10km, n15, σ1.61/26, 22C-9D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BTK	**Batken** baz=260	**0.51**	**260**	⇑	*i*P		**Pg**	**12 04 19.6**	**-0.8**
BTK				⇑	*i*S		**Sg**	**12 04 26.9**	**-0.3**
baz=260									
DRK	**Karamyk** baz=159	**0.71**	**159**	⇓	*i*P		**Pg**	**12 04 23.1

baz=43
ARK Arkit 1.69 12⇑*i*P **Pb 12 04 41.2 -0.5**
baz=13
ARK ⇑*i*S **Sg 12 05 03.8 -1.0**
baz=13
DZET Dzherino 2.45 238 ⇑Pn **Pb 12 04 54.5 -0.1**
13nm,0.6s
DZET ⇑Lg Lg 12 05 32.2
24nm,0.4s
MNAS Manas 2.46 18⇑*i*P **Pb 12 04 53.1 -1.7**
baz=18
MNAS ⇑*i*S **Sb 12 05 25.2 -0.1**
baz=18
MNAS Manas 2.46 18 ⇑Pn **Pn 12 04 51.6 +0.8**
3.9nm,0.4s
MNAS ⇓Lg Lg 12 05 27.5
20nm,0.3s
ARLS Aral 2.75 51⇓*i*P **Pn 12 04 55.8 +1.1**
baz=51
ARLS ⇓*i*S **Sb 12 05 30.4 -3.2**
baz=51
KK31 Karatay Array 3.04 347 ⇓Pn **Pb 12 05 05.4 +0.7**
2.4nm,0.3s,baz=167,slow=18,SNR=31
KK31 ⇑Lg Lg 12 05 45.7
10nm,0.5s,baz=161,slow=32,SNR=4.5
EKS2 Erkin-Say 3.05 34⇑*i*P **Pn 12 05 00.6 +1.8**
baz=34
EKS2 ⇑*i*S **Sb 12 05 38.6 -3.6**
baz=34
AAK Ala-Archa 3.37 41⇑*i*P **Pn 12 05 05.1 +1.9**
baz=41
AAK ⇑*i*S **Sn 12 05 45.2 +1.9**
baz=41
AAK Ala-Archa 3.37 41 ⇑Pn **Pn 12 05 04.3 +1.1**
3.1nm,0.6s
AAK ⇑Pg **Pb 12 05 11.4 +1.1**
2.0nm,0.5s
AAK ⇑Lg Lg 12 05 56.6
12nm,0.5s
KZA Kyzart 3.44 55⇑*i*P **Pn 12 05 06.0 +1.6**
baz=55
KZA ⇑*i*S **Sn 12 05 47.1 +1.6**
baz=55
KBK Karagaybulak 3.62 45⇑*i*P **Pn 12 05 08.4 +1.7**
baz=45
KBK ⇑*i*S **Sn 12 05 51.5 +2.0**
baz=45
TKM2 Tokmak 2 4.15 47 ⇓Pn **Pn 12 05 15.5 +1.5**
10nm,0.5s
TKM2 ⇑Lg Lg 12 06 19.5
8.7nm,0.7s

CASC 20 12:16:32.9±1.7, 10°86N×85°09W, h8km±17km, MD3.6, ML2.6, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CONN	**Concepcion**	**0.88**	**323**	*e*P	Pg	12 16 48.2	-1.6
JCR	**Jicaral**	**1.00**	**181**	*e*P	Pg	12 16 50.4	-1.8
CGA2	**Cerro Gallo 2**	**1.03**	**144**	*e*P	Pg	12 16 52.6	-0.2
ACON	**Acoyapa**	**1.11**	**356**	*e*P	Pg	12 16 52.5	-1.7
ACON				*e*S	Sg	12 17 08.4	-0.2
ACON				AML	AML	12 17 10.0	
	comp=N,67nm,0.2s						
ESPN	**Las Esperanzas**	**1.54**	**30**	*e*P	Pn	12 16 59.9	-0.7
ESPN				*e*S	Sb	12 17 21.4	+0.1
ESPN				AML	AML	12 17 21.7	
	comp=N,129nm,0.3s						
URSC	**Urasca**	**1.64**	**128**	*e*P	Pn	12 17 02.1	-0.1
BUS	**Buena Vista**	**1.84**	**135**	*e*P	Pn	12 17 04.9	-0.3
BUS				*e*S	Sb	12 17 30.1	-0.3

*ISCJB **20** 12:20:31.6±1.1, 34°.43N±0°.07×36°.64E±0°.04, h3km±6km, Error ellipse: s-maj=11.3km s-min=5.6km az=1.7*
*NSSC **20** 12:20:32.4±1.5, 34°.37N×36°.68E, h0km±6km, MD1.0, ML1.9*
*GRAL **20** 12:20:32.5±0.3, 34°.41N×36°.65E, h6km±2km, MD2.9*
ISC 20 12:20:32.5±1.6, 34°38N±0°.07×36°63E±0°.04, h3km±11km, n12, σ0°65/22, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FKH	**Fakeheh**	**0.23**	**233**	*e*P	**Pg**	**12 20 37.0**	**+0.2**
MARH	**Ras Al Marh**	**0.38**	**199**	*e*P	**Pg**	**12 20 39.3**	**-0.4**
MARH				*e*S	**Sg**	**12 20 45.5**	**+0.8**
MARH				AML	AML	12 20 50.9	
	comp=E,86nm,0.2s						
MARH				AML	AML	12 20 51.0	
	comp=N,182nm,0.3s						
HWQ	**Hawqa**	**0.57**	**260**	*e*P	**Pg**	**12 20 43.4**	**-0.1**
HWQ				*e*S	**Sg**	**12 20 51.2**	**+0.3**
ROOS	**tl_alroos**	**0.59**	**111**	*e*P	**Pg**	**12 20 43.6**	**-0.1**
ROOS				*e*S	**Sg**	**12 20 51.8**	**+0.4**
ROOS				AML	AML	12 20 56.4	
	comp=E,203nm,0.4s						
ROOS				AML	AML	12 21 00.5	
	comp=N,132nm,0.4s						
QASN	**Qassioun**	**0.90**	**199**	*e*P	**Pb**	**12 20 50.6**	**-0.2**
QASN				*e*S	**Sb**	**12 21 03.8**	**+0.7**
QASN				AML	AML	12 21 12.5	
	comp=N,108nm,0.4s						
QASN				AML	AML	12 21 16.0	
	comp=E,103nm,0.3s						
TOTH	**TOTAH**	**1.03**	**189**	*e*P	**Pg**	**12 20 52.4**	**+0.1**
TOTH				*e*S	**Sb**	**12 21 06.7**	**-0.3**
TOTH				AML	AML	12 21 12.3	
	comp=E,20nm,0.3s						
TOTH				AML	AML	12 21 17.2	
	comp=N,27nm,0.5s						
RCY	**Rachaya**	**1.10**	**217**	*e*P	**Pg**	**12 20 52.6**	**-1.0**
RCY				*e*S	**Sg**	**12 21 07.4**	**-0.5**
DQRL	**Deir Qamar**	**1.11**	**233**	*e*P	**Pg**	**12 20 52.7**	**-1.0**
BRBR	**Barbar**	**1.12**	**210**	*e*P	**Pb**	**12 20 54.8**	**+0.2**
BRBR				*e*S	**Sb**	**12 21 11.0**	**+1.3**
BRBR				AML	AML	12 21 17.5	
	comp=N,26nm,0.4s						
BRBR				AML	AML	12 21 19.9	
	comp=E,14nm,0.3s						
ZALF	**Zalf**	**1.57**	**158**	*e*P	**Pn**	**12 21 00.8**	**-0.6**
ZALF				*e*S	**Sn**	**12 21 21.1**	**-1.1**
ZALF				AML	AML	12 21 24.2	
	comp=N,19nm,0.7s						
ZALF				AML	AML	12 21 26.8	
	comp=E,26nm,0.5s						
SALA	**Sala**	**1.67**	**177**	*e*P	**Pn**	**12 21 03.0**	**+0.2**
SALA				*e*S	**Sn**	**12 21 25.2**	**+0.3**
SALA				AML	AML	12 21 27.8	
	comp=N,48nm,0.5s						
SALA				AML	AML	12 21 31.4	
	comp=E,3.1nm,0.8s						
TCHB	**Talchebab**	**1.79**	**198**	*e*P	**Pn**	**12 21 04.7**	**+0.3**
TCHB				*e*S	**Sn**	**12 21 27.9**	**+0.1**
TCHB				AML	AML	12 21 34.2	
	comp=N,52nm,0.6s						
TCHB				AML	AML	12 21 41.6	
	comp=E,28nm,0.4s						

IDC 20 12:29:02.2±2.3, 54°26N×86°02E, h0km, mb1 3.2/2, mb1mx3.0/34, mbtmp3.2/2, ML3.0/2, Error ellipse: s-maj=17.7km s-min=11.9km az=47.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.77**	**247**	*i*		12 34 20.0	
	baz=65,slow=308,SNR=4.3						
ZALV	**Zalesovo Beam**	**0.77**	**247**	Pg	Pg	12 29 15.7	-1.2
	2.1nm,0.3s,baz=64,slow=14,SNR=14						
ZALV				Lg	Lg	12 29 28.1	
	5.3nm,0.3s,baz=68,slow=29,SNR=29						
ZALV				Rg	Rg	12 29 33.0	
	12nm,0.7s,baz=65,slow=34,SNR=27						
KURBB	**Kurchatov Arra**	**5.85**	**235**	Pn	Pn	12 30 31.0	+1.0
	0.2nm,0.3s,baz=350,slow=12,SNR=15						
KURBB				Lg	Lg	12 32 09.9	
	0.0nm,0.3s,baz=47,slow=34,SNR=3.7						
MKAR	**Makanchi Array**	**7.84**	**199**	Pn	Pn	12 30 58.3	+0.9
	0.5nm,0.3s,baz=21,slow=12,SNR=16						
MKAR				Lg	Lg	12 33 08.9	
	0.1nm,0.3s,baz=24,slow=32,SNR=3.8						

*NIED **20** 12:58:00, 37°.10N×140°.70E, h5km, Mw3.7 Best double couple: M♋3.40000×10^14 NP1:φ♋31.00000°, δ28.00000°, λ-89.00000°. NP2:φ♋209.00000°, δ62.00000°, λ-91.00000°.*
*ISCJB **20** 12:58:42.8±0.6, 37°.12N±0°.04×140°.84E±0°.05, h9km±3km, mb3.6/8, Error ellipse: s-maj=7.1km s-min=5.9km az=22.4*
*IDC **20** 12:58:42.7±0.7, 37°.05N×140°.80E, h0km, mb3.7/8, mb1 3.9/9, mb1mx3.7/36, mbtmp3.7/9, ML3.5/1, Error ellipse: s-maj=21.9km s-min=18.9km az=136.0*
*JMA **20** 12:58:43.7, 37°.13N×140°.74E, h4km±1km, M3.7*
JMA Felt II J1.
ISC 20 12:58:43.0±1.4, 37°04N±0°.05×140°75E±0°.04, h1km±9km, n19, σ0°98/27, mb3.6/8, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**33**	⇑P	**Pg**	**12 58 44.9**	**+0.4**
ONAJ				S	**Sg**	**12 58 45.7**	**+0.2**
JFK	**Kawauchi**	**0.34**	**17**	⇑P	**Pg**	**12 58 48.9**	**-0.7**
JHO	**Hitachi**	**0.45**	**198**	⇓P	**Pb**	**12 58 53.8**	**0.0**
JHO				S	**Sb**	**12 59 01.4**	**+0.4**
JFT	**Otama**	**0.58**	**326**	⇑P	**Pg**	**12 58 53.8**	**-0.3**
JFT				S	**Sg**	**12 59 01.1**	**-0.5**
JSB	**Shiboa**	**0.67**	**264**	⇑P	**Pb**	**12 58 57.5**	**+0.1**
JSB				S	**Sb**	**12 59 07.2**	**0.0**
JMM	**Marumori**	**0.83**	**3**	⇑P	**Pg**	**12 58 57.6**	**-1.3**
JFY	**Yanaizu**	**0.91**	**294**	⇑P	**Pg**	**12 59 00.5**	**+0.1**
JFY				S	**Sg**	**12 59 12.2**	**0.0**
MJAR	**Matsushiro Arr**	**2.10**	**257**	Pn	**Pb**	**12 59 20.9**	**-1.0**
	16nm,0.3s,baz=75,slow=17,SNR=88						
MJAR				Sn	**Sb**	**12 59 48.7**	**+0.3**
	25nm,0.3s,baz=132,slow=17,SNR=19						
MAT	**Matsushiro**	**2.10**	**257**	P	**Pb**	**12 59 21.0**	**-0.9**
MAT				S	**Sg**	**12 59 49.8**	**-0.6**
USRK	**Ussuriysk Ar.**	**9.77**	**320**	Pn	**Pn**	**13 01 08.3**	**+3.7**
	0.1nm,0.3s,baz=111,slow=14,SNR=4.9						
SONM	**Songino Array**	**27.34**	**304**	P	**P**	**13 04 30.1**	**+0.5**
	0.4nm,0.4s,baz=91,slow=7.6,SNR=3.9						
MKAR	**Makanchi Array**	**43.66**	**302**	P	**P**	**13 06 48.5**	**-0.7**
	0.7nm,0.5s,baz=88,slow=10,SNR=9.7						
ILAR	**Eielson Array**	**49.77**	**32**	P	**P**	**13 07 36.5**	**-0.3**
	0.5nm,0.9s,baz=271,slow=6.0,SNR=4.4						
WRA	**Warramunga Arr**	**57.00**	**187**	P	**P**	**13 08 29.6**	**-0.7**
	1.0nm,0.5s,baz=2.6,slow=7.4,SNR=26						
WRA				PcP	**PcP**	**13 09 26.0**	**+0.5**
	0.4nm,0.6s,baz=360,slow=4.5,SNR=5.8						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**13 08 55.8**	**-0.4**
	0.4nm,0.8s,baz=11,slow=9.3,SNR=9.4						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**13 09 45.9**	**-1.1**
	0.4nm,0.4s,baz=92,slow=8.6,SNR=3.7						
PDAR	**Pinedale Array**	**78.04**	**45**	P	**P**	**13 10 43.6**	**0.0**
	0.3nm,0.4s,baz=260,slow=5.4,SNR=3.5						
TXAR	**Lajitas Array**	**90.54**	**52**	P	**P**	**13 11 47.1**	**0.0**
	0.2nm,0.6s,baz=293,slow=4.6,SNR=3.2						
LPAZ	**La Paz**	**147.15**	**59**	PKPbc	**PKPbc**	**13 18 28.7**	**-0.4**
	0.7nm,0.6s,baz=257,slow=6.9,SNR=3.7						

*NIED **20** 13:09:00, 38°.40N×142°.30E, h20km, Mw4.1 Best double couple: M♋1.69000×10^15 NP1:φ♋196.00000°, δ22.00000°, λ-9.00000°. NP2:φ♋294.00000°, δ87.00000°, λ-112.00000°.*
*ISCJB **20** 13:09:38.1±0.9, 38°.42N±0°.03×142°.36E±0°.05, h19km±6km, mb4.2/32, MS3.4/5, Error ellipse: s-maj=7.1km s-min=4.6km az=32.3*
*BJI **20** 13:09:39.8, 38°.66N×142°.48E, h44km, mb4.3/12, mB4.8/9, Ms4.4/7, Ms7 4.3/7*
*MOS **20** 13:09:39.9±1.2, 38°.43N×142°.49E, h33km, mb4.3/9, Error ellipse: s-maj=13.5km s-min=6.5km az=80.4*
*JMA **20** 13:09:40.3±0.1, 38°.48N×142°.27E, h27km±1km, M4.4*
JMA Felt II J1.
*NEIC **20** 13:09:43.8±1.0, 38°.51N×142°.12E, h46km±8km, mb4.5/2, Error ellipse: s-maj=16.6km s-min=7.0km az=124.0*
NEIC Recorded [2 JMA] in Miyagi.
*IDC **20** 13:09:44.3±2.5, 38°.38N×142°.22E, h52km±23km, mb3.8/16, mb1 4.0/20, mb1mx3.9/38, mbtmp4.0/20, ML3.8/3, MS3.2/6, Ms1 3.3/6, ms1mx3.0/37, Error ellipse: s-maj=21.6km s-min=13.6km az=103.0*
ISC 20 13:09:39.5±1.6, 38°44N±0°.04×142°35E±0°.04, h17km±9km, n83, σ1°81/90, mb4.2/32, MS3.2/5, 8C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.79**	**271**	P	**Pb**	**13 09 54.1**	**-0.5**
JIO				S	**Sg**	**13 10 03.3**	**-1.9**
OFUJ	**Ofunato**	**0.83**	**320**	P	**Pb**	**13 09 54.7**	**-0.7**
OFUJ				*e*S	**Sb**	**13 10 04.8**	**-1.5**
JMK	**Ichinoseki**	**1.02**	**300**	P	**Pb**	**13 09 57.6**	**-1.0**
JMK				*e*S	**Sb**	**13 10 09.9**	**-1.8**
JOM	**Ohasama**	**1.32**	**322**	P	**Pn**	**13 10 02.4**	**-0.7**
JOM				S	**Sn**	**13 10 18.5**	**-1.7**
JOU	**Okura**	**1.33**	**267**	P	**Pn**	**13 10 02.6**	**-0.6**
JOU				S	**Sn**	**13 10 19.0**	**-1.5**
JMM	**Marumori**	**1.36**	**245**	P	**Pn**	**13 10 02.2**	**-1.4**
JMM				S	**Sn**	**13 10 18.7**	**-2.4**
JFK	**Kawauchi**	**1.59**	**228**	P	**Pn**	**13 10 05.1**	**-1.7**
JFK				S	**Sn**	**13 10 23.5**	**-3.4**
JYK	**Kaneyama**	**1.63**	**287**	P	**Pn**	**13 10 07.1**	**-0.2**
JYK				S	**Sn**	**13 10 27.2**	**-0.7**
JRG	**Rokugo**	**1.64**	**306**	P	**Pn**	**13 10 07.6**	**+0.1**
ERM	**Erimo**	**3.62**	**10**	*e*P	**Pn**	**13 10 35.6**	**+0.9**
ERM	**Erimo**	**3.62**	**10**	*e*Pn	**Pn**	**13 10 35.5**	**+0.9**
MJAR	**Matsushiro Arr**	**3.80**	**241**	P	**Pn**	**13 10 37.8**	**+0.6**
	3.8nm,0.3s,baz=65,slow=11,SNR=37						
MAJO	**Matsushiro**	**3.80**	**241**	*e*P	**Pn**	**13 10 38.8**	**+1.6**
MAJO	**Matsushiro**	**3.80**	**241**	*e*Pn	**Pn**	**13 10 37.7**	**+0.5**
MAT	**Matsushiro**	**3.80**	**241**	P	**Pn**	**13 10 37.8**	**+0.6**
MAT				*e*S	**Sn**	**13 11 26.2**	**+4.6**
MJB9	**Matsu-Tunnel**	**3.80**	**241**	*e*Pn	**Pn**	**13 10 37.8**	**+0.5**
INU	**Inuyama**	**5.27**	**236**	*e*Pn	**Pn**	**13 10 59.6**	**+2.2**
ASAJ	**Asahikawa**	**5.67**	**2**	*e*Pn	**Pn**	**13 11 04.4**	**+1.6**
JHJ	**Hachijo jima 2**	**5.71**	**202**	P	**Pn**	**13 11 04.0**	**+0.6**
	27nm,0.3s,baz=88,slow=24,SNR=3.8						
JHJ				S	**Sn**	**13 12 05.0**	**-3.6**
	26nm,0.3s,baz=246,slow=23,SNR=3.0						
JHJ				LR	LR	13 13 37.5	
	comp=Z,345nm,18.4s,baz=72,slow=42						
YUK	**Yuzh-Kuril'sk**	**6.18**	**24**	*e*P	**Pn**	**13 11 08.0**	**-1.8**
YUK				*e*S	**Sn**	**13 12 16.0**	**-4.0**
YUK				pmax	pmax		
	comp=Z,120nm,0.4s						
YUK				pmax	pmax		
	comp=N,59nm,0.3s						
SHO	**Shikotan**	**6.39**	**31**	*e*P	**Pn**	**13 11 10.7**	**-2.0**
SHO				*e*S	**Sn**	**13 12 20.2**	**-4.9**
KUR	**Kuril'sk**	**7.93**	**29**	*d i*P	**Pn**	**13 11 33.6**	**-0.3**
KUR				*e*S	**Sn**	**13 12 59.8**	**-3.4**
KUR				pmax	pmax		
	comp=E,13nm,0.5s						
KUR				pmax	pmax		
	comp=Z,21nm,0.5s						
KUR				smax	smax		
	comp=E,25nm,0.5s						
KUR				smax	smax		
	comp=N,20nm,0.6s						
YSS	**Yuzh-Sakhalins**	**8.51**	**2**⇑	*e*P	**Pn**	**13 11 43.7**	**+1.9**
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
YSS				MLR	MLR		
	comp=N,200nm,14.0s						
YSS	**Yuzh-Sakhalins**	**8.51**	**2**	*e*Pn	**Pn**	**13 11 43.4**	**+1.6**
USRK	**Ussuriysk Ar.**	**9.68**	**310**	P	**Pn**	**13 12 01.1**	**+3.2**
	comp=N,0.1nm,0.3s,baz=116,slow=14,SNR=3.2						
JNU	**Nakatsue**	**10.72**	**244**	P	**Pn**	**13 12 14.9**	**+2.7**
	comp=N,0.4nm,0.3s,baz=66,slow=6.9,SNR=7.0						
KLR	**Kul'dur**	**13.21**	**328**	LR	LR	13 17 55.7	
	comp=N,134nm,18.4s,baz=129,slow=37						
KLR	**Kul'dur**	**13.21**	**328**	*i* P	**Pn**	**13 12 47.8**	**+1.8**
CN2	**Changchun**	**13.81**	**298**	*e*P	**Pn**	**13 12 56.3**	**+1.9**
SKR	**Severo-Kuril's**	**15.65**	**34**	*i* P	**Pn**	**13 13 18.8**	**-0.2**
PETK	**Petropavlovsk-**	**18.10**	**31**	LR	LR	13 20 33.3	
	comp=N,53nm,21.4s,baz=239,slow=36						
MA2	**Magadan**	**21.82**	**12**	P	**P**	**13 14 32.2**	**+1.6**
	comp=N,8.8nm,0.7s,baz=184,slow=10,SNR=4.5						
MA2				LR	LR	13 22 40.9	
	comp=N,58nm,18.8s,baz=206,slow=36						
HHC	**Hu-ho-hao-te**	**23.77**	**286**	*e*P	**P**	**13 14 49.0**	**-2.1**
HHC				S	S	13 18 52.5	-13
HHC				sS	sS	13 19 16.3	+1.8
HHC				pmax	pmax		
	comp=N,12nm,0.9s						
HHC				pmax	pmax		
	comp=N,57nm,4.7s						
HHC				LR	LR		
	comp=N,110nm,9.3s						
HHC				LR	LR		
	comp=N,150nm,11.3s						
HHC				LR	LR		
	comp=N,110nm,11.2s						
YAK	**Yakutsk**	**24.87**	**346**	LR	LR	13 25 05.4	
	comp=N,66nm,18.7s,baz=122,slow=37						
YAK	**Yakutsk**	**24.87**	**346**⇑	*e*P	**P**	**13 14 59.9**	**-0.9**
YAK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
SEY	**Seymchan**	**25.27**	**11**	P	**P**	**13 15 06.4**	**+2.0**
	comp=Z,9.3nm,1.0s,baz=199,slow=6.7,SNR=19						
SEY	**Seymchan**	**25.27**	**11**⇑	*e*P	**P**	**13 15 06.3**	**+1.9**
ENH	**Enshi**	**28.21**	**263**	*e*P	**P**	**13 15 30.2**	**-1.1**
	comp=Z,8.2nm,0.3s						
H11N2	**WAKE ISLAND Hy**	**28.28**	**124**	T	T	13 45 26.0	
	baz=316,slow=75,SNR=818						
H11N1	**WAKE ISLAND Hy**	**28.29**	**124**	T	T	13 45 20.7	
	baz=316,slow=75,SNR=741						
H11N3	**WAKE ISLAND Hy**	**28.30**	**124**	T	T	13 45 21.4	
	baz=316,slow=75,SNR=817						
H11S1	**WAKE ISLAND Hy**	**29.05**	**126**	T	T	13 46 47.7	
	SNR=235						
H11S3	**WAKE ISLAND Hy**	**29.05**	**126**	T	T	13 46 11.8	
	baz=316,slow=74,SNR=236						
H11S2	**WAKE ISLAND Hy**	**29.06**	**126**	T	T	13 46 14.6	
	baz=253,slow=74,SNR=234						
LZH	**Lanzhou**	**30.59**	**278**	*e*P	**P**	**13 15 50.0**	**-2.5**
LZH				pP	sP	13 16 03.0	+3.0
LZH				sP	pP	13 16 09.5	+12
LZH				*e*PP	**PnPn**	**13 16 50.3**	**-1.5**
LZH				pmax	pmax		
	comp=Z,23nm,1.1s						
LZH				pmax	pmax		
	comp=Z,69nm,4.9s						
LZH				LR	LR		
	comp=Z,280nm,12.6s						
LZH				LR	LR		
	comp=Z,310nm,13.0s						
LZH				LR	LR		
	comp=Z,400nm,16.3s						
BILL	**Bilibino**	**32.47**	**17**	*e*P	**P**	**13 16 08.5**	**0.0**
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TIXI	**Tiksi**	**33.99**	**352**	*e*P	**P**	**13 16 22.6**	**+0.9**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KMI	**Kunming**	**35.92**	**260**	P	**P**	**13 16 39.9**	**+0.7**
KMI				pmax	pmax		
	comp=Z,9.0nm,0.7s						
WMQ	**Urumqi**	**40.88**	**296**	*e*P	**P**	**13 17 20.1**	**-0.5**
WMQ				pP	sP	13 17 32.8	+4.7
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,120nm,5.7s						
ZAA0	**Zalesovo Array**	**41.53**	**311**	*e*P	**P**	**13 17 25.6**	**0.0**
ZALV	**Zalesovo Beam**	**41.53**	**311**	P	**P**	**13 17 26.2**	**+0.6**
	comp=Z,1.1nm,0.5s,baz=77,slow=6.7,SNR=3.8						
CMAR	**Chiang Mai Arr**	**42.58**	**255**	P	**P**	**13 17 34.6**	**0.0**
	comp=Z,0.6nm,0.5s,baz=43,slow=7.7,SNR=4.5						
CMAR				LR	LR	13 36 42.3	
	comp=Z,27nm,18.6s,baz=135,slow=38						
CMAR	**Chiang Mai Arr**	**42.58**	**255**	*ce*P	**P**	**13 17 35.2**	**+0.6**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MK01	**Makanchi Array**	**44.01**	**301**	*e*P	**P**	**13 17 46.2**	**+0.3**
MK31	**Makanchi Array**	**44.01**	**301**	*e*P	**P**	**13 17 42.2**	**-3.7**
MK31	**Makanchi Array**	**44.01**	**301**	*e*P	**P**	**13 17 42.2**	**-3.7**
MKAR	**Makanchi Array**	**44.01**	**301**	P	**P**	**13 17 46.1**	**+0.2**
	comp=Z,1.0nm,0.8s,baz=92,slow=7.5,SNR=5.6						
MKAR	**Makanchi Array**	**44.01**	**301**	*ce*P	P	13 17 51.0	+5.1
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
MKAR	**Makanchi Array**	**44.01**	**301**	*e*P	**P**	**13 17 42.3**	**-3.6**
KDAK	**Kodiak Island**	**45.56**	**43**	*i* P	**P**	**13 17 59.2**	**+1.2**
PMG	**Port Moresby**	**47.81**	**174**	*ce*P	**P**	**13 18 14.7**	**-1.3**
ILAR	**Eielson Array**	**47.91**	**33**	P	**P**	**13 18 17.6**	**+1.3**
	comp=Z,0.7nm,0.7s,baz=266,slow=6.4,SNR=12						
BRVK	**Borovoye**	**50.24**	**312**	*i* P	**P**	**13 18 34.1**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,1.0nm,0.9s						
KSH	**Kashi**	**50.52**	**293**	*e*P	**P**	**13 18 38.9**	**+2.1**
KSH				*e*pP	sP	13 18 52.4	+8.0
KSH				*e*PcP	**PcP**	**13 19 57.0**	**+2.3**
KSH				S	**S**	**13 25 47.4**	**-2.8**
KSH				pmax	pmax		
	comp=Z,48nm,4.2s						
KSH				LR	LR		
	comp=Z,97nm,7.0s						
KSH				LR	LR		
	comp=Z,95nm,4.8s						
KSH				LR	LR		
	comp=Z,130nm,5.9s						
INK	**Inuvik**	**52.80**	**28**	P	**P**	**13 18 54.2**	**+1.0**
	comp=Z,1.3nm,0.7s,baz=282,slow=4.1,SNR=3.8						
SVE	**Sverdlovsk**	**54.59**	**318**	*e*P	P	13 19 15.4	+8.9
SVE				pmax	pmax		
	comp=Z,11nm,1.0s						
ARU	**Arti**	**55.80**	**318**	*c i*P	**P**	**13 19 16.2**	**+0.9**
ARU						13 21 18.0	
ARU				S	**S**	**13 27 02.4**	**+1.1**
ARU				SS	**SS**	**13 30 45.0**	**-1.3**
ARU				pmax	pmax		
	comp=Z,4.0nm,1.7s						
ABKAR	**Akbulak array**	**57.60**	**310**	*e*P	**P**	**13 19 27.9**	**-0.3**
	comp=Z,0.9nm,0.5s						
WRAB	**Tennant Creek**	**58.55**	**189**	*ce*P	**P**	**13 19 36.0**	**+0.9**
WRAB				pmax	pmax		
	comp=Z,22nm,1.7s						
WRA	**Warramunga Arr**	**58.56**	**189**	P	**P**	**13 19 34.9**	**-0.3**
	comp=Z,6.1nm,0.8s,baz=6.8,slow=7.3,SNR=43						
ASAR	**Alice Springs**	**62.29**	**189**	P	**P**	**13 20 00.7**	**+0.1**
	comp=Z,2.6nm,0.8s,baz=12,slow=5.5,SNR=34						
OBN	**Obninsk**	**67.41**	**323**	*e*P	**P**	**13 20 34.7**	**+1.1**
OBN				pmax	pmax		
	comp=Z,3.0nm,0.6s						
FINES	**FINESS Array B**	**67.91**	**332**	P	**P**	**13 20 37.0**	**+0.3**
	comp=Z,2.1nm,0.8s,baz=46,slow=11,SNR=6.3						
FINES	**FINESS Array B**	**67.91**	**332**	P	**P**	**13 20 37.0**	**+0.3**
KIV	**Kislovodsk**	**70.54**	**311**	*e*P	**P**	**13 20 54.3**	**+0.9**
KIV				pmax	pmax		
	comp=Z,2.0nm,0.7s						
NB2	**NORSAR Subarra**	**73.17**	**337**	P	**P**	**13 21 09.1**	**+0.2**
	comp=Z,1.0nm,0.6s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.17**	**337**	P	**P**	**13 21 08.8**	**0.0**
	comp=Z,0.6nm,0.6s,baz=38,slow=6.2,SNR=3.6						
AKASG	**Malin Array Be**	**73.64**	**322**	P	**P**	**13 21 11.1**	**-0.6**
	comp=Z,0.4nm,0.3s,baz=46,slow=5.7,SNR=5.1						
KIEV	**Kiev**	**73.65**	**322**	*i* P	**P**	**13 21 12.7**	**+1.0**
KIEV				pmax	pmax		
	comp=Z,2.0nm,1.0s						
PDAR	**Pinedale Array**	**76.15**	**46**	P	**P**	**13 21 28.1**	**+1.4**
	comp=Z,0.5nm,0.4s,baz=254,slow=2.4,SNR=5.3						
GERES	**GERESS Array B**

LAUG				*e*Sg		**Sg**	**13 24 48.4**	**+1.4**
	201nm,0.5s								
LAUG	**Laupendahl**	**0.32**	**112**	Pg		**Pg**	**13 24 44.0**	**+1.2**
LAUG				Sg		**Sg**	**13 24 48.4**	**+1.4**
	201nm,0.5s								
HES	**Velbert-Hesper**	**0.38**	**106**	*e*Pg		**Pg**	**13 24 44.1**	**+0.3**
HES	**Velbert-Hesper**	**0.38**	**106**	Pg		**Pg**	**13 24 44.1**	**+0.3**
RWB	**Wassenberg**	**0.42**	**208**	*e*Sg		**Sb**	**13 24 52.5**	**-1.2**
	186nm,0.2s								
RWB	**Wassenberg**	**0.42**	**208**	Sg		**Sb**	**13 24 52.5**	**-1.2**
	186nm,0.2s								
OPLO	**Oploo**	**0.42**	**286**	*e*Pg		**Pb**	**13 24 46.9**	**0.0**
OPLO				*e*Sg		**Sb**	**13 24 53.7**	**-0.2**
OPLO	**Oploo**	**0.42**	**286**	Pg		**Pb**	**13 24 46.9**	**0.0**
OPLO				Sg		**Sb**	**13 24 53.7**	**-0.2**
BUG	**Bochum--Univer**	**0.51**	**93**	*e*Pg		**Pg**	**13 24 46.7**	**+0.4**
BUG				Sg		**Sg**	**13 24 53.8**	**+1.0**
PLH	**Pulheim**	**0.52**	**154**	*e*Pg		**Pb**	**13 24 47.7**	**-0.8**
PLH				*e*Sg		**Sg**	**13 24 55.1**	**+1.9**
	548nm,0.2s								
PLH	**Pulheim**	**0.52**	**154**	Pg		**Pb**	**13 24 47.7**	**-0.8**
PLH				Sg		**Sg**	**13 24 55.1**	**+1.9**
	548nm,0.2s								
WTSB	**Winterswijk**	**0.54**	**23**	*e*Pg		**Pg**	**13 24 47.3**	**+0.4**
	30nm,0.3s								
WTSB	**Winterswijk**	**0.54**	**23**	*e*Pg		**Pg**	**13 24 47.3**	**+0.4**
WTSB				*e*Sg		**Sg**	**13 24 55.3**	**+1.4**
WTSB	**Winterswijk**	**0.54**	**23**	Pg		**Pg**	**13 24 47.3**	**+0.4**
WTSB				Sg		**Sg**	**13 24 55.3**	**+1.4**
BNS	**Bensberg**	**0.68**	**138**	*e*Pg		**Pb**	**13 24 51.3**	**0.0**
BNS	**Bensberg**	**0.68**	**138**	Pg		**Pb**	**13 24 51.3**	**0.0**
HOBG	**Hohbusch**	**0.73**	**131**	*e*Pg		**Pb**	**13 24 52.4**	**+0.2**
HOBG	**Hohbusch**	**0.73**	**131**	Pg		**Pb**	**13 24 52.4**	**+0.2**
GSH	**Grosshau**	**0.74**	**184**	*e*Pg		**Pb**	**13 24 51.9**	**-0.4**
GSH				*e*Sg		**Sb**	**13 25 02.7**	**-0.3**
	62nm,0.2s								
GSH	**Grosshau**	**0.74**	**184**	Pg		**Pb**	**13 24 51.9**	**-0.4**
GSH				Sg		**Sb**	**13 25 02.7**	**-0.3**
	62nm,0.2s								
HGN	**Heimansgroeve**	**0.78**	**206**	*e*Pn		**Pb**	**13 24 53.7**	**+0.6**
	70nm,0.2s								
HGN				*e*Pg		**Pn**	**13 24 55.1**	**+0.2**
HGN				*e*Sg		**Sn**	**13 25 07.5**	**+0.2**
HGN	**Heimansgroeve**	**0.78**	**206**	*e*Pg		**Pb**	**13 24 53.7**	**+0.6**
HGN				*e*Sg		**Sn**	**13 25 07.6**	**+0.2**
HGN	**Heimansgroeve**	**0.78**	**206**	Pg		**Pb**	**13 24 53.7**	**+0.6**
HGN				*e*Sg		**Sn**	**13 25 07.5**	**+0.2**
DREG	**Dreilaegerbach**	**0.82**	**190**	*e*Pg		**Pb**	**13 24 54.2**	**+0.5**
DREG	**Dreilaegerbach**	**0.82**	**190**	Pg		**Pb**	**13 24 54.2**	**+0.5**
KLL	**Kalltalsperre**	**0.83**	**187**	*e*Pg		**Pb**	**13 24 54.3**	**+0.4**
KLL	**Kalltalsperre**	**0.83**	**187**	Pg		**Pb**	**13 24 54.3**	**+0.4**
BEBN	**Eben Emael**	**0.84**	**217**	P		**Pn**	**13 24 58.2**	**+2.6**
BEBN	**Eben Emael**	**0.84**	**217**	P		**Sn**	**13 25 07.9**	**-0.7**
BEBN	**Eben Emael**	**0.84**	**217**	P		**Pn**	**13 24 58.2**	**+2.6**
WBS	**Wahnbachtalspe**	**0.84**	**142**	*e*Sg		**Sb**	**13 25 04.9**	**-1.0**
	50nm,0.2s								
WBS	**Wahnbachtalspe**	**0.84**	**142**	Sg		**Sb**	**13 25 04.9**	**-1.0**
	50nm,0.2s								
MEM	**Membach**	**0.91**	**199**	P		**Pn**	**13 24 56.1**	**-0.5**
MEM	**Membach**	**0.91**	**199**	*e*Pg		**Pb**	**13 24 55.8**	**+0.5**
MEM	**Membach**	**0.91**	**199**	Pg		**Pb**	**13 24 55.8**	**+0.5**
STB	**Steinbach**	**0.91**	**165**	*e*Pg		**Pb**	**13 24 56.0**	**+0.8**
STB	**Steinbach**	**0.91**	**165**	Pg		**Pb**	**13 24 56.0**	**+0.8**
TDN	**Todenfeld**	**0.95**	**161**	*e*Pg		**Pb**	**13 24 55.6**	**-0.3**
TDN				*e*Sg		**Sb**	**13 25 08.9**	**-0.1**
	76nm,0.2s								
TDN	**Todenfeld**	**0.95**	**161**	Pg		**Pb**	**13 24 55.6**	**-0.3**
TDN				Sg		**Sb**	**13 25 08.9**	**-0.1**
	76nm,0.2s								
OLFT	**Oleftalsperre**	**0.98**	**182**	*e*Pg		**Pb**	**13 24 56.6**	**+0.2**
OLFT				*e*Sg		**Sb**	**13 25 10.3**	**+0.4**
OLFT	**Oleftalsperre**	**0.98**	**182**	Pg		**Pb**	**13 24 56.6**	**+0.2**
OLFT				Sg		**Sb**	**13 25 10.3**	**+0.4**
AHRW	**Bad Neuenahr-A**	**1.01**	**157**	*e*Pg		**Pn**	**13 24 58.1**	**+0.1**
AHRW				*e*Sg		**Sn**	**13 25 13.7**	**+0.8**
IBBN	**Ibbenburen**	**1.16**	**43**	*e*Sg		**Sg**	**13 25 13.1**	**-0.7**
IBBN	**Ibbenburen**	**1.16**	**43**	Sg		**Sg**	**13 25 13.1**	**-0.7**
BCLA	**Clavier**	**1.28**	**215**	P		**Pn**	**13 25 03.1**	**+1.3**
BCLA	**Clavier**	**1.28**	**215**	P		**Pn**	**13 25 03.1**	**+1.3**
KOE	**Koeppel**	**1.32**	**142**	*e*Pg		**Pn**	**13 25 02.8**	**+0.5**
KOE	**Koeppel**	**1.32**	**142**	Pg		**Pn**	**13 25 02.8**	**+0.5**
BMRD	**Maredsous**	**1.59**	**223**	P		**Pg**	**13 25 08.8**	**+1.7**
BMRD	**Maredsous**	**1.59**	**223**	P		**Pg**	**13 25 08.7**	**+1.7**
BSKQ	**Steenkerk**	**1.71**	**242**	P		**Sn**	**13 25 32.1**	**+1.9**
GIVF	**Givet**	**1.72**	**218**	*e*Pn		**Pb**	**13 25 08.6**	**-0.5**
GIVF				*e*Sn		**Sn**	**13 25 30.5**	**0.0**
	91nm,0.3s								
GIVF	**Givet**	**1.72**	**218**	*e*Pn		**Pb**	**13 25 08.6**	**-0.5**
GIVF				*e*Sn		**Sn**	**13 25 30.5**	**0.0**
	46nm,0.3s								
TNS	**Taunus Mts**	**1.77**	**134**	*e*Pn		**Pb**	**13 25 10.3**	**+0.3**
TNS	**Taunus Mts**	**1.77**	**134**	Pn		**Pb**	**13 25 10.3**	**+0.3**
DOU	**Dourbes**	**1.82**	**221**	P		**Pg**	**13 25 11.2**	**-0.2**
DOU	**Dourbes**	**1.82**	**221**	P		**Pg**	**13 25 11.2**	**-0.2**
WLF	**Walferdange**	**1.82**	**186**	*e*Sg		**Sg**	**13 25 37.2**	**+2.2**
WLF	**Walferdange**	**1.82**	**186**	Sg		**Sg**	**13 25 37.2**	**+2.2**
BAIF	**Baives**	**2.01**	**226**	*e*P		**Pg**	**13 25 14.9**	**-0.2**
BAIF				*e*Sn		**Sn**	**13 25 37.7**	**+0.1**
	28nm,0.3s								
BAIF	**Baives**	**2.01**	**226**	*e*P		**Pg**	**13 25 14.9**	**-0.2**
BAIF				*e*Sn		**Sn**	**13 25 37.7**	**+0.1**
	14nm,0.3s								
PAGF	**Fort de Pagny**	**2.96**	**190**	*e*Pn		**Pn**	**13 25 25.0**	**+0.2**
PAGF	**Fort de Pagny**	**2.96**	**190**	*e*Pg		**Pg**	**13 25 33.9**	**+0.6**
PAGF				*e*Sg		**Sg**	**13 26 12.7**	**+1.1**
	8.3nm,0.6s,baz=13								
PAGF	**Fort de Pagny**	**2.96**	**190**	*e*Pn		**Pn**	**13 25 25.0**	**+0.2**
PAGF	**Fort de Pagny**	**2.96**	**190**	*e*Pg		**Pg**	**13 25 33.9**	**+0.6**
PAGF				*e*Sg		**Sg**	**13 26 12.7**	**+1.1**
	4.2nm,0.6s								
CDF	**Champ du Feu**	**3.11**	**170**	*e*Pn		**Pn**	**13 25 27.3**	**+0.4**
CDF	**Champ du Feu**	**3.11**	**170**	*e*Pg		**Pg**	**13 25 36.7**	**+0.6**
CDF				*e*Sn		**Sn**	**13 26 02.4**	**-2.4**
CDF				*e*Sg		**Sg**	**13 26 16.4**	**0.0**
	17nm,0.5s								
CDF	**Champ du Feu**	**3.11**	**170**	*e*Pn		**Pn**	**13 25 27.3**	**+0.4**
CDF	**Champ du Feu**	**3.11**	**170**	*e*Pg		**Pg**	**13 25 36.7**	**+0.6**
CDF				*e*Sn		**Sn**	**13 26 02.4**	**-2.4**
CDF				*e*Sg		**Sg**	**13 26 16.4**	**0.0**
	8.6nm,0.5s								
MEZF	**Maizieres J'vi**	**3.11**	**198**	*e*Sg		**Sg**	**13 26 17.1**	**+0.7**
	26nm,0.4s,baz=18								
MEZF	**Maizieres J'vi**	**3.11**	**198**	*e*Sg		**Sg**	**13 26 17.1**	**+0.7**
	13nm,0.4s								
SFTF	**Sexfontaines**	**3.40**	**196**	*e*Pg		**Pg**	**13 25 41.9**	**+0.2**
SFTF				*e*Sg		**Sg**	**13 26 25.5**	**-0.2**
	19nm,0.3s								
SFTF	**Sexfontaines**	**3.40**	**196**	*e*Pg		**Pg**	**13 25 41.9**	**+0.2**
SFTF				*e*Sg		**Sg**	**13 26 25.5**	**-0.2**
	9.5nm,0.3s								
HAU	**Haudompre**	**3.47**	**181**	*e*Pg		**Pg**	**13 25 43.0**	**-0.1**
HAU				*e*Sg		**Sg**	**13 26 28.3**	**+0.3**
	16nm,0.4s								
HAU	**Haudompre**	**3.47**	**181**	*e*Pg		**Pg**	**13 25 43.0**	**-0.1**
HAU				*e*Sg		**Sg**	**13 26 28.3**	**+0.3**
	7.8nm,0.4s								
LOR	**Lormes**	**4.54**	**203**	*e*Pn		**Pn**	**13 25 46.7**	**+0.2**
	baz=38								
LOR				*e*Sn		**Sn**	**13 26 38.5**	**-1.5**
LOR				*e*Sg		**Sg**	**13 27 02.0**	**-0.3**
	17nm,0.5s,baz=27								
LOR	**Lormes**	**4.54**	**203**	*e*Pn		**Pn**	**13 25 46.7**	**+0.2**
LOR				*e*Sn		**Sn**	**13 26 38.5**	**-1.5**
LOR				*e*Sg		**Sg**	**13 27 02.0**	**-0.3**
	8.6nm,0.5s								
SSF	**Saint Saulge**	**4.82**	**205**	*e*Pn		**Pn**	**13 25 50.6**	**+0.2**
SSF				*e*Sn		**Sn**	**13 26 44.9**	**-2.0**
SSF				*e*Sg		**Sg**	**13 27 10.9**	**-0.4**
	15nm,0.5s								
SSF	**Saint Saulge**	**4.82**	**205**	*e*Pn		**Pn**	**13 25 50.6**	**+0.2**
SSF				*e*Sn		**Sn**	**13 26 44.9**	**-2.0**
SSF				*e*Sg		**Sg**	**13 27 10.9**	**-0.4**
	7.3nm,0.5s								
CABF	**La Chapelle**	**4.87**	**183**	*e*Pn		**Pn**	**13 25 51.2**	**0.0**
CABF	**La Chapelle**	**4.87**	**183**	*e*Pn		**Pn**	**13 25 51.2**	**0.0**
AVF	**Avril sur Loir**	**5.11**	**205**	*e*Pn		**Pn**	**13 25 54.3**	**-0.1**
AVF				*e*Sn		**Sn**	**13 26 52.5**	**-1.5**
	2.7nm,0.3s								
AVF	**Avril sur Loir**	**5.11**	**205**	*e*Pn		**Pn**	**13 25 54.3**	**-0.1**
AVF				*e*Sn		**Sn**	**13 26 52.5**	**-1.5**
	1.4nm,0.3s								
SMF	**Signal de Mont**	**5.13**	**201**	*e*Pn		**Pn**	**13 25 54.8**	**+0.2**
SMF				*e*Sn		**Sn**	**13 26 51.8**	**-2.7**
	5.0nm,0.4s								
SMF	**Signal de Mont**	**5.13**	**201**	*e*Pn		**Pn**	**13 25 54.8**	**+0.2**
SMF				*e*Sn		**Sn**	**13 26 51.8**	**-2.7**
	2.5nm,0.4s								
LDF	**La Druitiere**	**5.13**	**238**	*e*Sn		**Sn**	**13 26 51.3**	**-3.2**
	1.8nm,0.2s								
LDF	**La Druitiere**	**5.13**	**238**	*e*Sn		**Sn**	**13 26 51.3**	**-3.2**
	0.9nm,0.2s								
FLN	**La Foliniere**	**5.23**	**241**	*e*Pn		**Pn**	**13 25 57.3**	**+1.4**
	baz=63								
FLN	**La Foliniere**	**5.23**	**241**	*e*Pn		**Pn**	**13 25 57.3**	**+1.4**
BGF	**Bois d'Agland**	**5.46**	**207**	*e*Pn		**Pn**	**13 25 59.5**	**+0.3**
BGF				*e*Sn		**Sn**	**13 26 58.5**	**-4.2**
BGF	**Bois d'Agland**	**5.46**	**207**	*e*Pn		**Pn**	**13 25 59.5**	**+0.3**
GRR	**Gorron**	**5.64**	**240**	*e*Sn		**Sn**	**13 27 03.9**	**-3.3**
	10nm,0.2s								

*KRNET **20** 13:25:08.5±0.1, 42°.27N×73°.11E, h16km, mb2.8*
*SOME **20** 13:25:09.6, 42°.27N×73°.10E, h5km*
*NNC **20** 13:25:10.2±3.1, 42°.41N×73°.14E, h0km, mb3.1, mpv2.9,*
Error ellipse: s-maj=75.2km s-min=4.8km az=179.0
ISC 20 13:25:08.2±1.0, 42°24N±0'.03×73°11E±0'.02, h15km±12km, n30, σ1§40/57, 26C-8D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AML	**Almayashu**	**0.45**	**103**		Op *i*P	**Pb**	**13 25 18.1**	**0.0**
AML	baz=107			⇑	*i*S	**Sg**	**13 25 23.5**	**0.0**
MNAS	**Manas**	**0.51**	**299**	⇑	*i*P	**Pb**	**13 25 18.9**	**-0.1**
MNAS	baz=297			⇑	*i*S	**Sg**	**13 25 25.6**	**+0.4**
MNAS	**Manas**	**0.51**	**299**	⇑	P	**Pb**	**13 25 18.9**	**-0.1**
MNAS	12nm,0.5s			⇓	S	**Sg**	**13 25 25.6**	**+0.4**
	54nm,0.3s							
MRKS	**Merke**	**0.52**	**10**		*e*P	**Pb**	**13 25 19.1**	**+0.1**
MRKS					*e*S	**Sb**	**13 25 25.9**	**-0.4**
EKS2	**Erkin-Say**	**0.65**	**49**	⇑	*i*P	**Pb**	**13 25 21.3**	**-0.1**
EKS2	baz=51			⇑	*i*S	**Sb**	**13 25 29.8**	**-0.6**
	baz=51							
ARK	**Arkit**	**0.96**	**243**	⇑	*i*P	**Pb**	**13 25 27.2**	**+0.7**
ARK	baz=240			⇑	*i*S	**Sb**	**13 25 39.3**	**+0.2**
	baz=240							
ARLS	**Aral**	**0.98**	**112**	⇑	*i*P	**Pg**	**13 25 27.7**	**+0.5**
ARLS	baz=113			⇑	*i*S	**Sg**	**13 25 40.9**	**+0.8**
	baz=113							
AAK	**Ala-Archa**	**1.10**	**68**	⇑	*i*P	**Pg**	**13 25 29.6**	**+0.1**
AAK	baz=70			⇑	*i*S	**Sg**	**13 25 43.6**	**-0.3**
	baz=70							
AAK	**Ala-Archa**	**1.10**	**68**		P	**Pg**	**13 25 29.9**	**+0.4**
AAK	4.8nm,0.3s				S	**Sg**	**13 25 43.7**	**-0.2**
	45nm,0.5s							
CHMS	**Chumysh**	**1.43**	**57**	⇓	*i*P	**Pg**	**13 25 35.6**	**-0.2**
CHMS	baz=58			⇓	*i*S	**Sg**	**13 25 54.1**	**-0.3**
	baz=58							
USP	**Ospenovka**	**1.45**	**44**	⇑	*i*P	**Pg**	**13 25 35.8**	**-0.3**
USP	baz=45			⇑	*i*S	**Sg**	**13 25 54.8**	**-0.3**
	baz=45							
KZA	**Kyzart**	**1.60**	**95**	⇑	*i*P	**Pg**	**13 25 39.3**	**+0.3**
KZA	baz=96			⇑	*i*S	**Sg**	**13 26 00.1**	**+0.2**
	baz=96							
TKM2	**Tokmak 2**	**1.96**	**69**	⇓	*i*P	**Pb**	**13 25 44.7**	**+1.0**
TKM2	baz=70			⇓	*i*S	**Sg**	**13 26 09.6**	**-1.8**
	baz=70							
TKM2	**Tokmak 2**	**1.96**	**69**	⇑	Pn	**Pg**	**13 25 45.0**	**-0.8**
TKM2	5.4nm,0.3s			⇑	Sn	**Sg**	**13 26 09.9**	**-1.4**
	12nm,0.3s							
BMNS	**Besmoynak**	**2.08**	**64**		*e*P	**Pg**	**13 25 47.8**	**-0.3**
BMNS	165nm,0.3s				*e*S	**Sg**	**13 26 15.4**	**+0.3**
	211nm,0.3s							
KK31	**Karatay Array**	**2.10**	**295**	⇑	Pn	**Pb**	**13 25 47.2**	**+1.3**
KK31	2.6nm,0.4s,baz=124,slow=14,SNR=40			⇑	Sn	**Sg**	**13 26 16.4**	**+0.7**
	13nm,0.4s,baz=115,slow=29,SNR=15							
BOOM	**Boomskoye usch**	**2.12**	**82**	⇑	*i*P	**Pg**	**13 25 49.3**	**+0.5**
BOOM	baz=83			⇑	*i*S	**Sg**	**13 26 18.3**	**+2.0**
	baz=83							
DGS	**Degeres**	**2.21**	**62**		*e*P	**Pg**	**13 25 49.4**	**-1.1**
DGS	27nm,0.7s				*e*S	**Sg**	**13 26 17.9**	**-1.2**
	66nm,0.4s							
KST	**Kastek**	**2.26**	**68**		*e*P	**Pg**	**13 25 50.2**	**-1.3**
KST	5.0nm,0.2s				*e*S	**Sg**	**13 26 20.0**	**-0.8**
	72nm,0.4s							
IUG	**Iuzhnay**	**2.29**	**269**		*e*P	**Pg**	**13 25 52.1**	**+0.1**
IUG	44nm,0.2s				*e*S	**Sg**	**13 26 21.8**	**+0.1**
	57nm,0.4s							
BRLS	**Boroldav**	**2.59**	**283**		*e*P	**Pg**	**13 25 57.0**	**-0.8**
BRLS	4.3nm,0.3s				*e*S	**Sg**	**13 26 30.8**	**-0.5**
	13nm,0.2s							
MTBS	**Maitube**	**2.61**	**69**		*e*P	**Pg**	**13 25 56.6**	**-1.5**
MTBS	7.6nm,0.2s				*e*S	**Sg**	**13 26 31.2**	**-0.8**
	47nm,0.3s							
IZV	**Izvestkoviy**	**2.71**	**72**		*e*S	**Sg**	**13 26 33.0**	**-2.3**
	41nm,0.5s							
DRK	**Karamyk**	**2.93**	**200**	⇓	*i*P	**Pb**	**13 25 58.4**	**-1.8**
DRK	baz=200			⇓	*i*S	**Sb**	**13 26 34.9**	**-1.0**
	baz=200							
TNSS	**Tian-Shan**	**2.94**	**73**		*e*P	**Pg**	**13 26 02.8**	**-1.9**
TNSS					*e*S	**Sg**	**13 26 41.0**	**-1.8**
KDJ	**Kajisay**	**3.03**	**91**	⇑	*i*P	**Pb**	**13 26 02.9**	**+1.0**
KDJ	baz=91			⇑	*i*S	**Sb**	**13 26 40.4**	**+1.6**
	baz=91							
CHKK	**Chushkaly**	**3.29**	**59**		*e*P	**Pg**	**13 26 09.1**	**-2.1**
CHKK	3.3nm,0.3s				*e*S	**Sg**	**13 26 51.8**	**-2.0**
	45nm,0.3s							
MNBS	**Baschi**	**4.29**	**63**		*e*P	**Pg**	**13 26 27.7**	**-2.6**
MNBS	7.0nm,0.6s				*e*S	**Sg**	**13 27 23.5**	**-2.4**
	27nm,0.7s							
PDGK	**Podgornoye**	**4.82**	**75**	⇓	Pg	**Pb**	**13 26 33.8**	**+1.5**
PDGK	1.6nm,0.5s			⇑	Lg	Lg	13 27 40.2	
	4.3nm,0.5s							
KAPS	**Kapalarasan**	**5.46**	**54**		*e*S	**Sb**	**13 27 54.5**	**+6.0**
	6.5nm,0.8s							

*BJI **20** 13:27:38.3, 49°.35N×157°.22E, h56km, mb4.6/10, mB4.9/7, Ms4.6/3, Ms7 4.2/4*
*KRSC **20** 13:27:40.1±2.3, 49°.30N×157°.44E, h41km±26km, ML5.0*
*MOS **20** 13:27:41.5±1.0, 49°.36N×156°.53E, h59km, mb4.4/18, Error ellipse: s-maj=10.7km s-min=3.3km az=78.5*
*ISCJB **20** 13:27:41.2±0.3, 49°.32N±0°.03×156°.62E±0°.06, h57km, mb4.4/53, MS4.0/2, Error ellipse: s-maj=5.9km s-min=2.5km az=31.7*
*NEIC **20** 13:27:43.3±0.9, 49°.37N×156°.58E, h60km±10km, mb4.4/24, Error ellipse: s-maj=13.5km s-min=6.2km az=149.0*
*IDC **20** 13:27:45.5±2.6, 49°.38N×156°.34E, h75km±21km, mb3.7/18, mb1 3.9/23, mb1mx3.8/57, mbtmp4.0/23, MS3.1/6, Ms1 3.1/6, ms1mx2.8/46, Error ellipse: s-maj=17.8km s-min=12.1km az=150.0*
ISC 20 13:27:42.8±0.5, 49°32N±0°.06×156°70E±0°.05, h57km, n184, σ1§41/221, mb4.3/53, 5C-2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.42**	**345**	⇓	*i*PN	**Pn**	**13 28 05.9**	**-0.4**
SKR					*i* S	**Sn**	**13 28 23.9**	**0.0**
SKR	comp=Z,2μm,0.4s				pmax	pmax		
SKR					smax	smax		
	comp=N,9μm,0.6s							
SKR	**Severo-Kuril's**	**1.42**	**345**		*e*P	**Pn**	**13 28 05.8**	**-0.5**
SKR					*e*S	**Sn**	**13 28 24.1**	**+0.2**
PAU	**Pauzhetka**	**2.15**	**2**		PN	**Pn**	**13 28 16.5**	**+0.2**
PAU					S	**Sn**	**13 28 42.4**	**+0.6**
PAU	**Pauzhetka**	**2.15**	**2**		*e*P	**Pn**	**13 28 16.5**	**+0.2**
PAU					*e*S	**Sn**	**13 28 42.4**	**+0.6**
MIPR	**Malaya Ipel'ka**	**2.96**	**1**		PN	**Pn**	**13 28 28.2**	**+0.9**
MIPR	**Malaya Ipel'ka**	**2.96**	**1**		P	**Pn**	**13 28 28.2**	**+0.9**
ASAK	**Asacha**	**3.16**	**13**		PN	**Pn**	**13 28 30.5**	**+0.4**
ASAK					S	**Sn**	**13 29 07.6**	**+1.0**
ASAK	**Asacha**	**3.16**	**13**		*e*P	**Pn**	**13 28 30.5**	**+0.4**
ASAK					*e*S	**Sn**	**13 29 07.6**	**+1.0**
RUS	**Russkaya**	**3.32**	**19**		PN	**Pn**	**13 28 31.8**	**-0.4**
RUS					S	**Sn**	**13 29 09.2**	**-1.2**
RUS	**Russkaya**	**3.32**	**19**		*e*P	**Pn**	**13 28 31.8**	**-0.4**
RUS					*e*S	**Sn**	**13 29 09.2**	**-1.2**
GRL	**Gorelyy**	**3.35**	**14**		PN	**Pn**	**13 28 33.4**	**+0.6**
GRL					S	**Sn**	**13 29 12.3**	**+0.9**
GRL	**Gorelyy**	**3.35**	**14**		*e*P	**Pn**	**13 28 33.4**	**+0.6**
GRL					*e*S	**Sn**	**13 29 12.3**	**+0.9**
KRMR	**Karymshinskiy**	**3.63**	**14**		PN	**Pn**	**13 28 37.1**	**+0.7**
KRMR					S	**Sn**	**13 29 18.9**	**+0.9**
KRMR	**Karymshinskiy**	**3.63**	**14**		*e*P	**Pn**	**13 28 37.1**	**+0.7**
KRMR					*e*S	**Sn**	**13 29 18.9**	**+0.9**
PETK	**Petropavlovsk-**	**3.84**	**9**		P	**Pn**	**13 28 40.7**	**+1.2**
	comp=N,6.6nm,0.3s,baz=169,slow=14,SNR=126							
PETK					S	**Sn**	**13 29 27.8**	**+4.5**
	comp=N,8.4nm,0.3s,baz=180,slow=16,SNR=5.6							
PETK					LR	LR	13 30 34.5	
	comp=N,276nm,22.0s,baz=180,slow=44							
PET	**Petropavlovsk**	**3.91**	**18**	⇑	*i*PN	**Pn**	**13 28 40.7**	**+0.4**
PET					*e*S	**Sn**	**13 29 24.9**	**+0.1**
PET	comp=Z,87nm,0.5s				pmax	pmax		
PET					smax	smax		
	comp=N,451nm,0.5s							
PET					smax	smax		
	comp=E,445nm,0.5s							
PET	**Petropavlovsk**	**3.91**	**18**		*e*Pn	**Pn**	**13 28 40.5**	**+0.3**
DALK	**Dalny**	**3.93**	**18**		PN	**Pn**	**13 28 41.0**	**+0.4**
DALK					S	**Sn**	**13 29 25.6**	**+0.1**
DALK	**Dalny**	**3.93**	**18**		*e*P	**Pn**	**13 28 41.0**	**+0.4**
DALK					*e*S	**Sn**	**13 29 25.6**	**+0.1**
UGLR	**Uglovaya**	**4.12**	**18**		PN	**Pn**	**13 28 44.0**	**+0.8**
UGLR					S	**Sn**	**13 29 29.7**	**-0.4**
UGLR	**Uglovaya**	**4.12**	**18**		*e*P	**Pn**	**13 28 44.0**	**+0.8**
UGLR					*e*S	**Sn**	**13 29 29.7**	**-0.4**
AVH	**Avacha**	**4.15**	**17**		PN	**Pn**	**13 28 45.1**	**+1.4**
AVH					S	**Sn**	**13 29 31.6**	**+0.6**
AVH	**Avacha**	**4.15**	**17**		*e*P	**Pn**	**13 28 45.1**	**+1.4**
AVH					*e*S	**Sn**	**13 29 31.6**	**+0.6**
KOK	**Koryaka**	**4.16**	**16**		PN	**Pn**	**13 28 45.3**	**+1.5**
KOK					S	**Sn**	**13 29 32.8**	**+1.7**
KOK	**Koryaka**	**4.16**	**16**		*e*P	**Pn**	**13 28 45.3**	**+1.5**
KOK					*e*S	**Sn**	**13 29 32.8**	**+1.7**
SMAR	**Somma**	**4.16**	**18**		PN	**Pn**	**13 28 44.9**	**+0.9**
SMAR	**Somma**	**4.16**	**18**		*e*P	**Pn**	**13 28 44.9**	**+0.9**
KRER	**Koryakskii**	**4.19**	**17**		PN	**Pn**	**13 28 45.6**	**+1.2**
KRER					S	**Sn**	**13 29 33.2**	**+1.1**
KRER	**Koryakskii**	**4.19**	**17**		*e*P	**Pn**	**13 28 45.6**	**+1.2**
KRER					*e*S	**Sn**	**13 29 33.2**	**+1.1**
SDLR	**Sedlovina**	**4.19**	**18**		PN	**Pn**	**13 28 44.7**	**+0.4**
SDLR					S	**Sn**	**13 29 31.5**	**-0.5**
SDLR	**Sedlovina**	**4.19**	**18**		*i* P	**Pn**	**13 28 44.7**	**+0.4**
SDLR					*e*S	**Sn**	**13 29 31.5**	**-0.5**
NLC	**Nalytchevo**	**4.20**	**22**		PN	**Pn**	**13 28 43.1**	**-1.1**
NLC					S	**Sn**	**13 29 29.2**	**-2.7**
NLC	**Nalytchevo**	**4.20**	**22**		*e*P	**Pn**	**13 28 43.1**	**-1.1**
NLC					*e*S	**Sn**	**13 29 29.2**	**-2.7**
KRX	**Arik**	**4.22**	**16**		PN	**Pn**	**13 28 46.2**	**+1.4**
KRX					S	**Sn**	**13 29 34.0**	**+1.2**
KRX	**Arik**	**4.22**	**16**		*e*P	**Pn**	**13 28 46.2**	**+1.4**
KRX					*e*S	**Sn

MAJO	**Matsushiro**	**18.55**	**233**	*eP*		**P**	**13 31 52.5**	**-2.3**
	comp=Z,75nm,2.0s								
BILL	**Bilibino**	**19.38**	**11**	*i* P		**P**	**13 32 03.8**	**+0.2**
BILL					pmax	pmax			
	comp=Z,6.0nm,0.9s								
BILL	**Bilibino**	**19.38**	**11**	*eP*		**P**	**13 32 01.8**	**-1.8**
	comp=Z,23nm,1.4s								
YAK	**Yakutsk**	**19.66**	**320**	LR		LR	13 39 22.0		
	comp=Z,65nm,19.2s,baz=95,slow=36								
YAK	**Yakutsk**	**19.66**	**320**	*eP*		**P**	**13 32 04.8**	**-1.9**
YAK					pmax	pmax			
	comp=Z,8.0nm,0.6s								
YAK	**Yakutsk**	**19.66**	**320**	*eP*		**P**	**13 32 04.8**	**-1.9**
	comp=Z,8.1nm,0.6s								
INU	**Inuyama**	**20.08**	**233**	*eP*		**P**	**13 32 10.8**	**-0.7**
	comp=Z,31nm,1.3s								
SPIA	**Saint Paul Isl**	**21.11**	**56**	*eP*		**P**	**13 32 22.6**	**+0.2**
	comp=Z,559nm,1.8s								
NIKH	**Nikolski High**	**21.79**	**67**	*eP*		**P**	**13 32 30.9**	**+1.2**
	comp=Z,55nm,0.9s								
GAMB	**Gambell**	**22.32**	**38**	*eP*		**P**	**13 32 34.6**	**-0.6**
	comp=Z,36nm,1.1s								
TIXI	**Tiksi**	**25.77**	**340**	P		**P**	**13 33 05.5**	**-2.3**
	comp=Z,2.4nm,0.5s,baz=150,slow=8.7,SNR=2.9								
TIXI	**Tiksi**	**25.77**	**340**	*eP*		**P**	**13 33 06.2**	**-1.6**
TIXI					pmax	pmax			
	comp=Z,3.0nm,0.9s								
TIXI	**Tiksi**	**25.77**	**340**	*eP*		**P**	**13 33 05.4**	**-2.4**
	comp=Z,4.6nm,0.9s								
TT01	**Tatalina**	**28.89**	**44**	*eP*		**P**	**13 33 36.8**	**+0.9**
SVW2	**Sparrevohn**	**28.97**	**48**	*eP*		**P**	**13 33 37.9**	**+1.3**
	comp=Z,16nm,2.0s								
KDAK	**Kodiak Island**	**30.63**	**54**	*i* P		**P**	**13 33 51.3**	**+0.1**
BPAW	**Bear Paw Mtn.**	**31.23**	**42**	*eP*		**P**	**13 33 57.3**	**+0.7**
	comp=Z,2.9nm,1.1s								
H11S1	**WAKE ISLAND Hy**	**31.78**	**162**	T		T	14 08 17.4		
	baz=347,slow=76,SNR=55								
H11S3	**WAKE ISLAND Hy**	**31.79**	**162**	T		T	14 08 19.8		
	baz=347,slow=76,SNR=48								
H11S2	**WAKE ISLAND Hy**	**31.80**	**162**	T		T	14 08 18.7		
	baz=347,slow=76,SNR=40								
COLD	**Coldfoot**	**31.84**	**36**	*eP*		**P**	**13 34 02.8**	**+0.9**
	comp=Z,2.9nm,0.6s								
RND	**Reindeer**	**32.16**	**43**	*eP*		**P**	**13 34 05.0**	**+0.2**
RND					pmax	pmax			
	comp=Z,4.0nm,0.9s								
RND	**Reindeer**	**32.16**	**43**	*eP*		**P**	**13 34 05.0**	**+0.2**
	comp=Z,4.0nm,0.9s								
SML	**Sawmill**	**32.45**	**46**	*eP*		**P**	**13 34 07.9**	**+0.7**
SML					pmax	pmax			
	comp=Z,12nm,0.7s								
SML	**Sawmill**	**32.45**	**46**	*eP*		**P**	**13 34 07.9**	**+0.7**
	comp=Z,12nm,0.7s								
HHC	**Hu-ho-hao-te**	**32.56**	**272**	*eP*		**P**	**13 34 09.3**	**+0.8**
HHC					pmax	pmax			
	comp=Z,19nm,1.0s								
HHC					pmax	pmax			
	comp=Z,74nm,3.8s								
COLA	**College**	**32.62**	**41**	*eP*		**P**	**13 34 09.8**	**+1.2**
COLA					pmax	pmax			
	comp=Z,8.0nm,0.8s								
COLA	**College**	**32.62**	**41**	*eP*		**P**	**13 34 09.8**	**+1.2**
	comp=Z,8.1nm,0.8s								
CCB	**Clear Creek Bu**	**32.64**	**41**	*eP*		**P**	**13 34 09.9**	**+1.1**
	comp=Z,3.8nm,1.2s								
ILAR	**Eielson Array**	**33.03**	**41**	P		**P**	**13 34 12.7**	**+0.4**
	comp=Z,1.3nm,0.8s,baz=250,slow=7.7,SNR=14								
ILAR	**Eielson Array**	**33.03**	**41**	*eP*		**P**	**13 34 12.7**	**+0.4**
ILAR					pmax	pmax			
	comp=Z,2.0nm,0.8s								
EGAK	**Eagle**	**35.48**	**41**	*eP*		**P**	**13 34 33.9**	**+0.4**
	comp=Z,6.5nm,0.8s								
INK	**Inuvik**	**38.18**	**34**	P		**P**	**13 34 57.5**	**+1.2**
	comp=Z,4.9nm,0.6s,baz=306,slow=6.3,SNR=16								
INK	**Inuvik**	**38.18**	**34**	*eP*		**P**	**13 34 57.4**	**+1.2**
INK					pmax	pmax			
	comp=Z,6.0nm,0.8s								
INK	**Inuvik**	**38.18**	**34**	*eP*		**P**	**13 34 57.4**	**+1.2**
	comp=Z,6.3nm,0.8s								
LZH	**Lanzhou**	**40.23**	**271**	*eP*		**P**	**13 35 11.6**	**-2.4**
LZH				pP		pP	13 35 27.0	-1.6
LZH				sP		sP	13 35 34.3	-0.9
LZH				*e*PP		**PP**	**13 36 48.5**	**+1.3**
LZH					pmax	pmax			
	comp=Z,21nm,1.3s								
LZH					pmax	pmax			
	comp=Z,52nm,5.4s								
LZH					LR	LR			
	comp=Z,260nm,12.9s								
LZH					LR	LR			
	comp=Z,290nm,13.0s								
LZH					LR	LR			
	comp=Z,370nm,16.5s								
DLBC	**Dease Lake**	**42.08**	**49**	P		**P**	**13 35 31.3**	**+2.5**
	comp=Z,2.3nm,0.6s,baz=301,slow=8.0,SNR=5.7								
ZALV	**Zalesovo Beam**	**43.10**	**305**	P		**P**	**13 35 34.8**	**-2.2**
	comp=Z,0.6nm,0.5s,baz=46,slow=6.2,SNR=2.9								
WMQ	**Urumqi**	**46.26**	**291**	*eP*		**P**	**13 36 03.1**	**+0.7**
WMQ					pmax	pmax			
	comp=Z,6.0nm,0.6s								
YKA	**Yellowknife Ar**	**47.41**	**39**	P		**P**	**13 36 12.4**	**+1.4**
	comp=Z,2.0nm,0.8s,baz=296,slow=7.6,SNR=5.5								
MKAR	**Makanchi Array**	**47.91**	**297**	P		**P**	**13 36 14.1**	**-1.0**
	comp=Z,0.6nm,0.5s,baz=57,slow=8.8,SNR=7.1								
MKAR	**Makanchi Array**	**47.91**	**297**	*eP*		**P**	**13 36 14.8**	**-0.4**
MKAR					pmax	pmax			
	comp=Z,1.0nm,0.5s								
KURK	**Kurchatov**	**47.96**	**303**	P		**P**	**13 36 14.9**	**-0.5**
KURK							13 37 42.6		
KURK					pmax	pmax			
	comp=Z,2.0nm,0.6s								
KURK					pmax	pmax			
	comp=Z,1.0nm,0.7s								
KURBB	**Kurchatov Arra**	**48.06**	**303**	P		**P**	**13 36 14.9**	**-1.3**
	comp=Z,1.5nm,0.6s,baz=65,slow=8.2,SNR=8.0								
KURBB				PcP		**PcP**	**13 37 42.6**	**-0.5**
	comp=Z,0.9nm,0.7s,baz=61,slow=3.4,SNR=7.0								
KMI	**Kunming**	**48.07**	**260**	P		**P**	**13 36 17.3**	**+0.5**
KMI					pmax	pmax			
	comp=Z,9.0nm,0.6s								
BRVK	**Borovoye**	**51.13**	**309**	*ce*P		**P**	**13 36 38.0**	**-1.5**
BRVK					pmax	pmax			
	comp=Z,5.0nm,0.9s								
EDM	**Edmonton**	**52.80**	**49**	*eP*		**P**	**13 36 52.8**	**+0.8**
EDM					pmax	pmax			
	comp=Z,12nm,0.8s								
EDM	**Edmonton**	**52.80**	**49**	*eP*		**P**	**13 36 52.8**	**+0.8**
	comp=Z,12nm,0.8s								
ARU	**Arti**	**54.74**	**318**	*d iP*		**P**	**13 37 05.5**	**-0.5**
ARU							13 39 05.1		
ARU				S		**S**	**13 44 43.1**	**+1.2**
ARU				SS		**SS**	**13 48 25.0**	**+0.2**
ARU					pmax	pmax			
	comp=Z,3.0nm,0.8s								
CMAR	**Chiang Mai Arr**	**55.30**	**258**	P		**P**	**13 37 09.9**	**-0.6**
	comp=Z,0.7nm,0.7s,baz=31,slow=7.4,SNR=3.3								
FFC	**Flin Flon**	**57.22**	**43**	*eP*		**P**	**13 37 26.4**	**+2.7**
SUMG	**Summit**	**57.94**	**5**	*eP*		**P**	**13 37 29.5**	**+0.5**
SUMG					pmax	pmax			
	comp=Z,9.0nm,0.9s								
SUMG	**Summit**	**57.94**	**5**	*eP*		**P**	**13 37 29.5**	**+0.5**
	comp=Z,8.8nm,0.9s								
HLID	**Hailey**	**58.09**	**59**	*eP*		**P**	**13 37 31.2**	**+0.9**
	comp=Z,6.7nm,1.6s								
BOZ	**Bozeman (W)**	**58.29**	**56**	*eP*		**P**	**13 37 32.2**	**+0.6**
BOZ					pmax	pmax			
	comp=Z,2.0nm,0.8s								
BOZ	**Bozeman (W)**	**58.29**	**56**	*eP*		**P**	**13 37 32.2**	**+0.6**
	comp=Z,2.3nm,0.8s								
ABKAR	**Akbulak array**	**58.61**	**310**	*eP*		**P**	**13 37 32.5**	**-1.1**
PMG	**Port Moresby**	**59.07**	**191**	*eP*		**P**	**13 37 39.5**	**+2.5**
BW06	**Boulder Array**	**61.30**	**57**	*eP*		**P**	**13 37 53.5**	**+1.1**
PDAR	**Pinedale Array**	**61.30**	**57**	P		**P**	**13 37 54.2**	**+1.8**
	comp=Z,1.6nm,0.9s,baz=311,slow=4.9,SNR=8.3								
FINES	**FINESS Array B**	**62.71**	**336**	P		**P**	**13 38 00.6**	**-0.7**
	comp=Z,1.0nm,0.8s,baz=26,slow=9.1,SNR=4.6								
FINES	**FINESS Array B**	**62.71**	**336**	*ce*P		**P**	**13 38 00.8**	**-0.5**
FINES					pmax	pmax			
	comp=Z,1.0nm,0.8s								
NB2	**NORSAR Subarra**	**66.54**	**343**	P		**P**	**13 38 26.1**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=23,slow=6.5								
NOA	**NORSAR Array B**	**66.54**	**343**	P		**P**	**13 38 26.2**	**0.0**
	comp=Z,1.2nm,0.8s,baz=25,slow=6.3,SNR=5.5								
AKASG	**Malin Array Be**	**70.71**	**328**	P		**P**	**13 38 51.1**	**-1.2**
	comp=Z,0.7nm,0.3s,baz=25,slow=5.8,SNR=5.0								
WRA	**Warramunga Arr**	**71.77**	**202**	P		**P**	**13 38 58.8**	**-0.2**
	comp=Z,0.7nm,1.0s,baz=14,slow=6.1,SNR=4.3								
TX31	**Lajitas Ar. Si**	**74.16**	**63**	*eP*		**P**	**13 39 14.4**	**+1.0**
TXAR	**Lajitas Array**	**74.16**	**63**	P		**P**	**13 39 14.6**	**+1.2**
	comp=Z,1.1nm,0.6s,baz=298,slow=4.9,SNR=17								
BUR08	**Bucovina Ar. S**	**74.70**	**328**	*eP*		**P**	**13 39 16.1**	**-0.1**
DPC	**Dobruska-Polom**	**75.06**	**335**	*eP*		**P**	**13 39 19.0**	**+0.8**
DPC	**Dobruska-Polom**	**75.06**	**335**	*eP*		**P**	**13 39 19.0**	**+0.8**
CLL	**Collm**	**75.07**	**337**	*eP*		**P**	**13 39 18.0**	**-0.1**
	comp=Z,9.0nm,1.1s								
CLL	**Collm**	**75.07**	**337**	*eP*		**P**	**13 39 18.0**	**-0.1**
CLL					pmax	pmax			
	comp=Z,9.0nm,1.1s								
MORC	**Moravsky Berou**	**75.24**	**334**	*eP*		**P**	**13 39 19.4**	**+0.2**
MORC	**Moravsky Berou**	**75.24**	**334**	*eP*		**P**	**13 39 19.4**	**+0.2**
	comp=Z,26nm,0.8s								
ASAR	**Alice Springs**	**75.45**	**202**	P		**P**	**13 39 21.6**	**+1.1**
	comp=Z,0.5nm,0.8s,baz=20,slow=6.1,SNR=8.1								
ASAR	**Alice Springs**	**75.45**	**202**	*eP*		**P**	**13 39 22.0**	**+1.5**
ASAR					pmax	pmax			
	comp=Z,1.0nm,0.8s								
MLR	**Muntele Rosu**	**76.29**	**327**	*eP*		**P**	**13 39 26.1**	**+0.7**
MLR					pmax	pmax			
	comp=Z,6.0nm,0.7s								
MLR	**Muntele Rosu**	**76.29**	**327**	*eP*		**P**	**13 39 26.1**	**+0.7**
	comp=Z,5.5nm,0.7s								
KHC	**Kasperske Hory**	**76.92**	**336**	*eP*		**P**	**13 39 29.9**	**+1.2**
KHC	**Kasperske Hory**	**76.92**	**336**	*eP*		**P**	**13 39 29.7**	**+0.9**
KHC					pmax	pmax			
	comp=Z,2.0nm,0.8s								
KHC	**Kasperske Hory**	**76.92**	**336**	*eP*		**P**	**13 39 29.7**	**+0.9**
	comp=Z,2.1nm,0.8s								
GERES	**GERESS Array B**	**77.15**	**336**	P		**P**	**13 39 30.8**	**+0.7**
	comp=Z,2.2nm,0.7s,baz=43,slow=6.0,SNR=12								
GEA0	**GERESS Array S**	**77.15**	**336**	*eP*		**P**	**13 39 30.1**	**0.0**
CONA	**Conrad Observa**	**77.39**	**334**	*i* P		**P**	**13 39 32.4**	**+1.0**
	comp=Z,4.8nm,0.6s								
MOA	**Molln**	**77.90**	**335**	*i* P		**P**	**13 39 34.2**	**-0.1**
	comp=Z,5.3nm,0.8s								
ARSA	**Arzberg**	**78.10**	**334**	*i* P		**P**	**13 39 36.5**	**+1.1**
	comp=Z,6.2nm,0.9s								
BRTR	**Keskin Array B**	**78.11**	**319**	P		**P**	**13 39 36.1**	**+0.4**
	comp=Z,1.9nm,0.8s,baz=64,slow=2.9,SNR=8.8								
BRTR	**Keskin Array B**	**78.11**	**319**	*eP*		**P**	**13 39 36.3**	**+0.6**
BRTR					pmax	pmax			
	comp=Z,2.0nm,0.9s								
BR231	**Keskin MP Arra**	**78.38**	**319**	*eP*		**P**	**13 39 36.0**	**-1.2**
SOKA	**Soboth**	**78.76**	**334**	*i* P		**P**	**13 39 39.4**	**+0.3**
	comp=Z,3.4nm,1.0s								
KBA	**Koelnbreinsper**	**78.86**	**335**	*i* P		**P**	**13 39 37.0**	**-2.7**
	comp=Z,10nm,0.7s								
OBKA	**Obir**	**79.05**	**334**	*i* P		**P**	**13 39 40.8**	**+0.1**
	comp=Z,6.6nm,0.8s								
RETA	**Rette**	**79.16**	**337**	*i* P		**P**	**13 39 37.2**	**-4.0**
	comp=Z,7.2nm,1.2s								
MOTA	**Moosalm**	**79.21**	**337**	*i* P		**P**	**13 39 42.3**	**+0.7**
	comp=Z,1.8nm,0.4s								
FETA	**Feichten**	**79.60**	**337**	*i* P		**P**	**13 39 39.4**	**-4.4**
	comp=Z,3.7nm,0.9s								
DAVOX	**Davos/Dischmat**	**80.04**	**338**	LR		LR	14 19 59.2		
	comp=Z,25nm,18.1s,baz=92,slow=39								
CPUP	**Villa Florida**	**145.11**	**61**	PKPbc		**PKPdf**	**13 47 14.2**	**+0.6**
	comp=Z,1.1nm,0.6s,baz=244,slow=6.7,SNR=4.7								
PLCA	**Paso Flores**	**146.00**	**94**	PKPbc		**PKPab**	**13 47 16.6**	**+0.3**
	comp=Z,2.8nm,0.7s,baz=8.6,slow=2.7,SNR=4.5								
PLCA	**Paso Flores**	**146.00**	**94**	*e*PKP2		**PKPab**	**13 47 17.0**	**+0.7**
PLCA					pmax	pmax			
	comp=Z,3.0nm,0.7s								

*IDC **20** 13:33:16.7±1.2,26.47N×142.01E,h0km,mb3.8/6, mb1 3.9/7,mb1mx3.6/45,mbtmp3.8/7,ML3.4/1,MS3.6/2, Ms1 3.6/2,ms1mx2.7/40,Error ellipse: s-maj=56.2km s-min=18.7km az=89.0*

*NEIC **20** 13:33:18.8±1.9,26.46N×142.03E,h14km±13km,mb4.2/2, Error ellipse: s-maj=31.1km s-min=10.1km az=84.0*

*ISCJB **20** 13:33:20.1±0.8,26.52N±0.08×142.1E±0.2,h40km, mb3.8/8,MS3.6/2,Error ellipse: s-maj=31.8km s-min=11.5km az=1.3*

ISC 20 13:33:22.0±1.2,26.6N±0.1×142.2E±0.3,h40km,n13, σ1s04/11,mb3.8/8,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**0.54**	**3**	*e*Pg		**Pn**	**13 33 31.4**	**-1.9**
MJAR	**Matsushiro Arr**	**10.51**	**342**	Pn		**Pn**	**13 35 50.0**	**0.0**
	0.3nm,0.3s,baz=161,slow=12,SNR=4.9							
KLR	**Kul'dur**	**24.03**	**343**	P		**P**	**13 38 34.7**	**+1.6**
	1.9nm,0.6s,baz=161,slow=5.8,SNR=8.2							
PETK	**Petropavlovsk-**	**28.95**	**19**	P		**P**	**13 39 18.5**	**+1.1**
	1.2nm,0.5s,baz=209,slow=14,SNR=2.5							
WRAB	**Tennant Creek**	**46.83**	**190**	*eP*		**P**	**13 41 47.4**	**-0.6**
	3.0nm,0.6s							
WRA	**Warramunga Arr**	**46.84**	**190**	P		**P**	**13 41 47.9**	**-0.2**
	0.8nm,0.4s,baz=11,slow=8.7,SNR=15							
ASAR	**Alice Springs**	**50.56**	**190**	P		**P**	**13 42 16.2**	**-0.5**
	0.1nm,0.4s,baz=8.9,slow=6.6,SNR=3.0							
MKAR	**Makanchi Array**	**50.80**	**310**	LR		LR	14 04 47.8	
	comp=Z,48nm,20.1s,baz=266,slow=37							
KURK	**Kurchatov**	**53.34**	**315**	P		**P**	**13 42 37.2**	**+0.1**
KURBB	**Kurchatov Arra**	**53.40**	**315**	P		**P**	**13 42 37.2**	**-0.3**
	0.5nm,0.6s,baz=90,slow=8.0,SNR=6.3							
ABKAR	**Akbulak array**	**65.45**	**314**	*eP*		**P**	**13 44 00.7**	**-0.1**
	0.2nm,0.3s							
FINES	**FINESS Array B**	**78.42**	**334**	P		**P**	**13 45 18.8**	**+0.5**
	1.4nm,0.5s,baz=73,slow=5.9,SNR=10							
TXAR	**Lajitas Array**	**95.95**	**53**	LR		LR	14 24 22.2	
	comp=Z,34nm,21.0s,baz=0.0,slow=32							

IDC 20 13:35:57.6±1.1,3.01N×65.48E,h0km,mb3.6/9,mb1 3.7/9, mb1mx3.6/42,mbtmp3.6/9,MS3.5/14,Ms1 3.5/14, ms1mx3.3/36,Error ellipse: s-maj=30.3km s-min=22.9km az=29.0,Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H**	**10.79**	**149**	T		T	13 50 01.1	
	baz=329,slow=76,SNR=196							
H08N3	**Diego Garcia H**	**10.80**	**149**	T		T	13 50 08.9	
	baz=329,slow=76,SNR=194							
H08N1	**Diego Garcia H**	**10.81**	**149**	T		T	13 50 03.7	
	baz=329,slow=76,SNR=188							
PALK	**Pallekele**	**15.74**	**74**	LR		LR	13 44 26.8	
	comp=Z,195nm,19.9s,baz=296,slow=32							
WSAR	**Wadi Sarin**	**21.17**	**342**	LR		LR	13 47 21.5	
	comp=Z,116nm,19.3s,baz=174,slow=32							
PSI	**Prapat**	**33.40**	**89**	LR		LR	13 53 46.4	
	comp=Z,61nm,21.6s,baz=249,slow=32							
GEYT	**Alibeck**	**35.40**	**350**	LR		LR	13 56 52.0	
	comp=Z,98nm,19.8s,baz=270,slow=35							
CMAR	**Chiang Mai Arr**	**36.18**	**62**	P		P	13 43 03.0	+0.8
	0.6nm,0.5s,baz=249,slow=7.6,SNR=5.4							
CMAR						LR	13 57 11.6	
	comp=Z,51nm,18.9s,baz=270,slow=35							
MKAR	**Makanchi Array**	**45.99**	**16**	P		P	13 44 24.2	+1.5
	0.2nm,0.5s,baz=192,slow=4.3,SNR=3.1							
BRTR	**Keskin Array B**	**46.57**	**326**	P		P	13 44 26.9	-0.6
	0.5nm,0.6s,baz=153,slow=8.1,SNR=3.1							
KURBB	**Kurchatov Arra**	**48.71**	**11**	P		P	13 44 42.7	-1.0
	0.7nm,0.8s,baz=210,slow=8.1,SNR=4.7							
BOSA	**Boshof**	**49.79**	**228**	LR		LR	14 04 45.4	
	comp=Z,90nm,18.6s,baz=14,slow=35							
ZALV	**Zalesovo Beam**	**53.20**	**14**	P		P	13 45 16.1	-1.4
	1.1nm,0.5s,baz=224,slow=6.0,SNR=3.4							
ZALV						LR	14 07 44.6	
	comp=Z,43nm,20.3s,baz=248,slow=36							
ARU	**Arti**	**53.55**	**355**	LR		LR	14 08 13.9	
	comp=Z,42nm,20.6s,baz=122,slow=36							
MLR	**Muntele Rosu**	**54.63**	**327**	LR		LR	14 08 23.7	
	comp=Z,13nm,20.6s,baz=80,slow=36							
SONM	**Songino Array**	**56.84**	**32**	P		P	13 45 44.0	-0.1
	0.3nm,0.3s,baz=238,slow=8.5,SNR=3.6							
SONM						LR	14 10 11.5	
	comp=Z,68nm,19.7s,baz=260,slow=36							
H01W3	**Cape Leeuwin H**	**59.16**	**134**	T		T	14 50 09.2	
	baz=300,slow=75,SNR=33							
H01W2	**Cape Leeuwin H**	**59.17**	**134**	T		T	14 50 09.6	
	baz=300,slow=75,SNR=36							
H01W1	**Cape Leeuwin H**	**59.18**	**134**	T		T	14 50 10.5	
	baz=300,slow=75,SNR=32							
TORD	**Torodi Ar. Bea**	**63.80**	**283**	P		P	13 46 32.7	+0.5
	0.2nm,0.7s,baz=98,slow=6.0,SNR=2.3							
TORD						LR	14 13 06.4	
	comp=Z,29nm,21.1s,baz=255,slow=35							
NRIK	**Noril'sk**	**67.84**	**8**	LR		LR	14 17 48.1	
	comp=Z,57nm,20.5s,baz=136,slow=37							
WRA	**Warramunga Arr**	**71.27**	**112**	P		P	13 47 19.1	-0.4
	0.7nm,0.8s,baz=290,slow=5.4,SNR=4.8							
ASAR	**Alice Springs**	**71.59**	**116**	P		P	13 47 21.2	-0.1
	0.4nm,0.7s,baz=291,slow=5.4,SNR=6.3							
MJAR	**Matsushiro Arr**	**74.36**	**53**	LR		LR	14 22 27.6	
	comp=Z,17nm,20.9s,baz=95,slow=38							
PETK	**Petropavlovsk-**	**88.95**	**37**	LR		LR	14 31 38.7	
	comp=Z,48nm,18.4s,baz=310,slow=38							
TXAR	**Lajitas Array**	**146.20**	**343**	PKPbc		PKPdf	13 55 40.0	+0.1
	0.7nm,0.8s,baz=90,slow=2.5,SNR=7.8							

IDC 20 13:45:13.7±3.2,5.17S×152.00E,h0km,mb3.7/3, mb1 4.0/4,mb1mx3.6/29,mbtmp3.8/4,ML2.1/1,Error ellipse: s-maj=118.2km s-min=43.0km az=124.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.38**	**228**	Pn		Pn	13 46 49.8	+0.7
	2.7nm,0.3s,baz=49,slow=8.4,SNR=8.7							
PMG				Sn		Sn	13 47 54.8	-7.9
	1.9nm,0.3s,baz=38,slow=19,SNR=1.4							
WRA	**Warramunga Arr**	**22.60**	**228**	P		P	13 50 14.4	-1.8
	0.8nm,0.7s,baz=53,slow=10,SNR=5.2							
ASAR	**Alice Springs**	**25.34**	**222**	P		P	13 50 42.3	-0.3
	1.2nm,0.8s,baz=54,slow=9.1,SNR=15							
FITZ	**Fitzroy Crossi**	**28.78**	**241**	P		P	13 51 14.8	+1.3
	1.1nm,0.4s,baz=65,slow=10,SNR=10							
TORD	**Torodi Ar. Bea**	**149.65**	**287**	PKPbc		PKPbc	14 05 05.9	-0.6
	0.5nm,0.6s,baz=76,slow=2.1,SNR=5.7							

IDC 20 13:51:43.6±2.1,2.45N×128.17E,h0km,mb3.3/4, mb1 3.5/4,mb1mx3.3/39,mbtmp3.3/4,Error ellipse: s-maj=147.6km s-min=27.4km az=66.0,Halmahera

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.06**	**165**	P		P	13 56 51.9	+1.0
	0.3nm,0.4s,baz=344,slow=10.0,SNR=8.1							
ASAR	**Alice Springs**	**26.55**	**168**	P		P	13 57 22.8	-0.7
	0.2nm,0.7s,baz=348,slow=8.1,SNR=1.6							
STKA	**Stephens Creek**	**36.44**	**161**	P		P	13 58 49.0	-1.3
	0.8nm,0.6s,baz=346,slow=10,SNR=1.5							
MKAR	**Makanchi Array**	**59.42**	**325**	P		P	14 01 48.8	+0.7
	0.2nm,0.6s,baz=132,slow=8.7,SNR=1.8							

*DDA **20** 14:09:25.2,39.91N×33.05E,h7km,Ml2.8*
*CSEM **20** 14:09:25.3±0.2,39.89N×33.07E,h8km,ML2.6,Error ellipse: s-maj=5.5km s-min=4.0km az=108.0*
*ISK **20** 14:09:25.2,39.87N×33.05E,h8km,ML2.6*

ISC 20 14:09:25.4±1.1,39.89N±0.02×33.08E±0.03,h4km±11km, n22,σ0s78/35,Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
LOD	**Lodumlu**	**0.24**	**269**	*e*PG		**Pg**	**14 09 29.6**	**-0.5**
LOD				*e*SG		**Sg**	**14 09 33.9**	**+0.7**
LOD	**Lodumlu**	**0.24**	**269**	*e*Pg		**Pg**	**14 09 29.6**	**-0.5**
LOD				*e*Sg		**Sg**	**14 09 33.9**	**+0.7**
AFSR	**Af'ar-Bala (A**	**0.45**	**180**	*e*PG		**Pg**	**14 09 34.1**	**+0.1**
AFSR				*e*SG		**Sg**	**14 09 40.6**	**+0.8**
AFSR	**Af'ar-Bala (A**	**0.45**	**180**	*e*Pg		**Pg**	**14 09 34.1**	**+0.1**
AFSR				*e*Sg		**Sg**	**14 09 40.6**	**+0.8**
ELDT	**Eldivan**	**0.66**	**24**	*i* P		**Pg**	**14 09 37.4**	**-0.6**
ELDT				*i* S		**Sg**	**14 09 47.7**	**+1.2**
ELDT	**Eldivan**	**0.66**	**24**	P		**Pg**	**14 09 37.4**	**-0.6**
ELDT				S		**Sg**	**14 09 47.7**	**+1.2**
KAMT	**Kaman**	**0.72**	**136**	*e*PG		**Pg**	**14 09 38.8**	**-0.4**
KAMT	**Kaman**	**0.72**	**136**	*e*Pg		**Pg**	**14 09 38.8**	**-0.4**
KKUL	**Konya-Kulu**	**0.73**	**190**	*i* P		**Pg**	**14 09 39.1**	**-0.3**
KKUL				*i* S		**Sb**	**14 09 51.1**	**-0.1**
KKUL	**

*JMA **20** 14:49:10.6±0.2, 37.60N×144.47E, h12km, M3.7*
*IDC **20** 14:49:13.2±1.8, 37.84N×144.10E, h0km, mb3.4/2, mb1 3.5/4, mb1mx3.2/34, mbtmp3.4/4, ML3.2/2, Error ellipse: s-maj=41.1km s-min=26.4km az=84.0*

ISC 20 14:49:14.6±1.4, 37.83N±0.06×144.02E±0.07, h10km, n19, σ1°59/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.20**	**287**	P	**Pb**	**14 49 53.8**	**-0.6**
JIO				S	**Sg**	**14 50 25.5**	**+0.3**
OFUJ	**Ofunato**	**2.23**	**305**	P	**Pb**	**14 49 54.4**	**-0.6**
OFUJ				S	**Sg**	**14 50 26.9**	**+0.7**
JMK	**Ichinoseki**	**2.47**	**298**	P	**Pb**	**14 49 57.9**	**-1.1**
JMK				*e*S	**Sg**	**14 50 32.9**	**-1.0**
JOM	**Ohasama**	**2.69**	**308**	P	**Pb**	**14 50 01.4**	**-1.5**
JFT	**Otama**	**2.94**	**265**	P	**Pn**	**14 50 03.4**	**+2.1**
JFT				*e*S	**Sb**	**14 50 41.6**	**-1.4**
JYK	**Kaneyama**	**3.08**	**292**	P	**Pb**	**14 50 06.6**	**-2.8**
JOT	**Ohata**	**4.23**	**328**	P	**Pn**	**14 50 22.2**	**+3.2**
JRY	**Ryogami san**	**4.48**	**248**	S	**Sn**	**14 51 13.1**	**-1.6**
JCH	**Churui**	**4.81**	**354**	P	**Pn**	**14 50 26.3**	**-0.7**
JCH				S	**Sn**	**14 51 22.6**	**-0.2**
MJAR	**Matsushiro Arr**	**4.81**	**256**	Pn	**Pn**	**14 50 27.8**	**+0.7**
	0.7nm,0.3s,baz=89,slow=15,SNR=5.5						
MJAR				Sn	**Sn**	**14 51 25.0**	**+2.1**
	0.7nm,0.3s,baz=69,slow=22,SNR=4.2						
ASAJ	**Asahikawa**	**6.38**	**351**	Pn	**Pn**	**14 50 48.4**	**-0.2**
	0.6nm,0.3s,baz=234,slow=8.7,SNR=7.1						
ASAJ				Sn	**Sn**	**14 52 03.5**	**+2.1**
	0.4nm,0.3s,baz=90,slow=20,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**26.85**	**126**	T	T	15 21 39.8	
	baz=317,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**26.86**	**126**	T	T	15 21 35.7	
	baz=317,slow=75,SNR=6.4						
H11N3	**WAKE ISLAND Hy**	**26.86**	**126**	T	T	15 21 40.1	
	baz=317,slow=75,SNR=8.2						
H11S1	**WAKE ISLAND Hy**	**27.62**	**128**	T	T	15 22 34.7	
	baz=319						
H11S3	**WAKE ISLAND Hy**	**27.63**	**128**	T	T	15 22 36.3	
	baz=319						
H11S2	**WAKE ISLAND Hy**	**27.64**	**128**	T	T	15 22 35.8	
	baz=319						
WRA	**Warramunga Arr**	**58.18**	**191**	P	**P**	**14 59 08.7**	**0.0**
	1.1nm,1.2s,baz=8.5,slow=7.0,SNR=6.1						
ASAR	**Alice Springs**	**61.90**	**191**	P	**P**	**14 59 34.9**	**+0.6**
	0.1nm,0.3s,baz=6.6,slow=6.8,SNR=3.9						

*IDC **20** 15:02:05.7±0.7, 5.04S×130.29E, h0km, mb4.0/12, mb1 4.3/15, mb1mx4.0/44, mbtmp4.2/15, ML4.3/3, MS3.2/11, Ms1 3.2/11, ms1mx3.0/26, Error ellipse: s-maj=31.6km s-min=15.3km az=72.0*
*ISCJB **20** 15:02:08.3±0.3, 5.05S±0.03×130.46E±0.04, h35km, mb4.3/18, MS3.2/11, Error ellipse: s-maj=5.9km s-min=4.4km az=156.8*
*DJA **20** 15:02:09.3±0.5, 5°S±2°×13°0E±°, h10km±3km, M5.3/4, mB5.6/2, mb5.2/4, MLv5.4/2, Mw(mB)5.1/2*
*NEIC **20** 15:02:11.5±1.0, 5.06S×130.61E, h49km±11km, mb4.2/7, Error ellipse: s-maj=10.3km s-min=7.9km az=65.0*

ISC 20 15:02:10.5±0.5, 4.92S±0.04×130.44E±0.05, h35km, n55, σ2°72/55, mb4.2/18, MS3.2/11, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**0.66**	**307**	P	**Pn**	**15 02 21.2**	**-2.2**
BNDI				S	**Sn**	**15 02 32.5**	**-0.1**
MSAI	**Masohi**	**2.17**	**316**	P	**Pn**	**15 02 43.7**	**-0.5**
MSAI				S	**Sn**	**15 03 16.2**	**+0.3**
FAKI	**Fak Fak**	**2.69**	**42**	P	**Pn**	**15 02 51.8**	**+0.4**
FAKI				S	**Sn**	**15 03 23.7**	**+1.0**
FAKI	**Fak Fak**	**2.69**	**42**	*e*Pn	**Pn**	**15 02 51.6**	**+0.2**
SAUI	**Saumlaki**	**3.16**	**164**	P	**Pn**	**15 03 00.0**	**+2.2**
SAUI				S	**Sn**	**15 03 41.5**	**+7.1**
SAUI	**Saumlaki**	**3.16**	**164**	*e*Pn	**Pn**	**15 02 59.7**	**+1.9**
SIJI	**Sorong**	**4.11**	**12**	Pn	**Pn**	**15 03 12.0**	**+1.1**
	9.8nm,0.3s,baz=270,slow=20,SNR=5.3						
SIJI				Sn	**Sn**	**15 03 56.7**	**-1.1**
	21nm,0.3s,baz=90,slow=24,SNR=13						
SWI	**Sorong**	**4.12**	**12**	P	**Pn**	**15 03 11.4**	**+0.4**
SWI				S	**Sn**	**15 03 57.6**	**-0.3**
LBMI	**Labuha**	**5.17**	**325**	P	**Pn**	**15 03 26.2**	**+0.7**
SANI	**Sanana**	**5.28**	**303**	P	**Pn**	**15 03 28.4**	**+1.5**
SANI				S	**Sn**	**15 04 29.0**	**+2.4**
SOEI	**Soe**	**7.78**	**232**	P	**Pn**	**15 04 04.8**	**+3.4**
SOEI	**Soe**	**7.78**	**232**	*e*Pn	**Pn**	**15 04 03.0**	**+1.5**
MTN	**Manton Dam**	**7.90**	**175**	*e*Pn	**Pn**	**15 04 02.8**	**-0.3**
LUWI	**Luwuk**	**8.57**	**296**	*e*Pn	Pn	15 04 18.0	+5.8
MMRI	**Maumere**	**8.94**	**245**	P	Pn	15 04 25.3	+8.1
EDFI	**Ende, Flores**	**9.48**	**246**	P	Pn	15 04 29.9	+5.1
SPSI	**Sidrap Palu**	**10.68**	**275**	P	Pn	15 04 45.8	+4.7
WSI	**Waingapu**	**11.10**	**244**	P	**Pn**	**15 04 50.3**	**+3.3**
	230nm,0.5s,5μm						
FITZ	**Fitzroy Crossi**	**13.91**	**199**	Pn	**Pn**	**15 05 21.3**	**-4.1**
	1.3nm,0.3s,baz=41,slow=10,SNR=28						
FITZ				Sn	**Sn**	**15 07 54.1**	**-4.6**
	0.5nm,0.3s,baz=197,slow=7.2,SNR=4.6						
FITZ	**Fitzroy Crossi**	**13.91**	**199**	*e*Pn	**Pn**	**15 05 22.2**	**-3.2**
FITZ				Sn	**Sn**	**15 07 54.1**	**-4.6**
WRAB	**Tennant Creek**	**15.40**	**166**	*e*Pn	**Pn**	**15 05 39.4**	**-6.0**
	19nm,0.8s						
WRAB				*e*Sn	Sn	15 08 23.1	-12
WRA	**Warramunga Arr**	**15.41**	**166**	Pn	**Pn**	**15 05 38.9**	**-6.6**
	1.3nm,0.3s,baz=347,slow=13,SNR=59						
WRA				Sn	Sn	15 08 21.2	-14
	1.8nm,0.3s,baz=348,slow=24,SNR=8.4						
WB2	**Warramunga Arr**	**15.41**	**166**	*e*Pn	**Pn**	**15 05 39.2**	**-6.3**
COEN	**Coen**	**15.44**	**126**	*e*Pn	**Pn**	**15 05 43.7**	**-2.1**
	27nm,1.1s						
KKM	**Kota Kinabalu**	**17.89**	**307**	*e*P	**P**	**15 06 17.7**	**+0.3**
	18nm,1.0s						
AS31	**Alice Springs**	**18.93**	**170**	*e*P	**P**	**15 06 26.4**	**-2.3**
	7.8nm,0.6s						
ASAR	**Alice Springs**	**18.93**	**170**	P	**P**	**15 06 26.5**	**-2.2**
	1.2nm,0.3s,baz=348,slow=11,SNR=80						
ASAR				S	Sn	15 09 47.6	-13
	0.3nm,0.3s,baz=350,slow=25,SNR=5.0						
ASAR				LR	LR	15 14 22.0	
	comp=Z,116nm,18.2s,baz=347,slow=39						
AS01	**Alice Springs**	**18.94**	**170**	*e*P	**P**	**15 06 26.0**	**-2.7**
MBWA	**Marble Bar**	**19.20**	**212**	*e*P	**P**	**15 06 30.0**	**-1.5**
	16nm,1.1s						
SBUM	**Sibu**	**19.62**	**292**	*e*P	**Pn**	**15 06 37.7**	**0.0**
	7.0nm,1.2s						
CTA	**Charters Tower**	**21.55**	**136**	P	**P**	**15 06 58.1**	**+1.1**
	6.7nm,0.9s,baz=288,slow=20,SNR=4.2						
RABL	**Rabaul**	**21.67**	**89**	*e*P	**P**	**15 06 54.7**	**-3.8**
	52nm,0.7s						
STKA	**Stephens Creek**	**28.79**	**160**	P	**P**	**15 08 05.0**	**-0.2**
	1.9nm,0.3s,baz=347,slow=7.6,SNR=12						
STKA				LR	LR	15 20 12.2	
	comp=Z,140nm,20.3s,baz=17,slow=38						
CMAR	**Chiang Mai Arr**	**38.77**	**308**	P	**P**	**15 09 32.2**	**+0.1**
	0.3nm,0.4s,baz=33,slow=40,SNR=4.0						
CMAR				LR	LR	15 29 00.8	
	comp=Z,16nm,18.3s,baz=170,slow=42						
KMI	**Kunming**	**40.21**	**319**	P	**P**	**15 09 46.0**	**+1.8**
KMI				pmax	pmax		
	comp=Z,9.0nm,0.5s						
MJAR	**Matsushiro Arr**	**41.88**	**9**	P	**P**	**15 09 58.3**	**+0.8**
	comp=Z,1.7nm,0.8s,baz=190,slow=12,SNR=3.4						
MJAR				LR	LR	15 25 41.1	
	comp=Z,14nm,19.1s,baz=170,slow=34						
KSRS	**Korea Array**	**42.22**	**357**	LR	LR	15 28 54.4	
	comp=Z,6.3nm,18.9s,baz=160,slow=38						
LZH	**Lanzhou**	**47.80**	**331**	*e*P	**P**	**15 10 45.6**	**+0.7**
LZH				pP	sP	15 11 03.3	+3.8
LZH				sP	pP	15 11 11.5	+16
LZH				*e*PP	**PP**	**15 12 38.5**	**+1.5**
LZH				pmax	pmax		
	comp=Z,16nm,1.1s						
LZH				pmax	pmax		
	comp=Z,45nm,6.2s						
LZH				LR	LR		
	comp=N,110nm,14.0s						
LZH				LR	LR		
	comp=E,100nm,14.2s						
LZH				LR	LR		
	comp=Z,140nm,17.3s						
HHC	**Hu-ho-hao-te**	**48.72**	**341**	*e*P	**P**	**15 10 54.3**	**+2.4**
HHC				pmax	pmax		
	comp=Z,23nm,0.9s						
HHC				pmax	pmax		
	comp=Z,76nm,4.1s						

USRK	**Ussuriysk Ar.**	**48.92**	**1**	P	**P**	**15 10 54.7**	**+1.6**
	comp=Z,2.2nm,0.7s,baz=168,slow=7.4,SNR=4.2						
GTA	**Gaotai**	**52.38**	**330**	*e*P	P	15 11 25.0	+5.4
GTA				pP	sP	15 11 44.0	+10
GTA				sP	pP	15 11 51.3	+21
GTA				pmax	pmax		
	comp=Z,3.0nm,1.4s						
SONM	**Songino Array**	**56.63**	**341**	P	**P**	**15 11 51.2**	**+1.0**
	comp=Z,1.9nm,1.0s,baz=166,slow=6.9,SNR=8.3						
SONM				LR	LR	15 37 14.8	
	comp=Z,16nm,19.9s,baz=132,slow=37						
WMQ	**Urumqi**	**61.91**	**326**	*e*P	**P**	**15 12 28.0**	**+1.2**
WMQ				pmax	pmax		
	comp=Z,12nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,78nm,4.5s						
PETK	**Petropavlovsk-**	**62.23**	**18**	LR	LR	15 35 29.1	
	comp=Z,16nm,21.8s,baz=146,slow=32						
MKAR	**Makanchi Array**	**66.74**	**326**	P	**P**	**15 12 59.2**	**+0.9**
	comp=Z,2.0nm,0.6s,baz=113,slow=7.0,SNR=15						
SEY	**Seymchan**	**69.70**	**11**	P	**P**	**15 13 17.1**	**+0.7**
	comp=Z,1.0nm,0.7s,baz=125,slow=5.3,SNR=5.1						
ZALV	**Zalesovo Beam**	**69.93**	**333**	P	**P**	**15 13 18.5**	**+0.5**
	comp=Z,2.0nm,0.7s,baz=85,slow=3.1,SNR=10.0						
ZALV				LR	LR	15 46 56.5	
	comp=Z,14nm,18.3s,baz=74,slow=38						
KURBB	**Kurchatov Arra**	**70.98**	**328**	P	**P**	**15 13 25.1**	**+0.6**
	comp=Z,1.4nm,0.5s,baz=128,slow=5.1,SNR=12						
KURK	**Kurchatov**	**70.99**	**328**	P	**P**	**15 13 25.1**	**+0.6**
VNDA	**Vanda**	**74.45**	**173**	LR	LR	15 46 51.9	
	comp=Z,23nm,18.6s,baz=336,slow=36						
BVAR	**Borovoye Array**	**76.55**	**327**	P	**P**	**15 13 58.5**	**+1.3**
	comp=Z,0.9nm,0.7s,baz=52,slow=7.7,SNR=8.9						
MAW	**Mawson**	**77.03**	**201**	LR	LR	15 47 16.2	
	comp=Z,24nm,18.3s,baz=232,slow=35						
NRIK	**Noril'sk**	**79.66**	**346**	LR	LR	15 50 35.8	
	comp=Z,16nm,21.7s,baz=110,slow=36						
ILAR	**Eielson Array**	**91.29**	**25**	P	**P**	**15 15 13.7**	**+1.5**
	comp=Z,0.3nm,0.6s,baz=282,slow=4.3,SNR=3.8						
VNA1	**Neumayer--Stat**	**99.74**	**193**	P	**Pdif**	**15 15 44.9**	**-5.6**

MEX 20 15:37:02.7±0.8, 28.77N×113.32W, h10km, MD3.7, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**1.73**	**146**	*e*P	Pn	15 37 29.5	-3.4
SRIG				*e*S	Sn	15 37 50.4	-4.6
HSIG		**2.09**	**83**	*e*P	Pn	15 37 33.9	-3.9
HSIG				*e*S	Sn	15 37 59.8	-4.0
GUYB	**Guaymas**	**2.32**	**111**	*e*P	Pn	15 37 38.2	-2.8
GUYB				*e*S	Sn	15 38 05.7	-3.9

IDC 20 15:40:00.5±2.4, 59.70S×24.51W, h0km, mb4.3/2, mb1 4.4/2, mb1mx3.8/30, mbtmp4.3/2, Error ellipse: s-maj=93.4km s-min=46.8km az=175.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10S2	**ASCENSION HYDR**	**51.18**	**13**	T	T	16 44 02.1	
	baz=187						
H10S3	**ASCENSION HYDR**	**51.19**	**13**	T	T	16 43 56.1	
	baz=187						
H10S1	**ASCENSION HYDR**	**51.20**	**13**	T	T	16 43 59.8	
	baz=187						
LPAZ	**La Paz**	**53.65**	**305**	P	P	15 49 24.7	+0.3
	0.9nm,0.3s,baz=176,slow=5.0,SNR=7.4						
TORD	**Torodi Ar. Bea**	**75.62**	**26**	P	P	15 51 46.8	-0.3
	1.4nm,0.3s,baz=197,slow=6.2,SNR=35						
FINES	**FINESS Array B**	**126.96**	**28**	PKP	PKPdf	15 59 05.6	+0.9
	0.5nm,0.5s,baz=202,slow=1.0,SNR=4.3						
ARCES	**ARCESS Array B**	**133.81**	**22**	PKP	PKPdf	15 59 18.3	+0.8
	0.6nm,0.5s,baz=236,slow=2.2,SNR=7.1						
ILAR	**Eielson Array**	**153.52**	**306**	PKPbc	PKPbc	15 59 57.6	-1.7
	0.3nm,0.4s,baz=154,slow=1.5,SNR=6.2						

*IDC **20** 15:51:27.0±0.5, 7.05N×82.34W, h0km, mb4.7/20, mb1 4.9/25, mb1mx4.8/33, mbtmp4.7/25, ML4.4/4, MS4.5/27, Ms1 4.5/27, ms1mx4.5/31, Error ellipse: s-maj=18.8km s-min=10.9km az=57.0*
*ISCJB **20** 15:51:27.4±0.1, 7.21N±0.02×82.30W±0.02, h10km, mb5.3/270, MS4.7/41, Error ellipse: s-maj=3.2km s-min=2.0km az=37.8*
*MOS **20** 15:51:27.4±1.3, 7.10N×82.42W, h10km, mb5.4/55, MS4.7/6, Error ellipse: s-maj=9.4km s-min=4.9km az=108.0*
*BJI **20** 15:51:28.3, 7.10N×82.30W, h20km, mB5.4/16, Ms5.3/14, Ms7 5.0/16*
*CASC **20** 15:51:29.0±1.5, 7.08N×82.41W, h28km±31km, mb5.3(NEIC)*
*GCMT **20** 15:51:30.1±0.1, 7.05N×82.38W, h12km, MW5.3/126, Moment Tensor Solution. s76,c114; s126,c215; Duration: 1s1 Moment tensor: Scale 10^17 Nm; Mrr-0.05±.01; Mθθ0.22±.01; Mφφ-0.16±.02; Mrθ0.23±.03; Mrφ1.01±.01; Mθφ-0.09±.04; Best double couple: M0 1.05800×10^17 NP1:φ275.00000°, δ86.00000°, λ-13.00000°. NP2:φ6.00000°, δ77.00000°, λ-176.00000°. Principal axes: T 1.0660, Plg7.0000°, Azm321.0000°; N -0.0140, Plg76.0000°, Azm79.0000°; P -1.0510, Plg12.0000°, Azm230.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **20** 15:51:30.1±1.5, 7.09N×82.31W, h18km±9km, mb5.4/251 Error ellipse: s-maj=4.1km s-min=2.8km az=219.0*
NEIC Felt at Potrerillos Arriba. Also felt at Golfito, Costa Rica.

ISC 20 15:51:28.5±0.3, 7.04N±0.04×82.34W±0.04, h10km, n1058, σ1°40/1061, mb5.3/276, MS4.8/41, 1C-6D, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBS2		**1.77**	**350**	*i*P	**Pn**	**15 51 57.7**	**-1.6**
TBS2				*i* S	**Sn**	**15 52 19.6**	**-2.3**
BRU2	**Volcan**	**1.78**	**349**	*i*P	**Pn**	**15 51 57.3**	**-2.1**
BRU2				*i* S	**Sn**	**15 52 20.0**	**-2.2**
AZU	**Azuero**	**2.18**	**70**	*i*P	**Pn**	**15 52 03.5**	**-1.4**
AZU				*i* S	**Sn**	**15 52 31.5**	**-0.4**
PNME	**Penonome**	**2.46**	**54**	*i*P	**Pn**	**15 52 08.3**	**-0.3**
PNME				*e*S	**Sn**	**15 52 38.6**	**-0.2**
ZANG	**Zanguenga, Cho**	**3.10**	**52**	*i*P	**Pn**	**15 52 17.2**	**-0.3**
ZANG				*i* S	**Sn**	**15 52 54.2**	**-0.4**
MAPC	**Malpelo**	**3.10**	**166**	*e*P	Pn	15 52 12.3	-5.3
HDC	**Heredia**	**3.42**	**329**	*e*Pn	**Pn**	**15 52 21.2**	**-0.8**
UPD2	**Meteti**	**4.54**	**70**	*e*P	**Pn**	**15 52 38.8**	**+1.5**
UPD2				*e*S	**Sb**	**15 53 37.9**	**-5.2**
SOLC	**Bahia Solano**	**4.96**	**99**	*e*P	**Pn**	**15 52 40.4**	**-2.8**
CAPC	**Capurgana**	**5.19**	**72**	*e*P	**Pn**	**15 52 45.1**	**-1.1**
GRGC	**Isla de Gorgon**	**5.78**	**134**	*e*P	**Pn**	**15 52 51.4**	**-2.9**
MALC	**Bahia Malaga**	**5.82**	**121**	*e*P	**Pn**	**15 52 54.2**	**-0.7**
DBBC	**Dabeiba**	**6.08**	**90**	*e*P	**Pn**	**15 52 57.5**	**-1.1**
HELC	**Santa Helena**	**6.82**	**97**	*e*P	**Pn**	**15 53 08.9**	**0.0**
HELC	**Santa Helena**	**6.82**	**97**	*e*Pn	**Pn**	**15 53 09.2**	**+0.2**
GUYC	**Guyana, Colomb**	**7.14**	**104**	*e*P	**Pn**	**15 53 14.2**	**+0.7**
POPC	**Popayan, Colom**	**7.20**	**128**	*e*P	**Pn**	**15 53 11.8**	**-2.3**
TOLC	**Tolima**	**7.40**	**109**	*e*P	**Pn**	**15 53 17.6**	**+0.7**
CMBC	**Cumbal**	**7.55**	**143**	*e*P	**Pn**	**15 53 18.0**	**-1.1**
NORC	**Norcasia**	**7.57**	**101**	*e*P	**Pn**	**15 53 20.4**	**+1.4**
CRUC	**La Cruz**	**7.64**	**135**	*e*P	**Pn**	**15 53 21.1**	**+0.8**
OTAV	**Otavalo**	**7.79**	**150**	*e*P	**Pn**	**15 53 21.2**	**-1.2**
OTAV	**Otavalo**	**7.79**	**150**	*e*Pn	**Pn**	**15 53 22.4**	**0.0**
PRAC	**Prado**	**8.12**	**114**	*e*P	**Pn**	**15 53 27.5**	**+0.9**
PRAC	**Prado**	**8.12**	**114**	*e*Pn	**Pn**	**15 53 27.2**	**+0.6**
CNCH	**Conchagua**	**8.22**	**319**	*e*P	**Pn**	**15 53 27.4**	**-0.7**
ROSC	**El Rosal**	**8.27**	**105**	Pn	Pn	15 53 33.7	+4.8
	1.9nm,0.3s,baz=294,slow=6.8,SNR=15						
ROSC				LR	LR	15 56 04.5	
	comp=Z,3μm,19.0s,baz=292,slow=34						
ROSC	**El Rosal**	**8.27**	**105**	*e*P	Pn	15 53 34.8	+5.9
ROSC	**El Rosal**	**8.27**	**105**	*e*Pn	**Pn**	**15 53 28.9**	**0.0**
CHIC	**Chingaza**	**8.89**	**106**	*e*P	**Pn**	**15 53 39.9**	**+2.4**
OCAC	**Ocana**	**9.02**	**82**	*e*P	**Pn**	**15 53 41.3**	**+2.3**
VILC	**Villavicencio,**	**9.08**	**108**	*e*P	**Pn**	**15 53 43.8**	**+4.0**
BARC	**Barichara**	**9.11**	**92**	*e*P	**Pn**	**15 53 41.1**	**+0.9**
SJAC	**San Juan de Ar**	**9.15**	**114**	*e*P	**Pn**	**15 53 40.8**	**0.0**
RUSC	**La Rusia**	**9.27**	**97**	*e*P	**Pn**	**15 53 44.9**	**+2.2**
RUSC	**La Rusia**	**9.27**	**97**	*e*Pn	**Pn**	**15 53 45.2**	**+2.5**
LFRS	**El Faro**	**9.30**	**315**	*e*P	**Pn**	**15 53 40.4**	**-2.4**

LBRS	**Las Brisas**	**9.37**	**316**	*e*P	**Pn**	**15 53 44.2**	**+0.5**
LFU	**La Fuente**	**9.42**	**316**	*e*P	**Pn**	**15 53 44.1**	**-0.4**
SNET	**Serv Nac Est T**	**9.46**	**315**	*e*Pn	**Pn**	**15 53 43.7**	**-1.3**
CBRI	**Barrientos, No**	**9.49**	**85**	*e*P	**Pn**	**15 53 45.1**	**-0.4**
BOQS	**Boqueron**	**9.53**	**315**	*e*P	**Pn**	**15 53 43.2**	**-2.9**
CUS1	**Cusmapa**	**10.12**	**313**	*e*P	**Pn**	**15 53 53.5**	**-0.6**
PAYG	**Puerto Ayora**	**11.03**	**226**	*e*Pn	**Pn**	**15 54 07.6**	**+1.2**
SDV	**Santo Domingo**	**11.74**	**80**	Pn	**Pn**	**15 54 20.0**	**+3.7**
	3.1nm,0.3s,baz=290,slow=8.3,SNR=2.8						
SDV				Sn	**Sn**	**15 56 23.2**	**-4.4**
	2.7nm,0.3s,baz=118,slow=24,SNR=3.7						
SDV	**Santo Domingo**	**11.74**	**80**	*e*Pn	**Pn**	**15 54 15.3**	**-1.0**
	27nm,0.6s						
SDV				Sn	**Sn**	**15 56 23.2**	**-4.4**
MTDJ	**Mount Denham**	**12.06**	**22**	*e*Pn	**Pn**	**15 54 20.2**	**-0.5**
CCIG	**Comitan**	**13.28**	**315**	*e*Pn	**Pn**	**15 54 37.2**	**-0.1**
TEIG	**Tepich**	**14.31**	**337**	Pn	**P**	**15 54 58.6**	**0.0**
	1.9nm,0.3s,baz=198,slow=11,SNR=27						
TEIG				LR	LR	16 00 24.8	
	comp=Z,3μm,19.2s,baz=180,slow=38						
TEIG	**Tepich**	**14.31**	**337**	*e*P	**P**	**15 54 58.2**	**-0.3**
GTBY	**Guantanamo Bay**	**14.60**	**28**	*e*Pn	**Pn**	**15 54 56.2**	**+0.8**
ATAH	**Atahualpa**	**14.62**	**164**	Pn	**Pn**	**15 54 56.5**	**+0.6**
	0.1nm,0.3s,baz=340,slow=20,SNR=6.4						
ATAH				LR	LR	15 59 56.3	
	comp=Z,4μm,18.4s,baz=348,slow=35						
CMIG	**Matias Romero**	**15.81**	**310**	Pn	**Pn**	**15 55 10.5**	**-0.8**
	1.4nm,0.3s,baz=96,slow=8.3,SNR=19						
CMIG				Sn	**Sn**	**15 58 07.4**	**+0.7**
	0.3nm,0.3s,baz=98,slow=7.1,SNR=3.0						
CMIG				LR	LR	16 00 50.0	
	comp=Z,3μm,20.2s,baz=125,slow=36						
SDDR	**Presa de Saban**	**16.01**	**41**	*e*Pn	**Pn**	**15 55 12.3**	**-1.7**
	86nm,0.8s						
BANI	**BANI**	**16.23**	**45**	*e*Pn	**Pn**	**15 55 16.9**	**+0.1**
SDD	**Santo Domingo**	**16.59**	**46**	*e*Pn	**P**	**15 55 25.2**	**+1.4**
	623nm,1.9s						
PCRV	**Puerto La Cruz**	**17.78**	**79**	P	**Pn**	**15 55 36.0**	**-0.3**
	0.4nm,0.3s,baz=267,slow=4.9,SNR=18						
PCRV				LR	LR	16 04 36.8	
	comp=Z,3μm,19.4s,baz=272,slow=44						
IDE	**Isla Desecheo**	**18.35**	**51**	*e*Pn	**P**	**15 55 44.4**	**+1.0**
MPR	**Mayaguez**	**18.51**	**52**	*e*P	**Pn**	**15 55 46.1**	**+0.9**
	1μm,0.9s						
AGP	**Aguadilla**	**18.62**	**51**	*e*P	**Pn**	**15 55 46.8**	**+0.3**
	485nm,1.7s						
TLIG	**Tlapa**	**18.97**	**305**	*e*P	**Pn**	**15 55 52.1**	**+1.1**
	130nm,1.1s						
SJG	**San Juan**	**19.23**	**54**	P	**Pn**	**15 55 54.3**	**+0.3**
	2.1nm,0.3s,baz=248,slow=5.6,SNR=22						
SJG				Sn	**Sn**	**15 59 29.8**	**+0.1**
	5.7nm,0.3s,baz=342,slow=19,SNR=4.2						
SJG				LR	LR	16 03 22.5	
	comp=Z,2μm,21.3s,baz=244,slow=37						
SJG	**San Juan**	**19.23**	**54**	*e*P	**P**	**15 55 53.5**	**+0.4**
SJG						15 59 29.8	
SJG				pmax	pmax		
	comp=Z,120nm,1.0s						
SJG	**San Juan**	**19.23**	**54**	*e*P	**P**	**15 55 53.5**	**+0.4**
	comp=Z,120nm,1.0s						
SJG				Sn	**Sn**	**15 59 29.8**	**+0.1**
HUMP	**Col San Antoni**	**19.49**	**54**	*e*P	**P**	**15 55 54.9**	**-0.9**
	comp=Z,104nm,1.1s						
CBYP	**Canovanas**	**19.55**	**54**	*e*P	**P**	**15 55 57.0**	**+0.4**
	comp=Z,504nm,1.9s						
NNA	**Nana**	**19.68**	**164**	P	**P**	**15 55 58.4**	**+0.4**
	comp=Z,2.0nm,0.3s,baz=355,slow=11,SNR=9.0						
NNA				LR	LR	16 02 48.1	
	comp=Z,976nm,21.6s,baz=326,slow=35						
NNA	**Nana**	**19.68**	**164**	*e*P	**P**	**15 55 58.1**	**+0.2**
NNA				pmax	pmax		
	comp=Z,50nm,0.8s						
NNA	**Nana**	**19.68**	**164**	*e*P	**P**	**15 55 58.1**	**+0.2**
	comp=Z,50nm,0.8s						
CDVI	**St. Croix**	**20.18**	**57**	*e*P	**P**	**15 56 02.7**	**-0.7**
	comp=Z,1μm,2.0s						
STVI	**Saint Thomas**	**20.32**	**55**	*e*P	**P**	**15 56 04.5**	**-0.4**
	comp=Z,106nm,1.0s						
DWPF	**Disney Wildern**	**20.97**	**2**	*e*P	**P**	**15 56 13.0**	**+1.2**
	comp=Z,179nm,1.4s						
GRGR	**Grenville**	**21.01**	**74**	*e*P	**P**	**15 56 14.2**	**+1.8**
	comp=Z,341nm,1.0s						
ABVI	**Anegada Island**	**21.02**	**

540A	Vidor baz=152	25.51	336	P		P		15 56 58.2	+1.0
344A	Westbrook Farm baz=160,SNR=21	25.52	343	P		P		15 56 58.1	+0.8
247A	Quitman baz=165,SNR=23	25.56	348	P		P		15 56 58.2	+0.6
934A	Benavides baz=140,SNR=16	25.57	325	P		P		15 56 58.4	+0.6
343A	Vidalia baz=158	25.63	341	P		P		15 56 58.7	+0.5
246A	Jackson Lee, B baz=164	25.64	347	P		P		15 56 58.6	+0.2
441A	DeRidder baz=154,SNR=6.2	25.69	338	P		P		15 56 59.5	+0.7
835A	Beeville baz=142	25.71	327	P		P		15 56 59.5	+0.4
539A	Cross D Ranch, baz=151	25.73	335	P		P		15 56 59.6	+0.4
245A	Little AP, Sta baz=163,SNR=12	25.84	345	P		P		15 57 00.4	+0.2
736A	Circle Diamond baz=145,SNR=15	25.85	329	P		P		15 57 01.0	+0.7
637A	Eagle Lake baz=147	25.89	331	P		P		15 57 01.0	+0.4
CSU	Charleston Sou	25.90	4	eP		P		15 57 02.1	+1.4
342A	Flagon Creek P baz=157	25.95	340	P		P		15 57 01.6	+0.4
440A	Kirbyville baz=153	25.98	337	P		P		15 57 01.2	-0.2
834A	Tilden baz=141,SNR=9.5	25.98	326	P		P		15 57 01.8	+0.3
933A	Laredo baz=139,SNR=25	26.01	324	P		P		15 57 02.3	+0.5
NHSC	New Hope comp=Z,402nm,1.8s	26.01	4	eP		P		15 57 04.3	+2.6
244A	Avery, Jackson baz=161,SNR=8.0	26.06	344	P		P		15 57 02.2	0.0
147A	Livingston baz=166,SNR=20	26.09	349	P		P		15 57 02.7	+0.2
243A	Waterproof baz=159	26.14	342	P		P		15 57 03.1	+0.2
735A	Kenedy baz=143	26.15	328	P		P		15 57 03.4	+0.3
538A	Harpers Horsep baz=149	26.16	333	P		P		15 57 03.3	+0.3
VBMS	Vicksburg baz=161	26.18	344	P		P		15 57 03.3	0.0
VBMS	Vicksburg comp=Z,252nm,1.5s	26.18	344	eP		P		15 57 03.0	-0.2
341A	Kurthwood baz=155,SNR=7.7	26.20	339	P		P		15 57 03.0	-0.4
146A	Union baz=165	26.22	347	P		P		15 57 04.4	+0.7
LRAL	Lakeview Retre comp=Z,88nm,1.0s	26.22	351	eP		P		15 57 03.2	-0.4
GOGA	Godfrey	26.26	358	eP		P		15 57 03.4	-0.6
GOGA	comp=Z,114nm,1.6s			pmax		pmax			
GOGA	Godfrey comp=Z,114nm,1.6s	26.26	358	eP		P		15 57 03.4	-0.6
636A	Smothers Creek baz=145,SNR=21	26.28	330	P		P		15 57 04.2	+0.1
439A	Center Grove, baz=151	26.34	335	P		P		15 57 04.7	-0.1
145A	Houston Renfro baz=163	26.40	345	P		P		15 57 05.7	+0.5
537A	Green Hill Far baz=147,SNR=12	26.41	332	P		P		15 57 05.3	-0.1
242A	Grayson baz=158	26.52	341	P		P		15 57 05.9	-0.4
340A	Bronson baz=154	26.55	337	P		P		15 57 06.3	-0.3
144A	Alexander Plac baz=162	26.55	345	P		P		15 57 06.6	0.0
734A	La Parita Cree baz=142,SNR=6.9	26.55	327	P		P		15 57 06.3	-0.3
635A	Leesville baz=144	26.56	329	P		P		15 57 06.3	-0.4
Z47A	Carrollton baz=167	26.57	349	P		P		15 57 07.0	+0.2
438A	Sam Houston St baz=150,SNR=5.6	26.61	334	P		P		15 57 06.9	-0.2
833A	Chaparral WMA, baz=140,SNR=7.9	26.61	325	P		P		15 57 06.9	-0.4
Z48A	Northport baz=168,SNR=53	26.65	350	P		P		15 57 07.3	-0.1
339A	Huntington baz=152	26.73	336	P		P		15 57 07.7	-0.6
Z46A	Louisville baz=165,SNR=10	26.73	348	P		P		15 57 08.5	+0.2
241A	Mo Tay, Goldon baz=156	26.74	340	P		P		15 57 08.2	-0.2
536A	Bastrop baz=146	26.77	331	P		P		15 57 08.5	-0.1
733A	Divot King Ran baz=140	26.86	325	P		P		15 57 09.3	-0.1
634A	China Grove, S baz=143	26.86	328	P		P		15 57 09.2	-0.2
143A	Socs Landing, baz=160	26.89	343	P		P		15 57 09.1	-0.5
142A	Monroe baz=158	26.91	342	P		P		15 57 09.4	-0.4
832A	Faith Ranch, C baz=138,SNR=12	26.92	324	P		P		15 57 09.9	-0.1
437A	Phantom Ranch, baz=149	26.97	333	P		P		15 57 10.0	-0.4
535A	Dale baz=145,SNR=8.9	26.98	330	P		P		15 57 09.8	-0.7
240A	Hunter Patters baz=154	27.06	338	P		P		15 57 10.9	-0.3
338A	Crockett baz=151,SNR=7.1	27.06	335	P		P		15 57 10.9	-0.3
Z45A	Winona baz=164	27.07	346	P		P		15 57 11.3	0.0
LPAZ	La Paz comp=Z,5.9nm,0.6s,baz=339,slow=12,SNR=18	27.11	149	P		P		15 57 12.9	+0.4
LPAZ	comp=Z,2µm,18.8s,baz=318,slow=39			LR		LR		16 09 14.0	
LPAZ	La Paz comp=Z,58nm,1.9s	27.11	149	eP		P		15 57 12.5	0.0
LPAZ				pmax		pmax			
LPAZ	La Paz comp=Z,58nm,1.9s	27.11	149	eP		P		15 57 12.5	0.0
JSC	Jenkinsville JSC	27.13	2	eP		P		15 57 12.1	+0.3
JSC	comp=Z,42nm,1.3s			pmax		pmax			
JSC	Jenkinsville comp=Z,42nm,1.3s	27.13	2	eP		P		15 57 12.1	+0.3
NATX	Nacogdoches baz=152	27.15	337	P		P		15 57 11.7	-0.3
NATX	Nacogdoches comp=Z,345nm,1.7s	27.15	337	eP		P		15 57 12.0	0.0
Z44A	Pea Ridge, Bel baz=162	27.16	345	P		P		15 57 12.2	+0.1
Y47A	UCPARC, Winfie baz=168,SNR=28	27.21	350	P		P		15 57 12.0	-0.5
436A	Wall Ranch, Ga baz=147,SNR=6.8	27.22	332	P		P		15 57 12.0	-0.6
141A	Papa Simpson, baz=157	27.27	340	P		P		15 57 12.8	-0.3
337A	Centerville baz=150	27.27	334	P		P		15 57 13.1	0.0
239A	Gary baz=153	27.30	337	P		P		15 57 13.1	-0.3
Z43A	Armstrong Fami baz=160	27.32	344	P		P		15 57 12.9	-0.6
633A	Saathoff Ranch baz=141,SNR=10	27.36	327	P		P		15 57 13.3	-0.7
Y46A	Houston baz=166,SNR=13	27.38	348	P		P		15 57 13.6	-0.5
534A	Blanco baz=143,SNR=20	27.44	328	P		P		15 57 13.5	-1.2
Y45A	Yeager Farm, C baz=164,SNR=13	27.51	347	P		P		15 57 15.2	0.0
140A	Cam and Jess, baz=155	27.53	339	P		P		15 57 15.3	-0.2
238A	Jacksonville baz=152	27.55	336	P		P		15 57 15.3	-0.3
Z42A	Norrel Spur, H baz=159	27.58	342	P		P		15 57 15.2	-0.6
435B	Jarrell baz=146,SNR=9.6	27.60	331	P		P		15 57 15.5	-0.7
336A	Riesel baz=148,SNR=11	27.76	333	P		P		15 57 16.5	-1.0
Y44A	Strider, Charl baz=163	27.76	346	P		P		15 57 17.1	-0.4
533A	Kerrville baz=142,SNR=7.8	27.77	328	P		P		15 57 16.5	-1.1
237A	Washetta, Mont baz=150	27.83	335	P		P		15 57 17.9	-0.2
Z41A	Richland Creek baz=157	27.83	341	P		P		15 57 17.6	-0.5
Y43A	Makayla and Ka baz=162	27.89	345	P		P		15 57 17.9	-0.7
335A	Moody baz=147,SNR=9.1	27.94	332	P		P		15 57 18.4	-0.8
434A	Burnet baz=144,SNR=21	27.97	330	P		P		15 57 18.3	-1.1
KMSC	Kings Mountain baz=182,SNR=5.8	27.98	2	P		P		15 57 19.6	+0.2
KMSC	Kings Mountain comp=Z,93nm,1.8s	27.98	2	eP		P		15 57 19.8	+0.3
X45A	UM Field Stati baz=165	28.02	348	P		P		15 57 18.9	-0.9
Z40A	Long Farm, Mag baz=156	28.03	340	P		P		15 57 19.6	-0.3
Y42A	Garnett, Star baz=160	28.06	343	P		P		15 57 19.8	-0.4
138A	Matatall Enter baz=152,SNR=10	28.11	337	P		P		15 57 20.3	-0.3
CCAR	Cane Creek comp=Z,475nm,1.7s	28.13	343	eP		P		15 57 20.6	-0.1
SWET	Sewanee comp=Z,19nm,1.0s	28.23	354	eP		P		15 57 21.0	-0.8
X44A	Crenshaw baz=163	28.26	346	P		P		15 57 20.8	-1.1
Z39A	Irene McRaven, baz=155	28.29	339	P		P		15 57 21.7	-0.5
137A	Heron Place, G baz=151,SNR=7.5	28.33	336	P		P		15 57 22.2	-0.3
WLAR	White Oak Lake comp=Z,170nm,1.4s	28.33	341	eP		P		15 57 22.0	-0.6
433A	Art baz=143,SNR=61	28.34	328	P		P		15 57 21.9	-0.8
CPCT	Cooper Cave comp=Z,34nm,1.4s	28.34	356	eP		P		15 57 22.5	-0.2
Y41A	Eaglette Beard baz=158	28.35	342	P		P		15 57 22.2	-0.5
CNNC	Cliffs of the comp=Z,71nm,1.3s	28.36	8	eP		P		15 57 22.7	-0.1
334A	Lometa baz=145,SNR=37	28.37	330	P		P		15 57 22.1	-0.9
X43A	Marvell baz=162	28.46	345	P		P		15 57 23.2	-0.5
JCT	Junction City baz=141,SNR=21	28.50	327	P		P		15 57 23.7	-0.5
JCT	Junction City JCT	28.50	327	eP pmax		P pmax		15 57 24.0	-0.2
JCT	comp=Z,311nm,1.8s Junction City comp=Z,311nm,1.8s	28.50	327	eP		P		15 57 24.0	-0.2
TKL	Tuckaleechee C comp=Z,20nm,1.2s,baz=166,slow=8.1,SNR=8.5	28.51	358	P		P		15 57 24.6	+0.4
TKL	comp=Z,1µm,18.1s,baz=181,slow=38			LR		LR		16 09 17.1	
TKL	Tuckaleechee C TKL	28.51	358	eP pmax		P pmax		15 57 24.3	+0.1
TKL	comp=Z,74nm,1.7s Tuckaleechee C comp=Z,74nm,1.7s	28.51	358	eP		P		15 57 24.3	+0.1
136A	Ennis baz=149	28.55	334	P		P		15 57 23.7	-0.8
WHTX	Lake Whitney, baz=147,SNR=12	28.55	332	P		P		15 57 23.5	-1.0
WHTX	Lake Whitney, comp=Z,147nm,1.4s	28.55	332	eP		P		15 57 23.5	-1.0
Z38A	Mt. Pleasant baz=153	28.60	337	P		P		15 57 24.6	-0.3
W45A	Hickory Valley baz=166	28.68	348	P		P		15 57 24.7	-1.0
Y40A	Okolona baz=157	28.68	341	P		P		15 57 25.1	-0.6
333A	Richland Sprin baz=144,SNR=36	28.74	329	P		P		15 57 25.5	-0.8
W44A	Shelby Farms P baz=164	28.80	347	P		P		15 57 25.9	-0.8
Z37A	Pogue Cattle C baz=152	28.80	336	P		P		15 57 25.9	-0.8
MET	Memphis--Engin comp=Z,195nm,0.8s	28.81	347	eP		P		15 57 27.2	+0.5
234A	Claiborne baz=146,SNR=22	28.88	331	P		P		15 57 26.6	-0.9
X41A	Kaden, Bauxite baz=159	28.89	342	P		P		15 57 26.5	-1.0
Y39A	Lockesburg baz=155	28.89	339	P		P		15 57 26.8	-0.8
X40A	Basin Creek Fa baz=158,SNR=6.9	28.98	342	P		P		15 57 27.5	-0.9
135A	Vickery Place, baz=148	29.00	333	P		P		15 57 27.5	-1.1
UALR	University of comp=Z,269nm,2.0s	29.10	343	eP		P		15 57 28.3	-1.1
Y38A	Idabel baz=154	29.11	338	P		P		15 57 28.4	-1.0
Z36A	Blue Ridge baz=150	29.19	335	P		P		15 57 29.4	-0.8
V45A	Humboldt baz=166	29.20	349	P		P		15 57 29.1	-1.2
233A	Rising Star baz=145,SNR=11	29.26	330	P		P		15 57 30.1	-0.8
MIAR	Mount Ida baz=157,SNR=19	29.27	341	P		P		15 57 30.0	-0.9
MIAR	Mount Ida MIAR	29.27	341	eP pmax		P pmax		15 57 29.6	-1.3
MIAR	comp=Z,203nm,1.9s Mount Ida comp=Z,203nm,1.9s	29.27	341	eP		P		15 57 29.6	-1.3
134A	White-Moore Ra baz=147,SNR=8.3	29.32	332	P		P		15 57 30.2	-1.2
WVT	Waverly WVT	29.39	351	eP pmax		P pmax		15 57 30.5	-1.4
WVT	comp=Z,50nm,1.1s Waverly comp=Z,50nm,1.1s	29.39	351	eP		P		15 57 30.5	-1.4
TZTN	Tazewell comp=Z,31nm,1.1s	29.39	358	eP		P		15 57 31.7	-0.2
HBAR	Harrisburg	29.39	346	eP		P		15 57 30.7	-1.2
X39A	Fountain Ranch baz=156,SNR=13	29.41	340	P		P		15 57 31.3	-0.9
PB11	IPOC Station P comp=Z,37nm,0.8s	29.42	155	eP		P		15 57 33.2	+0.7
W41B	Gary Mavity, V baz=160,SNR=25	29.44	343	P		P		15 57 31.5	-1.0
V44A	Blytheville baz=165	29.48	347	P		P		15 57 31.8	-0.9
Y37A	Hugo baz=152,SNR=8.6	29.48	337	P		P		15 57 31.9	-0.9
X301	Greenbrier Sit comp=Z,142nm,1.5s	29.55	343	eP		P		15 57 32.2	-1.2
WHAR	Wooly Hollow comp=Z,146nm,1.4s	29.56	343	eP		P		15 57 32.2	-1.3
X201	Greenbrier Sit comp=Z,334nm,1.9s	29.59	343	eP		P		15 57 32.7	-1.1
Z35A	Perchaven, San baz=149	29.59	334	P		P		15 57 32.9	-0.8
GNAR	Gosnell	29.64	347	eP		P		15 57 33.5	-0.6
Y36A	Durant baz=151	29.68	336	P		P		15 57 34.1	-0.4
W40A	Ferguson Farm, baz=158,SNR=5.8	29.70	342	P		P		15 57 33.9	-0.9
HPIG	comp=Z,59nm,1.5s	29.71	315	eP		P		15 57 36.2	+1.0
133A	Hamilton Ranch baz=145,SNR=20	29.75	331	P		P		15 57 34.6	-0.7
UTMT	University of comp=Z,230nm,1.3s	29.77	349	eP		P		15 57 34.7	-0.6
GLAT	Glass	29.78	349	eP		P		15 57 35.0	-0.4
V42A	Cord baz=162,SNR=19	29.81	345	P		P		15 57 34.3	-1.3
X38A	Whitesboro baz=154,SNR=14	29.81	339	P		P		15 57 35.2	-0.5
Z34A	Collier Ranch, baz=148	29.92	333	P		P		15 57 36.1	-0.6
TXAR	Lajitas Array comp=Z,9.9nm,0.9s,baz=141,slow=8.1,SNR=75	29.92	320	P PcP		P PcP		15 57 37.9 16 00 41.0	+1.0 +1.2
TXAR	comp=Z,0.8nm,0.6s,baz=161,slow=8.0,SNR=4.0			LR		LR		16 10 59.8	
TX31	Lajitas Ar. Si	29.93	320	eP		P		15 57 37.5	+0.6
W39A	Magazine baz=157,SNR=25	29.93	341	P		P		15 57 36.3	-0.5
X37A	Clayton baz=153,SNR=12	29.93	338	P		P		15 57 36.0	-0.8
V41A	Mountainview baz=160,SNR=17	29.99	344	P		P		15 57 36.2	-1.1
Y35A	Marietta baz=150,SNR=24	29.99	335	P		P		15 57 37.3	-0.1
W38A	Poteau baz=155,SNR=10	30.06	340	P		P		15 57 37.3	-0.6
ABTX	Abilene, Hawle baz=144,SNR=10	30.11	330	P		P		15 57 37.6	-0.9
ABTX	Abilene, Hawle comp=Z,74nm,1.4s	30.11	330	eP		P		15 57 37.2	-1.3
H06E1	SOCORRO T-PHAS SNR=17	30.15	296	T		T		16 29 15.6	
V40A	Witts Springs baz=159,SNR=8.0	30.20	343	P		P		15 57 38.1	-1.0
Z33A	Whitaker Ranch baz=146,SNR=13	30.23	332	P		P		15 57 38.6	-0.9
U42A	Revenden baz=162,SNR=31	30.29	346	P		P		15 57 38.7	-1.2
X36A	Centrahoma baz=152	30.29	337	P		P		15 57 38.9	-1.0
Y34A	Reagan Ranch, baz=148,SNR=9.9	30.34	334	P		P		15 57 39.2	-1.2
X35A	Drake baz=150,SNR=7.0	30.39	336	P		P		15 57 39.7	-1.2
W37B	Quinton baz=154,SNR=10.0	30.45	339	P		P		15 57 39.9	-1.4
U41A	Viola baz=161	30.45	345	P		P		15 57 40.3	-1.1
V39A	Pettigrew baz=157,SNR=11	30.48	342	P		P		15 57 40.2	-1.4
PBMO	Poplar Bluff comp=Z,46nm,1.0s	30.51	347	eP		P		15 57 40.8	-1.1
PB01	IPOC Station P comp=Z,86nm,1.7s	30.63	156	eP		P		15 57 43.5	+0.3
U40A	Yellville baz=159,SNR=19	30.72	343	P		P		15 57 42.9	-0.9
W36A	Wetumka baz=152	30.74	337	P		P		15 57 42.5	-1.4
V38A	Canehill baz=156,SNR=13	30.75	341	P		P		15 57 42.2	-1.8
Y33A	Hilltop Ranch, baz=147	30.77	333	P		P		15 57 43.4	-0.9
X34A	Smith Ranch, M baz=149,SNR=15	30.92	335	P		P		15 57 44.4	-1.2
U39A	Green Forest baz=158,SNR=7.2	30.93	342	P		P		15 57 44.2	-1.4
HHAR	Hobbs comp=Z,76nm,1.7s	30.98	342	eP		P		15 57 44.4	-1.6
W35A	Tecumseh baz=151	31.01	336	P		P		15 57 44.7	-1.6
V37A	Hulbert baz=155,SNR=7.1	31.01	340	P		P		15 57 44.7	-1.6
S45A	Carrier Mills baz=168,SNR=7.8	31.02	350	P		P		15 57 44.8	-1.6
T41A	Mountain View baz=152,SNR=25	31.07	345	P		P		15 57 45.6	-1.2
S44A	Carbondale baz=167,SNR=14	31.15	349	P		P		15 57 46.7	-0.8
USIN	University of comp=Z,191nm,1.1s	31.16	352	eP		P		15 57 46.5	-1.1
X33A	Lawton baz=148,SNR=9.1	31.16	334	P		P		15 57 46.6	-1.1
SIUC	Southern Illin comp=Z,110nm,1.2s	31.17	349	eP		P		15 57 46.8	-0.8
S43A	Fulton Ridge, baz=165,SNR=15	31.19	348	P		P		15 57 46.7	-1.2
V36A	Jenks baz=153,SNR=8.4	31.21	338	P		P		15 57 46.6	-1.5
SLBS	Sierra La Lagu comp=Z,53nm,1.3s	31.24	305	eP		P		15 57 51.3	+2.7
WCI	Wyandotte Cave	31.25	354	eP		P		15 57 47.3	-1.1
WCI	comp=Z,184nm,1.3s			pmax		pmax			
WCI	Wyandotte Cave comp=Z,184nm,1.3s	31.25	354	eP		P		15 57 47.3	-1.1
U38A	Gravette baz=156,SNR=7.7	31.27	341	P		P		15 57 47.2	-1.4
TUL1	Leonard baz=154	31.27	339	P		P		15 57 47.0	-1.5
TUL1	Leonard comp=Z,147nm,1.8s	31.27	339	eP		P		15 57 46.8	-1.8
T40A	Mansfield baz=160,SNR=28	31.37	344	P		P		15 57 48.3	-1.2
X32A	Elmer baz=146,SNR=6.2	31.41	332	P		P		15 57 48.7	-1.3
W34A	Bridge Creek, baz=150	31.44	335	P		P		15 57 48.8	-1.3
W34A	Bridge Creek, comp=Z,61nm,1.1s	31.44	335	eP		P		15 57 48.5	-1.7
WMOK	Wichita Mounta baz=147,SNR=16	31.45	333	P		P		15 57 48.8	-1.5
WMOK	Wichita Mounta WMOK	31.45	333	eP		P		15 57 48.5	-1.7
WMOK	comp=Z,25nm,1.0s Wichita Mounta comp=Z,25nm,1.0s	31.45	333	eP		P		15 57 48.5	-1.7
U37A	Salina baz=155,SNR=6.7	31.48	340	P		P		15 57 49.1	-1.3
T39A	Clever baz=159,SNR=5.7	31.50	343	P		P		15 57 49.1	-1.5
V35A	Meyer Ranch, C baz=152,SNR=5.4	31.53	337	P		P		15 57 49.0	-1.9
S41A	Jilco Farms, baz=162,SNR=13	31.59	346	P		P		15 57 49.9	-1.5
R44A	Waltonville baz=167,SNR=15	31.66	350	P		P		15 57 51.1	-0.9
W33A	Caddo, Fort Co baz=148,SNR=7.9	31.66	334	P		P		15 57 51.1	-1.0
U36A	Oologah baz=154	31.68	339	P		P		15 57 51.0	-1.1
T38A	Diamond baz=157,SNR=7.4	31.78	342	P		P		15 57 51.9	-1.3
S40A	Lebanon baz=161,SNR=35	31.79	345	P		P		15 57 52.2	-1.0
V34A	Guthrie baz=150	31.86	336	P		P		15 57 52.0	-1.8
V34A	Guthrie comp=Z,71nm,1.4s	31.86	336	eP		P		15 57 51.0	-2.7
OLIL	Olney comp=Z,267nm,1.3s	31.98	351	eP		P		15 57 53.7	-1.1
W32A	Sentinel baz=147,SNR=15	31.98	333	P		P		15 57 53.8	-1.1
U35A	Pawnee baz=152	32.02	338	P		P		15 57 53.8	-1.4
T37A	Cheneyville 18 baz=156,SNR=28	32.06	341	P		P		15 57 54.2	-1.4
S39A	Bolivar baz=159,SNR=23	32.10	343	P		P		15 57 54.4	-1.5
V33A	Lossen Ranch, baz=149	32.16	335	P		P		15 57 54.9	-1.6
BLO	Bloomington BLO	32.21	354	eP		P		15 57 55.9	-0.9
BLO	comp=Z,66nm,0.8s			pmax		pmax			
BLO	Bloomington comp=Z,66nm,0.8s	32.21	354	eP		P		15 57 55.9	-0.9
S38A	Stockton baz=158,SNR=13	32.21	343	P		P		15 57 55.4	-1.5
LVC	Limon Verde comp=Z,54nm,1.4s	32.27	156	eP		P		15 57 58.1	+0.2
Q44A	Meyer Farm, Va baz=168	32.29	350	P		P		15 57 56.6	-0.9
T36A	Boggs Farm, Ca baz=154,SNR=10.0	32.33	340	P		P		15 57 56.9	-1.0
R40A	Maddies Statio baz=161,SNR=13	32.38	345	P		P		15 57 56.9	-1.5
U34A	Anderson Ranch baz=151	32.39	337	P		P		15 57 56.8	-1.7
U34A	Anderson Ranch comp=Z,42nm,1.1s	32.39	337	eP		P		15 57 55.8	-2.6
T35A	Sooner Cattle baz=153,SNR=15	32.42	339	P		P		15 57 57.2	-1.6
Q43A	New Douglas baz=166,SNR=9.0	32.45	349	P		P		15 57 57.4	-1.4
Q42A	Golden Eagle baz=165,SNR=13	32.58	348	P		P		15 57 59.2	-0.8
R39A	Chumby, Stover baz=160,SNR=19	32.60	344	P		P		15 57 59.0	-1.4
S37A	Fort Scott baz=156,SNR=18	32.61	341	P		P		15 57 59.1	-1.3
U33A	Lingo Farm, Me baz=150	32.61	336	P		P		15 57 58.5	-2.0
MNTX	Cornudas Mount baz=134,SNR=105	32.62	322	P		P		15 58 01.3	+0.7
MNTX	Cornudas Mount comp=Z,125nm,1.3s	32.62	322	eP		P		15 58 00.8	+0.2
R38A	Fenwick Farm, baz=158,SNR=12	32.73	343	P		P		15 57 59.8	-1.6
T34A	McClaskey Farm baz=152,SNR=8.1	32.77	338	P		P		15 58 00.1	-1.7
S36A	Lake Cedric, C	32.83	340	P		P		15 58 01.0	-1.3

baz=155,SNR=13
U32A **Winter Ranch,** 32.94 335 P P 15 58 01.8 -1.5
baz=148
AMTX **Amarillo** 32.94 330 P P 15 58 02.4 -1.0
baz=143
AMTX **Amarillo** 32.94 330 eP P 15 58 02.0 -1.3
comp=Z,69nm,1.4s
Q40A **Laux Farm, Aux** 33.00 346 P P 15 58 02.2 -1.6
baz=162,SNR=23
S35A **Otter Creek Ra** 33.04 339 P P 15 58 02.7 -1.4
baz=154,SNR=7.8
ACSO **Alum Creek Sta** 33.05 359 eP P 15 58 03.7 -0.5
comp=Z,79nm,1.0s
R37A **Teagarden Farm** 33.12 342 P P 15 58 03.3 -1.5
baz=157,SNR=7.2
P42A **Winchester** 33.19 349 P P 15 58 04.3 -1.1
baz=165,SNR=16
T33A **Patterson Ranc** 33.23 336 P P 15 58 04.2 -1.6
baz=150
MVL **Millersville** 33.25 8 eP P 15 58 07.1 +1.2
O56A **Blue Knob Stat** 33.26 5 P P 15 58 06.6 +0.5
baz=187,SNR=8.5
PSUB **Penn St. - Bra** 33.32 10 eP P 15 58 07.2 +0.7
comp=Z,84nm,1.9s
S34A **Willow Spring** 33.34 338 P P 15 58 05.7 -1.1
baz=153
R36A **Gordon, Harris** 33.34 341 P P 15 58 05.4 -1.4
baz=156,SNR=12
Q38A **Cooks Store, C** 33.37 344 P P 15 58 05.5 -1.5
baz=159,SNR=9.1
P41A **Barry, Barry** 33.42 348 P P 15 58 06.0 -1.5
baz=164,SNR=13
SFIN **Lafayette** 33.47 353 P P 15 58 06.1 -1.7
baz=171,SNR=11
SFIN **Lafayette** 33.47 353 eP P 15 58 06.0 -1.8
comp=Z,78nm,1.2s
P40A **Paris** 33.51 346 P P 15 58 06.6 -1.6
baz=162,SNR=21
Q37A **Longview Farm,** 33.53 343 P P 15 58 07.1 -1.3
baz=158
R35A **Emporia Munici** 33.57 340 P P 15 58 07.9 -0.9
baz=155
S33A **Kaszmaul Farm,** 33.58 337 P P 15 58 07.6 -1.2
baz=151
T32A **Huddler Ranch,** 33.59 336 P P 15 58 07.7 -1.3
baz=149
P39B **Salisbury** 33.64 345 P P 15 58 07.9 -1.4
baz=161,SNR=25
SSPA **Standing Stone** 33.69 6 eP P 15 58 09.9 +0.2
comp=Z,102nm,1.8s
O42A **Bath** 33.73 349 P P 15 58 08.4 -1.7
baz=166,SNR=5.9
O41A **Passleys Farm,** 33.81 348 P P 15 58 09.1 -1.7
baz=165,SNR=28
N54A **Moraine State** 33.84 3 P P 15 58 10.3 -0.8
baz=184
Q36A **Arnold C. Orve** 33.91 342 P P 15 58 10.2 -1.5
baz=156,SNR=7.2
R34A **Isabella, Hill** 33.92 339 P P 15 58 10.9 -1.0
baz=153,SNR=24
HDIL **Hopedale** 33.95 350 P P 15 58 10.4 -1.6
baz=168,SNR=8.3
HDIL **Hopedale** 33.95 350 eP P 15 58 10.3 -1.6
P38A **Dawn** 33.97 344 P P 15 58 10.4 -1.7
baz=160,SNR=7.4
LUPA **Lehigh Univers** 33.99 10 eP P 15 58 13.6 +1.3
comp=Z,45nm,1.0s
Q35A **Mercer Eighty,** 34.00 341 P P 15 58 11.5 -1.1
baz=155,SNR=11
O40A **La Belle** 34.03 347 P P 15 58 11.1 -1.6
baz=163,SNR=8.4
S32A **Newby Ranch, P** 34.04 336 P P 15 58 11.7 -1.1
baz=150
P37A **Lathrop** 34.16 343 P P 15 58 12.1 -1.8
baz=158,SNR=6.8
R33A **Olander Ranch,** 34.20 338 P P 15 58 13.0 -1.2
baz=152,SNR=18
BRNJ **Basking Ridge** 34.21 11 eP P 15 58 15.9 +1.7
comp=Z,127nm,1.5s
N59A **State Game Lan** 34.24 9 P P 15 58 14.8 +0.2
baz=192
O39A **Kirksville** 34.31 346 P P 15 58 13.7 -1.5
baz=162,SNR=5.8
Q34A **Chapman** 34.37 340 P P 15 58 14.2 -1.4
baz=154,SNR=6.5
M54A **Oil Creek Stat** 34.41 4 P P 15 58 16.8 +0.8
baz=185,SNR=6.4
KSU1 **Kansas State U** 34.41 340 P P 15 58 14.9 -1.2
baz=154
KSU1 **Kansas State U** 34.41 340 eP P 15 58 14.4 -1.7
O38A **Galt** 34.42 345 P P 15 58 14.7 -1.4
baz=160
P36A **Good Intent, A** 34.44 342 P P 15 58 15.0 -1.3
baz=157,SNR=15
R32A **Long Quarter,** 34.57 337 P P 15 58 16.8 -0.8
baz=150
P35A **Duane Minner,** 34.61 341 P P 15 58 16.2 -1.6
baz=156,SNR=11
O37A **Wolven Farm, M** 34.64 344 P P 15 58 16.6 -1.4
baz=159
121A **Cookes Peak, D** 34.69 320 P P 15 58 21.0 +2.3
baz=132,SNR=89
121A **Cookes Peak, D** 34.69 320 eP P 15 58 20.8 +2.1
comp=Z,738nm,1.8s
Q33A **Connelly Farm,** 34.75 339 P P 15 58 18.0 -1.0
baz=152,SNR=8.4
O36A **Bolckow** 34.84 343 P P 15 58 18.2 -1.5
baz=158
P34A **Walnut Farm, R** 34.89 340 P P 15 58 19.0 -1.2
baz=154,SNR=12
N39A **Derby Farms, D** 34.89 346 P P 15 58 18.7 -1.5
baz=162,SNR=11
319A **Douglas** 34.92 317 eP P 15 58 23.0 +2.3
comp=Z,84nm,1.0s
N38A **Joes South For** 34.99 346 P P 15 58 20.1 -0.9
baz=161
Q32A **Meitler Ranch,** 35.01 338 P P 15 58 20.0 -1.2
baz=151,SNR=6.6
BNM **Barren Site** 35.08 324 eP P 15 58 23.2 +1.0
P33A **Williams Farm,** 35.09 339 P P 15 58 21.2 -0.7
baz=153
LPM **Los Pinos Moun** 35.20 324 eP P 15 58 24.2 +1.0
Y22D **IRIS PASSCAL I** 35.20 323 P P 15 58 25.0 +1.8
baz=134
Y22D **IRIS PASSCAL I** 35.20 323 eP P 15 58 25.6 +2.4
comp=Z,315nm,1.4s
N37A **Lee Faris, Mou** 35.21 344 P P 15 58 21.4 -1.5
baz=159,SNR=8.4
O35A **Humboldt** 35.24 342 P P 15 58 21.6 -1.7
baz=156,SNR=6.5
CBKS **Cedar Bluff** 35.32 336 P P 15 58 23.1 -0.8
baz=149
CBKS **Cedar Bluff** 35.32 336 eP P 15 58 23.2 -0.8
CBKS **Cedar Bluff** 35.32 336 eP P 15 58 23.1 -0.8
M39A **Webster** 35.39 347 P P 15 58 22.7 -1.7
baz=163,SNR=16
O34A **Beatrice** 35.42 341 P P 15 58 23.6 -1.2
baz=155,SNR=16
BINY **Binghamton** 35.46 8 eP P 15 58 25.4 +0.3
comp=Z,76nm,1.5s
N36A **Muff Farm, Cla** 35.47 343 P P 15 58 24.0 -1.2
baz=158
ANMO **Albuquerque** 35.55 325 P P 15 58 27.2 +1.1
baz=136
ANMO **Albuquerque** 35.55 325 i P P 15 58 26.8 +0.6
ANMO pmax pmax
comp=Z,116nm,2.0s
ANMO **Albuquerque** 35.55 325 eP P 15 58 26.6 +0.4
comp=Z,75nm,1.3s
LAZ **Ladron** 35.56 323 eP P 15 58 27.2 +0.9
M38A **Pleasantville** 35.57 346 P P 15 58 24.3 -1.7
baz=161,SNR=7.7
P32A **Huiting Farm,** 35.58 338 P P 15 58 25.2 -1.0
baz=152
O33A **Hebron** 35.62 340 P P 15 58 25.2 -1.3
baz=153,SNR=6.7
L41A **Preston** 35.63 350 P P 15 58 24.8 -1.7
baz=166,SNR=23
N35A **Tabor** 35.71 343 P P 15 58 25.9 -1.3
baz=157
L40A **Anamosa** 35.76 349 P P 15 58 26.0 -1.6
baz=165,SNR=33
MMNY **Mt. Morris Dam** 35.76 6 eP P 15 58 27.2 -0.5
M37A **Trindle Farm,** 35.77 345 P P 15 58 26.5 -1.3
baz=160
N34A **Lincoln** 35.95 342 P P 15 58 27.9 -1.4
baz=156
L39A **Vinton** 35.97 348 P P 15 58 27.5 -2.0
baz=164,SNR=11
M36A **Felix, Anita** 36.02 344 P P 15 58 28.3 -1.5
baz=159
O32A **Brockman Farm,** 36.03 339 P P 15 58 28.4 -1.6
baz=152,SNR=5.2
BRYW **Bryant College** 36.03 14 eP P 15 58 32.5 +2.5
comp=Z,121nm,1.6s
T25A **Trinidad** 36.07 329 P P 15 58 31.2 +0.5
baz=141,SNR=30
T25A **Trinidad** 36.07 329 eP P 15 58 31.2 +0.5
comp=Z,65nm,1.1s
K41A **Shullsburg** 36.11 350 P P 15 58 28.8 -1.9
baz=166,SNR=12
L38A **Oak Wood Farm,** 36.20 347 P P 15 58 29.5 -1.9
baz=162,SNR=19
M35A **Neola** 36.28 343 P P 15 58 30.7 -1.4
baz=157
O31A **Woolen Ranch,** 36.31 338 P P 15 58 31.4 -1.0
baz=151
K40A **Colesburg** 36.35 349 P P 15 58 30.9 -1.9
baz=165,SNR=23
TRY **Troy** 36.36 11 eP P 15 58 34.2 +1.5
comp=Z,67nm,1.1s
L37A **Phoenix Point,** 36.37 346 P P 15 58 31.0 -1.9
baz=161,SNR=5.8
JFWS **Jewell Farm** 36.40 350 eP P 15 58 31.0 -2.1
JFWS pmax pmax
comp=Z,233nm,1.7s
JFWS **Jewell Farm** 36.40 350 eP P 15 58 31.0 -2.1
comp=Z,233nm,1.7s
N32A **Stulken Farm,** 36.48 339 P P 15 58 32.7 -1.1
baz=153
K39A **Oelwein** 36.51 348 P P 15 58 32.0 -2.0
baz=164,SNR=20
TUC **Tucson** 36.51 317 P P 15 58 36.2 +1.9
baz=127
TUC **Tucson** 36.51 317 eP P 15 58 35.6 +1.3
TUC pmax pmax
comp=Z,43nm,1.0s
TUC **Tucson** 36.51 317 eP P 15 58 35.6 +1.3
comp=Z,43nm,1.0s
BCX **Boston College** 36.51 14 eP P 15 58 35.1 +1.1
comp=Z,607nm,1.8s
WES **Weston** 36.52 14 eP P 15 58 35.5 +1.4
WES pmax pmax
comp=Z,118nm,1.6s
WES **Weston** 36.52 14 eP P 15 58 35.5 +1.4
comp=Z,118nm,1.6s
M34A **Aspy Farms, Fr** 36.58 342 P P 15 58 33.4 -1.3
baz=156
HRV **Adam Dziewonsk** 36.59 13 eP P 15 58 36.3 +1.6
HRV pmax pmax
comp=Z,33nm,1.2s
HRV **Adam Dziewonsk** 36.59 13 eP P 15 58 36.2 +1.6
comp=Z,33nm,1.2s
L36A **Harn Buss Farm** 36.59 345 P P 15 58 33.4 -1.3
baz=159
K38A **Parkersburg** 36.64 347 P P 15 58 33.3 -1.9
baz=162,SNR=14
KSCO **Kaye Shedlock'** 36.71 333 P P 15 58 36.0 0.0
baz=145
KSCO **Kaye Shedlock'** 36.71 333 eP P 15 58 35.3 -0.7
comp=Z,117nm,1.2s
N31A **Bailey Ranch,** 36.76 339 P P 15 58 35.4 -0.9
baz=152
J41A **Loganville** 36.80 351 P P 15 58 34.7 -1.9
baz=167,SNR=15
L35A **Bielow Farm, R** 36.84 344 P P 15 58 35.2 -1.7
baz=158,SNR=6.4
M33A **Taylor Creek F** 36.84 341 P P 15 58 35.7 -1.2
baz=155
L34A **Svendsen Farm,** 36.94 342 P P 15 58 36.2 -1.6
baz=156
K37A **Belmond** 36.95 346 P P 15 58 35.9 -1.9
baz=161,SNR=7.5
J40A **Soldiers Grove** 36.96 350 P P 15 58 35.9 -2.0
baz=166,SNR=17
ACCN **Adirondack Com** 36.99 11 eP P 15 58 38.1 0.0
comp=Z,23nm,1.0s
BGNE **Belgrade** 37.00 340 P P 15 58 37.3 -1.0
baz=153
BGNE **Belgrade** 37.00 340 eP P 15 58 36.6 -1.7
J39A **Decorah** 37.08 349 P P 15 58 36.7 -2.1
baz=164,SNR=14
SDCO **Great Sand Dun** 37.09 329 P P 15 58 40.4 +0.9
baz=140,SNR=55
SDCO **Great Sand Dun** 37.09 329 eP P 15 58 39.7 +0.2
comp=Z,70nm,1.4s
J38A **Wedel Dairy, R** 37.22 348 P P 15 58 38.1 -2.0
baz=163,SNR=9.2
M31A **Lambtecht Ranc** 37.23 339 P P 15 58 39.6 -0.6
baz=152
K35A **Storm Lake** 37.31 344 P P 15 58 39.1 -1.8
baz=159
X18A **Snowflake** 37.36 321 eP P 15 58 43.6 +2.0
comp=Z,184nm,1.3s
L33A **Hoskins** 37.40 342 P P 15 58 40.2 -1.5
baz=155
J37A **Redenius Farm,** 37.45 346 P P 15 58 40.6 -1.4
baz=162
NCB **Newcomb** 37.47 10 eP P 15 58 41.9 -0.3
comp=Z,1.0nm,1.9s
L32A **Elgin** 37.49 341 P P 15 58 41.4 -1.0
baz=154
K34A **Le Mars** 37.52 343 P P 15 58 41.2 -1.4
baz=157
LCO **Las Campanas** 37.56 163 eP P 15 58 44.6 +1.2
comp=Z,46nm,1.5s
HNH **Hanover** 37.57 12 eP P 15 58 44.4 +1.3
comp=Z,47nm,1.1s
W18A **Petrified Fore** 37.61 322 P P 15 58 46.3 +2.5
baz=132,SNR=34
W18A **Petrified Fore** 37.61 322 eP P 15 58 45.9 +2.2
comp=Z,741nm,1.5s
J36A **Seneca 1, Swea** 37.65 346 P P 15 58 41.9 -1.9
baz=160,SNR=13
MDV **Middlebury** 37.68 11 eP P 15 58 45.0 +1.1
214A **Organ Pipe Nat** 37.69 315 P P 15 58 46.6 +2.3
baz=125,SNR=33
214A **Organ Pipe Nat** 37.69 315 eP P 15 58 45.9 +1.6
comp=Z,309nm,1.0s
K33A **Hardington** 37.71 342 P P 15 58 43.0 -1.3
baz=156
Q24A **Divide** 37.86 330 P P 15 58 46.4 +0.5
baz=141,SNR=11
Q24A **Divide** 37.86 330 eP P 15 58 45.7 -0.2
comp=Z,46nm,1.2s
I38A **Scanlan Farm,** 37.88 348 P P 15 58 43.4 -2.3
baz=164,SNR=8.2
J35A **Milford** 37.91 345 P P 15 58 44.1 -1.8
baz=159
L31A **Butterfield Fa** 37.92 340 P P 15 58 45.2 -0.9
baz=153
J34A **George** 38.03 344 P P 15 58 45.5 -1.6
baz=158
LONY **Lake Ozonia** 38.04 9 eP P 15 58 47.2 +0.2
comp=Z,54nm,1.5s
OGNE **Ogallala** 38.06 336 P P 15 58 47.3 0.0
baz=147,SNR=6.0
OGNE **Ogallala** 38.06 336 eP P 15 58 47.2 -0.1
comp=Z,167nm,1.1s
K32A **Verdigre** 38.07 341 P P 15 58 45.6 -1.7
baz=154,SNR=7.1
I37A **Lemond, Waseca** 38.08 347 P P 15 58 45.4 -2.0
baz=162
VCA **Vinchina** 38.09 160 eP P 15 58 51.0 +3.2
PLVO **Plevna** 38.13 6 eP P 15 58 46.8 -1.0
comp=Z,42nm,1.1s
I36A **Fitzsimmons Fa** 38.23 346 P P 15 58 46.7 -1.9
baz=161
K31A **O'Neill** 38.29 340 P P 15 58 48.4 -0.7
baz=153
I35A **Creekview Farm** 38.31 345 P P 15 58 48.0 -1.3
baz=160,SNR=5.9
MVCO **Mesa Verde** 38.32 325 P P 15 58 50.9 +1.1
baz=135,SNR=30
MVCO **Mesa Verde** 38.32 325 eP P 15 58 50.8 +1.0
comp=Z,398nm,1.7s
J33A **Davis** 38.35 343 P P 15 58 47.9 -1.8
baz=156
FRNY **Flat Rock** 38.41 10 eP P 15 58 49.8 -0.3
comp=Z,31nm,1.3s
H37A **Dierke Farm, C** 38.52 348 P P 15 58 49.3 -1.8
baz=163
K30A **Basset** 38.63 339 P P 15 58 51.8 -0.3
baz=152
ECSD **EROS Data Cent** 38.63 343 P P 15 58 50.1 -1.9
baz=157,SNR=21
ECSD **EROS Data Cent** 38.63 343 eP P 15 58 49.9 -2.1
comp=Z,121nm,1.8s
J32A **Parkston** 38.67 342 P P 15 58 50.6 -1.7
baz=155
AGUA **GUANDACOL** 38.69 160 eP P 15 58 54.9 +2.2
I34A **Hadley** 38.71 344 P P 15 58 51.4 -1.3
baz=158
CYA **Choya** 38.72 156 eP P 15 58 54.0 +1.1
ISCO **Idaho Springs** 38.73 331 P P 15 58 53.6 +0.3
baz=141,SNR=23
ISCO **Idaho Springs** 38.73 331 eP P 15 58 53.3 0.0
ISCO pmax pmax
comp=Z,186nm,2.0s
ISCO **Idaho Springs** 38.73 331 eP P 15 58 53.3 0.0
comp=Z,186nm,2.0s
H36A **Jessenland, He** 38.73 347 P P 15 58 51.1 -1.8
baz=161
113A **Mohawk Valley,** 38.81 316 eP P 15 58 53.9 +0.2
comp=Z,149nm,1.4s
J31A **Geddes** 38.88 341 P P 15 58 52.3 -1.8
baz=154
WUAZ **Wupatki** 38.89 321 P P 15 58 56.8 +2.3
baz=130,SNR=16
WUAZ **Wupatki** 38.89 321 eP P 15 58 56.5 +2.0
comp=Z,274nm,1.4s
SMCO **Snowmass** 38.93 329 eP P 15 58 55.6 +0.5
comp=Z,19nm,0.9s
I33A **Coleman** 38.97 343 P P 15 58 53.1 -1.8
baz=157
WVL **Waterville** 38.98 14 eP P 15 58 55.9 +1.0
comp=Z,69nm,1.1s
AROD **Rodeo** 39.00 162 eP P 15 58 58.5 +2.8
PV01 **Paradox Valley** 39.01 326 eP P 15 58 56.6 +1.0
H35A **Sunnyside Ranc** 39.06 346 P P 15 58 53.4 -2.1
baz=160,SNR=5.6
SPMN **Marine on St.** 39.11 348 P P 15 58 54.0 -2.0
baz=163,SNR=16
SPMN **Marine on St.** 39.11 348 eP P 15 58 53.3 -2.7
comp=Z,74nm,0.9s
ACDV **Cuesta del Vie** 39.12 162 eP P 15 58 58.7 +2.3
I32A **Karley and Nic** 39.15 343 P P 15 58 54.7 -1.7
baz=156
J30A **Dallas** 39.16 340 P P 15 58 55.2 -1.3
baz=152,SNR=9.4
PV05 **Paradox Valley** 39.27 326 eP P 15 58 58.0 +0.3
H34A **Spellman Lake,** 39.27 345 P P 15 58 55.8 -1.5
baz=159
G36A **St. Michael** 39.32 347 P P 15 58 56.1 -1.6
baz=162
COWI **Conover** 39.35 353 eP P 15 58 56.5 -1.5
PV04 **Paradox Valley** 39.38 326 eP P 15 58 59.7 +1.0
PV10 **Paradox Valley** 39.45 326 eP P 15 58 59.3 +0.1
G35A **Watkins** 39.47 346 P P 15 58 57.9 -1.2
baz=161
I31A **Royce, Wessing** 39.48 342 P P 15 58 57.6 -1.5
baz=154
ACCO **Cerro Coronel** 39.52 162 eP P 15 59 02.7 +2.7
H33A **Prehn Over Nor** 39.54 344 P P 15 58 57.9 -1.7
baz=157,SNR=11
H32A **Carlson Farm,** 39.58 343 P P 15 58 58.1 -1.8
baz=156,SNR=6.0
PV09 **Paradox Valley** 39.58 326 eP P 15 59 01.4 +1.0
TRQ **Mont Tremblant** 39.61 8 eP P 15 58 59.3 -0.9
EMMW **East Machias** 39.70 17 eP P 15 59 01.4 +0.5
comp=Z,50nm,1.1s
GLA **Glamis** 39.71 315 P P 15 59 03.4 +2.1
baz=124,SNR=16
GLA **Glamis** 39.71 315 eP P 15 59 02.4 +1.1
GLA pmax pmax
comp=Z,263nm,1.6s
GLA **Glamis** 39.71 315 eP P 15 59 02.4 +1.1
comp=Z,263nm,1.6s
PKME **Peaks-Kenny Pk** 39.73 14 eP P 15 59 01.9 +0.8
comp=Z,246nm,1.8s
N23A **Red Feather La** 39.74 332 P P 15 59 02.1 +0.4
baz=142,SNR=9.9
N23A **Red Feather La** 39.74 332 eP P 15 59 01.9 +0.2
comp=Z,32nm,1.3s
G34A **Benson** 39.77 345 P P 15 58 59.4 -2.2
baz=159
PHWY **Pilot Hill** 39.84 332 eP P 15 59 01.6 -0.9
comp=Z,39nm,1.5s
H31A **Wolsey** 39.87 342 P P 15 59 00.4 -2.0
baz=154
F36A **Milaca** 39.87 348 P P 15 58 59.9 -2.4
baz=162,SNR=21
Y12C **Blythe** 39.89 316 P P 15 59 04.5 +1.8
baz=124,SNR=7.6
G33A **Ortonville** 39.93 344 P P 15 59 01.1 -1.8
baz=158
PDMCI **Parker Dam,Lak** 39.95 317 P P 15 59 05.2 +2.1
baz=126
SUSD **Miller** 39.98 341 P P 15 59 01.5 -1.9
baz=154
AMOG **MOGNA** 40.03 161 eP P 15 59 05.0 +1.1
F35A **Swanville** 40.09 347 P P 15 59 02.2 -2.0
baz=161
AVFE **Valle Fertil** 40.11 160 eP P 15 59 06.4 +1.8
F34A **Alexandria** 40.20 346 P P 15 59 03.2 -1.8
baz=160
GGN **Saint George** 40.25 17 eP P 15 59 06.8 +1.3
comp=Z,69nm,1.4s
G32A **Webster** 40.28 343 P P 15 59 04.1 -1.7
baz=156
O20A **White River Ci** 40.30 329 P P 15 59 07.3 +1.1
baz=138,SNR=12
O20A **White River Ci** 40.30 329 eP P 15 59 06.8 +0.6
comp=Z,43nm,1.1s
E37A **Wrenshall** 40.32 349 P P 15 59 04.7 -1.4
baz=164
SWSC **Sam W. Stewart** 40.34 314 P P 15 59 08.2 +1.8
baz=122,SNR=13
IKP **In-Ko-Pah, Jac** 40.41 314 P P 15 59 08.5 +1.4
baz=122,SNR=12
E36A **McGregor** 40.44 348 P P 15 59 04.3 -2.8
baz=163,SNR=8.3
G31A **Conde** 40.46 343 P P 15 59 05.4 -1.8
baz=155
BC3 **Big Chuckawall** 40.48 315 P P 15 59 09.4 +1.6
baz=123,SNR=13
F33A **5 Mile Ranch,** 40.49 345 P P 15 59 05.3 -2.2
baz=158,SNR=13
NEE2 **Needles Airpor** 40.54 317 P P 15 59 10.3 +2.2
baz=125
IRM **Iron Mountain** 40.55 316 P P 15 59 09.9 +1.8
baz=124
RTLS **Leoncito** 40.58 163 eP P 15 59 10.9 +2.2
MMU **Miners Mountai** 40.60 324 eP P 15 59 10.2 +1.4
E35A **Pequot Lakes** 40.72 347 P P 15 59 07.6 -1.8
baz=161
F32A **Veblen** 40.74 344 P P 15 59 07.6 -1.9
baz=157
MONP2 **Monument Peak** 40.76 314 P P 15 59 11.9 +1.7
baz=122,SNR=11
SRU **San Rafael Swe** 40.78 326 eP P 15 59 10.9 +0.6
SRU pmax pmax
comp=Z,423nm,1.9s
SRU **San Rafael Swe** 40.78 326 eP P 15 59 10.9 +0.6
comp=Z,423nm,1.9s
BDFB **Brasilia** 40.79 124 P P 15 59 10.0 -0.5
comp=Z,2.1nm,0.4s,baz=343,slow=20
BDFB LR LR 16 16 21.7
comp=Z,2µm,21.3s,baz=342,slow=37
BDFB **Brasilia** 40.79 124 eP P 15 59 11.0 +0.5
BDFB pmax pmax
comp=Z,14nm,0.9s
BDFB **Brasilia** 40.79 124 eP P 15 59 11.0 +0.5
comp=Z,14nm,0.9s
BAR **Barrett** 40.83 313 eP P 15 59 12.2 +1.6
comp=Z,78nm,1.6s
E34A **Wadena** 40.85 346 P P 15 59 08.5 -1.9
baz=160
D37A **Cotton** 40.90 349 P P 15 59 08.8 -2.0
baz=165,SNR=17
AUSP **Uspallata** 40.95 163 eP P 15 59 14.2 +2.5
E33A **Westby DABS, E** 41.04 346 P P 15 59 09.8 -2.2
baz=159
F31A **Hecla** 41.05 343 P P 15 59 10.2 -1.9
baz=156
BELC **Belle Mtn. Jos** 41.05 315 P P 15 59 11.8 -0.6
baz=123,SNR=5.4
D36A **Goodland** 41.05 349 P P 15 59 11.2 -0.9
baz=164,SNR=6.7
CPUP **Villa Florida** 41.11 145 P P 15 59 11.2 -1.6
comp=Z,4.7nm,0.8s,baz=330,slow=9.4,SNR=10
CPUP LR LR 16 17 53.7
comp=Z,1µm,18.7s,baz=334,slow=39

CPUP Villa Florida 41.11 145 eP P 15 59 11.9 -0.9
CPUP Villa Florida 41.11 145 eP P 15 59 11.9 -0.9
VLDQ Val d'Or 41.14 5 eP P 15 59 12.3 -0.4
comp=Z,64nm,1.6s
D35A Remer 41.14 348 P P 15 59 10.2 -2.7
baz=162
TPFO Pinon Flats 41.16 315 P P 15 59 14.9 +1.6
baz=122,SNR=14
P17A Butcher Ranch, 41.16 326 eP P 15 59 14.9 +1.6
comp=Z,234nm,1.8s
P17A Butcher Ranch, 41.16 326 ePg P 15 59 14.1 +0.8
PFO Pinyon Flats O 41.16 315 P P 15 59 14.9 +1.5
comp=Z,9.5nm,0.8s,baz=118,slow=10,SNR=5.8
PFO Pinyon Flats O 41.16 315 P P 15 59 14.8 +1.4
baz=122,SNR=11
PFO Pinyon Flats O 41.16 315 eP P 15 59 13.8 +0.4
PFO pmax pmax
comp=Z,39nm,1.0s
PFO Pinyon Flats O 41.16 315 eP P 15 59 13.8 +0.4
comp=Z,39nm,1.0s
ROC1 El Roble 41.23 165 eP P 15 59 15.2 +1.2
ROC1 El Roble 41.23 165 eP P 15 59 15.2 +1.2
comp=Z,23nm,0.8s
C38A Sawbill Land. 41.24 351 P P 15 59 13.0 -0.7
baz=166
109C Camp Elliot, M 41.25 313 P P 15 59 15.7 +1.7
baz=121
GMRC Granite Mounta 41.25 317 P P 15 59 15.7 +1.6
baz=124
F30A Leola 41.26 342 P P 15 59 12.3 -1.5
baz=154
TMUT Trail Mountain 41.30 325 eP P 15 59 15.7 +1.1
comp=Z,154nm,1.6s
TMUT Trail Mountain 41.30 325 ePg P 15 59 15.3 +0.7
K22A Casper 41.39 333 P P 15 59 14.9 -0.3
baz=142,SNR=11
K22A Casper 41.39 333 eP P 15 59 15.0 -0.2
comp=Z,41nm,1.1s
E32A Braaten, Kindr 41.40 345 P P 15 59 13.1 -1.8
baz=158
C37A Embarrass 41.40 350 P P 15 59 13.1 -1.9
baz=165,SNR=12
ASAL Salagasta 41.46 163 eP P 15 59 17.8 +2.1
SGU Sterling 41.47 325 eP P 15 59 17.6 +1.6
EYMN Ely 41.50 351 P P 15 59 13.8 -2.0
baz=166
EYMN Ely 41.50 351 P P 15 59 12.9 -2.9
comp=Z,70nm,1.4s
F29A Eureka 41.50 342 P P 15 59 14.0 -1.9
baz=153
RSSD Black Hills 41.52 336 P P 15 59 16.4 +0.1
baz=146
RSSD Black Hills 41.52 336 eP P 15 59 16.1 -0.2
RSSD pmax pmax
comp=Z,60nm,1.3s
RSSD Black Hills 41.52 336 eP P 15 59 16.1 -0.2
comp=Z,60nm,1.3s
LMN Caledonia Moun 41.53 19 eP P 15 59 16.4 +0.4
comp=Z,282nm,1.8s
C36A Pine Crest Far 41.55 349 P P 15 59 14.5 -1.7
baz=164,SNR=14
E31A Nome 41.58 344 P P 15 59 14.8 -1.7
baz=156
D33A AnnSam, Waubun 41.60 346 P P 15 59 14.8 -1.8
baz=160
ARCO CERRO ARCO 41.66 163 eP P 15 59 19.8 +2.3
ACAN Cantantal 41.68 161 eP P 15 59 19.7 +2.2
MURC Murrieta 41.68 314 P P 15 59 19.3 +1.8
baz=122,SNR=8.1
C35A Jirik Farms, M 41.72 348 P P 15 59 15.5 -2.0
baz=162,SNR=10
HEC Hector,Ludlow 41.74 316 P P 15 59 20.5 +2.4
baz=124,SNR=7.6
TCA Tanti 41.77 157 eP P 15 59 19.6 +1.3
TUQ Turquoise Moun 41.80 317 P P 15 59 20.5 +1.9
baz=125,SNR=7.7
BBRC Big Bear Solar 41.84 315 P P 15 59 21.4 +2.3
baz=122
C34A RKJ Ranch, Bem 41.86 347 P P 15 59 16.5 -2.3
baz=161
D32A Dogwood Acres, 41.88 345 P P 15 59 16.9 -2.0
baz=158
AAGR Agrelo 41.92 163 eP P 15 59 22.0 +2.5
D31A Mcclaflin, Tow 41.99 344 P P 15 59 18.1 -1.7
baz=157
MPU Maple Canyon 42.03 326 eP P 15 59 21.2 +0.8
comp=Z,123nm,1.5s
MPU Maple Canyon 42.03 326 ePg P 15 59 21.3 +0.8
C33A Trail 42.16 346 P P 15 59 19.4 -1.8
baz=160
RRX Edison Barstow 42.22 316 P P 15 59 24.0 +2.1
baz=123
SHOC Shoshone, Teco 42.29 318 P P 15 59 24.7 +2.2
baz=125
B35A Bob, Littlefor 42.30 349 P P 15 59 20.1 -2.2
baz=163,SNR=9.3
MRA San Martin 42.32 159 eP P 15 59 22.6 -0.1
GSC Goldstone, Bar 42.32 317 P P 15 59 24.7 +1.9
baz=124,SNR=7.8
JLU Jordanelle 42.33 327 eP P 15 59 23.5 +0.5
comp=Z,149nm,1.6s
JLU Jordanelle 42.33 327 ePg P 15 59 23.8 +0.8
PSUT Pine Spring 42.34 323 eP P 15 59 24.4 +1.4
comp=Z,58nm,0.9s
BFSC Mount Baldy Ra 42.34 315 P P 15 59 24.6 +1.6
baz=122
SCI2 San Clemente I 42.34 313 P P 15 59 25.2 +2.3
baz=120
C32A Crookston 42.40 346 P P 15 59 21.7 -1.4
baz=159
CIS Catalina Islan 42.45 313 P P 15 59 24.9 +1.0
baz=120
FMP Fort Macarthur 42.52 314 P P 15 59 23.1 -1.2
baz=120
CTU Camp Tracy 42.56 326 eP P 15 59 25.4 +0.7
comp=Z,809nm,2.0s
CTU Camp Tracy 42.56 326 ePg P 15 59 25.5 +0.7
B34A Aery, Baudette 42.60 348 P P 15 59 22.8 -1.9
baz=162,SNR=21
B33A Robert and Kas 42.60 347 P P 15 59 22.8 -1.9
baz=160,SNR=7.7
TCUT Toone Canyon 42.67 327 eP P 15 59 26.3 +0.6
comp=Z,446nm,1.9s
TCUT Toone Canyon 42.67 327 ePg P 15 59 26.4 +0.6
C31A Landman Farms, 42.68 345 P P 15 59 23.6 -1.8
baz=157,SNR=13
PASC Pasadena Art C 42.68 314 eP P 15 59 25.5 -0.1
comp=Z,177nm,1.6s
AGMN Agassiz Nation 42.69 347 P P 15 59 23.7 -1.8
baz=160,SNR=16
AGMN Agassiz Nation 42.69 347 eP P 15 59 23.8 -1.8
comp=Z,172nm,1.5s
DUG Dugway, Tooele 42.81 325 P P 15 59 28.1 +1.3
baz=132,SNR=32
DUG Dugway, Tooele 42.81 325 eP P 15 59 27.8 +1.0
DUG pmax pmax
comp=Z,150nm,1.6s
DUG Dugway, Tooele 42.81 325 eP P 15 59 27.8 +1.0
comp=Z,150nm,1.6s
DECC Green Verdugo 42.83 314 P P 15 59 28.6 +1.7
baz=121
TPNV Topopah Spring 42.88 319 P P 15 59 29.7 +2.2
baz=126,SNR=10
EDW2 Edwards Air Fo 42.91 315 P P 15 59 29.0 +1.4
baz=122,SNR=18
BW06 Boulder Array 42.91 330 P P 15 59 27.4 -0.3
baz=138,SNR=29
BW06 Boulder Array 42.91 330 eP P 15 59 27.4 -0.3
comp=Z,62nm,1.5s
PD31 Pinedale Array 42.91 330 eP P 15 59 26.9 -0.8
PDAR Pinedale Array 42.91 330 P P 15 59 27.5 -0.2
comp=Z,2.6nm,0.5s,baz=125,slow=7.4,SNR=43
PDAR PcP PcP 16 01 18.6 +0.2
comp=Z,3.0nm,1.0s,baz=197,slow=1.9,SNR=3.6
PDAR LR LR 16 21 37.9
comp=Z,510nm,18.2s,baz=130,slow=42
B32A Ashes, Strandq 42.94 346 P P 15 59 25.9 -1.6
baz=159,SNR=32
FURC Furnace Creek, 43.01 318 P P 15 59 30.6 +2.4
baz=124
LRMC Laurel Mtn Rad 43.02 316 P P 15 59 30.2 +1.7
baz=123,SNR=19
RSUT Red Spur Mount 43.04 328 eP P 15 59 29.5 +0.7
HWUT Hardware Ranch 43.10 328 eP P 15 59 29.5 +0.3
comp=Z,276nm,1.8s
BMUT Black Mountain 43.17 328 eP P 15 59 30.2 +0.4
A33A Warroad 43.19 347 P P 15 59 27.9 -1.5
baz=161,SNR=23
MPMC Manual Prospec 43.20 317 P P 15 59 31.4 +1.3
baz=123
B31A Greenbush Farm 43.24 345 P P 15 59 28.3 -1.6
baz=158
MDND Maddock 43.24 343 P P 15 59 28.8 -1.2
baz=154,SNR=5.9
MDND Maddock 43.24 343 eP P 15 59 28.7 -1.2
comp=Z,531nm,1.6s
BLG Laguna Peak, P 43.28 314 P P 15 59 29.3 -1.2
baz=120
R11A Troy Canyon, C 43.29 321 P P 15 59 32.6 +1.9
baz=128,SNR=13
OSI Osito Audit: C 43.29 314 P P 15 59 32.4 +1.8
baz=121
D26A Manning 43.41 340 P P 15 59 30.4 -0.9
baz=150
A32A Rocking H Ranc 43.41 346 P P 15 59 29.3 -2.0
baz=159,SNR=12
BGU Big Grassy Mou 43.43 326 eP P 15 59 32.6 +0.8
comp=Z,278nm,1.7s
ARVC Arvin 43.63 315 P P 15 59 35.4 +2.1
baz=121,SNR=5.8
SCZ2 Santa Cruz Isl 43.63 313 P P 15 59 35.2 +1.8
baz=119
GRAC Grapevine Rang 43.64 318 P P 15 59 35.9 +2.5
baz=124
ISA Isabella, Lake 43.66 316 P P 15 59 35.7 +2.0
baz=122,SNR=8.7
ISA Isabella, Lake 43.66 316 eP P 15 59 36.0 +2.4
ISA pmax pmax
comp=Z,76nm,1.4s
ISA Isabella, Lake 43.66 316 eP P 15 59 36.0 +2.4
comp=Z,76nm,1.4s
AHID Auburn Hatcher 43.69 329 eP P 15 59 33.5 -0.3
comp=Z,113nm,1.9s
CWC Cottonwood Cre 43.81 317 P P 15 59 36.6 +1.7
baz=123
HVU Hansel Valley 43.87 327 eP P 15 59 35.3 0.0
HVU pmax pmax
comp=Z,94nm,1.4s
HVU Hansel Valley 43.87 327 eP P 15 59 35.3 0.0
comp=Z,94nm,1.4s
HVU Hansel Valley 43.87 327 ePg P 15 59 35.6 +0.2
REDW Red Top Meadow 43.99 330 eP P 15 59 36.6 +0.2
comp=Z,105nm,1.4s
SNOW Snow King Moun 44.02 330 eP P 15 59 36.5 -0.1
comp=Z,93nm,1.5s
LOHW Long Hollow 44.05 330 eP P 15 59 36.8 -0.1
comp=Z,73nm,1.6s
TPAW Teton Pass 44.14 330 eP P 15 59 37.5 -0.1
comp=Z,79nm,1.5s
VES Vestal, Richgr 44.17 316 P P 15 59 39.5 +1.9
baz=122,SNR=17
PKM Mcpherson Peak 44.20 314 P P 15 59 39.9 +1.7
baz=120,SNR=10
MOOW Moose Ponds 44.22 330 eP P 15 59 37.9 -0.3
comp=Z,46nm,1.5s
TIN Tinemaha, Big 44.24 318 P P 15 59 40.4 +2.0
baz=124
IMW Indian Meadow 44.43 330 eP P 15 59 39.8 -0.1
comp=Z,14nm,0.8s
FLWY Flagg Ranch 44.45 331 eP P 15 59 39.6 -0.4
comp=Z,74nm,1.4s
LAO LASA Array 44.51 337 P P 15 59 40.4 +0.1
baz=145
LAO LASA Array 44.51 337 eP P 15 59 39.4 -0.9
comp=Z,38nm,0.7s
RCTC Rector, Farmer 44.53 316 P P 15 59 42.2 +1.8
baz=122
ULM Lac du Bonnet 44.53 348 P P 15 59 38.2 -2.0
comp=Z,29nm,0.6s,baz=155,slow=8.0,SNR=38
ULM Lac du Bonnet 44.53 348 eP P 15 59 37.8 -2.5
ULM pmax pmax
comp=Z,278nm,1.6s
ULM Lac du Bonnet 44.53 348 eP P 15 59 37.8 -2.5
comp=Z,278nm,1.6s
SMMC Simmler 44.54 315 P P 15 59 42.6 +1.9
baz=120
RLMT Red Lodge 44.56 333 P P 15 59 41.0 +0.1
baz=140,SNR=14
RLMT Red Lodge 44.56 333 eP P 15 59 40.4 -0.4
comp=Z,140nm,1.8s
H17A Grant Village 44.62 331 P P 15 59 41.9 +0.5
baz=138
B25A Knox Farm, Ray 44.73 340 P P 15 59 41.8 -0.2
baz=150
YFT Old Faithful 44.79 331 eP P 15 59 43.5 +0.7
comp=Z,102nm,1.9s
A26A Wade Farm, Ken 44.91 342 P P 15 59 43.0 -0.4
baz=152
MLAC Mammoth, Mammo 44.97 318 P P 15 59 45.5 +1.2
baz=123
DGMT Dagmar 45.25 340 P P 15 59 45.8 -0.3
baz=149,SNR=6.3
DGMT Dagmar 45.25 340 eP P 15 59 45.6 -0.5
comp=Z,76nm,1.0s
A25A Svangstu Ranch 45.29 341 P P 15 59 46.4 -0.1
baz=150
QLMT Earthquake Lak 45.35 331 eP P 15 59 47.3 +0.1
BMN Battle Mountai 45.56 322 eP P 15 59 50.1 +1.3
BMN pmax pmax
comp=Z,332nm,1.3s
BMN Battle Mountai 45.56 322 eP P 15 59 50.1 +1.3
comp=Z,332nm,1.3s
WAKR Walker 45.84 319 eP P 15 59 53.6 +2.4
comp=Z,58nm,1.1s
HLID Hailey 45.97 328 P P 15 59 52.8 +0.8
baz=133,SNR=25
HLID Hailey 45.97 328 eP P 15 59 52.5 +0.4
comp=Z,46nm,1.1s
MCMT McKenzie Canyo 46.05 330 eP P 15 59 53.6 +0.9
BOZ Bozeman (W) 46.05 332 P P 15 59 53.0 +0.4
baz=138,SNR=37
BOZ Bozeman (W) 46.05 332 eP P 15 59 52.6 0.0
BOZ pmax pmax
comp=Z,81nm,1.5s
BOZ Bozeman (W) 46.05 332 eP P 15 59 52.6 0.0
comp=Z,81nm,1.5s
CMB Columbia Colle 46.22 318 eP P 15 59 54.6 +0.7
CMB pmax pmax
comp=Z,27nm,1.4s
CMB Columbia Colle 46.22 318 eP P 15 59 54.6 +0.7
comp=Z,27nm,1.4s
SAO San Andreas Ge 46.29 316 eP P 15 59 54.6 +0.2
SAO pmax pmax
comp=Z,140nm,1.9s
SAO San Andreas Ge 46.29 316 eP P 15 59 54.6 +0.2
comp=Z,140nm,1.9s
DLMT Dillon 46.31 331 eP P 15 59 54.9 +0.2
comp=Z,49nm,1.4s
PAHR Pah Rah Range 46.48 320 eP P 15 59 58.1 +2.0
comp=Z,205nm,1.6s
LRM Limekiln Ridge 46.57 331 eP P 15 59 56.7 -0.1
MFID Camas Ranch 46.64 326 eP P 15 59 57.9 +0.6
comp=Z,375nm,2.0s
DRLN Deer Lake 46.99 22 eP P 16 00 00.4 +0.7
comp=Z,52nm,0.9s
EGMT Eagleton 47.02 335 P P 16 00 00.4 +0.3
baz=141
EGMT Eagleton 47.02 335 eP P 15 59 59.5 -0.6
comp=Z,100nm,1.6s
AFDM Forest Hills D 47.09 318 eP P 16 00 01.6 +0.9
comp=Z,10nm,1.1s
WVOR Wild Horse Val 47.62 324 eP P 16 00 05.6 +0.7
WVOR Wild Horse Val 47.62 324 eP P 16 00 05.5 +0.7
comp=Z,583nm,1.5s
CHMT Chamberlain Mo 47.74 332 eP P 16 00 05.5 -0.4
ORV Oroville 47.76 319 eP P 16 00 07.2 +1.3
ORV pmax pmax
comp=Z,82nm,1.1s
ORV Oroville 47.76 319 eP P 16 00 07.2 +1.3
comp=Z,82nm,1.1s
MSO Missoula 48.01 331 P P 16 00 08.3 +0.4
baz=136,SNR=14
MSO Missoula 48.01 331 eP P 16 00 08.0 +0.1
comp=Z,75nm,1.6s
MOD Modoc Plateau 48.30 322 eP P 16 00 10.2 -0.1
comp=Z,137nm,1.6s
O03D Paynes Creek 48.35 319 P P 16 00 11.1 +0.6
baz=122
BMO Blue Mountains 48.38 327 eP P 16 00 09.9 -0.8
comp=Z,104nm,1.8s
TRQA Tornquist 48.71 159 eP P 16 00 14.0 +0.7
comp=Z,30nm,1.3s
PLCA Paso Flores 48.76 168 P P 16 00 13.9 +0.3
comp=Z,13nm,0.8s,baz=4.4,slow=8.7,SNR=21
PLCA Paso Flores 48.76 168 eP P 16 00 13.6 0.0
PLCA pmax pmax
comp=Z,117nm,1.7s
PLCA Paso Flores 48.76 168 eP P 16 00 13.6 0.0
comp=Z,117nm,1.7s
BLMT Blacktail Moun 49.06 332 eP P 16 00 17.1 +1.0
F10A Beach Ranch, E 49.07 328 eP P 16 00 15.9 -0.1
comp=Z,61nm,1.2s
K05A Summer Lake 49.13 323 eP P 16 00 16.9 +0.2
comp=Z,80nm,1.4s
BSMT Bassoo Peak 49.14 331 eP P 16 00 16.3 -0.4
M04C Macdoel 49.18 321 P P 16 00 18.2 +1.1
baz=124,SNR=25
SCHQ Schefferville 49.26 12 P P 16 00 16.6 -0.5
comp=Z,11nm,0.7s,baz=204,slow=6.3,SNR=6.1
SCHQ LR LR 16 20 51.9
comp=Z,528nm,21.8s,baz=204,slow=36
SCHQ Schefferville 49.26 12 eP P 16 00 16.9 -0.3
comp=Z,44nm,1.0s
N02D Trinity Center 49.29 320 P P 16 00 18.7 +0.9
baz=122,SNR=5.8
KMRM Mail Ridge 49.56 318 eP P 16 00 20.3 +0.5
comp=Z,64nm,1.2s
G08A Pilot Rock 49.56 326 eP P 16 00 20.2 +0.4
comp=Z,102nm,1.4s
K04D Chiloquin, OR 49.60 322 P P 16 00 21.3 +1.2
baz=124
WALA Waterton Lakes 49.61 333 eP P 16 00 20.1 0.0
comp=Z,13nm,0.9s
M02C Callahan 49.61 320 P P 16 00 20.4 +0.2
baz=122
J05D Fort Rock, OR 49.66 323 P P 16 00 21.3 +0.7
baz=125
YBH Yreka Blue Hor 49.70 321 eP P 16 00 20.7 -0.2
YBH pmax pmax
comp=Z,17nm,1.1s
YBH Yreka Blue Hor 49.70 321 eP P 16 00 20.7 -0.2
comp=Z,17nm,1.1s
KHMM Horse Mountain 49.91 319 eP P 16 00 22.4 -0.2
comp=Z,60nm,1.1s
E09A Wood Farm, Sta 49.91 328 eP P 16 00 22.3 0.0
comp=Z,102nm,1.1s
JCC Jacoby Creek, 50.07 319 eP P 16 00 24.2 +0.6
comp=Z,238nm,1.5s
FFC Flin Flon 50.10 345 eP P 16 00 22.6 -1.0
FFC pmax pmax
comp=Z,59nm,1.4s
FFC Flin Flon 50.10 345 eP P 16 00 22.6 -1.0
comp=Z,59nm,1.4s
J04D Umpqua Nationa 50.16 322 P P 16 00 25.4 +0.8
baz=124,SNR=36
HUMO Hull Mountain 50.33 321 eP P 16 00 25.6 0.0
comp=Z,52nm,1.8s
I05D Terrebonne, OR 50.33 324 P P 16 00 26.8 +1.2
baz=126,SNR=16
KRMB Red Mountain 50.35 320 eP P 16 00 28.1 +2.2
comp=Z,154nm,1.6s
VTHM Trough 50.39 325 P P 16 00 27.1 +1.0
G06A Carlson Farm, 50.46 325 P P 16 00 27.8 +1.2
L02D Cave Junction, 50.49 321 P P 16 00 27.8 +1.0
baz=122
CROR Criterion Ridg 50.51 325 P P 16 00 28.9 +1.9
NEW Newport 50.56 330 P P 16 00 27.1 -0.2
baz=133,SNR=10
NEW Newport 50.56 330 eP P 16 00 27.5 +0.2
NEW pmax pmax
comp=Z,34nm,1.2s
NEW Newport 50.56 330 eP P 16 00 27.5 +0.2
comp=Z,34nm,1.2s
HAWA Hanford 50.57 327 eP P 16 00 28.1 +0.8
comp=Z,70nm,1.3s
I04A Tendick Farm, 50.65 323 P P 16 00 28.5 +0.4
baz=124,SNR=23
D08A Wollman Farm, 50.67 328 eP P 16 00 27.9 -0.2
comp=Z,32nm,1.1s
C09A Chrisman Ranch 50.82 329 eP P 16 00 28.9 -0.3
comp=Z,20nm,1.0s
G05D Wamic, OR 50.85 325 P P 16 00 31.2 +1.7
baz=126,SNR=32
VBEM Beaver Butte 50.90 325 P P 16 00 32.1 +2.1
I03D Drain, OR 51.16 322 P P 16 00 32.2 +0.3
baz=123,SNR=13
SAW Saint Andrews 51.33 329 P P 16 00 34.1 +1.0
VLMM Larch Mountain 51.44 325 P P 16 00 33.6 -0.4
WTV Waterville 51.62 328 P P 16 00 35.7 +0.4
TBM Table Mountain 51.63 327 P P 16 00 36.7 +1.4
COR Corvallis 51.63 323 eP P 16 00 36.2 +0.9
COR pmax pmax
comp=Z,322nm,1.5s
COR Corvallis 51.63 323 eP P 16 00 36.2 +0.9
comp=Z,322nm,1.5s
LTY Liberty 51.72 327 eP P 16 00 35.9 -0.2
comp=Z,78nm,1.3s
B08A Colville Reser 51.72 329 eP P 16 00 35.1 -0.9
comp=Z,38nm,1.1s
G03D McMinnville, O 51.96 324 P P 16 00 38.8 +1.1
baz=124,SNR=11
LON Longmire 52.03 326 P P 16 00 38.8 +0.5
LON Longmire 52.03 326 P P 16 00 38.8 +0.5
RCM Mount Rainier- 52.04 326 P P 16 00 40.2 +1.4
OBSR Observation Ro 52.12 326 P P 16 00 40.1 +0.8
WRW Wenatchee Ridg 52.20 328 P P 16 00 40.7 +1.0
C06D Leavenworth 52.25 328 P P 16 00 41.1 +1.1
baz=128
F04D Rainier, OR 52.31 325 P P 16 00 41.7 +1.4
baz=125
KMOR Kings Mountain 52.33 324 P P 16 00 42.6 +2.0
FCC Fort Churchill 52.38 352 eP P 16 00 38.6 -2.0
FCC pmax pmax
comp=Z,71nm,1.2s
FCC Fort Churchill 52.38 352 eP P 16 00 38.6 -2.0
comp=Z,71nm,1.2s
D05A Enumclaw 52.39 327 eP P 16 00 40.8 -0.1
PNT Penticton 52.49 330 P P 16 00 42.5 +0.8
PNT Penticton 52.49 330 P P 16 00 42.5 +0.8
EDM Edmonton 52.49 337 eP P 16 00 40.5 -1.2
EDM pmax pmax
comp=Z,153nm,1.3s
EDM Edmonton 52.49 337 eP P 16 00 40.5 -1.2
comp=Z,154nm,1.3s
E03A Lebam 52.89 325 eP P 16 00 45.1 +0.5
comp=Z,317nm,1.8s
GNW Green Mountain 53.07 327 P P 16 00 45.9 0.0
B05A Bryant 53.10 328 P P 16 00 46.1 -0.1
baz=128
NLWA Neilton Lookou 53.54 326 eP P 16 00 50.2 +0.7
comp=Z,109nm,1.2s
A04D Lummi Island 53.70 328 P P 16 00 51.3 +0.8
baz=127
PGC Sidney 54.05 327 eP P 16 00 54.3 +1.2
comp=Z,128nm,1.7s
LLLB Lillooet 54.44 330 eP P 16 00 56.9 +0.8
comp=Z,71nm,1.0s
RKT Rikitea 59.53 238 eS S 16 09 40.5 -2.1
comp=Z,608nm,28.8s
RKT eLR LR 16 19 06.5
comp=Z,1μm,35.2s
CMLA Cha da Macela 59.68 50 i P P 16 01 35.5 +2.2
TAOE Nuku Hiva Isla 59.74 256 eLR LR 16 19 03.3
comp=Z,370nm,25.8s
YKA Yellowknife Ar 60.16 343 P P 16 01 35.5 -0.6
comp=Z,14nm,0.7s,baz=137,slow=7.1,SNR=52
YKA LR LR 16 29 45.5
comp=Z,43nm,19.5s,baz=180,slow=38
YKB5 Yellowknife Ar 60.16 343 eP P 16 01 34.7 -1.4
YKW3 Yellowknife Ar 60.22 343 eP P 16 01 35.5 -1.0
comp=Z,44nm,1.0s
EFI East Falkland 62.09 163 i P P 16 01 50.8 +1.5
EFI pmax pmax
comp=Z,29nm,1.0s
DLBC Dease Lake 62.93 334 eP P 16 01 55.2 +0.2
comp=Z,44nm,1.1s
SKAG Skagway 65.81 333 eP P 16 02 13.2 -0.6
comp=Z,52nm,1.8s
HYT Haines Junctio 67.42 334 eP P 16 02 25.9 +1.6
comp=Z,27nm,1.4s
RES Resolute Bay 67.98 356 eP P 16 02 26.4 -0.9
RES pmax pmax
comp=Z,30nm,1.1s
RES Resolute Bay 67.98 356 eP P 16 02 26.4 -0.9
comp=Z,30nm,1.1s
BALM Baldy 69.64 333 eP P 16 02 38.6 +0.5
BALM pmax pmax
comp=Z,15nm,1.1s
BALM Baldy 69.64 333 eP P 16 02 38.6 +0.5
comp=Z,15nm,1.1s
DAWY Dawson 69.71 337 eP P 16 02 37.5 -0.9
comp=Z,27nm,1.3s

INK	**Inuvik**	**69.86**	**342**	*e*P		**P**		**16 02 39.3**	**+0.2**
INK					pmax	pmax				
	comp=Z,101nm,1.3s									
INK	**Inuvik**	**69.86**	**342**	*e*P		**P**		**16 02 39.3**	**+0.2**
	comp=Z,101nm,1.3s									
CRQM	**Cirque**	**69.89**	**333**	*e*P		**P**		**16 02 37.5**	**-2.2**
	comp=Z,13nm,0.9s									
BMRM	**Bremner River**	**70.63**	**333**	*e*P		**P**		**16 02 44.6**	**+0.5**
	comp=Z,28nm,1.1s									
SUMG	**Summit**	**70.63**	**13**	*i* P		**P**		**16 02 43.8**	**-0.5**
	comp=Z,41nm,1.1s									
SUMG	**Summit**	**70.63**	**13**	*e*P		**P**		**16 02 43.8**	**-0.5**
SUMG					pmax	pmax				
	comp=Z,41nm,1.1s									
SUMG	**Summit**	**70.63**	**13**	*e*P		**P**		**16 02 42.9**	**-1.4**
	comp=Z,52nm,1.2s									
EGAK	**Eagle**	**70.72**	**337**	*e*P		**P**		**16 02 44.5**	**+0.1**
	comp=Z,16nm,1.0s									
PPT	**Papeete**	**70.74**	**249**	LR		LR		16 25 50.9		
	comp=Z,168nm,20.4s,baz=28,slow=29									
PPT2	**Papeete2**	**70.75**	**249**	*e*S		**S**		**16 11 57.9**	**-2.9**
	comp=Z,127nm,26.5s									
PPT2	**Papeete2**	**70.75**	**249**	*e*LR		LR		16 24 18.9		
	comp=Z,543nm,27.0s,baz=71									
MENT	**Mentasta**	**70.99**	**335**	*e*P		**P**		**16 02 46.4**	**+0.2**
	comp=Z,13nm,1.1s									
EYAK	**Cordova Ski Ar**	**71.01**	**332**	*e*P		**P**		**16 02 46.5**	**+0.2**
	comp=Z,75nm,1.8s									
DIV	**Divide**	**71.22**	**333**	*e*P		**P**		**16 02 47.4**	**-0.3**
	comp=Z,9.5nm,1.0s									
DOT	**Dot Lake**	**71.41**	**336**	*e*P		**P**		**16 02 49.2**	**+0.5**
	comp=Z,58nm,0.9s									
KLU	**Klutina**	**71.41**	**333**	*e*P		**P**		**16 02 48.8**	**0.0**
	comp=Z,15nm,1.0s									
PAX	**Paxson**	**71.74**	**335**	*e*P		**P**		**16 02 51.0**	**+0.2**
PAX					pmax	pmax				
	comp=Z,25nm,1.4s									
PAX	**Paxson**	**71.74**	**335**	*e*P		**P**		**16 02 51.0**	**+0.2**
	comp=Z,25nm,1.4s									
TBI	**Tubuai**	**72.14**	**243**	*e*S		**S**		**16 12 13.6**	**-2.9**
	comp=Z,220nm,32.5s									
TBI	**Tubuai**	**72.14**	**243**	*e*LR		LR		16 24 56.8		
	comp=Z,1μm,27.8s,baz=69									
SCM	**Sheep Creek Mo**	**72.16**	**333**	*e*P		**P**		**16 02 52.9**	**-0.5**
SCM					pmax	pmax				
	comp=Z,21nm,1.0s									
SCM	**Sheep Creek Mo**	**72.16**	**333**	*e*P		**P**		**16 02 52.9**	**-0.5**
	comp=Z,21nm,1.0s									
DHY	**Denali Highway**	**72.59**	**334**	*e*P		**P**		**16 02 55.6**	**-0.4**
	comp=Z,5.1nm,0.9s									
SML	**Sawmill**	**72.61**	**333**	*e*P		**P**		**16 02 55.1**	**-0.9**
SML					pmax	pmax				
	comp=Z,37nm,1.2s									
SML	**Sawmill**	**72.61**	**333**	*e*P		**P**		**16 02 55.1**	**-0.9**
	comp=Z,37nm,1.2s									
SEW	**Seward**	**72.61**	**331**	*e*P		**P**		**16 02 54.8**	**-1.1**
	comp=Z,26nm,1.0s									
MORF	**Marmelete**	**72.80**	**53**	*e*P		**P**		**16 02 57.2**	**-0.4**
MORF					AMb	AMB		16 02 59.4		
	comp=Z,52nm,2.0s									
MORF	**Marmelete**	**72.80**	**53**	*e*P		**P**		**16 02 57.9**	**+0.3**
	comp=Z,57nm,1.2s									
HDA	**Harding Lake**	**72.87**	**336**	*e*P		**P**		**16 02 56.8**	**-0.6**
	comp=Z,44nm,1.2s									
IL1	**Eielson Array**	**72.97**	**336**	*e*P		**P**		**16 02 57.6**	**-0.4**
ILAR	**Eielson Array**	**72.97**	**336**	P		**P**		**16 02 58.0**	**0.0**
	comp=Z,8.0nm,0.9s,baz=112,slow=4.7,SNR=68									
ILAR					LR	LR		16 37 32.3		
	comp=Z,249nm,21.4s,baz=116,slow=38									
ILB	**Eielson Array**	**72.97**	**336**	*e*P		**P**		**16 02 57.5**	**-0.5**
FYU	**Fort Yukon**	**72.99**	**338**	*e*P		**P**		**16 02 58.2**	**+0.1**
	comp=Z,83nm,1.6s									
RC01	**Rabbit Creek A**	**73.03**	**332**	*e*P		**P**		**16 02 58.0**	**-0.4**
	comp=Z,28nm,1.2s									
MESJ	**Messejana**	**73.18**	**53**	*e*P		**P**		**16 02 59.3**	**-0.5**
MESJ					AMb	AMB		16 03 04.9		
	comp=Z,32nm,1.4s									
MESJ	**Messejana**	**73.18**	**53**	*e*P		**P**		**16 03 02.3**	**+2.5**
	comp=Z,34nm,1.5s									
BRLK	**Bradley Lake**	**73.22**	**331**	*e*P		**P**		**16 02 59.1**	**-0.5**
	comp=Z,46nm,1.3s									
PMTG	**Montargil**	**73.27**	**51**	*e*P		**P**		**16 03 01.6**	**+1.3**
	comp=Z,28nm,1.4s									
CCB	**Clear Creek Bu**	**73.30**	**336**	*e*P		**P**		**16 02 59.5**	**-0.5**
	comp=Z,12nm,1.3s									
PCVE	**Castro Verde**	**73.31**	**53**	*e*S		**SKiKP**		**16 12 39.1**	**+6.5**
CNPM	**China Poot**	**73.33**	**330**	*e*P		**P**		**16 03 00.3**	**+0.1**
	comp=Z,15nm,1.0s									
RND	**Reindeer**	**73.33**	**334**	*e*P		**P**		**16 03 00.6**	**+0.3**
RND					pmax	pmax				
	comp=Z,40nm,1.1s									
RND	**Reindeer**	**73.33**	**334**	*e*P		**P**		**16 03 00.6**	**+0.3**
	comp=Z,40nm,1.1s									
WRH	**Wood River Hil**	**73.36**	**336**	*e*P		**P**		**16 02 59.9**	**-0.4**
	comp=Z,13nm,1.2s									
COLA	**College**	**73.39**	**336**	*e*P		**P**		**16 03 00.1**	**-0.4**
COLA					pmax	pmax				
	comp=Z,68nm,1.8s									
COLA	**College**	**73.39**	**336**	*e*P		**P**		**16 03 00.1**	**-0.4**
	comp=Z,68nm,1.8s									
MCK	**McKinley**	**73.47**	**335**	*e*P		**P**		**16 03 01.1**	**+0.1**
MCK					pmax	pmax				
	comp=Z,16nm,1.0s									
MCK	**McKinley**	**73.47**	**335**	*e*P		**P**		**16 03 01.1**	**+0.1**
	comp=Z,16nm,1.0s									
PGAV	**Gavieira, Arco**	**73.48**	**48**	*e*LR		LR		16 26 12.2		
	comp=Z,427nm,22.0s									
PVAQ	**Vaqueiros**	**73.55**	**53**	*e*LR		LR		16 25 48.7		
	comp=Z,370nm,22.0s									
MDM	**Murphy Dome**	**73.58**	**336**	*e*P		**P**		**16 03 01.3**	**-0.3**
	comp=Z,23nm,1.2s									
SUA	**Susitna One**	**73.61**	**332**	*e*P		**P**		**16 03 02.9**	**+0.9**
	comp=Z,43nm,1.4s									
PESTR	**Estremoz**	**73.75**	**52**	*e*P		**P**		**16 03 05.6**	**+2.5**
	comp=Z,23nm,1.5s									
PESTR					*e*S		**S**		**16 12 40.7**	**+6.2**
SCO	**Scoresbysund**	**73.77**	**18**	*i* P		**P**		**16 03 02.0**	**-0.6**
SCO	**Scoresbysund**	**73.77**	**18**	*i* P		**P**		**16 03 02.0**	**-0.6**
OHAK	**Old Harbor**	**73.83**	**328**	*e*P		**P**		**16 03 03.2**	**0.0**
	comp=Z,57nm,1.5s									
MTE	**Manteigas**	**73.89**	**50**	*e*LR		LR		16 26 04.2		
	comp=Z,522nm,22.0s									
PMRV	**Marv??o**	**73.94**	**51**	*e*LR		LR		16 26 08.7		
	comp=Z,452nm,24.0s									
TRF	**Thorofare Moun**	**73.96**	**334**	*e*P		**P**		**16 03 03.8**	**-0.3**
	comp=Z,22nm,1.2s									
PBAR	**Barrancos**	**74.13**	**52**	*e*P		**P**		**16 03 06.3**	**+0.9**
	comp=Z,65nm,1.4s									
SPU	**Mount Spurr**	**74.14**	**332**	*e*P		**P**		**16 03 04.8**	**-0.2**
KTH	**Kantishna Hill**	**74.27**	**334**	*e*P		**P**		**16 03 05.1**	**-0.6**
	comp=Z,14nm,0.9s									
RSO	**Redoubt South**	**74.30**	**331**	*e*P		**P**		**16 03 05.9**	**-0.2**
MVO	**Moncorvo**	**74.34**	**49**	*e*LR		LR		16 26 33.0		
	comp=Z,336nm,20.0s									
BPAW	**Bear Paw Mtn.**	**74.45**	**335**	*e*P		**P**		**16 03 06.3**	**-0.4**
	comp=Z,25nm,1.2s									
MLY	**Manley**	**74.61**	**336**	*e*P		**P**		**16 03 07.4**	**-0.3**
	comp=Z,23nm,1.2s									
PPLA	**Purkeypile**	**74.64**	**334**	*e*P		**P**		**16 03 07.7**	**-0.4**
	comp=Z,58nm,1.4s									
CAST	**Castle Rocks**	**74.73**	**334**	*e*P		**P**		**16 03 07.7**	**-0.7**
	comp=Z,14nm,1.1s									
COLD	**Coldfoot**	**75.06**	**338**	*e*P		**P**		**16 03 11.0**	**+0.8**
	comp=Z,28nm,1.2s									
SVW2	**Sparrevohn**	**75.79**	**331**	*e*P		**P**		**16 03 13.8**	**-0.7**
	comp=Z,24nm,1.3s									
TT01	**Tatalina**	**76.35**	**333**	*e*P		**P**		**16 03 16.9**	**-0.7**
CHGN	**Chignik**	**76.45**	**326**	*e*P		**P**		**16 03 18.6**	**+0.3**
ESDC	**Sonseca Array**	**76.60**	**51**	P		**P**		**16 03 20.4**	**+0.8**
	comp=Z,5.3nm,0.8s,baz=272,slow=5.2,SNR=18									
ESDC					LR	LR		16 31 00.6		
	comp=Z,323nm,21.7s,baz=280,slow=31									
ESLA	**Sonseca Array**	**76.60**	**51**	*e*P		**P**		**16 03 20.9**	**+1.2**
	comp=Z,11nm,0.9s									
ES19	**SONSECA Array**	**76.65**	**51**	*e*P		**P**		**16 03 19.9**	**0.0**
TIC	**Toumodi**	**76.68**	**85**	*e*P		**P**		**16 03 21.5**	**+1.0**
LIC	**Lamto**	**76.71**	**85**	*e*P		**P**		**16 03 21.9**	**+1.2**
	comp=Z,61nm,1.1s									
DBIC	**Dimbokro**	**76.84**	**85**	P		**P**		**16 03 22.6**	**+1.2**
	comp=Z,10nm,1.0s,baz=224,slow=5.2,SNR=5.9									
DBIC					LR	LR		16 35 24.3		
	comp=Z,151nm,20.3s,baz=257,slow=34									
DBIC	**Dimbokro**	**76.84**	**85**	*e*P		**P**		**16 03 22.1**	**+0.8**
DBIC					pmax	pmax				
	comp=Z,31nm,1.4s									
DBIC	**Dimbokro**	**76.84**	**85**	*e*P		**P**		**16 03 22.1**	**+0.8**
	comp=Z,31nm,1.4s									
KIC	**Kosan Boka**	**76.98**	**85**	*e*P		**P**		**16 03 23.5**	**+1.3**
	comp=Z,62nm,1.4s									
DAG	**Danmarks Havn**	**77.30**	**12**	*i* P		**P**		**16 03 21.3**	**-1.4**
	comp=Z,13nm,1.0s									
DAG	**Danmarks Havn**	**77.30**	**12**	*i* P		**P**		**16 03 21.3**	**-1.4**
DAG					pmax	pmax				
	comp=Z,13nm,1.0s									
GRR	**Gorron**	**79.12**	**42**	*e*P		**P**		**16 03 35.6**	**+2.2**
GRR					pmax	pmax				
	comp=Z,40nm,1.2s									
MFF	**Saint Martin d**	**79.56**	**44**	*e*P		**P**		**16 03 38.1**	**+2.3**
MFF					pmax	pmax				
	comp=Z,96nm,1.9s									
LDF	**La Druitiere**	**79.61**	**42**	*e*P		**P**		**16 03 38.3**	**+2.2**
LDF					pmax	pmax				
	comp=Z,31nm,1.1s									
SSF	**Saint Saulge**	**82.07**	**44**	*e*P		**P**		**16 03 50.7**	**+1.5**
SSF					pmax	pmax				
	comp=Z,34nm,1.6s									
TOA0	**Torodi Ar. Sit**	**82.65**	**78**	*e*P		**P**		**16 03 52.7**	**-0.2**
TORD	**Torodi Ar. Bea**	**82.65**	**78**	P		**P**		**16 03 52.5**	**-0.4**
	comp=Z,4.9nm,1.0s,baz=177,slow=0.7,SNR=23									
TORD					LR	LR		16 39 19.5		
	comp=Z,307nm,21.6s,baz=270,slow=35									
HAU	**Haudompre**	**83.94**	**42**	*e*P		**P**		**16 04 02.1**	**+3.1**
HAU					pmax	pmax				
	comp=Z,48nm,1.8s									
HINF	**Hinteralfeld**	**84.30**	**43**	*e*P		**P**		**16 04 01.9**	**+1.1**
HINF					pmax	pmax				
	comp=Z,5.0nm,0.8s									
BFO	**Black Forest**	**85.24**	**42**	*e*P		**P**		**16 04 06.3**	**+0.7**
BFO					pmax	pmax				
	comp=Z,10.0nm,1.2s									
BFO	**Black Forest**	**85.24**	**42**	*e*P		**P**		**16 04 06.3**	**+0.7**
	comp=Z,9.8nm,1.2s									
TAM	**Tamanrasset**	**85.35**	**68**	P		**P**		**16 04 07.9**	**+1.2**
TAM					pmax	pmax				
	comp=Z,8.0nm,0.9s									
TAM	**Tamanrasset**	**85.35**	**68**	*e*P		**P**		**16 04 08.0**	**+1.2**
	comp=Z,7.8nm,0.9s									
NBO02	**NORSAR Array S**	**85.44**	**29**	*e*P		**P**		**16 04 07.0**	**+0.7**
NB2	**NORSAR Subarra**	**85.62**	**29**	P		**P**		**16 04 07.3**	**+0.1**
	comp=Z,23nm,1.4s,baz=274,slow=4.8									
NB2	**NORSAR Subarra**	**85.62**	**29**	P		**P**		**16 04 07.3**	**+0.1**
	baz=274,slow=4.8									
NOA	**NORSAR Array B**	**85.62**	**29**	P		**P**		**16 04 07.2**	**+0.1**
	comp=Z,3.5nm,0.9s,baz=276,slow=4.7,SNR=7.1									
NOA					LR	LR		16 40 36.5		
	comp=Z,158nm,19.1s,baz=270,slow=34									
STU	**Stuttgart**	**85.77**	**42**	P		**P**		**16 04 09.9**	**+1.8**
STU					pmax	pmax				
	comp=Z,23nm,1.3s									
NC405	**NORSAR Array S**	**85.85**	**29**	*e*P		**P**		**16 04 09.7**	**+1.4**
TUE	**Stuetta**	**86.11**	**44**	*e*P		**P**		**16 04 10.0**	**-0.1**
	comp=Z,14nm,1.0s									
DAVA	**Damuels**	**86.39**	**43**	*i* PcP		**P**		**16 04 13.7**	**+2.3**
	comp=Z,13nm,0.8s									
RETA	**Reutte**	**86.96**	**43**	*i* PcP		**P**		**16 04 16.4**	**+2.3**
	comp=Z,10.0nm,1.1s									
FETA	**Feichten**	**86.99**	**43**	*e*PcP		**P**		**16 04 16.7**	**+2.3**
	comp=Z,8.0nm,0.9s									
KEST	**Kesra**	**87.30**	**55**	LR		LR		16 39 00.6		
	comp=Z,102nm,21.2s,baz=315,slow=33									
NKC	**Novy Kostel**	**87.70**	**40**	*e*P		**P**		**16 04 20.0**	**+2.4**
NKC	**Novy Kostel**	**87.70**	**40**	*e*P		**P**		**16 04 20.0**	**+2.4**
CLL	**Collm**	**87.89**	**39**	*e*P		**P**		**16 04 20.0**	**+1.6**
CLL				*e*PP		**PP**		**16 07 43.0**	**-1.2**
CLL				*e*PS		**PnS**		**16 16 04.0**	**+1.0**
CLL				*e*SS		SS		16 20 48.0	-0.4
CLL				Lm		MLR		16 39 00.0		
	comp=Z,400nm,20.0s									
CLL	**Collm**	**87.89**	**39**	*e*P		**P**		**16 04 20.0**	**+1.6**
CLL					MLR	MLR				
	comp=Z,400nm,20.0s									
ABTA	**Abfaltersbach**	**88.24**	**43**	*e*PcP		**P**		**16 04 22.3**	**+2.0**
	comp=Z,8.9nm,0.9s									
BRG	**Berggiesshubel**	**88.55**	**39**	*e*P		**P**		**16 04 21.7**	**+0.2**
	comp=Z,6.7nm,1.0s									
	comp=N,220nm,17.5s									
	comp=E,267nm,20.0s									
	comp=Z,371nm,20.3s									
BRG	**Berggiesshubel**	**88.55**	**39**	*e*P		**P**		**16 04 21.7**	**+0.2**
BRG					pmax	pmax				
	comp=Z,7.0nm,1.0s									
BRG					MLR	MLR				
	comp=N,220nm,17.5s									
BRG					MLR	MLR				
	comp=E,267nm,20.0s									
BRG					MLR	MLR				
	comp=Z,371nm,20.3s									
KHC	**Kasperske Hory**	**88.59**	**41**	*e*P		**P**		**16 04 24.0**	**+2.2**
KHC				*ex*		x		16 04 33.1		
KHC					AMS	AMS		16 36 20.0		
	comp=Z,600nm,22.2s									
KHC	**Kasperske Hory**	**88.59**	**41**	*e*P		**P**		**16 04 21.6**	**-0.2**
KHC					pmax	pmax				
	comp=Z,4.0nm,1.4s									
KHC	**Kasperske Hory**	**88.59**	**41**	*e*P		**P**		**16 04 21.6**	**-0.2**
	comp=Z,4.3nm,1.4s									
GEC2	**GERESS Array S**	**88.72**	**41**	*e*P		**P**		**16 04 23.6**	**+1.1**
GEC2					pmax	pmax				
	comp=Z,7.0nm,1.1s									
GEC2	**GERESS Array S**	**88.72**	**41**	*e*P		**P**		**16 04 23.6**	**+1.1**
	comp=Z,7.1nm,1.1s									
GERES	**GERESS Array B**	**88.72**	**41**	P		**P**		**16 04 23.6**	**+1.1**
	comp=Z,2.5nm,0.8s,baz=270,slow=2.7,SNR=17									
GERES					LR	LR		16 38 46.3		
	comp=Z,224nm,22.0s,baz=274,slow=32									
GEA0	**GERESS Array S**	**88.72**	**41**	*e*P		**P**		**16 04 23.3**	**+0.8**
PVCC	**Panska Ves**	**89.00**	**39**	AMS		AMS		16 37 20.0		
	comp=Z,600nm,24.2s									
PRU	**Pruhonice**	**89.07**	**40**	*e*SKS		**SKSac**		**16 14 57.8**	**+3.8**
PRU					AMS	AMS		16 37 30.0		
	comp=Z,700nm,22.8s									
GOPC	**GO Pecny, Ondr**	**89.24**	**40**	AMS		AMS		16 37 50.0		
	comp=Z,800nm,23.2s									
ARCES	**ARCESS Array B**	**89.60**	**20**	P		**P**		**16 04 25.5**	**-0.6**
	comp=Z,2.3nm,0.7s,baz=283,slow=6.1,SNR=8.1									
ARCES					LR	LR		16 43 43.2		
	comp=Z,163nm,19.1s,baz=290,slow=35									
TREC	**Trest**	**89.80**	**40**	AMS		AMS		16 37 40.0		
	comp=Z,600nm,22.7s									
UPC	**Upice**	**89.91**	**39**	AMS		AMS		16 37 40.0		
	comp=Z,500nm,23.2s									
SOKA	**Soboth**	**89.97**	**43**	*i* PcP		**PcP**		**16 04 30.7**	**+1.1**
	comp=Z,3.5nm,0.7s									
DPC	**Dobruska-Polom**	**90.13**	**39**	*e*P		**P**		**16 04 31.5**	**+2.5**
DPC					AMS	AMS		16 37 50.0		
	comp=Z,500nm,23.5s									
DPC	**Dobruska-Polom**	**90.13**	**39**	*e*P		**P**		**16 04 31.5**	**+2.5**
DPC					MLR	MLR				
	comp=Z,500nm,23.5s									
CONA	**Conrad Observa**	**90.29**	**42**	*i* PcP		**P**		**16 04 31.9**	**+2.0**
	comp=Z,12nm,1.3s									
BILL	**Bilibino**	**91.34**	**339**	*e*P		**P**		**16 04 34.0**	**-0.2**
BILL				*e*				16 08 08.2		
BILL					pmax	pmax				
	comp=Z,6.0nm,0.9s									
BILL					MLR	MLR				
	comp=Z,320nm,22.0s									
BILL	**Bilibino**	**91.34**	**339**	*e*P		**P**		**16 04 35.3**	**+1.1**
	comp=Z,58nm,1.4s									
OKC	**Ostrava-Krasne**	**91.39**	**40**	AMS		AMS		16 38 50.0		
	comp=Z,600nm,24.4s									
FINES	**FINESS Array B**	**92.52**	**27**	P		**P**		**16 04 40.5**	**+0.8**
	comp=Z,2.5nm,0.9s,baz=299,slow=2.9,SNR=3.2									
FINES					LR	LR		16 44 17.7		
	comp=Z,223nm,19.8s,baz=280,slow=34									
APA	**Apatity**	**93.04**	**20**	*i* P		P		16 04 35.0	-7.1	
APA					pmax	pmax				
	comp=Z,4.0nm,1.0s									
APA					MLR	MLR				
	comp=Z,400nm,19.0s									
SNAA	**Sanae**	**93.34**	**162**	*i* P		**P**		**16 04 44.7**	**+1.3**
SNAA	**Sanae**	**93.34**	**162**	*e*P		**P**		**16 04 43.6**	**+0.2**
LVV	**L'vov**	**95.07**	**39**	*e*P		**P**		**16 04 49.1**	**-2.7**
KIEV	**Kiev**	**97.92**	**37**	*i* P		Pdif		16 05 06.4	+1.7	
KIEV					pmax	pmax				
	comp=Z,1.0nm,0.9s									
AKASG	**Malin Array Be**	**97.93**	**37**	LR		LR		16 45 41.0		
	comp=Z,291nm,21.3s,baz=290,slow=33									
TIXI	**Tiksi**	**98.82**	**350**	*i* P		**P**		**16 05 07.5**	**-0.8**
TIXI					pmax	pmax				
	comp=Z,3.0nm,1.0s									
SEY	**Seymchan**	**98.86**	**338**	*i* P		Pdif		16 05 09.3	+0.7	
OBN	**Obninsk**	**100.14**	**31**	*e*P		**Pdif**		**16 05 15.9**	**+1.4**
OBN				*e*				16 09 23.2		
OBN					pmax	pmax				
	comp=Z,4.0nm,0.9s									
OBN					MLR	MLR				
	comp=Z,157nm,19.0s									
H11S1	**WAKE ISLAND Hyl**	**07.37**	**292**		T	T		18 06 03.9		
	baz=77,slow=75,SNR=8.6									
H11S2	**WAKE ISLAND Hyl**	**07.37**	**292**		T	T		18 05 51.8		
	baz=77,slow=75,SNR=10.0									
H11S3	**WAKE ISLAND Hyl**	**07.38**	**292**		T	T		18 05 59.0		
	baz=77,slow=75,SNR=11									
ABKAR	**Akbulak array**	**114.99**	**26**	*e*PKiKP		PKPdf		16 10 10.3	+0.4	
ZALV	**Zalesovo Beam**	**118.28**	**9**	PKP		**PKPdf**		**16 10 16.5**	**+0.4**
	comp=Z,0.4nm,0.3s,baz=225,slow=1.9,SNR=3.9									
GEYT	**Alibeck**	**122.05**	**36**	PKP		**PKPdf**		**16 10 22.4**	**-1.5**
	comp=Z,0.9nm,0.4s,baz=119,slow=5.8,SNR=4.1									
CN2	**Changchun**	**123.49**	**336**	*e*PKP		**PKPdf**		**16 10 23.8**	**-2.6**
MKAR	**Makanchi Array**	**124.69**	**13**	PKP		**PKPdf**		**16 10 27.9**	**-0.8**
	comp=Z,0.9nm,0.9s,baz=343,slow=1.6,SNR=3.6									
SONA1	**Songino Array**	**124.81**	**353**	*e*PKPdf		**PKPdf**		**16 10 27.4**	**-1.7**
SONM	**Songino Array**	**124.82**	**353**	PKP		**PKPdf**		**16 10 27.8**	**-1.2**
	comp=Z,2.0nm,1.0s,baz=19,slow=0.6,SNR=6.8									
KS01	**Wonju Array Si**	**127.48**	**330**	*e*PKPdf		**PKPdf**		**16 10 33.2**	**-1.1**
KSRS	**Korea Array**	**127.48**	**330**	PKP		**PKPdf**		**16 10 34.4**	**+0.1**
	comp=Z,3.9nm,0.9s,baz=11,slow=1.4,SNR=9.9									
KSAR	**Wonju Array Be**	**127.51**	**330**	PKiKP		**PKPdf**		**16 10 34.4**	**+0.1**
KSAR	**Wonju Array Be**	**127.51**	**330**	PKP		**PKPdf**		**16 10 34.4**	**+0.1**
WMQ	**Urumqi**	**128.58**	**9**	*e*PKP		**PKPdf**		**16 10 34.8**	**-1.5**
WMQ					PP	**PP**		**16 12 45.0**	**+4.7**
WMQ					SKKS			16 19 30.0		
WMQ					SS	**SS**		**16 30 00.3**	**+3.9**
WMQ					AMB	AMB				
	comp=Z,120nm,4.0s									
WMQ					LR	LR				
	comp=Z,260nm,16.0s									
WMQ					LR	LR				
	comp=Z,160nm,17.0s									
WMQ					LR	LR				
	comp=Z,340nm,28.8s									
KSH	**Kashi**	**129.51**	**22**	*e*PKP		**PKPdf**		**16 10 37.4**	**-0.9**
KSH				*e*PP		PP		16 12 55.3	+8.5	
KSH				PKS		**PKSdf**		**16 14 12.9**	**-2.0**
KSH				SKS		**SKSdf**		**16 17 43.4**	**-7.0**
KSH				SKKS		**SKKSac**		**16 19 43.9**	**-1.5**
KSH				LR		LR				
	comp=Z,110nm,10.2s									
KSH				LR		LR				
	comp=Z,130nm,10.4s									
KSH				LR		LR				
	comp=Z,190nm,13.5s									
BJI	**Beijing**	**130.13**	**341**	PKP		**PKPdf**		**16 10 37.8**	**-1.4**
BJI				SS		SS		16 30 13.9	-1.8	
BJI				LR		LR				
	comp=Z,210nm,21.0s									
BJI				LR		LR				
	comp=Z,220nm,17.0s									
BJI				LR		LR				
	comp=Z,220nm,23.8s									
HHC	**Hu-ho-hao-te**	**130.66**	**346**	*e*PKP		**PKPdf**		**16 10 36.9**	**-3.5**
HHC				PP		PP		**16 12 54.8**	**+0.8**
HHC				SS		SS		16 30 21.0	-1.3	
HHC				AMB		AMB				
	comp=Z,58nm,3.8s									
HHC				LR		LR				
	comp=Z,150nm,14.8s									
HHC				LR		LR				
	comp=Z,130nm,16.0s									
HHC				LR		LR				
	comp=Z,200nm,16.3s									
STKA	**Stephens Creek**	**132.23**	**233**	PKP		**PKPdf**		**16 10 44.1**	**+0.7**
	comp=Z,4.4nm,1.1s,baz=0.7,slow=4.5,SNR=4.3									
GTA	**Gaotai**	**133.74**

WUAZ	**Wupatki**	**2.75**	**104**	*e*Pn	Pg	15 58 42.5	-1.3
MSU	**Marysvale**	**3.01**	**40**	*e*Pn	Pb	15 58 42.5	-2.6
GLA	**Glamis**	**3.17**	**183**	*e*Pn	Pn	15 58 41.0	-0.6
X16A	**Lo Mia Camp, P**	**3.18**	**124**	*e*Pg	Pg	15 58 50.5	-1.6
113A	**Mohawk Valley,**	**3.53**	**168**	*e*Pg	Pb	15 58 55.4	+1.6
OSI	**Osito Audit: C**	**3.70**	**245**	*e*Sn	Sn	15 59 32.9	+0.2

ISCJB ***20*** *16:15:51.8±0.5, 0°.29N±0°.03×78°.27W±0°.04, h4km±6km, Error ellipse: s-maj=7.1km s-min=4.6km az=18.6*
IGQ ***20*** *16:15:52.1±0.3, 0°N±2″×7°.8W±°, h1km±2km, M3.5/19*
ISC 20 16:15:50.7±1.0, **0°.32N**±0°.03×**78°.22W**±0°.05, **h15**km±9km, **n30**, σ0**°79**/33, **Colombia-Ecuador border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COTA	**Cotacachi**	**0.12**	**279**	P	**Pg**	**16 15 55.5**	**+0.6**
OTAV	**Otavalo**	**0.25**	**252**	*e*P	**Pg**	**16 15 56.2**	**-0.2**
OTAV	**Otavalo**	**0.25**	**252**	P	**Pg**	**16 15 55.5**	**-1.0**
OTAV				S	**Sg**	**16 15 59.5**	**-0.9**
ELAGU	**Cayambe Volc**	**0.41**	**146**	P	**Pb**	**16 16 00.4**	**+0.5**
LITE1	**Lita**	**0.50**	**343**	P	**Pb**	**16 16 01.2**	**0.0**
LITE1				S	**Sb**	**16 16 08.2**	**-0.2**
YANA	**Yana**	**0.56**	**220**	P	**Pg**	**16 16 01.4**	**-0.5**
PINO	**Pino**	**0.61**	**220**	P	**Pg**	**16 16 02.6**	**-0.4**
JUA2	**San Juan 2**	**0.65**	**217**	P	**Pg**	**16 16 03.0**	**-0.7**
ATUL	**Tulc¨¡n**	**0.67**	**47**	P	**Pn**	**16 16 06.1**	**+0.2**
CHAR	**Charly**	**0.68**	**126**	P	**Pn**	**16 16 05.8**	**-0.3**
CMBC	**Cumbal**	**0.73**	**32**	*e*P	**Pn**	**16 16 06.5**	**-0.4**
ANTI	**Antisana**	**0.76**	**176**	P	**Pb**	**16 16 06.2**	**+0.2**
PITA	**Cotopaxi Volc**	**0.89**	**194**	P	**Pb**	**16 16 08.3**	**+0.1**
VC1	**Cotopaxi 1**	**0.97**	**191**	P	**Pg**	**16 16 09.6**	**0.0**
COV1	**Cotopaxi Volc**	**0.98**	**187**	P	**Pb**	**16 16 10.5**	**+0.7**
BVC2	**Cotopaxi Volca**	**0.99**	**191**	P	**Pg**	**16 16 09.9**	**-0.1**
NAS2	**Nasa**	**0.99**	**195**	P	**Pb**	**16 16 10.0**	**+0.2**
BNAS	**Cotopaxi Volca**	**1.01**	**195**	P	**Pg**	**16 16 10.4**	**-0.1**
MOV1	**Cotopaxi Vol s**	**1.05**	**192**	P	**Pb**	**16 16 11.3**	**+0.4**
MOV1				S	**Sg**	**16 16 24.9**	**0.0**
PISA	**Pisayambo**	**1.38**	**187**	P	**Pg**	**16 16 17.1**	**-0.2**
MAG1	**Magdalena**	**1.60**	**256**	P	**Pn**	**16 16 19.3**	**+0.8**
POND	**Pondoa**	**1.74**	**188**	P	**Pb**	**16 16 23.1**	**+0.5**
BULB	**Ulba Tungurahu**	**1.75**	**186**	P	**Pb**	**16 16 23.3**	**+0.5**
CRUC	**La Cruz**	**1.77**	**45**	*e*P	**Pg**	**16 16 26.5**	**+1.7**
BPAT	**Tungurahua Vol**	**1.82**	**187**	P	**Pg**	**16 16 25.1**	**-0.7**
PAT1	**Patacocha**	**1.82**	**187**	P	**Pg**	**16 16 25.1**	**-0.7**
ARRY	**Arrayan**	**1.82**	**188**	P	**Pb**	**16 16 24.4**	**+0.4**
BMAS	**Tigual station**	**1.82**	**188**	P	**Pb**	**16 16 24.3**	**+0.3**
GRGC	**Isla de Gorgon**	**2.67**	**1**	*e*P	**Pn**	**16 16 34.6**	**+1.4**
POPC	**Popayan, Colom**	**2.69**	**35**	*e*P	**Pg**	**16 16 39.9**	**-2.5**

IDC 20 16:18:21.4±2.5, **10°.86S**×**123°.47E, h0**km, **mb3.6**/1, **mb1 3.6**/3, **mb1mx3.4**/34, **mbtmp3.4**/3, **ML3.2**/2, **Error ellipse: s-maj=238.2km s-min=32.7km az=52.0, Timor region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.83**	**132**	Pn	**Pn**	16 21 37.7	-1.1
	0.1nm,0.3s,baz=306,slow=14,SNR=7.0						
WRA				Sn	Sn	16 24 03.2	-10
	0.2nm,0.3s,baz=316,slow=24,SNR=8.2						
ASAR	**Alice Springs**	**16.16**	**143**	Pn	**Pn**	16 22 11.2	+1.2
	0.1nm,0.3s,baz=324,slow=13,SNR=10						
ASAR				Sn	Sn	16 25 04.9	-5.2
	0.1nm,0.3s,baz=313,slow=22,SNR=4.3						
MKAR	**Makanchi Array**	**68.16**	**331**	P	P	16 29 23.5	0.0
	0.5nm,0.8s,baz=144,slow=6.2,SNR=3.0						

ISCJB ***20*** *16:19:57.9±0.4, 67°.85N±0°.02×20°.32E±0°.06, h0km, Error ellipse: s-maj=3.2km s-min=3.2km az=173.7*
CSEM ***20*** *16:19:58.4±0.2, 67°.84N×20°.26E, h0km, ML2.2, Error ellipse: s-maj=4.3km s-min=3.6km az=91.0, Mining explosion.*
UPP ***20*** *16:19:58.5±0.1, 67°.84N×20°.20E, h0km, ML2.2, Suspected explosion*
NAO ***20*** *16:19:58.5±1.1, 67°.86N×20°.50E, ML2.5*
HEL ***20*** *16:19:58.9±0.1, 67°.87N×20°.25E, h0km, ML2.0, ML2.2(UPP), Explosion*
BER ***20*** *16:20:01.0±3.6, 67°.85N×20°.47E, h0km, ML1.9, ML2.5(NAO), Suspected explosion*
ISC 20 16:19:57.1±0.7, **67°.82N**±0°.02×**20°.14E**±0°.02, **h0**km, **n60**, σ1**°16**/84, **Sweden**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKU	**Nikkaluokta**	**0.42**	**277**	P	**Pb**	**16 20 07.0**	**-0.5**
NIKU				S	**Sb**	**16 20 13.3**	**-1.1**
NIKU	**Nikkaluokta**	**0.42**	**277**	*i* P	**Pb**	**16 20 07.0**	**-0.5**
NIKU				*i* S	**Sb**	**16 20 13.3**	**-1.1**
NIKU	**Nikkaluokta**	**0.42**	**277**	P	**Pb**	**16 20 07.0**	**-0.5**
NIKU				S	**Sb**	**16 20 13.3**	**-1.1**
DUNU	**Dundret**	**0.72**	**167**	P	**Pb**	**16 20 12.3**	**-0.2**
DUNU				S	**Sb**	**16 20 22.1**	**-0.9**
DUNU	**Dundret**	**0.72**	**167**	*i* P	**Pb**	**16 20 12.3**	**-0.2**
DUNU				*i* S	**Sb**	**16 20 22.1**	**-0.9**
DUNU	**Dundret**	**0.72**	**167**	P	**Pb**	**16 20 12.4**	**-0.2**
DUNU				S	**Sb**	**16 20 22.1**	**-0.9**
LANU	**Lannavaara**	**0.73**	**71**	P	**Pg**	**16 20 11.8**	**+0.6**
LANU	**Lannavaara**	**0.73**	**71**	*e*P	**Pg**	**16 20 11.6**	**+0.3**
	baz=249						
LANU				*e*S	**Sg**	**16 20 21.3**	**+0.6**
LANU	**Lannavaara**	**0.73**	**71**	Pb	**Pg**	**16 20 11.5**	**+0.3**
LANU	**Lannavaara**	**0.73**	**71**	P	**Pg**	**16 20 11.8**	**+0.6**
LANU				Sb	**Sg**	**16 20 21.3**	**+0.6**
MASU	**Masugnsbyn**	**0.80**	**116**	P	**Pb**	**16 20 13.4**	**-0.5**
MASU	**Masugnsbyn**	**0.80**	**116**	*i* P	**Pb**	**16 20 13.4**	**-0.5**
MASU	**Masugnsbyn**	**0.80**	**116**	P	**Pb**	**16 20 13.4**	**-0.5**
KIF	**Kilpisjarvi**	**1.21**	**11**	Pg	**Pg**	**16 20 20.4**	**0.0**
KIF				Lg	Lg	16 20 37.0	
KIF	**Kilpisjarvi**	**1.21**	**11**	P	**Pg**	**16 20 20.4**	**0.0**
KIF				Lg	Lg	16 20 37.0	
KIF	**Kilpisjarvi**	**1.21**	**11**	*e*PB	**Pg**	**16 20 20.6**	**+0.2**
	baz=187						
KIF				*e*SB	**Sb**	**16 20 37.1**	**0.0**
KIF	**Kilpisjarvi**	**1.21**	**11**	Pg	**Pg**	**16 20 20.6**	**+0.2**
KIF				Lg	Lg	16 20 37.0	
PAJU	**Pajala**	**1.40**	**124**	P	**Pb**	**16 20 24.0**	**-0.1**
PAJU	**Pajala**	**1.40**	**124**	*e*P	**Pb**	**16 20 24.0**	**-0.1**
PAJU	**Pajala**	**1.40**	**124**	P	**Pb**	**16 20 24.0**	**-0.1**
HEF	**Hetta**	**1.45**	**64**	*e*PG	**Pn**	**16 20 24.4**	**-0.1**
	baz=244						
HEF				MSG		16 20 41.2	
	comp=Z,15nm,0.2s						
HEF				*e*SB	**Sg**	**16 20 42.9**	**-0.7**
HEF	**Hetta**	**1.45**	**64**	Pn	**Pn**	**16 20 24.4**	**-0.1**
HEF				Sg	**Sg**	**16 20 42.8**	**-0.7**
ERTU	**Ertsjaerv**	**1.50**	**147**	P	**Pg**	**16 20 26.0**	**+0.1**
ERTU	**Ertsjaerv**	**1.50**	**147**	*e*P	**Pg**	**16 20 26.0**	**+0.1**
ERTU	**Ertsjaerv**	**1.50**	**147**	P	**Pg**	**16 20 26.0**	**+0.1**
HARU	**Harads**	**1.70**	**168**	P	**Pg**	**16 20 29.7**	**+0.1**
HARU	**Harads**	**1.70**	**168**	*e*P	**Pg**	**16 20 29.7**	**+0.1**
HARU	**Harads**	**1.70**	**168**	P	**Pg**	**16 20 29.7**	**+0.1**
TRO	**Tromso**	**1.87**	**347**	*e*P	**Pb**	**16 20 32.0**	**-0.1**
TRO				*e*S	**Sb**	**16 20 56.5**	**+0.5**
TRO				IAML		16 21 06.7	
	comp=Z,21nm,0.7s						
TRO	**Tromso**	**1.87**	**347**	*e*P	**Pb**	**16 20 32.0**	**-0.1**
	SNR=50						
TRO				*e*S	**Sb**	**16 20 56.5**	**+0.5**
	SNR=50						
SJUU	**Sjulsmark**	**2.40**	**165**	P	**Pb**	**16 20 40.2**	**-0.9**
SJUU	**Sjulsmark**	**2.40**	**165**	*e*P	**Pb**	**16 20 40.2**	**-0.9**
SJUU	**Sjulsmark**	**2.40**	**165**	P	**Pb**	**16 20 40.2**	**-0.9**
TOF	**Tornio**	**2.40**	**135**	*e*PB	**Pb**	**16 20 40.5**	**-0.7**
TOF				*e*SB	**Sb**	**16 21 11.2**	**-0.1**
TOF	**Tornio**	**2.40**	**135**	Pg	**Pb**	**16 20 40.4**	**-0.7**
TOF				Sg	**Sb**	**16 21 11.2**	**-0.1**
LOF	**Lofoten**	**2.51**	**280**	*e*S	**Sb**	**16 21 14.2**	**-0.1**
LOF				IAML		16 21 22.5	
	comp=Z,11nm,0.5s						
RNF	**Rovaniemi**	**2.59**	**115**	*e*PB	**Pb**	**16 20 43.1**	**-1.3**
RNF				*e*SB	**Sb**	**16 21 16.5**	**-0.2**
RNF	**Rovaniemi**	**2.59**	**115**	Pg	**Pb**	**16 20 43.1**	**-1.3**
RNF				Sg	**Sb**	**16 21 16.5**	**-0.2**
ARA0	**ARCESS Array S**	**2.61**	**46**	Pn	**Pn**	**16 20 41.9**	**+1.4**
	baz=229,slow=14						
ARA0				Sn	**Sn**	**16 21 11.7**	**-1.2**
	baz=233,slow=22						
ARA0				Lg	Lg	16 21 16.1	
	baz=228,slow=28						
ARA0	**ARCESS Array S**	**2.61**	**46**	Pn	**Pn**	**16 20 41.9**	**+1.4**
	SNR=50						
ARA0				Sn	**Sn**	**16 21 11.7**	**-1.2**
	SNR=50						
ARA0				Lg	Lg	16 21 16.0	
	SNR=8.4						
BURU	**Burvik**	**3.29**	**171**	*e*P	**Pb**	**16 20 53.1**	**-3.2**
	baz=355						
BURU	**Burvik**	**3.29**	**171**	Pb	**Pb**	**16 20 53.1**	**-3.2**
OUL	**Oulu**	**3.59**	**137**	*e*SB	**Sb**	**16 21 47.0**	**+1.6**
VRF	**Varrio**	**3.60**	**87**	*e*PG	**Pb**	**16 21 02.0**	**+0.4**
UMAU	**Umeaa**	**3.96**	**177**	*e*P	**Pn**	**16 21 03.1**	**+4.0**
UMAU	**Umeaa**	**3.96**	**177**	Pb	**Pn**	**16 21 03.0**	**+4.0**
KU6	**Riekki**	**4.24**	**111**	*e*P	**Pn**	**16 21 04.7**	**+1.8**
KU6	**Riekki**	**4.24**	**111**	Pn	**Pn**	**16 21 04.7**	**+1.8**
APA0	**Apatity Array**	**4.90**	**87**	Pn	**Pn**	**16 21 11.9**	**0.0**
	baz=276,slow=12						
APA0				Sn	**Sn**	**16 22 08.3**	**-0.9**
	baz=280,slow=28						
APA0				Lg	Lg	16 22 25.1	
	baz=284,slow=28						
APA0	**Apatity Array**	**4.90**	**87**	Pn	**Pn**	**16 21 11.9**	**0.0**
	baz=276,slow=12						
APA0				Sn	**Sn**	**16 22 08.3**	**-0.9**
	baz=280,slow=28						
APA0				Lg	Lg	16 22 25.1	
	baz=284,slow=28						
APA0	**Apatity Array**	**4.90**	**87**	Pn	**Pn**	**16 21 11.9**	**0.0**
	SNR=50						
APA0				Sn	**Sn**	**16 22 08.3**	**-0.9**
	SNR=50						
FIA0	**FINESS Array S**	**6.89**	**156**	Pn	**Pn**	**16 21 41.4**	**+2.2**
FIA0				Sn	**Sn**	**16 22 57.1**	**-1.1**
	baz=352,slow=22						
FIA0				Lg	Lg	16 23 32.6	
	baz=344,slow=37						
FIA0	**FINESS Array S**	**6.89**	**156**	Pn	**Pn**	**16 21 41.4**	**+2.2**
FIA0				Sn	**Sn**	**16 22 57.1**	**-1.1**
	baz=352,slow=22						
FIA0				Lg	Lg	16 23 32.6	
	baz=344,slow=37						
FIA0	**FINESS Array S**	**6.89**	**156**	Pn	**Pn**	**16 21 41.4**	**+2.2**
	SNR=50						
FIA0				Sn	**Sn**	**16 22 57.1**	**-1.1**
	SNR=50						
NB2	**NORSAR Subarra**	**7.82**	**214**	Lg	Lg	16 24 05.0	
	baz=35,slow=37						
NB2	**NORSAR Subarra**	**7.82**	**214**	Lg	Lg	16 24 05.0	
	baz=35,slow=37						
HFS	**Hagfors**	**8.22**	**203**	Sn	**Sn**	**16 23 30.6**	**-0.3**
	baz=17,slow=28						
HFS				Lg	Lg	16 24 12.8	
	baz=27,slow=22						
HFS	**Hagfors**	**8.22**	**203**	Sn	**Sn**	**16 23 30.6**	**-0.3**
	baz=17,slow=28						
HFS				Lg	Lg	16 24 12.8	
	baz=27,slow=22						
HFS	**Hagfors**	**8.22**	**203**	Sn	**Sn**	**16 23 30.6**	**-0.3**
	SNR=50						

CSEM ***20*** *16:25:38.8±0.2, 38°.24N×31°.95E, h10km, MD2.6, Error ellipse: s-maj=4.8km s-min=3.4km az=60.0*
ISK ***20*** *16:25:38.5, 38°.24N×31°.96E, h10km, MD2.6*
DDA ***20*** *16:25:39.8, 38°.26N×32°.04E, h7km, Md2.6*
ISC 20 16:25:39.4±1.0, **38°.25N**±0°.03×**31°.99E**±0°.04, **h13**km±9km, **n19**, σ1**°00**/31, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDHN	**Kadinhani**	**0.29**	**20**	*i* P	**Pg**	**16 25 45.0**	**-0.5**
KDHN				*i* S	**Sg**	**16 25 50.1**	**+0.5**
KDHN	**Kadinhani**	**0.29**	**20**	P	**Pg**	**16 25 45.0**	**-0.5**
KDHN				S	**Sg**	**16 25 50.1**	**+0.5**
LADK	**Ladik-KONYA**	**0.30**	**99**	*e*PG	**Pg**	**16 25 45.4**	**-0.3**
LADK				*e*SG	**Sg**	**16 25 50.3**	**+0.4**
LADK	**Ladik-KONYA**	**0.30**	**99**	*e*Pg	**Pg**	**16 25 45.4**	**-0.3**
LADK				*e*Sg	**Sg**	**16 25 50.3**	**+0.4**
KONT	**Konya--Tatoy**	**0.42**	**136**	*e*PG	**Pg**	**16 25 47.5**	**-0.4**
KONT				*e*SG	**Sg**	**16 25 53.4**	**-0.1**
KONT	**Konya--Tatoy**	**0.42**	**136**	*e*Pg	**Pg**	**16 25 47.5**	**-0.4**
KONT				*e*Sg	**Sg**	**16 25 53.4**	**-0.1**
KMER	**Konya-Meram**	**0.57**	**148**	*i* P	**Pg**	**16 25 50.1**	**-0.4**
KMER				*i* S	**Sb**	**16 25 59.1**	**-0.1**
KMER	**Konya-Meram**	**0.57**	**148**	P	**Pg**	**16 25 50.1**	**-0.4**
KMER				S	**Sb**	**16 25 59.2**	**-0.1**
KIZT	**Kizilcal**	**0.64**	**352**	*e*PG	**Pg**	**16 25 51.5**	**-0.3**
KIZT				*e*SG	**Sb**	**16 26 00.8**	**-0.5**
KIZT	**Kizilcal**	**0.64**	**352**	*e*Pg	**Pg**	**16 25 51.6**	**-0.3**
KIZT				*e*Sg	**Sb**	**16 26 00.9**	**-0.5**
CHBY	**Cihanbeyli**	**0.78**	**65**	*e*PG	**Pb**	**16 25 55.0**	**0.0**
CHBY	**Cihanbeyli**	**0.78**	**65**	*e*Pg	**Pb**	**16 25 55.0**	**0.0**
BOLV	**Bolvadin**	**0.94**	**300**	*i* P	**Pn**	**16 26 02.5**	**+4.0**
BOLV				*i* S	**Sn**	**16 26 11.0**	**-0.8**
BOLV	**Bolvadin**	**0.94**	**300**	S	**Sn**	**16 26 11.0**	**-0.8**
BAGO	**Egridir - ISPA**	**0.98**	**255**	*i* P	**Pn**	**16 25 59.5**	**+0.6**
BAGO				*i* S	**Sn**	**16 26 13.8**	**+1.1**
SUTC	**Sutluce-Ispart**	**1.10**	**226**	*e*PG	**Pg**	**16 25 59.3**	**-1.3**
SUTC	**Sutluce-Ispart**	**1.10**	**226**	*e*Pg	**Pg**	**16 25 59.3**	**-1.3**
SVRH	**Sivrihisar-ESK**	**1.25**	**343**	*e*PN	**Pn**	**16 26 01.8**	**-0.9**
SVRH	**Sivrihisar-ESK**	**1.25**	**343**	*e*Pn	**Pn**	**16 26 01.8**	**-0.9**

SOME ***20*** *16:29:36.7, 40°.78N×76°.82E, h15km*
NNC ***20*** *16:29:38.8±10.0, 40°.93N×77°.03E, h0km, mb3.4, mpv3.0, Error ellipse: s-maj=80.7km s-min=51.6km az=169.0*
KRNET ***20*** *16:29:39.7±0.1, 41°.05N×76°.62E, h18km, mb2.8*
ISC 20 16:29:37.2±2.3, **40°.92N**±0°.09×**76°.64E**±0°.04, **h16**km±16km, **n23**, σ1**°72**/44, **25C-3D, Kyrgyzstan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDJ	**Kajisay**	**1.28**	**18**	⇑*i* P	**Pb**	**16 30 01.3**	**+0.3**
	baz=21						
KDJ				⇑*i* S	**Sg**	**16 30 19.4**	**+0.8**
	baz=21						
ULHL	**Ulahol**	**1.36**	**347**	⇑*i* P	**Pg**	**16 30 03.4**	**-0.1**
	baz=346						
ULHL				⇑*i* S	**Sg**	**16 30 20.4**	**-0.9**
	baz=346						
KZA	**Kyzart**	**1.56**	**318**	⇓*i* P	**Pg**	**16 30 07.8**	**+0.4**
	baz=315						
KZA				⇓*i* S	**Sg**	**16 30 28.2**	**+0.4**
	baz=315						
BOOM	**Boomskoye usch**	**1.66**	**342**	⇑*i* P	**Pg**	**16 30 09.6**	**+0.4**
	baz=341						
BOOM				⇑*i* S	**Sg**	**16 30 31.2**	**+0.5**
	baz=341						
ARLS	**Aral**	**1.98**	**299**	⇑*i* P	**Pg**	**16 30 15.6**	**+0.2**
	baz=296						
ARLS				⇑*i* S	**Sg**	**16 30 41.4**	**+0.2**
	baz=296						
ANVS	**Anan'yevo**	**2.02**	**22**	⇑*e*P	**Pb**	**16 30 14.7**	**+1.1**
	baz=24						
ANVS				⇑*e*S	**Sg**	**16 30 41.3**	**-0.8**
	baz=24						
IZV	**Izvestkoviy**	**2.12**	**359**	*e*P	**Pb**	**16 30 16.3**	**+1.0**
	8.7nm,0.5s						
IZV				*e*S	**Sg**	**16 30 45.2**	**-0.2**
	44nm,0.7s						
TNSS	**Tian-Shan**	**2.14**	**6**	*e*P	**Pb**	**16 30 16.9**	**+1.1**
	14nm,0.8s						
TNSS				*e*S	**Sg**	**16 30 46.0**	**0.0**
	33nm,0.6s						
TKM2	**Tokmak 2**	**2.15**	**339**	⇑*i* P	**Pg**	**16 30 17.2**	**-1.3**
	baz=338						
TKM2				⇑*i* S	**Sg**	**16 30 43.9**	**-2.5**
	baz=338						
TKM2	**Tokmak 2**	**2.15**	**339**	⇑Pn	**Pg**	**16 30 18.2**	**-0.3**
	4.7nm,0.3s						
TKM2				⇑Sn	**Sg**	**16 30 46.1**	**-0.4**
	12nm,0.5s						
KBK	**Karagaybulak**	**2.15**	**324**	⇑*i* P	**Pb**	**16 30 17.3**	**+1.4**
	baz=323						
KBK				⇑*i* S	**Sg**	**16 30 44.3**	**-2.2**
	baz=323						
KST	**Kastek**	**2.19**	**347**	*e*P	**Pg**	**16 30 18.8**	**-0.4**
	2.4nm,0.4s						
KST				*e*S	**Sg**	**16 30 49.7**	**+2.1**
	9.5nm,0.8s						
MDOK	**Medeo**	**2.27**	**8**	*e*P	**Pg**	**16 30 20.2**	**-0.5**
	9.2nm,0.6s						
MDOK				*e*S	**Sg**	**16 30 52.0**	**+1.9**
	27nm,0.7s						
AAK	**Ala-Archa**	**2.35**	**318**	⇑*i* P	**Pb**	**16 30 20.7**	**+1.4**
	baz=316						
AAK				⇑*i* S	**Sg**	**16 30 49.6**	**-3.4**
	baz=316						
AAK	**Ala-Archa**	**2.35**	**318**	⇑Pn	**Pg**	**16 30 22.5**	**+0.1**
	14nm,0.6s						
AAK				⇑Sn	**Sg**	**16 30 53.6**	**+0.6**
	17nm,0.4s						
SATY	**Saty**	**2.51**	**31**	*e*P	**Pb**	**16 30 23.9**	**+1.9**
	8.1nm,0.2s						
SATY				*e*S	**Sg**	**16 30 58.3**	**+0.3**
	29nm,0.5s						
UZB	**Uzynbulak**	**2.85**	**38**	*e*P	**Pg**	**16 30 30.8**	**-1.0**
	5.1nm,0.4s						
UZB				*e*S	**Sg**	**16 31 09.8**	**+1.1**
	13nm,0.8s						
CHKK	**Chushkaly**	**2.96**	**5**	*e*P	**Pb**	**16 30 31.0**	**+1.4**
	5.0nm,0.5s						
CHKK				*e*S	**Sg**	**16 31 10.8**	**-1.7**
	20nm,0.4s						
PDGK	**Podgornoye**	**3.20**	**40**	⇑Pg	**Pb**	**16 30 32.5**	**-1.2**
	3.1nm,0.5s						
PDGK				⇑Lg	Lg	16 31 13.8	
	16nm,0.7s						
MNBS	**Baschi**	**3.42**	**22**	*e*P	**Pb**	**16 30 37.0**	**-0.5**
	3.1nm,0.2s						
MNBS				*e*S	**Sb**	**16 31 21.0**	**+2.3**
	24nm,0.8s						
MNAS	**Manas**	**3.47**	**298**	⇑Pn	**Pb**	**16 30 41.2**	**+2.8**
	2.9nm,0.7s						
MNAS				⇑Sn	**Sg**	**16 31 26.4**	**-2.5**
	4.7nm,1.0s						
KAPS	**Kapalarasan**	**4.80**	**24**	*e*P	**Pb**	**16 31 03.5**	**+2.7**
	1.9nm,0.8s						
KAPS				*e*S	**Sg**	**16 32 06.4**	**-4.7**
	2.3nm,0.5s						
KK31	**Karatay Array**	**5.06**	**298**	⇓Pn	Pn	16 30 59.2	+6.8
	0.2nm,0.3s,baz=132,slow=18,SNR=3.7						
KK31				⇑Sn	**Sb**	**16 32 02.4**	**-3.6**
	0.9nm,0.5s,baz=134,slow=30,SNR=4.5						

CSEM ***20*** *16:49:23.3, 38°.66N×30°.17W, h10km, ML3.1*
PDA 20 16:49:23.3±0.3, **38°.66N×30°.17W, h10**km, **MD3.9, ML3.1, Error ellipse: s-maj=7.6km s-min=2.6km az=6.0, Azores Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCED	**Cedros**	**1.15**	**91**	*e*P	Pb	16 49 40.6	-4.6
PCED				*e*S	Sb	16 49 53.8	-6.3
PCED				A	A	16 49 58.8	
	156nm,0.5s						
PCED	**Cedros**	**1.15**	**91**	*e*P	Pb	16 49 40.6	-4.6
PCED				*e*S	Sb	16 49 53.8	-6.3
CALA	**Caldeira**	**1.15**	**94**	*e*S	Sb	16 49 54.0	-6.3
CALA	**Caldeira**	**1.15**	**94**	*e*S	Sb	16 49 54.0	-6.3
HOR	**Horta**	**1.21**	**96**	*e*S	Sb	16 49 55.3	-6.7
HOR				A	A	16 49 56.4	
	306nm,0.2s						
HOR	**Horta**	**1.21**	**96**	*e*S	Sb	16 49 55.3	-6.7
PCAN	**Candelaria**	**1.33**	**98**	*e*P	Pn	16 49 43.4	-4.6
PCAN				*e*S	Sb	16 49 58.4	-7.1
PCAN				A	A	16 50 04.3	
	124nm,0.6s						
PCAN	**Candelaria**	**1.33**	**98**	*e*P	Pn	16 49 43.4	-4.6
PCAN				*e*S	Sb	16 49 58.4	-7.1
PPNO	**Prainha do Nor**	**1.50**	**97**	*e*P	Pn	16 49 45.8	-4.6
PPNO				*e*S	Sn	16 50 02.6	-7.4
PPNO				A	A	16 50 08.6	
	135nm,0.4s						
PPNO	**Prainha do Nor**	**1.50**	**97**	*e*P	Pn	16 49 45.8	-4.6
PPNO				*e*S	Sn	16 50 02.6	-7.4
ROSA	**Rosais**	**1.51**	**87**	*e*P	Pn	16 49 45.8	-4.6
ROSA				*e*S	Sn	16 50 02.6	-7.6
ROSA				A	A	16 50 06.1	
	104nm,0.3s						
ROSA	**Rosais**	**1.51**	**87**	*e*P	Pn	16 49 45.8	-4.6
ROSA				*e*S	Sn	16 50 02.5	-7.6

IDC 20 17:28:26.5±20.0, **17°.39N×145°.60E, h584**km±291km, **mb2.6**/6, **mb1 2.7**/6, **mb1mx2.5**/37, **mbtmp3.5**/6, **Error ellipse: s-maj=59.7km s-min=28.1km az=23.0, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**38.71**	**197**	P	P	17 35 01.6	-0.2
	0.4nm,0.9s,baz=21,slow=8.9,SNR=3.2						
CMAR	**Chiang Mai Arr**	**44.31**	**279**	P	P	17 35 46.0	0.0
	0.4nm,0.5s,baz=75,slow=7.4,SNR=3.2						
MKAR	**Makanchi Array**	**59.31**	**314**	P	P	17 37 33.2	+0.1
	0.4nm,0.6s,baz=88,slow=8.4,SNR=6.4						
KURBB	**Kurchatov Arra**	**62.23**	**318**	P	P	17 37 52.0	-0.2
	1.1nm,0.6s,baz=99,slow=6.9,SNR=8.8						
ILAR	**Eielson Array**	**64.86**	**26**	P	P	17 38 08.8	+0.1
	0.2nm,0.4s,baz=245,slow=6.1,SNR=3.6						
BVAR	**Borovoye Array**	**67.43

	comp=N,1µm,0.8s								
ACHE	Chepes	2.33	82	*e*P		Pn	17 46 09.8	+0.1	
ANTU	Antumapu	2.33	207	*e*P		Pn	17 46 08.8	-0.9	
ANTU				*i* S		Sn	17 46 36.9	-1.3	
ANTU				IAML			17 46 38.9		
	comp=E,803nm,0.3s								
RCDM	Rinconada Maip	2.33	211	⇑*i*P		Pn	17 46 08.6	-1.1	
RCDM				*i* S		Sn	17 46 36.4	-1.9	
LCO	Las Campanas	2.74	335	*e*P		Pn	17 46 15.7	+0.5	
LCO	Las Campanas	2.74	335	*e*Pn		Pn	17 46 15.6	+0.4	
VCA	Vinchina	2.93	20	*e*P		Pn	17 46 19.2	+1.6	
VCA				IAML			17 46 59.3		
	comp=E,614nm,0.3s								
VACH	Vallenar	3.15	337	⇑*i*P		Pn	17 46 21.5	+1.0	
VACH				*i* S		Sn	17 46 58.5	+1.0	
MRA	San Martin	3.23	108	*e*P		Pn	17 46 21.0	-0.5	
MRA				IAML			17 47 21.4		
	comp=Z,710nm,0.5s								
TCA	Tanti	4.07	89	*e*P		Pn	17 46 31.9	-0.9	
SUCO	SUCO	4.21	117	*e*P		Pn	17 46 33.4	-1.2	
CYA	Choya	4.33	46	⇓*e*P		Pn	17 46 35.6	-0.7	
CYA				IAML			17 47 29.2		
	comp=Z,76nm,0.3s								
LVC	Limon Verde	8.86	3	P		Pn	17 47 35.1	-2.8	
	comp=Z,64nm,0.3s,baz=181,slow=5.8,SNR=12								
LVC				S		Sn	17 49 09.8	-6.4	
	comp=Z,26nm,0.3s,baz=236,slow=18,SNR=2.1								
TRQA	Tornquist	8.92	139	*e*Pn		Pn	17 47 35.7	-2.6	
	comp=Z,51nm,0.6s								
PLCA	Paso Flores	9.27	186	P		Pn	17 47 41.9	-1.2	
	comp=Z,0.2nm,0.3s,baz=16,slow=13,SNR=3.7								
PLCA				LR		LR	17 51 16.5		
	comp=Z,42nm,20.3s,baz=208,slow=37								
CPUP	Villa Florida	11.72	67	P		Pn	17 48 10.8	-5.4	
	comp=Z,0.2nm,0.3s,baz=227,slow=12,SNR=3.9								
LPAZ	La Paz	15.18	5	P		Pn	17 49 01.8	+0.2	
	comp=Z,0.4nm,0.3s,baz=183,slow=7.7,SNR=18								
SAML	Samuel	23.16	16	*e*P		P	17 50 29.9	+0.7	
	comp=Z,2.2nm,0.7s								
SAML				*e*			17 50 56.3		
USHA	Ushuaia	23.34	179	P		P	17 50 30.7	+0.2	
	comp=Z,32nm,0.6s,baz=342,slow=9.6,SNR=3.9								
BDFB	Brasilia	25.06	56	LR		LR	18 01 04.9		
	comp=Z,39nm,18.0s,baz=350,slow=38								
SNAA	Sanae	53.07	159	P		P	17 54 37.5	-0.3	
	comp=Z,2.1nm,0.8s,baz=296,slow=7.7,SNR=11								
QSPA	South Pole Qui	58.73	180	*e*P		P	17 55 18.3	-0.1	
SBA	Scott Base	65.97	191	*e*P		P	17 56 09.1	+2.9	
	comp=Z,37nm,0.7s								
TXAR	Lajitas Array	68.73	328	P		P	17 56 25.6	+1.3	
	comp=Z,0.8nm,0.6s,baz=155,slow=8.3,SNR=7.8								
DBIC	Dumbokro	72.22	70	P		P	17 56 45.4	-0.4	
	comp=Z,1.3nm,0.5s,baz=213,slow=7.2,SNR=3.6								
MAW	Mawson	74.92	163	P		P	17 57 00.5	-0.2	
	comp=Z,0.8nm,0.5s,baz=186,slow=9.2,SNR=5.6								
TORD	Torodi Ar. Bea	81.22	69	P		P	17 57 36.0	-0.3	
	comp=Z,1.3nm,0.8s,baz=288,slow=6.3,SNR=7.5								
PDAR	Pinedale Array	82.60	331	P		P	17 57 43.0	-0.3	
	comp=Z,0.6nm,0.4s,baz=123,slow=6.5,SNR=3.4								
WRA	Warramunga Arr	124.03	207	PKP		PKPdf	18 04 17.1	-1.2	
	comp=Z,0.2nm,0.4s,baz=178,slow=4.4,SNR=4.2								
SEY	Seymchan	138.93	332	PKP		PKPdf	18 04 45.8	+0.8	
	comp=Z,1.4nm,1.0s,baz=87,slow=11,SNR=5.0								
ZALV	Zalesovo Beam	150.91	32	PKPbc		PKPbc	18 05 11.8	+0.3	
	comp=Z,5.4nm,0.5s,baz=308,slow=3.5,SNR=24								
MKAR	Makanchi Array	153.41	47	PKPbc		PKPbc	18 05 17.3	-0.1	
	comp=Z,0.5nm,0.7s,baz=329,slow=1.4,SNR=3.5								
MKAR				PKPab		PKPab	18 05 29.7	-0.4	
	comp=Z,0.7nm,0.7s,baz=302,slow=2.7,SNR=4.9								
SONM	Songino Array	163.36	10	PKPab		PKPab	18 06 13.8	+0.7	
	comp=Z,0.2nm,0.4s,baz=298,slow=3.1,SNR=2.7								

IDC ***20*** *17:51:09.6±1.6,39˚.41N×28˚.63E, h0km, mb3.5/3, mb1 3.5/8, mb1mx3.3/53, mbtmp3.4/8, ML3.2/5, Error ellipse: s-maj=24.0km s-min=15.8km az=32.0*
DDA ***20*** *17:51:12.5,39˚.11N×29˚.02E, h17km, Ml3.8*
ISK ***20*** *17:51:12.5,39˚.12N×29˚.01E, h5km, ML3.7*
CSEM ***20*** *17:51:13.7±0.1,39˚.12N×29˚.01E, h2km, ML3.8, Error ellipse: s-maj=2.4km s-min=2.2km az=5.0*
ISCJB ***20*** *17:51:13.2±0.4,39˚.13N±0˚.02×29˚.01E±0˚.02, h3km±4km, mb3.5/3, Error ellipse: s-maj=2.8km s-min=2.3km az=177.8*
THE ***20*** *17:51:14.8,38˚.99N×29˚.14E, h28km±12km, ML3.6/5, Error ellipse: s-maj=12.7km s-min=1.2km az=135.0*

ISC 20 17:51:13.7±0.9, 39˚11N±0˚.02×29˚00E±0˚.01, h10km±7km, n228, σ1s23/265, mb3.4/3, 9C-4D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	253	*i* P	Pg	17 51 18.5	0.0
DEMI				*i* S	Sg	17 51 22.1	+0.3
DEMI	Demirci	0.23	253	P	Pg	17 51 18.5	0.0
DEMI				S	Sg	17 51 22.1	+0.3
GEDZ	Gediz	0.33	102	*e*PG	Pg	17 51 19.8	-0.4
GEDZ	Gediz	0.33	102	*e*Pg	Pg	17 51 19.8	-0.4
GDZ	Gediz	0.37	93	*i* P	Pg	17 51 20.5	-0.6
GDZ				*i* S	Sg	17 51 25.6	-0.5
GDZ	Gediz	0.37	93	P	Pg	17 51 20.5	-0.6
GDZ				S	Sg	17 51 25.6	-0.5
TVSB	Tavsanli	0.49	46	*e*PG	Pg	17 51 22.5	-0.8
TVSB	Tavsanli	0.49	46	*e*Pg	Pg	17 51 22.5	-0.8
KULA	Kula-Manisa	0.65	204	*e*PG	Pg	17 51 26.0	-0.3
KULA	Kula-Manisa	0.65	204	P	Pg	17 51 25.9	-0.4
KULA				S	Sg	17 51 34.8	-0.1
KULA	Kula-Manisa	0.65	204	*e*Pg	Pg	17 51 26.0	-0.3
KULA				S	Sg	17 51 34.8	-0.1
MANT	Manisa	0.71	209	*i* P	Pg	17 51 26.0	-1.4
MANT				*i* S	Sg	17 51 35.5	-1.3
MANT				*i* S	Sg	17 51 36.4	-0.4
MANT	Manisa	0.71	209	P	Pg	17 51 26.0	-1.4
MANT				S	Sg	17 51 36.3	-0.4
KHL	Karahalli	0.89	152	*e*PG	Pg	17 51 31.0	+0.3
KHL	Karahalli	0.89	152	*e*Pg	Pg	17 51 31.0	+0.3
AKS	Akhisar	0.95	256	*e*PG	Pb	17 51 32.3	0.0
AKS	Akhisar	0.95	256	*e*Pg	Pb	17 51 32.3	0.0
BALB	Balikesir	1.02	302	*e*PG	Pn	17 51 34.0	0.0
BALB				*e*SG	Sn	17 51 48.0	-0.3
BALB	Balikesir	1.02	302	*e*Pg	Pn	17 51 34.0	0.0
BALB				*e*Sg	Sn	17 51 48.0	-0.3
IGD	Bursa	1.16	8	*i* P	Pb	17 51 33.6	-2.2
IGD				*i* S	Sn	17 51 51.9	0.0
BALY	Balya	1.24	301	*i* P	Pn	17 51 37.1	0.0
BALY	Balya	1.24	301	P	Pn	17 51 37.1	0.0
KCTX	Karacabey (Bur	1.26	337	*e*PN	Pn	17 51 37.2	-0.1
KCTX	Karacabey (Bur	1.26	337	*e*Pn	Pn	17 51 37.2	-0.1
MDNY	Mudanya-Bursa	1.26	356	*e*PN	Pn	17 51 36.9	-0.4
MDNY	Mudanya-Bursa	1.26	356	*e*Pn	Pn	17 51 36.9	-0.4
IZI	Iznik	1.28	16	*e*PN	Pn	17 51 37.5	-0.2
IZI	Iznik	1.28	16	*e*Pn	Pn	17 51 37.5	-0.2
GEMT	Gemlik	1.33	6	*e*PN	Pb	17 51 38.7	0.0
GEMT	Gemlik	1.33	6	*e*Pn	Pb	17 51 38.7	0.0
SHUT	Suhut-Afyon	1.33	114	*e*PN	Pb	17 51 38.9	+0.1
SHUT	Suhut-Afyon	1.33	114	*e*Pn	Pb	17 51 38.9	+0.1
DENT	Denizli	1.35	179	*e*PN	Pb	17 51 39.4	+0.3
DENT	Denizli	1.35	179	*e*Pn	Pb	17 51 39.4	+0.3
BORA	Eskisehir	1.36	55	*i* P	Pn	17 51 38.1	-0.7
BORA				*i* S	Sb	17 51 56.2	-0.6
BORA	Eskisehir	1.36	55	P	Pn	17 51 38.1	-0.7
BORA				S	Sb	17 51 56.2	-0.6
GONE	Gonen-Balikesi	1.38	313	*e*PN	Pn	17 51 39.1	+0.1
GONE	Gonen-Balikesi	1.38	313	*e*Pn	Pn	17 51 39.1	+0.1
ADVT	Abdulvahap	1.44	23	*e*PN	Pb	17 51 40.8	+0.3
ADVT	Abdulvahap	1.44	23	*e*Pn	Pb	17 51 40.8	+0.3
AYDB	Zeytinkoy-Aydi	1.45	217	*e*PN	Pb	17 51 40.6	-0.2
AYDB	Zeytinkoy-Aydi	1.45	217	*e*Pn	Pb	17 51 40.6	-0.2
ARMT	Armutlu	1.46	356	*e*PN	Pb	17 51 41.0	+0.1
ARMT	Armutlu	1.46	356	*e*Pn	Pb	17 51 41.0	+0.1
ESKT	Eskisehir	1.49	74	*e*PN	Pn	17 51 40.7	+0.1
ESKT	Eskisehir	1.49	74	*i* P	Pn	17 51 40.5	-0.1
ESKT	Eskisehir	1.49	74	*e*Pn	Pn	17 51 40.7	+0.1
SEYT	Eskypehyr	1.49	74	P	Pn	17 51 40.5	-0.1
EDC	Edincik	1.52	325	*e*PN	Pb	17 51 41.9	0.0
EDC	Edincik	1.52	325	*e*Pn	Pb	17 51 41.9	0.0
IZM	Izmir	1.53	243	*e*PN	Pb	17 51 42.2	0.0
IZM	Izmir	1.53	243	*e*Pn	Pb	17 51 42.2	0.0
BOLV	Bolvadin	1.57	104	*i* P	Pn	17 51 42.2	+0.5
BOLV				*i* S	Sg	17 52 08.0	+3.8
BOLV	Bolvadin	1.57	104	P	Pn	17 51 42.2	+0.5
KNL	Bal¨–kesir	1.62	316	*i* P	Pn	17 51 42.3	0.0
KNL				*i* S	Sb	17 52 04.6	+0.3
DKL	Dikili	1.63	269	*e*PN	Pb	17 51 43.5	-0.3
DKL	Dikili	1.63	269	*e*Pn	Pb	17 51 43.5	-0.3
BUY	Buyukada	1.74	3	*i* P	Pn	17 51 43.1	-0.8
BUY				*i* S	Sg	17 52 10.0	+0.3
BUY	Buyukada	1.74	3	P	Pn	17 51 43.1	-0.8
BUY				S	Sg	17 52 10.0	+0.3
GULT	Gulveren	1.76	41	*e*PN	Pb	17 51 45.6	-0.5
GULT	Gulveren	1.76	41	*e*Pn	Pb	17 51 45.6	-0.5
HRT	Hereke	1.78	16	*e*PN	Pn	17 51 45.5	+0.9
HRT	Hereke	1.78	16	*e*Pn	Pn	17 51 45.5	+0.9
BAGO	Egridir - ISPA	1.79	128	*i* P	Pn	17 51 44.5	-0.2
BAGO				*i* S	Sg	17 52 13.7	+2.4
AYVA	Ayvalik	1.81	277	*i* P	Pn	17 51 45.0	+0.2
AYVA				*i* S	Sg	17 52 11.4	-0.3
AYVA	Ayvalik	1.81	277	P	Pn	17 51 45.0	+0.2
AYVA				S	Sg	17 52 11.4	-0.3
KRBG	Karabiga-Canak	1.83	315	*e*PN	Pb	17 51 46.5	-0.8
KRBG	Karabiga-Canak	1.83	315	*e*Pn	Pb	17 51 46.5	-0.8
MRMT	Marmara Adasi	1.84	324	*e*PN	Pb	17 51 47.0	-0.5
MRMT	Marmara Adasi	1.84	324	*e*Pn	Pb	17 51 47.0	-0.5
SPNC	Sapanca-Adapaz	1.87	32	*e*PN	Pb	17 51 47.1	-0.8
SPNC	Sapanca-Adapaz	1.87	32	*e*Pn	Pb	17 51 47.1	-0.8
GOLH	Golhisar	1.92	167	*i* P	Pn	17 51 47.6	+1.1
GOLH				*i* S	Sg	17 52 19.1	+3.6
GOLH	Golhisar	1.92	167	P	Pn	17 51 47.6	+1.1
ISK	Istanbul-Kandi	1.95	1	*e*PN	Pn	17 51 48.1	+1.2
ISK	Istanbul-Kandi	1.95	1	P	Pn	17 51 46.3	-0.5
ISK				S	Sn	17 52 11.2	-0.2
ISK	Istanbul-Kandi	1.95	1	P	Pn	17 51 46.3	-0.5
ISK	Istanbul-Kandi	1.95	1	*e*Pn	Pn	17 51 48.1	+1.2
ISK				S	Sn	17 52 11.2	-0.2
DGB	¯zmir	1.97	238	*i* P	Pb	17 51 49.4	+0.2
DGB				*i* S	Sg	17 52 17.0	+0.1
GCAM	G?zelcami?	1.98	225	*i* P	Pb	17 51 49.9	+0.2
GCAM	G?zelcami?	1.98	225	P	Pb	17 51 49.9	+0.2
SVRH	Sivrihisar-ESK	1.99	79	*e*PN	Pn	17 51 48.6	+1.2
SVRH	Sivrihisar-ESK	1.99	79	*e*Pn	Pn	17 51 48.6	+1.2
GLHS	Glhisar (BURDU	1.99	168	*e*PN	Pn	17 51 48.7	+1.2
GLHS	Glhisar (BURDU	1.99	168	*e*Pn	Pn	17 51 48.7	+1.2
URLA	Izmir	2.02	249	*i* P	Pb	17 51 51.0	+0.5
URLA	Izmir	2.02	249	P	Pb	17 51 51.0	+0.5
YER	Yerkesik	2.05	196	*e*PN	Pn	17 51 49.5	+1.2
YER	Yerkesik	2.05	196	*e*Pn	Pn	17 51 49.5	+1.2
MLSB	Milas	2.05	208	*e*PN	Pb	17 51 49.8	-1.2
MLSB	Milas	2.05	208	*e*Pn	Pb	17 51 49.8	-1.2
SILT	Sile	2.10	13	*e*PN	Pn	17 51 49.9	+1.1
SILT	Sile	2.10	13	*e*Pn	Pn	17 51 49.9	+1.1
RKY	Sarkoy-Tekirda	2.11	319	*e*PN	Pn	17 51 50.5	+1.5
RKY	Sarkoy-Tekirda	2.11	319	*e*Pn	Pn	17 51 50.5	+1.5
SART	Tekirdag	2.11	319	*i* P	Pb	17 51 51.0	-1.0
SART				*i* S	Sb	17 52 19.3	+1.0
SART	Tekirdag	2.11	319	P	Pb	17 51 51.0	-1.0
SART				S	Sb	17 52 19.3	+1.0
BTAS	Taskesti	2.12	46	*i* P	Pn	17 51 48.8	-0.4
BTAS	Taskesti	2.12	46	P	Pn	17 51 48.8	-0.4
PRK	Paraskevi	2.12	275	P	Pn	17 51 49.8	+0.6
PRK				S	Sn	17 52 15.9	+0.3
PRK	Paraskevi	2.12	275	P	Pn	17 51 49.8	+0.6
PRK				S	Sn	17 52 15.9	+0.3
LPK	Lapseki	2.14	307	*e*PN	Pn	17 51 50.6	+1.3
LPK	Lapseki	2.14	307	*e*Pn	Pn	17 51 50.7	+1.3
KLYT	Kilyos	2.14	1	*e*PN	Pn	17 51 49.7	+0.3
KLYT	Kilyos	2.14	1	*e*Pn	Pn	17 51 49.7	+0.3
CTKS	Kestanelik-??a	2.16	350	*e*PN	Pn	17 51 51.1	+1.5
CTKS	Kestanelik-??a	2.16	350	*e*Pn	Pn	17 51 51.1	+1.5
MDUB	Mudurnu	2.17	51	*e*PN	Pn	17 51 51.1	+1.2
MDUB	Mudurnu	2.17	51	*e*Pn	Pn	17 51 51.1	+1.2
KAND	Kocaeli-Kandir	2.18	24	*i* P	Pn	17 51 50.1	+0.1
KAND	Kocaeli-Kandir	2.18	24	P	Pn	17 51 50.1	+0.1
TKR	Tekirdag	2.19	330	*e*PN	Pn	17 51 51.4	+1.3
TKR	Tekirdag	2.19	330	*e*Pn	Pn	17 51 51.4	+1.3
EZN	Ezine	2.19	290	*e*PN	Pn	17 51 51.1	+1.0
EZN	Ezine	2.19	290	*e*Pn	Pn	17 51 51.1	+1.0
CRLT	Corlu	2.24	335	*e*PN	Pn	17 51 52.4	+1.6
CRLT	Corlu	2.24	335	*e*Pn	Pn	17 51 52.4	+1.6
SAHE	Sakarya_HENDEK	2.25	39	*i* P	Pn	17 51 50.8	-0.1
SAHE				*i* S	Sg	17 52 28.5	+2.6
SAHE	Sakarya_HENDEK	2.25	39	P	Pn	17 51 50.8	-0.1
KIZT	Kizilcal	2.25	95	*e*PN	Pn	17 51 52.0	+0.9
KIZT	Kizilcal	2.25	95	*e*Pn	Pn	17 51 52.0	+0.9
SUTC	Sutluce-Ispart	2.27	135	*e*PN	Pn	17 51 53.0	+1.7
SUTC	Sutluce-Ispart	2.27	135	*e*Pn	Pn	17 51 53.0	+1.7
DALY	Dalyan (Mu¨la	2.31	187	*e*PN	Pn	17 51 53.6	+1.9
DALY	Dalyan (Mu¨la	2.31	187	*e*Pn	Pn	17 51 53.6	+1.9
GELI	Tayfur-Gelibol	2.33	304	*e*PN	Pn	17 51 53.6	+1.5
GELI	Tayfur-Gelibol	2.33	304	*e*Pn	Pn	17 51 53.6	+1.5
KORT	Korkueli	2.36	153	*i* P	Pn	17 51 54.0	+1.4
KORT	Korkueli	2.36	153	P	Pn	17 51 54.0	+1.4
CHOS	Chios island	2.41	254	*e*PN	Pn	17 51 54.8	+1.6
CHOS	Chios island	2.41	254	P	Pn	17 51 53.3	0.0
CHOS				S	Sn	17 52 21.5	-1.4
CHOS	Chios island	2.41	254	P	Pn	17 51 53.3	0.0
CHOS	Chios island	2.41	254	*e*Pn	Pn	17 51 54.8	+1.6
CHOS				S	Sn	17 52 21.5	-1.4
ELL	Elmali	2.46	163	*e*PN	Pn	17 51 55.4	+1.4
ELL	Elmali	2.46	163	*e*Pn	Pn	17 51 55.4	+1.4
ERIK	Erikli-Kesan	2.47	310	*e*PN	Pn	17 51 55.4	+1.5
ERIK	Erikli-Kesan	2.47	310	*e*Pn	Pn	17 51 55.4	+1.5
FETY	Fethiye	2.47	178	*e*PN	Pn	17 51 55.8	+1.8
FETY	Fethiye	2.47	178	*e*Pn	Pn	17 51 55.8	+1.8
KESN	Edirne-Kesan	2.47	315	*i* P	Pn	17 51 54.4	+0.1
KESN				*i* S	Sg	17 52 32.8	-0.4
KESN	Edirne-Kesan	2.47	315	P	Pn	17 51 54.4	+0.1
KDHN	Kadinhani	2.50	103	*i* P	Pn	17 51 55.0	+0.5
KDHN	Kadinhani	2.50	103	P	Pn	17 51 55.0	+0.5
GADA	Gvkgeada	2.63	295	*e*PN	Pn	17 51 58.0	+2.0
GADA	Gvkgeada	2.63	295	*e*Pn	Pn	17 51 58.1	+2.0
ENEZ	Enez	2.73	307	*e*PN	Pn	17 51 58.4	+1.0
ENEZ	Enez	2.73	307	*e*Pn	Pn	17 51 58.4	+1.0
LADK	Ladik-KONYA	2.79	108	*e*PN	Pn	17 51 58.0	+1.9
LADK	Ladik-KONYA	2.79	108	*e*Pn	Pn	17 52 00.3	+1.9
KONT	Konya--Tatoy	2.88	113	*e*PN	Pn	17 52 00.7	+1.1
KONT	Konya--Tatoy	2.88	113	*e*Pn	Pn	17 52 00.7	+1.1
ALN	Alexandroupoli	2.89	309	*e*PN	Pn	17 52 01.8	+2.1
ALN	Alexandroupoli	2.89	309	P	Pn	17 51 59.9	+0.2
ALN				S	Sn	17 52 35.9	+1.5
ALN	Alexandroupoli	2.89	309	P	Pn	17 51 59.9	+0.2
ALN	Alexandroupoli	2.89	309	*e*Pn	Pn	17 52 01.8	+2.1
ALN				S	Sn	17 52 35.9	+1.5
KDZE	Karadeniz Ereo	2.89	40	*e*PN	Pn	17 52 01.5	+1.8
KDZE	Karadeniz Ereo	2.89	40	*e*Pn	Pn	17 52 01.5	+1.8
NIS1	Nisyros Isl.	2.89	211	*e*PN	Pn	17 52 01.8	+2.1
NIS1	Nisyros Isl.	2.89	211	*e*Pn	Pn	17 52 01.8	+2.1
BCAM	Yenicaga	2.91	53	*i* P	Pn	17 52 00.5	+0.4
BCAM	Yenicaga	2.91	53	P	Pn	17 52 00.5	+0.4
SMTH	Samothraki Isl	3.00	298	P	Pn	17 52 01.5	+0.3
SMTH	Samothraki Isl	3.00	298	P	Pn	17 52 01.5	+0.3
LOD	Lodumlu	3.01	74	*e*PN	Pn	17 52 03.6	+2.1
LOD	Lodumlu	3.01	74	*e*Pn	Pn	17 52 03.6	+2.1
LIA	Limnos Island	3.06	286	P	Pn	17 52 02.7	+0.7
LIA	Limnos Island	3.06	286	P	Pn	17 52 02.7	+0.7
CHBY	Cihanbeyli	3.08	99	*e*PN	Pn	17 52 04.3	+1.8
CHBY	Cihanbeyli	3.08	99	*e*Pn	Pn	17 52 04.3	+1.8
AFSR	Af˘ar-Bala (A	3.18	83	*e*PN	Pn	17 52 05.4	+1.7
AFSR	Af˘ar-Bala (A	3.18	83	*e*Pn	Pn	17 52 05.4	+1.7
EDRB	Edirne	3.23	329	*e*PN	Pn	17 52 06.4	+2.0
EDRB	Edirne	3.23	329	P	Pn	17 52 04.8	+0.4
EDRB	Edirne	3.23	329	P	Pn	17 52 04.8	+0.4
EDRB	Edirne	3.23	329	*e*Pn	Pn	17 52 06.4	+2.0
APE	Apeiranthos	3.41	234	*e*PN	Pn	17 52 08.8	+1.9
APE	Apeiranthos	3.41	234	*e*Pn	Pn	17 52 08.8	+1.9
SAFT	Safranbolu	3.54	52	*e*PN	Pn	17 52 10.7	+2.1
SAFT	Safranbolu	3.54	52	*e*Pn	Pn	17 52 10.7	+2.1
BRTR	Keskin Array B	3.64	79	Pn	Pn	17 52 10.8	+0.6
	1.8nm,0.3s,baz=268,slow=14,SNR=26						
BRTR				Pg	Pg	17 52 22.0	-1.5
	3.8nm,0.3s,baz=263,slow=16,SNR=29						
BRTR				Sn	Sn	17 52 52.8	-0.5
	1.6nm,0.3s,baz=258,slow=18,SNR=3.7						
BRTR				Lg	Lg	17 53 12.0	
	1.3nm,0.3s,baz=264,slow=24,SNR=8.8						
KAMT	Kaman	3.67	84	*e*PN	Pn	17 52 12.5	+2.0
KAMT	Kaman	3.67	84	*e*Pn	Pn	17 52 12.5	+2.0
JMB	Yambol	3.82	332	*i* P	Pn	17 52 13.8	+1.3
KAVA	Kavala	3.92	300	P	Pn	17 52 14.4	+0.5
KAVA				S	Sn	17 53 00.1	+0.1
KAVA	Kavala	3.92	300	P	Pn	17 52 14.4	+0.5
KAVA				S	Sn	17 53 00.1	+0.1
DIM	Dimitrovgrad	3.95	319	*i* P	Pn	17 52 14.6	+0.3
RZN	Rozhen	4.16	310	*i* P	Pn	17 52 15.6	-1.8
TOS	Tosya	4.31	62	*e*PN	Pn	17 52 21.6	+2.3
TOS	Tosya	4.31	62	*e*Pn	Pn	17 52 21.6	+2.3
PLD	Plovdiv	4.43	314	*i* P	Pn	17 52 21.8	+0.9
CORM	Corum	4.47	74	*e*PN	Pn	17 52 24.2	+2.5
CORM	Corum	4.47	74	*e*Pn	Pn	17 52 24.2	+2.5
MMB	Musomiste	4.73	303	P	Pn	17 52 25.7	+0.7
SZH	Strazhica	4.75	332	*i* P	Pn	17 52 25.5	+0.2
BZK	Bozkurt	4.76	52	*e*PN	Pn	17 52 28.4	+3.0
BZK	Bozkurt	4.76	52	*e*Pn	Pn	17 52 28.4	+3.0
IDI	Anoyia	5.03	222	Pn	Pn	17 52 27.8	-1.4
	0.2nm,0.3s,baz=56,slow=16,SNR=2.2						
TLB	Topalu	5.52	353	⇓*i*P	Pg	17 53 01.3	+2.0
VTS	Vitosha	5.60	310	⇑*i*P	Pg	17 53 02.9	+2.0
MPEP	Malo Peshtene	5.81	319	*i* P	Pn	17 52 40.4	+0.6
TLCR		6.07	359	⇑*i*P	Pn	17 52 44.3	+0.9
TLCR		6.07	359	⇑*i*P	Pn	17 52 44.3	+0.9
CFR	Carcaliu	6.10	354	⇓*i*P	Pn	17 52 48.9	+5.1
MLR	Muntele Rosu	6.77	341	Pn	Pn	17 52 44.8	-8.3
	0.1nm,0.3s,baz=311,slow=20,SNR=5.6						
MLR	Muntele Rosu	6.77	341	⇓*i*P	Pn	17 52 45.3	-7.8
PLOR	Plostina	6.96	346	⇑*i*P	Pn	17 52 58.1	+2.5
PLOR	Plostina	6.96	346	⇑*i*P	Pn	17 52 58.1	+2.5
VRI	Vrincioaia	6.96	347	⇑*i*P	Pn	17 52 58.8	+3.2
VRI	Vrincioaia	6.96	347	⇑*i*P	Pn	17 52 58.8	+3.2
BOLS	Boljevac	7.09	314	*e*Pn	Pn	17 52 56.4	-1.0
BOVS	Bovan	7.11	312	*e*Pn	Pn	17 52 58.3	+0.7
SELS	Selova	7.22	307	*e*Pn	Pn	17 53 00.1	+0.8
TESR	Tescani	7.60	348	⇑*i*P	Pn	17 53 04.5	+0.1
TESR	Tescani	7.60	348	⇑*i*P	Pn	17 53 04.5	+0.1
MMAI	Mount Meron Ar	7.99	138	Pn	Pn	17 53 10.7	+0.8
	1.3nm,0.3s,baz=326,slow=13,SNR=4.9						
BURAR	Bucovina Array	8.94

ACOM	**Acomizza, Ital**	**0.41**	**69**	Pg	**Pg**	17 53 36.5	-0.4
ACOM				Sg	**Sg**	17 53 42.6	+0.1
	404nm,0.2s						
ACOM	**Acomizza, Ital**	**0.41**	**69**	*e*Pg	**Pg**	17 53 36.5	-0.4
ACOM				*e*Sg	**Sg**	17 53 42.8	+0.3
ACOM	**Acomizza, Ital**	**0.41**	**69**	Pg	**Pg**	17 53 36.5	-0.4
ACOM				Sg	**Sg**	17 53 42.6	+0.1
	404nm,0.2s						
ROBS	**Robic**	**0.41**	**113**	*i* Pg	**Pg**	17 53 35.8	-1.1
ROBS				*i* Sg	**Sg**	17 53 42.2	-0.3
	comp=Z,26nm,0.1s						
ROBS	**Robic**	**0.41**	**113**	*i* Pg	**Pg**	17 53 35.8	-1.1
ROBS				*i* Sg	**Sg**	17 53 42.2	-0.3
	comp=Z,26nm,0.1s						
ABTA	**Abfaltersbach**	**0.46**	**318**	Pg	**Pg**	17 53 37.8	-0.1
	comp=Z,8.4nm,0.1s,SNR=68						
ABTA				Sg	**Sg**	17 53 44.2	0.0
	comp=Z,119nm,0.2s						
MYKA	**Terra Mystica**	**0.52**	**64**	Pg	**Pg**	17 53 38.4	-0.5
	comp=Z,8.4nm,0.1s,SNR=23						
MYKA				Sg	**Sg**	17 53 45.8	-0.1
	comp=Z,56nm,0.2s						
CADS	**Cadrg**	**0.56**	**108**	*i* Pg	**Pg**	17 53 38.4	-1.4
CADS				*e*Sg	**Sg**	17 53 47.3	0.0
	comp=Z,61nm,0.1s						
CADS	**Cadrg**	**0.56**	**108**	*i* Pg	**Pg**	17 53 38.4	-1.4
CADS				*e*Sg	**Sg**	17 53 47.3	0.0
	comp=Z,61nm,0.1s						
SABO	**M.te Sabotino**	**0.61**	**134**	Pg	**Pg**	17 53 40.1	-0.5
SABO				Sg	**Sb**	17 53 50.6	+1.2
	comp=Z,164nm,0.3s						
SABO	**M.te Sabotino**	**0.61**	**134**	Pg	**Pg**	17 53 40.1	-0.5
SABO				Sg	**Sb**	17 53 50.6	+1.2
	comp=Z,164nm,0.3s						
AGOR	**Agordo**	**0.65**	**260**	Pg	**Pg**	17 53 41.3	0.0
AGOR				Sg	**Sb**	17 53 51.6	+1.2
	comp=Z,253nm,0.6s						
GORS	**Gorjuse**	**0.72**	**97**	*e*Pg	**Pg**	17 53 41.4	-1.3
GORS				*e*Sg	**Sb**	17 53 53.0	+0.4
	comp=Z,44nm,0.2s						
GORS	**Gorjuse**	**0.72**	**97**	*e*Pg	**Pg**	17 53 41.4	-1.3
GORS				*e*Sg	**Sb**	17 53 53.0	+0.4
	comp=Z,44nm,0.2s						
KBA	**Koelnbreinsper**	**0.72**	**21**	Pg	**Pg**	17 53 42.5	-0.3
	comp=Z,1.9nm,0.1s						
KBA				Sg	**Sg**	17 53 52.0	-0.4
	comp=Z,17nm,0.1s,SNR=5.6						
VOJS	**Vojsko**	**0.74**	**120**	*i* Pg	**Pg**	17 53 41.6	-1.4
	comp=Z,27nm,0.2s						
VOJS	**Vojsko**	**0.74**	**120**	*i* Pg	**Pg**	17 53 41.6	-1.4
	comp=Z,27nm,0.2s						
RISI	**Rein**	**0.82**	**312**	Pg	**Pg**	17 53 44.2	-0.3
RISI				Sg	**Sg**	17 53 55.2	-0.1
	comp=Z,286nm,0.3s						
RISI	**Rein**	**0.82**	**312**	Pg	**Pg**	17 53 44.2	-0.3
RISI				Sg	**Sg**	17 53 55.2	-0.1
	comp=Z,286nm,0.3s						
TRI	**Trieste**	**0.89**	**141**	Pg	**Pb**	17 53 46.2	+0.5
TRI				Sg	**Sb**	17 53 58.3	+0.9
	comp=Z,62nm,0.5s						
TRI	**Trieste**	**0.89**	**141**	Pg	**Pb**	17 53 46.2	+0.5
TRI				Sg	**Sb**	17 53 58.3	+0.9
	comp=Z,62nm,0.5s						
CRNS	**Crni Vrh**	**0.96**	**109**	*e*Pg	**Pg**	17 53 45.4	-1.7
	comp=Z,30nm,0.2s						
CRNS	**Crni Vrh**	**0.96**	**109**	*e*Pg	**Pg**	17 53 45.4	-1.7
	comp=Z,30nm,0.2s						
CGRP	**Cima Grappa**	**0.96**	**237**	Pg	**Pn**	17 53 48.5	+0.8
CGRP				Sg	**Sb**	17 54 01.6	+1.9
	comp=Z,74nm,0.6s						
CGRP	**Cima Grappa**	**0.96**	**237**	Pg	**Pn**	17 53 48.5	+0.8
CGRP				Sg	**Sb**	17 54 01.6	+1.9
	comp=Z,74nm,0.6s						
KOSI	**Kohlern**	**1.10**	**274**	Pg	**Pb**	17 53 49.7	+0.3
KOSI				Sg	**Sb**	17 54 04.9	+1.3
	comp=Z,69nm,0.4s						
KOSI	**Kohlern**	**1.10**	**274**	Pg	**Pb**	17 53 49.7	+0.3
KOSI				Sg	**Sb**	17 54 04.9	+1.3
	comp=Z,69nm,0.4s						
OBKA	**Obir**	**1.10**	**84**	Pg	**Pg**	17 53 49.2	-0.7
	comp=Z,3.8nm,0.2s,SNR=12						
OBKA				Sg	**Sb**	17 54 04.6	+1.0
	comp=Z,44nm,0.3s						
ABSI	**Aberstueckl**	**1.18**	**287**	Pg	**Pg**	17 53 51.0	-0.4
ABSI				Sg	**Sn**	17 54 07.8	+1.2
	comp=Z,123nm,0.4s						
ABSI	**Aberstueckl**	**1.18**	**287**	Pg	**Pg**	17 53 51.0	-0.4
ABSI				Sg	**Sn**	17 54 07.8	+1.2
	comp=Z,123nm,0.4s						
APPI	**Appiano**	**1.20**	**274**	Pg	**Pb**	17 53 51.7	+0.6
	comp=Z,419nm,1.5s						
APPI	**Appiano**	**1.20**	**274**	Pg	**Pb**	17 53 51.7	+0.6
	comp=Z,419nm,1.5s						
WTTA	**Wattenberg**	**1.25**	**314**	*e*PG	**Pb**	17 53 52.5	+0.5
WTTA				*e*SG	**Sb**	17 54 08.8	+0.8
WTTA	**Wattenberg**	**1.25**	**314**	Pg	**Pb**	17 53 52.5	+0.5
WTTA				Sg	**Sg**	17 54 08.4	-0.7
	comp=Z,79nm,0.5s						
WTTA	**Wattenberg**	**1.25**	**314**	Pg	**Pb**	17 53 52.5	+0.5
	comp=Z,11nm,0.3s,SNR=12						
WTTA				Sg	**Sg**	17 54 08.5	-0.7
	comp=Z,34nm,0.3s,SNR=8.4						
WATA	**Walderalm**	**1.33**	**315**	Pg	**Pb**	17 53 53.8	+0.4
	comp=Z,8.4nm,0.2s,SNR=20						
WATA				Sg	**Sn**	17 54 11.5	+1.2
	comp=Z,12nm,0.2s						
TEOL	**Teolo**	**1.38**	**221**	Pg	**Pb**	17 53 54.8	+0.7
TEOL				Sg	**Sn**	17 54 14.3	+3.0
TEOL	**Teolo**	**1.38**	**221**	Pg	**Pb**	17 53 54.8	+0.7
TEOL				Sg	**Sn**	17 54 14.3	+3.0
SOKA	**Soboth**	**1.45**	**78**	Pg	**Pn**	17 53 54.9	+0.5
	comp=Z,5.2nm,0.3s,SNR=18						
SOKA				Sg	**Sg**	17 54 15.3	-0.2
	comp=Z,7.9nm,0.2s						
ROVR	**Rover¤ Verone**	**1.52**	**241**	Pg	**Pn**	17 53 56.3	+1.0
ROVR				Sg	**Sg**	17 54 17.2	-0.4
ROVR	**Rover¤ Verone**	**1.52**	**241**	Pg	**Pn**	17 53 56.3	+1.0
ROVR				Sg	**Sg**	17 54 17.2	-0.4
MOTA	**Moosalm**	**1.59**	**307**	Pg	**Pg**	17 53 59.0	-0.1
	comp=Z,22nm,0.5s,SNR=22						
MOTA				Sg	**Sg**	17 54 19.7	0.0
	comp=Z,10.0nm,0.2s						
FETA	**Feichten**	**1.66**	**293**	Pg	**Pb**	17 53 59.6	+0.7
	comp=Z,14nm,0.5s,SNR=19						
FETA				Sg	**Sg**	17 54 21.8	-0.2
	comp=Z,20nm,0.4s						
MOSI	**Grossmontoni**	**1.68**	**278**	Pg	**Pg**	17 54 00.4	-0.5
MOSI				Sg	**Sg**	17 54 22.9	+0.1
	comp=Z,156nm,0.4s						
MOSI	**Grossmontoni**	**1.68**	**278**	Pg	**Pg**	17 54 00.4	-0.5
MOSI				Sg	**Sg**	17 54 22.9	+0.1
	comp=Z,156nm,0.4s						
MOA	**Molln**	**1.70**	**31**	Pg	**Pb**	17 54 00.2	+0.7
	comp=Z,3.8nm,0.2s,SNR=12						
MOA				Sg	**Sg**	17 54 23.4	+0.1
	comp=Z,16nm,0.5s						
MABI	**Malga Bissina**	**1.74**	**259**	Pg	**Pb**	17 54 01.1	+0.8
MABI				Sg	**Sg**	17 54 24.1	-0.4
	comp=Z,31nm,0.3s						
MABI	**Malga Bissina**	**1.74**	**259**	Pg	**Pb**	17 54 01.1	+0.8
MABI				Sg	**Sg**	17 54 24.1	-0.4
	comp=Z,31nm,0.3s						
BRMO	**Bormio**	**1.79**	**273**	Pg	**Pb**	17 54 02.2	+1.0
BRMO				Sg	**Sg**	17 54 25.8	-0.5
	comp=Z,32nm,0.6s						
BRMO	**Bormio**	**1.79**	**273**	Pg	**Pb**	17 54 02.2	+1.0
BRMO				Sg	**Sg**	17 54 25.8	-0.5
	comp=Z,32nm,0.6s						
RETA	**Reutte**	**1.86**	**306**	Pg	**Pg**	17 54 03.7	-0.6
	comp=Z,12nm,0.3s						
RETA				Sg	**Sg**	17 54 29.7	+1.3
	comp=Z,38nm,0.4s						
FUORN	**Ofenpass-Fuorn**	**1.88**	**278**	Pg	**Pb**	17 54 03.3	+0.6
FUORN				Sg	**Sb**	17 54 27.5	+1.4
	comp=Z,27nm,0.5s						
FUORN	**Ofenpass-Fuorn**	**1.88**	**278**	Pg	**Pb**	17 54 03.3	+0.6
FUORN				Sg	**Sb**	17 54 27.5	+1.4
	comp=Z,27nm,0.5s						
OZLJ	**Ozalj**	**1.92**	**113**	*e*Pn	**Pn**	17 54 02.3	+1.7
OZLJ				Sn	**Sb**	17 54 27.1	+0.2
OZLJ	**Ozalj**	**1.92**	**113**	*e*Pn	**Pn**	17 54 02.3	+1.7
OZLJ				Sn	**Sb**	17 54 27.0	+0.2
ARSA	**Arzberg**	**1.95**	**63**	Pg	**Pg**	17 54 05.0	-1.0
	comp=Z,1.2nm,0.2s						
ARSA				Sn	**Sn**	17 54 26.4	+1.0
	comp=Z,2.8nm,0.3s						
NVLJ	**Novalja**	**2.28**	**143**	*e*Pn	**Pn**	17 54 06.0	+0.4
NVLJ				Sn	**Sn**	17 54 34.2	+0.9
DAVA	**Damuels**	**2.29**	**294**	Pn	**Pb**	17 54 08.7	-1.0
	comp=Z,3.3nm,0.2s						
DAVA				Sg	**Sg**	17 54 42.6	+0.3
	comp=Z,14nm,0.3s						
UDBI	**Udbina**	**2.72**	**133**	*e*Pn	**Pn**	17 54 11.1	-0.7
UDBI	**Udbina**	**2.72**	**133**	*e*Pn	**Pn**	17 54 11.1	-0.7
KHC	**Kasperske Hory**	**2.76**	**8**	*e*PN	**Pn**	17 54 13.9	+1.6
KHC				*ex*	x	17 54 21.5	
KHC				*e*SN	**Sn**	17 54 47.8	+2.4
KHC				*e*SG	**Sg**	17 54 55.5	-1.8
	comp=Z,7.0nm,0.5s						
KHC	**Kasperske Hory**	**2.76**	**8**	Pn	**Pn**	17 54 13.9	+1.6
KHC				Sn	**Sn**	17 54 47.8	+2.4
KHC				Sg	**Sg**	17 54 55.5	-1.8
	comp=Z,7.0nm,0.5s						
GOPC	**GO Pecny, Ondr**	**3.72**	**18**	*e*SG	**Sg**	17 55 27.5	-0.5
GOPC	**GO Pecny, Ondr**	**3.72**	**18**	Sg	**Sg**	17 55 27.5	-0.5
NKC	**Novy Kostel**	**3.85**	**355**	*e*SN	**Sn**	17 55 13.0	+0.8
NKC				*e*SG	**Sg**	17 55 30.9	-1.2
	comp=Z,5.9nm,0.4s						
NKC	**Novy Kostel**	**3.85**	**355**	Sn	**Sn**	17 55 13.0	+0.8
NKC				Sg	**Sg**	17 55 30.9	-1.2
	comp=Z,5.9nm,0.4s						
PVCC	**Panska Ves**	**4.26**	**14**	*e*SG	**Sg**	17 55 44.4	-1.0
	comp=Z,7.7nm,0.4s						
PVCC	**Panska Ves**	**4.26**	**14**	Sg	**Sg**	17 55 44.4	-1.0
	comp=Z,7.7nm,0.4s						
CDF	**Champ du Feu**	**4.35**	**300**	*e*Pn	**Pn**	17 54 33.9	-0.3
CDF	**Champ du Feu**	**4.35**	**300**	*e*Pg	**Pg**	17 54 51.0	-0.9
CDF				*e*Sg	**Sg**	17 55 47.3	-1.0
CDF	**Champ du Feu**	**4.35**	**300**	*e*Pn	**Pn**	17 54 33.9	-0.3
CDF	**Champ du Feu**	**4.35**	**300**	*e*Pg	**Pg**	17 54 51.0	-0.9
CDF				*e*Sg	**Sg**	17 55 47.3	-1.0
HINF	**Hinteralfeld**	**4.41**	**291**	*e*Pn	**Pn**	17 54 34.1	-0.8
HINF				*e*Sn	**Sn**	17 55 24.3	-1.6
	comp=Z,5.0nm,0.3s						
HINF	**Hinteralfeld**	**4.41**	**291**	*e*Pn	**Pn**	17 54 34.1	-0.8
HINF				*e*Sn	**Sn**	17 55 24.3	-1.6
	comp=Z,2.5nm,0.3s						
LPG	**La Plagne**	**4.43**	**260**	*e*Pn	**Pn**	17 54 34.0	-1.4
LPG	**La Plagne**	**4.43**	**260**	*e*Pn	**Pn**	17 54 34.0	-1.4
BRG	**Berggiesshubel**	**4.52**	**8**	SG	**Sg**	17 55 53.2	-0.5
	comp=Z,2.7nm,0.5s						
DPC	**Dobruska-Polom**	**4.54**	**28**	*e*SG	**Sg**	17 55 51.7	-2.5
DPC	**Dobruska-Polom**	**4.54**	**28**	Sg	**Sg**	17 55 51.7	-2.5
CABF	**La Chapelle**	**4.75**	**275**	*e*Pg	**Pg**	17 54 57.4	-2.2
CABF	**La Chapelle**	**4.75**	**275**	*e*Pg	**Pg**	17 54 57.4	-2.2
HAU	**Haudompre**	**4.79**	**292**	*e*Pn	**Pn**	17 54 40.3	+0.2
HAU				*e*Sn	**Sn**	17 55 34.6	-0.7
	comp=Z,8.4nm,0.5s						
HAU	**Haudompre**	**4.79**	**292**	*e*Pn	**Pn**	17 54 40.3	+0.2
HAU				*e*Sn	**Sn**	17 55 34.6	-0.7
	comp=Z,4.2nm,0.5s						
PAGF	**Fort de Pagny**	**5.36**	**296**	*e*P	**Pn**	17 54 51.6	+3.6
PAGF	**Fort de Pagny**	**5.36**	**296**	*e*P	**Pn**	17 54 51.6	+3.6
SMF	**Signal de Mont**	**6.30**	**275**	*e*Pg	**Pg**	17 55 26.0	-3.2
SMF	**Signal de Mont**	**6.30**	**275**	*e*Pg	**Pg**	17 55 26.0	-3.2
LOR	**Lormes**	**6.31**	**281**	*e*Pg	**Pg**	17 55 25.6	-3.7
LOR				*e*Sn	**Sn**	17 56 09.3	-3.4
	comp=Z,1.2nm,0.3s						
LOR	**Lormes**	**6.31**	**281**	*e*Pg	**Pg**	17 55 25.6	-3.7
SSF	**Saint Saulge**	**6.54**	**279**	*e*Pg	**Pg**	17 55 30.1	-3.5
SSF				*e*Sn	**Sn**	17 56 13.4	-4.9
	comp=Z,0.4nm,0.2s						
AVF	**Avril sur Loir**	**6.63**	**277**	*e*Pn	**Pn**	17 55 06.2	+0.7
AVF	**Avril sur Loir**	**6.63**	**277**	*e*Pg	**Pg**	17 55 32.5	-3.0
AVF	**Avril sur Loir**	**6.63**	**277**	*e*Pn	**Pn**	17 55 06.2	+0.7

IDC 20 17:55:51.1±27.0, 22.08S×173.55W, h0km, mb4.1/4, mb1 4.3/4, mb1mx3.8/35, mbtmp4.1/4, Error ellipse: s-maj=497.8km s-min=152.1km az=77.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**37.48**	**265**	P	P	18 03 07.0	+0.3
	2.5nm,0.4s,baz=90,slow=12,SNR=9.0						
STKA	**Stephens Creek**	**40.90**	**246**	P	P	18 03 35.3	0.0
	2.5nm,0.9s,baz=91,slow=9.7,SNR=4.7						
ASAR	**Alice Springs**	**49.21**	**257**	P	P	18 04 33.4	-0.5
	1.0nm,0.5s,baz=95,slow=7.3,SNR=9.5						
WRA	**Warramunga Arr**	**48.50**	**262**	P	P	18 04 35.9	-0.2
	0.6nm,0.3s,baz=102,slow=8.3,SNR=23						

*ISCJB **20** 17:57:15.1±1.1, 5.56S±0.08×147.5E±0.2, h170km, mb3.7/6, Error ellipse: s-maj=34.3km s-min=10.5km az=2.9*

*IDC **20** 17:57:15.4±3.8, 5.40S×147.37E, h152km±43km, mb3.5/6, mb1 3.7/8, mb1mx3.5/36, mbtmp4.0/8, Error ellipse: s-maj=56.8km s-min=23.6km az=123.0*

ISC 20 17:57:16.5±1.2, 5.59S±0.09×147.5E±0.3, h170km, n9, σ0.95/10, mb3.8/6, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.81**	**186**	P	**Pn**	17 58 15.6	+0.7
	6.1nm,0.3s,baz=22,slow=15,SNR=70						
PMG				S	**Sn**	17 58 58.8	-1.7
	36nm,0.3s,baz=202,slow=20,SNR=15						
WRA	**Warramunga Arr**	**19.19**	**221**	P	**P**	18 01 28.2	+0.7
	1.5nm,0.3s,baz=44,slow=11,SNR=66						
ASAR	**Alice Springs**	**22.26**	**215**	P	**P**	18 02 01.0	+1.2
	6.4nm,0.8s,baz=45,slow=8.2,SNR=41						
FITZ	**Fitzroy Crossi**	**24.74**	**238**	P	**P**	18 02 22.4	-0.1
	3.0nm,0.5s,baz=150,slow=9.9,SNR=25						
SONM	**Songino Array**	**64.31**	**331**	P	**P**	18 07 33.7	-0.3
	0.9nm,0.7s,baz=126,slow=2.3,SNR=5.4						
MKAR	**Makanchi Array**	**77.53**	**320**	P	**P**	18 08 52.9	-0.6
	0.4nm,0.5s,baz=100,slow=8.6,SNR=6.4						
ZALV	**Zalesovo Beam**	**78.96**	**328**	P	**P**	18 09 00.6	-0.6
	0.9nm,0.5s,baz=108,slow=3.3,SNR=4.7						
ILAR	**Eielson Array**	**84.90**	**23**	P	**P**	18 09 32.2	+0.3
	0.4nm,0.6s,baz=246,slow=5.1,SNR=5.0						
TORD	**Torodi Ar. Bea**	**145.51**	**285**	PKPbc	**PKPdf**	18 16 35.7	+0.2
	1.2nm,0.5s,baz=65,slow=3.9,SNR=18						

*ISCJB **20** 18:04:39.5±0.3, 51.50N±0.02×16.17E±0.02, h0km, Error ellipse: s-maj=2.4km s-min=1.9km az=18.7*

*CSEM **20** 18:04:41.8±0.1, 51.50N×16.17E, h2km, ML3.8/10, Error ellipse: s-maj=3.0km s-min=2.4km az=23.0*

*PRU **20** 18:04:42.6, 51.49N×16.11E, h0km*

*BGR **20** 18:04:43.9±0.4, 51.46N×16.13E, h1km, ML3.2/16, Error ellipse: s-maj=5.6km s-min=2.2km az=19.0*

*IDC **20** 18:04:43.3±0.8, 51.47N×15.98E, h0km, mb1 3.5/4, mb1mx3.2/39, mbtmp3.4/4, ML3.1/4, Error ellipse: s-maj=13.6km s-min=7.1km az=121.0*

*WAR **20** 18:04:43.2, 51.48N×16.11E, h1km, Mw3.0*

*VIE **20** 18:04:44.8±0.9, 51.32N×16.27E, h0km, mb2.7/5, ML3.2/5, Error ellipse: s-maj=10.4km s-min=6.2km az=93.0, Suspected Mining induced.*

*UPP **20** 18:04:47.1±3.1, 51.87N×16.03E, h0km, ML2.1, Suspected explosion*

ISC 20 18:04:40.5±0.7, 51.53N±0.02×16.17E±0.02, h0km, n91, σ1.51/175, 6D, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.69**	**173**	*i* Pg	**Pb**	18 04 55.3	-0.1
KSP				*i* Sg	**Sg**	18 05 04.0	+1.3
KSP				*e*		18 05 07.3	
KSP	**Ksiaz**	**0.69**	**173**	*e*Pg	**Pb**	18 04 55.3	-0.1
KSP				*e*Sg	**Sg**	18 05 04.1	+1.5
KSP	**Ksiaz**	**0.69**	**173**	Pg	**Pb**	18 04 55.3	-0.1
KSP				*i* Sg	**Sg**	18 05 04.0	+1.3
KSP	**Ksiaz**	**0.69**	**173**	*i* Pgd	**Pb**	18 04 55.3	-0.1
KSP				*i* Sg	**Sg**	18 05 04.0	+1.3
KSP				*e*		18 05 07.3	
UPC	**Upice**	**1.03**	**186**	*i* PG	**Pb**	18 05 01.4	+0.3
UPC				*e*SG	**Sg**	18 05 14.5	+1.0
	comp=Z,217nm,0.4s						
UPC	**Upice**	**1.03**	**186**	Pg	**Pb**	18 05 01.4	+0.3
UPC				Sg	**Sg**	18 05 14.5	+1.0
	217nm,0.4s						
DPC	**Dobruska-Polom**	**1.19**	**175**	*i* PG	**Pb**	18 05 04.2	+0.4
DPC				*e*SG	**Sg**	18 05 18.9	+0.4
	comp=Z,83nm,0.6s						
DPC	**Dobruska-Polom**	**1.19**	**175**	*e*Pg	**Pb**	18 05 04.2	+0.4
DPC				*e*Sg	**Sb**	18 05 19.6	-0.1
DPC	**Dobruska-Polom**	**1.19**	**175**	Pg	**Pb**	18 05 04.2	+0.4
DPC				Sg	**Sb**	18 05 19.6	-0.1
PVCC	**Panska Ves**	**1.42**	**226**	*e*PG	**Pb**	18 05 08.3	+0.5
PVCC				*e*SG	**Sn**	18 05 28.0	+1.0
	comp=Z,277nm,0.2s						
PVCC	**Panska Ves**	**1.42**	**226**	Pg	**Pb**	18 05 08.3	+0.5
PVCC				Sg	**Sn**	18 05 28.0	+1.0
	277nm,0.2s						
KRLC	**Kraliky**	**1.51**	**165**	*e*PG	**Pb**	18 05 09.2	-0.1
KRLC				*e*SG	**Sg**	18 05 28.4	-0.4
KRLC	**Kraliky**	**1.51**	**165**	Pg	**Pb**	18 05 09.2	-0.1
KRLC				Sg	**Sg**	18 05 28.4	-0.4
BRG	**Berggiesshubel**	**1.55**	**246**	PN	**Pn**	18 05 09.5	+0.3
BRG				PG	**Pg**	18 05 11.4	+1.3
BRG				SG	**Sg**	18 05 31.4	+1.3
	140nm,0.4s						
BRG	**Berggiesshubel**	**1.55**	**246**	*e*Pn	**Pg**	18 05 10.8	+0.7
BRG				*e*Sg	**Sg**	18 05 31.3	+1.2
BRG	**Berggiesshubel**	**1.55**	**246**	Pn	**Pg**	18 05 10.8	+0.7
BRG				Sg	**Sg**	18 05 31.3	+1.2
GOPC	**GO Pecny, Ondr**	**1.84**	**209**	*e*PN	**Pn**	18 05 14.0	+0.7
GOPC				*e*PG	**Pg**	18 05 15.6	-0.1
GOPC				*e*SG	**Sb**	18 05 39.2	+0.6
	comp=Z,56nm,0.5s						
GOPC	**GO Pecny, Ondr**	**1.84**	**209**	Pn	**Pn**	18 05 14.0	+0.7
PRU	**Pruhonice**	**1.86**	**214**	*e*PN	**Pn**	18 05 14.0	+0.5
PRU				*e*PG	**Pg**	18 05 15.9	-0.1
PRU				*e*SG	**Sb**	18 05 39.4	+0.4
	comp=Z,38nm,0.3s						
PRU	**Pruhonice**	**1.86**	**214**	Pn	**Pn**	18 05 14.0	+0.5
FBE	**Freiberg**	**1.87**	**252**	*e*Pn	**Pg**	18 05 16.8	+0.5
FBE				*e*Sg	**Sg**	18 05 41.0	+0.5
FBE	**Freiberg**	**1.87**	**252**	Pn	**Pg**	18 05 16.8	+0.5
FBE				Sg	**Sg**	18 05 41.0	+0.5
MORC	**Moravsky Berou**	**1.96**	**153**	*e*Pn	**Pn**	18 05 16.1	+1.1
MORC	**Moravsky Berou**	**1.96**	**153**	Pn	**Pn**	18 05 16.1	+1.1
MORC				*e*Sg	**Sg**	18 05 43.0	-0.4
CLL	**Collm**	**1.99**	**265**	*e*Pn	**Pn**	18 05 16.0	+0.6
CLL				*e*Pg	**Pg**	18 05 19.0	+0.3
CLL				*e*		18 05 22.0	
CLL				*e*		18 05 33.0	
CLL				*e*Sg	**Sg**	18 05 44.0	-0.5
	comp=Z,85nm,1.2s						
CLL	**Collm**	**1.99**	**265**	*e*Pn	**Pn**	18 05 16.0	+0.6
CLL				*e*Sg	**Sg**	18 05 45.3	+0.8
CLL	**Collm**	**1.99**	**265**	Pn	**Pn**	18 05 16.0	+0.6
CLL				Sg	**Sg**	18 05 45.3	+0.8
OKC	**Ostrava-Krasne**	**2.11**	**143**	*e*PN	**Pn**	18 05 18.3	+1.3
OKC				*e*PG	**Pg**	18 05 21.8	+0.9
OKC				*e*SG	**Sg**	18 05 48.0	-0.2
	comp=Z,77nm,0.6s						
OKC	**Ostrava-Krasne**	**2.11**	**143**	*e*Pn	**Pn**	18 05 18.1	+1.1
OKC				*e*Sg	**Sg**	18 05 48.0	-0.2
OKC	**Ostrava-Krasne**	**2.11**	**143**	Pn	**Pn**	18 05 18.1	+1.1
VRAC	**Vranov**	**2.24**	**173**	*e*Pn	**Pb**	18 05 20.5	-1.3
VRAC				*e*Sg	**Sg**	18 05 52.2	-0.2
TREC	**Trest**	**2.28**	**191**	*e*PN	**Pn**	18 05 20.8	+1.4
TREC				*e*PG	**Pg**	18 05 24.4	+0.3
TREC				*e*SG	**Sg**	18 05 52.8	-0.8
	comp=Z,56nm,0.3s						
TREC	**Trest**	**2.28**	**191**	Pn	**Pn**	18 05 20.8	+1.4
OJC	**Ojcow**	**2.65**	**118**	*e*Pn	**Pn**	18 05 23.0	-1.4
OJC				*e*Pg	**Pg**	18 05 33.2	+2.0
OJC				*e*Sn	**Sn**	18 05 55.3	-1.9
OJC				*e*Sg	**Sg**	18 06 08.7	+3.2
OJC	**Ojcow**	**2.65**	**118**	*e*Pn	**Pn**	18 05 25.9	+1.5
OJC				*e*Sg	**Sg**	18 06 08.1	+2.6
OJC	**Ojcow**	**2.65**	**118**	Pn	**Pn**	18 05 25.9	+1.5
OJC	**Ojcow**	**2.65**	**118**	*e*Pn	**Pn**	18 05 23.0	-1.4
OJC				*e*Pg	**Pg**	18 05 33.2	+2.0
OJC				*e*Sn	**Sn**	18 05 55.3	-1.9
OJC				*e*Sg	**Sg**	18 06 08.7	+3.2
WERD	**Werda**	**2.67**	**248**	*e*Pn	**Pn**	18 05 25.9	+1.2
WERD	**Werda**	**2.67**

comp=Z,23nm,0.6s
KOLS Kolonicke sedl 4.70 121 ePn Pn 18 05 53.8 +1.2
KOLS Kolonicke sedl 4.70 121 ePn Pn 18 05 53.8 +1.2
KOLS ePG Pg 18 06 12.0 +1.5
KOLS eSG Sg 18 07 13.0 +1.6
KOLS eLG Lg 18 07 32.3
BLEU Blekinge 4.79 358 P Pn 18 05 55.0 +1.2
BLEU S Sn 18 06 46.4 -3.5
BLEU Blekinge 4.79 358 P Pn 18 05 55.0 +1.2
BLEU S Sn 18 06 46.4 -3.5
DEL Delary 5.13 346 P Pn 18 05 59.3 +0.8
DEL S Sn 18 06 55.2 -3.2
DEL Delary 5.13 346 P Pn 18 05 59.3 +0.8
DEL S Sn 18 06 55.2 -3.2
VXJU Vaexsjoe 5.45 353 P Pn 18 06 04.1 +1.3
VXJU Vaexsjoe 5.45 353 P Pn 18 06 04.1 +1.3
FABU Falkenberg 5.84 341 P Pn 18 06 08.8 +0.6
FABU Falkenberg 5.84 341 P Pn 18 06 08.8 +0.6
GNOU Gnosjoe 5.94 347 P Pn 18 06 10.7 +1.1
GNOU Gnosjoe 5.94 347 P Pn 18 06 10.7 +1.1
AKASG Malin Array Be 8.26 91 Pn Pn 18 06 43.0 +1.6
comp=Z,0.8nm,0.3s,baz=281,slow=12,SNR=4.2
AKASG Sn Sn 18 08 12.0 -3.3
comp=Z,0.8nm,0.3s,baz=278,slow=15,SNR=3.0
HFS Hagfors 8.73 352 Pn Pn 18 06 48.8 +0.9
baz=174,slow=17
FINES FINESS Array B 11.33 25 Pn Pn 18 07 23.3 -0.1
comp=Z,0.1nm,0.3s,baz=212,slow=10,SNR=4.5
FINES Sn Sn 18 09 25.3 -5.3
comp=Z,0.2nm,0.3s,baz=212,slow=19,SNR=4.7
FINES Lg Lg 18 10 45.2
comp=Z,0.1nm,0.3s,baz=220,slow=26,SNR=2.4
ARCES ARCESS Array B 18.60 10 Pn P 18 08 57.0 -1.9
comp=Z,0.2nm,0.3s,baz=205,slow=11,SNR=3.3

*GUC **20** 18:26:01.4±0.7, 26.07S×71.03W, h47km±13km, ML3.8*
ISC 20 18:26:01.1±1.3, 26.07S±0.04×70.9W±0.1, h31km, n15, σ4$37/14, 2C-5D, Near coast of northern Chile

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
CPCH Copiapo 1.38 159 *i*P Pb 18 26 25.4 -0.9
CPCH *i*S Sb 18 26 43.2 -0.3
PB14 Ipoc Station P 1.51 18 *i*P Pb 18 26 27.7 -1.0
PB14 eS Sb 18 26 47.6 +0.1
PB14 IAML 18 26 55.7
comp=E,2μm,0.5s
VACH Vallenar 2.50 177 *i*S Sn 18 27 09.9 +0.7
PB10 IPOC Station P 2.56 7⇑*i*P Pn 18 26 41.0 +0.4
PB10 IAML 18 27 29.2
comp=E,583nm,0.5s
LCO Las Campanas 2.94 176⇑*i*P Pn 18 26 46.6 +0.6
LCO IAML 18 27 40.4
comp=E,121nm,0.6s
PB06 IPOC Station P 3.56 20 eP Pn 18 26 56.3 +1.8
PB06 IAML 18 28 00.6
comp=E,188nm,0.6s
VCA Vinchina 3.58 138 eP Pn 18 26 58.9 +4.2
VCA IAML 18 27 59.5
comp=Z,52nm,0.4s
AGUA GUANDACOL 4.02 148 eP Pn 18 27 05.2 +4.5
AGUA ⇓eS Sb 18 28 08.4 +8.9
AROD Rodeo 4.27 163 eP Pb 18 27 12.8 -3.0
ACCO Cerro Coronel 4.78 161⇓eP Pn 18 27 16.5 +5.1
ACCO IAML 18 27 22.9
comp=Z,31nm,0.5s
AHML Horco Molle 5.05 99⇓eP Pb 18 27 23.3 -5.5
CYA Choya 5.12 119⇓eP Pn 18 27 18.6 +2.8
CYA ⇓eS Sb 18 28 26.1 -5.0
CYA IAML 18 28 31.9
comp=Z,17nm,0.6s
AVFE Valle Fertil 5.49 147 eP Pn 18 27 25.2 +4.3
AVFE eS Sb 18 28 33.7 -8.1
AVFE IAML 18 28 42.7
comp=Z,21nm,0.4s
RTLS Leoncito 5.88 166 eP Pn 18 27 31.5 +5.0
AUSP Uspallata 6.27 168 eP Pn 18 27 39.4 +7.6

*NIED **20** 18:30:00, 37.00N×141.90E, h29km, Mw3.5 Best double couple: M0 1.89000×10^14 NP1:φs203.00000°, δ10.00000°, λ84.00000°. NP2:φs29.00000°, δ80.00000°, λ91.00000°.*
*ISCJB **20** 18:30:48.9±0.7, 37.04N±0.04×142.15E±0.06, h19km, mb3.4/6, Error ellipse: s-maj=7.0km s-min=5.3km az=20.8*
*IDC **20** 18:30:48.2±1.2, 36.98N×142.14E, h0km, mb3.5/6, mb1 3.6/9, mb1mx3.5/35, mbtmp3.6/9, ML3.3/3, MS2.4/1, Ms1 2.4/1, ms1mx2.1/31, Error ellipse: s-maj=27.0km s-min=20.6km az=91.0*
*JMA **20** 18:30:51.7±0.3, 37.05N×141.92E, h26km±3km, M3.7*
ISC 20 18:30:50.9±1.0, 37.04N±0.05×142.08E±0.07, h19km, n27, σ1$62/29, mb3.5/6, Off east coast of Honshu

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JFK Kawauchi 1.02 289 P Pb 18 31 08.2 -1.7
ONAJ Iwakimizuishiy 1.03 274 P Pb 18 31 08.3 -1.8
JHO Hitachi 1.28 251 P Pn 18 31 12.3 -1.6
JMM Marumori 1.32 309 P Pn 18 31 13.0 -1.3
JFT Otama 1.47 290 P Pn 18 31 15.7 -0.7
JOU Okura 1.74 320 P Pn 18 31 20.0 -0.1
JOU eS Sn 18 31 40.3 -1.5
JFY Yanaizu 1.93 282 eS Sn 18 31 45.5 -1.0
JYS Shirataka 1.99 307 P Pn 18 31 23.8 +0.2
JYS eS Sn 18 31 47.5 -0.4
JMK Ichinoseki 2.03 341 P Pn 18 31 24.0 -0.1
JMK eS Sn 18 31 46.8 -2.1
JAG Ashikaga 2.19 255 P Pn 18 31 25.8 -0.6
JAG eS Sn 18 31 50.6 -2.4
MJAR Matsushiro Arr 3.15 262 Pn Pn 18 31 41.1 +1.6
3.5nm,0.3s,baz=81,slow=15,SNR=41
MJAR Sn Sn 18 32 18.3 +1.8
3.5nm,0.3s,baz=198,slow=38,SNR=6.0
MJAR LR LR 18 33 10.7
comp=Z,67nm,21.4s,baz=95,slow=45
MAT Matsushiro 3.15 262 P Pn 18 31 41.6 +2.1
MAT eS Sn 18 32 19.6 +3.1
JHJ Hachijo jima 2 4.34 206 Pn Pn 18 31 55.5 -0.4
11nm,0.3s,baz=72,slow=20,SNR=2.3
JHJ Sn Sn 18 32 43.6 -2.2
6.6nm,0.3s,baz=107,slow=19,SNR=2.7
ASAJ Asahikawa 7.08 3 Pn Pn 18 32 33.7 +0.2
0.4nm,0.3s,baz=326,slow=7.3,SNR=4.4
ASAJ Sn Sn 18 33 53.4 -0.1
0.7nm,0.3s,baz=198,slow=20,SNR=4.1
USRK Ussuriysk Ar. 10.48 316 Pn Pn 18 33 23.9 +3.8
0.2nm,0.3s,baz=120,slow=10,SNR=3.2
H11N2 WAKE ISLAND Hy 27.69 122 T T 19 05 44.0
baz=314,slow=75,SNR=20
H11N1 WAKE ISLAND Hy 27.70 122 T T 19 05 45.8
baz=314,slow=75,SNR=21
H11N3 WAKE ISLAND Hy 27.71 122 T T 19 06 04.6
baz=314,slow=75,SNR=23
SONM Songino Array 28.23 304 P P 18 36 42.9 +0.3
0.3nm,0.5s,baz=108,slow=8.8,SNR=3.9
H11S1 WAKE ISLAND Hy 28.42 124 T T 19 06 44.3
baz=316,slow=76,SNR=13
H11S3 WAKE ISLAND Hy 28.42 124 T T 19 06 50.7
baz=316,slow=76,SNR=12
H11S2 WAKE ISLAND Hy 28.43 124 T T 19 07 04.2
baz=316,slow=76,SNR=14
ZALV Zalesovo Beam 42.30 312 P P 18 38 44.5 +1.3
0.6nm,0.6s,baz=81,slow=9.3,SNR=3.6
MKAR Makanchi Array 44.57 302 P P 18 39 01.3 -0.3
0.4nm,0.6s,baz=89,slow=9.1,SNR=3.4
ILAR Eielson Array 49.21 32 P P 18 39 38.7 +1.1
0.2nm,0.5s,baz=258,slow=4.5,SNR=3.5
WRA Warramunga Arr 57.14 189 P P 18 40 35.8 -0.6
0.4nm,0.6s,baz=8.4,slow=7.3,SNR=6.1
ASAR Alice Springs 60.87 189 P P 18 41 02.2 0.0
0.2nm,0.8s,baz=7.4,slow=6.5,SNR=4.6

*VIE **20** 18:30:58.4±0.9, 48.59N×17.79E, h8km, mb1.7/4, ML2.2/4, Error ellipse: s-maj=8.8km s-min=2.6km az=112.0*
*IPEC **20** 18:30:58.4±0.1, 48.58N×17.84E, h8km, ML1.8/7, Error ellipse: s-maj=0.9km s-min=0.8km az=24.0*
*CSEM **20** 18:30:58.4±0.2, 48.61N×17.85E, h2km, ML2.6/9, Error ellipse: s-maj=3.1km s-min=2.8km az=175.0*
*PRU **20** 18:31:00.9, 48.67N×17.84E, h8km, Slovakia; N Of Piestany*
ISC 20 18:30:58.5±1.0, 48.61N±0.03×17.86E±0.02, h8km±9km,

n25, σ0$87/46, Czech and Slovak Republics

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JAVC Velka Javorina 0.28 333 ePg Pg 18 31 04.5 +0.5
JAVC eSg Sg 18 31 07.8 0.0
100nm,0.2s
SMOL Smolenice 0.30 251 ePg Pg 18 31 04.7 +0.2
SMOL Smolenice 0.30 251 ePG Pg 18 31 04.7 +0.2
SMOL eSG Sb 18 31 09.7 -1.6
VYHS Vyhne 0.66 100 ePg Pg 18 31 11.2 -0.1
VYHS eSg Sg 18 31 19.3 -0.6
VYHS Vyhne 0.66 100 ePG Pg 18 31 11.2 -0.1
VYHS eSG Sg 18 31 19.3 -0.6
VYHS eLG Lg 18 31 23.8
KRUC Moravsky 1.07 296 ePg Pb 18 31 18.8 -0.4
KRUC eSg Sg 18 31 32.2 -0.6
7.4nm,0.3s
VRAC Vranov 1.09 310 ePg Pb 18 31 19.3 -0.3
VRAC eSg Sg 18 31 32.7 -0.8
8.1nm,0.2s
MORC Moravsky Berou 1.18 350 ePg Pn 18 31 21.2 -0.2
MORC eSg Sb 18 31 36.5 -0.2
13nm,0.4s
OKC Ostrava-Krasne 1.24 9 ePG Pg 18 31 22.2 -0.1
OKC eSG Sb 18 31 37.9 -0.4
comp=Z,10nm,0.4s
OKC Ostrava-Krasne 1.24 9 Pg Pg 18 31 22.2 -0.1
OKC Sg Sb 18 31 37.9 -0.4
10nm,0.4s
CONA Conrad Observa 1.50 244 Pg Pn 18 31 25.7 -0.1
3.4nm,0.3s
CONA Sg Sb 18 31 45.8 0.0
11nm,0.3s
KRLC Kraliky 1.62 335 ePG Pb 18 31 28.7 -0.1
KRLC eSG Sg 18 31 50.4 -0.3
KRLC Kraliky 1.62 335 Pg Pb 18 31 28.7 -0.1
KRLC Sg Sg 18 31 50.4 -0.3
KECS Kecovo 1.75 93 ePn Pn 18 31 29.9 +0.7
KECS eSn Sb 18 31 53.5 +0.5
KECS Kecovo 1.75 93 ePN Pn 18 31 29.9 +0.7
KECS eSN Sb 18 31 53.5 +0.5
KECS eLG Lg 18 31 58.4
DPC Dobruska-Polom 2.01 331 ePN Pn 18 31 33.4 +0.7
DPC ePG Pg 18 31 36.2 -0.8
DPC eSG Sg 18 32 02.1 -0.9
comp=Z,4.4nm,0.6s
DPC Dobruska-Polom 2.01 331 Pn Pn 18 31 33.4 +0.7
ARSA Arzberg 2.08 230 Pg Pg 18 31 38.0 -0.4
0.9nm,0.2s
ARSA Sg Sg 18 32 05.6 +0.3
2.2nm,0.3s
UPC Upice 2.25 328 eSG Sg 18 32 11.5 +0.9
UPC Upice 2.25 328 Sg Sg 18 32 11.5 +0.9
STHS Stebnicka Huta 2.37 69 ePn Pn 18 31 38.1 +0.4
STHS Stebnicka Huta 2.37 69 ePN Pn 18 31 38.1 +0.4
MOA Molln 2.52 254 Pn Pn 18 31 41.0 +1.2
0.4nm,0.2s
MOA Sn Sn 18 32 08.5 -2.2
1.1nm,0.3s
KHC Kasperske Hory 2.87 282 ePN Pn 18 31 47.0 +2.4
KHC ePG Pg 18 31 52.9 -0.6
KHC ex x 18 31 56.1
KHC eSN Sn 18 32 21.0 +1.6
KHC eSG Sg 18 32 30.6 -0.1
comp=Z,5.1nm,0.7s
KHC Kasperske Hory 2.87 282 Pn Pn 18 31 47.0 +2.4

*CSEM **20** 18:48:50.5±0.5, 51.54N×16.15E, h2km, ML2.7/5, Error ellipse: s-maj=7.2km s-min=4.1km az=6.0*
*PRU **20** 18:48:51.8, 51.51N×16.16E, h0km*
WAR 20 18:48:51.4, 51.54N×16.13E, h1km, Poland

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
KSP Ksiaz 0.71 172 ePg Pg 18 49 04.6 -0.3
KSP eSg Sg 18 49 13.9 -0.1
KSP Ksiaz 0.71 172 ePG Pg 18 49 04.6 -0.3
KSP eSG Sg 18 49 13.9 -0.1
UPC Upice 1.04 184 ePG Pg 18 49 10.8 -0.5
UPC eSG Sg 18 49 24.6 -0.1
comp=Z,6.0nm,0.2s
UPC Upice 1.04 184 Pg Pg 18 49 10.8 -0.5
UPC Sg Sg 18 49 24.6 -0.1
6.0nm,0.2s
DPC Dobruska-Polom 1.20 174 ePG Pg 18 49 13.5 -0.8
DPC eSG Sg 18 49 29.2 -0.6
comp=Z,2.9nm,0.3s
DPC Dobruska-Polom 1.20 174 Pg Pg 18 49 13.5 -0.8
DPC Sg Sg 18 49 29.2 -0.6
2.9nm,0.3s
PVCC Panska Ves 1.42 225 ePG Pn 18 49 18.0 -0.3
PVCC eSG Sn 18 49 37.7 +0.2
comp=Z,11nm,0.2s
PVCC Panska Ves 1.42 225 Pg Pn 18 49 18.0 -0.3
PVCC Sg Sn 18 49 37.7 +0.2
11nm,0.2s
KRLC Kraliky 1.52 164 ePG Pn 18 49 19.7 -0.1
KRLC eSG Sb 18 49 39.1 -1.2
KRLC Kraliky 1.52 164 Pg Pn 18 49 19.7 -0.1
KRLC Sg Sb 18 49 39.1 -1.2
BRG Berggiesshubel 1.53 245 PG Pn 18 49 20.1 +0.2
BRG SG Sb 18 49 40.5 0.0
12nm,0.4s
GOPC GO Pecny, Ondr 1.84 208 ePG Pb 18 49 25.6 -0.2
GOPC eSG Sb 18 49 49.4 0.0
GOPC GO Pecny, Ondr 1.84 208 Pg Pb 18 49 25.6 -0.2
GOPC Sg Sb 18 49 49.4 0.0
PRU Pruhonice 1.85 214 ePG Pb 18 49 25.5 -0.6
PRU eSG Sb 18 49 49.8 +0.1
comp=Z,3.2nm,0.2s
PRU Pruhonice 1.85 214 Pg Pb 18 49 25.5 -0.6
PRU Sg Sb 18 49 49.8 +0.1
3.2nm,0.2s
MORC Moravsky Berou 1.98 153 ePn Pn 18 49 25.1 -1.0
MORC eSg Sb 18 49 53.1 -0.3
NKC Novy Kostel 2.68 242 eSG Sg 18 50 17.8 +0.5
comp=Z,5.9nm,0.4s
NKC Novy Kostel 2.68 242 Sg Sg 18 50 17.8 +0.5
5.9nm,0.4s
KHC Kasperske Hory 2.92 215 eSG Sg 18 50 23.2 -1.8
KHC Kasperske Hory 2.92 215 Sg Sg 18 50 23.2 -1.8

*ISCJB **20** 18:50:38.4±0.7, 51.47N±0.03×16.10E±0.04, h0km, Error ellipse: s-maj=4.8km s-min=3.0km az=18.4*
*WAR **20** 18:50:39.8, 51.54N×16.13E, h1km, Mw2.3*
*CSEM **20** 18:50:39.3±0.4, 51.51N×16.11E, h2km, ML2.9/10, Error ellipse: s-maj=5.8km s-min=3.7km az=7.0*
*VIE **20** 18:50:42.7±0.8, 51.29N×16.30E, h0km, mb2.2/3, ML2.3/5, Error ellipse: s-maj=8.3km s-min=6.1km az=101.0, Suspected Mining induced.*
ISC 20 18:50:39.6±1.1, 51.51N±0.05×16.09E±0.02, h0km, n32, σ0$58/65, 1D, Poland

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
KSP Ksiaz 0.68 169 *i*Pg Pg 18 50 53.0 +0.5
KSP eSg Sg 18 51 02.3 +1.0
KSP Ksiaz 0.68 169⇓*i*Pg Pg 18 50 53.0 +0.5
KSP eSg Sg 18 51 02.3 +1.0
UPC Upice 1.00 183 ePG Pg 18 50 59.1 +0.3
UPC eSG Sb 18 51 13.0 -0.5
comp=Z,30nm,0.4s
UPC Upice 1.00 183 Pg Pg 18 50 59.1 +0.3
UPC Sg Sb 18 51 13.0 -0.5
30nm,0.4s
DPC Dobruska-Polom 1.17 173 ePG Pg 18 51 01.9 -0.1
DPC eSG Sg 18 51 17.3 +0.3
comp=Z,8.5nm,0.4s
DPC Dobruska-Polom 1.17 173 Pg Pg 18 51 01.9 -0.1
DPC Sg Sg 18 51 17.3 +0.3
8.5nm,0.4s
PVCC Panska Ves 1.37 225 ePG Pg 18 51 05.8 -0.1
PVCC eSG Sn 18 51 25.2 +0.4
comp=Z,38nm,0.2s
PVCC Panska Ves 1.37 225 Pg Pg 18 51 05.8 -0.1
PVCC Sg Sn 18 51 25.2 +0.4
38nm,0.2s
BRG Berggiesshubel 1.49 246 PG Pb 18 51 07.9 -0.2
BRG SG Sn 18 51 29.0 +1.2
32nm,0.4s
KRLC Kraliky 1.50 163 ePG Pn 18 51 07.1 -0.7
KRLC eSG Sg 18 51 27.5 -0.2
KRLC Kraliky 1.50 163 Pg Pn 18 51 07.1 -0.7
KRLC Sg Sg 18 51 27.5 -0.2
GOPC GO Pecny, Ondr 1.79 208 ePN Pn 18 51 11.9 0.0
GOPC ePG Pb 18 51 13.4 0.0
GOPC eSG Sg 18 51 37.3 +0.1
GOPC GO Pecny, Ondr 1.79 208 Pn Pn 18 51 11.9 0.0
PRU Pruhonice 1.81 213 ePN Pn 18 51 11.6 -0.4
PRU ePG Pb 18 51 13.6 0.0
PRU ex x 18 51 30.7
PRU eSG Sg 18 51 37.6 -0.1
comp=Z,12nm,0.3s
PRU Pruhonice 1.81 213 Pn Pn 18 51 11.6 -0.4
CLL Collm 1.94 265 ePn Pn 18 51 13.0 -0.8
CLL ePg Pb 18 51 16.0 +0.1
CLL *i* 18 51 19.6
CLL eSg Sg 18 51 42.0 0.0
comp=Z,12nm,0.4s
MORC Moravsky Berou 1.96 151 ePn Pn 18 51 13.1 -1.1
MORC eSg Sb 18 51 41.4 +0.1
OKC Ostrava-Krasne 2.12 141 ePG Pb 18 51 18.9 0.0
OKC eSG Sb 18 51 45.8 0.0
comp=Z,8.7nm,0.5s
OKC Ostrava-Krasne 2.12 141 Pg Pb 18 51 18.9 0.0
OKC Sg Sb 18 51 45.8 0.0
comp=Z,8.7nm,0.5s
VRAC Vranov 2.22 171 ePn Pn 18 51 18.0 +0.3
VRAC eSg Sg 18 51 50.7 -0.3
TREC Trest 2.25 190 ePG Pg 18 51 22.1 -0.5
TREC eSG Sg 18 51 51.4 -0.3
TREC Trest 2.25 190 Pg Pg 18 51 22.1 -0.5
TREC Sg Sg 18 51 51.4 -0.3
NKC Novy Kostel 2.63 242 ePN Pn 18 51 23.7 +0.3
NKC ePG Pg 18 51 29.6 -0.5
NKC eSG Sg 18 52 05.7 +1.5
comp=Z,13nm,0.4s
NKC Novy Kostel 2.63 242 Pn Pn 18 51 23.7 +0.3
OJC Ojcow 2.68 117 ePg Pg 18 51 30.8 -0.2
OJC eSg Sg 18 52 06.4 +0.7
OJC Ojcow 2.68 117 ePG Pg 18 51 30.8 -0.2
OJC eSG Sg 18 52 06.4 +0.7
OJC Ojcow 2.68 117 ePg Pg 18 51 30.8 -0.2
OJC eSg Sg 18 52 06.4 +0.7
KHC Kasperske Hory 2.87 215 ePN Pn 18 51 26.3 -0.4
KHC ePG Pb 18 51 32.7 +1.0
KHC eSN Sn 18 52 00.2 -1.7
KHC eSG Sg 18 52 11.4 -0.4
comp=Z,6.8nm,0.6s
KHC Kasperske Hory 2.87 215 Pn Pn 18 51 26.3 -0.4
CONA Conrad Observa 3.58 182 Pn Pn 18 51 37.2 +0.7
comp=Z,0.2nm,0.1s
CONA Sg Sg 18 52 35.5 +0.8
comp=Z,4.7nm,0.4s
MOA Molln 3.84 199 Pn Pn 18 51 40.3 +0.2
comp=Z,1.1nm,0.2s
MOA Sg Sg 18 52 44.0 +0.9
comp=Z,4.9nm,0.5s
ARSA Arzberg 4.28 185 Sg Sg 18 52 56.2 -0.7
comp=Z,1.9nm,0.4s

IDC 20 18:55:18.9±2.8, 6.30S×149.62E, h0km, mb3.7/4, mb1 3.9/5, mb1mx3.6/27, mbtmp3.8/5, ML1.8/1, Error ellipse: s-maj=66.7km s-min=38.5km az=114.0, New Britain region

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
PMG Port Moresby 3.93 218 Pn Pn 18 56 22.5 +1.9
4.6nm,0.3s,baz=55,slow=5.9,SNR=14
PMG Sn Sn 18 57 08.1 +0.7
12nm,0.3s,baz=334,slow=11,SNR=9.9
WRA Warramunga Arr 20.11 226 P P 18 59 54.9 +0.4
3.9nm,0.8s,baz=50,slow=11,SNR=22
ASAR Alice Springs 22.95 220 P P 19 00 24.0 -1.0
0.7nm,0.6s,baz=58,slow=9.3,SNR=17
FITZ Fitzroy Crossi 26.17 241 P P 19 00 54.7 -0.6
0.9nm,0.5s,baz=78,slow=9.4,SNR=7.8
STKA Stephens Creek 26.53 195 P P 19 00 58.0 -0.4
1.0nm,0.8s,baz=36,slow=14,SNR=3.5
TORD Torodi Ar. Bea 147.69 285 PKPbc PKPbc 19 15 07.0 +0.4
0.3nm,0.6s,baz=67,slow=3.1,SNR=2.4

*NIED **20** 19:18:00, 27.20N×128.30E, h56km, Mw5.3 Best double couple: M0 9.64000×10^16 NP1:φs186.00000°, δ61.00000°, λ147.00000°. NP2:φs294.00000°, δ61.00000°, λ34.00000°.*
*BJI **20** 19:18:09.7, 26.93N×128.50E, h51km, mb4.8/67, mB4.9/59, Ms4.8/80, Ms7 4.5/76*
*MOS **20** 19:18:10.5±0.9, 27.30N×128.24E, h39km, mb5.6/54, MS4.5/35, Error ellipse: s-maj=6.5km s-min=4.1km az=107.0*
*ISCJB **20** 19:18:13.3±0.2, 27.27N±0.02×128.23E±0.02, h60km±1km, mb5.2/187, MS4.6/179, Error ellipse: s-maj=3.4km s-min=2.0km az=135.0*
*IDC **20** 19:18:14.7±0.7, 27.29N×128.26E, h62km±5km, mb4.7/34, mb1 4.8/37, mb1mx4.7/46, mbtmp5.0/37, MS4.3/40, Ms1 4.3/40, ms1mx4.3/52, Error ellipse: s-maj=11.1km s-min=8.9km az=88.0*
*GCMT **20** 19:18:14.8±0.1, 27.17N×128.20E, h49km, MW5.3/113, Moment Tensor Solution. s94,c135; s113,c198; Duration: 1$1 Moment tensor: Scale 10^17Nm; Mrr 0.92±.02; Mθθ 0.13±.02; Mφφ -1.05±.02; Mrθ -0.40±.01; Mθφ 0.50±.01; Mφr -0.19±.02; Best double couple: M0 1.19100×10^17 NP1:φs185.00000°, δ52.00000°, λ126.00000°. NP2:φs315.00000°, δ50.00000°, λ53.00000°. Principal axes: T 1.1470, Plg62.0000°, Azm158.0000°; N 0.0860, Plg28.0000°, Azm341.0000°; P -1.2340, Plg1.0000°, Azm250.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*JMA **20** 19:18:14.3, 27.23N×128.32E, h59km±1km, M5.2*
JMA Felt IV J1.
*NEIC **20** 19:18:14.8±0.4, 27.24N×128.20E, h64km±4km, mb5.3/86, Error ellipse: s-maj=4.7km s-min=3.4km az=125.0*
NEIC Felt [III] at Chatan, Nago and Okinawa; [II] at Ginowan, Gushikawa, Ishikawa, Naha and Yomitan, Okinawa. Also felt at Urasoe. Recorded [4 JMA] on Okinawa, Okino-erabu-shima and Yoron-jima.
ISC 20 19:18:14.4±0.4, 27.21N±0.03×128.33E±0.03, h61km±2km, h60km:pP-P, n777, σ1$45/761, mb5.2/200, 61C-34D, Ryukyu Islands

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JOKE Okinoerabujima 0.26 55 P Pn 19 18 24.1 -0.2
JOKE S Sn 19 18 31.0 -0.5
JIH Iheya 0.37 242 P Pn 19 18 25.0 -0.1
JIH S Sn 19 18 32.3 -0.6
JOW Kunigami 0.38 188 P Pn 19 18 25.2 -0.1
JOW S Sn 19 18 32.9 -0.2
JOW Kunigami 0.38 188 ePg Pn 19 18 25.2 -0.1
JNTH Nagotoyohara 0.74 202 P Pn 19 18 29.2 0.0
JNTH S Sn 19 18 40.3 +0.3
JTK Tokunoshima 0.79 44 P Pn 19 18 29.7 -0.1
JTK eS Sn 19 18 41.0 -0.2
JAGN Aguni-jima 1.15 238 P Pn 19 18 34.5 0.0
JAGN eS Sn 19 18 49.4 0.0
JJT2 Tamagusuku 2 1.19 206 P Pn 19 18 35.6 +0.7
JAMN Amaminishikomi 1.27 36 P Pn 19 18 35.6 -0.4
JAMN eS Sn 19 18 51.5 -0.7
JKE Kume jima 2 1.64 238 P Pn 19 18 40.9 -0.1
JKE eS Sn 19 19 01.2 +0.2
JAM Amami Oshima 1.64 43 P Pn 19 18 41.0 0.0
JAM eS Sn 19 19 01.4 +0.3
JZK Kikaishima 1.82 53 P Pn 19 18 44.0 +0.5
JZK eS Sn 19 19 06.8 +1.3
JTAJ Takarajima 2.08 21 P Pn 19 18 46.8 -0.2
JTAJ eS Sn 19 19 10.6 -1.2
JMZ Minamidaito 2 2.94 118 P Pn 19 18 56.9 -1.7
JMZ S Sn 19 19 28.9 -3.8
JNN Nakanoshima 2.95 27 P Pn 19 18 58.8 -0.1
JNN S Sn 19 19 32.8 -0.3
JYAK Yakushimahirau 3.57 32 P Pn 19 19 06.7 -0.6
JYAK eS Sn 19 19 47.3 -1.0
JIKM Ikemajima 3.59 231 P Pn 19 19 06.9 -0.7
JOGS Gusukube 3.59 228 P Pn 19 19 07.4 -0.2
JKC Kuchinoerabu 3.63 26 P Pn 19 19 08.4 +0.3
JKC S Sn 19 19 49.6 -0.1

JMJ	**Miyako jima 2**	**3.63**	**230**	P		**Pn**	**19 19 07.6**	**-0.5**
JIRB	**Irabujima**	**3.70**	**231**	P		**Pn**	**19 19 08.1**	**-1.0**
JTN	**Tanegashima 3**	**4.14**	**33**	P		**Pn**	**19 19 15.4**	**+0.3**
JTN				*e*S		**Sn**	**19 20 02.2**	**-0.1**
JTJ	**Tarama**	**4.15**	**233**	P		**Pn**	**19 19 14.2**	**-1.1**
JTJ				*e*S		**Sn**	**19 20 02.1**	**-0.4**
JISG	**Ishigakijimahi**	**4.46**	**235**	P		**Pn**	**19 19 17.7**	**-1.9**
JTSR	**Tashiro 2**	**4.54**	**29**	P		**Pn**	**19 19 21.0**	**+0.3**
JSJ	**Shimokoshiki**	**4.61**	**15**	P		**Pn**	**19 19 22.5**	**+0.9**
JIJ	**Ishigaki jima**	**4.72**	**234**	P		**Pn**	**19 19 21.0**	**-2.1**
JKRS	**Kuro-shima**	**4.89**	**234**	P		**Pn**	**19 19 23.8**	**-1.7**
JNAR	**Kushima--Naru**	**5.01**	**30**	P		**Pn**	**19 19 27.9**	**+0.9**
IRIF	**Iriomote-Funau**	**5.04**	**236**	P		**Pn**	**19 19 25.2**	**-2.3**
HATJ	**Hateruma jima**	**5.15**	**233**	P		**Pn**	**19 19 27.5**	**-1.5**
YOJ	**Yonaguni jima**	**5.52**	**241**	*e*P		**Pn**	**19 19 32.7**	**-1.3**
YOJ					pmax	pmax		
	comp=Z,124nm,0.4s							
YOJ	**Yonaguni jima**	**5.52**	**241**	*e*Pn		**Pn**	**19 19 32.7**	**-1.3**
	comp=Z,124nm,0.4s							
JNU	**Nakatsue**	**6.29**	**20**	P		**Pn**	**19 19 45.8**	**+1.2**
	comp=Z,52nm,0.3s,baz=228,slow=3.8,SNR=452							
JNU				S		**Sn**	**19 20 54.9**	**-0.2**
	baz=180,slow=20,SNR=1.5							
JNU				LR		LR	19 22 26.9	
	comp=Z,14nm,21.2s,baz=198,slow=40							
TATO	**Taipei**	**6.54**	**252**	*e*Pn		**Pn**	**19 19 49.1**	**+1.1**
	comp=Z,728nm,0.9s							
YHNB	**Yeheng**	**6.75**	**250**	*e*Pn		**Pn**	**19 19 51.5**	**+0.5**
	comp=Z,385nm,0.5s							
NACB	**Ninganchiao**	**6.79**	**245**	*e*Pn		**Pn**	**19 19 48.9**	**-2.5**
	comp=Z,253nm,0.5s							
SSE	**Sheshan**	**7.35**	**303**	P		**Pn**	**19 20 00.9**	**+1.9**
SSE				S		**Sn**	**19 21 21.0**	**0.0**
SSE					pmax	pmax		
	comp=Z,110nm,1.1s							
SSE					pmax	pmax		
	comp=Z,81nm,3.5s							
SSE					LR	LR		
	comp=Z,4μm,24.0s							
SSE					LR	LR		
	comp=Z,5μm,24.0s							
SSE					LR	LR		
	comp=Z,3μm,20.3s							
YULB	**Yu-li**	**7.41**	**241**	*e*Pn		**Pn**	**19 19 56.1**	**-3.9**
	comp=Z,324nm,0.4s							
SSLB	**Suanglung**	**7.49**	**245**	*e*Pn		**Pn**	**19 19 58.6**	**-2.4**
	comp=Z,321nm,0.4s							
TWG	**Pinlang**	**7.90**	**238**	*e*Pn		**Pn**	**19 20 01.9**	**-4.7**
	comp=Z,817nm,0.3s							
TPUB	**Ta-pu**	**7.99**	**243**	*e*Pn		**Pn**	**19 20 05.6**	**-2.2**
	comp=Z,417nm,0.4s							
QZH	**Quanzhou**	**9.04**	**258**	⇓*i*P		**Pn**	**19 20 22.8**	**+0.5**
QZH				sP			19 20 39.6	
QZH				S		**Sn**	**19 21 59.8**	**-2.8**
QZH				sS			19 22 19.3	
QZH				LR	LR			
	comp=Z,5μm,11.1s							
QZH				LR	LR			
	comp=Z,4μm,13.3s							
QZH				LR	LR			
	comp=Z,10μm,26.3s							
NJ2	**Nanjing**	**9.55**	**303**	*e*P		**Pn**	**19 20 29.0**	**-0.2**
NJ2				S		**Sn**	**19 22 20.0**	**+5.0**
NJ2					pmax	pmax		
	comp=Z,94nm,0.8s							
NJ2					pmax	pmax		
	comp=Z,680nm,4.6s							
NJ2					LR	LR		
	comp=Z,6μm,15.2s							
NJ2					LR	LR		
	comp=Z,4μm,13.6s							
NJ2					LR	LR		
	comp=Z,4μm,17.9s							
KSAR	**Wonju Array Be**	**10.21**	**358**	P		**Pn**	**19 20 40.5**	**+2.4**
KSAR	**Wonju Array Be**	**10.21**	**358**	P		**Pn**	**19 20 40.5**	**+2.4**
KSRS	**Korea Array**	**10.22**	**358**	P		**Pn**	**19 20 40.5**	**+2.2**
	comp=Z,1.1nm,0.3s,baz=176,slow=14,SNR=41							
KSRS				LR		LR	19 24 44.9	
	comp=Z,2μm,19.3s,baz=172,slow=38							
INCN	**Inchon**	**10.34**	**352**	*e*Pn		**Pn**	**19 20 42.1**	**+2.1**
	comp=Z,317nm,1.6s							
JHJ	**Hachijo jima 2**	**11.52**	**57**	P		**Pn**	**19 20 57.0**	**+0.9**
	comp=Z,26nm,0.3s,baz=248,slow=19,SNR=5.6							
JHJ				LR		LR	19 25 07.1	
	comp=Z,3μm,21.7s,baz=242,slow=36							
MAJO	**Matsushiro**	**12.52**	**40**	*e*P		**Pn**	**19 21 09.6**	**-0.1**
MAJO	**Matsushiro**	**12.52**	**40**	*e*Pn		**Pn**	**19 21 08.1**	**-1.7**
	comp=Z,276nm,1.3s							
MAT	**Matsushiro**	**12.52**	**40**	P		**Pn**	**19 21 08.0**	**-1.7**
MAT				*e*S		**Sn**	**19 23 30.5**	**+3.0**
MJAR	**Matsushiro Arr**	**12.52**	**40**	P		**Pn**	**19 21 08.7**	**-1.0**
	comp=Z,0.9nm,0.3s,baz=240,slow=12,SNR=12							
MJAR				LR		LR	19 26 13.6	
	comp=Z,1μm,20.6s,baz=220,slow=38							
WHN	**Wuhan**	**12.69**	**288**	⇑*i*P		**Pn**	**19 21 14.3**	**+2.2**
WHN				sP		sP	19 21 33.8	
WHN				S		**Sn**	**19 23 34.6**	**+2.9**
WHN				LR	LR			
	comp=Z,6μm,15.2s							
DL2	**Dalian**	**12.94**	**336**	P		**Pn**	**19 21 18.8**	**+3.4**
DL2				sP		sP	19 21 32.8	
DL2				S		**Sn**	**19 23 41.9**	**+4.2**
DL2				SS		**S**	**19 23 58.5**	**-1.6**
DL2					pmax	pmax		
	comp=Z,58nm,1.0s							
DL2					pmax	pmax		
	comp=Z,260nm,6.0s							
DL2					LR	LR		
	comp=Z,2μm,18.5s							
DL2					LR	LR		
	comp=Z,1μm,18.3s							
DL2					LR	LR		
	comp=Z,2μm,21.8s							
TIA	**Tai'an**	**13.09**	**316**	⇑P		**Pn**	**19 21 19.9**	**+2.5**
TIA				S		S	19 23 52.8	-10
TIA					pmax	pmax		
	comp=Z,10.0nm,1.1s							
TIA					pmax	pmax		
	comp=Z,400nm,3.8s							
TIA					LR	LR		
	comp=Z,1μm,16.0s							
TIA					LR	LR		
	comp=Z,2μm,11.9s							
TIA					LR	LR		
	comp=Z,2μm,13.7s							
GZH	**Guangzhou**	**14.18**	**256**	P		**Pn**	**19 21 30.0**	**-2.2**
GZH				S		**Sn**	**19 24 04.5**	**-3.5**
GZH					pmax	pmax		
	comp=Z,1μm,5.0s							
TGY	**Tagaytay City**	**14.76**	**209**	P		**Pn**	**19 21 39.3**	**-0.5**
	comp=Z,65nm,0.3s,baz=38,slow=2.6,SNR=4.1							
TGY				LR		LR	19 27 07.4	
	comp=Z,283nm,21.2s,baz=33,slow=36							
SNY	**Shenyang**	**15.09**	**346**	⇓P		**P**	**19 21 50.8**	**+2.9**
SNY				S		**Sn**	**19 24 32.1**	**+2.1**
SNY					pmax	pmax		
	comp=Z,57nm,1.4s							
SNY					pmax	pmax		
	comp=Z,620nm,3.9s							
SNY					LR	LR		
	comp=N,2μm,13.7s							
SNY					LR	LR		
	comp=E,2μm,13.3s							
SNY					LR	LR		
	comp=Z,2μm,24.5s							
BJT	**Baijiatuau**	**16.28**	**325**	*e*P		**P**	**19 22 00.3**	**-0.8**
BJT					pmax	pmax		
	comp=Z,67nm,0.8s							
BJT	**Baijiatuau**	**16.28**	**325**	*e*Pn		**P**	**19 22 00.3**	**-0.8**
	comp=Z,67nm,0.8s							
BJI	**Beijing**	**16.29**	**325**	P		**P**	**19 22 00.3**	**-0.9**
BJI					pmax	pmax		
	comp=Z,16nm,1.3s							
BJI					pmax	pmax		
	comp=Z,330nm,6.0s							
BJI					LR	LR		
	comp=Z,2μm,14.1s							
BJI					LR	LR		
	comp=Z,1μm,16.9s							
BJI					LR	LR		
	comp=Z,2μm,20.4s							
CN2	**Changchun**	**16.72**	**353**	*e*P		**P**	**19 22 06.5**	**+0.6**
CN2				*es*P		pP	19 22 20.6	+1.8
CN2				*e*S		**Sn**	**19 25 09.5**	**+0.2**
CN2					pmax	pmax		
	comp=Z,70nm,1.2s							
CN2					pmax	pmax		
	comp=Z,700nm,6.0s							
CN2					LR	LR		
	comp=Z,1μm,18.0s							
CN2					LR	LR		
	comp=Z,1μm,18.0s							
CN2					LR	LR		
	comp=Z,1μm,21.0s							
ENH	**Enshi**	**16.81**	**285**	*e*P		**P**	**19 22 07.6**	**+0.6**
	comp=Z,34nm,0.8s							
TIY	**Taiyuan**	**17.00**	**312**	*e*P		**P**	**19 22 13.3**	**+4.2**
TIY				S		**Sn**	**19 25 12.4**	**-3.8**
TIY					pmax	pmax		
	comp=Z,29nm,0.5s							
TIY					pmax	pmax		
	comp=Z,500nm,5.6s							
TIY					LR	LR		
	comp=Z,3μm,18.5s							
TIY					LR	LR		
	comp=Z,1μm,12.6s							
TIY					LR	LR		
	comp=Z,1μm,19.7s							
USRK	**Ussuriysk Ar.**	**17.21**	**9**	P		**P**	**19 22 12.1**	**+0.8**
	comp=Z,0.7nm,0.3s,baz=176,slow=9.5,SNR=8.1							
USRK				LR		LR	19 28 53.0	
	comp=Z,869nm,20.4s,baz=180,slow=37							
MDJ	**Mudanjiang**	**17.40**	**3**	P		**P**	**19 22 13.8**	**+0.4**
MDJ				pP		pP	19 22 25.9	-0.4
MDJ				sP		sP	19 22 32.3	-1.8
MDJ				S		**Sn**	**19 25 27.0**	**+1.2**
MDJ				PcP		**PcP**	**19 26 52.1**	**+0.6**
MDJ				ScP		**ScP**	**19 30 22.8**	**+1.5**
MDJ				PcS		**PcS**	**19 30 28.6**	**+1.1**
MDJ				ScS		**ScS**	**19 34 03.3**	**+2.1**
MDJ					pmax	pmax		
	comp=Z,350nm,5.2s							
MDJ					LR	LR		
	comp=Z,1μm,24.3s							
MDJ					LR	LR		
	comp=Z,780nm,20.6s							
MDJ					LR	LR		
	comp=Z,1μm,27.9s							
XAN	**Xi'an**	**18.02**	**297**	P		**Pn**	**19 22 21.3**	**+0.6**
XAN				pP		pP	19 22 29.1	-4.3
XAN				sP		sP	19 22 33.8	-7.3
XAN				S		**Sn**	**19 25 40.0**	**-1.2**
XAN				sS		sS	19 25 52.6	-12
XAN				SS		**SnSn**	**19 26 03.8**	**+8.3**
XAN					pmax	pmax		
	comp=Z,59nm,1.0s							
XAN					pmax	pmax		
	comp=Z,290nm,5.0s							
XAN					LR	LR		
	comp=Z,1μm,11.6s							
XAN					LR	LR		
	comp=Z,2μm,10.1s							
XAN					LR	LR		
	comp=Z,2μm,12.9s							
QIZ	**Qiongzhong**	**18.84**	**248**	P		**P**	**19 22 29.1**	**-0.4**
QIZ				sP		**pP**	**19 22 45.4**	**+2.9**
QIZ				S		**S**	**19 25 58.8**	**-1.8**
QIZ					pmax	pmax		
	comp=Z,490nm,8.1s							
QIZ					LR	LR		
	comp=Z,2μm,19.9s							
QIZ					LR	LR		
	comp=Z,2μm,21.0s							
CGP	**Cagayan de Oro**	**18.97**	**191**	⇓*e*P		**Pn**	**19 22 31.8**	**-0.3**
ERM	**Erimo**	**19.11**	**36**	⇑*e*P		**P**	**19 22 31.5**	**-0.8**
ERM					pmax	pmax		
	comp=Z,58nm,1.0s							
ERM	**Erimo**	**19.11**	**36**	*e*P		**P**	**19 22 29.5**	**-2.8**
	comp=Z,54nm,1.0s							
GYA	**Guiyang**	**19.35**	**273**	⇑*i*P		**Pn**	**19 22 36.8**	**0.0**
GYA				pP		pP	19 22 47.0	-1.2
GYA				sP		sP	19 22 54.4	-1.4
GYA				S		**S**	**19 26 06.8**	**-4.3**
GYA				sS		Sn	19 26 22.3	+9.0
GYA				SS		**SnSn**	**19 26 32.8**	**+4.6**
GYA					pmax	pmax		
	comp=Z,30nm,1.0s							
GYA					pmax	pmax		
	comp=Z,910nm,8.0s							
GYA					LR	LR		
	comp=Z,1μm,17.2s							
GYA					LR	LR		
	comp=Z,2μm,17.8s							
GYA					LR	LR		
	comp=Z,2μm,15.6s							
HHC	**Hu-ho-hao-te**	**19.40**	**319**	*e*P		**P**	**19 22 36.3**	**+0.7**
HHC				pP		pP	19 22 50.6	+2.0
HHC				S		**S**	**19 26 05.8**	**-6.1**
HHC				sS		sS	19 26 24.8	-8.2
HHC				SS		**SnSn**	**19 26 34.3**	**+4.9**
HHC					pmax	pmax		
	comp=Z,22nm,1.1s							
HHC					pmax	pmax		
	comp=Z,530nm,5.8s							
HHC					LR	LR		
	comp=Z,1μm,13.5s							
HHC					LR	LR		
	comp=Z,1μm,13.1s							
HHC					LR	LR		
	comp=Z,2μm,12.9s							
DAV	**Davao City (W)**	**20.20**	**188**	PFAKE			19 23 00.0	+13
DAV				LR		LR		
	comp=Z,2μm,20.0s							
CTBH	**Cotabato--PC H**	**20.26**	**192**	⇑*i*P		Pn	19 22 46.2	-1.1
ASAJ	**Asahikawa**	**20.41**	**31**	P		**P**	**19 22 45.6**	**-0.8**
	comp=Z,12nm,0.7s,baz=241,slow=14,SNR=12							
ASAJ	**Asahikawa**	**20.41**	**31**	P		**P**	**19 22 45.6**	**-0.8**
ASAJ					pmax	pmax		
	comp=Z,25nm,0.9s							
GUMO	**Guam**	**20.56**	**128**	LR		LR	19 29 19.6	
	comp=Z,690nm,19.1s,baz=304,slow=32							
CD2	**Chengdu**	**21.78**	**286**	⇓P		**P**	**19 23 01.1**	**-0.2**
CD2				pP		pP	19 23 12.8	-1.8
CD2				sP		sP	19 23 19.5	-2.7
CD2				S		**S**	**19 26 58.6**	**-0.4**
CD2				PcP		**PcP**	**19 27 00.5**	**+0.8**
CD2				sS		sS	19 27 18.5	-2.1
CD2					pmax	pmax		
	comp=Z,50nm,0.7s							
CD2					pmax	pmax		
	comp=Z,310nm,4.8s							
CD2					LR	LR		
	comp=Z,4μm,14.4s							
CD2					LR	LR		
	comp=Z,2μm,17.9s							
CD2					LR	LR		
	comp=Z,2μm,12.9s							
HABR	**Khabarovsk**	**21.86**	**12**	*e*P		**P**	**19 22 59.2**	**-2.7**
HABR				*e*			19 23 21.2	
HABR				*e*			19 26 57.8	
HABR				*e*S		**S**	**19 26 59.8**	**-0.2**
HABR				*e**SS		Sn	19 27 14.5	+1.6
HABR				*e*SS		**SnSn**	**19 27 27.2**	**-2.2**
HABR				*e*SSS		SSS	19 27 41.4	
HABR				*e*			19 34 16.9	
HABR					pmax	pmax		
	comp=N,23nm,1.0s							
HABR					pmax	pmax		
	comp=E,17nm,1.0s							
HABR					pmax	pmax		
	comp=Z,20nm,1.0s							
HABR					MLR	MLR		
	comp=Z,590nm,18.0s							
KLR	**Kul'dur**	**22.14**	**6**	P		**P**	**19 23 04.5**	**-0.4**
	comp=Z,2.7nm,0.8s,baz=229,slow=7.8,SNR=8.8							
KLR				PcP		**PcP**	**19 27 00.1**	**+0.1**
	comp=Z,3.1nm,0.9s,baz=275,slow=5.0,SNR=4.0							
KLR				ScP		**ScP**	**19 30 31.8**	**-0.4**
	comp=Z,2.1nm,1.0s,baz=246,slow=3.0,SNR=4.3							
KLR				LR		LR	19 31 39.5	
	comp=Z,502nm,21.3s,baz=183,slow=36							
KLR	**Kul'dur**	**22.14**	**6**	*e*P		**P**	**19 23 05.5**	**+0.6**
LZH	**Lanzhou**	**22.60**	**299**	⇑P		**P**	**19 23 11.6**	**+1.4**
LZH				pP		pP	19 23 24.0	+0.6
LZH				sP		sP	19 23 30.5	-0.5
LZH				PP		**PnPn**	**19 23 40.5**	**+4.5**
LZH				S		**S**	**19 27 10.0**	**-3.7**
LZH				sS		Sn	19 27 30.3	-0.8
LZH				SS		**SnSn**	**19 27 55.4**	**+7.7**
LZH					pmax	pmax		
	comp=Z,180nm,1.5s							
LZH					pmax	pmax		
	comp=Z,480nm,5.2s							
LZH					LR	LR		
	comp=Z,1μm,10.0s							
LZH					LR	LR		
	comp=Z,1μm,10.2s							
LZH					LR	LR		
	comp=Z,2μm,11.5s							
YSS	**Yuzh-Sakhalins**	**22.75**	**26**	⇑*e*P		**P**	**19 23 10.6**	**-0.8**
YSS				*e*			19 23 20.9	
YSS				*e*			19 23 22.5	
YSS				*e**SP		**sP**	**19 23 31.8**	**-0.5**
YSS				*e*			19 23 52.7	
YSS				*e*S		**S**	**19 27 13.0**	**-2.6**
YSS				*e*SS		SnSn	19 28 10.0	+19
YSS					pmax	pmax		
	comp=Z,30nm,1.0s							
YSS					pmax	pmax		
	comp=E,20nm,0.9s							
YSS					pmax	pmax		
	comp=Z,170nm,5.0s							
YSS					MLR	MLR		
	comp=Z,1μm,19.0s							
YSS					MLR	MLR		
	comp=E,600nm,15.0s							
YSS	**Yuzh-Sakhalins**	**22.75**	**26**	*e*P		**P**	**19 23 11.3**	**-0.1**
	comp=E,98nm,1.3s							
YSS					LR	LR		
	comp=Z,487nm,19.0s							
KDM	**Kudat**	**22.95**	**210**	⇓P		**P**	**19 23 15.2**	**+1.5**
HIA	**Hailar**	**23.00**	**346**	PFAKE			19 23 20.0	+6.0
HIA				LR	LR			
	comp=Z,983nm,19.0s							
KMI	**Kunming**	**23.05**	**271**	P		**P**	**19 23 16.0**	**+1.0**
KMI				pP		pP	19 23 27.9	-0.6
KMI				sP		sP	19 23 36.0	0.0
KMI				PP		**PnPn**	**19 23 46.1**	**+3.8**
KMI				S		**S**	**19 27 19.5**	**-2.0**
KMI				sS		Sn	19 27 41.3	-0.9
KMI				SS		**SnSn**	**19 28 06.0**	**+7.0**
KMI					pmax	pmax		
	comp=Z,26nm,0.8s							
KMI					pmax	pmax		
	comp=Z,270nm,4.9s							
KMI					LR	LR		
	comp=Z,510nm,10.4s							
KMI					LR	LR		
	comp=Z,1μm,14.9s							
KMI					LR	LR		
	comp=Z,1μm,15.4s							
KUR	**Kuril'sk**	**23.81**	**36**	*e*P		**P**	**19 23 23.3**	**+1.7**
KUR				*i*			19 23 37.0	
KUR				*i* S		**S**	**19 27 35.7**	**+2.8**
KUR					pmax	pmax		
	comp=Z,161nm,1.6s							
KUR					MLR	MLR		
	comp=Z,859nm,18.0s							
MYLDM	**Lahad Datu**	**23.83**	**205**	⇓P		**P**	**19 23 24.3**	**+2.3**
SDKM	**Sandakan**	**23.93**	**208**	⇑P		**P**	**19 23 24.4**	**+1.4**
KKM	**Kota Kinabalu**	**24.00**	**211**	⇑P		**P**	**19 23 25.5**	**+1.8**
KKM	**Kota Kinabalu**	**24.00**	**211**	*e*P		**P**	**19 23 24.9**	**+1.2**
	comp=Z,131nm,1.4s							
KKM					LR	LR		
	comp=Z,1μm,21.0s							
SKNT	**Sakolnakorn**	**24.71**	**251**	P		**P**	**19 23 31.6**	**+1.5**
	comp=Z,92nm,1.2s							
TSM	**Tawau**	**24.88**	**205**	⇑P		**P**	**19 23 33.6**	**+2.0**
NONG	**Nongkai**	**24.93**	**254**	P		**P**	**19 23 33.1**	**+1.1**
	comp=Z,125nm,1.2s,comp=Z,6μm							
TYV	**Tymovskoe**	**26.02**	**21**	*e*P		**P**	**19 23 43.0**	**+1.4**
TYV				*e*S		**S**	**19 28 11.0**	**+3.0**
TYV					pmax	pmax		
	comp=Z,26nm,1.0s							
TYV					smax	smax		
	comp=N,1μm,9.0s							
TYV					MLR	MLR		
	comp=E,1μm,16.0s							
GTA	**Gaotai**	**26.64**	**304**	P		**P**	**19 23 45.8**	**-1.8**
GTA				pP		pP	19 23 57.4	-4.9
GTA				sP		sP	19 24 03.0	-6.5
GTA				PP		**PnPn**	**19 24 33.3**	**+2.2**
GTA				PcP		**PcP**	**19 27 10.8**	**+0.6**
GTA				S		**S**	**19 28 16.0**	**-2.4**
GTA				sS		sS	19 28 36.3	-7.5
GTA				PcS		**PcS**	**19 30 50.5**	**-1.0**
GTA				ScS		**ScS**	**19 34 34.3**	**-1.4**
GTA					pmax	pmax		
	comp=E,6.0nm,1.5s							
GTA					pmax	pmax		
	comp=E,130nm,4.5s							
GTA					LR	LR		
	comp=E,2μm,17.6s							
GTA					LR	LR		
	comp=E,1μm,18.1s							
GTA					LR	LR		
	comp=E,2μm,17.6s							
LOEI	**Loei**	**26.78**	**255**	P		**P**	**19 23 46.1**	**-2.7**
	comp=E,227nm,0.7s,comp=E,14μm							
SONM	**Songino Array**	**26.79**	**326**	P		**P**	**19 23 48.5**	**-0.3**
	comp=E,14nm,0.7s,baz=143,slow=7.7,SNR=90							
SONM				pP		**pP**	**19 24 03.1**	**-0.5**
	comp=E,45nm,1.2s,baz=140,slow=8.1,SNR=9.4							
SONM				PcP		**PcP**	**19 27 11.1**	**+0.8**
	comp=E,1.8nm,0.8s,baz=132,slow=2.4,SNR=5.2							
SONM				ScP		**ScP**	**19 30 44.3**	**-1.0**
	comp=E,1.5nm,0.9s,baz=132,slow=2.9,SNR=6.7							
SONM				LR		LR	19 36 02.9	
	comp=E,640nm,18.6s,baz=134,slow=40							
CHAI	**Chaiyaphum**	**26.90**	**251**	P		**P**	**19 23 51.2**	**+1.3**
	comp=E,25nm,1.0s,comp=E,198nm							
MRSI	**Marisa**	**27.28**	**194**	P		**P**	**19 23 54.8**	**+1.5**
	comp=E,58nm,1.6s,comp=E,4μm							
UTTA	**Uttaradit**	**27.29**	**256**	P		**P**	**19 23 53.8**	**+0.4**
	comp=E,14nm,0.8s,comp=E,102nm							
PBKT	**Sadao Pong**	**27.45**	**253**	P		**P**	**19 23 55.7**	**+0.9**
	comp=E,46nm,1.1s,comp=E,1μm							
NKL	**Nikolayevsk**	**27.49**	**16**	*e*P		**P**	**19 24 00.5**	**+5.7**
NKL				*e*			19 24 43.0	
NKL				*e*			19 28 35.0	
NKL					pmax	pmax		
	comp=Z,60nm,1.1s							
NKL					MLR	MLR		
	comp=N,400nm,17.0s							
NKL					MLR	MLR		
	comp=Z,2μm,17.0s							
LAMP	**Lampang**	**27.77**	**258**	P		**P**	**19 23 58.6**	**+0.9**
	comp=Z,37nm,0.8s,comp=Z,254nm							
SRAK	**Srakaew**	**27.82**	**247**	P		**P**	**19 23 55.6**	**-2.5**
	comp=Z,144nm,0.8s							
SUKH	**Sukhothai**	**28.20**	**256**	P		**P**	**19 24 02.9**	**+1.4**
	comp=Z,8.2nm,1.0s,comp=Z,86nm							
CMMT	**Chiang Mai**	**28.25**	**259**	P		**P**	**19 24 02.5**	**+0.5**
	comp=Z,48nm,1.3s							
CHTO	**Chiang Mai**	**28.26**	**259**	P		**P**	**19 24 02.6**	**+0.5**
	comp=Z,211nm,1.3s							
CHTO	**Chiang Mai**	**28.26**	**259**	*e*P		**P**	**19 24 02.1**	**+0.1**
CHTO					pmax	pmax		
	comp=Z,26nm,0.6s							
CHTO					MLR	MLR		
	comp=Z,1μm,22.0s							
CHTO	**Chiang Mai**	**28.26**	**259**	*e*P		**P**	**19 24 02.1**	**+0.1**
	comp=Z,26nm,0.6s							
CHTO					LR	LR		
	comp=Z,1μm,22.0s							
CHBT	**CHBT**	**28.27**	**245**	P		**P**	**19 24 06.1**	**+3.9**
	comp=Z,56nm,0.9s							
CMAR	**Chiang Mai Arr**	**28.40**	**258**	P		**P**	**19 24 03.8**	**+0.5**
	comp=Z,11nm,0.7s,baz=57,slow=7.7,SNR=66							
CMAR				PcP		**PcP**	**19 27 15.3**	**+0.7**
	comp=Z,4.7nm,0.9s,baz=48,slow=1.2,SNR=14							
CMAR				LR		LR	19 35 47.1	
	comp=Z,1μm,21.7s,baz=76,slow=37							
SBUM	**Sibu**	**29.06**	**215**	⇓P		**P**	**19 24 10.9**	**+1.7**
PCI	**Palu**	**29.13**	**198**	P		**P**	**19 24 09.9**	**+0.2**
	comp=Z,45nm,1.3s,comp=Z,736nm							
PCI	**Palu**	**29.13**	**198**	P		**P**	**19 24 11.1**	**+1.4**
PCI					pmax	pmax		
	comp=Z,45nm,1.3s							
SANI	**Sanana**	**29.18**	**185**	P		**P**	**19 24 08.5**	**-1.7**
UMPA	**Umpang Tak**	**29.42**	**254**	P		P	19 24 17.3	+

TLY *e* 19 25 22.0
TLY *eS* **S** **19 29 20.1 -1.9**
TLY *eSS* **SnSn** **19 31 03.4 -1.7**
TLY pmax pmax
comp=Z,15nm,1.6s
TLY MLR MLR
comp=Z,696nm,17.0s
TLY Talaya 30.71 329 P **P** **19 24 23.0 -0.5**
TLY LR LR
comp=Z,749nm,19.0s
IRK Irkutsk 30.83 331 *eP* **P** **19 24 22.8 -1.7**
IRK pmax pmax
comp=Z,29nm,2.9s
KSM Kuching 30.88 217 ⇓P **P** **19 24 26.7 +1.5**
KSM Kuching 30.88 217 *eP* **P** **19 24 26.2 +1.0**
comp=Z,7.6nm,0.6s
KSM LR LR
comp=Z,651nm,22.0s
KDI Kendari 31.47 191 P **P** **19 24 31.4 +1.0**
comp=Z,47nm,1.3s,comp=Z,733nm
SKR Severo-Kuril's 31.55 35⇑ *eP* **P** **19 24 30.3 -0.5**
JAY Jayapura 31.87 156 LR LR 19 35 40.7
comp=Z,12nm,20.3s,baz=337,slow=33
MOY Mondy 31.95 327 *eP* **P** **19 24 31.7 -2.7**
KTGM Kuala Trenggan 32.40 232 ⇓P **P** **19 24 41.5 +2.9**
SURA Surathani 32.51 242 P **P** **19 24 42.4 +2.8**
comp=Z,295nm,1.8s
SHL Shillong 32.62 276 *eP* **P** **19 24 39.8 -0.9**
LSA Lhasa 32.70 283 P **P** **19 24 42.0 +0.3**
LSA pmax pmax
comp=Z,4.0nm,0.5s
LSA Lhasa 32.70 283 *eP* **P** **19 24 41.6 -0.1**
LSA pmax pmax
comp=Z,15nm,0.6s
LSA MLR MLR
comp=Z,1μm,22.0s
LSA Lhasa 32.70 283 *eP* **P** **19 24 41.6 -0.1**
comp=Z,15nm,0.6s
LSA LR LR
comp=Z,1μm,22.0s
KAPI Kappang 33.09 196 PFAKE 19 25 00.0 +15
KAPI LR LR
comp=Z,466nm,22.0s
BBKI Banjar Baru 33.16 205 P **P** **19 24 48.1 +2.9**
TRTT Trang 33.28 240 P **P** **19 24 49.8 +3.5**
comp=Z,36nm,1.4s,comp=Z,815nm
SURT Suratani 33.29 243 P **P** **19 24 48.6 +2.1**
comp=Z,20nm,0.8s
KRAB Krabi 33.42 241 P **P** **19 24 51.2 +3.6**
comp=Z,122nm,0.6s,comp=Z,2μm
PETK Petropavlovsk- 33.82 32 P **P** **19 24 49.9 -0.7**
comp=Z,34nm,0.9s,baz=211,slow=5.2,SNR=44
PETK PcP **PcP** **19 27 28.3 -0.1**
comp=Z,4.7nm,0.8s,baz=183,slow=2.5,SNR=3.8
PETK LR LR 19 39 01.7
comp=Z,649nm,21.8s,baz=226,slow=37
KULM Kulim 34.21 235 ⇑P **P** **19 24 55.8 +1.4**
KULM Kulim 34.21 235 *eP* **P** **19 24 55.9 +1.5**
comp=Z,45nm,1.1s
KULM LR LR
comp=Z,446nm,21.0s
PET Petropavlovsk 34.22 33⇓ *i*P **P** **19 24 54.0 0.0**
PET *eS* **S** **19 30 17.3 +0.9**
PET pmax pmax
comp=Z,75nm,1.7s
PET MLR MLR
comp=Z,900nm,21.0s
PET MLR MLR
comp=Z,800nm,17.0s
PET Petropavlovsk 34.22 33 *eP* **P** **19 24 54.1 0.0**
comp=Z,181nm,1.5s
PET LR LR
comp=Z,827nm,20.0s
PKDT Phuket 34.30 242 P P 19 25 00.8 +5.6
comp=Z,37nm,1.9s
IPM Ipoh 34.49 234 ⇓P **P** **19 24 58.6 +1.7**
IPM Ipoh 34.49 234 *eP* **P** **19 24 57.3 +0.5**
comp=Z,88nm,1.1s
MYKOM Kota Tinggi 34.49 227 ⇑P **P** **19 24 59.3 +2.5**
KGM Kluang 34.67 228 ⇓P **P** **19 25 00.7 +2.3**
YAK Yakutsk 34.83 1 P **P** **19 24 58.4 -0.7**
comp=Z,29nm,0.7s,baz=174,slow=1.1,SNR=21
YAK LR LR 19 39 21.2
comp=Z,742nm,21.3s,baz=168,slow=36
YAK Yakutsk 34.83 1 *eP* **P** **19 24 57.3 -1.9**
YAK *e**PP **pP** **19 25 09.3 -5.0**
YAK *e* 19 26 11.5
YAK *e* 19 27 30.7
YAK *eS* **S** **19 30 20.6 -4.9**
YAK *eSSS* SSS 19 32 38.7
YAK *e* 19 35 11.0
YAK pmax pmax
comp=Z,49nm,1.0s
YAK pmax pmax
comp=N,31nm,1.3s
YAK pmax pmax
comp=E,5.0nm,1.3s
YAK pmax pmax
comp=Z,15nm,1.1s
YAK smax smax
comp=E,59nm,2.2s
YAK smax smax
comp=N,92nm,2.3s
YAK MLR MLR
comp=E,186nm,17.0s
YAK MLR MLR
comp=N,596nm,19.0s
YAK MLR MLR
comp=Z,682nm,19.0s
YAK Yakutsk 34.83 1 *eP* **P** **19 24 58.3 -0.9**
comp=Z,42nm,0.8s
FRIM Kepong 34.93 232 ⇑P **P** **19 25 03.3 +2.6**
MA2 Magadan 35.86 19 LR LR 19 41 32.0
comp=Z,207nm,18.3s,baz=210,slow=39
MA2 Magadan 35.86 19 *i* P **P** **19 25 08.7 +0.6**
H11N2 WAKE ISLAND Hy 36.04 94 T T 20 03 21.9
baz=290,slow=75,SNR=110
H11N1 WAKE ISLAND Hy 36.04 94 T T 20 03 23.5
baz=290,slow=75,SNR=94
H11N3 WAKE ISLAND Hy 36.06 94 T T 20 03 22.9
baz=290,slow=75,SNR=116
H11S3 WAKE ISLAND Hy 36.28 96 T T 20 03 43.0
baz=291,slow=75,SNR=58
H11S1 WAKE ISLAND Hy 36.28 96 T T 20 03 41.2
baz=291,slow=75,SNR=59
H11S2 WAKE ISLAND Hy 36.30 96 T T 20 03 31.1
baz=291,slow=75,SNR=60
EDFI Ende, Flores 36.32 191 P **P** **19 25 11.0 -1.6**
WMQ Urumqi 36.58 308 P **P** **19 25 14.9 +0.3**
WMQ pP pP 19 25 29.8 +0.1
WMQ sP sP 19 25 36.9 +0.1
WMQ PcP **PcP** **19 27 36.9 +0.1**
WMQ S **S** **19 30 50.9 -2.1**
WMQ SS **SnSn** **19 33 24.4 -3.0**
WMQ pmax pmax
comp=Z,20nm,1.2s
WMQ pmax pmax
comp=Z,110nm,4.2s
WMQ LR LR
comp=Z,2μm,21.4s
WMQ LR LR
comp=Z,810nm,16.4s
WMQ LR LR
comp=Z,2μm,25.6s
SOEI Soe 36.96 187 P **P** **19 25 18.9 +0.9**
comp=Z,52nm,1.4s
PSI Prapat 37.16 234 P **P** **19 25 20.9 +1.1**
comp=Z,4.9nm,0.4s,baz=312,slow=3.8,SNR=9.5
PSI PcP **PcP** **19 27 39.0 0.0**
comp=Z,3.6nm,0.4s,baz=48,slow=1.3,SNR=6.0
PLAI Plampang 37.26 197 P **P** **19 25 20.2 -0.2**
comp=Z,118nm,1.4s,comp=Z,2μm
TWSI Taliwang, Sumb 37.42 199 P **P** **19 25 22.6 +0.8**
comp=Z,35nm,1.3s,comp=Z,2μm
BKNI Bangkinang 37.44 229 P **P** **19 25 23.2 +1.1**
GUN Gumba 37.50 281 *eP* **P** **19 25 23.6 +0.7**
comp=Z,53nm,0.3s
PKIN Phulchoki 37.98 281 *eP* **P** **19 25 27.0 +0.1**
comp=Z,86nm,0.6s
KKN Kakani 38.05 281 *eP* **P** **19 25 27.1 -0.3**
comp=Z,51nm,0.4s
MLSI Meulaboh, Aceh 38.06 239 P **P** **19 25 28.4 +1.1**
MNSI Mandailing Nat 38.10 231 P **P** **19 25 29.0 +1.4**
DMN Daman 38.23 281 *eP* **P** **19 25 28.8 -0.2**
BOK Bokaro 38.33 275 *eP* **P** **19 25 28.9 -0.6**
BOK IAmb IAmb 19 25 30.6
comp=Z,40nm,0.4s
KRAR Krasnoyarsk 38.40 328 *i* P **P** **19 25 28.9 -0.7**
KRAR pmax pmax
comp=Z,287nm,1.2s
PWJI Pagerwojo 38.51 207 P **P** **19 25 34.6 +3.6**
comp=Z,44nm,2.2s
GKN Gorkha 38.57 282 *eP* **P** **19 25 31.5 -0.2**
comp=Z,92nm,0.5s
PDSI Padang 38.74 228 P **P** **19 25 33.5 +0.5**
SEY Seymchan 39.06 17 P **P** **19 25 34.1 -1.0**
comp=Z,5.2nm,1.1s,baz=202,slow=10.0,SNR=7.3
SEY Seymchan 39.06 17 *ceP* **P** **19 25 34.5 -0.6**
GSI Gunungsitoli 39.16 234 P **P** **19 25 36.7 +0.2**
comp=Z,44nm,1.4s
GSI Gunungsitoli 39.16 234 *eP* **P** **19 25 36.4 -0.2**
comp=Z,28nm,0.6s
KOLN Koldanda 39.52 281 *eP* **P** **19 25 39.2 -0.5**
DBJI Dramaga 39.54 215 P **P** **19 25 41.3 +1.7**
LWLI Liwa 39.71 220 P **P** **19 25 42.2 +1.0**
PYUN Piuthan 39.99 282 *eP* **P** **19 25 43.9 +0.3**
comp=Z,205nm,1.0s
CGJI Cibinong 40.14 216 P **P** **19 25 45.7 +1.1**
PMG Port Moresby 40.72 151 P **P** **19 25 49.7 +0.3**
comp=Z,20nm,0.7s,baz=356,slow=9.7,SNR=6.9
PMG Port Moresby 40.72 151 *ceP* **P** **19 25 49.5 +0.1**
PMG pmax pmax
comp=Z,233nm,1.7s
PMG Port Moresby 40.72 151 P **P** **19 25 49.7 +0.3**
PMG LR LR
comp=Z,614nm,21.0s
MK31 Makanchi Array 40.95 311 *i* P **P** **19 25 50.3 -0.8**
MK31 pmax pmax
comp=Z,5.0nm,0.6s
MKAR Makanchi Array 40.95 311 P **P** **19 25 50.4 -0.7**
comp=Z,7.6nm,0.5s,baz=88,slow=9.9,SNR=54
MKAR PcP **PcP** **19 27 50.3 -0.1**
comp=Z,4.8nm,0.8s,baz=93,slow=4.9,SNR=5.2
MKAR ScP **ScP** **19 31 34.0 -1.0**
comp=Z,0.8nm,0.8s,baz=93,slow=5.8,SNR=3.6
MKAR LR LR 19 44 53.4
comp=Z,424nm,19.1s,baz=104,slow=39
ZALV Zalesovo Beam 41.53 322 P **P** **19 25 53.6 -2.0**
comp=Z,6.5nm,0.4s,baz=110,slow=7.3,SNR=30
ZALV PcP **PcP** **19 27 50.9 -1.1**
comp=Z,2.4nm,0.5s,baz=102,slow=3.5,SNR=4.7
ZALV ScP **ScP** **19 31 35.6 -1.4**
comp=Z,1.6nm,0.8s,baz=108,slow=4.7,SNR=4.9
ZALV LR LR 19 45 04.4
comp=Z,588nm,20.4s,baz=68,slow=39
PDGK Podgornoye 42.38 305 P **P** **19 26 01.1 -1.6**
PDGK pmax pmax
comp=Z,54nm,0.9s
VIS Vishakhapatnam 42.46 267 *eP* **P** **19 26 04.1 +0.4**
NVS Novosibirsk 42.72 323 *eP* **P** **19 26 03.4 -1.9**
NVS *e* 19 27 55.1
NVS *eS* **S** **19 32 22.1 -2.3**
NVS pmax pmax
comp=N,7.0nm,1.2s
NVS pmax pmax
comp=E,11nm,1.2s
NVS pmax pmax
comp=Z,16nm,1.2s
NVS smax smax
comp=N,4.0nm,1.3s
NVS smax smax
comp=E,7.0nm,1.3s
KURK Kurchatov 44.18 316 *eP* **P** **19 26 14.7 -2.4**
KURK pmax pmax
comp=Z,129nm,0.4s
KURK MLR MLR
comp=Z,1μm,19.0s
KURK Kurchatov 44.18 316 *eP* **P** **19 26 14.7 -2.4**
comp=Z,129nm,0.4s
KURK LR LR
comp=Z,1μm,19.0s
KURBB Kurchatov Arra 44.21 316 P **P** **19 26 15.9 -1.5**
comp=Z,17nm,0.4s,baz=102,slow=9.2,SNR=43
TIXI Tiksi 44.48 0 *i* P **P** **19 26 18.0 -1.2**
TIXI pmax pmax
comp=Z,11nm,1.1s
TIXI Tiksi 44.48 0 PFAKE 19 26 30.0 +11
TIXI LR LR
comp=Z,961nm,22.0s
SMLA Simla 44.53 288 *eP* **P** **19 26 20.0 -0.2**
SMLA IAmb IAmb 19 26 21.2
comp=Z,46nm,0.9s
KSH Kashi 44.85 300 P **P** **19 26 26.3 +3.5**
KSH *e*pP pP 19 26 39.1 +0.8
KSH *e*sP sP 19 26 44.8 -0.5
KSH *e*ScP **ScP** **19 31 54.9 +3.9**
KSH S **S** **19 33 00.3 +4.1**
KSH ScS **SS** **19 36 17.8 -1.1**
KSH pmax pmax
comp=Z,12nm,1.0s
KSH LR LR
comp=Z,190nm,10.8s
KSH LR LR
comp=Z,750nm,15.7s
KSH LR LR
comp=Z,710nm,16.5s
NDI New Delhi 44.90 284 *ex* P 19 26 16.5 -6.7
FITZ Fitzroy Crossi 45.12 184 P **P** **19 26 25.1 +0.2**
comp=Z,29nm,0.8s,baz=9.7,slow=7.8,SNR=122
NGP Nagpur 45.13 273 *eP* **P** **19 26 24.7 -0.5**
NGP IAmb IAmb 19 26 25.5
comp=Z,30nm,1.0s
FRU Bishkek 45.91 304 *eP* **P** **19 26 31.0 -0.1**
FRU *e* 19 28 06.0
FRU *e* 19 28 22.0
FRU pmax pmax
comp=Z,750nm,1.0s
FRU pmax pmax
comp=E,1μm,16.0s
BHPL Bhopal 45.97 277 *eP* **P** **19 26 30.6 -1.2**
BHPL IAmb IAmb 19 26 34.3
comp=Z,42nm,1.5s
AAK Ala-Archa 45.99 304 P **P** **19 26 31.6 -0.2**
comp=Z,4.6nm,0.3s,baz=90,slow=5.6,SNR=9.6
AAK LR LR 19 49 14.3
comp=Z,554nm,18.1s,baz=78,slow=40
AAK Ala-Archa 45.99 304 *dP* **P** **19 26 32.3 +0.4**
AAK pmax pmax
comp=Z,19nm,0.9s
AAK Ala-Archa 45.99 304 *eP* **P** **19 26 31.9 +0.1**
comp=Z,8.0nm,0.6s
BILL Bilibino 46.72 19 *eP* **P** **19 26 35.8 -1.1**
BILL *e* 19 28 08.6
BILL *e* 19 28 29.0
BILL pmax pmax
comp=Z,22nm,1.0s
BILL MLR MLR
comp=Z,739nm,20.0s
BILL Bilibino 46.72 19 *eP* **P** **19 26 37.2 +0.3**
comp=Z,30nm,1.1s
BILL LR LR
comp=Z,747nm,20.0s
HYB Hyderabad 46.81 269 *i* P **P** **19 26 40.0 +1.5**
MDRS Chennai 47.01 262 *ex* **P** **19 26 41.8 +1.9**
WRAB Tennant Creek 47.23 172 *eP* **P** **19 26 41.6 +0.1**
WRAB pmax pmax
comp=Z,108nm,1.3s
WRAB MLR MLR
comp=Z,335nm,22.0s
WRAB Tennant Creek 47.23 172 *eP* **P** **19 26 41.5 +0.1**
comp=Z,108nm,1.3s
WRAB LR LR
comp=Z,335nm,22.0s
WRA Warramunga Arr 47.23 172 P **P** **19 26 41.3 -0.2**
comp=Z,28nm,0.7s,baz=352,slow=8.4,SNR=198
WRA LR LR 19 46 17.6
comp=Z,190nm,21.8s,baz=280,slow=36
HNR Honiara 47.61 136 LR LR 19 46 52.2
comp=Z,204nm,19.8s,baz=332,slow=36
MIDW Midway 47.73 76 PFAKE 19 27 00.0 +15
MIDW LR LR
comp=Z,1μm,20.0s
OTUK Ortayu 47.84 312 P **P** **19 26 44.9 -1.1**
OTUK pmax pmax
comp=Z,37nm,1.0s
NRIK Noril'sk 48.35 342 P **P** **19 26 47.3 -2.3**
comp=Z,3.8nm,0.4s,baz=123,slow=8.6,SNR=7.1
NRIK PcP **PcP** **19 28 15.3 0.0**
comp=Z,9.5nm,0.8s,baz=159,slow=2.1,SNR=5.2
NRIK LR LR 19 49 06.5
comp=Z,673nm,20.1s,baz=128,slow=38
MBWA Marble Bar 48.80 191 *eP* **P** **19 26 52.8 -0.8**
comp=Z,190nm,1.4s
KK31 Karatay Array 48.92 305 P **P** **19 26 54.2 -0.2**
KK31 pmax pmax
comp=Z,6.0nm,0.6s
KKAR Karatay Array 48.92 305 *eP* **P** **19 26 54.7 +0.3**
KKAR pmax pmax
comp=Z,29nm,0.9s
KKAR Karatay Array 48.92 305 *eP* **P** **19 26 54.7 +0.3**
comp=Z,29nm,0.9s
PALK Pallekele 49.26 255 LR LR 19 47 57.3
comp=Z,529nm,21.8s,baz=117,slow=36
BVA0 Borovoye Array 49.61 318 *i* P **P** **19 26 58.2 -1.3**
BVA0 pmax pmax
comp=Z,47nm,1.1s
BVAR Borovoye Array 49.61 318 LR LR 19 49 38.7
comp=Z,1μm,21.1s,baz=96,slow=38
BRVK Borovoye 49.68 318 *ceP* **P** **19 26 59.5 -0.5**
BRVK pmax pmax
comp=Z,164nm,1.0s
BRVK Borovoye 49.68 318 *eP* **P** **19 26 59.1 -0.9**
comp=Z,186nm,1.0s
BRVK LR LR
comp=Z,730nm,21.0s
TARA Tarawa 49.86 113 PFAKE 19 27 10.0 +8.2
TARA LR LR
comp=Z,58nm,20.0s
CTAO Charters Tower 50.12 158 *eP* **P** **19 27 04.5 +0.8**
CTAO pmax pmax
comp=Z,545nm,1.3s
CTAO MLR MLR
comp=Z,411nm,21.0s
CTAO Charters Tower 50.12 158 *eP* **P** **19 27 04.5 +0.8**
comp=Z,544nm,1.3s
CTAO LR LR
comp=Z,411nm,21.0s
POO Poona 50.61 272 *eP* **P** **19 27 07.7 0.0**
POO IAmb IAmb 19 27 11.1
comp=Z,31nm,1.0s
ASAR Alice Springs 50.87 173 P **P** **19 27 09.7 +0.4**
comp=Z,20nm,0.7s,baz=5.6,slow=14,SNR=195
ASAR LR LR 19 49 10.6
comp=Z,97nm,21.4s,baz=344,slow=36
BHJ Bhuj 52.82 280 *eP* **P** **19 27 22.7 -1.2**
SVE Sverdlovsk 55.54 322⇓ *eP* **P** **19 27 42.6 -0.7**
SVE pmax pmax
comp=Z,40nm,1.2s
SVE MLR MLR
comp=Z,396nm,13.0s
AB31 Akbulak array 56.05 313 *i* P **P** **19 27 46.0 -1.0**
AB31 pmax pmax
comp=Z,20nm,0.9s
ABKAR Akbulak array 56.05 313 *eP* **P** **19 27 46.2 -0.8**
comp=Z,18nm,0.8s
ARU Arti 56.68 321 *c i* P **P** **19 27 50.2 -1.2**
ARU 19 28 42.9
ARU 19 29 56.5
ARU S **S** **19 35 41.2 +2.0**
ARU SS **SS** **19 39 24.1 -3.2**
ARU pmax pmax
comp=Z,47nm,1.2s
ARU MLR MLR
comp=Z,685nm,17.0s
ARU Arti 56.68 321 *eP* **P** **19 27 49.6 -1.8**
comp=Z,55nm,1.2s
ARU LR LR
comp=Z,352nm,22.0s
AKTO Aktyubinsk 57.21 314 LR LR 19 55 11.9
comp=Z,322nm,19.4s,slow=39
AKTO Aktyubinsk 57.21 314 P **P** **19 27 54.2 -1.1**
AKTO pmax pmax
comp=Z,14nm,0.9s
SOKR Solikamsk 57.65 325 *d i* P **P** **19 27 56.1 -2.0**
SOKR pmax pmax
comp=Z,17nm,1.1s
SOKR MLR MLR
comp=Z,708nm,19.0s
FORT Forrest 57.67 180 *eP* **P** **19 27 58.3 -0.2**
comp=Z,259nm,0.9s
GEYT Alibeck 58.88 300 P **P** **19 28 07.2 0.0**
comp=Z,12nm,1.0s,baz=66,slow=3.6,SNR=32
GEYT LR LR 19 58 12.3
comp=Z,478nm,19.3s,baz=75,slow=41
STKA Stephens Creek 60.10 167 P **P** **19 28 15.7 +0.3**
comp=Z,14nm,0.7s,baz=346,slow=6.7,SNR=45
STKA LR LR 19 53 55.0
comp=Z,140nm,21.9s,baz=5.7,slow=36
BBOO Buckleboo 60.14 172 *eP* **P** **19 28 15.8 +0.1**
comp=Z,305nm,1.9s
FUNA Funafuti 60.73 118 PFAKE 19 28 30.0 +10
FUNA LR LR
comp=Z,5μm,19.0s
NWAO Narrogin (SRO) 60.73 191 *eP* **P** **19 28 19.8 +0.1**
NWAO pmax pmax
comp=Z,339nm,1.6s
NWAO Narrogin (SRO) 60.73 191 *eP* **P** **19 28 19.8 +0.1**
comp=Z,339nm,1.6s
DZM Mont Dzumac 61.31 139 *eP* **P** **19 28 23.4 -0.6**
comp=Z,125nm,1.3s
DZM Mont Dzumac 61.31 139 *e*LR LR 19 46 45.2
comp=Z,700nm,23.3s
DZM Mont Dzumac 61.31 139 *eP* **P** **19 28 23.6 -0.4**
comp=Z,90nm,1.4s
OHAK Old Harbor 61.37 37 *eP* **P** **19 28 23.5 -0.3**
comp=Z,64nm,1.4s
PPLA Purkeypile 61.39 31 *eP* **P** **19 28 25.2 +1.1**
comp=Z,88nm,1.3s
KDAK Kodiak Island 61.68 37 *eP* **P** **19 28 25.7 -0.2**
KDAK pmax pmax
comp=Z,243nm,1.1s
KDAK MLR MLR
comp=Z,152nm,21.0s
KDAK Kodiak Island 61.68 37 *eP* **P** **19 28 25.7 -0.2**
comp=Z,243nm,1.1s
KDAK LR LR
comp=Z,152nm,21.0s
BPAW Bear Paw Mtn. 61.84 29 *eP* **P** **19 28 27.5 +0.5**
comp=Z,6.3nm,1.2s
KTH Kantishna Hill 61.91 30 *eP* **P** **19 28 27.7 +0.3**
comp=Z,46nm,1.3s
COLD Coldfoot 61.94 26 *eP* **P** **19 28 28.1 +0.6**
comp=Z,32nm,1.3s
TRF Thorofare Moun 62.20 30 *eP* **P** **19 28 28.8 -0.8**
comp=Z,16nm,1.0s
RC01 Rabbit Creek A 62.72 33 *eP* **P** **19 28 32.3 -0.5**
comp=Z,48nm,1.1s
MCK McKinley 62.78 30 *eP* **P** **19 28 33.3 +0.1**
MCK pmax pmax
comp=Z,66nm,1.1s
MCK McKinley 62.78 30 *eP* **P** **19 28 33.3 +0.1**
comp=Z,66nm,1.1s
PMR Palmer 62.95 32 *eP* **P** **19 28 34.0 -0.3**
PMR pmax pmax
comp=Z,80nm,1.3s
PMR Palmer 62.95 32 *eP* **P** **19 28 34.0 -0.3**
comp=Z,80nm,1.3s
SEW Seward 63.00 34 *eP* **P** **19 28 34.5 -0.1**
comp=Z,75nm,1.0s
COLA College 63.11 28 *eP* **P** **19 28 35.9 +0.6**
COLA pmax pmax
comp=Z,9.0nm,0.7s
COLA MLR MLR
comp=Z,236nm,20.0s
COLA College 63.11 28 *eP* **P** **19 28 35.9 +0.6**
comp=Z,8.9nm,0.7s
COLA LR LR
comp=Z,236nm,20.0s
SML Sawmill 63.30 32 *eP* **P** **19 28 36.8 +0.1**
SML pmax pmax
comp=Z,9.0nm,1.1s
SML Sawmill 63.30 32 *eP* **P** **19 28 36.8 +0.1**
comp=Z,9.2nm,1.1s
ILAR Eielson Array 63.53 28 P **P** **19 28 37.5 -0.7**
comp=Z,4.3nm,0.9s,baz=276,slow=5.7,SNR=35
ILAR pP **pP** **19 28 54.5 +0.1**
comp=Z,3.6nm,0.7s,baz=284,slow=4.8,SNR=7.9
ILAR LR LR 19 59 20.8
comp=Z,161nm,18.7s,baz=280,slow=39
HATD Hatta, Dubai 64.07 286 P **P** **19 28 43.5 +1.1**
ASHO Ashiyiah 64.18 286 *i* P **P** **19 28 43.4 +0.3**
SNR=6.9
PAX Paxson 64.43 30 *eP* **P** **19 28 44.3 +0.1**
PAX pmax pmax
comp=Z,45nm,1.3s
PAX Paxson 64.43 30 *eP* **P** **19 28 44.3 +0.1**
comp=Z,45nm,1.3s
FAQ Al Faqa, Dubai 64.56 286 *i* P **P** **19 28 46.0 +0.4**
SNR=11

DIV Divide 64.62 32 *e*P **P 19 28 46.0 +0.6**
comp=Z,86nm,1.2s
DOT Dot Lake 64.94 29 *e*P **P 19 28 47.3 -0.1**
comp=Z,76nm,0.9s
BMRM Bremner River 65.21 32 *e*P **P 19 28 49.9 +0.6**
comp=Z,62nm,1.1s
MSVF Nonsavu 65.73 127 *c i*P **P 19 28 54.5 +1.3**
MSVF pmax pmax
comp=Z,94nm,1.7s
EGAK Eagle 65.95 28 *e*P **P 19 28 53.8 -0.1**
comp=Z,12nm,0.8s
EGAK LR LR
comp=Z,260nm,19.0s
KLMR Klimovskoe 66.07 328 *e*P **P 19 28 52.9 -1.8**
KLMR *e* 19 29 23.7
KLMR pmax pmax
comp=Z,25nm,1.3s
LVZ Lovozero 66.46 336 PFAKE 19 29 10.0 +13
LVZ LR LR
comp=Z,453nm,22.0s
DAWY Dawson 66.86 29 *e*P **P 19 29 00.3 +0.5**
comp=Z,22nm,1.1s
VRH Novokhopyorsk 67.25 317 *e*P **P 19 29 00.9 -1.5**
VRH pmax pmax
comp=Z,30nm,0.7s
DGRG David-gareji 67.54 306 P **P 19 29 04.6 +0.1**
DGRG David-gareji 67.54 306 P **P 19 29 04.5 +0.1**
TBLG Delisi 67.91 307 P **P 19 29 06.9 0.0**
TBLG Delisi 67.91 307 P **P 19 29 06.8 0.0**
INK Inuvik 67.96 23 P **P 19 29 06.5 0.0**
comp=Z,12nm,0.8s,baz=281,slow=8.2,SNR=20
INK Inuvik 67.96 23 *e*P **P 19 29 06.6 +0.1**
INK pmax pmax
comp=Z,36nm,1.3s
INK Inuvik 67.96 23 *e*P **P 19 29 06.6 +0.1**
comp=Z,36nm,1.3s
GOF Gofitskoye 68.12 310⇑ *e*P **P 19 29 08.1 +0.1**
GOF pmax pmax
comp=Z,56nm,1.1s
ZEI Tsey 68.19 308 *e*P **P 19 29 06.0 -2.8**
ZEI pmax pmax
comp=Z,66nm,0.6s
KBS Kingsbay 68.30 349⇑ *e*P **P 19 29 09.5 +1.0**
KBS pmax pmax
comp=Z,269nm,2.5s
KBS Kingsbay 68.30 349 PFAKE 19 29 20.0 +11
KBS LR LR
comp=Z,321nm,20.0s
MOS Moscow 68.35 323 *e*P **P 19 29 07.8 -1.4**
MOS pmax pmax
comp=Z,65nm,1.3s
GNI Garni 68.39 305 *i* P **P 19 29 10.7 +0.7**
SNR=7.5
GNI Garni 68.39 305 *ce*P **P 19 29 11.0 +1.0**
GNI pmax pmax
comp=Z,94nm,1.2s
GNI Garni 68.39 305 *e*P **P 19 29 10.5 +0.5**
comp=Z,187nm,1.2s
GNI LR LR
comp=Z,352nm,20.0s
KBZ Khabaz 68.61 309 P **P 19 29 11.1 0.0**
comp=Z,31nm,0.9s,baz=89,slow=3.0,SNR=45
KBZ LR LR 20 03 25.7
comp=Z,357nm,18.1s,baz=71,slow=40
KIV Kislovodsk 68.69 309 *i* P **P 19 29 11.9 +0.2**
SNR=14
KIV Kislovodsk 68.69 309 *ce*P **P 19 29 11.6 -0.1**
KIV *e* 19 29 35.4
KIV *e* 19 31 43.2
KIV pmax pmax
comp=Z,71nm,1.3s
KIV MLR MLR
comp=Z,385nm,22.0s
KIV Kislovodsk 68.69 309 *e*P **P 19 29 11.9 +0.2**
comp=Z,90nm,1.3s
KIV LR LR
comp=Z,376nm,22.0s
VSR Storozhevoye 68.79 318 *e*P **P 19 29 10.5 -1.5**
VSR pmax pmax
comp=Z,50nm,1.0s
BGD Bogdanovka 68.87 306 P **P 19 29 14.1 +1.0**
NEY Neytrino 68.88 309⇓ *i*P **P 19 29 13.9 +0.9**
NEY pmax pmax
comp=Z,5.0nm,0.9s
AKH Akhalkalaki 68.90 307 P **P 19 29 13.8 +0.6**
AKH Akhalkalaki 68.90 307 P **P 19 29 13.7 +0.6**
OBN Obninsk 69.11 322⇓ *e*P **P 19 29 13.1 -0.8**
OBN *e* 19 29 38.1
OBN *e* 19 31 45.7
OBN pmax pmax
comp=Z,35nm,1.2s
OBN MLR MLR
comp=Z,741nm,18.0s
OBN Obninsk 69.11 322 PFAKE 19 29 30.0 +16
OBN LR LR
comp=Z,814nm,19.0s
ARCES ARCESS Array B 69.13 338 P **P 19 29 13.1 -0.8**
comp=Z,11nm,1.0s,baz=75,slow=9.2,SNR=11
ARCES LR LR 20 03 35.7
comp=Z,433nm,21.8s,baz=60,slow=39
SKAG Skagway 70.07 33 *e*P **P 19 29 21.1 +1.4**
comp=Z,44nm,1.2s
SOC Sochi 70.85 310 *e*P **P 19 29 23.0 -1.8**
SOC *e* 19 32 03.4
SOC pmax pmax
comp=Z,57nm,1.0s
SOC MLR MLR
comp=Z,271nm,16.0s
AFI Afiamalu 71.03 117 LR LR 19 53 44.2
comp=Z,165nm,19.9s,baz=332,slow=30
ANN Anapa 71.97 312 *c i*P **P 19 29 30.6 -1.0**
ANN *e*S **S 19 38 50.0 +1.7**
ANN *e* 19 39 32.0
ANN pmax pmax
comp=Z,86nm,1.2s
ANN MLR MLR
comp=Z,381nm,24.0s
FINES FINESS Array B 72.06 330 P **P 19 29 30.7 -1.1**
comp=Z,3.8nm,0.3s,baz=64,slow=5.7,SNR=49
FINES LR LR 20 05 16.5
comp=Z,839nm,18.2s,baz=68,slow=39
WRAK Wrangell Islan 72.66 35 PFAKE 19 29 50.0 +15
WRAK LR LR
comp=Z,379nm,22.0s
DLBC Dease Lake 73.00 33 P **P 19 29 38.7 +1.1**
comp=Z,8.2nm,0.9s,baz=300,slow=8.2,SNR=8.5
DLBC Dease Lake 73.00 33 *e*P **P 19 29 38.9 +1.4**
comp=Z,26nm,1.4s
SIM Simferopol' 74.11 313 *c i*P **P 19 29 43.8 -0.4**
SIM *e*S **S 19 39 19.7 +7.1**
SIM pmax pmax
comp=Z,34nm,1.0s
SIM MLR MLR
comp=Z,260nm,21.1s
DAG Danmarks Havn 74.30 353⇑ *i*P **P 19 29 43.5 -1.2**
comp=Z,13nm,0.8s
DAG Danmarks Havn 74.30 353⇑ *i*P **P 19 29 43.5 -1.2**
DAG pmax pmax
comp=Z,10.0nm,0.8s
NACGM Naroch 74.43 324 *e* **P 19 29 44.0 -1.9**
NACGM *e*LR LR 19 59 20.0
RES Resolute Bay 74.57 11 *e*P **P 19 29 45.9 -0.5**
RES pmax pmax
comp=Z,36nm,1.2s
RES Resolute Bay 74.57 11 *e*P **P 19 29 45.9 -0.5**
comp=Z,36nm,1.2s
AKASG Malin Array Be 74.85 319 P **P 19 29 47.1 -1.2**
comp=Z,8.8nm,0.5s,baz=54,slow=6.2,SNR=92
AKASG LR LR 20 05 21.3
comp=Z,613nm,18.7s,baz=75,slow=38
KIEV Kiev 74.86 319⇓ *e*P **P 19 29 46.6 -1.8**
KIEV pmax pmax
comp=Z,28nm,1.0s
KIEV Kiev 74.86 319 *e*P **P 19 29 47.1 -1.4**
comp=Z,27nm,0.8s
KIEV LR LR
comp=Z,655nm,19.0s
SORM Soroca 76.45 317⇑ *i*P **P 19 29 56.6 -0.9**
SORM Soroca 76.45 317⇑ P **P 19 29 56.6 -0.9**
BRTR Keskin Array B 76.51 308 P **P 19 29 58.0 -0.3**
comp=Z,44nm,1.0s,baz=97,slow=5.1,SNR=163
BRTR LR LR 20 09 06.4
comp=Z,52nm,20.3s,baz=34,slow=40
BRTR Keskin Array B 76.51 308 P **P 19 29 58.0 -0.3**
SUW Suwalki 76.71 324 *e*P **P 19 29 58.3 -0.6**
SUW Suwalki 76.71 324 *e*P **P 19 29 58.3 -0.6**

TLCR 77.44 314⇑ *i*P **P 19 30 02.9 -0.3**
TLCR 77.44 314⇑ P **P 19 30 02.9 -0.3**
YKA Yellowknife Ar 77.60 25 P **P 19 30 04.2 +0.5**
comp=Z,14nm,0.8s,baz=300,slow=5.5,SNR=31
YKA pP **pP 19 30 21.1 +0.6**
comp=Z,4.2nm,0.6s,baz=301,slow=5.4,SNR=5.0
YKA LR LR 20 06 46.3
comp=Z,11nm,20.6s,baz=0.0,slow=38
CFR Carcaliu 77.88 315⇓ *i*P **P 19 30 04.8 -0.8**
CFR Carcaliu 77.88 315⇓ P **P 19 30 04.8 -0.8**
TIRR Tirgusor 78.02 314⇑ P **P 19 30 06.1 -0.3**
TIRR Tirgusor 78.02 314⇑ P **P 19 30 06.1 -0.3**
PRAR RASCA 78.08 317⇑ *i*P **P 19 30 06.0 -0.7**
TLB Topalu 78.20 314⇓ *i*P **P 19 30 06.4 -1.0**
TLB Topalu 78.20 314⇓ P **P 19 30 06.4 -1.0**
TESR Tescani 78.20 316⇓ *i*P **P 19 30 07.1 -0.4**
HARR Harsova 78.22 314⇑ *i*P **P 19 30 07.2 -0.3**
HARR Harsova 78.22 314⇑ P **P 19 30 07.2 -0.3**
LVV L'vov 78.23 320 *e*P **P 19 30 07.1 -0.4**
LVV MLR MLR
comp=Z,410nm,19.4s
LVV MLR MLR
comp=E,530nm,18.8s
LVV MLR MLR
comp=N,250nm,19.4s
ODBI Odobesti 78.29 315⇑ *i*P **P 19 30 08.4 +0.5**
VRI Vrincioaia 78.45 316⇓ *i*P **P 19 30 09.7 +0.9**
VRI Vrincioaia 78.45 316⇓ P **P 19 30 09.7 +0.9**
NB2 NORSAR Subarra 78.48 334 P **P 19 30 07.7 -1.0**
comp=Z,59nm,0.9s,baz=53,slow=5.6
NB2 NORSAR Subarra 78.48 334 P **P 19 30 07.7 -1.0**
baz=53,slow=5.6
NOA NORSAR Array B 78.48 334 P **P 19 30 07.1 -1.6**
comp=Z,36nm,0.8s,baz=52,slow=5.6,SNR=70
NOA LR LR 20 08 22.8
comp=Z,243nm,19.4s,baz=70,slow=38
PLOR Plostina 78.51 316⇑ *i*P **P 19 30 09.4 +0.2**
PLOR Plostina 78.51 316⇑ P **P 19 30 09.4 +0.2**
BURAR Bucovina Array 78.57 318⇑ *i*P **P 19 30 09.4 -0.2**
BURAR Bucovina Array 78.57 318⇑ P **P 19 30 09.4 -0.2**
CSS Mathiatis 78.71 303 P **P 19 30 09.6 -0.9**
CSS Mathiatis 78.71 303 *e*P **P 19 30 10.1 -0.4**
comp=Z,14nm,1.0s
CSS LR LR
comp=Z,37nm,20.0s
BEL Belsk 79.04 323 *e*P **P 19 30 12.3 +0.4**
BEL Belsk 79.04 323 *e*P **P 19 30 12.3 +0.4**
KWP Kalwaria Pacla 79.07 320 *e*P **P 19 30 12.3 +0.1**
KWP Kalwaria Pacla 79.07 320 *e*P **P 19 30 12.3 +0.1**
ISK Istanbul-Kandi 79.10 311 P **P 19 30 11.8 -0.6**
ISK Istanbul-Kandi 79.10 311 P **P 19 30 11.8 -0.6**
ISK Istanbul-Kandi 79.10 311 P **P 19 30 11.8 -0.6**
MLR Muntele Rosu 79.11 316⇓ *i*P **P 19 30 12.7 +0.1**
MLR Muntele Rosu 79.11 316⇓ P **P 19 30 12.7 +0.1**
DOPR Dopca 79.23 316⇑ *i*P **P 19 30 13.4 +0.3**
SULR 79.29 315⇑ *i*P P 19 30 23.5 +10
ARCR ARCALIA 79.33 318⇑ *i*P **P 19 30 13.6 0.0**
ISP Isparta 79.52 307 PFAKE 19 30 30.0 +15
ISP LR LR
comp=Z,178nm,21.0s
BMR Baia Mare 79.56 318⇑ *i*P **P 19 30 15.4 +0.5**
BMR Baia Mare 79.56 318⇑ P **P 19 30 15.4 +0.5**
VOIR 79.69 316⇑ *i*P **P 19 30 15.2 -0.5**
VOIR 79.69 316⇑ P **P 19 30 15.2 -0.5**
UZH Uzhgorod 79.80 320 *e*P **P 19 30 15.8 -0.3**
UZH *i* 19 30 24.4
UZH *e* 19 30 32.5
KONO Kongsberg 79.95 333 *e*P **P 19 30 15.8 -0.9**
KONO pmax pmax
comp=Z,39nm,1.4s
KONO MLR MLR
comp=Z,524nm,21.0s
KONO Kongsberg 79.95 333 *e*P **P 19 30 15.8 -0.9**
comp=Z,39nm,1.4s
KONO LR LR
comp=Z,524nm,21.0s
CJR Cluj-Napoca 79.97 317⇓ *i*P **P 19 30 17.6 +0.5**
CJR Cluj-Napoca 79.97 317⇓ P **P 19 30 17.7 +0.6**
ARR Arges 79.98 316⇓ *i*P **P 19 30 17.7 +0.4**
SUMG Summit 80.07 356⇑ *i*P **P 19 30 17.9 +0.3**
comp=Z,48nm,1.1s
SUMG Summit 80.07 356⇑ *i*P **P 19 30 17.9 +0.3**
SUMG pmax pmax
comp=Z,48nm,1.1s
SUMG Summit 80.07 356 *e*P **P 19 30 17.7 +0.1**
comp=Z,43nm,1.0s
GKP Gorka Klasztor 80.15 325 *e*P **P 19 30 17.9 0.0**
GKP Gorka Klasztor 80.15 325 *e*P **P 19 30 17.9 0.0**
SZH Strazhica 80.16 314 *i*P **P 19 30 18.2 0.0**
HUMR Humele 80.17 315⇑ *i*P **P 19 30 17.5 -0.7**
BSD Bornholm Skovb 80.27 328 *i*P **P 19 30 17.9 -0.6**
comp=Z,66nm,0.9s
BSD Bornholm Skovb 80.27 328 *i*P **P 19 30 17.9 -0.6**
BSD pmax pmax
comp=Z,66nm,0.9s
SCO Scoresbysund 80.30 350 *i*P **P 19 30 18.5 +0.1**
comp=Z,37nm,1.2s
SCO Scoresbysund 80.30 350 *i*P **P 19 30 18.5 +0.1**
SCO pmax pmax
comp=Z,37nm,1.2s
ZIMR 80.34 314⇑ *i*P P 19 30 09.4 -10
OJC Ojcow 80.40 322 *e*P **P 19 30 19.5 +0.1**
OJC Ojcow 80.40 322 *e*P **P 19 30 19.5 +0.1**
DRGR 80.46 318⇓ *i*P **P 19 30 19.5 -0.3**
DRGR 80.46 318⇓ P **P 19 30 19.6 -0.3**
LOT Lotru 80.48 316⇑ *i*P **P 19 30 20.3 +0.3**
KULA Kula-Manisa 80.52 308 P **P 19 30 19.4 -0.9**
KULA Kula-Manisa 80.52 308 P **P 19 30 19.4 -0.9**
DIM Dimitrovgrad 80.99 313 *i*P **P 19 30 22.9 +0.3**
COP Copenhagen 81.11 329 *i*P **P 19 30 22.9 0.0**
comp=Z,34nm,0.9s
COP Copenhagen 81.11 329 *i*P **P 19 30 22.9 0.0**
COP pmax pmax
comp=Z,34nm,0.9s
ALN Alexandroupoli 81.20 311 P **P 19 30 23.1 -0.7**
ALN Alexandroupoli 81.20 311 P **P 19 30 23.1 -0.7**
ALN Alexandroupoli 81.20 311 P **P 19 30 23.1 -0.7**
SIRR Siria 81.35 318⇑ *i*P **P 19 30 24.5 0.0**
A04D Lummi Island 81.42 39 P **P 19 30 25.7 +1.0**
baz=302
NLWA Neilton Lookou 81.44 41 *e*P **P 19 30 26.2 +1.2**
comp=Z,39nm,1.5s
NLWA LR LR
comp=Z,130nm,19.0s
PLD Plovdiv 81.51 313 *i*P P 19 30 13.5 -12
OKC Ostrava-Krasne 81.51 322 *e*P **P 19 30 25.3 +0.1**
OKC *ep*P **pP 19 30 40.3 -1.8**
OKC AMS AMS 20 10 00.0
comp=Z,400nm,16.9s
OKC Ostrava-Krasne 81.51 322 *e*P **P 19 30 25.3 +0.1**
OKC *e* 19 30 40.3
OKC MLR MLR
comp=Z,400nm,16.9s
MPEP Malo Peshtene 81.52 314 *i*P **P 19 30 25.8 +0.4**
PSZ Piszkesteto 81.54 320⇓ *i*P **P 19 30 25.6 0.0**
PSZ Piszkesteto 81.54 320⇓ P **P 19 30 25.6 0.0**
PSZ Piszkesteto 81.54 320 *e*P **P 19 30 25.5 0.0**
comp=Z,38nm,1.5s
PSZ LR LR
comp=Z,575nm,22.0s
RZN Rozhen 81.70 313 *i*P **P 19 30 26.7 0.0**
PRK Paraskevi 81.83 310 P **P 19 30 26.6 -0.5**
PRK Paraskevi 81.83 310 P **P 19 30 26.6 -0.5**
PRK Paraskevi 81.83 310 P **P 19 30 26.6 -0.5**
MORC Moravsky Berou 81.87 322⇑ *i*P **P 19 30 27.3 +0.1**
MORC Moravsky Berou 81.87 322⇑ P **P 19 30 27.3 +0.1**
KSP Ksiaz 81.96 324 *e*P **P 19 30 27.8 +0.2**
KSP Ksiaz 81.96 324 *e*P **P 19 30 27.8 +0.2**
B05A Brant 82.01 39 P **P 19 30 28.8 +0.9**
baz=302
MDVR Moldovita 82.07 316⇑ *i*P **P 19 30 27.6 -0.8**
MUD Monsted U'grnd 82.10 331 *i*P **P 19 30 28.2 0.0**
MUD Monsted U'grnd 82.10 331 *i*P **P 19 30 28.2 0.0**
SIGR SIGRI 82.13 310 P **P 19 30 27.9 -0.8**
SIGR SIGRI 82.13 310 P **P 19 30 27.9 -0.8**
SMG Samos 82.17 308 P **P 19 30 28.2 -0.8**
SMG Samos 82.17 308 P **P 19 30 28.2 -0.8**
DPC Dobruska-Polom 82.22 323 *e*P **P 19 30 29.5 +0.5**
DPC *ex* x 19 30 39.7
DPC *ep*P **pP 19 30 44.8 -1.1**
DPC AMS AMS 20 10 20.0
comp=Z,400nm,16.7s
DPC Dobruska-Polom 82.22 323 *e*P **P 19 30 29.5 +0.5**

DPC *e* 19 30 39.7
DPC *e* 19 30 44.8
DPC MLR MLR
comp=Z,400nm,16.7s
VTS Vitosha 82.23 314 P **P 19 30 29.2 -0.2**
VTS Vitosha 82.23 314⇑ *i*P **P 19 30 29.7 +0.3**
VTS Vitosha 82.23 314⇑ P **P 19 30 29.7 +0.3**
VTS Vitosha 82.23 314 *i*P **P 19 30 29.7 +0.3**
VTS Vitosha 82.23 314 P **P 19 30 29.2 -0.2**
UPC Upice 82.29 323 *e*P **P 19 30 29.6 +0.2**
UPC AMS AMS 20 10 20.0
comp=Z,500nm,16.7s
UPC Upice 82.29 323 *e*P **P 19 30 29.6 +0.2**
UPC MLR MLR
comp=Z,500nm,16.7s
CHOS Chios island 82.39 309 P **P 19 30 29.1 -1.1**
CHOS Chios island 82.39 309 P **P 19 30 29.1 -1.1**
MMB Musomiste 82.39 313 *i*P **P 19 30 26.3 -3.8**
KKB Krupnik 82.68 313 *i*P **P 19 30 31.0 -0.5**
SRS Serrai 82.72 313 P **P 19 30 30.7 -1.1**
SRS Serrai 82.72 313 P **P 19 30 30.7 -1.1**
SRS Serrai 82.72 313 P **P 19 30 30.7 -1.1**
C06D Leavenworth 82.87 39 P **P 19 30 33.5 +1.1**
baz=303
OBSR Observation Ro 82.90 41 P **P 19 30 34.0 +1.1**
TDL Tradedollar La 82.96 41 P **P 19 30 34.3 +1.2**
PVCC Panska Ves 83.04 324 *e*P **P 19 30 33.6 +0.4**
PVCC AMS AMS 20 10 50.0
comp=Z,400nm,18.3s
PVCC Panska Ves 83.04 324 *e*P **P 19 30 33.6 +0.4**
PVCC MLR MLR
comp=Z,400nm,18.3s
KNT Kendrikon 83.15 313 P **P 19 30 33.3 -0.7**
KNT Kendrikon 83.15 313 P **P 19 30 33.3 -0.7**
KNT Kendrikon 83.15 313 P **P 19 30 33.3 -0.7**
BRG Berggiesshubel 83.17 324 *e*P **P 19 30 34.0 +0.1**
comp=Z,28nm,1.3s
BRG *e* 19 30 49.5
comp=Z,12nm,1.1s
comp=N,305nm,18.1s
comp=E,347nm,17.4s
comp=Z,608nm,17.9s
BRG Berggiesshubel 83.17 324 *e*P **P 19 30 34.0 +0.1**
BRG *e* 19 30 49.5
BRG pmax pmax
comp=Z,28nm,1.3s
BRG MLR MLR
comp=N,305nm,18.1s
BRG MLR MLR
comp=E,347nm,17.4s
BRG MLR MLR
comp=Z,608nm,17.9s
PLG Polygyros 83.18 312 P **P 19 30 33.4 -0.8**
PLG Polygyros 83.18 312 P **P 19 30 33.4 -0.8**
PLG Polygyros 83.18 312 P **P 19 30 33.4 -0.8**
TREC Trest 83.25 323 AMS AMS 20 10 30.0
comp=Z,600nm,18.6s
GOPC GO Pecny, Ondr 83.28 323 *e*P **P 19 30 34.6 +0.1**
GOPC AMS AMS 20 11 00.0
comp=Z,500nm,17.7s
GOPC GO Pecny, Ondr 83.28 323 *e*P **P 19 30 34.6 +0.1**
GOPC MLR MLR
comp=Z,500nm,17.7s
VAY Valandovo 83.28 313 P **P 19 30 33.3 -1.3**
VAY Valandovo 83.28 313 *i*P **P 19 30 34.4 -0.3**
VAY Valandovo 83.28 313 P **P 19 30 33.3 -1.3**
VAY Valandovo 83.28 313 P **P 19 30 33.3 -1.3**
HORT Hortiatis 83.30 312 P **P 19 30 33.1 -1.8**
HORT Hortiatis 83.30 312 P **P 19 30 33.1 -1.8**
PRU Pruhonice 83.37 324 *e*P **P 19 30 35.1 +0.2**
PRU *ep*P **pP 19 30 50.5 -1.3**
PRU AMS AMS 20 11 00.0
comp=Z,500nm,17.8s
PRU Pruhonice 83.37 324 *e*P **P 19 30 35.1 +0.2**
PRU *e* 19 30 50.5
PRU MLR MLR
comp=Z,500nm,17.8s
CLL Collm 83.40 325⇑ *i*P **P 19 30 34.8 -0.2**
comp=Z,52nm,1.1s
CLL *i* 19 30 37.6
CLL *i* 19 30 50.4
CLL *e*S **S 19 40 53.0 +1.6**
CLL LmV 20 11 00.0
comp=Z,600nm,19.1s
CLL Collm 83.40 325⇑ *i*P **P 19 30 34.8 -0.2**
CLL *i* 19 30 50.4
CLL *e*S **S 19 40 53.0 +1.6**
CLL pmax pmax
comp=Z,52nm,1.1s
CLL MLR MLR
comp=Z,600nm,19.1s
DIVS Divibare 83.48 317 P **P 19 30 35.2 -0.5**
B08A Colville Reser 83.50 38 P **P 19 30 36.4 +0.7**
I03D Drain, OR 83.68 44 P **P 19 30 37.7 +1.1**
baz=302,SNR=11
SKO Skopje 83.68 314 P **P 19 30 36.8 +0.1**
SKO Skopje 83.68 314 *i*P **P 19 30 36.9 +0.1**
SKO Skopje 83.68 314 P **P 19 30 36.8 +0.1**
SKO Skopje 83.68 314 P **P 19 30 36.8 +0.1**
EDM Edmonton 83.72 32 *e*P **P 19 30 37.5 +0.8**
EDM pmax pmax
comp=Z,64nm,1.7s
EDM Edmonton 83.72 32 *e*P **P 19 30 37.5 +0.8**
comp=Z,64nm,1.7s
SANT Santorini 83.78 308 PFAKE 19 30 50.0 +13
SANT LR LR
comp=Z,145nm,21.0s
CONA Conrad Observa 83.82 321 *i* PcP **P 19 30 37.8 +0.4**
comp=Z,26nm,1.6s,SNR=11
ZKR Zakros 83.84 306 P **P 19 30 36.6 -1.1**
ZKR Zakros 83.84 306 P **P 19 30 36.6 -1.1**
BROR Big Rock Looko 83.93 43 P **P 19 30 39.3 +1.4**
LIT Litokhoron 83.95 312 P **P 19 30 36.9 -1.3**
LIT Litokhoron 83.95 312 P **P 19 30 36.9 -1.3**
LIT Litokhoron 83.95 312 P **P 19 30 36.9 -1.3**
KTI Kastanea 84.05 312 P **P 19 30 38.2 -0.6**
G05D Wamic, OR 84.08 42 P **P 19 30 40.0 +1.3**
baz=303
I04A Tendick Farm, 84.20 43 P **P 19 30 40.5 +1.1**
baz=302,SNR=15
NPS Neapolis 84.21 307 P **P 19 30 38.2 -1.3**
NPS Neapolis 84.21 307 P **P 19 30 38.2 -1.3**
NPS Neapolis 84.21 307 P **P 19 30 38.2 -1.3**
NKC Novy Kostel 84.32 325 *e*P **P 19 30 40.1 +0.3**
NKC *ep*P **pP 19 30 55.6 -1.2**
NKC AMS AMS 20 12 00.0
comp=Z,700nm,19.7s
NKC Novy Kostel 84.32 325 *e*P **P 19 30 40.1 +0.3**
NKC *e* 19 30 55.6
NKC MLR MLR
comp=Z,700nm,19.7s
KZN Kozani 84.32 313 P **P 19 30 38.7 -1.4**
KZN Kozani 84.32 313 P **P 19 30 38.7 -1.4**
KZN Kozani 84.32 313 P **P 19 30 38.7 -1.4**
L02D Cave Junction, 84.33 45 P **P 19 30 41.3 +1.3**
baz=302
FNA Florina 84.33 313 P **P 19 30 38.6 -1.5**
FNA Florina 84.33 313 P **P 19 30 38.6 -1.5**
FNA Florina 84.33 313 P **P 19 30 38.6 -1.5**
LAST Lasithi 84.35 307 P **P 19 30 39.8 -0.5**
LAST Lasithi 84.35 307 P **P 19 30 39.8 -0.5**
KHC Kasperske Hory 84.37 323 *e*P **P 19 30 40.3 +0.1**
KHC *ep*P **pP 19 30 54.6 -2.5**
KHC *e*S **S 19 40 59.0 -2.4**
KHC AMS AMS 20 11 50.0
comp=Z,600nm,17.3s
KHC Kasperske Hory 84.37 323 *e*P **P 19 30 40.3 +0.1**
KHC pmax pmax
comp=Z,17nm,1.5s
KHC Kasperske Hory 84.37 323 *e*P **P 19 30 40.2 +0.1**
comp=Z,17nm,1.5s
ARSA Arzberg 84.39 321 *i* PcP **P 19 30 40.3 +0.1**
comp=Z,19nm,1.6s,SNR=7.5
GERES GERESS Array B 84.47 323 P **P 19 30 40.4 -0.4**
comp=Z,8.0nm,0.9s,baz=49,slow=4.1,SNR=33
GERES LR LR 20 11 57.7
comp=Z,509nm,18.1s,baz=72,slow=38
HAWA Hanford 84.49 40 *e*P **P 19 30 40.9 +0.1**
comp=Z,27nm,1.4s
I05D Terrebonne, OR 84.56 43 P **P 19 30 42.4 +1.2**
baz=303
VTHM Trough 84.56 42 P **P 19 30 42.4 +1.2**
J04D Umpqua Nationa 84.69 44 P **P 19 30 43.3 +1.2**
baz=303,SNR=7.9

IDI Anoyia 84.71 307 P P 19 30 40.2 -1.9
IDI Anoyia 84.71 307 eP P 19 30 40.8 -1.3
comp=Z,37nm,1.0s
MOA Molln 84.75 322 i PcP P 19 30 42.4 +0.3
comp=Z,16nm,1.1s,SNR=8.1
DID Didima 84.76 310 P P 19 30 39.2 -3.1
DID Didima 84.76 310 P P 19 30 39.2 -3.1
NEW Newport 84.77 38 P P 19 30 43.0 +0.8
comp=Z,17nm,0.9s,baz=322,slow=4.0,SNR=17
NEW LR LR 20 13 27.2
comp=Z,65nm,18.0s,baz=13,slow=39
NEW Newport 84.77 38 P P 19 30 43.0 +0.8
baz=306
NEW Newport 84.77 38 P P 19 30 43.0 +0.8
NEW pmax pmax
comp=Z,17nm,0.9s
NEW MLR MLR
comp=Z,65nm,18.0s
NEW Newport 84.77 38 eP P 19 30 42.7 +0.5
comp=Z,31nm,1.2s
PERS Pernice 84.97 321 eP P 19 30 42.9 -0.3
SOKA Soboth 84.99 321 i PcP P 19 30 43.2 -0.1
comp=Z,33nm,1.4s,SNR=12
TIR Tirane 85.01 314 PFAKE 19 30 50.0 +6.6
TIR LR LR
comp=Z,472nm,22.0s
ANX Ano Chora 85.10 311 P P 19 30 42.8 -1.3
J05D Fort Rock, OR 85.20 43 P P 19 30 45.5 +1.0
baz=303,SNR=5.3
M02C Callahan 85.21 46 P P 19 30 46.0 +1.5
baz=302,SNR=6.4
E09A Wood Farm, Sta 85.21 39 P P 19 30 45.5 +1.2
KLV Kalavryta, Ach 85.23 310 P P 19 30 42.0 -2.7
KLV Kalavryta, Ach 85.23 310 P P 19 30 42.0 -2.7
K04D Chiloquin, OR 85.24 44 P P 19 30 46.0 +1.3
baz=303
JAN Janina 85.26 312 P P 19 30 43.9 -0.9
JAN Janina 85.26 312 P P 19 30 43.9 -0.9
JAN Janina 85.26 312 P P 19 30 43.9 -0.9
IMMV Iera Moni Meta 85.27 307 P P 19 30 44.3 -0.5
GRFO Grafenberg 85.28 325 eP P 19 30 45.4 +0.8
GRFO pmax pmax
comp=Z,98nm,1.5s
GRFO Grafenberg 85.28 325 eP P 19 30 45.4 +0.8
comp=Z,98nm,1.5s
OBKA Obir 85.36 321 i P P 19 30 44.9 -0.4
comp=Z,14nm,1.1s
N02D Trinity Center 85.53 46 P P 19 30 47.4 +1.3
baz=303
DRO Drossia 85.57 311 P P 19 30 45.3 -1.0
LJU Ljubljana 85.64 320 i P P 19 30 46.3 -0.2
M04C Macdoel 85.64 45 P P 19 30 47.5 +0.8
baz=303,SNR=16
SGD Sagiada 85.69 313 P P 19 30 46.1 -0.7
KBA Koelnbreinsper 85.70 322 ePcP P 19 30 46.6 -0.4
comp=Z,16nm,1.2s
AMT Artemida-Makis 85.79 310 P P 19 30 46.3 -1.1
MYKA Terra Mystica 85.80 321 i P P 19 30 46.8 -0.6
comp=Z,9.5nm,1.2s
ITM Ithomi 85.82 310 P P 19 30 46.1 -1.5
ITM Ithomi 85.82 310 P P 19 30 46.1 -1.5
CADS Cadrg 85.98 321 eP P 19 30 47.0 -1.3
WALA Waterton Lakes 86.00 36 eP P 19 30 49.5 +1.1
comp=Z,31nm,1.3s
SFJD Kangerlussuaq 86.08 360 PFAKE 19 31 00.0 +12
SFJD LR LR
comp=Z,190nm,19.0s
PYL PYLOS 86.10 310 P P 19 30 47.0 -1.9
PYL PYLOS 86.10 310 P P 19 30 47.0 -1.9
ABTA Abfaltersbach 86.36 322 i P P 19 30 49.0 -1.2
comp=Z,24nm,1.2s,SNR=8.7
O03D Paynes Creek 86.47 46 P P 19 30 51.2 +0.4
baz=303
WTTA Wattenberg 86.53 322 i PcP P 19 30 51.5 +0.4
comp=Z,28nm,1.2s,SNR=7.6
MOD Modoc Plateau 86.53 44 eP P 19 30 51.6 +0.4
comp=Z,46nm,1.2s
BMO Blue Mountains 86.65 40 eP P 19 30 52.0 +0.4
comp=Z,23nm,1.3s
MOTA Moosalm 86.77 323 i PcP P 19 30 51.8 -0.4
comp=Z,20nm,1.1s,SNR=8.4
FETA Feichten 87.17 323 i PcP P 19 30 54.1 -0.1
comp=Z,19nm,1.2s,SNR=8.5
WVOR Wild Horse Val 87.26 43 P P 19 30 55.7 +1.0
WVOR MLR MLR
comp=Z,135nm,19.0s
WVOR Wild Horse Val 87.26 43 P P 19 30 55.7 +1.0
WVOR LR LR
comp=Z,135nm,19.0s
MSO Missoula 87.35 37 P P 19 30 55.7 +0.7
baz=308
FCC Fort Churchill 87.39 21 eP P 19 30 54.5 -0.2
FCC pmax pmax
comp=Z,23nm,1.1s
FCC Fort Churchill 87.39 21 eP P 19 30 54.5 -0.2
comp=Z,24nm,1.1s
DAVA Damuels 87.46 323 i P P 19 30 54.6 -1.0
comp=Z,16nm,0.8s
BFO Black Forest 87.62 325 eP P 19 30 56.2 0.0
BFO pmax pmax
comp=Z,18nm,1.3s
BFO MLR MLR
comp=Z,450nm,19.0s
BFO Black Forest 87.62 325 eP P 19 30 56.2 0.0
comp=Z,18nm,1.3s
BFO LR LR
comp=Z,450nm,19.0s
FFC Flin Flon 87.67 27 eP P 19 30 56.5 +0.3
FFC pmax pmax
comp=Z,54nm,0.9s
FFC MLR MLR
comp=Z,126nm,19.0s
FFC Flin Flon 87.67 27 eP P 19 30 56.5 +0.3
comp=Z,54nm,0.9s
FFC LR LR
comp=Z,126nm,19.0s
WLF Walferdange 87.85 327 P P 19 30 57.2 +0.1
comp=Z,12nm,1.7s
WLF Walferdange 87.85 327 PFAKE 19 31 10.0 +13
WLF LR LR
comp=Z,479nm,19.0s
ESK Eskdalemuir 87.96 335 PFAKE 19 31 10.0 +12
ESK LR LR
comp=Z,500nm,21.0s
TIP Timpagrande 88.19 314 PFAKE 19 31 10.0 +11
TIP LR LR
comp=Z,374nm,19.0s
TUE Stuetta 88.25 323 eP P 19 30 59.4 -0.1
comp=Z,44nm,1.4s
TUE LR LR
comp=Z,777nm,19.0s
DOU Dourbes 88.31 328 P P 19 30 59.0 -0.3
MFID Camas Ranch 88.36 41 eP P 19 31 00.8 +0.9
comp=Z,38nm,1.5s
FRB Frobisher Bay 88.37 7 P P 19 30 58.7 -0.6
comp=Z,21nm,1.0s,baz=325,slow=1.4,SNR=4.0
AQU L'Aquila 88.45 318 PFAKE 19 31 10.0 +10
AQU LR LR
comp=Z,528nm,21.0s
CMB Columbia Colle 88.63 47 eP P 19 31 01.6 +0.4
CMB pmax pmax
comp=Z,163nm,1.4s
CMB Columbia Colle 88.63 47 eP P 19 31 01.6 +0.4
comp=Z,163nm,1.4s
EGMT Eagleton 88.79 35 P P 19 31 02.7 +1.0
baz=311
EGMT Eagleton 88.79 35 eP P 19 31 02.8 +1.0
comp=Z,13nm,0.9s
EGMT LR LR
comp=Z,149nm,19.0s
DLMT Dillon 89.00 38 eP P 19 31 04.0 +1.1
comp=Z,42nm,1.3s
HLID Hailey 89.09 40 P P 19 31 05.0 +1.6
baz=308
HLID Hailey 89.09 40 eP P 19 31 04.8 +1.4
comp=Z,18nm,1.1s
HLID LR LR
comp=Z,159nm,21.0s
VLC Villacollemand 89.12 321 PFAKE 19 31 10.0 +6.7
VLC LR LR
comp=Z,330nm,21.0s
CEL Celeste 89.26 313 PFAKE 19 31 10.0 +5.9
CEL LR LR
comp=Z,299nm,20.0s
BOZ Bozeman (W) 89.34 37 P P 19 31 05.7 +1.1
baz=310
BOZ Bozeman (W) 89.34 37 eP P 19 31 05.6 +1.1
BOZ pmax pmax
comp=Z,25nm,1.4s
BOZ MLR MLR
comp=Z,178nm,19.0s
BOZ Bozeman (W) 89.34 37 eP P 19 31 05.6 +1.1
comp=Z,25nm,1.4s
BOZ LR LR
comp=Z,178nm,19.0s
RCTC Rector, Farmer 90.36 48 P P 19 31 09.8 +0.6
baz=305
SMMC Simmler 90.41 49 P P 19 31 10.3 +0.8
baz=304
BNI Bardonecchia 90.60 323 PFAKE 19 31 20.0 +10
BNI LR LR
comp=Z,828nm,20.0s
TIN Tinemaha, Big 90.60 47 P P 19 31 11.3 +0.8
baz=305
LKWY Lake 90.71 38 PFAKE 19 31 20.0 +9.0
LKWY LR LR
comp=Z,362nm,22.0s
VES Vestal, Richgr 90.73 49 P P 19 31 11.2 +0.2
baz=305
PKM Mcpherson Peak 90.78 50 P P 19 31 12.6 +1.1
baz=304
IMW Indian Meadow 90.84 38 eP P 19 31 13.2 +1.5
comp=Z,29nm,1.4s
FLWY Flagg Ranch 90.86 38 eP P 19 31 13.4 +1.8
comp=Z,46nm,1.4s
RLMT Red Lodge 90.95 37 P P 19 31 13.4 +1.3
baz=311
RLMT Red Lodge 90.95 37 eP P 19 31 13.2 +1.1
comp=Z,44nm,1.4s
MOOW Moose Ponds 91.05 38 eP P 19 31 14.2 +1.6
comp=Z,22nm,1.7s
CWC Cottonwood Cre 91.05 48 P P 19 31 12.3 -0.4
baz=306
SBC Santa Barbara 91.09 50 P P 19 31 12.8 +0.1
baz=304
TPAW Teton Pass 91.10 39 eP P 19 31 13.9 +1.0
comp=Z,9.6nm,1.2s
PPT Papeete 91.12 109 LR LR 20 04 40.8
comp=Z,159nm,21.9s,baz=349,slow=30
PPT2 Papeete2 91.13 109 eLR LR 20 00 35.5
comp=Z,526nm,23.8s,baz=290
DGMT Dagmar 91.21 32 P P 19 31 13.4 +0.4
baz=315
DGMT Dagmar 91.21 32 PFAKE 19 31 20.0 +7.0
DGMT LR LR
comp=Z,457nm,19.0s
A25A Svangstu Ranch 91.38 31 P P 19 31 13.7 0.0
baz=316
CLTB Caltabellotta 91.38 314 PFAKE 19 31 20.0 +5.9
CLTB LR LR
comp=Z,144nm,21.0s
SCZ2 Santa Cruz Isl 91.40 50 P P 19 31 13.8 -0.3
baz=305
LAO LASA Array 91.47 34 P P 19 31 15.5 +1.2
baz=314
LAO LASA Array 91.47 34 PFAKE 19 31 30.0 +16
LAO LR LR
comp=Z,294nm,21.0s
KMBO Kilima Mbogo 91.47 269 P P 19 31 18.4 +3.3
comp=Z,1.1nm,0.3s,baz=49,slow=4.8,SNR=5.6
KMBO LR LR 20 13 48.7
comp=Z,87nm,20.2s,baz=90,slow=36
KMBO Kilima Mbogo 91.47 269 i P P 19 31 21.2 +6.1
KMBO pmax pmax
comp=Z,1.0nm,0.3s
AHID Auburn Hatcher 91.48 39 PFAKE 19 31 30.0 +15
AHID LR LR
comp=Z,153nm,21.0s
R11A Troy Canyon, C 91.54 45 P P 19 31 15.7 +0.8
baz=307,SNR=16
R11A Troy Canyon, C 91.54 45 eP P 19 31 15.5 +0.6
comp=Z,8.6nm,1.2s
SSB Saint Sauveur 91.58 324 PFAKE 19 31 30.0 +15
SSB LR LR
comp=Z,403nm,20.0s
MPMC Manual Prospec 91.66 48 P P 19 31 16.3 +0.8
baz=306,SNR=11
OSI Osito Audit: C 91.67 49 P P 19 31 16.5 +1.1
baz=305
BLG Laguna Peak, P 91.73 50 P P 19 31 16.2 +0.5
baz=305
FURC Furnace Creek, 91.83 47 P P 19 31 17.4 +1.4
baz=306
LRMC Laurel Mtn Rad 91.87 48 P P 19 31 17.5 +1.1
baz=306
TPNV Topopah Spring 91.95 46 P P 19 31 17.5 +0.7
baz=307,SNR=16
HWUT Hardware Ranch 91.95 40 eP P 19 31 17.9 +1.1
comp=Z,38nm,1.4s
HWUT LR LR
comp=Z,187nm,21.0s
EDW2 Edwards Air Fo 92.01 49 P P 19 31 18.0 +1.0
baz=306,SNR=6.1
DUG Dugway, Tooele 92.11 42 P P 19 31 18.9 +1.4
baz=309
DUG Dugway, Tooele 92.11 42 eP P 19 31 18.7 +1.2
DUG pmax pmax
comp=Z,25nm,1.3s
DUG MLR MLR
comp=Z,168nm,19.0s
DUG Dugway, Tooele 92.11 42 eP P 19 31 18.7 +1.2
comp=Z,25nm,1.3s
DUG LR LR
comp=Z,168nm,19.0s
DECC Green Verdugo 92.14 50 P P 19 31 18.4 +0.8
baz=305
B26A Jensen Ranch, 92.19 31 P P 19 31 18.2 +0.7
baz=317
BW06 Boulder Array 92.34 39 P P 19 31 19.0 +0.4
baz=311
BW06 Boulder Array 92.34 39 eP P 19 31 18.6 0.0
comp=Z,12nm,1.4s
BW06 LR LR
comp=Z,173nm,19.0s
PDAR Pinedale Array 92.34 39 P P 19 31 18.8 +0.2
comp=Z,3.5nm,0.9s,baz=318,slow=2.0,SNR=26
PDAR PP PP 19 34 56.4 -2.9
comp=Z,0.1nm,0.4s,baz=325,slow=5.6,SNR=3.1
SHOC Shoshone, Teco 92.55 47 P P 19 31 20.6 +1.2
baz=307
GSC Goldstone, Bar 92.56 48 P P 19 31 20.4 +0.8
baz=306,SNR=14
BFSC Mount Baldy Ra 92.61 49 P P 19 31 20.1 +0.2
baz=306,SNR=6.2
RRX Edison Barstow 92.68 48 P P 19 31 21.3 +1.3
baz=306
TUQ Turquoise Moun 93.06 47 P P 19 31 22.9 +1.0
baz=307,SNR=9.1
D26A Manning 93.07 32 P P 19 31 21.8 +0.2
baz=316
BBRC Big Bear Solar 93.09 49 P P 19 31 22.7 +0.5
baz=306
HEC Hector,Ludlow 93.15 48 P P 19 31 23.1 +0.9
baz=306,SNR=13
MURC Murrieta 93.29 50 P P 19 31 23.7 +0.8
baz=306
ULM Lac du Bonnet 93.50 27 P P 19 31 22.3 -1.1
comp=Z,16nm,1.0s,baz=318,slow=6.3,SNR=10
ULM LR LR 20 17 36.9
comp=Z,113nm,19.1s,baz=339,slow=38
GMRC Granite Mounta 93.62 48 P P 19 31 25.6 +1.0
baz=307,SNR=14
109C Camp Elliot, M 93.77 50 P P 19 31 26.2 +1.2
baz=306
MDND Maddock 93.77 30 P P 19 31 25.3 +0.6
baz=319
PFO Pinyon Flats O 93.78 49 P P 19 31 25.3 0.0
comp=Z,24nm,1.0s,baz=304,slow=4.1,SNR=21
PFO Pinyon Flats O 93.78 49 P P 19 31 25.9 +0.7
baz=306,SNR=8.5
PFO Pinyon Flats O 93.78 49 eP P 19 31 26.0 +0.7
PFO pmax pmax
comp=Z,40nm,1.1s
PFO MLR MLR
comp=Z,332nm,22.0s
PFO Pinyon Flats O 93.78 49 eP P 19 31 26.0 +0.7
comp=Z,40nm,1.1s
PFO LR LR
comp=Z,332nm,22.0s
TPFO Pinon Flats 93.79 49 P P 19 31 26.0 +0.7
baz=306,SNR=17
BELC Belle Mtn. Jos 93.86 49 P P 19 31 26.2 +0.6
baz=307
TBI Tubuai 93.92 114 eS S 19 42 31.7 +0.5
comp=Z,213nm,27.5s
TBI Tubuai 93.92 114 eLR LR 20 01 41.7
comp=Z,370nm,32.2s,baz=302
B31A Greenbush Farm 94.19 29 P P 19 31 26.8 +0.2
baz=320
MONP2 Monument Peak 94.23 50 P P 19 31 28.2 +0.7
baz=306,SNR=9.8
H25A Fruitdale 94.23 34 P P 19 31 27.9 +0.9
baz=316
A32A Rocking H Ranc 94.29 28 P P 19 31 26.9 -0.2
baz=321
NEE2 Needles Airpor 94.31 47 P P 19 31 28.3 +0.7
baz=308
IRM Iron Mountain 94.33 48 P P 19 31 28.9 +1.2
baz=307,SNR=18
RSSD Black Hills 94.36 35 P P 19 31 28.5 +0.7
baz=315
BC3 Big Chuckawall 94.43 49 P P 19 31 29.3 +1.0
baz=307,SNR=14
IKP In-Ko-Pah, Jac 94.58 50 P P 19 31 30.0 +1.0
baz=306,SNR=7.5
SWSC Sam W. Stewart 94.62 49 P P 19 31 30.1 +1.1
baz=307
C31A Landman Farms, 94.63 29 P P 19 31 28.4 -0.3
baz=320
B32A Ashes, Strandq 94.68 28 P P 19 31 28.6 -0.3
baz=321
A33A Warroad 94.73 27 P P 19 31 28.8 -0.3
baz=322
PDMCI Parker Dam,Lak 94.91 47 P P 19 31 31.1 +0.8
baz=308
KEST Kesra 94.97 314 LR LR 20 21 10.5
comp=Z,149nm,18.5s,baz=268,slow=40
Y12C Blythe 94.99 48 P P 19 31 31.4 +0.7
baz=308,SNR=5.3
AGMN Agassiz Nation 95.04 28 P P 19 31 30.5 -0.1
baz=322
AGMN Agassiz Nation 95.04 28 PFAKE 19 31 40.0 +9.4
AGMN LR LR
comp=Z,250nm,19.0s
GLA Glamis 95.21 49 P P 19 31 32.9 +1.2
baz=307,SNR=5.7
TAOE Nuku Hiva Isla 95.33 97 eLR LR 20 02 36.5
comp=Z,273nm,27.5s
B34A Aery, Baudette 95.39 27 P P 19 31 31.7 -0.5
baz=323
N23A Red Feather La 95.60 38 P P 19 31 34.1 +0.5
baz=314
B35A Bob, Littlefor 95.86 27 P P 19 31 34.2 -0.2
baz=323
WUAZ Wupatki 95.94 45 PFAKE 19 31 50.0 +15
WUAZ LR LR
comp=Z,212nm,22.0s
PV01 Paradox Valley 95.96 42 eP P 19 31 36.9 +1.6
comp=Z,359nm,0.9s
C35A Jirik Farms, M 96.28 27 P P 19 31 36.3 +0.1
baz=323
ISCO Idaho Springs 96.53 39 P P 19 31 37.5 -0.5
baz=314
ISCO Idaho Springs 96.53 39 PFAKE 19 31 50.0 +12
ISCO LR LR
comp=Z,187nm,20.0s
MVCO Mesa Verde 96.61 42 PFAKE 19 31 50.0 +12
MVCO LR LR
comp=Z,163nm,19.0s
C36A Pine Crest Far 96.70 27 P P 19 31 38.4 +0.3
baz=324
F33A 5 Mile Ranch, 96.77 30 P P 19 31 38.6 +0.1
baz=321
C37A Embarrass 96.98 26 P P 19 31 39.2 -0.2
baz=324
MBAR Mbarara 97.03 273 PFAKE 19 31 50.0 +9.4
MBAR LR LR
comp=Z,522nm,20.0s
EYMN Ely 97.07 26 P P 19 31 39.5 -0.4
baz=325
EYMN Ely 97.07 26 PFAKE 19 31 50.0 +10
EYMN LR LR
comp=Z,276nm,21.0s
214A Organ Pipe Nat 97.23 49 P Pdif 19 31 41.3 +0.4
baz=308
SCHQ Schefferville 97.26 9 LR LR 20 16 42.4
comp=Z,267nm,22.0s,baz=293,slow=36
E36A McGregor 97.53 28 P P 19 31 41.9 0.0
baz=324
OGNE Ogallala 97.67 36 PFAKE 19 31 50.0 +7.2
OGNE LR LR
comp=Z,197nm,21.0s
SDCO Great Sand Dun 98.01 40 PFAKE 19 32 00.0 +15
SDCO LR LR
comp=Z,134nm,20.0s
ECSD EROS Data Cent 98.25 31 P P 19 31 45.1 -0.1
baz=321
ECSD EROS Data Cent 98.25 31 PFAKE 19 32 00.0 +15
ECSD LR LR
comp=Z,170nm,20.0s
TUC Tucson 98.34 47 PFAKE 19 32 00.0 +14
TUC LR LR
comp=Z,343nm,22.0s
ANMO Albuquerque 99.35 43 PFAKE 19 32 00.0 +9.4
ANMO LR LR
comp=Z,177nm,20.0s
COWI Conover 99.51 25 PFAKE 19 32 00.0 +9.2
COWI LR LR
comp=Z,283nm,20.0s
ESDC Sonseca Array 99.98 325 LR LR 20 20 37.2
comp=Z,143nm,21.0s,baz=30,slow=38
PAB San Pablo 100.27 325 PFAKE 19 32 10.0 +16
PAB LR LR
comp=Z,291nm,22.0s
CBKS Cedar Bluff 100.43 36 PFAKE 19 32 10.0 +15
CBKS LR LR
comp=Z,133nm,20.0s
MTE Manteigas 101.22 327 PFAKE 19 32 10.0 +11
MTE LR LR
comp=Z,479nm,19.0s
JFWS Jewell Farm 101.70 28 PFAKE 19 32 10.0 +9.4
JFWS LR LR
comp=Z,239nm,21.0s
KSU1 Kansas State U 101.82 34 PFAKE 19 32 10.0 +8.8
KSU1 LR LR
comp=Z,175nm,19.0s
MNTX Cornudas Mount 102.21 45 PFAKE 19 32 10.0 +6.9
MNTX LR LR
comp=Z,152nm,20.0s
WMOK Wichita Mounta 103.95 38 PFAKE 19 32 20.0 +9.2
WMOK LR LR
comp=Z,96nm,19.0s
HDIL Hopedale 104.05 29 PFAKE 19 32 20.0 +8.9
HDIL LR LR
comp=Z,223nm,21.0s
AAM Ann Arbor 104.80 24 PFAKE 19 32 30.0 +16
AAM LR LR
comp=Z,262nm,22.0s
TXAR Lajitas Array 104.90 45 Pdiff Pdif 19 32 14.8 -0.4
comp=Z,0.3nm,0.7s,baz=270,slow=2.3,SNR=2.8
LONY Lake Ozonia 105.51 17 PFAKE 19 36 40.0
LONY LR LR
comp=Z,245nm,19.0s
TAM Tamanrasset 105.67 306 PFAKE 19 36 40.0
TAM LR LR
comp=Z,130nm,19.0s
LSZ Lusaka 105.69 261 PFAKE 19 36 40.0
LSZ LR LR
comp=Z,268nm,22.0s
RKT Rikitea 105.85 108 eLR LR 20 07 27.4
comp=Z,415nm,33.5s,baz=297
PKME Peaks-Kenny Pk 106.11 13 PFAKE 19 36 40.0
PKME LR LR
comp=Z,356nm,21.0s
V40A Witts Springs 106.27 34 PKiKP PKiKP 19 36 31.8 -0.5
baz=323
VNDA Vanda 106.41 173 PP PP 19 36 46.6 +0.5
comp=Z,3.5nm,1.1s,baz=313,slow=9.9,SNR=5.8
JCT Junction City 106.47 42 PFAKE 19 36 40.0
JCT LR LR
comp=Z,182nm,20.0s
X39A Fountain Ranch 106.63 36 PKiKP PKiKP 19 36 32.5 -0.5
baz=321
ACSO Alum Creek Sta 106.85 25 PFAKE 19 36 40.0
ACSO LR LR
comp=Z,271nm,21.0s
MIAR Mount Ida 106.88 35 PFAKE 19 36 50.0
MIAR LR LR
comp=Z,91nm,19.0s
SBA Scott Base 107.26 172 PFAKE 19 36 40.0
SBA LR LR

comp=Z,206nm,19.0s
BINY Binghamton 107.38 19 PFAKE 19 36 50.0
BINY LR LR
comp=Z,312nm,21.0s
NATX Nacogdoches 108.46 38 PFAKE 19 36 50.0
NATX LR LR
comp=Z,172nm,19.0s
KVTX Kingsville 109.75 43 PFAKE 19 36 50.0
KVTX LR LR
comp=Z,562nm,19.0s
BLA Blacksburg 110.45 24 PFAKE 19 36 50.0
BLA LR LR
comp=Z,195nm,22.0s
CBN Corbin Frederi 110.61 21 PFAKE 19 36 50.0
CBN LR LR
comp=Z,209nm,20.0s
GOGA Godfrey 112.57 29 PFAKE 19 37 00.0
GOGA LR LR
comp=Z,134nm,19.0s
CNNC Cliffs of the 113.12 23 PFAKE 19 37 00.0
CNNC LR LR
comp=Z,197nm,20.0s
NHSC New Hope 114.18 26 PFAKE 19 37 00.0 +13
NHSC LR LR
comp=Z,255nm,19.0s
TORD Torodi Ar. Bea 114.51 301 PKP PKPdf 19 36 47.2 -1.1
comp=Z,1.2nm,0.8s,baz=8.4,slow=3.3,SNR=7.4
TSUM Tsumeb 116.54 261 PFAKE 19 37 00.0 +7.7
TSUM LR LR
comp=Z,302nm,19.0s
QSPA South Pole Qui 116.99 180 PFAKE 19 37 00.0 +8.4
QSPA LR LR
comp=Z,146nm,19.0s
CMIG Matias Romero 119.20 49 PKP **PKPdf 19 36 56.7 -0.6**
comp=Z,2.5nm,0.8s,baz=350,slow=4.2,SNR=6.0
BBSR BB Station 119.46 13 PFAKE 19 37 10.0 +13
BBSR LR LR
comp=Z,282nm,22.0s
TEIG Tepich 121.00 41 PFAKE 19 37 10.0 +9.3
TEIG LR LR
comp=Z,71nm,20.0s
DBIC Dimbokro 123.57 300 PKP **PKPdf 19 37 04.1 -1.7**
comp=Z,5.5nm,1.0s,baz=101,slow=6.0,SNR=3.7
GTBY Guantanamo Bay 127.93 28 PFAKE 19 37 30.0 +16
GTBY LR LR
comp=Z,220nm,22.0s
MTDJ Mount Denham 128.33 32 PFAKE 19 37 30.0 +15
MTDJ LR LR
comp=Z,175nm,20.0s
SDDR Presa de Saban 130.30 25 PFAKE 19 37 30.0 +11
SDDR LR LR
comp=Z,210nm,21.0s
SJG San Juan 132.81 19 PFAKE 19 37 30.0 +6.7
SJG LR LR
comp=Z,132nm,19.0s
ANWB Willy Bob 134.32 14 PFAKE 19 37 40.0 +14
ANWB LR LR
comp=Z,176nm,20.0s
FDF Fort de France 137.30 14 PFAKE 19 37 40.0 +8.2
FDF LR LR
comp=Z,152nm,22.0s
SDV Santo Domingo 139.68 30 PFAKE 19 37 50.0 +14
SDV LR LR
comp=Z,145nm,20.0s
ASCN Ascension 139.82 291 PFAKE 19 37 50.0 +14
ASCN LR LR
comp=Z,422nm,20.0s
ROSC El Rosal 141.34 38 PKP **PKPdf 19 37 36.9 -2.8**
comp=Z,5.5nm,0.7s,baz=322,slow=6.4,SNR=4.2
OTAV Otavalo 142.48 48 PFAKE 19 37 50.0 +8.2
OTAV LR LR
comp=Z,83nm,21.0s
RCBR Riachuelo 153.97 322 PFAKE 19 38 10.0 +2.1
RCBR LR LR
comp=Z,91nm,19.0s
SAML Samuel 158.82 33 PFAKE 19 38 20.0 +14
SAML LR LR
comp=Z,146nm,20.0s
PLCA Paso Flores 159.39 136 PKPab **PKPab 19 38 45.6 +1.6**
comp=Z,5.5nm,1.1s,baz=254,slow=9.7,SNR=3.2
LPAZ La Paz 161.26 58 PKP **PKPdf 19 38 10.2 +0.7**
comp=Z,9.9nm,1.2s,baz=11,slow=2.5,SNR=14
LCO Las Campanas 163.11 101 PFAKE 19 38 20.0 +9.3
LCO LR LR
comp=Z,235nm,19.0s
LVC Limon Verde 163.70 77 PFAKE 19 38 20.0 +8.5
LVC LR LR
comp=Z,161nm,20.0s
BDFB Brasilia 168.00 343 PKPab **PKPab 19 39 22.9 +0.7**
comp=Z,1.6nm,0.3s,baz=343,slow=20,SNR=3.1
BDFB Brasilia 168.00 343 PKP2 **PKPab 19 39 23.0 +0.7**
SPB Sao Paulo 174.74 312 PFAKE 19 38 30.0 +12
SPB LR LR
comp=Z,196nm,19.0s
CPUP Villa Florida 174.86 81 PKP **PKPdf 19 38 18.4 +0.6**
comp=Z,5.9nm,1.1s,baz=198,slow=6.4,SNR=4.5
CPUP PKPab **PKPab 19 39 52.6 -0.1**
comp=Z,0.8nm,0.4s,baz=268,slow=3.3,SNR=2.8

*ISCJB **20** 19:42:02.4±1.8,28.°87N±0.°04×94.°59E±0.°05,h4km±12km, mb3.6/6,MS3.5/1, Error ellipse: s-maj=7.9km s-min=6.0km az=174.6*
*IDC **20** 19:42:03.5±1.1,28.°69N×94.°65E,h0km,mb3.5/7, mb1 3.6/7,mb1mx3.4/49,mbtmp3.5/7,MS3.5/1,Ms1 3.5/1, ms1mx2.7/45,Error ellipse: s-maj=48.9km s-min=18.9km az=63.0*

ISC 20 19:42:04.5±1.9,28.°74N±0.°05×94.°49E±0.°05,h9km±11km, n25,σ2s05/40,mb3.7/6,Eastern Xizang-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DIBR	**DIBRUGARH**	**1.32**	**164**	*eP*	**Pn**	**19 42 28.8**	**-0.4**
DIBR				*eS*	**Sn**	**19 42 47.9**	**+1.0**
DIBR				*eS*	**Sn**	**19 42 47.9**	**+1.0**
DIBR				AML	AML	19 42 51.5	
DIBR				AML	AML	19 42 52.7	
	comp=E,68μm,0.1s						
DIBR				AML	AML	19 42 52.7	
	comp=N,75μm,0.1s						
ZIRO	**ZIRO**	**1.33**	**205**	*eP*	**Pb**	**19 42 29.9**	**+0.1**
ZIRO				*eS*	**Sn**	**19 42 49.9**	**+2.3**
ZIRO				AML	AML	19 42 53.6	
	comp=E,3μm,0.3s						
ZIRO				AML	AML	19 42 53.9	
	comp=N,5μm,0.2s						
ZIRO				AML	AML	19 42 57.4	
	comp=E,4μm,0.3s						
ITAN	**ITANAGAR**	**1.73**	**203**	*eP*	**Pg**	**19 42 37.0**	**-0.6**
ITAN				*eS*	**Sg**	**19 43 00.8**	**+0.7**
ITAN				*eS*	**Sg**	**19 43 00.8**	**+0.7**
ITAN				AML	AML	19 43 04.8	
	comp=N,97μm,0.2s						
ITAN				AML	AML	19 43 04.9	
	comp=E,88μm,0.2s						
LKP	**Lekhapani**	**1.84**	**139**	*eP*	**Pn**	**19 42 36.0**	**-0.4**
LKP				*eS*	**Sn**	**19 42 59.8**	**0.0**
LKP				*eS*	**Sb**	**19 43 00.0**	**-1.5**
LKP				AML	AML	19 43 00.9	
	comp=E,19μm,0.1s						
LKP				AML	AML	19 43 04.4	
	comp=N,38μm,0.1s						
LKP				AML	AML	19 43 04.4	
	comp=E,12μm,0.1s						
JORH	**JORHAT**	**2.00**	**186**	*eP*	**Pg**	**19 42 41.2**	**-1.7**
JORH				*eS*	**Sb**	**19 43 06.6**	**+0.5**
JORH				*eS*	**Sg**	**19 43 07.0**	**-1.8**
JORH				AML	AML	19 43 11.0	
JORH				AML	AML	19 43 11.1	
	comp=N,40μm,0.1s						
MOKO	**MOKOCHONG**	**2.41**	**180**	*eP*	**Pn**	**19 42 44.6**	**+0.3**
MOKO				*eS*	**Sn**	**19 43 15.1**	**+1.1**
MOKO				*eS*	**Sb**	**19 43 15.3**	**-2.8**
MOKO				AML	AML	19 43 21.6	
	comp=E,1μm,0.3s						
MOKO				AML	AML	19 43 21.6	
	comp=N,2μm,0.5s						
TEZP	**TEZPUR**	**2.59**	**216**	*eP*	**Pn**	**19 42 47.7**	**+1.0**
TEZP				*eS*	**Sb**	**19 43 21.7**	**-1.5**
TEZP				*eS*	**Sb**	**19 43 21.7**	**-1.5**
TEZP				AML	AML	19 43 27.6	
	comp=E,1μm,0.2s						
TEZP				AML	AML	19 43 27.9	
	comp=N,1μm,0.2s						
GUWA	**GUWAHATI**	**3.55**	**225**	*eP*	**Pn**	**19 43 01.1**	**+1.2**
GUWA				*ex*	x	19 43 55.6	
GUWA				AML	AML	19 43 57.6	
	comp=E,5μm,0.1s						
SHL	**Shillong**	**3.92**	**217**	*ex*	**Pb**	**19 43 17.7**	**+3.7**
SHL				AML	AML	19 44 12.5	
	comp=E,131nm,0.3s						
SHL				AML	AML	19 44 12.7	
	comp=N,149nm,0.3s						
SILR	**SILCHAR**	**4.22**	**201**	*eP*	**Pn**	**19 43 13.7**	**+4.6**
SILR				*eS*	**Sb**	**19 44 05.1**	**-5.0**
SILR				AML	AML	19 44 24.2	
	comp=E,6μm,0.3s						
SILR				AML	AML	19 44 25.1	
	comp=N,8μm,0.3s						
DHUB	**DHUBRI**	**4.83**	**237**	*eP*	**Pn**	**19 43 19.1**	**+1.6**
GUN	**Gumba**	**7.64**	**266**	*eP*	**Pn**	**19 43 58.2**	**+1.8**
PKIN	**Phulchoki**	**8.11**	**264**	*eP*	**Pn**	**19 44 04.8**	**+2.0**
PKIN				*eS*	**Sn**	**19 45 32.3**	**-2.6**
KKN	**Kakani**	**8.18**	**266**	*eP*	**Pn**	**19 44 05.9**	**+2.2**
KKN				*eS*	**Sn**	**19 45 33.1**	**-3.3**
DMN	**Daman**	**8.36**	**264**	*eP*	**Pn**	**19 44 08.8**	**+2.6**
DMN				*eS*	**Sn**	**19 45 37.9**	**-3.1**
GKN	**Gorkha**	**8.71**	**268**	*eP*	**Pn**	**19 44 12.5**	**+1.5**
PYUN	**Piuthan**	**10.15**	**269**	*eP*	**Pn**	**19 44 31.3**	**+0.6**
MKAR	**Makanchi Array**	**20.40**	**335**	P	Pn	19 46 43.9	+0.1
	comp=N,0.4nm,0.4s,baz=145,slow=11,SNR=7.3						
SONM	**Songino Array**	**21.18**	**23**	P	**P**	**19 46 49.3**	**-1.1**
	comp=N,0.7nm,0.7s,baz=208,slow=11,SNR=5.9						
KURBB	**Kurchatov Arra**	**24.97**	**335**	P	**P**	**19 47 29.0**	**+0.7**
	comp=N,0.6nm,0.5s,baz=145,slow=9.6,SNR=6.8						
ZALV	**Zalesovo Beam**	**26.16**	**347**	P	**P**	**19 47 41.2**	**+2.2**
	comp=N,0.5nm,0.4s,baz=145,slow=9.3,SNR=3.2						
TIXI	**Tiksi**	**46.90**	**14**	LR	LR	20 12 56.4	
	comp=N,54nm,18.3s,baz=178,slow=40						
WRA	**Warramunga Arr**	**61.83**	**137**	P	**P**	**19 52 23.8**	**-0.4**
	comp=N,0.6nm,0.7s,baz=325,slow=7.7,SNR=6.6						
ASAR	**Alice Springs**	**64.46**	**140**	P	**P**	**19 52 41.5**	**-0.2**
	comp=N,0.5nm,0.5s,baz=324,slow=6.7,SNR=10						
TORD	**Torodi Ar. Bea**	**86.20**	**283**	P	**P**	**19 54 47.3**	**+0.4**
	comp=N,0.5nm,0.8s,baz=52,slow=4.7,SNR=3.8						

IDC 20 19:54:09.4±3.1,9.°80S×113.°82E,h0km,mb3.6/6, mb1 3.8/7,mb1mx3.6/37,mbtmp3.6/7,ML3.2/1,Error ellipse: s-maj=161.8km s-min=18.2km az=49.0,South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**14.13**	**127**	Pn	Pn	19 57 28.7	-2.2
	0.1nm,0.3s,baz=300,slow=8.4,SNR=4.9						
FITZ				Sn	Sn	19 59 52.6	-16
	0.1nm,0.3s,baz=356,slow=24,SNR=7.1						
WRA	**Warramunga Arr**	**22.23**	**119**	P	P	19 59 08.8	+1.0
	1.0nm,0.5s,baz=292,slow=12,SNR=10						
ASAR	**Alice Springs**	**23.62**	**128**	P	P	19 59 22.2	-0.2
	0.7nm,0.5s,baz=302,slow=9.2,SNR=17						
CMAR	**Chiang Mai Arr**	**31.68**	**332**	P	P	20 00 35.4	+0.5
	1.3nm,0.8s,baz=170,slow=8.8,SNR=8.1						
H08S2	**Diego Garcia H**	**40.88**	**270**	T	T	20 44 52.1	
	baz=97,slow=75,SNR=10						
H08S3	**Diego Garcia H**	**40.89**	**270**	T	T	20 44 49.5	
	baz=97,slow=75,SNR=6.7						
H08S1	**Diego Garcia H**	**40.90**	**270**	T	T	20 44 49.5	
	baz=97,slow=75,SNR=12						
SONM	**Songino Array**	**57.76**	**354**	P	P	20 04 01.7	-0.7
	0.3nm,0.3s,baz=161,slow=9.2,SNR=3.3						
MKAR	**Makanchi Array**	**62.98**	**336**	P	P	20 04 36.9	-1.1
	0.2nm,0.5s,baz=155,slow=8.8,SNR=3.8						
ZALV	**Zalesovo Beam**	**68.09**	**342**	P	P	20 05 12.0	+1.2
	0.5nm,0.5s,baz=135,slow=6.3,SNR=3.5						

IDC 20 20:04:48.7±6.8,2.°19N×96.°20E,h0km,mb3.5/3,mb1 3.6/5, mb1mx3.3/41,mbtmp3.5/5,ML3.3/2,Error ellipse: s-maj=132.4km s-min=39.4km az=19.0,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**2.79**	**77**	Pn	Pn	20 05 34.7	0.0
	1.4nm,0.3s,baz=188,slow=4.7,SNR=7.2						
PSI				Sn	Sn	20 06 08.5	-0.7
	0.8nm,0.3s,baz=174,slow=19,SNR=4.1						
CMAR	**Chiang Mai Arr**	**16.39**	**9**	Pn	Pn	20 08 40.6	+0.4
	0.1nm,0.3s,baz=194,slow=11,SNR=5.8						
H08S2	**Diego Garcia H**	**25.59**	**247**	T	T	20 37 03.7	
	baz=69,slow=75,SNR=77						
H08S3	**Diego Garcia H**	**25.59**	**247**	T	T	20 37 07.1	
	baz=69,slow=75,SNR=70						
H08S1	**Diego Garcia H**	**25.60**	**247**	T	T	20 37 08.9	
	baz=69,slow=75,SNR=104						
MKAR	**Makanchi Array**	**46.05**	**347**	P	P	20 13 14.4	+0.2
	0.5nm,0.5s,baz=166,slow=7.4,SNR=5.2						
SONM	**Songino Array**	**46.32**	**9**	P	P	20 13 15.9	-0.5
	0.4nm,0.6s,baz=203,slow=6.6,SNR=3.5						
ZALV	**Zalesovo Beam**	**52.43**	**352**	P	P	20 14 02.7	-0.2
	0.4nm,0.3s,baz=179,slow=7.2,SNR=3.1						

IDC 20 20:05:53.0±2.9,6.°28S×129.°99E,h107km±39km,mb3.4/1, mb1 3.2/4,mb1mx3.0/28,mbtmp3.4/4,Error ellipse: s-maj=74.7km s-min=21.7km az=89.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**5.53**	**13**	P	Pn	20 07 12.8	-0.1
	20nm,0.3s,baz=174,slow=10,SNR=2.7						
SIJI				S	Sn	20 08 08.3	-7.0
	8.7nm,0.3s,baz=90,slow=24,SNR=11						
FITZ	**Fitzroy Crossi**	**12.49**	**199**	P	Pn	20 08 47.9	+0.9
	0.3nm,0.3s,baz=28,slow=12,SNR=15						
FITZ				S	Sn	20 11 00.2	-4.3
	0.2nm,0.3s,baz=24,slow=20,SNR=4.7						
WRA	**Warramunga Arr**	**14.22**	**163**	P	Pn	20 09 08.3	-1.3
	0.1nm,0.3s,baz=342,slow=14,SNR=9.0						
WRA				S	Sn	20 11 33.7	-13
	0.3nm,0.3s,baz=342,slow=23,SNR=8.6						
ASAR	**Alice Springs**	**17.69**	**168**	P	P	20 09 52.4	+0.3
	0.1nm,0.3s,baz=345,slow=12,SNR=9.1						
ASAR				S	Sn	20 13 00.6	-10
	0.1nm,0.3s,baz=346,slow=26,SNR=5.5						
MKAR	**Makanchi Array**	**67.62**	**327**	P	P	20 16 38.3	0.0
	0.6nm,0.6s,baz=114,slow=7.5,SNR=7.3						

*IDC **20** 20:19:53.0±0.9,3.°38S×100.°43E,h0km,mb4.2/17, mb1 4.2/19,mb1mx3.9/65,mbtmp4.2/19,ML3.7/2,MS3.1/2, Ms1 3.1/2,ms1mx2.7/30,Error ellipse: s-maj=33.5km s-min=12.7km az=50.0*
*ISCJB **20** 20:19:54.5±0.5,3.°48S±0.°06×100.°35E±0.°06,h29km, mb4.2/19,MS3.1/1,Error ellipse: s-maj=10.8km s-min=4.2km az=137.6*
*DJA **20** 20:19:54.1±0.5,4.°5S×10.°0E±°,h62km±11km,M4.6/8, mB5.0/1,mb4.7/3,MLv4.5/8,Mw(mB)4.3/1*
*NEIC **20** 20:19:58.6±0.5,3.°28S×100.°55E,h35km,mb4.5/2,Error ellipse: s-maj=17.3km s-min=6.6km az=55.0*

ISC 20 20:19:57.0±0.7,3.°46S±0.°08×100.°43E±0.°08,h29km,n53, σ1s27/51,mb4.3/19,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPSI	**Pulau Pagai**	**0.81**	**329**	P	**Pn**	**20 20 12.2**	**-0.2**
PPSI				S	**Sn**	**20 20 25.1**	**+1.7**
KSI	**Kapahiang**	**2.17**	**95**	P	**Pn**	**20 20 32.8**	**+1.6**
PDSI	**Padang**	**2.53**	**1**	P	**Pn**	**20 20 35.3**	**-0.8**
PDSI				S	**Sn**	**20 21 06.3**	**+0.3**
SDSI	**Sungai Dareh**	**2.70**	**22**	P	**Pn**	**20 20 38.7**	**+0.2**
LHSI	**Lahat**	**3.11**	**97**	P	**Pn**	**20 20 45.4**	**+1.3**
BKNI	**Bangkinang**	**3.81**	**9**	P	**Pn**	**20 20 54.3**	**+0.6**
BKNI	**Bangkinang**	**3.81**	**9**	Pn	**Pn**	**20 20 51.3**	**-2.4**
LWLI	**Liwa**	**3.94**	**113**	P	**Pn**	**20 20 56.4**	**+0.8**
LWLI				S	**Sn**	**20 21 42.3**	**+1.3**
MNSI	**Mandailing Nat**	**4.31**	**349**	P	**Pn**	**20 20 59.7**	**-0.9**
KLSI		**4.46**	**106**	P	**Pn**	**20 21 04.6**	**+1.9**
KASI	**Kota Agung**	**4.55**	**117**	P	**Pn**	**20 21 03.5**	**-0.4**
KASI				S	**Sn**	**20 21 54.9**	**-0.9**
GSI	**Gunungsitoli**	**5.52**	**329**	P	**Pn**	**20 21 14.1**	**-3.2**
GSI	**Gunungsitoli**	**5.52**	**329**	*e*Pn	**Pn**	**20 21 14.9**	**-2.4**
	26nm,0.8s						
TPRI	**Tanjung Pinang**	**5.97**	**43**	P	**Pn**	**20 21 23.6**	**+0.1**
CGJI	**Cibinong**	**6.11**	**121**	P	**Pn**	**20 21 23.0**	**-2.4**
PSI	**Prapat**	**6.39**	**346**	Pn	**Pn**	**20 21 26.4**	**-3.1**
	1.1nm,0.3s,baz=129,slow=9.5,SNR=2.3						
PSI				LR	LR	20 23 52.5	
	comp=Z,170nm,19.6s,baz=212,slow=38						
TPTI		**7.42**	**334**	P	**Pn**	**20 21 42.0**	**-1.4**
CNJI	**Cibinong**	**7.69**	**120**	P	**Pn**	**20 21 47.0**	**-0.1**
CISI	**Cisompet, Garu**	**8.40**	**119**	P	**Pn**	**20 21 54.5**	**-2.5**
CISI	**Cisompet, Garu**	**8.40**	**119**	*e*Pn	**Pn**	**20 21 55.2**	**-1.8**
	31nm,0.5s						
KAPI	**Kappang**	**19.33**	**95**	P	**P**	**20 24 20.1**	**-0.1**
	0.4nm,0.3s,baz=259,slow=15,SNR=5.0						
CMAR	**Chiang Mai Arr**	**21.82**	**356**	P	**P**	**20 24 45.5**	**-1.6**
	3.1nm,0.7s,baz=190,slow=8.9,SNR=10						
H08S2	**Diego Garcia H**	**28.11**	**260**	T	T	20 54 59.1	
	baz=83,slow=75,SNR=1393						
H08S3	**Diego Garcia H**	**28.11**	**260**	T	T	20 54 59.4	
	baz=83,slow=75,SNR=1406						
H08S1	**Diego Garcia H**	**28.12**	**260**	T	T	20 55 00.4	
	baz=83,slow=75,SNR=1418						
FITZ	**Fitzroy Crossi**	**28.66**	**122**	P	**P**	**20 25 52.3**	**+0.8**
	1.7nm,0.9s,baz=296,slow=8.1,SNR=3.2						
H01W3	**Cape Leeuwin H**	**33.76**	**159**	T	T	21 02 12.6	
	baz=336,slow=76,SNR=169						
H01W2	**Cape Leeuwin H**	**33.77**	**159**	T	T	21 02 13.6	
	baz=336,slow=76,SNR=160						
H01W1	**Cape Leeuwin H**	**33.78**	**159**	T	T	21 02 13.7	
	baz=336,slow=76,SNR=110						
LSA	**Lhasa**	**34.15**	**346**	*eP*	**P**	**20 26 41.5**	**+1.3**
	3.0nm,0.6s						
ENH	**Enshi**	**34.64**	**14**	*eP*	**P**	**20 26 43.0**	**-0.9**
WRA	**Warramunga Arr**	**36.90**	**119**	P	**P**	**20 27 03.4**	**-0.1**
	0.9nm,0.5s,baz=307,slow=8.5,SNR=22						
WRAB	**Tennant Creek**	**36.91**	**119**	*eP*	**P**	**20 27 04.4**	**+0.8**
ASAR	**Alice Springs**	**38.06**	**125**	P	**P**	**20 27 13.7**	**+0.3**
	2.7nm,0.4s,baz=300,slow=7.7,SNR=51						
STKA	**Stephens Creek**	**47.87**	**131**	P	**P**	**20 28 33.5**	**+0.8**
	2.0nm,0.8s,baz=322,slow=5.9,SNR=4.4						
KSAR	**Wonju Array Be**	**48.03**	**30**	P	**P**	**20 28 33.7**	**0.0**
KSRS	**Korea Array**	**48.06**	**30**	P	**P**	**20 28 33.7**	**-0.2**
	2.9nm,1.0s,baz=219,slow=7.7,SNR=6.2						
SONM	**Songino Array**	**51.34**	**5**	P	**P**	**20 28 59.6**	**+0.7**
	9.9nm,0.6s,baz=188,slow=9.4,SNR=73						
MKAR	**Makanchi Array**	**52.54**	**344**	P	**P**	**20 29 08.1**	**+0.4**
	2.9nm,0.6s,baz=154,slow=9.0,SNR=34						
MKAR				LR	LR	20 56 31.0	
	comp=Z,18nm,18.4s,baz=54,slow=42						
USRK	**Ussuriysk Ar.**	**55.24**	**27**	P	**P**	**20 29 27.1**	**-0.3**
	6.0nm,0.6s,baz=215,slow=6.3,SNR=12						
GEYT	**Alibeck**	**56.84**	**321**	P	**P**	**20 29 39.1**	**+0.1**
	1.4nm,0.7s,baz=134,slow=6.2,SNR=3.2						
KURBB	**Kurchatov Arra**	**57.06**	**344**	P	**P**	**20 29 40.2**	**-0.1**
	2.9nm,0.9s,baz=160,slow=7.0,SNR=25						
KURK	**Kurchatov**	**57.12**	**344**	*eP*	**P**	**20 29 40.3**	**-0.4**
ZALV	**Zalesovo Beam**	**58.67**	**349**	P	**P**	**20 29 51.3**	**-0.3**
	4.3nm,0.7s,baz=181,slow=5.4,SNR=24						
KLR	**Kul'dur**	**59.09**	**23**	P	**P**	**20 29 53.6**	**-0.9**
	1.2nm,0.5s,baz=262,slow=6.6,SNR=7.6						
BVAR	**Borovoye Array**	**61.69**	**340**	P	**P**	**20 30 11.7**	**-0.6**
	1.9nm,0.6s,baz=142,slow=9.0,SNR=19						
BRVK	**Borovoye**	**61.75**	**340**	*eP*	**P**	**20 30 12.3**	**-0.5**
ABKAR	**Akbulak array**	**63.12**	**332**	*eP*	**P**	**20 30 21.8**	**-0.1**
	3.3nm,0.6s						
AKTO	**Aktyubinsk**	**64.83**	**332**	P	**P**	**20 30 32.9**	**-0.3**
	0.7nm,0.6s,baz=106,slow=7.4,SNR=4.0						
BRTR	**Keskin Array B**	**74.62**	**313**	P	**P**	**20 31 33.5**	**-0.3**
	0.5nm,0.6s,baz=107,slow=4.3,SNR=3.6						
ARCES	**ARCESS Array B**	**87.98**	**340**	P	**P**	**20 32 45.6**	**+1.7**
	1.8nm,0.9s,baz=114,slow=4.4,SNR=4.6						
TXAR	**Lajitas Array**	**145.57**	**39**	PKPbc	**PKPab**	**20 39 34.5**	**+0.7**
	3.2nm,0.6s,baz=303,slow=1.1,SNR=48						
JCT	**Junction City**	**147.01**	**33**	*e*PKPbc	**PKPbc**	**20 39 37.7**	**0.0**

JMA 20 20:30:42.1,37.°24N×140.°90E,h5km±1km,M1.6,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.13**	**351**	P	Pg	20 30 45.0	+0.2
JFK				S	Sg	20 30 47.1	+0.6
ONAJ	**Iwakimizuishiy**	**0.16**	**211**	P	Pg	20 30 45.6	+0.3
ONAJ				*eS*	Sg	20 30 48.0	+0.6
JFT	**Otama**	**0.53**	**302**	P	Pg	20 30 52.7	+0.4
JFT				S	Sg	20 31 00.3	+1.2
JMM	**Marumori**	**0.63**	**352**	P	Pg	20 30 54.2	0.0
JMM				S	Sg	20 31 03.1	+0.7
JHO	**Hitachi**	**0.68**	**203**	P	Pg	20 30 55.0	-0.2
JHO				S	Sg	20 31 04.5	+0.5

*MOS **20** 20:30:57.6±1.5,39.°67N×142.°70E,h33km,mb4.3/18,Error ellipse: s-maj=13.3km s-min=7.8km az=97.9*
*ISCJB **20** 20:31:00.3±0.7,39.°77N±0.°03×142.°41E±0.°08,h50km±5km, mb4.1/24,MS3.3/1,Error ellipse: s-maj=10.6km s-min=4.7km az=15.6*
*NIED **20** 20:31:00,39.°70N×142.°40E,h47km,Mw4.0 Best double couple: M0 1.05000×10^15 NP1:φ0=178.00000°,δ19.00000°, λ71.00000°. NP2:φ0=18.00000°,δ72.00000°,λ96.00000°.*
*JMA **20** 20:31:01.1,39.°75N×142.°36E,h41km±1km,M3.7*
JMA Felt I J1.
*IDC **20** 20:31:03.4±2.4,39.°73N×142.°41E,h66km±20km,mb3.7/17, mb1 3.8/21,mb1mx3.6/60,mbtmp4.0/21,MS3.0/6, Ms1 3.0/6,ms1mx2.7/29,Error ellipse: s-maj=21.8km s-min=14.9km az=90.0*

ISC 20 20:31:01.7±1.2,39.°76N±0.°04×142.°40E±0.°08,h44km±10km, n58,σ1s42/59,mb4.1/24,7C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.45**	**294**	P	**Pn**	**20 31 11.0**	**-1.0**
JTH				S	**Sn**	**20 31 18.1**	**-1.2**
MIYJ	**Miyakonagasawa**	**0.48**	**248**	P	**Pn**	**20 31 11.1**	**-1.3**
MIYJ				S	**Sn**	**20 31 18.3**	**-1.6**
JKZ	**Kuzumaki**	**0.85**	**286**	P	**Pn**	**20 31 16.5**	**-0.8**
JKZ				S	**Sn**	**20 31 27.6**	**-1.1**
OFUJ	**Ofunato**	**0.88**	**220**	P	**Pn**	**20 31 16.7**	**-1.0**
OFUJ				S	**Sn**	**20 31 27.9**	**-1.4**
JOM	**Ohasama**	**0.90**	**252**	P	**Pn**	**20 31 17.2**	**-0.7**
JOM				S	**Sn**	**20 31 28.8**	**-1.0**
JANG	**Nango**	**0.92**	**313**	P	**Pn**	**20 31 17.0**	**-1.2**
JANG				*eS*	**Sn**	**20 31 28.9**	**-1.3**
JMK	**Ichinoseki**	**1.22**	**229**	P	**Pn**	**20 31 21.6**	**-0.6**
JMK				S	**Sn**	**20 31 36.7**	**-0.8**
JRG	**Rokugo**	**1.41**	**256**	P	**Pn**	**20 31 24.9**	**-0.0**
JAH	**Hinai**	**1.42**	**288**	P	**Pn**	**20 31 24.8**	**-0.2**
JTM	**Tenmabayashi**	**1.45**	**316**	P	**Pn**	**20 31 25.2**	**-0.2**
JTM				S	**Sn**	**20 31 43.1**	**-0.1**
JIO	**Ouri**	**1.54**	**212**	P	**Pn**	**20 31 26.0**	**-0.6**
ERM	**Erimo**	**2.33**	**14**	*eP*	**Pn**	**20 31 37.7**	**+0.2**
ASAJ	**Asahikawa**	**4.36**	**2**	P	**Pn**	**20 32 05.7**	**+0.4**
	1.8nm,0.3s,baz=224,slow=9.1,SNR=15						
ASAJ				S	**Sn**	**20 32 54.4**	**-0.5**
	baz=197,slow=17						
MJAR	**Matsushiro Arr**	**4.60**	**227**	P	**Pn**	**20 32 10.8**	**+2.1**
	2.6nm,0.3s,baz=32,slow=14,SNR=24						
MJAR				S	**Sn**	**20 33 01.3**	**+0.4**
	ba

SONM	**Songino Array**	**27.02**	**299**	P		**P**	**20 36 39.6**	**+0.1**	
	comp=Z,1.3nm,0.7s,baz=88,slow=8.8,SNR=12								
H11N2	**WAKE ISLAND Hy**	**29.01**	**126**	T		T	21 07 35.7		
	baz=319,slow=75,SNR=1610								
H11N1	**WAKE ISLAND Hy**	**29.02**	**126**	T		T	21 07 36.2		
	baz=319,slow=75,SNR=1022								
H11N3	**WAKE ISLAND Hy**	**29.02**	**126**	T		T	21 07 36.7		
	baz=319,slow=75,SNR=184								
ZAK	**Zakamensk**	**29.28**	**304**	*e*P		**P**	**20 36 58.5**	**-1.2**	
ZAK				pmax		pmax			
	comp=Z,3.0nm,1.4s								
H11S1	**WAKE ISLAND Hy**	**29.81**	**128**	T		T	21 08 33.6		
	baz=320,slow=76,SNR=79								
H11S3	**WAKE ISLAND Hy**	**29.81**	**128**	T		T	21 08 28.9		
	baz=320,slow=76,SNR=53								
H11S2	**WAKE ISLAND Hy**	**29.83**	**128**	T		T	21 08 34.8		
	baz=320,slow=76,SNR=58								
BILL	**Bilibino**	**31.20**	**17**	*e*P		P	20 37 08.6	-7.7	
BILL				pmax		pmax			
	comp=Z,2.0nm,1.0s								
ZALV	**Zalesovo Beam**	**40.70**	**310**	P		**P**	**20 38 37.1**	**-0.5**	
	comp=Z,2.2nm,0.5s,baz=92,slow=8.1,SNR=18								
NRIK	**Noril'sk**	**41.14**	**334**	LR		LR	20 57 14.7		
	comp=Z,38nm,18.7s,baz=125,slow=38								
MKAR	**Makanchi Array**	**43.38**	**300**	P		**P**	**20 38 58.9**	**-0.7**	
	comp=Z,1.0nm,0.5s,baz=86,slow=11,SNR=23								
MKAR	**Makanchi Array**	**43.38**	**300***ce*P			**P**	**20 39 03.7**	**+4.0**	
ILAR	**Eielson Array**	**46.79**	**34**	P		**P**	**20 39 26.9**	**+0.4**	
	comp=Z,0.6nm,0.8s,baz=260,slow=5.5,SNR=6.3								
BVAR	**Borovoye Array**	**49.35**	**311**	P		**P**	**20 39 45.6**	**-0.7**	
	comp=Z,1.2nm,0.6s,baz=66,slow=9.1,SNR=8.7								
BRVK	**Borovoye**	**49.40**	**311***ce*P			**P**	**20 39 47.1**	**+0.4**	
BRVK				pmax		pmax			
	comp=Z,13nm,2.5s								
ARU	**Arti**	**54.86**	**318**	P		**P**	**20 40 26.7**	**-0.4**	
	comp=Z,3.7nm,0.6s,baz=72,slow=4.2,SNR=9.7								
ARU	**Arti**	**54.86**	**318**⇓*e*P			**P**	**20 40 27.5**	**+0.3**	
ARU				pmax		pmax			
	comp=Z,9.0nm,2.5s								
AKTO	**Aktyubinsk**	**57.45**	**311**	P		**P**	**20 40 45.0**	**-0.8**	
	comp=Z,2.5nm,0.7s,baz=59,slow=6.8,SNR=8.8								
WRA	**Warramunga Arr**	**59.86**	**189**	P		**P**	**20 41 01.3**	**-1.5**	
	comp=Z,1.3nm,0.7s,baz=6.9,slow=6.9,SNR=11								
WRA	**Warramunga Arr**	**59.86**	**189***ce*P			**P**	**20 41 00.4**	**-2.4**	
WRA				pmax		pmax			
	comp=Z,1.0nm,0.7s								
GEYT	**Alibeck**	**63.21**	**298**	P		**P**	**20 41 24.5**	**-0.9**	
	comp=Z,1.0nm,0.7s,baz=3.4,slow=7.4,SNR=3.5								
ASAR	**Alice Springs**	**63.59**	**189**	P		**P**	**20 41 27.1**	**-0.8**	
	comp=Z,0.3nm,0.3s,baz=1.8,slow=6.4,SNR=8.8								
OBN	**Obninsk**	**66.39**	**323**	*e*P		**P**	**20 41 44.5**	**-1.2**	
OBN				pmax		pmax			
	comp=Z,3.0nm,0.8s								
FINES	**FINESS Array B**	**66.77**	**332**	P		**P**	**20 41 47.0**	**-1.0**	
	comp=Z,1.4nm,0.7s,baz=50,slow=10,SNR=6.9								
FINES	**FINESS Array B**	**66.77**	**332***ce*P			**P**	**20 41 47.5**	**-0.5**	
FINES				pmax		pmax			
	comp=Z,1.0nm,0.7s								
KVAR	**Kislovodsk Arr**	**69.71**	**311**	P		**P**	**20 42 07.0**	**+0.1**	
	comp=Z,2.6nm,0.7s,baz=15,slow=5.9,SNR=4.2								
KIV	**Kislovodsk**	**69.72**	**311**	*e*P		**P**	**20 42 08.1**	**+1.2**	
KIV				pmax		pmax			
	comp=Z,8.0nm,1.0s								
KBZ	**Khabaz**	**69.72**	**310**	P		**P**	**20 42 06.9**	**+0.1**	
	comp=Z,1.7nm,0.6s,baz=76,slow=5.4,SNR=3.9								
NB2	**NORSAR Subarra**	**71.98**	**337**	P		**P**	**20 42 19.7**	**-0.6**	
	comp=Z,0.8nm,0.7s,baz=39,slow=5.9								
NOA	**NORSAR Array B**	**71.98**	**337**	P		**P**	**20 42 19.6**	**-0.6**	
	comp=Z,1.4nm,0.8s,baz=43,slow=5.5,SNR=5.5								
AKASG	**Malin Array Be**	**72.62**	**322**	P		**P**	**20 42 23.7**	**-0.5**	
	comp=Z,1.6nm,0.5s,baz=46,slow=6.6,SNR=6.1								
KIEV	**Kiev**	**72.63**	**322**	*i* P		**P**	**20 42 23.2**	**-1.1**	
KIEV				pmax		pmax			
	comp=Z,1.0nm,0.8s								
BRTR	**Keskin Array B**	**77.63**	**312**	P		**P**	**20 42 53.5**	**0.0**	
	comp=Z,0.4nm,0.5s,baz=67,slow=4.8,SNR=2.8								

IDC ***20*** *20:38:17.9±1.1, 45.˚68S×166.˚62E, h0km, mb3.8/4, mb1 4.1/6, mb1mx3.9/23, mbtmp4.0/6, ML4.4/2, MS3.4/3, Ms1 3.4/3, ms1mx3.0/19, Error ellipse: s-maj=43.7km s-min=25.2km az=176.0*

ISCJB ***20*** *20:38:20.0±0.7, 45.˚57S±0.˚06×166.˚57E±0.˚06, h15km, mb3.7/4, MS3.3/1, Error ellipse: s-maj=9.2km s-min=5.5km az=6.4*

NEIC ***20*** *20:38:22.8, 45.˚68S×166.˚80E, h5km, ML4.7(WEL), After WEL.*

WEL ***20*** *20:38:22.7±0.6, 45.˚68S×166.˚79E, h5km, ML4.7/22, Mw4.1, Error ellipse: s-maj=5.5km s-min=2.7km az=90.0*

WEL Felt between Otago and Southland, maximum reported intensity MM 4.

ISC 20 20:38:20.0±0.7, 45.˚69S±0.˚05×166.˚66E±0.˚05, h15km, n66, σ1§33/68, mb3.8/4, 4C-4D, Off west coast of South Island

Code	Station Name	Δ°	AZ°		Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.41**	**57**		Pg	**Pb**	**20 38 29.2**	**+0.3**
DCZ					Sg	**Sg**	**20 38 34.1**	**+0.2**
DCZ	**Deep Cove**	**0.41**	**57**	⇑	PG	**Pb**	**20 38 29.2**	**+0.3**
DCZ					SG	**Sg**	**20 38 34.1**	**+0.2**
DCZ					AML	AML	20 38 35.5	
DCZ					AML	AML	20 38 40.4	
DCZ					AML	AML	20 38 40.4	
WHZ	**Wether Hill Ro**	**0.92**	**103**		P*	**Pn**	**20 38 38.6**	**+0.2**
WHZ					S*	**Sg**	**20 38 50.7**	**+0.7**
WHZ	**Wether Hill Ro**	**0.92**	**103**	⇓	P*	**Pn**	**20 38 38.6**	**+0.2**
WHZ					S*	**Sg**	**20 38 50.7**	**+0.7**
WHZ					AML	AML	20 38 58.0	
MLZ	**Mavora Lakes**	**1.07**	**73**		P*	**Pg**	**20 38 40.5**	**-0.2**
MLZ					S*	**Sb**	**20 38 54.6**	**+0.5**
MLZ	**Mavora Lakes**	**1.07**	**73**	⇑	P*	**Pg**	**20 38 40.5**	**-0.2**
MLZ					S*	**Sb**	**20 38 54.6**	**+0.5**
MLZ					AML	AML	20 39 01.3	
MSZ	**Milford Sound**	**1.35**	**42**		P*	**Pg**	**20 38 45.4**	**-0.6**
MSZ	**Milford Sound**	**1.35**	**42**		P*	**Pg**	**20 38 45.4**	**-0.6**
MSZ					AML	AML	20 39 13.2	
MSZ					AML	AML	20 39 13.2	
MSZ					AML	AML	20 39 16.8	
MSZ					AML	AML	20 39 16.8	
WKZ	**Wanaka**	**1.88**	**64**		Pn	**Pb**	**20 38 53.5**	**-0.4**
WKZ	**Wanaka**	**1.88**	**64**		PN	**Pb**	**20 38 53.5**	**-0.4**
WKZ					AML	AML	20 39 27.1	
WKZ					AML	AML	20 39 27.1	
WKZ					AML	AML	20 39 31.4	
WKZ					AML	AML	20 39 31.4	
EAZ	**Earnscleugh**	**1.92**	**77**		Pn	**Pb**	**20 38 54.7**	**+0.1**
EAZ	**Earnscleugh**	**1.92**	**77**	⇓	PN	**Pb**	**20 38 54.7**	**+0.1**
EAZ					AML	AML	20 39 20.9	
EAZ					AML	AML	20 39 20.9	
EAZ					AML	AML	20 39 23.9	
EAZ					AML	AML	20 39 23.9	
SYZ	**Scrubby Hill**	**1.92**	**117**		Pn	**Pb**	**20 38 53.9**	**-0.8**
SYZ	**Scrubby Hill**	**1.92**	**117**		PN	**Pb**	**20 38 53.9**	**-0.8**
SYZ					AML	AML	20 39 21.2	
SYZ					AML	AML	20 39 21.2	
SYZ					AML	AML	20 39 23.2	
SYZ					AML	AML	20 39 23.2	
TUZ	**Tuapeka**	**2.10**	**98**		Pn	**Pb**	**20 38 57.2**	**-0.4**
TUZ	**Tuapeka**	**2.10**	**98**	⇑	PN	**Pb**	**20 38 57.2**	**-0.4**
TUZ					AML	AML	20 39 25.7	
TUZ					AML	AML	20 39 25.8	
TUZ					AML	AML	20 39 26.2	
TUZ					AML	AML	20 39 26.2	
JCZ	**Jackson Bay**	**2.21**	**44**		Pn	**Pb**	**20 38 58.1**	**-1.6**
JCZ	**Jackson Bay**	**2.21**	**44**	*e*	PN	**Pb**	**20 38 58.1**	**-1.6**
JCZ					AML	AML	20 39 38.7	
JCZ					AML	AML	20 39 39.4	
HHSZ	**Highcliff Hill**	**2.76**	**95**		Pn	**Pb**	**20 39 06.4**	**-2.7**
HHSZ	**Highcliff Hill**	**2.76**	**95**		PN	**Pb**	**20 39 06.4**	**-2.7**
HHSZ					AML	AML	20 39 41.7	
HHSZ					AML	AML	20 39 55.8	
LBZ	**Lake Benmore**	**2.82**	**64**		Pn	**Pn**	**20 39 06.3**	**+1.9**
LBZ	**Lake Benmore**	**2.82**	**64**		PN	**Pn**	**20 39 06.3**	**+1.9**
LBZ					AML	AML	20 39 41.6	
LBZ					AML	AML	20 39 41.6	
LBZ					AML	AML	20 40 10.7	
LBZ					AML	AML	20 40 10.7	
ODZ	**Otahua Downs**	**2.88**	**79**		Pn	**Pn**	**20 39 06.8**	**+1.4**
ODZ	**Otahua Downs**	**2.88**	**79**		PN	**Pn**	**20 39 06.8**	**+1.4**
ODZ					AML	AML	20 39 42.7	
ODZ					AML	AML	20 39 42.7	
ODZ					AML	AML	20 39 43.3	
ODZ					AML	AML	20 39 43.3	
FOZ	**Fox Glacier**	**3.12**	**47**		Pn	**Pn**	**20 39 09.9**	**+1.4**
FOZ	**Fox Glacier**	**3.12**	**47**		PN	**Pn**	**20 39 09.9**	**+1.4**
FOZ					AML	AML	20 40 08.0	
FOZ					AML	AML	20 40 08.1	
FOZ					AML	AML	20 40 15.0	
FOZ					AML	AML	20 40 15.0	
RPZ	**Rata Peaks**	**3.70**	**59**		Pn	**Pn**	**20 39 17.3**	**+0.7**
	138nm,0.3s,baz=293,slow=4.0,SNR=135							
RPZ					Sn	**Sn**	**20 40 01.1**	**+1.2**
	214nm,0.3s,baz=19,slow=14,SNR=12							
RPZ					LR	LR	20 40 58.4	
	comp=Z,559nm,18.8s,baz=212,slow=43							
RPZ	**Rata Peaks**	**3.70**	**59**		Pn	**Pn**	**20 39 17.6**	**+1.0**
RPZ					Sn	**Sn**	**20 40 01.1**	**+1.2**
RPZ	**Rata Peaks**	**3.70**	**59**	⇓	PN	**Pn**	**20 39 17.6**	**+1.0**
RPZ					AML	AML	20 40 02.6	
RPZ					AML	AML	20 40 03.8	
WVZ	**Waitaha Valley**	**3.92**	**50**		Pn	**Pn**	**20 39 20.6**	**+1.1**
WVZ	**Waitaha Valley**	**3.92**	**50**		PN	**Pn**	**20 39 20.6**	**+1.1**
WVZ					AML	AML	20 40 20.9	
WVZ					AML	AML	20 40 34.8	
OXZ	**Oxford**	**4.51**	**60**		Pn	**Pn**	**20 39 28.6**	**+0.9**
OXZ	**Oxford**	**4.51**	**60**		PN	**Pn**	**20 39 28.6**	**+0.9**
OXZ					AML	AML	20 40 21.3	
OXZ					AML	AML	20 40 21.6	
OXZ					AML	AML	20 40 21.7	
OXZ					AML	AML	20 40 22.9	
INZ	**Inchbonnie**	**4.54**	**51**		PN	**Pn**	**20 39 29.7**	**+1.6**
MQZ	**McQueen's Vall**	**4.71**	**67**		Pn	**Pn**	**20 39 31.1**	**+0.7**
MQZ	**McQueen's Vall**	**4.71**	**67**		PN	**Pn**	**20 39 31.1**	**+0.7**
MQZ					AML	AML	20 40 26.6	
MQZ					AML	AML	20 40 27.6	
LTZ	**Lake Taylor**	**4.97**	**56**		Pn	**Pn**	**20 39 35.4**	**+1.4**
LTZ	**Lake Taylor**	**4.97**	**56**		PN	**Pn**	**20 39 35.4**	**+1.4**
LTZ					AML	AML	20 40 36.2	
DSZ	**Denniston Nort**	**5.42**	**45**		Pn	**Pn**	**20 39 41.2**	**+0.9**
DSZ	**Denniston Nort**	**5.42**	**45**		PN	**Pn**	**20 39 41.2**	**+0.9**
DSZ					AML	AML	20 40 49.8	
DSZ					AML	AML	20 40 51.9	
DSZ					AML	AML	20 40 51.9	
DSZ					AML	AML	20 40 56.2	
KHZ	**Kahutara**	**5.94**	**59**		Pn	**Pn**	**20 39 47.8**	**+0.5**
KHZ	**Kahutara**	**5.94**	**59**		PN	**Pn**	**20 39 47.8**	**+0.5**
THZ	**Tophouse**	**5.99**	**51**		Pn	**Pn**	**20 39 49.2**	**+1.1**
THZ	**Tophouse**	**5.99**	**51**	⇓	PN	**Pn**	**20 39 49.2**	**+1.1**
THZ					AML	AML	20 41 08.9	
THZ					AML	AML	20 41 11.9	
QRZ	**Quartz Range**	**6.48**	**43**		Pn	**Pn**	**20 39 55.4**	**+0.7**
QRZ	**Quartz Range**	**6.48**	**43**		PN	**Pn**	**20 39 55.4**	**+0.7**
QRZ					AML	AML	20 41 18.8	
QRZ					AML	AML	20 41 19.1	
QRZ					AML	AML	20 41 19.1	
NNZ	**Nelson**	**6.62**	**50**		Pn	**Pn**	**20 39 59.4**	**+2.7**
NNZ	**Nelson**	**6.62**	**50**		PN	**Pn**	**20 39 59.4**	**+2.7**
NNZ					AML	AML	20 41 21.3	
NNZ					AML	AML	20 41 22.5	
URZ	**Urewera**	**10.75**	**50**		Pn	**Pn**	**20 40 53.2**	**0.0**
	0.6nm,0.3s,baz=248,slow=10,SNR=2.9							
URZ					Sn	**Sn**	**20 42 47.5**	**-5.7**
	0.9nm,0.3s,baz=98,slow=19,SNR=3.4							
URZ					LR	LR	20 45 33.8	
	comp=Z,165nm,20.9s,baz=200,slow=40							
STKA	**Stephens Creek**	**23.79**	**297**		P	**P**	**20 43 33.9**	**+1.9**
	2.7nm,0.9s,baz=114,slow=10,SNR=3.9							
VNDA	**Vanda**	**32.00**	**182**		LR	LR	20 55 41.5	
	comp=Z,56nm,19.1s,baz=346,slow=33							
ASAR	**Alice Springs**	**34.39**	**299**		P	**P**	**20 45 06.2**	**-0.4**
	1.3nm,1.0s,baz=132,slow=9.4,SNR=7.1							
WRA	**Warramunga Arr**	**36.96**	**303**		P	**P**	**20 45 27.3**	**-1.3**
	0.6nm,0.7s,baz=138,slow=7.8,SNR=4.0							
H01W1	**Cape Leeuwin H**	**40.81**	**266**		T	T	21 29 16.3	
	baz=121,slow=75,SNR=289							
H01W2	**Cape Leeuwin H**	**40.82**	**266**		T	T	21 29 13.9	
	baz=121,slow=75,SNR=309							
H01W3	**Cape Leeuwin H**	**40.83**	**266**		T	T	21 29 14.4	
	baz=121,slow=75,SNR=428							
SYO	**Syowa Base**	**59.13**	**200**	⇑	eX	**P**	**20 48 18.7**	**-0.6**
H08S2	**Diego Garcia H**	**87.49**	**262**		T	T	22 27 30.0	
	baz=136,slow=76,SNR=621							
H08S1	**Diego Carcia H**	**87.50**	**262**		T	T	22 27 22.7	
	baz=136,slow=76,SNR=606							
H08S3	**Diego Garcia H**	**87.51**	**262**		T	T	22 27 23.3	
	baz=136,slow=76,SNR=818							
CMAR	**Chiang Mai Arr**	**88.40**	**299**		P	**P**	**20 51 12.7**	**+1.3**
	0.6nm,0.8s,baz=145,slow=3.3,SNR=4.7							
TORD	**Torodi Ar. Bea**	**145.15**	**206**		PKPbc	**PKPab**	**20 57 56.2**	**-0.5**
	4.5nm,0.7s,baz=143,slow=2.8,SNR=32							
BRTR	**Keskin Array B**	**145.37**	**277**		PKPbc	**PKPab**	**20 57 57.1**	**+0.1**
	0.7nm,0.5s,baz=133,slow=3.1,SNR=5.9							
ARCES	**ARCESS Array B**	**149.28**	**334**		PKPbc	**PKPbc**	**20 58 06.4**	**-0.3**
	2.4nm,0.6s,baz=64,slow=2.8,SNR=19							
AKASG	**Malin Array Be**	**151.49**	**296**		PKPbc	**PKPbc**	**20 58 12.2**	**-0.2**
	0.2nm,0.3s,baz=74,slow=2.5,SNR=3.9							
FINES	**FINESS Array B**	**152.33**	**319**		PKPbc	**PKPbc**	**20 58 14.0**	**0.0**
	1.0nm,0.5s,baz=102,slow=4.7,SNR=12							

NIED ***20*** *20:57:00, 38.˚20N×143.˚40E, h17km, Mw3.6 Best double couple: M0 2.39000×10^14 NP1:φs=61.00000°, δ68.00000°, λ=-1.00000°. NP2:φs=152.00000°, δ89.00000°, λ=-158.00000°.*

JMA 20 20:57:52.3±0.2, 38.˚18N×143.˚42E, h26km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.64**	**304**	P	Pn	20 58 20.1	+0.7
OFUJ				*e*S	Sn	20 58 40.5	+0.8
JIO	**Ouri**	**1.65**	**280**	P	Pn	20 58 20.3	+0.7
JIO				*e*S	Sn	20 58 40.8	+0.8
JMK	**Ichinoseki**	**1.89**	**295**	P	Pn	20 58 23.8	+0.9
JMK				*e*S	Sb	20 58 47.6	-1.6
JMM	**Marumori**	**2.10**	**262**	P	Pn	20 58 26.0	+0.3
JMM				*e*S	Sn	20 58 51.8	+0.8
JOM	**Ohasama**	**2.10**	**309**	P	Pn	20 58 27.2	+1.4
JOM				S	Sn	20 58 53.1	+1.9
JOU	**Okura**	**2.18**	**276**	P	Pn	20 58 28.3	+1.4
JOU				*e*S	Sn	20 58 54.6	+1.6
JRG	**Rokugo**	**2.49**	**300**	*e*S	Sn	20 59 02.4	+1.7
JFT	**Otama**	**2.53**	**256**	P	Pn	20 58 32.9	+1.2

MAN 20 21:11:27.9±2.2, 32N×122.˚10E, h30km, mb4.4, ML3.2, MS3.0, 1C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.12**	**89**	*i* P	Pn	21 11 46.2	-0.5
SNPH				*i* S	Sn	21 12 00.9	-0.3
DCPH	**Dipolog City**	**1.44**	**121**	⇓*e*P	Pn	21 11 51.7	+0.6
TBP	**Tagbilaran**	**1.78**	**78**	*i* P	Pb	21 12 02.3	+3.3
TBP				*i* S	Sb	21 12 23.6	+2.7
LLP	**Lapu-Lapu**	**2.09**	**62**	*e*P	Pn	21 12 00.1	+0.1
LLP				*e*S	Sn	21 12 26.4	+1.3
RCP	**Roxas**	**2.31**	**16**⇑	*e*P	Pn	21 12 03.7	+0.6
RCP				*e*S	Sb	21 12 33.6	-2.6

ISCJB ***20*** *21:15:04.3±0.9, 11.˚86S±0.˚08×166.˚6E±0.˚2, h200km, mb3.7/11, Error ellipse: s-maj=22.1km s-min=10.2km az=170.8*

IDC ***20*** *21:15:05.2±4.9, 11.˚86S×166.˚57E, h194km±46km, mb3.5/11, mb1 3.7/12, mb1mx3.5/39, mbtmp4.1/12, Error ellipse: s-maj=24.3km s-min=19.5km az=35.0*

ISC 20 21:15:05.9±1.0, 11.˚92S±0.˚09×166.˚6E±0.˚2, h200km, n12, σ1§10/14, mb3.9/11, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**10.10**	**181**	P	**Pn**	**21 17 27.7**	**+1.2**
	1.8nm,0.3s,baz=312,slow=19,SNR=17						
DZM				S	**Sn**	**21 19 17.9**	**-1.5**
	0.2nm,0.3s,baz=319,slow=20,SNR=2.7						
CTA	**Charters Tower**	**21.12**	**245**	P	**P**	**21 19 35.9**	**+0.6**
	3.5nm,0.6s,baz=92,slow=12,SNR=4.4						
STKA	**Stephens Creek**	**30.38**	**225**	P	**P**	**21 21 00.1**	**+0.8**
	1.1nm,0.3s,baz=56,slow=11,SNR=6.8						
RPZ	**Rata Peaks**	**31.92**	**174**	P	**P**	**21 21 12.6**	**0.0**
	4.9nm,0.6s,baz=18,slow=6.4,SNR=4.9						
WRA	**Warramunga Arr**	**31.94**	**251**	P	**P**	**21 21 12.3**	**-0.8**
	1.2nm,0.7s,baz=73,slow=9.0,SNR=18						
ASAR	**Alice Springs**	**33.13**	**245**	P	**P**	**21 21 22.7**	**-0.7**
	3.0nm,0.8s,baz=69,slow=10,SNR=33						
ASAR				pP	**pP**	**21 22 02.5**	**-2.1**
	0.7nm,0.8s,baz=67,slow=9.6,SNR=3.2						
FITZ	**Fitzroy Crossi**	**39.93**	**256**	P	**P**	**21 22 21.0**	**+0.1**
	3.4nm,0.7s,baz=76,slow=6.6,SNR=10						
VNDA	**Vanda**	**65.64**	**181**	P	**P**	**21 25 28.4**	**+0.3**
	0.5nm,0.5s,baz=358,slow=7.6,SNR=5.0						
CMAR	**Chiang Mai Arr**	**73.19**	**294**	P	**P**	**21 26 16.8**	**+1.4**
	1.0nm,0.9s,baz=118,slow=4.9,SNR=6.2						
SONM	**Songino Array**	**79.83**	**324**	P	**P**	**21 26 51.8**	**-0.3**
	0.2nm,0.4s,baz=136,slow=5.6,SNR=2.6						
ILAR	**Eielson Array**	**84.08**	**18**	P	**P**	**21 27 13.0**	**-0.8**
	0.3nm,0.6s,baz=248,slow=4.8,SNR=2.9						
MKAR	**Makanchi Array**	**94.69**	**317**	P	**P**	**21 28 04.2**	**-0.2**
	0.5nm,0.5s,baz=88,slow=5.5,SNR=5.7						

DDA ***20*** *21:16:28.1, 39.˚08N×29.˚04E, h8km, Md3.0*

ISK ***20*** *21:16:28.4, 39.˚07N×29.˚04E, h5km, MD3.2*

CSEM ***20*** *21:16:28.6±0.1, 39.˚06N×29.˚05E, h2km, MD3.0, Error ellipse: s-maj=3.2km s-min=2.8km az=155.0*

ISC 20 21:16:28.6±1.0, 39.˚07N±0.˚02×29.˚05E±0.˚02, h7km±11km, n63, σ0§69/74, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**265**	*i* P	**Pg**	**21 16 33.8**	**0.0**
DEMI				*i* S	**Sg**	**21 16 37.6**	**+0.3**
DEMI	**Demirci**	**0.26**	**265**	P	**Pg**	**21 16 33.8**	**0.0**
DEMI				S	**Sg**	**21 16 37.6**	**+0.3**
GEDZ	**Gediz**	**0.28**	**95**	*e*PG	**Pb**	**21 16 35.3**	**-0.8**
GEDZ				*e*SG	**Sg**	**21 16 38.7**	**+0.7**
GEDZ	**Gediz**	**0.28**	**95**	*e*Pg	**Pg**	**21 16 35.3**	**-0.8**
GEDZ				*e*Sg	**Sg**	**21 16 38.7**	**+0.7**
GDZ	**Gediz**	**0.34**	**86**	*i* P	**Pg**	**21 16 35.2**	**-0.1**
GDZ				*i* S	**Sg**	**21 16 40.2**	**+0.5**
GDZ	**Gediz**	**0.34**	**86**	P	**Pg**	**21 16 35.2**	**-0.1**
GDZ				S	**Sg**	**21 16 40.2**	**+0.5**
TVSB	**Tavsanli**	**0.50**	**40**	*e*PG	**Pg**	**21 16 37.8**	**-0.5**
TVSB	**Tavsanli**	**0.50**	**40**	*e*Pg	**Pg**	**21 16 37.8**	**-0.5**
KULA	**Kula-Manisa**	**0.63**	**209**	*e*PG	**Pg**	**21 16 40.9**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**209**	*e*Pg	**Pg**	**21 16 40.9**	**+0.1**
MANT	**Manisa**	**0.69**	**214**	*i* P	**Pg**	**21 16 40.8**	**-1.2**
MANT				*i* S	**Sg**	**21 16 50.5**	**-0.5**
MANT	**Manisa**	**0.69**	**214**	P	**Pg**	**21 16 40.8**	**-1.2**
MANT				S	**Sg**	**21 16 50.5**	**-0.5**
KHL	**Karahalli**	**0.83**	**153**	*e*PG	**Pb**	**21 16 45.4**	**-0.1**
KHL	**Karahalli**	**0.83**	**153**	*e*Pg	**Pb**	**21 16 45.4**	**-0.1**
AKS	**Akhisar**	**0.98**	**259**	*e*PG	**Pg**	**21 16 47.3**	**-0.2**
AKS				*e*SG	**Sb**	**21 17 00.9**	**-0.2**
AKS	**Akhisar**	**0.98**	**259**	*e*Pg	**Pg**	**21 16 47.3**	**-0.2**
AKS				*e*Sg	**Sb**	**21 17 00.9**	**-0.2**
BALB	**Balikesir**	**1.07**	**303**	*e*PN	**Pb**	**21 16 49.5**	**0.0**
BALB	**Balikesir**	**1.07**	**303**	*e*Pn	**Pb**	**21 16 49.5**	**0.0**
SHUT	**Suhut-Afyon**	**1.28**	**113**	*e*Pn	**Pg**	**21 16 53.1**	**-0.1**
SHUT	**Suhut-Afyon**	**1.28**	**113**	*e*Pn	**Pg**	**21 16 53.1**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*PN	**Pb**	**21 16 53.2**	**0.0**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*Pn	**Pb**	**21 16 53.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*PN	**Pg**	**21 16 53.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*Pn	**Pg**	**21 16 53.5**	**-0.2**
IZI	**Iznik**	**1.31**	**14**	*e*PN	**Pb**	**21 16 53.9**	**+0.3**
IZI	**Iznik**	**1.31**	**14**	*e*Pn	**Pb**	**21 16 53.9**	**+0.3**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*PN	**Pb**	**21 16 53.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*Pn	**Pb**	**21 16 53.7**	**+0.1**
GEMT	**Gemlik**	**1.37**	**4**	*e*PN	**Pg**	**21 16 55.0**	**+0.1**
GEMT	**Gemlik**	**1.37**	**4**	*e*Pn	**Pg**	**21 16 55.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*PN	**Pb**	**21 16 55.5**	**-0.2**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*Pn	**Pb**	**21 16 55.5**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**219**	*e*PN	**Pg**	**21 16 56.2**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**219**	*e*Pn	**Pg**	**21 16 56.2**	**-0.1**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*PN	**Pb**	**21 16 55.9**	**-0.3**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*Pn	**Pb**	**21 16 55.9**	**-0.3**
ESKT	**

WRA	**Warramunga Arr**	**13.68**	**161**	P		Pn	21 22 53.0	-1.0
	0.4nm,0.3s,baz=341,slow=13,SNR=8.7							
WRA				S		Sn	21 25 12.4	-14
	0.7nm,0.3s,baz=336,slow=22,SNR=12							
ASAR	**Alice Springs**	**17.10**	**166**	P		P	21 23 34.8	+0.1
	0.2nm,0.3s,baz=345,slow=11,SNR=12							
ASAR				S		S	21 26 34.7	-9.2
	0.1nm,0.3s,baz=348,slow=24,SNR=4.0							
MKAR	**Makanchi Array**	**67.99**	**327**	P		P	21 30 27.1	0.0
	0.6nm,0.5s,baz=116,slow=7.9,SNR=12							

IDC ***20*** *22:04:55.5±0.3,10.30S×162.12E,h0km,mb5.7/24, mb1 5.8/25,mb1mx5.7/28,mbtmp5.7/25,ML5.0/1,MS5.4/30, Ms1 5.4/30,ms1mx5.4/32,Error ellipse: s-maj=15.0km s-min=11.5km az=71.0*

BJI ***20*** *22:04:57.0,10.40S×162.00E,h21km,mb5.7/84,mB5.8/64, Ms5.8/88,Ms7 5.6/83*

ISCJB ***20*** *22:04:57.3±1.2,10.33S±0.02×162.00E±0.02,h18km±8km, mb5.9/351,MS5.7/576,Error ellipse: s-maj=3.9km s-min=3.1km az=175.7*

NEIC ***20*** *22:04:59.0±0.0,10.11S×162.05E,h23km Best double couple: NP1:ϕs353.00000°,δ68.00000°,λ131.00000°. NP2:ϕs106.00000°,δ46.00000°,λ31.00000°. Principal axes: T 0.9900, Plg48.0000°, Azm308.0000°; N 0.1800, Plg37.0000°, Azm155.0000°; P -1.1700, Plg13.0000°, Azm54.0000°;*

NEIC ***20*** *22:04:59.3±0.1,10.34S×162.01E,h21km,mb5.9/262, ME5.7,MS5.6/300,MW6.0,MW5.8 Error ellipse: s-maj=3.1km s-min=2.8km az=139.0,Moment Tensor Solution. s54 Moment tensor: Scale 1017Nm; Mrr3.92; Mθθ-3.84; Mϕϕ-0.08; Mrθ0.54; Mrϕ3.73; Mθϕ1.27; Best double couple: M0 5.60000×1017 NP1:ϕs96.00000°, δ51.00000°,λ51.00000°. NP2:ϕs327.00000°,δ53.00000°, λ127.00000°. Principal axes: T 4.6800, Plg61.0000°, Azm300.0000°; N 1.4700, Plg29.0000°, Azm122.0000°; P -6.1500, Plg1.0000°, Azm32.0000°; Broadband fault plane solution: P waves. NP1:ϕs123.00000°,δ27.00000°, λ70.00000°. NP2:ϕs326.00000°,δ65.00000°,λ100.00000°. Principal axes: T Plg68.0000°, Azm256.0000°; N Plg0.0000°, Azm0.0000°; P Plg19.0000°, Azm49.0000°; Two events about 3 seconds apart observed on broadband displacement seismograms. Depth from synthetics of broadband displacement seismograms based on first event. Energy computed from BB mechanism.*

NEIC Felt at Honiara.

GCMT ***20*** *22:04:59.3±0.1,10.30S×162.20E,h29km,MW6.0/139, Moment Tensor Solution. s139,c304; s138,c417; Duration: 2≥3 Moment tensor: Scale 1018Nm; Mrr0.67±.01; Mθθ-0.25±.01; Mϕϕ-0.42±.01; Mrθ0.23±.01; Mθϕ0.70±.01; Mrϕ0.59±.01; Best double couple: M0 1.11200×1018 NP1:ϕs350.00000°,δ64.00000°, λ129.00000°. NP2:ϕs108.00000°,δ46.00000°,λ37.00000°. Principal axes: T 1.1320, Plg53.0000°, Azm308.0000°; N -0.0400, Plg35.0000°, Azm150.0000°; P -1.0920, Plg11.0000°, Azm53.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

MOS ***20*** *22:05:06.5±1.1,10.24S×161.91E,h42km,mb6.1/80, MS5.7/116 Error ellipse: s-maj=7.4km s-min=6.0km az=82.7*

ISC 20 22:05:00.6±0.4,10°31'S±0°03'×162°14'E±0°03',h31km±2km, h31km:pP-P,n1697,σ1s77/1607,mb5.9/354,MS5.7/584, 66C-39D,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res
				Op	ISC		ISC
HNR	**Honiara**	**2.33**	**292**	Pn	**Pb**	**22 05 39.6**	**-2.3**
	5μm,0.3s,baz=153,slow=4.0,SNR=702						
HNR				LR	LR	22 06 04.8	
	comp=Z,22μm,19.0s,baz=120,slow=30						
HNR				Sn	**Sb**	**22 06 10.5**	**+0.2**
	7μm,0.3s,baz=28,slow=23,SNR=10						
HNR	**Honiara**	**2.33**	**292**	*i* P	**Pn**	**22 05 38.5**	**+1.7**
HNR				*i* S	**Sb**	**22 06 16.0**	**+5.7**
HNR	**Honiara**	**2.33**	**292**	*e*P	**Pb**	**22 05 39.6**	**-2.3**
HNR				*e*		22 06 03.8	
HNR	**Honiara**	**2.33**	**292**	*e*Pn	**Pb**	**22 05 39.6**	**-2.3**
HNR				*e*Sn	**Sn**	**22 06 03.8**	**-0.7**
RABL	**Rabaul**	**11.61**	**301**	*e*Pn	**Pn**	**22 07 47.3**	**+3.0**
DZM	**Mont Dzumac**	**12.40**	**161**	Pn	**Pn**	**22 07 54.6**	**-0.6**
	9.3nm,0.3s,baz=40,slow=6.0,SNR=58						
DZM				Sn	**Sn**	**22 10 05.2**	**-7.4**
	4.2nm,0.3s,baz=337,slow=15,SNR=2.2						
DZM				LR	LR	22 11 52.3	
	comp=Z,29μm,21.9s,baz=358,slow=34						
DZM	**Mont Dzumac**	**12.40**	**161**	*e*Pn	**Pn**	**22 07 53.6**	**-1.6**
	526nm,1.1s						
DZM				*e*Sn	**Sn**	**22 10 06.8**	**-5.7**
	359nm,1.1s						
DZM				*e*LR	LR	22 10 36.3	
	47μm,23.4s						
DZM	**Mont Dzumac**	**12.40**	**161**	*e*Pn	**Pn**	**22 07 53.6**	**-1.6**
DZM				*e*Sn	**Sn**	**22 10 05.2**	**-7.4**
PMG	**Port Moresby**	**14.79**	**272**	Pn	**P**	**22 08 31.9**	**-1.4**
	5.2nm,0.3s,baz=84,slow=6.5,SNR=45						
PMG				LR	LR	22 14 10.3	
	comp=Z,43μm,18.7s,baz=114,slow=38						
PMG	**Port Moresby**	**14.79**	**272**	*ce*P	**P**	**22 08 31.1**	**-2.2**
PMG				pmax	pmax		
	comp=Z,5μm,1.7s						
PMG	**Port Moresby**	**14.79**	**272**	*e*Pn	**Pn**	**22 08 27.3**	**-0.4**
TARA	**Tarawa**	**15.79**	**43**	*e*Pn	**Pn**	**22 08 37.8**	**-3.1**
	comp=Z,2μm,1.2s						
MANU	**Manus Island**	**16.82**	**298**	*e*Pn	**Pn**	**22 08 53.6**	**-0.4**
	comp=Z,859nm,0.8s						
FUNA	**Funafuti**	**16.92**	**85**	*e*Pn	**Pn**	**22 08 53.2**	**-2.0**
	comp=Z,3μm,1.9s						
MSVF	**Nonsavu**	**17.10**	**117**	*e*P	**Pn**	**22 08 58.1**	**+0.5**
MSVF				pmax	pmax		
	comp=Z,560nm,1.3s						
MSVF	**Nonsavu**	**17.10**	**117**	*e*Pn	**Pn**	**22 08 58.1**	**+0.5**
	comp=Z,560nm,1.3s						
PATS	**Pohnpei**	**17.45**	**347**	P	**Pn**	**22 09 02.2**	**+0.3**
	baz=18,SNR=13						
PATS	**Pohnpei**	**17.45**	**347**	*e*Pn	**Pn**	**22 09 00.5**	**-1.4**
	comp=Z,2μm,1.4s						
PATS				*e*Sn	**Sn**	**22 12 08.9**	**-6.5**
CTA	**Charters Tower**	**18.14**	**236**	P	**P**	**22 09 13.2**	**+2.8**
	comp=Z,19nm,0.3s,baz=64,slow=13,SNR=112						
CTA				LR	LR	22 15 58.4	
	comp=Z,11μm,19.1s,baz=52,slow=37						
CTAO	**Charters Tower**	**18.14**	**236**	*e*P	**P**	**22 09 13.3**	**+2.8**
CTAO	**Charters Tower**	**18.14**	**236**	*e*Pn	**P**	**22 09 13.3**	**+2.8**
EIDS	**Eidsvold**	**18.29**	**214**	P	**Pn**	**22 09 13.8**	**+1.7**
	baz=18,SNR=51						
EIDS	**Eidsvold**	**18.29**	**214**	*e*Pn	**Pn**	**22 09 14.3**	**+2.1**
	comp=Z,546nm,1.1s						
COEN	**Coen**	**18.89**	**257**	*e*P	**Pn**	**22 09 22.8**	**+3.2**
	comp=Z,1μm,1.1s						
KWAJ	**Kwajalein Atol**	**19.75**	**16**	*e*P	**P**	**22 09 27.9**	**-0.2**
KWAJ				pmax	pmax		
	comp=Z,1μm,1.2s						
KWAJ	**Kwajalein Atol**	**19.75**	**16**	*e*P	**P**	**22 09 27.9**	**-0.2**
	comp=Z,1μm,1.2s						
RMQ	**Roma**	**20.47**	**216**	P	Pn	22 09 38.2	0.0
	baz=21,SNR=179						
LHI	**Lord Howe Isla**	**21.30**	**187**	*e*P	**P**	**22 09 44.5**	**-0.3**
	comp=Z,308nm,1.1s						
ARMA	**Armidale**	**22.28**	**205**	P	**P**	**22 09 55.8**	**+0.3**
	baz=22,SNR=81						
ARMA	**Armidale**	**22.28**	**205**	*e*P	**P**	**22 09 55.8**	**+0.3**
	comp=Z,290nm,0.9s						
ARMA				LR	LR		
	comp=Z,10μm,20.0s						
JAY	**Jayapura**	**22.65**	**289**	P	**P**	**22 09 57.0**	**-2.5**
	comp=Z,26nm,1.0s,baz=91,slow=23,SNR=25						
JAY	**Jayapura**	**22.65**	**289**	P	**P**	**22 09 57.0**	**-2.5**
	comp=Z,352nm,1.0s,comp=Z,4μm						
GENI	**Genyem**	**23.12**	**288**	P	**P**	**22 10 01.6**	**-2.8**
	comp=Z,594nm,1.1s,comp=Z,8μm						
QLP	**Quilpie**	**23.41**	**224**	P	**P**	**22 10 07.5**	**+0.3**
	baz=24,SNR=90						
QIS	**Mount Isa**	**23.96**	**242**	P	**P**	**22 10 13.1**	**+0.6**
	baz=24,SNR=48						
MGCD	**Mangrove Creek**	**24.95**	**202**	P	**P**	**22 10 21.9**	**+0.6**
	baz=25,SNR=33						
RIV	**Riverview**	**25.49**	**202**	P	**P**	**22 10 30.0**	**+3.8**
RIV				pmax	pmax		
	comp=Z,562nm,0.9s						
AFI	**Afiamalu**	**25.75**	**101**	P	**P**	**22 10 27.9**	**-0.9**
	comp=Z,132nm,1.1s,baz=190,slow=16,SNR=8.1						
AFI				LR	LR	22 18 48.2	
	comp=Z,29μm,18.6s,baz=280,slow=32						
AFI	**Afiamalu**	**25.75**	**101**	*e*P	**P**	**22 10 28.9**	**0.0**
AFI				pmax	pmax		
	comp=Z,323nm,1.2s						
AFI				MLR	MLR		
	comp=Z,27μm,20.0s						
AFI	**Afiamalu**	**25.75**	**101**	*e*P	**P**	**22 10 28.9**	**0.0**
	comp=Z,323nm,1.2s						
AFI				LR	LR		
	comp=Z,27μm,20.0s						
CMSA	**Cobar Meteorol**	**26.05**	**213**	P	**P**	**22 10 31.1**	**-0.3**
	baz=26,SNR=170						
RAO	**Raoul Island**	**26.52**	**138**	LR	LR	22 19 08.3	
	comp=Z,12μm,20.9s,baz=347,slow=32						
OUZ	**Omahuta**	**26.91**	**159**	*e*P	**P**	**22 10 40.5**	**+1.5**
	comp=Z,242nm,1.3s						
OUZ				LR	LR		
	comp=Z,12μm,18.0s						
YNG	**Young**	**26.99**	**206**	P	**P**	**22 10 40.6**	**+0.8**
	baz=27,SNR=24						
CNB	**Canberra Magne**	**27.48**	**203**	P	**P**	**22 10 44.9**	**+0.6**
	baz=28,SNR=20						
CAN	**Canberra**	**27.63**	**204**	*e*P	**P**	**22 10 46.2**	**+0.6**
CAN				pmax	pmax		
	comp=Z,421nm,1.7s						
CAN				MLR	MLR		
	comp=Z,9μm,22.0s						
CAN	**Canberra**	**27.63**	**204**	*e*P	**P**	**22 10 46.1**	**+0.6**
	comp=Z,420nm,1.7s						
CAN				LR	LR		
	comp=Z,9μm,22.0s						
WR0	**Warramunga Arr**	**28.28**	**247**	PFAKE		22 11 00.0	+8.5
WR0				LR	LR		
	comp=Z,18μm,20.0s						
WR9	**Warramunga Arr**	**28.30**	**247**	PFAKE		22 11 00.0	+8.3
WR9				LR	LR		
	comp=Z,17μm,20.0s						
WR8	**Warramunga Arr**	**28.31**	**247**	PFAKE		22 11 00.0	+8.2
WR8				LR	LR		
	comp=Z,20μm,19.0s						
WR7	**Warramunga Arr**	**28.33**	**247**	PFAKE		22 11 00.0	+8.0
WR7				LR	LR		
	comp=Z,18μm,20.0s						
WR6	**Warramunga Arr**	**28.35**	**247**	PFAKE		22 11 00.0	+7.8
WR6				LR	LR		
	comp=Z,18μm,20.0s						
WB0	**Warramunga Arr**	**28.36**	**247**	PFAKE		22 11 00.0	+7.8
WB0				LR	LR		
	comp=Z,19μm,18.0s						
WB9	**Warramunga Arr**	**28.37**	**247**	PFAKE		22 11 00.0	+7.6
WB9				LR	LR		
	comp=Z,38μm,18.0s						
WR5	**Warramunga Arr**	**28.37**	**247**	PFAKE		22 11 00.0	+7.6
WR5				LR	LR		
	comp=Z,18μm,19.0s						
WB8	**Warramunga Arr**	**28.38**	**247**	PFAKE		22 11 00.0	+7.5
WB8				LR	LR		
	comp=Z,18μm,18.0s						
WR4	**Warramunga Arr**	**28.39**	**247**	PFAKE		22 11 00.0	+7.4
WR4				LR	LR		
	comp=Z,18μm,18.0s						
WB6	**Warramunga Arr**	**28.41**	**247**	PFAKE		22 11 00.0	+7.3
WB6				LR	LR		
	comp=Z,18μm,18.0s						
WB5	**Warramunga Arr**	**28.41**	**247**	PFAKE		22 11 00.0	+7.3
WB5				LR	LR		
	comp=Z,17μm,20.0s						
WR3	**Warramunga Arr**	**28.41**	**247**	PFAKE		22 11 00.0	+7.3
WR3				LR	LR		
	comp=Z,19μm,19.0s						
WB4	**Warramunga Arr**	**28.43**	**247**	PFAKE		22 11 00.0	+7.2
WB4				LR	LR		
	comp=Z,18μm,18.0s						
WC2	**Warramunga Arr**	**28.43**	**247**	PFAKE		22 11 00.0	+7.2
WC2				LR	LR		
	comp=Z,20μm,19.0s						
WC3	**Warramunga Arr**	**28.43**	**247**	PFAKE		22 11 00.0	+7.1
WC3				LR	LR		
	comp=Z,19μm,18.0s						
WB3	**Warramunga Arr**	**28.43**	**247**	PFAKE		22 11 00.0	+7.1
WB3				LR	LR		
	comp=Z,19μm,18.0s						
WR2	**Warramunga Arr**	**28.43**	**247**	PFAKE		22 11 00.0	+7.1
WR2				LR	LR		
	comp=Z,17μm,20.0s						
WRAB	**Tennant Creek**	**28.44**	**247**	*ce*P	**P**	**22 10 53.2**	**+0.2**
WRAB				pmax	pmax		
	comp=Z,462nm,0.9s						
WRAB	**Tennant Creek**	**28.44**	**247**	*e*P	**P**	**22 10 52.7**	**-0.3**
	comp=Z,405nm,0.9s						
WRAB				LR	LR		
	comp=Z,19μm,20.0s						
WB2	**Warramunga Arr**	**28.44**	**247**	*e*P	**P**	**22 10 52.0**	**-1.0**
WB2				LR	LR		
	comp=Z,19μm,20.0s						
WC1	**Warramunga Arr**	**28.45**	**247**	PFAKE		22 11 00.0	+6.9
WC1				LR	LR		
	comp=Z,15μm,18.0s						
WR1	**Warramunga Arr**	**28.45**	**247**	*e*P	**P**	**22 10 52.5**	**-0.6**
	comp=Z,446nm,0.8s						
WR1				*e*		22 43 09.8	
WR1				LR	LR		
	comp=Z,18μm,20.0s						
WRA	**Warramunga Arr**	**28.45**	**247**	P	**P**	**22 10 52.5**	**-0.6**
	comp=Z,296nm,0.8s,baz=75,slow=9.2,SNR=347						
WRA				PKiKP	**PKiKP**	**22 21 39.0**	**-1.3**
	comp=Z,2.1nm,0.7s,baz=122,slow=4.0,SNR=9.1						
WRA				LR	LR	22 22 34.7	
	comp=Z,18μm,18.0s,baz=75,slow=37						
WRA				P3KPbc		22 43 09.8	
	comp=Z,1.2nm,1.0s,baz=257,slow=3.2,SNR=4.9						
WC4	**Warramunga Arr**	**28.46**	**247**	PFAKE		22 11 00.0	+6.9
WC4				LR	LR		
	comp=Z,18μm,20.0s						
STKA	**Stephens Creek**	**28.67**	**218**	P	**P**	**22 10 54.6**	**-0.2**
	comp=Z,184nm,0.7s,baz=11,slow=8.1,SNR=107						
STKA				LR	LR	22 21 56.0	
	comp=Z,26μm,19.1s,baz=40,slow=36						
STKA	**Stephens Creek**	**28.67**	**218**	P	**P**	**22 10 54.8**	**-0.1**
	baz=29,SNR=342						
STKA	**Stephens Creek**	**28.67**	**218**	*e*P	**P**	**22 10 54.8**	**-0.1**
	comp=Z,48nm,0.8s						
H11S2	**WAKE ISLAND Hy**	**28.97**	**9**	T	T	22 41 60.0	
	baz=188,slow=76,SNR=2493						
H11S3	**WAKE ISLAND Hy**	**28.97**	**9**	T	T	22 41 39.5	
	baz=188,slow=76,SNR=3171						
H11S1	**WAKE ISLAND Hy**	**28.98**	**9**	T	T	22 41 35.4	
	baz=188,slow=76,SNR=1105						
MKAZ	**Moumakai**	**29.16**	**158**	*e*PN	**P**	**22 10 59.7**	**+0.7**
GUMO	**Guam**	**29.28**	**324**	P	**P**	**22 10 58.6**	**-1.8**
	comp=Z,273nm,1.1s,baz=171,slow=7.3,SNR=3.0						
GUMO				LR	LR	22 22 47.0	
	comp=Z,14μm,18.3s,baz=146,slow=37						
GUMO	**Guam**	**29.28**	**324**	*e*P	**P**	**22 10 59.2**	**-1.2**
	comp=Z,372nm,1.1s						
AS01	**Alice Springs**	**29.98**	**240**	*e*P	**P**	**22 11 05.6**	**-1.0**
AS31	**Alice Springs**	**30.02**	**240**	*e*P	**P**	**22 11 05.7**	**-1.3**
	comp=Z,30nm,0.5s						
AS31				*e*		22 43 03.8	
ASAR	**Alice Springs**	**30.02**	**240**	P	**P**	**22 11 05.6**	**-1.4**
	comp=Z,72nm,0.6s,baz=63,slow=9.5,SNR=329						
ASAR				LR	LR	22 22 50.3	
	comp=Z,17μm,19.1s,baz=66,slow=36						
ASAR				P3KPbc		22 43 03.8	
	comp=Z,0.7nm,0.8s,baz=224,slow=4.1,SNR=5.1						
H11N1	**WAKE ISLAND Hy**	**30.20**	**9**	T	T	22 43 17.4	
	baz=188,slow=76,SNR=1307						
H11N3	**WAKE ISLAND Hy**	**30.20**	**9**	T	T	22 43 28.9	
	baz=188,slow=76,SNR=1753						
H11N2	**WAKE ISLAND Hy**	**30.21**	**9**	T	T	22 43 33.5	
	baz=188,slow=76,SNR=2449						
HIZ	**Hauiti**	**30.31**	**160**	*e*P	**P**	**22 11 11.0**	**+1.7**
	comp=Z,191nm,1.0s						
HIZ				LR	LR		
	comp=Z,10μm,18.0s						
MTN	**Manton Dam**	**30.47**	**262**	P	**P**	**22 11 10.5**	**-0.5**
	baz=30,SNR=11						
MTN	**Manton Dam**	**30.47**	**262**	*e*P	**P**	**22 11 09.6**	**-1.4**
	comp=Z,84nm,0.8s						
MTN				LR	LR		
	comp=Z,5μm,21.0s						
SAUI	**Saumlaki**	**30.53**	**272**	PFAKE		22 11 20.0	+8.5
SAUI				LR	LR		
	comp=Z,12μm,19.0s						
FAKI	**Fak Fak**	**30.56**	**282**	*e*P	**P**	**22 11 10.4**	**-1.4**
	comp=Z,102nm,1.1s						
URZ	**Urewera**	**30.91**	**157**	P	**P**	**22 11 14.5**	**0.0**
	comp=Z,26nm,0.4s,baz=301,slow=2.5,SNR=33						
URZ	**Urewera**	**30.91**	**157**	*e*P	**P**	**22 11 14.5**	**0.0**
URZ				LR	LR		
	comp=Z,9μm,19.0s						
PKGZ	**Pakihiroa**	**30.98**	**155**	*e*PN	**P**	**22 11 14.7**	**-0.6**
TOO	**Toolangi**	**31.01**	**206**	P	**P**	**22 11 15.8**	**+0.3**
	baz=31,SNR=235						
TWGZ	**Tauwhareparae**	**31.18**	**155**	*e*PN	**P**	**22 11 16.6**	**-0.5**
HTT	**Hallett**	**31.38**	**219**	P	**P**	**22 11 18.8**	**-0.1**
	baz=32,SNR=224						
BKZ	**Black Stump Fm**	**31.47**	**158**	*e*P	**P**	**22 11 19.4**	**-0.2**
	comp=Z,144nm,0.8s						
BKZ				LR	LR		
	comp=Z,6μm,22.0s						
BKZ	**Black Stump Fm**	**31.47**	**158**	*e*PN	**P**	**22 11 18.8**	**-0.7**
RIGZ	**Rimuhau**	**31.55**	**156**	*e*PN	**P**	**22 11 19.6**	**-0.7**
KNZ	**Kokohu**	**31.79**	**157**	*e*PN	**P**	**22 11 21.1**	**-1.2**
ARPS	**Mount Arapiles**	**32.11**	**212**	P	**P**	**22 11 25.3**	**+0.2**
	baz=32,SNR=80						
BFZ	**Birch Farm**	**32.73**	**160**	*e*P	**P**	**22 11 30.5**	**-0.1**
	comp=Z,538nm,1.8s						
BFZ				LR	LR		
	comp=Z,11μm,19.0s						
THZ	**Tophouse**	**32.73**	**165**	*e*P	**P**	**22 11 30.2**	**-0.4**
	comp=Z,278nm,1.4s						
THZ				LR	LR		
	comp=Z,6μm,20.0s						
SNZO	**South Karori**	**32.81**	**162**	PFAKE		22 11 40.0	+8.8
SNZO				LR	LR		
	comp=Z,9μm,18.0s						
BBOO	**Buckleboo**	**32.84**	**223**	P	**P**	**22 11 31.0**	**-0.7**
	baz=33,SNR=293						
BBOO	**Buckleboo**	**32.84**	**223**	*e*P	**P**	**22 11 31.4**	**-0.2**
	comp=Z,593nm,0.8s						
BBOO				LR	LR		
	comp=Z,14μm,19.0s						
WVZ	**Waitaha Valley**	**33.49**	**169**	*e*PN	**P**	**22 11 37.4**	**+0.2**
KHZ	**Kahutara**	**33.51**	**165**	*e*P	**P**	**22 11 35.7**	**-1.6**
	comp=Z,481nm,1.6s						
KHZ				LR	LR		
	comp=Z,6μm,19.0s						
KHZ	**Kahutara**	**33.51**	**165**	*e*PN	**P**	**22 11 36.1**	**-1.2**
LTZ	**Lake Taylor**	**33.54**	**166**	*e*P	**P**	**22 11 37.1**	**-0.6**
	comp=Z,151nm,1.0s						
LTZ				LR	LR		
	comp=Z,10μm,19.0s						
LTZ	**Lake Taylor**	**33.54**	**166**	*e*PN	**P**	**22 11 37.3**	**-0.4**
MSAI	**Masohi**	**33.67**	**279**	P	**P**	**22 11 43.3**	**+4.2**
	comp=Z,52nm,0.7s						
FOZ	**Fox Glacier**	**33.77**	**170**	*e*P	**P**	**22 11 39.3**	**-0.2**
	comp=Z,205nm,1.1s						
FOZ				*e*PcP	**PcP**	**22 14 18.2**	**-0.3**
FOZ				LR	LR		
	comp=Z,4μm,18.0s						
FOZ	**Fox Glacier**	**33.77**	**170**	*e*PN	**P**	**22 11 39.6**	**+0.1**
OXZ	**Oxford**	**34.01**	**167**	*e*P	**P**	**22 11 40.5**	**-1.2**
	comp=Z,682nm,1.6s						
OXZ				LR	LR		
	comp=Z,7μm,18.0s						
OXZ	**Oxford**	**34.01**	**167**	*e*PN	**P**	**22 11 39.9**	**-1.8**
RPZ	**Rata Peaks**	**34.17**	**168**	P	**P**	**22 11 43.0**	**-0.1**
	comp=Z,99nm,0.8s,baz=335,slow=3.0,SNR=27						
RPZ	**Rata Peaks**	**34.17**	**168**	*e*P	**P**	**22 11 42.6**	**-0.5**
	comp=Z,191nm,1.0s						
RPZ				LR	LR		
	comp=Z,5μm,19.0s						
CRLZ	**Canterbury Las**	**34.37**	**166**	*e*P	**P**	**22 11 44.1**	**-0.7**
	comp=Z,993nm,1.7s						
CRLZ				LR	LR		
	comp=Z,6μm,20.0s						
MQZ	**McQueen's Vall**	**34.51**	**166**	*e*P	**P**	**22 11 45.6**	**-0.3**
	comp=Z,218nm,1.0s						
MQZ				LR	LR		
	comp=Z,5μm,20.0s						
MQZ	**McQueen's Vall**	**34.51**	**166**	*e*PN	**P**	**22 11 45.0**	**-0.9**
MOO	**Moorlands**	**34.58**	**200**	P	**P**	**22 11 47.9**	**+1.2**
	baz=35,SNR=8.5						
LBZ	**Lake Benmore**	**34.66**	**170**	*e*P	**P**	**22 11 45.8**	**-1.6**
	comp=Z,162nm,1.5s						
LBZ				LR	LR		
	comp=Z,6μm,19.0s						
WKZ	**Wanaka**	**34.90**	**171**	*e*P	**P**	**22 11 48.8**	**-0.6**
	comp=Z,501nm,1.8s						
WKZ				LR	LR		
	comp=Z,11μm,20.0s						
TAU	**Tasmania Unive**	**34.96**	**199**	*e*P	**P**	**22 11 50.6**	**+0.7**
TAU				pmax	pmax		
	comp=Z,208nm,1.0s						
TAU				MLR	MLR		
	comp=Z,4μm,19.0s						
TAU	**Tasmania Unive**	**34.96**	**199**	*e*P	**P**	**22 11 50.6**	**+0.7**
	comp=Z,208nm,1.0s						
TAU				LR	LR		
	comp=Z,4μm,19.0s						
WRKA	**Warakurna**	**35.29**	**241**	P	**P**	**22 11 51.4**	**-1.7**
	baz=35,SNR=266						
DCZ	**Deep Cove**	**35.30**	**174**	*e*P	**P**	**22 11 51.9**	**-0.9**
	comp=Z,93nm,0.9s						
DCZ				LR	LR		
	comp=Z,4μm,18.0s						
MLZ	**Mavora Lakes**	**35.31**	**173**	*e*P	**P**	**22 11 52.3**	**-0.6**
	comp=Z,128nm,1.3s						
MLZ				LR	LR		
	comp=Z,9μm,19.0s						
ODZ	**Otahua Downs**	**35.38**	**170**	*e*P	**P**	**22 11 56.0**	**+2.5**
	comp=Z,60nm,1.1s						
ODZ				LR	LR		
	comp=Z,5μm,18.0s						
WHZ	**Wether Hill Ro**	**35.81**	**173**	*e*P	**P**	**22 11 56.7**	**-0.5**
	comp=Z,222nm,1.7s						
WHZ				LR	LR		
	comp=Z,7μm,19.0s						
PYZ	**Puysegur Point**	**35.94**	**175**	PFAKE		22 12 10.0	+12
PYZ				LR	LR		
	comp=Z,3μm,20.0s						
TUZ	**Tuapeka**	**36.10**	**171**	*e*PN	**P**	**22 12 00.1**	**+0.4**
FITZ	**Fitzroy Crossi**	**36.17**	**253**	P	**P**	**22 11 59.2**	**-1.5**
	baz=36,SNR=239						
FITZ	**Fitzroy Crossi**	**36.17**	**253**	*e*P	**P**	**22 11 59.6**	**-1.0**
	comp=Z,172nm,0.8s						
SANI	**Sanana**	**36.83**	**280**	P	**P**	**22 12 05.9**	**-0.4**
SOEI	**Soe**	**37.28**	**267**	P	**P**	**22 12 10.7**	**+0.4**
SOEI	**Soe**	**37.28**	**267**	*e*P	**P**	**22 12 09.5**	**-0.8**
	comp=Z,184nm,0.7s						
SOEI				LR	LR		
	comp=Z,6μm,20.0s						
FORT	**Forrest**	**37.63**	**232**	P	**P**	**22 12 13.0**	**+0.1**
	baz=38,SNR=112						
FORT	**Forrest**	**37.63**	**232**	*e*P	**P**	**22 12 13.0**	**+0.1**
	comp=Z,6μm,0.9s						
BATI	**Baumata**	**37.85**	**267**	P	**P**	**22 12 15.0**	**0.0**
RAR	**Rarotonga**	**38.13**	**111**	P	**P**	**22 12 19.7**	**+2.5

SPSI	**Sidrap Palu**	**42.48**	**275**	P		**P**		**22 12 50.8**	**-2.6**
TTSI	**Tana Toraja**	**42.61**	**277**	P		**P**		**22 12 56.7**	**+2.2**
	comp=Z,116nm,0.8s								
KMBL	**Kambalda**	**42.74**	**235**	P		**P**		**22 12 55.2**	**-0.1**
	baz=43,SNR=43								
PCI	**Palu**	**43.07**	**280**	P		**P**		**22 12 58.6**	**+0.4**
PCI				S		**PP**		**22 14 41.7**	**+3.1**
MIDW	**Midway**	**43.12**	**27**	PFAKE				22 13 10.0	+12
MIDW				LR		LR			
	comp=Z,6μm,20.0s								
PLAI	**Plampang**	**43.74**	**268**	P		**P**		**22 13 01.2**	**-2.4**
MEEK	**Meekatharra**	**44.12**	**242**	P		**P**		**22 13 06.4**	**-0.2**
	baz=44,SNR=191								
TWSI	**Taliwang, Sumb**	**44.63**	**268**	P		**P**		**22 13 08.3**	**-2.5**
RCP	**Roxas**	**44.78**	**298**⇑	*e*P		**P**		**22 13 11.3**	**-0.6**
MYLDM	**Lahad Datu**	**46.10**	**287**	⇓P		**P**		**22 13 23.2**	**+0.8**
MYLDM	**Lahad Datu**	**46.10**	**287**	*e*P		**P**		**22 13 22.5**	**+0.1**
	comp=Z,188nm,1.0s								
MYLDM				LR		LR			
	comp=Z,8μm,20.0s								
GQP	**Guinayangan**	**46.14**	**301**⇓	*e*P		**P**		**22 13 21.8**	**-0.8**
KLBR	**Kellerberrin**	**46.15**	**236**	P		**P**		**22 13 21.4**	**-1.2**
	baz=46,SNR=47								
DNP	**Denpasar**	**46.28**	**268**	P		**P**		**22 13 23.2**	**-0.6**
	comp=Z,1μm,0.7s								
IGBI	**Denpasar**	**46.33**	**268**	P		**P**		**22 13 23.0**	**-1.2**
	comp=Z,890nm,0.7s,comp=Z,9μm								
BLDU	**Ballidu**	**46.73**	**238**	P		**P**		**22 13 26.6**	**-0.5**
	baz=47,SNR=164								
MORW	**Morawa**	**46.90**	**240**	P		**P**		**22 13 27.9**	**-0.6**
	baz=47,SNR=103								
NWAO	**Narrogin (SRO)**	**46.97**	**234**	P		**P**		**22 13 28.4**	**-0.6**
NWAO	baz=47,SNR=23			P		**P**		**22 13 28.4**	**-0.6**
	baz=47,SNR=23								
NWAO	**Narrogin (SRO)**	**46.97**	**234**	*e*P		**P**		**22 13 28.7**	**-0.3**
NWAO				pmax		pmax			
	comp=Z,181nm,1.0s								
NWAO				MLR		MLR			
	comp=Z,8μm,18.0s								
NWAO	**Narrogin (SRO)**	**46.97**	**234**	*e*P		**P**		**22 13 28.7**	**-0.3**
	comp=Z,181nm,1.0s								
NWAO				LR		LR			
	comp=Z,8μm,18.0s								
LQP	**Lukban**	**47.01**	**300**⇑	*e*P		**P**		**22 13 31.1**	**+1.4**
PPT	**Papeete**	**47.31**	**104**	LR		LR		22 29 19.0	
	comp=Z,8μm,19.9s,baz=268,slow=31								
PPT2	**Papeete2**	**47.31**	**104**	*e*S		**S**		**22 20 32.3**	**+8.4**
PPT2	comp=Z,3μm,26.2s								
				*e*LQ		LQ		22 25 00.5	
PPT2	comp=Z,15μm,30.5s								
				*e*LR		LR		22 27 03.7	
	comp=Z,12μm,22.8s,baz=275								
ABJI	**Asem Bagus**	**47.34**	**269**	P		**P**		**22 13 34.0**	**+1.9**
	comp=Z,180nm,0.7s,comp=Z,4μm								
JAGI	**Jajag, Banyuwa**	**47.35**	**268**	P		**P**		**22 13 29.6**	**-2.6**
	comp=Z,707nm,0.8s,comp=Z,6μm								
JAGI	**Jajag, Banyuwa**	**47.35**	**268**	*e*P		**P**		**22 13 29.4**	**-2.8**
	comp=Z,508nm,0.7s								
GIRL	**Giralia**	**47.35**	**249**	P		**P**		**22 13 33.1**	**+1.0**
	baz=47,SNR=14								
BBKI	**Banjar Baru**	**47.40**	**275**	P		**P**		**22 13 32.4**	**-0.2**
	comp=Z,345nm,0.9s,comp=Z,4μm								
RKGY	**Rocky Gully**	**47.71**	**232**	P		**P**		**22 13 34.6**	**-0.2**
	baz=48,SNR=19								
MTKI	**Muara Teweh, K**	**47.86**	**278**	P		P		22 13 44.7	+8.5
TBI	**Tubuai**	**47.89**	**112**	*e*S		**S**		**22 20 39.2**	**+7.3**
	comp=Z,3μm,30.0s								
TBI				*e*LQ		LQ		22 25 19.1	
	comp=Z,25μm,30.2s								
TBI				*e*LR		LR		22 27 21.6	
	comp=Z,18μm,27.2s,baz=282								
GMJI	**Gumukmas**	**48.06**	**268**	P		**P**		**22 13 36.4**	**-1.3**
	comp=Z,184nm,0.8s								
JHJ2	**Mitsune**	**48.14**	**335**	*e*P		**P**		**22 13 41.4**	**+3.5**
	comp=Z,997nm,1.0s								
KDM	**Kudat**	**48.25**	**289**	⇑P		**P**		**22 13 38.2**	**-0.9**
KKM	**Kota Kinabalu**	**48.53**	**288**	⇑P		**P**		**22 13 40.6**	**-0.8**
KKM	**Kota Kinabalu**	**48.53**	**288**	*e*P		**P**		**22 13 40.0**	**-1.5**
	comp=Z,141nm,1.0s								
KKM				LR		LR			
	comp=Z,4μm,20.0s								
KEKH	**Kekaha**	**49.30**	**49**	PFAKE				22 14 00.0	+13
KEKH				LR		LR			
	comp=Z,5μm,19.0s								
JOW	**Kunigami**	**49.43**	**319**	*e*P		**P**		**22 13 47.8**	**-0.2**
	comp=Z,349nm,1.0s								
JOW				LR		LR			
	comp=Z,4μm,21.0s								
PWJI	**Pagerwojo**	**49.71**	**268**	P		**P**		**22 13 48.8**	**-1.5**
	comp=Z,291nm,0.8s,comp=Z,3μm								
NGJI	**Ngawi**	**50.12**	**269**	P		**P**		**22 13 57.1**	**+3.6**
	comp=Z,353nm,0.8s								
HON	**Honolulu**	**50.21**	**51**	PFAKE				22 14 10.0	+16
HON				LR		LR			
	comp=Z,6μm,19.0s								
KIP	**Kipapa**	**50.25**	**51**	*ce*P		**P**		**22 13 54.2**	**-0.1**
KIP				pmax		pmax			
	comp=Z,250nm,0.8s								
KIP	**Kipapa**	**50.25**	**51**	*e*P		**P**		**22 13 57.0**	**+2.7**
	comp=Z,338nm,1.7s								
KIP				LR		LR			
	comp=Z,6μm,19.0s								
PCJI	**Pacitan**	**50.30**	**268**	P		**P**		**22 13 53.7**	**-1.2**
	comp=Z,1μm,0.8s,comp=Z,8μm								
OPA	**Opana**	**50.41**	**51**	*e*P		**P**		**22 13 56.2**	**+0.7**
OPA				pmax		pmax			
	comp=Z,504nm,0.9s								
OPA				MLR		MLR			
	comp=Z,5μm,20.0s								
OPA	**Opana**	**50.41**	**51**	*e*P		**P**		**22 13 56.2**	**+0.7**
	comp=Z,504nm,0.9s								
OPA				LR		LR			
	comp=Z,5μm,20.0s								
WOJI	**Wonogiri, Jawa**	**50.59**	**268**	P		**P**		**22 13 56.4**	**-0.7**
	comp=Z,313nm,1.2s,comp=Z,7μm								
BTM	**Bintulu**	**50.65**	**283**	⇓P		**P**		**22 13 59.9**	**+2.3**
PBKI	**Pangkalan Bun**	**50.65**	**275**	P		**P**		**22 14 01.4**	**+3.9**
	comp=Z,165nm,1.0s,comp=Z,2μm								
UWJI	**Ujung Watu**	**50.75**	**270**	P		P		22 14 06.4	+8.1
	comp=Z,437nm,0.8s								
UGM	**Wanagama**	**50.98**	**268**	P		**P**		**22 14 00.0**	**0.0**
	comp=Z,290nm,0.8s								
UGM	**Wanagama**	**50.98**	**268**	*e*P		**P**		**22 13 58.8**	**-1.2**
	comp=Z,304nm,0.9s								
INU	**Inuyama**	**51.25**	**334**	*e*P		**P**		**22 14 01.6**	**0.0**
	comp=Z,453nm,1.2s								
INU				LR		LR			
	comp=Z,7μm,22.0s								
HLK	**Haleakala**	**51.25**	**53**	*e*P		**P**		**22 14 05.5**	**+3.3**
	comp=Z,390nm,1.1s								
HLK				LR		LR			
	comp=Z,8μm,20.0s								
SBUM	**Sibu**	**51.28**	**282**	⇓P		**P**		**22 14 01.3**	**-1.0**
SBUM	**Sibu**	**51.28**	**282**	*e*P		**P**		**22 14 01.5**	**-0.8**
	comp=Z,42nm,1.1s								
POHA	**Pohakuloa**	**51.28**	**54**	*e*P		**P**		**22 14 02.9**	**+0.5**
	comp=Z,287nm,0.8s								
POHA				LR		LR			
	comp=Z,6μm,19.0s								
HPAH	**Hawaii Prepara**	**51.30**	**54**	PFAKE				22 14 20.0	+18
HPAH				LR		LR			
	comp=Z,6μm,19.0s								
UWE	**Uwekahuna**	**51.30**	**55**	PFAKE				22 14 20.0	+18
UWE				LR		LR			
	comp=Z,6μm,18.0s								
STKI	**Sintang**	**51.42**	**278**	P		**P**		**22 14 03.1**	**-0.2**
	comp=Z,106nm,1.0s								
YOJ	**Yonaguni jima**	**51.51**	**313**	*e*P		**P**		**22 14 04.2**	**+0.5**
YOJ				pmax		pmax			
	comp=Z,559nm,1.0s								
YOJ				MLR		MLR			
	comp=Z,5μm,20.0s								
YOJ	**Yonaguni jima**	**51.51**	**313**	*e*P		**P**		**22 14 04.2**	**+0.5**
	comp=Z,559nm,1.0s								
YOJ				LR		LR			
	comp=Z,5μm,20.0s								
MJAR	**Matsushiro Arr**	**51.76**	**335**	P		**P**		**22 14 04.2**	**-1.2**
	comp=Z,44nm,0.8s,baz=167,slow=8.7,SNR=61								
MJAR				PcP		**PcP**		**22 15 19.1**	**+0.7**
	comp=Z,27nm,0.8s,baz=166,slow=3.8,SNR=4.4								
MJAR				LR		LR		22 34 22.6	
	comp=Z,3μm,21.7s,baz=150,slow=34								
MAJO	**Matsushiro**	**51.76**	**335**	*e*P		**P**		**22 14 04.8**	**-0.6**
MAJO				pmax		pmax			
	comp=Z,729nm,1.7s								
MAJO				MLR		MLR			
	comp=Z,5μm,21.0s								
MAJO	**Matsushiro**	**51.76**	**335**	*e*P		**P**		**22 14 04.8**	**-0.6**
	comp=Z,729nm,1.7s								
MAJO				LR		LR			
	comp=Z,5μm,21.0s								
MAT	**Matsushiro**	**51.76**	**335**	P		**P**		**22 14 04.4**	**-1.0**
MAT				S		**S**		**22 21 28.2**	**+2.8**
MJB9	**Matsu-Tunnel**	**51.76**	**335**	*e*P		**P**		**22 14 05.0**	**-0.4**
	comp=Z,186nm,1.7s								
MJB9				LR		LR			
	comp=Z,1μm,21.0s								
TWG	**Pinlang**	**51.98**	**310**	*e*P		**P**		**22 14 08.5**	**+1.2**
	comp=Z,214nm,0.8s								
TWG				LR		LR			
	comp=Z,13μm,21.0s								
YULB	**Yu-li**	**52.13**	**310**	*e*P		**P**		**22 14 07.2**	**-1.2**
	comp=Z,119nm,0.7s								
YULB				LR		LR			
	comp=Z,4μm,21.0s								
NACB	**Ninganchiao**	**52.37**	**311**	*e*P		**P**		**22 14 09.8**	**-0.3**
	comp=Z,233nm,0.9s								
NACB				LR		LR			
	comp=Z,5μm,20.0s								
JNU	**Nakatsue**	**52.47**	**327**	*e*P		**P**		**22 14 10.9**	**+0.2**
	comp=Z,143nm,0.8s								
TPUB	**Ta-pu**	**52.58**	**310**	*e*P		**P**		**22 14 10.3**	**-1.5**
	comp=Z,260nm,0.8s								
TPUB				LR		LR			
	comp=Z,4μm,22.0s								
SSLB	**Suanglung**	**52.62**	**311**	*e*P		**P**		**22 14 11.5**	**-0.6**
	comp=Z,159nm,0.7s								
SSLB				LR		LR			
	comp=Z,5μm,20.0s								
YHNB	**Yeheng**	**52.82**	**312**	*e*P		**P**		**22 14 13.8**	**+0.2**
	comp=Z,375nm,1.0s								
YHNB				LR		LR			
	comp=Z,8μm,22.0s								
KSM	**Kuching**	**52.89**	**280**	⇑P		**P**		**22 14 14.3**	**+0.1**
KSM	**Kuching**	**52.89**	**280**	⇓P		**P**		**22 14 16.1**	**+1.9**
KSM	**Kuching**	**52.89**	**280**	*e*P		**P**		**22 14 11.7**	**-2.5**
	comp=Z,61nm,1.0s								
TATO	**Taipei**	**52.92**	**312**	*e*P		**P**		**22 14 14.2**	**0.0**
	comp=Z,598nm,1.4s								
TATO				LR		LR			
	comp=Z,7μm,20.0s								
CMJI	**Cimerak**	**53.03**	**268**	P		**P**		**22 14 14.3**	**-1.0**
	comp=Z,295nm,0.8s,comp=Z,3μm								
JCJI	**Jatiwangi**	**53.38**	**270**	P		**P**		**22 14 17.4**	**-0.4**
	comp=Z,787nm,0.9s,comp=Z,9μm								
CISI	**Cisompet, Garu**	**53.69**	**268**	P		**P**		**22 14 18.3**	**-1.9**
	comp=Z,413nm,1.0s,comp=Z,4μm								
CISI	**Cisompet, Garu**	**53.69**	**268**	*e*P		**P**		**22 14 17.7**	**-2.4**
	comp=Z,282nm,0.8s								
CNJI	**Cibinong**	**54.39**	**268**	P		**P**		**22 14 26.0**	**+0.8**
	comp=Z,304nm,1.1s,comp=Z,3μm								
DBJI	**Dramaga**	**54.87**	**269**	P		**P**		**22 14 28.3**	**-0.4**
	comp=Z,276nm,0.9s,comp=Z,5μm								
ERM	**Erimo**	**54.91**	**343**	*e*P		**P**		**22 14 29.4**	**+1.0**
ERM				pmax		pmax			
	comp=Z,264nm,1.3s								
ERM				MLR		MLR			
	comp=Z,5μm,20.0s								
ERM	**Erimo**	**54.91**	**343**	*e*P		**P**		**22 14 29.4**	**+1.0**
	comp=Z,264nm,1.3s								
ERM				LR		LR			
	comp=Z,5μm,20.0s								
QZH	**Quanzhou**	**55.04**	**310**⇑	*i*P		**P**		**22 14 30.0**	**+0.3**
QZH				S		**S**		**22 22 09.0**	**-1.4**
QZH				pmax		pmax			
	comp=Z,340nm,0.8s								
QZH				LR		LR			
	comp=Z,2μm,15.7s								
QZH				LR		LR			
	comp=Z,4μm,16.0s								
QZH				LR		LR			
	comp=Z,7μm,20.3s								
XMIS	**Christmas Isla**	**55.49**	**264**	*e*P		**P**		**22 14 33.1**	**-0.1**
	comp=Z,252nm,0.9s								
YUK	**Yuzh-Kuril'sk**	**56.07**	**346**	*i* P		**P**		**22 14 38.5**	**+1.8**
PPBI	**Pangkal Pinang**	**56.18**	**274**	P		**P**		**22 14 39.1**	**+0.9**
KUR	**Kuril'sk**	**56.76**	**348**	*ci*P		**P**		**22 14 42.8**	**+1.2**
KUR				*i* S		**S**		**22 22 30.6**	**-1.9**
KUR				pmax		pmax			
	comp=Z,323nm,1.3s								
TAOE	**Nuku Hiva Isla**	**56.86**	**94**	*e*S		S		22 22 47.0	+12
	comp=Z,2μm,29.7s								
TAOE				*e*LR		LR		22 31 30.9	
	comp=Z,9μm,23.5s,baz=270								
TAOE	**Nuku Hiva Isla**	**56.86**	**94**	PFAKE				22 15 00.0	+17
TAOE				LR		LR			
	comp=Z,5μm,22.0s								
SSE	**Sheshan**	**56.89**	**318**	P		**P**		**22 14 42.8**	**-0.1**
SSE				pP		**sP**		**22 14 56.8**	**+0.8**
SSE				S		**S**		**22 22 27.8**	**-7.0**
SSE				sS		**sS**		**22 22 52.4**	**+2.1**
SSE				pmax		pmax			
	comp=Z,110nm,0.8s								
SSE				pmax		pmax			
	comp=Z,540nm,3.8s								
SSE				LR		LR			
	comp=Z,560nm,17.4s								
SSE				LR		LR			
	comp=Z,2μm,17.4s								
SSE				LR		LR			
	comp=Z,3μm,22.8s								
ASAJ	**Asahikawa**	**57.00**	**343**	*e*P		**P**		**22 14 43.9**	**+0.5**
	comp=Z,608nm,0.8s								
ASAJ				LR		LR			
	comp=Z,7μm,21.0s								
HKC	**Hong Kong Obse**	**57.10**	**305**	⇑P		**P**		**22 14 47.0**	**+2.5**
KSRS	**Korea Array**	**57.32**	**328**	P		**P**		**22 14 46.0**	**+0.3**
	comp=Z,48nm,0.9s,baz=140,slow=6.6,SNR=54								
KSRS				PcP		**PcP**		**22 15 40.7**	**+1.1**
	comp=Z,3.7nm,0.5s,baz=149,slow=3.0,SNR=5.2								
KSRS				LR		LR		22 37 39.4	
	comp=Z,4μm,20.2s,baz=124,slow=34								
KS15	**Wonju Array Si**	**57.33**	**328**	*e*P		**P**		**22 14 46.3**	**+0.4**
KS15				*e*PcP		**PcP**		**22 15 40.7**	**+1.0**
KSAR	**Wonju Array Be**	**57.33**	**328**	P		**P**		**22 14 46.0**	**+0.2**
KSAR	**Wonju Array Be**	**57.33**	**328**	P		**P**		**22 14 46.0**	**+0.2**
KSAR	**Wonju Array Be**	**57.33**	**328**	PcP		**PcP**		**22 15 40.7**	**+1.0**
KS01	**Wonju Array Si**	**57.35**	**328**	*e*P		**P**		**22 14 45.7**	**-0.3**
MCO	**Taipa Grande**	**57.51**	**304**	P		**P**		**22 14 49.0**	**+1.6**
INCN	**Inchon**	**58.02**	**327**	P		**P**		**22 14 51.8**	**+1.0**
	SNR=25								
INCN	**Inchon**	**58.02**	**327**	P		**P**		**22 14 51.8**	**+1.0**
	SNR=25								
INCN	**Inchon**	**58.02**	**327**	*e*P		**P**		**22 14 51.4**	**+0.7**
	comp=Z,441nm,1.2s								
INCN				*e*PcP		**PcP**		**22 15 44.6**	**+2.1**
INCN				LR		LR			
	comp=Z,3μm,20.0s								
GZH	**Guangzhou**	**58.15**	**305**	P		**P**		**22 14 52.8**	**+0.9**
GZH				S		**S**		**22 22 54.9**	**+3.3**
GZH				pmax		pmax			
	comp=Z,2μm,10.6s								
NJ2	**Nanjing**	**59.04**	**317**	*e*P		**P**		**22 14 58.3**	**+0.4**
NJ2				PcP		**PcP**		**22 15 47.4**	**+0.8**
NJ2				S		**S**		**22 23 01.9**	**-1.0**
NJ2				pmax		pmax			
	comp=Z,120nm,1.1s								
NJ2				pmax		pmax			
	comp=Z,1μm,11.1s								
NJ2				LR		LR			
	comp=Z,3μm,17.4s								
NJ2				LR		LR			
	comp=Z,2μm,16.8s								
NJ2				LR		LR			
	comp=Z,3μm,20.1s								
QIZ	**Qiongzhong**	**59.22**	**299**	P		**P**		**22 14 59.3**	**-0.1**
QIZ				PP		**PP**		**22 17 12.1**	**+1.5**
QIZ				S		**S**		**22 23 07.0**	**+1.3**
QIZ				LR		LR			
	comp=Z,3μm,22.7s								
QIZ				LR		LR			
	comp=Z,6μm,23.1s								
QIZ	**Qiongzhong**	**59.22**	**299**	PFAKE				22 15 10.0	+11
QIZ				LR		LR			
	comp=Z,5μm,22.0s								
MYKOM	**Kota Tinggi**	**59.24**	**278**	⇓P		**P**		**22 14 59.4**	**-0.2**
MYKOM	**Kota Tinggi**	**59.24**	**278**	*e*P		**P**		**22 14 58.8**	**-0.8**
	comp=Z,46nm,1.2s								
MYKOM				LR		LR			
	comp=Z,1μm,21.0s								
YSS	**Yuzh-Sakhalins**	**59.58**	**345**	⇑*i*P		**P**		**22 15 02.5**	**+1.2**
YSS				*e*				22 15 47.1	
YSS				*e*PPP		PPP		22 18 37.0	
YSS				*e*S		**S**		**22 23 08.4**	**-0.8**
YSS				*e*SS		**sS**		**22 23 22.0**	**-2.9**
YSS				*e*PS		**PnS**		**22 23 34.0**	**+9.4**
YSS				*e*SSS		SSS		22 29 28.0	
YSS				pmax		pmax			
	comp=Z,1μm,2.6s								
YSS				pmax		pmax			
	comp=N,470nm,2.3s								
YSS				pmax		pmax			
	comp=E,310nm,2.4s								
YSS				pmax		pmax			
	comp=Z,260nm,1.3s								
YSS				pmax		pmax			
	comp=E,110nm,1.1s								
YSS	**Yuzh-Sakhalins**	**59.58**	**345**	*e*P		**P**		**22 15 01.9**	**+0.6**
	comp=E,533nm,1.3s								
YSS				LR		LR			
	comp=Z,2μm,20.0s								
MSHR	**Mys Shultsa**	**59.78**	**334**	*de*P		**P**		**22 15 03.3**	**+0.5**
KGM	**Kluang**	**59.80**	**278**	⇓P		**P**		**22 15 00.0**	**-3.5**
KGM	**Kluang**	**59.80**	**278**	⇓P		**P**		**22 15 05.5**	**+1.9**
USRK	**Ussuriysk Ar.**	**60.76**	**336**	P		**P**		**22 15 10.1**	**+0.7**
	comp=Z,324nm,1.0s,baz=143,slow=6.5,SNR=205								
USRK				LR		LR		22 39 11.9	
	comp=Z,3μm,21.8s,baz=142,slow=34								
KTGM	**Kuala Trenggan**	**60.78**	**282**	⇓P		**P**		**22 15 10.9**	**+0.6**
KTGM	**Kuala Trenggan**	**60.78**	**282**	⇓P		**P**		**22 15 13.7**	**+3.4**
SKR	**Severo-Kuril's**	**60.96**	**356**	*ci*P		**P**		**22 15 11.8**	**+1.1**
SKR				*e*S		**S**		**22 23 19.5**	**-7.3**
SKR				*e*SS		SS		22 27 14.6	-12
SKR				pmax		pmax			
	comp=Z,900nm,2.2s								
SKR				pmax		pmax			
	comp=Z,227nm,1.5s								
SKR				MLR		MLR			
	comp=Z,4μm,18.0s								
SKR				MLR		MLR			
	comp=Z,4μm,17.0s								
RKT	**Rikitea**	**61.16**	**111**	*e*S		**S**		**22 23 36.7**	**+6.1**
	comp=Z,1μm,31.8s								
RKT				*e*LQ		LQ		22 30 52.9	
	comp=Z,9μm,33.2s								
RKT				*e*LR		LR		22 33 31.0	
	comp=Z,16μm,28.2s,baz=275								
WHN	**Wuhan**	**61.28**	**313**⇓	*i*P		**P**		**22 15 13.1**	**-0.2**
WHN				sP		**pP**		**22 15 23.8**	**+1.0**
WHN				PcP		**PcP**		**22 15 59.6**	**+4.0**
WHN				PP		**PP**		**22 17 30.0**	**+1.4**
WHN				S		**S**		**22 23 37.3**	**+5.6**
WHN				pmax		pmax			
	comp=Z,89nm,0.8s								
WHN				pmax		pmax			
	comp=Z,1μm,5.1s								
WHN				LR		LR			
	comp=Z,2μm,12.4s								
WHN				LR		LR			
	comp=Z,10μm,19.4s								
WHN				LR		LR			
	comp=Z,11μm,18.9s								
UBPT	**Khong Chiam**	**61.62**	**294**	P		**P**		**22 15 20.4**	**+4.5**
BKNI	**Bangkinang**	**61.67**	**276**	*e*P		**P**		**22 15 17.4**	**+1.2**
	comp=Z,141nm,0.7s								
DL2	**Dalian**	**61.80**	**325**⇑	*i*P		**P**		**22 15 16.8**	**+0.2**
DL2				S		**S**		**22 23 36.9**	**-1.1**
DL2				pmax		pmax			
	comp=Z,260nm,1.2s								
DL2				pmax		pmax			
	comp=Z,2μm,9.1s								
DL2				LR		LR			
	comp=Z,3μm,18.3s								
DL2				LR		LR			
	comp=Z,4μm,17.5s								
DL2				LR		LR			
	comp=Z,5μm,18.8s								
MDJ	**Mudanjiang**	**62.10**	**334**	P		**P**		**22 15 18.8**	**+0.3**
MDJ				pP		pP		22 15 25.1	-2.9
MDJ				sP		sP		22 15 27.6	-4.1
MDJ				PP		**PP**		**22 17 34.5**	**-1.1**
MDJ				S		**S**		**22 23 46.5**	**+5.0**
MDJ				ScS		**ScS**		**22 25 09.4**	**+1.1**
MDJ				SS		**SS**		**22 27 43.3**	**-1.7**
MDJ				pmax		pmax			
	comp=Z,280nm,1.3s								
MDJ				pmax		pmax			
	comp=Z,1μm,11.1s								
MDJ				LR		LR			
	comp=Z,3μm,21.0s								
MDJ				LR		LR			
	comp=Z,2μm,26.0s								
MDJ				LR		LR			
	comp=Z,4μm,22.6s								
MDJ	**Mudanjiang**	**62.10**	**334**	*e*P		**P**		**22 15 19.3**	**+0.8**
	comp=Z,482nm,1.3s								
MDJ				LR		LR			
	comp=Z,4μm,22.0s								
IPM	**Ipoh**	**62.60**	**281**	PFAKE				22 15 30.0	+7.4
IPM				LR		LR			
	comp=Z,2μm,21.0s								
TIA	**Tai'an**	**62.74**	**320**	⇑P		**P**		**22 15 22.3**	**-0.7**
TIA				PP		**PP**		**22 17 45.3**	**+3.9**
TIA				S		**S**		**22 23 50.8**	**+0.8**
TIA				pmax		pmax			
	comp=Z,90nm,0.7s								
TIA				pmax		pmax			
	comp=Z,2μm,3.8s								
TIA				LR		LR			
	comp=Z,2μm,18.4s								
TIA				LR		LR			
	comp=Z,2μm,17.8s								
TIA				LR		LR			
	comp=Z,3μm,21.4s								
SNY	**Shenyang**	**62.81**	**328**	⇑P		**P**		**22 15 22.8**	**-0.5**
SNY				S		**S**		**22 23 55.8**	**+5.3**
SNY				pmax		pmax			
	comp=Z,73nm,1.5s								
SNY				pmax		pmax			
	comp=Z,1μm,14.9s								
SNY				LR		LR			
	comp=Z,3μm,17.7s								
SNY				LR		LR			
	comp=Z,3μm,17.1s								
SNY				LR		LR			
	comp=Z,4μm,19.2s								
PET	**Petropavlovsk**	**63.15**	**358**	*ce*P		**P**		**22 15 25.1**	**-0.2**
PET				*i* S		**S**		**22 23 52.8**	**-1.6**
PET				*e*SS		**SS**		**22 27 58.5**	**

HABR pmax pmax
comp=Z,249nm,1.5s
HABR pmax pmax
comp=N,68nm,1.5s
HABR pmax pmax
comp=Z,974nm,1.9s
HABR MLR MLR
comp=Z,2μm,19.0s
PEA0 Petropavlovsk- 63.28 357 *e*P **P 22 15 25.5 -0.8**
PEA0B Petropavlovsk- 63.28 357 *e*P **P 22 15 26.2 0.0**
comp=Z,474nm,1.3s
PEA0B LR LR
comp=Z,3μm,20.0s
PETK Petropavlovsk- 63.28 357 P **P 22 15 26.5 +0.3**
comp=Z,95nm,0.9s,baz=134,slow=6.4,SNR=68
PETK LR LR 22 40 03.6
comp=Z,2μm,20.6s,baz=176,slow=33
PEA1 Petropavlovsk- 63.28 357 *e*P **P 22 15 26.5 +0.3**
CN2 Changchun 63.34 331⇑ *i*P **P 22 15 26.9 +0.1**
CN2 PcP **PcP 22 16 06.4 +2.7**
CN2 *e*S **S 22 23 54.5 -2.6**
CN2 pmax pmax
comp=Z,300nm,1.2s
CN2 pmax pmax
comp=Z,1μm,7.0s
CN2 LR LR
comp=Z,5μm,19.0s
CN2 LR LR
comp=Z,4μm,19.0s
CN2 LR LR
comp=Z,5μm,20.0s
SMY Shemya 63.62 8 *e*P **P 22 15 28.9 +0.5**
SMY pmax pmax
comp=Z,442nm,1.5s
SMY MLR MLR
comp=Z,4μm,20.0s
SMY Shemya 63.62 8 *e*P **P 22 15 28.9 +0.5**
comp=Z,442nm,1.5s
SMY LR LR
comp=Z,4μm,20.0s
CHBT CHBT 63.65 290 P **P 22 15 32.5 +3.1**
comp=Z,72nm,0.9s,comp=Z,1μm
SKLT Songkhla 63.67 283 P **P 22 15 32.0 +2.4**
comp=Z,43nm,0.8s,comp=Z,1μm
PSI Prapat 64.26 278 P **P 22 15 32.6 -1.0**
comp=Z,18nm,0.7s,baz=54,slow=4.7,SNR=9.4
PSI Prapat 64.26 278 *e*P **P 22 15 33.8 +0.1**
comp=Z,153nm,1.8s
SRAK Srakaew 64.31 291 P **P 22 15 37.6 +3.8**
comp=Z,47nm,0.9s
NONG Nongkai 64.69 296 P **P 22 15 35.8 -0.4**
comp=Z,50nm,0.9s,comp=Z,6μm
ENH Enshi 64.70 310 *e*P **P 22 15 35.4 -0.8**
comp=Z,150nm,1.0s
ENH LR LR
comp=Z,2μm,22.0s
CHAI Chaiyaphum 64.98 293 P **P 22 15 37.5 -0.7**
comp=Z,9.3nm,0.8s,comp=Z,86nm
KLR Kul'dur 65.03 339 PKP2bc **P'P'bc 22 44 28.9 +4.5**
comp=Z,1.5nm,0.8s,baz=8.2,slow=9.5,SNR=4.1
KLR Kul'dur 65.03 339*c i*P **P 22 15 37.1 -0.7**
KLR Kul'dur 65.03 339*c i*P **P 22 15 37.1 -0.7**
PATY Pattaya 65.06 289 P **P 22 15 43.0 +4.3**
GYA Guiyang 65.09 305⇑ *i*P **P 22 15 38.3 -0.5**
GYA pP pP 22 15 48.4 0.0
GYA PP **PP 22 18 07.8 +5.4**
GYA ScP 22 20 14.3
GYA S **S 22 24 18.0 -1.8**
GYA sS sS 22 24 33.3 -2.3
GYA SKS **SKSac 22 25 31.5 -0.6**
GYA SS **SS 22 28 36.0 +3.4**
GYA pmax pmax
comp=Z,50nm,1.0s
GYA pmax pmax
comp=Z,760nm,14.3s
GYA LR LR
comp=Z,2μm,22.3s
GYA LR LR
comp=Z,2μm,21.0s
GYA LR LR
comp=Z,3μm,21.3s
SURA Surathani 65.14 285 P **P 22 15 42.2 +3.0**
comp=Z,36nm,1.2s,comp=Z,19μm
GSI Gunungsitoli 65.26 276 *e*P **P 22 15 38.4 -1.6**
comp=Z,112nm,1.1s
BJT Baijiatuau 65.71 323 *e*P **P 22 15 42.2 -0.2**
BJT pmax pmax
comp=Z,164nm,1.1s
BJT MLR MLR
comp=Z,5μm,21.0s
BJT Baijiatuau 65.71 323 *e*P **P 22 15 42.2 -0.2**
comp=Z,164nm,1.1s
BJT LR LR
comp=Z,5μm,21.0s
BJI Beijing 65.72 323 P **P 22 15 42.0 -0.4**
BJI S **S 22 24 30.1 +3.5**
BJI pmax pmax
comp=Z,81nm,1.3s
BJI pmax pmax
comp=Z,2μm,7.4s
BJI LR LR
comp=Z,3μm,23.7s
BJI LR LR
comp=Z,3μm,21.5s
BJI LR LR
comp=Z,4μm,22.1s
NKL Nikolayevsk 65.81 346 *i*P **P 22 15 42.3 -0.4**
NKL pmax pmax
comp=N,60nm,0.9s
NKL pmax pmax
comp=E,30nm,0.9s
NKL pmax pmax
comp=Z,210nm,0.9s
NKL pmax pmax
comp=N,600nm,10.0s
NKL pmax pmax
comp=Z,2μm,8.0s
NKL MLR MLR
comp=E,1μm,19.0s
NKL MLR MLR
comp=N,2μm,18.0s
NKL MLR MLR
comp=Z,4μm,18.0s
SURT Suratani 65.88 285 P **P 22 15 47.4 +3.4**
comp=Z,21nm,2.2s
PKDT Phuket 66.04 283 P **P 22 15 49.2 +4.2**
comp=Z,46nm,1.3s
PBKT Sadao Pong 66.13 293 P **P 22 15 45.5 0.0**
comp=Z,43nm,1.0s,comp=Z,1μm
LOEI Loei 66.18 294 P **P 22 15 42.9 -3.0**
comp=Z,159nm,0.9s,comp=Z,8μm
TIY Taiyuan 66.64 319 *e*P **P 22 15 50.4 +1.8**
TIY S **S 22 24 39.4 +1.2**
TIY pmax pmax
comp=Z,550nm,2.2s
TIY pmax pmax
comp=Z,730nm,7.4s
TIY LR LR
comp=Z,2μm,17.0s
TIY LR LR
comp=Z,2μm,17.2s
TIY LR LR
comp=Z,2μm,17.0s
UTTA Uttaradit 66.89 294 P **P 22 15 50.1 -0.3**
comp=Z,9.6nm,0.8s,comp=Z,81nm
XAN Xi'an 67.03 314 P **P 22 15 50.6 -0.5**
XAN PP **PP 22 18 24.3 +5.1**
XAN S **S 22 24 44.6 +1.6**
XAN pmax pmax
comp=Z,66nm,0.7s
XAN pmax pmax
comp=Z,920nm,11.9s
XAN LR LR
comp=Z,1μm,18.0s
XAN LR LR
comp=Z,3μm,19.3s
XAN LR LR
comp=Z,4μm,20.6s
SRDT SRDT 67.11 290 P P 22 15 56.9 +5.1
comp=Z,137nm,1.9s
VNDA Vanda 67.20 180 P **P 22 15 50.9 -0.4**
comp=Z,38nm,0.7s,baz=348,slow=6.8,SNR=130
VNDA LR LR 22 41 55.0
comp=Z,2μm,18.7s,baz=360,slow=33
VNDA PKP2bc 22 44 18.7
comp=Z,3.4nm,1.1s,baz=240,slow=3.1,SNR=9.2
VNDA Vanda 67.20 180 *e*P **P 22 15 50.7 -0.6**
comp=Z,80nm,1.0s
SBA Scott Base 67.57 179 *e*P **P 22 15 55.0 +1.3**
SBA pmax pmax
comp=Z,80nm,1.0s
SBA MLR MLR
comp=Z,2μm,18.0s
SBA Scott Base 67.57 179 *e*P **P 22 15 55.0 +1.3**
comp=Z,80nm,1.0s
SBA LR LR
comp=Z,2μm,18.0s
SUKH Sukhothai 67.64 294 P **P 22 15 55.0 -0.1**
comp=Z,17nm,0.8s,comp=Z,117nm
KMI Kunming 67.73 303 P **P 22 15 57.1 +1.2**
KMI pP pP 22 16 04.8 -0.7
KMI sP sP 22 16 08.3 -0.8
KMI PP **PP 22 18 26.8 +1.2**
KMI S **S 22 24 53.6 +1.6**
KMI sS sS 22 25 05.3 -2.6
KMI SS **SS 22 29 13.8 -0.1**
KMI pmax pmax
comp=Z,78nm,1.0s
KMI pmax pmax
comp=Z,650nm,7.4s
KMI LR LR
comp=Z,1μm,20.3s
KMI LR LR
comp=Z,2μm,22.9s
KMI LR LR
comp=Z,4μm,22.1s
NIKH Nikolski High 67.73 18 *e*P **P 22 15 55.4 +0.4**
comp=Z,452nm,1.3s
NIKH LR LR
comp=Z,4μm,20.0s
LAMP Lampang 67.98 295 P **P 22 15 57.2 -0.1**
comp=Z,28nm,0.8s,comp=Z,224nm
CM01 Chiang Mai Arr 68.55 294 *e*P **P 22 16 00.2 -0.7**
CM31 Chiang Mai Arr 68.58 294 *e*P **P 22 16 01.2 +0.2**
CMAR Chiang Mai Arr 68.58 294 P **P 22 16 00.3 -0.7**
comp=Z,16nm,0.8s,baz=119,slow=4.8,SNR=24
CMAR LR LR 22 44 05.6
comp=Z,1μm,22.0s,baz=107,slow=34
CMAR PKPPKP **P'P'df 22 44 15.9 -1.1**
comp=Z,0.8nm,0.4s,baz=303,slow=4.2,SNR=3.8
CMAR Chiang Mai Arr 68.58 294*ce*P **P 22 16 00.7 -0.3**
CMAR pmax pmax
comp=Z,16nm,0.8s
CMMT Chiang Mai 68.69 295 P **P 22 16 03.6 +1.8**
comp=Z,40nm,1.3s,comp=Z,705nm
CHTO Chiang Mai 68.69 295 P **P 22 16 03.7 +1.9**
comp=Z,136nm,1.0s,comp=Z,3μm
CHTO Chiang Mai 68.69 295 *e*P **P 22 16 01.1 -0.7**
CHTO pmax pmax
comp=Z,135nm,1.9s
CHTO MLR MLR
comp=Z,2μm,22.0s
CHTO Chiang Mai 68.69 295 *e*P **P 22 16 01.1 -0.7**
comp=Z,135nm,1.9s
CHTO LR LR
comp=Z,2μm,22.0s
CMAI Chiengmai2 68.98 296 P **P 22 16 06.3 +2.6**
comp=Z,590nm,0.9s,comp=Z,56μm
HHC Hu-ho-hao-te 69.01 321 *e*P **P 22 16 03.8 +0.4**
HHC S **S 22 25 03.1 -3.4**
HHC ScS **SKiKP 22 25 55.3 +2.7**
HHC SS **SS 22 29 31.9 -1.0**
HHC pmax pmax
comp=Z,86nm,1.3s
HHC pmax pmax
comp=Z,1μm,7.1s
HHC LR LR
comp=Z,2μm,17.1s
HHC LR LR
comp=Z,2μm,17.0s
HHC LR LR
comp=Z,3μm,16.6s
UNV Unalaska Valle 69.22 19 *e*P **P 22 16 05.1 +0.8**
comp=Z,64nm,0.9s
UNV LR LR
comp=Z,5μm,19.0s
CD2 Chengdu 69.36 309⇑ P **P 22 16 05.3 -0.4**
CD2 PP **PP 22 18 39.1 -0.3**
CD2 S **S 22 25 09.3 -1.5**
CD2 SS **SS 22 29 38.5 0.0**
CD2 pmax pmax
comp=Z,180nm,0.7s
CD2 pmax pmax
comp=Z,1μm,6.6s
CD2 LR LR
comp=Z,3μm,23.8s
CD2 LR LR
comp=Z,4μm,25.8s
CD2 LR LR
comp=Z,4μm,27.3s
AKUT Akutan 69.70 19 PFAKE 22 16 20.0 +13
AKUT LR LR
comp=Z,3μm,20.0s
HIA Hailar 70.02 332*c i*P **P 22 16 09.7 +0.4**
HIA pmax pmax
comp=Z,175nm,1.0s
HIA Hailar 70.02 332 *e*P **P 22 16 09.8 +0.4**
comp=Z,435nm,1.2s
MA2 Magadan 70.25 354 *e*P **P 22 16 09.2 -1.3**
SPIA Saint Paul Isl 70.99 15 *e*P **P 22 16 19.2 +4.2**
comp=Z,377nm,1.4s
SPIA LR LR
comp=Z,2μm,20.0s
LZH Lanzhou 71.66 313⇑ P **P 22 16 20.6 +0.8**
LZH pP pP 22 16 27.8 -1.7
LZH sP sP 22 16 30.8 -2.3
LZH PP **PP 22 19 02.0 +2.7**
LZH S **S 22 25 43.1 +5.3**
LZH sS sS 22 25 50.3 -3.4
LZH SKS **SKSac 22 26 18.0 -3.6**
LZH SS **SS 22 30 16.5 +2.5**
LZH pmax pmax
comp=Z,410nm,1.5s
LZH pmax pmax
comp=Z,1μm,7.6s
LZH LR LR
comp=Z,3μm,16.5s
LZH LR LR
comp=Z,3μm,16.3s
LZH LR LR
comp=Z,4μm,18.2s
PBA Port Blair 72.33 286 *e*P P 22 16 24.6 +0.6
MIR Mirnyy 72.35 203 *i*P **P 22 16 24.0 +0.8**
MIR pmax pmax
comp=Z,12nm,1.6s
SDPT Sand Point 72.50 21 PFAKE 22 16 40.0 +16
SDPT LR LR
comp=Z,5μm,20.0s
DGPR DIGLIPUR 72.54 287 *e*P **P 22 16 25.3 0.0**
SEY Seymchan 73.41 355*ce*P **P 22 16 29.3 -0.1**
CLNS Chul'man 73.62 340 *e*P **P 22 16 32.1 +1.2**
CLNS *e* 22 16 50.5
CLNS *e* 22 26 49.9
CLNS *e*SS SS 22 30 31.9 -11
CLNS pmax pmax
comp=Z,212nm,1.4s
CLNS pmax pmax
comp=N,146nm,1.5s
CLNS pmax pmax
comp=E,44nm,1.4s
CHGN Chignik 73.98 22 *e*P **P 22 16 32.0 -0.9**
CIT Chita 74.78 331 *e*P **P 22 16 38.4 +0.6**
CIT *e* 22 16 48.4
CIT *e* 22 17 05.8
CIT pmax pmax
comp=Z,628nm,1.2s
SONA0 Songino Array 76.00 325 *e*P **P 22 16 45.5 +0.5**
SONM Songino Array 76.00 325 P **P 22 16 45.5 +0.5**
comp=Z,239nm,0.8s,baz=142,slow=6.0,SNR=397
SONM PKPPKP **P'P'df 22 44 04.6 +3.0**
comp=Z,0.3nm,0.5s,baz=222,slow=2.0,SNR=4.2
SONM LR LR 22 51 57.3
comp=Z,2μm,18.4s,baz=114,slow=37
SONA1 Songino Array 76.01 325 *e*P **P 22 16 44.5 -0.5**
GTA Gaotai 76.01 315⇑ P **P 22 16 45.1 -0.1**
GTA pP pP 22 16 53.0 -2.0
GTA sP PcP 22 16 55.8 -1.7
GTA PP **PP 22 19 33.8 -2.5**
GTA S **S 22 26 24.4 -2.3**
GTA sS sS 22 26 37.5 -5.3
GTA SKS **SKSac 22 26 48.5 -5.6**
GTA SS **SS 22 31 20.6 +0.4**
GTA pmax pmax
comp=Z,44nm,1.6s
GTA pmax pmax
comp=Z,700nm,5.0s
GTA LR LR
comp=Z,1μm,18.5s
GTA LR LR
comp=Z,3μm,18.5s
GTA LR LR
comp=Z,3μm,18.1s
YAK Yakutsk 76.43 345 LR LR 22 50 18.4
comp=Z,2μm,19.8s,baz=154,slow=36
YAK Yakutsk 76.43 345*c i*P **P 22 16 46.8 0.0**
YAK *e* 22 17 00.4
YAK *e**PP sP 22 17 12.7 +13
YAK *e* 22 19 36.2
YAK *e*PPP PPP 22 21 34.1
YAK *e*S **S 22 26 29.0 -0.9**
YAK *e* 22 26 53.6
YAK *e**SS **ScS 22 27 05.8 +5.8**
YAK pmax pmax
comp=Z,424nm,0.9s
YAK pmax pmax
comp=E,96nm,1.4s
YAK pmax pmax
comp=N,165nm,1.1s
YAK pmax pmax
comp=Z,68nm,1.4s
YAK pmax pmax
comp=N,108nm,1.7s
YAK pmax pmax
comp=E,35nm,1.7s
YAK smax smax
comp=N,188nm,3.9s
YAK smax smax
comp=E,341nm,5.9s
YAK Yakutsk 76.43 345 *e*P **P 22 16 46.4 -0.5**
comp=E,420nm,0.9s
GAMB Gambell 76.52 12 *e*P **P 22 16 47.9 +0.6**
comp=E,145nm,1.4s
GAMB LR LR
comp=Z,3μm,20.0s
OHAK Old Harbor 76.58 23 *e*P **P 22 16 48.3 +0.5**
comp=Z,198nm,1.4s
OHAK LR LR
comp=Z,4μm,20.0s
SHL Shillong 77.06 299 *e*P **P 22 16 50.1 -1.4**
SHL IAmb IAmb 22 16 55.3
comp=Z,63nm,1.2s
KDAK Kodiak Island 77.24 23 *e*P **P 22 16 51.7 +0.1**
KDAK pmax pmax
comp=Z,94nm,0.9s
KDAK MLR MLR
comp=Z,3μm,18.0s
KDAK Kodiak Island 77.24 23 *e*P **P 22 16 51.7 +0.1**
comp=Z,94nm,0.9s
KDAK LR LR
comp=Z,3μm,18.0s
BILL Bilibino 78.20 2*ce*P **P 22 16 56.8 +0.1**
BILL *e* 22 19 58.7
BILL *e*PPP PPP 22 21 48.0
BILL *e*S S 22 26 59.2 +10
BILL pmax pmax
comp=Z,280nm,1.4s
BILL MLR MLR
comp=Z,1μm,18.0s
BILL Bilibino 78.20 2 *e*P **P 22 16 57.2 +0.5**
comp=Z,258nm,1.1s
BOD Bodaibo 78.39 336 *e*P **P 22 16 57.6 -0.3**
BOD pmax pmax
comp=Z,219nm,1.4s
SVW2 Sparrevohn 78.56 19 *e*P **P 22 16 59.2 +0.4**
comp=Z,270nm,1.2s
SVW2 LR LR
comp=Z,4μm,20.0s
HOM Homer 78.90 22 *e*P **P 22 16 59.6 -1.1**
comp=Z,468nm,1.0s
HOM LR LR
comp=Z,4μm,20.0s
CNPM China Poot 78.96 22 *e*P **P 22 17 01.7 +0.6**
comp=Z,227nm,1.0s
CNPM LR LR
comp=Z,4μm,20.0s
LSA Lhasa 78.97 303 P **P 22 17 02.3 -0.1**
LSA S **S 22 26 59.3 -0.5**
LSA LR LR
comp=Z,610nm,20.7s
LSA LR LR
comp=Z,2μm,28.0s
LSA LR LR
comp=Z,2μm,21.6s
LSA Lhasa 78.97 303 *e*P **P 22 17 03.2 +0.8**
LSA pmax pmax
comp=Z,156nm,1.8s
LSA MLR MLR
comp=Z,3μm,21.0s
LSA Lhasa 78.97 303 *e*P **P 22 17 03.2 +0.8**
comp=Z,156nm,1.8s
LSA LR LR
comp=Z,3μm,21.0s
RSO Redoubt South 79.06 21 *e*P **P 22 17 01.5 -0.4**
ZAK Zakamensk 79.09 326 *e*P **P 22 17 02.2 +0.1**
ZAK pmax pmax
comp=Z,261nm,1.3s
IRK Irkutsk 79.53 328 *e*P **P 22 17 03.7 -0.7**
IRK *e*S **S 22 27 06.9 +3.0**
IRK pmax pmax
comp=Z,451nm,1.4s
TLY Talaya 79.57 327 P **P 22 17 04.8 +0.2**
comp=Z,73nm,0.7s,baz=163,slow=3.2,SNR=30
TLY LR LR 22 51 02.3
comp=Z,1μm,20.4s,baz=104,slow=35
TLY Talaya 79.57 327*c i*P **P 22 17 04.2 -0.4**
TLY *e* 22 17 14.2
TLY *e* 22 20 03.6
TLY *e*S **S 22 27 04.7 +0.4**
TLY pmax pmax
comp=Z,431nm,1.5s
TLY MLR MLR
comp=Z,2μm,17.0s
TLY Talaya 79.57 327 *e*P **P 22 17 04.8 +0.2**
TLY LR LR
comp=Z,2μm,19.0s
QSPA South Pole Qui 79.69 180 *e*P **P 22 17 04.3 -0.9**
QSPA LR LR
comp=Z,2μm,18.0s
TT01 Tatalina 79.77 18 *e*P **P 22 17 05.5 +0.1**
TTA Tatalina 79.79 18 *e*P **P 22 17 05.7 +0.1**
TTA MLR MLR
comp=Z,4μm,19.0s
TTA Tatalina 79.79 18 *e*P **P 22 17 05.7 +0.1**
TTA LR LR
comp=Z,4μm,19.0s
SPU Mount Spurr 79.81 21 *e*P **P 22 17 05.3 -0.4**
SEW Seward 80.02 22 *e*P **P 22 17 07.2 +0.5**
comp=Z,61nm,1.0s
SEW LR LR
comp=Z,3μm,22.0s
SUA Susitna One 80.47 21 *e*P **P 22 17 09.2 -0.1**
comp=Z,121nm,1.1s
SUA LR LR
comp=Z,2μm,20.0s
RC01 Rabbit Creek A 80.57 22 *e*P **P 22 17 10.2 +0.4**
comp=Z,71nm,1.1s
RC01 LR LR
comp=Z,4μm,20.0s
MID Middleton Isla 80.78 24 PFAKE 22 17 20.0 +9.1
MID LR LR
comp=Z,2μm,22.0s
PPLA Purkeypile 80.97 19 *e*P **P 22 17 11.6 -0.5**
comp=Z,83nm,1.2s
PPLA LR LR
comp=Z,4μm,20.0s
MOY Mondy 80.99 326 *e*P **P 22 17 12.2 -0.2**
MOY pmax pmax
comp=Z,253nm,2.2s
PMR Palmer 81.12 21 *e*P **P 22 17 13.1 +0.4**
PMR pmax pmax
comp=Z,100nm,1.0s
PMR MLR MLR
comp=Z,4μm,20.0s
PMR Palmer 81.12 21 *e*P **P 22 17 13.1 +0.4**
comp=Z,100nm,1.0s
PMR LR LR
comp=Z,4μm,20.0s
CAST Castle Rocks 81.37 19 *e*P **P 22 17 13.7 -0.3**

comp=Z,79nm,0.8s
CAST LR LR
comp=Z,4µm,19.0s
GLI Glacier Island 81.41 23 eP P 22 17 14.5 +0.2
comp=Z,73nm,0.9s
GLI LR LR
comp=Z,2µm,21.0s
SML Sawmill 81.55 21 eP P 22 17 15.5 +0.4
SML pmax pmax
comp=Z,193nm,1.4s
SML MLR MLR
comp=Z,4µm,22.0s
SML Sawmill 81.55 21 eP P 22 17 15.5 +0.4
comp=Z,192nm,1.4s
SML LR LR
comp=Z,4µm,22.0s
FID Port Fidalgo 81.56 23 eP P 22 17 14.9 -0.2
comp=Z,59nm,0.9s
FID LR LR
comp=Z,3µm,20.0s
EYAK Cordova Ski Ar 81.72 23 eP P 22 17 16.3 +0.5
comp=Z,126nm,1.4s
EYAK LR LR
comp=Z,5µm,21.0s
BOK Bokaro 81.78 296 eP P 22 17 16.3 -0.8
BOK IAmb IAmb 22 17 19.2
comp=Z,151nm,1.9s
KTH Kantishna Hill 81.84 19 eP P 22 17 16.1 -0.5
comp=Z,94nm,1.1s
KTH LR LR
comp=Z,4µm,20.0s
SCM Sheep Creek Mo 81.93 22 eP P 22 17 17.7 +0.6
SCM pmax pmax
comp=Z,99nm,0.9s
SCM MLR MLR
comp=Z,4µm,22.0s
SCM Sheep Creek Mo 81.93 22 eP P 22 17 17.7 +0.6
comp=Z,99nm,0.9s
SCM LR LR
comp=Z,4µm,22.0s
TRF Thorofare Moun 81.98 20 eP P 22 17 16.7 -0.7
comp=Z,50nm,1.0s
TRF LR LR
comp=Z,5µm,20.0s
RAGM Ragged Mountai 82.03 24 eP P 22 17 18.9 +1.2
comp=Z,126nm,1.4s
RAGM LR LR
comp=Z,4µm,20.0s
DIV Divide 82.07 23 eP P 22 17 18.3 +0.5
comp=Z,63nm,1.0s
DIV LR LR
comp=Z,4µm,20.0s
CHLP Challavanipeta 82.14 290 eP P 22 17 17.4 -1.6
BPAW Bear Paw Mtn. 82.20 19 eP P 22 17 17.9 -0.5
comp=Z,102nm,1.4s
BPAW LR LR
comp=Z,3µm,20.0s
KLU Klutina 82.24 22 eP P 22 17 19.3 +0.6
comp=Z,68nm,0.9s
KLU LR LR
comp=Z,2µm,19.0s
BMRM Bremner River 82.42 23 eP P 22 17 19.9 +0.3
comp=Z,146nm,1.2s
BMRM LR LR
comp=Z,5µm,22.0s
RND Reindeer 82.43 20 eP P 22 17 19.7 0.0
RND pmax pmax
comp=Z,427nm,1.8s
RND MLR MLR
comp=Z,3µm,20.0s
RND Reindeer 82.43 20 eP P 22 17 19.7 0.0
comp=Z,427nm,1.8s
RND LR LR
comp=Z,3µm,20.0s
MCK McKinley 82.62 20 eP P 22 17 20.5 -0.1
MCK pmax pmax
comp=Z,204nm,1.1s
MCK MLR MLR
comp=Z,4µm,20.0s
MCK McKinley 82.62 20 eP P 22 17 20.5 -0.1
comp=Z,204nm,1.1s
MCK LR LR
comp=Z,4µm,20.0s
VIS Vishakhapatnam 82.63 289 eP P 22 17 21.0 -0.6
DHY Denali Highway 82.72 21 eP P 22 17 21.6 +0.3
comp=Z,50nm,1.1s
DHY LR LR
comp=Z,4µm,20.0s
BWN Browne 82.74 19 eP P 22 17 21.3 +0.2
comp=Z,815nm,1.9s
BWN LR LR
comp=Z,5µm,20.0s
CRQM Cirque 82.86 24 eP P 22 17 22.9 +0.8
comp=Z,105nm,0.9s
CRQM LR LR
comp=Z,2µm,19.0s
GUN Gumba 82.87 300 eP P 22 17 22.1 -1.0
comp=Z,554nm,1.4s
MLY Manley 82.92 18 eP P 22 17 22.2 0.0
comp=Z,119nm,1.2s
MLY LR LR
comp=Z,4µm,20.0s
PALK Pallekele 82.93 279 P P 22 17 23.4 0.0
comp=Z,29nm,0.8s,baz=116,slow=3.0,SNR=9.7
PALK Pallekele 82.93 279 eP P 22 17 24.9 +1.5
PALK pmax pmax
comp=Z,108nm,1.4s
PALK MLR MLR
comp=Z,900nm,22.0s
PALK Pallekele 82.93 279 eP P 22 17 24.9 +1.5
comp=Z,108nm,1.4s
PALK LR LR
comp=Z,900nm,22.0s
PKIN Phulchoki 83.20 300 eP P 22 17 24.0 -0.7
comp=Z,100nm,0.8s
PAX Paxson 83.33 21 eP P 22 17 24.5 +0.2
PAX pmax pmax
comp=Z,35nm,1.2s
PAX MLR MLR
comp=Z,4µm,20.0s
PAX Paxson 83.33 21 eP P 22 17 24.5 +0.2
comp=Z,35nm,1.2s
PAX LR LR
comp=Z,4µm,20.0s
BALM Baldy 83.34 24 eP P 22 17 25.0 +0.5
BALM pmax pmax
comp=Z,66nm,0.9s
BALM MLR MLR
comp=Z,2µm,18.0s
BALM Baldy 83.34 24 eP P 22 17 25.0 +0.5
comp=Z,66nm,0.9s
BALM LR LR
comp=Z,2µm,18.0s
KKN Kakani 83.35 300 eP P 22 17 24.7 -0.7
WRH Wood River Hil 83.39 19 eP P 22 17 24.0 -0.5
comp=Z,67nm,0.9s
WRH LR LR
comp=Z,5µm,20.0s
DMN Daman 83.45 299 eP P 22 17 25.0 -1.0
comp=Z,592nm,1.2s
CCB Clear Creek Bu 83.59 19 eP P 22 17 24.6 -1.0
comp=Z,37nm,0.9s
CCB LR LR
comp=Z,4µm,20.0s
YKU2 Yakutat 83.59 26 PFAKE 22 17 40.0 +14
YKU2 LR LR
comp=Z,3µm,22.0s
MDM Murphy Dome 83.66 19 eP P 22 17 25.7 -0.3
comp=Z,124nm,1.1s
MDM LR LR
comp=Z,4µm,20.0s
PCA Pinnacle 83.67 25 eP P 22 17 27.2 +1.0
comp=Z,227nm,1.0s
PCA LR LR
comp=Z,4µm,20.0s
HDA Harding Lake 83.72 20 eP P 22 17 26.4 +0.2
comp=Z,102nm,0.8s
HDA LR LR
comp=Z,3µm,20.0s
COLA College 83.73 19 eP P 22 17 26.1 -0.1
COLA pmax pmax
comp=Z,93nm,0.8s
COLA MLR MLR
comp=Z,4µm,21.0s
COLA College 83.73 19 eP P 22 17 26.1 -0.1
comp=Z,93nm,0.8s
COLA LR LR
comp=Z,4µm,21.0s
MENT Mentasta 83.94 22 eP P 22 17 28.1 +0.7
comp=Z,55nm,0.8s
MENT LR LR
comp=Z,2µm,21.0s
GKN Gorkha 83.96 300 eP P 22 17 27.3 -1.2
comp=Z,763nm,1.4s
IL1 Eielson Array 83.98 20 eP P 22 17 25.0 -2.5
ILAR Eielson Array 83.98 20 P P 22 17 26.3 -1.2
comp=Z,57nm,1.1s,baz=242,slow=4.5,SNR=127
ILAR PKKPbc PKKPbc 22 35 44.4 -1.4
comp=Z,0.7nm,0.9s,baz=21,slow=3.1,SNR=4.3
ILAR PKPPKP P'P'df 22 43 48.4 +2.4
comp=Z,0.4nm,0.9s,baz=0.0,slow=2.9,SNR=3.1
ILAR LR LR 22 50 27.2
comp=Z,3µm,19.8s,baz=234,slow=32
ILB Eielson Array 83.98 20 eP P 22 17 26.7 -0.8
DIB Dawson Inlet, 84.00 33 eP P 22 17 26.9 -1.0
comp=Z,138nm,1.2s
DHAK Deception Hill 84.00 27 eP P 22 17 29.7 +1.8
comp=Z,129nm,1.2s
DHAK LR LR
comp=Z,4µm,22.0s
MAW Mawson 84.06 202 P P 22 17 27.7 -0.3
comp=Z,33nm,1.0s,baz=102,slow=7.0,SNR=28
MAW PKKPbc PKKPbc 22 35 42.5 -2.3
comp=Z,1.7nm,0.8s,baz=309,slow=4.7,SNR=3.8
MAW LR LR 22 49 44.6
comp=Z,1µm,22.0s,baz=84,slow=32
MAW Mawson 84.06 202 P P 22 17 27.1 -0.9
baz=84,SNR=27
MAW Mawson 84.06 202 eP P 22 17 27.7 -0.3
MAW pmax pmax
comp=Z,22nm,1.1s
MAW Mawson 84.06 202 eP P 22 17 27.7 -0.3
comp=Z,22nm,1.1s
PVM Polavaram 84.11 289 eP P 22 17 26.9 -2.4
DOT Dot Lake 84.24 21 eP P 22 17 29.0 0.0
comp=Z,230nm,1.0s
DOT LR LR
comp=Z,11µm,20.0s
MDRS Chennai 84.53 284 eP P 22 17 29.4 -2.0
COLD Coldfoot 84.59 17 PFAKE 22 17 40.0 +9.4
COLD LR LR
comp=Z,4µm,20.0s
CRAG Craig 84.66 31 PFAKE 22 17 40.0 +8.8
CRAG LR LR
comp=Z,4µm,20.0s
JCC Jacoby Creek, 84.71 47 PFAKE 22 17 40.0 +8.3
JCC LR LR
comp=Z,2µm,20.0s
TIXI Tiksi 84.72 350 ceP P 22 17 30.0 -1.1
TIXI pmax pmax
comp=Z,223nm,1.7s
TIXI MLR MLR
comp=Z,1µm,18.0s
TIXI Tiksi 84.72 350 eP P 22 17 31.1 -0.1
comp=Z,192nm,1.3s
TIXI LR LR
comp=Z,2µm,20.0s
MCCM Marconi Confer 84.74 50 PFAKE 22 17 40.0 +8.0
MCCM LR LR
comp=Z,2µm,18.0s
KMRM Mail Ridge 84.75 48 eP P 22 17 34.0 +1.8
comp=Z,78nm,1.0s
KMRM LR LR
comp=Z,3µm,20.0s
KOLN Koldanda 84.79 299 eP P 22 17 31.9 -0.8
comp=Z,146nm,0.9s
HOPS Hopland Field 84.85 49 eP P 22 17 33.2 +0.7
comp=Z,111nm,1.1s
HOPS LR LR
comp=Z,4µm,19.0s
KHMM Horse Mountain 84.94 47 eP P 22 17 34.6 +1.4
comp=Z,156nm,1.3s
KHMM LR LR
comp=Z,2µm,20.0s
GDXM Geysers 85.00 49 PFAKE 22 17 50.0 +17
GDXM LR LR
comp=Z,5µm,18.0s
KRMB Red Mountain 85.02 46 eP P 22 17 35.7 +2.2
comp=Z,101nm,1.2s
KRMB LR LR
comp=Z,1µm,19.0s
SKHT Srikalahasti 85.18 285 eP P 22 17 33.8 -0.9
HYT Haines Junctio 85.21 25 eP P 22 17 35.2 +1.2
comp=Z,53nm,0.9s
HYT LR LR
comp=Z,3µm,20.0s
ADKI Addanki 85.37 287 eP P 22 17 33.9 -1.6
PYUN Piuthan 85.39 299 eP P 22 17 35.2 -0.6
comp=Z,254nm,1.1s
SAO San Andreas Ge 85.43 52 eP P 22 17 37.3 +1.8
SAO pmax pmax
comp=Z,76nm,1.1s
SAO MLR MLR
comp=Z,5µm,20.0s
SAO San Andreas Ge 85.43 52 eP P 22 17 37.3 +1.8
comp=Z,76nm,1.1s
SAO LR LR
comp=Z,5µm,20.0s
L02D Cave Junction, 85.43 46 P P 22 17 35.6 +0.2
baz=252
L02D S S 22 28 03.7 -1.0
baz=252
SKAG Skagway 85.47 27 eP P 22 17 35.8 +0.7
comp=Z,69nm,1.2s
SKAG LR LR
comp=Z,4µm,22.0s
WRAK Wrangell Islan 85.48 30 PFAKE 22 17 50.0 +15
WRAK LR LR
comp=Z,4µm,20.0s
KTRM Thompson Ridge 85.52 46 eP P 22 17 37.3 +1.3
FYU Fort Yukon 85.64 19 eP P 22 17 36.9 +1.1
comp=Z,86nm,1.4s
FYU LR LR
comp=Z,4µm,20.0s
N02D Trinity Center 85.71 47 P P 22 17 37.6 +0.7
baz=252,SNR=13
WDC Whiskeytown Da 85.71 48 eP P 22 17 37.7 +0.9
WDC pmax pmax
comp=Z,163nm,1.6s
WDC MLR MLR
comp=Z,3µm,20.0s
WDC Whiskeytown Da 85.71 48 eP P 22 17 37.7 +0.9
comp=Z,163nm,1.6s
WDC LR LR
comp=Z,3µm,20.0s
M02C Callahan 85.73 47 P P 22 17 36.8 -0.2
baz=252,SNR=13
PMPB Monarch Peak 85.78 52 eP P 22 17 38.9 +1.5
comp=Z,229nm,1.5s
PMPB LR LR
comp=Z,6µm,20.0s
EGAK Eagle 85.94 21 eP P 22 17 38.5 +1.1
comp=Z,218nm,1.1s
EGAK LR LR
comp=Z,4µm,22.0s
SNCC San Nicolas Is 86.00 55 P P 22 17 39.0 +0.6
baz=255
SNCC San Nicolas Is 86.00 55 eP P 22 17 41.1 +2.7
comp=Z,179nm,1.3s
SNCC LR LR
comp=Z,2µm,20.0s
BBB Bella Bella 86.01 35 PFAKE 22 17 50.0 +12
BBB LR LR
comp=Z,3µm,18.0s
HUMO Hull Mountain 86.03 46 PFAKE 22 17 50.0 +12
HUMO LR LR
comp=Z,2µm,20.0s
PAGB Antelope Grade 86.08 53 eP P 22 17 40.3 +1.5
comp=Z,94nm,1.0s
PAGB LR LR
comp=Z,6µm,20.0s
WMQ Urumqi 86.08 316 P P 22 17 38.1 -0.6
WMQ PP PP 22 20 58.9 -0.4
WMQ SKS SKSac 22 28 00.3 -2.3
WMQ SS SS 22 33 53.9 +3.8
WMQ pmax pmax
comp=Z,150nm,1.5s
WMQ pmax pmax
comp=Z,1µm,4.0s
WMQ LR LR
comp=Z,2µm,18.8s
WMQ LR LR
comp=Z,3µm,25.4s
WMQ LR LR
comp=Z,3µm,25.6s
I03D Drain, OR 86.09 44 P P 22 17 38.7 +0.2
baz=252,SNR=9.0
SCZ2 Santa Cruz Isl 86.11 55 P P 22 17 39.0 0.0
baz=255
NJS Nagarjunasagar 86.14 287 eP P 22 17 37.7 -1.7
SBC Santa Barbara 86.16 54 P P 22 17 39.2 +0.1
baz=255
SMMC Simmler 86.17 53 P P 22 17 39.1 -0.1
baz=255
O03D Paynes Creek 86.17 48 P P 22 17 38.8 -0.4
baz=253,SNR=14
ORV Oroville 86.18 49 eP P 22 17 39.6 +0.5
ORV pmax pmax
comp=Z,68nm,1.2s
ORV MLR MLR
comp=Z,2µm,18.0s
ORV Oroville 86.18 49 eP P 22 17 39.6 +0.5
comp=Z,68nm,1.2s
ORV LR LR
comp=Z,2µm,18.0s
DAWY Dawson 86.18 22 eP P 22 17 39.5 +0.8
comp=Z,270nm,1.4s
DAWY LR LR
comp=Z,3µm,20.0s
PKM Mcpherson Peak 86.20 54 P P 22 17 39.7 +0.1
baz=255
MPOR Mary's Peak 86.20 44 P P 22 17 40.1 +0.8
RCLA Racherla 86.24 286 eP P 22 17 37.5 -2.4
COR Corvallis 86.40 44 eP P 22 17 41.9 +1.8
COR pmax pmax
comp=Z,238nm,1.7s
COR MLR MLR
comp=Z,2µm,18.0s
COR Corvallis 86.40 44 eP P 22 17 41.9 +1.8
comp=Z,238nm,1.7s
COR LR LR
comp=Z,2µm,18.0s
AFDM Forest Hills D 86.40 50 eP P 22 17 40.6 +0.3
comp=Z,79nm,1.0s
AFDM LR LR
comp=Z,2µm,18.0s
BUOR Burton Butte 86.43 46 eP P 22 17 41.2 +0.6
SRLM Srisailam 86.43 287 eP P 22 17 40.2 -0.7
M04C Macdoel 86.57 47 P P 22 17 41.3 +0.1
baz=253,SNR=13
CMB Columbia Colle 86.59 51 eP P 22 17 41.7 +0.4
CMB pmax pmax
comp=Z,53nm,1.1s
CMB MLR MLR
comp=Z,2µm,20.0s
CMB Columbia Colle 86.59 51 eP P 22 17 41.7 +0.4
comp=Z,53nm,1.1s
CMB LR LR
comp=Z,2µm,20.0s
BLG Laguna Peak, P 86.59 55 P P 22 17 41.2 -0.1
baz=255
KMOR Kings Mountain 86.60 43 P P 22 17 41.5 +0.3
G03D McMinnville, O 86.62 43 P P 22 17 41.2 +0.1
baz=252,SNR=7.1
RPR Rampur 86.62 290 eP P 22 17 40.8 -1.0
F03A Seaside 86.64 42 eP P 22 17 42.5 +1.3
comp=Z,111nm,1.1s
F03A LR LR
comp=Z,3µm,20.0s
SCI2 San Clemente I 86.73 56 P P 22 17 41.8 -0.2
baz=256
I04A Tendick Farm, 86.77 45 P P 22 17 41.7 -0.3
baz=253,SNR=13
J04D Umpqua Nationa 86.81 45 P P 22 17 42.5 +0.1
baz=253,SNR=6.9
TRD Trivandrum 86.81 279 eP P 22 17 41.5 -1.3
OOW Octopus West 86.81 40 eP P 22 17 44.1 +1.9
E03A Lebam 86.84 42 eP P 22 17 43.5 +1.3
comp=Z,133nm,1.0s
E03A LR LR
comp=Z,3µm,20.0s
HBO Huckleberry Mo 86.84 45 P P 22 17 42.9 +0.3
BROR Big Rock Looko 86.88 44 eP P 22 17 42.7 +0.3
K04D Chiloquin, OR 86.88 46 P P 22 17 42.6 -0.1
baz=253
NLWA Neilton Lookou 86.91 41 eP P 22 17 43.7 +1.1
comp=Z,92nm,1.6s
NLWA LR LR
comp=Z,3µm,21.0s
CIS Catalina Islan 86.94 55 P P 22 17 42.9 -0.2
baz=256
OSI Osito Audit: C 87.00 54 P P 22 17 43.4 +0.1
baz=255
OSI Osito Audit: C 87.00 54 PFAKE 22 18 00.0 +17
OSI LR LR
comp=Z,5µm,20.0s
RCTC Rector, Farmer 87.01 52 P P 22 17 42.8 -0.5
baz=255
HYB Hyderabad 87.02 288 iP P 22 17 44.0 +0.2
HYBB Hyderabad (bro 87.02 288 eP P 22 17 42.6 -1.1
VES Vestal, Richgr 87.02 53 P P 22 17 43.4 +0.1
baz=255,SNR=5.4
ARVC Arvin 87.04 54 P P 22 17 43.5 0.0
baz=255
F04D Rainier, OR 87.06 42 P P 22 17 43.7 +0.4
baz=252
FMP Fort Macarthur 87.11 55 P P 22 17 43.7 -0.1
baz=256
KRAR Krasnoyarsk 87.22 328 diP P 22 17 45.0 +1.2
DECC Green Verdugo 87.22 55 P P 22 17 44.2 -0.2
baz=256
PASC Pasadena Art C 87.32 55 eP P 22 17 45.8 +1.0
comp=Z,126nm,1.3s
PASC LR LR
comp=Z,4µm,18.0s
F04A Amboy 87.40 43 eP P 22 17 46.2 +1.3
comp=Z,93nm,1.1s
F04A LR LR
comp=Z,2µm,20.0s
MWC Mount Wilson 87.43 55 eP P 22 17 46.2 +0.6
MWC pmax pmax
comp=Z,159nm,1.0s
MWC MLR MLR
comp=Z,4µm,20.0s
MWC Mount Wilson 87.43 55 eP P 22 17 46.2 +0.6
comp=Z,159nm,1.0s
MWC LR LR
comp=Z,4µm,20.0s
J05D Fort Rock, OR 87.43 45 P P 22 17 45.7 +0.3
baz=253,SNR=18
WAKR Walker 87.44 50 eP P 22 17 46.6 +1.0
comp=Z,103nm,1.2s
WAKR LR LR
comp=Z,2µm,19.0s
ISA Isabella, Lake 87.45 53 P P 22 17 45.5 -0.1
baz=256
ISA Isabella, Lake 87.45 53 eP P 22 17 46.7 +1.1
ISA pmax pmax
comp=Z,69nm,1.2s
ISA MLR MLR
comp=Z,6µm,20.0s
ISA Isabella, Lake 87.45 53 eP P 22 17 46.7 +1.1
comp=Z,69nm,1.2s
ISA LR LR
comp=Z,6µm,20.0s
PNTR Pine Nut 87.47 50 eP P 22 17 47.0 +1.3
comp=Z,79nm,1.0s
PNTR LR LR
comp=Z,2µm,19.0s
DLBC Dease Lake 87.47 29 eP P 22 17 44.8 -0.3
comp=Z,45nm,1.4s
DLBC LR LR
comp=Z,7µm,18.0s
SRSP Sriramsagar 87.52 290 eP P 22 17 45.8 -0.3
K05A Summer Lake 87.52 46 eP P 22 17 46.6 +0.8
comp=Z,150nm,1.4s
K05A LR LR
comp=Z,2µm,20.0s
ERK Elk Rock 87.57 42 P P 22 17 47.2 +1.3
PGC Sidney 87.57 40 eP P 22 17 47.4 +1.7
comp=Z,166nm,1.9s
PGC LR LR
comp=Z,5µm,20.0s
TDH Tom, Dick, Har 87.63 43 P P 22 17 46.7 +0.4
EDW2 Edwards Air Fo 87.64 54 P P 22 17 46.2 -0.2
baz=256,SNR=34
I05D Terrebonne, OR 87.66 44 P P 22 17 46.5 +0.1
baz=253,SNR=14
TDL Tradedollar La 87.66 42 P P 22 17 47.5 +1.1
MLAC Mammoth, Mammo 87.67 51 P P 22 17 46.7 -0.1
baz=255
MOD Modoc Plateau 87.71 47 eP P 22 17 47.4 +0.7

comp=Z,94nm,1.4s
MOD LR LR
comp=Z,2µm,21.0s
YERR Yerington 87.71 50 eP P 22 17 47.9 +1.0
comp=Z,192nm,1.9s
YERR LR LR
comp=Z,1µm,20.0s
URV Uravakonda 87.75 286 eP P 22 17 44.4 -2.9
BFSC Mount Baldy Ra 87.75 55 P P 22 17 46.5 -0.6
baz=256,SNR=20
PAHR Pah Rah Range 87.79 49 eP P 22 17 48.0 +0.8
comp=Z,104nm,1.2s
PAHR LR LR
comp=Z,2µm,19.0s
VFP Flag Point 87.86 43 P P 22 17 47.5 +0.1
TVH3 East Aurora ar 87.87 51 eP P 22 17 48.9 +1.2
comp=Z,39nm,1.0s
TVH3 LR LR
comp=Z,2µm,18.0s
109C Camp Elliot, M 87.88 56 P P 22 17 47.4 -0.2
baz=256
TVH2 Borealis Mine 87.92 51 PFAKE 22 18 00.0 +12
TVH2 LR LR
comp=Z,2µm,18.0s
TVH1 TV Hill, Hawth 87.93 50 eP P 22 17 47.3 -0.9
comp=Z,343nm,2.0s
TVH1 LR LR
comp=Z,2µm,21.0s
G05D Wamic, OR 87.94 43 P P 22 17 47.7 0.0
baz=253
CWC Cottonwood Cre 87.96 53 P P 22 17 48.0 -0.1
baz=256
MURC Murrieta 87.98 55 P P 22 17 47.6 -0.5
baz=256,SNR=6.0
TIN Tinemaha, Big 87.99 52 P P 22 17 48.3 +0.1
baz=256
LRMC Laurel Mtn Rad 88.04 54 P P 22 17 48.5 0.0
baz=256,SNR=5.9
LON Longmire 88.05 42 eP P 22 17 48.9 +0.8
LON pmax pmax
comp=Z,24nm,1.2s
LON MLR MLR
comp=Z,2µm,20.0s
LON Longmire 88.05 42 eP P 22 17 48.9 +0.8
comp=Z,24nm,1.2s
LON LR LR
comp=Z,2µm,20.0s
D05A Enumclaw 88.06 41 eP P 22 17 50.5 +2.4
comp=Z,242nm,1.4s
D05A LR LR
comp=Z,2µm,22.0s
A04D Lummi Island 88.06 40 P P 22 17 48.7 +0.6
baz=252
BAR Barrett 88.19 56 eP P 22 17 49.5 +0.4
comp=Z,63nm,1.1s
BAR LR LR
comp=Z,2µm,18.0s
DAC Darwin (Calif) 88.30 53 eP P 22 17 50.4 +0.7
DAC pmax pmax
comp=Z,209nm,1.7s
DAC MLR MLR
comp=Z,7µm,20.0s
DAC Darwin (Calif) 88.30 53 eP P 22 17 50.4 +0.7
comp=Z,209nm,1.7s
DAC LR LR
comp=Z,7µm,20.0s
B05A Bryant 88.31 40 P P 22 17 49.8 +0.6
baz=253
MPMC Manual Prospec 88.33 53 P P 22 17 49.6 -0.3
baz=256,SNR=52
BBRC Big Bear Solar 88.36 55 P P 22 17 50.0 -0.1
baz=256
G06A Carlson Farm, 88.40 44 eP P 22 17 50.4 +0.6
comp=Z,164nm,2.0s
G06A LR LR
comp=Z,2µm,18.0s
RRX Edison Barstow 88.44 54 P P 22 17 50.0 -0.2
baz=256
MONP2 Monument Peak 88.44 56 P P 22 17 50.4 -0.2
baz=257,SNR=24
PFO Pinyon Flats O 88.58 56 P P 22 17 50.9 -0.1
baz=257,SNR=5.7
PFO Pinyon Flats O 88.58 56 eP P 22 17 51.6 +0.6
PFO pmax pmax
comp=Z,58nm,1.1s
PFO MLR MLR
comp=Z,3µm,21.0s
PFO Pinyon Flats O 88.58 56 eP P 22 17 51.6 +0.6
comp=Z,58nm,1.1s
PFO LR LR
comp=Z,3µm,21.0s
TPFO Pinon Flats 88.58 56 P P 22 17 51.0 0.0
baz=257,SNR=7.5
IKP In-Ko-Pah, Jac 88.64 57 P P 22 17 51.8 +0.5
baz=257,SNR=28
GRAC Grapevine Rang 88.65 52 P P 22 17 51.4 +0.2
baz=256
GSC Goldstone, Bar 88.69 54 P P 22 17 51.2 -0.3
baz=256,SNR=16
GSC Goldstone, Bar 88.69 54 eP P 22 17 52.6 +1.1
GSC pmax pmax
comp=Z,115nm,1.5s
GSC MLR MLR
comp=Z,6µm,20.0s
GSC Goldstone, Bar 88.69 54 eP P 22 17 52.6 +1.1
comp=Z,115nm,1.5s
GSC LR LR
comp=Z,6µm,20.0s
B06A Marblemount 88.78 40 PFAKE 22 18 00.0 +8.6
B06A LR LR
comp=Z,3µm,19.0s
FURC Furnace Creek, 88.92 53 P P 22 17 52.3 -0.1
baz=256,SNR=25
LTY Liberty 88.94 42 PFAKE 22 18 00.0 +7.6
LTY LR LR
comp=Z,2µm,20.0s
HEC Hector,Ludlow 88.96 54 P P 22 17 52.5 -0.2
baz=257,SNR=6.7
SWSC Sam W. Stewart 88.97 56 P P 22 17 52.8 +0.1
baz=257,SNR=17
KLRI Killari 88.97 288 eP P 22 17 50.3 -2.8
C06D Leavenworth 88.98 41 P P 22 17 52.8 +0.4
baz=254
BELC Belle Mtn. Jos 89.04 55 P P 22 17 53.4 +0.2
baz=257,SNR=46
WVOR Wild Horse Val 89.04 47 eP P 22 17 54.0 +1.0
WVOR pmax pmax
comp=Z,176nm,1.4s
WVOR MLR MLR
comp=Z,3µm,19.0s
WVOR Wild Horse Val 89.04 47 eP P 22 17 54.0 +1.0
comp=Z,176nm,1.4s
WVOR LR LR
comp=Z,3µm,19.0s
LLLB Lillooet 89.15 38 eP P 22 17 53.8 +0.6
comp=Z,18nm,1.0s
LLLB LR LR
comp=Z,3µm,21.0s
BHPL Bhopal 89.22 294 eP P 22 17 52.9 -1.3
BHPL IAmb IAmb 22 17 56.6
comp=Z,12nm,0.5s
SHOC Shoshone, Teco 89.25 53 P P 22 17 54.0 +0.1
baz=257,SNR=6.8
E07A Sunnyside 89.29 42 PFAKE 22 18 10.0 +16
E07A LR LR
comp=Z,2µm,20.0s
BC3 Big Chuckawall 89.41 56 P P 22 17 55.2 +0.3
baz=257,SNR=21
TUQ Turquoise Moun 89.42 54 P P 22 17 55.0 0.0
baz=257,SNR=13
HAWA Hanford 89.46 43 eP P 22 17 56.8 +2.1
comp=Z,98nm,1.6s
HAWA LR LR
comp=Z,2µm,20.0s
GMRC Granite Mounta 89.49 55 P P 22 17 55.3 0.0
baz=257,SNR=31
TPNV Topopah Spring 89.51 52 P P 22 17 55.3 -0.1
baz=257,SNR=25
TPNV Topopah Spring 89.51 52 eP P 22 17 55.6 +0.2
TPNV pmax pmax
comp=Z,74nm,1.1s
TPNV MLR MLR
comp=Z,5µm,21.0s
TPNV Topopah Spring 89.51 52 eP P 22 17 55.5 +0.2
comp=Z,74nm,1.1s
TPNV LR LR
comp=Z,5µm,21.0s
G08A Pilot Rock 89.55 44 eP P 22 17 56.1 +0.7
comp=Z,70nm,1.4s
G08A LR LR
comp=Z,2µm,19.0s
BMN Battle Mountai 89.58 49 eP P 22 17 57.1 +1.5
BMN pmax pmax
comp=Z,53nm,1.1s
BMN MLR MLR
comp=Z,2µm,20.0s
BMN Battle Mountai 89.58 49 eP P 22 17 57.1 +1.5
comp=Z,54nm,1.1s
BMN LR LR
comp=Z,2µm,20.0s
IRM Iron Mountain 89.77 55 P P 22 17 56.7 +0.2
baz=257,SNR=53
GLA Glamis 89.79 56 P P 22 17 56.9 +0.3
baz=258,SNR=21
GLA Glamis 89.79 56 eP P 22 17 58.1 +1.5
GLA pmax pmax
comp=Z,147nm,1.1s
GLA MLR MLR
comp=Z,2µm,18.0s
GLA Glamis 89.79 56 eP P 22 17 58.1 +1.5
comp=Z,147nm,1.1s
GLA LR LR
comp=Z,2µm,18.0s
LDFC Landfair 89.99 54 eP P 22 17 58.9 +1.3
comp=Z,360nm,1.4s
LDFC LR LR
comp=Z,5µm,20.0s
D08A Wollman Farm, 90.04 42 eP P 22 17 58.2 +0.8
comp=Z,130nm,1.8s
D08A LR LR
comp=Z,2µm,20.0s
DDI Dehra Dun 90.09 301 eP P 22 17 58.9 +0.8
DDI IAmb IAmb 22 18 03.1
comp=Z,239nm,1.8s
B08A Colville Reser 90.11 41 eP P 22 17 58.0 +0.2
comp=Z,50nm,1.3s
B08A LR LR
comp=Z,3µm,20.0s
Y12C Blythe 90.18 56 P P 22 17 58.7 +0.4
baz=258,SNR=13
Y12C Blythe 90.18 56 eP P 22 17 59.5 +1.2
comp=Z,72nm,1.1s
Y12C LR LR
comp=Z,2µm,18.0s
SHPR Sheep Range 90.26 53 eP P 22 17 59.5 +0.6
comp=Z,107nm,1.1s
SHPR LR LR
comp=Z,7µm,20.0s
NEE2 Needles Airpor 90.32 55 P P 22 17 59.5 +0.5
baz=258
R11A Troy Canyon, C 90.33 51 P P 22 17 59.4 +0.1
baz=257,SNR=45
R11A Troy Canyon, C 90.33 51 eP P 22 17 59.5 +0.3
comp=Z,85nm,1.1s
R11A LR LR
comp=Z,2µm,20.0s
H06N1 SOCORRO T-PHAS 90.36 71 T T 23 58 20.8
SNR=72
H06S1 SOCORRO T 90.37 71 T T 23 58 22.3
SNR=22
INK Inuvik 90.38 20 eP P 22 17 58.7 +0.2
INK pmax pmax
comp=Z,139nm,1.8s
INK MLR MLR
comp=Z,6µm,21.0s
INK Inuvik 90.38 20 eP P 22 17 58.7 +0.2
comp=Z,138nm,1.8s
INK LR LR
comp=Z,6µm,21.0s
H06E1 SOCORRO T-PHAS 90.40 71 T T 23 58 20.0
SNR=35
E09A Wood Farm, Sta 90.42 43 eP P 22 18 00.3 +1.2
comp=Z,163nm,1.8s
E09A LR LR
comp=Z,2µm,20.0s
MK01 Makanchi Array 90.56 317 eP P 22 17 58.5 -1.3
MK31 Makanchi Array 90.57 317 eP P 22 17 59.9 -0.1
MK31 Makanchi Array 90.57 317 eP P 22 17 59.9 -0.1
MK32 Makanchi Array 90.57 317 eP P 22 17 59.5 -0.4
MK32 ePP PP 22 21 35.5 +0.3
MK32 ePKiKP PKiKP 22 22 54.5 +0.1
MKAR Makanchi Array 90.57 317 P P 22 17 59.5 -0.4
comp=Z,188nm,1.1s,baz=99,slow=6.3,SNR=90
MKAR PP PP 22 21 35.5 +0.3
comp=Z,13nm,1.0s,baz=108,slow=7.8,SNR=4.9
MKAR PKiKP PKiKP 22 22 54.5 +0.1
comp=Z,5.4nm,0.8s,baz=70,slow=1.9,SNR=5.5
MKAR LR LR 22 59 59.5
comp=Z,1µm,20.3s,baz=89,slow=36
MKAR Makanchi Array 90.57 317 eP P 22 17 59.9 -0.1
comp=Z,2µm,1.4s
BMO Blue Mountains 90.58 45 eP P 22 18 00.4 +0.3
BMO pmax pmax
comp=Z,99nm,1.5s
BMO MLR MLR
comp=Z,1µm,19.0s
BMO Blue Mountains 90.58 45 eP P 22 18 00.4 +0.3
comp=Z,99nm,1.5s
BMO LR LR
comp=Z,1µm,19.0s
113A Mohawk Valley, 90.60 57 eP P 22 18 00.9 +0.5
comp=Z,61nm,1.2s
113A LR LR
comp=Z,3µm,20.0s
PDMCI Parker Dam,Lak 90.61 55 P P 22 18 00.6 +0.3
baz=258,SNR=14
C09A Chrisman Ranch 90.65 42 eP P 22 18 00.7 +0.5
comp=Z,50nm,1.5s
C09A LR LR
comp=Z,2µm,20.0s
MAKZ Makanchi 90.78 317 eP P 22 18 00.7 -0.2
MAKZ pmax pmax
comp=Z,367nm,1.3s
MAKZ MLR MLR
comp=Z,2µm,20.0s
MAKZ Makanchi 90.78 317 eP P 22 18 00.7 -0.2
comp=Z,367nm,1.3s
MAKZ LR LR
comp=Z,2µm,20.0s
SRIG Santa Rosalia 90.82 63 PFAKE 22 18 10.0 +8.5
SRIG LR LR
comp=Z,3µm,19.0s
F10A Beach Ranch, E 90.90 43 eP P 22 18 01.9 +0.3
comp=Z,288nm,1.9s
F10A LR LR
comp=Z,2µm,18.0s
ZAA0 Zalesovo Array 90.90 325 eP P 22 18 00.3 -0.9
ZALV Zalesovo Beam 90.90 325 P P 22 17 59.8 -1.4
comp=Z,45nm,0.7s,baz=109,slow=5.2,SNR=49
ZALV PP PP 22 21 35.8 -1.8
comp=Z,7.5nm,1.0s,baz=94,slow=5.9,SNR=3.6
ZALV LR LR 22 58 06.2
comp=Z,2µm,21.1s,baz=83,slow=35
ZAA1 Zalesovo Array 90.90 325 eP P 22 17 59.8 -1.4
ZAA1 ePP PP 22 21 35.8 -1.8
W13A Hualapai Mount 90.98 55 eP P 22 18 03.3 +1.0
comp=Z,85nm,1.4s
W13A LR LR
comp=Z,4µm,20.0s
SMLA Simla 91.00 301 eP P 22 18 00.9 -1.3
SMLA IAmb IAmb 22 18 04.0
comp=Z,49nm,0.9s
214A Organ Pipe Nat 91.23 58 P P 22 18 03.7 +0.3
baz=259
MFID Camas Ranch 91.28 46 eP P 22 18 04.4 +0.9
comp=Z,60nm,1.1s
MFID LR LR
comp=Z,2µm,20.0s
SYO Syowa Base 91.43 198⇑ eP P 22 18 01.0 -2.5
SYO Syowa Base 91.43 198⇑ eX PcP 22 18 07.4 +3.0
Y14A Wickenburg 91.46 56 eP P 22 18 05.2 +0.8
comp=Z,142nm,1.4s
Y14A LR LR
comp=Z,13µm,18.0s
NEW Newport 91.52 41 P P 22 18 04.4 +0.1
baz=256
NEW Newport 91.52 41 eP P 22 18 04.7 +0.4
NEW pmax pmax
comp=Z,29nm,1.0s
NEW MLR MLR
comp=Z,2µm,18.0s
NEW Newport 91.52 41 eP P 22 18 04.7 +0.4
comp=Z,29nm,1.0s
NEW LR LR
comp=Z,2µm,18.0s
POO Poona 91.62 288 eP P 22 18 03.7 -1.7
SHLS Shalkode 91.68 313 eP P 22 18 01.1 -4.2
comp=Z,222nm,1.2s
SHLS eS SKSac 22 28 29.3 -6.8
PSUT Pine Spring 91.70 51 eP P 22 18 08.3 +2.7
comp=Z,63nm,1.2s
PSUT LR LR
comp=Z,2µm,18.0s
LCMT Little Creek M 91.87 53 eP P 22 18 07.5 +1.2
comp=Z,69nm,1.1s
LCMT LR LR
comp=Z,6µm,20.0s
CCUT Cedar City 91.89 52 eP P 22 18 06.9 +0.4
comp=Z,80nm,1.2s
CCUT LR LR
comp=Z,6µm,20.0s
UZB Uzynbulak 92.00 313 i P P 22 18 04.0 -2.8
comp=Z,223nm,1.2s
UZB i PP PP 22 21 42.8 -4.0
UZB i S SKSac 22 28 32.9 -5.0
UZB LRM MLR 23 02 06.4
comp=Z,269nm,15.4s
NVS Novosibirsk 92.03 325⇑ iP P 22 18 05.5 -0.9
NVS eS SKSac 22 28 38.1 +0.9
NVS pmax pmax
comp=N,660nm,1.2s
NVS pmax pmax
comp=E,155nm,1.2s
NVS pmax pmax
comp=Z,341nm,1.2s
NVS pmax pmax
comp=N,18nm,1.4s
NVS pmax pmax
comp=E,25nm,1.4s
NVS pmax pmax
comp=Z,28nm,1.4s
NVS smax smax
comp=N,16nm,2.5s
NVS smax smax
comp=E,51nm,2.5s
SZCU Shurtz Canyon 92.11 52 eP P 22 18 08.8 +1.3
comp=E,137nm,1.3s
SZCU LR LR
comp=Z,6µm,20.0s
SLBS Sierra La Lagu 92.19 66 eP P 22 18 09.3 +1.3
comp=Z,139nm,1.7s
SLBS LR LR
comp=Z,2µm,19.0s
KNB Kanab 92.20 53 eP P 22 18 09.2 +1.3
KNB pmax pmax
comp=Z,148nm,1.4s
KNB MLR MLR
comp=Z,5µm,20.0s
KNB Kanab 92.20 53 eP P 22 18 09.2 +1.3
comp=Z,148nm,1.4s
KNB LR LR
comp=Z,5µm,20.0s
HSIG 92.26 61 eP P 22 18 09.0 +0.8
comp=Z,86nm,1.4s
HSIG LR LR
comp=Z,3µm,20.0s
KPKS Kokpek 92.30 314 eP P 22 18 04.9 -3.3
comp=Z,374nm,1.2s
KPKS LRM MLR 23 00 59.0
comp=Z,755nm,17.9s
HLID Hailey 92.32 46 P P 22 18 08.7 +0.4
baz=258
HLID Hailey 92.32 46 eP P 22 18 09.5 +1.2
comp=Z,53nm,1.1s
HLID LR LR
comp=Z,2µm,20.0s
THN Thein Dam 92.46 302 eP P 22 18 08.0 -1.0
U15A North Rim 92.51 54 eP P 22 18 10.7 +1.1
comp=Z,166nm,1.8s
U15A LR LR
comp=Z,4µm,20.0s
PKCU Pink Cliffs 92.69 53 eP P 22 18 14.0 +3.6
comp=Z,119nm,1.4s
PKCU LR LR
comp=Z,5µm,20.0s
SEM Semipalatinsk 92.74 321 eP P 22 18 07.0 -3.2
SEM i PP PP 22 21 55.1 +2.7
SEM LRM MLR 23 01 08.1
comp=Z,498nm,19.2s
BGU Big Grassy Mou 92.80 49 eP P 22 18 11.4 +0.9
comp=Z,47nm,1.2s
BGU eS S 22 29 16.1 +1.9
BGU LR LR
comp=Z,1µm,20.0s
TCRU Three Creeks R 92.80 51 PFAKE 22 18 20.0 +9.3
TCRU LR LR
comp=Z,3µm,18.0s
TDK Taldyqorghan 92.81 315 eP P 22 18 07.7 -2.7
comp=Z,163nm,1.2s
TDK LRM MLR 23 01 04.2
comp=Z,501nm,20.6s
DUG Dugway, Tooele 92.82 50 P P 22 18 10.8 +0.2
baz=259
DUG Dugway, Tooele 92.82 50 PFAKE 22 18 20.0 +9.3
DUG LR LR
comp=Z,1µm,18.0s
X16A Lo Mia Camp, P 92.82 56 eP P 22 18 12.0 +1.1
comp=Z,16nm,1.0s
X16A LR LR
comp=Z,2µm,21.0s
MTPU Mount Pierson 92.90 52 eP P 22 18 13.1 +1.7
comp=Z,191nm,1.8s
MTPU LR LR
comp=Z,5µm,20.0s
BSMT Bassoo Peak 92.95 42 eP P 22 18 11.5 +0.4
TUC Tucson 92.98 58 P P 22 18 11.6 +0.1
baz=260
TUC Tucson 92.98 58 eP P 22 18 12.6 +1.1
TUC pmax pmax
comp=Z,14nm,1.0s
TUC MLR MLR
comp=Z,2µm,19.0s
TUC Tucson 92.98 58 eP P 22 18 12.6 +1.1
comp=Z,14nm,1.0s
TUC LR LR
comp=Z,2µm,19.0s
WUAZ Wupatki 93.07 55 P P 22 18 11.6 -0.4
baz=260
WUAZ Wupatki 93.07 55 eP P 22 18 12.8 +0.8
comp=Z,97nm,1.8s
WUAZ LR LR
comp=Z,3µm,20.0s
HVU Hansel Valley 93.15 48 eP P 22 18 13.3 +1.1
HVU pmax pmax
comp=Z,74nm,1.1s
HVU MLR MLR
comp=Z,3µm,18.0s
HVU Hansel Valley 93.15 48 eP P 22 18 13.3 +1.1
comp=Z,74nm,1.1s
HVU LR LR
comp=Z,3µm,18.0s
MSO Missoula 93.31 43 P P 22 18 12.4 -0.3
baz=259
MSO Missoula 93.31 43 eP P 22 18 13.6 +0.9
comp=Z,82nm,2.0s
MSO LR LR
comp=Z,2µm,18.0s
NLU North Lily Min 93.33 50 eP P 22 18 14.3 +1.1
comp=Z,33nm,1.1s
SWMT Swartz Lake 93.40 42 eP P 22 18 13.4 +0.3
MDOK Medeo 93.41 313 eP P 22 18 11.3 -2.1
comp=Z,92nm,1.7s
MDOK eS SKSac 22 28 41.7 -4.1
MDOK LRM MLR 23 00 29.7
comp=Z,734nm,21.4s
AAA Alma-Ata 93.52 313 eP P 22 18 11.3 -2.4
AAA pmax pmax
comp=Z,500nm,6.5s
AAA MLR MLR
comp=Z,2µm,20.0s
KSH Kashi 93.54 309 eP P 22 18 16.3 +2.3
KSH epP pP 22 18 24.4 +0.5
KSH ePP PP 22 22 04.3 +5.3
KSH S S 22 29 21.0 +0.3
KSH sS sS 22 29 34.8 -2.4
KSH SS SS 22 35 44.3 +5.7
KSH pmax pmax
comp=Z,15nm,1.0s
KSH pmax pmax
comp=Z,400nm,6.4s
KSH LR LR
comp=Z,730nm,14.2s

KSH LR LR
comp=Z,2µm,18.5s
KSH LR LR
comp=Z,3µm,19.4s
MCMT McKenzie Canyo 93.67 45 *eP* **P 22 18 15.6 +1.0**
MPU Maple Canyon 93.68 50 *eP* **P 22 18 16.9 +2.2**
comp=Z,70nm,1.5s
SLMT Seeley Lake 93.69 43 *eP* **P 22 18 15.3 +0.8**
CTU Camp Tracy 93.71 49 *eP* **P 22 18 16.6 +1.8**
comp=Z,123nm,1.0s
CTU LR LR
comp=Z,1µm,18.0s
WALA Waterton Lakes 93.77 41 *eP* **P 22 18 16.7 +1.9**
comp=Z,66nm,1.4s
WALA LR LR
comp=Z,2µm,18.0s
CHMT Chamberlain Mo 93.79 43 *eP* **P 22 18 15.4 +0.4**
KURK Kurchatov 93.82 321 PFAKE 22 18 30.0 +15
KURK LR LR
comp=Z,2µm,19.0s
KURBB Kurchatov Arra 93.86 321 PKiKP **PKiKP 22 22 59.4 -0.4**
comp=Z,3.4nm,0.7s,baz=118,slow=1.6,SNR=3.8
TMUT Trail Mountain 93.87 51 *eP* **P 22 18 18.0 +2.2**
comp=Z,25nm,1.0s
TMUT LR LR
comp=Z,2µm,20.0s
JLU Jordanelle 93.92 50 *eP* **P 22 18 17.3 +1.4**
comp=Z,53nm,1.2s
JLU LR LR
comp=Z,2µm,20.0s
DLMT Dillon 93.94 45 *eP* **P 22 18 16.7 +1.0**
comp=Z,106nm,1.4s
DLMT LR LR
comp=Z,2µm,19.0s
HWUT Hardware Ranch 94.01 49 PFAKE 22 18 30.0 +14
HWUT LR LR
comp=Z,2µm,20.0s
TCUT Toone Canyon 94.04 49 *eP* **P 22 18 18.3 +1.9**
comp=Z,113nm,1.3s
TCUT LR LR
comp=Z,2µm,20.0s
X18A Snowflake 94.05 56 *eP* **P 22 18 17.9 +1.4**
comp=Z,21nm,1.0s
X18A LR LR
comp=Z,2µm,18.0s
KUU Kurty 94.06 314 *i* P **P 22 18 13.3 -2.8**
comp=Z,313nm,1.2s
KUU *i* PP **PP 22 21 58.5 -4.2**
KUU *eS* **SKSac 22 28 44.0 -5.0**
KUU *i* SS **SS 22 35 39.9 -5.6**
KUU LRM MLR 23 01 34.8
comp=Z,1µm,20.8s
319A Douglas 94.09 59 *eP* **P 22 18 18.2 +1.5**
comp=Z,24nm,0.9s
319A LR LR
comp=Z,4µm,19.0s
LRM Limekiln Ridge 94.13 44 *eP* **P 22 18 17.1 +0.4**
NRIK Noril'sk 94.21 340 P **P 22 18 14.8 -1.4**
comp=Z,37nm,1.0s,baz=113,slow=4.2,SNR=23
NRIK LR LR 22 59 39.8
comp=Z,2µm,21.6s,baz=108,slow=35
P17A Butcher Ranch, 94.26 51 *eP* **P 22 18 19.4 +2.0**
comp=Z,19nm,1.1s
P17A LR LR
comp=Z,2µm,20.0s
W18A Petrified Fore 94.33 55 P **P 22 18 17.4 -0.4**
baz=260
W18A Petrified Fore 94.33 55 *eP* **P 22 18 21.8 +4.0**
comp=Z,26nm,1.0s
W18A LR LR
comp=Z,2µm,21.0s
SRU San Rafael Swe 94.37 51 PFAKE 22 18 30.0 +12
SRU LR LR
comp=Z,2µm,19.0s
AHID Auburn Hatcher 94.55 48 *eP* **P 22 18 22.3 +3.7**
comp=Z,22nm,1.0s
AHID LR LR
comp=Z,2µm,20.0s
BOZ Bozeman (W) 94.66 45 P **P 22 18 19.3 +0.3**
baz=260
BOZ Bozeman (W) 94.66 45 *eP* **P 22 18 19.5 +0.5**
BOZ pmax pmax
comp=Z,116nm,1.8s
BOZ MLR MLR
comp=Z,2µm,20.0s
BOZ Bozeman (W) 94.66 45 *eP* **P 22 18 19.5 +0.5**
comp=Z,116nm,1.8s
BOZ LR LR
comp=Z,2µm,20.0s
P18A Preston Nutter 94.66 51 PFAKE 22 18 30.0 +11
P18A LR LR
comp=Z,2µm,20.0s
QLMT Earthquake Lak 94.66 45 *eP* **P 22 18 21.1 +2.0**
TPAW Teton Pass 94.78 47 *eP* **P 22 18 22.6 +2.9**
comp=Z,64nm,1.6s
TPAW LR LR
comp=Z,2µm,20.0s
YHB Horse Butte 94.82 46 PFAKE 22 18 30.0 +10
YHB LR LR
comp=Z,2µm,20.0s
REDW Red Top Meadow 94.83 47 *eP* **P 22 18 21.4 +1.5**
comp=Z,55nm,1.4s
REDW LR LR
comp=Z,2µm,20.0s
IMW Indian Meadow 94.86 46 *eP* **P 22 18 21.8 +1.6**
comp=Z,69nm,1.5s
IMW LR LR
comp=Z,2µm,21.0s
EDM Edmonton 94.90 37 PFAKE 22 18 30.0 +10
EDM LR LR
comp=Z,3µm,18.0s
SNOW Snow King Moun 94.92 47 PFAKE 22 18 30.0 +10
SNOW LR LR
comp=Z,2µm,20.0s
YMR Madison River 94.96 46 *eP* **P 22 18 23.2 +2.6**
comp=Z,46nm,1.2s
YMR LR LR
comp=Z,2µm,20.0s
MOOW Moose Ponds 94.97 47 *eP* **P 22 18 21.8 +1.2**
comp=Z,27nm,1.4s
MOOW LR LR
comp=Z,2µm,20.0s
YPP Pitchstone Pla 95.01 46 PFAKE 22 18 30.0 +9.1
YPP LR LR
comp=Z,3µm,19.0s
YFT Old Faithful 95.02 46 PFAKE 22 18 30.0 +9.2
YFT LR LR
comp=Z,4µm,18.0s
LOHW Long Hollow 95.05 47 *eP* **P 22 18 22.1 +1.2**
comp=Z,33nm,1.5s
LOHW LR LR
comp=Z,2µm,20.0s
FLWY Flagg Ranch 95.06 46 *eP* **P 22 18 23.8 +2.8**
comp=Z,60nm,1.4s
FLWY LR LR
comp=Z,2µm,21.0s
YHH Holmes Hill 95.06 46 PFAKE 22 18 30.0 +8.9
YHH LR LR
comp=Z,2µm,20.0s
FRU Bishkek 95.11 312 *eP* **P 22 18 20.0 -1.0**
FRU *e* 22 18 36.0
FRU pmax pmax
comp=Z,80nm,1.6s
FRU pmax pmax
comp=E,2µm,18.0s
AAK Ala-Archa 95.17 312 LR LR 23 03 34.3
comp=E,1µm,18.9s,baz=72,slow=37
AAK Ala-Archa 95.17 312 *c iP* **P 22 18 19.9 -1.5**
AAK pmax pmax
comp=Z,78nm,2.1s
AAK Ala-Archa 95.17 312 P **P 22 18 21.0 -0.4**
SNR=9.7
AAK Ala-Archa 95.17 312 P **P 22 18 21.0 -0.4**
SNR=9.7
AAK Ala-Archa 95.17 312 *eP* **P 22 18 21.4 0.0**
comp=Z,16nm,1.0s
AAK LR LR
comp=Z,2µm,21.0s
YNR Norris Junctio 95.17 46 PFAKE 22 18 30.0 +8.5
YNR LR LR
comp=Z,2µm,19.0s
H17A Grant Village 95.19 46 P **P 22 18 21.4 -0.2**
baz=261
H17A Grant Village 95.19 46 PFAKE 22 18 30.0 +8.4
H17A LR LR
comp=Z,3µm,20.0s
PV05 Paradox Valley 95.30 52 *eP* **P 22 18 25.0 +2.8**

PV09 Paradox Valley 95.34 52 *eP* **P 22 18 24.5 +2.1**
LKWY Lake 95.34 46 PFAKE 22 18 30.0 +7.7
LKWY LR LR
comp=Z,3µm,20.0s
PV10 Paradox Valley 95.39 52 *eP* **P 22 18 26.7 +4.0**
121A Cookes Peak, D 95.52 58 P **P 22 18 23.2 -0.1**
baz=261
MVCO Mesa Verde 95.64 53 P **P 22 18 23.5 -0.3**
baz=261
MVCO Mesa Verde 95.64 53 *eP* **P 22 18 26.6 +2.7**
comp=Z,40nm,1.7s
MVCO LR LR
comp=Z,4µm,20.0s
BW06 Boulder Array 95.67 48 P **P 22 18 23.1 -0.7**
baz=261
BW06 Boulder Array 95.67 48 *eP* **P 22 18 23.5 -0.3**
BW06 LR LR
comp=Z,2µm,20.0s
PD31 Pinedale Array 95.67 48 *eP* **P 22 18 23.8 -0.1**
PD31 *eP* PKKPdf **PKKPdf 22 35 16.5 +0.1**
PDAR Pinedale Array 95.67 48 P **P 22 18 23.8 -0.1**
comp=Z,2.2nm,0.8s,baz=277,slow=1.5,SNR=13
PDAR PKKP **PKKPdf 22 35 16.5 +0.1**
comp=Z,0.3nm,0.7s,baz=110,slow=5.3,SNR=2.8
PDAR LR LR 22 55 29.4
comp=Z,1µm,20.2s,baz=288,slow=32
PV01 Paradox Valley 95.72 52 *eP* **P 22 18 25.9 +1.7**
BTLS Baital 95.86 315 *eP* **P 22 18 21.4 -3.0**
comp=Z,414nm,19.7s
BTLS *eS* **SKSac 22 28 54.0 -4.6**
BTLS LRM MLR 23 02 34.8
YKA Yellowknife Ar 95.96 28 P **P 22 18 23.1 -1.2**
comp=Z,12nm,0.9s,baz=256,slow=4.5,SNR=17
YKA LR LR 22 59 46.0
comp=Z,215nm,18.0s,baz=180,slow=34
YKB5 Yellowknife Ar 95.96 28 *eP* **P 22 18 22.5 -1.8**
YKW3 Yellowknife Ar 95.97 28 *eP* **P 22 18 23.4 -0.9**
comp=Z,39nm,1.5s
YKW3 LR LR
comp=Z,2µm,18.0s
RLMT Red Lodge 96.23 45 P **P 22 18 26.0 -0.3**
baz=262
RLMT Red Lodge 96.23 45 *eP* **P 22 18 28.5 +2.2**
comp=Z,25nm,1.3s
RLMT LR LR
comp=Z,1µm,19.0s
BHJ Bhuj 96.26 292 *eP* **P 22 18 25.5 -1.1**
BHJ IAmb IAmb 22 18 30.2
comp=Z,230nm,1.6s
O20A White River Ci 96.27 50 P **P 22 18 26.0 -0.6**
baz=262
O20A White River Ci 96.27 50 *eP* **P 22 18 28.3 +1.8**
comp=Z,46nm,1.4s
O20A LR LR
comp=Z,2µm,19.0s
EGMT Eagleton 96.31 42 P **P 22 18 26.4 0.0**
baz=262
EGMT Eagleton 96.31 42 *eP* **P 22 18 26.2 -0.2**
comp=Z,40nm,0.9s
EGMT LR LR
comp=Z,2µm,20.0s
LAZ Ladron 96.33 56 *eP* **P 22 18 28.6 +1.6**
Y22D IRIS PASSCAL I 96.46 57 P **P 22 18 26.3 -1.2**
baz=262
Y22D IRIS PASSCAL I 96.46 57 PFAKE 22 18 40.0 +12
Y22D LR LR
comp=Z,2µm,19.0s
HPIG 96.53 64 PFAKE 22 18 40.0 +12
HPIG LR LR
comp=Z,3µm,21.0s
NVL N'lazarevskaya 96.64 190 *eP* **P 22 18 29.2 +1.9**
NVL *e* 22 22 22.1
NVL *eS* **SKSac 22 29 03.1 +1.4**
NVL *eSP* **SP 22 31 08.4 +2.9**
NVL MLR MLR
comp=Z,4µm,22.0s
BNM Barren Site 96.71 57 *eP* **P 22 18 29.6 +0.9**
ANMO Albuquerque 96.96 56 P **P 22 18 28.8 -1.0**
baz=262
ANMO Albuquerque 96.96 56 *eP* **P 22 18 30.4 +0.6**
ANMO pmax pmax
comp=Z,12nm,1.0s
ANMO MLR MLR
comp=Z,1µm,19.0s
ANMO Albuquerque 96.96 56 *eP* **P 22 18 30.4 +0.6**
comp=Z,12nm,1.0s
ANMO LR LR
comp=Z,1µm,19.0s
S22A 4UR Ranch, Cre 97.03 53 P **P 22 18 28.9 -1.3**
baz=262
S22A 4UR Ranch, Cre 97.03 53 *eP* Pdif 22 18 34.1 +3.8
comp=Z,48nm,1.9s
S22A LR LR
comp=Z,4µm,20.0s
SMCO Snowmass 97.11 52 PFAKE 22 18 40.0 +9.3
SMCO LR LR
comp=Z,7µm,20.0s
MNTX Cornudas Mount 97.43 59 P **P 22 18 31.0 -0.8**
baz=262
MNTX Cornudas Mount 97.43 59 PFAKE 22 18 40.0 +8.2
MNTX LR LR
comp=Z,4µm,20.0s
SNAA Sanae 97.59 185 P **P 22 18 30.2 -1.5**
SNAA Sanae 97.59 185 PKKPbc PKKPbc 22 35 07.8 -2.9
comp=Z,1.0nm,0.7s,baz=348,slow=4.7,SNR=3.6
SNAA Sanae 97.59 185 *eP* **P 22 18 30.3 -1.5**
SNAA pmax pmax
comp=Z,16nm,1.0s
SNAA Sanae 97.59 185 *eP* **P 22 18 30.2 -1.5**
comp=Z,16nm,1.0s
K22A Casper 97.87 48 P **P 22 18 32.9 -0.8**
baz=263
K22A Casper 97.87 48 PFAKE 22 18 50.0 +16
K22A LR LR
comp=Z,2µm,18.0s
SDCO Great Sand Dun 98.08 53 P **P 22 18 33.8 -1.1**
baz=263
SDCO Great Sand Dun 98.08 53 PFAKE 22 18 50.0 +15
SDCO LR LR
comp=Z,4µm,18.0s
N23A Red Feather La 98.10 50 P **P 22 18 33.5 -1.4**
baz=264
N23A Red Feather La 98.10 50 *eP* **P 22 18 32.9 -2.1**
comp=Z,15nm,0.6s
N23A LR LR
comp=Z,2µm,21.0s
KKAR Karatay Array 98.14 312 *eP* Pdif 22 18 35.1 +0.4
KKAR pmax pmax
comp=Z,63nm,0.9s
KKAR Karatay Array 98.14 312 *eP* Pdif 22 18 35.1 +0.4
comp=Z,63nm,0.9s
ISCO Idaho Springs 98.23 51 Pdiff **P 22 18 33.9 -1.7**
baz=264
ISCO Idaho Springs 98.23 51 PFAKE 22 18 50.0 +14
ISCO LR LR
comp=Z,5µm,20.0s
KBL Kabul 98.29 304 *eP* Pdif 22 18 36.7 +0.8
KBL pmax pmax
comp=Z,29nm,1.4s
KBL MLR MLR
comp=Z,1µm,20.0s
KBL Kabul 98.29 304 *eP* Pdif 22 18 36.7 +0.9
comp=Z,29nm,1.4s
KBL LR LR
comp=Z,1µm,20.0s
IUG Iuzhnay 98.38 311 *eP* **P 22 18 33.0 -2.9**
comp=Z,36nm,0.9s
IUG *i* PP **PP 22 22 32.4 -4.0**
IUG *eS* **SKSac 22 29 07.5 -4.4**
Q24A Divide 98.49 52 Pdiff **P 22 18 35.0 -1.8**
baz=264
Q24A Divide 98.49 52 PFAKE 22 18 50.0 +13
Q24A LR LR
comp=Z,5µm,20.0s
PHWY Pilot Hill 98.51 50 PFAKE 22 18 50.0 +13
PHWY LR LR
comp=Z,2µm,21.0s
LAO LASA Array 98.53 44 Pdiff **P 22 18 35.9 -0.5**
baz=264
LAO LASA Array 98.53 44 *eP* Pdif 22 18 38.1 +1.6
comp=Z,78nm,1.3s
LAO LR LR
comp=Z,2µm,18.0s
LTX Lajitas 98.60 62 *eP* **P 22 18 36.9 -0.3**
LTX *e* 22 22 38.6
LTX Lajitas 98.60 62 *eP* **P 22 18 36.9 -0.3**

LTX *ePP* **PP 22 22 38.6 +0.3**
TX31 Lajitas Ar. Si 98.60 62 *eP* Pdif 22 18 41.8 +4.6
TXAR Lajitas Array 98.60 62 P **P 22 18 36.9 -0.3**
comp=Z,0.9nm,1.0s,baz=249,slow=4.7,SNR=5.6
TXAR PP **PP 22 22 38.6 +0.3**
comp=Z,4.4nm,1.0s,baz=263,slow=5.2,SNR=9.0
TXAR LR LR 22 58 17.9
comp=Z,3µm,18.5s,baz=0.0,slow=32
ZAIG Zacatecas 98.75 68 PFAKE 22 18 50.0 +12
ZAIG LR LR
comp=Z,2µm,18.0s
VOSK Vostochnaya 98.81 322 *eP* **P 22 18 35.9 -1.5**
VOSK pmax pmax
comp=Z,92nm,1.3s
VOSK MLR MLR
comp=Z,1µm,19.0s
VOSK Vostochnaya 98.81 322 *eP* **P 22 18 35.9 -1.5**
comp=Z,92nm,1.3s
VOSK LR LR
comp=Z,1µm,19.0s
T25A Trinidad 98.87 54 Pdiff **P 22 18 36.6 -1.8**
baz=264
T25A Trinidad 98.87 54 *eP* Pdif 22 18 43.8 +5.4
comp=Z,9.8nm,0.7s
T25A LR LR
comp=Z,3µm,21.0s
VNA1 Neumayer--Stat 98.96 183 P **P 22 18 37.0 -0.7**
BVAR Borovoye Array 99.20 322 PP PP 22 22 44.3 +2.2
comp=Z,7.2nm,0.9s,baz=110,slow=7.1,SNR=5.1
BVAR PKiKP **PKiKP 22 23 08.9 -0.2**
comp=Z,5.8nm,0.8s,baz=151,slow=3.1,SNR=5.6
BVAR LR LR 23 03 51.4
comp=Z,2µm,20.6s,baz=84,slow=36
BRVK Borovoye 99.26 322 *eP* **Pdif 22 18 38.4 -1.0**
BRVK pmax pmax
comp=Z,98nm,1.2s
BRVK MLR MLR
comp=Z,2µm,20.0s
BRVK Borovoye 99.26 322 *eP* **Pdif 22 18 38.4 -1.0**
comp=Z,98nm,1.2s
BRVK LR LR
comp=Z,2µm,20.0s
MOIG Morelia 99.63 72 PFAKE 22 18 50.0 +7.9
MOIG LR LR
comp=Z,2µm,18.0s
RSSD Black Hills 99.82 47 Pdiff **Pdif 22 18 41.1 -1.4**
baz=265
RSSD Black Hills 99.82 47 PFAKE 22 18 50.0 +7.5
RSSD LR LR
comp=Z,2µm,19.0s
MSTX Muleshoe 99.87 57 Pdiff **Pdif 22 18 41.5 -1.3**
baz=264
MSTX Muleshoe 99.87 57 PFAKE 22 18 50.0 +7.2
MSTX LR LR
comp=Z,2µm,19.0s
DGMT Dagmar 100.05 42 Pdiff **Pdif 22 18 42.6 -0.5**
baz=266
DGMT Dagmar 100.05 42 PFAKE 22 19 00.0 +17
DGMT LR LR
comp=Z,2µm,20.0s
KSCO Kaye Shedlock' 100.45 52 Pdiff **Pdif 22 18 42.9 -2.4**
baz=265
KSCO Kaye Shedlock' 100.45 52 PFAKE 22 19 00.0 +15
KSCO LR LR
comp=Z,5µm,20.0s
C25A Freed Ranch, W 100.63 43 Pdiff **Pdif 22 18 44.3 -1.4**
baz=266
B25A Knox Farm, Ray 100.73 43 Pdiff **Pdif 22 18 44.9 -1.2**
baz=267
A25A Svangstu Ranch 100.80 42 Pdiff **Pdif 22 18 46.2 -0.3**
baz=267
AMTX Amarillo 100.85 56 Pdiff **Pdif 22 18 46.1 -1.0**
baz=265
AMTX Amarillo 100.85 56 PFAKE 22 19 00.0 +13
AMTX LR LR
comp=Z,2µm,19.0s
OGNE Ogallala 101.06 50 Pdiff **Pdif 22 18 45.8 -2.1**
baz=266
OGNE Ogallala 101.06 50 PFAKE 22 19 00.0 +12
OGNE LR LR
comp=Z,3µm,19.0s
D26A Manning 101.15 44 Pdiff **Pdif 22 18 46.9 -1.1**
baz=267
B26A Jensen Ranch, 101.35 43 Pdiff **Pdif 22 18 48.5 -0.4**
baz=267
UNM Universidad Na 101.47 72 PFAKE 22 19 00.0 +10
UNM LR LR
comp=Z,2µm,18.0s
A26A Wade Farm, Ken 101.50 42 Pdiff **Pdif 22 18 48.4 -1.2**
baz=268
832A Faith Ranch, C 101.71 63 Pdiff **Pdif 22 18 50.1 -0.9**
baz=264
FFC Flin Flon 101.73 36 PFAKE 22 19 00.0 +10
FFC LR LR
comp=Z,1µm,19.0s
TLIG Tlapa 101.83 74 PFAKE 22 19 00.0 +8.2
TLIG LR LR
comp=Z,2µm,20.0s
A27A Ledoux Ranch, 102.03 42 Pdiff **Pdif 22 18 51.6 -0.3**
baz=268
JCT Junction City 102.05 61 Pdiff **Pdif 22 18 51.0 -1.5**
baz=265
JCT Junction City 102.05 61 PFAKE 22 19 00.0 +7.5
JCT LR LR
comp=Z,3µm,20.0s
833A Chaparral WMA, 102.22 63 Pdiff **Pdif 22 18 51.5 -1.7**
baz=265
ABTX Abilene, Hawle 102.36 59 PFAKE 22 19 10.0 +16
ABTX LR LR
comp=Z,4µm,19.0s
633A Saathoff Ranch 102.51 62 Pdiff **Pdif 22 18 53.7 -0.7**
baz=265
CBKS Cedar Bluff 102.69 52 Pdiff **Pdif 22 18 54.2 -0.9**
baz=267
CBKS Cedar Bluff 102.69 52 PFAKE 22 19 10.0 +15
CBKS LR LR
comp=Z,3µm,21.0s
433A Art 102.69 61 Pdiff **Pdif 22 18 54.2 -1.1**
baz=266
034A Hebbronville 102.73 64 Pdiff **Pdif 22 18 54.6 -0.9**
baz=265
333A Richland Sprin 102.82 60 Pdiff **Pdif 22 18 55.0 -0.8**
baz=266
W32A Sentinel 102.86 56 Pdiff **Pdif 22 18 55.1 -0.8**
baz=266
F29A Eureka 102.90 45 Pdiff **Pdif 22 18 55.7 -0.2**
baz=268
834A Tilden 102.94 63 PKiKP **PKiKP 22 23 14.7 -1.9**
baz=265
233A Rising Star 102.94 59 Pdiff **Pdif 22 18 55.4 -1.0**
baz=266
133A Hamilton Ranch 102.97 59 Pdiff **Pdif 22 18 55.9 -0.5**
baz=266
734A La Parita Cree 103.00 63 Pdiff **Pdif 22 18 55.9 -0.7**
baz=265
J30A Dallas 103.06 48 PKiKP **PKiKP 22 23 17.5 +1.1**
baz=268
V32A Arapaho 103.07 56 PKiKP **PKiKP 22 23 16.1 -0.6**
baz=267
MDND Maddock 103.10 43 PFAKE 22 19 10.0 +13
MDND LR LR
comp=Z,2µm,19.0s
U32A Winter Ranch, 103.14 55 PKiKP **PKiKP 22 23 15.7 -1.2**
baz=267
WMOK Wichita Mounta 103.22 57 Pdiff **Pdif 22 18 56.6 -1.0**
baz=267
WMOK Wichita Mounta 103.22 57 PFAKE 22 19 10.0 +12
WMOK LR LR
comp=Z,2µm,18.0s
035A Encino 103.24 65 Pdiff **Pdif 22 18 57.3 -0.4**
baz=265
T32A Huddler Ranch, 103.24 54 PKiKP **PKiKP 22 23 15.8 -1.2**
baz=267
RES Resolute Bay 103.30 15 PFAKE 22 19 10.0 +13
RES LR LR
comp=Z,3µm,20.0s
Y33A Hilltop Ranch, 103.31 57 PKiKP **PKiKP 22 23 15.0 -2.2**
baz=266
434A Burnet 103.40 61 Pdiff **Pdif 22 18 57.2 -1.2**
baz=266
434A PKiKP **PP 22 23 15.3 +0.8**
baz=266
X33A Lawton 103.44 57 Pdiff **Pdif 22 18 57.9 -0.6**
baz=267
334A Lometa 103.46 60 Pdiff **Pdif 22 18 57.7 -0.9**
baz=266
334A PKiKP **PKiKP 22 23 17.1 -0.5**

baz=266
R32A **Long Quarter,** 103.47 53 PKiKP **PKiKP** 22 23 14.2 -3.1
baz=268
234A **Clairette** 103.59 59 PKiKP **PKiKP** 22 23 16.2 -1.6
baz=266
Q32A **Meitler Ranch,** 103.61 52 PKiKP **PKiKP** 22 23 15.6 -2.0
baz=268
735A **Kenedy** 103.65 63 PKiKP **PKiKP** 22 23 17.2 -0.7
baz=266
134A **White-Moore Ra** 103.67 59 PKiKP **PKiKP** 22 23 16.6 -1.3
baz=266
V33A **Lossen Ranch,** 103.69 56 PKiKP **PKiKP** 22 23 15.9 -1.9
baz=267
635A **Leesville** 103.72 62 PKiKP **PKiKP** 22 23 15.3 -2.7
baz=266
T33A **Patterson Ranc** 103.78 54 PKiKP **PKiKP** 22 23 16.9 -1.0
baz=268
Z34A **Collier Ranch,** 103.86 58 PKiKP **PKiKP** 22 23 17.4 -0.8
baz=267
435B **Jarrell** 103.98 61 PKiKP **PKiKP** 22 23 17.2 -1.3
baz=266
X34A **Smith Ranch, M** 104.00 57 PKiKP **PKiKP** 22 23 18.0 -0.4
baz=267
BGNE **Belgrade** 104.00 50 PFAKE 22 19 10.0 +9.1
BGNE LR LR
comp=Z,2µm,20.0s
Y34A **Reagan Ranch,** 104.02 58 PKiKP **PKiKP** 22 23 18.9 +0.4
baz=267
W34A **Bridge Creek,** 104.08 56 PKiKP **PKiKP** 22 23 17.8 -0.8
baz=267
W34A **Bridge Creek,** 104.08 56 PFAKE 22 19 10.0 +8.7
W34A LR LR
comp=Z,2µm,21.0s
335A **Moody** 104.15 60 PKiKP **PKiKP** 22 23 17.2 -1.6
baz=266
WHTX **Lake Whitney,** 104.17 60 PKiKP **PKiKP** 22 23 18.8 0.0
baz=267
WHTX **Lake Whitney,** 104.17 60 PFAKE 22 19 10.0 +8.2
WHTX LR LR
comp=Z,4µm,19.0s
V34A **Guthrie** 104.31 56 PFAKE 22 19 10.0 +7.7
V34A LR LR
comp=Z,2µm,18.0s
U34A **Anderson Ranch** 104.32 55 PFAKE 22 19 10.0 +7.6
U34A LR LR
comp=Z,2µm,19.0s
636A **Smothers Creek** 104.35 62 PKiKP **PKiKP** 22 23 18.6 -0.6
baz=266
Z35A **Perchaven, San** 104.41 58 PKiKP **PKiKP** 22 23 18.0 -1.2
baz=267
R34A **Isabella, Hill** 104.62 53 PKiKP **PKiKP** 22 23 20.0 +0.6
baz=268
Y35A **Marietta** 104.62 58 PKiKP **PKiKP** 22 23 20.8 +1.2
baz=267
T34A **McClaskey Farm** 104.62 54 PKiKP **PKiKP** 22 23 18.5 -1.0
baz=268
W35A **Tecumseh** 104.81 56 PKiKP **PKiKP** 22 23 18.0 -1.9
baz=268
Q34A **Chapman** 104.87 52 PKiKP **PKiKP** 22 23 20.5 +0.6
baz=269
U35A **Pawnee** 104.97 55 PKiKP **PKiKP** 22 23 19.7 -0.4
baz=268
537A **Green Hill Far** 105.03 62 PKiKP **PKiKP** 22 23 19.1 -1.3
baz=267
Z36A **Blue Ridge** 105.09 58 PKiKP **PKiKP** 22 23 19.3 -1.1
baz=268
KSU1 **Kansas State U** 105.13 52 PFAKE 22 23 30.0
KSU1 LR LR
comp=Z,4µm,20.0s
ECSD **EROS Data Cent** 105.16 47 PKiKP **PKiKP** 22 23 18.8 -1.5
baz=270
ECSD **EROS Data Cent** 105.16 47 PFAKE 22 23 30.0
ECSD LR LR
comp=Z,2µm,19.0s
X36A **Centrahoma** 105.22 57 PKiKP **PKiKP** 22 23 20.1 -0.5
baz=268
F33A **5 Mile Ranch,** 105.37 45 PKiKP **PKiKP** 22 23 18.3 -2.3
baz=271
ULM **Lac du Bonnet** 105.52 41 PKiKP **PKiKP** 22 23 19.8 -0.9
comp=Z,7.4nm,0.9s,baz=308,slow=4.0,SNR=5.8
ULM **Lac du Bonnet** 105.52 41 PKiKP **PKiKP** 22 23 19.8 -0.9
ULM LR LR
comp=Z,2µm,20.0s
AGMN **Agassiz Nation** 105.60 43 PFAKE 22 23 30.0
AGMN LR LR
comp=Z,2µm,20.0s
T36A **Boggs Farm, Ca** 105.67 54 PKiKP **PKiKP** 22 23 20.5 -0.9
baz=269
ABKAR **Akbulak array** 105.69 318 *e*Pdif **Pdif** 22 19 09.2 +1.1
TUL1 **Leonard** 105.72 56 PFAKE 22 23 30.0
TUL1 LR LR
comp=Z,2µm,19.0s
A33A **Warroad** 105.89 42 PKiKP **PKiKP** 22 23 20.5 -0.9
baz=273
FCC **Fort Churchill** 105.89 32 PFAKE 22 23 30.0
FCC LR LR
comp=Z,5µm,22.0s
X37A **Clayton** 106.02 57 PKiKP **PKiKP** 22 23 20.1 -2.0
baz=268
ARU **Arti** 106.03 326 Pdiff **Pdif** 22 19 07.2 -2.2
comp=Z,5.2nm,0.7s,baz=106,slow=10,SNR=10
ARU PKiKP **PKiKP** 22 23 21.4 -0.1
comp=Z,9.0nm,0.8s,baz=40,slow=1.0,SNR=8.3
ARU **Arti** 106.03 326 *c i*P **Pdif** **22 19 07.5 -2.0**
ARU S **SKSac** **22 29 44.2 -3.1**
ARU PS **PS** **22 32 38.9 -12**
ARU pmax pmax
comp=Z,62nm,1.7s
ARU MLR MLR
comp=Z,3µm,20.0s
ARU **Arti** 106.03 326 *e*Pdif **Pdif** **22 19 07.9 -1.5**
ARU *e*PKiKP **PKiKP** **22 23 21.1 -0.3**
ARU LR LR
comp=Z,3µm,20.0s
U37A **Salina** 106.27 55 PKiKP **PKiKP** 22 23 21.4 -1.1
baz=269
B34A **Aery, Baudette** 106.40 42 PKiKP **PKiKP** 22 23 20.6 -1.8
baz=273
H35A **Sunnyside Ranc** 106.43 46 PKiKP **PKiKP** 22 23 22.4 -0.2
baz=272
T37A **Cheneyville 18** 106.44 54 PKiKP **PKiKP** 22 23 21.2 -1.7
baz=270
X38A **Whitesboro** 106.47 57 PKiKP **PKiKP** 22 23 21.0 -2.0
baz=269
S37A **Fort Scott** 106.52 54 PKiKP **PKiKP** 22 23 20.6 -2.4
baz=270
NATX **Nacogdoches** 106.53 60 PFAKE 22 23 40.0
NATX LR LR
comp=Z,4µm,19.0s
W38A **Poteau** 106.74 56 PKiKP **PKiKP** 22 23 22.9 -0.5
baz=269
U38A **Gravette** 106.86 55 PKiKP **PKiKP** 22 23 21.5 -2.2
baz=270
AKTO **Aktyubinsk** 106.87 320 Pdiff **Pdif** 22 19 12.0 -1.3
comp=Z,5.7nm,1.0s,baz=82,slow=6.7,SNR=5.5
AKTO PKiKP **PKiKP** 22 23 23.1 -0.1
comp=Z,8.8nm,0.9s,baz=107,slow=3.8,SNR=9.7
N37A **Lee Faris, Mou** 106.98 51 PKiKP **PKiKP** 22 23 22.5 -1.2
baz=271
B35A **Bob, Littlefor** 107.02 43 PKiKP **PKiKP** 22 23 22.0 -1.6
baz=274
PAYG **Puerto Ayora** 107.16 94 PFAKE 22 23 40.0
PAYG LR LR
comp=Z,2µm,18.0s
G36A **St. Michael** 107.18 46 PKiKP **PKiKP** 22 23 22.9 -1.0
baz=273
HHAR **Hobbs** 107.22 55 PFAKE 22 23 40.0
HHAR LR LR
comp=Z,2µm,21.0s
S38A **Stockton** 107.25 54 PKiKP **PKiKP** 22 23 21.8 -2.5
baz=270
GEYT **Alibeck** 107.30 307 Pdiff **Pdif** 22 19 15.0 -0.6
comp=Z,1.3nm,0.8s,baz=60,slow=6.8,SNR=3.2
GEYT PKiKP **PKiKP** 22 23 24.6 +0.1
comp=Z,2.1nm,0.5s,baz=190,slow=0.9,SNR=5.6
F36A **Milaca** 107.30 45 PKiKP **PKiKP** 22 23 22.3 -1.9
baz=273
J37A **Redenius Farm,** 107.40 48 PKiKP **PKiKP** 22 23 22.3 -2.1
baz=272
D36A **Goodland** 107.47 44 PKiKP **PKiKP** 22 23 23.0 -1.5
baz=274
MIAR **Mount Ida** 107.50 57 PFAKE 22 23 40.0
MIAR LR LR
comp=Z,3µm,22.0s
P38A **Dawn** 107.52 52 PKiKP **PKiKP** 22 23 22.9 -1.8
baz=271
U39A **Green Forest** 107.59 55 PKiKP **PKiKP** 22 23 23.7 -1.3
baz=270
C36A **Pine Crest Far** 107.66 43 PKiKP **PKiKP** 22 23 23.2 -1.6
baz=274
T39A **Clever** 107.67 54 PKiKP **PKiKP** 22 23 23.2 -1.9
baz=270
S39A **Bolivar** 107.71 54 PKiKP **PKiKP** 22 23 24.0 -1.2
baz=271
Y40A **Okolona** 107.74 58 PKiKP **PKiKP** 22 23 24.0 -1.4
baz=270
341A **Kurthwood** 107.79 60 PKiKP **PKiKP** 22 23 23.5 -1.9
baz=269
CCIG **Comitan** 107.80 76 PFAKE 22 23 40.0
CCIG LR LR
comp=Z,1µm,21.0s
SPMN **Marine on St.** 107.84 46 PKiKP **PKiKP** 22 23 24.6 -0.6
baz=273
SPMN **Marine on St.** 107.84 46 PFAKE 22 23 40.0
SPMN LR LR
comp=Z,2µm,20.0s
WLAR **White Oak Lake** 107.88 58 PFAKE 22 23 40.0
WLAR LR LR
comp=Z,2µm,18.0s
W40A **Ferguson Farm,** 107.92 56 PKiKP **PKiKP** 22 23 23.9 -1.7
baz=270
R39A **Chumby, Stover** 107.93 53 PKiKP **PKiKP** 22 23 25.3 -0.3
baz=271
D37A **Cotton** 107.98 44 PKiKP **PKiKP** 22 23 24.6 -0.8
baz=274
U40A **Yellville** 108.10 55 PKiKP **PKiKP** 22 23 24.0 -2.0
baz=270
C37A **Embarrass** 108.10 43 PKiKP **PKiKP** 22 23 25.2 -0.4
baz=275
P39B **Salisbury** 108.12 52 PKiKP **PKiKP** 22 23 24.9 -1.0
baz=272
V40A **Witts Springs** 108.12 56 PKiKP **PKiKP** 22 23 25.3 -0.8
baz=270
T40A **Mansfield** 108.36 54 PKiKP **PKiKP** 22 23 25.3 -1.1
baz=271
S40A **Lebanon** 108.36 54 PKiKP **PKiKP** 22 23 25.1 -1.3
baz=271
X301 **Greenbrier Sit** 108.47 56 PFAKE 22 23 40.0
X301 LR LR
comp=Z,2µm,22.0s
X201 **Greenbrier Sit** 108.50 56 PFAKE 22 23 40.0
X201 LR LR
comp=Z,2µm,19.0s
UALR **University of** 108.52 57 PFAKE 22 23 40.0
UALR LR LR
comp=Z,3µm,20.0s
EYMN **Ely** 108.54 43 PFAKE 22 23 40.0
EYMN LR LR
comp=Z,2µm,19.0s
WHAR **Wooly Hollow** 108.56 56 PFAKE 22 23 40.0
WHAR LR LR
comp=Z,2µm,18.0s
W41B **Gary Mavity, V** 108.60 56 PKiKP **PKiKP** 22 23 25.9 -1.0
baz=270
UOSS **Minazif** 108.65 293 PFAKE 22 23 40.0
UOSS LR LR
comp=Z,700nm,21.0s
Q40A **Laux Farm, Aux** 108.67 52 PKiKP **PKiKP** 22 23 25.7 -1.2
baz=272
CCAR **Cane Creek** 109.00 58 PFAKE 22 23 40.0
CCAR LR LR
comp=Z,2µm,18.0s
V42A **Cord** 109.29 56 PKiKP **PKiKP** 22 23 26.0 -2.2
baz=271
ABPO **Ambohimpanom** 109.55 246 PFAKE 22 23 40.0
ABPO LR LR
comp=Z,2µm,20.0s
OPO **Ambohidratompo** 109.72 246 PKKPbc PKKPbc 22 34 32.7 -0.5
comp=Z,4.6nm,0.9s,baz=28,slow=4.7,SNR=3.3
PLCA **Paso Flores** 109.74 140 PKKPbc PKKPbc 22 34 32.9 -0.9
comp=Z,7.2nm,0.8s,baz=24,slow=4.7,SNR=7.2
PLCA **Paso Flores** 109.74 140 *e*PKKPbc PKKPbc 22 34 36.3 +2.6
JFWS **Jewell Farm** 109.84 48 PFAKE 22 23 40.0
JFWS LR LR
comp=Z,1µm,18.0s
KBS **Kingsbay** 109.85 354 *e*P **Pdif** **22 19 28.0 +2.0**
KBS **Kingsbay** 109.85 354 PFAKE 22 23 40.0
KBS LR LR
comp=Z,1µm,20.0s
SPA0 **Spitsbergen Ar** 109.98 353 *e*PP PP 22 23 59.2 -2.1
SPITS **Spitsbergen Ar** 109.98 353 PKiKP **PKiKP** **22 23 28.1 -0.2**
comp=Z,9.2nm,0.7s,baz=68,slow=2.2,SNR=7.7
HOPEN **Hopen** 110.01 350 *e*P **Pdif** **22 19 30.7 +3.9**
HOPEN *e*PP **PP** **22 23 59.2 -2.3**
PBMO **Poplar Bluff** 110.04 55 PFAKE 22 23 40.0
PBMO LR LR
comp=Z,2µm,21.0s
VBMS **Vicksburg** 110.06 59 PFAKE 22 23 40.0
VBMS LR LR
comp=Z,3µm,19.0s
COWI **Conover** 110.33 45 PFAKE 22 23 40.0
COWI LR LR
comp=Z,2µm,20.0s
MET **Memphis--Engin** 110.50 56 PFAKE 22 23 40.0
MET LR LR
comp=Z,3µm,20.0s
PVMO **Portageville** 110.64 55 PFAKE 22 23 40.0
PVMO LR LR
comp=Z,2µm,18.0s
HDIL **Hopedale** 110.72 51 PKiKP **PKiKP** **22 23 30.0 -0.8**
baz=274
HDIL **Hopedale** 110.72 51 PFAKE 22 23 40.0
HDIL LR LR
comp=Z,4µm,20.0s
HALT **Halls** 110.95 56 PFAKE 22 23 40.0
HALT LR LR
comp=Z,1842µm,19.0s
SIUC **Southern Illin** 110.96 54 PFAKE 22 23 40.0
SIUC LR LR
comp=Z,3µm,19.0s
HSPB **Hornsund (broa** 111.05 352 *e*P **Pdif** **22 19 28.6 -2.8**
HSPB *e*PP **PP** **22 24 07.3 -1.7**
TEIG **Tepich** 111.77 72 PFAKE 22 23 50.0
TEIG LR LR
comp=Z,1µm,19.0s
OLIL **Olney** 111.78 52 PFAKE 22 23 40.0
OLIL LR LR
comp=Z,3µm,21.0s
WVT **Waverly** 112.16 55 PFAKE 22 23 50.0
WVT LR LR
comp=Z,2µm,21.0s
USIN **University of** 112.17 53 PFAKE 22 23 50.0
USIN LR LR
comp=Z,2µm,22.0s
SFIN **Lafayette** 112.41 51 PFAKE 22 23 50.0
SFIN LR LR
comp=Z,4µm,20.0s
BLO **Bloomington** 112.97 52 PFAKE 22 23 50.0
BLO LR LR
comp=Z,4µm,22.0s
LRAL **Lakeview Retre** 113.01 59 PFAKE 22 23 50.0
LRAL LR LR
comp=Z,4µm,19.0s
LVZ **Lovozero** 113.03 341 *i* PKiKP **PKiKP** **22 23 34.0 -0.4**
LVZ pmax pmax
comp=Z,12nm,0.7s
LVZ **Lovozero** 113.03 341 PFAKE 22 23 50.0
LVZ LR LR
comp=Z,1µm,19.0s
BRAL **Brewton** 113.03 61 PFAKE 22 23 50.0
BRAL LR LR
comp=Z,2µm,20.0s
WCI **Wyandotte Cave** 113.23 53 PFAKE 22 23 50.0
WCI LR LR
comp=Z,3µm,21.0s
DAG **Danmarks Havn** 113.55 0 *i* P **PKiP** **22 23 34.2 -0.9**
comp=Z,1µm,18.0s
DAG **Danmarks Havn** 113.55 0 *i* PKiKP **PKiKP** **22 23 34.2 -0.9**
DAG MLR MLR
comp=Z,1µm,18.0s
APA **Apatity** 113.61 341 ⇑ *i* PKiKP **PKiKP** **22 23 34.8 -0.6**
APA *i* 22 24 28.0
APA *i* 22 35 16.0
APA pmax pmax
comp=Z,11nm,1.0s
APA MLR MLR
comp=Z,1µm,22.0s
GLMI **Grayling** 113.66 46 PFAKE 22 23 50.0
GLMI LR LR
comp=Z,2µm,19.0s
SWET **Sewanee** 113.76 56 PFAKE 22 23 50.0
SWET LR LR
comp=Z,700nm,18.0s
HAMF **Hammerfest** 114.41 346 *e*PKPdf PKPdf 22 23 36.1 -0.7
HAMF *e*PP **PP** **22 24 33.2 +0.2**
HAMF IAMs_20 IAMs_20 23 07 49.8
comp=Z,2µm,21.7s
KLMR **Klimovskoe** 114.50 333 *e*P **Pdif** **22 19 43.6 -3.4**
KLMR *e* 22 23 35.6
KLMR *e* 22 27 08.1
KLMR pmax pmax
comp=Z,20nm,1.5s
ARCES **ARCESS Array B** 114.71 345 PKP PKPdf 22 23 36.9 -0.6
comp=Z,32nm,0.7s,baz=79,slow=1.4,SNR=138
ARCES PKKPbc **PKKPbc** **22 34 16.5 -1.4**
comp=Z,1.8nm,1.0s,baz=198,slow=3.6,SNR=3.9
ARE0 **ARCESS Array S** 114.71 345 *e*P **Pdif** **22 19 48.4 +0.6**
ARE0 *e*PKPdf **PKiKP** **22 23 37.2 -0.3**
ARE0 *e*PP **PP** **22 24 37.7 +2.5**
ARE0 IAMs_20 IAMs_20 23 17 41.1
comp=Z,2µm,19.5s
ARE0 **ARCESS Array S** 114.71 345 PFAKE 22 23 50.0 +12
ARE0 LR LR
comp=Z,2µm,19.0s
AAM **Ann Arbor** 114.74 48 PFAKE 22 23 50.0 +12
AAM LR LR
comp=Z,3µm,19.0s
CPCT **Cooper Cave** 114.89 56 PFAKE 22 23 50.0 +11
CPCT LR LR
comp=Z,1µm,20.0s
HDC **Heredia** 114.90 84 PFAKE 22 23 50.0 +10
HDC LR LR
comp=Z,2µm,19.0s
TKL **Tuckaleechee C** 115.48 55 *e*PKiKP **PKPdf** **22 23 39.9 -0.1**
TKL MLR MLR
comp=Z,2µm,18.0s
TKL **Tuckaleechee C** 115.48 55 *e*PKPdf **PKPdf** **22 23 39.9 -0.1**
TKL LR LR
comp=Z,2µm,18.0s
ACSO **Alum Creek Sta** 115.55 50 PFAKE 22 23 50.0 +10
ACSO LR LR
comp=Z,3µm,20.0s
TZTN **Tazewell** 115.57 54 PFAKE 22 23 50.0 +10
TZTN LR LR
comp=Z,3µm,19.0s
LCO **Las Campanas** 115.78 129 PFAKE 22 23 50.0 +8.8
LCO LR LR
comp=Z,2µm,22.0s
GOGA **Godfrey** 115.94 58 PFAKE 22 23 50.0 +9.1
GOGA LR LR
comp=Z,3µm,19.0s
TIGA **Tifton** 115.98 60 PFAKE 22 23 50.0 +9.0
TIGA LR LR
comp=Z,2µm,21.0s
TRO **Tromso** 116.26 346 *e*P **Pdif** **22 19 57.5 +2.8**
TRO *e*PP **PP** **22 24 45.6 -0.4**
TRO *e*SS SS 22 40 51.8 +4.9
SUMG **Summit** 116.55 7 *i* P **PKPdf** **22 23 43.3 +1.8**
comp=Z,1µm,21.0s
SUMG **Summit** 116.55 7 *e*PKiKP **PKPdf** **22 23 41.9 +0.4**
SUMG MLR MLR
comp=Z,1µm,20.0s
SUMG **Summit** 116.55 7 *e*PKPdf **PKPdf** **22 23 41.9 +0.4**
SUMG LR LR
comp=Z,1µm,20.0s
DGRG **David-gareji** 116.77 311 P **PKPdf** **22 23 43.4 +1.0**
DGRG **David-gareji** 116.77 311 PKiKP **PKPdf** **22 23 43.3 +1.0**
VRH **Novokhopyorsk** 116.85 323 *e*PKiKP **PKPdf** **22 23 41.6 -0.5**
VRH pmax pmax
comp=Z,40nm,0.6s
TBLG **Delisi** 117.19 312 P **PKPdf** **22 23 45.6 +2.5**
TBLG **Delisi** 117.19 312 PKiKP **PKPdf** **22 23 45.6 +2.5**
GUDG **Gudauri** 117.23 313 P **PKPdf** **22 23 44.3 +0.8**
NNA **Nana** 117.36 109 PFAKE 22 24 00.0 +16
NNA LR LR
comp=Z,1µm,19.0s
ERPA **Erie** 117.46 48 PFAKE 22 24 00.0 +16
ERPA LR LR
comp=Z,4µm,18.0s
GNI **Garni** 117.47 310 PKP **PKPdf** **22 23 44.5 +0.7**
comp=Z,13nm,0.8s,baz=133,slow=2.1,SNR=3.1
GNI **Garni** 117.47 310 PKPdf **PKPdf** **22 23 47.4 +3.5**
SNR=8.5
GNI **Garni** 117.47 310 P **PKPdf** **22 23 47.4 +3.5**
SNR=8.5
GNI **Garni** 117.47 310 *e*PKPdf **PKPdf** **22 23 44.5 +0.7**
GNI *e*PKPdf **PKiKP** **22 23 44.7 +0.8**
SADO **Sadowa** 117.49 45 *e*PKPdf **PKPdf** **22 23 43.0 -0.6**
SADO LR LR
comp=Z,3µm,20.0s
MOS **Moscow** 117.51 328 *i* PKiKP **PKPdf** **22 23 42.8 -0.4**
MOS *e* 22 34 38.3
MOS pmax pmax
comp=Z,94nm,1.2s
MOS MLR MLR
comp=N,1µm,19.0s
MOS MLR MLR
comp=E,2µm,19.0s
MOS MLR MLR
comp=Z,3µm,19.0s
KMSC **Kings Mountain** 117.52 56 PKiKP **PKPdf** **22 23 43.4 -0.5**
baz=277
KMSC **Kings Mountain** 117.52 56 *e*PKPdf **PKPdf** **22 23 44.0 +0.1**
KMSC LR LR
comp=Z,3µm,19.0s
ZEI **Tsey** 117.58 313 *i* PKiKP **PKPdf** **22 23 45.7 +1.6**
ZEI pmax pmax
comp=Z,35nm,0.6s
N54A **Moraine State** 117.68 49 PKiKP **PKPdf** **22 23 43.4 -0.6**
baz=281
JSC **Jenkinsville** 117.68 57 PFAKE 22 24 00.0 +16
JSC LR LR
comp=Z,2µm,20.0s
GOF **Gofitskoye** 117.68 316 ⇑ *e*PKiKP **PKPdf** **22 23 47.0 +3.1**
GOF pmax pmax
comp=Z,61nm,1.4s
VLDQ **Val d'Or** 117.76 41 *e*PKPdf **PKPdf** **22 23 42.6 -1.3**
VLDQ LR LR
comp=Z,3µm,19.0s
M54A **Oil Creek Stat** 117.81 48 PKiKP **PKPdf** **22 23 43.4 -0.9**
baz=281
ONI **Oni** 117.95 313 P **PKPdf** **22 23 45.0 +0.4**
ONI **Oni** 117.95 313 PKiKP **PKPdf** **22 23 45.0 +0.4**
BLA **Blacksburg** 117.98 53 *e*PKiKP **PKPdf** **22 23 44.6 -0.2**
BLA MLR MLR
comp=Z,1µm,20.0s
BLA **Blacksburg** 117.98 53 *e*PKPdf **PKPdf** **22 23 44.6 -0.2**
BLA LR LR
comp=Z,1µm,20.0s
MCWV **Mont Chateau** 118.02 51 PFAKE 22 24 00.0 +15
MCWV LR LR
comp=Z,2µm,22.0s
DWPF **Disney Wildern** 118.05 64 PFAKE 22 24 00.0 +15
DWPF LR LR
comp=Z,2µm,19.0s
KBZ **Khabaz** 118.09 314 PKP **PKPdf** **22 23 44.9 +0.2**
comp=Z,5.9nm,0.8s,baz=93,slow=6.0,SNR=9.1
KBZ PP **PP** **22 25 03.9 +4.1**
comp=Z,11nm,1.0s,baz=88,slow=9.0,SNR=7.0
BGD **Bogdanovka** 118.11 311 P **PKPdf** **22 23 46.0 +0.9**
AKH **Akhalkalaki** 118.16 312 ‖ *i*P **PKPdf** **22 23 45.9 +0.7**
AKH **Akhalkalaki** 118.16 312 P **PKPdf** **22 23 48.5 +3.3**
AKH **Akhalkalaki** 118.16 312 PKiKP **PKPdf** **22 23 48.5 +3.3**
KVAR **Kislovodsk Arr** 118.19 314 PKP **PKPdf** **22 23 45.0 -0.1**
comp=Z,56nm,1.3s,baz=338,slow=2.2,SNR=13
KVAR PP **PP** **22 25 03.3 +2.7**
comp=Z,72nm,1.3s,baz=270,slow=6.0,SNR=11
KIV **Kislovodsk** 118.19 314 *c i*PKiKP **PKPdf** **22 23 45.0 -0.1**
KIV *e* 22 25 04.0
KIV *e* 22 30 48.1
KIV *i* 22 34 46.0
KIV pmax pmax
comp=Z,48nm,1.2s
KIV MLR MLR
comp=Z,1µm,20.0s
KIV **Kislovodsk** 118.19 314 PKPdf **PKPdf** **22 23 45.8 +0.7**
SNR=12
KIV **Kislovodsk** 118.19 314 P **PKPdf** **22 23 45.8 +0.7**
SNR=12
KIV **Kislovodsk** 118.19 314 *e*PKPdf **PKPdf** **22 23 45.4 +0.4**
KIV *e*PP **PP** **22 25 03.4 +2.8**
KIV LR LR
comp=Z,1µm,19.0s
OBN **Obninsk** 118.32 328 PKP **PKPdf** **22 23 44.7 -0.1**
comp=Z,28nm,0.7s,baz=69,slow=1.8,SNR=19
OBN **Obninsk** 118.32 328 *c i*PKiKP **PKPdf** **22 23 43.5 -1.3**
OBN *e* 22 25 02.4
OBN *e* 22 30 39.2

OBN pmax pmax
comp=Z,49nm,1.1s
OBN MLR MLR
comp=Z,2µm,19.0s
OBN Obninsk 118.32 328 *e*PKPdf **PKPdf 22 23 44.7 -0.1**
OBN LR LR
comp=Z,3µm,20.0s
NEY Neytrino 118.33 314 *d i*PKIKP **PKPdf 22 23 48.9 +3.4**
VSR Storozhevoye 118.36 323 *e*PKIKP **PKPdf 22 23 44.3 -0.7**
VSR pmax pmax
comp=Z,30nm,0.9s
STEI Steigen 118.43 346 *e*PKPdf **PKPdf 22 23 44.0 -0.7**
PB10 IPOC Station P 118.49 124 PFAKE 22 24 00.0 +14
PB10 LR LR
comp=Z,1µm,20.0s
LOF Lofoten 118.65 347 *e*PKPdf **PKPdf 22 23 45.0 -0.1**
LOF *e*PP **PP 22 25 05.4 +2.8**
NHSC New Hope 118.71 58 PFAKE 22 24 00.0 +14
NHSC LR LR
comp=Z,4µm,20.0s
MMNY Mt. Morris Dam 118.83 47 *e*PKPdf **PKPdf 22 23 46.0 -0.2**
PLVO Plevna 118.85 44 *e*PKPdf **PKPdf 22 23 45.7 -0.5**
PLVO LR LR
comp=Z,2µm,20.0s
O56A Blue Knob Stat 118.87 50 PKiKP **PKPdf 22 23 44.8 -1.6**
baz=282
OTAV Otavalo 118.94 95 PFAKE 22 24 00.0 +12
OTAV LR LR
comp=Z,2µm,19.0s
DAMY Dhamar 119.21 281 PFAKE 22 24 00.0 +12
DAMY LR LR
comp=Z,1µm,20.0s
SFJD Kangerlussuaq 119.26 14 PFAKE 22 24 00.0 +14
SFJD LR LR
comp=Z,2µm,22.0s
SSPA Standing Stone 119.31 49 *e*PKPdf **PKPdf 22 23 46.5 -0.7**
SSPA LR LR
comp=Z,4µm,20.0s
FIA1 FINESS Array S 119.76 337 *e*PKPdf **PKPdf 22 23 46.5 -0.9**
FIA1 *e*PKPdf **PKiKP 22 23 47.0 -0.5**
FIA0 FINESS Array S 119.76 337 *e*PKIKP **PKPdf 22 23 46.6 -0.8**
FIA0 FINESS Array S 119.76 337 *e*PKPdf **PKPdf 22 23 46.6 -0.8**
FINES FINESS Array B 119.76 337 PKP **PKPdf 22 23 46.6 -0.8**
comp=Z,32nm,0.8s,baz=108,slow=6.2,SNR=47
SCO Scoresbysund 119.82 2 *i* P **PKPdf 22 23 48.6 +1.3**
comp=Z,1µm,22.0s
SCO Scoresbysund 119.82 2 *i* PKIKP **PKPdf 22 23 48.6 +1.3**
SCO MLR MLR
comp=Z,2µm,22.0s
URVA University of 120.18 53 *e*PKPdf **PKPdf 22 23 48.7 -0.3**
CBN Corbin Frederi 120.19 52 PFAKE 22 24 00.0 +11
CBN LR LR
comp=Z,3µm,21.0s
LVC Limon Verde 120.25 124 PFAKE 22 24 00.0 +10
LVC LR LR
comp=Z,2µm,20.0s
CNNC Cliffs of the 120.30 55 PFAKE 22 24 00.0 +11
CNNC LR LR
comp=Z,3µm,19.0s
BINY Binghamton 120.34 47 *e*PKPdf **PKPdf 22 23 49.0 -0.1**
BINY LR LR
comp=Z,4µm,20.0s
SDMD Soldier's Deli 120.35 50 *e*PKPdf **PKPdf 22 23 49.0 -0.2**
SOC Sochi 120.37 315 *e*PKIKP **PKPdf 22 23 50.3 +1.2**
SOC pmax pmax
comp=Z,24nm,0.7s
SOC MLR MLR
comp=Z,2µm,19.0s
PB01 IPOC Station P 120.48 122 PFAKE 22 24 00.0 +10
PB01 LR LR
comp=Z,2µm,21.0s
MVL Millersville 120.59 50 *e*PKPdf **PKPdf 22 23 49.6 -0.1**
MVL LR LR
comp=Z,3µm,20.0s
KSPA Keystone Colle 120.66 48 *e*PKPdf **PKPdf 22 23 49.5 -0.2**
KSPA LR LR
comp=Z,6µm,20.0s
LONY Lake Ozonia 120.67 44 *e*PKPdf **PKPdf 22 23 48.6 -1.1**
LONY LR LR
comp=Z,2µm,20.0s
N59A State Game Lan 120.81 48 PKiKP **PKPdf 22 23 48.9 -1.2**
baz=284
PB11 IPOC Station P 120.90 120 PFAKE 22 24 00.0 +8.9
PB11 LR LR
comp=Z,1µm,20.0s
NCB Newcomb 121.10 45 *e*PKPdf **PKPdf 22 23 50.1 -0.5**
LUPA Lehigh Univers 121.18 49 *e*PKPdf **PKPdf 22 23 50.7 -0.1**
LUPA LR LR
comp=Z,4µm,18.0s
SCHQ Schefferville 121.25 31 PKP **PKPdf 22 23 50.2 -0.3**
comp=Z,12nm,0.9s,baz=248,slow=4.4,SNR=6.8
SCHQ PKKPab **PKKPbc 22 33 53.4 -0.6**
comp=Z,7.6nm,0.8s,baz=98,slow=5.7,SNR=5.7
SCHQ Schefferville 121.25 31 *e*PKPdf **PKPdf 22 23 51.5 +1.0**
SCHQ *e*PKKPbc **PKKPbc 22 33 53.4 -0.6**
SCHQ LR LR
comp=Z,3µm,20.0s
FRNY Flat Rock 121.28 43 *e*PKPdf **PKPdf 22 23 50.3 -0.6**
FRNY LR LR
comp=Z,2µm,18.0s
PSUB Penn St. - Bra 121.28 49 *e*PKPdf **PKPdf 22 23 50.5 -0.5**
PSUB LR LR
comp=Z,5µm,20.0s
KBSD Kabsdagh 121.28 307 *e*P **PKPdf 22 23 49.7 -1.4**
VSU Vasula 121.30 334 *d i*PKIKP **PKPdf 22 23 50.1 -0.3**
VSU pmax pmax
comp=Z,356nm,1.7s
MZRK Al-Mazaregh 121.42 306 *e*P **PKPdf 22 23 51.7 +0.3**
KELT Kelkit 121.58 311 *i* P **PKPdf 22 23 52.2 +0.3**
ANN Anapa 121.58 317 *i* PKIKP **PKPdf 22 23 50.1 -1.3**
ANN *e* 22 25 21.9
ANN pmax pmax
comp=Z,60nm,1.0s
ODNJ Ogdensburg 121.62 48 *e*PKPdf **PKPdf 22 23 51.5 -0.1**
ODNJ LR LR
comp=Z,3µm,20.0s
ACCN Adirondack Com 121.66 45 *e*PKPdf **PKPdf 22 23 51.1 -0.5**
ACCN LR LR
comp=Z,3µm,19.0s
SFNV Sufian 121.74 306 *e*P **PKPdf 22 23 50.8 -1.3**
BRNJ Basking Ridge 121.75 48 *e*PKPdf **PKPdf 22 23 51.0 -0.8**
BRNJ LR LR
comp=Z,3µm,19.0s
MDV Middlebury 121.81 44 *e*PKPdf **PKPdf 22 23 51.4 -0.5**
MTDJ Mount Denham 121.84 75 PFAKE 22 24 00.0 +7.2
MTDJ LR LR
comp=Z,600nm,19.0s
TRY Troy 121.85 46 *e*PKPdf **PKPdf 22 23 52.4 +0.4**
TRY LR LR
comp=Z,4µm,20.0s
PAL Palisades 122.15 48 *e*PKIKP **PKPdf 22 23 53.1 +0.5**
PAL MLR MLR
comp=Z,4µm,20.0s
PAL Palisades 122.15 48 *e*PKPdf **PKPdf 22 23 53.1 +0.5**
PAL LR LR
comp=Z,4µm,20.0s
SUSE Susehri 122.35 311 *i* P **PKPdf 22 23 53.6 +0.3**
LMQ La Malbaie 122.47 40 *e*PKPdf **PKPdf 22 23 53.0 -0.1**
LMQ LR LR
comp=Z,3µm,19.0s
HNH Hanover 122.52 44 *e*PKPdf **PKPdf 22 23 53.4 +0.1**
HNH LR LR
comp=Z,5µm,20.0s
YLE Yale 122.77 47 *e*PKPdf **PKPdf 22 23 53.7 -0.1**
YLE LR LR
comp=Z,5µm,20.0s
TOLC Tolima 122.81 91 *e*P **PKPdf 22 23 55.0 -0.1**
GUYC Guyana, Colomb 122.84 90 *e*P **PKPdf 22 23 54.5 -0.8**
HELC Santa Helena 122.84 89 *e*P **PKPdf 22 23 54.5 -0.7**
HELC Santa Helena 122.84 89 *e*PKPdf **PKPdf 22 23 54.6 -0.6**
HELC LR LR
comp=Z,2µm,22.0s
QUA2 Belchertown 122.91 46 *e*PKPdf **PKPdf 22 23 53.9 -0.1**
QUA2 LR LR
comp=Z,3µm,18.0s
MICGM Minsk 123.02 330 ||*e*P **PKPdf 22 23 56.0 +2.1**
MICGM PM 22 23 57.0
comp=Z,0.2nm,1.0s
MICGM *e* 22 25 31.0
MICGM *e*LQ LQ 23 10 40.0
MICGM *e*LR LR 23 14 00.0
MICGM LRM MLR 23 16 16.0
comp=Z,2.3nm,20.0s
MICGM LRM MLR 23 16 52.0
comp=E,2.5nm,20.0s
MNK Minsk 123.02 330 ||*e*PKIKP **PKPdf 22 23 56.0 +2.1**
MNK *e* 22 25 31.0
MNK pmax pmax
comp=Z,170nm,1.0s
MNK MLR MLR
comp=Z,3µm,20.0s
MNK MLR MLR
comp=E,3µm,20.0s
FFD Franklin Falls 123.03 44 PFAKE 22 24 10.0 +16
FFD LR LR
comp=Z,6µm,20.0s
PRAC Prado 123.09 92 *e*P **PKPdf 22 23 54.0 -1.3**
PRAC Prado 123.09 92 *e*PKPdf **PKPdf 22 23 54.4 -0.9**
PRAC LR LR
comp=Z,400nm,20.0s
IZAR Zarasai 123.10 332 IAmb IAmb 22 23 59.9
comp=Z,9.2nm,1.2s
IDID Didziasalis 123.12 331 *e*P **PKPdf 22 23 54.4 +0.3**
IDID IAmb IAmb 22 23 58.3
comp=Z,75nm,1.0s
BOSA Boshof 123.15 226 PKP **PKPdf 22 23 54.2 -0.9**
comp=Z,5.0nm,0.6s,baz=110,slow=1.9,SNR=10
BOSA Boshof 123.15 226 *e*PKPdf **PKPdf 22 23 54.2 -0.9**
BOSA *e*PKPdf **PKiKP 22 23 54.7 -0.7**
ISAL Salakas 123.26 332 *e*P **PKPdf 22 23 54.6 +0.3**
ISAL IAmb IAmb 22 23 58.6
comp=Z,44nm,0.9s
NACGM Naroch 123.33 331 *e*PKP **PKPdf 22 23 54.0 -0.5**
NACGM PKPM 22 23 58.0
comp=Z,0.4nm,1.0s
NACGM *e*PP **PP 22 25 35.0 0.0**
NACGM *e*SKP 22 27 08.0
NACGM *e*PS **PS 22 35 26.0 -6.3**
NACGM *e*LR LR 23 11 58.0
NACGM LRM MLR 23 16 03.0
comp=Z,4.9nm,23.0s
HRV Adam Dziewonsk 123.40 46 *e*PKIKP **PKPdf 22 23 55.2 +0.2**
HRV MLR MLR
comp=Z,2µm,19.0s
HRV Adam Dziewonsk 123.40 46 *e*PKPdf **PKPdf 22 23 55.2 +0.2**
HRV LR LR
comp=Z,2µm,19.0s
SLMH Al Salmeh 123.50 307 *e*P **PKPdf 22 23 48.2 -7.3**
BRYW Bryant College 123.60 46 *e*PKPdf **PKPdf 22 23 55.2 -0.2**
BRYW LR LR
comp=Z,6µm,18.0s
WES Weston 123.61 46 *e*PKIKP **PKPdf 22 23 56.0 +0.7**
WES MLR MLR
comp=Z,3µm,19.0s
WES Weston 123.61 46 *e*PKPdf **PKPdf 22 23 56.0 +0.7**
WES LR LR
comp=Z,3µm,19.0s
LPAZ La Paz 123.68 117 PKP **PKPdf 22 23 57.2 +0.1**
comp=Z,4.7nm,0.6s,baz=286,slow=2.2,SNR=22
LPAZ La Paz 123.68 117 *e*PKPdf **PKPdf 22 23 57.8 +0.7**
BCX Boston College 123.73 46 *e*PKPdf **PKPdf 22 23 56.1 +0.6**
SUR Sutherland 123.73 219 PFAKE 22 24 10.0 +14
SUR LR LR
comp=Z,2µm,20.0s
SIM Simferopol' 123.75 318 *ce*P **Pdif 22 20 32.7 +4.1**
SIM *i* 22 23 55.0
SIM *e* 22 25 42.0
SIM *e*PS **PS 22 35 33.0 -3.6**
SIM *e*SS SS 22 42 43.0 +18
SIM pmax pmax
comp=Z,56nm,0.8s
SIM pmax pmax
comp=Z,230nm,12.6s
ROSC El Rosal 123.83 91 PKP **PKPdf 22 23 56.6 -0.5**
comp=Z,18nm,0.6s,baz=207,slow=4.3,SNR=12
ROSC El Rosal 123.83 91 *e*P **PKPdf 22 23 54.5 -2.6**
ROSC El Rosal 123.83 91 *e*PKPdf **PKPdf 22 23 57.0 -0.2**
ROSC LR LR
comp=Z,800nm,21.0s
PKME Peaks-Kenny Pk 124.00 42 *e*PKPdf **PKPdf 22 23 55.9 -0.1**
KMBO Kilima Mbogo 124.00 262 PKP **PKPdf 22 23 57.2 -0.1**
comp=Z,4.3nm,1.0s,baz=132,slow=2.3,SNR=7.9
KMBO PKKPbc **PKKPab 22 33 44.7 +1.8**
comp=Z,4.7nm,1.1s,baz=44,slow=5.4,SNR=4.4
KMBO Kilima Mbogo 124.00 262 PKPdf **PKPdf 22 24 00.4 +3.1**
SNR=5.2
KMBO Kilima Mbogo 124.00 262 P **PKPdf 22 24 00.4 +3.1**
SNR=5.2
KMBO Kilima Mbogo 124.00 262 *e*PKPdf **PKPdf 22 23 59.9 +2.6**
KMBO *e*PKKPbc **PKKPab 22 33 44.7 +1.8**
KMBO LR LR
comp=Z,2µm,22.0s
CUSAR Sarkisla-SIVAS 124.01 311 *i* P **PKPdf 22 23 53.7 -2.8**
WVL Waterville 124.01 43 *e*PKPdf **PKPdf 22 23 55.9 -0.1**
WVL LR LR
comp=Z,5µm,19.0s
GTBY Guantanamo Bay 124.13 73 PFAKE 22 24 10.0 +13
GTBY LR LR
comp=Z,600nm,20.0s
AKASG Malin Array Be 124.28 326 PKP **PKPdf 22 23 55.7 -0.7**
comp=Z,59nm,0.8s,baz=59,slow=2.3,SNR=69
AKASG PP **PP 22 25 41.9 +0.3**
comp=Z,2.9nm,0.7s,baz=50,slow=6.8,SNR=5.8
AKBB Malin Array Si 124.28 326 *e*PKIKP **PKPdf 22 23 56.1 -0.3**
AKBB *e* 22 25 41.9
AKBB MLR MLR
comp=Z,2µm,22.0s
AKBB Malin Array Si 124.28 326 *e*PKPdf **PKPdf 22 23 56.1 -0.3**
AKBB *e*PP **PP 22 25 41.9 +0.3**
AKBB LR LR
comp=Z,2µm,22.0s
FURI Furi 124.30 274 PFAKE 22 24 10.0 +12
FURI LR LR
comp=Z,800nm,20.0s
KIEV Kiev 124.30 326 *e*PKIKP **PKPdf 22 23 55.3 -1.1**
KIEV MLR MLR
comp=Z,2µm,21.0s
KIEV Kiev 124.30 326 *e*PKPdf **PKPdf 22 23 55.3 -1.1**
KIEV LR LR
comp=Z,2µm,21.0s
AK11 Malin Array Si 124.33 326 *e*PKPdf **PKPdf 22 23 55.1 -1.4**
CHIC Chingaza 124.38 91 *e*P **PKPdf 22 23 56.5 -1.7**
DRWC Darouich 124.40 307 *e*P **PKPdf 22 23 56.8 -0.4**
ROOS tl_alroos 124.45 304 *e*P **PKPdf 22 23 58.7 +1.3**
ZALF Zalf 124.65 303 *e*P **PKPdf 22 23 57.5 -0.3**
MOL Molde 124.69 346 *e*PKPdf **PKPdf 22 23 56.5 -0.3**
MOL IAMs_20 IAMs_20 23 23 04.0
comp=Z,3µm,22.0s
COAL Corum-Alaca 124.70 312 *i* P **PKPdf 22 23 56.8 -0.9**
BRRC Barranca, Sant 124.75 88 *e*P **PKPdf 22 23 58.5 +0.1**
DOMB Dombas 124.77 345 *e*PKPdf **PKPdf 22 23 57.6 +0.5**
DOMB *e*PP **PP 22 25 42.3 -2.1**
NC405 NORSAR Array S 124.82 343 *e*PKPdf **PKPdf 22 23 57.3 +0.1**
NC303 NORSAR Array S 124.83 343 *e*PKPdf **PKPdf 22 23 57.0 -0.2**
NC204 NORSAR Array S 124.95 344 *e*PKPdf **PKPdf 22 23 58.4 +0.9**
NB201 NORSAR Array S 124.99 343 *e*PKPdf **PKPdf 22 23 57.7 +0.2**
HFS Hagfors 125.00 341 PKP **PKPdf 22 23 57.0 -0.5**
comp=Z,49nm,0.7s,baz=126,slow=2.0,SNR=43
HFS Hagfors 125.00 341 PKIKP **PKPdf 22 23 57.0 -0.5**
NB2 NORSAR Subarra 125.02 343 PKPdf **PKPdf 22 23 57.2 -0.4**
comp=Z,75nm,0.9s,baz=36,slow=2.0
NB2 NORSAR Subarra 125.02 343 PKPdf **PKPdf 22 23 57.2 -0.4**
baz=36,slow=2.0
NB200 NORSAR Array S 125.02 343 *e*PKPdf **PKPdf 22 23 57.2 -0.4**
NB200 *e*PP **PP 22 25 46.8 +0.7**
NB200 *e*Sdif Sdif 22 33 38.5 -5.3
NOA NORSAR Array B 125.02 343 PKP **PKPdf 22 23 57.2 -0.4**
comp=Z,31nm,0.7s,baz=35,slow=1.8,SNR=70
NOA PP **PP 22 25 46.8 +0.7**
comp=Z,4.6nm,0.8s,baz=35,slow=6.6,SNR=4.1
NOA PKKPbc **PKKPbc 22 33 38.5 -0.9**
comp=Z,0.7nm,0.7s,baz=216,slow=4.3,SNR=3.4
NBO02 NORSAR Array S 125.11 343 *e*PKPdf **PKPdf 22 23 57.4 -0.3**
MARH Ras Al Marh 125.13 304 *e*P **PKPdf 22 23 57.5 -1.5**
NBO00 NORSAR Array S 125.15 343 *e*PKPdf **PKPdf 22 23 57.9 +0.1**
ASF Jabal al Asfar 125.15 302 PKP **PKPdf 22 23 59.0 +0.2**
comp=Z,15nm,0.7s,baz=96,slow=0.3,SNR=22
AKN Aaknes 125.16 346 *e*PKPdf **PKPdf 22 23 58.7 +0.9**
AKN *e*PP **PP 22 25 46.6 -0.3**
NC602 NORSAR Array S 125.17 343 *e*PKPdf **PKPdf 22 23 57.5 -0.4**
NC602 *e*PP **PP 22 25 47.9 +0.9**
NC602 NORSAR Array S 125.17 343 *e*PKPdf **PKPdf 22 23 57.5 -0.4**
SALA Sala 125.19 303 *e*P **PKPdf 22 24 01.3 +2.3**
RUSC La Rusia 125.21 90 *e*P **PKPdf 22 23 59.0 -0.8**
RUSC La Rusia 125.21 90 *e*PKPdf **PKPdf 22 23 58.6 -1.3**
BARC Barichara 125.21 89 *e*P **PKPdf 22 23 58.0 -1.5**
NAO01 NORSAR Array S 125.27 343 *e*PKPdf **PKPdf 22 23 58.5 +0.4**
OCAC Ocana 125.28 87 *e*P **PKPdf 22 23 59.5 -0.1**
TOTH TOTAH 125.31 304 *e*P **PKPdf 22 23 56.5 -2.5**
NRS Narsarsuaq 125.34 16 *i* P **PKPdf 22 23 57.1 -1.0**
NRS Narsarsuaq 125.34 16 *i* PKIKP **PKPdf 22 23 57.1 -1.0**
ILGA Ilgaz 125.37 313 *i* P **PKPdf 22 23 58.4 -0.7**
EMMW East Machias 125.41 42 *e*PKPdf **PKPdf 22 23 59.3 +0.5**
BORG Borgarnes 125.59 2 *e*PKIKP **PKPdf 22 24 00.0 +1.5**
BORG MLR MLR
comp=Z,1µm,20.0s
BORG Borgarnes 125.59 2 *e*PKPdf **PKPdf 22 23 60.0 +1.5**
BORG LR LR
comp=Z,1µm,20.0s
GGN Saint George 125.65 41 *e*PKPdf **PKPdf 22 23 59.0 -0.2**
GGN LR LR
comp=Z,2µm,20.0s
BRBR Barbar 125.69 304 *e*P **PKPdf 22 23 57.9 -2.1**
GRMC Gramalote, San 125.73 88 *e*P **PKPdf 22 23 57.5 -2.9**
CBRI Barrientos, No 125.73 88 *e*P **PKPdf 22 23 58.5 -1.9**
TCHB Talchebab 125.83 303 *e*P **PKPdf 22 23 59.5 -0.5**
BR101 Keskin Array S 125.85 312 *e*PKPdf **PKPdf 22 23 59.4 -0.6**
BR101 *e*PP **PP 22 25 54.2 +1.5**
BR131 Keskin Array S 125.85 312 *e*PKPdf **PKPdf 22 23 59.8 -0.2**
BRTR Keskin Array B 125.85 312 PKP **PKPdf 22 23 59.4 -0.6**
comp=Z,45nm,1.2s,baz=130,slow=1.9,SNR=32
BRTR PP **PP 22 25 54.2 +1.5**
comp=Z,7.8nm,1.1s,baz=110,slow=5.4,SNR=4.3
OSL Oslo 126.06 343 *e*PKPdf **PKPdf 22 23 59.4 -0.1**
FOO Floro 126.12 347 *e*PKPdf **PKPdf 22 24 00.5 +0.9**
FOO *e*PP **PP 22 25 54.7 +1.5**
KERG Konya-Eregli 126.16 309 *i* P **PKPdf 22 23 59.1 -1.5**
MMAI Mount Meron Ar 126.22 303 PKP **PKPdf 22 24 00.9 +0.1**
comp=Z,23nm,0.8s,baz=60,slow=4.0,SNR=22
HYA Hoyanger 126.24 346 *e*PKPdf **PKPdf 22 24 00.1 +0.3**
KIS Kishinev 126.28 322 ⇑*i* PKP **PKPdf 22 24 02.0 +1.6**
KIS M M 22 24 02.5
comp=Z,400nm,1.0s
KIS Kishinev 126.28 322 *e*PP PP 22 25 51.0 -4.0
KIS *e*SKS 22 30 02.0
KIS *e*SKKS **SKKSac 22 32 41.0 -10**
KIS LRM MLR 23 23 30.0
comp=Z,2µm,20.0s
KIS Kishinev 126.28 322 ||*i* P **PKPdf 22 23 59.7 -0.7**
KIS Kishinev 126.28 322 ⇑||*e*PKIKP **PKPdf 22 24 02.0 +1.6**
KIS *e* 22 24 09.0
KIS *e* 22 25 51.0
KIS pmax pmax
comp=Z,400nm,1.0s
KIS MLR MLR
comp=Z,2µm,18.0s
KIZK Mersin 126.40 308 *i* P **PKPdf 22 23 59.7 -1.2**
ANTO Ankara 126.42 312 *e*PKIKP **PKPdf 22 24 01.1 +0.1**
ANTO MLR MLR
comp=Z,900nm,21.0s
ANTO Ankara 126.42 312 *e*PKPdf **PKPdf 22 24 01.1 +0.1**
ANTO LR LR
comp=Z,900nm,21.0s
BR231 Keskin MP Arra 126.44 312 *e*PKPdf **PKPdf 22 24 00.0 -1.0**
KONO Kongsberg 126.62 343 *e*PKPdf **PKPdf 22 24 00.7 +0.1**
KONO *e*PP **PP 22 25 59.1 +2.4**
KONO IAMs_20 IAMs_20 23 20 52.6
comp=Z,2µm,18.1s
KONO Kongsberg 126.62 343 *e*PKIKP **PKPdf 22 24 01.0 +0.4**
KONO MLR MLR
comp=Z,2µm,21.0s
KONO Kongsberg 126.62 343 *e*PKPdf **PKPdf 22 24 01.0 +0.4**
KONO LR LR
comp=Z,2µm,21.0s
LMN Caledonia Moun 126.63 40 *e*PKPdf **PKPdf 22 24 00.3 -0.8**
LMN LR LR
comp=Z,3µm,21.0s
SUE Sulen 126.67 347 IAMs_20 IAMs_20 23 17 44.4
comp=Z,1µm,18.5s
LEOM Leova 126.87 321 ||*i* P **PKPdf 22 24 01.0 -0.5**
LEOM Leova 126.87 321 ||*i* PKIKP **PKPdf 22 24 01.0 -0.5**
IAS Iasi 126.94 323 ||*i* P **PKPdf 22 24 04.3 +2.7**
IAS Iasi 126.94 323 ||*i* PKIKP **PKPdf 22 24 04.3 +2.7**
CPUP Villa Florida 127.11 134 PKP **PKPdf 22 24 02.1 -0.5**
comp=Z,3.2nm,0.6s,baz=282,slow=3.1,SNR=7.3
CPUP PKKP **PKKPdf 22 34 15.4 -1.0**
comp=Z,3.6nm,0.9s,baz=101,slow=5.2,SNR=5.7
CPUP Villa Florida 127.11 134 *e*PKPdf **PKPdf 22 24 05.0 +2.4**
CPUP *e*Sdif Sdif 22 34 15.4 +13
BER Bergen 127.13 346 *e*PKPdf **PKPdf 22 24 05.8 +4.3**
BER *e*PP **PP 22 25 59.6 -0.2**
BER *e*SP SP 22 35 57.7 -2.4
ODD1 Odda 127.21 345 *e*PKPdf **PKPdf 22 24 02.2 +0.3**
EIL Elat 127.24 299 PKP **PKPdf 22 24 02.2 -0.5**
comp=Z,18nm,0.8s,baz=5.5,slow=2.0,SNR=23
ERMK Ermenek 127.31 308 *i* P **PKPdf 22 24 02.9 0.0**
KDHN Kadinhani 127.35 311 *i* P **PKPdf 22 24 01.7 -1.1**
CSS Mathiatis 127.44 306 P **PKPdf 22 24 05.6 +2.6**
CSS Mathiatis 127.44 306 P **PKPdf 22 24 02.2 -0.8**
CSS Mathiatis 127.44 306 *e*PKPdf **PKPdf 22 24 02.2 -0.8**
CSS LR LR
comp=Z,300nm,22.0s
SAHE Sakarya_HENDEK 127.47 314 *i* P **PKPdf 22 24 03.1 +0.2**
MAMC Mammari 127.48 307 *i* P **PKPdf 22 24 03.7 +0.7**
CFR Carcaliu 127.53 320 ⇑*i* P **PKPdf 22 24 03.3 +0.5**
CFR Carcaliu 127.53 320 ⇑PKIKP **PKPdf 22 24 03.3 +0.5**
LVV L'vov 127.58 327 ||*e*PKIKP **PKPdf 22 24 02.2 -0.6**
LVV *e* 22 36 04.8
PRAR RASCA 127.65 323 ⇑*i* P **PKPdf 22 24 03.5 +0.5**
TIRR Tirgusor 127.67 319 *e*PKIKP **PKPdf 22 24 05.4 +2.3**
TIRR MLR MLR
comp=Z,2µm,20.0s
TIRR Tirgusor 127.67 319 *e*PKPdf **PKPdf 22 24 05.3 +2.3**
TIRR LR LR
comp=Z,2µm,20.0s
BLS5 Blasjo 127.68 345 *e*PKPdf **PKPdf 22 24 03.3 +0.6**
BLS5 *e*PP **PP 22 26 07.1 +3.5**
BLS5 *e*SP SP 22 36 02.2 -2.9
SDDR Presa de Saban 127.76 74 *e*PKPdf **PKPdf 22 24 03.3 -0.7**
SDDR LR LR
comp=Z,2µm,19.0s
LSZ Lusaka 127.78 242 *e*PKIKP **PKPdf 22 24 04.4 +0.1**
LSZ MLR MLR
comp=Z,2µm,20.0s
LSZ Lusaka 127.78 242 PKPdf **PKPdf 22 24 06.2 +1.9**
SNR=9.8
LSZ Lusaka 127.78 242 *e*PKPdf **PKPdf 22 24 04.4 +0.1**
LSZ LR LR
comp=Z,2µm,20.0s
GRTK Grand Turk 127.79 71 PFAKE 22 24 20.0 +16
GRTK LR LR
comp=Z,2µm,22.0s
SZAC Souni 127.85 306 P **PKPdf 22 24 04.5 +0.7**
HARR Harsova 127.88 320 ⇑*i* P **PKPdf 22 24 05.0 +1.5**
HARR Harsova 127.88 320 ⇑PKIKP **PKPdf 22 24 05.0 +1.5**
ESKT Eskisehir 127.95 313 *i* P **PKPdf 22 24 04.3 +0.3**
SDV Santo Domingo 127.99 87 *e*PKPdf **PKPdf 22 24 04.8 0.0**
SDV LR LR
comp=Z,1µm,18.0s
BEL Belsk 128.04 331 *e*PKP **PKPdf 22 24 03.7 +0.1**
BEL *e*PKS PKSab 22 27 19.8 -2.2
BEL Belsk 128.04 331 *e*PKIKP **PKPdf 22 24 03.7 +0.1**
HOMB Homborsund 128.09 343 *e*PKPdf **PKPdf 22 24 03.9 +0.4**
HOMB *e*PP **PP 22 26 09.5 +3.2**
BORA Eskisehir 128.11 313 *i* P **PKPdf 22 24 03.3 -0.9**
BURO8 Bucovina Ar. S 128.11 324 *e*PKPdf **PKPdf 22 24 05.0 +1.0**
PLOR Plostina 128.14 321 ⇑*i* P **PKPdf 22 24 04.3 +0.3**
PLOR Plostina 128.14 321 ⇑PKIKP **PKPdf 22 24 04.3 +0.3**
GRER 128.17 321 ⇑*i* P **PKPdf 22 24 08.6 +4.6**
AKMC Akamas 128.22 307 P **PKPdf 22 24 03.4 -1.1**
PPCY Paphos 128.24 306 P **PKPdf 22 24 07.2 +2.7**
STAV Stavanger 128.30 345 *e*PKPdf **PKPdf 22 24 03.9 +0.1**
STAV *e*PP **PP 22 26 11.3 +3.7**
BSD Bornholm Skovb 128.38 337 *i* P **PKPdf 22 24 05.1 +1.0**
comp=Z,2µm,20.0s
BSD Bornholm Skovb 128.38 337 *i* PKIKP **PKPdf 22 24 05.1 +1.0**
BSD MLR MLR
comp=Z,2µm,20.0s
PGOR Pogoanele 128.38 320 ⇑*i* P **PKPdf 22 24 08.7 +4.3**
KWP Kalwaria Pacla 128.40 327 *e*PKP **PKPdf 22 24 04.7 +0.4**
KWP *e*PP **PP 22 26 10.3 +1.5**
KWP *e*PKS PKSbc 22 27 26.5 +0.5
KWP Kalwaria Pacla 128.40 327 *e*PKIKP **PKPdf 22 24 04.7 +0.4**
KWP *e* 22 26 10.3
ISK Istanbul-Kandi 128.65 315 P **PKPdf 22 24 05.1 0.0**
ISK Istanbul-Kandi 128.65 315 PKIKP **PKPdf 22 24 05.1 0.0**
ISK Istanbul-Kandi 128.65 315 P **PKPdf 22 24 05.1 0.0**
GKP Gorka Klasztor 128.74 334 *e*PKP **PKPdf 22 24 05.4 +0.6**
GKP Gorka Klasztor 128.74 334 *e*PKIKP **PKPdf 22 24 05.4 +0.6**
MLR Muntele Rosu 128.75 321 PKP **PKPdf 22 24 04.6 -0.7**
comp=Z,27nm,1.3s,baz=355,slow=1.6,SNR=19
MLR Muntele Rosu 128.75 321 ⇑*i* P **PKPdf 22 24 06.1 +0.8**

MLR	**Muntele Rosu**	**128.75**	**321**	*e*PKPdf	**PKPdf**	**22 24 04.9**	**-0.4**
MLR				LR	LR			
	comp=Z,2µm,22.0s							
DOPR	**Dopca**	**128.85**	**322**	⇓*i*P	**PKPdf**	**22 24 06.9**	**+1.5**
COP	**Copenhagen**	**128.88**	**338**	*i* P	**PKPdf**	**22 24 06.2**	**+1.2**
	comp=Z,1µm,21.0s							
COP	**Copenhagen**	**128.88**	**338**	*i* PKIKP	**PKPdf**	**22 24 06.2**	**+1.2**
COP				MLR	MLR			
	comp=Z,1µm,21.0s							
BMR	**Baia Mare**	**129.07**	**325**	⇓*i*P	**PKPdf**	**22 24 06.8**	**+1.1**
BMR	**Baia Mare**	**129.07**	**325**	⇓*i*PKIKP	**PKPdf**	**22 24 06.8**	**+1.1**
GDZ	**Gediz**	**129.09**	**312**	*i* P	**PKPdf**	**22 23 58.5**	**-7.7**
DRLN	**Deer Lake**	**129.11**	**33**	*e*PKPdf	**PKPdf**	**22 24 06.5**	**+0.9**
DRLN				LR	LR			
	comp=Z,3µm,19.0s							
KORT	**Korkueli**	**129.16**	**310**	*i* P	**PKPdf**	**22 24 07.6**	**+1.3**
UZH	**Uzhgorod**	**129.20**	**326**	*e*PKIKP	PKPdf	22 23 57.5	-8.4
UZH				*e*		22 24 06.9		
UZH				*i*		22 24 13.9		
UZH				MLR	MLR			
	comp=N,3µm,19.0s							
UZH				MLR	MLR			
	comp=E,2µm,19.0s							
LLD	**Lille Linde**	**129.23**	**338**	*i* P	**PKPdf**	**22 24 07.3**	**+1.6**
LLD	**Lille Linde**	**129.23**	**338**	*i* PKIKP	**PKPdf**	**22 24 07.3**	**+1.6**
MUD	**Monsted U'grnd**	**129.38**	**341**	*i* P	**PKPdf**	**22 24 09.0**	**+3.1**
	comp=Z,2µm,21.0s							
MUD	**Monsted U'grnd**	**129.38**	**341**	*i* PKIKP	**PKPdf**	**22 24 09.0**	**+3.1**
MUD				MLR	MLR			
	comp=Z,2µm,21.0s							
RGN	**Rugen**	**129.42**	**337**	PFAKE		22 24 20.0	+14	
RGN				LR	LR			
	comp=Z,2µm,22.0s							
CJR	**Cluj-Napoca**	**129.53**	**324**	⇑*i*P	**PKPdf**	**22 24 07.3**	**+0.6**
CJR	**Cluj-Napoca**	**129.53**	**324**	⇑PKIKP	**PKPdf**	**22 24 07.3**	**+0.6**
OJC	**Ojcow**	**129.54**	**329**	*e*PKP	**PKPdf**	**22 24 06.6**	**+0.1**
OJC				*e*PP	**PP**	**22 26 14.3**	**-2.0**
OJC				*e*PKS	**PKSbc**	**22 27 29.0**	**-0.6**
OJC	**Ojcow**	**129.54**	**329**	*e*PKIKP	**PKPdf**	**22 24 06.6**	**+0.1**
OJC				*e*		22 26 14.3		
OJC	**Ojcow**	**129.54**	**329**	*e*PKPpre	PKPpre	22 23 58.7		
ARR	**Arges**	**129.61**	**322**	⇑*i*P	**PKPdf**	**22 24 08.2**	**+1.3**
DEMI	**Demirci**	**129.66**	**313**	*i* P	PKPpre	22 24 00.7		
SZH	**Strazhica**	**129.81**	**319**	*i* P	**PKPdf**	**22 24 07.8**	**+0.6**
HUMR	**Humele**	**129.82**	**321**	⇓*i*P	**PKPdf**	**22 24 07.4**	**+0.2**
KULA	**Kula-Manisa**	**129.90**	**312**	P	**PKPdf**	**22 24 05.6**	**-2.1**
KULA	**Kula-Manisa**	**129.90**	**312**	P	**PKPdf**	**22 24 05.6**	**-2.1**
EDRB	**Edirne**	**129.91**	**317**	P	**PKPdf**	**22 24 07.4**	**-0.1**
EDRB	**Edirne**	**129.91**	**317**	P	**PKPdf**	**22 24 07.4**	**-0.1**
AKAS	**Kas**	**129.98**	**309**	*i* P	**PKPdf**	**22 24 07.7**	**-0.2**
MANT	**Manisa**	**129.98**	**312**	*i* P	**PKPdf**	**22 24 12.8**	**+4.8**
DRGR		**130.00**	**324**	⇑*i*P	**PKPdf**	**22 24 07.8**	**+0.2**
DRGR		**130.00**	**324**	⇑PKIKP	**PKPdf**	**22 24 07.8**	**+0.2**
LOT	**Lotru**	**130.09**	**322**	⇓*i*P	**PKPdf**	**22 24 07.4**	**-0.5**
BALY	**Balya**	**130.18**	**314**	*i* P	**PKPdf**	**22 24 06.8**	**-1.3**
MBAR	**Mbarara**	**130.46**	**260**	*e*PKIKP	**PKPdf**	**22 24 11.9**	**+2.4**
MBAR				MLR	MLR			
	comp=Z,2µm,18.0s							
MBAR	**Mbarara**	**130.46**	**260**	*e*PKPdf	**PKPdf**	**22 24 11.9**	**+2.4**
MBAR				LR	LR			
	comp=Z,2µm,18.0s							
TURN	**Turunc**	**130.52**	**310**	*i* P	PKPdf	22 24 18.5	+10	
OKC	**Ostrava-Krasne**	**130.61**	**330**	*e*PKPdf	**PKPdf**	**22 24 10.0**	**+1.5**
OKC				*e*pPKP	**pPKPdf**	**22 24 11.1**	**+0.4**
OKC				*ex*	x	22 26 09.2		
OKC				*e*PP	**PP**	**22 26 22.8**	**-0.3**
OKC				*e*SKP		22 27 35.1		
OKC				*e*SS	SS	22 43 57.3	+7.9	
OKC				AMS	AMS	23 20 30.0		
	comp=Z,2µm,22.2s							
OKC	**Ostrava-Krasne**	**130.61**	**330**	*e*PKIKP	**PKPdf**	**22 24 10.0**	**+1.5**
OKC				*e*		22 24 19.1		
OKC				*e*		22 26 22.8		
OKC				MLR	MLR			
	comp=Z,2µm,22.2s							
CRAR	**CRAIOVA**	**130.65**	**321**	⇓*i*P	**PKPdf**	**22 24 10.8**	**+2.0**
CRAR	**CRAIOVA**	**130.65**	**321**	⇓PKIKP	**PKPdf**	**22 24 10.8**	**+2.0**
ALN	**Alexandroupoli**	**130.80**	**316**	P	**PKPdf**	**22 24 08.6**	**-0.6**
ALN	**Alexandroupoli**	**130.80**	**316**	PKIKP	**PKPdf**	**22 24 08.6**	**-0.6**
ALN	**Alexandroupoli**	**130.80**	**316**	P	**PKPdf**	**22 24 08.6**	**-0.6**
KSP	**Ksiaz**	**130.83**	**332**	*e*PKP	**PKPdf**	**22 24 09.2**	**+0.3**
KSP				*e*PP	**PP**	**22 26 22.8**	**-1.6**
KSP				*e*PKS	PKSdf	22 27 35.8	-9.5	
KSP	**Ksiaz**	**130.83**	**332**	*e*PKIKP	**PKPdf**	**22 24 09.2**	**+0.3**
KSP				*e*		22 26 22.8		
KDZ	**Kurdzhali**	**130.89**	**317**	*i* P	**PKPdf**	**22 24 10.4**	**+1.0**
PSZ	**Piszkesteto**	**130.91**	**327**	⇑*i*P	**PKPdf**	**22 24 09.8**	**+0.5**
PSZ	**Piszkesteto**	**130.91**	**327**	⇑PKIKP	**PKPdf**	**22 24 09.8**	**+0.5**
PSZ	**Piszkesteto**	**130.91**	**327**	*e*PKPpre	PKPpre	22 24 00.1		
PSZ				LR	LR			
	comp=Z,3µm,20.0s							
PSZ	**Piszkesteto**	**130.91**	**327**	⇓*e*PKPdf	**PKPdf**	**22 24 11.0**	**+1.7**
MORC	**Moravsky Berou**	**130.95**	**330**	⇑*i*P	**PKPdf**	**22 24 09.5**	**+0.2**
MORC	**Moravsky Berou**	**130.95**	**330**	⇑PKIKP	**PKPdf**	**22 24 09.5**	**+0.2**
MORC	**Moravsky Berou**	**130.95**	**330**	*e*PKPpre	PKPpre	22 24 01.5		
MORC				LR	LR			
	comp=Z,8µm,20.0s							
SAML	**Samuel**	**131.01**	**111**	*e*PKPdf	**PKPdf**	**22 24 11.6**	**+1.3**
SAML				LR	LR			
	comp=Z,500nm,20.0s							
KRLC	**Kraliky**	**131.12**	**331**	*e*PKPdf	**PKPdf**	**22 24 09.8**	**+0.2**
KRLC				*e*PP	**PP**	**22 26 25.7**	**-0.8**
KRLC	**Kraliky**	**131.12**	**331**	*e*PKIKP	**PKPdf**	**22 24 09.8**	**+0.2**
KRLC				*e*		22 26 25.7		
DPC	**Dobruska-Polom**	**131.15**	**331**	*e*PKPpre	PKPpre	22 23 58.4		
DPC				*e*PKPdf	**PKPdf**	**22 24 10.0**	**+0.4**	
DPC				*ex*	x	22 24 27.6		
DPC				*e*PP	**PP**	**22 26 19.2**	**-7.4**
DPC				*e*SKP		22 27 35.6		
DPC				*ex*	x	22 27 37.7		
DPC				*e*SS	SS	22 44 02.6	+6.5	
DPC				AMS	AMS	23 16 40.0		
	comp=Z,2µm,24.8s							
DPC	**Dobruska-Polom**	**131.15**	**331**	*e*PKHKP	PKPpre	22 23 58.4		
DPC				*e*		22 24 10.0		
DPC				MLR	MLR			
	comp=Z,2µm,24.8s							
PLD	**Plovdiv**	**131.16**	**318**	*i* P	**PKPdf**	**22 24 08.2**	**-1.6**
MPEP	**Malo Peshtene**	**131.18**	**320**	*i* P	**PKPdf**	**22 24 10.4**	**+0.6**
UPC	**Upice**	**131.19**	**332**	*e*PKPdf	**PKPdf**	**22 24 09.6**	**0.0**
UPC				*e*PP	**PP**	**22 26 20.2**	**-6.6**
UPC				*e*SKP		22 27 36.3		
UPC				*e*SS	SS	22 44 03.9	+7.5	
UPC				AMS	AMS	23 27 30.0		
	comp=Z,2µm,19.2s							
UPC	**Upice**	**131.19**	**332**	*e*PKIKP	**PKPdf**	**22 24 09.6**	**0.0**
UPC				MLR	MLR			
	comp=Z,2µm,19.2s							
GCAM	**G?zelcaml?**	**131.25**	**312**	*i* P	PKPdf	22 24 19.3	+9.2	
PGB	**Panagyurishte**	**131.29**	**319**	*i* P	**PKPdf**	**22 24 09.9**	**-0.3**
PRK	**Paraskevi**	**131.34**	**314**	P	**PKPdf**	**22 24 12.0**	**+1.8**
PRK	**Paraskevi**	**131.34**	**314**	PKIKP	**PKPdf**	**22 24 12.0**	**+1.8**
PRK	**Paraskevi**	**131.34**	**314**	P	**PKPdf**	**22 24 12.0**	**+1.8**
SMTH	**Samothraki Isl**	**131.34**	**316**	P	**PKPdf**	**22 24 11.6**	**+1.4**
SMTH	**Samothraki Isl**	**131.34**	**316**	*e*PKPdf	**PKPdf**	**22 24 11.6**	**+1.4**
DGB	**`zmir**	**131.37**	**312**	*i* P	PKPpre	22 24 00.8		
SMG	**Samos**	**131.53**	**312**	P	**PKPdf**	**22 24 11.2**	**+0.5**
SMG	**Samos**	**131.53**	**312**	P	**PKPdf**	**22 24 11.2**	**+0.5**
BBSR	**BB Station**	**131.64**	**56**	PFAKE		22 24 20.0	+9.0	
BBSR				LR	LR			
	comp=Z,2µm,21.0s							
BUD	**Budapest**	**131.64**	**327**	⇓*e*PKPdf	**PKPdf**	**22 24 11.9**	**+1.3**
MDVR	**Moldovita**	**131.68**	**323**	⇓*i*P	**PKPdf**	**22 24 10.5**	**-0.3**
BANR	**Banloc**	**131.69**	**324**	⇓*i*P	**PKPdf**	**22 24 11.5**	**+0.8**
MPR	**Mayaguez**	**131.72**	**75**	PFAKE		22 24 20.0	+8.5	
MPR				LR	LR			
	comp=Z,39µm,20.0s							
VRAC	**Vranov**	**131.72**	**330**	PKhKP	PKPpre	22 24 04.1		
	comp=Z,1.4nm,0.7s,baz=45,slow=1.6,SNR=3.6							
VRAC				PKP	**PKPdf**	**22 24 10.6**	**-0.1**	
	comp=Z,35nm,1.1s,baz=101,slow=0.5,SNR=17							
VRAC				PP	**PP**	**22 26 32.6**	**+2.2**	
	comp=Z,16nm,1.1s,baz=68,slow=8.0,SNR=5.6							
KAVA	**Kavala**	**131.79**	**317**	P	**PKPdf**	**22 24 11.8**	**+0.8**
KAVA	**Kavala**	**131.79**	**317**	*e*PKPdf	**PKPdf**	**22 24 11.8**	**+0.8**
PVCC	**Panska Ves**	**131.83**	**333**	*e*PKPdf	**PKPdf**	**22 24 11.6**	**+0.8**
PVCC				*e*PP	**PP**	**22 26 31.4**	**+0.5**
PVCC				AMS	AMS	23 22 20.0		
	comp=Z,2µm,21.5s							
PVCC	**Panska Ves**	**131.83**	**333**	*e*PKIKP	**PKPdf**	**22 24 11.6**	**+0.8**
PVCC				*e*		22 26 31.4		
PVCC				MLR	MLR			
	comp=Z,2µm,21.5s							
CHOS	**Chios island**	**131.84**	**313**	P	**PKPdf**	**22 24 12.4**	**+1.1**
CHOS	**Chios island**	**131.84**	**313**	P	**PKPdf**	**22 24 12.4**	**+1.1**
VTS	**Vitosha**	**131.89**	**319**	P	**PKPdf**	**22 24 11.8**	**+0.4**
VTS	**Vitosha**	**131.89**	**319**	*e*PKIKP	**PKPdf**	**22 24 11.3**	**-0.1**
VTS				MLR	MLR			
	comp=Z,1µm,22.0s							
VTS	**Vitosha**	**131.89**	**319**	*i* P	**PKPdf**	**22 24 12.1**	**+0.7**
VTS	**Vitosha**	**131.89**	**319**	*e*PKPdf	**PKPdf**	**22 24 11.2**	**-0.1**
VTS				*e*PKPdf	**PKPdf**	**22 24 11.8**	**+0.4**
VTS				LR	LR			
	comp=Z,1µm,22.0s							
CLL	**Collm**	**131.96**	**334**	⇓*i*PKPdf	**PKPdf**	**22 24 11.4**	**+0.4**
	comp=Z,43nm,1.0s							
CLL				*i*		22 24 15.2		
	comp=Z,71nm,1.0s							
CLL				*e*		22 24 22.0		
CLL				*e*		22 26 04.0		
CLL				*e*PP	**PP**	**22 26 39.0**	**+7.3**
CLL				*e*SKPbc	**SKPbc**	**22 27 34.0**	**-1.0**
CLL				*e*PKSbc	**PKSbc**	**22 27 39.0**	**+0.8**
CLL				*e*PKSdf	**PKSdf**	**22 27 46.0**	**-1.3**
CLL				*e*		22 27 52.0		
CLL				*e*		22 27 57.0		
CLL				*e*		22 29 04.0		
CLL				*e*PSKS		22 36 30.0		
CLL				*e*PS	**PS**	**22 36 48.0**	**+0.3**
CLL				*e*PPS	PPS	22 38 24.0		
CLL				*e*SS	**SS**	**22 44 06.0**	**+0.4**
CLL				*e*		22 46 30.0		
CLL				*e*SSS	SSS	22 50 00.0		
CLL				*e*		22 50 12.0		
CLL				LmH		23 24 00.0		
	comp=N,900nm,21.5s							
CLL				LmH		23 24 00.0		
	comp=E,2µm,20.9s							
CLL				LmH		23 24 00.0		
	comp=Z,2µm,19.9s							
CLL				LmV		23 29 00.0		
	comp=Z,2µm,19.7s							
CLL	**Collm**	**131.96**	**334**	⇓*i*PKIKP	**PKPdf**	**22 24 11.4**	**+0.4**
CLL				pmax	pmax			
	comp=Z,43nm,1.0s							
CLL				MLR	MLR			
	comp=Z,2µm,19.7s							
CLL	**Collm**	**131.96**	**334**	*e*PKPdf	**PKPdf**	**22 24 11.4**	**+0.4**
CLL				LR	LR			
	comp=Z,2µm,20.0s							
MMB	**Musomiste**	**132.04**	**318**	*i* P	**PKPdf**	**22 24 11.2**	**-0.4**
NVR	**Nevrokopi**	**132.07**	**318**	P	**PKPdf**	**22 24 10.5**	**-1.1**
NVR	**Nevrokopi**	**132.07**	**318**	P	**PKPdf**	**22 24 10.5**	**-1.1**
KARP	**Karpathos**	**132.08**	**309**	PFAKE		22 24 20.0	+8.2	
KARP				LR	LR			
	comp=Z,200nm,19.0s							
GOPC	**GO Pecny, Ondr**	**132.17**	**332**	*e*PKPdf	**PKPdf**	**22 24 12.1**	**+0.6**
GOPC				*ex*	x	22 24 23.1		
GOPC				*e*PP	**PP**	**22 26 30.0**	**-3.1**
GOPC				*e*SKP		22 27 39.4		
GOPC				*e*PS	**PS**	**22 36 42.1**	**-7.5**
GOPC				*e*SS	SS	22 44 10.2	+1.8	
GOPC				AMS	AMS	23 29 40.0		
	comp=Z,2µm,20.3s							
GOPC	**GO Pecny, Ondr**	**132.17**	**332**	*e*PKIKP	**PKPdf**	**22 24 12.1**	**+0.6**
GOPC				*e*		22 24 23.1		
GOPC				*e*		22 26 30.0		
GOPC				*e*PS	**PS**	**22 36 42.1**	**-7.5**
GOPC				*e*SS	SS	22 44 10.2	+1.8	
GOPC				MLR	MLR			
	comp=Z,2µm,20.3s							
PRU	**Pruhonice**	**132.23**	**332**	*e*PKPdf	**PKPdf**	**22 24 11.7**	**+0.1**
PRU				*e*pPKP	**pPKPdf**	**22 24 22.7**	**+0.9**
PRU				*e*PP	**PP**	**22 26 28.9**	**-4.6**
PRU				*e*SKP		22 27 39.0		
PRU				*e*SP	SP	22 36 42.5	-2.5	
PRU				*e*SS	**SS**	**22 44 16.4**	**+7.4**
PRU				AMS	AMS	23 17 40.0		
	comp=Z,2µm,24.2s							
PRU	**Pruhonice**	**132.23**	**332**	*e*PKIKP	**PKPdf**	**22 24 11.7**	**+0.1**
PRU				*e*		22 24 22.7		
PRU				*e*PS	**PS**	**22 36 42.5**	**-7.5**
PRU				MLR	MLR			
	comp=Z,2µm,24.2s							
TREC	**Trest**	**132.26**	**331**	*e*PKPdf	**PKPdf**	**22 24 11.4**	**-0.3**
TREC				*e*pPKP	**pPKPdf**	**22 24 22.0**	**+0.1**
TREC				*e*PP	**PP**	**22 26 29.8**	**-4.0**
TREC				*e*SKP		22 27 39.9		
TREC				AMS	AMS	23 25 20.0		
	comp=Z,2µm,21.3s							
TREC	**Trest**	**132.26**	**331**	*e*PKIKP	**PKPdf**	**22 24 11.4**	**-0.3**
TREC				*e*		22 24 22.0		
TREC				*e*		22 26 29.8		
TREC				MLR	MLR			
	comp=Z,2µm,21.3s							
KKB	**Krupnik**	**132.33**	**319**	*i* P	**PKPdf**	**22 24 12.5**	**+0.4**
SRS	**Serrai**	**132.35**	**317**	P	**PKPdf**	**22 24 12.3**	**+0.2**
SRS	**Serrai**	**132.35**	**317**	*e*PKIKP	**PKPdf**	**22 24 12.3**	**+0.2**
SRS	**Serrai**	**132.35**	**317**	*e*PKPdf	**PKPdf**	**22 24 12.3**	**+0.2**
SJG	**San Juan**	**132.66**	**75**	*e*PKIKP	**PKPdf**	**22 24 12.8**	**-0.5**
SJG				MLR	MLR			
	comp=Z,900nm,21.0s							
SJG	**San Juan**	**132.66**	**75**	*e*PKPdf	**PKPdf**	**22 24 12.8**	**-0.5**
SJG				LR	LR			
	comp=Z,900nm,21.0s							
SOP	**Sopron**	**132.81**	**329**	⇓*e*PKPdf	**PKPdf**	**22 24 14.1**	**+1.3**
CBYP	**Canovanas**	**132.93**	**75**	PFAKE		22 24 30.0	+16	
CBYP				LR	LR			
	comp=Z,2µm,21.0s							
VAY	**Valandovo**	**132.93**	**318**	*e*PKP	**PKPdf**	**22 24 11.6**	**-1.6**
HUMP	**Col San Antoni**	**132.94**	**75**	*e*PKPdf	**PKPdf**	**22 24 13.4**	**-0.5**
HUMP				LR	LR			
	comp=Z,1µm,20.0s							
NKC	**Novy Kostel**	**132.99**	**334**	*e*PKPpre	PKPpre	22 24 00.7		
NKC				*e*PKPdf	**PKiKP**	**22 24 14.0**	**-0.2**
NKC				*e*PP	**PP**	**22 26 35.5**	**-2.9**
NKC				*e*SKP		22 27 42.8		
NKC				*e*PS	**PS**	**22 36 54.0**	**-2.6**
NKC				AMS	AMS	23 30 00.0		
	comp=Z,2µm,18.3s							
NKC	**Novy Kostel**	**132.99**	**334**	*e*PKHKP	PKPpre	22 24 00.7		
NKC				*e*		22 24 14.0		
NKC				*e*		22 26 35.5		
NKC				*e*PS	**PS**	**22 36 54.0**	**-2.6**
NKC				MLR	MLR			
	comp=Z,2µm,18.3s							
CONA	**Conrad Observa**	**133.00**	**329**	*e*PKiKP	**PKPdf**	**22 24 13.8**	**+0.6**
	comp=Z,82nm,1.0s,SNR=16							
SANT	**Santorini**	**133.06**	**311**	PFAKE		22 24 30.0	+16	
SANT				LR	LR			
	comp=Z,700nm,21.0s							
CMBO	**Columbo, Santo**	**133.06**	**311**	P	**PKPdf**	**22 24 14.5**	**+0.9**
DIVS	**Divibare**	**133.09**	**323**	P	**PKPdf**	**22 24 13.1**	**-0.4**
KHC	**Kasperske Hory**	**133.28**	**332**	*e*PKPpre	PKPpre	22 24 00.0		
KHC				*e*PKPdf	**PKPdf**	**22 24 13.6**	**-0.1**
KHC				*e*pPKP	pPKPdf	22 24 24.5	+0.6	
KHC				*e*PP	**PP**	**22 26 34.9**	**-5.4**
KHC				*e*SKP		22 27 43.8		
KHC				*e*SS	SS	22 44 30.1	+8.2	
KHC				AMS	AMS	23 28 10.0		
	comp=Z,2µm,19.9s							
KHC	**Kasperske Hory**	**133.28**	**332**	*e*PKHKP	PKPpre	22 24 00.0		
KHC				MLR	MLR			
	comp=Z,800nm,21.0s							
KHC	**Kasperske Hory**	**133.28**	**332**	*e*PKPpre	PKPpre	22 23 60.0		
KHC				LR	LR			
	comp=Z,800nm,21.0s							
SKO	**Skopje**	**133.34**	**320**	P	**PKPdf**	**22 24 15.7**	**+1.7**
SKO	**Skopje**	**133.34**	**320**	*e*PKP	**PKPdf**	**22 24 13.2**	**-0.8**
SKO	**Skopje**	**133.34**	**320**	*e*PKIKP	**PKPdf**	**22 24 15.7**	**+1.7**
SKO	**Skopje**	**133.34**	**320**	*e*PKPdf	**PKPdf**	**22 24 15.7**	**+1.7**
NPS	**Neapolis**	**133.36**	**309**	P	**PKPdf**	**22 24 16.1**	**+1.9**
NPS	**Neapolis**	**133.36**	**309**	PKIKP	**PKPdf**	**22 24 16.1**	**+1.9**
NPS	**Neapolis**	**133.36**	**309**	P	**PKPdf**	**22 24 16.1**	**+1.9**
GEC2	**GERESS Array S**	**133.42**	**332**	*e*PKHKP	PKPpre	22 24 02.7		
GEC2				MLR	MLR			
	comp=Z,2µm,19.0s							
GEC2	**GERESS Array S**	**133.42**	**332**	*e*PKPpre	PKPpre	22 24 02.7		
GEC2				LR	LR			
	comp=Z,2µm,19.0s							
GERES	**GERESS Array B**	**133.42**	**332**	PKhKP	PKPpre	22 24 02.6		
	comp=Z,1.1nm,0.6s,baz=44,slow=4.1,SNR=7.7							
GERES				PKP	**PKPdf**	**22 24 13.3**	**-0.8**	
	comp=Z,26nm,0.9s,baz=90,slow=1.3,SNR=23							
GEA0	**GERESS Array S**	**133.43**	**332**	*e*PKPpre	PKPpre	22 23 58.7		
	comp=Z,2µm,19.0s							
BEHE	**Becsehely**	**133.48**	**327**	⇓*e*PKPdf	**PKPdf**	**22 24 12.6**	**-1.5**
LAST	**Lasithi**	**133.50**	**309**	P	**PKPdf**	**22 24 14.9**	**+0.3**
LAST	**Lasithi**	**133.50**	**309**	P	**PKPdf**	**22 24 14.9**	**+0.3**
EKA	**Eskdalemuir Ar**	**133.61**	**348**	PKhKP	PKPpre	22 23 59.7		
	comp=Z,2.1nm,0.8s,baz=6.5,slow=2.9,SNR=6.2							
EKA				PKP	**PKPdf**	**22 24 14.2**	**+0.1**	
	comp=Z,19nm,0.8s,baz=5.4,slow=2.7,SNR=20							
EKA				SKPbc	**SKPab**	**22 27 42.3**	**-0.5**	
	comp=Z,5.5nm,1.0s,baz=358,slow=2.1,SNR=3.3							
ARSA	**Arzberg**	**133.62**	**329**	*e*PKPdf	**PKPdf**	**22 24 14.3**	**0.0**
	comp=Z,34nm,1.5s							
ESK	**Eskdalemuir**	**133.64**	**348**	*e*PKIKP	**PKPdf**	**22 24 15.6**	**+1.5**
ESK				MLR	MLR			
	comp=Z,1µm,20.0s							
ESK	**Eskdalemuir**	**133.64**	**348**	*e*PKPdf	**PKPdf**	**22 24 15.6**	**+1.5**
ESK				LR	LR			
	comp=Z,1µm,20.0s							
STVI	**Saint Thomas**	**133.78**	**74**	*e*PKPdf	**PKPdf**	**22 24 15.0**	**-0.4**
STVI				LR	LR			
	comp=Z,1µm,19.0s							
MOA	**Molln**	**133.85**	**330**	*e*PKiKP	**PKPdf**	**22 24 15.3**	**+0.5**
	comp=Z,20nm,0.7s							
WTSB	**Winterswijk**	**133.87**	**339**	*e*PKPdf	**PKPdf**	**22 24 10.3**	**-4.3**
	comp=Z,14nm,0.9s							
WTSB				*e*PKPbc	**PKiKP**	**22 24 15.4**	**-0.4**	
	comp=Z,110nm,1.2s							
IDI	**Anoyia**	**133.90**	**310**	PKP	**PKPdf**	**22 24 16.9**	**+1.6**
	comp=Z,51nm,1.1s,baz=10,slow=14,SNR=10							
IDI	**Anoyia**	**133.90**	**310**	P	**PKPdf**	**22 24 16.9**	**+1.6**
IDI	**Anoyia**	**133.90**	**310**	*e*PKPdf	**PKPdf**	**22 24 16.9**	**+1.6**
IDI				LR	LR			
	comp=Z,600nm,19.0s							
GRFO	**Grafenberg**	**133.92**	**334**	*e*PKIKP	**PKPdf**	**22 24 14.9**	**+0.1**
GRFO				MLR	MLR			
	comp=Z,2µm,19.0s							
GRFO	**Grafenberg**	**133.92**	**334**	*e*PKPdf	**PKPdf**	**22 24 14.9**	**+0.1**
GRFO				LR	LR			
	comp=Z,2µm,19.0s							
FNA	**Florina**	**133.98**	**318**	P	**PKPdf**	**22 24 15.0**	**-0.3**
FNA	**Florina**	**133.98**	**318**	PKIKP	**PKPdf**	**22 24 15.0**	**-0.3**
FNA	**Florina**	**133.98**	**318**	P	**PKPdf**	**22 24 15.0**	**-0.3**
CDVI	**St. Croix**	**133.99**	**75**	*e*PKPdf	**PKPdf**	**22 24 15.8**	**0.0**
AGG	**Agios Georgios**	**134.19**	**315**	P	PKPpre	22 24 08.3		
AGG	**Agios Georgios**	**134.19**	**315**	*e*PKHKP	PKPpre	22 24 08.3		
AGG				*e*		22 24 16.3		
AGG				MLR	MLR			
	comp=Z,2µm,20.0s							
AGG	**Agios Georgios**	**134.19**	**315**	*e*PKPpre	PKPpre	22 24 08.3		
AGG				*e*PKPdf	**PKPdf**	**22 24 16.3**	**+0.6**	
AGG				LR	LR			
	comp=Z,2µm,20.0s							
OHR	**Ohrid**	**134.19**	**319**	*e*PKP	**PKPdf**	**22 24 14.8**	**-0.9**
PERS	**Pernice**	**134.24**	**328**	*e*PKPdf	**PKPdf**	**22 24 14.5**	**-1.1**
PERS				*i*		22 24 17.8		
PERS				*e*PP	**PP**	**22 26 44.8**	**-1.8**
PERS				*e*		22 27 43.7		
SOKA	**Soboth**	**134.25**	**329**	*e*PKPdf	**PKPdf**	**22 24 14.8**	**-0.8**
	comp=Z,39nm,0.9s,SNR=14							
VAM	**Vamos**	**134.38**	**310**	P	PKPpre	22 24 09.1		
VAM	**Vamos**	**134.38**	**310**	PKIKP	PKPpre	22 24 09.1		
VAM	**Vamos**	**134.38**	**310**	P	PKPpre	22 24 09.1		
TSUM	**Tsumeb**	**134.39**	**230**	*e*PKPpre	PKPpre	22 24 10.3		
TSUM				LR	LR			
	comp=Z,4µm,20.0s							
KPRO	**Kipourio**	**134.40**	**317**	P	PKPpre	22 24 10.1		
PDG	**Podgorica**	**134.46**	**321**	⇑*i*P	**PKPdf**	**22 24 16.6**	**+0.6**
TIR	**Tirane**	**134.67**	**320**	*e*PKIKP	**PKPdf**	**22 24 19.8**	**+3.3**
TIR				MLR	MLR			
	comp=Z,2µ

PTGA	**Pitinga**	**136.70**	**102**	PFAKE			22 24 30.0	+8.9	
PTGA				LR	LR				
	comp=Z,800nm,18.0s								
ECH	**Echery**	**136.77**	**336**	PKP	PKPpre		22 24 11.2		
ANWB	**Willy Bob**	**136.84**	**75**	PFAKE			22 24 30.0	+8.9	
ANWB				LR	LR				
	comp=Z,1μm,20.0s								
GDHS	**Morne Mazeau,**	**136.93**	**77**	PFAKE			22 24 30.0	+8.6	
GDHS				LR	LR				
	comp=Z,1μm,18.0s								
MOF	**Molkenrain**	**137.06**	**335**	PKP	PKPpre		22 24 09.9		
TUE	**Stuetta**	**137.17**	**332**	*e*PKPpre	PKPpre		22 24 14.1		
TUE				LR	LR				
	comp=Z,2μm,20.0s								
FDF	**Fort de France**	**137.56**	**79**	*e*PKIKP	**PKPdf**		**22 24 24.6**	**+2.0**	
FDF	**Fort de France**	**137.56**	**79**	*e*PKPdf	**PKPdf**		**22 24 24.6**	**+2.0**	
TIP	**Timpagrande**	**137.84**	**319**	*e*PKPpre	PKPpre		22 24 15.4		
TIP				LR	LR				
	comp=Z,2μm,21.0s								
AQU	**L'Aquila**	**137.97**	**325**	*e*PKHKP	PKPpre		22 24 14.9		
AQU				MLR	MLR				
	comp=Z,2μm,20.0s								
AQU	**L'Aquila**	**137.97**	**325**	*e*PKPpre	PKPpre		22 24 14.8		
AQU				LR	LR				
	comp=Z,2μm,20.0s								
CUC	**Castrocucco**	**137.98**	**320**	PFAKE			22 24 30.0	+7.3	
CUC				LR	LR				
	comp=Z,900nm,22.0s								
SENIN	**Lac Senin/Sane**	**138.16**	**334**	*e*PKPpre	PKPpre		22 24 12.7		
SENIN				LR	LR				
	comp=Z,1μm,19.0s								
VLC	**Villacollemand**	**138.36**	**329**	PFAKE			22 24 40.0	+17	
VLC				LR	LR				
	comp=Z,800nm,21.0s								
DYA	**Yadsworthy**	**138.37**	**347**	PFAKE			22 24 40.0	+17	
DYA				LR	LR				
	comp=Z,1μm,21.0s								
RSL	**Roselend**	**138.99**	**334**	PKP	PKPpre		22 24 16.4		
BNI	**Bardonecchia**	**139.46**	**333**	PFAKE			22 24 40.0	+15	
BNI				LR	LR				
	comp=Z,2μm,19.0s								
GDM	**Grand'Maison**	**139.59**	**334**	PKP	PKPpre		22 24 17.8		
GRN	**Grenoble**	**139.72**	**334**	PKP	PKPpre		22 24 18.4		
PLDF	**La Plantade**	**140.00**	**337**	PKP	PKPpre		22 24 20.8		
LUCF	**Luceram**	**140.04**	**331**	PKP	PKPpre		22 24 21.2		
AGO	**Saint Agoulin**	**140.12**	**337**	PKP	PKPpre		22 24 20.5		
MVIF	**Mont Vial**	**140.13**	**332**	PKP	PKPpre		22 24 21.1		
REVF	**Revere**	**140.15**	**331**	PKP	PKPpre		22 24 24.0		
SSB	**Saint Sauveur**	**140.20**	**335**	PKP	PKPpre		22 24 19.8		
SSB	**Saint Sauveur**	**140.20**	**335**	*e*PKHKP	PKPpre		22 24 19.5		
SSB				MLR	MLR				
	comp=Z,2μm,19.0s								
SSB	**Saint Sauveur**	**140.20**	**335**	*e*PKPpre	PKPpre		22 24 19.5		
SSB				LR	LR				
	comp=Z,2μm,19.0s								
VAE	**Valguarnera**	**140.32**	**318**	PKP	**PKPdf**		**22 24 27.1**	**+0.1**	
	comp=Z,16nm,1.0s,baz=96,slow=2.2,SNR=2.3								
PYM	**Petit Puy Mans**	**140.42**	**337**	PKP	PKPpre		22 24 21.2		
BDFB	**Brasilia**	**140.55**	**130**	PKP	**PKPdf**		**22 24 28.2**	**+0.1**	
	comp=Z,5.2nm,0.7s,baz=163,slow=20,SNR=8.3								
BDFB	**Brasilia**	**140.55**	**130**	*e*PKIKP	**PKPdf**		**22 24 28.2**	**+0.1**	
BDFB				MLR	MLR				
	comp=Z,2μm,18.0s								
BDFB	**Brasilia**	**140.55**	**130**	*e*PKPdf	**PKPdf**		**22 24 28.2**	**+0.1**	
BDFB				*e*PKPdf	**PKiKP**		**22 24 31.7**	**+1.0**	
BDFB				LR	LR				
	comp=Z,2μm,18.0s								
VERF	**Verneugheol**	**140.62**	**337**	PKP	PKPpre		22 24 21.3		
LBL	**Lubilhac**	**140.76**	**336**	PKP	PKPpre		22 24 22.8		
FRNF	**Fournols**	**140.90**	**337**	PKP	PKPpre		22 24 22.9		
VSL	**Villasalto**	**142.15**	**325**	*e*PKPpre	PKPpre		22 24 24.2		
VSL				LR	LR				
	comp=Z,1μm,18.0s								
LRDF	**Laroque-de-Fa**	**142.94**	**335**	PKP	**PKPdf**		**22 24 28.5**	**-3.1**	
FILF	**Fillols**	**143.24**	**334**	PKP	PKPbc		22 24 29.3	+0.1	
VALF	**Valcebollere**	**143.60**	**335**	PKP	PKPbc		22 24 30.7	+0.4	
MELF	**Melles**	**143.71**	**337**	PKP	PKPbc		22 24 31.1	+0.6	
LABF	**Labassere**	**143.83**	**338**	PKP	PKPbc		22 24 30.6	-0.2	
RESF	**Ens**	**143.93**	**337**	PKP	**PKPdf**		**22 24 32.6**	**-0.9**	
REYF	**Montagne du Re**	**143.98**	**338**	PKP	PKPbc		22 24 32.3	+1.0	
VIEF	**Viey**	**143.99**	**337**	PKP	PKPbc		22 24 32.4	+1.1	
ORDF	**Ordiarp**	**144.06**	**339**	PKP	PKPbc		22 24 31.2	-0.2	
ATE	**Arette**	**144.08**	**338**	PKP	PKPbc		22 24 31.9	+0.4	
OSSF	**Osses**	**144.13**	**339**	PKP	**PKPab**		**22 24 31.4**	**+0.2**	
LARF	**Larrau**	**144.23**	**339**	PKP	**PKPdf**		**22 24 33.2**	**-0.7**	
KEST	**Kesra**	**144.63**	**320**	PKP	PKPbc		22 24 33.8	+0.2	
	comp=Z,501nm,1.2s,baz=18,slow=0.6,SNR=66								
KEST	**Kesra**	**144.63**	**320**	*e*PKPdf	PKPbc		22 24 34.0	+0.5	
KEST				LR	LR				
	comp=Z,1μm,20.0s								
CMAH	**Djebel Manchou**	**145.23**	**323**	P		**PKPbc**	**22 24 35.4**	**-0.1**	
ABSA	**Djebel Ababsia**	**145.43**	**322**	P		**PKPdf**	**22 24 36.2**	**0.0**	
CAEH	**'Ain El Ouahch**	**145.46**	**324**	P		**PKPbc**	**22 24 35.6**	**-0.5**	
CKFL	**Kef-Lekhel**	**145.79**	**323**	P		**PKPbc**	**22 24 37.5**	**+0.2**	
CASM	**Ain Smara**	**146.03**	**323**	P		**PKPbc**	**22 24 38.1**	**+0.1**	
DFRA	**Djebel Bou Aff**	**146.18**	**324**	P		**PKPab**	**22 24 39.3**	**+0.1**	
CTEI	**Djebel Teioual**	**146.21**	**323**	P		**PKPbc**	**22 24 38.9**	**+0.3**	
SET	**Setif**	**146.70**	**324**	P		**PKPbc**	**22 24 40.0**	**0.0**	
CKMR	**Kef el Ahmar**	**146.76**	**321**	P		**PKPbc**	**22 24 40.2**	**-0.1**	
PBRG	**Braganca**	**147.14**	**345**	*e*PKPdf		**PKPdf**	**22 24 37.6**	**-1.3**	
PBRG	**Braganca**	**147.14**	**345**	*e*PKPbc		**PKPbc**	**22 24 41.3**	**+0.3**	
PBRG	**Braganca**	**147.14**	**345**	*e*PKPab		**PKPab**	**22 24 44.8**	**+2.2**	
PGAV	**Gavieira, Arco**	**147.36**	**347**	*e*PKPdf		**PKPdf**	**22 24 39.7**	**+0.4**	
PGAV	**Gavieira, Arco**	**147.36**	**347**	*e*PKPbc		**PKPab**	**22 24 43.6**	**+0.1**	
PGAV	**Gavieira, Arco**	**147.36**	**347**	*e*LQ	LQ		23 06 01.4		
PGAV	**Gavieira, Arco**	**147.36**	**347**	*e*LR	LR		23 24 02.0		
	comp=Z,2μm,20.0s								
PCAB	**Cabril**	**147.55**	**346**	*e*PKPdf		**PKPdf**	**22 24 40.5**	**+1.0**	
PCAB	**Cabril**	**147.55**	**346**	*e*PKPbc		**PKPab**	**22 24 43.8**	**-0.4**	
PCAB	**Cabril**	**147.55**	**346**	*e*PKPab		**PKPab**	**22 24 47.0**	**+2.8**	
POLO	**Lamas de Olo**	**147.81**	**346**	*e*PKPdf		**PKPbc**	**22 24 43.1**	**+0.1**	
MVO	**Moncorvo**	**147.81**	**345**	*e*PKPbc		**PKPab**	**22 24 45.1**	**-0.2**	
MVO	**Moncorvo**	**147.81**	**345**	*e*PKPab		**PKPab**	**22 24 47.7**	**+2.4**	
MVO	**Moncorvo**	**147.81**	**345**	*e*LR	LR		23 18 58.4		
	comp=Z,1μm,20.0s								
PVRL	**Vila Real**	**147.88**	**346**	*e*PKPdf		**PKPdf**	**22 24 41.6**	**+1.5**	
PVRL	**Vila Real**	**147.88**	**346**	*e*PKPbc		**PKPbc**	**22 24 44.1**	**+1.0**	
EMHD	**Djebel Mahouad**	**148.05**	**327**	P		**PKPbc**	**22 24 44.4**	**+0.6**	
ES19	**SONSECA Array**	**148.20**	**339**	*e*PKPdf		**PKPdf**	**22 24 40.9**	**+0.2**	
ESDC	**Sonseca Array**	**148.24**	**339**	PKP		**PKPdf**	**22 24 40.5**	**-0.3**	
	comp=Z,32nm,0.9s,baz=5.6,slow=2.5,SNR=21								
ESDC				PKPbc		**PKPbc**	**22 24 44.1**	**0.0**	
	comp=Z,50nm,0.9s,baz=8.3,slow=3.2,SNR=49								
ESDC				PP		**PP**	**22 28 13.6**	**+2.1**	
	comp=Z,18nm,1.2s,baz=23,slow=6.5,SNR=5.3								
ESLA	**Sonseca Array**	**148.25**	**339**	*e*PKPdf		**PKPdf**	**22 24 41.8**	**+1.0**	
ESLA				LR					
	comp=Z,2μm,21.0s								
H07N1	**FLORES T-PHASE**	**148.45**	**20**	*e*PKPdf		**PKPdf**	**22 24 40.5**	**-0.6**	
PVIS	**Viseu**	**148.46**	**345**	*e*PKPdf		**PKPdf**	**22 24 42.2**	**+1.1**	
PVIS	**Viseu**	**148.46**	**345**	*e*PKPbc		**PKPab**	**22 24 46.9**	**-1.0**	
PVIS	**Viseu**	**148.46**	**345**	*e*PKPab		**PKPab**	**22 24 49.1**	**+1.2**	
PAB	**San Pablo**	**148.49**	**340**	*e*PKIKP		**PKPdf**	**22 24 42.3**	**+1.1**	
PAB				MLR	MLR				
	comp=Z,1μm,20.0s								
PAB	**San Pablo**	**148.49**	**340**	*e*PKPdf		**PKPdf**	**22 24 42.3**	**+1.1**	
PAB				LR	LR				
	comp=Z,1μm,20.0s								
MTE	**Manteigas**	**148.66**	**345**	*e*PKPdf		**PKPdf**	**22 24 42.1**	**+0.6**	
MTE	**Manteigas**	**148.66**	**345**	*e*PKPbc		**PKPab**	**22 24 47.4**	**-1.3**	
MTE	**Manteigas**	**148.66**	**345**	*e*PKPab		**PKPab**	**22 24 49.8**	**+1.1**	
MTE	**Manteigas**	**148.66**	**345**	*e*LQ	LQ		23 06 33.6		
MTE	**Manteigas**	**148.66**	**345**	*e*LR	LR		23 17 54.5		
	comp=Z,1μm,20.0s								
MTE	**Manteigas**	**148.66**	**345**	*e*PKPdf		**PKPdf**	**22 24 42.0**	**+0.6**	
MTE				LR	LR				
	comp=Z,2μm,21.0s								
EBNR	**Beni Rached**	**148.73**	**329**	P		**PKPbc**	**22 24 45.4**	**-0.1**	
ECHA	**Ech Chlef**	**148.92**	**329**	P		**PKPbc**	**22 24 45.7**	**-0.1**	
PCBR	**Castelo Branco**	**149.17**	**344**	*e*PKPdf		**PKPdf**	**22 24 42.7**	**+0.5**	
PCBR	**Castelo Branco**	**149.17**	**344**	*e*PKPbc		**PKPbc**	**22 24 48.4**	**+2.0**	
PCBR	**Castelo Branco**	**149.17**	**344**	*e*PKPab		**PKPab**	**22 24 50.7**	**0.0**	
EANR	**'Ain N'Sour**	**149.21**	**329**	P		**PKPbc**	**22 24 46.8**	**+0.1**	
PCAS	**Casmilo, Conde**	**149.23**	**346**	*e*PKPdf		**PKPdf**	**22 24 43.1**	**+0.8**	
PCAS	**Casmilo, Conde**	**149.23**	**346**	*e*PKPbc		**PKPbc**	**22 24 47.6**	**+1.0**	
PCAS	**Casmilo, Conde**	**149.23**	**346**	*e*PKPab		**PKPab**	**22 24 50.7**	**-0.3**	
PMRV	**Marv??o**	**149.53**	**344**	*e*PKPdf		**PKPdf**	**22 24 43.4**	**+0.6**	
PMRV	**Marv??o**	**149.53**	**344**	*e*PKPbc		**PKPbc**	**22 24 49.4**	**+2.0**	
PMRV	**Marv??o**	**149.53**	**344**	*e*PKPab		**PKPab**	**22 24 51.8**	**-0.4**	
PMRV	**Marv??o**	**149.53**	**344**	*e*LQ	LQ		23 06 55.0		
PMRV	**Marv??o**	**149.53**	**344**	*e*LR	LR		23 27 24.2		
	comp=Z,1μm,20.0s								
ETRT	**Tiaret**	**149.54**	**328**	P		**PKPbc**	**22 24 47.9**	**+0.3**	
PTOM	**Tomar**	**149.62**	**345**	*e*PKPdf		**PKPdf**	**22 24 43.3**	**+0.4**	
PTOM	**Tomar**	**149.62**	**345**	*e*PKPbc		**PKPbc**	**22 24 49.6**	**+2.1**	
PTOM	**Tomar**	**149.62**	**345**	*e*PKPab		**PKPab**	**22 24 51.9**	**-0.6**	
OJGS	**Djebel Guires**	**149.74**	**329**	P		**PKPbc**	**22 24 48.0**	**-0.1**	
OJBR	**Djebel Berber**	**149.88**	**330**	P		**PKPab**	**22 24 52.0**	**-1.9**	
PGRA	**Graciosa**	**150.00**	**16**	*e*PKPdf		**PKPdf**	**22 24 42.8**	**-0.8**	
PMTG	**Montargil**	**150.09**	**345**	*e*PKPdf		**PKPdf**	**22 24 44.6**	**+0.9**	
PMTG	**Montargil**	**150.09**	**345**	*e*PKPbc		**PKPbc**	**22 24 50.4**	**+1.7**	
PMTG	**Montargil**	**150.09**	**345**	*e*PKPab		**PKPab**	**22 24 53.1**	**-1.4**	
PESTR	**Estremoz**	**150.11**	**344**	*e*PKPdf		**PKPdf**	**22 24 44.3**	**+0.5**	
PESTR	**Estremoz**	**150.11**	**344**	*e*PKPbc		**PKPbc**	**22 24 50.1**	**+1.3**	
PESTR	**Estremoz**	**150.11**	**344**	*e*PKPab		**PKPab**	**22 24 52.8**	**-1.8**	
PCED	**Cedros**	**150.17**	**17**	*e*PKPdf		**PKPdf**	**22 24 42.8**	**-1.0**	
ROSA	**Rosais**	**150.22**	**16**	*e*PKPdf		**PKPdf**	**22 24 43.2**	**-0.7**	
ROSA	**Rosais**	**150.22**	**16**	*e*PKPbc		**PKPdf**	**22 24 45.6**	**+1.7**	
ODJA	**Bouhanifia**	**150.32**	**330**	P		**PKPbc**	**22 24 49.0**	**-0.4**	
PMAN	**Manadas**	**150.34**	**16**	*e*PKPdf		**PKPdf**	**22 24 43.4**	**-0.7**	
PICO	**Pico**	**150.37**	**17**	*e*PKPdf		**PKPdf**	**22 24 43.1**	**-1.1**	
PCAN	**Candelaria**	**150.39**	**17**	*e*PKPdf		**PKPdf**	**22 24 43.4**	**-0.8**	
PMAFR	**Mafra**	**150.46**	**346**	*e*PKPdf		**PKPbc**	**22 24 50.5**	**+0.9**	
EVO	**Evora**	**150.54**	**344**	*e*PKPdf		**PKPdf**	**22 24 45.0**	**+0.6**	
EVO	**Evora**	**150.54**	**344**	*e*PKPbc		**PKPbc**	**22 24 51.8**	**+2.0**	
EVO	**Evora**	**150.54**	**344**	*e*PKPab		**PKPab**	**22 24 54.0**	**-2.4**	
ADH	**Angra Heroismo**	**150.55**	**15**	*e*PKPdf		**PKPdf**	**22 24 43.8**	**-0.6**	
PBAR	**Barrancos**	**150.60**	**342**	*e*PKPdf		**PKPdf**	**22 24 46.4**	**+1.9**	
PBAR	**Barrancos**	**150.60**	**342**	*e*PKPbc		**PKPbc**	**22 24 51.9**	**+2.0**	
PBAR	**Barrancos**	**150.60**	**342**	*e*PKPab		**PKPab**	**22 24 54.1**	**-2.5**	
PMST	**Lisbon--Monsan**	**150.64**	**346**	*e*PKPbc		**PKPbc**	**22 24 47.9**	**-2.1**	
LIS	**Lisbon**	**150.66**	**346**	*e*P		**PKPdf**	**22 24 44.2**	**-0.3**	
LIS				AMS	AMS		23 38 46.4		
	comp=Z,2μm,16.3s								
OTSS	**Djebel Tessala**	**150.68**	**331**	P		**PKPbc**	**22 24 53.0**	**+2.6**	
PBEJ	**Beja**	**150.97**	**344**	*e*PKPdf		**PKPdf**	**22 24 46.0**	**+0.9**	
PBEJ	**Beja**	**150.97**	**344**	*e*PKPbc		**PKPbc**	**22 24 52.6**	**+1.8**	
PBEJ	**Beja**	**150.97**	**344**	*e*PKPab		**PKPab**	**22 24 55.4**	**-2.8**	
OLHC	**Oulhaca**	**151.00**	**331**	P		**PKPbc**	**22 24 51.0**	**0.0**	
PNCL	**Nicolau / Gran**	**151.07**	**345**	*e*PKPdf		**PKPdf**	**22 24 46.2**	**+1.0**	
PNCL	**Nicolau / Gran**	**151.07**	**345**	*e*PKPbc		**PKPbc**	**22 24 52.7**	**+1.7**	
PNCL	**Nicolau / Gran**	**151.07**	**345**	*e*PKPab		**PKPab**	**22 24 55.5**	**-3.0**	
MESJ	**Messejana**	**151.25**	**344**	*e*P		**PKPdf**	**22 24 45.2**	**-0.3**	
MESJ				AMS	AMS		23 36 21.7		
	comp=Z,1μm,22.4s								
MESJ	**Messejana**	**151.25**	**344**	*e*PKPdf		**PKPdf**	**22 24 44.4**	**-1.1**	
MESJ	**Messejana**	**151.25**	**344**	*e*PKPbc		**PKPbc**	**22 24 49.5**	**-2.0**	
MESJ	**Messejana**	**151.25**	**344**	*e*PKPab		**PKPbc**	**22 24 53.3**	**+1.8**	
SHEL	**Horse Pasture**	**151.28**	**205**	*i* PKIKP		**PKPab**	**22 24 57.8**	**-2.2**	
SHEL	**Horse Pasture**	**151.28**	**205**	PFAKE			22 25 00.0	0.0	
SHEL				LR	LR				
	comp=Z,1μm,19.0s								
PCVE	**Castro Verde**	**151.39**	**344**	*e*PKPdf		**PKPdf**	**22 24 46.2**	**+0.5**	
PCVE	**Castro Verde**	**151.39**	**344**	*e*PKPbc		**PKPbc**	**22 24 53.6**	**+1.8**	
PCVE	**Castro Verde**	**151.39**	**344**	*e*PKPab		**PKPab**	**22 24 56.2**	**-3.7**	
PVAQ	**Vaqueiros**	**151.51**	**343**	*e*PKPdf		**PKPdf**	**22 24 47.7**	**+1.8**	
PVAQ	**Vaqueiros**	**151.51**	**343**	*e*PKPbc		**PKPbc**	**22 24 53.8**	**+1.7**	
PVAQ	**Vaqueiros**	**151.51**	**343**	*e*PKPab		**PKPab**	**22 24 56.5**	**-3.9**	
PVAQ	**Vaqueiros**	**151.51**	**343**	*e*LQ	LQ		23 06 03.5		
PVAQ	**Vaqueiros**	**151.51**	**343**	*e*LR	LR		23 18 39.4		
	comp=Z,1μm,18.0s								
PTEO	**Sao Teotonio**	**151.66**	**345**	*e*PKPdf		**PKPdf**	**22 24 44.8**	**-1.3**	
PTEO	**Sao Teotonio**	**151.66**	**345**	*e*PKPbc		**PKPbc**	**22 24 54.6**	**+2.2**	
PTEO	**Sao Teotonio**	**151.66**	**345**	*e*PKPab		**PKPab**	**22 24 57.0**	**-4.0**	
PSET	**Sete Cidades**	**151.71**	**13**	*e*PKPdf		**PKPdf**	**22 24 44.8**	**-1.5**	
PBDV	**Barranco-do-Ve**	**151.72**	**343**	*e*PKPdf		**PKPdf**	**22 24 48.7**	**+2.4**	
PBDV	**Barranco-do-Ve**	**151.72**	**343**	*e*PKPbc		**PKPbc**	**22 24 54.7**	**+2.1**	
PBDV	**Barranco-do-Ve**	**151.72**	**343**	*e*PKPab		**PKPab**	**22 24 57.4**	**-3.9**	
CMLA	**Cha da Macela**	**151.81**	**13**	*e*PKPdf		**PKPdf**	**22 24 45.7**	**-0.7**	
MORF	**Marmelete**	**151.86**	**344**	*e*P		**PKPdf**	**22 24 46.0**	**-0.5**	
MORF				AMS	AMS		23 39 38.1		
	comp=E,1μm,18.4s								
MORF	**Marmelete**	**151.86**	**344**	*e*PKPbc		**PKPbc**	**22 24 54.8**	**+1.8**	
MORF	**Marmelete**	**151.86**	**344**	*e*PKPab		**PKPab**	**22 24 57.5**	**-4.5**	
BART	**Pico Bartolome**	**151.87**	**12**	*e*PKPdf		**PKPdf**	**22 24 47.7**	**+1.1**	
PFVI	**Vila Bisbo**	**152.07**	**344**	*e*PKPdf		**PKPdf**	**22 24 47.6**	**+0.8**	
PFVI	**Vila Bisbo**	**152.07**	**344**	*e*PKPbc		**PKPbc**	**22 24 55.1**	**+1.7**	
PFVI	**Vila Bisbo**	**152.07**	**344**	PFAKE			22 25 00.0	-2.8	
PFVI				LR	LR				
	comp=Z,2μm,20.0s								
PSMA	**Santa Maria**	**152.63**	**13**	*e*PKPdf		**PKPdf**	**22 24 44.9**	**-2.7**	
PSMN	**Pico do Norte,**	**152.64**	**13**	*e*PKPdf		**PKPdf**	**22 24 45.3**	**-2.3**	
TAM	**Tamanrasset**	**154.43**	**302**	*e*PKIKP		**PKPdf**	**22 24 51.1**	**+0.3**	
TAM				MLR	MLR				
	comp=Z,1μm,20.0s								
TAM	**Tamanrasset**	**154.43**	**302**	*e*PKPdf		**PKPdf**	**22 24 51.1**	**+0.3**	
TAM				LR	LR				
	comp=Z,1μm,20.0s								
MDT	**Midelt**	**154.49**	**333**	PKP		**PKPdf**	**22 24 50.9**	**+0.3**	
	comp=Z,42nm,1.1s,baz=31,slow=1.6,SNR=17								
MDT				PKPbc		**PKiKP**	**22 24 59.6**	**+0.6**	
	comp=Z,72nm,1.0s,baz=74,slow=2.9,SNR=16								
MDT				PP		**PP**	**22 28 48.6**	**+1.1**	
	comp=Z,13nm,1.2s,baz=53,slow=5.7,SNR=3.5								
RCBR	**Riachuelo**	**155.92**	**131**	*e*PKPdf		**PKPdf**	**22 24 56.4**	**+3.4**	
RCBR				LR	LR				
	comp=Z,1μm,22.0s								
TOA0	**Torodi Ar. Sit**	**160.65**	**280**	*e*PKPdf		**PKPdf**	**22 24 57.1**	**-1.4**	
TOA0				*e*PKPbc		**PKPdf**	**22 24 57.9**	**-0.6**	
TORD	**Torodi Ar. Bea**	**160.65**	**280**	PKP		**PKPdf**	**22 24 57.4**	**-1.2**	
	comp=Z,31nm,1.2s,baz=18,slow=0.9,SNR=23								
TORD				PP		**PP**	**22 29 25.3**	**+2.0**	
	comp=Z,2.6nm,1.0s,baz=72,slow=4.7,SNR=2.9								
TOA1	**Torodi Ar. Sit**	**160.65**	**280**	*e*PKPdf		**PKPdf**	**22 24 57.4**	**-1.2**	
TOA1				*e*PP		**PP**	**22 29 25.3**	**+2.0**	
KIC	**Kosan Boka**	**166.44**	**254**	*e*PKP2		**PKPdf**	**22 25 02.6**	**-1.4**	
	comp=Z,208nm,1.3s								
DBIC	**Dimbokro**	**166.64**	**255**	PKP		**PKPdf**	**22 25 03.9**	**-0.3**	
	comp=Z,52nm,1.2s,baz=112,slow=1.6,SNR=11								
DBIC	**Dimbokro**	**166.64**	**255**	*e*PKPdf		**PKPdf**	**22 25 04.1**	**-0.1**	
LIC	**Lamto**	**166.67**	**253**	*e*PKP2		**PKPdf**	**22 25 02.6**	**-1.6**	
	comp=Z,166nm,1.3s								
TIC	**Toumodi**	**166.79**	**255**	*e*PKP2		**PKPdf**	**22 25 04.1**	**-0.2**	

MOS ***20*** *22:07:37.3±1.1,36°.53N×70°.23E,h200km,mb4.6/31, Error ellipse: s-maj=6.6km s-min=4.3km az=99.3*

ISCJB ***20*** *22:07:37.0±0.3,36°.51N±0°.02×70°.20E±0°.03,h198km±3km, mb4.4/70, Error ellipse: s-maj=3.6km s-min=3.1km az=144.3*

IDC ***20*** *22:07:38.4±0.8,36°.45N×70°.18E,h200km±8km,mb4.0/31, mb1 4.1/36,mb1mx4.0/54,mbtmp4.6/36,MS4.0/1, Ms1 4.0/1,ms1mx2.7/47, Error ellipse: s-maj=9.6km s-min=7.8km az=9.0*

NEIC ***20*** *22:07:38.8±0.2,36°.52N×70°.17E,mb4.6/29, Error ellipse: s-maj=5.0km s-min=4.2km az=169.0*

BJI ***20*** *22:07:38.8,36°.61N×70°.29E,h196km,mb4.6/16,mB4.7/10*

NNC ***20*** *22:07:44.7±5.6,37°.56N×69°.93E,h380km±165km,mb3.6, mpv5.1, Error ellipse: s-maj=121.4km s-min=41.6km az=171.0*

ISC 20 22:07:37.7±0.4, 36°.47N±0°.04×70°.22E±0°.04, h195km±4km, h194km:pP-P, n236, σ1°64/266, mb4.5/70, 24C-12D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBL	**Kabul**	**2.15**	**207**	*e*PN	**Pn**	**22 08 19.3**	**+1.6**
KBL				*e*		22 08 49.3	
KBL	**Kabul**	**2.15**	**207**	*e*Pn	**Pn**	**22 08 19.3**	**+1.6**
KBL				*e*Sn	**Sn**	**22 08 49.3**	**+0.5**
CEP	**Cherat**	**2.99**	**152**	⇓P	**Pn**	**22 08 30.1**	**+3.0**
CEP				S	**Sn**	**22 09 09.0**	**+3.4**
CHCP	**Chirah Chowk**	**3.76**	**137**	P	**Pn**	**22 08 39.7**	**+3.3**
THW	**Thamme Wali**	**3.88**	**161**	⇓P	**Pn**	**22 08 40.1**	**+2.2**
SARP	**Sargodha**	**4.98**	**155**	⇓P	**Pn**	**22 08 53.5**	**+1.8**
KSH	**Kashi**	**5.47**	**55**	*i* P	**Pn**	**22 08 54.6**	**-3.5**
KSH				S	Sn	22 09 52.3	-9.2
KSH				smax	smax		
	comp=N,950nm,0.8s						
KSH				smax	smax		
	comp=E,720nm,0.5s						
THN	**Thein Dam**	**6.07**	**130**	*e*P	**Pn**	**22 09 07.0**	**+1.2**
THN				*e*S	**Sn**	**22 10 15.0**	**-0.5**
MNAS	**Manas** 75nm,0.5s	**6.26**	**16**	⇑P	**Pn**	**22 09 08.2**	**-0.2**
MNAS				⇑S	**Sn**	**22 10 16.9**	**-3.1**
	103nm,0.5s						
MNAS	**Manas**	**6.26**	**16**	PN	**Pn**	**22 09 08.1**	**-0.2**
MNAS				S	**Sn**	**22 10 16.9**	**-3.1**
MNAS				pmax	pmax		
	comp=Z,75nm,0.5s						
MNAS				smax	smax		
	comp=N,103nm,0.5s						
KK31	**Karatay Array**	**6.62**	**2**	⇑P	**Pn**	**22 09 12.1**	**-0.9**
	comp=N,32nm,0.4s,baz=181,slow=12						
KK31				⇑S	**Sn**	**22 10 23.9**	**-4.5**
	comp=N,93nm,0.7s,baz=188,slow=23						
KK31	**Karatay Array**	**6.62**	**2**	PN	**Pn**	**22 09 12.0**	**-0.9**
KK31				pmax	pmax		
	comp=Z,32nm,0.4s						
KKAR	**Karatay Array**	**6.62**	**2**	*e*PN	**Pn**	**22 09 12.5**	**-0.4**
KKAR	**Karatay Array**	**6.62**	**2**	*e*Pn	**Pn**	**22 09 12.5**	**-0.4**
KKAR				*e*Sn	**Sn**	**22 10 23.9**	**-4.5**
JWA	**Jwalamukhi**	**6.84**	**130**	*e*P	**Pn**	**22 09 18.0**	**+2.2**
JWA				*e*S	**Sn**	**22 10 32.0**	**-1.6**
AAK	**Ala-Archa**	**6.99**	**27**	P	**Pn**	**22 09 18.0**	**+0.2**
	comp=Z,56nm,0.3s,baz=180,slow=5.6,SNR=199						
AAK				S	**Sn**	**22 10 34.4**	**-2.8**
	comp=Z,13nm,0.3s,baz=144,slow=23,SNR=7.8						
AAK	**Ala-Archa**	**6.99**	**27**	⇑P	**Pn**	**22 09 18.3**	**+0.5**
	comp=Z,175

TBLG	**Delisi**	**20.42**	**293**	P	**P**	**22 12 01.4**	**+1.5**
NVS	**Novosibirsk**	**20.44**	**22**	*e*P	**P**	**22 12 00.4**	**+0.6**
NVS				*e*		22 12 36.4	
NVS				*e*		22 15 37.0	
NVS				pmax	pmax		
	comp=N,10.0nm,0.5s						
NVS				pmax	pmax		
	comp=E,5.0nm,0.5s						
NVS				pmax	pmax		
	comp=Z,10.0nm,0.5s						
GUDG	**Gudauri**	**20.71**	**295**	P	**P**	**22 12 04.5**	**+1.3**
ZEI	**Tsey**	**21.18**	**295**	*e*P	**P**	**22 12 09.0**	**+0.9**
ZEI				pmax	pmax		
	comp=Z,31nm,0.5s						
BGD	**Bogdanovka**	**21.23**	**291**	P	**P**	**22 12 10.9**	**+2.2**
AKH	**Akhalkalaki**	**21.32**	**292**	P	**P**	**22 12 11.2**	**+1.6**
AKH	**Akhalkalaki**	**21.32**	**292**	P	**P**	**22 12 11.2**	**+1.6**
SVE	**Sverdlovsk**	**21.35**	**345**	*e*P	**P**	**22 12 10.9**	**+1.4**
SVE				pmax	pmax		
	comp=Z,18nm,1.0s						
ARU	**Arti**	**21.46**	**342**	P	**P**	**22 12 11.4**	**+0.8**
	comp=Z,8.7nm,0.6s,baz=159,slow=5.5,SNR=24						
ARU	**Arti**	**21.46**	**342***c*	*i*P	**P**	**22 12 11.6**	**+1.0**
ARU						22 12 44.4	
ARU				S	**S**	**22 15 58.2**	**+2.5**
ARU				pmax	pmax		
	comp=Z,21nm,1.2s						
ARU	**Arti**	**21.46**	**342**	*e*P	**P**	**22 12 11.4**	**+0.8**
	comp=Z,13nm,0.8s						
ONI	**Oni**	**21.48**	**295**	P	**P**	**22 12 12.5**	**+1.4**
ONI	**Oni**	**21.48**	**295**	P	**P**	**22 12 12.4**	**+1.4**
KBZ	**Khabaz**	**22.05**	**298**	P	**P**	**22 12 15.8**	**-0.9**
	comp=Z,6.4nm,0.9s,baz=106,slow=6.7,SNR=10						
NEY	**Neytrino**	**22.10**	**296**	*e*P	**P**	**22 12 16.8**	**-0.6**
GOF	**Gofitskoye**	**22.21**	**301**⇑	*e*P	**P**	**22 12 18.7**	**+0.5**
GOF				pmax	pmax		
	comp=Z,19nm,0.7s						
KVAR	**Kislovodsk Arr**	**22.23**	**298**	P	**P**	**22 12 18.1**	**-0.5**
	comp=Z,4.1nm,0.6s,baz=115,slow=10,SNR=6.3						
KIV	**Kislovodsk**	**22.24**	**298**	P	**P**	**22 12 18.7**	**+0.1**
KIV	**Kislovodsk**	**22.24**	**298***c*	*i*P	**P**	**22 12 18.3**	**-0.3**
KIV				*e**PP	**pP**	**22 12 52.4**	**-0.1**
KIV				pmax	pmax		
	comp=Z,18nm,1.5s						
KIV	**Kislovodsk**	**22.24**	**298**	*e*P	**P**	**22 12 18.9**	**+0.3**
	comp=Z,35nm,1.6s						
GTA	**Gaotai**	**23.48**	**74**	*e*P	**P**	**22 12 33.3**	**+3.4**
GTA				pmax	pmax		
	comp=Z,9.0nm,1.3s						
KRAR	**Krasnoyarsk**	**24.84**	**31**	*e*P	**P**	**22 12 42.1**	**+0.2**
KRAR				pmax	pmax		
	comp=Z,558nm,0.9s						
VRH	**Novokhopyorsk**	**25.08**	**315**	*e*P	**P**	**22 12 42.8**	**-1.3**
VRH				pmax	pmax		
	comp=Z,10.0nm,0.5s						
VSR	**Storozhevoye**	**26.56**	**313**	*e*P	**P**	**22 12 56.5**	**-0.9**
VSR				pmax	pmax		
	comp=Z,10.0nm,0.6s						
MOY	**Mondy**	**26.57**	**45**	*e*P	**P**	**22 13 00.7**	**+3.0**
ZAK	**Zakamensk**	**27.48**	**49**	*e*P	**P**	**22 13 07.3**	**+1.5**
ZAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
MMAI	**Mount Meron Ar**	**28.72**	**273**	P	**P**	**22 13 18.4**	**+1.5**
	comp=Z,0.7nm,0.5s,baz=59,slow=6.9,SNR=2.9						
MMAI				LR	LR	22 26 28.1	
	comp=Z,341nm,20.9s,baz=355,slow=39						
BR101	**Keskin Array S**	**28.84**	**288**	*e*P	**P**	**22 13 18.9**	**+0.9**
BR131	**Keskin Array S**	**28.84**	**288**	*e*P	**P**	**22 13 19.0**	**+1.0**
BRTR	**Keskin Array B**	**28.84**	**288**	P	**P**	**22 13 18.9**	**+0.9**
	comp=Z,4.2nm,0.7s,baz=99,slow=8.8,SNR=31						
SONA0	**Songino Array**	**28.87**	**55**	*e*P	**P**	**22 13 20.4**	**+2.2**
	comp=Z,6.0nm,0.6s						
SONM	**Songino Array**	**28.87**	**55**	P	**P**	**22 13 20.4**	**+2.2**
	comp=Z,4.8nm,0.7s,baz=267,slow=9.2,SNR=35						
SONA1	**Songino Array**	**28.88**	**55**	*e*P	**P**	**22 13 20.3**	**+2.1**
ANTO	**Ankara**	**29.48**	**288**	*e*P	**P**	**22 13 21.1**	**-2.4**
ANTO				pmax	pmax		
	comp=Z,13nm,0.6s						
ANTO	**Ankara**	**29.48**	**288**	*e*P	**P**	**22 13 21.1**	**-2.4**
	comp=Z,13nm,0.6s						
BR231	**Keskin MP Arra**	**29.49**	**288**	*e*P	**P**	**22 13 19.6**	**-4.1**
OBN	**Obninsk**	**29.55**	**320**	P	**P**	**22 13 24.0**	**+0.2**
	comp=Z,24nm,0.6s,baz=76,slow=19,SNR=8.9						
OBN	**Obninsk**	**29.55**	**320***c*	*i*P	**P**	**22 13 23.7**	**-0.1**
OBN				*e**PP	**pP**	**22 14 04.4**	**+0.8**
OBN				pmax	pmax		
	comp=Z,22nm,0.7s						
OBN	**Obninsk**	**29.55**	**320**	*e*P	**P**	**22 13 24.1**	**+0.3**
	comp=Z,27nm,0.5s						
CM31	**Chiang Mai Arr**	**31.00**	**118**	*e*P	**P**	**22 13 38.6**	**+1.6**
CMAR	**Chiang Mai Arr**	**31.00**	**118**	P	**P**	**22 13 38.6**	**+1.6**
	comp=Z,3.8nm,0.9s,baz=299,slow=8.3,SNR=13						
CM01	**Chiang Mai Arr**	**31.04**	**118**	*e*P	**P**	**22 13 39.3**	**+1.9**
KLMR	**Klimovskoe**	**31.20**	**331**	*e*P	**P**	**22 13 37.0**	**-1.3**
KLMR				*e*		22 16 26.6	
KLMR				pmax	pmax		
	comp=Z,15nm,1.3s						
HHC	**Hu-ho-hao-te**	**32.36**	**69**	*e*P	**P**	**22 13 49.9**	**+1.0**
HHC				pmax	pmax		
	comp=Z,10.0nm,0.8s						
HHC				pmax	pmax		
	comp=Z,100nm,4.5s						
AKASG	**Malin Array Be**	**32.47**	**309**	P	**P**	**22 13 49.2**	**-0.3**
	comp=Z,6.7nm,0.6s,baz=83,slow=7.1,SNR=48						
AKASG				pP	**pP**	**22 14 31.4**	**+1.9**
	comp=Z,1.0nm,0.6s,baz=82,slow=7.3,SNR=1.6						
AKASG				PcP	**PcP**	**22 16 30.5**	**-1.1**
	comp=Z,1.0nm,0.5s,baz=85,slow=2.8,SNR=5.7						
AKBB	**Malin Array Si**	**32.47**	**309**	*e*P	**P**	**22 13 49.6**	**+0.1**
AKBB				*e*		22 16 30.5	
AKBB				pmax	pmax		
	comp=Z,11nm,0.6s						
AKBB	**Malin Array Si**	**32.47**	**309**	*e*P	**P**	**22 13 49.6**	**+0.1**
	comp=Z,11nm,0.6s						
AKBB				*e*PcP	**PcP**	**22 16 30.5**	**-1.1**
KIEV	**Kiev**	**32.48**	**309***c*	*i*P	**P**	**22 13 49.1**	**-0.5**
KIEV				pmax	pmax		
	comp=Z,9.0nm,0.6s						
KIEV	**Kiev**	**32.48**	**309**	*e*P	**P**	**22 13 49.3**	**-0.3**
	comp=Z,11nm,0.6s						
AK11	**Malin Array Si**	**32.50**	**309**	*e*P	**P**	**22 13 49.2**	**-0.6**
ENH	**Enshi**	**33.21**	**89**	*e*P	**P**	**22 13 56.7**	**+0.5**
	comp=Z,25nm,1.6s						
VRI	**Vrincioaia**	**33.69**	**300**⇑	*i*P	**P**	**22 14 02.0**	**+1.8**
VRI	**Vrincioaia**	**33.69**	**300**	⇑P	**P**	**22 14 02.0**	**+1.8**
PLOR	**Plostina**	**33.75**	**300**	⇓*i*P	**P**	**22 14 02.3**	**+1.6**
PLOR	**Plostina**	**33.75**	**300**	⇓P	**P**	**22 14 02.3**	**+1.6**
TESR	**Tescani**	**33.76**	**301**⇑	*i*P	**P**	**22 14 01.5**	**+0.7**
PRAR	**RASCA**	**34.07**	**303**	⇓*i*P	**P**	**22 14 04.0**	**+0.5**
MLR	**Muntele Rosu**	**34.24**	**299**	P	**P**	**22 14 06.7**	**+1.6**
	comp=Z,4.5nm,0.8s,baz=110,slow=2.7,SNR=45						
MLR	**Muntele Rosu**	**34.24**	**299**	⇑*i*P	**P**	**22 14 07.1**	**+2.0**
MLR	**Muntele Rosu**	**34.24**	**299**	⇑P	**P**	**22 14 07.1**	**+2.0**
MLR	**Muntele Rosu**	**34.24**	**299**	*e*P	**P**	**22 14 06.6**	**+1.6**
	comp=Z,22nm,0.9s						
NRIK	**Noril'sk**	**34.27**	**11**	P	**P**	**22 14 05.5**	**+0.7**
	comp=Z,7.6nm,0.7s,baz=240,slow=4.5,SNR=4.1						
DOPR	**Dopca**	**34.63**	**300**	⇓*i*P	**P**	**22 14 09.5**	**+1.2**
BURAR	**Bucovina Array**	**34.77**	**303**	⇑*i*P	**P**	**22 14 10.1**	**+0.6**
BURAR	**Bucovina Array**	**34.77**	**303**	⇑P	**P**	**22 14 10.1**	**+0.6**
BUR08	**Bucovina Ar. S**	**34.78**	**303**	*e*P	**P**	**22 14 10.4**	**+0.7**
VOIR		**34.87**	**299**	⇑*i*P	**P**	**22 14 11.6**	**+1.2**
VOIR		**34.87**	**299**	⇑P	**P**	**22 14 11.7**	**+1.3**
ARR	**Arges**	**35.17**	**299**	⇓*i*P	**P**	**22 14 13.9**	**+1.0**
JOF	**Joensuu**	**35.58**	**330**	P	**P**	**22 14 17.0**	**+0.9**
JOF				pmax	pmax		
	comp=Z,30nm,1.0s						
BOD	**Bodaibo**	**35.77**	**39**	*e*P	**P**	**22 14 18.5**	**+0.7**
LOT	**Lotru**	**35.77**	**299**⇑	*i*P	**P**	**22 14 19.4**	**+1.2**
VSU	**Vasula**	**35.81**	**322***c*	*i*P	**P**	**22 14 18.0**	**-0.1**
VSU				pmax	pmax		
	comp=Z,43nm,0.8s						
DRGR		**36.47**	**302**	⇓*i*P	**P**	**22 14 25.3**	**+1.3**
DRGR		**36.47**	**302**	⇓P	**P**	**22 14 25.3**	**+1.3**
FIA1	**FINESS Array S**	**37.15**	**326**	*e*P	**P**	**22 14 29.5**	**0.0**
FIA0	**FINESS Array S**	**37.15**	**326**	*e*P	**P**	**22 14 29.6**	**+0.2**
FIA0				*e*		22 16 45.0	
FIA0	**FINESS Array S**	**37.15**	**326**	*e*P	**P**	**22 14 29.6**	**+0.2**
FIA0				*e*PcP	**PcP**	**22 16 45.0**	**-0.2**
FINES	**FINESS Array B**	**37.15**	**326**	P	**P**	**22 14 29.6**	**+0.2**
	comp=Z,13nm,0.6s,baz=108,slow=10,SNR=77						
FINES				PcP	**PcP**	**22 16 44.9**	**-0.2**
	comp=Z,1.9nm,0.6s,baz=123,slow=3.8,SNR=3.3						
LVZ	**Lovozero**	**37.25**	**339**	*e*P	**P**	**22 14 30.2**	**0.0**
LVZ				pmax	pmax		
	comp=Z,10.0nm,0.7s						
LVZ	**Lovozero**	**37.25**	**339**	*e*P	**P**	**22 14 30.2**	**0.0**
	comp=Z,9.7nm,0.7s						
OJC	**Ojcow**	**38.41**	**307**	*e*P	**P**	**22 14 40.3**	**+0.1**
OJC				pmax	pmax		
	comp=Z,12nm,1.1s						
OJC	**Ojcow**	**38.41**	**307**	*e*P	**P**	**22 14 40.3**	**+0.1**
	comp=Z,12nm,1.1s						
VAF	**Ylistaro**	**39.21**	**328**	P	**P**	**22 14 47.0**	**+0.4**
VAF				pmax	pmax		
	comp=Z,23nm,0.8s						
MORC	**Moravsky Berou**	**39.87**	**306**	*e*P	**P**	**22 14 53.3**	**+1.0**
MORC				pmax	pmax		
	comp=Z,20nm,0.7s						
MORC	**Moravsky Berou**	**39.87**	**306**	*e*P	**P**	**22 14 53.3**	**+1.0**
	comp=Z,20nm,0.7s						
VRAC	**Vranov**	**40.50**	**306**	P	**P**	**22 14 58.1**	**+0.7**
	comp=Z,4.5nm,0.7s,baz=79,slow=10.0,SNR=7.2						
DPC	**Dobruska-Polom**	**40.65**	**307**	*e*P	**P**	**22 14 59.5**	**+0.9**
DPC	**Dobruska-Polom**	**40.65**	**307**	*e*P	**P**	**22 14 59.5**	**+0.9**
UPC	**Upice**	**40.84**	**308**	*e*P	**P**	**22 15 01.0**	**+0.8**
UPC	**Upice**	**40.84**	**308**	*e*P	**P**	**22 15 01.0**	**+0.8**
ARA0	**ARCESS Array S**	**40.93**	**338**	*e*P	**P**	**22 15 01.2**	**+0.6**
ARCES	**ARCESS Array B**	**40.93**	**338**	P	**P**	**22 15 00.9**	**+0.3**
	comp=Z,13nm,0.7s,baz=112,slow=7.1,SNR=88						
ARCES	**ARCESS Array B**	**40.93**	**338**	*e*P	**P**	**22 15 01.1**	**+0.5**
ARCES				pmax	pmax		
	comp=Z,13nm,0.6s						
ARE0	**ARCESS Array S**	**40.93**	**338**	*e*P	**P**	**22 15 01.4**	**+0.7**
	comp=Z,18nm,0.8s						
CONA	**Conrad Observa**	**41.07**	**304**	*i*P	**P**	**22 15 02.6**	**+0.4**
	comp=Z,5.1nm,0.7s						
SOKA	**Soboth**	**41.75**	**302**	*i*P	**P**	**22 15 08.0**	**+0.3**
	comp=Z,4.7nm,0.6s						
PRU	**Pruhonice**	**41.80**	**307**	*e*P	**P**	**22 15 08.6**	**+0.6**
PRU	**Pruhonice**	**41.80**	**307**	*e*P	**P**	**22 15 08.6**	**+0.6**
MOA	**Molln**	**42.14**	**304**	*i*P	**P**	**22 15 11.1**	**+0.2**
	comp=Z,4.7nm,0.8s						
GERES	**GERESS Array B**	**42.43**	**305**	P	**P**	**22 15 13.3**	**+0.1**
	comp=Z,0.4nm,0.4s,baz=80,slow=7.5,SNR=5.6						
GEA0	**GERESS Array S**	**42.43**	**305**	*e*P	**P**	**22 15 13.0**	**-0.2**
RGN	**Rugen**	**42.48**	**314**	*e*P	**P**	**22 15 12.6**	**-0.7**
	comp=Z,164nm,1.2s						
IPM	**Ipoh**	**42.60**	**131**	*e*P	**P**	**22 15 15.2**	**+0.4**
	comp=Z,66nm,1.0s						
HFS	**Hagfors**	**42.70**	**322**	P	**P**	**22 15 14.8**	**-0.2**
	comp=Z,26nm,0.5s,baz=98,slow=11,SNR=174						
CLL	**Collm**	**42.72**	**309**	*e*P	**P**	**22 15 15.0**	**-0.3**
	comp=Z,4.0nm,0.7s						
CLL				*e*		22 16 10.0	
CLL	**Collm**	**42.72**	**309**	*e*P	**P**	**22 15 15.0**	**-0.3**
CLL				pmax	pmax		
	comp=Z,4.0nm,0.7s						
NC405	**NORSAR Array S**	**43.79**	**323**	*e*P	**P**	**22 15 23.9**	**+0.1**
NC303	**NORSAR Array S**	**43.97**	**323**	*e*P	**P**	**22 15 25.2**	**0.0**
NB201	**NORSAR Array S**	**43.98**	**323**	*e*P	**P**	**22 15 25.2**	**-0.2**
NB2	**NORSAR Subarra**	**44.02**	**323**	P	**P**	**22 15 25.0**	**-0.7**
	comp=Z,11nm,0.5s,baz=98,slow=7.9						
NB2	**NORSAR Subarra**	**44.02**	**323**	P	**P**	**22 15 25.0**	**-0.7**
	baz=98,slow=7.9						
NB2	**NORSAR Subarra**	**44.02**	**323**	P	**P**	**22 15 25.0**	**-0.7**
NB2				pmax	pmax		
	comp=Z,9.0nm,0.5s						
NB200	**NORSAR Array S**	**44.02**	**323**	*e*P	**P**	**22 15 25.0**	**-0.7**
NOA	**NORSAR Array B**	**44.02**	**323**	P	**P**	**22 15 25.0**	**-0.7**
	comp=Z,15nm,0.6s,baz=98,slow=7.9,SNR=78						
NBO02	**NORSAR Array S**	**44.20**	**323**	*e*P	**P**	**22 15 26.4**	**-0.6**
NBO00	**NORSAR Array S**	**44.23**	**323**	*e*P	**P**	**22 15 26.9**	**-0.4**
NC204	**NORSAR Array S**	**44.26**	**323**	*e*P	**P**	**22 15 27.7**	**+0.1**
MOTA	**Moosalm**	**44.33**	**303**	*i*P	**P**	**22 15 27.3**	**-1.1**
	comp=Z,3.7nm,0.7s						
YAK	**Yakutsk**	**44.35**	**36**	*i*P	**P**	**22 15 28.5**	**+0.3**
YAK				pmax	pmax		
	comp=Z,21nm,0.6s						
DAVA	**Damuels**	**45.16**	**303**	*i*P	**P**	**22 15 34.6**	**-0.4**
	comp=Z,8.7nm,0.6s						
DAVOX	**Davos/Dischmat**	**45.24**	**303**	P	**P**	**22 15 34.8**	**-1.0**
	comp=Z,4.1nm,0.6s,baz=62,slow=6.3,SNR=5.7						
KS15	**Wonju Array Si**	**45.46**	**71**	*e*P	**P**	**22 15 38.0**	**+0.6**
KSAR	**Wonju Array Be**	**45.46**	**71**	P	**P**	**22 15 38.0**	**+0.7**
KSAR	**Wonju Array Be**	**45.46**	**71**	P	**P**	**22 15 38.0**	**+0.7**
KSRS	**Korea Array**	**45.48**	**71**	P	**P**	**22 15 38.0**	**+0.5**
	comp=Z,3.6nm,0.5s,baz=276,slow=7.2,SNR=4.4						
KSRS	**Korea Array**	**45.48**	**71**	P	**P**	**22 15 38.0**	**+0.5**
KSRS				pmax	pmax		
	comp=Z,7.0nm,0.8s						
SENIN	**Lac Senin/Sane**	**47.07**	**303**	*e*P	**P**	**22 15 50.1**	**+0.1**
	comp=Z,7.7nm,1.0s						
KMBO	**Kilima Mbogo**	**48.35**	**227**	P	**P**	**22 16 01.3**	**+1.1**
	comp=Z,5.7nm,0.6s,baz=32,slow=12,SNR=16						
EKA	**Eskdalemuir Ar**	**51.87**	**316**	P	**P**	**22 16 25.4**	**-0.5**
	comp=Z,2.5nm,0.7s,baz=79,slow=9.7,SNR=7.6						
MBAR	**Mbarara**	**51.98**	**234**	*e*P	**P**	**22 16 27.1**	**-0.3**
MBAR				pmax	pmax		
	comp=Z,8.0nm,0.6s						
MBAR	**Mbarara**	**51.98**	**234**	*e*P	**P**	**22 16 27.1**	**-0.3**
	comp=Z,7.7nm,0.6s						
ESDC	**Sonseca Array**	**56.91**	**298**	P	**P**	**22 17 01.5**	**-1.0**
	comp=Z,0.2nm,0.4s,baz=52,slow=8.0,SNR=4.6						
BILL	**Bilibino**	**58.91**	**26**	*e*P	**P**	**22 17 16.9**	**+1.1**
BILL				pmax	pmax		
	comp=Z,102nm,1.0s						
PEA1	**Petropavlovsk-**	**60.42**	**44**	*e*P	**P**	**22 17 27.0**	**+0.6**
PETK	**Petropavlovsk-**	**60.42**	**44**	P	**P**	**22 17 27.0**	**+0.6**
	comp=Z,2.0nm,0.5s,baz=330,slow=1.9,SNR=2.8						
SUMG	**Summit**	**60.88**	**341**	*e*P	**P**	**22 17 30.9**	**+1.2**
SUMG				pmax	pmax		
	comp=Z,15nm,1.0s						
SUMG	**Summit**	**60.88**	**341**	*e*P	**P**	**22 17 30.9**	**+1.2**
	comp=Z,15nm,1.0s						
LSZ	**Lusaka**	**64.98**	**225**	*e*P	**P**	**22 17 57.4**	**+0.3**
LSZ				pmax	pmax		
	comp=Z,4.0nm,0.7s						
LSZ	**Lusaka**	**64.98**	**225**	*e*P	**P**	**22 17 57.4**	**+0.3**
	comp=Z,3.7nm,0.7s						
TOA1	**Torodi Ar. Sit**	**65.08**	**268**	*e*P	**P**	**22 17 56.0**	**-1.8**
	comp=Z,10.0nm,0.9s						
TOA0	**Torodi Ar. Sit**	**65.08**	**268**	*e*P	**P**	**22 17 56.1**	**-1.6**
TORD	**Torodi Ar. Bea**	**65.08**	**268**	P	**P**	**22 17 56.0**	**-1.8**
	comp=Z,4.9nm,0.5s,baz=50,slow=6.1,SNR=132						
DBIC	**Dimbokro**	**74.06**	**267**	P	**P**	**22 18 52.1**	**-0.5**
	comp=Z,3.1nm,0.7s,baz=5.4,slow=7.3,SNR=5.4						
DBIC	**Dimbokro**	**74.06**	**267**	*e*P	**P**	**22 18 52.1**	**-0.5**
DBIC				pmax	pmax		
	comp=Z,61nm,1.9s						
DBIC	**Dimbokro**	**74.06**	**267**	*e*P	**P**	**22 18 52.1**	**-0.5**
	comp=Z,61nm,1.9s						
ILAR	**Eielson Array**	**74.97**	**16**	P	**P**	**22 18 56.8**	**-0.3**
	comp=Z,5.8nm,0.9s,baz=302,slow=4.4,SNR=3.2						
ILB	**Eielson Array**	**74.97**	**16**	*e*P	**P**	**22 18 56.8**	**-0.3**
BOSA	**Boshof**	**77.32**	**220**	P	**P**	**22 19 10.5**	**-0.4**
	comp=Z,5.4nm,0.7s,baz=14,slow=3.6,SNR=16						
KDAK	**Kodiak Island**	**79.46**	**22**	*i*P	**P**	**22 19 22.6**	**+0.5**
YKA	**Yellowknife Ar**	**81.30**	**2**	P	**P**	**22 19 32.2**	**+0.5**
	comp=Z,3.7nm,0.5s,baz=350,slow=5.3,SNR=11						
YKA				pP	**pP**	**22 20 20.9**	**+1.9**
	comp=Z,2.7nm,0.9s,baz=354,slow=5.1,SNR=3.1						
YKB5	**Yellowknife Ar**	**81.30**	**2**	*e*P	**P**	**22 19 32.2**	**+0.4**
YKB5				*e*pP	**pP**	**22 20 20.9**	**+1.9**
WRA	**Warramunga Arr**	**82.52**	**121**	P	**P**	**22 19 37.5**	**-1.3**
	comp=Z,4.5nm,0.8s,baz=326,slow=4.8,SNR=10						
WRA	**Warramunga Arr**	**82.52**	**121**	*e*P	**P**	**22 19 37.7**	**-1.1**
WRA				pmax	pmax		
	comp=Z,5.0nm,0.7s						
WR1	**Warramunga Ar**	**82.52**	**121**	*e*P	**P**	**22 19 37.5**	**-1.3**
	comp=Z,54nm,1.5s						
AS31	**Alice Springs**	**84.76**	**124**	*e*P	**P**	**22 19 49.3**	**-0.9**
	comp=Z,2.2nm,0.9s						
AS31				*e*pP	**pP**	**22 20 39.2**	**+1.4**
ASAR	**Alice Springs**	**84.76**	**124**	P	**P**	**22 19 49.3**	**-0.8**
	comp=Z,3.6nm,0.6s,baz=315,slow=4.6,SNR=14						
ASAR				pP	**pP**	**22 20 39.2**	**+1.4**
	comp=Z,1.4nm,0.9s,baz=307,slow=4.9,SNR=1.8						
PLCA	**Paso Flores**	**149.22**	**250**	PKPbc	**PKPbc**	**22 27 03.3**	**+0.2**
	comp=Z,7.0nm,1.0s,baz=302,slow=4.6,SNR=4.6						

ATH 20 22:11:11.8, 37.85N×23.87E, h12km±4km, ML1.4/1, Error ellipse: s-maj=5.7km s-min=2.2km az=262.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VLY	**Voula,Athens**	**0.06**	**276**	P	Pg	22 11 13.8	-0.4
VLY				S	Sg	22 11 16.3	+0.3
VLY				AML	AML	22 11 16.4	
	comp=N,928μm,0.3s						
VLY				AML	AML	22 11 17.9	
	comp=E,476μm,0.4s						
PTL	**Penteli**	**0.20**	**359**	P	Pg	22 11 16.1	-0.2
PTL				S	Sg	22 11 19.5	+0.2

CSEM ***20*** *22:11:51.8±0.1, 35.32N×27.80E, h10km, ML3.8, Error ellipse: s-maj=2.8km s-min=2.0km az=28.0*
HLW ***20*** *22:11:51.6, 35.41N×27.84E, h21km±6km, Md4.2, Ml4.4*
DDA ***20*** *22:11:51.7, 35.35N×27.71E, h40km, Ml3.9*
ISK ***20*** *22:11:52.0, 35.44N×27.77E, h16km, ML3.7*
THE ***20*** *22:11:52.9, 35.45N×27.76E, h0km, ML3.9/8, Error ellipse: s-maj=1.5km s-min=0.6km az=146.0*
ATH ***20*** *22:11:53.0, 35.45N×27.73E, h30km±1km, ML3.8/8, Error ellipse: s-maj=2.1km s-min=0.8km az=327.0*
GII ***20*** *22:11:54.8±0.0, 34.93N×28.25E, h1km, MD3.4/3*
IDC ***20*** *22:11:54.3±1.8, 35.43N×27.85E, h53km±24km, mb3.9/7, mb1 3.8/13, mb1mx3.6/41, mbtmp4.0/13, ML3.7/6, Error ellipse: s-maj=20.3km s-min=15.8km az=128.0*
NIC ***20*** *22:11:55.5±0.2, 35.74N×28.25E, h5km, mb4.5, ML4.2*
NSSC ***20*** *22:11:58.0±1.5, 35.52N×28.65E, h0km±462km, MD2.6, ML3.1*

ISC 20 22:11:51.0±1.1, 35.30N±0.03×27.83E±0.02, h16km±7km, n383, σ1.991/454, mb4.0/6, 4C, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KARP	**Karpathos**	**0.60**	**294**	*e*PG	**Pg**	**22 12 02.5**	**-0.3**
KARP				*e*SG	**Sg**	**22 12 10.2**	**-0.8**
KARP	**Karpathos**	**0.60**	**294**	P	**Pg**	**22 12 02.5**	**-0.3**
KARP				S	**Sb**	**22 12 10.9**	**-0.5**
KARP	**Karpathos**	**0.60**	**294**	*e*Pg	**Pg**	**22 12 02.6**	**-0.3**
KARP				*e*Sg	**Sg**	**22 12 10.1**	**-0.8**
KARP	**Karpathos**	**0.60**	**294**	P	**Pg**	**22 12 02.6**	**-0.3**
KARP				S	**Sg**	**22 12 10.2**	**-0.7**
KARP				AML	AML	22 12 11.6	
	comp=N,22080μm,0.4s						
KARP				AML	AML	22 12 12.3	
	comp=E,19706μm,0.3s						
ARG	**Arkhangelos**	**0.94**	**15**	P	**Pn**	**22 12 09.6**	**0.0**
ARG				S	**Sn**	**22 12 21.9**	**-0.9**
ARG	**Arkhangelos**	**0.94**	**15**	P	**Pn**	**22 12 09.6**	**0.0**
ARG				S	**Sn**	**22 12 21.9**	**-0.9**
ZKR	**Zakros**	**1.33**	**262**	P	**Pb**	**22 12 15.7**	**0.0**
ZKR				S	**Sg**	**22 12 34.9**	**+0.7**
ZKR	**Zakros**	**1.33**	**262**	P	**Pb**	**22 12 15.7**	**0.0**
ZKR				S	**Sg**	**22 12 34.9**	**+0.7**
ZKR	**Zakros**	**1.33**	**262**	P	**Pb**	**22 12 15.9**	**+0.2**
NIS1	**Nisyros Isl.**	**1.40**	**338**	*e*PN	**Pn**	**22 12 15.6**	**-0.4**
NIS1	**Nisyros Isl.**	**1.40**	**338**	P	**Pn**	**22 12 16.0**	**+0.1**
NIS1				S	**Sb**	**22 12 34.0**	**-0.5**
NIS1	**Nisyros Isl.**	**1.40**	**338**	*e*Pn	**Pn**	**22 12 15.6**	**-0.4**
NIS1	**Nisyros Isl.**	**1.40**	**338**	P	**Pn**	**22 12 16.1**	**+0.1**
NIS1				S	**Sb**	**22 12 34.0**	**-0.5**
NIS1	**Nisyros Isl.**	**1.40**	**338**	P	**Pn**	**22 12 16.1**	**+0.1**
NIS1				AML	AML	22 12 37.7	
	comp=N,10176μm,0.6s						
NIS1				AML	AML	22 12 43.9	
	comp=E,16668μm,0.5s						
NISR	**Nisiros**	**1.43**	**337**	P	**Pn**	**22 12 16.2**	**0.0**
NISR				S	**Sb**	**22 12 35.0**	**-0.1**
NISR	**Nisiros**	**1.43**	**337**	P	**Pb**	**22 12 16.4**	**-0.8**
NISR				S	**Sb**	**22 12 35.0**	**-0.1**
NISR	**Nisiros**	**1.43**	**337**	P	**Pb**	**22 12 16.4**	**-0.8**
NISR				AML	AML	22 12 46.7	
	comp=E,8256μm,0.7s	

comp=N,2424µm,0.3s
APE AML AML 22 13 04.1
comp=E,1461µm,0.4s
DENT Denizli 2.63 21 *e*PN **Pn** **22 12 33.9 +1.0**
DENT Denizli 2.63 21 *e*PN **Pn** **22 12 33.9 +1.0**
AYDB Zeytinkoy-Aydi 2.64 1 *e*PN **Pn** **22 12 33.4 +0.3**
AYDB Zeytinkoy-Aydi 2.64 1 *e*Pn **Pn** **22 12 33.4 +0.3**
KORT Korkueli 2.65 50 *i* P **Pb** **22 12 36.8 -1.4**
KORT *i* S **Sb** **22 13 10.4 -0.2**
KORT Korkueli 2.65 50 P **Pb** **22 12 36.8 -1.4**
KORT S **Sb** **22 12 10.4 -0.2**
ANTB Antalya 2.79 54 *e*PN **Pn** **22 12 36.8 +1.9**
ANTB Antalya 2.79 54 *e*Pn **Pn** **22 12 36.8 +1.9**
DGB ¨zmir 2.85 345 *i* P **Pn** **22 12 35.6 -0.2**
VAM Vamos 2.97 273 P **Pn** **22 12 39.9 +2.4**
VAM Vamos 2.97 273 P **Pn** **22 12 39.9 +2.4**
BCK Bucak 3.10 45 *e*PN **Pn** **22 12 41.1 +1.8**
BCK Bucak 3.10 45 *e*Pn **Pn** **22 12 41.1 +1.8**
GVD Gavdhos 3.10 263 P **Pn** **22 12 41.8 +2.5**
GVD Gavdhos 3.10 263 P **Pn** **22 12 41.8 +2.5**
IZM Izmir 3.12 352 *e*PN **Pn** **22 12 39.6 0.0**
IZM Izmir 3.12 352 *e*Pn **Pn** **22 12 39.6 0.0**
IMMV Iera Moni Meta 3.15 274 P **Pn** **22 12 41.9 +1.9**
IMMV Iera Moni Meta 3.15 274 P **Pn** **22 12 41.9 +1.9**
IMMV Iera Moni Meta 3.15 274 P **Pn** **22 12 42.5 +2.6**
URLA Izmir 3.21 342 *i* P **Pn** **22 12 40.7 -0.1**
URLA *i* S **Sg** **22 13 35.7 +1.6**
URLA Izmir 3.21 342 P **Pn** **22 12 40.7 -0.1**
MANT Manisa 3.24 10 *i* P **Pn** **22 12 40.2 -1.1**
MANT Manisa 3.24 10 P **Pn** **22 12 40.2 -1.1**
KULA Kula-Manisa 3.27 11 *e*PN **Pn** **22 12 42.2 +0.4**
KULA Kula-Manisa 3.27 11 P **Pn** **22 12 42.0 +0.3**
KULA S **Sn** **22 13 20.7 +0.3**
KULA Kula-Manisa 3.27 11 *e*Pn **Pn** **22 12 42.2 +0.4**
KHL Karahalli 3.31 24 *e*PN **Pn** **22 12 43.5 +1.3**
KHL Karahalli 3.31 24 *e*Pn **Pn** **22 12 43.5 +1.3**
SUTC Sutluce-Ispart 3.35 49 *e*PN **Pn** **22 12 44.8 +1.9**
SUTC Sutluce-Ispart 3.35 49 *e*Pn **Pn** **22 12 44.8 +1.9**
CHOS Chios island 3.39 336 *e*PN **Pn** **22 12 44.2 +0.9**
CHOS Chios island 3.39 336 P **Pn** **22 12 43.5 +0.1**
CHOS Chios island 3.39 336 P **Pn** **22 12 43.5 +0.1**
CHOS Chios island 3.39 336 *e*Pn **Pn** **22 12 44.2 +0.9**
CHOS Chios island 3.39 336 P **Pn** **22 12 43.2 -0.1**
AKS Akhisar 3.57 360 *e*PN **Pn** **22 12 45.9 +0.2**
AKS Akhisar 3.57 360 *e*Pn **Pn** **22 12 45.9 +0.2**
BAGO Egridir - ISPA 3.58 41 *i* P **Pn** **22 12 47.9 +1.9**
AKMC Akamas 3.70 93 P **Pn** **22 12 49.3 +1.8**
baz=283
AKMC Akamas 3.70 93 P **Pn** **22 12 49.3 +1.8**
PPCY Paphos 3.72 95 P **Pn** **22 12 49.8 +2.0**
baz=285
PPCY Paphos 3.72 95 P **Pn** **22 12 49.8 +2.0**
ANKY Antikythira Is 3.73 280 P **Pn** **22 12 49.1 +1.1**
ANKY Antikythira Is 3.73 280 P **Pn** **22 12 49.1 +1.1**
ANKY Antikythira Is 3.73 280 P **Pn** **22 12 49.5 +1.5**
GAZI Gazipasa 3.76 74 *i* P **Pn** **22 12 49.8 +1.4**
GAZI *i* S **Sn** **22 13 29.6 -2.7**
GAZI Gazipasa 3.76 74 P **Pn** **22 12 49.8 +1.4**
DEMI Demirci 3.80 10 *i* P **Pn** **22 12 49.2 +0.2**
DEMI Demirci 3.80 10 P **Pn** **22 12 49.2 +0.2**
DKL Dikili 3.83 349 *e*PN **Pn** **22 12 49.9 +0.6**
DKL Dikili 3.83 349 *e*Pn **Pn** **22 12 49.9 +0.6**
ALFC Alefka 3.91 91 P **Pn** **22 12 52.2 +1.8**
baz=280
ALFC S **Sn** **22 13 35.6 -0.3**
ALFC Alefka 3.91 91 P **Pn** **22 12 52.2 +1.8**
ALFC S **Sn** **22 13 35.6 -0.3**
SHUT Suhut-Afyon 3.91 33 *e*PN **Pn** **22 12 52.0 +1.5**
SHUT Suhut-Afyon 3.91 33 *e*Pn **Pn** **22 12 52.0 +1.5**
GEDZ Gediz 3.94 18 *e*PN **Pn** **22 12 52.1 +1.2**
GEDZ Gediz 3.94 18 *e*Pn **Pn** **22 12 52.1 +1.2**
GDZ Gediz 4.00 19 *i* P **Pn** **22 12 52.5 +0.7**
GDZ Gediz 4.00 19 P **Pn** **22 12 52.5 +0.7**
AYVA Ayvalik 4.10 348 *i* P **Pn** **22 12 54.0 +1.0**
AYVA Ayvalik 4.10 348 P **Pn** **22 12 54.0 +1.0**
VLY Voula,Athens 4.13 309 P **Pn** **22 12 54.9 +1.5**
VLY Voula,Athens 4.13 309 P **Pn** **22 12 54.9 +1.5**
PRK Paraskevi 4.13 343 P **Pn** **22 12 54.0 +0.6**
PRK Paraskevi 4.13 343 P **Pn** **22 12 54.0 +0.6**
PRK Paraskevi 4.13 343 P **Pn** **22 12 53.3 -0.1**
LEF Lefka 4.15 91 *e*PN **Pn** **22 12 56.4 +2.8**
LEF Lefka 4.15 91 *e*Pn **Pn** **22 12 56.4 +2.8**
SZAC Souni 4.18 96 P **Pn** **22 12 56.2 +2.0**
baz=285
SZAC S **Sn** **22 13 44.0 +1.3**
SZAC Souni 4.18 96 P **Pn** **22 12 56.2 +2.0**
SZAC S **Sn** **22 13 44.0 +1.3**
PTL Penteli 4.21 312 P **Pn** **22 12 56.1 +1.6**
PTL Penteli 4.21 312 P **Pn** **22 12 56.1 +1.6**
SIGR SIGRI 4.21 339 *e*PN **Pn** **22 12 55.0 +0.6**
SIGR SIGRI 4.21 339 P **Pn** **22 12 55.1 +0.6**
SIGR SIGRI 4.21 339 P **Pn** **22 12 55.1 +0.6**
SIGR SIGRI 4.21 339 P **Pn** **22 12 54.8 +0.4**
VLI Veliai 4.21 291 P **Pn** **22 12 54.4 -0.2**
VLI Veliai 4.21 291 P **Pn** **22 12 54.4 -0.2**
VLI AML AML 22 13 45.9
comp=E,421µm,1.0s
VLI AML AML 22 13 53.1
comp=N,406µm,0.9s
BOLV Bolvadin 4.22 35 *i* P **Pn** **22 12 56.3 +1.4**
BOLV Bolvadin 4.22 35 P **Pn** **22 12 56.3 +1.4**
DID Didima 4.31 302 P **Pn** **22 12 57.1 +1.2**
DID Didima 4.31 302 P **Pn** **22 12 57.1 +1.2**
DID Didima 4.31 302 P **Pn** **22 12 57.1 +1.2**
BALB Balikesir 4.33 0 *e*PN **Pn** **22 12 56.9 +0.8**
BALB Balikesir 4.33 0 *e*Pn **Pn** **22 12 56.9 +0.8**
ERMK Ermenek 4.33 71 *i* P **Pn** **22 12 59.0 +2.6**
ERMK *i* S **Sn** **22 13 52.7 +6.0**
ERMK Ermenek 4.33 71 P **Pn** **22 12 59.0 +2.6**
ERMK S **Sn** **22 13 52.7 +6.0**
TVSB Tavsanli 4.34 17 *e*PN **Pn** **22 12 57.0 +0.6**
TVSB Tavsanli 4.34 17 *e*Pn **Pn** **22 12 57.0 +0.6**
SLUM Salum 4.39 211 P **Pn** **22 12 58.1 +1.2**
baz=211
SLUM AMP 22 13 00.0
comp=E,1010µm,0.4s,logA/T=6.5,baz=211
SLUM S **Sn** **22 13 47.0 -0.7**
baz=211
SLUM Salum 4.39 211 P **Pn** **22 12 58.2 +1.2**
SLUM S **Sn** **22 13 47.0 -0.7**
KMER Konya-Meram 4.41 55 *i* P **Pn** **22 13 01.0 +3.7**
KMER *i* S **Sn** **22 13 52.5 +4.2**
KMER Konya-Meram 4.41 55 P **Pn** **22 13 01.0 +3.7**
KMER S **Sn** **22 13 52.5 +4.2**
BALY Balya 4.43 358 *i* P **Pn** **22 12 58.1 +0.5**
BALY Balya 4.43 358 P **Pn** **22 12 58.1 +0.5**
KONT Konya--Tatoy 4.50 53 *e*PN **Pn** **22 13 01.1 +2.6**
KONT Konya--Tatoy 4.50 53 *e*Pn **Pn** **22 13 01.1 +2.6**
CSS Mathiatis 4.52 93 P **Pn** **22 13 00.9 +2.1**
baz=281
CSS S **Sn** **22 13 51.3 +0.3**
CSS Mathiatis 4.52 93 P **Pn** **22 13 00.6 +1.8**
CSS Mathiatis 4.52 93 Pn **Pn** **22 13 00.2 +1.4**
CSS Mathiatis 4.52 93 Pn **Pn** **22 13 00.2 +1.4**
CSS Mathiatis 4.52 93 P **Pn** **22 13 00.6 +1.8**
CSS S **Sn** **22 13 51.3 +0.3**
LADK Ladik-KONYA 4.65 50 *e*PN **Pn** **22 13 03.1 +2.5**
LADK Ladik-KONYA 4.65 50 *e*Pn **Pn** **22 13 03.2 +2.5**
EZN Ezine 4.67 346 *e*PN **Pn** **22 13 02.0 +1.2**
EZN Ezine 4.67 346 *e*Pn **Pn** **22 13 02.1 +1.2**
KDHN Kadinhani 4.70 46 *i* P **Pn** **22 13 03.6 +2.2**
KDHN *i* S **Sn** **22 13 55.2 -0.4**
KDHN Kadinhani 4.70 46 P **Pn** **22 13 03.6 +2.2**
KDHN S **Sn** **22 13 55.2 -0.4**
AKKU Akkuyu-Mersin 4.73 78 *e*PN **Pn** **22 13 05.5 +3.8**
AKKU Akkuyu-Mersin 4.73 78 *e*Pn **Pn** **22 13 05.5 +3.8**
LTK Loutraki 4.76 306 P **Pn** **22 13 03.0 +0.9**
LTK Loutraki 4.76 306 P **Pn** **22 13 03.0 +0.9**
KIZT Kizilcal 4.82 41 *e*PN **Pn** **22 13 04.8 +1.8**
KIZT Kizilcal 4.82 41 *e*Pn **Pn** **22 13 04.8 +1.8**
ESKT Eskisehir 4.85 29 *e*PN **Pn** **22 13 05.7 +2.3**
ESKT Eskisehir 4.85 29 *i* P **Pn** **22 13 03.0 -0.4**
ESKT Eskisehir 4.85 29 *e*Pn **Pn** **22 13 05.7 +2.3**
SEYT Eskypehyr 4.85 29 P **Pn** **22 13 03.0 -0.4**
KCTX Karacabey (Bur 4.97 5 *e*PN **Pn** **22 13 06.4 +1.4**
KCTX Karacabey (Bur 4.97 5 *e*Pn **Pn** **22 13 06.4 +1.4**
BORA Eskisehir 5.02 24 *i* P **Pn** **22 13 06.9 +1.1**
BORA Eskisehir 5.02 24 P **Pn** **22 13 06.9 +1.1**
EDC Edincik 5.04 0 *e*PN **Pn** **22 13 07.4 +1.5**
EDC Edincik 5.04 0 *e*Pn **Pn** **22 13 07.4 +1.5**

LIA Limnos Island 5.05 336 P **Pn** **22 13 08.0 +2.0**
IGD Bursa 5.07 12 *i* P **Pn** **22 13 04.8 -1.5**
SVRH Sivrihisar-ESK 5.08 34 *e*PN **Pn** **22 13 09.0 +2.5**
SVRH Sivrihisar-ESK 5.08 34 *e*Pn **Pn** **22 13 09.0 +2.5**
KRBG Karabiga-Canak 5.10 355 *e*PN **Pn** **22 13 07.0 +0.3**
KRBG Karabiga-Canak 5.10 355 *e*Pn **Pn** **22 13 07.0 +0.3**
GADA Gvkgeada 5.12 343 *e*PN **Pn** **22 13 08.2 +1.3**
GADA Gvkgeada 5.12 343 *e*Pn **Pn** **22 13 08.2 +1.3**
ITM Ithomi 5.13 293 P **Pn** **22 13 09.1 +2.0**
ITM Ithomi 5.13 293 P **Pn** **22 13 09.1 +2.0**
LPK Lapseki 5.13 351 *e*PN **Pn** **22 13 08.4 +1.2**
LPK Lapseki 5.13 351 *e*Pn **Pn** **22 13 08.4 +1.2**
PYL PYLOS 5.18 290 P **Pn** **22 13 07.9 0.0**
PYL PYLOS 5.18 290 P **Pn** **22 13 07.9 0.0**
GELI Tayfur-Gelibol 5.20 348 *e*PN **Pn** **22 13 09.8 +1.7**
GELI Tayfur-Gelibol 5.20 348 *e*Pn **Pn** **22 13 09.8 +1.7**
CHBY Cihanbeyli 5.21 50 *e*PN **Pn** **22 13 11.1 +2.7**
CHBY Cihanbeyli 5.21 50 *e*Pn **Pn** **22 13 11.1 +2.7**
KIZK Mersin 5.26 75 *i* P **Pn** **22 13 11.1 +2.2**
KIZK *i* S **Sn** **22 14 12.0 +2.8**
KIZK Mersin 5.26 75 P **Pn** **22 13 11.1 +2.2**
KIZK S **Sn** **22 14 12.0 +2.8**
DSF Desfina 5.26 308 P **Pn** **22 13 10.9 +1.9**
DSF Desfina 5.26 308 P **Pn** **22 13 10.9 +1.9**
MRMT Marmara Adasi 5.30 358 *e*PN **Pn** **22 13 11.0 +1.5**
MRMT Marmara Adasi 5.30 358 *e*Pn **Pn** **22 13 11.0 +1.5**
ARMT Armutlu 5.32 8 *e*PN **Pn** **22 13 11.7 +1.9**
ARMT Armutlu 5.32 8 *e*Pn **Pn** **22 13 11.7 +1.9**
KLV Kalavryta, Ach 5.32 303 P **Pn** **22 13 11.3 +1.4**
KLV Kalavryta, Ach 5.32 303 P **Pn** **22 13 11.3 +1.4**
KLV Kalavryta, Ach 5.32 303 P **Pn** **22 13 11.5 +1.6**
RKY Sarkoy-Tekirda 5.40 355 *e*PN **Pn** **22 13 12.7 +1.8**
RKY Sarkoy-Tekirda 5.40 355 *e*Pn **Pn** **22 13 12.7 +1.8**
SULT Sultanhani-AKS 5.40 56 *e*PN **Pn** **22 13 14.0 +3.0**
SULT Sultanhani-AKS 5.40 56 *e*Pn **Pn** **22 13 14.0 +3.0**
SART Tekirdag 5.40 355 *i* P **Pn** **22 13 11.5 +0.5**
SART Tekirdag 5.40 355 P **Pn** **22 13 11.5 +0.5**
AMT Artemida-Makis 5.42 296 P **Pn** **22 13 12.8 +1.7**
AMT Artemida-Makis 5.42 296 P **Pn** **22 13 12.8 +1.7**
ERIK Erikli-Kesan 5.46 349 *e*PN **Pn** **22 13 13.3 +1.7**
ERIK Erikli-Kesan 5.46 349 *e*Pn **Pn** **22 13 13.4 +1.7**
SMTH Samothraki Isl 5.47 341 P **Pn** **22 13 12.0 +0.1**
SMTH Samothraki Isl 5.47 341 P **Pn** **22 13 12.0 +0.1**
KERG Konya-Eregli 5.50 66 *i* P **Pn** **22 13 15.2 +2.8**
KERG *i* S **Sn** **22 14 18.2 +2.9**
KERG Konya-Eregli 5.50 66 P **Pn** **22 13 15.2 +2.8**
KERG S **Sn** **22 14 18.2 +2.9**
GULT Gulveren 5.54 22 *e*PN **Pn** **22 13 15.3 +2.4**
GULT Gulveren 5.54 22 *e*Pn **Pn** **22 13 15.3 +2.4**
ENEZ Enez 5.58 347 *e*PN **Pn** **22 13 15.0 +1.6**
ENEZ Enez 5.58 347 *e*Pn **Pn** **22 13 15.0 +1.6**
DRO Drossia 5.59 300 P **Pn** **22 13 16.6 +3.1**
DRO Drossia 5.59 300 P **Pn** **22 13 16.6 +3.1**
KESN Edirne-Kesan 5.59 351 *i* P **Pn** **22 13 13.6 -0.2**
KESN Edirne-Kesan 5.59 351 P **Pn** **22 13 13.6 -0.2**
MERS Mersin 5.64 72 *e*PN **Pn** **22 13 18.0 +3.8**
MERS Mersin 5.64 72 *e*Pn **Pn** **22 13 18.0 +3.8**
AGG Agios Georgios 5.75 312 *e*PN **Pn** **22 13 17.9 +2.1**
AGG Agios Georgios 5.75 312 P **Pn** **22 13 16.6 +0.9**
AGG Agios Georgios 5.75 312 P **Pn** **22 13 16.6 +0.9**
AGG Agios Georgios 5.75 312 *e*Pn **Pn** **22 13 17.9 +2.1**
AGG Agios Georgios 5.75 312 P **Pn** **22 13 17.8 +2.1**
ALN Alexandroupoli 5.76 346 *e*PN **Pn** **22 13 17.5 +1.7**
ALN Alexandroupoli 5.76 346 P **Pn** **22 13 16.6 +0.8**
ALN Alexandroupoli 5.76 346 P **Pn** **22 13 16.6 +0.8**
ALN Alexandroupoli 5.76 346 *e*Pn **Pn** **22 13 17.5 +1.7**
ALN Alexandroupoli 5.76 346 P **Pn** **22 13 16.9 +0.4**
DED Mersin 5.88 72 *i* P **Pn** **22 13 19.4 +2.0**
GULE Gulek 5.95 69 *i* P **Pn** **22 13 21.8 +3.3**
GULE Gulek 5.95 69 P **Pn** **22 13 21.8 +3.3**
KLYT Kilyos 6.02 9 *e*PN **Pn** **22 13 21.3 +2.0**
KLYT Kilyos 6.02 9 *e*PN **Pn** **22 13 21.3 +2.0**
SAHE Sakarya_HENDEK 6.03 22 *i* P **Pn** **22 13 19.8 +0.2**
SAHE Sakarya_HENDEK 6.03 22 P **Pn** **22 13 19.8 +0.2**
KAND Kocaeli-Kandir 6.07 17 *i* P **Pn** **22 13 20.0 -0.1**
KAND Kocaeli-Kandir 6.07 17 P **Pn** **22 13 20.0 -0.1**
SQR Saqqara 6.11 151 P **Pn** **22 13 22.2 +1.6**
baz=151
SQR Saqqara 6.11 151 P **Pn** **22 13 22.2 +1.6**
KRTS Karatas 6.25 76 *e*PN **Pn** **22 13 27.3 +4.8**
KRTS Karatas 6.25 76 *e*Pn **Pn** **22 13 27.3 +4.8**
THL Klokotos Trika 6.29 314 P **Pn** **22 13 25.6 +2.6**
KOT Kottamia 6.33 147 P **Pn** **22 13 25.2 +1.5**
baz=147
KOT S **Sn** **22 14 33.5 -2.2**
baz=147
KOT Kottamia 6.33 147 P **Pn** **22 13 25.2 +1.5**
KOT S **Sn** **22 14 33.5 -2.2**
BRTR Keskin Array B 6.39 45 P **Pn** **22 13 26.3 +1.7**
comp=E,0.7nm,0.3s,baz=211,slow=14,SNR=19
BRTR S **Sn** **22 14 38.4 +1.1**
comp=E,0.8nm,0.3s,baz=215,slow=24,SNR=7.5
HHAG Hagoal 6.43 145 P **Pn** **22 13 26.8 +1.7**
baz=145
HHAG Hagoal 6.43 145 P **Pn** **22 13 26.8 +1.7**
HSAF As Saff 6.48 150 P **Pn** **22 13 27.2 +1.4**
baz=150
HSAF As Saff 6.48 150 P **Pn** **22 13 27.2 +1.4**
VLS Valsamata 6.48 298 P **Pn** **22 13 27.3 +1.5**
YURE YUREGIR 6.50 74 *i* P **Pn** **22 13 26.3 +0.3**
YURE YUREGIR 6.50 74 P **Pn** **22 13 26.3 +0.3**
AKO Adana 6.51 68 *i* P **Pn** **22 13 29.3 +3.2**
OFRI 'Ofer 6.52 112 Pn **Pn** **22 13 27.9 +1.6**
OFRI 'Ofer 6.52 112 Pn **Pn** **22 13 27.9 +1.6**
RSH 6.57 130 P **Pn** **22 13 28.3 +1.4**
baz=130
RSH 6.57 130 P **Pn** **22 13 28.3 +1.4**
GLL Jalalah 6.58 149 P **Pn** **22 13 29.1 +1.9**
baz=149
GLL Jalalah 6.58 149 P **Pn** **22 13 29.1 +1.9**
EDRB Edirne 6.59 353 *e*PN **Pn** **22 13 29.3 +2.1**
EDRB Edirne 6.59 353 *e*Pn **Pn** **22 13 29.3 +2.1**
CEYT Ceyhan 6.63 73 *e*PN **Pn** **22 13 31.9 +4.3**
CEYT Ceyhan 6.63 73 *e*Pn **Pn** **22 13 32.0 +4.3**
YAHY KAYSERI_Yahyal 6.66 63 *i* P **Pn** **22 13 31.1 +2.8**
YAHY KAYSERI_Yahyal 6.66 63 P **Pn** **22 13 31.1 +2.8**
MMA0B Mount Meron ar 6.68 108 Pn **Pn** **22 13 29.3 +0.8**
MMA0B Mount Meron ar 6.68 108 Pn **Pn** **22 13 29.3 +0.8**
MMAI Mount Meron Ar 6.68 108 P **Pn** **22 13 29.3 +0.8**
comp=E,4.7nm,0.3s,baz=300,slow=13,SNR=23
MMAI S **Sn** **22 14 44.8 +0.5**
comp=E,13nm,0.3s,baz=301,slow=25,SNR=12
SLTI Sal'it 6.73 115 Pn **Pn** **22 13 30.2 +1.0**
SLTI Sal'it 6.73 115 Pn **Pn** **22 13 30.2 +1.0**
YAYL Yayladag 6.78 81 *i* P **Pn** **22 13 28.8 -1.1**
KOZT Kozan 6.80 69 *e*PN **Pn** **22 13 33.0 +2.8**
KOZT Kozan 6.80 69 *e*Pn **Pn** **22 13 33.0 +2.8**
KSDI Kefar Szold 6.81 106 Pn **Pn** **22 13 32.5 +2.2**
KSDI Sn **Sn** **22 14 48.1 +0.5**
KSDI Kefar Szold 6.81 106 Pn **Pn** **22 13 32.5 +2.2**
KSDI Sn **Sn** **22 14 48.1 +0.5**
TAHT Tahtakopru-Hat 6.87 79 *e*PN **Pn** **22 13 35.6 +4.5**
TAHT Tahtakopru-Hat 6.87 79 *e*Pn **Pn** **22 13 35.6 +4.5**
MMLI Mount Malkishu 6.93 112 Pn **Pn** **22 13 33.1 +1.2**
MMLI Mount Malkishu 6.93 112 Pn **Pn** **22 13 33.1 +1.2**
BRBR Barbar 6.97 103 *e*P **Pn** **22 13 33.8 +1.1**
BRBR *e*S **Sn** **22 14 43.5 -8.3**
BRBR AML AML 22 14 54.8
comp=N,90nm,0.4s
BRBR AML AML 22 14 56.1
comp=E,21nm,0.3s
KSHT Keshet 7.01 107 Pn **Pn** **22 13 34.9 +1.9**
KSHT Keshet 7.01 107 Pn **Pn** **22 13 34.9 +1.9**
AMAZ Amatzia 7.01 120 Pn **Pn** **22 13 34.7 +1.6**
AMAZ Sn **Sn** **22 14 52.5 0.0**
AMAZ Amatzia 7.01 120 Pn **Pn** **22 13 34.7 +1.6**
KZIT Kziot 7.04 127 Pn **Pn** **22 13 34.4 +1.0**
KZIT Kziot 7.04 127 Pn **Pn** **22 13 34.4 +1.0**
HMDT Nahal Hemdat 7.09 113 Pn **Pn** **22 13 35.6 +1.5**
HMDT Nahal Hemdat 7.09 113 Pn **Pn** **22 13 35.6 +1.5**
ANDN Andirin 7.23 69 *i* P **Pn** **22 13 36.9 +0.8**
ANDN Andirin 7.23 69 P **Pn** **22 13 36.9 +0.8**
MARH Ras Al Marh 7.24 98 *e*P **Pn** **22 13 37.9 +1.5**
MARH *e*S Sn **22 14 49.4 -9.1**
MARH AML AML 22 15 02.5
comp=E,26nm,0.7s
MARH AML AML 22 15 04.5
comp=N,59nm,0.5s
TCHB Talchebab 7.25 109 *e*P **Pn** **22 13 38.1 +1.8**
TCHB *e*S **Sn** **22 14 51.7 -6.6**
TCHB AML AML 22 15 14.3
comp=N,64nm,0.4s
TCHB AML AML 22 15 14.3
comp=E,33nm,0.8s
YTIR Yattir 7.25 121 Pn **Pn** **22 13 38.6 +2.2**
YTIR Yattir 7.25 121 Pn **Pn** **22 13 38.6 +2.2**
BNN Bunyan 7.32 59 *e*PN **Pn** **22 13 40.9 +3.5**
BNN Bunyan 7.32 59 *e*Pn **Pn** **22 13 40.9 +3.5**
DSI Dead Sea 7.32 118 Pn **Pn** **22 13 38.9 +1.6**
DSI Sn **Sn** **22 15 00.7 +0.6**
DSI Dead Sea 7.32 118 Pn **Pn** **22 13 38.9 +1.6**
DSI Sn **Sn** **22 15 00.7 +0.6**
TOTH TOTAH 7.37 103 *e*P **Pn** **22 13 39.0 +1.0**
TOTH *e*S **Sn** **22 14 53.3 -8.0**
TOTH AML AML 22 15 06.2
comp=N,46nm,0.5s
TOTH AML AML 22 15 08.4
comp=E,37nm,0.6s
MZBI Masada 7.45 120 Pn **Pn** **22 13 40.7 +1.7**
MZBI Sn **Sn** **22 15 02.8 -0.3**
MZBI Masada 7.45 120 Pn **Pn** **22 13 40.7 +1.7**
MZDA Masada 7.46 120 Pn **Pn** **22 13 40.8 +1.7**
MZDA Sn **Sn** **22 15 03.4 +0.1**
MZDA Masada 7.46 120 Pn **Pn** **22 13 40.8 +1.7**
MZDA Sn **Sn** **22 15 03.4 +0.1**
SARI SarD1z-Kayseri 7.55 63 *e*PN **Pn** **22 13 43.9 +3.4**
ZFRI Zfri 7.78 125 Pn **Pn** **22 13 44.2 +0.6**
ZFRI Sn **Sn** **22 15 10.3 -1.0**
ZFRI Zfri 7.78 125 Pn **Pn** **22 13 44.2 +0.6**
PRNI Paran 7.80 127 Pn **Pn** **22 13 45.0 +1.2**
PRNI Sn **Sn** **22 15 09.7 -2.1**
PRNI Paran 7.80 127 Pn **Pn** **22 13 45.0 +1.2**
SALA Sala 7.83 107 *e*P **Pn** **22 13 46.7 +2.3**
SALA *e*S **Sn** **22 15 04.6 -8.2**
SALA AML AML 22 15 21.2
comp=N,34nm,0.6s
SALA AML AML 22 15 21.9
comp=E,3.0nm,0.5s
ROOS tl_alroos 7.87 96 *e*P **Pn** **22 13 46.4 +1.6**
ROOS *e*S Sn 22 15 04.0 -10
ROOS AML AML 22 15 20.2
comp=E,84nm,0.5s
ROOS AML AML 22 15 37.2
comp=N,35nm,0.5s
HRFI Mount Harif 8.03 129 Pn **Pn** **22 13 48.2 +1.2**
HRFI Mount Harif 8.03 129 Pn **Pn** **22 13 48.2 +1.2**
MBRI Mt Berech 8.12 131 Pn **Pn** **22 13 49.6 +1.3**
MBRI Sn **Sn** **22 15 17.6 -2.1**
MBRI Mt Berech 8.12 131 Pn **Pn** **22 13 49.6 +1.3**
VTS Vitosha 8.12 335 *i* P **Pn** **22 13 51.3 +3.0**
VTS Vitosha 8.12 335 *i* P **Pn** **22 13 51.3 +3.0**
HFRF Wahat Farafira 8.14 177 P **Pn** **22 13 50.8 +2.3**
baz=177
HFRF Wahat Farafira 8.14 177 P **Pn** **22 13 50.8 +2.3**
ASF Jabal al Asfar 8.17 110 P **Pn** **22 13 50.8 +1.8**
comp=N,0.3nm,0.3s,baz=270,slow=5.1,SNR=3.0
ASF S **Sn** **22 15 22.1 +1.1**
comp=N,0.6nm,0.3s,baz=210,slow=18,SNR=2.1
EIL Elat 8.23 131 P **Pn** **22 13 51.4 +1.7**
comp=N,0.7nm,0.3s,baz=322,slow=4.6,SNR=25
EIL S **Sn** **22 15 17.9 -4.4**
comp=N,2.8nm,0.3s,baz=323,slow=20,SNR=10
EIL Elat 8.23 131 Pn **Pn** **22 13 51.2 +1.5**
EIL Sn **Sn** **22 15 20.9 -1.4**
EIL Elat 8.23 131 Pn **Pn** **22 13 51.2 +1.5**
ZALF Zalf 8.23 104 *e*P **Pn** **22 13 53.2 +3.4**
ZALF *e*S **Sn** **22 15 14.0 -8.5**
ZALF AML AML 22 15 42.0
comp=N,9.1nm,0.5s
ZALF AML AML 22 15 50.2
comp=E,9.5nm,0.6s
HBST Basata 8.42 134 P **Pn** **22 13 54.3 +1.9**
baz=134
HBST Basata 8.42 134 P **Pn** **22 13 54.3 +1.9**
TR2 Tor 2 8.52 142 P **Pn** **22 13 55.6 +1.8**
baz=142
TR2 Tor 2 8.52 142 P **Pn** **22 13 55.6 +1.8**
BARS Barje 8.84 330 *e*P **Pn** **22 14 00.5 +2.4**
TR1 Tor 1 8.95 143 P **Pn** **22 14 01.5 +1.9**
baz=143
TR1 Tor 1 8.95 143 P **Pn** **22 14 01.5 +1.9**
ZAGS Zajecar 9.53 335 *e*P **Pn** **22 14 09.8 +2.2**
BOVS Bovan 9.57 332 *e*P **Pn** **22 14 11.3 +3.2**
MDVR Moldovita 10.56 336 *i* P **Pn** **22 14 23.9 +2.2**
MDVR Moldovita 10.56 336 *i* P **Pn** **22 14 23.9 +2.2**
KESZ Kesra 15.06 277 P **P** **22 15 27.9 -0.6**
comp=E,0.2nm,0.3s,baz=40,slow=5.4,SNR=7.3
AKASG Malin Array Be 15.43 3 P **P** **22 15 31.6 -0.8**
comp=E,1.2nm,0.3s,baz=193,slow=11,SNR=4.6
GERES GERESS Array B 17.08 327 P **Pn** **22 15 49.4 +0.3**
comp=E,0.2nm,0.3s,baz=147,slow=8.0,SNR=5.1
OBN Obninsk 20.71 14 P **P** **22 16 29.3 -1.1**
comp=E,8.9nm,0.3s,baz=214,slow=3.6,SNR=2.9
ESDC Sonseca Array 25.53 289 P **P** **22 17 17.8 -1.1**
comp=E,3.4nm,0.6s,baz=81,slow=9.7,SNR=28
FINES FINESS Array B 26.18 359 P **P** **22 17 22.1 -2.4**
comp=E,0.8nm,0.4s,baz=167,slow=11,SNR=8.1
HFS Hagfors 26.49 344 P **P** **22 17 24.4 -2.9**
comp=E,1.1nm,0.3s,baz=153,slow=11,SNR=6.8
TORD Torodi Ar. Bea 32.29 233 P **P** **22 18 19.7 +0.4**
comp=E,2.9nm,0.6s,baz=36,slow=8.7,SNR=11
ARCES ARCESS Array B 34.31 359 P **P** **22 18 34.2 -2.2**
comp=E,1.0nm,0.6s,baz=178,slow=8.7,SNR=10
DBIC Dimbokro 41.39 234 P **P** **22 19 36.2 -0.5**
comp=E,2.2nm,0.6s,baz=59,slow=5.9,SNR=2.7

*ISCJB **20** 22:39:51.2±0.5, 37°.23N±0°.02×22°.02E±0°.03, h4km±5km,*
Error ellipse: s-maj=4.7km s-min=4.0km az=164.8
*ATH **20** 22:39:51.3, 37°.24N×21°.99E, h9km±3km, ML2.5/7, Error*
ellipse: s-maj=3.8km s-min=0.9km az=216.0
*CSEM **20** 22:39:51.2±0.2, 37°.24N×22°.00E, h2km, ML2.5, Error*
ellipse: s-maj=3.6km s-min=2.9km az=56.0
*THE **20** 22:39:51.5, 37°.23N×22°.03E, h3km±2km, ML2.6/11, Error*
ellipse: s-maj=2.4km s-min=0.8km az=191.0

ISC 20 22:39:51.4±0.8, 37°.24N±0°.02×22°.00E±0°.02, h8km±6km, n42, σ0s58/70, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ITM	**Ithomi**	**0.08**	**228**	P	**Pg**	**22 39 53.3**	**-0.3**
ITM				S	**Sg**	**22 39 55.2**	**+0.2**
ITM	**Ithomi**	**0.08**	**228**	P	**Pg**	**22 39 53.2**	**-0.3**
ITM				S	**Sg**	**22 39 55.2**	**+0.2**
ITM	**Ithomi**	**0.08**	**228**	P	**Pg**	**22 39 53.2**	**-0.3**
ITM				AML	AML	22 39 55.3	
comp=N,11651µm,0.2s							
ITM				S	**Sg**	**22 39 55.5**	**+0.5**
ITM				AML	AML	22 39 57.0	
comp=E,9345µm,0.2s

DRO	**Drossia**	**0.75**	**342**	P	**Pg**	**22 40 05.6**	**-0.3**
DRO				S	**Sg**	**22 40 16.4**	**+0.7**
DRO				AML	AML	22 40 21.8	
	comp=N,1130μm,0.4s						
DRO				AML	AML	22 40 21.9	
	comp=E,1327μm,0.4s						
KLV	**Kalavryta, Ach**	**0.82**	**8**	P	**Pg**	**22 40 06.1**	**-1.0**
KLV				S	**Sb**	**22 40 18.7**	**-0.4**
KLV	**Kalavryta, Ach**	**0.82**	**8**	P	**Pg**	**22 40 06.6**	**-0.5**
KLV				S	**Sg**	**22 40 18.4**	**+0.7**
KLV	**Kalavryta, Ach**	**0.82**	**8**	P	**Pg**	**22 40 06.6**	**-0.5**
KLV				S	**Sg**	**22 40 18.4**	**+0.7**
KLV				AML	AML	22 40 21.2	
	comp=E,415μm,0.3s						
KLV				AML	AML	22 40 21.9	
	comp=N,331μm,0.3s						
VLI	**Veliai**	**0.91**	**124**	P	**Pg**	**22 40 09.0**	**+0.1**
VLI				S	**Sg**	**22 40 20.7**	**0.0**
VLI	**Veliai**	**0.91**	**124**	P	**Pg**	**22 40 09.0**	**+0.1**
VLI				S	**Sg**	**22 40 20.7**	**0.0**
VLI	**Veliai**	**0.91**	**124**	P	**Pb**	**22 40 09.5**	**0.0**
VLI				S	**Sb**	**22 40 21.7**	**+0.1**
RLS	**Riolos of Patr**	**0.93**	**333**	P	**Pg**	**22 40 08.8**	**-0.4**
RLS				S	**Sb**	**22 40 23.1**	**+0.9**
RLS	**Riolos of Patr**	**0.93**	**333**	P	**Pg**	**22 40 08.8**	**-0.4**
RLS				S	**Sb**	**22 40 23.1**	**+0.9**
RLS	**Riolos of Patr**	**0.93**	**333**	AML	AML	22 40 27.0	
	comp=E,386μm,0.5s						
RLS				AML	AML	22 40 27.4	
	comp=N,438μm,0.4s						
DID	**Didima**	**1.02**	**74**	P	**Pg**	**22 40 10.5**	**-0.4**
DID				S	**Sg**	**22 40 24.1**	**-0.1**
DID	**Didima**	**1.02**	**74**	P	**Pg**	**22 40 10.6**	**-0.4**
DID				S	**Sg**	**22 40 24.1**	**-0.1**
DID	**Didima**	**1.02**	**74**	P	**Pg**	**22 40 10.6**	**-0.4**
AXS	**Araxos**	**1.08**	**333**	P	**Pg**	**22 40 11.1**	**-1.1**
AXS	**Araxos**	**1.08**	**333**	P	**Pg**	**22 40 11.1**	**-1.1**
LTK	**Loutraki**	**1.10**	**44**	P	**Pg**	**22 40 11.7**	**-0.8**
LTK	**Loutraki**	**1.10**	**44**	P	**Pg**	**22 40 12.5**	**0.0**
LTK	**Loutraki**	**1.10**	**44**	P	**Pg**	**22 40 12.5**	**0.0**
SERG	**Sergoula**	**1.18**	**2**	P	**Pg**	**22 40 12.6**	**-1.4**
SERG				S	**Sn**	**22 40 31.3**	**+0.8**
SERG	**Sergoula**	**1.18**	**2**	P	**Pg**	**22 40 12.6**	**-1.4**
SERG				S	**Sn**	**22 40 31.3**	**+0.8**
DSF	**Desfina**	**1.25**	**19**	P	**Pg**	**22 40 14.7**	**-0.6**
DSF	**Desfina**	**1.25**	**19**	P	**Pg**	**22 40 14.7**	**-0.6**
ANX	**Ano Chora**	**1.36**	**357**	P	**Pn**	**22 40 15.9**	**-0.9**
ANX				S	**Sn**	**22 40 35.6**	**+0.6**
ANX	**Ano Chora**	**1.36**	**357**	P	**Pn**	**22 40 15.9**	**-0.9**
ANX				S	**Sn**	**22 40 35.6**	**+0.6**
VLS	**Valsamata**	**1.46**	**310**	P	**Pn**	**22 40 17.9**	**-0.2**
PDO	**Prodromos**	**1.51**	**335**	P	**Pb**	**22 40 19.7**	**+0.1**
PDO	**Prodromos**	**1.51**	**335**	P	**Pb**	**22 40 19.7**	**+0.1**
PDO	**Prodromos**	**1.51**	**335**	P	**Pg**	**22 40 20.3**	**-0.1**

*DDA **20** 22:40:06.9, 37°.95N×27°.14E, h22km, Md3.0*
*ISCJB **20** 22:40:07.5±0.5, 37°.97N±0°.02×27°.24E±0°.03, h1km±5km, Error ellipse: s-maj=4.7km s-min=3.2km az=157.7*
*ATH **20** 22:40:07.5, 37°.94N×27°.21E, h17km±2km, ML2.5/3, Error ellipse: s-maj=5.8km s-min=1.5km az=272.0*
*ISK **20** 22:40:07.0, 37°.97N×27°.30E, h5km, MD3.1*
*CSEM **20** 22:40:07.9±0.2, 37°.95N×27°.23E, h2km, MD3.0, Error ellipse: s-maj=5.3km s-min=4.0km az=81.0*

ISC 20 22:40:07.1±1.0, **37°.96N**±0°.02×**27°.25E**±0°.02, **h11**km±9km, **n66**, σ1°**09**/**87**, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.26**	**183**	*i* P	**Pb**	**22 40 13.4**	**-0.4**
GCAM				*i* S	**Sb**	**22 40 17.7**	**-0.6**
GCAM	**G?zelcaml?**	**0.26**	**183**	P	**Pb**	**22 40 13.4**	**-0.4**
GCAM				S	**Sb**	**22 40 17.7**	**-0.6**
DGB	**˜zmir**	**0.30**	**288**	*i* P	**Pg**	**22 40 13.2**	**0.0**
DGB				*i* S	**Sg**	**22 40 16.6**	**-0.8**
SMG	**Samos**	**0.41**	**233**	P	**Pg**	**22 40 15.4**	**+0.2**
SMG				S	**Sg**	**22 40 21.0**	**+0.4**
SMG	**Samos**	**0.41**	**233**	P	**Pg**	**22 40 15.4**	**+0.2**
SMG				S	**Sg**	**22 40 21.0**	**+0.4**
SMG				AML	AML	22 40 22.7	
	comp=E,1750μm,0.2s						
SMG				AML	AML	22 40 22.9	
	comp=N,1764μm,0.2s						
IZM	**Izmir**	**0.44**	**1**	*e*PG	**Pg**	**22 40 16.2**	**+0.5**
IZM				*e*SG	**Sg**	**22 40 22.8**	**+1.2**
IZM	**Izmir**	**0.44**	**1**	*e*Pg	**Pg**	**22 40 16.2**	**+0.5**
IZM				*e*Sg	**Sg**	**22 40 22.8**	**+1.2**
URLA	**Izmir**	**0.65**	**308**	*i* P	**Pg**	**22 40 19.4**	**-0.4**
URLA				*i* S	**Sg**	**22 40 27.6**	**-0.8**
URLA	**Izmir**	**0.65**	**308**	P	**Pg**	**22 40 19.4**	**-0.4**
URLA				S	**Sg**	**22 40 27.6**	**-0.8**
BODT	**Bodrum**	**0.90**	**177**	*e*PG	**Pn**	**22 40 25.3**	**-0.4**
BODT				*e*SG	**Sn**	**22 40 39.8**	**+1.1**
BODT	**Bodrum**	**0.90**	**177**	*e*Pg	**Pn**	**22 40 25.3**	**-0.4**
BODT				*e*Sg	**Sn**	**22 40 39.8**	**+1.1**
BDRM	**Kayabasi**	**0.91**	**170**	*i* P	**Pg**	**22 40 24.9**	**+0.4**
BDRM				*i* S	**Sg**	**22 40 37.0**	**+0.7**
BDRM	**Kayabasi**	**0.91**	**170**	P	**Pg**	**22 40 24.9**	**+0.4**
BDRM				S	**Sg**	**22 40 37.0**	**+0.7**
AKS	**Akhisar**	**1.02**	**26**	*e*PG	**Pg**	**22 40 27.4**	**+0.7**
AKS	**Akhisar**	**1.02**	**26**	*e*Pg	**Pg**	**22 40 27.4**	**+0.7**
CHOS	**Chios island**	**1.03**	**295**	*e*PG	**Pg**	**22 40 28.6**	**+1.6**
CHOS	**Chios island**	**1.03**	**295**	P	**Pb**	**22 40 26.9**	**-0.2**
CHOS	**Chios island**	**1.03**	**295**	*e*Pg	**Pg**	**22 40 28.6**	**+1.6**
CHOS				S	**Sb**	**22 40 39.9**	**-0.8**
CHOS	**Chios island**	**1.03**	**295**	P	**Pb**	**22 40 26.9**	**-0.2**
CHOS				S	**Sb**	**22 40 39.9**	**-0.8**
CHOS				AML	AML	22 40 43.0	
	comp=N,388μm,0.4s						
CHOS				AML	AML	22 40 43.2	
	comp=E,474μm,0.2s						
MANT	**Manisa**	**1.16**	**62**	*i* P	**Pb**	**22 40 29.4**	**0.0**
MANT				*i* S	**Sb**	**22 40 42.9**	**-1.6**
MANT	**Manisa**	**1.16**	**62**	P	**Pb**	**22 40 29.4**	**0.0**
YER	**Yerkesik**	**1.16**	**135**	*e*PN	**Pg**	**22 40 29.7**	**+0.2**
YER	**Yerkesik**	**1.16**	**135**	*e*Pn	**Pg**	**22 40 29.7**	**+0.2**
KULA	**Kula-Manisa**	**1.24**	**63**	*e*PN	**Pg**	**22 40 31.3**	**+0.3**
KULA	**Kula-Manisa**	**1.24**	**63**	*e*Pn	**Pg**	**22 40 31.3**	**+0.3**
NIS1	**Nisyros Isl.**	**1.35**	**182**	*e*PN	**Pg**	**22 40 33.9**	**+0.8**
NIS1	**Nisyros Isl.**	**1.35**	**182**	*e*Pn	**Pg**	**22 40 33.9**	**+0.8**
AYVA	**Ayvalik**	**1.42**	**342**	*i* P	**Pb**	**22 40 33.4**	**-0.2**
AYVA				*i* S	**Sb**	**22 40 52.0**	**+0.3**
AYVA	**Ayvalik**	**1.42**	**342**	P	**Pb**	**22 40 33.4**	**-0.2**
AYVA				S	**Sb**	**22 40 52.0**	**+0.3**
PRK	**Paraskevi**	**1.50**	**330**	P	**Pb**	**22 40 34.9**	**0.0**
PRK				S	**Sg**	**22 40 57.0**	**+1.7**
PRK	**Paraskevi**	**1.50**	**330**	P	**Pb**	**22 40 34.9**	**0.0**
PRK				S	**Sg**	**22 40 57.0**	**+1.7**
PRK				AML	AML	22 40 57.9	
	comp=E,322μm,0.3s						
PRK				AML	AML	22 40 58.3	
	comp=N,291μm,0.5s						
TURN	**Turunc**	**1.53**	**135**	*i* P	**Pn**	**22 40 34.1**	**-0.3**
APE	**Apeiranthos**	**1.63**	**237**	*e*PN	**Pg**	**22 40 38.4**	**0.0**
APE	**Apeiranthos**	**1.63**	**237**	P	**Pb**	**22 40 36.5**	**-0.8**
APE	**Apeiranthos**	**1.63**	**237**	*e*Pn	**Pg**	**22 40 38.4**	**0.0**
APE	**Apeiranthos**	**1.63**	**237**	P	**Pb**	**22 40 36.5**	**-0.8**
SIGR	**SIGRI**	**1.66**	**319**	*e*PN	**Pg**	**22 40 38.8**	**-0.2**
SIGR	**SIGRI**	**1.66**	**319**	P	**Pb**	**22 40 38.3**	**+0.6**
SIGR	**SIGRI**	**1.66**	**319**	*e*Pn	**Pg**	**22 40 38.8**	**-0.2**
SIGR	**SIGRI**	**1.66**	**319**	P	**Pb**	**22 40 38.4**	**+0.6**
BALY	**Balya**	**1.80**	**9**	*i* P	**Pb**	**22 40 39.2**	**-1.0**
BALY	**Balya**	**1.80**	**9**	P	**Pb**	**22 40 39.2**	**-1.0**
FETY	**Fethiye**	**1.97**	**132**	*e*PN	**Pb**	**22 40 42.2**	**-0.9**
FETY	**Fethiye**	**1.97**	**132**	*e*Pn	**Pb**	**22 40 42.2**	**-0.9**
GDZ	**Gediz**	**2.08**	**57**	*i* P	**Pg**	**22 40 46.6**	**-0.4**
GDZ	**Gediz**	**2.08**	**57**	P	**Pg**	**22 40 46.6**	**-0.4**
BOZC	**Bozcaada**	**2.10**	**334**	*i* P	**Pb**	**22 40 45.0**	**-0.2**
TVSB	**Tavsanli**	**2.28**	**49**	*e*PN	**Pb**	**22 40 47.5**	**-0.9**
TVSB	**Tavsanli**	**2.28**	**49**	*e*Pn	**Pb**	**22 40 47.6**	**-0.9**
KNL	**Bal˜kesir**	**2.32**	**5**	*i* P	**Pn**	**22 40 46.5**	**+1.2**
KNL				*i* S	**Sg**	**22 41 20.2**	**-1.4**
KRBG	**Karabiga-Canak**	**2.43**	**1**	*e*PN	**Pb**	**22 40 49.7**	**-1.2**
KRBG	**Karabiga-Canak**	**2.43**	**1**	*e*Pn	**Pb**	**22 40 49.7**	**-1.2**
GELI	**Tayfur-Gelibol**	**2.51**	**346**	*e*PN	**Pb**	**22 40 50.7**	**-1.5**
GELI	**Tayfur-Gelibol**	**2.51**	**346**	*e*Pn	**Pb**	**22 40 50.7**	**-1.5**
MRMT	**Marmara Adasi**	**2.65**	**6**	*e*PN	**Pb**	**22 40 52.8**	**-1.9**
MRMT	**Marmara Adasi**	**2.65**	**6**	*e*Pn	**Pb**	**22 40 52.8**	**-1.9**
RKY	**Sarkoy-Tekirda**	**2.73**	**359**	*e*PN	**Pb**	**22 40 54.0**	**-2.0**
RKY	**Sarkoy-Tekirda**	**2.73**	**359**	*e*Pn	**Pb**	**22 40 54.0**	**-2.0**
SART	**Tekirdag**	**2.73**	**359**	*i* P	**Pn**	**22 40 50.4**	**-0.6**
SART	**Tekirdag**	**2.73**	**359**	P	**Pn**	**22 40 50.4**	**-0.6**
ERIK	**Erikli-Kesan**	**2.77**	**348**	*e*PN	**Pb**	**22 40 54.5**	**-2.1**
ERIK	**Erikli-Kesan**	**2.77**	**348**	*e*Pn	**Pb**	**22 40 54.5**	**-2.1**
ARMT	**Armutlu**	**2.89**	**25**	*e*PN	**Pn**	**22 40 55.5**	**+2.3**
ARMT	**Armutlu**	**2.89**	**25**	*e*Pn	**Pn**	**22 40 55.5**	**+2.3**
ALN	**Alexandroupoli**	**3.08**	**343**	*e*PN	**Pb**	**22 40 59.0**	**-2.9**
ALN	**Alexandroupoli**	**3.08**	**343**	*e*Pn	**Pb**	**22 40 59.0**	**-2.9**

*IDC **20** 22:42:05.7±1.5, 6°.72N×126°.31E, h0km, mb3.8/7, mb1 4.0/7, mb1mx3.6/42, mbtmp3.8/7, Error ellipse: s-maj=118.9km s-min=17.2km az=68.0*
*ISCJB **20** 22:42:14.8±0.9, 6°.61N±0°.06×126°.28E±0°.09, h90km±9km, mb3.7/7, Error ellipse: s-maj=15.2km s-min=10.0km az=10.1*
*MAN **20** 22:42:15, 6°.72N×126°.32E, h96km, mb4.8, ML3.7, MS3.7*

ISC 20 22:42:15.7±1.3, **6°.56N**±0°.07×**126°.3E**±0°.1, **h80**km±13km, **n14**, σ1°**46**/**19**, **mb3.7**/**7**, **3C-3D**, **Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DMPH	**Davao City--Mi**	**0.94**	**303**	*i* P	**Pn**	**22 42 36.2**	**+2.1**
DMPH				*e*S	**Sn**	**22 42 50.1**	**+2.4**
KCP	**Kidapawan**	**1.28**	**290**	*i* P	**Pn**	**22 42 37.5**	**-0.8**
KCP				*i* S	**Sn**	**22 42 55.1**	**-0.1**
GSPH	**General Santos**	**1.42**	**251**	*i* P	**Pn**	**22 42 38.3**	**-1.8**
GSPH				*i* S	**Sn**	**22 42 56.0**	**-2.5**
BIPH	**Bislig**	**1.61**	**2**	*i* P	**Pn**	**22 42 41.4**	**-1.1**
BIPH				*i* S	**Sn**	**22 43 00.5**	**-2.3**
CTBH	**Cotabato--PC H**	**2.14**	**288**	*i* P	**Pn**	**22 42 49.3**	**-0.2**
CGP	**Cagayan de Oro**	**2.46**	**320**	*e*P	**Pn**	**22 42 54.1**	**+0.3**
CGP				*i* S	**Sn**	**22 43 22.0**	**-1.1**
FITZ	**Fitzroy Crossi**	**24.52**	**182**	P	**P**	**22 47 28.6**	**+0.9**
	3.0nm,0.4s,baz=8.5,slow=9.7,SNR=27						
WRA	**Warramunga Arr**	**27.50**	**163**	P	**P**	**22 47 55.1**	**+0.3**
	0.9nm,0.9s,baz=344,slow=9.6,SNR=9.5						
ASAR	**Alice Springs**	**30.95**	**166**	P	**P**	**22 48 26.1**	**+0.8**
	0.4nm,0.4s,baz=341,slow=6.3,SNR=6.6						
STKA	**Stephens Creek**	**40.92**	**160**	P	**P**	**22 49 51.4**	**+1.1**
	2.4nm,0.8s,baz=332,slow=8.8,SNR=3.2						
MKAR	**Makanchi Array**	**55.01**	**324**	P	**P**	**22 51 38.3**	**-0.6**
	0.4nm,0.5s,baz=117,slow=7.2,SNR=6.8						
KURBB	**Kurchatov Arra**	**59.15**	**327**	P	**P**	**22 52 07.6**	**-0.4**
	0.6nm,0.7s,baz=121,slow=6.3,SNR=5.3						
BVAR	**Borovoye Array**	**64.73**	**326**	P	**P**	**22 52 45.2**	**-0.2**
	0.5nm,0.7s,baz=125,slow=7.8,SNR=3.9						
TORD	**Torodi Ar. Bea**	**121.60**	**290**	PKP	**PKPdf**	**23 01 00.7**	**-0.5**
	0.2nm,0.5s,baz=57,slow=3.4,SNR=3.0						

*IDC **20** 22:43:46.2±1.0, 50°.22N×157°.28E, h0km, mb3.6/5, mb1 4.0/6, mb1mx3.5/40, mbtmp3.6/6, ML2.5/1, Error ellipse: s-maj=44.6km s-min=21.7km az=134.0*
*MOS **20** 22:43:50.8±0.6, 50°.32N×157°.17E, h50km, mb4.2/1, Error ellipse: s-maj=29.8km s-min=5.8km az=79.3*
*ISCJB **20** 22:43:52.5±1.0, 50°.48N±0°.09×157°.1E±0°.1, h61km±11km, mb3.6/5, Error ellipse: s-maj=19.9km s-min=6.7km az=42.4*
*KRSC **20** 22:43:52.0±1.6, 50°.55N×157°.19E, h60km±20km, ML4.7*

ISC 20 22:43:52.1±2.3, **50°.4N**±0°.1×**157°.18E**±0°.08, **h41**km±22km, **n43**, σ1°**10**/**55**, **mb3.6**/**5**, **1D**, **Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.74**	**294**	*i* PN	**Pn**	**22 44 06.4**	**+0.3**
SKR				*i* S	**Sn**	**22 44 15.9**	**-0.3**
SKR				pmax	pmax		
	comp=Z,395nm,0.5s						
SKR				smax	smax		
	comp=N,8μm,0.6s						
SKR				smax	smax		
	comp=E,8μm,0.6s						
SKR	**Severo-Kuril's**	**0.74**	**294**	*i* P	**Pn**	**22 44 06.4**	**+0.3**
SKR				*e*S	**Sn**	**22 44 16.0**	**-0.3**
PAU	**Pauzhetka**	**1.11**	**348**	PN	**Pn**	**22 44 11.4**	**+0.3**
PAU				S	**Sn**	**22 44 24.2**	**-1.0**
PAU	**Pauzhetka**	**1.11**	**348**	*i* P	**Pn**	**22 44 11.4**	**+0.3**
PAU				*i* S	**Sn**	**22 44 24.2**	**-1.0**
ASAK	**Asacha**	**2.05**	**12**	PN	**Pn**	**22 44 24.9**	**+0.8**
ASAK				S	**Sn**	**22 44 47.7**	**-0.8**
ASAK	**Asacha**	**2.05**	**12**	*e*P	**Pn**	**22 44 24.9**	**+0.8**
ASAK				*e*S	**Sn**	**22 44 47.7**	**-0.8**
KRMR	**Karymshinskiy**	**2.52**	**13**	PN	**Pn**	**22 44 32.0**	**+1.6**
KRMR				S	**Sn**	**22 45 00.1**	**+0.2**
KRMR	**Karymshinskiy**	**2.52**	**13**	*e*P	**Pn**	**22 44 32.0**	**+1.6**
KRMR				*e*S	**Sn**	**22 45 00.1**	**+0.2**
PETK	**Petropavlovsk-**	**2.75**	**6**	Pn	**Pn**	**22 44 34.9**	**+1.3**
	comp=E,3.2nm,0.3s,baz=186,slow=12,SNR=21						
PETK				Sn	**Sn**	**22 45 07.2**	**+1.6**
	comp=E,3.6nm,0.3s,baz=185,slow=33,SNR=5.4						
PET	**Petropavlovsk**	**2.79**	**19**	*e*PN	**Pn**	**22 44 35.5**	**+1.3**
PET				*e*S	**Sn**	**22 45 06.2**	**-0.5**
PET				smax	smax		
	comp=E,303nm,0.6s						
PET				smax	smax		
	comp=N,337nm,0.4s						
DALK	**Dalny**	**2.82**	**20**	PN	**Pn**	**22 44 35.8**	**+1.2**
DALK				S	**Sn**	**22 45 06.9**	**-0.5**
DALK	**Dalny**	**2.82**	**20**	*e*P	**Pn**	**22 44 35.8**	**+1.2**
DALK				*e*S	**Sn**	**22 45 06.9**	**-0.5**
UGLR	**Uglovaya**	**3.00**	**19**	PN	**Pn**	**22 44 38.9**	**+1.7**
UGLR	**Uglovaya**	**3.00**	**19**	*e*P	**Pn**	**22 44 38.9**	**+1.7**
AVH	**Avacha**	**3.04**	**18**	PN	**Pn**	**22 44 38.6**	**+0.9**
AVH				S	**Sn**	**22 45 11.3**	**-1.6**
AVH	**Avacha**	**3.04**	**18**	*e*P	**Pn**	**22 44 38.6**	**+0.9**
AVH				*e*S	**Sn**	**22 45 11.3**	**-1.6**
KOK	**Koryaka**	**3.05**	**17**	PN	**Pn**	**22 44 39.2**	**+1.4**
KOK	**Koryaka**	**3.05**	**17**	*e*P	**Pn**	**22 44 39.2**	**+1.4**
KRER	**Koryakskii**	**3.08**	**18**	PN	**Pn**	**22 44 38.9**	**+0.5**
KRER	**Koryakskii**	**3.08**	**18**	*e*P	**Pn**	**22 44 38.9**	**+0.5**
SDLR	**Sedlovina**	**3.08**	**19**	PN	**Pn**	**22 44 39.1**	**+0.8**
SDLR	**Sedlovina**	**3.08**	**19**	*e*P	**Pn**	**22 44 39.1**	**+0.8**
NLC	**Nalytchevo**	**3.10**	**25**	PN	**Pn**	**22 44 38.4**	**0.0**
NLC	**Nalytchevo**	**3.10**	**25**	*e*P	**Pn**	**22 44 38.4**	**0.0**
NLC				*e*S	**Sn**	**22 45 10.9**	**-3.2**
KRX	**Arik**	**3.11**	**16**	PN	**Pn**	**22 44 39.8**	**+1.0**
KRX	**Arik**	**3.11**	**16**	*e*P	**Pn**	**22 44 39.8**	**+1.0**
SPN	**Mys Shipunski**	**3.24**	**32**	PN	**Pn**	**22 44 41.7**	**+1.4**
SPN				S	**Sn**	**22 45 16.4**	**-1.2**
SPN	**Mys Shipunski**	**3.24**	**32**	*e*P	**Pn**	**22 44 41.7**	**+1.4**
SPN				*e*S	**Sn**	**22 45 16.4**	**-1.2**
GNL	**Ganaly**	**3.35**	**8**	PN	**Pn**	**22 44 43.0**	**+1.0**
GNL	**Ganaly**	**3.35**	**8**	*e*P	**Pn**	**22 44 43.0**	**+1.0**
MKZ	**Mys Kozlova**	**5.02**	**32**	PN	**Pn**	**22 45 05.5**	**+0.8**
MKZ	**Mys Kozlova**	**5.02**	**32**	*e*P	**Pn**	**22 45 05.5**	**+0.8**
MKZ				*e*S	**Sn**	**22 46 00.2**	**-1.1**
H11N2	**WAKE ISLAND Hy**	**31.55**	**162**	T	T	23 23 53.7	
	baz=348,slow=76,SNR=9.6						
H11N1	**WAKE ISLAND Hy**	**31.56**	**162**	T	T	23 23 54.5	
	baz=348,slow=76,SNR=8.8						
H11N3	**WAKE ISLAND Hy**	**31.56**	**162**	T	T	23 23 54.5	
	baz=348,slow=76,SNR=9.1						
ILAR	**Eielson Array**	**32.02**	**42**	P	**P**	**22 50 13.3**	**-0.9**
	comp=N,0.4nm,0.8s,baz=258,slow=8.5,SNR=5.0						
H11S1	**WAKE ISLAND Hy**	**32.70**	**163**	T	T	23 25 17.7	
	baz=348,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**32.71**	**163**	T	T	23 25 19.0	
	baz=348,slow=76,SNR=20						
H11S2	**WAKE ISLAND Hy**	**32.72**	**163**	T	T	23 25 18.3	
	baz=348,slow=76,SNR=11						
CMAR	**Chiang Mai Ar**	**55.84**	**257**	P	**P**	**22 53 25.0**	**-0.3**
	comp=N,0.6nm,0.3s,baz=39,slow=7.3,SNR=3.9						
PDAR	**Pinedale Array**	**60.46**	**58**	P	**P**	**22 53 58.4**	**+0.7**
	comp=N,0.5nm,0.7s,baz=289,slow=3.5,SNR=4.4						
WRA	**Warramunga Arr**	**72.87**	**202**	P	**P**	**22 55 16.4**	**-0.2**
	comp=N,0.4nm,0.6s,baz=16,slow=6.1,SNR=4.0						
TXAR	**Lajitas Array**	**73.41**	**64**	P	**P**	**22 55 20.5**	**+0.5**
	comp=N,0.4nm,0.6s,baz=302,slow=5.3,SNR=5.2						

*CSEM **20** 22:54:17.6, 38°.21N×42°.90E, h7km, MD2.7*
*DDA **20** 22:54:17.6, 38°.21N×42°.90E, h7km, Md2.7*

ISC 20 22:54:17.1±0.9, **38°.15N**±0°.03×**43°.02E**±0°.03, **h13**km±7km, **n13**, σ1°**06**/**25**, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEVA	**Gevas**	**0.16**	**12**	*i* P	**Pg**	**22 54 21.2**	**0.0**
GEVA				*i* S	**Sg**	**22 54 24.2**	**+0.2**
GEVA	**Gevas**	**0.16**	**12**	P	**Pg**	**22 54 21.2**	**0.0**
GEVA				S	**Sg**	**22 54 24.2**	**+0.2**
TVAN	**Van**	**0.49**	**39**	*i* P	**Pn**	**22 54 31.1**	**+1.1**
TVAN				*i* S	**Sn**	**22 54 39.6**	**+1.1**
TVAN	**Van**	**0.49**	**39**	P	**Pn**	**22 54 31.1**	**+1.1**
TVAN				S	**Sn**	**22 54 39.6**	**+1.1**
TATV	**Tatvan**	**0.69**	**301**	*i* P	**Pb**	**22 54 29.9**	**-1.2**
TATV				*i* S	**Sb**	**22 54 38.6**	**-2.0**
TATV	**Tatvan**	**0.69**	**301**	P	**Pb**	**22 54 29.9**	**-1.2**
TATV				S	**Sb**	**22 54 38.6**	**-2.0**
SIRT	**Sirnak**	**0.79**	**215**	*e*PG	**Pg**	**22 54 32.0**	**-0.5**
SIRT				*e*SG	**Sg**	**22 54 43.5**	**+0.6**
SIRN	**S˜–rnak**	**0.81**	**216**	*i* P	**Pg**	**22 54 33.1**	**+0.3**
SIRN				*i* S	**Sg**	**22 54 44.1**	**+0.7**
SIRN	**S˜–rnak**	**0.81**	**216**	P	**Pg**	**22 54 33.1**	**+0.3**
SIRN				S	**Sg**	**22 54 44.1**	**+0.7**
HKR	**Hakkari**	**0.81**	**135**	*e*PG	**Pg**	**22 54 31.9**	**-1.0**
HKR				*e*SG	**Sg**	**22 54 43.9**	**+0.4**
BTMN	**Batman**	**1.40**	**260**	*i* P	**Pg**	**22 54 44.0**	**-0.1**
BTMN				*i* S	**Sg**	**22 55 03.9**	**+1.6**
BTMN	**Batman**	**1.40**	**260**	P	**Pg**	**22 54 44.0**	**-0.1**
BTMN				S	**Sg**	**22 55 03.9**	**+1.6**
MARD	**Mardin**	**1.96**	**245**	*i* P	**Pg**	**22 54 54.6**	**-0.2**

*MAN **20** 22:54:43, 8°.81N×126°.33E, h4km, mb3.8, ML2.6, MS2.2*
*IDC **20** 22:55:30.6±2.1, 4°.32N×126°.29E, h0km, mb3.6/4, mb1 3.7/4, mb1mx3.4/38, mbtmp3.6/4, Error ellipse: s-maj=209.0km s-min=21.9km az=66.0*

ISC 20 22:54:43.4±2.7, **8°.77N**±0°.09×**126°.3E**±0°.1, **h10**km, **n6**, σ0°**92**/**8**, **3C-1D**, **Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.58**	**175**	*e*P	**Pg**	**22 54 54.9**	**+0.2**
BIPH				*i* S	**Sg**	**22 55 02.1**	**-0.3**
CGP	**Cagayan de Oro**	**1.63**	**259**	*e*P	**Pb**	**22 55 12.9**	**-0.7**
CGP				*e*S	**Sg**	**22 55 35.6**	**-0.3**
DMPH	**Davao City--Mi**	**1.85**	**206**	*e*P	**Pg**	**22 55 18.8**	**-0.3**
DMPH				*e*S	**Sb**	**22 55 41.8**	**+1.1**
TBP	**Tagbilaran**	**2.59**	**291**	*i* P	**Pg**	**22 55 33.0**	**-0.2**
TBP				*i* S	**Sb**	**22 56 03.4**	**+1.5**
WRA	**Warramunga Arr**	**29.60**	**165**	P	P	23 01 01.6	+13
	0.2nm,0.5s,baz=342,slow=9.9,SNR=3.1						
ASAR	**Alice Springs**	**33.08**	**167**	P	P	23 01 29.0	+9.4
	0.2nm,0.4s,baz=340,slow=7.9,SNR=4.1						

*GUC **20** 23:17:24.5±0.6, 33°.56S×71°.83W, h43km±5km, ML3.3*

ISC 20 23:17:25.2±2.5, **33°.60S**±0°.06×**71°.8W**±0°.1, **h5**km±12km, **n15**, σ1°**33**/**25**, **3C-1D**, **Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**0.89**	**45**	*i* P	**Pb**	**23 17 42.3**	**-0.9**
ROCH	**El Roble**	**0.89**	**45**	*i* P	**Pg**	**23 17 42.3**	**-0.2**
ROCH				*i* S	**Sb**	**23 17 54.8**	**-0.8**
ROCH				IAML		23 17 59.8	
	comp=N,1μm,0.4s						
ANTU	**Antumapu**	**0.95**	**88**	*i* P	**Pg**	**23 17 43.6**	**+0.2**
ANTU				*i* S	**Sb**	**23 17 57.7**	**+0.7**
ANTU				IAML		23 17 58.8	

mb4.7/25,MS4.2/3,Error ellipse: s-maj=15.2km s-min=8.4km az=38.9

ISC 20 23:35:35.5±0.5,15.1S±0.1×173.54W±0.10,h30km,n51, σ2s23/46,mb4.7/25,MS3.9/4,1C,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**2.09**	**55**	**Pn**	**Pn**	**23 36 07.8**	**-0.7**
	85nm,0.3s,baz=198,slow=2.3,SNR=48						
AFI				Sn	**Sn**	**23 36 28.1**	**-5.4**
	353nm,0.3s,baz=124,slow=15,SNR=22						
AFI				LR	LR	23 37 05.5	
	comp=Z,1μm,20.8s,baz=236,slow=43						
AFI	**Afiamalu**	**2.09**	**55**	*e*Pn	**Pn**	**23 36 07.9**	**-0.7**
AFI				*e*Sn	**Sn**	**23 36 27.6**	**-6.0**
RAO	**Raoul Island**	**14.64**	**195**	LR	LR	23 43 29.3	
	comp=Z,426nm,21.2s,baz=56,slow=33						
RAO	**Raoul Island**	**14.64**	**195**	*e*Pn	**Pn**	**23 38 56.6**	**-4.0**
DZM	**Mont Dzumac**	**20.18**	**247**	LR	LR	23 46 54.9	
	comp=Z,204nm,21.4s,baz=59,slow=34						
DZM	**Mont Dzumac**	**20.18**	**247**	*e*P	**P**	**23 40 01.1**	**-6.7**
	46nm,1.3s						
URZ	**Urewera**	**24.49**	**198**	P	**P**	**23 40 52.5**	**+0.5**
	8.9nm,0.8s,baz=53,slow=20,SNR=4.0						
URZ				LR	LR	23 48 53.8	
	comp=Z,321nm,19.5s,baz=22,slow=33						
URZ	**Urewera**	**24.49**	**198**	*e*P	**P**	**23 40 52.5**	**+0.5**
	72nm,1.4s						
BKZ	**Black Stump Fm**	**25.51**	**198**	*e*P	**P**	**23 41 01.2**	**-0.2**
	32nm,1.4s						
KHZ	**Kahutara**	**29.40**	**200**	*e*P	**P**	**23 41 37.2**	**+1.1**
	183nm,1.9s						
OXZ	**Oxford**	**30.71**	**201**	*e*P	**P**	**23 41 46.4**	**-1.4**
	62nm,1.5s						
FOZ	**Fox Glacier**	**31.70**	**203**	*e*P	**P**	**23 41 56.1**	**-0.3**
	109nm,1.8s						
DCZ	**Deep Cove**	**34.35**	**204**	*e*P	**P**	**23 42 20.5**	**+0.9**
	39nm,1.3s						
H11S2	**WAKE ISLAND Hy**	**38.65**	**329**	T	T	00 23 46.7	
	baz=147						
H11S3	**WAKE ISLAND Hy**	**38.66**	**329**	T	T	00 23 45.9	
	baz=147						
H11S1	**WAKE ISLAND Hy**	**38.66**	**329**	T	T	00 23 54.5	
	baz=147						
PMG	**Port Moresby**	**38.78**	**274**	*e*P	**P**	**23 42 57.5**	**-0.2**
	23nm,0.9s						
TAU	**Tasmania Unive**	**43.43**	**222**	*e*P	**P**	**23 43 35.6**	**0.0**
	232nm,1.9s						
STKA	**Stephens Creek**	**44.06**	**240**	P	**P**	**23 43 41.2**	**+0.3**
	1.9nm,0.7s,baz=105,slow=9.9,SNR=3.2						
STKA	**Stephens Creek**	**44.06**	**240**	*e*P	**P**	**23 43 39.6**	**-1.3**
	10nm,1.9s						
WB2	**Warramunga Arr**	**49.76**	**257**	*e*P	**P**	**23 44 26.1**	**+0.4**
WR1	**Warramunga Arr**	**49.77**	**257**	*e*P	**P**	**23 44 25.9**	**+0.1**
	28nm,1.8s						
WRA	**Warramunga Arr**	**49.77**	**257**	P	**P**	**23 44 25.9**	**+0.1**
	0.9nm,0.4s,baz=95,slow=7.5,SNR=16						
AS01	**Alice Springs**	**50.02**	**252**	*e*P	**P**	**23 44 27.3**	**-0.3**
AS31	**Alice Springs**	**50.07**	**252**	*e*P	**P**	**23 44 27.9**	**-0.1**
	1.9nm,0.8s						
ASAR	**Alice Springs**	**50.07**	**252**	P	**P**	**23 44 27.9**	**-0.1**
	5.8nm,0.7s,baz=86,slow=8.3,SNR=46						
SOEI	**Soe**	**60.80**	**267**	*e*P	**P**	**23 45 43.5**	**-2.0**
	64nm,1.5s						
SBA	**Scott Base**	**63.52**	**185**	*e*P	**P**	**23 46 04.5**	**+2.0**
	19nm,1.8s						
VNDA	**Vanda**	**63.65**	**186**	P	**P**	**23 46 05.7**	**+2.4**
	1.2nm,0.8s,baz=1.3,slow=6.0,SNR=6.5						
VNDA	**Vanda**	**63.65**	**186**	*e*P	**P**	**23 46 04.8**	**+1.5**
	1.9nm,0.8s						
MJAR	**Matsushiro Arr**	**68.63**	**320**	LR	LR	00 10 56.6	
	comp=Z,78nm,21.9s,baz=345,slow=31						
AKUT	**Akutan**	**69.29**	**5**	*e*P	**P**	**23 46 38.5**	**-1.1**
	337nm,1.8s						
QSPA	**South Pole Qui**	**74.93**	**180**	*e*P	**P**	**23 47 15.8**	**+2.3**
R11A	**Troy Canyon, C**	**75.95**	**43**	*e*P	**P**	**23 47 22.6**	**+2.7**
	9.7nm,1.6s						
TX31	**Lajitas Ar. Si**	**80.57**	**56**	*e*P	**P**	**23 47 48.1**	**+2.6**
LTX	**Lajitas**	**80.57**	**56**	*e*P	**P**	**23 47 48.0**	**+2.5**
TXAR	**Lajitas Array**	**80.57**	**56**	P	**P**	**23 47 48.0**	**+2.5**
	0.7nm,0.9s,baz=210,slow=5.2,SNR=7.6						
PAX	**Paxson**	**80.86**	**13**	*e*P	**P**	**23 47 46.8**	**+0.5**
	5.2nm,0.6s						
WRH	**Wood River Hil**	**81.70**	**11**	*e*P	**P**	**23 47 52.7**	**+2.1**
	3.0nm,0.9s						
CCB	**Clear Creek Bu**	**81.91**	**11**	*e*P	**P**	**23 47 53.6**	**+2.0**
	2.9nm,0.8s						
PD31	**Pinedale Array**	**82.14**	**42**	*e*P	**P**	**23 47 55.7**	**+1.9**
PDAR	**Pinedale Array**	**82.14**	**42**	P	**P**	**23 47 55.7**	**+1.9**
	0.5nm,0.7s,baz=230,slow=3.7,SNR=4.3						
ILAR	**Eielson Array**	**82.19**	**11**	P	**P**	**23 47 54.6**	**+1.5**
	0.5nm,0.8s,baz=224,slow=7.2,SNR=7.4						
ILB	**Eielson Array**	**82.19**	**11**	*e*P	**P**	**23 47 54.6**	**+1.5**
JCT	**Junction City**	**84.11**	**56**	*e*P	**P**	**23 48 05.7**	**+1.8**
MAW	**Mawson**	**88.02**	**199**	P	**P**	**23 48 23.8**	**+1.3**
	2.1nm,0.6s,baz=148,slow=5.6,SNR=13						
MAW				LR	LR	00 27 04.7	
	comp=Z,387nm,20.4s,baz=248,slow=35						
SYO	**Syowa Base**	**92.85**	**191↑**	*e*X	sP	23 49 00.8	+2.7
ARCES	**ARCESS Array B**	**124.31**	**352**	PKP	**PKPdf**	**23 54 31.5**	**+0.7**
	1.1nm,0.7s,baz=48,slow=1.3,SNR=4.7						
GERES	**GERESS Array B**	**145.84**	**351**	PKPbc	**PKPab**	**23 55 13.0**	**+0.6**
	1.4nm,0.9s,baz=19,slow=4.5,SNR=6.3						
BR101	**Keskin Array S**	**145.85**	**321**	*e*PKPdf	**PKPab**	**23 55 14.4**	**+1.6**
BRTR	**Keskin Array B**	**145.85**	**321**	PKPbc	**PKPab**	**23 55 14.4**	**+1.6**
	1.9nm,0.7s,baz=124,slow=2.2,SNR=17						

*CSEM **20** 23:46:10.6,38.88N×29.15W,h7km,ML2.8*

PDA 20 23:46:10.6±0.6,38.88N×29.15W,h7km±10km,MD3.6, ML2.8,Error ellipse: s-maj=10.8km s-min=4.6km az=86.0,Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCED	**Cedros**	**0.43**	**126**	*e*P	Pg	23 46 17.8	-1.2
PCED				*e*S	Sg	23 46 23.4	-1.2
PCED				A	A	23 46 25.8	
	292nm,0.3s						
PCED	**Cedros**	**0.43**	**126**	*e*P	Pg	23 46 17.9	-1.1
PCED				*e*S	Sg	23 46 23.5	-1.1
PCED				A	A	23 46 31.1	
	243nm,0.4s						
PCED	**Cedros**	**0.43**	**126**	*e*P	Pg	23 46 17.9	-1.1
PCED				*e*S	Sg	23 46 23.5	-1.1
CALA	**Caldeira**	**0.46**	**130**	*e*P	Pg	23 46 18.7	-0.8
CALA	**Caldeira**	**0.46**	**130**	*e*P	Pg	23 46 18.7	-0.8
CALA	**Caldeira**	**0.46**	**130**	*e*P	Pg	23 46 18.7	-0.8
HOR	**Horta**	**0.54**	**131**	*e*P	Pg	23 46 19.6	-1.4
HOR				*e*S	Sg	23 46 26.6	-1.4
HOR				A	A	23 46 27.8	
	204nm,0.3s						
HOR	**Horta**	**0.54**	**131**	*e*P	Pg	23 46 19.6	-1.4
HOR				*e*S	Sg	23 46 26.7	-1.3
HOR				A	A	23 46 32.3	
	446nm,0.3s						
HOR	**Horta**	**0.54**	**131**	*e*P	Pg	23 46 19.6	-1.4
HOR				*e*S	Sg	23 46 26.7	-1.3
PCAN	**Candelaria**	**0.67**	**129**	*e*P	Pg	23 46 21.4	-2.0
PCAN				*e*S	Sg	23 46 29.9	-2.2
PCAN				A	A	23 46 33.4	
	106nm,0.3s						
PCAN	**Candelaria**	**0.67**	**129**	*e*P	Pg	23 46 21.4	-2.0
PCAN				*e*S	Sg	23 46 29.9	-2.2
PCAN				A	A	23 46 37.0	
	137nm,0.5s						
PCAN	**Candelaria**	**0.67**	**129**	*e*P	Pg	23 46 21.4	-2.0
PCAN				*e*S	Sg	23 46 29.9	-2.2
PICO	**Pico**	**0.68**	**124**	*e*P	Pg	23 46 21.9	-1.8
PICO				*e*S	Sg	23 46 30.4	-2.2
PICO				A	A	23 46 31.8	
	143nm,0.1s						
PICO	**Pico**	**0.68**	**124**	*e*P	Pg	23 46 21.9	-1.8
PICO				*e*S	Sg	23 46 30.4	-2.2
PICO				A	A	23 46 37.5	
	286nm,0.2s						
PICO	**Pico**	**0.68**	**124**	*e*P	Pg	23 46 21.9	-1.8
PICO				*e*S	Sg	23 46 30.4	-2.2
ROSA	**Rosais**	**0.73**	**103**	*e*P	Pg	23 46 22.1	-2.5
ROSA				*e*S	Sg	23 46 30.8	-3.3
ROSA				A	A	23 46 36.5	
	231nm,0.2s						
ROSA	**Rosais**	**0.73**	**103**	*e*P	Pg	23 46 22.6	-2.0
ROSA				*e*S	Sg	23 46 31.2	-2.9
ROSA				A	A	23 46 36.6	
	230nm,0.2s						
ROSA	**Rosais**	**0.73**	**103**	*e*P	Pg	23 46 22.6	-2.0
ROSA				*e*S	Sg	23 46 31.2	-2.9
PMAN	**Manadas**	**0.87**	**106**	*e*P	Pg	23 46 24.2	-3.0
PMAN				*e*S	Sg	23 46 34.4	-4.1
PMAN				A	A	23 46 35.1	
	40nm,0.2s						
PMAN	**Manadas**	**0.87**	**106**	*e*S	Sg	23 46 34.6	-3.9
PMAN				A	A	23 46 40.7	
	81nm,0.2s						
PSMA	**Santa Maria**	**3.69**	**119**	*e*P	Pn	23 47 03.6	-4.5
PSMA				*e*S	Sn	23 47 43.5	-8.4
PSMA				A	A	23 47 45.2	
	12nm,0.2s						
PSMN	**Pico do Norte,**	**3.73**	**119**	*e*P	Pn	23 47 04.1	-4.6
PSMN				*e*S	Sn	23 47 44.5	-8.4
PSMN				A	A	23 47 46.4	
	13nm,0.2s						

IDC 20 23:46:37.0±2.9,5.74S×146.82E,h114km±28km,mb3.2/2, mb1 3.7/4,mb1mx3.3/31,mbtmp3.9/4,MS3.7/1,Ms1 3.7/1, ms1mx2.6/10,Error ellipse: s-maj=37.5km s-min=25.6km az=91.0,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.66**	**175**	P	Pn	23 47 31.9	0.0
	46nm,0.3s,baz=350,slow=12,SNR=37						
PMG				S	Sn	23 48 13.3	-1.0
	40nm,0.3s,baz=354,slow=9.4,SNR=11						
JAY	**Jayapura**	**6.89**	**297**	P	Pn	23 48 15.7	+0.1
	0.2nm,0.3s,baz=90,slow=20,SNR=6.3						
JAY				S	Sn	23 49 34.5	+1.8
	0.1nm,0.3s,baz=90,slow=20,SNR=2.2						
WRA	**Warramunga Arr**	**18.62**	**220**	P	P	23 50 45.3	-0.5
	0.9nm,0.3s,baz=42,slow=12,SNR=24						
ASAR	**Alice Springs**	**21.73**	**214**	P	P	23 51 19.3	-0.1
	1.7nm,0.5s,baz=54,slow=8.4,SNR=31						
USRK	**Ussuriysk Ar.**	**51.48**	**346**	LR	LR	00 16 11.5	
	comp=Z,73nm,18.2s,baz=291,slow=34						
ILAR	**Eielson Array**	**85.32**	**23**	P	P	23 59 01.0	0.0
	0.2nm,0.5s,baz=260,slow=5.4,SNR=3.0						
TORD	**Torodi Ar. Bea**	**144.86**	**285**	PKP	PKPdf	00 06 01.6	-0.1
	0.4nm,1.1s,baz=82,slow=3.1,SNR=2.5						

*NIED **20** 23:56:00,39.60N×143.80E,h14km,Mw4.0 Best double couple: M0 9.91000×10^14 NP1:φ0=169.00000°,δ40.00000°, λ45.00000°. NP2:φ0=42.00000°,δ63.00000°,λ121.00000°.*
*ISCJB **20** 23:56:08.8±0.5,39.60N±0.03×143.84E±0.06,h11km, mb4.2/15,Error ellipse: s-maj=7.3km s-min=3.7km az=18.9*
*IDC **20** 23:56:09.4±1.1,39.57N×143.80E,h0km,mb3.8/9, mb1 3.9/12,mb1mx3.8/37,mbtmp3.9/12,ML3.0/2,MS3.1/1, Ms1 3.1/1,ms1mx2.6/44,Error ellipse: s-maj=31.1km s-min=17.9km az=88.0*
*JMA **20** 23:56:10.6±0.2,39.61N×143.77E,h31km,M4.0*
*NEIC **20** 23:56:13.0±2.3,39.58N×143.85E,h26km±16km,mb4.5/5, Error ellipse: s-maj=10.9km s-min=6.1km az=103.0*

ISC 20 23:56:10.6±0.7,39.57N±0.05×143.81E±0.07,h11km,n54, σ1s39/57,mb4.0/15,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.54**	**271**	P	**Pn**	**23 56 36.4**	**-1.6**
JTH	**Tanohata**	**1.55**	**285**	P	**Pn**	**23 56 36.1**	**-2.0**
OFUJ	**Ofunato**	**1.73**	**254**	P	**Pn**	**23 56 39.2**	**-1.4**
JANG	**Nango**	**1.94**	**295**	P	**Pn**	**23 56 41.6**	**-1.9**
JOM	**Ohasama**	**1.95**	**268**	P	**Pn**	**23 56 42.7**	**-1.0**
JOM				*e*S	**Sn**	**23 57 06.2**	**-1.9**
JMK	**Ichinoseki**	**2.10**	**254**	P	**Pn**	**23 56 44.6**	**-1.2**
ERM	**Erimo**	**2.50**	**349**	*e*Pn	**Pn**	**23 56 50.8**	**-0.4**
ERM				*e*Sn	**Sn**	**23 57 19.5**	**-2.1**
JYK	**Kaneyama**	**2.76**	**258**	P	**Pn**	**23 56 54.4**	**-0.4**
JOT	**Ohata**	**2.78**	**312**	P	**Pn**	**23 56 54.2**	**-0.9**
JNBK	**Urakawa-nobuka**	**2.83**	**344**	P	**Pn**	**23 56 55.3**	**-0.4**
JNBK				*e*S	**Sn**	**23 57 29.0**	**-0.8**
JCH	**Churui**	**3.06**	**354**	P	**Pn**	**23 56 58.2**	**-0.8**
JCH				*e*S	**Sn**	**23 57 32.8**	**-2.8**
JFT	**Otama**	**3.41**	**234**	P	**Pn**	**23 57 02.8**	**-0.9**
JAK	**Akkeshi**	**3.49**	**11**	P	**Pn**	**23 57 04.0**	**-0.8**
JAK				*e*S	**Sn**	**23 57 43.6**	**-2.5**
JFR	**Furan**	**3.71**	**346**	P	**Pn**	**23 57 08.4**	**+0.5**
JAR	**Ashorobuto**	**3.73**	**360**	P	**Pn**	**23 57 07.0**	**-1.1**
JAR				*e*S	**Sn**	**23 57 48.4**	**-3.6**
ASAJ	**Asahikawa**	**4.64**	**349**	Pn	**Pn**	**23 57 20.8**	**+0.2**
	baz=183,slow=12						
ASAJ				Sn	**Sn**	**23 58 13.2**	**-1.2**
	baz=105,slow=19						
MAJO	**Matsushiro**	**5.35**	**237**	*e*Pn	**Pn**	**23 57 31.3**	**+0.8**
MAT	**Matsushiro**	**5.35**	**237**	P	**Pn**	**23 57 31.1**	**+0.6**
MJAR	**Matsushiro Arr**	**5.35**	**237**	Pn	**Pn**	**23 57 30.9**	**+0.4**
	1.9nm,0.3s,baz=42,slow=12,SNR=30						
MJB9	**Matsu-Tunnel**	**5.35**	**237**	*e*Pn	**Pn**	**23 57 31.4**	**+0.9**
USRK	**Ussuriysk Ar.**	**9.96**	**302**	Pn	**Pn**	**23 58 35.6**	**+2.0**
	0.4nm,0.3s,baz=94,slow=12,SNR=5.3						
USRK				LR	LR	00 01 46.7	
	comp=Z,124nm,21.8s,baz=318,slow=34						
KSRS	**Korea Array**	**12.62**	**265**	Pn	**Pn**	**23 59 13.2**	**+3.1**
	0.3nm,0.3s,baz=95,slow=14,SNR=4.1						
KS15	**Wonju Array Si**	**12.66**	**265**	*e*Pn	**Pn**	**23 59 13.2**	**+2.6**
KSAR	**Wonju Array Be**	**12.66**	**265**	Pn	**Pn**	**23 59 13.2**	**+2.6**
SEY	**Seymchan**	**23.96**	**10**	P	**P**	**00 01 26.0**	**+1.3**
	2.2nm,0.2s,baz=176,slow=8.4,SNR=5.6						
GUMO	**Guam**	**25.89**	**178**	*e*P	**P**	**00 01 40.0**	**-2.5**
	97nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**28.02**	**128**	T	T	00 31 24.0	
	baz=322						
H11N1	**WAKE ISLAND Hy**	**28.03**	**128**	T	T	00 31 26.7	
	baz=322						
H11N3	**WAKE ISLAND Hy**	**28.04**	**128**	T	T	00 31 32.8	
	baz=322						
SONA0	**Songino Array**	**28.06**	**300**	*e*P	**P**	**00 02 01.8**	**-0.2**
	11nm,2.0s						
SONM	**Songino Array**	**28.06**	**300**	P	**P**	**00 02 01.8**	**-0.2**
	0.5nm,0.4s,baz=82,slow=8.0,SNR=4.7						
H11S1	**WAKE ISLAND Hy**	**28.84**	**130**	T	T	00 32 32.0	
	baz=322						
H11S3	**WAKE ISLAND Hy**	**28.85**	**130**	T	T	00 32 32.2	
	baz=322						
H11S2	**WAKE ISLAND Hy**	**28.86**	**130**	T	T	00 32 33.0	
	baz=322						
TIXI	**Tiksi**	**33.04**	**351**	*e*P	**P**	**00 02 45.7**	**+0.2**
	7.7nm,1.1s						
ZAA0	**Zalesovo Array**	**41.66**	**310**	*e*P	**P**	**00 03 58.9**	**0.0**
ZAA1	**Zalesovo Array**	**41.66**	**310**	*e*P	**P**	**00 03 59.0**	**+0.2**
ZAA1				*e*PcP	**PcP**	**00 05 56.1**	**+0.7**
ZALV	**Zalesovo Beam**	**41.66**	**310**	P	**P**	**00 03 59.0**	**+0.2**
	1.1nm,0.5s,baz=92,slow=6.9,SNR=4.4						
ZALV				PcP	**PcP**	**00 05 56.1**	**+0.7**
	0.7nm,0.5s,baz=101,slow=2.2,SNR=3.1						
RSO	**Redoubt South**	**43.75**	**40**	*e*P	**P**	**00 04 17.4**	**+1.4**
CM31	**Chiang Mai Arr**	**43.97**	**255**	*e*P	**P**	**00 04 18.7**	**+0.7**
CMAR	**Chiang Mai Arr**	**43.97**	**255**	P	**P**	**00 04 18.7**	**+0.7**
	0.6nm,0.3s,baz=55,slow=6.7,SNR=4.2						
MK01	**Makanchi Array**	**44.42**	**300**	*e*P	**P**	**00 04 21.1**	**-0.2**
MK31	**Makanchi Array**	**44.42**	**300**	*e*P	**P**	**00 04 21.5**	**+0.2**
MK32	**Makanchi Array**	**44.42**	**300**	*e*P	**P**	**00 04 21.1**	**-0.3**
MKAR	**Makanchi Array**	**44.42**	**300**	P	**P**	**00 04 21.1**	**-0.3**
	1.7nm,0.9s,baz=84,slow=9.3,SNR=13						
HNR	**Honiara**	**51.00**	**159**	*e*P	**P**	**00 05 10.8**	**-1.8**
	64nm,0.4s						
WR1	**Warramunga Arr**	**59.85**	**190**	*e*P	**P**	**00 06 16.2**	**0.0**
	9.0nm,1.1s						
WRA	**Warramunga Arr**	**59.85**	**190**	P	**P**	**00 06 16.2**	**0.0**
	0.5nm,0.5s,baz=9.4,slow=7.1,SNR=3.7						
AS31	**Alice Springs**	**63.58**	**190**	*e*P	**P**	**00 06 42.2**	**+0.8**
	0.9nm,0.9s						
ASAR	**Alice Springs**	**63.58**	**190**	P	**P**	**00 06 42.2**	**+0.8**
	0.3nm,0.6s,baz=12,slow=10,SNR=3.9						
FIA0	**FINESS Array S**	**67.45**	**333**	*e*P	**P**	**00 07 05.8**	**-0.2**
FINES	**FINESS Array B**	**67.45**	**333**	P	**P**	**00 07 05.8**	**-0.2**
	0.8nm,0.6s,baz=64,slow=6.8,SNR=3.9						
NB200	**NORSAR Array S**	**72.57**	**338**	*e*P	**P**	**00 07 38.0**	**+0.5**
NOA	**NORSAR Array B**	**72.57**	**338**	P	**P**	**00 07 37.9**	**+0.5**
	0.5nm,0.7s,baz=39,slow=5.9,SNR=2.6						

*CSEM **21** 00:01:15.9±0.3,67.19N×20.67E,h2km,ML1.6,Error ellipse: s-maj=7.7km s-min=4.7km az=80.0,Mining explosion.*
*HEL **21** 00:01:17.1±0.0,67.18N×20.66E,h0km,ML1.7, ML1.5(UPP),Explosion*

UPP 21 00:01:16.5±0.1,67.19N×20.67E,h0km,ML1.5, Explosion,Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DUNU	**Dundret**	**0.07**	**210**	P	Pg	00 01 18.3	+0.4
DUNU				S	Sg	00 01 19.4	+0.6
DUNU	**Dundret**	**0.07**	**210**	P	Pg	00 01 18.3	+0.4
DUNU				S	Sg	00 01 19.4	+0.6
DUNU	**Dundret**	**0.07**	**210**	*i* P	Pg	00 01 18.3	+0.4
DUNU				*i* S	Sg	00 01 19.4	+0.6
DUNU	**Dundret**	**0.07**	**210**	P	Pg	00 01 18.3	+0.4
DUNU				S	Sg	00 01 19.4	+0.5
MASU	**Masugnsbyn**	**0.58**	**62**	P	Pg	00 01 27.7	+0.1
MASU	**Masugnsbyn**	**0.58**	**62**	P	Pg	00 01 27.8	+0.2
MASU	**Masugnsbyn**	**0.58**	**62**	*i* P	Pg	00 01 27.7	+0.1
MASU	**Masugnsbyn**	**0.58**	**62**	P	Pg	00 01 27.8	+0.1
ERTU	**Ertsjaerv**	**0.88**	**136**	P	Pg	00 01 32.6	-0.6
ERTU	**Ertsjaerv**	**0.88**	**136**	P	Pg	00 01 32.6	-0.6
ERTU	**Ertsjaerv**	**0.88**	**136**	*i* P	Pg	00 01 32.6	-0.6
ERTU	**Ertsjaerv**	**0.88**	**136**	P	Pg	00 01 32.6	-0.6
NIKU	**Nikkaluokta**	**0.93**	**318**	P	Pg	00 01 33.8	-0.5
NIKU	**Nikkaluokta**	**0.93**	**318**	P	Pg	00 01 33.7	-0.5
NIKU	**Nikkaluokta**	**0.93**	**318**	*e*P	Pg	00 01 33.8	-0.5
NIKU	**Nikkaluokta**	**0.93**	**318**	P	Pg	00 01 33.7	-0.6
PAJU	**Pajala**	**0.97**	**99**	P	Pg	00 01 34.6	-0.4
PAJU	**Pajala**	**0.97**	**99**	*e*P	Pg	00 01 34.6	-0.4
LANU	**Lannavaara**	**1.00**	**30**	P	Pg	00 01 35.1	-0.6
LANU	**Lannavaara**	**1.00**	**30**	P	Pg	00 01 35.1	-0.6
LANU	**Lannavaara**	**1.00**	**30**	*e*P	Pg	00 01 35.4	-0.3
LANU				*e*S	Sg	00 01 45.7	-3.0
LANU	**Lannavaara**	**1.00**	**30**	P	Sg	00 01 45.6	-3.1
LANU	**Lannavaara**	**1.00**	**30**	P	Pg	00 01 35.1	-0.6
LANU	**Lannavaara**	**1.00**	**30**	Pg	Pg	00 01 35.4	-0.3
LANU				Sg	Sg	00 01 45.6	-3.1
HARU	**Harads**	**1.03**	**173**	P	Pg	00 01 35.6	-0.7
HARU	**Harads**	**1.03**	**173**	P	Pg	00 01 35.5	-0.7
HARU	**Harads**	**1.03**	**173**	*e*P	Pg	00 01 35.6	-0.7
HARU	**Harads**	**1.03**	**173**	P	Pg	00 01 35.5	-0.8
HEF	**Hetta**	**1.67**	**41**	*e*P	Pn	00 01 46.9	-0.1
	baz=224						
HEF				MSG		00 02 04.6	
	comp=Z,2.6nm,0.2s						
HEF	**Hetta**	**1.67**	**41**	Pn	Pn	00 01 46.9	-0.1
KIF	**Kilpisjarvi**	**1.83**	**2**	*e*PN	Pb	00 01 50.3	-0.4
	baz=175						
KIF				*e*S	Sn	00 02 11.5	-1.4
KIF				MSG		00 02 11.6	
	comp=Z,9.5nm,0.2s						
KIF	**Kilpisjarvi**	**1.83**	**2**	Sb	Sn	00 02 11.5	-1.4
KIF	**Kilpisjarvi**	**1.83**	**2**	Pg	Pb	00 01 50.3	-0.4
TOF	**Tornio**	**1.83**	**126**	*e*PG	Pb	00 01 50.1	-0.7
TOF				*e*SN	Sb	00 02 14.0	-0.3
TOF	**Tornio**	**1.83**	**126**	Pg	Pb	00 01 50.1	-0.7
TOF				Sn	Sb	00 02 14.0	-0.3
RNF	**Rovaniemi**	**2.19**	**103**	Sn	Sn	00 02 17.1	-4.7
ARE0	**ARCESS Array S**	**2.96**	**35**	*e*PB	Pb	00 02 07.5	-2.6
	baz=216						

*CSEM **21** 00:01:32.1±0.1,67.83N×20.22E,h2km,ML1.3,Error ellipse: s-maj=2.5km s-min=1.6km az=17.0,Mining explosion.*

UPP 21 00:01:32.3,67.84N×20.19E,h0km,ML1.3,Mining explosion.,Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NIKU	**Nikkaluokta**	**0.44**	**274**	P	Pg	00 01 40.7	0.0
NIKU				S	Sg	00 01 46.6	+0.2
MASU	**Masugnsbyn**	**0.79**	**118**	P	Pg	00 01 47.2	-0.2
PAJU	**Pajala**	**1.40**	**125**	P	Pg	00 01 57.7	-1.3
ERTU	**Ertsjaerv**	**1.51**	**148**	P	Pn	00 02 00.0	-0.5
ERTU				S	Sg	00 02 19.6	-1.1

*ISCJB **21** 00:06:38.7±0.5,43.81N±0.03×12.67E±0.04,h12km±4km, Error ellipse: s-maj=5.2km s-min=4.0km az=40.9*
*CSEM **21** 00:06:38.9±0.2,43.80N×12.67E,h10km,ML2.6/11,Error ellipse: s-maj=3.5km s-min=2.6km az=132.0*
*ROM **21** 00:06:38.3±0.1,43.79N×12.66E,h7km±1km,Md2.1/16, Ml1.9/13,Error ellipse: s-maj=1.6km s-min=1.3km az=83.0*

ISC 21 00:06:37.8±0.9,43.83N±0.03×12.71E±0.03,h16km±6km, n34,σ0s63/63,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FSSB	**Fossombrone**	**0.14**	**161**	Pg	**Pg**	**00 06 41.7**	**-0.1**
FSSB				Sg	**Sg**	**00

ATCC					Sg	**Sb**	**00 07 00.7**	**+1.4**
	120nm,0.4s								
ATCC	**AVT- Casa Cast**	**0.64**	**185**		Pg	**Pg**	**00 06 50.5**	**+0.1**
ATCC					Sg	**Sb**	**00 07 00.7**	**+1.4**
	120nm,0.4s								
CESI	**CESI - Serrava**	**0.83**	**170**		Pg	**Pg**	**00 06 54.2**	**+0.2**
CESI	**CESI - Serrava**	**0.83**	**170**		Pg	**Pg**	**00 06 54.2**	**+0.2**
NVLJ	**Novalja**	**1.72**	**64**	*e*Pn		**Pb**	**00 07 09.1**	**+0.2**
NVLJ					Sn	**Sg**	**00 07 32.0**	**-1.1**
UDBI	**Udbina**	**2.31**	**71**	*e*Pn		**Pb**	**00 07 18.2**	**-0.7**
UDBI					Sn	**Sb**	**00 07 46.6**	**-0.6**
UDBI	**Udbina**	**2.31**	**71**	*e*Pn		**Pb**	**00 07 18.2**	**-0.7**
UDBI					Sn	**Sb**	**00 07 46.6**	**-0.6**

IDC 21 00:28:04.8±25.0, 24°42S×179°51E, h605km±250km, mb3.3/4, mb1 3.4/4, mb1mx3.0/30, mbtmp4.4/4, Error ellipse: s-maj=191.1km s-min=33.5km az=75.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**31.03**	**271**	P	P	00 33 35.5	+0.2
	6.3nm,0.3s,baz=94,slow=11,SNR=12						
STKA	**Stephens Creek**	**34.11**	**249**	P	P	00 34 01.1	+0.1
	1.2nm,0.4s,baz=90,slow=8.9,SNR=7.3						
WRA	**Warramunga Arr**	**41.92**	**267**	P	P	00 35 03.9	-0.5
	2.5nm,0.6s,baz=97,slow=8.3,SNR=18						
MAW	**Mawson**	**77.11**	**201**	P	P	00 38 56.7	0.0
	0.5nm,0.4s,baz=142,slow=8.6,SNR=10						
ARCES	**ARCESS Array B**	**132.30**	**348**	PKP	PKPdf	00 46 09.2	-1.2
	1.0nm,0.8s,baz=45,slow=1.4,SNR=3.5						
FINES	**FINESS Array B**	**138.79**	**341**	PKhKP	PKPpre	00 46 14.5	
	0.8nm,0.8s,baz=210,slow=22,SNR=2.9						
FINES				PKP	PKPdf	00 46 23.1	+0.5
	0.3nm,0.4s,baz=98,slow=4.2,SNR=4.6						
AKASG	**Malin Array Be**	**145.16**	**327**	PKPbc	PKPdf	00 46 34.1	-0.2
	0.3nm,0.3s,baz=54,slow=3.8,SNR=4.2						
BRTR	**Keskin Array B**	**147.53**	**306**	PKPbc	PKPbc	00 46 42.4	0.0
	0.7nm,0.6s,baz=146,slow=5.1,SNR=6.2						

*ISCJB **21** 00:28:59.2±1.3, 6°.8S±0°.1×147°.6E±0°.2, h63km, mb3.9/6, Error ellipse: s-maj=34.5km s-min=16.6km az=2.2*
*IDC **21** 00:29:00.2±4.8, 6°.74S×147°.57E, h56km±41km, mb3.8/6, mb1 4.0/8, mb1mx3.7/32, mbtmp4.1/8, ML3.8/1, MS3.5/4, Ms1 3.5/4, ms1mx3.2/35, Error ellipse: s-maj=46.5km s-min=27.9km az=84.0*
ISC 21 00:29:00.2±1.7, 6°.6S±0°.1×147°.6E±0°.3, h63km, n10, σ2°37/9, mb3.9/6, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.84**	**189**	P	**Pn**	**00 29 41.3**	**-1.9**
	25nm,0.3s,baz=12,slow=7.1,SNR=48						
PMG				S	**Sn**	**00 30 20.5**	**+4.2**
	13nm,0.3s,baz=338,slow=17,SNR=10						
PMG				LR	LR	00 30 58.9	
	comp=Z,1μm,20.6s,baz=354,slow=44						
HNR	**Honiara**	**12.55**	**104**	LR	LR	00 36 08.1	
	comp=Z,149nm,20.1s,baz=336,slow=34						
WRA	**Warramunga Arr**	**18.50**	**223**	P	**P**	**00 33 10.7**	**-0.8**
	0.4nm,0.3s,baz=49,slow=11,SNR=15						
GUMO	**Guam**	**20.22**	**352**	LR	LR	00 41 43.7	
	comp=Z,117nm,18.1s,baz=130,slow=38						
ASAR	**Alice Springs**	**21.49**	**216**	P	**P**	**00 33 42.9**	**-1.0**
	4.7nm,0.5s,baz=52,slow=9.2,SNR=42						
FITZ	**Fitzroy Crossi**	**24.28**	**240**	P	**P**	**00 34 11.9**	**0.0**
	8.1nm,0.6s,baz=53,slow=9.4,SNR=18						
STKA	**Stephens Creek**	**25.79**	**192**	P	**P**	**00 34 22.8**	**-2.6**
	6.1nm,1.1s,baz=15,slow=12,SNR=3.6						
STKA				LR	LR	00 45 00.1	
	comp=Z,150nm,19.0s,baz=269,slow=38						
VNDA	**Vanda**	**71.30**	**177**	P	**P**	**00 40 13.3**	**+0.6**
	1.0nm,0.7s,baz=332,slow=4.7,SNR=5.1						
MKAR	**Makanchi Array**	**78.32**	**320**	P	**P**	**00 40 54.8**	**+1.1**
	0.3nm,0.6s,baz=104,slow=6.9,SNR=3.4						
ZALV	**Zalesovo Beam**	**79.82**	**328**	P	**P**	**00 41 03.2**	**+1.5**
	0.5nm,0.5s,baz=116,slow=6.6,SNR=2.5						

*ISCJB **21** 00:30:20.8±1.7, 24°.22N±0°.04×122°.34E±0°.02, h14km±13km, Error ellipse: s-maj=7.5km s-min=3.1km az=3.4*
*TAP **21** 00:30:20.7, 24°.29N×122°.25E, h4km±1km, ML2.7, D*
*JMA **21** 00:30:21.5±0.1, 24°.20N×122°.35E, h48km, M1.9*
ISC 21 00:30:19.1±3.2, 24°28N±0°.05×122°36E±0°.02, h7km±24km, n17, σ0°47/29, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.56**	**72**	P	**Pn**	**00 30 34.2**	**+0.7**
JYNG				*e*S	**Sn**	**00 30 42.7**	**-0.3**
TWC	**Suao**	**0.57**	**305**	*e*P	**Pb**	**00 30 31.2**	**-0.2**
	baz=311						
TWC				*e*S	**Sb**	**00 30 39.5**	**-0.3**
	baz=311						
ENA	**Nanau**	**0.58**	**285**	*e*P	**Pb**	**00 30 31.5**	**-0.2**
	baz=286						
ENA				*e*S	**Sb**	**00 30 39.3**	**-0.9**
	baz=286						
YOJ	**Yonaguni jima**	**0.62**	**73**	P	**Pn**	**00 30 34.1**	**-0.2**
YOJ				*e*S	**Sn**	**00 30 44.3**	**-0.2**
TWD	**Chiawan**	**0.72**	**254**	*e*S	**Sb**	**00 30 44.2**	**0.0**
	baz=250						
TWE	**Neicheng**	**0.77**	**305**	*e*P	**Pb**	**00 30 35.2**	**+0.4**
	baz=309						
TWE				*e*S	**Sb**	**00 30 45.2**	**-0.2**
	baz=309						
TWB1	**Santiao Chiao**	**0.80**	**335**	*e*S	**Sn**	**00 30 49.9**	**+0.9**
	baz=342						
ENTT	**Nioudou**	**0.81**	**297**	*e*P	**Pb**	**00 30 35.8**	**+0.3**
	baz=299						
ENTT				*e*S	**Sb**	**00 30 46.1**	**-0.5**
	baz=299						
NNS	**Nan Shan**	**0.91**	**280**	*e*S	**Sb**	**00 30 49.4**	**-0.4**
	baz=280						
NWF	**Wu-fen Shan**	**0.95**	**326**	*e*P	**Pn**	**00 30 38.6**	**-0.3**
	baz=331						
NWF				*e*S	**Sn**	**00 30 52.5**	**-0.3**
	baz=331						
WHF	**Hehuan Shan**	**1.01**	**263**	*e*P	**Pn**	**00 30 40.8**	**+0.7**
	baz=260						
TWT	**Tachien**	**1.08**	**269**	*e*P	**Pn**	**00 30 41.8**	**+1.0**
	baz=267						
TWT				*e*S	**Sn**	**00 30 56.0**	**-0.1**
	baz=267						
WDT	**Danda**	**1.24**	**245**	*e*P	**Pb**	**00 30 42.6**	**-0.3**
	baz=242						
IRIF	**Iriomote-Funau**	**1.25**	**87**	P	**Pn**	**00 30 43.5**	**+0.5**
IRIF				*e*S	**Sb**	**00 30 59.8**	**+0.5**
TYC	**Yuchr**	**1.42**	**255**	*e*P	**Pn**	**00 30 45.2**	**-0.2**
	baz=253						
TYC				*e*S	**Sn**	**00 31 04.3**	**0.0**
	baz=253						
JKRS	**Kuro-shima**	**1.51**	**91**	P	**Pb**	**00 30 47.1**	**-0.3**
JKRS				*e*S	**Sn**	**00 31 06.4**	**0.0**
JIJ	**Ishigaki jima**	**1.63**	**87**	P	**Pn**	**00 30 48.3**	**+0.1**
JIJ				*e*S	**Sn**	**00 31 09.1**	**-0.3**

JMA 21 00:30:27.8±0.1, 37°.15N×141°.50E, h46km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.54**	**294**	P	Pn	00 30 39.3	-0.1
JFK				*e*S	Sn	00 30 47.2	-0.5
ONAJ	**Iwakimizuishiy**	**0.56**	**265**	P	Pn	00 30 39.6	-0.1
ONAJ				*e*S	Sn	00 30 47.7	-0.5
JMM	**Marumori**	**0.91**	**322**	P	Pn	00 30 44.3	+0.1
JMM				*e*S	Sn	00 30 55.7	-0.5
JHO	**Hitachi**	**0.92**	**234**	P	Pn	00 30 43.9	-0.5
JHO				*e*S	Sn	00 30 55.6	-0.9
JFT	**Otama**	**1.00**	**292**	P	Pn	00 30 46.4	+1.0
JFT				*e*S	Sn	00 30 59.6	+1.2
JIO	**Ouri**	**1.31**	**355**	P	Pn	00 30 49.6	0.0
JOU	**Okura**	**1.38**	**332**	P	Pn	00 30 51.8	+1.1
JFY	**Yanaizu**	**1.46**	**281**	P	Pn	00 30 52.7	+1.0
JFY				*e*S	Sn	00 31 11.4	+1.8
JYS	**Shirataka**	**1.56**	**314**	P	Pn	00 30 54.8	+1.7
JAG	**Ashikaga**	**1.79**	**247**	P	Pn	00 30 57.0	+0.7
JMK	**Ichinoseki**	**1.81**	**353**	P	Pn	00 30 57.3	+0.8
MAT	**Matsushiro**	**2.71**	**258**	P	Pn	00 31 14.6	+5.7
MAT				S	Sn	00 31 46.9	+6.5

JMA 21 00:42:26.5±0.3, 36°.98N×141°.94E, h21km±3km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.92**	**278**	P	Pb	00 42 43.7	-0.1
JFK	**Kawauchi**	**0.93**	**295**	P	Pb	00 42 43.8	-0.2
JFK				*e*S	Sb	00 42 56.2	+0.2
JHO	**Hitachi**	**1.16**	**252**	P	Pn	00 42 47.0	-0.5
JHO				S	Sb	00 43 02.4	0.0
JFT	**Otama**	**1.39**	**293**	P	Pb	00 42 51.5	-0.2
JFT				S	Sb	00 43 09.6	+0.6
JIO	**Ouri**	**1.54**	**343**	*e*S	Sn	00 43 12.7	+0.5
JOU	**Okura**	**1.71**	**324**	*e*S	Sb	00 43 17.6	-0.8
JFY	**Yanaizu**	**1.83**	**284**	P	Pb	00 42 58.1	-1.3
JFY				*e*S	Sb	00 43 21.2	-0.7
JYS	**Shirataka**	**1.94**	**310**	*e*S	Sb	00 43 23.9	-0.9
JAG	**Ashikaga**	**2.07**	**255**	*e*S	Sn	00 43 26.7	+1.4
MAT	**Matsushiro**	**3.03**	**263**	P	Pb	00 43 17.1	-2.6
MAT				S	Sb	00 43 56.1	-0.1

*DJA **21** 00:50:57.7±0.8, 3°N±3°×9°6E±°, h10km, M4.2/8, mb4.7/2, mB4.7/1, MLv3.9/8, Mw(mB)3.9/1*
*IDC **21** 00:51:01.0±6.5, 2°.58N×95°.92E, h58km±53km, mb3.7/6, mb1 3.8/8, mb1mx3.4/59, mbtmp3.9/8, ML3.7/2, MS4.4/1, Ms1 4.4/1, ms1mx3.0/37, Error ellipse: s-maj=70.8km s-min=18.7km az=56.0*
ISC 21 00:50:56.7±1.0, 2°.54N±0°.05×95°.87E±0°.09, h25km, n21, σ1°57/18, mb4.2/6, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TPTI		**1.49**	**61**	P	**Pb**	**00 51 22.6**	**-1.2**
TPTI				S	**Sb**	**00 51 42.4**	**+0.1**
MLSI	**Meulaboh, Aceh**	**1.79**	**17**	P	**Pn**	**00 51 26.6**	**+0.5**
MLSI				S	**Sb**	**00 51 53.1**	**+2.1**
GSI	**Gunungsitoli**	**2.10**	**126**	P	**Pb**	**00 51 32.1**	**-2.1**
GSI				S	**Sb**	**00 51 58.2**	**-1.7**
KCSI	**Kotacane, Aceh**	**2.13**	**63**	P	**Pb**	**00 51 33.6**	**-1.2**
LHMI	**Lhok Sumawe**	**2.88**	**22**	P	**Pb**	**00 51 46.0**	**-1.4**
LHMI				S	**Sb**	**00 52 19.5**	**-2.7**
PSI	**Prapat**	**3.06**	**85**	P	**Pn**	**00 51 46.1**	**+2.4**
	1.7nm,0.3s,baz=296,slow=7.2,SNR=13						
MNSI	**Mandailing Nat**	**4.09**	**115**	P	**Pn**	**00 52 00.2**	**+2.4**
CMAR	**Chiang Mai Arr**	**16.10**	**11**	P	**P**	**00 54 43.9**	**-0.9**
	0.3nm,0.3s,baz=198,slow=11,SNR=11						
CMAR				LR	LR	01 00 54.8	
	comp=Z,37nm,18.8s,baz=230,slow=37						
H08S2	**Diego Garcia H**	**25.42**	**246**	T	T	01 22 29.2	
	baz=66,slow=75,SNR=1354						
H08S3	**Diego Garcia H**	**25.43**	**246**	T	T	01 22 29.3	
	baz=66,slow=75,SNR=939						
H08S1	**Diego Garcia H**	**25.44**	**246**	T	T	01 22 30.5	
	baz=66,slow=75,SNR=1298						
H01W3	**Cape Leeuwin H**	**40.99**	**157**	T	T	01 42 17.2	
	baz=332,slow=76,SNR=211						
H01W2	**Cape Leeuwin H**	**41.00**	**157**	T	T	01 42 18.5	
	baz=332,slow=76,SNR=262						
H01W1	**Cape Leeuwin H**	**41.00**	**157**	T	T	01 42 16.2	
	baz=332,slow=76,SNR=208						
WRA	**Warramunga Arr**	**43.87**	**122**	P	**P**	**00 59 01.5**	**-0.1**
	0.6nm,0.6s,baz=298,slow=9.4,SNR=6.2						
ASAR	**Alice Springs**	**45.26**	**127**	P	**P**	**00 59 13.3**	**+0.7**
	0.3nm,0.5s,baz=301,slow=8.0,SNR=5.1						
MKAR	**Makanchi Array**	**45.63**	**347**	P	**P**	**00 59 15.5**	**+0.3**
	2.5nm,0.5s,baz=158,slow=8.3,SNR=31						
SONM	**Songino Array**	**46.03**	**10**	P	**P**	**00 59 18.4**	**0.0**
	1.8nm,0.6s,baz=191,slow=9.4,SNR=12						
GEYT	**Alibeck**	**49.34**	**320**	P	**P**	**00 59 44.5**	**+0.4**
	1.9nm,0.7s,baz=128,slow=9.6,SNR=5.3						
JHJ	**Hachijo jima 2**	**51.10**	**48**	LR	LR	01 19 02.5	
	comp=Z,402nm,20.4s,baz=275,slow=33						
ZALV	**Zalesovo Beam**	**52.04**	**352**	P	**P**	**01 00 04.2**	**0.0**
	2.0nm,0.5s,baz=181,slow=5.8,SNR=9.3						

*ISCJB **21** 00:51:18.3±1.2, 36°.19N±0°.04×141°.44E±0°.08, h17km±8km, mb3.9/5, Error ellipse: s-maj=10.6km s-min=6.4km az=176.8*
*IDC **21** 00:51:18.4±1.2, 36°.28N×141°.30E, h0km, mb3.6/4, mb1 3.7/6, mb1mx3.5/54, mbtmp3.7/6, ML3.5/2, Error ellipse: s-maj=26.7km s-min=21.3km az=73.0*
*JMA **21** 00:51:20.2±0.1, 36°.14N×141°.25E, h46km±2km, M3.6*
JMA Felt I J1.
ISC 21 00:51:19.8±1.5, 36°24N±0°.04×141°24E±0°.07, h11km±9km, n21, σ0°86/21, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.62**	**210**	P	**Pg**	**00 51 31.7**	**0.0**
CHOJ				S	**Sg**	**00 51 39.9**	**0.0**
JHO	**Hitachi**	**0.66**	**305**	P	**Pb**	**00 51 33.9**	**+0.6**
JHO				S	**Sn**	**00 51 45.0**	**-0.4**
JYT	**Yasato**	**0.85**	**270**	P	**Pg**	**00 51 36.2**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.94**	**338**	P	**Pg**	**00 51 38.0**	**+0.2**
JFK	**Kawauchi**	**1.17**	**345**	P	**Pb**	**00 51 41.1**	**-0.9**
JAG	**Ashikaga**	**1.46**	**278**	P	**Pn**	**00 51 45.0**	**-1.0**
JFT	**Otama**	**1.47**	**331**	P	**Pb**	**00 51 46.8**	**-0.3**
JFT				*e*S	**Sn**	**00 52 05.2**	**-0.3**
MJAR	**Matsushiro Arr**	**2.47**	**278**	Pn	**Pn**	**00 52 00.1**	**+0.2**
	7.4nm,0.3s,baz=85,slow=9.5,SNR=44						
MJAR				Sn	**Sb**	**00 52 33.1**	**-1.3**
	4.6nm,0.3s,baz=86,slow=16,SNR=6.9						
MAT	**Matsushiro**	**2.47**	**278**	P	**Pn**	**00 52 00.5**	**+0.6**
MAT				*e*S	**Sb**	**00 52 35.1**	**+0.6**
JHJ	**Hachijo jima 2**	**3.33**	**202**	Pn	**Pn**	**00 52 11.8**	**0.0**
	18nm,0.3s,baz=68,slow=11,SNR=3.4						
JHJ				Sn	**Sn**	**00 52 50.0**	**-1.3**
	33nm,0.3s,baz=73,slow=19,SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**27.87**	**119**	T	T	01 26 10.2	
	baz=312,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**27.88**	**119**	T	T	01 26 12.3	
	baz=312,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**27.89**	**119**	T	T	01 26 11.3	
	baz=312,slow=75,SNR=24						
SONM	**Songino Array**	**28.12**	**305**	P	**P**	**00 57 11.9**	**+0.1**
	0.6nm,0.8s,baz=110,slow=9.4,SNR=4.0						
H11S1	**WAKE ISLAND Hy**	**28.55**	**121**	T	T	01 27 01.9	
	baz=314,slow=75,SNR=154						
H11S3	**WAKE ISLAND Hy**	**28.55**	**121**	T	T	01 26 59.6	
	baz=314,slow=75,SNR=107						
H11S2	**WAKE ISLAND Hy**	**28.57**	**121**	T	T	01 27 00.8	
	baz=314,slow=75,SNR=101						
ZALV	**Zalesovo Beam**	**42.35**	**313**	P	**P**	**00 59 13.8**	**+0.2**
	1.2nm,0.6s,baz=98,slow=6.7,SNR=4.5						
ILAR	**Eielson Array**	**50.24**	**32**	P	**P**	**01 00 15.3**	**-0.2**
	0.5nm,0.8s,baz=268,slow=6.9,SNR=6.0						
WRA	**Warramunga Arr**	**56.25**	**188**	P	**P**	**01 00 59.5**	**-0.6**
	17nm,1.2s,baz=6.1,slow=7.7,SNR=5.1						
ASAR	**Alice Springs**	**59.98**	**189**	P	**P**	**01 01 28.5**	**+2.3**
	0.4nm,0.7s,baz=18,slow=9.3,SNR=3.1						

*ISCJB **21** 00:55:43.9±0.9, 37°.04N±0°.05×27°.49E±0°.07, h9km±8km, Error ellipse: s-maj=9.6km s-min=8.0km az=41.4*
*ISK **21** 00:55:43.1, 37°.05N×27°.50E, h5km, MD2.5*
*DDA **21** 00:55:43.7, 37°.00N×27°.45E, h7km, Md2.6*
*CSEM **21** 00:55:44.4±0.2, 37°.05N×27°.49E, h5km, MD2.6, Error ellipse: s-maj=4.2km s-min=3.7km az=178.0*
ISC 21 00:55:42.9±1.0, 37°.01N±0°.04×27°.53E±0°.03, h12km±7km, n15, σ1°57/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BDRM	**Kayabasi**	**0.09**	**310**	*i* P	**Pg**	**00 55 45.8**	**+0.1**
BDRM				*i* S	**Sg**	**00 55 47.3**	**-0.4**
BDRM	**Kayabasi**	**0.09**	**310**	P	**Pg**	**00 55 45.8**	**+0.1**
BDRM				S	**Sg**	**00 55 47.3**	**-0.4**
BODT	**Bodrum**	**0.18**	**287**	*e*PG	**Pg**	**00 55 46.6**	**-0.4**
BODT				*e*SG	**Sg**	**00 55 49.0**	**-0.8**
BODT	**Bodrum**	**0.18**	**287**	*e*Pg	**Pg**	**00 55 46.6**	**-0.4**
BODT				*e*Sg	**Sg**	**00 55 49.0**	**-0.8**
NIS1	**Nisyros Isl.**	**0.49**	**214**	*e*PG	**Pb**	**00 55 54.7**	**+1.2**
NIS1	**Nisyros Isl.**	**0.49**	**214**	*e*Pg	**Pb**	**00 55 54.7**	**+1.2**
YER	**Yerkesik**	**0.62**	**78**	*e*PG	**Pg**	**00 55 56.4**	**+1.4**
YER	**Yerkesik**	**0.62**	**78**	*e*Pg	**Pg**	**00 55 56.4**	**+1.4**
GCAM	**G?zelcaml?**	**0.73**	**341**	*i* P	**Pb**	**00 55 57.8**	**+0.4**
GCAM				*i* S	**Sb**	**00 56 07.2**	**-0.2**
GCAM	**G?zelcaml?**	**0.73**	**341**	P	**Pb**	**00 55 57.8**	**+0.4**
GCAM				S	**Sb**	**00 56 07.2**	**-0.2**

TURN	**Turunc**	**0.87**	**99**	*i* P		**Pg**	**00 55 56.9**	**-2.9**
TURN				*i* S		**Sg**	**00 56 07.4**	**-3.9**
DALY	**Dalyan (Mu˘la**	**0.93**	**102**	*e*Pg		**Pb**	**00 56 03.0**	**+2.2**
DALY	**Dalyan (Mu˘la**	**0.93**	**102**	*e*Pg		**Pb**	**00 56 03.1**	**+2.2**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**17**	*e*PG		**Pb**	**00 56 02.8**	**+1.0**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**17**	*e*Pg		**Pb**	**00 56 02.8**	**+1.0**

*NAO **21** 00:59:15.7±0.5, 60°.98N×11°.59E, h14km±3km, ML3.8*
*CSEM **21** 00:59:15.7±0.1, 60°.97N×11°.56E, h21km, ML3.3, Error ellipse: s-maj=2.0km s-min=1.1km az=163.0*
*UPP **21** 00:59:15.4±1.2, 60°.91N×11°.52E, h18km±8km, ML2.9, Probable volcanic*
*IDC **21** 00:59:15.8±0.5, 60°.96N×11°.57E, h16km±5km, mb3.4/3, mb1 3.6/5, mb1mx3.3/47, mbtmp3.7/5, ML3.6/2, MS3.3/1, Ms1 3.3/1, ms1mx2.2/44, Error ellipse: s-maj=7.0km s-min=4.3km az=99.0*
*ISCJB **21** 00:59:15.0±0.2, 60°.96N±0°.01×11°.56E±0°.03, h32km±1km, mb3.4/3, MS3.1/1, Error ellipse: s-maj=2.4km s-min=2.2km az=39.7*
*BER **21** 00:59:16.9±2.5, 60°.95N×11°.57E, h17km±2km, ML3.3, MW3.5, ML3.8(NAO)*
ISC 21 00:59:15.1±0.7, 60°.96N±0°.02×11°.55E±0°.02, h28km±3km, n220, σ1°09/263, mb3.3/3, 22C-51D, Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NC403	**NORSAR Array S**	**0.11**	**32**	*e*P	**Pb**	**00 59 20.4**	**+0.2**
NC403	**NORSAR Array S**	**0.11**	**32**	*e*P	**Pb**	**00 59 20.4**	**+0.2**
	SNR=143						
NC403				*e*S	**Sb**	**00 59 23.5**	**-0.3**
	SNR=143						
NC402	**NORSAR Array S**	**0.13**	**50**	*e*P	**Pb**	**00 59 20.6**	**+0.1**
NC402	**NORSAR Array S**	**0.13**	**50**	*e*P	**Pb**	**00 59 20.6**	**+0.1**
	SNR=139						
NC402				*e*S	**Sb**	**00 59 23.7**	**-0.4**
	SNR=139						
NB202	**NORSAR Array S**	**0.14**	**289**	*e*P	**Pb**	**00 59 21.0**	**+0.4**
NB202				AMPG		00 59 21.1	
	comp=Z,4771μm,0.2s						
NB202	**NORSAR Array S**	**0.14**	**289**	AMSG		00 59 25.0	
	comp=Z,6651μm,0.2s						
NB202	**NORSAR Array S**	**0.14**	**289**	*e*P	**Pb**	**00 59 21.0**	**+0.4**
	SNR=134						
NB202				*e*S	**Sb**	**00 59 24.2**	**-0.1**
	SNR=134						
NC4	**NORSAR Subarra**	**0.14**	**35**	Pg	**Pb**	**00 59 19.7**	**-0.9**
NC4				Lg	Lg	00 59 22.9	
NC4	**NORSAR Subarra**	**0.14**	**35**	Pg	**Pb**	**00 59 19.7**	**-0.9**
NC4				Lg	Lg	00 59 22.9	
NC4	**NORSAR Subarra**	**0.14**	**35**	Pg	**Pb**	**00 59 19.7**	**-0.9**
	SNR=136						
NC4				Lg	Lg	00 59 22.9	
NC400	**NORSAR Array S**	**0.14**	**35**	*e*P	**Pb**	**00 59 20.7**	**+0.1**
NC400	**NORSAR Array S**	**0.14**	**35**	*e*P	**Pb**	**00 59 20.7**	**+0.1**
	SNR=136						
NC400				*e*S	**Sb**	**00 59 24.1**	**-0.2**
	SNR=136						
NC404	**NORSAR Array S**	**0.14**	**18**	*e*P	**Pb**	**00 59 20.8**	**+0.2**
NC404	**NORSAR Array S**	**0.14**	**18**	*e*P	**Pb**	**00 59 20.8**	**+0.2**
	SNR=134						
NC404				*e*S	**Sb**	**00 59 24.2**	**-0.1**
	SNR=134						
NB201	**NORSAR Array S**	**0.15**	**305**	*e*P	**Pb**	**00 59 21.1**	**+0.4**
NB201				AMPG		00 59 21.2	
	comp=Z,1635μm,0.1s						
NB201	**NORSAR Array S**	**0.15**	**305**	*e*S	**Sb**	**00 59 24.6**	**+0.1**
NB201				AMSG		00 59 24.8	
	comp=Z,5517μm,0.1s						
NB201	**NORSAR Array S**	**0.15**	**305**	*e*P	**Pb**	**00 59 21.1**	**+0.4**
	SNR=131						
NB201				*e*S	**Sb**	**00 59 24.6**	**+0.1**
	SNR=131						
NC401	**NORSAR Array S**	**0.17**	**45**	*e*P	**Pb**	**00 59 21.0**	**+0.2**
NC401	**NORSAR Array S**	**0.17**	**45**	*e*P	**Pb**	**00 59 21.0**	**+0.2**
	SNR=131						
NC401				*e*S	**Sb**	**00 59 24.5**	**-0.3**
	SNR=131						
NC405	**NORSAR Array S**	**0.17**	**28**	*e*P	**Pb**	**00 59 21.1**	**+0.2**
NC405	**NORSAR Array S**	**0.17**	**28**	*e*P	**Pb**	**00 59 21.1**	**+0.2**
	SNR=130						
NC405				*e*S	**Sb**	**00 59 24.5**	**-0.3**
	SNR=130						
NB2	**NORSAR Subarra**	**0.18**	**296**	Pg	**Pb**	**00 59 20.9**	**-0.1**
NB2				Lg	Lg	00 59 24.5	
NB2	**NORSAR Subarra**	**0.18**	**296**	Pg	**Pb**	**00 59 20.9**	**-0.1**
NB2				Lg	Lg	00 59 24.5	
NB2	**NORSAR Subarra**	**0.18**	**296**	Pg	**Pb**	**00 59 20.9**	**-0.1**
	SNR=127						
NB2				Lg	Lg	00 59 24.5	
NB200	**NORSAR Array S**	**0.18**	**296**	*e*P	**Pb**	**00 59 21.5**	**+0.5**
NB200				AMPG		00 59 21.5	
	comp=Z,5557μm,0.1s						
NB200	**NORSAR Array S**	**0.18**	**296**	AMSG		00 59 25.3	
	comp=Z,8057μm,0.1s						
NB200	**NORSAR Array S**	**0.18**	**296**	*e*P	**Pb**	**00 59 21.5**	**+0.5**
	SNR=127				

SNR=115
NC302 eS Sb 00 59 26.9 +0.1
SNR=115
NC303 NORSAR Array S 0.28 342⇓eP Pb 00 59 22.6 +0.5
NC303 NORSAR Array S 0.28 342⇓eP Pb 00 59 22.6 +0.5
SNR=114
NC303 eS Sb 00 59 27.1 +0.2
SNR=114
NC3 NORSAR Subarra 0.31 348 Pg Pb 00 59 22.2 -0.3
NC3 Lg Lg 00 59 26.1
NC3 NORSAR Subarra 0.31 348 Pg Pb 00 59 22.2 -0.3
NC3 Lg Lg 00 59 26.1
NC3 NORSAR Subarra 0.31 348 Pg Pb 00 59 22.2 -0.3
SNR=112
NC3 Lg Lg 00 59 26.0
NC300 NORSAR Array S 0.31 348⇓eP Pb 00 59 23.0 +0.5
NC300 NORSAR Array S 0.31 348⇓eP Pb 00 59 23.0 +0.5
SNR=112
NC300 eS Sb 00 59 27.6 0.0
SNR=112
NC301 NORSAR Array S 0.32 355 eP Pb 00 59 23.1 +0.4
NC301 NORSAR Array S 0.32 355 eS Sb 00 59 28.0 +0.2
NC301 NORSAR Array S 0.32 355 eP Pb 00 59 23.1 +0.4
SNR=111
NC301 eS Sb 00 59 28.0 +0.2
SNR=111
NC304 NORSAR Array S 0.34 342 eP Pb 00 59 23.4 +0.5
NC304 NORSAR Array S 0.34 342 eP Pb 00 59 23.4 +0.5
SNR=110
NC304 eS Sb 00 59 28.6 +0.4
SNR=110
NC305 NORSAR Array S 0.34 348⇓eP Pb 00 59 23.5 +0.5
NC305 NORSAR Array S 0.34 348⇓eP Pb 00 59 23.5 +0.5
SNR=109
NC305 eS Sb 00 59 28.9 +0.5
SNR=109
NAO01 NORSAR Array S 0.35 250⇓eP Pb 00 59 23.6 +0.6
NAO01 AMPG 00 59 23.7
comp=Z,497μm,0.1s
NAO01 NORSAR Array S 0.35 250 AMSG 00 59 29.5
comp=Z,5920μm,0.1s
NAO01 NORSAR Array S 0.35 250⇓eP Pb 00 59 23.6 +0.6
SNR=109
NAO01 eS Sb 00 59 29.0 +0.5
SNR=109
NBO02 NORSAR Array S 0.35 285⇓eP Pb 00 59 23.7 +0.6
NBO02 NORSAR Array S 0.35 285 AMPG 00 59 23.8
comp=Z,5185μm,0.1s
NBO02 NORSAR Array S 0.35 285 eS **Sb 00 59 29.2 +0.6**
NBO02 AMSG 00 59 29.3
comp=Z,6646μm,0.3s
NBO02 NORSAR Array S 0.35 285⇓eP Pb 00 59 23.7 +0.6
SNR=109
NBO02 eS Sb 00 59 29.2 +0.6
SNR=109
NBO03 NORSAR Array S 0.35 279⇓eP Pb 00 59 23.8 +0.6
NBO03 NORSAR Array S 0.35 279 AMPG 00 59 23.9
comp=Z,2659μm,0.1s
NBO03 NORSAR Array S 0.35 279 AMSG 00 59 29.6
comp=Z,4341μm,0.8s
NBO03 NORSAR Array S 0.35 279⇓eP Pb 00 59 23.8 +0.6
SNR=108
NBO03 eS Sb 00 59 28.6 0.0
SNR=108
NAO02 NORSAR Array S 0.36 244 eP Pn 00 59 23.9 -0.5
NAO02 NORSAR Array S 0.36 244 AMPG 00 59 24.4
comp=Z,798μm,0.1s
NAO02 NORSAR Array S 0.36 244 AMSG 00 59 29.7
comp=Z,5317μm,0.1s
NAO02 NORSAR Array S 0.36 244 eP Pn 00 59 23.9 -0.5
SNR=108
NAO02 eS Sb 00 59 29.3 +0.6
SNR=108
NAO05 NORSAR Array S 0.38 253⇓eP Pb 00 59 24.1 +0.6
NAO05 NORSAR Array S 0.38 253 AMPG 00 59 24.2
comp=Z,1270μm,0.1s
NAO05 NORSAR Array S 0.38 253 AMSG 00 59 30.0
comp=Z,7336μm,0.1s
NAO05 NORSAR Array S 0.38 253⇓eP Pb 00 59 24.1 +0.6
SNR=107
NAO05 eS Sb 00 59 29.8 +0.6
SNR=107
NAO NORSAR Subarra 0.38 249 Pg Pb 00 59 24.0 +0.5
NAO Lg Lg 00 59 29.7
NAO NORSAR Subarra 0.38 249 Pg Pb 00 59 24.0 +0.5
NAO Lg Lg 00 59 29.7
NAO NORSAR Subarra 0.38 249 Pg Pb 00 59 24.0 +0.5
SNR=107
NAO Lg Lg 00 59 29.7
NAO00 NORSAR Array S 0.38 249 eP Pb 00 59 24.1 +0.5
NAO00 NORSAR Array S 0.38 249 AMPG 00 59 24.2
comp=Z,1086μm,0.1s
NAO00 NORSAR Array S 0.38 249 AMSG 00 59 30.1
comp=Z,8002μm,0.1s
NAO00 NORSAR Array S 0.38 249 eP Pb 00 59 24.1 +0.5
SNR=107
NAO00 eS Sb 00 59 29.8 +0.5
SNR=107
NBO NORSAR Subarra 0.38 281 Pg Pb 00 59 24.0 +0.4
NBO Lg Lg 00 59 29.0
NBO NORSAR Subarra 0.38 281 Pg Pb 00 59 24.0 +0.4
NBO Lg Lg 00 59 29.0
NBO NORSAR Subarra 0.38 281 Pg Pb 00 59 24.0 +0.4
SNR=101
NBO Lg Lg 00 59 29.0
NBO00 NORSAR Array S 0.38 281⇓eP Pb 00 59 24.3 +0.7
NBO00 NORSAR Array S 0.38 281 AMPG 00 59 24.4
comp=Z,1709μm,0.2s
NBO00 NORSAR Array S 0.38 281 AMSG 00 59 30.4
comp=Z,3661μm,0.3s
NBO00 NORSAR Array S 0.38 281⇓eP Pb 00 59 24.3 +0.7
SNR=107
NBO00 eS Sb 00 59 30.2 +0.8
SNR=107
NBO01 NORSAR Array S 0.39 285⇓eP Pb 00 59 24.3 +0.6
NBO01 AMPG 00 59 24.4
comp=Z,3087μm,0.1s
NBO01 NORSAR Array S 0.39 285 eS **Sb 00 59 30.2 +0.7**
NBO01 AMSG 00 59 30.3
comp=Z,3371μm,0.2s
NBO01 NORSAR Array S 0.39 285⇓eP Pb 00 59 24.3 +0.6
SNR=106
NBO01 eS Sb 00 59 30.2 +0.7
SNR=106
NBO04 NORSAR Array S 0.39 278⇓eP Pb 00 59 24.4 +0.6
NBO04 NORSAR Array S 0.39 278 AMPG 00 59 24.5
comp=Z,3574μm,0.1s
NBO04 NORSAR Array S 0.39 278 AMSG 00 59 30.5
comp=Z,6228μm,0.2s
NBO04 NORSAR Array S 0.39 278⇓eP Pb 00 59 24.4 +0.6
SNR=106
NBO04 eS Sb 00 59 29.4 -0.2
SNR=106
NAO03 NORSAR Array S 0.40 245⇓eP Pn 00 59 24.6 -0.4
NAO03 AMPG 00 59 24.7
comp=Z,2333μm,0.1s
NAO03 NORSAR Array S 0.40 245 AMSG 00 59 30.9
comp=Z,7027μm,0.1s
NAO03 NORSAR Array S 0.40 245⇓eP Pn 00 59 24.6 -0.4
SNR=105
NAO03 eS Sb 00 59 30.6 +0.7
SNR=105
NAO04 NORSAR Array S 0.41 249⇓eP Pb 00 59 24.7 +0.6
NAO04 AMPG 00 59 24.8
comp=Z,1673μm,0.1s
NAO04 NORSAR Array S 0.41 249 AMSG 00 59 31.2
comp=Z,7193μm,0.1s
NAO04 NORSAR Array S 0.41 249⇓eP Pb 00 59 24.7 +0.6
SNR=105
NAO04 eS Sb 00 59 30.8 +0.6
SNR=105
NBO05 NORSAR Array S 0.42 284⇓eP Pb 00 59 24.8 +0.6
NBO05 AMPG 00 59 24.8
comp=Z,5051μm,0.1s
NBO05 NORSAR Array S 0.42 284 AMSG 00 59 31.1
comp=Z,3572μm,0.2s
NBO05 NORSAR Array S 0.42 284⇓eP Pb 00 59 24.8 +0.6
SNR=105
NBO05 eS Sb 00 59 29.7 -0.6
SNR=105
NC202 NORSAR Array S 0.43 314⇓eP Pb 00 59 25.0 +0.5
NC202 NORSAR Array S 0.43 314⇓eP Pb 00 59 25.0 +0.5
SNR=106
NC202 eS Sb 00 59 31.3 +0.5
SNR=106
NC201 NORSAR Array S 0.46 318⇓eP Pb 00 59 25.4 +0.6
SNR=103
NC201 eS Sb 00 59 32.1 +0.6
SNR=103
NC2 NORSAR Subarra 0.47 313 Pg Pb 00 59 25.6 +0.5
NC2 Lg Lg 00 59 32.2
NC2 NORSAR Subarra 0.47 313 Pg Pb 00 59 25.6 +0.5
NC2 Lg Lg 00 59 32.2
NC2 NORSAR Subarra 0.47 313 Pg Pb 00 59 25.6 +0.5
SNR=102
NC2 Lg Lg 00 59 32.2
NC200 NORSAR Array S 0.47 313⇓eP Pb 00 59 25.6 +0.5
NC200 NORSAR Array S 0.47 313⇓eP Pb 00 59 25.6 +0.5
SNR=102
NC200 eS Sb 00 59 32.4 +0.6
SNR=102
NC204 NORSAR Array S 0.50 310⇓eP Pn 00 59 26.3 -0.1
NC204 NORSAR Array S 0.50 310⇓eP Pn 00 59 26.3 -0.1
SNR=101
NC204 eS Sb 00 59 33.3 +0.8
SNR=101
NC205 NORSAR Array S 0.51 316⇓eP Pb 00 59 26.2 +0.6
NC205 NORSAR Array S 0.51 316⇓eP Pb 00 59 26.2 +0.6
SNR=101
NC205 eS Sb 00 59 33.5 +0.7
SNR=101
OSL Oslo 1.11 202 eP Pb 00 59 36.1 +0.5
OSL eS Sb 00 59 51.1 +1.5
OSL IAML 00 59 52.2
comp=Z,1μm,0.2s
OSL Oslo 1.11 202 eP Pb 00 59 36.1 +0.5
SNR=55
OSL eS Sb 00 59 51.1 +1.5
SNR=55
UDD Uddeholm 1.34 130 P Pb 00 59 39.3 -0.2
UDD S Sb 00 59 57.3 +1.0
UDD Uddeholm 1.34 130 ⇓P Pb 00 59 39.3 -0.2
UDD S Sb 00 59 57.3 +1.0
HFS Hagfors 1.35 127 Pg Pb 00 59 39.4 -0.3
baz=302,slow=4.0
HFS Lg Lg 00 59 57.5
baz=306,slow=28
HFS Hagfors 1.35 127 Pn Pb 00 59 39.3 -0.3
comp=Z,149nm,0.3s,baz=308,slow=14,SNR=8747
HFS Lg Lg 00 59 57.4
comp=Z,417nm,0.3s,baz=310,slow=27,SNR=57
HFS Hagfors 1.35 127 Pg Pb 00 59 39.4 -0.3
baz=302,slow=4.0
HFS Lg Lg 00 59 57.5
baz=306,slow=28
DOMB Dombas 1.61 313⇑iP Pb 00 59 43.2 -1.0
DOMB Dombas 1.61 313⇑iP Pb 00 59 43.2 -1.0
SNR=55
FINU Finntorp 1.63 163 P Pn 00 59 43.1 +1.2
FINU S Sb 01 00 04.0 -0.6
FINU Finntorp 1.63 163 P Pn 00 59 43.1 +1.2
FINU S Sb 01 00 04.0 -0.6
KON Kongsberg 1.64 217 Pn Pn 00 59 43.0 +1.0
KON Lg Lg 01 00 05.8
KONO Kongsberg 1.64 217 eP Pn 00 59 43.2 +1.2
KONO eS Sb 01 00 05.8 +1.0
KONO Lg Lg 01 00 05.8
KONO IAML 01 00 12.1
comp=Z,169nm,0.3s
KONO Kongsberg 1.64 217 Pn Pn 00 59 43.0 +1.0
KONO Kongsberg 1.64 217 eP Pb 00 59 43.4 -1.2
KONO eS Sb 01 00 05.8 +1.0
SNR=55
VANU Vaenersborg 2.49 174 P Pn 00 59 55.0 +1.3
VANU Vaenersborg 2.49 174 P Pn 00 59 55.0 +1.3
MOL Molde 2.50 312 eP Pn 00 59 54.6 +0.9
MOL eS Sn 01 00 24.5 +1.4
MOL IAML 01 00 36.0
comp=Z,447nm,0.3s
MOL Molde 2.50 312 eP Pn 00 59 54.6 +0.9
SNR=55
MOL eS Sn 01 00 24.5 +1.4
SNR=55
AKN Aaknes 2.50 301⇑iP Pn 00 59 55.0 +1.2
AKN eS Sn 01 00 25.5 +2.2
AKN IAML 01 00 39.3
comp=Z,607nm,0.5s
AKN Aaknes 2.50 301⇑iP Pn 00 59 55.0 +1.2
SNR=55
AKN eS Sn 01 00 25.5 +2.2
SNR=55
ODD1 Odda 2.66 249⇑iP Pn 00 59 57.3 +1.3
ODD1 eS Sn 01 00 27.8 +0.5
ODD1 IAML 01 00 41.7
comp=Z,459nm,0.4s
ODD1 Odda 2.66 249⇑iP Pn 00 59 57.3 +1.3
SNR=55
ODD1 eS Sn 01 00 27.8 +0.5
SNR=55
HUDU Hudiksvall 2.79 71 P Pn 00 59 59.9 +2.0
HUDU S Sn 01 00 32.7 +2.2
HUDU Hudiksvall 2.79 71 P Pn 00 59 59.8 +2.0
HUDU S Sn 01 00 32.7 +2.2
IGGU Iggoen 2.82 89 P Pn 01 00 00.1 +2.0
IGGU S Sn 01 00 33.9 +2.8
IGGU Iggoen 2.82 89 P Pn 01 00 00.1 +2.0
IGGU S Sn 01 00 33.9 +2.8
NOD Norderasen 2.93 30 P Pn 01 00 02.0 +2.3
NOD Norderasen 2.93 30 P Pn 01 00 02.0 +2.3
BLS5 Blasjo 2.98 241⇓iP Pn 01 00 01.6 +1.2
BLS5 IAML 01 00 50.9
comp=Z,349nm,0.5s
BLS5 Blasjo 2.98 241⇓iP Pn 01 00 01.6 +1.2
SNR=55
FKPU Falk 3.02 158 P Pn 01 00 01.6 +0.6
FKPU S Sn 01 00 36.8 +0.6
FKPU Falk 3.02 158 P Pn 01 00 01.6 +0.6
FKPU S Sn 01 00 36.8 +0.6
HOMB Homborsund 3.11 211 eP Pn 01 00 02.9 +0.6
HOMB eS Sn 01 00 37.3 -1.1
HOMB IAML 01 00 59.5
comp=Z,147nm,0.6s
HOMB Homborsund 3.11 211 eP Pn 01 00 02.8 +0.6
SNR=55
BER Bergen 3.11 262 eP Pn 01 00 03.4 +1.2
BER eS Sn 01 00 39.6 +1.2
BER IAML 01 00 54.1
comp=Z,288nm,0.2s
BER Bergen 3.11 262 eP Pn 01 00 03.4 +1.2
SNR=55
BER eS Sn 01 00 39.6 +1.2
SNR=55
ASK Askoy 3.16 264 eP Pn 01 00 03.5 +0.6
ASK IAML 01 00 57.0
comp=Z,318nm,0.4s
FOO Floro 3.21 284 eP Pn 01 00 04.1 +0.7
FOO eS Sn 01 00 40.3 -0.4
FOO IAML 01 00 59.1
comp=Z,249nm,0.3s
FOO Floro 3.21 284 eP Pn 01 00 04.2 +0.7
FOO eS Sn 01 00 40.3 -0.4
SNR=55
UPP Uppsala 3.21 108 P Pn 01 00 05.4 +1.8
UPP Uppsala 3.21 108 P Pn 01 00 05.4 +1.8
BORU Boraas 3.40 169 P Pn 01 00 07.1 +1.0
BORU Boraas 3.40 169 P Pn 01 00 07.1 +1.0
GRAU Graesoe 3.50 97 P Pn 01 00 08.7 +1.2
GRAU Graesoe 3.50 97 P Pn 01 00 08.6 +1.2
HEMU Hemsoen 3.52 58 P Pn 01 00 09.8 +2.0
HEMU S Sn 01 00 51.0 +2.5
STAV Stavanger 3.58 238 eP Pn 01 00 09.7 +1.1
STAV IAML 01 01 07.6
comp=Z,201nm,0.4s
STAV Stavanger 3.58 238 eP Pn 01 00 09.7 +1.1
SNR=55
KMY Karmoy 3.61 244 eP Pn 01 00 10.2 +1.1
KMY IAML 01 01 10.8
comp=Z,207nm,0.2s
KMY Karmoy 3.61 244 eP Pn 01 00 10.2 +1.1
SNR=55
AAL Aland 4.24 97 S Sn 01 01 07.1 +1.0
MUD Monsted U'grnd 4.69 196 eP Pn 01 00 24.4 +0.6
MUD eS Sn 01 01 14.7 -2.5
MUD Monsted U'grnd 4.69 196 iP Pn 01 00 24.8 +1.0
MUD Monsted U'grnd 4.69 196 eP Pn 01 00 24.4 +0.6
SNR=53
COP Copenhagen 5.31 175 iP Pn 01 00 37.9 +5.5
COP Copenhagen 5.31 175 iP Pn 01 00 37.9 +5.5
VAF Ylistaro 5.64 63 P Pn 01 00 38.7 +1.8
VAF S Sn 01 01 41.4 +0.8
LLD Lille Linde 5.66 176 iP Pn 01 00 37.5 +0.4
LLD Lille Linde 5.66 176 eP Pn 01 00 37.5 +0.4
BSD Bornholm Skovb 6.13 162 iP Pn 01 00 43.6 0.0
BSD Bornholm Skovb 6.13 162 iP Pn 01 00 43.6 0.0
YEL1 Yell 6.21 272 eP Pn 01 00 44.4 -0.3
LRW Lerwick 6.33 268 eP Pn 01 00 48.4 +2.0
MEF Metsahovi 6.37 91 P Pn 01 00 47.6 +0.7
KEF Keuruu 6.48 73 P Pn 01 00 49.4 +1.0
MTSE Matsula 6.58 105 P Pn 01 00 51.0 +1.2
PVF Pernaja 7.03 87 P Pn 01 00 57.3 +1.4
FIA0 FINESS Array S 7.04 80 Pn Pn 01 00 56.8 +0.8
baz=270,slow=12
FIA0 Sn Sn 01 02 12.7 -2.3
baz=270,slow=28
FIA0 Lg Lg 01 02 50.0
baz=283,slow=28
FIA0 FINESS Array S 7.04 80 Pn Pn 01 00 56.8 +0.8
baz=270,slow=12
FIA0 Sn Sn 01 02 12.7 -2.3
baz=270,slow=28
FIA0 Lg Lg 01 02 50.0
baz=283,slow=28
FIA0 FINESS Array S 7.04 80 Pn Pn 01 00 56.8 +0.8
SNR=55
FIA0 FINESS Array S 7.04 80 P Pn 01 00 57.2 +1.2
FINES FINESS Array B 7.04 80 Pn Pn 01 00 57.2 +1.2
comp=Z,1.8nm,0.3s,baz=274,slow=12,SNR=50
FINES Sn Sn 01 02 13.1 -1.9
comp=Z,4.6nm,0.3s,baz=275,slow=23,SNR=8.4
FINES Lg Lg 01 02 50.5
comp=Z,14nm,0.3s,baz=267,slow=25,SNR=9.3
SUF Sumiainen 7.13 69 P Pn 01 00 58.5 +1.2
STEI Steigen 7.17 11 IAML 01 03 06.3
comp=Z,33nm,0.4s
LOF Lofoten 7.25 6 eP Pn 01 00 58.7 -0.3
LOF IAML 01 03 10.0
comp=Z,18nm,0.3s
LOF Lofoten 7.25 6 eP Pn 01 00 58.7 -0.3
SNR=51
TRO Tromso 9.23 16 eP Pn 01 01 27.6 +1.6
TRO IAML 01 04 20.0
comp=Z,22nm,0.5s
TRO Tromso 9.23 16 eP Pn 01 01 27.6 +1.6
SNR=51
EKA Eskdalemuir Ar 9.60 241 Pn Pn 01 01 30.2 -0.9
baz=48,slow=12,SNR=5.9
EKA Sn Sn 01 03 12.8 -5.1
baz=50,slow=25,SNR=3.5
CLL Collm 9.71 175 eSn Sn 01 03 22.0 +1.3
CLL eSb 01 03 54.0
CLL e 01 04 06.0
CLL eSg 01 04 20.0
ARA0 ARCESS Array S 10.37 28 Pn Pn 01 01 40.0 -1.7
baz=219,slow=14
ARA0 ARCESS Array S 10.37 28 P Pn 01 01 40.0 -1.7
baz=219,slow=14
ARCES ARCESS Array B 10.37 28 Pn Pn 01 01 40.0 -1.6
comp=Z,1.4nm,0.3s,baz=219,slow=13,SNR=47
ARCES Sn Sn 01 03 30.9 -5.9
comp=Z,2.1nm,0.3s,baz=215,slow=21,SNR=5.1
ARCES Lg Lg 01 04 35.2
comp=Z,2.3nm,0.3s,baz=221,slow=26,SNR=7.3
ARE0 ARCESS Array S 10.37 28 eP Pn 01 01 40.4 -1.2
ARE0 IAML 01 04 51.1
comp=Z,19nm,0.6s
APA0 Apatity Array 11.39 45 Lg Lg 01 05 09.9
baz=240,slow=22
APA0 Apatity Array 11.39 45 Lg Lg 01 05 09.9
baz=240,slow=22
AKASG Malin Array Be 14.24 128 Lg Lg 01 06 41.0
comp=Z,1.3nm,0.3s,baz=328,slow=28,SNR=7.6
ARU Arti 24.41 80 LR LR 01 13 37.9
comp=Z,70nm,21.6s,baz=266,slow=35
KURBB Kurchatov Arra 37.40 75 P P 01 06 26.1 +1.0
comp=Z,0.2nm,0.4s,baz=303,slow=8.7,SNR=2.8
ZALV Zalesovo Beam 38.08 67 P P 01 06 32.5 +1.7
comp=Z,0.6nm,0.5s,baz=302,slow=8.3,SNR=2.6
MKAR Makanchi Array 41.86 76 P P 01 07 03.3 +1.0
comp=Z,0.3nm,0.5s,baz=330,slow=8.3,SNR=3.4

NIED ***21*** *01:03:00, 39.˚60N×143.˚90E, h11km, Mw5.0 Best double couple: M₀3.56000×10¹⁶ NP1:φ₀173.00000°, δ34.00000°, λ57.00000°. NP2:φ₀31.00000°, δ62.00000°, λ110.00000°.*
JMA ***21*** *01:03:25.5±0.2, 39.˚60N×143.˚81E, h20km, M5.0*
JMA Felt I J1.
IDC ***21*** *01:03:25.7±0.6, 39.˚60N×143.˚60E, h0km, mb4.4/34, mb1 4.5/40, mb1mx4.5/61, mbtmp4.5/40, ML3.6/5, MS4.4/23, Ms1 4.4/23, ms1mx4.2/39, Error ellipse: s-maj=14.8km s-min=11.7km az=111.0*
BJI ***21*** *01:03:26.5, 39.˚55N×143.˚33E, h8km, mb4.9/72, mB5.1/62, Ms5.0/79, Ms7 4.8/75*
ISCJB ***21*** *01:03:27.7±0.7, 39.˚66N±0.˚02×143.˚50E±0.˚03, h17km±4km, mb4.7/165, MS4.8/54, Error ellipse: s-maj=4.3km s-min=2.7km az=143.5*
NEIC ***21*** *01:03:30.9±1.2, 39.˚63N×143.˚47E, h29km±8km, mb4.7/88, Error ellipse: s-maj=5.0km s-min=2.9km az=147.0*
NEIC Recorded [1 JMA] in Iwate.
MOS ***21*** *01:03:30.6±1.0, 39.˚82N×143.˚43E, h33km, mb5.0/63, MS4.4/18, Error ellipse: s-maj=6.7km s-min=4.4km az=105.2*
GCMT ***21*** *01:03:31.0±0.3, 39.˚70N×143.˚82E, h20km, MW5.1/93, Moment Tensor Solution. s34,c44; s93,c144; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr4.00±.20; Mθθ-0.56±.11; Mφφ-3.44±.13; Mrθ0.67±.25; Mθφ-1.00±.07; Mφr3.33±.24; Best double couple: M₀5.15400×10¹⁶ NP1:φ₁14.00000°, δ66.00000°, λ87.00000°. NP2: φ₂201.00000°, δ25.00000°, λ97.00000°. Principal axes: T 5.2850, Plg69.0000°, Azm278.0000°; N -0.2620, Plg3.0000°, Azm15.0000°; P -5.0220, Plg21.0000°, Azm106.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 21 01:03:29.2±0.6, 39.˚59N±0.˚04×143.˚66E±0.˚04, h23km±3km, h23km:pP-P, n372, σ1°79/428, mb4.8/166, MS4.8/54, 32C-8D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.42**	**270**	**⇑P**	**Pn**	**01 03 52.3**	**-1.2**
MIYJ				eS	Sn	01 04 11.6	+0.1
JTH	**Tanohata**	**1.43**	**285**	**⇑P**	**Pn**	**01 03 52.0**	**-1.6**
JTH				eS	Sb	01 04 12.0	-0.8
OFUJ	**Ofunato**	**1.62**	**252**	**⇑P**	**Pn**	**01 03 55.2**	**-1.1**
OFUJ				eS	Sn	01 04 16.5	0.0
JANG	**Nango**	**1.82**	**296**	**⇑P**	**Pn**	**01 03 57.2**	**-1.9**
JOM	**Ohasama**	**1.83**	**267**	**⇑P**	**Pn**	**01 03 58.7**	**-0.5**
JOM				eS	Sn	01 04 21.3	-0.4
JKZ	**Kuzumaki**	**1.84**	**283**	**⇑P**	**Pn**	**01 03 58.6**	**-0.7**
JMK	**Ichinoseki**	**2.00**	**252**	**⇑P**	**Pn**	**01 04 00.6**	**-0.9**
JMK				eS	Sn	01 04 25.7	0.0
JRG	**Rokugo**	**2.35**	**266**	**⇑P**	**Pn**	**01 04 05.9**	**-0.4**
ERM	**Erimo**	**2.45**	**351**	**deP**	**Pn**	**01 04 07.8**	**+0.1**
ERM				pmax	pmax		
comp=Z,270nm,1.7s							
ERM	**Erimo**	**2.45**	**351**	**ePn**	**Pn**	**01 04 06.2**	**-1.6**
ERM				eSn	Sn	01 04 36.8	-0.1
JYK	**Kaneyama**	**2.65**	**256**	**⇑P**	**Pn**	**01 04 10.0**	**-0.4**
JOT	**Ohata**	**2.68**	**313**	**P**	**Pn**	**01 04 10.1**	**-0.7**
JNBK	**Urakawa-nobuka**	**2.77**	**346**	**S**	**Sn**	**01 04 45.4**	**+0.5**
JCH	**Churui**	**3.03**	**356**	**P**	**Pn**	**01 04 14.7**	**-1.0**
JCH				S	Sn	01 04 49.1	-2.1
JFT	**Otama**	**3.33**	**233**	**P**	**Pn**	**01 04 18.9**	**-0.9**
JAK	**Akkeshi**	**3.49**	**13**	**P**	**Pn**	**01 04 20.3**	**-1.7**
JAK				S	Sn	01 04 59.3	-3.3
ASAJ	**Asahikawa**	**4.59**	**350**	**Pn**	**Pn**	**01 04 36.4**	**-0.8**
baz=174,slow=9.2							
ASAJ				Sn	Sn	**01 05 29.4**	**-0.4**
baz=348,slow=19							
ASAJ	**Asahikawa**	**4.59**	**350**	**ePn**	**Pn**	**01 04 37.3**	**+0.1**
ASAJ				Sn	Sn	01 05 29.4	-0.4
YUK	**Yuzh-Kuril'sk**	**4.74**	**20**	***i*P**	**Pn**	**01 04 36.9**	**-2.2**
MAJO	**Matsushiro**	**5.27**	**236**	***d*iP**	**Pn**	**01 04 47.3**	**+0.8**
MAJO	**Matsushiro**	**5.27**	**236**	**ePn**	**Pn**	**01 04 47.1**	**+0.6**
MAJO				eSn	Sn	01 05 45.0	-1.5
MAT	**Matsushiro**	**5.27**	**236**	**P**	**Pn**	**01 04 47.0**	**+0.5**
MAT				eS	Sn	01 05 51.4	+4.9
MAT	**Matsushiro**	**5.27**	**236**	**P**	**Pn**	**01 04 47.0**	**+0.5**
MJAR	**Matsushiro Arr**	**5.27**	**236**	**Pn**	**Pn**	**01 04 46.6**	**+0.1**
comp=Z,8.0nm,0.3s,baz=43,slow=11,SNR=99							

MJAR LR LR 01 07 02.5
comp=Z,2μm,21.6s,baz=55,slow=42
MJB9 Matsu-Tunnel 5.27 236 *e*Pn **Pn 01 04 47.1 +0.6**
MJB9 *e*Sn **Sn 01 05 43.1 -3.3**
KUR Kuril'sk 6.44 28 *e*P **Pn 01 05 01.8 -0.7**
KUR *e*S **Sn 01 06 10.2 -5.1**
KUR pmax pmax
comp=Z,71nm,0.7s
KUR pmax pmax
comp=N,32nm,0.8s
KUR smax smax
comp=E,127nm,0.5s
KUR smax smax
comp=N,183nm,0.6s
KUR smax smax
comp=E,1μm,4.8s
INU Inuyama 6.77 233 *e*Pn **Pn 01 05 06.7 -0.4**
INU *e*Sn **Sn 01 06 24.4 +1.1**
JHJ2 Mitsune 7.17 207 *e*Pn Pn 01 05 05.8 -6.8
JHJ2 *e*S **Sn 01 06 26.8 -6.4**
JHJ Hachijo jima 2 7.17 207 Pn **Pn 01 05 12.4 -0.2**
comp=E,17nm,0.3s,baz=52,slow=12,SNR=3.3
JHJ Sn **Sn 01 06 26.8 -6.6**
comp=E,54nm,0.3s,baz=43,slow=19,SNR=4.0
JHJ LR LR 01 08 19.7
comp=E,1μm,19.9s,baz=64,slow=41
YSS Yuzh-Sakhalins 7.39 355 *e*P **Pn 01 05 16.2 +0.7**
YSS *e*S **Sn 01 06 37.5 -1.1**
YSS pmax pmax
comp=Z,30nm,1.0s
YSS MLR MLR
comp=Z,5μm,16.0s
YSS MLR MLR
comp=N,4μm,14.0s
YSS MLR MLR
comp=E,3μm,16.0s
YSS Yuzh-Sakhalins 7.39 355 *e*Pn **Pn 01 05 17.0 +1.4**
VLA Vladivostok 9.53 296 *e*P **Pn 01 05 46.2 +1.3**
USRK Ussuriysk Ar. 9.84 302 Pn **Pn 01 05 50.4 +1.2**
comp=E,0.8nm,0.3s,baz=101,slow=16,SNR=33
MSHR Mys Shultsa 9.90 292 *i*P **Pn 01 05 50.7 +0.7**
HABR Khabarovsk 10.82 328 *e*P **Pn 01 05 59.4 -3.1**
HABR *e*S **Sn 01 07 56.9 -5.9**
HABR pmax pmax
comp=E,45nm,1.4s
HABR pmax pmax
comp=N,44nm,1.4s
HABR pmax pmax
comp=Z,93nm,1.4s
HABR MLR MLR
comp=Z,3μm,14.0s
TYV Tymovskoe 11.30 357 *e*P **Pn 01 06 07.5 -1.5**
TYV *e*S **Sn 01 08 09.0 -5.4**
TYV pmax pmax
comp=Z,10.0nm,0.6s
TYV smax smax
comp=E,1μm,8.0s
TYV MLR MLR
comp=E,9μm,22.0s
MDJ Mudanjiang 11.59 300 P **Pn 01 06 15.8 +2.7**
MDJ S **Sn 01 08 21.8 +0.1**
MDJ pmax pmax
comp=E,31nm,1.0s
MDJ pmax pmax
comp=E,720nm,8.7s
MDJ LR LR
comp=E,3μm,16.3s
MDJ LR LR
comp=E,4μm,15.1s
MDJ LR LR
comp=E,5μm,15.1s
MDJ Mudanjiang 11.59 300 *e*Pn **Pn 01 06 16.5 +3.4**
JNU Nakatsue 12.15 242 Pn **Pn 01 06 20.1 -0.7**
comp=E,0.3nm,0.3s,baz=76,slow=10,SNR=5.8
KSRS Korea Array 12.51 265 Pn **Pn 01 06 28.4 +2.7**
comp=E,0.4nm,0.3s,baz=88,slow=13,SNR=15
KSRS LR LR 01 10 46.3
comp=E,2μm,19.0s,baz=74,slow=35
KS01 Wonju Array Si 12.53 265 *e*Pn **Pn 01 06 25.4 -0.5**
KS15 Wonju Array Si 12.54 265 *e*Pn **Pn 01 06 27.6 +1.5**
KSAR Wonju Array Be 12.54 265 P **Pn 01 06 28.4 +2.3**
KSAR Wonju Array Be 12.54 265 Pn **Pn 01 06 28.4 +2.3**
KLR Kul'dur 12.84 323 Pn **Pn 01 06 28.7 -1.5**
comp=E,0.1nm,0.3s,baz=135,slow=11,SNR=26
KLR LR LR 01 11 36.0
comp=E,2μm,19.6s,baz=136,slow=38
KLR Kul'dur 12.84 323 *c i*P **Pn 01 06 28.4 -1.8**
NKL Nikolayevsk 13.72 352 *e*P **Pn 01 06 40.0 -2.1**
NKL *e*S **Sn 01 09 14.0 +0.4**
NKL pmax pmax
comp=N,300nm,0.5s
NKL pmax pmax
comp=Z,350nm,5.0s
NKL smax smax
comp=E,500nm,7.0s
NKL MLR MLR
comp=E,2μm,16.0s
NKL MLR MLR
comp=N,2μm,15.0s
NKL MLR MLR
comp=Z,3μm,15.0s
SKR Severo-Kuril's 14.13 34 *e*P **P 01 06 54.8 -0.3**
SKR MLR MLR
comp=Z,1μm,16.0s
PEA0 Petropavlovsk- 16.59 31 *e*Pn **P 01 07 21.9 -0.6**
PEA0B Petropavlovsk- 16.59 31 *e*Pn **P 01 07 22.1 -0.4**
comp=Z,92nm,1.6s
PETK Petropavlovsk- 16.59 31 Pn **P 01 07 21.3 -1.1**
comp=Z,0.2nm,0.3s,baz=204,slow=8.5,SNR=12
PETK LR LR 01 14 51.0
comp=Z,559nm,18.3s,baz=220,slow=41
PET Petropavlovsk 16.92 32 ⇑*i*P **P 01 07 27.4 +1.4**
PET *e*S **S 01 10 37.9 -3.4**
PET pmax pmax
comp=Z,60nm,1.0s
PET MLR MLR
comp=Z,1μm,16.0s
PET MLR MLR
comp=Z,1μm,13.0s
PET Petropavlovsk 16.92 32 *e*Pn **P 01 07 27.4 +1.4**
comp=Z,60nm,1.1s
DL2 Dalian 17.08 275 P **Pn 01 07 24.5 -1.8**
DL2 S **Sn 01 10 33.5 -1.9**
DL2 pmax pmax
comp=Z,81nm,1.3s
DL2 pmax pmax
comp=Z,630nm,8.4s
DL2 LR LR
comp=Z,2μm,13.6s
DL2 LR LR
comp=Z,2μm,17.5s
HIA Hailar 19.56 308 *e*P **P 01 07 51.1 -4.1**
HIA pmax pmax
comp=Z,39nm,1.2s
HIA Hailar 19.56 308 *e*P **P 01 07 53.1 -2.1**
comp=Z,41nm,0.8s
SSE Sheshan 20.16 252 P **P 01 08 00.6 -1.2**
SSE S **S 01 11 45.5 -1.5**
SSE pmax pmax
comp=Z,35nm,0.9s
SSE pmax pmax
comp=Z,470nm,5.8s
SSE LR LR
comp=Z,2μm,13.0s
SSE LR LR
comp=Z,1μm,13.0s
SSE LR LR
comp=Z,2μm,12.8s
MA2 Magadan 20.51 10 P **P 01 08 06.1 +0.8**
comp=Z,32nm,0.7s,baz=198,slow=9.5,SNR=21
BJI Beijing 21.09 280 P **P 01 08 08.8 -3.0**
BJI S **S 01 12 04.0 -1.4**
BJI pmax pmax
comp=Z,44nm,1.5s
BJI pmax pmax
comp=Z,350nm,3.5s
BJI LR LR
comp=Z,2μm,14.7s
BJI LR LR
comp=Z,3μm,15.8s
BJI LR LR
comp=Z,2μm,17.3s
BJT Baijiatuau 21.10 280 *e*P **P 01 08 09.5 -2.4**
BJT Baijiatuau 21.10 280 *e*P **P 01 08 09.5 -2.4**
TIA Tai'an 21.18 269 ⇑P **P 01 08 10.1 -2.8**
TIA S **S 01 12 06.0 -1.3**
TIA pmax pmax
comp=Z,70nm,1.2s
TIA LR LR
comp=Z,2μm,13.7s
TIA LR LR
comp=Z,3μm,14.9s
TIA LR LR
comp=Z,5μm,14.7s
CLNS Chul'man 21.19 331 *e*P **P 01 08 11.7 -1.1**
CLNS *e* 01 08 21.7
CLNS *e*PPP PPP 01 08 35.1
CLNS *e* 01 11 58.7
CLNS *e*S Sn 01 12 13.7 -0.8
CLNS *e*SS SnSn 01 12 47.5 +18
CLNS *e* 01 19 42.3
CLNS pmax pmax
comp=Z,52nm,1.3s
CLNS pmax pmax
comp=N,46nm,1.3s
CLNS pmax pmax
comp=E,22nm,1.2s
CLNS pmax pmax
comp=Z,68nm,1.2s
CLNS pmax pmax
comp=E,56nm,0.9s
CLNS pmax pmax
comp=N,62nm,1.3s
CLNS MLR MLR
comp=Z,2μm,14.0s
CLNS MLR MLR
comp=E,2μm,13.0s
CLNS MLR MLR
comp=N,2μm,13.0s
NJ2 Nanjing 21.43 257 *e*P **P 01 08 13.3 -2.2**
NJ2 LR LR
comp=N,2μm,13.0s
NJ2 LR LR
comp=N,1μm,11.9s
NJ2 LR LR
comp=N,2μm,11.4s
SEY Seymchan 23.96 10 P **P 01 08 41.5 +0.1**
comp=N,19nm,0.7s,baz=182,slow=7.6,SNR=40
SEY Seymchan 23.96 10 *ce*P **P 01 08 42.2 +0.8**
YAK Yakutsk 24.04 344 P **P 01 08 40.8 -1.3**
comp=N,29nm,0.4s,baz=313,slow=5.7,SNR=7.8
YAK LR LR 01 18 27.4
comp=N,701nm,20.9s,baz=148,slow=38
YAK Yakutsk 24.04 344 *e*P **P 01 08 40.1 -2.0**
YAK *e**PP **pP 01 08 49.4 +0.4**
YAK *e* 01 09 09.7
YAK *e*S **S 01 12 53.3 -4.4**
YAK *e**SS **sS 01 13 10.0 +1.0**
YAK *e*SS **SnSn 01 13 34.6 -4.4**
YAK *e* 01 19 45.7
YAK pmax pmax
comp=Z,43nm,1.4s
YAK pmax pmax
comp=N,34nm,1.5s
YAK pmax pmax
comp=E,12nm,1.5s
YAK pmax pmax
comp=Z,43nm,1.0s
YAK pmax pmax
comp=N,39nm,1.1s
YAK pmax pmax
comp=E,31nm,1.4s
YAK smax smax
comp=N,385nm,3.3s
YAK smax smax
comp=E,134nm,2.5s
YAK MLR MLR
comp=N,1μm,13.0s
YAK MLR MLR
comp=Z,923nm,17.0s
YAK MLR MLR
comp=N,750nm,16.0s
TIY Taiyuan 24.40 276 *e*P **P 01 08 47.3 +1.5**
TIY S **S 01 12 56.5 -7.7**
TIY pmax pmax
comp=N,24nm,0.6s
TIY pmax pmax
comp=N,300nm,7.6s
TIY LR LR
comp=N,2μm,13.7s
TIY LR LR
comp=N,1μm,13.6s
TIY LR LR
comp=N,2μm,18.0s
HHC Hu-ho-hao-te 24.47 283 *e*P **P 01 08 43.9 -2.6**
HHC pP pP 01 08 47.6 -5.8
HHC PP **PnPn 01 09 21.8 +4.4**
HHC S **S 01 13 00.9 -4.5**
HHC sS sS 01 13 11.0 -5.7
HHC pmax pmax
comp=N,10.0nm,1.1s
HHC pmax pmax
comp=N,380nm,7.8s
HHC LR LR
comp=N,1μm,14.1s
HHC LR LR
comp=N,2μm,15.2s
HHC LR LR
comp=N,2μm,14.3s
SSLB Suanglung 24.83 237 *e*P **P 01 08 49.1 -0.6**
comp=N,18nm,0.9s
YULB Yu-li 24.88 236 *e*P **P 01 08 49.5 -0.7**
comp=N,17nm,0.9s
WHN Wuhan 25.54 258 ⇑*i*P **P 01 08 55.5 -0.6**
WHN pP **pP 01 09 01.4 -1.5**
WHN S **S 01 13 19.3 -3.1**
WHN pmax pmax
comp=N,240nm,1.0s
WHN LR LR
comp=N,3μm,16.7s
WHN LR LR
comp=N,3μm,11.9s
WHN LR LR
comp=N,4μm,13.2s
QZH Quanzhou 25.63 243 ⇑*i*P **P 01 08 56.1 -0.8**
QZH pmax pmax
comp=N,2μm,6.1s
QZH LR LR
comp=N,3μm,13.1s
QZH LR LR
comp=N,1μm,9.7s
QZH LR LR
comp=N,3μm,12.2s
BOD Bodaibo 26.42 323 *e*P **P 01 09 03.2 -0.6**
BOD pmax pmax
comp=Z,54nm,1.3s
SONA1 Songino Array 27.94 300 *e*P **P 01 09 17.6 -0.2**
SONM Songino Array 27.95 299 P **P 01 09 17.9 +0.1**
comp=Z,11nm,0.8s,baz=98,slow=7.5,SNR=62
H11N2 WAKE ISLAND Hy 28.13 128 T T 01 39 03.9
baz=320,slow=75
H11N1 WAKE ISLAND Hy 28.14 128 T T 01 38 47.4
baz=320,slow=75
H11N3 WAKE ISLAND Hy 28.15 128 T T 01 39 00.4
baz=320,slow=75
XAN Xi'an 28.24 270 P **P 01 09 20.3 -0.1**
XAN pP pP 01 09 26.5 -0.9
XAN sP sP 01 09 29.4 -0.8
XAN PP **PnPn 01 10 09.6 +0.7**
XAN pmax pmax
comp=Z,30nm,1.4s
XAN pmax pmax
comp=Z,220nm,8.0s
XAN LR LR
comp=Z,2μm,15.2s
XAN LR LR
comp=Z,2μm,13.2s
H11S1 WAKE ISLAND Hy 28.95 130 T T 01 39 53.4
baz=316
H11S3 WAKE ISLAND Hy 28.95 130 T T 01 39 53.6
baz=316,slow=74
H11S2 WAKE ISLAND Hy 28.97 130 T T 01 39 54.6
baz=316,slow=74
ENH Enshi 29.37 262 *e*P **P 01 09 30.0 -0.5**
comp=Z,88nm,1.3s
IRK Irkutsk 29.80 308 *e*P P 01 09 28.5 -5.5
IRK pmax pmax
comp=Z,83nm,2.6s
TLY Talaya 30.10 307 P **P 01 09 36.7 0.0**
comp=Z,2.2nm,0.6s,baz=100,slow=12,SNR=11
TLY Talaya 30.10 307 *e*P **P 01 09 37.5 +0.8**
TLY *e* 01 10 41.0
TLY *e*SS SS 01 16 29.9 -12
TLY pmax pmax
comp=Z,24nm,1.4s
TLY MLR MLR
comp=Z,1μm,14.0s
TLY Talaya 30.10 307 *e*P **P 01 09 38.2 +1.5**
comp=Z,44nm,1.5s
ZAK Zakamensk 30.18 304 *e*P **P 01 09 37.5 0.0**
ZAK pmax pmax
comp=Z,19nm,1.5s
BILL Bilibino 31.08 16 *d i*P **P 01 09 46.2 +1.0**
BILL *e* 01 10 51.3
BILL *e*S **S 01 14 44.9 -4.0**
BILL pmax pmax
comp=Z,8.0nm,1.0s
BILL MLR MLR
comp=Z,615nm,16.0s
LZH Lanzhou 31.46 276 *e*P **P 01 09 50.0 +0.9**
LZH pP pP 01 09 53.5 -2.5
LZH sP sP 01 09 54.8 -4.1
LZH PP **PnPn 01 10 53.0 +0.8**
LZH S **S 01 14 54.1 -1.7**
LZH sS sS 01 15 02.0 -5.3
LZH SS **SnSn 01 16 40.5 -0.3**
LZH pmax pmax
comp=Z,49nm,1.3s
LZH pmax pmax
comp=Z,220nm,7.0s
LZH LR LR
comp=Z,1μm,12.6s
LZH LR LR
comp=Z,2μm,13.0s
LZH LR LR
comp=Z,2μm,14.9s
MOY Mondy 31.73 307 *e*P **P 01 09 51.4 +0.1**
MOY pmax pmax
comp=Z,33nm,1.4s
GYA Guiyang 33.43 258 ⇑*i*P **P 01 10 05.4 -1.0**
GYA PP **PnPn 01 11 18.0 +0.5**
GYA PcP **PcP 01 12 49.4 +2.0**
GYA S **S 01 15 23.6 -3.0**
GYA ScP **ScP 01 16 32.3 +1.9**
GYA SS **SnSn 01 17 27.9 -0.9**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=Z,930nm,14.0s
GYA LR LR
comp=Z,540nm,15.3s
GYA LR LR
comp=Z,490nm,15.6s
CD2 Chengdu 33.49 268 *e*P **P 01 10 05.8 -1.0**
CD2 sP pP 01 10 10.8 -3.0
CD2 PP **PP 01 11 21.1 -1.5**
CD2 S **S 01 15 26.9 -0.4**
CD2 sS sS 01 15 32.9 -5.9
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
GTA Gaotai 33.58 284 ⇑P **P 01 10 08.0 +0.4**
GTA pP pP 01 10 12.6 -1.9
GTA sP sP 01 10 15.0 -2.4
GTA PP **PnPn 01 11 19.8 +0.6**
GTA PcP **PcP 01 12 49.6 +1.9**
GTA S **S 01 15 28.3 -0.4**
GTA sS sS 01 15 36.8 -3.4
GTA SS **SnSn 01 17 32.8 +0.7**
GTA pmax pmax
comp=Z,31nm,1.2s
GTA pmax pmax
comp=Z,210nm,7.6s
GTA LR LR
comp=Z,570nm,17.6s
GTA LR LR
comp=Z,2μm,17.1s
GTA LR LR
comp=Z,2μm,17.6s
QIZ Qiongzhong 35.60 245 P **P 01 10 24.8 -0.3**
QIZ S **S 01 16 02.3 +2.4**
QIZ LR LR
comp=Z,1μm,14.4s
QIZ LR LR
comp=Z,460nm,16.9s
QIZ LR LR
comp=Z,1μm,16.2s
KRAR Krasnoyarsk 36.91 314 *e*P **P 01 10 36.8 +0.9**
KMI Kunming 37.12 260 P **P 01 10 38.4 +0.1**
KMI pP pP 01 10 42.1 -3.2
KMI sP sP 01 10 43.5 -4.7
KMI PP **PnPn 01 12 04.5 +1.1**
KMI S **S 01 16 23.3 -0.3**
KMI sS sS 01 16 28.8 -6.3
KMI SS **SnSn 01 18 51.6 -6.9**
KMI pmax pmax
comp=Z,27nm,1.0s
KMI pmax pmax
comp=Z,260nm,5.6s
KMI LR LR
comp=Z,1μm,15.1s
KMI LR LR
comp=Z,1μm,15.3s
KMI LR LR
comp=Z,980nm,14.3s
MYLDM Lahad Datu 41.10 220 *e*P **P 01 11 11.6 +0.3**
comp=Z,41nm,1.3s
SKNT Sakolnakorn 41.12 248 P **P 01 11 13.1 +1.6**
comp=Z,22nm,1.1s,comp=Z,3μm
WMQ Urumqi 41.32 295 P **P 01 11 13.4 +0.4**
WMQ pP pP 01 11 20.3 +0.2
WMQ S **S 01 17 31.8 +5.8**
WMQ pmax pmax
comp=Z,41nm,1.0s
WMQ pmax pmax
comp=Z,310nm,4.9s
WMQ LR LR
comp=Z,1μm,12.5s
WMQ LR LR
comp=Z,930nm,14.0s
WMQ LR LR
comp=Z,1μm,16.0s
ZAA0 Zalesovo Array 41.55 310 *e*P **P 01 11 14.7 0.0**
ZALV Zalesovo Beam 41.55 310 P **P 01 11 14.2 -0.5**
comp=Z,7.5nm,0.7s,baz=91,slow=7.6,SNR=34
ZALV PcP **PcP 01 13 11.6 -0.1**
comp=Z,2.2nm,0.6s,baz=72,slow=1.6,SNR=3.1
ZALV LR LR 01 29 17.8
comp=Z,652nm,18.0s,baz=70,slow=37
NRIK Noril'sk 41.72 334 P **P 01 11 15.8 0.0**
comp=Z,1.5nm,0.4s,baz=110,slow=7.5,SNR=8.2
NRIK LR LR 01 30 28.0
comp=Z,855nm,18.0s,baz=105,slow=39
NVS Novosibirsk 42.41 312 *e*P **P 01 11 22.2 +0.6**
NVS *e*S **S 01 17 45.3 +3.7**
NVS pmax pmax
comp=N,21nm,2.0s
NVS pmax pmax
comp=E,34nm,2.0s
NVS pmax pmax
comp=Z,61nm,2.0s
NVS smax smax
comp=N,13nm,2.4s
NVS smax smax
comp=E,36nm,2.4s
LOEI Loei 42.74 251 P **P 01 11 23.1 -1.7**
comp=E,12nm,1.4s,comp=E,3μm
CMAI Chiengmai2 42.89 256 P **P 01 11 27.6 +1.4**
comp=E,125nm,1.6s
UTTA Uttaradit 43.12 252 P **P 01 11 29.5 +1.7**
comp=E,4.6nm,1.0s
CHAI Chaiyaphum 43.26 249 P **P 01 11 29.9 +0.9**
comp=E,5.7nm,0.8s
LAMP Lampang 43.31 254 P **P 01 11 31.0 +1.6**
comp=E,5.4nm,0.9s
CMMT Chiang Mai 43.64 255 P **P 01 11 33.4 +1.3**
comp=E,14nm,2.2s,comp=E,465nm
CHTO Chiang Mai 43.65 255 P **P 01 11 33.5 +1.4**
comp=E,51nm,0.8s,comp=E,2μm
CHTO Chiang Mai 43.65 255 *e*P **P 01 11 32.6 +0.5**
CHTO pmax pmax
comp=Z,20nm,1.3s
CHTO Chiang Mai 43.65 255 *e*P **P 01 11 32.6 +0.5**
comp=Z,20nm,1.3s
LSA Lhasa 43.77 274 P **P 01 11 35.4 +1.9**

LSA pmax pmax
comp=Z,19nm,1.9s
LSA Lhasa 43.77 274 *e*P **P 01 11 34.9 +1.3**
LSA pmax pmax
comp=Z,65nm,1.5s
LSA Lhasa 43.77 274 *e*P **P 01 11 34.9 +1.3**
comp=Z,66nm,1.5s
CMAR Chiang Mai Arr 43.87 255 P **P 01 11 33.9 +0.1**
comp=Z,3.5nm,0.8s,baz=46,slow=7.2,SNR=15
CMAR LR LR 01 29 22.4
comp=Z,210nm,18.4s,baz=61,slow=36
CMAR Chiang Mai Arr 43.87 255*ce*P **P 01 11 34.5 +0.7**
CMAR pmax pmax
comp=Z,4.0nm,0.7s
CM01 Chiang Mai Arr 43.88 254 *e*P **P 01 11 34.0 +0.1**
SUKH Sukhothai 43.96 253 P **P 01 11 36.1 +1.5**
comp=Z,5.6nm,0.9s,comp=Z,81nm
PPLA Purkeypile 44.07 36 *e*P **P 01 11 37.5 +2.4**
comp=Z,23nm,1.5s
CAST Castle Rocks 44.12 36 *e*P **P 01 11 36.1 +0.7**
comp=Z,5.7nm,1.0s
MK01 Makanchi Array 44.31 300 *e*P **P 01 11 36.5 -0.6**
MK31 Makanchi Array 44.31 300 *i* P **P 01 11 36.7 -0.4**
MK31 pmax pmax
comp=Z,15nm,0.8s
MK31 Makanchi Array 44.31 300 *e*P **P 01 11 37.1 0.0**
MKAR Makanchi Array 44.31 300 P **P 01 11 36.9 -0.2**
comp=Z,9.7nm,0.7s,baz=84,slow=9.2,SNR=57
MKAR LR LR 01 30 51.0
comp=Z,206nm,21.3s,baz=77,slow=37
MKAR Makanchi Array 44.31 300 *i* P **P 01 11 37.0 -0.1**
MKAR pmax pmax
comp=Z,10.0nm,0.7s
SRAK Srakaew 44.48 247 P **P 01 11 38.2 -0.6**
comp=Z,34nm,1.6s
MAKZ Makanchi 44.51 300 *e*P **P 01 11 38.7 -0.1**
MAKZ pmax pmax
comp=Z,35nm,1.1s
MAKZ Makanchi 44.51 300 *e*P **P 01 11 38.7 -0.1**
comp=Z,34nm,1.1s
BPAW Bear Paw Mtn. 44.62 35 *e*P **P 01 11 40.6 +1.3**
comp=Z,16nm,1.7s
KTH Kantishna Hill 44.65 35 *e*P **P 01 11 41.9 +2.3**
comp=Z,16nm,1.2s
MLY Manley 44.75 33 *e*P **P 01 11 40.7 +0.3**
comp=Z,13nm,1.4s
SUA Susitna One 44.76 38 *e*P **P 01 11 43.6 +2.9**
comp=Z,7.3nm,1.0s
COLD Coldfoot 45.06 30 *e*P **P 01 11 45.0 +2.2**
comp=Z,27nm,2.0s
KURK Kurchatov 45.79 306 *e*P **P 01 11 48.5 -0.3**
KURK Kurchatov 45.79 306 *e*P **P 01 11 48.5 -0.3**
comp=Z,234nm,0.8s
MDM Murphy Dome 45.81 33 *e*P **P 01 11 50.6 +1.8**
comp=Z,12nm,1.2s
KURBB Kurchatov Arra 45.87 306 P **P 01 11 48.7 -0.7**
comp=Z,16nm,0.7s,baz=80,slow=8.5,SNR=17
CCB Clear Creek Bu 46.00 34 *e*P **P 01 11 50.7 +0.4**
comp=Z,17nm,1.7s
IL1 Eielson Array 46.39 34 *e*P **P 01 11 53.6 +0.2**
ILAR Eielson Array 46.39 34 P **P 01 11 53.6 +0.3**
comp=Z,2.8nm,0.8s,baz=264,slow=6.6,SNR=22
ILB Eielson Array 46.39 34 *e*P **P 01 11 54.5 +1.1**
KLU Klutina 47.07 38 *e*P **P 01 11 57.0 -1.7**
comp=Z,8.7nm,1.0s
PDGK Podgornoye 47.18 296 P **P 01 11 58.2 -1.6**
PDGK pmax pmax
comp=Z,36nm,1.5s
DOT Dot Lake 47.70 35 *e*P **P 01 12 04.6 +1.0**
comp=Z,7.9nm,0.7s
MENT Mentasta 47.93 36 *e*P **P 01 12 07.3 +1.9**
comp=Z,11nm,1.1s
CRQM Cirque 48.50 39 *e*P **P 01 12 10.7 +0.7**
comp=Z,19nm,1.1s
KSM Kuching 48.59 227 *e*P **P 01 12 11.1 +0.2**
comp=Z,5.4nm,0.8s
GUN Gumba 48.69 275 *e*P **P 01 12 12.3 +0.2**
comp=Z,131nm,1.0s
KKN Kakani 49.21 275 *e*P **P 01 12 16.0 +0.1**
comp=Z,67nm,0.8s
PKIN Phulchoki 49.22 275 *e*P **P 01 12 16.4 +0.3**
comp=Z,27nm,0.7s
DMN Daman 49.43 275 *e*P **P 01 12 17.8 +0.1**
GKN Gorkha 49.60 275 *e*P **P 01 12 18.7 -0.1**
VOSK Vostochnaya 49.93 311 *e*P **P 01 12 20.8 0.0**
VOSK pmax pmax
comp=Z,50nm,1.5s
VOSK Vostochnaya 49.93 311 *e*P **P 01 12 20.8 0.0**
comp=Z,50nm,1.5s
BVA0 Borovoye Array 50.19 311 *i* P **P 01 12 22.5 -0.3**
BVA0 pmax pmax
comp=Z,18nm,1.1s
BRVK Borovoye 50.24 311*ce*P **P 01 12 23.7 +0.5**
BRVK pmax pmax
comp=Z,82nm,1.7s
BRVK Borovoye 50.24 311 *e*P **P 01 12 23.5 +0.3**
comp=Z,36nm,1.2s
OTUK Ortayu 50.39 305 P **P 01 12 22.9 -1.5**
OTUK pmax pmax
comp=Z,23nm,1.2s
FRU Bishkek 50.71 297 *e*P **P 01 12 25.0 -1.9**
FRU *e* 01 12 34.0
FRU pmax pmax
comp=Z,60nm,1.6s
FRU pmax pmax
comp=E,1μm,12.0s
PYUN Piuthan 50.81 276 *e*P **P 01 12 29.0 +0.9**
comp=E,283nm,1.4s
AAK Ala-Archa 50.86 297*c i*P **P 01 12 28.1 -0.1**
AAK pmax pmax
comp=Z,34nm,1.3s
AAK Ala-Archa 50.86 297 *e*P **P 01 12 29.4 +1.1**
comp=Z,33nm,1.5s
KSH Kashi 51.01 293 *e*P **P 01 12 33.4 +4.1**
KSH pP sP 01 12 37.8 -1.5
KSH *es*P pP 01 12 40.3 +3.8
KSH *e*PP **PP 01 14 30.8 +5.1**
KSH PcS **PcS 01 17 45.8 +2.9**
KSH S **S 01 19 49.5 +4.3**
KSH ScS **ScS 01 22 20.3 +1.7**
KSH pmax pmax
comp=Z,11nm,1.0s
KSH pmax pmax
comp=Z,200nm,3.7s
KSH LR LR
comp=Z,660nm,15.5s
KSH LR LR
comp=Z,690nm,14.6s
KSH LR LR
comp=Z,1μm,15.1s
HYT Haines Junctio 51.20 38 *e*P **P 01 12 32.5 +2.1**
comp=Z,11nm,0.9s
INK Inuvik 51.31 28 P **P 01 12 31.9 +0.9**
comp=Z,5.1nm,0.8s,baz=300,slow=5.5,SNR=7.8
INK Inuvik 51.31 28 *e*P **P 01 12 32.1 +1.2**
INK pmax pmax
comp=Z,34nm,1.9s
INK Inuvik 51.31 28 *e*P **P 01 12 32.1 +1.2**
comp=Z,34nm,1.9s
KK31 Karatay Array 53.40 299 *i* P **P 01 12 46.2 -0.7**
KK31 pmax pmax
comp=Z,8.0nm,0.8s
KKAR Karatay Array 53.40 299 *e*P **P 01 12 46.7 -0.2**
KKAR *e* 01 13 55.5
KKAR Karatay Array 53.40 299 *e*P **P 01 12 46.7 -0.2**
KKAR *e*PcP **PcP 01 13 55.5 +1.5**
SVE Sverdlovsk 54.42 318‖ *e*P **P 01 12 54.4 +0.3**
SVE pmax pmax
comp=Z,50nm,1.5s
SVE MLR MLR
comp=Z,2μm,14.0s
PSI Prapat 54.61 240 LR LR 01 39 19.3
comp=Z,208nm,18.1s,slow=39
NDI New Delhi 54.94 280 *e*P P 01 12 51.0 -7.3
SOKR Solikamsk 55.39 322*d i*P **P 01 13 00.0 -1.0**
SOKR S **S 01 20 43.3 -0.6**
SOKR pmax pmax
comp=Z,19nm,1.2s
SOKR MLR MLR
comp=Z,615nm,14.0s
ARU Arti 55.63 318 P **P 01 13 02.5 -0.4**
comp=Z,19nm,0.9s,baz=55,slow=5.1,SNR=19
ARU Arti 55.63 318*c i*P **P 01 13 02.9 0.0**
ARU 01 14 05.6
ARU 01 15 04.2
ARU PPP PPP 01 16 18.3
ARU S **S 01 20 46.5 -0.8**
ARU 01 22 43.0
ARU SS **SS 01 24 28.5 -3.5**
ARU SSS SSS 01 26 38.6
ARU pmax pmax
comp=Z,54nm,1.2s
ARU MLR MLR
comp=Z,2μm,14.0s
ARU Arti 55.63 318 *e*P **P 01 13 03.2 +0.3**
comp=Z,87nm,1.5s
GSI Gunungsitoli 56.62 240 *e*P **P 01 13 07.3 -3.2**
comp=Z,35nm,0.5s
AB31 Akbulak array 57.66 310 P **P 01 13 16.1 -1.3**
AB31 pmax pmax
comp=Z,9.0nm,0.7s
ABKAR Akbulak array 57.66 310 *e*P **P 01 13 17.4 -0.1**
KBL Kabul 58.16 290 *e*P **P 01 13 21.8 +0.4**
KBL *e* 01 14 06.5
KBL pmax pmax
comp=Z,17nm,1.0s
KBL Kabul 58.16 290 *e*P **P 01 13 21.8 +0.4**
comp=Z,17nm,1.0s
KBL *e*PcP **PcP 01 14 06.5 -6.3**
AKTO Aktyubinsk 58.30 311 P **P 01 13 21.7 -0.2**
comp=Z,5.0nm,0.7s,baz=62,slow=10,SNR=14
AKTO Aktyubinsk 58.30 311 P **P 01 13 21.0 -0.9**
AKTO pmax pmax
comp=Z,9.0nm,0.9s
RES Resolute Bay 59.68 15 P **P 01 13 31.2 +0.1**
comp=Z,4.5nm,0.8s,baz=300,slow=5.5,SNR=4.4
WRA Warramunga Arr 59.86 190 P **P 01 13 32.7 -0.2**
comp=Z,3.1nm,0.9s,baz=11,slow=7.3,SNR=9.3
YKA Yellowknife Ar 60.71 31 P **P 01 13 38.4 +0.1**
comp=Z,2.3nm,0.8s,baz=296,slow=6.0,SNR=5.0
YKA LR LR 01 40 15.4
comp=Z,10nm,21.7s,baz=0.0,slow=36
ARCES ARCESS Array B 62.23 339 P **P 01 13 48.4 -0.1**
comp=Z,2.2nm,0.8s,baz=60,slow=7.2,SNR=4.4
KLMR Klimovskoe 62.54 328 *e*P **P 01 13 49.2 -1.5**
KLMR *e* 01 16 05.1
KLMR pmax pmax
comp=Z,30nm,1.4s
DAG Danmarks Havn 63.38 356 *i* P **P 01 13 55.6 -0.4**
comp=Z,5.4nm,0.9s
AS01 Alice Springs 63.58 190 *e*P **P 01 13 58.2 +0.3**
ASAR Alice Springs 63.58 190 P **P 01 13 57.7 -0.2**
comp=Z,1.2nm,0.7s,baz=8.1,slow=7.2,SNR=12
GEYT Alibeck 64.15 299 P **P 01 14 01.1 -0.7**
comp=Z,4.1nm,0.8s,baz=44,slow=4.5,SNR=14
GEYT LR LR 01 44 06.7
comp=Z,351nm,18.5s,baz=95,slow=38
MOS Moscow 66.25 324 *e*P **P 01 14 14.5 -0.5**
MOS *e* 01 14 24.7
MOS pmax pmax
comp=Z,51nm,1.1s
MOS MLR MLR
comp=Z,1μm,17.0s
MOS MLR MLR
comp=E,1μm,18.0s
MOS MLR MLR
comp=N,900nm,17.0s
C09A Chrisman Ranch 66.69 47 *e*P **P 01 14 19.8 +1.7**
comp=N,5.8nm,0.9s
D08A Wollman Farm, 66.74 48 *e*P **P 01 14 20.0 +1.7**
comp=N,4.6nm,0.8s
VRH Novokhopyorsk 66.87 318 *e*P **P 01 14 18.5 -0.5**
VRH pmax pmax
comp=Z,9.0nm,0.6s
NEW Newport 67.08 46 *e*P **P 01 14 22.1 +1.6**
NEW pmax pmax
comp=Z,7.0nm,1.1s
NEW Newport 67.08 46 *e*P **P 01 14 22.1 +1.6**
comp=Z,7.0nm,1.1s
OBN Obninsk 67.10 323‖ *i*P **P 01 14 20.2 -0.2**
OBN *e* 01 14 46.8
OBN *e*PPP PPP 01 18 25.4
OBN *i* S **S 01 23 16.5 +3.6**
OBN pmax pmax
comp=Z,28nm,1.7s
OBN MLR MLR
comp=Z,1μm,16.0s
FIA1 FINESS Array S 67.37 333 *e*P **P 01 14 22.4 +0.3**
FINES FINESS Array B 67.37 333 P **P 01 14 21.9 -0.2**
comp=Z,5.2nm,0.7s,baz=49,slow=8.6,SNR=20
FINES LR LR 01 46 58.2
comp=Z,1μm,18.3s,baz=34,slow=39
E09A Wood Farm, Sta 67.48 48 *e*P **P 01 14 25.2 +2.1**
comp=Z,13nm,1.1s
K05A Summer Lake 67.97 52 *e*P **P 01 14 29.1 +2.6**
comp=Z,65nm,1.7s
SUMG Summit 68.12 1 *i* P **P 01 14 27.6 +0.5**
comp=Z,19nm,1.3s
SUMG Summit 68.12 1 *e*P **P 01 14 27.6 +0.5**
SUMG pmax pmax
comp=Z,29nm,1.5s
SUMG Summit 68.12 1 *e*P **P 01 14 27.6 +0.5**
comp=Z,29nm,1.5s
VSR Storozhevoye 68.17 319 *e*P **P 01 14 26.9 -0.4**
VSR pmax pmax
comp=Z,20nm,1.3s
VSR MLR MLR
comp=Z,920nm,16.0s
MOD Modoc Plateau 68.80 53 *e*P **P 01 14 34.0 +2.4**
comp=Z,18nm,1.7s
BMO Blue Mountains 68.91 49 *e*P **P 01 14 34.1 +1.9**
BMO pmax pmax
comp=Z,5.0nm,1.1s
BMO Blue Mountains 68.91 49 *e*P **P 01 14 34.0 +1.9**
comp=Z,5.3nm,1.1s
VSU Vasula 69.14 330*ce*P **P 01 14 35.1 +1.9**
VSU pmax pmax
comp=Z,109nm,1.7s
SWMT Swartz Lake 69.23 45 *e*P **P 01 14 35.9 +1.8**
ORV Oroville 69.38 55 *e*P **P 01 14 36.4 +1.4**
ORV pmax pmax
comp=Z,8.0nm,1.3s
ORV Oroville 69.38 55 *e*P **P 01 14 36.4 +1.4**
comp=Z,8.3nm,1.3s
WVOR Wild Horse Val 69.51 52 *e*P **P 01 14 38.0 +2.0**
WVOR pmax pmax
comp=Z,5.0nm,0.9s
WVOR Wild Horse Val 69.51 52 *e*P **P 01 14 38.0 +2.0**
comp=Z,5.2nm,0.9s
SLMT Seeley Lake 69.67 45 *e*P **P 01 14 38.5 +1.6**
GOF Gofitskoye 69.70 312‖ *e*P **P 01 14 36.6 -0.3**
GOF pmax pmax
comp=Z,28nm,0.9s
GUDG Gudauri 70.38 309 P **P 01 14 42.2 +0.8**
DGRG David-gareji 70.43 308 P **P 01 14 42.6 +1.0**
DGRG David-gareji 70.43 308 P **P 01 14 42.6 +1.0**
ZEI Tsey 70.54 310 *e*P **P 01 14 40.4 -1.9**
ZEI pmax pmax
comp=Z,41nm,1.1s
KVAR Kislovodsk Arr 70.56 311 P **P 01 14 42.8 +0.5**
comp=Z,59nm,1.3s,baz=17,slow=8.9,SNR=33
KIV Kislovodsk 70.56 311‖ *i*P **P 01 14 42.9 +0.6**
KIV *e* 01 15 04.4
KIV *e* 01 17 19.7
KIV *e*S **S 01 23 56.6 +2.1**
KIV pmax pmax
comp=Z,83nm,1.7s
KIV Kislovodsk 70.56 311 *e*P **P 01 14 43.6 +1.2**
comp=Z,44nm,1.0s
KIV *e*PP **PP 01 17 18.1 -0.1**
KBZ Khabaz 70.57 311 P **P 01 14 43.1 +0.9**
comp=Z,10nm,1.0s,baz=48,slow=6.1,SNR=21
KBZ LR LR 01 46 58.2
comp=Z,242nm,18.0s,baz=20,slow=37
PAHR Pah Rah Range 70.63 54 *e*P **P 01 14 44.7 +1.8**
comp=Z,7.9nm,1.2s
TBLG Delisi 70.66 308 P **P 01 14 42.6 -0.3**
TBLG Delisi 70.66 308 P **P 01 14 42.6 -0.3**
ONI Oni 70.92 310 P **P 01 14 45.2 +0.7**
ONI Oni 70.92 310 P **P 01 14 45.2 +0.7**
NEY Neytrino 70.96 311 *e*P **P 01 14 45.5 +0.6**
NEY pmax pmax
comp=Z,5.0nm,2.0s
CMB Columbia Colle 70.97 56 *e*P **P 01 14 46.6 +1.8**
CMB pmax pmax
comp=Z,7.0nm,1.1s
CMB Columbia Colle 70.97 56 *e*P **P 01 14 46.6 +1.8**
comp=Z,6.9nm,1.1s
LRM Limekiln Ridge 71.09 46 *e*P **P 01 14 47.0 +1.3**
STKA Stephens Creek 71.13 182 P **P 01 14 45.8 +0.2**
comp=Z,1.5nm,0.7s,baz=294,slow=6.1,SNR=3.9
HLID Hailey 71.35 49 *e*P **P 01 14 49.2 +1.9**
comp=Z,4.0nm,1.0s
BMN Battle Mountai 71.55 53 *e*P **P 01 14 50.7 +2.3**
BMN pmax pmax
comp=Z,11nm,1.4s
BMN Battle Mountai 71.55 53 *e*P **P 01 14 50.7 +2.3**
comp=Z,11nm,1.4s
GNI Garni 71.59 307 P **P 01 14 49.4 +0.7**
comp=Z,4.6nm,0.8s,baz=182,slow=1.1,SNR=8.8
GNI Garni 71.59 307*ce*P **P 01 14 51.1 +2.4**
GNI pmax pmax
comp=Z,80nm,1.7s
GNI Garni 71.59 307 *e*P **P 01 14 51.1 +2.4**
comp=Z,46nm,1.4s
AKH Akhalkalaki 71.60 309 P **P 01 14 49.6 +0.8**
AKH Akhalkalaki 71.60 309 P **P 01 14 49.6 +0.8**
BOZ Bozeman (W) 71.66 46 *e*P **P 01 14 51.0 +2.0**
BOZ pmax pmax
comp=Z,6.0nm,0.8s
BOZ Bozeman (W) 71.66 46 *e*P **P 01 14 51.0 +2.0**
comp=Z,6.2nm,0.8s
NC405 NORSAR Array S 72.30 338 *e*P **P 01 14 53.8 +1.4**
NC204 NORSAR Array S 72.44 338 *e*P **P 01 14 54.0 +0.7**
NB201 NORSAR Array S 72.47 338 *e*P **P 01 14 54.9 +1.4**
HFS Hagfors 72.48 336 P **P 01 14 52.7 -0.7**
comp=Z,4.1nm,0.7s,baz=72,slow=4.8,SNR=8.1
SOC Sochi 72.50 312 *e*P P 01 14 44.0 -10
NB2 NORSAR Subarra 72.50 338 P **P 01 14 53.6 -0.1**
comp=Z,14nm,1.1s,baz=37,slow=6.2
NOA NORSAR Array B 72.50 338 P **P 01 14 53.3 -0.4**
comp=Z,3.6nm,0.8s,baz=39,slow=6.0,SNR=13
NOA LR LR 01 50 56.7
comp=Z,408nm,18.5s,baz=25,slow=39
NOA NORSAR Array B 72.50 338 P **P 01 14 53.3 -0.4**
NOA pmax pmax
comp=Z,7.0nm,1.0s
NOA MLR MLR
comp=Z,408nm,18.5s
NBO02 NORSAR Array S 72.60 338 *e*P **P 01 14 54.2 0.0**
ANN Anapa 73.02 314 *e*P **P 01 14 56.9 0.0**
ANN *e* 01 15 10.0
ANN *e*S **S 01 24 24.7 +2.2**
ANN *e*SS **SS 01 29 07.8 +5.2**
ANN pmax pmax
comp=Z,29nm,1.5s
IMW Indian Meadow 73.13 47 *e*P **P 01 15 00.7 +2.7**
comp=Z,16nm,1.5s
IMW *e*PP **PP 01 17 43.9 +3.4**
MOOW Moose Ponds 73.33 47 *e*P **P 01 15 01.1 +2.0**
AKASG Malin Array Be 73.34 323 P **P 01 14 58.4 -0.4**
comp=Z,3.8nm,0.6s,baz=42,slow=6.5,SNR=21
AKASG LR LR 01 50 47.1
comp=Z,298nm,20.1s,baz=55,slow=39
KIEV Kiev 73.36 323 *i* P **P 01 14 59.1 +0.3**
KIEV pmax pmax
comp=Z,14nm,1.2s
KIEV Kiev 73.36 323 *e*P **P 01 14 59.0 +0.1**
comp=Z,3.3nm,0.4s
TPAW Teton Pass 73.38 47 *e*P **P 01 15 00.7 +1.2**
comp=Z,1.4nm,0.7s
HVU Hansel Valley 73.40 49 *e*P **P 01 15 01.6 +2.1**
HVU pmax pmax
comp=Z,7.0nm,1.2s
HVU Hansel Valley 73.40 49 *e*P **P 01 15 01.6 +2.1**
comp=Z,6.6nm,1.2s
R11A Troy Canyon, C 73.81 54 *e*P **P 01 15 03.8 +1.8**
comp=Z,8.1nm,1.3s
HWUT Hardware Ranch 74.21 49 *e*P **P 01 15 06.4 +2.1**
comp=Z,13nm,1.4s
TPNV Topopah Spring 74.25 55 *e*P **P 01 15 06.4 +1.8**
TPNV pmax pmax
comp=Z,7.0nm,1.0s
TPNV Topopah Spring 74.25 55 *e*P **P 01 15 06.3 +1.8**
comp=Z,7.4nm,1.0s
DUG Dugway, Tooele 74.36 51 *e*P **P 01 15 06.9 +1.8**
DUG pmax pmax
comp=Z,8.0nm,1.1s
DUG Dugway, Tooele 74.36 51 *e*P **P 01 15 06.9 +1.8**
comp=Z,8.1nm,1.1s
TCUT Toone Canyon 74.61 49 *e*P **P 01 15 07.8 +1.0**
comp=Z,17nm,1.1s
PDAR Pinedale Array 74.63 47 P **P 01 15 07.7 +1.0**
comp=Z,1.5nm,0.8s,baz=260,slow=3.4,SNR=9.1
SIM Simferopol' 74.73 316 *e*P **P 01 15 07.8 +0.8**
SIM pmax pmax
comp=Z,9.0nm,1.1s
SHPR Sheep Range 75.21 55 *e*P **P 01 15 11.3 +1.1**
comp=Z,6.3nm,1.1s
CCUT Cedar City 75.68 53 *e*P **P 01 15 14.2 +1.3**
comp=Z,8.9nm,1.3s
MSU Marysvale 75.80 52 *e*P **P 01 15 15.5 +1.9**
MSU Marysvale 75.80 52 *e*P **P 01 15 15.5 +1.9**
TMUT Trail Mountain 75.89 51 *e*P **P 01 15 17.2 +3.1**
comp=Z,11nm,1.5s
P17A Butcher Ranch, 76.05 50 *e*P **P 01 15 16.0 +1.1**
comp=Z,30nm,1.8s
LCMT Little Creek M 76.10 53 *e*P **P 01 15 16.3 +1.1**
comp=Z,6.8nm,1.1s
MTPU Mount Pierson 76.10 52 *e*P **P 01 15 16.3 +0.8**
comp=Z,14nm,1.6s
KNB Kanab 76.36 53 *e*P **P 01 15 19.3 +2.6**
KNB pmax pmax
comp=Z,23nm,1.6s
KNB Kanab 76.36 53 *e*P **P 01 15 19.3 +2.6**
comp=Z,23nm,1.6s
SRU San Rafael Swe 76.41 50 *e*P **P 01 15 18.7 +1.7**
SRU pmax pmax
comp=Z,6.0nm,0.9s
SRU San Rafael Swe 76.41 50 *e*P **P 01 15 18.7 +1.7**
comp=Z,5.9nm,0.9s
RSSD Black Hills 76.75 43 *e*P **P 01 15 19.9 +1.0**
RSSD pmax pmax
comp=Z,4.0nm,0.8s
RSSD Black Hills 76.75 43 *e*P **P 01 15 19.9 +1.0**
comp=Z,4.2nm,0.8s
U15A North Rim 77.06 53 *e*P **P 01 15 22.3 +1.5**
comp=Z,8.7nm,1.1s
KWP Kalwaria Pacla 77.07 325 *e*P **P 01 15 21.9 +1.7**
KWP Kalwaria Pacla 77.07 325 *e*P **P 01 15 21.9 +1.7**
BUR08 Bucovina Ar. S 77.37 322 *e*P **P 01 15 21.9 -0.2**
PV10 Paradox Valley 77.77 50 *e*P **P 01 15 27.2 +2.5**
PV04 Paradox Valley 77.84 50 *e*P **P 01 15 26.5 +1.5**
OJC Ojcow 77.89 327 *e*P **P 01 15 26.1 +1.3**
OJC Ojcow 77.89 327 *e*P **P 01 15 25.4 +0.6**
OJC pmax pmax
comp=Z,65nm,1.8s
OJC Ojcow 77.89 327 *e*P **P 01 15 25.4 +0.6**
comp=Z,65nm,1.8s
N23A Red Feather La 77.89 47 *e*P **P 01 15 26.9 +1.5**
comp=Z,10.0nm,1.3s
PV05 Paradox Valley 77.93 50 *e*P **P 01 15 27.7 +2.1**
UZH Uzhgorod 77.99 325 *e*P **P 01 15 25.3 -0.1**
UZH *e* 01 15 33.5
TIRR Tirgusor 78.05 319‖ *i*P P 01 15 38.3 +13
PV01 Paradox Valley 78.21 50 *e*P **P 01 15 29.0 +1.9**
WUAZ Wupatki 78.21 54 *e*P **P 01 15 29.2 +2.1**
comp=Z,9.6nm,1.1s
BR131 Keskin Array S 78.46 312 *e*P **P 01 15 29.2 +0.8**
BRTR Keskin Array B 78.46 312 P **P 01 15 28.2 -0.2**
comp=Z,2.4nm,1.0s,baz=94,slow=3.7,SNR=15
BRTR LR LR 01 54 54.0
comp=Z,145nm,18.1s,baz=4.0,slow=39
BRTR Keskin Array B 78.46 312*ce*P **P 01 15 29.3 +0.9**
BRTR pmax pmax
comp=Z,2.0nm,1.0s
MLR Muntele Rosu 78.56 321 P **P 01 15 28.3 -0.4**
comp=Z,1.0nm,1.1s,baz=79,slow=5.2,SNR=4.0
ISCO Idaho Springs 78.81 47 *e*P **P 01 15 32.3 +1.8**
ISCO pmax pmax
comp=Z,16nm,1.8s
ISCO Idaho Springs 78.81 47 *e*P **P 01 15 32.3 +1.8**
comp=Z,16nm,1.8s
KSP Ksiaz 78.84 329 *e*P **P 01 15 31.3 +1.2**
KSP Ksiaz 78.84 329 *e*P **P 01 15 31.3 +1.2**
MVCO Mesa Verde 78.86 51 *e*P **P 01 15 32.3 +1.6**
comp=Z,5.8nm,0.9s
OKC Ostrava-Krasne 78.87 328 *e*P **P 01 15 31.4 +1.2**
OKC *ep*P **sP 01 15 42.1 +1.6**
OKC AMS AMS 01 56 30.0
comp=Z,600nm,14.1s
BR231 Keskin MP Arra 78.87 313 *e*P **P 01 15 29.2 -1.4**
MORC Moravsky Berou 79.16 328 *e*P **P 01 15 33.1 +1.2**
MORC pmax pmax
comp=Z,75nm,1.3s
MORC Moravsky Berou 79.16 328 *e*P **P 01 15 33.1 +1.2**
comp=Z,75nm,1.3s
DPC Dobruska-Polom 79.21 329 *e*P **P 01 15 32.5 +0.3**

DPC				*e*S		**S**	**01 25 32.8**	**+2.2**
DPC				AMS		AMS	01 55 50.0	
	comp=Z,900nm,15.4s							
UPC	**Upice**	**79.22**	**329**	*e*P		**P**	**01 15 33.1**	**+1.0**
UPC				AMS		AMS	01 55 50.0	
	comp=Z,700nm,16.5s							
KRLC	**Kraliky**	**79.24**	**328**	*e*P		**P**	**01 15 32.9**	**+0.6**
ARR	**Arges**	**79.29**	**321**	ǁ *i*P		**P**	**01 15 34.3**	**+1.6**
S22A	**4UR Ranch, Cre**	**79.50**	**49**	*e*P		**P**	**01 15 35.8**	**+1.5**
	comp=Z,4.3nm,1.1s							
PSZ	**Piszkesteto**	**79.58**	**325**	*e*P		**P**	**01 15 35.5**	**+1.2**
PSZ				pmax		pmax		
	comp=Z,29nm,1.5s							
PSZ	**Piszkesteto**	**79.58**	**325**	*e*P		**P**	**01 15 35.5**	**+1.2**
	comp=Z,29nm,1.5s							
CLL	**Collm**	**79.74**	**331**	*i* P		**P**	**01 15 35.3**	**+0.4**
	comp=Z,14nm,1.3s							
CLL				*i*			01 15 39.7	
CLL				*i*			01 15 45.4	
CLL				*i*			01 15 55.0	
CLL				LmH			01 49 00.0	
	comp=N,700nm,19.1s							
CLL				LmH			01 49 00.0	
	comp=E,1μm,21.2s							
CLL				LmV			01 54 00.0	
	comp=Z,500nm,21.1s							
CLL	**Collm**	**79.74**	**331**	*i* P		**P**	**01 15 35.3**	**+0.4**
CLL				*i*			01 15 45.4	
CLL				pmax		pmax		
	comp=Z,14nm,1.3s							
CLL				MLR		MLR		
	comp=Z,500nm,21.1s							
CLL	**Collm**	**79.74**	**331**	*e*P		**P**	**01 15 34.9**	**0.0**
	comp=Z,5.9nm,0.7s							
PVCC	**Panska Ves**	**79.77**	**330**	*e*P		**P**	**01 15 37.2**	**+2.1**
PVCC				AMS		AMS	01 55 20.0	
	comp=Z,800nm,15.1s							
VRAC	**Vranov**	**79.92**	**328**	P		**P**	**01 15 35.4**	**-0.6**
	comp=Z,5.7nm,1.1s,baz=52,slow=5.5,SNR=11							
VRAC	**Vranov**	**79.92**	**328**	ǁ *i*P		**P**	**01 15 34.9**	**-1.1**
VRAC	**Vranov**	**79.92**	**328**	ǁP		**P**	**01 15 34.9**	**-1.1**
GOPC	**GO Pecny, Ondr**	**80.17**	**329**	*e*P		**P**	**01 15 37.9**	**+0.6**
GOPC				*e*P		**sP**	**01 15 55.0**	**+1.4**
GOPC				*e*S		**S**	**01 25 53.0**	**+0.8**
GOPC				AMS		AMS	01 55 00.0	
	comp=Z,600nm,14.6s							
PRU	**Pruhonice**	**80.20**	**329**	*e*P		**P**	**01 15 37.2**	**-0.3**
PRU				*e*pP		**sP**	**01 15 48.9**	**+1.1**
PRU				*e*S		**S**	**01 25 41.6**	**+0.6**
PRU				AMS		AMS	01 54 20.0	
	comp=Z,600nm,16.9s							
TREC	**Trest**	**80.38**	**329**	AMS		AMS	01 56 20.0	
	comp=Z,800nm,14.6s							
NKC	**Novy Kostel**	**80.82**	**331**	AMS		AMS	01 56 30.0	
	comp=Z,600nm,16.0s							
ECSD	**EROS Data Cent**	**80.82**	**40**	*e*P		**P**	**01 15 40.3**	**-0.6**
	comp=Z,5.1nm,0.8s							
MDVR	**Moldovita**	**81.12**	**322**	ǁ *i*P		**P**	**01 15 42.5**	**-0.1**
KHC	**Kasperske Hory**	**81.27**	**329**	*e*P		**P**	**01 15 44.1**	**+0.8**
KHC				*e*pP		**sP**	**01 15 55.0**	**+1.4**
KHC				*e*S		**S**	**01 25 53.0**	**+0.8**
KHC				AMS		AMS	01 55 00.0	
	comp=Z,700nm,15.6s							
KHC	**Kasperske Hory**	**81.27**	**329**	*e*P		**P**	**01 15 44.2**	**+0.9**
KHC				pmax		pmax		
	comp=Z,4.0nm,1.3s							
KHC	**Kasperske Hory**	**81.27**	**329**	*e*P		**P**	**01 15 44.2**	**+0.9**
	comp=Z,4.3nm,1.3s							
EKA	**Eskdalemuir Ar**	**81.29**	**342**	P		**P**	**01 15 43.6**	**+0.4**
	comp=Z,1.1nm,0.7s,baz=29,slow=3.7,SNR=4.0							
GERES	**GERESS Array B**	**81.45**	**329**	P		**P**	**01 15 44.9**	**+0.6**
	comp=Z,1.0nm,0.8s,baz=19,slow=8.5,SNR=6.5							
GERES				LR		LR	01 55 34.1	
	comp=Z,506nm,18.7s,baz=10,slow=38							
GEA0	**GERESS Array S**	**81.45**	**329**	*e*P		**P**	**01 15 44.3**	**0.0**
LAZ	**Ladron**	**81.56**	**52**	*e*P		**P**	**01 15 47.2**	**+1.9**
ANMO	**Albuquerque**	**81.60**	**51**	*c e*P		**P**	**01 15 48.0**	**+2.5**
ANMO				pmax		pmax		
	comp=Z,8.0nm,1.7s							
ANMO	**Albuquerque**	**81.60**	**51**	*e*P		**P**	**01 15 47.6**	**+2.1**
	comp=Z,7.4nm,1.4s							
VTS	**Vitosha**	**82.02**	**320**	ǁ *i*P		P	01 15 53.8	+6.3
VTS	**Vitosha**	**82.02**	**320**	ǁP		P	01 15 53.8	+6.3
VTS	**Vitosha**	**82.02**	**320**	*e*P		**P**	**01 15 48.0**	**+0.5**
	comp=Z,8.4nm,1.0s							
SCHQ	**Schefferville**	**82.39**	**17**	LR		LR	01 58 00.4	
	comp=Z,121nm,18.0s,baz=34,slow=40							
BFO	**Black Forest**	**83.92**	**332**	*i* P		**P**	**01 15 59.3**	**+2.2**
PPT	**Papeete**	**84.24**	**118**	LR		LR	01 51 01.4	
	comp=Z,158nm,19.6s,baz=224,slow=34							
PPT2	**Papeete2**	**84.25**	**118**	*e*LR		LR	01 42 25.4	
	comp=Z,338nm,22.8s							
MNTX	**Cornudas Mount**	**84.47**	**53**	*e*P		**P**	**01 16 00.4**	**+0.2**
	comp=Z,7.4nm,1.5s							
MSTX	**Muleshoe**	**84.48**	**50**	*e*P		**P**	**01 16 02.1**	**+1.8**
	comp=Z,6.8nm,0.9s							
FUORN	**Ofenpass-Fuorn**	**84.61**	**330**	*e*P		**P**	**01 16 01.9**	**+1.0**
	comp=Z,19nm,1.2s							
TAOE	**Nuku Hiva Isla**	**85.11**	**106**	*e*LR		LR	01 42 51.8	
	comp=Z,304nm,20.9s							
WMOK	**Wichita Mounta**	**86.24**	**47**	*e*P		**P**	**01 16 08.9**	**-0.1**
WMOK				pmax		pmax		
	comp=Z,4.0nm,1.1s							
WMOK	**Wichita Mounta**	**86.24**	**47**	*e*P		**P**	**01 16 08.8**	**-0.1**
	comp=Z,4.4nm,1.1s							
TX31	**Lajitas Ar. Si**	**87.18**	**54**	*e*P		**P**	**01 16 13.8**	**+0.1**
TXAR	**Lajitas Array**	**87.18**	**54**	P		**P**	**01 16 13.8**	**+0.1**
	comp=Z,0.7nm,0.7s,baz=290,slow=2.9,SNR=10							
TXAR				LR		LR	01 56 08.3	
	comp=Z,50nm,18.0s,baz=0.0,slow=36							
TBI	**Tubuai**	**88.36**	**122**	*e*LR		LR	01 44 18.4	
	comp=Z,214nm,25.2s							
PBMO	**Poplar Bluff**	**89.17**	**41**	*e*P		**P**	**01 16 23.1**	**+0.2**
	comp=Z,7.2nm,0.6s							
WHAR	**Wooly Hollow**	**89.36**	**43**	*e*P		**P**	**01 16 23.1**	**-0.7**
	comp=Z,18nm,1.6s							
KEST	**Kesra**	**94.02**	**324**	LR		LR	02 04 16.1	
	comp=Z,500nm,18.6s,baz=327,slow=39							
ESDC	**Sonseca Array**	**95.74**	**335**	LR		LR	02 05 43.5	
	comp=Z,225nm,18.0s,baz=25,slow=39							
RKT	**Rikitea**	**98.11**	**113**	*e*LR		LR	01 48 51.3	
	comp=Z,232nm,23.2s							
SNAA	**Sanae**	**143.71**	**197**	PKP		PKPab	01 22 58.3	+0.4
VNA1	**Neumayer--Stat**	**145.66**	**196**	PKP		**PKPbc**	**01 23 04.7**	**0.0**

*IDC **21** 01:13:47.3±0.7,29.˚26S×176.˚19W,h0km,mb4.4/8, mb1 4.6/8,mb1mx4.4/23,mbtmp4.3/8,MS3.9/7,Ms1 3.9/7, ms1mx3.4/31,Error ellipse: s-maj=28.9km s-min=17.6km az=163.0*

*BJI **21** 01:13:48.7,30˚.29S×176˚.74W,h10km,mb5.1/12,mB5.3/4, Ms5.1/6,Ms7 4.9/7*

*GCMT **21** 01:13:48.7±0.6,29˚.22S×175˚.85W,h32km,MW4.9/55, Moment Tensor Solution. s35,c41; s55,c69; Duration: 0 Moment tensor: Scale 10^16^Nm; Mrr-3.21±.24; Mθθ0.72±.16; Mφφ2.49±.14; Mrθ0.80±.22; Mφθ0.29±.11; Mφr0.22±.15; Best double couple: M☐2.96400×10^16^ NP1:☐φ200.00000˚,δ49.00000˚,λ-76.00000˚. NP2: ☐φ359.00000˚,δ42.00000˚,λ-106.00000˚. Principal axes: T 2.5570, Plg4.0000˚, Azm280.0000˚; N 0.8180, Plg10.0000˚, Azm11.0000˚; P -3.3710, Plg79.0000˚, Azm172.0000˚; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **21** 01:13:48.6±0.2,29˚.74S×176˚.28W,h10km,mb5.0/53 Error ellipse: s-maj=11.6km s-min=5.2km az=131.0*

*ISCJB **21** 01:13:49.1±0.2,30˚.00S±0˚.03×176˚.20W±0˚.05,h24km, mb5.0/66,MS4.1/7,Error ellipse: s-maj=7.2km s-min=2.8km az=32.1*

*MOS **21** 01:13:51.9±0.9,29˚.36S×176˚.45W,h33km,mb5.1/15, Error ellipse: s-maj=17.2km s-min=12.1km az=69.6*

ISC 21 01:13:51.2±0.4,29˚.81S±0˚.05×176˚.29W±0˚.06,h24km, n178,σ1§88/182,mb5.0/66,MS4.0/7,3C-3D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.52**	**291**	Pn	**Pn**	**01 14 17.2**	**+0.2**
	1μm,0.3s,baz=106,slow=5.5,SNR=27						
RAO				Sn	**Sb**	**01 14 38.7**	**+1.0**
	1μm,0.3s,baz=87,slow=23,SNR=6.8						
RAO	**Raoul Island**	**1.52**	**291**	*e*P	**Pb**	**01 14 17.9**	**-0.9**
RAO						01 14 38.8	
RAO	**Raoul Island**	**1.52**	**291**	*e*Pn	**Pb**	**01 14 17.9**	**-0.9**
RAO				Sn	**Sb**	**01 14 38.8**	**+1.0**
MXZ	**Matakaoa Point**	**8.94**	**209**	PN	**Pn**	**01 15 58.1**	**-0.7**
MXZ				SN	**Sn**	**01 17 40.2**	**+1.4**
WMGZ	**Waiomatatini S**	**9.12**	**207**	PN	**Pn**	**01 16 00.1**	**-1.2**
PKGZ	**Pakihiroa**	**9.31**	**209**	PN	**Pn**	**01 16 02.2**	**-1.9**
PKGZ				SN	**Sn**	**01 17 48.1**	**+0.1**
PUZ	**Puketiti**	**9.40**	**207**	PN	**Pn**	**01 16 02.6**	**-2.5**
PUZ				*e*SN	**Sn**	**01 17 50.4**	**+0.3**
RUGZ	**Raukumara Rang**	**9.55**	**210**	PN	**Pn**	**01 16 05.7**	**-1.6**
TWGZ	**Tauwhareparae**	**9.60**	**208**	PN	**Pn**	**01 16 05.9**	**-2.0**
TWGZ				*e*SN	**Sn**	**01 17 53.8**	**-1.2**
CNGZ	**Carnagh Statio**	**9.77**	**206**	PN	**Pn**	**01 16 08.1**	**-2.2**
URZ	**Urewera**	**10.04**	**211**	Pn	**Pn**	**01 16 11.5**	**-2.4**
	1.2nm,0.3s,baz=22,slow=19,SNR=6.3						
URZ				Sn	**Sn**	**01 18 04.8**	**-1.0**
	13nm,0.3s,baz=235,slow=21,SNR=15						
URZ	**Urewera**	**10.04**	**211**	*e*Pn	**Pn**	**01 16 11.6**	**-2.3**
URZ				*e*S	**Sn**	**01 18 04.1**	**-1.8**
URZ	**Urewera**	**10.04**	**211**	*e*SN	**Sn**	**01 18 02.9**	**-2.9**
OUZ	**Omahuta**	**10.09**	**235**	*e*Pn	Pn	01 16 21.7	+7.0
SNGZ	**Shannon Statio**	**10.38**	**209**	PN	**Pn**	**01 16 17.3**	**-1.3**
KNZ	**Kokohu**	**10.45**	**207**	PN	**Pn**	**01 16 19.5**	**+0.1**
KNZ				*e*SN	**Sn**	**01 18 15.3**	**-0.4**
PXZ	**Pawanui**	**11.63**	**207**	*e*SN	**Sn**	**01 18 41.3**	**-3.5**
BFZ	**Birch Farm**	**12.43**	**207**	*e*Pn	**Pn**	**01 16 45.1**	**-1.6**
BFZ				*e*Sn	**Sn**	**01 19 02.4**	**-2.0**
MRZ	**Mangatainoka R**	**12.69**	**209**	*e*SN	**Sn**	**01 19 04.1**	**-6.6**
MSVF	**Nonsavu**	**13.09**	**335**	*i* P	**Pn**	**01 16 51.5**	**-4.3**
SNKO	**South Karori**	**13.60**	**210**	Pn	**Pn**	**01 17 04.1**	**+1.5**
SNZO				*e*S	**Sn**	**01 19 24.6**	**-8.3**
CTZ	**Chatham Island**	**13.90**	**181**	PN	**Pn**	**01 17 05.4**	**-1.2**
THZ	**Tophouse**	**14.78**	**213**	*e*Pn	**Pn**	**01 17 16.5**	**-2.3**
	173nm,1.8s						
THZ				*e*Sn	**Sn**	**01 19 55.6**	**-6.2**
KHZ	**Kahutara**	**15.01**	**210**	*e*Pn	**Pn**	**01 17 22.2**	**+0.5**
	52nm,0.6s						
KHZ				*e*S	**Sn**	**01 19 58.4**	**-8.7**
OXZ	**Oxford**	**16.40**	**212**	*e*Pn	**Pn**	**01 17 40.4**	**+0.6**
	89nm,1.6s						
OXZ				*e*Sn	Sn	01 20 29.6	-11
RPZ	**Rata Peaks**	**17.15**	**213**	P	**Pn**	**01 17 46.6**	**-2.7**
	2.2nm,0.3s,baz=338,slow=1.8,SNR=7.6						
RPZ				S	Sn	01 20 47.1	-12
	4.0nm,0.3s,baz=229,slow=22,SNR=8.2						
RPZ	**Rata Peaks**	**17.15**	**213**	*e*Pn	**Pn**	**01 17 46.6**	**-2.7**
RPZ				*e*S	Sn	01 20 46.3	-13
RAR	**Rarotonga**	**17.18**	**64**	LR	LR	01 23 37.7	
	comp=Z,379nm,18.2s,baz=246,slow=35						
DZM	**Mont Dzumac**	**17.32**	**292**	LR	LR	01 23 06.0	
	comp=Z,426nm,21.9s,baz=54,slow=32						
DZM	**Mont Dzumac**	**17.32**	**292**	*e*LR	LR	01 21 48.8	
	746nm,26.1s						
TBI	**Tubuai**	**24.81**	**81**	*e*LQ	LQ	01 23 45.5	
	288nm,27.5s						
TBI				*e*LR	LR	01 24 47.2	
	387nm,27.2s						
PPT2	**Papeete2**	**27.25**	**69**	*e*LR	LR	01 25 58.6	
	400nm,27.2s						
PPT	**Papeete**	**27.26**	**69**	LR	LR	01 28 56.4	
	comp=Z,218nm,18.3s,baz=188,slow=34						
STKA	**Stephens Creek**	**36.05**	**256**	P	**P**	**01 20 52.5**	**+1.6**
	6.6nm,0.9s,baz=99,slow=8.2,SNR=9.2						
STKA				LR	LR	01 34 44.9	
	comp=Z,112nm,18.2s,baz=22,slow=35						
RKT	**Rikitea**	**37.43**	**90**	*e*LR	LR	01 30 36.3	
	225nm,27.2s						
ASAR	**Alice Springs**	**44.62**	**266**	P	**P**	**01 22 01.8**	**-0.2**
	1.5nm,0.6s,baz=109,slow=7.7,SNR=12						
WB2	**Warramunga Arr**	**45.55**	**271**	*e*P	**P**	**01 22 09.2**	**-0.2**
WRAB	**Tennant Creek**	**45.56**	**271**	*e*P	**P**	**01 22 08.6**	**-0.8**
WRAB				pmax	pmax		
	comp=Z,8.0nm,0.9s						
WRAB	**Tennant Creek**	**45.56**	**271**	*e*P	**P**	**01 22 05.7**	**-3.8**
	comp=Z,21nm,1.4s						
WRA	**Warramunga Arr**	**45.56**	**271**	P	**P**	**01 22 09.2**	**-0.3**
	comp=Z,4.6nm,0.8s,baz=109,slow=8.0,SNR=31						
WRA				LR	LR	01 39 20.8	
	comp=Z,180nm,21.4s,baz=30,slow=34						
SBA	**Scott Base**	**48.74**	**185**	*e*P	P	01 22 39.4	+6.0
SBA				pmax	pmax		
	comp=Z,20nm,1.3s						
SBA	**Scott Base**	**48.74**	**185**	*e*P	P	01 22 39.4	+6.0
	comp=Z,20nm,1.3s						
VNDA	**Vanda**	**48.83**	**186**	P	**P**	**01 22 38.9**	**+4.7**
	comp=Z,2.2nm,1.0s,baz=22,slow=6.8,SNR=7.1						
VNDA	**Vanda**	**48.83**	**186**	*e*P	P	01 22 39.1	+5.0
VNDA				pmax	pmax		
	comp=Z,4.0nm,1.1s						
VNDA	**Vanda**	**48.83**	**186**	*e*P	P	01 22 39.1	+5.0
	comp=Z,3.7nm,1.1s						
FITZ	**Fitzroy Crossi**	**53.85**	**269**	LR	LR	01 46 38.3	
	comp=Z,111nm,18.2s,baz=70,slow=36						
QSPA	**South Pole Qui**	**60.30**	**180**	*e*P	**P**	**01 24 00.3**	**+2.6**
	comp=Z,77nm,1.0s						
MAW	**Mawson**	**73.37**	**200**	P	**P**	**01 25 23.5**	**+2.9**
	comp=Z,6.3nm,1.1s,baz=97,slow=5.7,SNR=7.8						
MAW	**Mawson**	**73.37**	**200**	*e*P	**P**	**01 25 23.0**	**+2.3**
MAW				pmax	pmax		
	comp=Z,2.0nm,1.2s						
MAW	**Mawson**	**73.37**	**200**	*e*P	**P**	**01 25 23.0**	**+2.3**
	comp=Z,2.3nm,1.2s						
SYO	**Syowa Base**	**78.01**	**192**	ǁ *e*P	**P**	**01 25 48.0**	**+0.8**
SNAA	**Sanae**	**78.69**	**178**	*c i*P	**P**	**01 25 52.6**	**+1.5**
SNAA	**Sanae**	**78.69**	**178**	*e*P	**P**	**01 25 51.6**	**+0.6**
	comp=Z,856nm,1.2s						
NVL	**N'lazarevskaya**	**79.54**	**183**	*e*P	**P**	**01 25 57.6**	**+2.0**
BFSC	**Mount Baldy Ra**	**84.39**	**45**	P	**P**	**01 26 21.3**	**-0.4**
	baz=228						
PFO	**Pinyon Flats O**	**84.72**	**46**	P	**P**	**01 26 22.9**	**-0.5**
	baz=229						
PFO	**Pinyon Flats O**	**84.72**	**46**	*e*P	**P**	**01 26 22.9**	**-0.5**
PFO				pmax	pmax		
	comp=Z,11nm,1.3s						
PFO	**Pinyon Flats O**	**84.72**	**46**	*e*P	**P**	**01 26 22.9**	**-0.5**
	comp=Z,11nm,1.3s						
KSRS	**Korea Array**	**84.88**	**319**	P	**P**	**01 26 26.7**	**+2.8**
	comp=Z,1.6nm,0.8s,baz=133,slow=8.8,SNR=4.7						
KSAR	**Wonju Array Be**	**84.89**	**319**	P	**P**	**01 26 26.7**	**+2.7**
KSAR	**Wonju Array Be**	**84.89**	**319**	P	**P**	**01 26 26.7**	**+2.7**
CMB	**Columbia Colle**	**85.34**	**41**	*e*P	**P**	**01 26 25.0**	**-1.3**
CMB				pmax	pmax		
	comp=Z,5.0nm,1.0s						
CMB	**Columbia Colle**	**85.34**	**41**	*e*P	**P**	**01 26 25.0**	**-1.3**
	comp=Z,5.5nm,1.0s						
BC3	**Big Chuckawall**	**85.39**	**47**	P	**P**	**01 26 26.5**	**-0.3**
	baz=230						
GLA	**Glamis**	**85.40**	**48**	P	**P**	**01 26 26.4**	**-0.4**
	baz=230						
GLA	**Glamis**	**85.40**	**48**	*e*P	**P**	**01 26 26.9**	**+0.2**
GLA				pmax	pmax		
	comp=Z,10.0nm,1.1s						
GLA	**Glamis**	**85.40**	**48**	*e*P	**P**	**01 26 26.9**	**+0.2**
	comp=Z,10nm,1.1s						
HEC	**Hector,Ludlow**	**85.60**	**46**	P	**P**	**01 26 27.2**	**-0.6**
	baz=229						
CWC	**Cottonwood Cre**	**85.60**	**43**	P	**P**	**01 26 27.0**	**-0.8**
	baz=228						
GSC	**Goldstone, Bar**	**85.62**	**45**	*e*P	**P**	**01 26 27.5**	**-0.3**
GSC				pmax	pmax		
	comp=Z,8.0nm,1.1s						
GSC	**Goldstone, Bar**	**85.62**	**45**	*e*P	**P**	**01 26 27.5**	**-0.3**
	comp=Z,7.5nm,1.1s						
AFDM	**Forest Hills D**	**85.65**	**40**	*e*P	**P**	**01 26 27.1**	**-0.6**
	comp=Z,7.6nm,1.3s						
MPMC	**Manual Prospec**	**85.70**	**44**	P	**P**	**01 26 27.6**	**-0.7**
	baz=228						
113A	**Mohawk Valley,**	**85.91**	**49**	*e*P	**P**	**01 26 29.1**	**-0.1**
	comp=Z,11nm,1.3s						
IRM	**Iron Mountain**	**85.91**	**47**	P	**P**	**01 26 29.0**	**-0.2**
	baz=230						
WDC	**Whiskeytown Da**	**85.94**	**38**	*e*P	**P**	**01 26 28.8**	**-0.3**
WDC				pmax	pmax		
	comp=Z,15nm,1.2s						
WDC	**Whiskeytown Da**	**85.94**	**38**	*e*P	**P**	**01 26 28.8**	**-0.3**
	comp=Z,15nm,1.2s						
GMRC	**Granite Mounta**	**85.99**	**46**	P	**P**	**01 26 29.2**	**-0.5**
	baz=229						
214A	**Organ Pipe Nat**	**86.03**	**50**	P	**P**	**01 26 29.1**	**-0.7**
	baz=231						
O03D	**Paynes Creek**	**86.13**	**39**	P	**P**	**01 26 30.1**	**-0.1**
	baz=225						
WAKR	**Walker**	**86.21**	**41**	*e*P	**P**	**01 26 30.6**	**-0.3**
	comp=Z,21nm,1.3s						
M02C	**Callahan**	**86.35**	**37**	P	**P**	**01 26 31.5**	**+0.2**
	baz=224						
FURC	**Furnace Creek,**	**86.35**	**44**	P	**P**	**01 26 31.0**	**-0.2**
	baz=228						
LDFC	**Landfair**	**86.53**	**46**	*e*P	**P**	**01 26 32.8**	**+0.4**
	comp=Z,20nm,1.0s						
PDMCI	**Parker Dam,Lak**	**86.64**	**47**	P	**P**	**01 26 32.5**	**-0.3**
	baz=230						
TPNV	**Topopah Spring**	**87.04**	**44**	P	**P**	**01 26 34.5**	**-0.4**
	baz=229						
TPNV	**Topopah Spring**	**87.04**	**44**	*e*P	**P**	**01 26 34.2**	**-0.7**
TPNV				pmax	pmax		
	comp=Z,6.0nm,0.9s						
TPNV	**Topopah Spring**	**87.04**	**44**	*e*P	**P**	**01 26 34.2**	**-0.7**
	comp=Z,5.9nm,0.9s						
PAHR	**Pah Rah Range**	**87.06**	**40**	*e*P	**P**	**01 26 34.2**	**-0.6**
	comp=Z,7.7nm,1.2s						
Y14A	**Wickenburg**	**87.14**	**48**	*e*P	**P**	**01 26 34.9**	**-0.4**
	comp=Z,33nm,1.0s						
HUMO	**Hull Mountain**	**87.16**	**36**	*e*P	**P**	**01 26 35.1**	**-0.1**
	comp=Z,12nm,1.3s						
W13A	**Hualapai Mount**	**87.31**	**47**	*e*P	**P**	**01 26 36.4**	**+0.1**
	comp=Z,5.5nm,1.0s						
SHPR	**Sheep Range**	**87.42**	**45**	*e*P	**P**	**01 26 37.0**	**+0.3**
	comp=Z,9.3nm,1.4s						
TUC	**Tucson**	**87.59**	**50**	P	**P**	**01 26 37.6**	**0.0**
	baz=232						
TUC	**Tucson**	**87.59**	**50**	*e*P	**P**	**01 26 36.8**	**-0.8**
TUC				pmax	pmax		
	comp=Z,8.0nm,0.9s						
TUC	**Tucson**	**87.59**	**50**	*e*P	**P**	**01 26 36.8**	**-0.8**
	comp=Z,7.7nm,0.9s						
319A	**Douglas**	**88.05**	**52**	*e*P	**P**	**01 26 40.0**	**+0.2**
	comp=Z,7.7nm,0.9s						
I04A	**Tendick Farm,**	**88.29**	**36**	P	**P**	**01 26 39.7**	**-0.8**
	baz=225						
K05A	**Summer Lake**	**88.32**	**37**	*e*P	**P**	**01 26 40.5**	**-0.4**
	comp=Z,25nm,1.4s						
X16A	**Lo Mia Camp, P**	**88.45**	**48**	*e*P	**P**	**01 26 41.8**	**+0.1**
	comp=Z,7.3nm,0.9s						
J05D	**Fort Rock, OR**	**88.53**	**37**	P	**P**	**01 26 40.9**	**-0.9**
	baz=225						
LCMT	**Little Creek M**	**88.92**	**46**	*e*P	**P**	**01 26 43.9**	**+0.1**
	comp=Z,6.0nm,0.9s						
U15A	**North Rim**	**89.15**	**46**	*e*P	**P**	**01 26 45.1**	**0.0**
	comp=Z,11nm,0.8s						
WUAZ	**Wupatki**	**89.17**	**48**	P	**P**	**01 26 45.0**	**0.0**
	baz=232						
WUAZ	**Wupatki**	**89.17**	**48**	*e*P	**P**	**01 26 44.8**	**-0.3**
	comp=Z,9.6nm,1.0s						
KNB	**Kanab**	**89.19**	**46**	*e*P	**P**	**01 26 44.9**	**-0.2**
KNB				pmax	pmax		
	comp=Z,10.0nm,0.9s						
KNB	**Kanab**	**89.19**	**46**	*e*P	**P**	**01 26 44.9**	**-0.2**
	comp=Z,9.5nm,0.9s						
I05D	**Terrebonne, OR**	**89.22**	**36**	P	**P**	**01 26 44.4**	**-0.5**
	baz=225						
G06A	**Carlson Farm,**	**90.21**	**36**	*e*P	**P**	**01 26 49.5**	**0.0**
	comp=Z,15nm,1.1s						
MTPU	**Mount Pierson**	**90.22**	**45**	*e*P	**P**	**01 26 50.9**	**+0.7**
	comp=Z,7.0nm,0.9s						
MSU	**Marysvale**	**90.52**	**45**	*e*P	**P**	**01 26 51.7**	**+0.3**
MSU	**Marysvale**	**90.52**	**45**	*e*P	**P**	**01 26 51.7**	**+0.3**
TXAR	**Lajitas Array**	**90.83**	**56**	P	**P**	**01 26 52.2**	**-0.7**
	comp=Z,2.4nm,1.0s,baz=211,slow=7.0,SNR=19						
D05A	**Enumclaw**	**90.91**	**34**	*e*P	**P**	**01 26 53.3**	**+0.6**
	comp=Z,52nm,1.4s						
MNTX	**Cornudas Mount**	**90.94**	**54**	P	**P**	**01 26 52.3**	**-0.9**
	baz=235						
MNTX	**Cornudas Mount**	**90.94**	**54**	*e*P	**P**	**01 26 52.6**	**-0.6**
	comp=Z,3.9nm,1.0s						
G08A	**Pilot Rock**	**91.10**	**36**	*e*P	**P**	**01 26 53.2**	**-0.6**
	comp=Z,15nm,1.2s						
KLR	**Kul'dur**	**91.29**	**329**	LR	LR	01 59 47.2	
	comp=Z,46nm,21.1s,baz=224,slow=30						
KLR	**Kul'dur**	**91.29**	**329**	*e*P	**P**	**01 26 53.1**	**-1.3**
MFID	**Camas Ranch**	**91.52**	**39**	*e*P	**P**	**01 26 54.8**	**-1.0**
	comp=Z,6.4nm,1.0s						
TMUT	**Trail Mountain**	**91.60**	**45**	*e*P	**P**	**01 26 56.6**	**+0.1**
	comp=Z,14nm,0.7s						
B05A	**Bryant**	**91.62**	**33**	P	**P**	**01 26 56.0**	**0.0**
	baz=225						
BMO	**Blue Mountains**	**91.67**	**38**	*e*P	**P**	**01 26 55.4**	**-1.0**
	comp=Z,3.0nm,1.0s						
ANMO	**Albuquerque**	**92.06**	**50**	P	**P**	**01 26 57.7**	**-0.8**
	baz=235						
ANMO	**Albuquerque**	**92.06**	**50**	*c i*P	**P**	**01 26 57.9**	**-0.7**
ANMO				pmax	pmax		
	comp=Z,6.0n

	comp=Z,3.0nm,1.0s								
RSSD	**Black Hills**	**98.77**	**44**	*e*P		**P**	**01 27 27.8**	**-1.2**	
RSSD				pmax		pmax			
	comp=Z,5.0nm,1.0s								
RSSD	**Black Hills**	**98.77**	**44**	*e*P		**P**	**01 27 27.8**	**-1.2**	
	comp=Z,5.1nm,1.0s								
LZH	**Lanzhou**	**99.57**	**306**	*e*P		**Pdif**	**01 27 31.3**	**-1.4**	
LZH				pP		pP	01 27 37.6	-3.0	
LZH				sP		sP	01 27 40.5	-2.9	
LZH				*e*PP		**PP**	**01 31 37.8**	**+0.7**	
LZH				pmax		pmax			
	comp=Z,19nm,1.4s								
LZH				pmax		pmax			
	comp=Z,78nm,5.2s								
LZH				LR		LR			
	comp=Z,230nm,17.2s								
LZH				LR		LR			
	comp=Z,240nm,17.6s								
LZH				LR		LR			
	comp=Z,340nm,19.3s								
WMQ	**Urumqi**	**114.03**	**308**	*e*PKP		**PKiKP**	**01 32 28.3**	**+0.1**	
MKAR	**Makanchi Array**	**118.53**	**310**	PKP		**PKPdf**	**01 32 35.3**	**-1.4**	
	comp=Z,0.6nm,0.8s,baz=96,slow=3.7,SNR=4.5								
KSH	**Kashi**	**121.22**	**301**	*e*PKP		**PKPdf**	**01 32 41.8**	**-0.5**	
KSH				*e*PP		**PP**	**01 34 19.4**	**+6.1**	
KSH				PKS		**PKSdf**	**01 36 17.3**	**-1.7**	
KSH				SKKS			01 41 07.6		
KSH				SS		**SS**	**01 50 51.8**	**+5.9**	
KSH				AMB		AMB			
	comp=Z,53nm,4.7s								
KSH				LR		LR			
	comp=Z,65nm,7.7s								
KSH				LR		LR			
	comp=Z,88nm,5.5s								
KSH				LR		LR			
	comp=Z,95nm,11.3s								
ARU	**Arti**	**133.57**	**321**	*e*PKIKP		**PKPdf**	**01 33 05.5**	**+0.4**	
H10N3	**ASCENSION HYDR**	**138.67**	**152**	T		T	04 10 03.6		
	baz=203,slow=75,SNR=4.4								
H10N1	**ASCENSION HYDR**	**138.67**	**152**	T		T	04 10 09.0		
	baz=203,slow=75,SNR=5.6								
H10N2	**ASCENSION HYDR**	**138.69**	**152**	T		T	04 10 13.0		
	baz=203,slow=75,SNR=4.3								
FINES	**FINESS Array B**	**145.09**	**341**	PKP		**PKPbc**	**01 33 23.7**	**-1.6**	
	comp=Z,6.2nm,1.0s,baz=45,slow=2.2,SNR=15								
GNI	**Garni**	**145.11**	**298**	*e*PKHKP		PKPpre	01 33 21.3		
GNI	**Garni**	**145.11**	**298**	*e*PKPdf		PKPpre	01 33 21.2		
ZEI	**Tsey**	**145.44**	**303**	*i* PKIKP		**PKPdf**	**01 33 26.5**	**-0.9**	
OBN	**Obninsk**	**145.52**	**327**⇓	*e*PKIKP		**PKPdf**	**01 33 25.6**	**-1.1**	
OBN				*e*			01 36 46.8		
OBN				*e*PPP		PPP	01 39 58.1		
OBN				pmax		pmax			
	comp=Z,13nm,0.9s								
KBZ	**Khabaz**	**146.00**	**305**	PKPbc		**PKPdf**	**01 33 27.9**	**0.0**	
	comp=Z,1.8nm,0.8s,baz=90,slow=1.0,SNR=4.0								
KBZ	**Khabaz**	**146.00**	**305**	PKP2		**PKPdf**	**01 33 28.0**	**0.0**	
KIV	**Kislovodsk**	**146.11**	**305**⇑	*e*PKP2		**PKPbc**	**01 33 29.1**	**-0.2**	
KIV				*e*			01 36 50.1		
KIV				*e*PPP		PPP	01 40 02.8		
KIV				*e*SS		SS	01 56 15.2	+29	
KIV				pmax		pmax			
	comp=Z,10.0nm,1.7s								
NB2	**NORSAR Subarra**	**148.37**	**353**	PKP		**PKPbc**	**01 33 33.5**	**-1.5**	
	comp=Z,10.0nm,1.2s,baz=9.8,slow=2.8								
NOA	**NORSAR Array B**	**148.37**	**353**	PKPbc		**PKPdf**	**01 33 32.6**	**+1.1**	
	comp=Z,3.6nm,0.9s,baz=15,slow=4.3,SNR=6.9								
AKASG	**Malin Array Be**	**151.71**	**325**	PKPbc		**PKPbc**	**01 33 42.2**	**-1.1**	
	comp=Z,1.4nm,0.5s,baz=46,slow=2.9,SNR=12								
BRTR	**Keskin Array B**	**153.61**	**300**	PKPbc		**PKPbc**	**01 33 47.1**	**-1.0**	
	comp=Z,0.7nm,1.0s,baz=64,slow=2.9,SNR=5.2								

*ISCJB **21** 01:23:05.4±0.6,39.°11N±0.°05×28.°99E±0.°05,h19km±10km, Error ellipse: s-maj=9.5km s-min=5.2km az=154.2*
*CSEM **21** 01:23:05.2±0.1,39.°11N×28.°97E,h15km,MD2.9, Error ellipse: s-maj=4.0km s-min=3.0km az=136.0*
*ISK **21** 01:23:05.2,39.°15N×29.°00E,h17km,MD2.6*
*DDA **21** 01:23:05.8,39.°10N×29.°02E,h7km,Md2.9*
ISC 21 01:23:05.2±0.9,**39.°10N**±0.°03×**29.°00E**±0.°03,**h17**km±8km, **n18**,σ0°**46**/28,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
DEMI	**Demirci**	**0.23**	**257**	*i* P		**Pb**	**01 23 11.2**	**+0.2**
DEMI				*i* S		**Sg**	**01 23 14.5**	**+0.3**
DEMI	**Demirci**	**0.23**	**257**	P		**Pb**	**01 23 11.2**	**+0.2**
DEMI				S		**Sg**	**01 23 14.5**	**+0.3**
GEDZ	**Gediz**	**0.32**	**99**	*e*PG		**Pb**	**01 23 12.7**	**+0.1**
GEDZ				*e*SG		**Sb**	**01 23 18.3**	**+0.7**
GEDZ	**Gediz**	**0.32**	**99**	*e*Pg		**Pb**	**01 23 12.7**	**+0.1**
GEDZ				*e*Sg		**Sb**	**01 23 18.3**	**+0.7**
GDZ	**Gediz**	**0.38**	**91**	*i* P		**Pb**	**01 23 13.4**	**-0.1**
GDZ				*i* S		**Sg**	**01 23 18.5**	**+0.1**
GDZ	**Gediz**	**0.38**	**91**	P		**Pb**	**01 23 13.4**	**-0.1**
GDZ				S		**Sg**	**01 23 18.5**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**45**	*e*PG		**Pg**	**01 23 15.3**	**-0.1**
TVSB				*e*SG		**Sg**	**01 23 21.8**	**-0.4**
TVSB	**Tavsanli**	**0.50**	**45**	*e*Pg		**Pg**	**01 23 15.3**	**-0.1**
TVSB				*e*Sg		**Sg**	**01 23 21.8**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*PG		**Pb**	**01 23 18.5**	**+0.5**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*Pg		**Pb**	**01 23 18.5**	**+0.5**
MANT	**Manisa**	**0.70**	**210**	*i* P		**Pg**	**01 23 18.7**	**-0.3**
MANT				*i* S		**Sg**	**01 23 27.2**	**-1.0**
MANT	**Manisa**	**0.70**	**210**	P		**Pg**	**01 23 18.7**	**-0.3**
MANT				S		**Sg**	**01 23 27.2**	**-1.0**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN		**Pb**	**01 23 28.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn		**Pb**	**01 23 28.8**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*PN		**Pn**	**01 23 28.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*Pn		**Pn**	**01 23 28.4**	**+0.2**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN		**Pn**	**01 23 30.5**	**-0.5**
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn		**Pn**	**01 23 30.5**	**-0.5**

*JMA **21** 01:23:53.3±0.1,23.°58N×122.°32E,h37km,M2.8*
*TAP **21** 01:23:54.5,23.°61N×122.°32E,h35km±1km,ML3.4,C*
ISC 21 01:23:50.1±1.1,**23.°57N**±0.°03×**122.°37E**±0.°02,**h13**km±9km, **n50**,σ0°**84**/91,**2C-1D**,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
TWD	**Chiawan**	**0.88**	**306**⇑	*i* P		**Pn**	**01 24 08.9**	**+0.8**
TWD	baz=307			*i* S		**Sb**	**01 24 19.4**	**+0.5**
	baz=307							
ESL	**Shilin**	**0.90**	**286**	*e*P		**Pn**	**01 24 08.2**	**-0.2**
	baz=286							
EHY	**Hungye**	**0.97**	**267**	*i* P		**Pn**	**01 24 10.6**	**+1.2**
EHY	baz=265			*e*S		**Sb**	**01 24 21.9**	**+0.5**
	baz=265							
TWF1	**Yuli**	**1.01**	**258**	*e*P		**Pn**	**01 24 10.9**	**+0.9**
	baz=249							
TWF1				*e*S		**Sn**	**01 24 23.9**	**-0.2**
	baz=249							
JYNG	**Yonagunijimaku**	**1.03**	**31**	P		**Pn**	**01 24 12.3**	**+2.1**
JYNG				*e*S		**Sn**	**01 24 24.8**	**+0.4**
CHKT	**Chengkung**	**1.04**	**244**	*e*P		**Pn**	**01 24 10.8**	**+0.5**
	baz=232							
CHKT				*e*S		**Sb**	**01 24 22.6**	**-0.7**
	baz=232							
ENA	**Nanau**	**1.04**	**326**	*e*P		**Pn**	**01 24 11.6**	**+1.3**
	baz=320							
ENA				*e*S		**Sn**	**01 24 24.4**	**-0.3**
	baz=320							
YOJ	**Yonaguni jima**	**1.07**	**33**	P		**Pn**	**01 24 12.5**	**+1.8**
YOJ				S		**Sn**	**01 24 25.6**	**+0.2**
TWC	**Suao**	**1.15**	**335**	P		**Pg**	**01 24 13.6**	**+1.5**
	baz=349							
TWC				S		**Sn**	**01 24 26.9**	**-0.5**
	baz=349							
WDT	**Danda**	**1.15**	**280**⇑	*i* P		**Pn**	**01 24 13.5**	**+1.2**
	baz=280							
WDT				*e*S		**Sb**	**01 24 27.1**	**0.0**
	baz=280							
WHF	**Hehuan Shan**	**1.17**	**300**	*i* P		**Pn**	**01 24 13.3**	**+0.8**
	baz=301							
WHF				S		**Sn**	**01 24 28.1**	**-0.4**
	baz=301							
NNS	**Nan Shan**	**1.26**	**314**	*e*P		**Pg**	**01 24 14.8**	**+0.3**
	baz=316							
NNS				*e*S		**Sg**	**01 24 30.6**	**-0.3**
	baz=316							
TWT	**Tachien**	**1.29**	**302**	P		**Pg**	**01 24 15.7**	**+0.7**
	baz=303							
TWT				*e*S		**Sg**	**01 24 31.9**	**+0.1**
	baz=303							
ENTT	**Nioudou**	**1.30**	**326**	*e*P		**Pg**	**01 24 15.4**	**+0.3**
	baz=328							
ENTT				*e*S		**Sn**	**01 24 30.9**	**-0.3**
	baz=328							
ELDTW	**Lidau**	**1.30**	**254**	*e*P		**Pg**	**01 24 17.1**	**+2.0**
	baz=242							
ELDTW				*e*S		**Sb**	**01 24 30.1**	**-1.1**
	baz=242							
YUS	**Yu-Shan**	**1.31**	**267**	*i* P		**Pg**	**01 24 16.5**	**+1.2**
	baz=267							
YUS				S		**Sb**	**01 24 31.3**	**-0.4**
	baz=267							
TWE	**Neicheng**	**1.32**	**331**	P		**Pg**	**01 24 16.4**	**+0.9**
	baz=334							
TWE				S		**Sg**	**01 24 32.1**	**-0.5**
	baz=334							
EGS		**1.34**	**343**	P		**Pg**	**01 24 16.7**	**+1.0**
	baz=346							
EGS				*e*S		**Sg**	**01 24 33.1**	**0.0**
	baz=346							
SMLT	**Sun Moon Lake**	**1.39**	**283**	P		**Pg**	**01 24 17.2**	**+0.5**
	baz=293							
SMLT				*e*S		**Sn**	**01 24 32.8**	**-0.8**
	baz=293							
TTN	**Taitung**	**1.39**	**235**	*e*P		**Pb**	**01 24 15.8**	**-0.1**
	baz=225							
HATJ	**Hateruma jima**	**1.40**	**69**	P		**Pg**	**01 24 17.4**	**+0.4**
HATJ				S		**Sg**	**01 24 34.5**	**-0.7**
TWG	**Pinlang**	**1.41**	**239**	*e*P		**Pg**	**01 24 17.0**	**-0.1**
	baz=229							
TWG				*e*S		**Sn**	**01 24 33.3**	**-0.6**
	baz=229							
TYC	**Yuchr**	**1.43**	**284**⇓	*i* P		**Pg**	**01 24 17.7**	**+0.1**
	baz=285							
TYC				*e*S		**Sg**	**01 24 35.7**	**-0.5**
	baz=285							
ALS	**Alishan**	**1.44**	**268**	*e*P		**Pg**	**01 24 18.5**	**+0.7**
	baz=268							
ALS				*e*S		**Sg**	**01 24 36.6**	**0.0**
	baz=268							
NSK	**Sanguang**	**1.44**	**320**	P		**Pg**	**01 24 18.1**	**+0.3**
	baz=311							
NSK				*e*S		**Sb**	**01 24 34.8**	**-0.4**
	baz=311							
IRIF	**Iriomote-Funau**	**1.46**	**58**	P		**Pg**	**01 24 18.7**	**+0.6**
IRIF				S		**Sg**	**01 24 36.7**	**-0.4**
STYT	**Tauyuan**	**1.54**	**255**	*e*P		**Pg**	**01 24 20.2**	**+0.5**
	baz=247							
STYT				*e*S		**Sb**	**01 24 38.5**	**+0.5**
	baz=247							
CHN5	**Tsauling**	**1.56**	**272**	P		**Pg**	**01 24 20.5**	**+0.6**
	baz=272							
CHN5				*e*S		**Sg**	**01 24 40.2**	**0.0**
	baz=272							
NWF	**Wu-fen Shan**	**1.59**	**340**	P		**Pg**	**01 24 20.6**	**-0.1**
	baz=358							
NWF				*e*S		**Sg**	**01 24 40.4**	**-1.1**
	baz=358							
JKRS	**Kuro-shima**	**1.64**	**66**	P		**Pg**	**01 24 21.2**	**-0.4**
JKRS				S		**Sg**	**01 24 41.1**	**-1.8**
NSTT	**Nanjuang**	**1.64**	**311**	*e*P		**Pg**	**01 24 21.7**	**+0.1**
	baz=313							
NSTT				*e*S		**Sb**	**01 24 41.1**	**+0.3**
	baz=313							
WTP	**Ta-pu**	**1.65**	**259**	*e*P		**Pg**	**01 24 21.8**	**+0.1**
	baz=259							
WTP				*e*S		**Sg**	**01 24 42.3**	**-0.8**
	baz=259							
CHN4	**Tsaushan**	**1.65**	**263**	*e*P		**Pg**	**01 24 21.8**	**+0.1**
	baz=257							
CHN4				*e*S		**Sg**	**01 24 42.7**	**-0.5**
	baz=257							
TCU	**Taichung**	**1.66**	**291**	*e*P		**Pg**	**01 24 22.5**	**+0.5**
	baz=292							
TCU				*e*S		**Sg**	**01 24 43.4**	**-0.1**
	baz=292							
TWQ1	**Liyutan**	**1.66**	**298**	*e*P		**Pg**	**01 24 21.2**	**-0.7**
	baz=300							
TWQ1				*e*S		**Sg**	**01 24 42.2**	**-1.2**
	baz=300							
SGST	**Jiashian**	**1.71**	**254**	*e*P		**Pg**	**01 24 23.0**	**0.0**
	baz=254							
SGST				*e*S		**Sg**	**01 24 44.9**	**-0.4**
	baz=254							
CHN1	**Nanshi**	**1.74**	**258**	*e*P		**Pg**	**01 24 23.6**	**+0.2**
	baz=258							
CHN1				*e*S		**Sg**	**01 24 45.4**	**-0.6**
	baz=258							
TWK	**Hsinying**	**1.76**	**261**	*e*P		**Pg**	**01 24 23.8**	**0.0**
	baz=261							
TWK				*e*S		**Sb**	**01 24 45.3**	**+1.1**
	baz=261							
TWS1	**Kuangyinshan**	**1.76**	**331**	*e*P		**Pg**	**01 24 24.0**	**+0.1**
	baz=333							
CHY	**Chiayi**	**1.79**	**268**	*e*P		**Pg**	**01 24 23.6**	**-0.8**
	baz=269							
SSD	**Sandimen**	**1.80**	**243**	*e*P		**Pg**	**01 24 25.3**	**+0.7**
	baz=236							
JIJ	**Ishigaki jima**	**1.80**	**63**	P		**Pb**	**01 24 23.1**	**+0.1**
JIJ				S		**Sn**	**01 24 43.7**	**+0.1**
EAST	**Anshuo**	**1.83**	**230**	*e*P		**Pn**	**01 24 22.3**	**+1.0**
	baz=237							
EAST				*e*S		**Sn**	**01 24 43.0**	**-1.4**
	baz=237							
TWM1	**Shoushan**	**1.94**	**248**	*e*P		**Pb**	**01 24 25.9**	**+0.6**
	baz=247							
SCZT	**Fangliau**	**2.00**	**234**	*e*P		**Pb**	**01 24 27.5**	**+1.1**
	baz=227							
SCZT				*e*S		**Sb**	**01 24 51.4**	**+0.1**
	baz=227							
JISG	**Ishigakijimahi**	**2.04**	**60**	P		**Pb**	**01 24 26.0**	**-1.0**
JISG				S		**Sb**	**01 24 51.2**	**-1.2**
TWK1	**Hengchun**	**2.17**	**222**	*e*P		**Pb**	**01 24 28.9**	**-0.3**
	baz=220							
JTJ	**Tarama**	**2.38**	**63**	P		**Pb**	**01 24 31.2**	**-1.6**
JTJ				S		**Sn**	**01 24 59.0**	**+1.1**
WDGT	**Dungji**	**2.51**	**264**	*e*P		**Pb**	**01 24 33.1**	**-1.9**
	baz=264							
PNG	**Penghu**	**2.59**	**271**	*e*P		**Pb**	**01 24 34.5**	**-1.9**
	baz=272							

*ISCJB **21** 01:30:08.7±0.5,39.°08N±0.°04×29.°05E±0.°05,h15km±5km, Error ellipse: s-maj=8.1km s-min=4.5km az=139.9*
*ISK **21** 01:30:08.2,39.°12N×29.°00E,h7km,MD2.6*
*CSEM **21** 01:30:08.7±0.1,39.°08N×29.°03E,h12km,MD2.7, Error ellipse: s-maj=4.1km s-min=2.6km az=131.0*
*DDA **21** 01:30:08.8,39.°08N×29.°04E,h7km,Md2.7*
ISC 21 01:30:08.9±1.0,**39.°07N**±0.°04×**29.°05E**±0.°03,**h17**km±8km, **n18**,σ0°**48**/28,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**263**	*i* P		**Pg**	**01 30 14.8**	**+0.1**
DEMI				*i* S		**Sg**	**01 30 18.4**	**-0.2**
DEMI	**Demirci**	**0.26**	**263**	P		**Pg**	**01 30 14.8**	**+0.1**
DEMI				S		**Sg**	**01 30 18.5**	**-0.2**
GEDZ	**Gediz**	**0.29**	**96**	*e*PG		**Pg**	**01 30 15.4**	**+0.2**
GEDZ	**Gediz**	**0.29**	**96**	*e*Pg		**Pg**	**01 30 15.4**	**+0.2**
GDZ	**Gediz**	**0.34**	**87**	*i* P		**Pg**	**01 30 15.8**	**-0.3**
GDZ				*i* S		**Sg**	**01 30 21.2**	**+0.1**
GDZ	**Gediz**	**0.34**	**87**	P		**Pg**	**01 30 15.8**	**-0.3**
GDZ				S		**Sg**	**01 30 21.2**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**41**	*e*PG		**Pg**	**01 30 18.5**	**-0.4**
TVSB				*e*SG		**Sg**	**01 30 25.0**	**-0.6**
TVSB	**Tavsanli**	**0.50**	**41**	*e*Pg		**Pg**	**01 30 18.5**	**-0.4**
TVSB				*e*Sg		**Sg**	**01 30 25.0**	**-0.6**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*PG		**Pg**	**01 30 21.5**	**+0.1**
KULA				*e*SG		**Sb**	**01 30 30.5**	**+0.3**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*Pg		**Pg**	**01 30 21.5**	**+0.1**
KULA				*e*Sg		**Sb**	**01 30 30.5**	**+0.3**
MANT	**Manisa**	**0.69**	**213**	*i* P		**Pg**	**01 30 21.8**	**-0.8**
MANT				*i* S		**Sg**	**01 30 31.2**	**-0.6**
MANT	**Manisa**	**0.69**	**213**	P		**Pg**	**01 30 21.8**	**-0.8**
MANT				S		**Sg**	**01 30 31.2**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*PN		**Pn**	**01 30 32.1**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*Pn		**Pn**	**01 30 32.1**	**-0.2**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN		**Pn**	**01 30 33.1**	**+0.7**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn		**Pn**	**01 30 33.1**	**+0.7**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN		**Pn**	**01 30 35.6**	**+0.5**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn		**Pn**	**01 30 35.6**	**+0.5**

MEX 21 01:36:48.2±0.9,**16.°80N×95.°15W**,**h139**km±22km,**MD3.7, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
HUIG	**Huatulco**	**1.38**	**222**	*e*P		Pn	01 37 14.1	-1.7
HUIG				*e*S		Sn	01 37 35.2	-1.4
VHO	**Vista Hermosa**	**1.54**	**280**	*e*P		Pn	01 37 17.1	-0.6
VHO				*e*S		Sn	01 37 37.4	-2.6
PNIG	**Pinotepa**	**2.89**	**262**	*e*P		Pn	01 37 32.6	-1.1
PNIG				*e*S		Sn	01 38 07.1	-1.7

*ATH **21** 01:40:48.7,37.°00N×27.°42E,h28km±2km,ML2.1/2, Error ellipse: s-maj=2.8km s-min=1.2km az=227.0*
*ISCJB **21** 01:40:49.3±0.5,37.°01N±0.°03×27.°47E±0.°05,h8km±4km, Error ellipse: s-maj=6.5km s-min=4.4km az=162.3*
*DDA **21** 01:40:49.4,37.°03N×27.°49E,h9km,Md2.5*
*CSEM **21** 01:40:49.4±0.2,37.°02N×27.°45E,h10km,MD2.6, Error ellipse: s-maj=4.0km s-min=3.3km az=93.0*
*ISK **21** 01:40:49.2,37.°06N×27.°44E,h13km,MD2.6*
ISC 21 01:40:48.1±0.9,**37.°01N**±0.°03×**27.°55E**±0.°03,**h12**km±6km, **n27**,σ1°**01**/40,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
BDRM	**Kayabasi**	**0.10**	**301**	*i* P		**Pg**	**01 40 51.4**	**+0.4**
BDRM				*i* S		**Sg**	**01 40 52.9**	**-0.2**
BDRM	**Kayabasi**	**0.10**	**301**	P		**Pg**	**01 40 51.4**	**+0.4**
BDRM				S		**Sg**	**01 40 52.9**	**-0.2**
BODT	**Bodrum**	**0.20**	**284**	*e*PG		**Pg**	**01 40 52.4**	**-0.1**
BODT				*e*SG		**Sg**	**01 40 54.9**	**-0.6**
BODT	**Bodrum**	**0.20**	**284**	*e*Pg		**Pg**	**01 40 52.4**	**-0.1**
BODT				*e*Sg		**Sg**	**01 40 54.9**	**-0.6**
MLSB	**Milas**	**0.33**	**32**	*e*PG		**Pb**	**01 40 56.9**	**+0.8**
MLSB	**Milas**	**0.33**	**32**	*e*Pg		**Pb**	**01 40 56.9**	**+0.8**
NIS1	**Nisyros Isl.**	**0.51**	**216**	*e*PG		**Pb**	**01 40 59.6**	**+0.6**
NIS1	**Nisyros Isl.**	**0.51**	**216**	P		**Pg**	**01 40 58.5**	**+0.4**
NIS1	**Nisyros Isl.**	**0.51**	**216**	*e*Pg		**Pb**	**01 40 59.6**	**+0.6**
NIS1				S		**Sb**	**01 41 05.8**	**-0.5**
NIS1	**Nisyros Isl.**	**0.51**	**216**	P		**Pg**	**01 40 58.5**	**+0.4**
NIS1				S		**Sb**	**01 41 05.8**	**-0.5**
NIS1				AML		AML	01 41 07.8	
	comp=E,1151μm,0.2s							
NIS1				AML		AML	01 41 08.1	
	comp=N,594μm,0.4s							
NISR	**Nisiros**	**0.53**	**220**	P		**Pg**	**01 40 58.1**	**-0.3**
NISR	**Nisiros**	**0.53**	**220**	P		**Pg**	**01 40 58.1**	**-0.3**
YER	**Yerkesik**	**0.60**	**78**	*e*PG		**Pn**	**01 41 02.8**	**+0.3**
YER	**Yerkesik**	**0.60**	**78**	*e*Pg		**Pn**	**01 41 02.8**	**+0.3**
GCAM	**G?zelcaml?**	**0.73**	**340**	*i* P		**Pb**	**01 41 03.4**	**+0.6**
GCAM				*i* S		**Sn**	**01 41 14.9**	**-0.4**
GCAM	**G?zelcaml?**	**0.73**	**340**	P		**Pb**	**01 41 03.4**	**+0.6**
GCAM				S		**Sn**	**01 41 14.9**	**-0.4**
TURN	**Turunc**	**0.85**	**99**	*i* P		**Pg**	**01 41 01.9**	**-2.7**
TURN				*i* S		**Sg**	**01 41 12.2**	**-3.6**
SMG	**Samos**	**0.90**	**321**	P		**Pb**	**01 41 05.7**	**0.0**
SMG				S		**Sg**	**01 41 16.8**	**-0.4**
SMG	**Samos**	**0.90**	**321**	P		**Pb**	**01 41 05.7**	**0.0**
SMG				S		**Sg**	**01 41 16.8**	**-0.4**
SMG				AML		AML	01 41 20.4	
	comp=E,234μm,0.4s							
SMG				AML		AML	01 41 20.4	
	comp=N,152μm,0.3s							
ARG	**Arkhangelos**	**0.92**	**150**	P		**Pn**	**01 41 07.6**	**+0.8**
ARG				S		**Sn**	**01 41 20.7**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**0.97**	**16**	*e*PG		**Pn**	**01 41 08.0**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.97**	**16**	*e*Pg		**Pn**	**01 41 08.0**	**+0.3**
DGB	**˙zmir**	**1.17**	**333**	*i* P		**Pb**	**01 41 10.3**	**+0.1**
DGB				*i* S		**Sn**	**01 41 27.2**	**+1.2**
FETY	**Fethiye**	**1.29**	**107**	*e*PN		**Pg**	**01 41 14.8**	**+2.0**
FETY	**Fethiye**	**1.29**	**107**	*e*Pn		**Pg**	**01 41 14.8**	**+2.0**
APE	**Apeiranthos**	**1.62**	**273**	P		**Pn**	**01 41 16.0**	**-0.5**
APE	**Apeiranthos**	**1.62**	**273**	P		**Pn**	**01 41 16.0**	**-0.5**

*ISCJB **21** 01:46:19.8±0.5,39.°08N±0.°04×29.°01E±0.°04,h9km±6km, Error ellipse: s-maj=8.2km s-min=4.4km az=147.7*
*CSEM **21** 01:46:19.7±0.1,39.°09N×28.°99E,h8km,MD2.7, Error ellipse: s-maj=3.9km s-min=2.3km az=129.0*
*ISK **21** 01:46:19.3,39.°10N×29.°02E,h10km,MD2.6*
*DDA **21** 01:46:19.9,39.°07N×29.°01E,h7km,Md2.7*
ISC 21 01:46:19.8±0.9,**39.°09N**±0.°03×**29.°01E**±0.°03,**h12**km±8km, **n26**,σ0°**32**/36,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
DEMI	**Demirci**	**0.23**	**260**	*i* P		**Pg**	**01 46 25.0**	**+0.2**
DEMI				*i* S		**Sg**	**01 46 28.3**	**+0.2**
DEMI	**Demirci**	**0.23**	**260**	P		**Pg**	**01 46 25.0**	**+0.2**
DEMI				S		**Sg**	**01 46 28.3**	**+0.2**
GEDZ	**Gediz**	**0.32**	**97**	*e*PG		**Pg**	**01 46 25.9**	**-0.4**
GEDZ	**Gediz**	**0.32**	**97**	*e*Pg		**Pg**	**01 46 25.9**	**-0.4**
GDZ	**Gediz**	**0.37**	**89**	*i* P		**Pg**	**01 46 27.3**	**+0.1**
GDZ				*i* S		**Sg**	**01 46 32.5**	**+0.3**
GDZ	**

1um,0.3s,baz=290,slow=23,SNR=10
RAO Raoul Island 1.53 279 *e*Pn **Pn** 01 56 01.9 +0.2
RAO *e*S **Sb** 01 56 22.9 0.0
URZ Urewera 10.36 211 Pn **Pn** 01 57 60.0 -3.0
1.5nm,0.3s,baz=276,slow=4.9,SNR=10
URZ Sn **Sn** 01 59 56.1 -2.1
5.9nm,0.3s,baz=269,slow=23,SNR=12
URZ Urewera 10.36 211 *e*Pn **Pn** 01 58 00.6 -2.4
URZ *e*S **Sn** 01 59 56.4 -1.8
MSVF Nonsavu 12.84 334 *e*P **Pn** 01 58 34.0 -3.0
MSVF Nonsavu 12.84 334 *e*Pn **Pn** 01 58 35.0 -2.0
SNZO South Karori 13.92 210 *e*Pn **Pn** 01 58 50.3 -1.3
THZ Tophouse 15.10 213 *e*Pn **Pn** 01 59 08.5 +0.8
50nm,0.8s
KHZ Kahutara 15.33 210 *e*Pn **Pn** 01 59 09.5 -1.1
93nm,0.8s
KHZ *e*S Sn 02 01 49.4 -10
OXZ Oxford 16.72 211 *e*Pn **Pn** 01 59 25.9 -2.5
55nm,1.1s
OXZ *e*Sn Sn 02 02 22.7 -11
DZM Mont Dzumac 17.29 291 LR LR 02 05 18.1
comp=Z,414nm,18.1s,baz=66,slow=34
DZM Mont Dzumac 17.29 291 *e*Pn Pn 01 59 28.0 -7.8
100nm,1.5s
RPZ Rata Peaks 17.47 212 P **Pn** 01 59 35.2 -2.7
2.0nm,0.3s,baz=39,slow=1.8,SNR=10
RPZ S Sn 02 02 36.2 -15
0.4nm,0.3s,baz=3.5,slow=19,SNR=3.0
RPZ Rata Peaks 17.47 212 *e*Pn **Pn** 01 59 35.1 -2.7
29nm,0.9s
RPZ S Sn 02 02 36.2 -15
ODZ Otahua Downs 18.69 210 *e*Pn **P** 01 59 52.3 0.0
28nm,0.9s
TBI Tubuai 24.68 82 *e*LQ LQ 02 05 30.4
493nm,27.2s
TBI *e*LR LR 02 06 43.0
918nm,27.5s
PPT2 Papeete2 27.05 70 *e*LR LR 02 07 40.7
706nm,26.0s
PPT Papeete 27.06 70 LR LR 02 10 45.3
comp=Z,472nm,18.5s,baz=188,slow=34
EIDS Eidsvold 29.28 270 *e*Pn **P** **02 01 37.8 +1.5**
14nm,1.1s
CTA Charters Tower 35.23 277 P **P** **02 02 27.7 -0.7**
5.9nm,0.7s,baz=118,slow=14,SNR=6.2
CTAO Charters Tower 35.23 277 *e*P **P** **02 02 28.4 -0.1**
CTAO pmax pmax
comp=Z,10.0nm,0.5s
CTAO Charters Tower 35.23 277 *e*P **P** **02 02 28.4 -0.1**
comp=Z,9.8nm,0.5s
STKA Stephens Creek 36.22 255 LR LR 02 16 51.2
comp=Z,415nm,18.3s,baz=49,slow=35
RKT Rikitea 37.34 90 *e*LR LR 02 12 35.0
comp=Z,504nm,26.0s
TAOE Nuku Hiva Isla 39.51 66 *e*LR LR 02 13 37.6
comp=Z,377nm,23.7s
AS01 Alice Springs 44.70 265 *e*P **P** **02 03 46.3 -0.8**
AS31 Alice Springs 44.74 265 *e*P **P** **02 03 47.0 -0.4**
comp=Z,2.2nm,0.8s
ASAR Alice Springs 44.74 265 P **P** **02 03 46.1 -1.3**
comp=Z,4.7nm,0.8s,baz=102,slow=6.7,SNR=20
ASAR LR LR 02 22 28.7
comp=Z,555nm,18.5s,baz=112,slow=36
WB2 Warramunga Arr 45.64 270 *e*P **P** **02 03 52.9 -1.7**
WRAB Tennant Creek 45.64 270 *i* P **P** **02 03 55.4 +0.8**
WRAB pmax pmax
comp=Z,34nm,1.0s
WRAB Tennant Creek 45.64 270 *e*P **P** **02 03 52.9 -1.7**
comp=Z,15nm,0.9s
WRA Warramunga Arr 45.65 270 P **P** **02 03 52.9 -1.8**
comp=Z,12nm,0.8s,baz=107,slow=7.9,SNR=21
WRA LR LR 02 22 24.4
comp=Z,136nm,18.5s,baz=105,slow=35
FORT Forrest 47.80 254 *e*P **P** **02 04 10.3 -1.1**
comp=Z,198nm,0.6s
SBA Scott Base 49.06 185 *e*P P 02 04 25.7 +5.3
SBA pmax pmax
comp=Z,30nm,1.6s
SBA Scott Base 49.06 185 *e*P P 02 04 25.6 +5.3
comp=Z,30nm,1.6s
VNDA Vanda 49.16 186 P **P** **02 04 24.0 +2.8**
comp=Z,2.4nm,1.1s,baz=7.8,slow=5.9,SNR=5.2
VNDA LR LR 02 21 42.8
comp=Z,71nm,20.6s,baz=358,slow=32
VNDA Vanda 49.16 186 P **P** **02 04 24.0 +2.8**
VNDA pmax pmax
comp=Z,2.0nm,1.1s
FITZ Fitzroy Crossi 53.94 268 P **P** **02 04 58.7 +1.0**
comp=Z,11nm,1.1s,baz=186,slow=6.1,SNR=7.1
GUMO Guam 56.98 313 LR LR 02 24 54.1
comp=Z,122nm,20.4s,baz=94,slow=31
MBWA Marble Bar 57.89 262 *e*P **P** **02 05 25.5 -0.5**
comp=Z,13nm,0.9s
QSPA South Pole Qui 60.62 180 *e*P **P** **02 05 46.6 +2.2**
comp=Z,56nm,1.0s
MAW Mawson 73.70 200 P **P** **02 07 08.9 +1.9**
comp=Z,8.7nm,1.2s,baz=152,slow=6.9,SNR=7.8
SYO Syowa Base 78.34 192⇑ *e*P **P** **02 07 33.0 -0.5**
SYO Syowa Base 78.34 192⇑ *e*pP pP 02 07 39.0 -3.4
SNAA Sanae 79.01 178 P **P** **02 07 34.2 -3.0**
SNAA Sanae 79.01 178⇑ *i*P **P** **02 07 38.1 +0.8**
SNAA Sanae 79.01 178 *e*P **P** **02 07 37.6 +0.4**
comp=Z,219nm,1.0s
VNA1 Neumayer--Stat 79.77 176 P **P** **02 07 42.5 +1.2**
PLCA Paso Flores 81.97 132 P **P** **02 07 54.1 +0.4**
comp=Z,10nm,1.2s,baz=242,slow=7.4,SNR=3.4
PLCA LR LR 02 39 07.3
comp=Z,156nm,18.4s,baz=316,slow=32
PLCA Paso Flores 81.97 132 P **P** **02 07 54.1 +0.4**
PLCA pmax pmax
comp=Z,7.0nm,1.1s
MONP2 Monument Peak 84.00 47 P **P** **02 08 03.2 -1.1**
baz=229
TPFO Pinon Flats 84.44 46 P **P** **02 08 06.0 -0.5**
baz=229
PFO Pinyon Flats O 84.44 46 *e*P **P** **02 08 05.9 -0.6**
PFO pmax pmax
comp=Z,16nm,1.4s
PFO Pinyon Flats O 84.44 46 *e*P **P** **02 08 05.9 -0.6**
comp=Z,16nm,1.4s
KSRS Korea Array 84.69 319 P **P** **02 08 11.7 +4.2**
comp=Z,2.0nm,0.7s,baz=160,slow=3.9,SNR=5.5
KSRS LR LR 02 43 58.9
comp=Z,26nm,19.3s,baz=114,slow=34
KSAR Wonju Array Be 84.71 319 P **P** **02 08 11.7 +4.2**
KSAR Wonju Array Be 84.71 319 P **P** **02 08 11.7 +4.2**
BELC Belle Mtn. Jos 84.98 46 P **P** **02 08 08.7 -0.5**
baz=229
CMB Columbia Colle 85.04 41 *e*P **P** **02 08 08.1 -1.2**
CMB pmax pmax
comp=Z,10.0nm,1.3s
CMB Columbia Colle 85.04 41 *e*P **P** **02 08 08.1 -1.2**
comp=Z,9.8nm,1.3s
BC3 Big Chuckawall 85.11 47 P **P** **02 08 09.4 -0.4**
baz=230
GSC Goldstone, Bar 85.33 45 P **P** **02 08 10.0 -0.8**
baz=229
GSC Goldstone, Bar 85.33 45 *e*P **P** **02 08 10.4 -0.5**
GSC pmax pmax
comp=Z,21nm,1.5s
GSC Goldstone, Bar 85.33 45 *e*P **P** **02 08 10.4 -0.5**
comp=Z,21nm,1.5s
PETK Petropavlovsk- 85.34 345 LR LR 02 42 31.2
comp=Z,66nm,19.1s,baz=130,slow=33
AFDM Forest Hills D 85.34 40 *e*P **P** **02 08 10.5 -0.3**
comp=Z,9.3nm,1.4s
MPMC Manual Prospec 85.41 44 P **P** **02 08 10.4 -0.9**
baz=228
ORV Oroville 85.47 39 *e*P **P** **02 08 10.6 -0.7**
ORV pmax pmax
comp=Z,7.0nm,1.4s
ORV Oroville 85.47 39 *e*P **P** **02 08 10.6 -0.7**
comp=Z,7.4nm,1.4s
IRM Iron Mountain 85.63 47 P **P** **02 08 11.7 -0.6**
baz=230
WDC Whiskeytown Da 85.63 38 *e*P **P** **02 08 11.5 -0.6**
WDC pmax pmax
comp=Z,18nm,1.4s
WDC Whiskeytown Da 85.63 38 *e*P **P** **02 08 11.5 -0.6**
comp=Z,18nm,1.4s
113A Mohawk Valley, 85.63 49 *e*P **P** **02 08 12.1 -0.2**
comp=Z,14nm,1.5s
GMRC Granite Mounta 85.71 46 P **P** **02 08 11.9 -0.9**
baz=230
214A Organ Pipe Nat 85.75 50 P **P** **02 08 12.4 -0.5**
baz=231
N02D Trinity Center 85.82 38 P **P** **02 08 12.5 -0.7**
baz=225
WAKR Walker 85.91 41 *e*P **P** **02 08 14.0 +0.2**
comp=Z,22nm,1.5s
TPNV Topopah Spring 86.75 44 P **P** **02 08 16.7 -1.3**
baz=229
TPNV Topopah Spring 86.75 44 *e*P **P** **02 08 17.6 -0.3**
TPNV pmax pmax
comp=Z,18nm,1.6s
TPNV Topopah Spring 86.75 44 *e*P **P** **02 08 17.6 -0.3**
comp=Z,18nm,1.6s
PAHR Pah Rah Range 86.76 40 *e*P **P** **02 08 17.7 -0.2**
comp=Z,5.8nm,0.9s
Y14A Wickenburg 86.86 48 *e*P **P** **02 08 18.2 -0.2**
comp=Z,64nm,1.4s
W13A Hualapai Mount 87.03 47 *e*P **P** **02 08 19.4 0.0**
comp=Z,8.3nm,1.3s
SHPR Sheep Range 87.13 45 *e*P **P** **02 08 19.9 +0.2**
comp=Z,8.0nm,1.3s
TUC Tucson 87.32 50 P **P** **02 08 20.0 -0.7**
baz=232
TUC Tucson 87.32 50 *e*P **P** **02 08 19.7 -1.0**
TUC pmax pmax
comp=Z,11nm,1.3s
TUC Tucson 87.32 50 *e*P **P** **02 08 19.7 -1.0**
comp=Z,11nm,1.3s
GSI Gunungsitoli 87.35 273 *e*P **P** **02 08 21.8 +0.5**
comp=Z,24nm,0.9s
K05A Sumner Lake 88.02 37 *e*P **P** **02 08 23.9 -0.1**
comp=Z,22nm,1.4s
R11A Troy Canyon, C 88.06 43 P **P** **02 08 23.4 -0.9**
baz=229
X16A Lo Mia Camp, P 88.17 48 *e*P **P** **02 08 25.1 +0.2**
comp=Z,7.4nm,1.3s
BMN Battle Mountai 88.47 41 *e*P **P** **02 08 25.3 -0.8**
BMN pmax pmax
comp=Z,7.0nm,1.4s
BMN Battle Mountai 88.47 41 *e*P **P** **02 08 25.3 -0.8**
comp=Z,7.2nm,1.4s
LCMT Little Creek M 88.64 45 *e*P **P** **02 08 26.8 -0.1**
comp=Z,15nm,1.8s
U15A North Rim 88.87 46 *e*P **P** **02 08 28.1 -0.1**
comp=Z,26nm,1.8s
WUAZ Wupatki 88.89 48 P **P** **02 08 27.3 -0.9**
baz=232
WUAZ Wupatki 88.89 48 *e*P **P** **02 08 28.2 0.0**
comp=Z,14nm,1.4s
CCUT Cedar City 88.90 45 *e*P **P** **02 08 27.6 -0.7**
comp=Z,10.0nm,1.5s
KNB Kanab 88.90 46 *e*P **P** **02 08 28.4 +0.1**
KNB pmax pmax
comp=Z,23nm,1.7s
KNB Kanab 88.90 46 *e*P **P** **02 08 28.4 +0.1**
comp=Z,23nm,1.7s
TRQA Tornquist 88.94 134 *e*P **P** **02 08 25.5 -3.0**
comp=Z,8.2nm,1.3s
WHN Wuhan 89.07 306 P P 02 08 35.5 +6.6
MTPU Mount Pierson 89.94 45 *e*P **P** **02 08 33.8 +0.5**
comp=Z,17nm,1.7s
TX31 Lajitas Ar. Si 90.58 56 *e*P **P** **02 08 35.6 -0.5**
TXAR Lajitas Array 90.58 56 P **P** **02 08 35.0 -1.1**
comp=Z,3.0nm,1.1s,baz=213,slow=5.8,SNR=20
TXAR LR LR 02 43 20.7
comp=Z,117nm,18.6s,baz=0.0,slow=32
MNTX Cornudas Mount 90.68 54 P **P** **02 08 35.4 -1.0**
baz=235
MNTX Cornudas Mount 90.68 54 *e*P **P** **02 08 35.7 -0.8**
comp=Z,9.2nm,1.4s
G08A Pilot Rock 90.79 36 *e*P **P** **02 08 35.6 -1.2**
comp=Z,10nm,1.1s
LAZ Ladron 91.02 51 *e*P **P** **02 08 38.2 0.0**
KLR Kul'dur 91.06 329 *e*P **P** **02 08 39.1 +1.3**
MFID Camas Ranch 91.22 39 *e*P **P** **02 08 37.9 -1.0**
comp=Z,4.8nm,1.0s
HAWA Hanford 91.25 35 *e*P **P** **02 08 38.3 -0.5**
comp=Z,14nm,1.2s
BMO Blue Mountains 91.36 38 *e*P **P** **02 08 37.8 -1.7**
comp=Z,5.2nm,1.4s
SRU San Rafael Swe 91.62 45 *e*P **P** **02 08 40.9 0.0**
SRU pmax pmax
comp=Z,8.0nm,1.2s
SRU San Rafael Swe 91.62 45 *e*P **P** **02 08 40.9 0.0**
comp=Z,8.4nm,1.2s
ANMO Albuquerque 91.79 50 P **P** **02 08 41.1 -0.7**
baz=235
ANMO Albuquerque 91.79 50 *e*P **P** **02 08 40.9 -0.9**
ANMO pmax pmax
comp=Z,3.0nm,1.0s
ANMO Albuquerque 91.79 50 *e*P **P** **02 08 41.2 -0.5**
comp=Z,2.5nm,0.9s
HVU Hansel Valley 91.91 42 *e*P **P** **02 08 41.5 -0.6**
HVU pmax pmax
comp=Z,10.0nm,1.4s
HVU Hansel Valley 91.91 42 *e*P **P** **02 08 41.5 -0.6**
comp=Z,10nm,1.4s
D08A Wollman Farm, 92.01 35 *e*P **P** **02 08 41.8 -0.5**
comp=Z,17nm,1.1s
E09A Wood Farm, Sta 92.04 36 *e*P **P** **02 08 41.4 -1.0**
comp=Z,14nm,1.0s
HLID Hailey 92.10 40 P **P** **02 08 42.3 -0.6**
baz=230
HLID Hailey 92.10 40 *e*P **P** **02 08 42.2 -0.8**
comp=Z,4.9nm,1.1s
F10A Beach Ranch, E 92.15 37 *e*P **P** **02 08 41.6 -1.4**
comp=Z,9.3nm,1.1s
GYA Guiyang 92.47 299 P **P** **02 08 45.0 -0.1**
GYA pP sP 02 08 56.4 -1.0
GYA PP **PP** **02 12 29.3 +2.6**
GYA SKS **SKSac** **02 19 15.0 -1.9**
GYA S **S** **02 19 44.8 -2.7**
GYA pmax pmax
comp=Z,10.0nm,1.0s
GYA pmax pmax
comp=Z,110nm,6.6s
RC01 Rabbit Creek A 92.80 13 *e*P **P** **02 08 44.0 -1.5**
comp=Z,18nm,1.6s
S22A 4UR Ranch, Cre 93.15 48 P **P** **02 08 47.6 -0.6**
baz=235
S22A 4UR Ranch, Cre 93.15 48 *e*P **P** **02 08 48.1 0.0**
comp=Z,3.8nm,1.2s
MCMT McKenzie Canyo 93.77 40 *e*P **P** **02 08 50.2 -0.6**
REDW Red Top Meadow 94.00 42 *e*P **P** **02 08 51.4 -0.4**
comp=Z,17nm,1.5s
BW06 Boulder Array 94.40 43 *e*P **P** **02 08 52.1 -1.6**
PDAR Pinedale Array 94.40 43 P **P** **02 08 52.0 -1.7**
comp=Z,1.0nm,1.0s,baz=243,slow=4.0,SNR=5.2
PDAR LR LR 02 47 23.0
comp=Z,141nm,18.2s,baz=259,slow=33
KMI Kunming 94.83 296 P **P** **02 08 56.8 +0.8**
KMI pmax pmax
comp=Z,11nm,0.7s
BOZ Bozeman (W) 94.95 39 P **P** **02 08 54.8 -1.3**
baz=232
BOZ Bozeman (W) 94.95 39 *e*P **P** **02 08 54.8 -1.3**
BOZ pmax pmax
comp=Z,9.0nm,1.3s
BOZ Bozeman (W) 94.95 39 *e*P **P** **02 08 54.8 -1.3**
comp=Z,8.5nm,1.3s
RND Reindeer 95.10 12 *e*P **P** **02 08 55.4 -0.7**
RND pmax pmax
comp=Z,7.0nm,1.2s
RND Reindeer 95.10 12 *e*P **P** **02 08 55.4 -0.7**
comp=Z,6.7nm,1.2s
WRH Wood River Hil 96.21 12 *e*P **P** **02 08 59.6 -1.5**
comp=Z,7.5nm,1.3s
CCB Clear Creek Bu 96.42 12 *e*P **P** **02 09 00.3 -1.7**
comp=Z,18nm,2.0s
COLA College 96.62 12 *e*P **P** **02 09 03.2 +0.3**
COLA pmax pmax
comp=Z,2.0nm,0.9s
ILAR Eielson Array 96.70 12 P **P** **02 09 01.2 -2.1**
comp=Z,0.8nm,0.9s,baz=219,slow=4.2,SNR=6.1
IL1 Eielson Array 96.70 12 *e*P **P** **02 09 01.2 -2.1**
HHC Hu-ho-hao-te 96.75 313 *e*P **P** **02 09 04.8 +0.5**
HHC pmax pmax
comp=Z,13nm,1.0s
HHC pmax pmax
comp=Z,87nm,6.0s
CD2 Chengdu 96.94 301 *e*P **P** **02 09 05.4 +0.1**
CD2 sP sP 02 09 20.1 +2.5
CD2 SKS **SKSac** **02 19 39.5 -1.1**
CD2 S **S** **02 20 25.3 -0.9**
CD2 sS sS 02 20 43.5 +2.2
CD2 SS **SS** **02 27 03.3 0.0**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
LPAZ La Paz 97.07 113 P Pdif 02 09 07.4 +0.3
comp=Z,1.8nm,0.8s,baz=198,slow=2.9,SNR=5.5
LPAZ LR LR 02 46 51.1
comp=Z,70nm,18.5s,baz=356,slow=32
BILL Bilibino 98.11 353⇑ *e*P Pdif 02 09 11.3 +1.6
BILL *e* 02 13 07.7
BILL pmax pmax
comp=Z,13nm,2.1s
RSSD Black Hills 98.47 44 *e*P **P** **02 09 10.6 -1.5**
RSSD pmax pmax
comp=Z,2.0nm,0.9s
RSSD Black Hills 98.47 44 *e*P **P** **02 09 10.6 -1.5**
comp=Z,2.2nm,0.9s
CPUP Villa Florida 99.30 127 LR LR 02 49 33.7
comp=Z,126nm,19.1s,baz=16,slow=33
LZH Lanzhou 99.45 306 *e*P **Pdif** **02 09 19.0 +2.4**
LZH pP sP 02 09 30.5 +1.6
LZH sP pP 02 09 34.6 +8.9
LZH *e*PP **PP** **02 13 25.0 +4.3**
LZH pmax pmax
comp=Z,20nm,1.5s
LZH pmax pmax
comp=Z,80nm,5.4s
LZH LR LR
comp=Z,130nm,17.0s
LZH LR LR
comp=Z,240nm,17.2s
LZH LR LR
comp=Z,340nm,19.6s
WMQ Urumqi 113.90 308 *e*PKP **PKiKP** **02 14 12.5 +0.1**
WMQ LR LR
comp=Z,210nm,28.6s
WMQ LR LR
comp=Z,170nm,27.4s
WMQ LR LR
comp=Z,190nm,29.3s
MKAR Makanchi Array 118.39 310 PKP **PKPdf** **02 14 19.1 -1.8**
comp=Z,0.4nm,0.6s,baz=180,slow=0.3,SNR=3.8
KSH Kashi 121.13 301 *e*PKP **PKPdf** **02 14 27.8 +1.3**
KSH *es*PKP 02 14 42.3
KSH *e*PP PP 02 16 06.4 +9.2
KSH PKS **PKSdf** **02 18 03.4 +0.1**
KSH SKS **SKSdf** **02 21 34.4 -2.3**
KSH SKKS **SKKSac** **02 22 53.6 -0.9**
KSH AMB AMB
comp=Z,64nm,5.2s
KSH LR LR
comp=Z,150nm,9.4s
KSH LR LR
comp=Z,81nm,7.6s
KSH LR LR
comp=Z,73nm,8.4s
KURK Kurchatov 121.55 314 PKIKP **PKPdf** **02 14 25.1 -1.7**
KURK pmax pmax
comp=Z,1.0nm,0.9s
KURK Kurchatov 121.55 314 PKP **PKPdf** **02 14 25.1 -1.7**
KURBB Kurchatov Arra 121.60 314 PKP **PKPdf** **02 14 25.1 -1.8**
comp=Z,0.9nm,0.9s,baz=107,slow=2.0,SNR=6.7
VOSK Vostochnaya 126.48 316 *e*PKIKP **PKPdf** **02 14 35.1 -1.1**
VOSK Vostochnaya 126.48 316 *e*PKPdf **PKPdf** **02 14 35.2 -1.1**
BVAR Borovoye Array 126.85 316 PKP **PKPdf** **02 14 36.1 -0.8**
comp=Z,0.3nm,0.5s,baz=70,slow=1.7,SNR=4.3
ARCES ARCESS Array B 138.02 349 PKP **PKPdf** **02 14 57.6 +0.1**
comp=Z,0.7nm,0.6s,baz=349,slow=2.8,SNR=6.4
FINES FINESS Array B 144.81 342 PKP **PKPab** **02 15 06.9 -1.9**
comp=Z,2.9nm,0.6s,baz=58,slow=2.4,SNR=12
OBN Obninsk 145.30 327⇓ *e*PKIKP **PKPdf** **02 15 13.6 +2.8**
OBN *e* 02 18 32.3
OBN *e*PPP PPP 02 21 44.2
OBN pmax pmax
comp=Z,6.0nm,1.0s
OBN MLR MLR
comp=Z,41nm,16.0s
KIV Kislovodsk 145.99 306⇑ *e*PKP2 **PKPdf** **02 15 12.5 -0.1**
KIV *e* 02 18 42.5
KIV *e*PPP PPP 02 21 48.3
KIV pmax pmax
comp=Z,3.0nm,0.9s
NEY Neytrino 146.11 305 *e*PKP2 **PKPab** **02 15 14.5 0.0**
VSU Vasula 147.01 338 *e*PKP2 **PKPbc** **02 15 15.8 +0.1**
NC303 NORSAR Array S 147.87 353 *e*PKPdf **PKPbc** **02 15 16.9 -1.1**
NB2 NORSAR Subarra 148.07 353 PKP **PKPbc** **02 15 17.4 -1.2**
comp=Z,5.6nm,1.1s,baz=10,slow=3.2
NOA NORSAR Array B 148.07 353 PKPbc **PKPdf** **02 15 16.7 +1.3**
comp=Z,2.6nm,0.8s,baz=14,slow=4.5,SNR=6.9
HFS Hagfors 148.64 350 PKPbc **PKPbc** **02 15 18.4 -1.6**
comp=Z,3.5nm,0.8s,baz=169,slow=2.3,SNR=11
MICGM Minsk 149.56 332 *e*LR LR 02 18 40.0
AKASG Malin Array Be 151.49 325 PKPbc **PKPbc** **02 15 25.8 -1.4**
comp=Z,0.7nm,0.4s,baz=47,slow=2.5,SNR=7.7
BRTR Keskin Array B 153.52 301 PKPbc **PKPbc** **02 15 30.8 -1.6**
comp=Z,1.0nm,0.9s,baz=166,slow=2.4,SNR=5.2
CLL Collm 157.15 345 *e*(P) **PKPdf** **02 15 32.0 +3.0**
CLL Collm 157.15 345 *e*PKIKP **PKPdf** **02 15 32.0 +3.0**
KHC Kasperske Hory 159.02 342 *e*pPKP pPKPdf 02 15 43.5 +2.8

IDC 21 02:00:00.0±3.3, 30°.35S×138°.44E, h0km, mb1 3.4/4, mb1mx3.3/33, mbtmp3.2/4, ML3.1/4, Error ellipse: s-maj=93.4km s-min=15.9km az=40.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.11**	**120**	Pn	Pn	02 00 50.6	+0.3
	0.5nm,0.3s,baz=300,slow=14,SNR=7.0						
STKA				Sn	Sn	02 01 27.9	-0.3
	3.1nm,0.3s,baz=319,slow=15,SNR=5.2						
STKA				Lg	Lg	02 01 38.8	
	4.8nm,0.3s,baz=31,slow=11,SNR=4.9						
ASAR	**Alice Springs**	**7.79**	**328**	Pn	Pn	02 01 54.2	-0.4
	0.3nm,0.3s,baz=151,slow=12,SNR=12						
ASAR				Sn	Sn	02 03 23.9	+0.4
	0.3nm,0.3s,baz=152,slow=22,SNR=6.0						
WRA	**Warramunga Arr**	**11.00**	**339**	Pn	Pn	02 02 38.4	-0.4
	0.3nm,0.3s,baz=162,slow=11,SNR=11						
FITZ	**Fitzroy Crossi**	**16.86**	**313**	Pn	P	02 03 58.8	-0.9
	0.2nm,0.3s,baz=135,slow=8.6,SNR=4.0						

*IDC **21** 02:12:39.6±12.0, 51°.97N×172°.25W, h0km, mb3.6/3, mb1 3.9/4, mb1mx3.4/56, mbtmp3.4/4, ML3.5/1, Error ellipse: s-maj=247.6km s-min=60.0km az=84.0*
*ISCJB **21** 02:12:46.7±0.7, 51°.9N±0°.1×171°.52W±0°.05, h44km, mb3.5/3, Error ellipse: s-maj=16.0km s-min=3.1km az=166.5*
*NEIC **21** 02:12:46.3, 51°.79N×171°.51W, h52km, ML3.6(AEIC), After AEIC.*

ISC 21 02:12:48.4±1.1, 52°.0N±0°.2×171°.55W±0°.05, h44km, n36, σ0s87/36, mb3.7/3, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**1.58**	**285**	P	Pn	02 13 14.1	+0.1
KOSE				S	Sn	02 13 34.4	+1.1
KOFP	**Korovin Flat P**	**1.60**	**282**	P	Pn	02 13 14.0	-0.3
KONE	**Korovin Northe**	**1.64**	**286**	P	Pn	02 13 14.7	0.0
KOKL	**Mount Kliuchef**	**1.67**	**283**	P	Pn	02 13 15.0	-0.2
KOKL				S	Sn	02 13 36.3	+0.9
NIKH	**Nikolski High**	**1.93**	**58**	P	Pn	02 13 16.7	-2.0
NIKH				S	Sn	02 13 40.0	-1.7
OKWR	**Okmok West Rim**	**2.51**	**53**	P	Pn	02 13 27.2	+0.5
OKAK	**Okmok**	**2.52**	**49**	P	Pn	02 13 25.7	-1.1
OKTU	**Okmok Mt. Tuli**	**2.56**	**55**	P	Pn	02 13 27.5	+0.1
OKER	**Okmok East Rim**	**2.59**	**54**	P	Pn	02 13 28.6	+0.7
GSMY	**Great Sitkin M**	**2.79**	**273**	P	Pn	02 13 29.8	-0.6
GSTD	**Great Sitkin T**	**2.84**	**273**	P	Pn	02 13 30.6	-0.7
GSTD				S	Sn	02 14 02.4	-1.8
GSCK	**Great Sitkin C**	**2.85**	**273**	P	Pn	02 13 30.4	-1.0
ETKA	**Kagalaska Isla**	**3.01**	**270**	P	Pn	02 13 32.3	-1.2
ADAG	**Mount Adagdak**	**3.12**	**272**	P	Pn	02 13 35.2	+0.1
MSOM	**Makushin Julie**	**3.34**	**55**	P	Pn	02 13 37.8	-0.3
KINC	**Kanaga Island**	**3.45**	**271**	P	Pn	02 13 39.5	-0.1
KIKV	**Kanaga Island**	**3.48**	**271**	P	Pn	02 13 39.6	-0.4
MTBL	**Makushin Table**	**3.56**	**54**	P	Pn	02 13 41.4	+0.2
UNV	**Unalaska Valle**	**3.58**	**56**	*e*Pn	Pn	02 13 41.0	-0.4
UNV				*e*S	Sn	02 14 23.0	+0.5
TAPA	**Tanaga Point A**	**3.88**	**270**	P	Pn	02 13 45.8	+0.2
AKRB	**Akutan Reef Bi**	**3.95**	**55**	P	Pn	02 13 47.4	+1.0
TAFP	**Tanaga Falls P**	**3.98**	**271**	P	Pn	02 13 47.3	+0.4
AKGG	**Akutan Green G**	**4.02**	**54**	P	Pn	02 13 48.5	+1.1
AKUT	**Akutan**	**4.10**	**56**	*e*Pn	Pn	02 13 47.9	-0.6
AKUT				*e*S	Sn	02 14 36.5	+1.3
SPIA	**Saint Paul Isl**	**5.27**	**8**	P	Pn	02 14 04.1	-0.4
SDPT	**Sand Point**	**7.40**	**58**	*e*Pn	Pn	02 14 34.0	+0.3
ILAR	**Eielson Array**	**18.04**	**35**	P	Pn	02 16 54.6	-0.8
	0.1nm,0.3s,baz=227,slow=9.8,SNR=4.9						

YKA	**Yellowknife Ar**	31.51	48	P		**P**	02 19 05.5	-0.2	
	0.2nm,0.3s,baz=275,slow=7.7,SNR=3.4								
H11N2	**WAKE ISLAND Hy**	36.33	216	T		T	02 58 17.1		
	baz=21,slow=76,SNR=44								
H11N3	**WAKE ISLAND Hy**	36.34	216	T		T	02 58 16.2		
	baz=21,slow=76,SNR=40								
H11N1	**WAKE ISLAND Hy**	36.34	216	T		T	02 58 21.2		
	baz=21,slow=76,SNR=38								
H11S1	**WAKE ISLAND Hy**	37.52	215	T		T	02 59 47.0		
	baz=22,slow=76,SNR=31								
H11S2	**WAKE ISLAND Hy**	37.54	215	T		T	02 59 51.4		
	baz=22,slow=76,SNR=18								
H11S3	**WAKE ISLAND Hy**	37.54	215	T		T	02 59 50.4		
	baz=22,slow=76,SNR=21								
PDAR	**Pinedale Array**	41.80	77	P		**P**	02 20 34.5	+0.8	
	0.8nm,0.6s,baz=298,slow=4.0,SNR=8.9								
TXAR	**Lajitas Array**	54.10	87	P		**P**	02 22 09.2	+0.4	
	0.7nm,0.7s,baz=296,slow=5.0,SNR=11								

ISCJB ***21*** *02:41:10.8±0.5,38°.20N±0°.03×26°.82E±0°.05,h10km±5km, Error ellipse: s-maj=7.1km s-min=4.9km az=144.2*
DDA ***21*** *02:41:10.9,38°.19N×26°.81E,h7km,Md2.6*
CSEM ***21*** *02:41:10.9±0.1,38°.19N×26°.81E,h10km,MD2.8, Error ellipse: s-maj=3.8km s-min=2.8km az=34.0*
ISK ***21*** *02:41:10.4,38°.19N×26°.82E,h9km,MD2.8*
ISC 21 02:41:11.1±0.9,38°.20N±0°.03×26°.82E±0°.03,h12km±8km, n27,σ0°.40/32,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
DGB	**ˇzmir**	**0.15**	**160**	*i* P		**Pg**	**02 41 14.4**		**-0.2**
DGB				*i* S		**Sg**	**02 41 16.8**		**-0.3**
URLA	**Izmir**	**0.24**	**314**	*i* P		**Pg**	**02 41 15.8**		**-0.3**
URLA				*i* S		**Sg**	**02 41 20.1**		**+0.5**
URLA	**Izmir**	**0.24**	**314**	P		**Pg**	**02 41 15.8**		**-0.3**
URLA				S		**Sg**	**02 41 20.1**		**+0.5**
IZM	**Izmir**	**0.41**	**60**	*e*PG		**Pg**	**02 41 19.3**		**+0.2**
IZM				*e*SG		**Sg**	**02 41 25.0**		**+0.4**
IZM	**Izmir**	**0.41**	**60**	*e*Pg		**Pg**	**02 41 19.3**		**+0.2**
IZM				*e*Sg		**Sg**	**02 41 25.0**		**+0.4**
GCAM	**G?zelcaml?**	**0.59**	**146**	*i* S		**Sg**	**02 41 31.0**		**+0.6**
GCAM	**G?zelcaml?**	**0.59**	**146**	S		**Sg**	**02 41 31.0**		**+0.6**
CHOS	**Chios island**	**0.63**	**288**	*e*PG		**Pg**	**02 41 23.4**		**+0.1**
CHOS	**Chios island**	**0.63**	**288**	*e*Pg		**Pg**	**02 41 23.4**		**+0.1**
DKL	**Dikili**	**0.88**	**4**	*e*PG		**Pg**	**02 41 27.2**		**-0.8**
DKL	**Dikili**	**0.88**	**4**	*e*Pg		**Pg**	**02 41 27.2**		**-0.8**
AYDB	**Zeytinkoy-Aydi**	**0.88**	**106**	*e*PG		**Pg**	**02 41 27.6**		**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.88**	**106**	*e*Pg		**Pg**	**02 41 27.6**		**-0.5**
AKS	**Akhisar**	**1.04**	**49**	*e*PG		**Pb**	**02 41 31.1**		**+0.1**
AKS	**Akhisar**	**1.04**	**49**	*e*Pg		**Pb**	**02 41 31.1**		**+0.1**
MLSB	**Milas**	**1.18**	**139**	*e*PN		**Pg**	**02 41 33.5**		**-0.2**
MLSB	**Milas**	**1.18**	**139**	*e*Pn		**Pg**	**02 41 33.5**		**-0.2**
BODT	**Bodrum**	**1.20**	**161**	*e*PN		**Pb**	**02 41 33.4**		**-0.3**
BODT	**Bodrum**	**1.20**	**161**	*e*Pn		**Pb**	**02 41 33.4**		**-0.3**
SIGR	**SIGRI**	**1.26**	**324**	*e*PN		**Pg**	**02 41 35.0**		**-0.3**
SIGR	**SIGRI**	**1.26**	**324**	*e*Pn		**Pg**	**02 41 35.0**		**-0.3**
MANT	**Manisa**	**1.40**	**77**	*i* P		**Pn**	**02 41 36.7**		**0.0**
MANT	**Manisa**	**1.40**	**77**	P		**Pn**	**02 41 36.7**		**0.0**
KULA	**Kula-Manisa**	**1.48**	**77**	*e*PN		**Pb**	**02 41 38.5**		**-0.1**
KULA	**Kula-Manisa**	**1.48**	**77**	*e*Pn		**Pb**	**02 41 38.5**		**-0.1**
DALY	**Dalyan (Mu˘la**	**2.01**	**133**	*e*PN		**Pn**	**02 41 44.9**		**+0.2**
DALY	**Dalyan (Mu˘la**	**2.01**	**133**	*e*Pn		**Pn**	**02 41 44.9**		**+0.2**

CSEM ***21*** *03:00:29.0, 11°.90N×43°.85E,h5km,ML3.7*
DHMR 21 03:00:29.0±2.2,11°.90N×43°.85E,h6km±29km,ML3.7,2D, Ethiopia

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
ADEN	**Aden**	**1.41**	**52**	⇓ *i* P		Pb	03 00 55.7		0.0
ADEN				*i* S		Sg	03 01 14.6		+0.3
ADEN				AML		AML	03 01 21.8		
	comp=E,1μm,0.3s								
ADEN	**Aden**	**1.41**	**52**	⇓ *i* P		Pb	03 00 55.7		0.0
ADEN				*i* S		Sg	03 01 14.6		+0.3
UDYN	**Al 'Udayn**	**2.06**	**3**	*i* P		Pb	03 01 06.4		-0.5
UDYN				*i* S		Sb	03 01 33.5		+0.8
UDYN	**Al 'Udayn**	**2.06**	**3**	*i* P		Pb	03 01 06.4		-0.5
UDYN				*i* S		Sb	03 01 33.5		+0.7
BDHA	**Al Bayda'**	**2.66**	**39**	*i* P		Pn	03 01 14.0		+1.3
BDHA				*i* S		Sb	03 01 51.9		+1.8
BDHA				AML		AML	03 01 59.0		
	comp=E,296nm,0.5s								
BDHA	**Al Bayda'**	**2.66**	**39**	*i* P		Pn	03 01 14.0		+1.4
BDHA				*i* S		Sb	03 01 51.9		+1.8
HAJJ	**Hajjah**	**3.78**	**356**	*i* P		Pn	03 01 30.0		+2.0
HAJJ				*i* S		Sb	03 02 18.6		-3.9
HAJJ				AML		AML	03 02 30.5		
	comp=Z,617nm,0.6s								
HAJJ	**Hajjah**	**3.78**	**356**	*i* P		Pn	03 01 30.0		+1.9
HAJJ				*i* S		Sb	03 02 18.6		-3.9

ISCJB ***21*** *03:09:22.8±0.2,26°.51N±0°.02×59°.53E±0°.02,h10km, mb4.5/86,MS3.6/25,Error ellipse: s-maj=3.3km s-min=3.0km az=172.3*
IDC ***21*** *03:09:22.6±0.6,26°.55N×59°.52E,h0km,mb4.4/27, mb1 4.5/28,mb1mx4.3/55,mbtmp4.4/28,ML5.0/1,MS3.6/19, Ms1 3.6/19,ms1mx3.4/44,Error ellipse: s-maj=13.7km s-min=11.8km az=122.0*
BJI ***21*** *03:09:23.0,26°.42N×59°.70E,h5km,mb4.7/31,mB4.8/20, Ms4.1/17,Ms7 3.9/18*
DSN ***21*** *03:09:24.7±1.5,26°.11N×59°.81E,h32km±18km,mb5.0, ML4.7,Error ellipse: s-maj=17.4km s-min=5.8km az=144.0*
CSEM ***21*** *03:09:24.9±0.1,26°.47N×59°.56E,h15km,mb4.5/56,Error ellipse: s-maj=4.5km s-min=3.8km az=135.0*
THR ***21*** *03:09:24.5±0.3,26°.54N×59°.52E,h15km±4km,ML4.6*
OMAN ***21*** *03:09:25.9±2.4,26°.43N×59°.44E,h15km,Error ellipse: s-maj=30.1km s-min=11.7km az=49.0*
MOS ***21*** *03:09:25.1±1.0,26°.51N×59°.61E,h28km,mb4.6/50,Error ellipse: s-maj=7.6km s-min=5.0km az=96.7*
NEIC ***21*** *03:09:26.0,26°.52N×59°.55E,h11km,mb4.6/31, ML4.7(THR),MN4.7(TEH),After TEH.*
TEH ***21*** *03:09:26.6,26°.52N×59°.55E,h11km,ML4.7*
ISC 21 03:09:24.4±0.3,26°.56N±0°.03×59°.47E±0°.03,h10km,n376, σ1s69/391,mb4.5/86,MS3.6/26,29C-9D,Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
CHBR	**Chabahar**	**1.33**	**136**	*e*Pg		**Pn**	**03 09 48.1**		**-0.8**
CHBR				*e*Sg		**Sb**	**03 10 05.3**		**-1.1**
CHBR				AML		AML	03 10 09.9		
	comp=N,12μm,0.6s								
CHBR				AML		AML	03 10 11.5		
	comp=E,16μm,0.6s								
CHBR	**Chabahar**	**1.33**	**136**	*e*Pg		**Pn**	**03 09 48.2**		**-0.8**
CHBR				*e*Sg		**Sb**	**03 10 05.3**		**-1.1**
KHSK	**Kohestak**	**2.17**	**276**	*e*Pg		**Pb**	**03 10 03.4**		**-0.4**
KHSK	**Kohestak**	**2.17**	**276**	*e*Pg		**Pb**	**03 10 03.4**		**-0.4**
NIAN	**Nian**	**2.55**	**294**	*e*Pg		**Pb**	**03 10 09.8**		**-0.5**
NIAN	**Nian**	**2.55**	**294**	*e*Pg		**Pb**	**03 10 09.8**		**-0.5**
IBND	**Bandar-abas**	**2.76**	**289**	*e*Pn		**Pb**	**03 10 11.8**		**-2.0**
IBND				*e*Pn		**Pn**	**03 10 12.2**		**+3.5**
IBND				*e*AMB		AMB	03 10 33.4		
	comp=Z,28μm,0.2s								
IBND				*e*AMB		AMB	03 11 34.3		
	comp=Z,41μm,0.5s								
IBND	**Bandar-abas**	**2.76**	**289**	*e*Pn		**Pb**	**03 10 11.8**		**-2.0**
IBND	**Bandar-abas**	**2.76**	**289**	Pn		**Pn**	**03 10 11.6**		**+2.9**
BANOM	**Banah**	**2.91**	**258**	*i* P		**Pn**	**03 10 11.1**		**+0.2**
	SNR=30								
BANOM	**Banah**	**2.91**	**258**	Pn		**Pn**	**03 10 10.9**		**0.0**
	SNR=67								
BANOM	**Banah**	**2.91**	**258**	P		**Pn**	**03 10 10.9**		**0.0**
	SNR=67								
BANOM	**Banah**	**2.91**	**258**	P		**Pn**	**03 10 11.1**		**+0.2**
	SNR=30								
GENO	**Geno**	**3.06**	**287**	*e*Pg		**Pn**	**03 10 15.2**		**+2.2**
GENO	**Geno**	**3.06**	**287**	*e*Pg		**Pn**	**03 10 15.2**		**+2.2**
BNDS	**Bandar-Abbas**	**3.06**	**287**	*e*Pn		**Pn**	**03 10 15.2**		**+2.2**
BNDS				*e*Sg		**Sg**	**03 11 01.6**		**-1.1**
BNDS	**Bandar-Abbas**	**3.06**	**287**	*e*Pn		**Pn**	**03 10 15.2**		**+2.2**
BNDS				*e*Sg		**Sg**	**03 11 01.6**		**-1.1**
BNDS	**Bandar-Abbas**	**3.06**	**287**	Pn		**Pn**	**03 10 15.0**		**+2.0**
BNDS				Sg		**Sg**	**03 11 01.0**		**-1.7**
ZHSF	**Zahedan**	**3.25**	**21**	*e*Pn		**Pn**	**03 10 17.1**		**+1.4**
ZHSF	**Zahedan**	**3.25**	**21**	*e*Pn		**Pn**	**03 10 17.1**		**+1.4**
ZHSF	**Zahedan**	**3.25**	**21**	Pn		**Pn**	**03 10 17.0**		**+1.4**
UOSS	**Minazif**	**3.35**	**242**	*e*Pn		**Pn**	**03 10 15.2**		**-1.7**
UOSS	**Minazif**	**3.35**	**242**	P		**Pn**	**03 10 16.1**		**-0.8**
	SNR=71								
UOSS	**Minazif**	**3.35**	**242**	*e*Pn		**Pn**	**03 10 15.2**		**-1.7**
WSAR	**Wadi Sarin**	**3.39**	**193**	Pn		**Pn**	**03 10 17.1**		**-0.3**
	comp=Z,154nm,0.3s,baz=40,slow=14,SNR=681								
WSAR				Sn		**Sn**	**03 10 57.4**		**-0.5**
	comp=Z,74nm,0.3s,baz=341,slow=19,SNR=12								
HATD	**Hatta, Dubai**	**3.47**	**241**	*i* P		**Pn**	**03 10 17.4**		**-1.1**
	SNR=31								
HATD				S		**Sn**	**03 10 58.6**		**-1.1**
HATD	**Hatta, Dubai**	**3.47**	**241**	P		**Pn**	**03 10 17.4**		**-1.1**
	SNR=31								
HATD				S		**Sn**	**03 10 58.6**		**-1.1**
HOQ	**Hoqain**	**3.55**	**214**	P		**Pn**	**03 10 18.4**		**-1.2**
	SNR=72								
HOQ	**Hoqain**	**3.55**	**214**	P		**Pn**	**03 10 18.4**		**-1.2**
	SNR=72								
ASHO	**Ashiyiah**	**3.60**	**239**	*i* P		**Pn**	**03 10 19.9**		**-0.4**
	SNR=221								
ASHO	**Ashiyiah**	**3.60**	**239**	P		**Pn**	**03 10 19.9**		**-0.4**
	SNR=221								
ASHO	**Ashiyiah**	**3.60**	**239**	P		**Pn**	**03 10 20.0**		**-0.4**
	SNR=221								
CHMN	**Cheshme madani**	**3.70**	**333**	*e*Pn		**Pn**	**03 10 24.5**		**+2.5**
CHMN	**Cheshme madani**	**3.70**	**333**	*e*Pn		**Pn**	**03 10 24.5**		**+2.5**
NAZ	**Nazwa, Dubai**	**3.77**	**246**	*i* P		**Pn**	**03 10 21.5**		**-1.1**
	SNR=46								
NAZ	**Nazwa, Dubai**	**3.77**	**246**	P		**Pn**	**03 10 21.5**		**-1.1**
	SNR=46								
NGRK	**Negar Kerman**	**3.91**	**322**	*e*Pn		**Pn**	**03 10 28.4**		**+3.5**
NGRK	**Negar Kerman**	**3.91**	**322**	*e*Pn		**Pn**	**03 10 28.4**		**+3.5**
FAQ	**Al Faqa, Dubai**	**3.94**	**244**	*i* P		**Pn**	**03 10 25.6**		**+0.7**
	SNR=26								
FAQ	**Al Faqa, Dubai**	**3.94**	**244**	P		**Pn**	**03 10 25.6**		**+0.7**
	SNR=26								
KRBR	**Kerman**	**4.16**	**326**	*e*Pn		**Pn**	**03 10 30.7**		**+2.4**
KRBR				AML		AML	03 11 42.9		
	comp=E,319nm,0.2s								
KRBR	**Kerman**	**4.16**	**326**	*e*Pn		**Pn**	**03 10 30.7**		**+2.4**
KRBR	**Kerman**	**4.16**	**326**	Pn		**Pn**	**03 10 30.0**		**+1.7**
TVBK	**TV Kerman**	**4.16**	**326**	*e*Pn		**Pb**	**03 10 34.4**		**-3.6**
TVBK	**TV Kerman**	**4.16**	**326**	*e*Pn		**Pb**	**03 10 34.4**		**-3.6**
ARQ	**Araqi**	**4.18**	**220**	Pn		**Pn**	**03 10 29.9**		**+1.7**
	SNR=36								
ARQ	**Araqi**	**4.18**	**220**	P		**Pn**	**03 10 29.9**		**+1.7**
	SNR=36								
ARQ	**Araqi**	**4.18**	**220**	P		**Pn**	**03 10 29.9**		**+1.7**
	SNR=36								
JMDO	**Jabal Madar**	**4.35**	**197**	Pn		**Pn**	**03 10 31.1**		**+0.4**
	SNR=134								
JMDO	**Jabal Madar**	**4.35**	**197**	P		**Pn**	**03 10 31.1**		**+0.4**
	SNR=134								
JMDO	**Jabal Madar**	**4.35**	**197**	P		**Pn**	**03 10 31.1**		**+0.4**
	SNR=134								
KHGB	**Koh Gabri**	**4.62**	**326**	*e*Pn		**Pn**	**03 10 37.6**		**+3.0**
KHGB	**Koh Gabri**	**4.62**	**326**	*e*Pn		**Pn**	**03 10 37.6**		**+3.0**
IKOO	**Kooshah**	**5.86**	**356**	*e*Pn		**Pn**	**03 10 53.0**		**+1.5**
IKOO				*e*AMB		AMB	03 12 58.3		
	comp=Z,3μm,0.4s								
IKOO	**Kooshah**	**5.86**	**356**	*e*Pn		**Pn**	**03 10 53.0**		**+1.5**
IKOO	**Kooshah**	**5.86**	**356**	Pn		**Pn**	**03 10 53.3**		**+1.8**
GHIR	**Ghir-Karzin**	**6.01**	**288**	*e*P		**Pn**	**03 10 56.0**		**+2.5**
GHIR	**Ghir-Karzin**	**6.01**	**288**	*e*P		**Pn**	**03 10 56.0**		**+2.5**
GHIR	**Ghir-Karzin**	**6.01**	**288**	P		**Pn**	**03 10 56.0**		**+2.5**
IBAF	**Bafgh**	**6.06**	**327**	*e*Pn		**Pn**	**03 10 56.9**		**+2.6**
IBAF	**Bafgh**	**6.06**	**327**	*e*Pn		**Pn**	**03 10 56.9**		**+2.6**
IBAF	**Bafgh**	**6.06**	**327**	Pn		**Pn**	**03 10 56.4**		**+2.1**
ISRV	**Sarvestan**	**6.28**	**298**	*e*Pn		**Pn**	**03 10 59.3**		**+1.9**
ISRV				*e*AMB		AMB	03 11 05.9		
	comp=Z,2μm,0.1s								
ISRV	**Sarvestan**	**6.28**	**298**	*e*Pn		**Pn**	**03 10 59.3**		**+1.9**
ISRV	**Sarvestan**	**6.28**	**298**	Pn		**Pn**	**03 10 59.7**		**+2.3**
ITEG	**Tejag**	**6.34**	**355**	*e*Pn		**Pn**	**03 11 00.0**		**+1.8**
ITEG				*e*Sg		**Sg**	**03 12 45.8**		**-2.3**
ITEG				*e*AMB		AMB	03 13 12.2		
	comp=Z,4μm,0.5s								
ITEG	**Tejag**	**6.34**	**355**	*e*Pn		**Pn**	**03 11 00.0**		**+1.8**
ITEG				*e*Sg		**Sg**	**03 12 45.8**		**-2.3**
ITEG	**Tejag**	**6.34**	**355**	Pn		**Pn**	**03 10 59.9**		**+1.8**
ITEG				Sg		**Sg**	**03 12 45.8**		**-2.3**
IMEH	**Mehriz**	**6.42**	**320**	*e*Pn		**Pn**	**03 11 00.9**		**+1.6**
IMEH				*e*AMB		AMB	03 13 16.6		
	comp=Z,1μm,0.4s								
IMEH	**Mehriz**	**6.42**	**320**	*e*Pn		**Pn**	**03 11 00.9**		**+1.6**
IMEH	**Mehriz**	**6.42**	**320**	Pn		**Pn**	**03 11 01.4**		**+2.1**
SHRT	**Shahrakht**	**7.10**	**6**	*e*P		**Pn**	**03 11 10.6**		**+2.2**
SHRT	**Shahrakht**	**7.10**	**6**	*e*P		**Pn**	**03 11 10.6**		**+2.2**
SHRT	**Shahrakht**	**7.10**	**6**	P		**Pn**	**03 11 10.0**		**+1.6**
ICHK	**Chekchek**	**7.18**	**323**	*e*Pn		**Pn**	**03 11 11.6**		**+1.9**
ICHK				*e*AMB		AMB	03 11 33.3		
	comp=Z,742nm,0.3s								
ICHK	**Chekchek**	**7.18**	**323**	*e*Pn		**Pn**	**03 11 11.6**		**+1.9**
ICHK	**Chekchek**	**7.18**	**323**	Pn		**Pn**	**03 11 11.6**		**+1.9**
ISAD	**Sadrabad**	**7.34**	**318**	*e*Pn		**Pn**	**03 11 14.3**		**+2.3**
ISAD	**Sadrabad**	**7.34**	**318**	*e*Pn		**Pn**	**03 11 14.3**		**+2.3**
ISAD	**Sadrabad**	**7.34**	**318**	Pn		**Pn**	**03 11 14.0**		**+2.0**
IRAM	**Ramesheh**	**8.10**	**312**	*e*Pn		**Pn**	**03 11 23.3**		**+0.9**
IRAM				*e*AMB		AMB	03 11 26.6		
	comp=Z,868nm,0.1s								
IRAM	**Ramesheh**	**8.10**	**312**	*e*Pn		**Pn**	**03 11 23.3**		**+0.9**
IRAM	**Ramesheh**	**8.10**	**312**	Pn		**Pn**	**03 11 24.2**		**+1.8**
BOQSS		**9.09**	**268**	S		**Sn**	**03 13 15.6**		**-2.5**
BOQSS				P		**Pn**	**03 11 32.9**		**-2.8**
IPIR	**Pirpir**	**9.64**	**311**	*e*Pn		**Pn**	**03 11 44.5**		**+1.0**
IPIR				*e*AMB		AMB	03 11 51.7		
	comp=Z,350nm,0.2s								
IPIR	**Pirpir**	**9.64**	**311**	*e*Pn		**Pn**	**03 11 44.5**		**+1.0**
IPIR	**Pirpir**	**9.64**	**311**	Pn		**Pn**	**03 11 45.1**		**+1.6**
UMR	**Umm Al-Rimmam**	**10.80**	**289**	P		**Pn**	**03 11 58.9**		**-0.2**
UMR	**Umm Al-Rimmam**	**10.80**	**289**	P		**Pn**	**03 11 58.9**		**-0.2**
GEYT	**Alibeck**	**11.39**	**355**	Pn		Pn	03 12 12.5		+5.3
	comp=Z,0.5nm,0.3s,baz=159,slow=13,SNR=8.5								
GEYT				Lg		Lg	03 15 22.9		
	baz=188,slow=27,SNR=2.7								
KBL	**Kabul**	**11.46**	**44**	*e*P		**Pn**	**03 12 09.2**		**+0.9**
KBL	**Kabul**	**11.46**	**44**	*e*Pn		**Pn**	**03 12 09.2**		**+0.9**
KBL	**Kabul**	**11.46**	**44**	*e*Pn		**Pn**	**03 12 09.2**		**+0.9**
THW	**Thimme Wali**	**12.35**	**57**	P		**Pn**	**03 12 18.3**		**-2.0**
CEP	**Cherat**	**12.96**	**53**	P		**Pn**	**03 12 26.6**		**-2.2**
CHCP	**Chirah Chowk**	**13.87**	**56**	⇓ P		**Pn**	**03 12 39.5**		**-1.7**
GNI	**Garni**	**18.27**	**322**	P		**P**	**03 13 42.0**		**+3.6**
	comp=Z,1.0nm,0.3s,baz=63,slow=2.4,SNR=7.6								
GNI				LR		LR	03 21 37.4		
	comp=Z,152nm,19.2s,baz=242,slow=40								
GNI	**Garni**	**18.27**	**322**	*de*P		**P**	**03 13 42.2**		**+3.9**
GNI				pmax		pmax			
	comp=Z,62nm,1.2s								
GNI	**Garni**	**18.27**	**322**	*e*Pn		**P**	**03 13 39.8**		**+1.5**
	comp=Z,15nm,0.8s								
GNI	**Garni**	**18.27**	**322**	*e*P		**P**	**03 13 42.2**		**+3.9**
	comp=Z,62nm,1.2s								
GNI	**Garni**	**18.27**	**322**	*e*Pn		**P**	**03 13 39.8**		**+1.5**
	comp=Z,15nm,0.8s								
DAMY	**Dhamar**	**18.46**	**233**	*e*Pn		**P**	**03 13 39.4**		**-1.3**
	comp=Z,91nm,1.4s								
DAMY	**Dhamar**	**18.46**	**233**	*e*Pn		**P**	**03 13 39.4**		**-1.3**
	comp=Z,91nm,1.4s								
KK31	**Karatay Array**	**18.80**	**26**	P		**P**	**03 13 43.3**		**-0.7**
KK31				pmax		pmax			
	comp=Z,6.0nm,0.6s								
KK31	**Karatay Array**	**18.80**	**26**	P		**P**	**03 13 43.3**		**-0.7**
	comp=Z,6.0nm,0.6s								
KKAR	**Karatay Array**	**18.80**	**26**	*e*P		**P**	**03 13 43.6**		**-0.4**
KKAR	**Karatay Array**	**18.80**	**26**	*e*Pn		**P**	**03 13 43.6**		**-0.4**
KKAR	**Karatay Array**	**18.80**	**26**	*e*Pn		**P**	**03 13 43.6**		**-0.4**
KSH	**Kashi**	**18.89**	**43**	P		**P**	**03 13 39.0**		**-6.2**
KSH				*e*pP		Pn	03 13 42.8		-2.9
KSH				*e*sP		pP	03 13 46.3		-1.7
KSH				*e*PP		**PnPn**	**03 13 54.3**		**-3.7**
KSH				S		Sn	03 16 59.1		-18
KSH				SS		**S**	**03 17 22.6**		**+2.6**
KSH				pmax		pmax			
	comp=Z,14nm,0.6s								
KSH				LR		LR			
	comp=Z,330nm,11.5s								
KSH				LR		LR			
	comp=Z,260nm,11.4s								
KSH				LR		LR			
	comp=Z,680nm,15.5s								
MNAS	**Manas**	**19.14**	**31**	P		**P**	**03 13 47.9**		**0.0**
MNAS				pmax		pmax			
	comp=Z,20nm,0.6s								
MNAS	**Manas**	**19.14**	**31**	P		**P**	**03 13 47.9**		**0.0**
	comp=Z,20nm,0.6s								
GUDG	**Gudauri**	**20.06**	**326**	P		Pn	03 14 00.4		+0.7
AAK	**Ala-Archa**	**20.20**	**34**	P		**P**	**03 14 00.1**		**+0.6**
	comp=Z,7.9nm,0.5s,baz=219,slow=12,SNR=16								
AAK	**Ala-Archa**	**20.20**	**34**	*de*P		**P**	**03 14 00.1**		**+0.6**
AAK				pmax		pmax			
	comp=Z,15nm,1.0s								
AAK	**Ala-Archa**	**20.20**	**34**	P		**P**	**03 13 59.9**		**+0.4**
	SNR=7.7								
AAK	**Ala-Archa**	**20.20**	**34**	*e*P		**P**	**03 13 59.4**		**-0.1**
	comp=Z,21nm,1.0s								
FRU	**Bishkek**	**20.41**	**33**	*e*P		**P**	**03 14 02.0**		**+0.4**
FRU	**Bishkek**	**20.41**	**33**	*e*P		**P**	**03 14 02.0**		**+0.4**
ASF	**Jabal al Asfar**	**20.43**	**291**	P		Pn	03 14 03.7		-0.5
	comp=Z,9.2nm,0.6s,baz=59,slow=12,SNR=19								
ZEI	**Tsey**	**20.58**	**326**	*e*P		Pn	03 14 05.7		-0.2
ZEI				pmax		pmax			
	comp=Z,40nm,0.7s								
PYUN	**Piuthan**	**20.95**	**80**	*e*P		**P**	**03 14 08.1**		**+0.3**
TKM2	**Tokmak 2**	**20.96**	**35**	P		**P**	**03 14 07.8**		**0.0**
TKM2				pmax		pmax			
	comp=Z,15nm,0.7s								
TKM2	**Tokmak 2**	**20.96**	**35**	P		**P**	**03 14 07.8**		**0.0**
	comp=Z,15nm,0.7s								
KOLN	**Koldanda**	**21.50**	**81**	*e*P		**P**	**03 14 13.5**		**-0.2**
	comp=Z,46nm,0.8s								
NEY	**Neytrino**	**21.51**	**325**	*e*P		**P**	**03 14 17.1**		**+3.4**
NEY				pmax		pmax			
	comp=Z,3.0nm,1.1s								
NEY	**Neytrino**	**21.51**	**325**	*e*P		**P**	**03 14 17.1**		**+3.4**
	comp=Z,3.0nm,1.1s								
ATD	**Arta Tunnel**	**21.65**	**229**	P		**P**	**03 14 17.1**		**+1.9**
	comp=Z,26nm,0.8s,baz=9.6,slow=7.2,SNR=8.6								
ATD				LR		LR	03 24 37.8		
	comp=Z,165nm,18.7s,baz=138,slow=42								
KBZ	**Khabaz**	**21.77**	**326**	P		**P**	**03 14 18.9**		**+2.7**
	comp=Z,3.2nm,0.6s,baz=128,slow=8.9,SNR=9.2								
MMAI	**Mount Meron Ar**	**21.83**	**293**	P		**P**	**03 14 21.3**		**+4.2**
	comp=Z,4.9nm,0.5s,baz=100,slow=14,SNR=8.3								
MMAI				LR		LR	03 25 12.9		
	comp=Z,235nm,18.2s,baz=105,slow=43								
EIL	**Elat**	**21.83**	**284**	P		**P**	**03 14 20.9**		**+3.9**
	comp=Z,24nm,0.7s,baz=142,slow=5.0,SNR=12								
KVAR	**Kislovodsk Arr**	**22.04**	**326**	P		**P**	**03 14 21.1**		**+1.9**
	comp=Z,22nm,0.7s,baz=135,slow=3.7,SNR=24								
KIV	**Kislovodsk**	**22.04**	**326**	*i* P		**P**	**03 14 21.6**		**+2.4**
	SNR=7.6								
KIV	**Kislovodsk**	**22.04**	**326**	*c i* P		**P**	**03 14 22.1**		**+2.9**
KIV			

BVAR	**Borovoye Array**	**27.67**	**14**	P		**P**		**03 15 11.8**	**-0.6**
	comp=Z,12nm,0.8s,baz=199,slow=8.8,SNR=35								
BRVK	**Borovoye**	**27.68**	**14**	*de*P		**P**		**03 15 13.7**	**+1.3**
BRVK				pmax	pmax				
	comp=Z,36nm,1.0s								
BRVK	**Borovoye**	**27.68**	**14**	*e*P		**P**		**03 15 12.1**	**-0.3**
	comp=Z,11nm,0.9s								
BRVK	**Borovoye**	**27.68**	**14**	*e*P		**P**		**03 15 12.1**	**-0.3**
	comp=Z,11nm,0.9s								
PALK	**Pallekele**	**27.85**	**130**	*ce*P		**P**		**03 15 18.3**	**+3.9**
KURBB	**Kurchatov Arra**	**28.11**	**26**	P		**P**		**03 15 17.3**	**+1.1**
	comp=Z,4.0nm,0.5s,baz=226,slow=8.4,SNR=26								
KURK	**Kurchatov**	**28.21**	**26**	P		**P**		**03 15 17.3**	**+0.1**
KURK				pmax	pmax				
	comp=Z,4.0nm,0.5s								
KURK	**Kurchatov**	**28.21**	**26**	P		**P**		**03 15 17.3**	**+0.1**
	comp=Z,4.0nm,0.5s								
KURK	**Kurchatov**	**28.21**	**26**	*e*P		**P**		**03 15 16.9**	**-0.4**
	comp=Z,32nm,0.4s								
WMQ	**Urumqi**	**28.59**	**46**	*e*P		**P**		**03 15 22.9**	**+2.1**
WMQ				pP	sP			03 15 27.8	+2.7
WMQ				S	**S**			**03 20 07.6**	**-1.5**
WMQ				pmax	pmax				
	comp=Z,20nm,0.8s								
WMQ				pmax	pmax				
	comp=Z,120nm,4.0s								
WMQ				LR	LR				
	comp=Z,250nm,20.6s								
WMQ				LR	LR				
	comp=Z,240nm,21.2s								
WMQ				LR	LR				
	comp=Z,230nm,22.0s								
SANT	**Santorini**	**30.48**	**297**	*e*P		**P**		**03 15 37.6**	**0.0**
	comp=Z,14nm,0.6s								
SANT	**Santorini**	**30.48**	**297**	*e*P		**P**		**03 15 37.6**	**0.0**
	comp=Z,14nm,0.6s								
TESR	**Tescani**	**32.70**	**316**⇑	*i*P		**P**		**03 15 56.6**	**-0.4**
TESR	**Tescani**	**32.70**	**316**⇓	*i*P		**P**		**03 15 56.6**	**-0.4**
MLR	**Muntele Rosu**	**32.72**	**314**⇓	*i*P		**P**		**03 15 58.5**	**+1.2**
MLR	**Muntele Rosu**	**32.72**	**314**	⇓P		**P**		**03 15 58.5**	**+1.2**
MLR	**Muntele Rosu**	**32.72**	**314**⇓	⇓P		**P**		**03 15 58.5**	**+1.2**
OBN	**Obninsk**	**33.06**	**336**⇑	*e*P		**P**		**03 16 01.9**	**+1.9**
OBN				*e*				03 17 12.1	
OBN				pmax	pmax				
	comp=Z,8.0nm,1.0s								
OBN				MLR	MLR				
	comp=Z,60nm,17.0s								
OBN	**Obninsk**	**33.06**	**336**	*e*P		**P**		**03 15 59.8**	**-0.2**
	comp=Z,9.8nm,0.4s								
OBN	**Obninsk**	**33.06**	**336**	*e*P		**P**		**03 15 59.8**	**-0.2**
	comp=Z,9.8nm,0.4s								
ZAA0	**Zalesovo Array**	**33.16**	**28**	*e*P		**P**		**03 16 01.1**	**+0.3**
ZAA0	**Zalesovo Array**	**33.16**	**28**	*e*P		**P**		**03 16 01.1**	**+0.3**
ZALV	**Zalesovo Beam**	**33.16**	**28**	P		**P**		**03 16 01.1**	**+0.3**
	comp=Z,17nm,0.8s,baz=243,slow=9.5,SNR=25								
ZALV				LR	LR			03 30 39.3	
	comp=Z,49nm,19.2s,baz=248,slow=38								
NVS	**Novosibirsk**	**33.18**	**25**	*e*P		**P**		**03 16 01.7**	**+0.7**
NVS				pmax	pmax				
	comp=N,14nm,0.8s								
NVS				pmax	pmax				
	comp=E,16nm,0.8s								
NVS				pmax	pmax				
	comp=Z,21nm,0.8s								
NVS	**Novosibirsk**	**33.18**	**25**	*e*P		**P**		**03 16 01.7**	**+0.7**
DOPR	**Dopca**	**33.27**	**315**⇑	*i*P		**P**		**03 16 03.0**	**+1.1**
DOPR	**Dopca**	**33.27**	**315**⇑	*i*P		**P**		**03 16 03.0**	**+1.1**
VOIR		**33.27**	**314**⇑	*i*P		**P**		**03 16 02.5**	**+0.4**
VOIR		**33.27**	**314**	⇑P		**P**		**03 16 02.5**	**+0.4**
VOIR		**33.27**	**314**⇑	*i*P		**P**		**03 16 02.5**	**+0.4**
AKASG	**Malin Array Be**	**33.35**	**324**	P		**P**		**03 16 02.1**	**-0.5**
	comp=Z,1.1nm,0.4s,baz=126,slow=8.1,SNR=7.9								
KIEV	**Kiev**	**33.36**	**324**	*e*P		**P**		**03 16 03.3**	**+0.7**
KIEV				pmax	pmax				
	comp=Z,9.0nm,1.5s								
KIEV	**Kiev**	**33.36**	**324**	*e*P		**P**		**03 16 03.3**	**+0.7**
	comp=Z,9.0nm,1.5s								
KIEV	**Kiev**	**33.36**	**324**	*e*P		**P**		**03 16 01.6**	**-1.0**
	comp=Z,5.0nm,0.6s								
ARR	**Arges**	**33.52**	**313**⇑	*i*P		**P**		**03 16 04.5**	**+0.3**
ARR	**Arges**	**33.52**	**313**⇑	*i*P		**P**		**03 16 04.5**	**+0.3**
VTS	**Vitosha**	**33.57**	**308**⇑	*i*P		**P**		**03 16 05.7**	**+0.9**
VTS	**Vitosha**	**33.57**	**308**	⇑P		**P**		**03 16 05.7**	**+0.9**
VTS	**Vitosha**	**33.57**	**308**	P		**P**		**03 16 05.7**	**+0.9**
VTS	**Vitosha**	**33.57**	**308**	*e*P		**P**		**03 16 07.2**	**+2.4**
	comp=Z,5.9nm,0.9s								
BURAR	**Bucovina Array**	**34.07**	**317**⇑	*i*P		**P**		**03 16 08.9**	**-0.1**
BURAR	**Bucovina Array**	**34.07**	**317**	⇑P		**P**		**03 16 08.9**	**-0.1**
BURAR	**Bucovina Array**	**34.07**	**317**⇑	*i*P		**P**		**03 16 08.9**	**-0.1**
BUR08	**Bucovina Ar. S**	**34.09**	**317**	*e*P		**P**		**03 16 09.3**	**+0.1**
BUR08	**Bucovina Ar. S**	**34.09**	**317**	*e*P		**P**		**03 16 09.3**	**+0.1**
KMBO	**Kilima Mbogo**	**34.88**	**221**	*ce*P		P		03 16 23.3	+6.8
KMBO				pmax	pmax				
	comp=Z,1.0nm,0.3s								
MDVR	**Moldovita**	**35.26**	**311**⇓	*i*P		**P**		**03 16 21.0**	**+1.7**
MDVR	**Moldovita**	**35.26**	**311**⇓	*i*P		**P**		**03 16 21.0**	**+1.7**
DRGR		**35.29**	**315**⇑	*i*P		**P**		**03 16 21.2**	**+1.6**
DRGR		**35.29**	**315**	⇑P		**P**		**03 16 21.2**	**+1.6**
DRGR		**35.29**	**315**⇑	*i*P		**P**		**03 16 21.2**	**+1.6**
TIR	**Tirane**	**35.68**	**305**⇑	*i*P		**P**		**03 16 22.7**	**-0.2**
TIR	**Tirane**	**35.68**	**305**	⇑P		**P**		**03 16 22.7**	**-0.2**
TIR	**Tirane**	**35.68**	**305**⇑	*i*P		**P**		**03 16 22.7**	**-0.2**
GTA	**Gaotai**	**35.90**	**59**	*e*P		**P**		**03 16 27.0**	**+2.1**
GTA				pP	sP			03 16 30.6	+1.3
GTA				sP	pP			03 16 33.1	+5.1
GTA				S	**S**			**03 22 05.3**	**+2.2**
GTA				sS	sS			03 22 12.6	+4.4
GTA				pmax	pmax				
	comp=Z,3.0nm,1.1s								
GTA				pmax	pmax				
	comp=Z,76nm,5.7s								
GTA				LR	LR				
	comp=Z,220nm,20.4s								
GTA				LR	LR				
	comp=Z,130nm,19.5s								
GTA				LR	LR				
	comp=Z,150nm,16.6s								
UZH	**Uzhgorod**	**36.27**	**317**	*e*P		**P**		**03 16 28.5**	**+0.7**
UZH				*e*				03 16 34.7	
UZH	**Uzhgorod**	**36.27**	**317**	*e*P		**P**		**03 16 28.5**	**+0.7**
KLMR	**Klimovskoe**	**36.87**	**344**	*e*P		**P**		**03 16 32.4**	**-0.4**
KLMR				*e*				03 17 57.7	
KLMR				pmax	pmax				
	comp=Z,8.0nm,0.9s								
KLMR	**Klimovskoe**	**36.87**	**344**	*e*P		**P**		**03 16 32.4**	**-0.4**
	comp=Z,8.0nm,0.9s								
CRVS	**Cervenica-Dubn**	**36.88**	**317**	*e*P		**P**		**03 16 35.0**	**+1.9**
CRVS	**Cervenica-Dubn**	**36.88**	**317**	*e*P		**P**		**03 16 35.0**	**+1.9**
CRVS	**Cervenica-Dubn**	**36.88**	**317**	*e*P		**P**		**03 16 35.0**	**+1.9**
CMAR	**Chiang Mai Arr**	**37.23**	**94**	LR		LR		03 35 57.8	
	comp=Z,25nm,18.0s,baz=282,slow=43								
KECS	**Kecovo**	**37.32**	**316**	*e*P		**P**		**03 16 39.7**	**+2.9**
KECS				*e*				03 16 55.3	
KECS				pmax	pmax				
	comp=Z,4.0nm,0.9s								
KECS	**Kecovo**	**37.32**	**316**	*e*P		**P**		**03 16 39.7**	**+2.9**
	comp=Z,4.0nm,0.9s								
KECS	**Kecovo**	**37.32**	**316**	*e*P		**P**		**03 16 39.7**	**+2.9**
KECS				*e*				03 16 55.3	
PSZ	**Piszkesteto**	**37.49**	**315**⇑	*i*P		**P**		**03 16 40.1**	**+1.8**
PSZ	**Piszkesteto**	**37.49**	**315**	⇑P		**P**		**03 16 40.1**	**+1.8**
PSZ	**Piszkesteto**	**37.49**	**315**	*e*P		**P**		**03 16 39.6**	**+1.3**
PSZ	**Piszkesteto**	**37.49**	**315**	*e*P		**P**		**03 16 39.6**	**+1.3**
TIP	**Timpagrande**	**37.69**	**300**	*e*P		**P**		**03 16 40.2**	**+0.1**
	comp=Z,38nm,1.2s								
TIP	**Timpagrande**	**37.69**	**300**	*e*P		**P**		**03 16 40.2**	**+0.1**
	comp=Z,38nm,1.2s								
VYHS	**Vyhne**	**38.35**	**316**	*e*P		**P**		**03 16 46.8**	**+1.3**
VYHS				pmax	pmax				
	comp=Z,2.0nm,0.9s								
VYHS	**Vyhne**	**38.35**	**316**	*e*P		**P**		**03 16 46.8**	**+1.3**
	comp=Z,2.4nm,0.9s								
VYHS	**Vyhne**	**38.35**	**316**	*e*P		**P**		**03 16 46.8**	**+1.3**
OJC	**Ojcow**	**38.40**	**319**	*e*P		**P**		**03 16 46.7**	**+0.9**
OJC				pmax	pmax				
	comp=Z,9.0nm,0.9s								
OJC	**Ojcow**	**38.40**	**319**	*e*P		**P**		**03 16 46.7**	**+0.9**
	comp=Z,9.1nm,0.9s								
OJC	**Ojcow**	**38.40**	**319**	*e*P		**P**		**03 16 46.7**	**+0.9**
	comp=Z,9.1nm,0.9s								
CUC	**Castrocucco**	**38.50**	**302**	*e*P		**P**		**03 16 47.4**	**+0.5**
	comp=Z,27nm,0.8s								
CUC	**Castrocucco**	**38.50**	**302**	*e*P		**P**		**03 16 47.4**	**+0.5**
	comp=Z,27nm,0.8s								
KMI	**Kunming**	**38.84**	**82**	P		**P**		**03 16 50.3**	**+0.2**
KMI				pmax	pmax				
	comp=Z,22nm,0.9s								
KMI				pmax	pmax				
	comp=Z,87nm,4.1s								
CD2	**Chengdu**	**38.89**	**73**	*e*P		**P**		**03 16 49.6**	**-0.7**
MORC	**Moravsky Berou**	**39.59**	**317**	*e*P		**P**		**03 16 57.0**	**+1.1**
MORC				pmax	pmax				
	comp=Z,18nm,0.9s								
MORC	**Moravsky Berou**	**39.59**	**317**	*e*P		**P**		**03 16 57.0**	**+1.1**
	comp=Z,18nm,0.9s								
MORC	**Moravsky Berou**	**39.59**	**317**	*e*P		**P**		**03 16 57.0**	**+1.1**
	comp=Z,18nm,0.9s								
VRAC	**Vranov**	**40.02**	**316**	*e*P		**P**		**03 17 01.5**	**+2.1**
CONA	**Conrad Observa**	**40.06**	**314**	*i*P		**P**		**03 16 59.3**	**-0.6**
	comp=Z,9.2nm,1.3s								
CONA	**Conrad Observa**	**40.06**	**314**	P		**P**		**03 16 59.3**	**-0.6**
	comp=Z,9.2nm,1.3s								
ARSA	**Arzberg**	**40.10**	**313**	*i*P		**P**		**03 17 02.9**	**+2.7**
	comp=Z,3.4nm,0.8s								
ARSA	**Arzberg**	**40.10**	**313**	P		**P**		**03 17 02.9**	**+2.7**
	comp=Z,3.4nm,0.8s								
DPC	**Dobruska-Polom**	**40.52**	**318**	*e*P		**P**		**03 17 02.7**	**-0.9**
DPC				*ep*P		**pP**		**03 17 05.7**	**-1.1**
DPC	**Dobruska-Polom**	**40.52**	**318**	P		**P**		**03 17 02.7**	**-0.9**
ZAK	**Zakamensk**	**40.94**	**43**	*e*P		**P**		**03 17 06.7**	**-0.4**
ZAK				pmax	pmax				
	comp=Z,3.0nm,1.3s								
ZAK	**Zakamensk**	**40.94**	**43**	*e*P		**P**		**03 17 06.7**	**-0.4**
	comp=Z,3.0nm,1.3s								
MOA	**Molln**	**41.08**	**313**	*i*P		**P**		**03 17 08.8**	**+0.6**
	comp=Z,11nm,1.1s								
MOA	**Molln**	**41.08**	**313**	P		**P**		**03 17 08.8**	**+0.6**
	comp=Z,11nm,1.1s								
FIA1	**FINESS Array S**	**41.46**	**336**	*e*P		**P**		**03 17 10.8**	**-0.3**
FIA1	**FINESS Array S**	**41.46**	**336**	*e*P		**P**		**03 17 10.8**	**-0.3**
FINES	**FINESS Array B**	**41.46**	**336**	P		**P**		**03 17 10.6**	**-0.5**
	comp=Z,3.2nm,0.6s,baz=134,slow=9.0,SNR=37								
FINES	**FINESS Array B**	**41.46**	**336**	*i*P		**P**		**03 17 10.8**	**-0.3**
FINES				pmax	pmax				
	comp=Z,3.0nm,0.6s								
FINES	**FINESS Array B**	**41.46**	**336**	*i*P		**P**		**03 17 10.8**	**-0.3**
	comp=Z,3.0nm,0.6s								
KBA	**Koelnbreinsper**	**41.50**	**312**	*i*P		**P**		**03 17 12.5**	**+0.6**
	comp=Z,9.3nm,0.8s								
KBA	**Koelnbreinsper**	**41.50**	**312**	P		**P**		**03 17 12.5**	**+0.6**
	comp=Z,9.3nm,0.8s								
GEA0	**GERESS Array S**	**41.70**	**315**	*e*P		**P**		**03 17 12.9**	**-0.5**
GEA0	**GERESS Array S**	**41.70**	**315**	*e*P		**P**		**03 17 12.8**	**-0.5**
GEC2	**GERESS Array S**	**41.70**	**315**	*e*P		**P**		**03 17 15.2**	**+1.8**
GEC2				pmax	pmax				
	comp=Z,14nm,1.2s								
GEC2	**GERESS Array S**	**41.70**	**315**	*e*P		**P**		**03 17 15.2**	**+1.8**
	comp=Z,14nm,1.2s								
GEC2	**GERESS Array S**	**41.70**	**315**	*e*P		**P**		**03 17 15.2**	**+1.8**
	comp=Z,14nm,1.2s								
GERES	**GERESS Array B**	**41.70**	**315**	P		**P**		**03 17 13.0**	**-0.4**
	comp=Z,6.5nm,1.0s,baz=101,slow=7.2,SNR=20								
GERES	**GERESS Array B**	**41.70**	**315**	P		**P**		**03 17 13.0**	**-0.4**
GERES				pmax	pmax				
	comp=Z,7.0nm,1.0s								
GERES	**GERESS Array B**	**41.70**	**315**	P		**P**		**03 17 13.0**	**-0.4**
GERES	**GERESS Array B**	**41.70**	**315**	P		**P**		**03 17 13.0**	**-0.4**
KHC	**Kasperske Hory**	**41.85**	**315**	*e*P		**P**		**03 17 13.9**	**-0.7**
KHC	**Kasperske Hory**	**41.85**	**315**	*e*P		**P**		**03 17 14.1**	**-0.5**
KHC				pmax	pmax				
	comp=Z,6.0nm,1.1s								
KHC	**Kasperske Hory**	**41.85**	**315**	*e*P		**P**		**03 17 14.1**	**-0.5**
	comp=Z,5.8nm,1.1s								
KHC	**Kasperske Hory**	**41.85**	**315**	*e*P		**P**		**03 17 14.1**	**-0.5**
	comp=Z,5.8nm,1.1s								
ABTA	**Abfaltersbach**	**41.99**	**311**	*i*P		**P**		**03 17 16.4**	**+0.6**
	comp=Z,11nm,1.1s								
ABTA	**Abfaltersbach**	**41.99**	**311**	P		**P**		**03 17 16.4**	**+0.6**
	comp=Z,11nm,1.1s								
SONM	**Songino Array**	**42.20**	**47**	P		**P**		**03 17 17.9**	**+0.3**
	comp=Z,5.7nm,0.8s,baz=253,slow=9.0,SNR=22								
SONM				LR	LR			03 37 11.6	
	comp=Z,106nm,19.8s,baz=224,slow=40								
SONA1	**Songino Array**	**42.21**	**47**	*e*P		**P**		**03 17 17.5**	**-0.2**
SONA1	**Songino Array**	**42.21**	**47**	*e*P		**P**		**03 17 17.5**	**-0.2**
WTTA	**Wattenberg**	**42.68**	**312**	*i*P		**P**		**03 17 20.2**	**-1.3**
	comp=Z,20nm,1.3s								
WTTA	**Wattenberg**	**42.68**	**312**	P		**P**		**03 17 20.2**	**-1.3**
	comp=Z,20nm,1.3s								
CLL	**Collm**	**42.82**	**318**	*i*P		**P**		**03 17 24.3**	**+1.9**
	comp=Z,17nm,1.2s								
CLL				*es*P	sP			03 17 42.0	+15
CLL				*e*PP		**PP**		**03 19 06.0**	**+4.4**
CLL				Lm	MLR			03 36 00.0	
	comp=Z,100nm,21.6s								
CLL	**Collm**	**42.82**	**318**	*i*P		**P**		**03 17 24.3**	**+1.9**
CLL				pmax	pmax				
	comp=Z,17nm,1.2s								
CLL	**Collm**	**42.82**	**318**	*i*P		**P**		**03 17 24.3**	**+1.9**
	comp=Z,17nm,1.2s								
CLL	**Collm**	**42.82**	**318**	*e*P		**P**		**03 17 24.4**	**+2.0**
	comp=Z,18nm,1.2s								
XAN	**Xi'an**	**43.01**	**68**	P		**P**		**03 17 25.8**	**+1.6**
XAN				pP	sP			03 17 31.1	+2.5
XAN				pmax	pmax				
	comp=Z,8.0nm,1.2s								
MOTA	**Moosalm**	**43.05**	**312**	*e*P		**P**		**03 17 24.3**	**-0.2**
	comp=Z,22nm,1.4s								
MOTA	**Moosalm**	**43.05**	**312**	P		**P**		**03 17 24.3**	**-0.2**
	comp=Z,22nm,1.4s								
FETA	**Feichten**	**43.24**	**311**	*i*P		**P**		**03 17 25.3**	**-0.7**
	comp=Z,26nm,1.2s								
FETA	**Feichten**	**43.24**	**311**	P		**P**		**03 17 25.3**	**-0.7**
	comp=Z,26nm,1.2s								
RETA	**Reutte**	**43.30**	**312**	*i*P		**P**		**03 17 26.3**	**-0.2**
	comp=Z,5.3nm,0.6s								
RETA	**Reutte**	**43.30**	**312**	P		**P**		**03 17 26.3**	**-0.2**
	comp=Z,5.3nm,0.6s								
GRFO	**Grafenberg**	**43.49**	**315**	*e*P		**P**		**03 17 30.3**	**+2.5**
GRFO				pmax	pmax				
	comp=Z,29nm,1.5s								
GRFO	**Grafenberg**	**43.49**	**315**	*e*P		**P**		**03 17 30.3**	**+2.5**
	comp=Z,29nm,1.5s								
GRFO	**Grafenberg**	**43.49**	**315**	*e*P		**P**		**03 17 30.3**	**+2.5**
	comp=Z,29nm,1.5s								
DAVA	**Damuels**	**43.86**	**312**	*i*P		**P**		**03 17 30.7**	**-0.3**
	comp=Z,18nm,1.1s								
DAVA	**Damuels**	**43.86**	**312**	P		**P**		**03 17 30.7**	**-0.3**
	comp=Z,18nm,1.1s								
PSI	**Prapat**	**44.58**	**115**	LR		LR		03 37 13.2	
	comp=Z,67nm,18.0s,baz=266,slow=38								
HHC	**Hu-ho-hao-te**	**44.99**	**58**	*e*P		**P**		**03 17 39.8**	**-0.4**
HHC				pmax	pmax				
	comp=Z,17nm,1.1s								
HHC				pmax	pmax				
	comp=Z,100nm,5.2s								
SENIN	**Lac Senin/Sane**	**45.47**	**310**	*e*P		**P**		**03 17 45.4**	**+1.4**
	comp=Z,31nm,1.8s								
SENIN	**Lac Senin/Sane**	**45.47**	**310**	*e*P		**P**		**03 17 45.4**	**+1.4**
	comp=Z,31nm,1.8s								
HFS	**Hagfors**	**45.76**	**330**	P		**P**		**03 17 45.6**	**-0.2**
	comp=Z,3.3nm,0.5s,baz=131,slow=8.6,SNR=24								
NRIK	**Noril'sk**	**45.87**	**13**	LR		LR		03 38 59.9	
	comp=Z,67nm,18.8s,baz=166,slow=39								
OPO	**Ambohidratompo**	**46.42**	**196**	P		**P**		**03 17 52.3**	**+0.7**
	comp=Z,5.6nm,0.9s,baz=353,slow=9.3,SNR=4.6								
QIZ	**Qiongzhong**	**46.80**	**88**	P		**P**		**03 17 51.8**	**-2.8**
QIZ				LR	LR				
	comp=Z,56nm,25.4s								
NB2	**NORSAR Subarra**	**47.25**	**330**	P		**P**		**03 17 56.6**	**-0.9**
	comp=Z,2.1nm,0.6s,baz=116,slow=7.9								
NB2	**NORSAR Subarra**	**47.25**	**330**	P		**P**		**03 17 56.6**	**-0.9**
	comp=Z,2.1nm,0.6s								
NOA	**NORSAR Array B**	**47.25**	**330**	P		**P**		**03 17 56.5**	**-1.1**
	comp=Z,1.0nm,0.6s,baz=120,slow=7.4,SNR=10								
NOA				LR	LR			03 41 37.3	
	comp=Z,68nm,20.7s,baz=120,slow=41								
SSB	**Saint Sauveur**	**47.28**	**308**	*e*P		**P**		**03 17 59.4**	**+1.3**
SSB				pmax	pmax				
	comp=Z,55nm,1.7s								
SSB	**Saint Sauveur**	**47.28**	**308**	*e*P		**P**		**03 17 59.4**	**+1.3**
	comp=Z,54nm,1.7s								
SSB	**Saint Sauveur**	**47.28**	**308**	*e*P		**P**		**03 17 59.4**	**+1.3**
	comp=Z,54nm,1.7s								
ARCES	**ARCESS Array B**	**47.34**	**345**	P		**P**		**03 17 57.5**	**-0.6**
	comp=Z,3.1nm,0.7s,baz=139,slow=7.7,SNR=26								
ARCES				LR	LR			03 40 53.5	
	comp=Z,57nm,18.6s,baz=138,slow=40								
TAM	**Tamanrasset**	**48.87**	**278**	*e*P		**P**		**03 18 11.5**	**+0.8**
TAM				pmax	pmax				
	comp=Z,4.0nm,1.1s								
TAM	**Tamanrasset**	**48.87**	**278**	*e*P		**P**		**03 18 11.5**	**+0.8**
	comp=Z,3.7nm,1.1s								
TAM	**Tamanrasset**	**48.87**	**278**	*e*P		**P**		**03 18 11.5**	**+0.8**
	comp=Z,3.7nm,1.1s								
BOD	**Bodaibo**	**49.17**	**35**	*e*P		**P**		**03 18 10.9**	**-1.5**
BOD				pmax	pmax				
	comp=Z,7.0nm,1.6s								
BOD	**Bodaibo**	**49.17**	**35**	*e*P		**P**		**03 18 10.9**	**-1.5**
	comp=Z,7.0nm,1.6s								
LSZ	**Lusaka**	**51.52**	**220**	*e*P		**P**		**03 18 30.5**	**-0.2**
LSZ				pmax	pmax				
	comp=Z,8.0nm,1.4s								
LSZ	**Lusaka**	**51.52**	**220**	*e*P		**P**		**03 18 30.5**	**-0.2**
	comp=Z,8.3nm,1.4s								
LSZ	**Lusaka**	**51.52**	**220**	*e*P		**P**		**03 18 30.5**	**-0.2**
	comp=Z,8.3nm,1.4s								
EKA	**Eskdalemuir Ar**	**53.11**	**321**	P		**P**		**03 18 41.8**	**-0.1**
	comp=Z,0.7nm,0.3s,baz=100,slow=8.5,SNR=15								
ES19	**SONSECA Array**	**53.65**	**301**	*e*P		**P**		**03 18 46.5**	**+0.2**
ES19	**SONSECA Array**	**53.65**	**301**	*e*P		**P**		**03 18 46.5**	**+0.2**
ESDC	**Sonseca Array**	**53.70**	**301**	P		**P**		**03 18 46.3**	**-0.4**
	comp=Z,1.3nm,0.4s,baz=70,slow=6.9,SNR=16								
TORD	**Torodi Ar. Bea**	**55.54**	**268**	P		**P**		**03 18 59.7**	**-0.6**
	comp=Z,4.2nm,0.6s,baz=60,slow=7.3,SNR=71								
YAK	**Yakutsk**	**57.65**	**32**	LR		LR		03 44 03.8	
	comp=Z,421nm,21.0s,baz=95,slow=36								
KSAR	**Wonju Array Be**	**57.90**	**61**	P		**P**		**03 19 16.1**	**-0.6**
KSAR	**Wonju Array Be**	**57.90**	**61**	P		**P**		**03 19 16.1**	**-0.6**
KSAR	**Wonju Array Be**	**57.90**	**61**	P		**P**		**03 19 16.1**	**-0.6**
KSRS	**Korea Array**	**57.92**	**61**	P		**P**		**03 19 16.1**	**-0.8**
	comp=Z,1.8nm,0.7s,baz=266,slow=40,SNR=7.1								
KSRS				LR		LR		03 47 37.9	
	comp=Z,46nm,19.6s,baz=268,slow=40								
KLR	**Kul'dur**	**59.03**	**47**	P		**P**		**03 19 23.4**	**-1.1**
	comp=Z,2.9nm,0.8s,baz=288,slow=8.5,SNR=7.4								
KLR				LR		LR		03 47 50.0	
	comp=Z,72nm,20.2s,baz=249,slow=39								
USRK	**Ussuriysk Ar.**	**59.84**	**53**	LR		LR		03 47 19.5	
	comp=Z,100nm,20.8s,baz=283,slow=38								
BOSA	**Boshof**	**63.94**	**213**	P		**P**		**03 19 58.0**	**+0.1**
	comp=Z,7.8nm,1.0s,baz=41,slow=8.6,SNR=7.9								
SUMG	**Summit**	**67.24**	**341**	*e*P		**P**		**03 20 19.5**	**+0.4**
SUMG				pmax	pmax				
	comp=Z,6.0nm,0.9s								
SUMG	**Summit**	**67.24**	**341**	*e*P		**P**		**03 20 19.5**	**+0.4**
	comp=Z,6.0nm,0.9s								
SUMG	**Summit**	**67.24**	**341**	*e*P		**P**		**03 20 19.5**	**+0.4**
	comp=Z,6.0nm,0.9s								
BILL	**Bilibino**	**71.66**	**22**⇑	*e*P		**P**		**03 20 47.9**	**+2.0**
BILL				*e*				03 23 26.6	
BILL				*e*S		**SKiKP**		**03 30 34.1**	**+9.3**
BILL				pmax	pmax				
	comp=Z,4.0nm,0.9s								
BILL				MLR	MLR				
	comp=Z,182nm,18.0s								
BILL	**Bilibino**	**71.66**	**22**	*e*P		**P**		**03 20 47.9**	**+2.0**
	comp=Z,4.0nm,0.9s								
PETK	**Petropavlovsk-**	**73.89**	**38**	LR		LR		03 57 11.7	
	comp=Z,33nm,19.6s,baz=281,slow=39								
WRA	**Warramunga Arr**	**86.04**	**114**	P		**P**		**03 22 04.8**	**-0.9**
	comp=Z,0.9nm,0.7s,baz=316,slow=4.2,SNR=11								
WRA	**Warramunga Arr**	**86.04**	**114**	*i*P		**P**		**03 22 04.9**	**-0.8**
WRA				pmax	pmax				
	comp=Z,1.0nm,0.6s								
WRAB	**Tennant Creek**	**86.04**	**114**	*e*P		**P**		**03 22 04.5**	**-1.2**
WRAB				pmax	pmax				
	comp=Z,1.0nm,0.6s								
WRAB	**Tennant Creek**	**86.04**	**114**	*e*P		**P**		**03 22

ellipse: s-maj=10.9km s-min=5.0km az=96.0
*ISCJB **21** 03:25:34.0±0.3,28°47N±0°03×57°51E±0°06, h43km, mb3.8/13, MS2.9/2, Error ellipse: s-maj=7.0km s-min=3.5km az=8.8*
*IDC **21** 03:25:36.6±2.2, 28°26N×57°31E, h74km±26km, mb3.6/13, mb1 3.7/15, mb1mx3.5/43, mbtmp3.9/15, MS3.1/4, Ms1 3.1/4, ms1mx2.6/39, Error ellipse: s-maj=16.1km s-min=15.3km az=118.0*

ISC 21 03:25:35.0±0.6, **28°49N**±0°03×**57°36E**±0°05, **h43km, n70,** σ1§**54**/**78, mb3.8**/13, **Southern Iran**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NIAN	**Nian**	**1.04**	**207**	*e*Pg	**Pn**	**03 25 53.9**	**+0.7**
NIAN	**Nian**	**1.04**	**207**	*e*Pg	**Pn**	**03 25 53.9**	**+0.7**
IBND	**Bandar-abas**	**1.27**	**215**	*e*Pg	**Pn**	**03 25 57.7**	**+1.4**
IBND				*e*AMB	AMB	03 26 33.2	
	comp=Z,34µm,0.2s						
IBND	**Bandar-abas**	**1.27**	**215**	*e*Pg	**Pn**	**03 25 57.7**	**+1.4**
NGRK	**Negar Kerman**	**1.27**	**334**	*e*Pg	**Pn**	**03 25 56.1**	**-0.6**
NGRK	**Negar Kerman**	**1.27**	**334**	*e*Pg	**Pn**	**03 25 56.1**	**-0.6**
CHMN	**Cheshme madani**	**1.37**	**7**	*e*Pn	**Pn**	**03 25 58.2**	**+0.1**
CHMN	**Cheshme madani**	**1.37**	**7**	*e*Pn	**Pn**	**03 25 58.2**	**+0.1**
GENO	**Geno**	**1.51**	**224**	*e*Pg	**Pn**	**03 26 00.3**	**+0.4**
GENO	**Geno**	**1.51**	**224**	*e*Pg	**Pn**	**03 26 00.3**	**+0.4**
BNDS	**Bandar-Abbas**	**1.52**	**224**	*e*Pg	**Pn**	**03 26 00.3**	**+0.5**
BNDS				*e*Sg	**Sn**	**03 26 20.3**	**+1.8**
BNDS				AML	AML	03 26 25.8	
	comp=N,679nm,0.6s						
BNDS				AML	AML	03 26 33.6	
	comp=E,835nm,0.4s						
BNDS	**Bandar-Abbas**	**1.52**	**224**	*e*Pg	**Pn**	**03 26 00.3**	**+0.5**
BNDS				*e*Sg	**Sn**	**03 26 20.3**	**+1.8**
KRBR	**Kerman**	**1.57**	**341**	*e*Pg	**Pn**	**03 26 01.5**	**+0.7**
KRBR				*e*Sg	**Sn**	**03 26 21.9**	**+1.8**
KRBR				AML	AML	03 26 24.4	
	comp=E,767nm,0.8s						
KRBR				AML	AML	03 26 24.7	
	comp=N,871nm,0.3s						
KRBR	**Kerman**	**1.57**	**341**	*e*Pg	**Pn**	**03 26 01.5**	**+0.7**
KRBR				*e*Sg	**Sn**	**03 26 21.9**	**+1.8**
TVBK	**TV Kerman**	**1.58**	**341**	*e*Pn	**Pn**	**03 26 01.4**	**+0.5**
TVBK	**TV Kerman**	**1.58**	**341**	*e*Pn	**Pn**	**03 26 01.4**	**+0.5**
KHSK	**Kohestak**	**1.75**	**189**	*e*Pg	**Pn**	**03 26 05.3**	**+2.4**
KHSK	**Kohestak**	**1.75**	**189**	*e*Pg	**Pn**	**03 26 05.3**	**+2.4**
KHGB	**Koh Gabri**	**2.03**	**338**	*e*Pn	**Pn**	**03 26 09.0**	**+2.0**
KHGB	**Koh Gabri**	**2.03**	**338**	*e*Pn	**Pn**	**03 26 09.0**	**+2.0**
BANOM	**Banah**	**2.73**	**200**	P	**Pn**	**03 26 16.1**	**-0.3**
BANOM				S	**Sn**	**03 26 51.4**	**+3.2**
BANOM	**Banah**	**2.73**	**200**	P	**Pn**	**03 26 16.1**	**-0.3**
	SNR=67						
BANOM	**Banah**	**2.73**	**200**	P	**Pn**	**03 26 16.1**	**-0.3**
	SNR=67						
BANOM				S	**Sn**	**03 26 51.4**	**+3.2**
ZHSF	**Zahedan**	**3.19**	**69**	*e*Pn	**Pn**	**03 26 25.2**	**+2.4**
ZHSF	**Zahedan**	**3.19**	**69**	*e*Pn	**Pn**	**03 26 25.2**	**+2.4**
UOSS	**Minazif**	**3.68**	**197**	P	**Pn**	**03 26 27.9**	**-1.6**
IMEH	**Mehriz**	**3.74**	**321**	*e*Pn	**Pn**	**03 26 32.3**	**+1.8**
IMEH				*e*AMB	AMB	03 27 47.5	
	comp=N,985nm,0.3s						
IMEH	**Mehriz**	**3.74**	**321**	*e*Pn	**Pn**	**03 26 32.3**	**+1.8**
NAZ	**Nazwa, Dubai**	**3.81**	**204**	P	**Pn**	**03 26 31.9**	**+0.7**
NAZ	**Nazwa, Dubai**	**3.81**	**204**	P	**Pn**	**03 26 32.6**	**+1.4**
NAZ	**Nazwa, Dubai**	**3.81**	**204**	P	**Pn**	**03 26 31.9**	**+0.7**
ISRV	**Sarvestan**	**3.83**	**284**	*e*Pn	**Pn**	**03 26 34.1**	**+2.4**
ISRV				*e*AMB	AMB	03 28 19.1	
	comp=Z,2µm,0.5s						
ISRV	**Sarvestan**	**3.83**	**284**	*e*Pn	**Pn**	**03 26 34.1**	**+2.4**
GHIR	**Ghir-Karzin**	**3.86**	**268**	*e*Pn	**Pn**	**03 26 32.8**	**+0.8**
GHIR				AML	AML	03 27 20.3	
	comp=N,85nm,0.3s						
GHIR				AML	AML	03 27 33.6	
	comp=E,65nm,0.3s						
GHIR	**Ghir-Karzin**	**3.86**	**268**	*e*Pn	**Pn**	**03 26 32.8**	**+0.8**
ASHO	**Ashiyiah**	**3.97**	**197**	P	**Pn**	**03 26 34.1**	**+0.6**
ASHO	**Ashiyiah**	**3.97**	**197**	P	**Pn**	**03 26 34.7**	**+1.2**
	SNR=25						
ASHO	**Ashiyiah**	**3.97**	**197**	P	**Pn**	**03 26 34.1**	**+0.6**
IKOO	**Kooshah**	**4.17**	**20**	*e*Pn	**Pn**	**03 26 37.1**	**+0.8**
IKOO				*e*AMB	AMB	03 26 50.6	
	comp=Z,1µm,0.2s						
IKOO	**Kooshah**	**4.17**	**20**	*e*Pn	**Pn**	**03 26 37.1**	**+0.8**
ICHK	**Chekchek**	**4.53**	**326**	*e*Pn	**Pn**	**03 26 45.3**	**+4.0**
ICHK				*e*AMB	AMB	03 28 05.0	
	comp=Z,894nm,0.4s						
ITEG	**Tejag**	**4.55**	**15**	*e*Pn	**Pn**	**03 26 43.3**	**+1.8**
ITEG				*e*AMB	AMB	03 27 05.6	
	comp=Z,1µm,0.2s						
ITEG	**Tejag**	**4.55**	**15**	*e*Pn	**Pn**	**03 26 43.3**	**+1.8**
HOQ	**Hoqain**	**4.89**	**181**	P	**Pn**	**03 26 45.2**	**-0.9**
	SNR=8.9						
HOQ	**Hoqain**	**4.89**	**181**	Pn	**Pn**	**03 26 45.2**	**-0.9**
	SNR=8.9						
HOQ	**Hoqain**	**4.89**	**181**	P	**Pn**	**03 26 45.2**	**-0.9**
	SNR=8.9						
ARQ	**Araqi**	**5.19**	**189**	P	**Pn**	**03 26 51.2**	**+1.0**
	SNR=19						
ARQ				S	**Sn**	**03 27 51.6**	**+2.7**
ARQ	**Araqi**	**5.19**	**189**	Pn	**Pn**	**03 26 51.2**	**+1.0**
	SNR=19						
ARQ	**Araqi**	**5.19**	**189**	P	**Pn**	**03 26 51.2**	**+1.0**
	SNR=19						
ARQ				S	**Sn**	**03 27 51.6**	**+2.7**
WSAR	**Wadi Sarin**	**5.36**	**167**	P	**Pn**	**03 26 52.2**	**-0.3**
	comp=Z,18nm,0.3s,baz=17,slow=6.3,SNR=88						
WSAR				S	**Sn**	**03 27 49.0**	**-4.0**
	comp=Z,17nm,0.3s,baz=75,slow=13,SNR=8.7						
WSAR				LR	LR	03 29 04.3	
	comp=Z,130nm,19.4s,baz=2.0,slow=40						
IRAM	**Ramesheh**	**5.43**	**309**	*e*Pn	**Pn**	**03 26 54.7**	**+1.0**
IRAM				*e*Sg	**Sn**	**03 27 52.9**	**-2.1**
IRAM				*e*AMB	AMB	03 28 08.5	
	comp=Z,190nm,0.3s						
IRAM	**Ramesheh**	**5.43**	**309**	*e*Pn	**Pn**	**03 26 54.7**	**+1.0**
SMDO	**Samad**	**5.45**	**173**	P	**Pn**	**03 26 53.7**	**-0.1**
	SNR=7.5						
SMDO	**Samad**	**5.45**	**173**	Pn	**Pn**	**03 26 53.7**	**-0.1**
	SNR=7.5						
SMDO	**Samad**	**5.45**	**173**	P	**Pn**	**03 26 53.7**	**-0.1**
	SNR=7.5						
GEYT	**Alibeck**	**9.43**	**4**	P	Pn	03 27 53.8	+5.4
	comp=Z,0.4nm,0.3s,baz=188,slow=7.0,SNR=8.0						
GEYT				LR	LR	03 31 57.4	
	comp=Z,133nm,20.8s,baz=50,slow=39						
AKTO	**Aktyubinsk**	**21.92**	**1**	P	**P**	**03 30 25.9**	**+1.4**
	comp=Z,5.5nm,0.8s,baz=184,slow=11,SNR=18						
AKTO				LR	LR	03 40 34.3	
	comp=Z,43nm,18.3s,baz=169,slow=40						
BRTR	**Keskin Array B**	**22.54**	**306**	P	**P**	**03 30 31.6**	**+0.1**
	comp=Z,3.3nm,0.9s,baz=122,slow=12,SNR=17						
BVAR	**Borovoye Array**	**26.33**	**18**	P	**P**	**03 31 07.8**	**+1.0**
	comp=Z,2.2nm,0.7s,baz=199,slow=8.8,SNR=12						
MKAR	**Makanchi Array**	**26.72**	**40**	P	**P**	**03 31 10.9**	**+0.6**
	comp=Z,0.7nm,0.7s,baz=222,slow=7.8,SNR=7.8						
KURBB	**Kurchatov Arra**	**27.29**	**30**	P	**P**	**03 31 16.1**	**+0.7**
	comp=Z,0.3nm,0.3s,baz=228,slow=8.6,SNR=7.3						
ARU	**Arti**	**27.93**	**1**	LR	LR	03 43 40.2	
	comp=Z,39nm,21.5s,baz=115,slow=38						
ZALV	**Zalesovo Beam**	**32.38**	**31**	P	**P**	**03 31 59.9**	**-0.5**
	comp=Z,2.0nm,0.6s,baz=231,slow=9.2,SNR=8.4						
FINES	**FINESS Array B**	**38.95**	**337**	P	**P**	**03 32 56.2**	**-0.4**
	comp=Z,2.1nm,0.9s,baz=130,slow=8.5,SNR=3.8						
GERES	**GERESS Array B**	**39.02**	**314**	P	**P**	**03 32 56.1**	**-1.3**
	comp=Z,1.4nm,0.9s,baz=122,slow=7.3,SNR=7.7						
SONM	**Songino Array**	**42.31**	**49**	P	**P**	**03 33 25.9**	**+1.2**
	comp=Z,0.6nm,0.6s,baz=256,slow=9.4,SNR=5.9						
ESDC	**Sonseca Array**	**51.11**	**300**	P	**P**	**03 34 32.8**	**-0.8**
	comp=Z,0.8nm,0.7s,baz=71,slow=7.1,SNR=4.3						
TORD	**Torodi Ar. Bea**	**53.78**	**266**	P	**P**	**03 34 52.1**	**-1.5**
	comp=Z,1.1nm,0.7s,baz=56,slow=7.1,SNR=15						
KSRS	**Korea Array**	**58.63**	**62**	P	**P**	**03 35 27.1**	**-0.9**
	comp=Z,2.0nm,0.8s,baz=285,slow=6.3,SNR=4.8						
KLR	**Kul'dur**	**59.09**	**47**	P	**P**	**03 35 29.9**	**-1.0**
	comp=Z,0.8nm,0.4s,baz=271,slow=8.6,SNR=4.4						

IDC 21 03:31:36.5±2.2, **5°94S×151°38E, h0km, mb3.4/4, mb1 3.6/4, mb1mx3.5/23, mbtmp3.4/4, Error ellipse: s-maj=87.4km s-min=29.1km az=119.0, New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**21.64**	**228**	P	P	03 36 28.2	-0.3
	0.5nm,0.5s,baz=54,slow=10,SNR=7.2						
ASAR	**Alice Springs**	**24.36**	**222**	P	P	03 36 56.9	+0.4
	0.6nm,0.7s,baz=56,slow=9.1,SNR=5.7						
MKAR	**Makanchi Array**	**80.26**	**319**	P	P	03 43 49.2	0.0
	0.2nm,0.4s,baz=115,slow=6.8,SNR=2.6						
ILAR	**Eielson Array**	**83.74**	**22**	P	P	03 44 07.2	0.0
	0.3nm,0.7s,baz=247,slow=4.6,SNR=3.6						

*IDC **21** 03:43:41.6±1.0, 35°75N×141°02E, h0km, mb3.6/6, mb1 3.8/7, mb1mx3.6/46, mbtmp3.6/7, ML3.0/1, MS3.0/1, Ms1 3.0/1, ms1mx2.3/35, Error ellipse: s-maj=27.5km s-min=24.5km az=70.0*
*ISCJB **21** 03:43:45.3±0.9, 35°85N±0°06×141°1E±0°1, h44km±7km, mb3.6/6, MS2.8/1, Error ellipse: s-maj=16.4km s-min=7.8km az=155.0*
*JMA **21** 03:43:46.9±0.1, 35°85N×140°92E, h38km±1km, M3.0*

ISC 21 03:43:46.3±1.3, **35°85N**±0°04×**141°06E**±0°07, **h34km**±3km, **n22,** σ1§**48**/**20, mb3.6**/6, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.22**	**227**	P	**Pn**	**03 43 53.4**	**+0.8**
CHOJ				*e*S	**Sb**	**03 43 58.2**	**+0.3**
JYT	**Yasato**	**0.79**	**298**	P	**Pn**	**03 44 00.0**	**-1.1**
JYT				*e*S	**Sn**	**03 44 09.9**	**-1.9**
JHO	**Hitachi**	**0.85**	**332**	P	**Pn**	**03 44 01.8**	**-0.2**
JHO				*e*S	**Sn**	**03 44 13.1**	**-0.2**
BSO3	**Boso 3**	**1.14**	**203**	P	**Pn**	**03 44 06.4**	**+0.7**
BSO1	**Boso 1**	**1.20**	**183**	P	**Pn**	**03 44 06.4**	**+0.2**
JAG	**Ashikaga**	**1.42**	**294**	P	**Pn**	**03 44 08.9**	**-0.9**
MJAR	**Matsushiro Arr**	**2.41**	**287**	Pn	**Pn**	**03 44 23.1**	**-0.2**
	3.9nm,0.3s,baz=93,slow=10.0,SNR=30						
MJAR				Sn	**Sb**	**03 44 58.4**	**+0.2**
	4.1nm,0.3s,baz=138,slow=13,SNR=6.9						
MAT	**Matsushiro**	**2.41**	**287**	P	**Pn**	**03 44 23.9**	**+0.5**
MAT				*e*S	**Sn**	**03 44 53.4**	**+1.7**
JHJ	**Hachijo jima 2**	**2.92**	**201**	Sn	**Sn**	**03 45 00.3**	**-4.1**
	331nm,0.3s,baz=261,slow=22,SNR=9.7						
MA2	**Magadan**	**24.57**	**12**	LR	LR	03 58 25.5	
	comp=Z,32nm,19.6s,baz=308,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.82**	**118**	T	T	04 18 31.5	
	baz=311,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**27.82**	**118**	T	T	04 18 31.2	
	baz=311,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy**	**27.83**	**118**	T	T	04 18 33.3	
	baz=311,slow=75,SNR=32						
H11S1	**WAKE ISLAND Hy**	**28.48**	**121**	T	T	04 19 31.2	
	baz=312,slow=75,SNR=26						
H11S3	**WAKE ISLAND Hy**	**28.48**	**121**	T	T	04 19 21.5	
	baz=312,slow=75,SNR=28						
H11S2	**WAKE ISLAND Hy**	**28.50**	**121**	T	T	04 19 21.8	
	baz=312,slow=75,SNR=20						
MKAR	**Makanchi Array**	**44.51**	**303**	P	**P**	**03 51 54.7**	**+0.1**
	0.4nm,0.4s,baz=90,slow=9.6,SNR=2.0						
KURBB	**Kurchatov Arra**	**46.51**	**309**	P	**P**	**03 52 10.1**	**-0.1**
	0.7nm,0.4s,baz=84,slow=7.7,SNR=6.7						
ILAR	**Eielson Array**	**50.64**	**32**	P	**P**	**03 52 41.2**	**-0.7**
	0.3nm,0.8s,baz=280,slow=5.4,SNR=3.4						
WRA	**Warramunga Arr**	**55.86**	**188**	P	**P**	**03 53 19.6**	**-1.0**
	1.7nm,0.9s,baz=4.3,slow=7.6,SNR=5.8						
ASAR	**Alice Springs**	**59.58**	**188**	P	**P**	**03 53 46.7**	**-0.1**
	0.5nm,0.8s,baz=14,slow=8.6,SNR=4.1						
PDAR	**Pinedale Array**	**78.70**	**45**	P	**P**	**03 55 48.0**	**+2.5**
	0.2nm,0.4s,baz=339,slow=3.9,SNR=3.4						

IDC 21 03:44:12.3±9.8, **20°79S×178°72W, h661km**±99km, **mb3.2**/6, **mb1 3.4**/6, **mb1mx3.0**/30, **mbtmp4.3**/6, **Error ellipse: s-maj=124.0km s-min=53.0km az=137.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**32.79**	**265**	P	P	03 49 54.9	+0.1
	1.1nm,0.2s,baz=77,slow=6.5,SNR=8.0						
STKA	**Stephens Creek**	**37.06**	**244**	P	P	03 50 29.9	+0.2
	1.6nm,0.6s,baz=89,slow=18,SNR=3.3						
ASAR	**Alice Springs**	**43.80**	**257**	P	P	03 51 23.2	+0.3
	5.1nm,0.6s,baz=95,slow=7.5,SNR=67						
WRA	**Warramunga Arr**	**43.90**	**262**	P	P	03 51 23.4	-0.4
	3.2nm,0.3s,baz=97,slow=7.8,SNR=142						
FITZ	**Fitzroy Crossi**	**52.32**	**263**	P	P	03 52 26.2	+0.3
	2.2nm,0.7s,baz=104,slow=8.0,SNR=7.4						
ILAR	**Eielson Array**	**88.75**	**13**	P	P	03 55 57.5	+0.2
	0.2nm,0.5s,baz=216,slow=5.2,SNR=4.7						
AKASG	**Malin Array Be**	**142.94**	**330**	PKP	PKPdf	04 02 31.1	-1.5
	0.3nm,0.4s,baz=41,slow=4.1,SNR=8.5						
BRTR	**Keskin Array B**	**146.53**	**312**	PKPbc	PKPbc	04 02 41.8	-0.2
	0.4nm,0.5s,baz=96,slow=1.4,SNR=3.1						

*IDC **21** 03:50:47.5±1.6, 18°95S×172°90W, h0km, mb3.9/5, mb1 4.3/6, mb1mx3.9/27, mbtmp3.9/6, ML3.5/1, Error ellipse: s-maj=70.1km s-min=23.4km az=145.0*
*ISCJB **21** 03:50:50.3±1.2, 18°65S±0°1×173°2W±0°2, h21km, mb4.0/5, Error ellipse: s-maj=37.2km s-min=12.0km az=29.3*

ISC 21 03:50:51.6±1.3, **18°7S**±0°2×**173°0W**±0°3, **h21km, n6,** σ1§**50**/**7, mb3.9**/5, **Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**4.89**	**15**	Pn	**Pn**	**03 52 05.8**	**+1.7**
	1.9nm,0.3s,baz=249,slow=18,SNR=2.8						
AFI				Sn	**Sn**	**03 52 58.1**	**-1.9**
	3.1nm,0.3s,baz=87,slow=23,SNR=3.5						
ASAR	**Alice Springs**	**49.49**	**255**	P	**P**	**03 59 40.6**	**-0.3**
	5.0nm,1.0s,baz=88,slow=8.6,SNR=17						
WRA	**Warramunga Arr**	**49.50**	**259**	P	**P**	**03 59 40.6**	**-0.4**
	4.7nm,1.1s,baz=97,slow=7.6,SNR=19						
TXAR	**Lajitas Array**	**82.16**	**56**	P	**P**	**04 03 10.9**	**-0.4**
	0.7nm,1.0s,baz=234,slow=7.6,SNR=4.6						
PDAR	**Pinedale Array**	**84.47**	**41**	P	**P**	**04 03 22.3**	**-0.8**
	0.4nm,0.6s,baz=214,slow=4.6,SNR=3.8						
ILAR	**Eielson Array**	**85.58**	**11**	P	**P**	**04 03 28.9**	**+1.0**
	0.5nm,0.7s,baz=221,slow=5.2,SNR=9.3						

*ISCJB **21** 04:24:48.2±0.7, 73°00N±0°08×54°0W±0°2, h10km, mb3.5/10, MS3.2/18, Error ellipse: s-maj=12.9km s-min=8.9km az=27.8*
*IDC **21** 04:24:48.0±1.0, 72°75N×53°79W, h0km, mb3.6/10, mb1 3.8/11, mb1mx3.6/35, mbtmp3.6/11, ML3.7/1, MS3.3/22, Ms1 3.3/22, ms1mx3.2/35, Error ellipse: s-maj=30.9km s-min=18.3km az=165.0*

ISC 21 04:24:49.6±0.8, **73°0N**±0°1×**53°70W**±0°07, **h10km, n27,** σ2§**15**/**15, mb3.6**/10, **MS3.2**/18, **Western Kalaallit Nunaat**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KULLO	**Kullorsuaq**	**1.85**	**329**	*i* P	**Pn**	**04 25 19.3**	**-2.0**
KULLO				*e*S	**Sn**	**04 25 42.8**	**-1.8**
SUMG	**Summit**	**4.55**	**88**	*i* P	**Pn**	**04 25 58.6**	**-0.1**
SUMG				*e*S	**Sb**	**04 27 00.1**	**-4.4**
I18DK	**QAANAAQ INFRAS**	**5.96**	**326**	*i*		04 59 09.4	
	baz=133,slow=319,SNR=13						
RES	**Resolute Bay**	**11.41**	**298**	LR	LR	04 32 00.7	
	comp=Z,107nm,20.0s,baz=64,slow=38						
BORG	**Borgarnes**	**14.10**	**109**	LR	LR	04 33 35.1	
	comp=Z,111nm,19.1s,baz=318,slow=38						
SPITS	**Spitsbergen Ar**	**17.06**	**41**	P	**P**	**04 28 49.2**	**-0.3**
	baz=284,slow=12,SNR=3.3						
SPITS				LR	LR	04 35 26.6	
	comp=Z,125nm,18.1s,baz=300,slow=37						
SCHQ	**Schefferville**	**19.07**	**204**	LR	LR	04 35 49.8	
	comp=Z,153nm,20.6s,baz=17,slow=35						
ARCES	**ARCESS Array B**	**23.91**	**58**	LR	LR	04 38 59.0	
	comp=Z,58nm,20.9s,baz=288,slow=35						
YKA	**Yellowknife Ar**	**24.09**	**276**	LR	LR	04 39 09.5	
	comp=Z,8.0nm,20.7s,baz=0.0,slow=36						
INK	**Inuvik**	**24.95**	**300**	P	**P**	**04 30 11.9**	**-0.5**
	3.0nm,0.8s,baz=360,slow=8.4,SNR=4.6						
INK				LR	LR	04 39 55.7	
	comp=Z,90nm,21.7s,baz=58,slow=36						
NOA	**NORSAR Array B**	**26.41**	**82**	LR	LR	04 40 31.2	
	comp=Z,32nm,18.8s,baz=310,slow=36						
HFS	**Hagfors**	**27.86**	**81**	LR	LR	04 41 27.9	
	comp=Z,47nm,20.3s,baz=320,slow=36						
ULM	**Lac du Bonnet**	**29.23**	**242**	LR	LR	04 42 40.2	
	comp=Z,74nm,18.7s,baz=346,slow=37						
FINES	**FINESS Array B**	**30.30**	**70**	P	**P**	**04 31 01.0**	**+0.6**
	2.0nm,1.0s,baz=310,slow=11,SNR=2.9						
FINES				LR	LR	04 42 17.6	
	comp=Z,57nm,21.4s,baz=316,slow=34						
ILAR	**Eielson Array**	**31.06**	**304**	P	**P**	**04 31 07.2**	**+0.1**
	0.3nm,0.8s,baz=28,slow=8.3,SNR=4.5						
ILAR				LR	LR	04 44 50.1	
	comp=Z,46nm,19.9s,baz=74,slow=38						
NRIK	**Noril'sk**	**35.67**	**22**	LR	LR	04 47 58.6	
	comp=Z,39nm,20.1s,baz=5.5,slow=39						
GERES	**GERESS Array B**	**37.61**	**92**	LR	LR	04 46 41.6	
	comp=Z,24nm,21.6s,baz=275,slow=35						
PDAR	**Pinedale Array**	**39.82**	**252**	P	**P**	**04 32 23.2**	**+0.4**
	0.9nm,0.8s,baz=59,slow=8.8,SNR=6.2						
PDAR				LR	LR	04 48 18.7	
	comp=Z,79nm,18.9s,baz=41,slow=36						
AKASG	**Malin Array Be**	**40.47**	**76**	LR	LR	04 48 40.0	
	comp=Z,37nm,20.2s,baz=340,slow=35						
ZALV	**Zalesovo Beam**	**50.14**	**31**	P	**P**	**04 33 47.6**	**+3.2**
	0.8nm,0.5s,baz=357,slow=7.5,SNR=3.8						
ZALV				LR	LR	04 58 13.0	
	comp=Z,45nm,20.4s,baz=248,slow=40						
KBZ	**Khabaz**	**50.66**	**69**	LR	LR	04 54 38.0	
	comp=Z,36nm,19.7s,baz=48,slow=35						
TXAR	**Lajitas Array**	**50.89**	**240**	P	**P**	**04 33 49.5**	**-0.9**
	0.2nm,0.7s,baz=0.8,slow=6.3,SNR=2.7						
TXAR				LR	LR	04 55 07.8	
	comp=Z,52nm,21.5s,baz=0.0,slow=36						
BRTR	**Keskin Array B**	**51.76**	**79**	P	**P**	**04 33 58.2**	**+1.2**
	0.3nm,0.5s,baz=347,slow=5.9,SNR=3.1						
BRTR				LR	LR	04 56 34.9	
	comp=Z,25nm,20.2s,baz=324,slow=37						
PETK	**Petropavlovsk-**	**52.30**	**337**	LR	LR	04 57 37.2	
	comp=Z,31nm,19.5s,baz=18,slow=38						
MKAR	**Makanchi Array**	**56.67**	**35**	P	**P**	**04 34 34.4**	**+1.8**
	0.1nm,0.2s,baz=354,slow=5.8,SNR=2.7						
MKAR				LR	LR	05 02 40.0	
	comp=Z,32nm,18.6s,baz=0.5,slow=40						
SONM	**Songino Array**	**58.65**	**16**	P	**P**	**04 34 49.2**	**+2.7**
	0.3nm,0.5s,baz=352,slow=7.3,SNR=2.2						
TORD	**Torodi Ar. Bea**	**67.76**	**120**	P	**P**	**04 35 44.8**	**-2.3**
	0.4nm,0.9s,baz=356,slow=8.1,SNR=2.2						

*IDC **21** 04:46:54.7±0.6, 15°36S×173°37W, h0km, mb4.4/15, mb1 4.6/15, mb1mx4.5/25, mbtmp4.4/15, MS3.8/19, Ms1 3.8/19, ms1mx3.7/33, Error ellipse: s-maj=27.6km s-min=15.2km az=127.0*
*NEIC **21** 04:46:56.1±0.2, 15°29S×173°44W, h10km, mb4.6/33, Error ellipse: s-maj=10.9km s-min=4.8km az=138.0*
*ISCJB **21** 04:46:58.9±0.3, 15°34S±0°08×173°50W±0°07, h42km, mb4.5/48, MS3.9/17, Error ellipse: s-maj=14.6km s-min=5.8km az=140.3*

ISC 21 04:47:00.8±0.5, **15°4S**±0°1×**173°4W**±0°1, **h42km, n122,** σ0§**79**/**96, mb4.5**/48, **MS3.9**/17, **16D, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**2.15**	**48**	Pn	Pn	04 47 26.1	-8.1
	245nm,0.3s,baz=45,slow=0.8,SNR=85						
AFI				Sn	Sn	04 47 45.7	-14
	1µm,0.3s,baz=60,slow=20,SNR=33						
AFI				LR	LR	04 48 17.0	
	comp=Z,959nm,20.3s,baz=240,slow=39						
AFI	**Afiamalu**	**2.15**	**48**	*e*Pn	Pn	04 47 25.9	-8.3
AFI				*e*S	Sn	04 47 46.2	-13
NIUE	**Niue**	**4.97**	**138**	P	Pn	04 48 05.8	-7.1
	baz=4.8,SNR=26						
MSVF	**Nonsavu**	**8.52**	**253**	*e*Pn	Pn	04 49 10.0	+8.2
RAR	**Rarotonga**	**14.19**	**116**	Pn	Pn	04 50 06.8	-12
	1.1nm,0.3s,baz=338,slow=19,SNR=2.4						
RAR				LR	LR	04 54 28.0	
	comp=Z,383nm,18.0s,baz=300,slow=32						
DZM	**Mont Dzumac**	**20.20**	**248**	P	**P**	**04 51 33.2**	**+0.9**
	9.3nm,0.7s,baz=102,slow=24,SNR=7.2						
DZM				LR	LR	04 58 14.8	
	comp=Z,413nm,21.4s,baz=68,slow=34						
DZM	**Mont Dzumac**	**20.20**	**248**	*e*LQ	LQ	04 55 58.6	
	702nm,31.9s						
DZM				*e*LR	LR	04 57 22.1	
	698nm,24.9s						
PAE	**Paea**	**22.96**	**99**	*e*T	T	05 15 12.9	
	2.8nm,0.2s						
PPT	**Papeete

baz=64,SNR=11
MUN Mundaring 65.54 242 P **P** **04 57 40.2 -0.2**
baz=66
MJAR Matsushiro Arr 68.91 320 LR LR 05 22 36.7
comp=Z,77nm,21.9s,baz=155,slow=31
PETK Petropavlovsk- 72.60 342 P **P** **04 58 22.5 -1.1**
7.0nm,0.6s,baz=130,slow=8.0,SNR=3.8
QSPA South Pole Qui 74.68 180 *eP* **P** **04 58 35.6 -0.3**
28nm,0.9s
MOD Modoc Plateau 75.10 38 *eP* **P** **04 58 38.2 -0.5**
3.3nm,0.8s
KSRS Korea Array 76.13 316 LR LR 05 26 34.4
comp=Z,37nm,21.2s,baz=116,slow=31
TUC Tucson 76.38 51 *eP* **P** **04 58 45.4 -0.8**
3.5nm,0.9s
WVOR Wild Horse Val 76.42 38 *eP* **P** **04 58 45.2 -0.9**
5.5nm,1.1s
USRK Ussuriysk Ar. 77.35 323 P **P** **04 58 52.8 +1.6**
2.4nm,0.8s,baz=117,slow=7.1,SNR=4.3
USRK LR LR 05 26 38.1
comp=Z,100nm,20.8s,baz=121,slow=31
BMO Blue Mountains 78.61 37 *eP* **P** **04 58 57.6 -0.7**
1.9nm,0.8s
MFID Camas Ranch 78.67 39 *eP* **P** **04 58 58.8 +0.1**
4.5nm,0.9s
DUG Dugway, Tooele 78.84 43 *eP* **P** **04 58 59.5 -0.3**
4.8nm,1.2s
PMR Palmer 79.09 12 *eP* **P** **04 59 00.2 -0.2**
2.3nm,0.7s
BMRM Bremner River 79.49 14 *eP* **P** **04 59 02.2 -0.5**
14nm,1.1s
HLID Hailey 79.61 39 *eP* **P** **04 59 04.0 0.0**
7.1nm,1.0s
MVCO Mesa Verde 80.33 47 *eP* **P** **04 59 07.7 -0.4**
1.6nm,0.5s
HWUT Hardware Ranch 80.38 42 *eP* **P** **04 59 07.3 -0.8**
1.2nm,0.6s
KTH Kantishna Hill 80.58 10 *eP* **P** **04 59 07.3 -1.3**
6.2nm,1.0s
TRF Thorofare Moun 80.59 10 *eP* **P** **04 59 07.9 -0.9**
4.2nm,0.8s
TXAR Lajitas Array 80.60 56 P **P** **04 59 09.7 +0.2**
1.9nm,0.9s,baz=225,slow=5.2,SNR=16
TXAR LR LR 05 28 45.0
comp=Z,55nm,19.0s,baz=0.0,slow=31
NEW Newport 80.69 34 *eP* **P** **04 59 08.7 -0.8**
1.9nm,0.7s
PV01 Paradox Valley 80.71 46 *eP* **P** **04 59 09.6 -0.4**
839nm,1.2s
ANMO Albuquerque 80.79 50 *eP* **P** **04 59 10.3 -0.2**
2.5nm,0.9s
MCK McKinley 81.09 11 *eP* **P** **04 59 10.2 -1.1**
12nm,1.1s
DLMT Dillon 81.67 38 *eP* **P** **04 59 13.9 -1.0**
2.2nm,0.6s
TPAW Teton Pass 81.72 41 *eP* **P** **04 59 15.2 -0.2**
7.2nm,1.1s
SNOW Snow King Moun 81.83 41 *eP* **P** **04 59 16.3 +0.4**
14nm,1.4s
IMW Indian Meadow 81.93 40 *eP* **P** **04 59 16.7 +0.2**
9.6nm,1.1s
DOT Dot Lake 81.98 13 *eP* **P** **04 59 15.6 -0.4**
13nm,1.1s
FLWY Flagg Ranch 82.17 40 *eP* **P** **04 59 17.8 +0.1**
3.5nm,0.9s
PDAR Pinedale Array 82.25 42 P **P** **04 59 17.6 -0.6**
2.1nm,0.9s,baz=207,slow=3.0,SNR=15
PDAR LR LR 05 31 48.3
comp=Z,59nm,18.3s,baz=252,slow=33
SMCO Snowmass 82.30 46 *eP* **P** **04 59 18.5 -0.1**
9.3nm,1.3s
BOZ Bozeman (W) 82.40 39 *eP* **P** **04 59 18.6 -0.1**
12nm,1.4s
ILAR Eielson Array 82.42 11 P **P** **04 59 17.5 -0.7**
1.0nm,0.6s,baz=233,slow=6.3,SNR=24
ILAR LR LR 05 32 59.1
comp=Z,31nm,18.2s,baz=212,slow=34
SDCO Great Sand Dun 82.70 48 *eP* **P** **04 59 20.2 -0.4**
3.8nm,1.1s
MSTX Muleshoe 83.15 52 *eP* **P** **04 59 22.1 -0.8**
7.4nm,1.1s
DAWY Dawson 83.39 14 *eP* **P** **04 59 23.4 +0.1**
5.9nm,1.1s
ISCO Idaho Springs 83.52 46 *eP* **P** **04 59 24.1 -0.8**
2.6nm,1.1s
ABTX Abilene, Hawle 85.05 54 *eP* **P** **04 59 31.8 -0.6**
14nm,1.0s
MAW Mawson 87.82 199 P **P** **04 59 45.8 +0.5**
2.6nm,0.7s,baz=150,slow=6.3,SNR=8.6
MAW LR LR 05 35 11.8
comp=Z,61nm,21.6s,baz=66,slow=33
MAW Mawson 87.82 199 P **P** **04 59 45.2 -0.1**
baz=88,SNR=7.6
YKA Yellowknife Ar 90.07 23 P **P** **04 59 57.9 +2.1**
0.9nm,0.8s,baz=230,slow=4.7,SNR=2.6
CMAR Chiang Mai Arr 92.59 288 LR LR 05 37 08.0
comp=Z,29nm,21.6s,baz=160,slow=32
ULM Lac du Bonnet 93.91 39 LR LR 05 40 08.3
comp=Z,63nm,18.1s,baz=343,slow=34
SONM Songino Array 94.81 318 P **P** **05 00 19.4 +1.1**
0.3nm,0.4s,baz=62,slow=3.4,SNR=3.5
LPAZ La Paz 99.83 110 LR LR 05 35 57.1
comp=Z,24nm,21.4s,baz=222,slow=30
MKAR Makanchi Array 110.80 315 PKiKP **PKiKP** **05 05 28.8 -0.6**
0.2nm,0.3s,baz=116,slow=3.4,SNR=3.6
ARCES ARCESS Array B 124.58 352 PKP **PKPdf** **05 05 54.5 -0.6**
1.6nm,0.7s,baz=354,slow=0.9,SNR=8.4
DPC Dobruska-Polom 144.23 349 *e*PKP **PKPdf** **05 06 31.4 -0.8**
BURAR Bucovina Array 144.33 338 ↓*i*P PKPbc 05 06 31.2 +0.2
PRU Pruhonice 144.87 351 *e*PKP **PKPdf** **05 06 32.8 -0.5**
SNF Seneffe 144.90 3 PKP **PKPdf** **05 06 32.8 -0.5**
GOPC GO Pecny, Ondr 144.91 351 *e*PKP **PKPdf** **05 06 33.2 -0.2**
CFR Carcaliu 145.17 333 ↓*i*P **PKPdf** **05 06 34.3 +0.4**
VRAC Vranov 145.18 349 ↓*i*P **PKPdf** **05 06 34.4 +0.5**
VRI Vrincioaia 145.21 335 ↓*i*P **PKPdf** **05 06 33.8 -0.2**
PLOR Plostina 145.25 335 ↓*i*P **PKPdf** **05 06 33.8 -0.3**
KMBO Kilima Mbogo 145.54 244 PKPbc **PKPab** **05 06 36.7 +0.5**
2.9nm,0.6s,baz=68,slow=4.1,SNR=5.8
KMBO Kilima Mbogo 145.54 244 *e*PKPbc **PKPab** **05 06 36.5 +0.3**
TIRR Tirgusor 145.60 332 ↓*i*P **PKPab** **05 06 35.9 +0.7**
DOPR Dopca 145.66 337 ↓*i*P **PKPab** **05 06 36.8 +1.3**
TLB Topalu 145.67 332 ↓*i*P **PKPab** **05 06 36.5 +1.0**
KHC Kasperske Hory 145.85 352 *e*PKP **PKPab** **05 06 36.4 +0.3**
KHC Kasperske Hory 145.85 352 *e*PKPbc **PKPab** **05 06 36.2 +0.1**
ISR Istrita 145.89 334 ↓*i*P **PKPab** **05 06 37.1 +0.7**
DRGR 145.91 340 ↓*i*P **PKPab** **05 06 36.7 +0.3**
GERES GERESS Array B 146.11 352 PKPbc **PKPbc** **05 06 36.3 -0.2**
2.6nm,1.1s,baz=352,slow=4.0,SNR=9.4
BRTR Keskin Array B 146.12 321 PKPbc **PKPab** **05 06 37.6 +0.1**
8.3nm,0.9s,baz=121,slow=1.9,SNR=26
VOIR 146.23 336 ↓*i*P **PKPab** **05 06 38.4 +0.7**
ARR Arges 146.45 337 ↓*i*P **PKPab** **05 06 39.5 +1.0**
SIRR Siria 146.71 341 ↓*i*P **PKPab** **05 06 39.3 -0.1**
BFO Black Forest 147.10 358 PKPbc **PKPab** **05 06 39.8 -1.1**
BZS Buzias 147.30 340 ↓*i*P **PKPab** **05 06 40.7 -1.0**
MDVR Moldovita 148.01 339 ↓*i*P **PKPab** **05 06 45.0 +0.4**
VTS Vitosha 149.34 336 ↓*i*P **PKPbc** **05 06 46.4 +0.8**

*AZER **21** 05:10:23.5±0.0,39.°17N×52.°68E,h72km±5km, Error ellipse: s-maj=6.7km s-min=3.0km az=267.0*
*CSEM **21** 05:10:24.9±0.7,39.°21N×52.°48E,h10km,mb3.4, Error ellipse: s-maj=12.7km s-min=11.0km az=84.0*
ISC 21 05:10:16.6±1.6,39.°19N±0.°08×53.°24E±0.°09,h35km,n28,
σ2°88/54,9C-14D,Turkmenistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LKRN	**Lenkeran, Azer**	**3.51**	**264**	↓P	**Pn**	**05 11 12.0**	**+3.3**
	SNR=6.6						
LKRN				↓S	**Sn**	**05 11 45.9**	**-3.1**
LKRN	**Lenkeran, Azer**	**3.51**	**264**	P	**Pn**	**05 11 12.0**	**+3.3**
	SNR=6.6						
LKRN				S	**Sn**	**05 11 45.9**	**-3.1**
ASTR	**Astara**	**3.53**	**261**	↑P	**Pn**	**05 11 12.1**	**+3.1**
	SNR=2.8						
ASTR				↓S	**Sn**	**05 11 47.6**	**-1.9**
ASTR	**Astara**	**3.53**	**261**	P	**Pn**	**05 11 12.1**	**+3.1**
	SNR=2.8						
ASTR				S	**Sn**	**05 11 47.6**	**-1.9**
GLBA	**Clilabad**	**3.77**	**272**	P	**Pn**	**05 11 14.9**	**+2.7**
	SNR=6.8						
GLBA				↓S	**Sn**	**05 11 54.0**	**-1.3**
GLBA	**Clilabad**	**3.77**	**272**	P	**Pn**	**05 11 14.9**	**+2.7**
	SNR=6.8						
GLBA				S	**Sn**	**05 11 54.0**	**-1.3**
SIZA	**Siyzn**	**3.83**	**301**	↓P	**Pn**	**05 11 17.5**	**+4.4**
	SNR=2.8						
SIZA				↓S	**Sn**	**05 11 57.7**	**+0.9**
SIZA	**Siyzn**	**3.83**	**301**	P	**Pn**	**05 11 17.5**	**+4.4**
	SNR=2.8						
SIZA				S	**Sn**	**05 11 57.7**	**+0.9**
LRK	**Lerik**	**3.86**	**263**	P	**Pn**	**05 11 16.3**	**+2.6**
	SNR=5.8						
LRK				↑S	**Sn**	**05 11 56.3**	**-1.6**
LRK	**Lerik**	**3.86**	**263**	P	**Pn**	**05 11 16.3**	**+2.6**
	SNR=5.8						
LRK				S	**Sn**	**05 11 56.3**	**-1.6**
IML	**Ismayilli**	**4.20**	**294**	↑P	**Pn**	**05 11 21.4**	**+3.2**
	SNR=5.6						
IML				↓S	**Sn**	**05 12 06.0**	**-0.1**
IML	**Ismayilli**	**4.20**	**294**	P	**Pn**	**05 11 21.4**	**+3.2**
	SNR=5.6						
IML				S	**Sn**	**05 12 06.0**	**-0.1**
XNQ	**Khinaliq**	**4.38**	**298**	P	**Pn**	**05 11 23.8**	**+3.0**
	SNR=26						
XNQ				↓S	**Sn**	**05 12 11.3**	**+0.6**
XNQ	**Khinaliq**	**4.38**	**298**	P	**Pn**	**05 11 23.8**	**+3.0**
	SNR=26						
XNQ				S	**Sn**	**05 12 11.3**	**+0.6**
QSAR	**Qusar**	**4.46**	**303**	P	**Pn**	**05 11 25.5**	**+3.8**
	SNR=9.6						
QSAR				↓S	**Sn**	**05 12 12.6**	**+0.2**
SEKA	**Sheki**	**5.05**	**295**	↑P	**Pn**	**05 11 32.6**	**+2.8**
	SNR=4.9						
SEKA				↑S	**Sn**	**05 12 27.0**	**+0.1**
SEKA	**Sheki**	**5.05**	**295**	P	**Pn**	**05 11 32.6**	**+2.8**
	SNR=4.9						
SEKA				S	**Sn**	**05 12 27.0**	**+0.1**
GANJ	**Ganja**	**5.52**	**287**	↑S	**Sn**	**05 12 34.3**	**-4.2**
GANJ	**Ganja**	**5.52**	**287**	S	**Sn**	**05 12 34.3**	**-4.2**
ZKTA	**Zakatala**	**5.61**	**298**	↓P	**Pn**	**05 11 41.6**	**+4.1**
	SNR=6.4						
ZKTA				↓S	**Sn**	**05 12 38.6**	**-2.2**
GDB	**GEDABAY**	**5.95**	**287**	P	**Pn**	**05 11 44.9**	**+2.5**
	SNR=16						
GDB				↓S	**Sn**	**05 12 45.7**	**-3.7**
GDB	**GEDABAY**	**5.95**	**287**	P	**Pn**	**05 11 44.9**	**+2.5**
	SNR=16						
GDB				S	**Sn**	**05 12 45.7**	**-3.7**
QZX	**Qazax, Azerbai**	**6.31**	**290**	↓P	**Pn**	**05 11 50.0**	**+2.8**
	SNR=21						
QZX				↓S	**Sn**	**05 12 54.2**	**-3.9**
QZX	**Qazax, Azerbai**	**6.31**	**290**	P	**Pn**	**05 11 50.0**	**+2.8**
	SNR=21						
QZX				S	**Sn**	**05 12 54.2**	**-3.9**
AB31	**Akbulak array**	**11.14**	**23**	↑Pn	**Pn**	**05 12 54.9**	**+1.6**
	0.2nm,0.4s,baz=205,slow=13,SNR=6.6						
AB31				Sn	**Sn**	**05 14 53.9**	**-2.7**
	0.2nm,0.3s,baz=209,slow=24,SNR=6.6						
AB31	**Akbulak array**	**11.14**	**23**	Pn	**Pn**	**05 12 54.9**	**+1.6**
	0.2nm,0.4s,SNR=6.6						
AB31				Sn	**Sn**	**05 14 53.8**	**-2.7**
	0.2nm,0.3s,SNR=3.6						
AKTO	**Aktyubinsk**	**11.74**	**15**	↑Pn	**Pn**	**05 13 01.6**	**+0.2**
	0.9nm,0.7s						
AKTO				↑Sn	**Sn**	**05 15 06.3**	**-4.8**
	1.5nm,0.8s						
AKTO	**Aktyubinsk**	**11.74**	**15**	Pn	**Pn**	**05 13 01.6**	**+0.2**
	0.9nm,0.7s						
AKTO				Sn	**Sn**	**05 15 06.3**	**-4.8**
	1.5nm,0.8s						

IDC 21 05:17:23.2±12.0,24.°13N×141.°41E,h407km±144km,
mb3.0/8,mb1 3.2/8,mb1mx2.9/34,mbtmp3.7/8, Error ellipse: s-maj=32.2km s-min=21.8km az=97.0, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**44.34**	**190**	P	P	05 24 54.7	-0.7
	0.5nm,0.3s,baz=6.7,slow=8.7,SNR=22						
ASAR	**Alice Springs**	**48.06**	**189**	P	P	05 25 24.5	+0.5
	0.3nm,0.6s,baz=16,slow=11,SNR=3.2						
MKAR	**Makanchi Array**	**51.87**	**311**	P	P	05 25 52.8	+0.8
	0.4nm,0.4s,baz=88,slow=9.4,SNR=4.2						
ILAR	**Eielson Array**	**60.65**	**28**	P	P	05 26 52.4	-0.4
	0.6nm,0.7s,baz=265,slow=6.1,SNR=8.2						
INK	**Inuvik**	**66.01**	**24**	P	P	05 27 27.7	+0.4
	1.4nm,0.7s,baz=264,slow=10,SNR=4.6						
ARCES	**ARCESS Array B**	**76.11**	**341**	P	P	05 28 25.7	-1.5
	0.4nm,0.5s,baz=71,slow=8.7,SNR=6.9						
FINES	**FINESS Array B**	**80.29**	**334**	P	P	05 28 50.5	+0.5
	0.6nm,0.7s,baz=57,slow=5.1,SNR=4.0						
TXAR	**Lajitas Array**	**97.93**	**53**	P	Pdif	05 30 16.3	+1.7
	0.1nm,0.6s,baz=309,slow=2.9,SNR=2.5						

IDC 21 05:38:49.3±3.1,6.°18S×147.°70E,h0km,mb3.6/2,
mb1 3.9/4,mb1mx3.5/29,mbtmp3.7/4,ML3.1/2, Error ellipse: s-maj=71.4km s-min=39.2km az=99.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.25**	**189**	Pn	Pn	05 39 42.4	+0.8
	22nm,0.3s,baz=17,slow=11,SNR=20						
PMG				Sn	Sn	05 40 16.6	-4.3
	7.6nm,0.3s,baz=49,slow=20,SNR=3.4						
WRA	**Warramunga Arr**	**18.86**	**222**	P	P	05 43 11.1	-0.2
	0.2nm,0.3s,baz=48,slow=11,SNR=5.6						
ASAR	**Alice Springs**	**21.87**	**216**	P	P	05 43 43.5	-0.4
	0.6nm,0.5s,baz=50,slow=9.4,SNR=12						
FITZ	**Fitzroy Crossi**	**24.57**	**239**	P	P	05 44 11.6	+0.4
	1.6nm,0.3s,baz=53,slow=8.9,SNR=13						
TORD	**Torodi Ar. Bea**	**145.81**	**284**	PKPbc	PKPdf	05 58 30.4	-0.8
	0.6nm,0.8s,baz=67,slow=4.2,SNR=6.0						

*ISCJB **21** 05:42:14.9±1.4,76.°81N±0.°06×8.°4E±0.°2,h2km±8km, mb3.3/4, MS3.0/6, Error ellipse: s-maj=10.5km s-min=8.0km az=138.1*
*IDC **21** 05:42:16.9±1.0,76.°87N×7.°77E,h0km,mb3.4/4,mb1 3.6/6, mb1mx3.3/45,mbtmp3.4/6,ML3.0/2,MS3.0/10,Ms1 3.0/10, ms1mx2.7/42, Error ellipse: s-maj=18.8km s-min=15.1km az=123.0*
*CSEM **21** 05:42:17.6±0.7,76.°89N×8.°49E,h10km,ML2.5, Error ellipse: s-maj=16.5km s-min=10.8km az=103.0*
*BER **21** 05:42:18.3±2.5,76.°93N×7.°63E,h15km±30km,MD1.6, ML2.1,ML2.5(NAO)*
*NAO **21** 05:42:21.4±3.8,76.°90N×9.°92E,h2km±18km,ML2.5*
ISC 21 05:42:15.5±2.0,76.°95N±0.°05×8.°17E±0.°06,h8km±12km,
n31,σ2°34/36,mb3.4/4,MS2.9/6,Svalbard region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HSPB	**Hornsund (broa**	**1.67**	**85**	*e*P	**Pg**	**05 42 47.1**	**-0.4**
HSPB				*e*S	**Sb**	**05 43 07.3**	**-0.3**
HSPB				IAML		05 43 10.7	
	comp=Z,24nm,0.3s						
HSPB	**Hornsund (broa**	**1.67**	**85**	Pg	**Pb**	**05 42 46.6**	**+0.2**
HSPB	**Hornsund (broa**	**1.67**	**85**	*e*P	**Pg**	**05 42 47.1**	**-0.4**
	SNR=55						
HSPB				*e*S	**Sb**	**05 43 07.3**	**-0.3**
	SNR=55						
HSP	**Hornsund**	**1.67**	**84**	Pg	**Pb**	**05 42 46.6**	**0.0**
BRBA	**Barentsburg A**	**1.73**	**47**	Pn	**Pg**	**05 42 47.4**	**-1.2**
BRBA				S	**Sb**	**05 43 07.7**	**-1.5**
	SNR=55						
KBS	**Kingsbay**	**2.14**	**20**	*e*P	**Pb**	**05 42 53.2**	**-1.3**
KBS				*e*S	**Sn**	**05 43 17.1**	**-1.0**
KBS				IAML		05 43 22.4	
	comp=Z,19nm,0.3s						
KBS	**Kingsbay**	**2.14**	**20**	*e*P	**Pb**	**05 42 53.2**	**-1.3**
	SNR=55						
KBS				*e*S	**Sn**	**05 43 17.1**	**-1.0**
	SNR=55						
SPA0	**Spitsbergen Ar**	**2.16**	**51**	Pn	**Pb**	**05 42 54.8**	**-0.1**
	baz=229,slow=12						
SPA0				Lg	Lg	05 43 20.9	
	baz=257,slow=22						
SPA0	**Spitsbergen Ar**	**2.16**	**51**	*e*P	**Pb**	**05 42 54.6**	**-0.3**
SPA0				*e*S	**Sb**	**05 43 21.0**	**-0.8**
SPA0				IAML		05 43 30.9	
	comp=Z,30nm,0.6s						
SPA0	**Spitsbergen Ar**	**2.16**	**51**	*e*P	**Pb**	**05 42 54.6**	**-0.3**
	SNR=55						
SPA0				Lg	Lg	05 43 20.9	
	SNR=8.3						
SPA0				*e*S	**Sb**	**05 43 21.0**	**-0.8**
	SNR=55						
SPITS	**Spitsbergen Ar**	**2.16**	**51**	Pn	**Pb**	**05 42 54.7**	**-0.1**
	baz=224,slow=16,SNR=74						
SPITS				Sn	**Sb**	**05 43 20.7**	**-1.1**
	baz=225,slow=24,SNR=20						
SPITS				LR	LR	05 43 38.9	
	comp=Z,61nm,19.7s,baz=280,slow=36						
HOPEN	**Hopen**	**3.90**	**88**	Pn	**Pn**	**05 43 18.0**	**+2.3**
HOPEN				Sn	**Sn**	**05 44 01.4**	**-0.1**
HOPEN	**Hopen**	**3.90**	**88**	*e*P	**Pn**	**05 43 17.9**	**+2.3**
HOPEN				*e*S	**Sn**	**05 44 01.7**	**+0.2**
HOPEN				IAML		05 44 07.5	
	comp=Z,17nm,0.8s						
HOPEN	**Hopen**	**3.90**	**88**	*e*P	**Pn**	**05 43 18.0**	**+2.3**
	SNR=53						
HOPEN				Sn	**Sn**	**05 44 01.4**	**-0.1**
ARA0	**ARCESS Array S**	**8.92**	**137**	Pn	**Pn**	**05 44 25.1**	**+0.7**
	baz=323,slow=12						
ARA0				Sn	**Sn**	**05 45 56.9**	**-8.0**
	baz=332,slow=22						
ARA0	**ARCESS Array S**	**8.92**	**137**	Pn	**Pn**	**05 44 25.1**	**+0.7**
	baz=323,slow=12						
ARA0				S	**Sn**	**05 45 56.9**	**-8.0**
	baz=332,slow=22						
ARA0	**ARCESS Array S**	**8.92**	**137**	Pn	**Pn**	**05 44 25.1**	**+0.7**
	SNR=7.0						
ARCES	**ARCESS Array B**	**8.92**	**137**	Pn	**Pn**	**05 44 25.1**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=328,slow=15,SNR=5.9						
ARCES				Sn	**Sn**	**05 45 56.3**	**-8.6**
	comp=Z,0.3nm,0.3s,baz=329,slow=22,SNR=5.4						
ARCES				LR	LR	05 47 52.7	
	comp=Z,58nm,20.8s,baz=348,slow=38						
LOF	**Lofoten**	**9.00**	**167**	*e*Pn	**Pn**	**05 44 26.1**	**+0.5**
LOF	**Lofoten**	**9.00**	**167**	*e*Pn	**Pn**	**05 44 26.1**	**+0.5**
	SNR=55						
FINES	**FINESS Array B**	**16.67**	**149**	LR	LR	05 52 47.4	
	comp=Z,48nm,20.4s,baz=20,slow=38						
SFJD	**Kangerlussuaq**	**19.65**	**272**	LR	LR	05 54 36.6	
	comp=Z,25nm,20.6s,baz=344,slow=38						
NRIK	**Norilʹsk**	**22.29**	**67**	LR	LR	05 59 03.0	
	comp=Z,38nm,18.0s,baz=295,slow=45						
RES	**Resolute Bay**	**22.31**	**317**	LR	LR	05 55 41.5	
	comp=Z,45nm,18.9s,baz=64,slow=36						
OBN	**Obninsk**	**24.23**	**138**	LR	LR	05 57 18.9	
	comp=Z,30nm,20.4s,baz=89,slow=37						
FRB	**Frobisher Bay**	**26.43**	**284**	LR	LR	05 58 15.6	
	comp=Z,61nm,19.3s,baz=42,slow=36						
TIXI	**Tiksi**	**27.51**	**36**	LR	LR	05 58 09.9	
	comp=Z,30nm,20.4s,baz=36,slow=34						
ILAR	**Eielson Array**	**37.67**	**343**	P	P	05 49 34.5	+4.0
	comp=Z,0.6nm,0.9s,baz=355,slow=9.1,SNR=6.9						
MKAR	**Makanchi Array**	**41.38**	**92**	P	**P**	**05 50 04.9**	**+3.2**
	comp=Z,0.1nm,0.2s,baz=358,slow=7.2,SNR=2.4						
TORD	**Torodi Ar. Bea**	**63.89**	**187**	P	**P**	**05 52 50.6**	**+2.2**
	comp=Z,0.5nm,0.8s,baz=0.0,slow=4.3,SNR=3.0						
TXAR	**Lajitas Array**	**66.37**	**298**	P	**P**	**05 53 05.6**	**+1.1**
	comp=Z,0.2nm,0.7s,baz=37,slow=4.6,SNR=4.2						
TXAR				LR	LR	06 23 06.9	
	comp=Z,34nm,18.3s,baz=0.0,slow=37						

*ISCJB **21** 05:45:52.5±0.4,51.°05N±0.°08×179.°47E±0.°04,h48km, mb4.3/45,MS3.6/15, Error ellipse: s-maj=11.0km s-min=3.8km az=174.0*
*NEIC **21** 05:45:52.4,50.°90N×179.°52E,h32km,mb4.2/29, ML3.9(AEIC), After AEIC.*
*IDC **21** 05:45:56.4±5.2,51.°08N×179.°54E,h75km±46km,mb3.7/16, mb1 3.9/17,mb1mx3.7/57,mbtmp4.0/17,ML2.8/1,MS3.4/14, Ms1 3.4/14,ms1mx3.1/48, Error ellipse: s-maj=23.0km s-min=14.5km az=170.0*
ISC 21 05:45:53.8±0.7,51.°0N±0.°1×179.°52E±0.°05,h48km,n90,
σ1°23/86,mb4.3/45,MS3.6/16,Rat Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GALAA	**Gareloi Lava P**	**1.35**	**52**	P	**Pn**	**05 46 15.4**	**-0.8**
GALAA				S	**Sn**	**05 46 35.3**	**+2.4**
GAEA	**Gareloi East**	**1.37**	**52**	P	**Pn**	**05 46 16.2**	**-0.3**
GAEA				S	**Sn**	**05 46 36.2**	**+2.7**
TAFL	**Tanaga Flats**	**1.81**	**62**	P	**Pn**	**05 46 22.3**	**-0.2**
TAFP	**Tanaga Falls P**	**1.83**	**58**	P	**Pn**	**05 46 22.5**	**-0.3**
TAFP				S	**Sn**	**05 46 47.6**	**+2.8**
TAPA	**Tanaga Point A**	**1.89**	**62**	P	**Pn**	**05 46 23.4**	**-0.1**
KIKV	**Kanaga Island**	**2.27**	**65**	P	**Pn**	**05 46 28.8**	**0.0**
KICM	**Kanaga Island**	**2.27**	**63**	P	**Pn**	**05 46 28.8**	**0.0**
KIRH	**Kanaga Island**	**2.33**	**65**	P	**Pn**	**05 46 29.6**	**0.0**
ADAG	**Mount Adagdak**	**2.64**	**65**	P	**Pn**	**05 46 34.3**	**+0.5**
GSCK	**Great Sitkin C**	**2.90**	**67**	P	**Pn**	**05 46 37.4**	**0.0**
GSTD	**Great Sitkin T**	**2.93**	**66**	P	**Pn**	**05 46 37.2**	**-0.6**
GSTD				S	**Sn**	**05 47 13.4**	**+1.6**
GSMY	**Great Sitkin M**	**2.98**	**67**	P	**Pn**	**05 46 38.3**	**-0.1**
SMY	**Shemya**	**3.80**	**300**	P	**Pn**	**05 46 49.8**	**0.0**
SMY				S	**Sn**	**05 47 33.9**	**+0.7**
KOKL	**Mount Kliuchef**	**4.15**	**68**	P	**Pn**	**05 46 55.8**	**+1.2**
KOFP	**Korovin Flat P**	**4.20**	**69**	P	**Pn**	**05 46 56.5**	**+1.3**
NIKH	**Nikolski High**	**7.47**	**70**	P	**Pn**	**05 47 40.5**	**+0.5**
SPIA	**Saint Paul Isl**	**8.66**	**40**	P	**Pn**	**05 47 58.2**	**+1.9**
PEA0	**Petropavlovsk-**	**13.60**	**288**	*e*Pn	**Pn**	**05 49 03.7**	**-0.1**
PETK	**Petropavlovsk-**	**13.60**	**288**	P	**Pn**	**05 49 05.3**	**+1.5**
	0.2nm,0.3s,baz=96,slow=14,SNR=6.2						
PETK				LR	LR	05 55 36.1	
	comp=Z,67nm,18.4s,baz=93,slow=43						
TT01	**Tatalina**	**17.79**	**38**	*e*Pn	**Pn**	**05 49 56.3**	**-1.2**
SUA	**Susitna One**	**19.42**	**46**	*e*P	**P**	**05 50 14.8**	**-1.0**
	15nm,1.1s						
CAST	**Castle Rocks**	**19.61**	**40**	*e*P	**P**	**05 50 16.8**	**-1.0**
	8.7nm,0.9s						
RC01	**Rabbit Creek A**	**19.76**	**47**	*e*P	**P**	**05 50 18.8**	**-0.7**
	1.7nm,0.5s						
KTH	**Kantishna Hill**	**20.13**	**40**	*e*P	**P**	**05 50 23.4**	**-0.1**
	40nm,1.3s						
BPAW	**Bear Paw Mtn.**	**20.34**	**38**	*e*P	**P**	**05 50 25.1**	**-0.6**
	5.5nm,0.8s						
TRF	**Thorofare Moun**	**20.35**	**41**	*e*P	**P**	**05 50 24.7**	**-1.2**
	8.2nm,1.0s						
MLY	**Manley**	**20.87**	**36**	*e*P	**P**	**05 50 30.8**	**-0.7**
	9.8nm,1.1s						
RND	**Reindeer**	**20.93**	**41**	*e*P	**P**	**05 50 31.2**	**-0.9**
	4.4nm,0.8s						
DHY	**Denali Highway**	**21.44**	**43**	*e*P	**P**	**05 50 36.5**	**-1.2**
	8.6nm,0.8s						
CCB	**Clear Creek Bu**	**21.83**	**39**	*e*P	**P**	**05 50 40.7**	**-1.0**
	6.9nm,1.3s						
COLD	**Coldfoot**	**22.17**	**31**	*e*P	**P**	**05 50 44.4**	**-0.9**
	8.3nm,1.2s						
PAX	**Paxson**	**22.23**	**44**	*e*P	**P**	**05 50 45.5**	**-0.6**
	7.8n

		6.4nm,1.1s							
SLMT	**Seeley Lake**		**42.66**	**68**	*e*P		**P**	**05 53 45.8**	**+0.3**
HLID	**Hailey**		**44.08**	**73**	*e*P		**P**	**05 53 57.6**	**+0.5**
		3.6nm,0.9s							
MCMT	**McKenzie Canyo**		**44.32**	**70**	*e*P		**P**	**05 53 59.3**	**+0.3**
BOZ	**Bozeman (W)**		**44.60**	**69**	*e*P		**P**	**05 54 01.8**	**+0.7**
		8.0nm,0.9s							
TLY	**Talaya**		**45.40**	**302**	LR		LR	06 14 51.1	
		comp=Z,78nm,18.3s,baz=13,slow=38							
SONM	**Songino Array**		**45.89**	**296**	P		**P**	**05 54 11.3**	**0.0**
		1.1nm,0.6s,baz=56,slow=10.0,SNR=7.9							
IMW	**Indian Meadow**		**45.98**	**70**	*e*P		**P**	**05 54 13.2**	**+0.9**
		7.4nm,1.3s							
RLMT	**Red Lodge**		**46.27**	**68**	*e*P		**P**	**05 54 15.1**	**+0.6**
		13nm,1.1s							
HHC	**Hu-ho-hao-te**		**46.78**	**285**	*e*P		**P**	**05 54 19.8**	**+1.4**
HHC					pmax		pmax		
		comp=Z,16nm,1.0s							
HHC					pmax		pmax		
		comp=Z,120nm,5.9s							
DUG	**Dugway, Tooele**		**47.00**	**76**	*e*P		**P**	**05 54 20.4**	**+0.3**
		comp=Z,7.0nm,1.1s							
BW06	**Boulder Array**		**47.45**	**71**	*e*P		**P**	**05 54 24.0**	**+0.3**
		comp=Z,15nm,1.2s							
PDAR	**Pinedale Array**		**47.45**	**71**	P		**P**	**05 54 24.3**	**+0.6**
		comp=Z,5.6nm,0.7s,baz=298,slow=3.8,SNR=52							
PDAR					LR		LR	06 14 24.4	
		comp=Z,26nm,19.2s,baz=320,slow=36							
ZALV	**Zalesovo Beam**		**53.55**	**313**	P		**P**	**05 55 08.0**	**-1.2**
		comp=Z,0.9nm,0.6s,baz=7.6,slow=4.4,SNR=2.2							
ZALV					LR		LR	06 19 25.9	
		comp=Z,34nm,19.3s,baz=68,slow=38							
LZH	**Lanzhou**		**54.48**	**285**	*e*P		**P**	**05 55 17.0**	**+0.5**
LZH					pP		pP	05 55 28.3	-1.5
LZH					sP		sP	05 55 32.1	-3.2
LZH					*e*PP		**PP**	**05 57 20.5**	**+1.7**
LZH					pmax		pmax		
		comp=Z,15nm,1.1s							
LZH					pmax		pmax		
		comp=Z,42nm,7.2s							
LZH					LR		LR		
		comp=N,63nm,15.2s							
LZH					LR		LR		
		comp=E,75nm,16.0s							
LZH					LR		LR		
		comp=Z,110nm,18.5s							
GTA	**Gaotai**		**54.74**	**291**	*e*P		**P**	**05 55 18.8**	**+0.5**
GTA					pP		pP	05 55 24.0	-7.6
GTA					sP		sP	05 55 27.0	-10
GTA					pmax		pmax		
		comp=Z,5.0nm,1.0s							
ARCES	**ARCESS Array B**		**58.33**	**350**	P		**P**	**05 55 42.4**	**-0.8**
		comp=Z,1.9nm,1.0s,baz=30,slow=7.6,SNR=3.4							
ARCES					LR		LR	06 24 08.6	
		comp=Z,33nm,18.8s,baz=96,slow=39							
KURK	**Kurchatov**		**58.54**	**313**	*e*P		**P**	**05 55 44.7**	**-0.3**
		comp=Z,54nm,1.0s							
WMQ	**Urumqi**		**58.68**	**302**	*e*P		**P**	**05 55 49.0**	**+2.9**
WMQ					pP		pP	05 56 00.3	+0.8
WMQ					pmax		pmax		
		comp=Z,10.0nm,0.7s							
WMQ					pmax		pmax		
		comp=Z,90nm,4.8s							
WMQ					LR		LR		
		comp=N,170nm,23.8s							
WMQ					LR		LR		
		comp=E,200nm,25.2s							
WMQ					LR		LR		
		comp=Z,190nm,22.4s							
MKAR	**Makanchi Array**		**59.46**	**308**	P		**P**	**05 55 50.5**	**-1.0**
		comp=Z,1.3nm,0.6s,baz=54,slow=6.8,SNR=14							
MKAR					LR		LR	06 23 45.1	
		comp=Z,39nm,18.2s,baz=22,slow=38							
TXAR	**Lajitas Array**		**59.77**	**80**	P		**P**	**05 55 53.6**	**-0.3**
		comp=Z,0.6nm,0.7s,baz=302,slow=4.7,SNR=9.8							
BRVK	**Borovoye**		**60.55**	**319**	*e*P		**P**	**05 55 58.6**	**-0.1**
		comp=Z,32nm,1.0s							
MIAR	**Mount Ida**		**62.27**	**69**	*e*P		**P**	**05 56 10.8**	**+0.2**
		comp=Z,11nm,1.4s							
SADO	**Sadowa**		**62.94**	**52**	LR		LR	06 24 49.9	
		comp=Z,25nm,18.5s,baz=48,slow=37							
OXF	**Oxford**		**64.72**	**66**	*e*P		**P**	**05 56 27.0**	**+0.2**
		comp=Z,31nm,1.2s							
FINES	**FINESS Array B**		**65.96**	**346**	LR		LR	06 26 09.8	
		comp=Z,19nm,21.8s,baz=36,slow=37							
AAK	**Ala-Archa**		**66.32**	**309**	LR		LR	06 26 09.0	
		comp=Z,44nm,20.9s,baz=349,slow=36							
ABKAR	**Akbulak array**		**67.63**	**322**	*e*P		**P**	**05 56 45.3**	**+0.1**
		comp=Z,6.6nm,0.6s							
KKAR	**Karatay Array**		**67.89**	**312**	*e*P		**P**	**05 56 47.0**	**+0.1**
		comp=Z,2.2nm,0.7s							
KSH	**Kashi**		**67.90**	**306**	*e*P		**P**	**05 56 51.3**	**+4.1**
KSH					*e*pP		PcP	05 57 28.8	+15
KSH					PcS			06 01 26.4	
KSH					S		S	06 05 31.8	-10
KSH					ScS		**SKiKP**	**06 06 34.3**	**-4.6**
KSH					pmax		pmax		
		comp=Z,71nm,3.1s							
KSH					LR		LR		
		comp=N,190nm,7.8s							
KSH					LR		LR		
		comp=E,160nm,12.7s							
KSH					LR		LR		
		comp=Z,91nm,6.1s							
NB2	**NORSAR Subarra**		**67.97**	**354**	P		**P**	**05 56 45.9**	**-1.3**
		comp=Z,6.4nm,1.0s,baz=9.2,slow=6.5							
NOA	**NORSAR Array B**		**67.97**	**354**	P		**P**	**05 56 45.6**	**-1.6**
		comp=Z,3.2nm,0.9s,baz=8.9,slow=6.3,SNR=8.3							
NOA					LR		LR	06 28 12.5	
		comp=Z,13nm,18.8s,baz=250,slow=37							
HFS	**Hagfors**		**68.68**	**352**	P		**P**	**05 56 50.1**	**-1.5**
		comp=Z,1.6nm,0.6s,baz=342,slow=9.1,SNR=3.5							
OBN	**Obninsk**		**69.89**	**338**	LR		LR	06 32 00.9	
		comp=Z,59nm,18.4s,baz=88,slow=40							
AKASG	**Malin Array Be**		**75.62**	**341**	P		**P**	**05 57 31.8**	**-1.4**
		comp=Z,0.4nm,0.4s,baz=21,slow=6.4,SNR=3.6							
AKASG					LR		LR	06 34 11.3	
		comp=Z,31nm,20.8s,baz=80,slow=38							
GEYT	**Alibeck**		**77.67**	**316**	P		**P**	**05 57 45.1**	**+0.1**
		comp=Z,1.0nm,0.3s,baz=311,slow=6.6,SNR=3.9							
GEYT					LR		LR	06 37 09.1	
		comp=Z,55nm,18.2s,baz=60,slow=40							
WRA	**Warramunga Arr**		**80.97**	**223**	P		**P**	**05 58 02.5**	**-0.6**
		comp=Z,0.9nm,0.8s,baz=35,slow=6.2,SNR=4.3							
ASAR	**Alice Springs**		**84.46**	**221**	P		**P**	**05 58 20.3**	**-0.9**
		comp=Z,0.6nm,0.8s,baz=51,slow=7.6,SNR=5.0							
BRTR	**Keskin Array B**		**84.89**	**334**	P		**P**	**05 58 22.6**	**-0.8**
		comp=Z,1.1nm,0.6s,baz=35,slow=1.4,SNR=6.6							
TSUM	**Tsumeb**		**145.24**	**329**	*e*PKPbc		**PKPdf**	**06 05 26.6**	**+0.4**

*ISCJB **21** 06:03:46.9±0.5, 12°.51N±0°.09×87°.67W±0°.06, h66km±8km, mb3.7/4, Error ellipse: s-maj=17.9km s-min=3.8km az=33.0.*
*CASC **21** 06:03:47.0±1.4, 12°.49N×87°.68W, h60km±40km, MD4.2, ML4.1*
*IDC **21** 06:03:53.3±7.1, 12°.81N×87°.48W, h110km±72km, mb3.5/4, mb1 3.8/5, mb1mx3.5/31, mbtmp3.9/5, ML2.7/1, MS3.1/5, Ms1 3.1/5, ms1mx2.8/26, Error ellipse: s-maj=113.8km s-min=18.6km az=54.0*

ISC 21 06:03:48.0±1.1, 12°.6N±0°.1×87°.64W±0°.07, h64km±12km, n32, σ0°90/37, mb3.8/4, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CNCH	**Conchagua**	**0.73**	**345**	*e*P		**Pn**	**06 04 03.1**	**+0.2**
CNCH				*e*S		**Sn**	**06 04 15.8**	**+1.9**
CNGN	**Cerro Negro**	**0.92**	**94**	*e*P		**Pn**	**06 04 04.4**	**-0.8**
CNGN				*e*S		**Sn**	**06 04 17.4**	**-0.6**
VSM	**San Miguel**	**1.05**	**324**	*e*P		**Pn**	**06 04 07.0**	**-0.2**
LCY	**Lacayo**	**1.06**	**323**	*e*P		**Pn**	**06 04 06.8**	**-0.3**
MOMN	**Momotombo**	**1.08**	**98**	*e*P		**Pn**	**06 04 06.4**	**-1.0**
PACA	**Pacayal**	**1.11**	**323**	*e*P		**Pn**	**06 04 07.5**	**-0.3**
CAHU	**Cacacuatique**	**1.32**	**335**	*e*P		**Pn**	**06 04 11.1**	**+0.5**
XAVN	**Gruta Xavier**	**1.35**	**108**	*e*P		**Pn**	**06 04 09.7**	**-1.0**
TISN	**Laguna Tiscapa**	**1.40**	**108**	*e*P		**Pn**	**06 04 10.5**	**-1.0**
MGAN	**Managua**	**1.42**	**107**	*e*P		**Pn**	**06 04 10.7**	**-1.0**
MGAN				*e*S		**Sn**	**06 04 28.9**	**-0.7**
MGAN				AML		AML	06 04 30.9	
	comp=E,1μm,0.3s							
SNVI	**San Vicente**	**1.56**	**312**	*e*P		**Pn**	**06 04 13.2**	**-0.5**
SNVI				*e*S		**Sn**	**06 04 33.3**	**+0.2**
LFRS	**El Faro**	**1.74**	**307**	*i* P		**Pn**	**06 04 14.8**	**-1.3**
LBRS	**Las Brisas**	**1.79**	**310**	*e*P		**Pn**	**06 04 16.1**	**-0.7**
LFU	**La Fuente**	**1.85**	**309**	*e*P		**Pn**	**06 04 17.3**	**-0.3**
LFU				*e*S		**Sn**	**06 04 40.3**	**+0.2**
SNET	**Serv Nac Est T**	**1.91**	**306**	*e*P		**Pn**	**06 04 17.3**	**-1.0**
SNET				*e*S		**Sn**	**06 04 40.8**	**-0.6**
SNET				AML		AML	06 04 46.3	
	comp=Z,4μm,0.3s							
BOQS	**Boqueron**	**1.97**	**306**	*e*P		**Pn**	**06 04 18.8**	**-0.6**
BOQS				*e*S		**Sn**	**06 04 43.7**	**+0.5**
SBLS	**San Blas**	**2.31**	**303**	*e*P		**Pn**	**06 04 23.4**	**-0.5**
SNJE	**San Jose**	**2.31**	**304**	*e*P		**Pn**	**06 04 22.6**	**-1.3**
MONT	**Ecomontaæa**	**2.34**	**303**	*e*P		**Pn**	**06 04 24.0**	**-0.3**
CUS1	**Cusmapa**	**2.61**	**301**	*e*P		**Pn**	**06 04 27.1**	**-0.9**
CGA2	**Cerro Gallo 2**	**4.02**	**129**	*e*P		**Pn**	**06 04 47.5**	**+0.4**
QCR	**Quepos**	**4.63**	**132**	*e*P		**Pn**	**06 04 55.6**	**+0.2**
QCR				*e*S		**Sn**	**06 05 48.4**	**+0.5**
URSC	**Urasca**	**4.66**	**125**	*e*P		**Pn**	**06 04 57.8**	**+1.8**
ROSC	**El Rosal**	**15.23**	**119**	P		**P**	**06 07 22.5**	**-0.9**
	comp=Z,0.6nm,0.3s,baz=255,slow=23,SNR=3.7							
ROSC				LR		LR	06 13 21.6	
	comp=Z,49nm,20.7s,baz=212,slow=37							
SJG	**San Juan**	**21.43**	**72**	LR		LR	06 16 42.9	
	comp=Z,41nm,21.0s,baz=263,slow=36							
ATAH	**Atahualpa**	**21.63**	**154**	LR		LR	06 15 23.1	
	comp=Z,76nm,19.7s,baz=355,slow=32							
TXAR	**Lajitas Array**	**22.36**	**321**	P		**P**	**06 08 41.5**	**+0.5**
	comp=Z,8.3nm,0.8s,baz=142,slow=10,SNR=67							
PTGA	**Pitinga**	**30.48**	**114**	LR		LR	06 22 01.9	
	comp=Z,44nm,21.3s,baz=295,slow=36							
LPAZ	**La Paz**	**34.56**	**146**	P		**P**	**06 10 33.2**	**+1.8**
	comp=Z,0.4nm,0.7s,baz=342,slow=6.4,SNR=2.9							
LPAZ				LR		LR	06 24 40.9	
	comp=Z,30nm,18.3s,baz=337,slow=36							
PDAR	**Pinedale Array**	**35.58**	**332**	P		**P**	**06 10 39.6**	**+0.1**
	comp=Z,1.5nm,0.8s,baz=124,slow=8,SNR=12							
ILAR	**Eielson Array**	**65.84**	**336**	P		**P**	**06 14 25.3**	**-1.1**
	comp=Z,0.5nm,0.8s,baz=97,slow=4.6,SNR=5.6							
WRA	**Warramunga Arr**	**139.13**	**254**	PKP		**PKPdf**	**06 23 07.9**	**-0.5**
	comp=Z,0.3nm,0.5s,baz=85,slow=2.0,SNR=4.2							

IDC 21 06:13:10.6±2.4, 54°.18N×86°.35E, h0km, mb1 3.1/2, mb1mx3.0/57, mbtmp3.1/2, ML2.9/2, Error ellipse: s-maj=18.5km s-min=11.6km az=58.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**0.93**	**256**	*i*			06 19 50.0	
	baz=74,slow=306,SNR=0.8							
ZALV	**Zalesovo Beam**	**0.93**	**256**	Pg		Pg	06 13 27.0	-1.4
	2.5nm,0.3s,baz=74,slow=17,SNR=17							
ZALV				Lg		Lg	06 13 41.9	
	5.9nm,0.3s,baz=78,slow=31,SNR=16							
KURBB	**Kurchatov Arra**	**5.96**	**237**	Pn		Pn	06 14 41.0	+1.0
	0.2nm,0.3s,baz=52,slow=13,SNR=9.2							
KURBB				Sn		Sn	06 15 47.5	-1.4
	0.0nm,0.3s,baz=347,slow=8.2,SNR=3.0							
KURBB				Lg		Lg	06 16 20.7	
	0.0nm,0.3s,baz=51,slow=30,SNR=3.6							
MKAR	**Makanchi Array**	**7.83**	**201**	Pn		Pn	06 15 06.9	+1.2
	0.3nm,0.3s,baz=22,slow=12,SNR=9.5							
MKAR				Sn		Sn	06 16 34.9	-0.1
	0.1nm,0.3s,baz=24,slow=28,SNR=2.8							
MKAR				Lg		Lg	06 17 18.7	
	0.0nm,0.3s,baz=25,slow=28,SNR=4.8							

*KRNET **21** 06:14:48.4±0.1, 39°.69N×70°.58E, mb2.6*
*NNC **21** 06:14:49.6±0.6, 39°.77N×70°.41E, h0km, mb2.7, mpv2.5, Error ellipse: s-maj=14.8km s-min=3.5km az=133.0*
*ISCJB **21** 06:14:50.2±0.7, 39°.68N±0°.05×70°.58E±0°.06, h10km, Error ellipse: s-maj=8.0km s-min=5.0km az=136.8*

ISC 21 06:14:49.9±1.0, 39°.67N±0°.05×70°.54E±0°.05, h10km, n10, σ1°40/19, 12C-7D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BTK	**Batken**	**0.44**	**29**	⇑*i*P		**Pg**	**06 14 56.8**	**-1.9**
	baz=27							
BTK				⇑*i*S		**Sg**	**06 15 02.7**	**-1.9**
	baz=27							
DRK	**Karamyk**	**0.99**	**101**	⇑*i*P		**Pg**	**06 15 07.6**	**-1.5**
	baz=102							
DRK				⇑*i*S		**Sg**	**06 15 21.4**	**-0.7**
	baz=102							
DZET	**Dzherino**	**1.58**	**238**	⇑Pn		**Pn**	**06 15 18.3**	**+0.2**
	3.5nm,0.3s							
DZET				⇑Sn		**Sg**	**06 15 40.9**	**0.0**
	14nm,0.4s							
ARK	**Arkit**	**2.39**	**27**	⇑*e*P		**Pn**	**06 15 30.1**	**+0.9**
	baz=27							
ARK				⇑*i*S		**Sb**	**06 16 01.4**	**-1.2**
	baz=27							
MNAS	**Manas**	**3.18**	**27**	⇓*e*P		**Pn**	**06 15 41.4**	**+1.2**
	baz=27							
MNAS				⇓*i*S		**Sn**	**06 16 20.3**	**+2.0**
	baz=27							
MNAS	**Manas**	**3.18**	**27**	⇑Pg		**Pb**	**06 15 47.0**	**+0.3**
MNAS				⇑Lg		Lg	06 16 28.3	
	7.9nm,0.4s							
KK31	**Karatay Array**	**3.43**	**360**	Pn		**Pn**	**06 15 44.3**	**+0.8**
	0.2nm,0.3s,baz=310,slow=14,SNR=15							
KK31				⇑Pg		**Pb**	**06 15 50.6**	**-0.2**
	0.3nm,0.2s,baz=184,slow=14,SNR=14							
KK31				Lg		Lg	06 16 35.1	
	1.7nm,0.2s,baz=184,slow=29,SNR=17							
ARLS	**Aral**	**3.61**	**52**	⇓*i*P		**Pn**	**06 15 47.0**	**+0.9**
	baz=51							
ARLS				⇓*i*S		**Sn**	**06 16 30.5**	**+1.6**
	baz=51							
AAK	**Ala-Archa**	**4.21**	**44**	⇓Pn		**Pn**	**06 15 54.7**	**+0.4**
AAK				⇓Sn		**Sn**	**06 16 45.8**	**+2.3**
TKM2	**Tokmak 2**	**5.01**	**48**	⇑Pn		**Pn**	**06 16 06.3**	**+1.0**
TKM2				⇓Sn		**Sn**	**06 17 05.2**	**+1.9**

*IDC **21** 06:14:52.7±0.9, 46°.68N×155°.56E, h0km, mb3.6/5, mb1 3.9/6, mb1mx3.6/55, mbtmp3.6/6, ML2.6.1/7, Error ellipse: s-maj=34.8km s-min=21.2km az=119.0*
*ISCJB **21** 06:14:53.6±0.9, 46°.67N±0°.09×155°.5E±0°.3, h18km, mb3.5/5, Error ellipse: s-maj=30.2km s-min=11.3km az=14.9*

ISC 21 06:14:55.4±1.1, 46°.7N±0°.1×155°.6E±0°.2, h18km, n9, σ1°64/7, mb3.6/5, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PETK	**Petropavlovsk-**	**6.59**	**11**	Pn		**Pn**	**06 16 29.1**	**-2.2**
	0.7nm,0.3s,baz=169,slow=12,SNR=10.0							
PETK				Sn		**Sn**	**06 17 48.2**	**+2.2**
	0.3nm,0.3s,baz=329,slow=45,SNR=2.9							
H11S1	**WAKE ISLAND Hy**	**29.55**	**158**	T		T	06 52 01.5	
	baz=345,slow=76,SNR=6.0							
H11S3	**WAKE ISLAND Hy**	**29.56**	**158**	T		T	06 51 58.7	
	baz=345,slow=76,SNR=8.9							
H11S2	**WAKE ISLAND Hy**	**29.57**	**158**	T		T	06 52 08.9	
	baz=345,slow=76,SNR=5.2							
MKAR	**Makanchi Array**	**48.46**	**298**	P		**P**	**06 23 36.9**	**+0.3**
	0.2nm,0.5s,baz=64,slow=8.0,SNR=3.6							
PDAR	**Pinedale Array**	**63.43**	**55**	P		**P**	**06 25 24.2**	**+0.1**
	0.5nm,0.7s,baz=295,slow=4.6,SNR=4.9							
WRA	**Warramunga Arr**	**69.02**	**201**	P		**P**	**06 25 59.5**	**-0.3**
	0.4nm,0.8s,baz=23,slow=7.0,SNR=2.9							
ASAR	**Alice Springs**	**72.70**	**201**	P		**P**	**06 26 22.7**	**+0.6**
	0.1nm,0.3s,baz=16,slow=5.3,SNR=3.7							
TXAR	**Lajitas Array**	**76.06**	**62**	P		**P**	**06 26 42.4**	**+0.5**
	1.2nm,0.8s,baz=305,slow=4.3,SNR=13							

*IDC **21** 06:20:10.7±1.1, 60°.26N×152°.91W, h94km±11km, mb3.5/8, mb1 3.8/12, mb1mx3.5/49, mbtmp4.0/12, MS2.9/2, Ms1 2.9/2, ms1mx2.4/36, Error ellipse: s-maj=17.1km s-min=15.4km az=23.0*
*NEIC **21** 06:20:11.6, 60°.03N×152°.83W, h93km, mb3.7/2, MW4.3, Moment Tensor Solution. s9 Moment tensor: Scale 10^15 Nm; Mrr1.69; Mθθ-3.08; Mφφ1.39; Mr1.22; Mθφ-0.09; Mφr1.77; Best double couple: M0.3.40000×10^15 NP1: φs303.00000°, δ44.00000°, λ150.00000°. NP2: φs55.00000°, δ70.00000°, λ50.00000°. Principal axes: T 3.4300, Plg49.0000°, Azm282.0000°; N 0.0000, Plg37.0000°, Azm71.0000°; P -3.4300, Plg16.0000°, Azm173.0000°; After AEIC.*
NEIC Felt at Cooper Landing.

ISC 21 06:20:09.5±0.6, 60°.03N±0°.03×152°.75W±0°.03,

h102km±5km, n258, σ1°56/162, mb3.8/12, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ILIM	**Iliamna**	**0.12**	**295**	P		**Pn**	**06 20 24.1**	**+0.3**
RDWB	**Redoubt West**	**0.46**	**354**	P		**Pn**	**06 20 25.8**	**+0.3**
RDWB				S		**Sn**	**06 20 37.0**	**-0.4**
NCT	**North Crescent**	**0.54**	**350**	P		**Pn**	**06 20 26.4**	**+0.5**
RDJH	**Redoubt Jeurge**	**0.56**	**357**	P		**Pn**	**06 20 26.6**	**+0.5**
RDJH				S		**Sn**	**06 20 38.5**	**-0.1**
HOM	**Homer**	**0.67**	**123**	P		**Pn**	**06 20 28.2**	**+1.3**
HOM				S		**Sn**	**06 20 42.3**	**+2.4**
AUL	**Augustine Lava**	**0.74**	**208**	P		**Pn**	**06 20 28.1**	**+0.6**
AUL				S		**Sn**	**06 20 41.5**	**+0.5**
BGRM	**Barrier Glacie**	**0.75**	**13**	P		**Pn**	**06 20 28.4**	**+0.7**
CNPM	**China Poot**	**0.92**	**123**	P		**Pn**	**06 20 30.2**	**+0.9**
CNPM				S		**Sn**	**06 20 45.4**	**+1.3**
NKA	**Nikishka**	**1.04**	**46**	P		**Pn**	**06 20 33.2**	**+2.8**
CKL	**Chakachamna La**	**1.19**	**10**	P		**Pn**	**06 20 33.3**	**+1.0**
SPCR	**Spurr Chakacha**	**1.20**	**13**	P		**Pn**	**06 20 33.3**	**+0.9**
SPCR				S		**Sn**	**06 20 50.2**	**+0.5**
SPWE	**Spurr West**	**1.25**	**4**	P		**Pn**	**06 20 34.4**	**+1.4**
SLKM	**Skilak Lake**	**1.35**	**68**	P		**Pn**	**06 20 35.5**	**+1.4**
VOGL	**Vogel Lake**	**1.50**	**49**	P		**Pn**	**06 20 38.7**	**+2.9**
STLK	**Strandline Lak**	**1.54**	**17**	P		**Pn**	**06 20 37.6**	**+1.2**
KAPH	**Katmai Pasha**	**1.66**	**210**	P		**Pn**	**06 20 38.5**	**+0.7**
KAPH				S		**Sn**	**06 20 59.5**	**+0.1**
SEW	**Seward**	**1.66**	**86**	P		**Pn**	**06 20 38.0**	**+0.3**
FIB	**Fire Island**	**1.71**	**47**	P		**Pn**	**06 20 40.9**	**+2.6**
SUA	**Susitna One**	**1.74**	**34**	P		**Pn**	**06 20 40.5**	**+1.5**
SUA				S		**Sn**	**06 21 03.2**	**+1.8**
SVW2	**Sparrevohn**	**1.76**	**309**	P		**Pn**	**06 20 39.1**	**0.0**
SVW2				S		**Sn**	**06 21 00.6**	**-1.0**
KAHC	**Katmai Hardscr**	**1.81**	**221**	P		**Pn**	**06 20 40.1**	**+0.4**
RC01	**Rabbit Creek A**	**1.83**	**53**	P		**Pn**	**06 20 41.4**	**+1.5**
RC01				S		**Sn**	**06 21 04.1**	**+1.0**
KARR	**Katmai Rainbow**	**1.84**	**214**	P		**Pn**	**06 20 40.9**	**+0.8**
KAWH	**Katmai**	**1.96**	**213**	P		**Pn**	**06 20 42.2**	**+0.6**
SKT	**Skwentna**	**2.04**	**16**	P		**Pn**	**06 20 43.8**	**+1.1**
KAKN	**Katmai Knife C**	**2.11**	**215**	P		**Pn**	**06 20 44.2**	**+0.6**
KVTA	**Katmai Vly 10**	**2.11**	**219**	P		**Pn**	**06 20 44.2**	**+0.6**
KELA	**Mount Kelaz**	**2.22**	**225**	P		**Pn**	**06 20 45.2**	**+0.2**
KABR	**Katmai Barrier**	**2.22**	**212**	P		**Pn**	**06 20 45.9**	**+0.8**
KDAK	**Kodiak Island**	**2.26**	**178**	*e*Sn		**Sn**	**06 21 11.9**	**-1.0**
PWL	**Port Wells**	**2.34**	**67**	P		**Pn**	**06 20 46.8**	**+0.2**
PWL				S		**Sn**	**06 21 14.3**	**-0.6**
PMR	**Palmer**	**2.37**	**47**	P		**Pn**	**06 20 47.7**	**+0.9**
CAHL	**Cahill**	**2.38**	**215**	P		**Pn**	**06 20 48.3**	**+1.1**
KNK	**Knik Glacier**	**2.52**	**55**	P		**Pn**	**06 20 49.7**	**+0.7**
GHO	**Glory Hole Cre**	**2.56**	**45**	P		**Pn**	**06 20 50.3**	**+0.9**
CUT	**Chulitna**	**2.67**	**26**	P		**Pn**	**06 20 52.3**	**+1.5**
SML	**Sawmill**	**2.80**	**49**	P		**Pn**	**06 20 53.5**	**+0.9**
OHAK	**Old Harbor**	**2.83**	**186**	P		**Pn**	**06 20 52.3**	**-0.6**
PPLA	**Purkeypile**	**2.89**	**5**	P		**Pn**	**06 20 55.8**	**+1.9**
GLI	**Glacier Island**	**2.93**	**71**	P		**Pn**	**06 20 53.5**	**-0.7**
PLK1	**Peulik 1**	**3.00**	**223**	P		**Pn**	**06 20 56.3**	**+1.0**
PLK4	**Peulik 4**	**3.05**	**219**	P		**Pn**	**06 20 57.3**	**+1.3**
HIN	**Hinchinbrook I**	**3.14**	**81**	P		**Pn**	**06 20 56.9**	**-0.2**
FID	**Port Fidalgo**	**3.19**	**74**	P		**Pn**	**06 20 56.9**	**-0.9**
SCM	**Sheep Creek Mo**	**3.20**	**53**	P		**Pn**	**06 20 58.8**	**+0.8**
JPK	**Jack Peak**	**3.21**	**69**	P		**Pn**	**06 20 57.8**	**-0.2**
TT01	**Tatalina**	**3.28**	**333**	P		**Pn**	**06 20 59.5**	**+0.5**
MID	**Middleton Isla**	**3.30**	**98**	P		**Pn**	**06 21 00.3**	**+1.1**
MID				S		**Sn**	**06 21 37.0**	**-0.6**
TTA	**Tatalina**	**3.30**	**333**	P		**Pn**	**06 20 59.8**	**+0.5**
HUR	**Hurricane**	**3.31**	**25**	P		**Pn**	**06 21 01.9**	**+2.5**
VLZ	**Valdez**	**3.35**	**68**	P		**Pn**	**06 21 00.2**	**+0.3**
CAST	**Castle Rocks**	**3.42**	**5**	P		**Pn**	**06 21 02.4**	**+1.6**
EYAK	**Cordova Ski Ar**	**3.52**	**79**	P		**Pn**	**06 21 01.8**	**-0.4**
DIV	**Divide**	**3.62**	**69**	P		**Pn**	**06 21 03.0**	**-0.1**
TRF	**Thorofare Moun**	**3.63**	**18**	P		**Pn**	**06 21 04.7**	**+0.9**
KTH	**Kantishna Hill**	**3.64**	**13**	P		**Pn**	**06 21 04.9**	**+1.1**
KLU	**Klutina**	**3.66**	**63**	P		**Pn**	**06 21 04.5**	**+0.4**
RND	**Reindeer**	**3.86**	**27**	P		**Pn**	**06 21 08.2**	**+1.4**
CHUM	**Lake Minchumin**	**3.87**	**3**	P		**Pn**	**06 21 08.6**	**+1.7**
DHY	**Denali Highway**	**3.99**	**38**	P		**Pn**	**06 21 09.9**	**+1.3**
RAGM	**Ragged Mountai**	**4.04**	**81**	P		**Pn**	**06 21 09.0**	**-0.3**

	2.2nm,0.8s						
MA2	**Magadan**	**27.68**	**294**	LR	LR	06 37 40.9	
	comp=Z,16nm,18.1s,baz=134,slow=38						
RLMT	**Red Lodge**	**29.69**	**100**	P	pP	06 26 34.0	+5.6
	baz=316						
BW06	**Boulder Array**	**31.28**	**104**	P	pP	06 26 47.2	+4.7
	baz=319						
PDAR	**Pinedale Array**	**31.28**	**104**	P	**P**	**06 26 24.0**	**+4.4**
	0.3nm,0.6s,baz=337,slow=5.9,SNR=3.1						
PDAR				pP	**pP**	**06 26 44.5**	**+2.0**
	0.8nm,0.9s,baz=297,slow=6.5,SNR=4.3						
DUG	**Dugway, Tooele**	**31.70**	**111**	P	pP	06 26 50.0	+3.9
	baz=322						
R11A	**Troy Canyon, C**	**31.90**	**116**	P	pP	06 26 52.1	+4.1
	baz=325						
K22A	**Casper**	**32.85**	**101**	P	pP	06 26 60.0	+3.7
	baz=318						
RSSD	**Black Hills**	**33.01**	**97**	P	pP	06 27 01.6	+3.9
	baz=316						
O20A	**White River Ci**	**33.92**	**106**	P	pP	06 27 09.7	+4.0
	baz=321						
AGMN	**Agassiz Nation**	**34.22**	**84**	P	pP	06 27 11.1	+3.2
	baz=312						
B34A	**Aery, Baudette**	**34.70**	**83**	P	pP	06 27 14.8	+2.7
	baz=312						
H32A	**Carlson Farm,**	**36.04**	**90**	P	pP	06 27 25.9	+2.1
	baz=316						
MVCO	**Mesa Verde**	**36.11**	**109**	P	pP	06 27 27.4	+2.7
	baz=324						
WUAZ	**Wupatki**	**36.15**	**114**	P	pP	06 27 28.7	+3.8
	baz=326						
S22A	**4UR Ranch, Cre**	**36.48**	**107**	P	pP	06 27 32.0	+4.0
	baz=323						
F35A	**Swanville**	**36.52**	**86**	P	pP	06 27 31.2	+3.3
	baz=314						
EYMN	**Ely**	**36.63**	**81**	P	pP	06 27 33.0	+4.2
	baz=313						
E36A	**McGregor**	**36.73**	**84**	P	pP	06 27 32.9	+3.3
	baz=314						
SDCO	**Great Sand Dun**	**37.12**	**105**	P	pP	06 27 38.0	+4.6
	baz=322						
T25A	**Trinidad**	**38.13**	**105**	P	pP	06 27 46.7	+4.7
	baz=323						
I38A	**Scanlan Farm,**	**38.94**	**86**	P	pP	06 27 51.9	+3.5
	baz=316						
CBKS	**Cedar Bluff**	**39.12**	**98**	P	pP	06 27 53.7	+3.6
	baz=321						
J38A	**Wedel Dairy, R**	**39.38**	**87**	P	pP	06 27 55.3	+3.1
	baz=317						
J39A	**Decorah**	**39.76**	**87**	P	pP	06 27 58.5	+3.2
	baz=317						
Q33A	**Connelly Farm,**	**39.92**	**97**	P	pP	06 27 59.9	+3.2
	baz=320						
P34A	**Walnut Farm, R**	**40.01**	**95**	P	pP	06 28 00.4	+2.9
	baz=320						
K39A	**Oelwein**	**40.13**	**87**	P	pP	06 28 00.8	+2.4
	baz=317						
J40A	**Soldiers Grove**	**40.20**	**86**	P	pP	06 28 01.4	+2.4
	baz=317						
121A	**Cookes Peak, D**	**40.28**	**113**	P	pP	06 28 04.0	+4.0
	baz=327						
P35A	**Duane Minner,**	**40.43**	**94**	P	pP	06 28 04.6	+3.6
	baz=320						
Q34A	**Chapman**	**40.43**	**96**	P	pP	06 28 04.5	+3.5
	baz=320						
K40A	**Colesburg**	**40.51**	**87**	P	pP	06 28 04.1	+2.6
	baz=317						
J41A	**Loganville**	**40.58**	**85**	P	pP	06 28 04.9	+2.7
	baz=317						
R34A	**Isabella, Hill**	**40.75**	**97**	P	pP	06 28 07.3	+3.7
	baz=321						
L40A	**Anamosa**	**40.93**	**88**	P	pP	06 28 07.7	+2.6
	baz=318						
K41A	**Shullsburg**	**40.99**	**86**	P	pP	06 28 08.3	+2.7
	baz=317						
P37A	**Lathrop**	**41.22**	**93**	P	pP	06 28 10.9	+3.4
	baz=320						
AMTX	**Amarillo**	**41.26**	**104**	P	pP	06 28 11.9	+3.9
	baz=324						
MSTX	**Muleshoe**	**41.47**	**106**	P	pP	06 28 12.9	+3.1
	baz=325						
R36A	**Gordon, Harris**	**41.61**	**95**	P	pP	06 28 13.5	+2.8
	baz=321						
S35A	**Otter Creek Ra**	**41.70**	**96**	P	pP	06 28 14.3	+2.8
	baz=321						
T34A	**McClaskey Farm**	**41.78**	**98**	P	pP	06 28 14.4	+2.3
	baz=322						
U33A	**Lingo Farm, Me**	**41.78**	**99**	P	pP	06 28 14.7	+2.5
	baz=322						
S36A	**Lake Cedric, C**	**42.03**	**96**	P	pP	06 28 17.0	+2.8
	baz=321						
O40A	**La Belle**	**42.06**	**90**	P	pP	06 28 17.3	+2.9
	baz=319						
Q38A	**Cooks Store, C**	**42.06**	**93**	P	pP	06 28 16.8	+2.4
	baz=320						
MNTX	**Cornudas Mount**	**42.09**	**111**	P	pP	06 28 18.2	+3.4
	baz=327						
V33A	**Lossen Ranch,**	**42.18**	**100**	P	pP	06 28 18.5	+3.0
	baz=323						
T35A	**Sooner Cattle**	**42.20**	**97**	P	pP	06 28 18.8	+3.2
	baz=322						
Q39A	**Willow Grove F**	**42.32**	**92**	P	pP	06 28 19.5	+2.9
	baz=320						
S37A	**Fort Scott**	**42.38**	**95**	P	pP	06 28 19.8	+2.8
	baz=321						
T36A	**Boggs Farm, Ca**	**42.40**	**97**	P	pP	06 28 19.8	+2.6
	baz=322						
R38A	**Fenwick Farm,**	**42.51**	**94**	P	pP	06 28 20.1	+2.0
	baz=321						
KLR	**Kul'dur**	**42.65**	**290**	P	**P**	**06 27 54.7**	**-0.7**
	1.9nm,0.8s,baz=42,slow=9.5,SNR=5.4						
WMOK	**Wichita Mounta**	**42.80**	**101**	P	pP	06 28 23.4	+2.8
	baz=323,SNR=7.5						
T37A	**Cheneyville 18**	**42.83**	**96**	P	pP	06 28 22.7	+2.0
	baz=321						
R39A	**Chumby, Stover**	**42.85**	**93**	P	pP	06 28 22.8	+1.9
	baz=320						
S38A	**Stockton**	**42.94**	**94**	P	pP	06 28 22.8	+1.2
	baz=321						
HDIL	**Hopedale**	**43.02**	**87**	P	pP	06 28 25.0	+2.8
	baz=319						
T38A	**Diamond**	**43.21**	**95**	P	pP	06 28 25.6	+1.7
	baz=321						
R40A	**Maddies Statio**	**43.25**	**92**	P	pP	06 28 26.8	+2.6
	baz=320						
U37A	**Salina**	**43.29**	**96**	P	pP	06 28 27.2	+2.7
	baz=322						
TUL1	**Leonard**	**43.34**	**98**	P	pP	06 28 27.7	+2.7
	baz=322						
V36A	**Jenks**	**43.37**	**98**	P	pP	06 28 28.1	+2.9
	baz=322						
W35A	**Tecumseh**	**43.41**	**99**	P	pP	06 28 28.4	+2.9
	baz=323						
U38A	**Gravette**	**43.63**	**96**	P	pP	06 28 29.0	+1.8
	baz=322,SNR=8.6						
Q42A	**Golden Eagle**	**43.65**	**90**	P	pP	06 28 30.1	+2.8
	baz=320						
S40A	**Lebanon**	**43.67**	**93**	P	pP	06 28 29.8	+2.2
	baz=321						
T39A	**Clever**	**43.68**	**94**	P	pP	06 28 29.7	+2.1
	baz=321						
V37A	**Hulbert**	**43.69**	**97**	P	pP	06 28 30.1	+2.3
	baz=322						
W36A	**Wetumka**	**43.74**	**99**	P	pP	06 28 31.1	+2.9
	baz=323						
Y34A	**Reagan Ranch,**	**43.93**	**101**	P	pP	06 28 33.0	+3.3
	baz=324						
Z33A	**Whitaker Ranch**	**43.97**	**103**	P	pP	06 28 32.8	+2.8
	baz=324						
Q43A	**New Douglas**	**44.05**	**89**	P	pP	06 28 32.9	+2.3
	baz=320						
S41A	**Jillco Farms,**	**44.06**	**92**	P	pP	06 28 32.2	+1.5
	baz=321,SNR=5.2						
V38A	**Canehill**	**44.07**	**96**	P	pP	06 28 32.9	+2.1
	baz=322						
U39A	**Green Forest**	**44.13**	**95**	P	pP	06 28 32.6	+1.3
	baz=322						
W37B	**Quinton**	**44.13**	**98**	P	pP	06 28 33.1	+1.7
	baz=323						
133A	**Hamilton Ranch**	**44.45**	**103**	P	pP	06 28 36.3	+2.4
	baz=325						
U40A	**Yellville**	**44.46**	**94**	P	pP	06 28 36.0	+2.0
	baz=322						
T41A	**Mountain View**	**44.47**	**93**	P	pP	06 28 35.8	+1.8
	baz=321						
V39A	**Pettigrew**	**44.47**	**96**	P	pP	06 28 36.3	+2.1
	baz=322						
X37A	**Clayton**	**44.60**	**98**	P	pP	06 28 37.8	+2.7
	baz=323						
W38A	**Poteau**	**44.64**	**97**	P	pP	06 28 38.4	+3.0
	baz=323						
Z35A	**Perchaven, San**	**44.68**	**101**	P	pP	06 28 39.2	+3.5
	baz=324						
X38A	**Whitesboro**	**44.81**	**98**	P	pP	06 28 40.1	+3.4
	baz=323						
TXAR	**Lajitas Array**	**44.88**	**111**	P	**P**	**06 28 15.9**	**+2.4**
	0.3nm,0.8s,baz=336,slow=8.3,SNR=3.6						
TXAR				pP	**pP**	**06 28 38.2**	**+0.7**
	0.7nm,0.9s,baz=316,slow=7.0,SNR=6.3						
S43A	**Fulton Ridge,**	**44.91**	**91**	P	pP	06 28 40.2	+2.7
	baz=321						
V40A	**Witts Springs**	**44.91**	**95**	P	pP	06 28 39.7	+2.1
	baz=322						
233A	**Rising Star**	**44.94**	**104**	P	pP	06 28 40.6	+2.7
	baz=325,SNR=5.8						
Y37A	**Hugo**	**44.96**	**99**	P	pP	06 28 41.2	+3.2
	baz=324						
Z36A	**Blue Ridge**	**45.13**	**100**	P	pP	06 28 42.4	+3.0
	baz=324						
S44A	**Carbondale**	**45.23**	**90**	P	pP	06 28 43.1	+3.0
	baz=321						
V41A	**Mountainview**	**45.26**	**94**	P	pP	06 28 41.7	+1.4
	baz=322						
U42A	**Revenden**	**45.27**	**93**	P	pP	06 28 42.4	+1.9
	baz=322						
333A	**Richland Sprin**	**45.46**	**104**	P	pP	06 28 44.9	+2.9
	baz=326						
MIAR	**Mount Ida**	**45.53**	**97**	P	pP	06 28 45.3	+2.7
	baz=323						
JCT	**Junction City**	**45.76**	**106**	P	pP	06 28 47.5	+3.0
	baz=326,SNR=8.1						
334A	**Lometa**	**45.82**	**104**	P	pP	06 28 48.3	+3.4
	baz=325						
433A	**Art**	**45.88**	**105**	P	pP	06 28 48.4	+3.0
	baz=326						
434A	**Burnet**	**46.23**	**104**	P	pP	06 28 51.7	+3.6
	baz=326						
336A	**Riesel**	**46.46**	**102**	P	pP	06 28 52.7	+2.8
	baz=325						
533A	**Kerrville**	**46.47**	**105**	P	pP	06 28 53.3	+3.2
	baz=326						
435B	**Jarrell**	**46.59**	**103**	P	pP	06 28 54.3	+3.4
	baz=326						
534A	**Blanco**	**46.78**	**105**	P	pP	06 28 55.3	+2.8
	baz=326						
733A	**Divot King Ran**	**47.47**	**107**	P	pP	06 29 01.3	+3.4
	baz=327						
832A	**Faith Ranch, C**	**47.51**	**108**	P	pP	06 29 01.4	+3.2
	baz=327						
636A	**Smothers Creek**	**47.92**	**104**	P	pP	06 29 05.6	+4.2
	baz=326,SNR=5.4						
Y45A	**Yeager Farm, C**	**48.09**	**94**	P	pP	06 29 06.3	+3.7
	baz=323						
242A	**Grayson**	**48.23**	**97**	P	pP	06 29 07.1	+3.4
	baz=324						
Y46A	**Houston**	**48.42**	**93**	P	pP	06 29 07.8	+2.6
	baz=323,SNR=6.9						
Y47A	**UCPARC, Winfie**	**48.91**	**92**	P	pP	06 29 11.5	+2.5
	baz=323,SNR=6.2						
244A	**Avery, Jackson**	**48.98**	**96**	P	pP	06 29 13.2	+3.7
	baz=324						
034A	**Hebbronville**	**49.15**	**107**	P	pP	06 29 15.8	+4.8
	baz=328						
146A	**Union**	**49.31**	**94**	P	pP	06 29 15.9	+3.8
	baz=324						
Z48A	**Northport**	**49.47**	**92**	P	pP	06 29 15.9	+2.6
	baz=323						
147A	**Livingston**	**49.68**	**93**	P	pP	06 29 17.7	+2.8
	baz=324						
247A	**Quitman**	**50.01**	**94**	P	pP	06 29 21.6	+4.1
	baz=324						
346A	**Big Creek Wild**	**50.12**	**95**	P	pP	06 29 21.7	+3.4
	baz=324						
347A	**Saraland**	**50.57**	**95**	P	pP	06 29 25.2	+3.5
	baz=324						
ARCES	**ARCESS Array B**	**50.72**	**1**	P	**P**	**06 28 57.2**	**-0.8**
	0.4nm,0.5s,baz=349,slow=9.4,SNR=3.3						
KSRS	**Korea Array**	**53.30**	**283**	P	**P**	**06 29 18.9**	**+1.4**
	1.3nm,0.5s,baz=44,slow=8.9,SNR=5.4						
KSAR	**Wonju Array Be**	**53.32**	**283**	P	**P**	**06 29 18.9**	**+1.2**
SONM	**Songino Array**	**54.87**	**306**	P	**P**	**06 29 31.1**	**+2.1**
	3.8nm,0.8s,baz=37,slow=7.6,SNR=20						
ZALV	**Zalesovo Beam**	**57.42**	**324**	P	**P**	**06 29 47.9**	**+1.0**
	2.6nm,0.7s,baz=30,slow=6.1,SNR=10						
HHC	**Hu-ho-hao-te**	**58.28**	**297**	*eP*	**P**	**06 29 56.5**	**+3.3**
HHC				pmax	pmax		
	comp=Z,9.0nm,0.9s						
HHC				pmax	pmax		
	comp=Z,51nm,5.6s						
MKAR	**Makanchi Array**	**64.48**	**321**	P	**P**	**06 30 35.2**	**+0.4**
	comp=Z,0.5nm,0.8s,baz=42,slow=6.6,SNR=3.8						
WMQ	**Urumqi**	**65.32**	**316**	*eP*	**P**	**06 30 40.8**	**+0.5**
LZH	**Lanzhou**	**65.61**	**300**	*eP*	**P**	**06 30 38.5**	**-3.9**
LZH				pP	pP	06 31 09.0	+1.1
LZH				sP	sP	06 31 23.0	+3.9
LZH				PP	**PP**	**06 33 05.6**	**-1.9**
LZH				pmax	pmax		
	comp=Z,16nm,1.4s						
LZH				pmax	pmax		
	comp=Z,40nm,7.8s						
ABKAR	**Akbulak array**	**67.88**	**338**	*eP*	**P**	**06 30 55.1**	**-1.3**
	comp=Z,0.4nm,0.4s						
BOSA	**Bosnof**	**148.56**	**3**	PKPbc	**PKPbc**	**06 39 44.2**	**+0.2**
	comp=Z,2.2nm,0.7s,baz=347,slow=3.6,SNR=5.3						

*ISCJB **21** 06:28:36.5±0.4,34.˚73N±0.˚04×139.˚31E±0.˚06, h153km,2km, mb3.6/10, Error ellipse: s-maj=8.7km s-min=6.0km az=162.0*
*JMA **21** 06:28:37.5±0.1,34.˚71N×139.˚31E, h147km±1km, M3.4*
*IDC **21** 06:28:38.0±0.6,34.˚72N×139.˚29E, h153km±5km, mb3.4/10, mb1 3.5/12, mb1mx3.3/36, mbtmp3.8/12, Error ellipse: s-maj=22.4km s-min=6.4km az=70.0*

ISC 21 06:28:37.5±0.7, 34.˚74N±0.˚04×139.˚28E±0.˚06, h148km±5km, n34, σ0§88/41, mb3.7/10, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIM2	**Oshima 3**	**0.12**	**99**	P	**Pn**	**06 28 57.3**	**-0.2**
JIM2				S	**Sn**	**06 29 12.7**	**+0.1**
KTJJ	**Kamata 2**	**0.26**	**316**	P	**Pn**	**06 28 57.9**	**+0.2**
KTJJ				S	**Sn**	**06 29 13.4**	**+0.3**
JIZS	**Izushimoda**	**0.33**	**267**	P	**Pn**	**06 28 58.0**	**+0.1**
JIZS				S	**Sn**	**06 29 13.2**	**-0.2**
JOD2	**Odawara 2**	**0.55**	**343**	P	**Pn**	**06 28 59.0**	**+0.1**
JOD2				S	**Sn**	**06 29 15.2**	**-0.1**
JYN	**Shimob**	**0.97**	**322**	P	**Pn**	**06 29 02.4**	**+0.5**
JYN				*eS*	**Sn**	**06 29 21.0**	**+0.4**
JRY	**Ryogami san**	**1.31**	**346**	P	**Pn**	**06 29 06.0**	**+0.9**
JRY				*eS*	**Sn**	**06 29 26.9**	**+0.7**
BSO1	**Boso 1**	**1.40**	**93**	P	**Pn**	**06 29 05.4**	**+0.1**
BSO1				*eS*	**Sn**	**06 29 27.5**	**+1.0**
TK02	**Tokai 2**	**1.49**	**238**	P	**Pn**	**06 29 07.2**	**+0.6**
TK02				*eS*	**Sn**	**06 29 28.1**	**-0.7**
JHJ	**Hachijo jima 2**	**1.67**	**165**	P	**Pn**	**06 29 08.8**	**0.0**
	311nm,0.3s,baz=331,slow=22,SNR=9.1						
JHJ				S	**Sn**	**06 29 34.1**	**+1.5**
	93nm,0.3s,baz=73,slow=19,SNR=4.8						
JHJ2	**Mitsune**	**1.68**	**165**	P	**Pn**	**06 29 09.2**	**+0.3**
JAG	**Ashikaga**	**1.69**	**5**	P	**Pn**	**06 29 09.4**	**+0.4**
JAG				S	**Sn**	**06 29 32.5**	**-0.7**
MJAR	**Matsushiro Arr**	**2.00**	**334**	P	**Pn**	**06 29 12.8**	**+0.2**
	5.1nm,0.3s,baz=161,slow=10,SNR=18						
MJAR				S	**Sn**	**06 29 40.5**	**+0.9**
	2.8nm,0.3s,baz=170,slow=29,SNR=7.1						
MAT	**Matsushiro**	**2.00**	**334**	P	**Pn**	**06 29 13.1**	**+0.5**
MAT				S	**Sn**	**06 29 40.4**	**+0.8**
MAT	**Matsushiro**	**2.00**	**334**	P	**Pn**	**06 29 13.2**	**+0.6**
MAT				*eS*	**Sn**	**06 29 40.1**	**+0.5**
JIE	**Ise**	**2.15**	**262**	P	**Pn**	**06 29 14.1**	**-0.2**
JNU	**Nakatsue**	**7.17**	**259**	P	**Pn**	**06 30 21.0**	**+1.1**
	0.5nm,0.3s,baz=41,slow=9.3,SNR=3.3						
KSRS	**Korea Array**	**9.59**	**290**	P	**Pn**	**06 30 54.4**	**+2.5**
	0.3nm,0.3s,baz=98,slow=15,SNR=4.1						
KLR	**Kul'dur**	**15.52**	**341**	P	**Pn**	**06 32 05.8**	**-2.4**
	0.5nm,0.3s,baz=146,slow=8.7,SNR=7.9						
H11N2	**WAKE ISLAND Hy**	**28.62**	**114**	T	T	07 04 06.6	
	baz=308,slow=75,SNR=8.0						
H11N1	**WAKE ISLAND Hy**	**28.63**	**114**	T	T	07 04 09.8	
	baz=308,slow=75,SNR=9.3						
H11N3	**WAKE ISLAND Hy**	**28.64**	**114**	T	T	07 04 30.3	
	baz=308,slow=75,SNR=9.1						
H11S3	**WAKE ISLAND Hy**	**29.23**	**117**	T	T	07 04 59.3	
	baz=308						
H11S1	**WAKE ISLAND Hy**	**29.23**	**117**	T	T	07 04 57.2	
	baz=308						
H11S2	**WAKE ISLAND Hy**	**29.24**	**117**	T	T	07 04 58.5	
	baz=308						
ZALV	**Zalesovo Beam**	**42.23**	**314**	P	**P**	**06 36 15.8**	**+0.1**
	0.8nm,0.3s,baz=90,slow=8.9,SNR=6.3						
MKAR	**Makanchi Array**	**43.91**	**304**	P	**P**	**06 36 29.4**	**0.0**
	1.0nm,0.6s,baz=90,slow=9.3,SNR=8.7						
ILAR	**Eielson Array**	**52.35**	**31**	P	**P**	**06 37 34.4**	**+0.5**
	0.3nm,0.7s,baz=266,slow=6.0,SNR=3.2						
WRA	**Warramunga Arr**	**54.58**	**186**	P	**P**	**06 37 49.2**	**-1.4**
	0.3nm,0.3s,baz=0.2,slow=7.6,SNR=14						
ASAR	**Alice Springs**	**58.31**	**186**	P	**P**	**06 38 17.0**	**+0.1**
	0.2nm,0.3s,baz=11,slow=10.0,SNR=3.8						
ARCES	**ARCESS Array B**	**65.53**	**339**	P	**P**	**06 39 04.9**	**+0.3**
	1.1nm,0.8s,baz=46,slow=6.9,SNR=4.2						
FINES	**FINESS Array B**	**70.03**	**332**	P	**P**	**06 39 33.1**	**+0.3**
	1.0nm,0.4s,baz=60,slow=5.7,SNR=12						
KBZ	**Khabaz**	**71.08**	**310**	P	**P**	**06 39 40.7**	**+1.2**
	2.1nm,0.9s,baz=126,slow=8.7,SNR=3.0						
AKASG	**Malin Array Be**	**75.04**	**322**	P	**P**	**06 40 01.0**	**-1.6**
	0.7nm,0.3s,baz=49,slow=6.1,SNR=5.4						
NOA	**NORSAR Array B**	**75.62**	**337**	P	**P**	**06 40 05.8**	**0.0**
	0.5nm,0.8s,baz=52,slow=6.5,SNR=2.8						

*KRNET **21** 06:28:56.7±0.1,39.˚99N×71.˚29E, h30km, mb3.3*
*SOME **21** 06:28:57.5,40.˚10N×71.˚62E, h10km*
*NNC **21** 06:28:58.5±0.9,40.˚22N×71.˚34E, h0km, mb3.8, mpv3.4, Error ellipse: s-maj=13.2km s-min=6.4km az=132.0*

ISC 21 06:28:56.1±1.2, 40.˚13N±0.˚03×71.˚54E±0.˚03, h0km±12km, n22, σ2§28/38, 23C-3D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTK	**Batken**	**0.56**	**263**	⇑*iP*	**Pg**	**06 29 05.1**	**-1.7**
	baz=282						
BTK				⇑*iS*	**Sg**	**06 29 11.3**	**-2.7**
	baz=282						
DRK	**Karamyk**	**0.68**	**163**	⇑*iP*	**Pg**	**06 29 09.8**	**+0.6**
	baz=141						
DRK				⇑*iS*	**Sg**	**06 29 18.6**	**+0.6**
	baz=141						
ARK	**Arkit**	**1.70**	**11**	⇑*iP*	**Pb**	**06 29 29.0**	**+0.8**
	baz=16						
ARK				⇑*iS*	**Sg**	**06 29 52.5**	**+1.9**
	baz=16						
IUG	**Iuzhnay**	**2.31**	**331**	*eP*	**Pb**	**06 29 39.0**	**+0.2**
	128nm,0.3s						
IUG				*eS*	**Sb**	**06 30 09.6**	**+1.7**
	138nm,0.6s						
MNAS	**Manas**	**2.46**	**17**	⇑*eP*	**Pn**	**06 29 39.9**	**+2.2**
	baz=20						
MNAS				⇑*iS*	**Sb**	**06 30 11.0**	**-1.3**
	baz=20						
MNAS	**Manas**	**2.46**	**17**	⇑Pn	**Pn**	**06 29 39.9**	**+2.2**
	9.0nm,0.6s						
MNAS				Pg	**Pg**	**06 29 43.6**	**+0.3**
MNAS				⇑Lg	Lg	06 30 16.7	
	64nm,0.4s						
DZET	**Dzherino**	**2.48**	**239**	⇑Pn	**Pn**	**06 29 40.3**	**+2.4**
	37nm,0.5s						
DZET				⇑Lg	Lg	06 30 12.5	
	102nm,0.4s						
CHM	**Chimkent**	**2.63**	**327**	*eP*	**Pb**	**06 29 46.1**	**+2.0**
	220nm,0.1s						
CHM				*eS*	**Sb**	**06 30 20.5**	**+3.6**
	491nm,0.3s						
ARLS	**Aral**	**2.73**	**50**	⇑*iP*	**Pb**	**06 29 43.9**	**-1.9**
	baz=50						
ARLS				⇑*iS*	**Sb**	**06 30 20.0**	**+0.2**
	baz=50						
DZA	**Taraz**	**2.76**	**357**	*eP*	**Pg**	**06 29 49.9**	**+0.8**
	112nm,0.4s						
DZA				*eS*	**Sg**	**06 30 27.6**	**+2.7**
	289nm,0.5s						
MRKS	**Merke**	**2.90**	**25**	*eP*	**Pb**	**06 29 51.0**	**+2.2**
	23nm,0.4s						
MRKS				*eS*	**Sg**	**06 30 30.0**	**+0.6**
	84nm,0.5s						
BRLS	**Borolday**	**3.00**	**333**	⇑*iP*	**Pb**	**06 29 51.8**	**+1.5**
	15nm,0.3s						
BRLS				*eS*	**Sb**	**06 30 30.5**	**+3.0**
	28nm,0.3s						
KK31	**Karatay Array**	**3.07**	**346**	Pn	**Pn**	**06 29 46.7**	**+0.9**
	1.6nm,0.3s,baz=147,slow=12,SNR=119						
KK31				Pg	**Pb**	**06 29 53.2**	**+1.7**
	5.9nm,0.3s,baz=172,slow=17,SNR=44						
KK31				⇑Lg	Lg	06 30 33.3	
	29nm,0.6s,baz=180,slow=28,SNR=6.7						
AAK	**Ala-Archa**	**3.35**	**41**	⇑Pn	**Pn**	**06 29 52.4**	**+2.6**
	2.4nm,0.3s						
AAK				⇑Pg	**Pg**	**06 29 59.3**	**-1.0**
	10nm,0.5s						
AAK				⇓Lg	Lg	06 30 45.0	
	26nm,0.7s						
TKM2	**Tokmak 2**	**4.13**	**46**	⇑Pn	**Pn**	**06 30 03.9**	**+3.3**
	13nm,0.4s						
TKM2				⇓Lg	Lg	06 31 08.9	
	13nm,0.6s						
KST	**Kastek**	**4.41**	**47**	*eP*	**Pg**	**06 30 19.3**	**-1.3**
	2.3nm,0.4s						
KST				*eS*	**Sg**	**06 31 18.0**	**+0.1**
	25nm,0.8s						
MDOK	**Medeo**	**5.12**	**52**	*eP*	**Pg**	**06 30 32.4**	**-1.8**
	3.7nm,0.5s						
MDOK				*eS*	**Sg**	**06 31 40.6**	**+0.1**
	15nm,0.8s						
KUU	**Kurty**	**5.19**	**42**	*eP*	**Pb**	**06 30 30.4**	**+2.7**
	10nm,0.8s						
KUU				*eS*	**Sg**	**06 31 37.6**	**-5.1**
	12nm,0.7s						
BTLS	**Baital**	**5.24**	**20**	*eP*	**Pg**	**06 30 34.1**	**-2.4**
	2.6nm,0.4s						
BTLS				*eS*	**Sg**	**06 31 42.9**	**-1.6**
	5.5nm,0.4s						
PDGK	**Podgornoye**	**6.75**	**59**	⇓Lg	Lg	06 32 35.2	
	7.3nm,1.0s						
OTUK	**Ortayu**	**8.13**	**4**	⇑Pg	Pb	06 31 25.0	+7.2
	0.9nm,0.5s						
OTUK				⇑Lg	Lg	06 33 15.1	
	5.8nm,0.6s						
AB31	**Akbulak array**	**12.29**	**322**	⇑Pn	**Pn**	**06 31 48.7**	**-3.5**
	0.5nm,0.5s,baz=124,slow=14,SNR=12						
AB31				⇑Sn	**Sn**	**06 34 05.8**	**-4.0**
	0.2nm,0.3s						

*IDC **21** 06:36:57.8±1.1,37.˚41N×143.˚75E, h0km, mb3.7/7, mb1

JANG				eS	Sn	06 38 28.9	-1.7	
JAG	**Ashikaga**	**3.52**	**254**	P	Pn	06 37 54.5	-0.5	
JAH	**Hinai**	**3.57**	**320**	eS	Sn	06 38 37.0	+0.3	
JTM	**Tenmabayashi**	**3.85**	**329**	eS	Sn	06 38 42.4	-1.2	
JRY	**Ryogami san**	**4.08**	**250**	P	Pn	06 38 02.1	-0.7	
JRY				eS	Sn	06 38 45.8	-3.5	
JOT	**Ohata**	**4.37**	**333**	eS	Sn	06 38 54.5	-2.0	
MJAR	**Matsushiro Arr**	**4.45**	**259**	Pn	Pn	06 38 09.0	+1.1	
	3.2nm,0.3s,baz=90,slow=15,SNR=12							
MAT	**Matsushiro**	**4.45**	**259**	P	Pn	06 38 09.2	+1.3	
MAT				S	Sn	06 38 57.9	-0.5	
JKB	**Kayabe**	**4.83**	**336**	P	Pn	06 38 13.9	+0.9	
JKB				eS	Sn	06 39 06.0	-1.7	
JCH	**Churui**	**5.12**	**358**	P	Pn	06 38 16.4	-0.6	
JCH				eS	Sn	06 39 11.0	-3.9	
ASAJ	**Asahikawa**	**6.67**	**354**	Sn	Sn	06 39 50.0	-2.9	
USRK	**Ussuriysk Ar.**	**11.08**	**311**	Pn	Pn	06 39 43.6	+5.0	
	0.2nm,0.3s,baz=92,slow=13,SNR=2.8							
USRK				LR	LR	06 44 00.2		
	comp=Z,48nm,18.6s,baz=50,slow=38							
KSRS	**Korea Array**	**12.49**	**275**	LR	LR	06 44 34.8		
	comp=Z,22nm,18.7s,baz=54,slow=36							
KLR	**Kul'dur**	**14.55**	**327**	Pn	**Pn**	**06 40 25.6**	**-0.5**	
	0.2nm,0.3s,baz=119,slow=12,SNR=4.0							
KLR				LR	LR	06 46 29.4		
	comp=Z,32nm,19.7s,baz=192,slow=39							
H11N2	**WAKE ISLAND Hy**	**26.90**	**125**	T	T	07 10 46.0		
	baz=318							
H11N1	**WAKE ISLAND Hy**	**26.91**	**125**	T	T	07 10 55.5		
	baz=318							
H11N3	**WAKE ISLAND Hy**	**26.92**	**125**	T	T	07 10 52.8		
	baz=318							
H11S1	**WAKE ISLAND Hy**	**27.66**	**127**	T	T	07 11 55.4		
	baz=314							
H11S3	**WAKE ISLAND Hy**	**27.66**	**127**	T	T	07 11 49.1		
	baz=314							
H11S2	**WAKE ISLAND Hy**	**27.68**	**127**	T	T	07 11 49.6		
	baz=314							
SONM	**Songino Array**	**29.02**	**303**	P	**P**	**06 43 00.7**	**+1.2**	
	0.2nm,0.4s,baz=111,slow=7.9,SNR=2.1							
ZALV	**Zalesovo Beam**	**42.92**	**312**	P	**P**	**06 44 57.0**	**-0.9**	
	0.5nm,0.4s,baz=76,slow=6.1,SNR=2.8							
MKAR	**Makanchi Array**	**45.38**	**302**	P	**P**	**06 45 19.3**	**+1.5**	
	0.4nm,0.7s,baz=83,slow=8.2,SNR=3.7							
KAPI	**Kappang**	**47.79**	**213**	LR	LR	07 05 42.4		
	comp=Z,144nm,19.7s,baz=280,slow=36							
ILAR	**Eielson Array**	**48.16**	**33**	P	**P**	**06 45 39.8**	**+0.6**	
	1.2nm,0.7s,baz=267,slow=6.4,SNR=17							
WRA	**Warramunga Arr**	**57.79**	**190**	P	**P**	**06 46 50.0**	**-0.6**	
	0.5nm,0.5s,baz=9.6,slow=7.5,SNR=8.0							
ASAR	**Alice Springs**	**61.52**	**190**	P	**P**	**06 47 16.1**	**-0.1**	
	0.3nm,0.5s,baz=4.2,slow=6.2,SNR=4.6							
FINES	**FINESS Array B**	**69.23**	**333**	P	**P**	**06 48 07.3**	**+1.6**	
	1.0nm,0.8s,baz=210,slow=30,SNR=3.5							

*CSEM **21** 06:39:29.6±0.1,41.80N×20.05E,h2km,ML3.0, Error ellipse: s-maj=3.0km s-min=2.4km az=22.0*
*PDG **21** 06:39:29.6±0.3,41.83N×20.01E,h3km±1km,MD2.8/2, ML2.7/12, Error ellipse: s-maj=0.5km s-min=0.8km az=0.0*
*SKO **21** 06:39:29.8,41.84N×20.05E,h18km*
*BEO **21** 06:39:30.0±0.3,41.85N×20.21E,h0km,M2.4/9*

ISC 21 06:39:29.7±1.0,41.82N±0.02×20.07E±0.02,h7km±9km, n59,σ0.971/104,8C-16D,Albania

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TIR	**Tirane**	**0.50**	**198**	*eP*	*g*	**Pg**		**06 39 5**	**+0.1**
TIR				*eS*	*g*	**Sg**		**06 39 46.8**	**+0.9**
TIR	**Tirane**	**0.50**	**198**	*eP*	*g*	**Pg**		**06 39 39.5**	**+0.1**
TIR				*eS*	*g*	**Sg**		**06 39 46.8**	**+0.9**
ULC	**Ulcinj**	**0.64**	**283**	*i*	P*g*	**Pg**		**06 39 41.3**	**-0.7**
ULC				*eS*	*g*	**Sg**		**06 39 49.3**	**-1.0**
ULC	**Ulcinj**	**0.64**	**283**	P		**Pg**		**06 39 40.9**	**-1.1**
ULC	**Ulcinj**	**0.64**	**283**	⇓	*i*P*g*	**Pg**		**06 39 41.3**	**-0.7**
ULC				*eS*	*g*	**Sg**		**06 39 49.3**	**-1.0**
ZATK	**Zatriq**	**0.75**	**33**	P		**Pb**		**06 39 44.7**	**-0.4**
ZATK				S		**Sb**		**06 39 56.7**	**+1.1**
DRME	**Dracevica, Mon**	**0.76**	**299**	⇓	*i*P*g*	**Pg**		**06 39 43.9**	**-0.4**
DRME				*eS*	*g*	**Sg**		**06 39 53.3**	**-0.8**
DRME	**Dracevica, Mon**	**0.76**	**299**	⇓	*i*P*g*	**Pg**		**06 39 43.9**	**-0.4**
DRME				*eS*	*g*	**Sg**		**06 39 53.3**	**-0.8**
PVY	**Plav**	**0.78**	**354**	⇓	*i*P*g*	**Pg**		**06 39 44.9**	**+0.2**
PVY				*eS*	*g*	**Sg**		**06 39 55.1**	**+0.3**
PVY	**Plav**	**0.78**	**354**	⇓	*i*P*g*	**Pg**		**06 39 44.9**	**+0.2**
PVY				*eS*	*g*	**Sg**		**06 39 55.1**	**+0.3**
PEJK	**Peje**	**0.83**	**10**	P		**Pb**		**06 39 46.8**	**+0.2**
PEJK				S		**Sn**		**06 39 59.8**	**-0.7**
PDG	**Podgorica**	**0.86**	**315**	*eS*	*g*	**Sn**		**06 40 00.7**	**-0.3**
PDG	**Podgorica**	**0.86**	**315**	⇑	*i*P*g*	**Pg**		**06 39 46.1**	**-0.2**
PDG				*eS*	*g*	**Sg**		**06 39 57.1**	**-0.3**
TTG	**Podgorica**	**0.86**	**315**	⇑	*i*P*g*	**Pg**		**06 39 46.1**	**-0.2**
TTG				*eS*	*g*	**Sg**		**06 39 57.1**	**-0.3**
OHR	**Ohrid**	**0.90**	**142**	*i*	P*g*	**Pg**		**06 39 46.6**	**-0.3**
OHR				*eS*	*g*	**Sg**		**06 39 59.2**	**+0.5**
OHR	**Ohrid**	**0.90**	**142**	*i*	P*g*	**Pg**		**06 39 46.6**	**-0.3**
OHR				*eS*	*g*	**Sg**		**06 39 59.1**	**+0.5**
BUM	**Brajici-Budva**	**1.00**	**299**	⇓	*i*P*g*	**Pg**		**06 39 48.9**	**0.0**
BUM				*eS*	*g*	**Sg**		**06 40 01.6**	**-0.3**
BUM	**Brajici-Budva**	**1.00**	**299**	⇓	*i*P*g*	**Pg**		**06 39 48.9**	**0.0**
BUM				*eS*	*g*	**Sg**		**06 40 01.6**	**-0.3**
SKO	**Skopje**	**1.03**	**81**	*i*	P*g*	**Pg**		**06 39 49.3**	**-0.3**
SKO				*i*	S*g*	**Sg**		**06 40 03.1**	**+0.2**
SKO	**Skopje**	**1.03**	**81**	*i*	P*g*	**Pg**		**06 39 49.2**	**-0.3**
SKO				*i*	S*g*	**Sg**		**06 40 03.1**	**+0.2**
BEY	**Berane**	**1.06**	**353**	⇓	*i*P*g*	**Pb**		**06 39 50.4**	**0.0**
BEY				*eS*	*g*	**Sb**		**06 40 04.6**	**+0.1**
IVA	**Berane**	**1.06**	**353**	⇓	*i*P*g*	**Pb**		**06 39 50.4**	**0.0**
IVA				*eS*	*g*	**Sb**		**06 40 04.6**	**+0.1**
CEME	**Cevo**	**1.12**	**310**	⇑	*i*P*g*	**Pg**		**06 39 51.2**	**-0.1**
CEME				*eS*	*g*	**Sg**		**06 40 05.7**	**-0.2**
CEME	**Cevo**	**1.12**	**310**	⇑	*i*P*g*	**Pg**		**06 39 51.2**	**-0.1**
CEME				*eS*	*g*	**Sg**		**06 40 05.7**	**-0.2**
NKME	**Niksic**	**1.26**	**319**	⇓	*i*P*g*	**Pg**		**06 39 54.1**	**+0.2**
NKME				*eS*	*g*	**Sg**		**06 40 10.3**	**+0.1**
NKME	**Niksic**	**1.26**	**319**	⇓	*i*P*g*	**Pg**		**06 39 54.1**	**+0.2**
NKME				*eS*	*g*	**Sg**		**06 40 10.3**	**+0.1**
NKY	**Niksic**	**1.27**	**321**	⇓	*i*P*g*	**Pg**		**06 39 54.3**	**+0.1**
NKY				*eS*	*g*	**Sg**		**06 40 10.7**	**0.0**
NKY	**Niksic**	**1.27**	**321**	⇓	*i*P*g*	**Pg**		**06 39 54.3**	**+0.1**
NKY				*eS*	*g*	**Sg**		**06 40 10.7**	**0.0**
HCY	**Herceg Novi**	**1.33**	**298**	⇑	*i*P*g*	**Pb**		**06 39 54.8**	**-0.2**
HCY				*eS*	*g*	**Sg**		**06 40 12.5**	**0.0**
HCY	**Herceg Novi**	**1.33**	**298**	⇑	*i*P*g*	**Pb**		**06 39 54.8**	**-0.2**
HCY				*eS*	*g*	**Sg**		**06 40 12.5**	**0.0**
TREB	**Trebinje**	**1.56**	**305**	*eP*	*g*	**Pb**		**06 39 58.6**	**-0.3**
TREB				*eS*	*g*	**Sg**		**06 40 22.7**	**+2.8**
TREB	**Trebinje**	**1.56**	**305**	*eP*	*g*	**Pb**		**06 39 58.6**	**-0.3**
TREB				*eS*	*g*	**Sg**		**06 40 22.7**	**+2.8**
BRY	**Bratogost**	**1.57**	**314**	⇑	*i*P*g*	**Pb**		**06 39 59.2**	**+0.1**
BRY				*eS*	*g*	**Sg**		**06 40 20.4**	**+0.3**
BRY	**Bratogost**	**1.57**	**314**	⇑	*i*P*g*	**Pb**		**06 39 59.2**	**+0.1**
BRY				*eS*	*g*	**Sg**		**06 40 20.4**	**+0.3**
SELS	**Selova**	**1.59**	**29**	*eP*	*g*	**Pn**		**06 39 57.3**	**-1.1**
SELS				*eS*	*g*	**Sn**		**06 40 17.6**	**-1.7**
UPM	**Unac-Piva**	**1.63**	**328**	⇓	*i*P*n*	**Pg**		**06 40 01.3**	**+0.3**
UPM				*eS*	*n*	**Sg**		**06 40 22.9**	**+0.8**
UPM	**Unac-Piva**	**1.63**	**328**	⇓	*i*P*n*	**Pg**		**06 40 01.3**	**+0.3**
UPM				*eS*	*n*	**Sg**		**06 40 22.9**	**+0.8**
BARS	**Barje**	**1.63**	**52**	*eP*	*g*	**Pn**		**06 39 58.4**	**-0.5**
BARS				*eS*	*g*	**Sn**		**06 40 18.7**	**-1.4**
BARS	**Barje**	**1.63**	**52**	*eP*	*g*	**Pn**		**06 39 58.4**	**-0.5**
BARS				*eS*	*g*	**Sn**		**06 40 18.7**	**-1.4**
IVAS	**Ivanjica**	**1.75**	**2**	*eP*	*n*	**Pn**		**06 40 01.2**	**+0.6**
IVAS				*eS*	*n*	**Sn**		**06 40 23.7**	**+0.5**
IVAS	**Ivanjica**	**1.75**	**2**	*eP*	*n*	**Pn**		**06 40 01.2**	**+0.6**
IVAS				*eS*	*n*	**Sn**		**06 40 23.7**	**+0.5**
BBLS	**Lazići**	**2.10**	**347**	*eP*	*n*	**Pb**		**06 40 07.4**	**-0.8**
BBLS				*eS*	*g*	**Sg**		**06 40 36.4**	**-0.8**
BBLS	**Lazići**	**2.10**	**347**	*eP*	*n*	**Pb**		**06 40 07.4**	**-0.8**
BBLS				*eS*	*g*	**Sg**		**06 40 36.4**	**-0.8**
GRUS	**Gruza**	**2.12**	**13**	*eP*	*n*	**Pn**		**06 40 06.4**	**+0.8**
GRUS	**Gruza**	**2.12**	**13**	*eP*	*n*	**Pn**		**06 40 06.4**	**+0.8**
BOVS	**Bovan**	**2.17**	**33**	*eP*	*n*	**Pn**		**06 40 06.2**	**-0.1**
BOVS	**Bovan**	**2.17**	**33**	*eP*	*n*	**Pn**		**06 40 06.2**	**-0.1**
DIVS	**Divibare**	**2.27**	**359**	*eP*	*n*	**Pn**		**06 40 08.3**	**+0.5**
DIVS				*eS*	*g*	**Sb**		**06 40 40.3**	**+0.8**
DIVS	**Divibare**	**2.27**	**359**	*eP*	*n*	**Pn**		**06 40 08.3**	**+0.5**
DIVS				*eS*	*g*	**Sb**		**06 40 40.3**	**+0.8**
ZAPS	**Zavoj**	**2.38**	**52**	*eP*	*n*	**Pn**		**06 40 09.5**	**+0.2**
ZAPS	**Zavoj**	**2.38**	**52**	*eP*	*n*	**Pn**		**06 40 09.5**	**+0.2**
TRUS	**Trudelj**	**2.41**	**6**	*eP*	*n*	**Pn**		**06 40 10.7**	**+1.1**
TRUS	**Trudelj**	**2.41**	**6**	*eP*	*n*	**Pn**		**06 40 10.7**	**+1.1**
ZAGS	**Zajecar**	**2.54**	**38**	*eP*	*n*	**Pn**		**06 40 12.7**	**+1.3**
ZAGS	**Zajecar**	**2.54**	**38**	*eP*	*n*	**Pn**		**06 40 12.7**	**+1.3**
KUBS	**Kucevo**	**2.84**	**24**	*eP*	*n*	**Pn**		**06 40 15.6**	**+0.1**
KUBS	**Kucevo**	**2.84**	**24**	*eP*	*n*	**Pn**		**06 40 15.6**	**+0.1**
NVLJ	**Novalja**	**4.69**	**308**	*i*	P*n*	**Pn**		**06 40 40.9**	**+0.1**
NVLJ					Sn	**Sn**		**06 41 35.1**	**-0.4**
NVLJ	**Novalja**	**4.69**	**308**	*i*	P*n*	**Pn**		**06 40 40.9**	**+0.1**
NVLJ					Sn	**Sn**		**06 41 35.0**	**-0.4**

CASC 21 06:39:50.0±2.1,9.00N×84.23W,h32km±9km,MD3.7, ML4.3,2C-2D,Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
QCR	**Quepos**	**0.39**	**10**	⇓	*i*P		Pb	06 39 57.3	-1.6
BUS	**Buena Vista**	**0.70**	**42**	*eP*			Pb	06 40 05.6	+1.5
URSC	**Urasca**	**0.91**	**30**	⇑	*i*P		Pn	06 40 06.1	-0.7
URSC				*eS*			Sn	06 40 14.2	-4.7
CGA2	**Cerro Gallo 2**	**1.00**	**347**	*eP*			Pb	06 40 09.3	+0.4
CGA2				*eS*			Sn	06 40 21.2	+0.1
BRU2	**Volcan**	**1.54**	**99**	⇑	*i*eP		Pn	06 40 15.1	-0.3
BRU2				*i*	S		Sn	06 40 35.3	+0.8
TBS2		**1.58**	**99**	⇓	*i*eP		Pn	06 40 16.3	+0.4
TBS2				*i*	S		Sn	06 40 36.2	+0.8
AZU	**Azuero**	**4.11**	**107**	*eP*			Pn	06 40 50.9	+0.3
AZU				*eS*			Sn	06 41 38.0	+0.4
ZANG	**Zanguenga, Cho**	**4.31**	**91**	*eP*			Pn	06 40 54.4	+1.0

*ISCJB **21** 06:43:46.7±1.0,10.56S±0.10×162.2E±0.1,h54km, mb3.7/5,MS3.2/2,Error ellipse: s-maj=18.0km s-min=8.7km az=137.7*
*IDC **21** 06:43:49.6±3.1,10.49S×162.14E,h65km±25km,mb3.5/5, mb1 3.9/9,mb1mx3.6/37,mbtmp4.1/9,MS3.2/4,Ms1 3.2/4, ms1mx2.9/26,Error ellipse: s-maj=28.5km s-min=19.4km az=65.0*

ISC 21 06:43:48.3±1.2,10.5S±0.1×162.2E±0.1,h54km,n17, σ1.959/13,mb3.6/5,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**2.44**	**296**	P			**Pn**	**06 44 25.5**	**-0.2**
	178nm,0.3s,baz=140,slow=3.0,SNR=49								
HNR				S			**Sn**	**06 44 56.1**	**+1.7**
	125nm,0.3s,baz=174,slow=19,SNR=4.3								
HNR	**Honiara**	**2.44**	**296**	*eP*			**Pn**	**06 44 24.0**	**-1.7**
HNR				*eS*			**Sn**	**06 44 52.0**	**-2.4**
DZM	**Mont Dzumac**	**12.20**	**161**	P			**Pn**	**06 46 41.1**	**+1.5**
	0.4nm,0.3s,baz=52,slow=7.3,SNR=25								
DZM				S			**Sn**	**06 48 51.4**	**-2.8**
	0.2nm,0.3s,baz=92,slow=16,SNR=3.0								
DZM				LR			LR	06 50 25.8	
	comp=Z,90nm,19.7s,baz=12,slow=32								
PMG	**Port Moresby**	**14.83**	**273**	P			**Pn**	**06 47 16.0**	**+1.0**
	1.2nm,0.3s,baz=332,slow=15,SNR=2.6								
PMG				LR			LR	06 52 29.9	
	comp=Z,105nm,19.0s,baz=53,slow=35								
CTA	**Charters Tower**	**18.05**	**236**	P			**Pn**	**06 47 55.8**	**+0.4**
	0.6nm,0.3s,baz=51,slow=12,SNR=9.1								
WRA	**Warramunga Arr**	**28.41**	**247**	P			**P**	**06 49 37.8**	**-0.3**
	1.1nm,0.8s,baz=76,slow=9.4,SNR=6.4								
STKA	**Stephens Creek**	**28.53**	**219**	P			**P**	**06 49 40.0**	**+1.0**
	2.5nm,0.7s,baz=55,slow=10,SNR=4.1								
STKA				LR			LR	07 00 54.3	
	comp=Z,120nm,18.1s,baz=29,slow=36								
H11S2	**WAKE ISLAND Hy**	**29.16**	**9**	T			T	07 20 38.6	
	baz=188,slow=76,SNR=49								
H11S3	**WAKE ISLAND Hy**	**29.16**	**9**	T			T	07 20 23.3	
	baz=188,slow=76,SNR=29								
H11S1	**WAKE ISLAND Hy**	**29.18**	**9**	T			T	07 20 44.8	
	baz=188,slow=76,SNR=20								
GUMO	**Guam**	**29.46**	**324**	LR			LR	07 00 49.8	
	comp=Z,24nm,19.9s,baz=111,slow=35								
ASAR	**Alice Springs**	**29.95**	**240**	P			**P**	**06 49 50.7**	**-1.0**
	0.5nm,0.7s,baz=67,slow=9.4,SNR=5.3								
H11N1	**WAKE ISLAND Hy**	**30.39**	**9**	T			T	07 22 10.6	
	baz=188,slow=76,SNR=15								
H11N3	**WAKE ISLAND Hy**	**30.40**	**9**	T			T	07 22 11.3	
	baz=188,slow=76,SNR=17								
H11N2	**WAKE ISLAND Hy**	**30.41**	**9**	T			T	07 22 12.0	
	baz=188,slow=76,SNR=15								
SONM	**Songino Array**	**76.19**	**325**	P			**P**	**06 55 30.9**	**-0.1**
	0.9nm,0.7s,baz=141,slow=5.0,SNR=5.7								
ILAR	**Eielson Array**	**84.16**	**20**	P			**P**	**06 56 13.3**	**0.0**
	0.5nm,1.1s,baz=212,slow=3.2,SNR=3.1								

*IDC **21** 06:43:59.0±1.1,16.88N×147.38E,h0km,mb3.7/7, mb1 3.9/8,mb1mx3.6/49,mbtmp3.7/8,ML3.7/1,Error ellipse: s-maj=41.2km s-min=21.3km az=103.0*
*ISCJB **21** 06:44:02.6±1.1,16.8N±0.1×147.4E±0.2,h41km,mb3.7/7, Error ellipse: s-maj=38.4km s-min=9.1km az=25.5*

ISC 21 06:44:04.6±1.0,16.8N±0.1×147.4E±0.2,h41km,n9, σ0.994/10,mb3.5/7,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**4.01**	**217**	Pn			**Pn**	**06 45 04.1**	**+0.5**
	5.0nm,0.3s,baz=198,slow=20,SNR=3.3								
GUMO				Sn			**Sn**	**06 45 48.7**	**-0.6**
	5.7nm,0.3s,baz=270,slow=20,SNR=2.9								
MJAR	**Matsushiro Arr**	**21.24**	**339**	P			**P**	**06 48 47.2**	**0.0**
	0.9nm,0.4s,baz=160,slow=10,SNR=3.2								
PETK	**Petropavlovsk-**	**37.10**	**10**	P			**P**	**06 51 10.9**	**-0.1**
	1.1nm,0.3s,baz=222,slow=8.1,SNR=4.0								
WRA	**Warramunga Arr**	**38.71**	**200**	P			**P**	**06 51 24.6**	**-0.2**
	0.5nm,0.6s,baz=21,slow=8.8,SNR=5.4								
MKAR	**Makanchi Array**	**60.89**	**315**	P			**P**	**06 54 14.5**	**+1.3**
	0.2nm,0.5s,baz=104,slow=6.1,SNR=2.4								
ILAR	**Eielson Array**	**64.63**	**26**	P			**P**	**06 54 37.7**	**0.0**
	0.2nm,0.5s,baz=258,slow=6.1,SNR=4.3								
ARCES	**ARCESS Array B**	**84.74**	**343**	P			**P**	**06 56 33.1**	**-1.0**
	0.7nm,0.7s,baz=69,slow=6.2,SNR=3.1								
FINES	**FINESS Array B**	**89.23**	**336**	P			**P**	**06 56 54.6**	**-1.4**
	0.7nm,0.6s,baz=48,slow=2.1,SNR=4.4								
LPAZ	**La Paz**	**146.01**	**94**	PKPbc			**PKPab**	**07 03 43.2**	**+0.9**
	0.4nm,0.5s,baz=304,slow=7.3,SNR=5.6								

*IDC **21** 06:47:60.0±0.4,0.20N×96.90E,h0km,mb4.5/30, mb1 4.6/32,mb1mx4.5/49,mbtmp4.5/32,ML4.6/2,MS3.7/27, Ms1 3.7/27,ms1mx3.5/55,Error ellipse: s-maj=15.5km s-min=10.2km az=49.0*
*ISCJB **21** 06:48:02.1±0.2,0.23N±0.03×97.04E±0.03,h22km, mb4.9/90,MS3.9/38,Error ellipse: s-maj=5.0km s-min=3.1km az=150.1*
*DJA **21** 06:48:02.3±0.8,0.7N±4.4×9.7E±.7,h59km±33km,M5.2/17, mb5.4/10,mB5.6/6,MLv5.1/17,Mw(mB)5.1/6*
*NEIC **21** 06:48:04.0±2.2,0.25N×96.99E,h26km±15km,mb5.1/23, Error ellipse: s-maj=9.2km s-min=4.2km az=57.0*
*GCMT **21** 06:48:04.0±0.4,0.12N×96.93E,h19km±1km,MW4.8/60, Moment Tensor Solution. s22,c26; s60,c82; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-1.61±.15; Mθθ1.26±.09; Mφφ0.34±.11; Mrθ0.66±.19; Mrφ-1.18±.06; Mθφ0.45±.22; Best double couple: M0 2.04200×10^16 NP1:φs281.00000°,δ55.00000°,λ-122.00000°. NP2: φs148.00000°,δ46.00000°,λ-53.00000°. Principal axes: T 2.0910, Plg5.0000°, Azm33.0000°; N -0.1060, Plg26.0000°, Azm301.0000°; P -1.9920, Plg64.0000°, Azm133.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **21** 06:48:04.0±1.7,0.20N×96.90E,h33km,mb5.3/38 Error ellipse: s-maj=9.4km s-min=5.3km az=109.3*
*KLM **21** 06:48:05.0,0.32N×97.00E,h32km,mb5.1,MS5.6*
*BJI **21** 06:48:07.4,0.45N×97.30E,h38km,mb4.8/51,mB4.9/34, Ms4.5/31,Ms7 4.2/31*

ISC 21 06:48:03.7±0.3,0.20N±0.04×96.91E±0.06,h22km,n339, σ1.935/291,mb4.9/95,MS3.8/39,8C-36D,Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.29**	**31**	P			**Pn**	**06 48 25.0**	**-1.4**
GSI	**Gunungsitoli**	**1.29**	**31**	*eP*			**Pn**	**06 48 25.0**	**-1.4**
MNSI	**Mandailing Nat**	**2.74**	**77**	P			**Pn**	**06 48 44.8**	**-1.5**
TPTI		**3.06**	**5**	P			**Pn**	**06 48 48.3**	**-2.4**
PSI	**Prapat**	**3.28**	**38**	Pn			**Pn**	**06 48 51.4**	**-2.5**
	16nm,0.3s,baz=241,slow=5.5,SNR=54								
PSI						LR	LR	06 49 52.3	
	comp=Z,1μm,21.2s,baz=282,slow=35								
PSI	**Prapat**	**3.28**	**38**	P			**Pn**	**06 48 51.4**	**-2.5**
PSI						pmax	pmax		
	comp=Z,16nm,0.3s								
PSI						MLR	MLR		
	comp=Z,1μm,21.2s								
KCSI	**Kotacane, Aceh**	**3.42**	**15**	P			**Pn**	**06 48 54.3**	**-1.4**
PDSI	**Padang**	**3.72**	**107**	P			**Pn**	**06 48 58.9**	**-1.0**
BKNI	**Bangkinang**	**4.14**	**88**	P			**Pn**	**06 49 04.7**	**-0.9**
BKNI	**Bangkinang**	**4.14**	**88**	*eP*			**Pn**	**06 49 04.9**	**-0.7**
PPSI	**Pulau Pagai**	**4.27**	**133**	P			**Pn**	**06 49 06.2**	**-1.2**
SDSI	**Sungai Dareh**	**4.66**	**104**	P			**Pn**	**06 49 12.4**	**-0.3**
LHMI	**Lhok Sumawe**	**5.00**	**0**	P			**Pn**	**06 49 15.1**	**-2.3**
LHMI	**Lhok Sumawe**	**5.00**	**0**	*eP*			**Pn**	**06 49 17.1**	**-0.3**
IPM	**Ipoh**	**5.92**	**44**	⇑	P		**Pn**	**06 49 29.6**	**-0.5**
IPM	**Ipoh**	**5.92**	**44**	*eP*			**Pn**	**06 49 29.2**	**-0.9**
MASI	**Maura Aman, Be**	**6.28**	**122**	P			**Pn**	**06 49 33.3**	**-1.8**
	comp=Z,284nm,1.2s,comp=Z,6μm								
KULM	**Kulim**	**6.29**	**36**	⇓	P		**Pn**	**06 49 33.6**	**-1.6**
KULM	**Kulim**	**6.29**	**36**	*eP*			**Pn**	**06 49 33.4**	**-1.8**
KGM	**Kluang**	**6.66**	**74**	⇓	P		**Pn**	**06 49 39.6**	**-0.7**
KSI	**Kapahiang**	**6.85**	**124**	P			**Pn**	**06 49 41.7**	**-1.2**
	comp=Z,462nm,0.7s,comp=Z,5μmcomp=Z,2.4nm								
MYKOM	**Kota Tinggi**	**7.12**	**77**	*eP*			**Pn**	**06 49 44.6**	**-2.0**
CMBY	**CAMPBELL BAY**	**7.39**	**336**	*eP*			**Pn**	**06 49 48.0**	**-2.4**
CMBY						IAmb	IAmb	06 50 03.6	
	comp=Z,118nm,0.6s								
MNAI	**Manna**	**7.55**	**127**	P			**Pn**	**06 49 50.8**	**-1.7**
	comp=Z,691nm,0.9s,comp=Z,6μmcomp=Z,3.4nm								
MNAI	**Manna**	**7.55**	**127**	*eP*			**Pn**	**06 49 51.2**	**-1.3**
LHSI	**Lahat**	**7.73**	**121**	P			**Pn**	**06 49 53.9**	**-1.0**
	comp=Z,305nm,0.7s,comp=Z,3μmcomp=Z,0.8nm								
PKDT	**Phuket**	**7.78**	**11**	P			**Pn**	**06 49 53.7**	**-1.9**
	comp=Z,90nm,1.0s,comp=Z,8μmcomp=Z,0.6nm								
SKLT	**Songkhla**	**7.86**	**28**	P			**Pn**	**06 49 54.0**	**-2.7**
	comp=Z,87nm,0.9s,comp=Z,1μm								
KTGM	**Kuala Trenggan**	**8.04**	**51**	⇓	P		**Pn**	**06 49 58.1**	**-1.2**
TRTT	**Trang**	**8.08**	**20**	P			**Pn**	**06 49 56.9**	**-2.9**
	comp=Z,110nm,1.0s								
LWLI	**Liwa**	**8.82**	**126**	P			**Pn**	**06 50 09.3**	**-0.8**
	comp=Z,289nm,0.7s								
SURT	**Suratani**	**8.91**	**12**	P			**Pn**	**06 50 08.4**	**-2.7**
	comp=Z,20nm,0.7s,comp=Z,0.1nm								
SURA	**Surathani**	**9

comp=Z,590nm,17.6s
PKIN Phulchoki 29.38 339 *e*P **P** **06 54 09.5 +3.8**
DMN Daman 29.52 338 *e*P **P** **06 54 10.5 +3.6**
comp=Z,21nm,0.5s
GUN Gumba 29.52 340 *e*P **P** **06 54 09.3 +2.3**
comp=Z,69nm,0.7s
KKN Kakani 29.62 339 *e*P **P** **06 54 10.6 +2.9**
comp=Z,31nm,0.7s
LSA Lhasa 29.85 350 P P 06 54 18.1 +8.0
LSA pmax pmax
comp=Z,16nm,0.8s
LSA Lhasa 29.85 350 *e*P **P** **06 54 09.1 -1.0**
LSA pmax pmax
comp=Z,35nm,0.8s
LSA Lhasa 29.85 350 *e*P **P** **06 54 09.1 -1.0**
comp=Z,36nm,0.8s
GKN Gorkha 30.05 338 *e*P **P** **06 54 13.4 +1.9**
KOLN Koldanda 30.25 336 *e*P **P** **06 54 14.8 +1.5**
MBWA Marble Bar 30.79 135 *e*P **P** **06 54 17.9 0.0**
comp=Z,20nm,1.1s
PYUN Piuthan 30.79 335 *e*P **P** **06 54 19.3 +1.2**
comp=Z,44nm,0.7s
CD2 Chengdu 31.23 11 P **P** **06 54 21.8 0.0**
CD2 pP sP 06 54 31.0 -0.2
CD2 sP pP 06 54 35.0 +6.6
CD2 S **S** **06 59 27.1 0.0**
CD2 sS sS 06 59 42.8 +4.7
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.0s
CD2 LR LR
comp=Z,450nm,14.9s
CD2 LR LR
comp=Z,690nm,20.4s
CD2 LR LR
comp=Z,390nm,14.4s
ENH Enshi 32.22 21 *e*P **P** **06 54 28.4 -2.0**
comp=Z,32nm,0.8s
YULB Yu-li 33.06 44 *e*P **P** **06 54 36.4 -1.5**
comp=Z,15nm,1.1s
SSLB Suanglung 33.08 43 *e*P **P** **06 54 35.8 -2.3**
comp=Z,21nm,0.9s
FITZ Fitzroy Crossi 33.60 124 P **P** **06 54 42.0 -0.6**
baz=33,SNR=29
FITZ Fitzroy Crossi 33.60 124 *e*P **P** **06 54 41.4 -1.2**
comp=Z,29nm,0.8s
MEEK Meekatharra 33.89 144 P **P** **06 54 46.4 +1.3**
baz=33,SNR=3.9
XAN Xi'an 35.50 17 P **P** **06 54 57.6 -1.4**
XAN pP pP 06 55 06.1 +0.4
XAN sP sP 06 55 10.3 +1.9
XAN S S 07 00 20.1 -13
XAN pmax pmax
comp=Z,12nm,1.0s
XAN pmax pmax
comp=Z,81nm,5.0s
XAN LR LR
comp=Z,290nm,13.2s
XAN LR LR
comp=Z,290nm,15.2s
XAN LR LR
comp=Z,300nm,13.2s
LZH Lanzhou 36.29 10 *e*P **P** **06 55 05.5 -0.3**
LZH pP sP 06 55 15.3 0.0
LZH sP pP 06 55 19.3 +6.8
LZH PP **PP** **06 56 29.8 +1.2**
LZH pmax pmax
comp=Z,24nm,1.2s
LZH pmax pmax
comp=Z,97nm,5.0s
LZH LR LR
comp=Z,370nm,12.9s
LZH LR LR
comp=Z,370nm,13.2s
LZH LR LR
comp=Z,430nm,16.7s
MTN Manton Dam 36.33 112 P **P** **06 55 03.5 -2.8**
baz=35,SNR=6.0
KLBR Kellerberrin 37.28 150 P **P** **06 55 15.5 +1.4**
baz=37,SNR=6.3
DHRM DHARAMSHALA 37.35 331 *e*P **P** **06 55 14.3 -0.7**
DHRM IAmb IAmb 06 55 19.6
comp=Z,24nm,0.2s
THN Thein Dam 37.79 330 *e*P P 06 55 28.0 +10
NWAO Narrogin (SRO) 38.11 152 LR LR 07 09 04.5
comp=Z,136nm,21.4s,slow=33
H01W3 Cape Leeuwin H 38.44 157 T T 07 36 19.6
baz=333,slow=76,SNR=45
H01W2 Cape Leeuwin H 38.45 157 T T 07 36 20.6
baz=333,slow=76,SNR=39
H01W1 Cape Leeuwin H 38.45 157 T T 07 36 14.1
baz=333,slow=76,SNR=62
GTA Gaotai 39.12 4 *e*P **P** **06 55 30.0 +0.3**
GTA pP sP 06 55 41.4 +2.3
GTA sP pP 06 55 46.3 +10
GTA PcP **PcP** **06 57 39.3 +0.1**
GTA S **S** **07 01 27.4 -0.9**
GTA sS sS 07 01 47.1 +7.6
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,77nm,6.2s
GTA LR LR
comp=Z,150nm,18.5s
GTA LR LR
comp=Z,170nm,23.3s
GTA LR LR
comp=Z,160nm,19.5s
KMBL Kambalda 39.32 145 P **P** **06 55 32.7 +1.4**
baz=39,SNR=13
WRKA Warakurna 39.38 132 P **P** **06 55 32.6 +0.6**
baz=39,SNR=24
WRA Warramunga Arr 41.77 121 P **P** **06 55 51.0 -0.7**
comp=Z,46nm,0.7s,baz=301,slow=9.0,SNR=238
WRA LR LR 07 15 12.7
comp=Z,63nm,19.5s,baz=275,slow=39
WRA Warramunga Arr 41.77 121 P **P** **06 55 51.1 -0.7**
WRA pmax pmax
comp=Z,37nm,0.8s
WRA MLR MLR
comp=Z,63nm,19.5s
WRAB Tennant Creek 41.77 121 *e*P **P** **06 55 51.6 -0.2**
WRAB pmax pmax
comp=Z,50nm,0.7s
WRAB Tennant Creek 41.77 121 *e*P **P** **06 55 51.6 -0.2**
comp=Z,50nm,0.7s
WB2 Warramunga Arr 41.78 121 *e*P **P** **06 55 51.2 -0.6**
HHC Hu-ho-hao-te 42.60 16 *e*P **P** **06 55 59.8 +1.5**
HHC sP sP 06 56 18.6 +11
HHC PP **PP** **06 57 43.4 +6.0**
HHC S **S** **07 02 22.8 +2.7**
HHC pmax pmax
comp=Z,16nm,1.1s
HHC pmax pmax
comp=Z,120nm,4.5s
HHC LR LR
comp=Z,170nm,13.1s
HHC LR LR
comp=Z,240nm,14.7s
HHC LR LR
comp=Z,240nm,13.6s
FORT Forrest 42.71 139 P **P** **06 56 00.5 +1.3**
baz=42,SNR=17
FORT Forrest 42.71 139 *e*P **P** **06 56 00.6 +1.3**
comp=Z,387nm,0.8s
ASAR Alice Springs 43.04 126 P **P** **06 56 02.0 -0.1**
comp=Z,9.7nm,0.8s,baz=298,slow=8.0,SNR=75
ASAR S **S** **07 02 28.8 +1.9**
comp=Z,0.6nm,0.9s,baz=292,slow=14,SNR=5.7
ASAR LR LR 07 14 08.2
comp=Z,105nm,21.9s,baz=305,slow=36
AS31 Alice Springs 43.04 126 *e*P **P** **06 56 02.1 0.0**
comp=Z,6.9nm,1.3s
AS01 Alice Springs 43.07 126 *e*P **P** **06 56 01.8 -0.6**
BJT Baijiatuan 43.35 22 *e*P **P** **06 56 04.6 +0.3**
BJT pmax pmax
comp=Z,7.0nm,0.4s
BJT Baijiatuan 43.35 22 *e*P **P** **06 56 04.6 +0.3**
comp=Z,6.6nm,0.4s
BJI Beijing 43.38 22 P **P** **06 56 05.3 +0.8**
BJI pmax pmax
comp=Z,19nm,1.0s
KSH Kashi 43.56 336 *e*P **P** **06 56 08.1 +1.9**
KSH *ep*P sP 06 56 17.3 +1.6
KSH *es*P pP 06 56 21.8 +8.8
KSH *e*PP **PcP** **06 57 51.0 -2.7**
KSH PcS **PcS** **07 01 46.9 +0.4**
KSH S **S** **07 02 34.3 0.0**
KSH pmax pmax
comp=Z,6.0nm,0.6s
KSH LR LR
comp=Z,270nm,10.9s
KSH LR LR
comp=Z,150nm,5.1s
KSH LR LR
comp=Z,120nm,6.6s
WSAR Wadi Sarin 43.66 304 LR LR 07 12 40.0
comp=Z,66nm,18.9s,slow=34
WMQ Urumqi 44.21 350 *e*P **P** **06 56 11.8 +0.6**
WMQ pP sP 06 56 24.3 +3.6
WMQ S **S** **07 02 42.8 -0.7**
WMQ pmax pmax
comp=Z,37nm,1.2s
WMQ pmax pmax
comp=Z,180nm,4.5s
WMQ LR LR
comp=Z,230nm,20.4s
WMQ LR LR
comp=Z,250nm,26.6s
WMQ LR LR
comp=Z,270nm,22.2s
DL2 Dalian 44.70 28 P P 06 56 27.8 +13
DL2 pmax pmax
comp=Z,49nm,0.8s
PDGK Podgornoye 45.69 342 P P 06 56 34.6 +12
PDGK pmax pmax
comp=Z,27nm,0.8s
QIS Mount Isa 46.57 119 P **P** **06 56 29.9 -0.3**
baz=46,SNR=11
TKM2 Tokmak 2 46.63 338 P P 06 56 42.2 +12
TKM2 pmax pmax
comp=Z,20nm,0.8s
AAK Ala-Archa 46.81 337 LR LR 07 18 06.7
comp=Z,79nm,19.9s,baz=177,slow=39
AAK Ala-Archa 46.81 337‖ *e*P P 06 56 45.1 +13
AAK pmax pmax
comp=Z,81nm,1.8s
AAK Ala-Archa 46.81 337 *e*P **P** **06 56 31.8 -0.1**
comp=Z,8.7nm,0.6s
KSAR Wonju Array Be 46.81 34 P **P** **06 56 31.8 0.0**
KSAR Wonju Array Be 46.81 34 P **P** **06 56 31.8 0.0**
KSRS Korea Array 46.84 34 P **P** **06 56 31.8 -0.3**
comp=Z,9.6nm,0.8s,baz=222,slow=9.1,SNR=24
FRU Bishkek 46.93 338 *e*P P 06 56 42.0 +9.3
MNAS Manas 47.48 336 P P 06 56 48.9 +12
MNAS pmax pmax
comp=Z,23nm,0.7s
MK01 Makanchi Array 48.12 347 *e*P **P** **06 56 42.2 +0.3**
MK31 Makanchi Array 48.14 347 *e*P **P** **06 56 43.2 +1.1**
MK31 Makanchi Array 48.14 347 *e*P **P** **06 56 43.2 +1.1**
MKAR Makanchi Array 48.14 347 P **P** **06 56 42.5 +0.4**
comp=Z,6.1nm,0.5s,baz=160,slow=7.8,SNR=25
MKAR Makanchi Array 48.14 347 *e*P **P** **06 56 43.2 +1.1**
MKAR Makanchi Array 48.14 347 *e*P **P** **06 56 43.2 +1.1**
SONM Songino Array 48.16 9 P **P** **06 56 42.3 0.0**
comp=Z,2.1nm,0.7s,baz=187,slow=7.9,SNR=8.1
SONM PcP **PcP** **06 58 09.1 -0.5**
comp=Z,1.9nm,0.7s,baz=221,slow=1.7,SNR=2.6
SONM LR LR 07 18 20.7
comp=Z,142nm,22.0s,baz=182,slow=38
SONA1 Songino Array 48.18 9 *e*P **P** **06 56 42.8 +0.3**
MAKZ Makanchi 48.23 346 *e*P **P** **06 56 43.5 +0.8**
MAKZ pmax pmax
comp=Z,20nm,0.7s
MAKZ Makanchi 48.23 346 *e*P **P** **06 56 43.5 +0.8**
comp=Z,20nm,0.7s
KK31 Karatay Array 48.83 334 *i* P P 06 56 59.0 +12
KK31 pmax pmax
comp=Z,27nm,1.0s
KKAR Karatay Array 48.83 334 *e*P **P** **06 56 48.8 +1.4**
KKAR Karatay Array 48.83 334 *e*P **P** **06 56 48.8 +1.4**
BBOO Buckleboo 49.37 136 P **P** **06 56 52.0 +0.3**
baz=49,SNR=7.3
MTSU Mount Surprise 50.02 114 P **P** **06 56 56.9 -0.1**
baz=49,SNR=9.0
ZAK Zakamensk 50.30 5 *e*P **P** **06 57 02.8 +4.2**
ZAK pmax pmax
comp=Z,2.0nm,0.9s
CN2 Changchun 50.33 27 *e*P **P** **06 57 02.0 +3.2**
PMG Port Moresby 50.92 102‖ *e*P P 06 57 10.6 +6.8
TLY Talaya 51.62 5 *e*P P 06 57 20.8 +12
TLY pmax pmax
comp=Z,14nm,0.8s
TLY MLR MLR
comp=Z,95nm,14.0s
HTT Hallett 51.73 135 P **P** **06 57 10.5 +0.8**
baz=51,SNR=7.0
GEYT Alibeck 51.80 321 P **P** **06 57 10.5 +0.4**
comp=Z,1.3nm,0.4s,baz=134,slow=8.3,SNR=3.6
GEYT LR LR 07 21 46.5
comp=Z,54nm,19.3s,baz=220,slow=39
CTA Charters Tower 52.33 116 P **P** **06 57 14.3 0.0**
comp=Z,16nm,0.9s,baz=292,slow=9.4,SNR=19
CTAO Charters Tower 52.33 116 *e*P **P** **06 57 14.3 0.0**
CTAO pmax pmax
comp=Z,19nm,0.9s
CTAO Charters Tower 52.33 116 *e*P **P** **06 57 14.3 0.0**
comp=Z,19nm,0.9s
OTUK Ortayu 52.38 339 P P 06 57 25.7 +12
OTUK pmax pmax
comp=Z,44nm,0.7s
MJAR Matsushiro Arr 52.63 42 P **P** **06 57 18.0 +1.8**
comp=Z,2.1nm,0.8s,baz=224,slow=5.1,SNR=4.9
MJAR LR LR 07 19 45.6
comp=Z,63nm,21.5s,baz=255,slow=36
MJAR Matsushiro Arr 52.63 42 P **P** **06 57 18.0 +1.8**
MJAR pmax pmax
comp=Z,2.0nm,0.8s
MJAR MLR MLR
comp=Z,63nm,21.5s
KURK Kurchatov 52.68 345 *c i* P P 06 57 28.2 +12
KURK pmax pmax
comp=Z,94nm,1.0s
KURK Kurchatov 52.68 345 *e*P **P** **06 57 17.0 +0.7**
comp=Z,31nm,1.0s
STKA Stephens Creek 52.91 131 P **P** **06 57 18.9 +0.5**
comp=Z,23nm,0.9s,baz=307,slow=6.5,SNR=29
STKA LR LR 07 22 18.0
comp=Z,73nm,20.0s,baz=229,slow=39
STKA Stephens Creek 52.91 131 P **P** **06 57 18.9 +0.5**
baz=52,SNR=23
STKA Stephens Creek 52.91 131 *e*P **P** **06 57 18.9 +0.5**
comp=Z,9.2nm,1.2s
USRK Ussuriysk Ar. 53.78 31 P **P** **06 57 24.4 -0.1**
comp=Z,5.8nm,0.8s,baz=222,slow=7.7,SNR=5.0
USRK LR LR 07 22 05.6
comp=Z,87nm,18.6s,baz=215,slow=38
ZALV Zalesovo Beam 54.50 351 P **P** **06 57 29.8 +0.3**
comp=Z,14nm,0.5s,baz=186,slow=7.0,SNR=24
ZALV LR LR 07 24 35.3
comp=Z,34nm,19.0s,baz=66,slow=40
NVS Novosibirsk 55.61 350 *e*P P 06 57 42.4 +4.8
NVS pmax pmax
comp=N,25nm,0.8s
NVS pmax pmax
comp=E,14nm,0.8s
NVS pmax pmax
comp=Z,34nm,0.8s
CMSA Cobar Meteorol 55.89 129 P **P** **06 57 41.1 +1.0**
baz=55,SNR=12
RMQ Roma 56.49 122 P **P** **06 57 45.4 +0.9**
baz=56,SNR=5.8
VOSK Vostochnaya 56.65 341 *e*P **P** **06 57 44.7 -0.4**
VOSK pmax pmax
comp=Z,20nm,0.8s
VOSK Vostochnaya 56.65 341 *e*P **P** **06 57 44.7 -0.4**
comp=Z,20nm,0.8s
BRVK Borovoye 57.16 341 *d i* P P 06 57 59.8 +11
BRVK pmax pmax
comp=Z,27nm,0.9s
BRVK Borovoye 57.16 341 *e*P **P** **06 57 47.7 -1.0**
comp=Z,12nm,0.8s
KLR Kul'dur 57.28 26 LR LR 07 24 24.9
comp=Z,106nm,18.4s,slow=38
EIDS Eidsvold 58.13 120 P **P** **06 57 56.7 +0.7**
baz=57,SNR=6.3
EIDS Eidsvold 58.13 120 *e*P **P** **06 57 56.8 +0.7**
comp=Z,18nm,0.8s
AB31 Akbulak array 58.26 332 P P 06 58 06.9 +10
AB31 pmax pmax
comp=Z,24nm,0.7s
ABKAR Akbulak array 58.26 332 *e*P **P** **06 57 56.2 -0.3**
BOD Bodaibo 59.05 11‖ *i*P **P** **06 58 01.6 -0.2**
BOD pmax pmax
comp=Z,25nm,0.9s
KMBO Kilima Mbogo 59.66 269 P **P** **06 58 06.3 -0.9**
comp=Z,2.0nm,0.7s,baz=44,slow=8.6,SNR=4.7
KMBO LR LR 07 21 01.7
comp=Z,54nm,19.0s,baz=99,slow=33
CLNS Chul'man 60.78 17 *e*P P 06 58 22.8 +9.0
CLNS pmax pmax
comp=Z,8.0nm,0.8s
CLNS pmax pmax
comp=N,14nm,0.8s
YSS Yuzh-Sakhalins 61.34 34 *e*P P 06 58 29.6 +12
YSS pmax pmax
comp=Z,11nm,0.9s
GNI Garni 61.81 317‖ *e*P P 06 58 33.7 +12
GNI pmax pmax
comp=Z,36nm,1.0s
HNR Honiara 63.47 101 *e*P **P** **06 58 32.7 +0.1**
HNR Honiara 63.47 101 *e*P **P** **06 58 32.7 +0.1**
SVE Sverdlovsk 63.51 339 *e*P P 06 58 43.5 +11
SVE pmax pmax
comp=Z,35nm,1.0s
ZEI Tsey 63.56 319 *e*P **P** **06 58 32.2 -0.8**
ZEI pmax pmax
comp=Z,22nm,0.4s
NEY Neytrino 64.54 319‖ *e*P P 06 58 52.1 +13
NEY pmax pmax
comp=Z,1.0nm,0.7s
KBZ Khabaz 64.64 320 P **P** **06 58 39.8 +0.1**
comp=Z,2.2nm,0.7s,baz=142,slow=5.5,SNR=7.3
KBZ LR LR 07 29 41.4
comp=Z,19nm,20.1s,baz=50,slow=39
KBZ Khabaz 64.64 320 P **P** **06 58 39.8 +0.1**
KBZ pmax pmax
comp=Z,4.0nm,0.8s
KBZ MLR MLR
comp=Z,19nm,20.1s
KIV Kislovodsk 64.88 320 *ce*P P 06 58 52.5 +11
KIV *e*S S 07 07 54.0 +32
KIV *e*SS **SS** **07 11 29.2 -4.3**
KIV pmax pmax
comp=Z,15nm,1.0s
KIV MLR MLR
comp=Z,25nm,17.0s
KIV Kislovodsk 64.88 320 *e*P **P** **06 58 42.1 +0.7**
YAK Yakutsk 66.46 16 *e*P P 06 59 01.9 +11
YAK *e**PP sP 06 59 09.2 +8.3
YAK *e**SS S 07 08 13.2 +33
YAK *e* 07 08 44.5
YAK *e*SS **SS** **07 11 58.4 +1.2**
YAK pmax pmax
comp=Z,70nm,1.0s
YAK pmax pmax
comp=E,10.0nm,1.2s
YAK pmax pmax
comp=N,14nm,1.0s
YAK pmax pmax
comp=Z,34nm,0.6s
YAK pmax pmax
comp=E,12nm,0.7s
YAK pmax pmax
comp=N,6.0nm,0.6s
YAK Yakutsk 66.46 16 *e*P **P** **06 58 50.5 -0.7**
comp=N,71nm,0.9s
SOC Sochi 66.67 318 *e*P P 06 59 02.2 +9.4
SOC *e* 07 01 25.6
SOC *e*PPP PPP 07 03 00.7
SOC pmax pmax
comp=Z,28nm,0.8s
SOC MLR MLR
comp=Z,201nm,17.0s
SOKR Solikamsk 66.93 339 *c i* P P 06 59 03.5 +9.4
SOKR pmax pmax
comp=Z,22nm,0.8s
VRH Novokhopyorsk 68.79 326 *e*P P 06 59 16.5 +10
VRH pmax pmax
comp=Z,30nm,0.6s
NRIK Noril'sk 69.31 356 P **P** **06 59 08.2 -0.8**
comp=Z,1.8nm,0.4s,baz=122,slow=3.5,SNR=4.0
NRIK LR LR 07 32 49.1
comp=Z,56nm,21.4s,baz=134,slow=39
BR131 Keskin Array S 69.57 313 *e*P **P** **06 59 11.1 -0.3**
BRTR Keskin Array B 69.57 313 P **P** **06 59 10.5 -0.8**
comp=Z,2.1nm,0.8s,baz=120,slow=7.3,SNR=10
BRTR Keskin Array B 69.57 313 *ce*P P 06 59 22.6 +11
BRTR pmax pmax
comp=Z,8.0nm,0.7s
VSR Storozhevoye 70.22 326 *e*P P 06 59 25.0 +10
VSR pmax pmax
comp=Z,10.0nm,0.7s
SIM Simferopol' 70.91 318 *e*P P 06 59 31.1 +12
SIM pmax pmax
comp=Z,30nm,0.8s
MAW Mawson 71.67 193 P **P** **06 59 24.3 +0.9**
comp=Z,5.1nm,0.9s,baz=37,slow=5.8,SNR=13
MAW LR LR 07 22 27.8
comp=Z,70nm,21.7s,baz=54,slow=29
MAW Mawson 71.67 193 *e*P **P** **06 59 25.4 +2.0**
PETK Petropavlovsk- 72.73 33 LR LR 07 34 20.0
comp=Z,32nm,18.1s,baz=245,slow=38
LBTB Lobatse 73.18 244 LR LR 07 27 32.7
comp=Z,25nm,19.1s,baz=102,slow=32
OBN Obninsk 73.32 329 *ce*P P 06 59 44.5 +11
OBN *e* 07 02 26.3
OBN *e*S **SKSac** **07 09 37.4 -0.8**
OBN pmax pmax
comp=Z,44nm,1.7s
BOSA Boshof 74.03 240 P **P** **06 59 38.3 -0.1**
comp=Z,2.8nm,1.0s,baz=70,slow=4.5,SNR=3.9
BOSA LR LR 07 24 07.2
comp=Z,48nm,21.2s,baz=47,slow=29
TIXI Tiksi 74.22 10 P **P** **06 59 36.4 -2.0**
comp=Z,4.5nm,0.6s,baz=131,slow=5.6,SNR=3.3
TIXI Tiksi 74.22 10 *d i* P P 06 59 49.4 +11
TIXI pmax pmax
comp=Z,65nm,1.7s
TIXI Tiksi 74.22 10 *e*P **P** **06 59 37.4 -1.0**
KLMR Klimovskoe 74.53 335 *e*P P 06 59 49.6 +9.2
KLMR pmax pmax
comp=Z,12nm,1.0s
SEY Seymchan 74.80 23 P **P** **06 59 41.3 -0.6**
comp=Z,1.3nm,0.6s,baz=221,slow=8.4,SNR=4.8
SEY Seymchan 74.80 23 PN **P** **06 59 41.3 -0.6**
SEY pmax pmax
comp=Z,1.0nm,0.6s
AKASG Malin Array Be 75.87 323 P **P** **06 59 47.7 -0.7**
comp=Z,3.4nm,0.6s,baz=85,slow=4.8,SNR=13
AKASG LR LR 07 38 02.7
comp=Z,34nm,18.2s,baz=50,slow=40
KIEV Kiev 75.88 323 *c i* P P 06 59 59.2 +11
KIEV pmax pmax
comp=Z,11nm,0.9s
KIEV Kiev 75.88 323 *e*P **P** **06 59 46.9 -1.5**
VRI Vrincioaia 76.15 317‖ *i*P **P** **06 59 51.4 +1.3**
VRI Vrincioaia 76.15 317‖ P **P** **06 59 51.4 +1.3**
PLOR Plostina 76.20 317‖ *i*P P 06 59 55.3 +4.9
PLOR Plostina 76.20 317‖ P P 06 59 55.3 +4.9
MLR Muntele Rosu 76.59 317 P **P** **06 59 52.8 0.0**
comp=Z,1.7nm,1.0s,baz=124,slow=7.2,SNR=4.6
MLR Muntele Rosu 76.59 317‖ *i*P **P** **06 59 53.3 +0.5**
MLR Muntele Rosu 76.59 317‖ P **P** **06 59 53.3 +0.5**
BURAR Bucovina Array 77.58 319‖ *i*P **P** **06 59 59.2 +0.9**
BURAR Bucovina Array 77.58 319‖ P **P** **06 59 59.2 +0.9**
VTS Vitosha 77.90 314‖ *i*P **P** **06 59 59.8 -0.4**
VTS Vitosha 77.90 314‖ P **P** **06 59 59.8 -0.4**
RPZ Rata Peaks 78.71 135 LR LR 07 35 52.1
comp=Z,73nm,19.3s,baz=238,slow=36
SYO Syowa Base 78.96 198‖ *e*P **P** **07 00 05.6 +0.3**
SIRR Siria 79.68 317‖ *i*P **P** **07 00 10.1 +0.3**
APA Apatity 79.96 340‖ *i*P P 07 00 16.5 +5.7
APA *i* 07 00 28.0
APA *i* 07 03 19.5
APA pmax pmax
comp=Z,4.0nm,0.9s
APA MLR MLR
comp=Z,300nm,13.0s
FINES FINESS Array B 80.75 333 P **P** **07 00 14.9 -0.3**
comp=Z,2.5nm,0.8s,baz=86,slow=3.9,SNR=6.3
FINES FINESS Array B 80.75 333 *ce*P P 07 00 26.6 +11
FINES pmax pmax
comp=Z,4.0nm,0.6s
KLNR Kaliningrad 82.15 325‖ *e*P P 07 00 34.1 +11
KLNR pmax pmax

	comp=Z,59nm,0.9s							
URZ	Urewera	82.42	129		LR	LR	07 39 21.0	
	comp=Z,59nm,19.7s,baz=312,slow=37							
MORC	Moravsky Berou	82.98	320	ǁ	*i*P	P	07 00 27.6	+0.4
MORC	Moravsky Berou	82.98	320	ǁ	P	P	07 00 27.6	+0.4
ARCES	ARCESS Array B	83.38	340		P	P	07 00 29.2	+0.4
	comp=Z,2.6nm,0.6s,baz=111,slow=3.8,SNR=18							
ARCES					LR	LR	07 41 16.2	
	comp=Z,53nm,19.2s,baz=102,slow=38							
DPC	Dobruska-Polom	83.83	321		*e*P	P	07 00 32.7	+1.1
DPC					*ep*P	pP	07 00 37.5	-1.4
DPC					*es*P	sP	07 00 44.0	+2.5
VNDA	Vanda	84.90	169		P	P	07 00 36.3	-0.1
	comp=Z,2.2nm,1.0s,baz=311,slow=4.0,SNR=6.5							
GERES	GERESS Array B	85.37	319		P	P	07 00 39.4	-0.1
	comp=Z,1.9nm,0.8s,baz=104,slow=4.3,SNR=9.7							
CLL	Collm	86.03	321		*e*P	P	07 00 54.0	+11
	comp=Z,8.0nm,1.1s							
CLL					*e*		07 01 01.0	
CLL	Collm	86.03	321		*e*P	P	07 00 54.0	+11
CLL					*e*		07 01 01.0	
CLL					pmax	pmax		
	comp=Z,8.0nm,1.1s							
HFS	Hagfors	86.44	330		P	P	07 00 44.2	-0.1
	comp=Z,9.1nm,1.1s,baz=188,slow=5.8,SNR=6.9							
NB2	NORSAR Subarra	87.73	331		P	P	07 00 50.2	-0.5
	comp=Z,7.9nm,0.9s,baz=93,slow=4.8							
NOA	NORSAR Array B	87.73	331		P	P	07 00 50.7	0.0
	comp=Z,2.8nm,0.9s,baz=94,slow=4.9,SNR=6.8							
DAVOX	Davos/Dischmat	87.82	317		P	P	07 00 50.9	-0.7
	comp=Z,2.3nm,0.5s,baz=105,slow=10,SNR=3.7							
DAVOX	Davos/Dischmat	87.82	317		P	P	07 00 51.0	-0.7
SPITS	Spitsbergen Ar	87.87	348		LR	LR	07 44 56.2	
	comp=Z,43nm,21.9s,baz=70,slow=39							
KEST	Kesra	87.90	306		P	P	07 00 52.9	+0.7
	comp=Z,4.4nm,0.8s,baz=15,slow=4.9,SNR=5.1							
KONO	Kongsberg	88.47	330	ǁ	*e*P	P	07 01 06.3	+12
KONO					pmax	pmax		
	comp=Z,109nm,1.2s							
NVL	N'lazarevskaya	88.55	199		*e*P	P	07 00 56.0	+1.7
QSPA	South Pole Qui	90.14	180		*e*P	P	07 01 02.6	+0.6
	comp=Z,35nm,1.0s							
TORD	Torodi Ar. Bea	95.03	283		P	P	07 01 26.1	+0.5
	comp=Z,0.6nm,0.8s,baz=92,slow=5.5,SNR=4.0							
ULM	Lac du Bonnet	128.57	10		PKP	PKPdf	07 07 07.8	-1.3
	comp=Z,2.2nm,0.5s,baz=349,slow=5.2,SNR=3.3							
PDAR	Pinedale Array	131.07	26		PKP	PKPdf	07 07 13.9	-0.5
	comp=Z,0.5nm,0.7s,baz=176,slow=2.6,SNR=4.4							
R11A	Troy Canyon, C	131.38	34		*e*PKPdf	PKPdf	07 07 15.3	+0.2
MNTX	Cornudas Mount	141.90	32		*e*PKPdf	PKPdf	07 07 33.8	-0.7
W37B	Quinton	143.01	17		P	PKPdf	07 07 32.6	-3.7
	baz=339							
X35A	Drake	143.21	19		P	PKPab	07 07 32.1	-0.3
	baz=336							
X36A	Centrahoma	143.25	18		P	PKPab	07 07 32.4	-0.1
	baz=337							
Y34A	Reagan Ranch,	143.34	21		P	PKPab	07 07 33.1	+0.2
	baz=335							
X37A	Clayton	143.54	17		P	PKPab	07 07 33.7	+0.1
	baz=339							
X38A	Whitesboro	143.62	16		P	PKPbc	07 07 34.8	0.0
	baz=340							
Y36A	Durant	143.89	19		P	PKPab	07 07 34.8	-0.3
	baz=337							
X39A	Fountain Ranch	143.97	16		P	PKPab	07 07 35.4	+0.1
	baz=341							
MRA	San Martin	144.00	205	ǁ	*e*P	PKPbc	07 07 36.7	+0.6
CPUP	Villa Florida	144.07	222		PKP	PKPbc	07 07 36.8	+0.4
	comp=Z,13nm,0.7s,baz=123,slow=2.9,SNR=35							
MIAR	Mount Ida	144.07	15		P	PKPab	07 07 35.6	0.0
	baz=342							
MIAR	Mount Ida	144.07	15		*e*PKIKP	PKPab	07 07 36.0	+0.3
MIAR	Mount Ida	144.07	15		*e*PKPdf	PKPab	07 07 36.0	+0.3
133A	Hamilton Ranch	144.12	23		P	PKPab	07 07 35.7	-0.3
	baz=332							
X40A	Basin Creek Fa	144.31	14		P	PKPab	07 07 36.1	-0.5
	baz=343							
TKL	Tuckaleechee C	144.32	1		PKP	PKPab	07 07 35.9	-0.7
	comp=Z,3.4nm,0.9s,baz=124,slow=7.9,SNR=4.8							
Y38A	Idabel	144.34	17		P	PKPab	07 07 36.0	-0.7
	baz=340							
X41A	Kaden, Bauxite	144.38	13		P	PKPab	07 07 36.2	-0.6
	baz=344							
TCA	Tanti	144.41	208	ǁ	*e*P	PKPab	07 07 37.0	-0.2
Z36A	Blue Ridge	144.42	19		P	PKPab	07 07 36.3	-0.8
	baz=337							
Y39A	Lockesburg	144.51	16		P	PKPab	07 07 37.0	-0.3
	baz=341							
AAGR	Agrelo	144.63	201	ǁ	*e*P	PKPdf	07 07 39.3	-0.1
233A	Rising Star	144.64	24		P	PKPab	07 07 37.6	-0.3
	baz=332							
Y40A	Okolona	144.65	15		P	PKPab	07 07 37.4	-0.4
	baz=342							
TXAR	Lajitas Array	144.67	32		PKP	PKPbc	07 07 38.4	+0.1
	comp=Z,5.1nm,0.8s,baz=251,slow=1.4,SNR=55							
ACAN	Cantantal	144.73	204	ǁ	*e*P	PKPbc	07 07 38.9	+0.5
KMSC	Kings Mountain	144.81	357		P	PKPab	07 07 37.5	-0.9
	baz=2.9							
KMSC	Kings Mountain	144.81	357		*e*PKPdf	PKPab	07 07 37.6	-0.8
ARCO	CERRO ARCO	144.89	201		*e*P	PKPab	07 07 38.5	-0.5
Z38A	Mt. Pleasant	144.90	17		P	PKPab	07 07 38.4	-0.4
	baz=339							
Y41A	Eaglette Beard	144.94	14		P	PKPab	07 07 38.7	-0.2
	baz=343							
234A	Clairette	144.96	23		P	PKPab	07 07 38.0	-1.0
	baz=333							
OXF	Oxford	144.97	9		*e*PKIKP	PKPab	07 07 38.1	-0.9
OXF	Oxford	144.97	9		*e*PKPdf	PKPab	07 07 38.1	-0.9
X45A	UM Field Stati	145.06	9		P	PKPbc	07 07 38.1	-1.2
	baz=349							
ASAL	Salagasta	145.08	201		*e*P	PKPdf	07 07 40.2	0.0
136A	Ennis	145.12	20		P	PKPbc	07 07 38.9	-0.7
	baz=336							
Y42A	Garnett, Star	145.18	13		P	PKPbc	07 07 39.3	-0.4
	baz=345							
333A	Richland Sprin	145.22	24		P	PKPbc	07 07 38.8	-1.1
	baz=331							
WHTX	Lake Whitney,	145.22	22		*e*PKPbc	PKPbc	07 07 39.3	-0.6
Y44A	Strider, Charl	145.37	10		P	PKPbc	07 07 39.7	-0.6
	baz=347							
Z41A	Richland Creek	145.49	14		P	PKPbc	07 07 40.4	-0.3
	baz=343							
334A	Lometa	145.51	23		P	PKPbc	07 07 40.0	-0.9
	baz=332							
Y45A	Yeager Farm, C	145.58	10		P	PKPdf	07 07 40.4	-0.4
	baz=348							
JCT	Junction City	145.60	26		P	PKPdf	07 07 40.6	-0.4
	baz=329							
JCT	Junction City	145.60	26		*e*PKP2	PKPdf	07 07 41.0	-0.1
JCT	Junction City	145.60	26		*e*PKPbc	PKPdf	07 07 41.0	-0.1
RTCV	Cerro Valdivia	145.63	202	ǁ	*e*P	PKPdf	07 07 40.7	-0.4
433A	Art	145.67	25		P	PKPdf	07 07 40.2	-1.0
	baz=331							
Y46A	Houston	145.67	9		P	PKPdf	07 07 40.0	-1.0
	baz=350							
Z42A	Norrel Spur, H	145.68	13		P	PKPdf	07 07 40.9	-0.2
	baz=344							
Y47A	UCPARC, Winfie	145.79	7		P	PKPdf	07 07 40.4	-0.8
	baz=351							
335A	Moody	145.87	22		P	PKPdf	07 07 41.0	-0.4
	baz=334							
434A	Burnet	145.96	24		P	PKPdf	07 07 41.4	-0.3
	baz=332							
RTLS	Leoncito	145.96	201	ǁ	*e*P	PKPab	07 07 43.3	+0.2
Z44A	Pea Ridge, Bel	146.00	11		P	PKPdf	07 07 42.0	+0.4
	baz=347							
RTLL	Cerro Villicun	146.08	203	ǁ	*e*P	PKPbc	07 07 42.6	-0.1
Z48A	Northport	146.34	7		P	PKPdf	07 07 42.0	-0.1
	baz=352							
Z47A	Carrollton	146.46	8		P	PKPdf	07 07 42.6	+0.3
	baz=351							
GOGA	Godfrey	146.57	1		*e*PKP2	PKPbc	07 07 43.7	-0.3
GOGA	Godfrey	146.57	1		*e*PKPbc	PKPbc	07 07 43.7	-0.3
241A	Mo Tay, Goldon	146.64	15		P	PKPbc	07 07 43.9	-0.4
	baz=342							
LRAL	Lakeview Retre	146.74	6		*e*PKPdf	PKPdf	07 07 42.8	-0.1
LRAL					*e*PKPbc	PKPbc	07 07 43.6	-0.9
633A	Saathoff Ranch	146.75	26		P	PKPbc	07 07 44.9	+0.2
	baz=330							
ACCO	Cerro Coronel	146.96	203	ǁ	*e*P	PKPbc	07 07 46.3	+0.7
245A	Little AP, Sta	147.31	11		P	PKPdf	07 07 45.1	+1.3
	baz=347							
ACDV	Cuesta del Vie	147.36	203		*e*P	PKPbc	07 07 46.1	-0.5
CYA	Choya	147.40	209	ǁ	*e*P	PKPbc	07 07 46.6	0.0
342A	Flagon Creek P	147.41	15		P	PKPbc	07 07 45.4	-1.0
	baz=343							
635A	Leesville	147.41	24		P	PKPbc	07 07 45.8	-0.7
	baz=332							
AROD	Rodeo	147.50	202		*e*P	PKPdf	07 07 45.5	+0.8
636A	Smothers Creek	147.62	23		P	PKPbc	07 07 47.9	+0.8
	baz=333							
AGUA	GUANDACOL	147.71	204		*e*P	PKPbc	07 07 48.1	+0.6
347A	Saraland	148.15	9		P	PKPbc	07 07 48.1	-0.3
	baz=350							
834A	Tilden	148.18	27		P	PKPbc	07 07 48.9	+0.2
	baz=330							
VCA	Vinchina	148.25	205		*e*P	PKPbc	07 07 50.3	+1.2
LPAZ	La Paz	158.24	222		PKP	PKPdf	07 08 00.8	-0.2
	comp=Z,1.1nm,0.8s,baz=165,slow=3.1,SNR=5.0							

KRSC ***21*** *06:57:25.7±0.8, 53.81N×160.61E, h113km±11km, ML4.4*
ISCJB ***21*** *06:57:26.3±0.3, 53.83N±0.03×160.49E±0.08, h124km±2km, mb3.8/14, Error ellipse: s-maj=8.4km s-min=2.8km az=29.8*
MOS ***21*** *06:57:26.2±0.6, 53.85N×160.46E, h129km, mb4.1/7, Error ellipse: s-maj=12.3km s-min=4.6km az=77.6*
IDC ***21*** *06:57:29.8±1.3, 53.90N×159.96E, h138km±11km, mb3.5/14, mb1 3.7/15, mb1mx3.5/55, mbtmp4.0/15, Error ellipse: s-maj=20.5km s-min=15.8km az=122.0*

ISC 21 06:57:26.8±0.7, 53.82N±0.03×160.55E±0.04, h116km±5km, n100, σ0s94/148, mb3.8/14, 3C, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KII	Karymskiy	0.69	289	P	Pn	06 57 45.9	+0.2
KII				S	Sn	06 57 59.0	-1.0
KII	Karymskiy	0.69	289	*e*P	Pn	06 57 45.9	+0.2
KII				*e*S	Sn	06 57 59.0	-1.0
SPN	Mys Shipunski	0.78	204	PN	Pn	06 57 46.9	+0.4
SPN				S	Sn	06 58 00.8	-0.4
SPN	Mys Shipunski	0.78	204	*i*P	Pn	06 57 46.9	+0.4
SPN				*i*S	Sn	06 58 00.8	-0.4
NLC	Nalytchevo	0.96	228	PN	Pn	06 57 48.6	+0.5
NLC				S	Sn	06 58 04.0	-0.2
NLC	Nalytchevo	0.96	228	*e*P	Pn	06 57 48.6	+0.5
NLC				*e*S	Sn	06 58 04.0	-0.2
MKZ	Mys Kozlova	1.02	43	PN	Pn	06 57 49.3	+0.7
MKZ				S	Sn	06 58 05.1	0.0
MKZ	Mys Kozlova	1.02	43	*e*P	Pn	06 57 49.3	+0.7
MKZ				*i*S	Sn	06 58 05.1	0.0
SDLR	Sedlovina	1.13	242	PN	Pn	06 57 50.7	+0.8
SDLR				S	Sn	06 58 07.7	+0.3
SDLR	Sedlovina	1.13	242	*e*P	Pn	06 57 50.7	+0.8
SDLR				*e*S	Sn	06 58 07.7	+0.3
SMAR	Somma	1.18	243	PN	Pn	06 57 51.4	+0.8
SMAR				S	Sn	06 58 08.9	+0.4
SMAR	Somma	1.18	243	*e*P	Pn	06 57 51.4	+0.8
SMAR				*e*S	Sn	06 58 08.9	+0.4
KRER	Koryakskii	1.19	245	PN	Pn	06 57 51.5	+0.8
KRER				S	Sn	06 58 09.4	+0.7
KRER	Koryakskii	1.19	245	*e*P	Pn	06 57 51.5	+0.8
KRER				*e*S	Sn	06 58 09.4	+0.7
UGLR	Uglovaya	1.19	240	PN	Pn	06 57 51.4	+0.8
UGLR				S	Sn	06 58 09.3	+0.7
UGLR	Uglovaya	1.19	240	*e*P	Pn	06 57 51.4	+0.8
UGLR				*e*S	Sn	06 58 09.3	+0.7
AVH	Avacha	1.21	244	PN	Pn	06 57 51.7	+0.9
AVH				S	Sn	06 58 09.9	+1.0
AVH	Avacha	1.21	244	*e*P	Pn	06 57 51.7	+0.9
AVH				*e*S	Sn	06 58 09.9	+1.0
KRX	Arik	1.22	249	PN	Pn	06 57 51.5	+0.6
KRX				S	Sn	06 58 09.4	+0.2
KRX	Arik	1.22	249	*e*P	Pn	06 57 51.5	+0.6
KRX				*e*S	Sn	06 58 09.4	+0.2
KOK	Koryaka	1.25	246	PN	Pn	06 57 52.2	+0.9
KOK				S	Sn	06 58 10.2	+0.4
KOK	Koryaka	1.25	246	*e*P	Pn	06 57 52.2	+0.9
KOK				*e*S	Sn	06 58 10.2	+0.4
KZV	Kizimen	1.31	354	PN	Pn	06 57 52.3	+0.4
KZV				S	Sn	06 58 10.9	-0.1
KZV	Kizimen	1.31	354	*i*P	Pn	06 57 52.3	+0.4
KZV				*i*S	Sn	06 58 10.9	-0.1
DALK	Dalny	1.33	234	PN	Pn	06 57 52.7	+0.7
DALK				S	Sn	06 58 11.4	+0.4
DALK	Dalny	1.33	234	*e*P	Pn	06 57 52.7	+0.7
DALK				*e*S	Sn	06 58 11.4	+0.4
PET	Petropavlovsk	1.38	236	ǁ *i*PN	Pn	06 57 53.5	+0.9
PET				*e*S	Sn	06 58 11.7	-0.4
PET				pmax	pmax		
	comp=Z,416nm,0.5s						
PET				smax	smax		
	comp=E,3μm,1.2s						
PET				smax	smax		
	comp=N,2μm,0.6s						
PET				smax	smax		
	comp=E,2μm,1.1s						
PET				smax	smax		
	comp=N,2μm,0.7s						
TUMR	Tumrok	1.49	351	PN	Pn	06 57 54.6	+0.7
TUMR				S	Sn	06 58 15.0	+0.4
TUMR	Tumrok	1.49	351	*i*P	Pn	06 57 54.6	+0.7
TUMR				*e*S	Sn	06 58 15.0	+0.4
GNL	Ganaly	1.55	267	PN	Pn	06 57 55.0	+0.3
GNL				S	Sn	06 58 15.8	0.0
GNL	Ganaly	1.55	267	*e*P	Pn	06 57 55.0	+0.3
GNL				*e*S	Sn	06 58 15.8	0.0
KRMR	Karymshinskiy	1.75	237	PN	Pn	06 57 57.9	+0.9
KRMR				S	Sn	06 58 20.0	+0.1
KRMR	Karymshinskiy	1.75	237	*e*P	Pn	06 57 57.9	+0.9
KRMR				*e*S	Sn	06 58 20.0	+0.1
PETK	Petropavlovsk-	1.84	249	P	Pn	06 57 58.8	+0.7
	comp=N,7.3nm,0.3s,baz=73,slow=19,SNR=92						
PETK				S	Sn	06 58 21.6	-0.4
	comp=N,14nm,0.3s,baz=76,slow=19,SNR=17						
RUS	Russkaya	1.85	222	PN	Pn	06 57 58.4	+0.3
RUS				S	Sn	06 58 21.2	-0.8
RUS	Russkaya	1.85	222	*e*P	Pn	06 57 58.4	+0.3
RUS				*e*S	Sn	06 58 21.2	-0.8
GRL	Gorelyy	1.95	231	PN	Pn	06 58 01.2	+1.6
GRL				S	Sn	06 58 25.8	+1.2
GRL	Gorelyy	1.95	231	*e*P	Pn	06 58 01.2	+1.6
GRL				*e*S	Sn	06 58 25.8	+1.2
KMNR	Kamenistaya	1.95	355	PN	Pn	06 58 00.3	+0.8
KMNR	Kamenistaya	1.95	355	*e*P	Pn	06 58 00.3	+0.8
BZMR	Bezymyannaya	2.12	359	PN	Pn	06 58 02.5	+0.8
BZMR	Bezymyannaya	2.12	359	*e*P	Pn	06 58 02.5	+0.8
ASAK	Asacha	2.15	229	PN	Pn	06 58 03.1	+1.1
ASAK				S	Sn	06 58 30.6	+1.8
ASAK	Asacha	2.15	229	*e*P	Pn	06 58 03.1	+1.1
ASAK				*e*S	Sn	06 58 30.6	+1.8
KIRR	Kirishev	2.15	357	PN	Pn	06 58 01.8	-0.2
KIRR	Kirishev	2.15	357	*e*P	Pn	06 58 01.8	-0.2
KPT	Kopyto	2.16	355	PN	Pn	06 58 02.4	+0.2
KPT	Kopyto	2.16	355	*e*P	Pn	06 58 02.4	+0.2
ZLN	Zelenaya	2.21	4	PN	Pn	06 58 03.8	+1.0
ZLN	Zelenaya	2.21	4	*e*P	Pn	06 58 03.8	+1.0
LGNR	Loginova	2.27	2	PN	Pn	06 58 04.0	+0.2
LGNR	Loginova	2.27	2	*i*P	Pn	06 58 04.0	+0.2
KOZ	Kozyrevsk	2.28	350	PN	Pn	06 58 03.8	+0.2
KOZ	Kozyrevsk	2.28	350	*e*P	Pn	06 58 03.8	+0.2
CIRR	Tsirk	2.31	3	PN	Pn	06 58 04.9	+0.8
CIRR	Tsirk	2.31	3	*e*P	Pn	06 58 04.9	+0.8
ESO	Esso	2.37	334	PN	Pn	06 58 04.7	0.0
ESO				S	Sn	06 58 33.5	-0.3
ESO	Esso	2.37	334	*e*P	Pn	06 58 04.7	0.0
ESO				*e*S	Sn	06 58 33.5	-0.3
KRSR	Krestovskiy	2.41	0	PN	Pn	06 58 04.9	-0.4
KRSR	Krestovskiy	2.41	0	*e*P	Pn	06 58 04.9	-0.4
KLY	Klyuchi	2.50	1	PN	Pn	06 58 07.4	+1.0
KLY				S	Sn	06 58 37.8	+0.9
KLY	Klyuchi	2.50	1	*e*P	Pn	06 58 07.4	+1.0
KLY				*e*S	Sn	06 58 37.8	+0.9
KBG	Krutoberegovo	2.74	26	PN	Pn	06 58 10.1	+0.6
KBG				S	Sn	06 58 42.1	-0.3
KBG	Krutoberegovo	2.74	26	*e*P	Pn	06 58 10.1	+0.6
KBG				*e*S	Sn	06 58 42.1	-0.3
BDR	Baidarnaya	2.79	8	PN	Pn	06 58 11.2	+1.0
BDR				S	Sn	06 58 45.4	+1.9
BDR	Baidarnaya	2.79	8	*i*P	Pn	06 58 11.2	+1.0
BDR				*i*S	Sn	06 58 45.4	+1.9
SMKR	Semkarok	2.82	10	PN	Pn	06 58 11.3	+0.6
SMKR				S	Sn	06 58 44.5	+0.1
SMKR	Semkarok	2.82	10	*e*P	Pn	06 58 11.3	+0.6
SMKR				*e*S	Sn	06 58 44.5	+0.1
SRKR	Sorokina	2.87	7	PN	Pn	06 58 12.0	+0.8
SRKR				S	Sn	06 58 46.9	+1.4
SRKR	Sorokina	2.87	7	*e*P	Pn	06 58 12.0	+0.8
SRKR				*e*S	Sn	06 58 46.9	+1.4
PAU	Pauzhetka	3.27	226	PN	Pn	06 58 17.8	+1.3
PAU	Pauzhetka	3.27	226	*i*P	Pn	06 58 17.8	+1.3
BKI	Bering	3.46	64	PN	Pn	06 58 18.8	-0.1
BKI				S	Sn	06 58 57.3	-1.9
BKI	Bering	3.46	64	*e*P	Pn	06 58 18.8	-0.1
BKI				*e*S	Sn	06 58 57.3	-1.9
SKR	Severo-Kuril's	4.15	223	*e*PN	Pn	06 58 28.9	+0.7
SKR				*i* S	Sn	06 59 14.1	-1.8
SKR				pmax	pmax		
	comp=Z,88nm,0.8s						
SKR				smax	smax		
	comp=E,237nm,1.0s						
SKR				smax	smax		
	comp=N,202nm,0.5s						
SKR	Severo-Kuril's	4.15	223	*e*P	Pn	06 58 29.2	+1.0
SKR				*e*S	Sn	06 59 15.0	-0.9
BILL	Bilibino	14.53	9	ǁ *e*P	Pn	07 00 33.1	-13
BILL				*e*		07 03 39.6	
BILL				*e*S	S	07 11 19.5	
BILL				pmax	pmax		
	comp=Z,1.0nm,0.7s						
BILL				MLR	MLR		
	comp=Z,86nm,17.0s						
BILL	Bilibino	14.53	9	ǁ *e*P	Pn	07 00 33.1	-13
BILL				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YAK	Yakutsk	18.18	309	P	P	07 01 27.1	-3.0
	comp=Z,0.0nm,0.3s,baz=82,slow=0.4,SNR=5.4						
MJAR	Matsushiro Arr	23.21	231	P	P	07 02 21.1	-2.3
	comp=Z,1.2nm,0.5s,baz=18,slow=11,SNR=4.6						
ILAR	Eielson Array	28.12	46	P	P	07 03 09.3	+2.0
	comp=Z,0.5nm,0.7s,baz=265,slow=7.7,SNR=8.1						
H11N2	WAKE ISLAND Hy	34.37	169	T	T	07 41 09.2	
	baz=354,slow=76,SNR=40						
H11N3	WAKE ISLAND Hy	34.39	169	T	T	07 41 12.9	
	baz=354,slow=76,SNR=41						
H11N1	WAKE ISLAND Hy	34.39	169	T	T	07 41 24.9	
	baz=354,slow=76,SNR=43						
H11S1	WAKE ISLAND Hy	35.56	170	T	T	07 41 57.0	
	baz=352						
H11S3	WAKE ISLAND Hy	35.57	170	T	T	07 41 53.0	
	baz=352						
H11S2	WAKE ISLAND Hy	35.58	170	T	T	07 42 00.7	
	baz=352						
ZALV	Zalesovo Beam	42.62	302	P	P	07 05 09.8	-1.3
	comp=Z,0.9nm,0.4s,baz=64,slow=6.6,SNR=3.4						
SPITS	Spitsbergen Ar	46.47	350	P	P	07 05 41.4	0.0
	comp=Z,3.0nm,0.6s,baz=66,slow=8.4,SNR=8.6						
MKAR	Makanchi Array	48.09	295	P	P	07 05 52.5	-1.8
	comp=Z,0.7nm,0.7s,baz=52,slow=5.7,SNR=6.3						
ARCES	ARCESS Array B	52.68	342	P	P	07 06 27.9	-0.6
	comp=Z,0.4nm,0.5s,baz=48,slow=8.6,SNR=4.6						
PDAR	Pinedale Array	56.94	61	P	P	07 07 03.0	+3.1
	comp=Z,0.7nm,0.9s,baz=316,slow=5.0,SNR=4.0						
FINES	FINESS Array B	59.56	337	P	P	07 07 16.9	-0.6
	comp=Z,0.7nm,0.4s,baz=27,slow=7.8,SNR=8.5						
NB2	NORSAR Subarra	62.92	344	P	P	07 07 40.0	-0.2
	comp=Z,0.7nm,0.5s,baz=25,slow=6.9						
NOA	NORSAR Array B	62.92	344	P	P	07 07 38.9	-1.3
	comp=Z,1.7nm,0.8s,baz=21,slow=6.5,SNR=5.9						
HFS	Hagfors	63.34	342	P	P	07 07 42.5	-0.4
	comp=Z,1.4nm,0.4s,baz=55,slow=5.5,SNR=15						
SCHQ	Schefferville	64.88	28	P	P	07 07 54.7	+1.6
	comp=Z,2.9nm,0.8s,baz=246,slow=20,SNR=2.5						
GERES	GERESS Array B	73.94	338	P	P	07 08 47.5	-1.6
	comp=Z,0.9nm,0.6s,baz=33,slow=5.8,SNR=4.0						
WRA	Warramunga Arr	76.85	205	P	P	07 09 06.4	+0.6
	comp=Z,1.0nm,0.5s,baz=17,slow=6.1,SNR=3.8						
ASAR	Alice Springs	80.53	205	P	P	07 09 26.2	+0.3
	comp=Z,1.1nm,0.7s,baz=19,slow=5.9,SNR=5.3						

ISCJB ***21*** *07:01:56.3±0.7, 59.03N±0.03×136.51W±0.04, h9km±5km, mb4.0/1, MS3.5/1, Error ellipse: s-maj=4.9km s-min=3.2km az=30.7*
NEIC ***21*** *07:01:57.1, 59.06N×136.61W, h2km, ML3.5(OTT), ML3.4(AEIC), After AEIC.*
PGC ***21*** *07:01:57.7±0.2, 59.06N×136.60W, h1km, ML3.5/10, 78km west of Haines, Ak Southeastern Alaska*
IDC ***21*** *07:01:57.4±1.2, 59.11N×136.27W, h0km, mb4.1/1, mb1 3.6/6, mb1mx3.4/47, mbtmp3.5/6, ML3.2/5, MS3.6/1, Ms1 3.6/1, ms1mx2.3/50, Error ellipse: s-maj=17.1km s-min=9.6km az=47.0*

ISC 21 07:01:56.5±1.2, 59.08N±0.03×136.60W±0.02, h1km±9km, n70, σ1s60/104, Southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res

DIV	**Divide**	**5.03**	**298**	*e*Pn	**Pn**	**07 03 13.0 0.0**
	9.9nm,0.8s					
DIV				*e*Sn	**Sn**	**07 04 10.0 -1.7**
DAWY	**Dawson**	**5.17**	**346**	Pn	**Pn**	**07 03 15.8 +0.7**
DAWY				Sg	**Sg**	**07 04 39.6 -2.9**
DAWY	**Dawson**	**5.17**	**346**	P	**Pn**	**07 03 16.3 +1.3**
HIN	**Hinchinbrook I**	**5.18**	**289**	P	**Pn**	**07 03 15.3 +0.2**
NDB	**Naden**	**5.53**	**157**	Pn	**Pn**	**07 03 20.5 +0.7**
PAX	**Paxson**	**5.81**	**316**	Pn	Pn	07 03 28.9 +5.1
PAX	**Paxson**	**5.81**	**316**	*e*Pn	**Pn**	**07 03 25.4 +1.6**
	2.7nm,0.7s					
DOT	**Dot Lake**	**5.82**	**325**	Pn	**Pn**	**07 03 24.4 +0.5**
DOT				Sn	**Sg**	**07 05 01.9 -1.1**
DOT	**Dot Lake**	**5.82**	**325**	*e*Pn	**Pn**	**07 03 24.5 +0.7**
	12nm,0.5s					
DOT				*e*Sn	**Sn**	**07 04 32.6 +1.5**
EGAK	**Eagle**	**6.10**	**341**	*e*Pn	**Pn**	**07 03 29.4 +1.7**
	147nm,0.4s					
EGAK				*e*Sn	**Sn**	**07 04 34.0 -4.1**
VIB	**Van Inlet**	**6.27**	**157**	Pn	**Pn**	**07 03 30.6 +0.5**
DIB	**Dawson Inlet,**	**6.33**	**157**	Pn	**Pn**	**07 03 31.1 +0.3**
SML	**Sawmill**	**6.42**	**300**	*e*Pn	**Pn**	**07 03 34.4 +2.3**
	1.5nm,0.6s					
SML				*e*Sn	**Sn**	**07 04 47.7 +1.8**
MOBC	**Moresby Island**	**6.49**	**155**	Pn	**Pn**	**07 03 33.4 +0.3**
RC01	**Rabbit Creek A**	**6.87**	**293**	*e*Pn	**Pn**	**07 03 38.8 +0.5**
RC01				*e*Sn	**Sn**	**07 04 58.8 +1.8**
FNBB	**Fort Nelson**	**7.03**	**86**	Pn	**Pn**	**07 03 40.9 +0.4**
FNBB				Sg	**Sg**	**07 05 36.6 -5.3**
ILAR	**Eielson Array**	**7.48**	**324**	Pn	**Pn**	**07 03 48.7 +2.1**
	0.1nm,0.3s,baz=141,slow=12,SNR=7.2					
ILAR				Lg	Lg	07 05 49.6
	0.2nm,0.3s,baz=136,slow=25,SNR=5.5					
TRF	**Thorofare Moun**	**7.91**	**309**	*e*Pn	**Pn**	**07 03 55.7 +3.1**
	4.3nm,0.7s					
TRF				*e*Sn	**Sn**	**07 05 27.3 +4.5**
KTH	**Kantishna Hill**	**8.21**	**309**	*e*Pn	**Pn**	**07 03 58.4 +1.7**
	4.9nm,0.7s					
KTH				*e*Sn	**Sn**	**07 05 31.2 +1.2**
BBB	**Bella Bella**	**8.41**	**142**	Pn	**Pn**	**07 04 00.6 +1.2**
	0.3nm,0.3s,baz=332,slow=17,SNR=4.6					
BBB				Sn	**Sn**	**07 05 31.2 -3.6**
	0.2nm,0.3s,baz=259,slow=16,SNR=2.1					
BBB				Lg	Lg	07 06 15.3
	0.5nm,0.3s,baz=203,slow=13,SNR=2.4					
PPLA	**Purkeypile**	**8.48**	**303**	*e*Pn	**Pn**	**07 04 03.2 +2.8**
PPLA				*e*Sn	**Sn**	**07 05 36.9 +0.1**
INK	**Inuvik**	**9.36**	**7**	Pn	**Pn**	**07 04 12.7 +0.4**
	0.1nm,0.3s,baz=189,slow=7.8,SNR=3.1					
INK				Lg	Lg	07 06 49.4
	0.2nm,0.3s,baz=207,slow=9.1,SNR=3.4					
YKR1	**Yellowknife Ar**	**11.10**	**63**	Pn	**Pn**	**07 04 35.5 -0.7**
YKR2	**Yellowknife Ar**	**11.12**	**63**	Pn	**Pn**	**07 04 35.5 -0.9**
YKR3	**Yellowknife Ar**	**11.14**	**63**	Pn	**Pn**	**07 04 35.8 -0.9**
YKR5	**Yellowknife Ar**	**11.19**	**63**	Pn	**Pn**	**07 04 36.6 -0.8**
YKA	**Yellowknife Ar**	**11.25**	**63**	Pn	**Pn**	**07 04 33.5 -4.7**
	0.2nm,0.3s,baz=259,slow=12,SNR=4.8					
YKA				Lg	Lg	07 07 47.5
	0.1nm,0.3s,baz=263,slow=30,SNR=3.9					
ULM	**Lac du Bonnet**	**24.79**	**93**	P	**P**	**07 07 19.4 -0.3**
	3.0nm,0.6s,baz=309,slow=10.0,SNR=4.2					
YAK	**Yakutsk**	**42.31**	**316**	LR	LR	07 30 03.1
	comp=Z,64nm,18.2s,baz=224,slow=40					

*IDC **21** 07:02:31.6±1.7, 11°.69S×116°.49E, h0km, mb3.8/4, mb1 4.1/7, mb1mx3.8/34, mbtmp4.0/7, ML4.2/3, MS3.4/1, Ms1 3.4/1, ms1mx2.5/38, Error ellipse: s-maj=61.6km s-min=20.2km az=49.0*

*ISCJB **21** 07:02:35.6±0.6, 11°.43S±0°.05×116°.76E±0°.05, h26km, mb4.0/5, MS3.3/1, Error ellipse: s-maj=7.7km s-min=5.6km az=136.9*

*DJA **21** 07:02:38.9±0.5, 11°.S±4°.×11°.7E±°, h10km, M4.9/14, mb4.8/7, mB5.7/3, MLv5.0/14, Mw(mB)5.2/3*

ISC 21 07:02:36.8±0.8, 11°.45S±0°.07×116°.78E±0°.07, h26km, n26, σ1s72/27, mb4.1/5, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
TWSI	**Taliwang, Sumb**	**2.69**	**2**	P	P	**Pn**	**07 03 19.8**	**+1.3**
TWSI				S	S	**Sn**	**07 03 49.6**	**-0.6**
PLAI	**Plampang**	**2.78**	**21**	P	P	**Pn**	**07 03 20.9**	**+1.2**
PLAI				S	S	**Sn**	**07 03 50.6**	**-1.8**
IGBI	**Denpasar**	**3.07**	**328**	P	P	**Pn**	**07 03 24.0**	**+0.4**
IGBI				S	S	**Sn**	**07 03 58.1**	**-1.4**
DNP	**Denpasar**	**3.15**	**331**	P	P	**Pn**	**07 03 26.3**	**+1.5**
SRBI	**Singaraja**	**3.68**	**335**	P	P	**Pn**	**07 03 34.6**	**+2.6**
JAGI	**Jajag, Banyuwa**	**3.93**	**319**	P	P	**Pn**	**07 03 35.1**	**-0.4**
JAGI				S	S	**Sn**	**07 04 20.1**	**-0.7**
ABJI	**Asem Bagus**	**4.41**	**325**	P	P	**Pn**	**07 03 44.1**	**+2.0**
GMJI	**Gumukmas**	**4.55**	**314**	P	P	**Pn**	**07 03 43.8**	**-0.3**
PWJI	**Pagerwojo**	**5.97**	**304**	P	P	**Pn**	**07 04 04.4**	**+0.9**
	45nm,0.4s,2μm							
MMRI	**Maumere**	**6.06**	**63**	P	P	**Pn**	**07 04 07.2**	**+2.4**
PCJI	**Pacitan**	**6.40**	**300**	P	P	**Pn**	**07 04 10.0**	**+0.6**
	63nm,1.6s							
KAPI	**Kappang**	**7.03**	**25**	Pn	P	**Pn**	**07 04 21.3**	**+3.1**
	6.1nm,0.3s,baz=212,slow=9.1,SNR=7.3							
KAPI				Sn	S	**Sn**	**07 05 33.9**	**-3.4**
	7.2nm,0.3s,baz=184,slow=23,SNR=6.1							
UGM	**Wanagama**	**7.10**	**299**	P	P	**Pn**	**07 04 20.0**	**+0.9**
	130nm,1.9s							
SOEI	**Soe**	**7.55**	**78**	P	P	**Pn**	**07 04 27.1**	**+1.7**
	39nm,0.7s							
FITZ	**Fitzroy Crossi**	**10.82**	**129**	Pn	P	**Pn**	**07 05 07.1**	**-3.0**
	1.8nm,0.3s,baz=326,slow=8.7,SNR=44							
FITZ				Sn	S	Sn	07 06 59.2	-11
	1.9nm,0.3s,baz=306,slow=13,SNR=3.6							
WRA	**Warramunga Arr**	**18.89**	**119**	P	P	**P**	**07 06 55.0**	**-0.5**
	0.5nm,0.3s,baz=295,slow=13,SNR=29							
WRA				S	S	Sn	07 10 10.8	-16
	1.3nm,0.3s,baz=282,slow=24,SNR=10							
ASAR	**Alice Springs**	**20.33**	**129**	P	P	**P**	**07 07 11.8**	**+0.6**
	2.1nm,0.6s,baz=301,slow=10,SNR=26							
ASAR				S	S	S	07 10 46.0	-12
	7.6nm,0.7s,baz=304,slow=24,SNR=15							
NWAO	**Narrogin (SRO)**	**21.39**	**179**	P	P	**P**	**07 07 24.4**	**+2.0**
	12nm,0.4s,baz=244,slow=12,SNR=27							
PSI	**Prapat**	**22.71**	**308**	LR	LR	LR	07 16 39.1	
	comp=Z,106nm,19.7s,baz=44,slow=38							
H08S2	**Diego Garcia H**	**43.80**	**271**	T	T	T	07 57 43.7	
	baz=103							
H08S3	**Diego Garcia H**	**43.82**	**271**	T	T	T	07 57 48.6	
	baz=103							
H08S1	**Diego Garcia H**	**43.82**	**271**	T	T	T	07 57 51.3	
	baz=103							
SONM	**Songino Array**	**59.73**	**352**	P	P	**P**	**07 12 39.5**	**+0.1**
	0.4nm,0.6s,baz=178,slow=5.2,SNR=2.7							
MKAR	**Makanchi Array**	**65.67**	**335**	P	P	**P**	**07 13 18.9**	**0.0**
	0.5nm,0.4s,baz=150,slow=6.7,SNR=12							
ZALV	**Zalesovo Beam**	**70.57**	**341**	P	P	**P**	**07 13 48.5**	**-0.9**
	0.5nm,0.3s,baz=132,slow=4.1,SNR=2.7							
SNAA	**Sanae**	**88.07**	**196**	P	P	**P**	**07 15 25.9**	**+1.2**
	1.1nm,1.0s,baz=108,slow=3.2,SNR=6.0							

JMA 21 07:17:58.2±0.1, 39°.12N×142°.42E, h31km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.59**	**266**	P	P	Pb	07 18 09.8	-0.3
OFUJ				S	S	Sb	07 18 17.7	-0.5
MIYJ	**Miyakonagasawa**	**0.65**	**315**	P	P	Pb	07 18 10.6	-0.6
MIYJ				S	S	Sb	07 18 19.2	-0.8
JTH	**Tanohata**	**0.92**	**332**	P	P	Pn	07 18 15.0	-0.1
JTH				S	S	Sb	07 18 27.6	-0.1
JOM	**Ohasama**	**0.94**	**292**	P	P	Pn	07 18 15.5	+0.2
JOM				S	S	Sn	07 18 27.8	+0.1
JMK	**Ichinoseki**	**0.95**	**260**	P	P	Pn	07 18 15.3	-0.1
JMK				S	S	Sn	07 18 27.6	-0.3
JIO	**Ouri**	**1.07**	**232**	P	P	Pn	07 18 16.4	-0.6
JIO				S	S	Sn	07 18 29.2	-1.6
JKZ	**Kuzumaki**	**1.21**	**316**	P	P	Pn	07 18 19.7	+0.7
JKZ				S	S	Sn	07 18 34.8	+0.5
MAT	**Matsushiro**	**4.21**	**234**	P	P	Pn	07 19 04.4	+4.1
MAT				S	S	Sn	07 19 47.7	-0.7

DJA 21 07:35:10.2±1.5, 0°.N±15°.×12°.1E±1°.0, h83km±13km, M3.5/5, MLv3.5/5, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PCI	**Palu**	**1.34**	**211**	P	P	Pn	07 35 33.9	+0.3
PCI				S	S	Sn	07 35 52.0	+0.7
MRSI	**Marisa**	**1.43**	**81**	P	P	Pn	07 35 35.0	+0.3
MRSI				S	S	Sn	07 35 53.7	+0.5
LUWI	**Luwuk**	**2.58**	**120**	P	P	Pn	07 35 50.2	+0.2
TTSI	**Tana Toraja**	**3.35**	**192**	P	P	Pn	07 36 00.5	+0.1
MTKI	**Muara Teweh, K**	**5.76**	**258**	P	P	Pn	07 36 31.2	-2.0

*MOS **21** 07:36:53.3±2.5, 48°.50N×156°.76E, h1km, mb4.2/1, Error ellipse: s-maj=77.6km s-min=8.7km az=81.5*

*SKHL **21** 07:36:55.9±0.4, 48°.42N×156°.67E, h6km±2km, mb3.9/1*

KRSC 21 07:36:53.4±1.5, 48°.50N×156°.76E, h1km±55km, ML4.1, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.22**	**349**	*e*PN	P	Pb	07 37 34.4	+0.1
SKR				*e*S	S	Sb	07 38 02.2	-0.1
SKR				pmax	pmax			
	comp=Z,31nm,0.6s							
SKR				smax	smax			
	comp=N,110nm,0.4s							
SKR				smax	smax			
	comp=E,123nm,0.4s							
SKR	**Severo-Kuril's**	**2.22**	**349**	*e*P	Pn		07 37 32.1	+0.8
SKR				*e*S	Sb		07 38 02.1	-0.2
SKR	**Severo-Kuril's**	**2.22**	**349**	*e*P	Pb		07 37 33.7	-0.6
SKR				AMB	AMB		07 37 35.9	
	comp=E,30nm,0.6s							
SKR				*e*S	Sb		07 38 01.8	-0.5
SKR				A	A		07 38 12.2	
	comp=E,110nm,0.4s							
SKR				A	A		07 38 12.2	
	comp=E,120nm,0.4s							
PAU	**Pauzhetka**	**2.97**	**1**	*e*S	Sb		07 38 22.2	-1.5
ASAK	**Asacha**	**3.95**	**10**	PN	Pn		07 37 59.3	+4.1
ASAK	**Asacha**	**3.95**	**10**	*e*P	Pn		07 37 59.3	+4.1
RUS	**Russkaya**	**4.09**	**15**	PN	Pn		07 38 00.0	+3.0
RUS				S	Sn		07 38 50.0	+4.6
RUS	**Russkaya**	**4.09**	**15**	*e*P	Pn		07 38 00.0	+3.0
RUS				*e*S	Sn		07 38 50.0	+4.6
RUS	**Russkaya**	**4.09**	**15**	*e*P	Pn		07 38 00.0	+3.0
PET	**Petropavlovsk**	**4.68**	**14**	*e*P	Pn		07 38 09.5	+4.4
PET				*e*S	Sn		07 39 05.0	+5.0
UGLR	**Uglovaya**	**4.89**	**15**	PN	Pn		07 38 12.6	+4.5
UGLR	**Uglovaya**	**4.89**	**15**	*e*P	Pn		07 38 12.6	+4.5
AVH	**Avacha**	**4.93**	**14**	PN	Pn		07 38 13.5	+4.9
AVH	**Avacha**	**4.93**	**14**	*e*P	Pn		07 38 13.5	+4.9
SDLR	**Sedlovina**	**4.97**	**15**	PN	Pn		07 38 13.2	+4.1
SDLR	**Sedlovina**	**4.97**	**15**	*e*P	Pn		07 38 13.2	+4.1
KRER	**Koryakskii**	**4.97**	**14**	PN	Pn		07 38 12.0	+2.8
KRER	**Koryakskii**	**4.97**	**14**	*e*P	Pn		07 38 12.0	+2.8
SPN	**Mys Shipunski**	**5.04**	**23**	PN	Pn		07 38 15.9	+5.8
SPN				S	Sn		07 39 15.0	+6.1
SPN	**Mys Shipunski**	**5.04**	**23**	*e*P	Pn		07 38 15.9	+5.8
SPN				*e*S	Sn		07 39 15.0	+6.1
SPN	**Mys Shipunski**	**5.04**	**23**	*e*P	Pn		07 38 15.9	+5.8
GNL	**Ganaly**	**5.25**	**8**	PN	Pn		07 38 17.9	+4.9
GNL	**Ganaly**	**5.25**	**8**	*e*P	Pn		07 38 17.9	+4.9
MKZ	**Mys Kozlova**	**6.81**	**25**	PN	Pn		07 38 38.8	+4.6
MKZ	**Mys Kozlova**	**6.81**	**25**	*e*P	Pn		07 38 38.8	+4.6
MKZ				*e*S	Sn		07 39 57.6	+5.3
MKZ	**Mys Kozlova**	**6.81**	**25**	*e*P	Pn		07 38 38.8	+4.6

*ISCJB **21** 07:40:17.7±0.8, 18°.73S±0°.05×69°.5W±0°.1, h137km±7km, mb3.5/1, Error ellipse: s-maj=16.9km s-min=7.7km az=11.9*

*GUC **21** 07:40:19.3±0.4, 18°.74S×69°.44W, h117km±3km, ML3.8*

*IDC **21** 07:40:20.7±5.7, 18°.59S×69°.34W, h149km±30km, mb3.4/2, mb1 3.3/4, mb1mx3.1/31, mbtmp3.7/4, Error ellipse: s-maj=74.3km s-min=37.3km az=76.0*

ISC 21 07:40:18.4±1.1, 18°.73S±0°.05×69°.5W±0°.1, h132km±9km, n10, σ0s64/17, 2C-2D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PB13	**IPOC Station P**	**0.39**	**2**	*e*P	P	**Pn**	**07 40 38.1**	**+0.1**
PB13				*e*S	S	**Sn**	**07 40 52.2**	**-0.5**
MNMC	**Minye Minye**	**0.41**	**190**	⇓*e*P	P	**Pn**	**07 40 37.8**	**+0.2**
MNMC				*e*S	S	**Sn**	**07 40 51.4**	**-0.8**
MNMC				IAML			07 40 55.6	
	comp=N,9μm,0.2s							
PB12	**IPOC Station P**	**0.78**	**278**	⇑*e*P	P	**Pn**	**07 40 40.2**	**+0.5**
PB12				*e*S	S	**Sn**	**07 40 56.3**	**+0.5**
PSGC	**Pisagua**	**1.04**	**213**	⇑*e*P	P	**Pn**	**07 40 42.3**	**+0.4**
PSGC				*e*S	S	**Sn**	**07 40 59.8**	**-0.1**
PSGC				IAML			07 41 00.6	
	comp=E,2μm,0.3s							
PB08	**IPOC Station P**	**1.45**	**166**	⇓*e*P	P	**Pn**	**07 40 47.2**	**+0.7**
PB08				*e*S	S	**Sn**	**07 41 08.1**	**+0.2**
PB08				IAML			07 41 09.4	
	comp=E,1μm,0.2s							
HMBC	**Humberstone**	**1.58**	**193**	*e*P	P	**Pn**	**07 40 48.3**	**+0.6**
HMBC				*e*S	S	**Sn**	**07 41 09.7**	**-0.4**
HMBC				IAML			07 41 11.4	
	comp=N,1μm,0.7s							
LPAZ	**La Paz**	**2.77**	**29**	P	P	**Pn**	**07 41 03.9**	**+1.2**
LPAZ	comp=N,3.6nm,0.3s,baz=212,slow=18,SNR=95			S	S	**Sn**	**07 41 36.3**	**-0.4**
	comp=N,0.9nm,0.3s,baz=221,slow=15,SNR=3.7							
CPUP	**Villa Florida**	**13.56**	**126**	P	P	**Pn**	**07 43 25.9**	**+0.5**
	comp=N,0.2nm,0.3s,baz=295,slow=14,SNR=3.7							
BDFB	**Brasilia**	**20.77**	**85**	P	P	**P**	**07 44 48.6**	**-0.6**
	comp=N,1.5nm,0.4s,baz=163,slow=20							
TORD	**Torodi Ar. Bea**	**76.99**	**71**	P	P	**P**	**07 51 56.3**	**-0.7**
	comp=N,0.9nm,0.7s,baz=254,slow=6.2,SNR=6.3							

*IDC **21** 07:54:31.0±2.8, 53°.62N×88°.01E, h0km, mb1 2.9/2, mb1mx2.9/48, mbtmp2.9/2, ML2.6/2, Error ellipse: s-maj=23.3km s-min=15.8km az=61.0*

*NNC **21** 07:54:33.8±7.1, 53°.39N×88°.03E, h0km, mpv2.8, Error ellipse: s-maj=47.7km s-min=41.5km az=169.0*

ISC 21 07:54:34.3±4.3, 53°.7N±0°.1×88°.1E±0°.2, h35km, n7, σ0s66/8, 4C-2D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.94**	**279**	*i*			08 06 23.9	
	baz=97,slow=323,SNR=25							
ZALV	**Zalesovo Beam**	**1.94**	**279**	Pn	P	**Pn**	**07 55 04.8**	**+0.1**
	2.7nm,0.3s,baz=103,slow=12,SNR=15							
ZALV				Lg	Lg		07 55 31.9	
	3.7nm,0.3s,baz=100,slow=28,SNR=20							
KURK	**Kurchatov**	**6.53**	**247**	⇑Lg	Lg		07 57 54.4	
	3.9nm,0.7s							
KURBB	**Kurchatov Arra**	**6.63**	**246**	Pn	P	**Pn**	**07 56 08.9**	**-0.2**
	0.1nm,0.3s,baz=62,slow=14,SNR=6.2							
KURBB				Sn	S	**Sn**	**07 57 23.4**	**0.0**
	0.0nm,0.3s,baz=66,slow=28,SNR=3.0							
KURBB				Lg	Lg		07 57 58.0	
	0.1nm,0.3s,baz=64,slow=31,SNR=8.9							
MK31	**Makanchi Array**	**7.85**	**210**	⇑Pn	P	**Pn**	**07 56 25.3**	**-0.5**
	0.1nm,0.2s,baz=31,slow=13,SNR=8.1							
MK31				⇓Sn	S	**Sn**	**07 57 52.8**	**-0.5**
	0.2nm,0.2s,baz=136,slow=36,SNR=4.6							
MK31				⇓Lg	Lg		07 58 35.2	
	0.2nm,0.3s,baz=31,slow=30,SNR=4.5							
MKAR	**Makanchi Array**	**7.85**	**210**	Pn	P	**Pn**	**07 56 26.3**	**+0.4**
	0.1nm,0.3s,baz=30,slow=13,SNR=7.7							
MKAR				Sn	S	**Sn**	**07 57 54.5**	**+1.1**
	0.1nm,0.3s,baz=32,slow=27,SNR=6.3							
MKAR				Lg	Lg		07 58 36.2	
	0.1nm,0.3s,baz=26,slow=31,SNR=8.0							
MAKZ	**Makanchi**	**7.93**	**212**	⇑Sn	S	**Sn**	**07 57 55.2**	**-0.3**
MAKZ				⇑Lg	Lg		07 58 36.7	
	5.4nm,1.4s							

*IDC **21** 07:57:15.8±0.8, 22°.43S×174°.95W, h0km, mb4.2/12, mb1 4.4/12, mb1mx4.2/32, mbtmp4.2/12, MS3.3/4, Ms1 3.3/4, ms1mx2.9/30, Error ellipse: s-maj=30.4km s-min=22.8km az=141.0*

*NEIC **21** 07:57:17.6±0.7, 22°.21S×174°.91W, h10km, mb4.4/2, Error ellipse: s-maj=26.3km s-min=15.0km az=132.0*

*ISCJB **21** 07:57:19.6±0.6, 22°.4S±0°.1×175°.0W±0°.1, h33km, mb4.2/14, MS3.4/3, Error ellipse: s-maj=21.5km s-min=17.7km az=142.5*

ISC 21 07:57:21.0±0.7, 22°.4S±0°.2×174°.9W±0°.2, h33km, n22, σ1s24/16, mb4.2/14, MS3.5/3, 1C, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**8.96**	**20**	P	P	Pn	07 59 23.0	-5.2
	2.7nm,0.3s,baz=83,slow=17,SNR=4.0							
AFI				Sn	Sn		08 00 56.6	-11
	1.8nm,0.3s,baz=204,slow=20,SNR=2.3							
RAR	**Rarotonga**	**14.11**	**88**	Pn	P	Pn	08 00 28.0	-11
	2.9nm,0.3s,baz=276,slow=7.4,SNR=20							
RAR				LR	LR		08 05 51.3	
	comp=Z,65nm,19.3s,baz=284,slow=36							
URZ	**Urewera**	**17.22**	**202**	Sn	Sn		08 04 14.7	-15
	0.2nm,0.3s,baz=151,slow=15,SNR=2.2							
PPT	**Papeete**	**24.28**	**83**	LR	LR		08 11 00.0	
	comp=Z,33nm,18.6s,baz=359,slow=34							
CTA	**Charters Tower**	**36.20**	**266**	P	P		**08 04 20.4**	**-0.6**
	1.4nm,0.6s,baz=100,slow=11,SNR=2.4							
CTA				LR	LR		08 18 36.9	
	comp=Z,141nm,19.0s,baz=226,slow=35							
ASAR	**Alice Springs**	**46.91**	**258**	P	P		**08 05 47.7**	**-1.0**
	3.0nm,0.9s,baz=94,slow=8.1,SNR=17							
WRAB	**Tennant Creek**	**47.20**	**263**	*e*P	P		**08 05 53.0**	**+2.0**
	1.4nm,0.6s							
WRA	**Warramunga Arr**	**47.21**	**263**	P	P		**08 05 49.4**	**-1.6**
	1.5nm,0.8s,baz=91,slow=8.5,SNR=9.3							
KAPI	**Kappang**	**65.31**	**275**	LR	LR		08 35 59.6	
	comp=Z,28nm,18.9s,baz=211,slow=36							
QSPA	**South Pole Qui**	**67.67**	**180**	*e*P	P		**08 08 15.2**	**+0.4**
	3.5nm,0.7s							
MJAR	**Matsushiro Arr**	**73.46**	**322**	P	P		**08 08 48.3**	**-1.9**
	0.6nm,0.5s,baz=146,slow=6.1,SNR=2.8							
PETK	**Petropavlovsk-**	**78.87**	**344**	P	P		**08 09 21.2**	**+0.6**
	5.9nm,1.1s,baz=142,slow=7.3,SNR=3.7							
MAW	**Mawson**	**80.73**	**199**	P	P		**08 09 31.6**	**+1.0**
	1.4nm,0.5s,baz=131,slow=3.7,SNR=14							
USRK	**Ussuriysk Ar.**	**82.16**	**325**	P	P		**08 09 38.6**	**+0.2**
	3.7nm,0.9s,baz=149,slow=4.0,SNR=4.3							
SYO	**Syowa Base**	**85.48**	**192**	⇓*e*P	P		08 09 43.4	-12
TXAR	**Lajitas Array**	**85.69**	**56**	P	P		**08 09 56.5**	**-0.5**
	1.8nm,1.1s,baz=215,slow=5.8,SNR=7.8							
SNAA	**Sanae**	**86.01**	**177**	P	P		**08 09 56.4**	**-1.5**
	2.2nm,1.0s,baz=172,slow=5.0,SNR=4.9							
PDAR	**Pinedale Array**	**88.41**	**42**	P	P		**08 10 09.5**	**-0.5**
	0.4nm,0.8s,baz=252,slow=4.6,SNR=2.9							
ILAR	**Eielson Array**	**89.56**	**12**	P	P		**08 10 15.2**	**+0.7**
	1.4nm,1.1s,baz=210,slow=5.0,SNR=6.9							
CMAR	**Chiang Mai Arr**	**93.45**	**288**	P	P		**08 10 35.1**	**+1.4**
	0.9nm,0.3s,baz=114,slow=4.4,SNR=4.3							
AKASG	**Malin Array Be**	**146.05**	**332**	PKPbc	**PKPab**		**08 16 57.9**	**0.0**
	1.6nm,0.5s,baz=41,slow=4.1,SNR=5.7							
BRTR	**Keskin Array B**	**150.24**	**312**	PKPbc	**PKPbc**		**08 17 10.3**	**+1.3**
	1.4nm,1.1s,baz=151,slow=3.3,SNR=3.4							

MAN 21 08:09:26, 9°.36N×122°.17E, h65km, mb4.4, ML3.2, MS3.1, 2C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.05**	**91**	⇓*i*P	P	Pn	08 09 45.5	+0.5
SNPH				*i* S	S	Sn	08 10 01.0	+1.9
DCPH	**Dipolog City**	**1.40**	**123**	⇑*e*P	P	Pn	08 09 51.6	+2.1
RCP	**Roxas**	**2.26**	**14**	⇑*e*P	P	Pn	08 10 01.9	+0.9
RCP				*e*S	S	Sn	08 10 30.1	+2.2

IDC 21 08:30:31.7±2.0, 2°.03S×133°.73E, h0km, mb3.6/3, mb1 3.8/6, mb1mx3.6/47, mbtmp3.7/6, ML3.6/3, Error ellipse: s-maj=63.7km s-min=22.3km az=75.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**2.72**	**295**	Pn	P	Pn	08 31 17.2	+0.5
	16nm,0.3s,baz=199,slow=2.5,SNR=2.2							
SIJI				Sn	Sn		08 31 46.9	-3.4
	16nm,0.3s,baz=334,slow=5.5,SNR=2.5							
WRA	**Warramunga Arr**	**17.81**	**178**	P	P	Pn	08 34 40.7	-0.5
	0.2nm,0.3s,baz=356,slow=12,SNR=11							
WRA				S	S	Sn	08 37 50.6	-10
	0.0nm,0.3s,baz=11,slow=23,SNR=3.6							
FITZ	**Fitzroy Crossi**	**17.84**	**206**	P	P	Pn	08 34 40.2	-1.3
	0.2nm,0.3s,baz=33,slow=12,SNR=3.8							
FITZ				S	S	Sn	08 37 45.7	-15
	0.2nm,0.3s,baz=150,slow=14,SNR=4.3							
ASAR	**Alice Springs**	**21.51**	**180**	P	P		08 35 23.2	+0.8
	1.2nm,0.6s,baz=3.9,slow=12,S

3.7nm,0.6s,baz=80,slow=6.6,SNR=13
FITZ S **S** **09 21 50.9 -1.8**
3.2nm,0.9s,baz=164,slow=15,SNR=2.6
ASAR Alice Springs 21.27 193 P **P** **09 18 24.6 +2.4**
5.4nm,0.9s,baz=23,slow=9.6,SNR=41
ASAR S **S** **09 22 17.1 +1.0**
1.2nm,0.7s,baz=13,slow=26,SNR=4.7
HNR Honiara 21.70 108 LR LR 09 26 12.4
comp=Z,320nm,20.1s,baz=184,slow=35
STKA Stephens Creek 28.93 176 P **P** **09 19 35.2 +0.7**
1.3nm,0.4s,baz=354,slow=9.6,SNR=11
KLR Kul'dur 52.30 354 P **P** **09 22 46.6 +0.2**
1.4nm,0.6s,baz=164,slow=2.3,SNR=3.9
MKAR Makanchi Array 70.17 322 P **P** **09 24 47.9 +0.3**
0.7nm,0.5s,baz=114,slow=7.8,SNR=8.3
KURBB **Kurchatov Arra 74.10 325** P **P** **09 25 10.2 -0.7**
0.2nm,0.4s,baz=100,slow=8.6,SNR=4.4
VNDA Vanda 75.57 175 P **P** **09 25 19.2 +0.2**
3.2nm,0.6s,baz=324,slow=6.5,SNR=17
BVAR Borovoye Array 79.69 325 P **P** **09 25 42.0 -0.4**
1.0nm,0.5s,baz=117,slow=6.1,SNR=5.3
MAW Mawson 82.11 202 P **P** **09 25 55.2 +0.2**
1.5nm,0.7s,baz=35,slow=3.8,SNR=4.5
ILAR Eielson Array 85.82 24 P **P** **09 26 10.9 -3.1**
1.3nm,0.7s,baz=261,slow=4.8,SNR=17
DBIC Dimbokro 143.91 277 PKP **PKPab** **09 33 08.0 -0.2**
6.6nm,0.8s,baz=8.8,slow=3.3,SNR=6.7
LPAZ La Paz 147.01 126 PKPbc **PKPdf** **09 33 17.9 +0.9**
1.0nm,0.9s,baz=198,slow=3.2,SNR=3.8

*ISCJB **21** 09:27:01.2±0.5,30.42N±0.04×138.81E±0.08,h450km, mb3.6/18,Error ellipse: s-maj=9.9km s-min=5.5km az=14.8*
*JMA **21** 09:27:01.0±0.4,30.42N×139.08E,h452km,M4.0*
*IDC **21** 09:27:02.4±1.7,30.36N×138.62E,h443km±19km, mb3.3/18,mb1 3.5/22,mb1mx3.3/41,mbtmp4.1/22,Error ellipse: s-maj=15.6km s-min=9.1km az=94.0*
ISC 21 09:27:02.9±0.6,30.48N±0.07×138.74E±0.09,h450km,n44, σ2s38/57,mb3.7/18,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TK01	**Tokai 1**	**3.42**	**344**	P		P	P	**09 28 14.0**	**+1.3**
JIE	**Ise**	**4.27**	**337**	P		P	P	**09 28 21.3**	**+1.0**
HMMJ	**Hamamatsu 2**	**4.45**	**349**	P		P	P	**09 28 22.6**	**+0.7**
CBIJ	**Chichi jima**	**4.52**	**137**	S		S	S	**09 29 21.7**	**-6.1**
BSO3	**Boso 3**	**4.56**	**19**	P		P	P	**09 28 22.2**	**-0.5**
BSO3				eS		S	S	**09 29 26.8**	**-1.1**
BSO1	**Boso 1**	**4.57**	**24**	P		P	P	**09 28 22.1**	**-0.3**
BSO1				eS		S	S	**09 29 26.1**	**-1.4**
BSO4	**Boso 4**	**4.70**	**16**	P		P	P	**09 28 23.3**	**-0.8**
BSO4				eS		S	S	**09 29 29.2**	**-1.3**
JOD2	**Odawara 2**	**4.78**	**3**	P		P	P	**09 28 25.4**	**+0.3**
JNY	**Yasuok**	**4.93**	**352**	P		P	P	**09 28 27.1**	**+0.6**
JAO	**Obara**	**4.94**	**346**	P		P	P	**09 28 27.3**	**+0.7**
JHU	**Hanno**	**5.38**	**5**	P		P	P	**09 28 29.5**	**-1.3**
JHU				eS		S	S	**09 29 36.4**	**-6.3**
JRY	**Ryogami san**	**5.53**	**1**	P		P	P	**09 28 32.3**	**0.0**
JRY				S		S	S	**09 29 43.5**	**-1.9**
JYT	**Yasato**	**5.87**	**12**	P		P	P	**09 29 34.1**	**-1.5**
JYT				S		S	S	**09 29 45.6**	**-5.9**
JAG	**Ashikaga**	**5.96**	**6**	P		P	P	**09 28 35.1**	**-1.6**
JAG				eS		S	S	**09 29 46.0**	**-7.4**
MJAR	**Matsushiro Arr**	**6.07**	**356**	P		P	P	**09 28 36.9**	**-0.8**
	2.6nm,0.3s,baz=172,slow=11,SNR=20								
MJAR				S		S	S	**09 29 53.0**	**-2.4**
	0.9nm,0.3s,baz=176,slow=17,SNR=3.5								
MAT	**Matsushiro**	**6.07**	**356**	P		P	P	**09 28 37.0**	**-0.8**
MAT				S		S	S	**09 29 52.7**	**-2.7**
JHO	**Hitachi**	**6.31**	**13**	P		P	P	**09 28 39.2**	**-1.0**
JHO				eS		S	S	**09 29 54.2**	**-5.7**
JFK	**Kawauchi**	**7.10**	**14**	P		P	P	**09 28 49.0**	**+0.5**
JFK				S		S	S	**09 30 11.2**	**-3.9**
JNU	**Nakatsue**	**7.20**	**294**	P		P	P	**09 28 49.7**	**+0.1**
	0.4nm,0.3s,baz=132,slow=12,SNR=5.3								
JAMN	**Amaminishikomi**	**8.64**	**257**	P		P	P	**09 29 03.9**	**-1.3**
JMK	**Ichinoseki**	**8.70**	**13**	P		P	P	**09 29 06.4**	**+0.7**
JMK				eS		S	S	**09 30 43.2**	**-3.4**
JKB	**Kayabe**	**11.54**	**9**	P		P	P	**09 29 37.9**	**+1.4**
JOSM	**Okushiri--Mats**	**11.60**	**3**	P		P	P	**09 29 38.4**	**+1.2**
JCH	**Churui**	**12.67**	**16**	P		P	P	**09 29 50.5**	**+1.7**
JCH				eS		S	S	**09 32 09.7**	**+4.0**
USRK	**Ussuriysk Ar.**	**14.71**	**341**	P		P	P	**09 30 11.1**	**+0.4**
	1.8nm,0.3s,baz=160,slow=8.4,SNR=24								
KLR	**Kul'dur**	**19.47**	**346**	P		P	P	**09 31 00.6**	**+1.4**
	1.2nm,0.3s,baz=155,slow=8.0,SNR=42								
MA2	**Magadan**	**30.22**	**12**	P		P	P	**09 32 36.4**	**+1.7**
	13nm,0.7s,baz=200,slow=9.1,SNR=6.4								
CMAR	**Chiang Mai Arr**	**37.96**	**261**	P		P	P	**09 33 39.9**	**-0.9**
	2.7nm,0.6s,baz=56,slow=6.6,SNR=11								
TIXI	**Tiksi**	**41.58**	**355**	P		P	P	**09 34 09.8**	**+0.6**
	2.8nm,0.3s,baz=164,slow=7.4,SNR=4.2								
MKAR	**Makanchi Array**	**46.02**	**307**	P		P	P	**09 34 44.6**	**+0.2**
	0.4nm,0.4s,baz=94,slow=8.8,SNR=2.3								
NRIK	**Noril'sk**	**48.41**	**338**	P		P	P	**09 35 01.4**	**-0.7**
	2.7nm,0.4s,baz=112,slow=5.4,SNR=3.2								
KURBB	**Kurchatov Arra**	**48.53**	**312**	P		P	P	**09 35 03.1**	**-0.2**
	0.4nm,0.4s,baz=91,slow=7.7,SNR=6.9								
WRA	**Warramunga Arr**	**50.30**	**185**	P		P	P	**09 35 15.5**	**-1.3**
	3.5nm,0.4s,baz=1.4,slow=8.4,SNR=145								
BVAR	**Borovoye Array**	**53.52**	**316**	P		P	P	**09 35 39.8**	**0.0**
	0.7nm,0.5s,baz=86,slow=7.1,SNR=3.4								
ASAR	**Alice Springs**	**54.03**	**185**	P		P	P	**09 35 42.6**	**-1.1**
	1.5nm,0.5s,baz=356,slow=5.5,SNR=70								
ILAR	**Eielson Array**	**56.25**	**30**	P		P	P	**09 35 59.6**	**+0.8**
	0.6nm,0.7s,baz=261,slow=4.8,SNR=10								
INK	**Inuvik**	**61.24**	**25**	P		P	P	**09 36 33.9**	**+1.5**
	0.9nm,0.3s,baz=299,slow=7.9,SNR=9.8								
STKA	**Stephens Creek**	**62.07**	**177**	P		P	P	**09 36 38.0**	**-0.4**
	2.5nm,0.7s,baz=346,slow=7.1,SNR=9.7								
ARCES	**ARCESS Array B**	**69.35**	**340**	P		P	P	**09 37 24.5**	**+0.8**
	1.4nm,0.4s,baz=67,slow=8.4,SNR=19								
YKA	**Yellowknife Ar**	**70.61**	**28**	P		P	P	**09 37 31.8**	**+0.5**
	1.3nm,0.7s,baz=300,slow=8.0,SNR=3.6								
FINES	**FINESS Array B**	**73.58**	**332**	P		P	P	**09 37 48.9**	**+0.3**
	0.9nm,0.4s,baz=66,slow=4.3,SNR=7.8								
NOA	**NORSAR Array B**	**79.35**	**337**	P		P	P	**09 38 20.5**	**-0.1**
	0.5nm,0.5s,baz=44,slow=5.6,SNR=3.0								
PDAR	**Pinedale Array**	**83.89**	**43**	P		P	P	**09 38 46.6**	**+2.0**
	0.4nm,0.5s,baz=282,slow=2.9,SNR=4.1								
TXAR	**Lajitas Array**	**95.92**	**51**	P		P	P	**09 39 42.3**	**+1.4**
	0.1nm,0.5s,baz=247,slow=4.4,SNR=2.6								

MEX 21 09:35:11.1±1.1,18.00N×95.30W,h69km±22km,MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TUIG	**Tuzandepetl**	**0.84**	**87**	*i* P		Pn	Pn	09 35 26.2	-1.4
TUIG				eS		Sn	Sn	09 35 37.7	-2.0
VHO	**Vista Hermosa**	**1.65**	**236**	eP		Pn	Pn	09 35 37.5	-0.7
VHO				eS		Sn	Sn	09 35 57.3	-1.3
TPIG	**Tehuac#an**	**2.00**	**282**	*i* P		Pn	Pn	09 35 41.9	-1.1
TPIG				eS		Sn	Sn	09 36 04.5	-2.7
HUIG	**Huatulco**	**2.35**	**199**	eP		Pn	Pn	09 35 45.9	-1.6
HUIG				eS		Sn	Sn	09 36 12.8	-2.4
PNIG	**Pinotepa**	**3.14**	**240**	eP		Pn	Pn	09 35 55.8	-2.5
PNIG				eS		Sn	Sn	09 36 32.6	-2.0
TLIG	**Tlapa**	**3.14**	**263**	eP		Pn	Pn	09 35 57.6	-0.8
TLIG				*i* S		Sn	Sn	09 36 33.0	-1.8

MEX 21 10:00:32.6±0.9,16.97N×94.37W,h139km±16km,MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TUIG	**Tuzandepetl**	**1.06**	**357**	*i* P		Pn	Pn	10 00 55.9	-1.0
TUIG				eS		Sn	Sn	10 01 12.8	-2.8
HUIG	**Huatulco**	**2.05**	**235**	eP		Pn	Pn	10 01 06.4	-1.4
HUIG				eS		Sn	Sn	10 01 33.1	-1.6
VHO	**Vista Hermosa**	**2.27**	**273**	eP		Pn	Pn	10 01 10.0	-0.5
VHO				eS		Sn	Sn	10 01 38.1	-1.5
PNIG	**Pinotepa**	**3.65**	**262**	eP		Pn	Pn	10 01 26.0	-2.0
PNIG				*i* S		Sn	Sn	10 02 08.6	-2.4
TLIG	**Tlapa**	**4.06**	**279**	eP		Pn	Pn	10 01 32.8	-0.6
TLIG				*i* S		Sn	Sn	10 02 18.4	-2.3

IDC 21 10:04:48.5±2.4,4.80S×144.92E,h105km±23km,mb3.5/4, mb1 3.7/6,mb1mx3.4/38,mbtmpg3.9/6,MS3.2/1,Ms1 3.2/1, ms1mx2.4/20,Error ellipse: s-maj=27.1km s-min=17.9km az=56.0,Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**4.78**	**298**	P		P	Pn	10 05 58.7	+0.5
	0.1nm,0.3s,baz=90,slow=20,SNR=4.2								
JAY				S		Sn	Sn	10 06 58.5	+5.9
	0.2nm,0.3s,baz=90,slow=20,SNR=1.7								
PMG	**Port Moresby**	**5.09**	**154**	P		P	Pn	10 06 02.9	+0.4
	3.8nm,0.3s,baz=27,slow=5.8,SNR=10								
PMG				S		Sn	Sn	10 07 00.2	+0.1
	13nm,0.3s,baz=184,slow=22,SNR=11								
WRA	**Warramunga Arr**	**18.24**	**213**	P		P	P	10 08 53.5	-0.3
	0.6nm,0.3s,baz=33,slow=11,SNR=26								
ASAR	**Alice Springs**	**21.55**	**208**	P		P	P	10 09 29.5	-0.1
	1.4nm,0.6s,baz=34,slow=11,SNR=25								
FITZ	**Fitzroy Crossi**	**23.02**	**233**	P		P	P	10 09 44.7	0.0
	5.4nm,0.6s,baz=44,slow=7.9,SNR=16								
FITZ				LR		LR	LR	10 20 05.7	
	comp=Z,63nm,20.5s,baz=20,slow=40								
STKA	**Stephens Creek**	**27.12**	**186**	P		P	P	10 10 21.8	+0.1
	1.3nm,0.8s,baz=23,slow=14,SNR=4.0								
ILAR	**Eielson Array**	**85.21**	**24**	P		P	P	10 17 13.0	0.0
	0.3nm,0.7s,baz=246,slow=6.0,SNR=4.7								

IDC 21 10:11:05.3±2.3,64.59S×176.58E,h0km,mb3.9/2, mb1 4.2/3,mb1mx3.8/27,mbtmpg3.9/3,ML3.7/1,MS3.4/4, Ms1 3.4/4,ms1mx3.1/19,Error ellipse: s-maj=79.7km s-min=38.8km az=69.0,Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**13.76**	**193**	Pn		Pn	Pn	10 14 21.0	-0.2
	0.3nm,0.3s,baz=32,slow=16,SNR=31								
VNDA				Sn		Sn	Sn	10 16 48.9	-5.5
	0.1nm,0.3s,baz=198,slow=20,SNR=2.1								
VNDA				LR		LR	LR	10 18 27.5	
	comp=Z,126nm,19.6s,baz=8.0,slow=32								
RPZ	**Rata Peaks**	**21.15**	**349**	LR		LR	LR	10 22 14.6	
	comp=Z,117nm,20.4s,baz=209,slow=32								
URZ	**Urewera**	**26.37**	**1**	LR		LR	LR	10 25 19.9	
	comp=Z,80nm,19.3s,baz=182,slow=32								
H01W1	**Cape Leeuwin H**	**47.32**	**278**	T		T	T	11 10 21.5	
	baz=148,slow=75,SNR=17								
H01W2	**Cape Leeuwin H**	**47.33**	**278**	T		T	T	11 10 21.9	
	baz=148,slow=75,SNR=20								
H01W3	**Cape Leeuwin H**	**47.34**	**278**	T		T	T	11 10 22.8	
	baz=149,slow=75,SNR=19								
ASAR	**Alice Springs**	**49.39**	**305**	P		P	P	10 19 57.0	+0.5
	1.1nm,0.6s,baz=154,slow=6.8,SNR=26								
WRA	**Warramunga Arr**	**52.67**	**307**	P		P	P	10 20 20.3	-0.8
	1.1nm,0.6s,baz=157,slow=6.6,SNR=16								
BOSA	**Boshof**	**84.43**	**205**	LR		LR	LR	10 57 33.0	
	comp=Z,34nm,21.8s,baz=193,slow=33								
H08S2	**Diego Garcia H**	**89.13**	**254**	T		T	T	12 02 58.5	
	baz=154,slow=76,SNR=7.2								
H08S1	**Diego Garcia H**	**89.14**	**254**	T		T	T	12 02 59.2	
	baz=154,slow=76,SNR=5.8								
H08S3	**Diego Garcia H**	**89.15**	**254**	T		T	T	12 02 59.7	
	baz=154,slow=76,SNR=6.8								
ILAR	**Eielson Array**	**131.80**	**20**	PKP		PKPdf	PKPdf	10 30 18.9	+0.5
	0.3nm,0.8s,baz=224,slow=2.7,SNR=4.6								
BRTR	**Keskin Array B**	**147.12**	**239**	PKPbc		PKPdf	PKPdf	10 30 48.2	+1.0
	1.2nm,0.9s,baz=156,slow=6.4,SNR=5.3								

*ISCJB **21** 10:14:52.0±0.6,23.97S±0.08×174.96W±0.09,h24km, mb4.7/17,MS3.6/3,Error ellipse: s-maj=12.4km s-min=11.4km az=20.2*
*IDC **21** 10:14:52.6±1.0,24.12S×175.36W,h0km,mb4.5/11, mb1 4.6/12,mb1mx4.4/23,mbtmp4.5/12,ML4.4/1,MS3.6/3, Ms1 3.6/3,ms1mx3.0/24,Error ellipse: s-maj=30.4km s-min=21.1km az=147.0*
*NEIC **21** 10:14:52.3±0.6,24.06S×174.96W,h10km,mb4.8/2,Error ellipse: s-maj=14.6km s-min=12.9km az=141.0*
ISC 21 10:14:54.5±0.6,23.95S±0.07×174.90W±0.09,h24km,n33, σ2s24/30,mb4.7/17,MS3.7/3,1D,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**9.04**	**312**	*e*Pn		**P**	**Pn**	**10 17 04.7**	**+1.0**
	50nm,1.0s								
AFI	**Afiamalu**	**10.41**	**17**	Pn		**P**	**Pn**	**10 17 21.9**	**-0.6**
	2.7nm,0.3s,baz=90,slow=12,SNR=4.9								
AFI				Sn		**S**	**Sn**	**10 19 14.3**	**-4.2**
	4.0nm,0.3s,baz=198,slow=20,SNR=4.3								
AFI	**Afiamalu**	**10.41**	**17**	Pn		**P**	**Pn**	**10 17 21.9**	**-0.6**
AFI				*e*Pn				10 17 23.7	+1.2
AFI				Sn		**S**	**Sn**	**10 19 14.3**	**-4.2**
RAR	**Rarotonga**	**14.23**	**82**	Pn		**P**	**Pn**	**10 18 12.8**	**-1.8**
	5.3nm,0.3s,baz=240,slow=10,SNR=9.9								
URZ	**Urewera**	**15.81**	**204**	Pn		**P**	**Pn**	**10 18 33.7**	**-1.9**
	1.6nm,0.3s,baz=319,slow=9.3,SNR=10								
URZ				Sn			Sn	10 21 11.6	-18
	0.7nm,0.3s,baz=108,slow=19,SNR=4.3								
DZM	**Mont Dzumac**	**17.28**	**272**	Pn		**P**	**P**	**10 18 57.4**	**+1.6**
	1.0nm,0.3s,baz=64,slow=20,SNR=13								
DZM	**Mont Dzumac**	**17.28**	**272**	*e*LR		LR	LR	10 23 08.5	
	187nm,26.5s								
TBI	**Tubuai**	**23.30**	**94**	*e*LR		LR	LR	10 25 35.7	
	183nm,28.0s								
PPT2	**Papeete2**	**24.48**	**80**	*e*LR		LR	LR	10 26 11.0	
	172nm,24.0s								
PPT	**Papeete**	**24.49**	**80**	LR		LR	LR	10 28 50.4	
	comp=Z,97nm,18.8s,baz=200,slow=34								
HNR	**Honiara**	**28.02**	**297**	P		**P**	**P**	**10 20 42.3**	**-1.7**
	45nm,0.6s,baz=191,slow=6.4,SNR=3.3								
CTA	**Charters Tower**	**36.14**	**268**	P		**P**	**P**	**10 21 54.0**	**-1.2**
	14nm,0.8s,baz=104,slow=12,SNR=17								
CTAO	**Charters Tower**	**36.14**	**268**	*e*P		**P**	**P**	**10 21 54.3**	**-0.9**
	233nm,1.3s								
RKT	**Rikitea**	**36.53**	**97**	*e*LR		LR	LR	10 31 39.3	
	127nm,27.5s								
PMG	**Port Moresby**	**38.97**	**285**	P		**P**	**P**	**10 22 18.3**	**-0.8**
	33nm,0.8s,baz=112,slow=5.6,SNR=8.3								
STKA	**Stephens Creek**	**39.04**	**248**	P		**P**	**P**	**10 22 15.8**	**-3.8**
	2.4nm,0.9s,baz=103,slow=16,SNR=4.3								
STKA				LR		LR	LR	10 37 28.4	
	comp=Z,101nm,18.3s,baz=41,slow=35								
ASAR	**Alice Springs**	**46.62**	**259**	P		**P**	**P**	**10 23 19.1**	**-2.1**
	8.3nm,0.9s,baz=98,slow=8.0,SNR=48								
ASAR				LR		LR	LR	10 43 26.7	
	comp=Z,78nm,18.3s,baz=117,slow=37								
WRAB	**Tennant Creek**	**47.05**	**265**	*e*P		**P**	**P**	**10 23 21.7**	**-2.9**
	8.8nm,0.8s								
WRA	**Warramunga Arr**	**47.06**	**265**	P		**P**	**P**	**10 23 22.2**	**-2.4**
	7.2nm,0.8s,baz=93,slow=8.7,SNR=44								
FITZ	**Fitzroy Crossi**	**55.47**	**264**	*e*P		**P**	**P**	**10 24 26.9**	**-0.8**
	10nm,1.0s								
QSPA	**South Pole Qui**	**66.14**	**180**	*e*P		**P**	**P**	**10 25 39.9**	**+0.2**
	41nm,1.1s								
MJAR	**Matsushiro Arr**	**74.68**	**322**	P		**P**	**P**	**10 26 33.5**	**+1.3**
	2.6nm,0.8s,baz=157,slow=5.5,SNR=4.2								
MAW	**Mawson**	**79.29**	**199**	P		**P**	**P**	**10 26 58.8**	**+1.2**
	3.8nm,1.0s,baz=109,slow=6.7,SNR=4.8								
PETK	**Petropavlovsk-**	**80.35**	**344**	P		**P**	**P**	**10 27 06.5**	**+3.1**
	3.0nm,0.8s,baz=84,slow=7.7,SNR=6.0								
USRK	**Ussuriysk Ar.**	**83.42**	**325**	P		**P**	**P**	**10 27 22.2**	**+2.4**
	4.0nm,0.9s,baz=93,slow=5.1,SNR=5.4								
SYO	**Syowa Base**	**83.98**	**192**	*e*P		**P**	**P**	**10 27 21.8**	**-0.6**
SNAA	**Sanae**	**84.48**	**177**	*e*P		**P**	**P**	**10 27 23.9**	**-1.1**
	326nm,1.3s								
TXAR	**Lajitas Array**	**86.54**	**56**	P		**P**	**P**	**10 27 39.9**	**+3.9**
	0.9nm,1.1s,baz=212,slow=4.4,SNR=6.1								
ILAR	**Eielson Array**	**91.06**	**12**	P		**P**	**P**	**10 27 57.9**	**+1.4**
	0.6nm,0.8s,baz=219,slow=4.2,SNR=5.8								
CMAR	**Chiang Mai Arr**	**93.95**	**288**	P		**P**	**P**	**10 28 13.9**	**+3.0**
	1.3nm,0.4s,baz=138,slow=2.9,SNR=8.9								
MKAR	**Makanchi Array**	**115.64**	**312**	PKP		**PKPdf**	**PKPdf**	**10 33 35.0**	**+0.4**
	0.2nm,0.3s,baz=123,slow=2.0,SNR=3.9								
AKASG	**Malin Array Be**	**147.41**	**331**	PKPbc		**PKPab**	**PKPab**	**10 34 37.7**	**-0.3**
	2.3nm,0.4s,baz=40,slow=3.7,SNR=15								
BRTR	**Keskin Array B**	**151.26**	**310**	PKPbc		**PKPbc**	**PKPbc**	**10 34 48.0**	**+1.7**
	2.7nm,0.8s,baz=116,slow=2.9,SNR=12								

*IDC **21** 10:48:14.7±0.7,15.72S×173.16W,h0km,mb4.3/9, mb1 4.5/11,mb1mx4.2/34,mbtmp4.3/11,ML4.1/2,MS3.3/12, Ms1 3.3/12,ms1mx3.2/31,Error ellipse: s-maj=30.9km s-min=16.3km az=133.0*
*NEIC **21** 10:48:16.0±0.4,15.74S×173.08W,h10km,mb4.6/2,Error ellipse: s-maj=13.1km s-min=8.4km az=149.0*
*ISCJB **21** 10:48:17.1±0.5,15.8S±0.1×173.09W±0.09,h29km, mb4.3/11,MS3.4/10,Error ellipse: s-maj=16.6km s-min=10.0km az=146.9*
ISC 21 10:48:18.7±0.6,15.7S±0.1×173.02W±0.10,h29km,n35, σ1s21/21,mb4.5/11,MS3.3/10,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.12**	**35**	Pn		**P**	**Pn**	**10 48 52.8**	**+0.4**
	108nm,0.3s,baz=182,slow=1.7,SNR=161								
AFI				Sn		**S**	**Sn**	**10 49 14.6**	**-3.2**
	377nm,0.3s,baz=47,slow=23,SNR=49								
AFI				LR		LR	LR	10 49 43.1	
	comp=Z,182nm,20.3s,baz=226,slow=39								
MSVF	**Nonsavu**	**8.80**	**255**	*e*Pn		**P**	**Pn**	**10 50 24.4**	**+0.3**
	26nm,1.0s								
RAR	**Rarotonga**	**13.73**	**116**	Pn		**P**	**Pn**	**10 51 30.9**	**-0.6**
	4.1nm,0.3s,baz=271,slow=8.6,SNR=7.2								
RAR				LR		LR	LR	10 55 46.9	
	comp=Z,54nm,22.0s,baz=276,slow=33								
DZM	**Mont Dzumac**	**20.44**	**249**	P		P	Pn	10 52 58.9	+2.6
	14nm,0.8s,baz=110,slow=14,SNR=6.7								
DZM				LR		LR	LR	10 59 40.0	
	comp=Z,78nm,20.3s,baz=62,slow=34								
DZM	**Mont Dzumac**	**20.44**	**249**	*e*P		P	Pn	10 52 58.6	+2.3
	67nm,1.3s								
PAE	**Paea**	**22.54**	**98**	*e*T		T	T	11 16 11.0	
	3.3nm,0.3s								
PPT	**Papeete**	**22.55**	**98**	LR		LR	LR	10 59 25.3	
	comp=Z,49nm,20.7s,baz=194,slow=30								
PPT2	**Papeete2**	**22.55**	**98**	*e*LR		LR	LR	10 58 31.4	
	146nm,26.8s								
TBI	**Tubuai**	**23.46**	**113**	*e*LR		LR	LR	10 59 03.0	
	182nm,28.0s								
TBI	**Tubuai**	**23.46**	**113**	*e*T		T	T	11 17 45.2	
	4.5nm,0.2s								
URZ	**Urewera**	**24.13**	**199**	P		**P**	**P**	**10 53 31.6**	**-0.5**
	6.2nm,0.3s,baz=331,slow=4.1,SNR=15								
URZ				LR		LR	LR	11 01 25.4	
	comp=Z,89nm,18.6s,baz=46,slow=33								
HNR	**Honiara**	**27.09**	**280**	LR		LR	LR	11 03 21.1	
	comp=Z,102nm,18.1s,baz=160,slow=34								
TAOE	**Nuku Hiva Isla**	**32.80**	**82**	*e*LR		LR	LR	11 03 25.2	
	253nm,26.0s								
RKT	**Rikitea**	**36.57**	**108**	*e*T		T	T	11 34 05.0	
	3.6nm,0.3s								
H11S3	**WAKE ISLAND Hy**	**39.39**	**329**	T		T	T	11 37 21.1	
	SNR=7.2								
H11N3	**WAKE ISLAND Hy**	**40.32**	**330**	T		T	T	11 39 33.4	
	SNR=8.3								
STKA	**Stephens Creek**	**44.22**	**240**	P		**P**	**P**	**10 56 24.4**	**-1.2**
	4.1nm,0.7s,baz=89,slow=7.6,SNR=13								
WRAB	**Tennant Creek**	**50.13**	**257**	*e*P		**P**	**P**	**10 57 10.5**	**-1.4**
	13nm,1.7s								
WRA	**Warramunga Arr**	**50.14**	**257**	P		**P**	**P**	**10 57 10.5**	**-1.4**
	1.3nm,0.4s,baz=96,slow=7.2,SNR=79								
ASAR	**Alice Springs**	**50.37**	**252**	P		**P**	**P**	**10 57 12.5**	**-1.2**
	19nm,0.6s,baz=87,slow=7.9,SNR=349								
ASAR				LR		LR	LR	11 17 07.4	
	comp=Z,52nm,19.5s,baz=82,slow=34								
NWAO	**Narrogin (SRO)**	**64.81**	**241**	LR		LR	LR	11 25 14.4	
	comp=Z,35nm,18.4s,baz=34								
MJAR	**Matsushiro Arr**	**69.38**	**320**	LR		LR	LR	11 23 48.2	
	comp=Z,15nm,21.7s,baz=100,slow=31								
PETK	**Petropavlovsk-**	**72.99**	**342**	P		**P**	**P**	**10 59 46.9**	**+1.4**
	4.8nm,0.9s,baz=120,slow=10,SNR=4.5								
TXAR	**Lajitas Array**	**80.46**	**56**	P		**P**	**P**	**11 00 29.7**	**+1.4**
	0.2nm,0.8s,baz=215,slow=6.1,SNR=4.0								
TXAR				LR		LR	LR	11 27 23.7	
	comp=Z,14nm,21.7s,baz=0.0,slow=29								
PDAR	**Pinedale Array**	**82.22**	**42**	P		**P**	**P**	**11 00 38.5**	**+0.9**
	0.7nm,0.8s,baz=219,slow=3.8,SNR=5.9								
PDAR				LR		LR	LR	11 30 51.9	
	comp=Z,18nm,20.8s,baz=266,slow=31				

MARH				*e*S		Sg	11 09 10.8	+0.3
MARH				AML	AML		11 09 17.6	
	comp=E,22nm,0.7s							
MARH				AML	AML		11 09 19.9	
	comp=N,85nm,0.4s							
TOTH	**TOTAH**	**0.56**	**135**	*e*P		**Pg**	**11 09 05.5**	**+0.9**
TOTH				*e*S		**Sb**	**11 09 14.1**	**-0.2**
TOTH				AML	AML		11 09 17.4	
	comp=E,24nm,0.7s							
TOTH				AML	AML		11 09 21.6	
	comp=N,30nm,0.6s							
ROOS	**tl_alroos**	**1.19**	**70**	*e*P		**Pg**	**11 09 15.4**	**-1.0**
ROOS				*e*S		**Sg**	**11 09 31.6**	**-0.2**
ROOS				AML	AML		11 09 41.4	
	comp=E,20nm,0.6s							
ROOS				AML	AML		11 09 50.7	
	comp=N,20nm,0.6s							
SALA	**Sala**	**1.24**	**148**	*e*P		**Pg**	**11 09 17.4**	**0.0**
SALA				*e*S		**Sg**	**11 09 32.4**	**-1.1**
SALA				AML	AML		11 09 37.8	
	comp=E,1.3nm,0.3s							
SALA				AML	AML		11 09 38.0	
	comp=N,24nm,0.3s							
ZALF	**Zalf**	**1.43**	**125**	*e*P		**Pn**	**11 09 20.6**	**+0.5**
ZALF				*e*S		**Sg**	**11 09 38.4**	**-1.3**
ZALF				AML	AML		11 09 42.0	
	comp=N,7.3nm,0.3s							
ZALF				AML	AML		11 09 42.1	
	comp=E,10nm,0.5s							

*IDC **21** 11:18:57.6±0.9, 30°.16S×177°.33W, h0km, mb4.6/7, mb1 4.7/9, mb1mx4.3/28, mbtmp4.6/9, ML4.0/2, MS3.5/7, Ms1 3.5/7, ms1mx3.1/28, Error ellipse: s-maj=26.9km s-min=19.7km az=105.0*
*NEIC **21** 11:18:59.2±0.7, 30°.07S×177°.31W, h10km, mb4.8/1, Error ellipse: s-maj=18.6km s-min=12.1km az=105.0*
*ISCJB **21** 11:19:02.4±0.8, 30°.15S±0°.06×177°.6W±0°.2, h35km, mb4.7/9, MS3.4/5, Error ellipse: s-maj=20.4km s-min=8.1km az=175.6*

ISC 21 11:19:03.5±0.7, 30°.14S±0°.07×177°.6W±0°.1, h35km, n38, σ1§20/33, mb4.7/9, MS3.6/5, 1C-1D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.94**	**341**		**Pn**	**Pn**	**11 19 18.9**	**-1.2**
	2µm,0.3s,baz=82,slow=4.2,SNR=49							
RAO					Sn	**Sn**	**11 19 31.3**	**-1.0**
	4µm,0.3s,baz=107,slow=19,SNR=17							
OUZ	**Omahuta**	**9.01**	**233**		Pn	Pn	11 21 16.1	+5.1
URZ	**Urewera**	**9.22**	**207**		Pn	**Pn**	**11 21 11.7**	**-2.3**
	0.6nm,0.3s,baz=276,slow=5.9,SNR=8.6							
URZ					Sn	**Sn**	**11 22 54.8**	**-1.7**
	3.9nm,0.3s,baz=322,slow=22,SNR=8.1							
RPZ	**Rata Peaks**	**16.30**	**211**		Pn	**Pn**	**11 22 48.4**	**-1.2**
	1.2nm,0.3s,baz=224,slow=1.2,SNR=6.0							
DZM	**Mont Dzumac**	**16.45**	**295**		LR	LR	11 28 14.2	
	comp=Z,224nm,18.3s,baz=132,slow=34							
DZM	**Mont Dzumac**	**16.45**	**295**	*e*P		P	11 23 03.9	+10
	37nm,0.9s							
DZM				*e*LR		LR	11 27 03.0	
	286nm,23.5s							
RAR	**Rarotonga**	**18.32**	**65**	LR		LR	11 28 45.2	
	comp=Z,129nm,21.6s,baz=252,slow=32							
TBI	**Tubuai**	**25.95**	**82**	*e*LR		LR	11 30 55.5	
	178nm,27.8s							
PPT2	**Papeete2**	**28.39**	**70**	*e*LR		LR	11 32 00.1	
	160nm,25.5s							
PPT	**Papeete**	**28.41**	**70**	LR		LR	11 33 47.4	
	comp=Z,22nm,21.9s,baz=191,slow=32							
HNR	**Honiara**	**29.42**	**310**	LR		LR	11 35 54.4	
	comp=Z,68nm,19.0s,baz=196,slow=34							
CTA	**Charters Tower**	**34.13**	**279**	P		**P**	**11 25 46.8**	**+1.5**
	7.0nm,0.6s,baz=103,slow=11,SNR=20							
CTAO	**Charters Tower**	**34.13**	**279**	*e*P		**P**	**11 25 46.9**	**+1.6**
	56nm,0.8s							
STKA	**Stephens Creek**	**34.90**	**256**	P		**P**	**11 25 54.0**	**+2.1**
	4.8nm,0.4s,baz=99,slow=12,SNR=54							
STKA					LR	LR	11 39 28.4	
	comp=Z,102nm,18.1s,baz=28,slow=35							
ASAR	**Alice Springs**	**43.50**	**266**	P		**P**	**11 27 03.9**	**+0.1**
	3.0nm,0.4s,baz=106,slow=7.2,SNR=91							
ASAR					PcP	**PcP**	**11 28 51.0**	**-0.5**
	0.8nm,0.6s,baz=125,slow=3.9,SNR=4.9							
ASAR					LR	LR	11 44 32.8	
	comp=Z,134nm,18.4s,baz=96,slow=35							
WRAB	**Tennant Creek**	**44.46**	**272**	*e*P		**P**	**11 27 11.6**	**+0.1**
	7.7nm,0.6s							
WRA	**Warramunga Arr**	**44.47**	**272**	P		**P**	**11 27 11.6**	**+0.1**
	10nm,0.5s,baz=110,slow=8.1,SNR=179							
WRA					PcP	**PcP**	**11 28 54.7**	**-0.1**
	0.7nm,0.7s,baz=108,slow=3.7,SNR=3.5							
QSPA	**South Pole Qui**	**59.97**	**180**	*e*P		**P**	**11 29 07.7**	**+1.5**
	29nm,0.8s							
MAW	**Mawson**	**72.68**	**200**	P		**P**	**11 30 27.4**	**+0.1**
	2.9nm,0.8s,baz=102,slow=8.8,SNR=6.7							
SYO	**Syowa Base**	**77.45**	**193**‖	*e*P		**P**	**11 30 52.2**	**-2.6**
SYO	**Syowa Base**	**77.45**	**193**‖	*e*PcP		**PcP**	**11 31 06.2**	**+1.1**
SNAA	**Sanae**	**78.41**	**327**	P		**P**	**11 31 02.1**	**+1.9**
PETK	**Petropavlovsk-**	**85.66**	**345**	P		**P**	**11 31 38.5**	**+0.5**
	3.8nm,0.8s,baz=92,slow=8.9,SNR=6.2							
USRK	**Ussuriysk Ar.**	**87.15**	**326**	P		**P**	**11 31 46.7**	**+1.1**
	3.0nm,1.0s,baz=133,slow=6.3,SNR=2.5							
TRF	**Thorofare Moun**	**95.76**	**12**	*e*P		**P**	**11 32 24.9**	**-0.6**
CPUP	**Villa Florida**	**99.85**	**128**	LR		LR	12 09 34.8	
	comp=Z,21nm,20.6s,baz=192,slow=30							
KURK	**Kurchatov**	**121.14**	**314**	PKP		**PKPdf**	**11 37 51.2**	**-0.9**
KURBB	**Kurchatov Arra**	**121.18**	**314**	PKP		**PKPdf**	**11 37 51.2**	**-1.0**
	0.3nm,0.3s,baz=99,slow=1.9,SNR=5.6							
BVAR	**Borovoye Array**	**126.48**	**316**	PKP		**PKPdf**	**11 38 02.1**	**-0.2**
	0.8nm,0.6s,baz=186,slow=1.5,SNR=4.7							
FINES	**FINESS Array B**	**145.03**	**340**	PKPbc		**PKPbc**	**11 38 35.2**	**-0.5**
	6.9nm,0.5s,baz=63,slow=3.3,SNR=46							
KBZ	**Khabaz**	**145.28**	**304**	PKPbc		**PKPbc**	**11 38 35.9**	**-1.3**
	2.3nm,0.7s,baz=169,slow=1.2,SNR=4.3							
NB2	**NORSAR Subarra**	**148.55**	**352**	PKP		**PKPbc**	**11 38 45.4**	**-0.6**
	comp=Z,2.4nm,0.7s,baz=19,slow=4.4							
NOA	**NORSAR Array B**	**148.55**	**352**	PKPbc		**PKPbc**	**11 38 45.6**	**-0.4**
	comp=Z,1.7nm,0.6s,baz=13,slow=4.4,SNR=6.8							
HFS	**Hagfors**	**149.06**	**349**	PKPbc		**PKPbc**	**11 38 46.6**	**-0.7**
	comp=Z,3.8nm,0.7s,baz=70,slow=1.7,SNR=7.2							
AKASG	**Malin Array Be**	**151.32**	**323**	PKPbc		**PKPbc**	**11 38 52.4**	**-0.6**
	comp=Z,1.1nm,0.4s,baz=50,slow=3.3,SNR=5.4							
EIL	**Elat**	**151.86**	**277**	PKPbc		**PKPbc**	**11 38 55.9**	**+0.9**
	comp=Z,2.5nm,0.5s,baz=346,slow=14,SNR=3.8							
BRTR	**Keskin Array B**	**152.80**	**299**	PKPbc		**PKPbc**	**11 38 57.2**	**+0.3**
	comp=Z,1.7nm,0.8s,baz=147,slow=2.9,SNR=7.6							
GERES	**GERESS Array B**	**159.44**	**338**	PKPab		**PKPab**	**11 39 35.4**	**-0.6**
	comp=Z,0.3nm,0.2s,baz=53,slow=6.5,SNR=3.4							

*ISK **21** 11:26:55.1, 38°.59N×39°.64E, h5km, ML3.5*
*DDA **21** 11:26:55.7, 38°.59N×39°.64E, h8km, Ml3.6*
*CSEM **21** 11:26:56.3±0.2, 38.58N×39.65E, h2km, ML3.5, Error ellipse: s-maj=4.3km s-min=3.7km az=61.0*

ISC 21 11:26:55.7±1.3, 38°.59N±0°.02×39°.64E±0°.02, h0km±12km, n57, σ0§79/75, Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.33**	**231**		PG	**Pg**	**11 27 02.5**	**+0.4**
SVRC					*e*Sg	**Sb**	**11 27 09.3**	**-1.3**
SVRC	**Sivrice-ELAZID**	**0.33**	**231**		*i* Pg	**Pg**	**11 27 02.5**	**+0.4**
SVRC					*e*Sg	**Sb**	**11 27 09.3**	**-1.3**
PTK	**Pertek**	**0.36**	**328**		PG	**Pg**	**11 27 03.1**	**+0.5**
PTK					*e*SG	**Sb**	**11 27 09.5**	**-1.9**
PTK	**Pertek**	**0.36**	**328**		*i* Pg	**Pg**	**11 27 03.1**	**+0.5**
PTK					*e*Sg	**Sb**	**11 27 09.5**	**-1.9**
ELZG	**Elazig**	**0.52**	**260**		*i* P	**Pg**	**11 27 05.8**	**+0.1**
ELZG					*i* S	**Sb**	**11 27 16.2**	**+0.2**
ELZG	**Elazig**	**0.52**	**260**		P	**Pg**	**11 27 05.8**	**+0.1**
ELZG					S	**Sb**	**11 27 16.2**	**+0.2**
TNCL	**Tunceli-Merkez**	**0.53**	**352**		*i* P	**Pg**	**11 27 06.1**	**+0.2**
TNCL					*i* S	**Sb**	**11 27 14.5**	**-1.7**
TNCL	**Tunceli-Merkez**	**0.53**	**352**		P	**Pg**	**11 27 06.1**	**+0.2**
TNCL					S	**Sb**	**11 27 14.5**	**-1.7**
DYBB	**Diyarbakir**	**0.75**	**148**		PG	**Pb**	**11 27 10.9**	**-0.8**
DIYA	**Diyarbakir**	**0.77**	**150**		*i* P	**Pb**	**11 27 11.4**	**-0.6**
DIYA					*i* S	**Sb**	**11 27 22.0**	**-1.0**
DIYA	**Diyarbakir**	**0.77**	**150**		P	**Pb**	**11 27 11.4**	**-0.6**
DIYA					S	**Sb**	**11 27 22.0**	**-1.0**
DIY	**Diyarbakir**	**0.83**	**146**		*i* Pg	**Pg**	**11 27 10.9**	**-0.8**
BNGB	**Bing¶ll**	**0.91**	**63**		PG	**Pg**	**11 27 13.7**	**+0.6**
ERZN	**Erzincan**	**1.00**	**4**		*e*PG	**Pg**	**11 27 14.7**	**-0.2**
REFA	**Refahiye_ERZ**	**1.05**	**320**		*i* P	Pn	11 27 23.8	+5.9
YEDI	**Yedisu-Bingol**	**1.10**	**40**		*e*PN	**Pg**	**11 27 16.9**	**0.0**
EUZM	**Uzumlu**	**1.12**	**2**		*i* P	**Pg**	**11 27 16.9**	**-0.3**
EUZM					*i* S	**Sb**	**11 27 32.8**	**-0.3**
EUZM	**Uzumlu**	**1.12**	**2**		P	**Pg**	**11 27 16.9**	**-0.3**
EUZM					S	**Sb**	**11 27 32.8**	**-0.3**
KEMA	**Kemaliye**	**1.12**	**308**		*i* P	**Pg**	**11 27 16.1**	**-1.1**
KEMA					*i* S	**Sn**	**11 27 35.4**	**+0.5**
KEMA	**Kemaliye**	**1.12**	**308**		P	**Pg**	**11 27 16.1**	**-1.1**
KEMA					S	**Sn**	**11 27 35.4**	**+0.5**
MAZI	**Mazidag**	**1.30**	**150**		*e*PN	**Pg**	**11 27 20.4**	**-0.2**
MAZI	**Mazidag**	**1.30**	**150**		*e*Pn	**Pg**	**11 27 20.4**	**-0.2**
SVAN	**Silvan-Diyarba**	**1.30**	**109**		*e*PN	**Pg**	**11 27 20.8**	**+0.1**
SVAN	**Silvan-Diyarba**	**1.30**	**109**		*e*Pn	**Pg**	**11 27 20.8**	**+0.1**
AKCD	**Akcadag**	**1.38**	**258**		*i* P	**Pn**	**11 27 20.9**	**-1.4**
AKCD	**Akcadag**	**1.38**	**258**		P	**Pn**	**11 27 20.9**	**-1.4**
BTMN	**Batman**	**1.46**	**118**		*i* P	**Pn**	**11 27 23.5**	**0.0**
BTMN					*i* S	**Sn**	**11 27 43.8**	**+0.4**
BTMN	**Batman**	**1.46**	**118**		P	**Pn**	**11 27 23.5**	**0.0**
BTMN					S	**Sn**	**11 27 43.8**	**+0.4**
ATAB	**Bozova**	**1.54**	**224**		*i* P	**Pb**	**11 27 24.9**	**-0.2**
ATAB					*i* S	**Sg**	**11 27 45.8**	**+0.6**
ATAB	**Bozova**	**1.54**	**224**		P	**Pb**	**11 27 24.9**	**-0.2**
ATAB					S	**Sg**	**11 27 45.8**	**+0.6**
MARD	**Mardin**	**1.56**	**144**		*i* P	**Pn**	**11 27 24.4**	**-0.4**
MARD					*i* S	**Sb**	**11 27 45.7**	**-0.2**
KOPT	**Kop Dagi**	**1.57**	**25**		*i* P	**Pb**	**11 27 25.9**	**0.0**
KOPT	**Kop Dagi**	**1.57**	**25**		P	**Pb**	**11 27 25.9**	**0.0**
KELT	**Kelkit**	**1.58**	**349**		*i* P	**Pn**	**11 27 25.5**	**+0.2**
KELT	**Kelkit**	**1.58**	**349**		P	**Pn**	**11 27 25.5**	**+0.2**
CUKAN	**kangal_SIVAS**	**1.84**	**294**		*i* P	**Pb**	**11 27 30.6**	**+0.3**
CUKAN	**kangal_SIVAS**	**1.84**	**294**		P	**Pb**	**11 27 30.6**	**+0.3**
GUMT	**Gumushane**	**1.87**	**356**		*e*PN	**Pb**	**11 27 30.1**	**-0.8**
GUMT	**Gumushane**	**1.87**	**356**		*e*Pn	**Pb**	**11 27 30.1**	**-0.8**
EZM	**Erzurum**	**1.88**	**45**		*e*PN	**Pn**	**11 27 29.4**	**+0.1**
SUSE	**Susehri**	**1.96**	**326**		*i* P	**Pb**	**11 27 32.4**	**-0.1**
SUSE	**Susehri**	**1.96**	**326**		P	**Pb**	**11 27 32.3**	**-0.1**
GAZ	**Gaziantep**	**2.38**	**234**		*e*PN	**Pn**	**11 27 36.9**	**+0.8**
GAZ	**Gaziantep**	**2.38**	**234**		*e*Pn	**Pn**	**11 27 36.9**	**+0.8**
KTUT	**Trabzon**	**2.40**	**2**		*e*PN	**Pn**	**11 27 36.9**	**+0.7**
KTUT	**Trabzon**	**2.40**	**2**		*e*Pn	**Pn**	**11 27 36.9**	**+0.7**
KMRS	**Kahramanmaras**	**2.42**	**244**		*e*PN	**Pn**	**11 27 37.2**	**+0.8**
KMRS	**Kahramanmaras**	**2.42**	**244**		*e*Pn	**Pn**	**11 27 37.3**	**+0.8**
ESPY	**Espiye-Giresun**	**2.43**	**344**		*e*PN	**Pn**	**11 27 37.2**	**+0.6**
ESPY	**Espiye-Giresun**	**2.43**	**344**		*e*Pn	**Pn**	**11 27 37.3**	**+0.6**
SIRT	**Sirnak**	**2.47**	**115**		*e*PN	**Pn**	**11 27 38.3**	**+1.0**
SIRT	**Sirnak**	**2.47**	**115**		*e*Pn	**Pn**	**11 27 38.3**	**+1.0**
SARI	**SarD1z-Kayseri**	**2.53**	**267**		*e*PN	**Pn**	**11 27 39.3**	**+1.1**
AGRB	**Hanur-Agry**	**2.79**	**68**		*e*PN	**Pn**	**11 27 43.0**	**+1.1**
AGRB	**Hanur-Agry**	**2.79**	**68**		*e*Pn	**Pn**	**11 27 43.0**	**+1.1**
BNN	**Bunyan**	**2.98**	**276**		*e*PN	**Pn**	**11 27 45.3**	**+1.0**
BNN	**Bunyan**	**2.98**	**276**		*e*Pn	**Pn**	**11 27 45.3**	**+1.0**

*IDC **21** 11:32:55.1±1.1, 29°.18S×177°.59W, h152km±3km, mb3.4/3, mb1 3.6/4, mb1mx3.3/23, mbtmp3.9/4, Error ellipse: s-maj=36.8km s-min=22.6km az=133.0*

ISC 21 11:32:54.6±1.3, 29°.2S±0°.1×177°.5W±0°.3, h150km, n12, σ0§78/16, mb3.7/3, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.40**	**261**		P	**Pn**	**11 33 16.4**	**+1.0**
	856nm,0.3s,baz=81,slow=8.3,SNR=35							
RAO					S	**Sn**	**11 33 32.8**	**+1.5**
	578nm,0.3s,baz=78,slow=23,SNR=8.3							
URZ	**Urewera**	**10.10**	**205**		P	**Pn**	**11 35 15.0**	**-0.8**
	0.2nm,0.3s,baz=354,slow=16,SNR=3.2							
URZ					S	**Sn**	**11 37 08.2**	**+0.6**
	0.7nm,0.3s,baz=281,slow=22,SNR=9.6							
STKA	**Stephens Creek**	**35.21**	**255**		P	**P**	**11 39 34.4**	**-0.2**
	2.0nm,1.1s,baz=110,slow=12,SNR=3.6							
ASAR	**Alice Springs**	**43.65**	**265**		P	**P**	**11 40 44.2**	**-0.3**
	0.5nm,0.6s,baz=102,slow=7.4,SNR=12							
ASAR					PcP	**PcP**	**11 42 29.6**	**+0.4**
	0.2nm,0.5s,baz=116,slow=3.4,SNR=4.7							
WRA	**Warramunga Arr**	**44.53**	**271**		P	**P**	**11 40 50.4**	**-1.1**
	1.0nm,0.5s,baz=109,slow=7.9,SNR=18							
WRA					PcP	**PcP**	**11 42 32.5**	**+0.3**
	1.2nm,0.9s,baz=107,slow=3.4,SNR=5.6							
MKAR	**Makanchi Array**	**117.35**	**310**	PKP		**PKPdf**	**11 51 22.2**	**+0.1**
	0.3nm,0.5s,baz=93,slow=2.9,SNR=3.1							
KURBB	**Kurchatov Arra**	**120.58**	**314**	PKP		**PKPdf**	**11 51 28.0**	**-0.1**
	0.3nm,0.3s,baz=107,slow=1.6,SNR=3.4							
FINES	**FINESS Array B**	**144.17**	**341**	PKP		**PKPab**	**11 52 09.8**	**-0.1**
	0.5nm,0.5s,baz=88,slow=5.9,SNR=3.5							
NB2	**NORSAR Subarra**	**147.63**	**352**	PKP		**PKPbc**	**11 52 20.4**	**-0.3**
	comp=Z,0.9nm,0.5s,baz=11,slow=2.9							
NOA	**NORSAR Array B**	**147.63**	**352**	PKPbc		**PKPbc**	**11 52 19.9**	**-0.8**
	comp=Z,1.2nm,0.5s,baz=14,slow=4.5,SNR=4.7							
AKASG	**Malin Array Be**	**150.51**	**324**	PKPbc		**PKPbc**	**11 52 27.9**	**-0.5**
	comp=Z,7nm,0.6s,baz=46,slow=3.3,SNR=9.3							
BRTR	**Keskin Array B**	**152.41**	**301**	PKPbc		**PKPbc**	**11 52 33.9**	**+0.8**
	comp=Z,0.5nm,0.5s,baz=132,slow=2.1,SNR=3.2							

MEX 21 11:53:57.6±0.6, 13°.95N×93°.07W, h15km, MD3.9, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.49**	**21**		*e*P	Pn	11 54 35.2	-2.6
CCIG					*e*S	Sn	11 55 03.9	-4.1

*DDA **21** 11:59:35.7, 39°.18N×29°.03E, h7km, Md2.5*
*ISCJB **21** 11:59:36.9±0.5, 39°.09N±0°.05×29°.05E±0°.04, h9km, Error ellipse: s-maj=6.9km s-min=4.1km az=165.6*
*ISK **21** 11:59:36.6, 39°.10N×29°.07E, h6km, MD2.4*
*CSEM **21** 11:59:37.1±0.1, 39°.10N×29°.05E, h2km, MD2.4, Error ellipse: s-maj=2.5km s-min=1.9km az=171.0*

ISC 21 11:59:37.0±0.9, 39°.09N±0°.03×29°.05E±0°.02, h9km, n22, σ0§23/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**261**		*i* P	**Pg**	**11 59 42.1**	**-0.1**
DEMI					*i* S	**Sg**	**11 59 45.9**	**0.0**
DEMI	**Demirci**	**0.26**	**261**		P	**Pg**	**11 59 42.1**	**-0.1**
DEMI					S	**Sg**	**11 59 45.8**	**0.0**
GEDZ	**Gediz**	**0.29**	**98**		*e*PG	**Pg**	**11 59 42.6**	**-0.1**
GEDZ	**Gediz**	**0.29**	**98**		*e*Pg	**Pg**	**11 59 42.6**	**-0.1**
GDZ	**Gediz**	**0.34**	**89**		*i* P	**Pg**	**11 59 43.6**	**-0.1**
GDZ					*i* S	**Sg**	**11 59 48.6**	**+0.4**
GDZ	**Gediz**	**0.34**	**89**		P	**Pg**	**11 59 43.6**	**-0.1**
GDZ					S	**Sg**	**11 59 48.6**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**41**		*e*PG	**Pg**	**11 59 46.2**	**-0.2**
TVSB					*e*SG	**Sg**	**11 59 52.7**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**41**		*e*Pg	**Pg**	**11 59 46.2**	**-0.2**
TVSB					*e*Sg	**Sg**	**11 59 52.7**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**208**		*e*PG	**Pg**	**11 59 49.4**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**208**		*e*Pg	**Pg**	**11 59 49.4**	**-0.1**
KHL	**Karahalli**	**0.85**	**154**		*e*PG	**Pb**	**11 59 54.1**	**+0.2**
KHL	**Karahalli**	**0.85**	**154**		*e*Pg	**Pb**	**11 59 54.1**	**+0.2**
AKS	**Akhisar**	**0.98**	**258**		*e*PG	**Pb**	**11 59 56.2**	**0.0**
AKS	**Akhisar**	**0.98**	**258**		*e*Pg	**Pb**	**11 59 56.2**	**0.0**
BALB	**Balikesir**	**1.06**	**302**		*e*PG	**Pn**	**11 59 57.8**	**-0.2**
BALB	**Balikesir**	**1.06**	**302**		*e*Pg	**Pn**	**11 59 57.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.29**	**336**		*e*PN	**Pg**	**12 00 02.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.29**	**336**		*e*Pn	**Pg**	**12 00 02.3**	**+0.5**
GONE	**Gonen-Balikesi**	**1.42**	**313**		*e*PN	**Pb**	**12 00 03.6**	**-0.1**
GONE	**Gonen-Balikesi**	**1.42**	**313**		*e*Pn	**Pb**	**12 00 03.6**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**219**		*e*PN	**Pg**	**12 00 05.0**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**219**		*e*Pn	**Pg**	**12 00 05.0**	**+0.1**

*CSEM **21** 12:12:31.1, 40°.54N×35°.09E, h7km, MD2.4, Suspected Mining explosion.*

DDA 21 12:12:31.1, 40°.54N×35°.09E, h7km, Md2.4, Suspected Mining explosion., Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CTAK	**Corum_Osmancik**	**0.26**	**296**		*i* P	Pg	12 12 35.9	-0.4
CTAK					*i* S	Sg	12 12 40.7	+1.0
CTAK	**Corum_Osmancik**	**0.26**	**296**		P	Pg	12 12 35.9	-0.4
CTAK					S	Sg	12 12 40.7	+1.0
COAL	**Corum-Alaca**	**0.29**	**197**		*i* P	Pg	12 12 37.2	+0.3
COAL	**Corum-Alaca**	**0.29**	**197**		P	Pg	12 12 37.2	+0.3
BOYT	**Boyabat**	**0.90**	**351**		*i* P	Pg	12 12 48.4	+0.1
BOYT	**Boyabat**	**0.90**	**351**		P	Pg	12 12 48.4	+0.1
ILGA	**Ilgaz**	**1.17**	**297**		*i* P	Pg	12 12 53.2	-0.3
ILGA					*i* S	Sg	12 13 08.4	-0.2
ILGA	**Ilgaz**	**1.17**	**297**		P	Pg	12 12 53.2	-0.3
ILGA					S	Sg	12 13 08.4	-0.3

*CSEM **21** 12:13:37.3±0.8, 38°.55N×39°.78E, h10km, MD2.4, Error ellipse: s-maj=15.2km s-min=5.3km az=113.0*
*DDA **21** 12:13:39.3, 38°.58N×39°.66E, h7km, Md2.4*

ISC 21 12:13:38.4±2.9, 38°.57N±0°.07×39°.7E±0°.1, h15km±13km, n8, σ0§39/16, Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.37**	**239**		*e*PG	**Pg**	**12 13 45.7**	**-0.2**
SVRC					*e*SG	**Sb**	**12 13 52.3**	**-0.1**
SVRC	**Sivrice-ELAZID**	**0.37**	**239**		*e*Pg	**Pg**	**12 13 45.7**	**-0.2**
SVRC					*e*Sg	**Sb**	**12 13 52.3**	**-0.1**
PTK	**Pertek**	**0.41**	**323**		*e*PG	**Pg**	**12 13 46.1**	**-0.5**
PTK					*e*SG	**Sg**	**12 13 52.6**	**+0.3**
PTK	**Pertek**	**0.41**	**323**		*e*Pg	**Pg**	**12 13 46.1**	**-0.5**
PTK					*e*Sg	**Sg**	**12 13 52.6**	**+0.3**
TNCL	**Tunceli-Merkez**	**0.56**	**347**		*i* P	**Pg**	**12 13 49.4**	**-0.1**
TNCL					*i* S	**Sb**	**12 13 57.9**	**0.0**
TNCL	**Tunceli-Merkez**	**0.56**	**347**		P	**Pg**	**12 13 49.4**	**-0.1**
TNCL					S	**Sb**	**12 13 57.9**	**0.0**
ELZG	**Elazig**	**0.57**	**263**		*i* P	**Pg**	**12 13 49.3**	**-0.4**
ELZG					*i* S	**Sg**	**12 13 57.9**	**+0.6**
ELZG	**Elazig**	**0.57**	**263**		P	**Pg**	**12 13 49.3**	**-0.4**
ELZG					S	**Sg**	**12 13 57.9**	**+0.6**

*ISCJB **21** 12:31:27.2±1.0, 31°.2N±0°.1×115°.69W±0°.10, h24km±11km, Error ellipse: s-maj=27.1km s-min=7.7km az=26.8*
*ECX **21** 12:31:28.2±0.4, 31°.25N×115°.65W, h6km, MD1.9, ML2.1*
*MEX **21** 12:31:29.5±0.6, 31°.23N×115°.57W, h10km, MD3.5*

ISC 21 12:31:26.8±1.1, 31°.26N±0°.07×115°.70W±0°.09, h14km±12km, n8, σ0§43/15, 2C-3D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SPX	**San Pedro Mart**	**0.29**	**136**‖	*e*P		**Pg**	**12 31 33.2**	**+0.1**
SPX				*e*S		**Sg**	**12 31 37.1**	**-0.2**
SPX				IAML			12 31 37.9	
	comp=E,200nm,0.3s							
SPX				IAML			12 31 37.9	
	comp=N,496nm,0.1s							
SPX				*e*			12 31 37.9	
ZAX	**El Zacaton**	**0.56**	**298**⇑	*e*P		**Pb**	**12 31 38.6**	**+0.1**
ZAX				*e*S		**Sb**	**12 31 47.0**	**+0.7**
ZAX				⇓*e*			12 31 47.9	
ZAX				IAML			12 31 47.9	
	comp=E,81nm,0.2s							
ZAX				IAML			12 31 48.1	
	comp=N,61nm,0.2s							
ZAX				⇑*e*			12 31 48.1	
ECNX	**Esteban Cantu**	**0.87**	**298**	*e*P		**Pn**	**12 31 44.5**	**-0.3**
ECNX				*e*S		**Sn**	**12 31 56.4**	**-0.9**

KK31				⇓Pg		**Pb**	**13 14 12.0**	**+0.9**
	3.7nm,0.5s,baz=124,slow=13,SNR=4.3								
KK31				⇑Lg		Lg	13 15 09.4		
	6.4nm,0.5s,baz=147,slow=28,SNR=5.8								
TNSS	**Tian-Shan**	**4.13**	**36**	*e*P		**Pb**	**13 14 13.6**	**+1.8**
	7.0nm,0.5s								
TNSS				*e*S		**Sg**	**13 15 10.0**	**-1.3**
	20nm,0.8s								
BRLS	**Borolday**	**4.27**	**317**	*e*P		**Pb**	**13 14 16.5**	**+2.6**
	0.5nm,0.3s								
BRLS				*e*S		**Sg**	**13 15 14.3**	**-1.4**
	19nm,0.8s								
MDOK	**Medeo**	**4.27**	**36**	*e*P		**Pb**	**13 14 15.7**	**+1.6**
	4.6nm,0.5s								
MDOK				*e*S		**Sg**	**13 15 13.7**	**-2.2**
	16nm,0.6s								
KUU	**Kurty**	**4.61**	**25**	*e*P		**Pb**	**13 14 20.9**	**+1.1**
	6.4nm,0.4s								
KUU				*e*S		**Sg**	**13 15 22.4**	**-4.5**
	25nm,1.2s								
BTLS	**Baital**	**5.31**	**3**	*e*P		**Pb**	**13 14 32.3**	**+0.7**
	0.8nm,0.3s								
BTLS				*e*S		**Sb**	**13 15 42.6**	**+7.3**
	5.0nm,0.6s								
CEP	**Cherat**	**6.07**	**194**	P		**Pn**	**13 14 29.9**	**+1.3**

*DDA **21** 13:37:42.0,39˚.20N×29˚.06E,h7km,Md2.7*
*ISCJB **21** 13:37:42.6±0.6,39˚.10N±0˚.05×29˚.05E±0˚.05,h9km,Error ellipse: s-maj=7.2km s-min=4.3km az=149.9*
*ISK **21** 13:37:42.0,39˚.14N×28˚.94E,h6km,ML2.3*
*CSEM **21** 13:37:42.4±0.3,39˚.12N×29˚.04E,h5km,MD2.7,Error ellipse: s-maj=9.1km s-min=5.7km az=132.0*

ISC 21 13:37:41.9±0.9,39˚.14N±0˚.04×29˚.01E±0˚.03,h9km,n14,σ0ᵗ35/21,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DEMI	**Demirci**	**0.25**	**246**	*i* P		**Pb**	**13 37 48.9**	**+0.2**
DEMI				*i* S		**Sb**	**13 37 52.9**	**-0.4**
DEMI	**Demirci**	**0.25**	**246**	P		**Pb**	**13 37 48.9**	**+0.2**
DEMI				S		**Sb**	**13 37 52.8**	**-0.4**
GEDZ	**Gediz**	**0.33**	**108**	*e*PG		**Pb**	**13 37 50.1**	**+0.2**
GDZ	**Gediz**	**0.37**	**98**	*i* P		**Pg**	**13 37 49.5**	**+0.2**
GDZ				*i* S		**Sg**	**13 37 54.0**	**-0.1**
GDZ	**Gediz**	**0.37**	**98**	P		**Pg**	**13 37 49.5**	**+0.2**
GDZ				S		**Sg**	**13 37 54.0**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**49**	*e*PG		**Pb**	**13 37 51.9**	**-0.4**
TVSB	**Tavsanli**	**0.46**	**49**	*e*Pg		**Pb**	**13 37 51.9**	**-0.4**
KULA	**Kula-Manisa**	**0.69**	**204**	*e*PG		**Pg**	**13 37 55.4**	**+0.2**
KULA				*e*SG		**Sg**	**13 38 04.8**	**+0.7**
MANT	**Manisa**	**0.74**	**209**	*i* P		**Pg**	**13 37 55.8**	**-0.5**
MANT				*i* S		**Sg**	**13 38 05.7**	**-0.3**
MANT	**Manisa**	**0.74**	**209**	P		**Pg**	**13 37 55.8**	**-0.5**
MANT				S		**Sg**	**13 38 05.7**	**-0.3**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*PN		**Pn**	**13 38 05.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*Pn		**Pn**	**13 38 05.7**	**+0.3**
ARMT	**Armutlu**	**1.43**	**355**	*e*PN		**Pg**	**13 38 09.4**	**+0.1**
ARMT	**Armutlu**	**1.43**	**355**	*e*Pn		**Pg**	**13 38 09.4**	**+0.1**

*ISCJB **21** 13:42:40.8±1.5,23˚.6S±0˚.1×175˚.0W±0˚.3,h29km,mb4.4/3, Error ellipse: s-maj=41.8km s-min=9.7km az=27.1*
*IDC **21** 13:42:42.0±1.9,23˚.68S×175˚.47W,h0km,mb4.4/3, mb1 4.5/5,mb1mx3.9/33,mbtmp4.4/5,ML4.1/2,Error ellipse: s-maj=64.5km s-min=28.7km az=137.0*

ISC 21 13:42:44.6±1.5,23˚.6S±0˚.2×175˚.2W±0˚.3,h29km,n8,σ1ᵍ66/9,mb4.4/3,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
AFI	**Afiamalu**	**10.20**	**19**	Pn		**Pn**	**13 45 09.8**	**+0.6**
	1.3nm,0.3s,baz=134,slow=18,SNR=4.6							
AFI				Sn		**Sn**	**13 47 00.5**	**-2.2**
	1.6nm,0.3s,baz=224,slow=24,SNR=3.5							
URZ	**Urewera**	**15.99**	**202**	Pn		**Pn**	**13 46 25.8**	**-1.7**
	0.9nm,0.3s,baz=144,slow=8.7,SNR=5.8							
CTA	**Charters Tower**	**35.87**	**268**	P		**P**	**13 49 42.9**	**+0.6**
	3.7nm,0.4s,baz=99,slow=12,SNR=7.7							
ASAR	**Alice Springs**	**46.41**	**259**	P		**P**	**13 51 08.1**	**-0.9**
	4.6nm,1.0s,baz=95,slow=8.1,SNR=26							
WRA	**Warramunga Arr**	**46.81**	**264**	P		**P**	**13 51 11.2**	**-0.9**
	3.2nm,0.8s,baz=104,slow=8.5,SNR=24							
BVAR	**Borovoye Array**	**123.13**	**319**	PKP		**PKPdf**	**14 01 40.1**	**+1.9**
	0.4nm,0.5s,baz=90,slow=2.9,SNR=3.1							
AKASG	**Malin Array Be**	**146.99**	**331**	PKPbc		**PKPab**	**14 02 26.2**	**+0.4**
	0.5nm,0.3s,baz=42,slow=2.8,SNR=4.5							
BRTR	**Keskin Array B**	**150.84**	**310**	PKPbc		**PKPbc**	**14 02 36.3**	**+1.6**
	1.0nm,0.6s,baz=151,slow=2.8,SNR=4.1							

*IDC **21** 13:44:36.0±2.3,23˚.84S×175˚.61W,h0km,mb4.4/3, mb1 4.6/4,mb1mx3.9/32,mbtmp4.4/4,ML4.1/1,MS3.1/1, Ms1 3.1/1,ms1mx2.3/37,Error ellipse: s-maj=70.8km s-min=41.3km az=144.0*
*NEIC **21** 13:44:37.2±1.5,23˚.78S×175˚.64W,h10km,mb4.0/1,Error ellipse: s-maj=34.4km s-min=21.3km az=98.0*

ISC 21 13:44:40.0±2.4,23˚.8S±0˚.2×175˚.6W±0˚.4,h28km,n8,σ0ᵍ90/7,mb4.4/4,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
URZ	**Urewera**	**15.66**	**202**	Pn		**Pn**	**13 48 18.7**	**0.0**
	0.8nm,0.3s,baz=284,slow=16,SNR=4.6							
DZM	**Mont Dzumac**	**16.62**	**273**	LR		LR	13 53 47.6	
	comp=Z,62nm,18.9s,baz=214,slow=33							
CTA	**Charters Tower**	**35.50**	**268**	P		**P**	**13 51 35.4**	**+0.8**
	4.1nm,0.5s,baz=92,slow=10,SNR=8.1							
ASAR	**Alice Springs**	**46.00**	**260**	P		**P**	**13 53 01.2**	**0.0**
	5.0nm,1.0s,baz=97,slow=8.3,SNR=16							
WRAB	**Tennant Creek**	**46.41**	**265**	*e*P		**P**	**13 53 02.9**	**-1.5**
	1.3nm,0.8s							
WRA	**Warramunga Arr**	**46.42**	**265**	P		**P**	**13 53 04.0**	**-0.5**
	3.3nm,0.8s,baz=105,slow=8.4,SNR=16							
AKASG	**Malin Array Be**	**147.00**	**331**	PKPbc		**PKPbc**	**14 04 19.9**	**+0.1**
	0.9nm,0.5s,baz=44,slow=3.7,SNR=2.4							
BRTR	**Keskin Array B**	**150.69**	**310**	PKPbc		**PKPbc**	**14 04 29.9**	**+0.1**
	1.2nm,0.9s,baz=69,slow=2.8,SNR=3.8							

*DDA **21** 13:51:49.2,39˚.12N×28˚.98E,h7km,Md2.6*
*ISCJB **21** 13:51:50.3±0.5,39˚.08N±0˚.04×29˚.06E±0˚.04,h11km±8km, Error ellipse: s-maj=7.5km s-min=4.1km az=142.0*
*ISK **21** 13:51:50.1,39˚.10N×29˚.06E,h5km,ML2.4*
*CSEM **21** 13:51:50.6±0.2,39˚.09N×29˚.05E,h5km,MD2.6,Error ellipse: s-maj=5.8km s-min=4.1km az=139.0*

ISC 21 13:51:50.3±0.9,39˚.10N±0˚.03×29˚.05E±0˚.03,h12km±11km,n21,σ0ᵍ66/32,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DEMI	**Demirci**	**0.26**	**258**	*i* P		**Pb**	**13 51 56.4**	**-0.6**
DEMI				*i* S		**Sg**	**13 52 00.1**	**+0.6**
DEMI	**Demirci**	**0.26**	**258**	P		**Pb**	**13 51 56.4**	**-0.6**
DEMI				S		**Sg**	**13 52 00.1**	**+0.6**
GEDZ	**Gediz**	**0.29**	**100**	*e*PG		**Pb**	**13 51 57.1**	**-0.3**
GEDZ	**Gediz**	**0.29**	**100**	*e*Pg		**Pb**	**13 51 57.1**	**-0.3**
GDZ	**Gediz**	**0.34**	**91**	*i* P		**Pg**	**13 51 57.0**	**-0.2**
GDZ				*i* S		**Sg**	**13 52 01.6**	**-0.2**
GDZ	**Gediz**	**0.34**	**91**	P		**Pg**	**13 51 57.0**	**-0.2**
GDZ				S		**Sg**	**13 52 01.6**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**42**	*e*PG		**Pg**	**13 51 59.5**	**-0.2**
TVSB				*e*SG		**Sg**	**13 52 05.8**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**42**	*e*Pg		**Pg**	**13 51 59.5**	**-0.2**
TVSB				*e*Sg		**Sg**	**13 52 05.8**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG		**Pg**	**13 52 03.3**	**+0.3**
KULA				*e*SG		**Sg**	**13 52 12.1**	**+0.4**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg		**Pg**	**13 52 03.3**	**+0.3**
KULA				*e*Sg		**Sg**	**13 52 12.1**	**+0.4**
MANT	**Manisa**	**0.72**	**212**	*i* P		**Pg**	**13 52 02.9**	**-1.3**
MANT				*i* S		**Sg**	**13 52 13.0**	**-0.6**
MANT	**Manisa**	**0.72**	**212**	P		**Pg**	**13 52 02.9**	**-1.3**
MANT				S		**Sg**	**13 52 13.0**	**-0.6**
KHL	**Karahalli**	**0.86**	**154**	*e*PG		**Pb**	**13 52 08.0**	**+0.8**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg		**Pb**	**13 52 08.0**	**+0.8**
AKS	**Akhisar**	**0.99**	**258**	*e*PG		**Pn**	**13 52 10.2**	**+0.3**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg		**Pn**	**13 52 10.2**	**+0.3**
IGD	**Bursa**	**1.17**	**6**	*i* P		**Pg**	**13 52 12.1**	**-0.7**
IGD				*i* S		**Sg**	**13 52 27.2**	**-0.9**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN		**Pb**	**13 52 15.5**	**+1.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn		**Pb**	**13 52 15.5**	**+1.1**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN		**Pg**	**13 52 18.3**	**-0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn		**Pg**	**13 52 18.3**	**-0.3**

*BJI **21** 13:55:51.7,16˚.00S×26˚.00E,h8km,mb5.1/37,mB5.2/25, Ms5.0/19,Ms7.4/7.18*
*ISCJB **21** 13:55:51.5±0.1,16˚.03S±0˚.02×25˚.94E±0˚.03,h10km, mb5.0/112,MS4.4/51,Error ellipse: s-maj=4.7km s-min=2.8km az=175.8*
*MOS **21** 13:55:52.4±0.7,15˚.87S×26˚.01E,h10km,mb5.2/52, MS4.2/15,Error ellipse: s-maj=10.8km s-min=5.5km az=82.3*
*NEIC **21** 13:55:53.4±2.3,15˚.96S×25˚.98E,h7km±14km,mb5.2/17, Error ellipse: s-maj=6.1km s-min=5.1km az=93.0*
NEIC Felt [III] at Lusaka. Also felt at Chibombo. Felt at Katima Mulilo, Namibia and at Victoria Falls, Zimbabwe.
*GCMT **21** 13:55:53.4±0.3,15˚.89S×26˚.07E,h28km±1km,MW5.0/58, Moment Tensor Solution. s35,c41; s58,c79; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.39±.17; $M_{\theta\theta}$1.72±.13; $M_{\phi\phi}$0.66±.12; $M_{r\theta}$-1.58±.18; $M_{\theta\phi}$-0.69±.08; $M_{\phi r}$2.03±.21; Best double couple: $M_0$3.38500×10^{16} NP1:ϕ_s135.00000°,δ70.00000°,λ-80.00000°. NP2: ϕ_s287.00000°,δ22.00000°,λ-116.00000°. Principal axes: T 3.1250, Plg24.0000°, Azm217.0000°; N 0.5150, Plg10.0000°, Azm311.0000°; P -3.6450, Plg64.0000°, Azm61.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **21** 13:55:56.2±5.8,15˚.91S×26˚.02E,h23km±37km,mb4.7/34, mb1 4.8/37,mb1mx4.7/44,mbtmp4.9/37,ML5.1/5,MS4.3/39, Ms1 4.3/39,ms1mx4.2/43 Error ellipse: s-maj=13.5km s-min=10.7km az=89.0*
*PRE **21** 13:55:57.1±2.0,16˚.45S×26˚.13E,h5km,ML6.6*
*LSZ **21** 13:55:58.7±0.3,15˚.57S×25˚.94E,h10km*

ISC 21 13:55:53.6±0.3,15˚.96S±0˚.03×25˚.99E±0˚.05,h10km,n318,σ1ᵍ37/329,mb5.1/111,MS4.5/51,23C-36D,Zambia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ITZ	**Itezhi-Tezhi**	**0.22**	**6**	⇓*i* P		Pg	13 56 02.8	+4.6
ITZ				*i* S		**Sg**	**13 56 06.7**	**+5.4**
LSZ	**Lusaka**	**2.22**	**72**	Pn		**Pn**	**13 56 31.1**	**+0.5**
	856nm,0.3s,baz=252,slow=12,SNR=3675							
LSZ				Sn		**Sn**	**13 56 56.5**	**-1.8**
	3μm,0.3s,baz=176,slow=20,SNR=13							
LSZ				Lg		Lg	13 57 02.1	
	5μm,0.3s,baz=130,slow=22,SNR=11							
LSZ				LR		LR	13 57 38.8	
	comp=Z,10μm,19.2s,baz=266,slow=47							
KMZ	**Kasempa**	**2.50**	**356**	*i* P		**Pn**	**13 56 34.3**	**-0.2**
KMZ				*i* P		**Pn**	**13 56 34.3**	**-0.2**
KMZ				*i*			13 56 34.6	
	baz=177,slow=6.5							
KMZ				*i* Sg		**Sn**	**13 57 01.6**	**-3.6**
MATP	**Matopo**	**5.04**	**152**	*i* P		**Pn**	**13 57 11.8**	**+2.5**
MATP				*i* S		**Sn**	**13 58 07.3**	**-0.4**
MATP	**Matopo**	**5.04**	**152**	*i* P		**Pn**	**13 57 11.9**	**+2.5**
MATP				*i*			13 57 12.2	
	baz=330,slow=18							
MATP				*i* S		**Sn**	**13 58 07.0**	**-0.8**
MATP	**Matopo**	**5.04**	**152**	Pn		**Pn**	**13 57 11.5**	**+2.1**
	166nm,0.3s,baz=332,slow=14,SNR=1253							
MATP				Sn		**Sn**	**13 58 07.0**	**-0.8**
	549nm,0.3s,baz=61,slow=21,SNR=12							
MATP				Lg		Lg	13 58 34.3	
	2μm,0.3s,baz=64,slow=19,SNR=21							
MATP				LR		LR	13 59 24.0	
	comp=Z,4μm,18.7s,baz=335,slow=41							
MSNA	**Messina**	**7.40**	**150**	*e*P		**Pn**	**13 57 41.3**	**-0.6**
MSNA				*e*S		**Sn**	**13 58 58.2**	**-7.7**
MSNA				AML		AML	13 59 51.6	
	comp=Z,3μm,0.5s							
TSUM	**Tsumeb**	**8.64**	**247**	Pn		**Pn**	**13 57 59.7**	**+0.8**
	comp=Z,170nm,0.3s,baz=39,slow=9.3,SNR=781							
TSUM				Sn		**Sn**	**13 59 33.4**	**-3.2**
	comp=Z,77nm,0.3s,baz=293,slow=20,SNR=5.5							
TSUM				Lg		Lg	14 00 28.1	
	comp=Z,77nm,0.3s,baz=118,slow=6.8,SNR=8.0							
TSUM				LR		LR	14 01 39.9	
	comp=Z,4μm,18.7s,baz=65,slow=40							
LBTB	**Lobatse**	**9.01**	**182**	Pn		**Pn**	**13 58 05.0**	**+1.0**
	comp=Z,122nm,0.3s,baz=9.2,slow=14,SNR=443							
LBTB				Sn		**Sn**	**13 59 41.2**	**-4.5**
	comp=Z,470nm,0.3s,baz=98,slow=18,SNR=15							
LBTB				Lg			14 00 40.0	
	comp=Z,82nm,0.3s,baz=111,slow=19,SNR=8.9							
LBTB				LR		LR	14 01 48.0	
	comp=Z,3μm,19.2s,baz=9.0,slow=39							
KSR	**Koster**	**9.87**	**175**	*e*P		**Pn**	**13 58 15.2**	**-0.7**
KSR				*e*S		Sn	13 59 54.8	-12
KSR				AML		AML	14 00 04.2	
	comp=Z,414nm,0.6s							
KLOF	**Kloof**	**10.44**	**172**	*e*P		**Pn**	**13 58 22.7**	**-1.0**
KLOF				*e*S		Sn	14 00 08.0	-13
KLOF				AML		AML	14 01 46.3	
	comp=Z,1μm,0.6s							
WDLM	**Western Deep L**	**10.49**	**173**	*e*P		**Pn**	**13 58 23.8**	**-0.6**
WDLM				*e*S		Sn	14 00 08.3	-14
WDLM				AML		AML	14 01 38.8	
	comp=Z,658nm,0.9s							
ERPM	**east rand prop**	**10.54**	**169**	*e*P		**Pn**	**13 58 23.8**	**-1.2**
ERPM				*e*S		Sn	14 00 08.6	-15
ERPM				AML		AML	14 01 27.0	
	comp=Z,686nm,0.6s							
BFSD	**Buffelsfontein**	**10.87**	**176**	*e*P		**Pn**	**13 58 29.3**	**-0.2**
BFSD				*e*S		Sn	14 00 18.0	-13
BFSD				AML		AML	14 01 41.3	
	comp=Z,652nm,0.6s							
TLEK	**Tau Lekoa**	**10.96**	**177**	*e*P		**Pn**	**13 58 30.7**	**0.0**
TLEK				*e*S		Sn	14 00 20.6	-13
TLEK				AML		AML	14 01 55.0	
	comp=Z,703nm,0.6s							
PRYS	**Parys**	**10.98**	**174**	*e*P		**Pn**	**13 58 28.6**	**-2.4**
PRYS				*e*S		Sn	14 00 21.8	-12
PRYS				AML		AML	14 00 45.3	
	comp=Z,524nm,0.5s							
MOAB	**Moab Khotsong**	**10.99**	**176**	*e*P		**Pn**	**13 58 31.8**	**+0.7**
MOAB				*e*S		Sn	14 00 22.1	-12
MOAB				AML		AML	14 01 45.3	
	comp=Z,784nm,0.7s							
SWZ	**Schweizer**	**11.18**	**183**	*e*P		**Pn**	**13 58 32.4**	**-1.3**
SWZ				*e*S		Sn	14 00 25.8	-13
SWZ				AML		AML	14 00 46.3	
	comp=Z,338nm,0.6s							
SEK	**Senekal**	**12.39**	**173**	*e*P		**Pn**	**13 58 49.8**	**-0.6**
SEK				*e*S		Sn	14 00 54.2	-14
SEK				AML		AML	14 02 00.3	
	comp=Z,618nm,0.7s							
POGA	**Pongola**	**12.49**	**156**	*i* P		**Pn**	**13 58 51.3**	**-0.2**
POGA				*i* S		Sn	14 01 00.9	-10
POGA	**Pongola**	**12.49**	**156**	*e*P		**Pn**	**13 58 50.0**	**-1.5**
POGA				*e*S		Sn	14 00 57.9	-13
POGA				AML		AML	14 01 17.9	
	comp=Z,767nm,0.7s							
BOSA	**Boshof**	**12.61**	**183**	*i* P		**Pn**	**13 58 52.1**	**-1.1**
BOSA				*i* S		Sn	14 01 04.1	-10
BOSA	**Boshof**	**12.61**	**183**	*i* P		**Pn**	**13 58 51.9**	**-1.3**
BOSA				*i*			13 58 52.2	
	baz=3.9,slow=16							
BOSA				*i* S		Sn	14 01 04.6	-9.2
BOSA	**Boshof**	**12.61**	**183**	Pn		**Pn**	**13 58 51.4**	**-1.8**
	comp=Z,42nm,0.3s,baz=3.9,slow=13,SNR=557							
BOSA				Sn		Sn	14 01 03.7	-10
	comp=Z,83nm,0.3s,baz=162,slow=2.2,SNR=16							
BOSA				Lg		Lg	14 02 35.9	
	comp=Z,11nm,0.3s,baz=102,slow=14,SNR=5.2							
BOSA				LR		LR	14 03 57.6	
	comp=Z,2μm,19.7s,baz=6.0,slow=38							
UPI	**Upington**	**13.09**	**199**	*e*P		**Pn**	**13 58 59.1**	**-0.7**
UPI				*e*S		Sn	14 01 14.3	-11
UPI				AML		AML	14 02 11.7	
	comp=Z,119nm,0.5s							
KEIM	**Keimoes**	**13.50**	**199**	*e*P		**Pn**	**13 59 05.8**	**+0.5**
KEIM				*e*S		Sn	14 01 23.8	-12
KEIM				AML		AML	14 03 28.8	
	comp=Z,223nm,0.7s							
AUGR	**Augrabies**	**13.61**	**202**	*e*P		**Pn**	**13 59 07.3**	**+0.4**
AUGR				*e*S		Sn	14 01 26.9	-11
AUGR				AML		AML	14 03 11.7	
	comp=Z,120nm,0.6s							
PKA	**Prieska**	**13.96**	**192**	*e*P		**Pn**	**13 59 11.4**	**-0.3**
PKA				*e*S		Sn	14 01 32.9	-14
PKA				AML		AML	14 03 05.0	
	comp=Z,2μm,0.5s							
HVD	**Gariep Dam**	**14.58**	**182**	*e*P		**Pn**	**13 59 18.3**	**-1.9**
HVD				*e*S		Sn	14 01 47.6	-14
HVD				AML		AML	14 01 54.1	
	comp=Z,512nm,0.6s							
KSD	**Kokstad**	**14.85**	**168**	*e*P		**Pn**	**13 59 21.2**	**-2.6**
KSD				*e*S		Sn	14 01 51.1	-17
KSD				AML		AML	14 02 30.0	
	comp=Z,144nm,0.7s							
KOMG	**Komaggas**	**15.83**	**208**	*e*P		**Pn**	**13 59 38.3**	**+1.6**
KOMG				*e*S		Sn	14 02 20.0	-12
KOMG				AML		AML	14 04 39.2	
	comp=Z,146nm,0.7s							
MBAR	**Mbarara**	**15.97**	**18**	*e*P		**Pn**	**13 59 33.5**	**-5.2**
MBAR				pmax		pmax		
	comp=Z,87nm,0.8s							
MBAR	**Mbarara**	**15.97**	**18**	*e*Pn		**Pn**	**13 59 33.5**	**-5.2**
	comp=Z,86nm,0.8s							
CVNA	**Calvinia**	**16.46**	**199**	*e*P		**Pn**	**13 59 45.8**	**+0.9**
CVNA				*e*S		Sn	14 02 34.6	-13
CVNA				AML		AML	14 04 50.1	
	comp=Z,264nm,0.9s							
SUR	**Sutherland**	**17.01**	**195**	P		**Pn**	**13 59 49.6**	**-2.2**
	comp=Z,0.2nm,0.3s,baz=14,slow=13,SNR=38							
SUR				S		Sn	14 02 49.1	-12
	comp=Z,0.3nm,0.3s,baz=331,slow=13,SNR=2.2							
SUR				Lg		Lg	14 04 45.9	
	baz=28,slow=2.6,SNR=4.8							
SUR				LR		LR	14 06 39.8	
	comp=Z,176nm,18.4s,baz=14,slow=38							
SUR	**Sutherland**	**17.01**	**195**	*e*Pn		**Pn**	**13 59 49.4**	**-2.5**
	comp=Z,114nm,0.9s							
SUR				S		Sn	14 02 49.1	-12
GRM	**Grahamstown**	**17.28**	**179**	*i* P		**P**	**13 59 58.4**	**+1.8**
GRM				*i* S		**S**	**14 03 12.7**	**-3.8**
GRM	**Grahamstown**	**17.28**	**179**	*e*P		**Pn**	**13 59 56.2**	**+1.1**
GRM				*e*S		Sn	14 02 51.4	-16
GRM				AML		AML	14 05 14.8	
	comp=Z,219nm,0.7s							
BUFB	**Buffelsbos**	**18.14**	**183**	*e*P		**P**	**14 00 08.7**	**+2.6**
BUFB				*e*S		Sn	14 03 13.2	-15
BUFB				AML		AML	14 05 56.8	
	comp=Z,169nm,0.8s							
KMBO	**Kilima Mbogo**	**18.46**	**38**	P		**P**	**14 00 08.5**	**-1.4**
	comp=Z,3.3nm,0.3s,baz=209,slow=16,SNR=30							
KMBO				S		Sn	14 03 19.1	-17
	comp=Z,4.3nm,0.3s,baz=295,slow=18,SNR=5.0							
KMBO				Lg		Lg	14 05 33.3	
	comp=Z,2.2nm,0.3s,baz=92,slow=12,SNR=6.6							
KMBO	**Kilima Mbogo**	**18.46**	**38**	*e*Pn		**P**	**14 00 08.4**	**-1.4**
	comp=Z,26nm,0.6s							
KMBO				S		Sn	14 03 19.1	-17
OPO	**Ambohidratompo**	**20.40**	**100**	P		**P**	**14 00 32.3**	**+1.1**
	comp=Z,77nm,0.6s,baz=265,slow=9.7,SNR=40							
OPO				LR		LR	14 09 05.3	
	comp=Z,501nm,18.0s,baz=254,slow=39							
ABPO	**Ambohimpanom**	**20.48**	**102**	*e*P		**P**	**14 00 32.2**	**+0.2**
ABPO				pmax		pmax		
	comp=Z,53nm,0.8s							
ABPO	**Ambohimpanom**	**20.48**	**102**	*e*P		**P**	**14 00 32.1**	**+0.2**
	comp=Z,53nm,0.8s							
ATD	**Arta Tunnel**	**32.01**	**32**	P		**P**	**14 02 22.4**	**+2.0**
	comp=Z,6.0nm,0.4s,baz=289,slow=4.3,SNR=7.2							
KIC	**Kosan Boka**	**37.65**	**304**	*e*P		**P**	**14 03 09.4**	**+0.2**
	comp=Z,79nm,0.7s							
LIC	**Lamto**	**37.80**	**303**	*e*P		**P**	**14 03 10.6**	**+0.1**
	comp=Z,68nm,0.6s							
DBIC	**Dimbokro**	**37.93**	**304**	P		**P**	**14 03 11.8**	**+0.3**
	comp=Z,13nm,0.5s,baz=116,slow=9.0,SNR=54							
DBIC				LR		LR	14 17 47.5	
	comp=Z,248nm,21.9s,baz=109,slow=35							
DBIC	**Dimbokro**	**37.93**	**304**	*e*P		**P**	**14 03 11.4**	**-0.2**
	comp=Z,44nm,0.6s							
TIC	**Toumodi**	**38.05**	**304**	*e*P		**P**	**14 03 12.8**	**+0.2**
TAM	**Tamanrasset**	**43.42**	**332**	*e*P		**P**	**14 03 56.8**	**-0.1**
TAM				pmax		pmax		
	comp=Z,15nm,0.7s							
TAM	**Tamanrasset**	**43.42**	**332**	*e*P		**P**	**14 03 56.8**	**-0.1**
	comp=Z,15nm,0.7s							
EIL	**Elat**	**46.18**	**11**	LR		LR	14 23 57.2	
	comp=Z,383nm,18.5s,baz=192,slow=36							
ASF	**Jabal al Asfar**	**48.99**	**12**	LR		LR	14 25 38.5	
	comp=Z,119nm,19.6s,baz=187,slow=36							
MMAI	**Mount Meron Ar**	**49.53**	**10**	LR		LR	14 26 03.1	
	comp=Z,320nm,18.4s,baz=185,slow=36							
WSAR	**Wadi Sarin**	**50.37**	**40**	P		**P**	**14 04 50.2**	**-0.9**
	comp=Z,7.3nm,0.7s,baz=236,slow=7.3,SNR=5.4							
WSAR

ARR Arges 61.05 359⇑ *i*P P 14 06 08.1 +0.5
VOIR 61.11 359⇓ *i*P P 14 06 08.2 +0.2
VOIR 61.11 359 ⇓P P 14 06 08.2 +0.2
MLR Muntele Rosu 61.16 360 LR LR 14 35 41.8
comp=Z,32nm,19.5s,baz=184,slow=39
MLR Muntele Rosu 61.16 360⇑ *i*P P 14 06 09.1 +0.7
MLR Muntele Rosu 61.16 360 ⇑P P 14 06 09.1 +0.7
MLR Muntele Rosu 61.16 360 *e*P P 14 06 08.9 +0.5
NCK Nalchik 61.33 15⇑ *i*P P 14 06 10.7 +1.3
NCK pmax pmax
comp=Z,9.0nm,0.7s
ANN Anapa 61.36 9 *e*P P 14 06 08.7 -0.9
ANN *e**PP **pP 14 06 12.2 -0.6**
ANN *e*S **S 14 14 32.1 +1.9**
ANN pmax pmax
comp=Z,50nm,1.3s
KBZ Khabaz 61.38 14 P P 14 06 10.4 +0.7
comp=Z,6.3nm,0.7s,baz=185,slow=6.6,SNR=14
KBZ LR LR 14 33 22.0
comp=Z,128nm,18.8s,baz=196,slow=37
BZS Buzias 61.42 357⇑ *i*P P 14 06 10.7 +0.8
BZS Buzias 61.42 357 ⇑P P 14 06 10.7 +0.8
HYB Hyderabad 61.51 60 *i*P P 14 06 10.0 -1.2
GEYT Alibeck 61.52 29 P P 14 06 11.2 +0.4
comp=Z,10nm,1.0s,baz=212,slow=5.3,SNR=20
GEYT LR LR 14 36 58.4
comp=Z,455nm,18.5s,baz=220,slow=40
PLOR Plostina 61.52 1⇑ *i*P P 14 06 11.4 +0.7
PLOR Plostina 61.52 1 ⇑P P 14 06 11.4 +0.7
VRI Vrincioaia 61.54 1⇓ *i*P P 14 06 11.3 +0.5
VRI Vrincioaia 61.54 1 ⇓P P 14 06 11.3 +0.5
KIV Kislovodsk 61.55 14 *d* *i*P P 14 06 11.5 +0.5
KIV *e* 14 06 51.2
KIV *e* 14 08 27.8
KIV *i*S S 14 14 54.7 +22
KIV *e*SSS SSS 14 21 11.6
KIV pmax pmax
comp=Z,22nm,1.0s
KIV MLR MLR
comp=Z,254nm,16.0s
KIV Kislovodsk 61.55 14 *e*P P 14 06 11.9 +0.8
comp=Z,16nm,0.8s
KVAR Kislovodsk Arr 61.55 14 P P 14 06 11.7 +0.7
comp=Z,7.9nm,0.7s,baz=173,slow=4.3,SNR=11
KVAR LR LR 14 33 35.3
comp=Z,94nm,18.3s,baz=186,slow=37
DOPR Dopca 61.64 360⇑ *i*P P 14 06 11.5 0.0
PVAQ Vaqueiros 61.84 330 *e*P P 14 06 13.5 +0.5
comp=Z,52nm,1.4s
PVAQ Vaqueiros 61.84 330 *e*LR LR 14 29 56.0
comp=Z,200nm,18.0s
ES19 SONSECA Array 62.00 334 *e*P P 14 06 14.3 +0.2
ESDC Sonseca Array 62.00 334 P P 14 06 14.6 +0.4
comp=Z,9.5nm,0.6s,baz=152,slow=7.3,SNR=54
ESLA Sonseca Array 62.00 334 *e*P P 14 06 14.7 +0.5
PAB San Pablo 62.06 334 *e*P P 14 06 15.0 +0.5
PAB pmax pmax
comp=Z,7.0nm,0.6s
PAB San Pablo 62.06 334 *e*P P 14 06 15.0 +0.5
comp=Z,7.4nm,0.6s
SIRR Siria 62.06 357⇓ *i*P P 14 06 15.4 +1.1
VALF Valcebollere 62.14 340 *e*P P 14 06 15.5 +0.4
MORF Marmelete 62.22 329 *e*P P 14 06 16.8 +1.2
MORF AMb AMB 14 06 17.5
comp=Z,64nm,1.0s
MORF Marmelete 62.22 329 *e*P P 14 06 16.9 +1.3
comp=Z,35nm,1.4s
MORF Marmelete 62.22 329 *e*P P 14 06 16.8 +1.2
CEY Cerknica 62.30 351 *i*P P 14 06 16.4 +0.5
MESJ Messejana 62.43 330 *e*P P 14 06 18.1 +1.1
MESJ AMb AMB 14 06 19.7
comp=Z,53nm,1.4s
MESJ Messejana 62.43 330 *e*P P 14 06 17.9 +1.0
comp=Z,48nm,1.1s
MESJ Messejana 62.43 330 *e*P P 14 06 18.1 +1.1
DRGR 62.53 357⇓ *i*P P 14 06 18.5 +1.0
DRGR 62.53 357 ⇓P P 14 06 18.5 +1.0
KOGS Kog 62.74 352 *i*P P 14 06 19.9 +1.1
PNCL Nicolau / Gran 62.80 330 *e*P P 14 06 20.4 +1.0
comp=Z,19nm,2.1s
ROBS Robic 62.94 350 *i*P P 14 06 20.5 +0.4
PESTR Estremoz 62.95 331 *e*P P 14 06 20.7 +0.3
comp=Z,28nm,2.3s
MELF Melles 62.98 339 *e*P P 14 06 21.2 +0.6
OBKA Obir 63.03 351 *i*P P 14 06 21.0 +0.1
comp=Z,7.4nm,0.7s
PERS Pernice 63.07 352 *i*P P 14 06 21.9 +0.8
SOKA Soboth 63.13 352 *i*P P 14 06 22.2 +0.7
comp=Z,33nm,1.4s,SNR=12
MYKA Terra Mystica 63.29 351 *i*P P 14 06 23.5 +0.9
comp=Z,15nm,0.8s,SNR=6.5
BURAR Bucovina Array 63.29 359⇑ *i*P P 14 06 24.2 +1.6
BURAR Bucovina Array 63.29 359 ⇑P P 14 06 24.2 +1.6
PMRV Marv??o 63.31 332 *e*LR LR 14 30 40.3
comp=Z,211nm,18.0s
BUR08 Bucovina Ar. S 63.32 359 *e*P P 14 06 24.5 +1.7
PMTG Montargil 63.41 331 *e*P P 14 06 24.2 +0.8
comp=Z,37nm,2.0s
ABTA Abfaltersbach 63.59 350 *i*P P 14 06 25.9 +1.3
comp=Z,9.9nm,0.7s
ARSA Arzberg 63.62 352 *i*P P 14 06 25.7 +1.0
comp=Z,5.4nm,0.7s
PCBR Castelo Branco 63.68 332 *e*P P 14 06 24.1 -1.1
comp=Z,29nm,1.7s
KBA Koelnbreinsper 63.77 350 *i*P P 14 06 26.3 +0.4
comp=Z,28nm,0.8s,SNR=15
PSZ Piszkesteto 63.82 355⇓ *i*P P 14 06 26.2 +0.1
PSZ Piszkesteto 63.82 355 ⇓P P 14 06 26.2 +0.1
PSZ Piszkesteto 63.82 355 *e*P P 14 06 26.0 -0.1
comp=Z,12nm,0.9s
SORM Soroca 63.84 2⇑ *i*P P 14 06 25.9 -0.2
SORM Soroca 63.84 2 ⇑P P 14 06 25.9 -0.2
FUORN Ofenpass-Fuorn 63.89 348 *e*P P 14 06 27.5 +0.7
PTOM Tomar 63.93 331 *e*P P 14 06 27.9 +1.0
comp=Z,33nm,1.3s
TUE Stuetta 63.93 347 *e*P P 14 06 27.1 +0.1
comp=Z,20nm,0.6s
SSB Saint Sauveur 63.99 343 *e*P P 14 06 28.0 +0.8
SSB pmax pmax
comp=Z,10.0nm,0.8s
SSB Saint Sauveur 63.99 343 *e*P P 14 06 28.0 +0.8
comp=Z,9.9nm,0.8s
MTE Manteigas 64.16 332 *e*P P 14 06 29.1 +0.6
comp=Z,56nm,1.9s
MTE Manteigas 64.16 332 *e*LR LR 14 30 07.5
comp=Z,149nm,18.0s
MTE Manteigas 64.16 332 *e*P P 14 06 28.9 +0.5
FETA Feichten 64.18 348 *i*P P 14 06 28.6 +0.1
comp=Z,14nm,0.8s,SNR=5.4
CONA Conrad Observa 64.24 352 *i*P P 14 06 29.3 +0.4
comp=Z,8.3nm,0.7s,SNR=10
WTTA Wattenberg 64.24 349 *i*P P 14 06 29.3 +0.3
comp=Z,11nm,0.7s
SENIN Lac Senin/Sane 64.29 346 *e*P P 14 06 28.8 -0.6
LBL Lubilhac 64.31 342 *e*P P 14 06 30.0 +0.6
WATA Walderalm 64.32 349 *i*P P 14 06 29.2 -0.3
comp=Z,7.5nm,0.5s
MOA Molln 64.38 351 *i*P P 14 06 30.2 +0.5
comp=Z,34nm,0.7s,SNR=13
UZH Uzhgorod 64.39 357⇓ *i*P P 14 06 29.7 +0.1
UZH *e* 14 06 36.5
MOTA Moosalm 64.42 349 *i*P P 14 06 30.1 0.0
comp=Z,12nm,0.7s,SNR=6.7
MVO Moncorvo 64.55 333 *e*P P 14 06 31.6 +0.6
comp=Z,43nm,1.3s
MVO Moncorvo 64.55 333 *e*LR LR 14 32 17.1
comp=Z,240nm,18.0s
PVIS Viseu 64.57 352 *e*P P 14 06 31.5 +0.4
comp=Z,32nm,1.6s
DAVA Damuels 64.60 348 *i*P P 14 06 31.0 -0.3
comp=Z,33nm,0.9s,SNR=8.6
RETA Reutte 64.62 349 *i*P P 14 06 31.2 -0.1
comp=Z,10nm,0.5s,SNR=5.9
KBL Kabul 64.79 39 *e*P P 14 06 33.1 +0.2
KBL Kabul 64.79 39 *e*P P 14 06 33.1 +0.2
PYM Petit Puy Mans 64.86 342 *e*P P 14 06 33.4 +0.5
PLDF La Plantade 64.88 343 *e*P P 14 06 33.2 +0.1
POLO Lamas de Olo 65.06 333 *e*P P 14 06 34.5 +0.2
comp=Z,22nm,1.3s
AGO Saint Agoulin 65.09 343 *e*P P 14 06 34.9 +0.5
GERES GERESS Array B 65.44 351 P P 14 06 37.0 +0.4
comp=Z,8.8nm,0.9s,baz=176,slow=8.0,SNR=52
GERES LR LR 14 37 39.2
comp=Z,93nm,19.9s,baz=154,slow=38
TREC Trest 65.63 352 ⇓AMS AMS 14 41 20.0
comp=Z,200nm,13.4s
MOF Molkenrain 65.73 346 *e*P P 14 06 38.0 -0.5
KHC Kasperske Hory 65.73 351⇓ *i*P P 14 06 38.8 +0.3
KHC *ex* x 14 06 47.8
KHC *ex* x 14 06 50.9
KHC AMS AMS 14 40 30.0
comp=Z,200nm,14.8s
KHC Kasperske Hory 65.73 351 *e*P P 14 06 38.8 +0.3
KHC pmax pmax
comp=Z,6.0nm,0.6s
KHC Kasperske Hory 65.73 351 *e*P P 14 06 38.8 +0.3
comp=Z,5.8nm,0.6s
PGAV Gavieira, Arco 65.75 333 *e*LR LR 14 32 44.7
comp=Z,190nm,18.0s
MORC Moravsky Berou 65.88 354⇑ *i*P P 14 06 39.5 +0.1
MORC Moravsky Berou 65.88 354 ⇑P P 14 06 39.5 +0.1
MORC Moravsky Berou 65.88 354 *e*P P 14 06 39.3 -0.1
OKC Ostrava-Krasne 65.88 354 ⇓AMS AMS 14 42 20.0
BFO Black Forest 65.92 347 *i*P P 14 06 39.9 +0.2
ECH Echery 66.07 346 *e*P P 14 06 40.4 -0.2
OJC Ojcow 66.12 356 *e*P P 14 06 40.6 -0.3
OJC Ojcow 66.12 356 *e*P P 14 06 40.6 -0.3
OJC Ojcow 66.12 356 *e*P P 14 06 40.6 -0.3
GOPC GO Pecny, Ondr 66.33 352 AMS AMS 14 39 40.0
comp=Z,200nm,16.9s
THEF They Montfort 66.35 346 *e*P P 14 06 43.0 +0.6
KIEV Kiev 66.43 2 *e*P P 14 06 43.0 +0.2
KIEV Kiev 66.43 2 *e*P P 14 06 43.0 +0.2
AKASG Malin Array Be 66.44 2 P P 14 06 42.6 -0.2
comp=Z,11nm,0.6s,baz=187,slow=6.0,SNR=35
AKASG LR LR 14 39 38.3
comp=Z,100nm,18.7s,baz=215,slow=40
PRU Pruhonice 66.44 352⇓ *e*P P 14 06 42.7 -0.2
PRU AMS AMS 14 41 10.0
comp=Z,200nm,14.9s
DPC Dobruska-Polom 66.57 353 *e*P P 14 06 43.9 +0.1
DPC *ex* x 14 06 53.4
DPC *ex* x 14 06 55.9
DPC AMS AMS 14 42 10.0
LANF Langenberg 66.64 347 *e*P P 14 06 43.9 -0.4
UPC Upice 66.76 353⇓ *e*P P 14 06 45.0 0.0
UPC AMS AMS 14 41 30.0
comp=Z,200nm,19.8s
PVCC Panska Ves 66.96 352 ⇓AMS AMS 14 41 30.0
comp=Z,200nm,13.8s
NKC Novy Kostel 66.98 351⇓ *e*P P 14 06 46.9 +0.5
NKC AMS AMS 14 40 00.0
comp=Z,400nm,17.6s
KSP Ksiaz 67.06 353 *e*P P 14 06 46.7 -0.2
KSP Ksiaz 67.06 353 *e*P P 14 06 46.7 -0.2
WLF Walferdange 67.66 346 P P 14 06 51.2 +0.5
CLL Collm 67.94 351 *i*P P 14 06 52.2 -0.2
comp=Z,9.0nm,1.0s
CLL *e* 14 07 02.0
CLL *e* 14 07 06.0
CLL Collm 67.94 351 *i*P P 14 06 52.2 -0.2
CLL pmax pmax
comp=Z,9.0nm,1.0s
DOU Dourbes 68.43 345 P P 14 06 55.6 +0.1
BCLA Clavier 68.56 346 P P 14 06 57.1 +0.8
comp=Z,14nm,1.5s
MEM Membach 68.57 346 P P 14 06 57.4 +0.9
comp=Z,6.6nm,1.1s
SNF Seneffe 68.88 345 P P 14 06 59.0 +0.7
SUW Suwalki 69.73 358 *e*P P 14 07 03.4 -0.1
SUW Suwalki 69.73 358 *e*P P 14 07 03.4 -0.1
PYUN Piuthan 70.44 52 *e*P P 14 07 08.1 -0.6
comp=Z,176nm,0.9s
KLNR Kaliningrad 70.46 356⇓ *e*P P 14 07 08.6 +0.7
KLNR pmax pmax
comp=Z,39nm,1.3s
KOLN Koldanda 70.73 52 *e*P P 14 07 09.9 -0.6
comp=Z,127nm,0.7s
BDFB Brasilia 70.82 259 LR LR 14 34 34.2
comp=Z,236nm,19.7s,baz=78,slow=33
OBN Obninsk 71.36 6 P P 14 07 12.9 -0.5
comp=Z,15nm,0.4s,baz=305,slow=23,SNR=4.9
OBN Obninsk 71.36 6 *d* *i*P P 14 07 13.1 -0.3
OBN *e* 14 07 34.5
OBN *e* 14 09 49.7
OBN pmax pmax
comp=Z,7.0nm,0.5s
OBN MLR MLR
comp=Z,59nm,16.0s
AB31 Akbulak array 71.56 23 *i*P P 14 07 14.8 0.0
AB31 pmax pmax
comp=Z,5.0nm,0.7s
KK31 Karatay Array 71.56 33 *i*P P 14 07 15.6 +0.6
KK31 pmax pmax
comp=Z,31nm,0.8s
GKN Gorkha 71.64 53 *e*P P 14 07 15.1 -0.9
comp=Z,121nm,0.7s
DMN Daman 71.81 53 *e*P P 14 07 16.5 -0.6
comp=Z,57nm,0.7s
AKTO Aktyubinsk 71.86 21 P P 14 07 16.4 -0.1
comp=Z,5.6nm,0.9s,baz=197,slow=7.4,SNR=12
AKTO Aktyubinsk 71.86 21 P P 14 07 16.1 -0.5
AKTO pmax pmax
comp=Z,13nm,1.4s
PKIN Phulchoki 72.02 53 *e*P P 14 07 17.9 -0.5
comp=Z,34nm,0.5s
KKN Kakani 72.03 53 *e*P P 14 07 17.8 -0.6
comp=Z,85nm,0.5s
MOS Moscow 72.10 7 *e*P P 14 07 17.9 +0.1
MNAS Manas 72.20 34 P P 14 07 19.1 +0.1
MNAS pmax pmax
comp=Z,11nm,0.8s
KSH Kashi 72.23 38 P P 14 07 17.1 -2.1
KSH *ep*P pP 14 07 21.6 -0.9
KSH *es*P sP 14 07 23.8 +0.1
KSH S **S 14 16 34.3 -7.9**
KSH ScS **SKSac 14 17 18.0 -6.0**
KSH pmax pmax
comp=Z,11nm,0.5s
KSH LR LR
comp=Z,100nm,9.6s
KSH LR LR
comp=Z,110nm,6.3s
KSH LR LR
comp=Z,260nm,17.9s
GUN Gumba 72.55 53 *e*P P 14 07 21.2 -0.5
comp=Z,158nm,0.8s
RAMN Ramite 72.65 55 *e*P P 14 07 21.8 -0.4
comp=Z,123nm,0.6s
AAK Ala-Archa 73.39 35 P P 14 07 26.1 0.0
comp=Z,4.7nm,0.5s,baz=229,slow=4.4,SNR=9.9
AAK Ala-Archa 73.39 35 *d* *i*P P 14 07 26.4 +0.3
AAK pmax pmax
comp=Z,12nm,0.9s
FRU Bishkek 73.59 35 *e*P P 14 07 27.0 -0.1
FRU *e* 14 07 50.0
VSU Vasula 74.16 0 *d* *i*P P 14 07 29.8 -0.2
VSU pmax pmax
comp=Z,65nm,1.7s
TKM2 Tokmak 2 74.19 36 P P 14 07 30.9 +0.1
TKM2 pmax pmax
comp=Z,15nm,1.0s
PSI Prapat 74.41 82 P P 14 07 32.8 +0.1
comp=Z,5.5nm,0.4s,baz=244,slow=7.5,SNR=5.6
OTUK Ortayu 76.08 30 P P 14 07 42.0 +0.6
OTUK pmax pmax
comp=Z,12nm,1.0s
PDGK Podgornoye 76.66 37 P P 14 07 44.2 -0.5
PDGK pmax pmax
comp=Z,15nm,1.0s
TRTT Trang 76.67 78 P P 14 07 46.0 +0.5
comp=Z,30nm,1.1s
ARU Arti 77.11 18 P P 14 07 47.6 +0.6
comp=Z,8.8nm,0.5s,baz=231,slow=1.9,SNR=20
ARU Arti 77.11 18 *d* *i*P P 14 07 47.4 +0.4
ARU 14 10 35.9
ARU S **S 14 17 35.0 -0.8**
ARU SS **SS 14 22 30.1 -3.6**
ARU pmax pmax
comp=Z,38nm,1.7s
ARU MLR MLR
comp=Z,219nm,17.0s
FINES FINESS Array B 77.14 0 P P 14 07 47.5 +0.4
comp=Z,7.0nm,0.8s,baz=153,slow=5.8,SNR=23
FINES LR LR 14 45 41.1
comp=Z,98nm,18.6s,baz=232,slow=39
CPUP Villa Florida 77.23 246 LR LR 14 37 03.3
comp=Z,115nm,21.3s,baz=112,slow=32
KLMR Klimovskoe 77.32 7 *e*P P 14 07 46.9 -1.1
KLMR *e* 14 07 56.8
KLMR pmax pmax
comp=Z,25nm,1.0s
LSA Lhasa 77.47 54 P P 14 07 51.0 +0.8
LSA pmax pmax
comp=Z,78nm,0.7s
NB2 NORSAR Subarra 77.65 353 P P 14 07 50.3 +0.3
comp=Z,18nm,1.0s,baz=166,slow=5.9
NB2 NORSAR Subarra 77.65 353 P P 14 07 50.3 +0.3
baz=166,slow=5.9
NOA NORSAR Array B 77.65 353 P P 14 07 50.5 +0.5
comp=Z,13nm,0.8s,baz=170,slow=5.3,SNR=26
NOA LR LR 14 44 58.9
comp=Z,49nm,21.1s,baz=160,slow=38
SVE Sverdlovsk 78.07 19 *e*P P 14 07 53.0 +0.7
SVE pmax pmax
comp=Z,10.0nm,0.8s
BRVK Borovoye 78.60 25 *d* *i*P P 14 07 55.5 +0.2
BRVK pmax pmax
comp=Z,19nm,0.8s
BVA0 Borovoye Array 78.62 26 *i*P P 14 07 55.7 +0.2
BVA0 pmax pmax
comp=Z,12nm,1.0s
BVAR Borovoye Array 78.62 26 P P 14 07 55.7 +0.2
comp=Z,7.4nm,0.7s,baz=224,slow=4.1,SNR=42
SOKR Solikamsk 79.34 15 *d* *i*P P 14 07 58.8 -0.4
SOKR pmax pmax
comp=Z,18nm,0.9s
CMAR Chiang Mai Arr 79.53 67 P P 14 08 01.4 +0.1
comp=Z,10nm,0.8s,baz=256,slow=6.5,SNR=35
CMAR LR LR 14 40 18.3
comp=Z,112nm,19.8s,baz=261,slow=34
CHTO Chiang Mai 79.66 67 P P 14 08 02.1 +0.2
comp=Z,105nm,1.1s
CMMT Chiang Mai 79.66 67 P P 14 08 02.0 0.0
comp=Z,24nm,1.2s
MK31 Makanchi Array 80.32 35 *i*P P 14 08 05.2 +0.3
MK31 pmax pmax
comp=Z,12nm,0.9s
MKAR Makanchi Array 80.32 35 P P 14 08 05.2 +0.2
comp=Z,8.4nm,0.8s,baz=235,slow=6.2,SNR=80
MKAR LR LR 14 47 30.1
comp=Z,250nm,19.3s,baz=242,slow=38
KURBB Kurchatov Arra 80.68 31 P P 14 08 07.1 +0.4
comp=Z,7.8nm,0.8s,baz=236,slow=5.8,SNR=73
PBKT Sadao Pong 80.70 70 P P 14 08 07.7 +0.2
comp=Z,29nm,1.2s
UTTA Uttaradit 80.72 69 P P 14 08 09.9 +2.3
comp=Z,4.1nm,1.0s
KURK Kurchatov 80.78 31 *d* *i*P P 14 08 07.7 +0.5
KURK pmax pmax
comp=Z,36nm,0.8s
KURK Kurchatov 80.78 31 P P 14 08 07.1 -0.1
WMQ Urumqi 81.87 40 *e*P P 14 08 14.5 +1.2
WMQ pP PcP 14 08 22.0 +3.1
WMQ S **S 14 18 23.4 -3.6**
WMQ pmax pmax
comp=Z,14nm,1.2s
WMQ pmax pmax
comp=Z,140nm,5.1s
WMQ LR LR
comp=Z,280nm,25.8s
WMQ LR LR
comp=Z,310nm,24.3s
WMQ LR LR
comp=Z,380nm,20.9s
NWAO Narrogin (SRO) 82.51 122 P P 14 08 17.8 +0.8
comp=Z,16nm,0.8s,baz=136,slow=3.9,SNR=9.6
VNDA Vanda 83.30 171 P P 14 08 20.5 +0.3
comp=Z,2.7nm,0.9s,baz=258,slow=5.8,SNR=14
VNDA LR LR 14 43 21.7
comp=Z,278nm,20.0s,baz=231,slow=34
APA Apatity 83.47 3⇑ *i*P P 14 08 21.0 0.0
APA pmax pmax
comp=Z,11nm,0.8s
APA MLR MLR
comp=Z,300nm,15.0s
SKNT Sakolnakorn 83.55 70 P P 14 08 23.0 +0.4
comp=Z,35nm,1.4s
PLCA Paso Flores 84.58 229 LR LR 14 40 36.9
comp=Z,282nm,21.4s,baz=148,slow=32
KMI Kunming 85.15 62 P P 14 08 31.9 +1.1
KMI pmax pmax
comp=Z,13nm,0.7s
KMI pmax pmax
comp=Z,130nm,3.9s
ARCES ARCESS Array B 85.27 360 P P 14 08 30.0 -0.1
comp=Z,9.6nm,0.5s,baz=180,slow=4.9,SNR=33
ARCES LR LR 14 50 52.9
comp=Z,134nm,19.4s,baz=126,slow=39
NVS Novosibirsk 85.52 29 *e*P P 14 08 32.4 +0.8
NVS pmax pmax
comp=N,14nm,1.2s
NVS pmax pmax
comp=Z,43nm,1.2s
ZALV Zalesovo Beam 85.76 30 P P 14 08 31.9 -1.0
comp=Z,4.1nm,0.6s,baz=253,slow=5.0,SNR=17
ZALV PP **PP 14 11 55.2 +2.7**
comp=Z,5.6nm,0.8s,baz=248,slow=7.8,SNR=8.0
ZALV LR LR 14 51 00.3
comp=Z,314nm,18.6s,baz=250,slow=39
CD2 Chengdu 87.97 57 *e*P P 14 08 44.8 +0.5
CD2 pP sP 14 08 49.3 +0.5
CD2 PP **PP 14 12 10.8 -0.1**
CD2 SKS **SKSac 14 19 12.1 -1.0**
CD2 S **S 14 19 28.1 0.0**
CD2 sS ScS 14 19 35.8 +1.4
CD2 SS **SS 14 25 16.8 +0.6**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.6s
GTA Gaotai 88.00 48 P P 14 08 45.3 +0.9
GTA pP sP 14 08 49.8 +0.9
GTA sP pP 14 08 52.4 +4.7
GTA SKS **SKSac 14 19 12.5 -0.7**
GTA S **S 14 19 28.4 +0.1**
GTA sS ScS 14 19 36.5 +1.9
GTA SS **SS 14 25 22.4 +5.8**
GTA pmax pmax
comp=Z,34nm,1.2s
GTA pmax pmax
comp=Z,150nm,6.7s
GTA LR LR
comp=Z,75nm,18.5s
GTA LR LR
comp=Z,83nm,20.0s
GTA LR LR
comp=Z,130nm,18.5s
GYA Guiyang 88.93 62⇓ *i*P P 14 08 48.8 -0.2
GYA PP **PP 14 12 21.4 +2.6**
GYA SKS **SKSac 14 19 16.8 -2.5**
GYA S **S 14 19 35.3 -2.2**
GYA SS **SS 14 25 31.4 +0.8**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,6.9s
GYA LR LR
comp=Z,530nm,19.6s
GYA LR LR
comp=Z,510nm,20.2s
GYA LR LR
comp=Z,490nm,20.8s
LPAZ La Paz 89.44 253 P P 14 08 52.4 +0.1
comp=Z,2.5nm,0.8s,baz=101,slow=2.5,SNR=12
LPAZ LR LR 14 45 33.9
comp=Z,201nm,21.6s,baz=113,slow=33
QIZ Qiongzhong 89.49 70 P P 14 08 51.9 +0.3
QIZ S **S 14 19 42.4 -0.4**
QIZ pmax pmax
comp=Z,21nm,1.9s
QIZ LR LR
comp=Z,220nm,20.1s
QIZ LR LR
comp=Z,240nm,18.5s
LZH Lanzhou 89.79 52 *e*P P 14 08 54.3 +1.4
LZH pP sP 14 08 58.8 +1.4
LZH sP pP 14 09 01.0 +4.8
LZH PP **PP 14 12 29.5 +4.0**
LZH pmax pmax
comp=Z,20nm,1.4s
LZH pmax pmax
comp=Z,97nm,6.0s
LZH LR LR
comp=Z,220nm,17.5s
LZH LR LR

	comp=Z,220nm,17.2s						
LZH				LR	LR		
	comp=Z,260nm,18.7s						
XAN	**Xi'an**	**93.09**	**56**	P	**P**	**14 09 07.8**	**-0.3**
XAN				pP	sP	14 09 12.6	-0.1
XAN				pmax	pmax		
	comp=Z,8.0nm,1.2s						
FITZ	**Fitzroy Crossi**	**93.95**	**110**	P	**P**	**14 09 12.3**	**-0.1**
	comp=Z,2.9nm,0.7s,baz=256,slow=5.3,SNR=8.8						
NRIK	**Noril'sk**	**95.33**	**18**	LR	LR	14 58 28.5	
	comp=Z,128nm,18.2s,baz=274,slow=39						
SONM	**Songino Array**	**95.39**	**42**	P	**P**	**14 09 18.1**	**-0.3**
	comp=Z,1.6nm,0.9s,baz=230,slow=5.6,SNR=6.0						
SONM				PP	**PP**	**14 13 09.9**	**+0.7**
	comp=Z,1.3nm,0.7s,baz=248,slow=7.9,SNR=6.4						
SONM				LR	LR	14 57 42.8	
	comp=Z,222nm,18.2s,baz=258,slow=39						
HHC	**Hu-ho-hao-te**	**96.99**	**50**	eP	**P**	**14 09 27.6**	**+1.7**
HHC				pmax	pmax		
	comp=Z,16nm,0.9s						
HHC				pmax	pmax		
	comp=Z,98nm,4.7s						
ASAR	**Alice Springs**	**99.33**	**118**	P	**Pdif**	**14 09 37.4**	**+0.6**
	comp=Z,1.8nm,0.8s,baz=239,slow=3.9,SNR=23						
ASAR				PKiKP	**PKiKP**	**14 14 06.8**	**+0.1**
	comp=Z,0.3nm,0.5s,baz=244,slow=1.7,SNR=3.8						
ASAR				PKKPbc	**PKKPbc**	**14 25 59.5**	**-1.0**
	comp=Z,0.5nm,0.8s,baz=60,slow=3.0,SNR=4.1						
WRA	**Warramunga Arr**	**101.08**	**115**	P	**Pdif**	**14 09 44.8**	**+0.2**
	comp=Z,3.0nm,0.8s,baz=251,slow=2.6,SNR=21						
WRA				PKiKP	**PKiKP**	**14 14 10.6**	**+0.7**
	comp=Z,0.4nm,0.7s,baz=287,slow=1.4,SNR=5.0						
WRA				PKKPbc	**PKKPbc**	**14 25 55.9**	**+0.4**
	comp=Z,0.5nm,0.6s,baz=73,slow=3.5,SNR=5.7						
WRA	**Warramunga Arr**	**101.08**	**115**	P	**Pdif**	**14 09 44.8**	**+0.2**
WRA				pmax	pmax		
	comp=Z,4.0nm,0.8s						
WRAB	**Tennant Creek**	**101.09**	**115⇓**	eP	**Pdif**	**14 09 44.9**	**+0.3**
WRAB				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KLR	**Kul'dur**	**112.19**	**43⇓**	/PKiKP		14 14 30.0	
SEY	**Seymchan**	**120.27**	**25**	PKP	**PKPdf**	**14 14 44.8**	**+0.2**
	comp=Z,2.4nm,0.7s,baz=251,slow=2.3,SNR=8.8						
SEY	**Seymchan**	**120.27**	**25⇑**	/PKiKP	**PKPdf**	**14 14 45.4**	**+0.8**
BILL	**Bilibino**	**122.11**	**16⇓**	/PKiKP	**PKPdf**	**14 14 48.8**	**+0.8**
BILL				e		14 16 32.3	
BILL				ePPP	PPP	14 18 57.4	
BILL				pmax	pmax		
	comp=Z,14nm,1.7s						
BILL				MLR	MLR		
	comp=Z,143nm,20.0s						
ULM	**Lac du Bonnet**	**122.39**	**320**	PKP	**PKPdf**	**14 14 48.3**	**-0.8**
	comp=Z,2.7nm,0.6s,baz=26,slow=7.0,SNR=4.1						
DZM	**Mont Dzumac**	**125.87**	**133**	eLR	LR	14 54 26.5	
	comp=Z,136nm,25.9s						
YKA	**Yellowknife Ar**	**125.96**	**339**	PKP	**PKPdf**	**14 14 55.6**	**+0.1**
	comp=Z,3.9nm,0.9s,baz=25,slow=1.7,SNR=7.7						
PETK	**Petropavlovsk-**	**127.15**	**34**	PKP	**PKPdf**	**14 14 58.3**	**+0.2**
	comp=Z,3.9nm,0.8s,baz=56,slow=4.4,SNR=7.4						
ILAR	**Eielson Array**	**131.00**	**356**	PKP	**PKPdf**	**14 15 04.6**	**-0.5**
	comp=Z,1.8nm,0.6s,baz=331,slow=3.5,SNR=32						
TXAR	**Lajitas Array**	**132.01**	**295**	PKhKP	PKPpre	14 15 00.9	
	comp=Z,0.4nm,0.9s,baz=94,slow=3.8,SNR=3.7						
TXAR				PKP	**PKPdf**	**14 15 08.6**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=111,slow=3.1,SNR=8.0						
PDAR	**Pinedale Array**	**133.68**	**315**	PKP	**PKPdf**	**14 15 11.2**	**+0.1**
	comp=Z,2.7nm,1.0s,baz=86,slow=1.9,SNR=12						
RKT	**Rikitea**	**136.92**	**206**	eLR	LR	14 59 40.3	
	comp=Z,173nm,27.2s						
TBI	**Tubuai**	**140.68**	**187**	eLR	LR	15 01 28.2	
	comp=Z,200nm,24.2s						
PPT2	**Papeete2**	**146.37**	**188**	eLR	LR	15 04 02.7	
	comp=Z,183nm,23.8s						

MEX 21 14:04:21.5±1.0,15.25N×92.48W,h172km±19km,MD3.6, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.08**	**18**	iP	Pn	14 04 48.6	-0.7
CCIG				eS	Sn	14 05 07.9	-2.9

IDC 21 14:06:56.2±2.2,2.05S×133.63E,h0km,mb3.3/2, mb1 3.7/5,mb1mx3.4/47,mbtmp3.5/5,ML3.3/3,Error ellipse: s-maj=52.5km s-min=22.4km az=64.0,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**2.63**	**296**	Pn	Pn	14 07 40.6	+0.6
	6.3nm,0.3s,baz=340,slow=8.9,SNR=2.4						
SIJI				Sn	Sn	14 08 12.4	-0.3
	20nm,0.3s,baz=14,slow=13,SNR=3.7						
FITZ	**Fitzroy Crossi**	**17.77**	**206**	P	Pn	14 11 04.3	-1.0
	0.1nm,0.3s,baz=32,slow=12,SNR=8.9						
FITZ				S	Sn	14 14 07.8	-16
	0.1nm,0.3s,baz=298,slow=11,SNR=1.2						
WRA	**Warramunga Arr**	**17.80**	**178**	P	Pn	14 11 05.2	-0.3
	0.1nm,0.3s,baz=358,slow=12,SNR=7.6						
ASAR	**Alice Springs**	**21.49**	**179**	P	P	14 11 47.4	+0.6
	0.4nm,0.4s,baz=3.3,slow=12,SNR=9.5						
MKAR	**Makanchi Array**	**66.22**	**324**	P	P	14 17 46.0	-0.1
	0.3nm,0.5s,baz=114,slow=7.9,SNR=4.7						

ISCJB 21 14:10:47.5±1.3,37.23N±0.05×20.00E±0.06,h15km±7km, mb3.5/6,Error ellipse: s-maj=9.6km s-min=6.0km az=42.7
ATH 21 14:10:48.5,37.32N×20.11E,h10km±2km,ML3.3/5,Error ellipse: s-maj=2.8km s-min=1.3km az=55.0
THE 21 14:10:48.0,37.32N×20.04E,h0km±2km,ML3.5/4,Error ellipse: s-maj=2.5km s-min=1.0km az=239.0
CSEM 21 14:10:49.1±0.3,37.32N×20.14E,h2km,ML3.3,Error ellipse: s-maj=6.8km s-min=4.3km az=46.0
IDC 21 14:10:52.0±5.5,37.15N×20.05E,h54km±35km,mb3.3/6, mb1 3.4/8,mb1mx3.2/46,mbtmp3.6/8,ML3.4/2,Error ellipse: s-maj=81.7km s-min=21.2km az=43.0
ISC 21 14:10:47.7±2.0,37.29N±0.05×20.07E±0.06,h8km±11km, n122,σ1§14/143,mb3.6/6,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKS	**Zakynthos**	**0.70**	**54**	P	**Pg**	**14 11 01.2**	**0.0**
ZKS				S	**Sb**	**14 11 12.2**	**+0.3**
ZKS	**Zakynthos**	**0.70**	**54**	P	**Pg**	**14 11 01.5**	**+0.3**
ZKS				S	**Sg**	**14 11 09.8**	**-0.5**
ZKS	**Zakynthos**	**0.70**	**54**	P	**Pg**	**14 11 01.5**	**+0.3**
ZKS				S	**Sg**	**14 11 09.8**	**-0.5**
ZKS				AML	AML	14 11 13.4	
	comp=E,21603μm,0.5s						
ZKS				AML	AML	14 11 14.9	
	comp=N,26978μm,0.5s						
VLS	**Valsamata**	**0.98**	**25**	P	**Pg**	**14 11 06.0**	**-0.5**
VLS				S	**Sb**	**14 11 20.2**	**+0.2**
VLS	**Valsamata**	**0.98**	**25**	P	**Pg**	**14 11 06.2**	**-0.3**
VLS				S	**Sb**	**14 11 19.9**	**-0.1**
KFL	**Anninata**	**1.00**	**34**	P	**Pg**	**14 11 06.0**	**-0.9**
KFL				S	**Sb**	**14 11 21.1**	**+0.6**
KFL	**Anninata**	**1.00**	**34**	P	**Pg**	**14 11 06.0**	**-0.9**
KFL				S	**Sg**	**14 11 19.4**	**-0.5**
KFL	**Anninata**	**1.00**	**34**	P	**Pg**	**14 11 05.6**	**-1.3**
KFL				S	**Sg**	**14 11 19.4**	**-0.5**
VTN	**Vitineika**	**1.08**	**54**	P	**Pg**	**14 11 08.7**	**+0.2**
VTN				S	**Sg**	**14 11 21.2**	**-1.4**
VTN	**Vitineika**	**1.08**	**54**	P	**Pg**	**14 11 08.7**	**+0.2**
VTN				S	**Sg**	**14 11 21.2**	**-1.4**
AMT	**Artemida-Makis**	**1.32**	**79**	P	**Pb**	**14 11 13.1**	**+0.3**
AMT	**Artemida-Makis**	**1.32**	**79**	P	**Pb**	**14 11 13.1**	**+0.3**
AMT				S	**Sg**	**14 11 31.6**	**+1.3**
AMT	**Artemida-Makis**	**1.32**	**79**	P	**Pg**	**14 11 13.5**	**+0.3**
AMT				S	**Sg**	**14 11 31.6**	**+1.3**
AMT				AML	AML	14 11 41.2	
	comp=N,2856μm,0.9s						
AMT				AML	AML	14 11 43.4	
	comp=E,2356μm,0.6s						
RLS	**Riolos of Patr**	**1.35**	**55**	P	**Pb**	**14 11 13.2**	**0.0**
RLS				S	**Sg**	**14 11 32.7**	**+1.7**
RLS	**Riolos of Patr**	**1.35**	**55**	P	**Pb**	**14 11 13.2**	**0.0**
RLS				S	**Sg**	**14 11 30.9**	**-0.2**
RLS	**Riolos of Patr**	**1.35**	**55**	S	**Sg**	**14 11 30.9**	**-0.2**
RLS				AML	AML	14 11 38.6	
	comp=N,1099μm,1.0s						
RLS				AML	AML	14 11 41.0	
	comp=E,1642μm,0.6s						
AXS	**Araxos**	**1.38**	**48**	P	**Pb**	**14 11 13.8**	**+0.2**
AXS	**Araxos**	**1.38**	**48**	P	**Pb**	**14 11 13.8**	**+0.2**
AXS	**Araxos**	**1.38**	**48**	P	**Pg**	**14 11 14.8**	**+0.7**
PYL	**PYLOS**	**1.39**	**106**	P	**Pb**	**14 11 14.3**	**+0.4**
PYL	**PYLOS**	**1.39**	**106**	P	**Pb**	**14 11 14.3**	**+0.4**
DRO	**Drossia**	**1.46**	**62**	P	**Pb**	**14 11 15.3**	**+0.2**
DRO	**Drossia**	**1.46**	**62**	P	**Pb**	**14 11 15.3**	**+0.2**
DRO				S	**Sg**	**14 11 35.2**	**+0.5**
DRO	**Drossia**	**1.46**	**62**	P	**Pg**	**14 11 15.6**	**-0.1**
DRO				S	**Sg**	**14 11 35.2**	**+0.5**
DRO				AML	AML	14 11 45.0	
	comp=E,2688μm,0.9s						
DRO				AML	AML	14 11 47.7	
	comp=N,2322μm,0.4s						
ITM	**Ithomi**	**1.48**	**94**	P	**Pb**	**14 11 15.7**	**+0.2**
ITM	**Ithomi**	**1.48**	**94**	P	**Pb**	**14 11 15.5**	**0.0**
ITM				S	**Sg**	**14 11 34.9**	**-0.5**
ITM	**Ithomi**	**1.48**	**94**	P	**Pb**	**14 11 15.5**	**0.0**
ITM				S	**Sg**	**14 11 34.9**	**-0.5**
ITM				AML	AML	14 11 48.2	
	comp=N,1140μm,0.6s						
ITM				AML	AML	14 11 50.2	
	comp=E,1366μm,0.6s						
LKD2	**Lefkada island**	**1.57**	**17**	P	**Pn**	**14 11 16.0**	**+0.1**
LKD2				S	**Sg**	**14 11 38.0**	**-0.2**
LKD2	**Lefkada island**	**1.57**	**17**	P	**Pb**	**14 11 17.3**	**+0.3**
LKD2				S	**Sg**	**14 11 38.0**	**-0.2**
LKD2	**Lefkada island**	**1.57**	**17**	P	**Pb**	**14 11 17.3**	**+0.3**
PDO	**Prodromos**	**1.58**	**33**	P	**Pb**	**14 11 17.7**	**+0.6**
PDO	**Prodromos**	**1.58**	**33**	P	**Pb**	**14 11 17.7**	**+0.6**
PDO	**Prodromos**	**1.58**	**33**	P	**Pg**	**14 11 18.2**	**+0.3**
UPR	**University Cam**	**1.68**	**53**	P	**Pg**	**14 11 21.5**	**+1.5**
PVO	**Paravola**	**1.76**	**40**	P	**Pb**	**14 11 20.4**	**+0.3**
PVO	**Paravola**	**1.76**	**40**	P	**Pb**	**14 11 20.4**	**+0.3**
PVO	**Paravola**	**1.76**	**40**	P	**Pb**	**14 11 20.6**	**+0.5**
KLV	**Kalavryta, Ach**	**1.81**	**65**	P	**Pb**	**14 11 20.5**	**-0.6**
KLV	**Kalavryta, Ach**	**1.81**	**65**	P	**Pb**	**14 11 20.5**	**-0.6**
KLV	**Kalavryta, Ach**	**1.81**	**65**	P	**Pn**	**14 11 20.1**	**+0.9**
VLX	**Vlachokerasia**	**1.84**	**87**	P	**Pn**	**14 11 20.4**	**+0.8**
VLX	**Vlachokerasia**	**1.84**	**87**	P	**Pn**	**14 11 20.4**	**+0.8**
VLX	**Vlachokerasia**	**1.84**	**87**	P	**Pg**	**14 11 22.9**	**-0.1**
SERG	**Sergoula**	**1.93**	**54**	P	**Pb**	**14 11 22.6**	**-0.5**
SERG	**Sergoula**	**1.93**	**54**	P	**Pb**	**14 11 22.6**	**-0.5**
ANX	**Ano Chora**	**1.96**	**48**	P	**Pb**	**14 11 23.4**	**-0.2**
ANX	**Ano Chora**	**1.96**	**48**	P	**Pb**	**14 11 23.4**	**-0.2**
DSL	**Palaion Diasel**	**2.01**	**23**	P	**Pn**	**14 11 22.3**	**+0.3**
DSL	**Palaion Diasel**	**2.01**	**23**	P	**Pn**	**14 11 22.3**	**+0.3**
EVR	**Evrytania**	**2.13**	**40**	P	**Pb**	**14 11 26.0**	**-0.5**
EVR	**Evrytania**	**2.13**	**40**	P	**Pb**	**14 11 26.0**	**-0.5**
EVR	**Evrytania**	**2.13**	**40**	P	**Pb**	**14 11 26.9**	**+0.4**
DSF	**Desfina**	**2.24**	**59**	P	**Pn**	**14 11 26.1**	**+1.0**
DSF	**Desfina**	**2.24**	**59**	P	**Pn**	**14 11 26.1**	**+1.0**
DSF	**Desfina**	**2.24**	**59**	P	**Pb**	**14 11 28.4**	**0.0**
IGT	**Igoumenitsa**	**2.25**	**5**	P	**Pn**	**14 11 27.1**	**+1.9**
IGT	**Igoumenitsa**	**2.25**	**5**	P	**Pn**	**14 11 27.1**	**+1.9**
IGT	**Igoumenitsa**	**2.25**	**5**	P	**Pb**	**14 11 27.8**	**-0.9**
VLI	**Veliai**	**2.36**	**103**	P	**Pb**	**14 11 30.3**	**-0.1**
VLI	**Veliai**	**2.36**	**103**	P	**Pb**	**14 11 30.3**	**-0.1**
LTK	**Loutraki**	**2.41**	**71**	P	**Pn**	**14 11 28.4**	**+1.0**
LTK	**Loutraki**	**2.41**	**71**	P	**Pn**	**14 11 28.4**	**+1.0**
LTK	**Loutraki**	**2.41**	**71**	P	**Pn**	**14 11 27.3**	**-0.1**
KEK	**Kerkira**	**2.43**	**355**	P	**Pn**	**14 11 29.6**	**+1.9**
KEK	**Kerkira**	**2.43**	**355**	P	**Pn**	**14 11 29.6**	**+1.9**
AGG	**Agios Georgios**	**2.48**	**45**	P	**Pn**	**14 11 29.8**	**+1.4**
AGG	**Agios Georgios**	**2.48**	**45**	P	**Pn**	**14 11 29.8**	**+1.4**
AGG	**Agios Georgios**	**2.48**	**45**	P	**Pn**	**14 11 30.3**	**+1.9**
DID	**Didima**	**2.53**	**84**	P	**Pn**	**14 11 29.5**	**+0.5**
DID	**Didima**	**2.53**	**84**	P	**Pn**	**14 11 29.5**	**+0.5**
DID	**Didima**	**2.53**	**84**	P	**Pn**	**14 11 27.9**	**-1.2**
THL	**Klokotos Trika**	**2.74**	**33**	P	**Pn**	**14 11 33.9**	**+2.0**
THL	**Klokotos Trika**	**2.74**	**33**	P	**Pn**	**14 11 33.8**	**+1.9**
KPRO	**Kipourio**	**2.85**	**20**	P	**Pn**	**14 11 35.6**	**+2.1**
KPRO	**Kipourio**	**2.85**	**20**	P	**Pn**	**14 11 35.6**	**+2.1**
KPRO	**Kipourio**	**2.85**	**20**	P	**Pb**	**14 11 36.5**	**-2.3**
VLY	**Voula,Athens**	**3.01**	**78**	P	**Pb**	**14 11 40.2**	**-1.3**
PENT	**Pentalofos**	**3.02**	**16**	P	**Pn**	**14 11 38.3**	**+2.4**
PENT	**Pentalofos**	**3.02**	**16**	P	**Pn**	**14 11 38.3**	**+2.4**
PENT	**Pentalofos**	**3.02**	**16**	P	**Pb**	**14 11 39.3**	**-2.5**
NEO	**Neokhori**	**3.19**	**50**	P	**Pn**	**14 11 38.9**	**+0.7**
NEO	**Neokhori**	**3.19**	**50**	P	**Pn**	**14 11 38.9**	**+0.7**
XOR	**Xorichti**	**3.21**	**49**	P	**Pn**	**14 11 39.0**	**+0.5**
XOR	**Xorichti**	**3.21**	**49**	P	**Pn**	**14 11 39.5**	**+1.0**
XOR	**Xorichti**	**3.21**	**49**	P	**Pn**	**14 11 39.5**	**+1.0**
NEST	**Nestorio**	**3.22**	**13**	P	**Pn**	**14 11 41.4**	**+2.8**
NEST	**Nestorio**	**3.22**	**13**	P	**Pn**	**14 11 41.4**	**+2.8**
NEST	**Nestorio**	**3.22**	**13**	P	**Pn**	**14 11 41.5**	**+3.0**
KZN	**Kozani**	**3.29**	**23**	P	**Pn**	**14 11 42.0**	**+2.4**
KZN	**Kozani**	**3.29**	**23**	P	**Pn**	**14 11 42.0**	**+2.4**
LIT	**Litokhoron**	**3.39**	**33**	P	**Pn**	**14 11 41.8**	**+1.0**
LIT	**Litokhoron**	**3.39**	**33**	P	**Pn**	**14 11 41.8**	**+1.0**
LIT	**Litokhoron**	**3.39**	**33**	P	**Pn**	**14 11 40.7**	**-0.2**
KTI	**Kastanea**	**3.49**	**27**	P	**Pn**	**14 11 44.0**	**+1.7**
KTI	**Kastanea**	**3.49**	**27**	P	**Pn**	**14 11 44.0**	**+1.7**
FNA	**Florina**	**3.64**	**16**	P	**Pn**	**14 11 46.0**	**+1.7**
FNA	**Florina**	**3.64**	**16**	P	**Pn**	**14 11 46.0**	**+1.7**
FNA	**Florina**	**3.64**	**16**	P	**Pn**	**14 11 44.9**	**+0.6**
PLG	**Polygyros**	**4.05**	**39**	P	**Pn**	**14 11 50.6**	**+0.6**
PLG	**Polygyros**	**4.05**	**39**	P	**Pn**	**14 11 50.6**	**+0.6**
HORT	**Hortiatis**	**4.06**	**35**	P	**Pn**	**14 11 50.7**	**+0.5**
HORT	**Hortiatis**	**4.06**	**35**	P	**Pn**	**14 11 50.7**	**+0.5**
GRG	**Griva**	**4.09**	**26**	P	**Pn**	**14 11 50.9**	**+0.4**
GRG	**Griva**	**4.09**	**26**	P	**Pn**	**14 11 50.9**	**+0.4**
SOH	**Sokhos**	**4.36**	**35**	P	**Pn**	**14 11 55.5**	**+1.3**
SOH	**Sokhos**	**4.36**	**35**	P	**Pn**	**14 11 55.5**	**+1.3**
IDI	**Anoyia**	**4.37**	**116**	P	**Pn**	**14 11 56.2**	**+1.8**
	comp=E,0.8nm,0.3s,baz=306,slow=14,SNR=1.4						
IDI				S	**Sn**	**14 12 44.7**	**-0.8**
	comp=E,2.4nm,0.3s,baz=181,slow=21,SNR=2.4						
KNT	**Kendrikon**	**4.45**	**29**	P	**Pn**	**14 11 56.8**	**+1.4**
KNT	**Kendrikon**	**4.45**	**29**	P	**Pn**	**14 11 56.8**	**+1.4**
SRS	**Serrai**	**4.70**	**34**	P	**Pn**	**14 11 59.5**	**+0.6**
SRS	**Serrai**	**4.70**	**34**	P	**Pn**	**14 11 59.5**	**+0.6**
NVR	**Nevrokopi**	**5.01**	**35**	P	**Pn**	**14 12 04.0**	**+0.9**
NVR	**Nevrokopi**	**5.01**	**35**	P	**Pn**	**14 12 04.0**	**+0.9**
VTS	**Vitosha**	**5.82**	**23**	P	**Pn**	**14 12 16.0**	**+1.6**
VTS	**Vitosha**	**5.82**	**23**	P	**Pn**	**14 12 16.0**	**+1.6**
MLR	**Muntele Rosu**	**9.31**	**26**	P	**Pn**	**14 13 05.4**	**+3.2**
	comp=E,0.1nm,0.3s,baz=180,slow=9.1,SNR=5.7						
HFS	**Hagfors**	**23.23**	**352**	P	**P**	**14 15 55.5**	**+0.5**
	comp=E,0.9nm,0.5s,baz=163,slow=12,SNR=4.8						
NOA	**NORSAR Array B**	**24.43**	**350**	P	**P**	**14 16 05.9**	**-0.6**
	comp=E,0.4nm,0.8s,baz=157,slow=6.8,SNR=2.5						
FINES	**FINESS Array B**	**24.47**	**7**	P	**P**	**14 16 06.6**	**-0.2**
	comp=E,1.0nm,0.7s,baz=207,slow=8.8,SNR=3.1						
BVAR	**Borovoye Array**	**37.97**	**49**	P	**P**	**14 18 05.4**	**-0.3**
	comp=E,0.3nm,0.4s,baz=290,slow=8.9,SNR=3.6						
MKAR	**Makanchi Array**	**46.07**	**58**	P	**P**	**14 19 11.0**	**-1.0**
	comp=E,0.5nm,0.6s,baz=274,slow=7.9,SNR=7.2						
ZALV	**Zalesovo Beam**	**46.55**	**47**	P	**P**	**14 19 14.9**	**-0.6**
	comp=E,0.8nm,0.6s,baz=274,slow=8.2,SNR=3.8						

IDC 21 14:16:20.7±1.4,5.67N×126.66E,h0km,mb3.5/6, mb1 3.6/6,mb1mx3.4/52,mbtmp3.5/6,Error ellipse: s-maj=108.9km s-min=18.5km az=73.0
ISC 21 14:16:29.3±1.5,5.6N±0.2×126.5E±0.5,h66km,n7,σ0§86/8, mb3.4/6,1C,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DMPH	**Davao City--Mi**	**1.76**	**328⇑**	eP	**Pn**	**14 16 58.3**	**+0.6**
DMPH				eS	**Sn**	**14 17 18.3**	**-0.9**
FITZ	**Fitzroy Crossi**	**23.55**	**182**	P		**14 21 34.6**	**+0.7**
	1.4nm,0.6s,baz=348,slow=10,SNR=7.0						
WRA	**Warramunga Arr**	**26.53**	**163**	P	**P**	**14 22 00.1**	**-0.9**
	0.5nm,0.7s,baz=345,slow=10,SNR=8.1						
ASAR	**Alice Springs**	**29.97**	**166**	P	**P**	**14 22 31.1**	**-0.5**
	0.3nm,0.6s,baz=337,slow=6.9,SNR=6.4						
SONM	**Songino Array**	**45.47**	**341**	P	**P**	**14 24 42.8**	**+0.8**
	0.2nm,0.4s,baz=139,slow=6.8,SNR=2.8						
MKAR	**Makanchi Array**	**55.89**	**325**	P	**P**	**14 25 59.9**	**-0.5**
	0.2nm,0.5s,baz=105,slow=7.9,SNR=3.2						
KURBB	**Kurchatov Arra**	**60.04**	**327**	P	**P**	**14 26 28.8**	**-0.5**
	0.2nm,0.4s,baz=127,slow=7.4,SNR=3.0						

ISCJB 21 14:21:12.3±0.3,53.48N±0.02×2.58E±0.05,h0km,Error ellipse: s-maj=4.4km s-min=2.8km az=161.3
CSEM 21 14:21:14.6±0.2,53.50N×2.49E,h1km,ML3.4/5,Error ellipse: s-maj=5.3km s-min=3.2km az=72.0,Mining explosion.
LDG 21 14:21:16.1±0.2,53.59N×2.25E,h10km,Ml3.3/12,Error ellipse: s-maj=7.4km s-min=3.5km az=53.0
BGS 21 14:21:18.6±1.6,53.58N×2.24E,h12km±18km,ML3.5
IDC 21 14:21:18.1±2.4,53.38N×1.90E,h0km,mb1 3.4/5, mb1mx3.2/42,mbtmp3.5/4,ML3.4/4,Error ellipse: s-maj=29.2km s-min=23.4km az=9.0
UCC 21 14:21:18.5,53.66N×2.29E,h10km,ML3.4,Mining explosion.
ISC 21 14:21:13.3±0.6,53.55N±0.03×2.44E±0.03,h0km,n187, σ2§10/225,North Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WACR	**West Acre**	**1.37**	**234**	eP	**Pb**	**14 21 41.7**	**+1.9**
WACR				eS	**Sg**	**14 21 57.9**	**+0.6**
WACR	**West Acre**	**1.37**	**234**	eP	**Pb**	**14 21 41.7**	**+1.9**
WACR				eS	**Sg**	**14 21 57.9**	**+0.6**
WACR	**West Acre**	**1.37**	**234**	eP	**Pb**	**14 21 41.7**	**+1.9**
WACR				eS	**Sg**	**14 21 57.9**	**+0.6**
LMK	**Market Rasen**	**1.66**	**268**	eP	**Pg**	**14 21 46.6**	**+1.6**
LMK				AML	AML	14 22 12.8	
	comp=N,686nm,0.3s						
LMK				AML	AML	14 22 17.2	
	comp=E,838nm,0.6s						
LMK	**Market Rasen**	**1.66**	**268**	eP	**Pg**	**14 21 46.6**	**+1.6**
LMK				AML	AML	14 22 12.8	
	comp=N,686nm,0.3s						
LMK				AML	AML	14 22 17.2	
	comp=E,838nm,0.6s						
LMK	**Market Rasen**	**1.66**	**268**	eP	**Pg**	**14 21 46.6**	**+1.6**
LMK				AML	AML	14 22 12.8	
	comp=N,686nm,0.3s						
LMK				AML	AML	14 22 17.2	
	comp=E,838nm,0.6s						
LMK	**Market Rasen**	**1.66**	**268**	eP	**Pg**	**14 21 46.6**	**+1.6**
	comp=E,838nm,0.6s						
ELSH	**Elham, Standar**	**2.54**	**199**	eP	**Pb**	**14 22 00.0**	**+0.3**
ELSH				AML	AML	14 22 38.5	
	comp=E,137nm,0.3s						
ELSH				AML	AML	14 22 43.9	
	comp=N,144nm,0.5s						
ELSH	**Elham, Standar**	**2.54**	**199**	eP	**Pb**	**14 22 00.0**	**+0.3**
ELSH				AML	AML	14 22 38.5	
	comp=E,137nm,0.3s						
ELSH				AML	AML	14 22 43.9	
	comp=N,144nm,0.5s						
ELSH	**Elham, Standar**	**2.54**	**199**	eP	**Pb**	**14 22 00.0**	**+0.3**
ELSH				AML	AML	14 22 38.5	
	comp=E,137nm,0.3s						
ELSH				AML	AML	14 22 43.9	
	comp=N,144nm,0.5s						
ELSH	**Elham, Standar**	**2.54**	**199**	eP	**Pb**	**14 22 00.0**	**+0.3**
	SNR=55						
BDSL	**Dessel**	**2.84**	**144**	P	**Pb**	**14 22 06.6**	**+1.8**
BRQR	**Ronqui¤re**	**3.15**	**159**	P	**Pb**	**14 22 08.6**	**-1.5**
BRQR	**Ronqui¤re**	**3.15**	**159**	P	**Pb**	**14 22 08.6**	**-1.5**
STRD	**Stroud**	**3.32**	**239**	eP	**Pn**	**14 22 08.9**	**+2.4**
STRD	**Stroud**	**3.32**	**239**	eP	**Pn**	**14 22 08.9**	**+2.4**
STRD	**Stroud**	**3.32**	**239**	eP	**Pn**	**14 22 08.9**	**+2.4**
STRD	**Stroud**	**3.32**	**239**	eP	**Pn**	**14 22 08.9**	**+2.4**
HLM1	**Long Mynd**	**3.38**	**254**	eP	**Pn**	**14 22 08.6**	**+1.4**
HLM1				eS	**Sn**	**14 22 46.5**	**-1.4**
HLM1				AML	AML	14 23 09.4	
	comp=N,75nm,0.6s						
HLM1				AML	AML	14 23 15.1	
	comp=E,80nm,0.4s						
HLM1	**Long Mynd**	**3.38**	**254**	eP	**Pn**	**14 22 08.6**	**+1.4**
HLM1				eS	**Sn**	**14 22 46.5**	**-1.4**
HLM1				AML	AML	14 23 09.4	
	comp=N,75nm,0.6s						
HLM1				AML	AML	14 23 15.1	
	comp=E,80nm,0.4s						
HLM1	**Long Mynd**	**3.38**	**254**	eP	**Pn**	**14 22 08.6**	**+1.4**
HLM1				eS	**Sn**	**14 22 46.5**	**-1.4**
HLM1				AML	AML	14 23 09.4	
	comp=N,75nm,0.6s						
HLM1				AML	AML	14 23 15.1	
	comp=E,80nm,0.4s						
HLM1	**Long Mynd**	**3.38**	**254**	eP	**Pn**	**14 22 08.6**	**+1.4**
HLM1				eS	**Sn**	**14 22 46.5**	**-1.4**
	comp=E,80nm,0.4s,SNR=55						
FOEL	**Foel Wylfa**	**3.46**	**261**	eP	**Pn**	**14 22 09.8**	**+1.4**
FOEL				AML	AML	14 23 09.8	
	comp=E,78nm,0.6s						
FOEL				AML	AML	14 23 11.2	
	comp=N,149nm,0.5s						
FOEL	**Foel Wylfa**	**3.46**	**261**	eP	**Pn**	**14 22 09.8**	**+1.4**
FOEL				AML	AML	14 23 09.8	
	comp=E,78nm,0.6s						
FOEL				AML	AML	14 23 11.2	
	comp=N,149nm,0.5s						
FOEL	**Foel Wylfa**	**3.46**	**261**	eP	**Pn**	**14 22 09.8**	**+1.4**
FOEL				AML	AML	14 23 09.8	
	comp=E,78nm,0.6s						
FOEL				AML	AML	14 23 11.2	
	comp=N,149nm,0.5s						
FOEL	**Foel Wylfa**	**3.46**	**261**	eP	**Pn**	**14 22 09.8**	**+1.4**
	comp=N,149nm,0.5s						
OLDB	**Oldbury-Upon-S**	**3.58**	**240**	eP	**Pn**	**14 22 11.9**	**+1.8**
OLDB	**Oldbury-Upon-S**	**3.58**	**240**	eP	**Pn**	**14 22 11.9**	**+1.8**
OLDB	**Oldbury-Upon-S**	**3.58**	**240**	eP	**Pn**	**14 22 11.9**	**+1.8**
OLDB	**Oldbury-Upon-S**	**3.58**	**240**	eP	**Pn**	**14 22 11.9**	**+1.8**
BATH	**Bath**	**3.60**	**236**	eP	**Pn**	**14 22 12.6**	**+2.3**
BATH				AML	AML	14 23 12.5	
	comp=E,420nm,0.6s						
BATH				AML	AML	14 23 14.2	
	comp=N,486nm,0.6s						
BATH	**Bath**	**3.60**	**236**	eP	**Pn**	**14 22 12.6**	**+2.3**
BATH				AML	AML	14 23 12.5	
	comp=E,420nm,0.6s						
BATH				AML	AML	14 23 14.2	
	comp=N,486nm,0.6s						
BATH	**Bath**	**3.60**	**236**	eP	**Pn**	**14 22 12.6**	**+2.3**
BATH				AML	AML	14 23 12.5	
	comp=E,420nm,0.6s						
BATH				AML	AML	14 23 14.2	
	comp=N,486nm,0.6s						
BATH	**Bath**	**3.60**	**236**	eP	**Pn**	**14 22 12.6**	**+2.3**
	comp=N,486nm,0.6s						
BCLA	**Clavier**	**3.60**	**149**	P	**Pn**	**14 22 14.5**	**+4.2**
BCLA	**Clavier**	**3.60**	**149**	P	**Pn**	**14 22 14.5**	**+4.2**
MONM	**Monmouth**	**3.62**	**244**	eP	**Pn**	**14 22 12.3**	**+1.7**
MONM				AML	AML	14 23 15.6	
	comp=E,84nm,0.5s						
MONM				AML	AML	14 23 16.6	
	comp=N,150nm,0.5s						
MONM	**Monmouth**	**3.62**	**244**	eP	**Pn**	**14 22 12.3**	**+1.7**
MONM				AML	AML	14 23 15.6	
	comp=E,84nm,0.5s						
MONM				AML	AML	14 23 16.6	
	comp=N,150nm,0.5s						
MONM	**Monmouth**	**3.62**	**244**	eP	**Pn**	**14 22 12.3**	**+1.7**
MONM				AML	AML	14 23 15.6	
	comp=E,84nm,0.5s						
MONM				AML	AML	14 23 16.6	
	comp=N,150nm,0.5s						
MONM	**Monmouth**	**3.62**	**244**	eP	**Pn**	**14 22 12.3**	**+1.7**
	comp=N,150nm,0.5s						
MCH1	**Michaelchurch**	**3.65**	**247**	eP	**Pn**	**14 22 12.8**	**+1.8**
MCH1				eS	**Sn**	**14 22 51.8**	**-2.9**
MCH1				AML	AML	14 23 11.8	
	comp=E,62nm,0.3s						
MCH1				AML	AML	14 23 17.1	
	comp=N,68nm,0.5s						
MCH1	**Michaelchurch**	**3.65**	**247**	eP	**Pn**	**14 22 12.8**	**+1.8**
MCH1				eS	**Sn**	**14 22 51.8**	**-2.9**
MCH1				AML	AML	14 23 11.8	
	comp=E,62nm,0.3s						
MCH1				AML	AML	14 23 17.1	
	comp=N,68nm,0.5s						
MCH1	**Michaelchurch**	**3.65**	**247**	eP	**Pn**	**14 22 12.8**	**+1.8**
MCH1				eS	**Sn**	**14 22 51.8**	**-2.9**
MCH1				AML	AML	14 23 11.8	
	comp=E,62nm,0.3s						
MCH1				AML	AML	14 23 17.1	
	comp=N,68nm,0.5s						
MCH1	**Michaelchurch**	**3.65**	**247**	eP	**Pn**	**14 22 12.8**	**+1.8**
MCH1				eS	**Sn**	**14 22 51.8**	**-2.9**
	comp=N,68nm,0.5s,SNR=55						
BAIF	**Baives**	**3.67**	**162**	eP	**Pn**	**14 22 14.6**	**+3.4**
BAIF	**Baives**	**3.67**	**162**	ePg	**Pg**	**14 22 24.3**	**+0.8**
BAIF				eSg	**Sg**	**14 23 12.3**	**+1.3**
	comp=N,40nm,0.7s						

BAIF Baives 3.67 162 eP Pn 14 22 14.6 +3.4
BAIF Baives 3.67 162 ePg Pg 14 22 24.3 +0.8
BAIF eSg Sg 14 23 12.3 +1.3
comp=N,20nm,0.7s
MEM Membach 3.68 142 P Pb 14 22 17.8 -1.3
MEM Membach 3.68 142 P Pb 14 22 17.8 -1.3
DOU Dourbes 3.71 158 P Pg 14 22 32.6 +8.3
EKA Eskdalemuir Ar 3.72 301 Pn Pn 14 22 13.7 +1.7
baz=118,slow=14,SNR=50
EKA Sn Sn 14 22 56.2 -0.4
baz=119,slow=28,SNR=6.1
HGH Gray Hill 3.73 241 eP Pn 14 22 13.3 +1.2
HGH Gray Hill 3.73 241 eP Pn 14 22 13.3 +1.2
HGH Gray Hill 3.73 241 eP Pn 14 22 13.3 +1.2
HGH Gray Hill 3.73 241 eP Pn 14 22 13.3 +1.2
LLW Llanuwychllyn 3.74 262 eP Pn 14 22 13.5 +1.3
LLW Llanuwychllyn 3.74 262 eP Pn 14 22 13.5 +1.3
LLW Llanuwychllyn 3.74 262 eP Pn 14 22 13.5 +1.3
LLW Llanuwychllyn 3.74 262 eP Pn 14 22 13.5 +1.3
LLW Llanuwychllyn 3.74 262 eP Pn 14 22 13.5 +1.3
GIVF Givet 3.76 156 eP Pn 14 22 15.6 +3.1
GIVF eSg Sg 14 23 15.5 +1.5
comp=N,63nm,0.6s
GIVF Givet 3.76 156 eP Pn 14 22 15.6 +3.1
GIVF eSg Sg 14 23 15.5 +1.5
comp=N,31nm,0.6s
ESY Stoneypath 3.77 311 eP Pn 14 22 14.8 +2.2
ESY Stoneypath 3.77 311 eP Pn 14 22 14.8 +2.2
ESY Stoneypath 3.77 311 eP Pn 14 22 14.8 +2.2
ESY Stoneypath 3.77 311 eP Pn 14 22 14.8 +2.2
WPM1 Penmaenmawr 3.81 268 eP Pn 14 22 14.5 +1.3
WPM1 Penmaenmawr 3.81 268 eP Pn 14 22 14.5 +1.3
WPM1 Penmaenmawr 3.81 268 eP Pn 14 22 14.5 +1.3
WPM1 Penmaenmawr 3.81 268 eP Pn 14 22 14.5 +1.3
EDI Edinburgh 4.03 308 eP Pn 14 22 18.6 +2.4
EDI Edinburgh 4.03 308 eP Pn 14 22 18.6 +2.4
EDI Edinburgh 4.03 308 eP Pn 14 22 18.6 +2.4
EDI Edinburgh 4.03 308 eP Pn 14 22 18.6 +2.4
LPW Lampeter 4.20 253 eP Pn 14 22 20.2 +1.6
LPW AML AML 14 23 31.8
comp=N,42nm,0.7s
LPW AML AML 14 23 35.3
comp=E,26nm,0.7s
LPW Lampeter 4.20 253 eP Pn 14 22 20.2 +1.6
LPW AML AML 14 23 31.8
comp=N,42nm,0.7s
LPW AML AML 14 23 35.3
comp=E,26nm,0.7s
LPW Lampeter 4.20 253 eP Pn 14 22 20.2 +1.6
LPW AML AML 14 23 31.8
comp=N,42nm,0.7s
LPW AML AML 14 23 35.3
comp=E,26nm,0.7s
LPW Lampeter 4.20 253 eP Pn 14 22 20.2 +1.6
comp=E,26nm,0.7s
EDU Dundee 4.34 316 eP Pn 14 22 22.5 +2.1
EDU Dundee 4.34 316 eP Pn 14 22 22.5 +2.1
EDU Dundee 4.34 316 eP Pn 14 22 22.5 +2.1
EDU Dundee 4.34 316 eP Pn 14 22 22.5 +2.1
DRUM Mains of Drumt 4.39 322 eP Pn 14 22 23.5 +2.3
DRUM eS Sn 14 23 11.2 -1.8
DRUM AML AML 14 23 12.9
comp=N,32nm,0.5s
DRUM AML AML 14 23 13.4
comp=E,30nm,0.5s
DRUM Mains of Drumt 4.39 322 eP Pn 14 22 23.5 +2.3
DRUM eS Sn 14 23 11.2 -1.8
DRUM AML AML 14 23 12.9
comp=N,32nm,0.5s
DRUM AML AML 14 23 13.4
comp=E,30nm,0.5s
DRUM Mains of Drumt 4.39 322 eP Pn 14 22 23.5 +2.3
DRUM eS Sn 14 23 11.2 -1.8
DRUM AML AML 14 23 12.9
comp=N,32nm,0.5s
DRUM AML AML 14 23 13.4
comp=E,30nm,0.5s
DRUM Mains of Drumt 4.39 322 eP Pn 14 22 23.5 +2.3
DRUM eS Sn 14 23 11.2 -1.8
comp=E,30nm,0.5s,SNR=53
GAL1 Galloway 4.40 290 eP Pn 14 22 23.3 +2.0
GAL1 Galloway 4.40 290 eP Pn 14 22 23.3 +2.0
GAL1 Galloway 4.40 290 eP Pn 14 22 23.3 +2.0
GAL1 Galloway 4.40 290 eP Pn 14 22 23.3 +2.0
EAB Aberfoyle 4.72 307 eP Pn 14 22 27.8 +2.1
EAB Aberfoyle 4.72 307 eP Pn 14 22 27.8 +2.1
EAB Aberfoyle 4.72 307 eP Pn 14 22 27.8 +2.1
EAB Aberfoyle 4.72 307 eP Pn 14 22 27.8 +2.1
MME1 Meikle Cairn 4.87 323 eP Pn 14 22 29.6 +1.9
MME1 Meikle Cairn 4.87 323 eP Pn 14 22 29.6 +1.9
MME1 Meikle Cairn 4.87 323 eP Pn 14 22 29.6 +1.9
MME1 Meikle Cairn 4.87 323 eP Pn 14 22 29.6 +1.9
GMM Mts of Mourne 5.01 281 eP Pn 14 22 31.2 +1.6
GMM Mts of Mourne 5.01 281 eP Pn 14 22 31.2 +1.6
GMM Mts of Mourne 5.01 281 eP Pn 14 22 31.2 +1.6
GMM Mts of Mourne 5.01 281 eP Pn 14 22 31.2 +1.6
GMK Mull of Kintyr 5.02 294 eP Pn 14 22 31.9 +2.1
GMK Mull of Kintyr 5.02 294 eP Pn 14 22 31.9 +2.1
GMK Mull of Kintyr 5.02 294 eP Pn 14 22 31.9 +2.1
GMK Mull of Kintyr 5.02 294 eP Pn 14 22 31.9 +2.1
DYA Yadsworthy 5.02 234 eP Pn 14 22 31.2 +1.4
DYA Yadsworthy 5.02 234 eP Pn 14 22 31.2 +1.4
DYA Yadsworthy 5.02 234 eP Pn 14 22 31.2 +1.4
DYA Yadsworthy 5.02 234 eP Pn 14 22 31.2 +1.4
FLN La Foliniere 5.14 202 ePn Pn 14 22 30.8 -0.6
baz=30
FLN La Foliniere 5.14 202 ePn Pn 14 22 30.8 -0.6
MCD Coleburn Disti 5.17 324 eP Pn 14 22 34.0 +2.1
MCD eS Sn 14 23 28.7 -3.5
MCD AML AML 14 23 31.5
comp=E,16nm,0.5s
MCD AML AML 14 23 34.2
comp=N,20nm,0.6s
MCD Coleburn Disti 5.17 324 eP Pn 14 22 34.0 +2.1
MCD eS Sn 14 23 28.7 -3.5
MCD AML AML 14 23 31.5
comp=E,16nm,0.5s
MCD AML AML 14 23 34.2
comp=N,20nm,0.6s
MCD Coleburn Disti 5.17 324 eP Pn 14 22 34.0 +2.1
MCD eS Sn 14 23 28.7 -3.5
MCD AML AML 14 23 31.5
comp=E,16nm,0.5s
MCD AML AML 14 23 34.2
comp=N,20nm,0.6s
MCD Coleburn Disti 5.17 324 eP Pn 14 22 34.0 +2.1
LDF La Druitiere 5.22 199 ePn Pn 14 22 33.0 +0.4
LDF eSn Sn 14 23 28.1 -5.3
comp=N,5.5nm,0.3s
LDF eSg
comp=N,38nm,0.9s
LDF La Druitiere 5.22 199 ePn Pn 14 22 33.0 +0.4
LDF eSn Sn 14 23 28.1 -5.3
comp=N,2.8nm,0.3s
JSA Saint Aubin 5.24 215 eP Pn 14 22 34.3 +1.5
JSA Saint Aubin 5.24 215 eP Pn 14 22 34.3 +1.5
JSA Saint Aubin 5.24 215 eP Pn 14 22 34.3 +1.5
JSA Saint Aubin 5.24 215 eP Pn 14 22 34.3 +1.5
PAGF Fort de Pagny 5.42 156 ePn Pn 14 22 36.6 +1.3
PAGF eSg Sg 14 24 07.4 +0.3
comp=N,6.3nm,0.6s
PAGF Fort de Pagny 5.42 156 ePn Pn 14 22 36.6 +1.3
PAGF eSg Sg 14 24 07.4 +0.3
comp=N,3.2nm,0.6s
GRR Gorron 5.57 203 ePn Pn 14 22 36.7 -0.7
GRR eSn Sn 14 23 35.5 -6.6
comp=N,8.4nm,0.3s
GRR Gorron 5.57 203 ePn Pn 14 22 36.7 -0.7
HOMB Homborsund 5.83 33 eP Pn 14 22 43.9 +3.0
HOMB eS Sn 14 23 46.5 -1.8
HOMB IAML 14 23 52.7
comp=Z,6.4nm,0.7s
HOMB Homborsund 5.83 33 eP Pn 14 22 43.9 +3.0
SNR=53
HOMB eS Sn 14 23 46.5 -1.8
SNR=53
KMY Karmoy 5.88 14 eP Pn 14 22 43.0 +1.4
KMY eS Sn 14 23 47.0 -2.7
KMY IAML 14 23 52.3
comp=Z,11nm,0.8s
KMY Karmoy 5.88 14 eP Pn 14 22 43.0 +1.4
SNR=53
KAC Achnashellach 5.91 315 eP Pn 14 22 43.8 +1.8
KAC Achnashellach 5.91 315 eP Pn 14 22 43.8 +1.8
KAC Achnashellach 5.91 315 eP Pn 14 22 43.8 +1.8
KAC Achnashellach 5.91 315 eP Pn 14 22 43.8 +1.8
KPL Plockton 5.97 313 eP Pn 14 22 44.5 +1.8
KPL AML AML 14 23 53.0
comp=N,18nm,0.7s
KPL AML AML 14 23 53.0
comp=E,14nm,0.5s
KPL Plockton 5.97 313 eP Pn 14 22 44.5 +1.8
KPL AML AML 14 23 53.0
comp=N,18nm,0.7s
KPL AML AML 14 23 53.0
comp=E,14nm,0.5s
KPL Plockton 5.97 313 eP Pn 14 22 44.5 +1.8
KPL AML AML 14 23 53.0
comp=N,18nm,0.7s
KPL AML AML 14 23 53.0
comp=E,14nm,0.5s
KPL Plockton 5.97 313 eP Pn 14 22 44.5 +1.8
comp=E,14nm,0.5s
CDF Champ du Feu 5.98 147 eP Pn 14 22 47.5 +4.4
HAU Haudompre 6.08 154 eP Pn 14 22 49.0 +4.6
HAU eSg Sg 14 24 28.7 +0.2
comp=E,6.0nm,0.4s
BIGH Upper Bighouse 6.10 327 eP Pn 14 22 46.3 +1.8
BIGH AML AML 14 23 53.4
comp=E,21nm,0.4s
BIGH AML AML 14 23 54.7
comp=N,23nm,0.5s
BIGH Upper Bighouse 6.10 327 eP Pn 14 22 46.3 +1.8
BIGH AML AML 14 23 53.4
comp=E,21nm,0.4s
BIGH AML AML 14 23 54.7
comp=N,23nm,0.5s
BIGH Upper Bighouse 6.10 327 eP Pn 14 22 46.3 +1.8
BIGH AML AML 14 23 53.4
comp=E,21nm,0.4s
BIGH AML AML 14 23 54.7
comp=N,23nm,0.5s
BIGH Upper Bighouse 6.10 327 eP Pn 14 22 46.3 +1.8
comp=N,23nm,0.5s
SGMF Saint Gilles 6.17 213 ePn Pn 14 22 46.4 +0.8
SGMF eSn Sn 14 23 51.4 -5.5
comp=N,4.9nm,0.3s
SGMF Saint Gilles 6.17 213 ePn Pn 14 22 46.4 +0.8
BLS5 Blasjo 6.29 19 eP Pn 14 22 49.4 +2.2
BLS5 eS Sn 14 23 56.8 -2.9
BLS5 IAML 14 23 59.2
comp=E,4.9nm,0.5s
BLS5 Blasjo 6.29 19 eP Pn 14 22 49.4 +2.2
SNR=51
ROSF Rostrenen 6.35 217 ePn Pn 14 22 48.4 +0.4
ROSF eSn Sn 14 23 54.6 -6.6
comp=E,6.9nm,0.3s
ROSF Rostrenen 6.35 217 ePn Pn 14 22 48.4 +0.4
LOR Lormes 6.36 171 ePn Pn 14 22 49.3 +1.1
baz=355
LOR eSn Sn 14 23 56.5 -5.0
comp=E,3.9nm,0.3s
LOR eSg Sg 14 24 37.2 -0.1
comp=E,12nm,0.5s
LOR Lormes 6.36 171 ePn Pn 14 22 49.3 +1.1
LOR eSg Sg 14 24 37.2 -0.1
comp=E,6.2nm,0.5s
SSF Saint Saulge 6.53 174 ePn Pn 14 22 51.0 +0.4
SSF Saint Saulge 6.53 174 ePn Pn 14 22 51.0 +0.4
QUIF Quistinic 6.67 214 ePn Pn 14 22 52.9 +0.5
QUIF Quistinic 6.67 214 ePn Pn 14 22 52.9 +0.5
AVF Avril sur Loir 6.79 175 ePn Pn 14 22 55.0 +0.8
AVF Avril sur Loir 6.79 175 ePn Pn 14 22 55.0 +0.8
ASK Askoy 7.11 11 eP Pn 14 22 59.7 +1.3
ASK eS Sn 14 24 15.2 -4.6
MFF Saint Martin d 7.15 194 ePn Pn 14 22 58.7 -0.4
MFF Saint Martin d 7.15 194 ePn Pn 14 22 58.7 -0.4
TCF Toulx Ste Croi 7.27 181 ePn Pn 14 23 01.6 +0.8
TCF Toulx Ste Croi 7.27 181 ePn Pn 14 23 01.6 +0.8
CABF La Chapelle 7.33 160 ePn Pn 14 23 03.3 +1.6
CABF La Chapelle 7.33 160 ePn Pn 14 23 03.3 +1.6
SUE Sulen 7.63 9 eP Pn 14 23 06.3 +0.8
SUE eS Sn 14 24 26.6 -5.9
SUE Sulen 7.63 9 eP Pn 14 23 06.3 +0.8
SNR=51
RJF Les Rejaudoux 8.28 185 ePn Pn 14 23 14.5 0.0
RJF Les Rejaudoux 8.28 185 ePn Pn 14 23 14.5 0.0
GERES GERESS Array B 8.49 119 Pn Pn 14 23 22.7 +5.1
comp=E,0.2nm,0.3s,baz=310,slow=14,SNR=3.1
LPL La Plagne 8.51 159 ePn Pn 14 23 18.1 +0.1
LPL La Plagne 8.51 159 ePn Pn 14 23 18.1 +0.1
CAF Calviac 8.64 182 ePn Pn 14 23 19.3 -0.2
CAF Calviac 8.64 182 ePn Pn 14 23 19.3 -0.2
LFF La Frestale 8.69 188 ePn Pn 14 23 18.5 -1.7
LFF La Frestale 8.69 188 ePn Pn 14 23 18.5 -1.7
NOA NORSAR Array B 8.88 29 Pn Pn 14 23 28.3 +5.6
comp=E,0.2nm,0.3s,baz=216,slow=13,SNR=2.6
HFS Hagfors 9.02 39 Pn Pn 14 23 27.2 +2.6
comp=E,0.1nm,0.3s,baz=230,slow=13,SNR=5.5
HFS Sn Sn 14 25 03.6 -3.2
comp=E,0.2nm,0.3s,baz=233,slow=26,SNR=3.2
LASF Ste Croix 9.53 174 ePn Pn 14 23 30.6 -1.1
LASF Ste Croix 9.53 174 ePn Pn 14 23 30.6 -1.1
EPF Esparros 10.62 188 ePn Pn 14 23 45.1 -1.6
EPF Esparros 10.62 188 ePn Pn 14 23 45.1 -1.6
SJPF Ste Jean 10.73 195 ePn Pn 14 23 45.8 -2.3
ETSF Etsaut 10.85 192 ePn Pn 14 23 48.4 -1.4
ETSF Etsaut 10.85 192 ePn Pn 14 23 48.4 -1.4
FINES FINESS Array B 14.89 49 Pn Pn 14 24 47.8 +3.0
comp=E,0.2nm,0.3s,baz=243,slow=12,SNR=8.8
FINES Sn Sn 14 27 26.9 -3.3
comp=E,0.1nm,0.3s,baz=255,slow=21,SNR=2.5

NIED 21 14:23:00,36.30N×141.00E,h44km,Mw3.9 Best double couple: Mo7.98000×10^{14} NP1:φs268.00000°,δ57.00000°, λ-9.00000°. NP2:φs2.00000°,δ83.00000°,λ-146.00000°.
ISCJB 21 14:23:07.6±0.7,36.22N±0.04×140.95E±0.06,h45km±6km, mb3.5/8,Error ellipse: s-maj=8.7km s-min=5.9km az=169.5
JMA 21 14:23:08.3±0.1,36.22N×140.88E,h47km±1km,M3.6
JMA Felt I J1.
IDC 21 14:23:11.6±2.5,36.09N×140.80E,h65km±22km,mb3.3/8, mb1 3.5/12,mb1mx3.4/54,mbtmp3.6/12,Error ellipse: s-maj=23.8km s-min=10.4km az=68.0
ISC 21 14:23:08.9±0.9,36.24N±0.04×140.95E±0.07,h39km±3km, n24,σ1§53/26,mb3.5/8,Near east coast of eastern Honshu

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JHO Hitachi 0.48 320 P Pn 14 23 18.5 -0.8
JHO S Sn 14 23 25.6 -1.0
CHOJ Chosi 0.54 188 P Pn 14 23 19.5 -0.7
CHOJ S Sn 14 23 27.0 -1.1
JYT Yasato 0.61 269 P Pn 14 23 20.1 -1.0
JYT S Sn 14 23 28.2 -1.5
JFK Kawauchi 1.12 357 P Pn 14 23 27.1 -1.1
JFK S Sn 14 23 40.9 -1.5
JAG Ashikaga 1.22 279 P Pn 14 23 28.5 -0.9
JAG S Sn 14 23 43.1 -1.6
MJAR Matsushiro Arr 2.23 279 P Pn 14 23 42.9 -0.4
11nm,0.3s,baz=91,slow=9.4,SNR=119
MJAR S Sn 14 24 10.5 +0.9
14nm,0.3s,baz=97,slow=16,SNR=6.8
MAT Matsushiro 2.23 279 P Pn 14 23 43.5 +0.1
MAT S Sn 14 24 10.2 +0.5
JHJ Hachijo jima 2 3.26 197 P Pn 14 23 59.4 +1.9
32nm,0.3s,baz=66,slow=20,SNR=3.3
JHJ S Sn 14 24 33.6 -1.4
89nm,0.3s,baz=269,slow=23,SNR=1.6
USRK Ussuriysk Ar. 10.48 322 P Pn 14 25 40.0 +3.5
0.2nm,0.3s,baz=129,slow=13,SNR=5.1
KLR Kul'dur 14.62 335 P P 14 26 37.9 -0.8
0.1nm,0.3s,baz=123,slow=12,SNR=5.1
SONM Songino Array 27.93 305 P P 14 28 55.8 +0.3
0.7nm,0.6s,baz=106,slow=8.6,SNR=4.1
H11N2 WAKE ISLAND Hy 28.08 119 T T 14 58 18.0
baz=311,slow=75,SNR=24
H11N1 WAKE ISLAND Hy 28.09 119 T T 14 58 16.9
baz=311,slow=75,SNR=22
H11N3 WAKE ISLAND Hy 28.10 119 T T 14 58 18.0
baz=311,slow=75,SNR=19
H11S1 WAKE ISLAND Hy 28.76 121 T T 14 59 01.3
baz=314,slow=75,SNR=52
H11S3 WAKE ISLAND Hy 28.76 121 T T 14 59 00.1
baz=314,slow=75,SNR=34
H11S2 WAKE ISLAND Hy 28.78 121 T T 14 59 01.3
baz=314,slow=75,SNR=30
ZALV Zalesovo Beam 42.17 313 P P 14 30 56.7 -0.8
1.3nm,0.6s,baz=93,slow=7.9,SNR=5.0
MKAR Makanchi Array 44.23 303 P P 14 31 14.8 +0.5
0.4nm,0.8s,baz=94,slow=8.6,SNR=4.7
ILAR Eielson Array 50.36 32 P P 14 32 04.5 +2.8
0.3nm,0.7s,baz=279,slow=5.9,SNR=2.9
FITZ Fitzroy Crossi 55.96 198 P P 14 32 43.2 -0.1
2.2nm,0.9s,baz=350,slow=11,SNR=3.1
WRA Warramunga Arr 56.23 187 P P 14 32 43.8 -1.4
0.2nm,0.3s,baz=23,slow=7.3,SNR=11
ASAR Alice Springs 59.95 187 P P 14 33 08.7 -2.6
0.3nm,0.6s,baz=14,slow=12,SNR=4.1
PDAR Pinedale Array 78.49 45 P P 14 35 05.5 -0.7
0.1nm,0.4s,baz=264,slow=3.6,SNR=2.1

CSEM 21 14:32:33.9±0.2,40.07N×38.92E,h8km,MD2.9,Error ellipse: s-maj=3.8km s-min=3.2km az=122.0
DDA 21 14:32:33.9,40.04N×38.93E,h11km,Md2.9
ISK 21 14:32:34.0,40.15N×38.93E,h24km,MD2.9
ISC 21 14:32:33.8±1.0,40.07N±0.03×38.91E±0.03,h11km±9km, n17,σ0§40/32,Turkey

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
KELT Kelkit 0.27 74 iP Pb 14 32 40.1 -0.7
KELT iS Sg 14 32 43.9 +0.5
KELT Kelkit 0.27 74 P Pb 14 32 40.1 -0.7
KELT S Sg 14 32 43.8 +0.5
SUSE Susehri 0.56 284 iP Pb 14 32 45.6 -0.1
SUSE iS Sb 14 32 53.9 +0.1
SUSE Susehri 0.56 284 P Pb 14 32 45.6 -0.1
SUSE S Sb 14 32 53.9 +0.1
GUMT Gumushane 0.58 48 ePG Pg 14 32 45.4 +0.2
GUMT eSG Sg 14 32 53.3 +0.4
GUMT Gumushane 0.58 48 ePg Pg 14 32 45.4 +0.2
GUMT eSg Sg 14 32 53.3 +0.4
REFA Refahiye_ERZ 0.68 190 iP Pg 14 32 38.4 -8.7
REFA iS Sg 14 32 41.2 -15
ESPY Espiye-Giresun 0.86 350 ePG Pg 14 32 49.9 -0.4
ESPY eSG Sg 14 33 01.6 +0.1
ESPY Espiye-Giresun 0.86 350 ePg Pg 14 32 49.9 -0.4
ESPY eSg Sg 14 33 01.6 +0.1
KEMA Kemaliye 0.86 202 iP Pg 14 32 50.0 -0.5
KEMA iS Sb 14 33 02.5 +0.1
KEMA Kemaliye 0.86 202 P Pg 14 32 50.0 -0.5
KEMA S Sb 14 33 02.5 +0.1
CUZAR Zara_SIVAS 0.90 259 iP Pg 14 32 50.9 -0.2
CUZAR iS Sg 14 33 03.4 +0.5
CUZAR Zara_SIVAS 0.90 259 P Pg 14 32 50.9 -0.2
CUZAR S Sg 14 33 03.4 +0.5
PTK Pertek 1.23 162 ePN Pn 14 32 57.0 -0.1
PTK eSN Sn 14 33 14.5 +0.6
PTK Pertek 1.23 162 ePn Pn 14 32 57.0 -0.1
PTK eSn Sn 14 33 14.5 +0.6
ELZG Elazig 1.57 178 iP Pb 14 33 02.8 -0.2
ELZG iS Sg 14 33 24.5 +0.1
ELZG Elazig 1.57 178 P Pb 14 33 02.8 -0.2
ELZG S Sg 14 33 24.5 +0.1

MEX 21 14:34:06.8±0.9,14.99N×94.45W,h21km±45km,MD3.9, Off coast of Chiapas

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
HUIG Huatulco 1.78 296 eP Pn 14 34 34.0 -2.4
HUIG iS Sn 14 34 54.5 -4.0
CCIG Comitan 2.57 60 eP Pn 14 34 46.0 -1.4
CCIG eS Sn 14 35 14.3 -3.8

ISCJB 21 14:42:24.3±0.7,46.92N±0.08×152.6E±0.1,h106km, mb3.6/11,Error ellipse: s-maj=16.1km s-min=5.1km az=41.7
SKHL 21 14:42:29.1±0.4,46.38N×152.45E,h151km±7km,mb4.6/5, msh5.5/3
MOS 21 14:42:29.7±2.0,46.97N×152.12E,h153km,mb4.2/2,Error ellipse: s-maj=15.4km s-min=11.5km az=75.8
JMA 21 14:42:29.7±0.5,45.86N×152.68E,h138km,M3.8
IDC 21 14:42:33.8±2.9,47.19N×152.15E,h171km±26km, mb3.3/11,mb1 3.4/16,mb1mx3.3/40,mbtmp3.8/16,Error ellipse: s-maj=20.2km s-min=17.0km az=104.0
ISC 21 14:42:25.6±0.9,46.91N±0.10×152.4E±0.1,h106km,n46, σ2§53/48,mb3.7/11,2C-1D,Kuril Islands

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
KUR Kuril'sk 3.59 244c iPN Pn 14 43 23.1 +3.8
KUR iS Sn 14 44 05.2 +4.3
KUR pmax pmax
comp=Z,54nm,0.4s
KUR pmax pmax
comp=N,21nm,0.3s
KUR pmax pmax
comp=E,6.0nm,0.3s
KUR smax smax
comp=N,105nm,0.3s
KUR smax smax
comp=E,86nm,0.3s
KUR Kuril'sk 3.59 244 iP Pn 14 43 23.1 +3.8
KUR AMB AMB 14 43 24.0
comp=E,200nm,0.4s
KUR AMB AMB 14 43 24.0
comp=E,10.0nm,0.4s
KUR AMB AMB 14 43 24.0
comp=E,50nm,0.4s
KUR iS Sn 14 44 05.0 +4.1
KUR A A 14 44 07.8
comp=E,110nm,0.3s
KUR A A 14 44 07.8
comp=E,90nm,0.3s
SHO Shikotan 4.98 234c iPN Pn 14 43 38.8 +0.8
SHO iS Sn 14 44 33.1 -1.3
SHO pmax pmax
comp=Z,35nm,0.4s
SHO pmax pmax
comp=E,24nm,0.6s
SHO pmax pmax
comp=N,13nm,0.3s
SHO smax smax
comp=N,136nm,0.4s
SHO smax smax
comp=E,91nm,0.4s
SHO Shikotan 4.98 234 iP Pn 14 43 38.8 +0.8
SHO AMB AMB 14 43 40.3
comp=E,10.0nm,0.4s
SHO AMB AMB 14 43 40.3
comp=E,20nm,0.4s
SHO AMB AMB 14 43 40.3
comp=E,40nm,0.4s
SHO iS Sn 14 44 33.1 -1.3
SHO A A 14 44 42.0
comp=E,140nm,0.4s
SHO A A 14 44 42.0
comp=E,90nm,0.4s
YUK Yuzh-Kuril'sk 5.44 240d iPN Pn 14 43 47.0 +2.8
YUK iS Sn 14 44 48.1 +2.6
YUK pmax pmax
comp=Z,116nm,0.5s
YUK pmax pmax
comp=N,47nm,0.2s
YUK pmax pmax
comp=E,55nm,0.2s
YUK smax smax
comp=E,114nm,0.4s
YUK smax smax
comp=N,114nm,0.6s
YUK Yuzh-Kuril'sk 5.44 240 iP Pn 14 43 47.0 +2.8
YUK AMB AMB 14 43 51.4
comp=N,30nm,0.4s
YUK iS Sn 14 44 48.1 +2.6
YUK A A 14 44 55.0
comp=N,110nm,0.5s
NEM2 Nemuro 2 5.91 236 P Pn 14 43 50.7 +0.1
NEM2 eS Sn 14 44 53.5 -3.4
JRA Rausu 5.94 243 P Pn 14 43 53.7 +2.7
YSS Yuzh-Sakhalins 6.62 274 ePN Pn 14 44 04.5 +4.2
YSS Yuzh-Sakhalins 6.62 274 eP Pn 14 44 05.3 +5.0
YSS AMB AMB 14 44 05.9

	comp=N,30nm,0.8s						
JTKR	**Abashiri--Toko**	**6.68**	**247**	P	**Pn**	**14 44 03.8**	**+2.8**
JAK	**Akkeshi**	**6.74**	**237**	P	**Pn**	**14 44 02.2**	**+0.4**
JAK				*e*S	**Sn**	**14 45 14.2**	**-2.8**
PETK	**Petropavlovsk-**	**7.07**	**27**	P	Pn	14 44 14.3	+8.0
	comp=N,0.3nm,0.3s,baz=205,slow=13,SNR=4.2						
PETK				S	**Sn**	**14 45 24.8**	**-0.2**
	comp=N,1.0nm,0.3s,baz=155,slow=18,SNR=5.0						
JAR	**Ashorobuto**	**7.11**	**243**	P	**Pn**	**14 44 09.1**	**+2.2**
JOB	**Onbets**	**7.30**	**240**	P	**Pn**	**14 44 10.7**	**+1.3**
JOB				*e*S	**Sn**	**14 45 29.0**	**-1.7**
ASAJ	**Asahikawa**	**7.45**	**252**	P	**Pn**	**14 44 15.4**	**+3.9**
JKK2	**Kamakawa 2**	**7.46**	**249**	P	**Pn**	**14 44 14.9**	**+3.2**
TYV	**Tymovskoe**	**7.56**	**305**	*e*P	Pn	14 44 20.3	+7.4
TYV				AMB	AMB	14 44 22.0	
	comp=N,10.0nm,0.9s						
JCH	**Churui**	**7.75**	**240**	P	**Pn**	**14 44 16.4**	**+0.8**
JCH				*e*S	**Sn**	**14 45 38.5**	**-3.1**
MYR	**Moyori**	**7.99**	**238**	*e*P	**Pn**	**14 44 19.1**	**+0.2**
JNBK	**Urakawa-nobuka**	**8.31**	**240**	P	**Pn**	**14 44 22.6**	**-0.6**
JNBK				*e*S	**Sn**	**14 45 50.4**	**-4.9**
JKB	**Kayabe**	**9.57**	**242**	P	**Pn**	**14 44 39.8**	**-0.5**
JKB				*e*S	**Sn**	**14 46 19.3**	**-6.7**
JANG	**Nango**	**10.25**	**234**	*e*S	Sn	14 46 33.2	-9.4
EKMR	**Ekimchan**	**13.94**	**303**	*e*P	**P**	**14 45 44.3**	**+1.4**
EKMR				AMB	AMB	14 45 50.0	
	comp=N,4.0nm,0.5s						
KLR	**Kul'dur**	**14.02**	**287**	P	**P**	**14 45 43.0**	**-0.7**
	comp=N,0.1nm,0.3s,baz=87,slow=9.5,SNR=5.5						
USRK	**Ussuriysk Ar.**	**14.57**	**267**	P	**P**	**14 45 48.7**	**-1.3**
	comp=N,0.4nm,0.3s,baz=84,slow=13,SNR=3.9						
SEY	**Seymchan**	**16.06**	**360**	P	**P**	**14 46 06.0**	**-0.2**
	comp=N,0.1nm,0.3s,baz=192,slow=12,SNR=4.6						
YAK	**Yakutsk**	**19.93**	**328**	P	**Pn**	**14 46 48.1**	**-3.2**
	comp=N,0.0nm,0.3s,baz=141,slow=6.5,SNR=6.2						
H11N2	**WAKE ISLAND Hy**	**29.58**	**152**	T	T	15 19 59.9	
	baz=340,slow=76,SNR=102						
H11N1	**WAKE ISLAND Hy**	**29.60**	**152**	T	T	15 20 00.1	
	baz=340,slow=76,SNR=107						
H11N3	**WAKE ISLAND Hy**	**29.60**	**152**	T	T	15 20 01.6	
	baz=340,slow=76,SNR=70						
H11S1	**WAKE ISLAND Hy**	**30.66**	**153**	T	T	15 21 23.3	
	baz=341,slow=76,SNR=155						
H11S3	**WAKE ISLAND Hy**	**30.67**	**153**	T	T	15 21 24.1	
	baz=341,slow=76,SNR=143						
H11S2	**WAKE ISLAND Hy**	**30.68**	**153**	T	T	15 21 24.4	
	baz=341,slow=76,SNR=123						
ZALV	**Zalesovo Beam**	**42.13**	**305**	P	**P**	**14 50 04.3**	**-2.8**
	comp=N,0.5nm,0.5s,baz=69,slow=8.0,SNR=2.8						
MKAR	**Makanchi Array**	**46.45**	**297**	P	**P**	**14 50 40.8**	**-0.7**
	comp=N,0.9nm,0.7s,baz=65,slow=7.6,SNR=9.5						
CMAR	**Chiang Mai Arr**	**51.95**	**256**	P	**P**	**14 51 26.1**	**+2.4**
	comp=N,0.6nm,0.7s,baz=41,slow=8.4,SNR=3.9						
FINES	**FINESS Array B**	**63.69**	**334**	P	**P**	**14 52 43.6**	**-1.6**
	comp=N,0.7nm,0.3s,baz=39,slow=7.2,SNR=15						
NB2	**NORSAR Subarra**	**67.92**	**341**	P	**P**	**14 53 12.0**	**-0.4**
	comp=Z,0.5nm,0.5s,baz=27,slow=6.2						
NOA	**NORSAR Array B**	**67.92**	**341**	P	**P**	**14 53 11.7**	**-0.7**
	comp=Z,1.0nm,0.8s,baz=28,slow=6.6,SNR=5.7						
WRA	**Warramunga Arr**	**68.52**	**198**	P	**P**	**14 53 17.6**	**+1.2**
	comp=Z,0.4nm,0.9s,baz=13,slow=7.1,SNR=3.1						
AKASG	**Malin Array Be**	**71.15**	**326**	P	**P**	**14 53 31.1**	**-1.2**
	comp=Z,2.2nm,0.4s,baz=34,slow=6.0,SNR=3.6						
ASAR	**Alice Springs**	**72.22**	**198**	P	**P**	**14 53 41.4**	**+2.4**
	comp=Z,1.0nm,0.8s,baz=15,slow=5.6,SNR=9.9						
TXAR	**Lajitas Array**	**77.82**	**60**	P	**P**	**14 54 12.2**	**+0.7**
	comp=Z,0.4nm,0.6s,baz=300,slow=4.2,SNR=5.9						
BRTR	**Keskin Array B**	**77.95**	**316**	P	**P**	**14 54 12.8**	**+0.7**
	comp=Z,0.3nm,0.5s,baz=56,slow=2.6,SNR=2.9						
GERES	**GERESS Array B**	**78.10**	**334**	P	**P**	**14 54 12.8**	**+0.1**
	comp=Z,0.3nm,0.2s,baz=28,slow=6.0,SNR=3.9						

*NSSC **21** 14:47:01.4±0.7, 34°.48N×36°.63E, h12km±2km, ML1.8*
*GRAL **21** 14:47:01.5±0.3, 34°.47N×36°.81E, h0km±4km, MD2.9*
*ISCJB **21** 14:47:02.3±1.4, 34°.43N±0°.08×36°.67E±0°.06, h10km, Error ellipse: s-maj=11.2km s-min=6.7km az=178.9*

ISC 21 14:47:02.2±1.9, 34°.4N±0°.1×36°.70E±0°.06, h10km, n6, σ0s49/10, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MARH	**Ras Al Marh**	**0.44**	**204**	*e*P		**Pg**	**14 47 10.6**	**-0.3**
MARH				*e*S		**Sg**	**14 47 17.7**	**+1.0**
MARH				AML		AML	14 47 18.4	
	comp=N,161nm,0.5s							
MARH				AML		AML	14 47 21.9	
	comp=E,88nm,0.2s							
ROOS	**tl_alroos**	**0.56**	**118**	*e*P		**Pb**	**14 47 13.9**	**-0.2**
ROOS				*e*S		**Sb**	**14 47 22.3**	**+0.2**
ROOS				AML		AML	14 47 32.0	
	comp=E,84nm,0.7s							
ROOS				AML		AML	14 47 40.4	
	comp=N,78nm,0.4s							
HWQ	**Hawqa**	**0.64**	**257**	*e*P		**Pg**	**14 47 14.7**	**+0.1**
RCY	**Rachaya**	**1.17**	**218**	*e*P		**Pb**	**14 47 24.1**	**-0.6**
ZALF	**Zalf**	**1.59**	**160**	*e*P		**Pn**	**14 47 30.4**	**-0.2**
ZALF				*e*S		**Sn**	**14 47 51.1**	**-0.1**
ZALF				AML		AML	14 47 54.8	
	comp=E,13nm,0.4s							
ZALF				AML		AML	14 47 55.1	
	comp=N,9.9nm,0.7s							
SALA	**Sala**	**1.71**	**179**	*e*P		**Pn**	**14 47 32.7**	**+0.3**
SALA				*e*S		**Sn**	**14 47 54.2**	**-0.2**
SALA				AML		AML	14 47 59.5	
	comp=E,2.2nm,0.4s							
SALA				AML		AML	14 48 00.2	
	comp=N,38nm,0.4s							

SJA 21 14:50:27.4±0.5, 31°.02S×68°.47W, h12km±5km, ML1.4, MW2.9,2D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
AMOG	**MOGNA**	**0.08**	**343**	*e*P		Pg	14 50 30.4	-0.4
AMOG				*e*S		Sg	14 50 33.9	+2.0
RTLL	**Cerro Villicun**	**0.31**	**182**	*e*P		Pg	14 50 33.3	-0.5
RTLL				*e*S		Sb	14 50 39.4	-0.8
ACCO	**Cerro Coronel**	**0.67**	**309**	*e*P		Pb	14 50 41.5	+0.3
ACCO				IAML			14 50 55.8	
	comp=Z,18nm,0.4s							
RTCV	**Cerro Valdivia**	**0.85**	**184**	*e*P		Pg	14 50 43.3	-0.5
RTCV				*e*S		Sb	14 50 56.1	+0.6
ACDV	**Cuesta del Vie**	**1.01**	**326**	*e*P		Pb	14 50 47.0	0.0
RTLS	**Leoncito**	**1.06**	**222**	*e*P		Pn	14 50 48.5	+0.1
RTLS				*e*S		Sn	14 51 03.5	+0.3
AROD	**Rodeo**	**1.21**	**314**	*e*P		Pg	14 50 50.8	0.0
AUSP	**Uspallata**	**1.44**	**213**	*e*P		Sn	14 51 07.9	-4.8
ASAL	**Salagasta**	**1.60**	**191**	*e*P		Pg	14 51 01.4	+3.2
ASAL				⇓*e*S		Sn	14 51 06.0	-10
ACAN	**Cantantal**	**1.66**	**139**	*e*P		Pn	14 50 56.2	-0.3
ARCO	**CERRO ARCO**	**1.86**	**192**	*e*P		Pn	14 51 00.2	+0.9
ARCO				⇓*e*S		Pg	14 51 03.7	+0.5
AAGR	**Agrelo**	**2.09**	**188**	*e*P		Pn	14 51 03.1	+0.7
AVIZ	**Vizcacheras**	**2.45**	**181**	*e*S		Pn	14 51 04.4	-3.0

*IDC **21** 15:03:09.6±1.3, 0°.74N×100°.08E, h171km±10km, mb3.4/9, mb1 3.5/10, mb1mx3.3/34, mbtmp3.9/10, Error ellipse: s-maj=34.6km s-min=13.6km az=51.0*
*DJA **21** 15:03:11.0±0.7, 1°.N±8°×10°.0E±°, h158km±6km, M3.2/6, MLv3.2/6*

ISC 21 15:03:08.1±0.7, 0°.82N±0°.09×100°.16E±0°.10, h150km, n15, σ2s68/20, mb3.6/9, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MNSI	**Mandailing Nat**	**0.58**	**268**	P		Pn	**15 03 33.6**	**+3.7**
MNSI				S		Sn	**15 03 51.0**	**+4.6**
BKNI	**Bangkinang**	**1.01**	**119**	P		Pn	**15 03 37.7**	**+4.7**
PDSI	**Padang**	**1.75**	**170**	P		Pn	**15 03 42.4**	**+2.0**
PSI	**Prapat**	**2.32**	**328**	P		Pn	**15 03 49.0**	**+1.8**
	4.2nm,0.3s,baz=142,slow=11,SNR=15							
PSI				S		Sn	**15 04 20.0**	**+2.6**
	1.0nm,0.3s,baz=156,slow=17,SNR=6.6							
GSI	**Gunungsitoli**	**2.63**	**281**	P		Pn	**15 03 52.8**	**+1.9**
TPTI		**3.84**	**309**	P		Pn	**15 04 08.6**	**+2.3**
WRA	**Warramunga Arr**	**39.34**	**124**	P		P	**15 10 23.7**	**+0.6**
	0.7nm,0.4s,baz=303,slow=9.0,SNR=13							
WRA				PcP		**PcP**	**15 12 27.2**	**-1.6**
	0.2nm,0.5s,baz=320,slow=2.5,SNR=3.5							
ASAR	**Alice Springs**	**40.83**	**129**	P		P	**15 10 33.7**	**-1.6**
	0.1nm,0.3s,baz=307,slow=7.9,SNR=8.1							
ASAR				PcP		**PcP**	**15 12 31.9**	**-1.6**
	0.3nm,0.7s,baz=338,slow=3.8,SNR=4.4							
ASAR				Z		**ScP**	**15 16 03.8**	**-5.5**
	0.1nm,0.5s,baz=306,slow=4.1,SNR=4.5							
SONM	**Songino Array**	**47.14**	**6**	P		P	**15 11 25.7**	**+0.3**
	0.6nm,0.6s,baz=195,slow=9.7,SNR=3.7							
MKAR	**Makanchi Array**	**48.38**	**344**	P		P	**15 11 34.7**	**-0.1**
	1.6nm,0.3s,baz=159,slow=8.4,SNR=38							
ZALV	**Zalesovo Beam**	**54.45**	**349**	P		P	**15 12 19.2**	**-0.6**
	1.2nm,0.3s,baz=164,slow=8.9,SNR=4.3							
BRTR	**Keskin Array B**	**71.56**	**312**	P		P	**15 14 11.9**	**-1.4**
	0.5nm,0.5s,baz=144,slow=11,SNR=2.9							
BOSA	**Boshof**	**77.16**	**241**	P		P	**15 14 44.9**	**-1.0**
	1.4nm,0.8s,baz=143,slow=5.1,SNR=2.8							
FINES	**FINESS Array B**	**81.71**	**332**	P		P	**15 15 08.7**	**-0.9**
	1.2nm,0.9s,baz=103,slow=6.1,SNR=4.5							
GERES	**GERESS Array B**	**87.05**	**319**	P		P	**15 15 37.3**	**+0.3**
	0.3nm,0.4s,baz=72,slow=8.6,SNR=4.7							

*TIR **21** 15:30:56.4±1.2, 41°.04N×20°.17E, h2km±20km, ML2.8*
*PDG **21** 15:30:58.8±0.5, 41°.03N×20°.09E, h10km±1km, ML2.7/11, Error ellipse: s-maj=0.7km s-min=1.4km az=0.0*
*THE **21** 15:30:59.7, 41°.10N×20°.09E, h3km±1km, ML2.8/4, Error ellipse: s-maj=1.9km s-min=0.9km az=91.0*
*CSEM **21** 15:30:59.6±0.1, 41°.06N×20°.09E, h2km, ML2.8, Error ellipse: s-maj=3.5km s-min=1.7km az=63.0*
*SKO **21** 15:31:00.6, 41°.04N×20°.05E, h12km*

ISC 21 15:30:59.8±1.2, 41°.05N±0°.02×20°.08E±0°.02, h3km±10km, n87, σ0s70/134, 17C-8D, Albania

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TIR	**Tirane**	**0.34**	**331**	*i* PG		**Pg**	**15 31 06.4**	**+0.1**
TIR				*i* SG		**Sb**	**15 31 12.7**	**-1.6**
TIR	**Tirane**	**0.34**	**331**	*i* Pg		**Pg**	**15 31 06.4**	**+0.1**
	SNR=90							
TIR				*i* Sg		**Sb**	**15 31 12.7**	**-1.6**
	SNR=90							
OHR	**Ohrid**	**0.55**	**84**	⇓*i*Pg		**Pg**	**15 31 10.9**	**+0.5**
OHR				*i* Sg		**Sb**	**15 31 20.3**	**-0.1**
OHR	**Ohrid**	**0.55**	**84**	⇓*i*Pg		**Pg**	**15 31 10.8**	**+0.5**
OHR				*i* Sg		**Sb**	**15 31 20.3**	**-0.1**
NEST	**Nestorio**	**0.97**	**131**	P		**Pg**	**15 31 17.6**	**-0.9**
NEST				S		**Sb**	**15 31 33.3**	**+0.6**
NEST	**Nestorio**	**0.97**	**131**	P		**Pg**	**15 31 17.6**	**-0.9**
NEST				S		**Sb**	**15 31 33.3**	**+0.6**
FNA	**Florina**	**1.02**	**105**	P		**Pg**	**15 31 18.7**	**-0.7**
FNA				S		**Sb**	**15 31 34.2**	**+0.2**
FNA	**Florina**	**1.02**	**105**	P		**Pg**	**15 31 18.7**	**-0.7**
FNA				S		**Sb**	**15 31 34.2**	**+0.2**
ULC	**Ulcinj**	**1.10**	**326**	⇑*i*Pg		**Pg**	**15 31 21.0**	**0.0**
ULC				*e*Sg		**Sb**	**15 31 37.1**	**+0.7**
ULC	**Ulcinj**	**1.10**	**326**	⇑*i*Pg		**Pg**	**15 31 21.0**	**0.0**
ULC				*e*Sg		**Sb**	**15 31 37.1**	**+0.7**
PENT	**Pentalofos**	**1.18**	**136**	P		**Pg**	**15 31 21.7**	**-0.7**
PENT	**Pentalofos**	**1.18**	**136**	P		**Pg**	**15 31 21.7**	**-0.7**
DRME	**Dracevica, Mon**	**1.32**	**330**	⇓*i*Pg		**Pn**	**15 31 24.3**	**-0.8**
DRME				*e*Sg		**Sn**	**15 31 43.2**	**0.0**
DRME	**Dracevica, Mon**	**1.32**	**330**	⇓*i*Pg		**Pn**	**15 31 24.3**	**-0.8**
DRME				*e*Sg		**Sn**	**15 31 43.2**	**0.0**
KEK	**Kerkira**	**1.35**	**189**	P		**Pn**	**15 31 24.5**	**-1.1**
KEK				S		**Sn**	**15 31 45.7**	**+1.6**
KEK	**Kerkira**	**1.35**	**189**	P		**Pn**	**15 31 24.5**	**-1.1**
KEK				S		**Sn**	**15 31 45.7**	**+1.6**
SKO	**Skopje**	**1.37**	**48**	P		**Pn**	**15 31 25.6**	**-0.3**
SKO				S		**Sn**	**15 31 44.4**	**-0.2**
SKO	**Skopje**	**1.37**	**48**	⇑*i*Pg		**Pb**	**15 31 26.0**	**-0.2**
SKO				*i* Sg		**Sn**	**15 31 44.9**	**+0.3**
SKO	**Skopje**	**1.37**	**48**	P		**Pn**	**15 31 25.6**	**-0.3**
SKO	**Skopje**	**1.37**	**48**	⇑*i*Pg		**Pb**	**15 31 26.0**	**-0.2**
SKO				S		**Sn**	**15 31 44.4**	**-0.2**
SGD	**Sagiada**	**1.44**	**175**	P		**Pn**	**15 31 26.7**	**-0.1**
SGD				S		**Sn**	**15 31 47.2**	**+0.9**
SGD	**Sagiada**	**1.44**	**175**	P		**Pn**	**15 31 26.7**	**-0.1**
SGD				S		**Sn**	**15 31 47.2**	**+0.9**
KPRO	**Kipourio**	**1.47**	**138**	P		**Pn**	**15 31 26.4**	**-0.9**
KPRO	**Kipourio**	**1.47**	**138**	P		**Pn**	**15 31 26.4**	**-0.9**
KZN	**Kozani**	**1.49**	**120**	P		**Pn**	**15 31 26.6**	**-0.9**
KZN	**Kozani**	**1.49**	**120**	P		**Pn**	**15 31 26.6**	**-0.9**
PDG	**Podgorica**	**1.51**	**336**	P		**Pn**	**15 31 27.1**	**-0.6**
PDG				S		**Sn**	**15 31 46.6**	**-1.3**
PDG	**Podgorica**	**1.51**	**336**	P		**Pn**	**15 31 27.1**	**-0.6**
PDG				S		**Sn**	**15 31 46.6**	**-1.3**
PDG				*e*Sg		**Sn**	**15 31 48.9**	**+0.6**
TTG	**Podgorica**	**1.51**	**336**	⇑*i*Pg		**Pn**	**15 31 27.3**	**-0.4**
TTG				*e*Sg		**Sg**	**15 31 48.9**	**+0.6**
JAN	**Janina**	**1.51**	**157**	P		**Pn**	**15 31 28.3**	**-0.3**
JAN	**Janina**	**1.51**	**157**	P		**Pb**	**15 31 28.3**	**-0.3**
BUM	**Brajici-Budva**	**1.53**	**325**	⇑*i*Pg		**Pn**	**15 31 27.5**	**-0.6**
BUM				*e*Sg		**Sb**	**15 31 48.9**	**+0.2**
BUM	**Brajici-Budva**	**1.53**	**325**	⇑*i*Pg		**Pn**	**15 31 27.5**	**-0.6**
BUM				*e*Sg		**Sb**	**15 31 48.9**	**+0.2**
IGT	**Igoumenitsa**	**1.53**	**173**	P		**Pn**	**15 31 27.7**	**-0.4**
IGT				S		**Sg**	**15 31 49.6**	**+0.6**
IGT	**Igoumenitsa**	**1.53**	**173**	P		**Pn**	**15 31 27.7**	**-0.4**
IGT				S		**Sg**	**15 31 49.6**	**+0.6**
PVY	**Plav**	**1.54**	**357**	⇓*i*Pg		**Pb**	**15 31 28.9**	**-0.2**
PVY				*e*Sg		**Sg**	**15 31 50.2**	**+0.8**
PVY	**Plav**	**1.54**	**357**	⇓*i*Pg		**Pb**	**15 31 28.9**	**-0.2**
PVY				*e*Sg		**Sg**	**15 31 50.2**	**+0.8**
CEME	**Cevo**	**1.73**	**330**	*e*Pn		**Pn**	**15 31 29.8**	**-1.0**
CEME				*e*Sn		**Sb**	**15 31 54.5**	**+0.1**
CEME	**Cevo**	**1.73**	**330**	*e*Pn		**Pn**	**15 31 29.8**	**-1.0**
CEME				*e*Sn		**Sb**	**15 31 54.5**	**+0.1**
GRG	**Griva**	**1.76**	**92**	P		**Pn**	**15 31 30.1**	**-1.1**
GRG	**Griva**	**1.76**	**92**	P		**Pn**	**15 31 30.1**	**-1.1**
BEY	**Berane**	**1.82**	**356**	⇑*i*Pn		**Pn**	**15 31 33.0**	**+0.8**
BEY				*e*Sn		**Sb**	**15 31 56.9**	**-0.3**
IVA	**Berane**	**1.82**	**356**	⇑*i*Pn		**Pn**	**15 31 33.0**	**+0.8**
IVA				*e*Sn		**Sb**	**15 31 56.9**	**-0.3**
HCY	**Herceg Novi**	**1.83**	**320**	⇑*i*Pn		**Pn**	**15 31 32.3**	**+0.1**
HCY				*e*Sn		**Sn**	**15 31 56.4**	**+0.5**
HCY	**Herceg Novi**	**1.83**	**320**	⇑*i*Pn		**Pn**	**15 31 32.3**	**+0.1**
HCY				*e*Sn		**Sn**	**15 31 56.4**	**+0.5**
NKME	**Niksic**	**1.91**	**334**	⇓*i*Pn		**Pn**	**15 31 33.6**	**+0.3**
NKME				*e*Sn		**Sb**	**15 31 58.9**	**-0.7**
NKME	**Niksic**	**1.91**	**334**	⇓*i*Pn		**Pn**	**15 31 33.6**	**+0.3**
NKME				*e*Sn		**Sb**	**15 31 58.9**	**-0.7**
NKY	**Niksic**	**1.94**	**336**	⇑*i*Pn		**Pn**	**15 31 33.7**	**-0.1**
NKY				*e*Sn		**Sn**	**15 31 59.2**	**+0.6**
NKY	**Niksic**	**1.94**	**336**	⇑*i*Pn		**Pn**	**15 31 33.7**	**-0.1**
NKY				*e*Sn		**Sn**	**15 31 59.2**	**+0.6**
LIT	**Litokhoron**	**2.07**	**117**	P		**Pn**	**15 31 34.8**	**-0.7**
LIT	**Litokhoron**	**2.07**	**117**	P		**Pn**	**15 31 34.8**	**-0.7**
DSL	**Palaion Diasel**	**2.07**	**158**	P		**Pn**	**15 31 35.8**	**+0.3**
DSL				S		**Sb**	**15 32 02.9**	**-1.3**
DSL	**Palaion Diasel**	**2.07**	**158**	P		**Pn**	**15 31 35.8**	**+0.3**
DSL				S		**Sb**	**15 32 02.9**	**-1.3**
KNT	**Kendrikon**	**2.13**	**86**	P		**Pn**	**15 31 36.0**	**-0.4**
KNT	**Kendrikon**	**2.13**	**86**	P		**Pn**	**15 31 36.0**	**-0.4**
BRY	**Bratogost**	**2.17**	**329**	⇑*i*Pn		**Pn**	**15 31 36.7**	**-0.4**
BRY				*e*Sn		**Sn**	**15 32 05.3**	**+0.7**
BRY	**Bratogost**	**2.17**	**329**	⇑*i*Pn		**Pn**	**15 31 36.7**	**-0.4**
BRY				*e*Sn		**Sn**	**15 32 05.3**	**+0.7**
BARS	**Barje**	**2.19**	**36**	*e*Pn		**Pn**	**15 31 36.7**	**-0.4**
LKD2	**Lefkada island**	**2.30**	**169**	P		**Pn**	**15 31 37.8**	**-0.9**
LKD2	**Lefkada island**	**2.30**	**169**	P		**Pn**	**15 31 37.8**	**-0.9**
UPM	**Unac-Piva**	**2.32**	**338**	⇑*i*Pn		**Pn**	**15 31 39.2**	**+0.1**
UPM				*e*Sn		**Sn**	**15 32 09.3**	**+1.1**
UPM	**Unac-Piva**	**2.32**	**338**	⇑*i*Pn		**Pn**	**15 31 39.2**	**+0.1**
UPM				*e*Sn		**Sn**	**15 32 09.3**	**+1.1**
IVAS	**Ivanjica**	**2.52**	**1**	*e*Pn		**Pn**	**15 31 41.1**	**-0.7**
PDO	**Prodromos**	**2.59**	**161**	P		**Pn**	**15 31 42.0**	**-0.7**
PDO	**Prodromos**	**2.59**	**161**	P		**Pn**	**15 31 42.0**	**-0.7**
PLG	**Polygyros**	**2.65**	**104**	P		**Pn**	**15 31 43.5**	**+0.1**
PLG	**Polygyros**	**2.65**	**104**	P		**Pn**	**15 31 43.5**	**+0.1**
AGG	**Agios Georgios**	**2.66**	**139**	P		**Pn**	**15 31 44.2**	**+0.5**
AGG	**Agios Georgios**	**2.66**	**139**	P		**Pn**	**15 31 44.2**	**+0.5**
PVO	**Paravola**	**2.68**	**155**	P		**Pn**	**15 31 43.5**	**-0.3**
PVO	**Paravola**	**2.68**	**155**	P		**Pn**	**15 31 43.5**	**-0.3**
ANX	**Ano Chora**	**2.84**	**149**	P		**Pn**	**15 31 46.5**	**+0.4**
ANX	**Ano Chora**	**2.84**	**149**	P		**Pn**	**15 31 46.5**	**+0.4**
BOVS	**Bovan**	**2.85**	**25**	*e*Pn		**Pn**	**15 31 45.7**	**-0.5**
GRUS	**Gruza**	**2.87**	**9**	*e*Pn		**Pn**	**15 31 47.2**	**+0.7**
XOR	**Xorichti**	**2.92**	**124**	P		**Pn**	**15 31 47.0**	**-0.2**
XOR				S		**Sn**	**15 32 23.7**	**+1.0**
XOR	**Xorichti**	**2.92**	**124**	P		**Pn**	**15 31 47.0**	**-0.2**
XOR				S		**Sn**	**15 32 23.7**	**+1.0**
ZAPS	**Zavoj**	**2.92**	**40**	*e*Pn		**Pn**	**15 31 48.0**	**+0.8**
DIVS	**Divibare**	**3.04**	**359**	*e*Pn		**Pn**	**15 31 47.9**	**-1.1**
BOLS	**Boljevac**	**3.10**	**26**	*e*Pn		**Pn**	**15 31 48.8**	**-0.9**
ZAGS	**Zajecar**	**3.19**	**29**	*e*Pn		**Pn**	**15 31 50.4**	**-0.4**
DRO	**Drossia**	**3.34**	**157**	P		**Pn**	**15 31 53.4**	**+0.4**
DRO	**Drossia**	**3.34**	**157**	P		**Pn**	**15 31 53.4**	**+0.4**
KLV	**Kalavryta, Ach**	**3.41**	**151**	P		**Pn**	**15 31 54.1**	**+0.2**
KLV	**Kalavryta, Ach**	**3.41**	**151**	P		**Pn**	**15 31 54.1**	**+0.2**
TEKS	**Tekeris**	**3.52**	**354**	*e*Pn		**Pn**	**15 31 55.4**	**0.0**
KUBS	**Kucevo**	**3.56**	**19**	*e*Pn		**Pn**	**15 31 54.2**	**-1.7**

JMA 21 15:31:06.9±0.1, 38°.95N×142°.59E, h33km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OFUJ	**Ofunato**	**0.73**	**281**	P		Pn	15 31 20.9	0.0
OFUJ				S		Sn	15 31 30.7	-0.2
MIYJ	**Miyakonagasawa**	**0.87**	**317**	P		Pn	15 31 22.7	-0.1
MIYJ				S		Sn	15 31 34.2	0.0
JMK	**Ichinoseki**	**1.07**	**271**	P		Pn	15 31 25.8	+0.3
JMK				S		Sn	15 31 39.5	+0.3
JIO	**Ouri**	**1.09**	**243**	P		Pn	15 31 25.8	0.0
JIO				S		Sn	15 31 39.1	-0.7
JOM	**Ohasama**	**1.14**	**298**	P		Pn	15 31 26.9	+0.4
JOM				S		Sn	15 31 41.6	+0.7
JTH	**Tanohata**	**1.14**	**331**	P		Pn	15 31 26.8	+0.3
JKZ	**Kuzumaki**	**1.42**	**317**	P		Pn	15 31 31.2	+0.7
JKZ				S		Sb	15 31 49.5	-1.1
JRG	**Rokugo**	**1.58**	**287**	P		Pb	15 31 34.2	-1.4
JOU	**Okura**	**1.62**	**249**	P		Pn	15 31 34.2	+1.1
JANG	**Nango**	**1.65**	**330**	P		Pn	15 31 34.6	+1.1

*CSEM **21** 15:35:07.6±4.7, 34°.45N×0°.80E, h2km, ML2.7, Error ellipse: s-maj=115.4km s-min=65.2km az=143.0*
*MDD **21** 15:35:10.4±4.2, 34°.51N×0°.79E, h0km, mb4.0/1, Error ellipse: s-maj=38.9km s-min=18.5km az=148.0, PRXIMO SIN SOLUCIN*
*CRAAG **21** 15:35:26.7, 35°.42N×0°.15W, Ml2.7*

ISC 21 15:35:06.0±4.1, 34°.4N±0°.2×0°.9E±0°.2, h10km, n13, σ0s55/12, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ODJA	**Bouhanifia**	**1.26**	**318**	P		**Pb**	**15 35 30.0**	**+0.1**
ODJA	**Bouhanifia**	**1.26**	**318**	P		**Pb**	**15 35 30.0**	**+0.1**
ODJA	**Bouhanifia**	**1.26**	**318**	P		**Pb**	**15 35 30.0**	**+0.1**
OTSS	**Djebel Tessala**	**1.64**	**303**	P		**Pg**	**15 35 38.0**	**+0.6**
OTSS	**Djebel Tessala

319nm,25.9s
TBI eLR LR 15 46 06.5
1µm,28.0s
ODZ Otahua Downs 23.70 205 *e*P **P 15 40 40.9 0.0**
151nm,2.0s
WKZ Wanaka 24.19 208 *e*P **P 15 40 44.4 -1.1**
197nm,1.8s
PPT2 Papeete2 24.86 79 eLR LR 15 46 39.2
1µm,27.0s
PPT Papeete 24.86 79 LR LR 15 47 44.9
comp=Z,264nm,21.9s,baz=184,slow=29
MLZ Mavora Lakes 25.01 209 *e*P **P 15 40 51.8 -1.1**
200nm,1.8s
WHZ Wether Hill Ro 25.50 208 *e*P **P 15 40 56.5 -0.7**
138nm,1.8s
DCZ Deep Cove 25.51 210 *e*P **P 15 40 58.8 +1.4**
58nm,1.3s
ARMA Armidale 29.98 251 *e*P **P 15 41 39.2 +1.5**
91nm,1.8s
EIDS Eidsvold 30.54 261 *e*P **P 15 41 42.7 +0.2**
21nm,1.2s
RMQ Roma 32.53 258 P **P 15 42 01.0 +0.9**
baz=33,SNR=6.7
CAN Canberra 32.77 242 *e*P **P 15 42 03.2 +1.1**
CAN pmax pmax
comp=Z,180nm,1.8s
CAN Canberra 32.77 242 *e*P **P 15 42 03.2 +1.1**
comp=Z,180nm,1.8s
CTAO Charters Tower 35.81 269 *e*P **P 15 42 28.0 -0.6**
CTAO pmax pmax
comp=Z,18nm,0.8s
CTAO Charters Tower 35.81 269 *e*P **P 15 42 28.0 -0.6**
comp=Z,18nm,0.8s
RKT Rikitea 36.81 97 eLR LR 15 52 12.1
comp=Z,601nm,27.8s
TAOE Nuku Hiva Isla 36.83 71 eLR LR 15 52 07.9
comp=Z,362nm,27.6s
MTSU Mount Surprise 38.09 271 P **P 15 42 47.7 -0.3**
baz=39,SNR=29
STKA Stephens Creek 38.63 249 P **P 15 42 51.1 -1.3**
comp=Z,1.6nm,0.4s,baz=92,slow=12,SNR=2.7
STKA LR LR 15 56 55.5
comp=Z,333nm,20.6s,baz=52,slow=34
STKA Stephens Creek 38.63 249 *e*P **P 15 42 51.4 -1.0**
comp=Z,1.9nm,1.1s
PMG Port Moresby 38.74 286 P **P 15 42 52.4 -1.0**
comp=Z,55nm,0.6s,baz=111,slow=8.7,SNR=21
PMG Port Moresby 38.74 286 *d*/*P* **P 15 42 52.3 -1.1**
PMG Port Moresby 38.74 286 *e*P **P 15 42 52.5 -1.0**
comp=Z,62nm,0.7s
PATS Pohnpei 40.25 317 *e*P **P 15 43 04.8 -1.1**
comp=Z,245nm,1.6s
COEN Coen 40.46 277 *e*P **P 15 43 08.0 +0.2**
comp=Z,18nm,0.6s
HTT Hallett 40.90 246 P **P 15 43 11.4 +0.1**
baz=41,SNR=5.0
BBOO Buckleboo 43.31 247 *e*P **P 15 43 30.3 -0.5**
comp=Z,46nm,1.5s
AS01 Alice Springs 46.21 260 *e*P **P 15 43 52.7 -1.5**
AS31 Alice Springs 46.25 260 *e*P **P 15 43 53.2 -1.3**
comp=Z,3.7nm,0.8s
AS31 *e*S **S 15 50 36.0 -2.5**
ASAR Alice Springs 46.25 260 P **P 15 43 53.0 -1.5**
comp=Z,10nm,0.6s,baz=96,slow=7.0,SNR=78
ASAR PcP **PcP 15 45 30.3 +0.7**
comp=Z,1.4nm,0.7s,baz=121,slow=4.2,SNR=5.0
ASAR S **S 15 50 36.0 -2.5**
comp=Z,0.4nm,0.8s,baz=106,slow=16,SNR=3.2
ASAR LR LR 16 04 08.5
comp=Z,454nm,18.1s,baz=114,slow=37
WB2 Warramunga Arr 46.70 265 *e*P **P 15 43 54.9 -3.1**
comp=Z,10nm,0.6s
WRAB Tennant Creek 46.70 265 *de*P **P 15 43 56.3 -1.7**
WRAB pmax pmax
comp=Z,23nm,0.9s
WRAB Tennant Creek 46.70 265 *e*P **P 15 43 55.8 -2.2**
comp=Z,9.3nm,0.7s
WR1 Warramunga Arr 46.71 265 *e*P **P 15 43 56.1 -1.9**
comp=Z,13nm,0.6s
WR1 *e*PcP **PcP 15 45 32.2 +1.0**
WRA Warramunga Arr 46.71 265 P **P 15 43 56.1 -1.9**
comp=Z,10nm,0.6s,baz=104,slow=8.1,SNR=98
WRA PcP **PcP 15 45 32.2 +1.0**
comp=Z,2.6nm,0.7s,baz=99,slow=3.6,SNR=6.3
WRA LR LR 16 04 01.0
comp=Z,435nm,18.1s,baz=85,slow=37
HPO Honuapo 47.16 26 *e*P **P 15 43 58.9 -2.5**
FORT Forrest 50.25 249 *e*P **P 15 44 23.8 -1.4**
comp=Z,174nm,0.7s
WRKA Warakurna 50.99 257 P **P 15 44 29.6 -1.3**
baz=52,SNR=18
MTN Manton Dam 51.81 273 P **P 15 44 35.8 -1.3**
baz=52,SNR=4.0
MTN Manton Dam 51.81 273 *e*P **P 15 44 34.8 -2.2**
comp=Z,8.9nm,0.8s
SBA Scott Base 54.33 185 *e*P **P 15 44 58.5 +3.8**
SBA pmax pmax
comp=Z,11nm,1.0s
SBA Scott Base 54.33 185 *e*P **P 15 44 58.5 +3.8**
comp=Z,11nm,1.0s
VNDA Vanda 54.44 186 P **P 15 44 59.0 +3.6**
comp=Z,2.6nm,0.9s,baz=11,slow=6.6,SNR=14
VNDA PcP **PcP 15 46 02.2 +3.6**
comp=Z,1.1nm,0.7s,baz=338,slow=5.4,SNR=7.0
VNDA LR LR 16 03 39.3
comp=Z,35nm,21.4s,baz=26,slow=31
VNDA Vanda 54.44 186 *e*P **P 15 44 58.1 +2.6**
comp=Z,4.9nm,1.0s
VNDA *e*PcP **PcP 15 46 02.2 +3.6**
FITZ Fitzroy Crossi 55.12 264 LR LR 16 09 18.9
comp=Z,323nm,18.2s,baz=124,slow=37
FITZ Fitzroy Crossi 55.12 264 P **P 15 45 00.5 -0.9**
baz=56,SNR=11
FITZ Fitzroy Crossi 55.12 264 *e*P **P 15 45 00.4 -0.9**
comp=Z,11nm,0.8s
KLBR Kellerberrin 58.84 247 P **P 15 45 27.2 -0.4**
baz=59,SNR=9.7
MEEK Meekatharra 59.16 252 P **P 15 45 29.0 -0.8**
baz=60,SNR=3.1
SOEI Soe 59.20 273 *e*P **P 15 45 30.3 0.0**
comp=Z,40nm,1.0s
MBWA Marble Bar 59.58 259 *e*P **P 15 45 32.9 +0.1**
comp=Z,9.3nm,0.8s
BLDU Ballidu 59.92 248 P **P 15 45 34.2 -0.8**
baz=60,SNR=8.5
MORW Morawa 60.82 249 P **P 15 45 41.0 -0.2**
baz=61,SNR=3.8
MMRI Maumere 61.48 273 *e*P **P 15 45 44.5 -1.3**
comp=Z,27nm,0.9s
KAPI Kappang 65.18 276 LR LR 16 15 52.9
comp=Z,78nm,18.5s,baz=114,slow=37
QSPA South Pole Qui 65.83 180 *e*P **P 15 46 15.0 +1.1**
MYLDM Lahad Datu 70.76 285 *e*P **P 15 46 45.2 -0.1**
comp=Z,9.3nm,0.9s
UGM Wanagama 72.44 269 *e*P **P 15 46 55.3 -0.3**
comp=Z,280nm,1.4s
KKM Kota Kinabalu 73.17 285 *e*P **P 15 47 00.5 +0.6**
comp=Z,19nm,1.2s
MJAR Matsushiro Arr 74.73 323 P **P 15 47 08.2 -0.2**
comp=Z,2.5nm,0.6s,baz=158,slow=5.9,SNR=6.0
MJAR LR LR 16 14 40.6
comp=Z,59nm,22.0s,baz=160,slow=32
KSM Kuching 76.45 278 *e*P **P 15 47 18.5 -0.3**
comp=Z,7.6nm,0.7s
TPUB Ta-pu 78.13 302 *e*P **P 15 47 26.6 -1.4**
comp=Z,22nm,0.7s
SSLB Suanglung 78.15 303 *e*P **P 15 47 27.1 -1.0**
comp=Z,11nm,0.6s
ASAJ Asahikawa 78.23 330 P **P 15 47 29.6 +1.5**
comp=Z,4.5nm,0.6s,baz=171,slow=6.3
ASAJ Asahikawa 78.23 330 *e*P **P 15 47 29.8 +1.8**
comp=Z,44nm,1.7s
MAW Mawson 78.90 199 P **P 15 47 33.3 +1.8**
comp=Z,3.7nm,0.9s,baz=145,slow=6.7,SNR=13
MAW Mawson 78.90 199 P **P 15 47 29.0 -2.5**
baz=79,SNR=12
YSS Yuzh-Sakhalins 80.38 332 *e*P **P 15 47 37.4 -2.3**
PETK Petropavlovsk- 80.55 344 P **P 15 47 40.8 +0.4**
comp=Z,6.8nm,0.7s,baz=124,slow=7.2,SNR=14
PETK LR LR 16 16 22.7
comp=Z,60nm,21.8s,baz=135,slow=31
PEA1 Petropavlovsk- 80.56 344 *e*P **P 15 47 40.8 +0.3**
KS01 Wonju Array Si 81.40 318 *e*P **P 15 47 45.9 +0.5**
MYKOM Kota Tinggi 82.44 275 *e*P **P 15 47 52.3 +0.9**
comp=Z,18nm,1.0s
MSHR Mys Shultsa 82.83 323 *e*P **P 15 47 52.9 +0.2**
USRK Ussuriysk Ar. 83.48 325 P **P 15 47 57.5 +1.4**
comp=Z,5.8nm,0.8s,baz=133,slow=2.7,SNR=10
USRK LR LR 16 25 09.8
comp=Z,33nm,18.2s,baz=121,slow=36
SYO Syowa Base 83.62 192 *e*P **P 15 47 55.5 -1.0**
SYO Syowa Base 83.62 192 *e*pP **P 15 47 59.2 +2.7**
SNAA Sanae 84.19 178 P **P 15 47 59.6 +0.1**
SNAA Sanae 84.19 178 *e*P **P 15 48 00.7 +1.2**
SNAA Sanae 84.19 178 *e*P **P 15 48 00.2 +0.8**
comp=Z,10.0nm,1.1s
LCMT Little Creek M 84.37 45 *e*P **P 15 48 01.3 +0.3**
comp=Z,7.6nm,1.4s
WVOR Wild Horse Val 84.42 38 *e*P **P 15 48 01.6 +0.5**
WVOR pmax pmax
comp=Z,9.0nm,1.3s
WVOR Wild Horse Val 84.42 38 *e*P **P 15 48 01.6 +0.5**
comp=Z,8.9nm,1.3s
U15A North Rim 84.65 46 *e*P **P 15 48 03.0 +0.4**
comp=Z,29nm,1.9s
QIZ Qiongzhong 84.70 293 P P 15 47 56.9 -5.9
QIZ Qiongzhong 84.70 293 S **S 15 58 31.3 +3.8**
PLCA Paso Flores 84.86 132 P **P 15 48 05.5 +2.0**
comp=Z,4.4nm,1.1s,baz=253,slow=8.1,SNR=2.9
PLCA LR LR 16 16 05.7
comp=Z,30nm,21.7s,baz=322,slow=29
PLCA Paso Flores 84.86 132 *e*P **P 15 48 05.0 +1.5**
comp=Z,68nm,2.0s
VNA1 Neumayer--Stat 84.91 176 P **P 15 48 04.8 +1.8**
HABR Khabarovsk 84.95 329 *e*P **P 15 48 01.8 -1.6**
HABR *e**SP **PcP 15 48 10.9 +4.3**
HABR *e* 15 51 18.5
HABR *e* 15 53 13.6
HABR *e*S **S 15 58 23.8 -5.0**
HABR *e*SS **SS 16 04 04.4 +1.3**
HABR *e*SSS SSS 16 07 35.2
HABR pmax pmax
comp=Z,11nm,2.2s
HABR MLR MLR
comp=Z,39nm,19.0s
MTPU Mount Pierson 85.66 45 *e*P **P 15 48 08.2 +0.5**
comp=Z,15nm,1.6s
G08A Pilot Rock 86.09 36 *e*P **P 15 48 10.2 +0.9**
comp=Z,5.6nm,1.2s
IPM Ipoh 86.11 277 *e*P **P 15 48 11.2 +1.1**
comp=Z,12nm,0.8s
LTX Lajitas 86.98 56 *e*P **P 15 48 14.6 +0.5**
LTX Lajitas 86.98 56 *e*P **P 15 48 14.6 +0.5**
TXAR Lajitas Array 86.98 56 P **P 15 48 14.6 +0.5**
comp=Z,0.3nm,0.7s,baz=201,slow=9.4,SNR=4.4
TXAR LR LR 16 23 10.6
comp=Z,42nm,18.5s,baz=0.0,slow=33
TXAR Lajitas Array 86.98 56 P **P 15 48 14.6 +0.5**
TXAR pmax pmax
comp=Z,1.0nm,0.8s
KLR Kul'dur 87.04 328 *e*P **P 15 48 14.1 +0.4**
GSI Gunungsitoli 87.95 272 *e*P **P 15 48 18.3 -0.7**
comp=Z,54nm,1.5s
SCM Sheep Creek Mo 88.68 13 *e*P **P 15 48 21.3 0.0**
SCM pmax pmax
comp=Z,7.0nm,0.7s
SCM Sheep Creek Mo 88.68 13 *e*P **P 15 48 21.3 0.0**
comp=Z,6.9nm,0.7s
TRF Thorofare Moun 89.60 11 *e*P **P 15 48 25.0 -0.8**
comp=Z,4.6nm,0.7s
RND Reindeer 89.82 12 *e*P **P 15 48 26.7 0.0**
RND pmax pmax
comp=Z,13nm,1.3s
RND Reindeer 89.82 12 *e*P **P 15 48 26.7 0.0**
comp=Z,13nm,1.3s
PDAR Pinedale Array 89.98 42 LR LR 16 27 39.2
comp=Z,47nm,18.3s,baz=254,slow=35
ENH Enshi 90.23 303 *e*P **P 15 48 30.5 +1.2**
comp=Z,20nm,1.3s
BOZ Bozeman (W) 90.38 39 *e*P **P 15 48 30.6 +0.8**
BOZ pmax pmax
comp=Z,9.0nm,1.5s
BOZ Bozeman (W) 90.38 39 *e*P **P 15 48 30.6 +0.8**
comp=Z,8.7nm,1.5s
SEY Seymchan 90.61 346 P **P 15 48 30.5 +0.3**
comp=Z,1.9nm,0.9s,baz=211,slow=5.9,SNR=3.3
SEY Seymchan 90.61 346 *e*P **P 15 48 30.0 -0.2**
GYA Guiyang 90.69 299 P **P 15 48 32.8 +1.1**
GYA pP pP 15 48 42.4 -2.4
GYA PP **PP 15 52 11.0 +3.3**
GYA SKS **SKSac 15 59 01.3 +1.1**
GYA pmax pmax
comp=Z,10.0nm,1.0s
GYA pmax pmax
comp=Z,110nm,6.8s
WRH Wood River Hil 90.93 11 *e*P **P 15 48 31.2 -0.5**
comp=Z,4.2nm,0.9s
DOT Dot Lake 90.98 13 *e*P **P 15 48 31.7 -0.3**
comp=Z,10nm,1.0s
CCB Clear Creek Bu 91.14 11 *e*P **P 15 48 32.6 -0.1**
comp=Z,18nm,1.9s
IL1 Eielson Array 91.42 12 *e*P **P 15 48 32.8 -1.2**
ILAR Eielson Array 91.42 12 P **P 15 48 33.8 -0.3**
comp=Z,0.9nm,0.7s,baz=219,slow=5.2,SNR=12
ILB Eielson Array 91.42 12 *e*P **P 15 48 33.0 -1.0**
XAN Xi'an 92.41 306 P **P 15 48 42.3 +2.9**
XAN pP pP 15 48 50.3 -2.2
XAN sP sP 15 48 54.1 -3.3
XAN pmax pmax
comp=Z,8.0nm,0.7s
XAN pmax pmax
comp=Z,64nm,6.3s
KMI Kunming 93.30 296 P **P 15 48 45.3 +1.4**
KMI pmax pmax
comp=Z,8.0nm,0.9s
KMI pmax pmax
comp=Z,120nm,4.0s
CM01 Chiang Mai Arr 93.71 288 *e*P **P 15 48 46.6 +0.9**
CM31 Chiang Mai Arr 93.74 288 *e*P **P 15 48 46.1 +0.3**
CMAR Chiang Mai Arr 93.74 288 P **P 15 48 46.6 +0.8**
comp=Z,2.2nm,0.8s,baz=131,slow=2.8,SNR=10.0
CMAR LR LR 16 31 27.4
comp=Z,14nm,18.1s,baz=110,slow=36
CMAR Chiang Mai Arr 93.74 288 P **P 15 48 46.6 +0.8**
CMAR pmax pmax
comp=Z,5.0nm,1.1s
CMAR MLR MLR
comp=Z,14nm,18.2s
HHC Hu-ho-hao-te 93.78 313 *e*P **P 15 48 46.5 +0.9**
HHC pmax pmax
comp=Z,27nm,1.1s
HHC pmax pmax
comp=Z,120nm,5.3s
CHTO Chiang Mai 93.88 289 *e*P **P 15 48 47.8 +1.3**
CHTO pmax pmax
comp=Z,12nm,1.4s
CHTO Chiang Mai 93.88 289 *e*P **P 15 48 47.8 +1.3**
comp=Z,12nm,1.4s
CD2 Chengdu 94.93 302 *e*P **P 15 48 50.5 -0.6**
CD2 pP PcP 15 48 57.3 +5.9
CD2 PP **PP 15 52 39.8 -1.1**
CD2 SKS **SKSac 15 59 24.8 +1.4**
CD2 S **ScS 16 00 04.0 +0.8**
CD2 sS sS 16 00 15.6 -8.8
CD2 SS **SS 16 06 31.0 +2.5**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.4s
PB11 IPOC Station P 95.38 114 *e*P **P 15 48 51.4 -2.2**
comp=Z,32nm,0.5s
TUL1 Leonard 95.91 53 *e*P **P 15 48 51.1 -4.2**
comp=Z,107nm,0.6s
LZH Lanzhou 97.05 306 *e*P **P 15 49 00.0 -0.7**
LZH pP Pdif 15 49 06.5 +5.7
LZH sP pP 15 49 09.3 -4.6
LZH PP **PP 15 52 59.6 +2.3**
LZH pmax pmax
comp=Z,16nm,1.5s
LZH pmax pmax
comp=Z,95nm,6.4s
LZH LR LR
comp=Z,200nm,17.8s
LZH LR LR
comp=Z,210nm,18.0s
LZH LR LR
comp=Z,240nm,19.7s
LPAZ La Paz 98.29 112 LR LR 16 28 19.8
comp=Z,36nm,18.1s,baz=220,slow=32
SONM Songino Array 100.24 318 LR LR 16 29 02.8
comp=Z,37nm,21.2s,baz=107,slow=32
WMQ Urumqi 111.28 310 *e*PKP **PKiKP 15 53 59.3 -3.0**
WMQ LR LR
comp=Z,140nm,25.4s
WMQ LR LR
comp=Z,230nm,25.9s
WMQ LR LR
comp=Z,190nm,23.0s
ZALV Zalesovo Beam 115.00 320 PKP PKPdf 15 54 08.4 -0.5
comp=Z,2.1nm,0.6s,baz=131,slow=1.9,SNR=12
ZAA1 Zalesovo Array 115.00 320 *e*PKiKP **PKiKP 15 54 08.4 -0.5**
MK01 Makanchi Array 115.59 312 *e*PKPdf **PKPdf 15 54 09.4 -1.0**
MK31 Makanchi Array 115.60 312 *e*PKiKP **PKPdf 15 54 09.7 -0.7**
MK31 Makanchi Array 115.60 312 *e*PKPdf **PKPdf 15 54 09.7 -0.7**
MK32 Makanchi Array 115.60 312 *e*PKPdf **PKPdf 15 54 09.8 -0.6**
MKAR Makanchi Array 115.60 312 PKP **PKPdf 15 54 09.8 -0.6**
comp=Z,0.9nm,0.6s,baz=90,slow=1.2,SNR=11
KSH Kashi 119.09 303 *e*PKP **PKPdf 15 54 16.4 -1.1**
KSH *e*PP **PP 15 55 43.9 +5.8**
KSH PKS **PKSdf 15 57 52.0 -2.2**
KSH SKS **SKSdf 16 01 24.3 -1.9**
KSH SKKS **SKKSac 16 02 32.1 -2.4**
KSH LR LR
comp=Z,95nm,6.3s
KSH LR LR
comp=Z,87nm,6.4s
KSH LR LR
comp=Z,69nm,7.6s
VOSK Vostochnaya 123.23 318 *e*PKiKP **PKPdf 15 54 24.2 -0.7**
VOSK Vostochnaya 123.23 318 *e*PKPdf **PKPdf 15 54 24.1 -0.7**
BVAR Borovoye Array 123.57 319 PKP **PKPdf 15 54 25.3 -0.2**
comp=Z,1.8nm,0.5s,baz=110,slow=0.7,SNR=15
BRVK Borovoye 123.63 319 *i*PKiKP **PKPdf 15 54 25.5 -0.1**
BOSA Boshof 123.85 202 PKP **PKPdf 15 54 29.4 +2.4**
comp=Z,1.8nm,0.6s,baz=146,slow=3.6,SNR=3.0
ARU Arti 129.72 324 *i* PKiKP **PKPdf 15 54 37.4 +0.3**
ARU 15 56 46.3
ARU 16 01 47.1
ARU SS SS 16 14 06.4 -2.3
ARU Arti 129.72 324 *e*PKPdf **PKPdf 15 54 37.2 +0.1**
GEYT Alibeck 132.90 300 PKP **PKPdf 15 54 44.6 +0.8**
comp=Z,1.4nm,0.6s,baz=129,slow=2.1,SNR=3.8
ARCES ARCESS Array B 133.05 350 PKP **PKPdf 15 54 45.2 +2.2**
comp=Z,1.0nm,0.5s,baz=348,slow=1.7,SNR=4.0
FIA0 FINESS Array S 140.07 344 *e*PKHKP PKPpre 15 54 48.7
FIA0 *e* 15 54 56.5
FIA0 FINESS Array S 140.07 344 *e*PKPpre PKPpre 15 54 48.7
FIA0 *e*PKPdf **PKPdf 15 54 56.5 +0.3**
FINES FINESS Array B 140.07 344 PKhKP PKPpre 15 54 48.7
comp=Z,0.9nm,0.6s,baz=83,slow=4.3,SNR=3.0
FINES PKP **PKPdf 15 54 56.5 +0.3**
comp=Z,1.5nm,0.8s,baz=72,slow=4.5,SNR=3.8
NB2 NORSAR Subarra 142.97 355 PKP **PKPdf 15 54 57.9 -3.6**
comp=Z,0.4nm,0.6s,baz=17,slow=2.6
MBAR Mbarara 144.70 229 *e*PKiKP PKPbc 15 55 05.6 +0.5
MBAR Mbarara 144.70 229 *e*PKPdf PKPbc 15 55 05.6 +0.5
NACGM Naroch 145.30 338 *e* **PKPdf 15 55 06.0 +0.3**
AKASG Malin Array Be 147.52 331 PKPbc **PKPbc 15 55 11.8 -0.4**
comp=Z,8.1nm,0.5s,baz=41,slow=3.8,SNR=27
AKBB Malin Array Si 147.52 331 *e*PKP2 **PKPbc 15 55 11.7 -0.5**
AKBB Malin Array Si 147.52 331 *e*PKPbc **PKPbc 15 55 11.7 -0.5**
KIEV Kiev 147.53 331 *e*PKP2 **PKPbc 15 55 11.5 -0.7**
KIEV Kiev 147.53 331 *e*PKPbc **PKPbc 15 55 11.5 -0.7**
AK11 Malin Array Si 147.56 331 *e*PKPbc **PKPbc 15 55 11.3 -1.0**
BR101 Keskin Array S 151.21 309 *e*PKPbc **PKPbc 15 55 21.9 -0.1**
BR131 Keskin Array S 151.21 309 *e*PKPbc **PKPbc 15 55 21.7 -0.4**
BRTR Keskin Array B 151.21 309 PKPbc **PKPbc 15 55 21.9 -0.1**
comp=Z,4.9nm,0.6s,baz=144,slow=4.9,SNR=22
BUR08 Bucovina Ar. S 151.55 330 *e*PKPdf **PKPdf 15 55 16.4 +0.2**
BUR08 *e*PKPbc **PKiKP 15 55 23.7 +0.7**
BR231 Keskin MP Arra 151.77 310 *e*PKPbc **PKPbc 15 55 22.1 -1.2**
UZH Uzhgorod 152.01 335 *e*PKiKP **PKPbc 15 55 20.3 -3.0**
UZH *e* 15 55 24.7
UZH *e* 15 55 31.3
CLL Collm 152.25 349 *i* PKPbc **PKPbc 15 55 24.4 +0.6**
comp=Z,8.0nm,0.5s
CLL *e* 15 55 36.0
CLL *e*PP **PP 15 59 00.0 -5.3**
CLL LmV 17 11 00.0
comp=Z,100nm,19.2s
CLL Collm 152.25 349 *e*PKiKP **PKPdf 15 55 16.8 -0.3**
CLL *e* 15 55 24.0
CLL Collm 152.25 349 *e*PKPdf **PKPdf 15 55 16.8 -0.3**
CLL *e*PKPbc **PKPbc 15 55 24.0 +0.2**
DPC Dobruska-Polom 152.44 344 *e*PKP **PKPbc 15 55 25.5 +1.2**
DPC *e*PKPAB **PKPab 15 55 34.1 -0.5**
DPC *ep*PKP **pPKPbc 15 55 38.1 +0.2**
DPC *ex* x 15 55 41.1
KHC Kasperske Hory 154.22 347 *e*PKP **PKPbc 15 55 29.5 +1.2**
KHC *e*PKPAB **PKPab 15 55 43.8 +1.7**
GERES GERESS Array B 154.46 346 PKPbc **PKPbc 15 55 29.6 +0.7**
comp=Z,0.6nm,0.8s,baz=302,slow=0.9,SNR=3.9

ISK ***21*** *15:48:47.8,37.°78N×38.°04E,h3km,MD2.6*
CSEM ***21*** *15:48:47.8±0.4,37.°66N×38.°16E,h5km,ML2.7,Error ellipse: s-maj=11.3km s-min=4.9km az=135.0*
DDA ***21*** *15:48:48.0,37.°67N×38.°17E,h8km,Ml2.7*
ISC 21 15:48:47.8±2.2,37.°67N±0.°07×38.°18E±0.°08,h5km±14km,
n12,σ0s94/23,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
AKCD	**Akcadag**	**0.64**	**348**	*i* P		**Pg**	**15 49 00.4**	**+0.3**
AKCD				*i* S		**Sb**	**15 49 11.0**	**+0.2**
AKCD	**Akcadag**	**0.64**	**348**	P		**Pg**	**15 49 00.4**	**+0.3**
AKCD				S		**Sb**	**15 49 11.0**	**+0.2**
GAZ	**Gaziantep**	**0.86**	**235**	*e*PG		**Pn**	**15 49 05.8**	**-0.8**
GAZ				*e*SG		**Sn**	**15 49 18.7**	**-0.8**
GAZ	**Gaziantep**	**0.86**	**235**	*e*Pg		**Pn**	**15 49 05.8**	**-0.8**
GAZ				*e*Sg		**Sn**	**15 49 18.7**	**-0.8**
KMRS	**Kahramanmaras**	**0.96**	**261**	*e*PG		**Pg**	**15 49 06.4**	**+0.1**
KMRS				*e*SG		**Sb**	**15 49 20.4**	**+0.4**
KMRS	**Kahramanmaras**	**0.96**	**261**	*e*Pg		**Pg**	**15 49 06.4**	**+0.1**
KMRS				*e*Sg		**Sb**	**15 49 20.4**	**+0.4**
ELZG	**Elazig**	**1.09**	**40**	*i* P		**Pn**	**15 49 08.5**	**-1.3**
ELZG				*i* S		**Sn**	**15 49 27.4**	**+2.1**
ELZG	**Elazig**	**1.09**	**40**	P		**Pn**	**15 49 08.5**	**-1.3**
SVRC	**Sivrice-ELAZID**	**1.19**	**53**	*e*PN		**Pn**	**15 49 10.9**	**-0.3**
SVRC				*e*SN		**Sn**	**15 49 27.7**	**-0.2**
SVRC	**Sivrice-ELAZID**	**1.19**	**53**	*e*Pn		**Pn**	**15 49 10.9**	**-0.3**
SVRC				*e*Sn		**Sn**	**15 49 27.7**	**-0.2**
KUZU	**Kuzuini**	**1.21**	**223**	*i* P		**Pn**	**15 49 10.7**	**-0.6**
KUZU				*i* S		**Sn**	**15 49 29.6**	**+1.5**
KUZU	**Kuzuini**	**1.21**	**223**	P		**Pn**	**15 49 10.7**	**-0.6**
KUZU				S		**Sn**	**15 49 29.6**	**+1.5**

ISCJB ***21*** *15:49:21.1±0.9,51.°41N±0.°04×16.°19E±0.°04,h0km,Error ellipse: s-maj=5.9km s-min=3.4km az=15.9*
CSEM ***21*** *15:49:22.4±0.5,51.°42N×16.°17E,h1km,ML3.1/8,Error ellipse: s-maj=7.2km s-min=3.9km az=5.0*
WAR ***21*** *15:49:23.2,51.°44N×16.°19E,h1km,Mw2.5*
ISC 21 15:49:22.9±1.1,51.°42N±0.°05×16.°16E±0.°02,h0km,n27,
σ0s50/51,Poland

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.59**	**172**	*e*Pg		**Pg**	**15 49 34.4**	**+0.3**
KSP				*e*Sg		**Sg**	**15 49 42.4**	**+0.7**
KSP	**Ksiaz**	**0.59**	**172**	*e*Pg		**Pg**	**15 49 34.4**	**+0.3**
KSP				*e*Sg		**Sg**	**15 49 42.4**	**+0.7**
KSP	**Ksiaz**	**0.59**	**172**	*e*Pg		**Pg**	**15 49 34.4**	**+0.3**
KSP				*e*Sg		**Sg**	**15 49 42.4**	**+0.7**
UPC	**Upice**	**0.92**	**186**	*e*PG		**Pg**	**15 49 40.8**	**+0.2**
UPC				*e*SG		**Sg**	**15 49 53.3**	**+0.8**
comp=Z,52nm,0.3s								
UPC	**Upice**	**0.92**	**186**	Pg		**Pg**	**15 49 40.8**	**+0.2**
UPC				Sg		**Sg**	**15 49 53.3**	**+0.8**
52nm,0.3s								
DPC	**Dobruska-Polom**	**1.08**	**174**	*e*PG		**Pg**	**15 49 43.6**	**0.0**
DPC				*e*SG		**Sg**	**15 49 57.4**	**-0.1**
comp=Z,18nm,0.4s								
DPC	**Dobruska-Polom**	**1.08**	**174**	Pg		**Pg**	**15 49 43.6**	**0.0**
DPC				Sg		**Sg**	**15 49 57.4**	**-0.1**
18nm,0.4s								
PVCC	**Panska Ves**	**1.35**	**229**	*e*PG		**Pb**	**15 49 49.2**	**+0.2**
PVCC				*e*SG		**Sn**	**15 50 07.7**	**+0.1**
comp=Z,92nm,0.4s								
PVCC	**Panska Ves**	**1.35**	**229**	Pg		**Pb**	**15 49 49.2**	**+0.2**
PVCC				Sg		**Sn**	**15 50 07.7**	**+0.1**
92nm,0.4s								
KRLC	**Kraliky**	**1.41**	**163**	*e*SG		**Sb**	**15 50 08.3**	**-0.2**
KRLC	**Kraliky**	**1.41**	**163**	Sg		**Sb**	**15 50 08.3**	**-0.2**
GOPC	**GO Pecny, Ondr**	**1.74**	**211**	*e*PG		**Pb**	**15 49 56.0**	**+0.2**
GOPC				*e*SG		**Sb**	**15 50 18.4**	**+0.1**

	comp=Z,14nm,0.5s							
GOPC	**GO Pecny, Ondr**	**1.74**	**211**	Pg	**Pb**	**15 49 56.0**	**+0.2**
GOPC				Sg	**Sb**	**15 50 18.4**	**+0.1**
	14nm,0.5s							
PRU	**Pruhonice**	**1.77**	**216**	*e*PG	**Pb**	**15 49 56.0**	**-0.2**
PRU				*e*SG	**Sg**	**15 50 19.6**	**0.0**
	comp=Z,17nm,0.4s							
PRU	**Pruhonice**	**1.77**	**216**	Pg	**Pb**	**15 49 56.0**	**-0.2**
PRU				Sg	**Sg**	**15 50 19.6**	**0.0**
	17nm,0.4s							
MORC	**Moravsky Berou**	**1.87**	**151**	*e*Pn	**Pn**	**15 49 55.2**	**-1.0**
MORC				*e*Sg	**Sn**	**15 50 20.7**	**+0.2**
CLL	**Collm**	**1.98**	**268**	*e*Pg	**Pg**	**15 50 01.0**	**+0.1**
CLL				*e*Sg	**Sg**	**15 50 28.0**	**+1.4**
	comp=Z,12nm,0.5s							
OKC	**Ostrava-Krasne**	**2.03**	**141**	*e*PG	**Pb**	**15 50 00.6**	**-0.1**
OKC				*e*SG	**Sb**	**15 50 26.2**	**-0.2**
	comp=Z,15nm,0.5s							
OKC	**Ostrava-Krasne**	**2.03**	**141**	Pg	**Pb**	**15 50 00.6**	**-0.1**
OKC				Sg	**Sb**	**15 50 26.2**	**-0.2**
	comp=Z,15nm,0.5s							
VRAC	**Vranov**	**2.13**	**172**	*e*Sg	**Sb**	**15 50 30.0**	**+0.5**
OJC	**Ojcow**	**2.60**	**116**	*e*Pg	**Pg**	**15 50 12.9**	**+0.1**
OJC				*e*Sg	**Sg**	**15 50 46.8**	**+0.3**
OJC	**Ojcow**	**2.60**	**116**	*e*Pg	**Pg**	**15 50 12.9**	**+0.1**
OJC				*e*Sg	**Sg**	**15 50 46.8**	**+0.3**
OJC	**Ojcow**	**2.60**	**116**	*e*Pg	**Pg**	**15 50 12.9**	**+0.1**
OJC				*e*Sg	**Sg**	**15 50 46.8**	**+0.3**
NKC	**Novy Kostel**	**2.64**	**245**	*e*PN	**Pn**	**15 50 06.4**	**-0.4**
NKC				*e*PG	**Pg**	**15 50 12.9**	**-0.6**
NKC				*e*SG	**Sg**	**15 50 47.7**	**+0.1**
	comp=Z,20nm,0.3s							
NKC	**Novy Kostel**	**2.64**	**245**	Pn	**Pn**	**15 50 06.4**	**-0.4**
KHC	**Kasperske Hory**	**2.83**	**217**	*e*PG	**Pb**	**15 50 15.1**	**+0.8**
KHC				*e*SG	**Sg**	**15 50 52.6**	**-1.2**
	comp=Z,5.8nm,0.5s							
KHC	**Kasperske Hory**	**2.83**	**217**	Pg	**Pb**	**15 50 15.1**	**+0.8**
KHC				Sg	**Sg**	**15 50 52.6**	**-1.2**
	comp=Z,5.8nm,0.5s							

*IDC **21** 15:54:19.4±4.7, 45°.52N×90°.75E, h0km, mb1 3.2/3, mb1mx3.1/50, mbtmp3.2/3, ML3.0/3, Error ellipse: s-maj=63.5km s-min=28.0km az=174.0*
*NNC **21** 15:54:21.8±2.0, 46°.00N×90°.72E, h0km, mb3.7, mpv3.4, Error ellipse: s-maj=21.8km s-min=13.9km az=13.0*
*OBM **21** 15:54:22.1±0.2, 46°.17N×91°.06E, h2km, Ml4.0/1, Error ellipse: s-maj=2.8km s-min=2.3km az=23.0*
*BJI **21** 15:54:22.0, 46°.22N×90°.95E, h6km, ML3.6/8*
ISC 21 15:54:21.3±3.0, 45.7N±0.1×90.8E±0.2, h10km, n8, σ1§66/11, 4C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HBD	**Hovd**	**1.92**	**11**	*e*Pg	Pb	15 54 56.6	+1.3
HBD				*e*Sg	Sb	15 55 21.0	+1.6
WMQ	**Urumqi**	**2.88**	**232**	Pn	**Pg**	**15 55 15.5**	**-1.0**
WMQ				Sn	**Sg**	**15 55 55.3**	**+1.6**
WMQ				smax	smax		
	comp=N,160nm,0.5s						
WMQ				smax	smax		
	comp=E,190nm,0.5s						
BYO	**Bayan-Olgiy**	**2.94**	**345**	*e*Sg	Sg	15 55 54.8	+0.3
	295nm,0.3s						
ULG	**Ulaangom**	**3.89**	**9**	*e*Pg	Pb	15 55 31.9	+3.2
ULG				*e*Sg	Sb	15 56 20.8	+4.9
	319nm,0.4s						
MK31	**Makanchi Array**	**6.03**	**284**	⇑Pn	**Pn**	**15 55 50.4**	**-0.2**
	0.8nm,0.6s,baz=96,slow=15,SNR=14						
MK31				⇓Sn	**Sn**	**15 56 59.4**	**-0.2**
	5.5nm,0.5s,baz=90,slow=26,SNR=6.3						
MK31				Lg	Lg	15 57 29.5	
	11nm,0.6s,baz=109,slow=29,SNR=4.7						
MKAR	**Makanchi Array**	**6.03**	**284**	Pn	**Pn**	**15 55 50.2**	**-0.3**
	0.7nm,0.3s,baz=95,slow=16,SNR=19						
MKAR				Sn	**Sn**	**15 57 00.6**	**+1.0**
	3.7nm,0.3s,baz=92,slow=23,SNR=11						
MKAR				Lg	Lg	15 57 30.1	
	1.9nm,0.3s,baz=97,slow=25,SNR=3.5						
MK01	**Makanchi Array**	**6.12**	**279**	*e*Sg	Sg	15 57 31.4	-4.9
	19nm,0.6s						
MAKZ	**Makanchi**	**6.24**	**284**	⇑Pn	**Pn**	**15 55 52.8**	**-0.7**
	0.8nm,0.3s						
MAKZ				⇓Sn	**Sn**	**15 57 05.2**	**+0.3**
	6.5nm,0.5s						
MAKZ				⇑Lg	Lg	15 57 36.4	
	4.2nm,0.6s						
TTS	**Tsetserleg**	**7.22**	**75**	*e*Pg	Pg	15 56 34.6	-3.7
TTS				*e*Sg	Sg	15 58 08.0	-3.8
	109nm,1.0s						
HTG	**Hatgal**	**7.44**	**51**	*e*Pg	Pb	15 56 37.2	+8.0
HTG				*e*Sg	Sg	15 58 13.1	-5.6
	28nm,0.6s						
PDGK	**Podgornoye**	**8.43**	**258**	⇑Pn	Pn	15 56 26.1	+2.7
	3.7nm,0.6s						
PDGK				⇓Sn	**Sn**	**15 58 02.1**	**+3.6**
	10nm,0.8s						
PDGK				⇓Lg	Lg	15 58 50.6	
	14nm,0.9s						
ZALV	**Zalesovo Beam**	**9.17**	**337**	Pn	**Pn**	**15 56 34.9**	**+1.4**
	0.2nm,0.3s,baz=173,slow=16,SNR=2.4						
ZALV				Pg		15 57 07.1	
	0.2nm,0.3s,baz=150,slow=15,SNR=5.6						
ZALV				Lg	Lg	15 59 01.0	
	0.5nm,0.3s,baz=145,slow=33,SNR=6.9						
SONM	**Songino Array**	**10.91**	**73**	Pg	Pn	15 57 39.7	+42
	0.2nm,0.3s,baz=270,slow=20,SNR=3.0						
SONM				Lg	Lg	15 59 57.6	
	0.4nm,0.3s,baz=267,slow=27,SNR=6.7						
BVAR	**Borovoye Array**	**15.19**	**306**	Pn	**Pn**	**15 57 54.3**	**-1.5**
	0.1nm,0.3s,baz=100,slow=13,SNR=2.7						

*ISCJB **21** 15:56:09.8±1.1, 15°.55N±0°.06×95°.05W±0°.03, h19km±8km, mb4.1/25, MS3.1/2, Error ellipse: s-maj=9.7km s-min=4.9km az=178.2*
*IDC **21** 15:56:09.6±1.4, 15°.63N×94°.76W, h0km, mb3.8/5, mb1 4.2/7, mb1mx3.8/43, mbtmp3.9/7, ML4.1/2, MS3.1/3, Ms1 3.1/3, ms1mx2.7/35, Error ellipse: s-maj=26.9km s-min=17.4km az=65.0*
*NEIC **21** 15:56:11.8±3.3, 15°.59N×94°.91W, h15km±21km, mb4.2/36, MD4.3(MEX), Error ellipse: s-maj=13.3km s-min=6.3km az=197.0*
*MEX **21** 15:56:12.6±0.8, 15°.39N×95°.07W, h16km±11km, MD4.3*
ISC 21 15:56:08.8±1.1, 15°.57N±0°.10×95°.06W±0°.03, h6km±7km, n173, σ2§08/183, mb4.1/25, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**1.03**	**281**	*e*P	**Pg**	**15 56 29.0**	**+0.4**
HUIG				*e*S	**Sg**	**15 56 41.1**	**-0.8**
HUIG	**Huatulco**	**1.03**	**281**	*e*Sg	**Sg**	**15 56 40.1**	**-1.9**
PANG	**Puerto Angel**	**1.37**	**274**	*e*P	**Pn**	**15 56 33.9**	**-0.5**
PANG				*e*S	**Sb**	**15 56 49.8**	**-2.7**
CMIG	**Matias Romero**	**1.52**	**6**	Pg	**Pn**	**15 56 37.2**	**+0.7**
	94nm,0.3s,baz=174,slow=11,SNR=1148						
CMIG				Lg	Lg	15 56 56.6	
	323nm,0.3s,baz=248,slow=18,SNR=15						
CMIG				LR	LR	15 57 13.6	
	comp=Z,134nm,19.5s,baz=194,slow=44						
VHO	**Vista Hermosa**	**2.19**	**313**	*e*P	**Pb**	**15 56 48.2**	**-0.8**
VHO				*e*S	**Sn**	**15 57 13.8**	**+0.2**
VHO	**Vista Hermosa**	**2.19**	**313**	*e*Pn	**Pb**	**15 56 48.3**	**-0.8**
TGBT	**Tuxtla Gutierr**	**2.24**	**57**	*e*P	**Pn**	**15 56 47.4**	**+0.9**
TGBT				*e*S	**Sn**	**15 57 14.0**	**-0.4**
CCIG	**Comitan**	**2.90**	**75**	*e*P	**Pn**	**15 56 56.4**	**+0.7**
CCIG				*e*S	**Sn**	**15 57 30.5**	**-0.4**
CCIG	**Comitan**	**2.90**	**75**	*e*Pn	**Pn**	**15 56 56.3**	**+0.7**
CCIG				*e*Sn	**Sn**	**15 57 30.5**	**-0.4**
CCIG				*e*Sn	**Sb**	**15 57 30.6**	**-6.2**
PNIG	**Pinotepa**	**3.06**	**286**	*e*P	**Pn**	**15 56 58.7**	**+0.9**
PNIG				*e*S	**Sn**	**15 57 33.8**	**-0.9**
PNIG	**Pinotepa**	**3.06**	**286**	*e*Sn	**Sn**	**15 57 30.0**	**-4.7**
TLIG	**Tlapa**	**3.91**	**301**	*e*Pn	**Pn**	**15 57 12.8**	**+3.4**
TLIG				*e*Sn	**Sn**	**15 57 53.1**	**-2.6**
MORG	**Morelia**	**7.13**	**306**	*e*Pn	**Pn**	**15 57 55.9**	**+2.0**
TEIG	**Tepich**	**7.95**	**53**	Pn	**Pn**	**15 58 04.3**	**-0.6**
	4.7nm,0.3s,baz=270,slow=19,SNR=32						
TEIG				Sn	**Sn**	**15 59 29.0**	**-6.1**
	6.8nm,0.3s,baz=359,slow=19,SNR=13						
TEIG	**Tepich**	**7.95**	**53**	*e*Pn	**Pn**	**15 58 03.9**	**-1.0**
TEIG				*e*Sn	**Sn**	**15 59 30.7**	**-4.4**
ZAIG	**Zacatecas**	**10.08**	**316**	*e*Pn	**Pn**	**15 58 37.5**	**+3.1**
035A	**Encino**	**11.66**	**346**	P	**Pn**	**15 58 59.3**	**+3.5**
	baz=165						
034A	**Hebbronville**	**11.93**	**344**	P	**Pn**	**15 59 00.2**	**+0.8**
	baz=162						
934A	**Benavides**	**12.40**	**346**	P	**Pn**	**15 59 09.2**	**+3.3**
	baz=164						
933A	**Laredo**	**12.61**	**343**	P	**Pn**	**15 59 10.2**	**+1.5**
	baz=160						
834A	**Tilden**	**12.91**	**346**	P	**Pn**	**15 59 13.7**	**+0.8**
	baz=164						
738A	**Farr-Stevens R**	**13.22**	**358**	P	**P**	**15 59 23.3**	**-3.8**
	baz=177						
833A	**Chaparral WMA,**	**13.31**	**343**	P	**P**	**15 59 25.0**	**-3.2**
	baz=161						
832A	**Faith Ranch, C**	**13.45**	**341**	P	**Pn**	**15 59 22.9**	**+2.6**
	baz=159						
736A	**Circle Diamond**	**13.45**	**352**	P	**Pn**	**15 59 23.5**	**+3.3**
	baz=171						
636A	**Smothers Creek**	**13.97**	**353**	P	**Pn**	**15 59 29.4**	**+2.0**
	baz=172						
534A	**Blanco**	**14.73**	**348**	P	**Pn**	**15 59 40.3**	**+2.5**
	baz=166						
533A	**Kerrville**	**14.89**	**346**	P	**Pn**	**15 59 42.5**	**+2.5**
	baz=164						
438A	**Sam Houston St**	**15.12**	**359**	P	**P**	**15 59 46.3**	**-2.0**
	baz=178						
435B	**Jarell**	**15.32**	**352**	P	**Pn**	**15 59 48.0**	**+2.3**
	baz=170						
434A	**Burnet**	**15.46**	**350**	P	**Pn**	**15 59 49.4**	**+1.9**
	baz=168						
JCT	**Junction City**	**15.47**	**344**	P	**Pn**	**15 59 50.1**	**+2.5**
	baz=162						
JCT	**Junction City**	**15.47**	**344**	*e*Pn	**Pn**	**15 59 49.6**	**+2.0**
	8.9nm,0.6s						
433A	**Art**	**15.56**	**347**	P	**Pn**	**15 59 51.2**	**+2.3**
	baz=165,SNR=11						
338A	**Crockett**	**15.72**	**359**	P	**P**	**15 59 53.6**	**-1.3**
	baz=179						
335A	**Moody**	**15.79**	**353**	P	**P**	**15 59 54.7**	**-1.0**
	baz=171						
LTX	**Lajitas**	**15.83**	**331**	*e*Pn	**P**	**15 59 55.5**	**-0.8**
TXAR	**Lajitas Array**	**15.83**	**331**	Pn	**P**	**15 59 55.6**	**-0.8**
	0.1nm,0.3s,baz=152,slow=14,SNR=17						
TXAR					LR	LR	16 06 28.7
	comp=Z,44nm,21.4s,baz=0.0,slow=39						
TX31	**Lajitas Ar. Si**	**15.83**	**331**	*e*Pn	**P**	**15 59 55.0**	**-1.3**
334A	**Lometa**	**15.96**	**350**	P	**Pn**	**15 59 55.4**	**+1.4**
	baz=168						
333A	**Richland Sprin**	**16.09**	**348**	P	**P**	**15 59 59.3**	**+0.2**
	baz=166,SNR=5.2						
NATX	**Nacogdoches**	**16.12**	**1**	P	**P**	**15 59 58.7**	**-0.7**
	baz=181						
WHTX	**Lake Whitney,**	**16.49**	**353**	P	**P**	**16 00 04.9**	**+1.4**
	baz=171						
WHTX	**Lake Whitney,**	**16.49**	**353**	*e*Pn	**P**	**16 00 04.2**	**+0.7**
	102nm,1.9s						
234A	**Clairette**	**16.60**	**351**	P	**P**	**16 00 05.1**	**+0.4**
	baz=169,SNR=5.2						
233A	**Rising Star**	**16.75**	**349**	P	**P**	**16 00 06.6**	**+0.2**
	baz=167						
ABTX	**Abilene, Hawle**	**17.48**	**347**	P	**Pn**	**16 00 13.6**	**+0.2**
	baz=165						
ABTX	**Abilene, Hawle**	**17.48**	**347**	*e*Pn	**P**	**16 00 14.8**	**+0.3**
	21nm,1.2s						
DWPF	**Disney Wildern**	**17.75**	**43**	*e*Pn	**P**	**16 00 18.5**	**+1.1**
	14nm,0.4s						
WLAR	**White Oak Lake**	**18.12**	**5**	*e*Pn	**P**	**16 00 21.8**	**+0.2**
	14nm,0.9s						
MNTX	**Cornudas Mount**	**18.61**	**331**	P	**Pn**	**16 00 28.6**	**+1.4**
	baz=147						
MNTX	**Cornudas Mount**	**18.61**	**331**	*e*P	**Pn**	**16 00 28.5**	**+1.2**
	3.6nm,0.9s						
X35A	**Drake**	**18.83**	**355**	P	**Pn**	**16 00 30.1**	**+0.2**
	baz=174						
X39A	**Fountain Ranch**	**18.88**	**2**	P	**Pn**	**16 00 33.5**	**+3.1**
	baz=182						
X37A	**Clayton**	**18.94**	**359**	P	**Pn**	**16 00 33.1**	**+1.9**
	baz=179						
MIAR	**Mount Ida**	**18.94**	**4**	P	**Pn**	**16 00 32.5**	**+1.3**
	baz=184						
MIAR	**Mount Ida**	**18.94**	**4**	*e*P	**Pn**	**16 00 34.0**	**+2.9**
	5.3nm,0.8s						
TIGA	**Tifton**	**18.95**	**32**	*e*P	**Pn**	**16 00 35.8**	**+4.4**
	26nm,0.3s						
X38A	**Whitesboro**	**19.02**	**1**	P	**Pn**	**16 00 32.6**	**+0.5**
	baz=180						
X34A	**Smith Ranch, M**	**19.11**	**353**	P	**Pn**	**16 00 34.2**	**+0.9**
	baz=171						
WMOK	**Wichita Mounta**	**19.38**	**351**	P	**Pn**	**16 00 37.3**	**+0.8**
	baz=169						
WMOK	**Wichita Mounta**	**19.38**	**351**	*e*P	**Pn**	**16 00 37.5**	**+1.0**
	5.2nm,0.9s						
Y47A	**UCPARC, Winfie**	**19.38**	**18**	P	**Pn**	**16 00 37.1**	**+0.6**
	baz=201						
W38A	**Poteau**	**19.43**	**1**	P	**Pn**	**16 00 37.8**	**+0.8**
	baz=181						
W37B	**Quinton**	**19.49**	**359**	P	**Pn**	**16 00 38.3**	**+0.5**
	baz=178						
W36A	**Wetumka**	**19.52**	**357**	P	**P**	**16 00 37.7**	**+0.8**
	baz=176						
W35A	**Tecumseh**	**19.57**	**356**	P	**P**	**16 00 38.1**	**+0.6**
	baz=174						
W39A	**Magazine**	**19.58**	**3**	P	**Pn**	**16 00 38.7**	**-0.1**
	baz=183						
MSTX	**Muleshoe**	**19.60**	**341**	P	**P**	**16 00 37.9**	**0.0**
	baz=157						
MSTX	**Muleshoe**	**19.60**	**341**	*e*P	**Pn**	**16 00 40.1**	**+0.9**
	16nm,1.1s						
W41B	**Gary Mavity, V**	**19.68**	**7**	P	**Pn**	**16 00 41.3**	**+1.2**
	baz=188						
W34A	**Bridge Creek,**	**19.73**	**353**	P	**Pn**	**16 00 41.3**	**+0.6**
	baz=172						
W34A	**Bridge Creek,**	**19.73**	**353**	*e*P	**Pn**	**16 00 42.7**	**+2.0**
	55nm,1.5s						
W33A	**Caddo, Fort Co**	**19.74**	**352**	P	**P**	**16 00 40.3**	**+1.0**
	baz=170						
W32A	**Sentinel**	**19.83**	**350**	P	**P**	**16 00 40.7**	**+0.3**
	baz=168						
AMTX	**Amarillo**	**20.13**	**344**	P	**P**	**16 00 43.1**	**-0.6**
	baz=161						
AMTX	**Amarillo**	**20.13**	**344**	*e*P	**P**	**16 00 44.9**	**+1.2**
	18nm,1.2s						
V36A	**Jenks**	**20.15**	**358**	P	**P**	**16 00 43.1**	**-0.7**
	baz=177						
V35A	**Meyer Ranch, C**	**20.17**	**356**	P	**P**	**16 00 42.6**	**-1.5**
	baz=175						
V38A	**Canehill**	**20.22**	**2**	P	**P**	**16 00 42.0**	**-2.5**
	baz=181						
V39A	**Pettigrew**	**20.23**	**3**	P	**P**	**16 00 41.5**	**-3.2**
	baz=184						
V37A	**Hulbert**	**20.23**	**360**	P	**P**	**16 00 39.8**	**-4.8**
	baz=179						
V40A	**Witts Springs**	**20.25**	**5**	P	**P**	**16 00 41.7**	**-3.2**
	baz=186						
TUL1	**Leonard**	**20.27**	**358**	*e*P	**P**	**16 00 43.9**	**-1.2**
	9.6nm,0.9s						
V34A	**Guthrie**	**20.30**	**354**	P	**P**	**16 00 44.4**	**-1.0**
	baz=173						
V34A	**Guthrie**	**20.30**	**354**	*e*P	**P**	**16 00 45.7**	**+0.2**
	14nm,0.7s						
V33A	**Lossen Ranch,**	**20.37**	**352**	P	**P**	**16 00 43.5**	**-2.7**
	baz=171						
V32A	**Arapaho**	**20.38**	**351**	P	**P**	**16 00 43.9**	**-2.4**
	baz=169						
319A	**Douglas**	**20.40**	**323**	*e*P	Pn	16 00 50.4	+1.6
	30nm,1.6s						
V42A	**Cord**	**20.42**	**9**	P	**P**	**16 00 43.1**	**-3.5**
	baz=190						
121A	**Cookes Peak, D**	**20.47**	**328**	P	**P**	**16 00 45.2**	**-2.2**
	baz=142						
U39A	**Green Forest**	**20.78**	**4**	P	**P**	**16 00 46.5**	**-4.1**
	baz=184						
U38A	**Gravette**	**20.79**	**2**	P	**P**	**16 00 49.2**	**-1.6**
	baz=181						
U40A	**Yellville**	**20.80**	**5**	P	**P**	**16 00 49.1**	**-1.7**
	baz=186						
U34A	**Anderson Ranch**	**20.90**	**354**	P	**P**	**16 00 51.2**	**-0.7**
	baz=173						
U34A	**Anderson Ranch**	**20.90**	**354**	*e*P	**P**	**16 00 53.4**	**+1.5**
	20nm,1.1s						
U33A	**Lingo Farm, Me**	**20.96**	**353**	P	**P**	**16 00 51.5**	**-1.0**
	baz=171						
U42A	**Revenden**	**20.98**	**9**	P	**P**	**16 00 53.1**	**+0.4**
	baz=190						
U32A	**Winter Ranch,**	**21.02**	**351**	P	**P**	**16 00 52.4**	**-0.9**
	baz=169						
BNM	**Barren Site**	**21.24**	**333**	*e*P	**P**	**16 00 58.3**	**+2.4**
T35A	**Sooner Cattle**	**21.30**	**357**	P	**P**	**16 00 52.9**	**-3.3**
	baz=176						
LPM	**Los Pinos Moun**	**21.38**	**333**	*e*P	**P**	**16 01 00.3**	**+3.0**
T38A	**Diamond**	**21.39**	**2**	P	**P**	**16 00 53.8**	**-3.4**
	baz=182						
T36A	**Boggs Farm, Ca**	**21.42**	**358**	P	**P**	**16 00 58.4**	**+0.9**
	baz=178						
T39A	**Clever**	**21.42**	**4**	P	**P**	**16 00 58.9**	**+1.4**
	baz=184						
T34A	**McClaskey Farm**	**21.45**	**355**	P	**P**	**16 00 58.2**	**+0.3**
	baz=174						
T37A	**Cheneyville 18**	**21.47**	**0**	P	**P**	**16 00 59.5**	**+1.5**
	baz=180						
WVT	**Waverly**	**21.47**	**16**	*e*P	**P**	**16 01 03.5**	**+5.4**
	5.2nm,1.2s						
PBMO	**Poplar Bluff**	**21.52**	**10**	*e*P	**P**	**16 01 00.6**	**+2.0**
	4.1nm,0.8s						
T41A	**Mountain View**	**21.59**	**7**	P	**P**	**16 00 59.7**	**+0.4**
	baz=188						
T33A	**Patterson Ranc**	**21.61**	**353**	P	**P**	**16 00 59.0**	**-0.5**
	baz=171						
T40A	**Mansfield**	**21.61**	**6**	P	**P**	**16 00 59.6**	**0.0**
	baz=186						
LAZ	**Ladron**	**21.68**	**332**	*e*P	**P**	**16 01 03.7**	**+3.1**
T32A	**Huddler Ranch,**	**21.80**	**352**	P	**P**	**16 01 02.9**	**+1.3**
	baz=170						
ANMO	**Albuquerque**	**21.84**	**334**	P	**P**	**16 01 01.4**	**-0.9**
	baz=149						
ANMO	**Albuquerque**	**21.84**	**334**	*e*P	**P**	**16 01 04.1**	**+1.8**
	2.5nm,1.0s						
TUC	**Tucson**	**21.96**	**322**	P	**P**	**16 01 04.0**	**+0.6**
	baz=136						
TUC	**Tucson**	**21.96**	**322**	*e*P	**P**	**16 01 06.8**	**+3.3**
	8.2nm,1.1s						
S36A	**Lake Cedric, C**	**22.07**	**359**	P	**P**	**16 01 04.5**	**0.0**
	baz=178						
S37A	**Fort Scott**	**22.10**	**0**	P	**P**	**16 01 04.8**	**0.0**
	baz=180						
S34A	**Willow Spring**	**22.12**	**356**	P	**P**	**16 01 04.7**	**-0.3**
	baz=174						
R36A	**Gordon, Harris**	**22.67**	**359**	P	**P**	**16 01 10.3**	**-0.6**
	baz=178						
R34A	**Isabella, Hill**	**22.73**	**356**	P	**P**	**16 01 10.3**	**-1.2**
	baz=174						
214A	**Organ Pipe Nat**	**22.97**	**318**	P	**P**	**16 01 14.7**	**+0.6**
	baz=131						
T25A	**Trinidad**	**23.03**	**341**	P	**P**	**16 01 15.8**	**+0.8**
	baz=156,SNR=9.2						
T25A	**Trinidad**	**23.03**	**341**	*e*P	**P**	**16 01 17.5**	**+2.5**
	13nm,0.9s						
KMSC	**Kings Mountain**	**23.05**	**30**	P	**P**	**16 01 13.8**	**-1.1**
	baz=215						
X18A	**Snowflake**	**23.15**	**327**	*e*P	**P**	**16 01 19.2**	**+3.0**
	6.5nm,1.2s						
Q38A	**Cooks Store, C**	**23.34**	**3**	P	**P**	**16 01 19.2**	**+1.4**
	baz=183						
Q33A	**Connelly Farm,**	**23.47**	**355**	P	**P**	**16 01 19.3**	**+0.2**
	baz=173						
KSU1	**Kansas State U**	**23.48**	**357**	*e*P	**P**	**16 01 21.6**	**+2.4**
	11nm,0.4s						
CBKS	**Cedar Bluff**	**23.52**	**351**	P	**P**	**16 01 20.0**	**+0.3**
	baz=168						
CBKS	**Cedar Bluff**	**23.52**	**351**	*e*P	**P**	**16 01 20.7**	**+1.0**
	9.9nm,0.9s						
Q32A	**Meitler Ranch,**	**23.53**	**353**	P	**P**	**16 01 20.5**	**+0.7**
	baz=171						
RUSC	**La Rusia**	**23.61**	**112**	*e*P	**P**	**16 01 21.9**	**+0.6**
RUSC				*e*pP	**pP**	**16 01 22.5**	**-0.7**
X16A	**Lo Mia Camp, P**	**23.87**	**325**	*e*P	**P**	**16 01 26.6**	**+3.2**
	6.1nm,1.0s						
P35A	**Duane Minner,**	**23.88**	**358**	P	**P**	**16 01 22.7**	**-0.5**
	baz=177						
P34A	**Walnut Farm, R**	**23.94**	**357**	P	**P**	**16 01 22.8**	**-0.9**
	baz=176						
SDCO	**Great Sand Dun**	**23.94**	**339**	P	**P**	**16 01 24.5**	**+0.4**
	baz=154,SNR=5.6						
SDCO	**Great Sand Dun**	**23.94**	**339**	*e*P	**P**	**16 01 26.2**	**+2.1**
	3.4nm,1.0s						
113A	**Mohawk Valley,**	**24.11**	**319**	*e*P	**P**	**16 01 27.3**	**+1.9**
	4.1nm,0.8s						
P32A	**Huiting Farm,**	**24.16**	**353**	P	**P**	**16 01 25.3**	**-0.5**
	baz=171						
KSCO	**Kaye Shedlock'**	**24.28**	**346**	*e*P	**P**	**16 01 28.4**	**+1.4**
	8.6nm,0.6s						
S22A	**4UR Ranch, Cre**	**24.42**	**337**	P	**P**	**16 01 29.2**	**+0.6**
	baz=151						
S22A	**4UR Ranch, Cre**	**24.42**	**337**	*e*P	**P**	**16 01 29.8**	**+1.3**
	6.0nm,1.4s						
Y14A	**Wickenburg**	**24.43**	**322**	*e*P	**P**	**16 01 28.8**	**+0.4**
	26nm,1.3s						
O33A	**Hebron**	**24.52**	**355**	P	**P**	**16 01 29.3**	**+0.3**
	baz=174						
MVCO	**Mesa Verde**	**24.63**	**334**	P	**P**	**16 01 31.0**	**+0.6**
	baz=147						
MVCO	**Mesa Verde**	**24.63**	**334**	*e*P	**P**	**16 01 33.2**	**+2.8**
	11nm,1.4s						
WUAZ	**Wupatki**	**24.66**	**327**	P	**P**	**16 01 31.9**	**+1.3**
	baz=139,SNR=6.6						
WUAZ	**Wupatki**	**24.66**	**327**	*e*P	**P**	**16 01 33.4**	**+2.9**
	8.9nm,0.9s						
SDV	**Santo Domingo**	**24.76**	**103**	P	**P**	**16 01 32.4**	**+0.7**
	2.5nm,0.5s,baz=311,slow=9.6,SNR=3.7						
SDV					LR	LR	16 12 27.7
	comp=Z,59nm,19.4s,baz=235,slow=40						
PDMCI	**Parker Dam,Lak**	**25.36**	**321**	P	**P**	**16 01 32.8**	**-3.9**
	baz=132						
PV01	**Paradox Valley**	**25.45**	**335**	*e*P	**P**	**16 01 40.1**	**+2.4**
PV05	**Paradox Valley**	**25.62**	**334**	*e*P	**P**	**16 01 41.3**	**+2.0**
BC3	**Big Chuckawall**	**25.76

JTJ				*e*S	**Sn**	**16 07 10.8**	**-0.7**
JIRB	**Irabujima**	**5.62**	**35**	P	**Pn**	**16 06 19.5**	**+1.5**
JIRB				*e*S	**Sn**	**16 07 20.6**	**-0.7**
JKE	**Kume jima 2**	**7.68**	**37**	P	**Pn**	**16 06 47.5**	**+1.0**

*CSEM **21** 16:12:24.8±0.2,37°.88N×30°.14E, h2km, MD2.8, Error ellipse: s-maj=5.3km s-min=3.9km az=54.0*
*ISK **21** 16:12:24.4,37°.87N×30°.13E, h7km, MD2.8*
*DDA **21** 16:12:25.6,37°.77N×30°.21E, h7km, Ml2.6*
ISC 21 16:12:24.6±1.2,37°.86N±0°.03×30°.13E±0°.03, h18km±7km, n27, σ0°.77/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BAGO	**Egridir - ISPA**	**0.54**	**76**	*i* P	**Pg**	**16 12 34.9**	**-0.6**
BAGO				*i* S	**Sb**	**16 12 44.2**	**+1.1**
BCK	**Bucak**	**0.54**	**137**	*e*PG	**Pb**	**16 12 36.0**	**+0.4**
BCK				*e*SG	**Sb**	**16 12 43.4**	**+0.3**
BCK	**Bucak**	**0.54**	**137**	*e*Pg	**Pb**	**16 12 36.0**	**+0.4**
BCK				*e*Sg	**Sb**	**16 12 43.4**	**+0.3**
KHL	**Karahalli**	**0.67**	**314**	*e*PG	**Pg**	**16 12 37.6**	**-0.2**
KHL	**Karahalli**	**0.67**	**314**	*e*Pg	**Pg**	**16 12 37.6**	**-0.2**
GOLH	**Golhisar**	**0.77**	**216**	*i* P	**Pb**	**16 12 39.0**	**-0.5**
GOLH				*i* S	**Sn**	**16 12 51.8**	**0.0**
GOLH	**Golhisar**	**0.77**	**216**	P	**Pb**	**16 12 39.0**	**-0.5**
GOLH				S	**Sn**	**16 12 51.8**	**0.0**
SHUT	**Suhut-Afyon**	**0.77**	**26**	*e*PG	**Pb**	**16 12 39.5**	**-0.1**
SHUT	**Suhut-Afyon**	**0.77**	**26**	*e*Pg	**Pb**	**16 12 39.5**	**-0.1**
SUTC	**Sutluce-Ispart**	**0.79**	**119**	*e*PG	**Pb**	**16 12 39.5**	**-0.4**
SUTC	**Sutluce-Ispart**	**0.79**	**119**	*e*Pg	**Pb**	**16 12 39.5**	**-0.4**
KORT	**Korkueli**	**0.87**	**168**	*i* P	**Pn**	**16 12 41.8**	**-0.4**
KORT				*i* S	**Sn**	**16 12 55.7**	**+1.2**
KORT	**Korkueli**	**0.87**	**168**	P	**Pn**	**16 12 41.8**	**-0.4**
KORT				S	**Sn**	**16 12 55.7**	**+1.2**
KULA	**Kula-Manisa**	**1.33**	**300**	*e*PN	**Pb**	**16 12 49.4**	**+0.3**
KULA	**Kula-Manisa**	**1.33**	**300**	*e*Pn	**Pb**	**16 12 49.4**	**+0.3**
MANT	**Manisa**	**1.39**	**298**	*i* P	**Pn**	**16 12 47.4**	**-1.9**
MANT				*i* S	**Sg**	**16 13 10.8**	**+1.2**
MANT	**Manisa**	**1.39**	**298**	P	**Pn**	**16 12 47.4**	**-1.9**
MANT				S	**Sg**	**16 13 10.8**	**+1.2**
DEMI	**Demirci**	**1.62**	**317**	*i* P	**Pb**	**16 12 55.0**	**+0.9**
DEMI				*i* S	**Sg**	**16 13 17.8**	**+0.8**
DEMI	**Demirci**	**1.62**	**317**	P	**Pb**	**16 12 55.0**	**+0.9**
DEMI				S	**Sg**	**16 13 17.8**	**+0.8**
TVSB	**Tavsanli**	**1.67**	**342**	*e*PN	**Pb**	**16 12 54.9**	**0.0**
TVSB	**Tavsanli**	**1.67**	**342**	*e*Pn	**Pb**	**16 12 54.9**	**0.0**
KIZT	**Kizilcal**	**1.71**	**53**	*e*PN	**Pb**	**16 12 55.5**	**-0.2**
KIZT	**Kizilcal**	**1.71**	**53**	*e*Pn	**Pb**	**16 12 55.5**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.77**	**274**	*e*PN	**Pb**	**16 12 56.5**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.77**	**274**	*e*Pn	**Pb**	**16 12 56.5**	**-0.1**
LADK	**Ladik-KONYA**	**1.80**	**78**	*e*PN	**Pb**	**16 12 57.0**	**-0.1**
LADK	**Ladik-KONYA**	**1.80**	**78**	*e*Pn	**Pb**	**16 12 57.0**	**-0.1**

*IDC **21** 16:25:22.6±1.0,6°.25S×104°.29E, h0km, mb4.1/15, mb1 4.1/15,mb1mx3.9/49,mbtmp4.1/15,MS3.1/1, Ms1 3.3/1,ms1mx2.6/37, Error ellipse: s-maj=40.8km s-min=13.7km az=50.0*
*ISCJB **21** 16:25:25.9±0.4,6°.50S±0°.05×104°.11E±0°.04, h48km, mb4.4/26,MS3.0/1, Error ellipse: s-maj=7.9km s-min=4.4km az=36.1*
*NEIC **21** 16:25:26.8±1.1,6°.48S×104°.10E, h37km±9km, mb4.6/16, Error ellipse: s-maj=16.9km s-min=6.6km az=224.0*
*DJA **21** 16:25:27.3±0.5,6°.5S×10°.4E, h10km, M4.4/12, mb4.8/1, MLv4.2/12*
ISC 21 16:25:27.2±0.5,6°.60S±0°.05×104°.14E±0°.06, h48km, n78, σ1°.92/78, mb4.3/26, 1C, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**1.13**	**18**	P	**Pn**	**16 25 45.0**	**-1.7**
KASI				S	**Sn**	**16 25 56.8**	**-4.2**
CGJI	**Cibinong**	**1.54**	**91**	S	**Sn**	**16 26 09.4**	**-1.8**
LWLI	**Liwa**	**1.57**	**357**	P	**Pn**	**16 25 52.7**	**-0.2**
BLSI	**Bandar Lampung**	**1.65**	**42**	P	**Pn**	**16 25 52.6**	**-1.2**
KLI	**Kotabumi**	**1.87**	**23**	P	**Pn**	**16 25 56.8**	**0.0**
KLSI		**1.99**	**17**	P	**Pn**	**16 25 58.3**	**-0.1**
SBJI	**Serang**	**2.04**	**77**	P	**Pn**	**16 25 59.1**	**0.0**
SKJI	**Sukabumi**	**2.44**	**100**	P	**Pn**	**16 26 05.5**	**+1.0**
MNAI	**Manna**	**2.52**	**332**	P	**Pn**	**16 26 06.9**	**+1.2**
MNAI	**Manna**	**2.52**	**332**	*e*Pn	**Pn**	**16 26 07.1**	**+1.4**
DBJI	**Dramaga**	**2.59**	**89**	P	**Pn**	**16 26 08.0**	**+1.2**
DBJI				S	**Sn**	**16 26 39.9**	**+2.8**
LHSI	**Lahat**	**2.82**	**347**	P	**Pn**	**16 26 12.0**	**+2.1**
CNJI	**Cibinong**	**3.05**	**104**	P	**Pn**	**16 26 13.3**	**+0.3**
KSI	**Kapahiang**	**3.31**	**332**	P	**Pn**	**16 26 19.2**	**+2.6**
LEM	**Lembang**	**3.46**	**94**	P	Pn	16 26 27.3	+8.5
CISI	**Cisompet, Garu**	**3.77**	**105**	P	**Pn**	**16 26 23.5**	**+0.5**
CISI	**Cisompet, Garu**	**3.77**	**105**	*e*Pn	**Pn**	**16 26 23.2**	**+0.2**
CISI				*e*Sn	**Sn**	**16 27 02.4**	**-3.7**
XMIS	**Christmas Isla**	**4.14**	**159**	*e*Pn	**Pn**	**16 26 25.7**	**-2.3**
XMIS				*e*Sn	**Sn**	**16 27 10.0**	**-5.0**
PPSI	**Pangkal Pinang**	**4.84**	**24**	P	**Pn**	**16 26 38.2**	**+0.6**
PPSI	**Pulau Pagai**	**5.61**	**313**	P	**Pn**	**16 26 49.6**	**+1.5**
UGM	**Wanagama**	**6.47**	**102**	*e*Pn	**Pn**	**16 27 01.7**	**+1.7**
JAGI	**Jajag, Banyuwa**	**10.10**	**101**	*e*Pn	**Pn**	**16 27 50.3**	**+0.5**
JAGI				*e*Sn	**Sn**	**16 29 33.6**	**-8.1**
GSI	**Gunungsitoli**	**10.23**	**320**	*e*Pn	**Pn**	**16 27 48.8**	**-2.6**
MMRI	**Maumere** 41nm,1.1s	**18.05**	**98**	*e*Pn	**Pn**	**16 29 35.2**	**+0.5**
LUWI	**Luwuk** 161nm,1.9s	**19.39**	**74**	*e*P	**Pn**	**16 29 52.3**	**+1.4**
SOEI	**Soe** 39nm,0.9s	**20.17**	**100**	*e*P	**P**	**16 29 58.2**	**+0.2**
FITZ	**Fitzroy Crossi** 1.7nm,0.8s,baz=252,slow=4.9,SNR=5.0	**23.88**	**121**	P	**P**	**16 30 38.9**	**+2.3**
FITZ	**Fitzroy Crossi** 17nm,1.7s	**23.88**	**121**	*e*P	**P**	**16 30 39.3**	**+2.7**
CM01	**Chiang Mai Arr**	**25.38**	**348**	*e*P	**P**	**16 30 48.0**	**-2.2**
CM31	**Chiang Mai Arr**	**25.42**	**348**	*e*P	**P**	**16 30 49.1**	**-1.4**
CMAR	**Chiang Mai Arr** 1.1nm,0.6s,baz=181,slow=9.0,SNR=8.2	**25.42**	**348**	P	**P**	**16 30 48.5**	**-2.1**
CMAR	comp=Z,38nm,18.0s,baz=190,slow=36			LR	LR	16 40 32.0	
H01W3	**Cape Leeuwin H** baz=342	**29.62**	**163**	T	T	17 02 56.3	
H01W2	**Cape Leeuwin H** baz=342	**29.63**	**163**	T	T	17 03 01.7	
H01W1	**Cape Leeuwin H** baz=342	**29.63**	**163**	T	T	17 02 59.1	
H08S2	**Diego Garcia H** baz=89,slow=76,SNR=12	**31.41**	**266**	T	T	17 05 22.7	
H08S3	**Diego Garcia H** baz=89,slow=76,SNR=19	**31.42**	**266**	T	T	17 05 24.1	
H08S1	**Diego Garcia H** baz=89,slow=76,SNR=16	**31.43**	**266**	T	T	17 05 22.7	
WRA	**Warramunga Arr** 1.1nm,0.7s,baz=303,slow=9.0,SNR=16	**32.17**	**117**	P	**P**	**16 31 52.1**	**+1.3**
WR1	**Warramunga Arr** 8.2nm,1.3s	**32.17**	**117**	*e*P	**P**	**16 31 52.1**	**+1.3**
WRAB	**Tennant Creek** 8.7nm,0.6s	**32.18**	**117**	*e*P	**P**	**16 31 53.3**	**+2.5**
WB2	**Warramunga Arr**	**32.18**	**117**	*e*P	**P**	**16 31 51.7**	**+0.8**
ASAR	**Alice Springs** 0.4nm,0.7s,baz=301,slow=7.8,SNR=15	**33.25**	**124**	P	**P**	**16 32 02.6**	**+2.4**
AS31	**Alice Springs** 1.2nm,1.3s	**33.25**	**124**	*e*P	**P**	**16 32 02.2**	**+2.0**
ENH	**Enshi** 7.6nm,1.1s	**37.02**	**8**	*e*P	**P**	**16 32 31.4**	**-1.1**
STKA	**Stephens Creek** 3.6nm,0.5s,baz=310,slow=8.3,SNR=24	**43.03**	**131**	P	**P**	**16 33 25.1**	**+2.7**
STKA	**Stephens Creek** 10nm,1.9s	**43.03**	**131**	*e*P	**P**	**16 33 25.5**	**+3.1**
KS15	**Wonju Array Si**	**49.11**	**25**	*e*P	**P**	**16 34 09.8**	**-0.2**
KSAR	**Wonju Array Be**	**49.11**	**25**	P	**P**	**16 34 09.6**	**-0.4**
KSRS	**Korea Array** 1.7nm,0.8s,baz=224,slow=7.5,SNR=6.4	**49.13**	**25**	P	**P**	**16 34 09.6**	**-0.6**
CBIJ	**Chichi jima** 566nm,1.2s	**49.78**	**46**	*e*P	**P**	**16 34 14.5**	**-0.8**
SONA0	**Songino Array** 4.0nm,1.1s	**54.24**	**2**	*e*P	**P**	**16 34 48.5**	**+0.2**
SONA0				*e*PcP	**PcP**	**16 35 53.2**	**+1.0**
SONM	**Songino Array** 1.6nm,0.5s,baz=180,slow=8.9,SNR=12	**54.24**	**2**	P	**P**	**16 34 48.5**	**+0.2**
SONM	0.9nm,0.4s,baz=169,slow=4.1,SNR=4.8			PcP	**PcP**	**16 35 53.2**	**+1.0**
SONA1	**Songino Array**	**54.25**	**2**	*e*P	**P**	**16 34 48.3**	**-0.1**
USRK	**Ussuriysk Ar.** 4.5nm,0.7s,baz=197,slow=6.4,SNR=7.7	**56.47**	**24**	P	**P**	**16 35 03.1**	**-1.1**
MK01	**Makanchi Array**	**56.57**	**342**	*e*P	**P**	**16 35 04.6**	**-0.4**
MK31	**Makanchi Array**	**56.59**	**342**	*e*P	**P**	**16 35 04.6**	**-0.6**
MK32	**Makanchi Array**	**56.59**	**342**	*e*P	**P**	**16 35 05.0**	**-0.1**
MKAR	**Makanchi Array** 3.4nm,0.6s,baz=146,slow=8.0,SNR=48	**56.59**	**342**	P	**P**	**16 35 05.0**	**-0.1**
MKAR	**Makanchi Array** 30nm,0.6s	**56.59**	**342**	*e*P	**P**	**16 35 04.7**	**-0.4**
MAKZ	**Makanchi** 10nm,1.8s	**56.70**	**342**	*e*P	**P**	**16 35 04.3**	**-1.6**
KURBB	**Kurchatov Arra** 1.6nm,0.7s,baz=158,slow=6.1,SNR=20	**61.14**	**342**	P	**P**	**16 35 36.6**	**+0.1**
GEYT	**Alibeck** 1.1nm,0.6s,baz=115,slow=16,SNR=3.4	**61.60**	**320**	P	**P**	**16 35 41.6**	**+1.6**
ZAA0	**Zalesovo Array**	**62.48**	**347**	*e*P	**P**	**16 35 44.3**	**-1.2**
ZALV	**Zalesovo Beam** 3.9nm,0.6s,baz=152,slow=4.7,SNR=21	**62.48**	**347**	P	**P**	**16 35 45.0**	**-0.5**
ZAA1	**Zalesovo Array**	**62.48**	**347**	*e*P	**P**	**16 35 45.0**	**-0.5**
VOSK	**Vostochnaya** 2.3nm,1.0s	**65.47**	**339**	*e*P	**P**	**16 36 05.3**	**+0.1**
ABKAR	**Akbulak array** 25nm,0.6s	**67.64**	**330**	*e*P	**P**	**16 36 19.4**	**+0.2**
YAK	**Yakutsk** 5.5nm,0.7s	**71.22**	**12**	*e*P	**P**	**16 36 39.5**	**-1.5**
SYO	**Syowa Base**	**74.91**	**200**	*i*eX	**P**	**16 37 01.2**	**-1.5**
BR101	**Keskin Array S**	**79.45**	**312**	*e*P	**P**	**16 37 30.6**	**+1.6**
BR131	**Keskin Array S**	**79.45**	**312**	*e*P	**P**	**16 37 30.6**	**+1.6**
BRTR	**Keskin Array B** 0.7nm,0.7s,baz=138,slow=6.1,SNR=3.6	**79.45**	**312**	P	**P**	**16 37 30.6**	**+1.6**
SMY	**Shemya** 31nm,0.6s	**83.32**	**35**	*e*P	**P**	**16 37 46.5**	**-2.4**
FIA0	**FINESS Array S**	**90.08**	**332**	*e*P	**P**	**16 38 23.2**	**+1.4**
FINES	**FINESS Array B** 0.8nm,0.8s,baz=112,slow=11,SNR=3.2	**90.08**	**332**	P	**P**	**16 38 23.2**	**+1.4**
ARCES	**ARCESS Array B** 0.8nm,0.6s,baz=110,slow=7.8,SNR=2.7	**92.18**	**340**	P	**P**	**16 38 32.5**	**+1.1**
LTX	**Lajitas**	**145.38**	**46**	*e*PKPbc	**PKPab**	**16 45 02.1**	**+1.2**
TXAR	**Lajitas Array** 1.1nm,0.6s,baz=250,slow=1.6,SNR=7.8	**145.38**	**46**	PKPbc	**PKPab**	**16 45 02.1**	**+1.2**

*ISCJB **21** 16:29:09.6±0.5,30°.18S±0°.04×176°.22W±0°.07, h10km, mb4.9/26,MS3.5/6, Error ellipse: s-maj=9.2km s-min=5.1km az=13.4*
*IDC **21** 16:29:11.5±0.9,30°.10S×176°.37W, h0km, mb4.4/8, mb1 4.5/11,mb1mx4.3/26,mbtmp4.4/11,ML4.1/3,MS3.5/8, Ms1 3.5/8,ms1mx3.3/30, Error ellipse: s-maj=25.2km s-min=19.6km az=142.0*
*NEIC **21** 16:29:12.2±0.5,30°.16S×176°.37W, h10km, mb5.0/26, Error ellipse: s-maj=11.6km s-min=5.5km az=105.0*
ISC 21 16:29:11.8±0.5,30°.09S±0°.06×176°.28W±0°.07, h10km, n79, σ1°.33/73, mb5.1/26, MS3.4/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 230nm,0.3s,baz=90,slow=4.5,SNR=14	**1.65**	**300**	Pn	**Pb**	**16 29 41.1**	**-1.2**
RAO	3µm,0.3s,baz=223,slow=24,SNR=24			Sn	**Sg**	**16 30 02.2**	**-2.7**
URZ	**Urewera** 0.8nm,0.3s,baz=271,slow=4.8,SNR=13	**9.81**	**212**	Pn	**Pn**	**16 31 32.0**	**-0.9**
URZ	5.4nm,0.3s,baz=225,slow=20,SNR=12			Sn	**Sn**	**16 33 23.0**	**-0.2**
OUZ	**Omahuta**	**9.94**	**236**	*e*Pn	Pn	16 31 41.6	+6.8
BKZ	**Black Stump Fm**	**10.83**	**211**	*e*Pn	**Pn**	**16 31 45.8**	**-1.2**
HIZ	**Hauiti**	**11.14**	**219**	*e*Pn	Pn	16 31 56.0	+4.8
BFZ	**Birch Farm**	**12.19**	**208**	*e*Pn	Pn	16 31 59.6	-5.9
MSVF	**Nonsavu**	**13.35**	**336**	*e*Pn	**Pn**	**16 32 22.9**	**+1.4**
THZ	**Tophouse**	**14.56**	**214**	*e*Pn	**Pn**	**16 32 38.2**	**+0.3**
KHZ	**Kahutara**	**14.77**	**211**	*e*Pn	**Pn**	**16 32 38.6**	**-2.2**
LTZ	**Lake Taylor** 128nm,1.9s	**15.64**	**213**	*e*Pn	**Pn**	**16 32 51.9**	**-0.4**
OXZ	**Oxford** 44nm,1.3s	**16.17**	**212**	*e*Pn	**Pn**	**16 32 56.5**	**-2.6**
MQZ	**McQueen's Vall** 56nm,1.4s	**16.19**	**210**	*e*Pn	**Pn**	**16 32 57.2**	**-2.2**
AFI	**Afiamalu** 1.2nm,0.3s,baz=136,slow=12,SNR=3.1	**16.63**	**15**	Pn	**Pn**	**16 33 04.6**	**-0.7**
AFI	**Afiamalu**	**16.63**	**15**	*e*Pn	**Pn**	**16 33 03.7**	**-1.6**
RPZ	**Rata Peaks** 0.6nm,0.3s,baz=62,slow=3.2,SNR=3.6	**16.93**	**213**	Pn	**P**	**16 33 09.6**	**-1.1**
RPZ	comp=Z,179nm,20.1s,baz=11,slow=41			LR	LR	16 40 45.0	
RPZ	**Rata Peaks** 62nm,1.3s	**16.93**	**213**	*e*Pn	**Pn**	**16 33 06.5**	**-2.2**
RAR	**Rarotonga** 1.2nm,0.3s,baz=302,slow=7.5,SNR=4.9	**17.30**	**63**	P	**Pn**	**16 33 10.6**	**-3.0**
RAR	comp=Z,99nm,18.1s,baz=242,slow=38			LR	LR	16 40 15.5	
RAR	**Rarotonga** 249nm,1.8s	**17.30**	**63**	*e*Pn	**Pn**	**16 33 10.5**	**-3.0**
FOZ	**Fox Glacier** 234nm,1.9s	**17.40**	**216**	*e*Pn	**P**	**16 33 15.3**	**-0.6**
DZM	**Mont Dzumac** 0.6nm,0.3s,baz=197,slow=24,SNR=7.0	**17.44**	**293**	P	**P**	**16 33 19.1**	**+2.5**
DZM	**Mont Dzumac** 318nm,23.4s	**17.44**	**293**	*e*LR	LR	16 37 36.2	
DZM	**Mont Dzumac** 42nm,1.4s	**17.44**	**293**	*e*Pn	**Pn**	**16 33 14.6**	**-0.8**
ODZ	**Otahua Downs** 178nm,2.0s	**18.13**	**211**	*e*Pn	**P**	**16 33 23.3**	**-0.7**
WKZ	**Wanaka** 105nm,1.4s	**18.73**	**214**	*e*P	**Pn**	**16 33 31.3**	**+0.3**
MLZ	**Mavora Lakes** 125nm,1.7s	**19.56**	**214**	*e*P	**Pn**	**16 33 41.4**	**+0.3**
WHZ	**Wether Hill Ro** 133nm,1.8s	**20.02**	**214**	*e*P	**P**	**16 33 42.8**	**-2.0**
LHI	**Lord Howe Isla** 455nm,1.8s	**21.22**	**260**	*e*P	**P**	**16 33 57.0**	**-0.8**
TBI	**Tubuai** 116nm,28.8s	**24.85**	**81**	*e*LR	LR	16 40 40.3	
PPT2	**Papeete2** 10nm,24.8s	**27.34**	**69**	*e*LR	LR	16 41 58.7	
PPT	**Papeete** comp=Z,79nm,18.9s,baz=348,slow=34	**27.35**	**69**	LR	LR	16 44 39.6	
HNR	**Honiara** 27nm,0.8s	**30.25**	**308**	*e*P	**P**	**16 35 22.2**	**-0.9**
TARA	**Tarawa** 424nm,1.7s	**32.92**	**340**	*e*P	**P**	**16 35 45.2**	**-1.4**
CTA	**Charters Tower** 3.6nm,0.3s,baz=102,slow=12,SNR=10	**35.22**	**278**	P	**P**	**16 36 07.7**	**+1.2**
CTAO	**Charters Tower**	**35.22**	**278**	*e*P	**P**	**16 36 08.5**	**+2.0**
STKA	**Stephens Creek** 3.3nm,0.6s,baz=94,slow=10,SNR=9.6	**35.99**	**256**	P	**P**	**16 36 14.9**	**+1.9**
STKA	**Stephens Creek** 1.1nm,0.8s	**35.99**	**256**	*e*P	**P**	**16 36 14.6**	**+1.5**
PMG	**Port Moresby** comp=Z,69nm,21.4s,baz=180,slow=31	**39.83**	**293**	LR	LR	16 49 57.2	
AS01	**Alice Springs**	**44.57**	**266**	*e*P	**P**	**16 37 23.7**	**-0.6**
AS31	**Alice Springs** 0.8nm,0.6s	**44.61**	**266**	*e*P	**P**	**16 37 23.9**	**-0.7**
ASAR	**Alice Springs** 1.4nm,0.6s,baz=105,slow=7.7,SNR=27	**44.61**	**266**	P	**P**	**16 37 24.4**	**-0.3**
ASAR	0.8nm,0.8s,baz=140,slow=4.5,SNR=4.3			PcP	**PP**	**16 39 09.0**	**+0.3**
ASAR	comp=Z,158nm,18.9s,baz=112,slow=36			LR	LR	16 55 33.8	
WB2	**Warramunga Arr**	**45.56**	**271**	*e*P	**P**	**16 37 31.2**	**-1.0**
WRAB	**Tennant Creek** 52nm,1.8s	**45.57**	**271**	*e*P	**P**	**16 37 31.1**	**-1.1**
WR1	**Warramunga Arr** 8.2nm,0.8s	**45.57**	**271**	*e*P	**P**	**16 37 31.4**	**-0.9**
WRA	**Warramunga Arr** 7.7nm,0.7s,baz=110,slow=7.6,SNR=50	**45.57**	**271**	P	**P**	**16 37 31.4**	**-0.9**
JOHN	**Johnston Islan** 182nm,1.0s	**47.01**	**9**	*e*P	**P**	**16 37 44.5**	**+1.2**
VNDA	**Vanda** comp=Z,37nm,18.1s,baz=282,slow=34	**48.56**	**186**	LR	LR	16 57 00.4	
MTN	**Manton Dam** 36nm,1.6s	**51.41**	**278**	*e*P	**P**	**16 38 17.6**	**+0.3**
HPAH	**Hawaii Prepara** 216nm,1.5s	**53.63**	**24**	*e*P	**P**	**16 38 33.9**	**+0.2**
FITZ	**Fitzroy Crossi** comp=Z,51nn,19.2s,baz=118,slow=34	**53.85**	**269**	LR	LR	16 59 37.5	
GUMO	**Guam** comp=Z,14nm,21.8s,baz=163,slow=31	**57.33**	**314**	LR	LR	16 58 54.0	
MIDW	**Midway** 105nm,1.0s	**57.99**	**359**	*e*P	**P**	**16 39 03.0**	**-1.6**
QSPA	**South Pole Qui**	**60.02**	**180**	*e*P	P	16 39 23.9	+5.3
MMRI	**Maumere** 70nm,1.3s	**61.08**	**277**	*e*P	**P**	**16 39 26.4**	**0.0**
LUWI	**Luwuk** 40nm,1.1s	**64.54**	**285**	*e*P	**P**	**16 39 49.3**	**-0.1**
KAPI	**Kappang** 30nm,1.4s	**65.02**	**279**	*e*P	**P**	**16 39 51.4**	**-1.2**
MYLDM	**Lahad Datu** 21nm,1.4s	**71.51**	**288**	*e*P	**P**	**16 40 33.3**	**0.0**
SBUM	**Sibu** 3.6nm,1.1s	**75.31**	**282**	*e*P	**P**	**16 40 56.3**	**+0.7**
KSM	**Kuching** 5.1nm,0.9s	**76.43**	**280**	*e*P	**P**	**16 41 01.9**	**-0.2**
MJAR	**Matsushiro Arr** 2.4nm,0.8s,baz=164,slow=5.9,SNR=5.6	**78.85**	**324**	P	**P**	**16 41 15.3**	**+0.2**
KSRS	**Korea Array** 1.7nm,0.9s,baz=139,slow=5.7,SNR=4.6	**85.09**	**319**	P	**P**	**16 41 50.4**	**+2.6**
KS15	**Wonju Array Si**	**85.10**	**319**	*e*P	**P**	**16 41 50.0**	**+2.1**
KSAR	**Wonju Array Be**	**85.10**	**319**	P	**P**	**16 41 50.4**	**+2.5**
PETK	**Petropavlovsk-** 1.3nm,0.6s,baz=125,slow=8.6,SNR=3.0	**85.90**	**345**	P	**P**	**16 41 52.6**	**+1.1**
PEA1	**Petropavlovsk-**	**85.90**	**345**	*e*P	**P**	**16 41 52.6**	**+1.1**
GSI	**Gunungsitoli** 11nm,0.8s	**87.30**	**273**	*e*P	**P**	**16 42 00.2**	**+0.8**
USRK	**Ussuriysk Ar.** 3.3nm,0.8s,baz=104,slow=6.5,SNR=4.9	**87.73**	**326**	P	**P**	**16 42 02.5**	**+1.9**
ENH	**Enshi** 20nm,1.0s	**92.66**	**304**	*e*P	**P**	**16 42 25.4**	**+1.3**
MK32	**Makanchi Array**	**118.71**	**310**	*e*PKPdf	**PKPdf**	**16 47 60.0**	**-0.1**
MKAR	**Makanchi Array** 0.5nm,0.7s,baz=117,slow=0.6,SNR=5.6	**118.71**	**310**	PKP	**PKPdf**	**16 47 60.0**	**-0.1**
FIA0	**FINESS Array S**	**145.35**	**341**	*e*PKPbc	**PKPdf**	**16 48 49.6**	**+0.4**
FINES	**FINESS Array B** 13nm,0.6s,baz=64,slow=4.4,SNR=52	**145.35**	**341**	PKPbc	**PKPdf**	**16 48 49.6**	**+0.4**
OBN	**Obninsk** 22nm,0.4s,baz=50,slow=4.2,SNR=8.1	**145.75**	**326**	PKPbc	**PKPab**	**16 48 51.6**	**+0.7**
OBN	**Obninsk**	**145.75**	**326**	*e*PKPdf	**PKPab**	**16 48 51.2**	**+0.3**
NB2	**NORSAR Subarra** comp=Z,6.1nm,0.8s,baz=15,slow=2.9	**148.65**	**353**	PKP	**PKPbc**	**16 48 59.4**	**+0.8**
NB200	**NORSAR Array S**	**148.65**	**353**	*e*PKPdf	**PKPdf**	**16 48 55.5**	**+0.6**
NB200				*e*PKPbc	**PKiKP**	**16 48 59.7**	**-0.4**
NOA	**NORSAR Array B** comp=Z,5.1nm,0.8s,baz=14,slow=4.4,SNR=4.4	**148.65**	**353**	PKP	**PKPdf**	**16 48 55.5**	**+0.6**
NOA	comp=Z,5.1nm,0.8s,baz=14,slow=4.3,SNR=11			PKPbc	**PKiKP**	**16 48 59.7**	**-0.4**
HFS	**Hagfors** comp=Z,5.1nm,0.7s,baz=146,slow=16,SNR=3.9	**149.22**	**350**	PKP	**PKPdf**	**16 48 56.0**	**+0.3**
HFS	comp=Z,5.9nm,0.8s,baz=146,slow=2.9,SNR=9.2			PKPbc	**PKiKP**	**16 49 00.4**	**-0.7**
AKASG	**Malin Array Be** comp=Z,4.3nm,0.5s,baz=44,slow=2.8,SNR=11	**151.94**	**324**	PKPbc	**PKPbc**	**16 49 08.0**	**+1.3**
AKBB	**Malin Array Si**	**151.94**	**324**	*e*PKPbc	**PKPbc**	**16 49 07.4**	**+0.7**

IDC 21 16:41:30.2±6.7,30°.24S×176°.31W, h36km±43km, mb3.4/2, mb1 3.8/3, mb1mx3.4/30, mbtmp3.8/3, ML3.4/1, Error ellipse: s-maj=55.2km s-min=30.2km az=84.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 65nm,0.3s,baz=338,slow=23,SNR=3.6	**1.71**	**305**	Pn	Pn	16 41 57.2	-0.3
RAO	157nm,0.3s,baz=8.4,slow=22,SNR=5.8			Sn	Sn	16 42 20.5	+2.4
URZ	**Urewera** 0.4nm,0.3s,baz=202,slow=2.5,SNR=3.1	**9.67**	**212**	Pn	Pn	16 43 47.2	+0.4
URZ	1.2nm,0.3s,baz=270,slow=24,SNR=9.4			Sn	Sn	16 45 33.4	-0.7
ASAR	**Alice Springs** 0.4nm,0.7s,baz=105,slow=6.9,SNR=8.2	**44.58**	**266**	P	P	16 49 39.0	+0.1
WRA	**Warramunga Arr** 0.7nm,0.6s,baz=109,slow=7.9,SNR=7.1	**45.56**	**271**	P	P	16 49 46.1	-0.7
FINES	**FINESS Array B** 1.6nm,0.8s,baz=64,slow=4.4,SNR=6.7	**145.48**	**341**	PKPbc	PKPdf	17 01 03.2	-0.4

*PDG **21** 16:44:30.6±0.8,36°.76N×21°.80E, h98km±2km, ML4.4/12, Error ellipse: s-maj=1.3km s-min=1.6km az=0.0*
*ATH **21** 16:44:31.9,36°.78N×21°.81E, h41km±1km, ML4.0/5, Error ellipse: s-maj=2.2km s-min=1.1km az=46.0*
*CSEM **21** 16:44:31.4±0.2,36°.76N×21°.73E, h43km, mb4.5/6, Error ellipse: s-maj=5.4km s-min=2.8km az=37.0*
*IDC **21** 16:44:31.1±0.6,36°.87N×21°.83E, h37km±3km, mb3.8/21, mb1 3.9/27,mb1mx3.8/53,mbtmp4.0/27,ML3.7/6,MS3.1/14, Ms1 3.1/14,ms1mx2.9/44, Error ellipse: s-maj=13.2km s-min=11.0km az=40.0*
*THE **21** 16:44:33.5,36°.77N×21°.92E, h28km, ML4.1/14, Error ellipse: s-maj=1.4km s-min=0.5km az=238.0*
*NEIC **21** 16:44:33.5,36°.77N×21°.92E, h28km, mb4.6/8, ML4.1(THE), After THE.*
NEIC Felt at Kalamata.
ISC 21 16:44:28.8±0.4,36°.70N±0°.03×21°.76E±0°.03, h29km±2km, n439, σ2°.20/539, mb4.0/27, MS3.2/8, 12C-37D, Southern Greece

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

DID	Didima	1.43	55	eSn		Sb		16 45 12.6	0.0
DID	Didima	1.43	55	P		Pb		16 44 55.1	+0.4
ANKY	Antikythira Is	1.50	123	P		Pb		16 44 57.9	+1.9
ANKY				S		Sb		16 45 16.2	+1.6
ANKY	Antikythira Is	1.50	123	P		Pb		16 44 57.9	+1.9
ANKY				S		Sb		16 45 16.2	+1.6
ANKY	Antikythira Is	1.50	123	P		Pb		16 44 58.9	+2.9
ANKY	comp=N,4946µm,0.5s			AML		AML		16 45 31.1	
ANKY	comp=E,5625µm,0.7s			AML		AML		16 45 43.5	
AXS	Araxos	1.52	349	P		Pb		16 44 58.2	+1.9
AXS	Araxos	1.52	349	P		Pb		16 44 58.2	+1.9
AXS	Araxos	1.52	349	P		Pb		16 44 58.8	+2.5
UPR	University Cam	1.58	1	P		Pb		16 44 58.5	+1.2
UPR	University Cam	1.58	1	P		Pb		16 44 57.0	-0.3
UPR	University Cam	1.58	1	P		Pb		16 44 57.0	-0.3
KFL	Anninata	1.60	331	P		Pb		16 44 59.1	+1.4
KFL	Anninata	1.60	331	P		Pb		16 44 59.1	+1.4
KFL	Anninata	1.60	331	P		Pb		16 45 00.1	+2.3
LTK	Loutraki	1.63	36	P		Pb		16 44 58.0	-0.2
LTK	Loutraki	1.63	36	P		Pb		16 44 57.7	-0.6
LTK	Loutraki	1.63	36	P		Pb		16 44 57.7	-0.6
SERG	Sergoula	1.72	8	P		Pb		16 45 00.0	+0.2
SERG	Sergoula	1.72	8	P		Pb		16 45 00.0	+0.2
VLS	Valsamata	1.74	328	P		Pb		16 44 59.3	-0.8
VLS	Valsamata	1.74	328	P		Pb		16 44 59.3	-0.8
VLS	Valsamata	1.74	328	P		Pb		16 44 59.3	-0.8
DSF	Desfina	1.81	19	P		Pb		16 45 00.4	-0.9
DSF	Desfina	1.81	19	P		Pb		16 45 00.3	-1.0
DSF	Desfina	1.81	19	P		Pb		16 45 00.3	-1.0
ANX	Ano Chora	1.89	4	P		Pb		16 45 03.6	+0.9
ANX	Ano Chora	1.89	4	P		Pb		16 45 03.6	+0.9
PVO	Paravola	1.92	355	P		Pb		16 45 03.9	+0.8
PVO	Paravola	1.92	355	P		Pb		16 45 03.9	+0.8
PVO	Paravola	1.92	355	P		Pb		16 45 05.0	+1.8
PDO	Prodromos	1.95	347	P		Pb		16 45 03.5	-0.1
PDO	Prodromos	1.95	347	P		Pb		16 45 03.5	-0.1
PDO	Prodromos	1.95	347	P		Pb		16 45 05.5	+1.9
VLY	Voula,Athens	1.99	54	P		Pn		16 45 02.3	+1.8
VLY				S		Sn		16 45 25.8	+1.4
VLY	Voula,Athens	1.99	54	P		Pn		16 45 02.3	+1.8
VLY				S		Sn		16 45 25.8	+1.4
ATH	Athens Observa	2.01	50	P		Pb		16 45 03.1	-1.5
ATH				S		Sn		16 45 26.1	+1.1
ATH	Athens Observa	2.01	50	P		Pb		16 45 03.1	-1.5
ATH				S		Sn		16 45 26.1	+1.1
ATH	Athens Observa	2.01	50	P		Pb		16 45 03.1	-1.5
ATH				S		Sn		16 45 26.1	+1.1
MHLO	Agia Marina, M	2.12	90	P		Pb		16 45 04.8	-1.8
MHLO				S		Sn		16 45 29.9	+2.1
MHLO	Agia Marina, M	2.12	90	P		Pb		16 45 04.8	-1.8
MHLO				S		Sn		16 45 29.9	+2.1
MHLO	Agia Marina, M	2.12	90	P		Pb		16 45 06.4	-0.2
PTL	Penteli	2.15	51	P		Pn		16 45 04.7	+2.0
PTL				S		Sn		16 45 29.1	+0.6
PTL	Penteli	2.15	51	P		Pn		16 45 04.7	+2.0
PTL				S		Sn		16 45 29.1	+0.6
PTL	Penteli	2.15	51	eSn		Sn		16 45 29.1	+0.6
IMMV	Iera Moni Meta	2.19	124	P		Pb		16 45 07.2	-0.4
IMMV				S		Sb		16 45 32.4	-1.9
IMMV	Iera Moni Meta	2.19	124	P		Pb		16 45 06.9	-0.8
IMMV				S		Sb		16 45 32.4	-1.9
IMMV	Iera Moni Meta	2.19	124	P		Pb		16 45 06.9	-0.8
LKD2	Lefkada island	2.26	338	P		Pb		16 45 08.6	-0.3
LKD2	Lefkada island	2.26	338	P		Pb		16 45 08.6	-0.3
LKD2	Lefkada island	2.26	338	P		Pb		16 45 08.6	-0.3
LKD2	Lefkada island	2.26	338	P		Pb		16 45 08.4	-0.5
AGG	Agios Georgios	2.36	11	P		Pb		16 45 08.4	-2.2
AGG	Agios Georgios	2.36	11	P		Pb		16 45 08.4	-2.2
AGG	Agios Georgios	2.36	11	P		Pb		16 45 08.8	-1.8
VAM	Vamos	2.36	122	P		Pb		16 45 09.1	-1.6
VAM	Vamos	2.36	122	P		Pb		16 45 08.9	-1.8
VAM	Vamos	2.36	122	P		Pb		16 45 09.1	-1.6
NEO	Neokhori	2.84	24	P		Pn		16 45 14.2	+1.9
NEO	Neokhori	2.84	24	P		Pn		16 45 14.2	+1.9
NEO	Neokhori	2.84	24	P		Pn		16 45 14.2	+1.9
XOR	Xorichti	2.89	23	P		Pn		16 45 14.8	+1.9
XOR	Xorichti	2.89	23	P		Pn		16 45 14.8	+1.9
XOR	Xorichti	2.89	23	P		Pn		16 45 14.8	+1.9
THR5	Thira Island,	2.90	95	P		Pn		16 45 15.5	+2.4
THR5	Thira Island,	2.90	95	P		Pn		16 45 15.5	+2.4
IDI	Anoyia	2.91	118	Pn		Pn		16 45 14.7	+1.5
IDI	comp=E,7.2nm,0.3s,baz=303,slow=18,SNR=28			Sn		Sb		16 45 51.8	-3.2
IDI	comp=E,41nm,0.3s,baz=133,slow=23,SNR=9.4			P		Pn		16 45 14.8	+1.6
IDI	Anoyia	2.91	118	ePn		Pn		16 45 15.5	+2.3
IDI				eSn		Sn		16 45 51.5	+4.3
IDI	Anoyia	2.91	118	ePn		Pn		16 45 15.5	+2.3
IDI				eSn		Sn		16 45 51.5	+4.3
IDI	Anoyia	2.91	118	P		Pn		16 45 14.8	+1.6
CMBO	Columbo, Santo	2.94	93	P		Pn		16 45 16.3	+2.7
CMBO				S		Sn		16 45 49.8	+1.8
CMBO	Columbo, Santo	2.94	93	P		Pn		16 45 16.3	+2.7
CMBO				S		Sn		16 45 49.8	+1.8
THR3	Thira Island,	2.95	95	P		Pn		16 45 16.5	+2.8
THR3	Thira Island,	2.95	95	P		Pn		16 45 16.5	+2.8
THR6	Thira Island,	2.95	96	P		Pn		16 45 16.6	+2.9
THR6	Thira Island,	2.95	96	P		Pn		16 45 16.6	+2.9
THR6	Thira Island,	2.95	96	ePn		Pn		16 45 16.6	+2.9
THR2	Thira island,	2.97	94	P		Pn		16 45 17.0	+3.0
THR2	Thira island,	2.97	94	P		Pn		16 45 17.0	+3.0
AOS	Alonnisos	2.98	34	P		Pn		16 45 15.6	+1.5
AOS	Alonnisos	2.98	34	P		Pn		16 45 15.6	+1.5
AOS	Alonnisos	2.98	34	ePn		Pn		16 45 15.6	+1.5
SIVA	Sivas	3.00	123	P		Pn		16 45 17.7	+3.4
SIVA				S		Sn		16 45 52.6	+3.3
SIVA	Sivas	3.00	123	P		Pn		16 45 17.7	+3.4
SIVA				S		Sn		16 45 52.6	+3.3
SIVA	Sivas	3.00	123	P		Pn		16 45 17.7	+3.4
SIVA				S		Sn		16 45 52.6	+3.3
SANT	Santorini	3.00	95	P		Pn		16 45 17.1	+2.6
SANT				S		Sn		16 45 51.2	+2.3
SANT	Santorini	3.00	95	ePn		Pn		16 45 17.0	+2.6
SANT				eSn		Sn		16 45 50.1	+0.7
SANT				S		Sn		16 45 51.7	+2.3
SANT	Santorini	3.00	95	ePn		Pn		16 45 17.0	+2.6
SANT				eSn		Sn		16 45 50.1	+0.7
THR8	Santorini-Mono	3.01	95	P		Pn		16 45 17.3	+2.8
THR8	Santorini-Mono	3.01	95	P		Pn		16 45 17.3	+2.8
JAN	Janina	3.03	347	P		Pb		16 45 18.6	-3.5
JAN				S		Sn		16 45 54.1	+3.8
JAN	Janina	3.03	347	P		Pb		16 45 18.4	-3.7
JAN				S		Sn		16 45 54.1	+3.8
JAN	Janina	3.03	347	P		Pb		16 45 18.6	-3.5
JAN				S		Sn		16 45 54.1	+3.8
IGT	Igoumenitsa	3.04	339	P		Pn		16 45 17.7	+2.7
IGT	Igoumenitsa	3.04	339	P		Pn		16 45 17.1	+2.1
IGT	Igoumenitsa	3.04	339	P		Pn		16 45 17.1	+2.1
APE	Apeiranthos	3.04	82	P		Pn		16 45 17.0	+1.9
APE	Apeiranthos	3.04	82	P		Pn		16 45 17.0	+1.9
SGD	Sagiada	3.14	338	P		Pn		16 45 19.1	+2.7
SGD	Sagiada	3.14	338	P		Pn		16 45 18.9	+2.5
SGD	Sagiada	3.14	338	P		Pn		16 45 18.9	+2.5
KPRO	Kipourio	3.26	355	P		Pn		16 45 21.7	+3.6
KPRO	Kipourio	3.26	355	P		Pn		16 45 21.7	+3.6
KEK	Kerkira	3.38	333	P		Pn		16 45 22.0	+2.4
KEK	Kerkira	3.38	333	P		Pn		16 45 22.0	+2.4
KEK	Kerkira	3.38	333	P		Pn		16 45 22.0	+2.4
LAST	Lasithi	3.39	116	ePn		Pn		16 45 22.1	+2.3
LAST	Lasithi	3.39	116	ePn		Pn		16 45 22.1	+2.3
NPS	Neapolis	3.44	114	P		Pn		16 45 23.8	+3.3
NPS	Neapolis	3.44	114	P		Pn		16 45 23.8	+3.3
NPS	Neapolis	3.44	114	P		Pn		16 45 23.8	+3.3
LIT	Litokhoron	3.44	9	P		Pn		16 45 23.9	+3.4
LIT	Litokhoron	3.44	9	P		Pn		16 45 23.9	+3.4
PENT	Pentalofos	3.52	352	P		Pn		16 45 25.9	+4.2
PENT	Pentalofos	3.52	352	P		Pn		16 45 25.9	+4.2
PAIG	Paliouri	3.56	25	P		Pn		16 45 23.8	+1.8
PAIG	Paliouri	3.56	25	P		Pn		16 45 23.8	+1.8
KZN	Kozani	3.60	0	P		Pn		16 45 26.1	+3.4
KZN	Kozani	3.60	0	P		Pn		16 45 26.1	+3.4
KZN	Kozani	3.60	0	P		Pn		16 45 26.1	+3.4
KTI	Kastanea	3.69	4	P		Pn		16 45 28.0	+3.9
KTI	Kastanea	3.69	4	P		Pn		16 45 28.0	+3.9
NEST	Nestorio	3.75	352	P		Pn		16 45 28.5	+3.7
NEST	Nestorio	3.75	352	P		Pn		16 45 28.5	+3.7
CHOS	Chios island	3.81	62	P		Pn		16 45 27.2	+1.6
CHOS	Chios island	3.81	62	P		Pn		16 45 27.2	+1.6
CHOS	Chios island	3.81	62	P		Pn		16 45 27.2	+1.6
PLG	Polygyros	3.90	19	P		Pn		16 45 29.3	+2.5
PLG	Polygyros	3.90	19	P		Pn		16 45 29.3	+2.5
PLG	Polygyros	3.90	19	P		Pn		16 45 29.3	+2.5
ZKR	Zakros	3.95	112	P		Pn		16 45 30.8	+3.3
ZKR	Zakros	3.95	112	P		Pn		16 45 30.8	+3.3
OUR	Ouranopolis	4.02	25	P		Pn		16 45 30.1	+1.6
OUR	Ouranopolis	4.02	25	P		Pn		16 45 30.1	+1.6
OUR	Ouranopolis	4.02	25	ePn		Pn		16 45 30.1	+1.6
HORT	Hortiatis	4.03	15	P		Pn		16 45 30.6	+2.0
HORT	Hortiatis	4.03	15	P		Pn		16 45 30.6	+2.0
HORT	Hortiatis	4.03	15	P		Pn		16 45 30.6	+2.0
FNA	Florina	4.08	356	P		Pn		16 45 31.9	+2.5
FNA	Florina	4.08	356	P		Pn		16 45 31.9	+2.5
FNA	Florina	4.08	356	P		Pn		16 45 31.9	+2.5
SIGR	SIGRI	4.09	51	P		Pn		16 45 30.5	+1.1
SIGR	SIGRI	4.09	51	P		Pn		16 45 30.5	+1.1
LIA	Limnos Island	4.17	39	P		Pn		16 45 31.2	+0.7
LIA	Limnos Island	4.17	39	P		Pn		16 45 31.2	+0.7
LIA	Limnos Island	4.17	39	P		Pn		16 45 31.2	+0.7
SMG	Samos	4.17	75	P		Pn		16 45 32.4	+1.8
SMG	Samos	4.17	75	P		Pn		16 45 32.4	+1.8
SMG	Samos	4.17	75	P		Pn		16 45 32.4	+1.8
SOH	Sokhos	4.30	16	P		Pn		16 45 34.4	+2.1
SOH	Sokhos	4.30	16	P		Pn		16 45 34.4	+2.1
PRK	Paraskevi	4.38	53	P		Pn		16 45 34.2	+0.9
PRK	Paraskevi	4.38	53	P		Pn		16 45 34.2	+0.9
PRK	Paraskevi	4.38	53	P		Pn		16 45 34.2	+0.9
OHR	Ohrid	4.46	351	ePn		Pn		16 45 37.8	+3.1
OHR				eSn		Sn		16 46 22.2	-3.4
OHR	Ohrid	4.46	351	ePn		Pn		16 45 37.7	+3.1
OHR				eSn		Sn		16 46 22.2	-3.4
SRS	Serrai	4.63	17	P		Pn		16 45 39.0	+2.1
SRS	Serrai	4.63	17	P		Pn		16 45 39.0	+2.1
VAY	Valandovo	4.65	8	ePn		Pn		16 45 34.5	-2.6
VAY	Valandovo	4.65	8	ePn		Pn		16 45 34.5	-2.6
TIP	Timpagrande	4.66	304	P		Pn		16 45 39.2	+1.9
TIP	Timpagrande	4.66	304	P		Pn		16 45 39.2	+1.9
TIP	Timpagrande	4.66	304	ePn		Pn		16 45 40.4	+3.1
TIP	Timpagrande	4.66	304	ePn		Pn		16 45 40.4	+3.1
TIP				eSn		Sn		16 46 20.6	-10
TIR	Tirane	4.87	343	⇓iP		Pn		16 45 43.0	+2.9
TIR	Tirane	4.87	343	ePn		Pn		16 45 42.5	+2.4
TIR	Tirane	4.87	343	⇓iP		Pn		16 45 43.0	+2.9
TIR	Tirane	4.87	343	ePn		Pn		16 45 42.5	+2.4
TIR				eSn		Sn		16 46 26.5	-8.9
CEL	Celeste	4.92	290	ePn		Pn		16 45 42.5	+1.7
CEL	Celeste	4.92	290	ePn		Pn		16 45 42.5	+1.7
CEL				eSn		Sn		16 46 28.1	-8.7
NVR	Nevrokopi	4.92	19	P		Pn		16 45 42.0	+1.2
NVR	Nevrokopi	4.92	19	P		Pn		16 45 42.0	+1.2
NVR	Nevrokopi	4.92	19	P		Pn		16 45 42.0	+1.2
MMB	Musomiste	5.11	17	iP		Pn		16 45 46.7	+3.2
SKO	Skopje	5.27	357	iPn		Pn		16 45 47.3	+1.7
SKO	Skopje	5.27	357	iPn		Pn		16 45 47.3	+1.7
ALN	Alexandroupoli	5.36	37	P		Pn		16 45 47.6	+0.8
ALN	Alexandroupoli	5.36	37	P		Pn		16 45 47.6	+0.8
ALN	Alexandroupoli	5.36	37	P		Pn		16 45 47.6	+0.8
RZN	Rozhen	5.48	24	iP		Pn		16 45 51.6	+2.9
ULC	Ulcinj	5.60	340	⇓iPn		Pn		16 45 51.5	+1.3
ULC				eSn		Sn		16 46 53.2	-0.4
ULC	Ulcinj	5.60	340	⇓iPn		Pn		16 45 51.5	+1.3
ULC				eSn		Sn		16 46 53.2	-0.4
KDZ	Kurdzhali	5.70	29	iP		Pn		16 45 52.7	+1.2
CUC	Castrococco	5.71	307	ePn		Pn		16 45 55.1	+3.4
CUC	Castrococco	5.71	307	ePn		Pn		16 45 55.1	+3.4
CUC				eSn		Sn		16 45 49.9	-6.0
SG1	Sgolgore (BA)	5.73	318	ePn		Pn		16 45 54.2	+2.3
BAI	Bari	5.81	321	ePn		Pn		16 45 55.1	+2.0
DRME	Dracevica, Mon	5.83	341	⇓iPn		Pn		16 45 54.8	+1.5
DRME				eSn		Sn		16 46 58.9	-0.2
DRME	Dracevica, Mon	5.83	341	⇓iPn		Pn		16 45 54.8	+1.5
DRME				eSn		Sn		16 46 58.9	-0.2
WDD	Wied Dalam	5.91	264	ePn		Pn		16 45 56.2	+1.8
WDD	Wied Dalam	5.91	264	ePn		Pn		16 45 56.2	+1.8
WDD				eSn		Sn		16 46 57.1	-4.0
VAE	Valguarnera	5.92	280	Pn		Pn		16 45 56.0	+1.3
VAE	comp=E,5.2nm,0.3s,baz=339,slow=8.9,SNR=6.0			Sn		Sn		16 47 04.0	+2.3
VTS	comp=E,6.5nm,0.3s,baz=146,slow=19,SNR=4.3	5.99	10	P		Pn		16 45 57.9	+2.3
VTS	Vitosha	5.99	10	⇓iP		Pn		16 45 58.3	+2.7
VTS	Vitosha	5.99	10	iP		Pn		16 45 59.5	+3.9
VTS	Vitosha	5.99	10	P		Pn		16 45 57.9	+2.3
BUM	Brajici-Budva	6.01	339	⇓iPn		Pn		16 45 57.0	+1.1
BUM				eSn		Sn		16 47 02.4	-1.4
BUM	Brajici-Budva	6.01	339	⇓iPn		Pn		16 45 57.0	+1.1
BUM				eSn		Sn		16 47 02.4	-1.4
PDG	Podgorica	6.04	342	P		Pn		16 45 58.0	+1.9
PDG	Podgorica	6.04	342	P		Pn		16 45 58.0	+1.9
PDG				eSn		Sn		16 47 03.6	-0.6
TTG	Podgorica	6.04	342	⇑iPn		Pn		16 45 58.1	+1.9
TTG				eSn		Sn		16 47 03.6	-0.6
TTG	Podgorica	6.04	342	P		Pn		16 45 58.0	+1.9
TTG	Podgorica	6.04	342	P		Pn		16 45 58.0	+1.9
PVY	Plav	6.04	347	⇓iPn		Pn		16 45 57.7	+1.3
PVY				eSn		Sn		16 47 03.8	-0.9
PVY	Plav	6.04	347	⇓iPn		Pn		16 45 57.7	+1.3
PVY				eSn		Sn		16 47 03.8	-0.9
BARS	Barje	6.11	0	⇓iPn		Pn		16 45 59.1	+2.0
CDT	Castel del Mon	6.12	317	ePn		Pn		16 45 59.2	+1.9
CEME	Cevo	6.23	340	⇑iPn		Pn		16 45 59.7	+0.8
CEME				eSn		Sn		16 47 08.0	-1.2
CEME	Cevo	6.23	340	⇑iPn		Pn		16 45 59.7	+0.8
CEME				eSn		Sn		16 47 08.0	-1.2
HCY	Herceg Novi	6.27	337	⇓iPn		Pn		16 45 59.9	+0.6
HCY				eSn		Sn		16 47 08.6	-1.3
HCY	Herceg Novi	6.27	337	⇓iPn		Pn		16 45 59.9	+0.6
HCY				eSn		Sn		16 47 08.6	-1.3
BEY	Berane	6.33	347	⇓iPn		Pn		16 46 01.7	+1.5
BEY				eSn		Sn		16 47 10.5	-1.0
IVA	Berane	6.33	347	⇓iPn		Pn		16 46 01.7	+1.5
IVA				eSn		Sn		16 47 10.5	-1.0
NKME	Niksic	6.43	341	⇑iPn		Pn		16 46 02.7	+1.1
NKME				eSn		Sn		16 47 13.1	-0.9
NKME	Niksic	6.43	341	⇑iPn		Pn		16 46 02.7	+1.1
NKME				eSn		Sn		16 47 13.1	-0.9
NKY	Niksic	6.46	342	⇓iPn		Pn		16 46 03.6	+1.5
NKY				eSn		Sn		16 47 13.4	-1.5
NKY	Niksic	6.46	342	⇓iPn		Pn		16 46 03.6	+1.5
NKY				eSn		Sn		16 47 13.4	-1.5
TREB	Trebinje	6.55	337	⇓iPn		Pn		16 46 03.5	+0.2
BRY	Bratogost	6.67	339	⇑iPn		Pn		16 46 06.9	+2.0
BRY				eSn		Sn		16 47 16.9	-3.1
BRY	Bratogost	6.67	339	⇑iPn		Pn		16 46 06.9	+2.0
MS1	Monte Sant'Ang	6.73	320	ePn		Pn		16 46 08.7	+2.9
UPM	Unac-Piva	6.85	342	⇓iPn		Pn		16 46 09.2	+1.7
UPM				eSn		Sn		16 47 21.3	-3.3
UPM	Unac-Piva	6.85	342	⇓iPn		Pn		16 46 09.2	+1.7
PLE	Pljevlja	6.86	345	⇓iPn		Pn		16 46 09.1	+1.5
PLE				eSn		Sn		16 47 21.3	-3.5
PLE	Pljevlja	6.86	345	⇓iPn		Pn		16 46 09.1	+1.5
BOVS	Bovan	6.92	360	ePn		Pn		16 46 09.3	+1.0
IVAS	Ivanjica	6.97	350	ePn		Pn		16 46 09.5	+0.4
ZAGS	Zajecar	7.11	3	ePn		Pn		16 46 10.7	-0.2
BOLS	Boljevac	7.12	1	⇓iPn		Pn		16 46 11.0	0.0
GRUS	Gruza	7.22	354	⇑iPn		Pn		16 46 13.0	+0.6
BBLS	Lazići	7.38	347	ePn		Pn		16 46 15.1	+0.5
DIVS	Divibare	7.51	350	P		Pn		16 46 15.6	-0.8
DIVS	Divibare	7.51	350	P		Pn		16 46 15.6	-0.8
DIVS	Divibare	7.51	350	⇑iPn		Pn		16 46 16.4	0.0
TRUS	Trudelj	7.58	353	⇑iPn		Pn		16 46 17.9	+0.5
KUBS	Kucevo	7.70	360	ePn		Pn		16 46 17.9	-1.1
TEKS	Tekeris	8.02	348	⇓iPn		Pn		16 46 23.2	-0.2
MDVR	Moldovita	8.07	360	⇓iP		Pn		16 46 23.0	-1.1
MDVR	Moldovita	8.07	360	⇓iP		Pn		16 46 23.0	-1.1
FGSL	Fruska Gora	8.57	351	ePn		Pn		16 46 31.2	+0.2
BLY	Banja Luka	8.75	338	ePn		Pn		16 46 34.7	+1.3
BZS	Buzias	8.91	359	⇓iP		Pn		16 46 35.5	0.0
BZS	Buzias	8.91	359	⇓iP		Pn		16 46 35.5	0.0
UDBI	Udbina	9.04	332	ePn		Pn		16 46 40.3	+2.8
UDBI				eSn		Sn		16 46 15.4	-3.0
UDBI	Udbina	9.04	332	ePn		Pn		16 46 40.3	+2.8
VOIR		9.07	15	⇑iP		Pn		16 46 40.3	+2.5
VOIR		9.07	15	⇑iP		Pn		16 46 40.3	+2.5
BR231	Keskin MP Arra	9.21	67	ePn		Pn		16 46 43.3	+3.5
BR231	Keskin MP Arra	9.21	67	ePn		Pn		16 46 43.3	+3.5
DEV	Deva	9.21	5	⇓iP		Pn		16 46 39.3	-0.4
DEV	Deva	9.21	5	⇓iP		Pn		16 46 39.3	-0.4
MLR	Muntele Rosu	9.33	18	Pn		Pn		16 46 45.3	+3.8
MLR	comp=E,0.1nm,0.3s,baz=180,slow=13,SNR=2.8			LR		LR		16 51 08.3	
MLR	comp=E,50nm,20.4s,baz=196,slow=43			Sn		Sn		16 46 45.2	+3.8
MLR	Muntele Rosu	9.33	18	⇓iP		Pn		16 46 45.2	+3.8
NVLJ	Novalja	9.43	328	i Pn		Pn		16 46 44.2	+1.5
NVLJ				Sn		Sn		16 48 21.6	-6.1
NVLJ	Novalja	9.43	328	i Pn		Pn		16 46 44.2	+1.5
BR101	Keskin Array S	9.82	69	ePn		Pn		16 46 52.7	+4.5
BR101	Keskin Array S	9.82	69	ePn		Pn		16 46 52.7	+4.5
BR131	Keskin Array S	9.82	69	ePn		Pn		16 46 53.0	+4.8
BR131	Keskin Array S	9.82	69	ePn		Pn		16 46 53.0	+4.8
BRTR	Keskin Array B	9.82	69	Pn		Pn		16 46 52.7	+4.4
BRTR	comp=E,0.1nm,0.3s,baz=255,slow=14,SNR=2.9			LR		LR		16 51 13.1	
PLOR	comp=E,115nm,21.5s,baz=248,slow=41	9.85	20	⇓iP		Pn		16 46 53.3	+4.8
VRI	Plostina	9.89	21	⇓iP		Pn		16 46 53.8	+4.9
KEST	Vrincioaia	10.08	268	Pn		Pn		16 46 56.9	+5.2
KEST	Kesra comp=E,0.2nm,0.3s,baz=24,slow=16,SNR=4.5			Sn		Sn		16 48 43.2	-0.6
KEST	comp=E,0.3nm,0.3s,baz=68,slow=21,SNR=4.2	10.08	268	ePn		Pn		16 46 49.1	-2.6
OZLJ	Kesra	10.08	334	eSn		Sn		16 48 39.9	-3.9
OZLJ	Ozalj	10.08	334	ePn		Pn		16 46 52.5	+0.9
OZLJ				Sn		Sn		16 48 35.9	-7.8
OZLJ	Ozalj	10.08	334	ePn		Pn		16 46 52.5	+0.9
VSL	Villasalto	10.15	290	ePn		Pn		16 46 54.5	+1.9
VSL	Villasalto	10.15	290	ePn		Pn		16 46 54.5	+1.9
GBRS	Gornja Briga	10.26	331	i Pn		Pn		16 46 54.8	+0.8
CRES	Cresnjev	10.27	334	i Pn		Pn		16 46 54.5	+0.3
CRES	comp=Z,17nm,0.6s			i Sn		Sn		16 48 41.4	-7.0
CRES	Cresnjev	10.27	334	⇓iPn		Pn		16 46 53.8	-0.4
CEY	Cerknica	10.58	331	⇓iPn		Pn		16 46 58.7	+0.3
TRI	Trieste	10.82	329	ePn		Pn		16 47 01.9	+0.2
TRI	Trieste	10.82	329	ePn		Pn		16 47 01

AKTO	**Aktyubinsk**	**29.32**	**51**	P		**P**	**16 50 28.7**	**-0.1**
	comp=Z,1.1nm,0.4s,baz=296,slow=3.5,SNR=5.6							
ARU	**Arti**	**31.54**	**40**	P		**P**	**16 50 48.2**	**-0.1**
	comp=Z,3.9nm,0.4s,baz=264,slow=11,SNR=7.6							
ARU	**Arti**	**31.54**	**40**	*e*P		**P**	**16 50 46.7**	**-1.5**
	comp=Z,4.9nm,0.5s							
ARA0	**ARCESS Array S**	**32.95**	**2**	*e*P		**P**	**16 51 00.9**	**+0.4**
ARA0	**ARCESS Array S**	**32.95**	**2**	*e*P		**P**	**16 51 00.9**	**+0.4**
ARCES	**ARCESS Array B**	**32.95**	**2**	P		**P**	**16 51 01.4**	**+0.9**
	comp=Z,0.6nm,0.4s,baz=193,slow=10,SNR=3.2							
ARCES				pP		**sP**	**16 51 11.0**	**-1.4**
	comp=Z,1.9nm,0.7s,baz=187,slow=9.5,SNR=3.6							
ARCES				LR		LR	17 05 26.6	
	comp=Z,34nm,20.4s,baz=186,slow=38							
ARE0	**ARCESS Array S**	**32.95**	**2**	*e*P		**P**	**16 51 00.4**	**-0.1**
	comp=Z,31nm,1.4s							
ARE0	**ARCESS Array S**	**32.95**	**2**	*e*P		**P**	**16 51 00.4**	**-0.1**
	comp=Z,31nm,1.4s							
BRVK	**Borovoye**	**37.27**	**48**	*e*P		**P**	**16 51 37.1**	**-0.8**
	comp=Z,3.4nm,0.8s							
BRVK	**Borovoye**	**37.27**	**48**	*e*P		**P**	**16 51 37.1**	**-0.8**
	comp=Z,3.4nm,0.8s							
BRVK				*e*S		**S**	**16 57 27.9**	**+4.6**
KBL	**Kabul**	**38.19**	**79**	*e*P		**P**	**16 51 47.1**	**+0.9**
	comp=Z,24nm,1.9s							
KBL	**Kabul**	**38.19**	**79**	*e*P		**P**	**16 51 47.1**	**+0.9**
	comp=Z,24nm,1.9s							
DBIC	**Dimbokro**	**38.52**	**226**	P		**P**	**16 51 51.6**	**+2.8**
	comp=Z,4.5nm,0.9s,baz=8.2,slow=12,SNR=3.1							
DBIC	**Dimbokro**	**38.52**	**226**	*e*P		**P**	**16 51 51.1**	**+2.3**
	comp=Z,34nm,1.8s							
DBIC	**Dimbokro**	**38.52**	**226**	*e*P		**P**	**16 51 51.1**	**+2.3**
	comp=Z,34nm,1.8s							
AAK	**Ala-Archa**	**40.47**	**65**	*e*P		**P**	**16 52 05.5**	**+0.4**
	comp=Z,2.4nm,0.6s							
AAK	**Ala-Archa**	**40.47**	**65**	*e*P		**P**	**16 52 05.5**	**+0.4**
	comp=Z,2.4nm,0.6s							
KSH	**Kashi**	**42.21**	**69**	*e*P		**P**	**16 52 16.5**	**-2.8**
KSH				*e*PP		**PP**	**16 53 57.3**	**+0.1**
KSH				PcS		**PcS**	**16 58 01.1**	**-3.9**
KSH				S		**S**	**16 58 36.0**	**-1.9**
KSH				SS		**SS**	**17 01 38.3**	**-7.9**
KSH				pmax		pmax		
	comp=Z,170nm,4.1s							
KURK	**Kurchatov**	**42.38**	**52**	*e*P		**P**	**16 52 20.0**	**-0.4**
KURK	**Kurchatov**	**42.38**	**52**	*e*P		**P**	**16 52 20.0**	**-0.4**
MK31	**Makanchi Array**	**45.25**	**57**	*e*P		**P**	**16 52 42.6**	**-1.0**
MK31	**Makanchi Array**	**45.25**	**57**	*e*P		**P**	**16 52 42.6**	**-1.0**
MK32	**Makanchi Array**	**45.25**	**57**	*e*P		**P**	**16 52 43.0**	**-0.5**
MK32	**Makanchi Array**	**45.25**	**57**	*e*P		**P**	**16 52 43.0**	**-0.5**
MKAR	**Makanchi Array**	**45.25**	**57**	P		**P**	**16 52 43.0**	**-0.5**
	comp=Z,0.6nm,0.3s,baz=271,slow=7.5,SNR=14							
MKAR				pP		**sP**	**16 52 53.8**	**-1.8**
	comp=Z,0.9nm,0.4s,baz=270,slow=7.0,SNR=9.2							
MK01	**Makanchi Array**	**45.26**	**57**	*e*P		**P**	**16 52 42.9**	**-0.7**
MK01	**Makanchi Array**	**45.26**	**57**	*e*P		**P**	**16 52 42.9**	**-0.7**
ZAA1	**Zalesovo Array**	**45.95**	**47**	*e*P		**P**	**16 52 48.3**	**-0.7**
ZAA1	**Zalesovo Array**	**45.95**	**47**	*e*P		**P**	**16 52 48.3**	**-0.7**
ZAA0	**Zalesovo Array**	**45.95**	**47**	*e*P		**P**	**16 52 47.7**	**-1.3**
ZAA0	**Zalesovo Array**	**45.95**	**47**	*e*P		**P**	**16 52 47.7**	**-1.3**
ZALV	**Zalesovo Beam**	**45.95**	**47**	P		**P**	**16 52 48.3**	**-0.7**
	comp=Z,4.4nm,0.4s,baz=265,slow=9.5,SNR=29							
ZALV				pP		**sP**	**16 52 59.3**	**-1.7**
	comp=Z,10nm,0.7s,baz=273,slow=9.7,SNR=15							
NRIK	**Noril'sk**	**47.68**	**26**	LR		LR	17 13 20.0	
	comp=Z,38nm,19.9s,baz=104,slow=36							
WMQ	**Urumqi**	**49.62**	**60**	*e*P		**P**	**16 53 15.9**	**-1.8**
WMQ				pP		pP	16 53 21.3	-5.0
WMQ				pmax		pmax		
	comp=Z,11nm,0.5s							
WMQ				pmax		pmax		
	comp=Z,87nm,4.0s							
SONA0	**Songino Array**	**60.63**	**50**	*e*P		**P**	**16 54 37.3**	**+0.2**
SONA0	**Songino Array**	**60.63**	**50**	*e*P		**P**	**16 54 37.3**	**+0.2**
SONA1	**Songino Array**	**60.63**	**50**	*e*P		**P**	**16 54 37.7**	**+0.5**
SONA1	**Songino Array**	**60.63**	**50**	*e*P		**P**	**16 54 37.7**	**+0.5**
SONM	**Songino Array**	**60.63**	**50**	P		**P**	**16 54 37.3**	**+0.2**
	comp=Z,0.3nm,0.4s,baz=286,slow=7.3,SNR=3.5							
SONM				pP		**sP**	**16 54 47.7**	**-1.7**
	comp=Z,1.2nm,0.5s,baz=278,slow=9.3,SNR=8.5							
LZH	**Lanzhou**	**63.98**	**63**	*e*P		**P**	**16 54 55.6**	**-4.2**
LZH				pP		pP	16 54 58.0	-11
LZH				sP		sP	16 54 59.3	-13
LZH				*e*PP		**PP**	**16 57 18.5**	**-1.9**
LZH				pmax		pmax		
	comp=Z,16nm,1.3s							
LZH				pmax		pmax		
	comp=Z,45nm,7.5s							
LZH				LR		LR		
	comp=N,83nm,15.2s							
LZH				LR		LR		
	comp=E,75nm,14.8s							
LZH				LR		LR		
	comp=Z,120nm,18.1s							
BOSA	**Boshof**	**65.05**	**177**	P		**P**	**16 55 09.0**	**+2.5**
	comp=Z,2.5nm,0.4s,baz=356,slow=6.2,SNR=14							
HHC	**Hu-ho-hao-te**	**67.06**	**55**	*e*P		**P**	**16 55 19.8**	**+0.3**
HHC				S		**S**	**17 04 13.6**	**+2.0**
HHC				ScS		**SKiKP**	**17 05 17.9**	**0.0**
HHC				pmax		pmax		
	comp=Z,8.0nm,0.9s							
HHC				pmax		pmax		
	comp=Z,130nm,4.8s							
HHC				LR		LR		
	comp=N,260nm,13.7s							
HHC				LR		LR		
	comp=E,390nm,15.3s							
HHC				LR		LR		
	comp=Z,410nm,15.6s							
CM31	**Chiang Mai Arr**	**69.11**	**82**	*e*P		**P**	**16 55 32.3**	**-0.3**
CM31	**Chiang Mai Arr**	**69.11**	**82**	*e*P		**P**	**16 55 32.3**	**-0.3**
CMAR	**Chiang Mai Arr**	**69.11**	**82**	P		**P**	**16 55 32.7**	**0.0**
	comp=Z,0.2nm,0.4s,baz=305,slow=8.2,SNR=2.8							
CMAR				pP		**sP**	**16 55 44.4**	**-0.6**
	comp=Z,0.7nm,0.7s,baz=300,slow=7.4,SNR=3.9							
SEY	**Seymchan**	**73.15**	**21**	P		**P**	**16 55 57.5**	**+1.2**
	comp=Z,0.8nm,0.6s,baz=88,slow=20,SNR=3.1							
SEY				pP		**sP**	**16 56 09.0**	**+0.3**
	comp=Z,2.1nm,0.6s,baz=323,slow=7.3,SNR=5.4							
KLR	**Kul'dur**	**74.38**	**40**	P		**P**	**16 56 04.2**	**+0.4**
	comp=Z,0.6nm,0.6s,baz=301,slow=18,SNR=2.5							
KLR				pP		**sP**	**16 56 15.6**	**-0.5**
	comp=Z,3.1nm,0.9s,baz=320,slow=5.8,SNR=5.2							
MA2	**Magadan**	**75.24**	**24**	pP		pP	16 56 21.4	+3.9
	comp=Z,7.6nm,0.7s,baz=18,slow=16,SNR=3.6							
QIZ	**Qiongzhong**	**77.39**	**76**	P		**P**	**16 56 19.8**	**-1.7**
QIZ				S		**S**	**17 06 16.0**	**+5.7**
QIZ				LR		LR		
	comp=N,220nm,14.8s							
QIZ				LR		LR		
	comp=Z,230nm,16.1s							
ILAR	**Eielson Array**	**78.46**	**355**	P		**P**	**16 56 28.5**	**+1.9**
	comp=Z,0.1nm,0.5s,baz=102,slow=9.2,SNR=2.8							
ILAR				pP		**sP**	**16 56 39.8**	**+0.7**
	comp=Z,0.4nm,0.6s,baz=360,slow=4.6,SNR=4.4							
ILB	**Eielson Array**	**78.46**	**355**	*e*P		**P**	**16 56 26.7**	**0.0**
ILB	**Eielson Array**	**78.46**	**355**	*e*P		**P**	**16 56 26.7**	**0.0**
KS15	**Wonju Array Si**	**79.48**	**51**	*e*P		**P**	**16 56 32.1**	**-0.6**
KS15	**Wonju Array Si**	**79.48**	**51**	*e*P		**P**	**16 56 32.1**	**-0.6**
KSAR	**Wonju Array Be**	**79.48**	**51**	P		**P**	**16 56 33.0**	**+0.3**
KSAR	**Wonju Array Be**	**79.48**	**51**	P		**P**	**16 56 33.0**	**+0.3**
KSRS	**Korea Array**	**79.50**	**51**	P		**P**	**16 56 33.0**	**+0.2**
	comp=Z,0.9nm,0.6s,baz=312,slow=4.3,SNR=4.7							
KSRS				pP		**sP**	**16 56 44.5**	**-0.6**
	comp=Z,1.6nm,0.6s,baz=311,slow=4.9,SNR=5.5							
PD31	**Pinedale Array**	**89.32**	**326**	*e*P		**P**	**16 57 21.7**	**-1.1**
PD31	**Pinedale Array**	**89.32**	**326**	*e*P		**P**	**16 57 21.7**	**-1.1**
PDAR	**Pinedale Array**	**89.32**	**326**	P		**P**	**16 57 22.1**	**-0.6**
	comp=Z,0.4nm,0.8s,baz=21,slow=5.3,SNR=2.7							
WRA	**Warramunga Arr**	**119.48**	**94**	PKP		**PKPdf**	**17 03 16.2**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=318,slow=1.3,SNR=17							
WR1	**Warramunga Arr**	**119.48**	**94**	*e*PKIKP		**PKPdf**	**17 03 16.2**	**+0.2**
WR1	**Warramunga Arr**	**119.48**	**94**	*e*PKPdf		**PKPdf**	**17 03 16.2**	**+0.2**
ASAR	**Alice Springs**	**121.02**	**98**	PKP		**PKPdf**	**17 03 19.3**	**+0.4**
	comp=Z,0.4nm,0.3s,baz=311,slow=1.7,SNR=25							

*ISK **21** 16:46:07.9, 38.°98N×43.°40E, h5km, MD2.9*
*ISCJB **21** 16:46:11.2±0.7, 39.°13N±0.°04×43.°45E±0.°06, h8km±10km, Error ellipse: s-maj=8.7km s-min=6.3km az=150.1*
*CSEM **21** 16:46:11.2±0.5, 39.°15N×43.°36E, h5km, MD2.9, Error ellipse: s-maj=13.1km s-min=9.2km az=97.0*
*DDA **21** 16:46:12.5, 39.°14N×43.°36E, h7km, Ml2.7*
ISC 21 16:46:10.1±1.3,**39.°07N**±0.°03×**43.°43E**±0.°04,**h2**km±11km,
n16,σ1§**16**/26,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CLDR	**Caldiran**	**0.38**	**78**	*e*PG	**Pg**	**16 46 16.5**	**-1.0**
CLDR				*e*SG	**Sg**	**16 46 23.5**	**+1.0**
DYDN	**Diyadin**	**0.52**	**22**	*i* P	**Pg**	**16 46 20.0**	**0.0**
DYDN				*i* S	**Sb**	**16 46 29.3**	**-0.7**
DYDN	**Diyadin**	**0.52**	**22**	P	**Pg**	**16 46 20.0**	**0.0**
DYDN				S	**Sb**	**16 46 29.3**	**-0.7**
TVAN	**Van**	**0.54**	**182**	*i* P	**Pn**	**16 46 24.4**	**-0.5**
TVAN				*i* S	**Sn**	**16 46 37.2**	**+2.6**
TVAN	**Van**	**0.54**	**182**	P	**Pn**	**16 46 24.4**	**-0.5**
AGRB	**Hanur-Agry**	**0.61**	**326**	*e*PG	**Pg**	**16 46 21.6**	**-0.3**
AGRB				*e*SG	**Sb**	**16 46 30.9**	**-1.9**
AGRB	**Hanur-Agry**	**0.61**	**326**	*e*Pg	**Pg**	**16 46 21.6**	**-0.3**
AGRB				*e*Sg	**Sb**	**16 46 30.9**	**-1.9**
GEVA	**Gevas**	**0.81**	**201**	*i* P	**Pg**	**16 46 24.8**	**-0.8**
GEVA				*i* S	**Sn**	**16 46 41.6**	**+0.4**
GEVA	**Gevas**	**0.81**	**201**	P	**Pg**	**16 46 24.8**	**-0.8**
GEVA				S	**Sn**	**16 46 41.6**	**+0.4**
DIGO	**Kars**	**1.35**	**358**	*i* P	**Pg**	**16 46 36.7**	**+0.8**
DIGO				*i* S	**Sn**	**16 46 56.4**	**+1.6**
DIGO	**Kars**	**1.35**	**358**	P	**Pg**	**16 46 36.7**	**+0.8**
SENK	**Senkaya-Erzuru**	**1.71**	**331**	*e*PN	**Pn**	**16 46 40.1**	**-1.0**
SENK	**Senkaya-Erzuru**	**1.71**	**331**	*e*Pn	**Pn**	**16 46 40.1**	**-1.0**
EZM	**Erzurum**	**1.81**	**298**	*e*PN	**Pn**	**16 46 41.6**	**-0.9**
BTMN	**Batman**	**2.06**	**236**	*i* P	**Pn**	**16 46 46.0**	**+0.2**
BTMN				*i* S	**Sg**	**16 47 18.3**	**+1.9**
BTMN	**Batman**	**2.06**	**236**	P	**Pn**	**16 46 46.0**	**+0.2**

KRNET 21 16:49:59.5±0.1,**41.°14N**×**76.°99E**,**h35**km,**mb1.8, 12C-6D, Kyrgyzstan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDJ	**Kajisay**	**1.00**	**8**	⇓*e*P	Pn	16 50 20.5	+3.2
	baz=8.0						
KDJ				⇓*i*S	Sn	16 50 35.9	+5.6
	baz=8.0						
ULHL	**Ulahol**	**1.24**	**334**	⇑*i*P	Pn	16 50 22.1	+1.5
	baz=346						
ULHL				⇑*i*S	Sn	16 50 37.5	+1.3
	baz=346						
BOOM	**Boomskoye usch**	**1.56**	**330**	⇓*i*P	Pn	16 50 27.4	+2.4
	baz=330						
BOOM				⇓*i*S	Sn	16 50 47.1	+3.0
	baz=330						
KZA	**Kyzart**	**1.61**	**306**	⇑*i*P	Pn	16 50 26.6	+0.8
	baz=313						
KZA				⇑*i*S	Sn	16 50 45.4	-0.1
	baz=313						
PRZ	**Przheval'sk**	**1.71**	**38**	⇑*i*P	Pn	16 50 28.8	+1.8
	baz=38						
PRZ				⇑*i*S	Sn	16 50 50.0	+2.2
	baz=38						
ANVS	**Anan'yevo**	**1.72**	**17**	⇑*e*P	Pn	16 50 29.3	+2.1
	baz=17						
ANVS				⇑*i*S	Sn	16 50 51.4	+3.4
	baz=17						
TKM2	**Tokmak 2**	**2.06**	**330**	⇑*i*P	Pn	16 50 35.3	+3.4
	baz=338						
TKM2				⇑*i*S	Sn	16 51 01.2	+4.8
	baz=338						
ARLS	**Aral**	**2.13**	**291**	⇑*i*P	Pn	16 50 35.1	+2.4
	baz=291						
ARLS				⇑*e*S	Sn	16 50 59.9	+1.9
	baz=291						
PDGK	**Podgornoye**	**2.87**	**39**	⇓*e*P	Pn	16 50 44.5	+1.6
	baz=39						
PDGK				⇓*e*S	Sn	16 51 17.2	+0.9
	baz=39						

*NEIC **21** 16:56:24.6, 15.°45N×95.°06W, h33km, mb3.9/1, MD4.0(MEX), After MEX.*
MEX 21 16:56:24.6±0.6,**15.°41N**×**95.°07W**,**h33**km±35km,**MD4.0, Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.06**	**290**	*e*P	Pn	16 56 41.3	-1.8
HUIG				*e*S	Sn	16 56 53.7	-3.1
HUIG	**Huatulco**	**1.06**	**290**	*e*P	Pn	16 56 41.3	-1.8
HUIG				*e*S	Sn	16 56 53.7	-3.1
VHO	**Vista Hermosa**	**2.30**	**316**	*e*P	Pn	16 56 59.2	-1.2
VHO				*e*S	Sn	16 57 25.4	-2.2
VHO	**Vista Hermosa**	**2.30**	**316**	*e*P	Pn	16 56 59.0	-1.4
VHO				*e*S	Sn	16 57 25.1	-2.6
CCIG	**Comitan**	**2.95**	**73**	*e*P	Pn	16 57 08.6	-0.8
CCIG				*e*S	Sn	16 57 41.2	-2.6
CCIG	**Comitan**	**2.95**	**73**	*e*P	Pn	16 57 08.6	-0.8
CCIG				*e*S	Sn	16 57 41.2	-2.6
TEIG	**Tepich**	**8.05**	**52**	*e*Pn	Pn	16 58 14.6	-4.6
	3.6nm,0.4s						
TEIG				*e*Sn	Sn	16 59 42.4	-6.7
ISCO	**Idaho Springs**	**25.99**	**341**	Pn	P	17 01 54.0	-0.7
	3.5nm,0.9s						

*NIED **21** 16:57:00, 39.°60N×143.°90E, h17km, Mw3.5 Best double couple: M0 1.98000×10^14 NP1:ϕs180.00000°, δ42.00000°, λ76.00000°. NP2:ϕs19.00000°, δ49.00000°, λ102.00000°.*
*IDC **21** 16:57:27.8±6.6, 39.°48N×144.°44E, h0km, mb3.6/3, mb1 3.5/6, mb1mx3.4/38, mbtmp3.6/6, ML2.9/2, Error ellipse: s-maj=110.0km s-min=35.2km az=106.0*
*JMA **21** 16:57:29.8±0.2, 39.°64N×143.°93E, h13km, M3.7*
*ISCJB **21** 16:57:31.3±1.8, 39.°62N±0.°08×143.°8E±0.°2, h11km, mb3.4/3, Error ellipse: s-maj=23.2km s-min=5.9km az=23.9*
ISC 21 16:57:33.8±2.0,**39.°64N**±0.°09×**143.°7E**±0.°2,**h11**km,**n18**, σ1§**64**/20,**mb3.5**/3,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.47**	**282**	P	**Pn**	**16 57 58.4**	**-1.8**
MIYJ	**Miyakonagasawa**	**1.48**	**268**	P	**Pn**	**16 57 58.7**	**-1.7**
OFUJ	**Ofunato**	**1.69**	**251**	P	**Pn**	**16 58 01.7**	**-1.6**
JANG	**Nango**	**1.85**	**294**	P	**Pn**	**16 58 03.7**	**-1.8**
JOM	**Ohasama**	**1.89**	**266**	P	**Pn**	**16 58 05.1**	**-1.0**
JMK	**Ichinoseki**	**2.06**	**251**	P	**Pn**	**16 58 07.1**	**-1.3**
JAH	**Hinai**	**2.44**	**284**	P	**Pn**	**16 58 13.2**	**-0.4**
JOU	**Okura**	**2.71**	**243**	P	**Pn**	**16 58 16.1**	**-1.2**
JYK	**Kaneyama**	**2.71**	**256**	P	**Pn**	**16 58 16.6**	**-0.8**
JCH	**Churui**	**2.98**	**355**	S	**Sn**	**16 58 54.3**	**-2.5**
JAR	**Ashorobuto**	**3.65**	**0**	P	**Pn**	**16 58 29.1**	**-1.2**
ASAJ	**Asahikawa**	**4.55**	**350**	Pn	**Pn**	**16 58 42.6**	**0.0**
ASAJ				Sn	**Sn**	**16 59 37.5**	**+2.0**
MJAR	**Matsushiro Arr**	**5.34**	**236**	Pn	**Pn**	**16 58 53.8**	**+0.2**
	1.0nm,0.3s,baz=36,slow=13,SNR=13						
MAT	**Matsushiro**	**5.34**	**236**	P	**Pn**	**16 58 53.9**	**+0.4**
MAT				S	**Sn**	**16 59 57.1**	**+2.0**
USRK	**Ussuriysk Ar.**	**9.86**	**301**	Pn	**Pn**	**16 59 58.9**	**+3.4**
	0.3nm,0.3s,baz=94,slow=13,SNR=2.9						
SONM	**Songino Array**	**27.97**	**299**	P	**P**	**17 03 25.3**	**+0.8**
	0.5nm,0.5s,baz=102,slow=6.6,SNR=2.9						
ZALV	**Zalesovo Beam**	**41.56**	**310**	P	**P**	**17 05 20.9**	**-0.4**
	0.5nm,0.4s,baz=96,slow=6.8,SNR=3.0						
MKAR	**Makanchi Array**	**44.33**	**300**	P	**P**	**17 05 43.5**	**-0.3**
	0.3nm,0.4s,baz=75,slow=11,SNR=4.0						

*GUC **21** 16:59:40.7±0.6, 31.°92S×71.°59W, h34km±3km, ML3.4*
ISC 21 16:59:34.4±2.7,**32.°04S**±0.°05×**72.°2W**±0.°1,**h6**km±14km,**n19**, σ1§**69**/28,**9D**,**Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**1.35**	**134**	*e*P	**Pg**	**17 00 00.5**	**+0.2**
ROC1				⇓*e*S	**Sb**	**17 00 15.7**	**-2.3**
ROCH	**El Roble**	**1.35**	**134**	⇓*i*P	**Pb**	**17 00 00.4**	**+0.1**
ROCH				*i* S	**Sb**	**17 00 16.0**	**-2.0**
ROCH				IAML		17 00 18.6	
	comp=N,2μm,0.3s						
PEL	**Peldehue**	**1.67**	**132**	⇓*i*P	**Pb**	**17 00 05.3**	**-0.3**
PEL				*i* S	**Sn**	**17 00 24.7**	**-1.4**
PEL				IAML		17 00 27.7	
	comp=E,850nm,0.3s						
CLCH	**Cerro Calan**	**1.93**	**135**	⇓*i*P	**Pb**	**17 00 09.8**	**-0.3**
CLCH				*i* S	**Sn**	**17 00 32.1**	**-0.5**
CLCH				IAML		17 00 38.7	
	comp=E,730nm,0.4s						
ANTU	**Antumapu**	**2.00**	**140**	*e*S	**Sn**	**17 00 34.5**	**+0.2**
ANTU				IAML		17 00 40.3	
	comp=E,530nm,0.3s						
FCH	**Farellones**	**2.04**	**130**	⇓*i*P	**Pb**	**17 00 11.5**	**-0.6**
FCH				*i* S	**Sn**	**17 00 34.3**	**-1.4**
FCH				IAML		17 00 37.8	
	comp=E,600nm,0.3s						
AUSP	**Uspallata**	**2.36**	**95**	*e*P	**Pb**	**17 00 18.2**	**+0.6**
AUSP				*e*S	**Sb**	**17 00 46.9**	**-0.3**
RTLS	**Leoncito**	**2.45**	**85**	*e*P	**Pb**	**17 00 19.6**	**+0.5**
ARCO	**CERRO ARCO**	**2.85**	**107**	*e*P	**Pb**	**17 00 25.9**	**+0.1**
ARCO				*e*S	**Sb**	**17 00 59.6**	**-1.4**
ARCO				IAML		17 01 10.5	
	comp=Z,106nm,0.4s						
ASAL	**Salagasta**	**2.87**	**102**	*e*P	**Pb**	**17 00 27.2**	**+1.0**
AROD	**Rodeo**	**2.96**	**52**	*e*P	**Pb**	**17 00 29.6**	**+1.7**
AAGR	**Agrelo**	**3.00**	**111**	*e*P	**Pb**	**17 00 27.0**	**-1.5**
ACCO	**Cerro Coronel**	**3.02**	**62**	*e*P	**Pb**	**17 00 29.2**	**+0.4**
ACCO				IAML		17 01 12.8	
	comp=Z,167nm,0.5s						
RTCV	**Cerro Valdivia**	**3.08**	**88**	*e*P	**Pb**	**17 00 28.6**	**-1.2**
ACDV	**Cuesta del Vie**	**3.21**	**55**	⇓*e*P	**Pb**	**17 00 32.6**	**+0.7**
ACDV				⇓*e*S	**Sg**	**17 01 16.9**	**-0.6**
AMOG	**MOGNA**	**3.32**	**72**	⇓*e*P	**Pb**	**17 00 32.8**	**-1.1**
AMOG				*e*S	**Sb**	**17 01 14.2**	**-0.4**
AGUA	**GUANDACOL**	**4.05**	**52**	*e*P	**Pb**	**17 00 43.8**	**-2.6**
VCA	**Vinchina**	**4.74**	**47**	⇓*e*P	**Pb**	**17 00 53.5**	**-4.6**
VCA				IAML		17 02 05.5	
	comp=E,55nm,0.6s						
ACHE	**Chepes**	**4.77**	**81**	*e*P	**Pn**	**17 00 50.9**	**+3.8**

*NIED **21** 17:12:00, 39.°60N×144.°00E, h14km, Mw4.5 Best double couple: M0 5.31000×10^15 NP1:ϕs198.00000°, δ37.00000°, λ92.00000°. NP2:ϕs16.00000°, δ53.00000°, λ89.00000°.*
*JMA **21** 17:12:53.0±0.1, 39.°64N×143.°96E, h23km, M4.5*
*IDC **21** 17:12:54.8±0.7, 39.°59N×143.°68E, h0km, mb4.0/21, mb1 4.1/27, mb1mx4.0/46, mbtmp4.0/27, ML3.3/6, MS3.6/21, Ms1 3.7/21, ms1mx3.5/44, Error ellipse: s-maj=16.2km s-min=13.1km az=107.0*
*ISCJB **21** 17:12:54.6±0.4, 39.°62N±0.°03×143.°69E±0.°05, h11km, mb4.2/32, MS3.7/17, Error ellipse: s-maj=6.0km s-min=3.7km az=34.0*
*MOS **21** 17:12:57.7±1.0, 39.°62N×143.°63E, h33km, mb4.4/20, Error ellipse: s-maj=9.8km s-min=6.3km az=92.2*
*NEIC **21** 17:12:57.6±2.5, 39.°61N×143.°67E, h18km±15km, mb4.4/7, Error ellipse: s-maj=8.4km s-min=4.9km az=124.0*
ISC 21 17:12:56.4±0.5,**39.°62N**±0.°05×**143.°65E**±0.°06,**h11**km,**n92**, σ1§**48**/95,**mb4.2**/32,**MS3.7**/17,**2C-8D**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.41**	**284**	P	**Pn**	**17 13 21.0**	**-1.0**
JTH				*e*S	**Sn**	**17 13 41.4**	**+0.8**
MIYJ	**Miyakonagasawa**	**1.41**	**269**	P	**Pn**	**17 13 21.3**	**-0.7**
OFUJ	**Ofunato**	**1.62**	**251**	P	**Pn**	**17 13 24.3**	**-0.6**
JANG	**Nango**	**1.80**	**295**	P	**Pn**	**17 13 26.4**	**-1.0**
JOM	**Ohasama**	**1.83**	**266**	P	**Pn**	**17 13 27.6**	**-0.1**
JMK	**Ichinoseki**	**2.00**	**251**	P	**Pn**	**17 13 29.7**	**-0.3**
ERM	**Erimo**	**2.42**	**351**	⇓*i*P	**Pn**	**17 13 35.4**	**-0.5**
ERM	**Erimo**	**2.42**	**351**	*e*Pn	**Pn**	**17 13 36.0**	**+0.1**
JYK	**Kaneyama**	**2.65**	**256**	P	**Pn**	**17 13 39.3**	**+0.3**
JOT	**Ohata**	**2.65**	**312**	P	**Pn**	**17 13 38.8**	**-0.2**
JFT	**Otama**	**3.34**	**232**	P	**Pn**	**17 13 48.3**	**-0.2**
JFT				*e*S	**Sn**	**17 14 27.9**	**-0.2**
JEW	**Eniwo**	**3.62**	**333**	*e*S	**Sn**	**17 14 35.1**	**0.0**
ASAJ	**Asahikawa**	**4.56**	**350**	Pn	**Pn**	**17 14 05.8**	**+0.5**
ASAJ				Sn	**Sn**	**17 14 59.6**	**+1.3**
MJAR	**Matsushiro Arr**	**5.28**	**236**	Pn	**Pn**	**17 14 16.5**	**+1.3**
	3.7nm,0.3s,baz=36,slow=13,SNR=50						
MJAR				LR	LR	17 16 32.4	
	comp=Z,315nm,19.5s,baz=55,slow=41						
MAJO	**Matsushiro**	**5.28**	**236**	*e*P	**Pn**	**17 14 15.8**	**+0.7**
MAJO				pmax	pmax		
	comp=Z,115nm,0.8s						
MAJO	**Matsushiro**	**5.28**	**236**	*e*Pn	**Pn**	**17 14 15.8**	**+0.7**
	comp=Z,115nm,0.8s						
**MAT

YAK				pmax	pmax			
	comp=N,28nm,1.9s							
YAK				smax	smax			
	comp=N,59nm,2.5s							
YAK				smax	smax			
	comp=E,90nm,3.5s							
YAK	**Yakutsk**	**24.01**	**344**	*e*P	**P**	**17 18 09.1**	**-1.7**	
	comp=E,13nm,0.8s							
SSLB	**Suanglung**	**24.84**	**237**	*e*P	**P**	**17 18 17.5**	**-1.3**	
GUMO	**Guam**	**25.95**	**177**	LR	LR	17 26 17.5		
	comp=E,51nm,20.6s,baz=6.0,slow=31							
BOD	**Bodaibo**	**26.39**	**323**	*e*P	**P**	**17 18 32.6**	**+0.1**	
BOD				pmax	pmax			
	comp=Z,12nm,1.1s							
SONM	**Songino Array**	**27.92**	**299**	P	**P**	**17 18 47.2**	**+0.6**	
	comp=Z,1.3nm,0.5s,baz=90,slow=8.0,SNR=14							
SONM				LR	LR	17 30 31.0		
	comp=Z,132nm,20.6s,baz=76,slow=38							
ENH	**Enshi**	**29.37**	**262**	*e*P	**P**	**17 18 58.9**	**-0.6**	
	comp=Z,14nm,0.9s							
TLY	**Talaya**	**30.07**	**307**	P	**P**	**17 19 07.2**	**+1.7**	
	comp=Z,0.7nm,0.4s,baz=120,slow=8.7,SNR=4.0							
TLY				LR	LR	17 30 27.6		
	comp=Z,32nm,21.9s,baz=110,slow=35							
TLY	**Talaya**	**30.07**	**307**	*e*P	**P**	**17 19 07.2**	**+1.7**	
TLY				*e*S	**S**	**17 24 00.5**	**-3.2**	
TLY				pmax	pmax			
	comp=Z,4.0nm,0.9s							
TLY				MLR	MLR			
	comp=Z,146nm,13.0s							
ZAK	**Zakamensk**	**30.16**	**304**	*e*P	P	17 19 01.2	-5.1	
ZAK				pmax	pmax			
	comp=Z,3.0nm,1.4s							
BILL	**Bilibino**	**31.06**	**16⇓**	*e*P	**P**	**17 19 14.6**	**+0.7**	
BILL				*e*		17 20 13.6		
BILL				*e*PPP	PPP	17 20 25.5		
BILL				*e*S	**S**	**17 24 17.0**	**-1.7**	
BILL				pmax	pmax			
	comp=Z,5.0nm,1.2s							
ZALV	**Zalesovo Beam**	**41.53**	**310**	P	**P**	**17 20 43.9**	**+0.4**	
	comp=Z,1.8nm,0.5s,baz=100,slow=8.7,SNR=11							
ZALV				LR	LR	17 38 46.5		
	comp=Z,102nm,18.3s,baz=70,slow=37							
NRIK	**Noril'sk**	**41.69**	**334**	LR	LR	17 39 05.6		
	comp=Z,104nm,18.0s,baz=128,slow=38							
NVS	**Novosibirsk**	**42.38**	**312**	*e*P	P	17 20 56.5	+6.1	
LSA	**Lhasa**	**43.76**	**274**	*e*P	**P**	**17 21 02.7**	**+0.2**	
LSA				pmax	pmax			
	comp=Z,4.0nm,0.8s							
LSA	**Lhasa**	**43.76**	**274**	*e*P	**P**	**17 21 02.7**	**+0.2**	
	comp=Z,4.1nm,0.8s							
CMAR	**Chiang Mai Arr**	**43.87**	**254**	P	**P**	**17 21 02.5**	**-0.4**	
	comp=Z,0.8nm,0.8s,baz=46,slow=7.9,SNR=5.4							
CMAR				LR	LR	17 41 22.0		
	comp=Z,66nm,19.8s,baz=50,slow=39							
MKAR	**Makanchi Array**	**44.28**	**300**	P	**P**	**17 21 06.0**	**0.0**	
	comp=Z,1.5nm,0.6s,baz=84,slow=9.4,SNR=19							
MKAR				LR	LR	17 39 44.2		
	comp=Z,54nm,18.0s,baz=82,slow=36							
KURK	**Kurchatov**	**45.77**	**306**	*e*P	**P**	**17 21 17.4**	**-0.2**	
KURK				pmax	pmax			
	comp=Z,144nm,1.3s							
KURK	**Kurchatov**	**45.77**	**306**	*e*P	**P**	**17 21 17.4**	**-0.2**	
	comp=Z,144nm,1.3s							
KURBB	**Kurchatov Arra**	**45.84**	**306**	P	**P**	**17 21 18.2**	**0.0**	
	comp=Z,3.0nm,0.6s,baz=80,slow=8.6,SNR=40							
ILAR	**Eielson Array**	**46.37**	**34**	P	**P**	**17 21 22.6**	**+0.4**	
	comp=Z,0.7nm,0.9s,baz=264,slow=6.7,SNR=6.6							
BRVK	**Borovoye**	**50.22**	**311⇑**	*e*P	**P**	**17 21 52.4**	**+0.3**	
BRVK				pmax	pmax			
	comp=Z,6.0nm,1.0s							
BRVK	**Borovoye**	**50.22**	**311**	*e*P	**P**	**17 21 52.5**	**+0.4**	
KKAR	**Karatay Array**	**53.38**	**299**	*e*P	**P**	**17 22 15.2**	**-0.6**	
KKAR	**Karatay Array**	**53.38**	**299**	*e*P	**P**	**17 22 15.2**	**-0.6**	
SVE	**Sverdlovsk**	**54.39**	**318**	*e*P	**P**	**17 22 23.7**	**+0.7**	
ARU	**Arti**	**55.61**	**318**	LR	LR	17 48 56.1		
	comp=Z,195nm,18.2s,baz=66,slow=39							
ARU	**Arti**	**55.61**	**318**	*d*P	**P**	**17 22 31.8**	**0.0**	
ARU						17 23 31.0		
ARU						17 24 36.6		
ARU				S	**S**	**17 30 16.8**	**-0.4**	
ARU				SS	**SS**	**17 33 57.5**	**-4.2**	
ARU				pmax	pmax			
	comp=Z,14nm,1.7s							
ARU				MLR	MLR			
	comp=Z,281nm,15.0s							
ARU	**Arti**	**55.61**	**318**	*e*P	**P**	**17 22 32.1**	**+0.4**	
	comp=Z,12nm,1.3s							
ABKAR	**Akbulak array**	**57.63**	**310**	*e*P	**P**	**17 22 46.1**	**-0.2**	
	comp=Z,1.5nm,0.5s							
WRAB	**Tennant Creek**	**59.87**	**190**	*e*P	**P**	**17 23 01.1**	**-1.0**	
WRAB	**Tennant Creek**	**59.87**	**190**	*e*P	**P**	**17 23 01.1**	**-1.0**	
WRA	**Warramunga Arr**	**59.88**	**190**	P	**P**	**17 23 01.2**	**-1.0**	
	comp=Z,1.6nm,0.9s,baz=9.0,slow=7.1,SNR=11							
WRA	**Warramunga Arr**	**59.88**	**190**	*i* P	**P**	**17 23 02.2**	**0.0**	
WRA				pmax	pmax			
	comp=Z,2.0nm,0.9s							
YKA	**Yellowknife Ar**	**60.69**	**31**	P	**P**	**17 23 07.7**	**+0.5**	
	comp=Z,0.7nm,0.8s,baz=282,slow=6.1,SNR=2.7							
ARCES	**ARCESS Array B**	**62.20**	**339**	LR	LR	17 53 07.9		
	comp=Z,82nm,20.8s,baz=33,slow=39							
KLMR	**Klimovskoe**	**62.52**	**328**	*e*P	**P**	**17 23 18.9**	**-0.7**	
KLMR				pmax	pmax			
	comp=Z,9.0nm,1.4s							
ASAR	**Alice Springs**	**63.61**	**190**	P	**P**	**17 23 27.3**	**0.0**	
	comp=Z,0.9nm,0.9s,baz=4.7,slow=5.7,SNR=8.2							
GEYT	**Alibeck**	**64.13**	**299**	P	**P**	**17 23 31.2**	**+0.5**	
	comp=Z,1.4nm,0.8s,baz=21,slow=8.4,SNR=3.6							
FINES	**FINESS Array B**	**67.34**	**333**	P	**P**	**17 23 51.4**	**+0.5**	
	comp=Z,1.2nm,0.6s,baz=40,slow=7.4,SNR=7.9							
FINES				LR	LR	17 56 27.1		
	comp=Z,172nm,18.4s,baz=26,slow=39							
FINES	**FINESS Array B**	**67.34**	**333**	*i* P	**P**	**17 23 50.7**	**-0.3**	
FINES				pmax	pmax			
	comp=Z,1.0nm,0.6s							
KIV	**Kislovodsk**	**70.53**	**311**	*de*P	**P**	**17 24 12.7**	**+1.4**	
KIV				*e*		17 24 35.4		
KIV				*e*		17 26 46.4		
KIV				*e*PPP	PPP	17 28 31.1		
KIV				pmax	pmax			
	comp=Z,9.0nm,1.0s							
KIV				MLR	MLR			
	comp=Z,116nm,14.0s							
KBZ	**Khabaz**	**70.55**	**311**	P	**P**	**17 24 12.5**	**+1.3**	
	comp=Z,2.4nm,0.7s,baz=45,slow=4.8,SNR=3.6							
STKA	**Stephens Creek**	**71.16**	**182**	P	**P**	**17 24 15.6**	**+0.7**	
	comp=Z,2.7nm,1.1s,baz=84,slow=7.5,SNR=3.5							
STKA	**Stephens Creek**	**71.16**	**182**	P	**P**	**17 24 15.6**	**+0.7**	
STKA				pmax	pmax			
	comp=Z,1.0nm,0.7s							
NB2	**NORSAR Subarra**	**72.47**	**338**	P	**P**	**17 24 22.7**	**+0.1**	
	comp=Z,3.5nm,1.0s,baz=39,slow=6.2							
NOA	**NORSAR Array B**	**72.47**	**338**	P	**P**	**17 24 23.1**	**+0.6**	
	comp=Z,1.2nm,0.8s,baz=36,slow=6.0,SNR=2.6							
NOA				LR	LR	18 00 25.5		
	comp=Z,66nm,18.7s,baz=20,slow=39							
ANN	**Anapa**	**72.99**	**314**	*e*P	P	17 24 20.2	-5.7	
ANN				pmax	pmax			
	comp=Z,32nm,1.2s							
AKASG	**Malin Array Be**	**73.32**	**323**	P	**P**	**17 24 27.8**	**+0.1**	
	comp=Z,0.8nm,0.5s,baz=44,slow=6.1,SNR=3.7							
PDAR	**Pinedale Array**	**74.61**	**47**	P	**P**	**17 24 36.0**	**+0.2**	
	comp=Z,0.4nm,0.6s,baz=267,slow=2.7,SNR=3.8							
BRTR	**Keskin Array B**	**78.44**	**312**	LR	LR	18 04 32.1		
	comp=Z,30nm,18.5s,baz=12,slow=40							
GERES	**GERESS Array B**	**81.42**	**329**	LR	LR	18 05 03.2		
	comp=Z,69nm,18.6s,baz=40,slow=38							
TXAR	**Lajitas Array**	**87.17**	**54**	P	**P**	**17 25 43.6**	**+0.8**	
	comp=Z,0.4nm,0.9s,baz=260,slow=5.0,SNR=4.2							
ESDC	**Sonseca Array**	**95.71**	**335**	LR	LR	18 15 30.4		
	comp=Z,50nm,18.4s,baz=140,slow=39							

*ISK **21** 17:20:02.7,41.75°N×42.27°E,h5km,MD3.0*
*TIF **21** 17:20:03.9,41.68°N×42.27°E,h12km±1km*
*ISCJB **21** 17:20:04.9±0.6,41.67°N±0.02°×42.24°E±0.03,h7km±5km,*
Error ellipse: s-maj=4.6km s-min=3.9km az=38.0
*CSEM **21** 17:20:04.6±0.2,41.66°N×42.26E,h5km,ML3.3,Error*
ellipse: s-maj=3.6km s-min=2.7km az=138.0
*DDA **21** 17:20:05.3,41.63°N×42.27E,h8km,Ml3.3*

ISC 21 17:20:04.2±1.1,41.70N±0.03°×42.30E±0.03,h6km±10km,
n31,σ0s38/58,Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EPOS	**Posof**	**0.38**	**121**	*i* P	**Pb**	**17 20 12.9**	**-0.4**
EPOS				*i* S	**Sb**	**17 20 19.1**	**-0.4**
EPOS	**Posof**	**0.38**	**121**	P	**Pb**	**17 20 12.9**	**-0.4**
EPOS				S	**Sb**	**17 20 19.1**	**-0.4**
ARTV	**Artvin**	**0.58**	**209**	*i* P	**Pg**	**17 20 15.6**	**+0.2**
ARTV				*i* S	**Sg**	**17 20 23.3**	**+0.3**
ARTV	**Artvin**	**0.58**	**209**	P	**Pg**	**17 20 15.6**	**+0.2**
ARTV				S	**Sg**	**17 20 23.3**	**+0.3**
DBOC	**Borcka**	**0.59**	**234**	*i* P	**Pg**	**17 20 15.6**	**+0.1**
DBOC				*i* S	**Sg**	**17 20 23.3**	**+0.1**
DBOC	**Borcka**	**0.59**	**234**	P	**Pg**	**17 20 15.6**	**+0.1**
DBOC				S	**Sg**	**17 20 23.3**	**+0.1**
DAGI	**Agillar**	**0.68**	**205**	*i* P	**Pg**	**17 20 17.4**	**+0.1**
DAGI				*i* S	**Sg**	**17 20 26.7**	**+0.5**
DDEM	**Demirkent**	**0.90**	**207**	*i* P	**Pg**	**17 20 21.1**	**-0.4**
DDEM				*i* S	**Sg**	**17 20 33.1**	**-0.1**
DDEM	**Demirkent**	**0.90**	**207**	P	**Pg**	**17 20 21.1**	**-0.4**
DDEM				S	**Sg**	**17 20 33.1**	**-0.1**
AKH	**Akhalkalaki**	**0.94**	**107**	P	**Pg**	**17 20 22.3**	**0.0**
AKH				S	**Sb**	**17 20 35.7**	**-0.1**
AKH	**Akhalkalaki**	**0.94**	**107**	P	**Pg**	**17 20 22.3**	**0.0**
AKH				S	**Sb**	**17 20 35.7**	**-0.1**
CHVG	**Ch'k'valeri**	**1.03**	**351**	*e*PN	**Pn**	**17 20 25.0**	**-0.2**
CHVG				*e*SN	**Sn**	**17 20 41.1**	**+1.0**
CHVG	**Ch'k'valeri**	**1.03**	**351**	P	**Pn**	**17 20 25.1**	**-0.2**
CHVG				S	**Sn**	**17 20 40.2**	**+0.1**
CHVG	**Ch'k'valeri**	**1.03**	**351**	P	**Pn**	**17 20 25.1**	**-0.2**
CHVG				S	**Sn**	**17 20 40.2**	**+0.1**
CHVG				*e*Sn	**Sn**	**17 20 41.1**	**+1.0**
BGD	**Bogdanovka**	**1.07**	**113**	P	**Pb**	**17 20 25.1**	**-0.1**
BGD				S	**Sb**	**17 20 39.3**	**-0.2**
BGD	**Bogdanovka**	**1.07**	**113**	P	**Pb**	**17 20 25.1**	**-0.1**
BGD				S	**Sb**	**17 20 39.3**	**-0.2**
SENK	**Senkaya-Erzuru**	**1.13**	**178**	*e*PN	**Pg**	**17 20 26.0**	**0.0**
SENK				*e*SN	**Sn**	**17 20 42.5**	**-0.2**
SENK	**Senkaya-Erzuru**	**1.13**	**178**	*e*Pn	**Pg**	**17 20 26.0**	**0.0**
SENK				*e*Sn	**Sn**	**17 20 42.6**	**-0.2**
KARS	**Kars**	**1.22**	**151**	*e*PN	**Pb**	**17 20 27.8**	**+0.1**
KARS	**Kars**	**1.22**	**151**	*e*Pn	**Pb**	**17 20 27.8**	**+0.1**
ONI	**Oni**	**1.24**	**43**	P	**Pb**	**17 20 28.1**	**0.0**
ONI				S	**Sn**	**17 20 45.7**	**+0.5**
ONI	**Oni**	**1.24**	**43**	P	**Pb**	**17 20 28.1**	**0.0**
ONI				S	**Sn**	**17 20 45.7**	**+0.5**
DIGO	**Kars**	**1.52**	**147**	*i* P	**Pn**	**17 20 32.3**	**+0.2**
DIGO				*i* S	**Sg**	**17 20 53.3**	**+0.4**
DIGO	**Kars**	**1.52**	**147**	P	**Pn**	**17 20 32.3**	**+0.2**
DIGO				S	**Sg**	**17 20 53.3**	**+0.4**
GUDG	**Gudauri**	**1.80**	**64**	P	**Pg**	**17 20 38.2**	**-0.4**
GUDG				S	**Sg**	**17 21 02.2**	**+0.3**
GUDG	**Gudauri**	**1.80**	**64**	P	**Pg**	**17 20 38.2**	**-0.4**
GUDG				S	**Sg**	**17 21 02.2**	**+0.3**
TBLG	**Delisi**	**1.83**	**88**	P	**Pb**	**17 20 38.0**	**0.0**
TBLG				S	**Sg**	**17 21 02.8**	**-0.1**
TBLG	**Delisi**	**1.83**	**88**	P	**Pb**	**17 20 37.5**	**-0.5**
TBLG				S	**Sb**	**17 21 01.3**	**+0.1**
EZM	**Erzurum**	**1.92**	**202**	*e*PN	**Pn**	**17 20 44.2**	**+0.8**
GUMT	**Gumushane**	**2.46**	**241**	*e*PN	**Pn**	**17 20 44.2**	**-0.8**
GUMT	**Gumushane**	**2.46**	**241**	*e*Pn	**Pn**	**17 20 44.2**	**-0.8**

*ISCJB **21** 17:25:58.8±0.6,32.60N±0.06°×115.75W±0.05,h11km±6km,*
Error ellipse: s-maj=10.2km s-min=6.4km az=4.7
*MEX **21** 17:25:59.3±0.7,32.79N×115.67W,h17km±372km,MD3.3*
*ECX **21** 17:26:00.0±0.5,32.63N×115.75W,h3km,MD1.8,ML2.0*

ISC 21 17:25:58.4±1.0,32.66N±0.05°×115.78W±0.04,h16km±6km,
n18,σ0s75/22,5C-6D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SGL	**Mount Signal**	**0.05**	**104**	*i* P	**Pb**	**17 26 00.6**	**-0.8**
WESC	**Westside Schoo**	**0.11**	**22⇓**	*e*P	**Pg**	**17 26 02.7**	**+0.8**
YUH	**Yuha Desert**	**0.12**	**264**	*i* P	**Pb**	**17 26 02.6**	**+0.2**
ERPC	**Ernies Place**	**0.13**	**50⇓**	*i* P	**Pg**	**17 26 02.9**	**+0.7**
COK	**Cook Ranch**	**0.19**	**13⇓**	*i* P	**Pg**	**17 26 04.5**	**+1.5**
RMX	**La Rumorosa**	**0.26**	**257**	*e*P	**Pg**	**17 26 04.3**	**+0.1**
RMX				*e*S	**Sg**	**17 26 08.8**	**+0.6**
RMX				⇑*e*		17 26 10.0	
RMX				IAML		17 26 10.0	
	comp=N,173nm,0.2s						
CRR	**Carrizo Plain**	**0.28**	**325⇓**	*i* P	**Pn**	**17 26 06.0**	**-1.9**
IKP	**In-Ko-Pah, Jac**	**0.28**	**268⇓**	*e*P	**Pb**	**17 26 05.5**	**+0.3**
IKP				*e*S	**Sb**	**17 26 10.1**	**+0.4**
CPBX	**Cerro Prieto**	**0.47**	**121**	*g*e	Pn	17 26 17.0	+6.5
CPBX				IAML		17 26 17.0	
	comp=Z,408nm,0.2s						
BAR	**Barrett**	**0.75**	**272⇓**	*e*P	**Pn**	**17 26 14.1**	**-0.4**
TJIG	**Tijuana**	**0.79**	**254**	*e*P	**Pg**	**17 26 14.0**	**+0.1**
TJIG				*e*S	**Sb**	**17 26 24.4**	**+0.1**
TJIG	**Tijuana**	**0.79**	**254**	*e*P	**Pn**	**17 26 14.3**	**-0.7**
CBX	**Cerro Bola**	**0.82**	**245**	*i* P	**Pg**	**17 26 14.8**	**+0.3**
CBX				*e*S	**Sb**	**17 26 25.8**	**+0.4**
CBX	**Cerro Bola**	**0.82**	**245⇓**	*e*P	**Pn**	**17 26 15.1**	**-0.5**
SDRC	**San Diego Road**	**0.98**	**275**	*e*P	**Pg**	**17 26 17.8**	**+0.3**
ECNX	**Esteban Cantu**	**1.22**	**215**	*e*P	**Pn**	**17 26 21.0**	**+0.1**
ZAX	**El Zacaton**	**1.22**	**200**	*e*P	**Pn**	**17 26 20.6**	**-0.3**
SPIG	**San Pedro Mart**	**1.63**	**171**	*e*P	**Pn**	**17 26 26.3**	**-0.5**
SPIG				*e*S	**Sn**	**17 26 47.1**	**-0.5**

GUC 21 17:26:13.7±0.6,21.70S×68.66W,h122km±4km,ML3.6,
6C-6D,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB09	**IPOC Station P**	**0.55**	**260**	*i* P	Pn	17 26 33.0	+0.6
PB09				*i* S	Sn	17 26 47.0	+0.5
PB09				IAML		17 26 48.4	
	comp=N,5μm,0.2s						
PB01	**IPOC Station P**	**1.01**	**310⇑**	*i* P	Pn	17 26 36.8	+0.7
PB01				*i* S	Sn	17 26 54.2	+1.1
PB01				IAML		17 26 56.6	
	comp=N,970nm,0.3s						
PB07	**IPOC Station P**	**1.14**	**269⇑**	*i* P	Pn	17 26 38.2	+0.7
PB07				*i* S	Sn	17 26 56.9	+1.4
PB07				IAML		17 26 58.8	
	comp=N,1μm,0.3s						
PB06	**IPOC Station P**	**1.31**	**220⇑**	*i* P	Pn	17 26 39.8	+0.5
PB06				*i* S	Sn	17 26 59.5	+0.8
PB06				IAML		17 27 00.1	
	comp=E,1μm,0.2s						
PB04	**IPOC Station P**	**1.52**	**245⇑**	*i* P	Pn	17 26 42.2	+0.6
PB04				*i* S	Sn	17 27 04.3	+1.5
PB04				IAML		17 27 06.5	
	comp=N,826nm,0.1s						
PB08	**IPOC Station P**	**1.62**	**343⇓**	*i* P	Pn	17 26 45.0	+1.9
PB08				*i* S	Sn	17 27 08.0	+2.6
PB08				IAML		17 27 10.3	
	comp=E,356nm,0.2s						
HMBC	**Humberstone**	**1.82**	**321⇑**	*i* P	Pn	17 26 46.0	+0.8
HMBC				*i* S	Sn	17 27 10.3	+1.0
HMBC				IAML		17 27 11.5	
	comp=N,743nm,0.2s						
PB11	**IPOC Station P**	**2.15**	**334⇓**	*i* P	Pn	17 26 50.3	+1.0
PB11				*i* S	Sn	17 27 17.5	+1.1
PSGC	**Pisagua**	**2.50**	**327⇓**	*i* P	Pn	17 26 53.7	0.0
PSGC				*e*S	Sn	17 27 24.7	+0.2
PSGC				IAML		17 27 27.7	
	comp=E,152nm,0.5s						
PB10	**IPOC Station P**	**2.51**	**224⇓**	*i* P	Pn	17 26 54.4	+0.7
PB10				IAML		17 27 35.0	
	comp=N,529nm,0.2s						
MNMC	**Minye Minye**	**2.71**	**341⇓**	*i* P	Pn	17 26 57.8	+1.3
MNMC				IAML		17 27 38.3	
	comp=E,316nm,0.2s						
PB12	**IPOC Station P**	**3.45**	**333⇓**	*i* P	Pn	17 27 05.6	-0.5
PB12				*i* S	Sn	17 27 46.0	-0.5

*ISCJB **21** 17:32:27.8±0.4,67.08°N±0.02°×20.85E±0.09,h0km,Error*
ellipse: s-maj=5.2km s-min=2.9km az=11.6
*UPP **21** 17:32:28.7±0.1,67.06°N×20.90E,h0km,ML2.2,Explosion*
*CSEM **21** 17:32:28.9±0.4,67.07°N×21.04E,h1km,ML2.2,Error*
ellipse: s-maj=10.8km s-min=6.6km az=100.0,Mining
explosion.
*IDC **21** 17:32:29.9±1.1,67.06°N×21.03E,h0km,mb1 2.8/3,*
mb1mx2.7/31,mbtmp2.7/3,ML2.3/3,Error ellipse:
s-maj=17.2km s-min=8.6km az=106.0
*HEL **21** 17:32:29.6±0.1,67.07°N×20.93E,h0km,ML2.4,*
ML2.2(UPP),Explosion
*NAO **21** 17:32:29.4±0.8,67.09°N×21.13E,ML2.5*
*BER **21** 17:32:31.1±3.0,67.10°N×20.87E,h0km,ML2.5(NAO),*
Suspected explosion

ISC 21 17:32:28.6±0.8,67.06N±0.02°×20.87E±0.03,h0km,n65,
σ1s15/91,Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MASU	**Masugnsbyn**	**0.59**	**47**	P	**Pg**	**17 32 39.8**	**-0.1**
MASU				S	**Sg**	**17 32 48.7**	**+1.2**
MASU	**Masugnsbyn**	**0.59**	**47**	*i* P	**Pg**	**17 32 39.8**	**-0.1**
MASU				*i* S	**Sg**	**17 32 48.7**	**+1.2**
ERTU	**Ertsjaerv**	**0.73**	**134**	P	**Pg**	**17 32 42.2**	**-0.2**
ERTU	**Ertsjaerv**	**0.73**	**134**	*i* P	**Pg**	**17 32 42.2**	**-0.2**
PAJU	**Pajala**	**0.88**	**91**	P	**Pg**	**17 32 44.8**	**-0.6**
PAJU				S	**Sg**	**17 32 56.8**	**0.0**
PAJU	**Pajala**	**0.88**	**91**	*i* P	**Pg**	**17 32 44.8**	**-0.6**
PAJU				*i* S	**Sg**	**17 32 56.8**	**0.0**
HARU	**Harads**	**0.90**	**177**	P	**Pg**	**17 32 45.8**	**0.0**
HARU	**Harads**	**0.90**	**177**	*e*P	**Pg**	**17 32 45.8**	**0.0**
KUA	**Kurravaara**	**0.92**	**347**	P	**Pg**	**17 32 45.8**	**-0.4**
KUA	**Kurravaara**	**0.92**	**347**	*e*P	**Pg**	**17 32 45.8**	**-0.4**
LANU	**Lannavaara**	**1.08**	**23**	P	**Pg**	**17 32 48.4**	**-0.9**
LANU	**Lannavaara**	**1.08**	**23**	*e*PB	**Pg**	**17 32 49.0**	**-0.3**
LANU	**Lannavaara**	**1.08**	**23**	Pb	**Pg**	**17 32 49.0**	**-0.3**
SJUU	**Sjulsmark**	**1.59**	**169**	P	**Pn**	**17 32 58.0**	**+0.1**
SJUU	**Sjulsmark**	**1.59**	**169**	*e*P	**Pn**	**17 32 58.0**	**+0.1**
SJUU	**Sjulsmark**	**1.59**	**169**	P	**Pn**	**17 32 58.0**	**+0.1**
TOF	**Tornio**	**1.69**	**124**	*e*P	**Pn**	**17 32 59.4**	**0.0**
TOF				*e*SG	**Sn**	**17 33 21.9**	**+0.2**
TOF	**Tornio**	**1.69**	**124**	Pg	**Pn**	**17 32 59.3**	**0.0**
TOF				Sn	**Sn**	**17 33 21.9**	**+0.2**
HEF	**Hetta**	**1.72**	**37**	*e*P	**Pn**	**17 32 59.3**	**-0.5**
	baz=222						
HEF				MSG		17 33 19.1	
	comp=Z,28nm,0.2s						
HEF				*e*SG	**Sn**	**17 33 21.9**	**-0.5**
HEF	**Hetta**	**1.72**	**37**	Pg	**Pn**	**17 32 59.3**	**-0.5**
HEF				Sn	**Sn**	**17 33 21.9**	**-0.5**
KIF	**Kilpisjarvi**	**1.96**	**359**	Pn	**Pb**	**17 33 04.5**	**-0.4**
KIF				Lg	Lg	17 33 30.8	
KIF	**Kilpisjarvi**	**1.96**	**359**	Pn	**Pb**	**17 33 04.5**	**-0.4**
KIF				Lg	Lg	17 33 30.8	
KIF	**Kilpisjarvi**	**1.96**	**359**	*e*PB	**Pb**	**17 33 04.3**	**-0.7**
KIF				MSG		17 33 28.1	
	comp=Z,31nm,0.2s						
KIF				*e*SG	**Sg**	**17 33 31.0**	**-0.3**
KIF	**Kilpisjarvi**	**1.96**	**359**	Pg	**Pb**	**17 33 04.3**	**-0.7**
KIF	**Kilpisjarvi**	**1.96**	**359**	Pn	**Pb**	**17 33 04.6**	**-0.4**
	SNR=50						
KIF				Lg	Lg	17 33 30.8	
	SNR=55						
RNF	**Rovaniemi**	**2.08**	**100**	*e*P	**Pn**	**17 33 05.4**	**+0.7**
RNF				*e*SG	**Sb**	**17 33 33.3**	**-0.2**
RNF	**Rovaniemi**	**2.08**	**100**	Pg	**Pn**	**17 33 05.4**	**+0.7**
RNF				Sg	**Sb**	**17 33 33.3**	**-0.2**
BURU	**Burvik**	**2.50**	**175**	*e*P	**Pn**	**17 33 11.8**	**+1.5**
BURU	**Burvik**	**2.50**	**175**	Pb	**Pn**	**17 33 11.8**	**+1.5**
OUL	**Oulu**	**2.85**	**132**	*e*P	**Pn**	**17 33 17.2**	**+2.0**
	baz=320						
OUL	**Oulu**	**2.85**	**132**	Pb	**Pn**	**17 33 17.2**	**+2.0**
ARE0	**ARCESS Array S**	**3.02**	**33**	*e*P	**Pn**	**17 33 17.8**	**+0.2**
ARE0				*e*SB	**Sn**	**17 33 56.9**	**+2.4**
ARE0	**ARCESS Array S**	**3.02**	**33**	Pn	**Pn**	**17 33 17.8**	**+0.2**
ARA0	**ARCESS Array S**	**3.02**	**33**	Pn	**Pn**	**17 33 18.2**	**+0.6**
	baz=213,slow=14						
ARA0				Sn	**Sn**	**17 33 54.5**	**-0.1**
	baz=218,slow=28						
ARA0				Lg	Lg	17 34 00.3	
	baz=213,slow=28						
ARA0	**ARCESS Array S**	**3.02**	**33**	Pn	**Pn**	**17 33 18.2**	**+0.6**
	baz=213,slow=14						
ARA0				Sn	**Sn**	**17 33 54.5**	**-0.1**
	baz=218,slow=28						
ARA0				Lg	Lg	17 34 00.3	
	baz=213,slow=28						
ARA0	**ARCESS Array S**	**3.02**	**33**	Pn	**Pn**	**17 33 18.2**	**+0.6**
	SNR=50						
ARA0				Sn	**Sn**	**17 33 54.5**	**-0.1**
	SNR=50						
ARA0				Lg	Lg	17 34 00.3	
	SNR=6.5						
ARCES	**ARCESS Array B**	**3.02**	**33**	Pn	**Pn**	**17 33 18.3**	**+0.7**
	comp=Z,0.7nm,0.3s,baz=215,slow=14,SNR=19						

GUC 21 17:37:43.6±0.3, 22°91S×67°29W, h238km±11km, ML4.1, 10C-2D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**2.12**	**275**	⇑	*i*	P	Pn	17 38 27.9	+1.5
PB06					*i*	S	S	17 39 01.8	+1.9
PB06					IAML			17 39 05.3	
	comp=E,182nm,0.3s								
PB09	**IPOC Station P**	**2.12**	**301**	⇑	*i*	P	Pn	17 38 28.6	+2.2
PB09					*i*	S	S	17 39 02.4	+2.4
PB09					IAML			17 39 03.7	
	comp=N,544nm,0.5s								
PB07	**IPOC Station P**	**2.68**	**296**	⇑	*i*	P	Pn	17 38 34.2	+2.1
PB07					*i*	S	S	17 39 12.5	+2.3
PB07					IAML			17 39 12.7	
	comp=N,542nm,0.3s								
PB04	**IPOC Station P**	**2.71**	**282**	⇑	*i*	P	Pn	17 38 34.4	+2.0
PB04					*i*	S	S	17 39 12.7	+2.1
PB04					IAML			17 39 17.4	
	comp=E,276nm,0.5s								
PB01	**IPOC Station P**	**2.76**	**312**	⇑	*i*	P	Pn	17 38 34.7	+1.9
PB01					*i*	S	S	17 39 14.0	+2.4
PB01					IAML			17 39 15.5	
	comp=E,255nm,0.1s								
ANCH	**Antofagasta**	**2.97**	**254**	⇑	*i*	P	Pn	17 38 37.1	+2.1
ANCH					*i*	S	S	17 39 16.7	+1.2
PB10	**IPOC Station P**	**3.06**	**258**	⇑	*i*	P	Pn	17 38 38.0	+1.9
PB08	**IPOC Station P**	**3.26**	**327**	⇑	*i*	P	Pn	17 38 41.3	+2.6
PB08					*i*	S	S	17 39 24.8	+2.8
HMBC	**Humberstone**	**3.56**	**317**	⇓	*i*	P	Pn	17 38 43.5	+1.5
HMBC					*i*	S	S	17 39 29.3	+1.4
PB11	**IPOC Station P**	**3.83**	**324**	⇑	*i*	P	Pn	17 38 46.3	+1.2
PB11					*i*	S	S	17 39 35.0	+1.3
PSGC	**Pisagua**	**4.22**	**321**	⇓	*i*	P	Pn	17 38 50.6	+0.9
PSGC					*i*	S	S	17 39 42.6	+0.6
MNMC	**Minye Minye**	**4.33**	**330**	⇑	*i*	P	Pn	17 38 53.1	+1.9
MNMC					*i*	S	S	17 39 46.7	+2.0

MEX 21 17:39:24.6±0.3, 30°33N×109°70W, h10km, MD3.5, Sonora

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
319A	**Douglas**	**1.10**	**19**		*i*	P	Pg	17 39 42.4	-3.4
319A					*e*	S	Sg	17 39 56.4	-3.7
CGIG		**1.49**	**88**		*e*	P	Pn	17 39 47.9	-3.7
CGIG					*e*	S	Sn	17 40 06.4	-4.7
HSIG		**1.70**	**220**		*e*	P	Pn	17 39 51.1	-3.2
HSIG					*e*	S	Sn	17 40 11.6	-4.6
121A	**Cookes Peak, D**	**2.74**	**36**		*e*	P	Pn	17 40 05.8	-2.9
121A					*e*	S	Sn	17 40 37.2	-4.8

*ISCJB **21** 17:39:29.3±0.3, 43°70S±0°03×172°40E±0°04, h16km, mb4.6/19, MS3.9/6, Error ellipse: s-maj=5.1km s-min=2.4km az=139.6*
*IDC **21** 17:39:31.3±0.9, 43°32S×172°16E, h0km, mb4.1/5, mb1 4.2/6, mb1mx4.1/18, mbtmp4.1/6, ML4.0/1, MS3.8/6, Ms1 3.7/6, ms1mx3.4/23, Error ellipse: s-maj=26.7km s-min=11.3km az=148.0*
*WEL **21** 17:39:32.5±0.1, 43°63S×172°21E, h12km±1km, ML5.2/84, Mw4.7, Error ellipse: s-maj=0.6km s-min=0.4km az=0.0*
WEL Felt from Wellington to Southland, maximum reported intensity MM 7.
*NEIC **21** 17:39:32.2, 43°65S×172°20E, h12km, mb4.8/13, ML5.1(WEL), After WEL.*
NEIC Felt at Christchurch.

ISC 21 17:39:31.5±0.5, 43°61S±0°03×172°25E±0°03, h16km, n163, σ1836/143, mb4.5/18, MS3.6/6, 8C-2D, South Island

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.28**	**83**	⇑	*e*	P*	**Pn**	**17 39 38.6**	**-2.2**
CRLZ	**Canterbury Las**	**0.28**	**83**	⇑	*e*	P*	**Pn**	**17 39 38.6**	**-2.2**
CRLZ						AML	AML	17 39 39.1	
CRLZ						AML	AML	17 39 39.2	
CRLZ						AML	AML	17 39 43.5	
CRLZ						AML	AML	17 39 43.6	
MQZ	**McQueen's Vall**	**0.31**	**109**		*e*	Pg	**Pb**	**17 39 38.9**	**+0.3**
MQZ					*e*	Sg	**Sb**	**17 39 43.2**	**-0.3**
MQZ						S*	**Sb**	**17 39 43.5**	**+0.1**
MQZ	**McQueen's Vall**	**0.31**	**109**	⇑	*e*	P*	**Pb**	**17 39 38.9**	**+0.3**
MQZ						S*	**Sb**	**17 39 43.5**	**+0.1**
MQZ						AML	AML	17 39 44.6	
OXZ	**Oxford**	**0.32**	**332**		*e*	P*	**Pb**	**17 39 38.7**	**-0.1**
OXZ					*e*	Sg	**Sb**	**17 39 43.6**	**-0.1**
OXZ	**Oxford**	**0.32**	**332**	⇓	*e*	P*	**Pb**	**17 39 38.7**	**-0.1**
OXZ						AML	AML	17 39 44.1	
OXZ						AML	AML	17 39 44.1	
OXZ						AML	AML	17 39 47.2	
OXZ						AML	AML	17 39 47.3	
LTZ	**Lake Taylor**	**0.83**	**1**			P*	**Pn**	**17 39 48.0**	**-0.5**
LTZ					*e*	Sg	**Sn**	**17 39 59.0**	**-1.3**
LTZ	**Lake Taylor**	**0.83**	**1**			P*	**Pn**	**17 39 48.0**	**-0.5**
LTZ						AML	AML	17 40 03.2	
RPZ	**Rata Peaks**	**0.87**	**263**			Pg	**Pn**	**17 39 48.5**	**-0.6**
RPZ						Lg	Lg	17 40 00.9	
	3µm,0.3s,baz=328,slow=21,SNR=26								
RPZ	**Rata Peaks**	**0.87**	**263**		*e*	Pg	**Pn**	**17 39 48.4**	**-0.6**
RPZ					*e*	Sg	**Sg**	**17 39 58.8**	**-1.1**
RPZ	**Rata Peaks**	**0.87**	**263**		*e*	P*	**Pn**	**17 39 48.5**	**-0.6**
RPZ						AML	AML	17 40 03.1	
RPZ						AML	AML	17 40 03.8	
INZ	**Inchbonnie**	**1.06**	**326**	⇑		P*	**Pg**	**17 39 51.5**	**-0.5**
WVZ	**Waitaha Valley**	**1.22**	**295**			P*	**Pg**	**17 39 53.9**	**-1.2**
WVZ	**Waitaha Valley**	**1.22**	**295**	⇑		P*	**Pg**	**17 39 53.9**	**-1.2**
WVZ						AML	AML	17 40 15.1	
WVZ						AML	AML	17 40 15.6	
KHZ	**Kahutara**	**1.52**	**39**		*e*	Pn	**Pb**	**17 39 58.1**	**-1.1**
KHZ	**Kahutara**	**1.52**	**39**			PN	**Pb**	**17 39 58.2**	**-1.1**
KHZ						AML	AML	17 40 31.6	
KHZ						AML	AML	17 40 31.6	
KHZ						AML	AML	17 40 40.2	
KHZ						AML	AML	17 40 40.2	
LBZ	**Lake Benmore**	**1.68**	**242**		*e*	Pn	**Pb**	**17 40 00.0**	**-2.0**
LBZ	**Lake Benmore**	**1.68**	**242**			PN	**Pb**	**17 39 59.9**	**-2.1**
LBZ						AML	AML	17 40 26.9	
LBZ						AML	AML	17 40 26.9	
LBZ						AML	AML	17 40 29.4	
LBZ						AML	AML	17 40 29.9	
FOZ	**Fox Glacier**	**1.77**	**272**		*e*	Pn	**Pb**	**17 40 02.2**	**-1.4**
FOZ	**Fox Glacier**	**1.77**	**272**	⇑		PN	**Pb**	**17 40 02.1**	**-1.4**
FOZ						AML	AML	17 40 35.1	
FOZ						AML	AML	17 40 35.1	
FOZ						AML	AML	17 40 42.8	
FOZ						AML	AML	17 40 42.9	
ODZ	**Otahua Downs**	**1.84**	**218**		*e*	Pn	**Pn**	**17 40 02.0**	**-0.4**
ODZ	**Otahua Downs**	**1.84**	**218**			PN	**Pn**	**17 40 01.9**	**-0.4**
ODZ						AML	AML	17 40 37.0	
ODZ						AML	AML	17 40 37.0	
ODZ						AML	AML	17 40 38.3	
ODZ						AML	AML	17 40 38.3	
DSZ	**Denniston Nort**	**1.89**	**350**			PN	**Pb**	**17 40 03.5**	**-2.1**
DSZ						AML	AML	17 40 33.7	
DSZ						AML	AML	17 40 36.1	
DSZ						AML	AML	17 40 38.0	
DSZ						AML	AML	17 40 38.1	
THZ	**Tophouse**	**1.91**	**15**		*e*	Pn	**Pn**	**17 40 03.5**	**+0.2**
THZ	**Tophouse**	**1.91**	**15**			PN	**Pn**	**17 40 03.0**	**-0.4**
THZ						AML	AML	17 40 43.9	
THZ						AML	AML	17 40 45.7	
BSWZ	**Blackbirch Sta**	**2.24**	**33**			PN	**Pn**	**17 40 08.2**	**+0.4**
BSWZ						AML	AML	17 40 45.5	
BSWZ						AML	AML	17 41 00.7	
TUWZ	**Tuamarina**	**2.51**	**31**			PN	**Pn**	**17 40 11.6**	**0.0**
TUWZ						AML	AML	17 41 04.8	
TUWZ						AML	AML	17 41 09.0	
NNZ	**Nelson**	**2.53**	**20**			PN	**Pn**	**17 40 12.4**	**+0.5**
NNZ						AML	AML	17 41 01.2	
NNZ						AML	AML	17 41 01.2	
NNZ						AML	AML	17 41 05.2	
NNZ						AML	AML	17 41 05.2	
JCZ	**Jackson Bay**	**2.55**	**258**			PN	**Pn**	**17 40 13.1**	**+0.9**
JCZ						AML	AML	17 40 59.4	
JCZ						AML	AML	17 41 00.3	
HHSZ	**Highcliff Hill**	**2.56**	**207**	⇓		PN	**Pn**	**17 40 12.5**	**+0.2**
HHSZ						AML	AML	17 41 00.8	
HHSZ						AML	AML	17 41 04.3	
WKZ	**Wanaka**	**2.62**	**241**		*e*	Pn	**Pn**	**17 40 12.7**	**-0.4**
WKZ	**Wanaka**	**2.62**	**241**			PN	**Pn**	**17 40 12.6**	**-0.6**
WKZ						AML	AML	17 41 03.1	
WKZ						AML	AML	17 41 03.1	
WKZ						AML	AML	17 41 06.9	
WKZ						AML	AML	17 41 06.9	
EAZ	**Earnscleugh**	**2.66**	**231**			PN	**Pn**	**17 40 12.9**	**-0.8**
EAZ						AML	AML	17 40 56.5	
EAZ						AML	AML	17 40 56.5	
EAZ						AML	AML	17 41 00.0	
EAZ						AML	AML	17 41 00.1	
QRZ	**Quartz Range**	**2.79**	**4**			PN	**Pn**	**17 40 15.5**	**+0.1**
QRZ						AML	AML	17 40 29.2	
QRZ						AML	AML	17 40 29.2	
QRZ						AML	AML	17 41 08.7	
QRZ						AML	AML	17 41 08.7	
TCW	**Tory Channel**	**2.83**	**33**			PN	**Pn**	**17 40 15.5**	**-0.4**
TCW						AML	AML	17 41 12.2	
TCW						AML	AML	17 41 12.3	
SNZO	**South Karori**	**2.93**	**39**		*e*	Pn	**Pn**	**17 40 17.2**	**-0.1**
BHW	**Baring Head**	**2.93**	**42**			PN	**Pn**	**17 40 16.7**	**-0.6**
BHW						AML	AML	17 41 21.8	
BHW						AML	AML	17 41 34.7	
WEL	**Wellington**	**2.98**	**40**			PN	**Pn**	**17 40 18.3**	**+0.2**
WEL						AML	AML	17 40 53.2	
WEL						AML	AML	17 40 53.2	
WEL						AML	AML	17 40 53.3	
WEL						AML	AML	17 40 53.4	
TUZ	**Tuapeka**	**3.00**	**218**			PN	**Pn**	**17 40 17.8**	**-0.5**
TUZ						AML	AML	17 41 14.6	
TUZ						AML	AML	17 41 14.6	
TUZ						AML	AML	17 41 17.1	
TUZ						AML	AML	17 41 17.1	
PLWZ	**Palliser**	**3.01**	**48**			PN	**Pn**	**17 40 18.1**	**-0.4**
PLWZ						AML	AML	17 41 10.7	
PLWZ						AML	AML	17 41 55.1	
DUWZ	**D'Urville Isla**	**3.07**	**24**			PN	**Pn**	**17 40 19.7**	**+0.5**
PAWZ	**Paruwai Farm**	**3.24**	**48**			PN	**Pn**	**17 40 20.5**	**-1.1**
PAWZ						AML	AML	17 41 02.2	
PAWZ						AML	AML	17 41 06.0	
CAW	**Cannon Point**	**3.26**	**41**			AML	AML	17 41 03.1	
CAW						AML	AML	17 41 08.1	
MSZ	**Milford Sound**	**3.29**	**250**			PN	**Pn**	**17 40 21.6**	**-0.6**
MSZ						AML	AML	17 41 19.1	
MSZ						AML	AML	17 41 24.2	
MSZ						AML	AML	17 41 24.3	
MSZ						AML	AML	17 41 24.4	
TRWZ	**Traveller**	**3.37**	**50**			PN	**Pn**	**17 40 22.6**	**-0.8**
TRWZ						AML	AML	17 41 04.7	
TRWZ						AML	AML	17 41 44.7	
KIW	**Kapiti Island**	**3.38**	**37**			PN	**Pn**	**17 40 23.4**	**-0.2**
KIW						AML	AML	17 41 06.9	
KIW						AML	AML	17 41 36.5	
MTW	**Mount Morrison**	**3.44**	**46**			PN	**Pn**	**17 40 23.1**	**-1.2**
MTW						AML	AML	17 41 03.8	
MTW						AML	AML	17 41 12.4	
MLZ	**Mavora Lakes**	**3.44**	**238**		*e*	Pn	**Pn**	**17 40 23.5**	**-0.9**
MLZ	**Mavora Lakes**	**3.44**	**238**			PN	**Pn**	**17 40 24.0**	**-0.3**
MLZ						AML	AML	17 41 27.2	
MLZ						AML	AML	17 41 34.6	
HOWZ	**Holdsworth Sta**	**3.64**	**43**			PN	**Pn**	**17 40 26.2**	**-0.9**
HOWZ						AML	AML	17 41 13.7	
HOWZ						AML	AML	17 41 15.0	
SYZ	**Scrubby Hill**	**3.66**	**216**	⇑		PN	**Pn**	**17 40 27.5**	**+0.1**
SYZ						AML	AML	17 41 36.7	
SYZ						AML	AML	17 41 36.7	
SYZ						AML	AML	17 41 36.8	
SYZ						AML	AML	17 41 36.8	
TMWZ	**Te Maipa**	**3.68**	**48**			AML	AML	17 41 19.4	
TMWZ						AML	AML	17 41 26.2	
WHZ	**Wether Hill Ro**	**3.82**	**232**		*e*	Pn	**Pn**	**17 40 28.2**	**-1.4**
WHZ	**Wether Hill Ro**	**3.82**	**232**			PN	**Pn**	**17 40 27.9**	**-1.7**
WHZ						AML	AML	17 41 43.0	
WHZ						AML	AML	17 41 46.2	
MRZ	**Mangatainoka R**	**3.85**	**41**			PN	**Pn**	**17 40 28.6**	**-1.4**
MRZ						AML	AML	17 41 19.7	
MRZ						AML	AML	17 41 21.4	
TIWZ	**Tintock**	**3.91**	**45**			AML	AML	17 41 21.2	
TIWZ						AML	AML	17 41 22.6	
CPWZ	**Castlepoint**	**3.98**	**49**			AML	AML	17 41 26.6	
DCZ	**Deep Cove**	**4.09**	**241**		*e*	Pn	**Pn**	**17 40 32.6**	**-0.6**
DCZ	**Deep Cove**	**4.09**	**241**			PN	**Pn**	**17 40 32.7**	**-0.5**
DCZ						AML	AML	17 41 48.1	
DCZ						AML	AML	17 41 48.1	
DCZ						AML	AML	17 41 51.1	
DCZ						AML	AML	17 41 51.1	
PRWZ	**Pori Road**	**4.12**	**44**			PN	**Pn**	**17 40 33.0**	**-0.8**
PRWZ						AML	AML	17 41 29.6	
PRWZ						AML	AML	17 42 10.0	
POWZ	**Post Office Ro**	**4.15**	**40**			PN	**Pn**	**17 40 34.1**	**0.0**
POWZ						AML	AML	17 42 05.5	
POWZ						AML	AML	17 42 08.2	
BFZ	**Birch Farm**	**4.17**	**47**		*e*	Pn	**Pn**	**17 40 33.2**	**-1.2**
BFZ	**Birch Farm**	**4.17**	**47**	⇑		PN	**Pn**	**17 40 33.4**	**-1.0**
BFZ						AML	AML	17 41 36.4	
BFZ						AML	AML	17 41 36.4	
BFZ						AML	AML	17 42 15.2	
BFZ						AML	AML	17 42 15.2	
WAZ	**Wanganui**	**4.36**	**29**			PN	**Pn**	**17 40 38.5**	**+1.4**
WAZ						AML	AML	17 41 41.2	
WAZ						AML	AML	17 41 46.1	
APZ	**The Paps**	**4.41**	**222**			PN	**Pn**	**17 40 36.7**	**-1.0**
APZ						AML	AML	17 41 57.6	
APZ						AML	AML	17 42 08.3	
DVHZ	**Dannevirke**	**4.41**	**43**			PN	**Pn**	**17 40 37.3**	**-0.5**
DVHZ						AML	AML	17 41 39.8	
DVHZ						AML	AML	17 41 53.2	
LREZ	**Lake Rotokare**	**4.45**	**22**			PN	**Pn**	**17 40 40.3**	**+2.1**
LREZ						AML	AML	17 41 49.4	
LREZ						AML	AML	17 42 13.1	
ANWZ	**Angora Road**	**4.45**	**46**			PN	**Pn**	**17 40 37.8**	**-0.5**
ANWZ						AML	AML	17 41 36.3	
ANWZ						AML	AML	17 41 43.0	
PREZ	**Palmer Road**	**4.50**	**19**			PN	**Pn**	**17 40 40.7**	**+1.8**
PREZ						AML	AML	17 41 44.8	
PREZ						AML	AML	17 41 56.9	
TSZ	**Takapari Road**	**4.50**	**39**			PN	**Pn**	**17 40 37.7**	**-1.3**
TSZ						AML	AML	17 42 16.3	
TSZ						AML	AML	17 42 16.3	
KHEZ	**Kahui Hut**	**4.51**	**18**			PN	**Pn**	**17 40 41.0**	**+1.8**
PNHZ	**Pukenui**	**4.73**	**40**			PN	**Pn**	**17 40 40.5**	**-1.6**
PNHZ						AML	AML	17 41 38.2	
PNHZ						AML	AML	17 41 38.5	
MHEZ	**Mangahewa**	**4.79**	**20**			PN	**Pn**	**17 40 45.0**	**+2.1**
VRZ	**Vera Road**	**4.86**	**24**			PN	**Pn**	**17 40 45.0**	**+1.1**
VRZ						AML	AML	17 42 03.0	
VRZ						AML	AML	17 42 24.4	
PKVZ	**Pokaka**	**4.90**	**29**			PN	**Pn**	**17 40 45.0**	**+0.5**
PKVZ						AML	AML	17 42 13.8	
PKVZ						AML	AML	17 42 46.8	
MOVZ	**Moawhango**	**4.95**	**33**			PN	**Pn**	**17 40 45.6**	**+0.3**
MOVZ						AML	AML	17 41 47.6	
MOVZ						AML	AML	17 41 48.0	
WNVZ	**Wahianoa**	**4.96**	**32**			PN	**Pn**	**17 40 45.6**	**+0.2**
PXZ	**Pawanui**	**4.97**	**46**			PN	**Pn**	**17 40 44.0**	**-1.4**
PXZ						AML	AML	17 41 47.4	
PXZ						AML	AML	17 42 42.1	
TRVZ	**Turoa**	**4.97**	**31**			PN	**Pn**	**17 40 45.9**	**+0.3**
TRVZ						AML	AML	17 41 47.6	
TRVZ						AML	AML	17 41 48.7	
WHVZ	**Whangaehu Hut**	**5.00**	**31**			PN	**Pn**	**17 40 46.0**	**0.0**
WHVZ						AML	AML	17 41 48.9	
WHVZ						AML	AML	17 41 50.0	
FWVZ	**Far West T-bar**	**5.01**	**31**			PN	**Pn**	**17 40 46.5**	**+0.4**
FWVZ						AML	AML	17 41 54.3	
FWVZ						AML	AML	17 42 35.3	
KRHZ	**Kereru**	**5.02**	**39**			PN	**Pn**	**17 40 44.8**	**-1.4**
KRHZ						AML	AML	17 41 51.6	
KRHZ						AML	AML	17 41 55.8	
TUVZ	**Tukino**	**5.04**	**32**			PN	**Pn**	**17 40 46.5**	**0.0**
TUVZ						AML	AML	17 41 51.5	
TUVZ						AML	AML	17 41 55.1	
TWVZ	**Taurewa**	**5.13**	**29**			AML	AML	17 42 01.9	
TWVZ						AML	AML	17 42 31.2	
OTVZ	**Oturere**	**5.13**	**31**			PN	**Pn**	**17 40 48.4**	**+0.7**
OTVZ						AML	AML	17 41 55.1	
OTVZ						AML	AML	17 42 42.0	
KAHZ	**Kahuranaki**	**5.15**	**44**			PN	**Pn**	**17 40 46.8**	**-1.1**
KAHZ						AML	AML	17 41 52.4	
KAHZ						AML	AML	17 41 52.9	
KWHZ	**Kaweka Forest**	**5.22**	**38**			AML	AML	17 41 57.2	
KWHZ						AML	AML	17 42 10.8	
MCHZ	**McNeill Hill**	**5.33**	**40**			PN	**Pn**	**17 40 49.7**	**-0.7**
MCHZ						AML	AML	17 42 36.5	
MCHZ						AML	AML	17 42 51.8	
HIZ	**Hauiti**	**5.46**	**22**		*e*	Pn	**Pn**	**17 40 52.4**	**+0.2**
HIZ	**Hauiti**	**5.46**	**22**			PN	**Pn**	**17 40 52.1**	**0.0**
HIZ						AML	AML	17 42 10.5	
HIZ						AML	AML	17 42 42.9	
BKZ	**Black Stump Fm**	**5.47**	**37**		*e*	Pn	**Pn**	**17 40 51.1**	**-1.1**
BKZ	**Black Stump Fm**	**5.47**	**37**			PN	**Pn**	**17 40 50.3**	**-2.0**
BKZ						AML	AML	17 42 31.6	
BKZ						AML	AML	17 42 41.3	
ARHZ	**Aropaoanui**	**5.62**	**41**			AML	AML	17 42 01.9	
ARHZ						AML	AML	17 42 10.5	
NMHZ	**Naumai**	**5.66**	**39**			AML	AML	17 42 04.9	
NMHZ						AML	AML	17 42 07.5	
TLZ	**Tolley Road**	**5.83**	**26**			PN	**Pn**	**17 40 57.2**	**-0.1**
TLZ						AML	AML	17 42 12.6	
TLZ						AML	AML	17 42 25.6	
KNZ	**Kokohu**	**6.14**	**44**			PN	**Pn**	**17 40 59.6**	**-1.9**
KNZ						AML	AML	17 43 33.9	
KNZ						AML	AML	17 43 40.7	
OMRZ	**Omania**	**6.32**	**31**			AML	AML	17 42 12.0	
TOZ	**Tahuroa Road**	**6.37**	**24**			PN	**Pn**	**17 41 04.3**	**-0.3**
TOZ						AML	AML	17 42 24.4	
TOZ						AML	AML	17 43 03.1	
RIGZ	**Rimuhau**	**6.42**	**42**			AML	AML	17 42 21.1	
RIGZ						AML	AML	17 42 25.8	
URZ	**Urewera**	**6.49**	**36**			PN	**Pn**	**17 41 04.2**	**-2.0**
	3.3nm,0.3s,baz=236,slow=6.9,SNR=26								
URZ						Sn	**Sn**	**17 42 15.5**	**-4.4**
	44nm,0.3s,baz=54,slow=14,SNR=8.9								
URZ						LR	LR	17 44 04.9	
	comp=Z,2µm,20.9s,baz=228,slow=43								
URZ	**Urewera**	**6.49**	**36**			PN	**Pn**	**17 41 03.9**	**-2.3**
URZ						AML	AML	17 42 22.1	
URZ						AML	AML	17 42 25.0	
MWZ	**Matawai**	**6.61**	**39**			PN	**Pn**	**17 41 05.9**	**-2.1**
MWZ						AML	AML	17 42 31.9	
MWZ						AML	AML	17 42 32.6	
TKGZ	**Te Karaka**	**6.68**	**41**			PN	**Pn**	**17 41 07.7**	**-1.1**
TKGZ						AML	AML	17 42 26.8	
TKGZ						AML	AML	17 42 36.3	
AWAZ	**Awhitu Peninsu**	**6.79**	**16**			PN	**Pn**	**17 41 11.7**	**+1.3**
CNGZ	**Carnagh Statio**	**6.82**	**43**			PN	**Pn**	**17 41 11.4**	**+0.7**
CNGZ						AML	AML	17 42 28.8	
CNGZ						AML	AML	17 42 43.7	
MKAZ	**Moumakai**	**6.87**	**20**			PN	**Pn**	**17 41 11.2**	**-0.2**
MKAZ						AML	AML	17 43 31.7	
MKAZ						AML	AML	17 43 41.4	
WTAZ	**Waiatarua**	**6.90**	**16**			PN	**Pn**	**17 41 13.8**	**+1.8**
TWGZ	**Tauwhareparae**	**6.95**	**41**			PN	**Pn**	**17 41 11.1**	**-1.5**
TWGZ						AML	AML	17 42 35.3	
TWGZ						AML	AML	17 42 37.8	
ETAZ	**East Tamaki Re**	**6.96**	**18**			PN	**Pn**	**17 41 13.5**	**+0.8**
RUGZ	**Raukumara Rang**	**6.98**	**38**			PN	**Pn**	**17 41 11.0**	**-2.2**
WIAZ	**Waiheke Island**	**7.16**	**19**			PN	**Pn**	**17 41 16.2**	**+0.8**
PUZ	**Puketiti**	**7.16**	**42**			PN	**Pn**	**17 41 15.0**	**-0.6**
PUZ						AML	AML	17 42 37.3	
PUZ						AML	AML	17 42 38.7	
HAZ	**Te Kaha**	**7.20**	**38**			AML	AML	17 42 43.1	
HAZ						AML	AML	17 42 45.0	
PKGZ	**Pakihiroa**	**7.22**	**40**			PN	**Pn**	**17 41 14.6**	**-1.9**
WMGZ	**Waiomatatini S**	**7.44**	**41**			PN	**Pn**	**17 41 16.7**	**-2.6**
WMGZ						AML	AML	17 42 42.4	
WMGZ						AML	AML	17 42 44.9	
MXZ	**Matakaoa Point**	**7.60**	**39**		*e*	Pn	**Pn**	**17 41 19.8**	**-1.7**
WCZ	**Waipu Caves**	**7.83**	**13**			AML	AML	17 38 21.5	
OUZ	**Omahuta**	**8.44**	**8**		*e*	Pn	**Pn**	**17 41 32.8**	**-0.2**
MCQ	**Macquarie Isla**	**13.93**	**214**		*e*	Pn	**Pn**	**17 42 47.8**	**-0.1**
TAU	**Tasmania Unive**	**18.16**	**264**		*e*	Pn	**P**	**17 43 42.0**	**-1.0**
	132nm,1.8s								
CAN	**Canberra**	**19.72**	**287**		*e*	P	**P**	**17 43 59.5**	**-0.7**
	158nm,1.7s								
ARMA	**Armidale**	**21.01**	**302**		*e*	P	**P**	**17 44 10.8**	**-3.5**
	71nm,1.5s								
DZM	**Mont Dzumac**	**22.01**	**346**		*e*	LR	LR	17 49 46.7	
	661nm,22.5s								
MSVF	**Nonsavu**	**26.26**	**13**		*e*	P	**P**	**17 45 06.0**	**0.0**
	46nm,1.7s								
STKA	**Stephens Creek**	**26.77**	**286**			P	**P**	**17 45 11.8**	**+1.3**
	2.2nm,0.9s,baz=124,slow=15,SNR=3.2								
STKA						LR	LR	17 54 11.9	
	comp=Z,171nm,20.6s,baz=136,slow=33								
STKA	**Stephens Creek**	**26.77**	**286**		*e*	P	**P**	**17 45 11.6**	**+1.1**
	3.6nm,1.4s								
VNDA	**Vanda**	**34.28**	**184**			P	**P**	**17 46 19.5**	**+3.1**
	1.1nm,1.0s,baz=350,slow=7.4,SNR=3.3								
VNDA						LR	LR	17 58 44.8	
	comp=Z,106nm,

ISCJB ***21*** *17:43:17.0±0.9, 19°.0S±0°.2×36°.2E±0°.1, h10km, mb3.9/5, Error ellipse: s-maj=27.0km s-min=9.0km az=144.9*
IDC ***21*** *17:43:17.4±1.8, 18°.93S×35°.97E, h0km, mb4.0/5, mb1 3.9/6, mb1mx3.6/40, mbtmp3.9/6, ML3.8/1, MS3.0/2, Ms1 2.9/2, ms1mx2.6/35, Error ellipse: s-maj=108.8km s-min=26.4km az=129.0*

ISC 21 17:43:18.8±1.2, 18°.9S±0°.1×36°.0E±0°.1, h10km, n9, σ2§41/11, mb4.0/5, Mozambique

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MATP	**Matopo**	**7.26**	**257**	*i* P		**Pn**	**17 45 01.8**	**-3.3**
MATP				*i*			17 45 02.0	
	baz=102,slow=9.3							
MATP				*i* S		**Sn**	**17 46 32.1**	**+4.5**
BOSA	**Boshof**	**13.80**	**224**	*i* P		**Pn**	**17 46 35.6**	**+0.9**
BOSA				*i*			17 46 35.8	
	baz=107,slow=7.4							
BOSA				*i* S		**S**	**17 49 27.6**	**-3.1**
BOSA	**Boshof**	**13.80**	**224**	Pn		**Pn**	**17 46 34.0**	**-0.7**
	0.3nm,0.3s,baz=36,slow=13,SNR=5.5							
BOSA				Sn		**Sn**	**17 49 09.8**	**+1.7**
	0.5nm,0.3s,baz=299,slow=13,SNR=2.4							
BOSA				Lg		Lg	17 50 32.8	
	0.7nm,0.3s,baz=129,slow=14,SNR=5.0							
BOSA				LR		LR	17 52 17.7	
	comp=Z,34nm,21.9s,baz=23,slow=39							
TSUM	**Tsumeb**	**17.44**	**266**	LR		LR	17 53 18.0	
	comp=Z,85nm,18.2s,baz=106,slow=35							
BRTR	**Keskin Array B**	**58.37**	**358**	P		**P**	**17 53 14.6**	**+0.2**
	0.8nm,0.7s,baz=171,slow=10,SNR=4.3							
MKAR	**Makanchi Array**	**77.54**	**31**	P		**P**	**17 55 15.2**	**+0.3**
	1.2nm,0.7s,baz=243,slow=6.3,SNR=5.5							
BVAR	**Borovoye Array**	**77.56**	**20**	P		**P**	**17 55 15.2**	**+0.4**
	0.7nm,0.6s,baz=224,slow=5.3,SNR=6.3							
KURBB	**Kurchatov Arra**	**78.68**	**26**	P		**P**	**17 55 22.2**	**+1.2**
	1.0nm,0.7s,baz=228,slow=6.4,SNR=13							
ZALV	**Zalesovo Beam**	**83.75**	**27**	P		**P**	**17 55 47.5**	**-0.3**
	0.8nm,0.5s,baz=188,slow=5.8,SNR=2.5							

IDC ***21*** *18:01:34.7±0.9, 21°.26S×174°.45W, h0km, mb4.2/12, mb1 4.3/13, mb1mx4.2/39, mbtmp4.2/13, ML4.3/1, MS3.9/19, Ms1 3.9/19, ms1mx3.8/31, Error ellipse: s-maj=27.0km s-min=20.6km az=128.0*
ISCJB ***21*** *18:01:45.8±0.6, 21°.52S±0°.10×174°.6W±0°.1, h100km, mb4.2/17, Error ellipse: s-maj=16.1km s-min=13.2km az=34.6*
NEIC ***21*** *18:01:48.8±2.3, 21°.43S×174°.58W, h113km±18km, mb4.6/6, Error ellipse: s-maj=18.3km s-min=12.0km az=106.0*

ISC 21 18:01:47.7±0.8, 21°.5S±0°.1×174°.5W±0°.1, h100km, n36, σ1§31/22, mb4.2/17, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**7.91**	**297**	*e*Pn		**Pn**	**18 03 41.1**	**+0.9**
	99nm,1.3s							
RAO	**Raoul Island**	**8.34**	**201**	LR		LR	18 06 58.5	
	comp=Z,479nm,18.7s,baz=332,slow=38							
URZ	**Urewera**	**18.22**	**201**	P		**P**	**18 05 51.1**	**-1.8**
	0.9nm,0.3s,baz=219,slow=0.8,SNR=5.3							
PPT2	**Papeete2**	**23.83**	**85**	*e*S		S	18 10 48.4	-12
	1μm,27.5s							
PPT2				*e*LR		LR	18 12 03.7	
	215nm,20.8s							
PPT	**Papeete**	**23.83**	**85**	LR		LR	18 14 24.9	
	comp=Z,309nm,18.7s,baz=220,slow=32							
RPZ	**Rata Peaks**	**25.22**	**205**	P		**P**	**18 07 06.1**	**+1.9**
	17nm,1.0s,baz=336,slow=6.8,SNR=3.4							
RPZ				LR		LR	18 17 43.0	
	comp=Z,484nm,18.5s,baz=26,slow=38							
HNR	**Honiara**	**27.30**	**292**	LR		LR	18 17 48.6	
	comp=Z,155nm,18.3s,baz=144,slow=36							
CTA	**Charters Tower**	**36.62**	**265**	P		**P**	**18 08 45.1**	**+0.4**
	2.0nm,0.5s,baz=112,slow=11,SNR=3.9							
STKA	**Stephens Creek**	**40.31**	**246**	P		**P**	**18 09 14.8**	**-0.6**
	3.5nm,0.8s,baz=87,slow=10,SNR=5.3							
STKA				LR		LR	18 25 34.8	
	comp=Z,197nm,18.9s,baz=42,slow=36							
JAY	**Jayapura**	**47.42**	**287**	P		**P**	**18 10 12.4**	**-0.1**
	0.7nm,0.6s,baz=92,slow=23,SNR=5.2							
ASAR	**Alice Springs**	**47.45**	**257**	P		**P**	**18 10 11.7**	**-1.1**
	3.5nm,0.8s,baz=99,slow=7.6,SNR=34							
ASAR				LR		LR	18 31 00.9	
	comp=Z,192nm,18.4s,baz=96,slow=37							
WRAB	**Tennant Creek**	**47.67**	**262**	*e*P		**P**	**18 10 11.9**	**-2.4**
	2.4nm,0.7s							
WRA	**Warramunga Arr**	**47.67**	**262**	P		**P**	**18 10 13.3**	**-1.2**
	3.7nm,0.9s,baz=92,slow=5.8,SNR=38							
FITZ	**Fitzroy Crossi**	**56.10**	**267**	P		**P**	**18 11 16.8**	**-0.3**
	1.6nm,0.6s,baz=82,slow=6.8,SNR=6.7							
VNDA	**Vanda**	**57.27**	**186**	P		**P**	**18 11 25.0**	**+0.6**
	1.2nm,0.8s,baz=13,slow=6.9,SNR=6.6							
VNDA				LR		LR	18 35 01.1	
	comp=Z,54nm,18.8s,baz=23,slow=35							
MBWA	**Marble Bar**	**60.80**	**257**	*e*P		**P**	**18 11 49.3**	**-0.3**
	5.4nm,0.5s							
MJAR	**Matsushiro Arr**	**72.93**	**322**	LR		LR	18 41 17.9	
	comp=Z,31nm,20.6s,baz=135,slow=33							
PETK	**Petropavlovsk-**	**78.07**	**343**	LR		LR	18 43 58.7	
	comp=Z,62nm,19.1s,baz=148,slow=33							
KSRS	**Korea Array**	**79.77**	**317**	LR		LR	18 43 58.9	
	comp=Z,22nm,19.2s,baz=134,slow=32							
USRK	**Ussuriysk Ar.**	**81.60**	**324**	LR		LR	18 46 00.3	
	comp=Z,121nm,20.3s,baz=109,slow=33							
MAW	**Mawson**	**81.74**	**199**	P		**P**	**18 13 55.6**	**+0.7**
	1.7nm,0.7s,baz=130,slow=6.1,SNR=5.6							
MAW				LR		LR	18 49 02.6	
	comp=Z,111nm,18.7s,baz=63,slow=35							
TXAR	**Lajitas Array**	**84.88**	**56**	LR		LR	18 45 20.5	
	comp=Z,90nm,19.7s,baz=0.0,slow=31							
KLR	**Kulʹdur**	**85.03**	**328**	LR		LR	18 49 04.9	
	comp=Z,63nm,18.5s,baz=186,slow=34							
PLCA	**Paso Flores**	**86.25**	**132**	LR		LR	18 48 54.2	
	comp=Z,65nm,18.8s,baz=208,slow=33							
TRF	**Thorofare Moun**	**86.75**	**11**	*e*P		**P**	**18 14 19.1**	**-1.2**
	9.3nm,1.1s							
MCK	**McKinley**	**87.25**	**11**	*e*P		**P**	**18 14 21.8**	**-0.8**
	6.8nm,1.0s							
PDAR	**Pinedale Array**	**87.48**	**42**	P		**P**	**18 14 23.6**	**-0.8**
	0.3nm,0.6s,baz=253,slow=6.3,SNR=2.5							
PDAR				LR		LR	18 48 20.8	
	comp=Z,62nm,18.1s,baz=255,slow=32							
DOT	**Dot Lake**	**88.12**	**13**	*e*P		**P**	**18 14 26.3**	**-0.4**
	4.3nm,1.0s							
ILAR	**Eielson Array**	**88.57**	**11**	P		**P**	**18 14 28.2**	**-0.5**
	1.1nm,1.0s,baz=225,slow=5.9,SNR=6.1							
CMAR	**Chiang Mai Arr**	**93.49**	**288**	P		**P**	**18 14 52.7**	**0.0**
	0.9nm,0.7s,baz=118,slow=3.1,SNR=7.3							
YAK	**Yakutsk**	**94.24**	**337**	LR		LR	18 53 08.1	
	comp=Z,32nm,19.2s,baz=95,slow=33							
SONM	**Songino Array**	**98.61**	**318**	LR		LR	18 59 10.0	
	comp=Z,35nm,18.0s,baz=128,slow=35							
LPAZ	**La Paz**	**98.70**	**111**	LR		LR	18 53 23.2	
	comp=Z,73nm,18.1s,baz=292,slow=32							
AKASG	**Malin Array Be**	**145.37**	**333**	PKPbc		**PKPbc**	**18 21 13.8**	**0.0**
	1.3nm,0.5s,baz=36,slow=3.6,SNR=4.0							
BRTR	**Keskin Array B**	**149.86**	**314**	PKPbc		**PKPdf**	**18 21 25.1**	**+3.3**
	2.0nm,0.9s,baz=60,slow=3.0,SNR=6.5							
GERES	**GERESS Array B**	**151.90**	**348**	PKPbc		**PKPbc**	**18 21 31.1**	**+0.1**
	1.1nm,0.9s,baz=15,slow=4.1,SNR=5.4							

NIED ***21*** *18:09:00, 39°.40N×143°.90E, h14km, Mw4.5 Best double couple: M0=5.68000×10^15 NP1:φ=188.00000°, δ=37.00000°, λ=93.00000°. NP2:φ=4.00000°, δ=53.00000°, λ=88.00000°.*
IDC ***21*** *18:09:09.9±0.7, 39°.33N×143°.83E, h0km, mb4.3/27, mb1 4.4/33, mb1mx4.3/59, mbtmp4.3/33, ML3.4/5, MS3.6/7, Ms1 3.6/7, ms1mx3.2/35, Error ellipse: s-maj=16.5km s-min=12.9km az=123.0*
JMA ***21*** *18:09:09.0±0.2, 39°.38N×143°.89E, h15km, M4.5*
ISCJB ***21*** *18:09:10.3±0.4, 39°.42N±0°.03×143°.73E±0°.05, h11km, mb4.4/44, MS4.1/16, Error ellipse: s-maj=6.5km s-min=3.5km az=31.2*
NEIC ***21*** *18:09:12.7±3.0, 39°.32N×143°.73E, h16km±18km, mb4.6/11, Error ellipse: s-maj=11.5km s-min=5.9km az=123.0*
MOS ***21*** *18:09:14.2±1.0, 39°.35N×143°.68E, h41km, mb4.7/24, Error ellipse: s-maj=9.4km s-min=6.5km az=97.3*

ISC 21 18:09:12.1±0.6, 39°.40N±0°.05×143°.74E±0°.06, h11km, n121, σ1§62/128, mb4.5/44, MS4.2/16, 7C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.50**	**278**	P		**Pn**	**18 09 37.4**	**-1.5**
MIYJ				*e*S		**Sn**	**18 09 58.1**	**-0.4**
JTH	**Tanohata**	**1.55**	**291**	P		**Pn**	**18 09 38.1**	**-1.5**
OFUJ	**Ofunato**	**1.64**	**260**	P		**Pn**	**18 09 39.3**	**-1.6**
JOM	**Ohasama**	**1.90**	**273**	P		**Pn**	**18 09 43.4**	**-1.0**
JANG	**Nango**	**1.97**	**300**	P		**Pn**	**18 09 43.5**	**-2.0**
JMK	**Ichinoseki**	**2.01**	**258**	P		**Pn**	**18 09 44.9**	**-1.0**
ERM	**Erimo**	**2.66**	**351**	*de*P		**Pn**	**18 09 55.1**	**+0.3**
ERM				pmax	pmax			
	comp=Z,41nm,1.2s							
ERM	**Erimo**	**2.66**	**351**	*e*Pn		**Pn**	**18 09 54.1**	**-0.7**
JYK	**Kaneyama**	**2.67**	**261**	P		**Pn**	**18 09 54.3**	**-0.8**
JOT	**Ohata**	**2.86**	**315**	P		**Pn**	**18 09 56.9**	**-0.7**
JCH	**Churui**	**3.23**	**355**	P		**Pn**	**18 10 02.1**	**-0.6**
JCH				*e*S		**Sn**	**18 10 37.9**	**-3.2**
JFT	**Otama**	**3.27**	**236**	P		**Pn**	**18 10 02.1**	**-1.1**
JAW	**Awa shima**	**3.63**	**256**	P		**Pn**	**18 10 07.8**	**-0.4**
JAK	**Akkeshi**	**3.67**	**11**	P		**Pn**	**18 10 08.1**	**-0.6**
JAK				*e*S		**Sn**	**18 10 48.6**	**-3.4**
JFR	**Furan**	**3.86**	**347**	*e*S		**Sn**	**18 10 55.5**	**-1.3**
JAR	**Ashorobuto**	**3.90**	**0**	P		**Pn**	**18 10 10.9**	**-1.0**
JAR				*e*S		**Sn**	**18 10 53.7**	**-4.0**
ASAJ	**Asahikawa**	**4.79**	**350**	Pn		**Pn**	**18 10 24.9**	**+0.6**
ASAJ				Sn		**Sn**	**18 11 18.6**	**-1.1**
ASAJ	**Asahikawa**	**4.79**	**350**	*e*Pn		**Pn**	**18 10 24.5**	**+0.3**
ASAJ				Sn		**Sn**	**18 11 18.6**	**-1.1**
MAJO	**Matsushiro**	**5.22**	**239**	*e*P		**Pn**	**18 10 30.4**	**+0.3**
MAJO				pmax	pmax			
	comp=Z,250nm,0.6s							
MAJO	**Matsushiro**	**5.22**	**239**	*e*Pn		**Pn**	**18 10 30.4**	**+0.3**
	comp=Z,250nm,0.6s							
MAT	**Matsushiro**	**5.22**	**239**	P		**Pn**	**18 10 30.3**	**+0.2**
MAT				S		**Sn**	**18 11 30.9**	**+0.6**
MJAR	**Matsushiro Arr**	**5.22**	**239**	Pn		**Pn**	**18 10 30.4**	**+0.3**
	comp=Z,9.2nm,0.3s,baz=41,slow=12,SNR=158							
MJAR				LR		LR	18 12 20.9	
	comp=Z,247nm,19.5s,baz=60,slow=36							
KUR	**Kurilʹsk**	**6.58**	**26**	*e*P		**Pn**	**18 10 49.8**	**+1.0**
KUR				*i* S		**Sn**	**18 12 00.1**	**-3.7**
KUR				pmax	pmax			
	comp=N,8.0nm,0.5s							
KUR				pmax	pmax			
	comp=E,17nm,0.5s							
KUR				pmax	pmax			
	comp=Z,25nm,0.5s							
KUR				smax	smax			
	comp=N,91nm,0.5s							
KUR				smax	smax			
	comp=E,61nm,0.5s							
YSS	**Yuzh-Sakhalins**	**7.59**	**355**	*i*P		**Pn**	**18 11 05.0**	**+2.4**
YSS				*e*S		**Sn**	**18 12 26.6**	**-1.9**
YSS				MLR	MLR			
	comp=Z,1μm,15.0s							
YSS				MLR	MLR			
	comp=N,800nm,16.0s							
YSS				MLR	MLR			
	comp=E,400nm,15.0s							
YSS	**Yuzh-Sakhalins**	**7.59**	**355**	*e*Pn		**Pn**	**18 11 04.7**	**+2.1**
	comp=E,16nm,0.8s							
USRK	**Ussuriysk Ar.**	**10.00**	**302**	Pn		**Pn**	**18 11 37.0**	**+1.4**
	comp=E,0.7nm,0.3s,baz=112,slow=13,SNR=18							
HABR	**Khabarovsk**	**11.02**	**328**	*ce*P		**Pn**	**18 11 47.4**	**-2.2**
HABR				*e*S		**Sn**	**18 13 47.5**	**-5.2**
HABR				pmax	pmax			
	comp=Z,17nm,1.5s							
HABR				MLR	MLR			
	comp=Z,411nm,15.0s							
MDJ	**Mudanjiang**	**11.74**	**301**	*e*Pn		**Pn**	**18 12 00.2**	**+0.7**
	comp=Z,21nm,0.9s							
JNU	**Nakatsue**	**12.12**	**243**	Pn		**Pn**	**18 12 03.5**	**-1.3**
	comp=Z,0.2nm,0.3s,baz=46,slow=7.1,SNR=5.6							
KSRS	**Korea Array**	**12.56**	**266**	Pn		**Pn**	**18 12 11.8**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=81,slow=13,SNR=15							
KSRS				LR		LR	18 16 38.3	
	comp=Z,283nm,18.8s,baz=82,slow=35							
KSAR	**Wonju Array Be**	**12.59**	**266**	P		**Pn**	**18 12 11.8**	**+0.7**
KSAR	**Wonju Array Be**	**12.59**	**266**	Pn		**Pn**	**18 12 11.8**	**+0.7**
KLR	**Kulʹdur**	**13.04**	**323**	Pn		**Pn**	**18 12 16.6**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=138,slow=13,SNR=14							
KLR				LR		LR	18 17 33.8	
	comp=Z,404nm,18.8s,baz=134,slow=38							
KLR	**Kulʹdur**	**13.04**	**323**	‖*e*P		**Pn**	**18 12 16.3**	**-0.9**
PETK	**Petropavlovsk-**	**16.73**	**30**	Pn		**Pn**	**18 13 09.1**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=204,slow=11,SNR=5.8							
HIA	**Hailar**	**19.73**	**308**	*e*P		**P**	**18 13 39.4**	**-2.2**
HIA				pmax	pmax			
	comp=Z,19nm,0.9s							
HIA	**Hailar**	**19.73**	**308**	*e*Pn		**P**	**18 13 39.4**	**-2.2**
	comp=Z,19nm,0.9s							
MA2	**Magadan**	**20.69**	**10**	P		**P**	**18 13 53.4**	**+1.5**
	comp=Z,4.2nm,0.7s,baz=78,slow=20,SNR=2.6							
BJT	**Baijiatuan**	**21.20**	**281**	*e*P		**P**	**18 13 54.3**	**-3.3**
BJT				pmax	pmax			
	comp=Z,6.0nm,0.4s							
BJT	**Baijiatuan**	**21.20**	**281**	*e*P		**P**	**18 13 54.3**	**-3.3**
	comp=Z,5.8nm,0.4s							
SEY	**Seymchan**	**24.14**	**10**	P		**P**	**18 14 26.5**	**-1.3**
	comp=Z,7.7nm,0.9s,baz=138,slow=6.2,SNR=15							
SEY	**Seymchan**	**24.14**	**10**	‖*e*P		**P**	**18 14 30.0**	**+2.2**
YAK	**Yakutsk**	**24.24**	**344**	P		**P**	**18 14 27.9**	**-0.8**
	comp=Z,22nm,0.9s,baz=165,slow=2.3,SNR=11							
YAK	**Yakutsk**	**24.24**	**344**	*e*P		**P**	**18 14 27.2**	**-1.5**
YAK				*e**PP		**sP**	**18 14 36.9**	**+3.5**
YAK				*e*			18 15 00.7	
YAK				*e*PPP		PPP	18 15 18.8	
YAK				*e*S		**S**	**18 18 45.0**	**-1.9**
YAK				*e**SS		**sS**	**18 18 59.3**	**+7.0**
YAK				*e*SS		**SnSn**	**18 19 30.0**	**+1.0**
YAK				*e*			18 25 28.6	
YAK				pmax	pmax			
	comp=Z,22nm,1.0s							
YAK				pmax	pmax			
	comp=N,11nm,1.2s							
YAK				pmax	pmax			
	comp=E,5.0nm,1.1s							
YAK				pmax	pmax			
	comp=Z,21nm,1.2s							
YAK				pmax	pmax			
	comp=N,22nm,1.6s							
YAK				pmax	pmax			
	comp=E,21nm,1.9s							
YAK				smax	smax			
	comp=N,46nm,2.0s							
YAK				smax	smax			
	comp=E,16nm,2.0s							
YAK				MLR	MLR			
	comp=Z,169nm,12.0s							
YAK				MLR	MLR			
	comp=N,221nm,15.0s							
YAK				MLR	MLR			
	comp=E,124nm,13.0s							
CIT	**Chita**	**24.38**	**311**	*e*P		**P**	**18 14 28.6**	**-1.6**
CIT				*e*			18 14 39.0	
CIT				*e*			18 15 06.9	
CIT				pmax	pmax			
	comp=Z,62nm,1.0s							
SSLB	**Suanglung**	**24.78**	**238**	*e*P		**P**	**18 14 31.9**	**-2.1**
	comp=Z,15nm,0.9s							
YULB	**Yu-li**	**24.83**	**237**	*e*P		**P**	**18 14 31.5**	**-2.9**
	comp=Z,12nm,1.0s							
BOD	**Bodaibo**	**26.61**	**324**	*e*P		**P**	**18 14 49.2**	**-1.1**
BOD				pmax	pmax			
	comp=Z,17nm,0.9s							
H11N2	**WAKE ISLAND Hy**	**27.96**	**128**	T		T	18 46 14.5	
	baz=318,slow=75,SNR=95							
H11N1	**WAKE ISLAND Hy**	**27.97**	**128**	T		T	18 46 12.4	
	baz=318,slow=75,SNR=105							
H11N3	**WAKE ISLAND Hy**	**27.98**	**128**	T		T	18 46 10.2	
	baz=318,slow=75,SNR=113							
SONM	**Songino Array**	**28.10**	**300**	P		**P**	**18 15 04.1**	**+0.2**
	comp=Z,2.8nm,0.7s,baz=96,slow=8.8,SNR=17							
SONM				LR		LR	18 26 47.2	
	comp=Z,208nm,20.2s,baz=79,slow=38							
H11S1	**WAKE ISLAND Hy**	**28.78**	**130**	T		T	18 46 58.1	
	baz=318,slow=76,SNR=12							
H11S3	**WAKE ISLAND Hy**	**28.78**	**130**	T		T	18 46 57.3	
	baz=318,slow=76,SNR=8.0							
H11S2	**WAKE ISLAND Hy**	**28.79**	**130**	T		T	18 47 14.6	
	baz=318,slow=76,SNR=7.7							
ENH	**Enshi**	**29.41**	**263**	*e*P		**P**	**18 15 15.8**	**+0.2**
	comp=Z,14nm,0.8s							
TLY	**Talaya**	**30.27**	**307**	P		**P**	**18 15 23.4**	**+0.4**
	comp=Z,3.9nm,0.8s,baz=116,slow=7.9,SNR=11							
TLY	**Talaya**	**30.27**	**307**	*e*P		**P**	**18 15 23.3**	**+0.4**
TLY				*e*S		**S**	**18 20 27.3**	**+4.9**
TLY				pmax	pmax			
	comp=Z,4.0nm,0.8s							
TLY				MLR	MLR			
	comp=Z,117nm,12.0s							
TLY	**Talaya**	**30.27**	**307**	*e*P		**P**	**18 15 22.8**	**-0.2**
	comp=Z,5.5nm,0.9s							
MOY	**Mondy**	**31.90**	**307**	*e*P		**P**	**18 15 38.0**	**+0.5**
ZALV	**Zalesovo Beam**	**41.73**	**310**	P		**P**	**18 17 01.1**	**+0.2**
	comp=Z,11nm,0.7s,baz=89,slow=7.5,SNR=36							
ZALV				PcP		**PcP**	**18 18 57.8**	**+0.6**
	comp=Z,2.7nm,0.8s,baz=92,slow=3.4,SNR=3.6							
ZALV	**Zalesovo Beam**	**41.73**	**310**	P		**P**	**18 17 01.1**	**+0.2**
ZALV							18 18 57.8	
ZALV				pmax	pmax			
	comp=Z,8.0nm,0.6s							
ZALV				pmax	pmax			
	comp=Z,3.0nm,0.8s							
NVS	**Novosibirsk**	**42.58**	**312**	*e*P		**P**	**18 17 07.9**	**+0.1**
NVS				pmax	pmax			
	comp=Z,9.0nm,1.0s							
NVS				pmax	pmax			
	comp=E,4.0nm,0.9s							
CHTO	**Chiang Mai**	**43.66**	**255**	*e*P		**P**	**18 17 16.5**	**-0.5**
CHTO				pmax	pmax			
	comp=Z,11nm,1.4s							
CHTO	**Chiang Mai**	**43.66**	**255**	*e*P		**P**	**18 17 16.5**	**-0.5**
	comp=Z,11nm,1.4s							
LSA	**Lhasa**	**43.85**	**274**	*e*P		**P**	**18 17 19.5**	**+0.6**
LSA				pmax	pmax			
	comp=Z,11nm,1.2s							
LSA	**Lhasa**	**43.85**	**274**	*e*P		**P**	**18 17 19.5**	**+0.6**
	comp=Z,11nm,1.2s							
CMAR	**Chiang Mai Arr**	**43.88**	**255**	P		**P**	**18 17 18.6**	**-0.2**
	comp=Z,1.3nm,0.8s,baz=43,slow=6.7,SNR=10							
MKAR	**Makanchi Array**	**44.46**	**300**	P		**P**	**18 17 22.9**	**-0.2**
	comp=Z,7.5nm,0.9s,baz=82,slow=9.9,SNR=20							
MKAR				LR		LR	18 35 37.3	
	comp=Z,47nm,19.6s,baz=78,slow=36							
MKAR	**Makanchi Array**	**44.46**	**300**	*i* P		**P**	**18 17 22.8**	**-0.3**
MKAR				pmax	pmax			
	comp=Z,8.0nm,0.9s							
KURK	**Kurchatov**	**45.96**	**307**	P		**P**	**18 17 35.3**	**+0.4**
KURK				pmax	pmax			
	comp=Z,10.0nm,0.6s							
KURK	**Kurchatov**	**45.96**	**307**	P		**P**	**18 17 35.2**	**+0.4**
KURBB	**Kurchatov Arra**	**46.03**	**307**	P		**P**	**18 17 35.2**	**-0.2**
	comp=Z,10nm,0.6s,baz=82,slow=8.2,SNR=32							
ILAR	**Eielson Array**	**46.52**	**34**	P		**P**	**18 17 40.3**	**+1.1**
	comp=Z,0.9nm,0.7s,baz=266,slow=6.9,SNR=7.5							
GUN	**Gumba**	**48.77**	**275**	*e*P		**P**	**18 17 57.5**	**0.0**
	comp=Z,46nm,0.7s							
KKN	**Kakani**	**49.29**	**275**	*e*P		**P**	**18 18 01.1**	**-0.2**
	comp=Z,33nm,0.7s							
PKIN	**Phulchoki**	**49.30**	**275**	*e*P		**P**	**18 18 01.4**	**-0.1**
DMN	**Daman**	**49.51**	**275**	*e*P		**P**	**18 18 03.1**	**0.0**
	comp=Z,31nm,1.1s							
GKN	**Gorkha**	**49.68**	**276**	*e*P		**P**	**18 18 03.9**	**-0.4**
BVAR	**Borovoye Array**	**50.37**	**311**	P		**P**	**18 18 09.1**	**+0.2**
	comp=Z,6.2nm,0.8s,baz=91,slow=8.9,SNR=17							
BRVK	**Borovoye**	**50.42**	**311**	*ce*P		**P**	**18 18 09.6**	**+0.3**
BRVK				pmax	pmax			
	comp=Z,16nm,1.2s							
BRVK	**Borovoye**	**50.42**	**311**	*e*P		**P**	**18 18 09.1**	**-0.2**
PYUN	**Piuthan**	**50.90**	**277**	*e*P		**P**	**18 18 13.4**	**-0.2**
	comp=Z,90nm,1.1s							
AAK	**Ala-Archa**	**51.01**	**297**	P		**P**	**18 18 14.3**	**+0.1**
	comp=Z,1.5nm,0.4s,baz=145,slow=1.7,SNR=4.2							
INK	**Inuvik**	**51.45**	**28**	P		**P**	**18 18 15.4**	**-1.4**
	comp=Z,1.3nm,0.3s,baz=158,slow=17,SNR=3.0							
PSI	**Prapat**	**54.57**	**240**	P		**P**	**18 18 40.2**	**-0.5**
	comp=Z,2.0nm,0.4s,baz=208,slow=10,SNR=4.0							
SVE	**Sverdlovsk**	**54.61**	**318**	*e*P		**P**	**18 18 41.1**	**+0.8**
SVE				pmax	pmax			
	comp=Z,17nm,0.9s							
SVE				MLR	MLR			
	comp=Z,403nm,15.0s							
DLBC	**Dease Lake**	**55.64**	**39**	P		**P**	**18 18 46.2**	**-1.6**
	comp=Z,1.4nm,0.8s,baz=146,slow=19,SNR=1.8							
ARU	**Arti**	**55.82**	**318**	P		**P**	**18 18 49.4**	**+0.3**
	comp=Z,5.9nm,0.6s,baz=69,slow=3.6,SNR=18							
ARU	**Arti**	**55.82**	**318**	*c* *i*P		**P**	**18 18 49.3**	**+0.2**
ARU				S		**S**	**18 26 34.2**	**-1.7**
ARU				SS		**SS**	**18 30 19.3**	**-1.5**
ARU				pmax	pmax			
	comp=Z,22nm,1.2s							
ARU				MLR	MLR			
	comp=Z,283nm,15.0s							
ARU	**Arti**	**55.82**	**318**	*e*P		**P**	**18 18 49.2**	**+0.2**
	comp=Z,11nm,0.8s							
ABKAR	**Akbulak array**	**57.83**	**310**	*e*P		**P**	**18 19 03.3**	**-0.2**
	comp=Z,4.0nm,0.6s							
AKTO	**Aktyubinsk**	**58.47

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,100nm,12.9s						
TXAR	Lajitas Array	87.24	54	P	P	18 22 06.0	+7.1
	comp=Z,0.4nm,0.7s,baz=289,slow=3.8,SNR=3.9						
KEST	Kesra	94.22	324	LR	LR	19 11 26.2	
	comp=Z,47nm,18.5s,baz=292,slow=40						

*IASPEI **21** 18:11:42.8±1.1, 42°.98N±0°.03×77°.01E±0°.02, h19km±2km, Error ellipse: s-maj=3.9km s-min=2.8km az=2.3, GT5 selection from ISC bulletin GT5 identified by Bondˆ¡r and McLaughlin (2009) selection criteria Bondˆ¡r and McLaughlin, A new ground truth data set for seismic studies, <i>Seism. Res. Let.</i>, 80, 465-472, 2009*
*NNC **21** 18:11:42.5±0.7, 42°.93N×76°.99E, h4km±5km, mb3.5, mpv3.2, Error ellipse: s-maj=9.2km s-min=1.9km az=156.0*
*KRNET **21** 18:11:42.5±0.1, 42°.95N×76°.99E, h18km, mb3.5*
*ISCJB **21** 18:11:43.6±0.3, 43°.00N±0°.02×77°.04E±0°.02, h12km±2km, Error ellipse: s-maj=3.3km s-min=2.0km az=168.2*
*SOME **21** 18:11:43.3, 42°.98N×77°.05E, h15km*
ISC 21 18:11:42.9±0.9**, 42°.97N**±0°.02×**77°.01E**±0°.01**, h18**km±3km**, n53, σ1s40**/100**, 42C-15D, Lake Issyk-Kul region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TNSS	Tian-Shan	0.09	326	eP	Pg	18 11 46.9	-0.1
	185nm,0.1s						
TNSS				eS	Sg	18 11 49.8	+0.1
	1µm,0.4s						
MDOK	Medeo	0.19	8	eP	Pg	18 11 47.8	-0.2
	317nm,0.1s						
MDOK				eS	Sg	18 11 50.9	-0.5
	5µm,0.2s						
KNDC	Almaty	0.25	353	⇓P	Pg	18 11 48.7	-0.1
	257nm,0.6s						
KNDC				⇑S	Sb	18 11 53.2	+0.4
	5µm,0.3s						
KOTS	Kotyrbulak	0.27	16	eP	Pg	18 11 49.2	0.0
	318nm,0.1s						
KOTS				eS	Sg	18 11 53.3	-0.2
	837nm,0.2s						
IZV	Izvestkoviy	0.30	283	eP	Pb	18 11 49.6	-0.2
	257nm,0.1s						
IZV				eS	Sg	18 11 53.6	-0.5
	1µm,0.1s						
AAA	Alma-Ata	0.30	351	eP	Pg	18 11 49.1	-0.5
	5µm,0.2s						
AAA				eS	Sg	18 11 53.0	-1.1
	7µm,0.2s						
MTBS	Maitube	0.45	291	eP	Pb	18 11 52.1	-0.4
	88nm,0.1s						
MTBS				eS	Sb	18 11 58.4	-0.6
	2µm,0.3s						
ANVS	Anan'yevo	0.52	111	⇑iP	Pg	18 11 52.9	-0.6
	baz=109						
ANVS				⇑iS	Sg	18 12 00.3	-0.2
	baz=109						
KST	Kastek	0.77	276	eP	Pb	18 11 57.8	-0.1
	32nm,0.1s						
KST				eS	Sb	18 12 08.1	0.0
	484nm,0.2s						
KTBS	Karatobe	0.78	342	eP	Pg	18 11 57.0	-1.3
	176nm,0.1s						
KTBS				eS	Sg	18 12 07.0	-1.6
	144nm,0.4s						
KDJ	Kajisay	0.85	171	⇓iP	Pb	18 11 59.2	-0.1
	baz=170						
KDJ				⇓iS	Sb	18 12 10.5	+0.1
	baz=170						
CHKK	Chushkaly	0.90	360	eP	Pb	18 11 59.5	-0.5
	395nm,0.1s						
CHKK				eS	Sb	18 12 11.3	-0.3
	2µm,0.2s						
ULHL	Ulahol	0.92	218	⇑iP	Pn	18 12 00.4	-0.8
	baz=218						
ULHL				⇑iS	Sn	18 12 12.9	-1.2
	baz=218						
BOOM	Boomskoye usch	0.92	239	⇑iP	Pg	18 12 00.1	-0.8
	baz=240						
BOOM				⇑iS	Sg	18 12 12.4	-0.7
	baz=240						
DGS	Degeres	0.95	287	eP	Pb	18 11 59.8	-1.1
	34nm,0.1s						
DGS				eS	Sb	18 12 11.9	-1.3
	446nm,0.3s						
BMNS	Besmoynak	0.99	278	⇑iP	Pb	18 12 01.4	-0.3
	219nm,0.1s						
BMNS				⇑iS	Sg	18 12 14.7	-0.7
	2µm,0.3s						
KURS	Kuram	0.99	58	⇑iP	Pb	18 12 01.1	-0.5
	20nm,0.1s						
KURS				⇓iS	Sb	18 12 14.2	-0.2
	81nm,0.5s						
SATY	Saty	1.03	85	eP	Pb	18 12 02.0	-0.3
	137nm,0.1s						
SATY				eS	Sb	18 12 15.4	-0.1
	923nm,0.1s						
TKM2	Tokmak 2	1.04	268	⇑iP	Pb	18 12 02.2	-0.3
	baz=269						
TKM2				⇑iS	Sn	18 12 16.9	-0.1
	baz=269						
TKM2	Tokmak 2	1.04	268	⇑P	Pb	18 12 02.2	-0.3
	12nm,0.3s						
TKM2				⇑S	Sn	18 12 16.5	-0.5
	68nm,0.3s						
KUU	Kurty	1.04	332	⇓iP	Pb	18 12 02.3	-0.2
	280nm,0.2s						
KUU				⇑iS	Sb	18 12 14.1	-1.8
	242nm,0.2s						
ZHN	Zhinishke	1.06	79	eP	Pb	18 12 02.1	-0.8
	175nm,0.2s						
ZHN				eS	Sb	18 12 15.4	-1.1
	425nm,0.2s						
PRZ	Przheval'sk	1.14	115	⇓iP	Pg	18 12 04.7	-0.3
	baz=114						
PRZ				⇓iS	Sn	18 12 20.4	+1.1
	baz=114						
KPKS	Kokpek	1.32	67	eP	Pn	18 12 07.0	+0.4
	336nm,0.1s						
KPKS				eS	Sn	18 12 23.9	+0.1
	561nm,0.2s						
ARXS	Arharly	1.38	25	eP	Pn	18 12 06.9	-0.5
	200nm,0.3s						
ARXS				eS	Sn	18 12 24.2	-0.9
	244nm,0.1s						
UZB	Uzynbulak	1.49	83	eP	Pn	18 12 09.5	+0.6
	65nm,0.1s						
UZB				eS	Sb	18 12 28.9	+0.2
	223nm,0.2s						
MNBS	Baschi	1.50	42	eP	Pn	18 12 08.8	-0.3
	74nm,0.2s						
MNBS				eS	Sn	18 12 27.6	-0.6
	375nm,0.3s						
KBK	Karagaybulak	1.55	259	⇑iP	Pg	18 12 11.6	-1.2
	baz=260						
KBK				⇑iS	Sg	18 12 32.3	-0.7
	baz=260						
KZA	Kyzart	1.58	236	⇑iP	Pg	18 12 12.0	-1.4
	baz=236						
KZA				⇑iS	Sg	18 12 33.3	-0.7
	baz=236						
CHMS	Chumysh	1.66	272	⇑iP	Pb	18 12 12.9	-0.1
	baz=272						
CHMS				⇑iS	Sg	18 12 35.0	-1.4
	baz=272						
FRU1	Bishkek	1.76	266	⇑iP	Pb	18 12 15.1	+0.4
	baz=266						
FRU1				⇑iS	Sg	18 12 38.6	-1.0
	baz=266						
PDGK	Podgornoye	1.85	78	⇑P	Pb	18 12 15.7	-0.5
	64nm,0.4s						
PDGK				⇑S	Sb	18 12 39.7	+0.9
	105nm,0.6s						
USP	Ospenovka	1.86	280	⇓iP	Pb	18 12 16.5	+0.1
	baz=281						
USP				⇓iS	Sg	18 12 41.1	-1.8
	baz=281						
AAK	Ala-Archa	1.88	261	⇑iP	Pb	18 12 16.9	0.0
	baz=261						
AAK				⇑iS	Sg	18 12 41.5	-2.1
	baz=261						
AAK	Ala-Archa	1.88	261	⇓Pg	Pb	18 12 16.7	-0.2
	23nm,0.3s						
AAK				⇑Lg	Lg	18 12 41.9	
	67nm,0.5s						
SHLS	Shalkode	2.11	84	eP	Pb	18 12 21.3	+0.5
	30nm,0.2s						
SHLS				eS	Sg	18 12 49.1	-1.9
	298nm,0.3s						
ARLS	Aral	2.28	242	⇑iP	Pb	18 12 24.2	+0.6
	baz=242						
ARLS				⇑iS	Sb	18 12 52.6	+1.1
	baz=242						
EKS2	Erkin-Say	2.40	264	⇑iP	Pb	18 12 24.8	-0.8
	baz=264						
EKS2				⇑iS	Sb	18 12 54.5	-0.4
	baz=264						
DJR	Jarkent	2.43	55	eP	Pb	18 12 26.2	0.0
	24nm,0.2s						
DJR				eS	Sb	18 12 56.8	+0.9
	166nm,0.4s						
KTMS	Ketmen	2.49	78	eP	Pb	18 12 26.3	-0.9
	23nm,0.1s						
KTMS				eS	Sb	18 12 57.2	-0.3
	89nm,0.5s						
AML	Almayashu	2.59	252	⇑iP	Pb	18 12 28.0	-1.1
	baz=253						
AML				⇑iS	Sb	18 13 00.0	-0.7
	baz=253						
MRKS	Merke	2.79	267	eP	Pb	18 12 32.2	-0.1
	34nm,0.4s						
MRKS				eS	Sb	18 13 06.8	+0.6
	60nm,0.3s						
KAPS	Kapalarasan	2.87	35	eP	Pb	18 12 33.3	-0.2
	14nm,0.4s						
KAPS				eS	Sb	18 13 09.4	+1.1
	112nm,0.4s						
BTLS	Baital	2.98	315	eP	Pb	18 12 36.1	+0.7
	11nm,0.1s						
BTLS				eS	Sb	18 13 13.8	+2.4
	51nm,0.2s						
MNAS	Manas	3.35	263	⇓eP	Pn	18 12 37.8	+3.2
	baz=264						
MNAS				⇓eS	Sb	18 13 18.3	-4.2
	baz=264						
MNAS	Manas	3.35	263	⇑Pn	Pn	18 12 37.4	+2.8
	3.3nm,0.7s						
MNAS				⇑Lg	Lg	18 13 26.2	
	8.8nm,0.5s						
ARK	Arkit	3.92	254	⇓eP	Pn	18 12 45.3	+3.0
	baz=254						
ARK				⇓iS	Sn	18 13 31.5	+3.6
	baz=254						
KK31	Karatay Array	4.76	274	⇑Pg	Pb	18 13 09.1	+3.2
	1.8nm,0.5s						
KK31				⇑Lg	Lg	18 14 11.5	
	10nm,0.4s,baz=85,slow=26,SNR=5.7						
MAKZ	Makanchi	5.21	41	⇑Pn	Pn	18 13 02.6	+2.6
	0.4nm,0.3s						
MAKZ				⇑Lg	Lg	18 14 23.5	
	9.1nm,0.8s						
IUG	Iuzhnay	5.22	263	eP	Pb	18 13 17.5	+3.8
	9.3nm,0.4s						
IUG				eS	Sg	18 14 24.8	-5.7
	36nm,1.0s						
MK31	Makanchi Array	5.36	43	Pn	Pn	18 13 04.0	+2.0
	0.1nm,0.2s,baz=222,slow=13,SNR=7.1						
MK31				⇑Lg	Lg	18 14 28.1	
	4.3nm,0.5s,baz=222,slow=30,SNR=5.0						
BRLS	Borolday	5.39	271	eP	Pb	18 13 16.5	0.0
	0.7nm,0.1s						
BRLS				eS	Sb	18 14 22.9	+2.1
	7.5nm,0.7s						
OTUK	Ortayu	6.21	330	⇓Pn	Pn	18 13 14.2	+0.5
	0.2nm,0.3s						
OTUK				⇑Lg	Lg	18 14 58.5	
	21nm,0.7s						

JMA 21 18:12:12.4±0.2**, 39°.37N**×**143°.89E, h26**km**, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.62	278	P	Pn	18 12 39.9	+0.7
MIYJ				eS	Sn	18 12 59.7	+0.5
JTH	Tanohata	1.66	291	P	Pn	18 12 40.6	+0.7
OFUJ	Ofunato	1.75	261	P	Pn	18 12 41.9	+0.9
JOM	Ohasama	2.02	274	P	Pn	18 12 46.0	+1.3
JANG	Nango	2.08	299	P	Pn	18 12 46.6	+0.9
JMK	Ichinoseki	2.12	259	P	Pn	18 12 47.4	+1.3
JIO	Ouri	2.18	246	P	Pn	18 12 48.2	+1.2
JYK	Kaneyama	2.78	262	P	Pn	18 12 57.2	+1.9
JCH	Churui	3.27	353	eS	Sn	18 13 41.7	+1.8
JAK	Akkeshi	3.67	9	eS	Sn	18 13 52.1	+2.2

*NIED **21** 18:13:00, 39°.40N×143°.60E, h26km, Mw3.7 Best double couple: $M_0$3.79000×10^{14} NP1:ϕ_s182.00000°, δ36.00000°, λ80.00000°. NP2:ϕ_s15.00000°, δ55.00000°, λ97.00000°.*
*ISCJB **21** 18:13:46.3±0.8, 39°.40N±0°.05×143°.62E±0°.07, h11km, mb3.5/8, Error ellipse: s-maj=9.0km s-min=6.7km az=40.4*
*JMA **21** 18:13:48.8±0.2, 39°.38N×143°.59E, h54km, M3.5*
*IDC **21** 18:13:49.8±1.4, 39°.24N×143°.66E, h29km±5km, mb3.4/8, mb1 3.5/9, mb1mx3.4/48, mbtmp3.6/9, ML3.4/1, Error ellipse: s-maj=26.9km s-min=21.2km az=130.0*
ISC 21 18:13:49.2±0.9**, 39°.45N**±0°.06×**143°.50E**±0°.08**, h11**km**, n22, σ2s21**/28**, mb3.6**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.31	276	P	Pn	18 14 12.3	-1.1
MIYJ				eS	Sg	18 14 30.0	-1.3
JTH	Tanohata	1.35	292	P	Pn	18 14 13.0	-1.0
JTH				eS	Sg	18 14 31.5	-1.3
OFUJ	Ofunato	1.47	256	P	Pn	18 14 14.2	-1.4
JOM	Ohasama	1.71	271	P	Pn	18 14 18.3	-0.6
JANG	Nango	1.78	302	P	Pn	18 14 18.9	-1.1
JMK	Ichinoseki	1.84	255	P	Pn	18 14 19.8	-0.9
JIO	Ouri	1.95	240	P	Pn	18 14 20.6	-1.6
JNBK	Urakawa-nobuka	2.88	349	eS	Sn	18 15 09.3	-0.4
JCH	Churui	3.16	358	eS	Sn	18 15 12.8	-3.8
MJAR	Matsushiro Arr	5.09	237	Pn	Pn	18 15 05.6	+0.1
	1.3nm,0.3s,baz=90,slow=16,SNR=6.1						
MAT	Matsushiro	5.09	237	P	Pn	18 15 05.7	+0.3
MAT				S	Sn	18 16 04.2	0.0
SEY	Seymchan	24.12	10	P	P	18 19 04.9	+0.2
	1.1nm,0.7s,baz=210,slow=14,SNR=3.5						
SEY				pP	sP	18 19 13.1	+3.7
	1.6nm,0.8s,baz=218,slow=9.5,SNR=3.0						
SONM	Songino Array	27.91	300	P	P	18 19 39.0	-0.2
	0.3nm,0.4s,baz=94,slow=9.1,SNR=2.8						
SONM				pP	sP	18 19 47.7	+3.6
	0.9nm,0.6s,baz=94,slow=10,SNR=3.3						
ZALV	Zalesovo Beam	41.55	310	P	P	18 21 36.0	-0.5
	0.6nm,0.5s,baz=96,slow=9.1,SNR=2.8						
ZALV				pP	sP	18 21 44.7	+3.4
	1.8nm,0.5s,baz=92,slow=7.5,SNR=6.4						
MKAR	Makanchi Array	44.27	300	P	P	18 21 58.3	-0.4
	0.7nm,0.9s,baz=86,slow=7.4,SNR=3.4						
MKAR				pP	sP	18 22 07.2	+3.7
	0.9nm,0.7s,baz=86,slow=11,SNR=5.0						
KURBB	Kurchatov Arra	45.85	306	P	P	18 22 09.8	-1.3
	0.8nm,0.6s,baz=81,slow=8.1,SNR=5.1						
KURBB				pP	sP	18 22 19.5	+3.5
ILAR	Eielson Array	46.58	34	P	P	18 22 15.3	-1.4
	0.5nm,0.7s,baz=268,slow=6.3,SNR=5.9						
BVAR	Borovoye Array	50.19	311	P	P	18 22 44.6	-0.1
	0.3nm,0.4s,baz=96,slow=13,SNR=2.6						
BVAR				pP	sP	18 22 53.0	+3.5
	1.4nm,0.6s,baz=69,slow=8.1,SNR=6.6						
ARU	Arti	55.66	318	pP	pP	18 23 33.4	+4.9
	1.1nm,0.4s,baz=88,slow=4.0,SNR=2.3						
AKTO	Aktyubinsk	58.30	311	pP	pP	18 23 52.1	+4.8
	0.5nm,0.5s,baz=50,slow=14,SNR=2.3						
WRA	Warramunga Arr	59.70	190	P	P	18 23 50.0	-3.8
	0.4nm,0.7s,baz=8.9,slow=7.0,SNR=6.3						
FINES	FINESS Array B	67.44	332	pP	pP	18 24 52.4	+4.4
	1.5nm,0.9s,baz=52,slow=7.2,SNR=2.3						

MEX 21 18:20:14.1±0.4**, 17°.86N**×**101°.54W, h53**km±5km**, MD3.6, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ZIIG	Zihuatanejo	0.26	164	i P	Pn	18 20 21.8	-1.4
ZIIG				eS	Sn	18 20 28.3	-1.5
ARIG	Puente Sto Nin	1.21	70	eP	Pn	18 20 33.3	-1.5
ARIG				eS	Sn	18 20 48.0	-2.2
CAIG	El Cayaco	1.46	123	eP	Pn	18 20 36.7	-1.4
CAIG				eS	Sn	18 20 53.5	-2.6
MEIG	Mezcala	1.83	88	eP	Pn	18 20 42.6	-0.6
MEIG				eS	Sn	18 21 03.4	-1.9
TLIG	Tlapa	2.85	96	i P	Pn	18 20 56.8	-0.5
TLIG				i S	Sn	18 21 29.8	-0.6

*ISCJB **21** 18:24:31.3±0.7, 35°.20N±0°.05×139°.71E±0°.08, h92km±4km, mb3.3/3, Error ellipse: s-maj=12.5km s-min=6.0km az=151.1*
*JMA **21** 18:24:31.6±0.2, 35°.25N×139°.72E, h88km±2km, M2.8*
*IDC **21** 18:24:34.8±1.3, 34°.97N×139°.07E, h93km±13km, mb3.0/3, mb1 3.2/3, mb1mx2.9/42, mbtmp3.3/3, Error ellipse: s-maj=76.2km s-min=7.6km az=68.0*
ISC 21 18:24:32.3±1.0**, 35°.21N**±0°.05×**139°.69E**±0°.07**, h85**km±7km**, n15, σ0s68**/25**, mb3.4**/3**, 2C-5D, Near south coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JYO	Yokosk	0.03	314	⇑P	Pn	18 24 44.4	+0.1
JYO				S	Sn	18 24 54.0	+0.9
TATJ	Tateyama 2	0.24	136	P	Pn	18 24 45.0	+0.2
TATJ				S	Sn	18 24 55.1	+1.1
JOD2	Odawara 2	0.50	277	⇓P	Pn	18 24 46.0	-0.5
JOD2				S	Sn	18 24 56.2	-0.8
JIM2	Oshima 3	0.53	204	⇓P	Pn	18 24 46.3	-0.5
JIM2				S	Sn	18 24 56.8	-0.7
BSO3	Boso 3	0.79	121	⇑P	Pn	18 24 48.8	-0.1
BSO3				X		18 25 02.3	
JIZS	Izushimoda	0.82	234	⇓P	Pn	18 24 49.7	+0.1
JIZS				S	Sn	18 25 03.6	+1.0
JYN	Shimob	0.98	288	⇓P	Pn	18 24 51.6	+0.1
JYN				S	Sn	18 25 06.5	+0.7
JRY	Ryogami san	1.03	322	⇓P	Pn	18 24 52.1	0.0
JRY				S	Sn	18 25 06.9	0.0
SHZ3	Shizuoka 3	1.22	264	P	Pn	18 24 54.9	+0.6
MJAR	Matsushiro Arr	1.80	318	P	Pn	18 25 01.8	+0.2
	5.3nm,0.3s,baz=157,slow=12,SNR=59						
MJAR				S	Sn	18 25 24.9	+1.0
	7.0nm,0.3s,baz=181,slow=16,SNR=4.8						
MAT	Matsushiro	1.80	318	P	Pn	18 25 02.1	+0.4
MAT				S	Sn	18 25 24.5	+0.5
JHJ	Hachijo jima 2	2.08	178	P	Pn	18 25 06.2	+0.8
	28nm,0.3s,baz=78,slow=22,SNR=1.3						
JHJ				S	Sn	18 25 31.5	+0.8
	50nm,0.3s,baz=82,slow=22,SNR=1.6						
MKAR	Makanchi Array	43.93	303	P	P	18 32 30.5	-0.2
	0.5nm,0.9s,baz=94,slow=12,SNR=3.3						
WRA	Warramunga Arr	55.08	186	P	P	18 33 54.3	-1.2
	0.4nm,0.6s,baz=1.0,slow=7.6,SNR=9.3						
ASAR	Alice Springs	58.80	186	P	P	18 34 21.8	0.0
	0.1nm,0.6s,baz=18,slow=13,SNR=3.2						

*IDC **21** 18:25:55.2±1.0, 38°.10N×143°.65E, h0km, mb3.6/8, mb1 3.7/10, mb1mx3.5/42, mbtmp3.6/10, ML3.4/2, Error ellipse: s-maj=26.6km s-min=19.0km az=102.0*
*ISCJB **21** 18:25:57.2±0.8, 38°.26N±0°.06×143°.56E±0°.07, h19km, mb3.5/8, Error ellipse: s-maj=10.1km s-min=6.5km az=142.8*
*JMA **21** 18:25:59.6±0.4, 38°.31N×143°.47E, h38km, M3.4*
ISC 21 18:25:59.0±1.0**, 38°.29N**±0°.07×**143°.52E**±0°.09**, h19**km**, n21, σ1s43**/23**, mb3.6**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.65	299	P	Pn	18 26 26.6	-0.4
JIO	Ouri	1.71	276	P	Pn	18 26 27.3	-0.5
JIO				eS	Sn	18 26 47.7	-1.5
MIYJ	Miyakonagasawa	1.85	315	P	Pn	18 26 29.0	-0.7
MIYJ				eS	Sn	18 26 50.7	-1.8
JMK	Ichinoseki	1.92	291	P	Pn	18 26 30.7	+0.1
JYK	Kaneyama	2.55	285	P	Pn	18 26 40.0	+0.6
JFT	Otama	2.63	254	P	Pn	18 26 40.5	0.0
JFT				eS	Sn	18 27 10.2	-1.7
JAG	Ashikaga	3.73	241	P	Pn	18 26 54.5	-1.1
MJAR	Matsushiro Arr	4.57	249	Pn	Pn	18 27 07.9	+0.7
	1.1nm,0.3s,baz=144,slow=9.5,SNR=4.6						
MJAR				Sn	Sn	18 28 03.0	+3.3
	1.4nm,0.3s,baz=278,slow=18,SNR=3.6						
MAT	Matsushiro	4.57	249	P	Pn	18 27 08.1	+0.9
MAT				S	Sn	18 28 02.0	+2.2
ASAJ	Asahikawa	5.87	353	Pn	Pn	18 27 25.7	+0.8
	1.1nm,0.3s,baz=200,slow=20,SNR=12						
SEY	Seymchan	25.26	10	P	P	18 31 25.2	+1.6
	1.1nm,0.7s,baz=267,slow=5.2,SNR=3.7						
H11N2	WAKE ISLAND Hy	27.44	126	T	T	19 00 16.3	
	baz=317,slow=74,SNR=6.0						
H11N1	WAKE ISLAND Hy	27.45	126	T	T	19 00 14.2	
	baz=317,slow=74,SNR=3.1						
H11N3	WAKE ISLAND Hy	27.46	126	T	T	19 00 15.4	
	baz=317,slow=74,SNR=4.3						
SONM	Songino Array	28.51	302	P	P	18 31 53.8	+0.5
	0.4nm,0.4s,baz=106,slow=9.4,SNR=5.1						
ZALV	Zalesovo Beam	42.32	311	P	P	18 33 51.8	+0.4
	0.5nm,0.4s,baz=88,slow=4.6,SNR=3.4						
MKAR	Makanchi Array	44.88	301	P	P	18 34 12.1	-0.1
	0.6nm,0.6s,baz=81,slow=7.6,SNR=4.4						
ILAR	Eielson Array	47.54	33	P	P	18 34 33.0	+0.2
	0.3nm,0.7s,baz=270,slow=6.3,SNR=3.4						
WRA	Warramunga Arr	58.56	190	P	P	18 35 52.0	-2.4
	1.1nm,0.8s,baz=8.7,slow=7.1,SNR=6.5						
ASAR	Alice Springs	62.28	190	P	P	18 36 17.9	-1.9
	0.2nm,0.8s,baz=13,slow=9.6,SNR=4.7						
FINES	FINESS Array B	68.48	333	P	P	18 37 00.1	+0.6
	0.6nm,0.6s,baz=46,slow=9.9,SNR=3.1						

MEX 21 18:29:34.2±0.4**, 16°.60N**×**98°.89W, h16**km±5km**, MD3.5, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.76	105	i P	Pg	18 29 46.2	-2.9
PNIG				i S	Sg	18 29 55.8	-3.4
TLIG	Tlapa	1.01	18	i P	Pb	18 29 49.9	-3.5
TLIG				i S	Sb	18 30 02.3	-4.3
CAIG	El Cayaco	1.39	289	eP	Pn	18 29 54.9	-4.0
CAIG				eS	Sn	18 30 11.6	-5.5
MEIG	Mezcala	1.50	332	eP	Pn	18 29 57.3	-3.2
MEIG				eS	Sn	18 30 13.6	-6.1
ARIG	Puente Sto Nin	2.18	321	eP	Pn	18 30 07.5	-2.3
ARIG				eS	Sn	18 30 32.4	-4.0

*NIED **21** 18:50:00, 39°.40N×144°.00E, h17km, Mw3.7 Best double couple: $M_0$4.10000×10^{14} NP1:ϕ_s202.00000°, δ38.00000°, λ103.00000°. NP2:ϕ_s5.00000°, δ53.00000°, λ80.00000°.*
*JMA **21** 18:50:30.1±0.1, 39°.39N×143°.96E, h25km, M3.9*
*ISCJB **21** 18:50:31.8±0.9, 39°.43N±0°.06×143°.75E±0°.08, h11km, mb3.4/6, Error ellipse: s-maj=10.0km s-min=6.5km az=40.3*
*IDC **21** 18:50:37.3±5.7, 39°.36N×143°.61E, h34km±45km, mb3.4/6, mb1 3.5/10, mb1mx3.3/44, mbtmp3.5/10, ML3.0/4, Error ellipse: s-maj=30.0km s-min=19.5km az=110.0*
ISC 21 18:50:34.1±1.1**, 39°.42N**±0°.08×**143°.66E**±0°.08**, h11**km**, n22, σ1s36**/21**, mb3.6**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.44	277	P	Pn	18 50 58.5	-1.5
MIYJ				eS	Sb	18 51 19.2	+0.1
JTH	Tanohata	1.48	291	P	Pn	18 50 59.1	-1.6
OFUJ	Ofunato	1.59	258	P	Pn	18 51 00.5	-1.6
JOM	Ohasama	1.84	272	P	Pn	18 51 04.6	-1.0
JOM				eS	Sn	18 51 29.7	+0.9
JANG	Nango	1.91	301	P	Pn	18 51 04.9	-1.6
JMK	Ichinoseki	1.96	257	P	Pn	18 51 06.0	-1.2
JYK	Kaneyama	2.62	260	P	Pn	18 51 15.7	-0.6
JCH	Churui	3.20	356	eS	Sn	18 51 59.3	-3.1
ASAJ	Asahikawa	4.76	351	Pn	Pn	18 51 45.9	+0.2
	0.8nm,0.3s,baz=217,slow=17,SNR=12						
ASAJ				Sn	Sn	18 52 40.5	-0.4
	1.1nm,0.3s,baz=45,slow=33,SNR=2.2						
MJAR	Matsushiro Arr	5.18	238	Pn	Pn	18 51 51.4	-0.2
	1.3nm,0.3s,baz=43,slow=12,SNR=25						
USRK	Ussuriysk Ar.	9.94	302	Pn	Pn	18 52 58.9	+2.2
	0.2nm,0.3s,baz=124,slow=13,SNR=3.3						
KSRS	Korea Array	12.50	266	Pn	Pn	18 53 33.2	+1.4
	0.1nm,0.3s,baz=74,slow=14,SNR=3.1						
SEY	Seymchan	24.12	10	P	P	18 55 50.4	+0.7
	0.8nm,0.8s,baz=29,slow=21,SNR=2.6						

H11N2 **WAKE ISLAND Hy** **28.02 128** T T 19 25 40.3
baz=320,slow=73,SNR=9.0
SONM **Songino Array** **28.03 300** P **P** **18 56 25.5 +0.3**
0.5nm,0.4s,baz=107,slow=7.7,SNR=5.3
H11N1 **WAKE ISLAND Hy** **28.03 128** T T 19 25 38.7
baz=320,slow=73,SNR=8.9
H11N3 **WAKE ISLAND Hy** **28.04 128** T T 19 25 40.8
baz=320,slow=73,SNR=8.5
ZALV **Zalesovo Beam** **41.67 310** P **P** **18 58 22.1 -0.3**
0.9nm,0.5s,baz=93,slow=8.9,SNR=5.8
MKAR **Makanchi Array** **44.40 300** P **P** **18 58 44.2 -0.4**
0.6nm,0.7s,baz=78,slow=11,SNR=6.4
ILAR **Eielson Array** **46.53 34** P **P** **18 59 02.3 +1.1**
0.2nm,0.7s,baz=255,slow=7.2,SNR=2.7
WRA **Warramunga Arr** **59.69 190** P **P** **19 00 37.6 -1.0**
0.2nm,0.5s,baz=8.2,slow=7.0,SNR=4.5
FINES **FINESS Array B** **67.52 333** pP pP 19 01 38.7 +5.2
0.9nm,0.6s,baz=43,slow=6.5,SNR=2.1

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*ISCJB **21** 19:11:55.6±0.2,29°.79S±0°.05×176°.26W±0°.05, h21km, mb5.0/86,MS4.0/13, Error ellipse: s-maj=8.3km s-min=4.3km az=136.9*
*GCMT **21** 19:11:55.1±0.3,29.07S×175°.87W, h17km±1km, MW5.0/68, Moment Tensor Solution. s19,c23; s68,c95; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr=2.57±.20; Mθθ0.07±.13; Mϕϕ2.50±.13; Mrθ1.34±.47; Mrϕ0.14±.09; Mθϕ~1.63±.31; Best double couple: M=3.26900×10¹⁶ NP1:ϕs340.00000°,δ65.00000°,λ-110.00000°. NP2: ϕs200.00000°,δ32.00000°,λ-54.00000°. Principal axes: T 3.0010, Plg17.0000°, Azm85.0000°; N 0.5370, Plg18.0000°, Azm349.0000°; P -3.5370, Plg65.0000°, Azm216.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **21** 19:11:55.1±0.2,29°.68S×176°.31W, h10km, mb5.0/67 Error ellipse: s-maj=8.5km s-min=4.8km az=138.0*
*BJI **21** 19:12:00.7,29°.43S×176°.07W, h56km, mb5.1/26, mB5.6/20, Ms5.2/9, Ms7 4.9/7*
*IDC **21** 19:12:01.9±3.2,29°.30S×176°.37W, h53km±26km, mb4.3/17, mb1 4.4/17, mb1mx4.3/31, mbtmp4.5/17, MS3.9/15, Ms1 3.9/15, ms1mx3.7/31, Error ellipse: s-maj=22.4km s-min=17.5km az=83.0*

ISC 21 19:11:57.5±0.4, 29°.60S±0°.06×176°.38W±0°.06, h21km, n175, σ2≥02/191, mb5.0/84, MS4.0/13, 3C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.39**	**284**	P	**Pb**	**19 12 24.5**	**+1.8**
	635nm,0.3s,baz=86,slow=5.6,SNR=27						
RAO				S	**Sb**	**19 12 45.3**	**+5.4**
	1μm,0.3s,baz=103,slow=23,SNR=11						
URZ	**Urewera**	**10.19**	**210**	P	**Pn**	**19 14 21.2**	**-1.2**
	1.5nm,0.3s,baz=272,slow=4.1,SNR=9.1						
URZ				S	**Sn**	**19 16 16.8**	**+0.8**
	4.0nm,0.3s,baz=176,slow=5.1,SNR=11						
URZ				LR	LR	19 18 31.2	
	comp=Z,458nm,19.3s,baz=26,slow=37						
URZ	**Urewera**	**10.19**	**210**	*e*Pn	**Pn**	**19 14 19.9**	**-2.6**
URZ				*e*Sn	**Sn**	**19 16 17.6**	**+1.5**
MSVF	**Nonsavu**	**12.86**	**335**	*e*P	**Pn**	**19 14 57.2**	**-2.0**
	32nm,1.1s						
THZ	**Tophouse**	**14.92**	**213**	*e*Pn	**Pn**	**19 15 24.2**	**-3.0**
THZ				*e*Sn	**Sn**	**19 18 07.4**	**-4.4**
KHZ	**Kahutara**	**15.15**	**210**	*e*Pn	**Pn**	**19 15 26.9**	**-3.3**
	110nm,0.8s						
KHZ				*e*Sn	**Sn**	**19 18 11.3**	**-6.0**
LTZ	**Lake Taylor**	**16.01**	**212**	*e*Pn	**Pn**	**19 15 40.2**	**-1.2**
	253nm,1.9s						
OXZ	**Oxford**	**16.54**	**211**	*e*Pn	**Pn**	**19 15 44.8**	**-3.3**
	53nm,0.6s						
OXZ				*e*Sn	**Sn**	**19 18 42.5**	**-8.7**
RAR	**Rarotonga**	**17.16**	**65**	P	Pn	19 15 47.0	-8.9
	0.8nm,0.3s,baz=58,slow=3.1,SNR=2.1						
RAR				LR	LR	19 22 45.0	
	comp=Z,315nm,18.4s,baz=266,slow=38						
DZM	**Mont Dzumac**	**17.17**	**292**	P	**P**	**19 16 00.4**	**+2.6**
	1.0nm,0.3s,baz=118,slow=18,SNR=10.0						
DZM				LR	LR	19 21 34.9	
	comp=Z,612nm,18.4s,baz=112,slow=34						
DZM	**Mont Dzumac**	**17.17**	**292**	*e*P	**P**	**19 16 00.0**	**+2.2**
	131nm,1.4s						
DZM				*e*LR	LR	19 20 09.1	
	2μm,27.1s						
RPZ	**Rata Peaks**	**17.30**	**212**	P	**Pn**	**19 15 54.6**	**-3.0**
	0.7nm,0.3s,baz=313,slow=3.4,SNR=5.0						
RPZ				LR	LR	19 24 09.2	
	comp=Z,256nm,18.3s,baz=32,slow=41						
ODZ	**Otahua Downs**	**18.52**	**210**	*e*P	**P**	**19 16 11.1**	**-1.3**
	136nm,1.8s						
TBI	**Tubuai**	**24.85**	**82**	*e*LR	LR	19 23 07.9	
	1μm,29.0s,baz=243						
PPT2	**Papeete2**	**27.24**	**70**	*e*LQ	LQ	19 22 59.8	
	1μm,28.2s						
PPT2				*e*LR	LR	19 24 08.4	
	945nm,28.0s,baz=249						
PPT	**Papeete**	**27.25**	**70**	LR	LR	19 27 36.8	
	comp=Z,197nm,18.4s,baz=194,slow=34						
EIDS	**Eidsvold**	**29.12**	**270**	P	**P**	**19 17 58.3**	**+1.3**
	baz=29,SNR=3.2						
EIDS	**Eidsvold**	**29.12**	**270**	*e*P	**P**	**19 17 57.4**	**+0.4**
	59nm,1.7s						
HNR	**Honiara**	**29.89**	**307**	LR	LR	19 29 00.1	
	comp=Z,95nm,19.6s,baz=146,slow=34						
RMQ	**Roma**	**30.86**	**267**	P	**P**	**19 18 13.6**	**+1.3**
	baz=31,SNR=6.7						
CMSA	**Cobar Meteorol**	**32.61**	**257**	P	**P**	**19 18 30.6**	**+2.9**
	baz=33,SNR=11						
QLP	**Quilpie**	**34.77**	**265**	P	**P**	**19 18 47.0**	**+0.5**
	baz=35,SNR=3.1						
CTAO	**Charters Tower**	**35.08**	**277**	*e*P	**P**	**19 18 49.2**	**-0.1**
	12nm,0.9s						
STKA	**Stephens Creek**	**36.03**	**256**	P	**P**	**19 18 59.0**	**+1.6**
	19nm,0.9s,baz=99,slow=10,SNR=28						
STKA				LR	LR	19 33 21.6	
	comp=Z,590nm,18.0s,baz=65,slow=35						
STKA	**Stephens Creek**	**36.03**	**256**	P	**P**	**19 19 00.1**	**+2.7**
	baz=36,SNR=18						
STKA	**Stephens Creek**	**36.03**	**256**	*e*P	**P**	**19 18 59.0**	**+1.6**
	5.5nm,1.0s						
RKT	**Rikitea**	**37.51**	**90**	*e*LR	LR	19 29 00.2	
	591nm,28.8s,baz=246						
MTSU	**Mount Surprise**	**37.54**	**279**	P	**P**	**19 19 12.2**	**+1.8**
	baz=37,SNR=4.4						
HTT	**Hallett**	**38.08**	**252**	P	**P**	**19 19 16.1**	**+1.3**
	baz=38,SNR=21						
TAOE	**Nuku Hiva Isla**	**39.70**	**66**	*e*LR	LR	19 29 51.4	
	506nm,28.1s						
BBOO	**Buckleboo**	**40.54**	**253**	P	**P**	**19 19 36.8**	**+1.5**
	baz=40,SNR=9.7						
BBOO	**Buckleboo**	**40.54**	**253**	*e*P	**P**	**19 19 36.8**	**+1.5**
	39nm,0.9s						
AS01	**Alice Springs**	**44.52**	**265**	*e*P	**P**	**19 20 08.5**	**+0.6**
AS31	**Alice Springs**	**44.56**	**265**	*e*P	**P**	**19 20 08.9**	**+0.7**
	2.1nm,0.6s						
ASAR	**Alice Springs**	**44.56**	**265**	P	**P**	**19 20 08.1**	**-0.1**
	3.8nm,0.6s,baz=102,slow=6.5,SNR=70						
ASAR				LR	LR	19 38 24.1	
	comp=Z,506nm,18.2s,baz=112,slow=36						
WB2	**Warramunga Arr**	**45.47**	**271**	*e*P	**P**	**19 20 14.6**	**-0.8**
	18nm,1.0s						
WRAB	**Tennant Creek**	**45.48**	**271**	*e*P	**P**	**19 20 14.8**	**-0.6**
	15nm,1.0s						
WRA	**Warramunga Arr**	**45.48**	**271**	P	**P**	**19 20 15.0**	**-0.5**
	10nm,0.8s,baz=109,slow=8.0,SNR=36						
SBA	**Scott Base**	**48.94**	**185**	*e*P	P	19 20 46.7	+5.0
	44nm,1.8s						
WRKA	**Warakurna**	**48.98**	**261**	P	**P**	**19 20 42.7**	**-0.1**
	baz=49,SNR=19						
VNDA	**Vanda**	**49.04**	**186**	P	**P**	**19 20 46.8**	**+4.4**
	3.4nm,1.0s,baz=352,slow=6.9,SNR=15						
VNDA				LR	LR	19 41 23.8	
	comp=Z,37nm,18.0s,baz=322,slow=36						
FITZ	**Fitzroy Crossi**	**53.78**	**268**	P	**P**	**19 21 18.6**	**-0.1**
	baz=54,SNR=9.4						
FITZ	**Fitzroy Crossi**	**53.78**	**268**	*e*P	**P**	**19 21 19.5**	**+0.8**
	11nm,0.9s						
KLBR	**Kellerberrin**	**55.94**	**250**	P	**P**	**19 21 34.4**	**+0.1**
	baz=56,SNR=5.9						
NWAO	**Narrogin (SRO)**	**56.00**	**248**	LR	LR	19 42 01.6	
	comp=Z,82nm,20.4s,baz=321,slow=32						
QSPA	**South Pole Qui**	**60.51**	**180**	*e*P	**P**	**19 22 08.9**	**+3.1**
	111nm,1.1s						
MAW	**Mawson**	**73.55**	**200**	P	**P**	**19 23 30.7**	**+2.4**
	11nm,1.1s,baz=123,slow=7.8,SNR=14						
MAW				LR	LR	19 58 29.9	
	comp=Z,67nm,18.3s,baz=67,slow=38						
MAW	**Mawson**	**73.55**	**200**	*e*P	**P**	**19 23 31.6**	**+3.3**
	baz=74,SNR=8.7						
MAW	**Mawson**	**73.55**	**200**	*e*P	**P**	**19 23 28.9**	**+0.5**
	3.4nm,1.0s						
SBUM	**Sibu**	**75.13**	**282**	*e*P	**P**	**19 23 37.6**	**-0.9**
	15nm,1.5s						
KSM	**Kuching**	**76.26**	**280**	*e*P	**P**	**19 23 45.1**	**+0.1**
	13nm,1.2s						
SYO	**Syowa Base**	**78.20**	**192**	*e*P	**P**	**19 23 54.9**	**-0.1**
SYO	**Syowa Base**	**78.20**	**192**	*e*X	sP	19 24 07.9	+3.5
MJAR	**Matsushiro Arr**	**78.40**	**324**	P	**P**	**19 23 55.2**	**-1.3**
	3.4nm,1.0s,baz=140,slow=6.1,SNR=3.6						
SNAA	**Sanae**	**78.91**	**178**	P	**P**	**19 24 00.1**	**+1.2**
SNAA	**Sanae**	**78.91**	**178**	P	**P**	**19 23 59.5**	**+0.5**
	6.2nm,1.1s,baz=182,slow=4.3,SNR=11						
SNAA	**Sanae**	**78.91**	**178**	*e*P	**P**	**19 23 59.8**	**+0.8**
	14nm,1.2s						
VNA1	**Neumayer--Stat**	**79.68**	**176**	P	**P**	**19 24 04.9**	**+1.9**
JNU	**Nakatsue**	**79.91**	**317**	P	**P**	**19 24 04.3**	**-0.5**
	6.4nm,1.0s,baz=212,slow=15,SNR=2.9						
SSLB	**Suanglung**	**80.26**	**304**	*e*P	**P**	**19 24 05.9**	**-1.0**
	36nm,1.5s						
ERM	**Erimo**	**80.44**	**331**	*e*P	**P**	**19 24 04.5**	**-2.9**
	116nm,0.7s						
PLCA	**Paso Flores**	**82.02**	**132**	LR	LR	19 53 36.2	
	comp=Z,58nm,18.2s,baz=334,slow=30						
ASAJ	**Asahikawa**	**82.39**	**332**	*e*P	**P**	**19 24 21.3**	**+3.6**
	62nm,0.8s						
PFO	**Pinyon Flats O**	**84.63**	**46**	*e*P	**P**	**19 24 29.3**	**-0.4**
	10nm,1.2s						
KSRS	**Korea Array**	**84.66**	**319**	P	**P**	**19 24 30.1**	**+0.6**
	2.9nm,0.9s,baz=142,slow=5.5,SNR=8.8						
KSAR	**Wonju Array Be**	**84.68**	**319**	P	**P**	**19 24 30.1**	**+0.5**
KS01	**Wonju Array Si**	**84.69**	**319**	*e*P	**P**	**19 24 30.3**	**+0.6**
CMB	**Columbia Colle**	**85.23**	**41**	*e*P	**P**	**19 24 32.4**	**-0.1**
	8.8nm,1.2s						
PETK	**Petropavlovsk-**	**85.40**	**345**	P	**P**	**19 24 31.3**	**-1.6**
	2.0nm,0.7s,baz=35,slow=5.4,SNR=3.7						
PETK				LR	LR	19 58 38.0	
	comp=Z,54nm,18.7s,baz=139,slow=33						
GSC	**Goldstone, Bar**	**85.52**	**45**	*e*P	**P**	**19 24 33.5**	**-0.5**
	9.9nm,1.2s						
AFDM	**Forest Hills D**	**85.53**	**40**	*e*P	**P**	**19 24 33.8**	**-0.1**
	5.2nm,0.9s						
ORV	**Oroville**	**85.66**	**39**	*e*P	**P**	**19 24 34.4**	**-0.1**
	3.8nm,0.9s						
IPM	**Ipoh**	**85.77**	**278**	*e*P	**P**	**19 24 36.4**	**+0.7**
	14nm,0.9s						
WDC	**Whiskeytown Da**	**85.81**	**38**	*e*P	**P**	**19 24 35.3**	**+0.1**
	11nm,1.0s						
113A	**Mohawk Valley,**	**85.82**	**49**	*e*P	**P**	**19 24 35.2**	**-0.3**
	5.2nm,1.0s						
QIZ	**Qiongzhong**	**85.93**	**294**	P	**P**	**19 24 36.6**	**+0.3**
QIZ				S	**S**	**19 35 01.3**	**-7.8**
QIZ				SS	**SS**	**19 40 44.9**	**-2.5**
WAKR	**Walker**	**86.10**	**41**	*e*P	**P**	**19 24 37.3**	**+0.3**
	16nm,1.2s						
LDFC	**Landfair**	**86.43**	**46**	*e*P	**P**	**19 24 38.8**	**+0.3**
	20nm,1.1s						
KULM	**Kulim**	**86.50**	**278**	*e*P	**P**	**19 24 40.1**	**+0.8**
	18nm,1.2s						
PSI	**Prapat**	**86.76**	**275**	*e*P	**P**	**19 24 41.0**	**+0.2**
	27nm,1.1s						
TPNV	**Topopah Spring**	**86.94**	**44**	*e*P	**P**	**19 24 40.9**	**-0.2**
	6.1nm,1.0s						
Y14A	**Wickenburg**	**87.05**	**48**	*e*P	**P**	**19 24 41.3**	**-0.2**
	27nm,0.9s						
GSI	**Gunungsitoli**	**87.19**	**273**	*e*P	**P**	**19 24 44.4**	**+1.7**
	54nm,1.1s						
USRK	**Ussuriysk Ar.**	**87.28**	**326**	P	**P**	**19 24 42.1**	**-0.2**
	4.5nm,0.9s,baz=175,slow=5.3,SNR=5.5						
USRK				LR	LR	20 00 04.0	
	comp=Z,36nm,19.0s,baz=156,slow=33						
SHPR	**Sheep Range**	**87.32**	**45**	*e*P	**P**	**19 24 43.1**	**+0.2**
	14nm,1.5s						
MOD	**Modoc Plateau**	**87.94**	**38**	*e*P	**P**	**19 24 44.5**	**-1.3**
	6.5nm,1.1s						
K05A	**Summer Lake**	**88.20**	**37**	*e*P	**P**	**19 24 48.7**	**+1.6**
	24nm,1.4s						
X16A	**Lo Mia Camp, P**	**88.37**	**49**	*e*P	**P**	**19 24 48.5**	**+0.4**
	11nm,1.2s						
X16A				*e*pP	**sP**	**19 25 01.1**	**+3.6**
BMN	**Battle Mountai**	**88.66**	**41**	*e*P	**P**	**19 24 48.1**	**-1.1**
	5.1nm,1.0s						
LCMT	**Little Creek M**	**88.83**	**46**	*e*P	**P**	**19 24 50.6**	**+0.6**
	4.9nm,0.9s						
WHN	**Wuhan**	**89.00**	**306**	*e*P	**P**	**19 24 52.8**	**+2.0**
U15A	**North Rim**	**89.06**	**47**	*e*P	**P**	**19 24 51.6**	**+0.3**
	11nm,0.9s						
WUAZ	**Wupatki**	**89.08**	**48**	*e*P	**P**	**19 24 51.6**	**+0.3**
	8.7nm,1.0s						
KNB	**Kanab**	**89.09**	**46**	*e*P	**P**	**19 24 51.8**	**+0.4**
	8.3nm,1.1s						
SKNT	**Sakolnakorn**	**89.58**	**290**	P	**P**	**19 24 55.9**	**+2.0**
	35nm,1.2s						
SRAK	**Srakaew**	**89.68**	**286**	P	**P**	**19 24 54.9**	**+0.5**
	36nm,1.2s,418nm						
G06A	**Carlson Farm,**	**90.08**	**36**	*e*P	**P**	**19 24 55.1**	**-0.5**
	65nm,2.0s						
MTPU	**Mount Pierson**	**90.13**	**45**	*e*P	**P**	**19 24 57.2**	**+0.8**
	6.4nm,1.0s						
CN2	**Changchun**	**90.36**	**322**	*e*P	**P**	**19 24 57.0**	**+0.1**
TIA	**Tai'an**	**90.47**	**312**	*e*P	**P**	**19 24 58.8**	**+1.2**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.7s						
D05A	**Enumclaw**	**90.77**	**34**	*e*P	**P**	**19 24 59.5**	**+0.8**
	34nm,1.0s						
TX31	**Lajitas Ar. Si**	**90.77**	**56**	*e*P	**P**	**19 24 58.4**	**-1.0**
TX31				*e*pP	**sP**	**19 25 10.7**	**+1.9**
TXAR	**Lajitas Array**	**90.77**	**56**	P	**P**	**19 24 58.2**	**-1.1**
	1.4nm,0.9s,baz=225,slow=3.4,SNR=9.6						
NONG	**Nongkai**	**90.82**	**290**	P	**P**	**19 25 02.0**	**+2.4**
G08A	**Pilot Rock**	**90.97**	**37**	*e*P	**P**	**19 24 59.4**	**-0.5**
G08A				*e*pP	**sP**	**19 25 11.7**	**+2.3**
KLR	**Kul'dur**	**91.06**	**329**	P	**P**	**19 24 59.8**	**-0.2**
	1.2nm,0.8s,baz=154,slow=4.4,SNR=3.9						
CNPM	**China Poot**	**91.20**	**13**	*e*P	**P**	**19 25 00.0**	**-0.4**
	25nm,1.2s						
CNPM				*e*pP	**sP**	**19 25 12.9**	**+3.0**
BRLK	**Bradley Lake**	**91.49**	**13**	*e*P	**P**	**19 25 01.3**	**-0.4**
TMUT	**Trail Mountain**	**91.50**	**45**	*e*P	**P**	**19 25 03.2**	**+0.5**
	6.8nm,0.9s						
BMO	**Blue Mountains**	**91.55**	**38**	*e*P	**P**	**19 25 01.6**	**-0.9**
	5.1nm,1.1s						
ANMO	**Albuquerque**	**91.98**	**51**	*e*P	**P**	**19 25 04.9**	**0.0**
	3.0nm,0.8s						
HVU	**Hansel Valley**	**92.10**	**42**	*e*P	**P**	**19 25 05.3**	**0.0**
	5.2nm,1.0s						
D08A	**Wollman Farm,**	**92.19**	**35**	*e*P	**P**	**19 25 04.9**	**-0.5**
	16nm,0.9s						
HLID	**Hailey**	**92.29**	**40**	*e*P	**P**	**19 25 05.8**	**-0.3**
	6.4nm,1.1s						
ENH	**Enshi**	**92.32**	**304**	*e*P	**P**	**19 25 07.5**	**+1.1**
	34nm,1.0s						
F10A	**Beach Ranch, E**	**92.33**	**37**	*e*P	**P**	**19 25 04.9**	**-1.3**
	13nm,0.9s						
GYA	**Guiyang**	**92.38**	**299**	P	**P**	**19 25 08.0**	**+1.1**
GYA				pP	sP	19 25 23.4	+7.1
GYA				PP	**PP**	**19 28 52.8**	**+4.6**
GYA				SKS	**SKSac**	**19 35 35.0**	**-4.4**
GYA				S	**S**	**19 36 04.3**	**-5.3**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA				pmax	pmax		
	comp=Z,110nm,6.8s						
RC01	**Rabbit Creek A**	**92.93**	**13**	*e*P	**P**	**19 25 08.3**	**-0.1**
	17nm,1.2s						
GLI	**Glacier Island**	**93.27**	**14**	*e*P	**P**	**19 25 09.5**	**-0.4**
	13nm,0.9s						
TT01	**Tatalina**	**93.61**	**9**	*e*P	**P**	**19 25 10.5**	**-0.9**
TT01				*e*pP	**sP**	**19 25 22.8**	**+1.8**
TTA	**Tatalina**	**93.64**	**9**	*e*P	**P**	**19 25 11.2**	**-0.5**
TTA				*e*pP	**sP**	**19 25 23.4**	**+2.2**
MCMT	**McKenzie Canyo**	**93.96**	**40**	*e*P	**P**	**19 25 13.5**	**-0.4**
CM01	**Chiang Mai Arr**	**94.44**	**289**	*e*P	**P**	**19 25 18.3**	**+1.9**
CMAR	**Chiang Mai Arr**	**94.47**	**289**	P	**P**	**19 25 18.2**	**+1.7**
	0.7nm,0.7s,baz=155,slow=3.2,SNR=5.2						
CMAR				LR	LR	20 10 35.5	
	comp=Z,33nm,18.2s,baz=135,slow=37						
BW06	**Boulder Array**	**94.59**	**43**	*e*P	**P**	**19 25 17.0**	**+0.2**
PDAR	**Pinedale Array**	**94.59**	**43**	P	**P**	**19 25 16.0**	**-0.8**
	1.1nm,0.8s,baz=213,slow=4.9,SNR=6.2						
CAST	**Castle Rocks**	**94.69**	**11**	*e*P	**P**	**19 25 14.9**	**-1.6**
CAST				*e*pP	**sP**	**19 25 27.3**	**+1.4**
KMI	**Kunming**	**94.72**	**296**	P	**P**	**19 25 18.8**	**+1.0**
KMI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,81nm,4.5s						
XAN	**Xi'an**	**94.76**	**307**	P	**P**	**19 25 20.3**	**+2.8**
XAN				pP	sP	19 25 33.0	+6.0
XAN				pmax	pmax		
	comp=Z,5.0nm,1.5s						
TRF	**Thorofare Moun**	**95.02**	**11**	*e*P	**P**	**19 25 17.2**	**-0.9**
	5.4nm,1.0s						
YML	**Mary Lake**	**95.06**	**41**	*e*P	**P**	**19 25 17.8**	**-1.2**
BOZ	**Bozeman (W)**	**95.14**	**40**	*e*P	**P**	**19 25 18.4**	**-0.7**
	5.9nm,0.9s						
RND	**Reindeer**	**95.23**	**12**	*e*P	**P**	**19 25 18.2**	**-0.8**
	9.9nm,1.1s						
RND				*e*pP	**sP**	**19 25 30.5**	**+2.0**
WRH	**Wood River Hil**	**96.35**	**12**	*e*P	**P**	**19 25 23.2**	**-0.7**
	6.1nm,0.9s						
DOT	**Dot Lake**	**96.39**	**14**	*e*P	**P**	**19 25 24.0**	**-0.3**
	12nm,1.1s						
MLY	**Manley**	**96.41**	**11**	*e*P	**P**	**19 25 23.0**	**-1.3**
	13nm,2.0s						
HHC	**Hu-ho-hao-te**	**96.70**	**313**	*e*P	**P**	**19 25 27.6**	**+1.3**
HHC				pmax	pmax		
	comp=Z,8.0nm,1.1s						
HHC				pmax	pmax		
	comp=Z,110nm,4.7s						
MDM	**Murphy Dome**	**96.77**	**12**	*e*P	**P**	**19 25 24.9**	**-1.0**
	5.7nm,1.1s						
IL1	**Eielson Array**	**96.84**	**12**	*e*P	**P**	**19 25 24.3**	**-1.9**
IL1				*e*pP	**sP**	**19 25 37.2**	**+1.6**
ILAR	**Eielson Array**	**96.84**	**12**	P	**P**	**19 25 24.8**	**-1.4**
	2.2nm,1.0s,baz=218,slow=5.6,SNR=11						
CD2	**Chengdu**	**96.86**	**302**	*e*P	**P**	**19 25 26.5**	**-0.7**
CD2				pP	sP	19 25 41.5	+4.8
CD2				sP	pP	19 25 47.5	+13
CD2				SKS	**SKSac**	**19 35 58.8**	**-4.3**
CD2				S	**S**	**19 36 45.1**	**-3.2**
CD2				sS	sS	19 37 11.3	+11
CD2				SS	**SS**	**19 43 24.1**	**-0.7**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.4s						
LPAZ	**La Paz**	**97.18**	**113**	P	Pdif	19 25 30.7	+0.8
	2.4nm,1.2s,baz=191,slow=1.2,SNR=5.0						
RSSD	**Black Hills**	**98.67**	**44**	*e*P	Pdif	19 25 35.8	+0.6
	4.9nm,0.9s						
LZH	**Lanzhou**	**99.38**	**306**	*e*P	**Pdif**	**19 25 37.8**	**-0.7**
LZH				pP	sP	19 25 53.0	+5.0
LZH				sP	pP	19 25 59.0	+13
LZH				*e*PP	**PP**	**19 29 44.5**	**+2.2**
LZH				pmax	pmax		
	comp=Z,17nm,1.3s						
LZH				pmax	pmax		
	comp=Z,86nm,5.2s						
LZH				LR	LR		
	comp=N,250nm,17.5s						
LZH				LR	LR		
	comp=E,270nm,17.8s						
LZH				LR	LR		
	comp=Z,350nm,19.7s						
WMQ	**Urumqi**	**113.84**	**308**	*e*PKP	**PKiKP**	**19 30 34.9**	**+0.3**
WMQ				LR	LR		
	comp=N,160nm,26.2s						
WMQ				LR	LR		
	comp=E,130nm,29.0s						
MK01	**Makanchi Array**	**118.32**	**310**	*e*PKPdf	**PKPdf**	**19 30 41.9**	**-1.1**
MKAR	**Makanchi Array**	**118.33**	**310**	PKP	**PKPdf**	**19 30 42.2**	**-0.9**
	1.8nm,0.9s,baz=64,slow=2.8,SNR=12						
ZAA0	**Zalesovo Array**	**118.37**	**318**	*e*PKPdf	**PKPdf**	**19 30 41.6**	**-1.2**
ZALV	**Zalesovo Beam**	**118.37**	**318**	PKP	**PKPdf**	**19 30 41.4**	**-1.4**
	1.4nm,0.8s,baz=0.0,slow=1.5,SNR=6.9						
KSH	**Kashi**	**121.04**	**301**	*e*PKP	**PKPdf**	**19 30 49.4**	**+0.8**
KSH				*e*PP	**PP**	**19 32 21.3**	**+2.5**
KSH				PKS	**PKSdf**	**19 34 25.1**	**-0.3**
KSH				SKS	**SKSdf**	**19 37 56.8**	**-2.8**
KSH				SKKS	**SKKSac**	**19 39 09.5**	**-7.4**
KSH				SS	**SS**	**19 48 45.8**	**-4.8**
KSH				AMB	AMB		
	comp=Z,56nm,4.0s						
KSH				LR	LR		
	comp=N,110nm,4.6s						
KSH				LR	LR		
	comp=E,98nm,5.2s						
KSH				LR	LR		
	comp=Z,170nm,5.7s						
KURK	**Kurchatov**	**121.51**	**314**	PKP	**PKPdf**	**19 30 48.2**	**-0.8**
KURBB	**Kurchatov Arra**	**121.55**	**314**	PKP	**PKPdf**	**19 30 48.2**	**-0.9**
	2.7nm,0.8s,baz=108,slow=2.0,SNR=32						
KKAR	**Karatay Array**	**125.80**	**304**	*e*PKPdf	**PKPdf**	**19 30 57.5**	**0.0**
VOSK	**Vostochnaya**	**126.44**	**316**	*e*PKPdf	**PKPdf**	**19 30 57.8**	**-0.6**
GEYT	**Alibeck**	**134.49**	**296**	PKP	**PKPdf**	**19 31 15.7**	**+1.5**
	1.3nm,0.7s,baz=258,slow=7.4,SNR=4.3						
KMBO	**Kilima Mbogo**	**135.68**	**232**	PKP	**PKPdf**	**19 31 17.9**	**+0.5**
	0.5nm,0.3s,baz=38,slow=23,SNR=4.0						
ARCES	**ARCESS Array B**	**138.09**	**349**	PKP	**PKPdf**	**19 31 19.1**	**-0.8**
	1.7nm,0.7s,baz=63,slow=3.0,SNR=4.6						
FIA1	**FINESS Array S**	**144.85**	**

AUSP				*i*	S		**Sn**	19 44 06.4	**0.0**
RTLS	**Leoncito**	**0.47**	**48**	*i*	P		**Pn**	19 43 54.1	**-0.3**
RTLS				⇓*i*	S		**Sn**	19 44 08.3	**+0.4**
ASAL	**Salagasta**	**0.88**	**123**	*i*	P		**Pn**	19 43 57.1	**-0.1**
ASAL				*i*	S		**Sn**	19 44 12.8	**-0.1**
ARCO	**CERRO ARCO**	**0.97**	**138**	*e*P			**Pn**	19 43 59.1	**+0.9**
ARCO				IAML				19 43 59.3	
	comp=Z,623nm,0.3s								
ARCO				*i*	S		**Sn**	19 44 14.8	**0.0**
RTCV	**Cerro Valdivia**	**1.02**	**76**	*i*	P		**Pn**	19 43 58.3	**-0.2**
RTCV				*i*	S		**Sn**	19 44 15.5	**+0.1**
FCH	**Farellones**	**1.30**	**202**	⇑*i*	P		**Pn**	19 44 02.5	**+0.7**
FCH				*i*	S		**Sn**	19 44 22.4	**+1.3**
FCH				IAML				19 44 22.8	
	comp=E,322nm,0.3s								
PEL	**Peldehue**	**1.31**	**219**	⇓*i*	P		**Pn**	19 44 01.2	**-0.4**
PEL				*i*	S		**Sn**	19 44 20.3	**-0.6**
PEL				IAML				19 44 21.2	
	comp=N,263nm,0.5s								
RTLL	**Cerro Villicun**	**1.31**	**54**	*i*	P		**Pn**	19 44 01.3	**-0.4**
RTLL				*i*	S		**Sn**	19 44 20.5	**-0.3**
ROCH	**El Roble**	**1.39**	**232**	⇓*i*	P		**Pn**	19 44 01.8	**-0.8**
ROCH				*i*	S		**Sn**	19 44 22.1	**-0.6**
ROCH				IAML				19 44 23.5	
	comp=N,280nm,0.3s								
ROC1	**El Roble**	**1.40**	**232**	*i*	P		**Pn**	19 44 02.3	**-0.5**
ROC1				*i*	S		**Sn**	19 44 22.2	**-0.6**
CLCH	**Cerro Calan**	**1.45**	**208**	*i*	P		**Pn**	19 44 03.5	**+0.3**
CLCH				*i*	S		**Sn**	19 44 24.3	**+0.6**
CLCH				IAML				19 44 25.2	
	comp=E,283nm,0.7s								
ACCO	**Cerro Coronel**	**1.62**	**20**	*i*	P		**Pn**	19 44 05.7	**+0.2**
ACCO				*i*	S		**Sn**	19 44 28.2	**+0.6**
ACCO				IAML				19 44 29.2	
	comp=Z,145nm,0.5s								
ANTU	**Antumapu**	**1.64**	**208**	*i*	S		**Sn**	19 44 27.9	**+0.3**
ANTU				IAML				19 44 29.2	
	comp=E,280nm,0.2s								
AROD	**Rodeo**	**1.96**	**6**	*i*	P		**Pn**	19 44 10.0	**+0.4**
AROD				*i*	S		**Sn**	19 44 35.3	**+0.4**
ACDV	**Cuesta del Vie**	**2.01**	**15**	*i*	P		**Pn**	19 44 10.2	**+0.1**
ACDV				*i*	S		**Sn**	19 44 35.9	**+0.2**
ACAN	**Cantantal**	**2.14**	**95**	*i*	P		**Pn**	19 44 11.7	**+0.1**
ACAN				*i*	S		**Sn**	19 44 38.0	**-0.6**
AVFE	**Valle Fertil**	**2.41**	**54**	*i*	P		**Pn**	19 44 14.6	**-0.5**
AVFE				IAML				19 44 47.6	
	comp=Z,41nm,0.2s								
ACHE	**Chepes**	**2.77**	**71**	*i*	P		**Pn**	19 44 19.3	**-0.4**
AGUA	**GUANDACOL**	**2.82**	**22**	*i*	P		**Pn**	19 44 20.6	**+0.1**

*ISK **21** 19:48:35.3,39˙09N×29˙12E,h10km,MD2.7*
*ISCJB **21** 19:48:36.1±0.5,39˙07N±0˙04×29˙12E±0˙05,h13km±5km, Error ellipse: s-maj=8.1km s-min=4.3km az=41.5*
*DDA **21** 19:48:36.1,39˙09N×29˙09E,h7km,Ml2.7*
*CSEM **21** 19:48:36.0±0.1,39˙08N×29˙11E,h12km,ML2.7, Error ellipse: s-maj=4.8km s-min=2.5km az=125.0*

ISC 21 19:48:35.9±1.0,**39˙08N**±0˙03×**29˙12E**±0˙03,**h14**km±9km, **n17**,σ0**9**40/30,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**88**	*i*	P		**Pb**	**19 48 43.0**	**+0.2**
GDZ				*i*	S		**Sb**	**19 48 47.1**	**-0.4**
GDZ	**Gediz**	**0.28**	**88**		P		**Pb**	**19 48 43.0**	**+0.2**
GDZ					S		**Sb**	**19 48 47.1**	**-0.4**
DEMI	**Demirci**	**0.32**	**263**	*i*	P		**Pb**	**19 48 43.1**	**-0.3**
DEMI				*i*	S		**Sg**	**19 48 47.5**	**+0.7**
DEMI	**Demirci**	**0.32**	**263**		P		**Pb**	**19 48 43.1**	**-0.3**
DEMI					S		**Sg**	**19 48 47.5**	**+0.7**
TVSB	**Tavsanli**	**0.45**	**36**	*e*PG			**Pg**	**19 48 44.9**	**0.0**
TVSB				*e*SG			**Sg**	**19 48 50.7**	**-0.3**
TVSB	**Tavsanli**	**0.45**	**36**	*e*Pg			**Pg**	**19 48 44.9**	**0.0**
TVSB				*e*Sg			**Sg**	**19 48 50.7**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**213**	*e*PG			**Pg**	**19 48 49.0**	**+0.1**
KULA				*e*SG			**Sb**	**19 48 58.7**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**213**	*e*Pg			**Pg**	**19 48 49.0**	**+0.1**
KULA				*e*Sg			**Sb**	**19 48 58.7**	**+0.1**
MANT	**Manisa**	**0.74**	**217**	*i*	P		**Pg**	**19 48 49.6**	**-0.6**
MANT				*i*	S		**Sg**	**19 48 59.6**	**-0.3**
MANT	**Manisa**	**0.74**	**217**		P		**Pg**	**19 48 49.6**	**-0.6**
MANT					S		**Sg**	**19 48 59.6**	**-0.3**
IGD	**Bursa**	**1.18**	**3**	*i*	P		**Pb**	**19 48 57.2**	**-0.9**
IGD				*i*	S		**Sn**	**19 49 14.4**	**+0.4**
IZI	**Iznik**	**1.28**	**12**	*e*PN			**Pn**	**19 48 59.8**	**+0.3**
IZI	**Iznik**	**1.28**	**12**	*e*Pn			**Pn**	**19 48 59.8**	**+0.3**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*PN			**Pn**	**19 49 00.4**	**+0.4**
KCTX				*e*SN			**Sg**	**19 49 18.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*Pn			**Pn**	**19 49 00.4**	**+0.4**
KCTX				*e*Sn			**Sg**	**19 49 18.6**	**+0.1**
ARMT	**Armutlu**	**1.50**	**352**	*e*PN			**Pn**	**19 49 02.7**	**+0.3**
ARMT	**Armutlu**	**1.50**	**352**	*e*Pn			**Pn**	**19 49 02.7**	**+0.3**

*ISCJB **21** 19:55:27.9±0.3,8˙58N±0˙04×82˙97W±0˙04,h10km, mb4.6/100,MS3.8/9,Error ellipse: s-maj=7.4km s-min=3.2km az=35.9*
*CASC **21** 19:55:28.2±1.7,8˙11N×83˙36W,h14km±13km,MD4.7, ML3.6,mb4.8(NEIC)*
*NEIC **21** 19:55:33.0±0.6,8˙26N×83˙14W,h44km±5km,mb4.8/87, Error ellipse: s-maj=9.1km s-min=4.0km az=225.0*
NEIC Felt at Buenos Aires and Palmar Norte.
*IDC **21** 19:55:32.1±2.9,8˙29N×83˙24W,h41km±27km,mb4.0/16, mb1 4.3/19,mb1mx4.2/30,mbtmp4.3/19,ML3.6/3,MS3.7/10, Ms1 3.7/10,ms1mx3.4/23,Error ellipse: s-maj=27.2km s-min=11.5km az=58.0*

ISC 21 19:55:28.2±0.4,**8˙17N**±0˙05×**83˙33W**±0˙05,**h8**km,**n373,** σ1**9**65/376,**mb4.8**/100,**MS3.8**/9,**5C-3D,Costa Rica**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BRU2	**Volcan**	**0.88**	**45**	⇓*i*	P		**Pb**	**19 55 45.2**	**-0.6**
BRU2				*e*S			**Sn**	**19 55 58.9**	**-1.3**
TBS2		**0.91**	**47**	⇑*i*	P		**Pn**	**19 55 46.5**	**-0.9**
TBS2				*e*S			**Sn**	**19 55 59.9**	**-0.9**
BRU	**Baru**	**0.99**	**50**	⇑*i*	P		**Pb**	**19 55 47.3**	**-0.5**
BUS	**Buena Vista**	**1.44**	**343**	*e*S			**Sg**	**19 56 15.6**	**+1.1**
QCR	**Quepos**	**1.50**	**326**	⇓*i*	P		**Pg**	**19 55 58.3**	**+1.5**
URSC	**Urasca**	**1.71**	**345**	⇓*i*	P		**Pn**	**19 55 58.3**	**-0.2**
HDC	**Heredia**	**1.98**	**337**	*e*Pn			**Pn**	**19 56 02.3**	**+0.1**
CGA2	**Cerro Gallo 2**	**2.15**	**329**	⇑*e*P			**Pn**	**19 56 03.8**	**+0.7**
CGA2				*e*S			**Sn**	**19 56 30.9**	**-0.5**
JCR	**Jicaral**	**2.43**	**314**	⇑*e*P			**Pn**	**19 56 06.3**	**-1.9**
PNME	**Penonome**	**2.98**	**84**	*e*P			**Pn**	**19 56 14.9**	**-0.9**
PNME				*e*S			**Sn**	**19 56 51.2**	**-0.7**
AZU	**Azuero**	**3.05**	**97**	⇑*i*	P		**Pn**	**19 56 15.1**	**-1.6**
ZANG	**Zanguenga, Cho**	**3.51**	**77**	*e*P			**Pn**	**19 56 24.4**	**+1.3**
CONN	**Concepcion**	**4.06**	**326**	*e*P			**Pn**	**19 56 31.4**	**+0.7**
ACON	**Acoyapa**	**4.19**	**334**	*e*P			**Pn**	**19 56 33.3**	**+0.9**
MOMN	**Momotombo**	**5.26**	**323**	*e*P			**Pn**	**19 56 47.9**	**+0.6**
UPD2	**Meteti**	**5.27**	**86**	*e*P			**Pn**	**19 56 46.6**	**-0.7**
CNGN	**Cerro Negro**	**5.43**	**323**	*e*P			**Pn**	**19 56 50.4**	**+0.8**
CNGN				AML			AML	19 57 24.0	
	comp=N,98nm,0.3s								
CAPC	**Capurgana**	**5.93**	**85**	*e*P			**Pn**	**19 56 54.7**	**-1.7**
HELC	**Santa Helena**	**7.98**	**104**	*e*P			**Pn**	**19 57 22.3**	**-2.6**
HELC	**Santa Helena**	**7.98**	**104**	*e*Pn			**Pn**	**19 57 23.4**	**-1.6**
TOLC	**Tolima**	**8.72**	**114**	*e*P			**Pn**	**19 57 34.1**	**-0.8**
NORC	**Norcasia**	**8.79**	**107**	*e*P			**Pn**	**19 57 35.8**	**+0.1**
OTAV	**Otavalo**	**9.26**	**148**	*e*P			**Pn**	**19 57 41.2**	**-1.3**
OTAV	**Otavalo**	**9.26**	**148**	*e*Pn			**Pn**	**19 57 42.8**	**+0.3**
PRAC	**Prado**	**9.49**	**117**	*e*P			**Pn**	**19 57 44.6**	**-0.7**
PRAC	**Prado**	**9.49**	**117**	*e*Pn			**Pn**	**19 57 45.8**	**+0.5**
ROSC	**El Rosal**	**9.54**	**110**	P			**Pn**	**19 57 47.6**	**+1.3**
	comp=N,1.5nm,0.3s,baz=54,slow=19,SNR=10								
ROSC	**El Rosal**	**9.54**	**110**	*e*P			**Pn**	**19 57 49.4**	**+3.1**
CHIC	**Chingaza**	**10.16**	**110**	*e*P			**Pn**	**19 57 55.8**	**+1.0**
VILC	**Villavicencio,**	**10.39**	**112**	*e*P			**Pn**	**19 57 60.0**	**+2.2**
RUSC	**La Rusia**	**10.42**	**102**	*e*P			**Pn**	**19 57 56.6**	**-1.8**
RUSC	**La Rusia**	**10.42**	**102**	*e*Pn			**Pn**	**19 57 58.8**	**+0.4**
GRMC	**Gramalote, San**	**10.43**	**92**	*e*P			**Pn**	**19 57 55.6**	**-2.7**
SJAC	**San Juan de Ar**	**10.52**	**117**	*e*P			**Pn**	**19 58 02.6**	**+3.1**
MTDJ	**Mount Denham**	**11.47**	**29**	*e*Pn			**Pn**	**19 58 13.6**	**+1.1**
CCIG	**Comitan**	**11.79**	**314**	*e*Pn			**Pn**	**19 58 19.4**	**+2.5**
SDV	**Santo Domingo**	**12.57**	**86**	P			**Pn**	**19 58 30.6**	**+2.9**
	comp=N,0.3nm,0.3s,baz=253,slow=12,SNR=5.9								
SDV	**Santo Domingo**	**12.57**	**86**	*e*P			**Pn**	**19 58 30.8**	**+3.1**
SDV	**Santo Domingo**	**12.57**	**86**	*e*Pn			Pn	19 58 32.9	+5.2
TEIG	**Tepich**	**12.91**	**339**	P			Pn	19 58 39.4	+7.3
	comp=N,0.3nm,0.3s,baz=274,slow=23,SNR=4.7								
GTBY	**Guantanamo Bay**	**14.14**	**33**	*e*P			**P**	**19 59 00.4**	**+3.8**
CMIG	**Matias Romero**	**14.34**	**309**	P			**Pn**	**19 58 52.3**	**+0.7**
	comp=N,2.0nm,0.3s,baz=127,slow=11,SNR=17								
CMIG				LR			LR	20 04 03.6	
	comp=N,266nm,18.9s,baz=122,slow=36								
SDDR	**Presa de Saban**	**15.88**	**46**	*e*Pn			**Pn**	**19 59 09.5**	**-2.7**
	comp=N,26nm,0.8s								
ATAH	**Atahualpa**	**15.98**	**162**	P			**P**	**19 59 16.9**	**-0.6**
	comp=N,0.6nm,0.3s,baz=326,slow=8.3,SNR=7.7								
TLIG	**Tlapa**	**17.53**	**304**	*e*Pn			**P**	**19 59 37.2**	**+2.8**
	comp=N,197nm,0.3s								
PCRV	**Puerto La Cruz**	**18.56**	**82**	P			**Pn**	**19 59 51.7**	**+5.8**
	comp=N,1.2nm,0.3s,baz=224,slow=9.8,SNR=4.5								
SJG	**San Juan**	**19.41**	**58**	P			**Pn**	**20 00 00.3**	**+4.2**
	comp=N,2.0nm,0.3s,baz=248,slow=6.0,SNR=5.0								
NNA	**Nana**	**21.04**	**162**	P			**P**	**20 00 13.3**	**+0.6**
	comp=N,9.6nm,0.5s,baz=355,slow=9.5,SNR=3.5								
035A	**Encino** baz=140	**23.34**	**325**	P			**P**	**20 00 36.8**	**-0.2**
ZAIG	**Zacatecas** comp=N,16nm,1.2s	**23.50**	**310**	*e*P			**P**	**20 00 41.1**	**+2.1**
348A	**Jackson** baz=168	**23.52**	**350**	P			**P**	**20 00 38.0**	**-0.7**
347A	**Saraland** baz=167	**23.62**	**349**	P			**P**	**20 00 38.9**	**-0.9**
034A	**Hebbronville** baz=139	**23.77**	**324**	P			**P**	**20 00 40.9**	**-0.4**
345A	**Thompson Farm,** baz=163	**23.85**	**346**	P			**P**	**20 00 41.3**	**-0.7**
934A	**Benavides** baz=140	**24.09**	**325**	P			**P**	**20 00 43.9**	**-0.4**
248A	**Dixon Mills** baz=169	**24.15**	**351**	P			**P**	**20 00 44.8**	**-0.1**
344A	**Westbrook Farm** baz=161	**24.17**	**344**	P			**P**	**20 00 45.3**	**+0.3**
247A	**Quitman** baz=167	**24.27**	**349**	P			**P**	**20 00 45.5**	**-0.4**
245A	**Little AP, Sta** baz=164	**24.52**	**346**	P			**P**	**20 00 47.9**	**-0.3**
244A	**Avery, Jackson** baz=162	**24.72**	**345**	P			**P**	**20 00 50.7**	**+0.7**
147A	**Livingston** baz=168	**24.81**	**350**	P			**P**	**20 00 50.3**	**-0.5**
636A	**Smothers Creek** baz=146	**24.82**	**330**	P			**P**	**20 00 51.2**	**+0.3**
PTGA	**Pitinga** comp=N,3.0nm,0.8s,baz=295,slow=13,SNR=4.5	**24.91**	**110**	P			**P**	**20 00 50.4**	**-1.5**
PTGA	**Pitinga** comp=N,13nm,0.9s	**24.91**	**110**	*e*P			**P**	**20 00 51.6**	**-0.3**
LRAL	**Lakeview Retre** comp=N,48nm,0.8s	**24.97**	**353**	*e*P			**P**	**20 00 52.8**	**+0.4**
NHSC	**New Hope** comp=N,128nm,1.4s	**24.98**	**6**	*e*P			**P**	**20 00 54.9**	**+2.5**
145A	**Houston Renfro** baz=164	**25.07**	**347**	P			**P**	**20 00 52.7**	**-0.5**
GOGA	**Godfrey** comp=N,15nm,0.9s	**25.12**	**360**	*e*P			**P**	**20 00 53.1**	**-0.5**
833A	**Chaparral WMA,** baz=140	**25.13**	**325**	P			**P**	**20 00 54.6**	**+0.8**
438A	**Sam Houston St** baz=150	**25.17**	**335**	P			**P**	**20 00 54.3**	**+0.2**
Z47A	**Carrollton** baz=168	**25.29**	**351**	P			**P**	**20 00 55.0**	**-0.1**
241A	**Mc Tay, Goldon** baz=157	**25.35**	**341**	P			**P**	**20 00 56.6**	**+0.9**
733A	**Divot King Ran** baz=140	**25.38**	**326**	P			**P**	**20 00 55.6**	**-0.5**
Z48A	**Northport** baz=170,SNR=5.3	**25.39**	**352**	P			**P**	**20 00 56.0**	**-0.1**
Z46A	**Louisville** baz=167	**25.44**	**349**	P			**P**	**20 00 56.2**	**-0.3**
143A	**Socs Landing,** baz=161	**25.53**	**344**	P			**P**	**20 00 57.5**	**+0.1**
Z45A	**Winona** baz=165	**25.76**	**348**	P			**P**	**20 00 59.6**	**+0.2**
Y47A	**UCPARC, Winfie** baz=169	**25.95**	**351**	P			**P**	**20 01 01.0**	**-0.2**
534A	**Blanco** baz=143	**25.97**	**329**	P			**P**	**20 01 01.2**	**-0.3**
Y46A	**Houston** baz=167	**26.09**	**349**	P			**P**	**20 01 02.0**	**-0.4**
Y45A	**Yeager Farm, C** baz=166	**26.21**	**348**	P			**P**	**20 01 01.3**	**-2.2**
433A	**Art** baz=143	**26.87**	**329**	P			**P**	**20 01 07.9**	**-1.6**
334A	**Lometa** baz=145	**26.91**	**331**	P			**P**	**20 01 09.1**	**-0.9**
TKL	**Tuckaleechee C** comp=N,1.0nm,0.3s,baz=252,slow=15,SNR=1.9	**27.36**	**359**	P			**P**	**20 01 11.9**	**-2.0**
233A	**Rising Star** baz=145	**27.80**	**331**	P			**P**	**20 01 17.2**	**-0.7**
MIAR	**Mount Ida** baz=158	**27.89**	**342**	P			**P**	**20 01 16.9**	**-1.8**
MIAR	**Mount Ida** comp=N,13nm,1.2s	**27.89**	**342**	*e*P			**P**	**20 01 19.3**	**+0.7**
X39A	**Fountain Ranch** baz=156	**28.03**	**341**	P			**P**	**20 01 18.6**	**-1.3**
W41B	**Gary Mavity, V** baz=161	**28.09**	**344**	P			**P**	**20 01 18.3**	**-2.1**
X301	**Greenbrier Sit** comp=N,18nm,1.1s	**28.20**	**344**	*e*P			**P**	**20 01 20.3**	**-1.1**
X201	**Greenbrier Sit**	**28.24**	**344**	*e*P			**P**	**20 01 20.1**	**-1.6**
X38A	**Whitesboro** baz=155	**28.41**	**340**	P			**P**	**20 01 22.1**	**-1.2**
TX31	**Lajitas Ar. Si**	**28.44**	**320**	*e*P			**P**	**20 01 23.9**	**+0.1**
TX31				*e*P			**P**	**20 01 24.0**	**+0.3**
TX31				*e*PcP			**PcP**	**20 04 36.0**	**-0.1**
TXAR	**Lajitas Array** comp=N,1.7nm,0.8s,baz=137,slow=9.1,SNR=20	**28.44**	**320**	P			**P**	**20 01 23.6**	**-0.1**
TXAR				PcP			**PcP**	**20 04 35.6**	**-0.4**
	comp=N,0.7nm,1.0s,baz=132,slow=1.3,SNR=4.0								
V42A	**Cord** baz=163	**28.48**	**346**	P			**P**	**20 01 22.1**	**-1.8**
W39A	**Magazine** baz=158	**28.56**	**342**	P			**P**	**20 01 23.1**	**-1.5**
LPAZ	**La Paz** comp=N,1.8nm,0.7s,baz=342,slow=6.2,SNR=7.5	**28.58**	**148**	P			**P**	**20 01 27.0**	**+1.3**
LPAZ				LR			LR	20 14 06.8	
	comp=N,176nm,18.4s,baz=322,slow=39								
LPAZ	**La Paz** comp=N,10nm,1.4s	**28.58**	**148**	*e*P			**P**	**20 01 29.6**	**+3.9**
V41A	**Mountainview** baz=161	**28.65**	**345**	P			**P**	**20 01 23.6**	**-1.8**
V40A	**Witts Springs** baz=160	**28.84**	**344**	P			**P**	**20 01 24.7**	**-2.5**
U42A	**Revenden** baz=163	**28.96**	**347**	P			**P**	**20 01 26.5**	**-1.7**
V39A	**Pettigrew** baz=158	**29.11**	**343**	P			**P**	**20 01 28.5**	**-1.0**
U41A	**Viola** baz=162	**29.12**	**346**	P			**P**	**20 01 27.7**	**-1.9**
V38A	**Canehill** baz=157	**29.36**	**341**	P			**P**	**20 01 29.7**	**-2.1**
U40A	**Yellville** baz=160	**29.37**	**344**	P			**P**	**20 01 29.9**	**-1.9**
T41A	**Mountain View** baz=163,SNR=6.6	**29.75**	**346**	P			**P**	**20 01 33.6**	**-1.6**
S45A	**Carrier Mills** baz=169	**29.76**	**352**	P			**P**	**20 01 33.6**	**-1.6**
S44A	**Carbondale** baz=168	**29.88**	**351**	P			**P**	**20 01 34.8**	**-1.4**
S43A	**Fulton Ridge,** baz=166	**29.90**	**349**	P			**P**	**20 01 34.8**	**-1.7**
T40A	**Mansfield** baz=161	**30.03**	**345**	P			**P**	**20 01 36.6**	**-1.1**
T39A	**Clever** baz=160	**30.14**	**344**	P			**P**	**20 01 36.5**	**-2.1**
R44A	**Waltonville** baz=168	**30.39**	**351**	P			**P**	**20 01 38.2**	**-2.6**
T38A	**Diamond** baz=158	**30.41**	**342**	P			**P**	**20 01 38.7**	**-2.3**
S40A	**Lebanon** baz=162,SNR=8.2	**30.45**	**346**	P			**P**	**20 01 39.4**	**-2.0**
T37A	**Cheneyville 18** baz=157	**30.68**	**342**	P			**P**	**20 01 41.6**	**-1.9**
S39A	**Bolivar** baz=160	**30.75**	**344**	P			**P**	**20 01 42.5**	**-1.5**
S38A	**Stockton** baz=159	**30.85**	**343**	P			**P**	**20 01 43.5**	**-1.4**
V32A	**Arapaho** baz=148	**30.96**	**335**	P			**P**	**20 01 45.4**	**-0.5**
Q44A	**Meyer Farm, Va** baz=169	**31.02**	**351**	P			**P**	**20 01 44.2**	**-2.1**
R40A	**Maddies Statio** baz=162	**31.05**	**346**	P			**P**	**20 01 44.6**	**-2.1**
MNTX	**Cornudas Mount** baz=134	**31.14**	**322**	P			**P**	**20 01 47.3**	**-0.2**
MNTX	**Cornudas Mount**	**31.14**	**322**	*e*P			**P**	**20 01 46.5**	**-1.0**
Q43A	**New Douglas** baz=167	**31.17**	**350**	P			**P**	**20 01 45.6**	**-2.1**
S37A	**Fort Scott** baz=157	**31.24**	**342**	P			**P**	**20 01 46.9**	**-1.5**
Q42A	**Golden Eagle** baz=166	**31.29**	**349**	P			**P**	**20 01 47.0**	**-1.7**
MSTX	**Muleshoe** baz=140	**31.31**	**328**	P			**P**	**20 01 48.5**	**-0.6**
R38A	**Fenwick Farm,** baz=159	**31.37**	**344**	P			**P**	**20 01 47.5**	**-2.0**
Q40A	**Laux Farm, Aux** baz=163	**31.68**	**347**	P			**P**	**20 01 50.2**	**-2.0**
R37A	**Teagarden Farm** baz=158	**31.75**	**343**	P			**P**	**20 01 50.8**	**-2.0**
P42A	**Winchester** baz=166	**31.91**	**350**	P			**P**	**20 01 51.6**	**-2.6**
Q39A	**Willow Grove F** baz=161	**31.94**	**346**	P			**P**	**20 01 51.5**	**-3.0**
R36A	**Gordon, Harris** baz=156	**31.97**	**342**	P			**P**	**20 01 52.4**	**-2.3**
Q38A	**Cooks Store, C** baz=160	**32.02**	**345**	P			**P**	**20 01 53.0**	**-2.2**
P41A	**Barry, Barry** baz=165	**32.12**	**349**	P			**P**	**20 01 54.4**	**-1.7**
P40A	**Paris** baz=163	**32.19**	**347**	P			**P**	**20 01 54.4**	**-2.2**
R35A	**Emporia Munici** baz=155	**32.19**	**341**	P			**P**	**20 01 54.9**	**-1.8**
P39B	**Salisbury** baz=162	**32.31**	**346**	P			**P**	**20 01 56.3**	**-1.4**
O42A	**Bath** baz=167	**32.45**	**350**	P			**P**	**20 01 56.7**	**-2.2**
P38A	**Dawn** baz=161	**32.63**	**345**	P			**P**	**20 01 58.8**	**-1.7**
HDIL	**Hopedale** baz=169	**32.68**	**352**	P			**P**	**20 01 58.4**	**-2.6**
O40A	**La Belle** baz=164	**32.72**	**348**	P			**P**	**20 01 59.1**	**-2.1**
P37A	**Lathrop** baz=159	**32.81**	**344**	P			**P**	**20 02 00.2**	**-1.9**
O39A	**Kirksville** baz=163	**32.99**	**347**	P			**P**	**20 02 02.2**	**-1.5**
P36A	**Good Intent, A** baz=158	**33.08**	**343**	P			**P**	**20 02 02.7**	**-1.7**
R32A	**Long Quarter,** baz=151	**33.16**	**338**	P			**P**	**20 02 02.9**	**-2.3**
121A	**Cookes Peak, D** baz=131,SNR=7.4	**33.20**	**320**	P			**P**	**20 02 06.1**	**+0.3**
O37A	**Wolven Farm, M** baz=160	**33.29**	**345**	P			**P**	**20 02 04.2**	**-2.2**
319A	**Douglas** comp=N,31nm,1.0s	**33.44**	**317**	*e*P			**P**	**20 02 03.8**	**-4.1**
P34A	**Walnut Farm, R** baz=155	**33.50**	**341**	P			**P**	**20 02 06.1**	**-2.1**
N39A	**Derby Farms, D** baz=163	**33.58**	**347**	P			**P**	**20 02 06.7**	**-2.1**
N38A	**Joes South For** baz=162	**33.66**	**346**	P			**P**	**20 02 07.7**	**-1.9**
N37A	**Lee Faris, Mou** baz=160	**33.87**	**345**	P			**P**	**20 02 08.8**	**-2.5**
O35A	**Humboldt** baz=157	**33.88**	**343**	P			**P**	**20 02 09.7**	**-1.7**
ANMO	**Albuquerque** baz=136	**34.06**	**325**	P			**P**	**20 02 12.9**	**-0.5**
ANMO	**Albuquerque** comp=N,4.3nm,0.9s	**34.06**	**325**	*e*P			**P**	**20 02 14.8**	**+1.5**
M39A	**Webster** baz=164	**34.09**	**348**	P			**P**	**20 02 10.9**	**-2.3**
M38A	**Pleasantville** baz=162	**34.25**	**347**	P			**P**	**20 02 12.0**	**-2.6**
N35A	**Tabor** baz=158	**34.35**	**343**	P			**P**	**20 02 13.4**	**-2.1**
L41A	**Preston** baz=167	**34.36**	**351**	P			**P**	**20 02 13.5**	**-2.1**
L40A	**Anamosa** baz=166	**34.47**	**350**	P			**P**	**20 02 14.3**	**-2.2**
T25A	**Trinidad** baz=141	**34.61**	**330**	P			**P**	**20 02 17.1**	**-1.0**
K41A	**Shullsburg** baz=168	**34.84**	**351**	P			**P**	**20 02 17.7**	**-2.1**
L38A	**Oak Wood Farm,** baz=163	**34.89**	**347**	P			**P**	**20 02 18.0**	**-2.1**
M35A	**Neola** baz=158	**34.92**	**344**	P			**P**	**20 02 18.0**	**-2.5**
TUC	**Tucson** baz=127	**35.02**	**317**	P			**P**	**20 02 20.1**	**-1.5**
TUC	**Tucson** comp=N,9.3nm,1.0s	**35.02**	**317**	*e*P			**P**	**20 02 22.6**	**+1.1**
K40A	**Colesburg** baz=166	**35.07**	**350**	P			**P**	**20 02 19.0**	**-2.7**
K39A	**Oelwein** baz=165	**35.21**	**349**	P			**P**	**20 02 20.3**	**-2.7**
K38A	**Parkersburg** baz=163	**35.33**	**348**	P			**P**	**20 02 21.9**	**-2.1**
L35A	**Bielow Farm, R** baz=159	**35.48**	**344**	P			**P**	**20 02 25.1**	**-0.2**
J41A	**Loganville** baz=168	**35.54**	**352**	P			**P**	**20 02 23.6**	**-2.1**
SDCO	**Great Sand Dun** comp=N,140,SNR=7.0	**35.63**	**329**	P			**P**	**20 02 26.9**	**-0.1**
SDCO	**Great Sand Dun** comp=N,4.7nm,1.0s	**35.63**	**329**	*e*P			**P**	**20 02 27.1**	**+0.2**
K37A	**Belmond** baz=162	**35.63**	**347**	P			**P**	**20 02 24.4**	**-2.2**
J40A	**Soldiers Grove** baz=167	**35.68**	**351**	P			**P**	**20 02 24.4**	**-2.6**
K36A	**Gilmore City** baz=161	**35.70**	**346**	P			**P**	**20 02 25.0**	**-2.1**
J39A	**Decorah** baz=165	**35.79**	**350**	P			**P**	**20 02 25.4**	**-2.5**
X18A	**Snowflake** comp=N,15nm,0.8s	**35.87**	**321**	*e*P			**P**	**20 02

W13A	**Hualapai Mount** comp=N,19nm,1.0s	38.75	318	*e*P		P	20 02 55.1	+1.6
F35A	**Swanville** baz=162	38.78	347	P		P	20 02 50.7	-2.5
SWSC	**Sam W. Stewart** baz=122	38.86	314	P		P	20 02 55.1	+1.0
F34A	**Alexandria** baz=161	38.87	347	P		P	20 02 52.0	-2.1
IKP	**In-Ko-Pah, Jac** baz=121	38.92	313	P		P	20 02 55.2	+0.5
BC3	**Big Chuckawall** baz=123	39.00	315	P		P	20 02 55.4	+0.1
IRM	**Iron Mountain** baz=124	39.06	316	P		P	20 02 57.1	+1.3
E36A	**McGregor** baz=164	39.15	349	P		P	20 02 53.8	-2.6
F33A	**5 Mile Ranch,** baz=159	39.16	346	P		P	20 02 54.3	-2.1
KNB	**Kanab** comp=N,15nm,1.0s	39.26	321	*e*P		P	20 02 59.6	+2.0
MONP2	**Monument Peak** baz=121	39.28	313	P		P	20 02 59.1	+1.2
E35A	**Pequot Lakes** baz=162	39.41	348	P		P	20 02 56.1	-2.5
LCMT	**Little Creek M** comp=N,6.3nm,1.1s	39.51	321	*e*P		P	20 03 00.7	+1.0
MTPU	**Mount Pierson** comp=N,3.1nm,0.8s	39.53	323	*e*P		P	20 03 01.4	+1.3
BELC	**Belle Mtn. Jos** baz=123,SNR=10	39.56	315	P		P	20 03 01.0	+0.9
D37A	**Cotton** baz=166	39.62	350	P		P	20 02 58.1	-2.2
TPFO	**Pinon Flats** baz=122,SNR=7.5	39.67	314	P		P	20 03 02.5	+1.5
PFO	**Pinyon Flats O** baz=122,SNR=6.4	39.68	314	P		P	20 03 02.0	+0.8
PFO	**Pinyon Flats O** comp=N,12nm,0.9s	39.68	314	*e*P		P	20 03 02.6	+1.5
GMRC	**Granite Mounta** baz=124	39.76	317	P		P	20 03 02.6	+0.7
D36A	**Goodland** baz=164	39.77	350	P		P	20 02 59.0	-2.5
109C	**Camp Elliot, M** baz=120	39.77	313	P		P	20 03 02.8	+1.1
K22A	**Casper** baz=142	39.95	333	P		P	20 03 01.8	-1.5
RSSD	**Black Hills** baz=147	40.10	337	P		P	20 03 03.6	-1.0
C37A	**Embarrass** baz=166	40.13	351	P		P	20 03 02.5	-2.0
HEC	**Hector,Ludlow** baz=123	40.25	316	P		P	20 03 06.7	+0.9
C36A	**Pine Crest Far** baz=165	40.27	350	P		P	20 03 02.8	-2.9
D33A	**AnnSam, Waubun** baz=160	40.28	347	P		P	20 03 03.3	-2.4
TUQ	**Turquoise Mou** baz=124	40.31	317	P		P	20 03 07.7	+1.4
C35A	**Jirik Farms, M** baz=163	40.42	349	P		P	20 03 04.2	-2.7
SHPR	**Sheep Range** comp=N,13nm,1.2s	40.42	319	*e*P		P	20 03 08.9	+1.7
SHOC	**Shoshone, Teco** baz=124	40.81	317	P		P	20 03 11.5	+1.2
GSC	**Goldstone, Bar** baz=123,SNR=5.5	40.83	316	P		P	20 03 11.8	+1.1
GSC	**Goldstone, Bar** comp=N,6.6nm,0.8s	40.83	316	*e*P		P	20 03 12.0	+1.4
CIS	**Catalina Islan** baz=120	40.97	313	P		P	20 03 12.6	+0.8
B34A	**Aery, Baudette** baz=163	41.30	349	P		P	20 03 11.7	-2.5
DUG	**Dugway, Tooele** baz=132	41.34	325	P		P	20 03 15.7	+0.9
C31A	**Landman Farms,** baz=158	41.34	345	P		P	20 03 12.5	-2.0
AGMN	**Agassiz Nation** baz=161	41.37	347	P		P	20 03 12.5	-2.3
AGMN	**Agassiz Nation** comp=N,17nm,1.0s	41.37	347	*e*P		P	20 03 12.6	-2.1
TPNV	**Topopah Spring** baz=125,SNR=19	41.39	319	P		P	20 03 16.8	+1.6
TPNV	**Topopah Spring** comp=N,25nm,1.1s	41.39	319	*e*P		P	20 03 17.3	+2.0
EDW2	**Edwards Air Fo** baz=122,SNR=9.5	41.43	315	P		P	20 03 16.1	+0.6
BW06	**Boulder Array** baz=138	41.45	331	P		P	20 03 14.9	-0.9
BW06	**Boulder Array**	41.45	331	*e*P		P	20 03 14.7	-1.1
BW06				*e*P		P	20 03 16.0	+0.2
BW06				*e*S		S	20 09 26.8	-4.6
BW06				*e*S		S	20 09 33.1	+1.6
PD31	**Pinedale Array**	41.45	331	*e*S		S	20 09 33.1	+1.6
PDAR	**Pinedale Array** comp=N,0.7nm,0.7s,baz=133,slow=8.3,SNR=7.6	41.45	331	P		P	20 03 14.7	-1.2
PDAR				PcP		PcP	20 05 12.4	-1.3
FURC	comp=N,0.6nm,0.6s,baz=123,slow=5.5,SNR=4.9 **Furnace Creek,** baz=124	41.52	318	P		P	20 03 18.1	+2.0
LRMC	**Laurel Mtn Rad** baz=122,SNR=11	41.53	316	P		P	20 03 17.2	+0.8
B32A	**Ashes, Strandlq** baz=160,SNR=9.2	41.62	347	P		P	20 03 14.5	-2.3
HWUT	**Hardware Ranch** comp=N,5.8nm,0.8s	41.63	328	*e*P		P	20 03 17.5	+0.3
MPMC	**Manual Prospec** baz=123,SNR=7.3	41.71	317	P		P	20 03 18.7	+0.7
R11A	**Troy Canyon, C** baz=127,SNR=18	41.80	321	P		P	20 03 19.4	+0.8
R11A	**Troy Canyon, C** comp=N,15nm,1.2s	41.80	321	*e*P		P	20 03 19.7	+1.1
A33A	**Warroad** baz=162,SNR=5.7	41.88	348	P		P	20 03 16.2	-2.7
DAC	**Darwin (Calif)** comp=N,5.2nm,0.9s	41.90	317	*e*P		P	20 03 20.2	+0.7
BGU	**Big Grassy Mou** comp=N,5.9nm,1.1s	41.95	326	*e*P		P	20 03 21.1	+1.3
A32A	**Rocking H Ranc** baz=160	42.10	347	P		P	20 03 18.1	-2.6
ARVC	**Arvin** baz=121	42.14	315	P		P	20 03 22.7	+1.5
GRAC	**Grapevine Rang** baz=124	42.15	318	P		P	20 03 22.8	+1.4
ISA	**Isabella, Lake** baz=122	42.17	316	P		P	20 03 22.7	+1.1
BDFB	**Brasilia** comp=N,1.0nm,0.3s,baz=348,slow=27,SNR=2.3	42.23	124	P		P	20 03 21.5	-0.8
BDFB				LR		LR	20 21 05.6	
CWC	comp=N,248nm,19.0s,baz=168,slow=36 **Cottonwood Cre** baz=123	42.32	317	P		P	20 03 23.7	+0.8
REDW	**Red Top Meadow** comp=N,14nm,1.1s	42.53	330	*e*P		P	20 03 24.6	0.0
CPUP	**Villa Florida** comp=N,1.5nm,0.6s,baz=2.7,slow=10,SNR=3.0	42.59	144	P		P	20 03 25.2	+0.3
CPUP				LR		LR	20 21 40.9	
VES	comp=N,82nm,19.0s,baz=326,slow=37 **Vestal, Richgr** baz=121	42.69	316	P		P	20 03 26.7	+1.1
PKM	**Mcpherson Peak** baz=120,SNR=5.7	42.72	314	P		P	20 03 27.1	+0.9
TIN	**Tinemaha, Big** baz=123	42.76	318	P		P	20 03 27.4	+1.1
RCTC	**Rector, Farmer** baz=122	43.04	316	P		P	20 03 29.4	+0.9
SMMC	**Simmler** baz=120	43.06	314	P		P	20 03 28.5	-0.3
RLMT	**Red Lodge** baz=140	43.11	333	P		P	20 03 28.5	-0.8
ULM	**Lac du Bonnet** comp=N,14nm,0.8s,baz=163,slow=10.0,SNR=8.4	43.23	348	P		P	20 03 26.6	-3.2
ULM	**Lac du Bonnet** comp=N,18nm,0.8s	43.23	348	*e*P		P	20 03 27.4	-2.4
BMN	**Battle Mountai** comp=N,35nm,1.0s	44.07	322	*e*P		P	20 03 37.6	+0.6
WAKR	**Walker** comp=N,17nm,1.1s	44.35	319	*e*P		P	20 03 40.9	+1.6
HLID	**Hailey** baz=133	44.50	328	P		P	20 03 39.8	-0.6
HLID	**Hailey** comp=N,5.6nm,1.0s	44.50	328	*e*P		P	20 03 40.5	+0.1
MCMT	**McKenzie Canyo**	44.59	330	*e*P		P	20 03 42.1	+0.9
BOZ	**Bozeman (W)** baz=138,SNR=9.1	44.60	332	P		P	20 03 40.5	-0.6
BOZ	**Bozeman (W)** comp=N,7.2nm,1.0s	44.60	332	*e*P		P	20 03 40.1	-1.0
BOZ				*e*S		S	20 10 17.4	+0.1
DLMT	**Dillon**	44.85	331	*e*P		P	20 03 43.5	+0.4
	comp=N,12nm,1.4s							
PAHR	**Pah Rah Range** comp=N,17nm,1.2s	44.99	320	*e*P		P	20 03 45.3	+1.0
LRM	**Limekiln Ridge**	45.11	331	*e*P		P	20 03 44.6	-0.7
MFID	**Camas Ranch** comp=N,4.8nm,0.9s	45.16	326	*e*P		P	20 03 45.8	+0.2
EGMT	**Eagleton** baz=142	45.59	335	P		P	20 03 47.4	-1.4
WVOR	**Wild Horse Val** comp=N,41nm,1.1s	46.13	324	*e*P		P	20 03 53.6	+0.3
ORV	**Oroville** comp=N,11nm,1.0s	46.27	319	*e*P		P	20 03 55.5	+1.2
MOD	**Modoc Plateau** comp=N,9.9nm,1.0s	46.81	322	*e*P		P	20 03 58.4	-0.3
O03D	**Paynes Creek** baz=122	46.86	319	P		P	20 03 58.8	-0.3
BMO	**Blue Mountains** comp=N,3.0nm,0.9s	46.91	327	*e*P		P	20 03 58.0	-1.3
SWMT	**Swartz Lake**	47.07	332	*e*PcP		PcP	20 05 33.0	+0.4
F10A	**Beach Ranch, E** comp=N,6.1nm,0.9s	47.60	328	*e*P		P	20 04 05.0	+0.2
K05A	**Summer Lake** comp=N,20nm,1.4s	47.65	323	*e*P		P	20 04 04.8	-0.5
M04C	**Macdoel** baz=123,SNR=5.8	47.70	321	P		P	20 04 05.0	-0.6
N02D	**Trinity Center** baz=122	47.80	320	P		P	20 04 06.8	+0.5
E09A	**Wood Farm, Sta** comp=N,20nm,1.3s	48.44	328	*e*P		P	20 04 11.2	+0.2
J04D	**Umpqua Nationa** baz=124,SNR=5.3	48.67	322	P		P	20 04 12.7	-0.5
I05D	**Terrebonne, OR** baz=126	48.85	324	P		P	20 04 14.2	-0.1
G06A	**Carlson Farm,** comp=N,21nm,1.4s	48.98	325	*e*P		P	20 04 16.6	+1.3
I04A	**Tendick Farm,** baz=124,SNR=6.6	49.17	323	P		P	20 04 15.4	-1.4
G05D	**Wamic, OR** baz=126	49.37	325	P		P	20 04 18.5	+0.2
I03D	**Drain, OR** baz=123	49.68	322	P		P	20 04 19.8	-0.8
PLCA	**Paso Flores** comp=N,2.4nm,0.9s,baz=0.0,slow=6.1,SNR=2.4	50.07	167	P		P	20 04 21.8	-1.8
LON	**Longmire** comp=N,3.7nm,0.8s	50.55	326	*e*P		P	20 04 27.6	+0.4
B05A	**Bryant** baz=128	51.62	328	P		P	20 04 33.0	-2.2
YKA	**Yellowknife Ar** comp=N,3.2nm,0.6s,baz=139,slow=6.8,SNR=17	58.81	344	P		P	20 05 25.0	-1.8
YKA				PcP		PcP	20 06 15.4	-0.9
BALM	comp=N,0.8nm,0.8s,baz=137,slow=4.0,SNR=4.0 **Baldy** comp=N,9.1nm,1.1s	68.20	333	*e*P		P	20 06 29.7	+0.5
DAWY	**Dawson** comp=N,5.7nm,1.2s	68.29	337	*e*P		P	20 06 29.1	-0.5
INK	**Inuvik** comp=N,7.1nm,1.0s,baz=157,slow=6.2,SNR=4.5	68.49	342	P		P	20 06 29.6	-1.0
INK	**Inuvik** comp=N,16nm,1.3s	68.49	342	*e*P		P	20 06 30.1	-0.5
BMRM	**Bremner River** comp=N,32nm,1.4s	69.19	333	*e*P		P	20 06 35.6	+0.4
EGAK	**Eagle** comp=N,10nm,1.1s	69.30	337	*e*P		P	20 06 35.5	-0.2
EYAK	**Cova Ski Ar** comp=N,46nm,1.6s	69.56	332	*e*P		P	20 06 37.8	+0.4
SUMG	**Summit** comp=N,13nm,0.9s	69.76	13	*i* P		P	20 06 36.5	-2.5
SUMG	**Summit** comp=N,16nm,1.0s	69.76	13	*e*P		P	20 06 36.7	-2.2
DIV	**Divide** comp=N,8.3nm,0.9s	69.77	333	*e*P		P	20 06 38.8	-0.1
KLU	**Klutina** comp=N,9.9nm,1.1s	69.97	333	*e*P		P	20 06 40.4	+0.3
DOT	**Dot Lake** comp=N,44nm,0.8s	69.98	336	*e*P		P	20 06 40.1	0.0
SCM	**Sheep Creek Mo** comp=N,13nm,0.6s	70.72	333	*e*P		P	20 06 44.3	-0.3
SEW	**Seward** comp=N,13nm,0.8s	71.16	331	*e*P		P	20 06 46.9	-0.3
SML	**Sawmill** comp=N,18nm,1.0s	71.16	333	*e*P		P	20 06 47.1	-0.2
HDA	**Harding Lake** comp=N,24nm,0.9s	71.44	336	*e*P		P	20 06 48.7	-0.2
IL1	**Eielson Array**	71.55	336	*e*P		P	20 06 49.0	-0.6
ILAR	**Eielson Array** comp=N,6.9nm,0.8s,baz=114,slow=4.4,SNR=75	71.55	336	P		P	20 06 48.9	-0.7
ILB	**Eielson Array**	71.55	336	*e*P		P	20 06 49.0	-0.6
RC01	**Rabbit Creek A** comp=N,14nm,1.1s	71.58	332	*e*P		P	20 06 49.5	-0.3
CNPM	**China Poot** comp=N,15nm,1.1s	71.87	330	*e*P		P	20 06 51.5	-0.1
CCB	**Clear Creek Bu** comp=N,10nm,1.6s	71.88	336	*e*P		P	20 06 50.7	-0.8
RND	**Reindeer** comp=N,33nm,1.0s	71.90	334	*e*P		P	20 06 51.7	-0.1
WRH	**Wood River Hil** comp=N,4.4nm,0.9s	71.93	336	*e*P		P	20 06 51.1	-0.7
MCK	**McKinley** comp=N,26nm,1.3s	72.04	335	*e*P		P	20 06 52.5	0.0
MDM	**Murphy Dome** comp=N,9.2nm,1.0s	72.15	336	*e*P		P	20 06 52.8	-0.4
TRF	**Thorofare Moun** comp=N,8.8nm,0.9s	72.53	334	*e*P		P	20 06 55.5	-0.2
KTH	**Kantishna Hill** comp=N,14nm,1.1s	72.83	334	*e*P		P	20 06 56.6	-0.7
BPAW	**Bear Paw Mtn.** comp=N,14nm,0.9s	73.01	335	*e*P		P	20 06 57.6	-0.8
MLY	**Manley** comp=N,13nm,0.9s	73.19	336	*e*P		P	20 06 58.9	-0.5
PPLA	**Purkeypile** comp=N,54nm,1.6s	73.20	333	*e*P		P	20 06 58.9	-0.7
CAST	**Castle Rocks** comp=N,19nm,1.4s	73.29	334	*e*P		P	20 06 58.9	-1.1
COLD	**Coldfoot** comp=N,15nm,1.0s	73.66	338	*e*P		P	20 07 02.7	+0.6
SVW2	**Sparrevohn** comp=N,9.2nm,1.0s	74.33	331	*e*P		P	20 07 04.8	-1.3
TT01	**Tatalina**	74.91	333	*e*P		P	20 07 08.1	-1.3
TTA	**Tatalina** comp=N,9.9nm,1.0s	74.91	333	*e*P		P	20 07 08.3	-1.2
DAG	**Dannarks Havn** comp=N,7.3nm,1.1s	76.41	12	*i* P		P	20 07 21.4	+3.6
ESDC	**Sonseca Array** comp=N,1.6nm,0.6s,baz=273,slow=5.7,SNR=9.9	76.66	51	P		P	20 07 18.7	-1.2
ESLA	**Sonseca Array** comp=N,11nm,1.0s	76.66	51	*e*P		P	20 07 19.0	-1.0
ES19	**SONSECA Array**	76.70	51	*e*P		P	20 07 19.1	-1.2
DBIC	**Dimbokro** comp=N,8.7nm,1.1s,baz=270,slow=9.2,SNR=3.6	77.71	85	P		P	20 07 30.5	+4.2
DBIC				LR		LR	20 42 16.7	
GAMB	comp=N,38nm,18.8s,baz=230,slow=36 **Gambell**	82.01	333	*e*S		S	20 18 01.4	-1.5
NB2	**NORSAR Subarra** comp=Z,4.7nm,0.9s,baz=278,slow=5.1	85.11	29	P		P	20 07 57.5	-7.2
NOA	**NORSAR Array B** comp=Z,2.1nm,0.9s,baz=277,slow=4.8,SNR=5.1	85.11	29	P		P	20 08 03.6	-1.1
NOA				LR		LR	20 43 26.3	
TAM	comp=Z,13nm,20.8s,baz=270,slow=34 **Tamanrasset** comp=Z,7.7nm,1.2s	85.83	68	*e*P		P	20 08 08.9	-0.3
KHC	**Kasperske Hory**	88.38	41	*e*P		P	20 08 19.9	-1.0
KHC				*ex*		x	20 08 26.2	
GERES	**GERESS Array B** comp=Z,0.4nm,0.6s,baz=282,slow=2.6,SNR=5.9	88.51	41	P		P	20 08 19.9	-1.7
GERES				LR		LR	20 42 41.6	
AFI	comp=Z,50nm,20.5s,baz=278,slow=32 **Afiamalu** comp=Z,20nm,18.8s,baz=39,slow=32	90.44	256	LR		LR	20 43 17.0	
FINES	**FINESS Array B** comp=Z,2.9nm,0.9s,baz=251,slow=9.5,SNR=4.3	91.96	27	P		P	20 08 40.5	+3.3
FINES				LR		LR	20 46 30.4	
RAO	comp=Z,34nm,21.4s,baz=296,slow=33 **Raoul Island** comp=Z,62nm,21.0s,baz=18,slow=29	97.93	242	LR		LR	20 43 07.1	
H11S1	**WAKE ISLAND Hyd** baz=77,slow=75,SNR=7.4	106.04	292	T		T	22 08 07.4	
H11S2	**WAKE ISLAND Hyd** baz=77,slow=75,SNR=8.5	106.04	292	T		T	22 08 05.7	
H11S3	**WAKE ISLAND Hyd** baz=77,slow=75,SNR=4.3	106.06	292	T		T	22 08 08.3	
SONM	**Songino Array** comp=Z,0.8nm,0.6s,baz=75,slow=0.4,SNR=5.3	123.58	352	PKP		PKPdf	20 14 24.4	-2.3
MKAR	**Makanchi Array** comp=Z,0.4nm,0.7s,baz=11,slow=1.5,SNR=3.2	123.80	12	PKP		PKPdf	20 14 24.4	-2.7
KSRS	**Korea Array** comp=Z,2.5nm,1.0s,baz=0.8,slow=0.2,SNR=7.4	126.02	329	PKP		PKPdf	20 14 30.1	-1.4
KSAR	**Wonju Array Be**	126.05	329	PKP		PKPdf	20 14 30.1	-1.4
ASAR	**Alice Springs**	141.18	242	PKhKP		PKPpre	20 14 51.5	
	comp=Z,0.9nm,0.6s,baz=120,slow=3.4,SNR=10							
WRA	**Warramunga Arr** comp=Z,3.1nm,0.9s,baz=103,slow=3.1,SNR=13	141.73	248	PKhKP		PKPpre	20 14 54.0	
CMAR	**Chiang Mai Arr** comp=Z,1.2nm,0.7s,baz=323,slow=3.3,SNR=6.8	153.44	355	PKPbc		PKPbc	20 15 26.1	-2.1

IDC 21 19:55:39.7±4.7, 6.48S×148.75E, h0km, mb3.9/3, mb1 4.0/5, mb1mx3.6/38, mbtmp3.9/5, ML3.3/2, MS3.8/1, Ms1 3.8/1, ms1mx2.5/27, Error ellipse: s-maj=71.6km s-min=54.5km az=77.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	3.31	208	Pn		Pn	19 56 34.6	+1.8
	27nm,0.3s,baz=33,slow=5.4,SNR=85							
PMG				Sn		Sn	19 57 12.1	-0.7
	113nm,0.3s,baz=176,slow=22,SNR=23							
WRA	**Warramunga Arr**	19.36	225	P		P	20 00 07.2	0.0
	0.4nm,0.3s,baz=51,slow=11,SNR=25							
ASAR	**Alice Springs**	22.27	218	P		P	20 00 38.2	-0.4
	1.2nm,0.5s,baz=57,slow=9.3,SNR=58							
FITZ	**Fitzroy Crossi**	25.33	241	P		P	20 01 08.0	-0.4
	1.7nm,0.4s,baz=63,slow=8.9,SNR=23							
STKA	**Stephens Creek**	26.14	194	P		P	20 01 16.0	+0.3
	0.9nm,0.5s,baz=6.3,slow=9.7,SNR=4.9							
AFI	**Afiamalu**	39.50	104	LR		LR	20 15 47.9	
	comp=Z,136nm,20.0s,baz=110,slow=31							

IDC 21 19:58:35.4±30.0, 15.48S×178.16E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.6/34, mbtmp3.8/4, MS3.1/1, Ms1 3.1/1, ms1mx2.5/29, Error ellipse: s-maj=554.6km s-min=126.0km az=79.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
URZ	**Urewera**	22.71	182	LR		LR	20 10 05.9	
	comp=Z,53nm,20.7s,baz=339,slow=30							
STKA	**Stephens Creek**	37.03	237	P		P	20 05 46.6	-0.6
	0.7nm,0.5s,baz=77,slow=12,SNR=6.7							
WRA	**Warramunga Arr**	41.89	257	P		P	20 06 28.0	+0.1
	1.2nm,1.2s,baz=89,slow=8.2,SNR=4.7							
ASAR	**Alice Springs**	42.35	252	P		P	20 06 31.2	-0.4
	2.3nm,0.4s,baz=83,slow=8.7,SNR=54							
FITZ	**Fitzroy Crossi**	50.21	259	P		P	20 07 34.0	+0.5
	1.0nm,0.9s,baz=104,slow=7.9,SNR=2.1							

NIED ***21*** *20:01:00, 36.00N×141.10E, h23km, Mw3.9 Best double couple: M0 8.71000×10^14 NP1: ϕ=358.00000°, δ=23.00000°, λ=24.00000°. NP2: ϕ=246.00000°, δ=81.00000°, λ=112.00000°.*

IDC ***21*** *20:01:53.3±0.6, 35.96N×141.12E, h0km, mb4.0/16, mb1 4.1/20, mb1mx4.0/46, mbtmp4.0/20, ML3.9/3, MS2.9/3, Ms1 2.9/3, ms1mx2.6/34, Error ellipse: s-maj=18.4km s-min=14.2km az=83.0*

ISCJB ***21*** *20:01:55.8±0.8, 36.06N±0.03×141.18E±0.06, h29km±5km, mb4.0/18, MS2.9/2, Error ellipse: s-maj=7.7km s-min=5.7km az=172.0*

JMA ***21*** *20:01:57.1±0.1, 36.03N×141.08E, h39km±1km, M3.8*

JMA Felt I J1.

NEIC ***21*** *20:01:58.4±0.4, 36.03N×141.12E, h35km, mb4.6/2, Error ellipse: s-maj=8.8km s-min=7.6km az=117.0*

ISC 21 20:01:55.8±3.0, 36.09N±0.04×141.16E±0.06, h14km±19km, n47, σ0.95/48, mb4.1/18, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	0.45	212	P		Pb	20 02 05.9	+0.4
CHOJ				S		Sb	20 02 12.1	0.0
JHO	**Hitachi**	0.71	318	P		Pb	20 02 10.4	+0.5
JHO				S		Sb	20 02 20.1	+0.6
JYT	**Yasato**	0.79	281	P		Pb	20 02 11.2	-0.1
JYT				S		Sb	20 02 20.8	-1.1
ONAJ	**Iwakimizuishiy**	1.05	344	P		Pb	20 02 15.7	-0.2
ONAJ				*e*S		Sb	20 02 28.9	-0.7
JFK	**Kawauchi**	1.30	350	P		Pn	20 02 18.9	-0.7
BSO3	**Boso 3**	1.39	203	P		Pn	20 02 20.6	+0.2
JAG	**Ashikaga**	1.42	284	P		Pn	20 02 20.2	-1.0
BSO1	**Boso 1**	1.44	186	P		Pn	20 02 20.6	-0.3
MJAR	**Matsushiro Arr**	2.42	282	Pn		Pn	20 02 35.1	+0.1
	12nm,0.3s,baz=103,slow=8.1,SNR=42							
MJAR				Sn		Sn	20 03 05.7	+1.2
	11nm,0.3s,baz=70,slow=7.2,SNR=7.0							
MJAR				LR		LR	20 03 41.7	
	comp=Z,124nm,19.4s,baz=115,slow=45							
MAJO	**Matsushiro**	2.43	282	*e*Pn		Pn	20 02 35.0	-0.1
MAT	**Matsushiro**	2.43	282	P		Pn	20 02 35.5	+0.5
MAT				S		Sn	20 03 03.8	-0.7
ERM	**Erimo**	6.12	14	*e*Pn		Pn	20 03 25.9	+0.2
	12nm,0.3s							
ASAJ	**Asahikawa**	8.10	7	Pn		Pn	20 03 52.1	-0.8
	3.3nm,0.3s,baz=224,slow=9.5,SNR=14							
ASAJ				Sn		Sn	20 05 22.7	-1.5
	baz=58,slow=19							
KSRS	**Korea Array**	10.71	281	Pn		Pn	20 04 30.8	+2.2
	baz=94,slow=14,SNR=2.5							
USRK	**Ussuriysk Ar.**	10.71	322	Pn		Pn	20 04 27.1	-1.7
	0.1nm,0.3s,baz=133,slow=20,SNR=2.9							
KSAR	**Wonju Array Be**	10.73	281	Pn		Pn	20 04 30.8	+1.8
KLR	**Kul'dur**	14.83	335	Pn		Pn	20 05 25.1	+0.1
	0.2nm,0.3s,baz=141,slow=14,SNR=2.6							
GUMO	**Guam**	22.65	171	LR		LR	20 15 20.1	
	comp=Z,39nm,20.5s,baz=155,slow=36							
YAK	**Yakutsk**	26.95	348	P		P	20 07 37.4	+0.9
	6.6nm,0.5s,baz=154,slow=3.8,SNR=4.2							
ENH	**Enshi**	27.06	267	*e*P		P	20 07 36.3	-1.5
SEY	**Seymchan**	27.76	11	P		P	20 07 45.2	+1.5
	2.9nm,0.9s,baz=207,slow=14,SNR=6.3							
H11N2	**WAKE ISLAND Hy**	27.86	119	T		T	20 36 46.1	
	baz=311,slow=75,SNR=150							
H11N1	**WAKE ISLAND Hy**	27.86	119	T		T	20 36 44.4	
	baz=311,slow=75,SNR=156							
H11N3	**WAKE ISLAND Hy**	27.87	119	T		T	20 36 55.4	
	baz=311,slow=75,SNR=160							
SONM	**Songino Array**	28.16	305	P		P	20 07 47.1	-0.5
	0.9nm,0.4s,baz=107,slow=9.1,SNR=12							
SONM				LR		LR	20 19 27.7	
	comp=Z,32nm,19.2s,baz=72,slow=37							
H11S1	**WAKE ISLAND Hy**	28.53	121	T		T	20 37 47.2	
	baz=313,slow=75,SNR=269							
H11S3	**WAKE ISLAND Hy**	28.53	121	T		T	20 37 40.3	
	baz=313,slow=75,SNR=192							
H11S2	**WAKE ISLAND Hy**	28.55	121	T		T	20 37 48.4	
	baz=313,slow=75,SNR=186							
ZALV	**Zalesovo Beam**	42.41	313	P		P	20 09 49.9	+0.3
	1.5nm,0.6s,baz=90,slow=7.0,SNR=7.8							
ZALV				PcP		PcP	20 11 42.3	-0.3
	0.3nm,0.3s,baz=114,slow=3.2,SNR=2.7							
NRIK	**Noril'sk**	44.04	336	P		P	20 10 04.5	+1.8
	3.3nm,0.4s,baz=118,slow=1.3,SNR=3.4							
MKAR	**Makanchi Array**	44.45	303	P		P	20 10 06.7	+0.4
	2.2nm,0.6s,baz=88,slow=9.7,SNR=26							
ILAR	**Eielson Array**	50.41	32	P		P	20 10 53.2	+0.9
	0.5nm,0.6s,baz=271,slow=6.4,SNR=6.2							
BRVK	**Borovoye**	51.12	313	P		P	20 10 58.3	+0.4
FITZ	**Fitzroy Crossi**	55.86	198	P		P	20 11 31.

JMA 21 20:08:32.0±0.1, 38°28N×143°79E, h17km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.84**	**296**	P	Pn	20 09 03.7	+0.9
OFUJ				*e*S	Sn	20 09 26.8	+1.1
JIO	**Ouri**	**1.93**	**276**	P	Pn	20 09 04.8	+0.8
JIO				*e*S	Sn	20 09 28.4	+0.6
MIYJ	**Miyakonagasawa**	**2.01**	**311**	P	Pn	20 09 05.6	+0.5
MIYJ				*e*S	Sn	20 09 31.0	+1.1
JMK	**Ichinoseki**	**2.12**	**289**	P	Pn	20 09 07.9	+1.2
JMK				*e*S	Sb	20 09 34.9	-1.1
JOM	**Ohasama**	**2.29**	**302**	P	Pn	20 09 10.3	+1.4
JOM				*e*S	Sn	20 09 38.4	+1.7
JOU	**Okura**	**2.46**	**273**	P	Pn	20 09 12.8	+1.4
JOU				*e*S	Sn	20 09 42.6	+1.6
JRG	**Rokugo**	**2.71**	**295**	P	Pn	20 09 16.7	+2.0
JRG				*e*S	Sn	20 09 49.8	+2.8
JANG	**Nango**	**2.73**	**321**	*e*S	Sn	20 09 49.0	+1.2
JYK	**Kaneyama**	**2.76**	**284**	P	Pn	20 09 17.3	+1.8
JYK				*e*S	Sb	20 09 52.0	-2.5
JFT	**Otama**	**2.84**	**256**	P	Pn	20 09 17.8	+1.3
JFT				*e*S	Sn	20 09 51.2	+0.9
JTM	**Tenmabayashi**	**3.27**	**321**	*e*S	Sn	20 10 01.9	+0.9
JAG	**Ashikaga**	**3.92**	**243**	P	Pn	20 09 32.4	+1.0
BSO1	**Boso 1**	**4.27**	**213**	P	Pn	20 09 33.6	-2.1

MEX 21 20:31:40.5±1.3, 17°25N×92°17W, h12km±999km, MD3.6, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**0.96**	**178**	*e*P	Pg	20 31 55.1	-4.0
CCIG				*i* S	Sg	20 32 07.9	-3.8

IDC 21 20:47:21.3±3.0, 27°31S×177°16W, h100km±12km, mb3.4/2, mb1 3.7/3, mb1mx3.3/21, mbtmp3.9/3, Error ellipse: s-maj=57.5km s-min=17.2km az=90.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**2.04**	**199**	P	Pn	20 47 55.2	+0.7
	177nm,0.3s,baz=51,slow=20,SNR=4.1						
RAO				S	Sn	20 48 20.1	+0.4
	304nm,0.3s,baz=205,slow=22,SNR=4.2						
STKA	**Stephens Creek**	**36.00**	**253**	P	P	20 54 13.7	+0.9
	2.4nm,1.0s,baz=86,slow=16,SNR=2.1						
STKA				pP	pP	20 54 34.1	-1.4
	1.7nm,0.8s,baz=85,slow=12,SNR=1.6						
ASAR	**Alice Springs**	**44.10**	**263**	pP	pP	20 55 43.3	0.0
	0.3nm,0.5s,baz=102,slow=8.3,SNR=2.0						
WRA	**Warramunga Arr**	**44.81**	**269**	P	P	20 55 24.5	-1.2
	0.3nm,0.5s,baz=109,slow=7.7,SNR=5.2						
WRA				pP	pP	20 55 49.9	+0.9
	0.6nm,0.5s,baz=110,slow=7.8,SNR=3.9						
MKAR	**Makanchi Array**	**116.33**	**311**	PKP	PKPdf	21 05 52.8	-0.3
	0.1nm,0.4s,baz=116,slow=4.1,SNR=2.0						

NNC ***21*** *20:50:13.2±3.5, 42°03N×80°30E, h0km, mb2.8, mpv2.6, Error ellipse: s-maj=28.7km s-min=17.1km az=34.0*
SOME ***21*** *20:50:14.4, 42°18N×80°58E, h25km*
KRNET ***21*** *20:50:21.9±0.1, 42°55N×80°32E, h35km, mb2.2*

ISC 21 20:50:15.9±2.2, 42°38N±0°07×80°53E±0°06, h0km±11km, n23, σ1°93/46, 8C-8D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHLS	**Shalkode**	**0.91**	**329**	*e*P	**Pg**	**20 50 33.6**	**+0.2**
	1.8nm,0.2s						
SHLS				*e*S	**Sb**	**20 50 47.6**	**0.0**
	15nm,0.3s						
KTMS	**Ketmen**	**1.08**	**353**	*e*P	**Pg**	**20 50 36.9**	**+0.4**
	3.5nm,0.2s						
KTMS				*e*S	**Sn**	**20 50 53.6**	**-0.5**
	9.0nm,0.3s						
PDGK	**Podgornoye**	**1.22**	**321**	⇓*e*P	**Pn**	**20 50 40.3**	**+0.1**
	baz=322						
PDGK				⇓*i*S	**Sg**	**20 50 54.0**	**-1.1**
	baz=322						
PDGK	**Podgornoye**	**1.22**	**321**	⇓P	**Pb**	**20 50 39.5**	**-0.3**
	1.1nm,0.3s						
PDGK				⇑S	**Sn**	**20 50 59.5**	**+2.1**
	7.6nm,0.6s						
UZB	**Uzynbulak**	**1.35**	**305**	*e*P	**Pn**	**20 50 42.6**	**+0.5**
	2.4nm,0.1s						
UZB				*e*S	**Sn**	**20 51 03.3**	**+2.5**
	11nm,0.4s						
PRZ	**Przheval'sk**	**1.58**	**275**	⇑*e*P	**Pg**	**20 50 47.3**	**+1.1**
	baz=268						
PRZ				⇑*i*S	**Sb**	**20 51 05.2**	**-1.4**
	baz=268						
ZHN	**Zhinishke**	**1.73**	**298**	*e*P	**Pg**	**20 50 48.9**	**-0.2**
	7.7nm,0.2s						
ZHN				*e*S	**Sg**	**20 51 15.3**	**+3.8**
	48nm,0.3s						
KPKS	**Kokpek**	**1.74**	**309**	*e*P	**Pb**	**20 50 48.5**	**-0.3**
	13nm,0.2s						
KPKS				*e*S	**Sg**	**20 51 14.2**	**+2.5**
	38nm,0.4s						
KURS	**Kuram**	**2.06**	**303**	*e*P	**Pb**	**20 50 53.3**	**-0.9**
	2.7nm,0.4s						
KURS				*e*S	**Sg**	**20 51 22.6**	**+0.6**
	6.9nm,0.8s						
ANVS	**Anan'yevo**	**2.15**	**282**	⇑*e*P	**Pb**	**20 50 55.0**	**-0.8**
	baz=278						
ANVS				⇑*i*S	**Sn**	**20 51 19.8**	**-0.9**
	baz=278						
MNBS	**Baschi**	**2.30**	**318**	*e*P	**Pn**	**20 50 55.7**	**+0.5**
	8.0nm,0.3s						
MNBS				*e*S	**Sb**	**20 51 27.1**	**-0.3**
	45nm,0.3s						
KDJ	**Kajisay**	**2.50**	**265**	⇓*i*P	**Pb**	**20 51 00.6**	**-1.1**
	baz=261						
KDJ				⇓*i*S	**Sn**	**20 51 28.7**	**-0.5**
	baz=261						
KOTS	**Kotyrbulak**	**2.66**	**290**	*e*P	**Pb**	**20 51 04.0**	**-0.4**
KOTS				*e*S	**Sg**	**20 51 41.3**	**0.0**
MDOK	**Medeo**	**2.68**	**288**	*e*P	**Pn**	**20 51 02.3**	**+1.9**
	2.8nm,0.5s						
MDOK				*e*S	**Sb**	**20 51 38.4**	**+0.1**
	9.5nm,0.6s						
ARXS	**Arharly**	**2.69**	**314**	*e*P	**Pb**	**20 51 04.2**	**-0.8**
	3.6nm,0.4s						
ARXS				*e*S	**Sg**	**20 51 41.6**	**-0.8**
	9.3nm,0.5s						
TNSS	**Tian-Shan**	**2.72**	**285**	*e*P	**Pb**	**20 51 04.2**	**-1.6**
	2.9nm,0.3s						
TNSS				*e*S	**Sg**	**20 51 41.8**	**-1.6**
	11nm,0.7s						
IZV	**Izvestkoviy**	**2.96**	**284**	*e*P	**Pb**	**20 51 07.2**	**-2.4**
	4.6nm,0.4s						
IZV				*e*S	**Sb**	**20 51 46.9**	**+0.5**
	14nm,0.4s						
CHKK	**Chushkaly**	**2.98**	**301**	*e*P	**Pb**	**20 51 08.2**	**-1.7**
	0.7nm,0.2s						
CHKK				*e*S	**Sg**	**20 51 48.9**	**-2.9**
	9.0nm,0.3s						
KAPS	**Kapalarasan**	**3.03**	**344**	*e*P	**Pb**	**20 51 10.9**	**+0.2**
	1.0nm,0.3s						
KAPS				*e*S	**Sg**	**20 51 53.0**	**-0.2**
	4.2nm,0.5s						
BOOM	**Boomskoye usch**	**3.40**	**273**	⇓*e*P	**Pn**	**20 51 12.6**	**+2.3**
	baz=270						
BOOM				⇓*i*S	**Sn**	**20 51 49.8**	**-1.6**
	baz=270						
DGS	**Degeres**	**3.60**	**285**	*e*P	**Pb**	**20 51 17.3**	**-3.3**
	1.2nm,0.5s						
DGS				*e*S	**Sb**	**20 52 04.3**	**-0.6**
	7.0nm,0.5s						
MAKZ	**Makanchi**	**4.55**	**13**	⇑Pn	**Pn**	**20 51 29.9**	**+3.9**
	0.5nm,0.3s						
MAKZ				⇑Sn	**Sb**	**20 52 28.0**	**-4.0**
	1.2nm,0.8s						
MK31	**Makanchi Array**	**4.59**	**15**	⇓Pn	**Pn**	**20 51 29.8**	**+3.2**
	0.5nm,0.5s,baz=200,slow=13,SNR=17						
MK31				⇑Sn	**Sb**	**20 52 28.0**	**-5.2**
	0.2nm,0.3s,baz=193,slow=23,SNR=3.8						

DDA ***21*** *21:12:11.8, 38°51N×27°04E, h8km, Ml2.7*

ISCJB ***21*** *21:12:12.3±0.5, 38°52N±0°03×27°02E±0°04, h8km±5km, Error ellipse: s-maj=5.4km s-min=4.8km az=29.4*
ISK ***21*** *21:12:12.0, 38°52N×27°02E, h10km, MD2.7*
CSEM ***21*** *21:12:12.4±0.2, 38°52N×27°03E, h10km, MD2.7, Error ellipse: s-maj=3.9km s-min=3.6km az=35.0*

ISC 21 21:12:12.5±0.9, 38°53N±0°02×27°04E±0°02, h15km±7km, n28, σ0°56/40, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IZM	**Izmir**	**0.22**	**126**	*e*PG	**Pg**	**21 12 17.8**	**+0.3**
IZM				*e*SG	**Sg**	**21 12 20.9**	**+0.1**
IZM	**Izmir**	**0.22**	**126**	*e*Pg	**Pg**	**21 12 17.8**	**+0.3**
IZM				*e*Sg	**Sg**	**21 12 20.9**	**+0.1**
URLA	**Izmir**	**0.39**	**245**	*i* P	**Pg**	**21 12 19.7**	**-0.6**
URLA				*i* S	**Sg**	**21 12 25.3**	**-0.4**
URLA	**Izmir**	**0.39**	**245**	P	**Pg**	**21 12 19.7**	**-0.6**
URLA				S	**Sg**	**21 12 25.3**	**-0.4**
DKL	**Dikili**	**0.55**	**349**	*e*PG	**Pg**	**21 12 23.0**	**-0.4**
DKL	**Dikili**	**0.55**	**349**	*e*Pg	**Pg**	**21 12 23.0**	**-0.4**
AKS	**Akhisar**	**0.70**	**60**	*e*PG	**Pb**	**21 12 26.6**	**+0.2**
AKS	**Akhisar**	**0.70**	**60**	*e*Pg	**Pb**	**21 12 26.6**	**+0.2**
CHOS	**Chios island**	**0.78**	**260**	*e*PG	**Pg**	**21 12 27.2**	**-0.5**
CHOS	**Chios island**	**0.78**	**260**	*e*Pg	**Pg**	**21 12 27.3**	**-0.5**
AYVA	**Ayvalik**	**0.83**	**341**	*i* P	**Pb**	**21 12 28.6**	**+0.1**
AYVA				*i* S	**Sb**	**21 12 39.8**	**+0.4**
AYVA	**Ayvalik**	**0.83**	**341**	P	**Pb**	**21 12 28.6**	**+0.1**
AYVA				S	**Sb**	**21 12 39.8**	**+0.4**
GCAM	**G?zelcaml?**	**0.84**	**169**	*i* P	**Pg**	**21 12 28.1**	**-0.7**
GCAM				*i* S	**Sb**	**21 12 40.2**	**+0.5**
GCAM	**G?zelcaml?**	**0.84**	**169**	P	**Pg**	**21 12 28.1**	**-0.7**
GCAM				S	**Sb**	**21 12 40.2**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**0.89**	**131**	*e*PG	**Pb**	**21 12 29.4**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.89**	**131**	*e*Pg	**Pb**	**21 12 29.4**	**-0.2**
SIGR	**SIGRI**	**1.15**	**307**	*e*PN	**Pn**	**21 12 34.3**	**+0.4**
SIGR	**SIGRI**	**1.15**	**307**	*e*Pn	**Pn**	**21 12 34.3**	**+0.4**
MANT	**Manisa**	**1.19**	**91**	*i* P	**Pb**	**21 12 33.8**	**-1.1**
MANT				*i* S	**Sb**	**21 12 50.3**	**+0.1**
MANT	**Manisa**	**1.19**	**91**	P	**Pb**	**21 12 33.8**	**-1.1**
MANT				S	**Sb**	**21 12 50.3**	**+0.1**
KULA	**Kula-Manisa**	**1.27**	**90**	*e*PN	**Pg**	**21 12 36.5**	**-0.5**
KULA	**Kula-Manisa**	**1.27**	**90**	*e*Pn	**Pg**	**21 12 36.5**	**-0.5**
BALY	**Balya**	**1.29**	**20**	*i* P	**Pn**	**21 12 36.3**	**+0.3**
BALY				*i* S	**Sg**	**21 12 54.5**	**+0.3**
BALY	**Balya**	**1.29**	**20**	P	**Pn**	**21 12 36.3**	**+0.3**
BALY				S	**Sg**	**21 12 54.5**	**+0.3**
APE	**Apeiranthos**	**1.88**	**220**	*e*PN	**Pn**	**21 12 45.2**	**+1.1**
APE	**Apeiranthos**	**1.88**	**220**	*e*Pn	**Pn**	**21 12 45.2**	**+1.1**
TVSB	**Tavsanli**	**2.10**	**63**	*e*PN	**Pb**	**21 12 49.3**	**-1.0**
TVSB	**Tavsanli**	**2.10**	**63**	*e*Pn	**Pb**	**21 12 49.3**	**-1.0**

ISCJB ***21*** *21:14:47.0±0.4, 41°55N±0°03×142°07E±0°05, h67km±4km, mb3.6/8, Error ellipse: s-maj=6.9km s-min=4.6km az=39.5*
JMA ***21*** *21:14:47.1±0.1, 41°55N×142°08E, h65km±2km, M3.4*
JMA Felt I J1.
IDC ***21*** *21:14:49.6±1.6, 41°60N×142°17E, h80km±14km, mb3.4/8, mb1 3.4/13, mb1mx3.3/40, mbtmp3.6/13, Error ellipse: s-maj=22.1km s-min=11.5km az=109.0*

ISC 21 21:14:48.7±0.9, 41°56N±0°04×142°08E±0°04, h58km±9km, n35, σ1°68/38, mb3.6/8, 2C-7D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOT	**Ohata**	**0.79**	**257**	⇓P	**Pn**	**21 15 02.8**	**-1.1**
JOT				*e*S	**Sn**	**21 15 15.0**	**-0.1**
JKB	**Kayabe**	**0.85**	**293**	⇓P	**Pn**	**21 15 03.2**	**-1.4**
JNBK	**Urakawa-nobuka**	**0.88**	**35**	P	**Pn**	**21 15 03.5**	**-1.6**
JEM	**Erimo**	**0.93**	**60**	⇑P	**Pn**	**21 15 04.5**	**-1.2**
JEM				*e*S	**Sn**	**21 15 17.2**	**-1.0**
JTM	**Tenmabayashi**	**1.08**	**225**	⇓P	**Pn**	**21 15 06.9**	**-0.9**
JTM				*e*S	**Sn**	**21 15 20.7**	**-1.2**
JNB	**Noboribetsu**	**1.19**	**320**	⇓P	**Pn**	**21 15 07.7**	**-1.5**
JNB				*e*S	**Sn**	**21 15 22.7**	**-1.7**
JBT2	**Biratori 2**	**1.24**	**10**	P	**Pn**	**21 15 09.0**	**-0.8**
JSR	**Shiriuchi**	**1.25**	**269**	P	**Pn**	**21 15 09.0**	**-0.9**
JANG	**Nango**	**1.26**	**200**	⇑P	**Pn**	**21 15 08.9**	**-1.2**
JANG				*e*S	**Sn**	**21 15 24.2**	**-1.9**
JEW	**Eniwo**	**1.36**	**340**	⇓P	**Pn**	**21 15 10.8**	**-0.7**
JEW				*e*S	**Sn**	**21 15 27.6**	**-0.9**
JYM2	**Yakumo 2**	**1.39**	**294**	⇓P	**Pn**	**21 15 11.2**	**-0.6**
JCH	**Churui**	**1.42**	**42**	P	**Pn**	**21 15 11.9**	**-0.4**
JCH				*e*S	**Sn**	**21 15 30.8**	**+0.8**
JFR	**Furan**	**1.65**	**13**	P	**Pn**	**21 15 14.4**	**-0.9**
JOSM	**Okushiri--Mats**	**2.01**	**286**	P	**Pn**	**21 15 18.8**	**-1.5**
JOSM				*e*S	**Sn**	**21 15 42.8**	**-1.5**
ASAJ	**Asahikawa**	**2.58**	**8**	P	**Pn**	**21 15 29.2**	**+1.2**
ASAJ				S	**Sn**	**21 15 58.9**	**+0.6**
	baz=204,slow=19						
MJAR	**Matsushiro Arr**	**5.84**	**212**	P	**Pn**	**21 16 14.7**	**+1.9**
	0.3nm,0.3s,baz=21,slow=15,SNR=3.7						
USRK	**Ussuriysk Ar.**	**7.86**	**293**	P	**Pn**	**21 16 41.5**	**+1.1**
	0.2nm,0.3s,baz=98,slow=14,SNR=5.6						
KLR	**Kul'dur**	**10.55**	**320**	P	**Pn**	**21 17 19.8**	**+2.7**
	0.1nm,0.3s,baz=125,slow=14,SNR=2.8						
KSRS	**Korea Array**	**11.68**	**254**	P	**Pn**	**21 17 34.9**	**+2.4**
	0.3nm,0.3s,baz=66,slow=14,SNR=4.4						
JNU	**Nakatsue**	**12.25**	**230**	P	**Pn**	**21 17 43.5**	**+3.1**
	0.2nm,0.3s,baz=190,slow=10.0,SNR=2.7						
SONM	**Songino Array**	**25.96**	**296**	P	**P**	**21 20 15.3**	**-0.5**
	0.7nm,0.5s,baz=84,slow=7.5,SNR=5.9						
PIP	**Pasuquin**	**29.54**	**225**	⇓*i*P	**P**	**21 20 52.5**	**+4.7**
H11N2	**WAKE ISLAND Hy**	**30.30**	**128**	T	T	21 53 25.9	
	baz=321,slow=75,SNR=26						
H11N1	**WAKE ISLAND Hy**	**30.31**	**128**	T	T	21 53 26.4	
	baz=321,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy**	**30.31**	**128**	T	T	21 53 26.2	
	baz=321,slow=75,SNR=26						
H11S1	**WAKE ISLAND Hy**	**31.14**	**130**	T	T	21 54 30.0	
	baz=323,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**31.14**	**130**	T	T	21 54 27.7	
	baz=323,slow=76,SNR=13						
H11S2	**WAKE ISLAND Hy**	**31.16**	**130**	T	T	21 54 29.1	
	baz=323,slow=76,SNR=10.0						
ZALV	**Zalesovo Beam**	**39.37**	**308**	P	**P**	**21 22 11.1**	**-1.3**
	0.9nm,0.4s,baz=92,slow=9.2,SNR=6.2						
MKAR	**Makanchi Array**	**42.29**	**298**	P	**P**	**21 22 35.2**	**-1.3**
	1.2nm,0.9s,baz=84,slow=10.0,SNR=6.9						
ILAR	**Eielson Array**	**45.44**	**35**	P	**P**	**21 23 00.6**	**-0.9**
	0.5nm,0.9s,baz=251,slow=6.7,SNR=6.2						
WRA	**Warramunga Arr**	**61.61**	**188**	P	**P**	**21 24 58.1**	**-2.1**
	0.6nm,0.9s,baz=7.8,slow=7.7,SNR=6.7						
FINES	**FINESS Array B**	**65.07**	**332**	P	**P**	**21 25 21.0**	**-1.7**
	1.3nm,0.6s,baz=51,slow=6.7,SNR=8.2						
ASAR	**Alice Springs**	**65.34**	**188**	P	**P**	**21 25 23.5**	**-1.2**
	0.2nm,0.6s,baz=12,slow=14,SNR=3.0						
NOA	**NORSAR Array B**	**70.22**	**337**	P	**P**	**21 25 53.6**	**-1.6**
	0.8nm,0.9s,baz=36,slow=4.1,SNR=2.6						

SJA 21 21:16:07.1±1.0, 28°03S×70°07W, h153km±12km, ML2.5, MW2.9,2D, Central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VCA	**Vinchina**	**1.78**	**114**	*e*P	Pn	21 16 40.7	+0.6
VCA				*e*S	Sn	21 17 05.9	+0.5
VCA				IAML		21 17 08.3	
	comp=Z,35nm,0.3s						
AROD	**Rodeo**	**2.19**	**166**	*e*P	Pn	21 16 46.1	+1.1
AROD				*e*S	Sn	21 17 15.1	+0.9
ACCO	**Cerro Coronel**	**2.69**	**161**	*e*P	Pn	21 16 52.7	+1.6
ACCO				IAML		21 17 29.1	
	comp=Z,13nm,0.4s						
AMOG	**MOGNA**	**3.21**	**155**	*e*P	Pn	21 16 58.1	+0.9
AMOG				*e*S	Sn	21 17 35.6	-0.5
AVFE	**Valle Fertil**	**3.47**	**140**	*e*P	Pn	21 17 01.4	+0.8
AVFE				⇓*e*S	Sn	21 17 43.0	+0.8
AVFE				IAML		21 17 46.1	
	comp=Z,6.9nm,0.4s						
RTLL	**Cerro Villicun**	**3.56**	**158**	⇓*e*S	Sn	21 17 45.3	+0.9
RTLS	**Leoncito**	**3.81**	**170**	*e*P	Pn	21 17 07.2	+1.9
RTLS				*e*S	Sn	21 17 50.7	+0.2
ACHE	**Chepes**	**4.30**	**137**	*e*P	Pn	21 17 12.6	+1.1
ACHE				*e*S	Sn	21 18 00.3	-1.3

NIED ***21*** *21:17:00, 39°40N×143°90E, h14km, Mw3.6 Best double couple: M0 2.94000×10^14 NP1:φs 193.00000°, δ37.00000°, λ88.00000°. NP2:φs 15.00000°, δ53.00000°, λ91.00000°.*
JMA ***21*** *21:17:57.2±0.3, 39°35N×143°88E, h7km±5km, M3.8*

ISCJB ***21*** *21:17:58.4±1.0, 39°38N±0°05×143°86E±0°09, h11km, mb3.4/5, Error ellipse: s-maj=11.2km s-min=5.6km az=26.0*
IDC ***21*** *21:18:06.4±3.1, 39°28N×143°42E, h42km±28km, mb3.2/5, mb1 3.4/9, mb1mx3.3/41, mbtmp3.4/9, ML3.0/4, Error ellipse: s-maj=30.6km s-min=22.1km az=102.0*

ISC 21 21:18:02.1±1.1, 39°40N±0°07×143°64E±0°09, h11km, n25, σ1°50/28, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.42**	**278**	P	**Pn**	**21 18 26.2**	**-1.6**
MIYJ				S	**Sn**	**21 18 47.0**	**+0.5**
JTH	**Tanohata**	**1.47**	**292**	P	**Pn**	**21 18 27.0**	**-1.5**
OFUJ	**Ofunato**	**1.56**	**259**	P	**Pn**	**21 18 28.2**	**-1.6**
JOM	**Ohasama**	**1.82**	**273**	P	**Pn**	**21 18 32.3**	**-1.0**
JANG	**Nango**	**1.90**	**301**	P	**Pn**	**21 18 32.9**	**-1.6**
JMK	**Ichinoseki**	**1.93**	**257**	P	**Pn**	**21 18 33.7**	**-1.2**
JIO	**Ouri**	**2.02**	**243**	P	**Pn**	**21 18 34.4**	**-1.7**
JRG	**Rokugo**	**2.33**	**271**	P	**Pn**	**21 18 39.9**	**-0.4**
JTM	**Tenmabayashi**	**2.41**	**306**	P	**Pn**	**21 18 40.7**	**-0.7**
JAH	**Hinai**	**2.44**	**290**	P	**Pn**	**21 18 41.5**	**-0.4**
JOU	**Okura**	**2.54**	**247**	P	**Pn**	**21 18 42.3**	**-1.0**
JYK	**Kaneyama**	**2.60**	**260**	P	**Pn**	**21 18 43.3**	**-0.7**
JOT	**Ohata**	**2.80**	**316**	P	**Pn**	**21 18 47.4**	**+0.6**
JFT	**Otama**	**3.20**	**235**	P	**Pn**	**21 18 51.7**	**-0.7**
JAK	**Akkeshi**	**3.68**	**12**	S	**Sn**	**21 19 38.9**	**-3.3**
ASAJ	**Asahikawa**	**4.78**	**351**	P	**Pn**	**21 19 15.8**	**+1.8**
	0.9nm,0.3s,baz=194,slow=12,SNR=5.2						
ASAJ				S	**Sn**	**21 20 09.4**	**+0.1**
	0.6nm,0.3s,baz=93,slow=18,SNR=3.3						
MAT	**Matsushiro**	**5.15**	**238**	P	**Pn**	**21 19 19.8**	**+0.6**
MAT				S	**Sn**	**21 20 22.2**	**+3.5**
MJAR	**Matsushiro Arr**	**5.15**	**238**	P	**Pn**	**21 19 19.4**	**+0.2**
	1.1nm,0.3s,baz=44,slow=11,SNR=16						
USRK	**Ussuriysk Ar.**	**9.93**	**303**	P	**Pn**	**21 20 25.5**	**+0.8**
	0.2nm,0.3s,baz=110,slow=13,SNR=3.4						
KLR	**Kul'dur**	**12.98**	**323**	P	**Pn**	**21 21 07.4**	**+1.0**
	0.1nm,0.3s,baz=132,slow=14,SNR=1.9						
SONM	**Songino Array**	**28.03**	**300**	P	**P**	**21 23 52.6**	**-0.6**
	0.3nm,0.6s,baz=86,slow=9.2,SNR=2.5						
ZALV	**Zalesovo Beam**	**41.67**	**310**	P	**P**	**21 25 49.8**	**-0.5**
	0.8nm,0.5s,baz=103,slow=8.4,SNR=4.8						
MKAR	**Makanchi Array**	**44.39**	**300**	P	**P**	**21 26 12.1**	**-0.5**
	0.6nm,0.8s,baz=82,slow=8.7,SNR=5.0						
ILAR	**Eielson Array**	**46.56**	**34**	P	**P**	**21 26 31.6**	**+2.2**
	0.1nm,0.5s,baz=260,slow=5.4,SNR=3.2						
WRA	**Warramunga Arr**	**59.67**	**190**	P	**P**	**21 28 04.7**	**-1.8**
	0.5nm,0.9s,baz=7.8,slow=6.8,SNR=2.6						

GUC ***21*** *21:19:36.9±0.4, 32°68S×71°12W, h11km±2km, ML2.3*
SJA ***21*** *21:19:37.1±1.3, 32°80S×71°28W, h20km, ML2.5, MW2.9*

ISC 21 21:19:39.6±1.7, 32°72S±0°05×70°99W±0°08, h4km±14km, n17, σ1°67/24, 3C-3D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROCH	**El Roble**	**0.25**	**184**	⇑*i*P	**Pg**	**21 19 43.7**	**-0.8**
ROCH				*i* S	**Sg**	**21 19 49.1**	**+1.3**
ROCH				IAML		21 19 53.9	
	comp=N,644nm,0.5s						
ROC1	**El Roble**	**0.25**	**185**	*e*P	**Pg**	**21 19 43.8**	**-0.7**
ROC1				*e*S	**Sg**	**21 19 49.1**	**+1.2**
PEL	**Peldehue**	**0.49**	**149**	⇑*i*P	**Pg**	**21 19 48.7**	**-0.3**
PEL				*i* S	**Sb**	**21 19 57.6**	**-0.9**
PEL				IAML		21 19 59.7	
	comp=N,224nm,0.5s						
CLCH	**Cerro Calan**	**0.77**	**151**	⇑*i*P	**Pg**	**21 19 53.5**	**-0.9**
CLCH				*i* S	**Sb**	**21 20 06.1**	**-0.5**
CLCH				IAML		21 20 07.8	
	comp=N,160nm,0.4s						
FCH	**Farellones**	**0.84**	**136**	*e*P	**Pg**	**21 19 54.4**	**-1.4**
ANTU	**Antumapu**	**0.90**	**161**	*e*P	**Pg**	**21 19 55.5**	**-1.3**
ANTU				*i* S	**Sg**	**21 20 09.4**	**+1.0**
ANTU				IAML		21 20 09.7	
	comp=E,364nm,0.4s						
AUSP	**Uspallata**	**1.44**	**70**	*e*P	**Pn**	**21 20 05.3**	**-1.5**
RTLS	**Leoncito**	**1.70**	**58**	*e*P	**Pn**	**21 20 09.6**	**-0.8**
RTLS				⇓*e*S	**Sg**	**21 20 35.2**	**+0.9**
ARCO	**CERRO ARCO**	**1.74**	**94**	IAML		21 20 47.5	
	comp=Z,39nm,0.5s						
ASAL	**Salagasta**	**1.82**	**86**	*e*P	**Pb**	**21 20 13.3**	**-0.3**
AAGR	**Agrelo**	**1.85**	**102**	*e*P	**Pb**	**21 20 14.6**	**+0.5**
RTCV	**Cerro Valdivia**	**2.25**	**68**	*e*P	**Pb**	**21 20 20.7**	**0.0**
RTCV				⇓*e*S	**Sg**	**21 20 55.8**	**+4.0**
RTLL	**Cerro Villicun**	**2.55**	**58**	⇓*e*P	**Pb**	**21 20 23.5**	**-2.5**
RTLL				⇓

0.4nm,0.7s,baz=331,slow=10,SNR=3.1
WRA pP **sP** **21 40 36.2 +5.4**
0.8nm,0.6s,baz=337,slow=9.4,SNR=5.4
SONM Songino Array 36.90 342 P **P** **21 40 30.4 -1.5**
0.1nm,0.3s,baz=152,slow=6.5,SNR=2.6
ASAR Alice Springs 38.45 163 P **P** **21 40 41.5 -3.6**
0.3nm,0.7s,baz=346,slow=6.8,SNR=4.4
ASAR pP **sP** **21 41 04.6 +5.0**
0.4nm,0.5s,baz=335,slow=7.1,SNR=2.9

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*NEIC **21** 21:36:14.5,21.63N×98.88W,h12km,MD4.0(MEX),After MEX.*
MEX 21 21:36:14.3±0.9,21.67N×98.85W,h20km±14km,MD3.9, Veracruz

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEIG	**Demacu**	**1.38**	**187**	*e*P	Pn	21 36 34.6	-4.0
DEIG				*i* S	Sn	21 36 52.1	-4.3
DEIG	**Demacu**	**1.38**	**187**	*e*P	Pn	21 36 34.6	-4.0
DEIG				*i* S	Sn	21 36 52.1	-4.3
VTVM	**Tizayuca**	**1.90**	**178**	*e*P	Pn	21 36 43.8	-2.0
VTVM				*e*S	Sn	21 37 06.1	-3.2
ATVM	**ATLACOMULCO**	**2.12**	**206**	*i* P	Pn	21 36 46.6	-2.2
ATVM				*i* S	Sn	21 37 10.8	-3.9
AZVM	**Cuida Lopez Ma**	**2.12**	**191**	*e*P	Pn	21 36 47.0	-1.9
AZVM				*e*S	Sn	21 37 11.2	-3.5
IGIG	**Irapuato, Guan**	**2.48**	**249**	*e*P	Pn	21 36 51.8	-2.1
IGIG				*i* S	Sn	21 37 20.2	-3.5
MZVM		**2.50**	**188**	*e*P	Pn	21 36 51.9	-1.9
MZVM				*e*S	Sn	21 37 19.5	-4.2
PPM	**Popocatepetl**	**2.60**	**175**	*e*P	Pn	21 36 52.7	-3.0
PPM	**Popocatepetl**	**2.60**	**175**	*e*P	Pn	21 36 54.4	-1.3
LNIG	**Linares**	**3.26**	**350**	*e*P	Pn	21 37 01.6	-2.7
LNIG				*i* S	Sn	21 37 39.9	-2.7
LNIG	**Linares**	**3.26**	**350**	*e*P	Pb	21 37 12.9	+1.4
LNIG				*e*S	Sb	21 37 50.5	-0.3
ZAIG	**Zacatecas**	**3.61**	**288**	*e*P	Pn	21 37 07.5	-1.9
ZAIG				*e*S	Sn	21 37 48.0	-3.6
ZAIG	**Zacatecas**	**3.61**	**288**	*e*P	Pn	21 37 09.2	-0.2
ZAIG				*e*S	Sn	21 37 50.7	-0.9

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*ISCJB **21** 21:50:07.7±0.4,5.24S±0.04×102.97E±0.04,h59km, mb4.2/22,MS3.2/1,Error ellipse: s-maj=7.6km s-min=4.5km az=41.9*
*NEIC **21** 21:50:07.8±0.8,5.08S×103.04E,h39km±8km,mb4.3/12, Error ellipse: s-maj=8.3km s-min=5.3km az=60.0*
*DJA **21** 21:50:09.1±1.1,5°S±5°×10°E±°,h28km±11km,M4.4/10, mB5.3/1,mb4.3/1,MLv4.4/10,Mw(mB)4.7/1*
*IDC **21** 21:50:09.9±0.9,5.07S×103.04E,h57km±6km,mb3.8/10, mb1 3.9/10,mb1mx3.6/38,mbtmp4.1/10,MS3.3/1, Ms1 3.3/1,ms1mx2.6/40,Error ellipse: s-maj=34.8km s-min=12.0km az=58.0*
ISC 21 21:50:09.6±0.5,5.15S±0.06×102.99E±0.06,h59km,n50, σ1§10/50,mb4.2/22,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**0.78**	**357**	P	**Pn**	**21 50 25.1**	**+0.3**
LWLI	**Liwa**	**1.07**	**83**	P	**Pn**	**21 50 28.1**	**-0.5**
LWLI				S	**Sn**	**21 50 42.5**	**-0.3**
LHSI	**Lahat**	**1.41**	**22**	P	**Pn**	**21 50 34.4**	**+1.3**
KSI	**Kapahiang**	**1.54**	**345**	P	**Pn**	**21 50 35.7**	**+0.9**
KASI	**Kota Agung**	**1.55**	**104**	P	**Pn**	**21 50 33.9**	**-0.9**
KASI				S	**Sn**	**21 50 52.2**	**-1.7**
KLSI		**1.79**	**75**	P	**Pn**	**21 50 38.8**	**+0.6**
MASI	**Maura Aman, Be**	**2.13**	**339**	P	**Pn**	**21 50 44.5**	**+1.7**
MASI				S	**Sn**	**21 51 11.1**	**+2.9**
BLSI	**Bandar Lampung**	**2.26**	**96**	P	**Pn**	**21 50 43.4**	**-1.1**
CGJI	**Cibinong**	**3.06**	**119**	P	**Pn**	**21 50 54.9**	**-0.6**
TNG	**Tangerang**	**3.78**	**106**	P	Pn	21 50 59.8	-5.5
CNJI	**Cibinong**	**4.64**	**118**	P	**Pn**	**21 51 16.3**	**-0.9**
PDSI	**Padang**	**4.91**	**329**	P	**Pn**	**21 51 21.4**	**+0.6**
CISI	**Cisompet, Garu** 48nm,0.4s	**5.36**	**117**	*e*Pn	**Pn**	**21 51 25.7**	**-1.4**
CMJI	**Cimerak**	**6.02**	**116**	P	**Pn**	**21 51 35.4**	**-0.7**
MNSI	**Mandailing Nat**	**6.81**	**330**	P	Pn	21 51 52.0	+5.0
GSI	**Gunungsitoli**	**8.38**	**320**	P	**Pn**	**21 52 08.8**	**-1.7**
GSI	**Gunungsitoli** 18nm,0.4s	**8.38**	**320**	*e*Pn	**Pn**	**21 52 07.2**	**-1.3**
GSI				*e*Sn	**Sn**	**21 53 39.6**	**-2.2**
PWJI	**Pagerwojo**	**9.21**	**109**	P	**Pn**	**21 52 20.6**	**+0.8**
COCO	**West Island**	**9.27**	**221**	*e*Pn	**Pn**	**21 52 19.4**	**-1.2**
CMAR	**Chiang Mai Arr** 2.4nm,0.6s,baz=180,slow=9.2,SNR=18	**23.79**	**350**	P	**P**	**21 55 16.5**	**-0.6**
CHTO	**Chiang Mai** 1.6nm,0.7s	**24.14**	**351**	*e*P	**P**	**21 55 19.5**	**-0.8**
PALK	**Pallekele** comp=Z,63nm,18.2s,baz=118,slow=33	**25.43**	**299**	LR	LR	22 04 06.0	
FITZ	**Fitzroy Crossi** 1.8nm,0.7s,baz=292,slow=8.7,SNR=4.3	**25.61**	**122**	P	**P**	**21 55 33.1**	**-0.5**
H08S2	**Diego Garcia H** baz=86,slow=76,SNR=4.3	**30.41**	**264**	T	T	22 28 33.7	
H08S3	**Diego Garcia H** baz=86,slow=76,SNR=7.5	**30.41**	**264**	T	T	22 28 31.7	
H08S1	**Diego Carcia H** baz=86,slow=76,SNR=3.9	**30.42**	**264**	T	T	22 28 32.5	
NWAO	**Narrogin (SRO)** 2.8nm,0.5s	**30.67**	**156**	*e*P	**P**	**21 56 19.5**	**+0.9**
H01W3	**Cape Leeuwin H** baz=340,slow=76,SNR=6.0	**31.34**	**162**	T	T	22 29 45.1	
H01W2	**Cape Leeuwin H** baz=340,slow=76,SNR=8.0	**31.35**	**162**	T	T	22 29 54.1	
H01W1	**Cape Leeuwin H** baz=340,slow=76,SNR=2.6	**31.35**	**162**	T	T	22 29 55.1	
WRA	**Warramunga Arr** 2.0nm,0.7s,baz=307,slow=8.4,SNR=26	**33.85**	**119**	P	**P**	**21 56 46.7**	**-0.1**
WRA				pP	**pP**	**21 57 02.3**	**+0.7**
WRAB	**Tennant Creek** 3.4nm,0.8s	**33.86**	**119**	*e*P	**P**	**21 56 46.3**	**-0.5**
NACB	**Ninganchiao** 6.0nm,0.8s	**34.32**	**31**	*e*P	**P**	**21 56 49.3**	**-1.4**
YHNB	**Yeheng** 6.8nm,0.9s	**34.62**	**30**	*e*P	**P**	**21 56 52.6**	**-0.8**
ASAR	**Alice Springs** 0.6nm,0.5s,baz=306,slow=8.1,SNR=8.6	**35.01**	**125**	P	**P**	**21 56 56.9**	**+0.1**
ENH	**Enshi** 1.1nm,0.4s	**35.76**	**10**	*e*P	**P**	**21 57 02.7**	**-0.4**
STKA	**Stephens Creek** 2.0nm,0.5s,baz=303,slow=9.9,SNR=10	**44.84**	**131**	P	**P**	**21 58 18.6**	**+0.4**
STKA				pP	**pP**	**21 58 35.0**	**+1.6**
SONM	**Songino Array** 1.8nm,0.6s,baz=180,slow=9.4,SNR=6.8	**52.84**	**3**	P	**P**	**21 59 20.2**	**+1.0**
SONM				pP	**pP**	**21 59 34.2**	**-0.6**
MKAR	**Makanchi Array** 1.5nm,0.5s,baz=146,slow=8.4,SNR=20	**54.87**	**343**	P	**P**	**21 59 33.9**	**-0.1**
MKAR				pP	**pP**	**21 59 48.2**	**-1.4**
HIA	**Hailar** 2.1nm,0.5s	**56.12**	**13**	P	**P**	**21 59 43.0**	**+0.1**
HNR	**Honiara** 16nm,0.6s	**56.61**	**98**	*e*P	**P**	**21 59 47.1**	**+0.1**
TLY	**Talaya** 2.3nm,0.6s	**56.61**	**0**	*e*P	**P**	**21 59 44.3**	**-2.0**
ZALV	**Zalesovo Beam** 2.2nm,0.4s,baz=164,slow=5.6,SNR=12	**60.82**	**348**	P	**P**	**22 00 15.2**	**-0.3**
ZALV				pP	**pP**	**22 00 30.9**	**-0.5**
ABKAR	**Akbulak array** 2.0nm,0.5s	**65.82**	**331**	*e*P	**P**	**22 00 48.4**	**-0.3**
MAW	**Mawson** 0.8nm,0.7s,baz=55,slow=16,SNR=3.5	**68.03**	**195**	P	**P**	**22 01 03.4**	**+1.1**
LSZ	**Lusaka** 1.0nm,1.0s	**74.02**	**256**	*e*P	**P**	**22 01 40.9**	**+1.1**
SBA	**Scott Base** 0.9nm,0.7s	**79.61**	**169**	*e*P	**P**	**22 02 10.9**	**+0.9**
FINES	**FINESS Array B** 0.8nm,0.6s,baz=142,slow=6.5,SNR=4.9	**88.27**	**332**	P	**P**	**22 02 55.3**	**+1.0**
COLA	**College**	**102.72**	**24**	*e*Pdif	**Pdif**	**22 04 01.0**	**+1.0**
TXAR	**Lajitas Array** 0.3nm,0.6s,baz=187,slow=2.1,SNR=3.6	**145.15**	**43**	PKPbc	**PKPbc**	**22 09 41.8**	**+0.9**

IDC 21 21:56:49.7±34.0,19.91S×178.54W,h0km,mb3.8/4, mb1 3.9/4,mb1mx3.7/19,mbtmp3.8/4,Error ellipse: s-maj=643.6km s-min=157.7km az=87.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek** 1.4nm,0.6s,baz=84,slow=10,SNR=2.9	**37.60**	**243**	P	P	22 04 05.9	-0.3
ASAR	**Alice Springs** 0.7nm,0.7s,baz=96,slow=7.8,SNR=9.0	**44.17**	**256**	P	P	22 05 00.5	-0.1
WRA	**Warramunga Arr** 0.4nm,0.5s,baz=97,slow=7.7,SNR=9.1	**44.19**	**262**	P	P	22 05 01.0	+0.2
FITZ	**Fitzroy Crossi** 1.0nm,0.7s,baz=117,slow=6.8,SNR=3.7	**52.61**	**262**	P	P	22 06 05.4	-0.4

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*ISCJB **21** 22:13:48.9±0.5,39.08N±0.04×29.06E±0.04,h13km±5km, Error ellipse: s-maj=7.2km s-min=4.5km az=156.5*
*DDA **21** 22:13:48.5,39.11N×29.08E,h7km,Ml2.6*
*CSEM **21** 22:13:48.9±0.2,39.09N×29.07E,h10km,MD2.6,Error ellipse: s-maj=6.1km s-min=4.3km az=152.0*
*ISK **21** 22:13:49.0,39.14N×29.08E,h12km,MD2.6*
ISC 21 22:13:48.9±0.9,39.10N±0.03×29.07E±0.03,h14km±8km, n21,σ0§65/32,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.27**	**101**	*e*PG	**Pg**	**22 13 55.1**	**+0.5**
GEDZ				*e*SG	**Sb**	**22 13 59.8**	**-0.2**
GEDZ	**Gediz**	**0.27**	**101**	*e*Pg	**Pg**	**22 13 55.1**	**+0.5**
GEDZ				*e*Sg	**Sb**	**22 13 59.8**	**-0.2**
DEMI	**Demirci**	**0.28**	**259**	*i* P	**Pg**	**22 13 54.8**	**0.0**
DEMI				*i* S	**Sg**	**22 13 59.0**	**+0.1**
DEMI	**Demirci**	**0.28**	**259**	P	**Pg**	**22 13 54.8**	**0.0**
DEMI				S	**Sg**	**22 13 59.0**	**+0.1**
GDZ	**Gediz**	**0.32**	**91**	*i* P	**Pg**	**22 13 54.7**	**-0.8**
GDZ				*i* S	**Sg**	**22 13 60.0**	**-0.1**
GDZ	**Gediz**	**0.32**	**91**	P	**Pg**	**22 13 54.7**	**-0.8**
GDZ				S	**Sg**	**22 14 00.0**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**41**	*e*PG	**Pg**	**22 13 57.9**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**41**	*e*Pg	**Pg**	**22 13 57.9**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*PG	**Pb**	**22 14 03.0**	**+0.8**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*Pg	**Pb**	**22 14 03.0**	**+0.8**
MANT	**Manisa**	**0.72**	**214**	*i* P	**Pg**	**22 14 02.1**	**-0.9**
MANT				*i* S	**Sg**	**22 14 11.3**	**-1.3**
MANT	**Manisa**	**0.72**	**214**	P	**Pg**	**22 14 02.1**	**-0.9**
MANT				S	**Sg**	**22 14 11.3**	**-1.3**
BALB	**Balikesir**	**1.07**	**301**	*e*PG	**Pn**	**22 14 10.2**	**+0.7**
BALB	**Balikesir**	**1.07**	**301**	*e*Pg	**Pn**	**22 14 10.2**	**+0.7**
IGD	**Bursa**	**1.17**	**5**	*i* P	**Pb**	**22 14 09.5**	**-1.4**
IGD				*i* S	**Sn**	**22 14 26.9**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pb**	**22 14 13.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pb**	**22 14 13.1**	**+0.1**
BORA	**Eskisehir**	**1.33**	**53**	*i* P	**Pb**	**22 14 13.6**	**0.0**
BORA				*i* S	**Sg**	**22 14 31.7**	**0.0**
BORA	**Eskisehir**	**1.33**	**53**	P	**Pb**	**22 14 13.6**	**0.0**
BORA				S	**Sg**	**22 14 31.7**	**0.0**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**22 14 15.5**	**+0.4**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**22 14 15.5**	**+0.4**

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*DDA **21** 22:14:47.7,39.13N×28.04E,h7km,Md2.7*
*ISCJB **21** 22:14:48.2±0.7,39.03N±0.04×28.00E±0.05,h8km±7km, Error ellipse: s-maj=8.1km s-min=5.8km az=34.2*
*ISK **21** 22:14:48.3,39.02N×27.95E,h11km,MD2.6*
*CSEM **21** 22:14:48.0±0.3,39.06N×28.01E,h2km,MD2.6,Error ellipse: s-maj=6.4km s-min=5.1km az=53.0*
ISC 21 22:14:47.5±1.2,39.09N±0.03×28.01E±0.03,h0km±12km, n20,σ0§61/30,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKS	**Akhisar**	**0.26**	**217**	PG	**Pg**	**22 14 52.6**	**+0.1**
AKS				*e*SG	**Sg**	**22 14 55.8**	**0.0**
AKS	**Akhisar**	**0.26**	**217**	*i* Pg	**Pg**	**22 14 52.6**	**+0.1**
AKS				*e*Sg	**Sg**	**22 14 55.8**	**0.0**
BALB	**Balikesir**	**0.56**	**350**	*e*PG	**Pb**	**22 15 01.1**	**+0.8**
BALB	**Balikesir**	**0.56**	**350**	*e*Pg	**Pb**	**22 15 01.1**	**+0.8**
BALY	**Balya**	**0.72**	**335**	*i* P	**Pg**	**22 15 01.4**	**0.0**
BALY				*i* S	**Sg**	**22 15 09.5**	**-1.2**
BALY	**Balya**	**0.72**	**335**	P	**Pg**	**22 15 01.4**	**0.0**
BALY				S	**Sg**	**22 15 09.5**	**-1.2**
MANT	**Manisa**	**0.73**	**144**	*i* P	**Pg**	**22 15 01.7**	**+0.2**
MANT				*i* S	**Sg**	**22 15 11.3**	**+0.3**
MANT	**Manisa**	**0.73**	**144**	P	**Pg**	**22 15 01.7**	**+0.2**
MANT				S	**Sg**	**22 15 11.3**	**+0.3**
KULA	**Kula-Manisa**	**0.76**	**138**	*e*PG	**Pb**	**22 15 03.4**	**-0.4**
KULA	**Kula-Manisa**	**0.76**	**138**	*e*Pg	**Pb**	**22 15 03.4**	**-0.4**
AYVA	**Ayvalik**	**1.05**	**283**	*i* P	**Pg**	**22 15 07.7**	**0.0**
AYVA				*i* S	**Sn**	**22 15 23.9**	**-1.0**
AYVA	**Ayvalik**	**1.05**	**283**	P	**Pg**	**22 15 07.7**	**0.0**
AYVA				S	**Sn**	**22 15 23.9**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**1.14**	**185**	*e*PG	**Pg**	**22 15 09.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.14**	**185**	*e*Pg	**Pg**	**22 15 09.1**	**-0.3**
GDZ	**Gediz**	**1.14**	**89**	*i* P	**Pg**	**22 15 09.1**	**-0.4**
GDZ				*i* S	**Sb**	**22 15 25.5**	**-0.2**
GDZ	**Gediz**	**1.14**	**89**	P	**Pg**	**22 15 09.1**	**-0.4**
GDZ				S	**Sb**	**22 15 25.5**	**-0.2**
TVSB	**Tavsanli**	**1.18**	**72**	*e*PN	**Pn**	**22 15 12.2**	**+0.8**
TVSB	**Tavsanli**	**1.18**	**72**	*e*Pn	**Pn**	**22 15 12.2**	**+0.8**
KCTX	**Karacabey (Bur**	**1.21**	**13**	*e*PN	**Pn**	**22 15 12.5**	**+0.8**
KCTX	**Karacabey (Bur**	**1.21**	**13**	*e*Pn	**Pn**	**22 15 12.5**	**+0.8**

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*ISCJB **21** 22:16:43.6±0.7,8.15S±0.05×74.42W±0.05,h158km±7km, mb4.4/23,Error ellipse: s-maj=9.3km s-min=5.1km az=43.3*
*IDC **21** 22:16:44.3±0.6,8.09S×74.44W,h150km±5km,mb4.0/12, mb1 4.2/19,mb1mx4.0/34,mbtmp4.6/19,Error ellipse: s-maj=13.1km s-min=9.9km az=35.0*
*NEIC **21** 22:16:45.0±0.5,8.16S×74.40W,h155km±5km,mb4.4/13, Error ellipse: s-maj=5.9km s-min=3.8km az=56.0*
NEIC Felt at Pucallpa.
ISC 21 22:16:44.6±0.4,8.18S±0.04×74.34W±0.05,h153km±4km, h153km:pP-P,n69,σ2§07/97,mb4.4/23,Peru-Brazil border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAH	**Atahualpa** 43nm,0.3s,baz=81,slow=3.9,SNR=103	**4.15**	**284**	P	**Pn**	**22 17 45.5**	**-1.8**
ATAH				S	**Sn**	**22 18 31.9**	**-4.1**
NNA	**Nana** 21nm,0.3s,baz=49,slow=6.6,SNR=23	**4.52**	**213**	P	**Pn**	**22 17 52.0**	**+0.2**
NNA				S	**Sn**	**22 18 41.1**	**-3.1**
NNA	**Nana** 93nm,0.3s,baz=321,slow=16,SNR=18	**4.52**	**213**	*e*Pn	**Pn**	**22 17 52.8**	**+1.0**
NNA				S	**Sn**	**22 18 41.1**	**-3.1**
OTAV	**Otavalo**	**9.31**	**334**	*e*Pn	**Pn**	**22 18 55.7**	**-0.2**
LPAZ	**La Paz** 1.8nm,0.3s,baz=318,slow=9.9,SNR=41	**10.09**	**144**	P	**Pn**	**22 19 07.3**	**+0.9**
LPAZ				S	**Sn**	**22 20 57.0**	**-1.4**
SAML	**Samuel**	**11.06**	**95**	*e*Pn	**Pn**	**22 19 19.5**	**+0.9**
PB11	**IPOC Station P**	**12.38**	**159**	*e*Pn	**Pn**	**22 19 37.1**	**+1.1**
RUSC	**La Rusia**	**14.03**	**5**	*e*Pn	**P**	**22 19 59.5**	**-1.0**
PB04	**IPOC Station P**	**14.64**	**164**	*e*Pn	**Pn**	**22 20 05.8**	**+1.1**
SIV	**San Ignacio** 3.6nm,0.3s,baz=302,slow=13,SNR=23	**15.11**	**122**	P	**P**	**22 20 12.0**	**0.0**
SIV				S	**Sn**	**22 22 54.5**	**-4.1**
LVC	**Limon Verde** 50nm,0.3s,baz=350,slow=6.6,SNR=11	**15.27**	**161**	P	**P**	**22 20 14.1**	**0.0**
LVC	**Limon Verde** 13nm,0.8s	**15.27**	**161**	*e*Pn	**P**	**22 20 13.9**	**-0.2**
PTGA	**Pitinga** 6.6nm,0.3s,baz=242,slow=16,SNR=56	**16.12**	**63**	P	**P**	**22 20 23.6**	**+0.5**
PTGA				S	**S**	**22 23 13.4**	**-8.6**
PTGA	**Pitinga** 22nm,0.7s	**16.12**	**63**	*e*Pn	**P**	**22 20 23.7**	**+0.5**
PTGA				S	**S**	**22 23 13.4**	**-8.6**
SDV	**Santo Domingo** 2.5nm,0.3s,baz=178,slow=15,SNR=11	**17.35**	**12**	P	**Pn**	**22 20 37.5**	**-0.4**
SDV				S	**Sn**	**22 23 59.0**	**+6.6**
SDV	**Santo Domingo** 8.0nm,0.9s	**17.35**	**12**	*e*P	**Pn**	**22 20 38.6**	**+0.7**
SDV				S	**Sn**	**22 23 59.0**	**+6.6**
PCRV	**Puerto La Cruz** 15nm,0.7s,baz=210,slow=3.6,SNR=5.2	**20.63**	**28**	P	**P**	**22 21 10.8**	**-1.6**
CPUP	**Villa Florida** 18nm,0.7s,baz=327,slow=9.9,SNR=40	**24.23**	**140**	P	**P**	**22 21 47.8**	**+0.3**
BDFB	**Brasilia**	**26.78**	**109**	*e*P	**P**	**22 22 11.3**	**+0.6**
BDFB				*e*pP	**pP**	**22 22 46.0**	**+3.3**
SJG	**San Juan** 19nm,0.5s,baz=178,slow=7.3,SNR=11	**27.34**	**17**	P	**P**	**22 22 15.0**	**-0.5**
SJG	**San Juan** 24nm,0.6s	**27.34**	**17**	*e*P	**P**	**22 22 16.7**	**+1.2**
PLCA	**Paso Flores** 2.3nm,0.5s,baz=1.6,slow=9.7,SNR=6.2	**32.59**	**175**	P	**P**	**22 23 02.9**	**+1.2**
RCBR	**Riachuelo** 6.0nm,0.7s,baz=246,slow=12,SNR=2.0	**38.21**	**89**	P	**P**	**22 23 50.0**	**0.0**
RCBR				pP	**pP**	**22 24 24.1**	**+0.9**
GOGA	**Godfrey** 6.6nm,0.6s	**42.26**	**349**	*e*P	**P**	**22 24 23.0**	**+0.1**
LRAL	**Lakeview Retre**	**42.72**	**344**	*e*P	**P**	**22 24 25.7**	**-1.0**
LRAL				*e*pP	**pP**	**22 24 58.8**	**-1.7**
TX31	**Lajitas Ar. Si**	**46.78**	**324**	*e*P	**P**	**22 24 58.7**	**-0.4**
TXAR	**Lajitas Array** 1.1nm,0.7s,baz=153,slow=8.9,SNR=13	**46.78**	**324**	P	**P**	**22 24 58.8**	**-0.3**
TXAR				pP	**pP**	**22 25 31.7**	**-1.7**
ABTX	**Abilene, Hawle** 0.4nm,0.5s,baz=150,slow=8.7,SNR=3.0	**47.20**	**331**	*e*P	**P**	**22 25 02.0**	**-0.2**
ABTX				*e*pP	**pP**	**22 25 40.9**	**+4.4**
HHAR	**Hobbs**	**47.91**	**339**	*e*P	**P**	**22 25 07.2**	**-0.3**
HHAR				*e*pP	**pP**	**22 25 45.2**	**+3.2**
MNTX	**Cornudas Mount** 10nm,1.5s	**49.53**	**325**	*e*P	**P**	**22 25 19.6**	**-0.4**
ANMO	**Albuquerque**	**52.54**	**327**	*e*P	**P**	**22 25 42.6**	**0.0**
ANMO				*e*pP	**pP**	**22 26 17.1**	**-0.6**
SDCO	**Great Sand Dun**	**54.17**	**330**	*e*P	**P**	**22 25 54.0**	**-0.6**
SDCO				*e*pP	**pP**	**22 26 29.4**	**-0.4**
214A	**Organ Pipe Nat** 15nm,1.0s	**54.24**	**319**	*e*P	**P**	**22 25 54.9**	**0.0**
X16A	**Lo Mia Camp, P**	**55.02**	**323**	*e*P	**P**	**22 25 59.8**	**-0.9**
X16A				*e*pP	**pP**	**22 26 35.2**	**-0.8**
WUAZ	**Wupatki** 4.1nm,0.8s	**55.74**	**324**	*e*P	**P**	**22 26 06.5**	**+0.7**
KNB	**Kanab**	**57.62**	**324**	*e*P	**P**	**22 26 19.5**	**+0.5**
KNB				*e*pP	**pP**	**22 26 53.7**	**-1.0**
CCUT	**Cedar City**	**58.30**	**324**	*e*P	**P**	**22 26 23.7**	**-0.1**
CCUT				*e*pP	**pP**	**22 27 02.9**	**+3.3**
TPNV	**Topopah Spring** 3.7nm,0.9s	**59.63**	**322**	*e*P	**P**	**22 26 32.1**	**-0.9**
DUG	**Dugway, Tooele** 6.9nm,1.3s	**59.81**	**327**	*e*P	**P**	**22 26 34.1**	**0.0**
BW06	**Boulder Array**	**60.00**	**331**	*e*P	**P**	**22 26 35.2**	**-0.2**
BW06				*e*pP	**pP**	**22 27 11.9**	**+0.5**
PDAR	**Pinedale Array** 0.6nm,0.7s,baz=126,slow=7.5,SNR=4.6	**60.00**	**331**	P	**P**	**22 26 34.8**	**-0.6**
PDAR				pP	**pP**	**22 27 08.9**	**-2.4**
BOZ	**Bozeman (W)** 0.4nm,0.6s,baz=180,slow=4.1,SNR=2.4	**63.14**	**332**	*e*P	**P**	**22 26 56.1**	**-0.2**
BOZ				*e*pP	**PcP**	**22 27 32.6**	**+0.1**
MFID	**Camas Ranch** 5.6nm,1.0s	**63.67**	**327**	*e*P	**P**	**22 27 00.3**	**+0.6**
MFID				*e*pP	**pP**	**22 27 36.8**	**+0.6**
ORV	**Oroville** 8.7nm,1.2s	**64.48**	**321**	*e*P	**P**	**22 27 06.0**	**+0.9**
ORV				*e*pP	**pP**	**22 27 40.8**	**-0.7**
MSO	**Missoula**	**65.10**	**331**	*e*P	**P**	**22 27 09.4**	**+0.3**
MSO				*e*pP	**pP**	**22 27 46.1**	**+0.5**
LIC	**Lamto** 20nm,0.6s	**70.58**	**80**	*e*P	**P**	**22 27 43.1**	**-0.7**
TIC	**Toumodi**	**70.67**	**80**	*e*P	**P**	**22 27 43.7**	**-0.7**
DBIC	**Dimbokro** 16nm,0.4s,baz=248,slow=5.0,SNR=49	**70.83**	**80**	P	**P**	**22 27 45.0**	**-0.4**
KIC	**Kosan Boka** 41nm,0.7s	**70.88**	**80**	*e*P	**P**	**22 27 45.2**	**-0.5**
VNA1	**Neumayer--Stat**	**74.51**	**162**	P	P	**22 28 08.2**	**+2.2**
SNAA	**Sanae**	**76.50**	**162**	P	P	**22 28 18.9**	**+1.4**
SNAA	**Sanae** 112nm,0.4s	**76.50**	**162**	*e*P	P	**22 28 18.4**	**+0.9**
YKA	**Yellowknife Ar** 0.2nm,0.4s,baz=136,slow=6.1,SNR=3.3	**76.96**	**342**	P	**P**	**22 28 19.0**	**-0.9**
YKA				pP	**pP**	**22 28 56.7**	**-0.8**
ESDC	**Sonseca Array** 1.6nm,0.7s,baz=256,slow=5.8,SNR=9.6	**80.40**	**48**	P	**P**	**22 28 39.3**	**-0.1**
TAM	**Tamanrasset** 3.9nm,0.6s	**83.89**	**66**	*e*P	**P**	**22 28 59.0**	**+0.9**
KEST	**Kesra** 2.4nm,0.6s,baz=274,slow=4.3,SNR=8.1	**89.63**	**54**	P	**P**	**22 29 25.8**	**+0.2**
ILAR	**Eielson Array** 0.3nm,0.6s,baz=104,slow=2.2,SNR=4.1	**90.02**	**336**	pP	pP	22 30 05.5	+0.2
NB2	**NORSAR Subarra** comp=Z,0.7nm,0.6s,baz=261,slow=4.6	**94.94**	**29**	P	**P**	**22 29 49.9**	**+0.5**
NOA	**NORSAR Array B** comp=Z,0.7nm,0.7s,baz=259,slow=4.5,SNR=3.5	**94.94**	**29**	P	**P**	**22 29 50.0**	**+0.6**
BVAR	**Borovoye Array** comp=Z,0.5nm,0.6s,baz=270,slow=2.9,SNR=4.1	**126.93**	**26**	PKP	**PKPdf**	**22 35 29.7**	**-0.7**
ZALV	**Zalesovo Beam** comp=Z,0.3nm,0.3s,baz=222,slow=2.0,SNR=4.5	**131.36**	**16**	PKP	**PKPdf**	**22 35 38.6**	**-0.2**
ZALV				pPKP	**pPKPdf**	**22 36 19.3**	**+0.1**
KURK	**Kurchatov** comp=Z,1.2nm,0.6s,baz=320,slow=3.8,SNR=3.4	**132.04**	**23**	PKP	**PKPdf**	**22 35 40.4**	**+0.3**
KURBB	**Kurchatov Arra** comp=Z,0.3nm,0.6s,baz=313,slow=2.3,SNR=5.6	**132.08**	**23**	PKP	**PKPdf**	**22 35 40.4**	**+0.2**
MKAR	**Makanchi Array** comp=Z,0.6nm,0.7s,baz=13,slow=2.2,SNR=5.9	**136.64**	**23**	PKP	**PKPdf**	**22 35 48.7**	**-0.2**
ASAR	**Alice Springs** comp=Z,0.5nm,0.6s,baz=106,slow=2.6,SNR=4.3	**138.01**	**220**	PKP	**PKPdf**	**22 35 52.6**	**+0.4**
MJAR	**Matsushiro Arr** comp=Z,0.3nm,0.3s,baz=112,slow=1.1,SNR=4.0	**139.10**	**319**	SKPbc	**SKPbc**	**22 39 13.7**	**-1.1**
WRA	**Warramunga Arr** comp=Z,1

0.2nm,0.4s,baz=8.4,slow=15,SNR=2.5

DDA ***21*** *22:34:19.0, 43˚.33N×45˚.34E, h5km, Ml3.3*
IDC ***21*** *22:34:24.4±0.7, 43˚.04N×45˚.02E, h0km, mb3.6/7, mb1 3.7/12, mb1mx3.5/52, mbtmp3.7/12, ML3.1/5, MS2.8/9, Ms1 2.8/9, ms1mx2.6/48, Error ellipse: s-maj=12.4km s-min=9.3km az=14.0*
AZER ***21*** *22:34:24.1±0.1, 42˚.78N×44˚.71E, h5km, Error ellipse: s-maj=5.5km s-min=0.2km az=319.0*
TIF ***21*** *22:34:24.6, 42˚.99N×45˚.08E, h13km±1km*
MOS ***21*** *22:34:26.8±0.9, 42˚.97N×45˚.01E, h13km, mb4.0/4, Error ellipse: s-maj=6.6km s-min=4.5km az=41.4*
CSEM ***21*** *22:34:26.6±0.1, 42˚.99N×45˚.08E, h5km, mb3.5/5, Error ellipse: s-maj=4.2km s-min=3.1km az=18.0*
ISCJB ***21*** *22:34:27.9±0.3, 43˚.01N±0˚.02×45˚.03E±0˚.02, h21km±3km, mb3.5/8, MS2.7/5, Error ellipse: s-maj=3.1km s-min=2.4km az=12.1*
NNC ***21*** *22:34:28.6±4.7, 42˚.99N×45˚.01E, h46km±38km, mb3.5, Error ellipse: s-maj=67.0km s-min=34.8km az=129.0*

ISC 21 22:34:26.8±0.8, 42˚.98N±0˚.02×45˚.03E±0˚.01, h16km±6km, n168, σ1§84/272, mb3.5/8, MS2.7/5, 27C-27D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KMGR	**Komgaron**	**0.14**	**303**	⇓*i*	PG		**Pg**	**22 34 30.0**	**-0.8**
KMGR				*i*	S		**Sb**	**22 34 35.0**	**+1.0**
KMGR	**Komgaron**	**0.14**	**303**	*i*	Pg		**Pg**	**22 34 30.0**	**-0.8**
KMGR				*i*	Sg		**Sb**	**22 34 35.0**	**+1.0**
VLKR	**Vladikavkaz**	**0.27**	**285**	⇓*i*	PG		**Pg**	**22 34 32.5**	**-0.1**
VLKR				*e*	S		**Sb**	**22 34 38.7**	**+1.1**
VLKR	**Vladikavkaz**	**0.27**	**285**	*i*	Pg		**Pg**	**22 34 32.5**	**-0.1**
VLKR				*e*	Sg		**Sb**	**22 34 38.7**	**+1.1**
BTKR	**Batakoyurt**	**0.53**	**318**	*e*	PG		**Pg**	**22 34 37.4**	**+0.1**
BTKR				*e*	S		**Sn**	**22 34 47.6**	**-0.8**
BTKR	**Batakoyurt**	**0.53**	**318**	*e*	Pg		**Pg**	**22 34 37.4**	**+0.1**
BTKR				*e*	Sg		**Sn**	**22 34 47.6**	**-0.8**
LACR	**Lac**	**0.56**	**254**	*e*	PG		**Pg**	**22 34 36.8**	**-1.1**
LACR				*i*	S		**Sg**	**22 34 45.8**	**+0.4**
LACR	**Lac**	**0.56**	**254**	*e*	Pg		**Pg**	**22 34 36.8**	**-1.1**
LACR				*i*	Sg		**Sg**	**22 34 45.8**	**+0.4**
ARNR	**Ardon**	**0.58**	**290**	*e*	PG		**Pb**	**22 34 39.1**	**+0.5**
ARNR				*e*	S		**Sn**	**22 34 49.6**	**0.0**
GROC	**Groznyy**	**0.61**	**68**	*e*	PG		**Pb**	**22 34 39.2**	**+0.2**
GROC				*e*				22 34 48.0	
GROC	comp=Z,336nm,0.6s				pmax		pmax		
GROC	comp=N,1μm,0.6s				smax		smax		
GROC	comp=E,1μm,0.5s				smax		smax		
GROC	comp=E,1μm,0.9s				smax		smax		
GROC	**Groznyy**	**0.61**	**68**	*e*	Pg		**Pb**	**22 34 39.2**	**+0.2**
GROC	comp=E,336nm,0.6s			*e*	Sg		**Sb**	**22 34 48.0**	**+0.7**
GROC	comp=E,1μm,0.6s								
GUDG	**Gudauri**	**0.66**	**218**		P		**Pg**	**22 34 38.7**	**-1.0**
GUDG					S		**Sg**	**22 34 48.5**	**+0.1**
GUDG	**Gudauri**	**0.66**	**218**		P		**Pg**	**22 34 38.7**	**-1.0**
GUDG					S		**Sg**	**22 34 48.5**	**+0.1**
KORR	**Kora**	**0.71**	**279**	*i*	PG		**Pn**	**22 34 42.5**	**+0.2**
KORR				*e*	S		**Sn**	**22 34 54.4**	**+1.5**
KORR	**Kora**	**0.71**	**279**	*i*	Pg		**Pn**	**22 34 42.5**	**+0.2**
KORR				*e*	Sg		**Sn**	**22 34 54.4**	**+1.5**
TRKR	**Terskaya**	**0.77**	**344**	⇓*i*	PG		**Pn**	**22 34 44.0**	**+0.9**
TRKR				*e*	S		**Sn**	**22 34 57.5**	**+3.1**
TRKR	**Terskaya**	**0.77**	**344**	*i*	Pg		**Pn**	**22 34 44.0**	**+0.9**
TRKR				*e*	Sg		**Sn**	**22 34 57.5**	**+3.1**
STDR	**Stavd-Durt**	**0.81**	**299**	*i*	PG		**Pn**	**22 34 43.7**	**+0.2**
STDR				*e*	S		**Sn**	**22 34 57.0**	**+1.8**
STDR	**Stavd-Durt**	**0.81**	**299**	*i*	Pg		**Pn**	**22 34 43.7**	**+0.2**
STDR				*e*	Sg		**Sn**	**22 34 57.0**	**+1.8**
ZEI	**Tsey**	**0.85**	**257**	*e*	PG		**Pb**	**22 34 43.4**	**+0.1**
ZEI				*e*	S		**Sn**	**22 34 56.4**	**-0.1**
ZEI	**Tsey**	**0.85**	**257**	*e*	Pg		**Pb**	**22 34 43.4**	**+0.1**
ZEI				*e*	Sg		**Sn**	**22 34 56.4**	**-0.1**
DUS	**Dusheti**	**0.92**	**195**		P		**Pb**	**22 34 44.4**	**0.0**
DUS					S		**Sg**	**22 34 58.3**	**+1.5**
DUS	**Dusheti**	**0.92**	**195**		PG		**Pb**	**22 34 44.4**	**0.0**
DUS					S		**Sg**	**22 34 58.3**	**+1.5**
DUS	**Dusheti**	**0.92**	**195**		P		**Pb**	**22 34 44.4**	**0.0**
DUS					S		**Sg**	**22 34 58.3**	**+1.5**
LSNR	**Lesken**	**0.93**	**289**	*e*	PG		**Pn**	**22 34 46.6**	**+1.3**
LSNR				*e*	S		**Sn**	**22 35 01.8**	**+3.5**
LSNR	**Lesken**	**0.93**	**289**	*e*	Pg		**Pn**	**22 34 46.6**	**+1.3**
LSNR				*e*	Sg		**Sn**	**22 35 01.8**	**+3.5**
PRTR	**Priterechnaya**	**0.94**	**325**	⇓*i*	PG		**Pn**	**22 34 47.2**	**+1.8**
PRTR				*e*	S		**Sn**	**22 35 02.8**	**+4.2**
PRTR	**Priterechnaya**	**0.94**	**325**	*i*	Pg		**Pn**	**22 34 47.2**	**+1.8**
PRTR				*e*	Sg		**Sn**	**22 35 02.8**	**+4.2**
DIGR	**Digorskoe uzhe**	**1.06**	**266**	⇓*i*	PG		**Pb**	**22 34 46.7**	**-0.3**
DIGR				*e*	S		**Sn**	**22 35 02.3**	**+0.4**
DIGR	**Digorskoe uzhe**	**1.06**	**266**	*i*	Pg		**Pb**	**22 34 46.7**	**-0.3**
DIGR				*e*	Sg		**Sn**	**22 35 02.3**	**+0.4**
NCK	**Nalchik**	**1.17**	**297**	*d*	PG		**Pg**	**22 34 49.8**	**+0.5**
NCK	**Nalchik**	**1.17**	**297**	*i*	Pg		**Pg**	**22 34 49.8**	**+0.5**
DLMR	**Dylym**	**1.18**	**85**	⇓*i*	PG		**Pn**	**22 34 48.0**	**-0.7**
DLMR				*e*	S		**Sb**	**22 35 04.0**	**+0.2**
DLMR	comp=Z,274nm,0.3s				pmax		pmax		
DLMR	**Dylym**	**1.18**	**85**	*i*	Pg		**Pn**	**22 34 48.0**	**-0.7**
DLMR	comp=Z,274nm,0.3s			*e*	Sg		**Sb**	**22 35 04.0**	**+0.2**
ONI	**Oni**	**1.22**	**252**		P		**Pn**	**22 34 48.8**	**-0.5**
ONI					S		**Sb**	**22 35 05.6**	**+0.4**
ONI	**Oni**	**1.22**	**252**		PG		**Pn**	**22 34 48.8**	**-0.5**
ONI					S		**Sb**	**22 35 05.6**	**+0.4**
ONI	**Oni**	**1.22**	**252**		P		**Sb**	**22 34 48.8**	**-0.5**
ONI					S		**Sb**	**22 35 05.6**	**+0.4**
SEAG	**Tbilisi Sea**	**1.23**	**188**		P		**Pn**	**22 34 48.4**	**-0.9**
SEAG					S		**Sb**	**22 35 06.2**	**+1.0**
SEAG	**Tbilisi Sea**	**1.23**	**188**		P		**Pn**	**22 34 48.4**	**-0.9**
SEAG					S		**Sb**	**22 35 06.2**	**+1.0**
TBLG	**Delisi**	**1.27**	**190**		P		**Pn**	**22 34 48.8**	**-1.1**
TBLG					S		**Sb**	**22 35 07.0**	**+0.7**
TBLG	**Delisi**	**1.27**	**190**		PG		**Pn**	**22 34 48.6**	**-1.3**
TBLG					S		**Sb**	**22 35 06.7**	**+0.4**
TBLG	**Delisi**	**1.27**	**190**		P		**Pn**	**22 34 48.6**	**-1.3**
TBLG					S		**Sb**	**22 35 06.7**	**+0.4**
XNZR	**Khunzakh**	**1.31**	**109**	*e*	PG		**Pn**	**22 34 50.0**	**-0.6**
XNZR				*e*	S		**Sb**	**22 35 08.0**	**+0.2**
XNZR	**Khunzakh**	**1.31**	**109**	*e*	Pg		**Pn**	**22 34 50.0**	**-0.6**
XNZR				*e*	Sg		**Sb**	**22 35 08.0**	**+0.2**
DBC	**Dubki**	**1.32**	**88**	*e*	PG		Pg	22 35 00.5	+8.2
DBC	**Dubki**	**1.32**	**88**	*e*	Pg		Pg	22 35 00.5	+8.2
UNCR	**Uncukul**	**1.33**	**101**	⇓*i*	PG		**Pn**	**22 34 50.5**	**-0.2**
UNCR				*i*	S		**Sg**	**22 35 11.2**	**+1.6**
UNCR	comp=Z,3μm,0.2s				pmax		pmax		
UNCR	**Uncukul**	**1.33**	**101**	*i*	Pg		**Pn**	**22 34 50.5**	**-0.2**
UNCR	comp=Z,3μm,0.2s			*i*	Sg		**Sg**	**22 35 11.2**	**+1.6**
KRNR	**Karanay**	**1.39**	**96**	*e*	PG		**Pn**	**22 34 52.0**	**+0.4**
KRNR				*e*	S		**Sg**	**22 35 14.0**	**+2.3**
KRNR	**Karanay**	**1.39**	**96**	*e*	Pg		**Pn**	**22 34 52.0**	**+0.4**
KRNR				*e*	Sg		**Sg**	**22 35 14.0**	**+2.3**
ARKR	**Arakani**	**1.50**	**104**	*e*	PG		**Pn**	**22 34 53.0**	**-0.1**
ARKR				*e*	S		**Sb**	**22 35 14.0**	**+1.0**
ARKR	**Arakani**	**1.50**	**104**	*e*	Pg		**Pn**	**22 34 53.0**	**-0.1**
ARKR				*e*	Sg		**Sb**	**22 35 14.0**	**+1.0**
GNBR	**Gunib**	**1.54**	**112**	⇑*i*	PG		**Pn**	**22 34 53.5**	**-0.2**
GNBR				*e*	S		**Sn**	**22 35 14.0**	**+0.5**
GNBR	**Gunib**	**1.54**	**112**	*i*	Pg		**Pn**	**22 34 53.5**	**-0.2**
GNBR				*e*	Sg		**Sn**	**22 35 14.0**	**+0.5**
DGRG	**David-gareji**	**1.55**	**170**		P		**Pn**	**22 34 54.4**	**+0.6**
DGRG					S		**Sg**	**22 35 16.9**	**+0.2**
DGRG	**David-gareji**	**1.55**	**170**		PG		**Pn**	**22 34 54.4**	**+0.6**
DGRG					S		**Sg**	**22 35 16.9**	**+0.2**
DGRG	**David-gareji**	**1.55**	**170**		P		**Pn**	**22 34 54.4**	**+0.6**
DGRG					S		**Sg**	**22 35 16.9**	**+0.2**
NEY	**Neytrino**	**1.71**	**280**	*i*	PN		**Pb**	**22 34 58.1**	**+0.2**
NEY				*i*	S		**Sg**	**22 35 22.0**	**+0.1**
NEY	comp=Z,237nm,0.5s				pmax		pmax		
NEY	comp=N,436nm,0.3s				smax		smax		
NEY	**Neytrino**	**1.71**	**280**	*i*	Pn		**Pb**	**22 34 58.1**	**+0.2**
NEY	comp=N,237nm,0.5s			*i*	Sg		**Sg**	**22 35 22.0**	**+0.1**
KBZ	**Khabaz**	**1.73**	**296**		Pg		**Pn**	**22 34 57.1**	**+1.0**
KBZ	comp=N,9.7nm,0.3s,baz=130,slow=11,SNR=64				Lg		Lg	22 35 22.4	
ZKTA	comp=N,32nm,0.3s,baz=323,slow=20,SNR=15 **Zakatala**	**1.79**	**138**	⇑	P		**Pn**	**22 34 57.6**	**+0.6**
ZKTA	SNR=145			⇑	S		**Sg**	**22 35 27.0**	**+2.6**
QZX	**Qazax, Azerbai**	**1.94**	**172**	⇓	P		**Pn**	**22 34 59.2**	**+0.1**
QZX	SNR=30			⇓	S		**Sb**	**22 35 25.9**	**+0.2**
QZX	**Qazax, Azerbai**	**1.94**	**172**		P		**Pn**	**22 34 59.2**	**+0.1**
QZX	SNR=30				S		**Sb**	**22 35 25.9**	**+0.2**
AKH	**Akhalkalaki**	**1.94**	**217**		P		**Pn**	**22 35 00.1**	**+0.8**
AKH					S		**Sb**	**22 35 25.6**	**-0.3**
AKH	**Akhalkalaki**	**1.94**	**217**		PN		**Pn**	**22 35 00.1**	**+0.8**
AKH	**Akhalkalaki**	**1.94**	**217**		Pn		**Pn**	**22 35 00.1**	**+0.8**
AKH					S		**Sb**	**22 35 25.6**	**-0.3**
KVAR	**Kislovodsk Arr**	**1.96**	**301**		Pn		**Pb**	**22 35 01.1**	**-1.0**
KIV	baz=138,slow=3.4,SNR=69 **Kislovodsk**	**1.96**	**301**	*e*	*i*	PN	**Pn**	**22 35 00.3**	**+0.8**
KIV				*e*	S		**Sg**	**22 35 31.9**	**+1.9**
KIV	comp=Z,74nm,0.6s				pmax		pmax		
KIV	**Kislovodsk** comp=Z,74nm,0.6s	**1.96**	**301**	*i*	Pn		**Pn**	**22 35 00.3**	**+0.8**
KIV				*e*	Sg		**Sg**	**22 35 31.9**	**+1.9**
BGD	**Bogdanovka**	**2.02**	**212**		P		**Pn**	**22 35 01.5**	**+1.1**
BGD					S		**Sn**	**22 35 27.2**	**+1.9**
BGD	**Bogdanovka**	**2.02**	**212**		P		**Pn**	**22 35 01.5**	**+1.1**
BGD					S		**Sn**	**22 35 27.2**	**+1.9**
URKR	**Urkarakh**	**2.09**	**112**	*e*	PN		**Pb**	**22 35 04.0**	**-0.4**
URKR				*e*	S		**Sg**	**22 35 34.0**	**0.0**
URKR	**Urkarakh**	**2.09**	**112**	*e*	Pn		**Pb**	**22 35 04.0**	**-0.4**
URKR				*e*	Sb		**Sg**	**22 35 34.0**	**0.0**
CHVG	**Ch'k'valeri**	**2.18**	**264**		P		**Pg**	**22 35 07.9**	**-0.7**
CHVG					S		**Sg**	**22 35 37.5**	**+0.6**
EPOS	**Posof**	**2.26**	**230**	*i*	P		**Pn**	**22 35 05.5**	**+1.9**
EPOS				*i*	S		**Sb**	**22 35 35.0**	**0.0**
EPOS	**Posof**	**2.26**	**230**		P		**Pn**	**22 35 05.5**	**+1.9**
EPOS					S		**Sb**	**22 35 35.0**	**0.0**
GDB	**GEDABAY** SNR=55	**2.32**	**166**	⇓	P		**Pn**	**22 35 04.3**	**-0.2**
GDB				⇓	S		**Sb**	**22 35 36.3**	**-0.6**
GDB	**GEDABAY** SNR=55	**2.32**	**166**		P		**Pn**	**22 35 04.3**	**-0.2**
GDB					S		**Sb**	**22 35 36.3**	**-0.6**
SEKA	**Sheki** SNR=112	**2.40**	**137**	⇑	P		**Pn**	**22 35 07.2**	**+1.8**
SEKA				⇑	S		**Sb**	**22 35 41.7**	**+2.8**
SEKA	**Sheki** SNR=112	**2.40**	**137**		P		**Pn**	**22 35 07.2**	**+1.8**
SEKA					S		**Sb**	**22 35 41.7**	**+2.8**
AKT	**Akhty**	**2.50**	**126**	⇑*i*	PN		**Pn**	**22 35 09.2**	**+2.2**
AKT				*e*	S		**Sb**	**22 35 42.7**	**+0.6**
AKT	**Akhty**	**2.50**	**126**	*i*	Pn		**Pn**	**22 35 09.2**	**+2.2**
AKT				*e*	Sn		**Sb**	**22 35 42.7**	**+0.6**
GOF	**Gofitskoye**	**2.52**	**326**	⇑*e*	PN		**Pn**	**22 35 08.9**	**+1.8**
GOF				*e*	S		**Sg**	**22 35 45.5**	**-2.4**
GOF	comp=Z,118nm,1.0s				pmax		pmax		
GOF	comp=N,411nm,0.9s				pmax		pmax		
GOF	comp=E,325nm,0.9s				pmax		pmax		
GOF	**Gofitskoye** comp=E,411nm,0.9s	**2.52**	**326**	*e*	Pn		**Pn**	**22 35 08.9**	**+1.8**
GOF				*e*	Sb		**Sg**	**22 35 45.5**	**-2.4**
GANJ	**Ganja** SNR=33	**2.52**	**157**	⇓	P		**Pn**	**22 35 08.0**	**+0.8**
GANJ				⇓	S		**Sb**	**22 35 41.1**	**-1.5**
GANJ	**Ganja** SNR=33	**2.52**	**157**		P		**Pn**	**22 35 08.0**	**+0.8**
GANJ					S		**Sb**	**22 35 41.1**	**-1.5**
DRN	**Derbent**	**2.62**	**110**	*e*	PN		**Pb**	**22 35 13.3**	**0.0**
DRN				*e*	S		**Sg**	**22 35 50.0**	**-1.0**
DRN	**Derbent**	**2.62**	**110**	*e*	Pn		**Pb**	**22 35 13.3**	**0.0**
DRN				*e*	Sb		**Sg**	**22 35 50.0**	**-1.0**
KSMR	**Kasumkent**	**2.68**	**120**	*e*	PN		**Pb**	**22 35 13.0**	**-1.4**
KSMR				*e*	S		**Sg**	**22 35 49.0**	**+1.9**
KSMR	**Kasumkent**	**2.68**	**120**	*e*	Pn		**Pb**	**22 35 13.0**	**-1.4**
KSMR				*e*	Sn		**Sb**	**22 35 49.0**	**+1.9**
MNGR	**Mingechevir, A** SNR=5.7	**2.69**	**144**	⇑	P		**Pn**	**22 35 11.5**	**+2.1**
MNGR				⇑	S		**Sb**	**22 35 47.3**	**+0.1**
MNGR	**Mingechevir, A** SNR=5.7	**2.69**	**144**		P		**Pn**	**22 35 11.5**	**+2.1**
MNGR					S		**Sb**	**22 35 47.3**	**+0.1**
QSAR	**Qusar** SNR=17	**2.81**	**120**	⇓	P		**Pb**	**22 35 14.8**	**-1.9**
QSAR				⇑	S		**Sb**	**22 35 52.2**	**+1.3**
GNI	**Garni**	**2.84**	**184**		Pn		**Pn**	**22 35 14.9**	**+3.3**
GNI	comp=E,25nm,0.3s,baz=315,slow=4.0,SNR=74				Lg		Lg	22 35 53.8	
GNI	comp=E,49nm,0.3s,baz=347,slow=14,SNR=17				LR		LR	22 36 31.1	
GNI	comp=E,200nm,18.4s,baz=49,slow=44 **Garni**	**2.84**	**184**	*c*	PN		**Pn**	**22 35 14.7**	**+3.1**
GNI	**Garni**	**2.84**	**184**	*i*	Pn		**Pn**	**22 35 14.7**	**+3.1**
DIGO	**Kars**	**2.85**	**206**	*i*	P		**Pn**	**22 35 13.0**	**+1.2**
DIGO				*i*	S		**Sb**	**22 35 54.9**	**+2.8**
DIGO	**Kars**	**2.85**	**206**		P		**Pn**	**22 35 13.0**	**+1.2**
QBL	**Gabala** SNR=15	**2.92**	**133**	⇓	P		**Pn**	**22 35 15.3**	**+2.7**
QBL				⇑	S		**Sb**	**22 35 53.2**	**-0.7**
QBL	**Gabala** SNR=15	**2.92**	**133**		P		**Pn**	**22 35 15.3**	**+2.7**
QBL					S		**Sb**	**22 35 53.2**	**-0.7**
ARTV	**Artvin**	**2.92**	**233**	*i*	P		**Pn**	**22 35 14.2**	**+1.4**
ARTV				*i*	S		**Sb**	**22 35 55.9**	**+1.7**
ARTV	**Artvin**	**2.92**	**233**		P		**Pn**	**22 35 14.2**	**+1.4**
XNQ	**Khinaliq** SNR=8.3	**2.94**	**127**	⇓	P		**Pn**	**22 35 16.0**	**+3.0**
XNQ				⇑	S		**Sb**	**22 35 56.1**	**+1.4**
XNQ	**Khinaliq** SNR=8.3	**2.94**	**127**		P		**Pn**	**22 35 16.0**	**+3.0**
XNQ					S		**Sb**	**22 35 56.1**	**+1.4**
DBOC	**Borcka**	**2.98**	**238**	*i*	P		**Pn**	**22 35 15.2**	**+1.7**
DBOC				*i*	S		**Sg**	**22 36 02.3**	**-0.3**
DBOC	**Borcka**	**2.98**	**238**		P		**Pn**	**22 35 15.2**	**+1.7**
DAGI	**Agillar**	**3.00**	**232**	*i*	P		**Pn**	**22 35 15.5**	**+1.7**
DAGI				*i*	S		**Sg**	**22 36 01.8**	**-1.3**
QUBA	**Quba, Azerbaij** SNR=7.3	**3.04**	**121**	⇑	P		**Pb**	**22 35 18.2**	**-2.4**
QUBA				⇑	S		**Sb**	**22 35 59.3**	**+1.8**
QUBA	**Quba, Azerbaij** SNR=7.3	**3.04**	**121**		P		**Pb**	**22 35 18.2**	**-2.4**
QUBA					S		**Sb**	**22 35 59.3**	**+1.8**
BRDA	**Brd** SNR=6.4	**3.16**	**149**	⇓	P		**Pn**	**22 35 17.6**	**+1.8**
BRDA				⇑	S		**Sb**	**22 35 59.8**	**-0.9**
BRDA	**Brd** SNR=6.4	**3.16**	**149**		P		**Pn**	**22 35 17.6**	**+1.8**
BRDA					S		**Sb**	**22 35 59.8**	**-0.9**
DDEM	**Demirkent**	**3.21**	**231**	*i*	P		**Pn**	**22 35 19.9**	**+3.2**
DDEM				*i*	S		**Sg**	**22 36 08.5**	**-1.5**
DDEM	**Demirkent**	**3.21**	**231**		P		**Pn**	**22 35 19.9**	**+3.2**
PQL	**Pirkuli** SNR=8.8	**3.45**	**128**	⇓	P		**Pn**	**22 35 23.7**	**+3.8**
PQL	**Pirkuli** SNR=8.8	**3.45**	**128**		P		**Pn**	**22 35 23.7**	**+3.8**
ATGJ	**Altiaghaj** SNR=8.1	**3.60**	**125**	⇓	P		**Pn**	**22 35 24.4**	**+2.3**
ATGJ	**Altiaghaj** SNR=8.1	**3.60**	**125**		P		**Pn**	**22 35 24.4**	**+2.3**
GBS	**Qobustan** SNR=9.8	**3.81**	**129**	⇓	P		**Pn**	**22 35 28.2**	**+3.3**
GBS	**Qobustan** SNR=9.8	**3.81**	**129**		P		**Pn**	**22 35 28.2**	**+3.3**
GLBA	**Cilabad** SNR=3.4	**4.52**	**145**	⇓	P		**Pn**	**22 35 37.0**	**+2.5**
GLBA				⇓	S		**Sn**	**22 36 30.6**	**+3.9**
GLBA	**Cilabad** SNR=3.4	**4.52**	**145**		P		**Pn**	**22 35 37.0**	**+2.5**
GLBA					S		**Sn**	**22 36 30.6**	**+3.9**
LRK	**Lerik** SNR=3.1	**5.01**	**149**	⇑	P		**Pn**	**22 35 43.2**	**+1.7**
LRK				⇑	S		**Sn**	**22 36 42.3**	**+3.2**
LRK	**Lerik** SNR=3.1	**5.01**	**149**		P		**Pn**	**22 35 43.2**	**+1.7**
LRK					S		**Sn**	**22 36 42.3**	**+3.2**
LKRN	**Lenkeran, Azer** SNR=3.3	**5.13**	**145**	⇑	P		**Pn**	**22 35 44.6**	**+1.7**
LKRN	**Lenkeran, Azer** SNR=3.3	**5.13**	**145**		P		**Pn**	**22 35 44.6**	**+1.7**
GEYT	**Alibeck** comp=E,0.5nm,0.3s,baz=303,slow=16,SNR=5.4	**11.17**	**112**		Pn		**Pn**	**22 37 05.5**	**-0.4**
AKTK	**Aktyubinsk** comp=E,33nm,20.1s	**11.61**	**46**		P		**Pn**	**22 37 08.8**	**-3.0**
AKTO	**Aktyubinsk** comp=E,0.2nm,0.3s,baz=221,slow=11,SNR=3.4	**11.61**	**46**		Pn		**Pn**	**22 37 08.8**	**-3.0**
AKTO	comp=E,0.1nm,0.3s,baz=103,slow=19,SNR=2.2				Sn		**Sn**	**22 39 14.5**	**-6.5**
AKTO	comp=E,33nm,20.1s,baz=233,slow=44				LR		LR	22 42 59.7	
AKTO	**Aktyubinsk** comp=E,2.6nm,0.8s	**11.61**	**46**	⇑	Pn		**Pn**	**22 37 12.1**	**+0.3**
AKTO	comp=E,3.6nm,0.9s			⇑	Sn		**Sn**	**22 39 19.6**	**-1.4**
AKTO	**Aktyubinsk** comp=E,2.6nm,0.8s	**11.61**	**46**		Pn		**Pn**	**22 37 12.1**	**+0.3**
AKTO	comp=E,3.6nm,0.9s				Sn		**Sn**	**22 39 19.6**	**-1.4**
AB31	**Akbulak array** comp=E,1.3nm,0.6s,baz=244,slow=12,SNR=28	**12.10**	**54**		Pn		**Pn**	**22 37 17.5**	**-0.9**
AB31	comp=E,0.6nm,0.4s,baz=11,slow=42,SNR=4.9			⇑	Sn		**Sn**	**22 39 33.3**	**+0.5**
AB31	**Akbulak array** comp=E,1.3nm,0.6s,SNR=28	**12.10**	**54**		Pn		**Pn**	**22 37 17.5**	**-0.9**
AB31	comp=E,0.6nm,0.4s,SNR=4.9				Sn		**Sn**	**22 39 33.3**	**+0.5**
OBN	**Obninsk** comp=E,39nm,18.6s,baz=94,slow=42	**13.34**	**339**		LR		LR	22 43 46.2	
OBN	**Obninsk**	**13.34**	**339**	⇓*e*	P		**Pn**	**22 37 36.0**	**+0.7**
OBN	comp=Z,4.0nm,0.6s				pmax		pmax		
OBN	comp=Z,62nm,17.0s				MLR		MLR		
OBN	**Obninsk** comp=Z,62nm,17.0s	**13.34**	**339**	*e*	P		**Pn**	**22 37 36.0**	**+0.7**
ARU	**Arti** comp=Z,0.0nm,0.3s,baz=279,slow=19,SNR=3.2	**16.01**	**28**		Pn		**Pn**	**22 38 04.8**	**-6.3**
ARU	comp=Z,0.0nm,0.3s,baz=108,slow=20,SNR=2.0				Sn		**Sn**	**22 40 59.7**	**-8.6**
ARU	comp=Z,31nm,18.2s,baz=264,slow=45				LR		LR	22 46 20.4	
ARU	**Arti**	**16.01**	**28**	*c*	*i*	P	**Pn**	**22 38 07.3**	**-3.9**
ARU						S	**Sn**	**22 41 02.0**	**-6.3**
ARU	comp=Z,6.0nm,1.7s				pmax		pmax		
APE	**Apeiranthos**	**16.05**	**255**	⇑	*e*	P	**Pn**	**22 38 10.8**	**-1.0**
APE	**Apeiranthos**	**16.05**	**255**		*e*	P	**Pn**	**22 38 10.8**	**-1.0**
SVE	**Sverdlovsk**	**17.06**	**30**		*e*	P	**Pn**	**22 38 18.1**	**-6.4**
SVE	comp=Z,8.0nm,1.0s				pmax		pmax		
KLMR	**Klimovskoe**	**18.21**	**351**		*e*	P	**Pn**	**22 38 38.3**	**-0.3**
KLMR	comp=Z,10.0nm,1.4s				pmax		pmax		
KLMR	**Klimovskoe** comp=Z,10.0nm,1.4s	**18.21**	**351**		*e*	P	**Pn**	**22 38 38.3**	**-0.3**
KK31	**Karatay Array** comp=Z,0.8nm,0.5s,baz=292,slow=12,SNR=22	**18.61**	**81**		P		**P**	**22 38 41.9**	**-1.5**
KK31	**Karatay Array** comp=Z,0.8nm,0.5s,SNR=22	**18.61**	**81**		P		**P**	**22 38 41.9**	**-1.5**
VSU	**Vasula**	**19.24**	**330**	⇓	*e*	P	**Pn**	**22 38 53.2**	**+2.0**
VSU	**Vasula**	**19.24**	**330**		*e*	P	**Pn**	**22 38 53.2**	**+2.0**
BRVK	**Borovoye** comp=Z,1.0nm,0.6s	**19.57**	**50**	⇑	P		**P**	**22 38 52.5**	**-1.4**
BRVK	**Borovoye**	**19.57**	**50**	⇓	*e*	P	**Pn**	**22 38 59.4**	**+4.2**
BRVK	comp=Z,4.0nm,0.9s				pmax		pmax		
BRVK	**Borovoye** comp=Z,1.0nm,0.6s	**19.57**	**50**		P		**P**	**22 38 52.5**	**-1.4**
BVA0	**Borovoye Array** comp=Z,1.8nm,0.9s,baz=270,slow=9.2,SNR=9.4	**19.62**	**50**	⇓	P		**P**	**22 38 53.2**	**-1.2**
BVA0	**Borovoye Array** comp=Z,1.8nm,0.9s,SNR=9.4	**19.62**	**50**		P		**P**	**22 38 53.2**	**-1.2**
BVAR	**Borovoye Array** comp=Z,0.4nm,0.3s,baz=249,slow=13,SNR=9.1	**19.62**	**50**		P		**P**	**22 38 54.0**	**-0.4**
BVAR	**Borovoye Array**	**19.62**	**50**		P		**P**	**22 38 54.0**	**-0.4**
BVAR	**Borovoye Array**	**19.62**	**50**		P		**P**	**22 38 54.0**	**-0.4**
AAK	**Ala-Archa** comp=Z,2.1nm,0.4s,baz=292,slow=4.

TUWZ				SN	Sn	22 42 38.0	-0.8	
TUWZ				AML	AML	22 42 38.7		
DSZ	**Denniston Nort**	**0.91**	**236**	⇓PN	Pn	22 42 17.9	-0.5	
BSWZ	**Blackbirch Sta**	**0.93**	**121**	PN	Pn	22 42 18.9	+0.4	
BSWZ				SN	Sn	22 42 39.3	-0.2	
BSWZ				AML	AML	22 42 39.9		
DUWZ	**D'Urville Isla**	**0.95**	**63**	⇑PN	Pn	22 42 18.7	-0.1	
TCW	**Tory Channel**	**1.10**	**89**	PN	Pn	22 42 19.9	+0.1	
TCW				SN	Sn	22 42 40.6	-1.2	
TCW				AML	AML	22 42 42.2		
KHZ	**Kahutara**	**1.29**	**155**	⇓PN	Pn	22 42 21.4	+0.1	
KHZ				SN	Sn	22 42 43.4	-1.3	
KHZ				AML	AML	22 42 43.8		
BHW	**Baring Head**	**1.56**	**97**	PN	Pn	22 42 29.6	-0.2	
BHW				AML	AML	22 42 48.0		
BHW				AML	AML	22 42 49.3		
LTZ	**Lake Taylor**	**1.59**	**195**	⇓PN	Pn	22 42 24.1	-0.1	
KIW	**Kapiti Island**	**1.63**	**77**	PN	Pn	22 42 24.3	-0.3	
KIW				AML	AML	22 42 50.0		
KIW				AML	AML	22 43 02.8		
CAW	**Cannon Point**	**1.71**	**86**	PN	Pn	22 42 25.0	-0.3	
CAW				AML	AML	22 42 50.6		
CAW				AML	AML	22 42 51.2		
MSWZ	**Moikau Station**	**1.84**	**96**	PN	Pn	22 42 26.4	-0.3	
MSWZ				AML	AML	22 42 53.3		
MSWZ				AML	AML	22 42 54.4		
PLWZ	**Palliser**	**1.86**	**101**	PN	Pn	22 42 26.7	-0.3	
PLWZ				AML	AML	22 42 54.5		
PLWZ				AML	AML	22 42 54.6		
PAWZ	**Paruwai Farm**	**1.97**	**95**	PN	Pn	22 42 27.8	-0.4	
PAWZ				AML	AML	22 42 57.3		
MTW	**Mount Morrison**	**2.03**	**88**	⇑PN	Pn	22 42 28.4	-0.4	
MTW				AML	AML	22 42 57.6		
MTW				AML	AML	22 42 57.7		
HOWZ	**Holdsworth Sta**	**2.07**	**81**	PN	Pn	22 42 28.8	-0.4	
OXZ	**Oxford**	**2.16**	**195**	⇓PN	Pn	22 42 29.3	-0.8	
TRWZ	**Traveller**	**2.17**	**95**	PN	Pn	22 42 30.2	-0.1	
TRWZ				AML	AML	22 43 01.4		
MRZ	**Mangatainoka R**	**2.17**	**75**	⇑PN	Pn	22 42 29.6	-0.7	
MRZ				AML	AML	22 43 00.5		
WAZ	**Wanganui**	**2.23**	**49**	PN	Pn	22 42 30.7	-0.2	
WVZ	**Waitaha Valley**	**2.39**	**219**	⇑PN	Pn	22 42 31.8	-1.0	
POWZ	**Post Office Ro**	**2.40**	**70**	PN	Pn	22 42 32.0	-0.9	
MQZ	**McQueen's Vall**	**2.46**	**183**	PN	Pn	22 42 32.2	-1.4	
MQZ				SN	Sn	22 43 02.8	-3.7	
VRZ	**Vera Road**	**2.59**	**36**	⇑PN	Pn	22 42 33.5	-1.6	
RPZ	**Rata Peaks**	**2.79**	**207**	⇓PN	Pn	22 42 36.4	-1.0	
WNVZ	**Wahianoa**	**2.86**	**49**	PN	Pn	22 42 37.4	-1.2	
ANWZ	**Angora Road**	**2.89**	**75**	PN	Pn	22 42 38.1	-0.5	
PNHZ	**Pukenui**	**2.90**	**64**	PN	Pn	22 42 37.7	-1.2	
HIZ	**Hauiti**	**3.15**	**31**	PN	Pn	22 42 39.7	-2.1	
FOZ	**Fox Glacier**	**3.19**	**223**	PN	Pn	22 42 40.4	-1.8	
LBZ	**Lake Benmore**	**3.69**	**211**	PN	Pn	22 42 47.1	-1.4	
JCZ	**Jackson Bay**	**4.10**	**225**	PN	Pn	22 42 52.2	-1.6	
ODZ	**Otahua Downs**	**4.12**	**202**	PN	Pn	22 42 52.9	-1.0	

ISK ***21*** *22:47:58.7, 36˚.93N×33˚.96E, h8km, MD2.8*
ISCJB ***21*** *22:47:59.0±0.5, 36˚.94N±0˚.03×33˚.96E±0˚.03, h6km±6km, Error ellipse: s-maj=5.6km s-min=3.5km az=140.6*
CSEM ***21*** *22:47:59.3±0.1, 36˚.95N×33˚.96E, h8km, MD2.8, Error ellipse: s-maj=2.8km s-min=2.0km az=132.0*
DDA ***21*** *22:47:59.2, 36˚.95N×33˚.98E, h7km, Ml2.8*

ISC 21 22:47:59.2±1.1, 36˚.94N±0˚.03×33˚.97E±0˚.02, h10km±10km, n32, σ0°46/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op	ISC	h	m	s	ISC
MERS	**Mersin**	**0.45**	**99**	*e*PG	**Pg**	**22**	**48**	**08.1**	**0.0**
MERS	**Mersin**	**0.45**	**99**	*e*Pg	**Pg**	**22**	**48**	**08.1**	**0.0**
KIZK	**Mersin**	**0.48**	**163**	*i* P	**Pg**	**22**	**48**	**09.1**	**+0.5**
KIZK				*i* S	**Sb**	**22**	**48**	**16.2**	**-0.7**
KIZK	**Mersin**	**0.48**	**163**	P	**Pg**	**22**	**48**	**09.1**	**+0.5**
KIZK				S	**Sb**	**22**	**48**	**16.2**	**-0.7**
KERG	**Konya-Eregli**	**0.49**	**15**	*i* P	**Pg**	**22**	**48**	**08.9**	**+0.2**
KERG				*i* S	**Sb**	**22**	**48**	**16.4**	**-0.8**
KERG	**Konya-Eregli**	**0.49**	**15**	P	**Pg**	**22**	**48**	**08.9**	**+0.2**
KERG				S	**Sb**	**22**	**48**	**16.4**	**-0.8**
DED	**Mersin**	**0.67**	**88**	*i* P	**Pg**	**22**	**48**	**11.8**	**-0.4**
DED				*i* S	**Sb**	**22**	**48**	**21.9**	**-0.4**
GULE	**Gulek**	**0.73**	**62**	*i* P	**Pg**	**22**	**48**	**13.4**	**0.0**
GULE				*i* S	**Sg**	**22**	**48**	**23.0**	**0.0**
GULE	**Gulek**	**0.73**	**62**	P	**Pg**	**22**	**48**	**13.4**	**0.0**
GULE				S	**Sg**	**22**	**48**	**23.0**	**0.0**
IKL	**Isikli**	**0.74**	**198**	*e*PG	**Pg**	**22**	**48**	**13.3**	**-0.2**
IKL	**Isikli**	**0.74**	**198**	*e*Pg	**Pg**	**22**	**48**	**13.3**	**-0.2**
AKKU	**Akkuyu-Mersin**	**0.85**	**203**	*e*PG	**Pg**	**22**	**48**	**15.1**	**-0.5**
AKKU				*e*SG	**Sb**	**22**	**48**	**27.5**	**0.0**
AKKU	**Akkuyu-Mersin**	**0.85**	**203**	*e*Pg	**Pg**	**22**	**48**	**15.1**	**-0.5**
AKKU				*e*Sg	**Sb**	**22**	**48**	**27.5**	**0.0**
YESY	**Yesilyurt**	**0.86**	**348**	*e*PG	**Pb**	**22**	**48**	**16.1**	**-0.1**
YESY	**Yesilyurt**	**0.86**	**348**	*e*Pg	**Pb**	**22**	**48**	**16.1**	**-0.1**
ERMK	**Ermenek**	**0.90**	**251**	*i* P	**Pg**	**22**	**48**	**16.4**	**-0.1**
ERMK				*i* S	**Sb**	**22**	**48**	**29.8**	**+0.8**
ERMK	**Ermenek**	**0.90**	**251**	P	**Pg**	**22**	**48**	**16.4**	**-0.1**
ERMK				S	**Sb**	**22**	**48**	**29.8**	**+0.8**
KARA	**Karaisali**	**0.93**	**70**	*e*PG	**Pg**	**22**	**48**	**17.0**	**0.0**
KARA	**Karaisali**	**0.93**	**70**	*e*Pg	**Pg**	**22**	**48**	**17.0**	**0.0**
KRTS	**Karatas**	**1.19**	**108**	*e*PN	**Pn**	**22**	**48**	**22.5**	**+0.6**
KRTS	**Karatas**	**1.19**	**108**	*e*Pn	**Pn**	**22**	**48**	**22.5**	**+0.6**
NIG	**Nigde**	**1.27**	**24**	*e*PN	**Pn**	**22**	**48**	**23.4**	**+0.1**
NIG	**Nigde**	**1.27**	**24**	*e*Pn	**Pn**	**22**	**48**	**23.4**	**+0.1**
AKO	**Adana**	**1.29**	**66**	*i* P	**Pn**	**22**	**48**	**22.8**	**-0.5**
AKO				*i* S	**Sn**	**22**	**48**	**41.4**	**+0.8**
GAZI	**Gazipasa**	**1.50**	**242**	*i* P	**Pn**	**22**	**48**	**25.9**	**-0.3**
GAZI				*i* S	**Sn**	**22**	**48**	**45.7**	**-0.2**
GAZI	**Gazipasa**	**1.50**	**242**	P	**Pn**	**22**	**48**	**25.9**	**-0.3**
GAZI				S	**Sn**	**22**	**48**	**45.7**	**-0.2**
KOZT	**Kozan**	**1.58**	**70**	*e*PN	**Pb**	**22**	**48**	**28.2**	**-0.2**
KOZT	**Kozan**	**1.58**	**70**	*e*Pn	**Pb**	**22**	**48**	**28.3**	**-0.2**
KONT	**Konya--Tatoy**	**1.62**	**309**	*e*PN	**Pn**	**22**	**48**	**28.5**	**+0.7**
KONT	**Konya--Tatoy**	**1.62**	**309**	*e*Pn	**Pn**	**22**	**48**	**28.5**	**+0.7**
TAHT	**Tahtakopru-Hat**	**1.87**	**107**	*e*PN	**Pn**	**22**	**48**	**32.0**	**+0.7**
TAHT	**Tahtakopru-Hat**	**1.87**	**107**	*e*Pn	**Pn**	**22**	**48**	**32.0**	**+0.7**

IDC ***21*** *22:48:19.2±6.0, 36˚.46N×70˚.51E, h146km±45km, mb3.3/1, mb1 3.0/7, mb1mx2.8/65, mbtmp3.6/7, MS3.8/1, Ms1 3.8/1, ms1mx2.5/35, Error ellipse: s-maj=76.5km s-min=23.7km az=151.0*
ISCJB ***21*** *22:48:20.7±0.4, 36˚.60N±0˚.04×70˚.51E±0˚.06, h150km, mb4.4/16, Error ellipse: s-maj=7.0km s-min=4.8km az=155.1*
NNC ***21*** *22:48:25.6±9.0, 37˚.05N×70˚.22E, h0km, mb3.8, mpv3.4, Error ellipse: s-maj=73.8km s-min=64.7km az=128.0*
NEIC ***21*** *22:48:26.2±1.7, 36˚.94N×70˚.65E, h186km±15km, mb4.1/17, Error ellipse: s-maj=14.8km s-min=9.5km az=175.0*

ISC 21 22:48:20.8±0.6, 36˚.52N±0˚.06×70˚.62E±0˚.06, h150km, n37, σ2°68/40, mb4.3/16, 4C-2D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op	ISC	h	m	s	ISC
THN	**Thein Dam**	**5.86**	**133**	*e*P	**Pn**	**22**	**49**	**48.0**	**+2.4**
THN				*e*S	**Sn**	**22**	**50**	**54.7**	**+2.9**
MNAS	**Manas**	**6.14**	**13**	⇓P	**Pn**	**22**	**49**	**52.3**	**+2.9**
	1.3nm,0.3s								
MNAS				⇑S	**Sn**	**22**	**50**	**59.9**	**+1.2**
	41nm,0.7s								
KK31	**Karatay Array**	**6.58**	**359**	⇑P	**Pn**	**22**	**49**	**57.0**	**+1.9**
	0.9nm,0.2s,baz=176,slow=12,SNR=33								
KK31				⇑S	**Sn**	**22**	**51**	**08.3**	**-0.8**
	2.9nm,0.4s,baz=187,slow=27,SNR=7.1								
KKAR	**Karatay Array**	**6.58**	**359**	*e*Pn	**Pn**	**22**	**49**	**56.5**	**+1.3**
	4.0nm,0.3s								
AAK	**Ala-Archa**	**6.81**	**25**	P	**Pn**	**22**	**49**	**57.5**	**-0.8**
	0.3nm,0.3s,baz=207,slow=12,SNR=1.3								
AAK				S	**Sn**	**22**	**51**	**15.8**	**+1.1**
	0.9nm,0.3s,baz=325,slow=20,SNR=20								
AAK	**Ala-Archa**	**6.81**	**25**	⇑P	**Pn**	**22**	**50**	**01.6**	**+3.3**
	2.2nm,0.6s								
AAK				⇓S	**Sn**	**22**	**51**	**15.9**	**+1.1**
	12nm,0.6s								
GEYT	**Alibeck**	**10.07**	**282**	P	**Pn**	**22**	**50**	**39.2**	**-2.5**
	0.2nm,0.3s,baz=95,slow=10,SNR=2.9								
MKAR	**Makanchi Array**	**13.46**	**37**	P	**Pn**	**22**	**51**	**26.7**	**+1.0**
	0.2nm,0.3s,baz=219,slow=14,SNR=11								
GKN	**Gorkha**	**14.57**	**122**	*e*P	**P**	**22**	**51**	**42.5**	**+0.1**
	7.1nm,0.3s								
GKN				*e*S	**Sn**	**22**	**54**	**13.3**	**-8.6**
ABKAR	**Akbulak array**	**14.92**	**332**	*e*Pn	**P**	**22**	**51**	**43.6**	**-2.3**
	1.5nm,0.4s								
DMN	**Daman**	**15.14**	**122**	*e*P	**P**	**22**	**51**	**50.0**	**+1.2**
KKN	**Kakani**	**15.15**	**121**	*e*P	**P**	**22**	**51**	**50.8**	**+1.9**
	11nm,0.4s								
KURBB	**Kurchatov Arra**	**15.21**	**20**	P	**Pn**	**22**	**51**	**47.0**	**-0.6**
	0.0nm,0.3s,baz=210,slow=10,SNR=5.0								
KURK	**Kurchatov**	**15.32**	**20**	P	**Pn**	**22**	**51**	**47.0**	**-1.9**
PKIN	**Phulchoki**	**15.36**	**121**	*e*P	**P**	**22**	**51**	**53.1**	**+1.8**
	10nm,0.4s								
PKIN				*e*S	**Sn**	**22**	**54**	**31.9**	**-9.1**
BVAR	**Borovoye Array**	**16.51**	**360**	P	**P**	**22**	**52**	**02.2**	**-1.2**
	0.2nm,0.3s,baz=174,slow=11,SNR=4.8								
BRVK	**Borovoye**	**16.54**	**359**	*e*P	**Pn**	**22**	**52**	**03.0**	**-0.8**
	1.5nm,1.2s								
AKTO	**Aktyubinsk**	**16.61**	**331**	P	**Pn**	**22**	**52**	**03.6**	**-1.2**
	0.3nm,0.3s,baz=146,slow=8.8,SNR=7.2								
ZALV	**Zalesovo Beam**	**20.03**	**25**	P	**P**	**22**	**52**	**41.2**	**-0.6**
	1.2nm,0.3s,baz=220,slow=12,SNR=10.0								
GNI	**Garni**	**20.59**	**288**	*e*P	Pn	22	52	50.0	-2.2
	5.9nm,0.6s								
ARU	**Arti**	**21.52**	**342**	*e*P	**P**	**22**	**52**	**56.5**	**-1.1**
	1.5nm,0.5s								
KIV	**Kislovodsk**	**22.51**	**298**	*e*P	**P**	**22**	**53**	**08.7**	**+0.8**
	2.8nm,0.5s								
TLY	**Talaya**	**27.86**	**47**	*e*P	**P**	**22**	**53**	**52.4**	**-3.6**
	1.8nm,0.7s								
CSS	**Mathiatis**	**30.18**	**278**	*e*P	**P**	**22**	**54**	**19.0**	**+2.2**
	2.0nm,0.9s								
BJT	**Baijiatuan**	**35.64**	**70**	*e*P	**P**	**22**	**55**	**05.2**	**+1.0**
	4.5nm,0.6s								
SANT	**Santorini**	**36.07**	**284**	*e*P	**P**	**22**	**55**	**06.7**	**-1.2**
	66nm,0.8s								
PSZ	**Piszkesteto**	**38.60**	**303**	*e*P	**P**	**22**	**55**	**28.8**	**-0.4**
	4.1nm,0.8s								
DGAR	**Diego Garcia**	**43.73**	**177**	P	P	22	56	16.3	+5.2
	103nm,0.8s								
AQU	**L'Aquila**	**43.86**	**296**	P	**P**	**22**	**56**	**13.6**	**+1.5**
	16nm,0.8s								
TGY	**Tagaytay City**	**50.02**	**103**	LR	LR	23	18	08.0	
	comp=Z,100nm,19.0s,baz=196,slow=36								
YSS	**Yuzh-Sakhalins**	**53.07**	**55**	*e*P	**P**	**22**	**57**	**22.6**	**+0.3**
	7.6nm,0.6s								
INK	**Inuvik**	**73.94**	**9**	*e*P	**P**	**22**	**59**	**37.2**	**-1.7**
	2.0nm,0.8s								
KTH	**Kantishna Hill**	**74.95**	**18**	*e*P	**P**	**22**	**59**	**44.5**	**-0.4**
	1.5nm,0.5s								
SUR	**Sutherland**	**82.87**	**221**	*e*P	P	23	00	32.9	+4.3
	22nm,1.1s								
PMG	**Port Moresby**	**84.91**	**106**	*e*P	**P**	**23**	**00**	**41.3**	**+2.2**
	12nm,0.9s								
FFC	**Flin Flon**	**88.90**	**356**	P	**P**	**23**	**00**	**58.0**	**+0.2**
	1.5nm,0.7s								
CTAO	**Charters Tower**	**90.83**	**114**	*e*P	**P**	**23**	**01**	**09.5**	**+2.2**
	85nm,1.5s								

NIED ***21*** *22:48:00, 35˚.60N×141˚.20E, h44km, Mw4.7 Best double couple: Mo1.18000×10^16 NP1:φ=199.00000°, δ18.00000°, λ114.00000°. NP2:φ=354.00000°, δ74.00000°, λ83.00000°.*
ISCJB ***21*** *22:48:34.6±0.3, 35˚.54N±0˚.03×141˚.12E±0˚.04, h33km, mb4.4/62, MS3.9/16, Error ellipse: s-maj=5.3km s-min=4.3km az=139.6*
JMA ***21*** *22:48:35.8±0.2, 35˚.58N×141˚.05E, h37km±1km, M4.4*
JMA Felt II J1.
MOS ***21*** *22:48:36.1±1.3, 35˚.67N×141˚.09E, h46km, mb4.6/33, Error ellipse: s-maj=9.2km s-min=6.0km az=111.4*
IDC ***21*** *22:48:37.8±1.5, 35˚.45N×140˚.94E, h46km±15km, mb4.0/29, mb1 4.2/33, mb1mx4.0/64, mbtmp4.3/33, ML3.4/4, MS3.9/10, Ms1 3.9/10, ms1mx3.6/52, Error ellipse: s-maj=15.5km s-min=10.2km az=87.0*
BJI ***21*** *22:48:38.2, 35˚.67N×140˚.67E, h48km, mb4.6/33, mB4.8/23, Ms4.2/23, Ms7 4.0/23*
NEIC ***21*** *22:48:38.2±0.9, 35˚.58N×140˚.96E, h46km±7km, mb4.6/13, Error ellipse: s-maj=10.0km s-min=6.0km az=147.0*
NEIC Recorded [2 JMA] in Chiba.

ISC 21 22:48:36.4±0.4, 35˚.58N±0˚.04×141˚.03E±0˚.05, h33km, n148, σ1°39/156, mb4.5/62, MS4.0/16, 11C-9D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op	ISC	h	m	s	ISC
CHOJ	**Chosi**	**0.18**	**312**	⇓P	**Pb**	**22**	**48**	**42.7**	**-0.1**
CHOJ				S	**Sb**	**22**	**48**	**47.8**	**+0.6**
JCN	**Nagara**	**0.69**	**257**	⇓P	**Pb**	**22**	**48**	**50.7**	**+0.6**
BSO4	**Boso 4**	**0.81**	**224**	P	**Pn**	**22**	**48**	**51.2**	**-0.2**
BSO3	**Boso 3**	**0.88**	**209**	P	**Pn**	**22**	**48**	**51.5**	**-0.7**
JYT	**Yasato**	**0.94**	**314**	⇓P	**Pn**	**22**	**48**	**53.0**	**-0.2**
JYT				S	**Sb**	**22**	**49**	**05.5**	**-0.8**
JAG	**Ashikaga**	**1.53**	**304**	P	**Pn**	**22**	**49**	**02.3**	**+0.9**
MJAR	**Matsushiro Arr**	**2.48**	**294**	P	**Pn**	**22**	**49**	**16.5**	**+2.1**
	28nm,0.3s,baz=108,slow=8.8,SNR=136								
MJAR				LR	LR	22	50	22.6	
	comp=Z,2μm,20.5s,baz=110,slow=43								
MJAR	**Matsushiro Arr**	**2.48**	**294**	P	**Pn**	**22**	**49**	**16.5**	**+2.1**
MJAR				pmax	pmax				
	comp=Z,28nm,0.3s								
MJAR				MLR	MLR				
	comp=Z,2μm,20.5s								
MAJO	**Matsushiro**	**2.48**	**294**	*e*P	**Pn**	**22**	**49**	**16.1**	**+1.6**
MAJO	**Matsushiro**	**2.48**	**294**	*e*Pn	**Pn**	**22**	**49**	**16.1**	**+1.6**
MAT	**Matsushiro**	**2.48**	**294**	P	**Pn**	**22**	**49**	**16.5**	**+2.1**
MAT				S	**Sb**	**22**	**49**	**49.0**	**-1.4**
MJB9	**Matsu-Tunnel**	**2.48**	**294**	*e*Pn	**Pn**	**22**	**49**	**16.1**	**+1.6**
JHJ	**Hachijo jima 2**	**2.66**	**203**	P	**Pn**	**22**	**49**	**15.2**	**-1.8**
	comp=Z,70nm,0.3s,baz=78,slow=18,SNR=2.9								
JHJ				S	**Sn**	**22**	**49**	**45.8**	**-2.3**
	comp=Z,115nm,0.3s,baz=75,slow=20,SNR=3.3								
INU	**Inuyama**	**3.28**	**267**	*e*Pn	**Pn**	**22**	**49**	**27.3**	**+1.9**
ERM	**Erimo**	**6.64**	**14**	⇑*e*P	**Pn**	**22**	**50**	**09.8**	**-1.7**
ERM	**Erimo**	**6.64**	**14**	*e*Pn	**Pn**	**22**	**50**	**10.5**	**-1.1**
ASAJ	**Asahikawa**	**8.61**	**8**	P	**Pn**	**22**	**50**	**37.1**	**-1.5**
	comp=Z,3.8nm,0.3s,baz=214,slow=11,SNR=15								
ASAJ				S	**Sn**	**22**	**52**	**12.7**	**-1.9**
	comp=Z,1.3nm,0.3s,baz=73,slow=20,SNR=4.4								
ASAJ	**Asahikawa**	**8.61**	**8**	*e*Pn	**Pn**	**22**	**50**	**37.7**	**-1.0**
ASAJ				S	**Sn**	**22**	**52**	**12.7**	**-1.9**
JNU	**Nakatsue**	**8.74**	**257**	P	**Pn**	**22**	**50**	**41.9**	**+1.3**
	comp=Z,0.3nm,0.3s,baz=104,slow=4.2,SNR=3.3								
YUK	**Yuzh-Kuril'sk**	**9.23**	**22**	*e*P	**Pn**	**22**	**50**	**45.5**	**-1.5**
KSRS	**Korea Array**	**10.71**	**284**	P	**Pn**	**22**	**51**	**11.1**	**+3.7**
	comp=Z,0.4nm,0.3s,baz=103,slow=13,SNR=9.6								
KSRS				LR	LR	22	55	19.9	
	comp=Z,971nm,20.8s,baz=100,slow=38								
KSAR	**Wonju Array Be**	**10.74**	**284**	P	**Pn**	**22**	**51**	**11.1**	**+3.3**
KSAR	**Wonju Array Be**	**10.74**	**284**	P	**Pn**	**22**	**51**	**11.1**	**+3.3**
KUR	**Kuril'sk**	**10.96**	**26**	*e*P	**Pn**	**22**	**51**	**09.9**	**-0.8**
USRK	**Ussuriysk Ar.**	**11.05**	**324**	P	**Pn**	**22**	**51**	**14.0**	**+1.9**
	comp=Z,0.3nm,0.3s,baz=144,slow=13,SNR=8.3								
USRK				LR	LR	22	55	20.0	
	comp=Z,510nm,19.2s,baz=136,slow=36								
YSS	**Yuzh-Sakhalins**	**11.44**	**6**	*e*P	**Pn**	**22**	**51**	**13.0**	**-4.3**
YSS				MLR	MLR				
	comp=Z,400nm,14.0s								
KLR	**Kul'dur**	**15.25**	**336**	P	**Pn**	**22**	**52**	**07.7**	**-1.4**
	comp=Z,0.4nm,0.3s,baz=112,slow=9.6,SNR=4.8								
KLR	**Kul'dur**	**15.25**	**336**	⇑*e*P	**Pn**	**22**	**52**	**08.8**	**-0.3**
HIA	**Hailar**	**20.74**	**318**	⇑*e*P	**P**	**22**	**53**	**11.5**	**-2.6**
HIA				pmax	pmax				
	comp=Z,3.0nm,0.9s								
PEA0	**Petropavlovsk-**	**21.11**	**29**	*e*P	**P**	**22**	**53**	**19.7**	**+1.7**
PETK	**Petropavlovsk-**	**21.11**	**29**	P	**P**	**22**	**53**	**20.1**	**+2.1**
	comp=Z,6.9nm,0.8s,baz=208,slow=6.0,SNR=4.0								
PETK				LR	LR	23	01	20.1	
	comp=Z,140nm,21.9s,baz=225,slow=36								
PET	**Petropavlovsk**	**21.42**	**30**	*e*P	**P**	**22**	**53**	**22.1**	**+0.8**
PET				pmax	pmax				
	comp=Z,11nm,1.2s								
WHN	**Wuhan**	**22.88**	**265**	P	**P**	**22**	**53**	**34.9**	**-2.2**
WHN				LR	LR				
	comp=Z,1μm,16.4s								
HHC	**Hu-ho-hao-te**	**23.68**	**292**	*e*P	**P**	**22**	**53**	**45.9**	**+0.8**
HHC				sP	sP	22	54	02.4	+4.0
HHC				S	**S**	**22**	**57**	**56.9**	**-0.9**
HHC				sS	sS	22	58	07.6	-5.9
HHC				pmax	pmax				
	comp=Z,13nm,0.9s								
HHC				pmax	pmax				
	comp=Z,100nm,6.0s								
HHC				LR	LR				
	comp=Z,130nm,10.6s								
HHC				LR	LR				
	comp=Z,160nm,12.0s								
HHC				LR	LR				
	comp=Z,180nm,13.1s								
XAN	**Xi'an**	**26.35**	**276**	P	**P**	**22**	**54**	**07.0**	**-2.4**
XAN				pmax	pmax				
	comp=Z,6.0nm,0.8s								
XAN				pmax	pmax				
	comp=Z,42nm,5.8s								
XAN				LR	LR				
	comp=Z,260nm,17.3s								
XAN				LR	LR				
	comp=Z,340nm,19.3s								
XAN				LR	LR				
	comp=Z,360nm,20.3s								
ENH	**Enshi**	**26.93**	**268**	*e*P	**P**	**22**	**54**	**12.9**	**-1.8**
	comp=Z,11nm,0.6s								
YAK	**Yakutsk**	**27.42**	**348**	*e*P	**P**	**22**	**54**	**16.6**	**-2.1**
YAK				pmax	pmax				
	comp=Z,7.0nm,0.7s								
H11N2	**WAKE ISLAND Hy**	**27.71**	**118**	T	T	23	23	29.8	
	baz=310,slow=75,SNR=84								
H11N1	**WAKE ISLAND Hy**	**27.72**	**118**	T	T	23	23	24.5	
	baz=310,slow=75,SNR=89								
H11N3	**WAKE ISLAND Hy**	**27.73**	**118**	T	T	23	23	33.9	
	baz=310,slow=75,SNR=78								
SEY	**Seymchan**	**28.27**	**11**	P	**P**	**22**	**54**	**26.6**	**+0.3**
	comp=Z,1.6nm,0.5s,baz=318,slow=10,SNR=3.6								
SEY	**Seymchan**	**28.27**	**11**	⇓*e*P	**P**	**22**	**54**	**26.3**	**0.0**
SONA1	**Songino Array**	**28.36**	**306**	*e*P	**P**	**22**	**54**	**26.9**	**-0.6**
SONM	**Songino Array**	**28.36**	**306**	P	**P**	**22**	**54**	**26.8**	**-0.7**
	comp=Z,2.9nm,0.6s,baz=112,slow=8.6,SNR=21								
SONM				LR	LR	23	06	03.2	
	comp=Z,110nm,19.5s,baz=104,slow=37								
H11S1	**WAKE ISLAND Hy**	**28.37**	**120**	T	T	23	24	09.4	
	baz=312,slow=75,SNR=275								
H11S3	**WAKE ISLAND Hy**	**28.37**	**120**	T	T	23	24	11.9	
	baz=312,slow=75,SNR=337								
H11S2	**WAKE ISLAND Hy**	**28.38**	**120**	T	T	23	24	10.5	
	baz=312,slow=75,SNR=319								
BOD	**Bodaibo**	**28.61**	**329**	*e*P	P	22	54	24.3	-5.0
BOD				pmax	pmax				
	comp=Z,5.0nm,1.5s								
LZH	**Lanzhou**	**30.03**	**282**	*e*P	**P**	**22**	**54**	**42.0**	**-0.4**
LZH				pP	sP	22	54	55.4	-0.6
LZH				sP	pP	22	55	01.8	+10
LZH				PP	**PnPn**	**22**	**55**	**40.1**	**+0.3**
LZH				pmax	pmax				
	comp=Z,21nm,1.2s								
LZH				pmax	pmax				
	comp=Z,67nm,5.3s								
LZH				LR	LR				
	comp=Z,300nm,12.7s								
LZH				LR	LR				
	comp=Z,310nm,13.0s								
LZH				LR	LR				
	comp=Z,380nm,16.5s								
TLY	**Talaya**	**31.07**	**313**	*e*P	**P**	**22**	**54**	**51.8**	**+0.6**
TLY				pmax	pmax				
	comp=Z,1.0nm,0.7s								
TLY				MLR	MLR				
	comp=Z,120nm,15.0s								
CD2	**Chengdu**	**31.39**	**272**	*e*P	**P**	**22**	**54**	**55.0**	**+0.7**
CD2				pP	sP	22	55	08.3	+0.4
CD2				sP	pP	22	55	14.6	+11
CD2				S	**S**	**22**	**59**	**57.8**	**-1.

KSH	**Kashi**	**50.72**	**295**	*e*P		**P**	**22 57 34.9**	**+1.8**
KSH				*e*pP		sP	22 57 48.1	+1.1
KSH				*e*sP		pP	22 57 52.8	+10
KSH				*e*PP		**PP**	**22 59 31.8**	**+2.6**
KSH				S		**S**	**23 04 41.8**	**-4.6**
KSH				pmax	pmax			
	comp=Z,56nm,3.3s							
KSH				LR	LR			
	comp=Z,81nm,6.1s							
KSH				LR	LR			
	comp=Z,84nm,6.0s							
KSH				LR	LR			
	comp=Z,120nm,6.6s							
IL1	**Eielson Array**	**50.89**	**32**	*e*P		**P**	**22 57 34.6**	**+0.8**
ILAR	**Eielson Array**	**50.89**	**32**	P		**P**	**22 57 34.1**	**+0.3**
	comp=Z,2.9nm,0.7s,baz=267,slow=6.3,SNR=35							
ILB	**Eielson Array**	**50.89**	**32**	*e*P		**P**	**22 57 35.0**	**+1.2**
AAK	**Ala-Archa**	**50.91**	**299**	LR	LR		23 20 18.8	
	comp=Z,171nm,21.8s,baz=74,slow=37							
AAK	**Ala-Archa**	**50.91**	**299**‖	*e*P		**P**	**22 57 34.4**	**-0.2**
AAK				pmax	pmax			
	comp=Z,6.0nm,0.8s							
VOSK	**Vostochnaya**	**51.03**	**313**	P		**P**	**22 57 33.4**	**-1.6**
VOSK				pmax	pmax			
	comp=Z,8.0nm,0.9s							
VOSK	**Vostochnaya**	**51.03**	**313**	*e*P		**P**	**22 57 34.7**	**-0.3**
	comp=Z,8.2nm,0.8s							
OTUK	**Ortayu**	**51.03**	**307**	P		**P**	**22 57 34.0**	**-1.2**
OTUK				pmax	pmax			
	comp=Z,11nm,0.8s							
BVAR	**Borovoye Array**	**51.33**	**313**	P		**P**	**22 57 37.4**	**+0.1**
	comp=Z,2.1nm,0.5s,baz=86,slow=7.6,SNR=14							
BRVK	**Borovoye**	**51.38**	**313**‖	*e*P		**P**	**22 57 37.6**	**-0.1**
BRVK				pmax	pmax			
	comp=Z,20nm,1.2s							
BRVK	**Borovoye**	**51.38**	**313**	*e*P		**P**	**22 57 37.0**	**-0.7**
	comp=Z,4.4nm,0.7s							
CISI	**Cisompet, Garu**	**53.09**	**223**	*e*P		**P**	**22 57 50.9**	**+0.1**
	comp=Z,31nm,0.4s							
KKAR	**Karatay Array**	**53.59**	**301**	*e*P		**P**	**22 57 55.0**	**+0.8**
KKAR	**Karatay Array**	**53.59**	**301**	*e*P		**P**	**22 57 55.0**	**+0.8**
WRA	**Warramunga Arr**	**55.58**	**188**	P		**P**	**22 58 07.7**	**-1.1**
	comp=Z,8.3nm,0.8s,baz=4.8,slow=7.5,SNR=61							
INK	**Inuvik**	**55.82**	**27**	P		**P**	**22 58 11.0**	**+1.1**
	comp=Z,0.9nm,0.5s,baz=301,slow=9.9,SNR=3.4							
INK	**Inuvik**	**55.82**	**27**	P		**P**	**22 58 11.0**	**+1.1**
INK				pmax	pmax			
	comp=Z,2.0nm,0.6s							
SVE	**Sverdlovsk**	**56.04**	**319**‖	*e*P		**P**	**22 58 12.2**	**+0.5**
SVE				pmax	pmax			
	comp=Z,13nm,1.1s							
ARU	**Arti**	**57.25**	**319**	P		**P**	**22 58 20.2**	**-0.1**
	comp=Z,6.8nm,0.7s,baz=48,slow=2.7,SNR=18							
ARU	**Arti**	**57.25**	**319***c*	*i*P		**P**	**22 58 20.1**	**-0.2**
ARU							22 59 12.4	
ARU							23 00 24.3	
ARU				S		**S**	**23 06 13.8**	**+0.1**
ARU				SS		**SS**	**23 09 58.8**	**-3.8**
ARU				pmax	pmax			
	comp=Z,13nm,1.0s							
ARU	**Arti**	**57.25**	**319**	*e*P		**P**	**22 58 20.1**	**-0.2**
	comp=Z,9.3nm,0.7s							
KBL	**Kabul**	**57.65**	**292**	*e*P		**P**	**22 58 23.6**	**-0.2**
KBL				pmax	pmax			
	comp=Z,4.0nm,1.0s							
KBL	**Kabul**	**57.65**	**292**	*e*P		**P**	**22 58 23.6**	**-0.2**
	comp=Z,4.1nm,1.0s							
AB31	**Akbulak array**	**58.64**	**311**	P		**P**	**22 58 29.5**	**-0.7**
AB31				pmax	pmax			
	comp=Z,3.0nm,0.6s							
ABKAR	**Akbulak array**	**58.64**	**311**	*e*P		**P**	**22 58 30.2**	**+0.1**
ASAR	**Alice Springs**	**59.31**	**188**	P		**P**	**22 58 34.1**	**-0.9**
	comp=Z,1.1nm,0.8s,baz=12,slow=7.5,SNR=12							
AKTO	**Aktyubinsk**	**59.42**	**312**	P		**P**	**22 58 36.3**	**+0.8**
	comp=Z,3.8nm,0.7s,baz=82,slow=8.7,SNR=7.4							
GEYT	**Alibeck**	**64.27**	**299**	P		**P**	**22 59 08.3**	**-0.2**
	comp=Z,1.9nm,0.6s,baz=287,slow=15,SNR=5.0							
YKA	**Yellowknife Ar**	**65.22**	**30**	P		**P**	**22 59 14.6**	**+0.5**
	comp=Z,1.2nm,0.8s,baz=300,slow=6.6,SNR=5.8							
YKA	**Yellowknife Ar**	**65.22**	**30***ce*	P		**P**	**22 59 15.1**	**+1.0**
YKA				pmax	pmax			
	comp=Z,1.0nm,0.8s							
ARCES	**ARCESS Array B**	**65.25**	**340**	P		**P**	**22 59 15.1**	**+0.8**
	comp=Z,0.9nm,0.5s,baz=34,slow=9.8,SNR=3.5							
STKA	**Stephens Creek**	**67.10**	**179**	P		**P**	**22 59 26.3**	**-0.2**
	comp=Z,1.3nm,0.7s,baz=342,slow=16,SNR=3.0							
STKA	**Stephens Creek**	**67.10**	**179**	P		**P**	**22 59 26.3**	**-0.2**
STKA				pmax	pmax			
	comp=Z,2.0nm,0.8s							
FINES	**FINESS Array B**	**69.95**	**332**	P		**P**	**22 59 44.2**	**+0.2**
	comp=Z,3.8nm,0.7s,baz=55,slow=6.0,SNR=7.1							
WSAR	**Wadi Sarin**	**70.94**	**285**	LR		LR	23 33 17.7	
	comp=Z,118nm,19.1s,baz=84,slow=38							
KBZ	**Khabaz**	**71.61**	**311**	P		**P**	**22 59 53.6**	**-0.8**
	comp=Z,3.9nm,0.8s,baz=22,slow=1.6,SNR=4.7							
KBZ	**Khabaz**	**71.61**	**311**	P		**P**	**22 59 53.6**	**-0.8**
KBZ				pmax	pmax			
	comp=Z,5.0nm,0.9s							
KVAR	**Kislovodsk Arr**	**71.62**	**311**	P		**P**	**22 59 55.0**	**+0.4**
	comp=Z,6.1nm,0.8s,baz=221,slow=7.7,SNR=4.2							
KIV	**Kislovodsk**	**71.62**	**311**	*de*P		**P**	**22 59 55.4**	**+0.8**
KIV				pmax	pmax			
	comp=Z,12nm,1.2s							
KIV	**Kislovodsk**	**71.62**	**311**	*e*P		**P**	**22 59 55.1**	**+0.5**
	comp=Z,9.7nm,0.8s							
SUMG	**Summit**	**72.14**	**360**	*e*P		**P**	**22 59 58.3**	**+0.7**
SUMG	**Summit**	**72.14**	**360**	*e*P		**P**	**22 59 58.2**	**+0.7**
GNI	**Garni**	**72.33**	**307**	P		**P**	**22 59 59.9**	**+0.9**
	comp=Z,4.2nm,0.8s,baz=343,slow=20,SNR=3.2							
GNI	**Garni**	**72.33**	**307**‖	*e*P		**P**	**23 00 00.0**	**+1.0**
GNI				pmax	pmax			
	comp=Z,38nm,1.2s							
GNI	**Garni**	**72.33**	**307**	*e*P		**P**	**22 59 59.6**	**+0.6**
	comp=Z,76nm,1.3s							
AKASG	**Malin Array Be**	**75.25**	**322**	P		**P**	**23 00 15.7**	**-0.1**
	comp=Z,1.5nm,0.5s,baz=46,slow=6.0,SNR=6.0							
HFS	**Hagfors**	**75.28**	**336**	P		**P**	**23 00 16.1**	**+0.4**
	comp=Z,4.1nm,0.9s,baz=96,slow=10,SNR=4.6							
NB2	**NORSAR Subarra**	**75.40**	**337**	P		**P**	**23 00 16.3**	**-0.2**
	comp=Z,3.8nm,0.8s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**75.40**	**337**	P		**P**	**23 00 16.9**	**+0.4**
	comp=Z,2.2nm,0.7s,baz=43,slow=5.4,SNR=8.8							
NOA	**NORSAR Array B**	**75.40**	**337**	P		**P**	**23 00 16.9**	**+0.4**
NOA				pmax	pmax			
	comp=Z,3.0nm,0.8s							
LRM	**Limekiln Ridge**	**75.41**	**44**	*e*P		**P**	**23 00 18.7**	**+1.6**
PDAR	**Pinedale Array**	**78.91**	**45**	P		**P**	**23 00 37.9**	**+1.1**
	comp=Z,0.7nm,0.6s,baz=297,slow=1.8,SNR=6.9							
BRTR	**Keskin Array B**	**79.58**	**312**	P		**P**	**23 00 40.1**	**-0.2**
	comp=Z,2.2nm,0.9s,baz=60,slow=2.7,SNR=7.3							
BRTR	**Keskin Array B**	**79.58**	**312***ce*	P		**P**	**23 00 40.5**	**+0.1**
BRTR				pmax	pmax			
	comp=Z,2.0nm,0.9s							
BR231	**Keskin MP Arra**	**80.03**	**312**	*e*P		**P**	**23 00 40.8**	**-2.0**
K22A	**Casper**	**80.71**	**44**	*e*P		**P**	**23 00 47.2**	**+0.8**
	comp=Z,1.6nm,0.4s							
DPC	**Dobruska-Polom**	**81.52**	**328**	*e*P		**P**	**23 00 51.6**	**+1.2**
VRAC	**Vranov**	**82.17**	**327**	P		**P**	**23 00 53.2**	**-0.6**
	comp=Z,1.1nm,0.5s,baz=72,slow=6.4,SNR=2.6							
CLL	**Collm**	**82.20**	**330**‖	*i*P		**P**	**23 00 54.3**	**+0.4**
	comp=Z,6.0nm,0.9s							
CLL	**Collm**	**82.20**	**330**‖	*i*P		**P**	**23 00 54.3**	**+0.4**
CLL				pmax	pmax			
	comp=Z,6.0nm,0.9s							
MMAI	**Mount Meron Ar**	**82.55**	**305**	LR		LR	23 40 29.3	
	comp=Z,67nm,20.2s,baz=175,slow=38							
KHC	**Kasperske Hory**	**83.62**	**328**	*e*P		**P**	**23 01 02.0**	**+0.6**
VTS	**Vitosha**	**83.70**	**319**	*e*P		**P**	**23 01 03.1**	**+1.0**
VTS	**Vitosha**	**83.70**	**319**	*e*P		**P**	**23 01 03.1**	**+1.0**
GERES	**GERESS Array B**	**83.78**	**328**	P		**P**	**23 01 02.4**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=44,slow=4.4,SNR=5.4							
BFO	**Black Forest**	**86.42**	**331***ce*	P		**P**	**23 01 16.6**	**+1.2**
TXAR	**Lajitas Array**	**91.26**	**52**	P		**P**	**23 01 38.9**	**+0.1**
	comp=Z,0.4nm,0.7s,baz=298,slow=2.7,SNR=3.6							
LPAZ	**La Paz**	**147.68**	**61**	PKPbc		**PKPbc**	**23 08 19.1**	**+0.3**
	comp=Z,1.3nm,0.8s,baz=316,slow=5.0,SNR=4.8							

KRSC 21 22:50:22.6±0.9, 52.59N×159.69E, *h*49km±8km, ML3.5, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPN	**Mys Shipunski**	**0.54**	**21**	*e*P	Pn	22 50 35.4	+1.0
SPN				*e*S	Sn	22 50 44.3	+1.5
NLC	**Nalytchevo**	**0.62**	**340**	*e*P	Pn	22 50 36.1	+0.9
NLC				*e*S	Sn	22 50 45.6	+1.3
DALK	**Dalny**	**0.72**	**308**	*i*P	Pn	22 50 37.3	+0.7
DALK				*e*S	Sn	22 50 47.0	+0.3
UGLR	**Uglovaya**	**0.81**	**320**	*e*P	Pn	22 50 39.3	+1.4
UGLR				*e*S	Sn	22 50 50.6	+1.6
AVH	**Avacha**	**0.89**	**320**	*e*P	Pn	22 50 40.4	+1.5
AVH				*e*S	Sn	22 50 52.4	+1.6
KRER	**Koryakskii**	**0.91**	**322**	*e*P	Pn	22 50 40.7	+1.3
KRER				*e*S	Sn	22 50 52.7	+1.1
KOK	**Koryaka**	**0.95**	**318**	*e*P	Pn	22 50 41.3	+1.6
KOK				*e*S	Sn	22 50 54.3	+2.0
KRMR	**Karymshinskiy**	**0.98**	**285**	*e*P	Pn	22 50 41.0	+1.0
KRMR				*e*S	Sn	22 50 53.0	+0.1
KRX	**Arik**	**0.99**	**321**	*e*P	Pn	22 50 41.2	+0.8
KRX				*e*S	Sn	22 50 54.6	+1.2
ASAK	**Asacha**	**1.12**	**260**	*e*P	Pn	22 50 43.1	+1.1
ASAK				*e*S	Sn	22 50 58.0	+1.7
GNL	**Ganaly**	**1.53**	**317**	*e*P	Pn	22 50 49.8	+2.2
GNL				*e*S	Sn	22 51 09.0	+2.7
MKZ	**Mys Kozlova**	**2.31**	**31**	*e*P	Pn	22 50 59.7	+1.6
MKZ				*e*S	Sn	22 51 27.6	+2.3
TUMR	**Tumrok**	**2.71**	**5**	*e*P	Pn	22 51 07.0	+3.3
TUMR				*e*S	Sn	22 51 39.9	+4.6
KMNR	**Kamenistaya**	**3.19**	**6**	*e*P	Pn	22 51 12.8	+2.5
SMKR	**Semkarok**	**4.13**	**14**	*e*P	Pn	22 51 27.9	+4.8
SMKR				*e*S	Sn	22 52 15.0	+4.9
SRKR	**Sorokina**	**4.16**	**11**	*e*P	Pn	22 51 27.4	+3.8
SRKR				*e*S	Sn	22 52 14.5	+3.6

*ISCJB **21** 22:50:42.3±1.1, 37.21N±0.04×19.92E±0.04, h11km±9km, mb3.6/6, Error ellipse: s-maj=6.7km s-min=4.8km az=38.7*
*CSEM **21** 22:50:43.6±0.4, 37.26N×20.03E, h2km, ML3.6, Error ellipse: s-maj=8.2km s-min=5.1km az=31.0*
*ATH **21** 22:50:43.4, 37.26N×20.02E, h12km±1km, ML3.7/2, Error ellipse: s-maj=2.7km s-min=1.2km az=58.0*
*THE **21** 22:50:44.8, 37.30N×20.10E, h0km±1km, ML3.6/10, Error ellipse: s-maj=1.9km s-min=0.9km az=239.0*
*IDC **21** 22:50:46.2±1.9, 37.71N×20.44E, h0km, mb3.6/6, mb1 3.6/9, mb1mx3.5/57, mbtmp3.6/9, ML3.1/3, Error ellipse: s-maj=38.0km s-min=22.9km az=33.0*

ISC 21 22:50:44.4±1.6, 37.29N±0.04×20.08E±0.04, h7km±9km, n156, σ1§17/186, mb3.7/6, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZKS	**Zakynthos**	**0.69**	**54**	P	**Pg**	**22 50 57.5**	**-0.2**
ZKS				S	**Sb**	**22 51 08.2**	**-0.4**
ZKS	**Zakynthos**	**0.69**	**54**	P	**Pg**	**22 50 57.9**	**+0.2**
ZKS				S	**Sb**	**22 51 08.5**	**-0.1**
ZKS	**Zakynthos**	**0.69**	**54**	P	**Pg**	**22 50 57.9**	**+0.2**
ZKS				S	**Sb**	**22 51 08.5**	**-0.1**
ZKS				AML	AML	22 51 09.9	
	comp=E,38039μm,0.5s						
ZKS				AML	AML	22 51 10.7	
	comp=N,51156μm,0.7s						
VLS	**Valsamata**	**0.97**	**25**	P	**Pg**	**22 51 02.0**	**-1.1**
VLS				S	**Sb**	**22 51 16.8**	**+0.2**
VLS	**Valsamata**	**0.97**	**25**	P	**Pg**	**22 51 02.0**	**-1.1**
VLS				S	**Sb**	**22 51 17.3**	**+0.7**
KFL	**Anninata**	**0.99**	**34**	P	**Pg**	**22 51 02.5**	**-0.9**
KFL				S	**Sb**	**22 51 17.8**	**+0.6**
KFL	**Anninata**	**0.99**	**34**	P	**Pg**	**22 51 02.5**	**-0.9**
KFL				S	**Sb**	**22 51 17.8**	**+0.6**
KFL	**Anninata**	**0.99**	**34**	P	**Pg**	**22 51 02.0**	**-1.4**
KFL				S	**Sg**	**22 51 16.9**	**+0.6**
VTN	**Vitineika**	**1.08**	**54**	P	**Pb**	**22 51 06.0**	**+0.7**
VTN				S	**Sb**	**22 51 20.8**	**+1.2**
VTN	**Vitineika**	**1.08**	**54**	P	**Pb**	**22 51 06.0**	**+0.7**
VTN				S	**Sb**	**22 51 20.8**	**+1.2**
AMT	**Artemida-Makis**	**1.32**	**79**	P	**Pg**	**22 51 09.2**	**-0.5**
AMT				S	**Sn**	**22 51 28.1**	**+1.0**
AMT	**Artemida-Makis**	**1.32**	**79**	P	**Pg**	**22 51 09.2**	**-0.5**
AMT				S	**Sn**	**22 51 28.1**	**+1.0**
AMT	**Artemida-Makis**	**1.32**	**79**	P	**Pg**	**22 51 09.2**	**-0.5**
AMT				S	**Sn**	**22 51 28.6**	**+1.5**
AMT				AML	AML	22 51 37.6	
	comp=N,3942μm,0.8s						
AMT				AML	AML	22 51 39.8	
	comp=E,3188μm,0.5s						
RLS	**Riolos of Patr**	**1.34**	**55**	P	**Pg**	**22 51 09.8**	**-0.3**
RLS				S	**Sn**	**22 51 28.7**	**+1.1**
RLS	**Riolos of Patr**	**1.34**	**55**	P	**Pg**	**22 51 09.8**	**-0.3**
RLS				S	**Sn**	**22 51 28.7**	**+1.1**
AXS	**Araxos**	**1.37**	**48**	P	**Pn**	**22 51 10.0**	**+0.1**
AXS	**Araxos**	**1.37**	**48**	P	**Pn**	**22 51 10.4**	**+0.5**
AXS	**Araxos**	**1.37**	**48**	P	**Pn**	**22 51 10.4**	**+0.5**
PYL	**PYLOS**	**1.39**	**106**	P	**Pn**	**22 51 10.3**	**+0.2**
PYL	**PYLOS**	**1.39**	**106**	P	**Pn**	**22 51 10.4**	**+0.2**
PYL	**PYLOS**	**1.39**	**106**	P	**Pn**	**22 51 10.4**	**+0.2**
DRO	**Drossia**	**1.46**	**63**	P	**Pn**	**22 51 11.8**	**+0.7**
DRO				S	**Sn**	**22 51 32.2**	**+1.8**
DRO	**Drossia**	**1.46**	**63**	P	**Pn**	**22 51 11.8**	**+0.7**
DRO				S	**Sn**	**22 51 32.2**	**+1.8**
DRO	**Drossia**	**1.46**	**63**	P	**Pn**	**22 51 11.4**	**+0.4**
ITM	**Ithomi**	**1.48**	**94**	P	**Pn**	**22 51 11.6**	**+0.2**
ITM				S	**Sn**	**22 51 32.2**	**+1.2**
ITM	**Ithomi**	**1.48**	**94**	P	**Pn**	**22 51 11.6**	**+0.2**
ITM				S	**Sn**	**22 51 32.2**	**+1.2**
ITM	**Ithomi**	**1.48**	**94**	P	**Pn**	**22 51 11.3**	**-0.1**
LKD2	**Lefkada island**	**1.56**	**17**	P	**Pn**	**22 51 12.9**	**+0.3**
LKD2				S	**Sn**	**22 51 34.3**	**+1.2**
LKD2	**Lefkada island**	**1.56**	**17**	P	**Pn**	**22 51 13.1**	**+0.5**
LKD2				S	**Sn**	**22 51 34.3**	**+1.2**
LKD2	**Lefkada island**	**1.56**	**17**	P	**Pn**	**22 51 13.1**	**+0.5**
PDO	**Prodromos**	**1.57**	**34**	P	**Pn**	**22 51 13.0**	**+0.3**
PDO				S	**Sg**	**22 51 35.3**	**+0.4**
PDO	**Prodromos**	**1.57**	**34**	P	**Pn**	**22 51 13.0**	**+0.3**
PDO				S	**Sg**	**22 51 35.3**	**+0.4**
PDO	**Prodromos**	**1.57**	**34**	P	**Pb**	**22 51 14.2**	**+0.4**
UPR	**University Cam**	**1.68**	**53**	P	**Pg**	**22 51 17.1**	**+0.6**
UPR	**University Cam**	**1.68**	**53**	P	**Pg**	**22 51 17.1**	**+0.6**
PVO	**Paravola**	**1.75**	**40**	P	**Pb**	**22 51 16.8**	**0.0**
PVO	**Paravola**	**1.75**	**40**	P	**Pb**	**22 51 16.8**	**0.0**
PVO	**Paravola**	**1.75**	**40**	P	**Pb**	**22 51 17.1**	**+0.3**
KLV	**Kalavryta, Ach**	**1.81**	**65**	P	**Pn**	**22 51 16.9**	**+0.9**
KLV				S	**Sb**	**22 51 41.6**	**+0.9**
KLV	**Kalavryta, Ach**	**1.81**	**65**	P	**Pn**	**22 51 16.5**	**+0.5**
KLV				S	**Sb**	**22 51 41.6**	**+0.9**
KLV	**Kalavryta, Ach**	**1.81**	**65**	P	**Pn**	**22 51 16.5**	**+0.5**
VLX	**Vlachokerasia**	**1.84**	**87**	P	**Pn**	**22 51 16.1**	**-0.3**
VLX	**Vlachokerasia**	**1.84**	**87**	P	**Pn**	**22 51 16.3**	**-0.1**
VLX	**Vlachokerasia**	**1.84**	**87**	P	**Pn**	**22 51 16.3**	**-0.1**
SERG	**Sergoula**	**1.93**	**54**	P	**Pn**	**22 51 18.9**	**+1.3**
SERG	**Sergoula**	**1.93**	**54**	P	**Pn**	**22 51 18.9**	**+1.3**
ANX	**Ano Chora**	**1.95**	**48**	P	**Pn**	**22 51 19.7**	**+1.7**
ANX	**Ano Chora**	**1.95**	**48**	P	**Pn**	**22 51 19.7**	**+1.7**
EVR	**Evrytania**	**2.12**	**40**	P	**Pn**	**22 51 22.0**	**+1.7**
EVR	**Evrytania**	**2.12**	**40**	P	**Pn**	**22 51 22.0**	**+1.7**
EVR	**Evrytania**	**2.12**	**40**	P	**Pb**	**22 51 23.2**	**0.0**
DSF	**Desfina**	**2.24**	**59**	P	**Pn**	**22 51 22.6**	**+0.6**
DSF				S	**Sn**	**22 51 51.1**	**+1.3**
DSF	**Desfina**	**2.24**	**59**	P	**Pn**	**22 51 22.5**	**+0.6**
DSF				S	**Sn**	**22 51 51.1**	**+1.3**
DSF	**Desfina**	**2.24**	**59**	P	**Pn**	**22 51 22.5**	**+0.6**
IGT	**Igoumenitsa**	**2.25**	**5**	P	**Pn**	**22 51 22.4**	**+0.4**
IGT	**Igoumenitsa**	**2.25**	**5**	P	**Pn**	**22 51 22.4**	**+0.4**
IGT	**Igoumenitsa**	**2.25**	**5**	P	**Pn**	**22 51 22.2**	**+0.2**
SGD	**Sagiada**	**2.32**	**3**	P	**Pn**	**22 51 23.6**	**+0.6**
SGD	**Sagiada**	**2.32**	**3**	P	**Pn**	**22 51 23.6**	**+0.6**
SGD	**Sagiada**	**2.32**	**3**	P	**Pn**	**22 51 24.3**	**+1.3**
VLI	**Veliai**	**2.36**	**103**	P	**Pn**	**22 51 24.4**	**+0.9**
VLI	**Veliai**	**2.36**	**103**	P	**Pn**	**22 51 24.4**	**+0.9**
VLI	**Veliai**	**2.36**	**103**	P	**Pn**	**22 51 25.9**	**+2.4**
LTK	**Loutraki**	**2.41**	**71**	P	**Pn**	**22 51 24.6**	**+0.4**
LTK	**Loutraki**	**2.41**	**71**	P	**Pn**	**22 51 24.6**	**+0.4**
LTK	**Loutraki**	**2.41**	**71**	P	**Pn**	**22 51 23.5**	**-0.7**
KEK	**Kerkira**	**2.43**	**355**	P	**Pn**	**22 51 25.5**	**+1.1**
KEK	**Kerkira**	**2.43**	**355**	P	**Pn**	**22 51 25.5**	**+1.1**
AGG	**Agios Georgios**	**2.48**	**45**	P	**Pn**	**22 51 26.3**	**+1.1**
AGG	**Agios Georgios**	**2.48**	**45**	P	**Pn**	**22 51 26.0**	**+0.8**
AGG	**Agios Georgios**	**2.48**	**45**	P	**Pn**	**22 51 26.0**	**+0.8**
DID	**Didima**	**2.53**	**84**	P	**Pn**	**22 51 26.0**	**+0.2**
DID				S	**Sn**	**22 51 58.8**	**+1.9**
DID	**Didima**	**2.53**	**84**	P	**Pn**	**22 51 26.0**	**+0.2**
DID				S	**Sn**	**22 51 58.8**	**+1.9**
DID	**Didima**	**2.53**	**84**	P	**Pn**	**22 51 24.6**	**-1.2**
KYTH	**Kithira**	**2.59**	**112**	P	**Pb**	**22 51 30.4**	**-0.8**
KYTH	**Kithira**	**2.59**	**112**	P	**Pb**	**22 51 30.4**	**-0.8**
THL	**Klokotos Trika**	**2.73**	**33**	P	**Pn**	**22 51 30.0**	**+1.4**
THL	**Klokotos Trika**	**2.73**	**33**	P	**Pn**	**22 51 29.8**	**+1.2**
KPRO	**Kipourio**	**2.84**	**20**	P	**Pn**	**22 51 32.4**	**+2.2**
KPRO	**Kipourio**	**2.84**	**20**	P	**Pn**	**22 51 32.4**	**+2.2**
KPRO	**Kipourio**	**2.84**	**20**	P	**Pn**	**22 51 33.1**	**+2.9**
PTL	**Penteli**	**3.10**	**75**	P	**Pn**	**22 51 33.8**	**+0.1**
PTL	**Penteli**	**3.10**	**75**	P	**Pn**	**22 51 33.8**	**+0.1**
PTL	**Penteli**	**3.10**	**75**	P	**Pn**	**22 51 33.0**	**-0.7**
NEO	**Neokhori**	**3.19**	**50**	P	**Pn**	**22 51 34.8**	**-0.2**
NEO	**Neokhori**	**3.19**	**50**	P	**Pn**	**22 51 34.8**	**-0.2**
NEO	**Neokhori**	**3.19**	**50**	P	**Pn**	**22 51 33.3**	**-1.7**
XOR	**Xorichti**	**3.21**	**49**	P	**Pn**	**22 51 34.7**	**-0.5**
XOR	**Xorichti**	**3.21**	**49**	P	**Pn**	**22 51 34.7**	**-0.5**
XOR	**Xorichti**	**3.21**	**49**	P	**Pn**	**22 51 33.4**	**-1.8**
NEST	**Nestorio**	**3.21**	**13**	P	**Pn**	**22 51 38.5**	**+3.2**
NEST	**Nestorio**	**3.21**	**13**	P	**Pn**	**22 51 38.5**	**+3.2**
TIP	**Timpagrande**	**3.22**	**307**	P	**Pn**	**22 51 37.1**	**+1.7**
TIP	**Timpagrande**	**3.22**	**307**	P	**Pn**	**22 51 37.1**	**+1.7**
TIP	**Timpagrande**	**3.22**	**307**	P	**Pn**	**22 51 38.3**	**+2.9**
KZN	**Kozani**	**3.29**	**23**	P	**Pn**	**22 51 38.8**	**+2.4**
LIT	**Litokhoron**	**3.38**	**33**	P	**Pn**	**22 51 38.1**	**+0.5**
LIT	**Litokhoron**	**3.38**	**33**	P	**Pn**	**22 51 38.1**	**+0.5**
LIT	**Litokhoron**	**3.38**	**33**	P	**Pn**	**22 51 36.8**	**-0.8**
KTI	**Kastanea**	**3.48**	**27**	P	**Pn**	**22 51 39.8**	**+0.7**
KTI	**Kastanea**	**3.48**	**27**	P	**Pn**	**22 51 39.8**	**+0.7**
MHLO	**Agia Marina, M**	**3.51**	**99**	P	**Pn**	**22 51 39.6**	**+0.2**
MHLO	**Agia Marina, M**	**3.51**	**99**	P	**Pn**	**22 51 39.6**	**+0.2**
MHLO	**Agia Marina, M**	**3.51**	**99**	P	**Pn**	**22 51 37.8**	**-1.5**
AOS	**Alonnisos**	**3.53**	**57**	P	**Pn**	**22 51 39.0**	**-0.6**
AOS	**Alonnisos**	**3.53**	**57**	P	**Pn**	**22 51 39.0**	**-0.6**
AOS	**Alonnisos**	**3.53**	**57**	P	**Pn**	**22 51 37.4**	**-2.3**
FNA	**Florina**	**3.63**	**16**	P	**Pn**	**22 51 41.8**	**+0.8**
FNA	**Florina**	**3.63**	**16**	P	**Pn**	**22 51 41.8**	**+0.8**
FNA	**Florina**	**3.63**	**16**	P	**Pn**	**22 51 42.0**	**+0.9**
PAIG	**Paliouri**	**3.86**	**46**	P	**Pn**	**22 51 42.3**	**-1.8**
PAIG	**Paliouri**	**3.86**	**46**	P	**Pn**	**22 51 42.3**	**-1.8**
THE	**Thessaloniki**	**4.02**	**33**	P	**Pn**	**22 51 46.5**	**+0.1**
THE	**Thessaloniki**	**4.02**	**33**	P	**Pn**	**22 51 46.5**	**+0.1**
HORT	**Hortiatis**	**4.06**	**35**	P	**Pn**	**22 51 45.2**	**-1.7**
HORT	**Hortiatis**	**4.06**	**35**	P	**Pn**	**22 51 45.2**	**-1.7**
GRG	**Griva**	**4.08**	**26**	P	**Pn**	**22 51 47.5**	**+0.3**
GRG	**Griva**	**4.08**	**26**	P	**Pn**	**22 51 47.5**	**+0.3**
NOCI	**Noci**	**4.21**	**327**	P	**Pn**	**22 51 49.6**	**+0.7**
NOCI	**Noci**	**4.21**	**327**	P	**Pn**	**22 51 49.6**	**+0.7**
OUR	**Ouranopolis**	**4.30**	**44**	P	**Pn**	**22 51 50.1**	**-0.1**
OUR	**Ouranopolis**	**4.30**	**44**	P	**Pn**	**22 51 50.

DRO	Drossia	1.35	66	P	Pn	22 53 03.5	+0.3	
DRO				S	Sb	22 53 23.1	+1.0	
DRO	Drossia	1.35	66	P	Pn	22 53 03.5	+0.3	
DRO				S	Sb	22 53 23.1	+1.0	
DRO	Drossia	1.35	66	P	Pb	22 53 04.4	-0.6	
DRO				S	Sb	22 53 24.6	+2.5	
PYL	PYLOS	1.38	111	P	Pn	22 53 02.8	-0.6	
PYL	PYLOS	1.38	111	P	Pn	22 53 02.6	-0.8	
PYL				S	Sn	22 53 20.7	+0.1	
PYL	PYLOS	1.38	111	P	Pn	22 53 02.8	-0.6	
PYL	PYLOS	1.38	111	P	Pn	22 53 02.6	-0.8	
PYL				S	Sn	22 53 20.7	+0.1	
PYL				AML	AML	22 53 21.1		
	comp=N,10553µm,0.6s							
PYL				AML	AML	22 53 28.1		
	comp=E,6641µm,0.6s							
LKD2	Lefkada island	1.43	16	P	Pb	22 53 05.6	-0.8	
LKD2	Lefkada island	1.43	16	P	Pb	22 53 05.6	-0.8	
LKD2				S	Sb	22 53 27.5	+3.2	
LKD2	Lefkada island	1.43	16	P	Pb	22 53 05.6	-0.8	
LKD2	Lefkada island	1.43	16	P	Pb	22 53 05.8	-0.7	
LKD2				S	Sb	22 53 27.6	+3.2	
LKD2				AML	AML	22 53 34.5		
	comp=N,11562µm,0.6s							
LKD2				AML	AML	22 53 44.6		
	comp=E,9958µm,0.7s							
ITM	Ithomi	1.44	99	P	Pn	22 53 04.5	+0.2	
ITM	Ithomi	1.44	99	P	Pn	22 53 04.2	-0.1	
ITM				S	Sn	22 53 22.8	+0.6	
ITM	Ithomi	1.44	99	P	Pn	22 53 04.5	+0.2	
ITM	Ithomi	1.44	99	P	Pn	22 53 04.3	0.0	
ITM				S	Sb	22 53 24.3	-0.2	
ITM				AML	AML	22 53 34.7		
	comp=N,10328µm,0.8s							
ITM				AML	AML	22 53 37.8		
	comp=E,8555µm,0.8s							
PDO	Prodromos	1.44	34	P	Pn	22 53 05.6	+1.3	
PDO				S	Sb	22 53 25.5	+1.0	
PDO	Prodromos	1.44	34	P	Pn	22 53 05.5	+1.3	
PDO				S	Sb	22 53 26.1	+1.6	
PDO	Prodromos	1.44	34	P	Pb	22 53 06.4	-0.1	
PDO				S	Sb	22 53 26.1	+1.6	
PDO				AML	AML	22 53 38.0		
	comp=N,28968µm,0.7s							
PDO				AML	AML	22 53 39.7		
	comp=E,24204µm,0.7s							
PVO	Paravola	1.62	42	P	Pb	22 53 08.9	-0.7	
PVO	Paravola	1.62	42	P	Pb	22 53 08.9	-0.7	
PVO	Paravola	1.62	42	P	Pb	22 53 09.6	-0.1	
KLV	Kalavryta, Ach	1.71	68	P	Pn	22 53 09.0	+0.9	
KLV				S	Sb	22 53 31.9	-0.4	
KLV	Kalavryta, Ach	1.71	68	P	Pn	22 53 09.0	+0.9	
KLV				S	Sb	22 53 32.3	0.0	
KLV	Kalavryta, Ach	1.71	68	P	Pn	22 53 09.0	+0.9	
KLV				S	Sb	22 53 31.9	-0.4	
KLV	Kalavryta, Ach	1.71	68	P	Pn	22 53 08.8	+0.7	
VLX	Vlachokerasia	1.78	91	P	Pn	22 53 09.3	+0.2	
VLX	Vlachokerasia	1.78	91	P	Pn	22 53 09.4	+0.3	
VLX	Vlachokerasia	1.78	91	P	Pn	22 53 09.3	+0.2	
VLX	Vlachokerasia	1.78	91	P	Pn	22 53 09.2	+0.1	
SERG	Sergoula	1.81	56	P	Pn	22 53 11.3	+1.8	
SERG	Sergoula	1.81	56	P	Pn	22 53 11.3	+1.8	
ANX	Ano Chora	1.83	49	P	Pb	22 53 12.1	-1.1	
ANX	Ano Chora	1.83	49	P	Pb	22 53 12.1	-1.1	
ANX	Ano Chora	1.83	49	P	Pb	22 53 12.2	-1.1	
DSL	Palaion Diasel	1.88	23	P	Pb	22 53 12.5	-1.4	
DSL	Palaion Diasel	1.88	23	P	Pb	22 53 12.5	-1.4	
DSL				S	Sb	22 53 37.2	+0.2	
DSL	Palaion Diasel	1.88	23	P	Pb	22 53 12.5	-1.4	
DSL	Palaion Diasel	1.88	23	P	Pb	22 53 12.6	-1.1	
DSL				S	Sb	22 53 37.2	+0.2	
DSL				AML	AML	22 53 56.8		
	comp=E,7511µm,0.8s							
DSL				AML	AML	22 54 00.5		
	comp=N,9286µm,0.8s							
EVR	Evrytania	2.00	41	P	Pn	22 53 13.8	+1.8	
EVR	Evrytania	2.00	41	P	Pn	22 53 13.8	+1.8	
EVR	Evrytania	2.00	41	P	Pn	22 53 13.8	+1.8	
EVR	Evrytania	2.00	41	P	Pb	22 53 14.6	-1.4	
IGT	Igoumenitsa	2.12	4	P	Pn	22 53 15.2	+1.5	
IGT	Igoumenitsa	2.12	4	P	Pn	22 53 15.2	+1.5	
IGT	Igoumenitsa	2.12	4	P	Pn	22 53 15.2	+1.5	
DSF	Desfina	2.13	61	P	Pn	22 53 15.0	+1.1	
DSF				S	Sb	22 53 43.5	-0.9	
DSF	Desfina	2.13	61	P	Pn	22 53 15.0	+1.1	
DSF				S	Sb	22 53 43.5	-0.9	
DSF	Desfina	2.13	61	P	Pn	22 53 15.0	+1.1	
DSF				S	Sb	22 53 43.5	-0.9	
SGD	Sagiada	2.20	2	P	Pb	22 53 17.3	-2.1	
SGD	Sagiada	2.20	2	P	Pb	22 53 17.3	-2.1	
JAN	Janina	2.31	14	P	Pn	22 53 18.4	+2.1	
JAN				S	Sb	22 53 49.0	-0.4	
JAN	Janina	2.31	14	P	Pn	22 53 18.4	+2.1	
JAN				S	Sb	22 53 49.0	-0.4	
JAN	Janina	2.31	14	P	Pn	22 53 18.4	+2.1	
JAN				S	Sb	22 53 49.0	-0.4	
KEK	Kerkira	2.31	353	P	Pn	22 53 18.3	+1.9	
KEK	Kerkira	2.31	353	P	Pn	22 53 18.2	+1.9	
KEK	Kerkira	2.31	353	P	Pn	22 53 18.3	+1.9	
LTK	Loutraki	2.32	74	P	Pn	22 53 17.1	+0.7	
LTK				S	Sn	22 53 46.5	+2.6	
LTK	Loutraki	2.32	74	P	Pn	22 53 17.1	+0.7	
LTK				S	Sn	22 53 46.5	+2.6	
LTK	Loutraki	2.32	74	P	Pn	22 53 17.1	+0.7	
LTK				S	Sn	22 53 46.5	+2.6	
VLI	Veliai	2.34	106	P	Pn	22 53 17.5	+0.8	
VLI				S	Sn	22 53 46.3	+1.9	
VLI	Veliai	2.34	106	P	Pn	22 53 17.5	+0.8	
VLI				S	Sn	22 53 46.3	+1.9	
VLI	Veliai	2.34	106	P	Pn	22 53 17.5	+0.8	
VLI				S	Sn	22 53 46.3	+1.9	
AGG	Agios Georgios	2.36	46	P	Pn	22 53 18.9	+2.0	
AGG	Agios Georgios	2.36	46	P	Pn	22 53 18.9	+2.0	
AGG	Agios Georgios	2.36	46	P	Pn	22 53 18.9	+2.0	
DID	Didima	2.46	87	P	Pn	22 53 18.5	+0.1	
DID	Didima	2.46	87	P	Pn	22 53 18.5	+0.1	
DID	Didima	2.46	87	P	Pn	22 53 18.5	+0.1	
KYTH	Kithira	2.59	115	P	Pn	22 53 20.8	+0.6	
KYTH				S	Sn	22 53 53.5	+2.8	
KYTH	Kithira	2.59	115	P	Pn	22 53 20.8	+0.6	
KYTH				S	Sn	22 53 53.5	+2.8	
KYTH	Kithira	2.59	115	P	Pn	22 53 20.8	+0.6	
KYTH				S	Sn	22 53 53.5	+2.8	
THL	Klokotos Trika	2.60	34	P	Pn	22 53 22.5	+2.2	
THL				S	Sn	22 53 54.8	+3.9	
THL	Klokotos Trika	2.60	34	P	Pn	22 53 22.5	+2.2	
THL				S	Sn	22 53 54.8	+3.9	
KPRO	Kipourio	2.71	20	P	Pn	22 53 24.7	+2.8	
KPRO	Kipourio	2.71	20	P	Pn	22 53 24.7	+2.8	
PENT	Pentalofos	2.89	15	P	Pn	22 53 27.5	+3.2	
PENT	Pentalofos	2.89	15	P	Pn	22 53 27.5	+3.2	
ATH	Athens Observa	2.89	78	P	Pn	22 53 24.2	0.0	
ATH	Athens Observa	2.89	78	P	Pn	22 53 24.2	0.0	
ATH	Athens Observa	2.89	78	P	Pn	22 53 24.2	0.0	
VLY	Voula,Athens	2.93	80	P	Pn	22 53 24.6	-0.2	
VLY	Voula,Athens	2.93	80	P	Pn	22 53 24.6	-0.2	
VLY	Voula,Athens	2.93	80	P	Pn	22 53 24.6	-0.2	
NEO	Neokhori	3.07	51	P	Pn	22 53 27.1	+0.3	
NEO	Neokhori	3.07	51	P	Pn	22 53 27.1	+0.3	
NEO	Neokhori	3.07	51	P	Pn	22 53 27.1	+0.3	
NEST	Nestorio	3.08	13	P	Pn	22 53 30.1	+3.1	
NEST	Nestorio	3.08	13	P	Pn	22 53 30.1	+3.1	
XOR	Xorichti	3.09	50	P	Pn	22 53 27.8	+0.8	
XOR	Xorichti	3.09	50	P	Pn	22 53 27.8	+0.8	
XOR	Xorichti	3.09	50	P	Pn	22 53 27.8	+0.8	
KZN	Kozani	3.16	23	P	Pn	22 53 30.4	+2.4	
KZN	Kozani	3.16	23	P	Pn	22 53 30.4	+2.4	
KZN	Kozani	3.16	23	P	Pn	22 53 30.4	+2.4	
TIP	Timpagrande	3.19	305	P	Pn	22 53 29.2	+0.7	
TIP	Timpagrande	3.19	305	P	Pn	22 53 29.2	+0.7	
TIP	Timpagrande	3.19	305	P	Pn	22 53 29.2	+0.7	
LIT	Litokhoron	3.25	34	P	Pn	22 53 30.4	+1.2	
LIT	Litokhoron	3.25	34	P	Pn	22 53 30.4	+1.2	
LIT	Litokhoron	3.25	34	P	Pn	22 53 30.4	+1.2	
KTI	Kastanea	3.35	27	P	Pn	22 53 32.8	+2.1	
KTI	Kastanea	3.35	27	P	Pn	22 53 32.8	+2.1	
AOS	Alonnisos	3.42	58	P	Pn	22 53 31.6	0.0	
AOS	Alonnisos	3.42	58	P	Pn	22 53 31.6	0.0	
AOS	Alonnisos	3.42	58	P	Pn	22 53 31.6	0.0	
MHLO	Agia Marina, M	3.48	101	P	Pn	22 53 31.8	-0.6	
MHLO	Agia Marina, M	3.48	101	P	Pn	22 53 31.8	-0.6	
FNA	Florina	3.50	16	P	Pn	22 53 34.7	+2.0	
FNA	Florina	3.50	16	P	Pn	22 53 34.7	+2.0	
FNA	Florina	3.50	16	P	Pn	22 53 34.7	+2.0	
IMMV	Iera Moni Meta	3.66	121	P	Pn	22 53 35.2	+0.4	
IMMV	Iera Moni Meta	3.66	121	P	Pn	22 53 35.2	+0.4	
OHR	Ohrid	3.73	8	*i* Pn	Pn	22 53 38.3	+2.4	
OHR	Ohrid	3.73	8	*i* Pn	Pn	22 53 38.3	+2.4	
OHR	Ohrid	3.73	8	*e*Pn	Pb	22 53 50.6	+5.1	
OHR	Ohrid	3.73	8	*i* Pn	Pn	22 53 38.2	+2.4	
PAIG	Paliouri	3.74	47	P	Pn	22 53 36.7	+0.8	
PAIG	Paliouri	3.74	47	P	Pn	22 53 36.7	+0.8	
PAIG	Paliouri	3.74	47	P	Pn	22 53 36.7	+0.8	
VAM	Vamos	3.83	120	P	Pn	22 53 37.3	+0.1	
VAM	Vamos	3.83	120	P	Pn	22 53 37.3	+0.1	
VAM	Vamos	3.83	120	P	Pn	22 53 37.3	+0.1	
THE	Thessaloniki	3.90	33	P	Pn	22 53 39.1	+1.1	
THE	Thessaloniki	3.90	33	P	Pn	22 53 39.1	+1.1	
THE	Thessaloniki	3.90	33	P	Pn	22 53 39.1	+1.1	
PLG	Polygyros	3.92	40	P	Pn	22 53 39.1	+0.6	
PLG	Polygyros	3.92	40	P	Pn	22 53 39.1	+0.6	
PLG	Polygyros	3.92	40	P	Pn	22 53 39.1	+0.6	
HORT	Hortiatis	3.93	35	P	Pn	22 53 39.3	+0.7	
HORT	Hortiatis	3.93	35	P	Pn	22 53 39.3	+0.7	
HORT	Hortiatis	3.93	35	P	Pn	22 53 39.3	+0.7	
GRG	Griva	3.95	26	P	Pn	22 53 40.0	+1.1	
GRG	Griva	3.95	26	P	Pn	22 53 40.0	+1.1	
GRG	Griva	3.95	26	P	Pn	22 53 40.0	+1.1	
OUR	Ouranopolis	4.18	45	P	Pn	22 53 43.2	+1.2	
OUR	Ouranopolis	4.18	45	P	Pn	22 53 43.2	+1.2	
OUR	Ouranopolis	4.18	45	P	Pn	22 53 43.2	+1.2	
APE	Apeiranthos	4.31	93	P	Pn	22 53 42.7	-1.1	
APE	Apeiranthos	4.31	93	P	Pn	22 53 42.7	-1.1	
APE	Apeiranthos	4.31	93	P	Pn	22 53 42.7	-1.1	
KNT	Kendrikon	4.31	29	P	Pn	22 53 45.2	+1.4	
KNT	Kendrikon	4.31	29	P	Pn	22 53 45.2	+1.4	
KNT	Kendrikon	4.31	29	P	Pn	22 53 45.2	+1.4	
CMBO	Columbo, Santo	4.32	101	P	Pn	22 53 43.5	-0.4	
CMBO	Columbo, Santo	4.32	101	P	Pn	22 53 43.5	-0.4	
THR3	Thira Island,	4.33	102	P	Pn	22 53 43.6	-0.4	
THR3	Thira Island,	4.33	102	P	Pn	22 53 43.6	-0.4	
THR3	Thira Island,	4.33	102	P	Pn	22 53 43.6	-0.4	
VAY	Valandovo	4.33	25	P	Pn	22 53 45.4	+1.3	
VAY	Valandovo	4.33	25	*i* Pn	Pn	22 53 44.9	+0.8	
VAY	Valandovo	4.33	25	*i* Pn	Pn	22 53 44.9	+0.8	
VAY				*e*Sn	Sn	22 54 32.9	-0.6	
VAY	Valandovo	4.33	25	*i* Pn	Pn	22 53 45.1	+1.1	
VAY				*e*Sn	Sn	22 54 31.8	-1.8	
VAY	Valandovo	4.33	25	*i* Pn	Pn	22 53 44.9	+0.8	
VAY	Valandovo	4.33	25	P	Pn	22 53 45.4	+1.3	
VAY	Valandovo	4.33	25	P	Pn	22 53 45.4	+1.3	
THR6	Thira Island,	4.34	102	P	Pn	22 53 43.8	-0.4	
THR6	Thira Island,	4.34	102	P	Pn	22 53 43.8	-0.4	
THR6	Thira Island,	4.34	102	P	Pn	22 53 43.8	-0.4	
THR2	Thira island,	4.35	101	P	Pn	22 53 44.0	-0.3	
THR2	Thira island,	4.35	101	P	Pn	22 53 44.0	-0.3	
THR2	Thira island,	4.35	101	P	Pn	22 53 44.0	-0.3	
SG1	Sgolgore (BA)	4.36	323	*e*Pn	Pn	22 53 45.0	+0.6	
SG1				Sn	Sn	22 54 33.9	-0.3	
IDI	Anoyia	4.38	118	Pn	Pn	22 53 45.3	+0.6	
	comp=N,4.8nm,0.3s,baz=253,slow=4.5,SNR=8.4							
IDI				Sn	Sn	22 54 35.2	+0.4	
	comp=N,13nm,0.3s,baz=353,slow=17,SNR=5.6							
IDI				LR	LR	22 55 55.8		
	comp=N,114nm,21.9s,baz=266,slow=46							
IDI	Anoyia	4.38	118	P	Pn	22 53 46.1	+1.3	
IDI	Anoyia	4.38	118	P	Pn	22 53 46.1	+1.3	
IDI				Sn	Sn	22 54 35.2	+0.4	
SANT	Santorini	4.39	102	P	Pn	22 53 44.5	-0.3	
SANT	Santorini	4.39	102	P	Pn	22 53 44.5	-0.3	
SANT	Santorini	4.39	102	P	Pn	22 53 44.5	-0.3	
THR8	Santorini-Mono	4.39	102	P	Pn	22 53 44.5	-0.4	
THR8	Santorini-Mono	4.39	102	P	Pn	22 53 44.5	-0.4	
BAI	Bari	4.48	327	*e*Pn	Pn	22 53 47.8	+1.8	
BAI				Sn	Sn	22 54 38.9	+1.9	
VAE	Valguarnera	4.56	273	Pn	Pb	22 53 53.0	-6.6	
	comp=N,4.0nm,0.3s,baz=18,slow=6.0,SNR=6.6							
VAE				Sn	Sn	22 54 40.4	+1.1	
	comp=N,5.4nm,0.3s,baz=354,slow=7.3,SNR=4.2							
LIA	Limnos Island	4.66	56	P	Pn	22 53 48.8	+0.2	
LIA	Limnos Island	4.66	56	P	Pn	22 53 48.8	+0.2	
LIA	Limnos Island	4.66	56	P	Pn	22 53 48.8	+0.2	
SKO	Skopje	4.66	12	P	Pn	22 53 50.4	+1.8	
SKO	Skopje	4.66	12	*e*Pn	Pn	22 53 47.6	-1.0	
SKO	Skopje	4.66	12	*e*Pn	Pn	22 53 47.6	-1.0	
SKO	Skopje	4.66	12	*i* Pn	Pn	22 53 50.6	+2.0	
SKO	Skopje	4.66	12	*e*Pn	Pn	22 53 47.6	-1.0	
SKO	Skopje	4.66	12	P	Pn	22 53 50.4	+1.8	
SKO	Skopje	4.66	12	P	Pn	22 53 50.4	+1.8	
CHOS	Chios island	4.78	76	P	Pn	22 53 50.0	-0.2	
CHOS	Chios island	4.78	76	P	Pn	22 53 50.0	-0.2	
CHOS	Chios island	4.78	76	P	Pn	22 53 50.0	-0.2	
LAST	Lasithi	4.86	116	P	Pn	22 53 51.9	+0.5	
LAST	Lasithi	4.86	116	P	Pn	22 53 51.9	+0.5	
LAST	Lasithi	4.86	116	P	Pn	22 53 51.9	+0.5	
NVR	Nevrokopi	4.88	35	P	Pn	22 53 52.3	+0.7	
NVR	Nevrokopi	4.88	35	P	Pn	22 53 52.3	+0.7	
NVR	Nevrokopi	4.88	35	P	Pn	22 53 52.3	+0.7	
KAVA	Kavala	4.93	42	P	Pn	22 53 52.8	+0.5	
KAVA	Kavala	4.93	42	P	Pn	22 53 52.8	+0.5	
KAVA	Kavala	4.93	42	P	Pn	22 53 52.8	+0.5	
SMTH	Samothraki Isl	5.19	52	P	Pn	22 53 56.4	+0.5	
SMTH	Samothraki Isl	5.19	52	P	Pn	22 53 56.4	+0.5	
SMTH	Samothraki Isl	5.19	52	P	Pn	22 53 56.4	+0.5	
BARS	Barje	5.55	13	*e*Pn	Pn	22 54 01.8	+1.0	
VTS	Vitosha	5.68	23	P	Pn	22 54 04.3	+1.5	
VTS	Vitosha	5.68	23	P	Pn	22 54 04.3	+1.5	
VTS	Vitosha	5.68	23	P	Pn	22 54 04.3	+1.5	
ALN	Alexandroupoli	5.76	51	P	Pn	22 54 04.5	+0.9	
ALN	Alexandroupoli	5.76	51	P	Pn	22 54 04.5	+0.9	
ALN	Alexandroupoli	5.76	51	P	Pn	22 54 04.5	+0.9	
IVAS	Ivanjica	6.16	0	*e*Pn	Pn	22 54 09.9	+0.7	
BOVS	Bovan	6.33	10	*e*Pn	Pn	22 54 11.9	+0.4	
GRUS	Gruza	6.49	4	*e*Pn	Pn	22 54 15.1	+1.5	
BOLS	Boljevac	6.56	12	*e*Pn	Pn	22 54 14.0	-0.6	
ZAGS	Zajecar	6.59	13	*e*Pn	Pn	22 54 15.5	+0.5	
DIVS	Divibare	6.68	359	*e*Pn	Pn	22 54 17.0	+0.6	
TURN	Turunc	6.78	92	*i* P	Pn	22 54 14.0	-3.6	
TURN				*i* S	Sn	22 55 27.9	-5.9	
KUBS	Kucevo	7.09	9	*e*Pn	Pn	22 54 21.1	-0.8	
TEKS	Tekeris	7.15	356	*e*Pn	Pn	22 54 22.8	+0.1	
MDVR	Moldovita	7.46	9	*i* P	Pn	22 54 33.9	+6.9	
GOLH	Golhisar	7.51	88	*i* P	Pn	22 54 32.2	+4.4	
GOLH				*i* S	Sn	22 55 55.4	+3.5	
KSL	Kastellorizon	7.68	97	P	Pn	22 54 31.8	+1.8	
KSL	Kastellorizon	7.68	97	P	Pn	22 54 31.8	+1.8	
KSL	Kastellorizon	7.68	97	P	Pn	22 54 31.8	+1.8	
AKAS	Kas	7.68	96	*i* P	Pn	22 54 30.2	0.0	
AKAS				*i* S	Sn	22 55 53.4	-2.8	
AKAS	Kas	7.68	96	P	Pn	22 54 30.2	0.0	
UDBI	Udbina	7.84	336	*e*Pn	Pn	22 54 33.8	+1.5	
UDBI				Sn	Sn	22 55 58.9	-1.1	
UDBI	Udbina	7.84	336	*e*Pn	Pn	22 54 33.8	+1.5	
HUMR	Humele	7.99	26	*i* P	Pn	22 54 35.9	+1.6	
HUMR	Humele	7.99	26	*i* P	Pn	22 54 35.9	+1.6	
KORT	Korkueli	8.16	90	*i* P	Pn	22 54 38.7	+2.0	
KORT				*i* S	Sn	22 56 07.9	0.0	
KORT	Korkueli	8.16	90	P	Pn	22 54 38.7	+2.0	
KORT				S	Sn	22 56 07.9	0.0	
NVLJ	Novalja	8.18	333	*e*Pn	Pn	22 54 38.4	+1.5	
NVLJ				Sn	Sn	22 56 04.7	-3.5	
NVLJ	Novalja	8.18	333	*e*Pn	Pn	22 54 38.3	+1.5	
BZS	Buzias	8.27	7	*i* P	Pn	22 54 41.6	+3.5	
BZS	Buzias	8.27	7	*i* P	Pn	22 54 41.6	+3.5	
ARR	Arges	8.63	22	*i* P	Pn	22 54 44.0	+0.8	
ARR	Arges	8.63	22	*i* P	Pn	22 54 44.0	+0.8	
VOIR		8.82	23	*i* P	Pn	22 54 47.0	+1.2	
VOIR		8.82	23	*i* P	Pn	22 54 47.0	+1.2	
KEST	Kesra	8.85	262	Pn	Pn	22 54 48.5	+2.3	
	comp=N,0.2nm,0.3s,baz=49,slow=18,SNR=4.0							
KEST				Sn	Sn	22 56 19.6	-5.2	
	baz=0.0,slow=20,SNR=2.2							
OZLJ	Ozalj	8.91	338	*e*Pn	Pn	22 54 47.9	+1.0	
OZLJ				Sn	Sn	22 56 24.4	-1.8	
OZLJ	Ozalj	8.91	338	*e*Pn	Pn	22 54 47.8	+1.0	
ISR	Istrita	9.08	30	*i* P	Pn	22 54 52.6	+3.3	
ISR	Istrita	9.08	30	*i* P	Pn	22 54 52.6	+3.3	
MLR	Muntele Rosu	9.17	27	Pn	Pn	22 54 52.2	+1.6	
	comp=N,0.2nm,0.3s,baz=241,slow=8.8,SNR=11							
MLR	Muntele Rosu	9.17	27	*i* P	Pn	22 54 53.7	+3.1	
MLR	Muntele Rosu	9.17	27	*i* P	Pn	22 54 53.7	+3.1	
TLB	Topalu	9.32	37	*i* P	Pn	22 54 52.8	+0.3	
TLB	Topalu	9.32	37	*i* P	Pn	22 54 52.8	+0.3	
HARR	Harsova	9.35	37	*i* P	Pn	22 54 52.2	-0.7	
HARR	Harsova	9.35	37	*i* P	Pn	22 54 52.2	-0.7	
DOPR	Dopca	9.40	23	*i* P	Pn	22 54 55.5	+1.8	
DOPR	Dopca	9.40	23	*i* P	Pn	22 54 55.5	+1.8	
GRER		9.47	31	*i* P	Pn	22 55 00.6	+6.1	
DRGR		9.56	11	*i* P	Pn	22 55 06.0	+10	
PLOR	Plostina	9.73	28	*i* P	Pn	22 55 00.9	+2.7	
PLOR	Plostina	9.73	28	*i* P	Pn	22 55 00.9	+2.7	
VRI	Vrincioaia	9.78	28	*i* P	Pn	22 55 01.7	+2.9	
VRI	Vrincioaia	9.78	28	*i* P	Pn	22 55 01.7	+2.9	
CFR	Carcaliu	9.81	35	*i* P	Pn	22 55 01.3	+2.1	
CFR	Carcaliu	9.81	35	*i* P	Pn	22 55 01.3	+2.1	
OBKA	Obir	10.00	337	*i* Pn	Pn	22 55 04.4	+2.6	
	comp=N,1.9nm,0.3s							
OBKA	Obir	10.00	337	Pn	Pn	22 55 04.4	+2.6	
	comp=N,1.9nm,0.3s							
SOKA	Soboth	10.01	339	*i* Pn	Pn	22 55 02.1	+0.1	
	comp=N,5.4nm,0.4s							
SOKA	Soboth	10.01	339	Pn	Pn	22 55 02.1	+0.1	
	comp=N,5.4nm,0.4s							
TESR	Tescani	10.30	26	*i* P	Pn	22 55 08.3	+2.4	
TESR	Tescani	10.30	26	*i* P	Pn	22 55 08.3	+2.4	
MYKA	Terra Mystica	10.40	334	*i* Pn	Pn	22 55 13.1	+5.7	
	comp=N,1.4nm,0.3s							
ARSA	Arzberg	10.41	342	*i* Pn	Pn	22 55 08.1	+0.7	
	comp=N,0.7nm,0.2s							
ARSA	Arzberg	10.41	342	Pn	Pn	22 55 08.1	+0.7	
	comp=N,0.7nm,0.2s							
PSZ	Piszkesteto	10.50	359	*i* P	Pn	22 55 17.0	+8.2	
BRTR	Keskin Array B	10.82	74	Pn	Pn	22 55 15.2	+2.1	
	comp=N,0.1nm,0.3s,baz=232,slow=9.3,SNR=6.1							
BRTR				Sn	Sn	22 57 03.4	-10	
	comp=N,0.0nm,0.3s,baz=243,slow=20,SNR=2.1							
BURAR	Bucovina Array	10.86	19	*i* P	Pn	22 55 15.5	+1.8	
BURAR	Bucovina Array	10.86	19	*i* P	Pn	22 55 15.5	+1.8	
LEOM	Leova	10.88	31	*i* P	Pn	22 55 15.6	+1.9	
LEOM	Leova	10.88	31	*i* P	Pn	22 55 15.6	+1.9	
PRAR	RASCA	10.91	22	*i* P	Pn	22 55 18.0	+3.7	
PRAR	RASCA	10.91	22	*i* P	Pn	22 55 18.0	+3.7	
ABTA	Abfaltersbach	10.91	331	*e*Pn	Pn	22 55 15.7	+1.4	
	comp=N,1.0nm,0.4s							
ABTA	Abfaltersbach	10.91	331	Pn	Pn	22 55 15.7	+1.4	
	comp=N,1.0nm,0.4s							
CONA	Conrad Observa	10.97	345	*i* Pn	Pn	22 55 21.4	+6.2	
	comp=N,0.8nm,0.4s							
MOA	Molln	11.29	339	*i* Pn	Pn	22 55 20.7	+1.2	
	comp=N,2.2nm,0.3s							
MOA	Molln	11.29

comp=Z,87nm,20.1s,baz=196,slow=39
BVAR Borovoye Array 37.84 49 P P 22 59 53.9 -0.1
comp=Z,1.7nm,0.5s,baz=260,slow=6.8,SNR=9.3
MKAR Makanchi Array 45.96 58 P P 23 00 59.9 -0.5
comp=Z,2.9nm,0.5s,baz=272,slow=6.9,SNR=28
ZALV Zalesovo Beam 46.43 48 P P 23 01 03.6 -0.3
comp=Z,6.9nm,0.6s,baz=276,slow=9.1,SNR=26
NRIK Noril'sk 47.61 26 P P 23 01 14.2 +1.2
comp=Z,2.8nm,0.6s,baz=269,slow=5.2,SNR=3.3
PYUN Piuthan 52.81 81 *eP* **P 23 01 53.2 0.0**
comp=Z,52nm,0.6s
KOLN Koldanda 53.44 81 *eP* **P 23 01 57.2 -0.6**
comp=Z,18nm,0.6s
GKN Gorkha 54.15 80 *eP* **P 23 02 02.5 -0.4**
comp=Z,34nm,0.7s
DMN Daman 54.70 80 *eP* **P 23 02 06.8 -0.2**
comp=Z,37nm,0.7s
KKN Kakani 54.75 80 *eP* **P 23 02 07.1 -0.3**
comp=Z,20nm,0.7s
GUN Gumba 55.16 79 *eP* **P 23 02 10.5 0.0**
SONM Songino Array 61.18 50 P P 23 02 52.5 +0.5
comp=Z,1.5nm,0.6s,baz=286,slow=9.2,SNR=10
CMAR Chiang Mai Arr 70.30 82 P P 23 03 51.4 +0.3
comp=Z,1.2nm,0.6s,baz=301,slow=7.6,SNR=5.6
ILAR Eielson Array 77.64 354 P P 23 04 38.5 +5.2
comp=Z,0.3nm,0.9s,baz=358,slow=4.8,SNR=3.2
KSAR Wonju Array Be 80.03 50 P P 23 04 48.7 +1.8
KSAR Wonju Array Be 80.03 50 P P 23 04 48.7 +1.8
KSRS Korea Array 80.05 50 P P 23 04 48.7 +1.7
comp=Z,2.1nm,0.9s,baz=335,slow=4.5,SNR=5.9

MEX 21 22:56:14.7±0.5, 16.73N×99.55W, h6km±3km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.33**	**295**	*eP*	Pb	22 56 22.8	-0.2
ACX				*eS*	Sb	22 56 28.0	-0.5
ACP2	**Acapulco**	**0.36**	**294**	*eP*	Pg	22 56 21.2	-0.4
ACP2				*eS*	Sg	22 56 26.5	+0.1
CAIG	**El Cayaco**	**0.76**	**295**	*i* P	Pg	22 56 27.6	-1.7
CAIG				*eS*	Sg	22 56 38.2	-1.0
MEIG	**Mezcala**	**1.19**	**357**	*eP*	Pg	22 56 34.3	-3.2
MEIG				*eS*	Sg	22 56 49.5	-3.6
TLIG	**Tlapa**	**1.25**	**48**	*eP*	Pg	22 56 35.1	-3.6
TLIG				*eS*	Sg	22 56 50.4	-4.5
PNIG	**Pinotepa**	**1.40**	**104**	*eP*	Pn	22 56 37.0	-3.9
PNIG				*eS*	Sb	22 56 54.9	-4.5
ARIG	**Puente Sto Nin**	**1.72**	**334**	*eP*	Pn	22 56 42.1	-3.0
ARIG				*eS*	Sn	22 57 02.5	-5.0
ZIIG	**Zihuatanejo**	**2.03**	**296**	*i* P	Pn	22 56 47.6	-1.9
ZIIG				*i* S	Sn	22 57 11.7	-3.4

ISK ***21*** *22:56:44.3, 34.47N×33.01E, h4km, MD3.2*
CSEM ***21*** *22:56:49.3±1.1, 34.57N×33.68E, h10km, ML3.3, Error ellipse: s-maj=24.4km s-min=9.9km az=161.0*
NIC ***21*** *22:56:49.8±0.2, 34.63N×33.67E, h2km, ML3.3*
ISC 21 22:56:50.8±2.2, 34.63N±0.10×33.63E±0.08, h12km, n19, σ0.98/24, Cyprus region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CSS	**Mathiatis** baz=140	**0.42**	**324**	P	**Pg**	**22 56 58.5**	**-0.6**
CSS	**Mathiatis**	**0.42**	**324**	P	**Pg**	**22 56 58.5**	**-0.6**
SZAC	**Souni** baz=101	**0.63**	**282**	P	**Pg**	**22 57 03.1**	**+0.1**
SZAC				S	**Sb**	**22 57 13.2**	**+0.7**
SZAC	**Souni**	**0.63**	**282**	P	**Pg**	**22 57 03.1**	**+0.1**
SZAC				S	**Sb**	**22 57 13.2**	**+0.7**
MAMC	**Mammari** baz=145	**0.64**	**328**	P	**Pg**	**22 57 03.0**	**-0.3**
MAMC	**Mammari**	**0.64**	**328**	P	**Pg**	**22 57 03.0**	**-0.3**
LEF	**Lefka**	**0.78**	**309**	*e*PG	Pg	22 56 57.6	-8.4
ALFC	**Alefka** baz=120	**1.00**	**302**	P	**Pb**	**22 57 09.8**	**-0.2**
ALFC				S	**Sg**	**22 57 24.2**	**+1.1**
ALFC	**Alefka**	**1.00**	**302**	P	**Pb**	**22 57 09.8**	**-0.2**
ALFC				S	**Sg**	**22 57 24.2**	**+1.1**
PPCY	**Paphos** baz=102	**1.09**	**284**	P	**Pb**	**22 57 10.7**	**-0.8**
PPCY	**Paphos**	**1.09**	**284**	P	**Pb**	**22 57 10.7**	**-0.8**
AKMC	**Akamas** baz=109	**1.14**	**291**	P	**Pn**	**22 57 12.2**	**-0.4**
AKMC	**Akamas**	**1.14**	**291**	P	**Pn**	**22 57 12.2**	**-0.4**
AKKU	**Akkuyu-Mersin**	**1.53**	**358**	*e*PN	**Pn**	**22 57 16.2**	**-1.8**
AKKU				*e*SN	**Sb**	**22 57 39.5**	**+1.0**
AKKU	**Akkuyu-Mersin**	**1.53**	**358**	*e*Pn	**Pn**	**22 57 16.2**	**-1.8**
AKKU				*e*Sn	**Sb**	**22 57 39.5**	**+1.0**
IKL	**Isikli**	**1.61**	**2**	*e*PN	**Pn**	**22 57 17.7**	**-1.3**
IKL	**Isikli**	**1.61**	**2**	*e*Pn	**Pn**	**22 57 17.7**	**-1.3**
KARA	**Karaisali**	**2.87**	**23**	*e*PN	**Pn**	**22 57 37.5**	**+1.1**
KARA	**Karaisali**	**2.87**	**23**	*e*Pn	**Pn**	**22 57 37.5**	**+1.1**

IDC 21 23:00:33.9±3.3, 9.29S×118.90E, h0km, mb3.5/3, mb1 3.5/4, mb1mx3.4/39, mbtmp3.4/4, ML2.9/1, Error ellipse: s-maj=265.9km s-min=26.3km az=51.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr** 0.0nm,0.3s,baz=304,slow=14,SNR=1.5	**18.30**	**127**	P	P	23 04 50.5	+0.9
ASAR	**Alice Springs** 0.3nm,0.5s,baz=324,slow=12,SNR=4.9	**20.25**	**137**	P	P	23 05 10.2	-0.8
MKAR	**Makanchi Array** 0.6nm,0.6s,baz=154,slow=5.6,SNR=7.0	**64.67**	**333**	P	P	23 11 13.7	+0.1
ZALV	**Zalesovo Beam** 0.9nm,0.6s,baz=142,slow=3.8,SNR=3.9	**69.27**	**339**	P	P	23 11 42.6	-0.1

IDC ***21*** *23:01:17.4±4.2, 34.51N×141.12E, h0km, mb3.8/9, mb1 3.9/10, mb1mx3.7/45, mbtmp3.8/10, ML3.4/1, MS3.5/5, Ms1 3.5/5, ms1mx3.0/58, Error ellipse: s-maj=108.7km s-min=35.5km az=179.0*
ISCJB ***21*** *23:01:24.8±0.8, 35.54N±0.05×141.31E±0.08, h25km, mb3.9/11, MS4.2/2, Error ellipse: s-maj=9.6km s-min=7.2km az=17.5*
JMA ***21*** *23:01:28.3±0.1, 35.57N×141.02E, h35km±1km, M3.2*
NEIC ***21*** *23:01:41.2±1.7, 35.17N×139.26E, h102km±12km, mb4.6/2, Error ellipse: s-maj=24.8km s-min=17.5km az=201.0*
ISC 21 23:01:26.9±0.9, 35.53N±0.05×141.13E±0.09, h25km, n35, σ1.9/17/24, mb3.8/11, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.28**	**308**	⇑P	**Pn**	**23 01 34.9**	**-0.6**
CHOJ				S	**Sb**	**23 01 39.4**	**+1.1**
JCN	**Nagara**	**0.77**	**262**	P	**Pn**	**23 01 41.6**	**-0.5**
KTR	**Katsuura**	**0.77**	**241**	P	**Pn**	**23 01 42.1**	**0.0**
BSO4	**Boso 4**	**0.84**	**231**	P	**Pn**	**23 01 43.2**	**+0.1**
BSO4				*eX*		23 01 53.7	
BSO1	**Boso 1**	**0.88**	**188**	P	**Pn**	**23 01 43.7**	**+0.5**
BSO3	**Boso 3**	**0.89**	**215**	⇑P	**Pb**	**23 01 43.8**	**+0.3**
BSO3				*eX*		23 01 56.4	
JYT	**Yasato**	**1.03**	**313**	P	**Pb**	**23 01 45.7**	**-0.4**
JHO	**Hitachi**	**1.17**	**337**	P	**Pb**	**23 01 47.3**	**-1.2**
JIM2	**Oshima 3**	**1.61**	**240**	P	**Pn**	**23 01 53.6**	**-0.2**
JIM2				*eS*	**Sn**	**23 02 12.6**	**-1.2**
JAG	**Ashikaga**	**1.63**	**304**	P	**Pn**	**23 01 54.6**	**+0.6**
MJAR	**Matsushiro Arr** 5.0nm,0.3s,baz=96,slow=14,SNR=31	**2.58**	**294**	Pn	**Pn**	**23 02 08.3**	**+1.3**
MJAR				LR	LR	23 03 14.0	
	comp=Z,186nm,19.9s,baz=65,slow=38						
MAJO	**Matsushiro**	**2.58**	**294**	*e*Pn	**Pn**	**23 02 08.7**	**+1.6**
ERM	**Erimo**	**6.67**	**13**	Pn	Pb	23 03 28.7	+6.7
KSRS	**Korea Array** comp=Z,113nm,20.4s,baz=64,slow=37	**10.81**	**284**	LR	LR	23 08 11.4	
MDJ	**Mudanjiang**	**12.66**	**319**	*e*Pn	**Pn**	**23 04 28.8**	**+3.5**
KLR	**Kul'dur** comp=Z,74nm,18.2s,baz=144,slow=35	**15.33**	**336**	LR	LR	23 10 45.6	
H11N2	**WAKE ISLAND Hy** baz=310,slow=75,SNR=22	**27.61**	**118**	T	T	23 36 14.0	
H11N1	**WAKE ISLAND Hy** baz=310,slow=75,SNR=19	**27.61**	**118**	T	T	23 36 13.8	
H11N3	**WAKE ISLAND Hy** baz=310,slow=75,SNR=20	**27.62**	**118**	T	T	23 36 21.9	
H11S3	**WAKE ISLAND Hy** baz=312,slow=75,SNR=113	**28.27**	**120**	T	T	23 37 06.6	
H11S1	**WAKE ISLAND Hy** baz=312,slow=75,SNR=123	**28.27**	**120**	T	T	23 37 09.7	
H11S2	**WAKE ISLAND Hy** baz=312,slow=75,SNR=80	**28.28**	**120**	T	T	23 37 02.1	
SONM	**Songino Array** 0.6nm,0.4s,baz=72,slow=9.3,SNR=5.4	**28.47**	**306**	P	**P**	**23 07 18.9**	**-1.1**
ZALV	**Zalesovo Beam** 0.9nm,0.6s,baz=100,slow=7.9,SNR=5.6	**42.77**	**314**	P	**P**	**23 09 21.9**	**-0.3**
MKAR	**Makanchi Array** 0.9nm,0.7s,baz=95,slow=8.6,SNR=7.9	**44.74**	**303**	P	**P**	**23 09 37.2**	**-0.9**
HNR	**Honiara** 8.9nm,0.3s	**48.12**	**155**	*e*P	P	23 10 13.9	+9.1
KTH	**Kantishna Hill** 0.9nm,0.5s	**49.12**	**33**	P	P	23 10 26.0	+14
ILAR	**Eielson Array** 0.4nm,0.7s,baz=268,slow=6.3,SNR=4.7	**50.89**	**32**	P	**P**	**23 10 26.6**	**+1.1**
ARU	**Arti** 1.0nm,0.4s,baz=108,slow=8.0,SNR=3.7	**57.34**	**319**	P	**P**	**23 11 11.6**	**-1.0**
AKTO	**Aktyubinsk** 0.7nm,0.6s,baz=61,slow=10,SNR=3.4	**59.52**	**313**	P	**P**	**23 11 27.6**	**-0.3**
FINES	**FINESS Array B** 0.7nm,0.5s,baz=52,slow=5.4,SNR=6.8	**70.04**	**332**	P	**P**	**23 12 36.0**	**-0.2**
KBZ	**Khabaz** comp=Z,161nm,21.6s,baz=158,slow=37	**71.71**	**311**	LR	LR	23 45 41.1	
KVAR	**Kislovodsk Arr** comp=Z,123nm,19.9s,baz=138,slow=37	**71.72**	**311**	LR	LR	23 45 55.6	
NOA	**NORSAR Array B** 0.6nm,0.7s,baz=56,slow=4.7,SNR=3.6	**75.49**	**337**	P	**P**	**23 13 08.4**	**-0.2**
BRTR	**Keskin Array B** 0.9nm,1.0s,baz=73,slow=4.9,SNR=3.2	**79.68**	**312**	P	**P**	**23 13 31.2**	**-1.4**

ISCJB ***21*** *23:01:40.9±0.3, 62.54S±0.04×165.1E±0.1, h10km, mb5.2/40, MS5.5/170, Error ellipse: s-maj=8.7km s-min=5.0km az=7.2*
IDC ***21*** *23:01:40.6±0.5, 62.49S×165.75E, h0km, mb4.8/13, mb1 4.9/15, mb1mx4.8/25, mbtmp4.8/15, ML5.0/2, MS5.5/18, Ms1 5.5/18, ms1mx5.4/22, Error ellipse: s-maj=21.6km s-min=13.5km az=81.0*
BJI ***21*** *23:01:41.9, 62.11S×165.16E, h8km, mb5.8/6, mB5.7/22, Ms5.6/25, Ms7 5.4/26*
NEIC ***21*** *23:01:42.0±0.0, 62.47S×164.30E, h15km Best double couple: NP1:ϕs139.00000°, δ87.00000°, λ54.00000°. NP2:ϕs44.00000°, δ36.00000°, λ174.00000°. Principal axes: T 1.3800, Plg37.0000°, Azm17.0000°; N -0.1800, Plg35.0000°, Azm141.0000°; P -1.2000, Plg32.0000°, Azm258.0000°;*
NEIC ***21*** *23:01:42.5±0.2, 62.50S×164.45E, h10km, mb5.6/42, MS5.5/133, MW6.0, MW5.8 Error ellipse: s-maj=8.5km s-min=4.7km az=96.0, Moment Tensor Solution. s30 Moment tensor: Scale 10^17 Nm; Mrr=1.50; Mθθ=6.58; Mϕϕ=5.08; Mrθ=0.47; Mrϕ=-1.61; Mθϕ=4.02; Best double couple: M0 7.40000×10^17 NP1:ϕs238.00000°, δ67.00000°, λ=156.00000°. NP2:ϕs138.00000°, δ68.00000°, λ=25.00000°. Principal axes: T 6.8000, Plg1.0000°, Azm188.0000°; N 1.0700, Plg58.0000°, Azm279.0000°; P -7.8800, Plg32.0000°, Azm98.0000°;*
GCMT ***21*** *23:01:42.5±0.1, 62.36S×165.42E, h16km, MW5.9/129, Moment Tensor Solution. s123,c248; s129,c410; Duration: 28s2 Moment tensor: Scale 10^18 Nm; Mrr=0.11±.01; Mθθ=0.88±.01; Mϕϕ=-0.77±.01; Mrθ=-0.30±.02; Mθϕ=-0.29±.01; Mrϕ=-0.05±.02; Best double couple: M0 0.92400×10^18 NP1:ϕs234.00000°, δ86.00000°, λ164.00000°. NP2:ϕs326.00000°, δ74.00000°, λ4.00000°. Principal axes: T 1.0080, Plg14.0000°, Azm189.0000°; N -0.1670, Plg73.0000°, Azm41.0000°; P -0.8400, Plg9.0000°, Azm281.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
MOS ***21*** *23:01:42.2±1.8, 62.59S×164.28E, h10km, mb4.9/24, MS5.5/11 Error ellipse: s-maj=36.9km s-min=9.5km az=94.7*
ISC 21 23:01:43.5±0.3, 62.52S±0.05×164.78E±0.07, h10km, n442, σ2.65/292, mb5.3/41, MS5.5/171, 29C-14D, Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCQ	**Macquarie Isla**	**8.60**	**337**	*e*P	**Pn**	**23 03 44.7**	**-3.1**
MCQ	**Macquarie Isla**	**8.60**	**337**	*e*Pn	**Pn**	**23 03 44.7**	**-3.1**
VNDA	**Vanda** 2.3nm,0.3s,baz=354,slow=14,SNR=123	**15.10**	**182**	Pn	**Pn**	**23 05 14.2**	**-2.3**
VNDA				LR	LR	23 10 18.1	
	comp=Z,37μm,18.2s,baz=12,slow=34						
VNDA	**Vanda** 273nm,1.5s	**15.10**	**182**	*e*Pn	**Pn**	**23 05 14.0**	**-2.5**
SBA	**Scott Base**	**15.42**	**178**	*e*P	**Pn**	**23 05 19.4**	**-1.3**
SBA				pmax	pmax		
	comp=Z,690nm,1.6s						
SBA	**Scott Base** comp=Z,693nm,1.6s	**15.42**	**178**	*e*Pn	**Pn**	**23 05 19.4**	**-1.3**
WHZ	**Wether Hill Ro** comp=Z,438nm,1.2s	**16.76**	**8**	*e*Pn	**Pn**	**23 05 36.4**	**-1.6**
DCZ	**Deep Cove** comp=Z,1μm,1.7s	**17.14**	**6**	*e*Pn	**Pn**	**23 05 42.0**	**-0.9**
MLZ	**Mavora Lakes** comp=Z,366nm,1.1s	**17.30**	**8**	*e*Pn	**Pn**	**23 05 43.9**	**-0.9**
ODZ	**Otahua Downs** comp=Z,544nm,1.3s	**17.84**	**14**	*e*Pn	**Pn**	**23 05 50.0**	**-1.5**
WKZ	**Wanaka** comp=Z,944nm,1.4s	**17.90**	**10**	*e*Pn	**Pn**	**23 05 52.3**	**0.0**
LBZ	**Lake Benmore** comp=Z,1μm,1.9s	**18.44**	**12**	*e*P	**P**	**23 05 58.3**	**-0.5**
RPZ	**Rata Peaks** comp=Z,15nm,0.3s,baz=183,slow=5.0,SNR=42	**19.19**	**14**	P	**P**	**23 06 05.9**	**-1.2**
RPZ				LR	LR	23 12 19.4	
	comp=Z,39μm,20.3s,baz=232,slow=34						
RPZ	**Rata Peaks** comp=Z,774nm,1.5s	**19.19**	**14**	*e*P	**P**	**23 06 07.0**	**-0.2**
FOZ	**Fox Glacier** comp=Z,1μm,1.9s	**19.25**	**11**	*e*P	**P**	**23 06 07.8**	**+0.1**
MQZ	**McQueen's Vall** comp=Z,735nm,1.8s	**19.40**	**17**	*e*P	**P**	**23 06 09.1**	**-0.3**
CRLZ	**Canterbury Las** comp=Z,917nm,1.6s	**19.53**	**17**	*e*P	**P**	**23 06 10.9**	**+0.1**
OXZ	**Oxford** comp=Z,536nm,1.6s	**19.69**	**16**	*e*P	**P**	**23 06 10.8**	**-1.8**
LTZ	**Lake Taylor** comp=Z,293nm,1.3s	**20.26**	**16**	*e*P	**P**	**23 06 18.0**	**-0.8**
KHZ	**Kahutara** comp=Z,1μm,1.7s	**20.79**	**19**	*e*P	**P**	**23 06 23.2**	**-1.3**
THZ	**Tophouse** comp=Z,263nm,1.1s	**21.35**	**17**	*e*P	**P**	**23 06 29.8**	**-0.7**
TAU	**Tasmania Unive**	**22.17**	**324**	PFAKE		23 06 50.0	+11
TAU				LR	LR		
	comp=Z,12μm,19.0s						
MOO	**Moorlands** baz=23,SNR=5.6	**22.64**	**324**	P	**P**	**23 06 46.8**	**+2.4**
BFZ	**Birch Farm** comp=Z,446nm,1.2s	**22.93**	**23**	*e*P	**P**	**23 06 46.6**	**-0.8**
BKZ	**Black Stump Fm** comp=Z,218nm,1.2s	**24.45**	**22**	*e*P	**P**	**23 07 01.0**	**-1.2**
HIZ	**Hauiti** comp=Z,177nm,1.0s	**24.81**	**19**	*e*P	**P**	**23 07 04.1**	**-1.3**
URZ	**Urewera** comp=Z,124nm,0.9s,baz=210,slow=3.7,SNR=26	**25.44**	**23**	P	**P**	**23 07 06.8**	**-4.3**
URZ				S	S	23 11 20.1	-18
	comp=Z,6.2nm,0.3s,baz=56,slow=23,SNR=8.4						
URZ				LR	LR	23 16 53.7	
	comp=Z,25μm,18.5s,baz=194,slow=36						
URZ	**Urewera** comp=Z,198nm,1.0s	**25.44**	**23**	*e*P	**P**	**23 07 08.3**	**-2.8**
URZ				S	S	23 11 20.1	-18
QSPA	**South Pole Qui** comp=Z,216nm,1.3s	**27.57**	**180**	*e*P	**P**	**23 07 28.9**	**-1.5**
TOO	**Toolangi** baz=28,SNR=7.5	**27.65**	**326**	P	**P**	**23 07 33.0**	**+1.8**
CAN	**Canberra**	**28.96**	**333**	PFAKE		23 07 50.0	+7.1
CAN				LR	LR		
	comp=Z,12μm,20.0s						
MIR	**Mirnyy**	**29.55**	**230**	*e*P	P	23 07 54.0	+6.3
MIR				pmax	pmax		
	comp=Z,4.0nm,1.8s						
MIR				MLR	MLR		
	comp=N,12μm,12.0s						
MIR				MLR	MLR		
	comp=E,12μm,12.0s						
MIR				MLR	MLR		
	comp=Z,16μm,12.0s						
YNG	**Young** baz=30,SNR=5.2	**30.08**	**332**	P	**P**	**23 07 55.1**	**+2.4**

CMSA Cobar Meteorol 33.34 329 P **P 23 08 22.7 +1.4**
baz=34,SNR=11
HTT Hallett 33.40 318 P **P 23 08 24.5 +2.6**
baz=34,SNR=8.0
STKA Stephens Creek 34.07 323 P **P 23 08 29.0 +1.3**
comp=Z,32nm,0.9s,baz=150,slow=9.5,SNR=44
STKA LR LR 23 20 06.5
comp=Z,9μm,19.3s,baz=153,slow=32
STKA Stephens Creek 34.07 323 P **P 23 08 30.0 +2.3**
baz=34,SNR=28
STKA Stephens Creek 34.07 323 *e*P **P 23 08 25.4 -2.3**
STKA pmax pmax
comp=Z,10.0nm,1.0s
STKA Stephens Creek 34.07 323 *e*P **P 23 08 25.4 -2.3**
comp=Z,9.7nm,0.9s
BBOO Buckleboo 34.88 315 *e*P **P 23 08 33.0 -1.8**
comp=Z,69nm,1.4s
RAO Raoul Island 35.14 27 LR LR 23 19 45.4
comp=Z,6μm,18.6s,baz=182,slow=31
RMQ Roma 37.58 336 P **P 23 08 59.6 +1.8**
baz=38,SNR=11
EIDS Eidsvold 38.26 340 P **P 23 09 04.6 +1.0**
baz=38,SNR=4.9
EIDS Eidsvold 38.26 340 *e*P **P 23 09 03.3 -0.3**
comp=Z,11nm,0.8s
QLP Quilpie 38.44 330 P **P 23 09 06.9 +1.9**
baz=39,SNR=7.3
MAW Mawson 38.59 217 P **P 23 09 07.2 +1.3**
comp=Z,5.7nm,1.0s,baz=131,slow=12,SNR=9.5
MAW LR LR 23 25 14.3
comp=Z,18μm,18.5s,baz=126,slow=36
MAW Mawson 38.59 217 *e*P **P 23 09 04.6 -1.4**
MAW pmax pmax
comp=Z,6.0nm,1.0s
MAW Mawson 38.59 217 *e*P **P 23 09 04.6 -1.4**
comp=Z,6.0nm,1.0s
FORT Forrest 39.55 306 P **P 23 09 16.8 +2.5**
baz=40,SNR=6.2
FORT Forrest 39.55 306 *e*P **P 23 09 10.8 -3.6**
comp=Z,941nm,1.3s
DZM Mont Dzumac 40.44 2 P **P 23 09 18.8 -3.2**
comp=Z,64nm,0.9s,baz=149,slow=8.0,SNR=17
DZM Mont Dzumac 40.44 2 *e*P **P 23 09 20.6 -1.3**
comp=Z,246nm,1.2s
DZM *e*S **S 23 15 28.0 -2.3**
comp=Z,3μm,25.2s
DZM *e*LQ LQ 23 18 36.8
comp=Z,8μm,27.0s
DZM *e*LR LR 23 20 14.4
comp=Z,5μm,24.6s
DZM Mont Dzumac 40.44 2 *e*P **P 23 09 19.8 -2.1**
comp=Z,145nm,1.2s
KMBL Kambalda 41.45 298 P **P 23 09 32.2 +2.1**
baz=42,SNR=11
H01W1 Cape Leeuwin H 41.72 287 T T 23 54 30.4
baz=146,slow=76,SNR=838
H01W2 Cape Leeuwin H 41.73 287 T T 23 54 33.8
baz=146,slow=76,SNR=726
H01W3 Cape Leeuwin H 41.74 287 T T 23 54 37.6
baz=146,slow=76,SNR=595
NWAO Narrogin (SRO) 42.05 292 P **P 23 09 36.2 +1.3**
comp=Z,20nm,1.1s,baz=55,slow=5.6,SNR=3.4
NWAO Narrogin (SRO) 42.05 292 *e*P **P 23 09 32.8 -2.1**
NWAO MLR MLR
comp=Z,12μm,21.0s
NWAO Narrogin (SRO) 42.05 292 *e*P **P 23 09 32.8 -2.1**
comp=Z,129nm,1.1s
NWAO LR LR
comp=Z,12μm,21.0s
KLBR Kellerberrin 42.98 294 P **P 23 09 44.3 +1.8**
baz=43,SNR=5.4
SYO Syowa Base 43.11 206⇑*e*P **P 23 09 43.4 +0.3**
SYO Syowa Base 43.11 206⇑*e*SP P 23 09 47.9 +4.8
AS01 Alice Springs 44.04 317 *e*P **P 23 09 48.8 -2.4**
AS31 Alice Springs 44.06 317 *e*P **P 23 09 48.7 -2.6**
comp=Z,23nm,1.4s
ASAR Alice Springs 44.06 317 P **P 23 09 51.5 +0.2**
comp=Z,28nm,1.0s,baz=160,slow=7.6,SNR=84
ASAR PcP **PcP 23 11 35.9 -0.7**
comp=Z,4.9nm,1.0s,baz=149,slow=4.9,SNR=4.9
ASAR LR LR 23 25 43.4
comp=Z,3μm,18.7s,baz=166,slow=32
CTAO Charters Tower 44.28 335 *e*P **P 23 09 51.0 -2.1**
CTAO pmax pmax
comp=Z,77nm,1.2s
CTAO Charters Tower 44.28 335 *e*P **P 23 09 51.0 -2.1**
comp=Z,77nm,1.3s
CTAO LR LR
comp=Z,13μm,19.0s
WRKA Warakurna 44.67 310 P **P 23 09 57.7 +1.5**
baz=45,SNR=18
QIS Mount Isa 45.36 326 P **P 23 10 02.4 +0.7**
baz=46,SNR=10
NVL N'lazarevskaya 45.66 192 *e*P **P 23 09 59.8 -3.7**
NVL *e* 23 11 53.1
NVL *e*S **S 23 16 43.7 -2.0**
NVL MLR MLR
comp=Z,13μm,17.0s
MSVF Nonsavu 45.69 18⇑*e*P **P 23 10 04.0 -0.4**
MSVF pmax pmax
comp=Z,32nm,1.2s
MSVF Nonsavu 45.69 18 *e*P **P 23 10 03.5 -0.9**
comp=Z,38nm,1.3s
MSVF LR LR
comp=Z,9μm,19.0s
SNAA Sanae 45.81 185 P **P 23 10 02.5 -2.3**
comp=Z,3.9nm,0.8s,baz=164,slow=9.2,SNR=8.9
SNAA Sanae 45.81 185‖*e*P **P 23 10 02.1 -2.7**
SNAA Sanae 45.81 185 *e*P **P 23 10 03.0 -1.8**
MORW Morawa 45.89 294 P **P 23 10 07.6 +1.7**
baz=46,SNR=5.9
MTSU Mount Surprise 46.58 333 P **P 23 10 11.8 +0.5**
baz=47,SNR=7.7
MEEK Meekatharra 46.95 298 P **P 23 10 14.8 +0.6**
baz=47,SNR=11
WB2 Warramunga Arr 47.42 320 *e*P **P 23 10 16.5 -1.4**
comp=Z,124nm,1.8s
WRA Warramunga Arr 47.42 320 P **P 23 10 16.7 -1.2**
comp=Z,13nm,1.0s,baz=160,slow=6.3,SNR=21
WRA PcP **PcP 23 11 47.8 -0.5**
comp=Z,8.8nm,1.1s,baz=165,slow=3.2,SNR=7.9
WRA LR LR 23 28 21.6
comp=Z,4μm,19.4s,baz=90,slow=34
WRAB Tennant Creek 47.43 320*c**e*P **P 23 10 16.4 -1.5**
WRAB pmax pmax
comp=Z,26nm,1.0s
WRAB Tennant Creek 47.43 320 *e*P **P 23 10 15.4 -2.5**
comp=Z,50nm,1.3s
RAR Rarotonga 47.83 47 LR LR 23 26 31.2
comp=Z,5μm,19.6s,baz=198,slow=31
PMSA Palmer Station 47.97 154 LR LR 23 27 09.9
comp=Z,3μm,20.6s,baz=220,slow=32
PMSA Palmer Station 47.97 154 PFAKE 23 10 30.0 +8.4
PMSA LR LR
comp=Z,3μm,20.0s
TBI Tubuai 49.72 60 *e*S **S 23 17 46.7 +2.5**
comp=Z,2μm,28.5s
TBI *e*LQ LQ 23 21 59.9
comp=Z,17μm,26.0s
TBI *e*LR LR 23 24 53.9
comp=Z,7μm,23.5s,baz=207
TBI Tubuai 49.72 60 *e*T T 00 03 17.9
comp=Z,123nm,0.3s
COEN Coen 50.87 333 *e*P **P 23 10 42.8 -1.5**
comp=Z,81nm,1.2s
AFI Afiamalu 51.33 30 PFAKE 23 11 00.0 +12
AFI LR LR
comp=Z,3μm,20.0s
MBWA Marble Bar 51.41 302 *e*P **P 23 10 45.2 -3.1**
comp=Z,65nm,1.4s
MBWA LR LR
comp=Z,5μm,21.0s
FITZ Fitzroy Crossi 51.99 310 P **P 23 10 54.8 +2.1**
baz=52,SNR=5.6
FITZ Fitzroy Crossi 51.99 310 *e*P **P 23 10 55.0 +2.3**
comp=Z,75nm,1.4s
HNR Honiara 53.11 354 P **P 23 11 00.8 -0.2**
comp=Z,35nm,0.3s,baz=174,slow=10,SNR=4.1
HNR LR LR 23 30 28.3
comp=Z,4μm,18.4s,baz=186,slow=32
PMG Port Moresby 54.54 338*c**e*P **P 23 11 10.5 -1.0**
PMG pmax pmax
comp=Z,239nm,1.0s
PMG Port Moresby 54.54 338 *e*P **P 23 11 09.3 -2.2**
comp=Z,82nm,1.0s
PMG LR LR
comp=Z,6μm,20.0s

PAE Paea 54.80 57 eT T 00 09 42.0
comp=Z,22nm,0.3s
TVO Taravao 54.82 57 eT T 00 09 40.5
comp=Z,10nm,0.3s
PPT2 Papeete2 54.87 56 eS S 23 18 57.4 +2.3
comp=Z,3μm,28.2s
PPT2 eLR LR 23 27 13.9
comp=Z,5μm,22.5s,baz=201
PPT2 Papeete2 54.87 56 eT T 00 09 44.2
comp=Z,32nm,0.3s
FUNA Funafuti 54.91 18 PFAKE 23 11 30.0 +16
FUNA LR LR
comp=Z,6μm,19.0s
MTN Manton Dam 55.09 319 P P 23 11 16.1 +0.7
baz=56,SNR=4.1
MTN Manton Dam 55.09 319 eP P 23 11 11.8 -3.7
comp=Z,47nm,1.1s
MEH Mehetia 55.20 58 eT T 00 10 09.7
comp=Z,39nm,0.2s
USHA Ushuaia 55.81 146 LR LR 23 29 09.8
comp=Z,13μm,20.8s,baz=188,slow=30
RKT Rikitea 56.09 74 eS S 23 19 13.7 +2.5
comp=Z,3μm,28.5s
RKT eLQ LQ 23 25 07.0
comp=Z,5μm,29.2s
RKT eLR LR 23 27 24.0
comp=Z,4μm,29.0s,baz=204
RKT Rikitea 56.09 74 eT T 00 11 21.2
comp=Z,64nm,0.2s
VAH Vaihoa 57.77 57 eT T 00 13 23.5
comp=Z,874nm,0.3s
SOEI Soe 60.22 312 eP P 23 11 49.8 -1.8
comp=Z,83nm,1.3s
EFI East Falkland 61.22 151 PFAKE 23 12 10.0 +12
EFI LR LR
comp=Z,2μm,22.0s
HOPE Hope Point 62.34 166 PFAKE 23 12 20.0 +15
HOPE LR LR
comp=Z,2μm,20.0s
KAPI Kappang 66.20 310 PFAKE 23 12 40.0 +8.8
KAPI LR LR
comp=Z,2μm,21.0s
TAOE Nuku Hiva Isla 66.55 62 eS S 23 21 26.7 +2.3
comp=Z,3μm,26.4s
TAOE eLQ LQ 23 29 07.4
comp=Z,8μm,33.2s
TAOE eLR LR 23 32 39.8
comp=Z,4μm,24.2s,baz=214
PLCA Paso Flores 67.95 138 P P 23 12 40.4 -1.8
comp=Z,3.0nm,0.9s,baz=248,slow=11,SNR=4.4
PLCA Paso Flores 67.95 138 eP P 23 12 42.6 +0.4
PLCA Paso Flores 67.95 138 eP P 23 12 42.6 +0.4
COCO West Island 69.14 284 PFAKE 23 13 00.0 +10
COCO LR LR
comp=Z,4μm,21.0s
TRQA Tornquist 72.96 143 eP P 23 13 12.8 0.0
KSM Kuching 75.71 303 P P 23 13 27.8 -1.2
comp=Z,7.1nm,0.6s
KSM LR LR
comp=Z,1μm,22.0s
SBUM Sibu 75.87 305 eP P 23 13 31.2 +1.4
GUMO Guam 77.45 340 PFAKE 23 13 50.0 +11
GUMO LR LR
comp=Z,2μm,21.0s
KKM Kota Kinabalu 77.72 310 PFAKE 23 13 50.0 +10
KKM LR LR
comp=Z,1μm,19.0s
LCO Las Campanas 78.63 133 PFAKE 23 14 00.0 +14
LCO LR LR
comp=Z,1μm,19.0s
GSI Gunungsitoli 80.81 291 eP P 23 13 55.0 -2.2
comp=Z,35nm,1.3s
SUR Sutherland 81.10 210 PFAKE 23 14 10.0 +11
SUR LR LR
comp=Z,7μm,20.0s
JOHN Johnston Islan 81.54 25 PFAKE 23 14 10.0 +9.2
JOHN LR LR
comp=Z,230nm,21.0s
PSI Prapat 81.58 293 LR LR 23 44 50.3
comp=Z,2μm,20.8s,baz=148,slow=32
KULM Kulim 83.08 295 eP P 23 14 10.8 +1.6
KULM LR LR
comp=Z,3μm,22.0s
BOSA Boshof 83.58 215 P P 23 14 11.3 -0.5
comp=Z,2.9nm,0.9s,baz=146,slow=7.3,SNR=3.5
BOSA LR LR 23 48 49.0
comp=Z,3μm,20.0s,baz=160,slow=34
H08S2 Diego Garcia H 84.33 264 T T 00 47 59.0
baz=152,slow=76,SNR=955
H08S1 Diego Carcia H 84.34 264 T T 00 47 59.7
baz=152,slow=76,SNR=1011
H08S3 Diego Garcia H 84.36 264 T T 00 48 00.5
baz=152,slow=76,SNR=933
LVC Limon Verde 85.13 132 eP P 23 14 19.5 -0.5
comp=Z,27nm,1.3s
LVC LR LR
comp=Z,2μm,21.0s
ABPO Ambohimpanom 85.19 237 eP P 23 14 18.4 -1.7
ABPO pmax pmax
comp=Z,21nm,1.1s
ABPO MLR MLR
comp=Z,517nm,20.0s
ABPO Ambohimpanom 85.19 237 eP P 23 14 18.4 -1.7
comp=Z,21nm,1.1s
ABPO LR LR
comp=Z,517nm,20.0s
CPUP Villa Florida 85.30 143 P P 23 14 16.6 -3.8
comp=Z,3.8nm,0.9s,baz=207,slow=2.3,SNR=2.4
CPUP Villa Florida 85.30 143 eP P 23 14 21.2 +0.9
CPUP Villa Florida 85.30 143 eP P 23 14 21.2 +0.9
PB11 IPOC Station P 87.50 130 eP P 23 14 32.1 +0.7
POHA Pohakuloa 87.79 37 PFAKE 23 14 40.0 +7.3
POHA LR LR
comp=Z,4μm,22.0s
KIP Kipapa 88.71 34 PFAKE 23 14 50.0 +13
KIP LR LR
comp=Z,5μm,22.0s
SPB Sao Paulo 90.43 151 PFAKE 23 15 00.0 +15
SPB LR LR
comp=Z,1μm,22.0s
LPAZ La Paz 91.24 130 P P 23 14 45.4 -4.2
comp=Z,3.6nm,1.1s,baz=247,slow=1.2,SNR=3.3
LPAZ LR LR 23 46 18.2
comp=Z,994nm,21.1s,baz=192,slow=30
MIDW Midway 91.55 16 PFAKE 23 15 00.0 +10
MIDW LR LR
comp=Z,3μm,22.0s
NNA Nana 91.89 121 PFAKE 23 15 00.0 +8.1
NNA LR LR
comp=Z,1μm,20.0s
QIZ Qiongzhong 92.01 309 P P 23 14 52.1 0.0
QIZ sP sP 23 14 56.8 +0.1
QIZ S S 23 25 54.4 +0.6
QIZ sS sS 23 26 00.3 +1.0
QIZ SS SS 23 32 06.6 +3.5
QIZ pmax pmax
comp=Z,16nm,1.8s
QIZ LR LR
comp=Z,830nm,20.6s
QIZ LR LR
comp=Z,1μm,20.6s
QIZ LR LR
comp=Z,990nm,20.9s
YHNB Yeheng 93.50 321 PFAKE 23 15 10.0 +11
YHNB LR LR
comp=Z,1μm,21.0s
PALK Pallekele 93.67 279 LR LR 23 50 19.3
comp=Z,2μm,19.4s,baz=116,slow=31
QZH Quanzhou 94.59 319 P P 23 14 59.3 -4.6
QZH Quanzhou 94.59 319 S S 23 26 07.0 -9.3
QZH Quanzhou 94.59 319 SS SS 23 32 43.3 +3.3
QZH LR LR
comp=Z,2μm,32.8s
LSZ Lusaka 95.35 222 PFAKE 23 15 20.0 +12
LSZ LR LR
comp=Z,2μm,22.0s
CMAR Chiang Mai Arr 95.66 300 P P 23 15 09.9 +1.0
comp=Z,3.6nm,1.1s,baz=179,slow=4.2,SNR=10
CMAR PP PP 23 19 06.8 +6.2
comp=Z,0.9nm,0.4s,baz=160,slow=5.0,SNR=5.3
CMAR LR LR 23 56 05.8
comp=Z,1μm,19.6s,baz=164,slow=34
CHTO Chiang Mai 95.98 300 PFAKE 23 15 20.0 +10
CHTO LR LR
comp=Z,1μm,22.0s
PAYG Puerto Ayora 96.27 104 PFAKE 23 15 20.0 +8.0
PAYG LR LR
comp=Z,2μm,22.0s
BDFB Brasilia 97.95 148 LR LR 23 58 47.7
comp=Z,718nm,18.2s,baz=169,slow=35
SSE Sheshan 99.62 323 P Pdif 23 15 26.3 -0.2
SSE S S 23 27 00.8 +1.7
SSE SS SS 23 33 52.5 +1.6
SSE pmax pmax
comp=Z,31nm,0.8s
SSE pmax pmax
comp=Z,220nm,4.1s
SSE LR LR
comp=Z,500nm,37.7s
SSE LR LR
comp=Z,970nm,37.7s
SSE LR LR
comp=Z,1μm,18.7s
GYA Guiyang 99.96 309 P Pdif 23 15 29.3 +1.0
GYA PP PP 23 19 37.3 +3.6
GYA SKS SKSac 23 26 07.3 +0.6
GYA S S 23 27 00.6 -1.9
GYA SS SS 23 33 57.5 +1.4
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,160nm,7.9s
GYA LR LR
comp=Z,630nm,22.6s
GYA LR LR
comp=Z,580nm,23.0s
GYA LR LR
comp=Z,550nm,22.8s
KMI Kunming 100.19 306 P Pdif 23 15 30.8 +1.3
KMI pP sP 23 15 34.0 0.0
KMI sP pP 23 15 35.3 +2.4
KMI PP PP 23 19 38.4 +2.8
KMI S Sdif 23 27 02.5 -2.2
KMI SS SS 23 34 00.8 +1.3
KMI pmax pmax
comp=Z,13nm,0.5s
KMI pmax pmax
comp=Z,160nm,4.5s
KMI LR LR
comp=Z,530nm,16.0s
KMI LR LR
comp=Z,740nm,19.6s
KMI LR LR
comp=Z,680nm,21.1s
MAJO Matsushiro 101.02 338 PFAKE 23 15 40.0 +7.4
MAJO LR LR
comp=Z,2μm,21.0s
WHN Wuhan 101.13 317 P Pdif 23 15 39.1 +5.9
WHN S Sdif 23 27 13.1 +1.4
WHN LR LR
comp=Z,3μm,23.1s
NJ2 Nanjing 101.18 322 eP Pdif 23 15 32.0 -1.4
NJ2 PP PP 23 19 44.4 +1.6
NJ2 SS SS 23 34 12.0 -0.7
NJ2 LR LR
comp=Z,680nm,22.2s
NJ2 LR LR
comp=Z,1μm,19.0s
NJ2 LR LR
comp=Z,2μm,19.0s
SHEL Horse Pasture 101.42 189 PFAKE 23 15 50.0 +15
SHEL LR LR
comp=Z,2μm,20.0s
OTAV Otavalo 102.27 114 PFAKE 23 15 50.0 +11
OTAV LR LR
comp=Z,660nm,20.0s
ENH Enshi 102.47 313 PFAKE 23 15 50.0 +11
ENH LR LR
comp=Z,680nm,20.0s
H06S1 SOCORRO T 103.82 76 T T 01 11 21.9
H06E1 SOCORRO T-PHAS 103.87 76 T T 01 11 29.7
SNR=6.9
INCN Inchon 104.28 330 PFAKE 23 16 00.0 +13
INCN LR LR
comp=Z,691nm,22.0s
CD2 Chengdu 105.05 309 Pdif Pdif 23 15 50.0 -0.7
CD2 S Sdif 23 27 44.4 -0.2
CD2 SS SS 23 35 07.1 +0.9
CD2 LR LR
comp=Z,1μm,21.8s
CD2 LR LR
comp=Z,1μm,25.4s
CD2 LR LR
comp=Z,1μm,20.5s
KMBO Kilima Mbogo 105.38 235 PFAKE 23 20 20.0
KMBO LR LR
comp=Z,757nm,20.0s
ERM Erimo 105.63 343 PFAKE 23 20 20.0
ERM LR LR
comp=Z,1μm,21.0s
MBAR Mbarara 108.25 229 PFAKE 23 20 20.0
MBAR LR LR
comp=Z,1μm,22.0s
PTGA Pitinga 108.55 132 PFAKE 23 20 20.0
PTGA LR LR
comp=Z,30μm,19.0s
LSA Lhasa 108.84 298 PFAKE 23 20 20.0
LSA LR LR
comp=Z,716nm,22.0s
BJT Baijiatuan 109.38 322 PFAKE 23 20 20.0
BJT LR LR
comp=Z,2μm,22.0s
LZH Lanzhou 109.69 311 ePKP PKiKP 23 20 06.1 -7.8
LZH pPKP pPKP 23 20 09.5
LZH sPKP 23 20 10.6
LZH PP PP 23 20 44.0 -2.0
LZH PKS PKSdf 23 23 42.0 -8.5
LZH SKKS 23 27 37.3
LZH Lanzhou 109.69 311 SS SS 23 36 05.3 -4.1
LZH AMB AMB
comp=Z,130nm,5.5s
LZH LR LR
comp=N,700nm,18.2s
LZH LR LR
comp=E,810nm,19.0s
LZH LR LR
comp=Z,1μm,20.1s
ASCN Ascension 109.75 181 PFAKE 23 20 30.0
ASCN LR LR
comp=Z,1μm,20.0s
MDJ Mudanjiang 110.45 334 PFAKE 23 20 30.0
MDJ LR LR
comp=Z,677nm,21.0s
HHC Hu-ho-hao-te 111.50 319 ePKP PKiKP 23 20 18.3 +1.2
HHC PP PP 23 21 01.6 +2.7
HHC SKKS 23 27 56.0
HHC AMB AMB
comp=Z,170nm,9.1s
HHC LR LR
comp=Z,710nm,20.6s
HHC LR LR
comp=Z,320nm,18.2s
HHC LR LR
comp=Z,880nm,22.0s
PFO Pinyon Flats O 114.37 64 PFAKE 23 20 30.0 +7.2
PFO LR LR
comp=Z,2μm,21.0s
KLR Kul'dur 114.46 337 PKP PKPdf 23 20 21.3 -0.9
comp=Z,0.7nm,0.5s,baz=256,slow=5.4,SNR=2.7
PET Petropavlovsk 115.30 356 PFAKE 23 20 30.0 +6.3
PET LR LR
comp=Z,2μm,22.0s
HIA Hailar 117.04 329 PFAKE 23 20 40.0 +13
HIA LR LR
comp=Z,718nm,22.0s
KVTX Kingsville 117.39 83 PFAKE 23 20 40.0 +11
KVTX LR LR
comp=Z,2μm,19.0s
MNTX Cornudas Mount 117.52 74 PFAKE 23 20 40.0 +11
MNTX LR LR
comp=Z,1μm,20.0s
MTDJ Mount Denham 118.70 106 PFAKE 23 20 40.0 +8.5
MTDJ LR LR
comp=Z,1μm,22.0s
JCT Junction City 119.01 79 PFAKE 23 20 40.0 +8.3
JCT LR LR
comp=Z,718nm,20.0s
SONM Songino Array 119.39 319 PKP PKPdf 23 20 32.8 +0.8
comp=Z,0.4nm,0.4s,baz=108,slow=4.7,SNR=3.7
ANMO Albuquerque 119.80 71 PFAKE 23 20 40.0 +6.7
ANMO LR LR
comp=Z,2μm,19.0s
GRGR Grenville 119.84 125 PFAKE 23 20 40.0 +6.3
GRGR LR LR
comp=Z,997nm,19.0s
MVCO Mesa Verde 120.81 68 PFAKE 23 20 50.0 +15
MVCO LR LR
comp=Z,1μm,20.0s
GTBY Guantanamo Bay 121.27 108 PFAKE 23 20 50.0 +14
GTBY LR LR
comp=Z,505nm,22.0s
DUG Dugway, Tooele 121.50 63 PFAKE 23 20 50.0 +14
DUG LR LR
comp=Z,1μm,20.0s
BBGH Gun Hill 121.56 127 PFAKE 23 20 50.0 +13
BBGH LR LR
comp=Z,2μm,21.0s
MA2 Magadan 122.24 352 PFAKE 23 20 50.0 +13
MA2 LR LR
comp=Z,1μm,21.0s
FDF Fort de France 122.41 125 PFAKE 23 20 50.0 +11
FDF LR LR
comp=Z,745nm,21.0s
WMQ Urumqi 122.43 303 ePKP PKPdf 23 20 35.0 -2.9
WMQ PP PP 23 22 17.0 +1.9
WMQ SS SS 23 38 58.3 +2.7
WMQ AMB AMB
comp=Z,190nm,5.3s
WMQ LR LR
comp=Z,600nm,18.9s
WMQ LR LR
comp=Z,460nm,19.4s
WMQ LR LR
comp=Z,790nm,22.8s
NATX Nacogdoches 122.44 83 PFAKE 23 20 50.0 +12
NATX LR LR
comp=Z,860nm,21.0s
SDCO Great Sand Dun 122.56 70 PFAKE 23 20 50.0 +11
SDCO LR LR
comp=Z,864nm,21.0s
ZAK Zakamensk 122.61 318 ePKIKP PKPdf 23 20 35.8 -2.2
ZAK pmax pmax
comp=Z,4.0nm,1.6s
HWUT Hardware Ranch 123.20 63 PFAKE 23 20 50.0 +10
HWUT LR LR
comp=Z,2μm,20.0s
NLWA Neilton Lookou 123.31 50 PFAKE 23 20 50.0 +11
NLWA LR LR
comp=Z,3μm,20.0s
BMO Blue Mountains 123.61 57 PFAKE 23 20 50.0 +10
BMO LR LR
comp=Z,2μm,22.0s
TLY Talaya 123.63 319 i PKIKP PKPdf 23 20 41.3 +1.4
TLY eSS SS 23 39 15.9 +5.3
TLY pmax pmax
comp=Z,4.0nm,1.3s
TLY MLR MLR
comp=Z,412nm,15.0s
TLY Talaya 123.63 319 PFAKE 23 20 50.0 +10
TLY LR LR
comp=Z,935nm,21.0s
KSH Kashi 123.64 292 ePKP PKPdf 23 20 42.1 +1.7
KSH ePP PP 23 22 26.6 +3.2
KSH PKS PKSdf 23 24 17.3 +0.2
KSH SKS SKSdf 23 27 52.8 +0.6
KSH SKKS SKKSac 23 29 18.6 -2.6
KSH SS SS 23 39 09.8 -1.4
KSH AMB AMB
comp=Z,70nm,5.2s
KSH LR LR
comp=Z,210nm,11.4s
KSH LR LR
comp=Z,340nm,16.5s
KSH LR LR
comp=Z,630nm,16.1s
HLID Hailey 123.67 60 PFAKE 23 20 50.0 +10
HLID LR LR
comp=Z,1μm,19.0s
HAWA Hanford 124.06 54 PFAKE 23 20 50.0 +9.2
HAWA LR LR
comp=Z,2μm,20.0s
ISCO Idaho Springs 124.22 69 PFAKE 23 20 50.0 +8.2
ISCO LR LR
comp=Z,1μm,19.0s
AHID Auburn Hatcher 124.36 63 PFAKE 23 20 50.0 +8.2
AHID LR LR
comp=Z,1μm,21.0s
GRTK Grand Turk 124.40 111 PFAKE 23 20 50.0 +7.8
GRTK LR LR
comp=Z,576nm,21.0s
KDAK Kodiak Island 124.42 26 PFAKE 23 20 50.0 +8.9
KDAK LR LR
comp=Z,733nm,19.0s
ANWB Willy Bob 124.84 122 PFAKE 23 20 50.0 +6.8
ANWB LR LR
comp=Z,734nm,19.0s
BW06 Boulder Array 124.99 64 PFAKE 23 20 50.0 +6.9
BW06 LR LR
comp=Z,1μm,20.0s
PDAR Pinedale Array 124.99 64 PKP PKPdf 23 20 43.0 -0.1
comp=Z,0.2nm,0.4s,baz=243,slow=0.6,SNR=6.1
MIAR Mount Ida 125.26 82 PFAKE 23 20 50.0 +6.5
MIAR LR LR
comp=Z,711nm,19.0s
H02S1 DAWSON INLET T 125.44 41 T T 01 38 20.9
SNR=12
H02N1 VAN INLET T-PH 125.46 41 T T 01 38 19.9
BRAL Brewton 125.47 90 PFAKE 23 20 50.0 +6.0
BRAL LR LR
comp=Z,499nm,21.0s
SEY Seymchan 125.49 353 PKP PKPdf 23 20 42.8 -0.2
comp=Z,1.1nm,0.6s,baz=138,slow=14,SNR=2.7
DLMT Dillon 125.89 60 ePKPdf PKPdf 23 20 43.9 -0.7
CBKS Cedar Bluff 125.99 74 PFAKE 23 21 00.0 +15
CBKS LR LR
comp=Z,2μm,20.0s
LKWY Lake 126.13 62 PFAKE 23 21 00.0 +15
LKWY LR LR
comp=Z,3μm,20.0s
BOD Bodaibo 126.26 329 ePKIKP PKPdf 23 20 41.9 -2.7
BOD pmax pmax
comp=Z,8.0nm,1.5s
BOZ Bozeman (W) 126.52 60 PFAKE 23 21 00.0 +14
BOZ LR LR
comp=Z,2μm,22.0s
NEW Newport 126.52 54 PFAKE 23 21 00.0 +14
NEW LR LR
comp=Z,1μm,20.0s
OGNE Ogallala 126.72 71 PFAKE 23 21 00.0 +14
OGNE LR LR
comp=Z,1μm,19.0s
AAK Ala-Archa 126.84 293 PKP PKPdf 23 20 46.3 -0.2
comp=Z,1.4nm,0.3s,baz=101,slow=5.2,SNR=3.7
AAK Ala-Archa 126.84 293 i PKIKP PKPdf 23 20 48.2 +1.7
AAK Ala-Archa 126.84 293 PKP PKPdf 23 20 46.3 -0.2
AAK LR LR
comp=Z,1μm,21.0s
FRU Bishkek 126.95 293 ePKIKP PKPdf 23 20 53.5 +7.0
MKAR Makanchi Array 127.02 301 PKP PKPdf 23 20 45.5 -1.0
comp=Z,2.3nm,0.9s,baz=126,slow=3.1,SNR=12
MKAR PP PP 23 22 49.0 +3.3
comp=Z,0.9nm,0.9s,baz=151,slow=6.5,SNR=2.9
MKAR Makanchi Array 127.02 301 PKIKP PKPdf 23 20 45.5 -1.0
MKAR 23 22 49.0
MKAR pmax pmax
comp=Z,4.0nm,1.1s
MKAR pmax pmax
comp=Z,1.0nm,1.0s
YAK Yakutsk 127.04 340 PKP PKPdf 23 20 44.1 -1.8
comp=Z,13nm,0.4s,baz=69,slow=2.7,SNR=2.3
RLMT Red Lodge 127.05 62 PFAKE 23 21 00.0 +13
RLMT LR LR
comp=Z,2μm,20.0s
KSU1 Kansas State U 127.62 76 PFAKE 23 21 00.0 +12
KSU1 LR LR
comp=Z,2μm,19.0s
GOGA Godfrey 129.00 92 PFAKE 23 21 00.0 +9.3
GOGA LR LR
comp=Z,425nm,20.0s
EGMT Eagleton 129.20 60 PFAKE 23 21 00.0 +9.3
EGMT LR LR
comp=Z,1μm,20.0s
LAO LASA Array 129.56 63 PFAKE 23 21 00.0 +8.6
LAO LR LR
comp=Z,1μm,20.0s
NHSC New Hope 130.27 95 PFAKE 23 21 00.0 +6.9

NHSC LR LR
comp=Z,546nm,20.0s
BILL Bilibino 130.27 1 PFAKE 23 21 00.0 +8.0
BILL LR LR
comp=Z,1μm,20.0s
GEYT Alibeck 130.35 276 PKP **PKPdf** **23 20 54.6 +1.5**
comp=Z,0.8nm,0.7s,baz=207,slow=2.9,SNR=3.3
GEYT PP **PP** **23 23 09.3 +1.7**
comp=Z,1.7nm,0.9s,baz=152,slow=6.5,SNR=5.8
ECSD EROS Data Cent 131.34 73 PFAKE 23 21 10.0 +15
ECSD LR LR
comp=Z,1μm,20.0s
KURBB Kurchatov Arra 131.58 302 PKP **PKPdf** **23 20 53.1 -1.8**
comp=Z,1.6nm,0.9s,baz=147,slow=1.9,SNR=10
KURK Kurchatov 131.61 302 PKIKP **PKPdf** **23 20 53.2 -1.9**
KURK pmax pmax
comp=Z,1.0nm,0.6s
KURK Kurchatov 131.61 302 PKP **PKPdf** **23 20 53.1 -1.9**
DGMT Dagmar 131.81 63 PFAKE 23 21 10.0 +14
DGMT LR LR
comp=Z,1μm,19.0s
ZALV Zalesovo Beam 131.82 309 PKP **PKPdf** **23 20 54.1 -1.2**
comp=Z,0.3nm,0.3s,baz=215,slow=30,SNR=4.0
COLA College 131.83 25 PFAKE 23 21 10.0 +15
COLA LR LR
comp=Z,1μm,22.0s
ILAR Eielson Array 131.93 25 PKP **PKPdf** **23 20 53.5 -1.7**
comp=Z,1.1nm,0.7s,baz=244,slow=3.0,SNR=11
ILAR Eielson Array 131.93 25 PKIKP **PKPdf** **23 20 53.5 -1.7**
ILAR pmax pmax
comp=Z,2.0nm,1.1s
HDIL Hopedale 132.12 81 PFAKE 23 21 10.0 +14
HDIL LR LR
comp=Z,764nm,20.0s
SACV Santiago Islan 132.14 169 PFAKE 23 21 10.0 +13
SACV LR LR
comp=Z,453nm,20.0s
CNNC Cliffs of the 133.09 95 PFAKE 23 21 10.0 +12
CNNC LR LR
comp=Z,701nm,21.0s
EGAK Eagle 133.14 28 PFAKE 23 21 10.0 +12
EGAK LR LR
comp=Z,860nm,19.0s
BLA Blacksburg 133.53 91 PFAKE 23 21 10.0 +11
BLA LR LR
comp=Z,659nm,21.0s
JFWS Jewell Farm 133.56 78 PFAKE 23 21 10.0 +11
JFWS LR LR
comp=Z,870nm,19.0s
ACSO Alum Creek Sta 134.78 87 PFAKE 23 21 10.0 +8.6
ACSO LR LR
comp=Z,827nm,19.0s
AGMN Agassiz Nation 135.22 69 PFAKE 23 21 10.0 +8.1
AGMN LR LR
comp=Z,1μm,20.0s
CBN Corbin Frederi 135.75 93 PFAKE 23 21 10.0 +6.8
CBN LR LR
comp=Z,642nm,21.0s
AAM Ann Arbor 136.10 84 PFAKE 23 21 10.0 +6.2
AAM LR LR
comp=Z,840nm,20.0s
TIXI Tiksi 136.16 344*ce*PKIKP **PKPdf** **23 21 03.9 +0.9**
COWI Conover 136.53 76 PFAKE 23 21 20.0 +16
COWI LR LR
comp=Z,1nm,19.0s
BBSR BB Station 136.64 110 PFAKE 23 21 20.0 +15
BBSR LR LR
comp=Z,478nm,19.0s
BVAR Borovoye Array 136.68 299 PKP **PKPdf** **23 21 03.7 -0.8**
comp=Z,0.8nm,0.7s,baz=139,slow=5.3,SNR=4.4
BRVK Borovoye 136.74 299⇑*e*PKIKP **PKPdf** **23 21 05.4 +0.8**
BRVK Borovoye 136.74 299 PFAKE 23 21 20.0 +15
BRVK LR LR
comp=Z,378nm,20.0s
EYMN Ely 136.87 73 PFAKE 23 21 20.0 +15
EYMN LR LR
comp=Z,2μm,20.0s
FFC Flin Flon 137.46 59 PFAKE 23 21 20.0 +14
FFC LR LR
comp=Z,2μm,22.0s
TAM Tamanrasset 137.87 209 PFAKE 23 21 20.0 +12
TAM LR LR
comp=Z,3μm,20.0s
GNI Garni 138.33 266 PFAKE 23 21 20.0 +12
GNI LR LR
comp=Z,1μm,22.0s
YKA Yellowknife Ar 138.55 44 PKP **PKPdf** **23 21 04.3 -3.3**
comp=Z,1.4nm,0.7s,baz=214,slow=3.2,SNR=6.0
CSS Mathiatis 139.25 251 PFAKE 23 21 20.0 +10
CSS LR LR
comp=Z,245nm,20.0s
BINY Binghamton 139.57 91 PFAKE 23 21 20.0 +10
BINY LR LR
comp=Z,1μm,21.0s
AKTO Aktyubinsk 140.05 288 PKP **PKPdf** **23 21 09.9 -0.9**
comp=Z,0.8nm,0.5s,baz=300,slow=3.2,SNR=4.6
KBZ Khabaz 141.99 268 PKP **PKPdf** **23 21 13.3 -1.1**
comp=Z,0.8nm,0.4s,baz=220,slow=5.3,SNR=3.8
LONY Lake Ozonia 142.09 90 PFAKE 23 21 30.0 +15
LONY LR LR
comp=Z,840nm,20.0s
KVAR Kislovodsk Arr 142.25 268 PKP **PKPdf** **23 21 14.1 -1.0**
comp=Z,3.7nm,1.0s,baz=166,slow=3.5,SNR=7.3
KIV Kislovodsk 142.26 268*ce*PKIKP **PKPdf** **23 21 13.5 -1.6**
KIV *e* 23 24 17.3
KIV *e* 23 28 20.1
KIV pmax pmax
comp=Z,35nm,1.6s
KIV Kislovodsk 142.26 268 PFAKE 23 21 30.0 +15
KIV LR LR
comp=Z,682nm,21.0s
NRIK Noril'sk 142.36 325 PKP **PKPdf** **23 21 13.5 -0.8**
comp=Z,2.0nm,0.7s,baz=128,slow=3.4,SNR=2.1
BRTR Keskin Array B 143.06 255 PKP PKPbc 23 21 14.2 +0.6
comp=Z,2.8nm,1.0s,baz=153,slow=0.6,SNR=8.8
SOC Sochi 143.35 265 *i* PKIKP **PKPdf** **23 21 20.0 +3.1**
SOC *e* 23 24 26.8
SOC *e*PPP PPP 23 27 38.1
SOC *e*SS SS 23 43 11.5 +2.4
SOC pmax pmax
comp=Z,7.0nm,0.5s
SVE Sverdlovsk 143.35 297 *e*PKIKP **PKPdf** **23 21 15.1 -1.4**
SVE pmax pmax
comp=Z,17nm,1.5s
SANT Santorini 143.80 243 *e*PKPdf PKPbc 23 21 16.6 +0.9
SANT LR LR
comp=Z,969nm,19.0s
ARU Arti 143.96 295 PKP PKPab 23 21 15.1 +0.2
comp=Z,2.3nm,0.6s,baz=152,slow=4.0,SNR=10
ARU Arti 143.96 295 *i* PKIKP PKPbc 23 21 16.3 +0.8
ARU PPP PPP 23 27 39.5
ARU Arti 143.96 295 PKP PKPab 23 21 15.1 +0.2
ARU *e*PKPdf PKPbc 23 21 15.8 +0.4
ARU LR LR
comp=Z,669nm,21.0s
APE Apeiranthos 144.37 244⇓*e*PKIKP PKPbc 23 21 18.2 +0.8
PKME Peaks-Kenny Pk 145.03 94 PFAKE 23 21 30.0 +10
PKME LR LR
comp=Z,845nm,20.0s
ANN Anapa 145.33 264 *i* PKIKP **PKPab** **23 21 23.5 +3.2**
ANN *e* 23 24 39.7
ANN *e*SS SS 23 43 34.5 +2.6
ANN pmax pmax
comp=Z,134nm,1.7s
SOKR Solikamsk 146.68 298*c i* PKP2 **PKPdf** **23 21 22.6 +0.6**
SOKR pmax pmax
comp=Z,51nm,1.0s
SIM Simferopol' 146.97 261 *i* PKP2 **PKPab** **23 21 27.7 +1.1**
SIM pmax pmax
comp=Z,23nm,1.3s
SIM pmax pmax
comp=Z,50nm,8.1s
WDD Wied Dalam 147.53 229 PFAKE 23 21 30.0 +0.9
WDD LR LR
comp=Z,3μm,20.0s
VRH Novokhopyorsk 147.98 276 *e*PKP2 **PKPab** **23 21 29.5 -0.9**
VRH pmax pmax
comp=Z,4.0nm,0.5s
KDZ Kurdzhali 148.25 248 *i* P **PKPab** **23 21 38.2 +6.4**
MMB Musomiste 148.92 246 *i* P **PKPab** **23 21 38.2 +3.6**
KEST Kesra 149.13 221 PKPbc **PKPbc** **23 21 33.3 +2.0**
comp=Z,9.5nm,1.0s,baz=242,slow=4.3,SNR=7.7
VSR Storozhevoye 149.17 274 *e*PKP2 **PKPbc** **23 21 29.0 -1.7**
VSR pmax pmax
comp=Z,10.0nm,1.3s

CEL Celeste 149.20 233 PFAKE 23 21 40.0 +4.2
CEL LR LR
comp=Z,1μm,22.0s
SZH Strazhica 149.34 250 *i* P PKPab 23 21 45.9 +10
KKB Krupnik 149.42 246 *i* P **PKPab** **23 21 34.8 -1.8**
TLB Topalu 149.45 254⇑*i*P **PKPab** **23 21 34.4 -2.2**
TLB Topalu 149.45 254⇑PKP2 **PKPab** **23 21 34.4 -2.2**
CLTB Caltabellotta 149.55 228 PFAKE 23 21 40.0 +2.7
CLTB LR LR
comp=Z,747nm,20.0s
HARR Harsova 149.58 254⇑*i*P **PKPab** **23 21 40.4 +3.3**
HARR Harsova 149.58 254⇑PKP2 **PKPab** **23 21 40.4 +3.3**
TIP Timpagrande 149.68 235 PFAKE 23 21 40.0 +2.2
TIP LR LR
comp=Z,919nm,19.0s
OHR Ohrid 149.75 242 *e*PKP **PKPdf** **23 21 29.9 +2.1**
CFR Carcaliu 149.86 255⇓*i*P **PKPbc** **23 21 35.3 +2.7**
CFR Carcaliu 149.86 255⇓PKP2 **PKPbc** **23 21 35.4 +2.8**
VTS Vitosha 149.97 246 *i* P **PKPbc** **23 21 35.5 +2.3**
SKO Skopje 150.20 244 *e*PKP **PKPbc** **23 21 35.9 +2.3**
PMOZ Porto Moniz, M 150.26 177 *e*LR LR 00 11 43.6
comp=Z,1μm,20.0s
TIR Tirane 150.32 241 PFAKE 23 21 40.0 -0.3
TIR LR LR
comp=Z,1μm,21.0s
MPEP Malo Peshtene 150.36 248 *i* P PKPab 23 21 50.2 +10
ISR Istrita 150.53 253⇑*i*P **PKPab** **23 21 38.9 -2.2**
ISR Istrita 150.53 253⇑PKIKP **PKPab** **23 21 38.9 -2.2**
CUC Castrocucco 150.75 234 PFAKE 23 21 40.0 -2.1
CUC LR LR
comp=Z,570nm,20.0s
HUMR Humele 150.76 251⇓*i*P **PKPdf** **23 21 30.8 +1.6**
LEOM Leova 150.81 257⇓*i*P **PKPbc** **23 21 36.1 +1.3**
LEOM Leova 150.81 257⇓PKIKP **PKPbc** **23 21 36.1 +1.3**
KIS Kishinev 150.94 258 *e*PKP **PKPab** **23 21 42.0 -0.7**
KIS LRM MLR 00 36 02.0
comp=Z,600nm,20.0s
KIS Kishinev 150.94 258 *e*PKIKP **PKPab** **23 21 42.0 -0.7**
VRI Vrincioaia 151.03 255⇑*i*P **PKPbc** **23 21 36.5 +1.1**
VRI Vrincioaia 151.03 255⇑PKIKP **PKPbc** **23 21 36.5 +1.1**
PLOR Plostina 151.05 255⇑*i*P **PKPbc** **23 21 38.8 +3.3**
PLOR Plostina 151.05 255⇑PKIKP **PKPbc** **23 21 38.8 +3.3**
MLR Muntele Rosu 151.09 253⇑*i*P **PKPbc** **23 21 37.9 +2.2**
MLR Muntele Rosu 151.09 253⇑PKIKP **PKPbc** **23 21 37.9 +2.2**
VOIR 151.44 252⇑*i*P **PKPbc** **23 21 38.2 +1.7**
VOIR 151.44 252⇑PKIKP **PKPbc** **23 21 38.2 +1.7**
PDG Podgorica 151.48 241⇓*i*P **PKPbc** **23 21 37.3 +0.8**
TESR Tescani 151.56 255⇓*i*P **PKPbc** **23 21 40.4 +3.8**
ARR Arges 151.57 252⇑*i*P **PKPbc** **23 21 39.3 +2.5**
DOPR Dopca 151.70 253⇑*i*P **PKPbc** **23 21 39.7 +2.7**
MDVR Moldovita 152.37 247⇓*i*P **PKPbc** **23 21 39.6 +1.0**
VSL Villasalto 152.57 224 PFAKE 23 21 40.0 +0.8
VSL LR LR
comp=Z,1μm,21.0s
MOS Moscow 152.76 280 *e*PKIKP **PKPbc** **23 21 38.2 -0.8**
MOS *e* 23 25 27.0
MOS pmax pmax
comp=Z,37nm,1.3s
OBN Obninsk 152.87 278⇑*e*PKIKP **PKPdf** **23 21 33.9 +1.9**
OBN *e* 23 25 23.0
OBN *e* 23 28 49.3
OBN pmax pmax
comp=Z,23nm,1.3s
OBN Obninsk 152.87 278 PFAKE 23 21 40.0 +0.8
OBN LR LR
comp=Z,909nm,22.0s
BURAR Bucovina Array 153.03 255⇑*i*P **PKPbc** **23 21 42.8 +2.8**
BURAR Bucovina Array 153.03 255⇑PKIKP **PKPbc** **23 21 42.8 +2.8**
BZS Buzias 153.08 248⇓*i*P **PKPbc** **23 21 43.0 +3.0**
BZS Buzias 153.08 248⇓PKIKP **PKPbc** **23 21 43.0 +3.0**
AKASG Malin Array Be 153.42 264 PKPbc **PKPbc** **23 21 41.3 +0.7**
comp=Z,0.6nm,0.4s,baz=80,slow=1.1,SNR=4.1
KIEV Kiev 153.42 264 PFAKE 23 21 40.0 -0.6
KIEV LR LR
comp=Z,875nm,21.0s
DRGR 153.52 251⇓*i*P **PKPbc** **23 21 42.5 +1.4**
DRGR 153.52 251⇓PKIKP **PKPbc** **23 21 42.5 +1.4**
AQU L'Aquila 153.70 233 PFAKE 23 21 40.0 -1.6
AQU LR LR
comp=Z,2μm,21.0s
PFVI Vila Bisbo 154.28 192 *e*PKPdf **PKPbc** **23 21 40.7 -2.2**
PFVI Vila Bisbo 154.28 192 *e*PKPab PKPab 23 22 10.2 +13
PBDV Barranco-do-Ve 154.30 193 *e*PKPdf **PKPbc** **23 21 45.6 +2.6**
PBDV Barranco-do-Ve 154.30 193 *e*PKPab PKPab 23 22 10.2 +13
CMLA Cha da Macela 154.42 161 PFAKE 23 21 50.0 +6.8
CMLA LR LR
comp=Z,857nm,20.0s
PVAQ Vaqueiros 154.43 194 *e*LR LR 00 14 41.6
comp=Z,1μm,20.0s
MORF Marmelete 154.44 192 *e*PKPab PKPab 23 22 11.1 +13
KLMR Klimovskoe 154.63 291 *e*PKIKP **PKPdf** **23 21 34.7 +0.3**
KLMR *e* 23 25 39.4
KLMR pmax pmax
comp=Z,23nm,1.5s
PCVE Castro Verde 154.69 193 *e*PKPab **PKPab** **23 22 06.1 +7.4**
MESJ Messejana 154.92 193 *e*PKPdf **PKPbc** **23 21 45.6 +1.3**
MESJ Messejana 154.92 193 *e*PKPab **PKPab** **23 22 06.8 +7.2**
PBEJ Beja 155.06 194 *e*PKPab **PKPab** **23 22 07.6 +7.3**
PBAR Barrancos 155.12 195 *e*PKPab **PKPab** **23 22 08.2 +7.7**
PBAR Barrancos 155.12 195 *e*SS SS 23 45 13.9 -5.8
LVV L'vov 155.18 257 *e*PKP2 **PKPab** **23 21 57.0 -3.5**
PNCL Nicolau / Gran 155.22 193 *e*PKPab **PKPab** **23 22 07.3 +6.4**
EVO Evora 155.58 194 *e*PKPdf PKPdf 23 21 47.0 +11
PSZ Piszkesteto 155.61 250 PFAKE 23 21 50.0 -13
PSZ LR LR
comp=Z,695nm,21.0s
PESTR Estremoz 155.86 195 *e*PKPdf **PKPdf** **23 21 42.4 +5.6**
PMST Lisbon--Monsan 155.90 192 *e*PKPdf **PKPdf** **23 21 41.8 +5.0**
PAB San Pablo 156.07 201 PFAKE 23 21 50.0 +13
PAB LR LR
comp=Z,2μm,21.0s
ESDC Sonseca Array 156.13 202 PKP **PKPdf** **23 21 36.6 -0.6**
comp=Z,0.5nm,0.8s,baz=44,slow=3.9,SNR=2.8
ESDC PKPab **PKPab** **23 22 03.2 -1.6**
comp=Z,2.0nm,0.9s,baz=170,slow=2.2,SNR=5.5
PMAFR Mafra 156.13 191 *e*PKPab **PKPab** **23 22 05.0 +0.2**
PMTG Montargil 156.14 194 *e*PKPdf **PKPdf** **23 21 39.2 +2.1**
PMTG Montargil 156.14 194 *e*PKPab **PKPab** **23 22 08.2 +3.4**
VLC Villacollemand 156.37 231 PFAKE 23 21 50.0 +13
VLC LR LR
comp=Z,723nm,20.0s
PMRV Marv??o 156.39 195 *e*PKPdf **PKPdf** **23 21 43.6 +6.1**
PMRV Marv??o 156.39 195 *e*PKPab **PKPab** **23 22 04.7 -1.3**
PMRV Marv??o 156.39 195 *e*LR LR 00 16 34.9
comp=Z,2μm,20.0s
SOKA Soboth 156.69 241 *i* PKPab **PKPab** **23 22 06.9 -0.3**
comp=Z,27nm,1.7s
OBKA Obir 156.75 240 *i* PKPab **PKPab** **23 22 05.4 -2.0**
comp=Z,43nm,1.6s
PCAS Casmilo, Conde 157.14 193 *e*PKPdf PKPdf 23 21 47.4 +9.0
PCAS Casmilo, Conde 157.14 193 *e*PKPab **PKPab** **23 22 09.4 +0.3**
MYKA Terra Mystica 157.21 239 *i* PKPab **PKPab** **23 22 07.3 -2.1**
comp=Z,18nm,1.5s
CONA Conrad Observa 157.34 244 *i* PKPab **PKPab** **23 22 06.7 -3.2**
comp=Z,23nm,1.5s
MTE Manteigas 157.37 195 *e*PKPdf **PKPdf** **23 21 43.0 +4.2**
MTE Manteigas 157.37 195 *e*LR LR 00 16 38.4
comp=Z,1μm,18.0s
MTE Manteigas 157.37 195 PFAKE 23 21 50.0 +11
MTE LR LR
comp=Z,2μm,19.0s
ABTA Abfaltersbach 157.75 238 *i* pPKPab **PKPab** **23 22 12.9 +1.1**
comp=Z,29nm,1.4s
OKC Ostrava-Krasne 157.82 251 *e*PKPDF **PKPdf** **23 21 46.5 +7.6**
OKC *e*SS SS 23 45 49.5 -0.1
OKC AMS AMS 00 44 20.0
comp=Z,600nm,16.9s
MOA Molln 157.94 242 *i* PKPab **PKPab** **23 22 12.1 -0.4**
comp=Z,28nm,1.5s
MVO Moncorvo 158.06 197 *e*PKPdf PKPdf 23 21 47.6 +8.0
MVO Moncorvo 158.06 197 *e*PKPab **PKPab** **23 22 07.3 -5.9**
MVO Moncorvo 158.06 197 *e*LR LR 00 17 24.4
comp=Z,2μm,20.0s
POLO Lamas de Olo 158.36 195 *e*PKPdf **PKPdf** **23 21 45.6 +5.6**
POLO Lamas de Olo 158.36 195 *e*PKPab **PKPab** **23 22 07.3 -7.2**
BNI Bardonecchia 158.43 226 PFAKE 23 21 50.0 +10
BNI LR LR
comp=Z,3μm,22.0s
TREC Trest 158.56 246 AMS AMS 00 49 00.0
comp=Z,2μm,20.7s
WATA Walderalm 158.60 237 *i* pPKPab pPKPab 23 22 17.3 -1.6
comp=Z,14nm,1.2s
PBRG Braganca 158.65 198 *e*PKPdf **PKPdf** **23 21 46.5 +6.2**

SQTA Sankt Quirin 158.65 236 *i* PKPab **PKPab** **23 22 11.4 -4.3**
comp=Z,0.1nm,1.2s
FETA Feichten 158.67 235 *i* pPKPab **PKPab** **23 22 17.0 +1.2**
comp=Z,9.5nm,1.1s
TUE Stuetta 158.72 232 PFAKE 23 21 50.0 +10
TUE LR LR
comp=Z,2μm,20.0s
MOTA Moosalm 158.79 236 *i* PKPab **PKPab** **23 22 14.1 -2.3**
comp=Z,5.0nm,0.9s
GERES GERESS Array B 158.96 243 PKP **PKPdf** **23 21 42.0 +1.5**
comp=Z,0.4nm,0.6s,baz=44,slow=5.8,SNR=3.1
GERES PKPab **PKPab** **23 22 19.2 +2.3**
comp=Z,0.6nm,0.8s,baz=199,slow=8.0,SNR=2.8
DPC Dobruska-Polom 158.99 249 *e*PKPAB **PKPab** **23 22 21.0 +4.0**
DPC *ex* x 23 22 27.3
DPC AMS AMS 00 42 30.0
comp=Z,1μm,21.5s
PGAV Gavieira, Arco 159.00 195 *e*PKPab PKPab 23 22 07.9 -9.4
PGAV Gavieira, Arco 159.00 195 *e*LR LR 00 17 33.7
comp=Z,2μm,20.0s
RETA Reutte 159.04 236 *i* PKPab **PKPab** **23 22 13.2 -4.1**
comp=Z,18nm,1.4s
KHC Kasperske Hory 159.23 243 *e*PKPAB **PKPab** **23 22 21.2 +3.1**
KHC *ex* x 23 22 27.5
KHC *ex* x 23 22 38.6
KHC *e*SS SS 23 46 01.7 -2.9
KHC AMS AMS 00 42 00.0
comp=Z,2μm,20.3s
UPC Upice 159.24 249 *e*PKPAB **PKPab** **23 22 22.3 +4.3**
UPC *ex* x 23 22 28.4
UPC AMS AMS 00 42 30.0
comp=Z,1μm,21.7s
GOPC GO Pecny, Ondr 159.32 246 *e*PKPDF **PKPdf** **23 21 45.6 +4.8**
GOPC *e*SS SS 23 46 00.9 -4.7
GOPC AMS AMS 00 48 00.0
comp=Z,2μm,19.8s
SSB Saint Sauveur 159.33 223 PFAKE 23 21 50.0 +9.0
SSB LR LR
comp=Z,1μm,22.0s
PRU Pruhonice 159.48 246 *e*PKPAB **PKPab** **23 22 23.0 +3.9**
PRU *ex* x 23 22 29.2
PRU *ex* x 23 22 39.4
PRU *e*SS SS 23 46 01.0 -6.2
PRU AMS AMS 00 47 00.0
comp=Z,2μm,20.5s
PVCC Panska Ves 159.88 247 AMS AMS 00 47 10.0
comp=Z,1μm,21.1s
NKC Novy Kostel 160.55 244 *e*PKPAB **PKPab** **23 22 28.3 +4.5**
NKC *ex* x 23 22 34.5
NKC AMS AMS 00 39 40.0
comp=Z,2μm,19.5s
BFO Black Forest 160.66 234 PFAKE 23 21 50.0 +7.7
BFO LR LR
comp=Z,1μm,20.0s
CLL Collm 161.12 247 *e*PKPdf **PKPdf** **23 21 42.0 -0.7**
CLL *e*PKPab **PKPab** **23 22 29.0 +2.8**
comp=Z,5.0nm,1.0s
CLL *i* 23 22 36.1
comp=Z,36nm,1.6s
CLL *e*PP **PP** **23 26 06.0 -3.9**
CLL *e*SS SS 23 46 06.0 -18
CLL *e* 23 48 30.0
CLL *e*SSS SSS 23 52 24.0
CLL *e*SSSS 23 56 54.0
CLL *e* 00 00 18.0
CLL Collm 161.12 247 *e*PKIKP **PKPdf** **23 21 42.0 -0.7**
CLL pmax pmax
comp=Z,5.0nm,1.0s
KBS Kingsbay 161.62 344 *e*PKPdf **PKPdf** **23 21 44.9 +2.5**
KBS *e*SS SS 23 46 29.0 +0.2
KBS Kingsbay 161.62 344 PFAKE 23 21 50.0 +7.6
KBS LR LR
comp=Z,910nm,20.0s
ARCES ARCESS Array B 162.35 311 PKPab **PKPab** **23 22 31.6 +0.5**
comp=Z,10nm,1.1s,baz=48,slow=1.8,SNR=9.0
ARE0 ARCESS Array S 162.35 311 *e*PKPdf **PKPdf** **23 21 48.1 +4.7**
ARE0 *e*PP **PP** **23 26 13.7 -2.6**
ARE0 *e*SS SS 23 46 36.3 -0.7
ARE0 IVMs_BB IVMs_BB 00 33 10.5
comp=Z,860nm,23.0s
HSPB Hornsund (broa 162.39 338 IVMsBB 00 35 48.5
comp=Z,499nm,3.5s
HSPB IVMs_BB IVMs_BB 00 35 51.8
comp=Z,686nm,15.9s
WLF Walferdange 162.57 232 PFAKE 23 21 50.0 +5.8
WLF LR LR
comp=Z,2μm,21.0s
TRO Tromso 164.63 312 *e*SS SS 23 47 01.6 +1.1
TRO IVMs_BB IVMs_BB 00 35 27.6
comp=Z,840nm,23.6s
LOF Lofoten 166.84 308 *e*PKPdf **PKPdf** **23 21 52.9 +5.6**
LOF *e*PP **PP** **23 26 39.1 -0.7**
LOF IVMs_BB IVMs_BB 00 36 41.1
comp=Z,594nm,26.3s
NC602 NORSAR Array S 167.19 274 *e*PKPdf **PKPdf** **23 21 50.9 +3.1**
NC602 IVMs_BB IVMs_BB 00 43 42.3
comp=Z,587nm,20.0s
HOMB Homborsund 167.56 261 *e*PKPdf **PKPdf** **23 21 53.7 +5.6**
HOMB IVMs_BB IVMs_BB 00 45 57.8
comp=Z,798nm,17.2s
KONO Kongsberg 167.68 268 IVMs_BB IVMs_BB 00 42 19.6
comp=Z,681nm,20.5s
KONO Kongsberg 167.68 268 PFAKE 23 22 00.0 +12
KONO LR LR
comp=Z,1μm,21.0s
DOMB Dombas 168.70 278 IVMsBB 00 34 15.7
comp=Z,790nm,28.8s
BLS5 Blasjo 169.04 263 *e*PKPdf **PKPdf** **23 21 49.6 +0.5**
BLS5 IVMs_BB IVMs_BB 00 44 34.9
comp=Z,871nm,19.7s
STAV Stavanger 169.17 260 *e*PKPdf **PKPdf** **23 21 51.3 +2.1**
STAV IVMs_BB IVMs_BB 00 40 30.0
comp=Z,872nm,20.4s
MOL Molde 169.50 280 IVMs_BB IVMs_BB 00 35 21.1
comp=Z,840nm,25.8s
AKN Aaknes 169.68 278 *e*PKPdf **PKPdf** **23 21 51.3 +1.8**
AKN *e*SS SS 23 47 50.8 -1.2
AKN IVMsBB 00 35 32.0
comp=Z,836nm,28.2s
BER Bergen 169.94 267 IVMsBB 00 32 05.8
comp=Z,699nm,31.9s
SUE Sulen 170.43 270 *e*PKPdf **PKPdf** **23 21 51.1 +1.3**
SUE IVMsBB 00 42 32.9
comp=Z,884nm,15.4s
FOO Floro 170.45 273 *e*PKPdf **PKPdf** **23 21 55.1 +5.3**
FOO IVMs_BB IVMs_BB 00 46 19.0
comp=Z,630nm,23.3s
JMIC Jan Mayen 171.10 346 *e*PKPdf **PKPdf** **23 21 51.0 +1.0**
JMIC IVMs_BB IVMs_BB 00 44 22.3
comp=Z,1μm,4.2s
BORG Borgarnes 176.47 48 PFAKE 23 22 00.0 +8.0
BORG LR LR
comp=Z,2μm,20.0s

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*NEIC **21**:23:05:52.0, 45.74N×76.14W, h10km, MN3.5(OTT), After OTT.*
NEIC Felt [II] at Constance Bay. Also felt at Almonte, Ottawa and Renfrew. Felt [II] at Shawville, Quebec. Also felt at Acton Vale and Maniwaki.

OTT 21 23:05:52.6±0.1, 45.74N×76.14W, h10km, MN3.5/8, 4D,
Southern Ontario

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LSQ1	**Lac Sinclair,**	**0.05**	**350**	PG	Pg	23 05 54.6	0.0
LSQ1				SG	Sg	23 05 55.8	-0.3
VABQ	**Val Des Bois**	**0.41**	**66**	⇓PG	Pg	23 06 00.7	-0.4
VABQ				SG	Sg	23 06 05.7	-0.4
VABQ				Trac		23 06 07.3	
	comp=Z,296nm,0.0s						
OTT	**Ottawa**	**0.45**	**139**	PG	Pg	23 06 01.2	-0.3
OTT				Trac		23 06 11.7	
	comp=Z,179nm,0.1s						
GAC	**Glen Almond**	**0.47**	**94**	⇓PG	Pg	23 06 01.2	-0.5
GAC				SG	Sg	23 06 07.4	-0.4
GAC				Trac		23 06 07.4	
	comp=Z,735nm,0.2s						
ORHO	**Orleans, Herit**	**0.51**	**123**	PG	Pg	23 06 02.2	-0.3
ORHO				SG	Sg	23 06 09.2	0.0
ORIO	**Orleans, Innes**	**0.53**	**123**	PG	Pg	23 06 02.2	-0.6
ORIO				SG	Sg	23 06 09.4	-0.4
PEMO	**Pembroke**	**0.78**	**266**	⇓PG	Pg	23 06 06.9	-0.8
PEMO				SG	Sg	23 06 17.0	-0.7

ALFO	**Alfred**	**0.89**	**97**	PG	Pg	23 06 08.7	-1.0		
GRQ	**Grand Remous**	**0.89**	**13**	PG	Pg	23 06 08.7	-1.1		
GRQ				SG	Sg	23 06 20.7	-0.7		
GRQ				Trac		23 06 23.4			
	comp=Z,88nm,0.0s								
WBO	**Williamsburg**	**0.96**	**140**	PG	Pg	23 06 10.0	-1.0		
WBO				SG	Sg	23 06 23.1	-0.3		
WBO				Trac		23 06 27.4			
	comp=Z,102nm,0.1s								
TRQ	**Mont Tremblant**	**1.21**	**66**	⇓PG	Pb	23 06 14.1	-1.6		
TRQ				Trac		23 06 34.6			
	comp=Z,158nm,0.1s								
ALGO	**Algonquin Park**	**1.35**	**280**	PG	Pn	23 06 16.7	-0.9		
ALGO				SG	Sb	23 06 35.3	-0.2		
BANO	**Bancroft**	**1.45**	**241**	PG	Pn	23 06 18.4	-0.5		
BANO				SG	Sn	23 06 37.5	-0.6		
KGNO	**Kingston**	**1.53**	**190**	PG	Pn	23 06 19.9	-0.2		
KGNO				SG	Sb	23 06 40.3	-0.2		
LONY	**Lake Ozonia**	**1.57**	**135**	PN	Pn	23 06 19.9	-0.7		
LONY				SG	Sn	23 06 40.7	-0.3		
LONY	**Lake Ozonia**	**1.57**	**135**	*e*Pn	Pn	23 06 20.0	-0.6		
LONY				*e*Sn	Sn	23 06 40.3	-0.7		
MNTQ	**Montreal, Queb**	**1.78**	**97**	PN	Pn	23 06 24.1	+0.6		
MNTQ				SG	Sb	23 06 47.4	-0.4		
SADO	**Sadowa**	**2.33**	**247**	Trac		23 07 07.7			
	comp=Z,103nm,0.1s								
SADO	**Sadowa**	**2.33**	**247**	*e*Pn	Pn	23 06 32.7	+1.7		
SADO				*e*Sn	Sn	23 07 01.4	+1.6		
DPQ	**Saint Jean**	**2.52**	**67**	Trac		23 07 11.3			
	comp=Z,61nm,0.1s								
BINY	**Binghamton**	**3.54**	**178**	*e*Pn	Pn	23 06 47.7	0.0		
BINY				*e*Sg	Sg	23 07 43.1	-3.1		
A54	**Misere**	**4.31**	**64**	Trac		23 08 05.8			
	comp=Z,28nm,0.1s								
LMQ	**La Malbaie**	**4.39**	**64**	Trac		23 08 10.7			
	comp=Z,36nm,0.1s								
LMQ	**La Malbaie**	**4.39**	**64**	*e*Pn	Pn	23 06 58.0	-1.4		
PKME	**Peaks-Kenny Pk**	**4.84**	**93**	Pn	Pn	23 07 05.3	-0.2		

IDC 21 23:07:24.5±4.0, 28°37S×178°78W, h191km, ↓47km, mb3.0/2, mb1 3.2/2, mb1mx3.0/27, mbtmp3.5/2, Error ellipse: s-maj=172.6km s-min=36.4km az=175.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.16**	**140**	P	Pn	23 07 55.4	+0.9
	666nm,0.3s,baz=91,slow=7.5,SNR=24						
RAO				S	Sn	23 08 17.3	-0.6
	250nm,0.3s,baz=75,slow=20,SNR=2.5						
ASAR	**Alice Springs**	**42.57**	**265**	P	P	23 15 01.3	-0.5
	0.3nm,0.5s,baz=101,slow=6.0,SNR=2.1						
WRA	**Warramunga Arr**	**43.37**	**270**	P	P	23 15 08.1	-0.2
	0.3nm,0.3s,baz=109,slow=8.0,SNR=6.4						
KURBB	**Kurchatov Arra**	**119.19**	**315**	PKP	PKPdf	23 25 48.8	-1.5
	0.1nm,0.2s,baz=109,slow=5.0,SNR=1.8						
BVAR	**Borovoye Array**	**124.47**	**317**	PKP	PKPdf	23 26 00.1	-0.3
	0.5nm,0.6s,baz=105,slow=3.4,SNR=2.5						
FINES	**FINESS Array B**	**143.01**	**340**	PKP	PKPbc	23 26 32.1	0.0
	1.6nm,0.4s,baz=46,slow=4.0,SNR=19						
MMAI	**Mount Meron Ar**	**150.32**	**288**	PKPbc	PKPbc	23 26 53.9	+0.5
	1.1nm,0.4s,baz=89,slow=7.0,SNR=10						

*IDC **21** 23:15:51.8±1.5, 21°78S×174°07W, h0km, mb4.1/10, mb1 4.3/10, mb1mx4.1/38, mbtmp4.1/10, Error ellipse: s-maj=60.8km s-min=24.1km az=145.0*
*NEIC **21** 23:15:52.6±0.3, 21°70S×173°82W, h10km, mb4.9/11, Error ellipse: s-maj=10.3km s-min=7.8km az=149.0*
*ISCJB **21** 23:15:53.1±0.5, 21°76S±0°09×173°84W±0°09, h25km, mb4.5/24, Error ellipse: s-maj=13.8km s-min=10.7km az=145.3*

ISC 21 23:15:54.8±0.5, 21°67S±0°10×173°77W±0°09, h25km, n40, σ1s17/40, mb4.5/24, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.94**	**14**	Pn	**Pn**	**23 17 45.5**	**-3.3**
	3.0nm,0.3s,baz=82,slow=16,SNR=6.2						
AFI				Sn	Sn	23 19 04.6	-13
	4.8nm,0.3s,baz=217,slow=20,SNR=3.0						
AFI	**Afiamalu**	**7.94**	**14**	*e*Pn	**Pn**	**23 17 48.4**	**-0.4**
AFI				Sn	Sn	23 19 04.6	-13
RAO	**Raoul Island**	**8.43**	**206**	*e*Pn	**Pn**	**23 17 54.9**	**-0.4**
MSVF	**Nonsavu**	**8.64**	**295**	*e*Pn	**Pn**	**23 17 57.9**	**-0.4**
	39nm,1.0s						
RAR	**Rarotonga**	**13.04**	**91**	Pn	**Pn**	**23 18 56.9**	**-1.6**
	4.2nm,0.3s,baz=175,slow=2.4,SNR=7.1						
RAR				Sn	Sn	23 21 10.1	-13
	1.2nm,0.3s,baz=288,slow=20,SNR=2.1						
RAR	**Rarotonga**	**13.04**	**91**	*e*Pn	**Pn**	**23 18 57.7**	**-0.9**
RAR				Sn	Sn	23 21 10.1	-13
STKA	**Stephens Creek**	**40.88**	**246**	P	**P**	**23 23 33.5**	**-1.5**
	2.7nm,0.8s,baz=75,slow=13,SNR=5.3						
ASAR	**Alice Springs**	**48.10**	**257**	P	**P**	**23 24 30.7**	**-2.1**
	3.4nm,0.8s,baz=91,slow=7.9,SNR=27						
WRA	**Warramunga Arr**	**48.35**	**262**	P	**P**	**23 24 33.0**	**-1.7**
	2.8nm,0.8s,baz=96,slow=8.3,SNR=18						
MBWA	**Marble Bar**	**61.45**	**257**	*e*P	**P**	**23 26 09.7**	**+0.2**
	7.3nm,0.5s						
QSPA	**South Pole Qui**	**68.41**	**180**	*e*P	**P**	**23 26 54.9**	**+0.6**
MJAR	**Matsushiro Arr**	**73.53**	**321**	P	**P**	**23 27 26.1**	**+0.6**
	1.6nm,0.7s,baz=160,slow=7.6,SNR=3.9						
MAJO	**Matsushiro**	**73.53**	**321**	*e*P	**P**	**23 27 24.9**	**-0.7**
	3.6nm,0.6s						
KKM	**Kota Kinabalu**	**73.87**	**283**	*e*P	**P**	**23 27 28.9**	**+0.7**
	29nm,1.3s						
TATO	**Taipei**	**78.11**	**303**	*e*P	**P**	**23 27 52.1**	**+0.2**
	11nm,0.5s						
PETK	**Petropavlovsk-**	**78.47**	**343**	P	**P**	**23 27 54.1**	**+0.8**
	1.4nm,0.6s,baz=110,slow=6.3,SNR=2.9						
KSRS	**Korea Array**	**80.41**	**317**	P	**P**	**23 28 05.4**	**+1.2**
	0.6nm,0.5s,baz=151,slow=5.6,SNR=4.4						
KSAR	**Wonju Array Be**	**80.42**	**317**	P	**P**	**23 28 05.4**	**+1.1**
TXAR	**Lajitas Array**	**84.40**	**56**	P	**P**	**23 28 28.5**	**+3.1**
	0.3nm,0.8s,baz=231,slow=6.9,SNR=3.9						
ANMO	**Albuquerque**	**85.10**	**50**	*e*P	**P**	**23 28 29.1**	**+0.1**
	0.2nm,0.6s						
PMR	**Palmer**	**85.30**	**12**	*e*P	**P**	**23 28 28.1**	**-0.9**
	2.6nm,0.3s						
PV01	**Paradox Valley**	**85.30**	**46**	*e*P	**P**	**23 28 30.0**	**+0.1**
	74nm,0.6s						
MA2	**Magadan**	**86.01**	**343**	*e*P	**P**	**23 28 32.8**	**+0.2**
	17nm,0.8s						
SDCO	**Great Sand Dun**	**87.18**	**48**	*e*P	**P**	**23 28 39.7**	**+0.4**
	0.2nm,0.4s						
KULM	**Kulim**	**87.83**	**277**	*e*P	**P**	**23 28 42.8**	**+0.2**
	1.9nm,0.6s						
SEY	**Seymchan**	**88.45**	**345**	P	**P**	**23 28 45.9**	**+1.6**
	1.8nm,0.6s,baz=181,slow=15,SNR=5.7						
ILAR	**Eielson Array**	**88.63**	**11**	P	**P**	**23 28 46.0**	**+0.8**
	0.5nm,0.7s,baz=212,slow=4.9,SNR=3.8						
ILAR	**Eielson Array**	**88.63**	**11**	P	**P**	**23 28 46.0**	**+0.8**
BJT	**Baijiatuau**	**89.51**	**314**	*e*P	**P**	**23 28 49.7**	**-0.2**
	3.6nm,0.5s						
HIA	**Hailar**	**91.96**	**323**	*e*P	**P**	**23 29 01.6**	**+0.5**
	6.1nm,0.4s						
CMAR	**Chiang Mai Arr**	**94.23**	**288**	P	**P**	**23 29 13.9**	**+1.7**
	0.7nm,0.3s,baz=123,slow=3.3,SNR=4.4						
CHTO	**Chiang Mai**	**94.36**	**288**	*e*P	**P**	**23 29 12.4**	**-0.4**
	1.4nm,0.6s						
INK	**Inuvik**	**94.40**	**14**	*e*P	**P**	**23 29 12.1**	**+0.3**
	0.8nm,0.6s						
BVAR	**Borovoye Array**	**122.51**	**320**	PKP	**PKPdf**	**23 34 49.3**	**+1.5**
	0.6nm,0.6s,baz=198,slow=26,SNR=4.1						
ARU	**Arti**	**128.39**	**326**	*e*PKPdf	**PKPdf**	**23 34 58.6**	**-0.2**
KIV	**Kislovodsk**	**142.58**	**315**	*e*PKPdf	**PKPdf**	**23 35 25.9**	**+0.1**
AKASG	**Malin Array Be**	**145.87**	**334**	PKPbc	**PKPbc**	**23 35 31.5**	**-0.3**
	2.0nm,0.7s,baz=36,slow=3.4,SNR=3.9						
BRTR	**Keskin Array B**	**150.52**	**314**	PKPbc	**PKPbc**	**23 35 45.5**	**+0.8**
	1.3nm,0.8s,baz=98,slow=3.7,SNR=5.5						
GERES	**GERESS Array B**	**152.23**	**349**	PKPbc	**PKPbc**	**23 35 48.6**	**+0.3**
	0.2nm,0.4s,baz=37,slow=16,SNR=3.8						
CSS	**Mathiatis**	**152.81**	**305**	*e*PKPdf	**PKPdf**	**23 35 42.9**	**+0.1**

*IDC **21** 23:17:35.0±0.6, 29°05S×176°31W, h0km, mb4.4/12, mb1 4.6/12, mb1mx4.4/32, mbtmp4.4/12, Error ellipse: s-maj=28.4km s-min=20.1km az=136.0*
*NEIC **21** 23:17:36.9±0.3, 29°02S×176°38W, h10km, mb4.9/17, Error ellipse: s-maj=9.9km s-min=5.8km az=125.0*
*BJI **21** 23:17:38.0, 29°29S×176°81W, h14km, mb5.3/15, mB5.8/14, Ms5.3/7, Ms7 5.1/7*
*ISCJB **21** 23:17:39.8±0.4, 29°18S±0°07×176°40W±0°09, h38km, mb4.8/29, MS5.0/4, Error ellipse: s-maj=12.5km s-min=7.4km az=37.6*
*MOS **21** 23:17:39.8±1.1, 28°94S×176°52W, h33km, mb5.0/8, Error ellipse: s-maj=15.0km s-min=14.2km az=18.3*

ISC 21 23:17:40.9±0.5, 29°12S±0°08×176°24W±0°07, h38km, n96, σ1s25/107, mb4.9/29, MS5.0/4, 5C-4D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.48**	**264**	Pn	**Pn**	**23 18 05.4**	**+0.5**
	662nm,0.3s,baz=55,slow=7.4,SNR=15						
RAO				Sn	**Sn**	**23 18 25.3**	**+2.4**
	2um,0.3s,baz=107,slow=19,SNR=18						
RAO	**Raoul Island**	**1.48**	**264**	*e*P	**Pn**	**23 18 01.8**	**-3.1**
RAO						23 18 25.3	
RAO	**Raoul Island**	**1.48**	**264**	*e*Pn	**Pn**	**23 18 01.8**	**-3.1**
RAO				Sn	**Sn**	**23 18 25.3**	**+2.4**
URZ	**Urewera**	**10.66**	**210**	Pn	Pn	23 20 01.7	-9.3
	0.4nm,0.3s,baz=184,slow=13,SNR=2.9						
URZ				Sn	Sn	23 21 57.8	-11
	5.8nm,0.3s,baz=118,slow=19,SNR=14						
URZ	**Urewera**	**10.66**	**210**	*e*Pn	**Pn**	**23 20 11.3**	**+0.3**
MSVF	**Nonsavu**	**12.48**	**334**	⇑*e*P	**Pn**	**23 20 32.3**	**-3.8**
MSVF				pmax	pmax		
	comp=Z,12nm,1.0s						
MSVF	**Nonsavu**	**12.48**	**334**	*e*Pn	**Pn**	**23 20 34.0**	**-2.1**
	comp=Z,18nm,1.2s						
THZ	**Tophouse**	**15.39**	**212**	*e*Pn	**Pn**	**23 21 15.6**	**+0.3**
	comp=Z,225nm,1.9s						
KHZ	**Kahutara**	**15.63**	**209**	*e*Pn	**Pn**	**23 21 16.3**	**-1.9**
	comp=Z,101nm,0.9s						
OXZ	**Oxford**	**17.02**	**210**	*e*Pn	**Pn**	**23 21 35.0**	**-0.9**
	comp=Z,63nm,1.1s						
MQZ	**McQueen's Vall**	**17.06**	**208**	*e*Pn	**Pn**	**23 21 36.3**	**0.0**
	comp=Z,141nm,1.5s						
DZM	**Mont Dzumac**	**17.12**	**290**	Pn	**P**	**23 21 40.4**	**+1.7**
	comp=Z,0.3nm,0.3s,baz=148,slow=15,SNR=2.6						
STKA	**Stephens Creek**	**36.27**	**255**	P	**P**	**23 24 40.5**	**-0.2**
	comp=Z,10nm,0.9s,baz=97,slow=8.8,SNR=14						
STKA	**Stephens Creek**	**36.27**	**255**	*e*P	**P**	**23 24 40.0**	**-0.7**
STKA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
STKA	**Stephens Creek**	**36.27**	**255**	*e*P	**P**	**23 24 40.0**	**-0.7**
	comp=Z,2.4nm,0.8s						
AS01	**Alice Springs**	**44.69**	**265**	*e*P	**P**	**23 25 49.1**	**-1.2**
AS31	**Alice Springs**	**44.73**	**265**	*e*P	**P**	**23 25 49.6**	**-1.1**
	comp=Z,5.9nm,1.8s						
ASAR	**Alice Springs**	**44.73**	**265**	P	**P**	**23 25 48.8**	**-2.0**
	comp=Z,2.9nm,0.5s,baz=101,slow=7.5,SNR=23						
WB2	**Warramunga Arr**	**45.59**	**270**	*e*P	**P**	**23 25 57.1**	**-0.5**
WRAB	**Tennant Creek**	**45.60**	**270**	⇓*e*P	**P**	**23 25 56.9**	**-0.7**
WRAB				pmax	pmax		
	comp=Z,18nm,0.9s						
WRAB	**Tennant Creek**	**45.60**	**270**	*e*P	**P**	**23 25 57.0**	**-0.7**
	comp=Z,56nm,1.1s						
WRA	**Warramunga Arr**	**45.61**	**270**	P	**P**	**23 25 55.6**	**-2.1**
	comp=Z,7.2nm,0.7s,baz=109,slow=7.8,SNR=19						
VNDA	**Vanda**	**49.52**	**186**	P	**P**	**23 26 27.6**	**+0.4**
	comp=Z,1.9nm,0.9s,baz=5.0,slow=7.4,SNR=7.9						
VNDA	**Vanda**	**49.52**	**186**	*e*P	**P**	**23 26 28.9**	**+1.6**
VNDA				pmax	pmax		
	comp=Z,7.0nm,1.2s						
VNDA	**Vanda**	**49.52**	**186**	*e*P	**P**	**23 26 28.9**	**+1.6**
	comp=Z,6.6nm,1.2s						
FITZ	**Fitzroy Crossi**	**53.91**	**268**	*e*P	**P**	**23 26 59.7**	**-1.1**
	comp=Z,26nm,1.5s						
SOEI	**Soe**	**58.71**	**276**	*e*P	**P**	**23 27 33.0**	**-2.3**
	comp=Z,103nm,0.5s						
MAW	**Mawson**	**74.03**	**200**	P	**P**	**23 29 12.5**	**+0.2**
	comp=Z,6.3nm,1.0s,baz=114,slow=6.2,SNR=9.8						
MAJO	**Matsushiro**	**78.09**	**324**	*e*P	**P**	**23 29 36.4**	**+0.6**
MAJO				pmax	pmax		
	comp=Z,4.0nm,0.6s						
MAJO	**Matsushiro**	**78.09**	**324**	*e*P	**P**	**23 29 36.4**	**+0.6**
	comp=Z,3.9nm,0.6s						
SYO	**Syowa Base**	**78.70**	**192**	⇓*e*P	**P**	**23 29 36.5**	**-2.2**
KSRS	**Korea Array**	**84.39**	**319**	P	**P**	**23 30 09.7**	**+0.6**
	comp=Z,0.7nm,0.4s,baz=136,slow=5.5,SNR=3.2						
KSAR	**Wonju Array Be**	**84.40**	**319**	P	**P**	**23 30 09.7**	**+0.5**
KSAR	**Wonju Array Be**	**84.40**	**319**	P	**P**	**23 30 09.7**	**+0.5**
PETK	**Petropavlovsk-**	**84.97**	**345**	P	**P**	**23 30 12.2**	**+0.4**
	comp=Z,3.7nm,0.7s,baz=155,slow=4.4,SNR=4.6						
PETK	**Petropavlovsk-**	**84.97**	**345**	PN	**P**	**23 30 12.2**	**+0.5**
W13A	**Hualapai Mount**	**86.80**	**47**	*e*P	**P**	**23 30 22.9**	**+1.3**
PSI	**Prapat**	**86.84**	**275**	P	**P**	**23 30 21.4**	**-0.7**
	comp=Z,7.6nm,1.0s,baz=138,slow=3.8,SNR=5.3						
GSI	**Gunungsitoli**	**87.29**	**273**	*e*P	**P**	**23 30 24.2**	**0.0**
	comp=Z,41nm,1.2s						
U15A	**North Rim**	**88.64**	**46**	*e*P	**P**	**23 30 31.4**	**+1.0**
WHN	**Wuhan**	**88.82**	**306**	P	**P**	**23 30 34.0**	**+3.0**
TXAR	**Lajitas Array**	**90.41**	**56**	P	**P**	**23 30 39.5**	**+0.9**
	comp=Z,0.7nm,0.8s,baz=220,slow=5.5,SNR=4.6						
G08A	**Pilot Rock**	**90.52**	**36**	*e*P	**P**	**23 30 39.6**	**+0.8**
	comp=Z,10nm,0.8s						
D08A	**Wollman Farm,**	**91.73**	**35**	*e*P	**P**	**23 30 44.6**	**+0.4**
	comp=Z,20nm,1.4s						
HLID	**Hailey**	**91.84**	**40**	*e*P	**P**	**23 30 46.2**	**+1.1**
	comp=Z,6.1nm,1.1s						
F10A	**Beach Ranch, E**	**91.88**	**37**	*e*P	**P**	**23 30 45.6**	**+0.6**
	comp=Z,10nm,1.2s						
ENH	**Enshi**	**92.16**	**304**	*e*P	**P**	**23 30 47.1**	**+0.5**
	comp=Z,9.8nm,1.5s						
GYA	**Guiyang**	**92.26**	**299**	P	**P**	**23 30 48.3**	**+1.0**
GYA				pP	pP	23 30 54.8	-4.4
GYA				SKS	**SKSac**	**23 41 18.5**	**+0.6**
GYA				S	**S**	**23 41 47.3**	**-0.5**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA				pmax	pmax		
	comp=Z,110nm,6.4s						
PDAR	**Pinedale Array**	**94.16**	**43**	P	**P**	**23 30 54.7**	**-1.1**
	comp=Z,0.4nm,0.7s,baz=269,slow=4.3,SNR=3.3						
CMAR	**Chiang Mai Arr**	**94.44**	**289**	P	**P**	**23 30 58.8**	**+1.5**
	comp=Z,0.7nm,0.5s,baz=119,slow=3.4,SNR=3.9						
KMI	**Kunming**	**94.63**	**296**	P	**P**	**23 30 59.0**	**+0.6**
KMI				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KMI				pmax	pmax		
	comp=Z,210nm,7.2s						
RND	**Reindeer**	**94.74**	**12**	*e*P	**P**	**23 30 58.3**	**+0.5**
RND	**Reindeer**	**94.74**	**12**	*e*P	**P**	**23 30 58.3**	**+0.5**
WRH	**Wood River Hil**	**95.86**	**12**	*e*P	**P**	**23 31 03.3**	**+0.6**
HDA	**Harding Lake**	**96.01**	**12**	*e*P	**P**	**23 31 03.8**	**+0.3**
COLA	**College**	**96.27**	**12**	*e*P	**P**	**23 31 04.4**	**-0.1**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.5s						
COLA	**College**	**96.27**	**12**	*e*P	**P**	**23 31 04.4**	**-0.1**
	comp=Z,1.7nm,0.5s						
ILAR	**Eielson Array**	**96.35**	**12**	P	**P**	**23 31 03.8**	**-1.2**
	comp=Z,0.9nm,0.7s,baz=217,slow=4.9,SNR=8.5						
HHC	**Hu-ho-hao-te**	**96.46**	**313**	*e*P	**P**	**23 31 08.0**	**+1.8**
HHC				sP	pP	23 31 16.4	-1.7
HHC				S	**S**	**23 42 27.8**	**+3.9**
HHC				sS	sS	23 42 40.8	-3.0
HHC				pmax	pmax		
	comp=Z,15nm,1.0s						
HHC				pmax	pmax		
	comp=Z,160nm,9.3s						
HHC				LR	LR		
	comp=Z,510nm,19.2s						
HHC				LR	LR		
	comp=Z,330nm,19.6s						
HHC				LR	LR		
	comp=Z,650nm,20.1s						
CD2	**Chengdu**	**96.72**	**302**	*e*P	**P**	**23 31 07.5**	**0.0**
CD2				pP	pP	23 31 14.3	-5.1
CD2				PP	**PP**	**23 35 01.8**	**-1.2**
CD2				SKS	**SKSac**	**23 41 42.9**	**+1.3**
CD2				S	**ScS**	**23 42 27.4**	**+0.5**
CD2				sS	sS	23 42 39.0	-7.3
CD2				SS	**SS**	**23 49 03.1**	**+0.6**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.4s						
LZH	**Lanzhou**	**99.20**	**306**	*e*P	**Pdif**	**23 31 20.0**	**+1.3**
LZH				pP	pP	23 31 26.5	-4.1
LZH				sP	sP	23 31 29.3	-5.6
LZH				*e*PP	**PP**	**23 35 25.0**	**+2.9**
LZH				pmax	pmax		
	comp=Z,21nm,1.2s						
LZH				pmax	pmax		
	comp=Z,95nm,5.3s						
LZH				LR	LR		
	comp=Z,260nm,17.7s						
LZH				LR	LR		
	comp=Z,280nm,18.0s						
LZH				LR	LR		
	comp=Z,380nm,19.7s						
YAK	**Yakutsk**	**100.66**	**337**	*e*P	**Pdif**	**23 31 24.3**	**0.0**
YAK				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ	**Urumqi**	**113.64**	**308**	*e*PKP	**PKiKP**	**23 36 14.3**	**-0.8**
WMQ				LR	LR		
	comp=Z,250nm,25.6s						
WMQ				LR	LR		
	comp=Z,220nm,23.0s						
WMQ				LR	LR		
	comp=Z,230nm,20.8s						
ZALV	**Zalesovo Beam**	**118.09**	**319**	PKP	**PKPdf**	**23 36 22.6**	**-0.6**
	comp=Z,0.5nm,0.3s,baz=199,slow=3.1,SNR=3.5						
MKAR	**Makanchi Array**	**118.12**	**310**	PKP	**PKPdf**	**23 36 22.6**	**-1.0**
	comp=Z,1.1nm,0.8s,baz=66,slow=4.1,SNR=6.4						
KSH	**Kashi**	**120.91**	**301**	*e*PKP	**PKPdf**	**23 36 30.4**	**+1.1**
KSH				PKS	**PKSdf**	**23 40 05.8**	**-0.2**
KSH				SKS	**SKSdf**	**23 43 37.8**	**-0.6**
KSH				AMB	AMB		
	comp=Z,120nm,4.7s						
KSH				LR	LR		
	comp=Z,75nm,6.1s						
KSH				LR	LR		
	comp=Z,130nm,8.8s						
KSH				LR	LR		
	comp=Z,290nm,13.8s						
KURK	**Kurchatov**	**121.27**	**314**	PKIKP	**PKPdf**	**23 36 28.2**	**-1.2**
KURK	**Kurchatov**	**121.27**	**314**	PKP	**PKPdf**	**23 36 28.2**	**-1.2**
KURBB	**Kurchatov Arra**	**121.31**	**314**	PKP	**PKPdf**	**23 36 28.2**	**-1.3**
	baz=96,slow=1.9						
AAK	**Ala-Archa**	**122.67**	**304**	⇑*i*PKIKP	**PKPdf**	**23 36 32.3**	**-0.3**
KKAR	**Karatay Array**	**125.64**	**304**	*e*PKIKP	**PKPdf**	**23 36 38.2**	**+0.1**
KKAR	**Karatay Array**	**125.64**	**304**	*e*PKPdf	**PKPdf**	**23 36 38.2**	**+0.1**
BVAR	**Borovoye Array**	**126.55**	**316**	PKP	**PKPdf**	**23 36 39.3**	**-0.3**
	comp=Z,1.9nm,0.8s,baz=170,slow=2.6,SNR=10						
BRVK	**Borovoye**	**126.61**	**316**	⇓*i*PKIKP	**PKPdf**	**23 36 39.4**	**-0.2**
GEYT	**Alibeck**	**134.39**	**296**	PKP	**PKPdf**	**23 36 53.8**	**-1.2**
	comp=Z,2.0nm,1.0s,baz=172,slow=2.9,SNR=4.6						
ARCES	**ARCESS Array B**	**137.65**	**349**	PKhKP	PKPpre	23 36 56.0	
	comp=Z,1.1nm,0.7s,baz=326,slow=8.8,SNR=2.8						
ARCES				PKP	**PKiKP**	**23 37 01.1**	**-0.9**
	comp=Z,2.9nm,0.8s,baz=35,slow=3.3,SNR=4.6						
FINES	**FINESS Array B**	**144.44**	**342**	PKP	**PKPab**	**23 37 10.1**	**-0.6**
	comp=Z,4.2nm,0.5s,baz=89,slow=4.6,SNR=33						
GNI	**Garni**	**144.81**	**299**	⇑*e*PKIKP	**PKPdf**	**23 37 13.9**	**0.0**
OBN	**Obninsk**	**144.96**	**327**	PKP	**PKPab**	**23 37 12.2**	**-0.6**
	comp=Z,8.3nm,0.5s,baz=60,slow=5.5,SNR=5.8						
OBN	**Obninsk**	**144.96**	**327**	⇓*e*PKIKP	**PKPab**	**23 37 12.3**	**-0.5**
OBN				*e*		23 40 33.6	
OBN				pmax	pmax		
	comp=Z,23nm,1.2s						
ZEI	**Tsey**	**145.09**	**304**	*i* PKIKP	**PKPbc**	**23 37 13.6**	**-0.3**
ZEI				pmax	pmax		
	comp=Z,48nm,1.3s						
VSR	**Storozhevoye**	**145.58**	**320**	*e*PKIKP	**PKPdf**	**23 37 13.7**	**-0.9**
VSR				pmax	pmax		
	comp=Z,20nm,1.5s						
KBZ	**Khabaz**	**145.64**	**306**	PKPbc	**PKPdf**	**23 37 14.1**	**-0.8**
	comp=Z,3.0nm,0.9s,baz=146,slow=4.3,SNR=4.3						
KVAR	**Kislovodsk Arr**	**145.73**	**306**	PKPbc	**PKPab**	**23 37 16.3**	**+0.1**
	comp=Z,2.3nm,0.6s,baz=260,slow=5.5,SNR=6.1						
KIV	**Kislovodsk**	**145.74**	**306**	⇑*e*PKIKP	**PKPab**	**23 37 16.0**	**-0.2**
KIV				*e*		23 40 35.6	
KIV				*e*PPP	PPP	23 43 52.2	
KIV				pmax	pmax		
	comp=Z,11nm,1.2s						
VSU	**Vasula**	**146.65**	**338**	⇑*e*PKHKP	PKPpre	23 37 11.4	
VSU				pmax	pmax		
	comp=Z,21nm,1.0s						
NB2	**NORSAR Subarra1**	**147.69**	**353**	PKP	**PKPbc**	**23 37 20.2**	**-0.6**
	comp=Z,5.8nm,0.8s,baz=13,slow=2.9						
NOA	**NORSAR Array B**	**147.69**	**353**	PKPbc	**PKPbc**	**23 37 20.2**	**-0.6**
	comp=Z,4.2nm,0.7s,baz=13,slow=4.4,SNR=11						
HFS	**Hagfors**	**148.27**	**351**	PKPbc	**PKPbc**	**23 37 21.3**	**-1.0**
	comp=Z,3.5nm,0.6s,baz=72,slow=4.8,SNR=10						
ANN	**Anapa**	**149.14**	**310**	*i* PKP2	**PK

27nm,1.0s
SIV San Ignacio 21.64 131 P P 23 28 25.6 -0.1
9.0nm,0.5s,baz=320,slow=11,SNR=24
GTBY Guantanamo Bay 21.81 7 eP P 23 28 28.1 +0.8
40nm,0.8s
LVC Limon Verde 22.36 158 P P 23 28 33.4 +0.3
50nm,0.5s,baz=338,slow=5.4,SNR=40
LVC Limon Verde 22.36 158 eP P 23 28 34.7 +1.6
32nm,1.2s
SJG San Juan 22.92 30 P P 23 28 35.9 -2.1
11nm,0.7s,baz=237,slow=7.6,SNR=4.4
TEIG Tepich 24.24 335 P P 23 28 50.5 +0.5
1.2nm,0.3s,baz=90,slow=20,SNR=4.3
CMIG Matias Romero 25.28 319 P P 23 28 59.6 +0.1
12nm,0.7s,baz=112,slow=5.4,SNR=26
VCA Vinchina 28.25 162 eP P 23 29 28.8 +2.7
AMOG MOGNA 30.23 164 eP P 23 29 44.3 +0.8
RTLL Cerro Villicun 30.60 164 eP P 23 29 48.2 +1.5
RTLS Leoncito 30.84 166 eP P 23 29 50.7 +1.6
RTCV Cerro Valdivia 31.09 165 eP P 23 29 52.6 +1.6
AUSP Uspallata 31.22 166 eP P 23 29 54.7 +2.3
CPUP Villa Florida 31.28 143 P P 23 29 51.7 -1.0
2.0nm,0.7s,baz=331,slow=8.9,SNR=4.9
ROC1 El Roble 31.60 169 eP P 23 29 57.0 +1.3
ROC1 El Roble 31.60 169 eP P 23 29 57.0 +1.3
71nm,0.5s
ACAN Cantantal 31.86 163 eP P 23 29 58.9 +1.2
TCA Tanti 31.86 158 eP P 23 29 58.5 +0.7
BDFB Brasilia 32.38 117 P P 23 30 03.6 +1.0
2.9nm,0.4s,baz=343,slow=20
BDFB Brasilia 32.38 117 eP P 23 30 03.0 +0.4
22nm,1.2s
TIGA Tifton 33.57 351 P P 23 30 12.6 0.0
baz=169
445A Amite 34.55 341 P P 23 30 21.1 +0.1
baz=157
347A Saraland 34.62 344 P P 23 30 21.7 0.0
baz=161
035A Encino 34.69 327 P P 23 30 22.6 +0.3
baz=142
NHSC New Hope 34.85 356 eP P 23 30 23.8 +0.2
48nm,0.9s
034A Hebbronville 35.11 326 P P 23 30 26.1 +0.1
baz=142
934A Benavides 35.44 327 P P 23 30 29.3 +0.5
baz=142
LRAL Lakeview Retre 35.78 347 eP P 23 30 30.7 -0.8
5.8nm,0.9s
933A Laredo 35.87 326 P P 23 30 33.0 +0.6
baz=141
JSC Jenkinsville 36.10 355 eP P 23 30 33.9 -0.4
7.2nm,0.8s
Z47A Carrollton 36.20 345 P P 23 30 35.2 +0.2
baz=162
Z48A Northport 36.24 346 P P 23 30 34.9 -0.6
baz=163
832A Faith Ranch, C 36.78 326 P P 23 30 40.2 +0.1
baz=141
Z44A Pea Ridge, Bel 36.93 342 P P 23 30 40.8 -0.5
baz=159
KMSC Kings Mountain 36.96 355 P P 23 30 41.3 -0.2
baz=174
KMSC Kings Mountain 36.96 355 eP P 23 30 41.7 +0.2
23nm,1.1s
Y46A Houston 37.05 345 P P 23 30 41.3 -1.0
baz=161,SNR=6.3
Y45A Yeager Farm, C 37.22 344 P P 23 30 42.3 -1.5
baz=160
633A Saathoff Ranch 37.27 328 P P 23 30 43.9 -0.4
baz=143,SNR=8.9
CPCT Cooper Cave 37.65 351 eP P 23 30 46.9 -0.4
3.4nm,0.7s
SWET Sewanee 37.66 349 eP P 23 30 47.0 -0.6
1.4nm,0.7s
533A Kerrville 37.68 329 P P 23 30 48.0 +0.2
baz=144
434A Burnet 37.90 331 P P 23 30 49.4 -0.2
baz=145
433A Art 38.26 330 P P 23 30 52.4 -0.2
baz=144,SNR=14
334A Lometa 38.31 331 P P 23 30 52.8 -0.2
baz=146
JCT Junction City 38.41 329 P P 23 30 53.4 -0.4
baz=143
JCT Junction City 38.41 329 eP P 23 30 54.6 +0.8
JCT pmax pmax
comp=Z,5.0nm,0.7s
JCT Junction City 38.41 329 eP P 23 30 54.6 +0.8
comp=Z,5.3nm,0.7s
JCT eS S 23 36 38.1 +1.2
WHTX Lake Whitney, 38.49 333 P P 23 30 54.3 -0.1
baz=147
TZTN Tazewell 38.58 353 eP P 23 30 54.6 -0.6
comp=Z,43nm,1.6s
333A Richland Sprin 38.67 330 P P 23 30 55.4 -0.6
baz=145
234A Clairette 38.82 332 P P 23 30 56.4 -0.8
baz=146
X40A Basin Creek Fa 38.82 340 P P 23 30 57.1 0.0
baz=156
TRQA Tornquist 38.83 160 eP P 23 30 57.7 +0.4
comp=Z,59nm,1.9s
UALR University of 38.92 341 eP P 23 30 57.3 -0.7
comp=Z,9.2nm,0.8s
WVT Waverly 38.94 347 eP P 23 30 56.2 -1.9
comp=Z,3.9nm,0.6s
BLA Blacksburg 38.95 357 eP P 23 30 58.5 +0.2
comp=Z,18nm,0.8s
233A Rising Star 39.19 331 P P 23 30 59.8 -0.6
baz=145
PLCA Paso Flores 39.24 171 P P 23 31 01.4 +0.7
comp=Z,18nm,0.7s,baz=9.0,slow=9.8,SNR=28
PLCA PcP PcP 23 33 06.9 +0.4
comp=Z,1.6nm,0.7s,baz=337,slow=7.7,SNR=3.8
PLCA Paso Flores 39.24 171 eP P 23 31 01.6 +1.0
comp=Z,25nm,0.8s
PLCA PcP PcP 23 33 06.9 +0.4
W41B Gary Mavity, V 39.25 341 P P 23 30 59.7 -1.0
baz=157
134A White-Moore Ra 39.27 332 P P 23 31 00.2 -0.6
baz=147
X39A Fountain Ranch 39.30 338 P P 23 31 00.7 -0.4
baz=154
X301 Greenbrier Sit 39.36 341 eP P 23 31 00.6 -1.0
comp=Z,6.7nm,0.7s
WHAR Wooly Hollow 39.37 341 eP P 23 31 00.9 -0.8
comp=Z,6.3nm,0.8s
X201 Greenbrier Sit 39.40 341 eP P 23 31 01.2 -0.7
comp=Z,7.4nm,0.7s
V42A Cord 39.57 343 P P 23 31 03.2 -0.1
baz=158
133A Hamilton Ranch 39.69 332 P P 23 31 03.8 -0.5
baz=146
TX31 Lajitas Ar. Si 39.70 323 eP P 23 31 04.8 +0.2
TX31 ePcP PcP 23 33 08.6 +0.4
TXAR Lajitas Array 39.70 323 P P 23 31 04.9 +0.3
comp=Z,1.2nm,0.5s,baz=148,slow=8.2,SNR=17
TXAR PcP PcP 23 33 08.7 +0.5
comp=Z,1.8nm,0.8s,baz=146,slow=6.2,SNR=7.9
TXAR ScP ScP 23 36 43.7 +1.5
comp=Z,1.0nm,0.8s,baz=142,slow=6.3,SNR=8.8
V41A Mountainview 39.79 342 P P 23 31 04.3 -0.9
baz=157,SNR=7.1
W39A Magazine 39.79 339 P P 23 31 04.9 -0.3
baz=154
V40A Witts Springs 40.02 341 P P 23 31 06.4 -0.7
baz=156,SNR=7.5
U42A Revenden 40.03 343 P P 23 31 06.1 -1.1
baz=159
ABTX Abilene, Hawle 40.05 331 P P 23 31 06.6 -0.8
baz=145
ABTX Abilene, Hawle 40.05 331 eP P 23 31 06.6 -0.8
comp=Z,10nm,0.6s
Z33A Whitaker Ranch 40.18 332 P P 23 31 07.4 -1.0
baz=146
X36A Centrahoma 40.22 336 P P 23 31 08.2 -0.5
baz=150
U41A Viola 40.23 342 P P 23 31 07.7 -1.1
baz=158
V39A Pettigrew 40.33 340 P P 23 31 08.8 -0.8
baz=155
U40A Yellville 40.53 341 P P 23 31 09.9 -1.4
baz=156
S45A Carrier Mills 40.59 347 P P 23 31 10.2 -1.5
baz=163
V38A Canehill 40.61 339 P P 23 31 10.8 -1.2
baz=154
Y33A Hilltop Ranch, 40.71 333 P P 23 31 12.6 -0.2
baz=147
U39A Green Forest 40.76 340 P P 23 31 11.5 -1.6
baz=156
S44A Carbondale 40.77 346 P P 23 31 11.8 -1.3
baz=162
HHAR Hobbs 40.83 340 eP P 23 31 13.1 -0.6
comp=Z,6.0nm,1.0s
T41A Mountain View 40.83 343 P P 23 31 12.5 -1.2
baz=158
V37A Hulbert 40.90 338 P P 23 31 13.8 -0.5
baz=153
X33A Lawton 41.10 334 P P 23 31 15.4 -0.6
baz=148
U38A Gravette 41.12 339 P P 23 31 15.1 -1.0
baz=154
R44A Waltonville 41.25 346 P P 23 31 16.2 -0.9
baz=163
T39A Clever 41.31 341 P P 23 31 16.8 -0.9
baz=156
S41A Jillco Farms, 41.33 343 P P 23 31 16.6 -1.2
baz=159
U37A Salina 41.35 339 P P 23 31 17.1 -0.9
baz=153
X32A Elmer 41.36 333 P P 23 31 17.9 -0.1
baz=146
WMOK Wichita Mounta 41.40 333 P P 23 31 17.6 -0.8
baz=147
WMOK Wichita Mounta 41.40 333 eP P 23 31 18.2 -0.2
comp=Z,5.7nm,0.9s
V35A Meyer Ranch, C 41.45 336 P P 23 31 17.7 -1.0
baz=150
S40A Lebanon 41.56 342 P P 23 31 18.6 -1.1
baz=158,SNR=6.2
W33A Caddo, Fort Co 41.60 334 P P 23 31 19.8 -0.2
baz=148
T38A Diamond 41.63 340 P P 23 31 20.0 -0.3
baz=155
MVL Millersville 41.68 2 eP P 23 31 21.3 +0.8
comp=Z,24nm,0.9s
T37A Cheneyville 18 41.92 339 P P 23 31 22.4 -0.2
baz=154
W32A Sentinel 41.92 333 P P 23 31 22.2 -0.5
baz=147,SNR=8.5
O56A Blue Knob Stat 41.93 359 P P 23 31 22.7 0.0
baz=179,SNR=8.5
Q43A New Douglas 42.06 346 P P 23 31 23.2 -0.4
baz=162
R40A Maddies Statio 42.13 343 P P 23 31 23.8 -0.4
baz=158
T36A Boggs Farm, Ca 42.22 338 P P 23 31 24.7 -0.2
baz=152
SSPA Standing Stone 42.29 360 eP P 23 31 25.7 +0.2
comp=Z,21nm,0.8s
LUPA Lehigh Univers 42.31 3 eP P 23 31 25.8 +0.1
comp=Z,20nm,0.8s
T35A Sooner Cattle 42.33 338 P P 23 31 25.9 0.0
baz=152
V32A Arapaho 42.34 334 P P 23 31 25.8 -0.3
baz=147
MNTX Cornudas Mount 42.43 324 P P 23 31 26.0 -0.8
baz=137,SNR=7.4
MNTX Cornudas Mount 42.43 324 eP P 23 31 26.9 +0.1
comp=Z,5.9nm,0.9s
S37A Fort Scott 42.46 340 P P 23 31 26.2 -0.7
baz=154
R38A Fenwick Farm, 42.54 341 P P 23 31 27.4 -0.2
baz=156
U33A Lingo Farm, Me 42.54 336 P P 23 31 26.8 -0.8
baz=149
N59A State Game Lan 42.61 2 P P 23 31 28.3 +0.1
baz=183
N54A Moraine State 42.67 358 P P 23 31 28.4 -0.2
baz=177,SNR=7.1
T34A McClaskey Farm 42.68 337 P P 23 31 28.6 -0.2
baz=151
MSTX Muleshoe 42.70 329 P P 23 31 28.9 -0.2
baz=142,SNR=6.6
MSTX Muleshoe 42.70 329 eP P 23 31 29.4 +0.3
comp=Z,18nm,1.1s
MSTX epP pP 23 32 06.2 +1.9
S36A Lake Cedric, C 42.70 339 P P 23 31 28.4 -0.5
baz=153
Q40A Laux Farm, Aux 42.73 344 P P 23 31 28.4 -0.7
baz=159
P42A Winchester 42.83 346 P P 23 31 27.9 -1.9
baz=161
AMTX Amarillo 42.87 331 P P 23 31 30.8 +0.4
baz=144
AMTX Amarillo 42.87 331 eP P 23 31 30.9 +0.5
comp=Z,12nm,0.7s
SFIN Lyette 42.89 350 P P 23 31 30.0 -0.4
baz=166
S35A Otter Creek Ra 42.93 338 P P 23 31 30.3 -0.4
baz=152
R37A Teagarden Farm 42.96 340 P P 23 31 29.9 -1.1
baz=154
Q39A Willow Grove F 43.04 343 P P 23 31 29.9 -1.7
baz=157
P41A Barry, Barry 43.09 345 P P 23 31 30.2 -1.8
baz=160
T33A Patterson Ranc 43.16 336 P P 23 31 32.5 0.0
baz=149
Q38A Cooks Store, C 43.16 342 P P 23 31 31.0 -1.6
baz=156
M54A Oil Creek Stat 43.20 358 P P 23 31 32.8 0.0
baz=177,SNR=8.9
P39B Salisbury 43.38 343 P P 23 31 33.3 -1.0
baz=158
HDIL Hopedale 43.50 347 P P 23 31 33.1 -2.2
baz=163
HDIL Hopedale 43.50 347 eP P 23 31 33.1 -2.2
comp=Z,13nm,0.6s
R34A Isabella, Hill 43.82 338 P P 23 31 36.9 -1.0
baz=151
Q35A Mercer Eighty, 43.87 339 P P 23 31 37.3 -0.9
baz=153
BINY Binghamton 43.89 2 eP P 23 31 38.5 +0.1
comp=Z,28nm,0.8s
Q34A Chapman 44.25 338 P P 23 31 41.0 -0.3
baz=152
KSU1 Kansas State U 44.29 339 P P 23 31 40.9 -0.6
baz=152
121A Cookes Peak, D 44.45 323 P P 23 31 43.6 +0.5
baz=134,SNR=5.7
121A Cookes Peak, D 44.45 323 eP P 23 31 43.6 +0.5
comp=Z,13nm,1.1s
R32A Long Quarter, 44.49 336 P P 23 31 43.3 0.0
baz=149
319A Douglas 44.59 320 eP P 23 31 45.0 +0.8
comp=Z,25nm,1.0s
N39A Derby Farms, D 44.60 344 P P 23 31 42.7 -1.3
baz=159
Q33A Connelly Farm, 44.65 338 P P 23 31 44.8 +0.4
baz=151
N38A Joes South For 44.73 343 P P 23 31 44.5 -0.6
baz=158
P34A Walnut Farm, R 44.76 339 P P 23 31 45.3 0.0
baz=152
BNM Barren Site 44.93 325 eP P 23 31 46.9 -0.1
M39A Webster 45.08 345 P P 23 31 48.2 +0.4
baz=159
ACCN Adirondack Com 45.19 4 eP P 23 31 47.5 -1.1
comp=Z,18nm,1.0s
L41A Preston 45.22 347 P P 23 31 46.8 -2.1
baz=162
L40A Anamosa 45.38 346 P P 23 31 49.8 -0.3
baz=161
LAZ Ladron 45.40 325 eP P 23 31 47.4 -3.2
ANMO Albuquerque 45.41 326 P P 23 31 51.7 +0.9
baz=138
ANMO Albuquerque 45.41 326 eP P 23 31 51.7 +0.9
comp=Z,16nm,0.7s
ANMO epP pP 23 32 29.2 +2.8
O33A Hebron 45.50 339 P P 23 31 52.2 +1.1
baz=152
NCB Newcomb 45.74 4 eP P 23 31 52.9 0.0
comp=Z,0.2nm,0.7s
MDV Middlebury 45.84 5 eP P 23 31 54.0 +0.3
O32A Brockman Farm, 45.92 338 P P 23 31 54.1 -0.4
baz=151
K40A Colesburg 45.97 346 P P 23 31 54.5 -0.3
baz=161
T25A Trinidad 46.00 330 P P 23 31 55.8 +0.4
baz=142,SNR=5.1
T25A Trinidad 46.00 330 eP P 23 31 56.5 +1.1
comp=Z,12nm,1.1s
M35A Neola 46.09 341 P P 23 31 54.9 -0.8
baz=155
TUC Tucson 46.16 320 P P 23 31 56.7 +0.1
baz=131
TUC Tucson 46.16 320 eP P 23 31 57.2 +0.7
comp=Z,12nm,0.8s
LONY Lake Ozonia 46.36 3 eP P 23 31 57.5 -0.3
comp=Z,21nm,1.1s
SADO Sadowa 46.44 359 eP P 23 31 57.5 -0.9
comp=Z,34nm,1.4s
FRNY Flat Rock 46.64 4 eP P 23 32 00.2 +0.3
comp=Z,26nm,0.8s
PLVO Plevna 46.70 1 eP P 23 32 00.1 -0.3
comp=Z,26nm,0.9s
J38A Wedel Dairy, R 46.88 345 P P 23 32 01.4 -0.4
baz=160
SDCO Great Sand Dun 47.02 330 P P 23 32 04.3 +0.9
baz=141,SNR=25
SDCO Great Sand Dun 47.02 330 eP P 23 32 03.1 -0.3
comp=Z,12nm,0.8s
214A Organ Pipe Nat 47.26 318 P P 23 32 05.8 +0.7
baz=129,SNR=8.2
214A Organ Pipe Nat 47.26 318 eP P 23 32 05.7 +0.7
comp=Z,56nm,0.9s
W18A Petrified Fore 47.41 324 P P 23 32 07.2 +0.9
baz=134,SNR=5.5
W18A Petrified Fore 47.41 324 eP P 23 32 07.3 +1.0
comp=Z,26nm,1.1s
S22A 4UR Ranch, Cre 47.70 329 P P 23 32 09.6 +0.9
baz=139
S22A 4UR Ranch, Cre 47.70 329 eP P 23 32 09.3 +0.6
comp=Z,3.8nm,0.8s
L31A Butterfield Fa 47.80 339 P P 23 32 08.6 -0.4
baz=151
TRQ Mont Tremblant 47.96 3 eP P 23 32 09.8 -0.4
X16A Lo Mia Camp, P 47.96 322 eP P 23 32 11.8 +1.1
comp=Z,6.0nm,0.6s
MVCO Mesa Verde 48.20 327 P P 23 32 12.9 +0.5
baz=137
MVCO Mesa Verde 48.20 327 eP P 23 32 13.1 +0.7
comp=Z,4.4nm,0.8s
ECSD EROS Data Cent 48.43 342 P P 23 32 12.7 -1.1
baz=154
Y14A Wickenburg 48.63 320 eP P 23 32 16.3 +0.7
comp=Z,18nm,0.6s
WUAZ Wupatki 48.66 323 P P 23 32 16.9 +1.0
baz=133,SNR=12
WUAZ Wupatki 48.66 323 eP P 23 32 16.0 +0.1
comp=Z,17nm,0.9s
WUAZ epP pP 23 32 56.5 +4.6
ISCO Idaho Springs 48.67 331 P P 23 32 16.5 +0.4
baz=142,SNR=5.4
ISCO Idaho Springs 48.67 331 eP P 23 32 16.8 +0.7
comp=Z,4.3nm,0.8s
PV05 Paradox Valley 49.15 327 eP P 23 32 20.2 +0.5
GLA Glamis 49.27 318 P P 23 32 21.0 +0.6
baz=127
PV10 Paradox Valley 49.34 327 eP P 23 32 20.7 -0.4
Y12C Blythe 49.50 319 P P 23 32 22.8 +0.7
baz=128
PDMCI Parker Dam,Lak 49.59 320 P P 23 32 24.1 +1.3
baz=129
N23A Red Feather La 49.69 332 P P 23 32 23.3 -0.4
baz=142
U15A North Rim 49.82 323 eP P 23 32 24.8 0.0
comp=Z,5.8nm,0.9s
SWSC Sam W. Stewart 49.86 317 P P 23 32 25.9 +1.0
baz=126
IKP In-Ko-Pah, Jac 49.90 317 P P 23 32 26.0 +0.8
baz=126
W13A Hualapai Mount 49.93 321 eP P 23 32 26.2 +0.5
comp=Z,8.4nm,0.8s
BC3 Big Chuckawall 50.05 318 P P 23 32 27.2 +0.8
baz=127
IRM Iron Mountain 50.15 319 P P 23 32 27.7 +0.6
baz=128,SNR=6.9
O20A White River Ci 50.22 330 P P 23 32 27.7 -0.1
baz=139
MONP2 Monument Peak 50.25 317 P P 23 32 28.9 +0.9
baz=126
KNB Kanab 50.53 323 eP P 23 32 30.0 0.0
comp=Z,6.0nm,0.9s
BELC Belle Mtn. Jos 50.62 318 P P 23 32 31.7 +1.0
baz=127
SRU San Rafael Swe 50.67 327 eP P 23 32 31.5 +0.4
comp=Z,9.7nm,1.0s
TPFO Pinon Flats 50.69 318 P P 23 32 31.7 +0.5
baz=126
PFO Pinyon Flats O 50.70 318 P P 23 32 31.9 +0.6
baz=126
LCMT Little Creek M 50.78 323 eP P 23 32 31.9 0.0
comp=Z,5.0nm,0.8s
GMRC Granite Mounta 50.87 319 P P 23 32 33.3 +0.7
baz=128,SNR=5.6
P17A Butcher Ranch, 51.05 327 eP P 23 32 34.5 +0.6
comp=Z,9.3nm,1.0s
C36A Pine Crest Far 51.14 347 P P 23 32 32.7 -1.4
baz=160
TMUT Trail Mountain 51.17 327 eP P 23 32 34.8 -0.2
TMUT epP pP 23 33 11.2 -0.2
MURC Murrieta 51.19 317 P P 23 32 35.8 +1.0
baz=126
CCUT Cedar City 51.21 324 eP P 23 32 35.7 +0.5
comp=Z,6.1nm,1.1s
HEC Hector,Ludlow 51.34 319 P P 23 32 37.0 +1.0
baz=127,SNR=7.2
RSSD Black Hills 51.45 336 P P 23 32 37.3 +0.4
baz=146
SHPR Sheep Range 51.62 321 eP P 23 32 39.4 +1.2
comp=Z,7.8nm,1.0s
SHPR ePcP PcP 23 33 50.6 +0.8
BFSC Mount Baldy Ra 51.87 318 P P 23 32 41.0 +1.0
baz=126
GSC Goldstone, Bar 51.93 319 P P 23 32 41.2 +0.8
baz=127,SNR=6.6
GSC Goldstone, Bar 51.93 319 eP P 23 32 41.6 +1.2
comp=Z,9.3nm,0.9s
SHOC Shoshone, Teco 51.95 320 P P 23 32 41.3 +0.8
baz=128
MWC Mount Wilson 52.13 317 eP P 23 32 41.9 -0.2
comp=Z,25nm,1.1s
JLU Jordanelle 52.23 328 eP P 23 32 42.2 -0.6
comp=Z,7.7nm,0.9s
AGMN Agassiz Nation 52.38 345 P P 23 32 42.1 -1.2
baz=157
C31A Landman Farms, 52.43 343 P P 23 32 43.1 -0.7
baz=154
EDW2 Edwards Air Fo 52.47 318 P P 23 32 44.9 +0.5
baz=126,SNR=6.2
TCUT Toone Canyon 52.58 328 eP P 23 32 45.3 +0.1
comp=Z,29nm,0.6s
TPNV Topopah Spring 52.58 321 P P 23 32 46.3 +1.0
baz=128,SNR=11
TPNV Topopah Spring 52.58 321 eP P 23 32 45.4 +0.2
comp=Z,11nm,0.9s
FURC Furnace Creek, 52.67 320 P P 23 32 46.8 +1.1
baz=128
DUG Dugway, Tooele 52.69 326 P P 23 32 46.6 +0.7
baz=134,SNR=9.4
DUG Dugway, Tooele 52.69 326 eP P 23 32 46.0 0.0
comp=Z,27nm,1.6s
MPMC Manual Prospec 52.83 319 P P 23 32 47.8 +0.7
baz=127
PD31 Pinedale Array 52.85 331 eP P 23 32 47.0 -0.2
PDAR Pinedale Array 52.85 331 P P 23 32 46.5 -0.7
comp=Z,1.4nm,0.7s,baz=123,slow=9.1,SNR=13
PDAR PcP PcP 23 33 53.5 -0.8
comp=Z,0.6nm,0.7s,baz=133,slow=3.8,SNR=3.5
PDAR ScP ScP 23 37 37.0 +0.1
comp=Z,0.3nm,0.7s,baz=160,slow=4.7,SNR=4.2
BW06 Boulder Array 52.85 331 P P 23 32 47.4 +0.2
baz=139
BW06 Boulder Array 52.85 331 eP P 23 32 47.2 -0.1
HWUT Hardware Ranch 53.01 329 eP P 23 32 48.3 -0.1
comp=Z,8.8nm,0.8s
MDND Maddock 53.05 342 P P 23 32 49.1 +0.8
baz=152
R11A Troy Canyon, C 53.06 323 P P 23 32 49.7 +0.8
baz=130,SNR=7.6
R11A Troy Canyon, C 53.06 323 eP P 23 32 49.6 +0.8
comp=Z,3.7nm,0.8s
ISA Isabella, Lake 53.24 318 P P 23 32 51.2 +1.2
baz=126
BGU Big Grassy Mou 53.31 327 eP P 23 32 51.1 +0.6
comp=Z,6.0nm,1.0s
USHA Ushuaia 53.35 173 P P 23 32 51.6 +1.3
comp=Z,78nm,0.9s,baz=338,slow=1.7,SNR=5.0
CWC Cottonwood Cre 53.44 320 P P 23 32 52.6 +1.0
baz=126
PKM Mcpherson Peak 53.70 317 P P 23 32 54.7 +1.1

baz=124
VES Vestal, Richgr 53.75 318 P P 23 32 55.2 +1.5
baz=125
REDW Red Top Meadow 53.93 331 eP P 23 32 55.9 +0.8
comp=Z,12nm,1.4s
ULM Lac du Bonnet 54.18 346 P P 23 32 54.5 -1.9
comp=Z,5.1nm,1.0s,baz=150,slow=16,SNR=3.6
RLMT Red Lodge 54.50 333 P P 23 32 59.0 -0.1
baz=140
GCMT Greyclif 55.20 333 eP P 23 33 04.4 +0.4
GCMT ePP pP 23 33 42.5 +1.6
BMN Battle Mountai 55.36 324 eP P 23 33 06.1 +0.7
comp=Z,7.9nm,0.8s
HLID Hailey 55.88 328 P P 23 33 09.4 +0.3
baz=134,SNR=6.3
HLID Hailey 55.88 328 eP P 23 33 09.4 +0.3
comp=Z,6.1nm,1.1s
BOZ Bozeman (W) 55.99 332 P P 23 33 09.8 0.0
baz=138,SNR=6.7
BOZ Bozeman (W) 55.99 332 eP P 23 33 09.8 0.0
comp=Z,8.1nm,1.1s
BOZ ePP pP 23 33 47.9 +1.2
MFID Camas Ranch 56.53 327 eP P 23 33 14.2 +0.6
comp=Z,9.7nm,0.8s
AFDM Forest Hills D 56.77 320 eP P 23 33 15.7 +0.4
comp=Z,6.5nm,1.0s
EGMT Eagleton 56.96 335 P P 23 33 16.5 +0.1
baz=141
SCHQ Schefferville 57.22 8 P P 23 33 16.8 -1.2
comp=Z,10nm,0.6s,baz=203,slow=4.9,SNR=12
SCHQ Schefferville 57.22 8 eP P 23 33 17.5 -0.6
comp=Z,12nm,0.8s
ORV Oroville 57.45 321 eP P 23 33 20.8 +0.8
comp=Z,24nm,0.9s
WVOR Wild Horse Val 57.45 325 eP P 23 33 20.5 +0.4
comp=Z,14nm,1.1s
MSO Missoula 57.95 331 P P 23 33 23.9 +0.4
baz=136
MSO Missoula 57.95 331 eP P 23 33 23.8 +0.4
comp=Z,4.9nm,1.0s
O03D Paynes Creek 58.06 321 P P 23 33 24.2 -0.1
baz=125
YBMT Yellow Bay 58.73 332 eP P 23 33 29.7 +0.8
K05A Summer Lake 58.94 324 eP P 23 33 31.4 +0.8
comp=Z,8.7nm,0.9s
M04C Macdoel 58.95 323 P P 23 33 30.4 0.0
baz=126
F10A Beach Ranch, E 58.99 329 eP P 23 33 30.8 +0.1
comp=Z,23nm,1.7s
G08A Pilot Rock 59.46 327 eP P 23 33 34.6 +0.7
comp=Z,10nm,0.8s
J05D Fort Rock, OR 59.48 324 P P 23 33 34.6 +0.5
baz=127,SNR=5.8
J04D Umpqua Nationa 59.97 324 P P 23 33 37.9 +0.4
baz=126
L02D Cave Junction, 60.24 322 P P 23 33 39.3 +0.1
baz=124
G06A Carlson Farm, 60.34 326 eP P 23 33 41.2 +1.4
comp=Z,7.4nm,0.8s
I04A Tendick Farm, 60.47 324 P P 23 33 40.5 -0.3
baz=126
NEW Newport 60.49 331 P P 23 33 41.1 +0.2
baz=133
NEW Newport 60.49 331 eP P 23 33 41.0 +0.2
comp=Z,6.7nm,0.9s
G05D Wamic, OR 60.72 326 P P 23 33 43.4 +1.0
baz=128
I03D Drain, OR 60.97 324 P P 23 33 44.2 +0.2
baz=125
LON Longmire 61.92 327 eP P 23 33 50.8 +0.4
comp=Z,6.7nm,1.0s
D05A Enumclaw 62.28 328 eP P 23 33 52.6 -0.1
comp=Z,21nm,1.0s
A04D Lummi Island 63.61 329 P P 23 34 01.3 -0.1
baz=128
YKA Yellowknife Ar 69.94 343 P P 23 34 40.3 -1.0
comp=Z,1.0nm,0.6s,baz=138,slow=5.9,SNR=9.0
YKA PcP PcP 23 35 02.2 -0.4
comp=Z,0.3nm,0.6s,baz=135,slow=4.5,SNR=3.6
LIC Lamto 73.08 83 eP P 23 35 00.3 -0.8
comp=Z,26nm,0.8s
TIC Toumodi 73.11 83 eP P 23 35 00.6 -0.7
ILULI Ilulissat 73.22 10 iP P 23 34 59.7 -1.1
comp=Z,23nm,0.7s
DBIC Dimbokro 73.28 83 P P 23 35 01.6 -0.6
comp=Z,9.1nm,0.7s,baz=261,slow=3.4,SNR=16
DBIC pP pP 23 35 40.3 -0.8
comp=Z,9.4nm,0.9s,baz=245,slow=4.6,SNR=4.0
DBIC Dimbokro 73.28 83 eP P 23 35 02.0 -0.2
comp=Z,18nm,1.0s
DBIC pP pP 23 35 40.3 -0.8
KIC Kosan Boka 73.37 83 eP P 23 35 02.2 -0.6
comp=Z,36nm,0.7s
BORG Borgarnes 78.01 21 P P 23 35 28.6 +0.5
comp=Z,10nm,0.8s,baz=246,slow=5.3,SNR=5.3
SUMG Summit 78.34 11 iP P 23 35 30.4 +0.1
comp=Z,22nm,0.7s
SUMG Summit 78.34 11 eP P 23 35 29.4 -0.9
comp=Z,22nm,0.7s
ESDC Sonseca Array 78.79 49 P P 23 35 32.8 -0.2
comp=Z,2.0nm,0.7s,baz=261,slow=6.2,SNR=10
ES19 SONSECA Array 78.84 49 eP P 23 35 32.9 -0.4
DAWY Dawson 79.63 337 eP P 23 35 37.2 +0.2
comp=Z,3.0nm,0.8s
INK Inuvik 79.67 342 P P 23 35 37.3 +0.2
comp=Z,5.3nm,0.8s,baz=108,slow=7.4,SNR=8.5
INK pP pP 23 36 16.0 -0.6
comp=Z,3.8nm,1.1s,baz=84,slow=4.9,SNR=2.3
INK Inuvik 79.67 342 eP P 23 35 37.4 +0.3
comp=Z,6.1nm,0.9s
INK pP pP 23 36 16.0 -0.6
EGAK Eagle 80.63 337 eP P 23 35 42.0 -0.4
comp=Z,14nm,0.8s
DOT Dot Lake 81.34 336 eP P 23 35 46.4 +0.3
comp=Z,15nm,0.8s
VNA1 Neumayer--Stat 81.55 162 P P 23 35 47.9 +0.9
PAX Paxson 81.68 335 eP P 23 35 47.9 -0.2
comp=Z,5.5nm,0.8s
HDA Harding Lake 82.80 336 eP P 23 35 53.4 -0.3
comp=Z,108nm,2.0s
EKA Eskdalemuir Ar 82.82 34 P P 23 35 52.7 -1.2
comp=Z,4.5nm,0.6s,baz=257,slow=3.9,SNR=23
IL1 Eielson Array 82.90 336 eP P 23 35 53.4 -0.8
IL1 ePP pP 23 36 33.6 -0.4
ILAR Eielson Array 82.90 336 P P 23 35 53.5 -0.6
comp=Z,4.4nm,0.9s,baz=126,slow=3.8,SNR=34
ILAR pP pP 23 36 33.1 -0.8
comp=Z,2.7nm,0.8s,baz=122,slow=3.5,SNR=6.3
ILB Eielson Array 82.90 336 eP P 23 35 53.9 -0.3
ILB ePP pP 23 36 33.7 -0.3
CCB Clear Creek Bu 83.23 336 eP P 23 35 55.5 -0.4
comp=Z,7.2nm,0.8s
RND Reindeer 83.27 335 eP P 23 35 56.6 +0.4
comp=Z,9.9nm,0.8s
RND ePP pP 23 36 36.8 +0.8
WRH Wood River Hil 83.29 336 eP P 23 35 55.5 -0.7
comp=Z,16nm,1.9s
MCK McKinley 83.41 335 eP P 23 35 57.0 +0.1
comp=Z,6.4nm,0.9s
MDM Murphy Dome 83.50 336 eP P 23 35 57.1 -0.2
comp=Z,9.8nm,1.0s
MDM ePP pP 23 36 37.1 0.0
SNAA Sanae 83.53 162 P P 23 35 57.5 +0.1
SNAA Sanae 83.53 162 eP P 23 35 57.6 +0.1
TRF Thorofare Moun 83.90 334 eP P 23 35 59.5 -0.1
comp=Z,5.5nm,0.7s
KTH Kantishna Hill 84.20 334 eP P 23 36 00.8 -0.2
comp=Z,9.3nm,0.8s
KTH ePP pP 23 36 41.2 +0.4
BPAW Bear Paw Mtn. 84.38 335 eP P 23 36 01.5 -0.3
comp=Z,14nm,0.8s
BPAW ePP pP 23 36 41.6 -0.1
MLY Manley 84.54 336 eP P 23 36 02.4 -0.2
comp=Z,6.6nm,0.8s
TAM Tamanrasset 84.54 67 ePKPdf P 23 36 04.5 +0.8
TAM Tamanrasset 84.54 67 eP P 23 36 04.1 +0.4
comp=Z,10nm,0.9s
TAM ePP pP 23 36 42.6 -1.0
PPLA Purkeypile 84.58 334 eP P 23 36 02.7 -0.3
comp=Z,14nm,0.8s
CAST Castle Rocks 84.67 334 eP P 23 36 02.5 -0.7
comp=Z,12nm,0.8s
CAST ePP pP 23 36 42.8 -0.3
COLD Coldfoot 84.96 338 eP P 23 36 05.7 +1.1
comp=Z,3.8nm,0.6s
SNF Seneffe 86.37 39 P P 23 36 11.6 -0.3
DOU Dourbes 86.52 40 P P 23 36 12.5 -0.1
comp=Z,12nm,1.5s
BCLA Clavier 87.01 39 P P 23 36 14.7 -0.3
comp=Z,7.4nm,1.7s
BEBN Eben Emael 87.29 39 P P 23 36 15.9 -0.4
comp=Z,3.1nm,0.9s
HGN Heimansgroeve 87.45 39 ePKP P 23 36 16.9 -0.2
comp=Z,32nm,1.0s
WLF Walferdange 87.47 40 P P 23 36 17.7 +0.4
comp=Z,20nm,1.3s
WLF Walferdange 87.47 40 eP P 23 36 17.4 +0.1
comp=Z,32nm,1.0s
MEM Membach 87.48 39 P P 23 36 17.2 -0.1
comp=Z,6.9nm,1.5s
WTSB Winterswijk 88.11 38 ePKP P 23 36 20.1 0.0
comp=Z,26nm,0.7s
QSPA South Pole Qui 88.20 180 eP P 23 36 21.6 +1.0
comp=Z,106nm,0.9s
KEST Kesra 88.74 54 P P 23 36 23.2 -0.5
comp=Z,10nm,0.8s,baz=358,slow=1.9,SNR=12
KEST Kesra 88.74 54 eP P 23 36 23.6 -0.1
comp=Z,12nm,0.8s
TUE Stuetta 89.36 44 eP P 23 36 25.6 -0.9
comp=Z,12nm,0.8s
DAVOX Davos/Dischmat 89.74 43 P P 23 36 27.9 -0.3
comp=Z,11nm,0.7s,baz=247,slow=4.6,SNR=12
DAVA Damuels 89.77 43 iPcP P 23 36 28.5 +0.2
comp=Z,9.7nm,0.7s
FETA Feichten 90.33 43 iP P 23 36 30.6 -0.3
comp=Z,16nm,1.0s
RETA Reutte 90.37 43 iP P 23 36 30.9 -0.2
comp=Z,5.7nm,0.8s
MOTA Moosalm 90.60 43 iP P 23 36 31.9 -0.2
comp=Z,13nm,1.0s
WATA Walderalm 90.92 43 iP P 23 36 33.4 -0.2
comp=Z,4.3nm,0.7s
WTTA Wattenberg 90.96 43 iP P 23 36 33.6 -0.3
comp=Z,5.9nm,0.6s
NB2 NORSAR Subarra 91.13 29 P P 23 36 34.1 -0.1
comp=Z,2.5nm,0.8s,baz=269,slow=4.6
NOA NORSAR Array B 91.13 29 P P 23 36 33.7 -0.4
comp=Z,2.1nm,0.9s,baz=268,slow=4.4,SNR=4.3
ABTA Abfaltersbach 91.55 43 iPcP P 23 36 36.4 -0.1
comp=Z,6.6nm,0.8s
CLL Collm 91.93 39 eP P 23 36 38.0 0.0
comp=Z,6.0nm,0.9s
MYKA Terra Mystica 92.32 44 iPcP P 23 36 39.9 -0.1
comp=Z,4.3nm,0.5s
HFS Hagfors 92.34 30 P P 23 36 39.5 -0.2
comp=Z,0.7nm,0.6s,baz=243,slow=6.3,SNR=3.5
GEA0 GERESS Array S 92.37 41 eP P 23 36 39.4 -0.8
GERES GERESS Array B 92.37 41 P P 23 36 39.5 -0.8
comp=Z,1.2nm,0.7s,baz=294,slow=3.1,SNR=8.3
MOA Molln 92.75 42 iPcP P 23 36 41.8 -0.1
comp=Z,0.3nm,0.4s
ARSA Arzberg 93.61 43 iPcP P 23 36 45.7 -0.2
comp=Z,3.0nm,0.7s
CONA Conrad Observa 93.82 42 iPcP P 23 36 46.7 -0.2
comp=Z,6.9nm,0.8s
VRAC Vranov 94.26 41 P P 23 36 49.0 +0.1
comp=Z,3.3nm,0.9s,baz=135,slow=15,SNR=3.9
VNDA Vanda 94.50 191 P P 23 36 50.5 +1.1
comp=Z,2.0nm,0.8s,baz=128,slow=2.8,SNR=12
FINES FINESS Array B 98.24 28 P P 23 37 06.3 -0.3
comp=Z,4.1nm,0.5s,baz=284,slow=5.6,SNR=4.1
BVAR Borovoye Array 122.59 22 PKP PKPdf 23 42 24.1 -0.2
comp=Z,0.5nm,0.6s,baz=15,slow=1.6,SNR=3.7
GEYT Alibeck 125.97 43 PKP PKPdf 23 42 31.2 0.0
comp=Z,1.4nm,0.6s,baz=316,slow=6.2,SNR=5.3
ZALV Zalesovo Beam 126.14 13 PKP PKPdf 23 42 30.5 -0.6
comp=Z,1.6nm,0.6s,baz=262,slow=2.4,SNR=9.2
ZALV pPKP pPKPdf 23 43 11.8 -1.4
comp=Z,1.8nm,0.8s,baz=318,slow=2.0,SNR=3.1
STKA Stephens Creek 129.82 225 PKP PKPdf 23 42 38.6 -0.1
comp=Z,3.3nm,0.7s,baz=52,slow=18,SNR=5.8
MKAR Makanchi Array 131.99 18 PKP PKPdf 23 42 42.0 -0.5
comp=Z,0.5nm,0.4s,baz=283,slow=3.2,SNR=9.0
MKAR SKPbc SKPbc 23 45 54.3 +0.4
comp=Z,0.9nm,0.7s,baz=347,slow=4.4,SNR=8.1
MJAR Matsushiro Arr 132.09 320 PKP PKPdf 23 42 42.5 -0.4
comp=Z,2.1nm,0.7s,baz=113,slow=0.5,SNR=4.5
SONM Songino Array 134.06 356 PKP PKPdf 23 42 46.3 -0.2
comp=Z,1.0nm,0.6s,baz=343,slow=2.8,SNR=5.0
SONM SKPbc SKPbc 23 46 02.2 +1.1
comp=Z,1.3nm,0.9s,baz=345,slow=4.9,SNR=5.1
KSH Kashi 135.55 29 ePKP PKPdf 23 42 50.0 +0.5
KSH esPKP 23 43 48.8
KSH ePP PP 23 45 35.8 +8.2
KSH PKS PKSdf 23 46 24.6 -1.3
KSH SKS SKSdf 23 49 43.4 -2.4
KSH SKKS SKKSac 23 52 09.1 +1.1
KSH AMB AMB
comp=Z,15nm,2.3s
KSRS Korea Array 137.41 329 PKP PKPdf 23 42 53.0 +0.2
comp=Z,4.7nm,0.8s,baz=21,slow=1.4,SNR=17
KSAR Wonju Array Be 137.44 329 PKP PKPdf 23 42 53.0 +0.1
ASAR Alice Springs 140.08 229 PKhKP PKPpre 23 42 49.5
comp=Z,2.3nm,0.8s,baz=123,slow=4.1,SNR=14
ASAR PKP PKPdf 23 42 57.4 -0.8
comp=Z,2.9nm,0.7s,baz=123,slow=2.2,SNR=15
WRA Warramunga Arr 141.76 234 PKhKP PKPpre 23 42 55.4
comp=Z,3.6nm,0.7s,baz=118,slow=2.9,SNR=8.1
WRA PKP PKPdf 23 42 59.8 -1.5
comp=Z,3.5nm,0.6s,baz=114,slow=3.3,SNR=7.2
LZH Lanzhou 145.91 358 ePKPbc PKPdf 23 43 06.5 -1.8
LZH PKPbc PKPab 23 43 10.3 +0.5
LZH pPKP pPKPdf 23 43 49.3 -1.2
LZH sPKP 23 44 06.0
PYUN Piuthan 148.09 33 eP PKPbc 23 43 15.3 -0.2
KOLN Koldanda 148.68 33 eP PKPbc 23 43 16.5 -0.6
comp=Z,6.8nm,0.5s
GKN Gorkha 149.04 31 eP PKPbc 23 43 17.7 -0.2
KKN Kakani 149.55 31 eP PKPbc 23 43 19.0 -0.2
comp=Z,19nm,0.5s
DMN Daman 149.60 31 eP PKPbc 23 43 19.1 -0.3
comp=Z,17nm,0.5s
GUN Gumba 149.75 30 eP PKPbc 23 43 19.8 -0.1
comp=Z,17nm,0.5s
PKIN Phulchoki 149.78 31 eP PKPbc 23 43 20.2 +0.3
comp=Z,14nm,0.7s
SSLB Suanglung 151.64 322 ePKPdf PKPdf 23 43 17.9 +0.3
SSLB ePKPbc PKPbc 23 43 23.6 -0.5
CMAR Chiang Mai Arr 163.20 11 PKP PKPdf 23 43 30.9 -1.2
comp=Z,0.8nm,0.6s,baz=308,slow=0.9,SNR=5.0
CMAR PKPab PKPab 23 44 22.2 -0.7
comp=Z,1.0nm,0.6s,baz=338,slow=5.4,SNR=4.0

NIED ***21*** *23:27:00, 44.70N× 145.40E, h5km, Mw4.2 Best double couple: M○2.22000×10^15 NP1:φ○241.00000°, δ40.00000°, λ75.00000°. NP2:φ○81.00000°, δ52.00000°, λ103.00000°.*
ISCJB ***21*** *23:27:19.8± 1.6, 44.65N± 0.03× 145.41E± 0.05, h8km± 11km, mb3.9/19, Error ellipse: s-maj=5.9km s-min=4.4km az=144.2*
IDC ***21*** *23:27:19.4± 0.7, 44.59N× 145.43E, h0km, mb3.9/12, mb1 4.1/14, mb1mx3.8/57, mbtmp3.8/14, ML3.7/2, Error ellipse: s-maj=21.3km s-min=17.6km az=136.0*
JMA ***21*** *23:27:20.8± 0.2, 44.65N× 145.41E, h15km± 2km, M4.1*
JMA Felt I J1.
SKHL ***21*** *23:27:21.5± 0.2, 44.60N× 145.28E, h26km± 2km, mb4.8/5*
MOS ***21*** *23:27:23.2± 1.8, 44.61N× 145.46E, h33km, mb4.3/12, Error ellipse: s-maj=10.4km s-min=7.0km az=100.1*
NEIC ***21*** *23:27:25.7± 1.3, 44.60N× 145.30E, h41km± 12km, mb4.3/2, Error ellipse: s-maj=14.2km s-min=10.2km az=105.0*
NEIC Recorded [1 JMA] in eastern Hokkaido.

ISC 21 23:27:20.1± 1.5, 44.58N± 0.04× 145.42E± 0.03, h0km± 9km, n72, σ1s 18/77, mb4.1/19, 3C-4D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
YUK	Yuzh-Kuril'sk	0.63	150	*i* P	Pb	23 27 33.9	0.0
YUK				*i* S	Sb	23 27 43.1	-0.3
YUK				pmax	pmax		
	comp=N,964nm,0.2s						
YUK				pmax	pmax		
	comp=Z,4μm,0.2s						
YUK				pmax	pmax		
	comp=E,1μm,0.1s						
YUK				smax	smax		
	comp=N,5μm,0.3s						
YUK				smax	smax		
	comp=E,10μm,0.4s						
YUK	Yuzh-Kuril'sk	0.63	150	*i* P	Pb	23 27 34.0	0.0
YUK				AMB	AMB	23 27 34.5	
	comp=E,960nm,0.2s						
YUK				AMB	AMB	23 27 34.5	
	comp=E,1μm,0.2s						
YUK				AMB	AMB	23 27 34.5	
	comp=E,460nm,0.2s						
YUK				*i* S	Sb	23 27 43.2	-0.2
YUK				A	A	23 27 43.6	
	comp=E,5μm,0.4s						
YUK				A	A	23 27 43.6	
	comp=E,10μm,0.4s						
JRA	Rausu	0.68	199	P	Pb	23 27 34.8	0.0
JNK	Nakash	1.12	207	P	Pb	23 27 42.0	-0.3
JNK				eS	Sn	23 27 57.6	-1.4
NEM2	Nemuro 2	1.24	169	P	Pb	23 27 43.6	-0.7
NEM2				eS	Sn	23 28 00.3	-1.7
SHO	Shikotan	1.24	125	*d* iPN	Pg	23 27 43.6	-0.2
SHO				*i* S	Sb	23 28 00.2	-0.6
SHO				pmax	pmax		
	comp=Z,1μm,0.4s						
SHO				pmax	pmax		
	comp=N,646nm,0.3s						
SHO				pmax	pmax		
	comp=E,1μm,0.4s						
SHO				smax	smax		
	comp=N,16μm,0.4s						
SHO				smax	smax		
	comp=E,41μm,0.6s						
SHO	Shikotan	1.24	125	*i* P	Pg	23 27 43.6	-0.2
SHO				AMB	AMB	23 27 46.1	
	comp=E,650nm,0.4s						
SHO				AMB	AMB	23 27 46.1	
	comp=E,1μm,0.4s						
SHO				AMB	AMB	23 27 46.1	
	comp=E,1μm,0.4s						
SHO				*i* S	Sb	23 28 00.4	-0.4
SHO				A	A	23 28 04.0	
	comp=E,2μm,0.5s						
SHO				A	A	23 28 04.0	
	comp=E,4μm,0.5s						
JTKR	Abashiri--Toko	1.25	241	P	Pg	23 27 43.4	-0.6
JAK	Akkeshi	1.67	199	P	Pn	23 27 50.5	-0.1
JAR	Ashorobuto	1.75	223	P	Pn	23 27 51.5	-0.2
KUR	Kuril'sk	1.86	69	*d* iPN	Pn	23 27 52.7	-0.4
KUR				*i* S	Sn	23 28 14.9	-2.3
KUR				pmax	pmax		
	comp=Z,107nm,0.3s						
KUR				smax	smax		
	comp=N,268nm,0.5s						
KUR				smax	smax		
	comp=E,293nm,0.5s						
KUR	Kuril'sk	1.86	69	eP	Pn	23 27 52.3	-0.8
KUR				AMB	AMB	23 27 53.4	
	comp=E,230nm,0.2s						
KUR				*i* S	Sn	23 28 15.3	-1.9
KUR				A	A	23 28 17.9	
	comp=E,600nm,0.3s						
KUR				A	A	23 28 17.9	
	comp=E,810nm,0.3s						
ASAJ	Asahikawa	2.08	258	Pn	Pn	23 27 55.7	-0.5
	comp=E,23nm,0.3s,baz=62,slow=18,SNR=17						
ASAJ	Asahikawa	2.08	258	ePn	Pn	23 27 56.8	+0.6
YSS	Yuzh-Sakhalins	3.02	323	ePN	Pb	23 28 14.0	-0.6
YSS	Yuzh-Sakhalins	3.02	323	ePn	Pn	23 28 08.8	-0.3
YSS	Yuzh-Sakhalins	3.02	323	eP	Pn	23 28 06.3	-2.8
YSS				AMB	AMB	23 28 09.1	
	comp=E,180nm,0.5s						
YSS				eS	Sn	23 28 42.0	-3.9
YSS				A	A	23 28 45.6	
	comp=E,160nm,0.5s						
YSS				A	A	23 28 45.6	
	comp=E,190nm,0.5s						
ERM	Erimo	3.05	214	↑ePN	Pb	23 28 14.9	-0.3
ERM				pmax	pmax		
	comp=Z,30nm,0.6s						
ERM	Erimo	3.05	214	ePn	Pb	23 28 12.9	-2.3
TYV	Tymovskoe	6.55	344	ePN	Pn	23 28 57.5	-0.2
TYV				pmax	pmax		
	comp=Z,15nm,0.8s						
TYV	Tymovskoe	6.55	344	eP	Pn	23 28 57.5	-0.2
HABR	Khabarovsk	8.14	302	ePN	Pn	23 29 19.9	+0.5
HABR				pmax	pmax		
	comp=N,5.0nm,0.5s						
HABR				pmax	pmax		
	comp=E,25nm,1.0s						
HABR				pmax	pmax		
	comp=Z,15nm,1.0s						
HABR				MLR	MLR		
	comp=Z,138nm,13.0s						
MJA0	Matsu Arr-Jizo	9.71	217	ePN	Pn	23 29 46.8	+5.8
MJAR	Matsushiro Arr	9.72	217	Pn	Pn	23 29 40.9	-0.3
	comp=Z,0.4nm,0.3s,baz=33,slow=16,SNR=4.2						
MDJ	Mudanjiang	11.29	276	ePn	Pn	23 30 03.2	+0.6
EKMR	Ekimchan	11.80	320	eP	Pn	23 30 09.4	-0.2
EKMR				AMB	AMB	23 30 18.3	
	comp=Z,4.0nm,0.6s						
HIA	Hailar	18.12	294	↓eP	P	23 31 34.8	+1.4
SEY	Seymchan	18.82	10	P	Pn	23 31 43.7	+2.3
	comp=Z,0.2nm,0.3s,baz=175,slow=9.7,SNR=7.1						
BOD	Bodaibo	23.47	316	eP	P	23 32 22.4	-8.5
BOD				pmax	pmax		
	comp=Z,5.0nm,1.8s						
SONM	Songino Array	27.01	291	P	P	23 33 03.8	+0.1
	comp=Z,0.7nm,0.6s,baz=72,slow=9.3,SNR=4.9						
SONM				PcP	PcP	23 36 25.3	+0.2
	comp=Z,0.4nm,0.5s,baz=164,slow=2.9,SNR=2.2						
SONM	Songino Array	27.01	291	eP	P	23 33 04.4	+0.7
SONM				pmax	pmax		
	comp=Z,1.0nm,0.6s						
TLY	Talaya	28.45	299	eP	P	23 33 18.4	+1.9
TLY				pmax	pmax		
	comp=Z,2.0nm,0.9s						
TLY	Talaya	28.45	299	eP	P	23 33 18.3	+1.8
H11N2	WAKE ISLAND Hy	30.55	137	T	T	00 04 37.9	
	baz=329,slow=75,SNR=54						
H11N1	WAKE ISLAND Hy	30.56	137	T	T	00 04 43.5	
	baz=329,slow=75,SNR=35						
H11N3	WAKE ISLAND Hy	30.57	137	T	T	00 04 39.6	
	baz=329,slow=75,SNR=43						
H11S1	WAKE ISLAND Hy	31.51	139	T	T	00 05 51.3	
	baz=307,slow=71,SNR=68						
H11S3	WAKE ISLAND Hy	31.51	139	T	T	00 05 49.1	
	baz=307,slow=71,SNR=108						
H11S2	WAKE ISLAND Hy	31.52	139	T	T	00 05 52.5	
	baz=307,slow=71,SNR=46						
ZALV	Zalesovo Beam	39.50	306	PcP	PcP	23 36 59.2	-0.5
	comp=Z,0.8nm,0.6s,baz=88,slow=2.1,SNR=4.0						
KDAK	Kodiak Island	39.61	48	*i* P	P	23 34 53.2	+0.3
KTH	Kantishna Hill	39.87	39	eP	P	23 34 55.8	+0.7
	comp=Z,5.5nm,1.0s						
COLA	College	41.14	37	P	P	23 35 05.7	+0.2
COLA				pmax	pmax		
	comp=Z,3.0nm,0.5s						
COLA	College	41.14	37	P	P	23 35 05.7	+0.2
	comp=Z,2.8nm,0.5s						
COLA	College	41.14	37	eP	P	23 35 05.7	+0.2
ILAR	Eielson Array	41.56	37	P	P	23 35 08.0	-1.0
	comp=Z,1.5nm,0.8s,baz=274,slow=8.7,SNR=13						
MKAR	Makanchi Array	43.10	296	P	P	23 35 20.1	-1.7
	comp=Z,0.5nm,0.7s,baz=87,slow=7.5,SNR=4.8						
MKAR				PcP	PcP	23 37 11.8	+0.2
	comp=Z,0.3nm,0.6s,baz=65,slow=3.5,SNR=3.5						
MKAR	Makanchi Array	43.10	296	eP	P	23 35 24.9	+3.1
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KURK	Kurchatov	44.03	303	P	P	23 35 29.1	-0.1
KURK	Kurchatov	44.03	303	P	P	23 35 29.1	-0.1
KURK	Kurchatov	44.03	303	eP	P	23 35 29.1	-0.1
KURBB	Kurchatov Arra	44.12	303	P	P	23 35 29.1	-0.8
	comp=Z,0.4nm,0.6s,baz=68,slow=8.6,SNR=2.7						
BRVK	Borovoye	48.06	308	↑eP	P	23 36 01.4	+0.5
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BRVK	Borovoye	48.06	308	eP	P	23 36 01.4	+0.5
ARU	Arti	52.88	316	*c* iP	P	23 36 40.1	+2.8
ARU						23 37 45.5	
ARU						23 38 35.5	
ARU				S	S	23 44 07.6	+0.6
ARU				SS	SS	23 47 43.2	-1.9
ARU				pmax	pmax		
	comp=Z,8.0nm,2.5s						
FINES	FINESS Array B	63.56	332	P	P	23 37 50.8	-1.1
	comp=Z,1.1nm,0.7s,baz=29,slow=3.2,SNR=2.2						
WRA	Warramunga Arr	65.00	192	P	P	23 38 00.9	-1.0
	comp=Z,1.4nm,0.8s,baz=7.3,slow=6.7,SNR=11						
KBZ	Khabaz	68.31	310	P	P	23 38 23.4	+0.6
	comp=Z,2.9nm,0.8s,baz=43,slow=4.7,SNR=3.8						
NOA	NORSAR Array B	68.37	338	P	P	23 38 21.2	-1.8
	comp=Z,0.8nm,0.8s,baz=49,slow=7.5,SNR=3.0						

HFS	**Hagfors**	**68.43**	**336**	P		**P**	**23 38 21.5**	**-1.8**
	comp=Z,1.5nm,0.8s,baz=37,slow=7.9,SNR=2.3							
ASAR	**Alice Springs**	**68.73**	**191**	P		**P**	**23 38 24.5**	**-1.0**
	comp=Z,0.8nm,0.9s,baz=12,slow=9.1,SNR=5.6							
ASAR	**Alice Springs**	**68.73**	**191**	*e*P		**P**	**23 38 26.3**	**+0.8**
ASAR					pmax	pmax		
	comp=Z,1.0nm,0.9s							
ASAR	**Alice Springs**	**68.73**	**191**	*e*P		**P**	**23 38 26.3**	**+0.8**
PDAR	**Pinedale Array**	**70.31**	**49**	P		**P**	**23 38 34.8**	**-0.8**
	comp=Z,1.1nm,0.7s,baz=288,slow=2.2,SNR=9.6							
DPC	**Dobruska-Polom**	**75.61**	**329**	*e*P		**P**	**23 39 07.3**	**+0.7**
DPC				*ex*		x	23 39 12.5	
CLL	**Collm**	**76.00**	**331**	*i* P		**P**	**23 39 08.2**	**-0.5**
	comp=Z,4.0nm,0.8s							
CLL				*e*			23 39 14.0	
CLL	**Collm**	**76.00**	**331**	*i* P		**P**	**23 39 08.2**	**-0.5**
CLL				*e*			23 39 14.0	
CLL					pmax	pmax		
	comp=Z,4.0nm,0.8s							
CLL	**Collm**	**76.00**	**331**	*e*P		**P**	**23 39 08.2**	**-0.5**
KHC	**Kasperske Hory**	**77.62**	**330**	*e*P		**P**	**23 39 18.5**	**+0.5**
KHC				*ex*		x	23 39 23.7	
TXAR	**Lajitas Array**	**83.21**	**55**	P		**P**	**23 39 48.4**	**0.0**
	comp=Z,0.9nm,0.7s,baz=276,slow=3.1,SNR=9.7							
TXAR	**Lajitas Array**	**83.21**	**55**	*e*P		**P**	**23 39 48.9**	**+0.5**
TXAR					pmax	pmax		
	comp=Z,1.0nm,0.7s							
TXAR	**Lajitas Array**	**83.21**	**55**	*e*P		**P**	**23 39 48.9**	**+0.5**

*ISCJB **21** 23:56:40.0±1.2,36.6N±0.1×142.2E±0.1, h19km, mb3.5/3, Error ellipse: s-maj=16.8km s-min=11.7km az=35.8*
*IDC **21** 23:56:39.2±2.8,36.62N×142.20E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.4/31, mbtmp3.5/4, ML3.3/1, Error ellipse: s-maj=64.3km s-min=28.9km az=41.0*
*JMA **21** 23:56:44.7±0.2,36.69N×141.80E, h26km±3km, M3.4*
ISC 21 23:56:42.3±1.6,**36.6N**±0.1×**142.0E**±0.1, **h19km, n17,** σ1§**72**/12, **mb3.6**/3, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.08**	**296**	P	**Pb**	**23 57 01.3**	**-1.1**
JHO	**Hitachi**	**1.16**	**269**	P	**Pn**	**23 57 02.5**	**-1.0**
JFK	**Kawauchi**	**1.17**	**309**	P	**Pn**	**23 57 02.7**	**-0.9**
JYT	**Yasato**	**1.52**	**255**	*e*S	**Sn**	**23 57 24.5**	**-3.2**
JMM	**Marumori**	**1.56**	**322**	P	**Pn**	**23 57 08.8**	**-0.3**
JFT	**Otama**	**1.60**	**304**	P	**Pn**	**23 57 10.1**	**+0.5**
JFY	**Yanaizu**	**2.00**	**293**	P	**Pn**	**23 57 15.7**	**+0.6**
MJAR	**Matsushiro Arr**	**3.06**	**269**	Pn	**Pn**	**23 57 31.5**	**+1.8**
	3.4nm,0.3s,baz=106,slow=9.8,SNR=17						
MJAR				Sn	**Sn**	**23 58 08.7**	**+2.9**
	2.6nm,0.3s,baz=188,slow=14,SNR=4.7						
H11N2	**WAKE ISLAND Hy**	**27.53**	**121**	T	T	00 31 51.2	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**27.54**	**121**	T	T	00 31 48.7	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**27.55**	**121**	T	T	00 31 47.6	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**28.24**	**123**	T	T	00 32 39.8	
	baz=315						
H11S3	**WAKE ISLAND Hy**	**28.24**	**123**	T	T	00 32 38.9	
	baz=315						
H11S2	**WAKE ISLAND Hy**	**28.26**	**123**	T	T	00 32 53.6	
	baz=315						
SONM	**Songino Array**	**28.40**	**304**	P	**P**	**00 02 36.5**	**+1.0**
	0.3nm,0.5s,baz=99,slow=9.2,SNR=2.7						
WRA	**Warramunga Arr**	**56.74**	**189**	P	**P**	**00 06 25.0**	**+0.1**
	0.3nm,0.5s,baz=6.6,slow=7.2,SNR=4.9						
ASAR	**Alice Springs**	**60.47**	**189**	P	**P**	**00 06 50.6**	**-0.2**
	0.3nm,0.4s,baz=14,slow=7.8,SNR=4.2						

*GUC **22** 00:18:23.9±0.5,34.19S×72.25W, h35km±4km, ML3.1*
ISC 22 00:18:25.2±2.9,**34.14S**±0.06×**72.2W**±0.1, **h16**km±15km, **n18,** σ1§**74**/25, **2C-5D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.29**	**149**	⇑*i*P	**Pb**	**00 18 31.3**	**-0.8**
CHPI				*i* S	**Sb**	**00 18 37.2**	**+0.5**
RCDM	**Rinconada Maip**	**1.32**	**61**	*i* S	**Sb**	**00 19 05.7**	**-0.5**
ANTU	**Antumapu**	**1.41**	**67**	*e*P	**Pn**	**00 18 49.2**	**-1.1**
ANTU				*e*S	**Sn**	**00 19 09.1**	**+0.5**
ANTU				IAML		00 19 12.1	
	comp=N,511nm,0.3s						
ROC1	**El Roble**	**1.52**	**40**	*e*P	**Pn**	**00 18 50.4**	**-1.5**
ROC1				⇓*e*S	**Sg**	**00 19 16.9**	**+2.7**
ROCH	**El Roble**	**1.52**	**40**	IAML		00 19 20.7	
	comp=N,342nm,0.6s						
CLCH	**Cerro Calan**	**1.56**	**62**	⇑*i*P	**Pn**	**00 18 51.9**	**-0.4**
CLCH				*i* S	**Sn**	**00 19 12.5**	**+0.3**
CLCH				IAML		00 19 19.6	
	comp=N,396nm,0.7s						
PEL	**Peldehue**	**1.60**	**52**	⇓*i*P	**Pn**	**00 18 52.4**	**-0.4**
PEL				*i* S	**Sn**	**00 19 13.8**	**+0.7**
PEL				IAML		00 19 19.5	
	comp=N,291nm,0.4s						
FCH	**Farellones**	**1.77**	**63**	⇓*i*P	**Pn**	**00 18 54.4**	**-1.2**
FCH				*i* S	**Sn**	**00 19 18.5**	**+0.7**
FCH				IAML		00 19 23.2	
	comp=N,262nm,0.3s						
AAGR	**Agrelo**	**2.99**	**70**	*e*P	**Pb**	**00 19 17.1**	**-1.1**
ARCO	**CERRO ARCO**	**3.01**	**65**	*e*P	**Pb**	**00 19 17.0**	**-1.6**
ARCO				IAML		00 19 22.1	
	comp=Z,47nm,0.4s						
AUSP	**Uspallata**	**3.03**	**52**	*e*P	**Pb**	**00 19 16.3**	**-2.6**
AUSP				*e*S	**Sb**	**00 19 59.7**	**+4.0**
ASAL	**Salagasta**	**3.20**	**62**	*e*P	**Pb**	**00 19 19.6**	**-2.2**
ASAL				*e*S	**Sg**	**00 20 07.5**	**-0.6**
RTLS	**Leoncito**	**3.37**	**47**	*e*P	**Pn**	**00 19 19.9**	**+2.5**
RTLS				*e*S	**Sb**	**00 20 05.7**	**+0.1**
RTCV	**Cerro Valdivia**	**3.81**	**54**	*e*P	**Pn**	**00 19 25.9**	**+2.6**
RTLL	**Cerro Villicun**	**4.20**	**49**	*e*P	**Pn**	**00 19 29.9**	**+1.2**
RTLL				⇓*e*S	**Sb**	**00 20 27.5**	**-1.7**
AMOG	**MOGNA**	**4.46**	**45**	*e*P	**Pn**	**00 19 32.4**	**+0.2**
ACAN	**Cantantal**	**4.58**	**67**	⇓*e*P	Pn	00 19 38.8	+5.0
AVFE	**Valle Fertil**	**5.29**	**50**	IAML		00 21 02.9	
	comp=Z,4.9nm,0.3s						

*IDC **22** 00:45:47.7±1.0,0.43N×125.20E, h0km, mb3.8/6, mb1 4.0/6, mb1mx3.7/44, mbtmp3.8/6, Error ellipse: s-maj=131.8km s-min=17.3km az=66.0*
*NEIC **22** 00:45:48.8±0.6,0.46N×125.32E, h10km, mb4.5/7, Error ellipse: s-maj=22.6km s-min=11.7km az=61.0*
*ISCJB **22** 00:45:51.3±0.6,0.68N±0.07×125.92E±0.06, h35km, mb4.1/13, Error ellipse: s-maj=10.7km s-min=8.4km az=22.7*
*DJA **22** 00:45:54.7±3.0, 1.1°N±27.1°×12.6°E±0.7°, h32km±39km, M4.3/3, MLv4.3/3*
ISC 22 00:45:53.8±0.7,**0.62N**±0.09×**125.80E**±0.06, **h35**km, **n19,** σ2§**46**/19, **mb3.9**/13, **Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KMSI	**Cibinong**	**1.82**	**269**	P	**Pn**	**00 46 23.0**	**+0.4**
KMSI				S	**Sn**	**00 46 44.5**	**+0.1**
LBMI	**Labuha**	**2.11**	**126**	P	**Pn**	**00 46 30.1**	**+3.5**
SANI	**Sanana**	**2.66**	**176**	P	**Pn**	**00 46 33.9**	**-0.3**
GTOI	**Gorontalo**	**2.79**	**270**	S	**Sn**	**00 47 13.7**	**+5.4**
LUWI	**Luwuk**	**3.45**	**241**	P	**Pn**	**00 46 48.0**	**+3.0**
KKM	**Kota Kinabalu**	**10.98**	**300**	*e*Pn	Pn	00 48 20.9	-7.6
WRAB	**Tennant Creek**	**22.08**	**158**	*e*P	**P**	**00 50 44.6**	**-1.4**
	3.0nm,0.7s						
WRA	**Warramunga Arr**	**22.09**	**158**	P	**P**	**00 50 44.5**	**-1.5**
	2.5nm,0.6s,baz=335,slow=11,SNR=21						
GUMO	**Guam**	**22.86**	**55**	*e*P	**P**	**00 50 58.8**	**+4.5**
	27nm,0.6s						
TATO	**Taipei**	**24.57**	**351**	*e*P	**P**	**00 51 10.0**	**-0.5**
	18nm,0.6s						
ASAR	**Alice Springs**	**25.39**	**162**	P	**P**	**00 51 17.9**	**-0.2**
	1.9nm,0.5s,baz=341,slow=9.2,SNR=19						
STKA	**Stephens Creek**	**35.62**	**157**	P	**P**	**00 52 47.6**	**-0.7**
	2.3nm,0.8s,baz=344,slow=11,SNR=5.1						
SONM	**Songino Array**	**49.95**	**343**	P	**P**	**00 54 43.8**	**-0.6**
	0.3nm,0.4s,baz=157,slow=7.8,SNR=3.8						
MKAR	**Makanchi Array**	**59.59**	**327**	P	**P**	**00 55 51.4**	**-2.8**
	0.4nm,0.4s,baz=121,slow=7.3,SNR=11						
BVAR	**Borovoye Array**	**69.42**	**328**	P	**P**	**00 56 57.3**	**-0.9**
	0.3nm,0.3s,baz=131,slow=8.2,SNR=5.1						
BRVK	**Borovoye**	**69.49**	**328**	*e*P	**P**	**00 56 57.0**	**-1.7**
	3.4nm,0.5s						
XMAS	**Kiritimati**	**76.74**	**88**	*e*P	**P**	**00 57 39.7**	**-2.6**
	0.5nm,0.6s						
MCK	**McKinley**	**87.34**	**26**	P	**P**	**00 58 37.9**	**+1.0**
	0.7nm,0.5s						
COLA	**College**	**87.89**	**25**	*e*P	**P**	**00 58 40.9**	**+1.4**
	2.3nm,0.5s						

*ISCJB **22** 00:51:27.0±0.6,21.44S±0.08×173.96W±0.10, h25km, mb4.5/18, Error ellipse: s-maj=13.6km s-min=9.9km az=28.0*
*IDC **22** 00:51:26.9±1.1,21.34S×174.35W, h0km, mb4.3/12, mb1 4.4/14, mb1mx4.2/39, mbtmp4.3/14, ML4.3/2, Error ellipse: s-maj=31.1km s-min=20.4km az=117.0*
*NEIC **22** 00:51:26.5±0.6,21.47S×173.89W, h10km, mb4.9/6, Error ellipse: s-maj=14.4km s-min=11.0km az=138.0*
ISC 22 00:51:29.4±0.7,**21.43S**±0.08×**174.0W**±0.1, **h25**km, **n30,** σ1§**36**/28, **mb4.6**/18, **1C, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.77**	**16**	Pn	**Pn**	**00 53 20.1**	**-1.0**
	4.2nm,0.3s,baz=204,slow=18,SNR=2.7						
AFI				Sn	Sn	00 54 36.6	-12
	4.0nm,0.3s,baz=189,slow=13,SNR=2.6						
AFI	**Afiamalu**	**7.77**	**16**	*e*Pn	**Pn**	**00 53 19.9**	**-1.1**
MSVF	**Nonsavu**	**8.35**	**295**	*e*Pn	**Pn**	**00 53 31.1**	**+2.1**
	80nm,1.0s						
RAO	**Raoul Island**	**8.56**	**204**	*e*Pn	**Pn**	**00 53 30.3**	**-1.3**
RAR	**Rarotonga**	**13.26**	**92**	Pn	Pn	00 54 30.6	-5.5
	6.9nm,0.3s,baz=266,slow=6.9,SNR=13						
RAR				Sn	Sn	00 56 46.4	-16
	2.6nm,0.3s,baz=360,slow=19,SNR=3.5						
RAR	**Rarotonga**	**13.26**	**92**	*e*Pn	Pn	00 54 31.3	-4.8
RAR				Sn	Sn	00 56 46.4	-16
DZM	**Mont Dzumac**	**18.18**	**264**	P	**P**	**00 55 41.2**	**+0.7**
	0.4nm,0.3s,baz=74,slow=19,SNR=4.2						
URZ	**Urewera**	**18.44**	**203**	P	**Pn**	**00 55 45.0**	**+1.7**
	0.8nm,0.3s,baz=0.0,slow=0.0,SNR=3.6						
CTA	**Charters Tower**	**37.13**	**265**	P	**P**	**00 58 37.2**	**-1.1**
	1.9nm,0.4s,baz=91,slow=12,SNR=3.7						
CTAO	**Charters Tower**	**37.13**	**265**	*e*P	**P**	**00 58 37.4**	**-0.9**
	17nm,0.8s						
STKA	**Stephens Creek**	**40.79**	**246**	P	**P**	**00 59 07.7**	**-1.1**
	4.9nm,0.8s,baz=103,slow=9.4,SNR=9.0						
POHA	**Pohakuloa**	**44.74**	**25**	*e*P	**P**	**00 59 40.1**	**-1.1**
	266nm,0.5s						
JAY	**Jayapura**	**47.89**	**287**	P	**P**	**01 00 04.0**	**-1.9**
	0.9nm,0.6s,baz=90,slow=20,SNR=5.5						
ASAR	**Alice Springs**	**47.95**	**257**	P	**P**	**01 00 05.0**	**-1.3**
	6.9nm,0.9s,baz=91,slow=8.2,SNR=51						
WRAB	**Tennant Creek**	**48.17**	**262**	*e*P	**P**	**01 00 06.5**	**-1.5**
	9.6nm,0.9s						
WRA	**Warramunga Arr**	**48.18**	**262**	P	**P**	**01 00 06.2**	**-1.8**
	5.2nm,0.8s,baz=98,slow=7.7,SNR=21						
FITZ	**Fitzroy Crossi**	**56.61**	**262**	P	**P**	**01 01 09.9**	**-0.7**
	1.5nm,0.5s,baz=101,slow=5.8,SNR=5.2						
VNDA	**Vanda**	**57.35**	**186**	P	**P**	**01 01 15.7**	**+0.7**
	1.1nm,0.9s,baz=17,slow=8.4,SNR=5.5						
MBWA	**Marble Bar**	**61.30**	**257**	*e*P	**P**	**01 01 42.9**	**-0.2**
	5.1nm,0.6s						
QSPA	**South Pole Qui**	**68.65**	**180**	*e*P	**P**	**01 02 30.8**	**+0.4**
	11nm,0.9s						
KSM	**Kuching**	**77.24**	**277**	*e*P	**P**	**01 03 22.4**	**+0.4**
	6.5nm,0.5s						
PETK	**Petropavlovsk-**	**78.19**	**343**	P	**P**	**01 03 27.9**	**+1.6**
	2.5nm,0.7s,baz=150,slow=8.0,SNR=3.8						
MAW	**Mawson**	**81.93**	**199**	P	**P**	**01 03 48.9**	**+2.4**
	1.1nm,0.7s,baz=143,slow=6.7,SNR=4.8						
PPLA	**Purkeypile**	**85.80**	**10**	*e*P	**P**	**01 04 05.9**	**-0.4**
	1.5nm,0.8s						
SYO	**Syowa Base**	**86.61**	**192**	⇑*e*P	**P**	**01 04 09.2**	**-1.0**
SEY	**Seymchan**	**88.17**	**345**	P	**P**	**01 04 19.4**	**+1.8**
	4.7nm,0.9s,baz=135,slow=8.5,SNR=3.2						
PSI	**Prapat**	**88.29**	**274**	P	**P**	**01 04 20.3**	**+0.7**
	5.5nm,0.8s,baz=139,slow=16,SNR=3.5						
ILAR	**Eielson Array**	**88.44**	**11**	P	**P**	**01 04 20.2**	**+1.4**
	0.2nm,0.4s,baz=221,slow=3.6,SNR=3.4						
AKASG	**Malin Array Be**	**145.57**	**334**	PKPbc	**PKPab**	**01 11 06.2**	**+0.5**
	1.0nm,0.4s,baz=34,slow=3.7,SNR=3.7						
BRTR	**Keskin Array B**	**150.20**	**314**	PKPbc	**PKPbc**	**01 11 16.9**	**-1.7**
	0.9nm,0.7s,baz=74,slow=5.2,SNR=4.6						

*NIED **22** 00:56:00, 39.90N×143.70E, h11km, Mw4.8 Best double couple: M0 1.58000×10^16 NP1:φ=207.00000°, δ=35.00000°, λ=100.00000°. NP2:φ=15.00000°, δ=56.00000°, λ=83.00000°.*
*IDC **22** 00:56:22.6±0.6, 39.75N×143.70E, h0km, mb4.6/35, mb1 4.6/40, mb1mx4.5/61, mbtmp4.6/40, ML3.6/4, MS4.2/18, Ms1 4.2/18, ms1mx3.9/41, Error ellipse: s-maj=14.4km s-min=11.4km az=110.0*
*ISCJB **22** 00:56:23.1±0.8, 39.85N±0.02×143.57E±0.03, h8km±4km, mb4.8/151, MS4.6/43, Error ellipse: s-maj=4.1km s-min=2.8km az=145.2*
*JMA **22** 00:56:24.2±0.2, 39.86N×143.69E, h23km, M4.8*
JMA Felt I J1.
*BJI **22** 00:56:24.3, 39.80N×143.35E, h14km, mb5.0/70, mB5.1/51, Ms4.7/69, Ms7 4.5/65*
*NEIC **22** 00:56:26.2±1.8, 39.80N×143.55E, h18km±11km, mb4.8/66, Error ellipse: s-maj=5.0km s-min=3.3km az=137.0*
NEIC Recorded [1 JMA] in Iwate and Miyagi.
*MOS **22** 00:56:27.4±1.0, 39.99N×143.45E, h33km, mb5.0/65, MS4.5/12, Error ellipse: s-maj=6.9km s-min=4.4km az=106.0*
ISC 22 00:56:26.4±0.8,**39.85N**±0.04×**143.61E**±0.04, **h19**km±2km, **n363,** σ1§**40**/415, **mb4.9**/156, **MS4.5**/43, **36C-13D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.34**	**274**	P	**Pn**	**00 56 48.7**	**-1.4**
MIYJ	**Miyakonagasawa**	**1.41**	**259**	P	**Pn**	**00 56 49.9**	**-1.0**
JANG	**Nango**	**1.69**	**289**	P	**Pn**	**00 56 53.7**	**-1.1**
JOM	**Ohasama**	**1.83**	**259**	P	**Pn**	**00 56 56.3**	**-0.4**
JOM				*e*S	**Sn**	**00 57 20.1**	**+0.8**
JMK	**Ichinoseki**	**2.06**	**245**	P	**Pn**	**00 56 58.8**	**-1.1**
JTM	**Tenmabayashi**	**2.15**	**296**	P	**Pn**	**00 57 01.0**	**-0.2**
ERM	**Erimo**	**2.19**	**351**	*de*P	**Pn**	**00 57 00.5**	**-1.2**
ERM				pmax	pmax		
	comp=Z,176nm,1.2s						
ERM	**Erimo**	**2.19**	**351**	*e*Pn	**Pn**	**00 57 00.9**	**-0.8**
JAH	**Hinai**	**2.31**	**279**	P	**Pn**	**00 57 03.5**	**+0.2**
JAH				S	**Sn**	**00 57 30.9**	**-0.2**
JRG	**Rokugo**	**2.34**	**260**	P	**Pn**	**00 57 03.5**	**-0.3**
JOT	**Ohata**	**2.48**	**309**	P	**Pn**	**00 57 05.6**	**0.0**
JNBK	**Urakawa-nobuka**	**2.51**	**345**	P	**Pn**	**00 57 06.0**	**-0.1**
JYK	**Kaneyama**	**2.68**	**251**	P	**Pn**	**00 57 08.1**	**-0.4**
JOU	**Okura**	**2.73**	**238**	P	**Pn**	**00 57 07.7**	**-1.5**
JOU				*e*S	**Sn**	**00 57 41.5**	**-0.1**
JCH	**Churui**	**2.77**	**356**	P	**Pn**	**00 57 06.7**	**-2.9**
JCH				*e*S	**Sn**	**00 57 40.7**	**-1.7**
JKB	**Kayabe**	**2.82**	**317**	P	**Pn**	**00 57 10.2**	**-0.1**
JKB				*e*S	**Sn**	**00 57 44.4**	**+0.7**
JAK	**Akkeshi**	**3.25**	**14**	P	**Pn**	**00 57 14.0**	**-2.2**
JAK				S	**Sn**	**00 57 51.5**	**-2.8**
JEW	**Eniwo**	**3.40**	**332**	P	**Pn**	**00 57 18.7**	**+0.4**
JEW				*e*S	**Sn**	**00 57 58.6**	**+0.5**
JAR	**Ashorobuto**	**3.44**	**2**	P	**Pn**	**00 57 17.0**	**-1.9**
JAR				S	**Sn**	**00 57 55.9**	**-3.3**
JFT	**Otama**	**3.46**	**229**	P	**Pn**	**00 57 17.7**	**-1.5**
JFT				S	**Sn**	**00 57 59.4**	**-0.3**
ASAJ	**Asahikawa**	**4.33**	**350**	Pn	**Pn**	**00 57 32.2**	**+1.1**
	baz=212,slow=11						
ASAJ				Sn	**Sn**	**00 58 21.1**	**+0.1**
	comp=Z,9.8nm,0.3s,baz=90,slow=32,SNR=3.5						
ASAJ	**Asahikawa**	**4.33**	**350**	*e*Pn	**Pn**	**00 57 31.4**	**+0.3**
ASAJ				Sn	**Sn**	**00 58 21.1**	**+0.1**
YUK	**Yuzh-Kuril'sk**	**4.50**	**21**	*e*P	**Pn**	**00 57 31.8**	**-1.7**
MAJO	**Matsushiro**	**5.38**	**234**	*e*P	**Pn**	**00 57 45.7**	**0.0**
MAJO	**Matsushiro**	**5.38**	**234**	*e*Pn	**Pn**	**00 57 45.7**	**0.0**
MAT	**Matsushiro**	**5.38**	**234**	P	**Pn**	**00 57 45.5**	**-0.2**
MAT				S	**Sn**	**00 58 53.8**	**+6.7**
MJAR	**Matsushiro Arr**	**5.38**	**234**	Pn	**Pn**	**00 57 45.9**	**+0.3**
	comp=Z,9.0nm,0.3s,baz=45,slow=12,SNR=160						
MJAR				LR	LR	01 00 10.6	
	comp=Z,1μm,18.6s,baz=50,slow=42						
MJB9	**Matsu-Tunnel**	**5.38**	**234**	*e*Pn	**Pn**	**00 57 45.8**	**+0.1**
KUR	**Kuril'sk**	**6.23**	**29**	*e*P	**Pn**	**00 57 57.8**	**+0.6**
KUR				*e*S	**Sn**	**00 59 03.3**	**-4.5**
KUR				pmax	pmax		
	comp=Z,31nm,0.6s						
KUR				pmax	pmax		
	comp=Z,278nm,3.6s						
KUR				smax	smax		
	comp=N,118nm,0.5s						
KUR				smax	smax		
	comp=E,51nm,0.2s						
KUR				smax	smax		
	comp=N,735nm,3.4s						
KUR				smax	smax		
	comp=E,441nm,2.2s						
INU	**Inuyama**	**6.90**	**231**	*e*Pn	**Pn**	**00 58 05.6**	**-0.8**
YSS	**Yuzh-Sakhalins**	**7.12**	**355**	⇑*e*P	**Pn**	**00 58 10.1**	**+0.6**
YSS				*e*S	**Sn**	**00 59 29.0**	**-0.8**
YSS				pmax	pmax		
	comp=Z,40nm,0.7s						
YSS				smax	smax		
	comp=N,70nm,1.0s						
YSS				MLR	MLR		
	comp=Z,2μm,17.0s						
YSS				MLR	MLR		
	comp=N,2μm,20.0s						
YSS				MLR	MLR		
	comp=E,3μm,17.0s						
YSS	**Yuzh-Sakhalins**	**7.12**	**355**	*e*Pn	**Pn**	**00 58 09.2**	**-0.3**
JHJ	**Hachijo jima 2**	**7.39**	**206**	Sn	Sn	00 59 25.6	-11
	comp=E,127nm,0.3s,baz=60,slow=20,SNR=8.6						
VLA	**Vladivostok**	**9.38**	**294**	*i* P	Pn	00 58 44.8	+4.4
USRK	**Ussuriysk Ar.**	**9.67**	**300**	Pn	**Pn**	**00 58 46.7**	**+2.3**
	comp=E,1.2nm,0.3s,baz=101,slow=12,SNR=79						
USRK				LR	LR	01 02 10.0	
	comp=E,428nm,19.5s,baz=33,slow=36						
MSHR	**Mys Shultsa**	**9.77**	**290**	⇓*e*P	**Pn**	**00 58 45.2**	**-0.5**
HABR	**Khabarovsk**	**10.58**	**327**	*e*P	**Pn**	**00 58 54.9**	**-1.9**
HABR				*e*S	**Sn**	**01 00 53.0**	**-1.6**
HABR				pmax	pmax		
	comp=N,34nm,1.1s						
HABR				pmax	pmax		
	comp=E,37nm,1.1s						
HABR				pmax	pmax		
	comp=Z,90nm,1.1s						
HABR				MLR	MLR		
	comp=Z,947nm,15.0s						
TYV	**Tymovskoe**	**11.03**	**357**	*e*P	**Pn**	**00 59 03.2**	**+0.2**
TYV				*e*		01 01 14.0	
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
TYV				MLR	MLR		
	comp=E,4μm,20.0s						
MDJ	**Mudanjiang**	**11.42**	**299**	P	**Pn**	**00 59 10.0**	**+1.6**
MDJ				S	**Sn**	**01 01 18.8**	**+3.4**
MDJ				PcP	**PcP**	**01 05 01.4**	**+0.6**
MDJ				ScP	**ScP**	**01 08 32.6**	**+0.3**
MDJ				PcS	**PcS**	**01 08 35.0**	**+0.5**
MDJ				ScS	**ScS**	**01 12 07.9**	**+0.2**
MDJ				pmax	pmax		
	comp=E,42nm,1.0s						
MDJ				pmax	pmax		
	comp=E,300nm,6.5s						
MDJ				LR	LR		
	comp=E,430nm,12.6s						
MDJ				LR	LR		
	comp=E,2μm,12.6s						
MDJ				LR	LR		
	comp=E,2μm,12.6s						
MDJ	**Mudanjiang**	**11.42**	**299**	*e*Pn	**Pn**	**00 59 09.3**	**+0.9**
	comp=E,37nm,0.9s						
JNU	**Nakatsue**	**12.24**	**241**	Pn	**Pn**	**00 59 18.7**	**-1.0**
	comp=E,0.5nm,0.3s,baz=66,slow=6.5,SNR=6.3						
JNU				LR	LR	01 04 38.4	
	comp=E,11nm,18.2s,baz=80,slow=40						
JNU	**Nakatsue**	**12.24**	**241**	*e*Pn	**Pn**	**00 59 18.8**	**-0.9**
KSRS	**Korea Array**	**12.49**	**264**	Pn	**Pn**	**00 59 26.3**	**+3.2**
	comp=E,0.3nm,0.3s,baz=85,slow=13,SNR=31						
KSRS				LR	LR	01 03 45.0	
	comp=E,1μm,19.1s,baz=50,slow=35						
KS01	**Wonju Array Si**	**12.51**	**264**	*e*Pn	**Pn**	**00 59 22.1**	**-1.2**
KS15	**Wonju Array Si**	**12.53**	**264**	*e*Pn	**Pn**	**00 59 22.9**	**-0.7**
KSAR	**Wonju Array Be**	**12.53**	**264**	P	**Pn**	**00 59 26.3**	**+2.8**
KSAR	**Wonju Array Be**	**12.53**	**264**	Pn	**Pn**	**00 59 26.3**	**+2.8**
KLR	**Kul'dur**	**12.61**	**322**	LR	LR	01 04 47.5	
	comp=E,2μm,18.0s,slow=40						
KLR	**Kul'dur**	**12.61**	**322**	*c i*P	**Pn**	**00 59 23.9**	**-0.7**
NKL	**Nikolayevsk**	**13.45**	**352**	*e*P	**Pn**	**00 59 36.0**	**0.0**
NKL				*e*		01 02 04.0	
NKL				pmax	pmax		
	comp=Z,34nm,1.0s						
NKL				MLR	MLR		
	comp=N,1μm,15.0s						
NKL				MLR	MLR		
	comp=E,800nm,15.0s						
NKL				MLR	MLR		
	comp=Z,2μm,15.0s						
CN2	**Changchun**	**14.10**	**292**	⇑P	**Pn**	**00 59 45.8**	**+0.8**
CN2				*es*P	*s*P	00 59 54.6	
CN2				*eS*	**Sn**	**01 02 21.4**	**+0.6**
CN2				pmax	pmax		
	comp=Z,20nm,0.7s						
CN2				pmax	pmax		
	comp=Z,300nm,5.0s						
CN2				LR	L

comp=N,1µm,13.6s
TIA LR LR
comp=N,2µm,15.7s
TIA LR LR
comp=N,2µm,14.6s
NJ2 Nanjing 21.45 256 *e*P **P 01 01 11.3 -2.2**
NJ2 S **S 01 05 05.8 -4.8**
NJ2 pmax pmax
comp=N,26nm,0.6s
NJ2 LR LR
comp=N,950nm,11.9s
NJ2 LR LR
comp=N,1µm,13.9s
NJ2 LR LR
comp=N,1µm,15.1s
SEY Seymchan 23.71 10 P **P 01 01 36.5 -0.2**
comp=N,24nm,0.9s,baz=191,slow=6.6,SNR=34
SEY Seymchan 23.71 10‖ *e*P **P 01 01 36.7 0.0**
YAK Yakutsk 23.77 344 P **P 01 01 36.2 -1.1**
comp=N,30nm,0.5s,baz=192,slow=1.5,SNR=9.2
YAK Yakutsk 23.77 344 *e*P **P 01 01 34.4 -2.9**
YAK *e**PP **sP 01 01 43.7 -1.8**
YAK *e*PPP PPP 01 02 09.2
YAK *e*S **S 01 05 50.8 -0.8**
YAK *e**SS Sn 01 06 07.6 -6.2
YAK *e*SS **SnSn 01 06 33.9 +3.6**
YAK *e*SSS SSS 01 06 50.0
YAK pmax pmax
comp=N,21nm,1.1s
YAK pmax pmax
comp=Z,60nm,0.9s
YAK pmax pmax
comp=E,11nm,0.9s
YAK pmax pmax
comp=Z,55nm,1.3s
YAK pmax pmax
comp=N,66nm,1.5s
YAK pmax pmax
comp=E,56nm,1.8s
YAK smax smax
comp=N,148nm,1.8s
YAK smax smax
comp=E,43nm,1.8s
YAK MLR MLR
comp=E,945nm,18.0s
YAK MLR MLR
comp=Z,564nm,17.0s
YAK MLR MLR
comp=N,319nm,12.0s
YAK Yakutsk 23.77 344 *e*P **P 01 01 35.7 -1.7**
comp=N,89nm,0.7s
CIT Chita 24.00 310 *e*P **P 01 01 38.2 -1.5**
CIT *e* 01 01 44.8
CIT pmax pmax
comp=Z,119nm,1.1s
HHC Hu-ho-hao-te 24.37 283 *e*P **P 01 01 41.3 -2.0**
HHC pP sP 01 01 48.3 -3.3
HHC sP pP 01 01 52.0 +2.9
HHC S **S 01 05 54.9 -7.0**
HHC pmax pmax
comp=Z,15nm,0.9s
HHC pmax pmax
comp=Z,130nm,7.2s
HHC LR LR
comp=Z,540nm,13.0s
HHC LR LR
comp=Z,800nm,14.9s
HHC LR LR
comp=Z,1µm,16.2s
SSLB Suanglung 24.94 237 *e*P **P 01 01 46.8 -1.6**
comp=Z,26nm,0.8s
YULB Yu-li 25.00 236 *e*P **P 01 01 47.8 -1.2**
comp=Z,22nm,0.8s
TPUB Ta-pu 25.49 237 *e*P **P 01 01 52.5 -0.9**
comp=Z,30nm,0.9s
TWG Pinlang 25.55 235 *e*P **P 01 01 53.5 -0.5**
comp=Z,518nm,1.3s
WHN Wuhan 25.55 258 ⇑P **P 01 01 53.5 -0.4**
WHN S **S 01 06 24.0 +3.3**
WHN pmax pmax
comp=Z,240nm,0.9s
WHN LR LR
comp=Z,7µm,19.0s
WHN LR LR
comp=Z,3µm,16.9s
WHN LR LR
comp=Z,2µm,17.2s
BOD Bodaibo 26.18 323 *e*P **P 01 01 58.7 -0.7**
BOD pmax pmax
comp=Z,37nm,1.2s
SONA1 Songino Array 27.78 299 *e*P **P 01 02 13.7 -0.4**
SONM Songino Array 27.78 299 P **P 01 02 14.5 +0.5**
comp=Z,9.8nm,0.8s,baz=98,slow=7.9,SNR=58
SONM LR LR 01 14 14.1
comp=Z,1µm,18.2s,baz=332,slow=38
XAN Xi'an 28.20 269 P **P 01 02 16.4 -1.5**
XAN pP sP 01 02 24.8 -1.3
XAN pmax pmax
comp=Z,30nm,1.3s
XAN LR LR
comp=Z,590nm,14.2s
XAN LR LR
comp=Z,900nm,17.2s
XAN LR LR
comp=Z,910nm,14.2s
H11N2 WAKE ISLAND Hy 28.32 128 T T 01 31 45.3
baz=317,slow=74,SNR=91
H11N1 WAKE ISLAND Hy 28.34 128 T T 01 31 44.1
baz=317,slow=74,SNR=67
H11N3 WAKE ISLAND Hy 28.34 128 T T 01 31 45.8
baz=317,slow=74,SNR=123
H11S1 WAKE ISLAND Hy 29.15 130 T T 01 32 47.0
baz=321,SNR=13
H11S3 WAKE ISLAND Hy 29.15 130 T T 01 32 47.0
baz=321,slow=74,SNR=9.3
H11S2 WAKE ISLAND Hy 29.17 130 T T 01 32 44.7
baz=321,slow=74,SNR=12
ENH Enshi 29.37 262 *e*P **P 01 02 27.8 -0.5**
comp=Z,114nm,1.1s
IRK Irkutsk 29.60 308 *e*P **P 01 02 30.1 0.0**
IRK pmax pmax
comp=Z,61nm,1.9s
TLY Talaya 29.91 307 P **P 01 02 33.3 +0.5**
comp=Z,3.8nm,0.6s,baz=117,slow=9.5,SNR=10
TLY LR LR 01 14 16.3
comp=Z,471nm,21.7s,baz=357,slow=36
TLY Talaya 29.91 307 *e*P **P 01 02 33.9 +1.1**
TLY pmax pmax
comp=Z,19nm,1.1s
TLY MLR MLR
comp=Z,610nm,14.0s
ZAK Zakamensk 30.00 304 *e*P **P 01 02 33.3 -0.4**
ZAK pmax pmax
comp=Z,15nm,1.2s
BILL Bilibino 30.84 16 *i* P **P 01 02 40.3 -0.5**
BILL *i* 01 05 34.4
BILL pmax pmax
comp=Z,5.0nm,1.1s
LZH Lanzhou 31.39 276 ⇓P **P 01 02 47.1 +0.9**
LZH pP sP 01 02 53.6 -0.9
LZH sP pP 01 02 57.3 +5.2
LZH PP **PnPn 01 03 51.0 +2.1**
LZH *e*S **S 01 07 50.3 -2.5**
LZH sS sS 01 08 05.0 +2.5
LZH SS **SnSn 01 09 37.0 +0.1**
LZH pmax pmax
comp=Z,84nm,1.3s
LZH pmax pmax
comp=Z,200nm,4.1s
LZH LR LR
comp=Z,740nm,13.0s
LZH LR LR
comp=Z,990nm,13.0s
LZH LR LR
comp=Z,1µm,13.8s
MOY Mondy 31.55 306 *e*P **P 01 02 47.4 0.0**
GYA Guiyang 33.45 258 ⇑*i*P **P 01 03 03.3 -1.0**
GYA pP sP 01 03 11.8 -0.7
GYA PP **PnPn 01 04 16.0 +0.6**
GYA PcP **PcP 01 05 46.5 +1.2**
GYA S **S 01 08 23.3 -1.6**
GYA ScP **ScP 01 09 28.0 -0.7**
GYA SS **SnSn 01 10 25.5 -1.5**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,80nm,5.6s
GYA LR LR
comp=Z,860nm,17.7s
GYA LR LR
comp=Z,450nm,15.5s
GYA LR LR
comp=Z,400nm,14.9s
CD2 Chengdu 33.47 267 *e*P **P 01 03 03.3 -1.0**
CD2 sP sP 01 03 13.3 +0.7
CD2 PP **PnPn 01 04 18.8 +3.3**
CD2 S **S 01 08 23.1 -1.9**
CD2 sS sS 01 08 35.3 +0.6
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
GTA Gaotai 33.48 284 ⇑P **P 01 03 04.6 +0.2**
GTA pP sP 01 03 11.9 -0.8
GTA sP pP 01 03 15.3 +5.0
GTA PcP **PcP 01 05 46.3 +1.1**
GTA S **S 01 08 25.0 -0.2**
GTA sS sS 01 08 37.6 +2.7
GTA SS **SnSn 01 10 29.3 +1.8**
GTA pmax pmax
comp=Z,44nm,1.3s
GTA pmax pmax
comp=Z,200nm,7.1s
GTA LR LR
comp=Z,320nm,19.5s
GTA LR LR
comp=Z,900nm,17.1s
GTA LR LR
comp=Z,970nm,16.2s
QIZ Qiongzhong 35.68 244 P **P 01 03 21.8 -1.7**
QIZ PP **PnPn 01 04 43.8 +0.6**
QIZ S **S 01 08 59.8 +0.6**
QIZ LR LR
comp=Z,570nm,16.6s
QIZ LR LR
comp=Z,330nm,14.5s
QIZ LR LR
comp=Z,590nm,16.6s
KMI Kunming 37.13 259 P **P 01 03 35.6 -0.5**
KMI pP sP 01 03 43.0 -1.4
KMI sP pP 01 03 45.9 +3.8
KMI PP **PP 01 05 00.3 -0.5**
KMI S **S 01 09 18.3 -3.5**
KMI sS sS 01 09 31.5 0.0
KMI SS **SnSn 01 11 47.6 -8.9**
KMI pmax pmax
comp=Z,24nm,1.1s
KMI pmax pmax
comp=Z,260nm,6.2s
KMI LR LR
comp=Z,490nm,14.4s
KMI LR LR
comp=Z,530nm,14.9s
KMI LR LR
comp=Z,670nm,15.8s
NONG Nongkai 41.07 250 P **P 01 04 09.1 +0.3**
comp=Z,34nm,1.3s
WMQ Urumqi 41.17 294 P **P 01 04 10.4 +0.9**
WMQ pP sP 01 04 19.3 +1.4
WMQ PP **PP 01 05 42.5 -2.0**
WMQ *e*S **S 01 10 22.0 +0.1**
WMQ pmax pmax
comp=Z,47nm,0.8s
WMQ pmax pmax
comp=Z,240nm,3.9s
WMQ LR LR
comp=Z,450nm,15.0s
WMQ LR LR
comp=Z,540nm,17.0s
WMQ LR LR
comp=Z,450nm,23.0s
SKNT Sakolnakorn 41.18 248 P **P 01 04 09.9 +0.1**
comp=Z,27nm,1.0s
ZAA0 Zalesovo Array 41.35 310 *e*P **P 01 04 10.6 -0.2**
ZALV Zalesovo Beam 41.35 310 P **P 01 04 10.8 +0.1**
comp=Z,5.8nm,0.6s,baz=92,slow=7.5,SNR=31
ZALV PcP **PcP 01 06 08.9 +0.2**
comp=Z,4.0nm,0.8s,baz=71,slow=3.4,SNR=4.3
NRIK Noril'sk 41.47 334 P **P 01 04 11.7 +0.2**
comp=Z,5.1nm,0.9s,baz=86,slow=7.6,SNR=6.7
NRIK LR LR 01 22 23.3
comp=Z,370nm,19.1s,baz=86,slow=38
NVS Novosibirsk 42.20 312 *e*P **P 01 04 17.9 +0.2**
NVS pmax pmax
comp=Z,30nm,1.4s
NVS pmax pmax
comp=N,5.0nm,1.0s
NVS pmax pmax
comp=E,17nm,1.3s
SVW2 Sparrevohn 42.24 39 *e*P **P 01 04 18.6 +0.6**
comp=E,5.4nm,1.0s
CMAI Chiengmai2 42.92 256 P P 01 04 30.5 +6.4
UTTA Uttaradit 43.16 252 P **P 01 04 25.8 -0.1**
comp=E,6.5nm,1.0s,comp=E,81nm
LAMP Lampang 43.35 254 P **P 01 04 27.9 +0.5**
comp=E,7.0nm,0.9s
PBKT Sadao Pong 43.61 250 P **P 01 04 29.7 +0.2**
comp=E,18nm,1.3s,comp=E,1µm
CMMT Chiang Mai 43.67 255 P **P 01 04 30.1 0.0**
comp=E,16nm,1.2s
CHTO Chiang Mai 43.68 255 P **P 01 04 30.2 +0.1**
comp=E,71nm,1.2s
CHTO Chiang Mai 43.68 255 *e*P **P 01 04 29.4 -0.7**
CHTO pmax pmax
comp=Z,11nm,0.9s
CHTO Chiang Mai 43.68 255 *e*P **P 01 04 29.4 -0.7**
comp=Z,11nm,0.9s
CMAR Chiang Mai Arr 43.90 254 P **P 01 04 31.9 0.0**
comp=Z,2.8nm,0.7s,baz=46,slow=6.7,SNR=13
CMAR LR LR 01 23 53.8
comp=Z,255nm,18.0s,baz=25,slow=38
CMAR Chiang Mai Arr 43.90 254*c**e*P **P 01 04 32.2 +0.3**
CMAR pmax pmax
comp=Z,2.0nm,0.6s
CM01 Chiang Mai Arr 43.91 254 *e*P **P 01 04 31.1 -0.8**
comp=Z,114nm,0.9s
SUKH Sukhothai 44.00 253 P **P 01 04 33.2 +0.5**
comp=Z,6.3nm,0.9s
MK31 Makanchi Array 44.14 300 *i* P **P 01 04 33.5 0.0**
MK31 pmax pmax
comp=Z,17nm,0.8s
MK31 Makanchi Array 44.14 300 *e*P **P 01 04 33.8 +0.3**
MKAR Makanchi Array 44.14 300 P **P 01 04 33.7 +0.2**
comp=Z,12nm,0.9s,baz=83,slow=9.9,SNR=37
MKAR Makanchi Array 44.14 300 *i* P **P 01 04 33.4 -0.1**
MKAR pmax pmax
comp=Z,12nm,0.9s
MAKZ Makanchi 44.34 300 *e*P **P 01 04 35.0 -0.2**
MAKZ pmax pmax
comp=Z,33nm,1.0s
MAKZ Makanchi 44.34 300 *e*P **P 01 04 35.0 -0.2**
comp=Z,33nm,1.0s
MLY Manley 44.55 33 *e*P **P 01 04 38.0 +1.4**
comp=Z,4.6nm,1.0s
SRAK Srakaew 44.55 247 P **P 01 04 34.0 -3.1**
comp=Z,64nm,1.1s,comp=Z,535nm
CHBT CHBT 45.22 245 P **P 01 04 43.3 +0.9**
comp=Z,50nm,1.0s
KURK Kurchatov 45.60 306*c* *i*P **P 01 04 44.5 -0.6**
KURK pmax pmax
comp=Z,114nm,1.1s
KURK Kurchatov 45.60 306 P **P 01 04 45.5 +0.5**
MDM Murphy Dome 45.62 34 *e*P **P 01 04 46.0 +1.0**
comp=Z,11nm,1.2s
KURBB Kurchatov Arra 45.68 306 P **P 01 04 45.5 -0.1**
comp=Z,23nm,1.0s,baz=80,slow=8.5,SNR=139
IL1 Eielson Array 46.20 34 *e*P **P 01 04 50.6 +1.0**
ILAR Eielson Array 46.20 34 P **P 01 04 50.0 +0.4**
comp=Z,1.9nm,0.8s,baz=260,slow=6.4,SNR=14
ILB Eielson Array 46.20 34 *e*P **P 01 04 50.0 +0.4**
PHET Kaeng Krachan 47.01 248 P **P 01 04 58.1 +1.6**
comp=Z,13nm,0.9s
PDGK Podgornoye 47.03 296 P **P 01 04 55.8 -0.6**
PDGK pmax pmax
comp=Z,31nm,1.1s
GUN Gumba 48.63 274 *e*P **P 01 05 09.6 +0.2**
comp=Z,114nm,0.8s
KKN Kakani 49.15 275 *e*P **P 01 05 13.3 +0.1**
comp=Z,87nm,0.8s
PKIN Phulchoki 49.16 274 *e*P **P 01 05 13.6 +0.2**
comp=Z,38nm,0.8s
DMN Daman 49.37 274 *e*P **P 01 05 15.1 +0.1**
GKN Gorkha 49.53 275 *e*P **P 01 05 15.9 -0.2**
VOSK Vostochnaya 49.73 310 P **P 01 05 16.6 -0.5**
VOSK pmax pmax
comp=Z,33nm,1.2s
VOSK Vostochnaya 49.73 310 *e*P **P 01 05 16.9 -0.2**
comp=Z,41nm,1.3s
KAPI Kappang 49.76 212 P **P 01 05 17.6 0.0**
comp=Z,3.7nm,0.3s,baz=21,slow=3.7,SNR=4.0
BVAR Borovoye Array 49.99 311 P **P 01 05 19.1 +0.1**
comp=Z,7.0nm,0.8s,baz=77,slow=9.3,SNR=41
BRVK Borovoye 50.04 311*c* *i*P **P 01 05 19.3 -0.1**
BRVK pmax pmax
comp=Z,80nm,2.5s
BRVK Borovoye 50.04 311 *e*P **P 01 05 19.7 +0.3**
comp=Z,19nm,1.0s
OTUK Ortayu 50.21 305 P **P 01 05 19.1 -1.7**
OTUK pmax pmax
comp=Z,17nm,1.1s
KOLN Koldanda 50.44 276 *e*P **P 01 05 23.1 0.0**
FRU Bishkek 50.55 297 *e*P **P 01 05 22.5 -1.0**
FRU *e* 01 06 38.0
FRU pmax pmax
comp=Z,50nm,1.8s
AAK Ala-Archa 50.71 297 P **P 01 05 24.2 -0.6**
comp=Z,6.8nm,0.4s,baz=61,slow=6.0,SNR=9.2
AAK Ala-Archa 50.71 297*c**e*P **P 01 05 25.0 +0.2**
AAK pmax pmax
comp=Z,17nm,1.0s
AAK Ala-Archa 50.71 297 *e*P **P 01 05 24.8 0.0**
comp=Z,12nm,0.6s
PYUN Piuthan 50.75 276 *e*P **P 01 05 25.4 0.0**
comp=Z,112nm,1.0s
KSH Kashi 50.87 293 P **P 01 05 29.8 +3.8**
KSH *e*pP sP 01 05 37.1 +2.6
KSH *e*sP pP 01 05 40.3 +8.2
KSH *e*PcP **PcP 01 06 45.1 +2.6**
KSH *e*ScP **ScP 01 10 38.8 +1.1**
KSH PcS **PcS 01 10 41.4 +1.3**
KSH S **S 01 12 44.8 +3.4**
KSH ScS **ScS 01 15 15.3 -0.6**
KSH SS **SS 01 16 19.1 +3.2**
KSH pmax pmax
comp=Z,7.0nm,0.7s
KSH pmax pmax
comp=Z,75nm,2.6s
KSH LR LR
comp=Z,350nm,14.9s
KSH LR LR
comp=Z,350nm,12.6s
KSH LR LR
comp=Z,400nm,12.9s
HYT Haines Junctio 51.02 38 *e*P **P 01 05 28.6 +1.8**
comp=Z,11nm,0.8s
INK Inuvik 51.09 28 P **P 01 05 26.4 -0.7**
comp=Z,2.2nm,0.4s,baz=286,slow=5.9,SNR=8.5
INK Inuvik 51.09 28 *e*P **P 01 05 28.8 +1.7**
INK pmax pmax
comp=Z,5.0nm,0.9s
INK Inuvik 51.09 28 *e*P **P 01 05 28.8 +1.7**
comp=Z,4.9nm,0.9s
MNAS Manas 52.12 298 P **P 01 05 34.5 -0.9**
MNAS pmax pmax
comp=Z,27nm,0.9s
KK31 Karatay Array 53.23 299 P **P 01 05 43.0 -0.5**
KK31 pmax pmax
comp=Z,9.0nm,0.9s
KKAR Karatay Array 53.23 299 *e*P **P 01 05 43.2 -0.3**
KKAR Karatay Array 53.23 299 *e*P **P 01 05 43.2 -0.3**
SVE Sverdlovsk 54.20 318‖ *e*P **P 01 05 50.8 +0.5**
SVE pmax pmax
comp=Z,26nm,1.0s
SVE MLR MLR
comp=Z,1µm,14.0s
PSI Prapat 54.71 239 P **P 01 05 54.0 -0.7**
comp=Z,8.0nm,0.8s,baz=356,slow=23,SNR=6.3
PSI Prapat 54.71 239 *e*P **P 01 05 54.4 -0.3**
PSI pmax pmax
comp=Z,13nm,0.9s
PSI Prapat 54.71 239 *e*P **P 01 05 54.4 -0.3**
comp=Z,12nm,0.9s
SOKR Solikamsk 55.16 322⇑ *i*P **P 01 05 56.2 -0.9**
SOKR pmax pmax
comp=Z,17nm,1.3s
SOKR MLR MLR
comp=Z,468nm,16.0s
ARU Arti 55.41 318 P **P 01 05 59.4 +0.4**
comp=Z,12nm,0.9s,baz=63,slow=4.2,SNR=28
ARU Arti 55.41 318*c* *i*P **P 01 05 58.9 -0.2**
ARU 01 08 03.7
ARU PPP PPP 01 09 14.5
ARU S **S 01 13 44.8 +2.3**
ARU SS **SS 01 17 26.1 -0.5**
ARU pmax pmax
comp=Z,38nm,1.2s
ARU MLR MLR
comp=Z,1µm,15.0s
ARU Arti 55.41 318 *e*P **P 01 05 59.1 +0.1**
comp=Z,32nm,1.1s
AB31 Akbulak array 57.46 309 *i* P **P 01 06 13.2 -0.6**
AB31 pmax pmax
comp=Z,8.0nm,0.7s
ABKAR Akbulak array 57.46 309 *e*P **P 01 06 13.7 -0.1**
KBL Kabul 58.03 290 *e*P **P 01 06 17.9 -0.4**
KBL pmax pmax
comp=Z,19nm,0.9s
KBL Kabul 58.03 290 *e*P **P 01 06 17.9 -0.4**
comp=Z,19nm,0.9s
AKTO Aktyubinsk 58.09 311 P **P 01 06 18.2 0.0**
comp=Z,7.2nm,0.8s,baz=73,slow=13,SNR=20
SPITS Spitsbergen Ar 58.09 349 LR LR 01 34 51.6
comp=Z,185nm,18.8s,baz=60,slow=40
RES Resolute Bay 59.44 15 LR LR 01 35 00.5
comp=Z,145nm,19.8s,baz=314,slow=39
FITZ Fitzroy Crossi 60.04 200 *e*P **P 01 06 33.3 +1.3**
comp=Z,40nm,1.5s
WRAB Tennant Creek 60.10 190⇑ *e*P **P 01 06 30.1 -2.2**
WRAB pmax pmax
comp=Z,15nm,1.0s
WRAB Tennant Creek 60.10 190 *e*P **P 01 06 30.3 -2.0**
comp=Z,7.8nm,0.7s
WB2 Warramunga Arr 60.11 190 *e*P **P 01 06 30.6 -1.8**
WRA Warramunga Arr 60.11 190 P **P 01 06 30.2 -2.2**
comp=Z,8.3nm,0.7s,baz=8.4,slow=6.9,SNR=30
YKA Yellowknife Ar 60.51 31 P **P 01 06 35.1 +0.5**
comp=Z,0.9nm,0.7s,baz=298,slow=6.2,SNR=5.7
ARCES ARCESS Array B 61.97 339 P **P 01 06 44.1 -0.4**
comp=Z,1.6nm,0.8s,baz=44,slow=3.9,SNR=4.7
ARCES LR LR 01 36 52.8
comp=Z,213nm,20.0s,baz=32,slow=39
KLMR Klimovskoe 62.30 328 *e*P **P 01 06 43.9 -2.9**
KLMR *e* 01 09 00.2
KLMR pmax pmax
comp=Z,24nm,1.4s
DAG Danmarks Havn 63.11 355 *i* P P 01 06 48.4 -3.6
comp=Z,6.6nm,0.9s
DAG *e* 01 06 59.7
AS01 Alice Springs 63.83 190 *e*P **P 01 06 55.5 -1.9**
AS31 Alice Springs 63.83 190 *e*P **P 01 06 58.2 +0.7**
comp=Z,1.4nm,0.8s
ASAR Alice Springs 63.84 190 P **P 01 06 56.0 -1.4**
comp=Z,3.2nm,0.7s,baz=9.3,slow=6.1,SNR=23
GEYT Alibeck 63.99 299 P **P 01 06 58.2 -0.2**
comp=Z,7.1nm,0.9s,baz=29,slow=3.4,SNR=19
GEYT LR LR 01 35 01.3
comp=Z,120nm,20.1s,baz=15,slow=36
MOS Moscow 66.01 323 *e*P **P 01 07 09.8 -1.5**
MOS *e* 01 09 35.2
MOS MLR MLR
comp=Z,500nm,16.0s
VRH Novokhopyorsk 66.65 318 *e*P **P 01 07 13.8 -1.6**
VRH pmax pmax
comp=Z,10.0nm,1.1s
OBN Obninsk 66.87 323 *i* P **P 01 07 15.8 -0.9**
OBN *i* 01 07 24.1
OBN pmax pmax
comp=Z,12nm,1.0s
OBN MLR MLR
comp=Z,606nm,16.0s
NEW Newport 66.92 46 *e*P **P 01 07 17.3 0.0**
NEW pmax pmax
comp=Z,10.0nm,1.4s
NEW Newport 66.92 46 *e*P **P 01 07 17.3 0.0**
comp=Z,9.9nm,1.4s
FIA1 FINESS Array S 67.12 332 *e*P **P 01 07 22.1 +3.8**
FINES FINESS Array B 67.12 332 P **P 01 07 18.2 0.0**
comp=Z,7.0nm,0.8s,baz=48,slow=8.5,SNR=22
FINES LR LR 01 39 50.7

comp=Z,483nm,18.3s,baz=33,slow=39
K05A Summer Lake 67.84 52 *e*P **P 01 07 24.5 +1.1**
comp=Z,18nm,1.1s
SUMG Summit 67.86 1 *i* P **P 01 07 23.6 +0.3**
comp=Z,8.5nm,1.0s
SUMG Summit 67.86 1 *e*P **P 01 07 24.1 +0.8**
SUMG pmax pmax
comp=Z,38nm,1.6s
SUMG Summit 67.86 1 *e*P **P 01 07 24.1 +0.8**
comp=Z,38nm,1.6s
WDC Whiskeytown Da 68.03 55 *e*P **P 01 07 25.3 +1.0**
WDC pmax pmax
comp=Z,8.0nm,1.0s
WDC Whiskeytown Da 68.03 55 *e*P **P 01 07 25.3 +1.0**
comp=Z,8.2nm,1.0s
BMO Blue Mountains 68.77 49 *e*P **P 01 07 29.8 +0.7**
comp=Z,3.4nm,1.0s
VSU Vasula 68.89 330 *de*P **P 01 07 29.8 +0.4**
VSU pmax pmax
comp=Z,53nm,1.7s
SWMT Swartz Lake 69.07 45 *e*P **P 01 07 33.1 +2.1**
ORV Oroville 69.26 55 *e*P **P 01 07 32.8 +0.7**
ORV pmax pmax
comp=Z,11nm,1.5s
ORV Oroville 69.26 55 *e*P **P 01 07 32.8 +0.7**
comp=Z,11nm,1.5s
GOF Gofitskoye 69.50 312⇑ *e*P **P 01 07 34.1 +0.7**
GOF pmax pmax
comp=Z,47nm,1.1s
SLMT Seeley Lake 69.51 45 *e*P **P 01 07 34.4 +0.7**
NCK Nalchik 70.10 310⇓ *e*P **P 01 07 37.6 +0.4**
NCK pmax pmax
comp=Z,16nm,0.9s
GUDG Gudauri 70.19 309 P **P 01 07 39.4 +1.4**
ZEI Tsey 70.34 310 *e*P **P 01 07 36.6 -2.3**
ZEI pmax pmax
comp=Z,21nm,0.6s
KVAR Kislovodsk Arr 70.35 311 P **P 01 07 39.9 +1.1**
comp=Z,34nm,1.0s,baz=83,slow=5.4,SNR=29
KIV Kislovodsk 70.36 311 *c i*P **P 01 07 39.0 +0.1**
KIV *i* 01 07 45.1
KIV *i* 01 07 59.6
KIV pmax pmax
comp=Z,66nm,1.0s
KIV Kislovodsk 70.36 311 *e*P **P 01 07 39.8 +1.0**
comp=Z,59nm,1.0s
KBZ Khabaz 70.37 311 P **P 01 07 39.7 +0.9**
comp=Z,18nm,0.9s,baz=39,slow=3.4,SNR=29
TBLG Delisi 70.46 308 P **P 01 07 39.5 +0.1**
TBLG Delisi 70.46 308 P **P 01 07 39.5 +0.1**
PAHR Pah Rah Range 70.51 54 *e*P **P 01 07 39.0 -0.9**
comp=Z,8.2nm,1.1s
ONI Oni 70.72 310 P **P 01 07 41.9 +0.8**
ONI Oni 70.72 310 P **P 01 07 41.9 +0.8**
NEY Neytrino 70.76 311⇓ *e*P **P 01 07 42.0 +0.6**
NEY pmax pmax
comp=Z,2.0nm,0.8s
CMB Columbia Colle 70.85 56 *e*P **P 01 07 42.7 +0.7**
CMB pmax pmax
comp=Z,5.0nm,1.0s
CMB Columbia Colle 70.85 56 *e*P **P 01 07 42.7 +0.7**
comp=Z,5.4nm,1.0s
LRM Limekiln Ridge 70.94 46 *e*P **P 01 07 43.3 +0.7**
DLMT Dillon 71.14 46 *e*P **P 01 07 41.3 -2.4**
comp=Z,7.0nm,1.0s
HLID Hailey 71.21 49 *e*P **P 01 07 44.8 +0.6**
comp=Z,3.3nm,1.0s
STKA Stephens Creek 71.39 182 P **P 01 07 43.7 -1.2**
comp=Z,2.3nm,0.7s,baz=7.9,slow=20,SNR=3.5
GNI Garni 71.40 307 *c i*P **P 01 07 45.9 +0.5**
GNI pmax pmax
comp=Z,61nm,1.2s
GNI Garni 71.40 307 *e*P **P 01 07 46.7 +1.3**
comp=Z,12nm,0.9s
BMN Battle Mountai 71.42 53 *e*P **P 01 07 46.7 +1.2**
BMN pmax pmax
comp=Z,8.0nm,1.4s
BMN Battle Mountai 71.42 53 *e*P **P 01 07 46.7 +1.2**
comp=Z,7.5nm,1.4s
BGD Bogdanovka 71.43 308 P **P 01 07 47.0 +1.4**
BOZ Bozeman (W) 71.50 46 *e*P **P 01 07 46.7 +0.8**
BOZ pmax pmax
comp=Z,6.0nm,0.9s
BOZ Bozeman (W) 71.50 46 *e*P **P 01 07 46.7 +0.8**
comp=Z,5.8nm,0.9s
NC204 NORSAR Array S 72.18 338 *e*P **P 01 07 49.8 +0.2**
NB2 NORSAR Subarra 72.24 338 P **P 01 07 49.1 -0.8**
comp=Z,11nm,1.0s,baz=39,slow=6.2
NOA NORSAR Array B 72.24 338 P **P 01 07 49.1 -0.8**
comp=Z,6.3nm,0.9s,baz=38,slow=6.0,SNR=14
NOA LR LR 01 45 40.6
comp=Z,192nm,18.1s,baz=20,slow=41
UOSS Minazif 72.58 288 *e*P **P 01 07 52.7 +0.2**
comp=Z,14nm,1.0s
ANN Anapa 72.81 314 *e*P **P 01 07 52.1 -1.4**
ANN pmax pmax
comp=Z,43nm,1.8s
AKASG Malin Array Be 73.11 323 P **P 01 07 54.6 -0.6**
comp=Z,6.9nm,0.8s,baz=45,slow=7.1,SNR=12
MOOW Moose Ponds 73.18 47 *e*P **P 01 07 56.2 +0.1**
comp=Z,2.9nm,0.9s
R11A Troy Canyon, C 73.69 54 *e*P **P 01 07 59.4 +0.3**
comp=Z,4.7nm,1.1s
DAC Darwin (Calif) 73.69 56 *e*P **P 01 07 59.2 +0.1**
DAC pmax pmax
comp=Z,5.0nm,1.0s
DAC Darwin (Calif) 73.69 56 *e*P **P 01 07 59.2 +0.1**
comp=Z,4.9nm,1.0s
TPNV Topopah Spring 74.13 55 *e*P **P 01 08 02.1 +0.4**
TPNV pmax pmax
comp=Z,10.0nm,1.0s
TPNV Topopah Spring 74.13 55 *e*P **P 01 08 02.1 +0.4**
comp=Z,9.9nm,1.0s
DUG Dugway, Tooele 74.22 51 *e*P **P 01 08 03.1 +1.0**
DUG pmax pmax
comp=Z,6.0nm,1.1s
DUG Dugway, Tooele 74.22 51 *e*P **P 01 08 03.1 +1.0**
comp=Z,5.8nm,1.1s
BW06 Boulder Array 74.47 47 *e*P **P 01 08 03.0 -0.7**
PD31 Pinedale Array 74.48 47 *e*P **P 01 08 05.2 +1.6**
PDAR Pinedale Array 74.48 47 P **P 01 08 04.2 +0.5**
comp=Z,1.6nm,0.8s,baz=266,slow=2.4,SNR=9.2
SHPR Sheep Range 75.09 55 *e*P **P 01 08 08.4 +1.1**
comp=Z,6.5nm,1.1s
SORM Soroca 75.29 321⇑ *i*P **P 01 08 07.2 -0.7**
SORM Soroca 75.29 321⇑ P **P 01 08 07.2 -0.7**
CCUT Cedar City 75.56 53 *e*P **P 01 08 10.3 +0.4**
comp=Z,6.5nm,1.2s
MTPU Mount Pierson 75.97 52 *e*P **P 01 08 12.5 0.0**
comp=Z,2.9nm,0.9s
LCMT Little Creek M 75.97 53 *e*P **P 01 08 13.1 +0.9**
comp=Z,5.2nm,0.9s
LVV L'vov 76.10 325 *e*P **P 01 08 12.5 -0.1**
LVV MLR MLR
comp=N,280nm,15.0s
LVV MLR MLR
comp=E,350nm,15.0s
LVV MLR MLR
comp=Z,400nm,15.0s
KNB Kanab 76.23 53 *e*P **P 01 08 14.9 +1.2**
KNB pmax pmax
comp=Z,25nm,1.9s
KNB Kanab 76.23 53 *e*P **P 01 08 14.9 +1.2**
comp=Z,25nm,1.9s
SRU San Rafael Swe 76.28 50 *e*P **P 01 08 14.9 +0.9**
SRU pmax pmax
comp=Z,6.0nm,0.9s
SRU San Rafael Swe 76.28 50 *e*P **P 01 08 14.9 +0.9**
comp=Z,5.5nm,0.9s
KWP Kalwaria Pacla 76.83 325 *e*P **P 01 08 17.3 +0.6**
U15A North Rim 76.93 53 *e*P **P 01 08 18.6 +0.7**
O20A White River Ci 76.94 48 *e*P **P 01 08 18.0 +0.3**
comp=Z,5.3nm,0.9s
BUR08 Bucovina Ar. S 77.14 322 *e*P **P 01 08 19.1 +0.5**
BURAR Bucovina Array 77.15 322⇑ *i*P **P 01 08 18.9 +0.2**
BURAR Bucovina Array 77.15 322⇑ P **P 01 08 18.9 +0.2**
TESR Tescani 77.26 321⇓ *i*P **P 01 08 19.0 -0.2**
STHS Stebnicka Huta 77.63 326 *e*P **P 01 08 21.3 +0.1**
STHS *es*P **PcP 01 08 31.2 -0.2**
PV10 Paradox Valley 77.63 50 *e*P **P 01 08 23.3 +1.6**
OJC Ojcow 77.64 327 *e*P **P 01 08 21.7 +0.4**
OJC Ojcow 77.64 327 *e*P **P 01 08 21.7 +0.4**
OJC pmax pmax
comp=Z,20nm,1.0s
OJC Ojcow 77.64 327 *e*P **P 01 08 21.7 +0.4**
comp=Z,20nm,1.0s
VRI Vrincioaia 77.68 320⇑ *i*P **P 01 08 22.1 +0.6**
VRI Vrincioaia 77.68 320⇑ P **P 01 08 22.1 +0.6**
UZH Uzhgorod 77.75 325 *e*P **P 01 08 19.4 -2.4**
UZH *e* 01 08 30.0
PV05 Paradox Valley 77.80 50 *e*P **P 01 08 24.3 +1.6**
CRVS Cervenica-Dubn 77.92 325 *e*P **P 01 08 22.9 +0.1**
TLB Topalu 77.93 319⇓ *i*P **P 01 08 23.5 +0.6**
TLB Topalu 77.93 319⇓ P **P 01 08 23.5 +0.6**
PV01 Paradox Valley 78.07 50 *e*P **P 01 08 23.5 -0.7**
comp=Z,477nm,1.2s
Y14A Wickenburg 78.08 56 *e*P **P 01 08 28.2 +4.2**
WUAZ Wupatki 78.09 54 *e*P **P 01 08 24.6 +0.4**
comp=Z,8.8nm,1.0s
BR131 Keskin Array S 78.25 312 *e*P **P 01 08 25.0 -0.1**
BRTR Keskin Array B 78.25 312 P **P 01 08 25.3 +0.3**
comp=Z,3.7nm,1.0s,baz=94,slow=5.0,SNR=11
BRTR LR LR 01 48 05.7
comp=Z,63nm,18.6s,baz=12,slow=40
LANS Liptovska Anna 78.59 326 *e*P **P 01 08 27.8 +1.2**
LANS *es*P **PcP 01 08 36.9 +1.3**
KSP Ksiaz 78.59 329 *e*P **P 01 08 27.1 +0.6**
OKC Ostrava-Krasne 78.62 327 *e*P **pP 01 08 35.4 +2.4**
OKC *ex* x 01 08 47.4
OKC AMS AMS 01 52 40.0
comp=Z,200nm,15.7s
KECS Kecovo 78.66 325 *e*P **P 01 08 27.6 +0.7**
KECS *es*P **PcP 01 08 35.7 -0.1**
BR231 Keskin MP Arra 78.67 313 *e*P **P 01 08 24.8 -2.4**
X16A Lo Mia Camp, P 78.76 55 *e*P **P 01 08 29.2 +1.3**
VOIR 78.80 321⇓ *i*P **P 01 08 28.5 +0.6**
VOIR 78.80 321⇓ P **P 01 08 28.5 +0.6**
MORC Moravsky Berou 78.92 328⇑ *i*P **P 01 08 28.7 +0.4**
MORC Moravsky Berou 78.92 328⇑ P **P 01 08 28.7 +0.4**
MORC Moravsky Berou 78.92 328 *e*P **P 01 08 28.8 +0.4**
comp=Z,39nm,1.1s
DPC Dobruska-Polom 78.97 329 *e*P **P 01 08 29.1 +0.5**
DPC *ep*P **PcP 01 08 38.0 +0.8**
DPC AMS AMS 01 48 30.0
comp=Z,300nm,16.5s
UPC Upice 78.97 329 *e*P **P 01 08 28.7 +0.1**
UPC AMS AMS 01 48 30.0
comp=Z,500nm,13.8s
ARR Arges 79.06 321⇑ *i*P **P 01 08 30.4 +1.2**
PSZ Piszkesteto 79.34 325⇑ *i*P **P 01 08 31.6 +0.8**
PSZ Piszkesteto 79.34 325⇑ P **P 01 08 31.6 +0.8**
PSZ Piszkesteto 79.34 325 *e*P **P 01 08 30.3 -0.5**
comp=Z,14nm,1.1s
S22A 4UR Ranch, Cre 79.35 49 *e*P **P 01 08 31.2 -0.1**
comp=Z,26nm,0.3s
VYHS Vyhne 79.36 326 *e*P **P 01 08 31.3 +0.5**
VYHS *es*P **PcP 01 08 39.7 +0.8**
CLL Collm 79.49 331 *e*P **P 01 08 31.0 -0.4**
comp=Z,9.0nm,0.9s
CLL *i* 01 08 39.8
comp=Z,9.0nm,0.9s
CLL *i* 01 08 51.5
CLL *e*PP **PP 01 11 31.0 -0.1**
CLL LmH 01 42 00.0
comp=N,300nm,19.3s
CLL LmH 01 42 00.0
comp=E,500nm,21.9s
CLL Collm 79.49 331 *e*P **P 01 08 31.0 -0.4**
CLL pmax pmax
comp=Z,8.0nm,0.9s
CLL Collm 79.49 331 *e*P **P 01 08 30.9 -0.4**
comp=Z,8.3nm,0.9s
PVCC Panska Ves 79.52 330 *e*P **P 01 08 32.4 +0.8**
PVCC *ep*P **PcP 01 08 41.1 +1.6**
PVCC AMS AMS 01 47 10.0
comp=Z,400nm,16.2s
VRAC Vranov 79.67 328⇑ *i*P **P 01 08 33.2 +0.7**
VRAC Vranov 79.67 328⇑ P **P 01 08 33.2 +0.7**
GOPC GO Pecny, Ondr 79.92 329 *e*P **P 01 08 34.5 +0.7**
GOPC *ep*P **PcP 01 08 42.9 +1.6**
GOPC AMS AMS 01 47 20.0
comp=Z,400nm,15.0s
PRU Pruhonice 79.96 329 *e*P **P 01 08 34.6 +0.6**
PRU *ep*P **PcP 01 08 43.0 +1.6**
PRU AMS AMS 01 47 30.0
comp=Z,400nm,16.5s
SDCO Great Sand Dun 80.13 49 *e*P **P 01 08 35.9 +0.4**
comp=Z,4.3nm,1.4s
TREC Trest 80.13 328 *e*P **P 01 08 35.5 +0.5**
TREC AMS AMS 01 49 30.0
comp=Z,400nm,17.1s
BZS Buzias 80.30 323⇑ *i*P **P 01 08 35.5 -0.4**
BZS Buzias 80.30 323⇑ P **P 01 08 35.5 -0.4**
MDVR Moldovita 80.88 322⇑ *i*P **P 01 08 38.8 -0.3**
KHC Kasperske Hory 81.02 329 *e*P **P 01 08 39.9 +0.1**
KHC *ep*P **PcP 01 08 48.6 +2.4**
KHC AMS AMS 01 48 10.0
comp=Z,300nm,16.0s
KHC Kasperske Hory 81.02 329 *e*P **P 01 08 40.4 +0.6**
KHC pmax pmax
comp=Z,3.0nm,1.0s
KHC Kasperske Hory 81.02 329 *e*P **P 01 08 40.4 +0.6**
comp=Z,3.1nm,1.0s
CONA Conrad Observa 81.06 327 *i*P **P 01 08 40.1 +0.1**
comp=Z,14nm,1.9s
GERES GERESS Array B 81.20 329 P **P 01 08 40.3 -0.5**
comp=Z,2.1nm,0.9s,baz=35,slow=4.9,SNR=11
GERES LR LR 01 48 36.1
comp=Z,271nm,18.1s,baz=2.5,slow=38
GEA0 GERESS Array S 81.21 329 *e*P **P 01 08 40.5 -0.4**
ANMO Albuquerque 81.47 51 *e*P **P 01 08 43.8 +1.2**
ANMO pmax pmax
comp=Z,4.0nm,1.0s
ANMO Albuquerque 81.47 51 *e*P **P 01 08 43.8 +1.2**
comp=Z,4.1nm,1.0s
ARSA Arzberg 81.73 327 *i*P **P 01 08 42.6 -0.9**
comp=Z,7.9nm,1.1s
MOA Molln 81.77 328 *i* PcP **P 01 08 45.8 +2.0**
comp=Z,9.5nm,1.5s
VTS Vitosha 81.79 320⇑ *i*P **P 01 08 44.5 +0.4**
VTS Vitosha 81.79 320⇑ P **P 01 08 44.5 +0.4**
VTS Vitosha 81.79 320 *i*P **P 01 08 44.5 +0.4**
VTS Vitosha 81.79 320 *e*P **P 01 08 44.5 +0.4**
comp=Z,8.9nm,0.8s
SCHQ Schefferville 82.15 17 LR LR 01 50 24.5
comp=Z,117nm,18.2s,baz=28,slow=39
MMB Musomiste 82.28 319 *i*P **P 01 08 46.7 +0.2**
SOKA Soboth 82.39 327 *i*P **P 01 08 47.5 +0.4**
comp=Z,12nm,1.0s
OBKA Obir 82.73 327 *i*P **P 01 08 47.6 -1.2**
comp=Z,24nm,1.7s
KBA Koelnbriesper 82.77 328 *i* PcP **P 01 08 50.2 +1.1**
comp=Z,8.2nm,0.8s
MYKA Terra Mystica 83.01 328 *i*P **P 01 08 50.3 0.0**
comp=Z,19nm,1.7s
WATA Walderalm 83.26 329 *i* PcP **P 01 08 53.2 +1.6**
comp=Z,5.8nm,1.0s
ABTA Abfaltersbach 83.37 329 *i* sP sP 01 08 58.2 -2.6
comp=Z,15nm,1.4s
MOTA Moosalm 83.44 330 *i*P **P 01 08 52.9 +0.3**
comp=Z,7.7nm,0.8s
RETA Reutte 83.45 330 *i*P **P 01 08 53.1 +0.5**
comp=Z,17nm,1.4s
BFO Black Forest 83.66 332 *i*P **P 01 08 55.2 +1.6**
BFO Black Forest 83.66 332 *e*P **P 01 08 53.3 -0.2**
comp=Z,12nm,1.2s
PDG Podgorica 83.83 322⇑ *i*P **P 01 08 54.3 -0.2**
FETA Feichten 83.85 330 *i* PcP **P 01 08 55.2 +0.5**
comp=Z,7.9nm,1.0s
DAVA Damuels 83.96 330 *i*P **P 01 08 55.4 +0.1**
comp=Z,12nm,1.1s
MNTX Cornudas Mount 84.35 53 *e*P **P 01 08 57.8 +0.4**
comp=Z,3.5nm,1.1s
FUORN Ofenpass-Fuorn 84.36 330 *e*P **P 01 08 58.0 +0.5**
comp=Z,14nm,0.8s
DAVOX Davos/Dischmat 84.38 330 P **P 01 08 57.3 -0.2**
comp=Z,3.5nm,0.7s,baz=60,slow=14,SNR=4.6
TUE Stuetta 84.84 330 *e*P **P 01 08 59.9 +0.1**
comp=Z,18nm,1.3s
WMOK Wichita Mounta 86.09 47 *e*P **P 01 09 07.0 +1.0**
WMOK pmax pmax
comp=Z,4.0nm,0.8s
WMOK Wichita Mounta 86.09 47 *e*P **P 01 09 07.0 +1.0**
comp=Z,4.1nm,0.8s
TX31 Lajitas Ar. Si 87.05 54 *e*P **P 01 09 11.1 +0.1**
TXAR Lajitas Array 87.05 54 P **P 01 09 09.8 -1.2**
comp=Z,1.0nm,0.9s,baz=311,slow=3.9,SNR=6.0
PBMO Poplar Bluff 89.00 41 *e*P **P 01 09 20.6 +0.7**
comp=Z,9.7nm,1.1s
ESDC Sonseca Array 95.48 335 P **P 01 09 49.3 -0.6**
comp=Z,0.4nm,0.7s,baz=25,slow=3.8,SNR=2.6
SNAA Sanae 143.95 197 PKP **PKPdf 01 16 01.7 +2.4**
SNAA Sanae 143.95 197 *e*PKIKP PKPab 01 15 57.1 +0.5
SNAA Sanae 143.95 197 *e*PKPdf PKPab 01 15 57.1 +0.5
VNA1 Neumayer--Stat 145.90 196 PKP **PKPdf 01 16 03.5 +1.0**

*IDC **22** 00:58:46.8±2.5,24°.60N×92°.10E, h0km, mb3.8/4, mb1 4.1/5, mb1mx3.6/57, mbtmp3.8/5, ML4.0/1, Error ellipse: s-maj=124.5km s-min=23.0km az=63.0*
*NEIC **22** 00:58:52.8±1.8,24°.53N×92°.07E, h44km±13km, mb4.0/3, Error ellipse: s-maj=44.8km s-min=8.6km az=58.0*
ISC 22 00:58:51.6±1.1,24°.67N±0°.04×92°.02E±0°.03, h32km±8km, n28, σ1s75/45, mb3.9/7, 1C, India-Bangladesh border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SILR	**SILCHAR**	**0.72**	**81⇑**	*e*P	**Pb**	**00 59 05.7**	**0.0**
SILR				*e*S	**Sn**	**00 59 17.7**	**+2.3**
SHL	**Shillong**	**0.90**	**352**	*e*P	**Pn**	**00 59 07.8**	**-0.4**
SHL				*e*S	**Sn**	**00 59 20.4**	**+0.2**
SHL				*e*S	**Sb**	**00 59 20.6**	**-0.2**
SHL				AML	AML	00 59 20.9	
	comp=N,4μm,0.1s						
SHL				AML	AML	00 59 22.3	
	comp=E,6μm,0.0s						
AGT	**Agartala**	**1.05**	**222**	*e*P	**Pb**	**00 59 11.4**	**0.0**
AGT				*e*S	**Sb**	**00 59 27.6**	**+2.8**
AGT				AML	AML	00 59 29.5	
BELO	**BELONIA**	**1.51**	**201**	*e*P	**Pb**	**00 59 17.7**	**-1.3**
BELO				*e*S	**Sb**	**00 59 37.4**	**-0.4**
GUWA	**GUWAHATI**	**1.55**	**349**	*e*P	**Pn**	**00 59 16.6**	**-0.3**
GUWA				*e*S	**Sn**	**00 59 36.5**	**+0.6**
TURI	**Tura**	**1.76**	**300**	*e*P	**Pn**	**00 59 21.6**	**+1.7**
TURI				*e*S	**Sb**	**00 59 44.5**	**-0.6**
TURI				AML	AML	00 59 49.0	
	comp=N,4μm,0.3s						
TURI				AML	AML	00 59 49.3	
	comp=E,2μm,0.3s						
TEZP	**TEZPUR**	**2.06**	**20**	*e*P	**Pn**	**00 59 23.3**	**-0.8**
TEZP				*e*S	**Sn**	**00 59 47.3**	**-1.4**
TEZP				AML	AML	00 59 55.1	
	comp=E,809nm,0.3s						
TEZP				AML	AML	00 59 55.5	
	comp=N,2μm,0.2s						
KOHI	**KOHIMA**	**2.16**	**61**	*e*S	**Sb**	**00 59 54.6**	**-2.0**
MOKO	**MOKOCHONG**	**2.79**	**53**	*e*P	**Pn**	**00 59 36.0**	**+1.8**
MOKO				*e*S	**Sn**	**01 00 06.8**	**-0.1**
MOKO				AML	AML	01 00 18.6	
	comp=E,1μm,0.4s						
MOKO				AML	AML	01 00 19.5	
	comp=N,967nm,0.3s						
ITAN	**ITANAGAR**	**2.90**	**31**	*i* x	**Pn**	**00 59 35.7**	**+0.1**
ITAN				*e*S	**Sn**	**01 00 10.6**	**+1.2**
ZIRO	**ZIRO**	**3.29**	**30**	*e*P	**Pn**	**00 59 41.1**	**+0.1**
ZIRO				*e*S	**Sn**	**01 00 18.4**	**-0.7**
GTK	**Tadong**	**4.05**	**311**	*e*P	**Pn**	**00 59 53.6**	**+2.0**
GTK				AML	AML	01 00 57.3	
	comp=N,130nm,0.1s						
GTK				AML	AML	01 01 00.8	
	comp=E,322nm,0.4s						
LSA	**Lhasa**	**5.07**	**351**	*e*Pn	**Pn**	**01 00 09.1**	**+3.3**
	comp=E,29nm,0.7s						
LSA				*e*Sn	**Sn**	**01 01 08.9**	**+5.3**
GUN	**Gumba**	**6.39**	**302**	*e*Pn	**Pn**	**01 00 25.5**	**+1.7**
GUN				*e*Sn	**Sn**	**01 01 35.2**	**-0.7**
	comp=E,207nm,0.5s						
PKIN	**Phulchoki**	**6.62**	**297**	*e*Pn	**Pn**	**01 00 27.9**	**+0.9**
KKN	**Kakani**	**6.80**	**299**	*e*Pn	**Pn**	**01 00 31.2**	**+1.8**
KKN				*e*Sn	**Sn**	**01 01 44.6**	**-1.3**
	comp=E,68nm,0.4s						
DMN	**Daman**	**6.87**	**297**	*e*Pn	**Pn**	**01 00 31.0**	**+0.6**
GKN	**Gorkha**	**7.41**	**298**	*e*Pn	**Pn**	**01 00 38.7**	**+1.0**
GKN				*e*Sn	**Sn**	**01 01 59.0**	**-1.8**
KOLN	**Koldanda**	**8.17**	**294**	*e*Pn	**Pn**	**01 00 48.7**	**+0.5**
KOLN				*e*Sn	**Sn**	**01 02 15.9**	**-3.6**
	comp=E,77nm,0.5s						
PYUN	**Piuthan**	**8.79**	**295**	*e*Pn	**Pn**	**01 00 56.7**	**0.0**
PYUN				*e*Sn	**Sn**	**01 02 30.3**	**-4.5**
	comp=E,82nm,0.7s						
CMAR	**Chiang Mai Arr**	**8.92**	**132**	Pn	**Pn**	**01 00 57.1**	**-1.3**
	comp=E,0.5nm,0.3s,baz=306,slow=14,SNR=4.6						
MKAR	**Makanchi Array**	**23.41**	**343**	P	**P**	**01 03 58.8**	**+1.0**
	comp=E,0.8nm,0.6s,baz=162,slow=9.4,SNR=9.6						
KKM	**Kota Kinabalu**	**29.69**	**125**	*e*P	**P**	**01 04 53.7**	**-1.2**
	comp=E,11nm,1.0s						
ABKAR	**Akbulak array**	**35.05**	**323**	*e*P	**P**	**01 05 42.3**	**+1.0**
	comp=E,6.0nm,0.4s						
WRA	**Warramunga Arr**	**60.52**	**133**	P	**P**	**01 08 58.2**	**-0.7**
	comp=E,1.2nm,0.6s,baz=323,slow=7.4,SNR=7.7						
ASAR	**Alice Springs**	**62.91**	**137**	P	**P**	**01 09 14.6**	**-0.4**
	comp=E,1.6nm,0.5s,baz=318,slow=6.7,SNR=12						
BPAW	**Bear Paw Mtn.**	**78.96**	**23**	*e*P	**P**	**01 10 52.4**	**+0.5**
	comp=E,1.7nm,1.5s						
ILAR	**Eielson Array**	**80.00**	**22**	P	**P**	**01 10 57.5**	**0.0**
	comp=E,0.5nm,0.9s,baz=294,slow=6.1,SNR=4.2						

*IDC **22** 01:01:46.0±2.2,28°.21S×176°.67W, h0km, mb4.0/2, mb1 4.2/2, mb1mx3.7/23, mbtmp4.0/2, MS3.9/1, Ms1 3.9/1, ms1mx2.9/29, Error ellipse: s-maj=79.7km s-min=24.3km az=134.0*
*NEIC **22** 01:01:46.5±1.3,28°.18S×176°.58W, h10km, mb4.1/1, Error ellipse: s-maj=50.3km s-min=18.2km az=137.0*
*ISCJB **22** 01:01:48.5±5.4,28°.2S±0°.4×176°.6W±0°.8, h37km, mb4.0/3, MS3.9/1, Error ellipse: s-maj=116.2km s-min=16.8km az=29.6*
ISC 22 01:01:49.7±2.5,28°.3S±0°.5×176°.5W±0°.5, h37km, n8, σ0s53/8, mb4.1/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.58**	**233**	Pn	**Pn**	**01 02 14.9**	**-0.3**
	126nm,0.3s,baz=87,slow=11,SNR=6.5						
RAO				Sn	**Sn**	**01 02 34.7**	**+0.3**
	336nm,0.3s,baz=18,slow=20,SNR=7.7						
ASAR	**Alice Springs**	**44.59**	**264**	P	**P**	**01 09 58.9**	**+0.3**
	0.8nm,0.5s,baz=101,slow=7.6,SNR=11						
WRAB	**Tennant Creek**	**45.39**	**269**	*e*P	**P**	**01 10 04.3**	**-0.6**
	1.6nm,0.6s						
WRA	**Warramunga Arr**	**45.40**	**269**	P	**P**	**01 10 05.1**	**+0.1**
	1.0nm,0.4s,baz=109,slow=8.1,SNR=11						
JAY	**Jayapura**	**48.18**	**294**	LR	LR	01 27 07.4	
	comp=Z,127nm,21.8s,slow=32						
FINES	**FINESS Array B**	**143.59**	**342**	PKP	**PKPdf**	**01 21 19.5**	**-0.4**
	0.6nm,0.5s,baz=54,slow=3.3,SNR=5.5						
NOA	**NORSAR Array B**	**146.85**	**353**	PKPbc	**PKPbc**	**01 21 28.2**	**+0.8**
	0.8nm,0.7s,baz=11,slow=4.7,SNR=3.2						
HFS	**Hagfors**	**147.42**	**351**	PKPbc	**PKPab**	**01 21 30.8**	**-0.2**
	2.1nm,0.9s,baz=45,slow=1.7,SNR=2.9						

JMA 22 01:03:06.0,39°.56N×140°.55E, h7km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JRG	**Rokugo**	**0.18**	**158**	P	Pg	01 03 09.7	+0.1
JRG				S	Sg	01 03 12.8	+0.8
JYW	**Yuwa**	**0.27**	**266**	P	Pg	01 03 11.7	+0.5
JYW				S	Sb	01 03 16.4	-1.4
JOM	**Ohasama**	**0.58**	**98**	P	Pg	01 03 16.9	-0.3
JAH	**Hinai**	**0.63**	**6**	P	Pg	01 03 18.2	0.0
JAH				S	Sg	01 03 26.7	+0.3
JYK	**Kaneyama**	**0.66**	**193**	P	Pg	01 03 18.2	-0.5
JYK				S	Sg	01 03 26.8	-0.4
JMK	**Ichinoseki**	**0.80**	**139**	P	Pg	01 03 20.7	-0.7
JMK				S	Sg	01 03 31.0	-0.7

*CSEM **22** 01:06:34.8, 40°.03N×24°.38E, h14km, ML1.4/5*
ATH 22 01:06:34.8, 40°.03N×24°.38E, h14km±4km, ML1.4/3, Error ellipse: s-maj=4.8km s-min=1.1km az=5.0, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OUR	**Ouranopolis**	**0.43**	**315**	P	Pg	01 06 43.6	+0.2
OUR				S	Sb	01 06 50.0	-0.7
OUR	**Ouranopolis**	**0.43**	**315**	P	Pg	01 06 43.6	+0.2
OUR				S	Sg	01 06 50.0	+0.7
OUR				AML	AML	01 06 50.3	
	comp=E,152μm,0.2s						
OUR				AML	AML	01 06 53.0	

comp=N,143μm,0.2s
PAIG **Paliouri** **0.55 260** P Pg 01 06 45.8 +0.2
PAIG S Sb 01 06 53.4 -0.5
PAIG **Paliouri** **0.55 260** P Pg 01 06 45.8 +0.3
PAIG S Sg 01 06 53.4 +0.5
PAIG AML AML 01 06 54.3
comp=E,83μm,0.2s
PAIG AML AML 01 06 56.3
comp=N,89μm,0.3s
LIA Limnos Island **0.63 102** P Pg 01 06 47.3 +0.1
LIA S Sb 01 06 56.9 +0.5
PLG Polygyros **0.79 296** P Pn 01 06 51.2 -0.5
PLG Polygyros **0.79 296** P Pn 01 06 51.2 -0.5
AOS Alonnisos **0.94 204** P Pb 01 06 52.7 -0.2
AOS Alonnisos **0.94 204** P Pb 01 06 52.7 -0.2
KAVA Kavala **0.97 6** P Pn 01 06 54.6 +0.5
KAVA S Sb 01 07 05.6 -0.7
KAVA Kavala **0.97 6** P Pn 01 06 54.6 +0.5
SMTH Samothraki Isl **0.99 63** P Pb 01 06 52.7 -1.0
SMTH S Sg 01 07 06.8 0.0
SMTH Samothraki Isl **0.99 63** P Pb 01 06 52.7 -1.0
SMTH S Sg 01 07 06.8 +0.1
SMTH AML AML 01 07 08.8
comp=E,44μm,0.4s
SMTH AML AML 01 07 09.4
comp=N,73μm,0.3s
SOH Sokhos **1.11 316** P Pg 01 06 56.3 0.0
SOH Sokhos **1.11 316** P Pg 01 06 56.3 0.0
XOR Xorichti **1.13 235** P Pb 01 06 55.1 -1.1
XOR Xorichti **1.13 235** P Pb 01 06 55.1 -1.1
HORT Hortiatis **1.13 301** P Pg 01 06 57.2 +0.5
HORT Hortiatis **1.13 301** P Pg 01 06 57.2 +0.6
NEO Neokhori **1.15 231** P Pb 01 06 54.9 -1.6
NEO Neokhori **1.15 231** P Pb 01 06 54.9 -1.6
SRS Serrai **1.24 331** P Pn 01 06 57.4 -0.5
SRS Serrai **1.24 331** P Pn 01 06 57.4 -0.4
NVR Nevrokopi **1.38 344** P Pn 01 06 58.8 -1.0
KNT Kendrikon **1.60 316** P Pg 01 07 05.5 0.0
KNT Kendrikon **1.60 316** P Pg 01 07 05.5 0.0

*ISCJB **22** 01:22:24.3±0.7, 44°.31N±0°.07×147°.54E±0°.09, h97km±5km, mb3.5/8, Error ellipse: s-maj=15.1km s-min=5.8km az=138.4*
*MOS **22** 01:22:24.1±1.6, 44°.28N×147°.52E, h104km, mb3.9/3, Error ellipse: s-maj=18.2km s-min=14.0km az=73.6*
*SKHL **22** 01:22:25.5±0.2, 44°.26N×147°.53E, h98km±6km, mb4.6/4, msh5.5/3*
*JMA **22** 01:22:25.4±0.3, 44°.26N×147°.56E, h70km, M4.2*
*IDC **22** 01:22:28.3±2.9, 44°.71N×147°.23E, h103km±24km, mb3.3/8, mb1 3.5/12, mb1mx3.3/56, mbtmp3.7/12, Error ellipse: s-maj=46.6km s-min=16.9km az=164.0*
ISC 22 01:22:24.9±0.8, 44°.26N±0°.07×147°.57E±0°.07, h90km±7km, n38, σ1°12/42, mb3.5/8, 2C-1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.66**	**234**	*c*	*i*	P	**Pn**	**01 22 41.9**	**+1.0**
SHO					*i*	S	**Sn**	**01 22 53.1**	**+0.2**
SHO						pmax	pmax		
	comp=N,550nm,0.3s								
SHO						pmax	pmax		
	comp=E,418nm,0.3s								
SHO						pmax	pmax		
	comp=Z,1μm,0.3s								
SHO						smax	smax		
	comp=N,958nm,0.2s								
SHO						smax	smax		
	comp=E,5μm,0.4s								
SHO	**Shikotan**	**0.66**	**234**		*i*	P	**Pn**	**01 22 41.9**	**+1.0**
SHO						AMB	AMB	01 22 42.2	
	comp=E,430nm,0.2s								
SHO						AMB	AMB	01 22 42.2	
	comp=E,360nm,0.2s								
SHO						AMB	AMB	01 22 42.2	
	comp=E,180nm,0.2s								
SHO					*i*	S	**Sn**	**01 22 53.5**	**+0.6**
SHO						A	A	01 22 54.8	
	comp=E,1μm,0.4s								
SHO						A	A	01 22 54.8	
	comp=E,3μm,0.4s								
KUR	**Kuril'sk**	**0.99**	**12**	*d*	*i*	PN	**Pn**	**01 22 44.6**	**+0.2**
KUR					*i*	S	**Sn**	**01 22 58.7**	**-0.4**
KUR						pmax	pmax		
	comp=N,40nm,0.3s								
KUR						pmax	pmax		
	comp=E,57nm,0.3s								
KUR						pmax	pmax		
	comp=Z,173nm,0.3s								
KUR						smax	smax		
	comp=E,555nm,0.5s								
KUR						smax	smax		
	comp=N,418nm,0.2s								
KUR	**Kuril'sk**	**0.99**	**12**		*i*	P	**Pn**	**01 22 44.4**	**0.0**
KUR						AMB	AMB	01 22 45.2	
	comp=N,40nm,0.2s								
KUR						AMB	AMB	01 22 45.2	
	comp=N,50nm,0.2s								
KUR						AMB	AMB	01 22 45.2	
	comp=N,170nm,0.2s								
KUR					*i*	S	**Sn**	**01 22 58.7**	**-0.4**
KUR						A	A	01 22 59.8	
	comp=N,420nm,0.3s								
KUR						A	A	01 22 59.8	
	comp=N,560nm,0.3s								
YUK	**Yuzh-Kuril'sk**	**1.25**	**260**	*c*	*i*	PN	**Pn**	**01 22 47.5**	**+0.1**
YUK					*i*	S	**Sn**	**01 23 03.9**	**-0.6**
YUK						pmax	pmax		
	comp=E,553nm,0.2s								
YUK						pmax	pmax		
	comp=Z,624nm,0.2s								
YUK						pmax	pmax		
	comp=N,345nm,0.1s								
YUK						smax	smax		
	comp=N,1μm,0.6s								
YUK						smax	smax		
	comp=E,856nm,0.4s								
YUK	**Yuzh-Kuril'sk**	**1.25**	**260**		*i*	P	**Pn**	**01 22 47.5**	**+0.1**
YUK						AMB	AMB	01 22 48.5	
	comp=E,350nm,0.2s								
YUK						AMB	AMB	01 22 48.5	
	comp=E,550nm,0.2s								
YUK						AMB	AMB	01 22 48.5	
	comp=E,110nm,0.2s								
YUK					*i*	S	**Sn**	**01 23 03.9**	**-0.6**
YUK						A	A	01 23 07.3	
	comp=E,1μm,0.5s								
YUK						A	A	01 23 07.3	
	comp=E,860nm,0.5s								
NEM2	**Nemuro 2**	**1.60**	**236**			P	**Pn**	**01 22 52.1**	**+0.3**
NEM2					*e*	S	**Sn**	**01 23 11.5**	**-0.7**
JRA	**Rausu**	**1.79**	**260**			P	**Pn**	**01 22 54.5**	**+0.2**
JNK	**Nakash**	**2.17**	**253**			P	**Pn**	**01 22 59.8**	**+0.6**
JNK					*e*	S	**Sn**	**01 23 25.5**	**0.0**
JAK	**Akkeshi**	**2.44**	**240**			P	**Pn**	**01 23 03.3**	**+0.5**
JTKR	**Abashiri--Toko**	**2.65**	**265**			P	**Pn**	**01 23 05.8**	**+0.1**
JAR	**Ashorobuto**	**2.92**	**252**			P	**Pn**	**01 23 10.7**	**+1.5**
JAR					*e*	S	**Sn**	**01 23 44.6**	**+1.2**
JOB	**Onbets**	**3.03**	**245**			P	**Pn**	**01 23 12.1**	**+1.3**
JOB					*e*	S	**Sn**	**01 23 47.3**	**+1.1**
HRK	**Horoka**	**3.31**	**258**		*e*	P	**Pn**	**01 23 15.8**	**+1.2**
JCH	**Churui**	**3.48**	**243**			P	**Pn**	**01 23 17.5**	**+0.7**
JKK2	**Kamakawa 2**	**3.50**	**265**			P	**Pn**	**01 23 18.5**	**+1.4**
JKA	**Kamikawa-asahi**	**3.58**	**269**		*e*	P	**Pn**	**01 23 18.9**	**+0.8**
ASAJ	**Asahikawa**	**3.58**	**269**			P	**Pn**	**01 23 18.9**	**+0.7**
	comp=E,4.2nm,0.3s,baz=95,slow=15,SNR=10.0								
ASAJ						S	Sn	01 24 12.1	+13
	baz=65,slow=14								
YSS	**Yuzh-Sakhalins**	**4.32**	**310**		*e*	PN	**Pn**	**01 23 31.4**	**+3.2**
YSS	**Yuzh-Sakhalins**	**4.32**	**310**		*e*	P	**Pn**	**01 23 30.1**	**+1.9**
YSS						AMB	AMB	01 23 32.1	
	comp=E,30nm,0.6s								
TYV	**Tymovskoe**	**7.39**	**335**		*e*	P	**Pn**	**01 24 12.0**	**+2.1**
PETK	**Petropavlovsk-**	**11.09**	**33**			P	**Pn**	**01 25 00.1**	**-0.2**
	comp=E,0.5nm,0.3s,baz=178,slow=8.5,SNR=5.0								
USRK	**Ussuriysk Ar.**	**11.18**	**275**			P	**Pn**	**01 25 01.3**	**-0.4**
	comp=E,0.2nm,0.3s,baz=84,slow=12,SNR=8.0								
SEY	**Seymchan**	**18.91**	**7**			P	**P**	**01 26 37.0**	**-1.2**
	comp=E,0.2nm,0.3s,baz=253,slow=19,SNR=2.8								
SONM	**Songino Array**	**28.56**	**292**			P	**P**	**01 28 11.3**	**-0.9**
	comp=E,0.2nm,0.4s,baz=81,slow=8.9,SNR=2.4								
H11N2	**WAKE ISLAND Hy 29.30**	**140**				T	T	01 59 15.2	
	baz=332,slow=76,SNR=68								
H11N1	**WAKE ISLAND Hy 29.31**	**140**				T	T	01 59 18.1	
	baz=332,slow=76,SNR=62								
H11N3	**WAKE ISLAND Hy 29.31**	**140**				T	T	01 59 19.2	
	baz=332,slow=76,SNR=55								
H11S1	**WAKE ISLAND Hy 30.28**	**142**				T	T	02 00 31.1	
	baz=333,slow=76,SNR=104								
H11S3	**WAKE ISLAND Hy 30.28**	**142**				T	T	02 00 35.0	
	baz=333,slow=76,SNR=97								
H11S2	**WAKE ISLAND Hy 30.30**	**142**				T	T	02 00 34.0	
	baz=333,slow=76,SNR=93								
ILAR	**Eielson Array**	**40.90**	**37**			P	**P**	**01 29 57.6**	**-0.1**
	comp=E,0.4nm,0.6s,baz=268,slow=7.9,SNR=5.5								
MKAR	**Makanchi Array**	**44.62**	**297**			P	**P**	**01 30 26.8**	**-1.3**
	comp=E,0.2nm,0.6s,baz=79,slow=7.2,SNR=3.0								
INK	**Inuvik**	**45.81**	**31**			P	**P**	**01 30 37.0**	**-0.2**
	comp=E,1.6nm,0.5s,baz=35,slow=2.6,SNR=8.7								
YKA	**Yellowknife Ar**	**55.21**	**34**			P	**P**	**01 31 48.3**	**+0.4**
	comp=E,0.6nm,0.6s,baz=299,slow=6.8,SNR=5.1								
FINES	**FINESS Array B**	**64.56**	**333**			P	**P**	**01 32 49.8**	**-2.1**
	comp=E,1.3nm,0.9s,baz=96,slow=9.1,SNR=2.5								
PDAR	**Pinedale Array**	**69.35**	**50**			P	**P**	**01 33 24.3**	**+1.3**
	comp=E,0.3nm,0.6s,baz=289,slow=2.8,SNR=3.2								
TXAR	**Lajitas Array**	**82.11**	**57**			P	**P**	**01 34 37.5**	**+1.8**
	comp=E,0.4nm,0.6s,baz=305,slow=4.1,SNR=7.7								

JMA 22 01:34:50.6, 37°.03N×138°.69E, h9km±1km, M1.3, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHK	**Hiroka**	**0.34**	**50**			P	Pg	01 34 57.3	0.0
JHK						S	Sg	01 35 02.2	+0.3
JKT	**Katashina**	**0.52**	**120**			P	Pg	01 35 00.7	0.0
JKT						S	Sg	01 35 07.7	+0.2
MAT	**Matsushiro**	**0.62**	**219**			P	Pg	01 35 02.2	-0.4
MAT						S	Sg	01 35 10.2	-0.6
MAT	**Matsushiro**	**0.62**	**219**			P	Pg	01 35 02.2	-0.4
MAT						S	Sg	01 35 10.1	-0.7
JFY	**Yanaizu**	**0.89**	**65**			P	Pg	01 35 07.3	-0.5
JFY						S	Sg	01 35 19.3	-0.1

*NIED **22** 01:36:00, 36°.40N×140°.70E, h53km, Mw4.3 Best double couple: M₀3.71000×10¹⁵ NP1:ϕs93.00000°, δ25.00000°, λ-35.00000°. NP2:ϕs215.00000°, δ76.00000°, λ-111.00000°.*
*ISCJB **22** 01:36:18.1±0.6, 36°.43N±0°.04×140°.67E±0°.06, h58km±4km, mb3.8/9, MS3.6/8, Error ellipse: s-maj=8.6km s-min=5.7km az=37.9*
*JMA **22** 01:36:18.9±0.1, 36°.43N×140°.62E, h54km±1km, M4.0 Broadband fault plane solution: P waves. NP1: ϕs204.00000°, δ84.00000°, λ-119.00000°. NP2: ϕs105.00000°, δ30.00000°, λ-11.00000°. Principal axes: T Plg33.0000°, Azm319.0000°; N Plg29.0000°, Azm208.0000°; P Plg43.0000°, Azm86.0000°;*
JMA Felt II J1.
*IDC **22** 01:36:21.6±3.0, 36°.42N×140°.53E, h73km±26km, mb3.6/9, mb1 3.8/10, mb1mx3.6/37, mbtmp3.9/10, MS3.5/10, Ms1 3.5/10, ms1mx3.2/42 Error ellipse: s-maj=25.2km s-min=17.6km az=85.0*
ISC 22 01:36:19.4±0.9, 36°.44N±0°.05×140°.67E±0°.06, h52km±7km, n34, σ1°14/31, mb3.7/9, MS3.6/8, 3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.18**	**334**			P	**Pn**	**01 36 27.6**	**-0.2**
JHO						S	**Sn**	**01 36 33.5**	**-0.3**
JYT	**Yasato**	**0.44**	**241**			P	**Pn**	**01 36 29.4**	**-0.6**
JYT						S	**Sn**	**01 36 36.7**	**-1.0**
ONAJ	**Iwakimizuishiy**	**0.67**	**9**			P	**Pn**	**01 36 32.3**	**-0.5**
ONAJ						S	**Sn**	**01 36 42.3**	**-0.3**
JFK	**Kawauchi**	**0.94**	**10**			P	**Pn**	**01 36 35.7**	**-0.7**
JFK						S	**Sn**	**01 36 48.0**	**-0.8**
JAG	**Ashikaga**	**0.98**	**269**			P	**Pn**	**01 36 36.2**	**-0.7**
JAG						S	**Sn**	**01 36 48.3**	**-1.5**
JFT	**Otama**	**1.10**	**346**			P	**Pn**	**01 36 38.6**	**0.0**
JFT						S	**Sn**	**01 36 52.8**	**0.0**
JKT	**Katashina**	**1.19**	**286**			P	**Pn**	**01 36 39.8**	**0.0**
JKT						S	**Sn**	**01 36 54.2**	**-0.7**
MJAR	**Matsushiro Arr**	**1.98**	**274**			P	**Pn**	**01 36 50.6**	**+0.1**
	17nm,0.3s,baz=102,slow=8.7,SNR=87								
MJAR						S	**Sn**	**01 37 14.0**	**-0.2**
	34nm,0.3s,baz=182,slow=16,SNR=9.8								
MJAR						LR	LR	01 37 49.2	
	comp=Z,592nm,20.7s,baz=110,slow=48								
MAT	**Matsushiro**	**1.99**	**274**			P	**Pn**	**01 36 50.7**	**+0.1**
MAT						S	**Sn**	**01 37 13.6**	**-0.7**
JHJ	**Hachijo jima 2**	**3.40**	**193**			S	**Sn**	**01 37 49.9**	**+0.9**
	42nm,0.3s,baz=138,slow=22,SNR=4.1								
USRK	**Ussuriysk Ar.**	**10.19**	**322**			P	**Pn**	**01 38 45.0**	**+2.1**
	0.4nm,0.3s,baz=136,slow=13,SNR=12								
USRK						LR	LR	01 42 19.3	
	comp=Z,201nm,20.8s,baz=91,slow=35								
KSRS	**Korea Array**	**10.25**	**279**			P	**Pn**	**01 38 48.0**	**+4.2**
	0.4nm,0.3s,baz=89,slow=14,SNR=4.4								
KSRS						LR	LR	01 42 57.9	
	comp=Z,102nm,19.4s,baz=44,slow=39								
SONM	**Songino Array**	**27.63**	**305**			P	**P**	**01 42 01.0**	**-1.0**
	1.2nm,0.7s,baz=102,slow=8.0,SNR=5.9								
H11N2	**WAKE ISLAND Hy 28.37**	**119**				T	T	02 12 11.3	
	baz=312,slow=75,SNR=76								
H11N1	**WAKE ISLAND Hy 28.38**	**119**				T	T	02 12 11.9	
	baz=312,slow=75,SNR=71								
H11N3	**WAKE ISLAND Hy 28.39**	**119**				T	T	02 12 12.7	
	baz=312,slow=75,SNR=74								
H11S1	**WAKE ISLAND Hy 29.06**	**121**				T	T	02 13 01.6	
	baz=314,slow=75,SNR=184								
H11S3	**WAKE ISLAND Hy 29.06**	**121**				T	T	02 13 01.7	
	baz=314,slow=75,SNR=160								
H11S2	**WAKE ISLAND Hy 29.07**	**121**				T	T	02 12 58.4	
	baz=314,slow=75,SNR=112								
ZALV	**Zalesovo Beam**	**41.87**	**313**			P	**P**	**01 44 03.6**	**-0.7**
	3.5nm,0.5s,baz=92,slow=6.3,SNR=10.0								
ZALV						LR	LR	02 01 52.7	
	comp=Z,47nm,18.4s,baz=56,slow=37								
NRIK	**Nor'sk**	**43.55**	**336**			LR	LR	02 02 39.4	
	comp=Z,39nm,20.1s,baz=18,slow=36								
MKAR	**Makanchi Array**	**43.93**	**303**			P	**P**	**01 44 20.9**	**-0.2**
	0.9nm,0.7s,baz=89,slow=8.8,SNR=9.5								
AAK	**Ala-Archa**	**50.24**	**299**			LR	LR	02 07 48.8	
	comp=Z,112nm,19.3s,baz=36,slow=38								
ILAR	**Eielson Array**	**50.31**	**32**			P	**P**	**01 45 10.3**	**-0.2**
	0.4nm,0.6s,baz=262,slow=5.2,SNR=6.5								
WRA	**Warramunga Arr**	**56.40**	**187**			P	**P**	**01 45 55.1**	**-0.4**
	1.7nm,0.6s,baz=5.1,slow=7.5,SNR=14								
ASAR	**Alice Springs**	**60.13**	**187**			P	**P**	**01 46 20.8**	**-0.7**
	0.9nm,0.8s,baz=18,slow=8.3,SNR=7.6								
FINES	**FINESS Array B**	**69.06**	**332**			P	**P**	**01 47 18.3**	**-1.1**
	0.7nm,0.6s,baz=32,slow=11,SNR=4.0								
HFS	**Hagfors**	**74.38**	**335**			LR	LR	02 22 24.5	
	comp=Z,42nm,19.7s,baz=50,slow=37								
AKASG	**Malin Array Be**	**74.39**	**322**			LR	LR	02 22 56.4	
	comp=Z,66nm,18.0s,baz=265,slow=38								
NOA	**NORSAR Array B**	**74.50**	**337**			P	**P**	**01 47 51.3**	**-0.8**
	0.7nm,0.7s,baz=41,slow=5.9,SNR=3.0								
NOA						LR	LR	02 22 52.8	
	comp=Z,18nm,21.4s,baz=40,slow=38								
PDAR	**Pinedale Array**	**78.51**	**45**			P	**P**	**01 48 16.0**	**+0.6**
	0.3nm,0.6s,baz=274,slow=2.5,SNR=3.4								
MLR	**Muntele Rosu**	**79.44**	**319**			LR	LR	02 26 57.2	
	comp=Z,23nm,19.3s,baz=306,slow=38								
VRAC	**Vranov**	**81.29**	**327**			LR	LR	02 27 46.8	
	comp=Z,24nm,18.2s,baz=346,slow=38								
LPAZ	**La Paz**	**147.51**	**59**			PKPbc	**PKPbc**	**01 56 00.0**	**+1.0**
	0.5nm,0.5s,baz=315,slow=2.9,SNR=3.5								

*NEIC **22** 01:36:21.4±1.3, 28°.93S×176°.15W, h10km, mb4.1/1, Error ellipse: s-maj=31.8km s-min=17.4km az=159.0*
*IDC **22** 01:36:23.2±3.1, 28°.84S×176°.78W, h0km, mb4.0/3, mb1 4.2/4, mb1mx3.9/17, mbtmp4.1/4, ML3.8/1, Error ellipse: s-maj=71.5km s-min=48.3km az=120.0*
ISC 22 01:36:23.5±2.4, 28°.9S±0°.2×176°.6W±0°.4, h10km, n8, σ1°01/7, mb4.0/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.20**	**251**			Sn	Sn	01 37 11.1	+8.4
	436nm,0.3s,baz=88,slow=21,SNR=7.6								
URZ	**Urewera**	**10.72**	**208**			Pn	**Pn**	**01 38 57.3**	**+0.1**
	0.8nm,0.3s,baz=312,slow=2.6,SNR=3.0								
URZ						Sn	Sn	01 40 36.8	-20
	1.2nm,0.3s,baz=215,slow=20,SNR=5.5								
STKA	**Stephens Creek**	**36.02**	**255**			P	**P**	**01 43 24.6**	**-0.3**
	1.4nm,0.6s,baz=106,slow=8.9,SNR=3.0								
ASAR	**Alice Springs**	**44.42**	**265**			P	**P**	**01 44 34.5**	**-0.2**
	0.4nm,0.5s,baz=98,slow=7.5,SNR=7.4								
WRAB	**Tennant Creek**	**45.27**	**270**		*e*	P	**P**	**01 44 41.4**	**-0.2**
	1.1nm,0.5s								
WRA	**Warramunga Arr**	**45.27**	**270**			P	**P**	**01 44 42.0**	**+0.4**
	2.7nm,0.6s,baz=110,slow=7.8,SNR=23								
FINES	**FINESS Array B**	**144.10**	**342**			PKP	**PKPdf**	**01 55 57.6**	**-1.2**
	1.5nm,0.7s,baz=45,slow=4.1,SNR=5.3								
KBZ	**Khabaz**	**145.22**	**306**			PKPbc	**PKPbc**	**01 56 02.5**	**+1.5**
	0.5nm,0.4s,baz=76,slow=4.2,SNR=3.8								

*ISCJB **22** 01:43:29.8±0.9, 5°.71N±0°.03×73°.37W±0°.04, h2km±7km, Error ellipse: s-maj=7.6km s-min=3.8km az=30.9*
*RSNC **22** 01:43:30.4±1.4, 5°.70N×73°.32W, h0km±8km, ML2.4*
*FUNV **22** 01:43:31.1, 5°.39N×73°.39W, h15km, MW2.5*
ISC 22 01:43:29.6±1.2, 5°.67N±0°.03×73°.39W±0°.04, h5km±11km, n18, σ1°60/28, 1C, Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RUSC	**La Rusia**	**0.37**	**54**	⇑	*i*	P	**Pg**	**01 43 36.7**	**-0.2**
RUSC					*e*	S	**Sg**	**01 43 42.2**	**+0.3**
RUSC					*i*			01 43 43.5	
	comp=Z,139nm,0.3s								
BARC	**Barichara**	**0.94**	**12**		*e*	P	**Pg**	**01 43 46.6**	**-1.0**
BARC					*i*			01 44 02.2	
	comp=Z,66nm,0.1s								
CHIC	**Chingaza**	**1.09**	**198**		*e*	P	**Pg**	**01 43 50.4**	**-0.1**
CHIC					*e*	S	**Sn**	**01 44 07.0**	**-0.7**
CHIC					*i*			01 44 16.2	
	comp=Z,38nm,0.3s								
ROSC	**El Rosal**	**1.24**	**228**		*e*	P	**Pg**	**01 43 54.3**	**+0.8**
ROSC					*i*			01 44 20.3	
	comp=Z,66nm,0.5s								
BTLC	**Betulia, Santa**	**1.25**	**5**		*e*	P	**Pn**	**01 43 52.4**	**-1.6**
BRRC	**Barranca, Sant**	**1.46**	**347**		*e*	P	**Pb**	**01 43 56.5**	**-0.8**
BRRC					*e*	S	**Sg**	**01 44 16.4**	**-0.3**
BRRC					*i*			01 44 21.5	
	comp=Z,80nm,0.2s								
NORC	**Norcasia**	**1.48**	**266**		*e*	P	**Pb**	**01 43 56.7**	**-1.0**
NORC					*e*	S	**Sg**	**01 44 19.1**	**+1.8**
VILC	**Villavicencio,**	**1.58**	**191**		*e*	P	**Pb**	**01 43 59.1**	**-0.3**
VILC					*e*	S	**Sg**	**01 44 22.4**	**+2.0**
VILC					*i*			01 44 30.1	
	comp=Z,42nm,0.3s								
GRMC	**Gramalote, San**	**2.11**	**16**		*e*	P	**Pb**	**01 44 08.6**	**+0.1**
GRMC					*e*	S	**Sg**	**01 44 37.0**	**-0.6**
GRMC					*i*			01 44 44.0	
	comp=Z,78nm,0.3s								
HELC	**Santa Helena**	**2.19**	**284**		*e*	P	**Pn**	**01 44 07.0**	**-0.1**
HELC					*i*			01 44 38.7	
	comp=Z,28nm,0.1s								
TOLC	**Tolima**	**2.21**	**241**		*e*	P	**Pb**	**01 44 08.7**	**-1.5**
SJAC	**San Juan de Ar**	**2.45**	**193**		*e*	P	**Pb**	**01 44 12.2**	**-2.0**
PRAC	**Prado**	**2.45**	**218**		*e*	P	**Pb**	**01 44 12.0**	**-2.3**
SOCV	**Socops**	**3.61**	**44**		*e*	P	**Pn**	**01 44 27.6**	**+1.3**
SOCV					*e*	S	**Sn**	**01 45 09.7**	**+0.3**
VIGV	**El Vigia**	**3.73**	**32**		*e*	P	**Pn**	**01 44 30.6**	**+2.6**
VIGV					*e*	S	**Sn**	**01 45 14.9**	**+2.5**
VIRV	**Villa del Rosa**	**4.90**	**11**		*e*	P	**Pn**	**01 44 46.8**	**+2.8**
VIRV					*e*	S	**Sn**	**01 45 41.7**	**+0.5**
CURV	**Curarigua**	**5.49**	**38**		*e*	P	**Pn**	**01 44 53.9**	**+1.7**
BAUV	**El Baul**	**6.22**	**58**		*e*	P	**Pn**	**01 45 02.2**	**0.0**
BAUV					*e*	S	**Sn**	**01 46 10.6**	**-3.2**

*TIF **22** 01:52:30.9, 42°.56N×43°.54E, h9km±1km*
*ISCJB **22** 01:52:31.7±0.7, 42°.54N±0°.09×43°.54E±0°.04, h1km±11km, Error ellipse: s-maj=15.3km s-min=4.9km az=7.5*
*CSEM **22** 01:52:31.6±0.3, 42°.53N×43°.51E, h2km, ML1.8, Error ellipse: s-maj=6.5km s-min=4.3km az=161.0*
*DDA **22** 01:52:42.3, 41°.61N×43°.47E, h7km, Md2.9*
ISC 22 01:52:31.7±0.9, 42°.52N±0°.05×43°.50E±0°.03, h6km±10km, n18, σ0°63/36, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONI	**Oni**	**0.08**	**333**			P	**Pg**	**01 52 33.6**	**0.0**
ONI						S	**Sg**	**01 52 35.1**	**+0.1**
ONI	**Oni**	**0.08**	**333**			P	**Pg**	**01 52 33.6**	**0.0**
ONI						S	**Sg**	**01 52 35.1**	**+0.1**
GUDG	**Gudauri**	**0.72**	**94**			P	**Pg**	**01 52 45.3**	**-0.3**
GUDG						S	**Sg**	**01 52 54.9**	**0.0**
GUDG	**Gudauri**	**0.72**	**94**			P	**Pg**	**01 52 45.3**	**-0.3**
GUDG						S	**Sg**	**01 52 54.9**	**0.0**
AKH	**Akhalkalaki**	**1.10**	**180**			P	**Pg**	**01 52 52.2**	**-0.7**
AKH						S	**Sb**	**01 53 08.9**	**+0.8**
AKH	**Akhalkalaki**	**1.10**	**180**			P	**Pg**	**01 52 52.2**	**-0.7**
AKH						S	**Sb**	**01 53 08.9**	**+0.8**
EPOS	**Posof**	**1.17**	**210**		*i*	P	**Pg**	**01 52 53.5**	**-0.5**
EPOS					*i*	S	**Sn**	**01 53 11.1**	**0.0**
EPOS	**Posof**	**1.17**	**210**			P	**Pg**	**01 52 53.5**	**-0.5**
EPOS						S	**Sn**	**01 53 11.1**	**0.0**
TBLG	**Delisi**	**1.21**	**130**			P	**Pn**	**01 52 55.0**	**-0.2**
TBLG						S	**Sn**	**01 53 11.5**	**-0.4**
TBLG	**Delisi**	**1.21**	**130**			P	**Pn**	**01 52 55.0**	**-0.2**
TBLG						S	**Sn**	**01 53 11.5**	**-0.4**
BGD	**Bogdanovka**	**1.25**	**177**			P	**Pg**	**01 52 55.6**	**-0.1**
BGD						S	**Sn**	**01 53 13.4**	**+0.1**
BGD	**Bogdanovka**	**1.25**	**177**			P	**

	9.9nm,0.3s,baz=60,slow=20,SNR=31						
MJAR				Sn	**Sn**	**02 02 39.9**	**-0.7**
	4.7nm,0.3s,baz=139,slow=11,SNR=8.4						
MAT	**Matsushiro**	**2.34**	**289**	P	**Pn**	**02 02 11.8**	**-0.3**
MAT				S	**Sn**	**02 02 39.8**	**-0.8**
H11N2	**WAKE ISLAND Hy 27.87**		**118**	T	T	02 36 22.9	
	baz=311,slow=75,SNR=183						
H11N1	**WAKE ISLAND Hy 27.88**		**118**	T	T	02 36 20.6	
	baz=311,slow=75,SNR=115						
H11N3	**WAKE ISLAND Hy 27.89**		**118**	T	T	02 36 24.0	
	baz=311,slow=75,SNR=205						
SONM	**Songino Array**	**28.18**	**306**	P	**P**	**02 07 28.8**	**+2.7**
	0.5nm,0.5s,baz=108,slow=9.3,SNR=3.2						
H11S1	**WAKE ISLAND Hy 28.54**		**120**	T	T	02 37 13.9	
	baz=312,slow=75,SNR=146						
H11S3	**WAKE ISLAND Hy 28.54**		**120**	T	T	02 37 14.9	
	baz=312,slow=75,SNR=142						
H11S2	**WAKE ISLAND Hy 28.55**		**120**	T	T	02 37 15.1	
	baz=312,slow=75,SNR=101						
ZALV	**Zalesovo Beam**	**42.47**	**313**	P	**P**	**02 09 29.4**	**+1.0**
	0.4nm,0.3s,baz=103,slow=6.2,SNR=2.2						
MKAR	**Makanchi Array**	**44.46**	**303**	P	**P**	**02 09 45.1**	**+0.4**
	0.7nm,0.6s,baz=87,slow=10.0,SNR=6.3						
MKAR				PcP	**PcP**	**02 11 26.8**	**-1.3**
	0.4nm,0.8s,baz=72,slow=4.7,SNR=3.2						
KURBB	**Kurchatov Arra**	**46.46**	**309**	P	**P**	**02 10 01.1**	**+0.6**
	0.7nm,0.5s,baz=84,slow=7.7,SNR=8.2						
ILAR	**Eielson Array**	**50.72**	**32**	P	**P**	**02 10 33.0**	**0.0**
	0.4nm,0.8s,baz=268,slow=6.3,SNR=4.7						
BVAR	**Borovoye Array**	**51.12**	**313**	P	**P**	**02 10 38.0**	**+1.8**
	0.3nm,0.4s,baz=54,slow=7.3,SNR=2.7						
WRA	**Warramunga Arr**	**55.81**	**188**	P	**P**	**02 11 09.2**	**-1.7**
	1.2nm,0.8s,baz=9.1,slow=7.2,SNR=6.8						
ASAR	**Alice Springs**	**59.54**	**188**	P	**P**	**02 11 34.6**	**-2.5**
	0.4nm,0.8s,baz=15,slow=7.7,SNR=4.1						
FINES	**FINESS Array B**	**69.71**	**332**	P	**P**	**02 12 43.2**	**+0.1**
	2.3nm,1.0s,baz=82,slow=12,SNR=3.0						
NOA	**NORSAR Array B**	**75.16**	**337**	P	**P**	**02 13 15.9**	**+0.3**
	0.8nm,0.8s,baz=40,slow=5.7,SNR=3.1						
PDAR	**Pinedale Array**	**78.78**	**45**	P	**P**	**02 13 37.1**	**+0.4**
	0.2nm,0.5s,baz=298,slow=3.9,SNR=2.8						

ISCJB ***22*** *02:24:09.8±0.5, 11°.32N±0°.08×85°.83W±0°.08, h203km±3km, mb3.7/10, Error ellipse: s-maj=18.0km s-min=5.2km az=135.0*

CASC ***22*** *02:24:12.5±1.6, 11°.35N×85°.72W, h177km±11km, MD4.0, ML3.8*

IDC ***22*** *02:24:13.1±3.2, 11°.48N×85°.64W, h213km±30km, mb3.5/11, mb1 3.7/12, mb1mx3.5/27, mbtmp4.0/12, Error ellipse: s-maj=29.2km s-min=13.2km az=37.0*

ISC 22 02:24:10.8±0.7, 11°.39N±0°.08×85°.78W±0°.08, h195km±6km, n31, σ1§17/40, mb3.8/10, 1C-2D, Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CONN	**Concepcion**	**0.23**	**41**	*eP*	**Pn**	**02 24 36.9**	**+0.4**
ACON	**Acoyapa**	**0.83**	**46**	*eP*	**Pn**	**02 24 39.1**	**+0.2**
MGAN	**Managua**	**0.88**	**329**	*eP*	**Pn**	**02 24 40.0**	**+0.8**
MGAN				*eS*	**Sn**	**02 25 02.2**	**+0.8**
TISN	**Laguna Tiscapa**	**0.89**	**328**	*eP*	**Pn**	**02 24 39.9**	**+0.6**
XAVN	**Gruta Xavier**	**0.93**	**325**	*eP*	**Pn**	**02 24 40.5**	**+1.0**
COPN	**Copaltepe**	**1.12**	**315**	*eP*	**Pn**	**02 24 41.2**	**+0.3**
MOMN	**Momotombo**	**1.26**	**324**	*eP*	**Pn**	**02 24 42.5**	**+0.5**
CNGN	**Cerro Negro**	**1.42**	**321**	*eP*	**Pn**	**02 24 43.8**	**+0.4**
CNGN				*eS*	**Sn**	**02 25 09.1**	**+0.4**
CNGN				AML	AML	02 25 13.4	
	comp=N,897nm,0.2s						
ESPN	**Las Esperanzas**	**1.66**	**61**	*eP*	**Pn**	**02 24 45.5**	**0.0**
JCR	**Jicaral**	**1.66**	**157**	*eP*	**Pn**	**02 24 46.1**	**+0.4**
JCR				*eS*	**Sn**	**02 25 11.3**	**-1.5**
ESTN	**Estel**	**1.80**	**341**	*eP*	**Pn**	**02 24 48.0**	**+1.1**
CGA2	**Cerro Gallo 2**	**1.88**	**136**	*eP*	**Pn**	**02 24 48.8**	**+0.9**
CGA2				*eS*	**Sn**	**02 25 15.8**	**-0.8**
URSC	**Urasca**	**2.50**	**128**	*eP*	**Pn**	**02 24 55.7**	**+1.1**
URSC				*eS*	**Sn**	**02 25 28.0**	**-0.7**
QCR	**Quepos**	**2.52**	**141**	*eP*	**Pn**	**02 24 55.7**	**+1.1**
QCR				*eS*	**Sn**	**02 25 27.5**	**-1.2**
BUS	**Buena Vista**	**2.70**	**132**	*eS*	**Sn**	**02 25 33.0**	**-0.1**
CMIG	**Matias Romero**	**10.49**	**304**	P	**Pn**	**02 26 37.7**	**+1.3**
CMIG				S	**Sn**	**02 28 29.5**	**-4.0**
	comp=N,0.5nm,0.3s,baz=133,slow=8.3,SNR=7.6						
SDV	**Santo Domingo**	**15.12**	**98**	P	**P**	**02 27 37.6**	**+2.0**
	comp=N,0.4nm,0.3s,baz=299,slow=10,SNR=3.3						
PCRV	**Puerto La Cruz**	**20.81**	**91**	P	**P**	**02 28 38.4**	**+1.1**
	comp=N,7.1nm,0.7s,baz=243,slow=2.3,SNR=4.4						
TKL	**Tuckaleechee C**	**24.23**	**4**	P	**P**	**02 29 10.8**	**+1.1**
	comp=N,3.5nm,0.7s,baz=171,slow=12,SNR=6.0						
TXAR	**Lajitas Array**	**24.43**	**320**	P	**P**	**02 29 13.7**	**+1.9**
	comp=N,1.4nm,0.5s,baz=142,slow=9.7,SNR=26						
TXAR				PcP	**PcP**	**02 32 46.3**	**+0.8**
	comp=N,0.3nm,0.7s,baz=140,slow=6.0,SNR=3.9						
PDAR	**Pinedale Array**	**37.48**	**331**	P	**P**	**02 31 06.5**	**+0.5**
	comp=N,0.2nm,0.5s,baz=112,slow=12,SNR=2.8						
PDAR				PcP	**PcP**	**02 33 20.4**	**+0.3**
	comp=N,0.3nm,0.6s,baz=150,slow=4.2,SNR=3.1						
ULM	**Lac du Bonnet**	**39.63**	**350**	P	**P**	**02 31 22.1**	**-1.3**
	comp=N,2.0nm,0.5s,baz=211,slow=9.3,SNR=3.8						
SCHQ	**Schefferville**	**45.85**	**15**	P	**P**	**02 32 12.2**	**-1.1**
	comp=N,6.6nm,0.6s,baz=204,slow=5.6,SNR=12						
BDFB	**Brasilia**	**46.03**	**125**	P	**P**	**02 32 14.7**	**-0.7**
	comp=N,1.9nm,0.6s,baz=258,slow=7.8						
CPUP	**Villa Florida**	**46.59**	**144**	PcP	**PcP**	**02 33 50.5**	**+0.2**
	comp=N,1.1nm,0.6s,baz=0.0,slow=1.0,SNR=4.5						
YKA	**Yellowknife Ar**	**55.07**	**344**	P	**P**	**02 33 21.4**	**-0.7**
	comp=N,0.4nm,0.3s,baz=131,slow=8.2,SNR=15						
ILAR	**Eielson Array**	**67.65**	**336**	P	**P**	**02 34 46.1**	**-0.4**
	comp=N,0.4nm,0.6s,baz=118,slow=4.6,SNR=6.5						
ESDC	**Sonseca Array**	**76.56**	**52**	P	**P**	**02 35 39.3**	**-0.6**
	comp=N,0.5nm,0.6s,baz=276,slow=5.5,SNR=4.2						
DBIC	**Dimbokro**	**79.85**	**85**	P	**P**	**02 35 57.4**	**-1.0**
	comp=N,8.2nm,1.2s,baz=257,slow=9.5,SNR=3.3						
ASAR	**Alice Springs**	**140.37**	**247**	PKP	**PKPdf**	**02 43 18.7**	**+1.2**
	comp=N,0.8nm,0.5s,baz=98,slow=2.0,SNR=5.9						
WRA	**Warramunga Arr**	**140.53**	**252**	PKP	**PKPdf**	**02 43 18.6**	**+0.7**
	comp=N,1.2nm,0.5s,baz=94,slow=2.5,SNR=7.6						

MEX 22 02:28:50.4±0.7, 14°.55N×93°.82W, h20km±11km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.36**	**43**	*eP*	Pn	02 29 26.2	-2.0
CCIG				*eS*	Sn	02 29 53.7	-3.1
HUIG	**Huatulco**	**2.52**	**299**	*eP*	Pn	02 29 28.1	-2.1
HUIG				*i* S	Sn	02 29 56.0	-4.3

ISCJB ***22*** *02:31:25.8±0.6, 38°.2N±0°.1×26°.5W±0°.1, h32km±12km, Error ellipse: s-maj=26.3km s-min=6.7km az=34.8*

PDA ***22*** *02:31:28.6±0.6, 38°.20N×26°.39W, h5km, MD3.7, ML2.3, Error ellipse: s-maj=5.1km s-min=1.0km az=34.0*

CSEM ***22*** *02:31:28.6, 38°.20N×26°.39W, h5km, ML2.3*

ISC 22 02:31:24.9±1.5, 38°.2N±0°.1×26°.40W±0°.07, h23km±16km, n21, σ0§72/41, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PSET	**Sete Cidades**	**0.65**	**125**	*eP*	**Pn**	**02 31 39.4**	**+0.7**
PSET				*eS*	**Sn**	**02 31 47.7**	**-0.6**
PSET				A	A	02 31 49.8	
	58nm,0.4s						
PSET	**Sete Cidades**	**0.65**	**125**	*eP*	**Pn**	**02 31 39.4**	**+0.7**
PSET				*eS*	**Sn**	**02 31 47.7**	**-0.6**
PDA	**Ponta Delgada**	**0.73**	**127**	*eP*	**Pn**	**02 31 40.5**	**+0.7**
PDA				*eS*	**Sn**	**02 31 49.6**	**-0.7**
PDA				A	A	02 31 54.6	
	41nm,0.3s						
PDA	**Ponta Delgada**	**0.73**	**127**	*eP*	**Pn**	**02 31 40.5**	**+0.7**
PDA				*eS*	**Sn**	**02 31 49.6**	**-0.7**
ADH	**Angra Heroismo**	**0.80**	**305**	*eP*	**Pn**	**02 31 41.5**	**+0.8**
ADH				*eS*	**Sn**	**02 31 51.6**	**-0.3**
ADH				A	A	02 31 54.2	
	78nm,0.4s						
ADH	**Angra Heroismo**	**0.80**	**305**	*eP*	**Pn**	**02 31 41.5**	**+0.8**
ADH				*eS*	**Sn**	**02 31 51.6**	**-0.3**
PCALD	**Caldeiras da R**	**0.82**	**119**	*eS*	**Sb**	**02 31 51.7**	**+0.5**
PCALD				A	A	02 31 52.6	
	63nm,0.1s						
PMAN	**Manadas**	**1.40**	**289**	*eP*	**Pb**	**02 31 49.9**	**-0.4**
PMAN				*eS*	**Sn**	**02 32 06.0**	**-0.6**
PMAN				A	A	02 32 10.8	
	19nm,0.2s						
PMAN	**Manadas**	**1.40**	**289**	*eP*	**Pb**	**02 31 49.9**	**-0.4**
PMAN				*eS*	**Sn**	**02 32 06.0**	**-0.6**
PGRA	**Graciosa**	**1.49**	**304**	*eP*	**Pb**	**02 31 51.4**	**-0.5**
PGRA				*eS*	**Sn**	**02 32 08.4**	**-0.6**
PGRA				A	A	02 32 14.0	
	14nm,0.3s						
PGRA	**Graciosa**	**1.49**	**304**	*eP*	**Pb**	**02 31 51.4**	**-0.5**
PGRA				*eS*	**Sn**	**02 32 08.4**	**-0.6**
ROSA	**Rosais**	**1.54**	**290**	*eP*	**Pb**	**02 31 52.0**	**-0.7**
ROSA				*eS*	**Sn**	**02 32 09.6**	**-0.5**
ROSA				A	A	02 32 11.7	
	13nm,0.1s						
ROSA	**Rosais**	**1.54**	**290**	*eP*	**Pb**	**02 31 52.0**	**-0.7**
ROSA				*eS*	**Sn**	**02 32 09.6**	**-0.5**
PICO	**Pico**	**1.62**	**281**	*eP*	**Pn**	**02 31 53.0**	**+0.9**
PICO				*eS*	**Sn**	**02 32 11.7**	**-0.6**
PICO				A	A	02 32 17.3	
	12nm,0.1s						
PICO	**Pico**	**1.62**	**281**	*eP*	**Pn**	**02 31 53.0**	**+0.9**
PICO				*eS*	**Sn**	**02 32 11.7**	**-0.6**
PCAN	**Candelaria**	**1.66**	**280**	*eP*	**Pn**	**02 31 53.6**	**+1.0**
PCAN				*eS*	**Sn**	**02 32 12.7**	**-0.5**
PCAN				A	A	02 32 14.9	
	7.8nm,0.1s						
PCAN	**Candelaria**	**1.66**	**280**	*eP*	**Pn**	**02 31 53.6**	**+1.0**
PCAN				*eS*	**Sn**	**02 32 12.7**	**-0.5**
CALA	**Caldeira**	**1.85**	**283**	*eP*	**Pn**	**02 31 56.5**	**+1.3**
CALA				*eS*	**Sn**	**02 32 17.4**	**-0.6**
CALA	**Caldeira**	**1.85**	**283**	*eP*	**Pn**	**02 31 56.5**	**+1.3**
CALA				*eS*	**Sn**	**02 32 17.4**	**-0.6**
PCED	**Cedros**	**1.86**	**284**	*eP*	**Pn**	**02 31 55.9**	**+0.6**
PCED				*eS*	**Sn**	**02 32 17.4**	**-0.7**
PCED				A	A	02 32 29.5	
	16nm,0.4s						
PCED	**Cedros**	**1.86**	**284**	*eP*	**Pn**	**02 31 55.9**	**+0.6**
PCED				*eS*	**Sn**	**02 32 17.4**	**-0.7**

IDC ***22*** *02:36:39.4±0.8, 8°.89S×160°.98E, h0km, mb4.4/11, mb1 4.5/11, mb1mx4.2/27, mbtmp4.4/11, Error ellipse: s-maj=27.1km s-min=18.8km az=89.0*

ISCJB ***22*** *02:36:44.0±0.6, 8°.93S±0°.10×160°.9E±0°.1, h43km, mb4.3/16, Error ellipse: s-maj=17.0km s-min=11.5km az=41.2*

NEIC ***22*** *02:36:47.0±2.1, 8°.90S×160°.91E, h54km±17km, mb4.6/4, Error ellipse: s-maj=17.8km s-min=13.8km az=102.0*

ISC 22 02:36:45.8±0.8, 8°.9S±0°.1×161°.0E±0°.1, h43km, n30, σ1§29/27, mb4.4/16, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**1.13**	**241**	*eP*	**Pn**	**02 37 04.0**	**-1.3**
HNR	**Honiara**	**1.13**	**241**	*ePn*	**Pn**	**02 37 05.3**	**0.0**
CTA	**Charters Tower**	**18.05**	**230**	P	**P**	**02 40 56.7**	**+3.0**
	0.6nm,0.3s,baz=46,slow=9.5,SNR=9.4						
CTAO	**Charters Tower**	**18.05**	**230**	*ePn*	**P**	**02 40 56.2**	**+2.6**
COEN	**Coen**	**18.14**	**252**	*ePn*	**Pn**	**02 40 56.0**	**+1.3**
JAY	**Jayapura**	**21.11**	**286**	P	**P**	**02 41 26.2**	**-0.9**
	1.1nm,0.8s,baz=100,slow=23,SNR=4.1						
H11S2	**WAKE ISLAND Hy 27.79**		**12**	T	T	03 11 30.1	
	baz=194,slow=75,SNR=132						
H11S3	**WAKE ISLAND Hy 27.79**		**12**	T	T	03 11 30.0	
	baz=194,slow=75,SNR=146						
H11S1	**WAKE ISLAND Hy 27.80**		**12**	T	T	03 11 33.3	
	baz=194,slow=75,SNR=97						
WRAB	**Tennant Creek**	**27.96**	**244**	*eP*	**P**	**02 42 31.5**	**-1.1**
	9.9nm,0.6s						
WRA	**Warramunga Arr**	**27.98**	**244**	P	**P**	**02 42 32.0**	**-0.7**
	9.3nm,0.6s,baz=69,slow=9.4,SNR=91						
WRA				PcP	**PcP**	**02 45 47.1**	**-0.3**
	0.4nm,0.6s,baz=75,slow=2.8,SNR=3.3						
H11N1	**WAKE ISLAND Hy 29.01**		**12**	T	T	03 13 02.0	
	baz=192,slow=76,SNR=421						
H11N3	**WAKE ISLAND Hy 29.02**		**12**	T	T	03 13 00.3	
	baz=192,slow=76,SNR=261						
H11N2	**WAKE ISLAND Hy 29.03**		**12**	T	T	03 13 03.1	
	baz=192,slow=76,SNR=308						
STKA	**Stephens Creek**	**29.10**	**215**	P	**P**	**02 42 42.2**	**-0.3**
	3.2nm,0.7s,baz=61,slow=15,SNR=7.2						
ASAR	**Alice Springs**	**29.75**	**237**	P	**P**	**02 42 47.1**	**-1.5**
	4.0nm,0.6s,baz=61,slow=10,SNR=53						
ASAR				PcP	**PcP**	**02 45 50.7**	**-1.1**
	0.3nm,0.4s,baz=95,slow=2.5,SNR=2.8						
ASAR				ScP	**ScP**	**02 49 33.1**	**+2.6**
	0.9nm,0.7s,baz=80,slow=3.9,SNR=6.3						
FITZ	**Fitzroy Crossi**	**35.48**	**251**	*eP*	**P**	**02 43 36.9**	**-1.7**
	5.6nm,0.4s						
RPZ	**Rata Peaks**	**35.80**	**167**	P	**P**	**02 43 40.3**	**-0.8**
	7.0nm,0.8s,baz=0.0,slow=7.1,SNR=3.3						
FORT	**Forrest**	**37.61**	**230**	*eP*	**P**	**02 43 56.2**	**-0.4**
MBWA	**Marble Bar**	**41.51**	**248**	*eP*	**P**	**02 44 27.8**	**-1.5**
CMAR	**Chiang Mai Arr**	**66.93**	**294**	P	**P**	**02 47 35.0**	**+0.6**
	1.3nm,0.5s,baz=128,slow=5.3,SNR=5.1						
VNDA	**Vanda**	**68.61**	**180**	P	**P**	**02 47 44.5**	**+0.6**
	0.7nm,0.6s,baz=342,slow=7.0,SNR=7.3						
SONM	**Songino Array**	**74.18**	**325**	P	**P**	**02 48 19.2**	**+1.0**
	1.9nm,0.8s,baz=139,slow=6.2,SNR=8.1						
MCK	**McKinley**	**81.69**	**20**	*eP*	**P**	**02 48 59.4**	**0.0**
	3.8nm,0.9s						
COLA	**College**	**82.78**	**20**	*eP*	**P**	**02 49 04.9**	**-0.2**
	5.2nm,0.8s						
ILAR	**Eielson Array**	**83.04**	**20**	P	**P**	**02 49 05.8**	**-0.6**
	0.6nm,0.5s,baz=246,slow=5.0,SNR=12						
MAW	**Mawson**	**84.92**	**202**	P	**P**	**02 49 16.4**	**+0.4**
	0.6nm,0.6s,baz=75,slow=12,SNR=3.2						
MKAR	**Makanchi Array**	**88.74**	**318**	P	**P**	**02 49 35.2**	**+0.2**
	2.3nm,0.8s,baz=100,slow=5.7,SNR=16						
NRIK	**Noril'sk**	**92.48**	**340**	P	**P**	**02 49 51.5**	**-0.3**
	2.6nm,0.4s,baz=122,slow=9.5,SNR=3.1						
BOSA	**Boshof**	**123.28**	**227**	PKP	**PKPdf**	**02 55 38.9**	**-0.1**
	2.2nm,0.7s,baz=187,slow=2.7,SNR=5.8						

ISCJB ***22*** *02:53:30.0±0.5, 32°.02N±0°.04×55°.62E±0°.05, h10km, Error ellipse: s-maj=6.0km s-min=5.4km az=155.3*

THR ***22*** *02:53:30.1±0.4, 32°.04N×55°.72E, h15km±3km, ML3.7*

CSEM ***22*** *02:53:30.2±0.2, 32°.01N×55°.67E, h2km, ML3.8, Error ellipse: s-maj=5.2km s-min=4.2km az=170.0*

TEH ***22*** *02:53:31.7, 31°.95N×55°.65E, h18km, ML3.8*

ISC 22 02:53:30.5±1.0, 32°.01N±0°.04×55°.72E±0°.04, h10km, n28, σ1§21/34, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
IBAF	**Bafgh**	**0.44**	**198**	*eP*	**Pg**	**02 53 38.3**	**-0.9**
IBAF				*eSg*	**Sg**	**02 53 44.4**	**-0.7**
IBAF				*eAMB*	AMB	02 53 45.0	
	comp=Z,4μm,0.1s						
IBAF	**Bafgh**	**0.44**	**198**	*eP*	**Pg**	**02 53 38.3**	**-0.9**
IBAF				*eSg*	**Sg**	**02 53 44.4**	**-0.7**
IMEH	**Mehriz**	**1.13**	**237**	*eP*	**Pg**	**02 53 51.2**	**-1.1**
IMEH				*eAMB*	AMB	02 54 08.9	
	comp=Z,16μm,0.1s						
IMEH	**Mehriz**	**1.13**	**237**	*eP*	**Pg**	**02 53 51.2**	**-1.1**
ICHK	**Chekchek**	**1.14**	**282**	*eP*	**Pg**	**02 53 51.0**	**-1.5**
ICHK				*eAMB*	AMB	02 54 09.1	
	comp=Z,13μm,0.1s						
ICHK	**Chekchek**	**1.14**	**282**	*eP*	**Pg**	**02 53 51.0**	**-1.5**
ISAD	**Sadrabad**	**1.73**	**267**	*eP*	**Pb**	**02 54 02.0**	**-0.7**
ISAD				*eAMB*	AMB	02 54 29.6	
	comp=Z,12μm,0.2s						
ISAD	**Sadrabad**	**1.73**	**267**	*eP*	**Pb**	**02 54 02.0**	**-0.7**
TABS	**Tabas**	**2.01**	**35**	*eP*	**Pn**	**02 54 05.2**	**+0.5**
TABS				AML	AML	02 54 37.3	
	comp=N,349nm,0.4s						
TABS	**Tabas**	**2.01**	**35**	*eP*	**Pn**	**02 54 05.2**	**+0.5**
KRBR	**Kerman**	**2.21**	**156**	*ePn*	**Pn**	**02 54 09.0**	**+1.4**
KRBR				*eSg*	**Sg**	**02 54 40.6**	**-1.1**
KRBR				AML	AML	02 54 46.5	
	comp=E,744nm,0.5s						
KRBR				AML	AML	02 54 48.8	
	comp=N,1μm,0.8s						
KRBR	**Kerman**	**2.21**	**156**	*ePn*	**Pn**	**02 54 09.0**	**+1.4**
KRBR				*eSg*	**Sg**	**02 54 40.6**	**-1.1**
NASN	**Na'in**	**2.59**	**288**	*ePn*	**Pn**	**02 54 13.8**	**+1.0**
NASN				*eSg*	**Sb**	**02 54 51.0**	**+1.8**
NASN				AML	AML	02 54 55.5	
	comp=N,189nm,0.3s						
NASN				AML	AML	02 54 59.4	
	comp=E,204nm,0.4s						
NASN	**Na'in**	**2.59**	**288**	*ePn*	**Pn**	**02 54 13.8**	**+1.0**
NASN				*eSg*	**Sb**	**02 54 51.0**	**+1.8**
ITEG	**Tejag**	**2.71**	**70**	*ePn*	**Pn**	**02 54 15.3**	**+1.0**
ITEG				*eAMB*	AMB	02 55 09.7	
	comp=Z,5μm,0.3s						
ITEG	**Tejag**	**2.71**	**70**	*ePn*	**Pn**	**02 54 15.3**	**+1.0**
IKOO	**Kooshah**	**2.81**	**81**	*ePn*	**Pn**	**02 54 16.5**	**+0.7**
IKOO				*eAMB*	AMB	02 55 05.2	
	comp=Z,8μm,0.2s						
IKOO	**Kooshah**	**2.81**	**81**	*ePn*	**Pn**	**02 54 16.5**	**+0.7**
IDAH	**Dahanechah**	**3.58**	**77**	*ePn*	**Pn**	**02 54 28.0**	**+1.6**
IDAH				*eAMB*	AMB	02 55 30.8	
	comp=Z,1μm,0.3s						
IDAH	**Dahanechah**	**3.58**	**77**	*ePn*	**Pn**	**02 54 28.0**	**+1.6**
SHRT	**Shahrakht**	**4.18**	**66**	*ePn*	**Pn**	**02 54 35.5**	**+1.1**
SHRT	**Shahrakht**	**4.18**	**66**	*ePn*	**Pn**	**02 54 35.5**	**+1.1**
GHIR	**Ghir-Karzin**	**4.41**	**213**	*ePn*	**Pn**	**02 54 38.8**	**+1.2**
GHIR	**Ghir-Karzin**	**4.41**	**213**	*ePn*	**Pn**	**02 54 38.8**	**+1.2**
GHVR	**GHOM**	**4.45**	**305**	*ePn*	**Pn**	**02 54 39.5**	**+1.3**
GHVR	**GHOM**	**4.45**	**305**	*ePn*	**Pn**	**02 54 39.5**	**+1.3**
BNDS	**Bandar-Abbas**	**4.61**	**175**	*ePn*	**Pn**	**02 54 41.8**	**+1.3**
BNDS	**Bandar-Abbas**	**4.61**	**175**	*ePn*	**Pn**	**02 54 41.8**	**+1.3**

IDC 22 02:54:00.6±16.0, 21°.17S×173°.40W, h0km, mb4.3/5, mb1 4.5/5, mb1mx3.9/35, mbtmp4.3/5, Error ellipse: s-maj=312.5km s-min=149.6km az=79.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**37.70**	**264**	P	P	03 01 18.6	+0.4
	7.6nm,0.4s,baz=100,slow=11,SNR=19						
STKA	**Stephens Creek**	**41.40**	**245**	P	P	03 01 46.9	-2.0
	0.8nm,0.5s,baz=98,slow=12,SNR=5.2						
ASAR	**Alice Springs**	**48.55**	**257**	P	P	03 02 45.4	-0.7
	2.4nm,0.6s,baz=98,slow=7.7,SNR=23						
WRA	**Warramunga Arr**	**48.77**	**262**	P	P	03 02 47.4	-0.3
	2.6nm,0.5s,baz=90,slow=6.0,SNR=93						
FITZ	**Fitzroy Crossi**	**57.20**	**262**	P	P	03 03 51.8	+1.8
	2.3nm,0.6s,baz=94,slow=6.9,SNR=6.3						

NIED ***22*** *03:03:00, 37°.30N×141°.30E, h20km, Mw3.6 Best double couple: M0 2.92000×10^14 NP1:φs=85.00000°, δ21.00000°, λ-54.00000°. NP2:φ227.00000°, δ73.00000°, λ-103.00000°.*

IDC ***22*** *03:03:05.7±1.2, 37°.41N×141°.32E, h0km, mb3.5/7, mb1 3.7/8, mb1mx3.6/46, mbtmp3.5/8, ML2.7/1, Error ellipse: s-maj=28.4km s-min=26.9km az=131.0*

JMA ***22*** *03:03:08.8±0.1, 37°.33N×141°.30E, h29km±1km, M3.5*

JMA Felt I J1.

ISC 22 03:03:06.0±1.9, 37°.37N±0°.05×141°.35E±0°.07, h4km±12km, n22, σ0§88/25, mb3.4/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.38**	**270**	P	**Pb**	**03 03 16.6**	**+1.2**
JFK				*i* S	**Sb**	**03 03 21.8**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.51**	**239**	P	**Pb**	**03 03 18.3**	**+0.6**
ONAJ				S	**Sb**	**03 03 24.8**	**-0.7**
JMM	**Marumori**	**0.67**	**319**	P	**Pn**	**03 03 21.4**	**-0.9**
JMM				S	**Sb**	**03 03 30.4**	**+0.6**
JFT	**Otama**	**0.82**	**281**	P	**Pn**	**03 03 24.1**	**-0.3**
JFT				S	**Sb**	**03 03 34.7**	**+0.4**
JHO	**Hitachi**	**0.98**	**220**	P	**Pg**	**03 03 24.6**	**-0.2**
JHO				S	**Sg**	**03 03 36.3**	**-1.2**
JIO	**Ouri**	**1.08**	**0**	P	**Pn**	**03 03 27.9**	**-0.2**
JIO				S	**Sb**	**03 03 41.8**	**-0.1**
JOU	**Okura**	**1.13**	**332**	P	**Pn**	**03 03 29.4**	**+0.6**
JOU				S	**Sn**	**03 03 44.7**	**-0.1**
MJAR	**Matsushiro Arr**	**2.65**	**253**	Pn	**Pn**	**03 03 51.0**	**+1.4**
	1.4nm,0.3s,baz=82,slow=16,SNR=7.8						
MJAR				Sn	**Sb**	**03 04 27.3**	**+0.4**
	3.0nm,0.3s,baz=82,slow=28,SNR=4.7						
MAT	**Matsushiro**	**2.65**	**253**	P	**Pn**	**03 03 51.4**	**+1.8**
MAT				S	**Sn**	**03 04 20.3**	**-1.9**
SONM	**Songino Array**	**27.56**	**303**	P	**P**	**03 08 53.4**	**-0.8**
	0.3nm,0.5s,baz=115,slow=10,SNR=2.5	

*BNS **22** 03:31:23.2±1.2,51°.46N×6°.62E,h1km,ML2.0*
*BGR **22** 03:31:23.6±0.3,51°.46N×6°.70E,h1km,ML2.2/9,Error ellipse: s-maj=4.4km s-min=3.3km az=148.0*
*UCC **22** 03:31:24.0,51°.51N×6°.53E,h10km,ML2.4*

ISC 22 03:31:20.2±0.8,51°.49N±0°.02×6°.61E±0°.02,h0km,n105, σ1§14/147,Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAUG	**Laupendahl**	**0.25**	**124**	*e*Pg	**Pb**	**03 31 27.4**	**+2.4**
LAUG				*e*Sg	**Sb**	**03 31 31.2**	**+3.0**
	202nm,0.6s						
LAUG	**Laupendahl**	**0.25**	**124**	Pg	**Pb**	**03 31 27.4**	**+2.4**
LAUG				Sg	**Sb**	**03 31 31.2**	**+3.0**
	202nm,0.6s						
BUG	**Bochum--Univer**	**0.41**	**97**	*e*Pg	**Pb**	**03 31 30.4**	**0.0**
BUG				Sg	**Sb**	**03 31 37.2**	**0.0**
RWB	**Wassenberg**	**0.48**	**217**	*e*Sg	**Sg**	**03 31 36.4**	**+0.7**
RWB	**Wassenberg**	**0.48**	**217**	Sg	**Sg**	**03 31 36.4**	**+0.7**
WTSB	**Winterswijk**	**0.49**	**14**	*e*Pg	**Pb**	**03 31 31.7**	**-0.1**
	11nm,0.3s						
WTSB	**Winterswijk**	**0.49**	**14**	*e*Pg	**Pb**	**03 31 31.6**	**-0.1**
WTSB	**Winterswijk**	**0.49**	**14**	Pg	**Pb**	**03 31 31.6**	**-0.1**
PLH	**Pulheim**	**0.50**	**165**	*e*Pg	**Pg**	**03 31 30.2**	**+0.4**
PLH				*e*Sg	**Sb**	**03 31 38.2**	**-1.5**
	180nm,0.2s						
PLH	**Pulheim**	**0.50**	**165**	Pg	**Pg**	**03 31 30.2**	**+0.4**
PLH				Sg	**Sb**	**03 31 38.2**	**-1.5**
	180nm,0.2s						
OPLO	**Oploo**	**0.51**	**282**	*e*Pg	**Pn**	**03 31 35.4**	**+0.7**
OPLO	**Oploo**	**0.51**	**282**	Pg	**Pn**	**03 31 35.4**	**+0.7**
BNS	**Bensberg**	**0.63**	**146**	*e*Pg	**Pb**	**03 31 35.1**	**+0.9**
BNS	**Bensberg**	**0.63**	**146**	Pg	**Pb**	**03 31 35.1**	**+0.9**
HOBG	**Hohbusch**	**0.68**	**138**	*e*Pg	**Pb**	**03 31 36.0**	**+1.0**
HOBG	**Hohbusch**	**0.68**	**138**	Pg	**Pb**	**03 31 36.0**	**+1.0**
GSH	**Grosshau**	**0.77**	**191**	*e*Pg	**Pg**	**03 31 35.0**	**+0.1**
GSH				*e*Sg	**Sg**	**03 31 46.0**	**+1.1**
	22nm,0.1s						
GSH	**Grosshau**	**0.77**	**191**	Pg	**Pg**	**03 31 35.0**	**+0.1**
GSH				Sg	**Sg**	**03 31 46.0**	**+1.1**
	22nm,0.1s						
WBS	**Wahnbachtalspe**	**0.80**	**148**	*e*Sg	**Sb**	**03 31 47.9**	**-0.5**
HGN	**Heimansgroeve**	**0.84**	**211**	*e*Pg	**Pn**	**03 31 39.5**	**+0.2**
	31nm,0.2s						
HGN				*e*Sg	**Sn**	**03 31 52.2**	**-0.2**
HGN	**Heimansgroeve**	**0.84**	**211**	*e*Pg	**Pb**	**03 31 38.2**	**+0.5**
HGN				*e*Sg	**Sb**	**03 31 50.2**	**+0.7**
HGN	**Heimansgroeve**	**0.84**	**211**	Pg	**Pb**	**03 31 38.2**	**+0.5**
HGN				Sg	**Sb**	**03 31 50.3**	**+0.7**
DREG	**Dreilaegerbach**	**0.86**	**196**	*e*Pg	**Pb**	**03 31 38.5**	**+0.5**
DREG	**Dreilaegerbach**	**0.86**	**196**	Pg	**Pb**	**03 31 38.5**	**+0.5**
KLL	**Kalltalsperre**	**0.86**	**193**	*e*Pg	**Pb**	**03 31 38.9**	**+0.8**
KLL	**Kalltalsperre**	**0.86**	**193**	Pg	**Pb**	**03 31 38.9**	**+0.8**
STB	**Steinbach**	**0.91**	**171**	*e*Pg	**Pn**	**03 31 40.5**	**+0.3**
STB				*e*Sg	**Sb**	**03 31 51.9**	**+0.5**
	55nm,0.1s						
STB	**Steinbach**	**0.91**	**171**	Pg	**Pn**	**03 31 40.5**	**+0.3**
STB				Sg	**Sb**	**03 31 51.9**	**+0.5**
	55nm,0.1s						
BEBN	**Eben Emael**	**0.91**	**221**	P	**Pn**	**03 31 41.8**	**+1.6**
BEBN	**Eben Emael**	**0.91**	**221**	P	**Pn**	**03 31 41.8**	**+1.6**
TDN	**Todenfeld**	**0.94**	**167**	*e*Sg	**Sb**	**03 31 52.0**	**-0.4**
	33nm,0.1s						
TDN	**Todenfeld**	**0.94**	**167**	Sg	**Sb**	**03 31 52.0**	**-0.4**
	33nm,0.1s						
MEM	**Membach**	**0.96**	**204**	P	**Pn**	**03 31 40.5**	**-0.4**
MEM	**Membach**	**0.96**	**204**	P	**Pn**	**03 31 40.6**	**-0.4**
MEM	**Membach**	**0.96**	**204**	*e*Pg	**Pb**	**03 31 40.1**	**+0.5**
MEM				*e*Sg	**Sn**	**03 31 54.3**	**-1.0**
MEM	**Membach**	**0.96**	**204**	Pg	**Pb**	**03 31 40.2**	**+0.5**
MEM	**Membach**	**0.96**	**204**	P	**Pn**	**03 31 40.5**	**-0.4**
MEM				Sg	**Sn**	**03 31 54.3**	**-1.0**
AHRW	**Bad Neuenahr-A**	**0.99**	**163**	*e*Pg	**Pn**	**03 31 42.5**	**+1.2**
AHRW				*e*Sg	**Sn**	**03 31 55.6**	**-0.5**
BMOL	**Mol**	**1.00**	**255**	P	**Pn**	**03 31 42.6**	**+1.2**
BMOL	**Mol**	**1.00**	**255**	P	**Pn**	**03 31 42.6**	**+1.2**
OLFT	**Oleftalsperre**	**1.00**	**187**	*e*Pg	**Pg**	**03 31 39.5**	**+0.1**
OLFT				*e*Sg	**Sb**	**03 31 53.6**	**-0.6**
OLFT	**Oleftalsperre**	**1.00**	**187**	Pg	**Pg**	**03 31 39.5**	**+0.1**
OLFT				Sg	**Sb**	**03 31 53.6**	**-0.6**
BDSL	**Dessel**	**1.01**	**255**	P	**Pn**	**03 31 42.3**	**+0.7**
BDSL	**Dessel**	**1.01**	**255**	P	**Pn**	**03 31 42.2**	**+0.7**
IBBN	**Ibbenburen**	**1.08**	**40**	*e*Pg	**Pn**	**03 31 43.0**	**+0.3**
IBBN	**Ibbenburen**	**1.08**	**40**	Pg	**Pn**	**03 31 43.0**	**+0.3**
BSTI	**Sart Tilman**	**1.12**	**216**	P	**Pn**	**03 31 44.3**	**+1.1**
BSTI	**Sart Tilman**	**1.12**	**216**	P	**Pn**	**03 31 44.2**	**+1.1**
HILG	**Hillesheim**	**1.20**	**178**	*e*Pg	**Pn**	**03 31 45.5**	**+1.2**
HILG	**Hillesheim**	**1.20**	**178**	Pg	**Pn**	**03 31 45.5**	**+1.2**
BCLA	**Clavier**	**1.35**	**218**	P	**Pb**	**03 31 48.0**	**+1.5**
BCLA	**Clavier**	**1.35**	**218**	P	**Pb**	**03 31 47.9**	**+1.5**
BMRD	**Maredsous**	**1.67**	**225**	P	**Pg**	**03 31 54.4**	**+2.2**
BMRD	**Maredsous**	**1.67**	**225**	P	**Pg**	**03 31 54.3**	**+2.2**
TNS	**Taunus Mts**	**1.72**	**137**	*e*Pn	**Pg**	**03 31 53.7**	**+0.5**
TNS				*e*Sg	**Sg**	**03 32 15.4**	**-0.1**
TNS	**Taunus Mts**	**1.72**	**137**	Pn	**Pg**	**03 31 53.7**	**+0.5**
TNS				Sg	**Sg**	**03 32 15.4**	**-0.1**
GIVF	**Givet**	**1.79**	**220**	*e*Pn	**Pn**	**03 31 52.7**	**+0.3**
GIVF	**Givet**	**1.79**	**220**	*e*P	**Pg**	**03 31 55.0**	**+0.4**
GIVF				*e*Sn	**Sn**	**03 32 15.6**	**-0.3**
	16nm,0.2s						
GIVF	**Givet**	**1.79**	**220**	*e*Pn	**Pn**	**03 31 52.7**	**+0.3**
GIVF	**Givet**	**1.79**	**220**	*e*P	**Pg**	**03 31 55.0**	**+0.4**
GIVF				*e*Sn	**Sn**	**03 32 15.6**	**-0.3**
	7.8nm,0.2s						
BSKQ	**Steenkerk**	**1.81**	**243**	P	**Sg**	**03 32 20.0**	**+1.8**
WLF	**Walferdange**	**1.85**	**189**	P	**Pg**	**03 31 57.6**	**+1.9**
WLF	**Walferdange**	**1.85**	**189**	*e*Pg	**Pg**	**03 31 57.0**	**+1.3**
WLF				*e*Sg	**Sg**	**03 32 20.7**	**+1.1**
WLF	**Walferdange**	**1.85**	**189**	Pg	**Pg**	**03 31 57.0**	**+1.3**
WLF	**Walferdange**	**1.85**	**189**	P	**Pg**	**03 31 57.5**	**+1.9**
WLF				Sg	**Sg**	**03 32 20.7**	**+1.1**
DOU	**Dourbes**	**1.89**	**223**	P	**Pg**	**03 31 57.1**	**+0.6**
DOU	**Dourbes**	**1.89**	**223**	P	**Pg**	**03 31 57.0**	**+0.6**
BAIF	**Baives**	**2.09**	**228**	*e*Pn	**Pn**	**03 31 57.0**	**+0.5**
BAIF				*e*Sn	**Sn**	**03 32 22.4**	**-0.8**
	6.7nm,0.3s						
BAIF	**Baives**	**2.09**	**228**	*e*Pn	**Pn**	**03 31 57.0**	**+0.5**
BAIF				*e*Sn	**Sn**	**03 32 22.4**	**-0.8**
	3.3nm,0.3s						
GTTG	**Gvttingen**	**2.10**	**87**	*e*Sg	**Sg**	**03 32 27.7**	**+0.2**
GTTG	**Gvttingen**	**2.10**	**87**	Sg	**Sg**	**03 32 27.7**	**+0.2**
CLZ	**Clausthal**	**2.37**	**80**	*e*Pg	**Pg**	**03 32 05.9**	**+0.3**
CLZ				*e*Sg	**Sg**	**03 32 37.8**	**+1.6**
CLZ	**Clausthal**	**2.37**	**80**	Pg	**Pg**	**03 32 05.9**	**+0.3**
CLZ				Sg	**Sg**	**03 32 37.8**	**+1.6**
PAGF	**Fort de Pagny**	**2.99**	**191**	*e*Sg	**Sg**	**03 32 56.6**	**+0.3**
	0.9nm,0.3s						
PAGF	**Fort de Pagny**	**2.99**	**191**	*e*Sg	**Sg**	**03 32 56.6**	**+0.3**
	0.4nm,0.3s						
CDF	**Champ du Feu**	**3.11**	**172**	*e*Pn	**Pn**	**03 32 10.3**	**-0.3**
CDF				*e*Sg	**Sg**	**03 33 00.5**	**+0.4**
	2.1nm,0.3s						
CDF	**Champ du Feu**	**3.11**	**172**	*e*Pn	**Pn**	**03 32 10.3**	**-0.3**
CDF				*e*Sg	**Sg**	**03 33 00.5**	**+0.4**
	1.0nm,0.3s						
MEZF	**Maizieres J'vi**	**3.16**	**199**	*e*Sg	**Sg**	**03 33 02.5**	**+1.0**
	5.6nm,0.3s						
MEZF	**Maizieres J'vi**	**3.16**	**199**	*e*Sg	**Sg**	**03 33 02.5**	**+1.0**
	2.8nm,0.3s						
MOX	**Moxa**	**3.27**	**103**	*e*Sg	**Sg**	**03 33 05.5**	**+0.4**
MOX	**Moxa**	**3.27**	**103**	Sg	**Sg**	**03 33 05.5**	**+0.4**
SFTF	**Sexfontaines**	**3.44**	**198**	*e*Sg	**Sg**	**03 33 11.3**	**+0.6**
	3.2nm,0.2s						
SFTF	**Sexfontaines**	**3.44**	**198**	*e*Sg	**Sg**	**03 33 11.3**	**+0.6**
	1.6nm,0.2s						
HAU	**Haudompre**	**3.49**	**183**	*e*Sg	**Sg**	**03 33 12.2**	**-0.1**
	3.5nm,0.4s						
HAU	**Haudompre**	**3.49**	**183**	*e*Sg	**Sg**	**03 33 12.2**	**-0.1**
	1.8nm,0.4s						
HINF	**Hinteralfeld**	**3.68**	**177**	*e*Sg	**Sg**	**03 33 18.0**	**-0.4**
	2.8nm,0.4s						
HINF	**Hinteralfeld**	**3.68**	**177**	*e*Sg	**Sg**	**03 33 18.0**	**-0.4**
	1.4nm,0.4s						
LOR	**Lormes**	**4.59**	**204**	*e*Pn	**Pn**	**03 32 31.4**	**+0.5**
LOR				*e*Sn	**Sn**	**03 33 22.4**	**-2.5**
LOR				*e*Sg	**Sg**	**03 33 47.0**	**-0.6**
	2.1nm,0.4s						
LOR	**Lormes**	**4.59**	**204**	*e*Pn	**Pn**	**03 32 31.4**	**+0.5**
LOR				*e*Sn	**Sn**	**03 33 22.4**	**-2.5**
LOR				*e*Sg	**Sg**	**03 33 47.0**	**-0.6**
	1.0nm,0.4s						
SSF	**Saint Saulge**	**4.88**	**206**	*e*Pn	**Pn**	**03 32 34.6**	**-0.2**
SSF				*e*Sn	**Sn**	**03 33 29.2**	**-2.7**
SSF				*e*Sg	**Sg**	**03 33 54.9**	**-1.9**
	2.1nm,0.3s						
SSF	**Saint Saulge**	**4.88**	**206**	*e*Pn	**Pn**	**03 32 34.6**	**-0.2**
SSF				*e*Sn	**Sn**	**03 33 29.2**	**-2.7**
SSF				*e*Sg	**Sg**	**03 33 54.9**	**-1.9**
	1.0nm,0.3s						
AVF	**Avril sur Loir**	**5.17**	**206**	*e*Pn	**Pn**	**03 32 39.2**	**+0.5**
AVF				*e*Sn	**Sn**	**03 33 35.7**	**-3.3**
	0.5nm,0.2s						
AVF	**Avril sur Loir**	**5.17**	**206**	*e*Pn	**Pn**	**03 32 39.2**	**+0.5**
AVF				*e*Sn	**Sn**	**03 33 35.7**	**-3.3**
	0.2nm,0.2s						
SMF	**Signal de Mont**	**5.18**	**202**	*e*Pn	**Pn**	**03 32 39.5**	**+0.6**
SMF	**Signal de Mont**	**5.18**	**202**	*e*Pg	**Pg**	**03 32 58.4**	**-1.0**
SMF				*e*Sg	**Sg**	**03 34 06.2**	**-0.3**
	2.7nm,0.3s						
SMF	**Signal de Mont**	**5.18**	**202**	*e*Pn	**Pn**	**03 32 39.5**	**+0.6**
SMF	**Signal de Mont**	**5.18**	**202**	*e*Pg	**Pg**	**03 32 58.4**	**-1.0**
SMF				*e*Sg	**Sg**	**03 34 06.2**	**-0.3**
	1.4nm,0.3s						
BGF	**Bois d'Agland**	**5.52**	**208**	*e*Pn	**Pn**	**03 32 43.4**	**-0.2**
BGF	**Bois d'Agland**	**5.52**	**208**	*e*Pn	**Pn**	**03 32 43.4**	**-0.2**
GRR	**Gorron**	**5.74**	**240**	*e*Pn	**Pn**	**03 32 47.1**	**+0.6**
GRR				*e*Sn	**Sn**	**03 33 48.9**	**-4.1**
	1.6nm,0.2s						
GRR	**Gorron**	**5.74**	**240**	*e*Pn	**Pn**	**03 32 47.1**	**+0.6**
TCF	**Toulx Ste Croi**	**5.96**	**211**	*e*Pn	**Pn**	**03 32 49.7**	**0.0**
TCF	**Toulx Ste Croi**	**5.96**	**211**	*e*Pn	**Pn**	**03 32 49.7**	**0.0**
MFF	**Saint Martin d**	**6.61**	**225**	*e*Pn	**Pn**	**03 32 58.3**	**-0.2**
MFF	**Saint Martin d**	**6.61**	**225**	*e*Pn	**Pn**	**03 32 58.3**	**-0.2**

*IDC **22** 03:36:42.2±0.7,9°.07S×161°.30E,h0km,mb4.3/11, mb1 4.4/11,mb1mx4.1/36,mbtmp4.2/11,MS3.6/7, Ms1 3.5/7,ms1mx3.1/39,Error ellipse: s-maj=25.8km s-min=16.6km az=138.0*
*ISCJB **22** 03:36:46.7±0.6,9°.1S±0°.1×161°.27E±0°.09,h43km, mb4.2/13,MS3.6/6,Error ellipse: s-maj=20.3km s-min=9.7km az=153.2*
*NEIC **22** 03:36:49.1±3.0,8°.98S×161°.18E,h47km±24km,mb4.4/4, Error ellipse: s-maj=29.1km s-min=17.2km az=120.0*

ISC 22 03:36:48.8±0.7,9°.0S±0°.1×161°.2E±0°.1,h43km,n27, σ1§35/25,mb4.2/13,MS3.7/6,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**1.31**	**250**	Pn	**Pn**	**03 37 10.0**	**-0.6**
	277nm,0.3s,baz=117,slow=2.3,SNR=39						
HNR				Sn	**Sn**	**03 37 27.9**	**+1.0**
	1μm,0.3s,baz=69,slow=20,SNR=27						
HNR				LR	LR	03 37 46.8	
	comp=Z,1μm,21.4s,baz=32,slow=47						
HNR	**Honiara**	**1.31**	**250**	*e*P	**Pn**	**03 37 09.0**	**-1.6**
PMG	**Port Moresby**	**13.86**	**267**	LR	LR	03 45 02.7	
	comp=Z,264nm,21.0s,baz=128,slow=36						
CTA	**Charters Tower**	**18.17**	**231**	P	**Pn**	**03 41 00.3**	**+2.3**
	0.8nm,0.3s,baz=45,slow=12,SNR=11						
CTAO	**Charters Tower**	**18.17**	**231**	*e*P	**Pn**	**03 41 00.3**	**+2.3**
	17nm,0.4s						
COEN	**Coen**	**18.33**	**253**	*e*P	**Pn**	**03 40 59.4**	**-0.6**
	4.5nm,0.5s						
GUMO	**Guam**	**27.67**	**324**	LR	LR	03 53 51.9	
	comp=Z,25nm,18.2s,baz=99,slow=37						
WRAB	**Tennant Creek**	**28.13**	**244**	*e*P	**P**	**03 42 36.0**	**-1.1**
	6.6nm,0.7s						
WRA	**Warrnunga Arr**	**28.14**	**244**	P	**P**	**03 42 36.2**	**-1.0**
	12nm,0.6s,baz=69,slow=9.4,SNR=120						
WRA				PcP	**PcP**	**03 45 51.3**	**+0.6**
	0.4nm,0.6s,baz=68,slow=3.2,SNR=3.3						
STKA	**Stephens Creek**	**29.15**	**216**	P	**P**	**03 42 46.7**	**+0.7**
	3.4nm,0.6s,baz=15,slow=11,SNR=7.8						
ASAR	**Alice Springs**	**29.90**	**237**	P	**P**	**03 42 51.3**	**-1.5**
	6.1nm,0.7s,baz=61,slow=10,SNR=67						
ASAR				PcP	**PcP**	**03 45 55.2**	**+0.2**
	0.3nm,0.4s,baz=92,slow=2.0,SNR=3.4						
ASAR				ScP	**ScP**	**03 49 36.8**	**+2.8**
	1.4nm,0.8s,baz=65,slow=3.1,SNR=8.6						
FITZ	**Fitzroy Crossi**	**35.67**	**252**	*e*P	**P**	**03 43 41.3**	**-2.0**
	4.6nm,0.3s						
FORT	**Forrest**	**37.72**	**230**	*e*P	**P**	**03 44 00.2**	**-0.3**
PSI	**Prapat**	**63.15**	**278**	LR	LR	04 15 06.6	
	comp=Z,210nm,21.9s,baz=246,slow=36						
CMAR	**Chiang Mai Arr**	**67.19**	**294**	P	**P**	**03 47 39.1**	**+0.1**
	1.8nm,0.6s,baz=126,slow=4.9,SNR=6.0						
VNDA	**Vanda**	**68.51**	**180**	P	**P**	**03 47 44.3**	**-2.0**
	0.5nm,0.6s,baz=345,slow=4.7,SNR=6.3						
SONM	**Songino Array**	**74.40**	**325**	P	**P**	**03 48 23.3**	**+0.9**
	3.0nm,0.9s,baz=138,slow=6.2,SNR=11						
ILAR	**Eielson Array**	**83.06**	**20**	P	**P**	**03 49 10.1**	**+0.6**
	0.6nm,0.5s,baz=252,slow=5.2,SNR=14						
MAW	**Mawson**	**84.92**	**202**	P	**P**	**03 49 20.1**	**+1.2**
	0.8nm,0.5s,baz=100,slow=6.1,SNR=3.9						
MAW				LR	LR	04 23 52.4	
	comp=Z,29nm,18.5s,baz=63,slow=33						
DLBC	**Dease Lake**	**86.79**	**29**	LR	LR	04 18 53.5	
	comp=Z,21nm,21.9s,baz=240,slow=29						
MKAR	**Makanchi Array**	**88.98**	**318**	P	**P**	**03 49 39.5**	**+0.4**
	2.2nm,0.7s,baz=98,slow=6.5,SNR=21						
INK	**Inuvik**	**89.46**	**20**	LR	LR	04 26 20.5	
	comp=Z,23nm,18.6s,baz=222,slow=33						
YKA	**Yellowknife Ar**	**95.23**	**28**	P	**P**	**03 50 06.4**	**-1.2**
	0.3nm,0.7s,baz=270,slow=5.1,SNR=4.1						
PDAR	**Pinedale Array**	**95.48**	**48**	P	**P**	**03 50 09.9**	**+0.3**
	0.2nm,0.6s,baz=202,slow=1.9,SNR=2.1						
TXAR	**Lajitas Array**	**98.80**	**62**	LR	LR	04 29 24.3	
	comp=Z,24nm,18.9s,baz=0.0,slow=32						
BOSA	**Boshof**	**123.38**	**227**	PKP	**PKPdf**	**03 55 41.6**	**-0.6**
	1.4nm,0.5s,baz=119,slow=2.2,SNR=7.3						
WLF	**Walferdange**	**134.42**	**337**	*e*PKPdf	**PKPdf**	**03 56 02.2**	**-0.1**

*IDC **22** 03:37:48.2±1.0,28°.98S×176°.18W,h0km,mb4.1/7, mb1 4.3/7,mb1mx4.0/33,mbtmp4.1/7,MS3.4/3,Ms1 3.4/3, ms1mx2.9/34,Error ellipse: s-maj=34.1km s-min=20.4km az=168.0*
*NEIC **22** 03:37:49.8±0.5,29°.19S×176°.21W,h10km,mb4.3/3,Error ellipse: s-maj=14.0km s-min=10.6km az=144.0*
*ISCJB **22** 03:37:50.4±0.7,29°.4S±0°.1×176°.3W±0°.1,h21km,mb4.2/10, MS3.6/2,Error ellipse: s-maj=16.0km s-min=13.2km az=149.7*

ISC 22 03:37:52.2±0.8,29°.4S±0°.1×176°.22W±0°.09,h21km,n25, σ1§79/23,mb4.3/10,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.49**	**275**	Pn	**Pn**	**03 38 16.3**	**-1.3**
	136nm,0.3s,baz=18,slow=20,SNR=4.1						
RAO				Sn	**Sb**	**03 38 39.7**	**+2.2**
	272nm,0.3s,baz=107,slow=19,SNR=7.0						
URZ	**Urewera**	**10.43**	**210**	Pn	**Pn**	**03 40 20.5**	**+0.1**
	0.7nm,0.3s,baz=161,slow=4.4,SNR=3.3						
URZ				Sn	**Sn**	**03 42 14.2**	**-2.4**
	1.4nm,0.3s,baz=238,slow=22,SNR=6.9						
URZ				LR	LR	03 44 27.0	
	comp=Z,70nm,18.3s,baz=72,slow=37						
KHZ	**Kahutara**	**15.39**	**210**	*e*Pn	**Pn**	**03 41 29.5**	**+1.5**
	162nm,0.8s						
DZM	**Mont Dzumac**	**17.23**	**291**	*e*LR	LR	03 46 06.8	
	453nm,26.1s						
RPZ	**Rata Peaks**	**17.53**	**212**	P	**Pn**	**03 41 50.6**	**-4.7**
	0.5nm,0.3s,baz=343,slow=14,SNR=2.9						
TBI	**Tubuai**	**24.69**	**82**	*e*LR	LR	03 48 59.8	
	268nm,27.5s						
PPT2	**Papeete2**	**27.05**	**70**	*e*LR	LR	03 49 58.8	
	226nm,27.0s						
PPT	**Papeete**	**27.06**	**70**	LR	LR	03 53 02.5	
	comp=Z,107nm,18.2s,baz=207,slow=34						
CTA	**Charters Tower**	**35.19**	**277**	P	**P**	**03 44 45.0**	**0.0**
	2.3nm,0.4s,baz=120,slow=13,SNR=4.4						
CTAO	**Charters Tower**	**35.19**	**277**	*e*P	**P**	**03 44 45.3**	**+0.3**
	23nm,0.7s						
STKA	**Stephens Creek**	**36.21**	**255**	P	**P**	**03 44 54.3**	**+0.6**
	4.6nm,0.7s,baz=90,slow=7.8,SNR=6.3						
ASAR	**Alice Springs**	**44.72**	**265**	P	**P**	**03 46 03.6**	**-0.5**
	1.0nm,0.5s,baz=101,slow=7.8,SNR=8.6						
ASAR				LR	LR	04 03 10.3	
	comp=Z,102nm,20.4s,baz=91,slow=34						
WRAB	**Tennant Creek**	**45.61**	**270**	*e*P	**P**	**03 46 10.4**	**-0.8**
	3.5nm,0.8s						
WRA	**Warrnunga Arr**	**45.62**	**270**	P	**P**	**03 46 10.1**	**-1.2**
	3.1nm,0.8s,baz=109,slow=6.1,SNR=10						
VNDA	**Vanda**	**49.25**	**186**	P	**P**	**03 46 41.2**	**+2.6**
	1.0nm,0.9s,baz=325,slow=5.5,SNR=5.4						
MAW	**Mawson**	**73.78**	**200**	P	**P**	**03 49 26.3**	**+1.9**
	1.9nm,0.8s,baz=97,slow=3.4,SNR=4.7						
SNAA	**Sanae**	**79.10**	**178**	*e*P	**P**	**03 49 54.7**	**0.0**
TUC	**Tucson**	**87.29**	**50**	*e*P	**P**	**03 50 37.5**	**+0.1**
	1.4nm,0.8s						
TXAR	**Lajitas Array**	**90.55**	**56**	P	**P**	**03 50 50.8**	**-2.2**
	0.8nm,1.0s,baz=225,slow=5.1,SNR=7.0						
MNTX	**Cornudas Mount**	**90.65**	**54**	*e*P	**P**	**03 50 52.5**	**-0.7**
	2.9nm,1.4s						
MKAR	**Makanchi Array**	**118.31**	**310**	PKP	**PKPdf**	**03 56 36.6**	**-1.1**
	0.4nm,0.8s,baz=70,slow=1.4,SNR=3.5						
FINES	**FINESS Array B**	**144.71**	**342**	PKP	**PKPab**	**03 57 24.3**	**-1.1**
	2.7nm,0.8s,baz=64,slow=3.0,SNR=8.6						
NB2	**NORSAR Subarra**	**147.97**	**353**	PKP	**PKPdf**	**03 57 34.5**	**+2.3**
	comp=Z,0.9nm,0.6s,baz=12,slow=2.9						
NOA	**NORSAR Array B**	**147.97**	**353**	PKPbc	**PKPdf**	**03 57 33.5**	**+1.3**
	comp=Z,1.8nm,0.8s,baz=15,slow=4.5,SNR=4.2						
AKASG	**Malin Array Be**	**151.40**	**325**	PKPbc	**PKPbc**	**03 57 43.3**	**-0.7**
	comp=Z,1.0nm,0.4s,baz=47,slow=4.1,SNR=3.4						

IDC 22 03:49:19.1±2.1,2°.29N×127°.66E,h0km,mb3.5/3, mb1 3.7/3,mb1mx3.4/45,mbtmp3.5/3,Error ellipse: s-maj=160.4km s-min=24.9km az=67.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.04**	**164**	P	P	03 54 25.3	-0.9
	1.3nm,0.8s,baz=343,slow=11,SNR=9.3						
ASAR	**Alice Springs**	**26.50**	**167**	P	P	03 54 59.1	+0.6
	0.6nm,0.8s,baz=347,slow=12,SNR=6.5						
MKAR	**Makanchi Array**	**59.26**	**325**	P	P	03 59 22.6	+0.1
	0.2nm,0.4s,baz=124,slow=7.6,SNR=3.7						

*IDC **22** 03:57:14.6±1.0,23°.92S×175°.41W,h0km,mb4.1/9, mb1 4.3/9,mb1mx4.1/32,mbtmp4.1/9,Error ellipse: s-maj=31.4km s-min=26.6km az=157.0*
*NEIC **22** 03:57:16.1±0.6,23°.95S×175°.35W,h10km,mb4.4/1,Error ellipse: s-maj=17.2km s-min=14.8km az=182.0*
*ISCJB **22** 03:57:17.6±0.8,24°.1S±0°.1×175°.4W±0°.1,h28km,mb4.3/11, Error ellipse: s-maj=20.9km s-min=19.2km az=23.7*

ISC 22 03:57:19.2±0.8,24°.0S±0°.2×175°.4W±0°.2,h28km,n19, σ0§82/18,mb4.3/11,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**8.76**	**314**	*e*Pn	Pn	03 59 35.5	+11
CTA	**Charters Tower**	**35.72**	**269**	P	**P**	**04 04 14.8**	**-0.9**
	4.7nm,0.8s,baz=102,slow=12,SNR=4.4						
CTAO	**Charters Tower**	**35.72**	**269**	*e*P	**P**	**04 04 15.2**	**-0.4**
	24nm,0.7s						
PMG	**Port Moresby**	**38.57**	**286**	P	**P**	**04 04 40.2**	**+0.3**
	11nm,0.5s,baz=120,slow=7.4,SNR=3.6						
PMG	**Port Moresby**	**38.57**	**286**	*e*P	**P**	**04 04 40.2**	**+0.3**
	19nm,0.8s						
ASAR	**Alice Springs**	**46.20**	**260**	P	**P**	**04 05 41.0**	**-1.0**
	4.7nm,1.0s,baz=96,slow=8.1,SNR=23						
WRAB	**Tennant Creek**	**46.62**	**265**	*e*P	**P**	**04 05 45.0**	**-0.3**
	2.1nm,0.6s						
WRA	**Warramunga Arr**	**46.63**	**265**	P	**P**	**04 05 44.0**	**-1.3**
	3.1nm,0.9s,baz=101,slow=7.9,SNR=12		

comp=Z,97nm,18.4s,baz=86,slow=36
WRAB Tennant Creek 45.74 270 *e*P **P 04 11 54.2 0.0**
2.5nm,0.7s
WRA Warramunga Arr 45.75 270 P **P 04 11 53.1 -1.2**
2.6nm,0.8s,baz=110,slow=7.2,SNR=16
TXAR Lajitas Array 90.56 56 P **P 04 16 36.0 +1.2**
0.8nm,1.1s,baz=224,slow=5.2,SNR=6.0
PDAR Pinedale Array 94.42 43 P **P 04 16 53.2 +0.7**
0.7nm,1.0s,baz=329,slow=1.1,SNR=3.2
ILAR Eielson Array 96.79 12 P **P 04 17 01.9 -0.6**
0.5nm,0.8s,baz=214,slow=5.4,SNR=5.9
KURK Kurchatov 121.71 314 PKP **PKPdf 04 22 25.9 0.0**
KURBB Kurchatov Arra 121.75 314 PKP **PKPdf 04 22 25.9 -0.1**
0.6nm,0.7s,baz=105,slow=2.1,SNR=6.1
FINES FINESS Array B 144.95 342 PKP **PKPab 04 23 07.7 -0.5**
1.9nm,0.6s,baz=60,slow=2.9,SNR=11
NB2 NORSAR Subarra148.19 353 PKP **PKPbc 04 23 17.0 -0.7**
comp=Z,1.1nm,0.6s,baz=13,slow=2.9
NOA NORSAR Array B 148.19 353 PKPbc **PKPbc 04 23 17.4 -0.4**
comp=Z,1.2nm,0.6s,baz=13,slow=4.5,SNR=4.7
AKASG Malin Array Be 151.65 325 PKPbc **PKPbc 04 23 25.2 -1.1**
comp=Z,2.3nm,0.7s,baz=64,slow=2.2,SNR=3.8

*ISCJB **22** 04:05:45.7±0.5, 6.58N±0.04×73.49W±0.04, h131km±5km, mb3.6/1, Error ellipse: s-maj=8.4km s-min=3.9km az=39.0*
*FUNV **22** 04:05:47.3, 6.52N×73.50W, h143km, MW3.2*
*IDC **22** 04:05:47.2±6.2, 6.33N×75.80W, h94km±68km, mb3.4/1, mb1 3.6/2, mb1mx3.1/31, mbtmp3.6/2, ML1.8/1, Error ellipse: s-maj=105.6km s-min=40.6km az=76.0*
*RSNC **22** 04:05:48.3±1.0, 6.56N×73.52W, h109km±6km, ML3.1*
ISC 22 04:05:46.7±1.0, **6.57N**±0.04×**73.45W**±0.05, **h125**km±6km, **n31**, σ1ᵖ**59**/48, **1C-2D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.27**	**85**	*i*P	**Pn**	**04 06 04.5**	**0.0**
BARC				*e*S	**Sn**	**04 06 16.4**	**-1.5**
BARC				*i*		04 06 18.5	
	comp=Z,2μm,0.3s						
GIRC	**Giron, Santand**	**0.57**	**27**	*i*P	**Pn**	**04 06 05.9**	**+0.1**
BRRC	**Barranca, Sant**	**0.59**	**334**	*e*P	**Pn**	**04 06 05.3**	**-0.6**
BRRC				*e*S	**Sn**	**04 06 18.6**	**-1.8**
BRRC				*i*		04 06 25.0	
	comp=Z,291nm,0.1s						
RUSC	**La Rusia**	**0.76**	**151**	*i*P	**Pn**	**04 06 07.5**	**-0.2**
RUSC				*e*S	**Sn**	**04 06 22.7**	**-0.8**
RUSC				*i*		04 06 26.2	
	comp=Z,113nm,0.2s						
PAMC	**Pamplona, Colo**	**1.07**	**44**	*e*S	**Sn**	**04 06 28.3**	**0.0**
GRMC	**Gramalote, San**	**1.31**	**29**	*e*P	**Pn**	**04 06 14.7**	**+2.2**
GRMC				*e*S	**Sn**	**04 06 34.9**	**+2.7**
GRMC				*i*		04 06 39.8	
	comp=Z,224nm,0.3s						
CBRI	**Barrientos, No**	**1.31**	**30**	*e*P	**Pn**	**04 06 13.4**	**+0.8**
OCAC	**Ocana**	**1.67**	**5**	*e*P	**Pn**	**04 06 16.8**	**+0.2**
OCAC				*i*		04 06 45.3	
	comp=Z,174nm,0.3s						
CAPV	**Capacho**	**1.71**	**41**	*i*P	**Pn**	**04 06 18.6**	**+1.4**
CAPV				*e*S	**Sn**	**04 06 42.7**	**+2.2**
NORC	**Norcasia**	**1.73**	**235**	*e*P	**Pn**	**04 06 16.1**	**-1.1**
NORC				*e*S	**Sn**	**04 06 37.7**	**-2.7**
ROSC	**El Rosal**	**1.92**	**207**	P	**Pn**	**04 06 21.1**	**+1.2**
	comp=Z,7.3nm,0.3s,baz=313,slow=14,SNR=18						
ROSC				S	**Sn**	**04 06 47.5**	**+2.3**
	comp=Z,28nm,0.3s,baz=236,slow=17,SNR=14						
ROSC	**El Rosal**	**1.92**	**207**	*e*P	**Pn**	**04 06 20.6**	**+0.7**
ROSC				*e*S	**Sn**	**04 06 45.2**	**0.0**
ROSC				*i*		04 06 51.4	
	comp=Z,189nm,0.4s						
CHIC	**Chingaza**	**1.95**	**188**	*e*P	**Pn**	**04 06 20.0**	**-0.2**
CHIC				*e*S	**Sn**	**04 06 45.0**	**-0.7**
CHIC				*i*		04 06 50.8	
	comp=Z,54nm,0.3s						
HELC	**Santa Helena**	**2.10**	**260**	*e*P	**Pn**	**04 06 21.6**	**-0.4**
HELC				*e*S	**Sn**	**04 06 47.1**	**-1.8**
VILC	**Villavicencio,**	**2.45**	**186**	*e*P	**Pn**	**04 06 26.6**	**+0.3**
VILC				*i*		04 07 05.9	
	comp=Z,62nm,0.4s						
TOLC	**Tolima**	**2.71**	**223**	*e*P	**Pn**	**04 06 30.1**	**+0.3**
DBBC	**Dabeiba**	**2.77**	**279**	*e*P	**Pn**	**04 06 30.4**	**+0.1**
VIGV	**El Vigia**	**3.06**	**42**	*e*P	**Pn**	**04 06 35.0**	**+0.9**
VIGV				*e*S	**Sn**	**04 07 10.1**	**-0.5**
SOCV	**Socops**	**3.09**	**56**	*e*P	**Pn**	**04 06 34.9**	**+0.5**
SOCV				*e*S	**Sn**	**04 07 10.3**	**-0.8**
PRAC	**Prado**	**3.17**	**207**	*e*P	**Pn**	**04 06 35.2**	**-0.3**
PRAC				*e*S	**Sn**	**04 07 11.4**	**-1.8**
SDV	**Santo Domingo**	**3.62**	**50**	*e*P	**Pn**	**04 06 42.4**	**+0.8**
SDV				*i*		04 07 27.4	
	comp=Z,60nm,0.5s						
VIRV	**Villa del Rosa**	**4.04**	**15**	*e*P	**Pn**	**04 06 46.5**	**-0.5**
VIRV				*e*S	**Sn**	**04 07 32.1**	**-1.6**
QARV	**Quebrada Arrib**	**4.63**	**38**	*e*P	**Pn**	**04 06 55.8**	**+0.9**
SANV	**Sanarito**	**4.85**	**53**	*e*P	**Pn**	**04 06 57.7**	**-0.2**
SANV				*e*S	**Sn**	**04 07 49.5**	**-3.7**
CURV	**Curarigua**	**4.86**	**45**	*e*P	**Pn**	**04 06 57.9**	**-0.1**
CURV				*e*S	**Sn**	**04 07 49.8**	**-3.7**
TEPV	**Terepaima**	**5.40**	**51**	*e*P	**Pn**	**04 07 05.2**	**0.0**
BAUV	**El Baul**	**5.86**	**66**	*e*P	**Pn**	**04 07 10.0**	**-1.3**
BAUV				*e*S	**Sn**	**04 08 13.3**	**-4.0**
MAPV	**Macapo**	**5.91**	**56**	*e*P	**Pn**	**04 07 11.8**	**-0.2**
CUPV	**Cœpira**	**8.34**	**65**	*e*P	**Pn**	**04 07 43.9**	**-0.9**
YKA	**Yellowknife Ar**	**63.39**	**340**	P	**P**	**04 16 02.6**	**+0.1**
	comp=Z,0.4nm,0.4s,baz=132,slow=6.4,SNR=8.9						
WRA	**Warramunga Arr 149.93 241**			PKPbc	**PKPdf**	**04 25 21.4**	**+3.1**
	comp=Z,0.3nm,0.7s,baz=105,slow=3.0,SNR=5.2						

*DDA **22** 04:14:22.8, 39.10N×29.09E, h7km, Ml2.8*
*ISK **22** 04:14:22.8, 39.10N×29.09E, h3km, MD2.8*
*ISCJB **22** 04:14:23.4±0.4, 39.06N±0.04×29.09E±0.03, h9km, Error ellipse: s-maj=5.3km s-min=3.7km az=164.3*
*CSEM **22** 04:14:23.3±0.1, 39.08N×29.08E, h5km, MD2.8, Error ellipse: s-maj=3.0km s-min=2.6km az=129.0*
ISC 22 04:14:23.3±0.9, **39.09N**±0.03×**29.09E**±0.02, **h9**km, **n34**, σ0ᵖ**51**/42, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.26**	**100**	*e*PG	**Pg**	**04 14 28.6**	**+0.1**
GEDZ				*e*SG	**Sg**	**04 14 32.8**	**+0.8**
GEDZ	**Gediz**	**0.26**	**100**	*e*Pg	**Pg**	**04 14 28.6**	**+0.1**
GEDZ				*e*Sg	**Sg**	**04 14 32.8**	**+0.8**
DEMI	**Demirci**	**0.29**	**261**	*i*P	**Pg**	**04 14 29.4**	**+0.2**
DEMI				*i*S	**Sg**	**04 14 33.8**	**+0.7**
DEMI	**Demirci**	**0.29**	**261**	P	**Pg**	**04 14 29.4**	**+0.2**
DEMI				S	**Sg**	**04 14 33.8**	**+0.7**
GDZ	**Gediz**	**0.31**	**90**	*i*P	**Pg**	**04 14 29.4**	**-0.1**
GDZ				*i*S	**Sg**	**04 14 33.9**	**+0.3**
GDZ	**Gediz**	**0.31**	**90**	P	**Pg**	**04 14 29.4**	**-0.1**
GDZ				S	**Sg**	**04 14 33.9**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**39**	*e*PG	**Pg**	**04 14 32.1**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**39**	*e*Pg	**Pg**	**04 14 32.1**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*PG	**Pg**	**04 14 36.5**	**+0.4**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*Pg	**Pg**	**04 14 36.5**	**+0.4**
MANT	**Manisa**	**0.72**	**215**	*i*P	**Pg**	**04 14 36.4**	**-0.9**
MANT				*i*S	**Sg**	**04 14 45.9**	**-0.9**
MANT	**Manisa**	**0.72**	**215**	P	**Pg**	**04 14 36.4**	**-0.9**
MANT				S	**Sg**	**04 14 45.9**	**-0.9**
KHL	**Karahalli**	**0.84**	**156**	*e*PG	**Pb**	**04 14 39.9**	**-0.2**
KHL	**Karahalli**	**0.84**	**156**	*e*Pg	**Pb**	**04 14 39.9**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**27**	*e*PN	**Pg**	**04 14 47.1**	**-0.4**
CAVI	**Cavuskoy**	**1.26**	**27**	*e*Pn	**Pg**	**04 14 47.1**	**-0.4**
IZI	**Iznik**	**1.28**	**13**	*e*PN	**Pg**	**04 14 48.1**	**+0.1**
IZI	**Iznik**	**1.28**	**13**	*e*Pn	**Pg**	**04 14 48.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*PN	**Pg**	**04 14 47.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*Pn	**Pg**	**04 14 47.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**04 14 48.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pg**	**04 14 48.3**	**0.0**
BALY	**Balya**	**1.31**	**300**	*i*P	**Pn**	**04 14 47.5**	**-0.3**
BALY	**Balya**	**1.31**	**300**	P	**Pn**	**04 14 47.5**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**220**	*e*PN	**Pb**	**04 14 51.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**220**	*e*Pn	**Pb**	**04 14 51.1**	**+0.1**
ARMT	**Armutlu**	**1.49**	**353**	*e*PN	**Pg**	**04 14 51.3**	**-0.5**
ARMT	**Armutlu**	**1.49**	**353**	*e*Pn	**Pg**	**04 14 51.3**	**-0.5**
EDC	**Edincik**	**1.57**	**324**	*e*PN	**Pb**	**04 14 52.4**	**-0.2**
EDC	**Edincik**	**1.57**	**324**	*e*Pn	**Pb**	**04 14 52.4**	**-0.2**
GULT	**Gulveren**	**1.74**	**39**	*e*PN	**Pb**	**04 14 54.8**	**-0.6**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn	**Pb**	**04 14 54.8**	**-0.6**
MRMT	**Marmara Adasi**	**1.90**	**323**	*e*PN	**Pn**	**04 14 56.8**	**+0.9**
MRMT	**Marmara Adasi**	**1.90**	**323**	*e*Pn	**Pn**	**04 14 56.8**	**+0.9**

*IDC **22** 04:24:11.9±0.8, 52.96N×170.79E, h0km, mb4.0/22, mb1 4.2/25, mb1mx4.1/44, mbtmp4.1/25, ML4.4/3, MS3.4/11, Ms1 3.4/11, ms1mx3.1/40, Error ellipse: s-maj=20.0km s-min=12.4km az=175.0*
*KRSC **22** 04:24:12.9±1.6, 52.82N×170.41E, h60km±48km, ML4.7*
*ISCJB **22** 04:24:13.7±0.3, 52.88N±0.05×170.38E±0.03, h28km, mb4.2/59, MS3.5/11, Error ellipse: s-maj=7.6km s-min=2.5km az=177.5*
*MOS **22** 04:24:14.8±1.1, 52.83N×170.41E, h43km, mb4.3/27, Error ellipse: s-maj=8.3km s-min=5.0km az=42.1*
*NEIC **22** 04:24:16.4±2.0, 52.93N×170.67E, h32km±15km, mb4.2/32, Error ellipse: s-maj=12.4km s-min=4.6km az=170.0*
ISC 22 04:24:15.2±0.6, **52.80N**±0.08×**170.45E**±0.05, **h28**km, **n174**, σ1ᵖ**48**/196, **mb4.2**/59, **MS3.4**/12, **3C-2D, Near Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMY	**Shemya**	**2.22**	**90**	*e*P	**Pn**	**04 24 48.2**	**-1.9**
SMY				*e*		04 25 13.1	
SMY	**Shemya**	**2.22**	**90**	*e*Pn	**Pn**	**04 24 48.2**	**-1.9**
SMY				*e*Sn	**Sn**	**04 25 13.1**	**-3.4**
BKI	**Bering**	**3.57**	**314**	P	**Pn**	**04 25 08.0**	**-0.6**
BKI				S	**Sn**	**04 25 49.9**	**+0.1**
BKI	**Bering**	**3.57**	**314**	*e*P	**Pn**	**04 25 08.0**	**-0.6**
BKI				*e*S	**Sn**	**04 25 49.9**	**+0.1**
MKZ	**Mys Kozlova**	**5.47**	**292**	P	**Pn**	**04 25 34.3**	**-0.4**
MKZ				S	**Sn**	**04 26 35.3**	**-1.3**
MKZ	**Mys Kozlova**	**5.47**	**292**	*e*P	**Pn**	**04 25 34.3**	**-0.4**
MKZ				*e*S	**Sn**	**04 26 35.3**	**-1.3**
SPN	**Mys Shipunski**	**6.31**	**277**	P	**Pn**	**04 25 46.8**	**+0.6**
SPN				S	**Sn**	**04 26 55.1**	**-2.2**
SPN	**Mys Shipunski**	**6.31**	**277**	*e*P	**Pn**	**04 25 46.8**	**+0.6**
SPN				*e*S	**Sn**	**04 26 55.1**	**-2.2**
KZV	**Kizimen**	**6.42**	**295**	P	**Pn**	**04 25 48.2**	**+0.2**
KZV	**Kizimen**	**6.42**	**295**	*e*P	**Pn**	**04 25 48.2**	**+0.2**
SMKR	**Semkarok**	**6.43**	**310**	P	**Pn**	**04 25 48.6**	**+0.6**
SMKR				S	**Sn**	**04 26 59.6**	**-0.9**
SMKR	**Semkarok**	**6.43**	**310**	*e*P	**Pn**	**04 25 48.6**	**+0.6**
SMKR				*e*S	**Sn**	**04 26 59.6**	**-0.9**
ZLN	**Zelenaya**	**6.48**	**304**	P	**Pn**	**04 25 50.1**	**+1.4**
ZLN	**Zelenaya**	**6.48**	**304**	*e*P	**Pn**	**04 25 50.1**	**+1.4**
BDR	**Baidarnaya**	**6.55**	**309**	P	**Pn**	**04 25 49.9**	**+0.3**
BDR	**Baidarnaya**	**6.55**	**309**	*e*P	**Pn**	**04 25 49.9**	**+0.3**
CIRR	**Tsirk**	**6.56**	**304**	P	**Pn**	**04 25 49.9**	**+0.1**
CIRR	**Tsirk**	**6.56**	**304**	*e*P	**Pn**	**04 25 49.9**	**+0.1**
TUMR	**Tumrok**	**6.56**	**296**	P	**Pn**	**04 25 50.0**	**+0.3**
TUMR	**Tumrok**	**6.56**	**296**	*e*P	**Pn**	**04 25 50.0**	**+0.3**
LGNR	**Loginova**	**6.57**	**304**	P	**Pn**	**04 25 51.2**	**+1.1**
LGNR	**Loginova**	**6.57**	**304**	*e*P	**Pn**	**04 25 51.2**	**+1.1**
BZMR	**Bezymyannaya**	**6.61**	**302**	P	**Pn**	**04 25 51.2**	**+0.7**
BZMR	**Bezymyannaya**	**6.61**	**302**	*e*P	**Pn**	**04 25 51.2**	**+0.7**
SRKR	**Sorokina**	**6.61**	**309**	P	**Pn**	**04 25 49.8**	**-0.7**
SRKR				S	**Sn**	**04 27 03.9**	**-1.0**
SRKR	**Sorokina**	**6.61**	**309**	*e*P	**Pn**	**04 25 49.8**	**-0.7**
SRKR				*e*S	**Sn**	**04 27 03.9**	**-1.0**
KMNR	**Kamenistaya**	**6.67**	**300**	P	**Pn**	**04 25 51.9**	**+0.6**
KMNR	**Kamenistaya**	**6.67**	**300**	*e*P	**Pn**	**04 25 51.9**	**+0.6**
KIRR	**Kirishev**	**6.69**	**302**	P	**Pn**	**04 25 51.8**	**+0.2**
KIRR	**Kirishev**	**6.69**	**302**	*e*P	**Pn**	**04 25 51.8**	**+0.2**
KLY	**Klyuchi**	**6.69**	**306**	P	**Pn**	**04 25 51.2**	**-0.3**
KLY	**Klyuchi**	**6.69**	**306**	*e*P	**Pn**	**04 25 51.2**	**-0.3**
NLC	**Nalytchevo**	**6.72**	**278**	P	**Pn**	**04 25 52.2**	**+0.4**
NLC				S	**Sn**	**04 27 06.0**	**-1.3**
NLC	**Nalytchevo**	**6.72**	**278**	*e*P	**Pn**	**04 25 52.2**	**+0.4**
NLC				*e*S	**Sn**	**04 27 06.0**	**-1.3**
KPT	**Kopyto**	**6.76**	**302**	P	**Pn**	**04 25 53.7**	**+1.2**
KPT	**Kopyto**	**6.76**	**302**	*e*P	**Pn**	**04 25 53.7**	**+1.2**
SDLR	**Sedlovina**	**6.99**	**279**	P	**Pn**	**04 25 56.3**	**+0.6**
SDLR				S	**Sn**	**04 27 14.2**	**-0.1**
SDLR	**Sedlovina**	**6.99**	**279**	*e*P	**Pn**	**04 25 56.3**	**+0.6**
SDLR				*e*S	**Sn**	**04 27 14.2**	**-0.1**
UGLR	**Uglovaya**	**7.03**	**278**	P	**Pn**	**04 25 56.2**	**0.0**
UGLR				S	**Sn**	**04 27 12.9**	**-2.3**
UGLR	**Uglovaya**	**7.03**	**278**	*e*P	**Pn**	**04 25 56.2**	**0.0**
UGLR				*e*S	**Sn**	**04 27 12.9**	**-2.3**
SMAR	**Somma**	**7.04**	**278**	P	**Pn**	**04 25 57.1**	**+0.6**
SMAR	**Somma**	**7.04**	**278**	*e*P	**Pn**	**04 25 57.1**	**+0.6**
KRER	**Koryakskii**	**7.07**	**279**	P	**Pn**	**04 25 58.6**	**+1.7**
KRER	**Koryakskii**	**7.07**	**279**	*e*P	**Pn**	**04 25 58.6**	**+1.7**
DALK	**Dalny**	**7.08**	**277**	P	**Pn**	**04 25 58.1**	**+1.3**
DALK				S	**Sn**	**04 27 16.8**	**+0.6**
DALK	**Dalny**	**7.08**	**277**	*e*P	**Pn**	**04 25 58.1**	**+1.3**
DALK				*e*S	**Sn**	**04 27 16.8**	**+0.6**
AVH	**Avacha**	**7.08**	**278**	P	**Pn**	**04 25 58.7**	**+1.8**
AVH				S	**Sn**	**04 27 15.7**	**-0.7**
AVH	**Avacha**	**7.08**	**278**	*e*P	**Pn**	**04 25 58.7**	**+1.8**
AVH				*e*S	**Sn**	**04 27 15.7**	**-0.7**
KRX	**Arik**	**7.13**	**279**	P	**Pn**	**04 25 58.2**	**+0.5**
KRX	**Arik**	**7.13**	**279**	*e*P	**Pn**	**04 25 58.2**	**+0.5**
PET	**Petropavlovsk**	**7.14**	**276**	*e*P	**Pn**	**04 26 00.6**	**+3.0**
PET				*e*S	**Sn**	**04 27 14.6**	**-3.1**
PET				pmax	pmax		
	comp=Z,20nm,0.4s						
PET				smax	smax		
	comp=E,36nm,0.6s						
PET				smax	smax		
	comp=N,32nm,0.6s						
PET				smax	smax		
	comp=Z,100nm,16.0s						
PET				smax	smax		
	comp=Z,100nm,17.0s						
PET	**Petropavlovsk**	**7.14**	**276**	*e*Pn	**Pn**	**04 25 57.9**	**+0.3**
PET				*e*Sn	**Sn**	**04 27 15.4**	**-2.2**
KOK	**Koryaka**	**7.14**	**279**	P	**Pn**	**04 25 59.4**	**+1.7**
KOK	**Koryaka**	**7.14**	**279**	*e*P	**Pn**	**04 25 59.4**	**+1.7**
RUS	**Russkaya**	**7.28**	**272**	P	**Pn**	**04 25 59.9**	**+0.4**
RUS				S	**Sn**	**04 27 20.0**	**-1.1**
RUS	**Russkaya**	**7.28**	**272**	*e*P	**Pn**	**04 25 59.9**	**+0.4**
RUS				*e*S	**Sn**	**04 27 20.0**	**-1.1**
KRMR	**Karymshinskiy**	**7.47**	**275**	P	**Pn**	**04 26 02.5**	**+0.4**
KRMR				S	**Sn**	**04 27 23.7**	**-2.1**
KRMR	**Karymshinskiy**	**7.47**	**275**	*e*P	**Pn**	**04 26 02.5**	**+0.4**
KRMR				*e*S	**Sn**	**04 27 23.7**	**-2.1**
ESO	**Esso**	**7.54**	**299**	P	**Pn**	**04 26 02.8**	**-0.4**
ESO	**Esso**	**7.54**	**299**	*e*P	**Pn**	**04 26 02.8**	**-0.4**
GNL	**Ganaly**	**7.56**	**282**	P	**Pn**	**04 26 04.0**	**+0.5**
GNL				S	**Sn**	**04 27 28.3**	**+0.1**
GNL	**Ganaly**	**7.56**	**282**	*e*P	**Pn**	**04 26 04.0**	**+0.5**
GNL				*e*S	**Sn**	**04 27 28.3**	**+0.1**
ASAK	**Asacha**	**7.66**	**272**	P	**Pn**	**04 26 06.6**	**+1.8**
ASAK	**Asacha**	**7.66**	**272**	*e*P	**Pn**	**04 26 06.6**	**+1.8**
OSSR	**Ossora**	**7.67**	**330**	P	**Pn**	**04 26 06.0**	**+1.2**
OSSR	**Ossora**	**7.67**	**330**	*e*P	**Pn**	**04 26 06.0**	**+1.2**
PEA0	**Petropavlovsk-**	**7.71**	**277**	*e*Pn	**Pn**	**04 26 08.1**	**+2.6**
PEA0B	**Petropavlovsk-**	**7.71**	**277**	*e*Pn	**Pn**	**04 26 08.2**	**+2.7**
PETK	**Petropavlovsk-**	**7.71**	**277**	Pn	**Pn**	**04 26 07.8**	**+2.3**
	comp=Z,4.7nm,0.3s,baz=89,slow=17,SNR=112						
PETK				Sn	**Sn**	**04 27 30.9**	**-0.9**
	comp=Z,2.3nm,0.3s,baz=98,slow=20,SNR=6.1						
PETK				LR	LR	04 29 08.8	
	comp=Z,139nm,20.7s,baz=92,slow=38						
SKR	**Severo-Kuril's**	**9.14**	**262**	P	**Pn**	**04 26 24.8**	**-0.3**
SKR	**Severo-Kuril's**	**9.14**	**262**	*e*P	**Pn**	**04 26 24.8**	**-0.3**
MA2	**Magadan**	**12.85**	**310**	Pn	**Pn**	**04 27 18.5**	**+2.7**
	comp=Z,1.2nm,0.3s,baz=77,slow=6.8,SNR=3.6						
MA2				LR	LR	04 32 21.2	
	comp=Z,216nm,18.1s,baz=110,slow=38						
SEY	**Seymchan**	**13.92**	**324**	Pn	**Pn**	**04 27 30.6**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=127,slow=14,SNR=4.4						
SEY	**Seymchan**	**13.92**	**324**	*e*P	**P**	**04 27 37.0**	**-1.1**
BILL	**Bilibino**	**15.42**	**354**	*e*P	**P**	**04 27 54.1**	**-0.6**
BILL				pmax	pmax		
	comp=Z,4.0nm,0.8s						
BILL				MLR	MLR		
	comp=Z,465nm,21.0s						
BILL	**Bilibino**	**15.42**	**354**	*e*Pn	**P**	**04 27 54.1**	**-0.6**
	comp=Z,12nm,0.8s						
TT01	**Tatalina**	**20.26**	**47**	*e*P	Pn	04 28 50.2	+0.1
TTA	**Tatalina**	**20.27**	**47**	*e*P	**P**	**04 28 49.4**	**+1.2**
TTA				pmax	pmax		
	comp=Z,7.0nm,0.6s						
TTA	**Tatalina**	**20.27**	**47**	*e*P	**P**	**04 28 49.4**	**+1.2**
	comp=Z,7.4nm,0.6s						
ASAJ	**Asahikawa**	**20.30**	**256**	P	Pn	04 28 52.4	+1.6
	comp=Z,3.0nm,0.4s,baz=5.2,slow=11						
OHAK	**Old Harbor**	**21.09**	**63**	*e*P	**P**	**04 28 54.6**	**-2.4**
	comp=Z,12nm,0.8s						
KDAK	**Kodiak Island**	**21.44**	**62**	*i*P	**P**	**04 28 58.3**	**-2.4**
KDAK	**Kodiak Island**	**21.44**	**62**	*e*P	**P**	**04 28 58.8**	**-1.9**
	comp=Z,41nm,1.8s						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAST	**Castle Rocks**	**22.11**	**47**	*e*P	**P**	**04 29 11.9**	**+3.9**
	comp=Z,5.5nm,0.8s						
KTH	**Kantishna Hill**	**22.65**	**47**	*e*P	**P**	**04 29 14.4**	**+0.6**
	comp=Z,4.9nm,0.8s						
BPAW	**Bear Paw Mtn.**	**22.73**	**45**	*e*P	**P**	**04 29 14.8**	**+0.2**
	comp=Z,4.4nm,0.7s						
TRF	**Thorofare Moun**	**22.91**	**47**	*e*P	**P**	**04 29 17.5**	**+0.8**
	comp=Z,4.7nm,0.6s						
MLY	**Manley**	**23.04**	**43**	*e*P	**P**	**04 29 19.9**	**+2.1**
	comp=Z,5.5nm,1.4s						
YAK	**Yakutsk**	**23.43**	**309**	P	**P**	**04 29 23.2**	**+1.6**
	comp=Z,21nm,0.4s,baz=149,slow=0.9,SNR=3.1						
YAK				LR	LR	04 38 45.4	
	comp=Z,127nm,18.2s,baz=88,slow=37						
YAK	**Yakutsk**	**23.43**	**309**	*e*P	**P**	**04 29 22.1**	**+0.5**
YAK	**Yakutsk**	**23.43**	**309**	*e*P	**P**	**04 29 22.2**	**+0.5**
	comp=Z,22nm,0.4s						
RND	**Reindeer**	**23.55**	**47**	*e*P	**P**	**04 29 23.3**	**+0.4**
RND				pmax	pmax		
	comp=Z,4.0nm,0.9s						
RND	**Reindeer**	**23.55**	**47**	*e*P	**P**	**04 29 23.3**	**+0.4**
	comp=Z,3.9nm,0.9s						
MCK	**McKinley**	**23.56**	**46**	*e*P	**P**	**04 29 21.5**	**-1.4**
MCK				pmax	pmax		
	comp=Z,6.0nm,0.7s						
MCK	**McKinley**	**23.56**	**46**	*e*P	**P**	**04 29 21.5**	**-1.4**
	comp=Z,6.4nm,0.7s						
SML	**Sawmill**	**23.63**	**51**	*e*P	**P**	**04 29 22.3**	**-1.3**
SML				pmax	pmax		
	comp=Z,1.0nm,0.6s						
SML	**Sawmill**	**23.63**	**51**	*e*P	**P**	**04 29 22.3**	**-1.3**
	comp=Z,1.1nm,0.6s						
COLD	**Coldfoot**	**23.84**	**38**	*e*P	**P**	**04 29 23.5**	**-2.0**
	comp=Z,3.2nm,0.6s						
WRH	**Wood River Hil**	**24.04**	**45**	*e*P	**P**	**04 29 26.0**	**-1.4**
	comp=Z,5.0nm,0.7s						
MDM	**Murphy Dome**	**24.06**	**44**	*e*P	**P**	**04 29 26.3**	**-1.4**
	comp=Z,4.7nm,0.6s						
SCM	**Sheep Creek Mo**	**24.11**	**51**	*e*P	**P**	**04 29 29.2**	**+1.0**
SCM				pmax	pmax		
	comp=Z,6.0nm,0.8s						
SCM	**Sheep Creek Mo**	**24.11**	**51**	*e*P	**P**	**04 29 29.2**	**+1.0**
	comp=Z,6.3nm,0.8s						
DHY	**Denali Highway**	**24.17**	**48**	*e*P	**P**	**04 29 28.1**	**-0.8**
	comp=Z,3.5nm,0.9s						
CCB	**Clear Creek Bu**	**24.19**	**44**	*e*P	**P**	**04 29 27.3**	**-1.5**
	comp=Z,4.8nm,0.7s						
COLA	**College**	**24.21**	**44**	*e*P	**P**	**04 29 26.9**	**-2.0**
COLA				pmax	pmax		
	comp=Z,9.0nm,0.6s						
COLA	**College**	**24.21**	**44**	*e*P	**P**	**04 29 26.9**	**-2.0**
	comp=Z,9.2nm,0.6s						
KLR	**Kul'dur**	**24.40**	**277**	P	**P**	**04 29 34.2**	**+3.3**
	comp=Z,3.0nm,0.9s,baz=66,slow=12,SNR=6.1						
KLR				LR	LR	04 40 08.1	
	comp=Z,65nm,18.6s,baz=66,slow=39						
IL1	**Eielson Array**	**24.60**	**44**	*e*P	**P**	**04 29 30.7**	**-1.8**
ILAR	**Eielson Array**	**24.60**	**44**	P	**P**	**04

MKAR	**Makanchi Array**	**53.79**	**302**	P		**P**	**04 33 35.1**	**+0.2**
	comp=Z,1.3nm,0.4s,baz=55,slow=7.0,SNR=17							
MKAR				LR		LR	04 57 56.4	
	comp=Z,39nm,20.7s,baz=32,slow=38							
MKAR	**Makanchi Array**	**53.79**	**302**	*e*P		**P**	**04 33 34.6**	**-0.3**
MKAR	**Makanchi Array**	**53.79**	**302**	*e*P		**P**	**04 33 34.6**	**-0.3**
MK01	**Makanchi Array**	**53.80**	**302**	*e*P		**P**	**04 33 35.0**	**+0.1**
MAKZ	**Makanchi**	**53.94**	**302**	*e*P		**P**	**04 33 36.3**	**+0.3**
MAKZ				pmax		pmax		
	comp=Z,2.0nm,0.8s							
MAKZ	**Makanchi**	**53.94**	**302**	*e*P		**P**	**04 33 36.3**	**+0.3**
	comp=Z,1.9nm,0.8s							
ARCES	**ARCESS Array B**	**55.32**	**346**	P		**P**	**04 33 46.4**	**+0.8**
	comp=Z,2.7nm,0.9s,baz=30,slow=10,SNR=3.6							
ARCES	**ARCESS Array B**	**55.32**	**346**	P		**P**	**04 33 46.4**	**+0.8**
ARCES				pmax		pmax		
	comp=Z,1.0nm,0.4s							
BRVK	**Borovoye**	**55.33**	**314**⇓	*e*P		**P**	**04 33 46.7**	**+0.8**
BRVK				pmax		pmax		
	comp=Z,3.0nm,0.6s							
BRVK	**Borovoye**	**55.33**	**314**	*e*P		**P**	**04 33 45.9**	**0.0**
	comp=Z,5.9nm,0.6s							
KLMR	**Klimovskoe**	**60.12**	**335**	*e*P		**P**	**04 34 18.8**	**-0.6**
KLMR				pmax		pmax		
	comp=Z,8.0nm,1.4s							
AAK	**Ala-Archa**	**60.67**	**303**⇑	*e*P		**P**	**04 34 24.4**	**+0.7**
AAK				pmax		pmax		
	comp=Z,4.0nm,1.1s							
KSH	**Kashi**	**62.16**	**299**	*e*P		P	04 34 38.9	+5.1
KSH				e*p*P		s*P*	04 34 58.3	+12
KSH				e*P*P		*P*P	04 36 58.3	+8.8
KSH				PcS		**PcS**	**04 39 19.8**	**+2.8**
KSH				S		**S**	**04 42 56.1**	**-1.2**
KSH				ScS		**SKKSac**	**04 44 19.1**	**-4.7**
KSH				pmax		pmax		
	comp=Z,28nm,3.4s							
KSH				LR		LR		
	comp=N,260nm,9.4s							
KSH				LR		LR		
	comp=E,390nm,15.3s							
KSH				LR		LR		
	comp=Z,140nm,5.3s							
ABKAR	**Akbulak array**	**62.55**	**316**	*e*P		**P**	**04 34 36.1**	**0.0**
FINES	**FINESS Array B**	**62.63**	**342**	P		**P**	**04 34 36.4**	**0.0**
	comp=Z,1.5nm,0.6s,baz=34,slow=7.1,SNR=5.5							
SCHQ	**Schefferville**	**62.73**	**33**	P		**P**	**04 34 36.0**	**-1.1**
	comp=Z,4.3nm,0.8s,baz=23,slow=7.7,SNR=3.0							
TXAR	**Lajitas Array**	**64.83**	**74**	P		**P**	**04 34 51.7**	**+0.2**
	comp=Z,0.5nm,0.5s,baz=305,slow=5.1,SNR=7.1							
NB2	**NORSAR Subarra**	**65.30**	**349**	P		**P**	**04 34 53.9**	**-0.1**
	comp=Z,1.0nm,0.5s,baz=14,slow=6.5							
NOA	**NORSAR Array B**	**65.30**	**349**	P		**P**	**04 34 54.1**	**+0.1**
	comp=Z,1.3nm,0.6s,baz=16,slow=6.6,SNR=7.5							
NOA				LR		LR	05 03 43.1	
	comp=Z,7.9nm,19.9s,baz=280,slow=36							
OBN	**Obninsk**	**65.88**	**333**	*i* P		**P**	**04 34 58.0**	**+0.2**
OBN				pmax		pmax		
	comp=Z,6.0nm,0.8s							
AKASG	**Malin Array Be**	**71.81**	**335**	LR		LR	05 08 55.8	
	comp=Z,18nm,19.5s,baz=290,slow=37							
GEYT	**Alibeck**	**72.30**	**310**	LR		LR	05 11 05.1	
	comp=Z,90nm,18.1s,baz=90,slow=8							
KBZ	**Khabaz**	**73.79**	**323**	P		**P**	**04 35 47.0**	**+0.5**
	comp=Z,1.6nm,0.7s,baz=79,slow=5.2,SNR=3.7							
GERES	**GERESS Array B**	**76.82**	**344**	P		**P**	**04 36 04.8**	**+0.7**
	comp=Z,1.9nm,0.6s,baz=36,slow=5.4,SNR=8.5							
WRA	**Warramunga Arr**	**78.93**	**214**	P		**P**	**04 36 17.6**	**+1.7**
	comp=Z,1.2nm,1.0s,baz=28,slow=6.1,SNR=5.1							
BRTR	**Keskin Array B**	**80.54**	**328**	P		**P**	**04 36 26.1**	**+1.4**
	comp=Z,1.0nm,0.7s,baz=57,slow=4.6,SNR=5.6							
BRTR	**Keskin Array B**	**80.54**	**328**	*i* P		**P**	**04 36 25.8**	**+1.1**
BRTR				pmax		pmax		
	comp=Z,1.0nm,0.8s							
ASAR	**Alice Springs**	**82.53**	**213**	P		**P**	**04 36 38.1**	**+3.0**
	comp=Z,1.0nm,0.9s,baz=16,slow=5.4,SNR=4.9							
TSUM	**Tsumeb**	**140.39**	**317**	*e*PKPdf		**PKPdf**	**04 43 40.8**	**-0.9**

*DDA **22** 04:24:44.9,39.˚10N×29.˚11E,h7km,Ml2.6*
*ISCJB **22** 04:24:45.2±0.6,39.˚11N±0.˚05×29.˚06E±0.˚04,h4km±8km, Error ellipse: s-maj=8.0km s-min=4.6km az=159.6*
*ISK **22** 04:24:45.2,39.˚12N×28.˚99E,h7km,MD2.5*
*CSEM **22** 04:24:45.4±0.3,39.˚10N×29.˚05E,h10km,ML2.6,Error ellipse: s-maj=7.2km s-min=5.3km az=131.0*
ISC 22 04:24:45.0±1.1,39.˚10N±0.˚03×29.˚05E±0.˚02,h6km±10km, n22,σ0s58/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**257**	*i* P	**Pb**	**04 24 51.6**	**-0.7**
DEMI				*i* S	**Sg**	**04 24 54.6**	**+0.8**
DEMI	**Demirci**	**0.27**	**257**	P	**Pb**	**04 24 51.6**	**-0.7**
DEMI				S	**Sg**	**04 24 54.6**	**+0.8**
GEDZ	**Gediz**	**0.28**	**101**	*e*PG	**Pb**	**04 24 52.8**	**+0.2**
GEDZ	**Gediz**	**0.28**	**101**	*e*Pg	**Pb**	**04 24 52.8**	**+0.2**
GDZ	**Gediz**	**0.33**	**92**	*i* P	**Pg**	**04 24 50.7**	**-0.8**
GDZ				*i* S	**Sg**	**04 24 55.5**	**-0.5**
GDZ	**Gediz**	**0.33**	**92**	P	**Pg**	**04 24 50.7**	**-0.8**
GDZ				S	**Sg**	**04 24 55.5**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**04 24 54.3**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**04 24 54.3**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**04 24 58.3**	**+0.6**
KULA				*e*SG	**Sb**	**04 25 07.8**	**-0.7**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**04 24 58.3**	**+0.6**
KULA				*e*Sg	**Sb**	**04 25 07.8**	**-0.7**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**04 24 58.5**	**-0.4**
MANT				*i* S	**Sg**	**04 25 08.6**	**+0.4**
MANT	**Manisa**	**0.72**	**213**	P	**Pg**	**04 24 58.5**	**-0.4**
MANT				S	**Sg**	**04 25 08.6**	**+0.4**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pb**	**04 25 02.9**	**+0.5**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pb**	**04 25 02.9**	**+0.5**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pn**	**04 25 09.5**	**0.0**
KCTX				*e*SN	**Sn**	**04 25 27.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pn**	**04 25 09.5**	**0.0**
KCTX				*e*Sn	**Sn**	**04 25 27.3**	**+0.3**
SHUT	**Suhut-Afyon**	**1.29**	**115**	*e*PN	**Pg**	**04 25 10.7**	**+0.9**
SHUT	**Suhut-Afyon**	**1.29**	**115**	*e*Pn	**Pg**	**04 25 10.7**	**+0.9**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pn**	**04 25 09.5**	**-0.8**
BORA				*i* S	**Sb**	**04 25 28.1**	**+0.2**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pn**	**04 25 09.5**	**-0.8**
BORA				S	**Sb**	**04 25 28.1**	**+0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**04 25 13.0**	**+0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**04 25 13.0**	**+0.2**

*DDA **22** 04:26:36.9,39.˚05N×29.˚09E,h7km,Ml2.8*
*ISCJB **22** 04:26:37.2±0.6,39.˚08N±0.˚04×29.˚08E±0.˚04,h5km±7km, Error ellipse: s-maj=7.1km s-min=4.6km az=162.2*
*ISK **22** 04:26:37.0,39.˚09N×29.˚11E,h8km,MD2.8*
*CSEM **22** 04:26:37.1±0.1,39.˚10N×29.˚09E,h2km,ML2.8,Error ellipse: s-maj=4.3km s-min=2.9km az=118.0*
ISC 22 04:26:37.2±0.9,39.˚08N±0.˚02×29.˚08E±0.˚03,h11km±8km, n26,σ0s74/42,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**263**	*i* P	**Pg**	**04 26 43.5**	**+0.5**
DEMI				*i* S	**Sg**	**04 26 47.4**	**+0.5**
DEMI	**Demirci**	**0.28**	**263**	P	**Pg**	**04 26 43.5**	**+0.5**
DEMI				S	**Sg**	**04 26 47.3**	**+0.5**
GDZ	**Gediz**	**0.32**	**88**	*i* P	**Pg**	**04 26 43.8**	**+0.1**
GDZ				*i* S	**Sg**	**04 26 48.5**	**+0.6**
GDZ	**Gediz**	**0.32**	**88**	P	**Pg**	**04 26 43.8**	**+0.1**
GDZ				S	**Sg**	**04 26 48.5**	**+0.6**
TVSB	**Tavsanli**	**0.48**	**39**	*e*PG	**Pg**	**04 26 46.0**	**-0.6**
TVSB	**Tavsanli**	**0.48**	**39**	*e*Pg	**Pg**	**04 26 46.0**	**-0.6**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*PG	**Pb**	**04 26 50.5**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*Pg	**Pb**	**04 26 50.5**	**-0.1**
MANT	**Manisa**	**0.71**	**215**	*i* P	**Pg**	**04 26 50.0**	**-1.0**
MANT				*i* S	**Sg**	**04 26 59.9**	**-0.5**
MANT	**Manisa**	**0.71**	**215**	P	**Pg**	**04 26 50.0**	**-1.0**
MANT				S	**Sg**	**04 26 59.9**	**-0.5**
KHL	**Karahalli**	**0.83**	**155**	*e*PG	**Pb**	**04 26 53.6**	**-0.1**
KHL				*e*SG	**Sb**	**04 27 05.2**	**+0.3**
KHL	**Karahalli**	**0.83**	**155**	*e*Pg	**Pb**	**04 26 53.6**	**-0.1**
KHL				*e*Sg	**Sb**	**04 27 05.3**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pg**	**04 27 01.4**	**-0.2**
CAVI				*e*SN	**Sn**	**04 27 19.0**	**+1.0**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pg**	**04 27 01.4**	**-0.2**
CAVI				*e*Sn	**Sn**	**04 27 19.0**	**+1.0**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pg**	**04 27 01.7**	**-0.4**
IZI				*e*SN	**Sn**	**04 27 20.4**	**+1.7**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pg**	**04 27 01.7**	**-0.4**
IZI				*e*Sn	**Sn**	**04 27 20.4**	**+1.7**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN	**Pg**	**04 27 02.2**	**-0.2**
KCTX				*e*SN	**Sn**	**04 27 20.5**	**+1.5**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn	**Pg**	**04 27 02.2**	**-0.2**
KCTX				*e*Sn	**Sn**	**04 27 20.5**	**+1.5**
BORA	**Eskisehir**	**1.33**	**53**	*i* P	**Pn**	**04 27 01.1**	**-0.8**
BORA				*i* S	**Sb**	**04 27 19.1**	**-0.4**
BORA	**Eskisehir**	**1.33**	**53**	P	**Pn**	**04 27 01.1**	**-0.8**
BORA				S	**Sb**	**04 27 19.1**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**220**	*e*PN	**Pg**	**04 27 05.2**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**220**	*e*Pn	**Pg**	**04 27 05.2**	**-0.1**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pb**	**04 27 04.7**	**-0.3**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pb**	**04 27 04.7**	**-0.3**
MRMT	**Marmara Adasi**	**1.90**	**324**	*e*PN	**Pb**	**04 27 11.2**	**-0.8**
MRMT	**Marmara Adasi**	**1.90**	**324**	*e*Pn	**Pb**	**04 27 11.2**	**-0.8**

IDC 22 04:31:11.1±13.0,21.˚02S×177.˚72W,h490km±125km, mb3.3/4,mb1 3.6/4,mb1mx3.0/22,mbtmp4.2/4,Error ellipse: s-maj=146.6km s-min=50.4km az=133.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**37.80**	**245**	P	P	04 37 44.4	-0.5
	1.9nm,0.8s,baz=96,slow=15,SNR=3.2						
ASAR	**Alice Springs**	**44.66**	**257**	P	P	04 38 40.0	+0.4
	3.9nm,0.5s,baz=95,slow=7.6,SNR=54						
ASAR				PcP	PcP	04 40 12.7	+0.6
	0.6nm,0.5s,baz=102,slow=3.9,SNR=5.7						
WRA	**Warramunga Arr**	**44.79**	**262**	P	P	04 38 40.0	-0.7
	2.2nm,0.3s,baz=96,slow=7.5,SNR=137						
ILAR	**Eielson Array**	**88.76**	**13**	P	P	04 43 11.9	+0.5
	0.5nm,0.6s,baz=226,slow=5.6,SNR=4.7						
AKASG	**Malin Array Be**	**143.59**	**331**	PKP	PKPab	04 49 47.0	-0.9
	1.8nm,0.4s,baz=44,slow=4.5,SNR=16						
BRTR	**Keskin Array B**	**147.38**	**312**	PKPbc	PKPbc	04 49 59.2	-0.4
	0.8nm,0.5s,baz=142,slow=5.8,SNR=4.1						
GERES	**GERESS Array B**	**150.76**	**344**	PKPbc	PKPbc	04 50 07.3	-0.2
	0.9nm,0.8s,baz=57,slow=4.9,SNR=5.5						

OTT 22 04:40:02.3±0.3,62.˚09N×60.˚49W,h18km,ML3.5/4, LAlbertaRADOR Sea Seismic Zone. 249km northeast from Resolution Island, Nu,Davis Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FRB	**Frobisher Bay**	**4.04**	**298**	PN	Pn	04 41 03.7	+0.6
FRB				SN	Sn	04 41 47.7	-2.3
FRB				Trac		04 42 20.1	
	comp=Z,63nm,0.8s						
KUQ	**Kuujjuuaa**	**5.62**	**228**	PN	Pn	04 41 24.1	-0.8
KUQ				SN	Sn	04 42 23.3	-5.6
KUQ				Trac		04 42 26.2	
	comp=Z,3.9nm,0.2s						
SCHQ	**Schefferville**	**8.00**	**207**	PN	Pn	04 41 56.8	-0.7
SCHQ				SN	Sn	04 43 21.5	-5.9
SCHQ				Trac		04 43 24.9	
	comp=Z,850nm,3.8s						
INUQ	**Inukjuak**	**9.48**	**255**	PN	Pn	04 42 17.0	-0.7
INUQ				SN	Sn	04 43 55.0	-8.6
INUQ				Trac		04 44 13.8	
	comp=Z,246nm,1.9s						
LG4Q	**La Grande 4**	**11.13**	**227**	PN	Pn	04 42 37.4	-3.0
LG4Q				SN	Sn	04 44 32.8	-11
LG4Q				Trac		04 44 39.9	
	comp=Z,0.9nm,0.2s						
ILON	**Igloolik, Nuna**	**11.35**	**319**	PN	Pn	04 42 42.0	-1.3
ILON				SN	Sn	04 44 40.5	-8.9
ILON				SN		04 44 40.9	
ILON				Trac		04 44 48.9	
	comp=Z,4.6nm,0.7s						
GIFN	**Gifford Fjord,**	**11.62**	**322**	PN	Pn	04 42 45.3	-1.6
GIFN				SN	Sn	04 44 47.5	-8.5
GIFN				Trac		04 44 57.4	
	comp=Z,62nm,1.9s						
LAIN	**Lailor River,**	**11.77**	**317**	PN	Pn	04 42 47.4	-1.6
LAIN				SN	Sn	04 44 50.5	-9.2
LAIN				Trac		04 44 57.5	
	comp=Z,50nm,1.2s						
NATG	**Natashquan Que**	**11.90**	**187**	PN	Pn	04 42 48.2	-2.7
NMSQ	**Nemaska Statio**	**13.38**	**226**	PN	Pn	04 43 07.0	-4.0
NMSQ				SN	Sn	04 45 26.3	-13
NMSQ				Trac		04 45 29.2	
	comp=Z,0.3nm,0.0s						
KUGN	**Kugaaruk Camp,**	**13.72**	**309**	PN	Pn	04 43 14.1	-1.5
KUGN				SN	Sn	04 45 37.5	-10
KUGN				Trac		04 45 51.6	
	comp=Z,296nm,4.2s						
SEDN	**First Sedna Si**	**14.09**	**288**	PN	Pn	04 43 18.7	-1.9
SEDN				SN	Sn	04 45 46.2	-10
SEDN				Trac		04 45 55.5	
	comp=Z,220nm,4.2s						
SMLN	**Simpson Lake,**	**14.50**	**310**	PN	Pn	04 43 23.4	-2.9
SMLN				Trac		04 46 00.0	
	comp=Z,58nm,2.6s						
MCMN	**McManaman Lake**	**14.57**	**289**	PN	Pn	04 43 25.4	-1.8
MCMN				SN	Sn	04 45 57.7	-10
MCMN				Trac		04 46 07.8	
	comp=Z,241nm,3.4s						
BULN	**Bullion Camp,**	**14.71**	**301**	PN	Pn	04 43 26.9	-2.2
BULN				SN	Sn	04 46 00.3	-11
BULN				Trac		04 46 11.2	
	comp=Z,170nm,3.1s						

MAN 22 04:42:36,9.˚41N×122.˚06E,h31km,mb4.7,ML3.6,MS3.6, 3C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**1.16**	**93**⇓	*i*P	Pn	04 42 55.9	-0.3
SNPH				*i* S	Sn	04 43 11.4	+0.4
JAP	**San Jose, Anti**	**1.33**	**355**⇓	*e*P	Pn	04 42 59.1	+0.6
DCPH	**Dipolog City**	**1.52**	**123**⇓	*e*P	Pn	04 43 02.2	+1.2
TBP	**Tagbilaran**	**1.80**	**81**⇑	*i*P	Pn	04 43 06.1	+1.2
TBP				*i* S	Sn	04 43 26.4	-0.3
LLP	**Lapu-Lapu**	**2.08**	**64**	*e*P	Pn	04 43 09.4	+0.6
LLP				*e*S	Sn	04 43 35.4	+1.7
CTBH	**Cotabato--PC H**	**3.06**	**135**⇑	*i*P	Pb	04 43 27.2	-2.7

*IDC **22** 04:47:28.6±3.4,36.˚26N×142.˚11E,h0km,mb3.4/2, mb1 3.5/3,mb1mx3.3/36,mbtmp3.3/3,ML3.2/1,Error ellipse: s-maj=80.7km s-min=36.8km az=55.0*
*JMA **22** 04:47:31.7±0.2,36.˚63N×141.˚94E,h39km,M3.3*
ISC 22 04:47:32.6±3.3,36.˚7N±0.˚1×141.˚8E±0.˚1,h8km±12km,n10, σ0s91/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.89**	**294**	P	**Pg**	**04 47 49.7**	**0.0**
JFK	**Kawauchi**	**0.97**	**310**	P	**Pg**	**04 47 51.5**	**+0.2**
JHO	**Hitachi**	**1.01**	**263**	P	**Pg**	**04 47 51.0**	**-1.0**
JHO				S	**Sg**	**04 48 05.1**	**+0.1**
JMM	**Marumori**	**1.38**	**324**	P	Pn	04 47 57.3	-0.9
JMM				*e*S	**Sn**	**04 48 15.8**	**-0.8**
JFT	**Otama**	**1.41**	**304**	P	Pn	04 47 58.6	0.0
JFT				*e*S	**Sn**	**04 48 17.5**	**+0.2**
JIO	**Ouri**	**1.75**	**348**	P	Pn	04 48 01.9	-1.3
JIO				*e*S	**Sn**	**04 48 23.9**	**-1.7**
JOU	**Okura**	**1.86**	**331**	P	**Pn**	**04 48 05.2**	**+0.5**
MJAR	**Matsushiro Arr**	**2.90**	**267**	Pn	**Pn**	**04 48 19.8**	**+0.7**
	3.2nm,0.3s,baz=98,slow=18,SNR=17						
MJAR				Sn	**Sn**	**04 48 53.6**	**-0.6**
	1.8nm,0.3s,baz=314,slow=19,SNR=4.7						
MKAR	**Makanchi Array**	**44.54**	**302**	P	**P**	**04 55 45.2**	**+0.4**
	0.2nm,0.5s,baz=93,slow=9.2,SNR=3.2						
WRA	**Warramunga Arr**	**56.82**	**188**	P	P	04 57 11.8	-5.8
	0.5nm,0.9s,baz=5.9,slow=7.1,SNR=3.1						

*SOME **22** 05:02:01.5,40.˚88N×76.˚65E,h10km*
*NNC **22** 05:02:03.3±2.8,45.˚08N×75.˚44E,h0km,mb3.6,mpv3.2, Error ellipse: s-maj=22.5km s-min=11.4km az=155.0*
*KRNET **22** 05:02:03.5±0.1,41.˚07N×76.˚57E,h22km,mb2.8*
ISC 22 05:02:01.4±1.7,40.˚97N±0.˚07×76.˚61E±0.˚03,h7km±11km, n34,σ1s23/67,38C-6D,Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDJ	**Kajisay**	**1.24**	**20**⇑	*e*P	**Pn**	**05 02 25.9**	**+0.6**
	baz=23						
KDJ				⇑*e*S	**Sn**	**05 02 42.4**	**0.0**
	baz=23						
ULHL	**Ulahol**	**1.31**	**348**⇑	*i*P	**Pg**	**05 02 26.9**	**+0.4**
	baz=348						
ULHL				⇑*i*S	**Sn**	**05 02 43.7**	**-0.5**
	baz=348						
KZA	**Kyzart**	**1.51**	**318**⇑	*i*P	**Pg**	**05 02 30.9**	**+0.5**
	baz=316						
KZA				⇑*i*S	**Sg**	**05 02 52.1**	**+2.1**
	baz=316						
ARLS	**Aral**	**1.94**	**298**⇑	*e*P	**Pg**	**05 02 38.5**	**-0.1**
	baz=296						
ARLS				⇑*e*S	**Sg**	**05 03 02.4**	**-1.3**
	baz=296						
ANVS	**Anan'yevo**	**1.98**	**23**⇑	*i*P	**Pg**	**05 02 39.0**	**-0.3**
	baz=25						
ANVS				⇑*i*S	**Sg**	**05 03 04.7**	**-0.3**
	baz=25						
PRZ	**Przheval'sk**	**2.02**	**41**⇑	*e*P	**Pb**	**05 02 40.1**	**+1.5**
	baz=44						
PRZ				⇑*e*S	**Sg**	**05 03 06.6**	**+0.3**
	baz=44						
IZV	**Izvestkoviy**	**2.07**	**0**	*e*P	**Pb**	**05 02 40.0**	**+0.7**
	19nm,0.5s						
IZV				*e*S	**Sg**	**05 03 07.8**	**0.0**
	53nm,0.7s						
TKM2	**Tokmak 2**	**2.09**	**339**⇑	*i*P	**Pb**	**05 02 40.4**	**+0.5**
	baz=339						
TKM2				⇑*i*S	**Sg**	**05 03 07.3**	**-1.4**
	baz=339						
TKM2	**Tokmak 2**	**2.09**	**339**	⇑Pn	**Pg**	**05 02 41.7**	**+0.1**
	6.6nm,0.4s						
TKM2				⇓Sn	**Sg**	**05 03 10.0**	**+1.3**
	24nm,0.6s						
KBK	**Karagaybulak**	**2.10**	**324**⇑	*i*P	**Pg**	**05 02 40.9**	**-0.7**
	baz=323						
KBK				⇑*i*S	**Sg**	**05 03 08.3**	**-0.5**
	baz=323						
KST	**Kastek**	**2.13**	**347**⇑	*i*P	**Pg**	**05 02 42.2**	**0.0**
	2.5nm,0.3s						
KST				⇑*i*S	**Sg**	**05 03 11.3**	**+1.5**
	20nm,0.9s						
MTBS	**Maitube**	**2.16**	**356**	*e*P	**Pg**	**05 02 42.8**	**-0.1**
	5.6nm,0.2s						
MTBS				⇑*i*S	**Sg**	**05 03 12.6**	**+1.6**
	28nm,0.2s						
MDOK	**Medeo**	**2.22**	**8**	*e*P	**Pg**	**05 02 43.7**	**-0.2**
	7.0nm,0.3s						
MDOK				*e*S	**Sg**	**05 03 13.8**	**+1.1**
	40nm,0.5s						
BMNS	**Besmoynak**	**2.25**	**342**	*e*P	**Pg**	**05 02 44.9**	**+0.3**
	88nm,0.3s						
BMNS				*e*S	**Sg**	**05 03 16.2**	**+2.5**
	89nm,0.6s						
KOTS	**Kotyrbulak**	**2.29**	**9**	*e*P	**Pb**	**05 02 44.0**	**+0.7**
KOTS				*e*S	**Sg**	**05 03 14.6**	**-0.6**
AAK	**Ala-Archa**	**2.30**	**317**⇑	*i*P	**Pb**	**05 02 44.1**	**+0.8**
	baz=316						
AAK				⇑*i*S	**Sg**	**05 03 13.8**	**-1.5**
	baz=316						
AAK	**Ala-Archa**	**2.30**	**317**	⇓Pn	**Pg**	**05 02 45.5**	**0.0**
	20nm,0.6s						
AAK				⇑Sn	**Sg**	**05 03 17.8**	**+2.5**
	25nm,0.6s						
DGS	**Degeres**	**2.36**	**345**	*e*P	**Pg**	**05 02 45.4**	**-1.1**
	26nm,0.7s						
DGS				*e*S	**Sg**	**05 03 17.1**	**-0.1**
	24nm,0.4s						
FRU1	**Bishkek**	**2.36**	**322**⇑	*i*P	**Pb**	**05 02 43.5**	**-0.8**
	baz=321						
FRU1				⇑*e*S	**Sb**	**05 03 12.8**	**-0.9**
	baz=321						
CHMS	**Chumysh**	**2.46**	**326**⇑	*i*P	**Pb**	**05 02 45.4**	**-0.6**
	baz=326						
CHMS				⇑*i*S	**Sb**	**05 03 16.5**	**0.0**
	baz=326						
AML	**Almayashu**	**2.48**	**299**⇑	*i*P	**Pb**	**05 02 46.9**	**+0.4**
	baz=297						
AML				⇑*i*S	**Sg**	**05 03 19.3**	**-1.8**
	baz=297						
EKS2	**Erkin-Say**	**2.71**	**310**⇑	*i*P	**Pb**	**05 02 50.0**	**-0.3**
	baz=309						
EKS2				⇑*i*S	**Sb**	**05 03 23.3**	**-0.6**
	baz=309						
KTBS	**Karatobe**	**2.74**	**1**	*e*P	**Pg**	**05 02 52.4**	**-1.6**
KTBS				*e*S	**Sg**	**05 03 29.1**	**-0.4**
ARSB	**Arslanbob**	**2.76**	**279**⇓	*e*P	**Pb**	**05 02 51.5**	**+0.2**
	baz=277						
ARSB				⇓*e*S	**Sb**	**05 03 25.0**	**-0.4**
	baz=277						
KURS	**Kuram**	**2.77**	**24**	*e*P	**Pg**	**05 02 53.7**	**-0.8**
	1.7nm,0.4s						
KURS				⇑*i*S	**Sg**	**05 03 31.4**	**+1.0**
	7.6nm,0.5s						
USP	**Ospenovka**	**2.78**	**326**⇑	*i*P	**Pb**	**05 02 50.7**	**-0.8**
	baz=326						
USP				⇑*i*S	**S

I46RU	**ZALESOVO INFRA**	**1.02 265**	*i*			05 46 30.0	
	baz=85,slow=320,SNR=4.4						
ZALV	**Zalesovo Beam**	**1.02 265**	Pg	Pg		05 40 23.5	-0.9
	1.7nm,0.3s,baz=82,slow=17,SNR=12						
ZALV			Lg	Lg		05 40 38.9	
	3.5nm,0.3s,baz=82,slow=30,SNR=17						
ZALV			Rg	Rg		05 40 44.4	
	145nm,1.2s,baz=83,slow=35,SNR=47						
KURBB	**Kurchatov Arra**	**5.99 238**	Pn	Pn		05 41 35.5	+0.8
	0.2nm,0.3s,baz=56,slow=14,SNR=6.2						
KURBB			Lg	Lg		05 43 14.0	
	0.0nm,0.3s,baz=60,slow=34,SNR=3.1						
MKAR	**Makanchi Array**	**7.76 202**	Pn	Pn		05 42 00.1	+1.2
	0.2nm,0.3s,baz=20,slow=13,SNR=9.6						
MKAR			Lg	Lg		05 44 11.6	
	0.1nm,0.3s,baz=26,slow=34,SNR=2.9						

ISCJB ***22*** *05:41:03.6±0.4,2°.75S±0°.03×128°.79E±0°.04, h33km, mb4.1/9, MS2.4/1, Error ellipse: s-maj=5.2km s-min=4.6km az=156.2*

DJA ***22*** *05:41:04.3±0.5,3°.S±4°×12°.9E±°, h52km±15km, M3.9/6, MLv3.9/6*

NEIC ***22*** *05:41:05.5±0.5,2°.83S×128°.80E, h35km, mb4.2/5, Error ellipse: s-maj=13.0km s-min=8.1km az=73.0*

IDC ***22*** *05:41:05.2±4.6,2°.81S×128°.83E, h33km±35km, mb3.9/8, mb1 4.1/11, mb1mx3.7/49, mbtmp4.1/11, ML3.8/3, MS2.6/2, Ms1 2.6/2, ms1mx2.4/28, Error ellipse: s-maj=35.6km s-min=9.6km az=74.0*

ISC 22 05:41:05.0±0.6, 2°.78S±0°.04×128°.78E±0°.04, h33km, n27, σ0§98/32, mb4.2/9, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSAI	**Masohi**	**0.58**	**165**	P	**Pn**	**05 41 17.6**	**+0.7**
MSAI				S	**Sn**	**05 41 25.1**	**-0.2**
NLAI	**Namlea**	**1.74**	**255**	P	**Pn**	**05 41 32.2**	**-0.7**
BNDI	**Bandanaira**	**2.06**	**147**	P	**Pn**	**05 41 36.1**	**-1.2**
LBMI	**Labuha**	**2.48**	**329**	P	**Pn**	**05 41 42.3**	**-0.9**
LBMI				S	**Sn**	**05 42 13.5**	**+1.1**
SANI	**Sanana**	**2.88**	**285**	P	**Pn**	**05 41 48.0**	**-0.7**
SANI				S	**Sn**	**05 42 21.0**	**-1.3**
SWI	**Sorong**	**3.12**	**52**	P	**Pn**	**05 41 51.8**	**-0.2**
SWI				S	**Sn**	**05 42 27.1**	**-1.1**
SIJI	**Sorong**	**3.13**	**53**	Pn	**Pn**	**05 41 51.9**	**-0.1**
	4.2nm,0.3s,baz=88,slow=24,SNR=8.1						
SIJI				Sn	**Sn**	**05 42 26.2**	**-2.1**
	7.6nm,0.3s,baz=270,slow=20,SNR=7.4						
FAKI	**Fak Fak**	**3.46**	**92**	P	**Pn**	**05 41 56.6**	**0.0**
FAKI	**Fak Fak**	**3.46**	**92**	*e*Pn	**Pn**	**05 41 56.1**	**-0.6**
KAPI	**Kappang**	**9.28**	**256**	LR	LR	05 47 20.7	
	comp=Z,29nm,18.9s,baz=79,slow=40						
FITZ	**Fitzroy Crossi**	**15.53**	**191**	Pn	**P**	**05 44 43.7**	**-2.0**
	0.2nm,0.3s,baz=4.8,slow=12,SNR=4.4						
FITZ	**Fitzroy Crossi**	**15.53**	**191**	*e*P	**Pn**	**05 44 42.0**	**+0.3**
	3.3nm,0.8s						
WRAB	**Tennant Creek**	**17.89**	**163**	*e*P	**Pn**	**05 45 10.3**	**-1.2**
	13nm,0.9s						
WRA	**Warramunga Arr**	**17.90**	**163**	P	**Pn**	**05 45 10.2**	**-1.3**
	0.8nm,0.3s,baz=347,slow=12,SNR=30						
WRA				S	**Sn**	**05 48 29.7**	**-0.6**
	0.1nm,0.3s,baz=337,slow=21,SNR=3.3						
COEN	**Coen**	**18.04**	**129**	*e*P	**P**	**05 45 15.0**	**+1.4**
	3.9nm,0.5s						
MBWA	**Marble Bar**	**20.28**	**205**	*e*P	**P**	**05 45 37.8**	**-0.2**
	100nm,1.0s						
ASAR	**Alice Springs**	**21.34**	**167**	P	**P**	**05 45 50.1**	**+0.6**
	11nm,0.4s,baz=351,slow=12,SNR=98						
ASAR				S	**S**	**05 49 45.5**	**+0.5**
	2.5nm,1.0s,baz=346,slow=21,SNR=9.6						
GUMO	**Guam**	**22.79**	**44**	LR	LR	05 55 19.7	
	comp=Z,14nm,18.4s,baz=146,slow=38						
MKAR	**Makanchi Array**	**64.06**	**326**	P	**P**	**05 51 36.0**	**+0.3**
	0.5nm,0.5s,baz=126,slow=7.8,SNR=7.1						
SEY	**Seymchan**	**67.92**	**11**	P	**P**	**05 52 01.8**	**+1.7**
	1.6nm,0.5s,baz=172,slow=3.6,SNR=5.0						
KURBB	**Kurchatov Arra**	**68.31**	**328**	P	**P**	**05 52 03.1**	**+0.3**
	1.5nm,0.6s,baz=127,slow=5.8,SNR=18						
KURK	**Kurchatov**	**68.31**	**328**	P	**P**	**05 52 03.1**	**+0.3**
BVAR	**Borovoye Array**	**73.87**	**328**	P	**P**	**05 52 37.2**	**+0.7**
	1.2nm,0.5s,baz=124,slow=7.8,SNR=7.9						
BRVK	**Borovoye**	**73.94**	**328**	*e*P	**P**	**05 52 37.9**	**+1.0**
	11nm,1.0s						
VNDA	**Vanda**	**76.75**	**173**	P	**P**	**05 52 52.9**	**+0.3**
	0.7nm,0.9s,baz=316,slow=7.0,SNR=4.2						
AKTO	**Aktyubinsk**	**80.02**	**322**	P	**P**	**05 53 11.4**	**+0.3**
	0.8nm,0.3s,baz=98,slow=8.5,SNR=4.2						
ILAR	**Eielson Array**	**90.07**	**25**	P	**P**	**05 54 00.5**	**-0.8**
	0.1nm,0.4s,baz=248,slow=4.1,SNR=3.3						

ISCJB ***22*** *05:58:10.0±1.0, 10°.89N±0°.04×62°.39W±0°.05, h105km±8km, Error ellipse: s-maj=8.8km s-min=5.7km az=43.3*

TRN ***22*** *05:58:10.8, 10°.90N×62°.38W, h105km, MD3.1*

FUNV ***22*** *05:58:12.0, 10°.93N×62°.37W, h96km, MW3.0*

ISC 22 05:58:09.6±1.5, 10°.92N±0°.05×62°.43W±0°.05, h113km±11km, n12, σ1§05/23, 1D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUIV	**Guiria**	**0.33**	**143**	*e*P	**Pn**	**05 58 26.1**	**+0.3**
GUIV				*e*S	**Sn**	**05 58 36.8**	**-1.2**
CRUV	**Carupano**	**0.83**	**253**	⇓*i*P	**Pn**	**05 58 29.9**	**+0.6**
CRUV				*e*S	**Sn**	**05 58 43.6**	**-0.5**
GUNV	**Guanoco**	**0.90**	**214**	*e*P	**Pn**	**05 58 31.5**	**+1.4**
GUNV				*e*S	**Sn**	**05 58 45.5**	**0.0**
TRN	**Trinidad (W)**	**1.04**	**105**	*e*P	**Pn**	**05 58 32.1**	**+0.7**
TRN				*e*S	**Sn**	**05 58 46.7**	**-1.2**
GRGR	**Grenville**	**1.43**	**32**	*e*P	**Pn**	**05 58 36.1**	**+0.5**
GRGR				*e*S	**Sn**	**05 58 55.5**	**-0.1**
GRGR	**Grenville**	**1.43**	**32**	*e*P	**Pn**	**05 58 36.2**	**+0.5**
GRW	**Mount Saint Ca**	**1.45**	**31**	*e*P	**Pn**	**05 58 37.0**	**+1.0**
GRW				*e*S	**Sn**	**05 58 55.3**	**-0.7**
GRSS	**Sisters**	**1.59**	**30**	*e*P	**Pn**	**05 58 38.3**	**+0.7**
GRSS				*e*S	**Sn**	**05 58 59.2**	**+0.3**
BOT	**Bacolet**	**1.70**	**81**	*e*P	**Pn**	**05 58 39.5**	**+0.6**
BOT				*e*S	**Sn**	**05 59 00.6**	**-0.7**
TOSP	**Speyside**	**1.90**	**78**	*e*P	**Pn**	**05 58 41.6**	**+0.2**
TOSP				*e*S	**Sn**	**05 59 04.5**	**-1.2**
RIOV	**Rio Grande**	**2.89**	**168**	*e*P	**Pn**	**05 58 55.9**	**+1.6**
RIOV				*e*S	**Sn**	**05 59 27.4**	**-1.3**
BAUV	**El Baul**	**5.87**	**251**	*e*P	**Pn**	**05 59 34.8**	**+0.6**
BAUV				*e*S	**Sn**	**06 00 37.8**	**-2.4**

NIED ***22*** *05:58:00, 38°.30N×141°.90E, h47km, Mw4.3 Best double couple: M03.51000×10^15 NP1:φ≈190.00000°, δ≈18.00000°, λ≈82.00000°. NP2:φ≈19.00000°, δ≈72.00000°, λ≈93.00000°.*

MOS ***22*** *05:58:23.8±1.1, 38°.37N×141°.79E, h33km, mb4.7/33, Error ellipse: s-maj=10.2km s-min=6.2km az=103.1*

ISCJB ***22*** *05:58:25.5±0.6, 38°.29N±0°.03×141°.92E±0°.06, h54km±3km, mb4.4/48, MS3.2/10, Error ellipse: s-maj=8.2km s-min=4.0km az=20.8*

IDC ***22*** *05:58:26.8±1.5, 38°.26N×141°.83E, h48km±15km, mb4.1/27, mb1 4.2/32, mb1mx4.2/45, mbtmp4.4/32, ML3.7/5, MS3.2/14, Ms1 3.2/14, ms1mx3.1/34, Error ellipse: s-maj=14.7km s-min=10.5km az=97.0*

JMA ***22*** *05:58:26.6±0.1, 38°.31N×141°.86E, h46km±1km, M4.2*

JMA Felt II J1.

NEIC ***22*** *05:58:27.4±0.7, 38°.30N×141°.90E, h53km±6km, mb4.7/9, Error ellipse: s-maj=8.9km s-min=5.5km az=117.0*

NEIC Recorded [2 JMA] in Iwate and Miyagi.

ISC 22 05:58:26.6±1.0, 38°.32N±0°.04×141°.88E±0°.06, h44km±8km, n118, σ1§31/126, mb4.5/48, MS3.2/10, 7C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.44**	**288**	P	**Pn**	**05 58 36.8**	**+0.1**
JIO				S	**Sn**	**05 58 43.9**	**+0.1**
OFUJ	**Ofunato**	**0.77**	**348**	P	**Pn**	**05 58 41.2**	**+0.1**
OFUJ				S	**Sn**	**05 58 51.5**	**-0.1**
JMK	**Ichinoseki**	**0.81**	**321**	P	**Pn**	**05 58 42.1**	**+0.5**
JMK				S	**Sn**	**05 58 52.8**	**+0.3**
JOU	**Okura**	**0.95**	**273**	P	**Pn**	**05 58 43.8**	**+0.2**
JOU				S	**Sn**	**05 58 56.4**	**+0.3**
JMM	**Marumori**	**0.97**	**242**	P	**Pn**	**05 58 43.1**	**-0.6**
JOM	**Ohasama**	**1.23**	**338**	P	**Pn**	**05 58 48.0**	**+0.6**
JOM				S	**Sn**	**05 59 04.2**	**+1.3**
JFK	**Kawauchi**	**1.24**	**220**	P	**Pn**	**05 58 46.8**	**-0.7**
JFK				S	**Sn**	**05 59 01.8**	**-1.3**
JYK	**Kaneyama**	**1.33**	**297**	P	**Pn**	**05 58 49.1**	**+0.4**
JYS	**Shirataka**	**1.43**	**266**	P	**Pn**	**05 58 50.4**	**+0.3**
JRG	**Rokugo**	**1.45**	**318**	P	**Pn**	**05 58 51.0**	**+0.7**
JRG				S	**Sn**	**05 59 10.5**	**+2.5**
JFT	**Otama**	**1.46**	**237**	P	**Pn**	**05 58 50.7**	**+0.2**
JFT				S	**Sn**	**05 59 09.2**	**+0.8**
JYA	**Atsumi**	**1.72**	**280**	P	**Pn**	**05 58 54.7**	**+0.7**
MJAR	**Matsushiro Arr**	**3.42**	**240**	P	**Pn**	**05 59 18.4**	**+1.1**
	15nm,0.3s,baz=60,slow=10.0,SNR=50						
MJAR				S	**Sn**	**05 59 59.0**	**+2.4**
	13nm,0.3s,baz=77,slow=9.3,SNR=4.8						
MJAR				LR	LR	06 00 52.2	
	comp=Z,511nm,19.4s,baz=55,slow=44						
MAJO	**Matsushiro**	**3.42**	**240**	*e*P	**Pn**	**05 59 18.7**	**+1.3**
MAJO	**Matsushiro**	**3.42**	**240**	*e*Pn	**Pn**	**05 59 18.7**	**+1.3**
MAT	**Matsushiro**	**3.42**	**240**	P	**Pn**	**05 59 13.0**	**-4.4**
ERM	**Erimo**	**3.81**	**14**	*e*P	**Pn**	**05 59 22.6**	**-0.2**
ERM	**Erimo**	**3.81**	**14**	*e*Pn	**Pn**	**05 59 22.5**	**-0.2**
ERM				*e*Sn	**Sn**	**06 00 09.2**	**+2.9**
JHJ2	**Mitsune**	**5.46**	**198**	*e*Pn	**Pn**	**05 59 45.0**	**-0.4**
JHJ2				*e*Sn	**Sn**	**06 00 51.0**	**+4.1**
JHJ	**Hachijo jima 2**	**5.46**	**199**	P	**Pn**	**05 59 44.9**	**-0.6**
	40nm,0.3s,baz=54,slow=19,SNR=4.2						
JHJ				S	**Sn**	**06 00 43.7**	**-3.3**
	42nm,0.3s,baz=45,slow=20,SNR=3.8						
ASAJ	**Asahikawa**	**5.81**	**5**	P	**Pn**	**05 59 50.1**	**0.0**
	baz=223,slow=9.5						
ASAJ	**Asahikawa**	**5.81**	**5**	*e*Pn	**Pn**	**05 59 49.8**	**-0.4**
	10nm,0.6s						
YSS	**Yuzh-Sakhalins**	**8.65**	**4**	⇑P	**Pn**	**06 00 30.5**	**+1.5**
YSS				*e*S	**Sn**	**06 02 01.7**	**-3.4**
YSS				pmax	pmax		
	comp=Z,20nm,1.1s						
VLA	**Vladivostok**	**8.97**	**305**	*e*P	**Pn**	**06 00 31.4**	**-2.0**
VLA				pmax	pmax		
	comp=Z,20nm,0.9s						
USRK	**Ussuriysk Ar.**	**9.48**	**311**	P	**Pn**	**06 00 41.7**	**+1.3**
	comp=Z,2.8nm,0.3s,baz=114,slow=17,SNR=47						
USRK				LR	LR	06 04 11.2	
	comp=Z,202nm,18.6s,baz=143,slow=36						
JNU	**Nakatsue**	**10.34**	**243**	P	**Pn**	**06 00 53.5**	**+1.3**
	comp=Z,0.4nm,0.3s,baz=51,slow=8.4,SNR=6.3						
KSRS	**Korea Array**	**11.06**	**270**	P	**Pn**	**06 01 06.0**	**+3.9**
	comp=Z,0.5nm,0.3s,baz=77,slow=15,SNR=6.5						
KSRS				LR	LR	06 04 59.3	
	comp=Z,170nm,20.4s,baz=76,slow=36						
KSAR	**Wonju Array Be**	**11.10**	**270**	P	**Pn**	**06 01 06.0**	**+3.4**
KSAR	**Wonju Array Be**	**11.10**	**270**	P	**Pn**	**06 01 06.0**	**+3.4**
KLR	**Kul'dur**	**13.12**	**329**	P	**Pn**	**06 01 31.5**	**+1.4**
	comp=Z,0.2nm,0.3s,baz=127,slow=13,SNR=3.6						
KLR				LR	LR	06 06 38.7	
	comp=Z,158nm,18.1s,baz=142,slow=37						
KLR	**Kul'dur**	**13.12**	**329**	*e*P	**Pn**	**06 01 26.9**	**-3.2**
PETK	**Petropavlovsk-**	**18.39**	**31**	LR	LR	06 09 28.7	
	comp=Z,20nm,20.9s,baz=235,slow=36						
MA2	**Magadan**	**22.02**	**12**	P	**P**	**06 03 16.3**	**-0.6**
	comp=Z,12nm,0.7s,baz=186,slow=10,SNR=6.4						
MA2				LR	LR	06 13 50.0	
	comp=Z,8.8nm,18.0s,baz=249,slow=42						
MA2	**Magadan**	**22.02**	**12**	*e*P	**P**	**06 03 18.4**	**+1.6**
	comp=Z,53nm,1.0s						
YAK	**Yakutsk**	**24.90**	**346**	LR	LR	06 14 00.2	
	comp=Z,59nm,18.1s,baz=216,slow=37						
YAK	**Yakutsk**	**24.90**	**346**	*i* P	**P**	**06 03 45.2**	**+0.3**
YAK				pmax	pmax		
	comp=Z,18nm,0.8s						
SEY	**Seymchan**	**25.46**	**11**	P	**P**	**06 03 51.0**	**+1.0**
	comp=Z,4.9nm,0.8s,baz=206,slow=7.3,SNR=14						
SEY	**Seymchan**	**25.46**	**11**	*i* P	**P**	**06 03 51.2**	**+1.2**
BOD	**Bodaibo**	**26.65**	**326**	*e*P	**P**	**06 04 00.0**	**-0.9**
BOD				pmax	pmax		
	comp=Z,11nm,0.8s						
SONM	**Songino Array**	**27.39**	**302**	P	**P**	**06 04 08.1**	**+0.3**
	comp=Z,2.8nm,0.8s,baz=110,slow=9.2,SNR=11						
SONM				LR	LR	06 15 26.8	
	comp=Z,56nm,18.3s,baz=96,slow=37						
ENH	**Enshi**	**27.83**	**263**	*e*P	**P**	**06 04 11.0**	**-0.8**
	comp=Z,19nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**28.52**	**123**	T	T	06 34 28.9	
	baz=316,slow=75,SNR=2863						
H11N1	**WAKE ISLAND Hy**	**28.53**	**123**	T	T	06 34 29.9	
	baz=316,slow=75,SNR=3694						
H11N3	**WAKE ISLAND Hy**	**28.54**	**123**	T	T	06 34 30.2	
	baz=316,slow=75,SNR=2901						
H11S1	**WAKE ISLAND Hy**	**29.28**	**125**	T	T	06 35 25.8	
	baz=318,slow=76,SNR=1537						
H11S3	**WAKE ISLAND Hy**	**29.28**	**125**	T	T	06 35 25.9	
	baz=318,slow=76,SNR=1970						
H11S2	**WAKE ISLAND Hy**	**29.29**	**125**	T	T	06 35 27.6	
	baz=318,slow=76,SNR=993						
ZAK	**Zakamensk**	**29.78**	**306**	*e*P	**P**	**06 04 27.9**	**-1.1**
ZAK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
TLY	**Talaya**	**29.78**	**309**	P	**P**	**06 04 29.0**	**+0.2**
	comp=Z,5.9nm,0.7s,baz=173,slow=8.1,SNR=4.3						
TLY	**Talaya**	**29.78**	**309**	*e*P	**P**	**06 04 29.1**	**+0.2**
TLY				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,77nm,18.0s						
BILL	**Bilibino**	**32.69**	**17**	*e*P	**P**	**06 04 53.5**	**-0.7**
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
ZALV	**Zalesovo Beam**	**41.33**	**311**	P	**P**	**06 06 07.8**	**+0.1**
	comp=Z,8.7nm,0.5s,baz=88,slow=7.5,SNR=17						
CMAR	**Chiang Mai Arr**	**42.19**	**254**	P	**P**	**06 06 14.7**	**-0.5**
	comp=Z,0.6nm,0.3s,baz=50,slow=7.4,SNR=4.5						
CMAR				LR	LR	06 24 57.8	
	comp=Z,23nm,18.6s,baz=190,slow=38						
CMAR	**Chiang Mai Arr**	**42.19**	**254**	*ce*P	**P**	**06 06 15.1**	**0.0**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
NRIK	**Noril'sk**	**42.26**	**335**	LR	LR	06 24 54.3	
	comp=Z,77nm,19.2s,baz=134,slow=38						
MK31	**Makanchi Array**	**43.76**	**301**	*i* P	**P**	**06 06 27.0**	**-0.6**
MK31				pmax	pmax		
	comp=Z,8.0nm,0.8s						
MKAR	**Makanchi Array**	**43.76**	**301**	P	**P**	**06 06 27.4**	**-0.1**
	comp=Z,5.4nm,0.6s,baz=87,slow=9.7,SNR=20						
MKAR				LR	LR	06 25 15.2	
	comp=Z,32nm,18.9s,baz=74,slow=37						
MKAR	**Makanchi Array**	**43.76**	**301**	*ce*P	**P**	**06 06 27.3**	**-0.3**
MKAR				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MAKZ	**Makanchi**	**43.97**	**301**	P	**P**	**06 06 28.2**	**-1.0**
MAKZ				pmax	pmax		
	comp=Z,7.0nm,0.9s						
KURK	**Kurchatov**	**45.44**	**307**	*c* iP	**P**	**06 06 40.4**	**-0.4**
KURK	**Kurchatov**	**45.44**	**307**	P	**P**	**06 06 41.1**	**+0.3**
KURBB	**Kurchatov Arra**	**45.51**	**307**	P	**P**	**06 06 41.1**	**-0.3**
	comp=Z,21nm,0.8s,baz=82,slow=8.1,SNR=86						
KDAK	**Kodiak Island**	**45.90**	**43**	*i* P	**P**	**06 06 44.9**	**+0.6**
PDGK	**Podgornoye**	**46.51**	**297**	P	**P**	**06 06 48.4**	**-1.0**
PDGK				pmax	pmax		
	comp=Z,4.0nm,0.7s						
GUN	**Gumba**	**47.41**	**275**	*e*P	**P**	**06 06 57.0**	**0.0**
	comp=Z,34nm,0.6s						
KKN	**Kakani**	**47.93**	**275**	*e*P	**P**	**06 07 01.0**	**+0.1**
DMN	**Daman**	**48.15**	**275**	*e*P	**P**	**06 07 02.5**	**-0.2**
	comp=Z,8.1nm,0.4s						
ILAR	**Eielson Array**	**48.21**	**33**	P	**P**	**06 07 03.0**	**+0.7**
	comp=Z,0.8nm,0.7s,baz=266,slow=6.3,SNR=12						
GKN	**Gorkha**	**48.34**	**276**	*e*P	**P**	**06 07 03.9**	**-0.1**
	comp=Z,58nm,0.9s						
KOLN	**Koldanda**	**49.26**	**276**	*e*P	**P**	**06 07 11.1**	**0.0**
	comp=Z,8.9nm,0.3s						
PYUN	**Piuthan**	**49.58**	**277**	*e*P	**P**	**06 07 13.8**	**+0.2**
	comp=Z,24nm,0.5s						
BVAR	**Borovoye Array**	**49.98**	**312**	P	**P**	**06 07 15.9**	**-0.2**
	comp=Z,1.9nm,0.5s,baz=65,slow=8.7,SNR=9.8						
BVAR				PcP	**PcP**	**06 08 35.1**	**-0.5**
	comp=Z,3.2nm,0.7s,baz=66,slow=3.6,SNR=7.2						
BRVK	**Borovoye**	**50.04**	**312**	⇑*i*P	**P**	**06 07 16.3**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,13nm,1.2s						
AAK	**Ala-Archa**	**50.21**	**298**	*e*P	**P**	**06 07 17.5**	**-0.6**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
MNAS	**Manas**	**51.65**	**298**	P	**P**	**06 07 28.6**	**-0.3**
MNAS				pmax	pmax		
	comp=Z,4.0nm,0.7s						
INK	**Inuvik**	**53.07**	**28**	P	**P**	**06 07 38.9**	**+0.1**
	comp=Z,1.9nm,0.9s,baz=301,slow=5.9,SNR=3.1						
INK	**Inuvik**	**53.07**	**28**	*e*P	**P**	**06 07 39.7**	**+0.8**
	comp=Z,4.1nm,1.2s						
ARU	**Arti**	**55.64**	**318**	P	**P**	**06 07 57.5**	**-0.2**
	comp=Z,5.0nm,0.5s,baz=88,slow=5.8,SNR=9.8						
ARU	**Arti**	**55.64**	**318**	*d* iP	**P**	**06 07 57.4**	**-0.4**
ARU						06 08 56.9	
ARU						06 10 00.7	
ARU				S	**S**	**06 15 43.7**	**+3.3**
ARU				SS	**SS**	**06 19 21.6**	**-3.8**
ARU				pmax	pmax		
	comp=Z,16nm,1.2s						
ARU	**Arti**	**55.64**	**318**	*e*P	**P**	**06 07 57.3**	**-0.4**
	comp=Z,4.9nm,0.6s						
AB31	**Akbulak array**	**57.40**	**310**	*i* P	**P**	**06 08 09.5**	**-0.8**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ABKAR	**Akbulak array**	**57.40**	**310**	*e*P	**P**	**06 08 09.4**	**-0.9**
	comp=Z,3.1nm,0.5s						
AKTO	**Aktyubinsk**	**58.09**	**311**	P	**P**	**06 08 14.3**	**-0.9**
	comp=Z,2.5nm,0.6s,baz=67,slow=13,SNR=7.9						
AKTO				PcP	**PcP**	**06 09 06.0**	**-0.5**
	comp=Z,1.2nm,0.5s,baz=44,slow=4.2,SNR=3.7						
WRAB	**Tennant Creek**	**58.38**	**188**	*e*P	**P**	**06 08 16.6**	**-0.8**
WRAB				*e*		06 08 29.4	
WRAB				pmax	pmax		
	comp=Z,8.0nm,1.2s						
WRAB	**Tennant Creek**	**58.38**	**188**	*e*P	**P**	**06 08 16.6**	**-0.8**
	comp=Z,8.3nm,1.2s						
WRAB				*e*		06 08 29.4	
WRA	**Warramunga Arr**	**58.39**	**188**	P	**P**	**06 08 16.6**	**-0.9**
	comp=Z,3.1nm,0.6s,baz=5.6,slow=7.1,SNR=27						
ASAR	**Alice Springs**	**62.12**	**188**	P	**P**	**06 08 42.8**	**-0.2**
	comp=Z,1.6nm,0.7s,baz=8.8,slow=6.5,SNR=16						
YKA	**Yellowknife Ar**	**62.51**	**31**	P	**P**	**06 08 45.4**	**+0.3**
	comp=Z,0.6nm,0.8s,baz=305,slow=6.3,SNR=6.1						
ARCES	**ARCESS Array B**	**62.92**	**339**	P	**P**	**06 08 47.4**	**-0.4**
	comp=Z,2.0nm,0.6s,baz=46,slow=8.7,SNR=7.6						
GEYT	**Alibeck**	**63.54**	**299**	P	**P**	**06 08 52.3**	**-0.1**
	comp=Z,1.1nm,0.4s,baz=338,slow=1.6,SNR=3.6						
DAG	**Danmarks Havn**	**64.52**	**355**	*i* P	**P**	**06 08 57.9**	**-0.3**
	comp=Z,4.7nm,0.9s						
FINES	**FINESS Array B**	**67.85**	**332**	P	**P**	**06 09 19.4**	**-0.3**
	comp=Z,9.0nm,0.8s,baz=51,slow=7.6,SNR=22						
VSR	**Storozhevoye**	**68.21**	**319**	*e*P	**P**	**06 09 21.7**	**-0.5**
VSR				pmax	pmax		
	comp=Z,9.0nm,0.9s						
SUMG	**Summit**	**69.40**	**0**	*i* P	**P**	**06 09 30.4**	**+0.6**
	comp=Z,6.1nm,0.9s						
SUMG	**Summit**	**69.40**	**0**	*e*P	**P**	**06 09 30.3**	**+0.6**
SUMG				pmax	pmax		
	comp=Z,7.0nm,0.9s						
SUMG	**Summit**	**69.40**	**0**	*e*P	**P**	**06 09 30.3**	**+0.6**
	comp=Z,6.7nm,0.9s						
KVAR	**Kislovodsk Arr**	**70.34**	**311**	P	**P**	**06 09 36.1**	**+0.5**
	comp=Z,6.1nm,0.7s,baz=45,slow=10.0,SNR=6.3						
KIV	**Kislovodsk**	**70.34**	**311**	*i* P	**P**	**06 09 36.1**	**+0.4**
KIV				*i*		06 09 59.9	
KIV				pmax	pmax		
	comp=Z,15nm,0.8s						
KIV	**Kislovodsk**	**70.34**	**311**	*e*P	**P**	**06 09 36.8**	**+1.1**
	comp=Z,16nm,0.9s						
KBZ	**Khabaz**	**70.34**	**311**	P	**P**	**06 09 36.2**	**+0.7**
	comp=Z,5.9nm,0.9s,baz=43,slow=1.9,SNR=9.9						
KBZ				LR	LR	06 45 30.0	
	comp=Z,21nm,18.1s,baz=336,slow=40						
NEY	**Neytrino**	**70.72**	**310**	*e*P	**P**	**06 09 37.3**	**-0.8**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.9s						
NB2	**NORSAR Subarra**	**73.14**	**337**	P	**P**	**06 09 51.6**	**-0.5**
	comp=Z,6.6nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.14**	**337**	P	**P**	**06 09 52.0**	**-0.1**
	comp=Z,5.8nm,0.7s,baz=39,slow=5.9,SNR=19						
NOA				LR	LR	06 44 37.6	
	comp=Z,32nm,21.8s,baz=40,slow=38						
AKASG	**Malin Array Be**	**73.50**	**322**	P	**P**	**06 09 53.8**	**-0.6**
	comp=Z,4.4nm,0.4s,baz=46,slow=6.2,SNR=7.9						
AKASG	**Malin Array Be**	**73.50**	**322**	*ce*P	**P**	**06 09 54.0**	**-0.3**
AKASG				pmax	pmax		
	comp=Z,4.0nm,0.4s						
KIEV	**Kiev**	**73.52**	**322**	*e*P	**P**	**06 09 53.5**	**-0.9**
KIEV				pmax	p

	baz=320								
OHH	**Osh**	**1.39**	**40**	⇓*e*P		**Pb**	**06 30 18.2**	**-0.1**
	baz=35								
OHH				⇓*i*S		**Sg**	**06 30 38.7**	**+2.2**
	baz=35								
ARSB	**Arslanbob**	**2.13**	**29**	⇑*e*P		**Pb**	**06 30 30.6**	**-0.3**
	baz=26								
ARSB				⇑*e*S		**Sg**	**06 31 00.0**	**-0.3**
	baz=26								
DZET	**Dzherino**	**2.26**	**254**	⇓Pn		**Pn**	**06 30 30.5**	**+0.7**
	8.0nm,0.4s								
DZET				⇑Sn		**Sb**	**06 31 01.4**	**+0.1**
	24nm,0.5s								
MNAS	**Manas**	**3.09**	**12**	⇑*e*P		**Pn**	**06 30 44.2**	**+2.9**
	baz=11								
MNAS				⇑*e*S		**Sb**	**06 31 22.7**	**-2.6**
	baz=11								
MNAS	**Manas**	**3.09**	**12**	⇓Pn		**Pb**	**06 30 45.4**	**-1.9**
	1.9nm,0.4s								
MNAS				⇑Lg		Lg	06 31 35.2		
	3.7nm,0.4s								
AML	**Almayashu**	**3.09**	**30**	⇑*i*P		**Pb**	**06 30 46.0**	**-1.5**
	baz=28								
AML				⇑*i*S		**Sb**	**06 31 27.7**	**+2.0**
	baz=28								
ARLS	**Aral**	**3.16**	**40**	⇑*e*P		**Pn**	**06 30 44.1**	**+1.8**
	baz=38								
ARLS				⇑*e*S		**Sb**	**06 31 23.8**	**-3.5**
	baz=38								
EKS2	**Erkin-Say**	**3.58**	**27**	⇑*i*P		**Pb**	**06 30 53.0**	**-2.7**
	baz=25								
EKS2				⇑*i*S		**Sb**	**06 31 39.1**	**-0.4**
	baz=25								
KK31	**Karatay Array**	**3.72**	**348**	Pn		**Pb**	**06 30 54.5**	**-3.5**
	0.9nm,0.3s,baz=164,slow=12,SNR=38								
KK31				⇑Lg		Lg	06 31 54.5		
	2.9nm,0.6s,baz=163,slow=33,SNR=5.2								

IDC ***22*** *06:37:37.2±2.3, 36°.35N×141°.16E, h0km, mb3.6/2, mb1 3.6/3, mb1mx3.3/50, mbtmp3.4/3, ML3.0/1, MS3.6/3, Ms1 3.6/3, ms1mx2.8/66, Error ellipse: s-maj=45.6km s-min=27.2km az=54.0*

JMA ***22*** *06:37:39.8±0.1, 36°.01N×141°.08E, h36km±1km, M3.2*

ISC 22 06:37:38.3±2.3, 36°.11N±0°.05×141°.06E±0°.07, h7km±15km, n20, σ1s08/17, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.44**	**202**	P		**Pb**	**06 37 48.1**	**-0.3**
CHOJ				S		**Sg**	**06 37 54.2**	**+1.6**
JHO	**Hitachi**	**0.64**	**321**	P		**Pn**	**06 37 53.4**	**-0.3**
JHO				*e*S		**Sn**	**06 38 03.4**	**-0.7**
JYT	**Yasato**	**0.71**	**279**	P		**Pn**	**06 37 53.9**	**-0.8**
ONAJ	**Iwakimizuishiy**	**1.01**	**348**	P		**Pn**	**06 37 58.9**	**0.0**
ONAJ				S		**Sn**	**06 38 12.3**	**-1.1**
JFK	**Kawauchi**	**1.26**	**353**	P		**Pn**	**06 38 02.0**	**-0.4**
JAG	**Ashikaga**	**1.33**	**284**	P		**Pn**	**06 38 02.9**	**-0.5**
JAG				S		**Sg**	**06 38 19.8**	**-1.4**
BSO3	**Boso 3**	**1.38**	**199**	P		**Pn**	**06 38 01.6**	**-2.2**
MJAR	**Matsushiro Arr**	**2.34**	**281**	Pn		**Pn**	**06 38 17.1**	**-0.2**
	3.5nm,0.3s,baz=92,slow=9.1,SNR=27							
MJAR				Sn		**Sn**	**06 38 46.6**	**+0.3**
	2.8nm,0.3s,baz=89,slow=29,SNR=6.2							
MAT	**Matsushiro**	**2.34**	**281**	P		**Pn**	**06 38 18.4**	**+1.1**
MAT				S		**Sn**	**06 38 46.6**	**+0.3**
KSRS	**Korea Array**	**10.62**	**281**	LR		LR	06 44 02.9	
	comp=Z,45nm,20.0s,baz=120,slow=36							
H11N2	**WAKE ISLAND Hy**	**27.94**	**119**	T		T	07 12 35.0	
	baz=311,slow=75,SNR=57							
H11N1	**WAKE ISLAND Hy**	**27.95**	**119**	T		T	07 12 35.5	
	baz=311,slow=75,SNR=41							
H11N3	**WAKE ISLAND Hy**	**27.96**	**119**	T		T	07 12 35.4	
	baz=311,slow=75,SNR=47							
H11S1	**WAKE ISLAND Hy**	**28.61**	**121**	T		T	07 13 23.0	
	baz=312,slow=75,SNR=23							
H11S3	**WAKE ISLAND Hy**	**28.61**	**121**	T		T	07 13 25.7	
	baz=312,slow=75,SNR=24							
H11S2	**WAKE ISLAND Hy**	**28.63**	**121**	T		T	07 13 25.6	
	baz=312,slow=75,SNR=25							
MKAR	**Makanchi Array**	**44.37**	**303**	P		**P**	**06 45 49.6**	**+0.4**
	0.8nm,0.6s,baz=86,slow=9.5,SNR=6.7							
AAK	**Ala-Archa**	**50.68**	**299**	LR		LR	07 09 27.6	
	comp=Z,55nm,20.9s,baz=134,slow=38							
WRA	**Warramunga Arr**	**56.11**	**188**	P		**P**	**06 47 19.4**	**+1.0**
	0.2nm,0.5s,baz=1.6,slow=7.7,SNR=3.2							
GNI	**Garni**	**72.03**	**307**	LR		LR	07 22 19.1	
	comp=Z,274nm,19.4s,baz=192,slow=37							

ISCJB ***22*** *06:38:58.9±0.2, 14°.87N±0°.03×93°.55W±0°.03, h33km, mb4.5/121, MS4.1/10, Error ellipse: s-maj=4.7km s-min=2.8km az=41.4*

MEX ***22*** *06:38:59.0±0.8, 14°.57N×93°.68W, h25km±52km, MD4.6*

IDC ***22*** *06:38:59.4±5.0, 14°.74N×93°.65W, h33km±36km, mb4.0/17, mb1 4.2/20, mb1mx4.1/44, mbtmp4.3/20, ML4.5/3, MS3.8/11, Ms1 3.8/11, ms1mx3.5/57, Error ellipse: s-maj=33.9km s-min=12.1km az=51.0*

NEIC ***22*** *06:38:59.6, 14°.57N×93°.65W, h16km, mb4.6/128, MD4.6(MEX), After MEX.*

NEIC Felt at Acacoyagua and Tuxtla Chico.

ISC 22 06:39:02.5±1.0, 14°.86N±0°.05×93°.72W±0°.04, h59km±8km, n495, σ1s56/498, mb4.5/121, MS3.9/10, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TGBT	**Tuxtla Gutierr**	**2.00**	**18**	*e*P		**Pn**	**06 39 33.4**	**-0.6**
TGBT				*e*S		**Sn**	**06 39 59.4**	**+1.6**
CCIG	**Comitan**	**2.08**	**47**	*e*P		**Pn**	**06 39 33.6**	**-1.6**
CCIG				*i* S		**Sn**	**06 39 59.0**	**-1.0**
CCIG	**Comitan**	**2.08**	**47**	*e*Pn		**Pn**	**06 39 34.5**	**-0.7**
CCIG				*i* S		**Sn**	**06 39 59.0**	**-1.0**
HUIG	**Huatulco**	**2.48**	**292**	*e*P		**Pn**	**06 39 36.6**	**-3.9**
HUIG				*i* S		**Sn**	**06 40 08.2**	**-1.4**
HUIG	**Huatulco**	**2.48**	**292**	*e*P		**Pn**	**06 39 36.5**	**-3.9**
HUIG				*i* S		**Sn**	**06 40 02.2**	**-7.4**
CMIG	**Matias Romero**	**2.49**	**333**	Pn		**Pn**	**06 39 38.4**	**-2.2**
	55nm,0.3s,baz=170,slow=13,SNR=288							
CMIG				Sn		**Sn**	**06 40 08.3**	**-1.4**
	106nm,0.3s,baz=147,slow=16,SNR=11							
CMIG				LR		LR	06 40 55.0	
	comp=Z,2μm,20.5s,baz=165,slow=44							
CUS1	**Cusmapa**	**3.77**	**104**	*e*P		**Pn**	**06 39 54.3**	**-3.9**
CUS1				*e*S		**Sn**	**06 40 41.6**	**0.0**
RBDL	**Robledal**	**3.98**	**100**	*e*P		**Pn**	**06 39 57.8**	**-3.3**
RBDL				*e*S		**Sn**	**06 40 48.6**	**+2.0**
RTR	**El Retiro**	**4.06**	**103**	*e*P		**Pn**	**06 40 00.0**	**-2.3**
MONT	**Ecomontaæa**	**4.07**	**104**	*e*P		**Pn**	**06 39 59.4**	**-3.0**
BOQS	**Boqueron**	**4.45**	**104**	*e*P		**Pn**	**06 40 05.1**	**-2.5**
BOQS				*e*S		**Sn**	**06 41 02.9**	**+4.7**
SNET	**Serv Nac Est T**	**4.50**	**104**	*e*Pn		**Pn**	**06 40 05.6**	**-2.7**
SNET	**Serv Nac Est T**	**4.50**	**104**	AML		AML	06 41 24.3	
	comp=Z,552nm,0.8s							
LFU	**La Fuente**	**4.60**	**103**	*e*P		**Pn**	**06 40 06.5**	**-3.1**
LBRS	**Las Brisas**	**4.67**	**103**	*e*P		**Pn**	**06 40 06.9**	**-3.6**
LFRS	**El Faro**	**4.68**	**105**	*e*P		**Pn**	**06 40 07.8**	**-2.9**
TLIG	**Tlapa**	**5.38**	**301**	*e*Pn		**Pn**	**06 40 20.6**	**+0.3**
TLIG				*e*Sn		**Sn**	**06 41 19.0**	**-2.0**
ESTN	**Estel**	**7.34**	**103**	*e*P		**Pn**	**06 40 44.3**	**-2.9**
TEIG	**Tepich**	**7.44**	**43**	Pn		**Pn**	**06 40 46.2**	**-2.3**
	comp=Z,15nm,0.3s,baz=269,slow=24,SNR=91							
TEIG				Sn		**Sn**	**06 42 06.3**	**-5.2**
	comp=Z,20nm,0.3s,baz=0.0,slow=20,SNR=3.9							
TEIG				LR		LR	06 44 18.4	
	comp=Z,645nm,19.1s,baz=173,slow=43							
TEIG	**Tepich**	**7.44**	**43**	*e*Pn		**Pn**	**06 40 46.6**	**-1.9**
TEIG				Sn		**Sn**	**06 42 06.3**	**-5.2**
MONG	**Morelia**	**8.60**	**305**	*e*Pn		**Pn**	**06 41 07.7**	**+3.2**
HDC	**Heredia**	**10.55**	**116**	*e*Pn		**Pn**	**06 41 30.8**	**-0.4**
ZAIG	**Zacatecas**	**11.49**	**315**	*e*Pn		**Pn**	**06 41 46.7**	**+2.6**
034A	**Hebbronville**	**13.00**	**340**	P		**Pn**	**06 42 06.6**	**+2.3**
	baz=158,SNR=7.9							
934A	**Benavides**	**13.44**	**341**	P		**Pn**	**06 42 12.5**	**+2.1**
	baz=159,SNR=5.7							
933A	**Laredo**	**13.70**	**339**	P		**Pn**	**06 42 15.5**	**+1.6**
	baz=156							
834A	**Tilden**	**13.94**	**342**	P		**Pn**	**06 42 19.1**	**+1.9**
	baz=160							
833A	**Chaparral WMA,**	**14.40**	**339**	P		**Pn**	**06 42 24.5**	**+1.3**
	baz=157,SNR=9.3							
832A	**Faith Ranch, C**	**14.57**	**338**	P		**Pn**	**06 42 26.8**	**+1.4**
	baz=155,SNR=22							
733A	**Divot King Ran**	**14.73**	**340**	P		**Pn**	**06 42 29.0**	**+1.5**
	baz=158,SNR=8.0							
636A	**Smothers Creek**	**14.88**	**349**	P		**Pn**	**06 42 30.3**	**+0.9**
	baz=167							
537A	**Green Hill Far**	**15.34**	**351**	P		**Pn**	**06 42 35.3**	**-0.1**
	baz=170,SNR=11							
633A	**Saathoff Ranch**	**15.38**	**342**	P		**Pn**	**06 42 36.8**	**+0.8**
	baz=159,SNR=6.8							
535A	**Dale**	**15.51**	**347**	P		**Pn**	**06 42 38.0**	**+0.4**
	baz=165,SNR=19							
534A	**Blanco**	**15.72**	**345**	P		**Pn**	**06 42 40.4**	**+0.1**
	baz=162,SNR=41							
533A	**Kerrville**	**15.91**	**343**	P		**Pn**	**06 42 43.4**	**+0.6**
	baz=160,SNR=28							
435B	**Jarrell**	**16.24**	**348**	P		**Pn**	**06 42 46.5**	**-0.4**
	baz=166,SNR=8.2							
446A	**Poplarville**	**16.35**	**13**	P		**Pn**	**06 42 46.5**	**-1.8**
	baz=194							
HPIG		**16.38**	**319**	*e*Pn		**P**	**06 42 52.7**	**+1.8**
	comp=Z,10nm,0.9s							
341A	**Kurthwood**	**16.41**	**2**	P		**Pn**	**06 42 48.8**	**-0.1**
	baz=181,SNR=8.1							
339A	**Huntington**	**16.42**	**357**	P		**Pn**	**06 42 46.6**	**-2.4**
	baz=176							
434A	**Burnet**	**16.42**	**346**	P		**Pn**	**06 42 47.1**	**-2.1**
	baz=164,SNR=11							
338A	**Crockett**	**16.49**	**355**	P		**Pn**	**06 42 48.6**	**-1.4**
	baz=174,SNR=7.9							
342A	**Flagon Creek P**	**16.49**	**4**	P		**Pn**	**06 42 48.8**	**-1.1**
	baz=184							
JCT	**Junction City**	**16.52**	**341**	P		**P**	**06 42 51.5**	**-0.7**
	baz=158,SNR=28							
JCT	**Junction City**	**16.52**	**341**	*e*Pn		**P**	**06 42 52.5**	**+0.4**
	comp=Z,35nm,1.0s							
JCT				*e*Sn		**Sn**	**06 45 54.5**	**+1.4**
433A	**Art**	**16.57**	**344**	P		**Pn**	**06 42 51.3**	**+0.2**
	baz=161,SNR=23							
335A	**Moody**	**16.70**	**349**	P		**Pn**	**06 42 52.6**	**+0.1**
	baz=167,SNR=11							
336A	**Riesel**	**16.70**	**351**	P		**Pn**	**06 42 52.9**	**+0.3**
	baz=169							
345A	**Thompson Farm,**	**16.72**	**11**	P		**Pn**	**06 42 53.1**	**+0.3**
	baz=192,SNR=6.1							
NATX	**Nacogdoches**	**16.84**	**357**	P		**Pn**	**06 42 54.7**	**+0.3**
	baz=176							
NATX	**Nacogdoches**	**16.84**	**357**	*e*Pn		**P**	**06 42 55.8**	**+0.1**
	comp=Z,23nm,0.9s							
NATX				*e*Sn		**Sn**	**06 45 57.0**	**-3.8**
448A	**Bay Minette**	**16.88**	**18**	P		**Pn**	**06 42 55.0**	**+0.3**
	baz=199							
346A	**Big Creek Wild**	**16.91**	**13**	P		**Pn**	**06 42 54.7**	**-0.5**
	baz=194							
334A	**Lometa**	**16.91**	**347**	P		**Pn**	**06 42 55.7**	**+0.4**
	baz=164,SNR=34							
243A	**Waterproof**	**17.07**	**6**	P		**Pn**	**06 42 57.0**	**-0.1**
	baz=187							
333A	**Richland Sprin**	**17.09**	**344**	P		**P**	**06 42 59.0**	**+0.6**
	baz=162,SNR=7.0							
TXAR	**Lajitas Array**	**17.09**	**329**	P		**P**	**06 42 59.0**	**+0.6**
	comp=Z,0.3nm,0.3s,baz=149,slow=14,SNR=34							
TXAR				LR		LR	06 50 16.8	
	comp=Z,186nm,18.4s,baz=0.0,slow=39							
TX31	**Lajitas Ar. Si**	**17.09**	**329**	*e*Pn		**P**	**06 43 00.1**	**+1.7**
241A	**Mo Tay, Goldon**	**17.10**	**2**	P		**P**	**06 42 58.5**	**0.0**
	baz=182							
238A	**Jacksonville**	**17.11**	**356**	P		**Pn**	**06 42 58.2**	**+0.5**
	baz=175							
237A	**Washetta, Mont**	**17.17**	**354**	P		**P**	**06 42 59.7**	**+0.4**
	baz=173							
242A	**Grayson**	**17.18**	**5**	P		**P**	**06 42 59.6**	**+0.2**
	baz=184,SNR=6.8							
244A	**Avery, Jackson**	**17.33**	**9**	P		**Pn**	**06 42 59.5**	**-0.8**
	baz=189							
BRAL	**Brewton**	**17.35**	**20**	*e*Pn		**P**	**06 43 01.5**	**+0.3**
	comp=Z,30nm,0.8s							
WHTX	**Lake Whitney,**	**17.39**	**349**	P		**P**	**06 43 01.8**	**+0.2**
	baz=167							
WHTX	**Lake Whitney,**	**17.39**	**349**	*e*Pn		**P**	**06 43 01.9**	**+0.2**
	comp=Z,37nm,0.7s							
DWPF	**Disney Wildern**	**17.43**	**39**	*e*Pn		**Pn**	**06 43 01.3**	**-0.4**
	comp=Z,33nm,0.5s							
VBMS	**Vicksburg**	**17.53**	**9**	P		**Pn**	**06 43 02.5**	**-0.3**
	baz=190							
VBMS	**Vicksburg**	**17.53**	**9**	*e*Pn		**P**	**06 43 04.0**	**+0.8**
	comp=Z,32nm,0.6s							
234A	**Clairette**	**17.54**	**347**	P		**P**	**06 43 03.3**	**0.0**
	baz=165,SNR=18							
142A	**Monroe**	**17.68**	**5**	P		**P**	**06 43 05.1**	**+0.2**
	baz=185,SNR=8.7							
136A	**Ennis**	**17.72**	**352**	P		**Pn**	**06 43 04.8**	**-0.4**
	baz=170,SNR=5.6							
233A	**Rising Star**	**17.72**	**345**	P		**P**	**06 43 05.8**	**+0.4**
	baz=183,SNR=8.5							
143A	**Socs Landing,**	**17.89**	**6**	P		**P**	**06 43 07.8**	**+0.6**
	baz=187							
135A	**Vickery Place,**	**17.94**	**350**	P		**P**	**06 43 09.1**	**+1.4**
	baz=168							
248A	**Dixon Mills**	**18.00**	**17**	P		**Pn**	**06 43 08.0**	**-0.6**
	baz=198							
134A	**White-Moore Ra**	**18.08**	**348**	P		**Pn**	**06 43 10.3**	**+0.8**
	baz=166							
133A	**Hamilton Ranch**	**18.29**	**346**	P		**Pn**	**06 43 12.4**	**+0.2**
	baz=163,SNR=12							
Z40A	**Long Farm, Mag**	**18.32**	**1**	P		**Pn**	**06 43 13.1**	**+0.7**
	baz=180							
Z41A	**Richland Creek**	**18.34**	**2**	P		**Pn**	**06 43 13.6**	**+1.0**
	baz=182							
Z42A	**Norrel Spur, H**	**18.40**	**5**	P		**Pn**	**06 43 13.8**	**+0.3**
	baz=185							
147A	**Livingston**	**18.41**	**15**	P		**Pn**	**06 43 14.0**	**+0.4**
	baz=196							
ABTX	**Abilene, Hawle**	**18.49**	**344**	P		**Pn**	**06 43 15.3**	**+0.7**
	baz=161,SNR=16							
ABTX	**Abilene, Hawle**	**18.49**	**344**	*e*P		**Pn**	**06 43 15.7**	**+1.2**
	comp=Z,30nm,0.9s							
Z36A	**Blue Ridge**	**18.50**	**353**	P		**Pn**	**06 43 15.6**	**+1.0**
	baz=171							
Z44A	**Pea Ridge, Bel**	**18.58**	**9**	P		**Pn**	**06 43 15.8**	**+0.2**
	baz=189							
Z35A	**Perchaven, San**	**18.67**	**351**	P		**Pn**	**06 43 17.5**	**+0.9**
	baz=169							
WLAR	**White Oak Lake**	**18.75**	**2**	*e*P		**Pn**	**06 43 18.3**	**+0.6**
	comp=Z,33nm,0.7s							
Z46A	**Louisville**	**18.76**	**13**	P		**Pn**	**06 43 18.1**	**+0.3**
	baz=194,SNR=7.2							
Z34A	**Collier Ranch,**	**18.82**	**349**	P		**P**	**06 43 17.3**	**-0.2**
	baz=167							
Z33A	**Whitaker Ranch**	**18.91**	**347**	P		**Pn**	**06 43 19.7**	**+0.1**
	baz=164,SNR=14							
TIGA	**Tifton**	**18.93**	**28**	P		**P**	**06 43 16.9**	**-1.7**
	baz=211,SNR=8.3							
TIGA	**Tifton**	**18.93**	**28**	*e*P		**P**	**06 43 18.8**	**+0.2**
	comp=Z,26nm,0.8s							
Z47A	**Carrollton**	**18.96**	**15**	P		**P**	**06 43 19.6**	**+0.7**
	baz=196,SNR=8.4							
Y42A	**Garnett, Star**	**18.98**	**5**	P		**Pn**	**06 43 20.3**	**0.0**
	baz=185							
Y39A	**Locksburg**	**19.00**	**359**	P		**Pn**	**06 43 20.9**	**+0.3**
	baz=178,SNR=5.1							
Y38A	**Idabel**	**19.01**	**357**	P		**Pn**	**06 43 20.4**	**-0.3**
	baz=176							
CCAR	**Cane Creek**	**19.06**	**5**	*e*P		**Pn**	**06 43 21.6**	**+0.3**
	comp=Z,27nm,0.8s							
LRAL	**Lakeview Retre**	**19.10**	**17**	*e*P		**Pn**	**06 43 22.1**	**+0.3**
	comp=Z,11nm,1.0s							
Y37A	**Hugo**	**19.11**	**355**	P		**Pn**	**06 43 22.0**	**0.0**
	baz=174							
Y35A	**Marietta**	**19.20**	**352**	P		**Pn**	**06 43 23.3**	**+0.3**
	baz=170							
Z48A	**Northport**	**19.27**	**16**	P		**P**	**06 43 22.9**	**+0.6**
	baz=198							
Y34A	**Reagan Ranch,**	**19.36**	**350**	P		**P**	**06 43 24.0**	**+0.7**
	baz=168							
Y46A	**Houston**	**19.45**	**12**	P		**P**	**06 43 24.8**	**+0.5**
	baz=194,SNR=14							
X40A	**Basin Creek Fa**	**19.56**	**2**	P		**Pn**	**06 43 26.5**	**-0.7**
	baz=182							
X39A	**Fountain Ranch**	**19.57**	**359**	P		**Pn**	**06 43 27.3**	**-0.2**
	baz=178,SNR=9.0							
Y33A	**Hilltop Ranch,**	**19.57**	**348**	P		**Pn**	**06 43 27.0**	**-0.4**
	baz=165							
X41A	**Kaden, Bauxite**	**19.58**	**3**	P		**P**	**06 43 26.0**	**+0.3**
	baz=183							
MIAR	**Mount Ida**	**19.60**	**0**	P		**P**	**06 43 25.9**	**0.0**
	baz=180,SNR=9.9							
X35A	**Drake**	**19.68**	**352**	P		**Pn**	**06 43 28.5**	**-0.1**
	baz=170							
Y47A	**UCPARC, Winfie**	**19.69**	**15**	P		**P**	**06 43 26.6**	**-0.3**
	baz=196,SNR=20							
X37A	**Clayton**	**19.70**	**356**	P		**Pn**	**06 43 28.3**	**-0.7**
	baz=175,SNR=16							
X43A	**Marvell**	**19.74**	**7**	P		**P**	**06 43 27.8**	**+0.4**
	baz=188,SNR=5.9							
X38A	**Whitesboro**	**19.75**	**357**	P		**P**	**06 43 28.3**	**+0.7**
	baz=176,SNR=6.7							
X36A	**Centrahoma**	**19.77**	**354**	P		**Pn**	**06 43 29.2**	**-0.5**
	baz=172,SNR=6.6							
X44A	**Crenshaw**	**19.82**	**9**	P		**P**	**06 43 29.1**	**+0.8**
	baz=190							
HELC	**Santa Helena**	**19.84**	**114**	*e*P		**P**	**06 43 29.7**	**+0.7**
HELC	**Santa Helena**	**19.84**	**114**	*e*P		**P**	**06 43 28.1**	**-1.0**
	comp=Z,10nm,0.9s							
MNTX	**Cornudas Mount**	**19.87**	**330**	P		**Pn**	**06 43 30.5**	**-0.5**
	baz=145,SNR=15							
MNTX	**Cornudas Mount**	**19.87**	**330**	*e*P		**Pn**	**06 43 30.8**	**-0.1**
	comp=Z,7.5nm,0.8s							
X45A	**UM Field Stati**	**19.87**	**11**	P		**P**	**06 43 29.1**	**+0.2**
	baz=192,SNR=5.4							
UALR	**University of**	**19.87**	**3**	*e*P		**P**	**06 43 29.9**	**+1.0**
	comp=Z,20nm,0.8s							
X34A	**Smith Ranch, M**	**20.00**	**350**	P		Pn	06 43 33.0	+0.5
	baz=168							
X33A	**Lawton**	**20.07**	**348**	P		**P**	**06 43 31.4**	**+0.3**
	baz=166,SNR=20							
X32A	**Elmer**	**20.12**	**347**	P		Pn	06 43 33.7	-0.2
	baz=164							
W38A	**Poteau**	**20.14**	**358**	P		Pn	06 43 33.3	-0.7
	baz=177,SNR=8.7							
W39A	**Magazine**	**20.25**	**360**	P		**P**	**06 43 34.0**	**+1.0**
	baz=179,SNR=7.7							
W37B	**Quinton**	**20.25**	**356**	P		**P**	**06 43 32.3**	**-0.7**
	baz=175							
W40A	**Ferguson Farm,**	**20.25**	**2**	P		**P**	**06 43 34.4**	**+1.3**
	baz=181							
W41B	**Gary Mavity, V**	**20.27**	**3**	P		**P**	**06 43 33.2**	**0.0**
	baz=184,SNR=9.3							
WMOK	**Wichita Mounta**	**20.31**	**348**	P		**P**	**06 43 33.6**	**-0.2**
	baz=165,SNR=9.3							
WMOK	**Wichita Mounta**	**20.31**	**348**	*e*P		**P**	**06 43 34.3**	**+0.6**
	comp=Z,13nm,1.0s							
W36A	**Wetumka**	**20.32**	**354**	P		**P**	**06 43 33.7**	**0.0**
	baz=172							
X301	**Greenbrier Sit**	**20.33**	**3**	*e*P		**P**	**06 43 35.1**	**+1.3**
	comp=Z,15nm,0.8s							
X201	**Greenbrier Sit**	**20.38**	**3**	*e*P		**P**	**06 43 34.9**	**+0.5**
	comp=Z,12nm,0.8s							
WHAR	**Wooly Hollow**	**20.39**	**3**	*e*P		**P**	**06 43 35.3**	**+0.9**
	comp=Z,19nm,0.9s							
W35A	**Tecumseh**	**20.41**	**353**	P		**P**	**06 43 34.6**	**-0.1**
	baz=171,SNR=20							
W34A	**Bridge Creek,**	**20.61**	**351**	P		**P**	**06 43 37.4**	**+0.4**
	baz=168							
W34A	**Bridge Creek,**	**20.61**	**351**	*e*P		**P**	**06 43 37.9**	**+0.9**
	comp=Z,31nm,0.8s							
W33A	**Caddo, Fort Co**	**20.65**	**349**	P		**P**	**06 43 37.1**	**-0.3**
	baz=166,SNR=14							
GOGA	**Godfrey**	**20.68**	**25**	*e*P		**P**	**06 43 37.7**	**+0.1**
	comp=Z,9.6nm,0.8s							
NORC	**Norcasia**	**20.70**	**115**	*e*P		**P**	**06 43 36.7**	**-1.5**
MSTX	**Muleshoe**	**20.71**	**338**	P		**P**	**06 43 39.1**	**+1.0**
	baz=154,SNR=44							
MSTX	**Muleshoe**	**20.71**	**338**	*e*P		**P**	**06 43 39.3**	**+1.1**
	comp=Z,52nm,0.8s							
W32A	**Sentinel**	**20.78**	**347**	P		**P**	**06 43 38.9**	**+0.1**
	baz=164,SNR=19							
TOLC	**Tolima**	**20.79**	**118**	*e*P		Pn	06 43 42.5	+0.2
V40A	**Witts Springs**	**20.87**	**2**	P		**P**	**06 43 39.9**	**+0.1**
	baz=182,SNR=7.4							
V41A	**Mountainview**	**20.89**	**4**	P		**P**	**06 43 40.1**	**+0.2**
	baz=184,SNR=8.9							
V39A	**Pettigrew**	**20.89**	**0**	P		**P**	**06 43 40.4**	**+0.4**
	baz=180,SNR=15							
V38A	**Canehill**	**20.93**	**358**	P		**P**	**06 43 41.1**	**+0.8**
	baz=178,SNR=20							
V36A	**Jenks**	**20.93**	**355**	P		**P**	**06 43 41.7**	**+1.3**
	baz=174							
V42A	**Cord**	**20.96**	**5**	P		**P**	**06 43 41.4**	**+0.7**
	baz=186							
V37A	**Hulbert**	**20.98**	**357**	P		**P**	**06 43 41.8**	**+1.0**
	baz=176,SNR=12							
V35A	**Meyer Ranch, C**	**21.00**	**353**	P		**P**	**06 43 42.6**	**+1.5**
	baz=171							
TUL1	**Leonard**	**21.05**	**355**	P		**P**	**06 43 43.5**	**+1.9**
	baz=174,SNR=20							
TUL1	**Leonard**	**21.05**	**355**	*e*P		**P**	**06 43 43.2**	**+1.6**
	comp=Z,42nm,0.8s							
V34A	**Guthrie**	**21.16**	**351**	P		**P**	**06 43 43.6**	**+0.8**
	baz=169,S

baz=171,SNR=12
VILC Villavicencio, 22.43 116 eP P 06 43 58.9 +2.2
BNM Barren Site 22.47 331 eP P 06 43 59.9 +2.7
T33A Patterson Ranc 22.50 351 P P 06 43 57.0 -0.2
baz=168
TKL Tuckaleechee C 22.55 22 P P
comp=Z,3.4nm,1.0s,baz=192,slow=12,SNR=3.1
LPM Los Pinos Moun 22.61 331 eP P 06 44 00.6 +2.1
S38A Stockton 22.68 360 P P 06 43 57.8 -1.3
baz=179,SNR=16
S41A Jillco Farms, 22.70 4 P P 06 43 57.9 -1.5
baz=184
T32A Huddler Ranch, 22.71 349 P P 06 43 59.0 -0.4
baz=166
S39A Bolivar 22.74 1 P P 06 43 58.5 -1.2
baz=180,SNR=21
S37A Fort Scott 22.83 358 P P 06 44 00.5 -0.1
baz=177
S36A Lake Cedric, C 22.83 356 P P 06 44 00.3 -0.4
baz=175,SNR=25
S35A Otter Creek Ra 22.85 355 P P 06 43 60.0 -0.9
baz=173,SNR=13
S43A Fulton Ridge, 22.85 7 P P 06 43 59.0 -1.8
baz=189
LAZ Ladron 22.92 330 eP P 06 44 01.6 -0.2
S34A Willow Spring 22.95 353 P P 06 44 01.7 -0.2
baz=171
S33A Kaszmaul Farm, 22.96 351 P P 06 44 01.7 -0.3
baz=169
ANMO Albuquerque 23.05 332 P P 06 44 04.6 +1.4
baz=147
KMSC Kings Mountain 23.06 27 eP P 06 44 04.4 +1.3
comp=Z,8.5nm,0.8s
S44A Carbondale 23.09 9 P P 06 44 02.5 -0.7
baz=190,SNR=5.5
SIUC Southern Illin 23.11 9 eP P 06 44 05.5 +2.0
comp=Z,33nm,0.9s
S45A Carrier Mills 23.18 10 P P 06 44 02.1 -2.0
baz=192
S32A Newby Ranch, P 23.22 349 P P 06 44 03.2 -1.4
baz=167
R38A Fenwick Farm, 23.24 360 P P 06 44 02.7 -2.0
baz=179,SNR=9.0
TUC Tucson 23.32 321 P P 06 44 06.9 +1.2
baz=134
TUC Tucson 23.32 321 eP P 06 44 08.1 +2.5
comp=Z,11nm,0.8s
SDV Santo Domingo 23.35 102 P P 06 44 04.7 -1.4
comp=Z,7.8nm,0.7s,baz=312,slow=8.1,SNR=4.5
SDV LR LR 06 55 05.5
comp=Z,209nm,19.7s,baz=202,slow=42
SDV Santo Domingo 23.35 102 eP P 06 44 00.1 -6.0
SDV Santo Domingo 23.35 102 eP P 06 44 06.4 +0.2
comp=Z,7.3nm,0.8s
R39A Chumby, Stover 23.37 1 P P 06 44 04.4 -1.6
baz=181,SNR=7.8
R40A Maddies Statio 23.38 3 P P 06 44 04.2 -1.7
baz=183
R37A Teagarden Farm 23.38 358 P P 06 44 04.7 -1.3
baz=177,SNR=5.2
R36A Gordon, Harris 23.43 356 P P 06 44 05.0 -1.4
baz=175,SNR=6.9
TZTN Tazewell 23.43 21 eP P 06 44 07.3 +0.8
comp=Z,14nm,0.8s
R35A Emporia Munici 23.47 355 P P 06 44 06.3 -0.7
baz=174
R34A Isabella, Hill 23.56 353 P P 06 44 07.2 -0.5
baz=171,SNR=6.9
R44A Waltonville 23.66 9 P P 06 44 07.6 -1.0
baz=191
R33A Olander Ranch, 23.66 352 P P 06 44 08.5 -0.1
baz=169
R32A Long Quarter, 23.88 350 P P 06 44 09.6 -1.1
baz=168,SNR=16
Q37A Longview Farm, 23.93 359 P P 06 44 10.1 -1.0
baz=178
Q35A Mercer Eighty, 23.99 356 P P 06 44 10.9 -0.8
baz=174,SNR=9.7
Q38A Cooks Store, C 24.01 0 P P 06 44 11.1 -0.7
baz=180,SNR=16
Q40A Laux Farm, Aux 24.09 3 P P 06 44 11.1 -1.4
baz=183
Q39A Willow Grove F 24.10 1 P P 06 44 11.1 -1.6
baz=181,SNR=7.7
Q34A Chapman 24.14 354 P P 06 44 12.3 -0.6
baz=172,SNR=6.0
T25A Trinidad 24.14 339 P P 06 44 15.1 +1.8
baz=154,SNR=19
T25A Trinidad 24.14 339 eP P 06 44 15.7 +2.4
comp=Z,15nm,0.8s
WCI Wyandotte Cave 24.19 14 eP P 06 44 13.0 -0.4
comp=Z,16nm,0.8s
Q43A New Douglas 24.25 8 P P 06 44 13.1 -0.9
baz=189,SNR=6.0
KSU1 Kansas State U 24.28 355 P P 06 44 13.9 -0.4
baz=173
KSU1 Kansas State U 24.28 355 eP P 06 44 14.4 +0.1
comp=Z,17nm,0.8s
OLIL Olney 24.29 11 eP P 06 44 14.5 +0.2
comp=Z,18nm,0.8s
Q33A Connelly Farm, 24.32 352 P P 06 44 14.2 -0.5
baz=170
214A Organ Pipe Nat 24.36 318 P P 06 44 15.5 +0.4
baz=130
214A Organ Pipe Nat 24.36 318 eP P 06 44 16.8 +1.7
comp=Z,25nm,0.8s
Q32A Meitler Ranch, 24.41 351 P P 06 44 14.3 -1.2
baz=168
X18A Snowflake 24.45 326 eP P 06 44 18.4 +2.3
comp=Z,6.5nm,0.8s
P39B Salisbury 24.55 2 P P 06 44 14.9 -1.8
baz=182,SNR=9.1
P40A Paris 24.62 3 P P 06 44 15.5 -1.9
baz=183
P37A Lathrop 24.64 359 P P 06 44 16.3 -1.2
baz=178,SNR=5.1
P35A Duane Minner, 24.66 356 P P 06 44 16.9 -0.8
baz=174,SNR=8.3
P38A Dawn 24.67 0 P P 06 44 15.8 -2.0
baz=180,SNR=7.7
P34A Walnut Farm, R 24.75 354 P P 06 44 18.4 -0.1
baz=172
P42A Winchester 24.81 6 P P 06 44 17.6 -1.5
baz=187
P41A Barry, Barry 24.83 5 P P 06 44 18.1 -1.2
baz=186
BLO Bloomington 25.03 13 eP P 06 44 20.6 -0.5
comp=Z,11nm,0.8s
P32A Huiting Farm, 25.04 351 P P 06 44 20.5 -0.7
baz=168
SDCO Great Sand Dun 25.08 338 P P 06 44 23.6 +1.7
baz=152,SNR=12
SDCO Great Sand Dun 25.08 338 eP P 06 44 24.1 +2.2
comp=Z,4.3nm,0.8s
O38A Galt 25.17 0 P P 06 44 21.9 -0.4
baz=180
X16A Lo Mia Camp, P 25.20 324 eP P 06 44 25.4 +2.6
comp=Z,6.6nm,0.8s
O36A Bolckow 25.20 358 P P 06 44 21.6 -1.1
baz=177
O37A Wolven Farm, M 25.21 359 P P 06 44 21.6 -1.1
baz=179
O40A La Belle 25.22 3 P P 06 44 22.0 -0.7
baz=184
O41A Passleys Farm, 25.28 5 P P 06 44 22.2 -1.2
baz=186
KSCO Kaye Shedlock' 25.31 344 eP P 06 44 25.1 +1.3
comp=Z,26nm,0.8s
O39A Kirksville 25.32 2 P P 06 44 23.5 -0.2
baz=182
O33A Hebron 25.35 353 P P 06 44 23.8 -0.2
baz=171
O34A Beatrice 25.36 355 P P 06 44 23.1 -1.0
baz=173,SNR=5.9
O35A Humboldt 25.39 356 P P 06 44 20.9 -3.4
baz=175
113A Mohawk Valley, 25.50 318 eP P 06 44 27.8 +2.4
comp=Z,26nm,1.8s
S22A 4UR Ranch, Cre 25.59 335 P P 06 44 28.8 +2.2
baz=149
S22A 4UR Ranch, Cre 25.59 335 eP P 06 44 28.7 +2.1
comp=Z,24nm,1.9s
Y14A Wickenburg 25.79 321 eP P 06 44 30.6 +2.5
comp=Z,20nm,1.0s
N37A Lee Faris, Mou 25.81 359 P P 06 44 27.1 -1.0
baz=178,SNR=6.9
N38A Joes South For 25.84 1 P P 06 44 28.3 -0.2
baz=181,SNR=9.6

MVCO Mesa Verde 25.85 332 P P 06 44 30.2 +1.3
baz=145,SNR=11
MVCO Mesa Verde 25.85 332 eP P 06 44 31.0 +2.2
comp=Z,9.9nm,0.7s
N36A Muff Farm, Cla 25.88 358 P P 06 44 27.1 -1.7
baz=177
HDIL Hopedale 25.89 8 eP P 06 44 29.6 +0.7
comp=Z,12nm,0.7s
WUAZ Wupatki 25.96 326 P P 06 44 31.6 +1.8
baz=138,SNR=7.9
WUAZ Wupatki 25.96 326 eP P 06 44 32.7 +2.9
comp=Z,8.7nm,0.8s
N34A Lincoln 26.00 355 P P 06 44 29.1 -0.8
baz=174
M37A Trindle Farm, 26.45 359 P P 06 44 34.2 +0.2
baz=179,SNR=6.4
M38A Pleasantville 26.47 1 P P 06 44 33.5 -0.5
baz=181
M36A Felix, Anita 26.52 358 P P 06 44 33.8 -0.7
baz=177
M39A Webster 26.56 3 P P 06 44 33.8 -1.1
baz=183
M35A Neola 26.57 357 P P 06 44 34.8 -0.2
baz=175
PV01 Paradox Valley 26.65 333 eP P 06 44 38.5 +2.4
M34A Aspy Farms, Fr 26.66 355 P P 06 44 35.7 -0.1
baz=179
PDMCI Parker Dam,Lak 26.73 320 P P 06 44 37.6 +1.1
baz=131
M33A Taylor Creek F 26.79 354 P P 06 44 37.0 0.0
baz=172
PV05 Paradox Valley 26.84 332 eP P 06 44 40.4 +2.7
SMCO Snowmass 26.89 337 eP P 06 44 40.9 +2.6
comp=Z,4.7nm,0.8s
ISCO Idaho Springs 26.95 339 P P 06 44 39.3 +0.5
baz=154,SNR=8.8
ISCO Idaho Springs 26.95 339 eP P 06 44 40.8 +2.0
comp=Z,4.0nm,0.8s
SCIA State Center 26.95 1 eP P 06 44 38.6 +0.2
comp=Z,13nm,0.7s
PV04 Paradox Valley 27.01 333 eP P 06 44 41.2 +2.0
PV10 Paradox Valley 27.05 333 eP P 06 44 41.5 +1.8
U15A North Rim 27.14 326 eP P 06 44 43.2 +2.7
comp=Z,4.5nm,0.9s
BC3 Big Chuckawall 27.15 317 P P 06 44 42.4 +1.9
baz=128,SNR=5.4
PV09 Paradox Valley 27.20 333 eP P 06 44 43.7 +2.7
L41A Preston 27.26 5 P P 06 44 39.7 -1.5
baz=186
L31A Butterfield Fa 27.58 352 P P 06 44 44.7 +0.6
baz=169
K39A Oelwein 27.79 3 P P 06 44 45.5 -0.5
baz=183
K37A Belmond 27.81 0 P P 06 44 46.3 +0.2
baz=180
K40A Colesburg 27.83 4 P P 06 44 45.8 -0.5
baz=185
LDFC Landfair 27.84 320 eP P 06 44 49.8 +3.2
comp=Z,11nm,0.5s
KNB Kanab 27.86 326 eP P 06 44 49.9 +3.1
comp=Z,5.1nm,0.8s
K32A Verdigre 27.95 353 P P 06 44 48.0 +0.6
baz=171
LCMT Little Creek M 28.08 325 eP P 06 44 50.9 +2.1
comp=Z,11nm,1.9s
JFWS Jewell Farm 28.12 5 eP P 06 44 49.8 +1.0
comp=Z,10nm,0.7s
K30A Basset 28.18 351 P P 06 44 50.5 +1.0
baz=168
O20A White River Ci 28.20 336 P P 06 44 51.1 +1.2
baz=149
MTPU Mount Pierson 28.29 328 eP P 06 44 53.0 +2.1
comp=Z,4.3nm,0.8s
J36A Seneca 1, Swea 28.38 359 P P 06 44 51.1 -0.1
baz=178,SNR=7.0
CCUT Cedar City 28.54 326 eP P 06 44 55.4 +2.4
comp=Z,3.7nm,0.9s
J41A Loganville 28.59 6 P P 06 44 52.7 -0.3
baz=187
J32A Parkston 28.64 354 P P 06 44 52.9 -0.6
baz=171
MSU Marysvale 28.64 329 eP P 06 44 56.1 +2.2
J31A Geddes 28.66 352 P P 06 44 53.7 0.0
baz=170
P17A Butcher Ranch, 28.71 332 eP P 06 44 56.8 +2.4
comp=Z,4.7nm,0.9s
ECSD EROS Data Cent 28.88 356 P P 06 44 54.6 -1.0
baz=174,SNR=19
ECSD EROS Data Cent 28.88 356 eP P 06 44 55.4 -0.2
comp=Z,12nm,0.6s
BFSC Mount Baldy Ra 28.97 316 P P 06 44 58.5 +1.8
baz=126
I33A Coleman 29.21 355 P P 06 44 58.5 0.0
baz=174
H32A Carlson Farm, 29.72 355 P P 06 45 02.0 -1.0
baz=172,SNR=13
H31A Wolsey 29.80 353 P P 06 45 03.4 -0.3
baz=170
H33A Prehn Over Nor 29.84 356 P P 06 45 03.4 -0.7
baz=174,SNR=7.8
MPMC Manual Prospec 29.95 319 P P 06 45 07.0 +1.5
baz=129
SPMN Marine on St. 30.28 1 P P 06 45 06.9 -1.0
baz=181
SPMN Marine on St. 30.28 1 eP P 06 45 08.1 +0.1
comp=Z,11nm,1.1s
G34A Benson 30.33 357 P P 06 45 07.5 -0.9
baz=176
R11A Troy Canyon, C 30.34 325 P P 06 45 11.0 +2.1
baz=134
TCUT Toone Canyon 30.34 333 eP P 06 45 11.5 +2.6
comp=Z,13nm,0.7s
RSSD Black Hills 30.46 345 P P 06 45 10.7 +0.8
baz=160
RSSD Black Hills 30.46 345 eP P 06 45 11.7 +1.8
comp=Z,4.3nm,0.6s
G31A Conde 30.51 354 P P 06 45 09.8 -0.2
baz=171
H25A Fruitdale 30.83 346 P P 06 45 14.4 +1.5
baz=161
VES Vestal, Richgr 30.85 317 P P 06 45 15.0 +1.9
baz=126
F36A Milaca 30.91 0 P P 06 45 13.5 0.0
baz=180
F33A 5 Mile Ranch, 30.96 356 P P 06 45 12.8 -1.1
baz=175
BW06 Boulder Array 30.97 337 P P 06 45 15.9 +1.5
baz=149
BW06 Boulder Array 30.97 337 eP P 06 45 16.0 +1.6
comp=Z,2.5nm,0.9s
PD31 Pinedale Array 30.97 337 eP P 06 45 16.1 +1.7
PDAR Pinedale Array 30.97 337 P P 06 45 15.9 +1.6
comp=Z,2.3nm,0.8s,baz=133,slow=8.3,SNR=18
F31A Hecla 31.14 354 P P 06 45 14.5 -1.1
baz=171
RCTC Rector, Farmer 31.23 318 P P 06 45 18.1 +1.6
baz=126
F29A Eureka 31.30 352 P P 06 45 16.8 -0.2
baz=168
E36A Mcgregor 31.56 1 P P 06 45 18.8 -0.5
baz=180
E34A Wadena 31.58 358 P P 06 45 18.1 -1.3
baz=177,SNR=7.3
E33A Westby DABS, E 31.61 357 P P 06 45 18.4 -1.3
baz=175
E35A Pequot Lakes 31.61 359 P P 06 45 18.6 -1.1
baz=178,SNR=5.8
E31A Nome 31.79 355 P P 06 45 20.0 -1.4
baz=172
REDW Red Top Meadow 31.97 336 eP P 06 45 25.6 +2.4
comp=Z,15nm,1.1s
SNOW Snow King Moun 32.02 336 eP P 06 45 25.9 +2.2
comp=Z,23nm,0.8s
LOHW Long Hollow 32.09 337 eP P 06 45 26.6 +2.4
comp=Z,7.3nm,0.8s
TPAW Teton Pass 32.12 336 eP P 06 45 26.2 +1.6
comp=Z,6.6nm,0.8s
D35A Remer 32.13 360 P P 06 45 23.2 -1.0
baz=179
D37A Cotton 32.22 2 P P 06 45 24.6 -0.5
baz=182
D33A AnnSam, Waubun 32.23 357 P P 06 45 23.7 -1.5
baz=176,SNR=6.8
MOOW Moose Ponds 32.26 337 eP P 06 45 27.4 +1.7
comp=Z,5.5nm,0.8s
SADO Sadowa 32.28 20 LR LR 07 00 37.6
comp=Z,162nm,18.7s,baz=210,slow=40
D32A Dogwood Acres, 32.30 356 P P 06 45 24.9 -0.8

baz=174
IMW Indian Meadow 32.46 336 eP P 06 45 29.4 +1.8
comp=Z,3.9nm,0.7s
FLWY Flagg Ranch 32.52 337 eP P 06 45 29.8 +1.7
comp=Z,8.0nm,0.9s
BMN Battle Mountai 32.70 326 eP P 06 45 31.9 +2.4
comp=Z,3.7nm,0.8s
C34A RKJ Ranch, Bem 32.71 359 P P 06 45 28.7 -0.6
baz=178
C35A Jirik Farms, M 32.74 360 P P 06 45 28.4 -1.3
baz=179
D26A Manning 32.89 349 P P 06 45 30.7 -0.2
baz=164,SNR=7.5
RLMT Red Lodge 32.91 340 P P 06 45 32.0 +0.6
baz=151
C31A Landman Farms, 33.01 355 P P 06 45 31.1 -0.8
baz=173,SNR=18
MDND Maddock 33.25 353 P P 06 45 33.7 -0.4
baz=169,SNR=13
AGMN Agassiz Nation 33.39 357 P P 06 45 35.0 -0.2
baz=176
AGMN Agassiz Nation 33.39 357 eP P 06 45 34.6 -0.7
comp=Z,5.7nm,0.8s
B32A Ashes, Strandq 33.52 357 P P 06 45 36.0 -0.4
baz=175,SNR=6.9
B34A Aery, Baudette 33.54 359 P P 06 45 35.9 -0.6
baz=178
B31A Greenbush Farm 33.62 355 P P 06 45 36.6 -0.7
baz=173,SNR=6.5
GCMT Greycliff 33.63 340 eP P 06 45 39.3 +1.7
HLID Hailey 33.64 332 P P 06 45 38.8 +1.2
baz=142,SNR=6.3
HLID Hailey 33.64 332 eP P 06 45 40.1 +2.4
comp=Z,3.0nm,0.8s
MCMT McKenzie Canyo 33.99 335 eP P 06 45 44.2 +3.4
A32A Rocking H Ranc 34.04 357 P P 06 45 40.0 -0.8
baz=175
BOZ Bozeman (W) 34.20 337 P P 06 45 43.7 +1.1
baz=148
BOZ Bozeman (W) 34.20 337 eP P 06 45 44.7 +2.2
comp=Z,5.2nm,1.1s
B25A Knox Farm, Ray 34.22 349 P P 06 45 42.6 +0.1
baz=163
DLMT Dillon 34.33 336 eP P 06 45 46.5 +2.9
comp=Z,7.5nm,0.9s
DGMT Dagmar 34.61 348 P P 06 45 47.0 +1.1
baz=162
DGMT Dagmar 34.61 348 eP P 06 45 46.8 +0.9
comp=Z,14nm,0.8s
A26A Wade Farm, Ken 34.62 350 P P 06 45 46.7 +0.7
baz=166,SNR=11
LRM Limekiln Ridge 34.66 337 eP P 06 45 48.3 +1.7
A25A Svangstu Ranch 34.85 349 P P 06 45 48.9 +1.0
baz=164
HRY Holter Researc 35.18 338 eP P 06 45 53.5 +2.6
ULM Lac du Bonnet 35.34 358 P P 06 45 50.7 -1.4
comp=Z,4.7nm,0.8s,baz=184,slow=8.6,SNR=5.8
ULM LR LR 07 03 26.4
comp=Z,98nm,18.5s,baz=148,slow=41
ULM Lac du Bonnet 35.34 358 eP P 06 45 51.2 -0.9
comp=Z,7.4nm,1.0s
EGMT Eagleton 35.63 341 eP P 06 45 56.7 +2.0
comp=Z,7.1nm,0.9s
CHMT Chamberlain Mo 35.88 337 eP P 06 45 58.7 +1.7
MSO Missoula 36.07 336 P P 06 45 59.4 +0.9
baz=145,SNR=5.9
MSO Missoula 36.07 336 eP P 06 46 00.5 +1.9
comp=Z,4.4nm,0.8s
SLMT Seeley Lake 36.24 337 eP P 06 46 01.6 +1.5
SWMT Swartz Lake 36.65 337 eP P 06 46 05.2 +1.7
F10A Beach Ranch, E 36.77 332 eP P 06 46 06.3 +1.8
comp=Z,12nm,0.8s
PTGA Pitinga 36.80 112 P P 06 46 03.2 -1.8
comp=Z,4.2nm,0.5s,baz=298,slow=11,SNR=16
PTGA Pitinga 36.80 112 eP P 06 46 04.3 -0.7
comp=Z,4.7nm,0.6s
YBMT Yellow Bay 36.95 337 eP P 06 46 08.1 +2.0
JTMT Jette 36.96 337 eP P 06 46 08.1 +2.0
BLMT Blacktail Moun 37.21 337 eP P 06 46 10.1 +1.8
BSMT Bassoo Peak 37.24 336 eP P 06 46 10.4 +1.8
NEW Newport 38.50 335 LR LR 07 04 29.1
comp=Z,365nm,19.9s,baz=155,slow=40
NEW Newport 38.50 335 P P 06 46 20.5 +1.4
baz=142
NEW Newport 38.50 335 eP P 06 46 20.3 +1.2
comp=Z,3.4nm,0.7s
C09A Chrisman Ranch 38.63 333 eP P 06 46 22.1 +2.0
comp=Z,5.5nm,0.6s
LON Longmire 39.50 329 eP P 06 46 29.5 +2.0
comp=Z,6.1nm,0.8s
LPAZ La Paz 39.95 140 P P 06 46 30.1 -2.0
comp=Z,1.1nm,0.7s,baz=326,slow=13,SNR=4.9
EDM Edmonton 41.30 342 eP P 06 46 42.9 +0.7
comp=Z,9.5nm,1.0s
SIV San Ignacio 44.49 132 P P 06 47 05.4 -3.0
comp=Z,2.2nm,0.8s,baz=332,slow=10,SNR=3.8
SCHQ Schefferville 45.02 22 LR LR 07 09 39.6
comp=Z,189nm,18.4s,baz=246,slow=41
YKA Yellowknife Ar 49.82 347 P P 06 47 50.0 +0.8
comp=Z,8.1nm,0.7s,baz=152,slow=7.2,SNR=82
DLBC Dease Lake 51.20 336 eP P 06 48 01.5 +1.7
comp=Z,6.1nm,0.9s
FRB Frobisher Bay 51.87 14 LR LR 07 11 24.3
comp=Z,69nm,18.3s,baz=196,slow=37
BDFB Brasilia 54.38 122 P P 06 48 23.7 -0.3
comp=Z,1.8nm,0.6s,baz=169,slow=27,SNR=4.5
DAWY Dawson 58.27 338 eP P 06 48 52.3 +1.5
comp=Z,8.8nm,0.6s
BMRM Bremner River 58.66 334 eP P 06 48 55.5 +1.8
comp=Z,4.7nm,0.8s
EYAK Cordova Ski Ar 58.97 333 eP P 06 48 56.9 +1.3
comp=Z,22nm,1.5s
INK Inuvik 59.15 344 P P 06 48 57.5 +0.7
comp=Z,3.4nm,0.7s,baz=120,slow=7.2,SNR=10
INK Inuvik 59.15 344 eP P 06 48 58.1 +1.3
comp=Z,7.2nm,1.1s
FID Port Fidalgo 59.38 333 eP P 06 49 00.3 +1.8
comp=Z,6.6nm,0.8s
GLI Glacier Island 59.70 333 eP P 06 49 02.9 +2.1
comp=Z,7.4nm,0.8s
DOT Dot Lake 59.77 337 eP P 06 49 02.6 +1.3
comp=Z,13nm,0.8s
RES Resolute Bay 59.83 360 eP P 06 49 02.1 +0.7
comp=Z,9.4nm,0.8s
PAX Paxson 59.99 336 eP P 06 49 04.3 +1.5
comp=Z,6.0nm,0.8s
SCM Sheep Creek Mo 60.23 334 eP P 06 49 05.7 +1.3
comp=Z,13nm,1.3s
SEW Seward 60.44 332 eP P 06 49 07.4 +1.7
comp=Z,10nm,1.3s
PMR Palmer 60.90 333 eP P 06 49 10.6 +1.7
comp=Z,3.6nm,0.7s
RC01 Rabbit Creek A 60.96 333 eP P 06 49 11.2 +1.8
comp=Z,9.9nm,0.9s
KDAK Kodiak Island 61.12 328 eP P 06 49 12.3 +1.9
comp=Z,18nm,1.3s
HDA Harding Lake 61.25 337 eP P 06 49 12.1 +0.8
comp=Z,3.7nm,0.6s
OHAK Old Harbor 61.30 328 eP P 06 49 11.9 +0.3
comp=Z,19nm,1.3s
IL1 Eielson Array 61.40 337 eP P 06 49 13.4 +1.2
ILAR Eielson Array 61.40 337 P P 06 49 13.4 +1.1
comp=Z,3.2nm,0.7s,baz=146,slow=4.7,SNR=43
ILB Eielson Array 61.40 337 eP P 06 49 13.4 +1.1
RND Reindeer 61.55 335 eP P 06 49 15.3 +1.9
comp=Z,11nm,0.8s
SUA Susitna One 61.56 333 eP P 06 49 15.4 +1.9
comp=Z,10.0nm,0.7s
CCB Clear Creek Bu 61.69 337 eP P 06 49 14.6 +0.4
comp=Z,2.2nm,0.7s
WRH Wood River Hil 61.72 336 eP P 06 49 15.2 +0.8
comp=Z,2.6nm,0.8s
MCK McKinley 61.73 335 eP P 06 49 16.0 +1.5
comp=Z,5.5nm,0.8s
COLA College 61.81 337 eP P 06 49 15.9 +0.9
comp=Z,4.2nm,0.8s
MDM Murphy Dome 62.00 337 eP P 06 49 17.2 +0.9
comp=Z,2.6nm,0.6s
TRF Thorofare Moun 62.16 335 eP P 06 49 19.1 +1.6
comp=Z,12nm,0.8s
KTH Kantishna Hill 62.46 335 eP P 06 49 20.7 +1.2
comp=Z,11nm,0.8s
KEKH Kekaha 62.61 287 eP P 06 49 23.0 +1.8
comp=Z,391nm,1.5s
BPAW Bear Paw Mtn. 62.70 335 eP P 06 49 22.3 +1.2
comp=Z,5.1nm,0.7s
PPLA Purkeypile 62.73 334 eP P 06 49 22.5 +1.1
comp=Z,14nm,1.5s

CAST	**Castle Rocks**	**62.88**	**335**	*e*P		**P**	**06 49 23.1**	**+0.8**
	comp=Z,5.7nm,0.8s							
MLY	**Manley**	**62.99**	**336**	*e*P		**P**	**06 49 23.9**	**+1.0**
	comp=Z,5.9nm,0.7s							
SVW2	**Sparrevohn**	**63.62**	**331**	*e*P		**P**	**06 49 27.9**	**+0.7**
	comp=Z,3.1nm,0.8s							
COLD	**Coldfoot**	**63.73**	**339**	*e*P		**P**	**06 49 30.1**	**+2.3**
	comp=Z,3.0nm,1.2s							
PPT	**Papeete**	**63.82**	**242**	LR		LR	07 08 48.8	
	comp=Z,2µm,21.0s,baz=262,slow=28							
TT01	**Tatalina**	**64.38**	**333**	*e*P		**P**	**06 49 32.8**	**+0.7**
SUMG	**Summit**	**65.86**	**16**	*i* P		**P**	**06 49 42.4**	**+0.4**
	comp=Z,5.9nm,0.7s							
SUMG	**Summit**	**65.86**	**16**	*e*P		**P**	**06 49 41.8**	**-0.2**
	comp=Z,6.3nm,0.6s							
DAG	**Danmarks Havn**	**72.22**	**14**	*i* P		**P**	**06 50 20.8**	**-0.1**
	comp=Z,11nm,0.7s							
JOHN	**Johnston Islan**	**72.54**	**283**	*e*P		**P**	**06 50 26.4**	**+2.6**
	comp=Z,185nm,0.8s							
ESDC	**Sonseca Array**	**80.49**	**51**	P		**P**	**06 51 08.2**	**-0.3**
	comp=Z,0.4nm,0.4s,baz=297,slow=8.4,SNR=4.6							
AFI	**Afiamalu**	**82.33**	**253**	LR		LR	07 18 49.2	
	comp=Z,80nm,19.3s,baz=84,slow=29							
NB2	**NORSAR Subarra**	**84.18**	**28**	P		**P**	**06 51 28.9**	**+1.6**
	comp=Z,3.9nm,0.9s,baz=292,slow=4.6							
NB2	**NORSAR Subarra**	**84.18**	**28**	P		**P**	**06 51 28.9**	**+1.6**
	baz=292,slow=4.6							
NOA	**NORSAR Array B**	**84.18**	**28**	P		**P**	**06 51 28.6**	**+1.2**
	comp=Z,1.5nm,0.8s,baz=293,slow=4.5,SNR=7.9							
NOA				LR		LR	07 29 19.7	
	comp=Z,28nm,18.6s,baz=10.0,slow=36							
ARA0	**ARCESS Array S**	**85.84**	**18**	*e*P		**P**	**06 51 36.1**	**+0.6**
ARCES	**ARCESS Array B**	**85.84**	**18**	P		**P**	**06 51 35.5**	**+0.1**
	comp=Z,1.9nm,0.6s,baz=289,slow=5.6,SNR=5.4							
ARE0	**ARCESS Array S**	**85.84**	**18**	*e*P		**P**	**06 51 36.1**	**+0.7**
	comp=Z,62nm,1.8s							
SEY	**Seymchan**	**87.28**	**335**	P		**P**	**06 51 43.3**	**+0.7**
	comp=Z,1.5nm,0.8s,baz=168,slow=5.2,SNR=5.3							
FIA1	**FINESS Array S**	**90.42**	**25**	*e*P		**P**	**06 51 58.0**	**+0.6**
FINES	**FINESS Array B**	**90.42**	**25**	P		**P**	**06 51 57.8**	**+0.4**
	comp=Z,1.1nm,0.6s,baz=260,slow=6.6,SNR=4.4							
BOSA	**Boshof**	**122.23**	**115**	PKP		**PKPdf**	**06 57 51.3**	**-0.2**
	comp=Z,1.6nm,0.6s,baz=0.0,slow=2.0,SNR=2.9							
KSH	**Kashi**	**125.06**	**10**	*e*PKP		**PKPdf**	**06 57 55.8**	**-1.0**
KSH				*es*PKP			06 58 33.6	
KSH				*e*PP		PP	06 59 57.3	+13
KSH				SKS		**SKSdf**	**07 04 56.4**	**-7.6**
KSH				AMB		AMB		
	comp=Z,23nm,3.6s							
MAW	**Mawson**	**125.13**	**169**	*e*PKPdf		**PKPdf**	**06 57 56.1**	**+0.4**
LZH	**Lanzhou**	**126.68**	**342**	*e*PKP		**PKPdf**	**06 57 56.5**	**-3.5**
LZH				pPKP		pPKPdf	06 58 16.3	-1.0
LZH				sPKP			06 58 26.0	
LZH				LR		LR		
	comp=N,120nm,18.0s							
LZH				LR		LR		
	comp=E,120nm,18.1s							
LZH				LR		LR		
	comp=Z,170nm,20.0s							
WB2	**Warramunga Arr**	**133.97**	**257**	*e*PKPdf		**PKPdf**	**06 58 14.5**	**+0.5**
WRA	**Warramunga Arr**	**133.98**	**257**	PKP		**PKPdf**	**06 58 13.8**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=85,slow=2.8,SNR=9.2							
AS01	**Alice Springs**	**134.33**	**251**	*e*PKPdf		**PKPdf**	**06 58 15.4**	**+0.8**
ASAR	**Alice Springs**	**134.37**	**251**	PKP		**PKPdf**	**06 58 14.4**	**-0.3**
	comp=Z,0.5nm,0.7s,baz=54,slow=1.9,SNR=5.3							
CMAR	**Chiang Mai Arr**	**144.62**	**339**	PKP		**PKPab**	**06 58 31.9**	**-0.1**
	comp=Z,3.7nm,0.7s,baz=338,slow=3.7,SNR=14							
CM01	**Chiang Mai Arr**	**144.65**	**339**	*e*PKPdf		PKPbc	06 58 33.3	+1.0
NWAO	**Narrogin (SRO)**	**146.65**	**232**	*e*PKPdf		**PKPbc**	**06 58 38.8**	**+0.7**

IDC ***22*** *06:39:36.5±1.4, 11°.42N×125°.33E, h0km, mb4.0/7, mb1 4.2/7, mb1mx3.7/49, mbtmp4.0/7, MS2.8/1, Ms1 2.8/1, ms1mx2.3/64, Error ellipse: s-maj=69.8km s-min=17.0km az=62.0*

ISCJB ***22*** *06:39:55.8±1.4, 11°.2N±0°.2×125°.1E±0°.4, h193km±10km, mb3.6/7, Error ellipse: s-maj=67.8km s-min=17.5km az=151.4*

ISC 22 06:39:56.9±1.5, 11°.3N±0°.2×125°.1E±0°.4, h185km±11km, n9, σ0s56/8, mb3.8/7, 1D, Samar

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PLP	**Palo**	**0.18**	**234**	ǁ *i*P		**Pn**	**06 40 21.4**	**0.0**
TGY	**Tagaytay City**	**4.96**	**305**	LR		LR	06 43 23.0	
	comp=Z,105nm,19.6s,baz=200,slow=45							
CMAR	**Chiang Mai Arr**	**26.27**	**289**	P		**P**	**06 45 15.1**	**-0.2**
	0.8nm,0.5s,baz=102,slow=8.5,SNR=3.5							
FITZ	**Fitzroy Crossi**	**29.19**	**179**	P		**P**	**06 45 40.6**	**-0.5**
	0.9nm,0.4s,baz=349,slow=10,SNR=5.7							
WRA	**Warramunga Arr**	**32.31**	**164**	P		**P**	**06 46 08.1**	**-0.5**
	1.0nm,0.6s,baz=342,slow=9.1,SNR=13							
ASAR	**Alice Springs**	**35.77**	**166**	P		**P**	**06 46 38.8**	**+0.4**
	1.2nm,0.4s,baz=351,slow=7.8,SNR=19							
STKA	**Stephens Creek**	**45.71**	**160**	P		**P**	**06 47 59.7**	**+0.2**
	1.9nm,0.7s,baz=333,slow=7.2,SNR=3.8							
MKAR	**Makanchi Array**	**50.56**	**323**	P		**P**	**06 48 37.1**	**+0.6**
	0.9nm,0.3s,baz=120,slow=8.5,SNR=24							
ZALV	**Zalesovo Beam**	**53.22**	**331**	P		**P**	**06 48 55.6**	**-0.4**
	1.0nm,0.5s,baz=116,slow=7.4,SNR=4.8							

IDC 22 06:40:11.9±10.0, 15°.18S×165°.49E, h0km, mb4.1/4, mb1 4.2/5, mb1mx3.7/46, mbtmp4.1/5, ML4.0/1, Error ellipse: s-maj=191.8km s-min=33.5km az=55.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DZM	**Mont Dzumac**	**6.91**	**173**	Pn		Pn	06 41 55.1	+0.4
	2.6nm,0.3s,baz=27,slow=1.1,SNR=18							
DZM				Sn		Sn	06 43 14.1	-0.1
	baz=0.0,slow=20,SNR=2.1							
STKA	**Stephens Creek**	**27.40**	**228**	P		P	06 45 59.4	0.0
	1.5nm,0.4s,baz=54,slow=9.9,SNR=7.5							
WRA	**Warramunga Arr**	**30.05**	**256**	P		P	06 46 22.8	-0.2
	0.8nm,0.9s,baz=86,slow=9.0,SNR=4.6							
ASAR	**Alice Springs**	**30.90**	**249**	P		P	06 46 30.5	-0.1
	1.1nm,0.4s,baz=78,slow=9.1,SNR=13							
FITZ	**Fitzroy Crossi**	**38.24**	**260**	P		P	06 47 34.2	+0.1
	3.0nm,0.6s,baz=64,slow=8.3,SNR=8.4							

CASC 22 06:52:24.4±3.5, 10°.67N×85°.28W, h0km±13km, MD3.7, Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CGA2	**Cerro Gallo 2**	**1.03**	**129**	*e*P		Pg	06 52 43.6	-0.5
CGA2				*e*S		Sb	06 52 58.8	-0.5
QCR	**Quepos**	**1.65**	**138**	*e*P		Pn	06 52 53.9	-0.8
QCR				*e*S		Sn	06 53 15.8	-0.8
URSC	**Urasca**	**1.69**	**119**	*e*P		Pn	06 52 53.6	-1.8
BUS	**Buena Vista**	**1.86**	**126**	*e*P		Pn	06 52 57.3	-0.7
BUS				*e*S		Sn	06 53 21.5	-0.9
BRU2	**Volcan**	**3.16**	**126**	*e*P		Pn	06 53 18.1	+2.6
BRU2				*i* S		Sn	06 53 57.1	+3.0
TBS2		**3.18**	**126**	*e*P		Pn	06 53 18.1	+2.2
TBS2				*e*S		Sn	06 53 57.2	+2.4
PNME	**Penonome**	**5.34**	**113**	*e*P		Pn	06 53 43.4	-2.0
ZANG	**Zanguenga, Cho**	**5.60**	**107**	*e*P		Pn	06 53 48.2	-0.8
UPD2	**Meteti**	**7.47**	**106**	*i* P		Pn	06 54 14.4	-0.2

ISCJB ***22*** *06:56:38.4±0.4, 20°.32S±0°.03×178°.56W±0°.02, h594km±5km, mb5.8/408, Error ellipse: s-maj=4.1km s-min=2.4km az=159.9*

IDC ***22*** *06:56:39.8±0.4, 20°.31S×178°.52W, h598km±3km, mb5.1/40, mb1 5.1/44, mb1mx5.1/45, mbtmp6.0/44, Error ellipse: s-maj=6.2km s-min=5.9km az=179.0*

MOS ***22*** *06:56:39.0±0.9, 20°.21S×178°.60W, h599km, mb5.9/72, Error ellipse: s-maj=7.5km s-min=6.2km az=72.3*

NEIC ***22*** *06:56:40.0±0.0, 20°.19S×178°.63W, h610km, Moment Tensor Solution. s28 Moment tensor: Scale 10¹⁷Nm; Mrr=4.09; Mθθ=1.34; Mφφ=5.44; Mrθ=-6.07; Mrφ=1.13; Mθφ=-5.07; Best double couple: M₀9.40000×10¹⁷ NP1:φs42.00000°, δ77.00000°, λ-68.00000°. NP2:φs162.00000°, δ25.00000°, λ-147.00000°. Principal axes: T 9.0000, Plg28.0000°, Azm114.0000°; N 0.7000, Plg20.0000°, Azm216.0000°; P -9.7000, Plg53.0000°, Azm337.0000°;*

NEIC ***22*** *06:56:40.9±0.3, 20°.33S×178°.60W, h612km±4km, mb5.9/295, MW5.9, MW6.0 Error ellipse: s-maj=3.5km s-min=2.6km az=140.0 Best double couple: NP1: φs52.00000°, δ79.00000°, λ-84.00000°. NP2:φs202.00000°, δ13.00000°, λ-120.00000°. Principal axes: T 0.9400, Plg34.0000°, Azm137.0000°; N 0.2500, Plg6.0000°, Azm231.0000°; P -1.1900, Plg55.0000°, Azm330.0000°;*

BJI ***22*** *06:56:40.0, 20°.20S×178°.50W, h600km, mb5.9/43, mB5.9/44*

GCMT ***22*** *06:56:40.9±0.1, 20°.18S×178°.51W, h605km, MW5.9/131, Moment Tensor Solution. s131,c263; s78,c90; Duration: 2s2 Moment tensor: Scale 10¹⁸Nm; Mrr-0.42±.01; Mθθ-0.05±.01; Mφφ0.46±.01; Mrθ-0.71±.01; Mθφ-0.02±.01; Mφr-0.50±.01; Best double couple: M₀0.95400×10¹⁸ NP1:φs44.00000°, δ80.00000°, λ-73.00000°. NP2:φs164.00000°, δ20.00000°, λ-149.00000°. Principal axes: T 0.8250, Plg33.0000°, Azm120.0000°; N 0.2590, Plg17.0000°, Azm221.0000°; P -1.0840, Plg52.0000°, Azm334.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*

ISC 22 06:56:39.6±0.2, 20°.30S±0°.03×178°.44W±0°.03, h603km±1km, h604km: pP-P, n1786, σ1s45/2169, mb5.8/407, 58C-159D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MSVF	**Nonsavu**	**4.18**	**307**	*c i*P		**P**	**06 58 07.4**	**+0.6**
MSVF	**Nonsavu**	**4.18**	**307**	*e*P		**P**	**06 58 07.3**	**+0.5**
NIUE	**Niue**	**8.12**	**83**	P		**P**	**06 58 39.8**	**-0.4**
	baz=8.1,SNR=73							
RAO	**Raoul Island**	**8.93**	**177**	P		**P**	**06 58 46.1**	**-1.7**
	353nm,0.3s,baz=241,slow=20,SNR=5.8							
RAO				S		**S**	**07 00 26.9**	**-6.0**
	143nm,0.3s,baz=253,slow=19,SNR=2.8							
RAO	**Raoul Island**	**8.93**	**177**	*e*P		**P**	**06 58 47.0**	**-0.8**
RAO				*e*S		**S**	**07 00 33.2**	**+0.2**
RAO	**Raoul Island**	**8.93**	**177**	*e*P		**P**	**06 58 47.0**	**-0.8**
RAO				S		**S**	**07 00 26.9**	**-6.0**
RAO				*e*S		S	07 00 33.2	+0.2
AFI	**Afiamalu**	**9.00**	**46**	P		**P**	**06 58 47.0**	**-1.9**
	91nm,0.3s,baz=183,slow=2.3,SNR=100							
AFI				S		**S**	**07 00 26.9**	**-7.8**
	229nm,0.3s,baz=49,slow=19,SNR=15							
AFI	**Afiamalu**	**9.00**	**46**	*e*P		**P**	**06 58 46.7**	**-2.1**
AFI	**Afiamalu**	**9.00**	**46**	*e*P		**P**	**06 58 46.7**	**-2.1**
AFI				S		**S**	**07 00 26.9**	**-7.8**
AFI				*e*S		S	07 00 32.3	-2.4
FUNA	**Funafuti**	**11.92**	**349**	*e*P		**P**	**06 59 16.3**	**-1.4**
DZM	**Mont Dzumac**	**14.21**	**260**	P		**P**	**06 59 39.2**	**-1.3**
	36nm,0.3s,baz=88,slow=15,SNR=74							
DZM				S		**S**	**07 02 10.2**	**+1.8**
	baz=270,slow=12,SNR=6.4							
DZM				ScS		**ScS**	**07 10 29.9**	**+2.8**
	0.1nm,0.3s,baz=29,slow=19,SNR=2.8							
DZM	**Mont Dzumac**	**14.21**	**260**	*e*P		**P**	**06 59 39.2**	**-1.3**
	1µm,0.8s							
NFK	**Norfolk Island**	**15.12**	**232**	P		**P**	**06 59 51.2**	**+2.4**
	baz=15,SNR=5.7							
OUZ	**Omahuta**	**16.44**	**204**	*e*P		**P**	**07 00 03.9**	**+3.3**
	2µm,1.7s							
OUZ				*e*PcP		**PcP**	**07 04 14.9**	**+0.4**
MXZ	**Matakaoa Point**	**17.43**	**189**	*e*P		**P**	**07 00 10.6**	**+0.8**
	452nm,1.3s							
RAR	**Rarotonga**	**17.49**	**96**	P		**P**	**07 00 10.8**	**+0.3**
	11nm,0.3s,baz=248,slow=6.6,SNR=82							
RAR	**Rarotonga**	**17.49**	**96**	*e*P		**P**	**07 00 11.5**	**+1.0**
RAR				pmax		pmax		
	comp=Z,740nm,1.0s							
RAR	**Rarotonga**	**17.49**	**96**	*e*P		**P**	**07 00 11.5**	**+1.0**
	comp=Z,737nm,1.0s							
URZ	**Urewera**	**18.31**	**191**	P		**P**	**07 00 15.9**	**-1.8**
	comp=Z,27nm,0.3s,baz=360,slow=2.6,SNR=99							
URZ				S		**S**	**07 03 07.8**	**-6.9**
	comp=Z,1.9nm,0.3s,baz=209,slow=19,SNR=5.9							
URZ				ScP		**ScP**	**07 06 57.4**	**+0.6**
	comp=Z,1.4nm,0.3s,baz=16,slow=3.4,SNR=5.5							
URZ				ScS		**ScS**	**07 10 35.4**	**-2.8**
	comp=Z,0.5nm,0.3s,baz=153,slow=23,SNR=8.8							
URZ	**Urewera**	**18.31**	**191**	*e*P		**P**	**07 00 16.0**	**-1.8**
	comp=Z,272nm,0.7s							
URZ				S		**S**	**07 03 07.8**	**-6.9**
URZ				ScP		**ScP**	**07 06 57.4**	**+0.6**
URZ				ScS		**ScS**	**07 10 35.4**	**-2.8**
HIZ	**Hauiti**	**19.06**	**196**	*e*P		**P**	**07 00 26.4**	**+1.8**
	comp=Z,385nm,1.2s							
BKZ	**Black Stump Fm**	**19.30**	**192**	*e*P		**P**	**07 00 25.7**	**-1.1**
	comp=Z,71nm,0.5s							
BKZ				*e*S		**S**	**07 03 28.3**	**-2.4**
BFZ	**Birch Farm**	**20.82**	**191**	*e*P		**P**	**07 00 40.1**	**-0.2**
	comp=Z,100nm,0.7s							
SNZO	**South Karori**	**21.74**	**194**	*e*P		**P**	**07 00 48.0**	**-0.6**
	comp=Z,240nm,0.7s							
THZ	**Tophouse**	**22.62**	**197**	*e*P		**P**	**07 00 56.8**	**+0.3**
	comp=Z,108nm,0.8s							
THZ				*e*S		**S**	**07 04 25.6**	**+2.5**
KHZ	**Kahutara**	**23.07**	**195**	*e*P		**P**	**07 00 59.2**	**-1.1**
	comp=Z,104nm,0.8s							
LHI	**Lord Howe Isla**	**23.07**	**237**	*e*P		**P**	**07 01 02.4**	**+1.9**
	comp=Z,122nm,0.8s							
TARA	**Tarawa**	**23.12**	**338**	*e*P		**P**	**07 01 01.3**	**0.0**
	comp=Z,3µm,0.9s							
HNR	**Honiara**	**23.48**	**294**	P		**P**	**07 01 02.7**	**-1.8**
	comp=Z,97nm,0.4s,baz=127,slow=5.1,SNR=4.5							
HNR	**Honiara**	**23.48**	**294**	*e*P		**P**	**07 01 03.0**	**-1.5**
HNR	**Honiara**	**23.48**	**294**	*e*P		**P**	**07 01 04.4**	**-0.1**
	comp=Z,314nm,0.8s							
LTZ	**Lake Taylor**	**23.74**	**197**	*e*P		**P**	**07 01 05.4**	**-1.1**
	comp=Z,100nm,0.5s							
OXZ	**Oxford**	**24.31**	**197**	*e*P		**P**	**07 01 10.1**	**-1.3**
	comp=Z,174nm,0.7s							
CRLZ	**Canterbury Las**	**24.39**	**196**	*e*P		**P**	**07 01 11.2**	**-0.8**
	comp=Z,463nm,2.0s							
MQZ	**McQueen's Vall**	**24.50**	**196**	*e*P		**P**	**07 01 12.3**	**-0.7**
	comp=Z,103nm,1.4s							
MQZ				*e*S		**S**	**07 04 51.6**	**-0.7**
RPZ	**Rata Peaks**	**24.95**	**198**	P		**P**	**07 01 15.9**	**-1.1**
	comp=Z,45nm,0.6s,baz=358,slow=1.3,SNR=35							
RPZ				S		**S**	**07 04 56.4**	**-3.0**
	comp=Z,15nm,0.6s,baz=37,slow=18,SNR=2.7							
RPZ				ScP		**ScP**	**07 07 14.6**	**+0.8**
	comp=Z,51nm,1.0s,baz=117,slow=7.5,SNR=4.8							
RPZ				ScS		**ScS**	**07 11 02.4**	**-0.7**
	comp=Z,18nm,1.0s,baz=108,slow=20,SNR=4.9							
RPZ	**Rata Peaks**	**24.95**	**198**	*e*P		**P**	**07 01 17.3**	**+0.2**
	comp=Z,44nm,0.7s							
RPZ				S		**S**	**07 04 56.4**	**-3.0**
RPZ				ScP		**ScP**	**07 07 14.6**	**+0.8**
RPZ				ScS		**ScS**	**07 11 02.4**	**-0.7**
FOZ	**Fox Glacier**	**25.17**	**200**	*e*P		**P**	**07 01 19.2**	**+0.3**
	comp=Z,116nm,0.8s							
LBZ	**Lake Benmore**	**25.82**	**199**	*e*P		**P**	**07 01 23.8**	**-0.9**
	comp=Z,299nm,1.8s							
ODZ	**Otahua Downs**	**26.28**	**198**	*e*P		**P**	**07 01 28.8**	**+0.1**
	comp=Z,114nm,1.9s							
WKZ	**Wanaka**	**26.58**	**200**	*e*P		**P**	**07 01 31.8**	**+0.4**
	comp=Z,136nm,1.2s							
WKZ				*e*S		**S**	**07 05 22.8**	**-2.1**
TBI	**Tubuai**	**27.06**	**102**	ǁ *i*P		**P**	**07 01 37.4**	**+1.6**
	comp=Z,1µm,1.0s							
TBI				*e*pP		**pP**	**07 03 07.1**	**-2.9**
	comp=Z,659nm,1.3s							
MLZ	**Mavora Lakes**	**27.35**	**201**	*e*P		**P**	**07 01 38.6**	**+0.5**
	comp=Z,156nm,0.8s							
PAE	**Paea**	**27.41**	**89**	ǁ *i*P		**P**	**07 01 39.7**	**+0.8**
	comp=Z,198nm,1.2s							
PAE				*e*ScP		**ScP**	**07 07 23.4**	**+1.8**
	comp=Z,22nm,1.2s							
PPT2	**Papeete2**	**27.42**	**89**	ǁ *i*P		**P**	**07 01 40.3**	**+1.1**
	comp=Z,1µm,1.3s							
PPT2				*e*pP		**pP**	**07 03 10.5**	**-3.1**
	comp=Z,383nm,1.5s							
PPT2				*e*ScP		**ScP**	**07 07 26.0**	**+4.3**
	comp=Z,85nm,1.1s							
PPT	**Papeete**	**27.43**	**89**	P		**P**	**07 01 40.0**	**+0.9**
	comp=Z,576nm,0.9s,baz=270,slow=4.4,SNR=43							
PPT				ScP		**ScP**	**07 07 23.5**	**+1.8**
	comp=Z,74nm,0.9s,baz=170,slow=6.1,SNR=5.5							
TIAR	**Tiarei**	**27.64**	**89**	ǁ *i*P		**P**	**07 01 42.0**	**+0.9**
	comp=Z,278nm,1.1s							
TIAR				*e*pP		**pP**	**07 03 12.3**	**-3.3**
	comp=Z,102nm,1.1s							
TIAR				*e*ScP		**ScP**	**07 07 25.1**	**+2.8**
	comp=Z,24nm,0.9s							
TVO	**Taravao**	**27.69**	**90**	ǁ *i*P		**P**	**07 01 42.3**	**+0.8**
TVO				*e*pP		**pP**	**07 03 12.7**	**-3.4**
	comp=Z,143nm,1.3s							
DCZ	**Deep Cove**	**27.77**	**202**	*e*P		**P**	**07 01 42.1**	**+0.4**
	comp=Z,242nm,1.1s							
WHZ	**Wether Hill Ro**	**27.87**	**201**	*e*P		**P**	**07 01 43.1**	**+0.5**
	comp=Z,421nm,0.7s							
WHZ				*e*PcP		**PcP**	**07 04 39.3**	**+1.3**
EIDS	**Eidsvold**	**28.50**	**254**	P		**P**	**07 01 48.6**	**+0.2**
	baz=28,SNR=28							
EIDS	**Eidsvold**	**28.50**	**254**	*e*P		**P**	**07 01 48.7**	**+0.3**
	comp=Z,54nm,0.8s							
ARMA	**Armidale**	**28.78**	**244**	P		**P**	**07 01 52.0**	**+1.1**
	baz=29,SNR=97							
ARMA	**Armidale**	**28.78**	**244**	*e*P		**P**	**07 01 52.0**	**+1.1**
	comp=Z,89nm,0.6s							
MEH	**Mehetia**	**28.79**	**90**	ǁ *i*P		**P**	**07 01 51.8**	**+0.8**
	comp=Z,294nm,1.0s							
VAH	**Vaihoa**	**29.75**	**85**	ǁ *i*P		**P**	**07 01 59.8**	**+0.6**
	comp=Z,1µm,1.1s							
MGCD	**Mangrove Creek**	**29.96**	**238**	P		**P**	**07 02 02.6**	**+1.8**
	baz=30,SNR=21							
XMAS	**Kiritimati**	**30.28**	**45**	*e*P		**P**	**07 02 04.7**	**+0.8**
	comp=Z,807nm,0.8s							
RMQ	**Roma**	**30.67**	**252**	P		**P**	**07 02 08.1**	**+1.1**
	baz=31,SNR=35							
CNB	**Canberra Magne**	**32.00**	**235**	P		**P**	**07 02 19.5**	**+1.3**
	baz=32,SNR=36							
KWAJ	**Kwajalein Atol**	**32.01**	**333**	*i* P		**P**	**07 02 19.1**	**+0.6**
KWAJ	**Kwajalein Atol**	**32.01**	**333**	*e*P		**P**	**07 02 18.6**	**+0.2**
	comp=Z,3µm,1.0s							
CAN	**Canberra**	**32.28**	**235**	*e*P		**P**	**07 02 21.8**	**+1.1**
CAN				pmax		pmax		
	comp=Z,400nm,2.0s							
CAN	**Canberra**	**32.28**	**235**	*e*P		**P**	**07 02 21.8**	**+1.1**
	comp=Z,400nm,2.0s							
CAN				*e*PcP		**PcP**	**07 04 52.1**	**+2.1**
YNG	**Young**	**32.44**	**238**	P		**P**	**07 02 23.6**	**+1.6**
	baz=32,SNR=6.2							
RABL	**Rabaul**	**32.78**	**295**	*e*P		**P**	**07 02 25.1**	**-0.1**
	comp=Z,521nm,1.4s							
RABL				*e*PcP		**PcP**	**07 04 53.4**	**+1.6**
CTA	**Charters Tower**	**33.09**	**264**	P		**P**	**07 02 28.1**	**+0.5**
	comp=Z,227nm,0.6s,baz=93,slow=11,SNR=261							
CTA				PcP		**PcP**	**07 04 53.1**	**+0.5**
	comp=Z,41nm,0.9s,baz=78,slow=4.5,SNR=4.6							
CTA				S		**S**	**07 06 58.9**	**-6.8**
	comp=Z,3.2nm,0.6s,baz=76,slow=17,SNR=2.6							
CTA				ScP		**ScP**	**07 07 43.2**	**+2.7**
	comp=Z,60nm,1.0s,baz=149,slow=1.3,SNR=7.5							
CTA				ScS		**ScS**	**07 11 43.2**	**+0.1**
	comp=Z,5.6nm,1.0s,baz=344,slow=21,SNR=6.9							
CTAO	**Charters Tower**	**33.09**	**264**	*e*P		**P**	**07 02 27.9**	**+0.2**
CTAO				pmax		pmax		
	comp=Z,250nm,0.7s							
CTAO	**Charters Tower**	**33.09**	**264**	*e*P		**P**	**07 02 27.9**	**+0.2**
	comp=Z,248nm,0.7s							
CTAO				*e*PcP		**PcP**	**07 04 53.2**	**+0.6**
CMSA	**Cobar Meteorol**	**34.00**	**243**	P		**P**	**07 02 35.6**	**+0.5**
	baz=34,SNR=81							
PMG	**Port Moresby**	**34.89**	**283**	P		**P**	**07 02 42.7**	**0.0**
	comp=Z,426nm,0.8s,baz=82,slow=5.0,SNR=69							
PMG				S		**S**	**07 07 32.1**	**-0.6**
	comp=Z,13nm,0.8s,baz=329,slow=20,SNR=9.7							
PMG				SS		**SS**	**07 10 39.7**	**-8.8**
	comp=Z,4.0nm,0.4s,baz=37,slow=15,SNR=2.0							
PMG	**Port Moresby**	**34.89**	**283**	*c i*P		**P**	**07 02 42.3**	**-0.4**
PMG				pmax		pmax		
	comp=Z,2µm,0.9s							
PMG	**Port Moresby**	**34.89**	**283**	*e*P		**P**	**07 02 43.0**	**+0.3**
	comp=Z,530nm,0.9s							
PMG				S		**S**	**07 07 32.1**	**-0.6**
PMG				SS		**SS**	**07 10 39.7**	**-8.8**
MTSU	**Mount Surprise**	**35.18**	**267**	P		**P**	**07 02 45.2**	**+0.1**
	baz=35,SNR=341							
PATS	**Pohnpei**	**35.35**	**317**	P		**P**	**07 02 47.0**	**+0.6**
	baz=35,SNR=27							
PATS	**Pohnpei**	**35.35**	**317**	*e*P		**P**	**07 02 47.2**	**+0.7**
	comp=Z,1µm,1.2s							
PATS				*e*PcP		**PcP**	**07 05 01.2**	**+1.9**
TOO	**Toolangi**	**35.68**	**233**	P		**P**	**07 02 49.6**	**+0.6**
	baz=36,SNR=123							
MOO	**Moorlands**	**36.35**	**225**	P		**P**	**07 02 55.8**	**+1.5**
	baz=36,SNR=12							
TAU	**Tasmania Unive**	**36.48**	**224**	*e*P		**P**	**07 02 56.3**	**

	comp=Z,461nm,1.1s								
WRAB	**Tennant Creek**	**44.21**	**262**	*e*P		**P**		**07 03 56.6**	**-0.4**
	comp=Z,549nm,1.5s								
WRAB				*e*S		**S**		**07 09 46.2**	**-1.8**
WRA	**Warramunga Arr**	**44.22**	**262**	P		**P**		**07 03 56.5**	**-0.6**
	comp=Z,71nm,0.3s,baz=97,slow=7.6,SNR=939								
WRA				PcP		**PcP**		**07 05 28.8**	**+0.5**
	comp=Z,36nm,0.7s,baz=94,slow=3.9,SNR=9.8								
WRA				ScP		**ScP**		**07 08 25.9**	**+2.3**
	comp=Z,9.9nm,1.1s,baz=106,slow=3.5,SNR=4.6								
WRA				S		**S**		**07 09 45.7**	**-2.4**
	comp=Z,27nm,1.0s,baz=95,slow=13,SNR=14								
WRA				PKiKP		**PKiKP**		**07 12 25.1**	**-1.4**
	comp=Z,3.5nm,0.6s,baz=79,slow=0.8,SNR=7.4								
WRA				ScS		**ScS**		**07 12 50.2**	**+1.1**
	comp=Z,9.7nm,1.0s,baz=100,slow=10,SNR=7.1								
WRA				P3KPbc				07 32 41.0	
	comp=Z,0.6nm,0.7s,baz=292,slow=2.6,SNR=4.6								
WRA	**Warramunga Arr**	**44.22**	**262**	P		**P**		**07 03 56.5**	**-0.6**
WRA								07 05 28.8	
WRA				S		**S**		**07 09 45.7**	**-2.4**
WRA				pmax	pmax				
	comp=Z,70nm,0.4s								
WRA				pmax	pmax				
	comp=Z,37nm,0.7s								
WRA				smax	smax				
	comp=N,27nm,1.0s								
PTCN	**Pitcairn Islan**	**44.68**	**105**	*e*P		**P**		**07 04 02.0**	**+1.4**
	comp=N,487nm,0.9s								
KKH	**Kailua Kona**	**45.38**	**30**	*e*P		**P**		**07 04 06.9**	**+1.1**
KKH	**Kailua Kona**	**45.38**	**30**	*e*P		**P**		**07 04 06.9**	**+1.1**
MLOA	**Mauna Loa Obse**	**45.49**	**31**	*e*P		**P**		**07 04 07.8**	**+0.6**
UWE	**Uwekahuna**	**45.53**	**31**	*e*P		**P**		**07 04 07.7**	**+0.5**
	comp=N,598nm,1.1s								
POHA	**Pohakuloa**	**45.70**	**31**	*e*P		**P**		**07 04 09.2**	**+0.6**
	comp=N,442nm,0.8s								
KEKH	**Kekaha**	**45.84**	**25**	*e*P		**P**		**07 04 09.9**	**+0.7**
	comp=N,1μm,0.9s								
HPAH	**Hawaii Prepara**	**45.85**	**30**	*e*P		**P**		**07 04 10.2**	**+0.6**
	comp=N,2μm,0.8s								
HON	**Honolulu**	**45.94**	**27**	*e*P		**P**		**07 04 11.0**	**+0.9**
HON	**Honolulu**	**45.94**	**27**	*e*P		**P**		**07 04 11.0**	**+0.9**
KIP	**Kipapa**	**46.02**	**27**	*e*P		**P**		**07 04 11.4**	**+0.7**
KIP				pmax	pmax				
	comp=Z,620nm,1.0s								
KIP	**Kipapa**	**46.02**	**27**	*e*P		**P**		**07 04 11.4**	**+0.7**
	comp=Z,624nm,0.9s								
HLK	**Haleakala**	**46.22**	**29**	*e*P		**P**		**07 04 13.1**	**+0.6**
	comp=Z,1μm,0.9s								
OPA	**Opana**	**46.26**	**27**	*e*P		**P**		**07 04 13.3**	**+0.8**
OPA				pmax	pmax				
	comp=Z,720nm,1.0s								
OPA	**Opana**	**46.26**	**27**	*e*P		**P**		**07 04 13.3**	**+0.8**
	comp=Z,716nm,1.0s								
KDU	**Kakadu**	**47.53**	**271**	P		**P**		**07 04 21.6**	**-0.6**
	baz=48,SNR=32								
MIDW	**Midway**	**48.24**	**1**	*e*P		**P**		**07 04 27.6**	**+0.4**
	comp=Z,448nm,0.8s								
MTN	**Manton Dam**	**48.74**	**271**	P		**P**		**07 04 30.3**	**-0.9**
	baz=49,SNR=66								
MTN	**Manton Dam**	**48.74**	**271**	*e*P		**P**		**07 04 30.6**	**-0.6**
	comp=Z,171nm,0.7s								
MTN				*e*S		**S**		**07 10 49.4**	**-1.5**
FORT	**Forrest**	**48.99**	**246**	P		**P**		**07 04 32.2**	**-0.6**
	baz=49,SNR=257								
FORT	**Forrest**	**48.99**	**246**	*e*P		**P**		**07 04 32.4**	**-0.4**
	comp=Z,3μm,0.6s								
FORT				*e*S		**S**		**07 10 51.9**	**-2.0**
WRKA	**Warakurna**	**49.12**	**254**	P		**P**		**07 04 33.5**	**-0.4**
	baz=49,SNR=798								
GUMO	**Guam**	**49.35**	**310**	P		**P**		**07 04 35.8**	**+0.2**
	comp=Z,995nm,1.1s,baz=168,slow=7.1,SNR=34								
GUMO				ScP		**ScP**		**07 08 46.7**	**+1.6**
	comp=Z,210nm,1.0s,baz=206,slow=3.4,SNR=6.4								
GUMO	**Guam**	**49.35**	**310**	P		**P**		**07 04 35.8**	**+0.2**
GUMO				pmax	pmax				
	comp=Z,793nm,1.0s								
GUMO				pmax	pmax				
	comp=N,210nm,1.0s								
GUMO	**Guam**	**49.35**	**310**	*e*P		**P**		**07 04 35.7**	**+0.2**
	comp=N,2μm,1.3s								
GUMO				ScP		**ScP**		**07 08 46.7**	**+1.6**
SAUI	**Saumlaki**	**50.06**	**277**	P		**P**		**07 04 41.4**	**+0.5**
SAUI	**Saumlaki**	**50.06**	**277**	*e*P		**P**		**07 04 40.8**	**-0.1**
	comp=N,3μm,1.7s								
FAKI	**Fak Fak**	**51.05**	**283**	P		**P**		**07 04 47.8**	**-0.2**
FAKI	**Fak Fak**	**51.05**	**283**	*e*P		**P**		**07 04 47.9**	**-0.2**
	comp=N,463nm,1.2s								
BNDI	**Bandanaira**	**52.58**	**280**	P		**P**		**07 04 58.6**	**-0.4**
FITZ	**Fitzroy Crossi**	**52.64**	**262**	P		**P**		**07 04 59.2**	**-0.2**
	baz=53,SNR=62								
FITZ	**Fitzroy Crossi**	**52.64**	**262**	*e*P		**P**		**07 04 59.3**	**-0.1**
	comp=N,91nm,0.8s								
FITZ				*e*S		**S**		**07 11 43.7**	**+0.6**
SWI	**Sorong**	**52.79**	**285**	P		**P**		**07 05 00.4**	**-0.1**
MSAI	**Masohi**	**53.93**	**281**	P		**P**		**07 05 09.7**	**+1.2**
	comp=N,55nm,1.1s,comp=N,913nm								
KMBL	**Kambalda**	**54.27**	**245**	P		**P**		**07 05 10.2**	**-0.5**
	baz=54,SNR=17								
SOEI	**Soe**	**56.08**	**272**	P		**P**		**07 05 24.8**	**+1.2**
	comp=N,846nm,1.1s,comp=N,9μm								
SOEI	**Soe**	**56.08**	**272**	*e*P		**P**		**07 05 24.9**	**+1.2**
	comp=N,1μm,1.3s								
LBMI	**Labuha**	**56.30**	**283**	P		**P**		**07 05 26.3**	**+1.3**
	comp=N,390nm,1.3s,comp=N,5μm								
BATI	**Baumata**	**56.51**	**271**	P		**P**		**07 05 29.4**	**+3.0**
	comp=N,96nm,1.2s								
SANI	**Sanana**	**57.13**	**281**	P		**P**		**07 05 30.3**	**-0.4**
	comp=N,370nm,1.1s,comp=N,5μm								
MBWA	**Marble Bar**	**57.49**	**257**	P		**P**		**07 05 32.3**	**-0.7**
	SNR=16								
MBWA	**Marble Bar**	**57.49**	**257**	P		**P**		**07 05 32.3**	**-0.7**
	SNR=16								
MBWA	**Marble Bar**	**57.49**	**257**	*e*P		**P**		**07 05 32.4**	**-0.7**
	comp=N,116nm,0.8s								
MEEK	**Meekatharra**	**57.59**	**251**	P		**P**		**07 05 32.7**	**-1.0**
	baz=58,SNR=63								
KLBR	**Kellerberrin**	**57.76**	**245**	P		**P**		**07 05 34.3**	**-0.4**
	baz=58,SNR=25								
SBA	**Scott Base**	**58.04**	**184**	*e*P		**P**		**07 05 38.7**	**+2.9**
SBA				pmax	pmax				
	comp=Z,180nm,1.1s								
SBA	**Scott Base**	**58.04**	**184**	*e*P		**P**		**07 05 38.6**	**+2.9**
	comp=Z,180nm,1.1s								
VNDA	**Vanda**	**58.07**	**185**	P		**P**		**07 05 37.0**	**+1.1**
	comp=Z,36nm,1.0s,baz=359,slow=7.6,SNR=166								
VNDA				pP		**pP**		**07 07 31.6**	**+0.6**
	comp=Z,6.6nm,1.1s,baz=352,slow=7.8,SNR=1.4								
VNDA				ScP		**ScP**		**07 09 23.8**	**+1.6**
	comp=Z,16nm,0.9s,baz=357,slow=6.7,SNR=6.8								
VNDA				S		**S**		**07 12 52.9**	**+1.4**
	comp=Z,0.6nm,0.9s,baz=250,slow=14,SNR=1.5								
VNDA				ScS		**ScS**		**07 14 25.4**	**+1.3**
	comp=Z,0.8nm,1.0s,baz=162,slow=13,SNR=4.4								
VNDA	**Vanda**	**58.07**	**185**	*e*P		**P**		**07 05 37.9**	**+1.9**
	comp=Z,192nm,1.6s								
VNDA				pP		**pP**		**07 07 31.6**	**+0.6**
VNDA				ScP		**ScP**		**07 09 23.8**	**+1.6**
VNDA				S		**S**		**07 12 52.9**	**+1.4**
VNDA				ScS		**ScS**		**07 14 25.4**	**+1.3**
NWAO	**Narrogin (SRO)**	**58.09**	**243**	P		**P**		**07 05 36.8**	**0.0**
	baz=58,SNR=18								
NWAO				P		**P**		**07 05 36.8**	**0.0**
	baz=58,SNR=18								
NWAO	**Narrogin (SRO)**	**58.09**	**243**	*e*P		**P**		**07 05 37.1**	**+0.2**
NWAO				pmax	pmax				
	comp=Z,300nm,1.8s								
NWAO	**Narrogin (SRO)**	**58.09**	**243**	*e*P		**P**		**07 05 37.1**	**+0.2**
	comp=Z,299nm,1.8s								
RKGY	**Rocky Gully**	**58.17**	**241**	P		**P**		**07 05 37.6**	**+0.2**
	baz=58,SNR=26								
MMRI	**Maumere**	**58.33**	**272**	P		**P**		**07 05 38.7**	**0.0**
	comp=Z,334nm,0.9s,comp=Z,5μm								
MMRI	**Maumere**	**58.33**	**272**	*e*P		**P**		**07 05 38.2**	**-0.5**
	comp=Z,272nm,1.0s								
BLDU	**Balliduu**	**58.76**	**246**	P		**P**		**07 05 40.8**	**-0.6**
	baz=59,SNR=107								
EDFI	**Ende, Flores**	**58.81**	**272**	P		**P**		**07 05 41.7**	**-0.4**
	comp=Z,280nm,1.2s,comp=Z,4μm								
BASI	**Baing, Sumba**	**59.40**	**270**	P		**P**		**07 05 47.7**	**+1.8**
	comp=Z,535nm,1.8s,comp=Z,10μm								
MORW	**Morawa**	**59.52**	**248**	P		**P**		**07 05 45.9**	**-0.5**
	baz=60,SNR=23								
KDI	**Kendari**	**59.55**	**278**	P		**P**		**07 05 46.9**	**0.0**
	comp=Z,167nm,1.4s,comp=Z,2μm								
WSI	**Waingapu**	**59.83**	**270**	P		**P**		**07 05 50.0**	**+1.3**
	comp=Z,1μm,1.2s								
KMSI	**Cibinong**	**60.01**	**283**	P		P		07 05 57.4	+7.5
LUWI	**Luwuk**	**60.49**	**281**	P		**P**		**07 05 54.1**	**+1.0**
	comp=Z,735nm,1.3s,comp=Z,10μm								
LUWI	**Luwuk**	**60.49**	**281**	*e*P		**P**		**07 05 53.9**	**+0.8**
	comp=Z,1μm,1.3s								
MRSI	**Marisa**	**61.84**	**282**	P		**P**		**07 06 01.4**	**-0.5**
	comp=Z,170nm,1.1s,comp=Z,7μm								
KAPI	**Kappang**	**61.85**	**275**	P		**P**		**07 06 01.7**	**-0.2**
	comp=Z,30nm,0.6s,baz=101,slow=7.9								
KAPI				S		**S**		**07 13 40.9**	**+0.5**
	comp=Z,3.2nm,0.5s,baz=217,slow=20,SNR=3.3								
KAPI	**Kappang**	**61.85**	**275**	*e*P		**P**		**07 06 02.1**	**+0.1**
	comp=Z,92nm,1.0s								
KAPI				S		**S**		**07 13 40.9**	**+0.5**
GIRL	**Giralia**	**62.20**	**254**	P		**P**		**07 06 04.7**	**+0.6**
	baz=62,SNR=44								
PLAI	**Plampang**	**62.45**	**270**	P		**P**		**07 06 05.6**	**-0.3**
	comp=Z,582nm,1.1s,comp=Z,7μm								
TTSI	**Tana Toraja**	**62.48**	**277**	P		**P**		**07 06 06.1**	**+0.1**
	comp=Z,70nm,1.7s,comp=Z,3μm								
CTBH	**Cotabato--PC H**	**62.62**	**290**	*i*P		**P**		**07 06 07.4**	**+0.5**
CGP	**Cagayan de Oro**	**62.79**	**291**	*e*P		**P**		**07 06 08.7**	**+0.7**
RPN	**Rapa Nui**	**62.95**	**111**	*e*P		**P**		**07 06 11.4**	**+2.5**
RPN				pmax	pmax				
	comp=Z,660nm,1.3s								
RPN	**Rapa Nui**	**62.95**	**111**	*e*P		**P**		**07 06 11.4**	**+2.5**
	comp=Z,661nm,1.3s								
PCI	**Palu**	**63.25**	**280**	P		**P**		**07 06 12.6**	**+1.6**
	comp=Z,757nm,1.3s,comp=Z,8μm								
TWSI	**Tatiwang, Sumb**	**63.32**	**270**	P		**P**		**07 06 11.2**	**-0.2**
	comp=Z,383nm,1.4s,comp=Z,5μm								
IGBI	**Denpasar**	**64.93**	**270**	P		**P**		**07 06 21.8**	**+0.2**
	comp=Z,466nm,1.2s,comp=Z,8μm								
JAGI	**Jajag, Banyuwa**	**65.97**	**270**	P		**P**		**07 06 27.0**	**-1.0**
	comp=Z,286nm,1.1s,comp=Z,4μm								
JAGI	**Jajag, Banyuwa**	**65.97**	**270**	*e*P		**P**		**07 06 27.1**	**-1.0**
	comp=Z,510nm,1.4s								
ABJI	**Asem Bagus**	**66.10**	**270**	P		**P**		**07 06 29.4**	**+0.5**
	comp=Z,286nm,1.4s,comp=Z,4μm								
JHJ2	**Mitsune**	**66.40**	**322**	*e*P		**P**		**07 06 30.9**	**+0.7**
	comp=Z,3μm,1.1s								
JHJ	**Hachijo jima 2**	**66.42**	**322**	P		**P**		**07 06 30.1**	**-0.4**
	comp=Z,562nm,0.4s,baz=64,slow=23,SNR=8.9								
GMJI	**Gumukmas**	**66.69**	**270**	P		**P**		**07 06 32.3**	**-0.2**
	comp=Z,143nm,1.0s,comp=Z,2μm								
BLJI	**Banyuglugur**	**66.72**	**270**	P		**P**		**07 06 32.5**	**-0.2**
MYLDM	**Lahad Datu**	**66.88**	**285**	*e*P		**P**		**07 06 35.9**	**+2.3**
	comp=Z,843nm,1.7s								
BBKI	**Banjar Baru**	**66.98**	**275**	P		**P**		**07 06 35.1**	**+0.8**
	comp=Z,328nm,1.6s,comp=Z,6μm								
MTKI	**Muara Teweh, K**	**67.82**	**278**	P		**P**		**07 06 40.3**	**+0.9**
	comp=Z,224nm,1.1s								
PWJI	**Pagerwojo**	**68.31**	**269**	P		**P**		**07 06 42.3**	**-0.1**
	comp=Z,219nm,1.1s,comp=Z,4μm								
TBJI	**Tambak Boyo**	**68.66**	**270**	P		**P**		**07 06 45.2**	**+0.7**
NGJI	**Ngawi**	**68.84**	**270**	P		**P**		**07 06 47.7**	**+2.1**
	comp=Z,113nm,0.9s,comp=Z,6μm								
PCJI	**Pacitan**	**68.85**	**269**	P		**P**		**07 06 45.8**	**+0.2**
	comp=Z,850nm,1.1s,comp=Z,10μm								
KKM	**Kota Kinabalu**	**69.31**	**285**	*e*P		**P**		**07 06 48.0**	**-0.4**
	comp=Z,905nm,1.6s								
UGM	**Wanagama**	**69.55**	**269**	P		**P**		**07 06 50.1**	**+0.2**
	comp=Z,321nm,1.0s								
UGM	**Wanagama**	**69.55**	**269**	*e*P		**P**		**07 06 49.6**	**-0.2**
	comp=Z,185nm,0.7s								
INU	**Inuyama**	**69.62**	**322**	*e*P		**P**		**07 06 49.9**	**+0.2**
	comp=Z,187nm,1.0s								
UWJI	**Ujung Watu**	**69.63**	**271**	P		**P**		**07 06 52.2**	**+1.9**
	comp=Z,390nm,1.4s,comp=Z,5μm								
JOW	**Kunigami**	**69.72**	**310**	*e*P		**P**		**07 06 51.2**	**+0.7**
	comp=Z,458nm,1.2s								
QSPA	**South Pole Qui**	**69.77**	**180**	*e*P		**P**		**07 06 51.2**	**+0.9**
	comp=Z,167nm,1.0s								
MJAR	**Matsushiro Arr**	**69.80**	**324**	P		**P**		**07 06 50.7**	**-0.1**
	comp=Z,110nm,0.6s,baz=158,slow=6.0,SNR=248								
MJAR				pP		**pP**		**07 08 53.3**	**+0.9**
	comp=Z,36nm,1.3s,baz=165,slow=6.8,SNR=3.9								
MJAR	**Matsushiro Arr**	**69.80**	**324**	P		**P**		**07 06 50.7**	**-0.1**
MJAR				*PP		**pP**		**07 08 53.3**	**+0.9**
MJAR				pmax	pmax				
	comp=Z,101nm,0.6s								
MJAR				pmax	pmax				
	comp=Z,36nm,1.3s								
MAJO	**Matsushiro**	**69.80**	**324**	*e*P		**P**		**07 06 50.5**	**-0.3**
MAJO				*e*PP		**pP**		**07 08 56.3**	**+3.9**
MAJO				pmax	pmax				
	comp=Z,190nm,0.8s								
MAJO	**Matsushiro**	**69.80**	**324**	*e*P		**P**		**07 06 50.8**	**0.0**
	comp=Z,194nm,0.8s								
MJB9	**Matsu-Tunnel**	**69.81**	**324**	*e*P		**P**		**07 06 50.8**	**0.0**
	comp=Z,49nm,0.8s								
PBKI	**Pangkalan Bun**	**70.21**	**275**	P		**P**		**07 06 55.3**	**+1.6**
	comp=Z,755nm,1.3s,comp=Z,9μm								
STKI	**Sintang**	**71.37**	**277**	P		**P**		**07 07 01.7**	**+1.2**
ERM	**Erimo**	**71.44**	**331**	*c i*P		**P**		**07 07 01.2**	**+0.9**
ERM				pmax	pmax				
	comp=Z,20nm,0.6s								
ERM	**Erimo**	**71.44**	**331**	*e*P		**P**		**07 07 01.5**	**+1.3**
	comp=Z,101nm,0.8s								
CMJI	**Cimerak**	**71.54**	**268**	P		**P**		**07 07 02.2**	**+0.7**
	comp=Z,223nm,1.3s,comp=Z,3μm								
SBUM	**Sibu**	**71.56**	**280**	*e*P		**P**		**07 07 02.6**	**+0.9**
	comp=Z,395nm,1.7s								
JNU	**Nakatsue**	**71.84**	**317**	P		**P**		**07 07 03.0**	**+0.2**
	comp=Z,212nm,0.9s,baz=99,slow=4.8,SNR=125								
JNU	**Nakatsue**	**71.84**	**317**	*e*P		**P**		**07 07 03.0**	**+0.2**
	comp=Z,298nm,0.9s								
YUK	**Yuzh-Kuril'sk**	**71.88**	**334**	*e*P		**P**		**07 07 02.8**	**+0.1**
KUR	**Kuril'sk**	**72.07**	**336**	*i*P		**P**		**07 07 04.4**	**+0.6**
CISI	**Cisompet, Garu**	**72.20**	**268**	P		**P**		**07 07 04.7**	**-0.7**
	comp=Z,339nm,1.7s,comp=Z,5μm								
CISI	**Cisompet, Garu**	**72.20**	**268**	*e*P		**P**		**07 07 04.4**	**-1.0**
	comp=Z,963nm,1.6s								
YOJ	**Yonaguni jima**	**72.28**	**305**	*e*P		**P**		**07 07 05.6**	**+0.1**
YOJ				pmax	pmax				
	comp=Z,710nm,1.1s								
YOJ	**Yonaguni jima**	**72.28**	**305**	*e*P		**P**		**07 07 05.6**	**+0.1**
	comp=Z,710nm,1.1s								
TWG	**Pinlang**	**72.92**	**303**	*e*P		**P**		**07 07 08.2**	**-1.0**
	comp=Z,516nm,0.7s								
CNJI	**Cibinong**	**72.93**	**268**	P		**P**		**07 07 09.8**	**+0.3**
	comp=Z,334nm,1.2s,comp=Z,4μm								
KSM	**Kuching**	**72.97**	**278**	*e*P		**P**		**07 07 10.2**	**+0.4**
	comp=Z,682nm,1.4s								
SMY	**Shemya**	**73.01**	**355**	*e*P		**P**		**07 07 08.8**	**-0.2**
SMY				pmax	pmax				
	comp=Z,850nm,0.9s								
SMY	**Shemya**	**73.01**	**355**	*e*P		**P**		**07 07 08.8**	**-0.2**
	comp=Z,851nm,0.9s								
YULB	**Yu-li**	**73.04**	**303**	*e*P		**P**		**07 07 08.1**	**-1.8**
	comp=Z,76nm,0.8s								
NACB	**Ninganchiao**	**73.22**	**304**	*e*P		**P**		**07 07 10.3**	**-0.5**
	comp=Z,693nm,1.2s								
XMIS	**Christmas Isla**	**73.31**	**265**	*e*P		**P**		**07 07 12.4**	**+0.7**
	comp=Z,666nm,1.6s								
ASAJ	**Asahikawa**	**73.35**	**332**	P		**P**		**07 07 12.9**	**+1.7**
	comp=Z,716nm,1.0s,baz=210,slow=6.6,SNR=346								
ASAJ	**Asahikawa**	**73.35**	**332**	P		**P**		**07 07 12.9**	**+1.7**
ASAJ				pmax	pmax				
	comp=Z,519nm,0.8s								
ASAJ	**Asahikawa**	**73.35**	**332**	*e*P		**P**		**07 07 12.6**	**+1.4**
	comp=Z,1μm,1.1s								
NIKH	**Nikolski High**	**73.44**	**6**	*e*P		**P**		**07 07 11.1**	**-0.4**
	comp=Z,2μm,0.9s								
SSLB	**Suanglung**	**73.52**	**304**	*e*P		**P**		**07 07 11.2**	**-1.4**
	comp=Z,150nm,0.8s								
TPUB	**Ta-pu**	**73.52**	**303**	*e*P		**P**		**07 07 11.2**	**-1.4**
	comp=Z,473nm,0.8s								
DBJI	**Dramaga**	**73.53**	**269**	P		**P**		**07 07 13.4**	**+0.5**
	comp=Z,485nm,1.5s,comp=Z,11μm								
SKJI	**Sukabumi**	**73.56**	**268**	P		**P**		**07 07 14.1**	**+1.0**
	comp=Z,477nm,0.8s,comp=Z,5μm								
YHNB	**Yeheng**	**73.65**	**305**	*e*P		**P**		**07 07 13.1**	**-0.3**
	comp=Z,362nm,1.0s								
TATO	**Taipei**	**73.72**	**305**	P		**P**		**07 07 13.4**	**-0.3**
	SNR=10.0								
TATO	**Taipei**	**73.72**	**305**	P		**P**		**07 07 13.4**	**-0.3**
	SNR=10.0								
TATO	**Taipei**	**73.72**	**305**	*e*P		**P**		**07 07 13.6**	**-0.1**
	comp=Z,672nm,1.1s								
SKR	**Severo-Kuril's**	**74.15**	**343**	*i*P		**P**		**07 07 15.5**	**0.0**
SKR				pmax	pmax				
	comp=Z,636nm,1.5s								
SKR				pmax	pmax				
	comp=Z,2μm,5.2s								
SBJI	**Serang**	**74.25**	**269**	P		**P**		**07 07 17.2**	**+0.2**
	comp=Z,552nm,1.6s,comp=Z,8μm								
CGJI	**Cibinong**	**74.50**	**269**	P		**P**		**07 07 17.4**	**-1.0**
	comp=Z,402nm,1.4s,comp=Z,5μm								
UNV	**Unalaska Valle**	**74.55**	**7**	*e*P		**P**		**07 07 17.2**	**-0.5**
	comp=Z,471nm,0.6s								
AKUT	**Akutan**	**74.92**	**8**	*e*P		**P**		**07 07 18.9**	**-0.9**
	comp=Z,384nm,0.8s								
BLSI	**Bandar Lampung**	**75.33**	**270**	P		**P**		**07 07 23.2**	**+0.2**
	comp=Z,345nm,1.1s								
YSS	**Yuzh-Sakhalins**	**75.53**	**334**	*d i*P		**P**		**07 07 24.3**	**+1.0**
YSS				*e*PP		**pP**		**07 09 29.0**	**+1.3**
YSS				*e*				07 10 23.0	
YSS				*e*SP		**sP**		**07 10 33.0**	**+3.8**
YSS				*e*S		**S**		**07 16 19.0**	**+3.0**
YSS				*e*				07 16 32.0	
YSS				*e*				07 16 56.0	
YSS				*e*SS		**SS**		**07 21 27.0**	**+1.9**
YSS				*e*SSS		SSS		07 24 53.0	
YSS				pmax	pmax				
	comp=Z,3μm,3.2s								
YSS				pmax	pmax				
	comp=Z,670nm,1.2s								
YSS	**Yuzh-Sakhalins**	**75.53**	**334**	*e*P		**P**		**07 07 24.4**	**+1.0**
	comp=Z,1μm,1.2s								
PPBI	**Pangkal Pinang**	**75.58**	**273**	P		**P**		**07 07 24.9**	**+0.5**
	comp=Z,199nm,1.4s,comp=Z,11μm								
PET	**Petropavlovsk**	**75.67**	**346**	*d i*P		**P**		**07 07 22.9**	**-1.0**
PET				*e*PP		**pP**		**07 09 28.4**	**0.0**
PET				*e*SP		**sP**		**07 10 29.5**	**-0.3**
PET				*e*S		**S**		**07 16 16.2**	**-1.0**
PET				*e*SP		**ScS**		**07 16 43.8**	**+1.7**
PET				*e*SS		**SS**		**07 21 31.9**	**+4.9**
PET				pmax	pmax				
	comp=Z,265nm,0.7s								
PET				pmax	pmax				
	comp=Z,900nm,15.2s								
PET				pmax	pmax				
	comp=Z,300nm,18.0s								
PET				pmax	pmax				
	comp=Z,300nm,15.0s								
PET	**Petropavlovsk**	**75.67**	**346**	*e*P		**P**		**07 07 24.0**	**+0.1**
	comp=Z,791nm,1.6s								
QZH	**Quanzhou**	**75.95**	**304**	*i*P		**P**		**07 07 26.9**	**+0.7**
QZH				pP		**pP**		**07 09 27.0**	**-3.7**
QZH				S		**S**		**07 16 14.0**	**-7.5**
QZH				pmax	pmax				
	comp=Z,850nm,1.0s								
QZH				pmax	pmax				
	comp=Z,3μm,3.2s								
PEA0	**Petropavlovsk-**	**75.97**	**345**	*e*P		**P**		**07 07 26.1**	**+0.4**
PEA0B	**Petropavlovsk-**	**75.97**	**345**	*e*P		**P**		**07 07 25.9**	**+0.3**
	comp=Z,2μm,1.4s								
PETK	**Petropavlovsk-**	**75.97**	**345**	P		**P**		**07 07 25.9**	**+0.3**
	comp=Z,333nm,0.8s,baz=122,slow=7.2,SNR=304								
PETK				pP		**pP**		**07 09 31.2**	**+1.0**
	comp=Z,3.6nm,0.7s,baz=256,slow=24,SNR=3.3								
PETK				PP		**PP**		**07 10 26.6**	**-1.3**
	comp=Z,17nm,1.0s,baz=118,slow=12,SNR=3.8								
PETK				PKiKP		**PKiKP**		**07 13 03.3**	**-1.6**
	comp=Z,11nm,0.6s,baz=110,slow=4.5,SNR=5.4								
PETK	**Petropavlovsk-**	**75.97**	**345**	P		**P**		**07 07 26.0**	**+0.3**
PETK				*PP		**pP**		**07 09 31.2**	**+1.0**
PETK								07 10 26.6	
PETK				pmax	pmax				
	comp=Z,348nm,0.8s								
KASI	**Kota Agung**	**75.98**	**269**	P		**P**		**07 07 25.7**	**-0.9**
	comp=Z,504nm,1.1s,comp=Z

ARVC	Arvin	78.95	46	P		P	07 07 43.8	+1.7
	baz=236							
MWC	Mount Wilson	78.97	47	*eP*		P	07 07 43.7	+1.2
MWC				pmax		pmax		
	comp=Z,140nm,0.8s							
MWC	Mount Wilson	78.97	47	*eP*		P	07 07 43.7	+1.2
	comp=Z,142nm,0.8s							
JCC	Jacoby Creek,	79.05	39	*eP*		P	07 07 44.5	+2.1
	comp=Z,378nm,1.3s							
BAR	Barrett	79.10	49	*eP*		P	07 07 44.3	+1.3
	comp=Z,77nm,1.1s							
MYKOM	Kota Tinggi	79.10	276	*eP*		P	07 07 43.6	+0.2
	comp=Z,710nm,1.6s							
VES	Vestal, Richgr	79.18	45	P		P	07 07 44.6	+1.3
	baz=235							
MURC	Murrieta	79.23	48	P		P	07 07 45.3	+1.6
	baz=237							
BFSC	Mount Baldy Ra	79.26	47	P		P	07 07 45.1	+1.2
	baz=236							
GZH	Guangzhou	79.26	300	P		P	07 07 45.4	+1.4
GZH				pP		pP	07 09 54.1	+4.2
GZH				sP		sP	07 10 51.6	+0.5
GZH				S		S	07 16 58.3	+2.2
GZH				sS		sS	07 20 40.3	-0.3
GZH				pmax		pmax		
	comp=Z,2μm,3.8s							
KHMM	Horse Mountain	79.26	39	*eP*		P	07 07 46.0	+2.2
	comp=Z,296nm,1.0s							
RCTC	Rector, Farmer	79.34	45	P		P	07 07 45.2	+1.0
	baz=235							
EDW2	Edwards Air Fo	79.38	47	P		P	07 07 46.1	+1.6
	baz=236							
MONP2	Monument Peak	79.39	49	P		P	07 07 46.7	+1.9
	baz=237							
NJ2	Nanjing	79.43	310	*eP*		P	07 07 45.3	+0.6
NJ2				PcP		PcP	07 07 49.3	-1.0
NJ2				PP		PP	07 10 54.9	-1.8
NJ2				S		S	07 16 56.3	-1.2
NJ2				pmax		pmax		
	comp=Z,1μm,3.5s							
IKP	In-Ko-Pah, Jac	79.48	49	P		P	07 07 47.1	+2.0
	baz=238							
ISA	Isabella, Lake	79.49	46	P		P	07 07 46.8	+1.7
	baz=236							
ISA	Isabella, Lake	79.49	46	*eP*		P	07 07 46.6	+1.5
ISA				pmax		pmax		
	comp=Z,370nm,1.4s							
ISA	Isabella, Lake	79.49	46	*eP*		P	07 07 46.6	+1.5
	comp=Z,368nm,1.4s							
KRMB	Red Mountain	79.56	38	*eP*		P	07 07 47.6	+2.2
	comp=Z,326nm,1.2s							
CMB	Columbia Colle	79.60	43	*eP*		P	07 07 46.8	+1.3
CMB				pmax		pmax		
	comp=Z,200nm,1.0s							
CMB	Columbia Colle	79.60	43	*eP*		P	07 07 46.8	+1.3
	comp=Z,196nm,0.9s							
SRIG	Santa Rosalia	79.66	56	*eP*		P	07 07 47.4	+1.4
	comp=Z,155nm,0.9s							
PFO	Pinyon Flats O	79.75	48	P		P	07 07 47.5	+1.0
	comp=Z,98nm,0.9s,baz=272,slow=3.7,SNR=62							
PFO	Pinyon Flats O	79.75	48	P		P	07 07 48.0	+1.5
	baz=237							
PFO	Pinyon Flats O	79.75	48	*eP*		P	07 07 47.8	+1.3
	comp=Z,93nm,1.0s							
TPFO	Pinon Flats	79.75	48	P		P	07 07 48.1	+1.5
	baz=237							
SLBS	Sierra La Lagu	79.77	60	*eP*		P	07 07 48.8	+2.0
	comp=Z,83nm,0.8s							
BBRC	Big Bear Solar	79.78	48	P		P	07 07 48.2	+1.4
	baz=237							
WDC	Whiskeytown Da	79.79	40	*eP*		P	07 07 48.1	+1.7
WDC				pmax		pmax		
	comp=Z,280nm,1.0s							
WDC	Whiskeytown Da	79.79	40	*eP*		P	07 07 48.1	+1.7
	comp=Z,283nm,1.0s							
ORV	Oroville	79.80	41	*eP*		P	07 07 47.9	+1.4
ORV				pmax		pmax		
	comp=Z,200nm,0.9s							
ORV	Oroville	79.80	41	*eP*		P	07 07 47.9	+1.4
	comp=Z,202nm,0.9s							
SWSC	Sam W. Stewart	79.86	49	P		P	07 07 48.7	+1.8
	baz=238							
LRMC	Laurel Mtn Rad	79.93	46	P		P	07 07 49.0	+1.6
	baz=236							
N02D	Trinity Center	79.93	39	P		P	07 07 49.3	+2.1
	baz=232,SNR=103							
OHAK	Old Harbor	80.05	14	*eP*		P	07 07 47.7	+0.4
	comp=Z,958nm,1.4s							
O03D	Paynes Creek	80.06	40	P		P	07 07 49.3	+1.4
	baz=233,SNR=119							
RRX	Edison Barstow	80.06	47	P		P	07 07 49.7	+1.7
	baz=237							
HABR	Khabarovsk	80.06	331	*d i*	P	P	07 07 46.9	-0.7
HABR				*e*			07 07 51.7	
HABR				*e*	*PP	pP	07 09 52.6	-1.4
HABR				*e*	*SP	sP	07 10 53.8	-1.1
HABR				*e*			07 11 00.2	
HABR				*e*	PPP	PPP	07 12 55.2	
HABR				*e*	S	S	07 17 03.7	+0.4
HABR				*e*			07 17 17.6	
HABR				*e*	SS	SS	07 22 33.2	+0.8
HABR				pmax		pmax		
	comp=N,107nm,1.5s							
HABR				pmax		pmax		
	comp=E,87nm,1.5s							
HABR				pmax		pmax		
	comp=Z,645nm,1.5s							
HABR				pmax		pmax		
	comp=Z,1μm,2.5s							
HABR				MLR		MLR		
	comp=Z,105nm,21.0s							
M02C	Callahan	80.10	39	P		P	07 07 50.4	+2.3
	baz=232,SNR=167							
MDJ	Mudanjiang	80.11	325	P		P	07 07 48.9	+0.9
MDJ				PcP		PcP	07 07 53.9	+0.9
MDJ				pP		pP	07 09 55.6	+1.2
MDJ				sP		sP	07 10 55.3	0.0
MDJ				PP		PP	07 11 02.8	+0.8
MDJ				S		S	07 17 06.5	+2.5
MDJ				pmax		pmax		
	comp=Z,350nm,1.2s							
MDJ	Mudanjiang	80.11	325	*eP*		P	07 07 49.0	+1.0
	comp=Z,506nm,1.1s							
L02D	Cave Junction,	80.14	38	P		P	07 07 50.3	+2.1
	baz=231,SNR=26							
CWC	Cottonwood Cre	80.19	45	P		P	07 07 50.2	+1.4
	baz=236							
BELC	Belle Mtn. Jos	80.28	48	P		P	07 07 51.0	+1.7
	baz=238							
MLAC	Mammoth, Mammo	80.37	44	P		P	07 07 51.5	+1.7
	baz=235							
MPMC	Manual Prospec	80.38	46	P		P	07 07 51.3	+1.4
	baz=236							
YBH	Yreka Blue Hor	80.39	39	*eP*		P	07 07 51.3	+1.7
YBH				pmax		pmax		
	comp=Z,490nm,0.9s							
YBH	Yreka Blue Hor	80.39	39	*eP*		P	07 07 51.3	+1.7
	comp=Z,494nm,0.8s							
QIZ	Qiongzhong	80.39	294	P		P	07 07 50.9	+0.9
QIZ				pP		pP	07 09 55.1	-1.4
QIZ				sP		sP	07 10 59.3	+1.8
QIZ				S		S	07 17 10.9	+3.0
QIZ				sS		sS	07 20 53.8	+0.6
QIZ	Qiongzhong	80.39	294	*eP*		P	07 07 51.2	+1.2
	comp=Z,312nm,1.8s							
SDSI	Sungai Dareh	80.42	273	P		P	07 07 49.7	-0.6
	comp=Z,95nm,1.3s							
GSC	Goldstone, Bar	80.43	47	P		P	07 07 51.4	+1.4
	baz=237							
GSC	Goldstone, Bar	80.43	47	*eP*		P	07 07 51.3	+1.4
GSC				pmax		pmax		
	comp=Z,177nm,1.3s							
GSC	Goldstone, Bar	80.43	47	*eP*		P	07 07 51.3	+1.3
	comp=Z,177nm,1.3s							
DAC	Darwin (Calif)	80.43	46	*eP*		P	07 07 52.1	+2.0
DAC				pmax		pmax		
	comp=Z,82nm,0.8s							
DAC	Darwin (Calif)	80.43	46	*eP*		P	07 07 52.0	+2.0
	comp=Z,82nm,0.8s							
TIN	Tinemaha, Big	80.44	45	P		P	07 07 51.8	+1.8
	baz=236							
WAKR	Walker	80.48	43	*eP*		P	07 07 52.3	+2.0
	comp=Z,432nm,1.1s							
BC3	Big Chuckawall	80.48	49	P		P	07 07 52.4	+2.1
	baz=238							
HEC	Hector,Ludlow	80.49	47	P		P	07 07 51.7	+1.4
	baz=237							
GLA	Glamis	80.61	50	P		P	07 07 53.1	+2.2
	baz=238							
GLA	Glamis	80.61	50	*eP*		P	07 07 53.2	+2.3
GLA				pmax		pmax		
	comp=Z,240nm,0.9s							
GLA	Glamis	80.61	50	*eP*		P	07 07 53.2	+2.3
	comp=Z,238nm,0.9s							
KDAK	Kodiak Island	80.72	14	*i*	P	P	07 07 50.9	+0.2
KDAK				*i*			07 13 11.8	
KDAK	Kodiak Island	80.72	14	*eP*		P	07 07 51.2	+0.5
	comp=Z,2μm,1.8s							
HUMO	Hull Mountain	80.79	38	*eP*		P	07 07 53.6	+2.0
	comp=Z,414nm,1.1s							
GMRC	Granite Mounta	80.94	48	P		P	07 07 54.2	+1.5
	baz=238							
M04C	Macdoel	80.94	39	P		P	07 07 54.3	+1.8
	baz=232,SNR=130							
IRM	Iron Mountain	80.97	49	P		P	07 07 54.7	+2.0
	baz=238							
GRAC	Grapevine Rang	80.98	45	P		P	07 07 54.8	+2.1
	baz=236							
FURC	Furnace Creek,	81.02	46	P		P	07 07 54.6	+1.7
	baz=237							
TUQ	Turquoise Moun	81.10	47	P		P	07 07 55.0	+1.6
	baz=237							
SHOC	Shoshone, Teco	81.11	47	P		P	07 07 54.9	+1.5
	baz=237							
Y12C	Blythe	81.19	49	P		P	07 07 55.7	+1.9
	baz=238							
Y12C	Blythe	81.19	49	*eP*		P	07 07 55.7	+1.9
	comp=Z,148nm,0.9s							
PAHR	Pah Rah Range	81.21	42	*eP*		P	07 07 55.8	+1.8
	comp=Z,379nm,1.2s							
BKNI	Bangkinang	81.22	274	P		P	07 07 55.8	+1.4
	comp=Z,313nm,1.5s,comp=Z,5μm							
BKNI	Bangkinang	81.22	274	*eP*		P	07 07 54.9	+0.5
	comp=Z,785nm,1.5s							
113A	Mohawk Valley,	81.23	50	*eP*		P	07 07 55.5	+1.5
	comp=Z,160nm,0.9s							
NKL	Nikolayevsk	81.25	336	*i*	P	P	07 07 53.0	-0.5
NKL				*e*			07 10 02.0	
NKL				pmax		pmax		
	comp=N,400nm,7.0s							
NKL				pmax		pmax		
	comp=E,500nm,7.0s							
NKL				pmax		pmax		
	comp=Z,2μm,7.0s							
NKL				pmax		pmax		
	comp=N,95nm,1.0s							
NKL				pmax		pmax		
	comp=E,86nm,1.0s							
NKL				pmax		pmax		
	comp=Z,430nm,1.0s							
I03D	Drain, OR	81.25	37	P		P	07 07 55.5	+1.7
	baz=231,SNR=20							
DL2	Dalian	81.30	317	⇓ *i*	P	P	07 07 54.3	+0.1
DL2					pP	pP	07 10 06.3	+5.2
DL2					sP	sP	07 11 03.6	+1.7
DL2					S	S	07 17 14.4	-1.8
DL2				pmax		pmax		
	comp=Z,340nm,1.2s							
DL2				pmax		pmax		
	comp=Z,1μm,5.6s							
PDSI	Padang	81.33	272	P		P	07 07 54.2	-0.8
	comp=Z,86nm,1.2s,comp=Z,6μm							
HSIG	Sierra Grande	81.47	55	*eP*		P	07 07 57.0	+1.6
	comp=Z,94nm,0.8s							
LDFC	Landfair	81.48	48	*eP*		P	07 07 57.6	+2.2
	comp=Z,507nm,0.9s							
K04D	Chiloquin, OR	81.50	39	P		P	07 07 56.9	+1.6
	baz=232,SNR=50							
214A	Organ Pipe Nat	81.51	52	P		P	07 07 57.7	+2.2
	baz=240							
214A	Organ Pipe Nat	81.51	52	*eP*		P	07 07 57.2	+1.6
	comp=Z,606nm,1.0s							
MAW	Mawson	81.61	200	P		P	07 07 55.7	+0.3
	comp=Z,12nm,0.6s,baz=134,slow=7.3,SNR=41							
MAW				pP		pP	07 10 03.1	+0.9
	comp=Z,15nm,1.0s,baz=122,slow=6.5,SNR=5.0							
MAW				S		S	07 17 15.9	-2.6
	comp=Z,3.4nm,1.1s,baz=221,slow=19,SNR=4.2							
MAW				PKKPbc		PKKPbc	07 26 22.3	-2.7
	comp=Z,2.7nm,0.7s,baz=315,slow=1.4,SNR=10							
MAW	Mawson	81.61	200	P		P	07 07 55.9	+0.6
	baz=82,SNR=36							
MAW	Mawson	81.61	200	*eP*		P	07 07 56.1	+0.8
	comp=Z,20nm,1.4s							
MAW				pP		pP	07 10 03.1	+0.9
MAW				S		S	07 17 15.9	-2.6
MAW				PKKPbc		PKKPbc	07 26 22.3	-2.7
PMSA	Palmer Station	81.64	157	P		P	07 07 57.1	+1.6
	comp=Z,54nm,0.9s,baz=224,slow=4.3,SNR=6.2							
PMSA	Palmer Station	81.64	157	*eP*		P	07 07 57.4	+1.9
	comp=Z,126nm,1.2s							
NEE2	Needles Airpor	81.66	48	P		P	07 07 58.0	+1.9
	baz=236							
J04D	Umpqua Nationa	81.67	38	P		P	07 07 58.1	+1.8
	baz=232,SNR=148							
TPNV	Topopah Spring	81.70	46	P		P	07 07 58.3	+1.7
	baz=237							
TPNV	Topopah Spring	81.70	46	*eP*		P	07 07 58.3	+1.7
TPNV				pmax		pmax		
	comp=Z,229nm,0.8s							
TPNV	Topopah Spring	81.70	46	*eP*		P	07 07 58.2	+1.7
	comp=Z,229nm,0.8s							
TPNV	Topopah Spring	81.70	46	*e*Sg		P	07 07 58.4	+1.9
PDMCI	Parker Dam,Lak	81.75	49	P		P	07 07 58.7	+2.0
	baz=239							
SNY	Shenyang	81.79	320	⇓ P		P	07 07 56.4	-0.2
SNY				pP		pP	07 10 01.8	-1.9
SNY				sP		sP	07 11 03.3	-1.2
SNY				S		S	07 17 17.1	-3.8
SNY				SKS		SKSac	07 17 20.9	+1.2
SNY				SS		SS	07 23 05.1	+7.2
SNY				pmax		pmax		
	comp=Z,1μm,5.7s							
COR	Corvallis	81.83	36	*eP*		P	07 07 58.7	+2.0
COR				pmax		pmax		
	comp=Z,190nm,0.8s							
COR	Corvallis	81.83	36	*eP*		P	07 07 58.7	+2.0
	comp=Z,189nm,0.8s							
I04A	Tendick Farm,	81.84	37	P		P	07 07 58.2	+1.2
	baz=232,SNR=9.5							
CN2	Changchun	81.89	323	⇓ *i*	P	P	07 07 57.9	+0.8
CN2				*e*	pP	pP	07 10 07.8	+3.6
CN2				*e*	S	S	07 17 23.0	+1.1
CN2				pmax		pmax		
	comp=Z,400nm,1.2s							
CN2				pmax		pmax		
	comp=Z,1μm,4.0s							
MOD	Modoc Plateau	81.93	40	*eP*		P	07 07 59.3	+1.7
	comp=Z,328nm,0.8s							
IRO	Indian Ridge	82.06	37	*eP*		P	07 07 59.6	+1.4
K05A	Summer Lake	82.07	39	*eP*		P	07 08 00.3	+2.0
	comp=Z,644nm,0.9s							
KLR	Kul'dur	82.14	330	P		P	07 07 59.0	+0.7
	comp=Z,113nm,1.0s,baz=127,slow=4.4,SNR=156							
KLR				PP		PP	07 11 16.2	-2.1
	comp=Z,8.4nm,0.9s,baz=153,slow=11,SNR=3.7							
KLR				S		S	07 17 21.5	-2.7
	comp=Z,0.4nm,0.3s,baz=18,slow=20,SNR=9.9							
KLR				PKKPbc		PKKPbc	07 26 21.6	-2.2
	comp=Z,2.9nm,0.6s,baz=307,slow=0.8,SNR=10							
J05D	Fort Rock, OR	82.20	38	P		P	07 08 00.9	+2.0
	baz=233,SNR=138							
G03D	McMinnville, O	82.25	36	P		P	07 08 00.7	+1.8
	baz=231,SNR=26							
W13A	Hualapai Mount	82.34	48	*eP*		P	07 08 01.8	+1.9
	comp=Z,115nm,0.9s							
Y14A	Wickenburg	82.37	50	*eP*		P	07 08 01.5	+1.6
	comp=Z,589nm,1.0s							
F03A	Seaside	82.54	35	*eP*		P	07 08 02.1	+1.8
	comp=Z,370nm,0.9s							
CNPM	China Poot	82.60	14	*eP*		P	07 08 00.9	+0.5
	comp=Z,480nm,0.9s							
HOM	Homer	82.63	13	*eP*		P	07 08 01.1	+0.7
	comp=Z,1μm,0.8s							
UBPT	Khong Chiam	82.67	289	P		P	07 08 02.4	+0.7
	comp=Z,177nm,1.3s,comp=Z,3μm							
G04A	Mulino	82.68	36	*eP*		P	07 08 02.4	+1.4
IPM	Ipoh	82.69	277	*eP*		P	07 08 02.0	+0.2
	comp=Z,785nm,1.5s							
MNSI	Mandailing Nat	82.75	274	P		P	07 08 01.2	-0.9
	comp=Z,182nm,0.9s,comp=Z,3μm							
I05D	Terrebonne, OR	82.78	37	P		P	07 08 03.3	+1.6
	baz=233,SNR=7.0							
TIA	Tai'an	82.83	313	⇓ P		P	07 08 02.4	+0.4
R11A	Troy Canyon, C	82.90	45	P		P	07 08 03.6	+1.1
	baz=237							
E03A	Lebam	82.92	35	*eP*		P	07 08 04.1	+1.9
	comp=Z,630nm,1.0s							
F04D	Rainier, OR	82.93	35	P		P	07 08 04.4	+2.1
	baz=231,SNR=26							
BMN	Battle Mountai	82.98	42	*eP*		P	07 08 04.7	+1.8
BMN				pmax		pmax		
	comp=Z,286nm,0.9s							
BMN	Battle Mountai	82.98	42	*eP*		P	07 08 04.7	+1.8
	comp=Z,286nm,0.9s							
TDH	Tom, Dick, Har	83.11	36	P		P	07 08 04.5	+1.1
F04A	Amboy	83.16	36	*eP*		P	07 08 04.8	+1.4
	comp=Z,1μm,1.6s							
SVW2	Sparrevohn	83.18	11	*eP*		P	07 08 03.3	+0.1
	comp=Z,127nm,0.7s							
TUC	Tucson	83.18	52	P		P	07 08 06.3	+2.3
	baz=241							
TUC	Tucson	83.18	52	*eP*		P	07 08 06.6	+2.6
TUC				pmax		pmax		
	comp=Z,172nm,0.9s							
TUC	Tucson	83.18	52	*eP*		P	07 08 06.6	+2.6
	comp=Z,172nm,0.9s							
WVOR	Wild Horse Val	83.24	40	*eP*		P	07 08 05.8	+1.7
WVOR				pmax		pmax		
	comp=Z,353nm,1.1s							
WVOR	Wild Horse Val	83.24	40	*eP*		P	07 08 05.8	+1.7
	comp=Z,353nm,1.1s							
DIB	Dawson Inlet,	83.28	26	*eP*		P	07 08 04.8	+1.0
	comp=Z,160nm,1.0s							
NLWA	Neilton Lookou	83.30	34	*eP*		P	07 08 06.0	+1.8
	comp=Z,330nm,1.0s							
OSR	Olympics--Salm	83.33	34	P		P	07 08 06.2	+1.9
KULM	Kulim	83.33	278	*eP*		P	07 08 05.8	+0.8
	comp=Z,131nm,0.7s							
G05D	Wamic, OR	83.35	37	P		P	07 08 05.8	+1.4
	baz=232,SNR=29							
OOW	Octopus West	83.36	33	P		P	07 08 06.7	+2.2
CROR	Criterion Ridg	83.37	37	P		P	07 08 05.4	+0.8
MA2	Magadan	83.48	345	P		P	07 08 04.1	-0.5
	comp=Z,186nm,0.9s,baz=148,slow=4.9,SNR=16							
MA2				S		S	07 17 29.6	-7.3
	comp=Z,2.5nm,0.5s,baz=135,slow=20,SNR=2.4							
MA2	Magadan	83.48	345	*eP*		P	07 08 04.3	-0.4
MA2				S		S	07 17 29.6	-7.3
MA2				pmax		pmax		
	comp=Z,2μm,1.2s							
MA2	Magadan	83.48	345	*eP*		P	07 08 04.3	-0.4
	comp=Z,2μm,1.2s							
MA2				S		S	07 17 29.6	-7.3
SEW	Seward	83.52	14	*eP*		P	07 08 04.9	+0.1
	comp=Z,351nm,0.9s							
MID	Middleton Isla	83.68	16	*eP*		P	07 08 05.3	-0.3
MID				pmax		pmax		
	comp=Z,780nm,1.2s							
MID	Middleton Isla	83.68	16	*eP*		P	07 08 05.3	-0.3
	comp=Z,785nm,1.3s							
G06A	Carlson Farm,	83.72	37	*eP*		P	07 08 07.5	+1.1
	comp=Z,175nm,1.0s							
VTHM	Trough	83.73	37	P		P	07 08 07.8	+1.4
X16A	Lo Mia Camp, P	83.73	50	*eP*		P	07 08 08.8	+2.0
	comp=Z,186nm,1.1s							
319A	Douglas	83.86	54	*eP*		P	07 08 10.0	+2.5
	comp=Z,386nm,1.0s							
GAMB	Gambell	83.96	3	*eP*		P	07 08 07.9	+1.0
	comp=Z,328nm,1.0s							
CCUT	Cedar City	83.97	46	*eP*		P	07 08 09.2	+1.3
	comp=Z,84nm,0.9s							
LON	Longmire	84.00	35	*eP*		P	07 08 08.5	+0.8
LON				pmax		pmax		
	comp=Z,370nm,1.8s							
LON	Longmire	84.00	35	*eP*		P	07 08 08.4	+0.8
	comp=Z,367nm,1.9s							
PSI	Prapat	84.06	275	*eP*		P	07 08 07.5	-1.3
PSI				pmax		pmax		
	comp=Z,250nm,1.2s							
PSI	Prapat	84.06	275	*eP*		P	07 08 08.2	-0.6
	comp=Z,254nm,1.2s							
U15A	North Rim	84.14	48	*eP*		P	07 08 11.2	+2.3
	comp=Z,210nm,0.8s							
PSUT	Pine Spring	84.15	45	*eP*		P	07 08 10.7	+1.9
	comp=Z,45nm,0.9s							
D05A	Enumclaw	84.17	35	*eP*		P	07 08 10.1	+1.7
	comp=Z,715nm,1.3s							
FMW	Mount Fremont	84.18	35	P		P	07 08 10.0	+1.3
PGC	Sidney	84.32	33	*eP*		P	07 08 10.5	+1.5
	comp=Z,574nm,1.4s							
WUAZ	Wupatki	84.33	49	P		P	07 08 11.4	+1.8
	baz=240							
RC01	Rabbit Creek A	84.34	14	*eP*		P	07 08 08.7	-0.2
	comp=Z,611nm,1.1s							
TRW	Toppenish Ridg	84.41	36	P		P	07 08 11.0	+1.4
BBB	Bella Bella	84.42	28	P		P	07 08 10.6	+1.2
	comp=Z,120nm,0.8s,baz=263,slow=4.6,SNR=105							
BBB	Bella Bella	84.42	28	*eP*		P	07 08 10.7	+1.2
	comp=Z,500nm,1.5s							
SUA	Susitna One	84.46	13	*eP*		P	07 08 09.6	0.0
	comp=Z,406nm,0.7s							
CHBT	CHBT	84.52	286	P		P	07 08 12.1	+1.3
	comp=Z,232nm,1.6s,comp=Z,8μm							
USHA	Ushuaia	84.52	147	P		P	07 08 11.4	+1.3
	comp=Z,166nm,1.0s,baz=228,slow=3.9,SNR=8.8							
USHA				PP		PP	07 11 35.2	-1.3
	comp=Z,85nm,1.1s,baz=200,slow=8.4,SNR=3.5							
SKNT	Sakolnakorn	84.65	290	P		P	07 08 12.1	+0.7
	comp=Z,531nm,1.1s,comp=Z,6μm							
MCW	Mount Constitu	84.66	33	P		P	07 08 12.3	+1.5
MCW	Mount Constitu	84.66	33	P		P	07 08 12.2	+1.5
HPIG		84.68	59	*eP*		P	07 08 13.0	+1.3
	comp=Z,82nm,0.8s							
CRAG	Craig	84.70	24	*eP*		P	07 08 12.2	+1.5
	comp=Z,203nm,1.0s							
G08A	Pilot Rock	84.71	38	*eP*		P	07 08 12.9	+1.6
	comp=Z,337nm,1.1s							
A04D	Lummi Island	84.75	33	P		P	07 08 12.8	+1.7
	baz=231,SNR=46							
GLI	Glacier Island	84.76	15	*eP*		P	07 08 11.2	+0.2
	comp=Z,742nm,0.8s							
B05A	Bryant	84.78	34	P		P	07 08 12.8	+1.5
	baz=232,SNR=81							
FID	Port Fidalgo	84.80	15	*eP*		P	07 08 10.9	-0.2
	comp=Z,525nm,1.2s							
TT01	Tatalina	84.80	10	*eP*		P	07 08 11.8	+0.7
GSI	Gunungsitoli	84.80	273	P		P	07 08 13.3	+1.0
	comp=Z,493nm,1.3s,comp=Z,7μm							
GSI	Gunungsitoli	84.80	273	*eP*		P	07 08 13.0	+0.7
	comp=Z,269nm,1.4s							
EYAK	Cordova Ski Ar	84.80	16	*eP*		P	07 08 11.8	+0.6
	comp=Z,506nm,1.3s							
TTA	Tatalina	84.82	10	*eP*		P	07 08 11.4	+0.1
TTA				pmax		pmax		
	comp=Z,380nm,1.2s							
TTA	T

SML **Sawmill** 85.29 14 *e*P P 07 08 13.6 +0.1
comp=Z,236nm,1.0s
DIV **Divide** 85.30 15 *e*P P 07 08 14.2 +0.6
comp=Z,543nm,1.0s
W18A **Petrified Fore** 85.30 50 P P 07 08 15.8 +1.4
baz=241
KCSI **Kotacane, Aceh** 85.39 275 P P 07 08 15.3 +0.2
comp=Z,81nm,1.6s,comp=Z,2µm
BMO **Blue Mountains** 85.42 39 *e*P P 07 08 15.6 +1.0
BMO pmax pmax
comp=Z,140nm,0.8s
BMO **Blue Mountains** 85.42 39 *e*P P 07 08 15.6 +1.0
comp=Z,142nm,0.8s
MOIG **Morelia** 85.43 67 *e*P P 07 08 16.5 +1.1
comp=Z,104nm,0.8s
BJT **Baijiatuau** 85.45 316 *e*P P 07 08 15.5 +0.7
BJT pmax pmax
comp=Z,1µm,1.7s
BJT **Baijiatuau** 85.45 316 *e*P P 07 08 15.5 +0.7
comp=Z,1µm,1.7s
BMRM **Bremner River** 85.45 16 *e*P P 07 08 14.7 +0.4
comp=Z,411nm,1.0s
BJI **Beijing** 85.46 316 P P 07 08 15.8 +1.0
BJI pP pP 07 10 23.5 +0.1
BJI sP sP 07 11 24.3 +0.5
BJI SKS SKSac 07 17 46.1 +3.1
BJI S S 07 17 58.0 +1.3
BJI SS SS 07 23 54.3 +2.9
BJI pmax pmax
comp=Z,270nm,1.4s
BJI pmax pmax
comp=Z,3µm,4.1s
PPLA **Purkeypile** 85.47 12 *e*P P 07 08 13.6 -0.9
comp=Z,193nm,1.3s
ZAIG **Zacatecas** 85.49 64 *e*P P 07 08 16.5 +0.8
comp=Z,57nm,0.9s
MFID **Camas Ranch** 85.50 40 *e*P P 07 08 16.6 +1.5
comp=Z,184nm,1.0s
121A **Cookes Peak, D** 85.53 53 P P 07 08 17.6 +2.0
baz=243
121A **Cookes Peak, D** 85.53 53 *e*P P 07 08 17.3 +1.8
comp=Z,119nm,1.0s
SCM **Sheep Creek Mo** 85.54 14 *e*P P 07 08 15.5 +0.7
SCM pmax pmax
comp=Z,660nm,0.8s
SCM **Sheep Creek Mo** 85.54 14 *e*P P 07 08 15.5 +0.7
comp=Z,658nm,0.8s
KLU **Klutina** 85.58 15 *e*P P 07 08 15.0 0.0
comp=Z,204nm,0.9s
ENH **Enshi** 85.58 304 *e*P P 07 08 16.3 +0.6
comp=Z,1µm,1.4s
YKU2 **Yakutat** 85.61 19 *e*P P 07 08 15.2 +0.2
comp=Z,1µm,1.3s
CRQM **Cirque** 85.66 17 *e*P P 07 08 15.7 +0.2
comp=Z,521nm,1.2s
WRAK **Wrangell Islan** 85.70 24 *e*P P 07 08 16.9 +1.4
comp=Z,306nm,0.9s
DUG **Dugway, Tooele** 85.70 44 P P 07 08 17.1 +0.9
baz=239
DHAK **Deception Hill** 85.72 20 *e*P P 07 08 17.0 +1.3
comp=Z,1µm,1.6s
D08A **Wollman Farm,** 85.77 36 *e*P P 07 08 17.7 +1.6
comp=Z,315nm,1.1s
NONG **Nongkai** 85.81 291 P P 07 08 17.7 +0.8
comp=Z,156nm,1.9s,comp=Z,5µm
TPTI **Tapi** 85.85 275 P P 07 08 17.6 +0.3
comp=Z,78nm,1.7s,comp=Z,2µm
E09A **Wood Farm, Sta** 85.88 37 *e*P P 07 08 17.9 +1.2
comp=Z,356nm,1.2s
PATY **Pattaya** 85.91 285 P P 07 08 19.4 +2.0
comp=Z,78nm,1.3s,comp=Z,3µm
PCA **Pinnacle** 85.92 18 *e*P P 07 08 17.2 +0.7
comp=Z,412nm,1.0s
CAST **Castle Rocks** 85.97 12 *e*P P 07 08 15.6 -1.0
comp=Z,309nm,0.9s
SEY **Seymchan** 86.08 347 P P 07 08 17.4 +0.2
comp=Z,338nm,0.8s,baz=150,slow=5.0,SNR=28
SEY S SKSac 07 17 46.3 +0.5
comp=Z,0.5nm,0.5s,baz=291,slow=22,SNR=7.0
SEY PKKPbc PKKPbc 07 26 12.2 -2.9
comp=Z,0.9nm,0.4s,baz=137,slow=1.3,SNR=5.2
SEY **Seymchan** 86.08 347 *d i*P P 07 08 17.1 -0.1
F10A **Beach Ranch, E** 86.10 38 *e*P P 07 08 18.8 +0.9
comp=Z,552nm,0.8s
BALM **Baldy** 86.11 17 *e*P P 07 08 17.7 +0.2
BALM *e*S S 07 18 01.3 -1.0
BALM pmax pmax
comp=Z,323nm,1.0s
BALM **Baldy** 86.11 17 *e*P P 07 08 17.7 +0.2
comp=Z,323nm,1.0s
BALM *e*S S 07 18 01.3 -1.0
GYA **Guiyang** 86.19 300 *i*P P 07 08 18.9 +0.2
GYA pP pP 07 10 28.0 +0.4
GYA sP sP 07 11 27.4 -0.6
GYA PP PP 07 11 54.8 +3.5
GYA SKS SKSac 07 17 47.3 -1.1
GYA S S 07 18 04.0 -0.6
B08A **Colville Reser** 86.31 35 *e*P P 07 08 19.4 +0.7
comp=Z,201nm,0.8s
KTH **Kantishna Hill** 86.31 12 *e*P P 07 08 17.4 -0.9
comp=Z,304nm,1.0s
TRF **Thorofare Moun** 86.34 12 *e*P P 07 08 18.2 -0.4
comp=Z,454nm,0.8s
LLLB **Lillooet** 86.34 32 *e*P P 07 08 20.0 +1.2
comp=Z,195nm,1.0s
SURT **Suratani** 86.36 281 P P 07 08 21.4 +1.8
comp=Z,108nm,1.5s,comp=Z,1µm
PKDT **Phuket** 86.40 280 P P 07 08 21.5 +1.6
comp=Z,176nm,0.9s,comp=Z,3µm
HLID **Hailey** 86.45 41 P P 07 08 21.3 +1.7
baz=238
HLID **Hailey** 86.45 41 *e*P P 07 08 21.5 +1.9
HVU **Hansel Valley** 86.54 43 *e*P P 07 08 21.6 +1.5
HVU pmax pmax
comp=Z,60nm,0.8s
HVU **Hansel Valley** 86.54 43 *e*P P 07 08 21.6 +1.5
comp=Z,60nm,0.8s
C09A **Chrisman Ranch** 86.56 36 *e*P P 07 08 20.7 +0.9
comp=Z,776nm,1.6s
RND **Reindeer** 86.59 13 *e*P P 07 08 19.2 -0.5
RND pmax pmax
comp=Z,770nm,0.8s
RND **Reindeer** 86.59 13 *e*P P 07 08 19.9 +0.2
comp=Z,775nm,0.8s
DHY **Denali Highway** 86.62 14 *e*P P 07 08 19.6 -0.3
comp=Z,540nm,1.6s
PNT **Penticton** 86.72 34 *e*P P 07 08 21.6 +1.0
PNT **Penticton** 86.72 34 *e*P P 07 08 21.6 +1.0
LHMI **Lhok Sumawe** 86.75 277 P P 07 08 22.9 +1.4
comp=Z,552nm,1.1s,comp=Z,6µm
LHMI **Lhok Sumawe** 86.75 277 *e*P P 07 08 22.6 +1.1
comp=Z,425nm,1.0s
BPAW **Bear Paw Mtn.** 86.79 12 *e*P P 07 08 19.3 -1.3
comp=Z,548nm,1.9s
SYO **Syowa Base** 86.83 193 *e*P P 07 08 19.0 -1.8
TIY **Taiyuan** 86.83 312 *e*P P 07 08 22.4 +0.9
TIY SKS SKSac 07 17 52.8 +1.1
TIY S SKSac 07 18 06.1 +3.3
TIY sS sS 07 21 58.5 -1.7
TIY pmax pmax
comp=Z,660nm,1.6s
LAZ **Ladron** 86.86 52 *e*P P 07 08 23.8 +2.0
MCK **McKinley** 86.87 13 *e*P P 07 08 20.4 -0.5
MCK pmax pmax
comp=Z,660nm,1.2s
MCK **McKinley** 86.87 13 *e*P P 07 08 20.8 -0.2
comp=Z,660nm,1.2s
Y22D **IRIS PASSCAL I** 86.87 52 P P 07 08 23.8 +2.0
baz=243
Y22D **IRIS PASSCAL I** 86.87 52 *e*P P 07 08 24.2 +2.4
comp=Z,124nm,0.8s
TLIG **Tlapa** 86.91 70 *e*P P 07 08 24.1 +1.8
comp=Z,50nm,0.9s
MLSI **Meulaboh, Aceh** 86.93 276 P P 07 08 22.9 +0.6
comp=Z,511nm,1.3s,comp=Z,7µm
SKAG **Skagway** 86.94 20 *e*P P 07 08 22.5 +1.3
comp=Z,582nm,1.5s
PAX **Paxson** 86.96 14 *e*P P 07 08 21.4 -0.1
PAX pmax pmax
comp=Z,290nm,1.4s
PAX **Paxson** 86.96 14 *e*P P 07 08 21.4 -0.1
comp=Z,295nm,1.4s
MNTX **Cornudas Mount** 86.97 55 P P 07 08 24.0 +1.8
baz=244
MNTX **Cornudas Mount** 86.97 55 *e*P P 07 08 23.4 +1.2
comp=Z,201nm,1.2s

PHET **Kaeng Krachan** 87.02 285 P P 07 08 24.8 +2.1
comp=Z,112nm,1.1s,comp=Z,985nm
BNM **Barren Site** 87.12 52 *e*P P 07 08 24.6 +1.5
PBKT **Sadao Pong** 87.16 289 P P 07 08 24.8 +1.5
comp=Z,208nm,1.6s,comp=Z,3µm
LPM **Los Pinos Moun** 87.19 52 *e*P P 07 08 24.8 +1.4
TX31 **Lajitas Ar. Si** 87.30 58 *e*P P 07 08 26.0 +2.1
TXAR **Lajitas Array** 87.30 58 P P 07 08 25.9 +2.0
comp=Z,113nm,0.8s,baz=220,slow=6.2,SNR=932
TXAR pP pP 07 10 33.8 +0.5
comp=Z,14nm,1.2s,baz=237,slow=3.0,SNR=3.9
TXAR S SKSac 07 17 55.9 +1.0
comp=Z,0.3nm,0.8s,baz=125,slow=12,SNR=3.4
TXAR PKKPbc PKKPbc 07 26 10.9 +0.1
comp=Z,2.9nm,0.8s,baz=90,slow=3.2,SNR=16
TXAR PKPPKP P'P'df 07 34 14.0 -3.7
comp=Z,0.5nm,0.9s,baz=102,slow=4.0,SNR=4.2
HYT **Haines Junctio** 87.32 19 *e*P P 07 08 24.4 +1.2
comp=Z,209nm,1.0s
MENT **Mentasta** 87.35 15 *e*P P 07 08 24.0 +0.8
comp=Z,146nm,0.8s
NEW **Newport** 87.45 36 P P 07 08 24.4 +0.3
comp=Z,63nm,0.9s,baz=236,slow=4.0,SNR=109
NEW **Newport** 87.45 36 P P 07 08 24.8 +0.7
baz=236,SNR=81
NEW **Newport** 87.45 36 *e*P P 07 08 24.9 +0.8
NEW pmax pmax
comp=Z,180nm,1.3s
NEW **Newport** 87.45 36 *e*P P 07 08 24.9 +0.8
comp=Z,180nm,1.4s
ANMO **Albuquerque** 87.60 51 P P 07 08 26.7 +1.3
baz=243
ANMO **Albuquerque** 87.60 51 *d i*P P 07 08 23.5 -1.8
ANMO pmax pmax
comp=Z,107nm,1.2s
ANMO **Albuquerque** 87.60 51 *e*P P 07 08 26.6 +1.3
comp=Z,118nm,1.1s
MLY **Manley** 87.68 11 *e*P P 07 08 24.0 -0.7
comp=Z,374nm,1.2s
XAN **Xi'an** 87.68 308 P P 07 08 26.8 +1.3
XAN pP pP 07 10 40.3 +5.3
XAN sP sP 07 11 36.0 +0.8
XAN S S 07 18 19.4 +1.4
XAN SS SS 07 24 28.4 +4.5
XAN pmax pmax
comp=Z,770nm,5.5s
WRH **Wood River Hil** 87.70 13 *e*P P 07 08 24.8 0.0
comp=Z,610nm,1.0s
PAF **Port-aux-Franc** 87.85 218 *e*P P 07 08 26.4 +0.4
PAF pmax pmax
comp=Z,502nm,1.6s
PAF **Port-aux-Franc** 87.85 218 *e*P P 07 08 26.4 +0.4
comp=Z,502nm,1.6s
DOT **Dot Lake** 87.87 15 *e*P P 07 08 26.0 +0.4
comp=Z,783nm,1.1s
HDA **Harding Lake** 87.88 13 *e*P P 07 08 25.7 0.0
comp=Z,366nm,0.6s
CCB **Clear Creek Bu** 87.91 13 *e*P P 07 08 25.5 -0.2
comp=Z,436nm,0.7s
UTTA **Uttaradit** 87.97 290 P P 07 08 28.5 +1.4
comp=Z,36nm,1.2s,comp=Z,391nm
GDL2 **Guadalupe Moun** 87.97 55 *e*P P 07 08 26.8 -0.2
SRDT **SRDT** 88.00 286 P P 07 08 29.3 +2.0
comp=Z,572nm,1.9s,comp=Z,12µm
DLBC **Dease Lake** 88.03 23 P P 07 08 27.7 +1.2
comp=Z,106nm,1.0s,baz=220,slow=4.7,SNR=142
DLBC PP PP 07 12 04.5 -0.5
comp=Z,17nm,1.0s,baz=202,slow=9.7,SNR=5.9
DLBC **Dease Lake** 88.03 23 *e*P P 07 08 27.3 +0.8
comp=Z,204nm,1.1s
DLBC PP PP 07 12 04.5 -0.5
MCMT **McKenzie Canyo** 88.07 40 *e*P P 07 08 29.1 +1.8
MDM **Murphy Dome** 88.10 12 *e*P P 07 08 26.5 -0.2
comp=Z,474nm,0.9s
COLA **College** 88.10 13 *e*P P 07 08 26.0 -0.6
COLA **College** 88.10 13 *e*P P 07 08 26.5 -0.1
comp=Z,592nm,0.8s
AHID **Auburn Hatcher** 88.11 43 *e*P P 07 08 28.8 +1.3
comp=Z,146nm,1.0s
IL1 **Eielson Array** 88.21 13 *e*P P 07 08 26.6 -0.5
IL1 *e*PcP PcP 07 08 26.8 -1.4
ILAR **Eielson Array** 88.21 13 P P 07 08 26.8 -0.4
comp=Z,196nm,0.9s,baz=220,slow=5.8,SNR=1100
ILAR pP pP 07 10 36.2 -0.6
comp=Z,19nm,1.2s,baz=223,slow=4.2,SNR=2.9
ILAR PP PP 07 12 09.4 +3.2
comp=Z,20nm,0.8s,baz=221,slow=7.8,SNR=8.2
ILAR PKiKP PKiKP 07 13 23.4 -0.6
comp=Z,1.7nm,0.5s,baz=254,slow=3.2,SNR=12
ILAR S SKSac 07 17 57.9 -0.6
comp=Z,0.7nm,1.1s,baz=250,slow=2.7,SNR=4.9
ILAR PKKP PKKPdf 07 26 06.5 +1.9
comp=Z,0.9nm,0.6s,baz=352,slow=2.3,SNR=10.0
ILAR PKPPKP P'P'df 07 34 12.8 -0.2
comp=Z,0.5nm,0.7s,baz=317,slow=2.1,SNR=5.8
ILB **Eielson Array** 88.21 13 *e*P P 07 08 26.8 -0.4
SNAA **Sanae** 88.22 179 P P 07 08 26.9 -0.5
comp=Z,7.2nm,0.8s,baz=194,slow=4.0,SNR=6.7
SNAA pP pP 07 10 36.8 -0.1
comp=Z,22nm,1.1s,baz=182,slow=4.2,SNR=8.2
SNAA S SKSac 07 17 58.1 -0.9
comp=Z,8.3nm,1.0s,baz=22,slow=19,SNR=25
SNAA PKKP PKKPdf 07 26 05.1 +3.4
comp=Z,3.8nm,0.6s,baz=172,slow=0.8,SNR=23
SNAA **Sanae** 88.22 179 *e*P P 07 08 26.9 -0.5
comp=Z,88nm,1.5s
SNAA pP pP 07 10 36.8 -0.1
SNAA S SKSac 07 17 58.1 -0.9
SNAA PKKP PKKPdf 07 26 05.1 +3.4
HIA **Hailar** 88.29 325 *e*P P 07 08 28.4 +0.5
HIA pmax pmax
comp=Z,135nm,1.0s
HIA **Hailar** 88.29 325 *e*P P 07 08 28.4 +0.5
comp=Z,135nm,1.0s
CLNB **Carlsbad** 88.37 55 *e*P P 07 08 30.8 +1.9
MSO **Missoula** 88.47 38 P P 07 08 29.2 +0.3
baz=238,SNR=40
MSO **Missoula** 88.47 38 *e*P P 07 08 29.3 +0.3
comp=Z,176nm,1.5s
DLMT **Dillon** 88.50 40 *e*P P 07 08 30.9 +1.7
comp=Z,366nm,1.4s
BSMT **Bassoo Peak** 88.53 37 *e*P P 07 08 30.5 +1.2
REDW **Red Top Meadow** 88.57 42 *e*P P 07 08 30.9 +1.3
comp=Z,334nm,1.1s
TPAW **Teton Pass** 88.57 42 *e*P P 07 08 31.3 +1.6
comp=Z,151nm,0.9s
S22A **4UR Ranch, Cre** 88.60 49 P P 07 08 31.6 +1.6
baz=243
S22A **4UR Ranch, Cre** 88.60 49 *e*P P 07 08 31.7 +1.6
comp=Z,130nm,1.3s
SNOW **Snow King Moun** 88.68 42 *e*P P 07 08 32.1 +2.0
comp=Z,266nm,0.9s
SUKH **Sukhothai** 88.69 289 P P 07 08 31.9 +1.5
comp=Z,63nm,1.1s,comp=Z,629nm
O20A **White River Ci** 88.72 46 P P 07 08 31.8 +1.4
baz=242
JTMT **Jette** 88.76 37 *e*P P 07 08 30.4 +0.1
MCID **Moose Creek** 88.77 42 *e*P P 07 08 32.5 +1.9
IMW **Indian Meadow** 88.78 42 *e*P P 07 08 32.1 +1.4
comp=Z,228nm,0.9s
BILL **Bilibino** 88.79 354 *d i*P P 07 08 29.7 -0.1
BILL *i* *PP pP 07 10 40.4 +0.7
BILL pmax pmax
comp=Z,72nm,0.9s
BILL **Bilibino** 88.79 354 *e*P P 07 08 30.2 +0.4
comp=Z,249nm,1.4s
SWMT **Swartz Lake** 88.80 38 *e*P P 07 08 30.5 0.0
LRM **Limekiln Ridge** 88.82 40 *e*P P 07 08 31.8 +1.0
MOOW **Moose Ponds** 88.83 42 *e*P P 07 08 32.6 +1.8
comp=Z,349nm,1.8s
LOHW **Long Hollow** 88.85 42 *e*P P 07 08 32.5 +1.6
comp=Z,101nm,0.8s
BLMT **Blacktail Moun** 88.86 37 *e*P P 07 08 30.9 +0.1
KMI **Kunming** 88.89 297 P P 07 08 32.3 +0.8
KMI pP pP 07 10 42.3 +0.9
KMI sP sP 07 11 41.1 -0.4
KMI PP PP 07 12 13.0 +0.3
KMI S S 07 18 27.8 -2.0
KMI sS sS 07 22 18.8 -2.6
KMI SS SS 07 24 43.9 +2.1
KMI pmax pmax
comp=Z,210nm,1.0s
KMI pmax pmax
comp=Z,1µm,5.1s
NVL **N'lazarevskaya** 88.89 183 *e*P P 07 08 30.6 +0.2
NVL *e**PP pP 07 10 39.7 -0.5
NVL *e*S SKSac 07 18 01.9 -0.8
NVL *e*SS SS 07 24 38.1 +0.3
UMPA **Umpang Tak** 88.91 288 P P 07 08 33.0 +1.5
comp=Z,44nm,1.1s,comp=Z,944nm
HHC **Hu-ho-hao-te** 88.92 315 *e*P P 07 08 32.0 +0.9
HHC pP pP 07 10 42.6 +1.6
HHC sP sP 07 11 41.0 -0.1
HHC PP PP 07 12 17.3 +4.8
HHC S S 07 18 24.3 -4.9
HHC pmax pmax
comp=Z,150nm,0.8s
CHMT **Chamberlain Mo** 88.92 38 *e*P P 07 08 31.6 +0.4
QLMT **Earthquake Lak** 88.94 41 *e*P P 07 08 33.4 +2.1
SLMT **Seeley Lake** 88.95 38 *e*P P 07 08 31.3 +0.1
YBMT **Yellow Bay** 88.98 37 *e*P P 07 08 31.3 +0.1
FLWY **Flagg Ranch** 89.02 42 *e*P P 07 08 33.8 +2.1
comp=Z,251nm,0.9s
VNA1 **Neumayer--Stat** 89.03 177 P P 07 08 31.6 +0.5
YHB **Horse Butte** 89.04 41 *e*P P 07 08 33.9 +2.1
comp=Z,258nm,1.2s
BW06 **Boulder Array** 89.10 43 P P 07 08 32.9 +0.8
baz=241
BW06 **Boulder Array** 89.10 43 *e*P P 07 08 33.5 +1.3
PD31 **Pinedale Array** 89.10 43 *e*P P 07 08 33.5 +1.4
PDAR **Pinedale Array** 89.10 43 P P 07 08 32.9 +0.8
comp=Z,95nm,0.6s,baz=209,slow=3.0,SNR=32
PDAR pP pP 07 10 42.7 +0.6
comp=Z,1.3nm,0.8s,baz=63,slow=44,SNR=2.2
PDAR PP PP 07 12 10.6 -3.4
comp=Z,7.2nm,1.1s,baz=235,slow=3.2,SNR=4.1
PDAR PKKP PKKPdf 07 26 01.5 -0.9
comp=Z,0.6nm,0.6s,baz=79,slow=4.7,SNR=3.5
PDAR PKKPbc PKKPbc 07 26 07.0 -0.3
comp=Z,2.6nm,0.7s,baz=77,slow=3.9,SNR=19
PDAR PKPPKP P'P'df 07 34 12.7 -0.8
comp=Z,0.7nm,0.8s,baz=74,slow=7.9,SNR=3.7
YFT **Old Faithful** 89.12 41 *e*P P 07 08 35.3 +3.2
comp=Z,148nm,0.9s
YMR **Madison River** 89.14 41 *e*P P 07 08 34.8 +2.5
comp=Z,164nm,0.9s
SMCO **Snowmass** 89.15 47 *e*P P 07 08 34.3 +1.7
comp=Z,74nm,0.8s
LCCM **Lewis and Clar** 89.18 40 *e*P P 07 08 33.2 +0.9
BOZ **Bozeman (W)** 89.23 40 P P 07 08 33.7 +1.2
baz=240
BOZ **Bozeman (W)** 89.23 40 *e*P P 07 08 33.8 +1.2
BOZ pmax pmax
comp=Z,150nm,1.0s
BOZ **Bozeman (W)** 89.23 40 *e*P P 07 08 33.8 +1.2
comp=Z,155nm,1.0s
H17A **Grant Village** 89.25 42 P P 07 08 35.3 +2.5
baz=240
H17A **Grant Village** 89.25 42 *e*P P 07 08 35.8 +3.0
comp=Z,134nm,0.8s
YHH **Holmes Hill** 89.28 41 *e*P P 07 08 35.2 +2.2
comp=Z,337nm,1.7s
DAWY **Dawson** 89.38 16 *e*P P 07 08 33.5 +0.8
comp=Z,356nm,1.0s
LKWY **Lake** 89.44 42 *e*P P 07 08 36.5 +2.8
LKWY pmax pmax
comp=Z,130nm,0.9s
LKWY **Lake** 89.44 42 *e*P P 07 08 36.5 +2.8
comp=Z,126nm,0.9s
EGAK **Eagle** 89.52 15 *e*P P 07 08 33.9 +0.7
comp=Z,358nm,1.0s
SDCO **Great Sand Dun** 89.54 49 P P 07 08 35.4 +1.0
baz=244
SDCO **Great Sand Dun** 89.54 49 *e*P P 07 08 36.2 +1.8
comp=Z,46nm,0.9s
CM01 **Chiang Mai Arr** 89.63 290 *e*P P 07 08 36.7 +1.9
HRY **Holter Researc** 89.65 39 *e*P P 07 08 35.7 +1.3
CM31 **Chiang Mai Arr** 89.66 290 *e*P P 07 08 36.7 +1.8
CMAR **Chiang Mai Arr** 89.66 290 P P 07 08 36.5 +1.6
comp=Z,115nm,0.9s,baz=117,slow=3.0,SNR=310
CMAR PP PP 07 12 19.3 +0.8
comp=Z,2.7nm,0.7s,baz=103,slow=4.0,SNR=2.7
CMAR PKKPbc PKKPbc 07 26 05.5 +0.8
comp=Z,4.2nm,0.6s,baz=282,slow=4.2,SNR=11
CMAR SKKPbc SKKPbc 07 28 47.6 +0.5
comp=Z,1.8nm,0.8s,baz=282,slow=4.8,SNR=4.8
CMAR **Chiang Mai Arr** 89.66 290 P P 07 08 36.5 +1.6
CMAR 07 12 19.3
CMAR pmax pmax
comp=Z,120nm,0.9s
WALA **Waterton Lakes** 89.67 36 *e*P P 07 08 35.5 +1.0
comp=Z,111nm,0.8s
PLCA **Paso Flores** 89.71 134 P P 07 08 37.0 +2.0
comp=Z,22nm,1.0s,baz=256,slow=4.5,SNR=16
PLCA PKKPbc PKKPbc 07 26 04.8 -0.5
comp=Z,8.3nm,0.9s,baz=81,slow=4.1,SNR=8.6
PLCA **Paso Flores** 89.71 134 *e*P P 07 08 37.1 +2.1
PLCA pmax pmax
comp=Z,52nm,1.1s
PLCA **Paso Flores** 89.71 134 *e*P P 07 08 37.1 +2.1
comp=Z,52nm,1.1s
PLCA PKKPbc PKKPbc 07 26 04.8 -0.5
COLD **Coldfoot** 89.76 11 *e*P P 07 08 35.1 +0.8
comp=Z,219nm,1.0s
CMMT **Chiang Mai** 89.78 290 P P 07 08 36.5 +1.0
comp=Z,286nm,1.2s,comp=Z,3µm
CHTO **Chiang Mai** 89.78 290 P P 07 08 36.6 +1.1
comp=Z,1µm,1.1s,comp=Z,14µm
CHTO **Chiang Mai** 89.78 290 *e*P P 07 08 36.7 +1.2
CHTO pmax pmax
comp=Z,580nm,1.5s
CHTO **Chiang Mai** 89.78 290 P P 07 08 36.8 +1.2
SNR=49
CHTO **Chiang Mai** 89.78 290 P P 07 08 36.8 +1.2
SNR=49
CHTO **Chiang Mai** 89.78 290 *e*P P 07 08 36.7 +1.2
comp=Z,577nm,1.5s
832A **Faith Ranch, C** 89.83 60 P P 07 08 36.6 +1.1
baz=247,SNR=81
BTO **Baotou** 89.84 314 *e*P P 07 08 36.4 +1.0
MSTX **Muleshoe** 89.93 54 P P 07 08 36.9 +0.9
baz=245
MSTX **Muleshoe** 89.93 54 *e*P P 07 08 37.0 +0.9
comp=Z,111nm,0.8s
T25A **Trinidad** 90.06 50 P P 07 08 37.5 +0.9
baz=244
T25A **Trinidad** 90.06 50 *e*P P 07 08 38.8 +2.2
comp=Z,63nm,0.9s
CMAI **Chiengmai2** 90.10 291 P P 07 08 38.3 +1.1
FYU **Fort Yukon** 90.11 13 *e*P P 07 08 35.8 -0.1
comp=Z,82nm,1.1s
933A **Laredo** 90.14 61 P P 07 08 38.5 +1.5
baz=247,SNR=31
CMBY **CAMPBELL BAY** 90.19 277 *e*P P 07 08 35.3 -2.2
CLNS **Chul'man** 90.26 333 *e*P P 07 08 36.5 -0.4
CLNS pmax pmax
comp=Z,63nm,0.9s
CLNS pmax pmax
comp=N,31nm,1.2s
CLNS pmax pmax
comp=E,23nm,0.9s
833A **Chaparral WMA,** 90.32 60 P P 07 08 38.9 +1.1
baz=247,SNR=33
Q24A **Divide** 90.32 48 P P 07 08 39.0 +1.0
baz=244
CD2 **Chengdu** 90.33 303 P P 07 08 38.8 +0.9
CD2 pP pP 07 10 48.3 +0.2
CD2 PP PP 07 12 24.0 +0.4
CD2 SKS SKSac 07 18 12.5 +0.2
CD2 S ScS 07 18 43.1 -1.1
CD2 sS sS 07 22 35.5 +0.7
CD2 SS SS 07 25 03.5 +1.6
ISCO **Idaho Springs** 90.37 47 P P 07 08 39.6 +1.4
baz=244
034A **Hebbronville** 90.42 61 P P 07 08 40.5 +2.3
baz=247,SNR=35
RLMT **Red Lodge** 90.42 41 P P 07 08 38.7 +0.6
baz=241
RLMT **Red Lodge** 90.42 41 *e*P P 07 08 38.9 +0.8
comp=E,69nm,0.9s
GCMT **Greycliff** 90.50 41 *e*P P 07 08 39.9 +1.6
733A **Divot King Ran** 90.55 60 P P 07 08 40.0 +1.2
baz=247,SNR=32
N23A **Red Feather La** 90.63 46 P P 07 08 40.7 +1.4
baz=244
035Z **Hargill** 90.70 62 P P 07 08 41.1 +1.6
baz=248,SNR=7.1
934A **Benavides** 90.76 61 P P 07 08 42.0 +2.2
baz=248,SNR=23
JCT **Junction City** 90.83 58 P P 07 08 40.8 +0.6
baz=247,SNR=38
JCT **Junction City** 90.83 58 *e*P P 07 08 40.7 +0.6

JCT pmax pmax
comp=Z,59nm,0.8s
JCT Junction City 90.83 58 *e*P **P 07 08 40.7 +0.6**
comp=Z,59nm,0.8s
035A Encino 90.85 62 P **P 07 08 42.5 +2.3**
baz=248,SNR=19
834A Tilden 90.93 60 P **P 07 08 42.5 +1.9**
baz=248,SNR=26
633A Saathoff Ranch 90.93 59 P **P 07 08 42.2 +1.6**
baz=247,SNR=54
K22A Casper 91.03 45 P **P 07 08 41.8 +0.8**
baz=243
AMTX Amarillo 91.12 53 P **P 07 08 42.2 +0.7**
baz=246
AMTX Amarillo 91.12 53 *e*P **P 07 08 42.6 +1.1**
comp=Z,39nm,0.8s
PHWY Pilot Hill 91.14 46 *e*P **P 07 08 43.2 +1.6**
comp=Z,65nm,0.8s
734A La Parita Cree 91.20 60 P **P 07 08 43.2 +1.4**
baz=248,SNR=11
533A Kerrville 91.28 58 P **P 07 08 43.4 +1.1**
baz=247,SNR=54
EFI East Falkland 91.48 147 *e*P **P 07 08 44.0 +1.3**
EFI pmax pmax
comp=Z,279nm,1.6s
EFI East Falkland 91.48 147 *e*P **P 07 08 44.0 +1.3**
comp=Z,279nm,1.6s
433A Art 91.50 58 P **P 07 08 44.0 +0.8**
baz=247,SNR=126
EGMT Eagleton 91.52 39 P **P 07 08 43.9 +0.9**
baz=241,SNR=22
EGMT Eagleton 91.52 39 *e*P **P 07 08 44.3 +1.3**
comp=Z,178nm,1.5s
634A China Grove, S 91.57 59 P **P 07 08 45.0 +1.5**
baz=248,SNR=8.4
835A Beeville 91.58 61 P **P 07 08 45.8 +2.3**
baz=248,SNR=9.3
534A Blanco 91.71 59 P **P 07 08 45.3 +1.1**
baz=248,SNR=180
YAK Yakutsk 91.77 338 *d i*P **P 07 08 42.8 -0.8**
YAK *e**PP **pP 07 10 56.6 +2.6**
YAK *e* 07 12 29.0
YAK *e*S **SKSac 07 18 15.3 -3.4**
YAK *e* 07 18 56.3
YAK *e*SS **SS 07 25 29.9 +9.1**
YAK pmax pmax
comp=Z,330nm,1.0s
YAK pmax pmax
comp=E,92nm,1.5s
YAK pmax pmax
comp=N,81nm,1.5s
YAK pmax pmax
comp=Z,282nm,2.0s
YAK pmax pmax
comp=E,193nm,2.4s
YAK pmax pmax
comp=N,198nm,1.8s
YAK smax smax
comp=E,139nm,1.7s
YAK smax smax
comp=N,621nm,3.0s
YAK Yakutsk 91.77 338 *e*P **P 07 08 43.7 +0.1**
comp=N,309nm,0.8s
ABTX Abilene, Hawle 91.79 56 P **P 07 08 45.3 +0.8**
baz=247,SNR=28
ABTX Abilene, Hawle 91.79 56 *e*P **P 07 08 45.4 +0.8**
comp=N,113nm,1.0s
333A Richland Sprin 91.80 57 P **P 07 08 45.3 +0.7**
baz=247,SNR=25
735A Kenedy 91.81 60 P **P 07 08 46.5 +1.9**
baz=248,SNR=18
635A Leesville 92.04 60 P **P 07 08 47.2 +1.6**
baz=248,SNR=18
KSCO Kaye Shedlock' 92.12 49 P **P 07 08 47.3 +1.3**
baz=246
KSCO Kaye Shedlock' 92.12 49 *e*P **P 07 08 47.3 +1.3**
comp=N,173nm,1.0s
233A Rising Star 92.14 57 P **P 07 08 47.0 +0.8**
baz=247,SNR=31
EDM Edmonton 92.17 33 *e*P **P 07 08 46.1 +0.3**
EDM Edmonton 92.17 33 *e*P **P 07 08 46.1 +0.3**
comp=N,324nm,1.4s
434A Burnet 92.18 58 P **P 07 08 47.1 +0.7**
baz=248,SNR=50
LZH Lanzhou 92.32 308 ⇓P **P 07 08 48.3 +1.3**
LZH pP pP 07 11 02.0 +4.5
LZH sP sP 07 11 59.5 +2.2
LZH PP **PP 07 12 41.0 +2.0**
LZH SKS **SKSac 07 18 23.0 -0.4**
LZH S **ScS 07 19 01.3 +0.5**
LZH sS sS 07 22 51.0 -2.7
LZH SS **SS 07 25 33.0 +2.9**
LZH pmax pmax
comp=N,320nm,1.4s
LZH pmax pmax
comp=N,880nm,5.7s
133A Hamilton Ranch 92.35 56 P **P 07 08 47.9 +0.9**
baz=247,SNR=34
334A Lometa 92.40 58 P **P 07 08 48.2 +0.8**
baz=248,SNR=68
535A Dale 92.44 59 P **P 07 08 48.7 +1.2**
baz=248,SNR=14
736A Circle Diamond 92.45 60 P **P 07 08 49.8 +2.2**
baz=248,SNR=7.7
636A Smothers Creek 92.65 60 P **P 07 08 50.3 +1.9**
baz=248,SNR=18
435B Jarrell 92.71 58 P **P 07 08 49.6 +0.9**
baz=248,SNR=5.8
Z33A Whitaker Ranch 92.72 56 P **P 07 08 49.5 +0.7**
baz=248,SNR=30
234A Clairette 92.73 57 P **P 07 08 49.7 +0.8**
baz=248,SNR=27
X32A Elmer 92.76 54 P **P 07 08 49.2 +0.3**
baz=247,SNR=36
536A Bastrop 92.86 59 P **P 07 08 50.8 +1.3**
baz=248,SNR=7.9
134A White-Moore Ra 92.99 56 P **P 07 08 50.8 +0.8**
baz=248,SNR=19
335A Moody 93.02 58 P **P 07 08 50.8 +0.7**
baz=248,SNR=9.1
LAO LASA Array 93.03 41 P **P 07 08 51.6 +1.8**
baz=244,SNR=17
LAO LASA Array 93.03 41 *e*P **P 07 08 51.7 +1.8**
comp=N,91nm,0.8s
W32A Sentinel 93.06 54 P **P 07 08 51.1 +0.8**
baz=247,SNR=29
CIT Chita 93.09 325 *e*P **P 07 08 50.2 +0.2**
CIT pmax pmax
comp=Z,164nm,1.5s
Y33A Hilltop Ranch, 93.11 55 P **P 07 08 51.0 +0.5**
baz=248,SNR=14
DGPR DIGLIPUR 93.22 283 *e*P **P 07 08 51.9 +0.5**
637A Eagle Lake 93.22 60 P **P 07 08 52.8 +1.8**
baz=249,SNR=6.8
WHTX Lake Whitney, 93.26 57 P **P 07 08 51.7 +0.5**
baz=248,SNR=6.5
WHTX Lake Whitney, 93.26 57 *e*P **P 07 08 52.1 +0.9**
comp=Z,30nm,0.8s
WMOK Wichita Mounta 93.26 54 P **P 07 08 51.3 0.0**
baz=248,SNR=9.0
WMOK Wichita Mounta 93.26 54 *e*P **P 07 08 51.4 +0.2**
WMOK pmax pmax
comp=Z,7.0nm,1.0s
WMOK Wichita Mounta 93.26 54 *e*P **P 07 08 51.4 +0.2**
comp=Z,7.2nm,0.9s
RSSD Black Hills 93.30 44 P **P 07 08 51.9 +0.5**
baz=245
RSSD Black Hills 93.30 44 *e*P **P 07 08 52.3 +0.9**
RSSD pmax pmax
comp=Z,55nm,1.0s
RSSD Black Hills 93.30 44 *e*P **P 07 08 52.3 +0.9**
comp=Z,55nm,0.9s
OGNE Ogallala 93.33 48 P **P 07 08 52.1 +0.7**
baz=246
OGNE Ogallala 93.33 48 *e*P **P 07 08 52.6 +1.1**
comp=Z,246nm,1.8s
436A Wall Ranch, Ga 93.34 59 P **P 07 08 52.8 +1.2**
baz=248,SNR=5.3
X33A Lawton 93.40 55 P **P 07 08 51.9 +0.1**
baz=248,SNR=8.8
Z34A Collier Ranch, 93.41 56 P **P 07 08 52.3 +0.4**
baz=248
V32A Arapaho 93.44 53 P **P 07 08 53.1 +1.1**
baz=248,SNR=5.4
135A Vickery Place, 93.51 57 P **P 07 08 53.0 +0.7**
baz=248,SNR=5.3
336A Riesel 93.52 58 P **P 07 08 53.1 +0.7**
baz=248,SNR=6.6
W33A Caddo, Fort Co 93.66 54 P **P 07 08 54.1 +1.2**
baz=248,SNR=15
U32A Winter Ranch, 93.72 53 P **P 07 08 53.7 +0.5**
baz=248
Y34A Reagan Ranch, 93.75 55 P **P 07 08 53.8 +0.4**
baz=248,SNR=6.3
H25A Fruitdale 93.80 44 P **P 07 08 54.2 +0.8**
baz=245
437A Phantom Ranch, 93.89 59 P **P 07 08 55.1 +1.0**
baz=249
Z35A Perchaven, San 93.91 56 P **P 07 08 54.8 +0.6**
baz=248,SNR=6.5
X34A Smith Ranch, M 93.94 55 P **P 07 08 55.5 +1.2**
baz=248,SNR=19
638A Rosharon 93.94 60 P **P 07 08 55.6 +1.2**
baz=249
V33A Lossen Ranch, 94.05 53 P **P 07 08 55.1 +0.3**
baz=248,SNR=9.6
T32A Huddler Ranch, 94.08 52 P **P 07 08 55.5 +0.6**
baz=248,SNR=7.5
CBKS Cedar Bluff 94.11 50 P **P 07 08 55.5 +0.5**
baz=247
CBKS Cedar Bluff 94.11 50 *e*P **P 07 08 55.7 +0.7**
CBKS Cedar Bluff 94.11 50 *e*P **P 07 08 55.7 +0.7**
136A Ennis 94.17 57 P **P 07 08 55.9 +0.6**
baz=249,SNR=8.8
538A Harpers Horsep 94.19 59 P **P 07 08 57.0 +1.5**
baz=249
INK Inuvik 94.19 15 P **P 07 08 54.4 -0.2**
comp=Z,102nm,1.1s,baz=228,slow=4.1,SNR=102
INK PP **PP 07 12 49.7 -2.7**
comp=Z,30nm,1.1s,baz=212,slow=9.6,SNR=7.6
INK PKKPbc **PKKPdf 07 25 51.9 -1.9**
comp=Z,1.4nm,0.6s,baz=317,slow=2.7,SNR=5.2
INK Inuvik 94.19 15 *e*P **P 07 08 54.4 -0.2**
comp=Z,182nm,1.3s
INK PP **PP 07 12 49.7 -2.7**
INK PKKPbc **PKKPdf 07 25 51.9 -1.9**
W34A Bridge Creek, 94.22 54 P **P 07 08 56.2 +0.7**
baz=248
W34A Bridge Creek, 94.22 54 *e*P **P 07 08 56.4 +0.8**
comp=Z,44nm,1.3s
337A Centerville 94.26 58 P **P 07 08 57.1 +1.4**
baz=249
S32A Newby Ranch, P 94.27 51 P **P 07 08 56.5 +0.8**
baz=248,SNR=9.4
Y35A Marietta 94.29 56 P **P 07 08 56.5 +0.6**
baz=248
438A Sam Houston St 94.39 59 P **P 07 08 58.1 +1.7**
baz=249,SNR=5.3
U33A Lingo Farm, Me 94.40 53 P **P 07 08 56.8 +0.5**
baz=248
X35A Drake 94.52 55 P **P 07 08 57.2 +0.3**
baz=249,SNR=8.2
Z36A Blue Ridge 94.53 56 P **P 07 08 57.8 +0.8**
baz=249,SNR=8.1
T33A Patterson Ranc 94.55 52 P **P 07 08 57.5 +0.5**
baz=248
237A Washetta, Mont 94.57 58 P **P 07 08 58.2 +1.1**
baz=249
V34A Guthrie 94.63 54 P **P 07 08 57.6 +0.3**
baz=248
V34A Guthrie 94.63 54 *e*P **P 07 08 58.0 +0.7**
comp=Z,12nm,0.8s
R32A Long Quarter, 94.70 51 P **P 07 08 58.3 +0.6**
baz=248,SNR=37
137A Heron Place, G 94.82 57 P **P 07 08 59.8 +1.5**
baz=249
U34A Anderson Ranch 94.84 53 P **P 07 08 58.6 +0.3**
baz=248,SNR=8.2
U34A Anderson Ranch 94.84 53 *e*P **P 07 08 59.1 +0.8**
comp=Z,29nm,0.8s
W35A Tecumseh 94.87 54 P **P 07 08 59.1 +0.6**
baz=249,SNR=14
Y36A Durant 94.87 56 P **P 07 08 59.3 +0.8**
baz=249,SNR=19
O31A Woolen Ranch, 94.92 49 P **P 07 08 59.5 +0.9**
baz=248,SNR=6.2
S33A Kaszmaul Farm, 94.92 52 P **P 07 08 59.5 +0.8**
baz=248
439A Center Grove, 94.98 59 P **P 07 08 59.4 +0.4**
baz=249
Q32A Meitler Ranch, 95.03 50 P **P 07 08 60.0 +0.8**
baz=248,SNR=15
DGMT Dagmar 95.04 40 P **P 07 09 00.1 +1.2**
baz=245,SNR=21
DGMT Dagmar 95.04 40 *e*P **P 07 09 00.2 +1.2**
comp=Z,147nm,0.9s
X36A Centrahoma 95.06 55 P **P 07 08 59.7 +0.3**
baz=249,SNR=8.2
238A Jacksonville 95.12 58 P **P 07 09 00.7 +1.1**
baz=249
V35A Meyer Ranch, C 95.12 54 P **P 07 08 59.5 -0.1**
baz=249
Z37A Pogue Cattle C 95.14 57 P **P 07 09 00.4 +0.7**
baz=249
R33A Olander Ranch, 95.19 51 P **P 07 09 00.8 +0.9**
baz=248,SNR=17
P32A Huiting Farm, 95.23 50 P **P 07 09 00.7 +0.7**
baz=248,SNR=7.8
C25A Freed Ranch, W 95.30 41 P **P 07 09 01.4 +1.3**
baz=246
T34A McClaskey Farm 95.31 53 P **P 07 09 01.0 +0.6**
baz=249,SNR=7.0
SONA1 Songino Array 95.33 319 *e*P **P 07 09 00.3 -0.1**
SONM Songino Array 95.33 319 P **P 07 09 00.0 -0.4**
comp=Z,11nm,0.6s,baz=134,slow=3.3,SNR=43
SONM PP **PP 07 13 00.5 -1.3**
comp=Z,12nm,1.1s,baz=114,slow=5.8,SNR=5.8
SONM PKiKP **PKiKP 07 13 36.7 -0.2**
comp=Z,1.9nm,0.6s,baz=143,slow=3.6,SNR=2.5
SONM S **SKSac 07 18 38.2 -0.6**
comp=Z,0.9nm,0.6s,baz=35,slow=3.5,SNR=3.7
SONM PKKPbc **PKKPdf 07 25 50.5 -0.8**
comp=Z,1.9nm,0.6s,baz=235,slow=3.9,SNR=5.3
339A Huntington 95.33 59 P **P 07 09 01.6 +0.9**
baz=250
W36A Wetumka 95.36 55 P **P 07 09 01.0 +0.3**
baz=248,SNR=8.2
138A Matatall Enter 95.37 57 P **P 07 09 01.4 +0.6**
baz=249
NATX Nacogdoches 95.40 58 *e*P **P 07 09 01.6 +0.7**
comp=Z,31nm,1.1s
540A Vidor 95.41 60 P **P 07 09 01.7 +0.7**
baz=250
Y37A Hugo 95.42 56 P **P 07 09 01.7 +0.7**
baz=249,SNR=11
N31A Bailey Ranch, 95.43 49 P **P 07 09 01.7 +0.8**
baz=248
D26A Manning 95.53 42 P **P 07 09 02.2 +1.0**
baz=246,SNR=14
Q33A Connelly Farm, 95.56 51 P **P 07 09 02.3 +0.8**
baz=248,SNR=21
B25A Knox Farm, Ray 95.58 40 P **P 07 09 02.7 +1.3**
baz=246,SNR=5.8
M31A Lambtecht Ranc 95.61 48 P **P 07 09 03.0 +1.3**
baz=248,SNR=14
S34A Willow Spring 95.61 52 P **P 07 09 02.2 +0.5**
baz=249,SNR=8.3
K30A Basset 95.67 47 P **P 07 09 03.0 +1.0**
baz=248,SNR=8.8
O32A Brockman Farm, 95.70 49 P **P 07 09 02.6 +0.5**
baz=248,SNR=7.5
BOD Bodaibo 95.71 330 *e*P **P 07 09 00.0 -1.7**
BOD *e*S **SKSac 07 18 35.6 -4.4**
BOD pmax pmax
comp=Z,49nm,1.8s
R34A Isabella, Hill 95.73 51 P **P 07 09 02.8 +0.5**
baz=249,SNR=17
T35A Sooner Cattle 95.78 53 P **P 07 09 03.0 +0.4**
baz=249,SNR=12
V36A Jenks 95.81 54 P **P 07 09 03.1 +0.4**
baz=249
P33A Williams Farm, 95.82 50 P **P 07 09 03.3 +0.7**
baz=249
X37A Clayton 95.82 55 P **P 07 09 03.0 +0.2**
baz=250,SNR=8.8
N32A Stulken Farm, 95.87 49 P **P 07 09 03.7 +0.8**
baz=248
A25A Svangstu Ranch 95.89 40 P **P 07 09 03.9 +1.2**
baz=246,SNR=7.4
340A Bronson 95.90 59 P **P 07 09 04.0 +0.8**
baz=250
TUL1 Leonard 95.97 54 Pdiff **P 07 09 03.8 +0.4**
baz=249
TUL1 Leonard 95.97 54 *e*P **P 07 09 04.2 +0.8**
comp=Z,12nm,0.8s
W37B Quinton 95.97 55 Pdiff **P 07 09 03.9 +0.4**
baz=250
J30A Dallas 96.00 46 Pdiff **P 07 09 04.0 +0.6**
baz=248
L31A Butterfield Fa 96.02 47 Pdiff **P 07 09 04.4 +0.9**
baz=248
Y38A Idabel 96.09 56 Pdiff **P 07 09 04.2 +0.2**
baz=250
O33A Hebron 96.13 50 Pdiff **P 07 09 05.0 +0.9**
baz=249
Q34A Chapman 96.18 51 Pdiff **P 07 09 05.0 +0.7**
baz=249
U36A Oologah 96.18 54 Pdiff **P 07 09 04.9 +0.6**
baz=249
B26A Jensen Ranch, 96.19 41 Pdiff **P 07 09 05.3 +1.2**
baz=246
S35A Piter Creek Ra 96.19 52 Pdiff **P 07 09 04.9 +0.5**
baz=249
BGNE Belgrade 96.21 48 Pdiff **P 07 09 05.3 +0.9**
baz=248
BGNE Belgrade 96.21 48 *e*P **P 07 09 06.2 +1.8**
comp=Z,180nm,0.9s
441A DeRidder 96.23 60 Pdiff **P 07 09 05.5 +0.8**
baz=250
K31A O'Neill 96.24 47 Pdiff **P 07 09 05.4 +0.9**
baz=248
X38A Whitesboro 96.27 55 Pdiff **P 07 09 05.4 +0.6**
baz=250
Z39A Irene McRaven, 96.29 57 Pdiff **P 07 09 05.7 +0.8**
baz=250
T36A Boggs Farm, Ca 96.30 53 Pdiff **P 07 09 05.5 +0.7**
baz=249
341A Kurthwood 96.45 59 Pdiff **P 07 09 06.6 +1.0**
baz=250
V37A Hulbert 96.45 54 Pdiff **P 07 09 06.0 +0.4**
baz=250
KSU1 Kansas State U 96.48 51 Pdiff **P 07 09 06.8 +1.2**
baz=249
KSU1 Kansas State U 96.48 51 *e*P **P 07 09 06.9 +1.2**
comp=Z,50nm,0.7s
P34A Walnut Farm, R 96.48 50 Pdiff **P 07 09 06.5 +0.8**
baz=249
J31A Geddes 96.50 46 Pdiff **P 07 09 06.0 +0.4**
baz=248
YKA Yellowknife Ar 96.50 25 P **P 07 09 05.2 +0.1**
comp=Z,18nm,0.7s,baz=243,slow=4.5,SNR=178
YKA PP **PP 07 13 06.8 -3.3**
comp=Z,2.4nm,0.8s,baz=243,slow=7.6,SNR=4.5
YKA PKiKP **PKiKP 07 13 37.7 -0.6**
comp=Z,2.0nm,0.6s,baz=268,slow=1.4,SNR=8.6
YKA PKKPbc **PKKPbc 07 25 46.1 -2.4**
comp=Z,1.2nm,0.6s,baz=40,slow=2.4,SNR=15
YKA SKKPbc SKKPbc 07 28 34.8 +0.6
comp=Z,2.0nm,1.1s,baz=51,slow=4.8,SNR=5.3
YKA PKPPKP **P'P'df 07 33 60.0 +2.0**
comp=Z,0.7nm,0.8s,baz=76,slow=3.2,SNR=5.5
YKA Yellowknife Ar 96.50 25 P **P 07 09 05.2 +0.1**
YKA 07 13 06.8
YKA pmax pmax
comp=Z,15nm,0.6s
A26A Wade Farm, Ken 96.52 40 Pdiff **P 07 09 06.5 +0.9**
baz=247
GTA Gaotai 96.52 309 ⇓P **P 07 09 06.3 +0.3**
GTA pP pP 07 11 22.9 +6.1
GTA sP sP 07 12 17.0 +0.5
GTA PP **PP 07 13 13.1 +2.1**
GTA SKS **SKSac 07 18 43.8 -1.6**
GTA S **S 07 19 32.9 -2.7**
GTA sS sS 07 23 26.6 -4.8
GTA SS **SS 07 26 28.4 -0.4**
GTA pmax pmax
comp=Z,470nm,6.7s
L32A Elgin 96.53 48 Pdiff **P 07 09 06.6 +0.8**
baz=249
140A Cam and Jess, 96.56 58 Pdiff **P 07 09 06.8 +0.7**
baz=250
Y39A Lockesburg 96.59 56 Pdiff **P 07 09 07.1 +0.9**
baz=250
W38A Poteau 96.65 55 Pdiff **P 07 09 06.7 +0.2**
baz=250
U37A Salina 96.65 54 Pdiff **P 07 09 07.0 +0.5**
baz=250
F29A Eureka 96.72 44 Pdiff **P 07 09 06.9 +0.3**
baz=248
S36A Lake Cedric, C 96.75 52 Pdiff **P 07 09 07.4 +0.6**
baz=250
X39A Fountain Ranch 96.77 56 Pdiff **P 07 09 07.6 +0.6**
baz=250
SUSD Miller 96.78 45 Pdiff **P 07 09 06.9 +0.1**
baz=248
K32A Verdigre 96.79 47 Pdiff **P 07 09 07.1 +0.1**
baz=249
O34A Beatrice 96.80 50 Pdiff **P 07 09 07.8 +0.7**
baz=249
Q35A Mercer Eighty, 96.81 51 Pdiff **P 07 09 07.7 +0.6**
baz=250
I31A Royce, Wessing 96.91 46 Pdiff **P 07 09 07.6 +0.2**
baz=249
M33A Taylor Creek F 96.94 48 Pdiff **P 07 09 08.3 +0.7**
baz=249
V38A Canehill 97.00 54 Pdiff Pdif 07 09 08.4 +0.3
baz=250
R36A Gordon, Harris 97.02 52 Pdiff **P 07 09 08.8 +0.8**
baz=250
T37A Chenevyille 18 97.05 53 Pdiff **P 07 09 08.6 +0.4**
baz=250
P35A Duane Minner, 97.06 51 Pdiff **P 07 09 09.2 +1.0**
baz=250
543A St. Martinvill 97.10 61 Pdiff **P 07 09 09.0 +0.4**
baz=251
H31A Wolsey 97.11 45 Pdiff **P 07 09 08.6 +0.3**
baz=249
J32A Parkston 97.13 46 Pdiff Pdif 07 09 08.2 -0.2
baz=249
N34A Lincoln 97.17 49 Pdiff **P 07 09 09.6 +0.9**
baz=250
MIAR Mount Ida 97.20 56 Pdiff **P 07 09 09.5 +0.6**
baz=250
MIAR Mount Ida 97.20 56 *e*P **P 07 09 10.8 +1.8**
MIAR Mount Ida 97.20 56 *e*P **P 07 09 10.8 +1.8**
comp=Z,5.7nm,0.9s
U38A Gravette 97.22 54 Pdiff **P 07 09 09.6 +0.6**
baz=250
F30A Leola 97.24 44 Pdiff **P 07 09 09.4 +0.5**
baz=248
Y40A Okolona 97.25 57 Pdiff **P 07 09 09.8 +0.6**
baz=250
W39A Magazine 97.26 55 Pdiff **P 07 09 09.8 +0.6**
baz=250
Q36A Arnold C. Orve 97.27 51 Pdiff **P 07 09 09.7 +0.5**
baz=250
WLAR White Oak Lake 97.28 57 *e*P **P 07 09 10.6 +1.3**
S37A Fort Scott 97.33 53 Pdiff **P 07 09 10.1 +0.7**
baz=250
M34A Aspy Farms, Fr 97.34 49 Pdiff **P 07 09 10.1 +0.7**
baz=250
T38A Diamond 97.49 53 Pdiff **P 07 09 10.6 +0.4**
baz=250
HHAR Hobbs 97.50 54 *e*Pdif **P 07 09 10.7 +0.4**
G31A Conde 97.56 45 Pdiff **P 07 09 10.7 +0.4**
baz=249
V39A Pettigrew 97.58 55 Pdiff **P 07 09 11.0 +0.3**
baz=251
MDND Maddock 97.62 42 Pdiff **P 07 09 10.9 +0.4**
baz=248
MDND Maddock 97.62 42 *e*Pdif **P 07 09 11.2 +0.7**
comp=Z,66nm,1.0s
I32A Karley and Nic 97.62 46 Pdiff **P 07 09 10.9 +0.2**
baz=249
P36A Good Intent, A 97.68 51 Pdiff **P 07 09 11.2 +0.2**
baz=250
J33A Davis 97.71 47 Pdiff **P 07 09 11.4 +0.3**
baz=250
F31A Hecla 97.75 44 Pdiff Pdif 07 09 11.2 +0.1
baz=249
N35A Tabor 97.79 49 Pdiff **P 07 09 12.3 +0.9**
baz=250
W40A Ferguson Farm, 97.81 55 Pdiff **P 07 09 12.0 +0.4**
baz=251
H32A Carlson Farm, 97.81 46 Pdiff **P 07 09 11.7 +0.2**
baz=249
U39A Green Forest 97.88 54 Pdiff **P 07 09 12.1 +0.1**
baz=251
M35A Neola 97.96 49 Pdiff **P 07 09 12.8 +0.6**
baz=250
S38A Stockton 97.97 53 Pdiff **P 07 09 12.5 +0.1**
baz=251
O36A Bolckow 98.03 50 Pdiff **P 07 09 13.3 +0.8**

baz=250
G32A Webster 98.03 45 Pdiff Pdif 07 09 12.4 0.0
baz=249
I33A Coleman 98.08 46 Pdiff **P** **07 09 12.9 +0.2**
baz=250
K34A Le Mars 98.09 48 Pdiff **P** **07 09 12.9 +0.1**
baz=250
ECSD EROS Data Cent 98.10 46 Pdiff **P** **07 09 12.9 +0.1**
baz=250
ECSD EROS Data Cent 98.10 46 *e*Pdif **P** **07 09 12.9 +0.1**
comp=Z,26nm,1.0s
R38A Fenwick Farm, 98.16 52 Pdiff **P** **07 09 13.3 +0.2**
baz=251
T39A Clever 98.17 54 Pdiff **P** **07 09 13.6 +0.4**
baz=251
V40A Witts Springs 98.20 55 Pdiff **P** **07 09 13.6 +0.2**
baz=251
ZAK Zakamensk 98.21 321 *e*P Pdif 07 09 10.9 -2.3
ZAK pmax pmax
comp=Z,17nm,1.8s
SHL Shillong 98.23 294 *e*P Pdif 07 09 13.6 -0.4
UALR University of 98.24 56 *e*Pdif **P** **07 09 14.8 +1.2**
comp=Z,9.5nm,0.8s
E31A Nome 98.24 43 Pdiff Pdif 07 09 13.2 0.0
baz=249
N36A Muff Farm, Cla 98.26 50 Pdiff **P** **07 09 14.2 +0.6**
baz=250
L35A Bielow Farm, R 98.28 48 Pdiff **P** **07 09 14.1 +0.4**
baz=250
P37A Lathrop 98.30 51 Pdiff **P** **07 09 14.5 +0.7**
baz=251
H33A Prehn Over Nor 98.34 46 Pdiff **P** **07 09 14.1 +0.3**
baz=250
U40A Yellville 98.35 54 Pdiff **P** **07 09 15.0 +0.9**
baz=251
Y42A Garnett, Star 98.37 57 Pdiff **P** **07 09 14.8 +0.6**
baz=251
X201 Greenbrier Sit 98.39 56 *e*Pdif **P** **07 09 16.3 +2.0**
J34A George 98.39 47 Pdiff Pdif 07 09 14.0 -0.1
baz=250
S39A Bolivar 98.43 53 Pdiff Pdif 07 09 14.3 0.0
baz=251
W41B Gary Mavity, V 98.44 56 Pdiff Pdif 07 09 14.4 0.0
baz=251
WHAR Wooly Hollow 98.44 56 *e*Pdif **P** **07 09 15.5 +1.0**
TIXI Tiksi 98.45 345 P Pdif 07 09 12.3 -1.3
comp=Z,20nm,0.9s,baz=130,slow=7.0,SNR=12
TIXI PP **PP** **07 13 19.1 -5.4**
comp=Z,31nm,1.1s,baz=121,slow=7.3,SNR=11
TIXI PKiKP **PKiKP** **07 13 41.0 -0.5**
comp=Z,7.0nm,0.6s,baz=92,slow=3.4,SNR=4.5
TIXI S **SKSac** **07 18 52.3 -0.9**
comp=Z,2.0nm,0.3s,baz=253,slow=19,SNR=2.9
TIXI Tiksi 98.45 345 *d i*P Pdif 07 09 12.7 -0.9
TIXI pmax pmax
comp=Z,32nm,1.2s
TIXI Tiksi 98.45 345 *e*Pdif Pdif 07 09 12.8 -0.8
comp=Z,50nm,1.1s
TIXI PP **PP** **07 13 19.1 -5.4**
TIXI PKiKP **PKiKP** **07 13 41.0 -0.5**
TIXI S **SKSac** **07 18 52.3 -0.9**
344A Westbrook Farm 98.46 60 Pdiff **P** **07 09 15.3 +0.7**
baz=251
TLY Talaya 98.48 322 P **P** **07 09 14.8 +0.5**
comp=Z,6.9nm,0.9s,baz=135,slow=6.2,SNR=5.2
TLY Talaya 98.48 322 *e*P **P** **07 09 14.3 0.0**
TLY pmax pmax
comp=Z,20nm,1.2s
D31A Mcclaflin, Tow 98.52 43 Pdiff **P** **07 09 15.6 +1.1**
baz=250
Q38A Cooks Store, C 98.62 52 Pdiff **P** **07 09 16.5 +1.3**
baz=251
O37A Wolven Farm, M 98.63 50 Pdiff **P** **07 09 16.5 +1.3**
baz=251
K35A Storm Lake 98.70 48 Pdiff **P** **07 09 15.8 +0.3**
baz=251
V41A Mountainview 98.71 55 Pdiff **P** **07 09 15.9 +0.2**
baz=251
I34A Hadley 98.72 46 Pdiff **P** **07 09 16.3 +0.7**
baz=250
C31A Landman Farms, 98.77 42 Pdiff Pdif 07 09 15.6 0.0
baz=250
N37A Lee Faris, Mou 98.78 50 Pdiff **P** **07 09 16.4 +0.5**
baz=251
R39A Chumby, Stover 98.84 53 Pdiff **P** **07 09 16.4 +0.2**
baz=251
T40A Mansfield 98.86 54 Pdiff **P** **07 09 16.6 +0.2**
baz=251
L36A Harm Buss Farm 98.89 48 Pdiff **P** **07 09 16.9 +0.5**
baz=251
P38A Dawn 98.90 51 Pdiff **P** **07 09 16.5 0.0**
baz=251
H34A Spellman Lake, 98.98 46 Pdiff **Pdif** **07 09 16.6 0.0**
baz=250
D32A Dogwood Acres, 99.00 43 Pdiff **Pdif** **07 09 17.0 +0.4**
baz=250
S40A Lebanon 99.02 53 Pdiff **Pdif** **07 09 17.6 +0.6**
baz=251
F33A 5 Mile Ranch, 99.03 45 Pdiff **Pdif** **07 09 17.0 +0.2**
baz=250
B31A Greenbush Farm 99.04 42 Pdiff **Pdif** **07 09 17.0 +0.2**
baz=250
U41A Viola 99.06 55 Pdiff **Pdif** **07 09 17.2 0.0**
baz=252
Y43A Makayla and Ka 99.07 57 Pdiff **Pdif** **07 09 17.4 +0.2**
baz=252
M37A Trindle Farm, 99.10 49 Pdiff **Pdif** **07 09 17.9 +0.6**
baz=251
LVC Limon Verde 99.10 118 P **Pdif** **07 09 19.8 +1.6**
comp=Z,5.2nm,0.5s,baz=257,slow=9.2,SNR=3.2
LVC PP **PP** **07 13 29.6 -0.9**
comp=Z,67nm,1.2s,baz=236,slow=10,SNR=5.3
O38A Galt 99.11 51 Pdiff **Pdif** **07 09 17.8 +0.5**
baz=251
Q39A Willow Grove F 99.13 52 Pdiff **Pdif** **07 09 17.8 +0.4**
baz=251
K36A Gilmore City 99.22 48 Pdiff **Pdif** **07 09 18.1 +0.4**
baz=251
I35A Creekview Farm 99.25 47 Pdiff **Pdif** **07 09 17.7 -0.1**
baz=251
G34A Benson 99.27 45 Pdiff **Pdif** **07 09 17.7 -0.2**
baz=251
V42A Cord 99.30 55 Pdiff **Pdif** **07 09 18.3 0.0**
baz=252
T41A Mountain View 99.40 54 Pdiff **Pdif** **07 09 18.9 +0.2**
baz=252
R40A Maddies Statio 99.41 53 Pdiff **Pdif** **07 09 19.1 +0.5**
baz=252
P39B Salisbury 99.43 51 Pdiff **Pdif** **07 09 18.8 +0.1**
baz=252
E33A Westby DABS, E 99.44 44 Pdiff **Pdif** **07 09 19.2 +0.6**
baz=251
145A Houston Renfro 99.46 59 Pdiff **Pdif** **07 09 17.9 -1.1**
baz=252
N38A Joes South For 99.49 50 Pdiff **Pdif** **07 09 18.8 -0.2**
baz=252
A31A Linda, St. Vin 99.50 41 Pdiff **Pdif** **07 09 18.8 -0.1**
baz=250
J36A Seneca 1, Swea 99.52 47 Pdiff **Pdif** **07 09 19.1 0.0**
baz=251
C32A Crookston 99.55 43 Pdiff **Pdif** **07 09 18.9 -0.1**
baz=250
S41A Jillco Farms, 99.59 54 Pdiff **Pdif** **07 09 19.3 -0.2**
baz=252
U42A Revenden 99.59 55 Pdiff **Pdif** **07 09 19.8 +0.3**
baz=252
H35A Sunnyside Ranc 99.63 46 Pdiff **Pdif** **07 09 20.3 +0.8**
baz=251
F34A Alexandria 99.70 45 Pdiff **Pdif** **07 09 20.0 +0.2**
baz=251
M38A Pleasantville 99.72 50 Pdiff **Pdif** **07 09 20.3 +0.4**
baz=252
B32A Ashes, Strandq 99.73 42 Pdiff **Pdif** **07 09 19.7 -0.2**
baz=251
D33A AnnSam, Waubun 99.76 43 Pdiff **Pdif** **07 09 19.7 -0.3**
baz=251
Q40A Laux Farm, Aux 99.78 52 Pdiff **Pdif** **07 09 20.0 -0.3**
baz=252
K37A Belmond 99.83 48 Pdiff **Pdif** **07 09 20.5 0.0**
baz=252
A32A Rocking H Ranc 99.93 42 Pdiff **Pdif** **07 09 20.6 -0.1**
baz=251
P40A Paris 99.96 52 Pdiff **Pdif** **07 09 21.4 +0.3**
baz=252
I36A Fitzsimmons Fa 99.97 47 Pdiff **Pdif** **07 09 20.9 -0.1**
baz=252
E34A Wadena 99.99 44 Pdiff **Pdif** **07 09 20.9 -0.2**
baz=251
C33A Trail 100.00 43 Pdiff **Pdif** **07 09 20.7 -0.4**
baz=251
MOY Mondy 100.02 321 *e*P **Pdif** **07 09 21.0 -0.2**
G35A Watkins 100.03 46 Pdiff **Pdif** **07 09 21.6 +0.4**
baz=251
N39A Derby Farms, D 100.05 50 Pdiff **Pdif** **07 09 21.7 +0.2**
baz=252
J37A Redenius Farm, 100.06 48 Pdiff **Pdif** **07 09 21.8 +0.3**
baz=252
L38A Oak Wood Farm, 100.11 49 Pdiff **Pdif** **07 09 22.4 +0.7**
baz=252
AGMN Agassiz Nation 100.12 42 Pdiff **Pdif** **07 09 22.2 +0.5**
baz=251
AGMN Agassiz Nation 100.12 42 *e*Pdif **Pdif** **07 09 21.8 +0.2**
D34A Park Rapids 100.16 44 Pdiff **Pdif** **07 09 22.4 +0.6**
baz=251
F35A Swanville 100.17 45 Pdiff **Pdif** **07 09 22.7 +0.8**
baz=252
H36A Jessenland, He 100.20 46 Pdiff **Pdif** **07 09 23.0 +1.0**
baz=252
O40A La Belle 100.27 51 Pdiff **Pdif** **07 09 22.8 +0.3**
baz=252
B33A Robert and Kas 100.29 42 Pdiff **Pdif** **07 09 22.0 -0.3**
baz=251
I37A Lemond, Waseca 100.39 47 Pdiff **Pdif** **07 09 23.2 +0.3**
baz=252
X45A UU Field Stati 100.44 57 Pdiff **Pdif** **07 09 23.4 0.0**
baz=253
M39A Webster 100.47 50 Pdiff **Pdif** **07 09 23.5 +0.2**
baz=252
E35A Pequot Lakes 100.51 44 Pdiff **Pdif** **07 09 23.6 +0.3**
baz=252
C34A RKJ Ranch, Bem 100.52 43 Pdiff **Pdif** **07 09 23.0 -0.4**
baz=252
G36A St. Michael 100.53 46 Pdiff **Pdif** **07 09 24.2 +0.7**
baz=252
A33A Warroad 100.63 42 Pdiff **Pdif** **07 09 24.3 +0.5**
baz=252
Y46A Houston 100.70 58 Pdiff **Pdif** **07 09 24.4 -0.1**
baz=253
ULM Lac du Bonnet 100.75 40 P **Pdif** **07 09 23.5 -0.8**
comp=Z,3.3nm,0.5s,baz=263,slow=3.6,SNR=7.3
ULM PP **PP** **07 13 36.4 -5.8**
comp=Z,9.5nm,0.9s,baz=283,slow=7.4,SNR=5.7
ULM Lac du Bonnet 100.75 40 *e*Pdif **Pdif** **07 09 25.1 +0.7**
ULM PP **PP** **07 13 36.4 -5.8**
L39A Vinton 100.78 49 Pdiff **Pdif** **07 09 25.3 +0.6**
baz=252
J38A Wedel Dairy, R 100.81 48 Pdiff **Pdif** **07 09 25.7 +0.9**
baz=252
F36A Milaca 100.87 45 Pdiff **Pdif** **07 09 25.4 +0.5**
baz=252
D35A Remer 100.90 44 Pdiff **Pdif** **07 09 25.1 0.0**
baz=252
B34A Aery, Baudette 100.95 42 Pdiff **Pdif** **07 09 25.2 -0.1**
baz=252
O41A Passleys Farm, 100.99 51 Pdiff **Pdif** **07 09 26.1 +0.4**
baz=253
K39A Oelwein 101.04 49 Pdiff **Pdif** **07 09 26.8 +1.0**
baz=253
I38A Scanlan Farm, 101.13 47 Pdiff **Pdif** **07 09 27.2 +1.0**
baz=253
SPMN Marine on St. 101.16 46 Pdiff **Pdif** **07 09 26.8 +0.5**
baz=253
SPMN Marine on St. 101.16 46 *e*Pdif **Pdif** **07 09 27.2 +0.9**
P42A Winchester 101.23 52 Pdiff **Pdif** **07 09 27.2 +0.5**
baz=253
E36A McGregor 101.25 45 Pdiff **Pdif** **07 09 27.0 +0.4**
baz=252
L40A Anamosa 101.32 49 Pdiff **Pdif** **07 09 27.6 +0.5**
baz=253
J39A Decorah 101.35 48 Pdiff **Pdif** **07 09 28.0 +0.8**
baz=253
B35A Bob, Littlefor 101.50 43 Pdiff **Pdif** **07 09 28.1 +0.4**
baz=253
D36A Goodland 101.50 44 Pdiff **Pdif** **07 09 28.2 +0.4**
baz=253
C36A Pine Crest Far 101.89 43 Pdiff **Pdif** **07 09 30.2 +0.8**
baz=253
D37A Cotton 101.98 44 Pdiff **Pdif** **07 09 30.6 +0.7**
baz=253
J40A Soldiers Grove 102.05 48 Pdiff **Pdif** **07 09 30.4 +0.2**
baz=254
K41A Shullsburg 102.13 49 Pdiff **Pdif** **07 09 31.5 +0.8**
baz=254
JFWS Jewell Farm 102.25 49 *e*P **Pdif** **07 09 32.6 +1.4**
JFWS Jewell Farm 102.25 49 *e*Pdif **Pdif** **07 09 32.6 +1.4**
LPAZ La Paz 102.52 113 P **Pdif** **07 09 38.1 +4.3**
comp=Z,5.1nm,0.9s,baz=244,slow=3.7,SNR=20
LPAZ PP **PP** **07 13 54.8 -1.5**
comp=Z,8.0nm,1.1s,baz=296,slow=2.8,SNR=8.0
LPAZ PKKPbc **PKKPbc** **07 25 30.9 -0.4**
comp=Z,3.4nm,0.7s,baz=41,slow=2.9,SNR=14
J41A Loganville 102.55 48 Pdiff **Pdif** **07 09 32.7 +0.2**
baz=254
EYMN Ely 102.81 44 Pdiff **Pdif** **07 09 33.9 +0.4**
baz=254
C38A Sawbill Land. 102.89 44 Pdiff **Pdif** **07 09 34.4 +0.4**
baz=254
BOK Bokaro 102.90 291 *e*P **Pdif** **07 09 35.8 +1.2**
RAMN Ramite 103.17 294 *e*P **PKiKP** **07 13 51.3 -0.4**
comp=Z,67nm,0.6s
VIS Vishakhapatnam 103.44 284 *e*P **Pdif** **07 09 35.3 -1.7**
COWI Conover 103.87 46 *e*Pdif **Pdif** **07 09 40.3 +1.9**
comp=Z,5.4nm,0.6s
GUN Gumba 104.05 295 *e*P **PKiKP** **07 13 52.6 -0.8**
comp=Z,57nm,0.8s
PKIN Phulchoki 104.37 294 *e*P **PKiKP** **07 13 53.2 -0.7**
comp=Z,44nm,0.6s
KKN Kakani 104.53 295 *e*P **PKiKP** **07 13 53.2 -0.9**
comp=Z,34nm,0.6s
DMN Daman 104.63 294 *e*P **PKiKP** **07 13 53.6 -0.8**
comp=Z,37nm,0.6s
ROSC El Sosal 104.90 90 PP PP 07 14 15.2 +1.3
comp=Z,2.2nm,0.4s,baz=273,slow=3.1,SNR=6.9
GKN Gorkha 105.13 295 *e*P **PKiKP** **07 13 53.8 -1.4**
comp=Z,20nm,0.6s
KOLN Koldanda 105.96 294 *e*P **PKiKP** **07 13 55.4 -1.4**
comp=Z,32nm,0.6s
CPUP Villa Florida 106.45 127 PKiKP **PKiKP** **07 13 55.7 -1.8**
comp=Z,1.4nm,0.7s,baz=205,slow=2.6,SNR=4.2
CPUP PP **PP** **07 14 22.6 -1.1**
comp=Z,8.7nm,1.1s,baz=262,slow=8.7,SNR=4.6
CPUP PKKPbc **PKKPbc** **07 25 17.5 -1.7**
comp=Z,3.0nm,0.9s,baz=30,slow=8.5,SNR=3.9
CPUP PKKP **PKKPdf** **07 25 31.3 +2.4**
comp=Z,2.5nm,0.7s,baz=50,slow=6.1,SNR=3.8
WMQ Urumqi 106.48 311 Pdif **Pdif** **07 09 50.3 +0.2**
WMQ PP **PP** **07 14 25.6 +1.2**
WMQ SS SS 07 28 49.8 +5.6
WMQ AMB AMB
comp=Z,190nm,4.2s
TRD Trivandrum 106.54 273 *e*P **Pdif** **07 09 50.1 -0.8**
PYUN Pinan 106.56 294 *e*P **PKiKP** **07 13 56.9 -1.0**
comp=Z,34nm,0.6s
KMSC Kings Mountain 107.03 58 PKiKP **PKiKP** **07 13 57.4 -0.9**
baz=257
NGP Nagpur 108.27 286 *e*P **Pdif** **07 09 57.1 -1.4**
SIV San Ignacio 108.70 116 PKiKP **PKiKP** **07 14 01.2 -0.8**
comp=Z,1.2nm,0.4s,baz=253,slow=6.8,SNR=3.4
SIV PP **PP** **07 14 41.3 +1.0**
comp=Z,12nm,1.1s,baz=256,slow=11,SNR=13
N54A Moraine State 109.25 53 PKiKP **PKiKP** **07 14 01.7 -0.6**
M54A Oil Creek Stat 109.59 52 PKiKP **PKiKP** **07 14 02.4 -0.5**
baz=260
SDV Santo Domingo 109.67 88 PKKP **PKKPdf** **07 25 23.9 +0.2**
comp=Z,2.5nm,0.7s,baz=309,slow=6.5,SNR=3.2
ZAA0 Zalesovo Array 110.08 321 *e*Pdif **Pdif** **07 10 05.0 -0.7**
ZALV Zalesovo Beam 110.08 321 Pdiff **Pdif** **07 10 04.7 -1.0**
comp=Z,1.1nm,0.5s,baz=129,slow=4.4,SNR=5.1
ZALV PKiKP **PKiKP** **07 14 02.3 -1.1**
comp=Z,31nm,0.6s,baz=166,slow=0.9,SNR=70
ZALV PP **PP** **07 14 45.0 -4.7**
comp=Z,12nm,0.9s,baz=106,slow=4.8,SNR=5.5
ZALV PKKPbc **PKKPbc** **07 25 07.5 -0.9**
comp=Z,1.3nm,0.5s,baz=302,slow=3.3,SNR=3.6
ZALV PKKPab **PKKPab** **07 25 19.8 +0.1**
comp=Z,0.7nm,0.3s,baz=289,slow=4.4,SNR=2.8
O56A Blue Knob Stat 110.20 53 PKiKP **PKiKP** **07 14 03.6 -0.5**
baz=260
NRIK Noril'sk 110.22 338 Pdiff **Pdif** **07 10 05.8 -0.3**
comp=Z,1.3nm,0.4s,baz=115,slow=2.1,SNR=5.7
NRIK PKiKP **PKiKP** **07 14 02.9 -0.3**
comp=Z,12nm,0.7s,baz=98,slow=2.0,SNR=13
NRIK PP **PP** **07 14 46.9 -3.3**
comp=Z,54nm,1.3s,baz=104,slow=7.1,SNR=16
BHPL Bhopal 110.25 288 *e*P **PKiKP** **07 14 03.0 -1.8**
BHPL IAmb IAmb 07 14 03.7
comp=Z,13nm,0.5s
BHPL IAMs_20 IAMs_20 07 42 01.8
comp=Z,638nm,3.7s
SADO Sadowa 110.50 49 PKKPab PKKPab 07 25 18.0 0.0
comp=Z,5.1nm,0.8s,baz=113,slow=5.0,SNR=5.3
MK01 Makanchi Array 110.75 313 *e*Pdif **Pdif** **07 10 08.8 -0.1**
MK31 Makanchi Array 110.76 314 *i* PKiKP **PKiKP** **07 14 03.8 -1.2**
MK31 pmax pmax
comp=Z,31nm,0.7s
MK31 Makanchi Array 110.76 314 *e*Pdif **Pdif** **07 10 09.4 +0.4**
MKAR Makanchi Array 110.76 314 Pdiff **Pdif** **07 10 08.8 -0.1**
comp=Z,3.4nm,0.6s,baz=91,slow=6.1,SNR=19
MKAR PKiKP **PKiKP** **07 14 03.9 -1.1**
comp=Z,26nm,0.6s,baz=67,slow=2.0,SNR=104
MKAR PKKPbc **PKKPbc** **07 25 05.5 -0.5**
comp=Z,4.0nm,0.8s,baz=273,slow=4.0,SNR=14
MKAR PKKPab **PKKPab** **07 25 17.8 +0.9**
comp=Z,1.7nm,0.8s,baz=302,slow=2.7,SNR=3.8
MKAR Makanchi Array 110.76 314 *e*Pdif **Pdif** **07 10 09.4 +0.4**
MKAR PKiKP **PKiKP** **07 14 03.9 -1.1**
MKAR PKKPbc **PKKPbc** **07 25 05.5 -0.5**
MKAR PKKPab **PKKPab** **07 25 17.8 +0.9**
MAKZ Makanchi 110.97 314 PKiKP **PKiKP** **07 14 03.9 -1.5**
MAKZ pmax pmax
comp=Z,49nm,0.8s
MAKZ Makanchi 110.97 314 *e*Pdif **Pdif** **07 10 11.0 +1.0**
NVS Novosibirsk 111.09 322 *e*PKiKP **PKiKP** **07 14 04.5 -0.8**
NVS *e* 07 19 47.2
NVS pmax pmax
comp=Z,36nm,0.9s
NVS pmax pmax
comp=N,12nm,0.9s
NVS pmax pmax
comp=E,23nm,1.0s
DDI Dehra Dun 111.27 296 *e*P **PKiKP** **07 14 04.5 -2.0**
SMLA Simla 112.17 296 *e*P **PKiKP** **07 14 07.4 -0.6**
SMLA IAmb IAmb 07 14 08.4
comp=Z,56nm,0.3s
PDGK Podgornoye 112.27 310 PKiKP **PKiKP** **07 14 07.0 -0.9**
PDGK pmax pmax
comp=Z,26nm,1.1s
N59A State Game Lan 112.40 53 PKiKP **PKiKP** **07 14 07.6 -0.7**
baz=262
DHRM DHARAMSHALA 113.11 297 *e*P **PKiKP** **07 14 09.4 -0.8**
KURK Kurchatov 113.56 317 Pdif **Pdif** **07 10 19.9 -1.4**
KURK PKiKP **PKiKP** **07 14 09.3 -0.8**
KURK PP **PP** **07 15 10.0 -4.2**
KURK SKP 07 16 50.1
KURK PKKPbc **PKKPbc** **07 24 56.6 -0.3**
KURK PKKPab **PKKPab** **07 25 04.3 0.0**
KURBB Kurchatov Arra 113.62 317 Pdiff **Pdif** **07 10 19.9 -1.6**
comp=Z,0.5nm,0.2s,baz=104,slow=4.2,SNR=4.4
KURBB PKiKP **PKiKP** **07 14 09.3 -0.9**
comp=Z,36nm,0.6s,baz=98,slow=1.8,SNR=180
KURBB PP **PP** **07 15 10.0 -4.5**
comp=Z,17nm,1.1s,baz=96,slow=5.8,SNR=9.4
KURBB SKP 07 16 50.1
comp=Z,5.3nm,0.8s,baz=105,slow=2.2,SNR=5.1
KURBB PKKPbc **PKKPbc** **07 24 56.6 -0.1**
comp=Z,1.7nm,0.7s,baz=276,slow=3.8,SNR=9.1
KURBB PKKPab **PKKPab** **07 25 04.3 +0.3**
comp=Z,2.4nm,0.9s,baz=279,slow=5.1,SNR=8.4
KSH Kashi 114.43 305 PKP PKPdf 07 14 12.9 +0.5
KSH *e*PP **PP** **07 15 27.0 +6.2**
KSH *es*PKP 07 17 28.6
KSH PKS **PKSdf** **07 17 48.4 -0.7**
KSH SKS **SKSdf** **07 20 29.9 +1.7**
KSH SKKS **SKKSac** **07 21 20.3 +0.7**
KSH SS **SS** **07 30 36.5 +7.3**
KSH AMB AMB
comp=Z,360nm,7.7s
TKM2 Tokmak 2 115.06 309 PKiKP **PKPdf** **07 14 12.8 -0.8**
TKM2 pmax pmax
comp=Z,29nm,0.7s
QUA2 Belchertown 115.10 52 *e*PKPdf **PKPdf** **07 14 13.5 +0.1**
HNH Hanover 115.27 50 *e*PKPdf **PKPdf** **07 14 13.5 -0.1**
IDE Isla Desecheo 115.28 79 *e*PKPdf **PKPdf** **07 14 14.2 -0.2**
LBNH Lisbon 115.57 50 *e*PKiKP **PKPdf** **07 14 14.3 +0.1**
LBNH Lisbon 115.57 50 *e*PKPdf **PKPdf** **07 14 14.3 +0.1**
BRYW Bryant College 115.67 52 *e*PKPdf **PKPdf** **07 14 14.4 -0.1**
HRV Adam Dziewonsk 115.71 52 *e*PKiKP **PKPdf** **07 14 14.2 -0.4**
HRV Adam Dziewonsk 115.71 52 *e*PKPdf **PKPdf** **07 14 14.2 -0.4**
FRU Bishkek 115.77 309 *i* PKiKP **PKPdf** **07 14 13.0 -1.7**
FRU *i* 07 15 27.0
FRU *i* 07 20 07.0
FRU pmax pmax
comp=Z,72nm,1.7s
AAK Ala-Archa 115.85 308 PKP **PKPdf** **07 14 14.4 -0.7**
comp=Z,14nm,0.6s,baz=139,slow=2.8,SNR=18
AAK PP **PP** **07 15 28.6 -1.9**
comp=Z,6.0nm,0.8s,baz=83,slow=13,SNR=6.6
AAK PKKPab **PKKPab** **07 24 55.3 +0.7**
comp=Z,1.8nm,0.3s,baz=225,slow=4.2,SNR=6.9
AAK Ala-Archa 115.85 308 *e*PKiKP **PKPdf** **07 14 14.7 -0.4**
AAK 07 15 28.6
AAK Ala-Archa 115.85 308 P **PKPdf** **07 14 14.6 -0.4**
SNR=8.9
AAK Ala-Archa 115.85 308 PKPdf **PKPdf** **07 14 14.6 -0.4**
SNR=8.9
AAK Ala-Archa 115.85 308 *e*PKPdf **PKPdf** **07 14 14.7 -0.4**
AAK PP **PP** **07 15 28.6 -1.9**
AAK PKKPab **PKKPab** **07 24 55.3 +0.7**
PTGA Pitinga 116.31 101 PKP **PKPdf** **07 14 16.0 -0.6**
comp=Z,6.7nm,0.6s,baz=261,slow=3.4,SNR=24
PTGA PP **PP** **07 15 33.6 -0.2**
comp=Z,16nm,1.2s,baz=247,slow=7.2,SNR=10
PTGA SKP 07 16 55.5
comp=Z,2.7nm,0.6s,baz=229,slow=2.8,SNR=4.8
PTGA PKKPbc **PKKPbc** **07 24 47.7 +0.7**
comp=Z,5.7nm,0.6s,baz=42,slow=6.1,SNR=16
PTGA PKKPab **PKKPab** **07 24 54.7 +0.6**
comp=Z,7.1nm,0.8s,baz=67,slow=3.6,SNR=8.4
SJG San Juan 116.44 79 *e*PKiKP **PKPdf** **07 14 15.8 -0.8**
SJG San Juan 116.44 79 *e*PKPdf **PKPdf** **07 14 15.8 -0.8**
HUMP Col San Antoni 116.72 79 *e*PKPdf **PKPdf** **07 14 16.3 -0.9**
CBYP Canovanas 116.75 79 *e*PKPdf **PKPdf** **07 14 16.8 -0.5**
FRB Frobisher Bay 116.81 28 PKP **PKPdf** **07 14 15.4 -0.6**
comp=Z,24nm,0.5s,baz=309,slow=2.3,SNR=36
LMQ La Malbaie 116.83 46 *e*PKPdf **PKPdf** **07 14 15.7 -0.9**
WVL Waterville 117.21 50 *e*PKPdf **PKPdf** **07 14 16.7 -0.6**
MNAS Manas 117.30 308 PKiKP **PKPdf** **07 14 17.0 -0.8**
MNAS pmax pmax
comp=Z,57nm,0.6s
PKME Peaks-Kenny Pk 117.49 49 *e*PKPdf **PKPdf** **07 14 17.8 0.0**
KULLO Kullorsuaq 117.55 15 *i* P **PKPdf** **07 14 16.3 -0.8**
comp=Z,24nm,0.6s
OTUK Ortayu 117.58 315 PKiKP PKPpre 07 14 10.8
OTUK pmax pmax
comp=Z,53nm,0.5s
STVI Saint Thomas 117.60 79 *e*PKPdf **PKPdf** **07 14 17.9 -1.0**
VOSK Vostochnaya 118.32 320 *e*PKiKP **PKPdf** **07 14 18.5 -0.8**
VOSK Vostochnaya 118.32 320 *e*PKPdf **PKPdf** **07 14 18.5 -0.8**
BVA0 Borovoye Array 118.66 320 *i* PKiKP **PKPdf** **07 14 19.3 -0.6**
BVA0 pmax pmax
comp=Z,77nm,0.7s
BVAR Borovoye Array 118.66 320 PKP **PKPdf** **07 14 19.2 -0.7**
comp=Z,75nm,0.6s,baz=113,slow=1.3,SNR=266
BVAR PP **PP** **07 15 51.4 +2.4**
comp=Z,17nm,1.0s,baz=99,slow=9.2,SNR=4.7
BRVK Borovoye 118.72 320 *d i*PKiKP **PKPdf** **07 14 18.9 -1.1**
BRVK Borovoye 118.72 320 *e*PKPdf **PKPdf** **07 14 19.4 -0.6**
SCHQ Schefferville 118.77 38 PKP **PKPdf** **07 14 19.1 -1.0**
comp=Z,11nm,0.8s,baz=297,slow=5.3,SNR=11
SCHQ Schefferville 118.77 38 *e*PKPdf **PKPdf** **07 14 19.4 -0.7**
EMMW East Machias 118.78 49 *e*PKPdf **PKPdf** **07 14 19.9 -0.4**
KK31 Karatay Array 118.79 309 *i* PKiKP **PKPdf** **07 14 19.6 -0.9**
KK31 pmax pmax
comp=Z,30nm,0.7s
KKAR Karatay Array 118.79 309 *e*PKiKP **PKPdf** **07 14 19.8 -0.7**
KKAR Karatay Array 118.79 309 *e*PKPdf **PKPdf** **07 14 19.8 -0.7**
GGN Saint George 119.22 49 *e*PKPdf **PKPdf** **07 14 20.6 -0.6**
SMRT St. Maarten 119.26 80 *e*PKPdf **PKPdf** **07 14 21.0 -1.0**
KBL Kabul 119.43 299 *e*PKiKP **PKPdf** **07 14 22.3 0.0**
KBL Kabul 119.43 299 *e*PKPdf **PKPdf** **07 14 22.3 0.0**
BDFB Brasilia 119.61 122 PKP **PKPdf** **07 14 23.8 +0.8**
comp=Z,8.3nm,0.5s,baz=348,slow=27,SNR=22
BDFB SKP 07 17 03.4
comp=Z,6.0nm,0.8s,baz=163,slow=20,SNR=5.0
BDFB PKKPbc **PKKPbc** **07 24 37.9 +1.9**
comp=Z,10nm,0.6s,baz=347,slow=27,SNR=18
BDFB Brasilia 119.61 122 *e*PKPdf **PKPdf** **07 14 24.1 +1.1**
BDFB SKP 07 17 03.4
BDFB PKKPbc **PKKPbc** **07 24 37.9 +1.9**

SVB	**Belmont**	119.76	86	*e*PKPdf	**PKPdf**	07 14 21.7	-1.5			
DZET	**Dzherino**	119.91	304	PKIKP	**PKPdf**	07 14 22.6	-0.3			
DZET				pmax	pmax					
	comp=Z,89nm,0.6s									
GDHS	**Morne Mazeau,**	120.05	83	*e*PKPdf	**PKPdf**	07 14 23.6	-0.1			
FDF	**Fort de France**	120.24	84	*e*PKIKP	**PKPdf**	07 14 23.6	-0.5			
FDF	**Fort de France**	120.24	84	*e*PKPdf	**PKPdf**	07 14 23.6	-0.5			
ABPO	**Ambohimpanom**	120.59	232	*e*PKIKP	**PKPdf**	07 14 25.7	+0.8			
ABPO	**Ambohimpanom**	120.59	232	*e*PKPdf	**PKPdf**	07 14 25.7	+0.8			
LMN	**Caledonia Moun**	120.64	48	*e*PKPdf	**PKPdf**	07 14 23.4	-0.5			
OPO	**Ambohidratompo**	120.89	232	PKP	**PKPdf**	07 14 25.8	+0.3			
	comp=Z,24nm,0.7s,baz=91,slow=1.2,SNR=36									
OPO				SKP		07 17 05.5				
	comp=Z,6.4nm,1.0s,baz=331,slow=0.9,SNR=3.5									
KBS	**Kingsbay**	121.12	358	*e*PKPdf	**PKPdf**	07 14 24.1	+0.2			
KBS	**Kingsbay**	121.12	358	*e*PKIKP	**PKPdf**	07 14 24.2	+0.2			
KBS	**Kingsbay**	121.12	358	*e*PKPdf	**PKPdf**	07 14 24.2	+0.2			
SPB5	**Spitsbergen Ar**	121.63	356	*e*PKPdf	**PKPdf**	07 14 24.9	-0.1			
SPA1	**Spitsbergen Ar**	121.64	356	*e*PKPdf	**PKPdf**	07 14 24.9	-0.2			
SPB1	**Spitsbergen Ar**	121.64	356	*e*PKPdf	**PKPdf**	07 14 24.9	-0.1			
SPA0	**Spitsbergen Ar**	121.64	356	*e*PKPdf	**PKPdf**	07 14 24.5	-0.5			
SPA0				*e*PP	**PP**	07 16 05.4	-2.9			
SPA0	**Spitsbergen Ar**	121.64	356	*e*PKPdf	**PKPdf**	07 14 24.8	-0.2			
SPB4	**Spitsbergen Ar**	121.64	356	*e*PKPdf	**PKPdf**	07 14 25.0	0.0			
SPA2	**Spitsbergen Ar**	121.64	356	*e*PKPdf	**PKPdf**	07 14 24.6	-0.3			
SPA3	**Spitsbergen Ar**	121.64	356	*e*PKPdf	**PKPdf**	07 14 25.0	0.0			
SPB2	**Spitsbergen Ar**	121.64	356	*e*PKPdf	**PKPdf**	07 14 24.7	-0.3			
SPB3	**Spitsbergen Ar**	121.64	356	*e*PKPdf	**PKPdf**	07 14 24.8	-0.2			
ILULI	**Ilulissat**	121.69	19	⇓*i*P	**PKPdf**	07 14 24.6	-0.6			
	comp=Z,94nm,0.6s									
HOPEN	**Hopen**	122.50	354	*e*PKPdf	**PKPdf**	07 14 26.3	-0.3			
DAG	**Danmarks Havn**	122.58	5	⇓*i*P	**PKPdf**	07 14 25.5	-1.3			
DAG				*i*		07 16 03.7				
HSPB	**Hornsund (broa**	122.83	356	*e*PKPdf	**PKPdf**	07 14 26.8	-0.4			
SFJD	**Kangerlussuaq**	122.91	22	PKP	**PKPdf**	07 14 26.8	-0.7			
	comp=Z,46nm,0.6s,baz=246,slow=1.8,SNR=18									
SFJD				PP	**PP**	07 16 14.8	-2.1			
	comp=Z,42nm,1.1s,baz=311,slow=8.5,SNR=8.2									
SFJD	**Kangerlussuaq**	122.91	22	⇓*i*P	**PKPdf**	07 14 26.9	-0.7			
	comp=Z,56nm,0.7s									
SUMG	**Summit**	123.05	13	⇓*i*P	**PKPdf**	07 14 28.3	0.0			
	comp=Z,78nm,1.0s									
SUMG				*i*		07 16 08.6				
SUMG	**Summit**	123.05	13	*e*PKIKP	**PKPdf**	07 14 28.1	-0.2			
SUMG	**Summit**	123.05	13	*e*PKPdf	**PKPdf**	07 14 28.1	-0.2			
SVE	**Sverdlovsk**	123.59	326	*c i*PKIKP	**PKPdf**	07 14 29.0	-0.2			
SVE				pmax	pmax					
	comp=Z,167nm,1.2s									
SUR	**Sutherland**	124.47	200	PKP	**PKPdf**	07 14 32.8	+0.8			
	comp=Z,2.8nm,0.7s,baz=155,slow=0.4,SNR=41									
SUR				PKKPbc	**PKKPbc**	07 24 17.9	-0.8			
	comp=Z,1.8nm,0.8s,baz=8.7,slow=2.3,SNR=15									
SOKR	**Solikamsk**	124.69	329	*d i*PKIKP	**PKPdf**	07 14 29.0	-2.2			
SOKR				pmax	pmax					
	comp=Z,332nm,1.3s									
ARU	**Arti**	124.80	325	PKP	**PKPdf**	07 14 31.8	+0.2			
	comp=Z,91nm,0.6s,baz=91,slow=0.9,SNR=132									
ARU				PP	**PP**	07 16 25.8	-4.0			
	comp=Z,60nm,1.1s,baz=77,slow=4.7,SNR=14									
ARU	**Arti**	124.80	325	*i*PKIKP	**PKPdf**	07 14 30.8	-0.8			
ARU						07 16 25.3				
ARU				PPP	PPP	07 19 11.3				
ARU						07 20 40.1				
ARU	**Arti**	124.80	325	*e*PKPdf	**PKPdf**	07 14 31.1	-0.4			
ARU				PP	**PP**	07 16 25.8	-4.0			
DRLN	**Deer Lake**	125.22	43	*e*PKPdf	**PKPdf**	07 14 32.1	-0.5			
AB31	**Akbulak array**	125.65	317	*i*PKIKP	**PKPdf**	07 14 33.0	-0.4			
AB31				pmax	pmax					
	comp=Z,29nm,0.8s									
ABKAR	**Akbulak array**	125.65	317	*e*PKPpre	PKPpre	07 14 26.2				
ABKAR				*e*PKPdf	**PKPdf**	07 14 33.3	-0.1			
BOSA	**Boshof**	126.25	206	PKP	**PKPdf**	07 14 35.5	0.0			
	comp=Z,23nm,0.8s,baz=155,slow=2.1,SNR=37									
BOSA				PKKPbc	**PKKPbc**	07 24 10.7	-0.8			
	comp=Z,10nm,0.6s,baz=328,slow=4.2,SNR=26									
AKTO	**Aktyubinsk**	126.64	318	PKP	**PKPdf**	07 14 34.9	-0.4			
	comp=Z,55nm,0.7s,baz=80,slow=2.6,SNR=90									
AKTO				PP	**PP**	07 16 41.7	-0.3			
	comp=Z,6.6nm,0.9s,baz=79,slow=10,SNR=3.2									
AKTO				PKKPab	**PKKPab**	07 24 07.1	-0.2			
	comp=Z,0.8nm,0.3s,baz=151,slow=1.4,SNR=3.6									
WSAR	**Wadi Sarin**	127.20	284	PKP	**PKPdf**	07 14 36.8	-0.4			
	comp=Z,26nm,1.1s									
WSAR				PP	**PP**	07 16 45.2	-1.4			
	comp=Z,6.1nm,1.1s,baz=146,slow=5.1,SNR=3.6									
JMDO	**Jabal Madar**	127.55	283	P	**PKPdf**	07 14 37.7	-0.2			
	SNR=5.2									
JMDO	**Jabal Madar**	127.55	283	PKPdf	**PKPdf**	07 14 37.7	-0.2			
	SNR=5.2									
BIDO	**Bidbid**	127.70	284	P	**PKPdf**	07 14 37.8	-0.3			
	SNR=6.7									
BIDO	**Bidbid**	127.70	284	PKPdf	**PKPdf**	07 14 37.8	-0.3			
	SNR=6.7									
SMDO	**Samad**	127.70	284	P	**PKPdf**	07 14 38.6	+0.3			
	SNR=10									
SMDO	**Samad**	127.70	284	PKPdf	**PKPdf**	07 14 38.6	+0.3			
	SNR=10									
NRS	**Narsarsuaq**	127.75	27	*i* P	**PKPdf**	07 14 36.6	-0.4			
SCO	**Scoresbysund**	127.89	10	⇓*i*P	**PKPdf**	07 14 37.1	0.0			
	comp=Z,34nm,0.8s									
SCO				*i*		07 16 45.5				
HAMF	**Hammerfest**	127.96	351	*e*PKPdf	**PKPdf**	07 14 36.7	-0.5			
HAMF				IAmb	IAmb	07 14 37.9				
	comp=Z,94nm,0.9s									
LVZ	**Lovozero**	128.08	345	*e*PKIKP	**PKPdf**	07 14 35.4	-2.2			
LVZ	**Lovozero**	128.08	345	*e*PKPpre	PKPpre	07 14 35.4				
LVZ				*e*PKPdf	**PKPdf**	07 14 37.2	-0.4			
GEYT	**Alibeck**	128.32	303	PKP	**PKPdf**	07 14 39.0	0.0			
	comp=Z,53nm,0.7s,baz=236,slow=1.6,SNR=59									
GEYT				PP	**PP**	07 16 51.4	-2.2			
	comp=Z,41nm,1.2s,baz=76,slow=6.3,SNR=13									
HOQ	**Hoqain**	128.45	284	P	**PKPdf**	07 14 39.6	0.0			
	SNR=7.5									
HOQ	**Hoqain**	128.45	284	PKPdf	**PKPdf**	07 14 39.6	0.0			
	SNR=7.5									
APA	**Apatity**	128.64	345	⇓*i*PKIKP	**PKPdf**	07 14 37.5	-1.1			
APA				*i*		07 16 58.1				
APA				*i* PPP	PPP	07 19 55.0				
APA				*i*		07 20 49.0				
APA				*i* SS	SS	07 33 27.0	+2.0			
APA				pmax	pmax					
	comp=Z,6.0nm,0.7s									
ARA0	**ARCESS Array S**	128.65	349	*e*PKPpre	PKPpre	07 14 25.4				
ARCES	**ARCESS Array B**	128.65	349	PKP	**PKPdf**	07 14 38.2	-0.4			
	comp=Z,63nm,0.6s,baz=17,slow=1.3,SNR=89									
ARCES				pPKP	**pPKPdf**	07 16 57.5	-0.3			
	comp=Z,12nm,0.9s,baz=2.3,slow=4.5,SNR=4.1									
ARE0	**ARCESS Array S**	128.65	349	*e*PKPdf	**PKPdf**	07 14 38.2	-0.4			
ARE0	**ARCESS Array S**	128.65	349	*e*PKPdf	**PKPdf**	07 14 38.4	-0.2			
ARQ	**Araqi**	129.13	284	P	**PKPdf**	07 14 40.4	-0.5			
	SNR=6.0									
ARQ	**Araqi**	129.13	284	PKPdf	**PKPdf**	07 14 40.4	-0.5			
	SNR=6.0									
LBTB	**Lobatse**	129.25	209	PKP	**PKPdf**	07 14 41.3	0.0			
	comp=Z,13nm,0.7s,baz=175,slow=3.7,SNR=22									
LBTB				SKPbc	SKPbc	07 17 09.1	+1.7			
	comp=Z,14nm,0.9s,baz=125,slow=4.5,SNR=9.6									
TRO	**Tromso**	129.54	352	*e*PKPdf	**PKPdf**	07 14 40.0	-0.2			
TRO				IAmb	IAmb	07 14 41.5				
	comp=Z,63nm,0.8s									
TRO				*e*SS	SS	07 33 37.9	+2.1			
UOSS	**Minazif**	129.62	286	*e*PKPdf	**PKPdf**	07 14 40.8	-0.9			
HATD	**Hatta, Dubai**	129.67	286	P	**PKPdf**	07 14 41.1	-0.8			
	SNR=12									
HATD	**Hatta, Dubai**	129.67	286	PKPdf	**PKPdf**	07 14 41.1	-0.8			
	SNR=12									
ASHO	**Ashiyiah**	129.72	286	P	**PKPdf**	07 14 40.9	-1.1			
	SNR=10									
ASHO	**Ashiyiah**	129.72	286	PKPdf	**PKPdf**	07 14 40.9	-1.1			
	SNR=10									
NAZ	**Nazwa, Dubai**	130.11	286	P	**PKPdf**	07 14 42.3	-0.4			
	SNR=9.3									
NAZ	**Nazwa, Dubai**	130.11	286	PKPdf	**PKPdf**	07 14 42.3	-0.4			
	SNR=9.3									
FAQ	**Al Faqa, Dubai**	130.15	286	P	**PKPdf**	07 14 41.6	-1.1			
	SNR=5.4									
FAQ	**Al Faqa, Dubai**	130.15	286	PKPdf	**PKPdf**	07 14 41.6	-1.1			
	SNR=5.4									
KLMR	**Klimovskoe**	131.53	336	*e*PKHKP	PKPpre	07 14 34.5				
KLMR				*e*		07 17 21.6				
KLMR				pmax	pmax					
	comp=Z,133nm,1.4s									
LOF	**Lofoten**	131.59	354	*e*PP	PP	07 17 10.4	-2.4			
LOF				*e*SS	SS	07 34 00.9	+0.6			
STEI	**Steigen**	131.60	353	*e*	**PKPdf**	07 14 43.7	-0.4			
STEI				*e*PP	**PP**	07 17 16.0	+3.1			
MATP	**Matopo**	131.69	215	PKP	**PKPdf**	07 14 45.8	-0.2			
	comp=Z,31nm,0.8s,baz=157,slow=2.3,SNR=42									
MATP				SKPbc	**SKPab**	07 17 18.1	+0.4			
	comp=Z,35nm,1.0s,baz=151,slow=4.4,SNR=20									
BORG	**Borgarnes**	133.04	13	PKP	**PKPdf**	07 14 47.6	+0.6			
	comp=Z,38nm,0.9s,baz=1.9,slow=0.8,SNR=16									
BORG				SKPbc	**SKPbc**	07 17 19.9	+0.7			
	comp=Z,20nm,1.0s,baz=313,slow=3.9,SNR=4.9									
RCBR	**Riachuelo**	134.95	121	PKP	**PKPdf**	07 14 52.7	+0.5			
	comp=Z,9.5nm,0.6s,baz=314,slow=0.8,SNR=8.6									
RCBR				SKPbc	**SKPbc**	07 17 27.1	0.0			
	comp=Z,25nm,0.8s,baz=209,slow=5.5,SNR=8.2									
FIA1	**FINESS Array S**	135.46	343	*e*PKPpre	PKPpre	07 14 40.4				
FINES	**FINESS Array B**	135.46	343	PKhKP	PKPpre	07 14 36.8				
	comp=Z,9.3nm,0.7s,baz=56,slow=2.6,SNR=16									
FINES				PKP	**PKPdf**	07 14 51.0	-0.5			
	comp=Z,53nm,0.8s,baz=56,slow=3.8,SNR=23									
FINES				SKPbc	**SKPbc**	07 17 27.7	+0.7			
	comp=Z,27nm,1.0s,baz=64,slow=4.4,SNR=12									
FINES				SKPab	**SKiKP**	07 17 33.2	+0.3			
	comp=Z,14nm,0.9s,baz=29,slow=4.4,SNR=7.7									
MOS	**Moscow**	135.52	332	*i* PKIKP	**PKPdf**	07 14 50.9	-0.9			
MOS				pmax	pmax					
	comp=Z,300nm,1.7s									
MOS				pmax	pmax					
	comp=Z,111nm,1.1s									
VRH	**Novokhopyorsk**	136.00	324	*i* PKIKP	**PKPdf**	07 14 52.8	-0.1			
VRH				pmax	pmax					
	comp=Z,160nm,0.5s									
LSZ	**Lusaka**	136.01	219	PKhKP	PKPpre	07 14 40.9				
	comp=Z,3.0nm,0.6s,baz=102,slow=3.4,SNR=6.0									
LSZ				PKP	**PKPdf**	07 14 54.7	+0.5			
	comp=Z,34nm,0.6s,baz=124,slow=1.4,SNR=30									
LSZ				SKPbc	**SKPbc**	07 17 31.1	+0.8			
	comp=Z,12nm,0.8s,baz=182,slow=1.1,SNR=6.4									
LSZ				SKPab	**SKPab**	07 17 37.7	+1.0			
	comp=Z,20nm,1.1s,baz=141,slow=3.4,SNR=8.7									
LSZ	**Lusaka**	136.01	219	P	**PKPdf**	07 14 54.5	+0.3			
	SNR=8.1									
LSZ	**Lusaka**	136.01	219	*e*PKPpre	PKPpre	07 14 42.5				
LSZ				*e*PKPdf	**PKPdf**	07 14 54.9	+0.7			
LSZ				SKPbc	**SKPbc**	07 17 31.1	+0.8			
LSZ				SKPab	**SKPab**	07 17 37.7	+1.0			
OBN	**Obninsk**	136.38	331	PKhKP	PKPpre	07 14 41.3				
	comp=Z,29nm,0.4s,baz=227,slow=22,SNR=4.2									
OBN				PKP	**PKPdf**	07 14 53.1	-0.3			
	comp=Z,74nm,0.6s,baz=59,slow=2.1,SNR=16									
OBN				SKPbc	**SKPbc**	07 17 31.4	+1.4			
	comp=Z,142nm,0.9s,baz=52,slow=1.9,SNR=38									
OBN	**Obninsk**	136.38	331	*d i*PKIKP	**PKPdf**	07 14 53.0	-0.4			
OBN				*i*		07 17 38.8				
OBN				*i*		07 21 04.0				
OBN				pmax	pmax					
	comp=Z,101nm,0.9s									
OBN	**Obninsk**	136.38	331	PKPpre	PKPpre	07 14 41.3				
OBN				*e*PKPdf	**PKPdf**	07 14 53.6	+0.1			
OBN				SKPbc	**SKPbc**	07 17 31.4	+1.4			
VSR	**Storozhevoye**	137.37	325	*i* PKIKP	**PKPdf**	07 14 54.4	-1.0			
VSR				pmax	pmax					
	comp=Z,90nm,0.9s									
MOL	**Molde**	137.56	356	*e*PKPdf	PKPpre	07 14 44.9				
MOL				*e*SKPdf	**SKPdf**	07 17 34.5	+0.6			
MOL				*e*PKSdf	**PKSdf**	07 18 31.6	+0.4			
TSUM	**Tsumeb**	137.72	203	PKhKP	PKPpre	07 14 47.4				
	comp=Z,3.2nm,0.5s,baz=146,slow=8.3,SNR=5.1									
TSUM				PKP	**PKPdf**	07 14 57.1	-0.2			
	comp=Z,18nm,0.9s,baz=165,slow=4.0,SNR=15									
TSUM				SKPbc	**SKPbc**	07 17 35.9	+0.7			
	comp=Z,24nm,1.1s,baz=167,slow=4.0,SNR=15									
TSUM	**Tsumeb**	137.72	203	*e*PKPpre	PKPpre	07 14 50.9				
TSUM				PKP	**PKPdf**	07 14 57.1	-0.2			
TSUM				SKPbc	**SKPbc**	07 17 35.9	+0.7			
VSU	**Vasula**	137.72	341	*i* PKIKP	**PKPdf**	07 14 53.8	-2.0			
TBLG	**Delisi**	137.82	310	P	**SKiKP**	07 17 35.4	-3.0			
GOF	**Gofitskoye**	137.87	316	*e*PKIKP	**PKPdf**	07 14 56.2	-0.4			
GOF				pmax	pmax					
	comp=Z,56nm,0.6s									
DOMB	**Dombas**	137.97	355	*e*PKPdf	PKPpre	07 14 46.0				
DOMB				IAmb	IAmb	07 14 49.5				
	comp=Z,51nm,0.7s									
DOMB				*e*SKPdf	**SKPdf**	07 17 35.5	+0.8			
AKN	**Aaknes**	137.98	356	*e*PKPdf	PKPpre	07 14 48.2				
AKN				*e*SKPdf	**SKPdf**	07 17 36.1	+1.3			
NCK	**Nalchik**	138.06	313	*i* PKIKP	**PKPdf**	07 14 56.6	-0.4			
ZEI	**Tsey**	138.08	312	*e*PKHKP	PKPpre	07 14 48.5				
ZEI				pmax	pmax					
	comp=Z,68nm,0.6s									
GNI	**Garni**	138.25	308	PKhKP	PKPpre	07 14 48.3				
	comp=Z,5.3nm,0.4s,baz=195,slow=6.5,SNR=6.3									
GNI				PKP	**PKPdf**	07 14 57.9	+0.2			
	comp=Z,38nm,0.8s,baz=173,slow=3.2,SNR=20									
GNI				SKPbc	**SKPbc**	07 17 37.4	+1.3			
	comp=Z,9.1nm,0.7s,baz=115,slow=1.7,SNR=5.0									
GNI				SKPab	**SKPab**	07 17 46.5	+0.4			
	comp=Z,5.9nm,0.4s,baz=204,slow=6.5,SNR=5.3									
GNI				SKKPbc	**SKKPbc**	07 26 23.4	+1.5			
	comp=Z,4.2nm,0.3s,baz=206,slow=4.5,SNR=9.9									
GNI	**Garni**	138.25	308	*e*PKHKP	PKPpre	07 14 51.1				
GNI						07 14 57.9				
GNI	**Garni**	138.25	308	P	**PKPdf**	07 14 58.0	+0.3			
	SNR=12									
GNI	**Garni**	138.25	308	PKPdf	**PKPdf**	07 14 58.0	+0.3			
	SNR=12									
GNI	**Garni**	138.25	308	*e*PKPpre	PKPpre	07 14 51.1				
GNI				PKP	**PKPdf**	07 14 57.9	+0.2			
GNI				SKPbc	**SKPbc**	07 17 37.4	+1.3			
GNI				SKPab	**SKPab**	07 17 46.5	+0.4			
GNI				SKKPbc	**SKKPbc**	07 26 23.4	+1.5			
KBZ	**Khabaz**	138.45	314	PKhKP	PKPpre	07 14 49.6				
	comp=Z,5.2nm,0.7s,baz=141,slow=2.3,SNR=11									
KBZ				PKP	**PKPdf**	07 14 58.0	+0.3			
	comp=Z,20nm,0.8s,baz=153,slow=0.5,SNR=17									
KBZ				SKPbc	**SKiKP**	07 17 37.8	-1.8			
	comp=Z,9.9nm,0.8s,baz=63,slow=3.5,SNR=6.4									
KBZ				SKPab	**SKPab**	07 17 47.6	+1.1			
	comp=Z,16nm,1.1s,baz=80,slow=13,SNR=7.1									
ONI	**Oni**	138.46	312	P	**SKiKP**	07 17 36.9	-2.9			
KVAR	**Kislovodsk Arr**	138.51	314	PKhKP	PKPpre	07 14 50.1				
	comp=Z,6.1nm,0.6s,baz=14,slow=7.5,SNR=4.9									
KVAR				PKP	**PKPdf**	07 14 57.9	0.0			
	comp=Z,26nm,0.8s,baz=359,slow=1.8,SNR=17									
KIV	**Kislovodsk**	138.52	314	*d i*PKIKP	**PKPdf**	07 14 57.4	-0.5			
KIV				pmax	pmax					
	comp=Z,37nm,1.0s									
KIV	**Kislovodsk**	138.52	314	P	**PKPdf**	07 14 57.8	-0.1			
	SNR=12									
KIV	**Kislovodsk**	138.52	314	PKPdf	**PKPdf**	07 14 57.8	-0.1			
	SNR=12									
KIV	**Kislovodsk**	138.52	314	*e*PKPdf	**PKPdf**	07 14 56.4	-1.5			
NC303	**NORSAR Array S**	138.53	353	*e*PKPpre	PKPpre	07 14 48.0				
NC303				*e*PKPdf	**PKiKP**	07 14 59.4	-0.2			
NC204	**NORSAR Array S**	138.55	353	*e*PKPpre	PKPpre	07 14 48.1				
NC405	**NORSAR Array S**	138.60	353	*e*PKPpre	PKPpre	07 14 48.0				
FOO	**Floro**	138.66	357	*e*PKPdf	PKPpre	07 14 48.8				
FOO				*e*SKPdf	**SKPbc**	07 17 37.6	+1.3			
NB201	**NORSAR Array S**	138.71	353	*e*PKPpre	PKPpre	07 14 48.0				
NB2	**NORSAR Subarra**	138.73	353	PKP	PKPpre	07 14 48.3				
	comp=Z,19nm,0.8s,baz=16,slow=3.2									
NB2	**NORSAR Subarra**	138.73	353	PKP	PKPpre	07 14 48.3				
	baz=16,slow=3.2									
NOA	**NORSAR Array B**	138.73	353	PKhKP	PKPpre	07 14 48.4				
	comp=Z,40nm,0.7s,baz=20,slow=2.4,SNR=74									
NOA				PKP	**PKPdf**	07 14 57.7	0.0			
	comp=Z,18nm,0.6s,baz=14,slow=4.0,SNR=13									
NOA				SKPbc	**SKiKP**	07 17 38.2	-1.5			
	comp=Z,42nm,1.0s,baz=16,slow=4.4,SNR=13									
NOA				SKPab	**SKPab**	07 17 48.3	+1.1			
	comp=Z,17nm,1.1s,baz=9.8,slow=2.9,SNR=3.8									
NOA				SKKPbc	**SKKPbc**	07 26 17.6	-3.5			
	comp=Z,11nm,1.1s,baz=189,slow=4.3,SNR=6.1									
NEY	**Neytrino**	138.74	313	*i* PKIKP	**PKPdf**	07 14 58.8	+0.3			
NBO02	**NORSAR Array S**	138.76	353	*e*PKPpre	PKPpre	07 14 48.2				
NBO02				*e*PKPdf	**PKiKP**	07 15 00.1	0.0			
NBO00	**NORSAR Array S**	138.79	353	*e*PKPpre	PKPpre	07 14 48.7				
NBO00				*e*PKPdf	**PKiKP**	07 15 00.1	-0.1			
AKH	**Akhalkalaki**	138.80	310	⇓*i*P	PKPpre	07 14 51.8				
AKH	**Akhalkalaki**	138.80	310	P	**SKiKP**	07 17 38.5	-2.1			
NAO01	**NORSAR Array S**	138.96	353	*e*PKPpre	PKPpre	07 14 49.3				
NC602	**NORSAR Array S**	138.99	353	*e*PKPdf	PKPpre	07 14 49.1				
NC602	**NORSAR Array S**	138.99	353	*e*PKPpre	PKPpre	07 14 48.9				
HYA	**Hoyanger**	139.04	357	*e*PKPdf	PKPpre	07 14 50.1				
KMBO	**Kilima Mbogo**	139.06	243	PKhKP	PKPpre	07 14 51.3				
	comp=Z,8.1nm,0.7s,baz=65,slow=4.4,SNR=16									
KMBO	**Kilima Mbogo**	139.06	243	P	**PKPdf**	07 14 57.7	-2.3			
	SNR=5.6									
KMBO	**Kilima Mbogo**	139.06	243	PKPdf	**PKPdf**	07 14 57.7	-2.3			
	SNR=5.6									
SUE	**Sulen**	139.22	358	*e*PKPdf	PKPpre	07 14 50.8				
SUE				*e*SKPdf	**SKPbc**	07 17 38.7	+0.9			
HFS	**Hagfors**	139.28	351	PKhKP	PKPpre	07 14 50.0				
	comp=Z,48nm,0.5s,baz=80,slow=3.2,SNR=68									
HFS				PKP	**PKPdf**	07 14 57.5	-1.1			
	comp=Z,36nm,0.7s,baz=69,slow=4.9,SNR=11									
HFS				SKPbc	**SKPbc**	07 17 38.6	+0.6			
	comp=Z,50nm,0.9s,baz=338,slow=2.4,SNR=17									
EPOS	**Posof**	139.32	311	⇓*i*P	PKPpre	07 14 50.2				
ATD	**Arta Tunnel**	139.44	264	PKhKP	PKPpre	07 14 54.2				
	comp=Z,5.4nm,0.7s,baz=307,slow=9.7,SNR=5.0									
ATD				SKPbc	**SKPbc**	07 17 40.7	+0.7			
	comp=Z,11nm,0.8s,baz=76,slow=2.7,SNR=3.7									
HAKT	**HAKKARI**	139.67	305	⇑*i*P	PKPpre	07 14 53.1				
ASK	**Askoy**	139.77	357	*e*PKPdf	PKPpre	07 14 52.8				
ASK				*e*SKPdf	**SKiKP**	07 17 41.1	-0.7			
OSL	**Oslo**	139.86	353	*e*PKPdf	PKPpre	07 14 52.0				
OSL				*e*		07 17

KIS *e* 07 18 27.0
KIS pmax pmax
comp=Z,1μm,1.3s
KIS pmax pmax
comp=Z,3μm,6.5s
KIS pmax pmax
comp=Z,2μm,12.0s
LVV L'vov 145.54 334 *e*PKIKP **PKPdf** 07 15 08.9 -1.1
LVV *e* 07 18 24.2
ILGA Ilgaz 145.75 314 ⇓*i*P **PKPdf** 07 15 10.9 -0.1
YAHY KAYSERI_Yahyal 145.82 309 ⇓*i*P **PKPdf** 07 15 10.2 -0.8
CDAG Cicekdag 145.93 312 ⇓*i*P **PKPdf** 07 15 09.7 -1.4
YAYL Yayladag 145.96 305 ⇓*i*P **PKPdf** 07 15 08.5 -2.8
AKO Adana 145.98 308 ⇓*i*P **PKPbc** 07 15 13.2 0.0
H07N1 FLORES T-PHASE 146.00 48 *e*PKiKP **PKPab** 07 15 14.5 -0.9
YURE YUREGIR 146.06 306 *i* P **PKPdf** 07 15 11.7 +0.4
H07S1 FLORES T-PHASE 146.07 49 *e*PKiKP **PKPbc** 07 15 14.1 +0.7
ELDT Eldivan 146.20 314 ⇓*i*P **PKPdf** 07 15 10.9 -0.8
KWP Kalwaria Pacla 146.22 335 *e*PKPdf **PKPbc** 07 15 14.0 +0.5
KWP *e*PP pPKPab 07 17 31.3 +1.5
ASF Jabal al Asfar 146.31 298 PKPbc **PKPdf** 07 15 12.1 +0.1
comp=Z,138nm,0.8s,baz=69,slow=2.1,SNR=92
ASF SKKPbc SKKPbc 07 25 47.8 -1.3
comp=Z,6.4nm,1.1s,baz=227,slow=2.8,SNR=6.6
BR131 Keskin Array S 146.40 312 *e*PKPdf **PKPdf** 07 15 11.6 -0.4
BR131 *e*PKPbc **PKPbc** 07 15 14.4 0.0
BRTR Keskin Array B 146.40 312 PKP **PKPdf** 07 15 11.5 -0.4
comp=Z,110nm,0.6s,baz=129,slow=2.5,SNR=107
BRTR PKPbc **PKPbc** 07 15 14.4 0.0
comp=Z,111nm,0.6s,baz=131,slow=3.6,SNR=192
BRTR SKKPbc SKKPbc 07 25 48.6 -0.7
comp=Z,6.3nm,0.8s,baz=242,slow=4.5,SNR=18
BTIN Bart¯–n 146.44 316 ⇓*i*P **PKPbc** 07 15 13.5 -0.8
TLCR 146.50 324 ⇓*i*P **PKPdf** 07 15 12.1 +0.4
TLCR 146.50 324 ⇓*i*PKiKP **PKPdf** 07 15 12.1 +0.4
DSB Dublin 146.55 9 *e*PKPdf **PKPdf** 07 15 11.4 -0.1
DSB *e*PKPbc **PKPbc** 07 15 14.5 +0.3
HWQ Hawqa 146.59 302 *e*P **PKPbc** 07 15 14.9 -0.2
DED Mersin 146.64 307 ⇓*i*P **PKPdf** 07 15 11.0 -1.3
BUR08 Bucovina Ar. S 146.67 330 *e*PKPdf **PKPdf** 07 15 12.8 +0.7
BUR08 *e*PKPbc **PKiKP** 07 15 15.9 -1.0
BURAR Bucovina Array 146.68 330 ⇓*i*P **PKPdf** 07 15 12.1 0.0
BURAR Bucovina Array 146.68 330 ⇓⇓PKiKP **PKPdf** 07 15 12.1 0.0
AKSY AKSARAY - Alti 146.76 310 ⇓*i*P **PKPdf** 07 15 11.5 -1.0
TESR Tescani 146.77 328 ⇓*i*P **PKPdf** 07 15 11.7 -0.5
BSTP Nigde 146.79 309 ⇓*i*P **PKPbc** 07 15 16.0 +0.5
OJC Ojcow 146.82 338 *e*PKPdf **PKPdf** 07 15 12.0 -0.1
OJC *e*PKPabd **PKPbc** 07 15 15.3 +0.3
OJC Ojcow 146.82 338 *e*PKiKP **PKPdf** 07 15 12.1 -0.1
OJC *e* 07 15 15.3
OJC Ojcow 146.82 338 *e*PKPdf **PKPdf** 07 15 12.1 -0.1
OJC *e*PKPbc **PKPbc** 07 15 15.3 +0.3
BBAL Bala 146.83 312 ⇓*i*P **PKPdf** 07 15 12.0 -0.7
H10S3 ASCENSION HYDR 146.84 150 PKPbc **PKPbc** 07 15 15.0 -0.8
baz=240,slow=6.1,SNR=3.3
H10S2 ASCENSION HYDR 146.84 150 PKPbc **PKPbc** 07 15 16.9 +1.0
baz=240,slow=6.1,SNR=9.8
H10S1 ASCENSION HYDR 146.86 150 PKPbc **PKPbc** 07 15 16.4 +0.5
baz=240,slow=6.1,SNR=19
CFR Carcaliu 146.88 325 ⇑*i*P **PKPdf** 07 15 11.8 -0.6
CFR Carcaliu 146.88 325 ⇑⇑PKiKP **PKPdf** 07 15 11.8 -0.6
BHL Bhannes 146.92 301 *e*P **PKPbc** 07 15 16.1 +0.1
BR231 Keskin MP Arra 146.94 313 *e*PKPdf **PKPdf** 07 15 11.9 -0.9
BR231 *e*PKPbc **PKPbc** 07 15 15.6 -0.3
BCAM Yenicaga 146.96 315 ⇓*i*P **PKPdf** 07 15 11.9 -1.0
STHS Stebnicka Huta 146.96 336 *e*PKP **PKPdf** 07 15 13.2 +0.8
STHS *e* 07 15 16.3
STHS *e* 07 15 19.6
KERG Konya-Eregli 146.98 308 ⇓*i*P **PKPdf** 07 15 11.1 -1.9
ODBI Odobesti 147.07 326 ⇓*i*P **PKPbc** 07 15 16.9 +1.0
VAL Valentia 147.10 13 ⇓*i*P **PKPbc** 07 15 14.8 -0.9
KKUL Konya-Kulu 147.14 312 ⇓*i*P **PKPdf** 07 15 12.5 -0.7
VRI Vrincioaia 147.17 327 ⇓*i*P **PKPdf** 07 15 12.0 -0.9
VRI Vrincioaia 147.17 327 ⇓⇓PKiKP **PKPdf** 07 15 12.0 -0.9
UZH Uzhgorod 147.18 334 ⇑*e*PKHKP PKPpre 07 15 10.4
UZH *i* 07 15 16.8
PLOR Plostina 147.22 327 ⇓*i*P **PKPdf** 07 15 12.2 -0.8
PLOR Plostina 147.22 327 ⇓⇓PKiKP **PKPdf** 07 15 12.2 -0.8
HARR Harsova 147.30 324 ⇑*i*P **PKPdf** 07 15 13.5 +0.4
HARR Harsova 147.30 324 ⇑⇑PKiKP **PKPdf** 07 15 13.5 +0.4
KIZK Mersin 147.31 307 ⇓*i*P **PKPdf** 07 15 12.5 -0.9
TLB Topalu 147.31 324 ⇓*i*P **PKPdf** 07 15 13.6 +0.5
TLB Topalu 147.31 324 ⇓⇓PKiKP **PKPdf** 07 15 13.6 +0.5
MMAI Mount Meron Ar 147.35 300 PKP **PKPdf** 07 15 12.9 -0.8
comp=Z,203nm,0.6s,baz=69,slow=4.6,SNR=93
MMAI PKPbc **PKPbc** 07 15 17.6 +0.5
comp=Z,196nm,0.6s,baz=67,slow=3.7,SNR=86
MMAI PKPab **PKPab** 07 15 22.6 +1.4
comp=Z,32nm,0.5s,baz=61,slow=3.9,SNR=5.2
KSP Ksiaz 147.38 343 *e*PKPdf **PKPdf** 07 15 13.3 +0.3
KSP *e*PKPabd 07 15 17.3
BMR Baia Mare 147.42 332 ⇑*i*P **PKPdf** 07 15 13.1 -0.1
BMR Baia Mare 147.42 332 ⇑⇑PKiKP **PKPdf** 07 15 13.1 -0.1
TRPA Tarpa 147.47 334 ⇓*ex* **PKPbc** 07 15 17.0 +0.2
CWF Charnwood Fore 147.54 3 *e*PKPdf **PKPdf** 07 15 13.4 +0.1
CWF *e*PKPbc **PKPbc** 07 15 16.9 +0.1
OKC Ostrava-Krasne 147.70 340 *e*PKPDF **PKPdf** 07 15 14.1 +0.5
OKC ⇑*i*PKP **PKPbc** 07 15 17.7 +0.4
OKC *e*PKPAB **PKPab** 07 15 22.7 +0.8
OKC *ex* x 07 18 29.6
SAHE Sakarya_HENDEK 147.74 316 ⇓*i*P **PKPdf** 07 15 12.5 -1.5
UPC Upice 147.75 343 *e*PKPDF **PKPdf** 07 15 13.9 +0.2
UPC ⇑*i*PKP **PKiKP** 07 15 18.2 -0.7
UPC *e*PKPAB **PKPab** 07 15 23.2 +1.1
UPC *es*PKP 07 18 33.0
ISR Istrita 147.77 326 ⇓*i*P **PKPbc** 07 15 18.2 +0.4
ISR Istrita 147.77 326 ⇓⇓PKP2 **PKPbc** 07 15 18.2 +0.4
CLL Collm 147.77 346 *e*PKPdf **PKPdf** 07 15 14.0 +0.3
comp=Z,96nm,1.2s
CLL ⇓⇓*i*PKPbc **PKPbc** 07 15 18.0 +0.5
comp=Z,690nm,0.7s
CLL ⇑⇑*i*PKPab **PKPab** 07 15 22.4 +0.3
comp=Z,316nm,0.8s
CLL *ep*PKPab **pPKPab** 07 17 37.0 +1.5
CLL *eS*KPdf **SKPdf** 07 17 50.0 -1.2
CLL *eS*KPbc **SKPbc** 07 17 58.0 -0.5
CLL *eP*P PP 07 18 39.0 -12
CLL *eP*KSdf **PKSdf** 07 18 47.0 -1.5
CLL *eP*PP PPP 07 21 56.0
CLL *eS*KKSac **SKKSac** 07 24 45.0 +2.8
CLL Collm 147.77 346 *e*PKiKP **PKPdf** 07 15 13.6 -0.1
CLL Collm 147.77 346 *e*PKPdf **PKPdf** 07 15 13.6 -0.1
CLL *e*PKPbc **PKiKP** 07 15 18.2 -0.7
BTAS Tasketsi 147.79 315 ⇓*i*P **PKPdf** 07 15 13.1 -1.0
DPC Dobruska-Polom 147.81 342 *e*PKPDF **PKPdf** 07 15 14.2 +0.4
DPC ⇑*i*PKP **PKiKP** 07 15 18.4 -0.7
DPC *e*PKPAB **PKPab** 07 15 23.6 +1.2
DPC *ep*PKP **pPKPdf** 07 17 37.9 +4.5
DPC *ex* x 07 18 27.1
MLR Muntele Rosu 147.83 327 PKP **PKPdf** 07 15 13.4 -0.7
comp=Z,32nm,1.1s,baz=340,slow=5.4,SNR=52
MLR PKPbc **PKPbc** 07 15 18.2 +0.2
comp=Z,59nm,0.8s,baz=8.4,slow=2.6,SNR=85
MLR SKKPbc 07 25 40.9
comp=Z,0.7nm,0.6s,baz=291,slow=5.1,SNR=5.3
MLR Muntele Rosu 147.83 327 ⇓*i*P **PKPdf** 07 15 13.4 -0.7
LANS Liptovska Anna 147.84 338 *e*PKP **PKPdf** 07 15 14.9 +1.0
LANS *e* 07 15 19.2
LANS *e* 07 15 24.0
ASCN Ascension 147.87 149 *e*PKPbc **PKPbc** 07 15 20.3 +1.4
H10N3 ASCENSION HYDR 147.88 149 PKPbc **PKPbc** 07 15 19.8 +1.3
baz=205,slow=2.9,SNR=7.0
H10N1 ASCENSION HYDR 147.89 149 PKPbc **PKPbc** 07 15 19.5 +1.0
baz=205,slow=2.9,SNR=9.7
H10N2 ASCENSION HYDR 147.90 149 PKPbc **PKPbc** 07 15 19.8 +1.3
baz=205,slow=2.9,SNR=11
KRLC Kraliky 147.92 341 ⇑*i*PKP **PKPbc** 07 15 18.6 +0.6
MORC Moravsky Berou 147.95 340 ⇓*i*P **PKPdf** 07 15 14.3 +0.2
MORC Moravsky Berou 147.95 340 ⇓⇓PKiKP **PKPdf** 07 15 14.3 +0.2
MORC Moravsky Berou 147.95 340 *e*PKPdf **PKPdf** 07 15 14.3 +0.2
MORC *e*PKPbc **PKiKP** 07 15 18.7 -0.7
KDHN Kadinhani 147.99 311 ⇓*i*P **PKPdf** 07 15 13.6 -1.0
KECS Kecovo 148.02 336 *e*PKP **PKPdf** 07 15 14.3 +0.1
KECS *e* 07 15 19.2
KECS *e* 07 15 24.2
KAND Kocaeli-Kandir 148.05 317 ⇓*i*P **PKPbc** 07 15 18.4 -0.1
SECR 148.07 326 ⇓*i*P **PKPbc** 07 15 16.6 -1.9
CJR Cluj-Napoca 148.09 331 ⇓*i*P **PKPdf** 07 15 15.0 +0.6
CJR Cluj-Napoca 148.09 331 ⇓⇓PKiKP **PKPdf** 07 15 15.0 +0.6
PVCC Panska Ves 148.12 344 *e*PKPDF **PKPdf** 07 15 14.6 +0.3
PVCC ⇑*i*PKP **PKiKP** 07 15 19.0 -0.6
PVCC *ep*PKP **pPKPdf** 07 17 41.7 +7.8

KMER Konya-Meram 148.12 310 ⇓*i*P **PKPbc** 07 15 18.1 -0.9
WTSB Winterswijk 148.13 354 *e*PKPdf **PKPdf** 07 15 14.1 -0.1
comp=Z,145nm,1.0s
WTSB *e*PKPbc **PKPbc** 07 15 18.8 +0.4
comp=Z,857nm,0.7s
WTSB *e*PKPab **PKPab** 07 15 23.5 -0.1
comp=Z,546nm,1.3s
PCED Cedros 148.15 48 *e*PKiKP **PKiKP** 07 15 19.7 -0.4
ERMK Ermenek 148.17 307 ⇓*i*P **PKPdf** 07 15 14.2 -0.9
CALA Caldeira 148.17 48 *e*PKiKP **PKiKP** 07 15 20.5 +0.3
SULR 148.22 326 ⇓*i*P **PKPbc** 07 15 18.9 +0.1
VOIR 148.32 328 ⇑*i*P **PKPdf** 07 15 14.3 -0.6
VOIR 148.32 328 ⇑⇑PKiKP **PKPdf** 07 15 14.3 -0.6
PCAN Candelaria 148.38 49 *e*PKiKP **PKiKP** 07 15 20.4 -0.2
PICO Pico 148.40 48 *e*PKiKP **PKiKP** 07 15 20.9 +0.2
ESKT Eskisehir 148.41 314 *i* P **PKPdf** 07 15 14.7 -0.5
EIL Elat 148.42 294 PKP **PKPdf** 07 15 15.0 -0.4
comp=Z,31nm,1.0s,baz=71,slow=0.5,SNR=26
EIL PKPbc **PKiKP** 07 15 20.4 -0.5
comp=Z,176nm,0.8s,baz=64,slow=1.4,SNR=113
EIL PKPab **PKPab** 07 15 26.8 +1.2
comp=Z,125nm,0.9s,baz=107,slow=5.8,SNR=16
ROSA Rosais 148.43 48 *e*PKiKP **PKiKP** 07 15 20.9 +0.2
ROSA Rosais 148.43 48 *e*PKPdf **PKPdf** 07 15 16.6 +1.5
ROSA *e*PKPbc **PKiKP** 07 15 20.4 -0.2
DRGR 148.43 332 ⇓*i*P **PKPdf** 07 15 14.6 -0.4
DRGR 148.43 332 ⇓⇓PKiKP **PKPdf** 07 15 14.6 -0.4
CSS Mathiatis 148.44 304 P **PKPbc** 07 15 19.6 -0.2
CSS Mathiatis 148.44 304 P **PKPdf** 07 15 14.2 -1.1
CSS Mathiatis 148.44 304 *e*PKPdf **PKPdf** 07 15 14.8 -0.5
CSS *e*PKPbc **PKPbc** 07 15 19.5 -0.2
MAMC Mammari 148.46 305 P **PKPbc** 07 15 19.8 +0.1
PGRA Graciosa 148.47 47 *e*PKiKP **PKiKP** 07 15 20.5 -0.2
BORA Eskisehir 148.50 315 ⇓*i*P **PKPdf** 07 15 14.3 -1.0
PRD Provadia 148.54 322 *i* P **PKPbc** 07 15 20.8 +1.2
ARR Arges 148.58 328 ⇑*i*P **PKPdf** 07 15 15.6 +0.3
PMAN Manadas 148.58 48 *e*PKiKP **PKiKP** 07 15 20.9 0.0
VYHS Vyhne 148.62 338 *e*PKP **PKPdf** 07 15 15.2 0.0
VYHS *e* 07 15 20.5
VYHS *e* 07 15 26.6
PRU Pruhonice 148.62 344 *e*PKPDF **PKPdf** 07 15 14.3 -0.8
PRU ⇑*i*PKP **PKPbc** 07 15 20.1 +0.5
PRU *e*PKPAB **PKPab** 07 15 26.3 +0.6
PRU *ep*PKP **pPKPdf** 07 17 43.9 +9.2
PRU *es*PKP 07 18 34.6
PRU *ex* x 07 21 58.7
PRU *eS*KKS 07 24 48.6
PRU *eS*S **SS** 07 37 17.1 +0.4
GOPC GO Pecny, Ondr 148.63 343 *e*PKPDF **PKPdf** 07 15 15.5 +0.4
GOPC ⇑*i*PKP **PKiKP** 07 15 20.2 -0.5
GOPC *e*PKPAB **PKPab** 07 15 26.6 +0.9
GOPC *es*PKP 07 18 37.1
GOPC *ex* x 07 21 59.5
GOPC *ex* x 07 28 58.0
VRAC Vranov 148.66 341 PKP **PKPdf** 07 15 14.9 -0.3
comp=Z,6.5nm,0.7s,baz=299,slow=0.3,SNR=14
VRAC PKPbc **PKiKP** 07 15 20.3 -0.4
comp=Z,147nm,1.0s,baz=31,slow=2.2,SNR=100
VRAC PKPab **PKPab** 07 15 26.1 +0.2
comp=Z,128nm,0.9s,baz=32,slow=5.5,SNR=21
VRAC Vranov 148.66 341 ⇓*i*P **PKPdf** 07 15 15.3 +0.1
VRAC Vranov 148.66 341 ⇓⇓PKHKP **PKPdf** 07 15 15.3 +0.1
PSZ Piszkesteto 148.71 336 ⇓*i*P **PKPdf** 07 15 15.2 -0.2
PSZ Piszkesteto 148.71 336 ⇓⇓PKHKP **PKPdf** 07 15 15.2 -0.2
PSZ Piszkesteto 148.71 336 *e*PKPdf **PKPdf** 07 15 15.5 +0.1
PSZ *e*PKPbc **PKiKP** 07 15 20.6 -0.4
PSZ 148.71 336 ⇓*ex* **PKPdf** 07 15 15.1 -0.3
PSZ *ex* x 07 15 20.3
BOLV Bolvadin 148.71 312 ⇓*i*P **PKPdf** 07 15 14.8 -0.9
GAZI Gazipasa 148.77 307 ⇓*i*P **PKPdf** 07 15 13.9 -1.8
ISK Istanbul-Kandi 148.78 318 P **PKPdf** 07 15 14.3 -1.3
SZAC Souni 148.86 304 P **PKPbc** 07 15 20.5 -0.3
BUY Buyukada 148.86 317 ⇓*i*P **PKPbc** 07 15 20.7 +0.2
NKC Novy Kostel 148.90 346 *e*PKPDF **PKPdf** 07 15 15.6 0.0
NKC ⇑*i*PKP **PKiKP** 07 15 21.0 -0.3
NKC *e*PKPAB **PKPab** 07 15 27.1 +0.2
HUMR Humele 148.99 327 ⇓*i*P **PKPdf** 07 15 15.7 -0.1
TREC Trest 149.00 342 *e*PKPDF **PKPdf** 07 15 16.1 +0.4
TREC ⇑*i*PKP **PKiKP** 07 15 21.1 -0.4
TREC *e*PKPAB **PKPab** 07 15 27.3 0.0
SMOL Smolenice 149.08 339 *e*PKP **PKPbc** 07 15 22.2 +1.4
IGD Bursa 149.12 316 ⇓*i*P **PKPdf** 07 15 13.5 -2.7
ELBA Catalca 149.13 318 ⇓*i*P **PKPdf** 07 15 14.8 -1.4
BAGO Egridir - ISPA 149.16 311 ⇓*i*P **PKPbc** 07 15 20.5 -0.9
ADH Angra Heroismo 149.16 47 *e*PKiKP **PKiKP** 07 15 22.5 +0.4
AKMC Akamas 149.19 305 P **PKPbc** 07 15 20.4 -1.2
PPCY Paphos 149.23 305 P **PKPbc** 07 15 21.1 -0.5
SIRR Siria 149.30 332 ⇑*i*P **PKPdf** 07 15 16.3 0.0
BEBN Eben Emael 149.39 355 PKP **PKPdf** 07 15 16.6 +0.4
BEBN PKPbc **PKiKP** 07 15 21.8 -0.4
BEBN PKPab **PKPab** 07 15 29.0 +0.2
BUD Budapest 149.40 336 ⇓*ex* **PKPdf** 07 15 16.0 -0.4
BUD *ex* x 07 15 21.7
HGN Heimansgroeve 149.40 355 *e*PKPdf **PKPdf** 07 15 15.9 -0.3
comp=Z,70nm,0.9s
HGN *e*PKPbc **PKPbc** 07 15 21.8 +0.4
comp=Z,390nm,1.0s
HGN *e*PKPab **PKPab** 07 15 28.7 -0.1
comp=Z,453nm,1.4s
UCC Uccle 149.48 356 PKPbc **PKPbc** 07 15 22.2 +0.6
GDZ Gediz 149.54 314 ⇓*i*P **PKPdf** 07 15 15.7 -1.4
MEM Membach 149.55 354 PKP **PKPdf** 07 15 17.0 +0.5
MEM PKPbc **PKPbc** 07 15 22.1 +0.2
DYA Yadsworthy 149.61 7 *e*PKPdf **PKPdf** 07 15 16.4 -0.2
DYA *e*PKPbc **PKPbc** 07 15 22.0 0.0
KHC Kasperske Hory 149.66 344 *e*PKPDF **PKPdf** 07 15 16.8 0.0
KHC ⇑*i*PKP **PKiKP** 07 15 22.9 0.0
KHC *e*PKPAB **PKPab** 07 15 31.1 +1.0
KHC *es*PKP 07 18 40.5
KHC *eS*KKS 07 24 51.5
KHC *ex* x 07 29 03.3
KHC *eS*S **SS** 07 37 23.6 -4.6
KHC Kasperske Hory 149.66 344 *e*PKiKP **PKPdf** 07 15 16.8 0.0
KHC *e* 07 15 30.8
KHC Kasperske Hory 149.66 344 *e*PKPdf **PKPdf** 07 15 16.8 0.0
KHC *e*PKPbc **PKiKP** 07 15 22.9 0.0
KHC *e*PKPab **PKPab** 07 15 30.8 +0.7
GRFO Grafenberg 149.68 348 *e*PKHKP **PKPdf** 07 15 17.4 +0.6
GRFO Grafenberg 149.68 348 *e*PKPdf **PKPdf** 07 15 17.4 +0.6
GRFO *e*PKPbc **PKiKP** 07 15 23.0 +0.1
EDRB Edirne 149.75 321 P **PKPdf** 07 15 16.1 -1.0
SNF Seneffe 149.78 357 PKP **PKPdf** 07 15 17.3 +0.5
SNF PKPbc **PKiKP** 07 15 22.9 -0.1
SNF PKPab **PKPab** 07 15 30.4 0.0
CSKK Cs¯‡kako 149.78 337 *ex* **PKPdf** 07 15 16.4 -0.6
CSKK *ex* x 07 15 22.6
SRE Strehaia 149.79 328 ⇑*i*P **PKPdf** 07 15 17.2 +0.1
SRE Strehaia 149.79 328 ⇑⇑PKiKP **PKPdf** 07 15 17.2 +0.1
BCLA Clavier 149.80 355 PKP **PKPdf** 07 15 17.4 +0.5
BCLA PKPbc **PKPbc** 07 15 22.3 -0.1
BCLA PKPab **PKPab** 07 15 30.6 +0.1
BZS Buzias 149.82 331 ⇓*i*P **PKPdf** 07 15 16.7 -0.4
BZS Buzias 149.82 331 ⇓⇓PKiKP **PKPdf** 07 15 16.7 -0.4
GEC2 GERESS Array S 149.89 344 *e*PKiKP **PKPdf** 07 15 17.4 +0.1
GEC2 GERESS Array S 149.89 344 *e*PKPdf **PKPdf** 07 15 17.4 +0.1
GEC2 *e*PKPbc **PKPbc** 07 15 23.1 +0.2
GEC2 *e*PKPbc **PKiKP** 07 15 23.3 -0.2
GERES GERESS Array B 149.89 344 PKP **PKPdf** 07 15 17.0 -0.3
comp=Z,11nm,0.8s,baz=48,slow=1.5,SNR=73
GERES PKPbc **PKPbc** 07 15 23.0 +0.2
comp=Z,117nm,0.7s,baz=31,slow=2.3,SNR=176
GERES PKPab **PKPab** 07 15 31.5 +0.3
comp=Z,42nm,0.7s,baz=15,slow=4.1,SNR=14
GERES PP **PP** 07 18 59.0 -3.8
comp=Z,2.5nm,0.9s,baz=38,slow=12,SNR=2.2
GEA0 GERESS Array S 149.90 344 *e*PKPdf **PKPdf** 07 15 15.9 -1.3
GEA0 *e*PKPbc **PKPbc** 07 15 23.1 +0.2
GEA0 *e*PKPab **PKPab** 07 15 31.9 +0.7
KORT Korkueli 149.91 310 ⇓*i*P **PKPdf** 07 15 16.5 -1.2
TIM Timisoara 149.91 332 ⇑*i*P **PKPbc** 07 15 21.3 -1.5
TIM Timisoara 149.91 332 ⇑⇑PKHKP **PKPbc** 07 15 21.3 -1.5
DEMI Demirci 150.08 315 ⇓*i*P **PKPdf** 07 15 16.6 -1.3
CONA Conrad Observa 150.10 341 *i* PKPdf **PKPdf** 07 15 17.3 -0.3
comp=Z,32nm,1.0s,SNR=16
DOU Dourbes 150.17 356 PKP **PKPdf** 07 15 18.1 +0.6
DOU PKPbc **PKiKP** 07 15 23.7 -0.1
SART Tekirdag 150.17 319 ⇓*i*P **PKPdf** 07 15 16.6 -1.3
GOLH Golhisar 150.37 311 ⇓*i*P **PKPbc** 07 15 23.6 -0.7
KULA Kula-Manisa 150.38 314 P **PKPdf** 07 15 17.1 -1.2
KESN Edirne-Kesan 150.40 319 ⇓*i*P **PKPdf** 07 15 16.9 -1.7
MDVR Moldovita 150.41 330 ⇑*i*P **PKPdf** 07 15 17.6 -0.5

BALY Balya 150.43 317 ⇓*i*P **PKPbc** 07 15 23.4 -1.0
MPEP Malo Peshtene 150.44 326 *i* P **PKPbc** 07 15 24.7 +0.5
MANT Manisa 150.47 314 ⇓*i*P **PKPbc** 07 15 23.0 -1.7
WLF Walferdange 150.47 354 PKP **PKPdf** 07 15 19.2 +1.2
WLF PKPbc **PKiKP** 07 15 25.0 +0.5
WLF PKPab **PKPab** 07 15 34.0 +0.6
WLF Walferdange 150.47 354 *e*PKiKP **PKPdf** 07 15 19.1 +1.2
WLF Walferdange 150.47 354 *e*PKPdf **PKPdf** 07 15 19.1 +1.1
WLF *e*PKPbc **PKiKP** 07 15 24.9 +0.5
MOA Molln 150.65 342 *i* PKPdf **PKPdf** 07 15 18.2 -0.1
comp=Z,19nm,0.8s,SNR=13
ALN Alexandroupoli 150.75 320 P **PKPdf** 07 15 15.9 -2.8
CMLA Cha da Macela 150.77 48 *e*PKiKP **PKPdf** 07 15 20.8 +2.0
CMLA Cha da Macela 150.77 48 *e*PKPdf **PKPdf** 07 15 20.8 +2.0
CMLA *e*PKPbc **PKiKP** 07 15 25.8 +0.3
AKAS Kas 150.78 309 ⇓*i*P **PKPbc** 07 15 24.6 -0.7
ARSA Arzberg 150.81 340 *i* PKPdf **PKPdf** 07 15 17.9 -0.7
comp=Z,10nm,0.8s,SNR=9.7
KSL Kastellorizon 150.83 309 P **PKPdf** 07 15 18.5 -0.4
STU Stuttgart 150.94 350 *e*PKiKP **PKPdf** 07 15 19.2 +0.5
STU Stuttgart 150.94 350 *e*PKPdf **PKPdf** 07 15 19.2 +0.5
STU *e*PKPbc **PKiKP** 07 15 25.8 +0.3
LANF Langenberg 150.95 352 PKP **PKPdf** 07 15 19.1 +0.3
BEHE Becsehely 151.07 338 ⇓*ex* **PKPdf** 07 15 19.0 0.0
BEHE *ex* x 07 15 25.6
TURN Turunc 151.21 311 ⇓*i*P **PKPbc** 07 15 26.8 +0.7
VTS Vitosha 151.26 325 P **PKPdf** 07 15 19.2 -0.4
VTS Vitosha 151.26 325 ⇓*i*P **PKPdf** 07 15 19.2 -0.4
VTS Vitosha 151.26 325 ⇓⇓PKiKP **PKPdf** 07 15 19.2 -0.4
VTS Vitosha 151.26 325 *i* P **PKPbc** 07 15 26.6 +0.3
VTS Vitosha 151.26 325 *e*PKPdf **PKPdf** 07 15 19.3 -0.4
VTS *e*PKPbc **PKPbc** 07 15 26.2 0.0
AYVA Ayvalik 151.27 317 ⇓*i*P **PKPbc** 07 15 25.3 -0.9
KOGS Kog 151.27 339 *e*PKPdf **PKPdf** 07 15 18.2 -1.1
KOGS *i* PKPbc **PKPbc** 07 15 25.5 -0.5
KOGS *i* PKPab **PKPab** 07 15 37.0 +0.2
SMTH Samothraki Isl 151.31 320 P **PKPdf** 07 15 18.8 -0.8
BOZC Bozcaada 151.37 318 ⇓*i*P **PKPdf** 07 15 18.0 -1.6
SOKA Soketi 151.47 340 *i* PKPdf **PKPdf** 07 15 19.1 -0.6
comp=Z,36nm,1.0s,SNR=18
PERS Pernice 151.48 340 *i* PKPdf **PKPdf** 07 15 18.6 -1.1
PERS *i* PKPbc **PKPbc** 07 15 25.9 -0.6
PERS *e*PKPab **PKPab** 07 15 37.2 -0.7
BFO Black Forest 151.50 351 *e*PKiKP **PKPdf** 07 15 19.7 0.0
BFO Black Forest 151.50 351 *e*PKPdf **PKPdf** 07 15 19.6 0.0
BFO *e*PKPbc **PKPbc** 07 15 26.4 0.0
PRK Paraskevi 151.57 317 P **PKPdf** 07 15 18.6 -1.4
KAVA Kavala 151.59 322 P **PKPdf** 07 15 18.7 -1.2
KBA Koelnbreinsper 151.61 343 *i* PKPdf **PKPdf** 07 15 19.4 -0.6
comp=Z,25nm,0.9s,SNR=13
MMB Musomiste 151.65 323 *i* P **PKPbc** 07 15 27.3 +0.3
DIVS Divibare 151.73 331 P **PKPdf** 07 15 18.3 -1.9
NVR Nevrokopi 151.74 323 P **PKPdf** 07 15 18.8 -1.4
GCAM G?zelcaml? 151.77 313 ⇓*i*P **PKPdf** 07 15 19.0 -1.3
OBKA Obir 151.77 341 *i* PKPdf **PKPdf** 07 15 19.9 -0.3
comp=Z,29nm,1.8s
ECH Echery 151.78 352 PKP **PKPdf** 07 15 19.7 -0.4
DGB ¯zmir 151.82 314 ⇓*i*P **PKPdf** 07 15 18.5 -1.8
WATA Walderalm 151.82 345 *i* PKPdf **PKPdf** 07 15 20.1 -0.2
comp=Z,52nm,1.2s,SNR=7.4
URLA Izmir 151.85 315 ⇓*i*P **PKPdf** 07 15 18.6 -1.8
SIGR SIGRI 151.86 317 P **PKPdf** 07 15 20.0 -0.4
RETA Reutte 151.86 347 *i* PKPdf **PKPdf** 07 15 19.9 -0.4
comp=Z,27nm,1.0s,SNR=8.7
LIA Limnos Island 151.87 319 P **PKPdf** 07 15 19.2 -1.2
WTTA Wattenberg 151.88 345 *i* PKPdf **PKPdf** 07 15 19.8 -0.7
comp=Z,36nm,0.8s,SNR=14
THEF They Montfort 151.91 354 PKP **PKPdf** 07 15 20.7 +0.5
MOTA Moosalm 151.92 346 *i* PKPdf **PKPdf** 07 15 20.1 -0.4
comp=Z,36nm,0.8s,SNR=18
MYKA Terra Mystica 151.94 342 *i* PKPdf **PKPdf** 07 15 19.5 -0.9
comp=Z,18nm,0.7s,SNR=11
BDRM Kayabasi 151.94 312 ⇓⇓*i*P **PKPdf** 07 15 19.4 -1.2
SMG Samos 152.03 314 P **PKPdf** 07 15 19.4 -1.3
SMG Samos 152.03 314 P **PKPdf** 07 15 19.4 -1.3
SRS Serrai 152.04 323 P **PKPdf** 07 15 18.2 -2.5
VNDS Vrh nad Dolski 152.09 340 *e*PKPdf **PKPdf** 07 15 20.0 -0.5
ABTA Abfaltersbach 152.14 344 *i* PKPdf **PKPdf** 07 15 20.0 -0.7
comp=Z,119nm,1.3s,SNR=29
MOF Molkenrain 152.14 352 PKP **PKPdf** 07 15 19.5 -1.2
CHOS Chios island 152.19 316 P **PKPdf** 07 15 19.7 -1.3
CHOS Chios island 152.19 316 P **PKPdf** 07 15 19.7 -1.3
LJU Ljubljana 152.20 340 *e*PKPdf **PKPdf** 07 15 20.4 -0.3
LJU *i* PKPbc **PKPbc** 07 15 27.9 -0.2
LJU *e*PKPab **PKPab** 07 15 40.4 -0.4
LJU *ep*PKPbc **pPKPbc** 07 17 48.5 +2.0
LJU *e* 07 17 58.3
LJU *e* 07 18 43.5
LJU *e* 07 19 13.9
LJU *e* 07 22 18.2
DAVA Damuels 152.24 348 *i* PKPdf **PKPdf** 07 15 21.0 0.0
comp=Z,35nm,0.9s,SNR=12
CADS Cadrg 152.27 342 *i* PKPdf **PKPdf** 07 15 19.8 -1.1
CADS *i* PKPbc **PKPbc** 07 15 27.3 -1.0
CADS *i* PKPab **PKPab** 07 15 40.2 -0.9
FETA Feichten 152.31 346 *i* PKPdf **PKPdf** 07 15 20.7 -0.4
comp=Z,78nm,0.8s,SNR=48
OUR Ouranopolis 152.32 321 P **PKPdf** 07 15 20.0 -1.0
KNT Kendrikon 152.40 324 P **PKPdf** 07 15 19.3 -1.9
BOJS Bojanci 152.44 339 *i* PKPdf **PKPdf** 07 15 21.0 -0.1
BOJS *i* PKPbc **PKiKP** 07 15 28.7 0.0
BOJS *i* PKPab **PKPab** 07 15 41.7 -0.1
VAY Valandovo 152.48 324 P **PKPdf** 07 15 19.8 -1.4
VAY Valandovo 152.48 324 *i* PKPdf **PKPdf** 07 15 19.8 -1.4
PLE Pljevlja 152.60 331 ⇑*i*PKP **PKPdf** 07 15 20.7 -0.8
PLG Polygyros 152.61 322 P **PKPdf** 07 15 19.7 -1.8
SKO Skopje 152.62 327 *i* PKP **PKPdf** 07 15 20.5 -1.0
HORT Hortiatis 152.67 322 P **PKPdf** 07 15 20.1 -1.6
DAVOX Davos/Dischmat 152.72 347 PKP **PKPdf** 07 15 21.8 +0.1
comp=Z,40nm,0.7s,baz=19,slow=0.9,SNR=46
DAVOX PKPbc **PKi

NEST	Nestorio	153.94	325	P		PKPdf	07 15 22.7	-0.8
THL	Klokotos Trika	153.97	322	P		PKPdf	07 15 21.5	-1.9
PENT	Pentalofos	154.04	324	P		PKPdf	07 15 23.5	-0.1
KPRO	Kipourio	154.08	323	P		PKPdf	07 15 22.4	-1.3
AGG	Agios Georgios	154.14	321	P		PKPdf	07 15 21.1	-2.6
AGG	Agios Georgios	154.14	321	*e*PKIKP		PKPdf	07 15 23.4	-0.3
AGG	Agios Georgios	154.14	321	*e*PKPdf		PKPdf	07 15 23.4	-0.3
AGG				*e*PKPbc		PKPbc	07 15 31.8	-0.7
LAST	Lasithi	154.25	310	*e*PKPdf		PKPdf	07 15 24.0	-0.1
LAST				*e*PKPbc		PKPbc	07 15 33.4	+0.5
LAST				*e*PKPab		PKPab	07 15 50.9	+0.8
AGO	Saint Agoulin	154.28	357	PKP		PKPdf	07 15 24.1	+0.4
RSL	Roselend	154.33	352	PKP		PKPdf	07 15 23.9	-0.1
PLDF	La Plantade	154.34	357	PKP		PKPdf	07 15 24.2	+0.4
LTK	Loutraki	154.38	318	P		PKPdf	07 15 23.2	-0.9
DSF	Desfina	154.41	319	P		PKPdf	07 15 22.6	-1.6
DID	Didima	154.52	317	P		PKPdf	07 15 21.7	-2.6
EVR	Evrytania	154.52	321	P		PKPdf	07 15 23.5	-0.8
JAN	Janina	154.57	324	P		PKPdf	07 15 23.8	-0.5
PYM	Petit Puy Mans	154.59	358	PKP		PKPdf	07 15 24.6	+0.4
VERF	Verneugheol	154.60	358	PKP		PKPdf	07 15 24.5	+0.3
IDI	Anoyia	154.61	311	PKP		PKPdf	07 15 24.6	+0.1
	comp=Z,34nm,0.9s,baz=346,slow=4.6,SNR=9.3							
IDI				PKPbc		PKPbc	07 15 34.3	+0.7
	comp=Z,33nm,0.6s,baz=130,slow=2.6,SNR=16							
IDI				PKPab		PKPab	07 15 52.6	+0.9
	comp=Z,35nm,0.6s,baz=335,slow=1.8,SNR=6.2							
IDI	Anoyia	154.61	311	*e*PKPdf		PKPdf	07 15 24.2	-0.4
IDI				PKPbc		PKPbc	07 15 34.3	+0.7
IDI				PKPab		PKPab	07 15 52.5	+0.9
ANX	Ano Chora	154.66	320	P		PKPdf	07 15 24.2	-0.3
SERG	Sergoula	154.70	320	P		PKPdf	07 15 24.4	-0.1
DSL	Palaion Diasel	154.79	322	P		PKPdf	07 15 23.7	-0.9
KLV	Kalavryta, Ach	154.88	319	P		PKPdf	07 15 23.0	-1.8
PVO	Paravola	154.88	321	P		PKPdf	07 15 25.1	+0.4
SGD	Sagiada	154.94	324	P		PKPdf	07 15 23.8	-0.9
SSB	Saint Sauveur	154.96	355	PKP		PKPdf	07 15 24.7	0.0
SSB	Saint Sauveur	154.96	355	*e*PKIKP		PKPdf	07 15 24.7	0.0
SSB	Saint Sauveur	154.96	355	*e*PKPdf		PKPdf	07 15 24.7	0.0
FRNF	Fournols	154.97	358	PKP		PKPdf	07 15 25.4	+0.7
VAM	Vamos	155.04	312	P		PKPdf	07 15 25.2	+0.2
VLC	Villacollemand	155.09	345	*e*PKPab		PKPab	07 15 53.2	-0.1
LBL	Lubilhac	155.09	357	PKP		PKPdf	07 15 25.7	+0.8
PDO	Prodromos	155.10	321	P		PKPdf	07 15 24.1	-0.9
KEK	Kerkira	155.11	325	P		PKPdf	07 15 24.0	-1.0
VLX	Vlachokerasia	155.15	318	P		PKPdf	07 15 24.8	-0.4
IMMV	Iera Moni Meta	155.16	312	P		PKPdf	07 15 24.8	-0.4
LKD2	Lefkada island	155.28	322	P		PKPdf	07 15 25.0	-0.3
RLS	Riolos of Patr	155.28	320	P		PKPdf	07 15 25.4	+0.2
KYTH	Kithira	155.36	315	P		PKPdf	07 15 24.4	-1.1
ITM	Ithomi	155.55	318	P		PKPdf	07 15 25.2	-0.5
AQU	L'Aquila	155.84	338	*e*PKP2		PKPab	07 15 58.0	+1.4
AQU	L'Aquila	155.84	338	*e*PKPab		PKPab	07 15 58.0	+1.4
LUCF	Luceram	155.98	350	PKP		PKPdf	07 15 26.1	0.0
MVIF	Mont Vial	156.01	350	PKP		PKPdf	07 15 26.1	-0.1
REVF	Revere	156.12	350	PKP		PKPdf	07 15 26.4	+0.1
PGAV	Gavieira, Arco	156.85	19	*e*PKPdf		PKPdf	07 15 27.9	+0.6
PGAV	Gavieira, Arco	156.85	19	*e*PKPab		PKPab	07 16 01.2	+0.1
CUC	Castrocucco	156.88	331	*e*PKPdf		PKPdf	07 15 26.0	-1.4
CUC				*e*PKPab		PKPab	07 16 00.0	-1.2
TIP	Timpagrande	157.08	328	P		PKPdf	07 15 26.7	-0.9
TIP	Timpagrande	157.08	328	*e*PKPdf		PKPdf	07 15 28.2	+0.6
TIP				*e*PKPab		PKPab	07 16 02.7	+0.6
PBRG	Braganca	157.44	16	*e*PKPdf		PKPdf	07 15 28.4	+0.4
PBRG	Braganca	157.44	16	*e*PKPab		PKPab	07 16 04.1	+0.6
VIEF	Viey	157.44	3	PKP		PKPdf	07 15 29.0	+1.0
RESF	Ens	157.53	2	PKP		PKPdf	07 15 29.0	+0.9
POLO	Lamas de Olo	157.54	19	*e*PKPdf		PKPdf	07 15 28.7	+0.5
POLO	Lamas de Olo	157.54	19	*e*PKPab		PKPab	07 16 04.1	+0.1
PVRL	Vila Real	157.65	19	*e*PKPdf		PKPdf	07 15 29.0	+0.8
PVRL	Vila Real	157.65	19	*e*PKPab		PKPab	07 16 05.2	+0.7
MVO	Moncorvo	157.95	17	*e*PKPdf		PKPdf	07 15 29.5	+0.9
MVO	Moncorvo	157.95	17	*e*PKPab		PKPab	07 16 06.5	+0.7
VALF	Valcebollere	157.96	359	PKP		PKPdf	07 15 28.8	+0.1
PVIS	Viseu	158.11	20	*e*PKPdf		PKPdf	07 15 29.3	+0.5
PVIS	Viseu	158.11	20	*e*PKPab		PKPab	07 16 06.2	-0.3
CEL	Celeste	158.22	328	*e*PKPdf		PKPdf	07 15 28.8	-0.3
CEL				*e*PKPab		PKPab	07 16 06.0	-1.1
MTE	Manteigas	158.50	19	*e*PKPdf		PKPdf	07 15 28.8	+0.5
MTE	Manteigas	158.50	19	*e*PKPdf		PKPdf	07 15 29.8	+0.5
MTE				*e*PKPab		PKPab	07 16 08.6	+0.4
PCAS	Casmilo, Conde	158.51	21	*e*PKPdf		PKPdf	07 15 30.1	+0.9
PCAS	Casmilo, Conde	158.51	21	*e*PKPab		PKPab	07 16 08.5	+0.3
PTOM	Tomar	158.93	22	*e*PKPdf		PKPdf	07 15 30.5	+0.8
PTOM	Tomar	158.93	22	*e*PKPab		PKPab	07 16 10.4	+0.4
PCBR	Castelo Branco	159.04	20	*e*PKPdf		PKPdf	07 15 30.7	+0.9
PCBR	Castelo Branco	159.04	20	*e*PKPab		PKPab	07 16 10.8	+0.3
PMAFR	Mafra	159.19	24	*e*PKPab		PKPab	07 16 11.7	+0.5
PMRV	Marv??o	159.44	20	*e*PKPdf		PKPdf	07 15 31.2	+0.8
PMRV	Marv??o	159.44	20	*e*PKPab		PKPab	07 16 12.6	+0.3
LIS	Lisbon	159.45	24	*e*PP		PP	07 19 56.3	+0.9
PMTG	Montargil	159.48	22	*e*PKPab		PKPab	07 16 12.6	+0.2
VSL	Villasalto	159.72	342	*e*PKPdf		PKPdf	07 15 30.9	+0.2
VSL				*e*PKPab		PKPab	07 16 13.1	-0.4
PESTR	Estremoz	159.88	21	*e*PKPdf		PKPdf	07 15 31.5	+0.6
PESTR	Estremoz	159.88	21	*e*PKPab		PKPab	07 16 14.3	+0.1
CLTB	Caltabellotta	160.02	332	*e*PKPdf		PKPdf	07 15 31.5	+0.3
EVO	Evora	160.03	22	*e*PKPdf		PKPdf	07 15 31.7	+0.7
EVO	Evora	160.03	22	*e*PKPab		PKPab	07 16 15.2	+0.3
ES19	SONSECA Array	160.10	12	*e*PKPdf		PKPdf	07 15 31.5	+0.3
ES19				*e*PKPab		PKPab	07 16 15.3	+0.1
ESDC	Sonseca Array	160.11	13	PKP		PKPdf	07 15 31.4	+0.2
	comp=Z,3.7nm,0.6s,baz=344,slow=2.3,SNR=22							
ESDC				PKPab		PKPab	07 16 15.2	0.0
	comp=Z,60nm,1.0s,baz=345,slow=4.2,SNR=54							
ESDC				PP		PP	07 19 59.0	+0.3
	comp=Z,23nm,1.2s,baz=348,slow=5.0,SNR=7.9							
ESLA	Sonseca Array	160.11	13	*e*PKPdf		PKPdf	07 15 31.9	+0.8
ESLA				*e*PKPab		PKPab	07 16 15.0	-0.3
PAB	San Pablo	160.16	14	*e*PKIKP		PKPdf	07 15 31.9	+0.7
PAB				*e*			07 16 15.9	
PAB	San Pablo	160.16	14	*e*PKPdf		PKPdf	07 15 31.9	+0.7
PAB				*e*PKPab		PKPab	07 16 15.9	+0.4
PNCL	Nicolau / Gran	160.21	24	*e*PKPdf		PKPdf	07 15 32.4	+1.2
PNCL	Nicolau / Gran	160.21	24	*e*PKPab		PKPab	07 16 16.0	+0.3
MESJ	Messejana	160.57	24	*e*P		PKPdf	07 15 31.3	-0.3
MESJ				*e*PP		PP	07 20 02.3	+1.0
MESJ				*e*SS		SS	07 39 27.0	+2.5
MESJ	Messejana	160.57	24	*e*PKPdf		PKPdf	07 15 33.0	+1.4
MESJ	Messejana	160.57	24	*e*PKPab		PKPab	07 16 17.5	+0.3
PTEO	Sao Teotonio	160.62	25	*e*PKPdf		PKPdf	07 15 32.8	+1.1
PTEO	Sao Teotonio	160.62	25	*e*PKPab		PKPab	07 16 18.0	+0.5
PBAR	Barrancos	160.69	21	*e*PKPdf		PKPdf	07 15 32.7	+1.0
PBAR	Barrancos	160.69	21	*e*PKPab		PKPab	07 16 18.0	+0.2
WDD	Wied Dalam	160.78	326	*e*PKPab		PKPab	07 16 18.1	-0.1
PCVE	Castro Verde	160.82	24	*e*PKPdf		PKPdf	07 15 32.8	+0.9
PCVE	Castro Verde	160.82	24	*e*PKPab		PKPab	07 16 18.8	+0.5
MORF	Marmelete	160.86	26	*e*P		PKPdf	07 15 32.0	0.0
MORF				*e*PP		PP	07 20 03.9	+0.9
MORF	Marmelete	160.86	26	*e*PKPdf		PKPdf	07 15 33.4	+1.4
MORF	Marmelete	160.86	26	*e*PKPab		PKPab	07 16 19.1	+0.5
PFVI	Vila Bisbo	160.94	26	*e*PKPdf		PKPdf	07 15 33.1	+1.1
PFVI	Vila Bisbo	160.94	26	*e*PKPab		PKPab	07 16 19.4	+0.5
PFVI	Vila Bisbo	160.94	26	*e*PKPdf		PKPdf	07 15 33.6	+1.6
PVAQ	Vaqueiros	161.14	23	*e*PKPdf		PKPdf	07 15 33.1	+0.9
PVAQ	Vaqueiros	161.14	23	*e*PKPab		PKPab	07 16 20.4	+0.6
PBDV	Barranco-do-Ve	161.20	24	*e*PKPdf		PKPdf	07 15 32.2	-0.1
PBDV	Barranco-do-Ve	161.20	24	*e*PKPab		PKPab	07 16 20.6	+0.5
KEST	Kesra	163.17	338	PKP		PKPdf	07 15 34.2	-0.2
	comp=Z,11nm,0.9s,baz=257,slow=2.0,SNR=11							
KEST				PKPab		PKPab	07 16 29.1	+0.3
	comp=Z,44nm,0.7s,baz=297,slow=2.2,SNR=20							
KEST	Kesra	163.17	338	*e*PKPdf		PKPdf	07 15 34.8	+0.4
KEST				*e*PKPab		PKPab	07 16 29.3	+0.5
ABSA	Djebel Ababsia	163.26	343	P		PKPdf	07 15 34.8	+0.3
CKFL	Kef-Lekhel	163.33	345	P		PKPdf	07 15 35.0	+0.4
DFRA	Djebel Bou Aff	163.38	348	P		PKPdf	07 15 35.6	+1.0
CTEI	Djebel Teioual	163.73	346	P		PKPdf	07 15 35.2	+0.2
SET	Setif	163.80	349	P		PKPdf	07 15 30.0	-5.0
CKHR	Kef el Ahmar	163.96	348	P		PKPdf	07 15 32.8	-2.4
LIC	Lamto	164.62	155	*e*PKIKP		PKPdf	07 15 35.7	-0.5
	comp=Z,233nm,1.0s							
KIC	Kosan Boka	164.86	155	*e*PKIKP		PKPdf	07 15 35.9	-0.5
	comp=Z,151nm,0.9s							
TIC	Toumodi	165.00	154	*e*PKIKP		PKPdf	07 15 36.0	-0.6
DBIC	Dimbokro	165.09	154	PKP		PKPdf	07 15 36.1	-0.5
	comp=Z,37nm,0.9s,baz=143,slow=1.4,SNR=37							
DBIC				PKPab		PKPab	07 16 39.2	+1.5
	comp=Z,27nm,1.0s,baz=193,slow=5.4,SNR=9.8							
DBIC	Dimbokro	165.09	154	*e*PKIKP		PKPdf	07 15 36.3	-0.3
DBIC				*e*			07 16 39.6	
DBIC	Dimbokro	165.09	154	*e*PKPdf		PKPdf	07 15 36.2	-0.3
DBIC				*e*PKPab		PKPab	07 16 39.6	+1.9
MDT	Midelt	166.37	23	PKP		PKPdf	07 15 38.4	+1.2
	comp=Z,33nm,0.9s,baz=326,slow=0.8,SNR=38							
MDT				PKPab		PKPab	07 16 44.4	+1.3
	comp=Z,31nm,0.9s,baz=317,slow=4.4,SNR=18							
MDT				PP		PP	07 20 32.0	+0.6
	comp=Z,26nm,1.3s,baz=351,slow=4.0,SNR=7.2							
TORD	Torodi Ar. Bea	172.89	181	PKP		PKPdf	07 15 40.5	-0.9
	comp=Z,26nm,0.9s,baz=198,slow=0.5,SNR=134							
TORD				PKPab		PKPab	07 17 13.3	+1.2
	comp=Z,5.5nm,0.7s,baz=166,slow=3.7,SNR=8.5							
TORD				pPKP		pPKPdf	07 18 00.8	-1.3
	comp=Z,5.9nm,1.1s,baz=78,slow=0.9,SNR=2.1							
TORD				PP		PP	07 21 02.7	-0.3
	comp=Z,2.4nm,0.8s,baz=155,slow=4.4,SNR=3.6							
TAM	Tamanrasset	175.55	305	*e*PKIKP		PKPdf	07 15 42.7	+0.5
TAM	Tamanrasset	175.55	305	*e*PKPdf		PKPdf	07 15 42.7	+0.5
TAM				*e*PKPab		PKPab	07 17 24.8	+0.4
S22A				*e*Pg		Pg	07 06 57.5	-3.5
H17A	Grant Village	4.56	11	*e*Pg		Pb	07 06 57.3	+1.4
N23A	Red Feather La	4.58	76	*e*Pn		Pn	07 06 49.0	+3.8
TPNV	Topopah Spring	4.58	231	*e*Pn		Pn	07 06 47.4	+2.2
YFT	Old Faithful	4.58	9	*e*Pg		Pg	07 07 02.5	-0.9
MFID	Camas Ranch	4.61	321	*e*Pn		Pn	07 06 49.0	+3.5
ISCO	Idaho Springs	4.77	89	*e*Pn		Pn	07 06 51.1	+3.3
K22A	Casper	4.82	54	Sb		Sb	07 08 02.5	+4.0
	baz=237							
K22A	Casper	4.82	54	*e*Pn		Pn	07 06 50.8	+2.3
PHWY	Pilot Hill	5.02	72	*e*Pn		Pn	07 06 52.5	+1.2
	12nm,0.6s							
W18A	Petrified Fore	5.07	160	*e*Pg		Pg	07 07 09.9	-2.9
SDCO	Great Sand Dun	5.38	112	*e*Pn		Pn	07 06 58.4	+2.2
SDCO				*e*Pg		Pg	07 07 15.0	-3.7
DLMT	Dillon	5.47	354	*e*Pn		Pn	07 07 00.8	+3.5
DLMT				*e*Pg		Pg	07 07 19.5	-0.9
BOZ	Bozeman (W)	5.72	1	*e*Pn		Pn	07 07 03.8	+2.9
PAHR	Pah Rah Range	5.84	270	*e*Pn		Pn	07 07 04.9	+2.5
ANMO	Albuquerque	6.54	138	*e*Pn		Pn	07 07 14.2	+2.1
LAO	LASA Array	7.89	29	*e*Pn		Pn	07 07 30.4	-0.1

ISCJB ***22*** *07:05:35.3±0.2, 39°.95N±0°.01×111°.80W±0°.03, h10km, Error ellipse: s-maj=2.9km s-min=2.0km az=169.9*
NEIC ***22*** *07:05:35.0, 39°.93N×111°.82W, h5km, MW3.6, ML3.3(SLC), Moment Tensor Solution. s17 Moment tensor: Scale 10^14Nm; Mrr=1.21; Mθθ=1.06; Mφφ=2.28; Mrθ=1.45; Mθφ=0.32; Mφr=1.80; Best double couple: M=3.10000×10^14 NP1: φs=40.00000°, δ35.00000°, λ-25.00000°. NP2:φs=151.00000°, δ76.00000°, λ-122.00000°. Principal axes: T 3.0600, Plg24.0000°, Azm265.0000°; N 0.0000, Plg31.0000°, Azm160.0000°; P -3.0500, Plg49.0000°, Azm26.0000°; After SLC.*
NEIC Felt [III] at Nephi, Salem and Santaquin; [II] at Mona and Payson. Also felt at Cedar Valley, Mount Pleasant and Spanish Fork.

ISC 22 07:05:35.7±0.8, 39°.92N±0°.01×111°.81W±0°.02, h10km, n103, σ1°.56/132, Utah

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMUT	West Mountain	0.16	352	*e*Pg	Pg	07 05 38.4	-0.9
LMUT	Lake Mountain	0.41	346	*e*Pg	Pg	07 05 43.1	-0.6
LEVU	Levan	0.41	181	*e*Pg	Pg	07 05 43.5	-0.4
DCU	Deer Creek Res	0.54	23	*e*Pg	Pg	07 05 45.3	-0.8
ELU	Electric Lake	0.54	121	*e*Pg	Pg	07 05 45.5	-0.8
WTU	Western Traver	0.55	348	*e*Pg	Pg	07 05 45.7	-0.6
CWU	Camp Williams	0.57	337	*e*Pg	Pg	07 05 46.3	-0.5
SNO	Snow College	0.64	161	*e*Pg	Pg	07 05 47.5	-0.6
DAU	Daniels Canyon	0.65	40	*e*Pg	Pg	07 05 47.3	-0.9
GMU	Granite Mounta	0.65	3	*e*Pg	Pg	07 05 47.7	-0.7
LDJ	Lady	0.73	25	*e*Pg	Pg	07 05 48.9	-0.8
JLU	Jordanelle	0.73	22	*e*Pg	Pg	07 05 49.5	-0.3
MHD	Mile High Driv	0.74	0	*e*Pg	Pg	07 05 49.3	-0.7
SGU	Sterling	0.75	170	*e*Pg	Pg	07 05 49.8	-0.4
HLJ	Hailstone	0.76	24	*e*Pg	Pg	07 05 49.5	-0.8
NOQ	North Oquirrh	0.77	342	*e*Pg	Pg	07 05 50.0	-0.5
CTU	Camp Tracy	0.77	3	*e*Pg	Pg	07 05 49.6	-1.0
KLJ	Keetly	0.77	23	*e*Pg	Pg	07 05 49.8	-0.8
TMUT	Trail Mountain	0.78	143	*e*Pg	Pg	07 05 50.2	-0.5
RCJ	Ross Creek	0.79	21	*e*Pg	Pg	07 05 50.1	-0.8
DBD	Des Bee Dove	0.82	138	*e*Pg	Pg	07 05 50.9	-0.6
DUG	Dugway, Tooele	0.82	290	P	Pg	07 05 50.5	-1.0
	baz=108						
DUG	Dugway, Tooele	0.82	290	*e*Pg	Pg	07 05 50.9	-0.6
RBU	Red Butte Cany	0.86	360	*e*Pg	Pg	07 05 51.6	-0.7
HRU	Hogsback Ridge	0.87	356	*e*Pg	Pb	07 05 51.9	-1.0
HTU	Hoyt Peak	0.88	31	*e*Pg	Pg	07 05 51.7	-0.9
P17A	Butcher Ranch,	0.94	118	*e*Pg	Pg	07 05 52.8	-0.9
P17A				*e*Sg	Sg	07 06 05.3	-0.5
DCM	Dugout Coal Mi	0.97	103	*e*Pg	Pg	07 05 53.4	-0.9
ARGU	Argyle Ridge	0.98	95	*e*Pg	Pg	07 05 53.5	-0.9
SAIU	Southern Antel	0.98	343	*e*Pg	Pb	07 05 53.9	-0.9
WCU	Willow Creek	0.98	193	*e*Pg	Pb	07 05 54.3	-0.7
N16A	Rees Ranch, Co	1.00	16	*e*Pg	Pg	07 05 54.2	-0.8
SNUT	Stansbury Nort	1.10	331	*e*Pg	Pn	07 05 56.3	-1.0
FPU	Francis Peak	1.10	359	*e*Pg	Pg	07 05 56.2	-0.8
NAIU	Northern Antel	1.14	344	*e*Pg	Pg	07 05 56.8	-0.8
OWUT	Old Woman Plat	1.18	165	*e*Pg	Pb	07 05 57.5	-0.8
TCUT	Toone Canyon	1.23	14	*e*Pg	Pb	07 05 58.5	-0.7
FSU	Fish Springs	1.24	261	*e*Pg	Pg	07 05 58.6	-0.8
SRU	San Rafael Swe	1.28	129	*e*Pg	Pn	07 05 58.8	-1.0
BGU	Big Grassy Mou	1.37	317	*e*Pn	Pn	07 05 59.5	-1.6
BGU				*e*Sg	Sg	07 06 19.0	-0.8
MSU	Marysvale	1.44	192	*e*Pn	Pb	07 06 02.0	-0.6
GZU	Grizzly Peak	1.51	355	*e*Pn	Pn	07 06 02.2	-0.8
MCU	Monte Cristo P	1.56	8	*e*Pn	Pn	07 06 02.8	-0.9
IMU	Iron Mountain	1.66	220	*e*Pn	Pn	07 06 04.9	-0.2
HONU	Honeyville	1.69	357	*e*Pn	Pn	07 06 05.1	-0.3
WVUT	Wellsville	1.69	356	*e*Pn	Pn	07 06 04.9	-0.5
HWUT	Hardware Ranch	1.69	6	*e*Pn	Pn	07 06 04.8	-0.7
HWUT				*e*Sn	Sg	07 06 29.1	-1.0
LTU	Little Mountai	1.70	349	*e*Pn	Pn	07 06 05.1	-0.5
RSUT	Red Spur Mount	1.74	10	*e*Pn	Pn	07 06 05.6	-0.7
MMU	Miners Mountai	1.77	167	*e*Pn	Pn	07 06 06.2	-0.3
MTUT	Morton Thiokol	1.85	345	*e*Pn	Pn	07 06 07.4	-0.2
HDU	Hyde Park	1.88	1	*e*Pn	Pn	07 06 07.7	-0.4
MTPU	Mount Pierson	1.90	189	*e*Pn	Pn	07 06 08.8	+0.4
MTPU				*e*Sn	Sg	07 06 38.3	+1.5
HVU	Hansel Valley	2.00	339	*e*Pn	Pn	07 06 08.9	-0.7
HVU				*e*Sn	Sg	07 06 39.8	0.0
DWU	Dry Willow Pea	2.04	208	*e*Pn	Pn	07 06 10.4	+0.2
DWU				*e*Sn	Sg	07 06 41.0	-0.2
BMUT	Black Mountain	2.08	12	*e*Pn	Pn	07 06 10.6	-0.2
PSUT	Pine Spring	2.11	230	*e*Pn	Pb	07 06 13.6	-0.6
PSUT				*e*Sn	Sg	07 06 44.0	+0.5
PV09	Paradox Valley	2.52	124	*e*Pn	Pn	07 06 18.0	+1.1
PV09				*e*Sn	Sb	07 06 53.5	+1.3
PV10	Paradox Valley	2.65	125	*e*Pn	Pn	07 06 20.3	+1.6
PV10				*e*Sn	Sg	07 07 00.2	-0.5
CCUT	Cedar City	2.66	208	*e*Pn	Pn	07 06 19.1	+0.3
CCUT				*e*Sn	Sg	07 07 00.3	-0.9
PV04	Paradox Valley	2.72	123	*e*Pn	Pn	07 06 21.2	+1.6
PV04				*e*Sg	Sb	07 06 59.7	+1.6
O20A	White River Ci	2.74	84	Pb	Pb	07 06 24.4	-0.6
	baz=267						
O20A				Sb	Sb	07 06 59.7	+1.0
	baz=267						
O20A	White River Ci	2.74	84	*e*Pn	Pn	07 06 21.8	+1.8
O20A				*e*Sg	Sb	07 07 00.4	+1.7
AHID	Auburn Hatcher	2.89	10	*e*Pn	Pn	07 06 22.4	+0.4
AHID				*e*Sg	Sg	07 07 06.5	-2.0
KNB	Kanab	3.01	196	*e*Pn	Pn	07 06 25.1	+1.5
KNB				*e*Sn	Sg	07 07 13.7	+1.4
PV01	Paradox Valley	3.09	124	*e*Pn	Pn	07 06 25.8	+1.1
LCMT	Little Creek M	3.12	202	*e*Pn	Pn	07 06 27.0	+2.0
LCMT				*e*Sg	Sg	07 07 14.5	-1.3
BW06	Boulder Array	3.31	30	P	Pn	07 06 27.4	-0.3
	baz=211						
BW06	Boulder Array	3.31	30	*e*Pn	Pn	07 06 27.7	0.0
BW06				*e*Sg	Sg	07 07 24.1	+2.2
PD31	Pinedale Array	3.31	30	*e*Pn	Pn	07 06 27.8	+0.1
R11A	Troy Canyon, C	3.33	243	Sb	Sg	07 07 20.2	-2.5
	baz=61						
R11A	Troy Canyon, C	3.33	243	*e*Pn	Pn	07 06 29.6	+1.6
R11A				*e*Sg	Sg	07 07 20.4	-2.4
U15A	North Rim	3.51	186	*e*Pn	Pn	07 06 32.5	+2.0
U15A				*e*Sg	Sg	07 07 26.0	-2.3
REDW	Red Top Meadow	3.51	11	*e*Pn	Pn	07 06 30.6	+0.1
REDW				*e*Sg	Sg	07 07 26.5	-2.0
TPAW	Teton Pass	3.62	10	*e*Pn	Pn	07 06 32.5	+0.4
SNOW	Snow King Moun	3.62	12	*e*Pn	Pn	07 06 32.3	+0.2
SNOW				*e*Sg	Sg	07 07 31.2	-0.9
MVCO	Mesa Verde	3.75	135	*e*Pn	Pn	07 06 34.7	+0.9
MVCO				*e*Sg	Sg	07 07 33.1	-2.9
LOHW	Long Hollow	3.80	13	*e*Pn	Pn	07 06 34.3	-0.1
SMCO	Snowmass	3.81	100	*e*Pn	Pn	07 06 36.2	+1.5
SMCO				*e*Sg	Sb	07 07 30.7	+1.1
MOOW	Moose Ponds	3.91	11	*e*Pn	Pn	07 06 35.9	0.0
IMW	Indian Meadow	4.03	9	*e*Pn	Pn	07 06 38.0	+0.3
HLID	Hailey	4.13	333	*e*Pn	Pn	07 06 40.7	+1.8
FLWY	Flagg Ranch	4.24	11	*e*Pn	Pn	07 06 41.0	+0.5
SHPR	Sheep Range	4.31	219	*e*Pn	Pn	07 06 44.9	+3.4
SHPR				*e*Pg	Pg	07 06 59.5	+1.2
SHPR				*e*Sg	Sg	07 07 51.2	-3.0
WUAZ	Wupatki	4.41	175	*e*Pn	Pn	07 06 46.0	+3.2
WUAZ				*e*Pg	Pg	07 06 56.4	-3.8
YPP	Pitchstone Pla	4.41	9	*e*Pn	Pn	07 06 45.1	+2.1
S22A	4UR Ranch, Cre	4.45	118	*e*Pn	Pn	07 06 45.6	+2.1

MEX 22 07:07:09.3±0.3, 14°.48N×93°.43W, h20km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	Comitan	2.

baz=44
ARSB ⇑*iS* **Sb 07 20 51.4 +0.2**
baz=44
ARK Arkit 1.75 9 ⇓*eP* **Pn 07 20 30.4 -0.1**
baz=12
ARK ⇓*iS* **Sn 07 20 52.6 -0.8**
baz=12
IUG Iuzhnay 2.40 331 *eP* **Pb 07 20 41.9 -0.9**
33nm,0.2s
IUG *eS* **Sn 07 21 10.3 +1.2**
54nm,0.3s
DZET Dzherino 2.49 241 ⇓Pn **Pg 07 20 48.1 +1.3**
16nm,0.7s
DZET ⇓Sn **Sb 07 21 15.7 +0.3**
36nm,0.8s
MNAS Manas 2.52 15 ⇓*eP* **Pn 07 20 42.6 +1.6**
baz=18
MNAS ⇓*iS* **Sn 07 21 12.8 +0.6**
baz=18
MNAS Manas 2.52 15 ⇑Pn **Pb 07 20 43.9 -1.0**
2.9nm,0.3s
MNAS ⇑Sn **Sn 07 21 10.9 -1.2**
3.1nm,0.2s
MNAS ⇑Lg Lg 07 21 15.4
8.9nm,0.3s
AML Almayashu 2.60 37 ⇑*iP* **Pn 07 20 43.0 +0.6**
baz=43
AML ⇑*iS* **Sn 07 21 13.8 -0.9**
baz=43
ARLS Aral 2.74 48 ⇑*iP* **Pn 07 20 45.2 +1.2**
baz=54
ARLS ⇑*iS* **Sn 07 21 18.8 +1.2**
baz=54
ARLS Aral 2.74 48 ⇓*eP* **Pb 07 20 46.5 -2.2**
baz=51
ARLS ⇓*eS* **Sb 07 21 20.1 -2.6**
baz=51
MRKS Merke 2.95 24 *eP* **Pb 07 20 52.6 +0.3**
7.1nm,0.3s
MRKS *eS* **Sb 07 21 28.3 -0.3**
25nm,0.3s
EKS2 Erkin-Say 3.07 32 ⇑*iP* **Pn 07 20 49.2 +0.6**
baz=37
EKS2 ⇑*iS* **Sn 07 21 24.2 -1.6**
baz=37
KK31 Karatay Array 3.15 345 ⇓Pn **Pn 07 20 49.1 -0.3**
0.2nm,0.3s,baz=168,slow=12,SNR=54
KK31 Pg **Pb 07 20 55.4 -0.3**
2.8nm,0.3s,baz=149,slow=16,SNR=14
KK31 ⇑Lg Lg 07 21 34.8
2.7nm,0.3s,baz=150,slow=30,SNR=5.1
AAK Ala-Archa 3.37 39 ⇑Pn **Pn 07 20 56.0 +3.3**
2.1nm,0.4s
AAK ⇑Lg Lg 07 21 43.9
3.6nm,0.3s
KZA Kyzart 3.42 53 ⇑*iP* **Pn 07 20 54.9 +1.3**
baz=58
KZA ⇑*iS* **Sn 07 21 35.7 +1.0**
baz=58

MEX 22 07:41:01.5±0.5, 14°42N×93°46W, h13km±221km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.25**	**34**	*eP*	Pn	07 41 35.5	-3.1
CCIG				*eS*	Sn	07 42 01.9	-4.4

GUC 22 07:41:01.1±0.5, 20°03S×69°22W, h95km±2km, ML3.7, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB08	**IPOC Station P**	**0.13**	**152**	*eP*	Pn	07 41 15.3	+0.3
PB08				*eS*	Sn	07 41 26.2	+0.9
PB08				IAML		07 41 27.6	
	comp=N,3μm,0.2s						
HMBC	**Humberstone**	**0.68**	**248**	*eP*	Pn	07 41 18.3	+0.3
HMBC				*eS*	Sn	07 41 31.5	+0.8
HMBC				IAML		07 41 32.4	
	comp=E,5μm,0.3s						
PSGC	**Pisagua**	**0.95**	**296**	*eP*	Pn	07 41 20.9	+0.1
PSGC				*eS*	Sn	07 41 36.2	+0.7
PSGC				IAML		07 41 38.1	
	comp=E,3μm,0.3s						
MNMC	**Minye Minye**	**0.96**	**338**	*eP*	Pn	07 41 21.5	+0.5
MNMC				*eS*	Sn	07 41 36.8	+0.9
PB01	**IPOC Station P**	**1.04**	**194**	*eP*	Pn	07 41 22.3	+0.5
PB01				*eS*	Sn	07 41 38.1	+0.8
PB01				IAML		07 41 39.6	
	comp=E,2μm,0.5s						
PB13	**IPOC Station P**	**1.70**	**351**	*eP*	Pn	07 41 31.5	+1.2
PB13				*eS*	Sn	07 41 54.5	+2.2
PB12	**IPOC Station P**	**1.75**	**323**	*eP*	Pn	07 41 30.3	-0.1
PB12				*eS*	Sn	07 41 53.1	+0.5
PB09	**IPOC Station P**	**1.76**	**181**	*eP*	Pn	07 41 31.6	+1.0
PB09				*eS*	Sn	07 41 54.5	+1.5
PB09				IAML		07 41 58.5	
	comp=E,1μm,0.5s						
PB07	**IPOC Station P**	**1.81**	**200**	*eP*	Pn	07 41 31.6	+0.5
PB07				*eS*	Sn	07 41 55.2	+1.2

*BJI **22** 07:49:53.2, 35°90N×80°69E, h7km, ML4.2/7*
*IDC **22** 07:49:54.3±3.6, 36°01N×80°91E, h0km, mb3.7/4, mb1 3.8/10, mb1mx3.5/55, mbtmp3.8/10, ML3.5/6, MS3.5/1, Ms1 3.5/1, ms1mx2.8/38, Error ellipse: s-maj=65.7km s-min=27.4km az=117.0*
*NNC **22** 07:50:00.2±3.0, 36°35N×80°89E, h2km±16km, mb4.1, mpv4.0, Error ellipse: s-maj=24.8km s-min=17.6km az=88.0*
ISC 22 07:49:57.0±1.6, 36°2N±0°1×80°8E±0°1, h10km, n19, σ1§66/23, mb3.8/4, 7C-8D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSH	**Kashi**	**5.08**	**313**	Pn	**Pn**	**07 51 14.4**	**+1.1**
KSH				Sn	**Sn**	**07 52 13.3**	**+1.2**
KSH				smax	smax		
	comp=N,260nm,0.8s						
KSH				smax	smax		
	comp=E,260nm,0.7s						
PDGK	**Podgornoye**	**7.24**	**352**	⇑Pn	**Pn**	**07 51 45.4**	**+2.6**
13nm,0.8s							
PDGK				⇓Sn	**Sn**	**07 53 08.0**	**+3.1**
40nm,0.7s							
PDGK				⇓Lg	Lg	07 53 42.9	
45nm,0.6s							
TKM2	**Tokmak 2**	**7.86**	**331**	⇑Pn	**Pn**	**07 51 53.8**	**+2.3**
2.0nm,0.5s							
TKM2				⇓Lg	Lg	07 54 03.8	
9.9nm,0.5s							
AAK	**Ala-Archa**	**8.10**	**325**	Pn	Pn	07 51 59.8	+4.9
0.8nm,0.3s,baz=150,slow=9.4,SNR=4.8							
AAK				Lg	Lg	07 54 07.0	
1.5nm,0.3s,baz=313,slow=18,SNR=5.6							
AAK	**Ala-Archa**	**8.10**	**325**	⇑Pg	**Pg**	**07 52 28.5**	**-3.6**
8.7nm,0.8s							
AAK				⇑Lg	Lg	07 54 12.3	
68nm,1.1s							
WMQ	**Urumqi**	**9.31**	**33**	*eP*	**Pn**	**07 52 11.5**	**+0.2**
WMQ				smax	smax		
	comp=N,53nm,0.6s						
WMQ				smax	smax		
	comp=E,47nm,0.8s						
KK31	**Karatay Array**	**10.53**	**314**	⇓Pn	**Pn**	**07 52 29.7**	**+1.7**
0.4nm,0.4s,baz=146,slow=11,SNR=9.8							
KK31				⇑Lg	Lg	07 55 32.1	
2.9nm,0.6s							
MAKZ	**Makanchi**	**10.68**	**4**	⇑Pn	**Pn**	**07 52 31.3**	**+1.2**
6.8nm,0.6s							
MAKZ				⇓Sn	**Sn**	**07 54 29.3**	**-0.4**
5.2nm,0.7s							
MK31	**Makanchi Array**	**10.69**	**6**	⇓Pn	**Pn**	**07 52 31.2**	**+1.0**
0.7nm,0.3s,baz=187,slow=12,SNR=61							
MK31				⇑Sn	**Sn**	**07 54 30.5**	**+0.5**
4.4nm,0.6s,baz=184,slow=22,SNR=7.5							
MKAR	**Makanchi Array**	**10.69**	**6**	Pn	**Pn**	**07 52 31.1**	**+0.9**
0.8nm,0.3s,baz=185,slow=12,SNR=43							
MKAR				Sn	**Sn**	**07 54 29.9**	**-0.1**
1.7nm,0.3s,baz=188,slow=24,SNR=7.9							
OTUK	**Ortayu**	**13.60**	**335**	⇓Pn	**Pn**	**07 53 12.7**	**+2.8**
1.6nm,0.9s							
OTUK				⇓Lg	Lg	07 57 02.7	
10nm,1.3s							
KURBB	**Kurchatov Arra**	**14.56**	**354**	Pn	**Pn**	**07 53 21.4**	**-1.5**
0.0nm,0.3s,baz=178,slow=12,SNR=13							
ZALV	**Zalesovo Beam**	**18.02**	**8**	P	**P**	**07 54 07.7**	**-0.1**
0.2nm,0.3s,baz=200,slow=12,SNR=2.8							
GEYT	**Alibeck**	**18.18**	**282**	P	**P**	**07 54 09.0**	**-0.8**
0.3nm,0.3s,baz=89,slow=12,SNR=4.5							
GEYT				LR	LR	08 02 50.7	
comp=Z,160nm,21.2s,baz=45,slow=42							
BVAR	**Borovoye Array**	**18.39**	**340**	P	**Pn**	**07 54 12.5**	**+0.6**
0.3nm,0.3s,baz=133,slow=6.1,SNR=5.3							
AKTO	**Aktyubinsk**	**21.76**	**318**	P	**P**	**07 54 49.2**	**+0.6**
0.7nm,0.4s,baz=162,slow=6.4,SNR=1.8							
FINES	**FINESS Array B**	**42.29**	**324**	P	**P**	**07 57 50.0**	**-0.4**
1.5nm,0.8s,baz=105,slow=11,SNR=5.4							
NOA	**NORSAR Array B**	**49.42**	**323**	P	**P**	**07 58 46.3**	**-0.4**
1.0nm,0.8s,baz=90,slow=7.6,SNR=2.7							
TORD	**Torodi Ar. Bea**	**73.63**	**274**	P	**P**	**08 01 31.0**	**0.0**
0.6nm,0.6s,baz=43,slow=5.0,SNR=6.0							

*IDC **22** 07:51:43.9±0.8, 36°01N×142°53E, h0km, mb3.9/11, mb1 4.1/12, mb1mx3.8/46, mbtmp3.9/12, ML3.0/1, Error ellipse: s-maj=23.4km s-min=19.8km az=43.0*
*ISCJB **22** 07:51:45.8±0.6, 36°14N±0°04×142°55E±0°06, h23km, mb4.0/13, Error ellipse: s-maj=7.4km s-min=6.2km az=159.3*
*JMA **22** 07:51:47.3±0.3, 36°15N×142°41E, h74km, M3.0*
*NEIC **22** 07:51:49.3±0.6, 36°16N×142°54E, h35km, mb4.4/2, Error ellipse: s-maj=13.0km s-min=11.4km az=179.0*
ISC 22 07:51:48.2±0.7, 36°17N±0°05×142°39E±0°07, h23km, n37, σ1§59/34, mb4.0/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.32**	**250**	P	**Pn**	**07 52 10.6**	**-0.6**
JHO	**Hitachi**	**1.53**	**287**	P	**Pn**	**07 52 13.3**	**-0.8**
JFK	**Kawauchi**	**1.70**	**315**	S	**Sn**	**07 52 37.3**	**-0.2**
BSO1	**Boso 1**	**1.90**	**218**	P	**Pn**	**07 52 18.2**	**-0.5**
BSO1				S	**Sb**	**07 52 43.6**	**-1.4**
BSO3	**Boso 3**	**2.05**	**229**	P	**Pn**	**07 52 20.6**	**-0.4**
JFT	**Otama**	**2.12**	**310**	P	**Pn**	**07 52 22.9**	**+0.7**
JFT				S	**Sb**	**07 52 50.1**	**-1.7**
JAG	**Ashikaga**	**2.38**	**277**	P	**Pn**	**07 52 25.7**	**-0.1**
JMK	**Ichinoseki**	**2.92**	**342**	P	**Pn**	**07 52 32.4**	**-0.8**
JNS	**Sasagawa**	**2.96**	**305**	S	**Sb**	**07 53 11.6**	**-4.2**
MJAR	**Matsushiro Arr**	**3.39**	**277**	Pn	**Pn**	**07 52 40.2**	**+0.5**
1.3nm,0.3s,baz=88,slow=15,SNR=9.3							
MJAR				Sn	Sb	07 53 35.7	+7.3
0.4nm,0.3s,baz=279,slow=19,SNR=4.4							
MAJO	**Matsushiro**	**3.39**	**277**	*e*Pn	**Pn**	**07 52 40.7**	**+1.0**
MAT	**Matsushiro**	**3.39**	**277**	P	**Pn**	**07 52 40.5**	**+0.8**
MAT				S	**Sn**	**07 53 18.4**	**-0.9**
ERM	**Erimo**	**5.87**	**6**	*e*Pn	**Pn**	**07 53 10.7**	**-2.9**
USRK	**Ussuriysk Ar.**	**11.28**	**318**	Pn	**Pn**	**07 54 31.4**	**+3.5**
baz=121,slow=13,SNR=4.3							
KSRS	**Korea Array**	**11.66**	**281**	Pn	**Pn**	**07 54 36.4**	**+3.3**
0.3nm,0.3s,baz=98,slow=14,SNR=4.4							
KSAR	**Wonju Array Be**	**11.70**	**281**	Pn	**Pn**	**07 54 36.4**	**+2.8**
H11N2	**WAKE ISLAND Hy**	**27.04**	**121**	T	T	08 25 36.9	
baz=312,slow=75,SNR=44							
H11N1	**WAKE ISLAND Hy**	**27.04**	**121**	T	T	08 25 38.8	
baz=312,slow=75,SNR=32							
H11N3	**WAKE ISLAND Hy**	**27.05**	**121**	T	T	08 25 35.9	
baz=312,slow=75,SNR=22							
H11S1	**WAKE ISLAND Hy**	**27.74**	**123**	T	T	08 26 25.8	
baz=315,slow=75,SNR=10							
H11S3	**WAKE ISLAND Hy**	**27.74**	**123**	T	T	08 26 27.6	
baz=315,slow=75,SNR=8.8							
H11S2	**WAKE ISLAND Hy**	**27.75**	**123**	T	T	08 26 27.6	
baz=315,slow=75,SNR=8.0							
SONM	**Songino Array**	**28.92**	**305**	P	**P**	**07 57 47.0**	**+1.5**
1.1nm,0.7s,baz=99,slow=9.2,SNR=7.9							
ZALV	**Zalesovo Beam**	**43.07**	**313**	P	**P**	**07 59 46.8**	**+0.7**
0.6nm,0.4s,baz=90,slow=7.7,SNR=5.2							
MKAR	**Makanchi Array**	**45.24**	**303**	P	**P**	**08 00 04.2**	**+0.6**
1.6nm,0.8s,baz=90,slow=9.7,SNR=6.9							
KURK	**Kurchatov**	**47.08**	**309**	P	**P**	**08 00 19.0**	**+1.1**
KURBB	**Kurchatov Arra**	**47.15**	**309**	P	**P**	**08 00 19.0**	**+0.5**
3.0nm,0.8s,baz=85,slow=8.0,SNR=15							
ILAR	**Eielson Array**	**49.80**	**32**	P	**P**	**08 00 38.4**	**-0.4**
0.5nm,0.8s,baz=247,slow=5.5,SNR=6.5							
WRAB	**Tennant Creek**	**56.32**	**189**	P	**P**	**08 01 27.1**	**0.0**
7.6nm,1.3s							
WRA	**Warramunga Arr**	**56.33**	**189**	P	**P**	**08 01 25.3**	**-1.9**
2.4nm,1.1s,baz=3.2,slow=7.1,SNR=6.9							
ABKAR	**Akbulak array**	**59.09**	**311**	*e*P	**P**	**08 01 46.1**	**-0.3**
1.9nm,0.9s							
AKTO	**Aktyubinsk**	**59.83**	**313**	P	**P**	**08 01 51.7**	**+0.2**
1.5nm,0.8s,baz=74,slow=14,SNR=5.1							
ASAR	**Alice Springs**	**60.05**	**189**	P	**P**	**08 01 51.6**	**-1.7**
1.0nm,1.0s,baz=29,slow=2.6,SNR=5.6							
FINES	**FINESS Array B**	**69.94**	**333**	P	**P**	**08 02 57.5**	**+0.4**
2.4nm,0.9s,baz=7.6,slow=5.8,SNR=4.8							
PDAR	**Pinedale Array**	**77.71**	**46**	P	**P**	**08 03 43.0**	**-0.4**
0.4nm,0.7s,baz=260,slow=4.5,SNR=3.5							
TXAR	**Lajitas Array**	**90.02**	**53**	P	**P**	**08 04 46.2**	**0.0**
0.6nm,0.8s,baz=270,slow=5.0,SNR=7.6							
LPAZ	**La Paz**	**146.43**	**62**	PKPbc	**PKPdf**	**08 11 27.4**	**+0.2**
0.5nm,0.6s,baz=307,slow=5.1,SNR=3.6							

*NEIC **22** 08:20:31.8±2.3, 2°65S×80°31W, h60km±19km, mb4.1/15, MD3.6(IGQ), Error ellipse: s-maj=21.2km s-min=9.3km az=223.0*
NEIC Felt at Guayaquil.
*IGQ **22** 08:20:33, 2°33S×80°36W, h56km±5km, Mb4.1, Error ellipse: s-maj=3.6km s-min=1.9km az=101.7*
*ISCJB **22** 08:20:34.4±0.6, 2°23S±0°04×80°34W±0°04, h79km±5km, mb4.0/22, Error ellipse: s-maj=7.0km s-min=6.3km az=172.1*
*IDC **22** 08:20:35.5±2.9, 2°01S×79°96W, h82km±31km, mb3.4/7, mb1 3.7/11, mb1mx3.6/32, mbtmp3.8/11, MS2.6/1, Ms1 2.6/1, ms1mx2.4/13, Error ellipse: s-maj=19.1km s-min=15.0km az=179.0*
ISC 22 08:20:33.7±1.1, 2°25S±0°06×80°35W±0°06, h62km±9km, n104, σ1§70/116, mb4.1/22, 24C-12D, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AGUAY	**Guayaquil**	**0.44**	**64**	P	**Pn**	**08 20 45.8**	**+0.6**
baz=55							
AGUAY				S	**Sn**	**08 20 52.4**	**-1.2**
baz=55							
CHIS	**Cerro-Chispas-**	**1.25**	**342**	P	**Pn**	**08 20 56.9**	**+1.7**
baz=343							
AMANT	**Manta**	**1.35**	**343**	P	**Pn**	**08 20 57.4**	**+0.9**
baz=344							
AQUE	**Quevedo**	**1.47**	**36**	P	**Pn**	**08 20 57.4**	**-0.6**
baz=36							
PECV	**Mancha de Ca P**	**1.49**	**12**	P	**Pn**	**08 20 59.8**	**+1.4**
baz=359							
IGUA	**Igualata**	**1.86**	**66**	⇑P	**Pn**	**08 21 04.0**	**+0.1**
baz=63							
JAMA	**Jama**	**1.98**	**4**	P	Pn	08 21 10.8	+5.8
baz=4.0							
BIL2	**Estacion Bilba**	**2.00**	**67**	⇓P	**Pn**	**08 21 06.4**	**+0.9**
baz=64							
BMAS	**Trigal station**	**2.01**	**68**	⇑P	**Pn**	**08 21 06.8**	**+1.2**
baz=66							
BBIL	**Ulba Tungurahu**	**2.02**	**67**	⇑P	**Pn**	**08 21 06.4**	**+0.6**
baz=64							
BBIL				⇑S	**Sn**	**08 21 29.4**	**-0.8**
baz=64							
ARRY	**Arrayan**	**2.03**	**69**	⇑P	**Pn**	**08 21 06.9**	**+1.0**
baz=66							
PAT1	**Patacocha**	**2.04**	**69**	⇑P	**Pn**	**08 21 07.5**	**+1.3**
baz=66							
JUI6	**Juive**	**2.05**	**67**	⇓P	**Pn**	**08 21 07.8**	**+1.7**
baz=64							
BPAT	**Tungurahua Vol**	**2.05**	**69**	⇑P	**Pn**	**08 21 07.6**	**+1.3**
baz=66							
BPAT				⇑S	**Sn**	**08 21 31.8**	**+0.7**
baz=66							
POND	**Pondoa**	**2.06**	**67**	⇓P	**Pn**	**08 21 07.2**	**+0.8**
baz=64							
POND				⇓S	**Sn**	**08 21 31.9**	**+0.6**
baz=64							
BULB	**Ulba Tungurahu**	**2.10**	**67**	P	**Pn**	**08 21 07.5**	**+0.6**
baz=65							
BULB				S	**Sn**	**08 21 31.3**	**-0.8**
baz=65							
BRUN	**Tungurahua Vol**	**2.10**	**67**	⇓P	**Pn**	**08 21 08.5**	**+1.7**
baz=64							
BRUN				⇓S	**Sn**	**08 21 31.4**	**-0.8**
baz=64							
MAG1	**Magdalena**	**2.23**	**15**	P	**Pn**	**08 21 09.3**	**+0.8**
baz=14							
PISA	**Pisayambo**	**2.29**	**59**	⇑P	**Pn**	**08 21 11.7**	**+2.1**
baz=57							
ASDO	**Santo Domingo**	**2.32**	**32**	P	**Pn**	**08 21 08.8**	**-0.9**
baz=30							
CAMI	**Rancho Maria**	**2.41**	**50**	⇓P	**Pn**	**08 21 13.8**	**+2.5**
baz=48							
BMOR	**Cotopaxi Volca**	**2.41**	**51**	⇑P	**Pn**	**08 21 13.6**	**+2.2**
baz=49							
BMOR				⇑S	**Sn**	**08 21 41.7**	**+1.6**
baz=49							
BNAS	**Cotopaxi Volca**	**2.44**	**50**	⇑P	**Pn**	**08 21 13.2**	**+1.6**
baz=48							
MOV1	**Cotopaxi Vol s**	**2.44**	**51**	P	**Pn**	**08 21 13.8**	**+2.0**
baz=49							
MOV1				S	**Sn**	**08 21 42.2**	**+1.4**
baz=49							
NAS2	**Nasa**	**2.46**	**50**	⇑P	**Pn**	**08 21 14.8**	**+2.8**
baz=48							
BREF	**Cotopaxi Volca**	**2.47**	**51**	⇑P	**Pn**	**08 21 14.8**	**+2.7**
baz=48							
BREF				⇑S	**Sn**	**08 21 44.5**	**+3.1**
baz=48							
BVC2	**Cotopaxi Volca**	**2.50**	**51**	⇑P	**Pn**	**08 21 14.0**	**+1.5**
baz=49							
BVC2				⇑S	**Sn**	**08 21 43.9**	**+1.8**
baz=49							
VC1	**Cotopaxi 1**	**2.51**	**51**	⇑P	**Pn**	**08 21 14.2**	**+1.5**
baz=49							
PITA	**Cotopaxi Volc**	**2.54**	**49**	⇓P	**Pn**	**08 21 15.6**	**+2.5**
baz=47							
COV1	**Cotopaxi Volc**	**2.55**	**52**	⇑P	**Pn**	**08 21 14.9**	**+1.6**
baz=48							
JUA2	**San Juan 2**	**2.67**	**41**	⇑P	**Pn**	**08 21 16.6**	**+1.9**
baz=39							
TERV	**Terraza Guagua**	**2.70**	**40**	⇓P	**Pn**	**08 21 16.7**	**+1.5**
baz=39							
GGP	**Refugio Guagua**	**2.70**	**40**	P	**Pn**	**08 21 16.0**	**+0.7**
baz=39							
PINO	**Pino**	**2.71**	**40**	⇓P	**Pn**	**08 21 16.8**	**+1.5**
baz=38							
YANA	**Yana**	**2.76**	**40**	P	**Pn**	**08 21 16.4**	**+0.3**
baz=38							
ANTI	**Antisana**	**2.82**	**51**	⇓P	**Pn**	**08 21 18.2**	**+1.2**
baz=49							
OTAV	**Otavalo**	**3.11**	**38**	⇑P	**Pn**	**08 21 21.1**	**+0.3**
baz=36							
OTAV				⇑S	**Sn**	**08 21 56.9**	**-0.2**
baz=36							
OTAV	**Otavalo**	**3.11**	**38**	*e*P	**Pn**	**08 21 20.8**	**0.0**
OTAV	**Otavalo**	**3.11**	**38**	*e*Pn	**Pn**	**08 21 21.1**	**+0.3**
OTAV				*e*Sn	**Sn**	**08 21 58.2**	**+1.2**
CUIC	**Cuicocha-Domo**	**3.22**	**38**	⇑P	**Pn**	**08 21 23.9**	**+1.7**
baz=37							
COTA	**Cotacachi**	**3.26**	**38**	P	**Pn**	**08 21 24.8**	**+1.9**
baz=37							
CAYA	**Cayambe**	**3.29**	**46**	P	**Pn**	**08 21 25.3**	**+2.0**
baz=44							
URCU	**Urcuqui**	**3.39**	**38**	P	**Pn**	**08 21 26.7**	**+2.2**
baz=37							
CHAR	**Charly**	**3.43**	**51**	⇓P	**Pn**	**08 21 27.9**	**+2.7**
baz=50							
LAV4	**Lava4-Reventad**	**3.46**	**52**	⇑P	**Pn**	**08 21 27.8**	**+2.4**
baz=50							
CONE	**Cono NE Rev Vo**	**3.46**	**51**	P	**Pn**	**08 21 26.4**	**+1.0**
baz=50							
LITE	**Lita**	**3.62**	**33**	P	**Pn**	**08 21 27.4**	**-0.1**
baz=32							
LITE				S	**Sn**	**08 22 08.8**	**-0.3**
baz=32							
CMBC	**Cumbal**	**4.05**	**39**	*e*P	**Pn**	**08 21 36.1**	**+2.5**
CRUC	**La Cruz**	**5.09**	**42**	*e*P	**Pn**	**08 21 49.5**	**+1.7**
ATAH	**Atahualpa**	**5.23**	**158**	P	Pn	08 21 53.4	+3.6
1.5nm,0.3s,baz=350,slow=10,SNR=7.3							
ATAH				S	**Sn**	**08 22 52.6**	**+3.6**
3.7nm,0.3s,baz=48,slow=14,SNR=3.6							
ATAH				LR	LR	08 24 36.2	
comp=Z,62nm,22.0s,baz=327,slow=45							
GRGC	**Isla de Gorgon**	**5.65**	**23**	*e*P	**Pn**	**08 21 57.1**	**+1.9**
POPC	**Popayan, Colom**	**6.01**	**38**	*e*P	**Pn**	**08 21 58.8**	**-1.4**
PRAC	**Prado**	**8.05**	**43**	*e*P	Pn	08 22 20.1	-8.0
PRAC	**Prado**	**8.05**	**43**	*e*Pn	**Pn**	**08 22 29.3**	**+1.2**
CHIC	**Chingaza**	**9.51**	**44**	*e*P	**Pn**	**08 22 51.8**	**+3.5**
RUSC	**La Rusia**	**10.86**	**42**	*e*P	**Pn**	**08 23 06.5**	**-0.4**
RUSC	**La Rusia**	**10.86**	**42**	*e*Pn	**Pn**	**08 23 10.0**	**+3.1**
SDV	**Santo Domingo**	**14.70**	**41**	P	Pn	08 23 54.1	-4.4
0.2nm,0.3s,baz=225,slow=16,SNR=2.2							
SDV	**Santo Domingo**	**14.70**	**41**	*e*Pn	**P**	**08 24 01.8**	**-1.4**
SAML	**Samuel**	**18.32**	**112**	*e*P	**P**	**08 24 40.1**	**-3.0**
11nm,1.2s							
LPAZ	**La Paz**	**18.42**	**140**	P	**P**	**08 24 43.5**	**-1.2**
0.1nm,0.3s,baz=333,slow=2.3,SNR=3.4							
PCRV	**Puerto La Cruz**	**19.93**	**51**	P	**P**	**08 24 57.2**	**-3.4**
1.4nm,0.3s,baz=16,slow=4.7,SNR=6.7							
PCRV				S	S	08 28 32.5	-9.2
2.1nm,0.3s,baz=2.6,slow=3.3,SNR=16							
PTGA	**Pitinga**	**20.43**	**86**	P	**P**	**08 25 03.0**	**-3.1**
7.2nm,0.7s,baz=275,slow=10,SNR=20							
PTGA	**Pitinga**	**20.43**	**86**	*e*P	**P**	**08 25 04.4**	**-1.7**
SIV	**San Ignacio**	**23.39**	**127**	P	**P**	**08 25 36.9**	**-0.4**
1.5nm,0.7s,baz=304,slow=12,SNR=3.4							
GRTK	**Grand Turk**	**25.27**	**20**	*e*P	**P**	**08 25 55.3**	**+1.0**
ABVI	**Anegada Island**	**26.13**	**36**	*e*P	**P**	**08 26 05.9**	**+3.8**
TXAR	**Lajitas Array**	**38.53**	**326**	P	**P**	**08 27 50.8**	**+0.3**
0.3nm,0.7s,baz=150,slow=10,SNR=4.7							
TXAR				PcP	**PcP**	**08 30 02.6**	**+0.4**
0.2nm,0.7s,baz=158,slow=7.8,SNR=5.1							
TX31	**Lajitas Ar. Si**	**38.53**	**326**	*e*P	**P**	**08 27 52.5**	**+2.1**
ANMO	**Albuquerque**	**44.37**	**329**	*e*P	**P**	**08 28 40.0**	**+1.8**
2.7nm,1.0s							
TUC	**Tucson**	**44.86**	**323**	*e*P	**P**	**08 28 43.9**	**+1.8**
3.4nm,1.3s							
SDCO	**Great Sand Dun**	**46.11**	**332**	*e*P	**P**	**08 28 53.9**	**+1.7**
1.5nm,1.0s							
X16A	**Lo Mia Camp, P**	**46.73**	**324**	*e*P	**P**	**08 28 58.9**	**+2.0**
2.5nm,0.9s							
PDAR	**Pinedale Array**	**51.98**	**333**	P	**P**	**08 29 35.5**	**-1.4**
0.7nm,0.7s,baz=133,slow=6.3,SNR=6.5							
BGU	**Big Grassy Mou**	**52.27**	**329**	*e*P	**P**	**08 29 40.5**	**+1.5**
SNOW	**Snow King Moun**	**53.07**	**333**	*e*P	**P**	**08 29 45.6**	**+0.6**
ULM	**Lac du Bonnet**	**53.97**	**348**	P	**P**	**08 29 49.3**	**-1.8**
1.3nm,0.4s,baz=153,slow=6.8,SNR=3.5							
GCMT	**Gogrcliff**	**54.43**	**335**	*e*P	**P**	**08 29 55.8**	**+1.1**
HLID	**Hailey**	**54.90**	**330**	*e

ASAR	**Alice Springs**	**137.88**	**230**	PKhKP	PKPpre	08 39 45.1		
	comp=Z,0.3nm,0.5s,baz=111,slow=3.9,SNR=5.6							
ASAR				PKP	**PKPdf**	**08 39 51.5**	**-0.6**	
	comp=Z,0.8nm,0.9s,baz=133,slow=3.8,SNR=5.7							
WRA	**Warramunga Arr**	**139.44**	**235**	PKP	**PKPdf**	**08 39 54.3**	**-0.7**	
	comp=Z,0.7nm,0.7s,baz=112,slow=2.2,SNR=9.7							
LZH	**Lanzhou**	**146.10**	**354**	*e*PKP	**PKPdf**	**08 40 03.1**	**-3.5**	
LZH				PKP	**PKPbc**	**08 40 07.5**	**0.0**	
LZH				pPKP	pPKPdf	08 40 22.3	-2.5	
LZH				sPKP		08 40 29.8		
LZH				LR	LR			
	comp=N,100nm,18.0s							
LZH				LR	LR			
	comp=E,120nm,18.1s							
LZH				LR	LR			
	comp=Z,170nm,20.2s							
FAKI	**Fak Fak**	**147.01**	**261**	*e*PKPdf	**PKPdf**	**08 40 06.8**	**-1.7**	

*GUC **22** 08:41:14.9±0.4, 34.°09S×72.°38W, h8km±2km, ML3.6*

ISC 22 08:41:14.9±2.2, 34.°15S±0.°04×72.°4W±0.°1, h11km±10km, n25, σ2ş17/39, 4D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.39**	**129**	*e*P	**Pg**	**08 41 22.8**	**+0.2**
CHPI				*e*S	**Sg**	**08 41 28.7**	**+1.1**
CHPI				IAML		08 41 30.3	
	comp=N,9μm,0.8s						
NICH	**Los Niches**	**1.27**	**133**	*e*P	**Pn**	**08 41 37.7**	**-0.9**
NICH				*e*S	**Sb**	**08 41 54.8**	**-0.4**
TALC	**Talca**	**1.39**	**155**	*e*P	**Pn**	**08 41 39.7**	**-0.5**
TALC				*e*S	**Sn**	**08 41 58.2**	**-0.4**
ANTU	**Antumapu**	**1.55**	**69**	*e*P	**Pn**	**08 41 41.0**	**-1.5**
ANTU				*e*S	**Sn**	**08 42 00.9**	**-1.8**
ROC1	**El Roble**	**1.62**	**44**	*e*P	**Pn**	**08 41 41.9**	**-1.8**
ROC1				⇓*e*S	**Sg**	**08 42 10.3**	**+3.3**
ROCH	**El Roble**	**1.63**	**44**	*e*P	**Pn**	**08 41 42.2**	**-1.6**
ROCH				*e*S	**Sn**	**08 42 03.0**	**-1.8**
ROCH				IAML		08 42 13.1	
	comp=E,1μm,0.6s						
CLCH	**Cerro Calan**	**1.69**	**64**	*e*P	**Pn**	**08 41 43.5**	**-1.1**
CLCH				*e*S	**Sn**	**08 42 05.4**	**-0.9**
PEL	**Peldehue**	**1.72**	**55**	*e*P	**Pn**	**08 41 43.6**	**-1.3**
PEL				*e*S	**Sn**	**08 42 04.1**	**-2.8**
PEL				IAML		08 42 13.5	
	comp=E,1μm,0.7s						
AAGR	**Agrelo**	**3.13**	**71**	*e*P	**Pb**	**08 42 09.4**	**-1.3**
AUSP	**Uspallata**	**3.15**	**53**	*e*P	**Pn**	**08 42 07.0**	**+2.2**
AUSP				*e*S	**Sb**	**08 42 50.4**	**+0.8**
ARCO	**CERRO ARCO**	**3.15**	**67**	*e*P	**Pb**	**08 42 09.0**	**-2.0**
ARCO				IAML		08 42 14.4	
	comp=Z,214nm,0.4s						
ASAL	**Salagasta**	**3.33**	**63**	*e*P	**Pb**	**08 42 10.8**	**-3.4**
ASAL				*e*S	**Sg**	**08 42 59.8**	**-2.2**
RTLS	**Leoncito**	**3.48**	**49**	*e*P	**Pn**	**08 42 10.7**	**+1.4**
RTLS				*e*S	**Sb**	**08 42 58.9**	**-0.3**
CANA	**Caviahue**	**3.88**	**165**	*e*P	**Pn**	**08 42 16.7**	**+2.0**
RTCV	**Cerro Valdivia**	**3.94**	**56**	*e*P	**Pn**	**08 42 17.1**	**+1.7**
RTCV				*e*S	**Sb**	**08 43 14.4**	**+2.3**
RTLL	**Cerro Villicun**	**4.32**	**50**	⇓*e*P	**Pn**	**08 42 21.6**	**+1.0**
RTLL				*e*S	**Sn**	**08 43 15.8**	**+4.9**
ACCO	**Cerro Coronel**	**4.51**	**39**	*e*P	**Pn**	**08 42 24.3**	**+0.7**
ACCO				IAML		08 43 44.9	
	comp=Z,76nm,0.5s						
AMOG	**MOGNA**	**4.57**	**47**	*e*P	**Pn**	**08 42 23.7**	**-0.4**
AROD	**Rodeo**	**4.66**	**32**	*e*P	**Pn**	**08 42 25.8**	**+0.2**
AROD				⇓*e*S	**Sb**	**08 43 34.1**	**+0.9**
ACAN	**Cantantal**	**4.72**	**68**	*e*P	**Pn**	**08 42 30.5**	**+4.4**
ACAN				*e*S	**Sb**	**08 43 32.6**	**-2.1**
ACDV	**Cuesta del Vie**	**4.82**	**36**	*e*P	**Pn**	**08 42 28.2**	**+0.6**
AVFE	**Valle Fertil**	**5.41**	**51**	IAML		08 43 53.7	
	comp=Z,31nm,0.5s						
ACHE	**Chepes**	**5.65**	**60**	*e*S	**Sn**	**08 43 49.3**	**+5.2**
AGUA	**GUANDACOL**	**5.70**	**36**	*e*P	**Pn**	**08 42 39.7**	**+0.1**
MRA	**San Martin**	**5.83**	**75**	⇓*e*P	**Pn**	**08 42 44.0**	**+2.6**
MRA				IAML		08 44 29.9	
	comp=Z,34nm,0.6s						

RSNC 22 08:45:01.6±0.5, 6.°76N×73.°09W, h153km±3km, ML2.0, 5C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.19**	**209**	*i* P	Pn	08 45 22.0	-0.6
BARC				*e*S	Sn	08 45 38.0	-0.5
BARC				*i*		08 45 38.8	
	comp=Z,39nm,0.2s						
BARC	**Barichara**	**0.19**	**209**	*i* P	Pn	08 45 22.0	-0.6
BARC				*e*S	Sn	08 45 37.4	-1.1
BARC				*i*		08 45 38.8	
	comp=Z,37nm,0.2s						
BTLC	**Betulia, Santa**	**0.24**	**311**	*e*P	Pn	08 45 22.5	-0.2
BTLC				*e*S	Sn	08 45 38.6	-0.1
BTLC	**Betulia, Santa**	**0.24**	**311**	*e*P	Pn	08 45 22.4	-0.2
BTLC				*e*S	Sn	08 45 37.9	-0.7
GIRC	**Giron, Santand**	**0.33**	**342**	*e*P	Pn	08 45 22.4	-0.4
GIRC				*e*S	Sn	08 45 38.7	-0.4
GIRC	**Giron, Santand**	**0.33**	**342**	*e*P	Pn	08 45 22.3	-0.5
GIRC				*e*S	Sn	08 45 38.6	-0.4
BRRC	**Barranca, Sant**	**0.71**	**299**	⇑*i*P	Pn	08 45 23.9	-0.6
BRRC				*i*		08 45 24.1	
	comp=Z,36nm,0.2s						
BRRC				*e*S	Sn	08 45 41.4	-0.6
BRRC	**Barranca, Sant**	**0.71**	**299**	⇑*i*P	Pn	08 45 23.9	-0.6
BRRC				*i*		08 45 24.1	
	comp=Z,35nm,0.1s						
BRRC				*e*S	Sn	08 45 41.5	-0.5
RUSC	**La Rusia**	**0.86**	**180**	⇑*i*P	Pn	08 45 26.0	-0.2
RUSC				*e*S	Sn	08 45 44.7	-0.3
RUSC				*i*		08 45 45.9	
	comp=Z,7.2nm,0.3s						
RUSC	**La Rusia**	**0.86**	**180**	⇑*i*P	Pn	08 45 25.9	-0.2
RUSC				*e*S	Sn	08 45 44.8	-0.1
RUSC				*i*		08 45 45.8	
	comp=Z,7.2nm,0.2s						
CBRI	**Barrientos, No**	**0.99**	**17**	*e*P	Pn	08 45 26.6	-0.2
CBRI	**Barrientos, No**	**0.99**	**17**	*e*P	Pn	08 45 26.6	-0.2
GRMC	**Gramalote, San**	**0.99**	**17**	*i* P	Pn	08 45 27.8	+1.0
GRMC				*e*S	Sn	08 45 47.8	+1.7
GRMC				*i*		08 45 49.1	
	comp=Z,8.0nm,0.4s						
GRMC	**Gramalote, San**	**0.99**	**17**	⇑*i*P	Pn	08 45 27.8	+1.0
GRMC				*e*S	Sn	08 45 48.0	+1.9
GRMC				*i*		08 45 49.0	
	comp=Z,7.6nm,0.3s						
OCAC	**Ocana**	**1.48**	**351**	*e*P	Pn	08 45 31.4	-0.1
OCAC				*e*S	Sn	08 45 53.8	-0.5
OCAC				*i*		08 45 59.7	
	comp=Z,10nm,0.5s						
OCAC	**Ocana**	**1.48**	**351**	*e*P	Pn	08 45 30.8	-0.7
OCAC				*e*S	Sn	08 45 53.9	-0.5
OCAC				*i*		08 45 59.0	
	comp=Z,10nm,0.6s						
NORC	**Norcasia**	**2.13**	**236**	*e*P	Pn	08 45 38.0	-0.5
NORC				*e*S	Sn	08 46 06.4	-0.6
NORC	**Norcasia**	**2.13**	**236**	*e*P	Pn	08 45 38.8	+0.2
NORC				*e*S	Sn	08 46 07.1	+0.1
CHIC	**Chingaza**	**2.21**	**197**	*e*P	Pn	08 45 39.4	-0.5
CHIC				*e*S	Sn	08 46 09.2	-0.1
CHIC				*i*		08 46 17.6	
	comp=Z,3.9nm,0.6s						
CHIC	**Chingaza**	**2.21**	**197**	*e*P	Pn	08 45 39.8	-0.1
CHIC				*e*S	Sn	08 46 10.0	+0.7
CHIC				*i*		08 46 17.6	
	comp=Z,3.8nm,0.4s						
HELC	**Santa Helena**	**2.49**	**257**	*e*P	Pn	08 45 43.2	+0.1
HELC				*e*S	Sn	08 46 15.1	0.0
HELC	**Santa Helena**	**2.49**	**257**	*e*P	Pn	08 45 44.0	+0.9
HELC				*e*S	Sn	08 46 15.1	0.0
PRAC	**Prado**	**3.52**	**211**	*e*P	Pn	08 45 54.8	-1.0
PRAC				*e*S	Sn	08 46 37.1	-0.7
PRAC	**Prado**	**3.52**	**211**	*e*P	Pn	08 45 55.6	-0.2
PRAC				*e*S	Sn	08 46 38.5	+0.7

*NIED **22** 09:03:00, 38.°90N×142.°00E, h47km, Mw3.8 Best double couple: M0 6.15000×10^14 NP1:φs158.00000°, δ29.00000°, λ50.00000°. NP2:φs22.00000°, δ68.00000°, λ110.00000°.*
*ISCJB **22** 09:03:06.6±0.7, 38.°83N±0.°05×142.°09E±0.°07, h51km, mb3.9/8, MS3.2/2, Error ellipse: s-maj=8.6km s-min=6.4km az=24.6*
*JMA **22** 09:03:07.4±0.1, 38.°86N×142.°05E, h46km±1km, M3.8*
JMA Felt II J1.
*IDC **22** 09:03:10.1±2.5, 38.°79N×142.°04E, h72km±22km, mb3.6/8, mb1 3.7/12, mb1mx3.5/45, mbtmp3.9/12, MS3.0/4, Ms1 3.0/4, ms1mx2.6/43, Error ellipse: s-maj=26.2km s-min=15.6km az=100.0*

ISC 22 09:03:08.5±0.9, 38.°87N±0.°06×142.°04E±0.°09, h51km, n30, σ1ş72/27, mb4.0/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.35**	**306**	P	**Pn**	**09 03 17.0**	**-1.2**
OFUJ				*e*S	**Sn**	**09 03 23.7**	**-1.5**
JMK	**Ichinoseki**	**0.64**	**277**	P	**Pn**	**09 03 20.5**	**-1.0**
JMK				*e*S	**Sn**	**09 03 29.6**	**-1.4**
JIO	**Ouri**	**0.68**	**232**	P	**Pn**	**09 03 20.5**	**-1.5**
JIO				*e*S	**Sn**	**09 03 29.3**	**-2.5**
JOM	**Ohasama**	**0.83**	**316**	P	**Pn**	**09 03 23.2**	**-0.8**
JOM				*e*S	**Sn**	**09 03 34.5**	**-0.9**
JTH	**Tanohata**	**1.07**	**353**	P	**Pn**	**09 03 26.1**	**-1.1**
JOU	**Okura**	**1.19**	**245**	P	**Pn**	**09 03 27.7**	**-1.1**
JRG	**Rokugo**	**1.21**	**296**	P	**Pn**	**09 03 28.4**	**-0.6**
JYK	**Kaneyama**	**1.31**	**272**	P	**Pn**	**09 03 29.7**	**-0.7**
JMM	**Marumori**	**1.40**	**225**	P	**Pn**	**09 03 31.0**	**-0.7**
MJAR	**Matsushiro Arr**	**3.83**	**234**	P	**Pn**	**09 04 06.1**	**+1.2**
	4.0nm,0.3s,baz=33,slow=13,SNR=41						
MAT	**Matsushiro**	**3.83**	**234**	P	**Pn**	**09 04 05.5**	**+0.6**
MAT				S	**Sn**	**09 04 54.0**	**+5.4**
ASAJ	**Asahikawa**	**5.25**	**4**	P	**Pn**	**09 04 25.7**	**+1.3**
	1.9nm,0.3s,baz=200,slow=16,SNR=10						
USRK	**Ussuriysk Ar.**	**9.22**	**308**	P	**Pn**	**09 05 21.6**	**+2.9**
	0.5nm,0.3s,baz=123,slow=15,SNR=16						
KSRS	**Korea Array**	**11.21**	**267**	P	**Pn**	**09 05 48.0**	**+2.2**
	0.2nm,0.3s,baz=81,slow=14,SNR=5.7						
KSRS				LR	LR	09 09 32.0	
	comp=Z,49nm,20.2s,baz=123,slow=34						
KLR	**Kul'dur**	**12.71**	**328**	LR	LR	09 10 56.1	
	comp=Z,50nm,19.6s,baz=72,slow=36						
SEY	**Seynchan**	**24.89**	**11**	P	**P**	**09 08 27.4**	**+1.2**
	1.9nm,0.8s,baz=232,slow=9.0,SNR=6.1						
H11N2	**WAKE ISLAND Hy**	**28.72**	**125**	T	T	09 39 25.4	
	baz=317,slow=75,SNR=1344						
H11N1	**WAKE ISLAND Hy**	**28.73**	**125**	T	T	09 39 25.7	
	baz=317,slow=75,SNR=1123						
H11N3	**WAKE ISLAND Hy**	**28.74**	**125**	T	T	09 39 26.5	
	baz=317,slow=75,SNR=584						
H11S1	**WAKE ISLAND Hy**	**29.50**	**126**	T	T	09 40 18.9	
	baz=318,slow=76,SNR=72						
H11S3	**WAKE ISLAND Hy**	**29.50**	**127**	T	T	09 40 19.0	
	baz=318,slow=76,SNR=139						
H11S2	**WAKE ISLAND Hy**	**29.51**	**126**	T	T	09 40 20.3	
	baz=318,slow=76,SNR=114						
ZALV	**Zalesovo Beam**	**41.06**	**311**	P	**P**	**09 10 46.6**	**-0.1**
	2.0nm,0.5s,baz=96,slow=9.1,SNR=3.8						
MKAR	**Makanchi Array**	**43.59**	**301**	P	**P**	**09 11 07.2**	**-0.2**
	1.9nm,0.5s,baz=87,slow=9.9,SNR=21						
MKAR				LR	LR	09 28 27.6	
	comp=Z,35nm,20.9s,baz=55,slow=35						
ILAR	**Eielson Array**	**47.68**	**33**	P	**P**	**09 11 39.6**	**+0.1**
	0.4nm,0.6s,baz=273,slow=5.9,SNR=8.5						
HNR	**Honiara**	**50.87**	**157**	LR	LR	09 34 25.2	
	comp=Z,18nm,18.3s,baz=322,slow=37						
WRA	**Warramunga Arr**	**58.95**	**188**	P	**P**	**09 13 01.1**	**-1.4**
	0.6nm,0.5s,baz=6.1,slow=7.0,SNR=15						
ASAR	**Alice Springs**	**62.68**	**188**	P	**P**	**09 13 26.9**	**-1.0**
	0.3nm,0.6s,baz=4.1,slow=5.2,SNR=6.2						
FINES	**FINESS Array B**	**67.42**	**332**	P	**P**	**09 13 57.7**	**-0.5**
	1.3nm,0.6s,baz=49,slow=4.2,SNR=5.8						
AKASG	**Malin Array Be**	**73.15**	**322**	P	**P**	**09 14 32.9**	**-0.5**
	0.8nm,0.4s,baz=46,slow=6.0,SNR=4.4						

*ISCJB **22** 09:03:19.3±0.7, 24.°95N±0.°03×122.°25E±0.°03, h9km±4km, Error ellipse: s-maj=4.9km s-min=4.3km az=23.4*
*JMA **22** 09:03:19.5±0.2, 24.°97N×122.°25E, h46km, M2.1*
*TAP **22** 09:03:20.1, 24.°94N×122.°23E, h6km, ML2.6, D*

ISC 22 09:03:18.2±1.5, 24.°99N±0.°04×122.°26E±0.°03, h12km±11km, n23, σ0ş59/37, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TWB1	**Santiao Chiao**	**0.25**	**274**	*e*P	**Pb**	**09 03 24.4**	**-0.2**
	baz=287						
TWB1				*e*S	**Sg**	**09 03 27.6**	**+0.7**
	baz=287						
EGS		**0.33**	**244**	*e*P	**Pb**	**09 03 25.4**	**-0.6**
	baz=249						
NWF	**Wu-fen Shan**	**0.44**	**281**	*e*P	**Pb**	**09 03 28.5**	**+0.5**
	baz=287						
NWF				*e*S	**Sb**	**09 03 34.1**	**-0.5**
	baz=287						
TWC	**Suao**	**0.53**	**225**	*e*P	**Pb**	**09 03 28.8**	**-0.7**
	baz=225						
TWC				*e*S	**Sb**	**09 03 37.0**	**0.0**
	baz=225						
TWE	**Neicheng**	**0.60**	**244**	*e*P	**Pb**	**09 03 30.5**	**-0.2**
	baz=245						
TWE				*e*S	**Sb**	**09 03 39.0**	**-0.1**
	baz=245						
TWA	**Mucha**	**0.61**	**269**	*e*S	**Sb**	**09 03 39.2**	**-0.2**
	baz=273						
PCYT	**Pengchaiyu**	**0.66**	**345**	*e*P	**Pn**	**09 03 33.5**	**+0.1**
	baz=348						
PCYT				*e*S	**Sn**	**09 03 43.3**	**-0.3**
	baz=348						
TWY	**Chenhua**	**0.66**	**296**	*e*P	**Pn**	**09 03 33.0**	**-0.3**
	baz=300						
TWY				*e*S	**Sb**	**09 03 41.7**	**+0.9**
	baz=300						
ENTT	**Nioudou**	**0.72**	**241**	*e*P	**Pb**	**09 03 32.7**	**0.0**
	baz=243						
ENTT				*e*S	**Sb**	**09 03 42.7**	**+0.2**
	baz=243						
ENA	**Nanau**	**0.73**	**220**	*e*P	**Pb**	**09 03 32.7**	**-0.1**
	baz=220						
ENA				*e*S	**Sg**	**09 03 42.1**	**+0.1**
	baz=220						
TWS1	**Kuangyinshan**	**0.77**	**278**	*e*P	**Pb**	**09 03 33.6**	**0.0**
	baz=282						
TWS1				*e*S	**Sb**	**09 03 44.7**	**+0.8**
	baz=282						
JYNG	**Yonagunijimaku**	**0.82**	**131**	P	**Pb**	**09 03 34.3**	**-0.1**
JYNG				*e*S	**Sb**	**09 03 46.1**	**+0.7**
YOJ	**Yonaguni jima**	**0.86**	**127**	P	**Pn**	**09 03 35.6**	**-0.5**
YOJ				*e*S	**Sb**	**09 03 47.2**	**+0.6**
NSK	**Sanguang**	**0.88**	**249**	*e*P	**Pb**	**09 03 35.9**	**+0.5**
	baz=251						
NCU	**National Centr**	**0.97**	**269**	*e*S	**Sg**	**09 03 47.6**	**-2.1**
	baz=271						
NNS	**Nan Shan**	**0.97**	**236**	*e*S	**Sb**	**09 03 50.0**	**+0.1**
	baz=236						
TWD	**Chiawan**	**1.09**	**214**	*e*P	**Pn**	**09 03 39.3**	**+0.1**
	baz=213						
TWD				*e*S	**Sb**	**09 03 53.2**	**+0.1**
	baz=213						
NSTT	**Nanjuang**	**1.20**	**253**	*e*P	**Pn**	**09 03 41.1**	**+0.3**
	baz=254						
TWT	**Tachien**	**1.23**	**234**	*e*P	**Pn**	**09 03 42.4**	**+1.0**
	baz=234						
WHF	**Hehuan Shan**	**1.23**	**227**	*e*P	**Pn**	**09 03 42.2**	**+0.5**
	baz=227						
WHF				*e*S	**Sb**	**09 03 58.2**	**+0.4**
	baz=227						
WDT	**Danda**	**1.60**	**220**	*e*P	**Pn**	**09 03 46.7**	**+0.1**
	baz=219						
WDT				*e*S	**Sn**	**09 04 07.7**	**+0.3**
	baz=219						
SMLT	**Sun Moon Lake**	**1.66**	**229**	*e*P	**Pb**	**09 03 49.0**	**+0.2**
	baz=228						
TYC	**Yuchr**	**1.67**	**230**	*e*P	**Pn**	**09 03 47.0**	**-0.3**
	baz=230						

MEX 22 09:07:39.3±0.5, 14.°44N×93.°43W, h16km±223km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.22**	**34**	*e*P	Pn	09 08 12.4	-3.1
CCIG				*e*S	Sn	09 08 38.1	-4.6

*ISCJB **22** 09:08:34.7±0.3, 32.°79N±0.°02×116.°10W±0.°01, h14km±2km, Error ellipse: s-maj=2.8km s-min=2.1km az=4.1*

*NEIC **22** 09:08:35.9, 32.°80N×116.°15W, h8km, ML3.9(PAS), After PAS.*
NEIC Felt [IV] at Pine Valley, [III] at Campo and [II] at El Centro and San Diego. Felt in much of southern San Diego County and as far as Hemet and Palm Springs. Felt at Mexicali, Rosarito and Tecate, Baja California.
*ECX **22** 09:08:36.2±0.8, 32.°79N×116.°15W, h4km, MD3.7, ML4.0*

ISC 22 09:08:35.5±0.8, 32.°80N±0.°02×116.°12W±0.°02, h14km±5km, n112, σ1ş27/148, 10C-5D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
IKP	**In-Ko-Pah, Jac**	**0.15**	**175**	P	**Pg**	**09 08 38.8**	**-0.6**
	baz=344,SNR=1000						
IKP				S	**Sg**	**09 08 41.6**	**-0.3**
	baz=344						
IKP	**In-Ko-Pah, Jac**	**0.15**	**175**	⇓*i*P	**Pg**	**09 08 39.1**	**-0.2**
IKP				*e*S	**Sg**	**09 08 41.7**	**-0.3**
CRR	**Carrizo Plain**	**0.15**	**57**	⇑*i*P	**Pg**	**09 08 39.2**	**-0.1**
RMX	**La Rumorosa**	**0.20**	**169**	⇓*i*P	**Pg**	**09 08 39.5**	**-0.7**
RMX				*e*S	**Sg**	**09 08 42.6**	**-0.8**
YUH	**Yuha Desert**	**0.23**	**132**	⇑*i*P	**Pg**	**09 08 40.4**	**-0.1**
MONP2	**Monument Peak**	**0.27**	**290**	P	**Pg**	**09 08 40.6**	**-0.7**
	baz=113,SNR=1000						
MONP2				S	**Sg**	**09 08 44.6**	**-0.6**
	baz=113						
SWSC	**Sam W. Stewart**	**0.31**	**62**	P	**Pg**	**09 08 41.6**	**-0.3**
	baz=244,SNR=1000						
SWSC				S	**Sg**	**09 08 46.2**	**0.0**
	baz=244						
SWSC	**Sam W. Stewart**	**0.31**	**62**	⇑*i*P	**Pg**	**09 08 41.9**	**+0.1**
WESC	**Westside Schoo**	**0.33**	**97**	⇑*i*P	**Pg**	**09 08 42.9**	**+0.6**
COK	**Cook Ranch**	**0.34**	**82**	⇑*i*P	**Pg**	**09 08 42.8**	**+0.5**
SGL	**Mount Signal**	**0.37**	**114**	⇑*i*P	**Pg**	**09 08 43.1**	**+0.2**
BAR	**Barrett**	**0.48**	**255**	⇑*i*P	**Pg**	**09 08 44.5**	**-0.4**
BAR				*e*S	**Sg**	**09 08 50.7**	**-0.6**
BAR	**Barrett**	**0.48**	**255**	*e*Pg	**Pg**	**09 08 44.3**	**-0.6**
BAR				*e*Sg	**Sg**	**09 08 50.9**	**-0.5**
DREC	**Desert Rsrch C**	**0.57**	**90**	⇑*e*P	**Pg**	**09 08 47.5**	**+0.8**
TJIG	**Tijuana**	**0.59**	**232**	⇓*e*P	**Pg**	**09 08 46.0**	**-1.1**
CBX	**Cerro Bola**	**0.67**	**223**	⇓*e*P	**Pg**	**09 08 48.1**	**-0.4**
CBX				*e*S	**Sg**	**09 08 57.0**	**-0.4**
CBX				IAML		09 09 00.3	
	comp=N,8μm,0.4s						
SDRC	**San Diego Road**	**0.69**	**265**	⇑*i*P	**Pg**	**09 08 48.1**	**-0.9**
CPBX	**Cerro Prieto**	**0.79**	**119**	*e*P	**Pg**	**09 08 50.7**	**-0.2**
CPBX				⇑*e*		09 09 08.6	
CPBX				IAML		09 09 08.6	
	comp=E,15μm,0.3s						
109C	**Camp Elliot, M**	**0.83**	**276**	P	**Pg**	**09 08 50.5**	**-1.1**
	baz=96,SNR=262						
109C				S	**Sg**	**09 09 01.1**	**-1.3**
	baz=96						
TPFO	**Pinon Flats**	**0.85**	**341**	P	**Pg**	**09 08 51.4**	**-0.6**
	baz=163,SNR=352						
TPFO				S	**Sg**	**09 09 02.0**	**-1.1**
	baz=163						
PFO	**Pinyon Flats O**	**0.85**	**341**	P	**Pg**	**09 08 51.4**	**-0.7**
	baz=163,SNR=306						
PFO				S	**Sg**	**09 09 02.1**	**-1.2**
	baz=163						
PFO	**Pinyon Flats O**	**0.85**	**341**	*e*Pg	**Pg**	**09 08 51.4**	**-0.7**
PFO				*e*Sg	**Sg**	**09 09 02.0**	**-1.3**
MBIG	**Mexicali**	**0.88**	**117**	*e*P	**Pg**	**09 08 51.8**	**-0.6**
BC3	**Big Chuckawall**	**1.02**	**33**	P	**Pg**	**09 08 53.6**	**-1.5**
	baz=215,SNR=349						
GLA	**Glamis**	**1.12**	**77**	P	**Pg**	**09 08 55.1**	**-1.9**
	baz=258,SNR=335						
GLA				S	**Sg**	**09 09 08.8**	**-2.9**
	baz=258						
GLA	**Glamis**	**1.12**	**77**	*e*Pg	**Pg**	**09 08 55.1**	**-1.9**
GLA				*e*Sg	**Sg**	**09 09 09.2**	**-2.5**
PBX	**Punta Banda**	**1.17**	**206**	*e*P	**Pg**	**09 08 56.2**	**-1.9**
BELC	**Belle Mtn. Jos**	**1.20**	**5**	P	**Pg**	**09 08 56.5**	**-2.1**
	baz=186,SNR=389						
BELC				S	**Sg**	**09 09 13.5**	**-0.8**
	baz=186						
MURC	**Murrieta**	**1.20**	**312**	P	**Pg**	**09 08 56.8**	**-1.8**
	baz=132,SNR=420						
MURC				S	**Sg**	**09 09 12.9**	**-1.4**
	baz=132						
ECNX	**Esteban Cantu**	**1.21**	**199**	*e*P	**Pb**	**09 08 57.0**	**-1.2**
ECNX				*e*P	Pg	09 08 53.4	-5.4
ZAX	**El Zacaton**	**1.29**	**186**	*e*P	**Pn**	**09 08 58.2**	**-1.0**
IRM	**Iron Mountain**	**1.58**	**31**	P	**Pn**	**09 09 01.9**	**-1.1**
	baz=212,SNR=92						
BBRC	**Big Bear Solar**	**1.60**	**336**	P	**Pn**	**09 09 03.2**	**-0.4**
	baz=156,SNR=188						
BBRC				Sb	**Sn**	**09 09 25.2**	**+1.1**
	baz=156						
ECBX	**El Chinero**	**1.61**	**145**	*e*P	**Pn**	**09 09 03.6**	**+0.1**
ECBX				*e*S	**Sn**	**09 09 25.4**	**+1.5**
ECBX				IAML		09 09 26.8	
	comp=N,2μm,0.5s						
ECBX				⇓*e*		09 09 26.8	
Y12C	**Blythe**	**1.64**	**54**	P	**Pn**	**09 09 02.6**	**-1.2**
	baz=236,SNR=20						
Y12C				S	**Sn**	**09 09 23.9**	**-0.9**
	baz=236						
Y12C	**Blythe**	**1.64**	**54**	*e*Pn	**Pn**	**09 09 02.7**	**-1.2**
SSK	**Sunset Peak**	**1.92**	**317**	*e*Pn	**Pb**	**09 09 10.2**	**-0.2**
BFSC	**Mount Baldy Ra**	**1.92**	**319**	P	**Pn**	**09 09 07.1**	**-0.8**
	baz=139						
BFSC				Sb	**Sb**	**09 09 34.3**	**0.0**
	baz=139						
113A	**Mohawk Valley,**	**1.99**	**90**	*e*Pn	**Pn**	**09 09 07.5**	**-1.1**
113A				*e*

LRMC	**Laurel Mtn Rad** baz=154	**2.97**	**335**	P	**Pn**	09 09 21.2	**+0.4**	**-1.0**
LRMC				Sb	**Sb**	09 10 06.4	**+2.0**	
	baz=154							
WSHM	**Spangler Hills**	**3.01**	**338**	*e*Pn	**Pn**	09 09 22.4	**-0.4**	
WSHM				*e*Sn	**Sb**	09 10 09.6	**+4.1**	
SHOC	**Shoshone, Teco** baz=178,SNR=23	**3.09**	**358**	P	**Pn**	09 09 23.5	**-0.4**	
SCZ2	**Santa Cruz Isl** baz=112	**3.17**	**293**	P	**Pn**	09 09 24.5	**-0.4**	
ARVC	**Arvin** baz=136,SNR=24	**3.23**	**317**	P	**Pn**	09 09 26.1	**+0.4**	
MPMC	**Manual Prospec** baz=161	**3.44**	**341**	P	**Pn**	09 09 28.0	**-0.8**	
ISA	**Isabella, Lake** baz=146,SNR=12	**3.45**	**326**	P	**Pn**	09 09 28.8	**-0.1**	
ISA	**Isabella, Lake**	**3.45**	**326**	*e*Pn	**Pn**	09 09 29.0	**+0.1**	
DAC	**Darwin (Calif)**	**3.67**	**341**	*e*Pn	**Pn**	09 09 31.8	**-0.2**	
DAC				*e*Sg	**Sg**	09 10 31.4	**-2.0**	
PKM	**Mcpherson Peak** baz=124	**3.71**	**305**	P	**Pn**	09 09 32.7	**+0.2**	
SHPR	**Sheep Range**	**3.78**	**12**	*e*Pn	**Pn**	09 09 33.8	**+0.4**	
VES	**Vestal, Richgr** baz=141	**3.90**	**322**	P	**Pn**	09 09 34.6	**-0.3**	
CWC	**Cottonwood Cre** baz=156	**3.97**	**337**	P	**Pn**	09 09 35.7	**-0.4**	
TPNV	**Topopah Spring** baz=179,SNR=22	**4.14**	**359**	P	**Pn**	09 09 38.7	**+0.3**	
TPNV	**Topopah Spring**	**4.14**	**359**	*e*Pn	**Pn**	09 09 38.9	**+0.5**	
X16A	**Lo Mia Camp, P**	**4.23**	**66**	*e*Pn	**Pn**	09 09 40.4	**+0.8**	
GRAC	**Grapevine Rang** baz=166,SNR=6.0	**4.31**	**347**	P	**Pn**	09 09 41.0	**+0.4**	
PAGB	**Antelope Grade**	**4.49**	**312**	*e*Pn	Pn	09 09 48.8	+5.6	
TUC	**Tucson** baz=278	**4.54**	**95**	P	**Pn**	09 09 43.5	**-0.3**	
TUC	**Tucson**	**4.54**	**95**	*e*Pn	**Pn**	09 09 43.9	**+0.1**	
TUC				*e*Sn	**Sn**	09 10 36.5	**+0.2**	
WUAZ	**Wupatki** baz=237,SNR=6.0	**4.78**	**54**	P	**Pn**	09 09 47.8	**+0.6**	
WUAZ	**Wupatki**	**4.78**	**54**	*e*Pn	**Pn**	09 09 48.2	**+1.0**	
U15A	**North Rim**	**4.80**	**40**	*e*Pn	**Pn**	09 09 48.7	**+1.1**	
LCMT	**Little Creek M**	**4.82**	**29**	*e*Pn	**Pn**	09 09 48.8	**+1.1**	
KNB	**Kanab**	**5.00**	**32**	*e*Pn	**Pn**	09 09 51.5	**+1.3**	
EKU	**East Kanab**	**5.20**	**34**	*e*Pn	**Pn**	09 09 53.6	**+0.6**	
CCUT	**Cedar City**	**5.25**	**25**	*e*Pn	**Pn**	09 09 54.1	**+0.4**	
SZCU	**Shurtz Canyon**	**5.39**	**27**	*e*Pn	**Pn**	09 09 57.4	**+1.8**	
X18A	**Snowflake**	**5.43**	**70**	*e*Pn	**Pn**	09 09 56.7	**+0.6**	
X18A				*e*Sn	**Sn**	09 10 57.9	**-0.6**	
BHU	**Blowhard Mount**	**5.48**	**28**	*e*Pn	**Pn**	09 09 58.9	**+1.9**	
R11A	**Troy Canyon, C** baz=185	**5.55**	**4**	P	**Pn**	09 09 58.7	**+0.9**	
R11A	**Troy Canyon, C**	**5.55**	**4**	*e*Pn	**Pn**	09 09 59.4	**+1.5**	
PKCU	**Pink Cliffs**	**5.59**	**33**	*e*Pn	**Pn**	09 10 00.2	**+1.8**	
W18A	**Petrified Fore** baz=248	**5.79**	**65**	P	**Pn**	09 10 01.9	**+0.8**	
W18A	**Petrified Fore**	**5.79**	**65**	*e*Pn	**Pn**	09 10 02.5	**+1.4**	
SAO	**San Andreas Ge**	**5.90**	**314**	*e*Pn	**Pn**	09 10 06.5	**+4.1**	
PSUT	**Pine Spring**	**6.01**	**17**	*e*Pn	**Pn**	09 10 08.0	**+3.9**	
TCRU	**Three Creeks R**	**6.52**	**26**	*e*Pn	Pn	09 10 17.0	+5.8	
MMU	**Miners Mountai**	**6.67**	**35**	*e*Pn	**Pn**	09 10 15.4	**+2.1**	
PNTR	**Pine Nut**	**6.88**	**337**	*e*Pn	**Pn**	09 10 18.3	**+2.3**	
121A	**Cookes Peak, D** baz=274,SNR=7.4	**7.04**	**90**	P	**Pn**	09 10 18.3	**0.0**	
MVCO	**Mesa Verde** baz=237	**7.65**	**53**	P	**Pn**	09 10 27.0	**+0.4**	
SRU	**San Rafael Swe**	**7.76**	**34**	*e*Pn	**Pn**	09 10 29.4	**+1.3**	
DUG	**Dugway, Tooele**	**7.84**	**19**	*e*Pg	**Pg**	09 11 07.0	**+1.4**	
PV10	**Paradox Valley**	**8.01**	**44**	*e*Pn	**Pn**	09 10 34.4	**+2.7**	
PV09	**Paradox Valley**	**8.04**	**43**	*e*Pn	**Pn**	09 10 34.8	**+2.7**	
PV01	**Paradox Valley**	**8.14**	**47**	*e*Pn	**Pn**	09 10 36.4	**+3.0**	
TCUT	**Toone Canyon**	**9.12**	**23**	*e*Pn	**Pn**	09 10 46.6	**-0.1**	
MNTX	**Cornudas Mount** baz=280	**9.16**	**94**	P	**Pn**	09 10 47.4	**+0.2**	
MNTX	**Cornudas Mount**	**9.16**	**94**	*e*Pn	**Pn**	09 10 47.1	**-0.1**	

CSEM ***22*** *09:21:55.6, 37.87N×22.25E, h4km, ML1.5/8*
ATH 22 09:21:55.6, 37.87N×22.25E, h4km±4km, ML1.5/8, Error ellipse: s-maj=4.4km s-min=0.8km az=208.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLV	**Kalavryta, Ach**	**0.19**	**335**	P	Pg	09 21 59.1	-0.2
KLV				S	Sg	09 22 02.3	+0.4
KLV	**Kalavryta, Ach**	**0.19**	**335**	P	Pg	09 21 59.1	-0.3
KLV				S	Sg	09 22 02.3	+0.4
KLV				AML	AML	09 22 02.5	
	comp=E,1138μm,0.2s						
KLV				AML	AML	09 22 02.6	
	comp=N,903μm,0.2s						
DRO	**Drossia**	**0.43**	**281**	P	Pg	09 22 04.3	+0.3
DRO				S	Sg	09 22 11.2	+1.6
DRO	**Drossia**	**0.43**	**281**	P	Pg	09 22 04.3	+0.3
DRO				S	Sg	09 22 11.2	+1.6
DRO				AML	AML	09 22 16.2	
	comp=N,323μm,0.5s						
DRO				AML	AML	09 22 18.4	
	comp=E,282μm,0.9s						
VLX	**Vlachokerasia**	**0.51**	**168**	P	Pb	09 22 06.7	-0.5
VLX	**Vlachokerasia**	**0.51**	**168**	P	Pb	09 22 06.7	-0.5
VLX				AML	AML	09 22 20.8	
	comp=E,102μm,0.3s						
VLX				AML	AML	09 22 22.5	
	comp=N,99μm,0.5s						
AMT	**Artemida-Makis**	**0.55**	**232**	P	Pg	09 22 06.0	-0.1
AMT	**Artemida-Makis**	**0.55**	**232**	P	Pg	09 22 06.0	-0.1
DSF	**Desfina**	**0.58**	**22**	P	Pg	09 22 06.2	-0.6
DSF				S	Sg	09 22 13.8	-0.6
DSF	**Desfina**	**0.58**	**22**	P	Pg	09 22 06.2	-0.6
DSF				S	Sg	09 22 13.8	-0.5
DSF				AML	AML	09 22 15.3	
	comp=E,96μm,0.1s						
DSF				AML	AML	09 22 16.1	
	comp=N,124μm,0.1s						
LTK	**Loutraki**	**0.59**	**75**	P	Pg	09 22 07.0	+0.1
LTK				S	Sg	09 22 14.8	+0.3
LTK	**Loutraki**	**0.59**	**75**	P	Pg	09 22 07.0	+0.1
LTK				S	Sg	09 22 14.8	+0.3
LTK				AML	AML	09 22 19.3	
	comp=E,108μm,0.5s						
LTK				AML	AML	09 22 25.6	
	comp=N,128μm,0.9s						
RLS	**Riolos of Patr**	**0.65**	**287**	P	Pg	09 22 06.0	-2.0
RLS				S	Sg	09 22 16.4	0.0
RLS	**Riolos of Patr**	**0.65**	**287**	S	Sg	09 22 16.4	0.0
RLS				AML	AML	09 22 18.1	
	comp=E,52μm,0.3s						
RLS				AML	AML	09 22 20.2	
	comp=N,64μm,0.2s						
AXS	**Araxos**	**0.76**	**295**	P	Pg	09 22 09.9	-0.3
AXS	**Araxos**	**0.76**	**295**	P	Pg	09 22 09.9	-0.3
ANX	**Ano Chora**	**0.77**	**340**	P	Pb	09 22 11.2	-0.4
ANX				S	Sb	09 22 21.6	-0.8
ANX	**Ano Chora**	**0.77**	**340**	S	Sb	09 22 21.6	-0.8
ANX				AML	AML	09 22 24.6	
	comp=N,102μm,0.4s						
ANX				AML	AML	09 22 26.6	
	comp=E,114μm,0.7s						
DID	**Didima**	**0.86**	**115**	P	Pg	09 22 12.0	-0.1
DID				S	Sb	09 22 25.1	0.0
DID	**Didima**	**0.86**	**115**	P	Pg	09 22 12.0	-0.2
DID				S	Sb	09 22 25.1	0.0
DID				AML	AML	09 22 27.7	
	comp=N,58μm,0.4s						
DID				AML	AML	09 22 28.0	
	comp=E,74μm,0.5s						
PDO	**Prodromos**	**1.11**	**311**	P	Pn	09 22 18.0	0.0
PDO	**Prodromos**	**1.11**	**311**	P	Pn	09 22 18.0	0.0
AGG	**Agios Georgios**	**1.15**	**3**	P	Pg	09 22 17.6	-0.1
AGG	**Agios Georgios**	**1.15**	**3**	P	Pg	09 22 17.6	0.0
VLI	**Veliai**	**1.27**	**154**	P	Pg	09 22 19.9	-0.1
VLI				S	Sg	09 22 35.9	-0.6
VLI	**Veliai**	**1.27**	**154**	P	Pg	09 22 19.9	-0.2
VLI				S	Sg	09 22 35.9	-0.6

NIED ***22*** *09:32:00, 37.70N×141.90E, h8km, Mw3.8 Best double couple: M₀5.95000×10¹⁴ NP1:φs290.00000°, δ46.00000°, λ-116.00000°. NP2:φs146.00000°, δ50.00000°, λ-66.00000°.*
JMA ***22*** *09:32:01.1±0.1, 37.76N×141.86E, h23km±1km, M4.1*

JMA Felt I J1.
NEIC ***22*** *09:32:04.2±0.5, 37.72N×141.99E, h35km, mb4.3/3, Error ellipse: s-maj=11.4km s-min=7.5km az=122.0*
NEIC Recorded [1 JMA] in Fukushima, Iwate and Miyagi.
IDC ***22*** *09:32:04.2±5.0, 37.71N×141.88E, h33km±39km, mb3.7/11, mb1 3.9/14, mb1mx3.7/51, mbtmpg3.9/14, ML4.1/2, Error ellipse: s-maj=22.8km s-min=14.6km az=98.0*
ISC 22 09:31:59.9±2.1, 37.72N±0.04×141.82E±0.06, h2km±12km, n44, σ1s37/52, mb3.9/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.82**	**333**	P	**Pg**	09 32 16.2	**+0.5**
JIO				*e*S	**Sg**	09 32 26.5	**+0.1**
JMM	**Marumori**	**0.83**	**281**	P	**Pb**	09 32 16.9	**-0.1**
JMM				*e*S	**Sb**	09 32 27.7	**-0.9**
JFK	**Kawauchi**	**0.83**	**245**	P	**Pn**	09 32 17.3	**-1.3**
JFK				*e*S	**Sb**	09 32 28.9	**+0.2**
ONAJ	**Iwakimizuishiy**	**1.02**	**233**	P	**Pn**	09 32 20.1	**-1.2**
ONAJ				*e*S	**Sn**	09 32 34.1	**-2.1**
JOU	**Okura**	**1.12**	**306**	P	**Pb**	09 32 21.9	**-0.1**
JOU				*e*S	**Sb**	09 32 36.7	**-0.3**
JFT	**Otama**	**1.20**	**261**	P	**Pn**	09 32 23.4	**-0.2**
JFT				*e*S	**Sn**	09 32 40.5	**+0.1**
JMK	**Ichinoseki**	**1.32**	**339**	P	**Pn**	09 32 23.9	**-1.4**
JMK				*e*S	**Sb**	09 32 40.5	**-2.2**
OFUJ	**Ofunato**	**1.36**	**355**	P	**Pn**	09 32 23.6	**-2.4**
JYS	**Shirataka**	**1.48**	**290**	P	**Pn**	09 32 27.3	**-0.2**
JYS				*e*S	**Sb**	09 32 47.0	**-0.2**
JYK	**Kaneyama**	**1.66**	**317**	P	**Pn**	09 32 29.3	**-0.7**
JFY	**Yanaizu**	**1.71**	**260**	P	**Pb**	09 32 31.3	**-0.8**
JFY				*e*S	**Sb**	09 32 53.2	**-0.8**
MJAR	**Matsushiro Arr** 19nm,0.3s,baz=82,slow=16,SNR=102	**3.12**	**249**	Pn	**Pn**	09 32 51.7	**+1.6**
MJAR				Sn	**Sb**	09 33 32.3	**-2.2**
	6.8nm,0.3s,baz=208,slow=17,SNR=4.7						
MAJO	**Matsushiro**	**3.12**	**249**	*e*Pn	**Pn**	09 32 51.8	**+1.7**
MAJO				*e*Sn	**Sn**	09 33 24.9	**-3.0**
MAT	**Matsushiro**	**3.12**	**249**	P	**Pn**	09 32 51.7	**+1.6**
MAT				S	**Sb**	09 33 32.7	**-1.8**
ERM	**Erimo**	**4.41**	**13**	*e*Pn	**Pn**	09 33 07.1	**-0.7**
ERM				*e*Sn	**Sn**	09 33 58.9	**-0.9**
JHJ2	**Mitsune**	**4.88**	**200**	*e*Pn	**Pn**	09 33 14.8	**+0.5**
JHJ2				*e*Sn	**Sn**	09 34 09.8	**-1.4**
JHJ	**Hachijo jima 2** 25nm,0.3s,baz=36,slow=17,SNR=4.9	**4.88**	**201**	Pn	**Pn**	09 33 14.3	**0.0**
JHJ				Sn	**Sn**	09 34 10.3	**-1.0**
	36nm,0.3s,baz=72,slow=20,SNR=2.7						
ASAJ	**Asahikawa** baz=208,slow=12	**6.42**	**5**	Pn	**Pn**	09 33 36.5	**+1.1**
ASAJ				Sn	**Sn**	09 34 50.4	**+1.2**
	1.3nm,0.3s,baz=127,slow=20,SNR=3.8						
ASAJ	**Asahikawa** 2.7nm,0.6s	**6.42**	**5**	*e*Pn	**Pn**	09 33 34.7	**-0.7**
ASAJ				*e*Sn	**Sn**	09 34 49.9	**+0.7**
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=124,slow=14,SNR=5.3	**9.86**	**314**	Pn	Pn	09 34 27.1	+4.6
KSRS	**Korea Array** 0.2nm,0.3s,baz=94,slow=14,SNR=2.9	**11.03**	**273**	Pn	Pn	09 34 43.8	+5.1
KSAR	**Wonju Array Be**	**11.06**	**273**	Pn	Pn	09 34 43.8	+4.7
SONM	**Songino Array** 0.6nm,0.4s,baz=98,slow=10,SNR=4.6	**27.68**	**303**	P	**P**	09 37 50.6	**+1.3**
H11N2	**WAKE ISLAND Hy** baz=315,slow=75,SNR=498	**28.23**	**122**	T	T	10 07 24.5	
H11N1	**WAKE ISLAND Hy** baz=315,slow=75,SNR=422	**28.24**	**122**	T	T	10 07 24.8	
H11N3	**WAKE ISLAND Hy** baz=315,slow=75,SNR=353	**28.25**	**122**	T	T	10 07 19.9	
H11S1	**WAKE ISLAND Hy** baz=316,slow=75,SNR=219	**28.97**	**124**	T	T	10 08 17.1	
H11S3	**WAKE ISLAND Hy** baz=316,slow=75,SNR=413	**28.97**	**125**	T	T	10 08 17.2	
H11S2	**WAKE ISLAND Hy** baz=316,slow=75,SNR=207	**28.98**	**125**	T	T	10 08 18.4	
ZALV	**Zalesovo Beam** 1.0nm,0.5s,baz=112,slow=6.4,SNR=2.8	**41.70**	**312**	P	**P**	09 39 50.1	**+0.3**
MKAR	**Makanchi Array** 0.5nm,0.6s,baz=92,slow=8.1,SNR=2.6	**44.03**	**302**	P	**P**	09 40 08.3	**-0.6**
ILAR	**Eielson Array** 0.4nm,0.6s,baz=262,slow=5.5,SNR=8.9	**48.74**	**33**	P	**P**	09 40 45.0	**-0.7**
ABKAR	**Akbulak array** 0.8nm,0.6s	**57.75**	**310**	*e*P	**P**	09 41 53.8	**+1.7**
WRAB	**Tennant Creek** 2.0nm,0.6s	**57.77**	**188**	*e*P	**P**	09 41 52.2	**-0.3**
WRA	**Warramunga Arr** 2.5nm,0.6s,baz=5.6,slow=7.2,SNR=61	**57.78**	**188**	P	**P**	09 41 52.1	**-0.4**
ASAR	**Alice Springs** 1.0nm,0.7s,baz=9.0,slow=5.5,SNR=20	**61.51**	**188**	P	**P**	09 42 18.0	**-0.2**
YKA	**Yellowknife Ar** 0.2nm,0.6s,baz=301,slow=6.2,SNR=4.0	**63.05**	**30**	P	**P**	09 42 27.1	**-1.0**
FINES	**FINESS Array B** 1.8nm,0.8s,baz=2.9,slow=7.6,SNR=3.7	**68.36**	**332**	P	**P**	09 43 01.8	**-0.6**
AKASG	**Malin Array Be** 1.2nm,0.4s,baz=49,slow=6.4,SNR=3.2	**73.35**	**322**	P	**P**	09 43 35.3	**-1.2**
ELK	**Elko** 5.8nm,1.1s	**74.86**	**50**	*e*P	**P**	09 43 45.8	**+3.5**
PDAR	**Pinedale Array** 0.3nm,0.5s,baz=293,slow=1.4,SNR=5.8	**76.96**	**46**	P	**P**	09 43 53.4	**-0.8**
BRTR	**Keskin Array B** 0.5nm,0.4s,baz=74,slow=6.1,SNR=2.8	**78.64**	**312**	P	**P**	09 44 07.0	**+3.4**
TXAR	**Lajitas Array** 0.3nm,0.5s,baz=291,slow=2.8,SNR=9.4	**89.45**	**53**	P	**P**	09 44 58.4	**-0.3**
LPAZ	**La Paz** 0.8nm,0.4s,baz=153,slow=2.0,SNR=5.5	**146.07**	**59**	PKPbc	**PKPdf**	09 51 41.1	**-0.7**

MOS ***22*** *09:43:05.3±1.1, 54.97N×161.44W, h10km, mb5.2/50, MS4.4/4, Error ellipse: s-maj=9.1km s-min=5.1km az=80.3*
ISCJB ***22*** *09:43:10.8±0.3, 54.96N±0.02×161.19W±0.02, h51km±3km, mb4.9/185, MS4.2/45, Error ellipse: s-maj=3.9km s-min=2.3km az=5.1*
GCMT ***22*** *09:43:11.1±0.2, 54.65N×161.02W, h51km±1km, MW5.1/87, Moment Tensor Solution. s67,c93; s87,c129; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr4.26±.15; Mθθ-3.07±.14; Mφφ-1.19±.13; Mrθ2.19±.11; Mrφ-2.42±.08; Mθφ1.20±.10; Best double couple: M₀5.14100×10¹⁶ NP1:φs59.00000°, δ60.00000°, λ93.00000°. NP2: φs232.00000°, δ31.00000°, λ84.00000°. Principal axes: T 4.9140, Plg75.0000°, Azm338.0000°; N 0.4540, Plg3.0000°, Azm237.0000°; P -5.3680, Plg14.0000°, Azm146.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***22*** *09:43:11.1±0.2, 54.90N×161.34W, h35km, mb5.0/117, ML4.6(AEIC) Error ellipse: s-maj=4.4km s-min=3.0km az=168.0*
IDC ***22*** *09:43:11.8±2.8, 54.90N×161.34W, h45km±26km, mb4.4/45, mb1 4.5/47, mb1mx4.4/65, mbtmp4.7/47, ML4.3/3, MS4.2/29, Ms1 4.2/29, ms1mx4.0/42, Error ellipse: s-maj=16.3km s-min=8.7km az=179.0*
ISC 22 09:43:11.2±0.6, 54.87N±0.06×161.34W±0.03, h42km±5km, n76, σ1s24/765, mb4.9/185, MS4.3/46, 31C-5D, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DT1	**Dutton Round H**	**0.59**	**294**	*e*Pn	**Pn**	09 43 24.7	**+1.4**
DTNA	**Dutton South F**	**0.60**	**299**	*e*Pn	**Pn**	09 43 25.3	**+2.0**
SDPT	**Sand Point**	**0.69**	**45**	*e*Pn	**Pn**	09 43 25.2	**+0.6**
SDPT				*e*Sn	**Sn**	09 43 35.7	**+1.5**
WESN	**West Dahl Nort**	**1.90**	**262**	*e*Pn	**Pn**	09 43 43.5	**+2.4**
WESE	**West Dahl East**	**1.93**	**259**	*e*Pn	**Pn**	09 43 43.5	**+2.0**
AKSA	**Akutan Strait**	**2.64**	**256**	*e*Pn	**Pn**	09 43 54.1	**+2.8**
AKUT	**Akutan**	**2.69**	**256**	*e*Pn	**Pn**	09 43 53.7	**+1.8**
AKUT				*e*Sn	**Sn**	09 44 22.9	**-0.2**
UNV	**Unalaska Valle**	**3.19**	**253**	*e*Pn	**Pn**	09 44 00.1	**+1.4**
UNV				*e*Sn	**Sn**	09 44 33.2	**-2.2**
MTBL	**Makushin Table**	**3.25**	**256**	*e*Pn	**Pn**	09 44 02.1	**+2.5**
MGOD	**Makushin Gods**	**3.41**	**254**	*e*Pn	**Pn**	09 44 04.0	**+2.1**
NIKH	**Nikolski High**	**4.83**	**250**	*e*Pn	**Pn**	09 44 23.3	**+2.0**
NIKH				*e*Sn	**Sn**	09 45 16.5	**+0.6**
OHAK	**Old Harbor**	**5.09**	**59**	*e*Pn	**Pn**	09 44 24.2	**-0.7**
SPIA	**Saint Paul Isl**	**5.50**	**298**	*e*Pn	**Pn**	09 44 33.8	**+3.3**
SPIA				*e*Sn	**Sn**	09 45 27.8	**-4.6**
KDAK	**Kodiak Island**	**5.68**	**55**	*i* P	**Pn**	09 44 32.0	**-0.9**
KDAK	**Kodiak Island**	**5.68**	**55**	*e*Pn	**Pn**	09 44 32.2	**-0.7**
KDAK				*e*Sn	**Sn**	09 45 39.4	**+2.6**
FOSS	**Fourpeaked Sta**	**5.76**	**44**	*e*Pn	**Pn**	09 44 35.5	**+1.5**
AUE	**Augustine Isla**	**6.25**	**41**	*e*Pn	**Pn**	09 44 43.1	**+2.3**
OPT	**Oil Point**	**6.51**	**39**	*e*Pn	**Pn**	09 44 46.4	**+2.1**

SVW2	**Sparrevohn**	**6.96**	**24**	*e*Pn	**Pn**	09 44 52.7	**+2.3**	
SVW2				*e*Sn	**Sn**	09 46 08.8	**+0.7**	
HOM	**Homer**	**7.12**	**44**	*e*Pn	**Pn**	09 44 54.7	**+2.0**	
CNPM	**China Poot**	**7.20**	**45**	*e*Pn	**Pn**	09 44 54.9	**+1.0**	
SLKM	**Skilak Lake**	**8.21**	**42**	*e*P	**Pn**	09 45 08.4	**+0.8**	
SLKM	**Skilak Lake**	**8.21**	**42**	*e*Pn	**Pn**	09 45 08.4	**+0.8**	
SEW	**Seward**	**8.28**	**46**	*e*Pn	**Pn**	09 45 07.9	**-0.6**	
TT01	**Tatalina**	**8.52**	**17**	*e*Pn	**Pn**	09 45 13.0	**+1.2**	
TTA	**Tatalina**	**8.54**	**17**	*e*P	**Pn**	09 45 13.4	**+1.2**	
TTA	**Tatalina**	**8.54**	**17**	*e*Pn	**Pn**	09 45 13.4	**+1.2**	
SUA	**Susitna One**	**8.66**	**36**	*e*Pn	**Pn**	09 45 14.5	**+0.6**	
RC01	**Rabbit Creek A**	**8.76**	**40**	*e*Pn	**Pn**	09 45 15.4	**+0.2**	
SKT	**Skwentna**	**8.79**	**32**	*e*Pn	**Pn**	09 45 17.7	**+2.2**	
PWL	**Port Wells**	**9.16**	**44**	*e*Pn	**Pn**	09 45 20.5	**-0.1**	
PMR	**Palmer**	**9.31**	**39**	*e*Pn	**Pn**	09 45 22.2	**-0.4**	
PMR	**Palmer**	**9.31**	**39**	*e*Pn	**Pn**	09 45 22.2	**-0.4**	
PPLA	**Purkeypile**	**9.33**	**27**	*e*Pn	**Pn**	09 45 26.4	**+3.3**	
MID	**Middleton Isla**	**9.34**	**55**	*e*P	**Pn**	09 45 24.2	**+1.2**	
MID	**Middleton Isla**	**9.34**	**55**	*e*Pn	**Pn**	09 45 24.2	**+1.2**	
KNK	**Knik Glacier**	**9.45**	**41**	*e*Pn	**Pn**	09 45 25.5	**+0.9**	
GHO	**Glory Hole Cre**	**9.50**	**38**	*e*Pn	**Pn**	09 45 25.2	**-0.2**	
GLI	**Glacier Island**	**9.68**	**46**	*e*Pn	**Pn**	09 45 27.0	**-0.7**	
HIN	**Hinchinbrook I**	**9.69**	**49**	*e*Pn	**Pn**	09 45 27.6	**-0.3**	
SML	**Sawmill**	**9.74**	**39**	*e*P	**Pn**	09 45 28.3	**-0.3**	
SML	**Sawmill**	**9.74**	**39**	*e*Pn	**Pn**	09 45 28.3	**-0.3**	
CAST	**Castle Rocks**	**9.79**	**25**	*e*Pn	**Pn**	09 45 31.1	**+1.8**	
FID	**Port Fidalgo**	**9.87**	**47**	*e*Pn	**Pn**	09 45 29.5	**-0.8**	
EYAK	**Cordova Ski Ar**	**10.09**	**49**	*e*Pn	**Pn**	09 45 32.0	**-1.2**	
SCM	**Sheep Creek Mo**	**10.13**	**41**	*e*P	**Pn**	09 45 33.1	**-0.8**	
SCM	**Sheep Creek Mo**	**10.13**	**41**	*e*Pn	**Pn**	09 45 33.1	**-0.8**	
KTH	**Kantishna Hill**	**10.20**	**27**	*e*Pn	**Pn**	09 45 36.1	**+1.2**	
TRF	**Thorofare Moun**	**10.29**	**29**	*e*Pn	**Pn**	09 45 37.0	**+0.7**	
DIV	**Divide**	**10.36**	**46**	*e*Pn	**Pn**	09 45 37.3	**+0.3**	
GAMB	**Gambell**	**10.37**	**334**	*e*Pn	**Pn**	09 45 33.8	**-3.3**	
KLU	**Klutina**	**10.49**	**45**	*e*Pn	**Pn**	09 45 38.1	**-0.7**	
RAGM	**Ragged Mountai**	**10.49**	**51**	*e*Pn	**Pn**	09 45 38.6	**-0.3**	
BPAW	**Bear Paw Mtn.**	**10.63**	**25**	*e*Pn	**Pn**	09 45 41.6	**+0.9**	
RND	**Reindeer**	**10.68**	**32**	*e*P	**Pn**	09 45 40.1	**-1.3**	
RND	**Reindeer**	**10.68**	**32**	*e*Pn	**Pn**	09 45 40.1	**-1.3**	
BMRM	**Bremner River**	**10.78**	**49**	*e*Pn	**Pn**	09 45 42.3	**-0.5**	
MCK	**McKinley**	**10.90**	**30**	*e*P	**Pn**	09 45 43.8	**-0.5**	
MCK	**McKinley**	**10.90**	**30**	*e*Pn	**Pn**	09 45 43.8	**-0.5**	
DHY	**Denali Highway**	**10.91**	**35**	*e*Pn	**Pn**	09 45 43.3	**-1.4**	
BWN	**Browne**	**11.09**	**28**	*e*Pn	**Pn**	09 45 47.5	**+0.5**	
CRQM	**Cirque**	**11.34**	**51**	*e*Pn	**Pn**	09 45 50.5	**0.0**	
MLY	**Manley**	**11.47**	**23**	*e*Pn	**Pn**	09 45 52.9	**+0.7**	
PAX	**Paxson**	**11.51**	**39**	*e*P	**Pn**	09 45 52.1	**-0.7**	
PAX	**Paxson**	**11.51**	**39**	*e*Pn	**Pn**	09 45 52.1	**-0.7**	
WRH	**Wood River Hil**	**11.70**	**29**	*e*Pn	**Pn**	09 45 53.6	**-1.7**	
BALM	**Baldy**	**11.80**	**51**	*e*P	**Pn**	09 45 56.9	**0.0**	
BALM	**Baldy**	**11.80**	**51**	*e*Pn	**Pn**	09 45 56.9	**0.0**	
CCB	**Clear Creek Bu**	**11.91**	**29**	*e*Pn	**Pn**	09 45 55.8	**-2.4**	
HDA	**Harding Lake**	**11.99**	**31**	*e*Pn	**Pn**	09 45 57.5	**-1.7**	
MDM	**Murphy Dome**	**12.04**	**28**	*e*Pn	**Pn**	09 45 58.0	**-2.0**	
COLA	**College**	**12.07**	**28**	*e*P	**Pn**	09 45 58.3	**-2.1**	
COLA	**College**	**12.07**	**28**	*e*Pn	**Pn**	09 45 58.3	**-2.1**	
MENT	**Mentasta**	**12.14**	**41**	*e*Pn	**Pn**	09 46 01.2	**-0.2**	
IL1	**Eielson Array**	**12.27**	**30**	*e*Pn	**Pn**	09 46 00.2	**-2.9**	
ILAR	**Eielson Array** 1.3nm,0.3s,baz=223,slow=14,SNR=60	**12.27**	**30**	P	**Pn**	09 46 00.2	**-2.9**	
ILAR				S	**Sn**	09 48 17.

WVOR **Wild Horse Val** 30.34 96 *e*P P 09 49 20.4 +1.6
comp=Z,14nm,0.9s
CHMT **Chamberlain Mo** 30.82 85 *e*P P 09 49 23.1 0.0
MFID **Camas Ranch** 31.35 92 *e*P P 09 49 29.2 +1.6
comp=Z,21nm,0.9s
PAHR **Pah Rah Range** 31.70 101 *e*P P 09 49 32.7 +1.9
comp=Z,17nm,1.1s
PNTR **Pine Nut** 32.00 102 *e*P P 09 49 37.2 +3.8
comp=Z,22nm,0.8s
HLID **Hailey** 32.08 91 P P 09 49 34.1 0.0
baz=308,SNR=9.3
HLID **Hailey** 32.08 91 *e*P P 09 49 35.5 +1.4
comp=Z,9.9nm,0.9s
EGMT **Eagleton** 32.23 80 P P 09 49 35.7 +0.4
baz=302
BMN **Battle Mountai** 32.45 98 *e*P P 09 49 38.5 +1.2
BMN pmax pmax
comp=Z,8.0nm,1.0s
BMN **Battle Mountai** 32.45 98 *e*P P 09 49 38.5 +1.2
comp=Z,7.6nm,1.0s
BOZ **Bozeman (W)** 32.46 86 P P 09 49 38.3 +0.9
baz=305
WAKR **Walker** 32.49 103 *e*P P 09 49 39.8 +2.0
comp=Z,11nm,0.9s
RLMT **Red Lodge** 34.12 85 P P 09 49 52.7 +0.7
baz=306
RCTC **Rector, Farmer** 34.16 105 P P 09 49 52.8 +0.7
baz=316,SNR=5.1
VES **Vestal, Richgr** 34.58 106 P P 09 49 56.1 +0.4
baz=317,SNR=8.6
CWC **Cottonwood Cre** 34.71 104 P P 09 49 58.9 +1.8
baz=316
GRAC **Grapevine Rang** 34.72 103 P P 09 49 58.6 +1.7
baz=315
R11A **Troy Canyon, C** 34.78 99 P P 09 49 58.2 +0.5
baz=314,SNR=16
R11A **Troy Canyon, C** 34.78 99 *e*P P 09 49 57.7 0.0
comp=Z,16nm,1.0s
PKM **Mcpherson Peak** 34.88 108 P P 09 49 59.3 +0.8
baz=318,SNR=6.2
LAO **LASA Array** 34.97 80 P P 09 50 00.1 +1.0
baz=304
LAO **LASA Array** 34.97 80 *e*P P 09 50 00.0 +0.9
comp=Z,9.2nm,0.8s
ISA **Isabella, Lake** 35.05 105 P P 09 50 01.1 +1.2
baz=317
DUG **Dugway, Tooele** 35.13 94 P P 09 50 01.6 +0.9
baz=311,SNR=6.9
DUG **Dugway, Tooele** 35.13 94 *e*P P 09 50 02.5 +1.8
DUG pmax pmax
comp=Z,26nm,0.9s
DUG **Dugway, Tooele** 35.13 94 *e*P P 09 50 02.5 +1.8
comp=Z,26nm,0.9s
DGMT **Dagmar** 35.14 76 P P 09 50 01.4 +0.9
baz=303
YAK **Yakutsk** 35.18 310 P P 09 50 00.7 +0.1
comp=Z,27nm,0.6s,baz=87,slow=1.8,SNR=6.0
YAK **Yakutsk** 35.18 310 *e*P P 09 50 00.0 -0.6
YAK pmax pmax
comp=Z,25nm,0.9s
YAK MLR MLR
comp=Z,1μm,20.0s
YAK **Yakutsk** 35.18 310 *e*P P 09 50 00.9 +0.3
comp=Z,31nm,0.7s
ARVC **Arvin** 35.25 106 P P 09 50 03.3 +1.9
baz=318
YSS **Yuzh-Sakhalins** 35.27 281 *e*P P 09 50 02.3 +0.8
MPMC **Manual Prospec** 35.32 104 P P 09 50 03.2 +0.9
baz=316,SNR=8.3
BW06 **Boulder Array** 35.37 88 P P 09 50 02.7 -0.1
baz=308
BW06 **Boulder Array** 35.37 88 *e*P P 09 50 02.5 -0.3
comp=Z,7.0nm,1.3s
PDAR **Pinedale Array** 35.37 88 P P 09 50 02.8 0.0
comp=Z,0.4nm,0.6s,baz=280,slow=1.5,SNR=4.1
PDAR LR LR 10 03 30.4
comp=Z,121nm,19.5s,baz=312,slow=34
FURC **Furnace Creek,** 35.38 103 P P 09 50 03.1 +0.5
baz=316
TPNV **Topopah Spring** 35.38 102 P P 09 50 03.0 +0.1
baz=315,SNR=13
TPNV **Topopah Spring** 35.38 102 *e*P P 09 50 04.0 +1.2
TPNV pmax pmax
comp=Z,38nm,1.0s
TPNV **Topopah Spring** 35.38 102 *e*P P 09 50 04.0 +1.2
comp=Z,38nm,1.0s
A25A **Svangstu Ranch** 35.49 75 P P 09 50 03.8 +0.2
baz=302
LRMC **Laurel Mtn Rad** 35.63 105 P P 09 50 05.4 +0.5
baz=317
SHOC **Shoshone, Teco** 36.11 103 P P 09 50 09.9 +1.0
baz=316,SNR=7.8
A26A **Wade Farm, Ken** 36.12 74 P P 09 50 08.1 -0.8
baz=303,SNR=6.0
GSC **Goldstone, Bar** 36.25 104 P P 09 50 11.1 +0.9
baz=317,SNR=5.9
B26A **Jensen Ranch,** 36.29 75 P P 09 50 10.7 +0.3
baz=303
SHPR **Sheep Range** 36.31 101 *e*P P 09 50 12.6 +1.8
comp=Z,5.4nm,0.9s
BFSC **Mount Baldy Ra** 36.55 106 P P 09 50 14.3 +1.4
baz=318,SNR=6.4
CCUT **Cedar City** 36.60 98 *e*P P 09 50 13.9 +0.6
comp=Z,8.9nm,1.0s
MSU **Marysvale** 36.63 96 *e*P P 09 50 15.3 +1.8
MSU **Marysvale** 36.63 96 *e*P P 09 50 15.3 +1.8
TMUT **Trail Mountain** 36.66 94 *e*P P 09 50 15.3 +1.4
comp=Z,30nm,1.0s
HEC **Hector,Ludlow** 36.85 104 P P 09 50 15.5 +0.2
baz=317
BBRC **Big Bear Solar** 36.94 105 P P 09 50 18.1 +1.8
baz=318,SNR=5.5
ASAJ **Asahikawa** 37.01 277 P P 09 50 16.8 +0.3
comp=Z,5.9nm,0.9s,baz=45,slow=10.0
ASAJ **Asahikawa** 37.01 277 *e*P P 09 50 16.8 +0.3
comp=Z,8.5nm,0.9s
LCMT **Little Creek M** 37.05 99 *e*P P 09 50 18.8 +1.8
comp=Z,16nm,1.0s
SRU **San Rafael Swe** 37.17 94 *e*P P 09 50 19.0 +0.9
SRU pmax pmax
comp=Z,32nm,0.8s
SRU **San Rafael Swe** 37.17 94 *e*P P 09 50 19.0 +0.9
comp=Z,32nm,0.8s
KNB **Kanab** 37.29 98 *e*P P 09 50 20.8 +1.7
KNB pmax pmax
comp=Z,13nm,1.0s
KNB **Kanab** 37.29 98 *e*P P 09 50 20.8 +1.7
comp=Z,13nm,1.0s
BELC **Belle Mtn. Jos** 37.65 105 P P 09 50 22.4 +0.2
baz=318,SNR=9.6
H25A **Fruitdale** 37.67 81 P P 09 50 21.7 -0.4
baz=307
PFO **Pinyon Flats O** 37.68 106 P P 09 50 23.7 +1.3
comp=Z,1.8nm,0.5s,baz=323,slow=10,SNR=2.5
PFO **Pinyon Flats O** 37.68 106 P P 09 50 23.2 +0.8
baz=318,SNR=7.1
PFO **Pinyon Flats O** 37.68 106 *e*P P 09 50 24.2 +1.8
PFO pmax pmax
comp=Z,28nm,1.1s
PFO **Pinyon Flats O** 37.68 106 *e*P P 09 50 24.2 +1.8
comp=Z,28nm,1.1s
TPFO **Pinon Flats** 37.69 106 P P 09 50 22.9 +0.4
baz=316,SNR=7.1
RSSD **Black Hills** 37.72 82 P P 09 50 22.2 -0.6
baz=308
RSSD **Black Hills** 37.72 82 *e*P P 09 50 22.6 -0.2
RSSD pmax pmax
comp=Z,10.0nm,0.8s
RSSD **Black Hills** 37.72 82 *e*P P 09 50 22.6 -0.2
comp=Z,10nm,0.8s
O20A **White River Ci** 37.81 90 P P 09 50 23.8 +0.2
baz=311,SNR=5.2
O20A **White River Ci** 37.81 90 *e*P P 09 50 23.8 +0.2
comp=Z,42nm,0.9s
109C **Camp Elliot, M** 37.87 107 P P 09 50 25.1 +1.3
baz=319,SNR=6.3
ERM **Erimo** 37.99 274 *e*P P 09 50 24.8 +0.1
ERM pmax pmax
comp=Z,14nm,1.2s
U15A **North Rim** 38.00 98 *e*P P 09 50 26.3 +1.0
comp=Z,15nm,0.9s
IRM **Iron Mountain** 38.02 104 P P 09 50 26.3 +1.2
baz=318,SNR=10
W13A **Hualapai Mount** 38.04 101 *e*P P 09 50 26.6 +1.0
comp=Z,25nm,0.9s
MDND **Maddock** 38.05 74 P P 09 50 25.5 +0.3
baz=304,SNR=7.5
MDND **Maddock** 38.05 74 *e*P P 09 50 25.2 0.0
comp=Z,66nm,0.8s
BC3 **Big Chuckawall** 38.21 105 P P 09 50 27.4 +0.5
baz=318,SNR=9.0
MONP2 **Monument Peak** 38.24 106 P P 09 50 27.7 +0.5
baz=319,SNR=6.9
PDMCI **Parker Dam,Lak** 38.47 103 P P 09 50 30.1 +1.2
baz=317,SNR=5.8
SWSC **Sam W. Stewart** 38.55 106 P P 09 50 30.7 +1.2
baz=319,SNR=5.9
IKP **In-Ko-Pah, Jac** 38.60 106 P P 09 50 30.4 +0.4
baz=319,SNR=10
Y12C **Blythe** 38.66 103 P P 09 50 31.1 +0.6
baz=318,SNR=6.5
Y12C **Blythe** 38.66 103 *e*P P 09 50 32.3 +1.8
comp=Z,60nm,1.2s
ULM **Lac du Bonnet** 38.76 69 P P 09 50 31.0 -0.1
comp=Z,8.1nm,0.4s,baz=308,slow=8.7,SNR=29
ULM LR LR 10 06 46.5
comp=Z,418nm,19.0s,baz=297,slow=36
ULM **Lac du Bonnet** 38.76 69 *e*P P 09 50 31.1 -0.1
ULM pmax pmax
comp=Z,17nm,0.8s
ULM **Lac du Bonnet** 38.76 69 *e*P P 09 50 31.1 -0.1
comp=Z,17nm,0.8s
B31A **Greenbush Farm** 38.81 72 P P 09 50 31.7 +0.2
baz=304,SNR=9.3
PV01 **Paradox Valley** 38.96 93 *e*P P 09 50 33.6 +0.3
GLA **Glamis** 39.01 105 P P 09 50 34.7 +1.2
baz=318,SNR=7.6
GLA **Glamis** 39.01 105 *e*P P 09 50 35.6 +2.1
GLA pmax pmax
comp=Z,41nm,1.1s
GLA **Glamis** 39.01 105 *e*P P 09 50 35.6 +2.1
comp=Z,41nm,1.1s
F29A **Eureka** 39.09 77 P P 09 50 33.2 -0.8
baz=306
C31A **Landman Farms,** 39.12 73 P P 09 50 34.1 -0.1
baz=305,SNR=7.2
A32A **Rocking H Ranc** 39.16 71 P P 09 50 34.4 -0.1
baz=304,SNR=5.9
WUAZ **Wupatki** 39.17 99 P P 09 50 35.8 +0.9
baz=316,SNR=6.2
WUAZ **Wupatki** 39.17 99 *e*P P 09 50 36.1 +1.1
comp=Z,20nm,0.9s
Y14A **Wickenburg** 39.38 102 *e*P P 09 50 36.5 -0.1
comp=Z,127nm,1.2s
B32A **Ashes, Strandq** 39.44 72 P P 09 50 35.2 -1.7
baz=305
D31A **Mcclaflin, Tow** 39.55 74 P P 09 50 37.9 +0.1
baz=306,SNR=5.1
MVCO **Mesa Verde** 39.64 94 P P 09 50 39.3 +0.4
baz=314,SNR=8.1
MVCO **Mesa Verde** 39.64 94 *e*P P 09 50 39.2 +0.3
comp=Z,14nm,0.8s
E31A **Nome** 39.75 75 P P 09 50 39.8 +0.3
baz=306
A33A **Warroad** 39.75 70 P P 09 50 39.1 -0.4
baz=304,SNR=6.5
113A **Mohawk Valley,** 39.81 104 *e*P P 09 50 41.3 +1.2
comp=Z,30nm,1.2s
AGMN **Agassiz Nation** 39.86 71 P P 09 50 40.0 -0.3
baz=305,SNR=13
AGMN **Agassiz Nation** 39.86 71 *e*P P 09 50 40.0 -0.3
comp=Z,26nm,0.8s
X16A **Lo Mia Camp, P** 39.92 100 *e*P P 09 50 42.2 +1.0
comp=Z,31nm,1.3s
B33A **Robert and Kas** 40.02 71 P P 09 50 41.6 -0.1
baz=305,SNR=8.2
KLR **Kul'dur** 40.11 291 P P 09 50 42.1 -0.3
comp=Z,5.6nm,0.8s,baz=71,slow=7.0,SNR=24
KLR **Kul'dur** 40.11 291 *e*P P 09 50 41.5 -0.9
C33A **Trail** 40.22 72 P P 09 50 43.3 0.0
baz=306
S22A **4UR Ranch, Cre** 40.23 92 P P 09 50 44.9 +1.0
baz=313
Q24A **Divide** 40.38 89 P P 09 50 45.2 0.0
baz=312
B34A **Aery, Baudette** 40.41 70 P P 09 50 44.7 -0.3
baz=305,SNR=10
SUSD **Miller** 40.42 78 P P 09 50 45.2 +0.1
baz=308
F32A **Veblen** 40.58 75 P P 09 50 45.9 -0.5
baz=307
H31A **Wolsey** 40.67 78 P P 09 50 47.2 +0.1
baz=308
X18A **Snowflake** 40.69 98 *e*P P 09 50 49.8 +2.2
comp=Z,19nm,1.1s
G32A **Webster** 40.74 76 P P 09 50 47.2 -0.5
baz=308
C34A **RKJ Ranch, Bem** 40.76 72 P P 09 50 47.2 -0.6
baz=306
J30A **Dallas** 40.81 80 P P 09 50 48.3 0.0
baz=309,SNR=6.7
E33A **Westby DABS, E** 40.83 74 P P 09 50 47.8 -0.5
baz=307
D34A **Park Rapids** 40.93 73 P P 09 50 49.1 -0.1
baz=306,SNR=7.7
214A **Organ Pipe Nat** 40.96 104 P P 09 50 50.7 +1.1
baz=319,SNR=11
B35A **Bob, Littlefor** 40.99 70 P P 09 50 49.3 -0.4
baz=306,SNR=8.9
SDCO **Great Sand Dun** 41.00 91 P P 09 50 50.6 +0.4
baz=313,SNR=8.4
SDCO **Great Sand Dun** 41.00 91 *e*P P 09 50 51.3 +1.1
comp=Z,8.2nm,0.9s
F33A **5 Mile Ranch,** 41.07 75 P P 09 50 49.3 -1.1
baz=307
C35A **Jirik Farms, M** 41.24 71 P P 09 50 51.2 -0.5
baz=306,SNR=6.5
H32A **Carlson Farm,** 41.24 77 P P 09 50 49.9 -1.9
baz=308
G33A **Ortonville** 41.38 76 P P 09 50 51.6 -1.3
baz=308
H33A **Prehn Over Nor** 41.52 76 P P 09 50 53.0 -1.1
baz=308
D35A **Remer** 41.56 72 P P 09 50 53.9 -0.5
baz=307,SNR=8.1
E35A **Pequot Lakes** 41.68 73 P P 09 50 54.8 -0.6
baz=307,SNR=6.5
J32A **Parkston** 41.71 79 P P 09 50 55.5 -0.2
baz=309
G34A **Benson** 41.80 75 P P 09 50 55.8 -0.5
baz=308
C36A **Pine Crest Far** 41.83 70 P P 09 50 55.7 -0.8
baz=306,SNR=6.4
TUC **Tucson** 41.84 101 P P 09 50 56.2 -0.7
baz=318
TUC **Tucson** 41.84 101 *e*P P 09 50 58.9 +2.0
TUC pmax pmax
comp=Z,27nm,1.1s
TUC **Tucson** 41.84 101 *e*P P 09 50 58.9 +2.0
comp=Z,27nm,1.1s
L31A **Butterfield Fa** 41.91 81 P P 09 50 57.2 -0.2
baz=310
D36A **Goodland** 41.99 71 P P 09 50 57.5 -0.4
baz=307,SNR=8.3
F35A **Swanville** 42.01 74 P P 09 50 58.0 -0.1
baz=308,SNR=5.1
T25A **Trinidad** 42.05 91 P P 09 50 58.5 -0.2
baz=314,SNR=9.3
T25A **Trinidad** 42.05 91 *e*P P 09 50 59.9 +1.1
comp=Z,21nm,1.0s
H34A **Spellman Lake,** 42.07 76 P P 09 50 58.4 -0.2
baz=308
ECSD **EROS Data Cent** 42.18 77 P P 09 50 57.4 -2.1
baz=309
ECSD **EROS Data Cent** 42.18 77 *e*P P 09 50 58.8 -0.7
comp=Z,8.1nm,0.8s
C37A **Embarrass** 42.20 70 P P 09 50 59.4 -0.2
baz=307,SNR=8.6
E36A **McGregor** 42.34 72 P P 09 51 00.3 -0.4
baz=307,SNR=7.7
M31A **Lambtecht Ranc** 42.37 82 P P 09 50 59.3 -1.8
baz=311
ANMO **Albuquerque** 42.40 95 P P 09 51 02.8 +1.2
baz=316
ANMO **Albuquerque** 42.40 95 ⇓*i*P P 09 51 01.4 -0.2
ANMO pmax pmax
comp=Z,3.0nm,1.2s
ANMO **Albuquerque** 42.40 95 *e*P P 09 51 02.8 +1.2
comp=Z,12nm,1.3s
ANMO *e*PcP PcP 09 52 54.5 +0.4
D37A **Cotton** 42.41 71 P P 09 51 00.1 -1.2
baz=307
EYMN **Ely** 42.44 69 P P 09 51 01.1 -0.5
baz=307,SNR=12
EYMN **Ely** 42.44 69 *e*P P 09 51 01.1 -0.5
comp=Z,24nm,0.9s
G35A **Watkins** 42.45 74 P P 09 51 02.0 +0.3
baz=308
H11N2 **WAKE ISLAND Hy** 42.54 227 T T 10 36 18.4
baz=27,slow=76,SNR=638
H11N3 **WAKE ISLAND Hy** 42.54 227 T T 10 36 19.3
baz=27,slow=76,SNR=631
H11N1 **WAKE ISLAND Hy** 42.55 227 T T 10 36 20.3
baz=27,slow=76,SNR=496
H35A **Sunnyside Ranc** 42.58 75 P P 09 51 02.5 -0.2
baz=309
F36A **Milaca** 42.59 73 P P 09 51 02.8 0.0
baz=308
C38A **Sawbill Land.** 42.70 69 P P 09 51 02.8 -0.8
baz=307,SNR=7.4
LPM **Los Pinos Moun** 42.75 96 *e*P P 09 51 06.0 +1.5
BGNE **Belgrade** 42.80 81 P P 09 51 04.4 -0.1
baz=311
G36A **St. Michael** 42.85 74 P P 09 51 04.1 -0.8
baz=308
BNM **Barren Site** 42.87 96 *e*P P 09 51 07.0 +1.6
USRK **Ussuriysk Ar.** 42.98 284 LR LR 10 08 31.7
comp=Z,226nm,22.0s,baz=42,slow=35
K34A **Le Mars** 43.14 78 P P 09 51 07.0 -0.3
baz=310,SNR=7.5
H36A **Jessenland, He** 43.16 75 P P 09 51 07.7 +0.3
baz=309
M33A **Taylor Creek F** 43.23 80 P P 09 51 07.4 -0.7
baz=311
C39A **Grand Marais** 43.26 69 P P 09 51 06.9 -1.2
baz=307
121A **Cookes Peak, D** 43.38 98 P P 09 51 09.2 -0.4
baz=318,SNR=7.4
SPMN **Marine on St.** 43.38 73 P P 09 51 08.4 -0.8
baz=309
L34A **Svendsen Farm,** 43.44 79 P P 09 51 08.8 -1.0
baz=310
CBKS **Cedar Bluff** 43.60 85 P P 09 51 10.2 -0.9
baz=313
K35A **Storm Lake** 43.60 78 P P 09 51 09.7 -1.3
baz=310
H11S1 **WAKE ISLAND Hy** 43.71 227 T T 10 37 35.5
baz=26,slow=76,SNR=504
P32A **Huiting Farm,** 43.71 83 P P 09 51 11.3 -0.7
baz=312,SNR=5.9
J36A **Seneca 1, Swea** 43.72 76 P P 09 51 10.3 -1.6
baz=310
H11S2 **WAKE ISLAND Hy** 43.72 227 T T 10 37 36.9
baz=26,slow=76,SNR=348
H11S3 **WAKE ISLAND Hy** 43.73 227 T T 10 37 36.8
baz=26,slow=76,SNR=173
I37A **Lemond, Waseca** 43.81 75 P P 09 51 11.3 -1.4
baz=309
O33A **Hebron** 43.99 82 P P 09 51 12.9 -1.3
baz=312,SNR=5.1
FRB **Frobisher Bay** 44.08 40 LR LR 10 11 44.0
comp=Z,248nm,18.4s,baz=290,slow=39
BOD **Bodaibo** 44.10 310 *e*P P 09 51 13.2 -1.6
BOD pmax pmax
comp=Z,10.0nm,1.4s
K36A **Gilmore City** 44.10 77 P P 09 51 14.2 -0.8
baz=310
N34A **Lincoln** 44.11 81 P P 09 51 14.4 -0.7
baz=311
M35A **Neola** 44.16 79 P P 09 51 14.8 -0.7
baz=311
Q32A **Meitler Ranch,** 44.16 84 P P 09 51 15.0 -0.6
baz=313
J37A **Redenius Farm,** 44.17 76 P P 09 51 13.8 -1.8
baz=310,SNR=5.5
P33A **Williams Farm,** 44.36 83 P P 09 51 16.2 -0.9
baz=312
I38A **Scanlan Farm,** 44.39 74 P P 09 51 16.3 -1.0
baz=310,SNR=5.9
O34A **Beatrice** 44.43 81 P P 09 51 16.8 -0.9
baz=312
K37A **Belmond** 44.47 77 P P 09 51 16.7 -1.3
baz=310
MAJO **Matsushiro** 44.49 272 *e*P P 09 51 18.4 +0.2
MAJO pmax pmax
comp=Z,22nm,1.0s
MAJO **Matsushiro** 44.49 272 *e*P P 09 51 18.4 +0.2
comp=Z,22nm,1.0s
MAT **Matsushiro** 44.49 272 P P 09 51 18.1 -0.1
MJAR **Matsushiro Arr** 44.49 272 P P 09 51 18.2 0.0
comp=Z,4.6nm,0.5s,baz=36,slow=7.0,SNR=18
MJAR LR LR 10 08 58.6
comp=Z,135nm,21.9s,baz=55,slow=35
MJB9 **Matsu-Tunnel** 44.49 272 *e*P P 09 51 18.4 +0.2
comp=Z,5.8nm,1.0s
Q33A **Connelly Farm,** 44.57 84 P P 09 51 18.0 -0.9
baz=313
N35A **Tabor** 44.58 80 P P 09 51 18.5 -0.3
baz=312,SNR=6.8
M36A **Felix, Anita** 44.67 79 P P 09 51 18.6 -1.0
baz=311
J38A **Wedel Dairy, R** 44.77 75 P P 09 51 20.1 -0.2
baz=310
P34A **Walnut Farm, R** 44.78 82 P P 09 51 19.9 -0.6
baz=312
L37A **Phoenix Point,** 44.83 77 P P 09 51 19.8 -1.0
baz=311
COWI **Conover** 44.85 70 *e*P P 09 51 20.1 -0.8
comp=Z,22nm,1.3s
R33A **Olander Ranch,** 44.95 84 P P 09 51 21.3 -0.6
baz=313
M37A **Trindle Farm,** 45.13 78 P P 09 51 23.3 +0.1
baz=311
Q34A **Chapman** 45.14 83 P P 09 51 22.8 -0.5
baz=313,SNR=5.2
T32A **Huddler Ranch,** 45.19 86 P P 09 51 24.0 +0.3
baz=314
AMTX **Amarillo** 45.20 91 P P 09 51 22.7 -1.3
baz=316
AMTX **Amarillo** 45.20 91 *e*P P 09 51 24.3 +0.3
comp=Z,14nm,1.0s
KSU1 **Kansas State U** 45.21 83 P P 09 51 24.1 +0.2
baz=313
P35A **Duane Minner,** 45.26 82 P P 09 51 23.6 -0.6
baz=312
L38A **Oak Wood Farm,** 45.26 77 P P 09 51 23.5 -0.8
baz=311
MNTX **Cornudas Mount** 45.37 97 P P 09 51 25.7 +0.4
baz=318,SNR=9.1
MNTX **Cornudas Mount** 45.37 97 *e*P P 09 51 26.5 +1.3
comp=Z,14nm,1.0s
R34A **Isabella, Hill** 45.38 84 P P 09 51 25.2 -0.1
baz=313,SNR=6.2
K39A **Oelwein** 45.50 75 P P 09 51 23.9 -2.2
baz=311
P36A **Good Intent, A** 45.66 81 P P 09 51 26.6 -0.8
baz=312,SNR=6.2
S34A **Willow Spring** 45.87 84 P P 09 51 28.0 -1.1
baz=314
O37A **Wolven Farm, M** 45.90 80 P P 09 51 28.3 -1.0
baz=312
Q36A **Arnold C. Orve** 45.96 82 P P 09 51 28.6 -1.2
baz=313
J41A **Loganville** 46.11 73 P P 09 51 30.1 -0.9
baz=311,SNR=11
M39A **Webster** 46.14 77 P P 09 51 30.3 -0.9
baz=312,SNR=8.3
P37A **Lathrop** 46.17 80 P P 09 51 29.4 -2.0
baz=313
L40A **Anamosa** 46.29 76 P P 09 51 31.5 -0.8
baz=311,SNR=5.1
T34A **McClaskey Farm** 46.30 85 P P 09 51 31.0 -1.4
baz=314,SNR=5.7
S35A **Otter Creek Ra** 46.34 84 P P 09 51 31.5 -1.4
baz=314,SNR=5.3
N39A **Derby Farms, D** 46.35 78 P P 09 51 31.6 -1.3
baz=312
R36A **Gordon, Harris** 46.37 83 P P 09 51 32.1 -0.9
baz=313
W32A **Sentinel** 46.44 89 P P 09 51 33.7 +0.1
baz=315
K41A **Shullsburg** 46.44 74 P P 09 51 32.2 -1.4
baz=311
NRIK **Noril'sk** 46.45 333 P P 09 51 33.8 +0.6
comp=Z,4.0nm,0.5s,baz=74,slow=7.4,SNR=4.3
NRIK LR LR 10 13 40.2
comp=Z,553nm,21.1s,baz=54,slow=39
U34A **Anderson Ranch** 46.50 86 P P 09 51 33.9 -0.2
baz=314
DAG **Danmarks Havn** 46.51 11⇑*i*P P 09 51 33.0 -0.6
comp=Z,20nm,0.7s
DAG *i* 09 51 49.2
DAG *i* 09 51 50.3
P38A **Dawn** 46.61 80 P P 09 51 33.6 -1.3

baz=313,SNR=6.1
L41A Preston 46.69 75 P P 09 51 34.1 -1.3
baz=312
S36A Lake Cedric, C 46.73 83 P P 09 51 34.4 -1.4
baz=314
O39A Kirksville 46.75 78 P P 09 51 33.9 -2.1
baz=312
T35A Sooner Cattle 46.76 85 P P 09 51 35.0 -1.1
baz=314
CN2 Changchun 46.87 288 *e*P P 09 51 39.0 +2.2
CN2 pmax pmax
comp=Z,10.0nm,0.8s
SUMG Summit 46.88 20 *i* P P 09 51 37.2 +0.1
comp=Z,7.2nm,0.7s
SUMG Summit 46.88 20 *e*P P 09 51 37.0 0.0
SUMG pmax pmax
comp=Z,23nm,1.2s
SUMG Summit 46.88 20 *e*P P 09 51 37.0 0.0
comp=Z,23nm,1.2s
WMOK Wichita Mounta 46.98 89 P P 09 51 36.8 -1.1
baz=316,SNR=5.4
WMOK Wichita Mounta 46.98 89 *e*P P 09 51 37.6 -0.3
WMOK pmax pmax
comp=Z,10.0nm,0.8s
WMOK Wichita Mounta 46.98 89 *e*P P 09 51 37.6 -0.3
comp=Z,10nm,0.8s
Q38A Cooks Store, C 47.01 80 P P 09 51 36.6 -1.5
baz=313
T36A Boggs Farm, Ca 47.02 84 P P 09 51 36.5 -1.7
baz=314
S37A Fort Scott 47.14 83 P P 09 51 37.7 -1.4
baz=314,SNR=6.0
SPITS Spitsbergen Ar 47.21 1 LR LR 10 13 39.9
comp=Z,142nm,18.5s,baz=15,slow=39
O40A La Belle 47.22 78 P P 09 51 38.4 -1.2
baz=313,SNR=5.8
R38A Fenwick Farm, 47.38 81 P P 09 51 38.6 -2.3
baz=314
V35A Meyer Ranch, C 47.38 86 P P 09 51 40.2 -0.8
baz=315
P40A Paris 47.52 79 P P 09 51 39.9 -2.1
baz=313
T37A Cheneyville 18 47.53 83 P P 09 51 40.8 -1.3
baz=314,SNR=7.0
U36A Oologah 47.57 85 P P 09 51 41.4 -1.1
baz=315
X34A Smith Ranch, M 47.63 88 P P 09 51 41.6 -1.3
baz=316
S38A Stockton 47.76 82 P P 09 51 42.2 -1.7
baz=314
O41A Passleys Farm, 47.78 77 P P 09 51 42.7 -1.3
baz=313
R39A Chumby, Stover 47.78 81 P P 09 51 42.0 -2.0
baz=314
W35A Tecumseh 47.79 87 P P 09 51 43.7 -0.5
baz=315
Q40A Laux Farm, Aux 47.87 79 P P 09 51 43.5 -1.2
baz=313
TUL1 Leonard 47.88 85 P P 09 51 44.0 -0.8
baz=315
V36A Jenks 47.88 85 P P 09 51 43.5 -1.3
baz=315
U37A Salina 47.92 84 P P 09 51 43.7 -1.4
baz=315
SFJD Kangerlussuaq 47.94 30 *i* P P 09 51 44.9 +0.1
comp=Z,18nm,0.7s
SFJD Kangerlussuaq 47.94 30 *e*P P 09 51 45.4 +0.6
SFJD pmax pmax
comp=Z,20nm,0.6s
SFJD Kangerlussuaq 47.94 30 *e*P P 09 51 45.4 +0.6
comp=Z,20nm,0.6s
T38A Diamond 47.95 83 P P 09 51 43.4 -2.0
baz=314,SNR=6.0
P41A Barry, Barry 47.98 78 P P 09 51 43.3 -2.2
baz=313,SNR=5.9
ABTX Abilene, Hawle 48.00 91 P P 09 51 44.4 -1.5
baz=317
S39A Bolivar 48.05 82 P P 09 51 44.7 -1.5
baz=314
LTX Lajitas 48.12 98 *e*P P 09 51 47.0 +0.2
LTX *e* 09 53 13.6
LTX Lajitas 48.12 98 *e*P P 09 51 47.0 +0.2
LTX *e*PcP PcP 09 53 13.6 -0.3
TX31 Lajitas Ar. Si 48.12 98 *e*P P 09 51 47.2 +0.3
TXAR Lajitas Array 48.12 98 P P 09 51 47.0 +0.2
comp=Z,1.6nm,0.7s,baz=304,slow=5.9,SNR=25
TXAR PcP PcP 09 53 13.6 -0.3
comp=Z,1.2nm,0.5s,baz=254,slow=1.0,SNR=6.0
TXAR LR LR 10 10 22.1
comp=Z,315nm,21.7s,baz=0.0,slow=34
Y34A Reagan Ranch, 48.13 88 P P 09 51 45.5 -1.2
baz=316
W36A Wetumka 48.17 86 P P 09 51 45.8 -1.3
baz=315
O42A Bath 48.18 77 P P 09 51 46.6 -0.4
baz=313
R40A Maddies Statio 48.24 80 P P 09 51 45.4 -2.2
baz=314,SNR=5.7
X35A Drake 48.27 87 P P 09 51 46.0 -1.8
baz=316
V37A Hulbert 48.27 85 P P 09 51 46.5 -1.3
baz=315
U38A Gravette 48.31 84 P P 09 51 46.5 -1.7
baz=315,SNR=7.7
HDIL Hopedale 48.38 76 P P 09 51 46.4 -2.2
baz=313,SNR=12
HDIL Hopedale 48.38 76 *e*P P 09 51 47.9 -0.7
comp=Z,72nm,0.7s
133A Hamilton Ranch 48.43 91 P P 09 51 48.5 -0.6
baz=317
P42A Winchester 48.44 78 P P 09 51 47.9 -1.3
baz=313
T39A Clever 48.48 82 P P 09 51 47.1 -2.4
baz=314,SNR=6.9
X36A Centrahoma 48.50 87 P P 09 51 48.6 -1.0
baz=316
Y35A Marietta 48.58 88 P P 09 51 49.9 -0.4
baz=316
S40A Lebanon 48.59 81 P P 09 51 49.6 -0.6
baz=314
W37B Quinton 48.63 86 P P 09 51 49.1 -1.5
baz=316,SNR=5.1
HHAR Hobbs 48.68 83 *e*P P 09 51 49.8 -1.2
comp=Z,12nm,0.9s
V38A Canehill 48.71 84 P P 09 51 50.0 -1.2
baz=315,SNR=7.7
Q42A Golden Eagle 48.80 78 P P 09 51 50.3 -1.5
baz=314
233A Rising Star 48.87 91 P P 09 51 52.5 -0.1
baz=317
U39A Green Forest 48.87 83 P P 09 51 50.6 -1.9
baz=315,SNR=5.5
T40A Mansfield 48.89 81 P P 09 51 50.6 -2.0
baz=314
Y36A Durant 49.02 87 P P 09 51 53.8 +0.1
baz=316
S41A Jillco Farms, 49.02 80 P P 09 51 52.1 -1.6
baz=314,SNR=11
X37A Clayton 49.06 86 P P 09 51 53.1 -0.7
baz=316,SNR=6.8
V39A Pettigrew 49.16 84 P P 09 51 53.6 -1.2
baz=315
W38A Poteau 49.20 85 P P 09 51 54.2 -0.8
baz=316,SNR=6.1
Q43A New Douglas 49.25 78 P P 09 51 53.7 -1.6
baz=314,SNR=11
U40A Yellville 49.25 82 P P 09 51 53.4 -2.0
baz=315,SNR=6.5
X38A Whitesboro 49.31 86 P P 09 51 55.1 -0.8
baz=316
234A Clairette 49.33 91 P P 09 51 55.4 -0.6
baz=317
Y37A Hugo 49.35 87 P P 09 51 54.8 -1.3
baz=316,SNR=5.8
Z36A Blue Ridge 49.39 88 P P 09 51 55.8 -0.7
baz=317
T41A Mountain View 49.39 81 P P 09 51 54.7 -1.7
baz=315
JCT Junction City 49.48 93 P P 09 51 56.7 -0.5
baz=318
JCT Junction City 49.48 93 *e*P P 09 51 56.9 -0.3
JCT pmax pmax
comp=Z,19nm,0.7s
JCT Junction City 49.48 93 *e*P P 09 51 56.9 -0.3
comp=Z,20nm,0.7s
W39A Magazine 49.54 84 P P 09 51 56.5 -1.0
baz=316,SNR=5.6
V40A Witts Springs 49.66 83 P P 09 51 56.9 -1.6
baz=315,SNR=7.2
Q44A Meyer Farm, Va 49.66 77 P P 09 51 58.0 -0.4
baz=314
433A Art 49.69 92 P P 09 51 57.7 -1.1
baz=318
VLDQ Val d'Or 49.69 61 *e*P P 09 51 56.1 -2.4
comp=Z,76nm,1.9s
SFIN Lafayette 49.72 75 P P 09 51 57.3 -1.6
baz=313
SFIN Lafayette 49.72 75 *e*P P 09 51 58.2 -0.7
comp=Z,36nm,1.0s
WHTX Lake Whitney, 49.73 90 P P 09 51 57.0 -2.0
baz=317
WHTX Lake Whitney, 49.73 90 *e*P P 09 51 59.8 +0.8
comp=Z,17nm,0.8s
334A Lometa 49.76 91 P P 09 51 58.4 -0.9
baz=318
KS01 Wonju Array Si 49.77 280 *e*P P 09 51 59.2 -0.1
KSRS Korea Array 49.77 280 P P 09 51 59.5 +0.3
comp=Z,7.1nm,0.5s,baz=44,slow=7.2,SNR=37
KSRS LR LR 10 14 09.7
comp=Z,99nm,19.6s,baz=36,slow=37
U41A Viola 49.80 82 P P 09 51 57.5 -2.0
baz=315
KS15 Wonju Array Si 49.80 280 *e*P P 09 52 00.1 +0.6
X39A Fountain Ranch 49.84 85 P P 09 51 58.1 -1.8
baz=316,SNR=5.2
W40A Ferguson Farm, 49.95 84 P P 09 51 59.6 -1.1
baz=316
S43A Fulton Ridge, 49.99 79 P P 09 51 59.1 -1.8
baz=314,SNR=18
V41A Mountainview 50.05 82 P P 09 51 59.6 -1.9
baz=315,SNR=12
R44A Waltonville 50.08 78 P P 09 51 59.6 -2.1
baz=314
MIAR Mount Ida 50.12 85 P P 09 52 00.5 -1.5
baz=316,SNR=5.8
MIAR Mount Ida 50.12 85 *e*P P 09 52 01.0 -1.0
MIAR pmax pmax
comp=Z,20nm,0.9s
MIAR Mount Ida 50.12 85 *e*P P 09 52 01.0 -1.0
comp=Z,20nm,0.9s
434A Burnet 50.12 92 P P 09 52 01.2 -0.8
baz=318
U42A Revenden 50.18 81 P P 09 52 00.4 -2.0
baz=315
SCHQ Schefferville 50.26 49 P P 09 52 02.5 -0.3
comp=Z,14nm,0.9s,baz=294,slow=8.0,SNR=10
SCHQ Schefferville 50.26 49 *e*P P 09 52 02.6 -0.2
comp=Z,39nm,1.3s
335A Moody 50.26 91 P P 09 52 02.8 -0.3
baz=318
OLIL Olney 50.30 77 *e*P P 09 52 02.1 -1.1
comp=Z,56nm,1.0s
S44A Carbondale 50.37 79 P P 09 52 02.6 -1.2
baz=315
SIUC Southern Illin 50.37 79 *e*P P 09 52 02.8 -1.0
comp=Z,25nm,0.8s
W41B Gary Mavity, V 50.44 83 P P 09 52 02.7 -1.6
baz=316
V42A Cord 50.48 82 P P 09 52 02.7 -1.9
baz=315
336A Riesel 50.52 90 P P 09 52 03.9 -1.1
baz=318
S45A Carrier Mills 50.76 78 P P 09 52 05.5 -1.2
baz=315
PARMO Parma 50.81 80 *e*P P 09 52 06.3 -0.9
WLAR White Oak Lake 51.01 85 *e*P P 09 52 08.2 -0.4
comp=Z,30nm,0.9s
832A Faith Ranch, C 51.03 95 P P 09 52 08.4 -0.5
baz=319,SNR=7.7
SADO Sadowa 51.05 65 LR LR 10 14 32.9
comp=Z,129nm,18.2s,baz=5.0,slow=37
SADO Sadowa 51.05 65 *e*P P 09 52 08.0 -0.9
comp=Z,20nm,1.0s
USIN University of 51.08 77 *e*P P 09 52 08.7 -0.5
comp=Z,54nm,0.9s
Y41A Eaglette Beard 51.15 85 P P 09 52 08.8 -1.0
baz=316,SNR=6.8
JNU Nakatsue 51.16 274 P P 09 52 09.8 0.0
comp=Z,3.4nm,0.6s,baz=210,slow=6.1,SNR=6.8
JNU Nakatsue 51.16 274 *e*P P 09 52 10.0 +0.2
comp=Z,16nm,1.0s
833A Chaparral WMA, 51.33 95 P P 09 52 10.8 -0.4
baz=319,SNR=5.1
CCAR Cane Creek 51.61 84 *e*P P 09 52 12.9 -0.2
comp=Z,48nm,0.8s
Y42A Garnett, Star 51.66 84 P P 09 52 12.3 -1.2
baz=316,SNR=5.3
V45A Humboldt 51.91 80 P P 09 52 14.8 -0.6
baz=316
PLVO Plevna 51.95 64 *e*P P 09 52 15.4 -0.2
comp=Z,16nm,0.8s
X44A Crenshaw 52.12 82 P P 09 52 15.1 -1.9
baz=316
WVT Waverly 52.28 79 *e*P P 09 52 17.2 -0.9
WVT pmax pmax
comp=Z,43nm,0.8s
WVT Waverly 52.28 79 *e*P P 09 52 17.2 -0.9
comp=Z,43nm,0.8s
TRQ Mont Tremblant 52.43 61 *e*P P 09 52 18.1 -1.1
OXF Oxford 52.54 82 *e*P P 09 52 19.2 -0.8
OXF pmax pmax
comp=Z,86nm,0.9s
OXF Oxford 52.54 82 *e*P P 09 52 19.2 -0.8
comp=Z,86nm,0.9s
X45A UM Field Stati 52.61 82 P P 09 52 19.2 -1.4
baz=316
TLY Talaya 52.62 309 P P 09 52 21.2 +0.7
comp=Z,4.8nm,0.7s,baz=63,slow=4.5,SNR=2.7
TLY LR LR 10 16 27.4
comp=Z,196nm,19.0s,baz=32,slow=38
341A Kurthwood 52.69 87 P P 09 52 20.6 -0.6
baz=318
143A Socs Landing, 52.70 85 P P 09 52 20.9 -0.4
baz=317
Z44A Pea Ridge, Bel 52.84 83 P P 09 52 20.7 -1.6
baz=317,SNR=5.4
Y45A Yeager Farm, C 52.93 82 P P 09 52 22.4 -0.5
baz=317
M54A Oil Creek Stat 53.02 68 P P 09 52 21.5 -2.0
baz=314
N54A Moraine State 53.22 69 P P 09 52 23.3 -1.7
baz=315
Y46A Houston 53.31 82 P P 09 52 24.6 -1.2
baz=317,SNR=11
144A Alexander Plac 53.32 84 P P 09 52 23.7 -2.1
baz=317
VBMS Vicksburg 53.57 84 P P 09 52 25.8 -1.8
baz=317
244A Avery, Jackson 53.60 85 P P 09 52 26.7 -1.2
baz=318,SNR=5.3
145A Houston Renfro 53.62 84 P P 09 52 26.3 -1.7
baz=317,SNR=5.3
Z46A Louisville 53.76 82 P P 09 52 26.4 -2.7
baz=317
Y47A UCPARC, Winfie 53.87 81 P P 09 52 27.6 -2.2
baz=317
SONA1 Songino Array 54.00 304 *e*P P 09 52 31.2 +0.3
SONA0 Songino Array 54.01 304 *e*P P 09 52 30.9 0.0
SONA0 *e*PcP PcP 09 53 35.3 -0.3
SONM Songino Array 54.01 304 P P 09 52 30.9 0.0
comp=Z,4.4nm,0.8s,baz=44,slow=8.1,SNR=15
SONM PcP PcP 09 53 35.3 -0.3
comp=Z,3.1nm,0.7s,baz=42,slow=2.1,SNR=4.0
146A Union 54.10 83 P P 09 52 29.9 -1.6
baz=317,SNR=5.9
Z47A Carrollton 54.25 82 P P 09 52 31.4 -1.3
baz=317,SNR=5.4
TZTN Tazewell 54.39 75 *e*P P 09 52 33.1 -0.5
comp=Z,21nm,1.0s
Z48A Northport 54.42 81 P P 09 52 32.4 -1.4
baz=317,SNR=6.5
O56A Blue Knob Stat 54.48 69 P P 09 52 32.0 -2.3
baz=315
147A Livingston 54.52 82 P P 09 52 33.3 -1.3
baz=317
SSPA Standing Stone 54.58 68 *e*P P 09 52 34.3 -0.7
comp=Z,40nm,1.0s
CPCT Cooper Cave 54.64 77 *e*P P 09 52 33.9 -1.6
comp=Z,7.5nm,0.9s
346A Big Creek Wild 54.78 84 P P 09 52 35.3 -1.2
baz=318
247A Quitman 54.78 83 P P 09 52 34.7 -1.8
baz=318
TKL Tuckaleechee C 54.91 76 LR LR 10 15 43.2
comp=Z,328nm,18.8s,baz=330,slow=36
LRAL Lakeview Retre 54.99 81 *e*P P 09 52 36.1 -1.9
comp=Z,9.1nm,0.9s
347A Saraland 55.30 83 P P 09 52 38.2 -2.1
baz=318
N59A State Game Lan 55.51 66 P P 09 52 39.9 -1.8
baz=316
BLA Blacksburg 55.65 73 *e*P P 09 52 41.8 -1.0
BLA pmax pmax
comp=Z,15nm,0.7s
BLA Blacksburg 55.65 73 *e*P P 09 52 41.8 -1.0
comp=Z,15nm,0.7s
348A Jackson 55.66 83 P P 09 52 42.4 -0.4
baz=318
447A Lucedale 55.69 84 P P 09 52 42.1 -0.9
baz=318
ARCES ARCESS Array B 55.80 357 P P 09 52 42.3 -1.1
comp=Z,1.6nm,0.5s,baz=0.6,slow=8.1,SNR=7.0
ARCES LR LR 10 17 57.2
comp=Z,130nm,19.9s,baz=350,slow=37
HHC Hu-ho-hao-te 56.37 294 *e*P P 09 52 49.6 +1.7
HHC pP pP 09 53 02.6 +2.6
HHC sP sP 09 53 07.8 +2.9
HHC S **S** **10 00 34.3 -1.0**
HHC pmax pmax
comp=Z,16nm,0.7s
HHC pmax pmax
comp=Z,89nm,5.5s
HHC LR LR
comp=N,210nm,17.9s
HHC LR LR
comp=E,270nm,20.0s
HHC LR LR
comp=Z,280nm,23.0s
KMSC Kings Mountain 56.65 75 P P 09 52 47.3 -2.6
baz=317
GOGA Godfrey 56.72 78 *e*P P 09 52 48.5 -1.9
GOGA pmax pmax
comp=Z,10.0nm,0.9s
GOGA Godfrey 56.72 78 *e*P P 09 52 48.5 -1.9
comp=Z,10nm,0.9s
BORG Borgarnes 56.83 19 LR LR 10 19 10.2
comp=Z,104nm,19.8s,baz=342,slow=38
BORG Borgarnes 56.83 19 *e*P P 09 52 48.9 -1.8
BORG pmax pmax
comp=Z,105nm,1.9s
BORG Borgarnes 56.83 19 *e*P P 09 52 48.9 -1.8
comp=Z,105nm,1.9s
TIGA Tifton 58.11 80 P P 09 52 56.9 -3.3
baz=318
ZAA1 Zalesovo Array 58.66 321 *e*P P 09 53 03.6 -0.1
ZAA1 *e*PcP PcP 09 53 53.8 +0.5
ZAA0 Zalesovo Array 58.66 321 *e*P P 09 53 04.0 +0.2
ZALV Zalesovo Beam 58.66 321 P P 09 53 03.6 -0.2
comp=Z,1.4nm,0.4s,baz=45,slow=6.3,SNR=4.5
ZALV PcP PcP 09 53 53.8 +0.4
comp=Z,3.7nm,0.7s,baz=38,slow=2.2,SNR=5.8
ZALV LR LR 10 20 43.5
comp=Z,680nm,18.6s,baz=70,slow=38
TLIG Tiapa 60.20 102 *e*P P 09 53 15.4 +0.5
comp=Z,24nm,1.0s
GTA Gaotai 63.44 301 *e*P P 09 53 37.9 +1.4
GTA pP pP 09 53 47.8 -1.0
GTA sP sP 09 53 51.8 -1.8
GTA S **S** **10 02 07.3 +1.0**
GTA sS sS 10 02 25.1 -1.5
GTA Gaotai 63.44 301 SS SS 10 06 16.9 +4.0
GTA pmax pmax
comp=Z,9.0nm,0.9s
GTA pmax pmax
comp=Z,82nm,6.2s
GTA LR LR
comp=N,280nm,19.5s
GTA LR LR
comp=E,280nm,19.0s
GTA LR LR
comp=Z,470nm,18.1s
KLMR Klimovskoe 63.44 349 *e*P P 09 53 34.3 -1.7
KLMR *e* 09 54 11.8
KLMR pmax pmax
comp=Z,10.0nm,0.6s
KURK Kurchatov 63.52 322 *i* P P 09 53 36.0 -0.7
KURK pmax pmax
comp=Z,16nm,1.2s
KURK Kurchatov 63.52 322 *e*P P 09 53 37.6 +1.0
KURBB Kurchatov Arra 63.63 322 P P 09 53 37.6 +0.2
comp=Z,0.9nm,0.5s,baz=38,slow=6.8,SNR=8.7
FIA1 FINESS Array S 63.88 356 *e*P P 09 53 38.0 -0.9
comp=Z,16nm,0.9s
FIA0 FINESS Array S 63.88 356 *e*P P 09 53 38.2 -0.7
FIA0 FINESS Array S 63.88 356 *e*P P 09 53 38.2 -0.7
FINES FINESS Array B 63.88 356 P P 09 53 38.2 -0.7
comp=Z,7.6nm,0.5s,baz=19,slow=7.9,SNR=51
FINES LR LR 10 21 24.6
comp=Z,90nm,21.9s,baz=36,slow=36
LZH Lanzhou 63.95 296 *e*P P 09 53 40.1 +0.2
LZH pP pP 09 53 50.5 -1.7
LZH sP sP 09 53 57.0 0.0
LZH *e*PP PP 09 56 02.3 +1.8
LZH pmax pmax
comp=Z,20nm,1.2s
LZH pmax pmax
comp=Z,73nm,7.8s
LZH LR LR
comp=N,260nm,15.6s
LZH LR LR
comp=E,270nm,16.0s
LZH LR LR
comp=Z,350nm,18.5s
BVAR Borovoye Array 64.28 328 P P 09 53 41.8 +0.2
comp=Z,4.1nm,0.7s,baz=49,slow=4.5,SNR=14
BRVK Borovoye 64.28 328 *c i* P P 09 53 42.6 +0.9
BRVK pmax pmax
comp=Z,8.0nm,0.8s
NB2 NORSAR Subarra 64.29 4 P P 09 53 41.2 -0.4
comp=Z,6.7nm,0.6s,baz=349,slow=6.2
NB200 NORSAR Array S 64.29 4 *e*P P 09 53 41.5 -0.1
NOA NORSAR Array B 64.29 4 P P 09 53 41.5 -0.1
baz=352,slow=7.1
VOSK Vostochnaya 64.36 328 *e*P P 09 53 41.7 -0.5
VOSK pmax pmax
comp=Z,9.0nm,1.0s
VOSK Vostochnaya 64.36 328 *e*P P 09 53 41.7 -0.5
comp=Z,8.8nm,1.0s
ARU Arti 64.40 337 *d i* P P 09 53 41.5 -0.9
ARU 09 54 12.0
ARU 09 55 59.4
ARU S **S** **10 02 18.8 +1.5**
ARU pmax pmax
comp=Z,13nm,1.2s
ARU Arti 64.40 337 *e*P P 09 53 41.7 -0.6
comp=Z,8.2nm,0.6s
HFS Hagfors 65.28 3 P P 09 53 47.5 -0.5
comp=Z,14nm,0.5s,baz=27,slow=3.6,SNR=102
MK31 Makanchi Array 65.39 317 *e*P P 09 53 48.7 -0.3
MK31 Makanchi Array 65.39 317 *e*P P 09 53 48.6 -0.3
MK32 Makanchi Array 65.39 317 *e*P P 09 53 48.5 -0.5
MKAR Makanchi Array 65.39 317 P P 09 53 48.5 -0.5
comp=Z,5.0nm,0.5s,baz=48,slow=6.4,SNR=41
MKAR LR LR 10 24 07.0
comp=Z,484nm,21.4s,baz=30,slow=38
MKAR Makanchi Array 65.39 317 *i* P P 09 53 48.2 -0.8
MKAR pmax pmax
comp=Z,5.0nm,0.5s
MKAR Makanchi Array 65.39 317 *e*P P 09 53 48.6 -0.5
comp=Z,47nm,0.6s
MK01 Makanchi Array 65.40 317 *e*P P 09 53 48.4 -0.7
MAKZ Makanchi 65.50 318 *e*P P 09 53 49.2 -0.5
MAKZ pmax pmax
comp=Z,7.0nm,0.4s
MAKZ Makanchi 65.50 318 *e*P P 09 53 49.2 -0.5
comp=Z,7.4nm,0.4s
WMQ Urumqi 65.59 312 P P 09 53 51.8 +1.4
WMQ pP sP 09 54 08.4 +0.9
WMQ PP PP 09 56 22.3 +7.8
WMQ S **S** **10 02 33.8 +1.3**
WMQ pmax pmax
comp=Z,13nm,0.8s
WMQ pmax pmax
comp=Z,75nm,5.8s
WMQ LR LR
comp=N,220nm,13.0s
WMQ LR LR
comp=E,180nm,15.6s
WMQ LR LR
comp=Z,390nm,26.3s
TAOE Nuku Hiva Isla 65.93 157 *e*LR LR 10 13 48.3
comp=Z,575nm,24.7s

TAOE	**Nuku Hiva Isla**	**65.93**	**157**	*e*T		T		11 05 05.5	
	comp=Z,76nm,0.2s								
KPL	**Plockton**	**66.42**	**14**	*e*P		**P**		**09 53 55.5**	**+0.1**
KPL					AMB	AMB		09 53 57.0	
	comp=Z,21nm,0.9s								
MDO	**Dochfour**	**66.50**	**13**	*e*P		**P**		**09 53 56.1**	**+0.2**
MCD	**Coleburn Disti**	**66.51**	**13**	*e*P		**P**		**09 53 55.9**	**-0.1**
VSU	**Vasula**	**66.84**	**355**	*e*P		**P**		**09 53 57.5**	**-0.5**
VSU					pmax	pmax			
	comp=Z,22nm,0.7s								
DRUM	**Mains of Drumt**	**67.26**	**12**	*e*P		**P**		**09 54 00.7**	**0.0**
DRUM					AMB	AMB		09 54 01.8	
	comp=Z,64nm,1.1s								
EAB	**Aberfoyle**	**67.72**	**14**	*e*P		**P**		**09 54 03.5**	**-0.1**
EKA	**Eskdalemuir Ar**	**68.71**	**13**	P		**P**		**09 54 10.1**	**+0.2**
	comp=Z,10nm,0.6s,baz=342,slow=4.9,SNR=34								
ESK	**Eskdalemuir**	**68.72**	**13**	*e*P		**P**		**09 54 10.0**	**0.0**
ESK					pmax	pmax			
	comp=Z,21nm,0.8s								
ESK	**Eskdalemuir**	**68.72**	**13**	*e*P		**P**		**09 54 10.0**	**0.0**
	comp=Z,21nm,0.8s								
GAL1	**Galloway**	**68.95**	**14**	*e*P		**P**		**09 54 11.2**	**-0.2**
GAL1					AMB	AMB		09 54 14.3	
	comp=Z,12nm,1.4s								
OBN	**Obninsk**	**69.40**	**349**	*i* P		**P**		**09 54 12.7**	**-1.4**
OBN				*i*				09 54 36.3	
OBN					pmax	pmax			
	comp=Z,10.0nm,0.7s								
OBN					MLR	MLR			
	comp=Z,254nm,23.0s								
AKTO	**Aktyubinsk**	**70.03**	**334**	P		**P**		**09 54 18.2**	**+0.1**
	comp=Z,8.1nm,0.7s,baz=15,slow=6.7								
ABKAR	**Akbulak array**	**70.62**	**333**	*e*P		**P**		**09 54 21.2**	**-0.5**
	comp=Z,66nm,0.6s								
VAH	**Vaihoa**	**70.79**	**166**	*e*T		T		11 11 12.7	
	comp=Z,13nm,0.3s								
FOEL	**Foel Wylfa**	**71.09**	**14**	*e*P		**P**		**09 54 24.6**	**0.0**
FOEL					AMB	AMB		09 54 26.5	
	comp=Z,27nm,0.8s								
AAK	**Ala-Archa**	**71.87**	**320**	P		**P**		**09 54 30.0**	**+0.4**
	comp=Z,5.1nm,0.5s,baz=126,slow=3.7,SNR=6.9								
AAK	**Ala-Archa**	**71.87**	**320**	*e*P		**P**		**09 54 30.0**	**+0.4**
AAK					pmax	pmax			
	comp=Z,11nm,0.8s								
AAK	**Ala-Archa**	**71.87**	**320**	*e*P		**P**		**09 54 30.4**	**+0.7**
VRH	**Novokhopyorsk**	**72.56**	**345**	*e*P		**P**		**09 54 32.3**	**-1.1**
VRH					pmax	pmax			
	comp=Z,40nm,0.6s								
PPT	**Papeete**	**72.84**	**168**	LR		LR		10 19 13.5	
	comp=Z,253nm,19.7s,baz=0.0,slow=30								
TIAR	**Tiarei**	**72.86**	**168**	*e*T		T		11 13 48.8	
	comp=Z,30nm,0.3s								
PPT2	**Papeete2**	**72.86**	**168**	*e*S		**SKiKP**		**10 04 02.2**	**-2.8**
	comp=Z,434nm,32.8s								
PPT2	**Papeete2**	**72.86**	**168**	*e*LR		LR		10 16 55.0	
	comp=Z,529nm,24.5s								
PPT2	**Papeete2**	**72.86**	**168**	*e*T		T		11 13 49.0	
	comp=Z,9.0nm,0.3s								
KKAR	**Karatay Array**	**72.90**	**323**	*e*P		**P**		**09 54 35.6**	**0.0**
KKAR					pmax	pmax			
	comp=Z,49nm,0.7s								
KKAR	**Karatay Array**	**72.90**	**323**	*e*P		**P**		**09 54 35.6**	**0.0**
	comp=Z,49nm,0.7s								
VSR	**Storozhevoye**	**72.91**	**347**	*e*P		**P**		**09 54 32.8**	**-2.7**
VSR					pmax	pmax			
	comp=Z,10.0nm,0.4s								
PAE	**Paea**	**72.93**	**168**	*e*T		T		11 13 54.0	
	comp=Z,2.9nm,0.3s								
TVO	**Taravao**	**73.09**	**168**	*e*T		T		11 14 06.1	
	comp=Z,5.6nm,0.3s								
KMI	**Kunming**	**73.11**	**290**	P		**P**		**09 54 39.4**	**+2.0**
KMI					pmax	pmax			
	comp=Z,12nm,0.5s								
KMI					pmax	pmax			
	comp=Z,66nm,4.3s								
MEH	**Mehetia**	**73.33**	**167**	*e*T		T		11 14 23.5	
	comp=Z,28nm,0.3s								
QIZ	**Qiongzhong**	**73.99**	**280**	P		**P**		**09 54 43.1**	**+0.8**
QIZ				S		**S**		**10 04 16.0**	**+4.4**
QIZ				LR		LR			
	comp=N,160nm,18.3s								
QIZ				LR		LR			
	comp=Z,140nm,21.5s								
KSH	**Kashi**	**74.00**	**317**	P		**P**		**09 54 45.9**	**+3.6**
KSH				*es*P		sP		09 55 03.6	+4.1
KSH				S		**S**		**10 04 13.4**	**+2.0**
KSH				SKS		**SKSac**		**10 04 45.1**	**-0.9**
KSH				pmax		pmax			
	comp=Z,20nm,1.1s								
KSH				pmax		pmax			
	comp=Z,79nm,2.2s								
KSH				LR		LR			
	comp=N,120nm,6.8s								
KSH				LR		LR			
	comp=E,140nm,6.7s								
KSH				LR		LR			
	comp=Z,130nm,10.5s								
SNF	**Seneffe**	**74.31**	**9**	P		**P**		**09 54 44.1**	**+0.5**
SNF				XP		**sP**		**09 55 01.5**	**+0.6**
MEM	**Membach**	**74.36**	**8**	P		**P**		**09 54 45.1**	**+1.1**
AKASG	**Malin Array Be**	**74.43**	**353**	P		**P**		**09 54 43.8**	**-0.6**
	comp=Z,19nm,0.5s,baz=9.3,slow=5.8,SNR=53								
AKASG				LR		LR		10 27 26.0	
	comp=Z,185nm,21.9s,baz=355,slow=36								
AKBB	**Malin Array Si**	**74.43**	**353**	*e*P		**P**		**09 54 43.6**	**-0.8**
AKBB					pmax	pmax			
	comp=Z,26nm,0.6s								
AKBB	**Malin Array Si**	**74.43**	**353**	*e*P		**P**		**09 54 43.6**	**-0.8**
	comp=Z,26nm,0.6s								
KIEV	**Kiev**	**74.44**	**353**	*c i*P		**P**		**09 54 43.0**	**-1.4**
KIEV					pmax	pmax			
	comp=Z,14nm,0.7s								
KIEV	**Kiev**	**74.44**	**353**	*e*P		**P**		**09 54 43.7**	**-0.7**
	comp=Z,25nm,0.6s								
AK11	**Malin Array Si**	**74.46**	**353**	*e*P		**P**		**09 54 43.4**	**-1.1**
BCLA	**Clavier**	**74.49**	**9**	P		**P**		**09 54 44.8**	**+0.1**
PVCC	**Panska Ves**	**74.92**	**3**	*e*P		**P**		**09 54 47.5**	**+0.3**
PVCC					AMS	AMS		10 34 00.0	
	comp=Z,200nm,22.6s								
UPC	**Upice**	**74.97**	**2**	*e*P		**P**		**09 54 47.5**	**-0.1**
UPC				*ep*P		**PcP**		**09 55 00.8**	**-0.4**
UPC					AMS	AMS		10 34 20.0	
	comp=Z,200nm,19.6s								
DPC	**Dobruska-Polom**	**75.14**	**2**	*e*P		**P**		**09 54 48.8**	**+0.3**
DPC				*ep*P		**PcP**		**09 55 02.2**	**+0.2**
DPC					AMS	AMS		10 34 30.0	
	comp=Z,200nm,24.1s								
PRU	**Pruhonice**	**75.46**	**3**	*e*P		**P**		**09 54 50.6**	**+0.3**
PRU				*ex*		x		09 54 56.0	
PRU					AMS	AMS		10 34 50.0	
	comp=Z,200nm,16.1s								
GOPC	**GO Pecny, Ondr**	**75.54**	**3**	*e*P		**P**		**09 54 51.1**	**+0.3**
GOPC					AMS	AMS		10 34 30.0	
	comp=Z,200nm,22.5s								
OKC	**Ostrava-Krasne**	**75.67**	**0**	AMS		AMS		10 29 10.0	
	comp=Z,100nm,24.9s								
MORC	**Moravsky Berou**	**75.72**	**1**	⇑*i*P		**P**		**09 54 51.7**	**-0.2**
MORC	**Moravsky Berou**	**75.72**	**1**	⇑P		**P**		**09 54 51.7**	**-0.2**
MORC	**Moravsky Berou**	**75.72**	**1**	*e*P		**P**		**09 54 52.0**	**+0.1**
	comp=Z,26nm,0.9s								
STHS	**Stebnicka Huta**	**76.06**	**358**	*e*P		**P**		**09 54 54.7**	**+0.8**
VRAC	**Vranov**	**76.18**	**1**	P		**P**		**09 54 54.7**	**+0.2**
	comp=Z,8.7nm,0.6s,baz=12,slow=6.1,SNR=8.6								
VRAC	**Vranov**	**76.18**	**1**	⇓*i*P		**P**		**09 54 53.8**	**-0.7**
VRAC	**Vranov**	**76.18**	**1**	⇓P		**P**		**09 54 53.8**	**-0.7**
KHC	**Kasperske Hory**	**76.29**	**3**	*e*P		**P**		**09 54 55.7**	**+0.6**
KHC				*ep*P		**PcP**		**09 55 05.0**	**-1.9**
KHC					AMS	AMS		10 35 10.0	
	comp=Z,200nm,16.4s								
KHC	**Kasperske Hory**	**76.29**	**3**	*e*P		**P**		**09 54 56.0**	**+0.8**
KHC					pmax	pmax			
	comp=Z,5.0nm,0.8s								
KHC	**Kasperske Hory**	**76.29**	**3**	*e*P		**P**		**09 54 56.0**	**+0.8**
	comp=Z,4.8nm,0.8s								
LANS	**Liptovska Anna**	**76.35**	**359**	*e*P		**P**		**09 54 56.6**	**+1.1**
CRVS	**Cervenica-Dubn**	**76.58**	**358**	*e*P		**P**		**09 54 57.0**	**+0.3**
GEC2	**GERESS Array S**	**76.58**	**3**	*e*P		**P**		**09 54 57.1**	**+0.3**
GEC2					pmax	pmax			
	comp=Z,8.0nm,0.8s								
GEC2	**GERESS Array S**	**76.58**	**3**	*e*P		**P**		**09 54 57.1**	**+0.3**
	comp=Z,8.0nm,0.8s								
GERES	**GERESS Array B**	**76.58**	**3**	P		**P**		**09 54 56.9**	**+0.1**
	comp=Z,3.8nm,0.7s,baz=357,slow=4.7,SNR=18								
GERES				LR		LR		10 28 42.3	
	comp=Z,71nm,21.5s,baz=326,slow=36								
GEA0	**GERESS Array S**	**76.58**	**3**	*e*P		**P**		**09 54 56.9**	**0.0**
BFO	**Black Forest**	**76.81**	**7**	*i* P		**P**		**09 54 59.5**	**+1.4**
UZH	**Uzhgorod**	**76.83**	**358**	*e*P		**P**		**09 54 58.4**	**+0.3**
UZH				*e*				09 55 03.8	
KECS	**Kecovo**	**77.01**	**359**	*e*P		**P**		**09 54 59.6**	**+0.4**
VYHS	**Vyhne**	**77.01**	**360**	*e*P		**P**		**09 54 59.6**	**+0.4**
SORM	**Soroca**	**77.05**	**353**	⇑*i*P		**P**		**09 54 57.4**	**-1.9**
SORM	**Soroca**	**77.05**	**353**	⇑P		**P**		**09 54 57.4**	**-1.9**
CONA	**Conrad Observa**	**77.55**	**2**	*i* P		**P**		**09 55 02.7**	**+0.4**
	comp=Z,14nm,1.1s								
PSZ	**Piszkesteto**	**77.58**	**359**	*e*P		**P**		**09 55 03.3**	**+0.8**
PSZ					pmax	pmax			
	comp=Z,12nm,0.9s								
PSZ	**Piszkesteto**	**77.58**	**359**	*e*P		**P**		**09 55 03.3**	**+0.8**
	comp=Z,12nm,0.9s								
MOA	**Molln**	**77.59**	**3**	*e*P		**P**		**09 55 04.0**	**+1.6**
	comp=Z,5.4nm,1.1s								
BUR08	**Bucovina Ar. S**	**77.71**	**355**	*e*P		**P**		**09 55 03.3**	**+0.1**
BURAR	**Bucovina Array**	**77.74**	**355**	⇑*i*P		**P**		**09 55 03.2**	**-0.2**
BURAR	**Bucovina Array**	**77.74**	**355**	⇑P		**P**		**09 55 03.2**	**-0.2**
RETA	**Reutte**	**77.80**	**5**	*i* P		**P**		**09 55 04.3**	**+0.6**
	comp=Z,6.3nm,0.9s								
DAVA	**Damuels**	**77.95**	**6**	*i* P		**P**		**09 55 05.4**	**+0.7**
	comp=Z,3.1nm,0.6s								
MOTA	**Moosalm**	**77.96**	**5**	*i* P		**P**		**09 55 05.6**	**+0.9**
	comp=Z,7.4nm,0.6s								
WATA	**Walderalm**	**77.99**	**5**	*i* P		**P**		**09 55 05.1**	**+0.2**
	comp=Z,6.3nm,0.6s								
WTTA	**Wattenberg**	**78.07**	**5**	*i* P		**P**		**09 55 05.9**	**+0.6**
	comp=Z,14nm,0.7s								
ARSA	**Arzberg**	**78.22**	**2**	*i* P		**P**		**09 55 06.8**	**+0.8**
	comp=Z,6.9nm,0.6s								
FETA	**Feichten**	**78.26**	**6**	*i* P		**P**		**09 55 07.1**	**+0.7**
	comp=Z,9.3nm,0.9s								
KBA	**Koelnbreinsper**	**78.33**	**4**	*i* P		**P**		**09 55 07.7**	**+0.9**
	comp=Z,15nm,0.8s								
DAVOX	**Davos/Dischmat**	**78.45**	**6**	P		**P**		**09 55 07.9**	**+0.4**
	comp=Z,6.9nm,0.6s,baz=340,slow=7.2,SNR=7.4								
TBI	**Tubuai**	**78.56**	**169**	*e*LR		LR		10 19 37.9	
	comp=Z,473nm,29.8s,baz=348								
TBI	**Tubuai**	**78.56**	**169**	*e*T		T		11 20 56.3	
	comp=Z,70nm,0.3s								
ABTA	**Abfaltersbach**	**78.62**	**4**	*i* P		**P**		**09 55 09.6**	**+1.3**
	comp=Z,9.4nm,0.9s								
FUORN	**Ofenpass-Fuorn**	**78.64**	**6**	*e*P		**P**		**09 55 09.3**	**+0.7**
	comp=Z,12nm,0.8s								
SENIN	**Lac Senin/Sane**	**78.69**	**8**	*e*P		**P**		**09 55 09.7**	**+0.9**
	comp=Z,6.8nm,0.8s								
TESR	**Tescani**	**78.77**	**354**	⇓*i*P		**P**		**09 55 08.7**	**-0.3**
SOKA	**Soboth**	**78.78**	**3**	*i* P		**P**		**09 55 09.9**	**+0.8**
	comp=Z,7.4nm,0.6s								
MYKA	**Terra Mystica**	**78.79**	**4**	*i* P		**P**		**09 55 09.7**	**+0.5**
	comp=Z,8.0nm,0.8s								
OBKA	**Obir**	**78.94**	**3**	*i* P		**P**		**09 55 10.5**	**+0.5**
	comp=Z,45nm,0.7s								
DOPR	**Dopca**	**79.38**	**355**	⇑*i*P		**P**		**09 55 13.2**	**+0.8**
VRI	**Vrincioaia**	**79.41**	**354**	⇑*i*P		**P**		**09 55 13.1**	**+0.6**
VRI	**Vrincioaia**	**79.41**	**354**	⇑P		**P**		**09 55 13.1**	**+0.6**
PLOR	**Plostina**	**79.43**	**354**	⇑*i*P		**P**		**09 55 13.4**	**+0.8**
PLOR	**Plostina**	**79.43**	**354**	⇑P		**P**		**09 55 13.4**	**+0.8**
KVAR	**Kislovodsk Arr**	**79.45**	**343**	P		**P**		**09 55 13.0**	**+0.1**
	comp=Z,17nm,0.6s,baz=333,slow=5.9,SNR=11								
KIV	**Kislovodsk**	**79.45**	**343**	*i* P		**P**		**09 55 11.4**	**-1.5**
KIV				*i*				09 55 18.9	
KIV				*i* S		**ScS**		**10 05 38.0**	**+5.3**
KIV				*i* SS		**SS**		**10 10 23.2**	**+6.0**
KIV					pmax	pmax			
	comp=Z,15nm,0.8s								
KIV					MLR	MLR			
	comp=Z,136nm,23.0s								
KIV	**Kislovodsk**	**79.45**	**343**	*e*P		**P**		**09 55 13.6**	**+0.7**
	comp=Z,19nm,0.7s								
GUN	**Gumba**	**79.52**	**304**	*e*P		**P**		**09 55 14.1**	**+0.3**
	comp=Z,25nm,0.4s								
KBZ	**Khabaz**	**79.63**	**342**	P		**P**		**09 55 14.2**	**+0.5**
	comp=Z,13nm,0.8s,baz=358,slow=5.3,SNR=4.9								
KBZ					LR	LR		10 36 45.1	
	comp=Z,131nm,19.7s,baz=18,slow=40								
MLR	**Muntele Rosu**	**79.82**	**355**	P		**P**		**09 55 15.7**	**+0.8**
	comp=Z,1.1nm,0.5s,baz=330,slow=6.3,SNR=7.1								
MLR	**Muntele Rosu**	**79.82**	**355**	*e*P		**P**		**09 55 16.1**	**+1.2**
MLR					pmax	pmax			
	comp=Z,43nm,1.9s								
MLR	**Muntele Rosu**	**79.82**	**355**	*e*P		**P**		**09 55 16.1**	**+1.2**
	comp=Z,43nm,1.9s								
BZS	**Buzias**	**79.86**	**358**	⇑*i*P		**P**		**09 55 14.9**	**0.0**
BZS	**Buzias**	**79.86**	**358**	⇑P		**P**		**09 55 14.9**	**0.0**
KKN	**Kakani**	**79.91**	**304**	*e*P		**P**		**09 55 15.9**	**+0.1**
	comp=Z,35nm,0.5s								
VOIR		**79.92**	**355**	⇑*i*P		**P**		**09 55 16.3**	**+0.9**
VOIR		**79.92**	**355**	⇑P		**P**		**09 55 16.3**	**+0.9**
TLCR		**79.95**	**353**	⇑*i*P		**P**		**09 55 14.6**	**-0.8**
TLCR		**79.95**	**353**	⇑P		**P**		**09 55 14.6**	**-0.8**
CFR	**Carcaliu**	**80.00**	**353**	⇑*i*P		**P**		**09 55 12.9**	**-2.7**
CFR	**Carcaliu**	**80.00**	**353**	⇑P		**P**		**09 55 13.0**	**-2.7**
ARR	**Arges**	**80.01**	**356**	⇑*i*P		**P**		**09 55 17.0**	**+1.1**
PKIN	**Phulchoki**	**80.03**	**304**	*e*P		**P**		**09 55 16.7**	**+0.2**
	comp=Z,46nm,0.6s								
GKN	**Gorkha**	**80.03**	**305**	*e*P		**P**		**09 55 16.2**	**-0.2**
	comp=Z,35nm,0.7s								
DMN	**Daman**	**80.14**	**304**	*e*P		**P**		**09 55 17.1**	**0.0**
	comp=Z,49nm,0.5s								
CHTO	**Chiang Mai**	**80.26**	**289**	*e*P		**P**		**09 55 17.0**	**-0.5**
CHTO					pmax	pmax			
	comp=Z,51nm,2.0s								
CHTO	**Chiang Mai**	**80.26**	**289**	*e*P		**P**		**09 55 17.0**	**-0.5**
	comp=Z,51nm,2.0s								
HARR	**Harsova**	**80.50**	**353**	⇑*i*P		**P**		**09 55 18.3**	**-0.1**
HARR	**Harsova**	**80.50**	**353**	⇑P		**P**		**09 55 18.3**	**-0.1**
CMAR	**Chiang Mai Arr**	**80.55**	**288**	P		**P**		**09 55 19.1**	**0.0**
	comp=Z,8.0nm,0.7s,baz=23,slow=5.7,SNR=26								
CMAR					LR	LR		10 34 57.9	
	comp=Z,96nm,18.0s,baz=18,slow=39								
CM01	**Chiang Mai Arr**	**80.57**	**288**	*e*P		**P**		**09 55 19.0**	**-0.2**
TLB	**Topalu**	**80.60**	**353**	⇑*i*P		**P**		**09 55 18.9**	**0.0**
TLB	**Topalu**	**80.60**	**353**	⇑P		**P**		**09 55 18.9**	**0.0**
MDVR	**Moldovita**	**80.69**	**358**	⇑*i*P		**P**		**09 55 19.0**	**-0.5**
TIRR	**Tirgusor**	**80.70**	**353**	*e*P		**P**		**09 55 18.7**	**-0.8**
TIRR					pmax	pmax			
	comp=Z,17nm,0.9s								
TIRR	**Tirgusor**	**80.70**	**353**	*e*P		**P**		**09 55 18.7**	**-0.8**
	comp=Z,17nm,0.9s								
KOLN	**Koldanda**	**80.72**	**306**	*e*P		**P**		**09 55 20.0**	**-0.1**
	comp=Z,42nm,0.5s								
PYUN	**Piuthan**	**80.73**	**306**	*e*P		**P**		**09 55 20.2**	**0.0**
	comp=Z,55nm,0.5s								
RKT	**Rikitea**	**80.90**	**156**	*e*LR		LR		10 20 37.0	
	comp=Z,424nm,30.2s								
RKT	**Rikitea**	**80.90**	**156**	*e*T		T		11 23 46.7	
	comp=Z,4.3nm,0.3s								
KBL	**Kabul**	**81.01**	**320**	*e*P		**P**		**09 55 20.5**	**-1.1**
KBL					pmax	pmax			
	comp=Z,18nm,0.9s								
KBL	**Kabul**	**81.01**	**320**	*e*P		**P**		**09 55 20.5**	**-1.1**
	comp=Z,18nm,0.9s								
DZM	**Mont Dzumac**	**81.44**	**210**	*e*LR		LR		10 21 04.4	
	comp=Z,407nm,24.6s								
GEYT	**Alibeck**	**81.57**	**329**	P		**P**		**09 55 24.8**	**+0.5**
	comp=Z,5.2nm,0.5s,baz=344,slow=4.9,SNR=10.0								
GEYT					LR	LR		10 36 11.4	
	comp=Z,366nm,18.9s,baz=35,slow=39								
OCAC	**Ocana**	**82.19**	**87**	*e*P		**P**		**09 55 28.6**	**+0.7**
GNI	**Garni**	**82.75**	**340**	P		**P**		**09 55 31.5**	**+0.9**
	comp=Z,6.0nm,0.3s,baz=104,slow=8.3,SNR=4.0								
GNI	**Garni**	**82.75**	**340**	*e*P		**P**		**09 55 31.9**	**+1.3**
GNI					pmax	pmax			
	comp=Z,24nm,0.9s								
VTS	**Vitosha**	**82.84**	**357**	⇑*i*P		**P**		**09 55 30.1**	**-0.9**
VTS	**Vitosha**	**82.84**	**357**	⇑P		**P**		**09 55 30.1**	**-0.9**
VTS	**Vitosha**	**82.84**	**357**	*e*P		**P**		**09 55 30.4**	**-0.5**
	comp=Z,5.7nm,0.9s								
GRMC	**Gramalote, San**	**82.91**	**87**	*e*P		**P**		**09 55 28.5**	**-3.2**
PDG	**Podgorica**	**83.07**	**360**	⇑*i*P		**P**		**09 55 32.4**	**+0.4**
SDV	**Santo Domingo**	**83.21**	**84**	*e*P		**P**		**09 55 31.7**	**-1.6**
NORC	**Norcasia**	**83.45**	**90**	*e*P		**P**		**09 55 32.8**	**-1.6**
BARC	**Barichara**	**83.60**	**88**	*e*P		**P**		**09 55 34.1**	**-1.2**
ES19	**SONSECA Array**	**83.84**	**17**	*e*P		**P**		**09 55 36.1**	**+0.1**
ESDC	**Sonseca Array**	**83.85**	**17**	P		**P**		**09 55 36.4**	**+0.3**
	comp=Z,6.4nm,0.7s,baz=343,slow=4.6,SNR=23								
ESLA	**Sonseca Array**	**83.85**	**17**	*e*P		**P**		**09 55 36.4**	**+0.3**
	comp=Z,12nm,0.8s								
TOLC	**Tolima**	**83.98**	**91**	*e*P		P		09 55 50.0	+13
RUSC	**La Rusia**	**84.22**	**88**	*e*P		**P**		**09 55 37.8**	**-1.0**
RUSC	**La Rusia**	**84.22**	**88**	*e*P		**P**		**09 55 38.3**	**-0.5**
	comp=Z,36nm,1.1s								
CHIC	**Chingaza**	**84.87**	**89**	*e*P		**P**		**09 55 40.7**	**-1.3**
BR231	**Keskin MP Arra**	**84.89**	**349**	*e*P		**P**		**09 55 42.0**	**+0.5**
BR101	**Keskin Array S**	**84.91**	**348**	*e*P		**P**		**09 55 41.8**	**+0.2**
BR131	**Keskin Array S**	**84.91**	**348**	*e*P		**P**		**09 55 41.9**	**+0.3**
BRTR	**Keskin Array B**	**84.91**	**348**	P		**P**		**09 55 41.8**	**+0.2**
	comp=Z,8.2nm,0.7s,baz=35,slow=2.5,SNR=38								
BRTR					LR	LR		10 39 06.1	
	comp=Z,75nm,19.8s,baz=18,slow=40								
PRAC	**Prado**	**84.94**	**91**	*e*P		**P**		**09 55 40.4**	**-1.6**
PRAC	**Prado**	**84.94**	**91**	*e*P		**P**		**09 55 40.5**	**-1.4**
	comp=Z,24nm,0.7s								
CUC	**Castrocucco**	**85.48**	**2**	*e*P		**P**		**09 55 43.8**	**-0.5**
	comp=Z,24nm,1.3s								
AGG	**Agios Georgios**	**86.43**	**357**	*e*P		**P**		**09 55 48.4**	**-0.6**
AGG					pmax	pmax			
	comp=Z,52nm,0.8s								
AGG	**Agios Georgios**	**86.43**	**357**	*e*P		**P**		**09 55 48.4**	**-0.6**
	comp=Z,52nm,0.8s								
KEST	**Kesra**	**89.41**	**8**	P		**P**		**09 56 05.8**	**+2.5**
	comp=Z,2.1nm,0.6s,baz=22,slow=5.4,SNR=3.6								
KEST	**Kesra**	**89.41**	**8**	*e*P		**P**		**09 56 05.0**	**+1.7**
	comp=Z,16nm,1.4s								
IDI	**Anoyia**	**90.05**	**355**	P		**P**		**09 56 04.4**	**-2.0**
	comp=Z,2.1nm,0.4s,baz=10,slow=11,SNR=5.2								
IDI	**Anoyia**	**90.05**	**355**	*e*P		**P**		**09 56 04.6**	**-1.7**
	comp=Z,65nm,1.6s								
MDT	**Midelt**	**90.40**	**19**	P		**P**		**09 56 08.5**	**+0.4**
	comp=Z,3.5nm,0.9s,baz=14,slow=8.3,SNR=4.8								
ASF	**Jabal al Asfar**	**91.90**	**345**	P		**P**		**09 56 15.2**	**+0.2**
	comp=Z,2.6nm,0.8s,baz=325,slow=2.4,SNR=4.4								
WR1	**Warramunga Arr**	**92.35**	**238**	*e*P		**P**		**09 56 15.7**	**-1.3**
	comp=Z,17nm,1.6s								
WRA	**Warramunga Arr**	**92.35**	**238**	P		**P**		**09 56 15.7**	**-1.3**
	comp=Z,1.1nm,0.8s,baz=36,slow=5.8,SNR=12								
WRA	**Warramunga Arr**	**92.35**	**238**	*i* P		**P**		**09 56 16.5**	**-0.4**
WRA					pmax	pmax			
	comp=Z,1.0nm,0.7s								
ASAR	**Alice Springs**	**95.72**	**236**	P		**P**		**09 56 31.6**	**-0.8**
	comp=Z,0.5nm,0.8s,baz=31,slow=4.7,SNR=7.0								
ASAR					PKiKPbc	**PKKPbc**		**10 13 20.8**	**+0.3**
	comp=Z,0.1nm,0.5s,baz=210,slow=2.0,SNR=6.0								
ASAR					LR	LR		10 33 21.4	
	comp=Z,111nm,21.2s,baz=42,slow=31								
STKA	**Stephens Creek**	**99.29**	**226**	LR		LR		10 37 41.3	
	comp=Z,116nm,20.1s,baz=33,slow=33								
TOA1	**Torodi Ar. Sit**	**110.74**	**18**	*e*PKiKP		**PKiKP**		**10 01 38.0**	**-1.5**
TORD	**Torodi Ar. Bea**	**110.74**	**18**	PKiKP		**PKiKP**		**10 01 38.0**	**-1.5**
TORD					PKKPbc	**PKKPbc**		**10 12 34.3**	**-1.2**
	comp=Z,0.2nm,0.5s,baz=348,slow=3.1,SNR=5.0								
	comp=Z,0.5nm,0.7s,baz=157,slow=1.8,SNR=4.7								
PLCA	**Paso Flores**	**122.44**	**116**	PKP		**PKPdf**		**10 02 01.2**	**+0.1**
	comp=Z,0.7nm,0.4s,baz=179,slow=1.0,SNR=5.0	

TEIG Sn Sn 10 10 50.3 -1.6
comp=Z,24nm,0.3s,baz=358,slow=23,SNR=5.7
TEIG **Tepich** 7.49 38 *e*Pn Pn 10 09 26.6 -1.7
MOIG **Morelia** 9.30 306 *e*Pn Pn 10 09 54.7 +1.3
034A **Hebbronville** 13.64 339 P Pn 10 10 51.6 -0.8
baz=156
934A **Benavides** 14.08 340 P Pn 10 10 57.6 -0.8
baz=158
933A **Laredo** 14.36 338 P Pn 10 11 02.2 +0.2
baz=155
835A **Beeville** 14.52 343 P Pn 10 11 04.2 +0.1
baz=161
834A **Tilden** 14.58 341 P Pn 10 11 04.6 -0.4
baz=158
833A **Chaparral WMA,** 15.04 338 P Pn 10 11 09.5 -1.6
baz=156,SNR=6.9
735A **Kenedy** 15.05 344 P Pn 10 11 09.7 -1.4
baz=162
832A **Faith Ranch, C** 15.22 337 P Pn 10 11 12.8 -0.5
baz=154
734A **La Parita Cree** 15.25 342 P Pn 10 11 13.4 -0.3
baz=159
637A **Eagle Lake** 15.29 350 P Pn 10 11 13.4 -0.7
baz=168
733A **Divot King Ran** 15.37 339 P Pn 10 11 14.2 -1.1
baz=157
636A **Smothers Creek** 15.47 347 P Pn 10 11 15.3 -1.2
baz=165
MTDJ **Mount Denham** 15.51 74 *e*Pn Pn 10 11 13.6 -3.6
comp=Z,69nm,1.0s
537A **Green Hill Far** 15.91 350 P Pn 10 11 20.6 -1.6
baz=168
633A **Saathoff Ranch** 16.02 341 P Pn 10 11 23.2 -0.4
baz=158,SNR=8.2
535A **Dale** 16.11 346 P Pn 10 11 25.2 +0.5
baz=164,SNR=11
534A **Blanco** 16.34 344 P Pn 10 11 26.6 -1.0
baz=161,SNR=11
444A **Pine Grove** 16.43 7 P Pn 10 11 26.6 -2.2
baz=188
438A **Sam Houston St** 16.45 353 P Pn 10 11 27.5 -1.5
baz=172
533A **Kerrville** 16.54 342 P Pn 10 11 28.7 -1.5
baz=159
446A **Poplarville** 16.73 12 P Pn 10 11 30.9 -1.6
baz=192
435B **Jarrell** 16.84 347 P Pn 10 11 32.8 -1.1
baz=165
447A **Lucedale** 16.88 14 P Pn 10 11 32.7 -1.7
baz=195
341A **Kurthwood** 16.90 0 P Pn 10 11 33.2 -1.3
baz=180
339A **Huntington** 16.94 356 P Pn 10 11 34.1 -1.0
baz=175
342A **Flagon Creek P** 16.96 3 P Pn 10 11 34.2 -1.1
baz=182
340A **Bronson** 16.99 358 P Pn 10 11 34.5 -1.3
baz=177
338A **Crockett** 17.03 354 P Pn 10 11 35.0 -1.2
baz=172
434A **Burnet** 17.03 345 P Pn 10 11 35.3 -1.0
baz=163
337A **Centerville** 17.06 352 P Pn 10 11 35.9 -0.7
baz=171
HPIG 17.10 319 *e*Pn P 10 11 38.9 +0.5
comp=Z,29nm,1.2s
345A **Thompson Farm,** 17.12 9 P Pn 10 11 36.0 -1.3
baz=190
JCT **Junction City** 17.16 340 P Pn 10 11 37.0 -1.0
baz=157,SNR=10
JCT **Junction City** 17.16 340 *e*P Pn 10 11 38.0 +0.1
JCT pmax pmax
comp=Z,26nm,1.0s
JCT **Junction City** 17.16 340 *e*Pn Pn 10 11 38.0 +0.1
comp=Z,26nm,1.0s
344A **Westbrook Farm** 17.16 7 P Pn 10 11 36.5 -1.4
baz=188
433A **Art** 17.20 343 P Pn 10 11 37.8 -0.6
baz=160,SNR=14
336A **Riesel** 17.28 349 P Pn 10 11 39.0 -0.3
baz=168
335A **Moody** 17.29 348 P Pn 10 11 39.2 -0.2
baz=166
346A **Big Creek Wild** 17.29 11 P Pn 10 11 38.5 -1.0
baz=192
NATX **Nacogdoches** 17.37 356 P Pn 10 11 40.4 -0.1
baz=175
347A **Saraland** 17.49 13 P Pn 10 11 41.5 -0.4
baz=195
243A **Waterproof** 17.51 5 P Pn 10 11 41.9 -0.3
baz=185
DWPF **Disney Wildern** 17.51 37 *e*Pn Pn 10 11 42.0 -0.2
comp=Z,62nm,1.1s
334A **Lometa** 17.52 346 P Pn 10 11 41.4 -0.9
baz=163,SNR=13
241A **Mo Tay, Goldon** 17.59 1 P Pn 10 11 42.5 -0.6
baz=180
240A **Hunter Patters** 17.61 358 P Pn 10 11 42.7 -0.7
baz=178
242A **Grayson** 17.65 3 P Pn 10 11 43.2 -0.6
baz=183
238A **Jacksonville** 17.65 355 P Pn 10 11 43.5 -0.5
baz=173
348A **Jackson** 17.66 15 P Pn 10 11 43.2 -0.7
baz=197
333A **Richland Sprin** 17.70 343 P Pn 10 11 44.3 -0.3
baz=161
244A **Avery, Jackson** 17.75 7 P Pn 10 11 43.7 -1.5
baz=188
LTX **Lajitas** 17.78 329 *e*P P 10 11 46.6 +0.8
LTX **Lajitas** 17.78 329 *e*Pn P 10 11 46.5 +0.8
TXAR **Lajitas Array** 17.78 329 P P 10 11 46.5 +0.7
comp=Z,0.2nm,0.3s,baz=150,slow=10,SNR=35
TXAR LR LR 10 19 26.2
comp=Z,291nm,18.5s,baz=0.0,slow=40
TX31 **Lajitas Ar. Si** 17.78 329 *e*Pn P 10 11 46.2 +0.3
VBMS **Vicksburg** 17.95 7 P Pn 10 11 45.9 -1.6
baz=188
VBMS **Vicksburg** 17.95 7 *e*Pn Pn 10 11 47.2 -0.3
comp=Z,30nm,0.9s
WHTX **Lake Whitney,** 17.98 348 P P 10 11 47.6 -0.3
baz=166
WHTX **Lake Whitney,** 17.98 348 *e*P P 10 11 48.0 0.0
comp=Z,30nm,1.0s
247A **Quitman** 18.11 13 P P 10 11 48.6 -0.7
baz=194
234A **Clairette** 18.14 346 P P 10 11 49.6 -0.1
baz=164,SNR=5.7
142A **Monroe** 18.14 3 P P 10 11 49.5 -0.2
baz=183
141A **Papa Simpson,** 18.17 1 P P 10 11 49.8 -0.1
baz=180
136A **Ennis** 18.29 351 P P 10 11 51.1 -0.2
baz=169
138A **Matatall Enter** 18.30 355 P P 10 11 51.3 -0.2
baz=174
137A **Heron Place, G** 18.31 353 P P 10 11 50.4 -1.1
baz=172
143A **Socs Landing,** 18.34 5 P P 10 11 51.1 -0.7
baz=185
233A **Rising Star** 18.34 344 P Pn 10 11 52.2 -0.1
baz=162,SNR=8.4
145A **Houston Renfro** 18.41 9 P P 10 11 52.4 -0.2
baz=190
135A **Vickery Place,** 18.52 349 P Pn 10 11 55.5 +1.0
baz=167
146A **Union** 18.58 11 P P 10 11 54.5 0.0
baz=192
134A **White-Moore Ra** 18.67 347 P Pn 10 11 56.1 -0.3
baz=165,SNR=5.8
147A **Livingston** 18.78 13 P P 10 11 56.5 -0.1
baz=194
Z40A **Long Farm, Mag** 18.82 359 P P 10 11 56.9 -0.2
baz=179
Z41A **Richland Creek** 18.82 1 P Pn 10 11 57.7 -0.3
baz=181
Z42A **Norrel Spur, H** 18.86 3 P P 10 11 57.6 0.0
baz=183
Z37A **Pogue Cattle C** 18.89 354 P P 10 11 57.8 0.0
baz=172
133A **Hamilton Ranch** 18.90 345 P P 10 11 58.6 +0.6
baz=162,SNR=9.8
Z44A **Pea Ridge, Bel** 19.00 7 P Pn 10 11 59.8 -0.4
baz=188
Z36A **Blue Ridge** 19.06 352 P P 10 12 00.1 +0.4
baz=170
ABTX **Abilene, Hawle** 19.11 343 P Pn 10 12 01.6 -0.1
baz=160,SNR=7.1

ABTX **Abilene, Hawle** 19.11 343 *e*P Pn 10 12 01.7 +0.1
comp=Z,27nm,1.0s
TIGA **Tifton** 19.14 26 P P 10 12 00.6 -0.1
baz=209
Z46A **Louisville** 19.14 11 P P 10 12 01.2 +0.5
baz=192
HELC **Santa Helena** 19.17 113 *e*P Pn 10 12 02.7 -0.1
HELC **Santa Helena** 19.17 113 *e*P P 10 11 59.9 -1.6
comp=Z,25nm,0.9s
Z45A **Winona** 19.19 9 P P 10 12 01.4 +0.2
baz=190
WLAR **White Oak Lake** 19.24 0 *e*P Pn 10 12 03.6 +0.5
comp=Z,54nm,1.2s
Z35A **Perchaven, San** 19.25 350 P Pn 10 12 03.0 -0.2
baz=168,SNR=8.9
Z47A **Carrollton** 19.33 13 P P 10 12 03.0 +0.4
baz=195
Z34A **Collier Ranch,** 19.41 348 P P 10 12 04.3 +0.7
baz=166
LRAL **Lakeview Retre** 19.43 16 *e*P P 10 12 04.1 +0.3
comp=Z,22nm,1.0s
Y42A **Garnett, Star** 19.43 4 P P 10 12 04.4 +0.6
baz=184
Y41A **Eaglette Beard** 19.44 1 P P 10 12 04.2 +0.3
baz=181
Y39A **Lockesburg** 19.51 358 P P 10 12 05.0 +0.3
baz=177
Z33A **Whitaker Ranch** 19.51 346 P P 10 12 05.6 +0.8
baz=163,SNR=23
Y38A **Idabel** 19.53 356 P P 10 12 05.2 +0.2
baz=175
Y40A **Okolona** 19.57 360 P P 10 12 05.2 -0.1
baz=179
Y43A **Makayla and Ka** 19.58 6 P P 10 12 05.4 +0.1
baz=186
Z48A **Northport** 19.61 14 P P 10 12 04.7 -1.1
baz=196,SNR=8.4
Y36A **Durant** 19.66 352 P P 10 12 06.4 +0.2
baz=171
Y37A **Hugo** 19.66 354 P P 10 12 06.7 +0.4
baz=173,SNR=16
Y45A **Yeager Farm, C** 19.70 9 P P 10 12 06.5 -0.3
baz=190
Y44A **Strider, Charl** 19.70 7 P P 10 12 06.3 -0.5
baz=186
Y35A **Marietta** 19.77 351 P P 10 12 07.7 +0.2
baz=168,SNR=6.7
Y46A **Houston** 19.83 11 P P 10 12 08.5 +0.3
baz=192,SNR=21
Y34A **Reagan Ranch,** 19.95 349 P P 10 12 09.0 -0.4
baz=167
NORC **Norcasia** 20.03 114 *e*P P 10 12 10.7 +0.1
X40A **Basin Creek Fa** 20.04 1 P P 10 12 10.1 -0.3
baz=181
Y47A **UCPARC, Winfie** 20.05 13 P P 10 12 10.3 -0.2
baz=195
X41A **Kaden, Bauxite** 20.06 2 P P 10 12 10.2 -0.5
baz=182
X39A **Fountain Ranch** 20.08 358 P P 10 12 10.7 -0.2
baz=177
MIAR **Mount Ida** 20.10 359 P P 10 12 11.3 +0.2
baz=178,SNR=27
MIAR **Mount Ida** 20.10 359 *e*P P 10 12 11.1 0.0
MIAR pmax pmax
comp=Z,38nm,1.0s
MIAR **Mount Ida** 20.10 359 *e*P P 10 12 11.1 0.0
comp=Z,38nm,1.0s
Y33A **Hilltop Ranch,** 20.17 347 P P 10 12 12.0 +0.1
baz=164,SNR=6.8
X43A **Marvell** 20.18 6 P P 10 12 11.4 -0.6
baz=186,SNR=5.6
X37A **Clayton** 20.24 355 P P 10 12 13.0 +0.4
baz=174,SNR=11
X44A **Crenshaw** 20.24 7 P P 10 12 12.0 -0.6
baz=188
X35A **Drake** 20.25 351 P P 10 12 13.1 +0.4
baz=169
X45A **UM Field Stati** 20.27 9 P P 10 12 12.8 -0.1
baz=190
X38A **Whitesboro** 20.28 356 P P 10 12 13.0 0.0
baz=175,SNR=19
X36A **Centrahoma** 20.33 352 P P 10 12 13.6 0.0
baz=177,SNR=11
UALR **University of** 20.34 2 *e*P P 10 12 13.8 +0.1
comp=Z,40nm,1.2s
OXF **Oxford** 20.36 9 *e*P P 10 12 14.1 +0.3
OXF pmax pmax
comp=Z,56nm,1.0s
OXF **Oxford** 20.36 9 *e*P P 10 12 14.1 +0.3
comp=Z,56nm,1.0s
OCAC **Ocana** 20.40 105 *e*P Pn 10 12 20.8 +3.6
MNTX **Cornudas Mount** 20.56 329 P P 10 12 16.8 +0.7
baz=144,SNR=25
MNTX **Cornudas Mount** 20.56 329 *e*P P 10 12 16.9 +0.8
comp=Z,16nm,0.9s
X34A **Smith Ranch, M** 20.59 349 P P 10 12 17.2 +0.8
baz=167,SNR=6.7
W38A **Poteau** 20.66 357 P P 10 12 17.1 0.0
baz=176
X33A **Lawton** 20.66 347 P P 10 12 17.0 -0.2
baz=165,SNR=14
X32A **Elmer** 20.72 346 P P 10 12 18.2 +0.4
baz=163,SNR=14
W41B **Gary Mavity, V** 20.74 2 P P 10 12 17.3 -0.7
baz=182
W40A **Ferguson Farm,** 20.75 0 P P 10 12 18.4 +0.3
baz=180
W39A **Magazine** 20.76 359 P P 10 12 17.5 -0.6
baz=178
W37B **Quinton** 20.79 355 P P 10 12 18.4 -0.1
baz=174,SNR=7.4
X301 **Greenbrier Sit** 20.80 2 *e*P P 10 12 18.1 -0.6
comp=Z,56nm,1.6s
ROSC **El Rosal** 20.85 115 P Pn 10 12 23.0 +0.2
comp=Z,42nm,1.0s,baz=345,slow=1.4,SNR=28
ROSC **El Rosal** 20.85 115 *e*P P 10 12 18.6 -1.2
comp=Z,50nm,1.0s
WHAR **Wooly Hollow** 20.86 2 *e*P P 10 12 18.9 -0.4
comp=Z,116nm,1.6s
X201 **Greenbrier Sit** 20.86 2 *e*P P 10 12 19.4 +0.1
comp=Z,87nm,1.6s
W36A **Wetumka** 20.87 353 P P 10 12 18.9 -0.6
baz=171
WMOK **Wichita Mounta** 20.91 347 P P 10 12 19.2 -0.7
baz=164,SNR=8.9
WMOK **Wichita Mounta** 20.91 347 *e*P P 10 12 19.6 -0.3
WMOK pmax pmax
comp=Z,16nm,1.2s
WMOK **Wichita Mounta** 20.91 347 *e*P P 10 12 19.6 -0.3
comp=Z,16nm,1.2s
PRAC **Prado** 20.92 119 *e*P P 10 12 20.3 +0.1
PRAC **Prado** 20.92 119 *e*P P 10 12 21.0 +0.8
comp=Z,76nm,1.2s
GOGA **Godfrey** 20.92 23 *e*P Pn 10 12 21.6 -1.4
GOGA pmax pmax
comp=Z,55nm,1.1s
GOGA **Godfrey** 20.92 23 *e*P Pn 10 12 21.6 -1.4
comp=Z,55nm,1.1s
W35A **Tecumseh** 20.97 352 P P 10 12 19.8 -0.7
baz=170,SNR=10
GRMC **Gramalote, San** 21.06 106 *e*P P 10 12 22.2 +0.4
CBRI **Barrientos, No** 21.07 106 *e*P P 10 12 26.9 +5.0
BARC **Barichara** 21.12 109 *e*P P 10 12 25.1 +2.5
W34A **Bridge Creek,** 21.19 350 P P 10 12 22.3 -0.7
baz=167
W34A **Bridge Creek,** 21.19 350 *e*P P 10 12 22.2 -0.7
comp=Z,57nm,1.4s
W33A **Caddo, Fort Co** 21.24 348 P P 10 12 23.1 -0.4
baz=165
PAMC **Pamplona, Colo** 21.29 107 *e*P P 10 12 27.8 +3.2
V41A **Mountainview** 21.36 2 P P 10 12 23.9 -0.7
baz=182,SNR=22
V40A **Witts Springs** 21.36 1 P P 10 12 23.6 -1.1
baz=181
MSTX **Muleshoe** 21.37 338 P P 10 12 24.6 -0.3
baz=153,SNR=26
MSTX **Muleshoe** 21.37 338 *e*P P 10 12 24.8 -0.2
comp=Z,46nm,1.0s
W32A **Sentinel** 21.39 346 P P 10 12 24.8 -0.1
baz=163,SNR=16
V39A **Pettigrew** 21.39 359 P P 10 12 24.6 -0.5
baz=178,SNR=9.1
V42A **Cord** 21.42 4 P P 10 12 23.2 -2.1
baz=184,SNR=5.6
V38A **Canehill** 21.44 357 P P 10 12 24.9 -0.6
baz=176,SNR=12
CHIC **Chingaza** 21.47 115 *e*P P 10 12 27.8 +1.4
RUSC **La Rusia** 21.49 111 *e*P P 10 12 27.8 +1.1

RUSC **La Rusia** 21.49 111 *e*P P 10 12 28.0 +1.2
comp=Z,21nm,1.1s
V37A **Hulbert** 21.51 356 P P 10 12 25.1 -1.1
baz=174,SNR=7.7
V35A **Meyer Ranch, C** 21.57 352 P P 10 12 25.6 -1.3
baz=170,SNR=6.7
TUL1 **Leonard** 21.59 354 P P 10 12 26.6 -0.5
baz=173
TUL1 **Leonard** 21.59 354 *e*P P 10 12 27.0 -0.1
comp=Z,29nm,1.0s
V34A **Guthrie** 21.74 350 P P 10 12 27.9 -0.8
baz=168,SNR=7.3
V34A **Guthrie** 21.74 350 *e*P P 10 12 27.9 -0.8
comp=Z,109nm,1.8s
SWET **Sewanee** 21.77 16 *e*P P 10 12 29.3 +0.1
comp=Z,8.7nm,1.2s
AMTX **Amarillo** 21.82 341 P P 10 12 29.0 -0.7
baz=157
AMTX **Amarillo** 21.82 341 *e*P P 10 12 29.4 -0.4
comp=Z,57nm,0.8s
HHAR **Hobbs** 21.84 358 *e*P P 10 12 30.9 +1.0
comp=Z,41nm,1.3s
V33A **Lossen Ranch,** 21.86 349 P P 10 12 29.1 -0.9
baz=166,SNR=14
U40A **Yellville** 21.91 1 P P 10 12 30.5 -0.1
baz=180,SNR=7.8
V32A **Arapaho** 21.91 347 P P 10 12 30.0 -0.6
baz=164
U41A **Viola** 21.92 3 P P 10 12 30.0 -0.7
baz=183,SNR=14
U39A **Green Forest** 21.93 359 P P 10 12 30.4 -0.4
baz=179
U42A **Revenden** 21.97 4 P P 10 12 30.1 -1.1
baz=185,SNR=7.7
U38A **Gravette** 22.02 357 P P 10 12 31.3 -0.4
baz=176,SNR=8.9
U37A **Salina** 22.02 356 P P 10 12 31.1 -0.7
baz=175,SNR=5.3
U36A **Oologah** 22.06 355 P P 10 12 31.0 -1.2
baz=173
NHSC **New Hope** 22.10 30 *e*P P 10 12 31.8 -0.8
comp=Z,184nm,1.2s
U35A **Pawnee** 22.15 352 P P 10 12 32.3 -0.8
baz=170,SNR=18
WVT **Waverly** 22.21 12 *e*P P 10 12 32.5 -1.2
WVT pmax pmax
comp=Z,9.0nm,0.8s
WVT **Waverly** 22.21 12 *e*P P 10 12 32.5 -1.2
comp=Z,8.7nm,0.8s
UTMT **University of** 22.23 9 *e*P P 10 12 32.0 -2.0
comp=Z,258nm,0.3s
U34A **Anderson Ranch** 22.33 351 P P 10 12 34.1 -0.9
baz=168,SNR=5.9
U34A **Anderson Ranch** 22.33 351 *e*P P 10 12 34.9 -0.2
comp=Z,19nm,0.9s
CPCT **Cooper Cave** 22.40 19 *e*P P 10 12 34.5 -1.4
comp=Z,8.8nm,1.0s
U33A **Lingo Farm, Me** 22.42 350 P P 10 12 35.4 -0.7
baz=167,SNR=6.0
121A **Cookes Peak, D** 22.46 326 P P 10 12 37.9 +1.1
baz=140,SNR=25
319A **Douglas** 22.46 322 *e*P P 10 12 38.1 +1.4
comp=Z,30nm,0.9s
PBMO **Poplar Bluff** 22.46 6 *e*P P 10 12 36.6 +0.1
comp=Z,23nm,0.9s
U32A **Winter Ranch,** 22.54 348 P P 10 12 37.0 -0.3
baz=165,SNR=6.0
T39A **Clever** 22.57 360 P P 10 12 36.8 -0.9
baz=179,SNR=9.8
JSC **Jenkinsville** 22.58 26 *e*P P 10 12 38.6 +0.8
JSC pmax pmax
comp=Z,64nm,1.2s
JSC **Jenkinsville** 22.58 26 *e*P P 10 12 38.6 +0.8
comp=Z,64nm,1.2s
T38A **Diamond** 22.61 358 P P 10 12 37.0 -1.1
baz=177,SNR=6.2
T41A **Mountain View** 22.63 3 P P 10 12 36.5 -1.8
baz=183,SNR=28
T35A **Sooner Cattle** 22.66 353 P P 10 12 37.0 -1.6
baz=171,SNR=8.8
T40A **Mansfield** 22.71 1 P P 10 12 37.2 -1.9
baz=181
T37A **Cheneyville 18** 22.72 356 P P 10 12 37.9 -1.4
baz=175,SNR=18
T36A **Boggs Farm, Ca** 22.74 354 P P 10 12 37.7 -1.7
baz=173
SDV **Santo Domingo** 22.74 101 P P 10 12 37.0 -2.9
comp=Z,22nm,0.8s,baz=275,slow=12,SNR=3.0
SDV **Santo Domingo** 22.74 101 *e*P P 10 12 37.4 -2.5
SDV **Santo Domingo** 22.74 101 *e*P P 10 12 39.0 -0.9
comp=Z,21nm,0.9s
TKL **Tuckaleechee C** 22.84 20 P P 10 12 39.9 -0.6
comp=Z,47nm,0.9s,baz=193,slow=13,SNR=3.6
TKL **Tuckaleechee C** 22.84 20 *e*P P 10 12 39.6 -0.9
TKL pmax pmax
comp=Z,27nm,1.1s
TKL **Tuckaleechee C** 22.84 20 *e*P P 10 12 39.6 -0.9
comp=Z,27nm,1.1s
T34A **McClaskey Farm** 22.85 352 P P 10 12 38.8 -1.8
baz=170,SNR=8.4
T33A **Patterson Ranc** 23.08 350 P P 10 12 42.2 -0.7
baz=167
S40A **Lebanon** 23.16 1 P P 10 12 42.2 -1.5
baz=181,SNR=7.4
BNM **Barren Site** 23.16 331 *e*P P 10 12 44.9 +0.9
S41A **Jillco Farms,** 23.17 3 P P 10 12 42.0 -1.9
baz=183,SNR=11
S38A **Stockton** 23.19 359 P P 10 12 42.2 -1.7
baz=178,SNR=7.3
Y22D **IRIS PASSCAL I** 23.23 330 P P 10 12 46.5 +1.8
baz=144
Y22D **IRIS PASSCAL I** 23.23 330 *e*P P 10 12 45.7 +1.1
comp=Z,71nm,1.2s
S39A **Bolivar** 23.24 360 P P 10 12 42.7 -1.7
baz=179,SNR=12
S43A **Fulton Ridge,** 23.29 6 P P 10 12 42.9 -2.0
baz=187,SNR=7.5
KMSC **Kings Mountain** 23.29 25 P P 10 12 42.9 -2.0
baz=210
KMSC **Kings Mountain** 23.29 25 *e*P P 10 12 44.3 -0.6
comp=Z,18nm,1.0s
LPM **Los Pinos Moun** 23.29 331 *e*P P 10 12 46.0 +0.8
T32A **Huddler Ranch,** 23.30 348 P P 10 12 43.6 -1.5
baz=166
S37A **Fort Scott** 23.35 357 P P 10 12 44.0 -1.6
baz=176,SNR=7.0
S36A **Lake Cedric, C** 23.37 355 P P 10 12 44.5 -1.2
baz=174,SNR=9.3
S35A **Otter Creek Ra** 23.40 354 P P 10 12 45.0 -1.0
baz=172,SNR=7.0
S44A **Carbondale** 23.50 8 P P 10 12 45.2 -1.8
baz=189
S34A **Willow Spring** 23.51 352 P P 10 12 45.6 -1.5
baz=170
S33A **Kaszmaul Farm,** 23.53 350 P P 10 12 45.8 -1.5
baz=168
LAZ **Ladron** 23.61 330 *e*P P 10 12 46.8 -1.4
ANMO **Albuquerque** 23.73 332 P P 10 12 49.4 0.0
baz=146
ANMO **Albuquerque** 23.73 332 *i*P P 10 12 50.7 +1.3
ANMO pmax pmax
comp=Z,7.0nm,1.0s
ANMO **Albuquerque** 23.73 332 *e*P P 10 12 50.0 +0.6
comp=Z,7.7nm,1.0s
R38A **Fenwick Farm,** 23.74 359 P P 10 12 47.7 -1.5
baz=178,SNR=14
S32A **Newby Ranch, P** 23.80 349 P P 10 12 48.3 -1.5
baz=166
R40A **Maddies Statio** 23.85 2 P P 10 12 48.1 -2.1
baz=182,SNR=8.6
R39A **Chumby, Stover** 23.86 0 P P 10 12 48.4 -1.9
baz=180,SNR=11
R37A **Teagarden Farm** 23.90 357 P P 10 12 49.4 -1.3
baz=176
R36A **Gordon, Harris** 23.96 356 P P 10 12 49.9 -1.3
baz=174
R35A **Emporia Munici** 24.02 354 P P 10 12 50.1 -1.6
baz=172
TUC **Tucson** 24.03 321 P P 10 12 52.1 +0.1
baz=134
TUC **Tucson** 24.03 321 *e*P P 10 12 54.0 +2.0
TUC pmax pmax
comp=Z,18nm,0.9s
TUC **Tucson** 24.03 321 *e*P P 10 12 54.0 +2.0
comp=Z,18nm,0.9s
R34A **Isabella, Hill** 24.12 352 P P 10 12 51.3 -1.4
baz=170
R33A **Olander Ranch,** 24.23 351 P P 10 12 52.1 -1.6

baz=168
Q37A **Longview Farm,** 24.45 358 P P 10 12 53.7 -1.9
baz=177
R32A **Long Quarter,** 24.46 349 P P 10 12 54.5 -1.4
baz=167
Q38A **Cooks Store, C** 24.51 359 P P 10 12 55.0 -1.2
baz=179,SNR=13
Q35A **Mercer Eighty,** 24.53 355 P P 10 12 54.8 -1.7
baz=173,SNR=7.9
WCI **Wyandotte Cave** 24.55 13 eP P 10 12 56.0 -0.6
WCI pmax pmax
comp=Z,20nm,0.8s
WCI **Wyandotte Cave** 24.55 13 eP P 10 12 56.0 -0.6
comp=Z,20nm,0.8s
Q40A **Laux Farm, Aux** 24.56 2 P P 10 12 55.3 -1.4
baz=182
Q42A **Golden Eagle** 24.57 5 P P 10 12 55.2 -1.5
baz=186
Q36A **Arnold C. Orve** 24.59 356 P P 10 12 55.7 -1.3
baz=174
Q43A **New Douglas** 24.68 7 P P 10 12 55.6 -2.2
baz=188
Q34A **Chapman** 24.69 353 P P 10 12 56.4 -1.5
baz=171
OLIL **Olney** 24.69 10 eP P 10 12 57.1 -0.7
comp=Z,27nm,1.0s
Q44A **Meyer Farm, Va** 24.73 8 P P 10 12 55.7 -2.4
baz=189
T25A **Trinidad** 24.80 338 P P 10 12 59.5 +0.5
baz=153,SNR=32
T25A **Trinidad** 24.80 338 eP P 10 12 59.6 +0.5
comp=Z,48nm,1.1s
KSU1 **Kansas State U** 24.83 354 P P 10 12 56.9 -2.2
baz=172
KSU1 **Kansas State U** 24.83 354 eP P 10 12 58.5 -0.7
comp=Z,34nm,1.1s
Q33A **Connelly Farm,** 24.88 351 P P 10 12 57.5 -2.1
baz=169,SNR=5.4
Q32A **Meitler Ranch,** 24.99 350 P P 10 12 59.4 -1.3
baz=167,SNR=13
P39B **Salisbury** 25.04 1 P P 10 12 58.6 -2.3
baz=181,SNR=9.0
CBKS **Cedar Bluff** 25.04 348 P P 10 12 59.2 -1.8
baz=165
CBKS **Cedar Bluff** 25.04 348 eP P 10 13 00.8 -0.2
CBKS pmax pmax
comp=Z,30nm,1.0s
CBKS **Cedar Bluff** 25.04 348 eP P 10 13 00.8 -0.2
comp=Z,30nm,1.0s
214A **Organ Pipe Nat** 25.07 318 P P 10 12 59.5 -1.9
baz=130
P40A **Paris** 25.09 2 P P 10 12 58.9 -2.6
baz=182,SNR=8.4
X18A **Snowflake** 25.15 326 eP P 10 13 04.1 +1.8
comp=Z,12nm,0.9s
P37A **Lathrop** 25.15 358 P P 10 13 00.4 -1.7
baz=177
P38A **Dawn** 25.17 359 P P 10 13 00.8 -1.4
baz=179
P35A **Duane Minner,** 25.20 355 P P 10 13 01.2 -1.3
baz=173
P36A **Good Intent, A** 25.23 356 P P 10 13 01.1 -1.6
baz=175
P42A **Winchester** 25.25 5 P P 10 13 00.8 -2.2
baz=186,SNR=5.9
P41A **Barry, Barry** 25.29 4 P P 10 13 01.0 -2.3
baz=184,SNR=8.2
P33A **Williams Farm,** 25.29 352 P P 10 13 01.9 -1.5
baz=169
P34A **Walnut Farm, R** 25.30 353 P P 10 13 01.1 -2.3
baz=171,SNR=5.2
P32A **Huiting Farm,** 25.61 350 P P 10 13 04.9 -1.4
baz=168,SNR=6.9
O38A **Galt** 25.67 359 P P 10 13 03.5 -3.2
baz=179
O40A **La Belle** 25.69 2 P P 10 13 05.7 -1.2
baz=183
O37A **Wolven Farm, M** 25.72 358 P P 10 13 06.1 -1.1
baz=178
SDCO **Great Sand Dun** 25.73 337 P P 10 13 07.6 -0.1
baz=151,SNR=26
SDCO **Great Sand Dun** 25.73 337 eP P 10 13 08.8 +1.2
comp=Z,21nm,1.2s
O41A **Passleys Farm,** 25.74 4 P P 10 13 05.9 -1.5
baz=185
X16A **Lo Mia Camp, P** 25.90 324 eP P 10 13 10.7 +1.6
comp=Z,5.7nm,1.0s
O33A **Hebron** 25.91 352 P P 10 13 07.9 -1.0
baz=170
O34A **Beatrice** 25.91 354 P P 10 13 08.1 -0.9
baz=172
KSCO **Kaye Shedlock'** 25.93 343 P P 10 13 08.8 -0.4
baz=158,SNR=7.3
KSCO **Kaye Shedlock'** 25.93 343 eP P 10 13 10.0 +0.7
comp=Z,29nm,0.9s
O32A **Brockman Farm,** 26.19 351 P P 10 13 10.9 -0.6
baz=168
O31A **Woolen Ranch,** 26.25 349 P P 10 13 11.3 -0.7
baz=166,SNR=6.8
S22A **4UR Ranch, Cre** 26.26 335 P P 10 13 12.5 0.0
baz=149,SNR=12
S22A **4UR Ranch, Cre** 26.26 335 eP P 10 13 13.5 +1.1
comp=Z,10nm,1.1s
N37A **Lee Faris, Mou** 26.32 358 P P 10 13 11.3 -1.3
baz=178
HDIL **Hopedale** 26.32 7 P P 10 13 10.5 -2.1
baz=188
HDIL **Hopedale** 26.32 7 eP P 10 13 10.7 -1.9
comp=Z,16nm,0.9s
N38A **Joes South For** 26.34 360 P P 10 13 12.0 -0.8
baz=180
N36A **Muff Farm, Cla** 26.41 357 P P 10 13 13.0 -0.4
baz=176
N39A **Derby Farms, D** 26.43 1 P P 10 13 13.1 -0.4
baz=181
Y14A **Wickenburg** 26.50 321 eP P 10 13 15.5 +1.1
comp=Z,34nm,1.1s
MVCO **Mesa Verde** 26.53 332 P P 10 13 14.8 0.0
baz=145,SNR=13
MVCO **Mesa Verde** 26.53 332 eP P 10 13 16.0 +1.1
comp=Z,14nm,1.0s
N34A **Lincoln** 26.54 354 P P 10 13 14.4 -0.2
baz=172
WUAZ **Wupatki** 26.66 325 P P 10 13 16.4 +0.4
baz=138,SNR=5.8
WUAZ **Wupatki** 26.66 325 eP P 10 13 17.5 +1.5
comp=Z,8.4nm,0.9s
M37A **Trindle Farm,** 26.96 359 P P 10 13 17.6 -0.8
baz=176
M38A **Pleasantville** 26.96 360 P P 10 13 18.2 -0.2
baz=180
M36A **Felix, Anita** 27.03 357 P P 10 13 18.3 -0.8
baz=176
M39A **Webster** 27.04 2 P P 10 13 18.6 -0.4
baz=182
GLA **Glamis** 27.08 317 P P 10 13 20.3 +0.7
baz=128
M35A **Neola** 27.10 356 P P 10 13 19.2 -0.4
baz=174
M34A **Aspy Farms, Fr** 27.21 354 P P 10 13 20.5 -0.1
baz=172
PV01 **Paradox Valley** 27.32 333 eP P 10 13 22.5 +0.5
Y12C **Blythe** 27.32 319 P P 10 13 21.1 -0.6
baz=130
M33A **Taylor Creek F** 27.34 353 P P 10 13 20.9 -0.8
baz=171
M31A **Lambtecht Ranc** 27.36 350 P P 10 13 21.4 -0.6
baz=168
PDMCI **Parker Dam,Lak** 27.44 320 P P 10 13 23.0 +0.2
baz=131
SMCO **Snowmass** 27.55 336 eP P 10 13 25.2 +1.1
comp=Z,19nm,1.2s
OGNE **Ogallala** 27.59 345 P P 10 13 23.3 -0.9
baz=161
ISCO **Idaho Springs** 27.59 339 P P 10 13 24.6 +0.1
baz=153,SNR=6.7
ISCO **Idaho Springs** 27.59 339 eP P 10 13 25.6 +1.2
ISCO pmax pmax
comp=Z,7.0nm,1.1s
ISCO **Idaho Springs** 27.59 339 eP P 10 13 25.6 +1.2
comp=Z,6.7nm,1.1s
L40A **Anamosa** 27.66 3 P P 10 13 22.9 -1.7
baz=184
SWSC **Sam W. Stewart** 27.67 316 P P 10 13 23.8 -1.0
baz=126
L36A **Harm Buss Farm** 27.67 358 P P 10 13 24.4 -0.4
baz=177
L41A **Preston** 27.72 4 P P 10 13 23.2 -2.0
baz=185
PV10 **Paradox Valley** 27.73 333 eP P 10 13 25.8 +0.1
W13A **Hualapai Mount** 27.82 322 eP P 10 13 27.5 +1.1
comp=Z,8.8nm,1.3s
U15A **North Rim** 27.84 326 eP P 10 13 27.8 +1.1
comp=Z,10.0nm,1.1s
L32A **Elgin** 27.86 352 P P 10 13 25.6 -0.8
baz=170
BC3 **Big Chuckawall** 27.87 317 P P 10 13 26.8 +0.1
baz=128,SNR=7.3
IRM **Iron Mountain** 27.98 319 P P 10 13 26.7 -0.9
baz=129,SNR=5.6
L31A **Butterfield Fa** 28.15 351 P P 10 13 28.2 -0.8
baz=168
K41A **Shullsburg** 28.26 5 P P 10 13 29.2 -0.7
baz=186
K39A **Oelwein** 28.27 2 P P 10 13 28.9 -1.2
baz=182
K40A **Colesburg** 28.30 3 P P 10 13 29.1 -1.2
baz=184
PFO **Pinyon Flats O** 28.51 316 P P 10 13 32.8 +0.3
baz=126
PFO **Pinyon Flats O** 28.51 316 i P P 10 13 35.1 +2.7
KNB **Kanab** 28.56 326 eP P 10 13 34.9 +2.0
KNB pmax pmax
comp=Z,10.0nm,1.2s
KNB **Kanab** 28.56 326 eP P 10 13 34.9 +2.0
comp=Z,10nm,1.2s
K31A **O'Neill** 28.57 351 P P 10 13 33.2 +0.4
baz=168
N23A **Red Feather La** 28.68 340 P P 10 13 34.3 +0.2
baz=153
GMRC **Granite Mounta** 28.71 319 P P 10 13 34.7 +0.5
baz=129
K30A **Basset** 28.75 350 P P 10 13 34.5 0.0
baz=167
LCMT **Little Creek M** 28.79 325 eP P 10 13 34.8 -0.1
comp=Z,5.5nm,1.2s
O20A **White River Ci** 28.87 336 P P 10 13 35.3 -0.3
baz=148
O20A **White River Ci** 28.87 336 eP P 10 13 35.6 0.0
comp=Z,15nm,1.3s
J36A **Seneca 1, Swea** 28.89 358 P P 10 13 34.9 -0.6
baz=177
PHWY **Pilot Hill** 28.89 341 eP P 10 13 36.9 +1.0
comp=Z,19.9nm,1.0s
MURC **Murrieta** 29.00 316 P P 10 13 36.2 -0.4
baz=126
J41A **Loganville** 29.04 5 P P 10 13 35.9 -1.0
baz=186
J33A **Davis** 29.04 354 P P 10 13 36.0 -0.9
baz=172
SZCU **Shurtz Canyon** 29.12 326 eP P 10 13 40.1 +2.1
comp=Z,14nm,1.0s
J32A **Parkston** 29.19 353 P P 10 13 37.4 -0.8
baz=170
J31A **Geddes** 29.23 352 P P 10 13 37.3 -1.3
baz=169
CCUT **Cedar City** 29.24 326 eP P 10 13 40.4 +1.4
comp=Z,9.9nm,1.1s
TUQ **Turquoise Moun** 29.29 320 P P 10 13 39.0 -0.4
baz=130
P17A **Butcher Ranch,** 29.39 332 eP P 10 13 41.8 +1.4
comp=Z,12nm,1.4s
ECSD **EROS Data Cent** 29.42 355 P P 10 13 40.0 -0.3
baz=173
ECSD **EROS Data Cent** 29.42 355 eP P 10 13 39.4 -0.9
comp=Z,7.8nm,1.0s
TMUT **Trail Mountain** 29.47 331 eP P 10 13 41.7 +0.5
comp=Z,4.4nm,1.0s
SHPR **Sheep Range** 29.53 322 eP P 10 13 42.7 +1.2
comp=Z,12nm,1.6s
H37A **Dierke Farm, C** 30.12 0 P P 10 13 45.4 -1.1
baz=180
H32A **Carlson Farm,** 30.26 354 P P 10 13 46.3 -1.5
baz=172,SNR=7.6
H31A **Wolsey** 30.36 352 P P 10 13 47.4 -1.2
baz=170
H33A **Prehn Over Nor** 30.37 355 P P 10 13 47.8 -1.0
baz=173
K22A **Casper** 30.45 340 P P 10 13 49.2 -0.4
baz=154
K22A **Casper** 30.45 340 eP P 10 13 49.9 +0.3
comp=Z,12nm,1.1s
TPNV **Topopah Spring** 30.48 322 P P 10 13 50.9 +1.0
baz=131
FURC **Furnace Creek,** 30.53 320 P P 10 13 50.8 +0.7
baz=130
MPMC **Manual Prospec** 30.67 319 P P 10 13 51.5 -0.1
baz=128
SPMN **Marine on St.** 30.77 1 P P 10 13 52.3 +0.1
baz=180
SPMN **Marine on St.** 30.77 1 eP P 10 13 51.5 -0.6
comp=Z,6.4nm,0.7s
G34A **Benson** 30.85 357 P P 10 13 52.0 -0.9
baz=175
G33A **Ortonville** 30.86 356 P P 10 13 52.0 -0.9
baz=174
G32A **Webster** 31.01 354 P P 10 13 52.3 -2.1
baz=172
TCUT **Toone Canyon** 31.02 333 eP P 10 13 53.2 -1.6
comp=Z,19nm,1.0s
R11A **Troy Canyon, C** 31.04 324 P P 10 13 55.1 +0.3
baz=134,SNR=6.9
R11A **Troy Canyon, C** 31.04 324 eP P 10 13 56.0 +1.1
comp=Z,5.5nm,1.1s
RSSD **Black Hills** 31.08 345 P P 10 13 54.3 -0.9
baz=159
RSSD **Black Hills** 31.08 345 eP P 10 13 55.7 +0.5
RSSD pmax pmax
comp=Z,13nm,1.4s
RSSD **Black Hills** 31.08 345 eP P 10 13 55.7 +0.5
comp=Z,13nm,1.4s
F36A **Milaca** 31.41 360 P P 10 13 56.4 -1.3
baz=179
F35A **Swanville** 31.42 358 P P 10 13 57.3 -0.6
baz=177
H25A **Fruitdale** 31.44 346 P P 10 13 58.2 0.0
baz=160
HWUT **Hardware Ranch** 31.49 333 eP P 10 13 59.9 +1.1
comp=Z,25nm,1.9s
PKM **Mcpherson Peak** 31.51 315 P P 10 13 59.3 +0.2
baz=124
VES **Vestal, Richgr** 31.57 317 P P 10 14 00.0 +0.7
baz=126
BW06 **Boulder Array** 31.63 337 P P 10 13 59.9 -0.1
baz=148
BW06 **Boulder Array** 31.63 337 eP P 10 14 00.6 +0.6
PD31 **Pinedale Array** 31.63 337 eP P 10 14 00.8 +0.7
PDAR **Pinedale Array** 31.63 337 P P 10 14 00.3 +0.2
comp=Z,1.8nm,1.0s,baz=132,slow=8.8,SNR=9.5
PDAR PcP PcP 10 16 55.0 +3.6
comp=Z,0.7nm,0.8s,baz=134,slow=2.6,SNR=3.5
PDAR LR LR 10 29 53.1
comp=Z,134nm,19.7s,baz=150,slow=42
F31A **Hecla** 31.69 353 P P 10 13 59.5 -0.8
baz=170
F30A **Leola** 31.76 352 P P 10 14 00.9 -0.1
baz=169
RCTC **Rector, Farmer** 31.94 318 P P 10 14 04.2 +1.6
baz=126
E34A **Wadena** 32.10 357 P P 10 14 03.4 -0.5
baz=176
E35A **Pequot Lakes** 32.12 358 P P 10 14 03.0 -1.0
baz=178
E33A **Westby DABS, E** 32.13 356 P P 10 14 02.9 -1.2
baz=175
HVU **Hansel Valley** 32.17 332 eP P 10 14 05.8 +1.0
HVU pmax pmax
comp=Z,12nm,1.2s
HVU **Hansel Valley** 32.17 332 eP P 10 14 05.8 +1.0
comp=Z,12nm,1.2s
AHID **Auburn Hatcher** 32.24 335 eP P 10 14 06.6 +1.2
comp=Z,13nm,1.1s
E32A **Braaten, Kindr** 32.30 355 P P 10 14 04.7 -0.9
baz=173
E31A **Nome** 32.34 354 P P 10 14 05.2 -0.8
baz=171
D35A **Remer** 32.63 359 P P 10 14 08.0 -0.5
baz=178
REDW **Red Top Meadow** 32.64 336 eP P 10 14 09.8 +0.9
comp=Z,27nm,0.9s
D34A **Park Rapids** 32.67 357 P P 10 14 07.5 -1.4
baz=176
SNOW **Snow King Moun** 32.68 336 eP P 10 14 10.6 +1.3
comp=Z,46nm,1.0s
D37A **Cotton** 32.71 1 P P 10 14 07.4 -1.8
baz=181
D36A **Goodland** 32.72 0 P P 10 14 07.3 -2.0
baz=180
LOHW **Long Hollow** 32.75 336 eP P 10 14 10.8 +1.0
comp=Z,9.3nm,0.9s
D33A **AnnSam, Waubun** 32.76 357 P P 10 14 07.4 -2.2
baz=175
TPAW **Teton Pass** 32.78 336 eP P 10 14 11.6 +1.3
comp=Z,29nm,1.2s
MOOW **Moose Ponds** 32.92 336 eP P 10 14 12.7 +1.3
comp=Z,6.8nm,0.8s
FLWY **Flagg Ranch** 33.18 337 eP P 10 14 14.7 +1.1
comp=Z,9.5nm,1.0s
C35A **Jirik Farms, M** 33.25 359 P P 10 14 11.3 -2.6
baz=178
C37A **Embarrass** 33.28 1 P P 10 14 10.9 -3.3
baz=182
C36A **Pine Crest Far** 33.30 0 P P 10 14 13.3 -1.0
baz=180
BMN **Battle Mountai** 33.40 326 eP P 10 14 16.9 +1.4
BMN pmax pmax
comp=Z,8.0nm,0.9s
BMN **Battle Mountai** 33.40 326 eP P 10 14 16.9 +1.4
comp=Z,8.2nm,0.9s
D26A **Manning** 33.48 349 P P 10 14 15.1 -0.8
baz=163
C31A **Landman Farms,** 33.55 354 P P 10 14 15.4 -1.1
baz=172,SNR=10
RLMT **Red Lodge** 33.56 339 P P 10 14 17.1 +0.3
baz=151
RLMT **Red Lodge** 33.56 339 eP P 10 14 17.2 +0.3
comp=Z,31nm,1.8s
YMR **Madison River** 33.78 337 eP P 10 14 19.1 +0.2
comp=Z,11nm,0.7s
MDND **Maddock** 33.81 352 P P 10 14 17.6 -1.2
baz=169
MDND **Maddock** 33.81 352 eP P 10 14 17.1 -1.8
comp=Z,28nm,0.9s
YHH **Holmes Hill** 33.84 337 eP P 10 14 20.4 +1.0
comp=Z,7.4nm,0.9s
PNTR **Pine Nut** 33.87 322 eP P 10 14 22.1 +2.4
comp=Z,9.4nm,1.1s
AGMN **Agassiz Nation** 33.91 357 P P 10 14 18.4 -1.2
baz=175
AGMN **Agassiz Nation** 33.91 357 eP P 10 14 17.9 -1.8
LAO **LASA Array** 34.03 344 P P 10 14 20.9 +0.1
baz=157,SNR=5.6
LAO **LASA Array** 34.03 344 eP P 10 14 21.2 +0.3
comp=Z,19nm,1.1s
B34A **Aery, Baudette** 34.05 358 P P 10 14 19.8 -1.0
baz=177
B32A **Ashes, Strandq** 34.05 356 P P 10 14 20.0 -0.9
baz=174
PAHR **Pah Rah Range** 34.14 323 eP P 10 14 23.6 +1.6
comp=Z,11nm,1.4s
B31A **Greenbush Farm** 34.17 355 P P 10 14 20.9 -1.0
baz=172
GCMT **Greyclift** 34.28 339 eP P 10 14 23.4 +0.3
HLID **Hailey** 34.31 332 P P 10 14 23.9 +0.5
baz=141,SNR=9.5
HLID **Hailey** 34.31 332 eP P 10 14 24.6 +1.2
comp=Z,6.0nm,0.9s
A33A **Warroad** 34.53 357 P P 10 14 24.1 -0.9
baz=176
A32A **Rocking H Ranc** 34.57 356 P P 10 14 23.4 -2.0
baz=174
MCMT **McKenzie Canyo** 34.66 335 eP P 10 14 28.1 +1.7
MFID **Camas Ranch** 34.86 331 eP P 10 14 28.6 +0.5
comp=Z,6.6nm,1.3s
BOZ **Bozeman (W)** 34.86 337 P P 10 14 28.8 +0.7
baz=147,SNR=7.1
BOZ **Bozeman (W)** 34.86 337 eP P 10 14 28.3 +0.2
BOZ pmax pmax
comp=Z,9.0nm,1.1s
BOZ **Bozeman (W)** 34.86 337 eP P 10 14 28.3 +0.2
comp=Z,8.6nm,1.1s
DLMT **Dillon** 34.99 336 eP P 10 14 30.8 +1.6
comp=Z,13nm,1.0s
A26A **Wade Farm, Ken** 35.20 350 P P 10 14 30.4 -0.5
baz=165
DGMT **Dagmar** 35.21 347 P P 10 14 30.2 -0.7
baz=161
LRM **Limekiln Ridge** 35.32 336 eP P 10 14 33.3 +1.1
A25A **Svangstu Ranch** 35.44 349 P P 10 14 32.5 -0.3
baz=183
WVOR **Wild Horse Val** 35.56 327 eP P 10 14 35.6 +1.5
WVOR pmax pmax
comp=Z,14nm,1.1s
WVOR **Wild Horse Val** 35.56 327 eP P 10 14 35.6 +1.5
comp=Z,14nm,1.1s
ULM **Lac du Bonnet** 35.86 357 P P 10 14 35.0 -1.4
comp=Z,8.4nm,1.0s,baz=186,slow=7.6,SNR=6.6
ULM LR LR 10 31 26.9
comp=Z,147nm,21.5s,baz=183,slow=40
ULM **Lac du Bonnet** 35.86 357 eP P 10 14 35.2 -1.2
ULM pmax pmax
comp=Z,13nm,1.1s
ULM **Lac du Bonnet** 35.86 357 eP P 10 14 35.2 -1.2
comp=Z,13nm,1.1s
MOD **Modoc Plateau** 36.10 325 eP P 10 14 39.8 +0.9
comp=Z,7.6nm,1.0s
EGMT **Eagleton** 36.27 341 P P 10 14 39.9 -0.2
baz=152,SNR=11
EGMT **Eagleton** 36.27 341 eP P 10 14 41.1 +1.0
comp=Z,18nm,1.0s
CHMT **Chamberlain Mo** 36.54 337 eP P 10 14 43.0 +0.5
BMO **Blue Mountains** 36.64 331 eP P 10 14 43.6 +0.3
comp=Z,4.5nm,1.1s
MSO **Missoula** 36.73 336 P P 10 14 43.3 -0.8
baz=145
MSO **Missoula** 36.73 336 eP P 10 14 44.1 +0.1
comp=Z,8.1nm,0.9s
SLMT **Seeley Lake** 36.90 337 eP P 10 14 45.5 -0.1
SWMT **Swartz Lake** 37.31 337 eP P 10 14 49.4 +0.3
F10A **Beach Ranch, E** 37.45 332 eP P 10 14 50.7 +0.5
comp=Z,10nm,0.9s
YBMT **Yellow Bay** 37.61 337 eP P 10 14 52.4 +0.8
JTMT **Jette** 37.62 337 eP P 10 14 52.0 +0.4
NEW **Newport** 39.17 335 P P 10 15 05.3 +0.7
comp=Z,1.2nm,0.7s,baz=144,slow=6.8,SNR=3.6
LPAZ **La Paz** 39.24 140 P P 10 15 03.6 -2.5
comp=Z,0.5nm,0.6s,baz=315,slow=1.4,SNR=2.3
LPAZ LR LR 10 29 49.7
comp=Z,157nm,21.2s,baz=326,slow=34
FFC **Flin Flon** 40.86 352 i P P 10 15 19.0 +0.6
EDM **Edmonton** 41.93 342 eP P 10 15 27.2 0.0
EDM pmax pmax
comp=Z,22nm,1.0s
EDM **Edmonton** 41.93 342 eP P 10 15 27.2 0.0
comp=Z,22nm,1.0s
LLLB **Lillooet** 42.98 333 eP P 10 15 36.9 +1.1
comp=Z,17nm,1.5s
SIV **San Ignacio** 43.78 132 P P 10 15 40.1 -2.6
comp=Z,3.0nm,0.8s,baz=312,slow=8.6,SNR=6.8
SCHQ **Schefferville** 45.30 21 PcP PcP 10 17 34.3 +1.0
comp=Z,2.4nm,0.6s,baz=296,slow=4.8,SNR=4.5
SCHQ LR LR 10 36 03.2
comp=Z,590nm,19.3s,baz=220,slow=38
YKA **Yellowknife Ar** 50.42 347 P P 10 16 33.8 +0.1
comp=Z,18nm,0.9s,baz=149,slow=7.5,SNR=91
YKA PcP PcP 10 17 52.3 +0.9
comp=Z,1.5nm,0.8s,baz=147,slow=3.8,SNR=4.8
YKB5 **Yellowknife Ar** 50.42 347 eP P 10 16 33.0 -0.7
YKW3 **Yellowknife Ar** 50.48 347 eP P 10 16 34.2 0.0
comp=Z,19nm,0.9s
DLBC **Dease Lake** 51.86 336 eP P 10 16 44.7 0.0
comp=Z,16nm,1.2s
TAOE **Nuku Hiva Isla** 51.97 246 eT T 11 12 25.7
comp=Z,18nm,0.2s
CPUP **Villa Florida** 53.40 139 P P 10 16 55.0 -1.4
comp=Z,2.3nm,0.9s,baz=287,slow=11,SNR=2.2
CPUP LR LR 10 39 38.6
comp=Z,93nm,21.5s,baz=334,slow=36
CPUP **Villa Florida** 53.40 139 eP P 10 16 55.0 -1.4
BDFB **Brasilia** 53.69 122 P P 10 16 59.4 +0.5
comp=Z,7.1nm,0.9s,baz=258,slow=6.0
BDFB LR LR 10 39 32.9
comp=Z,112nm,21.2s,baz=349,slow=36
RKT **Rikitea** 55.31 228 eLR LR 10 33 17.9
comp=Z,454nm,27.2s
RKT **Rikitea** 55.31 228 eT T 11 16 39.8
comp=Z,2.3nm,0.2s
HYT **Haines Junctio** 56.32 336 eP P 10 17 17.2 0.0
BALM **Baldy** 58.41 334 eP P 10 17 32.6 +0.6
BALM **Baldy** 58.41 334 eP P 10 17 32.5 +0.6
BMRM **Bremner River** 59.34 334 eP P 10 17 38.7 +0.4
comp=Z,11nm,1.1s
EYAK **Cordova Ski Ar** 59.64 333 eP P 10 17 40.1 -0.2

	comp=Z,10nm,1.0s							
INK	**Inuvik**	**59.77**	**344**	*e*P		**P**	**10 17 41.4**	**+0.3**
INK				pmax		pmax		
	comp=Z,10.0nm,0.9s							
INK	**Inuvik**	**59.77**	**344**	*e*P		**P**	**10 17 41.4**	**+0.3**
	comp=Z,10nm,0.9s							
MENT	**Mentasta**	**59.94**	**336**	*e*P		**P**	**10 17 43.4**	**+1.0**
	comp=Z,5.8nm,1.2s							
EGAK	**Eagle**	**59.95**	**338**	*e*P		**P**	**10 17 41.6**	**-0.7**
	comp=Z,6.9nm,1.0s							
KLU	**Klutina**	**60.15**	**334**	*e*P		**P**	**10 17 45.2**	**+1.4**
	comp=Z,18nm,1.2s							
DOT	**Dot Lake**	**60.43**	**337**	*e*P		**P**	**10 17 46.6**	**+0.8**
	comp=Z,27nm,1.0s							
PAX	**Paxson**	**60.65**	**336**	*e*P		**P**	**10 17 48.0**	**+0.7**
PAX				pmax		pmax		
	comp=Z,8.0nm,1.0s							
PAX	**Paxson**	**60.65**	**336**	*e*P		**P**	**10 17 48.0**	**+0.7**
	comp=Z,8.0nm,1.0s							
SCM	**Sheep Creek Mo**	**60.90**	**334**	*e*P		**P**	**10 17 50.2**	**+1.2**
SCM				pmax		pmax		
	comp=Z,11nm,1.1s							
SCM	**Sheep Creek Mo**	**60.90**	**334**	*e*P		**P**	**10 17 50.2**	**+1.2**
	comp=Z,11nm,1.1s							
SML	**Sawmill**	**61.32**	**334**	*e*P		**P**	**10 17 53.7**	**+1.9**
SML				pmax		pmax		
	comp=Z,12nm,1.1s							
SML	**Sawmill**	**61.32**	**334**	*e*P		**P**	**10 17 53.7**	**+1.9**
	comp=Z,12nm,1.1s							
HDA	**Harding Lake**	**61.91**	**337**	*e*P		**P**	**10 17 56.1**	**+0.4**
	comp=Z,10nm,1.1s							
IL1	**Eielson Array**	**62.06**	**337**	*e*P		**P**	**10 17 56.6**	**0.0**
ILAR	**Eielson Array**	**62.06**	**337**	P		**P**	**10 17 57.0**	**+0.3**
	comp=Z,4.8nm,1.0s,baz=136,slow=4.5,SNR=46							
ILAR				LR		LR	10 47 07.1	
	comp=Z,268nm,18.7s,baz=140,slow=38							
ILB	**Eielson Array**	**62.06**	**337**	*e*P		**P**	**10 17 56.6**	**0.0**
RND	**Reindeer**	**62.22**	**335**	*e*P		**P**	**10 17 58.4**	**+0.6**
RND				pmax		pmax		
	comp=Z,28nm,1.0s							
RND	**Reindeer**	**62.22**	**335**	*e*P		**P**	**10 17 58.4**	**+0.6**
	comp=Z,28nm,1.0s							
CCB	**Clear Creek Bu**	**62.35**	**337**	*e*P		**P**	**10 17 59.1**	**+0.5**
	comp=Z,7.1nm,1.3s							
WRH	**Wood River Hil**	**62.38**	**336**	*e*P		**P**	**10 17 58.5**	**-0.3**
	comp=Z,7.7nm,1.5s							
MCK	**McKinley**	**62.39**	**335**	*e*P		**P**	**10 17 59.6**	**+0.6**
MCK				pmax		pmax		
	comp=Z,13nm,1.0s							
MCK	**McKinley**	**62.39**	**335**	*e*P		**P**	**10 17 59.6**	**+0.6**
	comp=Z,13nm,1.0s							
COLA	**College**	**62.47**	**337**	*i* P		**P**	**10 18 00.2**	**+0.8**
COLA				pmax		pmax		
	comp=Z,7.0nm,1.0s							
BWN	**Browne**	**62.79**	**336**	*e*P		**P**	**10 18 02.1**	**+0.6**
	comp=Z,61nm,1.0s							
TRF	**Thorofare Moun**	**62.82**	**335**	*e*P		**P**	**10 18 02.2**	**+0.2**
	comp=Z,19nm,1.0s							
KTH	**Kantishna Hill**	**63.13**	**335**	*e*P		**P**	**10 18 03.9**	**0.0**
	comp=Z,9.0nm,0.9s							
BPAW	**Bear Paw Mtn.**	**63.37**	**335**	*e*P		**P**	**10 18 05.5**	**+0.1**
	comp=Z,8.9nm,1.0s							
CAST	**Castle Rocks**	**63.55**	**335**	*e*P		**P**	**10 18 06.5**	**-0.2**
	comp=Z,8.9nm,1.0s							
MLY	**Manley**	**63.65**	**336**	*e*P		**P**	**10 18 07.7**	**+0.4**
	comp=Z,11nm,1.0s							
PPT	**Papeete**	**64.03**	**242**	LR		LR	10 39 23.2	
	comp=Z,116nm,19.8s,baz=1.5,slow=30							
PPT2	**Papeete2**	**64.04**	**242**	*e*LR		LR	10 37 01.5	
	comp=Z,252nm,26.0s							
COLD	**Coldfoot**	**64.38**	**339**	*e*P		**P**	**10 18 13.4**	**+1.4**
	comp=Z,10nm,1.2s							
TT01	**Tatalina**	**65.06**	**333**	*e*P		**P**	**10 18 16.2**	**-0.3**
TBI	**Tubuai**	**66.58**	**236**	*e*LR		LR	10 38 30.3	
	comp=Z,299nm,31.0s							
TBI	**Tubuai**	**66.58**	**236**	*e*T		T	11 30 42.9	
	comp=Z,3.9nm,0.3s							
KBS	**Kingsbay**	**78.88**	**11**	*i* P		**P**	**10 19 39.6**	**+0.6**
KBS				pmax		pmax		
	comp=Z,37nm,1.2s							
ESDC	**Sonseca Array**	**80.40**	**52**	P		**P**	**10 19 46.9**	**-1.2**
	comp=Z,1.0nm,0.5s,baz=290,slow=6.0,SNR=7.5							
ES19	**SONSECA Array**	**80.44**	**51**	*e*P		**P**	**10 19 47.0**	**-1.3**
BILL	**Bilibino**	**80.70**	**338**σ	*i* P		**P**	**10 19 49.9**	**+0.9**
BILL				pmax		pmax		
	comp=Z,12nm,1.2s							
ARCES	**ARCESS Array B**	**86.16**	**18**	P		**P**	**10 20 17.7**	**+0.6**
	comp=Z,0.8nm,0.4s,baz=287,slow=4.9,SNR=4.7							
ARCES				LR		LR	10 59 14.5	
	comp=Z,144nm,19.1s,baz=284,slow=36							
TIC	**Toumodi**	**86.61**	**84**	*e*PKP1		**P**	**10 20 20.9**	**+0.5**
LIC	**Lamto**	**86.71**	**84**	*e*PKP1		**P**	**10 20 21.1**	**+0.3**
	comp=Z,42nm,1.2s							
DBIC	**Dimbokro**	**86.77**	**84**	P		**P**	**10 20 20.8**	**-0.3**
	comp=Z,2.4nm,0.7s,baz=262,slow=9.2,SNR=3.9							
DBIC	**Dimbokro**	**86.77**	**84**	*e*P		**P**	**10 20 20.1**	**-1.0**
DBIC				pmax		pmax		
	comp=Z,27nm,1.6s							
DBIC	**Dimbokro**	**86.77**	**84**	*e*P		**P**	**10 20 20.1**	**-1.0**
	comp=Z,27nm,1.6s							
KIC	**Kosan Boka**	**86.95**	**84**	*e*PKP1		**P**	**10 20 22.0**	**0.0**
	comp=Z,15nm,0.9s							
TIXI	**Tiksi**	**89.67**	**348**⇑	*i* P		**P**	**10 20 33.4**	**-0.3**
TIXI				pmax		pmax		
	comp=Z,9.0nm,1.0s							
LVZ	**Lovozero**	**89.82**	**17**	P		**P**	**10 20 34.5**	**-0.1**
LVZ				pmax		pmax		
	comp=Z,11nm,1.2s							
KHC	**Kasperske Hory**	**89.88**	**39**	AMS		AMS	11 00 20.0	
	comp=Z,100nm,17.9s							
PVCC	**Panska Ves**	**89.94**	**37**	AMS		AMS	11 00 50.0	
	comp=Z,100nm,17.1s							
GERES	**GERESS Array B**	**90.06**	**39**	P		**P**	**10 20 36.8**	**+0.7**
	comp=Z,0.9nm,0.8s,baz=341,slow=4.6,SNR=4.2							
PRU	**Pruhonice**	**90.13**	**38**	AMS		AMS	11 01 10.0	
	comp=Z,200nm,16.0s							
GOPC	**GO Pecny, Ondr**	**90.31**	**38**	AMS		AMS	11 01 10.0	
	comp=Z,200nm,16.5s							
FIA0	**FINESS Array S**	**90.66**	**25**	*e*P		**P**	**10 20 38.3**	**-0.2**
FIA0	**FINESS Array S**	**90.66**	**25**	*e*P		**P**	**10 20 38.3**	**-0.2**
FINES	**FINESS Array B**	**90.66**	**25**	P		**P**	**10 20 38.3**	**-0.2**
	comp=Z,3.3nm,0.9s,baz=310,slow=5.2,SNR=4.9							
FINES				LR		LR	11 03 00.9	
	comp=Z,96nm,18.2s,baz=262,slow=37							
UPC	**Upice**	**90.80**	**37**	AMS		AMS	11 00 40.0	
	comp=Z,100nm,20.1s							
DPC	**Dobruska-Polom**	**91.04**	**37**	AMS		AMS	11 01 10.0	
	comp=Z,200nm,15.6s							
TOA1	**Torodi Ar. Sit**	**91.41**	**76**	*e*P		**P**	**10 20 42.1**	**-0.8**
	comp=Z,28nm,2.0s							
TORD	**Torodi Ar. Bea**	**91.41**	**76**	P		**P**	**10 20 42.2**	**-0.8**
	comp=Z,0.3nm,0.5s,baz=286,slow=5.3,SNR=3.6							
NRIK	**Noril'sk**	**96.52**	**360**	LR		LR	11 08 13.0	
	comp=Z,78nm,20.0s,baz=344,slow=38							
YAK	**Yakutsk**	**96.75**	**341**	*i* P		**P**	**10 21 07.1**	**+0.6**
YAK				pmax		pmax		
	comp=Z,4.0nm,0.7s							
KIEV	**Kiev**	**98.05**	**33**	P		Pdif	10 21 13.2	+0.6
TLY	**Talaya**	**112.63**	**349**	*i* PKIKP		**PKiKP**	**10 26 12.5**	**0.0**
GNI	**Garni**	**113.15**	**34**⇑	*i*PKIKP		**PKiKP**	**10 26 13.6**	**-0.4**
MK32	**Makanchi Array**	**119.00**	**4**	*e*PKPdf		**PKPdf**	**10 26 24.8**	**-0.1**
MKAR	**Makanchi Array**	**119.00**	**4**	PKP		**PKPdf**	**10 26 24.8**	**0.0**
	comp=Z,0.8nm,0.8s,baz=357,slow=2.4,SNR=6.7							
PMG	**Port Moresby**	**120.87**	**268**	*i* PKIKP		**PKPdf**	**10 26 29.0**	**-0.2**
BOSA	**Boshof**	**121.55**	**115**	PKP		**PKPdf**	**10 26 34.4**	**+4.0**
	comp=Z,4.6nm,0.8s,baz=243,slow=2.6,SNR=6.6							
AAK	**Ala-Archa**	**122.17**	**11**⇑	*i*PKIKP		**PKPdf**	**10 26 32.1**	**+0.8**
KSH	**Kashi**	**125.46**	**10**	*e*PKP		**PKPdf**	**10 26 39.0**	**+1.4**
KSH				*e*sPKP			10 26 53.8	
KSH				*e*PP		**PP**	**10 28 32.3**	**+4.9**
KSH				SKS		**SKSdf**	**10 33 46.4**	**+0.8**
KSH				SKKS		**SKKSac**	**10 35 20.3**	**-2.6**
KSH	**Kashi**	**125.46**	**10**	SS		SS	10 45 23.8	+2.3
KSH				AMB		AMB		
	comp=Z,26nm,2.7s							
KSH				LR		LR		
	comp=N,120nm,4.8s							
KSH				LR		LR		
	comp=E,77nm,6.5s							
KSH				LR		LR		
	comp=Z,130nm,7.2s							
LZH	**Lanzhou**	**127.31**	**343**	*e*PKP		**PKPdf**	**10 26 40.8**	**-0.5**
LZH				pPKP		pPKPdf	10 26 55.3	-1.4
LZH				sPKP			10 27 00.6	
LZH				LR		LR		
	comp=N,110nm,18.0s							
LZH				LR		LR		
	comp=E,110nm,17.9s							
LZH				LR		LR		
	comp=Z,160nm,20.0s							
WR1	**Warramunga Arr**	**134.36**	**256**	*e*PKPdf		**PKPdf**	**10 26 55.1**	**+0.3**
WRA	**Warramunga Arr**	**134.36**	**256**	PKP		**PKPdf**	**10 26 55.1**	**+0.3**
	comp=Z,1.2nm,0.9s,baz=90,slow=2.1,SNR=4.7							
CM31	**Chiang Mai Arr**	**145.27**	**340**	*e*PKPbc		**PKPdf**	**10 27 15.2**	**+0.5**
CMAR	**Chiang Mai Arr**	**145.27**	**340**	PKPbc		**PKPdf**	**10 27 14.8**	**+0.2**
	comp=Z,7.7nm,0.9s,baz=340,slow=3.9,SNR=31							

*DDA **22** 10:08:16.0,39.10N×29.02E,h7km,Md2.7*
*ISCJB **22** 10:08:16.4±0.5,39.05N±0.04×29.04E±0.03,h5km±8km,*
Error ellipse: s-maj=7.2km s-min=4.3km az=174.2
*CSEM **22** 10:08:16.5±0.2,39.06N×29.05E,h5km,MD2.7,Error*
ellipse: s-maj=4.0km s-min=3.8km az=127.0
*ISK **22** 10:08:16.2,39.09N×29.06E,h6km,MD2.7*

ISC 22 10:08:16.4±1.0,39.08N±0.03×29.04E±0.02,h10km±9km, n25,σ0.944/34,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.25**	**263**	*i* P	**Pg**	**10 08 21.5**	**0.0**
DEMI				*i* S	**Sg**	**10 08 25.0**	**0.0**
DEMI	**Demirci**	**0.25**	**263**	P	**Pg**	**10 08 21.5**	**0.0**
DEMI				S	**Sg**	**10 08 25.0**	**0.0**
GEDZ	**Gediz**	**0.29**	**96**	*e*PG	**Pg**	**10 08 22.2**	**-0.1**
GEDZ				*e*SG	**Sg**	**10 08 26.6**	**+0.3**
GDZ	**Gediz**	**0.35**	**88**	*i* P	**Pg**	**10 08 23.5**	**+0.2**
GDZ				*i* S	**Sg**	**10 08 28.5**	**+0.5**
GDZ	**Gediz**	**0.35**	**88**	P	**Pg**	**10 08 23.5**	**+0.2**
GDZ				S	**Sg**	**10 08 28.5**	**+0.5**
TVSB	**Tavsanli**	**0.50**	**41**	*e*PG	**Pg**	**10 08 25.4**	**-0.7**
TVSB	**Tavsanli**	**0.50**	**41**	*e*Pg	**Pg**	**10 08 25.4**	**-0.7**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*PG	**Pg**	**10 08 29.0**	**+0.4**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*Pg	**Pg**	**10 08 29.0**	**+0.4**
MANT	**Manisa**	**0.69**	**213**	*i* P	**Pg**	**10 08 29.1**	**-0.7**
MANT				*i* S	**Sg**	**10 08 38.5**	**-0.4**
MANT	**Manisa**	**0.69**	**213**	P	**Pg**	**10 08 29.1**	**-0.7**
MANT				S	**Sg**	**10 08 38.5**	**-0.4**
KHL	**Karahalli**	**0.84**	**153**	*e*PG	**Pb**	**10 08 33.1**	**-0.1**
KHL	**Karahalli**	**0.84**	**153**	*e*Pg	**Pb**	**10 08 33.1**	**-0.1**
BALB	**Balikesir**	**1.06**	**303**	*e*PG	**Pn**	**10 08 37.3**	**0.0**
BALB				*e*SG	**Sn**	**10 08 52.5**	**+0.4**
BALB	**Balikesir**	**1.06**	**303**	*e*Pg	**Pn**	**10 08 37.3**	**0.0**
BALB				*e*Sg	**Sn**	**10 08 52.5**	**+0.4**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pg**	**10 08 42.1**	**+0.8**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pg**	**10 08 42.1**	**+0.8**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pg**	**10 08 40.9**	**-0.5**
IZI	**Iznik**	**1.30**	**15**	*e*Pn	**Pg**	**10 08 40.9**	**-0.5**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*PN	**Pb**	**10 08 43.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*Pn	**Pb**	**10 08 43.2**	**+0.1**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pb**	**10 08 44.0**	**-0.3**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pb**	**10 08 44.0**	**-0.3**
EDC	**Edincik**	**1.56**	**325**	*e*PN	**Pg**	**10 08 45.9**	**-0.4**
EDC	**Edincik**	**1.56**	**325**	*e*Pn	**Pg**	**10 08 45.9**	**-0.4**

*GUC **22** 10:14:35.1±0.4,34.15S×73.24W,h35km±2km,ML3.6*

ISC 22 10:14:33.8±3.9,34.17S±0.06×73.2W±0.2,h1km±29km,n22, σ1.922/25,7D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**1.02**	**103**	*e*P	**Pb**	**10 14 53.9**	**-0.4**
CHPI				*e*S	**Sb**	**10 15 08.0**	**-0.2**
CHPI				IAML		10 15 10.7	
	comp=N,830nm,0.1s						
TALC	**Talca**	**1.79**	**134**	*e*P	**Pn**	**10 15 05.7**	**-0.1**
TALC				*e*S	**Sn**	**10 15 29.3**	**+0.2**
NICH	**Los Niches**	**1.83**	**118**	*e*P	**Pn**	**10 15 06.5**	**+0.1**
NICH				*e*S	**Sn**	**10 15 30.5**	**+0.2**
ROC1	**El Roble**	**2.18**	**58**	*e*P	**Pn**	**10 15 10.8**	**-0.6**
ROC1				*e*S	**Sn**	**10 15 38.3**	**-0.9**
ROCH	**El Roble**	**2.19**	**58**	*e*P	**Pn**	**10 15 10.8**	**-0.7**
ROCH				*e*S	**Sn**	**10 15 38.4**	**-0.9**
ROCH				IAML		10 15 41.8	
	comp=N,682nm,0.3s						
PEL	**Peldehue**	**2.34**	**65**	*e*P	**Pn**	**10 15 13.5**	**+0.1**
PEL				*e*S	**Sn**	**10 15 43.0**	**+0.2**
PEL				IAML		10 15 44.9	
	comp=N,1μm,0.3s						
CLCH	**Cerro Calan**	**2.35**	**72**μ	*e*P	**Pn**	**10 15 13.8**	**+0.2**
CLCH				*e*S	**Sn**	**10 15 43.1**	**-0.1**
CLCH				IAML		10 15 54.6	
	comp=E,538nm,0.6s						
FCH	**Farellones**	**2.57**	**72**	*e*P	**Pn**	**10 15 17.4**	**+0.5**
AUSP	**Uspallata**	**3.75**	**60**μ	*e*P	Pn	10 15 35.4	+2.4
ARCO	**CERRO ARCO**	**3.81**	**71**μ	*e*P	**Pn**	**10 15 37.3**	**+3.5**
ARCO				IAML		10 16 31.4	
	comp=Z,56nm,0.3s						
ASAL	**Salagasta**	**3.98**	**68**μ	*e*P	**Pn**	**10 15 39.5**	**+3.4**
RTLS	**Leoncito**	**4.05**	**55**μ	*e*P	Pn	10 15 39.2	+2.1
RTCV	**Cerro Valdivia**	**4.55**	**61**	*e*P	Pn	10 15 45.5	+1.7
RTLL	**Cerro Villicun**	**4.89**	**56**μ	*e*P	Pn	10 15 49.5	+1.0
ACCO	**Cerro Coronel**	**5.00**	**46**	*e*P	**Pn**	**10 15 51.3**	**+1.0**
ARCO	**Rodeo**	**5.09**	**39**μ	*e*P	**Pn**	**10 15 52.2**	**+0.7**
ACDV	**Cuesta del Vie**	**5.28**	**42**	*e*P	**Pn**	**10 15 54.9**	**+0.9**
AVFE	**Valle Fertil**	**5.99**	**56**	*e*P	**Pn**	**10 16 04.0**	**+0.3**
AGUA	**GUANDACOL**	**6.15**	**42**	*e*P	**Pn**	**10 16 06.6**	**+0.7**
ACHE	**Chepes**	**6.28**	**63**	*e*P	**Pn**	**10 16 07.0**	**-0.6**
VCA	**Vinchina**	**6.90**	**40**	*e*P	**Pn**	**10 16 16.5**	**+0.3**
TCA	**Tanti**	**7.79**	**71**	*e*P	**Pn**	**10 16 27.8**	**-0.5**
TCA				IAML		10 17 59.8	
	comp=Z,8.1nm,0.8s						

IDC 22 10:15:14.3±3.3,6.00S×152.51E,h0km,mb3.8/3, mb1 4.0/3,mb1mx3.5/29,mbtmp3.8/3,Error ellipse: s-maj=111.3km s-min=47.9km az=124.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.45**	**230**	P	P	10 20 15.5	+0.3
	0.7nm,0.6s,baz=55,slow=10,SNR=11						
ASAR	**Alice Springs**	**25.08**	**224**	P	P	10 20 40.6	-0.2
	0.8nm,0.6s,baz=59,slow=8.9,SNR=18						
FITZ	**Fitzroy Crossi**	**28.85**	**243**	P	P	10 21 14.5	-0.2
	3.1nm,0.4s,baz=61,slow=10.0,SNR=24						
TORD	**Torodi Ar. Bea**	**150.38**	**286**	PKPbc	PKPbc	10 35 08.7	-0.1
	1.0nm,0.8s,baz=70,slow=2.9,SNR=5.7						

IDC 22 10:20:23.8±2.0,11.71S×117.02E,h0km,mb3.8/1, mb1 3.8/5,mb1mx3.6/32,mbtmp3.7/5,ML3.8/4,Error ellipse: s-maj=65.0km s-min=23.5km az=52.0,South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	**Kappang**	**7.18**	**22**	Pn	Pn	10 22 10.0	-0.2
	2.0nm,0.3s,baz=185,slow=11,SNR=11						
KAPI				Sn	Sn	10 23 20.1	-12
	7.7nm,0.3s,baz=196,slow=8.5,SNR=23						
FITZ	**Fitzroy Crossi**	**10.47**	**128**	Pn	Pn	10 22 54.1	-1.3
	1.0nm,0.3s,baz=322,slow=13,SNR=32						
FITZ				Sn	Sn	10 24 42.7	-11
	1.5nm,0.3s,baz=192,slow=23,SNR=11						
WRA	**Warramunga Arr**	**18.55**	**118**	P	P	10 24 41.3	-1.0
	0.2nm,0.3s,baz=286,slow=14,SNR=16						
WRA				Sn	Sn	10 27 51.2	-19
	0.1nm,0.3s,baz=293,slow=23,SNR=4.1						
ASAR	**Alice Springs**	**19.98**	**129**	P	Pn	10 24 59.4	-0.2
	0.2nm,0.3s,baz=304,slow=11,SNR=16						
ASAR				Sn	S	10 28 29.6	-14
	0.1nm,0.3s,baz=309,slow=25,SNR=5.8						
NWAO	**Narrogin (SRO)**	**21.12**	**180**	P	P	10 25 15.0	+4.8
	6.0nm,0.7s,baz=3.4,slow=14,SNR=8.1						
NWAO				S	S	10 28 58.7	-7.4
	5.9nm,0.4s,baz=108,slow=13,SNR=8.9						
MKAR	**Makanchi Array**	**66.02**	**335**	P	P	10 31 12.2	0.0
	0.6nm,0.5s,baz=145,slow=7.1,SNR=8.5						

*ISCJB **22** 10:23:09.4±0.5,39.89N±0.03×33.10E±0.04,h0km,Error*
ellipse: s-maj=5.0km s-min=4.2km az=169.5
*ISK **22** 10:23:09.1,39.89N×33.06E,h8km,MD2.8*
*CSEM **22** 10:23:09.1±0.2,39.91N×33.08E,h1km,MD2.8,Error*
ellipse: s-maj=3.9km s-min=3.6km az=86.0,Suspected
Mining explosion.

*DDA **22** 10:23:10.3,39.88N×33.09E,h7km,Md2.8,Suspected*
Mining explosion.

ISC 22 10:23:09.1±0.8,39.87N±0.03×33.08E±0.03,h0km,n28, σ0.994/39,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LOD	**Lodumlu**	**0.24**	**276**	*e*PG	**Pg**	**10 23 14.3**	**+0.6**
LOD				*e*SG	**Sg**	**10 23 18.0**	**+1.2**
LOD	**Lodumlu**	**0.24**	**276**	*e*Pg	**Pg**	**10 23 14.3**	**+0.6**
LOD				*e*Sg	**Sg**	**10 23 18.0**	**+1.2**
BBAL	**Bala**	**0.32**	**173**	*i* P	**Pb**	**10 23 17.1**	**-0.8**
BBAL				*i* S	**Sb**	**10 23 23.6**	**0.0**
BBAL	**Bala**	**0.32**	**173**	P	**Pb**	**10 23 17.0**	**-0.8**
BBAL				S	**Sb**	**10 23 23.6**	**0.0**
AFSR	**Af˙ar-Bala (A**	**0.42**	**180**	*e*PG	**Pb**	**10 23 18.0**	**-1.4**
AFSR				*e*SG	**Sb**	**10 23 24.6**	**-1.7**
AFSR	**Af˙ar-Bala (A**	**0.42**	**180**	*e*Pg	**Pb**	**10 23 18.0**	**-1.4**
AFSR				*e*Sg	**Sb**	**10 23 24.6**	**-1.7**
ELDT	**Eldivan**	**0.68**	**23**	*i* P	**Pg**	**10 23 22.7**	**+0.6**
ELDT				*i* S	**Sb**	**10 23 34.2**	**+0.2**
ELDT	**Eldivan**	**0.68**	**23**	P	**Pg**	**10 23 22.7**	**+0.6**
ELDT				S	**Sb**	**10 23 34.2**	**+0.2**
KAMT	**Kaman**	**0.70**	**135**	*e*PG	**Pb**	**10 23 23.4**	**-0.8**
KAMT	**Kaman**	**0.70**	**135**	*e*Pg	**Pb**	**10 23 23.4**	**-0.8**
CDAG	**Cicekdag**	**1.03**	**103**	*i* P	**Pb**	**10 23 29.0**	**-0.8**
CDAG				*i* S	**Sn**	**10 23 49.4**	**+3.3**
CDAG	**Cicekdag**	**1.03**	**103**	P	**Pb**	**10 23 29.0**	**-0.8**
BCAM	**Yenicaga**	**1.22**	**321**	*i* P	**Pg**	**10 23 32.3**	**-0.2**
BCAM				*i* S	**Sn**	**10 23 51.3**	**+0.4**
BCAM	**Yenicaga**	**1.22**	**321**	P	**Pg**	**10 23 32.3**	**-0.2**
BCAM				S	**Sn**	**10 23 51.3**	**+0.4**
CORM	**Corum**	**1.23**	**75**	*e*PN	**Pn**	**10 23 33.3**	**-0.4**
CORM	**Corum**	**1.23**	**75**	*e*Pn	**Pn**	**10 23 33.3**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.27**	**251**	*e*PN	**Pg**	**10 23 33.5**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.27**	**251**	*e*Pn	**Pg**	**10 23 33.5**	**+0.1**
KIZT	**Kizilcal**	**1.35**	**224**	*e*PN	**Pg**	**10 23 35.2**	**+0.2**
KIZT	**Kizilcal**	**1.35**	**224**	*e*Pn	**Pg**	**10 23 35.2**	**+0.2**
TOS	**Tosya**	**1.38**	**31**	*e*PN	**Pg**	**10 23 34.9**	**-0.5**
TOS	**Tosya**	**1.38**	**31**	*e*Pn	**Pg**	**10 23 34.9**	**-0.5**
SAFT	**Safranbolu**	**1.41**	**348**	*e*PN	**Pn**	**10 23 35.2**	**-0.8**
SAFT	**Safranbolu**	**1.41**	**348**	*e*Pn	**Pn**	**10 23 35.2**	**-0.8**
YOZ	**Yozgat**	**1.75**	**97**	*e*PN	**Pn**	**10 23 40.5**	**-0.3**
YOZ	**Yozgat**	**1.75**	**97**	*e*Pn	**Pn**	**10 23 40.5**	**-0.3**
KONT	**Konya--Tatoy**	**2.00**	**196**	*e*PN	**Pn**	**10 23 44.3**	**+0.2**
KONT	**Konya--Tatoy**	**2.00**	**196**	*e*Pn	**Pn**	**10 23 44.3**	**+0.2**

IDC 22 10:24:45.7±6.6,21.56N×143.25E,h278km±67km,mb3.0/6, mb1 3.2/7,mb1mx3.0/37,mbtmp3.7/7,Error ellipse: s-maj=43.8km s-min=14.3km az=88.0,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**15.56**	**345**	P	P	10 28 10.6	+0.6
	0.6nm,0.3s,baz=158,slow=9.7,SNR=6.4						
KSRS	**Korea Array**	**20.66**	**323**	P	P	10 29 04.9	+0.2
	1.9nm,0.6s,baz=146,slow=8.8,SNR=12						
KLR	**Kul'dur**	**29.09**	**344**	P	P	10 30 20.6	-0.1
	3.2nm,0.6s,baz=170,slow=8.6,SNR=12						
WRA	**Warramunga Arr**	**42.16**	**193**	P	P	10 32 11.4	-0.1
	1.3nm,0.7s,baz=18,slow=7.8,SNR=14						
ASAR	**Alice Springs**	**45.87**	**192**	P	P	10 32 40.6	-0.3
	0.3nm,0.5s,baz=18,slow=12,SNR=5.7						
MKAR	**Makanchi Array**	**54.83**	**313**	P	P	10 33 47.4	-0.1
	0.1nm,0.4s,baz=96,slow=7.4,SNR=2.5						
YKA	**Yellowknife Ar**	**76.55**	**28**	P	P	10 36 04.8	-0.5
	0.3nm,0.6s,baz=301,slow=5.5,SNR=3.9						
LPAZ	**La Paz**	**149.89**	**85**	PKPbc	PKPbc	10 44 04.8	+0.1
	0.5nm,0.5s,baz=30,slow=3.5,SNR=5.7				

Duration: 0 Moment tensor: Scale 10^{16}Nm; M_r4.19±.14; $M_{\theta\theta}$-4.04±.11; $M_{\phi\phi}$-0.15±.11; $M_{r\theta}$2.80±.25; $M_{\theta\phi}$1.41±.08; $M_{r\phi}$-2.74±.28; Best double couple: M≈5.85500×10^{16} NP1:χ_ϕ125.00000°,δ67.00000°,λ105.00000°. NP2: ϕ_ϕ272.00000°,δ28.00000°,λ60.00000°. Principal axes: T 5.9140, Plg65.0000°, Azm61.0000°; N -0.1200, Plg13.0000°, Azm299.0000°; P -5.7950, Plg20.0000°, Azm204.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

*IDC **22** 10:48:34.9±2.8, 12.56N×88.23W, h58km±25km, mb4.3/12, mb1 4.5/14, mb1mx4.3/28, mbtmp4.6/14, ML3.5/2, MS4.3/27, Ms1 4.3/27, ms1mx4.2/41 Error ellipse: s-maj=28.4km s-min=12.6km az=55.0*

ISC 22 10:48:32.9±0.7, 12°32N±0°04×88°25W±0°04, h44km±5km, n791, σ1$31/793, mb4.9/182, MS4.5/29, 10C-2D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CNCH	Conchagua	1.03	23	eP		Pn	10 48 51.5	+0.5
LCY	Lacayo	1.10	358	eP		Pn	10 48 51.8	-0.2
VSM	San Miguel	1.10	359	eP		Pn	10 48 52.1	0.0
PACA	Pacayal	1.14	356	iP		Pn	10 48 52.9	+0.4
SNVI	San Vicente	1.41	336	eP		Pn	10 48 55.3	-0.9
CAHU	Cacaucatique	1.44	1	eP		Pn	10 48 57.5	+0.7
LFRS	El Faro	1.52	329	iP		Pn	10 48 56.3	-1.4
CNGN	Cerro Negro	1.52	83	eP		Pn	10 48 56.5	-1.2
CNGN				eS		Sn	10 49 16.3	-0.1
CNGN				AML		AML	10 49 16.4	
	comp=N,1μm,0.4s							
LBRS	Las Brisas	1.61	331	eP		Pn	10 48 58.1	-0.8
LFU	La Fuente	1.65	329	eP		Pn	10 48 58.1	-1.3
SNET	Serv Nac Est T	1.66	325	ePn		Pn	10 48 58.1	-1.6
SNET				eSn		Sn	10 49 23.7	+3.9
SNET	Serv Nac Est T	1.66	325	eP		Pn	10 48 57.9	-1.8
SNET				eS		Sn	10 49 21.6	+1.8
SNET				AML		AML	10 49 39.7	
	comp=Z,4μm,0.5s							
MOMN	Momotombo	1.67	87	eP		Pn	10 48 58.8	-0.9
BOQS	Boqueron	1.73	325	eP		Pn	10 48 59.3	-1.4
XAVN	Gruta Xavier	1.89	95	eP		Pn	10 49 01.7	-0.9
TISN	Laguna Tiscapa	1.94	95	eP		Pn	10 49 02.4	-1.0
MGAN	Managua	1.96	95	eP		Pn	10 49 02.7	-1.0
SBLS	San Blas	2.02	319	eP		Pn	10 49 03.2	-1.4
SNJE	San Jose	2.03	319	eP		Pn	10 49 03.5	-1.2
MONT	Ecomontaæa	2.05	318	eP		Pn	10 49 03.8	-1.3
RTR	El Retiro	2.08	319	iP		Pn	10 49 04.4	-1.0
RBDL	Robledal	2.27	322	iP		Pn	10 49 07.3	-0.7
CUS1	Cusmapa	2.29	314	eP		Pn	10 49 06.0	-2.2
CONN	Concepcion	2.67	106	eP		Pn	10 49 12.9	-0.5
ACON	Acoyapa	3.03	96	eP		Pn	10 49 17.3	-1.0
CGA2	Cerro Gallo 2	4.36	121	eP		Pn	10 49 37.5	+0.7
CGA2				eS		Sn	10 50 26.5	+0.1
HDC	Heredia	4.67	119	ePn		Pn	10 49 41.7	+0.8
QCR	Quepos	4.94	125	eP		Pn	10 49 43.8	-0.8
URSC	Urasca	5.04	119	eP		Pn	10 49 46.8	+0.7
BUS	Buena Vista	5.20	122	eP		Pn	10 49 47.8	-0.7
CCIG	Comitan	5.45	317	ePn		Pn	10 49 53.6	+1.8
BRU2	Volcan	6.49	122	eP		Pn	10 50 58.5	+0.4
TBS2		6.52	122	eP		Pn	10 50 06.6	+0.1
BRU	Baru	6.59	121	eP		Pn	10 50 08.9	+1.2
TEIG	Tepich	7.86	360	P		Pn	10 50 27.5	+2.8
	comp=Z,0.8nm,0.3s,baz=172,slow=17,SNR=10							
TEIG				LR		LR	10 53 48.9	
	comp=Z,3μm,19.0s,baz=184,slow=41							
TEIG	Tepich	7.86	360	ePn		Pn	10 50 26.0	+1.3
CMIG	Matias Romero	7.98	307	P		Pn	10 50 25.7	-0.6
	comp=Z,3.3nm,0.3s,baz=93,slow=10,SNR=59							
CMIG				S		Sn	10 51 53.7	-1.7
	comp=Z,0.3nm,0.3s,baz=242,slow=23,SNR=2.3							
PNME	Penonome	8.67	115	eP		Pn	10 50 33.2	-2.6
UPD2	Meteti	10.74	109	eP		Pn	10 51 06.0	+1.9
TLIG	Tlapa	11.25	299	ePn		Pn	10 51 12.2	+0.9
MTDJ	Mount Denham	11.88	59	ePn		Pn	10 51 20.6	+0.7
PAYG	Puerto Ayora	13.07	189	ePn		Pn	10 51 33.2	-2.8
HELC	Santa Helena	13.95	115	ePn		Pn	10 51 48.6	+0.2
NORC	Norcasia	14.82	116	eP		P	10 52 04.4	-0.4
TOLC	Tolima	14.91	120	eP		P	10 52 07.8	+1.6
POPC	Popayan, Colom	15.03	129	eP		P	10 52 08.3	+1.0
OCAC	Ocana	15.24	104	eP		Pn	10 52 06.1	+0.8
CMBC	Cumbal	15.32	137	eP		P	10 52 12.9	+2.1
OTAV	Otavalo	15.45	140	eP		P	10 52 15.7	+3.5
CRUC	La Cruz	15.48	133	eP		P	10 52 17.4	+5.0
ROSC	El Rosal	15.64	117	P		P	10 52 14.0	-0.3
	comp=Z,1.2nm,0.3s,baz=9.8,slow=9.7,SNR=5.0							
ROSC				LR		LR	10 59 25.3	
	comp=Z,946nm,18.2s,baz=21,slow=41							
ROSC	El Rosal	15.64	117	eP		Pn	10 52 09.5	-1.3
ROSC	El Rosal	15.64	117	ePn		P	10 52 13.8	-0.6
	comp=Z,24nm,1.0s							
PRAC	Prado	15.74	122	eP		Pn	10 52 12.3	+0.5
PRAC	Prado	15.74	122	ePn		Pn	10 52 13.5	+1.7
	comp=Z,60nm,0.9s							
GRMC	Gramalote, San	15.88	105	eP		Pn	10 52 12.3	-1.3
CBRI	Barrientos, No	15.89	105	eP		P	10 52 16.3	-0.5
BARC	Barichara	15.91	110	eP		Pn	10 52 12.3	-1.8
URIC	Uribia, Colomb	15.91	91	eP		P	10 52 17.4	+0.5
CHIC	Chingaza	16.26	117	eP		Pn	10 52 17.4	-1.2
RUSC	La Rusia	16.27	112	eP		Pn	10 52 12.9	-6.1
RUSC	La Rusia	16.27	112	ePn		Pn	10 52 18.1	-0.8
	comp=Z,17nm,1.3s							
035Z	Hargill	16.83	328	P		Pn	10 52 26.3	+0.9
	baz=144,SNR=14							
DWPF	Disney Wildern	16.95	21	ePn		Pn	10 52 26.8	-0.1
	comp=Z,208nm,1.5s							
ZAIG	Zacatecas	17.14	309	ePn		P	10 52 31.8	+1.0
	comp=Z,46nm,1.3s							
645A	Chauvin	17.19	353	P		P	10 52 32.5	+1.5
	baz=172							
035A	Encino	17.24	329	P		P	10 52 32.1	+0.6
	baz=145,SNR=13							
646A	Port Sulphur	17.24	355	P		P	10 52 33.2	+1.7
	baz=174							
936A	North Padre Is	17.26	332	P		P	10 52 33.7	+2.0
	baz=148							
034A	Hebbronville	17.64	328	P		P	10 52 36.9	+1.0
	baz=144,SNR=32							
KVTX	Kingsville	17.64	331	eP		P	10 52 37.0	+1.1
	comp=Z,350nm,1.4s							
SDV	Santo Domingo	17.65	99	P		Pn	10 52 34.3	-1.5
	comp=Z,1.0nm,0.3s,baz=290,slow=7.3,SNR=11							
SDV				LR		LR	11 01 04.9	
	comp=Z,702nm,18.9s,baz=266,slow=42							
SDV	Santo Domingo	17.65	99	eP		Pn	10 52 32.1	-3.7
SDV	Santo Domingo	17.65	99	ePn		Pn	10 52 34.1	-1.7
	comp=Z,52nm,1.2s							
545A	Edgard	17.76	354	P		P	10 52 39.7	+2.5
	baz=172							
738A	Farr-Stevens R	17.83	338	P		P	10 52 39.5	+1.5
	baz=155							
546A	Slidell	17.88	356	P		P	10 52 40.3	+1.8
	baz=175							
544A	White Castle	17.91	352	P		P	10 52 41.6	+2.7
	baz=170							
934A	Benavides	17.99	329	P		P	10 52 40.7	+0.9
	baz=145,SNR=22							
543A	St. Martinvill	17.99	350	P		P	10 52 42.7	+2.9
	baz=168							
737A	Port Lavaca	18.06	336	P		Pn	10 52 42.2	+1.7
	baz=153							
542A	Morse	18.16	348	P		Pn	10 52 44.3	+2.5
	baz=166							
835A	Beeville	18.23	332	P		Pn	10 52 43.6	+0.9
	baz=148,SNR=19							
541A	Lake Charles	18.24	346	P		Pn	10 52 45.2	+2.5
	baz=164							
638A	Rosharon	18.28	340	P		Pn	10 52 45.1	+1.8
	baz=157							
933A	Laredo	18.39	327	P		Pn	10 52 44.7	+0.2
	baz=143,SNR=14							
447A	Lucedale	18.39	359	P		Pn	10 52 47.0	+2.4
	baz=178							
446A	Poplarville	18.41	357	P		Pn	10 52 46.9	+2.1
	baz=176							
445A	Amite	18.42	354	P		Pn	10 52 47.2	+2.2
	baz=173							
834A	Tilden	18.44	330	P		Pn	10 52 45.6	+0.5
	baz=146,SNR=41							
444A	Pine Grove	18.45	353	P		Pn	10 52 47.5	+2.2
	baz=172							
736A	Circle Diamond	18.48	335	P		Pn	10 52 46.5	+0.8
	baz=152,SNR=9.8							
448A	Bay Minette	18.52	1	P		Pn	10 52 48.1	+1.9
	baz=181							
540A	Vidor	18.58	344	P		Pn	10 52 49.2	+2.4
	baz=162							
637A	Eagle Lake	18.62	337	P		Pn	10 52 48.2	+0.9
	baz=154,SNR=10							
443A	Delano Plantat	18.64	350	P		Pn	10 52 48.8	+1.2
	baz=169							
539A	Cross D Ranch,	18.69	342	P		Pn	10 52 49.8	+1.6
	baz=160							
442A	Mamou	18.71	349	P		Pn	10 52 50.2	+1.8
	baz=167							
735A	Kenedy	18.71	333	P		P	10 52 47.7	0.0
	baz=149							
BRAL	Brewton	18.79	3	eP		Pn	10 52 50.0	+0.6
	comp=Z,102nm,1.3s							
441A	DeRidder	18.90	347	P		Pn	10 52 53.0	+2.3
	baz=165,SNR=7.0							
636A	Smothers Creek	18.94	336	P		Pn	10 52 50.9	-0.3
	baz=152,SNR=39							
345A	Thompson Farm,	18.97	355	P		Pn	10 52 51.9	+0.4
	baz=174							
347A	Saraland	18.99	359	P		Pn	10 52 51.3	-0.5
	baz=179							
348A	Jackson	19.00	1	P		Pn	10 52 53.1	+1.2
	baz=181							
346A	Big Creek Wild	19.01	357	P		Pn	10 52 53.2	+1.2
	baz=176							
833A	Chaparral WMA,	19.02	328	P		P	10 52 51.8	+0.6
	baz=144,SNR=70							
538A	Harpers Horsep	19.04	340	P		Pn	10 52 52.6	+0.3
	baz=158							
734A	La Parita Cree	19.05	331	P		P	10 52 51.6	+0.2
	baz=147,SNR=15							
440A	Kirbyville	19.08	345	P		Pn	10 52 54.1	+1.2
	baz=162							
343A	Vidalia	19.13	351	P		P	10 52 52.5	+0.2
	baz=170							
635A	Leesville	19.16	334	P		P	10 52 52.4	-0.2
	baz=150,SNR=18							
344A	Westbrook Farm	19.18	354	P		Pn	10 52 55.9	+1.9
	baz=172,SNR=16							
537A	Green Hill Far	19.19	338	P		P	10 52 53.4	+0.4
	baz=155							
832A	Faith Ranch, C	19.29	327	P		P	10 52 54.3	+0.2
	baz=143,SNR=41							
733A	Divot King Ran	19.30	329	P		P	10 52 55.0	+0.9
	baz=145,SNR=112							
342A	Flagon Creek P	19.33	349	P		Pn	10 52 56.7	+0.8
	baz=168							
439A	Center Grove,	19.35	343	P		Pn	10 52 56.6	+0.5
	baz=160,SNR=12							
634A	China Grove, S	19.40	333	P		P	10 52 55.4	+0.1
	baz=149,SNR=7.7							
341A	Northwood	19.46	347	P		Pn	10 52 57.9	+0.5
	baz=165,SNR=9.4							
536A	Bastrop	19.47	337	P		P	10 52 56.3	+0.3
	baz=153							
TIGA	Tifton	19.51	12	P		Pn	10 52 58.7	+0.8
	baz=193,SNR=11							
TIGA	Tifton	19.51	12	eP		P	10 52 54.1	-2.3
	comp=Z,87nm,1.1s							
438A	Sam Houston St	19.52	341	P		Pn	10 52 57.9	-0.2
	baz=143,SNR=7.8							
246A	Jackson Lee, B	19.62	358	P		Pn	10 52 59.0	-0.2
	baz=177							
535A	Dale	19.63	335	P		P	10 52 58.0	+0.2
	baz=152							
247A	Quitman	19.64	359	P		Pn	10 52 59.7	+0.1
	baz=179,SNR=5.6							
245A	Little AP, Sta	19.68	356	P		Pn	10 53 00.5	+0.6
	baz=175,SNR=12							
248A	Dixon Mills	19.68	1	P		Pn	10 52 59.8	-0.3
	baz=181							
243A	Waterproof	19.69	352	P		Pn	10 53 00.2	0.0
	baz=170							
340A	Bronson	19.70	346	P		Pn	10 53 00.6	+0.3
	baz=163,SNR=33							
244A	Avery, Jackson	19.76	354	P		Pn	10 53 01.5	+0.6
	baz=173,SNR=32							
339A	Huntington	19.80	344	P		Pn	10 53 01.0	-0.4
	baz=161,SNR=13							
437A	Phantom Ranch,	19.81	340	P		P	10 53 00.3	+0.6
	baz=156							
633A	Saathoff Ranch	19.85	331	P		P	10 53 00.3	0.0
	baz=147,SNR=102							
VBMS	Vicksburg	19.91	354	P		Pn	10 53 03.2	+0.5
	baz=173,SNR=14							
242A	Grayson	19.97	350	P		Pn	10 53 03.8	+0.4
	baz=168,SNR=11							
436A	Wall Ranch, Ga	19.99	338	P		P	10 53 01.9	+0.2
	baz=155							
534A	Blanco	20.01	333	P		P	10 53 01.5	-0.5
	baz=149,SNR=54							
338A	Crockett	20.03	342	P		Pn	10 53 03.6	-0.6
	baz=159,SNR=9.2							
241A	Mo Tay, Goldon	20.07	348	P		Pn	10 53 04.6	0.0
	baz=166							
337A	Centerville	20.18	341	P		P	10 53 04.8	+1.1
	baz=158,SNR=9.4							
NATX	Nacogdoches	20.23	344	P		P	10 53 05.2	+1.0
	baz=181,SNR=6.4							
NATX	Nacogdoches	20.23	344	eP		P	10 53 04.4	+0.1
	comp=Z,188nm,1.3s							
146A	Union	20.23	358	P		Pn	10 53 05.9	-0.7
	baz=177,SNR=8.2							
145A	Houston Renfro	20.25	356	P		Pn	10 53 06.5	-0.2
	baz=175,SNR=6.8							
147A	Livingston	20.26	360	P		Pn	10 53 06.2	-0.7
	baz=180							
240A	Hunter Patters	20.27	346	P		Pn	10 53 06.0	-1.0
	baz=164							
435B	Jarrell	20.30	336	P		P	10 53 05.2	+0.1
	baz=153,SNR=9.5							
533A	Kerrville	20.30	332	P		P	10 53 04.9	-0.2
	baz=148,SNR=85							
144A	Alexander Plac	20.31	355	P		Pn	10 53 06.7	-0.8
	baz=174							
142A	Monroe	20.42	351	P		Pn	10 53 08.2	-0.6
	baz=169							
239A	Gary	20.42	345	P		P	10 53 07.5	+1.1
	baz=162							
143A	Socs Landing,	20.49	352	P		Pn	10 53 08.5	-1.1
	baz=171,SNR=6.7							
336A	Riesel	20.57	339	P		P	10 53 08.1	+0.2
	baz=155,SNR=12							
238A	Jacksonville	20.59	343	P		P	10 53 09.1	+0.9
	baz=160							
434A	Burnet	20.61	335	P		P	10 53 07.8	-0.6
	baz=151,SNR=41							
141A	Papa Simpson,	20.64	349	P		Pn	10 53 10.2	-1.1
	baz=167							
LRAL	Lakeview Retre	20.65	3	eP		Pn	10 53 11.8	+0.3
	comp=Z,41nm,0.9s							
335A	Moody	20.68	337	P		P	10 53 09.2	0.0
	baz=154,SNR=14							
Z47A	Carrollton	20.78	0	P		Pn	10 53 12.1	-1.0
	baz=180,SNR=8.3							
237A	Washetta, Mont	20.79	342	P		P	10 53 10.6	+0.3
	baz=158,SNR=17							
Z46A	Louisville	20.79	358	P		Pn	10 53 12.4	-0.7
	baz=178,SNR=13							
140A	Cam and Jess,	20.81	347	P		Pn	10 53 12.3	-1.0
	baz=165,SNR=6.8							
433A	Art	20.91	333	P		P	10 53 10.9	-0.8
	baz=149,SNR=74							
Z44A	Pea Ridge, Bel	20.95	355	P		P	10 53 13.6	+1.5
	baz=174							
Z48A	Northport	20.97	2	P		P	10 53 13.0	+0.7
	baz=182,SNR=17							
Z43A	Armstrong Fami	20.97	353	P		P	10 53 13.7	+1.4
	baz=172							
Z45A	Winona	20.99	357	P		P	10 53 13.8	+1.3
	baz=176,SNR=5.4							
JCT	Junction City	21.00	331	P		P	10 53 12.6	-0.1
	baz=147,SNR=20							
139A	Bunkhouse Ranc	21.03	345	P		P	10 53 14.3	+1.4
	baz=163							
334A	Lometa	21.05	336	P		P	10 53 12.7	-0.4
	baz=152,SNR=45							
Z42A	Norrel Spur, H	21.13	351	P		P	10 53 15.2	+1.3
	baz=170							
138A	Matatall Enter	21.20	344	P		P	10 53 15.8	+1.1
	baz=161,SNR=11							
Z41A	Richland Creek	21.25	349	P		P	10 53 16.4	+1.1
	baz=167,SNR=14							
137A	Heron Place, G	21.32	342	P		P	10 53 16.6	+0.6
	baz=159,SNR=16							
WHTX	Lake Whitney,	21.33	338	P		P	10 53 16.0	-0.2
	baz=154,SNR=9.2							
WHTX	Lake Whitney,	21.33	338	eP		P	10 53 16.4	+0.2
	comp=Z,118nm,1.2s							
333A	Richland Sprin	21.35	334	P		P	10 53 16.1	-0.4
	baz=150,SNR=74							
Z40A	Long Farm, Mag	21.37	348	P		P	10 53 18.1	+1.6
	baz=166,SNR=23							
GOGA	Godfrey	21.44	11	eP		P	10 53 18.8	+1.4
GOGA				pmax		pmax		
	comp=Z,33nm,0.8s							
GOGA	Godfrey	21.44	11	eP		P	10 53 18.8	+1.4
	comp=Z,33nm,0.8s							
136A	Ennis	21.45	341	P		P	10 53 17.3	-0.1
	baz=157,SNR=14							
Y46A	Houston	21.47	359	P		P	10 53 18.4	+0.7
	baz=178,SNR=14							
Y45A	Yeager Farm, C	21.48	357	P		P	10 53 19.0	+1.3
	baz=176							
Y47A	UCPARC, Winfie	21.49	1	P		P	10 53 18.7	+0.9
	baz=181,SNR=11							
Z39A	Irene McRaven,	21.52	346	P		P	10 53 19.3	+1.2
	baz=164							
234A	Clairette	21.60	337	P		P	10 53 18.4	-0.6
	baz=153,SNR=19							
Y44A	Strider, Charl	21.62	356	P		P	10 53 20.3	+1.1
	baz=174							
Y43A	Makayla and Ka	21.63	354	P		P	10 53 20.6	+1.3
	baz=179							
Y42A	Garnett, Star	21.66	352	P		P	10 53 20.8	+1.1
	baz=170,SNR=6.2							
ATAH	Atahualpa	21.67	153	P		P	10 53 20.9	+0.5
	comp=Z,15nm,1.0s,baz=332,slow=11,SNR=5.3							
Z38A	Mt. Pleasant	21.73	345	P		P	10 53 21.1	+0.7
	baz=162							
WLAR	White Oak Lake	21.73	349	eP		P	10 53 22.2	+1.8
	comp=Z,226nm,1.1s							
CCAR	Cane Creek	21.74	352	eP		P	10 53 22.0	+1.5
	comp=Z,279nm,1.5s							
135A	Vickery Place,	21.83	339	P		P	10 53 20.5	-0.9
	baz=155							
Y41A	Eaglette Beard	21.83	350	P		P	10 53 21.2	-0.3
	baz=168							
Z37A	Pogue Cattle C	21.85	343	P		P	10 53 22.3	+0.6
	baz=160,SNR=7.5							
HPIG		21.88	314	eP		P	10 53 22.9	+0.6
	comp=Z,38nm,1.2s							
233A	Rising Star	21.92	335	P		P	10 53 22.0	-0.5
	baz=151,SNR=53							
X45A	UM Field Stati	22.03	357	P		P	10 53 23.7	+0.1
	baz=177,SNR=7.9							
Y40A	Okolona	22.07	349	P		P	10 53 24.7	+0.6
	baz=167,SNR=21							
SJG	San Juan	22.08	72	P		P	10 53 21.5	-2.8
	comp=Z,6.2nm,0.2s,baz=294,slow=10,SNR=2.9							
134A	White-Moore Ra	22.08	337	P		P	10 53 23.8	-0.5
	baz=153,SNR=10							
OXF	Oxford	22.12	357	eP		P	10 53 24.8	+0.3
OXF				pmax		pmax		
	comp=Z,74nm,1.1s							
OXF	Oxford	22.12	357	eP		P	10 53 24.8	+0.3
	comp=Z,74nm,1.1s							
X44A	Crenshaw	22.15	356	P		P	10 53 25.3	+0.4
	baz=175							
Z36A	Blue Ridge	22.16	342	P		P	10 53 25.1	+0.1
	baz=158,SNR=20							
Y39A	Lockesburg	22.17	347	P		P	10 53 25.8	+0.6
	baz=164,SNR=8.2							
LTX	Lajitas	22.19	322	eP		P	10 53 25.5	0.0
LTX				e			10 57 21.6	
LTX	Lajitas	22.19	322	eP		P	10 53 25.5	0.0
LTX				ePcP		PcP	10 57 21.6	+0.4
TXAR	Lajitas Array	22.19	322	P		P	10 53 25.5	0.0
	comp=Z,17nm,0.7s,baz=145,slow=9.8,SNR=166							
TXAR				PcP		PcP	10 57 21.6	+0.4
	comp=Z,4.9nm,1.2s,baz=116,slow=2.9,SNR=5.0							
TXAR				ScP		ScP	11 00 58.3	+3.1
	comp=Z,0.6nm,0.8s,baz=148,slow=5.2,SNR=2.6							
TXAR				LR		LR	11 02 57.4	
	comp=Z,163nm,20.5s,baz=0.0,slow=39							
TX31	Lajitas Ar. Si	22.19	322	eP		P	10 53 25.8	+0.3
TX31				eS		S	10 57 22.3	-5.1
X43A	Marvell	22.23	354	P		P	10 53 26.2	+0.5
	baz=173							
Y38A	Idabel	22.31	346	P		P	10 53 26.2	-0.4
	baz=163							
X41A	Kaden, Bauxite	22.41	351	P		P	10 53 28.0	+0.3
	baz=169							
133A	Hamilton Ranch	22.44	336	P		P	10 53 27.4	-0.8
	baz=152,SNR=43							
X40A	Basin Creek Fa	22.46	350	P		P	10 53 28.9	+0.6
	baz=168,SNR=31							
Z35A	Perchaven, San	22.48	340	P		P	10 53 28.7	+0.3
	baz=156,SNR=18							
Y37A	Hugo	22.58	344	P		P	10 53 29.7	+0.1
	baz=161,SNR=34							
MIAR	Mount Ida	22.65	349	P		P	10 53 30.5	+0.3
	baz=166,SNR=75							
MIAR	Mount Ida	22.65	349	eP		P	10 53 30.6	+0.3
MIAR				pmax		pmax		
	comp=Z,106nm,1.1s							
MIAR	Mount Ida	22.65	349	eP		P	10 53 30.6	+0.4
	comp=Z,106nm,1.1s							
UALR	University of	22.66	351	eP		P	10 53 31.1	+0.7
	comp=Z,44nm,0.8s							
Y36A	Durant	22.70	342	P		P	10 53 30.4	-0.4
	baz=159,SNR=27							
X39A	Fountain Ranch	22.73	347	P		P	10 53 31.3	+0.2
	baz=165,SNR=20							
Z34A	Collier Ranch,	22.74	339	P		P	10 53 30.3	-1.0
	baz=155							
W45A	Hickory Valley	22.75	358	P		P	10 53 30.0	-1.4
	baz=177,SNR=9.9							
ABTX	Abilene, Hawle	22.75	334	P		P	10 53 30.1	-1.3
	baz=150,SNR=26							
ABTX	Abilene, Hawle	22.75	334	eP		P	10 53 30.3	-1.2
	comp=Z,208nm,1.4s							
W44A	Shelby Farms P	22.76	357	P		P	10 53 30.2	-1.2
	baz=176							
JSC	Jenkinsville	22.77	15	eP		P	10 53 33.1	+1.6
JSC				pmax		pmax		
	comp=Z,100nm,1.2s							
JSC	Jenkinsville	22.77	15	eP		P	10 53 33.0	+1.6
	comp=Z,100nm,1.2s							
SWET	Sewanee	22.89	5	eP	

TKL **Tuckaleechee C** 23.58 9 P P 10 53 39.4 -0.2
comp=Z,45nm,1.0s,baz=191,slow=9.5,SNR=27
TKL LR LR 11 03 20.7
comp=Z,452nm,18.8s,baz=202,slow=38
TKL **Tuckaleechee C** 23.58 9 eP P 10 53 40.1 +0.5
TKL pmax pmax
comp=Z,88nm,1.2s
TKL **Tuckaleechee C** 23.58 9 eP P 10 53 40.1 +0.5
comp=Z,88nm,1.2s
V41A **Mountainview** 23.63 352 P P 10 53 39.7 -0.4
baz=170,SNR=34
W37B **Quinton** 23.63 345 P P 10 53 40.0 -0.1
baz=162,SNR=85
WVT **Waverly** 23.71 1 eP P 10 53 40.0 -0.7
WVT pmax pmax
comp=Z,26nm,1.2s
WVT **Waverly** 23.71 1 eP P 10 53 40.0 -0.7
comp=Z,26nm,1.2s
V40A **Witts Springs** 23.74 351 P P 10 53 41.0 -0.2
baz=169,SNR=43
X34A **Smith Ranch, M** 23.83 340 P P 10 53 41.8 -0.1
baz=156,SNR=85
W36A **Wetumka** 23.84 344 P P 10 53 41.2 -0.8
baz=160,SNR=9.6
GLAT **Glass** 23.86 358 eP P 10 53 40.1 -2.1
V39A **Pettigrew** 23.92 349 P P 10 53 42.5 -0.3
baz=167,SNR=70
X33A **Lawton** 24.00 339 P P 10 53 42.6 -0.9
baz=154,SNR=109
W35A **Tecumseh** 24.04 342 P P 10 53 43.1 -0.7
baz=159,SNR=14
U42A **Revenden** 24.08 354 P P 10 53 43.4 -0.7
baz=173,SNR=18
V38A **Canehill** 24.09 348 P P 10 53 43.5 -0.9
baz=165,SNR=25
U41A **Viola** 24.15 353 P P 10 53 44.0 -0.8
baz=171
X32A **Elmer** 24.18 337 P P 10 53 44.6 -0.6
baz=153,SNR=21
V37A **Hulbert** 24.27 346 P P 10 53 45.6 -0.4
baz=163,SNR=86
WMOK **Wichita Mounta** 24.28 339 P P 10 53 45.2 -0.9
baz=154,SNR=62
WMOK **Wichita Mounta** 24.28 339 eP P 10 53 45.8 -0.3
WMOK pmax pmax
comp=Z,116nm,1.3s
WMOK **Wichita Mounta** 24.28 339 eP P 10 53 45.8 -0.3
comp=Z,116nm,1.3s
U40A **Yellville** 24.29 351 P P 10 53 46.1 -0.1
baz=169,SNR=86
V36A **Jenks** 24.38 345 P P 10 53 45.9 -1.0
baz=161,SNR=15
W34A **Bridge Creek,** 24.39 341 P P 10 53 46.9 -0.2
baz=157,SNR=18
W34A **Bridge Creek,** 24.39 341 eP P 10 53 46.9 -0.2
comp=Z,158nm,0.8s
HHAR **Hobbs** 24.40 349 eP P 10 53 46.8 -0.4
comp=Z,89nm,1.2s
U39A **Green Forest** 24.42 350 P P 10 53 46.7 -0.6
baz=167,SNR=50
PBMO **Poplar Bluff** 24.43 356 eP P 10 53 47.2 -0.2
comp=Z,37nm,1.0s
TUL1 **Leonard** 24.45 345 P P 10 53 47.0 -0.6
baz=162,SNR=18
TUL1 **Leonard** 24.45 345 eP P 10 53 47.0 -0.6
comp=Z,97nm,1.1s
TZTN **Tazewell** 24.49 9 eP P 10 53 48.1 +0.1
comp=Z,100nm,1.6s
W33A **Caddo, Fort Co** 24.55 340 P P 10 53 48.7 +0.2
baz=155,SNR=21
V35A **Meyer Ranch, C** 24.60 343 P P 10 53 47.9 -1.1
baz=159,SNR=6.6
U38A **Gravette** 24.64 348 P P 10 53 48.9 -0.5
baz=165,SNR=30
U37A **Salina** 24.77 347 P P 10 53 50.1 -0.4
baz=164,SNR=82
W32A **Sentinel** 24.80 338 P P 10 53 50.0 -0.7
baz=153,SNR=85
T41A **Mountain View** 24.82 353 P P 10 53 50.3 -0.6
baz=172,SNR=19
V34A **Guthrie** 24.86 342 P P 10 53 50.5 -0.9
baz=158,SNR=31
V34A **Guthrie** 24.86 342 eP P 10 53 50.7 -0.6
comp=Z,77nm,0.7s
U36A **Oologah** 24.90 346 P P 10 53 50.2 -1.5
baz=162
MNTX **Cornudas Mount** 24.92 323 P P 10 53 51.1 -0.8
baz=137,SNR=42
MNTX **Cornudas Mount** 24.92 323 eP P 10 53 51.2 -0.7
comp=Z,50nm,1.3s
T40A **Mansfield** 25.02 352 P P 10 53 52.5 -0.3
baz=170
T39A **Clever** 25.03 350 P P 10 53 52.5 -0.3
baz=168,SNR=46
V33A **Lossen Ranch,** 25.09 340 P P 10 53 52.6 -0.9
baz=156,SNR=24
U35A **Pawnee** 25.14 344 P P 10 53 52.7 -1.2
baz=160,SNR=7.3
S43A **Fulton Ridge,** 25.20 357 P P 10 53 53.2 -1.2
baz=176,SNR=6.9
T38A **Diamond** 25.20 349 P P 10 53 53.7 -0.7
baz=166,SNR=46
S45A **Carrier Mills** 25.25 359 P P 10 53 53.3 -1.5
baz=179
V32A **Arapaho** 25.26 339 P P 10 53 53.8 -1.2
baz=154,SNR=18
S44A **Carbondale** 25.28 358 P P 10 53 54.1 -1.0
baz=178,SNR=10
MSTX **Muleshoe** 25.29 331 P P 10 53 54.6 -0.8
baz=145,SNR=68
MSTX **Muleshoe** 25.29 331 eP P 10 53 54.7 -0.8
comp=Z,156nm,1.1s
SIUC **Southern Illin** 25.30 358 eP P 10 53 54.5 -0.8
comp=Z,73nm,1.3s
S41A **Jillco Farms,** 25.36 354 P P 10 53 54.3 -1.5
baz=172,SNR=24
T37A **Cheneyville 18** 25.41 348 P P 10 53 55.9 -0.5
baz=164,SNR=34
U34A **Anderson Ranch** 25.43 342 P P 10 53 55.4 -1.1
baz=158,SNR=25
U34A **Anderson Ranch** 25.43 342 eP P 10 53 55.6 -0.9
comp=Z,164nm,1.4s
S40A **Lebanon** 25.46 352 P P 10 53 56.1 -0.6
baz=170,SNR=34
AMTX **Amarillo** 25.56 334 P P 10 53 57.5 -0.3
baz=148
AMTX **Amarillo** 25.56 334 eP P 10 53 57.7 -0.1
comp=Z,161nm,1.2s
T36A **Boggs Farm, Ca** 25.57 346 P P 10 53 56.9 -0.9
baz=162,SNR=24
T35A **Sooner Cattle** 25.59 345 P P 10 53 57.2 -0.8
baz=161,SNR=12
U33A **Lingo Farm, Me** 25.60 341 P P 10 53 57.1 -1.0
baz=157,SNR=10
S39A **Bolivar** 25.67 351 P P 10 53 58.1 -0.5
baz=168,SNR=83
S38A **Stockton** 25.71 350 P P 10 53 58.4 -0.5
baz=167,SNR=29
BLA **Blacksburg** 25.76 14 eP P 10 53 59.2 -0.3
BLA pmax pmax
comp=Z,54nm,1.3s
BLA **Blacksburg** 25.76 14 eP P 10 53 59.2 -0.3
comp=Z,54nm,1.3s
R44A **Waltonville** 25.83 358 P P 10 53 59.4 -0.7
baz=178,SNR=6.5
U32A **Winter Ranch,** 25.84 340 P P 10 53 59.8 -0.4
baz=155,SNR=15
WCI **Wyandotte Cave** 25.86 4 eP P 10 53 59.4 -1.0
WCI pmax pmax
comp=Z,21nm,0.7s
WCI **Wyandotte Cave** 25.86 4 eP P 10 53 59.4 -1.0
comp=Z,21nm,0.7s
T34A **McClaskey Farm** 25.87 343 P P 10 53 59.6 -0.9
baz=159,SNR=11
S37A **Fort Scott** 26.01 348 P P 10 54 01.1 -0.6
baz=165,SNR=30
R40A **Maddies Statio** 26.11 353 P P 10 54 01.8 -0.9
baz=171,SNR=34
S36A **Lake Cedric, C** 26.14 347 P P 10 54 02.0 -0.8
baz=163,SNR=28
R39A **Chumby, Stover** 26.24 351 P P 10 54 03.1 -0.6
baz=169,SNR=52
T33A **Patterson Ranc** 26.24 342 P P 10 54 02.8 -1.0
baz=157
R38A **Fenwick Farm,** 26.25 350 P P 10 54 03.0 -0.9
baz=167,SNR=27
S35A **Otter Creek Ra** 26.27 345 P P 10 54 03.4 -0.6
baz=162,SNR=24

OLIL **Olney** 26.30 0 eP P 10 54 03.8 -0.5
comp=Z,25nm,0.9s
Q44A **Meyer Farm, Va** 26.48 359 P P 10 54 05.2 -0.8
baz=178,SNR=7.0
S34A **Willow Spring** 26.49 344 P P 10 54 04.7 -1.4
baz=160
R37A **Teagarden Farm** 26.54 348 P P 10 54 06.0 -0.6
baz=165
T32A **Huddler Ranch,** 26.54 341 P P 10 54 05.6 -1.0
baz=156,SNR=12
Q43A **New Douglas** 26.54 357 P P 10 54 05.3 -1.2
baz=177
Q42A **Golden Eagle** 26.56 356 P P 10 54 06.0 -0.7
baz=175
S33A **Kaszmaul Farm,** 26.64 343 P P 10 54 06.1 -1.3
baz=158,SNR=5.6
NNA **Nana** 26.67 154 LR LR 11 02 46.2
comp=Z,450nm,18.7s,baz=290,slow=32
R36A **Gordon, Harris** 26.69 347 P P 10 54 06.9 -1.0
baz=164,SNR=8.9
Q40A **Laux Farm, Aux** 26.78 353 P P 10 54 07.4 -1.2
baz=172,SNR=14
R35A **Emporia Munici** 26.85 346 P P 10 54 08.4 -0.9
baz=162
121A **Cookes Peak, D** 26.94 321 P P 10 54 08.7 -1.7
baz=134
Q38A **Cooks Store, C** 26.96 351 P P 10 54 10.0 -0.3
baz=168,SNR=23
Q37A **Longview Farm,** 27.02 349 P P 10 54 09.9 -0.9
baz=166
S32A **Newby Ranch, P** 27.02 341 P P 10 54 10.1 -0.8
baz=156,SNR=9.5
R34A **Isabella, Hill** 27.09 344 P P 10 54 10.4 -1.0
baz=160,SNR=6.6
319A **Douglas** 27.12 318 eP P 10 54 13.6 +1.6
comp=Z,16nm,1.0s
P42A **Winchester** 27.22 356 P P 10 54 11.6 -0.9
baz=175
Q36A **Arnold C. Orve** 27.30 348 P P 10 54 12.0 -1.3
baz=164
R33A **Olander Ranch,** 27.30 343 P P 10 54 12.5 -0.8
baz=159,SNR=7.6
P40A **Paris** 27.31 354 P P 10 54 12.3 -1.1
baz=172,SNR=24
Q35A **Mercer Eighty,** 27.32 347 P P 10 54 12.6 -1.0
baz=163
P39B **Salisbury** 27.35 352 P P 10 54 12.7 -1.1
baz=170,SNR=18
P41A **Barry, Barry** 27.36 355 P P 10 54 12.8 -1.1
baz=174
BNM **Barren Site** 27.43 325 eP P 10 54 15.4 +0.5
Y22D **IRIS PASSCAL I** 27.54 325 P P 10 54 12.8 -2.9
baz=137
Y22D **IRIS PASSCAL I** 27.54 325 eP P 10 54 15.3 -0.4
comp=Z,100nm,1.1s
LPM **Los Pinos Moun** 27.55 326 eP P 10 54 16.0 +0.1
P38A **Dawn** 27.59 351 P P 10 54 15.1 -0.9
baz=169,SNR=20
Q34A **Chapman** 27.60 345 P P 10 54 15.1 -0.9
baz=161,SNR=13
R32A **Long Quarter,** 27.62 342 P P 10 54 15.5 -0.8
baz=157
KSU1 **Kansas State U** 27.68 346 P P 10 54 16.0 -0.7
baz=156,SNR=10
KSU1 **Kansas State U** 27.68 346 eP P 10 54 16.2 -0.6
comp=Z,43nm,1.0s
P37A **Lathrop** 27.69 350 P P 10 54 15.9 -0.9
baz=167,SNR=9.5
O41A **Passleys Farm,** 27.78 356 P P 10 54 16.4 -1.2
baz=174
O42A **Bath** 27.81 357 P P 10 54 16.3 -1.5
baz=176
O40A **La Belle** 27.88 354 P P 10 54 17.7 -0.7
baz=172,SNR=10
P36A **Good Intent, A** 27.88 348 P P 10 54 17.7 -0.8
baz=165,SNR=7.5
LAZ **Ladron** 27.90 325 eP P 10 54 19.1 +0.1
Q33A **Connelly Farm,** 27.90 344 P P 10 54 17.9 -0.8
baz=160,SNR=7.6
ANMO **Albuquerque** 27.93 327 P P 10 54 19.1 -0.2
baz=139
ANMO **Albuquerque** 27.93 327 c iP P 10 54 19.2 -0.1
ANMO pmax pmax
comp=Z,23nm,1.7s
ANMO **Albuquerque** 27.93 327 eP P 10 54 21.6 +2.3
comp=Z,21nm,1.4s
P35A **Duane Minner,** 27.96 347 P P 10 54 18.1 -1.1
baz=163,SNR=12
SFIN **Lafayette** 27.97 2 P P 10 54 18.0 -1.3
baz=182
SFIN **Lafayette** 27.97 2 eP P 10 54 17.8 -1.5
comp=Z,60nm,1.8s
O38A **Galt** 28.07 351 P P 10 54 18.8 -1.4
baz=169
O39A **Kirksville** 28.08 353 P P 10 54 19.2 -1.1
baz=171
Q32A **Meitler Ranch,** 28.10 343 P P 10 54 19.9 -0.6
baz=158,SNR=6.8
HDIL **Hopedale** 28.14 358 P P 10 54 19.8 -1.0
baz=178
P34A **Walnut Farm, R** 28.16 346 P P 10 54 20.7 -0.4
baz=167,SNR=18
ACSO **Alum Creek Sta** 28.19 9 eP P 10 54 21.2 0.0
comp=Z,14nm,0.7s
O37A **Wolven Farm, M** 28.22 350 P P 10 54 20.6 -0.9
baz=168
P33A **Williams Farm,** 28.27 344 P P 10 54 21.5 -0.6
baz=160,SNR=6.8
CBKS **Cedar Bluff** 28.29 341 P P 10 54 21.5 -0.8
baz=156
CBKS **Cedar Bluff** 28.29 341 eP P 10 54 22.5 +0.2
CBKS pmax pmax
comp=Z,137nm,1.6s
CBKS **Cedar Bluff** 28.29 341 eP P 10 54 22.5 +0.2
comp=Z,137nm,1.6s
O36A **Bolckow** 28.33 349 P P 10 54 21.2 -1.3
baz=166
O35A **Humboldt** 28.64 348 P P 10 54 24.1 -1.2
baz=164
T25A **Trinidad** 28.65 332 P P 10 54 26.5 +0.9
baz=145,SNR=24
T25A **Trinidad** 28.65 332 eP P 10 54 26.6 +0.9
comp=Z,46nm,1.2s
N39A **Derby Farms, D** 28.69 353 P P 10 54 24.9 -0.9
baz=171,SNR=12
P32A **Huiting Farm,** 28.70 343 P P 10 54 25.1 -0.7
baz=158,SNR=7.9
N38A **Joes South For** 28.70 352 P P 10 54 24.8 -1.0
baz=170
TUC **Tucson** 28.70 317 P P 10 54 26.2 +0.2
baz=129
TUC **Tucson** 28.70 317 eP P 10 54 23.4 -2.7
TUC pmax pmax
comp=Z,13nm,1.3s
TUC **Tucson** 28.70 317 eP P 10 54 23.4 -2.7
comp=Z,13nm,1.3s
O34A **Beatrice** 28.73 346 P P 10 54 25.3 -0.9
baz=162,SNR=5.9
N37A **Lee Faris, Mou** 28.81 351 P P 10 54 26.0 -0.8
baz=168,SNR=7.0
O33A **Hebron** 28.85 345 P P 10 54 26.9 -0.3
baz=161,SNR=25
N36A **Muff Farm, Cla** 28.99 349 P P 10 54 27.5 -0.9
baz=166
O56A **Blue Knob Stat** 29.12 15 P P 10 54 29.3 -0.3
baz=200
N35A **Tabor** 29.16 348 P P 10 54 28.7 -1.2
baz=165
O32A **Brockman Farm,** 29.20 344 P P 10 54 29.4 -0.9
baz=159
M39A **Webster** 29.25 354 P P 10 54 30.1 -0.6
baz=172,SNR=16
M38A **Pleasantville** 29.31 352 P P 10 54 30.3 -0.9
baz=170
N34A **Lincoln** 29.32 347 P P 10 54 30.6 -0.7
baz=163,SNR=5.5
O31A **Woolen Ranch,** 29.39 343 P P 10 54 31.5 -0.5
baz=157
M37A **Trindle Farm,** 29.41 351 P P 10 54 31.5 -0.6
baz=168
N54A **Moraine State** 29.44 13 P P 10 54 32.0 -0.3
baz=196
KSCO **Kaye Shedlock'** 29.49 337 P P 10 54 33.0 0.0
baz=150,SNR=7.7
KSCO **Kaye Shedlock'** 29.49 337 eP P 10 54 33.4 +0.3
comp=Z,40nm,0.8s
MVL **Millersville** 29.50 19 eP P 10 54 32.0 -0.9
comp=Z,45nm,1.6s

M36A **Felix, Anita** 29.58 350 P P 10 54 32.6 -1.0
baz=167,SNR=6.9
X18A **Snowflake** 29.62 322 eP P 10 54 36.1 +1.7
comp=Z,10.0nm,1.2s
SSPA **Standing Stone** 29.64 16 eP P 10 54 34.1 0.0
comp=Z,44nm,1.8s
SDCO **Great Sand Dun** 29.65 332 P P 10 54 35.2 +0.6
baz=144,SNR=40
SDCO **Great Sand Dun** 29.65 332 eP P 10 54 35.7 +1.1
comp=Z,35nm,1.3s
N32A **Stulken Farm,** 29.68 344 P P 10 54 34.3 -0.2
baz=160
L41A **Preston** 29.71 357 P P 10 54 33.8 -0.9
baz=175
L40A **Anamosa** 29.74 356 P P 10 54 34.2 -0.8
baz=174
M35A **Neola** 29.76 349 P P 10 54 34.6 -0.6
baz=165
SCIA **State Center** 29.79 353 eP P 10 54 34.8 -0.7
comp=Z,101nm,1.3s
L39A **Vinton** 29.87 354 P P 10 54 35.1 -1.1
baz=172,SNR=10
W18A **Petrified Fore** 29.90 323 P P 10 54 35.1 -1.7
baz=134
W18A **Petrified Fore** 29.90 323 eP P 10 54 36.8 0.0
comp=Z,90nm,1.9s
N31A **Bailey Ranch,** 29.91 344 P P 10 54 36.0 -0.6
baz=158
M34A **Aspy Farms, Fr** 29.97 347 P P 10 54 36.5 -0.6
baz=163
L38A **Oak Wood Farm,** 29.99 353 P P 10 54 36.4 -0.9
baz=171,SNR=22
M54A **Oil Creek Stat** 30.03 13 P P 10 54 36.8 -0.9
baz=197
L37A **Phoenix Point,** 30.08 352 P P 10 54 36.6 -1.4
baz=169,SNR=11
M33A **Taylor Creek F** 30.17 347 P P 10 54 38.0 -0.9
baz=162
L36A **Harm Buss Farm** 30.19 350 P P 10 54 38.0 -1.0
baz=167,SNR=5.9
K41A **Shullsburg** 30.23 357 P P 10 54 38.1 -1.2
baz=176
BGNE **Belgrade** 30.25 345 P P 10 54 39.1 -0.4
baz=160
BGNE **Belgrade** 30.25 345 eP P 10 54 39.2 -0.3
comp=Z,74nm,1.1s
S22A **4UR Ranch, Cre** 30.28 330 P P 10 54 40.2 -0.1
baz=142,SNR=21
S22A **4UR Ranch, Cre** 30.28 330 eP P 10 54 42.2 +2.0
comp=Z,16nm,0.9s
L35A **Bielow Farm, R** 30.35 349 P P 10 54 39.4 -1.1
baz=166
LUPA **Lehigh Univers** 30.36 20 eP P 10 54 41.3 +0.7
comp=Z,26nm,1.3s
K40A **Colesburg** 30.37 356 P P 10 54 39.4 -1.2
baz=174
L34A **Svendsen Farm,** 30.37 348 P P 10 54 39.1 -1.6
baz=164
M31A **Lambtecht Ranc** 30.40 344 P P 10 54 40.5 -0.5
baz=159,SNR=5.5
K39A **Oelwein** 30.44 355 P P 10 54 40.0 -1.2
baz=173,SNR=11
X16A **Lo Mia Camp, P** 30.47 320 eP P 10 54 42.6 +0.8
comp=Z,5.2nm,0.9s
K38A **Parkersburg** 30.47 353 P P 10 54 40.2 -1.2
baz=171
Q24A **Divide** 30.49 333 P P 10 54 41.9 -0.1
baz=146,SNR=5.9
Q24A **Divide** 30.49 333 eP P 10 54 43.6 +1.5
comp=Z,29nm,1.4s
N59A **State Game Lan** 30.52 19 P P 10 54 41.9 -0.1
baz=204
K36A **Gilmore City** 30.68 351 P P 10 54 42.2 -1.1
baz=168
K37A **Belmond** 30.69 352 P P 10 54 42.4 -1.0
baz=170,SNR=36
MVCO **Mesa Verde** 30.72 327 P P 10 54 43.9 -0.1
baz=138,SNR=7.4
MVCO **Mesa Verde** 30.72 327 eP P 10 54 45.2 +1.2
comp=Z,7.6nm,0.8s
L33A **Hoskins** 30.76 347 P P 10 54 42.7 -1.4
baz=162
L32A **Elgin** 30.77 346 P P 10 54 43.7 -0.5
baz=161
K35A **Storm Lake** 30.89 350 P P 10 54 44.0 -1.2
baz=166
PTGA **Pitinga** 30.92 113 eP P 10 54 46.3 +0.5
comp=Z,4.4nm,0.8s
J41A **Loganville** 30.97 357 P P 10 54 44.4 -1.4
baz=176,SNR=6.9
OGNE **Ogallala** 30.98 339 P P 10 54 45.9 -0.2
baz=153
OGNE **Ogallala** 30.98 339 eP P 10 54 46.9 +0.8
comp=Z,56nm,1.3s
K34A **Le Mars** 31.01 349 P P 10 54 45.2 -1.1
baz=165
J40A **Soldiers Grove** 31.04 356 P P 10 54 45.3 -1.2
baz=175
J39A **Decorah** 31.05 355 P P 10 54 45.3 -1.2
baz=173
J38A **Wedel Dairy, R** 31.10 354 P P 10 54 46.2 -0.9
baz=172,SNR=21
K33A **Hardington** 31.12 347 P P 10 54 46.0 -1.2
baz=163
L31A **Butterfield Fa** 31.14 345 P P 10 54 46.9 -0.6
baz=160
WUAZ **Wupatki** 31.15 322 P P 10 54 48.5 +0.7
baz=132,SNR=5.8
WUAZ **Wupatki** 31.15 322 eP P 10 54 48.6 +0.9
comp=Z,15nm,1.1s
Y14A **Wickenburg** 31.17 318 eP P 10 54 48.8 +1.0
comp=Z,60nm,2.0s
Y14A eP cP PcP PcP 10 57 44.0 +1.9
J37A **Redenius Farm,** 31.22 353 P P 10 54 47.4 -0.6
baz=170,SNR=29
J36A **Seneca 1, Swea** 31.34 351 P P 10 54 48.0 -1.1
baz=168,SNR=7.6
ISCO **Idaho Springs** 31.38 334 P P 10 54 49.8 -0.1
baz=146,SNR=9.9
ISCO **Idaho Springs** 31.38 334 eP P 10 54 50.7 +0.8
ISCO pmax pmax
comp=Z,37nm,1.6s
ISCO **Idaho Springs** 31.38 334 eP P 10 54 50.7 +0.8
comp=Z,37nm,1.6s
K32A **Verdigre** 31.39 346 P P 10 54 48.5 -1.0
baz=161
PV01 **Paradox Valley** 31.45 328 eP P 10 54 50.5 0.0
SMCO **Snowmass** 31.48 331 eP P 10 54 52.8 +1.8
comp=Z,19nm,1.1s
J35A **Milford** 31.51 350 P P 10 54 48.9 -1.8
baz=167
K31A **O'Neill** 31.54 345 P P 10 54 50.8 -0.2
baz=160,SNR=6.5
J34A **George** 31.56 349 P P 10 54 50.2 -0.9
baz=165
PV05 **Paradox Valley** 31.68 328 eP P 10 54 53.1 +0.6
J33A **Davis** 31.79 348 P P 10 54 51.7 -1.5
baz=164
I38A **Scanlan Farm,** 31.80 354 P P 10 54 52.0 -1.2
baz=172,SNR=7.8
K30A **Basset** 31.81 344 P P 10 54 53.2 -0.1
baz=158,SNR=11
PV10 **Paradox Valley** 31.88 328 eP P 10 54 54.1 -0.2
I37A **Lemond, Waseca** 31.89 353 P P 10 54 53.1 -0.9
baz=170,SNR=22
I35A **Creekview Farm** 31.95 351 P P 10 54 53.1 -1.4
baz=167
I36A **Fitzsimmons Fa** 31.97 352 P P 10 54 53.4 -1.3
baz=169,SNR=8.9
PV09 **Paradox Valley** 32.02 328 eP P 10 54 55.8 +0.3
J32A **Parkston** 32.03 347 P P 10 54 53.9 -1.4
baz=162
ECSD **EROS Data Cent** 32.12 349 P P 10 54 54.5 -1.4
baz=164,SNR=22
ECSD **EROS Data Cent** 32.12 349 eP P 10 54 54.6 -1.4
comp=Z,57nm,1.3s
PDMCI **Parker Dam,Lak** 32.14 317 P P 10 54 53.9 -2.4
baz=126
J31A **Geddes** 32.17 346 P P 10 54 55.4 -1.0
baz=160
I34A **Hadley** 32.28 350 P P 10 54 56.3 -1.1
baz=166
U15A **North Rim** 32.31 322 eP P 10 54 59.8 +1.7
comp=Z,12nm,1.4s
J30A **Dallas** 32.39 345 P P 10 54 57.8 -0.6
baz=159,SNR=12
H37A **Dierks Farm, C** 32.40 354 P P 10 54 57.6 -0.8
baz=171,SNR=12

N23A Red Feather La 32.43 335 *e*P P 10 54 59.7 +0.6
comp=Z,20nm,1.3s
W13A Hualapai Mount 32.46 319 *e*P P 10 55 00.3 +1.0
comp=Z,3.8nm,0.8s
W13A *e*pP **pP** 10 55 08.9 -2.3
I33A Coleman 32.46 348 P P 10 54 57.4 -1.6
baz=164
H36A Jessenland, He 32.51 352 P P 10 54 58.8 -0.6
baz=170,SNR=17
PHWY Pilot Hill 32.57 336 *e*P P 10 55 00.5 +0.2
comp=Z,35nm,1.4s
I32A Karley and Nic 32.58 348 P P 10 54 58.9 -1.1
baz=163
SAML Samuel 32.67 129 *e*P P 10 55 01.8 +0.8
comp=Z,49nm,0.6s
H35A Sunnyside Ranc 32.76 351 P P 10 55 00.2 -1.3
baz=168,SNR=36
TRY Troy 32.84 20 *e*P P 10 55 02.7 +0.4
comp=Z,58nm,1.3s
O20A White River Ci 32.84 331 P P 10 55 03.3 +0.8
baz=142,SNR=26
O20A White River Ci 32.84 331 *e*P P 10 55 05.0 +2.4
comp=Z,45nm,1.0s
H34A Spellman Lake, 32.87 350 P P 10 55 01.4 -1.2
baz=166,SNR=6.6
SPMN Marine on St. 33.02 354 P P 10 55 02.6 -1.2
baz=172,SNR=31
SPMN Marine on St. 33.02 354 *e*P P 10 55 02.7 -1.2
comp=Z,129nm,1.1s
KNB Kanab 33.02 322 *e*P P 10 55 05.4 +1.2
KNB pmax pmax
comp=Z,18nm,1.2s
KNB Kanab 33.02 322 *e*P P 10 55 05.4 +1.2
comp=Z,18nm,1.2s
H32A Carlson Farm, 33.03 348 P P 10 55 02.4 -1.5
baz=163,SNR=10
H33A Prehn Over Nor 33.06 349 P P 10 55 02.7 -1.5
baz=164,SNR=6.7
G36A St. Michael 33.14 353 P P 10 55 03.7 -1.2
baz=170,SNR=12
SRU San Rafael Swe 33.20 327 *e*P P 10 55 06.3 +0.6
SRU pmax pmax
comp=Z,29nm,1.5s
SRU San Rafael Swe 33.20 327 *e*P P 10 55 06.3 +0.6
comp=Z,29nm,1.5s
G35A Watkins 33.22 352 P P 10 55 04.1 -1.4
baz=169
H31A Wolsey 33.23 347 P P 10 55 04.1 -1.5
baz=161
SADO Sadowa 33.26 12 *e*P P 10 55 04.7 -1.3
comp=Z,16nm,0.9s
LCMT Little Creek M 33.27 322 *e*P P 10 55 04.8 -1.5
comp=Z,6.0nm,1.1s
SUSD Miller 33.30 346 P P 10 55 05.4 -0.9
baz=160
PFO Pinyon Flats O 33.33 314 *e*P P 10 55 07.5 +0.6
PFO pmax pmax
comp=Z,7.0nm,1.0s
PFO Pinyon Flats O 33.33 314 *e*P P 10 55 07.5 +0.6
comp=Z,6.5nm,1.0s
G34A Benson 33.41 351 P P 10 55 05.7 -1.6
baz=167,SNR=13
G33A Ortonville 33.50 349 P P 10 55 06.6 -1.5
baz=165,SNR=11
SZCU Shurtz Canyon 33.57 323 *e*P P 10 55 10.3 +1.3
comp=Z,16nm,1.2s
P17A Butcher Ranch, 33.58 328 *e*P P 10 55 09.2 +0.2
comp=Z,21nm,1.2s
MSU Marysvale 33.67 325 *e*P P 10 55 10.4 +0.5
MSU Marysvale 33.67 325 *e*P P 10 55 10.3 +0.5
COWI Conover 33.67 359 *e*P P 10 55 08.2 -1.3
TMUT Trail Mountain 33.70 327 *e*P P 10 55 10.1 -0.1
comp=Z,27nm,1.6s
CCUT Cedar City 33.70 323 *e*P P 10 55 10.7 +0.6
comp=Z,6.1nm,1.0s
F36A Milaca 33.73 353 P P 10 55 08.3 -1.7
baz=170,SNR=29
G32A Webster 33.76 348 P P 10 55 09.2 -1.2
baz=163,SNR=15
NCB Newcomb 33.77 18 *e*P P 10 55 10.1 -0.4
comp=Z,0.4nm,1.4s
F35A Swanville 33.85 352 P P 10 55 09.9 -1.2
baz=169,SNR=19
G31A Conde 33.88 347 P P 10 55 09.7 -1.7
baz=162
F34A Alexandria 33.89 351 P P 10 55 10.1 -1.3
baz=168,SNR=8.2
PLVO Plevna 33.98 14 *e*P P 10 55 11.2 -1.0
comp=Z,50nm,1.7s
F33A 5 Mile Ranch, 34.10 350 P P 10 55 11.8 -1.5
baz=166,SNR=28
K22A Casper 34.13 336 P P 10 55 13.8 +0.1
baz=147,SNR=11
K22A Casper 34.13 336 *e*P P 10 55 14.5 +0.7
comp=Z,88nm,1.7s
LONY Lake Ozonia 34.25 17 *e*P P 10 55 13.7 -0.9
comp=Z,40nm,1.3s
E37A Wrenshall 34.31 355 P P 10 55 13.7 -1.4
baz=173
E36A McGregor 34.35 354 P P 10 55 13.7 -1.7
baz=171,SNR=20
RSSD Black Hills 34.48 340 P P 10 55 16.8 0.0
baz=152
RSSD Black Hills 34.48 340 *e*P P 10 55 17.3 +0.5
RSSD pmax pmax
comp=Z,25nm,1.3s
RSSD Black Hills 34.48 340 *e*P P 10 55 17.3 +0.5
comp=Z,25nm,1.3s
F31A Hecla 34.49 348 P P 10 55 15.0 -1.7
baz=162
E35A Pequot Lakes 34.52 352 P P 10 55 15.9 -1.0
baz=169,SNR=7.9
E34A Wadena 34.58 352 P P 10 55 16.2 -1.2
baz=168
NLU North Lily Min 34.63 327 *e*P P 10 55 19.5 +1.3
comp=Z,7.8nm,1.2s
F30A Leola 34.64 347 P P 10 55 16.3 -1.6
baz=161
E33A Westby DABS, E 34.70 351 P P 10 55 16.7 -1.7
baz=166,SNR=5.8
LPAZ La Paz 34.70 145 P P 10 55 22.1 +2.8
comp=Z,3.9nm,1.1s,baz=312,slow=6.9,SNR=10
LPAZ LR LR 11 10 11.1
comp=Z,629nm,19.0s,baz=314,slow=37
LPAZ La Paz 34.70 145 *e*P P 10 55 19.5 +0.1
LPAZ pmax pmax
comp=Z,15nm,1.4s
LPAZ La Paz 34.70 145 *e*P P 10 55 19.5 +0.1
comp=Z,15nm,1.4s
FRNY Flat Rock 34.75 18 *e*P P 10 55 18.5 -0.3
comp=Z,24nm,1.2s
JLU Jordanelle 34.78 328 *e*P P 10 55 19.8 +0.3
comp=Z,11nm,1.2s
F29A Eureka 34.82 346 P P 10 55 17.8 -1.7
baz=160
D37A Cotton 34.90 355 P P 10 55 18.6 -1.6
baz=173,SNR=18
E32A Braaten, Kindr 34.96 349 P P 10 55 18.9 -1.8
baz=165
D36A Goodland 34.99 354 P P 10 55 19.3 -1.6
baz=171,SNR=13
D35A Remer 34.99 353 P P 10 55 19.2 -1.7
baz=170,SNR=9.0
CTU Camp Tracy 35.00 328 *e*P P 10 55 22.1 +0.8
comp=Z,37nm,1.9s
E31A Nome 35.09 348 P P 10 55 20.0 -1.8
baz=163
TPNV Topopah Spring 35.10 319 *e*P P 10 55 20.8 -1.4
TPNV pmax pmax
comp=Z,24nm,1.8s
TPNV Topopah Spring 35.10 319 *e*P P 10 55 20.8 -1.4
comp=Z,24nm,1.8s
TCUT Toone Canyon 35.14 329 *e*P P 10 55 22.8 +0.2
comp=Z,75nm,1.9s
D34A Park Rapids 35.14 352 P P 10 55 20.6 -1.6
baz=168,SNR=15
DUG Dugway, Tooele 35.20 326 *e*P P 10 55 23.1 +0.1
DUG pmax pmax
comp=Z,13nm,1.5s
DUG Dugway, Tooele 35.20 326 *e*P P 10 55 23.1 +0.1
comp=Z,12nm,1.5s
D33A AnnSam, Waubun 35.29 351 P P 10 55 22.1 -1.4
baz=167,SNR=22
C38A Sawbill Land. 35.38 356 P P 10 55 21.9 -2.3
baz=175,SNR=7.0
C39A Grand Marais 35.42 358 P P 10 55 22.2 -2.4
baz=177
C37A Embarrass 35.45 355 P P 10 55 23.1 -1.8
baz=173,SNR=9.5
D32A Dogwood Acres, 35.48 350 P P 10 55 23.5 -1.6
baz=165,SNR=6.1
BW06 Boulder Array 35.52 333 P P 10 55 25.3 -0.5
baz=142,SNR=7.5
BW06 Boulder Array 35.52 333 *e*P P 10 55 25.7 -0.1
PD31 Pinedale Array 35.52 333 *e*P P 10 55 25.8 -0.1
PDAR Pinedale Array 35.52 333 P P 10 55 25.1 -0.7
comp=Z,1.3nm,0.8s,baz=122,slow=8.6,SNR=14
PDAR PcP **PcP** 10 57 54.4 0.0
comp=Z,2.6nm,0.9s,baz=137,slow=4.7,SNR=7.2
PDAR LR LR 11 14 07.9
comp=Z,617nm,18.6s,baz=137,slow=43
D31A Mcclaflin, Tow 35.52 349 P P 10 55 23.8 -1.7
baz=164,SNR=7.8
C36A Pine Crest Far 35.53 355 P P 10 55 23.9 -1.7
baz=172,SNR=17
R11A Troy Canyon, C 35.55 322 P P 10 55 25.6 -0.5
baz=129
R11A Troy Canyon, C 35.55 322 *e*P P 10 55 27.2 +1.1
comp=Z,10.0nm,1.4s
HWUT Hardware Ranch 35.58 329 *e*P P 10 55 26.5 +0.2
comp=Z,12nm,0.9s
DAC Darwin (Calif) 35.58 317 *e*P P 10 55 27.1 +0.7
DAC pmax pmax
comp=Z,3.0nm,0.9s
DAC Darwin (Calif) 35.58 317 *e*P P 10 55 27.1 +0.7
comp=Z,3.1nm,0.9s
C35A Jirik Farms, M 35.59 353 P P 10 55 24.5 -1.6
baz=170,SNR=38
EYMN Ely 35.62 356 P P 10 55 24.5 -1.8
baz=174,SNR=6.9
EYMN Ely 35.62 356 *e*P P 10 55 24.8 -1.5
comp=Z,45nm,1.4s
C34A RKJ Ranch, Bem 35.66 352 P P 10 55 24.9 -1.7
baz=169,SNR=8.8
TRQ Mont Tremblant 35.73 16 *e*P P 10 55 26.8 -0.5
BGU Big Grassy Mou 35.84 327 *e*P P 10 55 28.7 +0.2
comp=Z,10nm,1.1s
C33A Trail 35.88 351 P P 10 55 26.8 -1.8
baz=167
C32A Crookston 36.07 351 P P 10 55 28.9 -1.3
baz=166
B35A Bob, Littlefor 36.22 354 P P 10 55 29.7 -1.7
baz=171,SNR=7.9
AHID Auburn Hatcher 36.23 331 *e*P P 10 55 31.7 -0.2
comp=Z,12nm,0.7s
C31A Landman Farms, 36.24 349 P P 10 55 30.4 -1.3
baz=164,SNR=11
HVU Hansel Valley 36.32 328 *e*P P 10 55 33.2 +0.6
HVU pmax pmax
comp=Z,7.0nm,0.7s
HVU Hansel Valley 36.32 328 *e*P P 10 55 33.1 +0.6
comp=Z,6.5nm,0.7s
B33A Robert and Kas 36.36 352 P P 10 55 31.0 -1.6
baz=165,SNR=5.5
AGMN Agassiz Nation 36.42 351 P P 10 55 32.1 -1.2
baz=167,SNR=43
AGMN Agassiz Nation 36.42 351 *e*P P 10 55 32.0 -1.2
comp=Z,116nm,1.3s
B34A Aery, Baudette 36.45 353 P P 10 55 32.1 -1.2
baz=169,SNR=31
REDW Red Top Meadow 36.58 332 *e*P P 10 55 35.1 +0.3
comp=Z,57nm,1.1s
D26A Manning 36.60 344 P P 10 55 34.3 -0.5
baz=156,SNR=11
SNOW Snow King Moun 36.61 332 *e*P P 10 55 35.2 +0.1
comp=Z,43nm,0.9s
B32A Ashes, Strandq 36.62 351 P P 10 55 34.1 -0.8
baz=166,SNR=81
LOHW Long Hollow 36.66 332 *e*P P 10 55 36.0 +0.5
comp=Z,15nm,1.0s
MDND Maddock 36.67 347 P P 10 55 34.6 -0.7
baz=161,SNR=16
MDND Maddock 36.67 347 *e*P P 10 55 34.6 -0.7
comp=Z,297nm,1.4s
TPAW Teton Pass 36.72 332 *e*P P 10 55 35.2 -0.9
comp=Z,26nm,0.8s
VLDQ Val d'Or 36.80 12 *e*P P 10 55 35.8 -0.6
comp=Z,30nm,1.4s
MOOW Moose Ponds 36.83 332 *e*P P 10 55 38.3 +1.3
comp=Z,7.7nm,0.8s
B31A Greenbush Farm 36.84 350 P P 10 55 35.3 -1.4
baz=158,SNR=9.7
A33A Warroad 36.98 352 P P 10 55 36.8 -1.1
baz=168,SNR=30
IMW Indian Meadow 37.03 332 *e*P P 10 55 40.3 +1.5
comp=Z,7.1nm,0.9s
FLWY Flagg Ranch 37.07 333 *e*P P 10 55 40.0 +1.0
comp=Z,30nm,1.1s
A32A Rocking H Ranc 37.12 351 P P 10 55 37.5 -1.7
baz=166,SNR=11
A31A Lind, St. Vin 37.25 350 P P 10 55 38.8 -1.4
baz=165
H17A Grant Village 37.26 333 *e*P P 10 55 43.3 +2.6
comp=Z,19nm,1.1s
YPP Pitchstone Pla 37.27 333 *e*P P 10 55 41.6 +0.9
comp=Z,23nm,1.4s
RLMT Red Lodge 37.29 335 P P 10 55 40.4 -0.5
baz=144,SNR=15
RLMT Red Lodge 37.29 335 *e*P P 10 55 40.8 -0.1
comp=Z,27nm,1.0s
YFT Old Faithful 37.42 333 *e*P P 10 55 44.2 +2.2
comp=Z,29nm,1.0s
C25A Freed Ranch, W 37.45 343 P P 10 55 41.6 -0.4
baz=155
LAO LASA Array 37.47 340 P P 10 55 41.9 -0.3
baz=150,SNR=8.4
LAO LASA Array 37.47 340 *e*P P 10 55 42.3 +0.2
comp=Z,69nm,1.4s
YMR Man River 37.65 333 *e*P P 10 55 45.0 +1.0
comp=Z,32nm,1.1s
YHH Holmes Hill 37.69 333 *e*P P 10 55 45.2 +0.8
comp=Z,17nm,1.0s
B26A Jensen Ranch, 37.79 345 P P 10 55 44.7 -0.1
baz=157
YHB Horse Butte 37.81 333 *e*P P 10 55 46.3 +0.9
comp=Z,14nm,1.0s
BMN Battle Mountai 37.85 323 *e*P P 10 55 46.3 +0.6
BMN pmax pmax
comp=Z,12nm,1.4s
BMN Battle Mountai 37.85 323 *e*P P 10 55 46.2 +0.6
comp=Z,12nm,1.4s
B25A Knox Farm, Ray 37.94 344 P P 10 55 45.7 -0.4
baz=156,SNR=5.5
QLMT Earthquake Lak 37.98 333 *e*P P 10 55 48.2 +1.5
GCMT Greycliff 38.00 335 *e*P P 10 55 46.6 -0.2
WAKR Walker 38.06 319 *e*P P 10 55 49.0 +1.6
comp=Z,9.7nm,1.1s
LMQ La Malbaie 38.20 20 *e*P P 10 55 47.8 -0.4
A26A Wade Farm, Ken 38.22 345 P P 10 55 48.0 -0.5
baz=158,SNR=9.5
ULM Lac du Bonnet 38.34 352 P P 10 55 47.5 -1.9
comp=Z,19nm,0.5s,baz=167,slow=9.1,SNR=47
ULM LR LR 11 12 59.5
comp=Z,546nm,21.9s,baz=152,slow=38
ULM Lac du Bonnet 38.34 352 *e*P P 10 55 47.6 -1.7
ULM pmax pmax
comp=Z,106nm,1.4s
ULM Lac du Bonnet 38.34 352 *e*P P 10 55 47.6 -1.7
comp=Z,106nm,1.4s
DGMT Dagmar 38.41 343 P P 10 55 49.8 -0.3
baz=154,SNR=10
DGMT Dagmar 38.41 343 *e*P P 10 55 50.2 +0.2
comp=Z,153nm,1.3s
HLID Hailey 38.45 329 P P 10 55 50.1 -0.6
baz=136
HLID Hailey 38.45 329 *e*P P 10 55 50.9 +0.3
comp=Z,17nm,1.6s
A25A Svangstu Ranch 38.54 344 P P 10 55 50.8 -0.2
baz=156
MCMT McKenzie Canyo 38.62 332 *e*P P 10 55 53.1 +0.9
BOZ Bozeman (W) 38.71 334 P P 10 55 52.6 -0.1
baz=142,SNR=30
BOZ Bozeman (W) 38.71 334 *e*P P 10 55 52.9 +0.1
BOZ pmax pmax
comp=Z,58nm,1.6s
BOZ Bozeman (W) 38.71 334 *e*P P 10 55 52.9 +0.1
comp=Z,58nm,1.6s
LMN Caledonia Moun 38.90 26 *e*P P 10 55 54.0 -0.1
comp=Z,55nm,1.2s
DLMT Dillon 38.92 332 *e*P P 10 55 55.4 +0.9
comp=Z,27nm,1.1s
MFID Camas Ranch 39.07 328 *e*P P 10 55 55.6 -0.2
comp=Z,7.0nm,1.1s
MFID *e*PcP **PcP** 10 58 07.1 +2.0
JBNB Ben Lomond Mou 39.13 315 *e*P P 10 56 01.2 +4.9
LRM Limekiln Ridge 39.20 333 *e*P P 10 55 57.5 +0.5
LVC Limon Verde 39.55 151 P P 10 56 02.6 +2.4
comp=Z,50nm,1.1s,baz=312,slow=7.9,SNR=5.8
LVC Limon Verde 39.55 151 *e*P P 10 56 03.6 +3.3
HRY Holter Researc 39.63 334 *e*P P 10 56 00.8 +0.4
EGMT Eagleton 39.87 337 P P 10 56 02.3 -0.1
baz=146,SNR=17
EGMT Eagleton 39.87 337 *e*P P 10 56 02.8 +0.5
comp=Z,143nm,1.8s
WVOR Wild Horse Val 39.95 324 *e*P P 10 56 03.5 +0.4
WVOR pmax pmax
comp=Z,10.0nm,1.1s
WVOR Wild Horse Val 39.95 324 *e*P P 10 56 03.5 +0.4
comp=Z,10.0nm,1.1s
CHMT Chamberlain Mo 40.40 333 *e*P P 10 56 06.5 -0.4
O03D Paynes Creek 40.58 319 P P 10 56 07.4 -0.9
baz=124
MSO Missoula 40.64 333 P P 10 56 08.2 -0.5
baz=139,SNR=29
MSO Missoula 40.64 333 *e*P P 10 56 08.9 +0.1
comp=Z,41nm,1.3s
SLMT Seeley Lake 40.76 334 *e*P P 10 56 09.8 0.0
BMO Blue Mountains 40.83 328 *e*P P 10 56 12.0 +1.7
comp=Z,7.0nm,1.3s
SWMT Swartz Lake 41.18 333 *e*P P 10 56 13.2 0.0
SWMT *e*PcP **PcP** 10 58 13.1 +1.4
JTMT Jette 41.49 333 *e*P P 10 56 16.1 +0.3
JTMT *e*PcP **PcP** 10 58 14.1 +1.3
F10A Beach Ranch, E 41.57 329 *e*P P 10 56 16.1 -0.3
comp=Z,12nm,0.9s
BSMT Bassoo Peak 41.79 333 *e*P P 10 56 18.2 -0.1
G08A Pilot Rock 41.99 327 *e*P P 10 56 19.8 -0.1
comp=Z,7.6nm,1.5s
G08A *e*PcP **PcP** 10 58 16.7 +2.2
WALA Waterton Lakes 42.34 335 *e*P P 10 56 22.8 +0.1
comp=Z,70nm,1.8s
NEW Newport 43.15 332 *e*P P 10 56 30.5 +1.3
NEW pmax pmax
comp=Z,7.0nm,1.2s
NEW Newport 43.15 332 *e*P P 10 56 30.5 +1.3
comp=Z,7.1nm,1.2s
C09A Chrisman Ranch 43.36 331 *e*P P 10 56 31.6 +0.8
comp=Z,14nm,1.4s
FFC Flin Flon 43.66 348 *e*P P 10 56 32.6 -0.5
FFC pmax pmax
comp=Z,57nm,1.5s
FFC Flin Flon 43.66 348 *e*P P 10 56 32.6 -0.5
comp=Z,57nm,1.5s
B08A Colville Reser 44.26 330 *e*P P 10 56 37.5 -0.6
comp=Z,9.3nm,1.1s
EDM Edmonton 45.45 339 *e*P P 10 56 47.0 -0.4
EDM pmax pmax
comp=Z,99nm,1.3s
EDM Edmonton 45.45 339 *e*P P 10 56 47.0 -0.4
comp=Z,99nm,1.3s
SCHQ Schefferville 45.63 17 P P 10 56 47.5 -1.3
comp=Z,41nm,1.0s,baz=210,slow=6.0,SNR=14
SCHQ LR LR 11 17 38.3
comp=Z,2μm,18.1s,baz=180,slow=38
SCHQ Schefferville 45.63 17 *e*P P 10 56 47.3 -1.5
comp=Z,60nm,1.2s
FCC Fort Churchill 46.56 356 *e*P P 10 56 55.2 -0.8
FCC pmax pmax
comp=Z,69nm,1.3s
FCC Fort Churchill 46.56 356 *e*P P 10 56 55.2 -0.8
comp=Z,69nm,1.3s
LLLB Lillooet 47.01 331 *e*P P 10 57 02.5 +2.7
comp=Z,12nm,1.0s
BDFB Brasilia 48.55 124 P P 10 57 12.9 +0.7
comp=Z,8.5nm,0.8s,baz=258,slow=9.7
BDFB LR LR 11 19 39.5
comp=Z,742nm,18.2s,baz=71,slow=38
CPUP Villa Florida 48.79 142 P P 10 57 12.5 -1.2
comp=Z,8.5nm,1.1s,baz=333,slow=8.0,SNR=4.4
CPUP LR LR 11 18 58.5
comp=Z,528nm,19.2s,baz=337,slow=37
CPUP Villa Florida 48.79 142 *e*P P 10 57 15.8 +2.1
CPUP Villa Florida 48.79 142 *e*P P 10 57 15.8 +2.1
YKA Yellowknife Ar 53.53 345 P P 10 57 47.8 -1.0
comp=Z,11nm,1.0s,baz=140,slow=7.8,SNR=65
YKA PcP **PcP** 10 58 54.4 -0.7
comp=Z,0.8nm,0.6s,baz=149,slow=3.8,SNR=4.5
YKA LR LR 11 22 40.9
comp=Z,48nm,20.3s,baz=180,slow=38
YKB5 Yellowknife Ar 53.53 345 *e*P P 10 57 47.8 -1.0
YKB5 *e*PcP **PcP** 10 58 54.4 -0.7
DLBC Dease Lake 55.69 335 *e*P P 10 58 05.2 +0.6
comp=Z,16nm,0.9s
TAOE Nuku Hiva Isla 55.70 250 *e*LR LR 11 14 07.0
comp=Z,452nm,25.9s
TRQA Tornquist 55.83 155 *e*P P 10 58 07.0 +1.1
comp=Z,76nm,1.8s
RKT Rikitea 57.73 232 *e*S S 11 06 19.7 +4.2
comp=Z,205nm,30.2s
RKT *e*LR LR 11 15 19.8
comp=Z,433nm,36.0s,baz=56
RKT Rikitea 57.73 232 *e*T T 12 00 22.0
comp=Z,2.2nm,0.3s
SFJD Kangerlussuaq 60.05 16 LR LR 11 25 35.2
comp=Z,498nm,18.2s,baz=214,slow=37
DAWY Dawson 62.61 337 *e*P P 10 58 51.3 -1.2
comp=Z,8.9nm,1.3s
INK Inuvik 63.09 343 *e*P P 10 58 55.1 -0.4
INK pmax pmax
comp=Z,20nm,1.1s
INK Inuvik 63.09 343 *e*P P 10 58 55.1 -0.4
comp=Z,20nm,1.1s
BMRM Bremner River 63.31 333 *e*P P 10 58 56.6 -0.5
comp=Z,9.7nm,0.9s
EGAK Eagle 63.63 338 *e*P P 10 58 58.2 -0.9
comp=Z,6.6nm,1.0s
EYAK Cordova Ski Ar 63.65 332 *e*P P 10 59 00.3 +1.0
comp=Z,21nm,1.3s
DIV Divide 63.89 333 *e*P P 10 59 01.8 +0.8
comp=Z,6.5nm,0.8s
KLU Klutina 64.10 333 *e*P P 10 59 02.5 +0.1
comp=Z,6.6nm,0.8s
DOT Dot Lake 64.23 336 *e*P P 10 59 03.0 -0.1
comp=Z,42nm,1.3s
PAX Paxson 64.51 335 *e*P P 10 59 04.6 -0.5
PAX pmax pmax
comp=Z,13nm,1.5s
PAX Paxson 64.51 335 *e*P P 10 59 04.6 -0.5
comp=Z,13nm,1.5s
SML Sawmill 65.29 333 *e*P P 10 59 09.7 -0.4
SML pmax pmax
comp=Z,29nm,1.4s
SML Sawmill 65.29 333 *e*P P 10 59 09.7 -0.4
comp=Z,29nm,1.4s
PMR Palmer 65.57 333 *e*P P 10 59 10.9 -0.9
PMR pmax pmax
comp=Z,8.0nm,1.1s
PMR Palmer 65.57 333 *e*P P 10 59 10.9 -0.9
comp=Z,8.1nm,1.1s
HDA Harding Lake 65.70 336 *e*P P 10 59 12.0 -0.7
comp=Z,25nm,1.4s
IL1 Eielson Array 65.82 336 *e*P P 10 59 12.1 -1.3
ILAR Eielson Array 65.82 336 P P 10 59 12.6 -0.9
comp=Z,8.4nm,1.1s,baz=121,slow=4.5,SNR=52
ILB Eielson Array 65.82 336 *e*P P 10 59 12.4 -1.0
RND Reindeer 66.09 335 *e*P P 10 59 14.8 -0.5
RND pmax pmax
comp=Z,33nm,1.2s
RND Reindeer 66.09 335 *e*P P 10 59 14.8 -0.5
comp=Z,33nm,1.2s
CCB Clear Creek Bu 66.14 336 *e*P P 10 59 13.9 -1.5
comp=Z,7.5nm,1.4s
WRH Wood River Hil 66.18 336 *e*P P 10 59 14.4 -1.3
comp=Z,7.0nm,1.1s
COLA College 66.24 336 *e*P P 10 59 15.5 -0.6
COLA pmax pmax
comp=Z,7.0nm,0.8s
COLA College 66.24 336 *e*P P 10 59 15.5 -0.6
comp=Z,6.8nm,0.8s
MCK McKinley 66.25 335 *e*P P 10 59 15.4 -0.8
MCK pmax pmax
comp=Z,13nm,1.0s
MCK McKinley 66.25 335 *e*P P 10 59 15.4 -0.8
comp=Z,13nm,1.0s
MDM Murphy Dome 66.42 336 *e*P P 10 59 16.5 -0.8
comp=Z,12nm,1.4s
BWN Browne 66.63 335 *e*P P 10 59 18.0 -0.6
comp=Z,85nm,1.0s
BWN *e*S **S** 11 08 03.9 -2.6
TRF Thorofare Moun 66.71 334 *e*P P 10 59 18.7 -0.7
comp=Z,13nm,0.9s
SUMG Summit 66.91 14 *e*P P 10 59 19.4 -1.3
SUMG pmax pmax

comp=Z,9.0nm,0.9s
SUMG Summit 66.91 14 *e*P **P** **10 59 19.4 -1.3**
comp=Z,9.4nm,0.9s
BPAW Bear Paw Mtn. 67.23 335 *e*P **P** **10 59 21.3 -1.1**
comp=Z,13nm,1.1s
PPLA Purkeypile 67.35 334 *e*P **P** **10 59 22.3 -1.0**
comp=Z,21nm,1.3s
PPT Papeete 67.44 245 LR LR 11 21 20.3
comp=Z,244nm,18.2s,baz=56,slow=29
MLY Manley 67.44 336 *e*P **P** **10 59 22.9 -0.9**
comp=Z,14nm,1.3s
PPT2 Papeete2 67.45 245 *e*S **S** **11 08 21.6 +3.6**
comp=Z,137nm,24.2s
PPT2 Papeete2 67.45 245 *e*LR LR 11 19 43.7
comp=Z,245nm,22.2s,baz=60
CAST Castle Rocks 67.47 334 *e*P **P** **10 59 22.8 -1.1**
comp=Z,12nm,1.3s
COLD Coldfoot 68.03 338 *e*P **P** **10 59 28.0 +0.6**
comp=Z,19nm,1.2s
BORG Borgarnes 69.15 25 LR LR 11 32 33.7
comp=Z,174nm,18.2s,baz=244,slow=38
TBI Tubuai 69.58 239 *e*S **S** **11 08 46.2 +3.3**
comp=Z,186nm,26.0s
TBI Tubuai 69.58 239 *e*LR LR 11 20 51.4
comp=Z,268nm,23.8s,baz=66
TBI Tubuai 69.58 239 *e*T T 12 15 17.1
comp=Z,5.1nm,0.3s
JMIC Jan Mayen 75.09 19 LR LR 11 32 54.3
comp=Z,236nm,20.0s,baz=254,slow=36
RAR Rarotonga 77.72 245 LR LR 11 25 16.4
comp=Z,100nm,20.7s,baz=186,slow=28
ESDC Sonseca Array 77.88 52 P **P** **11 00 26.2 -0.2**
comp=Z,0.2nm,0.3s,baz=284,slow=5.2,SNR=3.4
ESDC LR LR 11 31 24.0
comp=Z,104nm,19.9s,baz=285,slow=33
DBIC Dimbokro 82.17 85 LR LR 11 34 13.7
comp=Z,159nm,21.1s,baz=264,slow=33
BILL Bilibino 84.36 339 *i* P **P** **11 00 59.0 -1.1**
BILL pmax pmax
comp=Z,12nm,1.1s
ARCES ARCESS Array B 86.56 19 LR LR 11 38 22.7
comp=Z,170nm,21.6s,baz=294,slow=35
DAVOX Davos/Dischmat 86.61 43 LR LR 11 36 39.6
comp=Z,260nm,19.4s,baz=266,slow=33
TORD Torodi Ar. Bea 87.20 77 LR LR 11 40 22.6
comp=Z,167nm,18.4s,baz=285,slow=36
GERES GERESS Array B 88.54 40 P **P** **11 01 19.0 -2.1**
comp=Z,0.5nm,0.7s,baz=294,slow=3.1,SNR=3.6
GERES LR LR 11 36 44.2
comp=Z,365nm,20.9s,baz=276,slow=33
KEST Kesra 88.96 54 LR LR 11 37 07.8
comp=Z,118nm,20.8s,baz=235,slow=33
SEY Seymchan 91.76 336 *i* P **P** **11 01 33.8 -1.9**
PET Petropavlovsk 93.59 326 *e*P **P** **11 01 42.9 -1.4**
PET *e*S **S** **11 12 46.2 -3.4**
AKASG Malin Array Be 97.07 35 LR LR 11 43 11.9
comp=Z,295nm,20.8s,baz=305,slow=34
NRIK Noril'sk 98.49 2 LR LR 11 47 41.9
comp=Z,408nm,22.0s,baz=355,slow=36
ZAA1 Zalesovo Array 113.72 4 *e*PKiKP **PKiKP** **11 07 06.6 0.0**
ZALV Zalesovo Beam 113.73 4 PKiKP **PKiKP** **11 07 06.6 0.0**
comp=Z,0.7nm,0.4s,baz=356,slow=3.2,SNR=3.1
KURK Kurchatov 116.19 9 *i* PKiKP **PKPdf** **11 07 09.3 -2.1**
SONA0 Songino Array 118.71 349 *e*PKPdf **PKPdf** **11 07 16.7 +0.2**
SONM Songino Array 118.71 349 PKP **PKPdf** **11 07 16.7 +0.2**
comp=Z,0.6nm,0.5s,baz=48,slow=2.2,SNR=4.1
KSRS Korea Array 119.96 327 PKP **PKPdf** **11 07 19.1 0.0**
comp=Z,2.9nm,1.0s,baz=15,slow=1.1,SNR=12
MK32 Makanchi Array 120.55 8 *e*PKPdf **PKPdf** **11 07 19.6 -0.4**
MKAR Makanchi Array 120.55 8 PKP **PKPdf** **11 07 19.5 -0.4**
comp=Z,0.4nm,0.5s,baz=5.7,slow=2.4,SNR=4.5
MKAR Makanchi Array 120.55 8σ *i* PKiKP **PKPdf** **11 07 18.2 -1.8**
AAK Ala-Archa 123.06 15 *i* PKiKP **PKPdf** **11 07 24.3 -0.8**
WMQ Urumqi 124.01 4 *e*PKP **PKPdf** **11 07 25.3 -1.4**
WMQ PP PP 11 09 18.8 +9.2
WMQ SKKS 11 16 04.4
WMQ AMB AMB
comp=Z,120nm,4.9s
WMQ LR LR
comp=Z,280nm,28.4s
WMQ LR LR
comp=Z,280nm,23.6s
WMQ LR LR
comp=Z,280nm,27.3s
HHC Hu-ho-hao-te 124.01 342 *e*PKP **PKPdf** **11 07 26.9 0.0**
HHC PP **PP** **11 09 15.3 +5.5**
HHC SS SS 11 25 58.3 +2.3
HHC AMB AMB
comp=Z,65nm,10.9s
HHC LR LR
comp=Z,160nm,27.5s
HHC LR LR
comp=Z,140nm,21.6s
HHC LR LR
comp=Z,170nm,24.3s
KSH Kashi 126.38 15 *e*PKP **PKPdf** **11 07 32.8 +1.3**
KSH *es*PKP 11 07 48.4
KSH *e*PP **PP** **11 09 32.4 +6.8**
KSH PKS **PKSdf** **11 11 08.1 -0.1**
KSH SKS **SKSdf** **11 14 39.0 -1.1**
KSH SKKS **SKKSac** **11 16 21.8 +0.3**
KSH SS **SS** **11 26 32.8 +7.1**
KSH AMB AMB
comp=Z,130nm,6.1s
KSH LR LR
comp=Z,110nm,5.2s
KSH LR LR
comp=Z,100nm,6.3s
KSH LR LR
comp=Z,140nm,7.2s
GTA Gaotai 127.99 352 *e*PKP **PKPdf** **11 07 34.9 +0.3**
GTA sPKP 11 07 50.5
GTA PP **PP** **11 09 41.0 +4.9**
GTA SKS **SKSdf** **11 14 41.5 -1.6**
GTA SKKS **SKKSac** **11 16 29.1 -2.5**
GTA SS **SS** **11 26 49.5 +3.9**
GTA AMB AMB
comp=Z,79nm,8.1s
GTA LR LR
comp=Z,160nm,19.0s
GTA LR LR
comp=Z,180nm,18.5s
GTA LR LR
comp=Z,180nm,23.3s
LZH Lanzhou 130.52 347 *e*PKP **PKPdf** **11 07 36.8 -2.7**
LZH sPKP 11 07 58.3
LZH LR LR
comp=Z,140nm,18.0s
LZH LR LR
comp=Z,130nm,18.2s
LZH LR LR
comp=Z,190nm,20.0s
CD2 Chengdu 135.50 345 PKP **PKPdf** **11 07 45.9 -3.0**
CD2 sPKP 11 08 07.3
CD2 SKS **SKSdf** **11 14 52.3 -4.5**
CD2 SKKS **SKKSac** **11 17 12.3 -5.5**
CD2 SS **SS** **11 28 16.4 -0.8**
CD2 AMB AMB
comp=Z,120nm,5.4s
GYA Guiyang 138.82 339 *e*Pdif **Pdif** **11 05 03.8 -2.9**
GYA PKP **PKPdf** **11 07 53.3 -1.9**
GYA sPKP 11 08 14.0
GYA PP **PP** **11 10 48.5 +3.0**
GYA AMB AMB
comp=Z,120nm,7.8s
KMI Kunming 141.27 344 PKP **PKPdf** **11 07 57.8 -2.1**
QIZ Qiongzhong 144.10 330 PKP PKPbc 11 08 03.0 +0.3
QIZ PP **PP** **11 11 18.4 +0.6**
QIZ SS SS 11 30 03.6 +4.6
QIZ AMB AMB
comp=Z,120nm,12.3s
QIZ LR LR
comp=Z,170nm,18.2s
QIZ LR LR
comp=Z,180nm,19.8s
CMAR Chiang Mai Arr 148.60 347 PKPbc **PKPbc** **11 08 14.6 -1.4**
comp=Z,6.6nm,0.8s,baz=328,slow=3.3,SNR=28

*IDC **22** 10:52:29.2±1.0,34°.59N×73°.22E,h0km,mb3.7/5, mb1 3.8/8,mb1mx3.5/46,mbtmp3.6/8,ML3.3/3,Error ellipse: s-maj=29.1km s-min=24.5km az=78.0*
*ISCJB **22** 10:52:30.9±0.8,34°.80N±0°.07×73°.3E±0°.1,h21km,mb3.6/4, Error ellipse: s-maj=18.8km s-min=6.3km az=153.2*
ISC 22 10:52:32.5±0.9,**34°.78N**±0°.08×**73°.3E**±0°.1,**h21**km,**n18,**
σ**2**§**95**/22,**mb3.6**/4,**2C-2D**,**Pakistan**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
THN	**Thein Dam**	**3.11**	**138**	*e*P		**Pn**	**10 53 22.0**	**+1.7**
THN				*e*S		**Sb**	**10 54 03.0**	**-1.5**
SDNR	**Sundarnagar**	**4.51**	**135**	*e*P		**Pn**	**10 53 41.0**	**+1.3**
SDNR				*e*S		**Sb**	**10 54 51.0**	**+6.0**
MNAS	**Manas**	**7.72**	**356**	⇑Pn		**Pn**	**10 54 23.4**	**-0.4**
	1.6nm,0.4s							
MNAS				⇓Sn		**Sn**	**10 55 45.7**	**-4.9**
	3.5nm,0.4s							
AAK	**Ala-Archa**	**7.90**	**7**	Sn		**Sn**	**10 55 59.9**	**+4.7**
	0.5nm,0.3s,baz=254,slow=20,SNR=4.2							
KK31	**Karatay Array**	**8.58**	**346**	⇑Pn		**Pn**	**10 54 37.3**	**+1.8**
	1.6nm,0.3s,baz=155,slow=11,SNR=22							
KK31				⇓Sn		**Sn**	**10 56 11.7**	**0.0**
	2.2nm,0.5s,baz=155,slow=24,SNR=6.3							
PYUN	**Piuthan**	**10.64**	**126**	*e*P		**Pn**	**10 55 03.9**	**-0.1**
	17nm,0.4s							
GKN	**Gorkha**	**11.83**	**122**	*e*P		**Pn**	**10 55 19.0**	**-1.2**
	11nm,0.4s							
GKN				*e*S		**Sn**	**10 57 25.9**	**-5.7**
PKIN	**Phulchoki**	**12.62**	**121**	*e*P		Pn	10 55 25.2	-5.9
	9.5nm,0.4s							
PKIN				*e*S		Sn	10 57 36.7	-14
GUN	**Gumba**	**12.76**	**119**	*e*P		**Pn**	**10 55 32.4**	**-0.7**
	13nm,0.3s							
MKAR	**Makanchi Array**	**13.80**	**27**	Pn		**Pn**	**10 55 48.9**	**+2.0**
	0.1nm,0.3s,baz=208,slow=11,SNR=3.0							
KURBB	**Kurchatov Arra**	**16.29**	**12**	Pn		**Pn**	**10 56 20.9**	**+1.0**
	0.1nm,0.3s,baz=201,slow=11,SNR=4.3							
BVAR	**Borovoye Array**	**18.36**	**354**	Pn		**P**	**10 56 40.1**	**-5.5**
	0.3nm,0.3s,baz=151,slow=7.4,SNR=3.2							
AKTO	**Aktyubinsk**	**19.19**	**329**	P		**Pn**	**10 56 57.0**	**+1.2**
	0.7nm,0.3s,baz=170,slow=12,SNR=3.4							
ZALV	**Zalesovo Beam**	**20.82**	**19**	P		**P**	**10 57 13.0**	**+0.6**
	1.2nm,0.4s,baz=217,slow=11,SNR=4.1							
TORD	**Torodi Ar. Bea**	**67.55**	**271**	P		**P**	**11 03 27.4**	**-0.3**
	0.7nm,0.5s,baz=52,slow=5.5,SNR=13							
WRA	**Warramunga Arr**	**79.51**	**123**	P		**P**	**11 04 37.9**	**0.0**
	0.5nm,0.8s,baz=311,slow=6.3,SNR=5.6							
ASAR	**Alice Springs**	**81.75**	**126**	P		**P**	**11 04 49.8**	**-0.1**
	0.3nm,0.6s,baz=313,slow=5.4,SNR=8.6							
YKA	**Yellowknife Ar**	**82.86**	**4**	P		**P**	**11 04 55.7**	**+0.7**
	0.4nm,0.7s,baz=345,slow=5.3,SNR=5.6							

DJA 22 10:53:27.5±1.7,**10°S**±8°×**11°5E**±°,**h15**km±11km,**M3.7/6, MLv3.7/6,South of Bali**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
IGBI	**Denpasar**	**0.88**	**8**	P		Pg	10 53 44.6	+0.1
IGBI				S		Sg	10 53 56.1	+0.1
DNP	**Denpasar**	**1.02**	**11**	P		Pn	10 53 47.4	+0.1
DNP				S		Sn	10 54 01.5	+0.1
JAGI	**Jajag, Banyuwa**	**1.48**	**325**	P		Pn	10 53 53.2	-0.5
TWSI	**Taliwang, Sumb**	**2.07**	**63**	P		Pn	10 54 01.4	-0.3
GMJI	**Gumukmas**	**2.10**	**312**	P		Pn	10 54 01.8	-0.3
BLJI	**Banyuglugur**	**2.39**	**324**	P		Pn	10 54 06.5	+0.3
PLAI	**Plampang**	**2.85**	**73**	P		Pn	10 54 12.5	0.0

*IDC **22** 11:01:13.1±0.9,16°.99S×167°.49E,h0km,mb4.2/14, mb1 4.3/14,mb1mx4.2/27,mbtmp4.2/14,ML5.2/1,MS3.4/2, Ms1 3.4/2,ms1mx3.0/26,Error ellipse: s-maj=27.6km s-min=17.2km az=88.0*
*ISCJB **22** 11:01:15.3±0.4,16°.97S±0°.06×167°.40E±0°.07,h25km, mb4.4/22,MS3.2/1,Error ellipse: s-maj=10.2km s-min=7.7km az=147.7*
*NEIC **22** 11:01:18.2±3.0,17°.06S×167°.40E,h31km±22km,mb4.6/6, Error ellipse: s-maj=11.0km s-min=10.1km az=63.0*
ISC 22 11:01:17.1±0.5,**17°.12S**±0°.06×**167°.37E**±0°.08,**h25**km,**n54,**
σ**1**§**51**/51,**mb4.3**/22,**1C**,**Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**5.01**	**190**	Pn		**Pn**	**11 02 30.1**	**-0.8**
	77nm,0.3s,baz=342,slow=16,SNR=609							
DZM				Sn		**Sn**	**11 03 24.7**	**-3.3**
	48nm,0.3s,baz=301,slow=23,SNR=6.4							
DZM	**Mont Dzumac**	**5.01**	**190**	*e*Pn		**Pn**	**11 02 28.8**	**-2.0**
	246nm,0.3s							
DZM				*e*Sn		**Sn**	**11 03 24.3**	**-3.7**
	301nm,0.3s							
DZM	**Mont Dzumac**	**5.01**	**190**	*e*Pn		**Pn**	**11 02 28.8**	**-2.0**
	231nm,0.6s							
DZM				*e*Sn		**Sn**	**11 03 28.3**	**+0.3**
MSVF	**Nonsavu**	**10.21**	**95**	*e*Pn		**Pn**	**11 03 44.5**	**+2.3**
	143nm,1.6s							
HNR	**Honiara**	**10.51**	**316**	Pn		**Pn**	**11 03 47.8**	**+1.4**
	66nm,0.3s,baz=160,slow=6.4,SNR=33							
HNR				Sn		**Sn**	**11 05 43.6**	**+0.2**
	7.8nm,0.3s,baz=162,slow=20,SNR=3.5							
HNR				LR		LR	11 07 59.2	
	comp=Z,167nm,18.0s,baz=174,slow=39							
HNR	**Honiara**	**10.51**	**316**	*e*P		**Pn**	**11 03 47.0**	**+0.7**
HNR				*e*S		**Sn**	**11 05 41.0**	**-2.4**
HNR	**Honiara**	**10.51**	**316**	*e*Pn		**Pn**	**11 03 47.0**	**+0.7**
	331nm,0.6s							
HNR				Sn		**Sn**	**11 05 43.6**	**+0.2**
TARA	**Tarawa**	**19.15**	**17**	*e*P		**P**	**11 05 37.1**	**-1.7**
	2.5nm,0.6s							
CTA	**Charters Tower**	**20.23**	**258**	P		Pn	11 05 53.1	+0.5
	2.6nm,0.5s,baz=104,slow=16,SNR=3.9							
CTAO	**Charters Tower**	**20.23**	**258**	*e*P		**P**	**11 05 49.8**	**-0.8**
	13nm,0.4s							
AFI	**Afiamalu**	**20.34**	**84**	LR		LR	11 12 35.1	
	comp=Z,108nm,19.6s,baz=136,slow=34							
PMG	**Port Moresby**	**21.10**	**289**	P		**P**	**11 06 03.1**	**+3.1**
	16nm,0.9s,baz=31,slow=12,SNR=3.4							
URZ	**Urewera**	**22.73**	**160**	P		**P**	**11 06 18.4**	**+1.1**
	17nm,0.6s,baz=348,slow=12,SNR=11							
URZ	**Urewera**	**22.73**	**160**	*e*P		**P**	**11 06 18.5**	**+1.2**
STKA	**Stephens Creek**	**27.59**	**233**	P		**P**	**11 07 03.8**	**+1.3**
	4.1nm,0.7s,baz=60,slow=8.8,SNR=13							
WRAB	**Tennant Creek**	**31.41**	**260**	*e*P		**P**	**11 07 37.0**	**+0.5**
	1.5nm,0.6s							
WRA	**Warramunga Arr**	**31.42**	**260**	P		**P**	**11 07 36.6**	**-0.1**
	1.4nm,0.7s,baz=88,slow=8.4,SNR=21							
ASAR	**Alice Springs**	**31.99**	**253**	P		**P**	**11 07 42.1**	**+0.5**
	3.5nm,0.5s,baz=80,slow=8.5,SNR=106							
BBOO	**Buckleboo**	**32.25**	**235**	*e*P		**P**	**11 07 44.8**	**+1.0**
	8.3nm,1.0s							
FITZ	**Fitzroy Crossi**	**39.73**	**262**	*e*P		**P**	**11 08 49.1**	**+1.1**
	2.9nm,0.7s							
TBI	**Tubuai**	**40.86**	**106**	*e*LR		LR	11 19 57.2	
	268nm,23.8s							
PPT2	**Papeete2**	**41.03**	**97**	*e*LR		LR	11 19 40.0	
	326nm,24.5s							
MBWA	**Marble Bar**	**45.06**	**257**	*e*P		**P**	**11 09 32.2**	**+0.9**
	14nm,0.7s							
MJAR	**Matsushiro Arr**	**60.06**	**333**	P		**P**	**11 11 20.4**	**-1.7**
	2.2nm,0.9s,baz=160,slow=7.4,SNR=4.7							
VNDA	**Vanda**	**60.49**	**181**	P		**P**	**11 11 24.7**	**+0.2**
	1.0nm,0.9s,baz=354,slow=5.0,SNR=5.1							
SBA	**Scott Base**	**60.77**	**180**	*e*P		**P**	**11 11 28.5**	**+2.1**
	14nm,1.1s							
KSRS	**Korea Array**	**65.76**	**326**	P		**P**	**11 11 59.6**	**-0.5**
	0.5nm,0.6s,baz=132,slow=8.5,SNR=2.6							
KSAR	**Wonju Array Be**	**65.77**	**326**	P		**P**	**11 11 59.5**	**-0.5**
USRK	**Ussuriysk Ar.**	**69.05**	**334**	P		**P**	**11 12 21.9**	**+1.2**
	2.6nm,0.8s,baz=123,slow=4.5,SNR=4.4							
PETK	**Petropavlovsk-**	**70.43**	**354**	P		**P**	**11 12 27.5**	**-1.5**
	2.2nm,0.7s,baz=128,slow=9.6,SNR=4.3							
QSPA	**South Pole Qui**	**72.93**	**180**	*e*P		**P**	**11 12 44.3**	**+0.1**
	103nm,1.1s							
CMAR	**Chiang Mai Arr**	**76.02**	**295**	P		**P**	**11 13 03.7**	**+0.9**
	0.4nm,0.3s,baz=141,slow=4.6,SNR=3.4							
MAW	**Mawson**	**79.72**	**202**	P		**P**	**11 13 23.5**	**+1.0**
	1.5nm,0.8s,baz=32,slow=4.7,SNR=2.9							
SONM	**Songino Array**	**84.47**	**324**	P		**P**	**11 13 47.4**	**-0.4**
	0.6nm,0.6s,baz=131,slow=4.0,SNR=2.7							
SYO	**Syowa Base**	**86.46**	**197**σ	*e*P		P	11 14 07.9	+11
ILAR	**Eielson Array**	**88.75**	**18**	P		**P**	**11 14 04.3**	**-4.0**
	0.3nm,0.7s,baz=238,slow=4.9,SNR=6.8							
SNAA	**Sanae**	**91.19**	**183**	P		**P**	**11 14 20.8**	**+1.0**
SNAA	**Sanae**	**91.19**	**183**	*e*P		**P**	**11 14 20.2**	**+0.4**
	307nm,0.9s							
MKAR	**Makanchi Array**	**98.99**	**316**	P		**P**	**11 14 55.4**	**-0.3**
	0.3nm,0.6s,baz=107,slow=5.7,SNR=3.7							
CONA	**Conrad Observa**	**141.42**	**329**	*i* PKPdf		**PKPdf**	**11 20 44.5**	**-1.5**
	2.7nm,1.0s							
GERES	**GERESS Array B**	**141.79**	**332**	PKP		**PKPdf**	**11 20 47.8**	**+1.1**
	0.2nm,0.3s,baz=3.8,slow=2.9,SNR=3.3							
ARSA	**Arzberg**	**142.05**	**328**	*i* PKiKP		**PKiKP**	**11 20 50.4**	**+0.3**
	2.2nm,0.5s							
MOA	**Molln**	**142.25**	**330**	*i* PKiKP		**PKiKP**	**11 20 51.2**	**+0.8**
	1.5nm,0.5s							
SOKA	**Soboth**	**142.68**	**328**	*i* PKPdf		**PKPdf**	**11 20 46.0**	**-2.4**
	1.9nm,0.7s							
OBKA	**Obir**	**143.04**	**328**	*i* PKPdf		PKPbc	11 20 46.8	+1.0
	8.0nm,1.2s							
MYKA	**Terra Mystica**	**143.41**	**329**	*i* PKPdf		PKPab	11 20 45.8	+0.1
	0.7nm,0.5s							
ABTA	**Abfaltersbach**	**143.87**	**330**	*i* PKPdf		PKPbc	11 20 47.9	-0.2
	8.1nm,0.7s							
WATA	**Walderalm**	**143.87**	**332**	*i* PKPdf		**PKPdf**	**11 20 50.3**	**-0.2**
	2.8nm,0.5s							
MOTA	**Moosalm**	**144.07**	**332**	*i* PKPdf		**PKPab**	**11 20 48.3**	**0.0**
	3.2nm,0.5s							
RETA	**Reutte**	**144.12**	**333**	*i* PKiKP		**PKiKP**	**11 20 54.4**	**0.0**
	2.1nm,0.4s							
FETA	**Feichten**	**144.49**	**332**	*i* PKPdf		PKPbc	11 20 50.1	-0.1
	8.8nm,0.8s							
DAVA	**Damuels**	**144.65**	**333**	*i* PKPdf		**PKPdf**	**11 20 51.4**	**-0.5**
	13nm,0.9s							
DAVOX	**Davos/Dischmat**	**145.04**	**333**	PKP		**PKPbc**	**11 20 51.8**	**-0.2**
	9.0nm,0.7s,baz=38,slow=5.1,SNR=9.4							
TUE	**Stuetta**	**145.52**	**333**	*e*PKPbc		**PKPdf**	**11 20 53.1**	**-0.4**

*ISCJB **22** 11:12:44.9±0.7,27°.43S±0°.04×68°.10W±0°.06,h136km, mb3.5/1,Error ellipse: s-maj=8.1km s-min=5.5km az=20.0*
*SJA **22** 11:12:44.2±1.0,27°.39S×68°.09W,h144km±8km,ML3.3, MW3.4*
*IDC **22** 11:12:46.0±2.8,27°.24S×68°.59W,h125km±22km,mb3.5/1, mb1 3.6/4,mb1mx3.3/29,mbtmp3.9/4,Error ellipse: s-maj=39.7km s-min=22.2km az=77.0*
ISC 22 11:12:46.1±0.9,**27°.40S**±0°.05×**68°.15W**±0°.06,**h136**km,**n23,**
σ**1**§**66**/36,**12D**,**Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
VCA	**Vinchina**	**1.33**	**182**	*e*P		**Pn**	**11 13 12.4**	**-0.6**
VCA				*e*S		**Sn**	**11 13 32.8**	**-0.7**
VCA				IAML			11 13 35.0	
	comp=Z,182nm,0.3s							
AGUA	**GUANDACOL**	**2.10**	**188**	*e*P		**Pn**	**11 13 21.5**	**-0.2**
AGUA				⇓*e*S		**Sn**	**11 13 48.8**	**-0.3**
CYA	**Choya**	**2.32**	**117**	*e*P		**Pn**	**11 13 23.4**	**-1.0**
CYA				IAML			11 13 23.8	
	comp=Z,277nm,0.4s							
FSA	**Cafayete**	**2.33**	**57**	⇓*e*P		**Pn**	**11 13 24.1**	**-0.6**
FSA				IAML			11 13 26.3	
	comp=Z,20nm,0.7s							
LCO	**Las Campanas**	**2.76**	**234**	*e*P		**Pn**	**11 13 28.6**	**-1.6**
LCO				*e*S		**Sn**	**11 14 01.7**	**-2.4**
ACDV	**Cuesta del Vie**	**2.89**	**197**	*e*P		**Pn**	**11 13 32.1**	**+0.4**
ACDV				*e*S		**Sn**	**11 14 07.5**	**+0.7**
AROD	**Rodeo**	**2.99**	**203**	⇓*e*P		**Pn**	**11 13 33.0**	**-0.2**
AROD				⇓*e*S		**Sn**	**11 14 10.1**	**+0.7**
ACCO	**Cerro Coronel**	**3.27**	**194**	⇓*e*P		**Pn**	**11 13 36.9**	**+0.1**
ACCO				*e*S		**Sn**	**11 14 16.2**	**+0.3**
ACCO				IAML			11 14 19.1	
	comp=Z,76nm,0.4s							
AVFE	**Valle Fertil**	**3.30**	**170**	*e*P		**Pn**	**11 13 36.3**	**-0.6**
AVFE				*e*S		**Sn**	**11 14 14.8**	**-1.5**
AVFE				IAML			11 14 16.6	
	comp=Z,89nm,0.5s							
AMOG	**MOGNA**	**3.54**	**185**	⇓*e*P		**Pn**	**11 13 39.4**	**-0.6**
AMOG				*e*S		**Sn**	**11 14 20.3**	**-1.4**
RTLL	**Cerro Villicun**	**3.92**	**184**	⇓*e*P		**Pn**	**11 13 44.6**	**-0.4**
RTLL				*e*S		**Sn**	**11 14 29.1**	**-1.6**
ACHE	**Chepes**	**3.96**	**161**	⇓*e*P		**Pn**	**11 13 44.9**	**-0.8**
ACHE				*e*S		**Sn**	**11 14 29.9**	**-1.9**
RTCV	**Cerro Valdivia**	**4.46**	**184**	*e*P		**Pn**	**11 13 51.4**	**-0.7**
RTCV				⇓*e*S		**Sn**	**11 14 41.2**	**-2.2**
RTLS	**Leoncito**	**4.49**	**193**	⇓*e*P		**Pn**	**11 13 52.3**	**-0.5**
RTLS				*e*S		**Sn**	**11 14 42.9**	**-1.8**
LVC	**Limon Verde**	**4.82**	**352**	P		**Pn**	**11 13 54.7**	**-2.6**
	comp=Z,95nm,0.3s,baz=167,slow=11,SNR=42							
LVC				S		**Sn**	**11 14 47.4**	**-5.3**
	comp=Z,267nm,0.3s,baz=246,slow=20,SNR=16							
HJA	**Humahuaca**	**4.86**	**31**	⇓*e*S		**Pn**	**11 13 59.1**	**+1.3**
TCA	**Tanti**	**5.00**	**142**	*e*P		**Pn**	**11 13 57.7**	**-1.7**
TCA				⇓*e*S		**Sn**	**11 14 53.0**	**-3.4**
TCA				IAML			11 14 54.1	
	comp=Z,22nm,0.6s							
CPUP	**Villa Florida**	**9.72**	**86**	P		Pn	11 15 09.3	+6.6
	comp=Z,0.2nm,0.3s,baz=256,slow=9.7,SNR=3.8							
PLCA	**Paso Flores**	**13.44**	**188**	P		**Pn**	**11 15 52.0**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=354,slow=14,SNR=3.4							
TORD	**Torodi Ar. Bea**	**78.76**	**69**	P		**P**	**11 24 35.8**	**+1.7**
	comp=Z,0.8nm,0.7s,baz=255,slow=4.8,SNR=5.0							
WRA	**Warramunga Arr**	**128.14**	**207**	PKP		**PKPdf**	**11 31 38.2**	**+1.3**
	comp=Z,0.3nm,0.7s,baz=157,slow=1.7,SNR=3.5							
ZALV	**Zalesovo Beam**	**146.87**	**29**	PKPbc		**PKPab**	**11 32 13.5**	**-0.2**
	comp=Z,0.6nm,0.4s,baz=312,slow=3.5,SNR=3.9							
MKAR	**Makanchi Array**	**149.77**	**42**	PKPbc		**PKPbc**	**11 32 21.4**	**+1.5**
	comp=Z,1.1nm,0.7s,baz=303,slow=2.6,SNR=8.6							

*ISCJB **22** 11:30:21.9±0.6,38°.40N±0°.04×39°.63E±0°.05,h0km,Error ellipse: s-maj=6.8km s-min=4.0km az=135.9*
*ISK **22** 11:30:21.4,38°.44N×39°.62E,h15km,MD2.4*
*CSEM **22** 11:30:21.6±0.3,38°.40N×39°.63E,h1km,MD2.4,Error ellipse: s-maj=10.2km s-min=5.8km az=48.0,Suspected Mining explosion.*
*DDA **22** 11:30:22.6,38°.43N×39°.66E,h6km,Md2.7,Suspected Mining explosion.*
ISC 22 11:30:22.0±0.9,**38°.44N**±0°.03×**39°.66E**±0°.04,**h0**km,**n15,**
σ**0**§**45**/26,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.29**	**258**	*e*PG		**Pg**	**11 30 27.2**	**-0.2**
SVRC				*e*SG		**Sg**	**11 30 31.5**	**+0.4**
SVRC	**Sivrice-ELAZID**	**0.29**	**258**	*e*Pg		**Pg**	**11 30 27.2**	**-0.2**
SVRC				*e*Sg		**Sg**	**11 30 31.5**	**+0.4**
PTK	**Pertek**	**0.50**	**335**	*e*PG		**Pg**	**11 30 31.5**	**-0.1**
PTK	**Pertek**	**0.50**	**335**	*e*Pg		**Pg**	**11 30 31.5**	**-0.1**
DYBB	**Diyarbakir**	**0.61**	**142**	*e*PG		**Pg**	**11 30 34.2**	**+0.5**
DIYA	**Diyarbakir**	**0.63**	**145**	*i* P		**Pg**	**11 30 34.0**	**0.0**
DIYA				*i* S		**Sb**	**11 30 45.9**	**+0.7**
DIYA	**Diyarbakir**	**0.63**	**145**	P		**Pg**	**11 30 34.0**	**0.0**
DIYA				S		**Sb**	**11 30 45.9**	**+0.7**
TNCL	**Tunceli-Merkez**	**0.68**	**352**	*i* P		**Pg**	**11 30 35.0**	**-0.1**
TNCL				*i* S		**S

KUR pmax pmax
comp=N,79nm,0.4s
KUR smax smax
comp=N,146nm,0.5s
KUR smax smax
comp=E,109nm,0.6s
KUR Kuril'sk 4.11 255 *i* P **Pn 11 58 35.4 +2.1**
KUR AMB AMB 11 58 36.0
comp=E,30nm,0.4s
KUR *i* S **Sn 11 59 21.4 +0.8**
KUR A A 11 59 32.5
comp=E,290nm,0.8s
KUR A A 11 59 32.5
comp=E,390nm,0.8s
SKR Severo-Kuril's 4.61 21 *e*PN **Pn 11 58 41.2 +1.1**
SKR pmax pmax
comp=Z,55nm,0.6s
SKR Severo-Kuril's 4.61 21 *e*P **Pn 11 58 40.3 +0.2**
SKR AMB AMB 11 58 42.5
comp=Z,30nm,0.3s
SKR *e*S **Sn 11 59 30.9 -1.9**
SKR A A 11 59 40.1
comp=Z,50nm,0.4s
SKR A A 11 59 40.1
comp=Z,140nm,0.4s
SHO Shikotan 5.36 244*c i*PN **Pn 11 58 50.8 +0.3**
SHO pmax pmax
comp=Z,86nm,0.4s
SHO pmax pmax
comp=N,52nm,0.3s
SHO pmax pmax
comp=E,69nm,0.5s
SHO Shikotan 5.36 244 *i* P **Pn 11 58 50.7 +0.3**
SHO AMB AMB 11 58 52.3
comp=E,50nm,0.7s
SHO AMB AMB 11 58 52.3
comp=E,40nm,0.7s
SHO AMB AMB 11 58 52.3
comp=E,90nm,0.7s
SHO *e*S **Sn 11 59 49.2 -2.2**
SHO A A 11 59 57.3
comp=E,120nm,0.4s
SHO A A 11 59 57.3
comp=E,90nm,0.4s
PAU Pauzhetka 5.50 22 *e*S **Sn 11 59 52.0 -2.9**
YUK Yuzh-Kuril'sk 5.90 249 *e*PN **Pn 11 59 00.0 +2.2**
YUK S **Sn 12 00 06.1 +1.5**
YUK pmax pmax
comp=Z,128nm,0.5s
YUK pmax pmax
comp=E,64nm,0.4s
YUK pmax pmax
comp=N,68nm,0.6s
YUK smax smax
comp=N,189nm,0.6s
YUK smax smax
comp=E,95nm,0.4s
YUK Yuzh-Kuril'sk 5.90 249 *e*P **Pn 11 59 00.1 +2.2**
YUK AMB AMB 11 59 04.5
comp=E,70nm,0.6s
YUK AMB AMB 11 59 04.5
comp=E,60nm,0.6s
YUK AMB AMB 11 59 04.5
comp=E,110nm,0.6s
YUK *e*S **Sn 12 00 05.9 +1.3**
YUK A A 12 00 09.9
comp=E,190nm,0.6s
YUK A A 12 00 09.9
comp=E,90nm,0.6s
JRA Rausu 6.42 250 P **Pn 11 59 07.3 +2.3**
JNK Nakash 6.84 249 P **Pn 11 59 11.3 +0.5**
JAK Akkeshi 7.14 245 P **Pn 11 59 13.8 -1.1**
JAK *e*S **Sn 12 00 30.7 -4.6**
JTKR Abashiri--Toko 7.20 254 P **Pn 11 59 17.2 +1.4**
PETK Petropavlovsk- 7.23 21 P **Pn 11 59 16.4 +0.3**
comp=E,0.5nm,0.3s,baz=171,slow=12,SNR=9.0
PET Petropavlovsk 7.41 25 *i* PN **Pn 11 59 18.1 -0.4**
PET Petropavlovsk 7.41 25 *e*P **Pn 11 59 18.1 -0.4**
YSS Yuzh-Sakhalins 7.41 278 *e*PN Pn 11 59 24.7 +6.1
YSS *e*S **Sn 12 00 46.5 +4.7**
YSS pmax pmax
comp=Z,20nm,1.2s
YSS MLR MLR
comp=Z,400nm,16.0s
YSS Yuzh-Sakhalins 7.41 278 *e*P **Pn 11 59 21.1 +2.5**
YSS AMB AMB 11 59 23.3
comp=Z,30nm,0.7s
JAR Ashorobuto 7.58 249 P **Pn 11 59 21.6 +0.6**
JAR *e*S **Sn 12 00 44.1 -2.1**
JKK2 Kamakawa 2 8.01 255 P **Pn 11 59 28.9 +2.0**
ASAJ Asahikawa 8.03 257 P **Pn 11 59 29.5 +2.4**
baz=74,slow=9.3
ASAJ Asahikawa 8.03 257 P **Pn 11 59 30.1 +3.0**
JCH Churui 8.18 246 P **Pn 11 59 28.5 -0.7**
JCH *e*S **Sn 12 00 55.5 -5.3**
MYR Moyori 8.40 244 *e*P **Pn 11 59 31.6 -0.6**
TYV Tymovskoe 8.44 306 *e*PN **Pn 11 59 34.5 +1.8**
TYV pmax pmax
comp=Z,6.0nm,0.6s
TYV Tymovskoe 8.44 306 *e*P **Pn 11 59 34.5 +1.8**
TYV AMB AMB 11 59 38.2
comp=Z,10.0nm,0.6s
JAB Ashibetsu 8.51 254 P **Pn 11 59 36.4 +2.7**
ERM Erimo 8.63 243 ⇑ *i*PN **Pn 11 59 38.6 +3.2**
ERM Erimo 8.63 243 *e*P **Pn 11 59 38.6 +3.2**
GRNR Gornyy 12.11 297 *e*P **Pn 12 00 27.5 +4.5**
GRNR AMB AMB 12 00 31.8
comp=Z,2.0nm,0.8s
HABR Khabarovsk 12.65 286 *e*PN **Pn 12 00 30.5 +0.1**
HABR *e*S **Sn 12 02 51.4 +1.0**
HABR pmax pmax
comp=N,14nm,1.8s
HABR pmax pmax
comp=E,37nm,1.8s
HABR pmax pmax
comp=Z,13nm,1.8s
HABR MLR MLR
comp=Z,198nm,13.0s
HABR Khabarovsk 12.65 286 *e*P **Pn 12 00 30.5 +0.1**
MA2 Magadan 13.28 354 P **Pn 12 00 40.8 +2.0**
comp=Z,0.7nm,0.3s,baz=172,slow=12,SNR=4.8
EKMR Ekimchan 14.83 304 *e*P **P 12 01 03.3 -2.4**
EKMR AMB AMB 12 01 12.5
comp=Z,4.0nm,0.6s
KLR Kul'dur 14.87 289 P **P 12 01 03.8 -2.3**
comp=Z,0.1nm,0.3s,baz=100,slow=15,SNR=2.7
MAJO Matsushiro 15.10 235 ⇑ *i*P **P 12 01 07.7 -1.1**
MJAR Matsushiro Arr 15.10 235 P **P 12 01 07.1 -1.7**
comp=Z,0.2nm,0.3s,baz=41,slow=12,SNR=6.1
USRK Ussuriysk Ar. 15.29 269 P **Pn 12 01 07.0 +0.8**
comp=Z,0.3nm,0.3s,baz=82,slow=14,SNR=5.3
SEY Seymchan 16.56 358 P **Pn 12 01 23.0 +0.6**
comp=Z,0.1nm,0.3s,baz=222,slow=9.3,SNR=4.0
SEY Seymchan 16.56 358 ⇑ *e*P **Pn 12 01 22.2 -0.2**
SEY Seymchan 16.56 358 *e*P **Pn 12 01 22.2 -0.2**
BMKR Bomnak 17.65 307 *e*P **Pn 12 01 34.3 -1.8**
BMKR AMB AMB 12 01 40.0
comp=Z,2.0nm,0.6s
KROS Kirovskiy 18.62 305 *e*P **Pn 12 01 48.9 +0.9**
KSRS Korea Array 20.95 254 P **P 12 02 14.2 +1.1**
comp=Z,2.2nm,0.8s,baz=59,slow=9.8,SNR=11
BILL Bilibino 22.66 12 ⇑ *i*P **P 12 02 31.0 -0.1**
BILL pmax pmax
comp=Z,3.0nm,0.9s
BILL MLR MLR
comp=Z,372nm,21.0s
BILL Bilibino 22.66 12 *e*P **P 12 02 31.0 -0.1**
H11N2 WAKE ISLAND Hy 28.80 153 T T 12 35 25.3
baz=340,slow=76,SNR=7.0
H11N1 WAKE ISLAND Hy 28.82 153 T T 12 35 23.4
baz=340,slow=76,SNR=5.5
H11N3 WAKE ISLAND Hy 28.82 153 T T 12 35 16.4
baz=340,slow=76,SNR=6.3
H11S1 WAKE ISLAND Hy 29.89 154 T T 12 36 57.8
baz=341,slow=76,SNR=18
H11S3 WAKE ISLAND Hy 29.90 154 T T 12 36 38.3
baz=341,slow=76,SNR=19
H11S2 WAKE ISLAND Hy 29.91 154 T T 12 36 40.8
baz=341,slow=76,SNR=4.1
SONM Songino Array 31.69 290 P **P 12 03 52.8 -0.9**
comp=Z,0.4nm,0.3s,baz=111,slow=8.2,SNR=4.0
COLA College 36.23 38 *e*P **P 12 04 35.8 +3.1**
COLA pmax pmax
comp=Z,3.0nm,1.0s
ILAR Eielson Array 36.64 38 P **P 12 04 36.6 +0.4**
comp=Z,0.4nm,0.9s,baz=263,slow=7.1,SNR=4.3

INK Inuvik 41.79 32 P **P 12 05 19.8 +0.7**
comp=Z,0.6nm,0.4s,baz=297,slow=5.9,SNR=2.6
ZALV Zalesovo Beam 43.02 306 P **P 12 05 27.6 -1.7**
comp=Z,0.8nm,0.4s,baz=73,slow=6.5,SNR=3.0
MKAR Makanchi Array 47.33 298 P **P 12 06 02.7 -0.9**
comp=Z,2.6nm,0.8s,baz=64,slow=8.6,SNR=23
KURK Kurchatov 47.77 304 ⇓ *i*P **P 12 06 05.5 -1.4**
KURK pmax pmax
comp=Z,12nm,0.9s
KURBB Kurchatov Arra 47.86 304 P **P 12 06 06.3 -1.4**
comp=Z,3.0nm,0.7s,baz=69,slow=8.6,SNR=16
YKA Yellowknife Ar 51.03 37 P **P 12 06 32.1 +0.5**
comp=Z,1.4nm,0.6s,baz=296,slow=7.1,SNR=9.3
YKA Yellowknife Ar 51.03 37 *e*P **P 12 06 32.8 +1.1**
YKA pmax pmax
comp=Z,1.0nm,0.6s
YKA Yellowknife Ar 51.03 37 *e*P **P 12 06 32.8 +1.1**
BVAR Borovoye Array 51.27 310 P **P 12 06 32.5 -1.1**
comp=Z,0.9nm,0.3s,baz=52,slow=7.5,SNR=8.1
BRVK Borovoye 51.31 310 ⇓ *i*P **P 12 06 33.2 -0.7**
BRVK pmax pmax
comp=Z,5.0nm,0.7s
CMAR Chiang Mai Arr 52.55 257 P **P 12 06 44.8 +1.2**
comp=Z,1.6nm,0.6s,baz=38,slow=7.2,SNR=7.6
CMAR Chiang Mai Arr 52.55 257 *e*P **P 12 06 45.4 +1.8**
CMAR pmax pmax
comp=Z,2.0nm,0.6s
CMAR Chiang Mai Arr 52.55 257 *e*P **P 12 06 45.4 +1.8**
AAK Ala-Archa 54.22 297 ⇑ *e*P **P 12 06 55.8 0.0**
AAK pmax pmax
comp=Z,6.0nm,0.8s
AAK Ala-Archa 54.22 297 *e*P **P 12 06 55.8 0.0**
ARU Arti 55.43 318 P **P 12 07 03.1 -1.0**
comp=Z,1.6nm,0.3s,baz=37,slow=5.1,SNR=4.3
ARU Arti 55.43 318*c i*P **P 12 07 03.4 -0.7**
ARU 12 08 01.2
ARU 12 09 04.2
ARU S **S** 12 14 46.5 -0.7
ARU SS **SS** 12 18 28.2 -3.0
ARU pmax pmax
comp=Z,11nm,2.5s
DAG Danmarks Havn 56.98 358 *i* P **P 12 07 14.7 -0.2**
comp=Z,5.5nm,1.0s
SUMG Summit 61.01 4 *i* P **P 12 07 44.2 +0.8**
comp=Z,7.9nm,0.8s
FINES FINESS Array B 64.45 335 P **P 12 08 05.1 -0.8**
comp=Z,3.3nm,0.6s,baz=34,slow=8.1,SNR=18
FINES FINESS Array B 64.45 335 *e*P **P 12 08 05.6 -0.3**
FINES pmax pmax
comp=Z,3.0nm,0.6s
FINES FINESS Array B 64.45 335 *e*P **P 12 08 05.6 -0.3**
WRA Warramunga Arr 68.29 199 P **P 12 08 31.3 +0.4**
comp=Z,1.0nm,1.0s,baz=25,slow=7.2,SNR=4.3
NB2 NORSAR Subarra 68.62 341 P **P 12 08 32.7 0.0**
comp=Z,4.0nm,0.7s,baz=28,slow=6.5
KBZ Khabaz 71.28 314 P **P 12 08 48.6 -0.6**
comp=Z,1.6nm,0.7s,baz=352,slow=3.9,SNR=3.7
AKASG Malin Array Be 71.97 326 P **P 12 08 52.4 -0.8**
comp=Z,2.8nm,0.5s,baz=33,slow=6.3,SNR=14
AKASG Malin Array Be 71.97 326 *i* P **P 12 08 52.7 -0.5**
AKASG pmax pmax
comp=Z,4.0nm,0.6s
ASAR Alice Springs 71.98 199 P **P 12 08 54.8 +1.3**
comp=Z,0.4nm,0.5s,baz=12,slow=5.8,SNR=12
ASAR Alice Springs 71.98 199 *e*P **P 12 08 55.0 +1.5**
ASAR Alice Springs 71.98 199 *e*P **P 12 08 55.0 +1.5**
CLL Collm 76.87 336 *i* P **P 12 09 22.6 +0.8**
comp=Z,7.0nm,0.7s
TXAR Lajitas Array 77.42 61 P **P 12 09 26.2 +0.8**
comp=Z,0.5nm,0.5s,baz=306,slow=4.4,SNR=11
TXAR Lajitas Array 77.42 61 *e*P **P 12 09 28.7 +3.3**
TXAR pmax pmax
comp=Z,1.0nm,0.5s
BRTR Keskin Array B 78.81 317 P **P 12 09 32.8 -0.2**
comp=Z,0.5nm,0.5s,baz=5.7,slow=4.3,SNR=5.1
BRTR Keskin Array B 78.81 317 *e*P **P 12 09 33.9 +1.0**
BRTR pmax pmax
comp=Z,1.0nm,0.7s
GERES GERESS Array B 78.87 334 P **P 12 09 32.5 -0.5**
comp=Z,0.8nm,0.6s,baz=20,slow=4.3,SNR=4.4
GERES GERESS Array B 78.87 334 *e*P **P 12 09 34.1 +1.1**
GERES pmax pmax
comp=Z,1.0nm,0.6s

ISCJB ***22*** *11:58:39.8±0.3, 15°.59N±0°.03×94°.85W±0°.03, h10km, mb4.5/77, MS3.7/18, Error ellipse: s-maj=5.3km s-min=3.6km az=41.5*
MEX ***22*** *11:58:40.4±0.5, 15°.28N×95°.20W, h14km±7km, MD4.5*
NEIC ***22*** *11:58:40.4, 15°.28N×95°.20W, h14km, mb4.6/74, MD4.6(MEX), After MEX.*
NEIC Felt at Huatulco.
IDC ***22*** *11:58:48.1±2.2, 15°.80N×94°.78W, h59km±19km, mb4.0/20, mb1 4.2/21, mb1mx4.1/40, mbtmp4.3/21, MS3.6/20, Ms1 3.6/20, ms1mx3.6/28, Error ellipse: s-maj=21.5km s-min=10.0km az=47.0*
ISC 22 11:58:40.0±0.4, 15°.39N±0°.06×95°.20W±0°.04, h10km, n378, σ1°56/374, mb4.5/78, MS3.7/18, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.96**	**294**	*i* P		**Pg**	**11 58 56.4**	**-2.1**
HUIG				*i* S		**Sg**	**11 59 08.3**	**-2.6**
HUIG	**Huatulco**	**0.96**	**294**	*e*Pn		Pn	11 59 08.3	+8.8
PANG	**Puerto Angel**	**1.26**	**283**	*i* P		**Pn**	**11 59 00.5**	**-3.2**
PANG				*e*S		**Sb**	**11 59 15.6**	**-4.6**
CMIG	**Matias Romero**	**1.72**	**10**	P		**Pn**	**11 59 09.8**	**-0.2**
	76nm,0.3s,baz=178,slow=14,SNR=874							
CMIG				S		**Sn**	**11 59 32.5**	**+0.3**
	508nm,0.3s,baz=120,slow=20,SNR=35							
PNIG	**Pinotepa**	**2.99**	**290**	*i* P		**Pn**	**11 59 25.3**	**-2.2**
PNIG				*e*S		**Sn**	**11 59 59.0**	**-4.5**
CCIG	**Comitan**	**3.08**	**73**	*e*Pn		**Pn**	**11 59 28.1**	**-0.8**
TLIG	**Tlapa**	**3.89**	**304**	*e*Pn		**Pn**	**11 59 41.1**	**+1.1**
TLIG				*e*Sn		**Sn**	**12 00 24.1**	**-1.8**
MOIG	**Morelia**	**7.13**	**308**	*e*Pn		**Pn**	**12 00 28.4**	**+3.7**
MOIG				*e*Sn		**Sn**	**12 01 47.1**	**+1.1**
TEIG	**Tepich**	**8.16**	**53**	P		**Pn**	**12 00 36.2**	**-2.4**
	27nm,0.3s,baz=270,slow=24,SNR=89							
TEIG				S		Sn	12 02 02.4	-8.5
	baz=180,slow=20,SNR=2.3							
TEIG				LR		LR	12 04 04.8	
	comp=Z,301nm,20.7s,baz=150,slow=42							
TEIG	**Tepich**	**8.16**	**53**	*e*Pn		**Pn**	**12 00 35.9**	**-2.7**
TEIG				*e*Sn		**Sn**	**12 02 05.6**	**-5.4**
ZAIG	**Zacatecas**	**10.12**	**318**	*e*Pn		**Pn**	**12 01 08.8**	**+3.0**
035A	**Encino**	**11.81**	**347**	P		**Pn**	**12 01 30.9**	**+2.4**
	baz=164							
034A	**Hebbronville**	**12.07**	**345**	P		**Pn**	**12 01 34.4**	**+2.3**
	baz=162							
934A	**Benavides**	**12.54**	**346**	P		**Pn**	**12 01 41.6**	**+3.0**
	baz=163							
933A	**Laredo**	**12.74**	**343**	P		**Pn**	**12 01 43.6**	**+2.3**
	baz=160,SNR=6.7							
834A	**Tilden**	**13.05**	**347**	P		**Pn**	**12 01 47.9**	**+2.3**
	baz=164,SNR=11							
835A	**Beeville**	**13.07**	**350**	P		**Pn**	**12 01 48.4**	**+2.6**
	baz=167							
833A	**Chaparral WMA,**	**13.45**	**344**	P		**Pn**	**12 01 53.1**	**+2.2**
	baz=161							
832A	**Faith Ranch, C**	**13.58**	**342**	P		**Pn**	**12 01 54.8**	**+2.0**
	baz=158							
735A	**Kenedy**	**13.62**	**350**	P		**Pn**	**12 01 55.7**	**+2.4**
	baz=168							
733A	**Divot King Ran**	**13.80**	**345**	P		**Pn**	**12 01 56.8**	**+1.0**
	baz=162,SNR=7.0							
635A	**Leesville**	**14.14**	**351**	P		**Pn**	**12 02 01.8**	**+1.5**
	baz=168							
633A	**Saathoff Ranch**	**14.48**	**346**	P		**Pn**	**12 02 05.7**	**+0.6**
	baz=163,SNR=8.5							
537A	**Green Hill Far**	**14.66**	**356**	P		**Pn**	**12 02 08.1**	**+0.6**
	baz=174,SNR=6.2							
534A	**Blanco**	**14.88**	**349**	P		**Pn**	**12 02 11.6**	**+1.0**
	baz=166,SNR=8.3							
533A	**Kerrville**	**15.04**	**347**	P		**Pn**	**12 02 13.0**	**+0.3**
	baz=164,SNR=7.5							
HPIG		**15.07**	**321**	*e*Pn		**Pn**	**12 02 15.8**	**+2.5**
	19nm,0.8s							
JCT	**Junction City**	**15.61**	**345**	P		**Pn**	**12 02 20.6**	**+0.4**
	baz=162,SNR=20							
JCT	**Junction City**	**15.61**	**345**	*e*Pn		**Pn**	**12 02 21.7**	**+1.5**
	40nm,0.7s							
434A	**Burnet**	**15.61**	**350**	P		**Pn**	**12 02 20.4**	**+0.2**
	baz=168,SNR=14							
433A	**Art**	**15.71**	**348**	P		**Pn**	**12 02 21.1**	**-0.4**
	baz=165,SNR=15							
LTX	**Lajitas**	**15.93**	**332**	*e*Pn		**Pn**	**12 02 26.5**	**+2.1**
TXAR	**Lajitas Array**	**15.93**	**332**	P		**Pn**	**12 02 26.5**	**+2.1**
	0.9nm,0.3s,baz=152,slow=14,SNR=67							
TXAR				LR		LR	12 08 41.8	
	comp=Z,322nm,18.4s,baz=0.0,slow=38							
TX31	**Lajitas Ar. Si**	**15.93**	**332**	*e*Pn		**Pn**	**12 02 26.5**	**+2.1**
335A	**Moody**	**15.95**	**353**	P		**Pn**	**12 02 25.2**	**+0.5**
	baz=171							
336A	**Riesel**	**16.00**	**355**	P		**Pn**	**12 02 25.2**	**0.0**
	baz=173							
334A	**Lometa**	**16.12**	**351**	P		**Pn**	**12 02 26.4**	**-0.4**
	baz=168,SNR=22							
333A	**Richland Sprin**	**16.24**	**348**	P		**Pn**	**12 02 28.4**	**0.0**
	baz=165,SNR=18							
LPIG	**La Paz**	**16.65**	**304**	P		**P**	**12 02 38.8**	**+2.9**
	baz=184,slow=13,SNR=3.2							
LPIG				LR		LR	12 08 23.2	
	comp=Z,270nm,18.6s,baz=124,slow=34							
WHTX	**Lake Whitney,**	**16.66**	**353**	P		**Pn**	**12 02 34.1**	**+0.4**
	baz=171,SNR=14							
234A	**Clairette**	**16.76**	**351**	P		**Pn**	**12 02 35.2**	**+0.3**
	baz=169,SNR=32							
233A	**Rising Star**	**16.90**	**349**	P		**Pn**	**12 02 37.7**	**+1.0**
	baz=166,SNR=36							
135A	**Vickery Place,**	**17.21**	**354**	P		**Pn**	**12 02 40.5**	**-0.1**
	baz=172							
134A	**White-Moore Ra**	**17.31**	**352**	P		**Pn**	**12 02 42.2**	**+0.4**
	baz=169,SNR=7.5							
133A	**Hamilton Ranch**	**17.48**	**349**	P		**Pn**	**12 02 43.8**	**-0.1**
	baz=167,SNR=17							
ABTX	**Abilene, Hawle**	**17.63**	**348**	P		**Pn**	**12 02 45.6**	**-0.3**
	baz=164,SNR=22							
ABTX	**Abilene, Hawle**	**17.63**	**348**	*e*Pn		**Pn**	**12 02 46.6**	**+0.8**
	61nm,0.7s							
Z36A	**Blue Ridge**	**17.84**	**357**	P		**Pn**	**12 02 48.0**	**-0.4**
	baz=175							
Z35A	**Perchaven, San**	**17.96**	**354**	P		**Pn**	**12 02 50.6**	**+0.7**
	baz=172							
Z34A	**Collier Ranch,**	**18.07**	**353**	P		**Pn**	**12 02 51.6**	**+0.3**
	baz=170							
Z33A	**Whitaker Ranch**	**18.11**	**350**	P		**Pn**	**12 02 51.9**	**+0.1**
	baz=168,SNR=17							
Y36A	**Durant**	**18.46**	**357**	P		**P**	**12 02 55.9**	**-0.1**
	baz=176							
Y35A	**Marietta**	**18.52**	**355**	P		**P**	**12 02 56.2**	**-0.3**
	baz=173,SNR=17							
Y37A	**Hugo**	**18.52**	**359**	P		**P**	**12 02 56.5**	**0.0**
	baz=178							
Y34A	**Reagan Ranch,**	**18.64**	**353**	P		**P**	**12 02 58.3**	**+0.4**
	baz=171,SNR=15							
MNTX	**Cornudas Mount**	**18.71**	**332**	P		**P**	**12 02 59.9**	**+1.1**
	baz=147,SNR=9.2							
MNTX	**Cornudas Mount**	**18.71**	**332**	*e*P		**P**	**12 02 59.8**	**+1.0**
	11nm,1.0s							
Y33A	**Hilltop Ranch,**	**18.80**	**351**	P		**P**	**12 02 59.2**	**-0.5**
	baz=168,SNR=13							
X35A	**Drake**	**19.00**	**355**	P		**P**	**12 03 01.7**	**-0.2**
	baz=174,SNR=12							
X37A	**Clayton**	**19.12**	**360**	P		**P**	**12 03 02.9**	**-0.3**
	baz=178,SNR=8.0							
X36A	**Centrahoma**	**19.13**	**357**	P		**P**	**12 03 03.3**	**-0.1**
	baz=175,SNR=10							
MIAR	**Mount Ida**	**19.13**	**4**	P		**P**	**12 03 03.2**	**-0.1**
	baz=184							
X38A	**Whitesboro**	**19.20**	**1**	P		**P**	**12 03 04.1**	**0.0**
	baz=180							
X34A	**Smith Ranch, M**	**19.28**	**353**	P		**P**	**12 03 05.0**	**0.0**
	baz=171							
Y46A	**Houston**	**19.29**	**16**	P		**P**	**12 03 04.0**	**-1.0**
	baz=198							
X33A	**Lawton**	**19.30**	**352**	P		**P**	**12 03 05.6**	**+0.4**
	baz=169,SNR=28							
X32A	**Elmer**	**19.31**	**350**	P		**P**	**12 03 06.0**	**+0.7**
	baz=167,SNR=22							
WMOK	**Wichita Mounta**	**19.54**	**351**	P		**P**	**12 03 07.2**	**-0.6**
	baz=168,SNR=15							
WMOK	**Wichita Mounta**	**19.54**	**351**	*e*P		**P**	**12 03 07.9**	**+0.1**
	11nm,0.6s							
W38A	**Poteau**	**19.61**	**2**	P		**P**	**12 03 07.6**	**-0.9**
	baz=181							
GTBY	**Guantanamo Bay**	**19.66**	**74**	*e*P		P	12 03 01.7	-7.5
	76nm,0.8s							
X45A	**UM Field Stati**	**19.66**	**14**	P		**P**	**12 03 07.6**	**-1.5**
	baz=196							
W36A	**Quinton**	**19.67**	**359**	P		**P**	**12 03 08.4**	**-0.8**
	baz=178							
W36A	**Wetumka**	**19.69**	**357**	P		**P**	**12 03 08.9**	**-0.6**
	baz=176							
MSTX	**Muleshoe**	**19.73**	**341**	P		**P**	**12 03 10.0**	**0.0**
	baz=157,SNR=24							
MSTX	**Muleshoe**	**19.73**	**341**	*e*P		**P**	**12 03 10.8**	**+0.8**
	89nm,0.8s							
W35A	**Tecumseh**	**19.74**	**356**	P		**P**	**12 03 09.9**	**-0.1**
	baz=174,SNR=11							
W39A	**Magazine**	**19.77**	**3**	P		**P**	**12 03 09.8**	**-0.4**
	baz=183							
W41A	**Tony Mavity, V**	**19.88**	**7**	P		**P**	**12 03 10.8**	**-0.7**
	baz=187							
W41B	**Gary Mavity, V**	**19.88**	**7**	P		**P**	**12 03 10.7**	**-0.8**
	baz=187							
W33A	**Caddo, Fort Co**	**19.90**	**352**	P		**P**	**12 03 11.2**	**-0.5**
	baz=170,SNR=14							
W34A	**Bridge Creek,**	**19.90**	**354**	P		**P**	**12 03 11.9**	**+0.1**
	baz=172							
W34A	**Bridge Creek,**	**19.90**	**354**	*e*P		**P**	**12 03 09.6**	**-2.2**
	104nm,1.5s							
W32A	**Sentinel**	**19.99**	**350**	P		**P**	**12 03 12.3**	**-0.5**
	baz=167,SNR=18							
AMTX	**Amarillo**	**20.27**	**344**	P		**P**	**12 03 16.5**	**+0.6**
	baz=161							
AMTX	**Amarillo**	**20.27**	**344**	*e*P		**P**	**12 03 16.8**	**+0.9**
	55nm,1.2s							
V36A	**Jenks**	**20.33**	**358**	P		**P**	**12 03 16.0**	**-0.4**
	baz=177							
V35A	**Meyer Ranch, C**	**20.35**	**356**	P		**P**	**12 03 15.7**	**-0.9**
	baz=174,SNR=8.6							
V38A	**Canehill**	**20.41**	**2**	P		**P**	**12 03 16.0**	**-1.2**
	baz=181,SNR=11							
V37A	**Hulbert**	**20.41**	**0**	P		**P**	**12 03 16.9**	**-0.3**
	baz=179							
V39A	**Pettigrew**	**20.42**	**4**	P		**P**	**12 03 16.3**	**-1.1**
	baz=183,SNR=9.2							
V40A	**Witts Springs**	**20.45**	**6**	P		**P**	**12 03 17.3**	**-0.4**
	baz=186							
TUL1	**Leonard**	**20.45**	**359**	P		**P**	**12 03 16.3**	**-1.4**
	baz=177							
319A	**Douglas**	**20.47**	**323**	*e*P		Pn	12 03 21.1	+0.9
	62nm,1.3s							
V34A	**Guthrie**	**20.47**	**355**	P		**P**	**12 03 17.5**	**-0.4**
	baz=172,SNR=5.9							
V34A	**Guthrie**	**20.47**	**355**	*e*P		**P**	**12 03 18.0**	**+0.1**
	29nm,0.7s							
V41A	**Mountainview**	**20.50**	**7**	P		**P**	**12 03 17.4**	**-0.8**
	baz=187							
V33A	**Lossen Ranch,**	**20.54**	**353**	P		**P**	**12 03 19.1**	**+0.4**
	baz=170,SNR=25							
V32A	**Arapaho**	**20.54**	**351**	P		**P**	**12 03 19.5**	**+0.7**
	baz=168							
121A	**Cookes Peak, D**	**20.55**	**328**	P		**P**	**12 03 21.4**	**+2.4**
	baz=142,SNR=22							
V42A	**Cord**	**20.62**	**9**	P		**P**	**12 03 18.0**	**-1.5**
	baz=190							
U37A	**Salina**	**20.93**	**0**	P		**P**	**12 03 22.6**	**-0.4**
	baz=179							
U35A	**Pawnee**	**20.94**	**357**	P		**P**	**12 03 22.3**	**-0.8**
	baz=175							
U39A	**Green Forest**	**20.97**	**4**	P		**P**	**12 03 22.6**	**-0.7**
	baz=184							
U38A	**Gravette**	**20.98**	**2**	P		**P**	**12 03 22.9**	**-0.6**
	baz=181							
U40A	**Yellville**	**20.99**	**5**	P		**P**	**12 03 22.5**	**-1.1**
	baz=185,SNR=6.5							
U34A	**Anderson Ranch**	**21.07**	**355**	P		**P**	**12 03 24.2**	**-0.2**
	baz=173							
U34A	**Anderson Ranch**	**21.07**	**355**	*e*P		**P**	**12 03 24.8**	**+0.4**
	44nm,0.6s							
U41A	**Viola**	**21.08**	**7**	P		**P**	**12 03 23.7**	**-0.8**
	baz=188							
U33A	**Lingo Farm, Me**	**21.12**	**353**	P		**P**	**12 03 24.6**	**-0.4**
	baz=171,SNR=20							
U42A	**Revenden**	**21.18**	**9**	P		**P**	**12 03 24.2**	**-1.4**
	baz=190							
U32A	**Winter Ranch,**	**21.18**	**351**	P		**P**	**12 03 25.5**	**-0.1**
	baz=169							
BNM	**Barren Site**	**21.34**	**333**	*e*P		**P**	**12 03 29.7**	**+2.1**
HELC	**Santa Helena**	**21.35**	**113**	*e*P		**P**	**12 03 24.1**	**-3.9**
T35A	**Sooner Cattle**	**21.48**	**357**	P		**P**	**12 03 28.1**	**-0.7**

baz=176,SNR=11
LPM Los Pinos Moun 21.48 333 eP P 12 03 30.4 +1.4
T38A Diamond 21.58 2 P P 12 03 28.9 -1.0
baz=181
T36A Boggs Farm, Ca 21.60 359 P P 12 03 28.3 -1.7
baz=177
T39A Clever 21.61 4 P P 12 03 29.2 -1.1
baz=184
T34A McClaskey Farm 21.62 356 P P 12 03 29.6 -0.7
baz=174,SNR=18
T37A Cheneyville 18 21.65 1 P P 12 03 30.2 -0.5
baz=180
LAZ Ladron 21.78 333 eP P 12 03 34.6 +2.3
T33A Patterson Ranc 21.78 353 P P 12 03 31.1 -1.0
baz=171
T41A Mountain View 21.79 7 P P 12 03 30.3 -1.8
baz=188
T40A Mansfield 21.81 6 P P 12 03 31.0 -1.3
baz=186
ANMO Albuquerque 21.95 335 P P 12 03 34.9 +0.8
baz=149
ANMO Albuquerque 21.95 335 eP P 12 03 35.5 +1.5
9.9nm,1.0s
T32A Huddler Ranch, 21.96 352 P P 12 03 33.7 -0.3
baz=169,SNR=13
TUC Tucson 22.02 323 P P 12 03 34.6 -0.2
baz=135
TUC Tucson 22.02 323 eP P 12 03 37.4 +2.6
38nm,1.2s
S38A Stockton 22.19 3 P P 12 03 35.1 -1.3
baz=182
NORC Norcasia 22.22 114 eP P 12 03 34.3 -2.7
S35A Otter Creek Ra 22.23 358 P P 12 03 36.5 -0.4
baz=176,SNR=5.1
S36A Lake Cedric, C 22.25 359 P P 12 03 35.9 -1.2
baz=178
S40A Lebanon 22.25 6 P P 12 03 35.2 -2.0
baz=186
S33A Kaszmaul Farm, 22.26 354 P P 12 03 36.8 -0.4
baz=172
S39A Bolivar 22.28 4 P P 12 03 35.5 -1.9
baz=184
S37A Fort Scott 22.29 1 P P 12 03 36.2 -1.3
baz=180
S34A Willow Spring 22.29 356 P P 12 03 37.1 -0.4
baz=174
TOLC Tolima 22.30 117 eP P 12 03 37.1 -1.0
S41A Jillco Farms, 22.32 7 P P 12 03 36.4 -1.5
baz=188
CMBC Cumbal 22.36 128 eP P 12 03 32.6 -6.3
S32A Newby Ranch, P 22.47 352 P P 12 03 39.0 -0.5
baz=170
TKL Tuckaleechee C 22.63 25 P P 12 03 38.4 -2.8
1.8nm,0.6s,baz=208,slow=15,SNR=2.4
TKL Tuckaleechee C 22.63 25 eP P 12 03 39.6 -1.6
23nm,1.5s
R38A Fenwick Farm, 22.74 3 P P 12 03 41.0 -1.3
baz=182,SNR=5.2
S44A Carbondale 22.84 12 P P 12 03 41.3 -2.0
baz=194
R37A Teagarden Farm 22.84 1 P P 12 03 42.4 -0.9
baz=180
R36A Gordon, Harris 22.85 359 P P 12 03 42.6 -0.8
baz=178
R35A Emporia Munici 22.86 358 P P 12 03 42.1 -1.5
baz=176
R34A Isabella, Hill 22.90 356 P P 12 03 43.2 -0.8
baz=174,SNR=16
R39A Chumby, Stover 22.92 4 P P 12 03 43.9 -0.3
baz=184,SNR=7.0
R40A Maddies Statio 22.96 6 P P 12 03 43.5 -1.1
baz=186
R33A Olander Ranch, 22.96 354 P P 12 03 45.0 +0.3
baz=172,SNR=7.4
214A Organ Pipe Nat 23.02 319 P P 12 03 47.3 +2.0
baz=131,SNR=7.8
ROSC El Rosal 23.04 115 P P 12 03 46.8 +0.7
54nm,0.7s,baz=307,slow=20,SNR=25
ROSC El Rosal 23.04 115 eP P 12 03 46.2 +0.1
ROSC El Rosal 23.04 115 eP P 12 03 46.8 +0.7
63nm,1.0s
PRAC Prado 23.11 118 eP P 12 03 45.6 -0.8
PRAC Prado 23.11 118 eP P 12 03 46.1 -0.3
76nm,1.1s
R32A Long Quarter, 23.16 353 P P 12 03 46.6 -0.1
baz=170
T25A Trinidad 23.16 341 P P 12 03 48.7 +1.7
baz=156,SNR=61
T25A Trinidad 23.16 341 eP P 12 03 48.9 +2.0
82nm,0.9s
GRMC Gramalote, San 23.21 107 eP P 12 03 45.0 -2.6
CBRI Barrientos, No 23.22 107 eP P 12 03 47.5 -0.1
X18A Snowflake 23.23 328 eP P 12 03 50.0 +2.3
31nm,0.8s
BARC Barichara 23.29 110 eP P 12 03 47.3 -1.2
R44A Waltonville 23.41 12 P P 12 03 48.1 -1.0
baz=194
Q34A Chapman 23.50 357 P P 12 03 48.9 -1.1
baz=175
Q38A Cooks Store, C 23.53 3 P P 12 03 49.1 -1.2
baz=183
W18A Petrified Fore 23.59 329 eP P 12 03 53.0 +1.8
15nm,1.0s
Q33A Connelly Farm, 23.64 355 P P 12 03 50.9 -0.5
baz=173
CHIC Chingaza 23.66 115 eP P 12 03 53.6 +1.2
RUSC La Rusia 23.67 111 eP P 12 03 50.2 -2.3
RUSC La Rusia 23.67 111 eP P 12 03 50.9 -1.6
59nm,1.2s
CBKS Cedar Bluff 23.68 351 P P 12 03 51.7 -0.2
baz=168,SNR=12
CBKS Cedar Bluff 23.68 351 eP P 12 03 52.5 +0.6
55nm,1.0s
Q32A Meitler Ranch, 23.70 353 P P 12 03 51.9 -0.1
baz=171,SNR=7.6
X16A Lo Mia Camp, P 23.94 325 eP P 12 03 56.6 +2.0
13nm,0.9s
P33A Williams Farm, 24.06 355 P P 12 03 54.7 -0.8
baz=173
P35A Duane Minner, 24.06 358 P P 12 03 54.3 -1.2
baz=177
SDCO Great Sand Dun 24.07 340 P P 12 03 56.7 +0.8
baz=154,SNR=14
SDCO Great Sand Dun 24.07 340 eP P 12 03 57.2 +1.3
12nm,1.1s
P39B Salisbury 24.11 5 P P 12 03 54.4 -1.5
baz=185
P34A Walnut Farm, R 24.11 357 P P 12 03 56.3 +0.3
baz=175
P36A Good Intent, A 24.14 360 P P 12 03 55.8 -0.4
baz=179
113A Mohawk Valley, 24.16 319 eP P 12 03 58.4 +1.9
14nm,1.0s
P38A Dawn 24.19 3 P P 12 03 55.8 -0.8
baz=183
P40A Paris 24.21 6 P P 12 03 55.7 -1.1
baz=186
P32A Huiting Farm, 24.33 354 P P 12 03 58.1 +0.1
baz=171,SNR=8.0
KSCO Kaye Shedlock' 24.43 346 P P 12 03 59.8 +0.8
baz=162
KSCO Kaye Shedlock' 24.43 346 eP P 12 04 00.5 +1.5
29nm,0.9s
P41A Barry, Barry 24.47 8 P P 12 03 58.2 -1.0
baz=189
P42A Winchester 24.48 9 P P 12 03 58.7 -0.7
baz=190
Y14A Wickenburg 24.49 322 eP P 12 04 01.7 +2.1
263nm,1.8s
S22A 4UR Ranch, Cre 24.54 337 eP P 12 04 02.0 +1.8
11nm,1.0s
O33A Hebron 24.69 356 P P 12 04 01.2 0.0
baz=174,SNR=11
WUAZ Wupatki 24.73 327 P P 12 04 03.2 +1.3
baz=139,SNR=38
WUAZ Wupatki 24.73 327 eP P 12 04 03.6 +1.7
50nm,0.9s
MVCO Mesa Verde 24.74 334 P P 12 04 02.9 +0.9
baz=147,SNR=12
MVCO Mesa Verde 24.74 334 eP P 12 04 03.8 +1.8
25nm,1.1s
O34A Beatrice 24.74 357 P P 12 04 01.3 -0.4
baz=176
O40A La Belle 24.81 6 P P 12 04 01.4 -1.0
baz=187
SDV Santo Domingo 24.85 102 P P 12 04 01.7 -1.4
15nm,0.7s,baz=313,slow=8.0,SNR=14
SDV LR LR 12 15 19.2
comp=Z,193nm,19.2s,baz=227,slow=40
SDV Santo Domingo 24.85 102 eP P 12 03 59.2 -4.0
SDV Santo Domingo 24.85 102 eP P 12 04 01.9 -1.3
15nm,0.8s
O41A Passleys Farm, 24.93 8 P P 12 04 02.4 -0.9
baz=189
O32A Brockman Farm, 24.93 354 P P 12 04 03.2 -0.2
baz=172
O31A Woolen Ranch, 24.94 352 P P 12 04 04.0 +0.5
baz=170
GLA Glamis 25.02 318 P P 12 04 06.2 +1.9
baz=129,SNR=9.1
GLA Glamis 25.02 318 eP P 12 04 06.1 +1.8
37nm,0.9s
Y12C Blythe 25.28 320 P P 12 04 08.5 +1.8
baz=131
Y12C Blythe 25.28 320 eP P 12 04 08.8 +2.2
8.5nm,0.9s
N38A Joes South For 25.37 3 P P 12 04 07.3 -0.1
baz=184
N34A Lincoln 25.39 358 P P 12 04 08.1 +0.6
baz=176
PDMCI Parker Dam,Lak 25.42 321 P P 12 04 09.4 +1.6
baz=132
N32A Stulken Farm, 25.43 355 P P 12 04 08.8 +0.8
baz=172
N39A Derby Farms, D 25.51 5 P P 12 04 08.6 0.0
baz=185
PV01 Paradox Valley 25.55 335 eP P 12 04 10.9 +1.5
SWSC Sam W. Stewart 25.59 317 P P 12 04 11.0 +1.6
baz=127
IKP In-Ko-Pah, Jac 25.61 316 P P 12 04 11.2 +1.4
baz=126
PV05 Paradox Valley 25.73 334 eP P 12 04 12.5 +1.6
BC3 Big Chuckawall 25.81 318 P P 12 04 13.5 +2.0
baz=129,SNR=14
W13A Hualapai Mount 25.82 323 eP P 12 04 14.1 +2.3
12nm,1.5s
SMCO Snowmass 25.86 339 eP P 12 04 13.7 +1.4
12nm,1.0s
U15A North Rim 25.91 327 eP P 12 04 14.8 +2.2
6.0nm,0.8s
IRM Iron Mountain 25.94 320 P P 12 04 14.5 +1.9
baz=130
M37A Trindle Farm, 25.94 2 P P 12 04 12.0 -0.6
baz=182
PV10 Paradox Valley 25.95 335 eP P 12 04 13.8 +0.8
ISCO Idaho Springs 25.97 341 P P 12 04 14.1 +0.9
baz=156
ISCO Idaho Springs 25.97 341 eP P 12 04 14.7 +1.4
6.2nm,0.8s
M36A Felix, Anita 25.98 1 P P 12 04 12.6 -0.3
baz=180
M38A Pleasantville 26.00 3 P P 12 04 12.2 -0.8
baz=184
M31A Lambtecht Ranc 26.07 354 P P 12 04 14.4 +0.6
baz=171
PV09 Paradox Valley 26.09 335 eP P 12 04 15.8 +1.5
OGNE Ogallala 26.15 348 P P 12 04 15.6 +1.1
baz=164
OGNE Ogallala 26.15 348 eP P 12 04 15.7 +1.1
BELC Belle Mtn. Jos 26.38 318 P P 12 04 18.0 +1.3
baz=129
TPFO Pinon Flats 26.43 317 P P 12 04 18.2 +1.1
baz=127
PFO Pinyon Flats O 26.43 317 P P 12 04 18.9 +1.7
2.0nm,0.7s,baz=128,slow=7.0,SNR=3.8
PFO LR LR 12 14 53.9
comp=Z,268nm,19.9s,baz=136,slow=37
PFO Pinyon Flats O 26.43 317 P P 12 04 18.7 +1.4
baz=127
PFO Pinyon Flats O 26.43 317 eP P 12 04 19.3 +2.1
6.0nm,1.0s
KNB Kanab 26.63 327 eP P 12 04 21.1 +2.0
8.2nm,0.9s
GMRC Granite Mounta 26.67 320 P P 12 04 21.0 +1.6
baz=130
L37A Phoenix Point, 26.68 2 P P 12 04 18.8 -0.4
baz=182
L38A Oak Wood Farm, 26.73 4 P P 12 04 19.5 -0.2
baz=184
L40A Anamosa 26.80 7 P P 12 04 19.5 -0.8
baz=188
LCMT Little Creek M 26.85 327 eP P 12 04 23.0 +2.0
4.4nm,1.1s
HEC Hector,Ludlow 27.12 319 P P 12 04 25.8 +2.4
baz=130
O20A White River Ci 27.16 338 P P 12 04 25.7 +1.9
baz=151
O20A White River Ci 27.16 338 eP P 12 04 26.4 +2.5
24nm,1.5s
CCUT Cedar City 27.32 327 eP P 12 04 26.9 +1.6
5.2nm,0.9s
K40A Cosby 27.44 7 P P 12 04 25.6 -0.5
baz=188
K41A Shullsburg 27.45 8 P P 12 04 25.4 -0.8
baz=190
MSU Marysvale 27.47 330 eP P 12 04 28.7 +2.1
SHPR Sheep Range 27.54 323 eP P 12 04 29.4 +2.1
P17A Butcher Ranch, 27.59 333 eP P 12 04 29.3 +1.6
8.9nm,1.0s
BFSC Mount Baldy Ra 27.60 317 P P 12 04 28.4 +0.7
baz=126
JFWS Jewell Farm 27.76 8 eP P 12 04 28.4 -0.5
ATAH Atahualpa 27.89 142 LR LR 12 13 49.1
comp=Z,140nm,18.4s,baz=268,slow=32
J30A Dallas 28.09 353 P P 12 04 32.4 +0.5
baz=170
J40A Soldiers Grove 28.18 7 P P 12 04 32.2 -0.4
baz=188
EDW2 Edwards Air Fo 28.21 318 P P 12 04 35.6 +2.5
baz=127
TPNV Topopah Spring 28.48 323 P P 12 04 37.0 +1.4
baz=133
TPNV Topopah Spring 28.48 323 eP P 12 04 38.0 +2.3
TPNV epP sP 12 04 42.7 +2.8
FURC Furnace Creek, 28.52 321 P P 12 04 36.9 +1.1
baz=131
MPMC Manual Prospec 28.63 320 P P 12 04 38.0 +1.0
baz=130
DAC Darwin (Calif) 28.84 320 eP P 12 04 40.6 +1.8
3.6nm,0.9s
R11A Troy Canyon, C 29.09 326 P P 12 04 42.9 +1.8
baz=136,SNR=6.2
R11A Troy Canyon, C 29.09 326 eP P 12 04 43.2 +2.1
3.4nm,1.0s
DUG Dugway, Tooele 29.11 332 P P 12 04 42.2 +1.1
baz=142
GRAC Grapevine Rang 29.17 322 P P 12 04 43.6 +2.0
baz=131
CWC Cottonwood Cre 29.24 320 P P 12 04 43.4 +1.0
baz=129
TCUT Toone Canyon 29.24 334 eP P 12 04 44.2 +1.7
25nm,0.9s
VES Vestal, Richgr 29.50 318 P P 12 04 46.2 +1.7
baz=127
HWUT Hardware Ranch 29.72 335 eP P 12 04 48.2 +1.6
6.1nm,1.2s
SPMN Marine on St. 29.81 3 eP P 12 04 46.3 -0.9
6.9nm,0.6s
BW06 Boulder Array 29.94 339 P P 12 04 48.3 -0.3
baz=151
BW06 Boulder Array 29.94 339 eP P 12 04 48.9 +0.3
PD31 Pinedale Array 29.94 339 eP P 12 04 49.8 +1.1
PDAR Pinedale Array 29.94 339 P P 12 04 48.9 +0.2
1.4nm,0.9s,baz=141,slow=9.6,SNR=10.0
PDAR LR LR 12 18 03.6
comp=Z,103nm,18.7s,baz=157,slow=39
PCRV Puerto La Cruz 30.23 96 LR LR 12 18 16.9
comp=Z,146nm,20.8s,baz=298,slow=39
HVU Hansel Valley 30.37 333 eP P 12 04 54.1 +1.8
10nm,0.9s
REDW Red Top Meadow 30.93 337 eP P 12 04 58.5 +1.2
14nm,1.0s
SNOW Snow King Moun 30.98 338 eP P 12 04 59.4 +1.6
18nm,0.8s
LOHW Long Hollow 31.05 338 eP P 12 04 59.7 +1.3
9.2nm,0.9s
TPAW Teton Pass 31.07 337 eP P 12 05 00.1 +1.4
11nm,1.0s
MOOW Moose Ponds 31.22 338 eP P 12 05 01.3 +1.4
3.9nm,0.8s
IMW Indian Meadow 31.42 338 eP P 12 05 03.1 +1.4
8.8nm,1.4s
BMN Battle Mountai 31.47 327 eP P 12 05 03.9 +1.9
3.6nm,0.9s
D35A Remer 31.62 1 P P 12 05 02.4 -0.6
baz=181
D37A Cotton 31.76 4 P P 12 05 03.7 -0.6
baz=184,SNR=5.9
PNTR Pine Nut 31.87 322 eP P 12 05 08.4 +2.7
RLMT Red Lodge 31.93 341 P P 12 05 06.7 +0.6
baz=153
RLMT Red Lodge 31.93 341 eP P 12 05 07.1 +1.0
PAHR Pah Rah Range 32.16 324 eP P 12 05 10.6 +2.5
C36A Pine Crest Far 32.34 3 P P 12 05 09.3 -0.1
baz=184
C37A Embarrass 32.34 4 P P 12 05 09.0 -0.5
baz=185
C38A Sawbill Land. 32.40 5 P P 12 05 09.1 -0.8
baz=186
HLID Hailey 32.52 334 P P 12 05 12.4 +1.2
baz=143,SNR=9.7
HLID Hailey 32.52 334 eP P 12 05 12.7 +1.4
EYMN Ely 32.61 5 P P 12 05 10.7 -1.0
baz=186
AGMN Agassiz Nation 32.82 359 eP P 12 05 13.1 -0.5
8.9nm,0.8s
B35A Bob, Littlefor 32.90 2 P P 12 05 13.9 -0.4
baz=182
MCMT McKenzie Canyo 32.93 337 eP P 12 05 16.8 +1.9
B32A Ashes, Strandq 32.94 358 P P 12 05 15.0 +0.4
baz=177
BOZ Bozeman (W) 33.18 339 P P 12 05 17.4 +0.4
baz=149
BOZ Bozeman (W) 33.18 339 eP P 12 05 18.0 +1.0
DLMT Dillon 33.29 337 eP P 12 05 19.7 +1.8
19nm,1.0s
ORV Oroville 33.30 321 eP P 12 05 21.2 +3.2
3.6nm,0.9s
LRM Limekiln Ridge 33.63 338 eP P 12 05 22.3 +1.4
WVOR Wild Horse Val 33.65 328 eP P 12 05 22.5 +1.4
34nm,1.8s
A26A Wade Farm, Ken 33.89 352 P P 12 05 23.3 +0.4
baz=167
MOD Modoc Plateau 34.16 326 eP P 12 05 27.0 +1.4
5.3nm,0.9s
EGMT Eagleton 34.70 343 P P 12 05 31.3 +1.2
baz=154
EGMT Eagleton 34.70 343 eP P 12 05 31.4 +1.3
7.6nm,1.0s
ULM Lac du Bonnet 34.78 359 P P 12 05 29.6 -1.0
1.9nm,0.6s,baz=173,slow=12,SNR=3.4
ULM LR LR 12 21 25.7
comp=Z,96nm,20.3s,baz=39,slow=40
CHMT Chamberlain Mo 34.85 338 eP P 12 05 32.5 +1.0
N02D Trinity Center 34.91 322 P P 12 05 33.6 +1.7
baz=128
SWMT Swartz Lake 35.62 338 eP P 12 05 38.5 +0.4
F10A Beach Ranch, E 35.65 333 eP P 12 05 39.2 +0.9
13nm,0.8s
JTMT Jette 35.92 338 eP P 12 05 41.8 +1.1
J04D Umpqua Nationa 36.04 326 P P 12 05 43.4 +1.5
baz=132
I05D Terrebonne, OR 36.39 328 P P 12 05 45.7 +1.0
baz=134
I04A Tendick Farm, 36.58 326 P P 12 05 46.9 +0.7
baz=132
I03D Drain, OR 37.02 325 P P 12 05 51.1 +1.2
baz=130
NEW Newport 37.43 336 P P 12 05 53.8 +0.4
2.2nm,0.6s,baz=150,slow=9.3,SNR=6.2
NEW Newport 37.43 336 P P 12 05 54.0 +0.6
baz=143
NEW Newport 37.43 336 eP P 12 05 54.2 +0.8
G03D McMinnville, O 37.98 327 P P 12 05 59.5 +1.5
baz=132
PTGA Pitinga 38.32 112 P P 12 06 01.0 -0.3
13nm,0.8s,baz=309,slow=10.0,SNR=26
PTGA Pitinga 38.32 112 eP P 12 05 60.0 -1.4
18nm,0.9s
LON Longmire 38.33 330 eP P 12 06 02.1 +1.1
4.1nm,0.8s
B08A Colville Reser 38.41 334 eP P 12 06 02.2 +0.5
4.0nm,1.0s
LPAZ La Paz 41.28 139 P P 12 06 28.9 +2.3
0.8nm,0.8s,baz=320,slow=8.5,SNR=2.8
LPAZ LR LR 12 21 46.1
comp=Z,88nm,21.3s,baz=320,slow=33
LPAZ La Paz 41.28 139 eP P 12 06 28.9 +2.3
LPAZ eS S 12 12 33.9 -7.5
SCHQ Schefferville 45.08 23 LR LR 12 28 52.7
comp=Z,130nm,18.2s,baz=313,slow=40
YKA Yellowknife Ar 49.01 348 P P 12 07 26.1 -0.5
2.1nm,0.7s,baz=154,slow=7.4,SNR=16
YKA LR LR 12 30 42.4
comp=Z,6.9nm,18.3s,baz=180,slow=39
YKB5 Yellowknife Ar 49.01 348 eP P 12 07 25.9 -0.8
DLBC Dease Lake 50.15 337 P P 12 07 37.1 +1.5
1.3nm,0.6s,baz=123,slow=7.1,SNR=3.5
DLBC Dease Lake 50.15 337 eP P 12 07 36.0 +0.4
9.9nm,1.3s
RKT Rikitea 54.58 226 eLR LR 12 23 54.7
204nm,33.8s
RKT Rikitea 54.58 226 eT T 13 06 27.3
1.7nm,0.3s
CPUP Villa Florida 55.45 138 P P 12 08 18.8 +3.7
5.4nm,0.9s,baz=325,slow=6.6,SNR=7.3
CPUP LR LR 12 31 57.9
comp=Z,61nm,19.1s,baz=328,slow=36
BDFB Brasilia 55.88 121 P P 12 08 20.5 +2.0
16nm,0.7s,baz=255,slow=19
BDFB Brasilia 55.88 121 eP P 12 08 17.4 -1.1
28nm,0.7s
INK Inuvik 58.26 344 P P 12 08 34.0 -0.4
3.5nm,0.7s,baz=128,slow=6.5,SNR=11
INK Inuvik 58.26 344 eP P 12 08 34.0 -0.4
4.1nm,0.8s
DOT Dot Lake 58.73 337 eP P 12 08 39.3 +1.5
12nm,1.1s
PLCA Paso Flores 60.34 159 P P 12 08 51.8 +2.5
2.1nm,0.8s,baz=262,slow=6.9,SNR=3.3
PLCA LR LR 12 29 38.9
comp=Z,48nm,19.0s,baz=2.5,slow=31
IL1 Eielson Array 60.36 337 eP P 12 08 49.1 0.0
ILAR Eielson Array 60.36 337 P P 12 08 48.9 -0.1
1.9nm,0.9s,baz=137,slow=4.8,SNR=24
ILAR LR LR 12 36 12.0
comp=Z,87nm,18.7s,baz=142,slow=37
ILB Eielson Array 60.36 337 eP P 12 08 49.0 0.0
RND Reindeer 60.48 335 eP P 12 08 50.9 +0.9
8.9nm,1.0s
CAST Castle Rocks 61.80 335 eP P 12 08 58.7 -0.2
6.3nm,1.2s
MLY Manley 61.94 337 eP P 12 08 59.7 -0.1
4.1nm,0.8s
RCBR Riachuelo 62.39 105 P P 12 09 03.3 -0.4
13nm,0.8s,baz=312,slow=7.5,SNR=4.0
PPT Papeete 62.82 241 LR LR 12 28 16.3
comp=Z,83nm,21.5s,baz=24,slow=28
PPT2 Papeete2 62.83 241 eLR LR 12 27 34.4
126nm,25.5s
TBI Tubuai 65.55 235 eLR LR 12 28 49.6
105nm,27.2s
ESDC Sonseca Array 81.28 51 P P 12 10 55.0 -1.8
1.5nm,0.8s,baz=303,slow=4.4,SNR=4.0
SNF Seneffe 84.18 39 P P 12 11 14.1 +2.5
NB2 NORSAR Subarra 84.39 28 P P 12 11 11.9 -0.6
comp=Z,5.2nm,0.9s,baz=295,slow=5.1
DOU Dourbes 84.49 40 P P 12 11 14.3 +1.2
BCLA Clavier 84.83 39 P P 12 11 16.3 +1.4
MEM Membach 85.19 39 P P 12 11 18.2 +1.5
comp=Z,7.1nm,1.2s
ARCES ARCESS Array B 85.78 18 P P 12 11 22.8 +3.5
comp=Z,1.4nm,0.7s,baz=301,slow=7.3,SNR=3.9
ARCES LR LR 12 50 12.8
comp=Z,28nm,19.4s,baz=276,slow=36
DBIC Dimbokro 88.58 84 LR LR 12 49 42.7
comp=Z,30nm,18.5s,baz=262,slow=35
CLL Collm 89.08 37 e(P) P 12 11 38.0 +2.5
GERES GERESS Array B 90.48 39 P P 12 11 41.2 -1.1
comp=Z,1.2nm,0.7s,baz=343,slow=3.1,SNR=7.2
GERES LR LR 12 50 48.1
comp=Z,35nm,21.0s,baz=286,slow=35
TOA1 Torodi Ar. Sit 93.04 76 eP P 12 11 53.2 -1.5
comp=Z,17nm,1.8s
TORD Torodi Ar. Bea 93.05 76 P P 12 11 53.2 -1.5
comp=Z,0.2nm,0.4s,baz=306,slow=5.1,SNR=4.1
AKASG Malin Array Be 98.24 32 LR LR 12 55 51.2
comp=Z,26nm,21.2s,baz=295,slow=35
LZH Lanzhou 125.73 341 ePKP PKPdf 12 17 42.3 -0.4
LZH pPKP pPKPdf 12 17 52.1 +6.0
LZH sPKP 12 17 56.8
LZH LR LR
comp=N,110nm,18.0s

LZH					LR	LR					
	comp=E,100nm,18.1s										
LZH					LR	LR					
	comp=Z,150nm,20.2s										
WR1	**Warramunga Arr**	**132.71**	**257**	*e*PKPdf		**PKPdf**		**12 17 57.8**	**+1.7**		
WRA	**Warramunga Arr**	**132.71**	**257**	PKP		**PKPdf**		**12 17 57.8**	**+1.7**		
	comp=Z,0.7nm,0.9s,baz=91,slow=2.3,SNR=4.2										
ASAR	**Alice Springs**	**133.18**	**252**	PKP		**PKPdf**		**12 17 58.2**	**+1.3**		
	comp=Z,0.4nm,0.9s,baz=75,slow=2.2,SNR=3.3										
CMAR	**Chiang Mai Arr**	**143.60**	**337**	PKP		**PKPdf**		**12 18 16.2**	**+0.1**		
	comp=Z,0.7nm,0.4s,baz=331,slow=3.8,SNR=4.9										

*ISCJB **22** 12:17:54.6±0.6,31°.37N±0°.04×115°.37W±0°.03,h3km±7km, Error ellipse: s-maj=6.1km s-min=4.7km az=173.9*
*NEIC **22** 12:17:55.2,31°.34N×115°.34W,h6km,ML3.0(PAS), ML2.9(ECX), After ECX.*
*ECX **22** 12:17:55.2±0.5,31°.34N×115°.34W,h6km,MD2.8,ML2.9*
*MEX **22** 12:17:55.5±0.4,31°.03N×115°.34W,h44km±6km,MD3.9*

ISC 22 12:17:54.8±1.0,31°32N±0°.03×115°38W±0°.03,h10km±9km, n23,σ0s86/39,8C-2D,Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**0.29**	**195**	*i* P		**Pb**	**12 18 02.0**	**-0.2**
SPIG				*e*S		**Sb**	**12 18 06.8**	**-0.3**
SPIG	**San Pedro Mart**	**0.29**	**195**	*e*P		**Pg**	**12 18 01.5**	**+0.8**
SPIG	**San Pedro Mart**	**0.29**	**195**	*i* P		**Pb**	**12 18 02.0**	**-0.2**
SPIG				*e*S		**Sb**	**12 18 06.8**	**-0.3**
SPX	**San Pedro Mart**	**0.29**	**195**	*i*P		**Pg**	**12 18 01.1**	**+0.3**
SPX				*e*S		**Sb**	**12 18 06.0**	**-1.2**
SPX	**San Pedro Mart**	**0.29**	**195**	*e*P		**Pg**	**12 18 01.0**	**+0.3**
SPX				*e*S		**Sg**	**12 18 05.8**	**+1.1**
ECBX	**El Chinero**	**0.32**	**62**	*e*P		**Pg**	**12 18 00.5**	**-0.7**
ECBX				*e*S		**Sg**	**12 18 04.2**	**-1.1**
ECBX				IAML			12 18 05.0	
	comp=E,2μm,0.5s							
ECBX				*e*			12 18 05.0	
ZAX	**El Zacaton**	**0.79**	**284**	*e*P		**Pg**	**12 18 10.0**	**-0.1**
ZAX				*e*S		**Sg**	**12 18 20.4**	**0.0**
ZAX				IAML			12 18 25.7	
	comp=E,433nm,0.5s							
ZAX				*e*			12 18 25.7	
MBIG	**Mexicali**	**1.09**	**8**	*i* P		**Pg**	**12 18 16.4**	**+0.6**
MBIG				*e*S		**Sn**	**12 18 33.3**	**+2.0**
CPBX	**Cerro Prieto**	**1.09**	**3**	*e*P		**Pg**	**12 18 17.0**	**+1.2**
CPBX				*e*S		**Sn**	**12 18 32.9**	**+1.6**
ECNX	**Esteban Cantu**	**1.09**	**288**	*e*P		**Pb**	**12 18 15.1**	**-0.8**
ECNX				*e*P		**Pg**	**12 18 16.7**	**+0.8**
PBX	**Punta Banda**	**1.23**	**290**	*e*P		**Pn**	**12 18 17.0**	**-0.9**
RMX	**La Rumorosa**	**1.41**	**335**	*e*P		**Pn**	**12 18 19.4**	**-1.2**
IKP	**In-Ko-Pah, Jac**	**1.46**	**335**	P		**Pn**	**12 18 20.4**	**-0.9**
	baz=153							
IKP				S		**Sn**	**12 18 39.5**	**-1.1**
	baz=153							
IKP	**In-Ko-Pah, Jac**	**1.46**	**335**	*e*P		**Pn**	**12 18 20.6**	**-0.8**
CBX	**Cerro Bola**	**1.48**	**312**	*e*P		**Pn**	**12 18 21.5**	**0.0**
CBX				*e*S		**Sn**	**12 18 40.9**	**0.0**
CBX	**Cerro Bola**	**1.48**	**312**	*e*P		**Pn**	**12 18 21.7**	**+0.2**
CBX				*e*			12 18 45.4	
CBX				IAML			12 18 45.4	
	comp=E,205nm,0.8s							
CBX	**Cerro Bola**	**1.48**	**312**	*e*P		**Pn**	**12 18 21.5**	**0.0**
CBX				*e*S		**Sn**	**12 18 40.9**	**0.0**
TJIG	**Tijuana**	**1.56**	**315**	*e*P		**Pn**	**12 18 22.5**	**-0.1**
TJIG				*i* S		**Sn**	**12 18 43.0**	**0.0**
MONP2	**Monument Peak**	**1.80**	**331**	P		**Pn**	**12 18 25.9**	**-0.1**
	baz=149							
MONP2				S		**Sn**	**12 18 49.9**	**+0.8**
	baz=149							
109C	**Camp Elliot, M**	**2.14**	**317**	S		**Sb**	**12 18 59.7**	**-0.6**
	baz=136							
214A	**Organ Pipe Nat**	**2.28**	**73**	*e*Pn		**Pn**	**12 18 33.2**	**+0.7**
214A				*e*Sn		**Sn**	**12 19 00.2**	**-0.4**
PFO	**Pinyon Flats O**	**2.46**	**338**	Sg		**Sb**	**12 19 10.9**	**+1.4**
	baz=157							
PFO	**Pinyon Flats O**	**2.46**	**338**	*e*Pn		**Pn**	**12 18 36.0**	**+1.0**
PFO				*e*Sn		**Sb**	**12 19 08.4**	**-1.2**

*IDC **22** 12:34:16.0±0.6,13°.87N×92°.89E,h0km,mb4.2/15, mb1 4.2/16,mb1mx3.9/62,mbtmp4.1/16, Error ellipse: s-maj=30.3km s-min=12.2km az=56.0*
*ISCJB **22** 12:34:18.8±0.5,13°.91N±0°.08×93°.01E±0°.09,h32km, mb4.2/17, Error ellipse: s-maj=13.8km s-min=9.6km az=143.2*
*NEIC **22** 12:34:20.7±0.4,13°.84N×92°.84E,h35km,mb4.4/3, Error ellipse: s-maj=10.6km s-min=9.6km az=57.0*

ISC 22 12:34:20.3±0.6,13°.88N±0°.09×92°.89E±0°.07,h32km,n25, σ1s33/26,mb4.2/17,Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**7.38**	**51**	Pn	**Pn**	**12 36 06.0**	**0.0**
	baz=241,slow=15,SNR=2.4						
CMAR				Sn	**Sn**	**12 37 24.4**	**-4.4**
	0.5nm,0.3s,baz=239,slow=27,SNR=7.7						
CHTO	**Chiang Mai**	**7.60**	**49**	*e*Pn	**Pn**	**12 36 08.4**	**-0.5**
PALK	**Pallekele**	**13.66**	**243**	*e*Pn	**Pn**	**12 37 28.3**	**-3.7**
PALK				*e*Sn	**Sn**	**12 40 01.8**	**-0.9**
H08S3	**Diego Garcia H**	**29.44**	**225**	T	T	13 11 11.1	
	baz=42,slow=76,SNR=11						
H08S2	**Diego Garcia H**	**29.45**	**225**	T	T	13 11 11.5	
	baz=42,slow=76,SNR=13						
H08S1	**Diego Garcia H**	**29.46**	**225**	T	T	13 11 12.5	
	baz=42,slow=76,SNR=9.9						
MKAR	**Makanchi Array**	**34.00**	**347**	P	**P**	**12 41 01.7**	**+0.6**
	3.5nm,0.8s,baz=163,slow=8.6,SNR=23						
SONM	**Songino Array**	**35.67**	**16**	P	**P**	**12 41 16.1**	**+0.3**
	0.5nm,0.3s,baz=188,slow=8.7,SNR=4.4						
KURBB	**Kurchatov Arra**	**38.46**	**345**	P	**P**	**12 41 39.6**	**+0.5**
	2.9nm,0.7s,baz=162,slow=8.0,SNR=22						
KURK	**Kurchatov**	**38.53**	**345**	P	**P**	**12 41 39.6**	**-0.1**
GEYT	**Alibeck**	**39.04**	**314**	P	**P**	**12 41 44.8**	**+0.5**
	2.4nm,0.4s,baz=141,slow=7.3,SNR=5.8						
ZALV	**Zalesovo Beam**	**40.48**	**353**	P	**P**	**12 41 56.0**	**0.0**
	1.7nm,0.5s,baz=170,slow=8.8,SNR=11						
ABKAR	**Akbulak array**	**44.44**	**329**	*e*P	**P**	**12 42 29.2**	**+1.0**
	10nm,0.8s						
FITZ	**Fitzroy Crossi**	**45.31**	**134**	P	**P**	**12 42 35.4**	**-0.1**
	2.9nm,0.6s,baz=322,slow=9.5,SNR=15						
FITZ	**Fitzroy Crossi**	**45.31**	**134**	*e*P	**P**	**12 42 35.1**	**-0.4**
	2.3nm,0.5s						
AKTO	**Aktyubinsk**	**46.15**	**330**	P	**P**	**12 42 42.0**	**+0.1**
	0.7nm,0.3s,baz=112,slow=7.7,SNR=3.8						
NWAO	**Narrogin (SRO)**	**52.03**	**154**	P	**P**	**12 43 27.8**	**+0.8**
	6.2nm,0.9s,baz=338,slow=11,SNR=4.5						
WRA	**Warramunga Arr**	**52.84**	**129**	P	**P**	**12 43 33.4**	**+0.1**
	2.3nm,0.8s,baz=303,slow=9.2,SNR=20						
WRA				PcP	**PcP**	**12 44 43.1**	**+0.8**
	0.7nm,0.6s,baz=315,slow=3.2,SNR=6.8						
WRAB	**Tennant Creek**	**52.84**	**129**	*e*P	**P**	**12 43 33.1**	**-0.2**
	2.8nm,0.6s						
ASAR	**Alice Springs**	**54.77**	**133**	P	**P**	**12 43 47.9**	**+0.5**
	2.3nm,0.5s,baz=311,slow=7.0,SNR=78						
ASAR				PcP	**PcP**	**12 44 50.5**	**+0.9**
	0.9nm,0.9s,baz=301,slow=3.6,SNR=5.3						
BRTR	**Keskin Array B**	**57.68**	**308**	P	**P**	**12 44 08.5**	**+0.4**
	1.3nm,0.8s,baz=111,slow=6.8,SNR=6.4						
STKA	**Stephens Creek**	**65.16**	**135**	P	**P**	**12 44 59.4**	**+0.9**
	1.3nm,0.6s,baz=310,slow=10,SNR=5.6						
FINES	**FINESS Array B**	**66.88**	**331**	P	**P**	**12 45 09.3**	**+0.3**
	2.7nm,0.9s,baz=101,slow=7.2,SNR=2.2						
GERES	**GERESS Array B**	**72.59**	**317**	P	**P**	**12 45 45.4**	**+0.7**
	2.1nm,1.1s,baz=98,slow=5.5,SNR=4.9						
TORD	**Torodi Ar. Bea**	**88.05**	**283**	P	**P**	**12 47 09.2**	**+1.0**
	0.4nm,0.5s,baz=80,slow=4.9,SNR=3.1						

IDC 22 12:35:27.1±3.0,54°.17N×87°.20E,h0km,mb1 2.7/2, mb1mx2.7/53,mbtmp2.7/2,ML2.4/1,Error ellipse: s-maj=24.6km s-min=19.9km az=47.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.42**	**262**	*i*		12 44 33.7	
	baz=80,slow=311,SNR=5.3						
ZALV	**Zalesovo Beam**	**1.42**	**262**	Pg	Pn	12 35 52.9	-1.3
	2.1nm,0.3s,baz=79,slow=16,SNR=23						
ZALV				Lg	Lg	12 36 12.4	
	1.6nm,0.3s,baz=82,slow=25,SNR=9.8						
KURBB	**Kurchatov Arra**	**6.39**	**240**	Pn	Pn	12 37 02.8	+0.5
	0.1nm,0.3s,baz=56,slow=14,SNR=6.2						
KURBB				Sn	Sn	12 38 16.4	+0.6
	0.1nm,0.3s,baz=4.3,slow=23,SNR=4.1						
KURBB				Lg	Lg	12 38 46.6	
	0.0nm,0.3s,baz=64,slow=4.3,SNR=2.6						
MKAR	**Makanchi Array**	**8.02**	**205**	Pn	Pn	12 37 26.0	+1.2
	baz=26,slow=13,SNR=2.9						

IDC 22 12:43:55.4±7.7,6°.13S×150°.89E,h113km±52km,mb3.7/3, mb1 3.9/3,mb1mx3.2/32,mbtmp4.1/3,Error ellipse: s-maj=91.3km s-min=53.5km az=125.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**4.93**	**228**	P	Pn	12 45 07.2	-0.1
	0.9nm,0.3s,baz=333,slow=11,SNR=3.2						
PMG				S	Sn	12 46 04.4	+1.2
	0.9nm,0.3s,baz=198,slow=20,SNR=1.8						
WRA	**Warramunga Arr**	**21.15**	**228**	P	P	12 48 31.0	-0.6
	3.6nm,0.5s,baz=54,slow=10,SNR=38						
ASAR	**Alice Springs**	**23.90**	**221**	P	P	12 48 59.2	+0.2
	5.1nm,0.7s,baz=57,slow=9.0,SNR=86						
FITZ	**Fitzroy Crossi**	**27.36**	**242**	P	P	12 49 29.8	-0.4
	1.9nm,0.8s,baz=56,slow=9.1,SNR=6.1						
TORD	**Torodi Ar. Bea**	**148.87**	**285**	PKPbc	PKPbc	13 03 30.9	-0.2
	0.9nm,0.6s,baz=59,slow=3.7,SNR=6.6						

IDC 22 12:50:50.1±3.3,30°.82S×177°.78W,h0km,mb3.7/3, mb1 3.9/3,mb1mx3.6/24,mbtmp3.7/3,Error ellipse: s-maj=72.5km s-min=24.4km az=113.0,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.56**	**355**	Pn	Pb	12 51 19.9	0.0
	101nm,0.3s,baz=271,slow=22,SNR=4.0						
RAO				Sn	Sg	12 51 40.5	+0.2
	119nm,0.3s,baz=10.0,slow=22,SNR=3.0						
URZ	**Urewera**	**8.54**	**208**	Sn	Sn	12 54 33.4	+1.5
	0.6nm,0.3s,baz=138,slow=23,SNR=3.8						
STKA	**Stephens Creek**	**34.57**	**257**	P	P	12 57 42.3	+1.7
	1.5nm,0.5s,baz=96,slow=10,SNR=3.8						
ASAR	**Alice Springs**	**43.28**	**267**	P	P	12 58 53.2	-0.5
	0.2nm,0.3s,baz=103,slow=7.3,SNR=4.3						
WRA	**Warramunga Arr**	**44.31**	**272**	P	P	12 59 00.9	-1.1
	0.7nm,0.5s,baz=111,slow=8.0,SNR=11						
FINES	**FINESS Array B**	**145.60**	**340**	PKPbc	PKPdf	13 10 28.6	-0.9
	1.5nm,0.8s,baz=36,slow=3.5,SNR=6.8						

*ISCJB **22** 13:25:24.0±0.4,35°.79N±0°.05×137°.33E±0°.06, h280km±3km,mb3.5/7, Error ellipse: s-maj=9.2km s-min=6.5km az=151.7*
*JMA **22** 13:25:24.9±0.2,35°.80N×137°.32E,h275km±2km,M3.1*
*IDC **22** 13:25:25.1±0.5,35°.74N×137°.30E,h273km±6km,mb3.3/7, mb1 3.3/9,mb1mx3.0/36,mbtmp3.9/9, Error ellipse: s-maj=16.0km s-min=13.0km az=63.0*

ISC 22 13:25:24.8±0.8,35°.80N±0°.06×137°.30E±0°.05,h274km±6km, n29,σ0s73/38,mb3.5/7,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JKG	**Kaga**	**0.92**	**301**	P	**Pn**	**13 26 02.5**	**+0.6**
JKG				*e*S	**S**	**13 26 31.3**	**-0.1**
MAT	**Matsushiro**	**1.04**	**45**	P	**Pn**	**13 26 03.0**	**+0.4**
MAT				S	**S**	**13 26 32.4**	**-0.1**
MAT	**Matsushiro**	**1.04**	**45**	P	**Pn**	**13 26 03.1**	**+0.4**
MAT				S	**S**	**13 26 32.5**	**-0.1**
MJAR	**Matsushiro Arr**	**1.04**	**45**	P	**Pn**	**13 26 02.9**	**+0.3**
	22nm,0.3s,baz=223,slow=17,SNR=224						
MJAR				S	**S**	**13 26 33.3**	**+0.7**
	1.6nm,0.3s,baz=253,slow=9.7,SNR=10						
JYN	**Shimob**	**1.06**	**106**	P	**Pn**	**13 26 03.1**	**+0.3**
JRY	**Ryogami san**	**1.32**	**80**	P	**Pn**	**13 26 04.7**	**+0.4**
JRY				S	**S**	**13 26 35.2**	**-0.3**
JIE	**Ise**	**1.49**	**199**	*e*S	**S**	**13 26 37.2**	**-0.4**
JOD2	**Odawara 2**	**1.55**	**110**	P	**Pn**	**13 26 06.5**	**+0.6**
JWT	**Wachi**	**1.63**	**252**	P	**Pn**	**13 26 06.7**	**+0.3**
JWT				S	**S**	**13 26 38.5**	**-0.9**
JSZ	**Suzu**	**1.65**	**2**	P	**Pn**	**13 26 06.5**	**+0.1**
JAG	**Ashikaga**	**1.85**	**70**	P	**Pn**	**13 26 07.9**	**-0.2**
TK02	**Tokai 2**	**1.89**	**168**	P	**Pn**	**13 26 09.5**	**+1.3**
JWY	**Kouya**	**2.11**	**222**	P	**Pn**	**13 26 10.8**	**+0.4**
JWY				*e*S	**S**	**13 26 45.7**	**-0.9**
JSD	**Sado**	**2.36**	**19**	P	**Pn**	**13 26 12.9**	**+0.5**
JNS	**Sasagawa**	**2.58**	**38**	P	**Pn**	**13 26 14.8**	**+0.2**
JWZ	**Kozaga**	**2.62**	**210**	P	**Pn**	**13 26 15.1**	**+0.1**
BSO1	**Boso 1**	**3.22**	**110**	P	**Pn**	**13 26 20.2**	**-0.4**
BSO1				*e*S	**S**	**13 27 03.8**	**-1.2**
JOI	**OKI**	**3.32**	**280**	P	**Pn**	**13 26 21.9**	**-0.2**
JNU	**Nakatsue**	**5.94**	**245**	P	**Pn**	**13 26 53.1**	**+0.4**
	0.3nm,0.3s,baz=16,slow=6.0,SNR=3.4						
JNU				S	**S**	**13 28 02.2**	**-1.2**
	0.3nm,0.3s,baz=25,slow=23,SNR=6.0						
KSRS	**Korea Array**	**7.72**	**285**	P	**Pn**	**13 27 16.0**	**+1.4**
	0.3nm,0.3s,baz=102,slow=13,SNR=15						
ASAJ	**Asahikawa**	**9.24**	**24**	P	**Pn**	**13 27 32.2**	**-1.4**
	3.3nm,0.3s,baz=223,slow=12,SNR=29						
KLR	**Kul'dur**	**14.02**	**345**	P	**Pn**	**13 28 30.9**	**-1.4**
	0.2nm,0.3s,baz=135,slow=8.7,SNR=6.7						
SONM	**Songino Array**	**25.80**	**307**	P	**P**	**13 30 32.6**	**+1.4**
	0.7nm,0.4s,baz=110,slow=8.3,SNR=3.8						
ZALV	**Zalesovo Beam**	**40.32**	**314**	P	**P**	**13 32 35.9**	**+0.2**
	1.0nm,0.5s,baz=112,slow=6.8,SNR=6.2						
MKAR	**Makanchi Array**	**41.97**	**303**	P	**P**	**13 32 50.2**	**+1.0**
	0.8nm,0.6s,baz=89,slow=11,SNR=9.4						
KURBB	**Kurchatov Arra**	**44.16**	**309**	P	**P**	**13 33 06.8**	**+0.3**
	1.1nm,0.5s,baz=85,slow=7.4,SNR=8.5						
WRA	**Warramunga Arr**	**55.51**	**183**	P	**P**	**13 34 31.6**	**-0.2**
	1.5nm,0.3s,baz=0.4,slow=7.6,SNR=61						
ASAR	**Alice Springs**	**59.23**	**184**	P	**P**	**13 34 57.8**	**+0.1**
	0.6nm,0.3s,baz=358,slow=5.8,SNR=30						
FINES	**FINESS Array B**	**68.32**	**331**	P	**P**	**13 35 56.3**	**+0.1**
	0.9nm,0.8s,baz=131,slow=5.8,SNR=3.4						

*IDC **22** 13:26:30.5±1.9,37°.07N×141°.10E,h0km,mb3.7/4, mb1 3.7/5,mb1mx3.5/34,mbtmp3.6/5,ML3.2/1,Error ellipse: s-maj=36.9km s-min=32.1km az=84.0*
*ISCJB **22** 13:26:31.3±1.0,37°.10N±0°.03×140°.96E±0°.06,h7km±4km, mb3.6/4,Error ellipse: s-maj=8.9km s-min=5.2km az=17.8*
*JMA **22** 13:26:32.8,37°.12N×140°.85E,h7km±1km,M3.3*
JMA Felt II J1.

ISC 22 13:26:32.3±1.5,37°.11N±0°.04×140°92E±0°.06,h4km±9km, n13,σ0s86/22,mb3.7/4,5C-2D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**267**	P	**Pg**	**13 26 34.1**	**-0.1**
ONAJ				*e*S	**Sg**	**13 26 35.1**	**-0.4**
JFK	**Kawauchi**	**0.26**	**353**	P	**Pg**	**13 26 37.7**	**+0.4**
JFK				*e*S	**Sg**	**13 26 41.7**	**+0.9**
JHO	**Hitachi**	**0.57**	**209**	P	**Pg**	**13 26 43.4**	**+0.3**
JHO				*e*S	**Sg**	**13 26 50.7**	**+0.2**
JFT	**Otama**	**0.62**	**312**	P	**Pg**	**13 26 44.1**	**0.0**
JFT				*e*S	**Sg**	**13 26 52.1**	**-0.1**
JMM	**Marumori**	**0.77**	**353**	P	**Pg**	**13 26 46.8**	**-0.1**
JMM				S	**Sg**	**13 26 57.2**	**+0.3**
JSB	**Shiboa**	**0.81**	**260**	P	**Pg**	**13 26 48.0**	**+0.2**
JSB				S	**Sg**	**13 26 58.3**	**0.0**
JFY	**Yanaizu**	**1.01**	**288**	P	**Pg**	**13 26 51.1**	**-0.6**
JFY				S	**Sg**	**13 27 03.6**	**-1.2**
MJAR	**Matsushiro Arr**	**2.24**	**256**	Pn	**Pn**	**13 27 11.2**	**+1.0**
	5.9nm,0.3s,baz=80,slow=17,SNR=7.6						
MJAR				Sn	**Sn**	**13 27 40.1**	**+1.7**
	6.5nm,0.3s,baz=86,slow=25,SNR=6.2						
MAT	**Matsushiro**	**2.25**	**256**	P	**Pn**	**13 27 10.9**	**+0.6**
MAT				S	**Sn**	**13 27 40.3**	**+1.8**
MKAR	**Makanchi Array**	**43.74**	**302**	P	**P**	**13 34 38.7**	**0.0**
	0.2nm,0.3s,baz=84,slow=9.7,SNR=1.8						
KURBB	**Kurchatov Arra**	**45.64**	**308**	P	**P**	**13 34 53.1**	**-0.6**
	0.5nm,0.4s,baz=84,slow=8.1,SNR=1.7						
WRA	**Warramunga Arr**	**57.08**	**187**	P	**P**	**13 36 18.4**	**-1.3**
	0.4nm,0.7s,baz=3.6,slow=7.3,SNR=2.8						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**13 37 35.3**	**-0.5**
	1.4nm,0.8s,baz=71,slow=9.3,SNR=2.2						

*NIED **22** 14:04:00,38°.70N×142°.20E,h35km,Mw3.4 Best double couple: M0 1.62000×10^14 NP1:φs112.00000°,δ19.00000°, λ7.00000°. NP2:φs16.00000°,δ88.00000°,λ109.00000°.*

*ISCJB **22** 14:04:01.0±1.5,38°.60N±0°.05×142°.23E±0°.10,h31km±7km, mb3.2/2,MS2.5/1,Error ellipse: s-maj=13.2km s-min=6.9km az=21.4*
*JMA **22** 14:04:02.4±0.1,38°.66N×142°.15E,h41km±1km,M3.6*
*IDC **22** 14:04:05.3±3.3,38°.61N×142°.11E,h66km±32km,mb3.0/2, mb1 3.2/5,mb1mx3.0/34,mbtmp3.3/5,ML2.8/3,MS2.5/2, Ms1 2.5/2,ms1mx2.2/8,Error ellipse: s-maj=46.7km s-min=19.2km az=107.0*

ISC 22 14:04:01.7±1.2,38°.57N±0°.05×142°.15E±0°.07,h27km±7km, n17,σ1s37/23,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.63**	**324**	P	**Pb**	**14 04 14.1**	**0.0**
OFUJ				*e*S	**Sb**	**14 04 22.1**	**-0.5**
JIO	**Ouri**	**0.64**	**260**	P	**Pn**	**14 04 15.2**	**+0.3**
JIO				*e*S	**Sn**	**14 04 24.0**	**-0.2**
JMK	**Ichinoseki**	**0.82**	**298**	P	**Pb**	**14 04 17.2**	**-0.1**
JMK				*e*S	**Sb**	**14 04 27.8**	**-0.1**
JOM	**Ohasama**	**1.12**	**324**	P	**Pn**	**14 04 21.2**	**-0.4**
JOM				*e*S	**Sn**	**14 04 35.3**	**-0.9**
JOU	**Okura**	**1.18**	**260**	P	**Pn**	**14 04 23.1**	**+0.6**
JOU				*e*S	**Sb**	**14 04 38.9**	**+0.6**
JMM	**Marumori**	**1.28**	**237**	P	**Pn**	**14 04 24.3**	**+0.5**
JTH	**Tanohata**	**1.38**	**351**	P	**Pn**	**14 04 24.1**	**-1.1**
JRG	**Rokugo**	**1.44**	**305**	P	**Pn**	**14 04 26.1**	**+0.1**
JYK	**Kaneyama**	**1.44**	**284**	P	**Pn**	**14 04 26.3**	**+0.3**
MJAR	**Matsushiro Arr**	**3.73**	**238**	P	**Pn**	**14 05 00.2**	**+2.7**
	0.8nm,0.3s,baz=37,slow=12,SNR=12						
MAT	**Matsushiro**	**3.73**	**238**	P	**Pn**	**14 04 59.5**	**+2.0**
MAT				*e*S	**Sn**	**14 05 39.5**	**-1.0**
ASAJ	**Asahikawa**	**5.55**	**3**	P	**Pn**	**14 05 23.0**	**+0.5**
	0.4nm,0.3s,baz=206,slow=15,SNR=6.9						
ASAJ				S	**Sn**	**14 06 28.1**	**+2.7**
USRK	**Ussuriysk Ar.**	**9.48**	**310**	P	**Pn**	**14 06 19.5**	**+3.1**
	0.2nm,0.3s,baz=119,slow=14,SNR=6.9						
KSRS	**Korea Array**	**11.28**	**269**	LR	LR	14 10 19.7	
	comp=Z,18nm,20.2s,baz=105,slow=33						
SONM	**Songino Array**	**27.45**	**301**	LR	LR	14 20 36.2	
	comp=Z,14nm,20.2s,baz=232,slow=36						
MKAR	**Makanchi Array**	**43.81**	**301**	P	**P**	**14 12 04.2**	**-1.0**
	0.2nm,0.7s,baz=90,slow=11,SNR=1.5						
WRA	**Warramunga Arr**	**58.66**	**189**	P	**P**	**14 13 55.8**	**-0.9**
	0.4nm,0.9s,baz=6.1,slow=7.2,SNR=2.3						
WRA				pP	**sP**	**14 14 07.8**	**-0.3**
	0.4nm,0.7s,baz=5.8,slow=7.4,SNR=2.6						

IDC 22 14:06:24.2±6.1,39°.15N×110°.46E,h0km,mb3.3/2, mb1 3.5/3,mb1mx3.2/32,mbtmp3.3/3,ML2.9/1,MS2.4/1, Ms1 2.4/1,ms1mx2.0/23,Error ellipse: s-maj=127.4km s-min=32.2km az=85.0,Western Nei Mongol

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SONM	**Songino Array**	**9.17**	**343**	Pn	Pn	14 08 38.0	+0.1
	0.1nm,0.3s,baz=164,slow=16,SNR=3.9						
TLY	**Talaya**	**13.40**	**341**	LR	LR	14 14 38.0	
	comp=Z,17nm,21.7s,baz=178,slow=37						
MKAR	**Makanchi Array**	**21.90**	**300**	P	P	14 11 18.8	0.0
	1.0nm,0.9s,baz=90,slow=11,SNR=7.9						
CMAR	**Chiang Mai Arr**	**22.91**	**209**	P	P	14 11 29.8	0.0
	1.0nm,0.8s,baz=14,slow=9.1,SNR=5.9						

*ISCJB **22** 14:18:49.3±0.5,16°.39N±0°.04×95°.49W±0°.03,h100km, Error ellipse: s-maj=6.0km s-min=4.4km az=166.3*
*NEIC **22** 14:18:50.8,16°.41N×95°.45W,h98km,mb4.0/3, MD4.3(MEX),After MEX.*
*MEX **22** 14:18:50.6±0.6,16°.40N×95°.49W,h110km±7km,MD4.3*

ISC 22 14:18:50.2±0.9,16°.41N±0°.06×95°.45W±0°.04,h100km,n47, σ2s51/54,Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.90**	**225**	*e*P	**Pn**	**14 19 08.7**	**-0.9**
HUIG				*e*S	**Sn**	**14 19 24.3**	**0.0**
HUIG	**Huatulco**	**0.90**	**225**	*e*P	**Pn**	**14 19 08.7**	**-0.9**
HUIG				*e*S	**Sn**	**14 19 22.5**	**-1.8**
PANG	**Puerto Angel**	**1.23**	**233**	*e*P	**Pn**	**14 19 12.8**	**-0.6**
PANG				*e*S	**Sn**	**14 19 29.4**	**-1.3**
OXBJ	**Oaxaca**	**1.39**	**298**	*e*P	**Pn**	**14 19 14.6**	**-0.7**
OXBJ				*e*S	**Sn**	**

baz=192
S38A Stockton 21.18 3 P P 14 23 39.2 +12
baz=184
S35A Otter Creek Ra 21.20 358 P P 14 23 39.5 +12
baz=178

*IDC **22** 14:40:40.6±1.5,29˙66S×175˙97W,h0km,mb4.1/5, mb1 4.3/7,mb1mx3.9/36,mbtmp4.2/7,ML3.9/2,MS3.4/5, Ms1 3.4/5,ms1mx2.9/24,Error ellipse: s-maj=35.3km s-min=24.7km az=158.0*
*NEIC **22** 14:40:41.3±0.9,29˙75S×175˙88W,h10km,mb4.0/2,Error ellipse: s-maj=16.3km s-min=12.8km az=106.0*
*ISCJB **22** 14:40:42.2±1.1,29˙77S±0˙05×175˙9W±0˙1,h28km, mb4.1/6,MS3.3/3,Error ellipse: s-maj=13.4km s-min=7.0km az=178.1*
ISC 22 14:40:44.4±1.2,29˙64S±0˙08×175˙9W±0˙1,h28km,n19, σ1s22/22,mb4.2/6,MS3.2/3,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RAO	**Raoul Island**	**1.78**	**282**	Pn		**Pn**	**14 41 13.1**	**-0.1**
	546nm,0.3s,baz=93,slow=5.3,SNR=20							
RAO				Sn		**Sn**	**14 41 34.4**	**-0.5**
	568nm,0.3s,baz=348,slow=23,SNR=6.6							
PKGZ	**Pakihiroa**	**9.62**	**210**	PN		**Pn**	**14 43 00.4**	**-0.6**
PKGZ				SN		**Sn**	**14 44 46.9**	**-1.2**
HAZ	**Te Kaha**	**9.64**	**211**	PN		**Pn**	**14 43 01.2**	**0.0**
HAZ				SN		**Sn**	**14 44 51.6**	**+3.1**
RUGZ	**Raukumara Rang**	**9.86**	**211**	PN		**Pn**	**14 43 04.1**	**-0.2**
TWGZ	**Tauwhareparae**	**9.90**	**209**	PN		**Pn**	**14 43 04.0**	**-0.8**
TWGZ				SN		**Sn**	**14 44 54.6**	**-0.5**
URZ	**Urewera**	**10.35**	**212**	Pn		**Pn**	**14 43 09.6**	**-1.4**
	1.1nm,0.3s,baz=273,slow=4.4,SNR=22							
URZ				Sn		**Sn**	**14 45 07.2**	**+1.2**
	5.8nm,0.3s,baz=267,slow=6.9,SNR=13							
URZ	**Urewera**	**10.35**	**212**	PN		**Pn**	**14 43 09.6**	**-1.4**
RAR	**Rarotonga**	**16.82**	**64**	LR		LR	14 50 55.3	
	comp=Z,125nm,18.1s,baz=262,slow=36							
RPZ	**Rata Peaks**	**17.47**	**213**	*e*Pn		**Pn**	**14 44 43.5**	**-2.4**
	3.2nm,0.3s							
DZM	**Mont Dzumac**	**17.55**	**291**	P		**Pn**	**14 44 47.7**	**+0.6**
	0.4nm,0.3s,baz=106,slow=18,SNR=2.2							
DZM				LR		LR	14 50 58.7	
	comp=Z,130nm,19.3s,baz=136,slow=35							
PPT	**Papeete**	**26.90**	**69**	LR		LR	14 56 14.6	
	comp=Z,53nm,18.9s,baz=198,slow=35							
CTA	**Charters Tower**	**35.47**	**277**	P		**P**	**14 47 38.8**	**+0.1**
	1.7nm,0.5s,baz=93,slow=8.7,SNR=5.8							
STKA	**Stephens Creek**	**36.40**	**255**	P		**P**	**14 47 47.7**	**+1.2**
	1.6nm,0.4s,baz=102,slow=11,SNR=12							
STKA				LR		LR	14 59 55.4	
	comp=Z,42nm,21.7s,baz=33,slow=32							
ASAR	**Alice Springs**	**44.95**	**265**	P		**P**	**14 48 57.2**	**0.0**
	1.2nm,0.4s,baz=103,slow=6.7,SNR=63							
ASAR				LR		LR	15 07 09.8	
	comp=Z,69nm,18.6s,baz=109,slow=35							
WRAB	**Tennant Creek**	**45.87**	**270**	*e*P		**P**	**14 49 03.6**	**-0.9**
	1.2nm,0.5s							
WRA	**Warramunga Arr**	**45.88**	**270**	P		**P**	**14 49 03.3**	**-1.3**
	1.5nm,0.4s,baz=109,slow=8.1,SNR=22							
ILAR	**Eielson Array**	**96.80**	**12**	P		**P**	**14 54 12.2**	**+0.3**
	0.2nm,0.7s,baz=212,slow=7.0,SNR=2.6							
FINES	**FINESS Array B**	**145.02**	**342**	PKPbc		**PKPdf**	**15 00 17.9**	**-0.3**
	0.8nm,0.5s,baz=90,slow=5.7,SNR=6.6							
NOA	**NORSAR Array B**	**148.24**	**353**	PKPbc		**PKPbc**	**15 00 27.7**	**+0.5**
	0.5nm,0.5s,baz=11,slow=4.6,SNR=2.4							

IDC 22 14:45:03.9±2.1,1˙47N×126˙58E,h0km,mb3.4/3, mb1 3.7/3,mb1mx3.3/46,mbtmp3.5/3,Error ellipse: s-maj=172.3km s-min=25.7km az=66.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
WRA	**Warramunga Arr**	**22.60**	**161**	P		P	14 50 05.7	-0.7
	0.7nm,0.4s,baz=339,slow=11,SNR=9.2							
ASAR	**Alice Springs**	**25.98**	**165**	P		P	14 50 39.2	+0.6
	0.3nm,0.6s,baz=345,slow=11,SNR=5.7							
MKAR	**Makanchi Array**	**59.32**	**326**	P		P	14 55 07.7	-0.1
	0.3nm,0.5s,baz=123,slow=7.7,SNR=6.0							

*OBM **22** 14:52:53.3±0.1,49˙90N×118˙94E,h2km,Ml4.6/2,Error ellipse: s-maj=1.9km s-min=1.5km az=161.0*
*BJI **22** 14:52:55.7,49˙85N×118˙85E,h10km,mb4.6/42,mB4.7/34, ML5.1/9,Ms4.7/58,Ms7 4.5/52*
*BYKL **22** 14:52:55.3±0.8,49˙61N×118˙88E,Mw4.5/10(IEC),FELT I=V MSK at Kaptsegaytuy, Kaylastuy, Duroy, Bogdanovka, Pogodaeva, Starotsuruhaytuy, Molodezhnyy and IV-V at Brusilovka, Abagatuy, Dosatuy, Celinnyy, Klichka, Selinda, Byrka, Chingiltuy, Kadaya #STATIONS ALE COLA MA2 PET ENH KMI AAK ARU LVZ KBS*
*MOS **22** 14:52:56.5±1.0,49˙87N×118˙73E,h9km,mb4.6/40,Error ellipse: s-maj=7.7km s-min=5.0km az=104.3*
*ISCJB **22** 14:52:56.8±0.1,49˙97N±0˙02×118˙67E±0˙03,h10km, mb4.5/98,MS4.0/47,Error ellipse: s-maj=2.7km s-min=2.4km az=141.6*
*IDC **22** 14:52:56.4±0.4,49˙81N×118˙75E,h0km,mb4.3/31, mb1 4.4/39,mb1mx4.4/49,mbtmp4.3/39,ML3.9/7,MS3.7/34, Ms1 3.7/34,ms1mx3.6/60,Error ellipse: s-maj=10.4km s-min=9.3km az=21.0*
*NEIC **22** 14:52:58.0±0.2,49˙83N×118˙77E,h10km,mb4.9/62,Error ellipse: s-maj=4.5km s-min=4.2km az=181.0*
ISC 22 14:52:58.5±0.2,49˙94N±0˙02×118˙67E±0˙02,h10km,n273, σ2s19/316,mb4.7/98,MS3.9/48,10C-5D, Priamurye-Northeastern China border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HIA	**Hailar**	**0.97**	**134**	⇓*i*PG		Pg	14 53 12.1	-5.1
HIA				*e*			14 53 26.4	
HIA	**Hailar**	**0.97**	**134**	⇓*i*Pg		Pg	14 53 12.1	-5.1
HIA				*e*Sn		**Sb**	**14 53 26.4**	**-3.9**
CIT	**Chita**	**3.85**	**305**	*e*Pn		**Pn**	**14 53 58.8**	**+1.0**
CIT				*e*			14 54 02.4	
CIT				*e*			14 54 10.2	
CIT				max			14 54 17.3	
	541nm,0.3s							
CIT				*e*			14 54 47.3	
CIT				*e*Sg		**Sg**	**14 55 02.3**	**+0.3**
CIT				Smax			14 55 06.8	
	27μm,1.5s							
CIT	**Chita**	**3.85**	**305**	*e*PN		**Pn**	**14 54 00.0**	**+2.2**
CIT				*e*			14 54 10.3	
CIT				*e*			14 55 02.5	
CIT				pmax	pmax			
	comp=Z,731nm,0.9s							
CIT				smax	smax			
	comp=N,27μm,1.6s							
KPC	**Khapcheranga**	**4.08**	**269**	⇑*i*Pn		**Pn**	**14 54 01.0**	**0.0**
KPC				*e*Pg		**Pb**	**14 54 10.8**	**+0.3**
KPC				*e*			14 54 13.6	
KPC				max			14 54 16.1	
	comp=N,762nm,1.4s							
KPC				*e*Sn		**Sn**	**14 54 47.3**	**-1.6**
KPC				*e*Sg		**Sb**	**14 55 05.5**	**+5.6**
KPC				Smax			14 55 20.9	
	comp=N,5μm,2.2s							
KPC	**Khapcheranga**	**4.08**	**269**	*e*PN		**Pn**	**14 54 01.0**	**0.0**
KPC				*e*			14 54 11.9	
KPC				*e*			14 55 05.8	
KPC				pmax	pmax			
	comp=Z,649nm,0.5s							
KPC				smax	smax			
	comp=N,5μm,1.2s							
KPC	**Khapcheranga**	**4.08**	**269**	*e*P		**Pn**	**14 54 01.0**	**0.0**
TUP	**Tupik**	**4.56**	**9**	⇑*i*Pn		**Pn**	**14 54 07.6**	**0.0**
TUP				*e*Pg		Pb	14 54 23.0	+4.4
TUP				Pmax			14 54 26.0	
	comp=N,701nm,0.7s							
TUP				*e*			14 54 55.9	
TUP				*e*Sg		**Sg**	**14 55 25.9**	**+1.1**
TUP				Smax			14 55 27.3	
	comp=N,7μm,1.3s							
TUP	**Tupik**	**4.56**	**9**	*e*PN		**Pn**	**14 54 07.6**	**0.0**
TUP				*e*			14 54 21.2	
TUP				*e*S		**Sn**	**14 55 04.3**	**+3.7**
TUP				*e*			14 55 24.5	
TUP				pmax	pmax			
	comp=Z,697nm,0.7s							
TUP				smax	smax			
	comp=E,6μm,1.1s							
TUP	**Tupik**	**4.56**	**9**	*e*P		**Pn**	**14 54 07.6**	**0.0**
ZEA	**Zeya**	**6.53**	**51**	*e*Pn		**Pn**	**14 54 33.8**	**-0.8**
ZEA				*e*Pg		**Pb**	**14 54 54.8**	**+2.6**
ZEA				*e*Sn		**Sn**	**14 55 49.4**	**+0.3**
ZEA				*e*Sg		**Sg**	**14 56 23.8**	**-4.3**
SYVR	**Suvo**	**6.54**	**308**	*e*Pn		**Pn**	**14 54 35.6**	**+0.9**
SYVR				*e*			14 54 39.7	
SYVR				*e*Pg		Pb	14 54 58.3	+6.0
SYVR				Pmax			14 55 09.5	
	comp=E,87nm,0.7s							
SYVR				*e*Sn		**Sn**	**14 55 53.2**	**+3.9**
SYVR				*e*Sg		**Sg**	**14 56 26.9**	**-1.4**
SYVR				Smax			14 56 31.4	
	comp=E,4μm,1.5s							
YLYR	**Ulyunkhan**	**6.75**	**320**	*e*Pn		**Pn**	**14 54 37.7**	**+0.2**
YLYR				*e*Pg		Pb	14 55 02.0	+6.2
YLYR				Pmax			14 55 09.5	
	comp=E,71nm,1.1s							
YLYR				*e*Sg		**Sg**	**14 56 34.1**	**-0.8**
YLYR				Smax			14 56 36.4	
	comp=E,7μm,2.0s							
YLYR				*e*			15 56 11.1	
YLYR	**Ulyunkhan**	**6.75**	**320**	*e*PN		**Pn**	**14 54 37.9**	**+0.4**
YLYR				*e*			14 55 02.2	
YLYR				*e*S		**Sn**	**14 55 55.5**	**+1.1**
YLYR				*e*			14 56 30.4	
YLYR				pmax	pmax			
	comp=Z,95nm,0.7s							
YLYR				smax	smax			
	comp=E,7μm,2.0s							
YLYR	**Ulyunkhan**	**6.75**	**320**	*e*P		**Pn**	**14 54 37.9**	**+0.4**
NLYR	**Nelyaty**	**6.80**	**346**	*e*Pn		**Pn**	**14 54 37.8**	**-0.5**
NLYR				*e*Pg		Pb	14 55 02.3	+5.6
NLYR				Pmax			14 55 08.1	
	comp=E,197nm,0.8s							
NLYR				*e*			14 56 28.2	
NLYR				*e*Sg		**Sg**	**14 56 36.3**	**-0.3**
NLYR				Smax			14 57 06.3	
	comp=E,10μm,1.4s							
KROS	**Kirovskiy**	**6.80**	**45**	*e*Pn		**Pn**	**14 54 35.4**	**-2.9**
KROS				*e*			14 55 05.2	
YKLR	**Yuktali**	**6.90**	**14**	*e*Pn		**Pn**	**14 54 38.9**	**-0.7**
YKLR				*e*Pg		Pb	14 55 05.3	+6.9
YKLR				*e*Sg		**Sg**	**14 56 39.3**	**-0.4**
YKLR				*e*			14 56 52.9	
SVKR	**Severomuysk**	**6.91**	**335**	*e*		**Sn**	**14 56 06.8**	**+8.3**
SVKR				*e*Sg		**Sg**	**14 56 41.1**	**+1.0**
SVKR				Smax			14 57 01.2	
	comp=E,9μm,1.0s							
CRS	**Chara**	**6.98**	**358**	*e*Pn		**Pn**	**14 54 41.5**	**+0.8**
CRS				max			14 54 43.9	
	comp=E,412nm,1.0s							
CRS				*e*			14 54 58.5	
CRS				*e*Pg		Pb	14 55 07.0	+7.3
CRS				*e*Sg		**Sg**	**14 56 42.1**	**-0.1**
CRS				Smax			14 56 58.4	
	comp=E,5μm,1.6s							
CRS	**Chara**	**6.98**	**358**	*e*PN		**Pn**	**14 54 41.3**	**+0.6**
CRS				*e*			14 55 07.0	
CRS				*e*			14 56 42.8	
CRS				pmax	pmax			
	comp=Z,386nm,0.9s							
CRS				smax	smax			
	comp=E,5μm,1.8s							
MXMB	**Maximikha**	**7.02**	**302**	*e*Pn		**Pn**	**14 54 41.8**	**+0.5**
MXMB				*e*			14 54 45.6	
MXMB				*e*Pg		Pb	14 55 07.8	+7.3
MXMB				*e*			14 56 00.0	
MXMB				*e*Sg		**Sg**	**14 56 42.4**	**-1.3**
KHNR	**Khani**	**7.04**	**6**	*e*Pn		**Pn**	**14 54 40.7**	**-0.8**
KHNR				*e*			14 54 49.6	
KHNR				*e*Pg		Pb	14 55 06.5	+5.8
KHNR				*e*			14 56 08.9	
KHNR				*e*Sg		**Sg**	**14 56 41.2**	**-3.0**
KELR	**Kotokel**	**7.21**	**297**	*e*Pn		**Pn**	**14 54 44.0**	**+0.1**
KELR				*e*			14 55 08.1	
KELR				*e*Sg		**Sg**	**14 56 46.5**	**-3.2**
UUDB	**Ulan-Yde**	**7.22**	**290**	*e*Pn		**Pn**	**14 54 44.0**	**-0.1**
UUDB				max			14 54 45.7	
	comp=E,209nm,0.9s							
UUDB				*e*			14 54 47.9	
UUDB				*e*Pg		Pb	14 55 09.3	+5.3
UUDB				*e*			14 56 01.4	
UUDB				*e*Sg		**Sg**	**14 56 46.8**	**-3.4**
UUDB				Smax			14 57 00.2	
	comp=E,5μm,1.5s							
KMO	**Kumora**	**7.47**	**326**	*e*Pn		**Pn**	**14 54 47.9**	**+0.4**
KMO				*e*			14 55 04.7	
KMO				max			14 55 20.2	
	comp=E,83nm,1.3s							
KMO				*e*			14 56 34.1	
KMO				*e*Sg		**Sg**	**14 56 56.9**	**-1.2**
KMO				Smax			14 57 11.9	
	comp=E,8μm,1.4s							
YOA	**Uoyan**	**7.48**	**329**	*e*Pn		Pn	14 54 39.0	-8.6
YOA				*e*			14 54 53.3	
YOA				*e*Sn		**Sn**	**14 56 17.1**	**+4.7**
YOA				*e*Sg		**Sg**	**14 56 57.5**	**-0.9**
YOA				*e*			14 56 59.5	
YOA				max			14 57 22.9	
	comp=E,4μm,1.6s							
YOA	**Uoyan**	**7.48**	**329**	*e*PN		**Pn**	**14 54 48.6**	**+1.0**
YOA				*i*S		**Sg**	**14 56 57.9**	**-0.5**
YOA				smax	smax			
	comp=N,25μm,1.6s							
HRMR	**Khuramsha**	**7.62**	**287**	⇓*i*		Pn	14 54 45.4	-4.1
HRMR				*e*Pg		Pb	14 55 17.0	+6.3
HRMR				Pmax			14 55 22.6	
	comp=N,172nm,0.8s							
HRMR				*e*Sg		**Sg**	**14 56 59.9**	**-2.9**
HRMR				Smax			14 57 09.6	
	comp=N,11μm,1.2s							
ZRHB	**Zarechye**	**7.69**	**294**	*e*		Pn	14 54 43.7	-6.8
ZRHB				max			14 54 58.1	
	comp=N,405nm,0.8s							
ZRHB				*e*Pg		**Pb**	**14 55 15.8**	**+4.0**
ZRHB				*e*			14 55 19.8	
ZRHB				*e*			14 56 13.2	
ZRHB				*e*Sg		**Sg**	**14 57 00.3**	**-4.8**
ZRHB				Smax			14 57 21.4	
	comp=N,18μm,1.7s							
CN2	**Changchun**	**7.70**	**140**	Pn		**Pn**	**14 54 48.5**	**-2.1**
CN2				Sg		Sg	14 56 52.6	-13
CN2				smax	smax			
	comp=N,600nm,1.2s							
CN2				smax	smax			
	comp=N,700nm,1.2s							
OGRR	**Ongureny**	**7.80**	**303**	*e*Pn		**Pn**	**14 54 51.8**	**-0.2**
OGRR				*e*			14 54 55.6	
OGRR				max			14 54 56.4	
	comp=N,58nm,1.1s							
OGRR				*e*Pg		Pb	14 55 19.6	+5.8
OGRR				*e*			14 56 17.4	
OGRR				*e*Sg		**Sg**	**14 57 05.4**	**-3.3**
OGRR				Smax			14 57 15.8	
	comp=N,2μm,1.6s							
OGRR	**Ongureny**	**7.80**	**303**	*e*PG		Pb	14 55 19.2	+5.4
OGRR				pmax	pmax			
	comp=Z,52nm,1.4s							
CLNS	**Chul'man**	**7.84**	**26**	⇓*i*		**Pn**	**14 54 52.1**	**-0.5**
CLNS				*e*			14 55 20.7	
CLNS				*e*			14 56 35.6	
CLNS				*e*			14 56 48.0	
CLNS				*e*Sg		**Sg**	**14 57 07.0**	**-3.0**
CLNS	**Chul'man**	**7.84**	**26**	*e*PN		**Pn**	**14 54 52.0**	**-0.5**
CLNS				*e*			14 55 19.8	
CLNS				*e*S		**Sn**	**14 56 20.9**	**-0.5**
CLNS				pmax	pmax			
	comp=E,5.0nm,0.2s							
CLNS				pmax	pmax			
	comp=N,3.0nm,0.2s							
CLNS				pmax	pmax			
	comp=Z,9.0nm,0.3s							
CLNS				pmax	pmax			
	comp=E,54nm,0.7s							
CLNS				pmax	pmax			
	comp=E,81nm,0.9s							
CLNS				pmax	pmax			
	comp=N,29nm,0.5s							
CLNS				smax	smax			
	comp=N,221nm,0.8s							
CLNS				smax	smax			
	comp=E,259nm,1.1s							
CLNS				smax	smax			
	comp=Z,160nm,0.8s							
KAB	**Kabansk**	**7.87**	**290**	*e*			14 56 39.1	
KAB				*e*			14 56 43.7	
KAB				*e*Sg		**Sg**	**14 57 09.4**	**-1.6**
KAB				Smax			14 57 26.9	
	comp=Z,11μm,1.2s							
ARTM		**7.88**	**260**	*e*Pn		Pn	14 54 50.2	-3.4
ARTM				*e*Sg		Sb	14 57 00.8	+11
	comp=Z,479nm,0.6s							
UGDM		**7.90**	**258**	*e*Pn		Pn	14 54 50.0	-3.8
UGDM				*e*Sg		Sb	14 57 02.2	+12
	comp=Z,789nm,0.8s							
NIZ	**Nizh Angarsk**	**8.04**	**320**	*e*Pn		**Pn**	**14 54 57.3**	**+2.1**
NIZ				*e*Pg		Pb	14 55 24.2	+6.4
NIZ				Pmax			14 56 32.7	
	comp=Z,54nm,0.8s							
NIZ				*e*Sg		**Sg**	**14 57 12.7**	**-3.5**
NIZ				Smax			14 57 38.9	
	comp=Z,3μm,1.6s							
NIZ	**Nizh Angarsk**	**8.04**	**320**	*e*PN		**Pn**	**14 54 57.3**	**+2.1**
STDB	**Stepnoy Dvoret**	**8.07**	**291**	*e*Pn		**Pn**	**14 54 55.9**	**+0.2**
STDB				*e*Sg		**Sg**	**14 57 12.3**	**-5.0**
STDB				*e*			14 57 15.8	
ALFM		**8.18**	**261**	*e*Pn		Pn	14 54 53.9	-3.7
ALFM				*e*Sg		Sb	14 57 10.3	+12
	comp=Z,511nm,0.6s							
SEMM		**8.19**	**258**	*e*Pn		Pn	14 54 54.2	-3.6
SEMM				*e*Sg		Sb	14 57 10.5	+12
	comp=Z,365nm,1.0s							
UB5M		**8.23**	**260**	*e*Pn		Pn	14 54 55.4	-2.9
UB5M				*e*Sg		Sb	14 57 12.2	+13
	comp=Z,462nm,0.7s							
SONA1	**Songino Array**	**8.35**	**260**	*e*Pn		**Pn**	**14 54 57.7**	**-2.0**
BOD	**Bodaibo**	**8.36**	**343**	*e*		**Pn**	**14 54 59.1**	**-0.5**
BOD				*e*Pg		Pg	14 55 33.3	-5.1
BOD				Pmax			14 55 35.2	
	comp=Z,66nm,1.0s							
BOD				*e*Sn		Sb	14 56 56.4	-6.2
BOD				*e*Sg		**Sg**	**14 57 23.9**	**-2.6**
BOD				Smax			14 57 29.4	
	comp=Z,2μm,1.2s							
BOD	**Bodaibo**	**8.36**	**343**	*e*PN		**Pn**	**14 54 58.1**	**-1.5**
BOD				*e*			14 55 29.0	
BOD				*e*			14 57 03.2	
BOD				pmax	pmax			
	comp=Z,66nm,0.9s							
SONM	**Songino Array**	**8.36**	**260**	Pn		**Pn**	**14 54 58.0**	**-1.9**
	comp=Z,7.2nm,0.3s,baz=69,slow=14,SNR=64							
SONM				Sn		**Sn**	**14 56 34.7**	**+0.4**
	comp=Z,21nm,0.3s,baz=71,slow=22,SNR=6.0							
SONM				Lg		Lg	14 57 17.7	
	comp=Z,25nm,0.3s,baz=79,slow=26,SNR=5.2							
SONM				LR		LR	14 58 35.4	
	comp=Z,928nm,18.6s,baz=78,slow=40							
I34MN	**SONGINO INFRAS**	**8.36**	**260**	*i*			15 40 30.0	
	baz=71,slow=317,SNR=0.1							
SONB2	**Songino Ar. Si**	**8.45**	**261**	*e*Pn		Pn	14 54 57.4	-3.9
SONB2				*e*Sg		Sb	14 57 19.5	+14
	comp=Z,636nm,0.7s							
SONB1	**Songino Array**	**8.46**	**261**	*e*Pn		Pn	14 54 57.8	-3.6
SONB1				*e*Sg		Sb	14 57 19.9	+14
	comp=Z,616nm,0.7s							
SONA3	**Songino Array**	**8.46**	**261**	*e*Sg		Sb	14 57 19.2	+13
	comp=Z,540nm,0.6s							
SONB3	**Songino Array**	**8.46**	**261**	*e*Pn		Pn	14 54 57.6	-3.8
SONB3				*e*Sg		Sb	14 57 20.1	+14
	comp=Z,715nm,0.7s							
SONA1	**Songino Array**	**8.46**	**261**	*e*Pn		Pn	14 54 57.8	-3.7
SONA1				*e*Sg		Sb	14 57 19.1	+13
	comp=Z,654nm,0.6s							
SONA2	**Songino Array**	**8.47**	**261**	*e*Pn		Pn	14 54 57.7	-3.8
SONA2				*e*Sg		Sb	14 57 19.4	+13
	comp=Z,626nm,0.7s							
SONA4	**Songino Array**	**8.47**	**261**	*e*Pn		Pn	14 54 57.8	-3.7
SONA4				*e*Sg		Sb	14 57 19.9	+14
	comp=Z,582nm,0.6s							
SONA0	**Songino Array**	**8.47**	**261**	*e*Pn		Pn	14 54 57.8	-3.8
SONA0				*e*Sg		Sb	14 57 19.1	+13
	comp=Z,1μm,0.7s							
SONB5	**Songino Array**	**8.48**	**261**	*e*Pn		Pn	14 54 58.0	-3.7
SONB5				*e*Sg		Sb	14 57 20.4	+14
	comp=Z,515nm,0.6s							
SONB4	**Songino Array**	**8.50**	**261**	*e*Pn		Pn	14 54 58.2	-3.7
SONB4				*e*Sg		Sn	14 57 19.9	+43
	comp=Z,700nm,0.7s							
KLR	**Kul'dur**	**8.53**	**90**	Pn		**Pn**	**14 54 59.2**	**-2.8**
	comp=Z,6.1nm,0.3s,baz=294,slow=16,SNR=42							
KLR				Sn		Sn	14 56 28.4	-10
	comp=Z,10nm,0.3s,baz=240,slow=12,SNR=4.0							
KLR				Lg		Lg	14 57 23.6	
	comp=Z,26nm,0.3s,baz=191,slow=21,SNR=13							
BGT	**Bolshoye Golou**	**8.63**	**289**	*e*		**Pn**	**14 55 01.9**	**-1.5**
BGT				*e*			14 55 36.9	
BGT				*e*			14 56 28.8	
BGT				*e*Sg		Sg	14 57 29.2	-6.0
BGT				Smax			14 57 40.5	
	comp=Z,2μm,1.4s							
LSTR	**Listvyanka**	**8.96**	**288**	*e*Pn		**Pn**	**14 55 06.4**	**-1.5**
LSTR				*e*			14 55 41.2	
LSTR				max			14 56 01.4	
	comp=Z,39nm,1.3s							
LSTR				*e*Sg		Sn	14 57 40.7	+52
LSTR				Smax			14 58 02.8	
	comp=Z,1μm,2.2s							
MDJ	**Mudanjiang**	**9.13**	**122**	P		**Pn**	**14 55 08.8**	**-1.5**
MDJ				S		**Sn**	**14 56 51.9**	**-1.1**
MDJ				PcP		**PcP**	**15 01 33.8**	**+1.7**
MDJ				ScP		**ScP**	**15 05 03.4**	**-0.5**
MDJ				PcS		**PcS**	**15 05 05.9**	**+0.7**
MDJ				ScS		**ScS**	**15 08 38.8**	**+0.8**
MDJ				pmax	pmax			
	comp=Z,19nm,0.8s							
MDJ				pmax	pmax			
	comp=Z,58nm,4.3s							
MDJ				LR	LR			
	comp=Z,2μm,6.9s							
MDJ				LR	LR			
	comp=Z,2μm,6.9s							
MDJ				LR	LR			
	comp=Z,1μm,9.3s							
MDJ	**Mudanjiang**	**9.13**	**122**	*e*Pn		**Pn**	**14 55 05.5**	**-4.8**
	comp=Z,39nm,0.8s							
IVK	**Ivanovka**	**9.21**	**287**	*e*Pn		**Pn**	**14 55 09.7**	**-1.6**
IVK				max			14 55 50.8	
	comp=Z,46nm,1.6s							
IVK				*e*Sg		Sn	14 57 49.2	+54
IVK				Smax			14 58 00.8	
	comp=Z,1μm,2.0s							
IRK	**Irkutsk**	**9.35**	**290**	*e*			14 57 39.7	
IRK				*e*Sg		Sn	14 57 52.1	+54
IRK				*e*			14 58 07.5	
IRK				max			14 58 14.0	
	comp=Z,2μm,1.3s							
IRK	**Irkutsk**	**9.35**	**290**	*e*P		**Pn**	**14 55 12.0**	**-1.3**
TLY	**Talaya**	**9.67**	**286**	Pn		**Pn**	**14 55 16.3**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=107

BJT pmax pmax
comp=Z,19nm,0.6s
BJT Baijiatuau 10.08 191 *e*Pn **Pn 14 55 21.2 -2.1**
comp=Z,19nm,0.6s
VTMR Vitim 10.15 342 *e* Pn 14 55 52.3 +28
VTMR *e*Pg 14 56 05.4
VTMR *e* 14 57 12.2
VTMR *e* 14 57 52.0
VTMR *e*Sg 14 58 21.7
HHC Hu-ho-hao-te 10.37 211 *e*P **Pn 14 55 29.4 +2.1**
HHC pP 14 55 32.5
HHC sP 14 55 35.5
HHC S **Sn 14 57 26.1 +2.5**
HHC pmax pmax
comp=Z,19nm,0.5s
HHC pmax pmax
comp=Z,70nm,4.0s
HHC LR LR
comp=N,3μm,8.8s
HHC LR LR
comp=E,5μm,11.2s
HHC LR LR
comp=Z,3μm,10.0s
HHC Hu-ho-hao-te 10.37 211 *e*P **Pn 14 55 29.0 +1.7**
HHC S Sn 14 57 32.3 +8.7
HHC LR LR
comp=Z,5μm,12.3s
USRK Ussuriysk Ar. 10.74 117 Pn **Pn 14 55 30.2 -2.1**
comp=Z,0.6nm,0.3s,baz=308,slow=13,SNR=19
USRK Sn **Sn 14 57 30.9 -1.5**
comp=Z,0.9nm,0.3s,baz=310,slow=19,SNR=4.3
USRK Lg Lg 14 58 29.8
comp=Z,4.6nm,0.3s,baz=317,slow=30,SNR=8.7
USRK LR LR 15 00 12.5
comp=Z,106nm,19.8s,baz=294,slow=41
HABR Khabarovsk 10.82 92*de*P **Pn 14 55 30.3 -3.0**
HABR *e*S **Sn 14 57 31.1 -3.3**
HABR pmax pmax
comp=Z,6.0nm,0.8s
HABR MLR MLR
comp=Z,320nm,9.0s
DL2 Dalian 11.23 168 P Pn 14 55 42.3 +3.3
DL2 *e*S Sn 14 57 51.9 +7.3
DL2 pmax pmax
comp=Z,21nm,0.6s
DL2 LR LR
comp=Z,2μm,10.9s
DL2 LR LR
comp=Z,1μm,11.5s
DL2 LR LR
comp=Z,2μm,10.9s
MOY Mondy 11.32 286 *e*Pn **Pn 14 55 43.9 +3.6**
MOY *e*Pg 14 56 22.8
MOY Pmax 14 56 33.4
comp=Z,27nm,1.0s
MOY *e*Sg 14 58 52.2
MOY Smax 14 59 04.8
comp=Z,779nm,1.6s
MSHR Mys Shultsa 11.34 126 *i* P **Pn 14 55 40.4 -0.1**
ORL Orlik 12.10 290 *e*Pn **Pn 14 55 51.2 +0.2**
ORL max 14 56 06.5
comp=Z,78nm,0.6s
ORL *e* 14 56 20.9
ORL *e* 14 56 31.9
ORL *e* 14 58 28.5
ORL *e*Sg 14 59 16.1
ORL Smax 14 59 27.1
comp=Z,530nm,1.9s
YAK Yakutsk 13.56 23 Pn **Pn 14 56 09.2 -1.5**
comp=Z,0.0nm,0.3s,baz=36,slow=21,SNR=22
YAK Lg Lg 15 00 04.5
comp=Z,0.0nm,0.3s,baz=138,slow=20,SNR=16
YAK LR LR 15 01 44.8
comp=Z,785nm,18.3s,baz=224,slow=39
YAK Yakutsk 13.56 23 *e*P **Pn 14 56 09.0 -1.7**
YAK pmax pmax
comp=Z,39nm,0.9s
YAK pmax pmax
comp=E,31nm,1.5s
YAK pmax pmax
comp=N,26nm,1.1s
YAK MLR MLR
comp=Z,2μm,8.0s
YAK Yakutsk 13.56 23 *e*Pn **Pn 14 56 08.5 -2.2**
NKL Nikolayevsk 14.05 68 *e*P **Pn 14 56 14.0 -3.5**
NKL pmax pmax
comp=Z,34nm,1.0s
NKL MLR MLR
comp=N,1μm,10.0s
NKL MLR MLR
comp=E,4μm,10.0s
NKL MLR MLR
comp=Z,4μm,10.0s
KSAR Wonju Array Be 14.14 149 P **Pn 14 56 18.0 -0.8**
KSAR Wonju Array Be 14.14 149 Pn **Pn 14 56 18.0 -0.8**
KSRS Korea Array 14.15 148 Pn **Pn 14 56 18.0 -0.8**
comp=Z,0.1nm,0.3s,baz=321,slow=12,SNR=10
KSRS Lg Lg 15 00 21.1
comp=Z,0.8nm,0.3s,baz=339,slow=28,SNR=16
KSRS LR LR 15 02 14.6
comp=Z,162nm,19.8s,baz=337,slow=40
TYV Tymovskoe 15.31 77 *e*P **P 14 56 36.0 -3.3**
TYV pmax pmax
comp=Z,26nm,1.0s
YSS Yuzh-Sakhalins 16.24 91 *e*P **P 14 56 47.3 -2.3**
YSS pmax pmax
comp=Z,20nm,1.2s
YSS MLR MLR
comp=Z,600nm,13.0s
YSS Yuzh-Sakhalins 16.24 91 *e*Pn **Pn 14 56 41.5 -5.0**
comp=Z,25nm,0.8s
GTA Gaotai 17.00 239 ⇑P **Pn 14 56 55.6 -0.8**
GTA pP pP 14 57 00.1 -1.0
GTA sP sP 14 57 02.6 +0.2
GTA S **Sn 15 00 05.8 +0.4**
GTA sS S 15 00 11.1 -4.4
GTA SS **SnSn 15 00 27.3 +8.9**
GTA pmax pmax
comp=Z,15nm,1.6s
GTA pmax pmax
comp=Z,150nm,5.9s
GTA LR LR
comp=Z,2μm,13.8s
GTA LR LR
comp=Z,1μm,17.6s
ASAJ Asahikawa 17.28 101 P **P 14 56 60.0 -1.3**
comp=Z,0.5nm,0.3s,baz=279,slow=11,SNR=16
ASAJ Asahikawa 17.28 101 P **P 14 57 00.0 -1.3**
ASAJ pmax pmax
comp=Z,1.0nm,0.3s
ASAJ Asahikawa 17.28 101 *e*Pn **Pn 14 56 56.6 -3.2**
comp=Z,40nm,1.0s
XAN Xi'an 17.44 208 P **P 14 57 02.9 -0.2**
XAN S **Sn 15 00 14.8 -1.1**
XAN pmax pmax
comp=Z,23nm,1.4s
XAN LR LR
comp=Z,2μm,15.7s
XAN LR LR
comp=Z,2μm,10.4s
LZH Lanzhou 17.54 223 *e*P **P 14 57 04.5 +0.2**
LZH pP sP 14 57 08.1 -0.3
LZH sP pP 14 57 11.6 +4.5
LZH PP **PnPn 14 57 19.4 +6.0**
LZH *e*S **Sn 15 00 17.3 -1.2**
LZH sS S 15 00 23.0 -3.5
LZH pmax pmax
comp=Z,53nm,1.1s
LZH pmax pmax
comp=Z,170nm,4.3s
LZH LR LR
comp=Z,2μm,15.0s
LZH LR LR
comp=Z,2μm,16.2s
NJ2 Nanjing 17.87 179 *e*P **P 14 57 08.8 +1.0**
NJ2 S **Sn 15 00 25.6 -0.7**
NJ2 pmax pmax
comp=Z,20nm,0.7s
NJ2 LR LR
comp=Z,2μm,22.9s
NJ2 LR LR
comp=Z,2μm,25.3s
NJ2 LR LR
comp=Z,3μm,26.5s
ERM Erimo 18.71 106 *e*P **Pn 14 57 15.9 -1.4**
ERM pmax pmax
comp=Z,20nm,1.0s
JNU Nakatsue 19.09 147 P **Pn 14 57 20.9 -1.1**
comp=Z,0.3nm,0.3s,baz=32,slow=6.9,SNR=10.0
JNU Lg Lg 15 02 59.2
comp=Z,0.1nm,0.3s,baz=345,slow=13,SNR=5.4
YUK Yuzh-Kuril'sk 19.41 97 *e*P **Pn 14 57 24.7 -1.0**
MJB9 Matsu-Tunnel 19.46 126 *e*P **Pn 14 57 24.2 -2.2**
comp=Z,12nm,1.7s
MAJO Matsushiro 19.46 126 *e*P **Pn 14 57 25.6 -0.9**
MAJO pmax pmax
comp=Z,48nm,0.9s
MAJO Matsushiro 19.46 126 *e*P **P 14 57 21.8 -3.5**
comp=Z,43nm,1.7s
MJAR Matsushiro Arr 19.46 126 P **Pn 14 57 25.7 -0.8**
comp=Z,0.2nm,0.3s,baz=319,slow=12,SNR=16
MJAR LR LR 15 03 42.3
comp=Z,108nm,19.4s,baz=295,slow=33
WHN Wuhan 19.65 191 ⇑P **Pn 14 57 28.6 -0.1**
WHN S **Sn 15 01 01.5 -7.7**
WHN LR LR
comp=Z,5μm,15.6s
WHN LR LR
comp=Z,4μm,12.6s
INU Inuyama 19.79 131 *e*P **P 14 57 27.6 -1.2**
comp=Z,18nm,1.1s
KUR Kuril'sk 20.18 92 *e*P **P 14 57 31.5 -1.5**
MA2 Magadan 20.68 50 P Pn 14 57 39.3 -1.3
comp=Z,30nm,0.7s,baz=259,slow=9.9,SNR=18
MA2 LR LR 15 05 27.3
comp=Z,291nm,19.4s,baz=256,slow=36
MA2 Magadan 20.68 50 P **P 14 57 37.9 -0.4**
comp=Z,120nm,0.8s
ENH Enshi 20.83 203 P **P 14 57 38.5 -1.8**
comp=Z,18nm,0.8s
ZAA0 Zalesovo Array 21.12 294 *e*P **P 14 57 45.0 +1.8**
ZALV Zalesovo Beam 21.12 294 P **P 14 57 44.5 +1.3**
comp=Z,2.8nm,0.7s,baz=109,slow=9.8,SNR=9.0
ZALV Lg Lg 15 04 02.9
comp=Z,5.9nm,0.9s,baz=94,slow=21,SNR=9.4
ZALV LR LR 15 07 18.3
comp=Z,29nm,19.4s,baz=70,slow=41
WMQ Urumqi 21.94 266 P **P 14 57 53.6 +1.5**
WMQ pP sP 14 57 59.3 +3.1
WMQ sP pP 14 58 04.8 +10
WMQ SS Sn 15 02 26.4 +22
WMQ pmax pmax
comp=Z,15nm,1.2s
WMQ pmax pmax
comp=Z,130nm,4.0s
WMQ LR LR
comp=Z,1μm,10.0s
WMQ LR LR
comp=Z,420nm,9.4s
WMQ LR LR
comp=Z,880nm,18.0s
NVS Novosibirsk 22.01 297 *e*P **P 14 57 52.6 -0.1**
NVS pmax pmax
comp=Z,22nm,1.2s
NVS pmax pmax
comp=N,4.0nm,0.8s
NVS pmax pmax
comp=E,14nm,0.8s
CD2 Chengdu 22.07 216 *e*P **P 14 57 53.8 +0.3**
CD2 pP sP 14 57 58.1 +0.4
CD2 sP pP 14 58 00.1 +3.7
CD2 PcP **PcP 15 01 51.1 0.0**
CD2 S **S 15 01 57.5 +0.7**
CD2 sS Sn 15 02 04.8 -2.6
CD2 pmax pmax
comp=E,60nm,0.7s
CD2 pmax pmax
comp=E,220nm,5.0s
CD2 LR LR
comp=E,2μm,12.5s
CD2 LR LR
comp=E,2μm,11.3s
TIXI Tiksi 22.28 9 P **P 14 57 56.1 +0.8**
comp=E,73nm,0.9s,baz=181,slow=9.1,SNR=65
TIXI LR LR 15 08 04.7
comp=E,180nm,21.9s,baz=213,slow=41
TIXI Tiksi 22.28 9*c i*P **P 14 57 56.0 +0.6**
TIXI pmax pmax
comp=Z,140nm,1.2s
TIXI Tiksi 22.28 9 *e*P **P 14 57 56.1 +0.8**
comp=Z,81nm,0.9s
SEY Seymchan 22.40 42 P **P 14 57 57.2 +0.4**
comp=Z,7.2nm,0.7s,baz=250,slow=8.9,SNR=33
SEY Lg Lg 15 04 40.5
comp=Z,6.0nm,1.0s,baz=4.0,slow=23,SNR=10
SEY Seymchan 22.40 42*c i*P **P 14 57 57.3 +0.6**
MKAR Makanchi Array 24.22 277 P **P 14 58 15.6 +0.4**
comp=Z,2.0nm,0.7s,baz=70,slow=10,SNR=7.9
MKAR Lg Lg 15 05 40.9
comp=Z,3.2nm,1.1s,baz=74,slow=27,SNR=4.1
MKAR LR LR 15 08 17.7
comp=Z,224nm,19.5s,baz=72,slow=38
MKAR Makanchi Array 24.22 277 *i* P **P 14 58 16.2 +0.9**
MKAR pmax pmax
comp=Z,2.0nm,0.7s
MK01 Makanchi Array 24.22 277 *e*P **P 14 58 16.1 +0.8**
PEA0 Petropavlovsk- 24.28 67 *e*P **P 14 58 15.2 -0.5**
PETK Petropavlovsk- 24.28 67 P **P 14 58 15.4 -0.3**
comp=Z,4.0nm,0.7s,baz=233,slow=7.1,SNR=6.1
PETK LR LR 15 07 55.8
comp=Z,163nm,19.1s,baz=279,slow=37
MAKZ Makanchi 24.42 277 *e*P **P 14 58 18.3 +1.3**
MAKZ pmax pmax
comp=Z,18nm,1.3s
MAKZ Makanchi 24.42 277 *e*P **P 14 58 18.3 +1.3**
comp=Z,18nm,1.3s
NRIK Nori'sk 24.51 334 P **P 14 58 17.9 +0.3**
comp=Z,4.3nm,0.8s,baz=124,slow=11,SNR=6.6
NRIK Lg Lg 15 05 52.2
comp=Z,26nm,1.1s,baz=212,slow=18,SNR=4.2
NRIK LR LR 15 08 42.8
comp=Z,321nm,19.9s,baz=131,slow=38
PET Petropavlovsk 24.86 67 *e*P **P 14 58 20.4 -0.5**
PET *e*S **S 15 02 37.2 -6.4**
PET pmax pmax
comp=Z,19nm,1.0s
PET smax smax
comp=Z,600nm,12.0s
PET smax smax
comp=Z,500nm,14.0s
GYA Guiyang 25.21 206 ⇑*i*P **P 14 58 28.0 +3.6**
GYA PP **PnPn 14 59 02.4 +4.0**
GYA PcP **PcP 15 02 00.6 +2.7**
GYA S **S 15 02 47.0 -2.8**
GYA SS **SnSn 15 03 45.3 +5.4**
GYA ScP **ScP 15 05 37.5 +0.7**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,520nm,16.7s
GYA LR LR
comp=Z,490nm,16.5s
GYA LR LR
comp=Z,460nm,16.9s
KURK Kurchatov 25.37 287 *i* P **P 14 58 26.3 +0.8**
KURK pmax pmax
comp=Z,30nm,1.0s
KURK Kurchatov 25.37 287 P **P 14 58 27.4 +1.9**
KURBB Kurchatov Arra 25.45 287 P **P 14 58 27.4 +1.2**
comp=Z,5.1nm,0.7s,baz=80,slow=10,SNR=22
KURBB Lg Lg 15 06 21.6
comp=Z,1.3nm,0.2s,baz=84,slow=30,SNR=5.8
KMI Kunming 27.69 212 P **P 14 58 48.5 +1.5**
KMI pP sP 14 58 52.8 +1.5
KMI sP pP 14 58 54.5 +4.5
KMI PP **PnPn 14 59 36.0 +3.6**
KMI S **S 15 03 26.9 -2.3**
KMI sS sS 15 03 35.8 +1.6
KMI SS **SnSn 15 04 46.9 +6.1**
KMI pmax pmax
comp=Z,5.0nm,0.6s
KMI pmax pmax
comp=Z,130nm,6.5s
KMI LR LR
comp=Z,730nm,13.5s
KMI LR LR
comp=Z,1μm,13.7s
KMI LR LR
comp=Z,610nm,15.2s
BILL Bilibino 29.42 34 *e*P **P 14 59 01.5 -0.2**
BILL pmax pmax
comp=Z,2.0nm,1.3s
BILL MLR MLR
comp=Z,453nm,17.0s
VOSK Vostochnaya 29.50 294 *e*P **P 14 59 04.8 +2.2**
VOSK pmax pmax
comp=Z,3.0nm,0.9s
VOSK Vostochnaya 29.50 294 *e*P **P 14 59 04.8 +2.2**
comp=Z,3.0nm,0.9s
BVAR Borovoye Array 29.77 295 P **P 14 59 07.1 +2.1**
comp=Z,0.5nm,0.4s,baz=51,slow=11,SNR=3.7
BRVK Borovoye 29.83 295 *e*P **P 14 59 07.8 +2.3**
BRVK pmax pmax
comp=Z,8.0nm,0.9s
AAK Ala-Archa 31.01 274 *e*P **P 14 59 17.0 +0.7**
AAK pmax pmax
comp=Z,4.0nm,1.0s
QIZ Qiongzhong 31.64 196 P **P 14 59 22.3 +0.6**
QIZ S **S 15 04 30.6 -0.2**
QIZ LR LR
comp=Z,390nm,13.2s
QIZ LR LR
comp=Z,420nm,10.4s
QIZ LR LR
comp=Z,530nm,10.7s
KSH Kashi 31.68 267 *e*P P 14 59 28.3 +6.2
KSH *es*P sP 14 59 35.4 +9.0
KSH *e*PcP **PcP 15 02 17.3 +3.6**
KSH S **S 15 04 39.8 +8.4**
KSH SS **SS 15 06 33.8 -13**
KSH pmax pmax
comp=Z,68nm,3.7s
KSH LR LR
comp=Z,220nm,6.2s
KSH LR LR
comp=Z,360nm,6.0s
KSH LR LR
comp=Z,310nm,14.1s
CMAR Chiang Mai Arr 35.17 214 P **P 14 59 51.7 -0.8**
comp=Z,0.5nm,0.5s,baz=7.9,slow=8.7,SNR=6.8
CMAR LR LR 15 16 09.6
comp=Z,142nm,18.3s,baz=20,slow=40
CMAR Chiang Mai Arr 35.17 214 *i* P **P 14 59 54.0 +1.5**
CMAR pmax pmax
comp=Z,2.0nm,1.1s
ARU Arti 35.56 304 P **P 14 59 56.2 +0.6**
comp=Z,0.8nm,0.3s,baz=110,slow=15,SNR=2.9
ARU Arti 35.56 304*c i*P **P 14 59 55.8 +0.3**
ARU 15 01 14.9
ARU S **S 15 05 33.8 +2.9**
ARU SS **SnSn 15 07 50.8 0.0**
ARU pmax pmax
comp=Z,5.0nm,1.7s
ARU MLR MLR
comp=Z,144nm,12.0s
AKTO Aktyubinsk 37.88 295 P **P 15 00 16.6 +1.2**
comp=Z,2.1nm,1.0s,baz=79,slow=5.2,SNR=3.0
AKTO LR LR 15 14 54.5
comp=Z,110nm,19.2s,baz=63,slow=35
APA Apatity 43.51 326 *e*P **P 15 01 02.8 +1.2**
APA MLR MLR
comp=Z,200nm,16.0s
KLMR Klimovskoe 43.53 316 *e*P **P 15 01 01.8 0.0**
KLMR pmax pmax
comp=Z,7.0nm,1.3s
SPITS Spitsbergen Ar 44.07 343 P **P 15 01 05.9 -0.1**
comp=Z,4.3nm,0.7s,baz=40,slow=9.5,SNR=4.2
SPITS LR LR 15 21 31.9
comp=Z,119nm,18.7s,baz=60,slow=39
GEYT Alibeck 44.08 278 P **P 15 01 07.2 +0.6**
comp=Z,1.1nm,0.7s,baz=23,slow=4.7,SNR=2.5
GEYT LR LR 15 21 10.3
comp=Z,267nm,18.7s,baz=95,slow=38
TT01 Tatalina 45.35 40 *e*P **P 15 01 16.9 +0.6**
ARCES ARCESS Array B 45.42 330 P **P 15 01 15.5 -1.3**
comp=Z,2.6nm,0.8s,baz=66,slow=9.8,SNR=6.6
ARCES LR LR 15 23 45.1
comp=Z,56nm,18.0s,baz=67,slow=41
COLD Coldfoot 45.73 33 *e*P **P 15 01 20.1 +0.8**
comp=Z,12nm,1.0s
SVW2 Sparrevohn 46.34 42 *e*P **P 15 01 25.1 +0.9**
comp=Z,7.4nm,1.0s
MLY Manley 46.51 36 *e*P **P 15 01 26.0 +0.5**
comp=Z,5.8nm,0.8s
CAST Castle Rocks 46.73 38 *e*P **P 15 01 28.0 +0.8**
comp=Z,9.0nm,0.9s
PPLA Purkeypile 46.93 39 *e*P **P 15 01 30.7 +1.7**
comp=Z,45nm,1.9s
KTH Kantishna Hill 47.12 38 *e*P **P 15 01 29.6 -0.8**
comp=Z,26nm,1.4s
TRF Thorofare Moun 47.42 38 *e*P **P 15 01 33.5 +0.6**
comp=Z,13nm,1.1s
MDM Murphy Dome 47.48 35 *e*P **P 15 01 33.6 +0.4**
comp=Z,9.5nm,0.9s
OBN Obninsk 47.49 309 *e*P **P 15 01 33.3 +0.1**
OBN pmax pmax
comp=Z,5.0nm,0.7s
OBN MLR MLR
comp=Z,138nm,15.0s
SBUM Sibu 47.64 189 *e*P **P 15 01 34.6 -0.2**
comp=Z,7.7nm,0.8s
COLA College 47.67 35 *e*P **P 15 01 35.0 +0.5**
COLA pmax pmax
comp=Z,4.0nm,0.9s
FYU Fort Yukon 47.77 32 *e*P **P 15 01 37.2 +1.9**
comp=Z,18nm,1.2s
WRH Wood River Hil 47.77 36 *e*P **P 15 01 35.9 +0.6**
comp=Z,16nm,1.0s
CCB Clear Creek Bu 47.80 35 *e*P **P 15 01 36.0 +0.5**
comp=Z,10nm,0.9s
RND Reindeer 48.01 37 *e*P **P 15 01 37.5 +0.2**
RND pmax pmax
comp=Z,12nm,1.6s
RND Reindeer 48.01 37 *e*P **P 15 01 37.5 +0.2**
comp=Z,12nm,1.6s
IL1 Eielson Array 48.08 35 *e*P **P 15 01 37.8 +0.1**
ILAR Eielson Array 48.08 35 P **P 15 01 38.0 +0.4**
comp=Z,7.2nm,0.9s,baz=296,slow=7.7,SNR=73
ILAR LR LR 15 23 38.8
comp=Z,92nm,18.3s,baz=330,slow=38
ILB Eielson Array 48.08 35 *e*P **P 15 01 37.7 0.0**
SUA Susitna One 48.22 40 *e*P **P 15 01 38.8 -0.1**
comp=Z,28nm,1.5s
DHY Denali Highway 48.75 37 *e*P **P 15 01 41.6 -1.5**
comp=Z,8.6nm,0.7s
PMR Palmer 48.82 39 *e*P **P 15 01 42.8 -0.6**
PMR pmax pmax
comp=Z,20nm,0.9s
PMR Palmer 48.82 39 *e*P **P 15 01 42.8 -0.6**
comp=Z,20nm,0.9s
RC01 Rabbit Creek A 48.83 40 *e*P **P 15 01 43.6 +0.1**
comp=Z,19nm,1.0s
SML Sawmill 49.03 39 *e*P **P 15 01 45.9 +0.8**
SML pmax pmax
comp=Z,19nm,0.9s
SML Sawmill 49.03 39 *e*P **P 15 01 45.9 +0.8**
comp=Z,19nm,0.9s
FIA1 FINESS Array S 49.06 321 *e*P **P 15 01 46.0 +0.8**
FINES FINESS Array B 49.06 321 P **P 15 01 45.2 -0.1**
comp=Z,4.7nm,0.8s,baz=72,slow=6.2,SNR=11
FINES LR LR 15 24 38.0
comp=Z,98nm,18.1s,baz=64,slow=39
KDAK Kodiak Island 49.30 45 *i* P **P 15 01 47.7 +0.5**
SCM Sheep Creek Mo 49.42 39 *e*P **P 15 01 48.7 +0.5**
SCM pmax pmax
comp=Z,17nm,0.9s
SCM Sheep Creek Mo 49.42 39 *e*P **P 15 01 48.7 +0.5**
comp=Z,17nm,0.9s
PAX Paxson 49.55 37 *e*P **P 15 01 48.9 -0.2**
PAX pmax pmax
comp=Z,23nm,1.7s
PAX Paxson 49.55 37 *e*P **P 15 01 48.9 -0.2**
comp=Z,23nm,1.7s
DOT Dot Lake 49.72 35 *e*P **P 15 01 50.1 -0.3**
comp=Z,22nm,0.9s
PSI Prapat 49.88 206 P **P 15 01 50.9 -1.3**
comp=Z,2.2nm,0.4s,baz=50,slow=12,SNR=4.0
KVAR Kislovodsk Arr 50.13 294 LR LR 15 26 27.3
comp=Z,82nm,18.0s,baz=7.5,slow=40
KIV Kislovodsk 50.14 294 *i* P **P 15 01 55.6 +1.7**
KIV *i* 15 03 52.3
KIV *i* S **S 15 09 03.8 -1.6**
KIV *i* SS **SS 15 12 29.6 -8.5**
KIV pmax pmax
comp=Z,12nm,1.1s
KIV MLR MLR
comp=Z,86nm,17.0s

KBZ **Khabaz** 50.15 294 LR LR 15 25 32.4
comp=Z,37nm,19.1s,baz=16,slow=39
MENT **Mentasta** 50.24 36 *e*P **P** 15 01 55.1 +0.8
comp=Z,7.1nm,0.9s
FID **Port Fidalgo** 50.35 39 *e*P **P** 15 01 55.4 +0.2
comp=Z,32nm,1.5s
DIV **Divide** 50.43 39 *e*P **P** 15 01 56.5 +0.6
comp=Z,14nm,1.2s
NEY **Neytrino** 50.53 293 *e*P **P** 15 01 56.5 -0.4
NEY pmax pmax
comp=Z,1.0nm,1.0s
INK **Inuvik** 50.58 27 P **P** 15 01 57.4 +0.7
comp=Z,5.4nm,0.7s,baz=319,slow=9.8,SNR=13
INK **Inuvik** 50.58 27 *e*P **P** 15 01 57.3 +0.6
INK pmax pmax
comp=Z,17nm,1.3s
INK **Inuvik** 50.58 27 *e*P **P** 15 01 57.3 +0.6
comp=Z,17nm,1.3s
DAG **Danmarks Havn** 50.70 348⇑ *i*P **P** 15 01 58.4 +0.8
comp=Z,18nm,0.9s
EYAK **Cordova Ski Ar** 50.77 39 *e*P **P** 15 01 56.0 -2.2
comp=Z,31nm,1.6s
BMRM **Bremner River** 51.00 39 *e*P **P** 15 01 58.8 -1.3
comp=Z,25nm,1.1s
GNI **Garni** 51.15 289 *e*P **P** 15 02 02.9 +1.2
GNI pmax pmax
comp=Z,17nm,1.4s
BALM **Baldy** 51.86 38 *e*P **P** 15 02 06.6 0.0
BALM pmax pmax
comp=Z,7.0nm,0.9s
BALM **Baldy** 51.86 38 *e*P **P** 15 02 06.6 0.0
comp=Z,7.4nm,0.9s
JMIC **Jan Mayen** 53.62 341 LR LR 15 26 38.7
comp=Z,80nm,18.8s,baz=74,slow=38
AKASG **Malin Array Be** 53.63 308 P **P** 15 02 19.7 +0.1
comp=Z,0.9nm,0.5s,baz=47,slow=7.4,SNR=5.2
KIEV **Kiev** 53.64 308 *i*P **P** 15 02 19.0 -0.8
HYT **Haines Junctio** 53.86 36 *e*P **P** 15 02 22.2 +0.7
comp=Z,9.3nm,1.0s
KAPI **Kappang** 54.74 179 LR LR 15 28 43.0
comp=Z,84nm,18.1s,baz=358,slow=39
HFS **Hagfors** 54.75 324 LR LR 15 27 30.0
comp=Z,97nm,19.7s,baz=54,slow=38
NB2 **NORSAR Subarra** 55.08 326 P **P** 15 02 30.5 +0.3
comp=Z,8.0nm,0.9s,baz=48,slow=7.4
NOA **NORSAR Array B** 55.08 326 P **P** 15 02 30.1 -0.1
comp=Z,5.7nm,0.9s,baz=49,slow=7.1,SNR=8.6
NOA LR LR 15 27 17.8
comp=Z,77nm,19.1s,baz=45,slow=37
SKAG **Skagway** 55.58 37 *e*P **P** 15 02 35.1 +1.5
comp=Z,13nm,0.8s
SUMG **Summit** 56.74 352⇑ *i*P **P** 15 02 43.6 +1.3
comp=Z,12nm,0.9s
SUMG **Summit** 56.74 352 *e*P **P** 15 02 43.6 +1.3
SUMG pmax pmax
comp=Z,12nm,0.9s
SUMG **Summit** 56.74 352 *e*P **P** 15 02 43.6 +1.3
comp=Z,12nm,0.9s
BRTR **Keskin Array B** 58.06 295 P **P** 15 02 52.6 +0.8
comp=Z,1.0nm,0.7s,baz=38,slow=5.1,SNR=2.8
BRTR LR LR 15 31 19.4
comp=Z,35nm,19.2s,baz=24,slow=40
DLBC **Dease Lake** 58.29 35 P **P** 15 02 52.7 -0.3
comp=Z,6.8nm,0.8s,baz=62,slow=13,SNR=5.4
DLBC **Dease Lake** 58.29 35 *e*P **P** 15 02 50.1 -3.0
comp=Z,1.1nm,1.0s
BR231 **Keskin MP Arra** 58.49 296 *e*P **P** 15 02 53.9 -0.8
OKC **Ostrava-Krasne** 59.65 312 AMS AMS 15 31 20.0
comp=Z,200nm,15.6s
DPC **Dobruska-Polom** 60.16 314 *e*P **P** 15 03 07.4 +1.3
DPC *e*pP **sP** 15 03 11.9 +1.4
DPC AMS AMS 15 31 30.0
comp=Z,200nm,14.3s
UPC **Upice** 60.20 314 AMS AMS 15 31 50.0
comp=Z,200nm,14.3s
YKA **Yellowknife Ar** 60.22 25 P **P** 15 03 06.1 -0.1
comp=Z,8.0nm,0.8s,baz=327,slow=6.5,SNR=29
PVCC **Panska Ves** 60.85 315 AMS AMS 15 31 30.0
comp=Z,200nm,12.1s
DIB **Dawson Inlet,** 61.05 41 *e*P **P** 15 03 13.1 +1.2
comp=Z,24nm,1.0s
GOPC **GO Pecny, Ondr** 61.18 314 AMS AMS 15 32 30.0
comp=Z,300nm,13.1s
PRU **Pruhonice** 61.24 314 AMS AMS 15 32 30.0
comp=Z,200nm,12.0s
TREC **Trest** 61.28 313 AMS AMS 15 32 10.0
comp=Z,200nm,12.0s
MMAI **Mount Meron Ar** 61.48 288 LR LR 15 31 58.3
comp=Z,43nm,18.7s,baz=105,slow=38
KHC **Kasperske Hory** 62.29 314 *e*P **P** 15 03 22.1 +1.6
KHC AMS AMS 15 33 00.0
comp=Z,300nm,12.4s
EIL **Elat** 64.06 286 LR LR 15 33 31.3
comp=Z,55nm,20.3s,baz=68,slow=38
FITZ **Fitzroy Crossi** 68.02 173 *e*P **P** 15 03 59.2 +1.4
comp=Z,4.9nm,0.6s
EDM **Edmonton** 68.24 31 *e*P **P** 15 03 59.5 +0.5
EDM pmax pmax
comp=Z,13nm,0.8s
EDM **Edmonton** 68.24 31 *e*P **P** 15 03 59.5 +0.5
comp=Z,13nm,0.8s
FFC **Flin Flon** 70.28 24 *i*P **P** 15 04 12.0 +0.4
WRAB **Tennant Creek** 70.94 164 *i*P **P** 15 04 16.1 +0.2
WRAB pmax pmax
comp=Z,13nm,0.7s
WRAB **Tennant Creek** 70.94 164 *e*P **P** 15 04 16.4 +0.5
comp=Z,9.4nm,0.9s
WRA **Warramunga Arr** 70.95 164 P **P** 15 04 13.6 -2.3
comp=Z,3.5nm,0.5s,baz=352,slow=6.8,SNR=62
WRA **Warramunga Ar** 70.95 164 *i*P **P** 15 04 16.2 +0.3
WRA pmax pmax
comp=Z,4.0nm,0.5s
WB2 **Warramunga Arr** 70.95 164 *e*P **P** 15 04 15.4 -0.6
comp=Z,11nm,1.1s
WALA **Waterton Lakes** 71.54 33 *e*P **P** 15 04 19.5 0.0
comp=Z,29nm,2.0s
ATD **Arta Tunnel** 72.14 267 LR LR 15 39 05.7
comp=Z,35nm,21.0s,slow=38
BSMT **Bassoo Peak** 72.24 35 *e*P **P** 15 04 23.4 -0.4
JTMT **Jette** 72.51 34 *e*P **P** 15 04 24.7 -0.6
SWMT **Swartz Lake** 72.81 34 *e*P **P** 15 04 25.9 -1.2
SLMT **Seeley Lake** 73.22 34 *e*P **P** 15 04 27.8 -1.8
CHMT **Chamberlain Mo** 73.59 34 *e*P **P** 15 04 31.7 -0.1
BMO **Blue Mountains** 73.78 38 *e*P **P** 15 04 32.1 -0.7
comp=Z,6.2nm,1.0s
K05A **Summer Lake** 74.05 41 *e*P **P** 15 04 33.8 -0.8
comp=Z,51nm,1.9s
ASAR **Alice Springs** 74.52 166 P **P** 15 04 35.4 -1.7
comp=Z,2.8nm,0.9s,baz=343,slow=5.3,SNR=21
AS01 **Alice Springs** 74.52 165 *e*P **P** 15 04 35.5 -1.7
MOD **Modoc Plateau** 74.97 41 *e*P **P** 15 04 39.6 -0.3
comp=Z,9.5nm,1.1s
DLMT **Dillon** 75.15 35 *e*P **P** 15 04 40.8 -0.1
comp=Z,9.5nm,1.0s
WVOR **Wild Horse Val** 75.24 40 *e*P **P** 15 04 41.3 -0.1
WVOR pmax pmax
comp=Z,7.0nm,1.2s
WVOR **Wild Horse Val** 75.24 40 *e*P **P** 15 04 41.3 -0.1
comp=Z,7.3nm,1.2s
BOZ **Bozeman (W)** 75.26 34 *e*P **P** 15 04 41.0 -0.5
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ **Bozeman (W)** 75.26 34 *e*P **P** 15 04 41.0 -0.5
comp=Z,2.6nm,0.8s
SCHQ **Schefferville** 75.50 3 LR LR 15 41 19.8
comp=Z,61nm,18.0s,baz=324,slow=38
GCMT **Greycliff** 75.83 33 *e*P **P** 15 04 44.3 -0.5
ULM **Lac du Bonnet** 75.90 22 P **P** 15 04 43.8 -1.1
comp=Z,2.7nm,0.7s,baz=315,slow=22,SNR=2.9
ULM LR LR 15 41 14.7
comp=Z,56nm,18.3s,baz=354,slow=38
RLMT **Red Lodge** 76.55 33 *e*P **P** 15 04 48.6 -0.3
comp=Z,9.8nm,1.1s
NMTM **Middletown** 76.55 45 *e*P **P** 15 04 49.9 +1.1
MOOW **Moose Ponds** 77.21 34 *e*P **P** 15 04 53.7 +0.9
comp=Z,8.8nm,1.1s
ESDC **Sonseca Array** 77.50 318 P **P** 15 04 54.0 -0.2
comp=Z,0.3nm,0.5s,baz=36,slow=4.5,SNR=5.3
BW06 **Boulder Array** 78.50 34 *e*P **P** 15 04 58.5 -1.4
PDAR **Pinedale Array** 78.50 34 P **P** 15 04 59.0 -0.9
comp=Z,0.8nm,0.7s,baz=5.9,slow=2.2,SNR=8.9
PDAR LR LR 15 39 58.2
comp=Z,73nm,18.7s,baz=342,slow=36
HWUT **Hardware Ranch** 78.76 36 *e*P **P** 15 05 01.1 -0.2
comp=Z,12nm,1.1s
RSSD **Black Hills** 79.19 30 *e*P **P** 15 05 03.5 -0.2
RSSD pmax pmax
comp=Z,8.0nm,0.9s
RSSD **Black Hills** 79.19 30 *e*P **P** 15 05 03.5 -0.2
comp=Z,7.9nm,0.9s
R11A **Troy Canyon, C** 79.93 40 *e*P **P** 15 05 06.1 -1.6
comp=Z,2.7nm,1.2s
ARGU **Argyle Ridge** 80.69 36 *e*P **P** 15 05 13.7 +1.7
DAC **Darwin (Calif)** 80.81 43 *e*P **P** 15 05 12.1 -0.5
DAC pmax pmax
comp=Z,3.0nm,0.8s
DAC **Darwin (Calif)** 80.81 43 *e*P **P** 15 05 12.1 -0.5
comp=Z,3.2nm,0.8s
O20A **White River Ci** 81.28 35 *e*P **P** 15 05 15.0 0.0
comp=Z,5.9nm,0.9s
N23A **Red Feather La** 81.42 33 *e*P **P** 15 05 15.3 -0.6
comp=Z,16nm,1.3s
PV09 **Paradox Valley** 82.38 36 *e*P **P** 15 05 21.3 +0.4
PV10 **Paradox Valley** 82.52 36 *e*P **P** 15 05 22.2 +0.6
PFO **Pinyon Flats O** 83.55 44 *i*P **P** 15 05 28.0 +1.1
STKA **Stephens Creek** 83.96 161 P **P** 15 05 27.2 -1.3
comp=Z,8.2nm,0.8s,baz=337,slow=5.6,SNR=19
SADO **Sadowa** 84.40 13 LR LR 15 46 25.2
comp=Z,33nm,18.9s,baz=18,slow=38
TX31 **Lajitas Ar. Si** 92.58 36 *e*P **P** 15 06 10.6 +0.2
TXAR **Lajitas Array** 92.58 36 P **P** 15 06 10.1 -0.2
comp=Z,0.5nm,0.8s,baz=262,slow=4.7,SNR=6.0
TXAR LR LR 15 50 59.0
comp=Z,56nm,20.1s,baz=0.0,slow=38
OPO **Ambohidratompo** 92.69 244 LR LR 15 45 01.6
comp=Z,108nm,22.0s,baz=340,slow=34
LPAZ **La Paz** 145.98 12 PKPbc **PKPdf** 15 12 37.8 -0.8
comp=Z,1.4nm,0.7s,baz=346,slow=6.1,SNR=6.4

IDC 22 15:11:47.6±4.0, 5.90S×150.29E, h0km, mb3.6/4, mb1 3.9/5, mb1mx3.5/30, mbtmpg3.8/5, ML2.5/1, Error ellipse: s-maj=82.1km s-min=44.0km az=175.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	4.67	222	Pn	Pn	15 12 58.1	-1.3
	17nm,0.3s,baz=36,slow=7.7,SNR=53						
PMG				Sn	Sn	15 13 35.0	-19
	27nm,0.3s,baz=346,slow=23,SNR=13						
WRA	**Warramunga Arr**	20.87	227	P	P	15 16 31.4	0.0
	0.5nm,0.5s,baz=51,slow=11,SNR=12						
ASAR	**Alice Springs**	23.68	220	P	P	15 17 01.8	+0.5
	0.5nm,0.4s,baz=58,slow=9.4,SNR=25						
FITZ	**Fitzroy Crossi**	26.95	241	P	P	15 17 31.3	+0.2
	1.4nm,0.8s,baz=60,slow=7.1,SNR=14						
VNDA	**Vanda**	71.84	177	P	P	15 23 11.6	-0.2
	0.6nm,0.4s,baz=329,slow=8.4,SNR=6.4						

*ISCJB **22** 15:18:45.8±0.8, 36.12N±0.05×33.53E±0.05, h7km±5km, Error ellipse: s-maj=8.3km s-min=6.6km az=138.4*
*CSEM **22** 15:18:45.9±0.2, 36.14N×33.56E, h8km, ML2.2, Error ellipse: s-maj=5.8km s-min=4.1km az=112.0*
*ISK **22** 15:18:45.1, 36.20N×33.49E, h4km, ML2.2*
*DDA **22** 15:18:46.6, 36.20N×33.58E, h7km, Md2.7*

ISC 22 15:18:45.9±0.9, 36.16N±0.05×33.52E±0.05, h6km±6km, n14, σ0.48/23, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKKU	**Akkuyu-Mersin**	0.03	101	PG	**Pg**	15 18 47.0	-0.2
AKKU				*e*SG	**Sg**	15 18 48.1	+0.1
AKKU	**Akkuyu-Mersin**	0.03	101	*i* Pg	**Pg**	15 18 47.0	-0.2
AKKU				*e*Sg	**Sg**	15 18 48.1	+0.1
IKL	**Isikli**	0.16	62	PG	**Pg**	15 18 49.2	+0.1
IKL				*e*SG	**Sg**	15 18 52.3	+1.0
IKL	**Isikli**	0.16	62	*i* Pg	**Pg**	15 18 49.2	+0.1
IKL				*e*Sg	**Sg**	15 18 52.3	+1.0
KIZK	**Mersin**	0.60	58	*i* P	**Pg**	15 18 57.2	-0.2
KIZK				*i* S	**Sb**	15 19 06.6	-0.9
KIZK	**Mersin**	0.60	58	P	**Pg**	15 18 57.2	-0.2
ERMK	**Ermenek**	0.68	315	*i* P	**Pb**	15 19 00.6	+0.3
ERMK				*i* S	**Sb**	15 19 10.0	-0.1
ERMK	**Ermenek**	0.68	315	P	**Pb**	15 19 00.6	+0.3
ERMK				S	**Sb**	15 19 10.0	-0.1
LFK	**Lefkose**	0.88	179	*e*PG	**Pg**	15 19 03.2	+0.3
LFK	**Lefkose**	0.88	179	*e*Pg	**Pg**	15 19 03.2	+0.3
LEF	**Lefka**	1.16	206	*e*PN	**Pg**	15 19 07.9	-0.2
LEF	**Lefka**	1.16	206	*e*Pn	**Pg**	15 19 07.9	-0.2
KERG	**Konya-Eregli**	1.34	21	*i* P	**Pn**	15 19 10.7	-0.6
KERG				*i* S	**Sn**	15 19 29.7	+0.2
KERG	**Konya-Eregli**	1.34	21	P	**Pn**	15 19 10.7	-0.6
KERG				S	**Sn**	15 19 29.7	+0.2

*GUC **22** 15:21:20.8±0.6, 34.85S×71.70W, h54km±3km, ML3.6*
*SJA **22** 15:21:22.0±1.1, 34.63S×71.89W, h72km±21km, ML3.4, MW3.3*

ISC 22 15:21:20.9±1.6, 34.8S±0.1×71.79W±0.06, h17km±19km, n22, σ1.44/34, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	0.42	335	*i* P	**Pn**	15 21 32.4	+0.2
CHPI				*i* S	**Sn**	15 21 40.9	+1.4
NICH	**Los Niches**	0.51	117	*i* P	**Pg**	15 21 31.5	+0.3
NICH				*i* S	**Sg**	15 21 38.9	+0.8
TALC	**Talca**	0.64	169	*i* P	**Pg**	15 21 33.0	-0.5
TALC				*i* S	**Sg**	15 21 41.6	-0.5
RCDM	**Rinconada Maip**	1.52	33	*i* P	**Pn**	15 21 46.5	-0.8
RCDM				*i* S	**Sn**	15 22 05.5	-1.2
ANTU	**Antumapu**	1.53	39	*i* P	**Pn**	15 21 47.2	-0.4
ANTU				*i* S	**Sn**	15 22 07.0	-0.1
ANTU				IAML		15 22 07.6	
	comp=E,1μm,0.4s						
CLCH	**Cerro Calan**	1.72	37	*i* P	**Pn**	15 21 49.6	-0.5
CLCH				*e*S	**Sn**	15 22 07.6	-4.2
CLCH				IAML		15 22 15.6	
	comp=E,936nm,0.2s						
PEL	**Peldehue**	1.86	30	*i* P	**Pn**	15 21 51.8	-0.3
PEL				*i* S	**Sn**	15 22 15.2	-0.1
PEL				IAML		15 22 22.2	
	comp=N,692nm,0.4s						
FCH	**Farellones**	1.90	41	*i* P	**Pn**	15 21 52.3	-0.6
FCH				*i* S	**Sn**	15 22 17.2	+0.5
FCH				IAML		15 22 25.0	
	comp=N,827nm,0.2s						
ROC1	**El Roble**	1.90	20	*e*P	**Pn**	15 21 53.0	+0.1
ROC1				*e*S	**Sn**	15 22 15.8	-0.7
ROCH	**El Roble**	1.91	20	*i* P	**Pn**	15 21 53.2	+0.4
ROCH				*i* S	**Sn**	15 22 17.6	+1.0
ROCH				IAML		15 22 22.3	
	comp=E,808nm,0.4s						
AAGR	**Agrelo**	2.98	56	*e*P	**Pn**	15 22 08.7	+1.1
ARCO	**CERRO ARCO**	3.06	52	*e*P	**Pn**	15 22 10.4	+1.8
AUSP	**Uspallata**	3.24	39‖	*e*P	**Pn**	15 22 13.1	+1.9
ASAL	**Salagasta**	3.28	49	*e*P	**Pn**	15 22 13.6	+1.9
RTLS	**Leoncito**	3.62	36	*e*P	**Pn**	15 22 18.0	+1.4
AMOG	**MOGNA**	4.72	37	*e*P	**Pn**	15 22 31.4	-0.1
ACCO	**Cerro Coronel**	4.76	30	*e*P	**Pn**	15 22 32.1	-0.1
ACCO				*e*S	**Sn**	15 23 31.4	+4.2
ACCO				IAML		15 23 44.1	
	comp=Z,33nm,0.6s						
AROD	**Rodeo**	4.99	24	*e*P	**Pn**	15 22 36.3	+0.9
AROD				*e*S	**Sb**	15 23 46.3	-1.5
ACDV	**Cuesta del Vie**	5.11	27	*e*P	**Pn**	15 22 37.1	+0.2
AVFE	**Valle Fertil**	5.49	43	*e*P	**Pn**	15 22 40.8	-1.2
AVFE				IAML		15 23 55.0	
	comp=Z,14nm,0.3s						
ACHE	**Chepes**	5.61	52	*e*P	**Pn**	15 22 44.1	+0.3
AGUA	**GUANDACOL**	5.96	29	*e*P	**Pn**	15 22 48.0	-0.5

*ISCJB **22** 15:31:48.1±1.2, 43.06N±0.06×126.3W±0.1, h10km, mb3.2/3, MS2.9/2, Error ellipse: s-maj=12.1km s-min=7.0km az=146.4*
*NEIC **22** 15:31:48.5±2.0, 42.96N×126.23W, h10km, ML2.8, Error ellipse: s-maj=24.9km s-min=14.2km az=50.0*
*IDC **22** 15:31:53.1±3.0, 43.77N×125.79W, h0km, mb3.3/3, mb1 3.7/4, mb1mx3.4/45, mbtmpg3.4/4, ML3.8/1, MS3.0/5, Ms1 3.0/5, ms1mx2.7/18, Error ellipse: s-maj=62.8km s-min=26.2km az=35.0*

ISC 22 15:31:49.8±1.9, 43.08N±0.07×126.2W±0.1, h10km, n32, σ1.29/26, mb3.2/3, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UMPQ	**Umpqua Communi**	2.09	83	P	**Pn**	15 32 24.6	-0.4
L02D	**Cave Junction,**	2.11	115	P	**Pn**	15 32 24.3	-0.9
	baz=293,SNR=22						
L02D				S	**Sn**	15 32 52.0	+0.5
	baz=293						
I03D	**Drain, OR**	2.15	72	P	**Pn**	15 32 25.0	-0.8
	baz=252,SNR=33						
I03D				S	**Sn**	15 32 53.5	+0.9
	baz=252						
HSO	**Harness Mounta**	2.30	78	P	**Pn**	15 32 27.7	-0.2
MPOR	**Mary's Peak**	2.38	52	P	**Pn**	15 32 28.4	-0.6
HUMO	**Hull Mountain**	2.42	100	*e*Pn	**Pn**	15 32 29.2	-0.2
HUMO				*e*Sn	**Sb**	15 33 02.5	-0.7
COR	**Corvallis**	2.57	53	*e*Pn	**Pn**	15 32 30.1	-1.4
COR				*e*Sn	**Sn**	15 33 00.1	-2.7
HBO	**Huckleberry Mo**	2.91	73	P	**Pn**	15 32 37.0	+0.6
J04D	**Umpqua Nationa**	2.98	85	P	**Pn**	15 32 38.4	+1.1
	baz=266,SNR=52						
M02C	**Callahan**	2.99	123	S	**Sn**	15 33 13.7	+0.4
	baz=303						
G03D	**McMinnville, O**	2.99	44	S	**Sn**	15 33 14.1	+0.9
	baz=224						
J05D	**Fort Rock, OR**	3.62	85	P	**Pn**	15 32 46.4	+0.3
	baz=266,SNR=15						
I05D	**Terrebonne, OR**	3.73	69	P	**Pn**	15 32 47.9	+0.4
	baz=250,SNR=8.6						
TDH	**Tom, Dick, Har**	3.86	53	P	**Pn**	15 32 50.3	+1.0
FL2	**Flat Top 2**	4.15	40	P	**Pn**	15 32 54.2	+0.9
MOD	**Modoc Plateau**	4.50	103	Pn	**Pn**	15 32 57.7	-0.5
MOD				*e*Sn	**Sn**	15 33 51.4	+0.8
TRW	**Toppenish Ridg**	5.15	49	P	**Pn**	15 33 08.3	+1.3
BMO	**Blue Mountains**	6.64	71	*e*Pn	**Pn**	15 33 25.0	-2.6
	3.4nm,0.8s						
NEW	**Newport**	8.19	48	LR	LR	15 36 12.5	
	comp=Z,72nm,18.5s,baz=286,slow=34						
BBB	**Bella Bella**	9.21	353	LR	LR	15 36 51.0	
	comp=Z,58nm,18.8s,baz=312,slow=35						
PFO	**Pinyon Flats O**	12.13	138	LR	LR	15 39 14.4	
	comp=Z,70nm,18.1s,baz=326,slow=35						
PDAR	**Pinedale Array**	12.19	86	Pn	**Pn**	15 34 47.1	+3.4
	0.1nm,0.3s,baz=276,slow=9.7,SNR=4.5						
ULM	**Lac du Bonnet**	21.89	60	P	**P**	15 36 42.8	0.0
	2.1nm,0.8s,baz=278,slow=7.1,SNR=2.9						
TXAR	**Lajitas Array**	22.67	120	P	P	15 36 57.8	+6.4
	0.7nm,0.8s,baz=300,slow=8.5,SNR=6.6						
LPIG	**La Paz**	23.01	140	LR	LR	15 46 27.3	
	comp=Z,44nm,19.6s,baz=221,slow=37						
ILAR	**Eielson Array**	24.69	339	P	**P**	15 37 10.1	-0.5
	0.3nm,0.7s,baz=149,slow=8.4,SNR=4.6						
ILAR				LR	LR	15 45 48.0	
	comp=Z,38nm,18.1s,baz=158,slow=35						
H11N3	**WAKE ISLAND Hy**	60.07	270	T	T	16 46 37.2	
	baz=51,slow=75,SNR=40						
H11N2	**WAKE ISLAND Hy**	60.07	270	T	T	16 46 37.3	
	baz=51,slow=75,SNR=42						
H11N1	**WAKE ISLAND Hy**	60.09	270	T	T	16 46 38.4	
	baz=51,slow=75,SNR=35						
H11S1	**WAKE ISLAND Hy**	60.98	269	T	T	16 47 56.6	
	baz=50,slow=75,SNR=148						
H11S2	**WAKE ISLAND Hy**	60.99	269	T	T	16 47 56.9	
	baz=50,slow=75,SNR=100						
H11S3	**WAKE ISLAND Hy**	61.00	269	T	T	16 47 55.4	
	baz=50,slow=75,SNR=95						

IDC 22 15:32:54.3±15.0, 18.36S×176.88W, h271km±142km, mb3.0/4, mb1 3.3/4, mb1mx3.0/27, mbtmpg3.6/4, Error ellipse: s-maj=113.4km s-min=43.0km az=158.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	39.70	242	P	P	15 40 02.0	+1.3
	1.3nm,0.9s,baz=84,slow=8.7,SNR=3.9						
WRA	**Warramunga Arr**	45.99	260	P	P	15 40 50.4	-0.9
	0.2nm,0.3s,baz=97,slow=7.7,SNR=13						
ASAR	**Alice Springs**	46.08	255	P	P	15 40 51.8	-0.1
	0.9nm,0.6s,baz=90,slow=8.1,SNR=27						
ASAR				PcP	PcP	15 42 22.1	-1.2
	0.2nm,0.7s,baz=111,slow=3.6,SNR=4.2						
TXAR	**Lajitas Array**	85.01	57	P	P	15 44 59.3	-0.6
	0.2nm,0.3s,baz=224,slow=5.0,SNR=4.3						
GERES	**GERESS Array B**	148.41	347	PKPbc	PKPbc	15 52 09.5	+0.6
	0.5nm,0.5s,baz=29,slow=3.0,SNR=3.9						

IDC 22 15:38:50.8±2.1, 17.09S×178.77W, h539km±31km, mb3.5/4, mb1 3.7/5, mb1mx3.1/24, mbtmpg4.5/5, Error ellipse: s-maj=94.2km s-min=17.3km az=152.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	7.45	66	P	P	15 40 42.9	0.0
	3.0nm,0.3s,baz=145,slow=6.9,SNR=5.1						
STKA	**Stephens Creek**	38.73	240	P	P	15 45 28.8	-0.1
	3.1nm,0.5s,baz=88,slow=10,SNR=24						
WRA	**Warramunga Arr**	44.45	259	P	P	15 46 13.9	-0.4
	3.0nm,0.5s,baz=93,slow=6.8,SNR=75						
ASAR	**Alice Springs**	44.69	253	P	P	15 46 16.1	0.0
	21nm,0.5s,baz=89,slow=7.6,SNR=613						
TXAR	**Lajitas Array**	85.85	58	P	P	15 50 33.8	-0.2
	0.4nm,0.6s,baz=228,slow=4.9,SNR=5.1						
BRTR	**Keskin Array B**	143.97	315	PKP	PKPbc	15 57 24.3	-0.4
	0.8nm,0.8s,baz=62,slow=3.4,SNR=3.8						
GERES	**GERESS Array B**	146.74	345	PKPbc	PKPbc	15 57 32.0	-0.4
	0.4nm,0.4s,baz=36,slow=3.9,SNR=3.2						

IDC 22 16:34:12.9±2.5, 27.76N×141.50E, h0km, mb3.6/5, mb1 3.7/6, mb1mx3.4/44, mbtmpg3.5/6, ML3.2/1, Error ellipse: s-maj=114.9km s-min=20.5km az=77.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	9.19	343	Pn	Pn	16 36 28.6	+1.9
	0.3nm,0.3s,baz=122,slow=17,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	24.55	103	T	T	17 04 33.2	
	baz=296,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	24.55	104	T	T	17 04 34.0	
	baz=296,slow=75,SNR=7.8						
H11N3	**WAKE ISLAND Hy**	24.56	103	T	T	17 04 35.0	
	baz=296,slow=75,SNR=7.1						
H11S3	**WAKE ISLAND Hy**	24.89	106	T	T	17 04 54.4	
	baz=297,slow=76,SNR=13						
H11S1	**WAKE ISLAND Hy**	24.89	106	T	T	17 04 59.6	
	baz=297,slow=76,SNR=8.6						
H11S2	**WAKE ISLAND Hy**	24.91	106	T	T	17 05 01.5	
	baz=297,slow=76,SNR=3.7						
WRA	**Warramunga Arr**	47.92	189	P	P	16 42 53.3	+0.1
	0.4nm,0.3s,baz=8.6,slow=8.3,SNR=35						
MKAR	**Makanchi Array**	49.59	309	P	P	16 43 05.9	+0.1
	0.1nm,0.3s,baz=117,slow=5.0,SNR=3.4						
ASAR	**Alice Springs**	51.65	189	P	P	16 43 21.4	-0.1
	0.1nm,0.3s,baz=12,slow=6.1,SNR=9.7						
BVAR	**Borovoye Array**	57.15	317	P	P	16 44 01.0	-0.3
	0.3nm,0.4s,baz=112,slow=6.5,SNR=3.8						
FINES	**FINESS Array B**	77.09	334	P	P	16 46 07.1	-0.7
	0.4nm,0.3s,baz=69,slow=4.6,SNR=6.3						

BJI 22 16:34:56.3, 49.71N×118.79E, h8km, ML3.5/4, Priamurye-Northeastern China border region

IDC 22 17:22:12.0±1.3, 17.81N×123.61E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.2/43, mbtmpg3.3/4, Error ellipse: s-maj=72.1km s-min=26.7km az=74.0, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	38.97	164	P	P	17 29 40.1	+0.1
	0.6nm,0.7s,baz=342,slow=9.0,SNR=4.5						
ASAR	**Alice Springs**

*CSEM **22** 17:23:26.8±0.3,39°72.N×30°19.E, h1km, MD2.5, Error ellipse: s-maj=8.9km s-min=6.0km az=7.0, Suspected Mining explosion.*
*ISK **22** 17:23:26.7, 39°65.N×30°20.E, h21km, ML2.0*
*DDA **22** 17:23:27.1, 39°75.N×30°23.E, h7km, Md2.5, Suspected Mining explosion.*

ISC 22 17:23:26.6±0.8, 39°74.N±0°03.×30°21.E±0°02, h0km, n23, σ0.93/34, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BORA	**Eskisehir**	**0.24**	**53**	*i*	P		**Pg**	**17 23 31.5**	**+0.3**
BORA				*i*	S		**Sg**	**17 23 36.1**	**+1.8**
BORA	**Eskisehir**	**0.24**	**53**	P			**Pg**	**17 23 31.5**	**+0.3**
BORA					S		**Sg**	**17 23 36.1**	**+1.8**
ESKT	**Eskisehir**	**0.54**	**113**	*e*	PG		**Pg**	**17 23 37.6**	**+0.6**
ESKT				*e*	SG		**Sg**	**17 23 45.5**	**+1.5**
ESKT	**Eskisehir**	**0.54**	**113**	*i*	P		**Pg**	**17 23 37.1**	**+0.1**
ESKT				*i*	S		**Sb**	**17 23 45.9**	**-1.5**
ESKT	**Eskisehir**	**0.54**	**113**	*e*	Pg		**Pg**	**17 23 37.6**	**+0.6**
ESKT				*e*	Sg		**Sg**	**17 23 45.5**	**+1.5**
SEYT	**Eskypehyr**	**0.54**	**113**	P			**Pg**	**17 23 37.1**	**+0.1**
SEYT					S		**Sb**	**17 23 45.9**	**-1.5**
TVSB	**Tavsanli**	**0.64**	**244**	*e*	PG		**Pg**	**17 23 39.1**	**+0.2**
TVSB				*e*	SG		**Sg**	**17 23 48.4**	**+1.2**
TVSB	**Tavsanli**	**0.64**	**244**	*e*	Pg		**Pg**	**17 23 39.1**	**+0.2**
TVSB				*e*	Sg		**Sg**	**17 23 48.4**	**+1.2**
GULT	**Gulveren**	**0.73**	**19**	*e*	PG		**Pn**	**17 23 43.6**	**-0.7**
GULT	**Gulveren**	**0.73**	**19**	*e*	Pg		**Pn**	**17 23 43.6**	**-0.7**
IZI	**Iznik**	**0.82**	**317**	*e*	PG		**Pb**	**17 23 44.0**	**+0.2**
IZI	**Iznik**	**0.82**	**317**	*e*	Pg		**Pb**	**17 23 44.0**	**+0.2**
GDZ	**Gediz**	**0.86**	**221**	*i*	P		**Pb**	**17 23 44.1**	**-0.3**
GDZ				*i*	S		**Sb**	**17 23 57.4**	**+0.9**
GDZ	**Gediz**	**0.86**	**221**	P			**Pb**	**17 23 44.1**	**-0.3**
GDZ					S		**Sb**	**17 23 57.4**	**+0.9**
IGD	**Bursa**	**0.94**	**305**	*i*	P		**Pg**	**17 23 44.8**	**+0.3**
IGD				*i*	S		**Sn**	**17 24 00.3**	**-0.8**
GEMT	**Gemlik**	**1.05**	**312**	*e*	PN		**Pg**	**17 23 47.2**	**+0.5**
GEMT	**Gemlik**	**1.05**	**312**	*e*	Pn		**Pg**	**17 23 47.2**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.06**	**105**	*e*	PG		**Pg**	**17 23 46.6**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.06**	**105**	*e*	Pg		**Pg**	**17 23 46.6**	**-0.3**
ARMT	**Armutlu**	**1.32**	**309**	*e*	PN		**Pg**	**17 23 51.3**	**-0.6**
ARMT	**Armutlu**	**1.32**	**309**	*e*	Pn		**Pg**	**17 23 51.3**	**-0.6**
KCTX	**Karacabey (Bur**	**1.52**	**291**	*e*	PN		**Pn**	**17 23 54.1**	**-0.9**
KCTX	**Karacabey (Bur**	**1.52**	**291**	*e*	Pn		**Pn**	**17 23 54.1**	**-0.9**

IDC 22 17:34:11.3±631.0, 62°15N×63°23E, h0km, Error ellipse: s-maj=228.5km s-min=189.9km az=17.0, Northwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**12.12**	**196**	*i*				18 50 05.0	
	baz=13,slow=311,SNR=2.7								
I46RU	**ZALESOVO INFRA**	**14.02**	**116**	*i*				19 03 58.1	
	baz=314,slow=320,SNR=2.9								
I43RU	**DUBNA INFRASON**	**14.24**	**259**	*i*				19 02 10.0	
	baz=56,slow=318,SNR=1.5								

MEX 22 17:34:25.3±0.4, 15°44.N×93°37.W, h49km±90km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.45**	**54**	*i*	P		Pn	17 34 47.7	-1.6
CCIG				*i*	S		Sn	17 35 05.4	-1.9

*NIED **22** 18:08:00, 38°30.N×144°20.E, h5km, Mw3.8 Best double couple: M₀5.40000×10¹⁴ NP1:φ₁21.00000°, δ28.00000°, λ-59.00000°. NP2:φ₂167.00000°, δ66.00000°, λ-105.00000°.*
*IDC **22** 18:08:05.4±0.9, 38°.14N×144°47.E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.6/43, mbtmp3.6/8, ML3.6/1, MS2.8/3, Ms1 2.8/3, ms1mx2.3/51, Error ellipse: s-maj=26.9km s-min=18.5km az=95.0*
*ISCJB **22** 18:08:07.8±0.7, 38°.34N±0°.04×144°.32E±0°.06, h29km, mb3.5/6, MS3.0/1, Error ellipse: s-maj=7.2km s-min=5.5km az=136.2*
*JMA **22** 18:08:10.0±0.2, 38°.34N×144°.18E, h40km, M4.0*

ISC 22 18:08:09.5±0.9, 38°.30N±0°.05×144°.31E±0°.08, h29km, n29, σ2.948/41, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.21**	**292**		P		**Pn**	**18 08 44.1**	**-0.1**
MIYJ	**Miyakonagasawa**	**2.33**	**304**		P		**Pn**	**18 08 45.1**	**-0.7**
MIYJ					eS		**Sn**	**18 09 11.9**	**-1.5**
JIO	**Ouri**	**2.34**	**275**		P		**Pn**	**18 08 45.5**	**-0.4**
JIO					eS		**Sn**	**18 09 11.7**	**-1.9**
JMK	**Ichinoseki**	**2.51**	**286**		P		**Pn**	**18 08 48.4**	**+0.1**
JOM	**Ohasama**	**2.63**	**297**		P		**Pn**	**18 08 50.6**	**+0.6**
JOM					eS		**Sn**	**18 09 20.3**	**-0.7**
JANG	**Nango**	**3.00**	**315**		P		**Pn**	**18 08 54.7**	**-0.4**
JYK	**Kaneyama**	**3.16**	**283**		P		**Pn**	**18 08 58.0**	**+0.7**
JYK					eS		**Sn**	**18 09 34.2**	**+0.2**
JFT	**Otama**	**3.24**	**257**		P		**Pn**	**18 08 58.7**	**+0.3**
JFT					eS		**Sn**	**18 09 34.5**	**-1.5**
JOT	**Ohata**	**3.98**	**322**		P		**Pn**	**18 09 08.9**	**+0.4**
JOT					eS		**Sn**	**18 09 52.2**	**-1.9**
JCH	**Churui**	**4.37**	**351**		P		**Pn**	**18 09 13.3**	**-0.6**
JCH					eS		**Sn**	**18 10 00.1**	**-3.8**
JKB	**Kayabe**	**4.38**	**326**		P		**Pn**	**18 09 15.2**	**+1.2**
JRY	**Ryogami san**	**4.88**	**244**		P		**Pn**	**18 09 20.7**	**-0.3**
JRY					eS		**Sn**	**18 10 12.6**	**-4.0**
MJAR	**Matsushiro Arr**	**5.17**	**252**		Pn		**Pn**	**18 09 25.3**	**+0.5**
	1.9nm,0.3s,baz=76,slow=14,SNR=18								
MJAR					Sn		**Sn**	**18 10 26.6**	**+3.1**
	1.7nm,0.3s,baz=96,slow=24,SNR=5.8								
MJAR					LR		LR	18 11 43.2	
	comp=Z,43nm,18.5s,baz=80,slow=42								
MAT	**Matsushiro**	**5.17**	**252**		P		**Pn**	**18 09 25.5**	**+0.6**
MAT					eS		**Sn**	**18 10 19.2**	**-4.3**
JOD2	**Odawara 2**	**5.17**	**236**		eS		**Sn**	**18 10 18.4**	**-5.2**
NEM2	**Nemuro 2**	**5.18**	**12**		P		**Pn**	**18 09 22.5**	**-2.5**
NEM2					eS		**Sn**	**18 10 18.3**	**-5.4**
JTKR	**Abashiri--Toko**	**5.68**	**357**		P		**Pn**	**18 09 31.4**	**-0.4**
JTKR					eS		**Sn**	**18 10 31.4**	**-4.6**
ASAJ	**Asahikawa**	**5.96**	**348**		Pn		**Pn**	**18 09 36.1**	**+0.4**
ASAJ					Sn		**Sn**	**18 10 41.0**	**-2.0**
	0.6nm,0.3s,baz=3.6,slow=26,SNR=3.7								
JHJ	**Hachijo jima 2**	**6.34**	**217**		Sn		**Sn**	**18 10 45.0**	**-7.5**
	15nm,0.3s,baz=110,slow=22,SNR=2.7								
USRK	**Ussuriysk Ar.**	**10.99**	**306**		Pn		Pn	18 10 49.9	+5.2
	0.1nm,0.3s,baz=114,slow=14,SNR=2.9								
KSRS	**Korea Array**	**12.98**	**271**		LR		LR	18 15 46.1	
	comp=Z,40nm,19.0s,baz=86,slow=35								
SEY	**Seymchan**	**25.15**	**9**		P		**P**	**18 13 33.9**	**+2.0**
	1.5nm,0.6s,baz=183,slow=7.6,SNR=8.2								
SONM	**Songino Array**	**29.04**	**301**		P		**P**	**18 14 09.4**	**+2.3**
	0.3nm,0.5s,baz=97,slow=7.4,SNR=2.4								
TIXI	**Tiksi**	**34.35**	**351**		LR		LR	18 31 08.0	
	comp=Z,26nm,18.3s,baz=220,slow=40								
ZALV	**Zalesovo Beam**	**42.79**	**311**		PcP		**PcP**	**18 17 56.2**	**+1.1**
	0.5nm,0.4s,baz=81,slow=3.2,SNR=5.1								
MKAR	**Makanchi Array**	**45.41**	**302**		P		**P**	**18 16 26.5**	**+1.1**
	0.4nm,0.6s,baz=84,slow=8.9,SNR=5.7								
ILAR	**Eielson Array**	**47.19**	**33**		P		**P**	**18 16 39.4**	**+0.3**
	0.2nm,0.7s,baz=267,slow=5.4,SNR=3.3								
WRA	**Warramunga Arr**	**58.68**	**191**		P		**P**	**18 18 03.3**	**-1.0**
	0.9nm,0.5s,baz=11,slow=7.4,SNR=17								
WRA					PcP		**PcP**	**18 18 54.8**	**+0.7**
	0.4nm,0.6s,baz=0.8,slow=4.3,SNR=6.0								
ASAR	**Alice Springs**	**62.41**	**191**		P		**P**	**18 18 28.9**	**-0.8**
	0.4nm,0.8s,baz=8.3,slow=7.0,SNR=4.7								
ASAR					PcP		**PcP**	**18 19 09.1**	**+0.1**
	0.2nm,0.6s,baz=10,slow=5.7,SNR=3.6								

*CSEM **22** 18:21:54.6, 37°89N×37°92E, h7km, MD2.7*
DDA 22 18:21:54.6, 37°89N×37°92E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
AKCD	**Akcadag**	**0.40**	**0**	*i*	P		Pg	18 22 02.4	0.0
AKCD				*i*	S		Sg	18 22 08.6	+0.9
AKCD	**Akcadag**	**0.40**	**0**	P			Pg	18 22 02.4	0.0
AKCD					S		Sg	18 22 08.6	+0.8
GZT	**Gaziantep**	**0.61**	**208**	*i*	P		Pg	18 22 06.1	-0.2
GZT				*i*	S		Sb	18 22 15.4	-0.9
ANDN	**Andirin**	**1.29**	**256**	*i*	P		Pg	18 22 19.3	0.0
ANDN				*i*	S		Sn	18 22 37.7	+1.1
ANDN	**Andirin**	**1.29**	**256**	P			Pg	18 22 19.3	0.0
ANDN					S		Sn	18 22 37.7	+1.1
KUZU	**Kuzuini**	**1.30**	**211**	*i*	P		Pn	18 22 18.9	-0.3
KUZU				*i*	S		Sn	18 22 37.8	+0.8
KUZU	**Kuzuini**	**1.30**	**211**	P			Pn	18 22 18.9	-0.4
KUZU					S		Sn	18 22 37.8	+0.8

*NIED **22** 18:26:00, 41°90N×142°30E, h56km, Mw3.8 Best double couple: M₀6.57000×10¹⁴ NP1:φ₁170.00000°, δ16.00000°, λ62.00000°. NP2:φ₂19.00000°, δ76.00000°, λ98.00000°.*
*ISCJB **22** 18:26:42.8±0.3, 41°.94N±0°.03×142°.31E±0°.04, h73km±2km, mb3.9/20, Error ellipse: s-maj=5.4km s-min=3.6km az=136.0*
*JMA **22** 18:26:42.9±0.1, 41°.92N×142°.32E, h69km±2km, M3.5 Broadband fault plane solution: P waves. NP1: φ₁28.00000°, δ79.00000°, λ102.00000°. NP2: φ₂159.00000°, δ16.00000°, λ42.00000°. Principal axes: T Plg54.0000°, Azm313.0000°; N Plg12.0000°, Azm206.0000°; P Plg33.0000°, Azm108.0000°;*
JMA Felt i J1.
*NEIC **22** 18:26:43.8±0.9, 41°.98N×142°.70E, h92km±12km, mb4.2/5 Error ellipse: s-maj=35.4km s-min=8.4km az=109.0*
*IDC **22** 18:26:45.6±1.8, 42°.02N×142°.34E, h82km±12km, mb3.6/14, mb1 3.7/19, mb1mx3.4/69, mbtmp3.9/19, MS2.5/5, Ms1 2.6/5, ms1mx2.4/45, Error ellipse: s-maj=19.2km s-min=12.2km az=121.0*

ISC 22 18:26:43.9±0.7, 41°.94N±0°.03×142°.32E±0°.03, h66km±7km, n63, σ1.925/74, mb4.1/20, 3C-8D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JNBK	**Urakawa-nobuka**	**0.47**	**44**	⇑	P		**Pn**	**18 26 54.9**	**-1.1**
JNBK					eS		**Sn**	**18 27 04.0**	**-0.8**
ERM	**Erimo**	**0.63**	**83**	*e*	Pn		**Pn**	**18 26 57.1**	**-0.6**
ERM				*e*	Sn		**Sn**	**18 27 06.4**	**-1.3**
JEM	**Erimo**	**0.63**	**83**	⇑	P		**Pn**	**18 26 57.3**	**-0.3**
JEM					eS		**Sn**	**18 27 07.7**	**-0.1**
JBT2	**Biratori 2**	**0.83**	**2**	⇓	P		**Pn**	**18 26 59.5**	**-0.6**
JBT2					eS		**Sn**	**18 27 12.1**	**0.0**
JKB	**Kayabe**	**0.96**	**267**	⇓	P		**Pn**	**18 27 00.8**	**-0.8**
JKB					eS		**Sn**	**18 27 14.1**	**-0.7**
JCH	**Churui**	**1.02**	**49**	⇑	P		**Pn**	**18 27 02.2**	**-0.2**
JCH					eS		**Sn**	**18 27 16.3**	**+0.1**
JNB	**Noboribetsu**	**1.09**	**299**	⇓	P		**Pn**	**18 27 02.1**	**-1.1**
JNB					eS		**Sn**	**18 27 16.5**	**-1.2**
JEW	**Eniwo**	**1.10**	**325**	⇓	P		**Pn**	**18 27 03.3**	**-0.2**
JEW					eS		**Sn**	**18 27 17.9**	**-0.2**
JOT	**Ohata**	**1.11**	**240**	⇓	P		**Pn**	**18 27 02.7**	**-0.8**
JOT					eS		**Sn**	**18 27 17.2**	**-0.9**
JFR	**Furan**	**1.24**	**9**	⇓	P		**Pn**	**18 27 04.7**	**-0.5**
JFR					eS		**Sn**	**18 27 21.0**	**-0.2**
JYM2	**Yakumo 2**	**1.46**	**277**		P		**Pn**	**18 27 07.4**	**-0.8**
JYM2					eS		**Sn**	**18 27 26.3**	**-0.2**
JOB	**Onbets**	**1.48**	**49**	⇓	P		**Pn**	**18 27 09.1**	**+0.8**
JOB					eS		**Sn**	**18 27 27.9**	**+1.1**
JSR	**Shiriuchi**	**1.48**	**254**		P		**Pn**	**18 27 07.8**	**-0.6**
JTM	**Tenmabayashi**	**1.49**	**220**		P		**Pn**	**18 27 08.2**	**-0.4**
JTM					eS		**Sn**	**18 27 27.6**	**+0.5**
JAB	**Ashibetsu**	**1.56**	**357**		P		**Pn**	**18 27 09.8**	**+0.3**
JANG	**Nango**	**1.68**	**201**		P		**Pn**	**18 27 10.9**	**-0.2**
JANG					eS		**Sn**	**18 27 31.5**	**-0.3**
JAR	**Ashorobuto**	**1.73**	**38**		P		**Pn**	**18 27 11.6**	**-0.1**
JAR					eS		**Sn**	**18 27 32.7**	**-0.1**
JHR	**Hokuryu**	**1.85**	**347**	⇓	P		**Pn**	**18 27 14.0**	**+0.6**
JHR					eS		**Sn**	**18 27 38.0**	**+2.2**
ASAJ	**Asahikawa**	**2.18**	**5**		P		**Pn**	**18 27 18.9**	**+1.1**
ASAJ					S		**Sn**	**18 27 44.6**	**+0.8**
	8.8nm,0.3s,baz=317,slow=26,SNR=13								
ASAJ	**Asahikawa**	**2.18**	**5**	*e*	Pn		**Pn**	**18 27 18.3**	**+0.4**
ASAJ				*e*	Sn		**Sn**	**18 27 44.5**	**+0.6**
MJB9	**Matsu-Tunnel**	**6.26**	**212**	*e*	Pn		**Pn**	**18 28 16.4**	**+2.7**
MAJO	**Matsushiro**	**6.27**	**212**	*e*	Pn		**Pn**	**18 28 16.3**	**+2.6**
MJAR	**Matsushiro Arr**	**6.27**	**212**		P		**Pn**	**18 28 17.9**	**+4.2**
	0.5nm,0.3s,baz=23,slow=13,SNR=8.4								
MJAR					LR		LR	18 30 52.1	
	comp=Z,31nm,21.4s,baz=250,slow=39								
INU	**Inuyama**	**7.78**	**214**	*e*	Pn		**Pn**	**18 28 37.3**	**+2.9**
USRK	**Ussuriysk Ar.**	**7.89**	**290**		P		**Pn**	**18 28 38.2**	**+2.3**
	0.2nm,0.3s,baz=95,slow=14,SNR=9.1								
USRK					LR		LR	18 31 57.0	
	comp=Z,25nm,19.9s,baz=136,slow=40								
KLR	**Kul'dur**	**10.38**	**318**		P		**Pn**	**18 29 12.7**	**+2.9**
	0.1nm,0.3s,baz=122,slow=14,SNR=14								
KLR					LR		LR	18 33 41.2	
	comp=Z,31nm,19.5s,baz=170,slow=40								
KSRS	**Korea Array**	**11.96**	**253**		P		**Pn**	**18 29 33.5**	**+2.1**
	0.4nm,0.3s,baz=67,slow=13,SNR=11								
KSRS					LR		LR	18 34 14.8	
	comp=Z,6.8nm,19.2s,baz=215,slow=37								
SONA1	**Songino Array**	**25.95**	**295**	*e*	P		**P**	**18 32 09.5**	**-0.6**
SONM	**Songino Array**	**25.96**	**295**	P			**P**	**18 32 10.7**	**+0.5**
	0.8nm,0.5s,baz=84,slow=8.9,SNR=6.3								
TLY	**Talaya**	**27.91**	**304**	*e*	P		**P**	**18 32 26.9**	**-0.5**
	8.0nm,0.8s								
LZH	**Lanzhou**	**30.28**	**272**	*e*	P		**P**	**18 32 51.3**	**+2.5**
LZH					pP		pP	18 32 57.5	-7.3
LZH					sP		sP	18 33 00.8	-12
LZH				*e*	PP		PnPn	18 33 14.5	-35
LZH					pmax		pmax		
	comp=Z,19nm,1.0s								
LZH					pmax		pmax		
	comp=Z,57nm,4.7s								
LZH					LR		LR		
	comp=N,260nm,11.2s								
LZH					LR		LR		
	comp=E,270nm,12.0s								
LZH					LR		LR		
	comp=Z,370nm,14.5s								
H11N2	**WAKE ISLAND Hy**	**30.39**	**129**		T		T	19 05 28.8	
	baz=321,slow=75,SNR=23								
H11N1	**WAKE ISLAND Hy**	**30.40**	**129**		T		T	19 05 27.5	
	baz=321,slow=75,SNR=27								
H11N3	**WAKE ISLAND Hy**	**30.41**	**129**		T		T	19 05 30.6	
	baz=321,slow=75,SNR=4.4								
H11S1	**WAKE ISLAND Hy**	**31.25**	**131**		T		T	19 06 30.8	
	baz=322,slow=74								
H11S3	**WAKE ISLAND Hy**	**31.25**	**131**		T		T	19 06 33.5	
	baz=322								
H11S2	**WAKE ISLAND Hy**	**31.27**	**131**		T		T	19 06 33.1	
	baz=322,slow=74								
ZAA0	**Zalesovo Array**	**39.28**	**308**	*e*	P		**P**	**18 34 04.2**	**-1.7**
ZALV	**Zalesovo Beam**	**39.28**	**308**	P			**P**	**18 34 05.5**	**-0.4**
	comp=Z,1.2nm,0.5s,baz=86,slow=8.0,SNR=10								
WMQ	**Urumqi**	**39.46**	**292**	*e*	P		**P**	**18 34 06.5**	**-1.1**
WMQ					pP		pP	18 34 12.3	-12
WMQ					pmax		pmax		
	comp=Z,10.0nm,0.5s								
WMQ					pmax		pmax		
	comp=Z,76nm,4.0s								
MK01	**Makanchi Array**	**42.28**	**298**	*e*	P		**P**	**18 34 30.1**	**-0.6**
MK31	**Makanchi Array**	**42.28**	**298**	*e*	P		**P**	**18 34 29.6**	**-1.1**
MKAR	**Makanchi Array**	**42.28**	**298**	P			**P**	**18 34 30.3**	**-0.4**
	comp=Z,1.6nm,0.9s,baz=86,slow=8.7,SNR=14								
MKAR	**Makanchi Array**	**42.28**	**298**	*e*	P		**P**	**18 34 29.9**	**-0.8**
	comp=Z,14nm,0.7s								
MAKZ	**Makanchi**	**42.48**	**298**	*e*	P		**P**	**18 34 30.7**	**-1.6**
	comp=Z,2.3nm,0.8s								
CM01	**Chiang Mai Arr**	**43.61**	**251**	*e*	P		**P**	**18 34 40.3**	**-1.4**
KURBB	**Kurchatov Arra**	**43.68**	**304**	P			**P**	**18 34 41.4**	**-0.5**
	comp=Z,2.7nm,0.7s,baz=78,slow=8.6,SNR=26								
ILAR	**Eielson Array**	**45.02**	**35**	P			**P**	**18 34 52.2**	**-0.2**
	comp=Z,0.6nm,1.0s,baz=279,slow=6.6,SNR=5.2								
VOSK	**Vostochnaya**	**47.64**	**309**	*e*	P		**P**	**18 35 12.9**	**-0.3**
	comp=Z,4.3nm,1.5s								
BVAR	**Borovoye Array**	**47.90**	**309**	P			**P**	**18 35 15.1**	**0.0**
	comp=Z,1.5nm,0.4s,baz=80,slow=8.7,SNR=20								
KKAR	**Karatay Array**	**51.39**	**297**	*e*	P		**P**	**18 35 41.1**	**-0.7**
ABKAR	**Akbulak array**	**55.40**	**308**	*e*	P		**P**	**18 36 08.2**	**-2.8**
	comp=Z,1.3nm,0.4s								
WRA	**Warramunga Arr**	**62.01**	**189**	P			**P**	**18 36 56.2**	**-1.0**
	comp=Z,0.3nm,0.6s,baz=7.0,slow=6.8,SNR=6.0								
FIA1	**FINESS Array S**	**64.82**	**332**	*e*	P		**P**	**18 37 14.6**	**-0.7**
FINES	**FINESS Array B**	**64.82**	**332**	P			**P**	**18 37 14.8**	**-0.4**
	comp=Z,1.4nm,0.4s,baz=54,slow=6.9,SNR=35								
KBZ	**Khabaz**	**68.28**	**310**	LR			LR	19 09 48.0	
	comp=Z,30nm,19.8s,baz=219,slow=38								
HFS	**Hagfors**	**69.92**	**335**	P			**P**	**18 37 46.9**	**-0.6**
	comp=Z,1.1nm,0.3s,baz=35,slow=5.6,SNR=20								
NB2	**NORSAR Subarra**	**69.94**	**337**	P			**P**	**18 37 47.3**	**-0.4**
	comp=Z,0.6nm,0.4s,baz=37,slow=6.5								
NOA	**NORSAR Array B**	**69.94**	**337**	P			**P**	**18 37 47.0**	**-0.7**
	comp=Z,0.6nm,0.5s,baz=202,slow=2.3,SNR=4.5								
AKASG	**Malin Array Be**	**70.86**	**322**	P			**P**	**18 37 53.0**	**-0.4**
	comp=Z,0.6nm,0.4s,baz=46,slow=5.9,SNR=5.8								
PDAR	**Pinedale Array**	**73.76**	**47**	P			**P**	**18 38 11.6**	**+0.5**
	comp=Z,0.4nm,0.6s,baz=273,slow=5.2,SNR=4.2								
BRTR	**Keskin Array B**	**76.14**	**311**	P			**P**	**18 38 24.5**	**-0.3**
	comp=Z,0.6nm,0.8s,baz=50,slow=4.6,SNR=3.3								
TXAR	**Lajitas Array**	**86.59**	**53**	P			**P**	**18 39 20.7**	**+0.5**
	comp=Z,0.1nm,0.6s,baz=308,slow=4.5,SNR=3.6								

*IDC **22** 18:30:24.7±1.2, 31°.39S×177°.56W, h0km, mb4.3/4, mb1 4.5/7, mb1mx4.0/37, mbtmp4.4/7, ML4.2/3, MS3.1/2, Ms1 3.1/2, ms1mx2.7/25, Error ellipse: s-maj=37.5km s-min=24.2km az=129.0*
*ISCJB **22** 18:30:27.1±0.9, 31°.48S±0°.04×177°.8W±0°.2, h26km, mb4.5/12, MS3.2/1, Error ellipse: s-maj=19.6km s-min=4.8km az=11.2*
*NEIC **22** 18:30:33.3±2.9, 31°.84S×177°.72W, h66km±25km, mb4.7/16, Error ellipse: s-maj=26.3km s-min=18.3km az=180.0*

ISC 22 18:30:29.4±0.8, 31°.35S±0°.07×177°.9W±0°.2, h26km, n68, σ2.810/77, mb4.6/12, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.09**	**359**		Pn		**Pn**	**18 31 01.9**	**-0.8**
	128nm,0.3s,baz=86,slow=23,SNR=7.8								
RAO					Sn		**Sn**	**18 31 25.7**	**-2.3**
	623nm,0.3s,baz=99,slow=21,SNR=9.0								
WMGZ	**Waiomatatini S**	**7.14**	**204**		PN		**Pn**	**18 32 13.3**	**+1.1**
WMGZ					SN		**Sn**	**18 33 34.9**	**+2.5**
HAZ	**Te Kaha**	**7.33**	**208**		PN		**Pn**	**18 32 15.4**	**+0.7**
HAZ					SN		**Sn**	**18 33 35.8**	**-1.2**
PKGZ	**Pakihiroa**	**7.33**	**206**		PN		**Pn**	**18 32 14.8**	**0.0**
PKGZ					SN		**Sn**	**18 33 36.5**	**-0.6**
PUZ	**Puketiti**	**7.42**	**204**		PN		**Pn**	**18 32 15.8**	**-0.3**
PUZ					SN		**Sn**	**18 33 38.6**	**-0.9**
RUGZ	**Raukumara Rang**	**7.55**	**208**		PN		**Pn**	**18 32 17.9**	**0.0**
TWGZ	**Tauwhareparae**	**7.62**	**205**		PN		**Pn**	**18 32 18.7**	**0.0**
TWGZ					SN		**Sn**	**18 33 45.3**	**+1.1**
CNGZ	**Carnagh Statio**	**7.81**	**203**		PN		**Pn**	**18 32 21.5**	**+0.1**
MWZ	**Matawai**	**7.93**	**207**		PN		**Pn**	**18 32 22.0**	**-1.0**
URZ	**Urewera**	**8.03**	**210**		Pn		**Pn**	**18 32 23.9**	**-0.5**
	1.6nm,0.3s,baz=280,slow=5.6,SNR=19								
URZ					Sn		**Sn**	**18 33 55.1**	**+0.8**
	14nm,0.3s,baz=221,slow=22,SNR=10								
URZ	**Urewera**	**8.03**	**210**	*e*	Pn		**Pn**	**18 32 24.3**	**-0.1**
URZ				*e*	Sn		**Sn**	**18 33 46.5**	**-7.8**
URZ	**Urewera**	**8.03**	**210**		PN		**Pn**	**18 32 23.9**	**-0.5**
URZ					SN		**Sn**	**18 33 54.1**	**-0.3**
RAGZ	**Rawiri**	**8.11**	**207**		PN		**Pn**	**18 32 25.3**	**-0.3**
RAGZ					SN		**Sn**	**18 33 56.2**	**-0.2**
QUZ	**Omahuta**	**8.12**	**239**	*e*	Pn		**Pn**	18 32 34.1	+8.6
RIGZ	**Rimuhau**	**8.16**	**205**		PN		**Pn**	**18 32 25.6**	**-0.7**
RIGZ					SN		**Sn**	**18 33 59.2**	**+1.5**
SNGZ	**Shannon Statio**	**8.39**	**207**		PN		**Pn**	**18 32 29.1**	**-0.2**
BKZ	**Black Stump Fm**	**9.05**	**209**	*e*	Pn		**Pn**	**18 32 37.6**	**-0.9**
BKZ				*e*	Sn		**Sn**	18 34 08.8	-11
BKZ	**Black Stump Fm**	**9.05**	**209**		PN		**Pn**	**18 32 36.8**	**-1.7**
BKZ					SN		**Sn**	**18 34 18.6**	**-1.

JFT	**Otama**	**3.26**	**316**	S		**Sn**	**18 33 28.5**	**-1.9**
JAG	**Ashikaga**	**3.26**	**293**	P		**Pn**	**18 32 51.8**	**-1.1**
JHJ	**Hachijo jima 2**	**3.49**	**235**	Sn		**Sn**	**18 33 34.1**	**-1.9**
	39nm,0.3s,baz=250,slow=22,SNR=2.9							
MJAR	**Matsushiro Arr**	**4.25**	**290**	Pn		**Pn**	**18 33 06.3**	**-0.2**
	0.8nm,0.3s,baz=86,slow=12,SNR=5.7							
MJAR				Sn		**Sn**	**18 33 56.9**	**+2.1**
	0.5nm,0.3s,baz=102,slow=19,SNR=3.5							
SONM	**Songino Array**	**30.00**	**306**	P		P	18 38 12.8	+3.2
	0.5nm,0.6s,baz=110,slow=9.1,SNR=3.7							
MKAR	**Makanchi Array**	**46.31**	**304**	P		**P**	**18 40 27.3**	**+0.8**
	0.4nm,0.8s,baz=96,slow=8.9,SNR=3.0							
KURBB	**Kurchatov Arra**	**48.26**	**310**	P		**P**	**18 40 41.7**	**+0.1**
	0.4nm,0.5s,baz=88,slow=7.8,SNR=4.6							
WRA	**Warramunga Arr**	**55.47**	**190**	P		**P**	**18 41 36.4**	**+0.8**
	0.4nm,0.6s,baz=9.2,slow=7.5,SNR=3.9							
ASAR	**Alice Springs**	**59.19**	**190**	P		**P**	**18 42 01.6**	**-0.2**
	0.1nm,0.6s,baz=1.0,slow=6.1,SNR=2.6							

KRSC 22 18:49:39.5±2.1, 49°15N×156°56E, h6km±10km, ML3.9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.57**	**350**	*e*P	Pn	18 50 07.8	0.0
SKR				eS	Sn	18 50 27.0	-1.9
PAU	**Pauzhetka**	**2.33**	**4**	P	Pb	18 50 21.4	-0.4
PAU				eS	Sb	18 50 49.3	-1.5
ASAK	**Asacha**	**3.35**	**14**	P	Pn	18 50 35.6	+3.2
RUS	**Russkaya**	**3.52**	**20**	*e*P	Pn	18 50 37.6	+3.0
RUS				S	Sn	18 51 19.2	+2.8
PET	**Petropavlovsk**	**4.10**	**18**	S	Sb	18 51 37.0	-4.7
DALK	**Dalny**	**4.13**	**19**	P	Pn	18 50 46.8	+3.8
DALK				S	Sn	18 51 35.7	+4.2
UGLR	**Uglovaya**	**4.31**	**18**	P	Pn	18 50 48.2	+2.6
AVH	**Avacha**	**4.35**	**18**	P	Pb	18 50 51.4	-4.8
KRER	**Koryakskii**	**4.38**	**17**	P	Pn	18 50 51.3	+4.6
KRER				S	Sn	18 51 44.0	+5.9
SDLR	**Sedlovina**	**4.39**	**19**	P	Pn	18 50 49.5	+2.8
SPN	**Mys Shipunski**	**4.52**	**28**	P	Pb	18 50 54.0	-5.1
SPN				eS	Sn	18 51 46.5	+5.4
GNL	**Ganaly**	**4.64**	**10**	P	Pn	18 50 53.7	+3.6
MKZ	**Mys Kozlova**	**6.29**	**29**	P	Pn	18 51 16.1	+3.5

*IDC **22** 18:53:13.4±1.9, 33°.84N×23°.85E, h0km, mb3.9/9, mb1 4.0/17, mb1mx3.8/50, mbtmp3.9/17, ML3.9/8, MS2.9/7, Ms1 2.9/7, ms1mx2.5/48, Error ellipse: s-maj=33.6km s-min=18.3km az=31.0*
*HLW **22** 18:53:19.7, 34°.20N×24°.43E, h11km±11km, Md4.4, Ml4.3*
*CSEM **22** 18:53:20.6±0.3, 34°.06N×24°.32E, h20km, ML3.7, Error ellipse: s-maj=8.6km s-min=4.1km az=70.0*
*ISCJB **22** 18:53:21.4±0.4, 34°.10N±0°.02×24°.50E±0°.04, h61km±6km, mb3.8/9, Error ellipse: s-maj=5.6km s-min=3.7km az=159.3*
*ATH **22** 18:53:23.0, 34°.28N×24°.16E, h54km±5km, ML3.5/2, Error ellipse: s-maj=10.1km s-min=2.8km az=17.0*
*THE **22** 18:53:22.6, 34°.08N×24°.15E, h32km±22km, ML3.7/5, Error ellipse: s-maj=22.0km s-min=1.3km az=359.0*
*GII **22** 18:53:31.4±0.0, 33°.86N×25°.52E, h1km, MD3.6/6*
*DDA **22** 18:54:09.4, 35°.34N×26°.38E, h18km, Md3.8*

ISC 22 18:53:21.8±1.0, 34°03N±0°.04×24°49E±0°.06, h36km±2km, n132, σ2s76/180, mb3.7/9, MS3.0/4, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.88**	**338**	P	Pn	18 53 35.5	-2.1
GVD				S	**Sn**	**18 53 47.1**	**-2.1**
GVD	**Gavdhos**	**0.88**	**338**	P	Pn	18 53 35.2	-2.4
GVD				S	**Sn**	**18 53 45.3**	**-3.9**
GVD	**Gavdhos**	**0.88**	**338**	P	Pn	18 53 35.2	-2.4
GVD				S	**Sn**	**18 53 45.3**	**-3.9**
GVD				AML	AML	18 53 52.2	
	comp=N,12706μm,0.4s						
GVD				AML	AML	18 53 55.2	
	comp=E,17650μm,0.6s						
SIVA	**Sivas**	**1.02**	**15**	P	**Pn**	**18 53 40.9**	**+1.3**
SIVA	**Sivas**	**1.02**	**15**	P	**Pn**	**18 53 40.6**	**+1.0**
SIVA				S	**Sn**	**18 53 52.5**	**-0.2**
SIVA	**Sivas**	**1.02**	**15**	P	**Pn**	**18 53 40.6**	**+1.0**
SIVA				S	**Sn**	**18 53 52.5**	**-0.2**
IDI	**Anoyia**	**1.30**	**15**	Pn	**Pn**	**18 53 44.5**	**+1.0**
	comp=E,21nm,0.3s,baz=212,slow=12,SNR=88						
IDI				Sn	**Sn**	**18 54 06.9**	**+7.2**
	comp=E,47nm,0.3s,baz=159,slow=12,SNR=10						
IDI				LR	LR	18 54 42.6	
	comp=E,281nm,21.7s,baz=226,slow=53						
IDI	**Anoyia**	**1.30**	**15**	P	**Pn**	**18 53 44.8**	**+1.3**
IDI	**Anoyia**	**1.30**	**15**	P	**Pn**	**18 53 44.8**	**+1.3**
IDI	**Anoyia**	**1.30**	**15**	P	**Pn**	**18 53 45.4**	**+1.8**
LAST	**Lasithi**	**1.40**	**36**	P	**Pn**	**18 53 47.2**	**+2.4**
LAST				S	**Sn**	**18 54 06.1**	**+4.1**
LAST	**Lasithi**	**1.40**	**36**	P	**Pn**	**18 53 47.4**	**+2.6**
LAST				S	**Sn**	**18 54 06.1**	**+4.1**
LAST	**Lasithi**	**1.40**	**36**	P	**Pn**	**18 53 47.4**	**+2.6**
VAM	**Vamos**	**1.40**	**350**	P	**Pn**	**18 53 44.1**	**-0.7**
VAM				S	**Sn**	**18 54 01.3**	**-0.7**
VAM	**Vamos**	**1.40**	**350**	P	**Pn**	**18 53 44.1**	**-0.7**
VAM				S	**Sn**	**18 54 01.3**	**-0.7**
IMMV	**Iera Moni Meta**	**1.49**	**344**	P	**Pn**	**18 53 45.1**	**-1.0**
IMMV				S	**Sn**	**18 54 02.5**	**-1.8**
IMMV	**Iera Moni Meta**	**1.49**	**344**	P	**Pn**	**18 53 44.7**	**-1.4**
IMMV				S	**Sn**	**18 54 02.5**	**-1.8**
IMMV	**Iera Moni Meta**	**1.49**	**344**	P	**Pn**	**18 53 44.7**	**-1.4**
NPS	**Neapolis**	**1.54**	**37**	P	**Pn**	**18 53 49.5**	**+2.7**
NPS				S	**Sn**	**18 54 09.7**	**+4.1**
NPS	**Neapolis**	**1.54**	**37**	P	**Pn**	**18 53 49.7**	**+2.9**
NPS				S	**Sn**	**18 54 09.7**	**+4.1**
NPS	**Neapolis**	**1.54**	**37**	P	**Pn**	**18 53 49.7**	**+2.9**
ZKR	**Zakros**	**1.79**	**52**	P	**Pn**	**18 53 53.6**	**+3.4**
ZKR	**Zakros**	**1.79**	**52**	P	**Pn**	**18 53 53.6**	**+3.4**
ZKR				AML	AML	18 54 27.6	
	comp=E,1018μm,0.6s						
ZKR				AML	AML	18 54 28.8	
	comp=N,621μm,0.9s						
SANT	**Santorini**	**2.47**	**18**	P	**Pn**	**18 53 59.6**	**0.0**
SANT	**Santorini**	**2.47**	**18**	P	**Pn**	**18 53 59.6**	**0.0**
KYTH	**Kithira**	**2.53**	**333**	P	Pn	18 53 53.6	-6.7
KYTH	**Kithira**	**2.53**	**333**	P	Pn	18 53 53.6	-6.8
SLUM	**Salum**	**2.60**	**166**	P	**Pn**	**18 54 04.0**	**+2.7**
	baz=166						
SLUM				AMP		18 54 00.0	
	comp=N,1180μm,0.4s,logA/T=6.5,baz=166						
SLUM				S	**Sn**	**18 54 36.0**	**+4.4**
	baz=166						
SLUM	**Salum**	**2.60**	**166**	P	**Pn**	**18 54 04.0**	**+2.7**
SLUM				S	**Sn**	**18 54 36.0**	**+4.4**
MHLO	**Agia Marina, M**	**2.66**	**358**	P	**Pn**	**18 54 00.4**	**-1.7**
MHLO	**Agia Marina, M**	**2.66**	**358**	P	**Pn**	**18 54 00.4**	**-1.7**
KARP	**Karpathos**	**2.67**	**55**	P	**Pn**	**18 54 06.6**	**+4.3**
KARP	**Karpathos**	**2.67**	**55**	P	**Pn**	**18 54 06.6**	**+4.3**
VLI	**Veliai**	**2.97**	**335**	P	**Pn**	**18 54 05.0**	**-1.4**
VLI	**Veliai**	**2.97**	**335**	P	**Pn**	**18 54 05.0**	**-1.4**
VLI	**Veliai**	**2.97**	**335**	P	**Pn**	**18 54 05.7**	**-0.7**
APE	**Apeiranthos**	**3.15**	**15**	P	**Pn**	**18 54 07.9**	**-1.0**
APE	**Apeiranthos**	**3.15**	**15**	P	**Pn**	**18 54 07.9**	**-1.0**
MATC	**Matruh**	**3.53**	**138**	P	**Pn**	**18 54 16.5**	**+2.4**
	baz=139						
DID	**Didima**	**3.62**	**344**	P	Pn	18 54 11.1	-4.3
DID	**Didima**	**3.62**	**344**	P	Pn	18 54 11.1	-4.3
HMAT	**Matruh**	**3.66**	**142**	P	**Pn**	**18 54 16.5**	**+0.6**
ARG	**Arkhangelos**	**3.70**	**53**	P	**Pn**	**18 54 19.1**	**+2.7**
BDRM	**Kayabasi**	**3.87**	**38**	*i* P	**Pn**	**18 54 20.4**	**+1.7**
BDRM				*i* S	**Sn**	**18 55 00.6**	**-2.5**
BDRM	**Kayabasi**	**3.87**	**38**	P	**Pn**	**18 54 20.5**	**+1.7**
BDRM				S	**Sn**	**18 55 00.6**	**-2.5**
TURN	**Turunc**	**4.40**	**49**	*i* P	**Pn**	**18 54 24.0**	**-2.0**
TURN				*i* S	Sn	18 55 09.0	-7.0
AKAS	**Kas**	**4.74**	**61**	*i* P	**Pn**	**18 54 32.7**	**+1.9**
AKAS				*i* S	**Sn**	**18 55 23.8**	**-0.7**
AKAS	**Kas**	**4.74**	**61**	P	**Pn**	**18 54 32.7**	**+1.9**
AKAS				S	**Sn**	**18 55 23.8**	**-0.7**
SWA2		**4.84**	**170**	P	**Pn**	**18 54 34.5**	**+2.4**
	baz=169						
SWA2				AMP		18 55 00.0	
	comp=N,810μm,0.2s,logA/T=6.6,baz=169						
SWA2				S	**Sn**	**18 55 29.4**	**+2.5**
	baz=169						
SWA2		**4.84**	**170**	P	**Pn**	**18 54 34.5**	**+2.4**
SWA2				S	**Sn**	**18 55 29.4**	**+2.5**

GOLH	**Golhisar**	**5.23**	**51**	*i* P		**Pn**	**18 54 39.5**	**+2.0**
GOLH				*i* S		**Sn**	**18 55 37.4**	**+0.8**
GOLH	**Golhisar**	**5.23**	**51**	P		**Pn**	**18 54 39.5**	**+2.0**
GOLH				S		**Sn**	**18 55 37.4**	**+0.8**
KORT	**Korkueli**	**5.63**	**57**	*i* P		**Pn**	**18 54 45.2**	**+2.2**
KORT				*i* S		**Sn**	**18 55 49.0**	**+2.5**
KORT	**Korkueli**	**5.63**	**57**	P		**Pn**	**18 54 45.2**	**+2.2**
KORT				S		**Sn**	**18 55 49.0**	**+2.5**
CSS	**Mathiatis**	**7.36**	**80**	Pn		**Pn**	**18 55 08.4**	**+1.7**
CSS				Sn		**Sn**	**18 56 25.7**	**-3.3**
CSS	**Mathiatis**	**7.36**	**80**	Pn		**Pn**	**18 55 08.4**	**+1.7**
CSS				Sn		**Sn**	**18 56 25.7**	**-3.3**
ERMK	**Ermenek**	**7.36**	**67**	*i* P		**Pn**	**18 55 07.9**	**+1.0**
ERMK				*i* S		**Sn**	**18 56 28.2**	**-1.1**
ERMK	**Ermenek**	**7.36**	**67**	P		**Pn**	**18 55 07.9**	**+1.0**
ERMK				S		**Sn**	**18 56 28.2**	**-1.1**
KOT	**Kottamia**	**7.45**	**121**	P		**Pn**	**18 55 10.8**	**+2.8**
	baz=122							
KOT				AMP			18 56 00.0	
	comp=E,570μm,0.4s,logA/T=6.2,baz=122							
KOT	**Kottamia**	**7.45**	**121**	P		**Pn**	**18 55 10.8**	**+2.8**
GLL	**Jalalah**	**7.58**	**124**	P		**Pn**	**18 55 12.4**	**+2.6**
	baz=124							
GLL	**Jalalah**	**7.58**	**124**	P		**Pn**	**18 55 12.4**	**+2.6**
HFRF	**Wahat Farafira**	**7.61**	**153**	AMP			18 56 00.0	
	comp=N,180μm,1.0s,logA/T=5.3,baz=153							
HHAG	**Hagoal**	**7.63**	**120**	P		**Pn**	**18 55 13.1**	**+2.6**
	baz=121							
HHAG	**Hagoal**	**7.63**	**120**	P		**Pn**	**18 55 13.1**	**+2.6**
NBNS	**Bani Suef**	**7.93**	**131**	P		**Pn**	**18 55 17.5**	**+2.9**
	baz=131							
NBNS				AMP			18 56 00.0	
	comp=E,200μm,0.5s,logA/T=5.6,baz=131							
NBNS	**Bani Suef**	**7.93**	**131**	P		**Pn**	**18 55 17.5**	**+2.9**
OFRI	**'Ofer**	**8.89**	**96**	Pn		**Pn**	**18 55 29.2**	**+1.4**
OFRI	**'Ofer**	**8.89**	**96**	Pn		**Pn**	**18 55 29.2**	**+1.4**
KZIT	**Kziot**	**8.93**	**108**	Pn		**Pn**	**18 55 29.7**	**+1.4**
KZIT				Sn		**Sn**	**18 57 02.8**	**-4.8**
KZIT	**Kziot**	**8.93**	**108**	Pn		**Pn**	**18 55 29.7**	**+1.4**
KZIT				Sn		**Sn**	**18 57 02.8**	**-4.8**
SLTI	**Sal'it**	**9.03**	**98**	Pn		**Pn**	**18 55 31.3**	**+1.7**
SLTI				Sn		**Sn**	**18 57 05.6**	**-4.4**
SLTI	**Sal'it**	**9.03**	**98**	Pn		**Pn**	**18 55 31.3**	**+1.7**
SLTI				Sn		**Sn**	**18 57 05.6**	**-4.4**
BLGI	**Bet Lehem HaGe**	**9.04**	**95**	Sn		**Sn**	**18 57 05.6**	**-4.7**
BLGI	**Bet Lehem HaGe**	**9.04**	**95**	Sn		**Sn**	**18 57 05.6**	**-4.7**
AMAZ	**Amatzia**	**9.12**	**103**	Pn		**Pn**	**18 55 32.9**	**+2.0**
AMAZ				Sn		**Sn**	**18 57 07.5**	**-4.9**
AMAZ	**Amatzia**	**9.12**	**103**	Pn		**Pn**	**18 55 32.9**	**+2.0**
AMAZ				Sn		**Sn**	**18 57 07.5**	**-4.9**
MMA0B	**Mount Meron ar**	**9.17**	**93**	Pn		**Pn**	**18 55 33.1**	**+1.5**
MMA0B				Sn		**Sn**	**18 57 09.2**	**-4.3**
MMA0B	**Mount Meron ar**	**9.17**	**93**	Pn		**Pn**	**18 55 33.1**	**+1.5**
MMA0B				Sn		**Sn**	**18 57 09.2**	**-4.3**
MMAI	**Mount Meron Ar**	**9.17**	**93**	Pn		**Pn**	**18 55 32.3**	**+0.7**
	comp=E,2.2nm,0.3s,baz=265,slow=12,SNR=23							
MMAI				Sn		**Sn**	**18 57 13.0**	**-0.6**
	comp=E,14nm,0.3s,baz=260,slow=23,SNR=15							
BRTR	**Keskin Array B**	**9.28**	**50**	Pn		**Pn**	**18 55 34.5**	**+1.5**
	comp=E,0.2nm,0.3s,baz=243,slow=14,SNR=7.6							
BRTR				Sn		**Sn**	**18 57 18.0**	**+1.8**
	comp=E,0.2nm,0.3s,baz=219,slow=27,SNR=5.9							
BRTR				LR		LR	19 00 26.4	
	comp=E,54nm,19.4s,baz=229,slow=44							
MMLI	**Mount Malkishu**	**9.29**	**97**	Pn		**Pn**	**18 55 34.0**	**+0.7**
MMLI	**Mount Malkishu**	**9.29**	**97**	Pn		**Pn**	**18 55 34.0**	**+0.7**
YTIR	**Yattir**	**9.34**	**104**	Pn		**Pn**	**18 55 35.6**	**+1.6**
YTIR	**Yattir**	**9.34**	**104**	Pn		**Pn**	**18 55 35.6**	**+1.6**
KSDI	**Kefar Szold**	**9.35**	**92**	Pn		**Pn**	**18 55 34.6**	**+0.6**
KSDI				Sn		**Sn**	**18 57 13.5**	**-4.5**
KSDI	**Kefar Szold**	**9.35**	**92**	Pn		**Pn**	**18 55 34.6**	**+0.6**
KSDI				Sn		**Sn**	**18 57 13.5**	**-4.5**
HMDT	**Nahal Hemdat**	**9.42**	**98**	Pn		**Pn**	**18 55 36.4**	**+1.4**
HMDT				Sn		**Sn**	**18 57 15.9**	**-3.8**
HMDT	**Nahal Hemdat**	**9.42**	**98**	Pn		**Pn**	**18 55 36.4**	**+1.4**
HMDT				Sn		**Sn**	**18 57 15.9**	**-3.8**
DSI	**Dead Sea**	**9.49**	**102**	Pn		**Pn**	**18 55 37.6**	**+1.7**
DSI				Sn		**Sn**	**18 57 16.7**	**-4.6**
DSI	**Dead Sea**	**9.49**	**102**	Pn		**Pn**	**18 55 37.6**	**+1.7**
DSI				Sn		**Sn**	**18 57 16.7**	**-4.6**
KSHT	**Keshet**	**9.51**	**93**	Pn		**Pn**	**18 55 38.1**	**+1.8**
KSHT	**Keshet**	**9.51**	**93**	Pn		**Pn**	**18 55 38.1**	**+1.8**
MZDA	**Masada**	**9.56**	**103**	Pn		**Pn**	**18 55 38.9**	**+2.1**
MZDA				Sn		**Sn**	**18 57 19.2**	**-3.7**
MZDA	**Masada**	**9.56**	**103**	Pn		**Pn**	**18 55 38.9**	**+2.1**
MZDA				Sn		**Sn**	**18 57 19.2**	**-3.7**
BRBR	**Barbar**	**9.57**	**90**	*e*P		**Pn**	**18 55 38.2**	**+1.0**
BRBR				*e*S		**Sn**	**18 57 19.3**	**-4.3**
BRBR				AML	AML		18 57 29.2	
	comp=E,21nm,0.7s							
BRBR				AML	AML		18 57 35.8	
	comp=N,40nm,0.5s							
PRNI	**Paran**	**9.63**	**109**	Pn		**Pn**	**18 55 39.9**	**+2.0**
PRNI				Sn		**Sn**	**18 57 19.7**	**-5.2**
PRNI	**Paran**	**9.63**	**109**	Pn		**Pn**	**18 55 39.9**	**+2.0**
PRNI				Sn		**Sn**	**18 57 19.7**	**-5.2**
ZFRI	**Zfri**	**9.69**	**108**	Pn		**Pn**	**18 55 39.9**	**+1.3**
ZFRI				Sn		Sn	18 57 20.8	-5.3
ZFRI	**Zfri**	**9.69**	**108**	Pn		**Pn**	**18 55 39.9**	**+1.3**
ZFRI				Sn		Sn	18 57 20.8	-5.3
TCHB	**Talchebab**	**9.70**	**95**	*e*P		**Pn**	**18 55 40.6**	**+1.7**
TCHB				*e*S		**Sn**	**18 57 22.4**	**-4.1**
TCHB				AML	AML		18 57 32.6	
	comp=N,105nm,0.4s							
TCHB				AML	AML		18 57 34.9	
	comp=E,101nm,0.4s							
HRFI	**Mount Harif**	**9.80**	**111**	Pn		**Pn**	**18 55 42.0**	**+1.8**
HRFI	**Mount Harif**	**9.80**	**111**	Pn		**Pn**	**18 55 42.0**	**+1.8**
MBRI	**Mt Berech**	**9.81**	**113**	Pn		**Pn**	**18 55 42.5**	**+2.1**
MBRI				Sn		**Sn**	**18 57 24.4**	**-5.0**
MBRI	**Mt Berech**	**9.81**	**113**	Pn		**Pn**	**18 55 42.5**	**+2.1**
MBRI				Sn		**Sn**	**18 57 24.4**	**-5.0**
EIL	**Elat**	**9.90**	**113**	Pn		**Pn**	**18 55 42.7**	**+1.2**
	comp=E,0.7nm,0.3s,baz=262,slow=3.0,SNR=23							
EIL				Sn		**Sn**	**18 57 29.4**	**-2.0**
	comp=E,5.2nm,0.3s,baz=5.1,slow=18,SNR=9.2							
EIL	**Elat**	**9.90**	**113**	Pn		**Pn**	**18 55 43.0**	**+1.5**
EIL	**Elat**	**9.90**	**113**	Pn		**Pn**	**18 55 43.0**	**+1.5**
MARH	**Ras Al Marh**	**9.95**	**87**	*e*P		**Pn**	**18 55 44.5**	**+2.0**
MARH				*e*S		**Sn**	**18 57 28.5**	**-4.7**
MARH				AML	AML		18 57 38.9	
	comp=N,39nm,0.5s							
MARH				AML	AML		18 57 46.2	
	comp=E,36nm,0.5s							
TOTH	**TOTAH**	**9.97**	**90**	*e*P		**Pn**	**18 55 45.5**	**+2.9**
TOTH				*e*S		**Sn**	**18 57 28.2**	**-5.0**
TOTH				AML	AML		18 57 44.2	
	comp=E,18nm,0.5s							
TOTH				AML	AML		18 57 52.2	
	comp=N,16nm,0.6s							
SALA	**Sala**	**10.32**	**94**	*e*P		**Pn**	**18 55 50.0**	**+2.4**
SALA				*e*S		**Sn**	**18 57 37.3**	**-4.8**
SALA				AML	AML		18 57 49.2	
	comp=N,44nm,0.5s							
SALA				AML	AML		18 57 54.3	
	comp=E,3.0nm,0.4s							
ASF	**Jabal al Asfar**	**10.57**	**97**	Pn		**Pn**	**18 55 52.4**	**+1.6**
	comp=E,0.4nm,0.3s,baz=161,slow=20,SNR=3.4							
ASF				Sn		**Sn**	**18 57 46.4**	**-1.6**
	comp=E,0.8nm,0.3s,baz=300,slow=20,SNR=5.1							
ROOS	**tl_alroos**	**10.62**	**86**	*e*P		**Pn**	**18 55 54.5**	**+3.1**
ROOS				*e*S		**Sn**	**18 57 44.1**	**-4.9**
ROOS				AML	AML		18 57 52.2	
	comp=N,33nm,0.4s							
ROOS				AML	AML		18 57 56.1	
	comp=E,27nm,0.6s							
ZALF	**Zalf**	**10.79**	**92**	*e*P		**Pn**	**18 55 56.0**	**+2.3**
ZALF				*e*S		**Sn**	**18 57 48.5**	**-4.7**
ZALF				AML	AML		18 58 14.2	
	comp=N,13nm,0.6s							
ZALF				AML	AML		18 58 16.0	
	comp=E,9.1nm,0.4s							
VRAC	**Vranov**	**16.35**	**341**	Pn		**Pn**	**18 57 07.6**	**-0.9**
	comp=E,0.3nm,0.3s,baz=159,slow=8.7,SNR=3.5							
GERES	**GERESS Array B**	**16.84**	**335**	Pn		**Pn**	**18 57 11.6**	**-3.2**
	comp=E,0.1nm,0.3s,baz=143,slow=12,SNR=2.4							
AKASG	**Malin Array Be**	**17.02**	**10**	P		**Pn**	**18 57 17.0**	**+0.1**
	comp=E,1.7nm,0.3s,baz=199,slow=10,SNR=8.4							
KVAR	**Kislovodsk Arr**	**17.25**	**50**	P		**P**	**18 57 24.2**	**+3.1**
	baz=232,slow=8.1,SNR=2.6							
KVAR				LR		LR	19 05 23.3	
	comp=E,20nm,20.2s,baz=212,slow=41							
GNI	**Garni**	**17.26**	**63**	LR		LR	19 05 49.9	
	comp=E,58nm,20.7s,baz=269,slow=42							
KBZ	**Khabaz**	**17.27**	**50**	P		**P**	**18 57 23.8**	**+2.6**
	comp=E,0.1nm,0.3s,baz=222,slow=14,SNR=3.3							
HFS	**Hagfors**	**27.06**	**348**	P		**P**	**18 58 57.7**	**-2.9**
	comp=E,1.2nm,0.4s,baz=163,slow=10,SNR=13							
FINES	**FINESS Array B**	**27.45**	**2**	P		**P**	**18 59 01.4**	**-2.6**
	comp=E,1.5nm,0.8s,baz=162,slow=10,SNR=4.0							
NOA	**NORSAR Array B**	**28.36**	**346**	P		P	18 59 08.4	-3.8
	comp=E,0.2nm,0.4s,baz=147,slow=9.0,SNR=6.2							
NOA				LR		LR	19 13 00.8	
	comp=E,15nm,19.4s,baz=150,slow=42							
EKA	**Eskdalemuir Ar**	**28.66**	**326**	P		**P**	**18 59 11.9**	**-3.1**
	comp=E,1.2nm,0.8s,baz=116,slow=8.0,SNR=3.4							
AKTO	**Aktyubinsk**	**29.43**	**46**	P		**P**	**18 59 22.7**	**+0.9**
	comp=E,0.9nm,0.6s,baz=274,slow=8.6,SNR=5.4							
ARCES	**ARCESS Array B**	**35.56**	**1**	LR		LR	19 16 07.5	
	comp=E,35nm,21.7s,baz=176,slow=38							
MKAR	**Makanchi Array**	**44.87**	**56**	P		**P**	**19 01 33.7**	**+1.2**
	comp=E,2.8nm,0.6s,baz=278,slow=6.3,SNR=30							
ZALV	**Zalesovo Beam**	**46.19**	**45**	P		**P**	**19 01 43.0**	**+0.1**
	comp=E,0.6nm,0.3s,baz=275,slow=9.3,SNR=3.6							
NRIK	**Noril'sk**	**49.14**	**25**	LR		LR	19 24 46.9	
	comp=E,24nm,21.3s,baz=143,slow=38							
TLY	**Talaya**	**57.78**	**46**	LR		LR	19 33 24.3	
	comp=E,8.5nm,18.5s,baz=277,slow=41							
SONM	**Songino Array**	**60.63**	**50**	P		**P**	**19 03 30.7**	**+1.6**
	comp=E,0.4nm,0.7s,baz=280,slow=6.6,SNR=3.2							
USRK	**Ussuriysk Ar.**	**78.03**	**45**	P		**P**	**19 05 17.2**	**+0.6**
	comp=E,1.9nm,0.7s,baz=354,slow=2.6,SNR=5.7							

*IDC **22** 19:16:48.0±1.6, 3°.57S×145°.69E, h0km, mb3.8/5, mb1 4.2/6, mb1mx3.7/39, mbtmp3.9/6, ML3.7/1, MS3.1/3, Ms1 3.1/3, ms1mx2.7/24, Error ellipse: s-maj=49.2km s-min=23.3km az=112.0*
*ISCJB **22** 19:16:49.8±0.7, 3°.62S±0°.09×145°.6E±0°.1, h23km, mb3.9/7, MS3.4/2, Error ellipse: s-maj=21.0km s-min=9.2km az=27.4*
*NEIC **22** 19:16:49.5±0.6, 3°.61S×145°.68E, h10km, mb4.2/5, Error ellipse: s-maj=19.6km s-min=8.5km az=117.0*

ISC 22 19:16:51.2±1.0, 3°.6S±0°.2×145°.7E±0°.2, h23km, n20, σ1s07/18, mb3.9/7, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MANU	**Manus Island**	**2.28**	**46**	*e*Pn	**Pn**	**19 17 27.4**	**0.0**
PMG	**Mt Moresby**	**5.91**	**166**	LR	LR	19 20 17.3	
	comp=Z,38nm,21.7s,baz=318,slow=35						
WB2	**Warramunga Arr**	**19.64**	**214**	*e*P	**P**	**19 21 18.2**	**-0.3**
	14nm,1.2s						
WR1	**Warramunga Arr**	**19.65**	**214**	*e*P	**P**	**19 21 18.8**	**+0.2**
	10.0nm,1.0s						
WRA	**Warramunga Arr**	**19.65**	**214**	P	**P**	**19 21 18.8**	**+0.2**
	0.2nm,0.3s,baz=32,slow=11,SNR=18						
SOEI	**Soe**	**22.15**	**253**	*e*P	**P**	**19 21 45.2**	**-0.6**
	27nm,0.9s						
AS01	**Alice Springs**	**22.93**	**209**	*e*P	**P**	**19 21 53.8**	**-0.2**
AS31	**Alice Springs**	**22.96**	**209**	*e*P	**P**	**19 21 55.9**	**+1.7**
	2.9nm,1.4s						
ASAR	**Alice Springs**	**22.96**	**209**	P	**P**	**19 21 54.8**	**+0.6**
	3.5nm,0.9s,baz=40,slow=9.1,SNR=16						
FITZ	**Fitzroy Crossi**	**24.36**	**232**	P	**P**	**19 22 07.5**

MESJ AML AML 19 20 28.5
comp=N,309nm,0.3s
MESJ Messejana 1.91 36⇓ *i*Pn **Pn 19 20 06.3 +1.7**
MESJ *e*Sn **Sn 19 20 27.8 -0.9**
MESJ A A 19 20 29.5
comp=N,225nm,0.2s
MESJ Messejana 1.91 36 P **Pn 19 20 06.3 +1.7**
MESJ S **Sn 19 20 27.8 -0.9**
comp=N,225nm,0.2s
MESJ Messejana 1.91 36⇓ *i*Pn **Pn 19 20 06.3 +1.7**
MESJ *e*Sn **Sn 19 20 27.8 -0.9**
comp=N,225nm,0.2s
PNCL Nicolau / Gran 2.01 26⇓ *e*Pn **Pn 19 20 07.3 +1.3**
PNCL *e*Sn **Sn 19 20 29.9 -1.4**
PNCL A A 19 20 32.3
comp=N,273nm,0.1s
PNCL Nicolau / Gran 2.01 26⇓ *e*Pn **Pn 19 20 07.3 +1.3**
PNCL *e*Sn **Sn 19 20 29.9 -1.4**
comp=N,273nm,0.1s
EGRO El Granado 2.12 54 P **Pn 19 20 09.0 +1.5**
comp=N,26nm,0.1s,SNR=249
EGRO S **Sn 19 20 31.7 -2.1**
comp=N,172nm,0.1s,SNR=19
EGRO El Granado 2.12 54 P **Pn 19 20 09.0 +1.5**
comp=N,26nm,0.1s,SNR=249
EGRO S **Sn 19 20 31.7 -2.1**
comp=N,172nm,0.1s,SNR=19
PBEJ Beja 2.23 39⇓ *e*Pn **Pn 19 20 10.4 +1.4**
PBEJ *e*Sn **Sn 19 20 34.9 -1.7**
PBEJ A A 19 20 37.6
comp=N,152nm,0.2s
PBEJ Beja 2.23 39 P **Pn 19 20 10.4 +1.4**
PBEJ S **Sn 19 20 34.9 -1.7**
comp=N,76nm,0.2s
PBEJ Beja 2.23 39⇓ *e*Pn **Pn 19 20 10.4 +1.4**
PBEJ *e*Sn **Sn 19 20 34.9 -1.7**
comp=N,152nm,0.2s
LIS Lisbon 2.45 9 *e*P **Pn 19 20 13.5 +1.6**
LIS *e*S **Sn 19 20 39.8 -2.2**
LIS AML AML 19 20 41.8
comp=N,397nm,0.3s
LIS Lisbon 2.45 9 *e*Pn **Pn 19 20 13.6 +1.6**
LIS *e*Sn **Sn 19 20 40.3 -1.6**
LIS A A 19 20 42.6
comp=N,434nm,0.2s
LIS Lisbon 2.45 9 P **Pn 19 20 13.6 +1.6**
LIS S **Sn 19 20 40.3 -1.6**
comp=N,434nm,0.2s
LIS Lisbon 2.45 9 *e*Pn **Pn 19 20 13.6 +1.6**
LIS *e*Sn **Sn 19 20 40.3 -1.6**
comp=N,434nm,0.2s
PMST Lisbon--Monsan 2.46 8⇑ *e*Pn **Pn 19 20 13.5 +1.3**
PMST *e*Sn **Sn 19 20 40.4 -2.0**
PMST A A 19 20 44.1
comp=N,254nm,0.2s
PMST Lisbon--Monsan 2.46 8⇑ *e*Pn **Pn 19 20 13.5 +1.3**
PMST *e*Sn **Sn 19 20 40.4 -2.0**
comp=N,254nm,0.2s
INMG Instituto de M 2.51 9 *e*Pn **Pn 19 20 14.9 +2.1**
INMG Instituto de M 2.51 9 P **Pn 19 20 14.9 +2.1**
INMG Instituto de M 2.51 9 *e*Pn **Pn 19 20 14.9 +2.1**
EVO Evora 2.58 29⇑ *i*Pn **Pn 19 20 15.0 +1.2**
EVO *e*Sn **Sn 19 20 42.7 -2.5**
EVO A A 19 20 44.0
comp=N,865nm,0.1s
EVO Evora 2.58 29 P **Pn 19 20 15.0 +1.2**
EVO S **Sn 19 20 42.7 -2.5**
comp=N,865nm,0.1s
EVO Evora 2.58 29⇑ *i*Pn **Pn 19 20 15.0 +1.2**
EVO *e*Sn **Sn 19 20 42.7 -2.5**
comp=N,865nm,0.1s
PMAFR Mafra 2.67 6⇑ *i*Pn **Pn 19 20 16.3 +1.2**
PMAFR *e*Sn **Sn 19 20 46.0 -1.5**
PMAFR A A 19 20 48.0
comp=N,677nm,0.2s
PMAFR Mafra 2.67 6 P **Pn 19 20 16.2 +1.2**
comp=N,226nm,0.1s,SNR=7.9
PMAFR S **Sn 19 20 45.6 -1.9**
comp=N,403nm,0.1s,SNR=7.9
PMAFR Mafra 2.67 6 P **Pn 19 20 16.2 +1.2**
comp=N,226nm,0.1s,SNR=7.9
PMAFR S **Sn 19 20 45.6 -1.9**
comp=N,403nm,0.1s,SNR=7.9
PMAFR *e*Sn Sb 19 20 46.0 -6.7
comp=N,677nm,0.2s
EMIN Mina Concepcio 2.79 57 P **Pn 19 20 18.0 +1.3**
comp=N,15nm,0.1s,SNR=185
EMIN S **Sn 19 20 48.0 -2.3**
comp=N,52nm,0.1s,SNR=9.0
EMIN Mina Concepcio 2.79 57 P **Pn 19 20 18.0 +1.3**
comp=N,15nm,0.1s,SNR=185
EMIN S **Sn 19 20 48.0 -2.3**
comp=N,52nm,0.1s,SNR=9.0
PBAR Barrancos 2.79 47 *e*Pn **Pn 19 20 18.0 +1.3**
PBAR *e*Sn **Sn 19 20 48.2 -2.3**
PBAR A A 19 20 49.9
comp=N,155nm,0.2s
PBAR Barrancos 2.79 47 P **Pn 19 20 18.0 +1.3**
PBAR S **Sn 19 20 48.2 -2.3**
comp=N,155nm,0.2s
PBAR Barrancos 2.79 47 *e*Pn **Pn 19 20 18.0 +1.3**
PBAR *e*Sn **Sn 19 20 48.2 -2.3**
comp=N,155nm,0.2s
PMTG Montargil 2.98 21⇓ *i*Pn **Pn 19 20 20.8 +1.4**
PMTG *e*Sn **Sn 19 20 53.0 -2.2**
PMTG A A 19 20 55.7
comp=N,134nm,0.1s
PMTG Montargil 2.98 21⇓ *i*Pn **Pn 19 20 20.8 +1.4**
PMTG *e*Sn **Sn 19 20 53.0 -2.2**
comp=N,134nm,0.1s
PESTR Estremoz 3.04 32⇓ *i*Pn **Pn 19 20 21.0 +0.9**
PESTR *e*Sn **Sn 19 20 54.0 -2.5**
PESTR A A 19 20 55.9
comp=N,89nm,0.1s
PESTR Estremoz 3.04 32⇓ *i*Pn **Pn 19 20 21.0 +0.9**
PESTR *e*Sn **Sn 19 20 54.0 -2.5**
comp=N,89nm,0.1s
ESPR Espera 3.09 78 P **Pn 19 20 22.7 +1.9**
comp=N,15nm,0.1s,SNR=69
ESPR S **Sn 19 20 55.2 -2.6**
comp=N,637nm,0.3s,SNR=106
ESPR Espera 3.09 78 P **Pn 19 20 22.7 +1.9**
comp=N,15nm,0.1s,SNR=69
ESPR S **Sn 19 20 55.2 -2.6**
comp=N,637nm,0.3s,SNR=106
EBAD Badajoz 3.22 39 P **Pn 19 20 23.7 +1.1**
comp=N,15nm,0.1s,SNR=85
EBAD S **Sn 19 20 58.3 -2.7**
comp=N,82nm,0.1s
EBAD Badajoz 3.22 39 P **Pn 19 20 23.7 +1.1**
comp=N,15nm,0.1s,SNR=85
EBAD S **Sn 19 20 58.3 -2.7**
comp=N,82nm,0.1s
RTC Rabat Centre 3.23 135 P **Pn 19 20 24.0 +1.2**
RTC S **Sn 19 20 58.0 -3.4**
RTC Rabat Centre 3.23 135 *i*P **Pn 19 20 24.0 +1.2**
RTC *i*S **Sn 19 20 58.0 -3.4**
EJIF Jimena Fronter 3.36 86 P **Pn 19 20 26.8 +2.2**
comp=N,6.7nm,0.2s,SNR=7.9
EJIF S **Sn 19 21 01.6 -2.9**
comp=N,26nm,0.3s,SNR=7.9
EJIF Jimena Fronter 3.36 86 P **Pn 19 20 26.8 +2.2**
comp=N,6.7nm,0.2s,SNR=7.9
EJIF S **Sn 19 21 01.6 -2.9**
comp=N,26nm,0.3s,SNR=7.9
PTOM Tomar 3.45 16⇓ *i*Pn **Pn 19 20 27.3 +1.5**
PTOM *e*Sn **Sn 19 21 03.4 -3.4**
PTOM A A 19 21 06.6
comp=N,166nm,0.5s
PTOM Tomar 3.45 16 P **Pn 19 20 27.3 +1.5**
PTOM S **Sn 19 21 03.4 -3.4**
comp=N,83nm,0.5s
PTOM Tomar 3.45 16⇓ *i*Pn **Pn 19 20 27.3 +1.5**
PTOM *e*Sn **Sn 19 21 03.4 -3.4**
comp=N,166nm,0.5s
ECEU Ceuta 3.47 95 P **Pn 19 20 28.4 +2.4**
comp=N,9.0nm,0.2s,SNR=11
ECEU S **Sn 19 21 04.0 -3.2**
comp=N,34nm,0.2s
ECEU Ceuta 3.47 95 P **Pn 19 20 28.4 +2.4**
comp=N,9.0nm,0.2s,SNR=11
ECEU S **Sn 19 21 04.0 -3.2**
comp=N,34nm,0.2s
PMRV Marv??o 3.59 29⇓ *e*Pn **Pn 19 20 28.9 +1.1**
PMRV *e*Sn **Sn 19 21 07.4 -2.9**
PMRV A A 19 21 08.6
comp=N,170nm,0.2s
PMRV Marv??o 3.59 29 P **Pn 19 20 28.9 +1.1**
PMRV S **Sn 19 21 07.4 -2.9**
comp=N,170nm,0.2s
PMRV Marv??o 3.59 29⇓ *e*Pn **Pn 19 20 28.9 +1.1**
PMRV *e*Sn **Sn 19 21 07.4 -2.9**
comp=N,170nm,0.2s
ECAB El Cabril 3.80 61 P **Pn 19 20 32.0 +1.3**
comp=N,13nm,0.1s,SNR=357
ECAB S **Sn 19 21 11.8 -3.6**
comp=N,26nm,0.1s
ECAB El Cabril 3.80 61 P **Pn 19 20 32.0 +1.3**
comp=N,13nm,0.1s,SNR=357
ECAB S **Sn 19 21 11.8 -3.6**
comp=N,26nm,0.1s
PCAS Casmilo, Conde 3.85 13⇑ *i*Pn **Pn 19 20 32.6 +1.2**
PCAS *e*Sn **Sn 19 21 13.9 -2.8**
PCAS A A 19 21 16.1
comp=N,37nm,0.1s
PCAS Casmilo, Conde 3.85 13⇑ *i*Pn **Pn 19 20 32.6 +1.2**
PCAS *e*Sn **Sn 19 21 13.9 -2.8**
comp=N,37nm,0.1s
EMIJ Mijas 3.92 85 P **Pn 19 20 33.5 +1.2**
comp=N,0.7nm,0.1s,SNR=14
EMIJ S **Sn 19 21 15.2 -3.3**
comp=N,13nm,0.1s
EMIJ Mijas 3.92 85 P **Pn 19 20 33.5 +1.2**
comp=N,0.7nm,0.1s,SNR=14
EMIJ S **Sn 19 21 15.2 -3.3**
comp=N,13nm,0.1s
COI Coimbra 4.02 13 P **Pn 19 20 34.8 +1.2**
COI S **Sn 19 21 17.4 -3.4**
comp=N,34nm,0.2s
COI Coimbra 4.02 13 *e*Pn **Pn 19 20 34.8 +1.2**
COI *e*Sn **Sn 19 21 17.4 -3.4**
comp=N,69nm,0.2s
MTE Manteigas 4.41 21 *e*Pn **Pn 19 20 40.2 +1.1**
MTE *e*Sn **Sn 19 21 26.5 -4.1**
MTE A A 19 21 29.9
comp=N,85nm,0.3s
MTE Manteigas 4.41 21 P **Pn 19 20 40.2 +1.1**
MTE S **Sn 19 21 26.5 -4.1**
comp=N,42nm,0.3s
MTE Manteigas 4.41 21 *e*Pn **Pn 19 20 40.2 +1.1**
MTE *e*Sn **Sn 19 21 26.5 -4.1**
comp=N,85nm,0.3s
EADA Adamuz 4.44 64 P **Pn 19 20 40.9 +1.4**
comp=N,16nm,0.1s,SNR=209
EADA S **Sn 19 21 27.6 -3.7**
comp=N,58nm,0.2s,SNR=7.9
EADA Adamuz 4.44 64 P **Pn 19 20 40.9 +1.4**
comp=N,16nm,0.1s,SNR=209
EADA S **Sn 19 21 27.6 -3.7**
comp=N,58nm,0.2s,SNR=7.9
EGOR Sierra Gorda, 4.51 78 P **Pn 19 20 42.8 +2.3**
comp=N,5.0nm,0.3s,SNR=7.9
EGOR S **Sn 19 21 29.0 -4.1**
comp=N,15nm,0.2s,SNR=7.9
EGOR Sierra Gorda, 4.51 78 P **Pn 19 20 42.8 +2.3**
comp=N,5.0nm,0.3s,SNR=7.9
EGOR S **Sn 19 21 29.0 -4.1**
comp=N,15nm,0.2s,SNR=7.9
PVIS Viseu 4.62 17⇑ *e*Pn **Pn 19 20 42.8 +0.9**
PVIS *e*Sn **Sn 19 21 32.3 -3.3**
PVIS A A 19 21 36.1
comp=N,69nm,0.3s
PVIS Viseu 4.62 17 P **Pn 19 20 42.8 +0.9**
PVIS S **Sn 19 21 32.3 -3.3**
comp=N,34nm,0.3s
PVIS Viseu 4.62 17⇑ *e*Pn **Pn 19 20 42.8 +0.9**
PVIS *e*Sn **Sn 19 21 32.3 -3.3**
comp=N,69nm,0.3s
EPLA Plasencia 4.69 36 P **Pn 19 20 43.9 +1.1**
comp=N,18nm,0.2s,SNR=72
EPLA S **Sn 19 21 33.5 -3.8**
comp=N,41nm,0.1s
EPLA Plasencia 4.69 36 P **Pn 19 20 43.9 +1.1**
comp=N,18nm,0.2s,SNR=72
EPLA S **Sn 19 21 33.5 -3.8**
comp=N,41nm,0.1s
CIA Chichaoua 4.77 171 P **Pn 19 20 44.0 0.0**
CIA S Sn 19 21 34.0 -5.4
CIA Chichaoua 4.77 171 *i*P **Pn 19 20 44.0 0.0**
CIA *i*S Sn 19 21 34.0 -5.4
SELV Sierra Elvira 4.83 77 P **Pn 19 20 45.9 +1.1**
comp=N,2.0nm,0.2s,SNR=7.9
SELV S **Sn 19 21 36.8 -4.0**
comp=N,7.0nm,0.2s,SNR=7.9
SELV Sierra Elvira 4.83 77 P **Pn 19 20 45.9 +1.1**
comp=N,2.0nm,0.2s,SNR=7.9
SELV S **Sn 19 21 36.8 -4.0**
comp=N,7.0nm,0.2s,SNR=7.9
TZC Tazercounte 4.89 147 P **Pn 19 20 46.0 +0.3**
TZC S Sn 19 21 37.0 -5.4
TZC Tazercounte 4.89 147 *i*P **Pn 19 20 46.0 +0.3**
TZC *i*S Sn 19 21 37.0 -5.4
PTO Porto 4.90 9 *e*Pn **Pn 19 20 46.6 +0.9**
PTO *e*Sn **Sn 19 21 38.8 -3.7**
PTO A A 19 21 43.2
comp=N,114nm,0.1s
PTO Porto 4.90 9 P **Pn 19 20 46.6 +0.9**
PTO S **Sn 19 21 38.8 -3.7**
comp=N,57nm,0.1s
PTO Porto 4.90 9 *e*Pn **Pn 19 20 46.6 +0.9**
PTO *e*Sn **Sn 19 21 38.8 -3.7**
comp=N,114nm,0.1s
TZK Tazeka 4.97 115 P **Pn 19 20 48.0 +1.1**
TZK S Sn 19 21 40.0 -4.6
TZK Tazeka 4.97 115 *i*P **Pn 19 20 48.0 +1.1**
TZK *i*S Sn 19 21 40.0 -4.6
CZD Col de Zad 4.99 129 P **Pn 19 20 49.0 +1.8**
CZD S Sn 19 21 40.0 -5.0
CZD Col de Zad 4.99 129 *i*P **Pn 19 20 49.0 +1.8**
CZD *i*S Sn 19 21 40.0 -5.0
EQUE Quentar 5.05 78 P **Pn 19 20 50.0 +2.1**
comp=N,1.2nm,0.1s,SNR=7.9
EQUE S **Sn 19 21 43.5 -2.9**
comp=N,15nm,0.2s,SNR=7.9
EQUE Quentar 5.05 78 P **Pn 19 20 50.0 +2.1**
comp=N,1.2nm,0.1s,SNR=7.9
EQUE S **Sn 19 21 43.5 -2.9**
comp=N,15nm,0.2s,SNR=7.9
PVRL Vila Real 5.19 16⇑ *e*Pn **Pn 19 20 50.6 +0.8**
PVRL *e*Sn Sn 19 21 44.6 -5.1
PVRL A A 19 21 49.1
comp=N,174nm,0.1s
PVRL Vila Real 5.19 16 P **Pn 19 20 50.6 +0.8**
PVRL S Sn 19 21 44.6 -5.1
comp=N,87nm,0.1s
PVRL Vila Real 5.19 16⇑ *e*Pn **Pn 19 20 50.6 +0.8**
PVRL *e*Sn Sn 19 21 44.6 -5.1
comp=N,174nm,0.1s
MVO Moncorvo 5.27 22 *e*Pn **Pn 19 20 51.8 +1.0**
MVO *e*Sn **Sn 19 21 48.1 -3.6**
MVO A A 19 21 49.6
comp=N,54nm,0.3s
MVO Moncorvo 5.27 22 P **Pn 19 20 51.9 +1.0**
comp=N,15nm,0.1s,SNR=7.9
MVO S **Sn 19 21 47.7 -4.0**
comp=N,33nm,0.1s,SNR=7.9
MVO Moncorvo 5.27 22 *e*Pn **Pn 19 20 51.8 +1.0**
MVO *e*Sn **Sn 19 21 47.7 -4.0**
comp=N,33nm,0.1s,SNR=7.9
MVO *e*Sn **Sn 19 21 48.1 -3.6**
comp=N,54nm,0.3s
POLO Lamas de Olo 5.27 15⇑ *e*Pn **Pn 19 20 51.5 +0.6**
POLO *e*Sn **Sn 19 21 47.7 -4.0**
POLO A A 19 21 51.0
comp=N,31nm,0.4s
POLO Lamas de Olo 5.27 15⇑ *e*Pn **Pn 19 20 51.5 +0.6**
POLO *e*Sn **Sn 19 21 47.7 -4.0**
comp=N,31nm,0.4s
OUK Oukaimeden 5.28 163 P **Pn 19 20 53.0 +1.7**
OUK S Sn 19 21 46.0 -6.4
OUK Oukaimeden 5.28 163 *i*P **Pn 19 20 53.0 +1.7**
OUK *i*S Sn 19 21 46.0 -6.4
EALB Alboran 5.35 92 P **Pn 19 20 53.4 +1.5**
comp=N,2.3nm,0.1s,SNR=7.9
EALB S Sn 19 21 49.1 -4.5
comp=N,20nm,0.2s,SNR=7.9
EALB Alboran 5.35 92 P **Pn 19 20 53.4 +1.5**
comp=N,2.3nm,0.1s,SNR=7.9
EALB S Sn 19 21 49.1 -4.5
comp=N,20nm,0.2s,SNR=7.9
GORA Gorafe 5.41 75 S **Sn 19 21 52.4 -2.8**
comp=N,43nm,0.2s,SNR=7.9
GORA Gorafe 5.41 75 S **Sn 19 21 52.4 -2.8**
comp=N,43nm,0.2s,SNR=7.9
EBER Berja 5.46 82 P **Pn 19 20 56.1 +2.6**
comp=N,0.8nm,0.1s,SNR=12
EBER S **Sn 19 21 53.7 -2.7**
comp=N,12nm,0.2s,SNR=7.9
EBER Berja 5.46 82 P **Pn 19 20 56.1 +2.6**
comp=N,0.8nm,0.1s,SNR=12
EBER S **Sn 19 21 53.7 -2.7**
comp=N,12nm,0.2s,SNR=7.9
EQES Quesada 5.46 72 P **Pn 19 20 54.5 +1.0**
comp=N,1.9nm,0.2s,SNR=23
EQES S **Sn 19 21 53.0 -3.4**
comp=N,25nm,0.2s,SNR=7.9
EQES Quesada 5.46 72 P **Pn 19 20 54.5 +1.0**
comp=N,1.9nm,0.2s,SNR=23
EQES S **Sn 19 21 53.0 -3.4**
comp=N,25nm,0.2s,SNR=7.9
EMEL Melilla 5.51 98 S Sn 19 21 53.0 -4.6
comp=N,186nm,0.2s,SNR=7.9
EMLI Melilla 5.52 98 S Sn 19 21 53.0 -4.7
comp=N,186nm,0.2s,SNR=7.9
ESDC Sonseca Array 5.60 51 P **Pn 19 20 56.7 +1.3**
comp=N,37nm,0.2s,baz=236,slow=13,SNR=164
ESDC S **Sn 19 21 56.4 -3.5**
comp=N,35nm,0.2s,baz=238,slow=24,SNR=7.9
ESDC Sonseca Array 5.60 51 P **Pn 19 20 56.7 +1.3**
comp=N,37nm,0.2s,SNR=164
ESDC S **Sn 19 21 56.4 -3.5**
comp=N,35nm,0.2s,SNR=7.9
ELOB Lobios 5.70 12 P **Pn 19 20 57.1 +0.4**
comp=N,11nm,0.1s,SNR=7.9
ELOB S Sn 19 21 57.4 -4.8
comp=N,47nm,0.1s,SNR=7.9
ELOB Lobios 5.70 12 P **Pn 19 20 57.1 +0.4**
comp=N,11nm,0.1s,SNR=7.9
ELOB S Sn 19 21 57.4 -4.8
comp=N,47nm,0.1s,SNR=7.9
PGAV Gavieira, Arco 5.76 10⇑ *e*Pn **Pn 19 20 58.4 +0.8**
PGAV *e*Sn Sn 19 21 59.0 -4.8
PGAV A A 19 22 03.1
comp=N,55nm,0.4s
PGAV Gavieira, Arco 5.76 10⇑ *e*Pn **Pn 19 20 58.4 +0.8**
PGAV *e*Sn Sn 19 21 59.0 -4.8
comp=N,55nm,0.4s
SESP Santiago Espad 5.94 70 P **Pn 19 21 01.1 +0.9**
comp=N,2.7nm,0.1s,SNR=7.9
SESP S Sn 19 22 03.8 -4.5
comp=N,67nm,0.1s,SNR=7.9
SESP Santiago Espad 5.94 70 P **Pn 19 21 01.1 +0.9**
comp=N,2.7nm,0.1s,SNR=7.9
SESP S Sn 19 22 03.8 -4.5
comp=N,67nm,0.1s,SNR=7.9
PBRG Braganca 5.94 21 *e*Pn **Pn 19 21 00.8 +0.7**
PBRG *e*Sn **Sn 19 22 03.9 -4.3**
PBRG A A 19 22 05.6
comp=N,34nm,0.1s
PBRG Braganca 5.94 21 P **Pn 19 21 00.8 +0.7**
PBRG S **Sn 19 22 03.9 -4.3**
comp=N,17nm,0.1s
PBRG Braganca 5.94 21 *e*Pn **Pn 19 21 00.8 +0.7**
PBRG *e*Sn **Sn 19 22 03.9 -4.3**
comp=N,34nm,0.1s
ENIJ Nijar 6.01 81 P **Pn 19 21 03.0 +2.1**
comp=N,1.9nm,0.3s,SNR=7.9
ENIJ S Sn 19 22 05.4 -4.3
comp=N,11nm,0.3s,SNR=7.9
ENIJ Nijar 6.01 81 P **Pn 19 21 03.0 +2.1**
comp=N,1.9nm,0.3s,SNR=7.9
ENIJ S Sn 19 22 05.4 -4.4
comp=N,11nm,0.3s,SNR=7.9
ECAL Calabor 6.07 21 P **Pn 19 21 02.6 +0.8**
comp=N,30nm,0.2s,SNR=7.9
ECAL S **Sn 19 22 07.5 -3.9**
comp=N,92nm,0.4s,SNR=7.9
ECAL Calabor 6.07 21 P **Pn 19 21 02.6 +0.8**
comp=N,30nm,0.2s,SNR=7.9
ECAL S **Sn 19 22 07.5 -3.9**
comp=N,92nm,0.4s,SNR=7.9
ZFT Errachidia 6.10 133 P **Pn 19 21 04.0 +1.6**
ZFT S **Sn 19 22 08.0 -4.3**
ZFT Errachidia 6.10 133 *i*P **Pn 19 21 04.0 +1.6**
ZFT *i*S **Sn 19 22 08.0 -4.3**
GUD Guadarrama 6.11 43 P **Pn 19 21 03.3 +0.9**
comp=N,4.5nm,0.2s,SNR=54
GUD S **Sn 19 22 08.5 -3.9**
comp=N,24nm,0.2s,SNR=7.9
GUD Guadarrama 6.11 43 P **Pn 19 21 03.3 +0.9**
comp=N,4.5nm,0.2s,SNR=54
GUD S **Sn 19 22 08.5 -3.9**
comp=N,24nm,0.2s,SNR=7.9
EVIA Vianos 6.13 65 P **Pn 19 21 03.3 +0.6**
comp=N,7.0nm,0.1s,SNR=7.9
EVIA S Sn 19 22 08.1 -4.8
comp=N,17nm,0.1s,SNR=7.9
EVIA Vianos 6.13 65 P **Pn 19 21 03.3 +0.6**
comp=N,7.0nm,0.1s,SNR=7.9
EVIA S Sn 19 22 08.1 -4.9
comp=N,17nm,0.1s,SNR=7.9
PMPS Porto Santo 6.40 242 *e*Sn Sn 19 22 12.4 -7.0
PMPS Porto Santo 6.40 242 S Sn 19 22 12.4 -7.0
PMPS Porto Santo 6.40 242 *e*Sn Sn 19 22 12.4 -7.0
EAGO Agolada(Pontev 6.61 10 P **Pn 19 21 09.3 +0.1**
comp=N,19nm,0.1s,SNR=7.9
EAGO S Sn 19 22 18.0 -6.5
comp=N,41nm,0.3s,SNR=7.9
EAGO Agolada(Pontev 6.61 10 P **Pn 19 21 09.3 +0.1**
comp=N,19nm,0.1s,SNR=7.9
EAGO S Sn 19 22 18.0 -6.5
comp=N,41nm,0.3s,SNR=7.9
EMAZ Mazaricos 6.66 4 P **Pn 19 21 09.9 0.0**
comp=N,31nm,0.2s,SNR=7.9
EMAZ S Sn 19 22 19.7 -6.3
comp=N,75nm,0.3s,SNR=7.9
EMAZ Mazaricos 6.66 4 P **Pn 19 21 09.9 0.0**
comp=N,31nm,0.2s,SNR=7.9
EMAZ S Sn 19 22 19.7 -6.2
comp=N,75nm,0.3s,SNR=7.9
ETOB Tobarra 6.84 68 P **Pn 19 21 12.9 +0.5**
comp=N,2.8nm,0.1s,SNR=7.9
ETOB S Sn 19 22 25.6 -4.8
comp=N,17nm,0.1s,SNR=7.9
ETOB Tobarra 6.84 68 P **Pn 19 21 12.9 +0.5**
comp=N,2.8nm,0.1s,SNR=7.9
ETOB S Sn 19 22 25.6 -4.8
comp=N,17nm,0.1s,SNR=7.9
EMUR La Murta 6.88 75 P **Pn 19 21 14.6 +1.6**
comp=N,8.4nm,0.4s,SNR=7.9
EMUR S Sn 19 22 25.7 -5.7
comp=N,6.5nm,0.3s,SNR=7.9
EMUR La Murta 6.88 75 P **Pn 19 21 14.6 +1.6**
comp=N,8.4nm,0.4s,SNR=7.9
EMUR S Sn 19 22 25.7 -5.7
comp=N,6.5nm,0.3s,SNR=7.9
PMAR Madeira 6.99 241 *e*Pn Pn 19 21 23.2 +8.6
PMAR *e*Sn Sn 19 22 26.9 -7.3
PMAR A A 19 22 33.9
comp=N,26nm,0.5s
PMAR Madeira 6.99 241 P Pn 19 21 23.2 +8.6
PMAR S Sn 19 22 26.9 -7.3
comp=N,13nm,0.5s
PMAR Madeira 6.99 241 *e*Pn Pn 19 21 23.2 +8.6
PMAR *e*Sn Sn 19 22 26.9 -7.3
comp=N,26nm,0.5s
PMOZ Porto Moniz, M 7.14 243 S Sn 19 22 31.0 -6.8
comp=N,181nm,0.6s,SNR=7.9
PMOZ Porto Moniz, M 7.14 243 S Sn 19 22 31.0 -6.8
comp=N,181nm,0.6s,SNR=7.9
PMOZ *e*Sn **Sn 19 22 38.6 +0.8**
EPON Pontenova 7.28 14 P **Pn 19 21 19.5 +1.1**
comp=N,4.3nm,0.1s,SNR=7.9
EPON S Sn 19 22 34.8 -6.2
comp=N,6.4nm,0.3s,SNR=7.9
EPON Pontenova 7.28 14 P **Pn 19 21 19.5 +1.1**
comp=N,4.3nm,0.1s,SNR=7.9
EPON S Sn 19 22 34.8 -6.2
comp=N,6.4nm,0.3s,SNR=7.9
ETOR Torete 7.46 50 P **Pn 19 21 22.4 +1.5**
comp=N,6.3nm,0.2s,SNR=7.9
ETOR S Sn 19 22 40.5 -5.0
comp=N,24nm,0.3s,SNR=7.9
ETOR Torete 7.46 50 P **Pn 19 21 22.4 +1.5**
comp=N,6.3nm,0.2s,SNR=7.9
ETOR S Sn 19 22 40.5 -5.1
comp=N,24nm,0.3s,SNR=7.9
AFON Font Roja 7.60 69 P **Pn 19 21 23.5 +0.6**
comp=N,0.2nm,0.1s,SNR=7.9

AFON S Sn 19 22 43.4 -5.8
comp=N,4.2nm,0.3s,SNR=7.9
AFON Font Roja 7.60 69 P **Pn 19 21 23.5 +0.6**
comp=N,0.2nm,0.1s,SNR=7.9
AFON S Sn 19 22 43.4 -5.8
comp=N,4.2nm,0.3s,SNR=7.9
EARI Arriondas 7.78 25 P **Pn 19 21 27.0 +1.7**
comp=N,1.5nm,0.1s,SNR=7.9
EARI S Sn 19 22 47.8 -5.6
comp=N,3.9nm,0.3s,SNR=7.9
EARI Arriondas 7.78 25 P **Pn 19 21 27.0 +1.7**
comp=N,1.5nm,0.1s,SNR=7.9
EARI S Sn 19 22 47.8 -5.6
comp=N,3.9nm,0.3s,SNR=7.9
EFAM Famara 7.87 206 S Sn 19 22 47.1 -8.5
comp=N,13nm,0.4s,SNR=7.9
EFAM Famara 7.87 206 S Sn 19 22 47.1 -8.5
comp=N,13nm,0.4s,SNR=7.9
EMOS Mosqueruela 8.26 58 P **Pn 19 21 34.3 +2.2**
comp=N,5.4nm,0.2s,SNR=7.9
EMOS S Sn 19 22 59.7 -5.8
comp=N,6.8nm,0.3s,SNR=7.9
EMOS Mosqueruela 8.26 58 P **Pn 19 21 34.3 +2.2**
comp=N,5.4nm,0.2s,SNR=7.9
EMOS S Sn 19 22 59.7 -5.8
comp=N,6.8nm,0.3s,SNR=7.9
ELAN Lanestosa 8.41 33 P **Pn 19 21 35.8 +1.9**
comp=N,0.4nm,0.2s,SNR=7.9
ELAN S Sn 19 23 02.0 -6.9
comp=N,2.5nm,0.2s,SNR=7.9
ELAN Lanestosa 8.41 33 P **Pn 19 21 35.8 +1.9**
comp=N,0.4nm,0.2s,SNR=7.9
ELAN S Sn 19 23 02.0 -6.9
comp=N,2.5nm,0.2s,SNR=7.9
CFUE Fuerteventura 8.45 207 S Sn 19 23 00.7 -9.2
comp=N,12nm,0.2s,SNR=7.9
CFUE Fuerteventura 8.45 207 S Sn 19 23 00.7 -9.2
comp=N,12nm,0.2s,SNR=7.9
CFTV Fuerteventura 8.71 207 S Sn 19 23 08.0 -8.5
comp=N,0.6nm,0.1s,SNR=7.9
CFTV Fuerteventura 8.71 207 S Sn 19 23 08.0 -8.5
comp=N,0.6nm,0.1s,SNR=7.9
ESAC San Caprasio 8.95 50 S Sn 19 23 16.1 -6.2
comp=N,7.1nm,0.2s,SNR=7.9
ESAC San Caprasio 8.95 50 S Sn 19 23 16.1 -6.2
comp=N,7.1nm,0.2s,SNR=7.9
ERTA Horta de San J 9.08 56 P **Pn 19 21 45.4 +2.3**
comp=N,2.5nm,0.3s,SNR=7.9
ERTA S Sn 19 23 18.4 -6.9
comp=N,1.0nm,0.2s,SNR=7.9
ERTA Horta de San J 9.08 56 P **Pn 19 21 45.4 +2.3**
comp=N,2.5nm,0.3s,SNR=7.9
ERTA S Sn 19 23 18.4 -6.9
comp=N,1.0nm,0.2s,SNR=7.9
IZUN Zunzarren 9.10 41 P **Pn 19 21 45.8 +2.4**
comp=N,2.1nm,0.2s,SNR=7.9
IZUN S Sn 19 23 18.6 -7.2
comp=N,1.4nm,0.3s,SNR=7.9
IZUN Zunzarren 9.10 41 P **Pn 19 21 45.8 +2.4**
comp=N,2.1nm,0.2s,SNR=7.9
IZUN S Sn 19 23 18.6 -7.2
comp=N,1.4nm,0.3s,SNR=7.9
YARA Arangoiti 9.10 43 P **Pn 19 21 44.8 +1.4**
comp=N,0.9nm,0.1s,SNR=7.9
YARA S Sn 19 23 19.0 -7.0
comp=N,2.1nm,0.2s,SNR=7.9
YARA Arangoiti 9.10 43 P **Pn 19 21 44.8 +1.4**
comp=N,0.9nm,0.1s,SNR=7.9
YARA S Sn 19 23 19.0 -6.9
comp=N,2.1nm,0.2s,SNR=7.9
IUSE Utxeti 9.11 41 P **Pn 19 21 45.6 +2.1**
comp=N,1.9nm,0.3s,SNR=7.9
IUSE S Sn 19 23 21.2 -4.9
comp=N,1.4nm,0.1s,SNR=7.9
IUSE Utxeti 9.11 41 P **Pn 19 21 45.6 +2.1**
comp=N,1.9nm,0.3s,SNR=7.9
IUSE S Sn 19 23 21.2 -4.9
comp=N,1.4nm,0.1s,SNR=7.9
EIBI Ibiza 9.12 69 S Sn 19 23 18.2 -8.1
comp=N,15nm,0.3s,SNR=7.9
EIBI Ibiza 9.12 69 S Sn 19 23 18.2 -8.1
comp=N,15nm,0.3s,SNR=7.9
IEPA Eparoz 9.14 42 P **Pn 19 21 45.7 +1.7**
comp=N,1.3nm,0.1s,SNR=7.9
IEPA S Sn 19 23 20.5 -6.5
comp=N,3.3nm,0.2s,SNR=7.9
IEPA Eparoz 9.14 42 P **Pn 19 21 45.7 +1.7**
comp=N,1.3nm,0.1s,SNR=7.9
IEPA S Sn 19 23 20.5 -6.5
comp=N,3.3nm,0.2s,SNR=7.9
YMUS Pe˜–a Musera 9.15 44 P **Pn 19 21 45.8 +1.7**
comp=N,1.4nm,0.2s,SNR=7.9
YMUS S Sn 19 23 21.3 -5.8
comp=N,1.9nm,0.2s,SNR=7.9
YMUS Pe˜–a Musera 9.15 44 P **Pn 19 21 45.8 +1.7**
comp=N,1.4nm,0.2s,SNR=7.9
YMUS S Sn 19 23 21.3 -5.8
comp=N,1.9nm,0.2s,SNR=7.9
YASP Aspurt 9.16 43 P **Pn 19 21 46.0 +1.7**
comp=N,1.3nm,0.2s,SNR=7.9
YASP S Sn 19 23 20.9 -6.6
comp=N,4.1nm,0.2s,SNR=7.9
YASP Aspurt 9.16 43 P **Pn 19 21 46.0 +1.7**
comp=N,1.3nm,0.2s,SNR=7.9
YASP S Sn 19 23 20.9 -6.6
comp=N,4.1nm,0.2s,SNR=7.9
EORO Oroz-Betelu 9.20 42 P **Pn 19 21 46.2 +1.5**
comp=N,0.6nm,0.1s,SNR=7.9
EORO S Sn 19 23 21.5 -6.8
comp=N,6.3nm,0.3s,SNR=7.9
EORO Oroz-Betelu 9.20 42 P **Pn 19 21 46.2 +1.5**
comp=N,0.6nm,0.1s,SNR=7.9
EORO S Sn 19 23 21.5 -6.8
comp=N,6.3nm,0.3s,SNR=7.9
YSIG Sigues 9.20 44 P **Pn 19 21 46.5 +1.7**
comp=N,0.7nm,0.1s,SNR=7.9
YSIG S Sn 19 23 21.3 -7.1
comp=N,3.4nm,0.2s,SNR=7.9
YSIG Sigues 9.20 44 P **Pn 19 21 46.5 +1.7**
comp=N,0.7nm,0.1s,SNR=7.9
YSIG S Sn 19 23 21.3 -7.1
comp=N,3.4nm,0.2s,SNR=7.9
IELO Elcoad 9.20 42 P **Pn 19 21 45.9 +1.1**
comp=N,1.8nm,0.1s,SNR=7.9
IELO S Sn 19 23 21.9 -6.6
comp=N,11nm,0.3s,SNR=7.9
IELO Elcoad 9.20 42 P **Pn 19 21 45.9 +1.1**
comp=N,1.8nm,0.1s,SNR=7.9
IELO S Sn 19 23 21.9 -6.5
comp=N,11nm,0.3s,SNR=7.9
YBER Berdun 9.21 44 P **Pn 19 21 46.2 +1.4**
comp=N,1.8nm,0.2s,SNR=7.9
YBER S Sn 19 23 22.1 -6.4
comp=N,2.6nm,0.2s,SNR=7.9
YBER Berdun 9.21 44 P **Pn 19 21 46.2 +1.4**
comp=N,1.8nm,0.2s,SNR=7.9
YBER S Sn 19 23 22.1 -6.4
comp=N,2.6nm,0.2s,SNR=7.9
EALK Alkurruntz 9.32 40 P **Pn 19 21 47.2 +0.8**
comp=N,3.5nm,0.3s,SNR=7.9
EALK S Sn 19 23 24.5 -6.9
comp=N,14nm,0.4s,SNR=7.9
EALK Alkurruntz 9.32 40 P **Pn 19 21 47.2 +0.8**
comp=N,3.5nm,0.3s,SNR=7.9
EALK S Sn 19 23 24.5 -6.8
comp=N,14nm,0.4s,SNR=7.9
SJPF Ste Jean 9.39 41 *e*Pn **Pn 19 21 49.0 +1.6**
SJPF *e*Sn Sn 19 23 27.5 -5.5
comp=N,4.7nm,0.2s
SJPF Ste Jean 9.39 41 P **Pn 19 21 49.0 +1.6**
SJPF S Sn 19 23 27.5 -5.5
comp=N,2.3nm,0.2s
SJPF Ste Jean 9.39 41 *e*Pn **Pn 19 21 49.0 +1.6**
SJPF *e*Sn Sn 19 23 27.5 -5.5
comp=N,2.3nm,0.2s
ETSF Etsaut 9.61 44 *e*Pn **Pn 19 21 51.9 +1.5**
ETSF *e*Sn Sn 19 23 32.2 -6.3
comp=N,3.5nm,0.3s
ETSF Etsaut 9.61 44 P **Pn 19 21 51.9 +1.5**
ETSF S Sn 19 23 32.2 -6.3
comp=N,1.8nm,0.3s
ETSF Etsaut 9.61 44 *e*Pn **Pn 19 21 51.9 +1.5**
ETSF *e*Sn Sn 19 23 32.2 -6.3
comp=N,1.8nm,0.3s
ATE Arette 9.66 43 P **Pn 19 21 53.1 +2.1**
comp=N,1.6nm,0.2s,SNR=7.9
ATE S Sn 19 23 32.8 -6.7
comp=N,0.8nm,0.2s,SNR=7.9
EPOB Poblet 9.76 56 P **Pn 19 21 53.5 +1.0**
comp=N,0.6nm,0.1s,SNR=7.9
EPOB S Sn 19 23 34.9 -7.3
comp=N,0.5nm,0.1s,SNR=7.9
EPOB Poblet 9.76 56 P **Pn 19 21 53.5 +1.0**
comp=N,0.6nm,0.1s,SNR=7.9
EPOB S Sn 19 23 34.9 -7.2
comp=N,0.5nm,0.1s,SNR=7.9
EPF Esparros 10.21 46 *e*Pn **Pn 19 22 00.1 +1.5**
EPF *e*Sn Sn 19 23 46.7 -6.4
comp=N,3.6nm,0.2s
EPF Esparros 10.21 46 P **Pn 19 22 00.1 +1.5**
EPF S Sn 19 23 46.7 -6.4
comp=N,1.8nm,0.2s
EPF Esparros 10.21 46 *e*Pn **Pn 19 22 00.1 +1.5**
EPF *e*Sn Sn 19 23 46.7 -6.4
comp=N,1.8nm,0.2s
CSOR Sort 10.31 51 P **Pn 19 22 01.0 +1.0**
comp=N,2.5nm,0.4s,SNR=7.9
CSOR S Sn 19 23 48.2 -7.4
comp=N,5.6nm,0.4s,SNR=7.9
CSOR Sort 10.31 51 P **Pn 19 22 01.0 +1.0**
comp=N,2.5nm,0.4s,SNR=7.9
CSOR S Sn 19 23 48.2 -7.5
comp=N,5.6nm,0.4s,SNR=7.9
RJF Les Rejaudoux 12.33 40 *e*Pn **Pn 19 22 27.9 +0.3**
RJF *e*Sn Sn 19 24 36.8 -8.2
comp=N,1.8nm,0.3s
RJF Les Rejaudoux 12.33 40 *e*Pn **Pn 19 22 27.9 +0.3**
RJF *e*Sn Sn 19 24 36.8 -8.2
comp=N,0.9nm,0.3s
CAF Calviac 12.37 42 *e*Pn **Pn 19 22 28.3 +0.2**
CAF *e*Sn Sn 19 24 38.6 -7.4
comp=N,2.8nm,0.3s
CAF Calviac 12.37 42 *e*Pn **Pn 19 22 28.3 +0.2**
CAF *e*Sn Sn 19 24 38.6 -7.4
comp=N,1.4nm,0.3s
MFF Saint Martin d 12.50 32 *e*Pn **Pn 19 22 30.1 +0.2**
MFF *e*Sn Sn 19 24 41.3 -7.9
comp=N,1.0nm,0.3s
MFF Saint Martin d 12.50 32 *e*Pn **Pn 19 22 30.1 +0.2**
MFF *e*Sn Sn 19 24 41.3 -7.9
comp=N,0.5nm,0.3s
QUIF Quistinic 12.56 20 *e*Pn **Pn 19 22 31.4 +0.8**
QUIF *e*Sn Sn 19 24 43.0 -7.5
comp=N,1.0nm,0.2s
QUIF Quistinic 12.56 20 *e*Pn **Pn 19 22 31.4 +0.8**
QUIF *e*Sn Sn 19 24 43.0 -7.5
comp=N,0.5nm,0.2s
ROSF Rostrenen 12.91 19 *e*Pn **Pn 19 22 36.2 +0.7**
ROSF *e*Sn Sn 19 24 50.3 -8.9
comp=N,1.6nm,0.3s
ROSF Rostrenen 12.91 19 *e*Pn **Pn 19 22 36.2 +0.7**
ROSF *e*Sn Sn 19 24 50.3 -8.9
comp=N,0.8nm,0.3s
SGMF Saint Gilles 13.04 21 *e*Pn **Pn 19 22 37.6 +0.4**
SGMF *e*Sn Sn 19 24 53.9 -8.4
comp=N,0.8nm,0.2s
SGMF Saint Gilles 13.04 21 *e*Pn **Pn 19 22 37.6 +0.4**
SGMF *e*Sn Sn 19 24 53.9 -8.4
comp=N,0.4nm,0.2s
VIVF Saint-Julien-l 13.81 47 *e*Sn Sn 19 25 13.2 -8.1
comp=N,1.4nm,0.3s
VIVF Saint-Julien-l 13.81 47 *e*Sn Sn 19 25 13.2 -8.1
comp=N,0.7nm,0.3s
LDF La Druitiere 14.14 27 *e*Pn **Pn 19 22 52.2 0.0**
LDF *e*Sn Sn 19 25 19.4 -10
comp=N,0.4nm,0.2s
LDF La Druitiere 14.14 27 *e*Pn **Pn 19 22 52.2 0.0**
LDF *e*Sn Sn 19 25 19.4 -10
comp=N,0.2nm,0.2s
FLN La Foliniere 14.15 25 *e*Pn **Pn 19 22 52.5 +0.1**
FLN *e*Sn Sn 19 25 19.2 -10
comp=N,0.4nm,0.2s
FLN La Foliniere 14.15 25 *e*Pn **Pn 19 22 52.5 +0.1**
FLN *e*Sn Sn 19 25 19.2 -10
comp=N,0.2nm,0.2s

*ATH **22** 19:30:20.9,38˚.33N×26˚.72E,h27km±2km,ML1.9/4,Error ellipse: s-maj=3.4km s-min=1.1km az=236.0*
*ISCJB **22** 19:30:21.9±0.7,38˚.31N±0˚.04×26˚.71E±0˚.06,h11km±5km, Error ellipse: s-maj=8.9km s-min=4.9km az=147.1*
*CSEM **22** 19:30:21.6±0.1,38˚.34N×26˚.72E,h10km,MD2.7, Error ellipse: s-maj=4.3km s-min=2.4km az=52.0*
*DDA **22** 19:30:21.9,38˚.31N×26˚.75E,h7km,Md2.7*
ISC 22 19:30:21.7±0.9,38˚.33N±0˚.03×26˚.73E±0˚.04,h14km±6km, n14,σ0s42/28,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URLA	**Izmir**	**0.11**	**286**	*i* P	**Pg**	**19 30 24.9**	**-0.1**
URLA				*i* S	**Sg**	**19 30 27.3**	**+0.1**
URLA	**Izmir**	**0.11**	**286**	P	**Pg**	**19 30 24.9**	**-0.1**
URLA				S	**Sg**	**19 30 27.3**	**+0.1**
CHOS	**Chios island**	**0.53**	**276**	P	**Pg**	**19 30 32.1**	**-0.1**
CHOS				S	**Sg**	**19 30 39.2**	**0.0**
CHOS	**Chios island**	**0.53**	**276**	P	**Pg**	**19 30 32.1**	**-0.1**
CHOS				S	**Sg**	**19 30 39.2**	**0.0**
CHOS				AML	AML	19 30 43.5	
	comp=N,216μm,0.1s						
CHOS				AML	AML	19 30 44.1	
	comp=E,332μm,0.1s						
SMG	**Samos**	**0.63**	**172**	P	**Pg**	**19 30 33.4**	**-0.6**
SMG				S	**Sb**	**19 30 43.1**	**+0.1**
SMG	**Samos**	**0.63**	**172**	P	**Pg**	**19 30 33.4**	**-0.6**
SMG				S	**Sb**	**19 30 43.1**	**+0.1**
SMG				AML	AML	19 30 46.5	
	comp=N,432μm,0.2s						
SMG				AML	AML	19 30 46.5	
	comp=E,305μm,0.3s						
GCAM	**G?zelcaml?**	**0.75**	**147**	*i* P	**Pb**	**19 30 36.3**	**-0.1**
GCAM				*i* S	**Sb**	**19 30 46.6**	**+0.2**
GCAM	**G?zelcaml?**	**0.75**	**147**	P	**Pb**	**19 30 36.3**	**-0.1**
GCAM				S	**Sb**	**19 30 46.6**	**+0.2**
PRK	**Paraskevi**	**0.98**	**339**	P	**Pg**	**19 30 39.8**	**-0.8**
PRK				S	**Sb**	**19 30 53.9**	**+0.7**
PRK	**Paraskevi**	**0.98**	**339**	P	**Pg**	**19 30 39.8**	**-0.8**
PRK				S	**Sb**	**19 30 53.9**	**+0.7**
PRK				AML	AML	19 30 55.8	
	comp=N,127μm,0.5s						
PRK				AML	AML	19 30 56.2	
	comp=E,142μm,0.3s						
SIGR	**SIGRI**	**1.11**	**323**	P	**Pb**	**19 30 42.2**	**-0.5**
SIGR				S	**Sn**	**19 30 58.2**	**+0.3**
SIGR	**SIGRI**	**1.11**	**323**	P	**Pb**	**19 30 42.2**	**-0.5**
SIGR				S	**Sn**	**19 30 58.2**	**+0.3**
SIGR				AML	AML	19 30 59.3	
	comp=N,85μm,0.5s						
SIGR				AML	AML	19 31 00.0	
	comp=E,74μm,0.3s						
MANT	**Manisa**	**1.45**	**83**	*i* P	**Pb**	**19 30 48.5**	**0.0**
MANT				*i* S	**Sn**	**19 31 07.0**	**+0.5**
MANT	**Manisa**	**1.45**	**83**	P	**Pb**	**19 30 48.5**	**0.0**
MANT				S	**Sn**	**19 31 07.0**	**+0.5**

*NEIC **22** 19:45:39.8,43˚.65S×172˚.21E,h11km,ML4.3(WEL),After WEL.*
NEIC Felt in Canterbury.
WEL 22 19:45:40.0±0.1,43˚.64S×172˚.21E,h12km±1km,ML4.3/35, Mw3.9,6C-7D,Error ellipse: s-maj=0.8km s-min=0.8km az=0.0,South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.31**	**78**	⇓P*	Pg	19 45 46.2	-0.1
CRLZ				Sg	Sg	19 45 50.8	+0.3
CRLZ	**Canterbury Las**	**0.31**	**78**	⇓P*	Pg	19 45 46.2	-0.1
CRLZ				S*	Sg	19 45 50.8	+0.3
CRLZ				AML	AML	19 45 51.1	
MQZ	**McQueen's Vall**	**0.33**	**102**	⇓P*	Pg	19 45 46.1	-0.2
MQZ	**McQueen's Vall**	**0.33**	**102**	⇓P*	Pg	19 45 46.5	-0.2
MQZ				AML	AML	19 45 52.0	
MQZ				AML	AML	19 45 53.4	
OXZ	**Oxford**	**0.34**	**339**	⇑P*	Pg	19 45 46.2	-0.6
OXZ				Sg	Sg	19 45 50.9	-0.4
OXZ	**Oxford**	**0.34**	**339**	⇑P*	Pg	19 45 46.2	-0.6
OXZ				S*	Sg	19 45 50.9	-0.4
OXZ				AML	AML	19 45 51.1	
OXZ				AML	AML	19 45 51.1	
OXZ				AML	AML	19 45 51.1	
RPZ	**Rata Peaks**	**0.84**	**264**	P*	Pg	19 45 55.7	-0.5
RPZ	**Rata Peaks**	**0.84**	**264**	P*	Pg	19 45 55.7	-0.5
RPZ				AML	AML	19 46 08.4	
RPZ				AML	AML	19 46 08.6	
LTZ	**Lake Taylor**	**0.86**	**3**	P*	Pg	19 45 55.6	-0.9
LTZ				S*	Sg	19 46 07.5	-0.3
LTZ	**Lake Taylor**	**0.86**	**3**	P*	Pg	19 45 55.6	-0.9
LTZ				S*	Sg	19 46 07.5	-0.3
INZ	**Inchbonnie**	**1.07**	**328**	⇑P*	Pb	19 45 59.3	-1.1
WVZ	**Waitaha Valley**	**1.21**	**297**	P*	Pn	19 46 01.5	-1.1
WVZ	**Waitaha Valley**	**1.21**	**297**	⇓P*	Pn	19 46 01.5	-1.1
WVZ				AML	AML	19 46 21.2	
WVZ				AML	AML	19 46 22.6	
KHZ	**Kahutara**	**1.57**	**39**	Pn	Pn	19 46 05.5	-2.0
KHZ	**Kahutara**	**1.57**	**39**	⇓Pn	Pn	19 46 05.5	-2.0
KHZ				AML	AML	19 46 25.9	
KHZ				AML	AML	19 46 31.0	
LBZ	**Lake Benmore**	**1.64**	**242**	Pn	Pn	19 46 07.7	-0.9
LBZ	**Lake Benmore**	**1.64**	**242**	PN	Pn	19 46 07.7	-0.9
LBZ				AML	AML	19 46 33.2	
LBZ				AML	AML	19 46 35.5	
FOZ	**Fox Glacier**	**1.74**	**273**	Pn	Pn	19 46 10.0	+0.1
FOZ	**Fox Glacier**	**1.74**	**273**	⇑PN	Pn	19 46 10.0	+0.1
FOZ				AML	AML	19 46 40.9	
FOZ				AML	AML	19 46 41.2	
ODZ	**Otahua Downs**	**1.80**	**218**	Pn	Pn	19 46 09.6	-1.1
ODZ	**Otahua Downs**	**1.80**	**218**	PN	Pn	19 46 09.6	-1.1
ODZ				AML	AML	19 46 44.5	
ODZ				AML	AML	19 46 44.7	
DSZ	**Denniston Nort**	**1.92**	**351**	Pn	Pn	19 46 11.0	-1.4
DSZ	**Denniston Nort**	**1.92**	**351**	PN	Pn	19 46 11.0	-1.4
DSZ				AML	AML	19 46 41.3	
DSZ				AML	AML	19 46 41.7	
THZ	**Tophouse**	**1.95**	**16**	Pn	Pn	19 46 11.1	-1.7
THZ	**Tophouse**	**1.95**	**16**	⇓PN	Pn	19 46 11.1	-1.7
THZ				AML	AML	19 46 52.5	
THZ				AML	AML	19 46 53.2	
BSWZ	**Blackbirch Sta**	**2.28**	**33**	Pn	Pn	19 46 16.0	-1.5
BSWZ	**Blackbirch Sta**	**2.28**	**33**	PN	Pn	19 46 16.0	-1.5
BSWZ				AML	AML	19 46 47.8	
BSWZ				AML	AML	19 46 52.8	
JCZ	**Jackson Bay**	**2.51**	**259**	Pn	Pn	19 46 20.1	-0.5
JCZ	**Jackson Bay**	**2.51**	**259**	PN	Pn	19 46 20.1	-0.5
JCZ				AML	AML	19 47 06.8	
JCZ				AML	AML	19 47 07.8	
HHSZ	**Highcliff Hill**	**2.52**	**206**	Pn	Pn	19 46 19.3	-1.3
HHSZ	**Highcliff Hill**	**2.52**	**206**	PN	Pn	19 46 19.3	-1.3
HHSZ				AML	AML	19 47 03.4	
HHSZ				AML	AML	19 47 08.3	
TUWZ	**Tuamarina**	**2.56**	**31**	Pn	Pn	19 46 19.1	-2.0
TUWZ	**Tuamarina**	**2.56**	**31**	PN	Pn	19 46 19.1	-2.0
TUWZ				AML	AML	19 46 53.2	
TUWZ				AML	AML	19 47 13.4	
NNZ	**Nelson**	**2.57**	**20**	Pn	Pn	19 46 20.2	-1.1
NNZ	**Nelson**	**2.57**	**20**	⇑PN	Pn	19 46 20.2	-1.1
NNZ				AML	AML	19 47 06.7	
NNZ				AML	AML	19 47 08.4	
WKZ	**Wanaka**	**2.58**	**242**	Pn	Pn	19 46 20.4	-1.1
WKZ	**Wanaka**	**2.58**	**242**	PN	Pn	19 46 20.4	-1.1
WKZ				AML	AML	19 47 07.0	
WKZ				AML	AML	19 47 10.5	
EAZ	**Earnscleugh**	**2.62**	**232**	Pn	Pn	19 46 20.8	-1.2
EAZ	**Earnscleugh**	**2.62**	**232**	⇑PN	Pn	19 46 20.8	-1.2
EAZ				AML	AML	19 47 07.6	
EAZ				AML	AML	19 47 08.4	
QRZ	**Quartz Range**	**2.82**	**5**	Pn	Pn	19 46 23.0	-1.8
QRZ	**Quartz Range**	**2.82**	**5**	PN	Pn	19 46 23.0	-1.8
QRZ				AML	AML	19 46 34.6	
QRZ				AML	AML	19 47 15.6	
TCW	**Tory Channel**	**2.87**	**33**	Pn	Pn	19 46 23.8	-1.6
TCW	**Tory Channel**	**2.87**	**33**	PN	Pn	19 46 23.8	-1.6
TCW				AML	AML	19 47 07.8	
TCW				AML	AML	19 47 08.5	
TUZ	**Tuapeka**	**2.95**	**217**	Pn	Pn	19 46 25.4	-1.2
TUZ	**Tuapeka**	**2.95**	**217**	PN	Pn	19 46 25.4	-1.2
TUZ				AML	AML	19 47 19.3	
TUZ				AML	AML	19 47 22.1	
PLWZ	**Palliser**	**3.06**	**48**	PN	Pn	19 46 25.6	-2.5
MSWZ	**Moikau Station**	**3.16**	**46**	PN	Pn	19 46 26.7	-2.8
MSWZ				AML	AML	19 47 02.8	
MSWZ				AML	AML	19 47 03.6	
MSZ	**Milford Sound**	**3.25**	**250**	AML	AML	19 47 22.8	
MSZ				AML	AML	19 47 23.1	
CAW	**Cannon Point**	**3.30**	**41**	Pn	Pn	19 46 28.8	-2.6
CAW	**Cannon Point**	**3.30**	**41**	PN	Pn	19 46 28.8	-2.6
CAW				AML	AML	19 47 07.3	
CAW				AML	AML	19 47 08.7	
MLZ	**Mavora Lakes**	**3.40**	**238**	Pn	Pn	19 46 31.5	-1.2
MLZ	**Mavora Lakes**	**3.40**	**238**	PN	Pn	19 46 31.5	-1.2
MLZ				AML	AML	19 47 31.3	
MLZ				AML	AML	19 47 35.8	
TRWZ	**Traveller**	**3.41**	**50**	Pn	Pn	19 46 29.9	-3.0
TRWZ	**Traveller**	**3.41**	**50**	PN	Pn	19 46 29.9	-3.0
TRWZ				AML	AML	19 47 19.7	
KIW	**Kapiti Island**	**3.43**	**37**	Pn	Pn	19 46 30.9	-2.2
KIW	**Kapiti Island**	**3.43**	**37**	PN	Pn	19 46 30.9	-2.2
KIW				AML	AML	19 47 14.1	
KIW				AML	AML	19 47 14.7	
MTW	**Mount Morrison**	**3.48**	**46**	Pn	Pn	19 46 31.3	-2.6
MTW	**Mount Morrison**	**3.48**	**46**	PN	Pn	19 46 31.3	-2.6
MTW				AML	AML	19 47 15.5	
MTW				AML	AML	19 47 22.1	
OGWZ	**Otaki Gorge**	**3.58**	**39**	Pn	Pn	19 46 32.0	-3.2
OGWZ	**Otaki Gorge**	**3.58**	**39**	PN	Pn	19 46 32.0	-3.2
OGWZ				AML	AML	19 47 13.5	
OGWZ				AML	AML	19 47 16.4	
SYZ	**Scrubby Hill**	**3.62**	**216**	Pn	Pn	19 46 34.9	-0.9
SYZ	**Scrubby Hill**	**3.62**	**216**	PN	Pn	19 46 34.9	-0.9
SYZ				AML	AML	19 47 41.7	
SYZ				AML	AML	19 47 45.8	
HOWZ	**Holdsworth Sta**	**3.68**	**43**	AML	AML	19 47 16.7	
HOWZ				AML	AML	19 47 17.8	
WHZ	**Wether Hill Ro**	**3.78**	**232**	Pn	Pn	19 46 35.7	-2.3
WHZ	**Wether Hill Ro**	**3.78**	**232**	PN	Pn	19 46 35.7	-2.3
WHZ				AML	AML	19 47 50.5	
WHZ				AML	AML	19 47 53.6	
MRZ	**Mangatainoka R**	**3.89**	**41**	Pn	Pn	19 46 36.4	-3.1
MRZ	**Mangatainoka R**	**3.89**	**41**	PN	Pn	19 46 36.4	-3.1
MRZ				AML	AML	19 47 21.1	
MRZ				AML	AML	19 47 22.4	
TIWZ	**Tintock**	**3.96**	**45**	AML	AML	19 47 23.2	
TIWZ				AML	AML	19 47 26.0	

*JMA **22** 19:59:10.5±0.2,23˚.76N×122˚.84E,h51km,M2.0*
*TAP **22** 19:59:12.8,23˚.82N×122˚.68E,h22km±2km,ML2.8,C*
ISC 22 19:59:08.9±1.3,23˚.66N±0˚.05×122˚.85E±0˚.03,h24km±14km, n31,σ0s73/53,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.79**	**6**	P	**Pn**	**19 59 24.5**	**-0.1**
JYNG				S	**Sb**	**19 59 33.7**	**-0.7**
YOJ	**Yonaguni jima**	**0.81**	**10**	P	**Pn**	**19 59 24.9**	**0.0**
YOJ				*e*S	**Sb**	**19 59 34.3**	**-0.7**
HATJ	**Hateruma jima**	**0.96**	**65**	P	**Pb**	**19 59 27.6**	**+0.8**
HATJ				S	**Sn**	**19 59 39.8**	**+0.1**
IRIF	**Iriomote-Funau**	**1.05**	**50**	P	**Pb**	**19 59 28.4**	**0.0**
IRIF				S	**Sn**	**19 59 41.9**	**0.0**
HWA	**Hwalien** baz=265	**1.19**	**286**	*e*P	**Pb**	**19 59 31.2**	**+0.4**
JKRS	**Kuro-shima**	**1.20**	**61**	P	**Pb**	**19 59 31.2**	**+0.1**
JKRS				S	**Sb**	**19 59 46.1**	**-0.1**
TWD	**Chiawan** baz=271	**1.23**	**290**	*e*P	**Pb**	**19 59 32.0**	**+0.5**
TWD	baz=271			*e*S	**Sn**	**19 59 45.1**	**-1.3**
ENA	**Nanau** baz=306	**1.27**	**307**	*e*P	**Pb**	**19 59 32.2**	**-0.1**
ESL	**Shilin** baz=270	**1.31**	**277**	*e*P	**Pb**	**19 59 32.6**	**-0.3**
ESL	baz=270			*e*S	**Sn**	**19 59 47.3**	**-1.2**
TWC	**Suao** baz=316	**1.32**	**316**	*e*P	**Pb**	**19 59 34.6**	**+1.6**
JIJ	**Ishigaki jima**	**1.37**	**59**	P	**Pn**	**19 59 32.8**	**+0.2**
JIJ				*e*S	**Sn**	**19 59 48.9**	**-1.1**

EHY	**Hungye**	**1.41**	**264**	*eP*	**Pb**	**19 59 34.6 -0.1**
	baz=257					
EHY				S	**Sn**	**19 59 51.0 0.0**
	baz=257					
TWF1	**Yuli**	**1.46**	**258**	P	**Pb**	**19 59 35.7 +0.2**
	baz=250					
TWF1				*eS*	**Sb**	**19 59 53.3 -0.3**
	baz=250					
CHKT	**Chengkung**	**1.48**	**248**	*eP*	**Pb**	**19 59 35.3 -0.4**
	baz=240					
CHKT				*eS*	**Sn**	**19 59 53.2 +0.6**
	baz=240					
TWE	**Neicheng**	**1.52**	**315**	*eP*	**Pb**	**19 59 36.4 0.0**
	baz=315					
ENTT	**Nioudou**	**1.53**	**310**	*eP*	**Pb**	**19 59 36.5 -0.1**
	baz=310					
ENTT				*eS*	**Sn**	**19 59 52.7 -1.2**
	baz=310					
WHF	**Hehuan Shan**	**1.53**	**289**	P	**Pb**	**19 59 36.4 -0.5**
	baz=272					
WHF				*eS*	**Sn**	**19 59 53.5 -1.1**
	baz=272					
TWB1	**Santiao Chiao**	**1.56**	**330**	*eP*	**Pb**	**19 59 38.0 +0.9**
	baz=333					
NNS	**Nan Shan**	**1.56**	**300**	*eP*	**Pb**	**19 59 36.8 -0.4**
	baz=298					
NNS				*eS*	**Sn**	**19 59 54.0 -0.9**
	baz=298					
JISG	**Ishigakijimahi**	**1.62**	**55**	P	**Pn**	**19 59 35.8 -0.2**
JISG				S	**Sn**	**19 59 56.4 +0.3**
NSK	**Sanguang**	**1.70**	**307**	*eP*	**Pn**	**19 59 38.5 +1.3**
	baz=306					
ELDTW	**Lidau**	**1.75**	**255**	P	**Pb**	**19 59 39.6 -0.8**
	baz=248					
ELDTW				*eS*	**Sn**	**19 59 59.6 0.0**
	baz=248					
YUS	**Yu-Shan**	**1.75**	**265**	*eP*	**Pb**	**19 59 40.9 +0.1**
	baz=259					
YUS				*eS*	**Sn**	**19 59 59.0 -1.1**
	baz=259					
SMLT	**Sun Moon Lake**	**1.80**	**277**	*eP*	**Pn**	**19 59 40.1 +1.5**
	baz=273					
SMLT				*eS*	**Sn**	**20 00 00.5 -0.3**
	baz=273					
TYC	**Yuchr**	**1.85**	**278**	*eP*	**Pb**	**19 59 42.8 +0.8**
	baz=274					
ALS	**Alishan**	**1.89**	**266**	*eP*	**Pb**	**19 59 42.8 -0.1**
	baz=260					
ALS				*eS*	**Sn**	**20 00 03.9 +0.8**
	baz=260					
NSTT	**Nanjuang**	**1.95**	**300**	*eP*	**Pn**	**19 59 42.2 +1.6**
	baz=286					
NSTT				*eS*	**Sn**	**20 00 03.7 -0.6**
	baz=286					
CHN5	**Tsauling**	**2.00**	**269**	*eP*	**Pb**	**19 59 45.0 +0.4**
	baz=264					
CHN4	**Tsaushan**	**2.10**	**262**	*eP*	**Pb**	**19 59 46.0 -0.3**
	baz=246					
WTP	**Ta-pu**	**2.10**	**259**	*eP*	**Pb**	**19 59 45.8 -0.5**
	baz=254					
WTP				*eS*	**Sb**	**20 00 11.7 -0.3**
	baz=254					
CHN1	**Nanshi**	**2.19**	**258**	*eP*	**Pb**	**19 59 47.8 -0.1**
	baz=253					
CHN1				*eS*	**Sb**	**20 00 13.7 -0.9**
	baz=253					

*NIED **22** 20:09:00,38.°30N×144.°30E,h8km,Mw3.8 Best double couple: M₀5.54000×10¹⁴ NP1:φ₀163.00000°, δ25.00000°, λ-141.00000°. NP2:φ₀38.00000°, δ74.00000°, λ-70.00000°.*

*IDC **22** 20:09:28.9±0.8,38.°19N×144.°86E,h0km,mb3.7/9, mb1 3.9/13,mb1mx3.7/40,mbtmp3.7/13,ML3.9/3,MS2.8/3, Ms1 2.8/3,ms1mx2.5/50,Error ellipse: s-maj=21.8km s-min=17.2km az=96.0*

*ISCJB **22** 20:09:33.1±0.8,38.°35N±0.°04×144.°46E±0.°05,h33km±7km, mb4.2/20,MS3.1/1,Error ellipse: s-maj=7.8km s-min=5.0km az=37.7*

*NEIC **22** 20:09:33.4±0.6,38.°20N×144.°83E,h35km,mb4.5/11,Error ellipse: s-maj=11.7km s-min=7.6km az=140.0*

*JMA **22** 20:09:35.1±0.2,38.°34N×144.°32E,h45km,M4.3*

ISC 22 20:09:33.8±2.0,38.°32N±0.°06×144.°61E±0.°09,h27km±16km, n58,σ2§48/81,mb4.1/20,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.43**	**289**	P	**Pn**	**20 10 10.5**	**-1.1**
OFUJ				*eS*	**Sn**	**20 10 36.9**	**-3.5**
MIYJ	**Miyakonagasawa**	**2.52**	**301**	P	**Pn**	**20 10 11.7**	**-1.1**
MIYJ				*eS*	**Sn**	**20 10 38.9**	**-3.7**
JIO	**Ouri**	**2.57**	**274**	P	**Pn**	**20 10 12.1**	**-1.4**
JIO				*eS*	**Sn**	**20 10 39.3**	**-4.6**
JMK	**Ichinoseki**	**2.73**	**284**	P	**Pn**	**20 10 14.9**	**-0.9**
JMK				*eS*	**Sn**	**20 10 44.3**	**-3.6**
JOM	**Ohasama**	**2.84**	**295**	P	**Pn**	**20 10 16.6**	**-0.6**
JOM				*eS*	**Sn**	**20 10 47.8**	**-2.7**
JANG	**Nango**	**3.16**	**311**	P	**Pn**	**20 10 20.8**	**-0.9**
JANG				*eS*	**Sn**	**20 10 54.4**	**-4.1**
JYK	**Kaneyama**	**3.39**	**281**	P	**Pn**	**20 10 24.2**	**-0.6**
JYK				S	**Sn**	**20 11 01.1**	**-3.0**
JFT	**Otama**	**3.48**	**258**	P	**Pn**	**20 10 25.2**	**-0.8**
JFT				S	**Sn**	**20 11 02.7**	**-3.6**
ERM	**Erimo**	**3.86**	**344**	*ePn*	**Pn**	**20 10 31.3**	**0.0**
ERM				*eSn*	**Sn**	**20 11 10.1**	**-5.5**
JOT	**Ohata**	**4.11**	**319**	P	**Pn**	**20 10 34.1**	**-0.6**
JOT				*eS*	**Sn**	**20 11 17.3**	**-4.6**
JCH	**Churui**	**4.40**	**348**	P	**Pn**	**20 10 38.2**	**-0.4**
JCH				*eS*	**Sn**	**20 11 25.1**	**-3.8**
JKB	**Kayabe**	**4.50**	**324**	P	**Pn**	**20 10 39.8**	**-0.3**
JKB				S	**Sn**	**20 11 27.2**	**-4.3**
JRY	**Ryogami san**	**5.11**	**245**	P	**Pn**	**20 10 46.7**	**-1.8**
JRY				*eS*	**Sn**	**20 11 39.8**	**-6.8**
NEM2	**Nemuro 2**	**5.11**	**9**	P	**Pn**	**20 10 47.0**	**-1.5**
NEM2				*eS*	**Sn**	**20 11 41.4**	**-5.2**
JOD2	**Odawara 2**	**5.38**	**237**	P	**Pn**	**20 10 50.9**	**-1.3**
MJAR	**Matsushiro Arr**	**5.40**	**253**	Pn	**Pn**	**20 10 52.0**	**-0.4**
	6.1nm,0.3s,baz=86,slow=15,SNR=44						
MJAR				Sn	**Sn**	**20 11 50.8**	**-2.9**
	0.9nm,0.3s,baz=89,slow=28,SNR=4.0						
MJAR				LR	LR	20 13 42.9	
	comp=Z,36nm,18.4s,baz=125,slow=46						
MAJO	**Matsushiro**	**5.40**	**253**	*ePn*	**Pn**	**20 10 52.0**	**-0.4**
MAJO				*eSn*	**Sn**	**20 11 53.0**	**-0.8**
MAT	**Matsushiro**	**5.40**	**253**	P	**Pn**	**20 10 52.0**	**-0.5**
MAT				*eS*	**Sn**	**20 11 51.0**	**-2.7**
MJB9	**Matsu-Tunnel**	**5.40**	**253**	*ePn*	**Pn**	**20 10 52.3**	**-0.2**
MJB9				*eSn*	**Sn**	**20 11 52.6**	**-1.1**
JTKR	**Abashiri--Toko**	**5.67**	**355**	P	**Pn**	**20 10 55.8**	**-0.4**
JTKR				S	**Sn**	**20 11 56.1**	**-4.2**
JHR	**Hokuryu**	**5.84**	**339**	P	**Pn**	**20 10 59.9**	**+1.4**
JHR				*eS*	**Sn**	**20 12 02.1**	**-2.5**
ASAJ	**Asahikawa**	**5.99**	**346**	Pn	**Pn**	**20 11 00.5**	**0.0**
	3.1nm,0.3s,baz=198,slow=16,SNR=20						
ASAJ				Sn	**Sn**	**20 12 05.0**	**-3.2**
	2.1nm,0.3s,baz=296,slow=32,SNR=6.5						
ASAJ	**Asahikawa**	**5.99**	**346**	*ePn*	**Pn**	**20 11 00.7**	**+0.2**
ASAJ				*eSn*	**Sn**	**20 12 04.0**	**-4.2**
JHJ	**Hachijo jima 2**	**6.51**	**219**	Sn	**Sn**	**20 12 14.4**	**-6.6**
	30nm,0.3s,baz=268,slow=22,SNR=2.6						
INU	**Inuyama**	**6.78**	**246**	*ePn*	**Pn**	**20 11 10.7**	**-0.6**
USRK	**Ussuriysk Ar.**	**11.17**	**306**	Pn	**Pn**	**20 12 13.0**	**+1.5**
	0.3nm,0.3s,baz=116,slow=15,SNR=6.8						
KSRS	**Korea Array**	**13.22**	**271**	Pn	**Pn**	**20 12 41.9**	**+2.3**
	0.2nm,0.3s,baz=86,slow=13,SNR=6.2						
KSRS				LR	LR	20 18 05.8	
	comp=Z,32nm,19.1s,baz=60,slow=38						
KS15	**Wonju Array Si**	**13.25**	**271**	*ePn*	**Pn**	**20 12 42.5**	**+2.5**
KSAR	**Wonju Array Be**	**13.25**	**271**	Pn	**Pn**	**20 12 41.9**	**+1.9**
SEY	**Seymchan**	**25.09**	**8**	P	**P**	**20 14 57.4**	**+1.7**
	2.5nm,0.6s,baz=177,slow=10.0,SNR=11						
YAK	**Yakutsk**	**25.46**	**344**	P	**P**	**20 15 00.1**	**+1.0**
	12nm,0.4s,baz=169,slow=2.3,SNR=4.8						
YAK	**Yakutsk**	**25.46**	**344**	*eP*	**P**	**20 14 59.8**	**+0.7**
	15nm,0.5s						
SONA0	**Songino Array**	**29.23**	**301**	*eP*	**P**	**20 15 36.2**	**+2.9**
	4.3nm,1.5s						
SONM	**Songino Array**	**29.23**	**301**	P	**P**	**20 15 36.2**	**+2.9**
	0.4nm,0.7s,baz=108,slow=9.3,SNR=2.2						
SONM				LR	LR	20 27 10.0	
	comp=Z,46nm,18.0s,baz=159,slow=36						
ENH	**Enshi**	**29.97**	**265**	*eP*	**P**	**20 15 40.5**	**+0.6**
	25nm,2.0s						

ZAA1	**Zalesovo Array**	**42.95**	**311**	*eP*	**P**	**20 17 30.5 +0.5**
ZALV	**Zalesovo Beam**	**42.95**	**311**	P	**P**	**20 17 30.5 +0.5**
	0.5nm,0.3s,baz=80,slow=7.9,SNR=4.4					
MK01	**Makanchi Array**	**45.60**	**302**	*eP*	**P**	**20 17 51.3 -0.1**
MK31	**Makanchi Array**	**45.60**	**302**	*eP*	**P**	**20 17 51.5 +0.1**
MK32	**Makanchi Array**	**45.60**	**302**	*eP*	**P**	**20 17 51.6 +0.2**
MKAR	**Makanchi Array**	**45.60**	**302**	P	**P**	**20 17 51.6 +0.1**
	1.0nm,0.8s,baz=83,slow=9.6,SNR=10					
MKAR	**Makanchi Array**	**45.60**	**302**	*eP*	**P**	**20 17 51.8 +0.4**
	11nm,0.7s					
MAKZ	**Makanchi**	**45.81**	**302**	*eP*	**P**	**20 17 53.2 +0.1**
	1.8nm,1.0s					
SML	**Sawmill**	**46.45**	**37**	*eP*	**P**	**20 17 56.6 -1.3**
	7.1nm,1.1s					
ILAR	**Eielson Array**	**47.04**	**33**	P	**P**	**20 17 59.6 -2.8**
	0.3nm,0.9s,baz=251,slow=5.6,SNR=3.3					
ILB	**Eielson Array**	**47.04**	**33**	*eP*	**P**	**20 17 59.5 -2.9**
YKU2	**Yakutat**	**50.94**	**40**	*eP*	**P**	**20 18 29.1 -3.2**
	522nm,0.9s					
VOSK	**Vostochnaya**	**51.32**	**312**	*eP*	**P**	**20 18 35.6 +0.2**
	1.4nm,0.7s					
WR1	**Warramunga Arr**	**58.75**	**191**	*eP*	**P**	**20 19 27.3 -2.0**
WR1				*ePcP*	**PcP**	**20 20 18.4 -0.4**
WRA	**Warramunga Arr**	**58.75**	**191**	P	**P**	**20 19 27.3 -2.0**
	0.9nm,0.7s,baz=10,slow=6.9,SNR=7.6					
WRA				PcP	**PcP**	**20 20 18.4 -0.5**
	0.6nm,0.9s,baz=359,slow=4.4,SNR=4.6					
ABKAR	**Akbulak array**	**59.05**	**310**	*eP*	**P**	**20 19 30.9 -0.2**
	12nm,0.8s					
KBL	**Kabul**	**59.32**	**292**	*eP*	**P**	**20 19 31.8 -1.7**
	3.0nm,0.4s					
ASAR	**Alice Springs**	**62.47**	**191**	P	**P**	**20 19 54.0 -0.7**
	0.4nm,0.9s,baz=357,slow=5.8,SNR=5.2					
FIA0	**FINESS Array S**	**68.84**	**333**	*eP*	**P**	**20 20 35.0 -0.3**
FINES	**FINESS Array B**	**68.84**	**333**	P	**P**	**20 20 35.0 -0.3**
	1.7nm,1.0s,baz=15,slow=7.9,SNR=4.1					
KIV	**Kislovodsk**	**71.96**	**312**	*eP*	**P**	**20 20 54.2 -0.6**
	6.9nm,1.1s					
DAC	**Darwin (Calif)**	**73.88**	**56**	*eP*	P	20 20 59.8 -6.7
	2.8nm,0.8s					
PDAR	**Pinedale Array**	**74.94**	**47**	P	**P**	**20 21 12.6 0.0**
	0.3nm,0.5s,baz=305,slow=3.2,SNR=3.4					

MEX 22 20:17:37.3±0.5,13.°94N×92.°96W,h13km±544km,MD3.9, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.46**	**19**	*eP*	Pn	20 18 14.4	-3.0
CCIG				*eS*	Sn	20 18 43.1	-4.2

*IDC **22** 20:31:06.6±1.4,54.°81N×161.°35W,h0km,mb3.8/13, mb1 4.0/15,mb1mx3.8/45,mbtmp3.8/15,ML3.8/2,Error ellipse: s-maj=36.8km s-min=17.4km az=155.0*

*ISCJB **22** 20:31:12.0±0.4,54.°87N±0.°05×161.°04W±0.°05,h56km, mb4.0/18,MS4.1/1,Error ellipse: s-maj=7.8km s-min=2.9km az=152.9*

*NEIC **22** 20:31:13.6±0.5,54.°83N×161.°14W,h54km±4km,mb4.0/3, ML3.6(AEIC),Error ellipse: s-maj=9.8km s-min=3.5km az=157.0*

ISC 22 20:31:13.4±0.6,54.°76N±0.°08×161.°10W±0.°05,h56km,n89, σ1§86/99,mb3.9/18,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DOL	**Dolgoi Island**	**0.59**	**312**	P	**Pn**	**20 31 24.5**	**-1.6**
SDPT	**Sand Point**	**0.69**	**31**	*ePn*	**Pn**	**20 31 26.9**	**-0.4**
SDPT				*eSn*	**Sn**	**20 31 37.6**	**+0.2**
PS4A	**Pavlof South-4**	**0.73**	**324**	P	**Pn**	**20 31 26.9**	**-0.8**
PVV	**Pavlof Volcano**	**0.73**	**328**	P	**Pn**	**20 31 27.0**	**-0.8**
DT1	**Dutton Round H**	**0.76**	**298**	*ePn*	**Pn**	**20 31 26.6**	**-1.6**
DTNA	**Dutton South F**	**0.77**	**301**	*ePn*	**Pn**	**20 31 27.0**	**-1.3**
VNWF	**Veniaminof 8**	**1.65**	**32**	P	**Pn**	**20 31 41.9**	**+1.8**
SSLN	**Shishaldin Nor**	**1.68**	**273**	P	**Pn**	**20 31 40.4**	**0.0**
SSLS	**Shishaldin Sou**	**1.68**	**270**	P	**Pn**	**20 31 40.6**	**+0.1**
VNHG	**Veniaminof 1**	**1.83**	**36**	P	**Pn**	**20 31 44.4**	**+1.8**
WESN	**West Dahl Nort**	**2.03**	**266**	*ePn*	**Pn**	**20 31 45.2**	**0.0**
WESE	**West Dahl East**	**2.05**	**263**	*ePn*	**Pn**	**20 31 45.7**	**+0.2**
WESP	**Westdahl Peak**	**2.12**	**264**	P	**Pn**	**20 31 47.3**	**+0.8**
AKUT	**Akutan**	**2.80**	**259**	*ePn*	**Pn**	**20 31 54.6**	**-1.0**
AKUT				*eSn*	**Sn**	**20 32 29.6**	**+1.5**
AKGG	**Akutan Green G**	**2.91**	**261**	P	**Pn**	**20 31 57.9**	**+0.7**
UNV	**Unalaska Valle**	**3.29**	**256**	*ePn*	**Pn**	**20 32 01.7**	**-0.7**
UNV				*eSn*	**Sn**	**20 32 38.3**	**-2.0**
KABR	**Katmai Barrier**	**4.79**	**43**	P	**Pn**	**20 32 24.1**	**+1.1**
KVTA	**Katmai Vly 10**	**4.85**	**39**	P	**Pn**	**20 32 26.0**	**+2.4**
KAKN	**Katmai Knife C**	**4.87**	**41**	P	**Pn**	**20 32 26.1**	**+2.0**
KAKN				S	**Sn**	**20 33 23.2**	**+4.1**
NIKH	**Nikolski High**	**4.92**	**252**	*ePn*	**Pn**	**20 32 24.7**	**0.0**
NIKH				*eSn*	**Sn**	**20 33 22.1**	**+1.8**
OHAK	**Old Harbor**	**5.03**	**57**	*ePn*	**Pn**	**20 32 25.6**	**-0.5**
KAHC	**Katmai Hardscr**	**5.14**	**38**	P	**Pn**	**20 32 29.1**	**+1.2**
KDAK	**Kodiak Island**	**5.63**	**54**	*ePn*	**Pn**	**20 32 33.6**	**-0.8**
SPIA	**Saint Paul Isl**	**5.68**	**299**	*ePn*	**Pn**	**20 32 36.4**	**+1.4**
SVW2	**Sparrevohn**	**7.00**	**23**	*ePn*	**Pn**	**20 32 53.4**	**+0.3**
CNPM	**China Poot**	**7.18**	**44**	*ePn*	**Pn**	**20 32 57.0**	**+1.4**
TT01	**Tatalina**	**8.58**	**16**	*ePn*	**Pn**	**20 33 15.0**	**+0.2**
TT01				*eSn*	**Sn**	**20 34 50.5**	**+0.5**
TTA	**Tatalina**	**8.61**	**16**	*ePn*	**Pn**	**20 33 15.2**	**+0.1**
SUA	**Susitna One**	**8.66**	**35**	*ePn*	**Pn**	**20 33 12.8**	**-3.2**
SUA				*eSn*	**Sn**	**20 34 49.3**	**-2.8**
RC01	**Rabbit Creek A**	**8.76**	**39**	*ePn*	**Pn**	**20 33 15.8**	**-1.3**
PPLA	**Purkeypile**	**9.37**	**26**	*ePn*	**Pn**	**20 33 25.2**	**-0.4**
GLI	**Glacier Island**	**9.65**	**45**	*ePn*	Pn	20 33 23.1	-6.4
GLI				*eSn*	Sn	20 35 05.3	-11
SML	**Sawmill**	**9.74**	**38**	*ePn*	**Pn**	**20 33 26.0**	**-4.6**
CAST	**Castle Rocks**	**9.83**	**24**	*ePn*	**Pn**	**20 33 31.0**	**-0.9**
FID	**Port Fidalgo**	**9.84**	**47**	*ePn*	Pn	20 33 27.2	-4.7
FID				*eSn*	**Sn**	**20 35 13.5**	**-7.3**
SCM	**Sheep Creek Mo**	**10.12**	**40**	*ePn*	**Pn**	**20 33 35.7**	**-0.2**
SCM				*eSn*	**Sn**	**20 35 21.9**	**-5.8**
KTH	**Kantishna Hill**	**10.23**	**26**	*ePn*	Pn	20 33 31.3	-6.1
DIV	**Divide**	**10.33**	**46**	*ePn*	**Pn**	**20 33 36.6**	**-2.1**
RAGM	**Ragged Mountai**	**10.45**	**51**	*ePn*	**Pn**	**20 33 40.3**	**0.0**
KLU	**Klutina**	**10.47**	**44**	*ePn*	**Pn**	**20 33 40.3**	**-0.3**
BPAW	**Bear Paw Mtn.**	**10.67**	**25**	*ePn*	**Pn**	**20 33 44.8**	**+1.5**
RND	**Reindeer**	**10.70**	**31**	*ePn*	**Pn**	**20 33 41.2**	**-2.5**
BMRM	**Bremner River**	**10.75**	**48**	*ePn*	**Pn**	**20 33 44.0**	**-0.3**
PAX	**Paxson**	**11.51**	**38**	*ePn*	**Pn**	**20 33 54.2**	**-0.7**
WRH	**Wood River Hil**	**11.73**	**29**	*ePn*	**Pn**	**20 33 59.2**	**-2.6**
BALM	**Baldy**	**11.77**	**50**	*ePn*	**Pn**	**20 33 58.2**	**-0.1**
CCB	**Clear Creek Bu**	**11.94**	**29**	*ePn*	**Pn**	**20 33 58.1**	**-2.4**
HDA	**Harding Lake**	**12.01**	**31**	*ePn*	**Pn**	**20 33 59.1**	**-2.4**
MDM	**Murphy Dome**	**12.07**	**27**	*ePn*	**Pn**	**20 34 00.0**	**-2.3**
MENT	**Mentasta**	**12.13**	**41**	*ePn*	**Pn**	**20 34 01.7**	**-1.6**
IL1	**Eielson Array**	**12.29**	**30**	*ePn*	**Pn**	**20 34 03.8**	**-1.6**
ILAR	**Eielson Array**	**12.29**	**30**	Pn	Pn	20 34 00.5	-5.0
	0.2nm,0.3s,baz=221,slow=13,SNR=6.3						
ILAR				Sn	**Sn**	**20 36 16.7**	**-3.9**
	0.0nm,0.3s,baz=216,slow=22,SNR=2.8						
ILB	**Eielson Array**	**12.29**	**30**	*ePn*	**Pn**	**20 34 01.8**	**-3.6**
DOT	**Dot Lake**	**12.43**	**37**	*ePn*	**Pn**	**20 34 07.7**	**+0.4**
DHAK	**Deception Hill**	**13.20**	**62**	*ePn*	**Pn**	**20 34 18.5**	**+0.7**
COLD	**Coldfoot**	**13.55**	**18**	*ePn*	**Pn**	**20 34 22.9**	**+0.5**
HYT	**Haines Junctio**	**13.92**	**55**	*ePn*	**Pn**	**20 34 25.3**	**-2.4**
EGAK	**Eagle**	**14.13**	**37**	*ePn*	**Pn**	**20 34 28.1**	**-2.2**
INK	**Inuvik**	**18.65**	**33**	P	**P**	**20 35 25.2**	**-1.0**
	0.3nm,0.3s,baz=237,slow=11,SNR=4.8						
INK	**Inuvik**	**18.65**	**33**	*eP*	**P**	**20 35 25.4**	**-0.8**
PEA1	**Petropavlovsk-**	**24.06**	**283**	*eP*	**P**	**20 36 23.1**	**0.0**
PEA0	**Petropavlovsk-**	**24.07**	**283**	*eP*	**P**	**20 36 23.6**	**+0.5**
PEA0B	**Petropavlovsk-**	**24.07**	**283**	*eP*	**P**	**20 36 23.3**	**+0.2**
PETK	**Petropavlovsk-**	**24.07**	**283**	P	**P**	**20 36 23.1**	**0.0**
	3.0nm,0.5s,baz=79,slow=14,SNR=14						
MOD	**Modoc Plateau**	**29.57**	**99**	*eP*	**P**	**20 37 13.5**	**+0.7**
	3.1nm,0.5s						
WVOR	**Wild Horse Val**	**30.19**	**96**	*eP*	**P**	**20 37 18.8**	**+0.5**
	1.9nm,0.6s						
PEV	**Pleasant Valle**	**32.07**	**107**	*eP*	**P**	**20 37 34.0**	**-0.7**
PEV				*epP*	**pP**	**20 37 45.4**	**-3.4**
MJAR	**Matsushiro Arr**	**44.63**	**272**	P	**P**	**20 39 19.9**	**-0.2**
	0.7nm,0.5s,baz=42,slow=8.3,SNR=4.2						
LTX	**Lajitas**	**47.97**	**98**	*eP*	**P**	**20 39 48.2**	**+1.8**
TXAR	**Lajitas Array**	**47.97**	**98**	P	**P**	**20 39 48.2**	**+1.8**
	0.1nm,0.4s,baz=306,slow=7.7,SNR=3.6						
KSRS	**Korea Array**	**49.92**	**281**	P	**P**	**20 40 01.0**	**-0.1**
	0.8nm,0.6s,baz=44,slow=8.2,SNR=5.6						
KSAR	**Wonju Array Be**	**49.95**	**281**	P	**P**	**20 40 01.0**	**-0.4**
SONA0	**Songino Array**	**54.19**	**304**	*eP*	**P**	**20 40 32.7**	**-0.2**
SONA0				*ePcP*	**PcP**	**20 41 37.2**	**+0.5**
SONM	**Songino Array**	**54.19**	**304**	P	**P**	**20 40 32.7**	**-0.2**
	0.6nm,0.8s,baz=25,slow=8.4,SNR=4.2						
SONM				PcP	**PcP**	**20 41 37.2**	**+0.5**
	0.4nm,0.9s,baz=46,slow=4.2,SNR=2.1						
HHC	**Hu-ho-hao-te**	**56.54**	**295**	*eP*	**P**	**20 40 51.6**	**+1.8**
HHC				pP	pP	20 41 02.5	-2.4
HHC				sP	sP	20 41 05.3	-5.9
HHC				S	**S**	**20 48 40.8**	**+3.7**
HHC				pmax	pmax		
	comp=Z,8.0nm,0.4s						
HHC				pmax	pmax		
	comp=Z,77nm,4.7s						
HHC				LR	LR		
	comp=N,110nm,12.7s						
HHC				LR	LR		
	comp=E,67nm,11.7s						
HHC				LR	LR		
	comp=Z,64nm,10.8s						
FIA0	**FINESS Array S**	**64.00**	**356**	*eP*	**P**	**20 41 39.9**	**-0.4**
FINES	**FINESS Array B**	**64.00**	**356**	P	**P**	**20 41 39.9**	**-0.4**
	comp=Z,0.5nm,0.4s,baz=10,slow=7.5,SNR=10						
NB200	**NORSAR Array S**	**64.38**	**4**	*eP*	**P**	**20 41 43.3**	**+0.4**
NOA	**NORSAR Array B**	**64.38**	**4**	P	**P**	**20 41 43.3**	**+0.4**
	comp=Z,2.1nm,1.0s,baz=358,slow=6.5,SNR=3.0						
MK32	**Makanchi Array**	**65.56**	**318**	*eP*	**P**	**20 41 49.9**	**-0.8**
MKAR	**Makanchi Array**	**65.56**	**318**	P	**P**	**20 41 49.9**	**-0.9**
	comp=Z,0.4nm,0.4s,baz=47,slow=5.3,SNR=6.7						
ABKAR	**Akbulak array**	**70.78**	**333**	*eP*	**P**	**20 42 23.3**	**-0.1**
	comp=Z,1.1nm,0.7s						
KSH	**Kashi**	**74.17**	**318**	*eP*	**P**	**20 42 47.8**	**+3.9**
KSH				pmax	pmax		
	comp=Z,4.0nm,0.9s						
AKASG	**Malin Array Be**	**74.55**	**353**	P	**P**	**20 42 45.4**	**-0.3**
	comp=Z,2.0nm,0.4s,baz=9.6,slow=5.8,SNR=7.8						
GERES	**GERESS Array B**	**76.67**	**4**	P	**P**	**20 42 58.4**	**+0.4**
	comp=Z,0.4nm,0.7s,baz=354,slow=3.9,SNR=4.2						
CMAR	**Chiang Mai Arr**	**80.72**	**289**	P	**P**	**20 43 20.9**	**+0.4**
	comp=Z,1.3nm,0.6s,baz=24,slow=5.8,SNR=9.1						
ESDC	**Sonseca Array**	**83.92**	**18**	P	**P**	**20 43 38.1**	**+1.1**
	comp=Z,0.3nm,0.6s,baz=344,slow=4.6,SNR=4.8						
BR101	**Keskin Array S**	**85.04**	**349**	*eP*	**P**	**20 43 43.9**	**+1.0**
BRTR	**Keskin Array B**	**85.04**	**349**	P	**P**	**20 43 43.9**	**+1.0**
	comp=Z,0.6nm,0.7s,baz=23,slow=4.7,SNR=5.9						

*IDC **22** 20:35:50.0±0.5,41.°85N×83.°89W,h0km,mb4.4/12, mb1 4.6/12,mb1mx4.5/21,mbtmp4.4/12,MS4.5/14, Ms1 4.5/14,ms1mx4.2/27,Error ellipse: s-maj=23.4km s-min=15.8km az=97.0*

*ISCJB **22** 20:35:50.0±0.2,41.°58S±0.°04×83.°59W±0.°06,h10km, mb5.1/130,MS4.7/16,Error ellipse: s-maj=7.3km s-min=5.8km az=143.4*

*MOS **22** 20:35:51.3±1.1,41.°65S×83.°65W,h10km,mb5.4/30,Error ellipse: s-maj=15.7km s-min=9.0km az=99.6*

*GCMT **22** 20:35:53.0±0.2,41.°67S×84.°05W,h12km,MW5.0/89, Moment Tensor Solution. s36,c41; s89,c132; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-3.79±.10; Mθθ-0.28±.09; Mφφ4.07±.09; Mrθ1.93±.36; Mφθ-1.08±.08; Mφr-0.25±.29; Best double couple: M₀4.51700×10¹⁶ NP1:φ₀324.00000°,δ54.00000°,λ-119.00000°. NP2: φ₀189.00000°,δ45.00000°,λ-55.00000°. Principal axes: T 4.3850, Plg5.0000°, Azm75.0000°; N 0.2600, Plg24.0000°, Azm343.0000°; P -4.6490, Plg66.0000°, Azm177.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **22** 20:35:53.0±0.8,41.°78S×83.°70W,h17km±4km,mb5.2/123 Error ellipse: s-maj=6.8km s-min=5.5km az=57.0*

*BJI **22** 20:35:55.0,41.°70S×83.°50W,h25km,mB5.1/15,Ms5.3/12, Ms7 5.1/12*

ISC 22 20:35:52.0±0.3,41.°70S±0.°06×83.°67W±0.°06,h10km,n662, σ1§49/681,mb5.2/130,MS4.6/16,4C-4D,West Chile Rise

| Code | Station Name | Δ° | AZ° | Phase ID | | Time | Res |
|---|---|---|---

SDV Santo Domingo 51.74 16 eP P 20 44 59.3 -0.5
comp=Z,23nm,1.3s
NVL N'lazarevskaya 53.02 156 eP P 20 45 05.5 -3.0
SBA Scott Base 53.52 194 eP P 20 45 13.2 +1.1
SBA pmax pmax
comp=Z,18nm,1.4s
SBA Scott Base 53.52 194 eP P 20 45 13.2 +1.1
comp=Z,18nm,1.4s
TRIS Tristan da Cun 53.89 110 eP P 20 45 13.2 -2.3
comp=Z,604nm,1.9s
VNDA Vanda 54.59 194 P P 20 45 20.1 +0.1
comp=Z,4.9nm,1.1s,baz=142,slow=7.7,SNR=10
VNDA LR LR 21 04 57.9
comp=Z,354nm,19.1s,baz=139,slow=32
VNDA Vanda 54.59 194 eP P 20 45 19.6 -0.4
VNDA pmax pmax
comp=Z,12nm,1.2s
VNDA Vanda 54.59 194 eP P 20 45 19.6 -0.4
comp=Z,12nm,1.2s
TBI Tubuai 57.09 267 eS S 20 53 30.9 -2.7
TBI eLR LR 21 02 13.7
comp=Z,596nm,32.8s
CCIG Comitan 58.22 350 eP P 20 45 46.7 +0.1
comp=Z,12nm,1.0s
TAOE Nuku Hiva Isla 59.34 287 eLR LR 21 03 30.8
comp=Z,656nm,24.1s
CMIG Matias Romero 59.41 348 P P 20 45 55.8 +1.1
comp=Z,10nm,1.1s,baz=153,slow=9.0,SNR=5.5
TLIG Tlapa 60.55 344 eP P 20 46 03.9 +1.2
comp=Z,19nm,1.2s
PPT2 Papeete2 60.62 272 eS S 20 54 17.4 -2.3
comp=Z,253nm,26.2s
PPT2 eLR LR 21 03 49.5
comp=Z,930nm,28.2s
PPT Papeete 60.63 272 eP P 20 46 05.9 +2.6
PPT Papeete 60.63 272 eP P 20 46 05.9 +2.6
SYO Syowa Base 61.95 160 eP P 20 46 10.0 -1.4
SABA Saba 61.97 22 eP P 20 46 13.3 +1.1
comp=Z,180nm,1.3s
RAR Rarotonga 66.04 262 LR LR 21 07 01.5
comp=Z,222nm,21.4s,baz=137,slow=28
ZAIG Zacatecas 66.49 341 eP P 20 46 43.8 +1.7
comp=Z,17nm,1.1s
MAW Mawson 68.11 167 P P 20 46 50.0 -1.5
comp=Z,1.5nm,0.8s,baz=202,slow=9.6,SNR=3.0
MAW LR LR 21 16 19.4
comp=Z,110nm,18.2s,baz=236,slow=36
MAW Mawson 68.11 167 eP P 20 46 50.4 -1.1
MAW pmax pmax
comp=Z,3.0nm,1.1s
MAW Mawson 68.11 167 eP P 20 46 50.4 -1.1
comp=Z,3.0nm,1.1s
035A Encino 69.59 346 P P 20 46 59.7 -1.4
baz=169
034A Hebbronville 69.82 346 P P 20 47 02.0 -0.5
baz=168
934A Benavides 70.31 346 P P 20 47 04.6 -0.9
baz=168
933A Laredo 70.46 345 P P 20 47 06.3 -0.1
baz=168
SHEL Horse Pasture 70.62 94 eP P 20 47 09.0 +1.1
SHEL pmax pmax
comp=Z,110nm,1.7s
SHEL Horse Pasture 70.62 94 eP P 20 47 09.0 +1.1
comp=Z,110nm,1.7s
834A Tilden 70.83 346 P P 20 47 07.8 -0.8
baz=168
833A Chaparral WMA, 71.17 345 P P 20 47 10.2 -0.6
baz=168
832A Faith Ranch, C 71.25 345 P P 20 47 10.2 -1.0
baz=167
HPIG 71.26 339 eP P 20 47 10.9 -0.7
comp=Z,31nm,1.1s
736A Circle Diamond 71.39 348 P P 20 47 11.0 -1.0
baz=170
734A La Parita Cree 71.53 346 P P 20 47 12.1 -0.8
baz=168
733A Divot King Ran 71.54 346 P P 20 47 11.8 -1.2
baz=168
546A Slidell 71.79 354 P P 20 47 12.2 -2.2
baz=175
636A Smothers Creek 71.90 348 P P 20 47 14.5 -0.6
baz=170
635A Leesville 71.92 347 P P 20 47 14.8 -0.5
baz=169
633A Saathoff Ranch 72.24 346 P P 20 47 16.2 -1.0
baz=168
446A Poplarville 72.32 355 P P 20 47 16.1 -1.5
baz=176
537A Green Hill Far 72.37 349 P P 20 47 16.7 -1.3
baz=170
536A Bastrop 72.48 348 P P 20 47 18.4 -0.2
baz=170
535A Dale 72.52 347 P P 20 47 18.5 -0.3
baz=169
534A Blanco 72.67 347 P P 20 47 19.1 -0.7
baz=168
TIGA Tifton 72.78 0 P P 20 47 19.3 -1.0
baz=180
TIGA Tifton 72.78 0 eP P 20 47 19.7 -0.6
comp=Z,30nm,0.3s
533A Kerrville 72.81 346 P P 20 47 20.0 -0.6
baz=168
348A Jackson 72.86 356 P P 20 47 19.6 -1.1
baz=177
439A Center Grove, 72.86 350 P P 20 47 20.4 -0.4
baz=171
347A Saraland 72.88 356 P P 20 47 20.4 -0.5
baz=176
438A Sam Houston St 72.91 349 P P 20 47 19.9 -1.2
baz=171
LTX Lajitas 73.06 342 eP P 20 47 22.6 +0.5
LTX Lajitas 73.06 342 eP P 20 47 22.6 +0.5
TXAR Lajitas Array 73.06 342 P P 20 47 22.6 +0.5
comp=Z,4.2nm,1.0s,baz=162,slow=8.7,SNR=22
TX31 Lajitas Ar. Si 73.06 342 eP P 20 47 21.7 -0.4
344A Westbrook Farm 73.08 354 P P 20 47 21.2 -0.9
baz=174
436A Wall Ranch, Ga 73.12 348 P P 20 47 21.5 -0.9
baz=170
342A Flagon Creek P 73.15 352 P P 20 47 22.1 -0.4
baz=173
341A Kurthwood 73.20 352 P P 20 47 21.6 -1.2
baz=173
435B Jarrell 73.26 348 P P 20 47 22.8 -0.4
baz=169
JCT Junction City 73.35 345 P P 20 47 23.7 -0.1
baz=168
JCT Junction City 73.35 345 eP P 20 47 23.9 +0.1
JCT Junction City 73.35 345 eP P 20 47 23.9 +0.1
339A Huntington 73.36 350 P P 20 47 22.6 -1.2
baz=172
340A Bronson 73.36 351 P P 20 47 22.5 -1.3
baz=172
434A Burnet 73.40 347 P P 20 47 23.8 -0.3
baz=169,SNR=12
338A Crockett 73.48 350 P P 20 47 23.2 -1.3
baz=171
433A Art 73.49 346 P P 20 47 23.2 -1.4
baz=168,SNR=6.6
337A Centerville 73.52 349 P P 20 47 22.9 -1.8
baz=171
248A Dixon Mills 73.53 356 P P 20 47 23.4 -1.4
baz=177
247A Quitman 73.53 356 P P 20 47 23.8 -1.0
baz=176
243A Waterproof 73.57 353 P P 20 47 23.6 -1.3
baz=174
SRIG Santa Rosalia 73.59 334 eP P 20 47 23.7 -1.5
comp=Z,81nm,1.0s
245A Little AP, Sta 73.59 354 P P 20 47 23.5 -1.6
baz=175
244A Avery, Jackson 73.66 354 P P 20 47 23.3 -2.2
baz=175
335A Moody 73.72 348 P P 20 47 23.7 -2.2
baz=169
336A Riesel 73.73 348 P P 20 47 24.9 -1.1
baz=170
NATX Nacogdoches 73.80 350 P P 20 47 24.7 -1.6
baz=172
NATX Nacogdoches 73.80 350 eP P 20 47 25.7 -0.6
comp=Z,37nm,0.8s
242A Grayson 73.81 353 P P 20 47 24.9 -1.5
baz=174
334A Lometa 73.90 347 P P 20 47 25.4 -1.6
baz=169,SNR=15
333A Richland Sprin 74.02 346 P P 20 47 26.0 -1.7
baz=168
239A Gary 74.03 350 P P 20 47 25.8 -1.8
baz=172
238A Jacksonville 74.10 350 P P 20 47 26.1 -2.0
baz=171
RAO Raoul Island 74.12 245 LR LR 21 10 56.7
comp=Z,443nm,21.6s,baz=146,slow=28
147A Livingston 74.13 356 P P 20 47 26.0 -2.2
baz=176
146A Union 74.14 355 P P 20 47 25.6 -2.7
baz=176
145A Houston Renfro 74.16 355 P P 20 47 26.5 -1.9
baz=175
237A Washetta, Mont 74.19 349 P P 20 47 27.0 -1.6
baz=171
143A Socs Landing, 74.38 353 P P 20 47 28.0 -1.7
baz=174
WHTX Lake Whitney, 74.42 348 P P 20 47 29.0 -1.0
baz=169
WHTX Lake Whitney, 74.42 348 eP P 20 47 30.4 +0.4
comp=Z,42nm,1.1s
141A Papa Simpson, 74.43 352 P P 20 47 28.3 -1.7
baz=173
LRAL Lakeview Retre 74.43 357 eP P 20 47 30.4 +0.4
comp=Z,17nm,1.1s
NHSC New Hope 74.51 3 eP P 20 47 30.4 0.0
comp=Z,73nm,1.3s
234A Clairette 74.54 347 P P 20 47 29.9 -0.8
baz=169,SNR=12
Z47A Carrollton 74.64 356 P P 20 47 30.2 -1.0
baz=177
139A Bunkhouse Ranc 74.67 351 P P 20 47 29.9 -1.5
baz=172
Z46A Louisville 74.68 355 P P 20 47 30.0 -1.5
baz=175
233A Rising Star 74.69 347 P P 20 47 30.3 -1.3
baz=168
138A Matatall Enter 74.74 350 P P 20 47 30.5 -1.3
baz=171
GOGA Godfrey 74.74 0 eP P 20 47 32.2 +0.4
GOGA pmax pmax
comp=Z,28nm,1.4s
GOGA Godfrey 74.74 0 eP P 20 47 32.2 +0.4
comp=Z,28nm,1.4s
HSIG 74.75 335 eP P 20 47 32.3 +0.3
comp=Z,6.5nm,0.7s
136A Ennis 74.75 349 P P 20 47 30.1 -1.7
baz=170
137A Heron Place, G 74.77 349 P P 20 47 30.8 -1.1
baz=171
Z44A Pea Ridge, Bel 74.87 354 P P 20 47 30.7 -1.8
baz=175
Z45A Winona 74.91 355 P P 20 47 31.6 -1.2
baz=175
135A Vickery Place, 74.97 348 P P 20 47 31.7 -1.4
baz=170
Z42A Norrel Spur, H 75.00 353 P P 20 47 30.8 -2.4
baz=174
Z41A Richland Creek 75.06 352 P P 20 47 32.2 -1.4
baz=173
134A White-Moore Ra 75.09 347 P P 20 47 33.3 -0.6
baz=169
Z40A Long Farm, Mag 75.13 352 P P 20 47 32.4 -1.6
baz=173
133A Hamilton Ranch 75.27 347 P P 20 47 34.7 -0.2
baz=168,SNR=6.4
Z38A Mt. Pleasant 75.31 350 P P 20 47 33.5 -1.6
baz=171
Y47A UCPARC, Winfie 75.33 356 P P 20 47 33.6 -1.6
baz=177
Z37A Pogue Cattle C 75.34 350 P P 20 47 33.7 -1.5
baz=171
Y46A Houston 75.36 356 P P 20 47 33.8 -1.6
baz=176
Y45A Yeager Farm, C 75.39 355 P P 20 47 33.5 -2.0
baz=176
ABTX Abilene, Hawle 75.41 346 P P 20 47 34.9 -0.8
baz=168
ABTX Abilene, Hawle 75.41 346 eP P 20 47 36.1 +0.4
comp=Z,33nm,1.2s
Z36A Blue Ridge 75.52 349 P P 20 47 35.4 -0.9
baz=170
Y44A Strider, Charl 75.53 354 P P 20 47 34.6 -1.8
baz=175
Y42A Garnett, Star 75.54 353 P P 20 47 34.5 -1.9
baz=174
Y43A Makayla and Ka 75.54 354 P P 20 47 35.1 -1.3
baz=174
Y41A Eaglette Beard 75.66 352 P P 20 47 35.8 -1.3
baz=173
Z35A Perchaven, San 75.70 348 P P 20 47 36.4 -1.0
baz=170
MNTX Cornudas Mount 75.73 341 P P 20 47 36.5 -1.1
baz=164
MNTX Cornudas Mount 75.73 341 eP P 20 47 38.0 +0.5
comp=Z,11nm,1.5s
Z34A Collier Ranch, 75.84 348 P P 20 47 37.8 -0.4
baz=169
Y40A Okolona 75.86 352 P P 20 47 36.3 -1.9
baz=173
Y39A Lockesburg 75.88 351 P P 20 47 36.9 -1.4
baz=172
Z33A Whitaker Ranch 75.90 347 P P 20 47 37.2 -1.3
baz=168
X45A UM Field Stati 75.94 355 P P 20 47 36.3 -2.3
baz=176
Y38A Idabel 75.94 351 P P 20 47 38.0 -0.7
baz=172
Y37A Hugo 76.11 350 P P 20 47 38.7 -0.9
baz=171
Y36A Durant 76.12 349 P P 20 47 38.3 -1.4
baz=170
X43A Marvell 76.14 354 P P 20 47 38.6 -1.2
baz=174
Y35A Marietta 76.23 349 P P 20 47 39.3 -1.1
baz=170
X40A Basin Creek Fa 76.28 352 P P 20 47 39.5 -1.2
baz=173
Y34A Reagan Ranch, 76.39 348 P P 20 47 39.2 -2.0
baz=169
MIAR Mount Ida 76.42 352 P P 20 47 39.5 -1.9
baz=172
MIAR Mount Ida 76.42 352 eP P 20 47 41.5 +0.1
MIAR pmax pmax
comp=Z,16nm,1.4s
MIAR Mount Ida 76.42 352 eP P 20 47 41.5 +0.1
comp=Z,16nm,1.4s
X39A Fountain Ranch 76.44 351 P P 20 47 40.0 -1.5
baz=172
319A Douglas 76.45 338 eP P 20 47 42.6 +0.8
comp=Z,16nm,1.0s
KMSC Kings Mountain 76.50 2 P P 20 47 39.2 -2.6
baz=182
KMSC Kings Mountain 76.50 2 eP P 20 47 42.3 +0.5
comp=Z,18nm,1.1s
SWET Sewanee 76.57 358 eP P 20 47 41.9 -0.4
comp=Z,8.2nm,0.8s
Y33A Hilltop Ranch, 76.58 347 P P 20 47 40.9 -1.5
baz=169
W45A Hickory Valley 76.65 355 P P 20 47 41.2 -1.5
baz=176
X37A Clayton 76.68 350 P P 20 47 40.4 -2.4
baz=171
X38A Whitesboro 76.69 351 P P 20 47 41.8 -1.1
baz=172
X35A Drake 76.71 349 P P 20 47 41.4 -1.6
baz=170
CPCT Cooper Cave 76.78 359 eP P 20 47 43.4 -0.1
comp=Z,11nm,1.0s
X36A Centrahoma 76.79 349 P P 20 47 42.0 -1.5
baz=170
W41B Gary Mavity, V 76.91 353 P P 20 47 42.3 -1.8
baz=174
X301 Greenbrier Sit 76.98 353 eP P 20 47 44.5 0.0
comp=Z,21nm,1.1s
W40A Ferguson Farm, 77.00 352 P P 20 47 43.3 -1.4
baz=173
WHAR Wooly Hollow 77.03 353 eP P 20 47 44.6 -0.2
comp=Z,25nm,1.0s
X201 Greenbrier Sit 77.03 353 eP P 20 47 44.4 -0.4
comp=Z,31nm,1.1s
X34A Smith Ranch, M 77.04 348 P P 20 47 43.5 -1.4
baz=169,SNR=6.4
W38A Poteau 77.05 351 P P 20 47 43.6 -1.4
baz=172
X33A Lawton 77.08 347 P P 20 47 43.5 -1.6
baz=169
W39A Magazine 77.08 352 P P 20 47 43.7 -1.5
baz=172
X32A Elmer 77.10 347 P P 20 47 44.7 -0.6
baz=168
121A Cookes Peak, D 77.14 339 P P 20 47 44.4 -1.3
baz=162
W37B Quinton 77.22 350 P P 20 47 44.7 -1.3
baz=171
MSTX Muleshoe 77.32 344 P P 20 47 46.1 -0.5
baz=166
MSTX Muleshoe 77.32 344 eP P 20 47 46.8 +0.1
comp=Z,47nm,1.1s
WMOK Wichita Mounta 77.32 347 P P 20 47 45.8 -0.8
baz=169,SNR=16
WMOK Wichita Mounta 77.32 347 eP P 20 47 46.0 -0.5
WMOK pmax pmax
comp=Z,26nm,1.3s
WMOK Wichita Mounta 77.32 347 eP P 20 47 46.0 -0.5
comp=Z,26nm,1.3s
W36A Wetumka 77.33 349 P P 20 47 45.2 -1.4
baz=170
W35A Tecumseh 77.44 349 P P 20 47 46.4 -0.7
baz=170
V42A Cord 77.46 354 P P 20 47 45.9 -1.3
baz=174
V41A Mountainview 77.50 353 P P 20 47 46.4 -1.1
baz=174,SNR=5.1
V40A Witts Springs 77.59 352 P P 20 47 46.8 -1.2
baz=173
W34A Bridge Creek, 77.65 348 P P 20 47 47.6 -0.7
baz=169
W33A Caddo, Fort Co 77.68 348 P P 20 47 48.1 -0.4
baz=169
V39A Pettigrew 77.70 352 P P 20 47 47.8 -0.9
baz=172
TUC Tucson 77.77 337 P P 20 47 48.2 -1.0
baz=160
TUC Tucson 77.77 337 eP P 20 47 49.7 +0.5
TUC pmax pmax
comp=Z,14nm,1.3s
TUC Tucson 77.77 337 eP P 20 47 49.7 +0.5
comp=Z,14nm,1.3s
W32A Sentinel 77.78 347 P P 20 47 49.1 0.0
baz=168,SNR=6.1
V38A Canehill 77.81 351 P P 20 47 48.7 -0.5
baz=172
V37A Hulbert 77.92 350 P P 20 47 48.7 -1.1
baz=171
V36A Jenks 77.93 350 P P 20 47 48.7 -1.1
baz=171
U42A Revenden 77.98 354 P P 20 47 49.3 -0.8
baz=174
AMTX Amarillo 77.99 345 P P 20 47 50.4 +0.1
baz=166
AMTX Amarillo 77.99 345 eP P 20 47 50.6 +0.2
comp=Z,31nm,1.1s
V35A Meyer Ranch, C 78.03 349 P P 20 47 49.6 -0.8
baz=170
TUL1 Leonard 78.03 350 P P 20 47 50.0 -0.5
baz=171
TUL1 Leonard 78.03 350 eP P 20 47 49.9 -0.5
comp=Z,35nm,1.0s
U41A Viola 78.04 353 P P 20 47 48.6 -1.8
baz=174
214A Organ Pipe Nat 78.06 335 P P 20 47 50.7 0.0
baz=158
U40A Yellville 78.14 352 P P 20 47 50.4 -0.6
baz=173
HHAR Hobbs 78.17 352 eP P 20 47 50.5 -0.7
comp=Z,14nm,1.2s
V34A Guthrie 78.20 349 P P 20 47 50.4 -1.0
baz=170
V34A Guthrie 78.20 349 eP P 20 47 51.1 -0.2
comp=Z,27nm,1.0s
U39A Green Forest 78.22 352 P P 20 47 49.6 -1.9
baz=173
V33A Lossen Ranch, 78.30 348 P P 20 47 51.4 -0.5
baz=169
V32A Arapaho 78.33 347 P P 20 47 51.8 -0.3
baz=168
BNM Barren Site 78.38 341 eP P 20 47 53.5 +0.8
Y22D IRIS PASSCAL I 78.38 340 P P 20 47 52.5 0.0
baz=163
U38A Gravette 78.38 351 P P 20 47 51.1 -1.3
baz=172
U37A Salina 78.44 351 P P 20 47 51.9 -0.7
baz=171
U36A Oologah 78.50 350 P P 20 47 51.6 -1.4
baz=171
LPM Los Pinos Moun 78.53 341 eP P 20 47 53.9 +0.5
U35A Pawnee 78.61 349 P P 20 47 53.5 -0.1
baz=170
T41A Mountain View 78.72 353 P P 20 47 53.4 -0.8
baz=174,SNR=6.1
LAZ Ladron 78.74 340 eP P 20 47 55.6 +0.9
U34A Anderson Ranch 78.79 349 P P 20 47 53.1 -1.6
baz=170
T39A Clever 78.85 352 P P 20 47 53.8 -1.1
baz=173
U33A Lingo Farm, Me 78.88 348 P P 20 47 53.6 -1.5
baz=169
T40A Mansfield 78.89 353 P P 20 47 53.4 -1.7
baz=173
T38A Diamond 78.96 351 P P 20 47 53.5 -2.0
baz=172
U32A Winter Ranch, 78.96 347 P P 20 47 53.8 -1.8
baz=168
ANMO Albuquerque 79.09 341 P P 20 47 56.3 -0.2
baz=163
ANMO Albuquerque 79.09 341 *d iP* P 20 47 57.0 +0.4
ANMO Albuquerque 79.09 341 eP P 20 47 57.4 +0.8
comp=Z,48nm,1.1s
S43A Fulton Ridge, 79.11 355 P P 20 47 53.5 -2.8
baz=175
113A Mohawk Valley, 79.11 335 eP P 20 47 55.9 -0.5
comp=Z,18nm,1.4s
T35A Sooner Cattle 79.12 350 P P 20 47 54.8 -1.6
baz=170,SNR=5.1
T37A Cheneyville 18 79.12 351 P P 20 47 55.5 -0.9
baz=172,SNR=5.8
T36A Boggs Farm, Ca 79.18 350 P P 20 47 54.4 -2.3
baz=171
S44A Carbondale 79.18 355 P P 20 47 54.4 -2.3
baz=176
S41A Jillco Farms, 79.25 353 P P 20 47 55.3 -1.9
baz=174,SNR=5.9
T34A McClaskey Farm 79.32 349 P P 20 47 56.1 -1.3
baz=170,SNR=6.0
S40A Lebanon 79.33 353 P P 20 47 56.4 -1.2
baz=173,SNR=12
S39A Bolivar 79.50 352 P P 20 47 57.0 -1.4
baz=173,SNR=6.0
S38A Stockton 79.51 352 P P 20 47 57.1 -1.4
baz=172
T33A Patterson Ranc 79.53 348 P P 20 47 57.4 -1.2
baz=169
X18A Snowflake 79.61 338 eP P 20 47 59.9 +0.5
comp=Z,30nm,1.4s
GLA Glamis 79.72 334 P P 20 47 59.5 -0.3
baz=157
GLA Glamis 79.72 334 eP P 20 47 59.7 -0.2
GLA pmax pmax
comp=Z,20nm,1.1s
GLA Glamis 79.72 334 eP P 20 47 59.7 -0.2
comp=Z,20nm,1.1s
R44A Waltonville 79.72 356 P P 20 47 56.2 -3.5
baz=176
T32A Huddler Ranch, 79.73 348 P P 20 47 58.2 -1.6
baz=168
S37A Fort Scott 79.74 351 P P 20 47 58.8 -0.9
baz=172
IKP In-Ko-Pah, Jac 79.79 333 P P 20 47 59.8 -0.5
baz=156
S36A Lake Cedric, C 79.79 350 P P 20 47 60.0 -0.1
baz=171
S35A Otter Creek Ra 79.85 350 P P 20 47 59.2 -1.2
baz=170
X16A Lo Mia Camp, P 79.93 337 eP P 20 48 02.0 +0.9
comp=Z,26nm,1.3s
SWSC Sam W. Stewart 79.95 333 P P 20 48 01.1 +0.1
baz=156
Y14A Wickenburg 79.95 336 eP P 20 48 02.8 +1.6
comp=Z,83nm,1.3s
S34A Willow Spring 79.97 349 P P 20 47 60.0 -1.1
baz=170
S33A Kaszmaul Farm, 80.00 348 P P 20 47 59.8 -1.4
baz=169
R40A Maddies Statio 80.00 353 P P 20 47 59.1 -2.0

R38A Fenwick Farm, 80.06 352 P P 20 48 00.0 -1.5
baz=174
R39A Chumby, Stover 80.09 353 P P 20 48 00.5 -1.1
baz=172
W18A Petrified Fore 80.10 339 P P 20 48 01.6 -0.4
baz=173
MONP2 Monument Peak 80.12 332 P P 20 48 01.1 -1.1
baz=161
Y12C Blythe 80.26 334 P P 20 48 03.4 +0.7
baz=156
Y12C Blythe 80.26 334 eP P 20 48 03.6 +0.9
baz=157
R37A Teagarden Farm 80.28 351 P P 20 48 01.3 -1.4
comp=Z,38nm,1.3s
109C Camp Elliot, M 80.35 332 P P 20 48 02.4 -0.8
baz=172
Q44A Meyer Farm, Va 80.37 356 P P 20 48 01.4 -1.7
baz=155
R36A Gordon, Harris 80.37 351 P P 20 48 02.3 -0.9
baz=176
Q43A New Douglas 80.45 355 P P 20 48 02.7 -0.9
baz=171
R35A Emporia Munici 80.46 350 P P 20 48 03.4 -0.2
baz=176
Q42A Golden Eagle 80.48 355 P P 20 48 03.0 -0.7
baz=171
BC3 Big Chuckawall 80.48 334 P P 20 48 03.0 -1.0
baz=175
BLO Bloomington 80.53 358 eP P 20 48 03.2 -0.8
BLO pmax pmax
comp=Z,32nm,0.9s
BLO Bloomington 80.53 358 eP P 20 48 03.2 -0.8
comp=Z,32nm,0.9s
R34A Isabella, Hill 80.58 349 P P 20 48 03.5 -0.8
baz=170
PDMCI Parker Dam,Lak 80.65 335 P P 20 48 04.6 -0.1
baz=158
Q40A Laux Farm, Aux 80.68 353 P P 20 48 03.6 -1.2
baz=174,SNR=14
R33A Olander Ranch, 80.69 349 P P 20 48 03.7 -1.2
baz=169
T25A Trinidad 80.72 343 P P 20 48 04.5 -0.9
baz=164
T25A Trinidad 80.72 343 eP P 20 48 06.3 +0.9
comp=Z,45nm,1.3s
TPFO Pinon Flats 80.78 333 P P 20 48 04.3 -1.3
baz=156
PFO Pinyon Flats O 80.78 333 P P 20 48 05.3 -0.3
baz=156
PFO Pinyon Flats O 80.78 333 eP P 20 48 05.9 +0.2
PFO pmax pmax
comp=Z,32nm,1.6s
PFO Pinyon Flats O 80.78 333 eP P 20 48 05.9 +0.2
comp=Z,32nm,1.6s
Q38A Cooks Store, C 80.79 352 P P 20 48 03.8 -1.6
baz=172
Q37A Longview Farm, 80.80 351 P P 20 48 04.1 -1.3
baz=172
IRM Iron Mountain 80.84 334 P P 20 48 05.9 0.0
baz=157
R32A Long Quarter, 80.92 348 P P 20 48 05.8 -0.3
baz=169
WUAZ Wupatki 80.94 337 P P 20 48 06.7 +0.2
baz=160
WUAZ Wupatki 80.94 337 eP P 20 48 07.5 +1.1
comp=Z,30nm,1.4s
Q35A Mercer Eighty, 80.97 350 P P 20 48 06.0 -0.3
baz=171
BELC Belle Mtn. Jos 80.98 333 P P 20 48 06.2 -0.5
baz=156
Q36A Arnold C. Orve 81.00 351 P P 20 48 05.3 -1.2
baz=171
MURC Murrieta 81.03 332 P P 20 48 07.0 +0.2
baz=155
P42A Winchester 81.13 355 P P 20 48 06.0 -1.2
baz=175
Q34A Chapman 81.15 350 P P 20 48 06.5 -0.9
baz=170
P40A Paris 81.21 353 P P 20 48 05.2 -2.4
baz=174,SNR=6.2
NEE2 Needles Airpor 81.23 335 P P 20 48 07.3 -0.5
baz=157
P39B Salisbury 81.23 353 P P 20 48 05.2 -2.5
baz=173
P41A Barry, Barry 81.27 354 P P 20 48 06.0 -1.9
baz=174
KSU1 Kansas State U 81.28 350 P P 20 48 06.9 -1.2
baz=170
CIS Catalina Islan 81.28 331 P P 20 48 07.4 -0.8
baz=155
W13A Hualapai Mount 81.30 335 eP P 20 48 09.8 +1.3
comp=Z,12nm,1.0s
Q33A Connelly Farm, 81.35 349 P P 20 48 06.5 -1.9
baz=169
P38A Dawn 81.44 352 P P 20 48 07.5 -1.3
baz=173
Q32A Meitler Ranch, 81.45 348 P P 20 48 07.1 -1.8
baz=169
CBKS Cedar Bluff 81.46 347 P P 20 48 06.5 -2.6
baz=168
P37A Lathrop 81.49 352 P P 20 48 05.9 -3.2
baz=172
SDCO Great Sand Dun 81.54 343 P P 20 48 08.7 -1.1
baz=164
SDCO Great Sand Dun 81.54 343 eP P 20 48 10.5 +0.7
comp=Z,6.5nm,1.2s
ACSO Alum Creek Sta 81.55 1 eP P 20 48 08.7 -0.7
comp=Z,35nm,1.1s
GMRC Granite Mounta 81.58 334 P P 20 48 10.2 +0.3
baz=156
PSUB Penn St. - Bra 81.59 6 eP P 20 48 09.4 -0.2
comp=Z,31nm,1.3s
P35A Duane Minner, 81.63 350 P P 20 48 07.8 -2.1
baz=171,SNR=5.5
O41A Passleys Farm, 81.70 354 P P 20 48 07.7 -2.5
baz=175,SNR=5.4
O42A Bath 81.72 355 P P 20 48 08.1 -2.2
baz=175
P34A Walnut Farm, R 81.75 350 P P 20 48 09.3 -1.2
baz=170,SNR=6.0
MVCO Mesa Verde 81.75 340 P P 20 48 10.5 -0.3
baz=162
MVCO Mesa Verde 81.75 340 eP P 20 48 11.9 +1.0
comp=Z,31nm,1.3s
SFIN Lafayette 81.76 357 P P 20 48 08.4 -2.0
baz=177
P33A Williams Farm, 81.76 349 P P 20 48 10.0 -0.6
baz=170
BFSC Mount Baldy Ra 81.77 332 P P 20 48 09.4 -1.5
baz=155
O40A La Belle 81.78 354 P P 20 48 09.0 -1.6
baz=174,SNR=5.5
HEC Hector,Ludlow 81.85 333 P P 20 48 10.9 -0.3
baz=156
S22A 4UR Ranch, Cre 81.85 342 P P 20 48 11.4 0.0
baz=163
S22A 4UR Ranch, Cre 81.85 342 eP P 20 48 12.5 +1.1
comp=Z,54nm,1.4s
O38A Galt 81.93 352 P P 20 48 10.3 -1.1
baz=173
O39A Kirksville 81.97 353 P P 20 48 10.6 -1.0
baz=173
HDIL Hopedale 82.03 356 P P 20 48 10.2 -1.7
baz=176
O37A Wolven Farm, M 82.04 352 P P 20 48 11.3 -0.7
baz=172
U15A North Rim 82.05 337 eP P 20 48 13.6 +1.1
comp=Z,29nm,1.3s
P32A Huiting Farm, 82.07 348 P P 20 48 10.6 -1.6
baz=169
O36A Bolckow 82.09 351 P P 20 48 11.4 -0.8
baz=172
RRX Edison Barstow 82.11 333 P P 20 48 13.7 +1.2
baz=156
BLG Laguna Peak, P 82.15 331 P P 20 48 13.2 +0.4
baz=154
KSCO Kaye Shedlock' 82.17 345 P P 20 48 12.2 -0.7
baz=166
KSCO Kaye Shedlock' 82.17 345 eP P 20 48 13.6 +0.7
comp=Z,45nm,1.1s
SCZ2 Santa Cruz Isl 82.26 330 P P 20 48 13.6 +0.3
baz=154
TUQ Turquoise Moun 82.27 334 P P 20 48 13.6 +0.1
baz=156
O35A Humboldt 82.34 351 P P 20 48 11.5 -2.1
baz=171
N54A Moraine State 82.35 3 P P 20 48 11.5 -2.1
baz=183
O34A Beatrice 82.36 350 P P 20 48 12.5 -1.1
baz=170
O33A Hebron 82.37 349 P P 20 48 12.7 -1.0
baz=170
GSC Goldstone, Bar 82.44 333 P P 20 48 13.4 -0.9
baz=156
GSC Goldstone, Bar 82.44 333 eP P 20 48 15.3 +1.0
GSC pmax pmax
comp=Z,20nm,1.1s
GSC Goldstone, Bar 82.44 333 eP P 20 48 15.3 +1.0
comp=Z,20nm,1.1s
EDW2 Edwards Air Fo 82.46 332 P P 20 48 13.5 -0.9
baz=155
N59A State Game Lan 82.55 6 P P 20 48 13.0 -1.7
baz=186
N38A Joes South For 82.57 353 P P 20 48 13.5 -1.2
baz=173
N39A Derby Farms, D 82.58 353 P P 20 48 12.8 -2.0
baz=173
N37A Lee Faris, Mou 82.63 352 P P 20 48 13.6 -1.4
baz=172
Q24A Divide 82.64 343 P P 20 48 15.4 -0.2
baz=164
Q24A Divide 82.64 343 eP P 20 48 16.3 +0.8
comp=Z,20nm,1.2s
PV01 Paradox Valley 82.64 340 eP P 20 48 16.5 +1.0
O32A Brockman Farm, 82.65 349 P P 20 48 14.9 -0.3
baz=169
PV05 Paradox Valley 82.72 340 eP P 20 48 16.4 +0.5
KNB Kanab 82.75 337 eP P 20 48 16.9 +0.9
KNB pmax pmax
comp=Z,38nm,1.2s
KNB Kanab 82.75 337 eP P 20 48 16.9 +0.9
comp=Z,38nm,1.2s
N36A Muff Farm, Cla 82.77 351 P P 20 48 13.9 -1.9
baz=172
SHOC Shoshone, Teco 82.80 334 P P 20 48 16.1 0.0
baz=156
N35A Tabor 82.89 351 P P 20 48 15.1 -1.3
baz=171
LRMC Laurel Mtn Rad 82.90 333 P P 20 48 16.9 +0.1
baz=155
N34A Lincoln 82.98 350 P P 20 48 15.6 -1.2
baz=170
PV10 Paradox Valley 82.99 340 eP P 20 48 17.8 +0.5
SHPR Sheep Range 83.00 335 eP P 20 48 19.1 +1.8
PKM Mcpherson Peak 83.12 331 P P 20 48 16.2 -1.8
baz=154
M39A Webster 83.15 354 P P 20 48 15.4 -2.4
baz=174
M38A Pleasantville 83.18 353 P P 20 48 16.4 -1.5
baz=173
M37A Trindle Farm, 83.25 352 P P 20 48 15.7 -2.6
baz=172
ISA Isabella, Lake 83.34 332 P P 20 48 19.7 +0.7
baz=155
ISA Isabella, Lake 83.34 332 eP P 20 48 20.4 +1.4
ISA pmax pmax
comp=Z,22nm,1.3s
ISA Isabella, Lake 83.34 332 eP P 20 48 20.4 +1.4
comp=Z,22nm,1.3s
MPMC Manual Prospec 83.35 333 P P 20 48 17.7 -1.5
baz=155
SZCU Shurtz Canyon 83.37 337 eP P 20 48 19.8 +0.6
comp=Z,32nm,1.1s
M36A Felix, Anita 83.38 352 P P 20 48 17.8 -1.1
baz=172
CCUT Cedar City 83.41 337 eP P 20 48 20.2 +0.7
comp=Z,22nm,1.1s
M35A Neola 83.50 351 P P 20 48 17.9 -1.7
baz=171
FURC Furnace Creek, 83.52 334 P P 20 48 18.4 -1.3
baz=156
ISCO Idaho Springs 83.54 343 P P 20 48 18.7 -1.5
baz=164
SMMC Simmler 83.57 331 P P 20 48 19.1 -1.0
baz=154
DAC Darwin (Calif) 83.59 333 eP P 20 48 21.4 +1.0
DAC pmax pmax
comp=Z,24nm,1.3s
DAC Darwin (Calif) 83.59 333 eP P 20 48 21.4 +1.0
comp=Z,24nm,1.3s
L41A Preston 83.62 355 P P 20 48 18.6 -1.5
baz=175
M34A Aspy Farms, Fr 83.64 350 P P 20 48 18.8 -1.5
baz=170
L40A Anamosa 83.66 354 P P 20 48 18.5 -1.8
baz=174
VES Vestal, Richgr 83.71 332 P P 20 48 20.1 -0.7
baz=154
TPNV Topopah Spring 83.75 334 P P 20 48 21.7 +0.5
baz=156
TPNV Topopah Spring 83.75 334 eP P 20 48 22.6 +1.4
TPNV pmax pmax
comp=Z,30nm,1.3s
TPNV Topopah Spring 83.75 334 eP P 20 48 22.6 +1.4
comp=Z,30nm,1.3s
BGNE Belgrade 83.76 349 P P 20 48 19.1 -1.9
baz=169
L39A Vinton 83.78 354 P P 20 48 19.2 -1.7
baz=174
M33A Taylor Creek F 83.79 350 P P 20 48 19.1 -2.0
baz=170
M31A Lambtecht Ranc 83.82 348 P P 20 48 19.1 -2.1
baz=169
L38A Oak Wood Farm, 83.88 353 P P 20 48 19.4 -2.1
baz=173
CWC Cottonwood Cre 83.90 333 P P 20 48 21.9 -0.1
baz=155
OGNE Ogallala 83.93 346 P P 20 48 20.2 -1.7
baz=166
L37A Phenix Point, 83.94 352 P P 20 48 20.2 -1.6
baz=172
MSU Marysvale 83.96 338 eP P 20 48 24.7 +2.4
MSU Marysvale 83.96 338 eP P 20 48 24.7 +2.4
L36A Harm Buss Farm 84.01 352 P P 20 48 19.9 -2.3
baz=172
SRU San Rafael Swe 84.07 339 eP P 20 48 23.1 +0.3
SRU pmax pmax
comp=Z,19nm,1.1s
SRU San Rafael Swe 84.07 339 eP P 20 48 23.1 +0.3
comp=Z,18nm,1.1s
L34A Swadsen Farm, 84.07 351 P P 20 48 20.2 -2.3
baz=170
L35A Bielow Farm, R 84.12 351 P P 20 48 21.4 -1.3
baz=171
BOSA Boshof 84.13 123 P P 20 48 22.8 -0.8
comp=Z,6.2nm,0.9s,baz=222,slow=4.3,SNR=7.3
BOSA LR LR 21 20 29.1
comp=Z,185nm,18.2s,baz=215,slow=32
BOSA Boshof 84.13 123 eP P 20 48 22.8 -0.8
BOSA pmax pmax
comp=Z,23nm,0.9s
BOSA Boshof 84.13 123 eP P 20 48 22.8 -0.8
comp=Z,23nm,0.9s
K41A Shullsburg 84.14 355 P P 20 48 20.9 -1.9
baz=175
GRAC Grapevine Rang 84.16 333 P P 20 48 24.4 +1.3
baz=156
K40A Colesburg 84.29 354 P P 20 48 21.6 -2.0
baz=174
K39A Oelwein 84.35 354 P P 20 48 21.8 -2.1
baz=174
K38A Parkersburg 84.36 353 P P 20 48 22.5 -1.5
baz=173
MSVF Nonsavu 84.39 251 eP P 20 48 26.3 +1.4
MSVF pmax pmax
comp=Z,17nm,1.3s
TMUT Trail Mountain 84.42 339 eP P 20 48 25.7 +1.0
comp=Z,26nm,1.1s
JFWS Jewell Farm 84.44 355 eP P 20 48 23.1 -1.2
JFWS pmax pmax
comp=Z,45nm,1.2s
JFWS Jewell Farm 84.44 355 eP P 20 48 23.1 -1.2
comp=Z,45nm,1.2s
O20A White River Ci 84.46 341 P P 20 48 24.0 -0.7
baz=162
O20A White River Ci 84.46 341 eP P 20 48 25.2 +0.4
comp=Z,22nm,1.2s
P17A Butcher Ranch, 84.46 339 eP P 20 48 25.0 +0.2
comp=Z,26nm,1.2s
TIN Tinemaha, Big 84.51 333 P P 20 48 24.7 -0.3
baz=155
K37A Belmond 84.56 353 P P 20 48 23.3 -1.7
baz=173
L31A Butterfield Fa 84.61 349 P P 20 48 25.2 0.0
baz=169
N23A Red Feather La 84.66 343 P P 20 48 24.8 -1.1
baz=164
N23A Red Feather La 84.66 343 eP P 20 48 25.6 -0.2
comp=Z,24nm,1.3s
K35A Storm Lake 84.68 351 P P 20 48 24.7 -0.9
baz=171
R11A Troy Canyon, C 84.82 335 P P 20 48 26.0 -0.6
baz=157
R11A Troy Canyon, C 84.82 335 eP P 20 48 27.6 +1.0
comp=Z,22nm,1.2s
J41A Loganville 84.88 355 P P 20 48 25.4 -1.1
baz=175
PHWY Pilot Hill 84.94 344 eP P 20 48 27.9 +0.6
comp=Z,61nm,2.0s
J40A Soldiers Grove 84.95 355 P P 20 48 25.5 -1.4
baz=175
J39A Decorah 84.96 354 P P 20 48 25.3 -1.6
baz=174
K32A Verdigre 84.96 349 P P 20 48 26.1 -0.9
baz=169
J38A Wedel Dairy, R 85.01 354 P P 20 48 24.7 -2.4
baz=173
K31A O'Neill 85.04 349 P P 20 48 25.6 -1.8
baz=169
J37A Redenius Farm, 85.09 353 P P 20 48 25.5 -2.1
baz=173
J36A Seneca 1, Swea 85.19 352 P P 20 48 26.2 -1.9
baz=172
K30A Basset 85.21 348 P P 20 48 27.4 -0.9
baz=168
MLAC Mammoth, Mammo 85.23 333 P P 20 48 27.5 -1.3
baz=154
NLU North Lily Min 85.27 338 eP P 20 48 29.9 +1.0
comp=Z,20nm,1.3s
J34A George 85.32 351 P P 20 48 27.0 -1.8
baz=171
J33A Davis 85.48 350 P P 20 48 27.9 -1.7
baz=170
J31A Geddes 85.69 349 P P 20 48 29.6 -1.0
baz=169
DUG Dugway, Tooele 85.70 338 P P 20 48 30.1 -0.9
baz=159
DUG Dugway, Tooele 85.70 338 eP P 20 48 31.3 +0.4
DUG pmax pmax
comp=Z,12nm,1.2s
DUG Dugway, Tooele 85.70 338 eP P 20 48 31.3 +0.4
comp=Z,12nm,1.2s
I38A Scanlan Farm, 85.71 354 P P 20 48 28.7 -2.0
baz=174
I35A Creekview Farm 85.78 352 P P 20 48 28.9 -2.1
baz=172
I37A Lemond, Waseca 85.78 353 P P 20 48 28.8 -2.2
baz=173
J30A Dallas 85.83 348 P P 20 48 30.7 -0.6
baz=168
I36A Fitzsimmons Fa 85.84 353 P P 20 48 30.2 -1.1
baz=172
ECSD EROS Data Cent 85.84 351 P P 20 48 29.8 -1.6
baz=170
ECSD EROS Data Cent 85.84 351 eP P 20 48 30.8 -0.6
comp=Z,42nm,1.4s
DBIC Dimbokro 86.11 78 LR LR 21 22 11.2
comp=Z,260nm,20.1s,baz=180,slow=32
SADO Sadowa 86.18 3 eP P 20 48 32.1 -0.9
comp=Z,16nm,0.9s
WAKR Walker 86.23 333 eP P 20 48 32.5 -1.1
comp=Z,25nm,1.4s
H37A Dierke Farm, C 86.30 353 P P 20 48 31.0 -2.5
baz=173
LONY Lake Ozonia 86.32 6 eP P 20 48 34.6 +0.9
comp=Z,30nm,1.3s
H36A Jessenland, He 86.39 353 P P 20 48 31.8 -2.2
baz=172
BGU Big Grassy Mou 86.44 338 eP P 20 48 35.5 +0.9
comp=Z,20nm,1.6s
K22A Casper 86.46 343 P P 20 48 33.2 -1.5
baz=163
K22A Casper 86.46 343 eP P 20 48 35.0 +0.4
comp=Z,68nm,1.2s
PLVO Plevna 86.56 5 eP P 20 48 35.8 +1.0
comp=Z,14nm,1.0s
H35A Sunnyside Ranc 86.59 352 P P 20 48 33.5 -1.5
baz=172
SPUT South Promonto 86.64 339 eP P 20 48 35.9 +0.4
comp=Z,21nm,1.2s
H34A Spellman Lake, 86.67 351 P P 20 48 34.3 -1.0
baz=171
HWUT Hardware Ranch 86.68 339 eP P 20 48 36.1 +0.4
comp=Z,36nm,1.7s
H33A Prehn Over Nor 86.79 351 P P 20 48 34.3 -1.7
baz=170
SPMN Marine on St. 86.93 354 P P 20 48 35.3 -1.3
baz=173
SPMN Marine on St. 86.93 354 eP P 20 48 36.6 0.0
comp=Z,25nm,1.2s
G36A St. Michael 87.02 353 P P 20 48 35.9 -1.2
baz=172
G35A Watkins 87.08 352 P P 20 48 36.2 -1.1
baz=172
HVU Hansel Valley 87.17 339 eP P 20 48 38.1 0.0
HVU pmax pmax
comp=Z,31nm,1.4s
HVU Hansel Valley 87.17 339 eP P 20 48 38.1 0.0
comp=Z,31nm,1.4s
G34A Benson 87.22 352 P P 20 48 36.6 -1.4
baz=171
G33A Ortonville 87.26 351 P P 20 48 36.5 -1.8
baz=170
BW06 Boulder Array 87.27 341 P P 20 48 36.8 -1.8
baz=161
BW06 Boulder Array 87.27 341 eP P 20 48 37.9 -0.7
PD31 Pinedale Array 87.27 341 eP P 20 48 38.5 -0.1
PDAR Pinedale Array 87.27 341 P P 20 48 38.7 +0.1
comp=Z,1.9nm,0.9s,baz=163,slow=6.6,SNR=12
RSSD Black Hills 87.37 345 P P 20 48 36.2 -2.9
baz=165
RSSD Black Hills 87.37 345 eP P 20 48 38.5 -0.6
RSSD pmax pmax
comp=Z,28nm,1.0s
RSSD Black Hills 87.37 345 eP P 20 48 38.5 -0.6
comp=Z,28nm,1.0s
G32A Webster 87.45 350 P P 20 48 36.2 -3.0
baz=170
COWI Conover 87.55 356 eP P 20 48 39.0 -0.7
F36A Milaca 87.62 353 P P 20 48 37.7 -2.3
baz=173
AHID Auburn Hatcher 87.64 340 eP P 20 48 40.5 +0.1
comp=Z,63nm,1.8s
F35A Swanville 87.72 352 P P 20 48 37.2 -3.2
baz=172
F34A Alexandria 87.72 352 P P 20 48 37.1 -3.4
baz=171
H25A Fruitdale 87.78 346 P P 20 48 37.7 -3.1
baz=165
F33A 5 Mile Ranch, 87.88 351 P P 20 48 35.7 -5.5
baz=171
ORV Oroville 87.89 332 eP P 20 48 42.1 +0.7
ORV pmax pmax
comp=Z,55nm,2.0s
ORV Oroville 87.89 332 eP P 20 48 42.1 +0.7
comp=Z,55nm,2.0s
TRQ Mont Tremblant 87.92 6 eP P 20 48 40.9 -0.6
REDW Red Top Meadow 88.14 341 eP P 20 48 42.9 +0.1
comp=Z,26nm,1.4s
E36A McGregor 88.25 353 P P 20 48 40.6 -2.4
baz=173
TPAW Teton Pass 88.29 341 eP P 20 48 43.8 +0.3
comp=Z,15nm,1.1s
LOHW Long Hollow 88.32 341 eP P 20 48 45.2 +1.5
comp=Z,18nm,1.5s
F29A Eureka 88.34 349 P P 20 48 41.3 -2.1
baz=168
O03D Paynes Creek 88.65 332 P P 20 48 43.9 -1.2
baz=153
IMW Indian Meadow 88.67 341 eP P 20 48 45.4 0.0
comp=Z,26nm,1.4s
FLWY Flagg Ranch 88.78 341 eP P 20 48 45.4 -0.5
comp=Z,89nm,1.9s
D37A Cotton 88.82 354 P P 20 48 43.7 -1.9
baz=174
D35A Remer 88.88 353 P P 20 48 44.2 -1.7
baz=172
D36A Goodland 88.89 354 P P 20 48 44.5 -1.5
baz=173
WDC Whiskeytown Da 89.16 331 eP P 20 48 47.2 -0.2
WDC pmax pmax
comp=Z,62nm,2.0s
WDC Whiskeytown Da 89.16 331 eP P 20 48 47.1 -0.2

	comp=Z,62nm,2.0s								
HLID	**Hailey**	**89.27**	**338**		P		**P**	**20 48 47.8**	**-0.3**
	baz=158								
HLID	**Hailey**	**89.27**	**338**		*e*P		**P**	**20 48 48.6**	**+0.6**
	comp=Z,17nm,0.9s								
C38A	**Sawbill Land.**	**89.29**	**355**		P		**P**	**20 48 46.3**	**-1.5**
	baz=174								
C39A	**Grand Marais**	**89.32**	**356**		P		**P**	**20 48 46.7**	**-1.3**
	baz=175								
C37A	**Embarrass**	**89.36**	**354**		P		**P**	**20 48 46.9**	**-1.3**
	baz=174								
RLMT	**Red Lodge**	**89.42**	**342**		P		**P**	**20 48 47.4**	**-1.4**
	baz=161								
RLMT	**Red Lodge**	**89.42**	**342**		*e*P		**P**	**20 48 49.4**	**+0.6**
	comp=Z,9.6nm,1.2s								
C36A	**Pine Crest Far**	**89.44**	**354**		P		**P**	**20 48 46.8**	**-1.8**
	baz=173								
C35A	**Jirik Farms, M**	**89.49**	**353**		P		**P**	**20 48 47.5**	**-1.3**
	baz=172								
WVOR	**Wild Horse Val**	**89.50**	**335**		*e*P		**P**	**20 48 50.0**	**+0.9**
WVOR					pmax		pmax		
	comp=Z,15nm,1.1s								
WVOR	**Wild Horse Val**	**89.50**	**335**		*e*P		**P**	**20 48 50.0**	**+0.9**
	comp=Z,15nm,1.1s								
EYMN	**Ely**	**89.53**	**355**		P		**P**	**20 48 48.2**	**-0.8**
	baz=174								
EYMN	**Ely**	**89.53**	**355**		*e*P		**P**	**20 48 48.9**	**0.0**
	comp=Z,12nm,1.1s								
MFID	**Camas Ranch**	**89.54**	**337**		*e*P		**P**	**20 48 49.8**	**+0.5**
	comp=Z,24nm,0.8s								
MOD	**Modoc Plateau**	**89.56**	**334**		*e*P		**P**	**20 48 49.3**	**-0.2**
	comp=Z,18nm,1.3s								
N02D	**Trinity Center**	**89.57**	**332**		P		**P**	**20 48 48.9**	**-0.5**
	baz=152								
VLDQ	**Val d'Or**	**89.60**	**4**		*e*P		**P**	**20 48 48.2**	**-1.0**
	comp=Z,20nm,1.0s								
D26A	**Manning**	**89.91**	**347**		P		**P**	**20 48 49.4**	**-1.4**
	baz=166								
C31A	**Landman Farms,**	**89.98**	**351**		P		**P**	**20 48 50.3**	**-0.7**
	baz=170								
M04C	**Macdoel**	**89.98**	**332**		P		**P**	**20 48 51.1**	**-0.3**
	baz=153								
M02C	**Callahan**	**89.99**	**332**		P		**P**	**20 48 50.3**	**-1.1**
	baz=152								
MCMT	**McKenzie Canyo**	**90.02**	**340**		*e*P		**P**	**20 48 52.3**	**+0.6**
B35A	**Bob, Littlefor**	**90.12**	**353**		P		**P**	**20 48 49.9**	**-1.8**
	baz=172								
B33A	**Robert and Kas**	**90.21**	**352**		P		**P**	**20 48 50.1**	**-2.0**
	baz=171								
AGMN	**Agassiz Nation**	**90.26**	**352**		P		**P**	**20 48 50.0**	**-2.4**
	baz=171								
AGMN	**Agassiz Nation**	**90.26**	**352**		*e*P		P	20 48 57.8	+5.4
LAO	**LASA Array**	**90.27**	**345**		P		**P**	**20 48 51.2**	**-1.3**
	baz=163								
MDND	**Maddock**	**90.28**	**349**		P		**P**	**20 48 50.8**	**-1.6**
	baz=168								
B34A	**Aery, Baudette**	**90.33**	**353**		P		**P**	**20 48 51.3**	**-1.4**
	baz=172								
B32A	**Ashes, Strandq**	**90.43**	**351**		P		**P**	**20 48 51.9**	**-1.2**
	baz=170								
DLMT	**Dillon**	**90.45**	**340**		*e*P		**P**	**20 48 54.8**	**+1.3**
	comp=Z,30nm,1.3s								
BOZ	**Bozeman (W)**	**90.48**	**341**		P		**P**	**20 48 53.3**	**-0.3**
	baz=160								
BOZ	**Bozeman (W)**	**90.48**	**341**		*e*P		**P**	**20 48 54.2**	**+0.6**
BOZ					pmax		pmax		
	comp=Z,8.0nm,1.2s								
BOZ	**Bozeman (W)**	**90.48**	**341**		*e*P		**P**	**20 48 54.2**	**+0.6**
	comp=Z,8.2nm,1.2s								
K05A	**Summer Lake**	**90.50**	**334**		*e*P		**P**	**20 48 55.2**	**+1.4**
	comp=Z,47nm,1.3s								
A33A	**Warroad**	**90.84**	**352**		P		**P**	**20 48 54.0**	**-1.0**
	baz=171								
LRM	**Limekiln Ridge**	**90.85**	**340**		*e*P		**P**	**20 48 55.5**	**+0.1**
J05D	**Fort Rock, OR**	**91.11**	**334**		P		**P**	**20 48 55.4**	**-1.2**
	baz=153								
J04D	**Umpqua Nationa**	**91.36**	**333**		P		**P**	**20 48 56.3**	**-1.6**
	baz=152								
DGMT	**Dagmar**	**91.60**	**346**		P		**P**	**20 48 56.6**	**-2.0**
	baz=165								
CHMT	**Chamberlain Mo**	**92.07**	**340**		*e*P		**P**	**20 49 01.1**	**0.0**
MSO	**Missoula**	**92.16**	**340**		P		**P**	**20 48 59.7**	**-1.7**
	baz=158								
MSO	**Missoula**	**92.16**	**340**		*e*P		**P**	**20 49 04.4**	**+3.1**
ULM	**Lac du Bonnet**	**92.19**	**352**		P		**P**	**20 49 00.8**	**-0.5**
	comp=Z,3.2nm,0.7s,baz=180,slow=2.0,SNR=3.7								
KIP	**Kipapa**	**93.00**	**296**		P		**P**	**20 49 05.8**	**+0.1**
ILAR	**Eielson Array**	**117.01**	**335**		PKP		**PKPdf**	**20 54 35.2**	**-0.7**
	comp=Z,0.3nm,0.7s,baz=112,slow=1.0,SNR=3.8								
FETA	**Feichten**	**121.51**	**53**	*i*	PKiKP		**PKiKP**	**20 54 47.1**	**+1.6**
SOKA	**Soboth**	**123.96**	**55**	*i*	PKPdf		**PKPdf**	**20 54 48.7**	**-1.3**
	comp=Z,5.2nm,1.4s								
MOA	**Molln**	**124.02**	**54**	*i*	PKPdf		**PKPdf**	**20 54 50.4**	**+0.5**
	comp=Z,5.0nm,1.1s								
GEA0	**GERESS Array S**	**124.12**	**52**		*e*PKPdf		**PKPdf**	**20 54 49.2**	**-1.0**
GEC2	**GERESS Array S**	**124.12**	**52**		*e*PKIKP		**PKPdf**	**20 54 49.1**	**-1.1**
GEC2	**GERESS Array S**	**124.12**	**52**		*e*PKPdf		**PKPdf**	**20 54 49.1**	**-1.1**
GERES	**GERESS Array B**	**124.12**	**52**		PKP		**PKPdf**	**20 54 49.7**	**-0.5**
	comp=Z,0.9nm,0.8s,baz=241,slow=3.2,SNR=7.3								
KHC	**Kasperske Hory**	**124.18**	**52**		*e*PKP		**PKPdf**	**20 54 54.6**	**+4.4**
ARSA	**Arzberg**	**124.52**	**55**	*i*	PKiKP		**PKPdf**	**20 54 51.5**	**+0.6**
	comp=Z,1.5nm,0.6s								
CONA	**Conrad Observa**	**125.02**	**54**	*i*	PKPdf		**PKPdf**	**20 54 51.7**	**-0.2**
	comp=Z,6.4nm,1.4s								
DPC	**Dobruska-Polom**	**126.31**	**52**		*e*PKP		**PKPdf**	**20 54 59.1**	**+4.8**
VYHS	**Vyhne**	**127.06**	**54**		*e*PKP		**PKPdf**	**20 54 55.7**	**0.0**
OKC	**Ostrava-Krasne**	**127.18**	**53**		*e*x		x	21 06 27.5	
VTS	**Vitosha**	**127.40**	**63**		*e*PKIKP		**PKPdf**	**20 54 55.9**	**-0.9**
VTS	**Vitosha**	**127.40**	**63**		*e*PKPdf		**PKPdf**	**20 54 55.9**	**-0.9**
KECS	**Kecovo**	**128.07**	**55**		*e*PKP		**PKPdf**	**20 54 57.8**	**+0.2**
KECS					*e*PDIFF			21 12 48.8	
BR231	**Keskin MP Arra**	**132.82**	**70**		*e*PKPdf		**PKPdf**	**20 55 04.1**	**-3.0**
BRTR	**Keskin Array B**	**133.38**	**71**		PKP		**PKPdf**	**20 55 08.2**	**+0.1**
	comp=Z,0.8nm,0.8s,baz=225,slow=1.2,SNR=4.4								
BR101	**Keskin Array S**	**133.38**	**71**		*e*PKPdf		**PKPdf**	**20 55 08.2**	**+0.1**
AKASG	**Malin Array Be**	**134.16**	**55**		PKP		**PKPdf**	**20 55 10.1**	**+1.0**
	comp=Z,0.2nm,0.3s,baz=257,slow=2.8,SNR=4.5								
PET	**Petropavlovsk**	**137.59**	**308**		*e*PKIKP		**PKPdf**	**20 55 16.3**	**+0.9**
ANN	**Anapa**	**137.80**	**65**	*i*	PKIKP		**PKPdf**	**20 55 22.5**	**+6.5**
ANN					pmax		pmax		
	comp=Z,42nm,1.0s								
ANN					MLR		MLR		
	comp=Z,793nm,21.0s								
BKNI	**Bangkinang**	**138.60**	**187**		*e*PKPpre		PKPpre	20 55 11.9	
OBN	**Obninsk**	**139.38**	**50**	*i*	PKIKP		**PKPdf**	**20 55 20.7**	**+2.1**
OBN					pmax		pmax		
	comp=Z,7.0nm,1.0s								
OBN					MLR		MLR		
	comp=Z,914nm,18.0s								
NEY	**Neytrino**	**140.99**	**69**		PKIKP		**PKPdf**	**20 55 22.4**	**+0.2**
KIV	**Kislovodsk**	**141.17**	**68**	⇓*i*	PKIKP		**PKPdf**	**20 55 23.0**	**+0.6**
KIV					pmax		pmax		
	comp=Z,5.0nm,1.2s								
KIV					MLR		MLR		
	comp=Z,1μm,20.0s								
KBZ	**Khabaz**	**141.25**	**68**		PKP		**PKPdf**	**20 55 23.4**	**+1.0**
	comp=Z,2.3nm,0.7s,baz=72,slow=3.2,SNR=3.9								
SEY	**Seymchan**	**141.32**	**323**		PKP		**PKPdf**	**20 55 22.6**	**+0.7**
	comp=Z,4.8nm,0.9s,baz=78,slow=3.0,SNR=10								
SEY	**Seymchan**	**141.32**	**323**	⇓*i*	PKIKP		**PKPdf**	**20 55 23.3**	**+1.4**
SEY					*i*			20 55 27.6	
MA2	**Magadan**	**142.39**	**317**		*e*PKIKP		**PKPdf**	**20 55 25.1**	**+1.2**
TIXI	**Tiksi**	**145.95**	**342**		PKPbc		**PKPdf**	**20 55 28.1**	**-1.7**
	comp=Z,5.3nm,0.8s,baz=40,slow=4.0,SNR=7.3								
TIXI	**Tiksi**	**145.95**	**342**	*d*	*i* PKP2		**PKPdf**	**20 55 30.0**	**+0.2**
YSS	**Yuzh-Sakhalins**	**146.77**	**295**		*e*PKIKP		**PKPdf**	**20 55 31.5**	**-0.4**
YSS					*e*			20 55 37.3	
MJAR	**Matsushiro Arr**	**147.34**	**275**		PKPbc		**PKPdf**	**20 55 32.6**	**-0.7**
	comp=Z,5.8nm,1.1s,baz=166,slow=3.3,SNR=3.1								
SOKR	**Solikamsk**	**149.81**	**40**	*c*	*i* PKHKP		PKPpre	20 55 39.3	
SOKR					pmax		pmax		
	comp=Z,59nm,1.4s								
GEYT	**Alibeck**	**150.57**	**85**		PKPbc		**PKPbc**	**20 55 43.3**	**-0.5**
	comp=Z,3.0nm,0.9s,baz=251,slow=4.4,SNR=9.8								
YAK	**Yakutsk**	**151.57**	**327**		PKPbc		**PKPbc**	**20 55 44.6**	**-0.7**
	comp=Z,41nm,0.9s,baz=57,slow=1.0,SNR=9.6								
YAK	**Yakutsk**	**151.57**	**327**		*e*PKIKP		**PKPbc**	**20 55 43.8**	**-1.5**
YAK					pmax		pmax		
	comp=Z,19nm,0.9s								
YAK	**Yakutsk**	**151.57**	**327**		*ep*PKPdf		pPKPdf	20 55 43.7	+1.2
ARU	**Arti**	**151.63**	**46**		PKPbc		**PKPbc**	**20 55 44.7**	**-1.0**
	comp=Z,4.3nm,0.8s,baz=248,slow=3.9,SNR=12								
ARU	**Arti**	**151.63**	**46**	*i*	PKIKP		**PKPdf**	**20 55 42.4**	**+3.0**
ARU	**Arti**	**151.63**	**46**		*e*PKPdf		**PKPdf**	**20 55 38.3**	**-1.1**
ARU					*e*PKPbc		**PKPbc**	**20 55 45.3**	**-0.4**
AKTO	**Aktyubinsk**	**152.28**	**58**		PKPbc		**PKPbc**	**20 55 46.9**	**-0.5**
	comp=Z,3.1nm,0.8s,baz=284,slow=3.4,SNR=12								
SVE	**Sverdlovsk**	**152.62**	**44**		*e*PKIKP		**PKPbc**	**20 55 47.5**	**-0.4**
SVE					pmax		pmax		
	comp=Z,19nm,1.6s								
ABKAR	**Akbulak array**	**153.59**	**61**		*e*PKPdf		**PKPdf**	**20 55 40.6**	**-1.9**
ABKAR					*e*PKPbc		**PKPbc**	**20 55 48.4**	**-1.9**
KLR	**Kul'dur**	**154.23**	**299**		PKPbc		**PKPbc**	**20 55 50.2**	**-1.4**
	comp=Z,0.6nm,0.5s,baz=312,slow=2.9,SNR=3.1								
MDJ	**Mudanjiang**	**155.66**	**288**		PKP		**PKPdf**	**20 55 47.1**	**+1.6**
MDJ					pPKP		pPKPdf	20 55 57.4	+8.4
MDJ					sPKP			20 56 01.0	
MDJ					PKS		**PKSdf**	**20 59 21.5**	**+2.1**
MDJ					PP		**PP**	**20 59 52.5**	**+3.1**
MDJ					SKS		**SKSdf**	**21 02 49.9**	**-1.8**
MDJ					AMB		AMB		
	comp=Z,81nm,4.5s								
CM01	**Chiang Mai Arr**	**156.69**	**186**		*e*PKPdf		**PKPdf**	**20 55 46.7**	**-1.0**
CMAR	**Chiang Mai Arr**	**156.73**	**186**		PKP		**PKPdf**	**20 55 48.3**	**+0.6**
	comp=Z,1.1nm,0.8s,baz=219,slow=2.3,SNR=4.2								
CMAR					PKPab		**PKPab**	**20 56 15.4**	**-1.5**
	comp=Z,1.8nm,0.9s,baz=198,slow=4.0,SNR=4.0								
CHTO	**Chiang Mai**	**157.08**	**186**		*e*PKP2		**PKPab**	**20 56 15.8**	**-2.7**
CHTO	**Chiang Mai**	**157.08**	**186**		*e*PKPab		**PKPab**	**20 56 15.8**	**-2.7**
CN2	**Changchun**	**158.56**	**285**		*e*PKP		**PKPdf**	**20 55 51.0**	**+1.7**
CN2					*ep*PKP		pPKPdf	20 56 02.0	+9.3
CN2					PP		**PP**	**21 00 11.0**	**+5.5**
CN2					*e*SS		SS	21 20 08.8	+1.2
CN2					AMB		AMB		
	comp=Z,200nm,8.0s								
CN2					LR		LR		
	comp=Z,600nm,21.0s								
CN2					LR		LR		
	comp=Z,400nm,21.0s								
CN2					LR		LR		
	comp=Z,600nm,22.0s								
BVAR	**Borovoye Array**	**159.22**	**48**		PKP		**PKPdf**	**20 55 50.5**	**+0.7**
	comp=Z,0.7nm,0.8s,baz=232,slow=1.6,SNR=2.9								
GYA	**Guiyang**	**162.58**	**212**		PKP		**PKPdf**	**20 55 54.3**	**-0.1**
GYA					PKPab		**PKPab**	**20 56 45.0**	**+2.6**
GYA					PKS		**PKSdf**	**20 59 25.6**	**-2.1**
GYA					PP		**PP**	**21 00 30.4**	**+4.1**
GYA					AMB		AMB		
	comp=Z,120nm,7.9s								
KMI	**Kunming**	**162.63**	**200**		PKP		**PKPdf**	**20 55 54.5**	**-0.1**
KSH	**Kashi**	**164.38**	**91**		*e*PKP		**PKPdf**	**20 55 55.3**	**-0.4**
KSH					*ep*PKP		pPKPdf	20 56 06.9	+7.8
KSH					PKS		**PKSdf**	**20 59 28.3**	**-0.3**
KSH					*e*PP		**PP**	**21 00 33.0**	**-3.9**
KSH					SKS		**SKSdf**	**21 02 55.0**	**-5.1**
KSH					SKKS		**SKKSac**	**21 07 16.0**	**-8.3**
KSH					AMB		AMB		
	comp=Z,66nm,3.7s								
KSH					LR		LR		
	comp=Z,93nm,5.4s								
KSH					LR		LR		
	comp=Z,84nm,8.5s								
KSH					LR		LR		
	comp=Z,170nm,6.2s								
KURBB	**Kurchatov Arra**	**164.81**	**48**		PKP		**PKPdf**	**20 55 55.0**	**-0.5**
	comp=Z,1.4nm,1.1s,baz=349,slow=0.7,SNR=4.9								
KURBB					PKPab		**PKPab**	**20 56 52.1**	**+0.6**
	comp=Z,0.2nm,0.6s,baz=313,slow=3.9,SNR=3.5								
KURK	**Kurchatov**	**164.81**	**48**		*e*PKIKP		**PKPdf**	**20 55 55.0**	**-0.5**
KURK					*e*			20 56 52.1	
KURK	**Kurchatov**	**164.81**	**48**		*e*PKPdf		**PKPdf**	**20 55 55.0**	**-0.5**
KURK					*e*PKPab		**PKPab**	**20 56 52.1**	**+0.6**
ZAA1	**Zalesovo Array**	**165.53**	**28**		*e*PKPdf		**PKPdf**	**20 55 55.4**	**-0.6**
ZAA1					*e*PKPab		**PKPab**	**20 56 54.4**	**-0.1**
ZAA0	**Zalesovo Array**	**165.53**	**28**		*e*PKPdf		**PKPdf**	**20 55 54.2**	**-1.8**
ZAA0					*e*PKPdf		**PKPdf**	**20 55 54.8**	**-1.2**
ZAA0					*e*PKPab		**PKPab**	**20 56 53.6**	**-0.9**
ZALV	**Zalesovo Beam**	**165.53**	**28**		PKP		**PKPdf**	**20 55 55.4**	**-0.6**
	comp=Z,3.0nm,0.9s,baz=325,slow=2.3,SNR=4.5								
ZALV					PKPab		**PKPab**	**20 56 54.4**	**-0.2**
	comp=Z,0.3nm,0.3s,baz=306,slow=3.4,SNR=2.9								
CD2	**Chengdu**	**167.69**	**211**		PKP		**PKPdf**	**20 55 58.6**	**+0.1**
CD2					pPKP		pPKPdf	20 56 11.3	+9.4
CD2					PP		**PP**	**21 00 54.8**	**+2.0**
CD2					SKS		**SKSdf**	**21 02 59.3**	**-3.1**
CD2					SKKS		**SKKSac**	**21 07 38.3**	**-2.3**
CD2					SS		**SS**	**21 21 41.3**	**+1.0**
CD2					AMB		AMB		
	comp=Z,220nm,6.4s								
HHC	**Hu-ho-hao-te**	**168.50**	**271**		*e*PKP		**PKPdf**	**20 56 00.1**	**+1.3**
HHC					PP		**PP**	**21 01 02.8**	**+4.6**
HHC					SS		SS	21 21 50.5	-0.2
HHC					AMB		AMB		
	comp=Z,63nm,5.2s								
HHC					LR		LR		
	comp=Z,130nm,21.1s								
HHC					LR		LR		
	comp=Z,140nm,15.2s								
HHC					LR		LR		
	comp=Z,170nm,15.9s								
MAKZ	**Makanchi**	**168.51**	**59**		*e*PKIKP		**PKPdf**	**20 55 56.3**	**-2.2**
MAKZ					*e*			20 57 05.6	
MAKZ	**Makanchi**	**168.51**	**59**		*e*PKPdf		**PKPdf**	**20 55 56.3**	**-2.2**
MAKZ					*e*PKPab		**PKPab**	**20 57 05.6**	**-2.5**
MK32	**Makanchi Array**	**168.72**	**58**		*e*PKPdf		**PKPdf**	**20 55 57.8**	**-0.9**
MK32					*e*PKPab		**PKPab**	**20 57 08.9**	**0.0**
MKAR	**Makanchi Array**	**168.72**	**58**		PKP		**PKPdf**	**20 55 57.8**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=243,slow=2.3,SNR=3.5								
MKAR					PKPab		**PKPab**	**20 57 08.9**	**0.0**
	comp=Z,0.2nm,0.4s,baz=284,slow=5.8,SNR=2.5								
SONA1	**Songino Array**	**170.57**	**314**		*e*PKPdf		**PKPdf**	**20 55 59.1**	**-0.8**
SONA1					*e*PKPab		**PKPab**	**20 57 15.6**	**-1.7**
SONA0	**Songino Array**	**170.58**	**314**		*e*PKPab		**PKPab**	**20 57 16.4**	**-0.9**
SONM	**Songino Array**	**170.58**	**314**		PKPab		**PKPab**	**20 57 16.4**	**-0.9**
	comp=Z,1.8nm,0.9s,baz=42,slow=3.6,SNR=9.4								
LZH	**Lanzhou**	**171.90**	**229**		*e*PKP		**PKPdf**	**20 56 00.6**	**-0.3**
LZH					pPKP		pPKPdf	20 56 13.3	+8.9
LZH					sPKP			20 56 17.8	
LZH					PKPab		**PKPab**	**20 57 26.3**	**+2.8**
LZH					PP		**PP**	**21 01 18.5**	**+3.9**
LZH					SKKS			21 07 58.5	
LZH					SS		**SS**	**21 22 21.0**	**-2.2**
LZH					AMB		AMB		
	comp=Z,140nm,7.5s								
LZH					LR		LR		
	comp=Z,260nm,18.2s								
LZH					LR		LR		
	comp=Z,240nm,19.0s								
LZH					LR		LR		
	comp=Z,450nm,20.1s								
WMQ	**Urumqi**	**173.30**	**69**		*e*PKP		**PKPdf**	**20 56 02.6**	**+1.4**
WMQ					LR		LR		
	comp=Z,220nm,23.8s								
GTA	**Gaotai**	**176.50**	**230**		*e*PKP		**PKPdf**	**20 56 04.1**	**+1.8**
GTA					pPKP		pPKPdf	20 56 14.4	+8.6
GTA					sPKP			20 56 18.8	
GTA					PKPab		**PKPab**	**20 57 44.0**	**+0.2**

NIED ***22*** *20:53:00, 40.30N×139.10E, h5km, Mw3.5 Best double couple: M0 1.70000×10^14 NP1:ϕs307.00000°, δ64.00000°, λ11.00000°. NP2:ϕs212.00000°, δ80.00000°, λ154.00000°.*

JMA 22 20:53:15.0±0.1, 40.30N×139.18E, h17km±1km, M3.9, 4C-2D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°		Phase	ID		Time			Res
						Op	ISC	h	m	s	ISC
JOG2	**Oga 2**	**0.60**	**129**		⇑P		Pg	20	53	26.8	-0.1
JOG2					S		Sb	20	53	35.2	-0.1
JIW	**Iwasaki**	**0.70**	**65**		⇓P		Pg	20	53	28.2	-0.5
JIW					S		Sg	20	53	37.2	-0.7
JAH	**Hinai**	**1.12**	**95**		⇓P		Pn	20	53	35.2	-0.7
JAH					S		Sb	20	53	49.9	-0.3
JRG	**Rokugo**	**1.44**	**128**		P		Pn	20	53	39.8	-0.5
JRG					*e*S		Sn	20	53	58.9	+0.2
JTM	**Tenmabayashi**	**1.52**	**71**		⇑P		Pn	20	53	41.2	-0.2
JTM					*e*S		Sn	20	54	01.1	+0.4
JSR	**Shiriuchi**	**1.55**	**37**		⇑P		Pn	20	53	41.4	-0.3
JYK	**Kaneyama**	**1.65**	**146**		⇑P		Pn	20	53	42.6	-0.6
MAT	**Matsushiro**	**3.83**	**192**		P		Pn	20	54	14.3	+1.1
MAT					S		Sn	20	54	56.2	-1.6

IDC ***22*** *20:57:39.4±2.0, 23.59N×94.34E, h0km, mb3.5/3, mb1 3.5/4, mb1mx3.3/72, mbtmp3.4/4, ML3.3/1, MS3.3/2, Ms1 3.3/2, ms1mx2.9/41, Error ellipse: s-maj=55.6km s-min=21.6km az=57.0*

ISC 22 20:57:42.7±1.2, 22.8N±0.1×93.5E±0.1, h59km, n13,

σ3$07/16, mb3.3/3, Myanmar-India border region

Code	Station Name	Δ°	AZ°		Phase	ID		Time			Res
						Op	ISC	h	m	s	ISC
SHL	**Shillong**	**3.16**	**332**		*e*PN		**Pn**	**20**	**58**	**34.0**	**+3.8**
SHL					*e*SN		**Sn**	**20**	**59**	**08.0**	**+1.3**
CMAR	**Chiang Mai Arr**	**6.64**	**129**		Pn		**Pn**	**20**	**59**	**18.3**	**+0.5**
	0.2nm,0.3s,baz=315,slow=14,SNR=8.9										
CMAR					Lg		Lg	21	01	12.2	
	0.0nm,0.3s,baz=318,slow=32,SNR=2.7										
GUN	**Gumba**	**8.61**	**308**		*e*P		**Pn**	**20**	**59**	**48.2**	**+3.3**
	12nm,0.3s										
GUN					*e*S		**Sn**	**21**	**01**	**18.6**	**-2.1**
PKIN	**Phulchoki**	**8.78**	**305**		*e*P		**Pn**	**20**	**59**	**50.3**	**+3.0**
	14nm,0.3s										
PKIN					*e*S		**Sn**	**21**	**01**	**22.2**	**-2.8**
KKN	**Kakani**	**8.98**	**305**		*e*P		**Pn**	**20**	**59**	**53.7**	**+3.7**
DMN	**Daman**	**9.02**	**304**		*e*P		**Pn**	**20**	**59**	**53.9**	**+3.4**
GKN	**Gorkha**	**9.58**	**305**		*e*P		**Pn**	**21**	**00**	**01.0**	**+2.9**
	36nm,0.3s										
GKN					*e*S		**Sn**	**21**	**01**	**42.0**	**-2.3**
PYUN	**Piuthan**	**10.90**	**301**		*e*P		**Pn**	**21**	**00**	**18.5**	**+2.3**
	7.9nm,0.3s										
PYUN					*e*S		**Sn**	**21**	**02**	**14.6**	**-2.1**
PALK	**Pallekele**	**19.76**	**221**		LR		LR	21	12	22.4	
	comp=Z,147nm,19.3s,baz=296,slow=42										
MKAR	**Makanchi Array**	**25.62**	**342**		P		**P**	**21**	**03**	**05.9**	**-0.7**
	1.1nm,0.7s,baz=149,slow=9.5,SNR=12										
SONM	**Songino Array**	**27.04**	**19**		P		**P**	**21**	**03**	**14.5**	**-4.9**
	0.6nm,0.7s,baz=212,slow=8.3,SNR=3.9										
KURBB	**Kurchatov Arra**	**30.16**	**341**		P		**P**	**21**	**03**	**46.6**	**-0.4**
	0.4nm,0.8s,baz=156,slow=8.0,SNR=3.9										
ZALV	**Zalesovo Beam**	**31.81**	**350**		LR		LR	21	16	41.6	
	comp=Z,35nm,21.6s,baz=70,slow=37										

BJI ***22*** *20:58:54.4, 13.09N×145.45E, h7km, mb5.0/35, mB5.3/61, Ms5.2/72, Ms7 5.1/69*

GCMT ***22*** *20:58:58.5±0.1, 12.99N×145.57E, h13km, MW5.4/116, Moment Tensor Solution. s93,c170; s116,c218; Duration: 1s3 Moment tensor: Scale 10^17Nm; Mrr1.07±.02; Mθθ-0.05±.02; Mϕϕ-1.02±.02; Mrθ0.05±.04; Mθϕ-0.82±.02; Mϕr1.09±.06; Best double couple: M0 1.70600×10^17 NP1:ϕs10.00000°, δ67.00000°, λ69.00000°. NP2:ϕs234.00000°, δ31.00000°, λ130.00000°. Principal axes: T 1.5860, Plg62.0000°, Azm247.0000°; N 0.2390, Plg19.0000°, Azm18.0000°; P -1.8260, Plg19.0000°, Azm115.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

DJA ***22*** *20:58:58.8±0.7, 13.6N±6.6×14.6E±.6, h41km±9km, M5.5/14, mb5.5/14, mB5.9/12, MLv5.4/1, Mw(mB)5.5/12, Mwp5.5/1*

ISCJB ***22*** *20:58:58.3±0.1, 13.07N±0.02×145.39E±0.02, h33km, mb5.1/145, MS5.0/77, Error ellipse: s-maj=3.1km s-min=2.7km az=151.2*

NEIC ***22*** *20:58:58.5±1.5, 13.06N×145.34E, h23km±10km, mb5.2/8, Error ellipse: s-maj=4.5km s-min=3.6km az=101.0*

NEIC Felt [II] on Guam.

MOS ***22*** *20:58:59.3±1.1, 13.13N×145.35E, h43km, mb5.4/58, MS5.0/29, Error

	comp=Z,44nm,0.7s								
SSE				pmax	pmax				
	comp=Z,370nm,12.0s								
SSE				LR	LR				
	comp=Z,960nm,17.1s								
SSE				LR	LR				
	comp=Z,2µm,17.1s								
SSE				LR	LR				
	comp=Z,3µm,16.6s								
SDKM	**Sandakan**	**28.93 258**	⇓	P	**P**	**21 04 56.9**	**+0.8**		
KDM	**Kudat**	**28.93 261**	⇓	P	**P**	**21 04 57.0**	**+1.0**		
KSRS	**Korea Array**	**28.95 330**		P	**P**	**21 04 54.7**	**-1.2**		
	comp=Z,3.2nm,0.6s,baz=145,slow=9.8,SNR=22								
KS15	**Wonju Array Si**	**28.96 330**		*e*P	**P**	**21 04 53.9**	**-2.1**		
KSAR	**Wonju Array Be**	**28.96 330**		P	**P**	**21 04 54.7**	**-1.3**		
KSAR	**Wonju Array Be**	**28.96 330**		P	**P**	**21 04 54.7**	**-1.3**		
KS01	**Wonju Array Si**	**28.98 330**		*e*P	**P**	**21 04 56.6**	**+0.4**		
PCI	**Palu**	**29.05 243**		P	**P**	**21 04 59.7**	**+2.6**		
MTN	**Manton Dam**	**29.46 210**		*e*P	**P**	**21 04 58.9**	**-1.7**		
TARA	**Tarawa**	**29.48 111**		*e*P	**P**	**21 05 01.2**	**+0.3**		
KKM	**Kota Kinabalu**	**29.75 259**	⇓	P	**P**	**21 05 02.9**	**-0.5**		
KKM	**Kota Kinabalu**	**29.75 259**		*e*P	**P**	**21 05 00.1**	**-3.8**		
TTSI	**Tana Toraja**	**30.16 240**		P	P	21 05 13.5	+6.6		
SPSI	**Sidrap Palu**	**30.71 238**		P	**P**	**21 05 13.3**	**+1.6**		
NJ2	**Nanjing**	**30.93 312**		*e*P	**P**	**21 05 13.8**	**+0.3**		
NJ2				PP	**PnPn**	**21 06 11.3**	**-3.3**		
NJ2				S	**S**	**21 10 20.9**	**+4.3**		
NJ2				pmax	pmax				
	comp=Z,11nm,0.5s								
NJ2				pmax	pmax				
	comp=Z,270nm,5.7s								
NJ2				LR	LR				
	comp=Z,2µm,18.2s								
NJ2				LR	LR				
	comp=Z,2µm,16.7s								
NJ2				LR	LR				
	comp=Z,3µm,26.0s								
SOEI	**Soe**	**31.01 224**		P	**P**	**21 05 13.7**	**-0.8**		
SOEI	**Soe**	**31.01 224**		*e*P	**P**	**21 05 13.5**	**-1.0**		
ASAJ	**Asahikawa**	**31.05 356**		P	**P**	**21 05 14.1**	**-0.3**		
	comp=Z,11nm,0.9s,baz=210,slow=8.1,SNR=5.6								
ASAJ	**Asahikawa**	**31.05 356**		*e*P	**P**	**21 05 13.5**	**-0.8**		
KAPI	**Kappang**	**31.31 237**		P	**P**	**21 05 16.7**	**-0.3**		
	comp=Z,14nm,0.7s,baz=57,slow=10,SNR=9.3								
KAPI				LR	LR	21 20 10.4			
	comp=Z,713nm,19.5s,baz=31,slow=41								
KAPI	**Kappang**	**31.31 237**		*e*P	**P**	**21 05 16.9**	**-0.1**		
MMRI	**Maumere**	**31.65 228**		*e*P	**P**	**21 05 19.4**	**-0.7**		
MSHR	**Mys Shultsa**	**31.95 340**	⇑	*e*P	**P**	**21 05 21.3**	**-1.0**		
GZH	**Guangzhou**	**32.15 293**		P	**P**	**21 05 22.6**	**-1.7**		
GZH				pmax	pmax				
	comp=Z,790nm,9.0s								
CTA	**Charters Tower**	**32.95 179**		P	**P**	**21 05 32.0**	**+0.6**		
	comp=Z,12nm,1.0s,baz=3.8,slow=6.9,SNR=7.7								
CTAO	**Charters Tower**	**32.95 179**		*e*P	**P**	**21 05 32.4**	**+1.0**		
CTAO				pmax	pmax				
	comp=Z,65nm,1.6s								
CTAO	**Charters Tower**	**32.95 179**		*e*P	**P**	**21 05 32.4**	**+1.0**		
USRK	**Ussuriysk Ar.**	**33.14 342**		P	**P**	**21 05 32.2**	**-0.6**		
	comp=Z,3.9nm,0.7s,baz=146,slow=12,SNR=10								
USRK				LR	LR	21 16 42.3			
	comp=Z,2µm,21.7s,baz=144,slow=32								
DL2	**Dalian**	**33.34 325**	⇑	P	**P**	**21 05 33.0**	**-1.6**		
DL2				S	**S**	**21 10 55.0**	**+1.0**		
DL2				pmax	pmax				
	comp=Z,48nm,0.8s								
DL2				pmax	pmax				
	comp=Z,410nm,8.5s								
DL2				LR	LR				
	comp=Z,2µm,18.9s								
DL2				LR	LR				
	comp=Z,2µm,19.1s								
DL2				LR	LR				
	comp=Z,3µm,18.3s								
BTM	**Bintulu**	**33.58 256**	⇑	P	**P**	**21 05 38.3**	**+1.3**		
WHN	**Wuhan**	**33.64 306**	⇑	P	**P**	**21 05 34.6**	**-2.7**		
WHN				PP	**PP**	**21 06 51.8**	**-1.8**		
WHN				S	**S**	**21 10 58.0**	**-0.8**		
WHN				pmax	pmax				
	comp=Z,650nm,4.4s								
WHN				LR	LR				
	comp=Z,3µm,10.9s								
WHN				LR	LR				
	comp=Z,4µm,16.1s								
WHN				LR	LR				
	comp=Z,8µm,19.4s								
YSS	**Yuzh-Sakhalins**	**33.86 357**		*e*P	**P**	**21 05 38.3**	**-0.7**		
YSS				*e*		21 06 46.0			
YSS				*e*S	**S**	**21 10 53.7**	**-8.1**		
YSS				pmax	pmax				
	comp=Z,30nm,1.5s								
YSS				MLR	MLR				
	comp=Z,2µm,17.0s								
YSS				MLR	MLR				
	comp=N,2µm,15.0s								
YSS				MLR	MLR				
	comp=E,900nm,17.0s								
YSS	**Yuzh-Sakhalins**	**33.86 357**		*e*P	**P**	**21 05 38.9**	**-0.1**		
MDJ	**Mudanjiang**	**34.28 340**		P	P	21 05 48.8	+6.1		
MDJ				PP	**PP**	**21 07 07.1**	**+6.5**		
MDJ				PcP	**PcP**	**21 08 23.1**	**+4.4**		
MDJ				S	**S**	**21 11 05.4**	**-3.0**		
MDJ				ScP	**ScP**	**21 12 06.0**	**+3.6**		
MDJ	**Mudanjiang**	**34.28 340**		ScS	ScS	21 16 11.8	+7.1		
MDJ				pmax	pmax				
	comp=Z,13nm,1.0s								
MDJ				pmax	pmax				
	comp=Z,160nm,5.4s								
MDJ				LR	LR				
	comp=N,2µm,17.5s								
MDJ				LR	LR				
	comp=E,1µm,16.4s								
MDJ				LR	LR				
	comp=Z,3µm,20.1s								
MDJ	**Mudanjiang**	**34.28 340**		*e*P	**P**	**21 05 41.5**	**-1.2**		
SNY	**Shenyang**	**34.46 330**	⇑	P	**P**	**21 05 43.4**	**-0.8**		
SNY				pmax	pmax				
	comp=Z,390nm,6.2s								
SNY				LR	LR				
	comp=Z,2µm,16.4s								
SNY				LR	LR				
	comp=Z,2µm,18.5s								
SNY				LR	LR				
	comp=Z,4µm,19.2s								
WRAB	**Tennant Creek**	**34.60 199**	*d*	*i*P	**P**	**21 05 46.1**	**+0.4**		
WRAB				pmax	pmax				
	comp=Z,151nm,1.7s								
WRAB	**Tennant Creek**	**34.60 199**		*e*P	**P**	**21 05 45.3**	**-0.5**		
WB2	**Warramunga Arr**	**34.61 199**		*e*P	**P**	**21 05 43.5**	**-2.3**		
WR1	**Warramunga Arr**	**34.62 199**		*e*P	**P**	**21 05 45.6**	**-0.3**		
WRA	**Warramunga Arr**	**34.62 199**		P	**P**	**21 05 45.6**	**-0.3**		
	comp=Z,14nm,0.6s,baz=21,slow=9.9,SNR=108								
WRA				LR	LR	21 19 35.2			
	comp=Z,1µm,20.7s,baz=15,slow=36								
WRA	**Warramunga Arr**	**34.62 199**	*i*	P	**P**	**21 05 45.7**	**-0.1**		
WRA				pmax	pmax				
	comp=Z,14nm,0.6s								
SBUM	**Sibu**	**34.63 255**		*e*P	**P**	**21 05 46.6**	**+0.4**		
BBKI	**Banjar Baru**	**34.65 244**		P	**P**	**21 05 50.5**	**+4.2**		
QIZ	**Qiongzhong**	**34.80 285**		P	**P**	**21 05 47.8**	**+0.3**		
QIZ				PP	**PP**	**21 07 05.3**	**-1.3**		
QIZ				S	**S**	**21 11 21.8**	**+4.8**		
QIZ				pmax	pmax				
	comp=Z,20nm,1.4s								
QIZ				pmax	pmax				
	comp=Z,340nm,12.2s								
QIZ				LR	LR				
	comp=Z,3µm,18.1s								
QIZ				LR	LR				
	comp=Z,4µm,19.0s								
CN2	**Changchun**	**35.17 334**		*e*P	**P**	**21 05 51.9**	**+1.5**		
CN2				*e*SP	pP	21 05 56.0	-1.8		
CN2				*e*S	**S**	**21 11 24.0**	**+1.9**		
CN2				pmax	pmax				
	comp=Z,100nm,3.0s								
CN2				LR	LR				
	comp=Z,2µm,19.0s								
CN2				LR	LR				
	comp=Z,2µm,19.0s								
CN2				LR	LR				
	comp=Z,3µm,17.0s								
STKI	**Sintang**	**36.17 252**		P	**P**	**21 05 59.5**	**+0.1**		
HABR	**Khabarovsk**	**36.36 348**	*de*	P	**P**	**21 05 58.3**	**-2.2**		
HABR				*e**SP	**pP**	**21 06 07.1**	**-0.8**		
HABR				*e*		21 07 20.8			
HABR				*e*		21 08 22.6			
HABR				*e*S	**S**	**21 11 39.3**	**-1.0**		
HABR				*e*SS	**SnSn**	**21 14 08.1**	**-0.7**		
HABR				*e*SSS	SSS	21 14 25.0			
HABR				*e*		21 16 14.5			
HABR				pmax	pmax				
	comp=N,11nm,1.6s								
HABR				pmax	pmax				
	comp=Z,36nm,1.6s								
HABR				pmax	pmax				
	comp=E,5.0nm,0.8s								
HABR				MLR	MLR				
	comp=Z,1µm,18.0s								
FITZ	**Fitzroy Crossi**	**36.69 213**		P	**P**	**21 06 03.2**	**-0.5**		
	comp=Z,11nm,1.1s,baz=47,slow=7.4,SNR=16								
FITZ				LR	LR	21 23 51.7			
	comp=Z,263nm,18.0s,baz=30,slow=41								
FITZ	**Fitzroy Crossi**	**36.69 213**		*e*P	**P**	**21 06 02.4**	**-1.3**		
PBKI	**Pangkalan Bun**	**37.12 247**		P	**P**	**21 06 08.7**	**+1.3**		
BJT	**Baijiatuao**	**37.26 321**		*e*P	**P**	**21 06 07.2**	**-1.2**		
BJT	**Baijiatuao**	**37.26 321**		*e*P	**P**	**21 06 07.2**	**-1.2**		
BJI	**Beijing**	**37.27 322**		P	**P**	**21 06 07.8**	**-0.6**		
BJI				S	**S**	**21 11 58.8**	**+4.4**		
BJI				pmax	pmax				
	comp=Z,370nm,3.8s								
BJI				LR	LR				
	comp=Z,2µm,16.8s								
BJI				LR	LR				
	comp=Z,2µm,17.4s								
BJI				LR	LR				
	comp=Z,1µm,16.8s								
ENH	**Enshi**	**37.44 303**		*e*P	**P**	**21 06 09.0**	**-1.1**		
TYV	**Tymovskoe**	**37.77 357**		*e*P	**P**	**21 06 10.8**	**-1.6**		
TYV				pmax	pmax				
	comp=N,13nm,0.8s								
TYV				pmax	pmax				
	comp=Z,72nm,1.2s								
KLR	**Kul'dur**	**37.82 345**		P	**P**	**21 06 11.8**	**-1.1**		
	comp=Z,3.7nm,0.6s,baz=146,slow=6.2,SNR=15								
KLR	**Kul'dur**	**37.82 345**	*d*	*i*P	**P**	**21 06 12.3**	**-0.6**		
JAGI	**Jajag, Banyuwa**	**37.84 237**		P	**P**	**21 06 14.1**	**+0.6**		
JAGI	**Jajag, Banyuwa**	**37.84 237**		*e*P	**P**	**21 06 12.3**	**-1.3**		
BLJI	**Banyuglugur**	**37.90 239**		P	**P**	**21 06 17.3**	**+3.3**		
AS01	**Alice Springs**	**38.23 197**		*e*P	**P**	**21 06 16.5**	**-0.3**		
AS31	**Alice Springs**	**38.25 197**		*e*P	**P**	**21 06 16.9**	**0.0**		
ASAR	**Alice Springs**	**38.25 197**		P	**P**	**21 06 17.0**	**+0.1**		
	comp=Z,11nm,0.5s,baz=28,slow=8.3,SNR=128								
ASAR				PcP	**PcP**	**21 08 32.1**	**+1.1**		
	comp=Z,4.2nm,1.0s,baz=28,slow=2.7,SNR=2.6								
ASAR				LR	LR	21 22 09.2			
	comp=Z,1µm,20.2s,baz=20,slow=36								
GMJI	**Gumukmas**	**38.31 238**		P	**P**	**21 06 19.2**	**+1.7**		
TIY	**Taiyuan**	**38.37 316**		*e*P	**P**	**21 06 19.1**	**+1.2**		
TIY				S	**S**	**21 12 13.8**	**+2.5**		
TIY				pmax	pmax				
	comp=Z,350nm,8.1s								
TIY				LR	LR				
	comp=Z,2µm,15.9s								
TIY				LR	LR				
	comp=Z,3µm,17.1s								
TIY				LR	LR				
	comp=Z,4µm,17.4s								
EIDS	**Eidsvold**	**38.58 172**		*e*P	**P**	**21 06 20.4**	**+0.9**		
GYA	**Guiyang**	**38.80 296**	⇑	*i*P	**P**	**21 06 21.9**	**+0.2**		
GYA				PP	**PnPn**	**21 07 54.5**	**+1.5**		
GYA				PcP	**PcP**	**21 08 35.3**	**+2.4**		
GYA				S	**S**	**21 12 22.0**	**+3.8**		
GYA				SS	**SnSn**	**21 15 01.8**	**-6.7**		
GYA				pmax	pmax				
	comp=Z,20nm,0.8s								
GYA				pmax	pmax				
	comp=Z,140nm,5.2s								
GYA				LR	LR				
	comp=Z,3µm,17.7s								
GYA				LR	LR				
	comp=Z,1µm,18.0s								
GYA				LR	LR				
	comp=Z,1µm,18.2s								
UBPT	**Khong Chiam**	**38.90 278**		P	P	21 06 31.4	+8.9		
XAN	**Xi'an**	**39.25 308**		P	**P**	**21 06 23.4**	**-1.9**		
XAN				pP	pP	21 06 32.3	-0.4		
XAN				PP	**PnPn**	**21 07 59.8**	**+1.6**		
XAN				S	**S**	**21 12 32.4**	**+7.8**		
XAN				pmax	pmax				
	comp=Z,540nm,11.1s								
XAN				LR	LR				
	comp=Z,3µm,19.3s								
XAN				LR	LR				
	comp=Z,4µm,18.2s								
NGJI	**Ngawi**	**39.50 241**		P	**P**	**21 06 31.7**	**+4.2**		
PWJI	**Pagerwojo**	**39.55 240**		P	**P**	**21 06 27.8**	**-0.1**		
PCJI	**Pacitan**	**40.17 240**		P	**P**	**21 06 34.7**	**+1.7**		
NKL	**Nikolayevsk**	**40.17 355**		*e*P	**P**	**21 06 37.0**	**+4.5**		
NKL				*e*		21 08 08.0			
NKL				*e*S	**S**	**21 12 30.0**	**-7.7**		
NKL				smax	smax				
	comp=E,500nm,15.0s								
NKL				MLR	MLR				
	comp=E,700nm,15.0s								
NKL				MLR	MLR				
	comp=N,1µm,18.0s								
NKL				MLR	MLR				
	comp=Z,1µm,18.0s								
WOJI	**Wonogiri, Jawa**	**40.20 241**		P	**P**	**21 06 34.4**	**+1.1**		
SKNT	**Sakolnakorn**	**40.30 281**		P	**P**	**21 06 34.7**	**+0.6**		
	comp=Z,50nm,1.1s								
DZM	**Mont Dzumac**	**40.48 149**		P	**P**	**21 06 36.1**	**+0.5**		
	comp=Z,19nm,1.0s,baz=249,slow=4.9,SNR=5.3								
DZM	**Mont Dzumac**	**40.48 149**		*e*S	**S**	**21 12 41.2**	**-2.0**		
	comp=Z,2µm,29.9s								
DZM				*e*LR	LR	21 17 45.8			
	comp=Z,3µm,22.4s								
DZM	**Mont Dzumac**	**40.48 149**		*e*P	**P**	**21 06 35.4**	**-0.2**		
UGM	**Wanagama**	**40.58 241**		P	**P**	**21 06 37.7**	**+1.2**		
UGM	**Wanagama**	**40.58 241**		*e*P	**P**	**21 06 35.5**	**-0.9**		
HHC	**Hu-ho-hao-te**	**40.61 319**		*e*P	**P**	**21 06 38.0**	**+1.5**		
HHC				S	**S**	**21 12 47.3**	**+2.4**		
HHC				pmax	pmax				
	comp=Z,10.0nm,0.6s								
HHC				pmax	pmax				
	comp=Z,390nm,7.4s								
HHC				LR	LR				
	comp=Z,2µm,18.6s								
HHC				LR	LR				
	comp=Z,3µm,19.6s								
HHC				LR	LR				
	comp=Z,2µm,18.6s								
PEA0	**Petropavlovsk-**	**41.10 11**		*e*P	**P**	**21 06 38.9**	**-1.3**		
PEA0B	**Petropavlovsk-**	**41.10 11**		*e*P	**P**	**21 06 39.3**	**-0.9**		
PETK	**Petropavlovsk-**	**41.10 11**		P	**P**	**21 06 40.1**	**-0.1**		
	comp=Z,7.1nm,0.7s,baz=164,slow=7.7,SNR=4.7								
PETK				PcP	**PcP**	**21 08 40.8**	**+1.3**		
	comp=Z,5.1nm,0.7s,baz=180,slow=2.7,SNR=3.0								
PEA1	**Petropavlovsk-**	**41.10 11**		*e*P	**P**	**21 06 40.1**	**-0.1**		
PEA1				*e*PcP	**PcP**	**21 08 40.8**	**+1.3**		
NONG	**Nongkai**	**41.10 283**		P	**P**	**21 06 41.4**	**+0.7**		
	comp=Z,49nm,1.1s								
PET	**Petropavlovsk**	**41.20 12**		*e*P	**P**	**21 06 41.4**	**+0.4**		
PET				*e*S	**S**	**21 12 54.6**	**+1.5**		
PET				pmax	pmax				
	comp=Z,46nm,1.4s								
PET				smax	smax				
	comp=Z,1µm,17.0s								
PET				smax	smax				
	comp=Z,1µm,19.0s								
PET	**Petropavlovsk**	**41.20 12**		*e*P	**P**	**21 06 41.1**	**+0.1**		
BTO	**Baotou**	**41.47 318**		*e*P	**P**	**21 06 42.8**	**-0.8**		
HIA	**Hailar**	**41.90 335**		*e*P	**P**	**21 06 44.6**	**-2.3**		
HIA	**Hailar**	**41.90 335**		*e*P	**P**	**21 06 44.6**	**-2.3**		
KMI	**Kunming**	**42.04 293**		P	**P**	**21 06 48.8**	**+0.2**		
KMI				sP	pP	21 06 51.1	-5.0		
KMI				PP	**PP**	**21 08 29.5**	**+3.4**		
KMI				S	**S**	**21 13 08.5**	**+1.7**		
KMI				sS	sS	21 13 13.4	-5.7		
KMI				SS	**SS**	**21 16 11.0**	**-3.4**		
KMI				pmax	pmax				
	comp=Z,14nm,0.8s								
KMI				pmax	pmax				
	comp=Z,400nm,7.9s								
KMI				LR	LR				
	comp=Z,910nm,19.9s								
KMI				LR	LR				
	comp=Z,2µm,21.0s								
KMI				LR	LR				
	comp=Z,2µm,22.7s								
CHBT	**CHBT**	**42.11 275**		P	**P**	**21 06 50.7**	**+1.7**		
	comp=Z,55nm,1.6s,comp=Z,3µm								
CHAI	**Chaiyaphum**	**42.24 279**		P	**P**	**21 06 50.0**	**-0.1**		
	comp=Z,9.1nm,1.1s,comp=Z,106nm								
SRAK	**Srakaew**	**42.28 277**		P	**P**	**21 06 46.7**	**-3.7**		
	comp=Z,81nm,1.4s,comp=Z,887nm								
CD2	**Chengdu**	**42.35 302**	⇑	P	**P**	**21 06 49.8**	**-1.1**		
CD2				sP	pP	21 06 53.4	-4.9		
CD2				PP	**PP**	**21 08 27.8**	**-1.4**		
CD2				PcS	**PcS**	**21 12 35.3**	**-0.9**		
CD2				S	**S**	**21 13 12.0**	**+1.2**		
CD2				sS	sS	21 13 15.9	-7.2		
CD2				pmax	pmax				
	comp=Z,20nm,0.6s								
CD2				pmax	pmax				
	comp=Z,600nm,8.2s								
CD2				LR	LR				
	comp=Z,2µm,19.9s								
CD2				LR	LR				
	comp=Z,2µm,22.3s								
CD2				LR	LR				
	comp=Z,2µm,21.4s								
MBWA	**Marble Bar**	**42.44 217**		*e*P	**P**	**21 06 49.7**	**-1.9**		
KTGM	**Kuala Trenggan**	**42.54 264**	⇑	P	**P**	**21 06 52.7**	**+0.1**		
CISI	**Cisompet, Garu**	**42.74 243**		*e*P	**P**	**21 06 52.2**	**-1.9**		
MYKOM	**Kota Tinggi**	**42.78 258**	⇑	P	**P**	**21 06 54.9**	**+0.3**		
MYKOM	**Kota Tinggi**	**42.78 258**		*e*P	**P**	**21 06 54.0**	**-0.6**		
LOEI	**Loei**	**42.89 282**		P	**P**	**21 06 52.0**	**-3.4**		
	comp=Z,90nm,1.2s								
PBKT	**Sadao Pong**	**43.19 280**		P	P	21 07 03.5	+5.7		
	comp=Z,42nm,1.2s,comp=Z,1µm								
UTTA	**Uttaradit**	**43.57 282**		P	**P**	**21 07 00.7**	**-0.1**		
	comp=Z,5.3nm,0.7s,comp=Z,56nm								
LZH	**Lanzhou**	**43.88 309**	⇑	P	**P**	**21 07 03.1**	**-0.2**		
LZH				pP	pP	21 07 04.8	-6.0		
LZH				PP	**PP**	**21 08 46.1**	**+0.5**		
LZH				S	**S**	**21 13 33.0**	**-0.4**		
LZH				sS	sS	21 13 39.3	-6.4		
LZH				SS	**SS**	**21 16 43.5**	**-6.5**		
LZH				pmax	pmax				
	comp=Z,75nm,1.4s								
LZH				pmax	pmax				
	comp=Z,420nm,6.5s								
LZH				LR	LR				
	comp=Z,1µm,13.2s								
LZH				LR	LR				
	comp=Z,1µm,14.0s								
LZH				LR	LR				
	comp=Z,2µm,16.5s								
MSVF	**Nonsavu**	**44.32 133**		*e*P	**P**	**21 07 07.8**	**+0.9**		
MSVF				pmax	pmax				
	comp=Z,50nm,1.1s								
MSVF	**Nonsavu**	**44.32 133**		*e*P	**P**	**21 07 07.8**	**+0.9**		
LAMP	**Lampang**	**44.44 283**		P	**P**	**21 07 08.2**	**+0.3**		
	comp=Z,79nm,0.6s,comp=Z,71nm								
SUKH	**Sukhothai**	**44.45 282**		P	**P**	**21 07 09.1**	**+1.2**		
	comp=Z,5.1nm,0.8s,comp=Z,56nm								
FRIM	**Kepong**	**44.51 261**	⇑	P	**P**	**21 07 09.1**	**+0.6**		
PHET	**Kaeng Krachan**	**44.72 275**		P	**P**	**21 07 12.3**	**+2.2**		
	comp=Z,7.1nm,1.0s								
IPM	**Ipoh**	**44.78 263**	⇓	P	**P**	**21 07 09.9**	**-0.8**		
IPM	**Ipoh**	**44.78 263**		*e*P	**P**	**21 07 08.2**	**-2.4**		
STKA	**Stephens Creek**	**44.85 185**		P	**P**	**21 07 10.6**	**-0.3**		
	comp=Z,7.2nm,0.8s,baz=360,slow=8.0,SNR=18								
STKA	**Stephens Creek**	**44.85 185**		*e*P	**P**	**21 07 10.5**	**-0.3**		
STKA				pmax	pmax				
	comp=Z,6.0nm,1.2s								
KULM	**Kulim**	**44.95 264**	⇓	P	**P**	**21 07 12.4**	**+0.4**		
KULM	**Kulim**	**44.95 264**		*e*P	**P**	**21 07 10.7**	**-1.3**		
CMAI	**Chiengmai2**	**45.01 285**		P	**P**	**21 07 14.7**	**+2.1**		
	comp=Z,298nm,1.4s								
CM01	**Chiang Mai Arr**	**45.08 283**		*e*P	**P**	**21 07 12.4**	**-0.6**		
CMMT	**Chiang Mai**	**45.09 284**		P	**P**	**21 07 13.2**	**+0.1**		
	comp=Z,32nm,0.9s								
CHTO	**Chiang Mai**	**45.10 284**		P	**P**	**21 07 13.3**	**+0.2**		
	comp=Z,58nm,1.1s								
CHTO	**Chiang Mai**	**45.10 284**		*e*P	**P**	**21 07 11.9**	**-1.2**		
CHTO				pmax	pmax				
	comp=Z,36nm,1.3s								
CHTO	**Chiang Mai**	**45.10 284**		*e*P	**P**	**21 07 11.9**	**-1.2**		
CM31	**Chiang Mai Arr**	**45.10 283**		*e*P	**P**	**21 07 12.9**	**-0.2**		
CMAR	**Chiang Mai Arr**	**45.10 283**		P	**P**	**21 07 12.9**	**-0.2**		
	comp=Z,17nm,0.6s,baz=82,slow=6.7,SNR=110								
CMAR				PcP	**PcP**	**21 08 54.7**	**+1.0**		
	comp=Z,8.8nm,0.8s,baz=88,slow=2.0,SNR=7.8								
CMAR				LR	LR	21 27 16.1			
	comp=Z,1µm,18.6s,baz=83,slow=38								
SURA	**Surathani**	**45.20 270**		P	**P**	**21 07 15.3**	**+1.4**		
	comp=Z,139nm,1.2s,comp=Z,7µm								
UMPA	**Umpang Tak**	**45.23 280**		P	**P**	**21 07 15.8**	**+1.6**		
	comp=Z,9.1nm,1.4s,comp=Z,156nm								
SMY	**Shemya**	**45.65 24**		*e*P	**P**	**21 07 19.8**	**+2.9**		
SMY				pmax	pmax				
	comp=Z,750nm,1.5s								
SMY	**Shemya**	**45.65 24**		*e*P	**P**	**21 07 19.8**	**+2.9**		
MNAI	**Manna**	**45.73 251**		*e*P	**P**	**21 07 16.1**	**-2.0**		
BKNI	**Bangkinang**	**45.90 258**		*e*P	**P**	**21 07 17.6**	**-1.9**		
XMIS	**Christmas Isla**	**46.02 241**		*e*P	**P**	**21 07 18.8**	**-1.6**		
SURT	**Suratani**	**46.05 270**		P	**P**	**21 07 24.8**	**+4.2**		
	comp=Z,12nm,1.1s								
BBOO	**Buckleboo**	**46.52 191**		*e*P	**P**	**21 07 23.6**	**-0.4**		
MA2	**Magadan**	**46.58 4**		P	**P**	**21 07 24.4**	**+0.2**		
	comp=Z,17nm,1.0s,baz=176,slow=7.3,SNR=8.8								
CIT	**Chita**	**46.59 333**		*e*P	**P**	**21 07 25.3**	**+0.8**		
CIT				*e*		21 07 46.1			
FORT	**Forrest**	**46.73 201**		*e*P	**P**	**21 07 26.3**	**+0.6**		
PSI	**Prapat**	**47.23 262**		P	**P**	**21 07 29.3**	**-0.8**		
	comp=Z,13nm,0.7s,baz=66,slow=8.2,SNR=11								
PSI	**Prapat**	**47.23 262**		*e*P	**P**	**21 07 29.3**	**-0.8**		
PSI				pmax	pmax				
	comp=Z,17nm,0.7s

YAK pmax pmax
comp=Z,84nm,3.4s
YAK pmax pmax
comp=N,119nm,4.2s
YAK smax smax
comp=E,174nm,5.8s
YAK smax smax
comp=N,44nm,1.9s
YAK MLR MLR
comp=N,1µm,16.0s
YAK MLR MLR
comp=Z,1µm,15.0s
YAK MLR MLR
comp=E,703nm,14.0s
BOD Bodaibo 50.65 339 *e*P **P 21 07 54.6 -0.9**
BOD pmax pmax
comp=Z,26nm,1.2s
ZAK Zakamensk 50.65 326 *e*P **P 21 07 53.3 -2.5**
ZAK *e* 21 09 13.4
ZAK pmax pmax
comp=Z,15nm,1.6s
ZAK pmax pmax
comp=Z,27nm,1.4s
ZAK pmax pmax
comp=Z,6.0nm,1.8s
TLY Talaya 51.16 328 P **P 21 07 59.8 +0.3**
comp=Z,3.6nm,0.6s,baz=128,slow=8.3,SNR=4.1
TLY Talaya 51.16 328 *e*P **P 21 07 59.2 -0.3**
TLY *e*S **S 21 15 20.4 +4.3**
TLY pmax pmax
comp=Z,22nm,1.3s
TLY MLR MLR
comp=Z,841nm,15.0s
TLY Talaya 51.16 328 *e*P **P 21 07 58.7 -0.8**
SHL Shillong 51.85 292 *e*P **P 21 08 08.0 +2.7**
SHL *e*S S 21 15 40.0 +13
MOY Mondy 52.55 327 *e*P **P 21 08 10.2 +0.2**
MOY pmax pmax
comp=Z,37nm,2.9s
LSA Lhasa 52.84 297 P **P 21 08 12.9 0.0**
LSA Lhasa 52.84 297 *e*P **P 21 08 12.1 -0.8**
LSA Lhasa 52.84 297 *e*P **P 21 08 12.1 -0.8**
NWAO Narrogin (SRO) 53.15 210 P **P 21 08 14.5 +0.1**
comp=E,16nm,1.1s,baz=271,slow=7.5,SNR=4.7
NWAO Narrogin (SRO) 53.15 210 *e*P **P 21 08 13.4 -1.0**
NWAO pmax pmax
comp=Z,24nm,1.0s
NWAO Narrogin (SRO) 53.15 210 *e*P **P 21 08 13.4 -1.0**
NIKH Nikolski High 53.74 32 *e*P **P 21 08 18.9 +0.4**
HON Honolulu 54.30 73 *e*P **P 21 08 25.3 +2.2**
HON Honolulu 54.30 73 *e*P **P 21 08 25.3 +2.2**
RAO Raoul Island 54.89 141 *e*P **P 21 08 26.5 -0.7**
RAO Raoul Island 54.89 141 *e*P **P 21 08 26.5 -0.7**
SPIA Saint Paul Isl 55.32 27 *e*P **P 21 08 32.7 +2.8**
UNV Unalaska Valle 55.40 32 *e*P **P 21 08 31.7 +1.1**
AKUT Akutan 55.91 32 *e*P **P 21 08 35.5 +1.3**
KKH Kailua Kona 56.21 75 *e*P **P 21 08 38.8 +1.8**
HPAH Hawaii Prepara 56.49 75 *e*P **P 21 08 39.7 +0.6**
BILL Bilibino 56.56 9*c i*P **P 21 08 38.2 -0.5**
BILL *i* 21 10 42.2
BILL pmax pmax
comp=Z,37nm,1.0s
BILL MLR MLR
comp=Z,823nm,19.0s
BILL Bilibino 56.56 9 *e*P **P 21 08 38.1 -0.6**
POHA Pohakuloa 56.66 75 *e*P **P 21 08 42.0 +1.5**
HPO Honuapo 56.68 76 *e*P **P 21 08 41.4 +1.1**
GUN Gumba 57.33 295 *e*P **P 21 08 44.7 -0.5**
comp=Z,53nm,0.6s
PKIN Phulchoki 57.74 294 *e*P **P 21 08 47.0 -1.1**
comp=Z,23nm,0.7s
KKN Kakani 57.85 295 *e*P **P 21 08 47.8 -1.0**
WMQ Urumqi 57.99 314 P **P 21 08 50.0 +0.7**
WMQ pP pP 21 08 54.8 -2.2
WMQ PcP **PcP 21 09 42.6 +1.4**
WMQ PP **PP 21 11 02.0 +4.2**
WMQ S **S 21 16 47.8 -0.6**
WMQ ScS **ScS 21 18 35.8 -1.8**
WMQ pmax pmax
comp=Z,32nm,1.0s
WMQ pmax pmax
comp=Z,290nm,5.2s
WMQ LR LR
comp=Z,1µm,18.7s
WMQ LR LR
comp=Z,1µm,18.7s
WMQ LR LR
comp=Z,2µm,24.2s
DMN Daman 58.00 294 *e*P **P 21 08 48.9 -1.0**
comp=Z,30nm,0.6s
GKN Gorkha 58.43 295 *e*P **P 21 08 51.4 -1.4**
comp=Z,30nm,0.6s
GAMB Gambell 58.72 21 *e*P **P 21 08 54.1 +0.2**
URZ Urewera 58.99 151 P **P 21 08 56.2 +0.1**
comp=Z,15nm,0.8s,baz=88,slow=1.7,SNR=7.8
SDPT Sand Point 59.21 33 *e*P **P 21 08 58.1 +0.7**
TIXI Tiksi 59.42 354‖*e*P **P 21 08 59.6 +1.0**
TIXI pmax pmax
comp=Z,7.0nm,1.3s
TIXI Tiksi 59.42 354 *e*P **P 21 08 59.1 +0.4**
BKZ Black Stump Fm 59.44 152 *e*P **P 21 08 58.6 -0.6**
PYUN Piuthan 59.89 295 *e*P **P 21 09 02.1 -0.8**
comp=Z,54nm,0.8s
THZ Tophouse 60.10 157 *e*P **P 21 09 04.2 +0.4**
SNZO South Karori 60.43 155 *e*P **P 21 09 05.0 -0.9**
FOZ Fox Glacier 60.53 160 *e*P **P 21 09 04.9 -1.6**
KHZ Kahutara 60.90 157 *e*P **P 21 09 10.1 +0.9**
RPZ Rata Peaks 61.11 159 P **P 21 09 10.8 +0.2**
comp=Z,38nm,1.1s,baz=262,slow=4.2,SNR=8.6
RPZ Rata Peaks 61.11 159 *e*P **P 21 09 09.6 -1.0**
OXZ Oxford 61.12 158 *e*P **P 21 09 10.0 -0.6**
LBZ Lake Benmore 61.41 160 *e*P **P 21 09 13.0 +0.4**
DCZ Deep Cove 61.44 163 *e*P **P 21 09 12.5 -0.2**
CRLZ Canterbury Las 61.55 158 *e*P **P 21 09 12.1 -1.5**
MLZ Mavora Lakes 61.64 162 *e*P **P 21 09 15.9 +1.7**
MQZ McQueen's Vall 61.67 158 *e*P **P 21 09 16.4 +2.0**
MK01 Makanchi Array 62.32 316 *e*P **P 21 09 17.9 -1.0**
MK31 Makanchi Array 62.34 316 *e*P **P 21 09 18.6 -0.4**
MK31 pmax pmax
comp=Z,9.0nm,0.7s
MK31 Makanchi Array 62.34 316 *e*P **P 21 09 18.5 -0.4**
MK32 Makanchi Array 62.34 316 *e*P **P 21 09 18.3 -0.7**
MK32 ⇑*e* 21 38 31.1
MKAR Makanchi Array 62.34 316 P **P 21 09 18.3 -0.7**
comp=Z,3.7nm,0.5s,baz=88,slow=8.7,SNR=51
MKAR LR LR 21 37 52.5
comp=Z,1µm,18.7s,baz=96,slow=37
MKAR PKP2bc 21 38 31.1
comp=Z,1.5nm,0.9s,baz=278,slow=3.6,SNR=12
MKAR Makanchi Array 62.34 316 *e*P **P 21 09 18.4 -0.6**
ZAA0 Zalesovo Array 62.44 324 *e*P **P 21 09 17.8 -1.6**
ZALV Zalesovo Beam 62.44 324 P **P 21 09 18.9 -0.6**
comp=Z,3.2nm,0.7s,baz=104,slow=5.8,SNR=22
ZALV LR LR 21 37 00.6
comp=Z,1µm,19.9s,baz=70,slow=36
ZALV PKP2bc 21 38 28.2
comp=Z,0.6nm,0.2s,baz=233,slow=0.7,SNR=3.8
ZAA1 Zalesovo Array 62.44 324 *e*P **P 21 09 18.9 -0.6**
ZAA1 ⇑*e* 21 38 28.2
MAKZ Makanchi 62.55 316 P **P 21 09 18.4 -2.0**
MAKZ pmax pmax
comp=Z,23nm,1.0s
MAKZ Makanchi 62.55 316 *e*P **P 21 09 20.1 -0.3**
NVS Novosibirsk 63.58 325⇑*i*P **P 21 09 27.4 +0.4**
NVS *e*S **S 21 18 01.3 +2.1**
NVS pmax pmax
comp=N,24nm,1.0s
NVS pmax pmax
comp=Z,42nm,1.0s
NVS pmax pmax
comp=E,14nm,0.7s
NVS smax smax
comp=N,4.0nm,0.6s
NVS smax smax
comp=E,1.0nm,0.3s
OHAK Old Harbor 63.62 32 *e*P **P 21 09 28.5 +1.3**
SVW2 Sparrevohn 63.82 28 *e*P **P 21 09 29.9 +1.4**
PALK Pallekele 63.97 272 LR LR 21 36 09.9
comp=E,1µm,20.2s,baz=117,slow=35
PALK Pallekele 63.97 272*c e*P **P 21 09 31.9 +1.5**
PALK Pallekele 63.97 272 *e*P **P 21 09 28.5 -1.9**
UZB Uzynbulak 64.09 312 *e*P **P 21 09 28.7 -2.1**
comp=E,41nm,0.9s
UZB *e*S **S 21 18 02.6 -3.8**
UZB LR LR 21 37 43.6
comp=E,310nm,17.3s
KDAK Kodiak Island 64.15 32 *i*P **P 21 09 32.3 +1.6**
KDAK Kodiak Island 64.15 32 *e*P **P 21 09 32.9 +2.2**
TT01 Tatalina 64.31 26 *e*P **P 21 09 33.0 +1.2**
TTA Tatalina 64.33 26 *e*P **P 21 09 32.6 +0.7**
TTA Tatalina 64.33 26 *e*P **P 21 09 32.6 +0.7**
HYB Hyderabad 64.53 283 *i*P **P 21 09 34.0 0.0**
HYB *e* 21 18 18.0
TDK Taldyqorghan 64.75 314 *e*P **P 21 09 33.4 -1.6**
comp=E,40nm,0.7s
TDK *e*S **S 21 18 10.7 -3.5**
TDK LR LR 21 37 37.4
comp=E,319nm,16.6s
CNPM China Poot 65.34 30 *e*P **P 21 09 39.0 +0.6**
KURK Kurchatov 65.42 320 P **P 21 09 38.4 -0.7**
KURK pmax pmax
comp=Z,26nm,0.8s
KURK Kurchatov 65.42 320 *e*P **P 21 09 38.4 -0.7**
KURBB Kurchatov Arra 65.46 320 P **P 21 09 38.4 -1.0**
comp=Z,26nm,0.8s,baz=102,slow=6.8,SNR=117
MDOK Medeo 65.53 312 *e*P **P 21 09 38.0 -2.3**
comp=Z,37nm,1.4s
MDOK *e*S **S 21 18 20.2 -3.9**
MDOK LR LR 21 38 48.2
comp=Z,526nm,17.1s
AAA Alma-Ata 65.61 312 *i*P **P 21 09 41.0 +0.4**
AAA pmax pmax
comp=Z,400nm,8.2s
AAA MLR MLR
comp=Z,1µm,18.0s
AAA Alma-Ata 65.61 312 *e*P **P 21 09 37.8 -2.8**
AAA *e*S **S 21 18 20.7 -4.2**
AAA LR LR 21 39 07.1
comp=Z,463nm,18.6s
PPLA Purkeypile 65.95 26 *e*P **P 21 09 43.7 +1.2**
KSH Kashi 66.10 308 P **P 21 09 46.4 +2.5**
KSH *e*PP **PP 21 12 14.1 +4.6**
KSH *e*ScP 21 14 19.9
KSH S **S 21 18 33.8 +2.7**
KSH ScS **ScS 21 19 40.4 +1.3**
KSH SS **SS 21 22 49.8 +3.0**
KSH pmax pmax
comp=Z,260nm,5.7s
KSH LR LR
comp=Z,900nm,18.9s
KSH LR LR
comp=Z,1µm,16.8s
KSH LR LR
comp=Z,1µm,18.4s
KUU Kurty 66.11 312 *e*P **P 21 09 41.7 -2.0**
comp=Z,85nm,1.3s
KUU *i* PP **PP 21 12 07.0 -2.3**
KUU *e*S **S 21 18 27.7 -3.1**
KUU LR LR 21 39 10.8
comp=Z,420nm,15.1s
SUA Susitna One 66.14 28 *e*P **P 21 09 44.5 +0.8**
CAST Castle Rocks 66.17 26 *e*P **P 21 09 44.4 +0.6**
RC01 Rabbit Creek A 66.50 29 *e*P **P 21 09 46.3 +0.4**
TKM2 Tokmak 2 66.57 311 P **P 21 09 45.3 -1.7**
TKM2 pmax pmax
comp=Z,8.0nm,1.1s
KTH Kantishna Hill 66.70 26 *e*P **P 21 09 47.8 +0.6**
NRIK Noril'sk 66.84 341 P **P 21 09 47.1 -0.8**
comp=Z,15nm,0.8s,baz=111,slow=6.9,SNR=21
NRIK LR LR 21 39 34.3
comp=Z,1µm,18.4s,baz=117,slow=36
BPAW Bear Paw Mtn. 66.85 25 *e*P **P 21 09 48.8 +0.6**
PMR Palmer 66.92 28 *e*P **P 21 09 49.3 +0.8**
PMR pmax pmax
comp=Z,130nm,1.8s
PMR Palmer 66.92 28 *e*P **P 21 09 48.9 +0.3**
TRF Thorofare Moun 66.94 26 *e*P **P 21 09 49.2 +0.3**
MLY Manley 67.25 24 *e*P **P 21 09 51.2 +0.5**
FRU Bishkek 67.29 311 *e*P **P 21 09 50.0 -1.3**
FRU pmax pmax
comp=E,2µm,19.0s
SML Sawmill 67.34 28 *e*P **P 21 09 51.7 +0.4**
SML Sawmill 67.34 28 *e*P **P 21 09 51.7 +0.4**
AAK Ala-Archa 67.37 311 P **P 21 09 52.5 +0.5**
comp=E,2.1nm,0.4s,baz=87,slow=3.0,SNR=3.2
AAK Ala-Archa 67.37 311 ‖P **P 21 09 51.9 -0.1**
AAK pmax pmax
comp=Z,5.0nm,0.8s
AAK Ala-Archa 67.37 311 *e*P **P 21 09 49.9 -2.1**
TRD Trivandrum 67.38 274‖*e*P P 21 10 01.2 +8.8
TRD *e*S S 21 19 03.2 +16
BWN Browne 67.50 25 *e*P **P 21 09 53.0 +0.8**
RND Reindeer 67.55 26 *e*P **P 21 09 52.4 -0.2**
RND Reindeer 67.55 26 *e*P **P 21 09 52.4 -0.2**
MCK McKinley 67.60 26 *e*P **P 21 09 53.5 +0.6**
MCK McKinley 67.60 26 *e*P **P 21 09 53.5 +0.6**
GLI Glacier Island 67.69 29 *e*P **P 21 09 54.2 +0.7**
MID Middleton Isla 67.73 31 *e*P **P 21 09 53.8 +0.1**
MID Middleton Isla 67.73 31 *e*P **P 21 09 53.8 +0.1**
SCM Sheep Creek Mo 67.81 28 *e*P **P 21 09 55.1 +0.8**
SCM Sheep Creek Mo 67.81 28 *e*P **P 21 09 55.1 +0.8**
FID Port Fidalgo 67.95 29 *e*P **P 21 09 56.1 +1.0**
WRH Wood River Hil 68.17 25 *e*P **P 21 09 56.2 -0.2**
COLD Coldfoot 68.17 22 *e*P **P 21 09 57.3 +0.9**
MDM Murphy Dome 68.24 25 *e*P **P 21 09 56.9 0.0**
EYAK Cordova Ski Ar 68.26 30 *e*P **P 21 09 58.0 +1.0**
CCB Clear Creek Bu 68.33 25 *e*P **P 21 09 57.1 -0.3**
DIV Divide 68.37 29 *e*P **P 21 09 59.5 +1.7**
COLA College 68.38 25 *e*P **P 21 09 57.6 -0.1**
COLA College 68.38 25 *e*P **P 21 09 57.6 -0.1**
KLU Klutina 68.38 29 *e*P **P 21 09 59.2 +1.3**
HDA Harding Lake 68.63 26 *e*P **P 21 09 58.8 -0.5**
ILAR Eielson Array 68.75 25 P **P 21 09 59.4 -0.6**
comp=Z,8.0nm,0.6s,baz=259,slow=4.5,SNR=87
ILAR PKP2bc 21 38 18.2
comp=Z,0.8nm,1.1s,baz=42,slow=2.8,SNR=5.1
ILAR LR LR 21 39 11.0
comp=Z,740nm,20.2s,baz=266,slow=35
ILB Eielson Array 68.75 25 *e*P **P 21 09 59.4 -0.6**
ILB *e*P'P'df **P'P'df 21 38 18.2 +1.5**
ILB *e* 21 39 11.0
IL1 Eielson Array 68.75 25 *e*P **P 21 09 59.0 -1.0**
RAGM Ragged Mountai 68.75 30 *e*P **P 21 10 01.9 +1.7**
MNAS Manas 68.83 311 P **P 21 09 58.8 -2.4**
MNAS pmax pmax
comp=Z,29nm,1.5s
BMRM Bremner River 68.90 29 *e*P **P 21 10 02.0 +0.9**
PAX Paxson 68.92 27 *e*P **P 21 10 01.8 +0.6**
PAX Paxson 68.92 27 *e*P **P 21 10 01.8 +0.6**
OTUK Ortayu 69.20 317 P **P 21 09 57.4 -5.8**
OTUK pmax pmax
comp=Z,31nm,1.6s
CRQM Cirque 69.56 30 *e*P **P 21 10 07.5 +2.1**
DOT Dot Lake 69.69 27 *e*P **P 21 10 06.5 +0.5**
MENT Mentasta 69.69 27 *e*P **P 21 10 05.8 -0.1**
FYU Fort Yukon 69.86 23 *e*P **P 21 10 08.1 +1.3**
BALM Baldy 69.99 30 *e*P **P 21 10 08.9 +1.0**
BALM Baldy 69.99 30 *e*P **P 21 10 08.9 +1.0**
KK31 Karatay Array 70.31 311 *i*P **P 21 10 09.8 -0.3**
KK31 pmax pmax
comp=Z,3.0nm,0.7s
KKAR Karatay Array 70.31 311 *e*P **P 21 10 09.6 -0.5**
KKAR *e* 21 10 32.1
KKAR Karatay Array 70.31 311 *e*P **P 21 10 09.6 -0.5**
KKAR *e*PcP **PcP 21 10 32.1 +0.4**
VOSK Vostochnaya 70.38 321 P **P 21 10 07.6 -2.7**
VOSK pmax pmax
comp=Z,13nm,0.9s
VOSK Vostochnaya 70.38 321 *e*P **P 21 10 09.1 -1.2**
BVA0 Borovoye Array 70.75 322 *i*P **P 21 10 11.6 -1.0**
BVA0 pmax pmax
comp=Z,22nm,0.8s
BVAR Borovoye Array 70.75 322 P **P 21 10 12.8 +0.1**
comp=Z,26nm,0.6s,baz=105,slow=7.6,SNR=96
BVAR LR LR 21 42 51.1
comp=Z,2µm,19.7s,baz=88,slow=37
BRVK Borovoye 70.82 322*c i*P **P 21 10 13.2 +0.2**
BRVK pmax pmax
comp=Z,100nm,1.0s
BRVK Borovoye 70.82 322 *e*P **P 21 10 13.3 +0.2**
PCA Pinnacle 70.88 31 *e*P **P 21 10 14.6 +1.3**
PPT Papeete 70.88 114 LR LR 21 37 47.3
comp=Z,1µm,18.8s,baz=316,slow=33
PPT Papeete 70.88 114 *e*P **P 21 10 13.1 -0.8**
PPT Papeete 70.88 114 *e*P **P 21 10 13.1 -0.8**
PPT2 Papeete2 70.89 114 *e*LR LR 21 31 39.4
comp=Z,2µm,22.5s,baz=299
EGAK Eagle 71.14 26 *e*P **P 21 10 16.0 +1.3**
KBL Kabul 71.69 302 *e*P **P 21 10 17.6 -1.3**
KBL Kabul 71.69 302 *e*P **P 21 10 17.6 -1.3**
DAWY Dawson 71.80 27 *e*P **P 21 10 20.3 +1.5**
DHAK Deception Hill 71.80 32 *e*P **P 21 10 21.4 +2.5**
HYT Haines Junctio 72.31 30 *e*P **P 21 10 24.3 +2.3**
TBI Tubuai 73.12 120 *e*S **S 21 19 50.9 -2.9**
comp=Z,1µm,29.5s
TBI Tubuai 73.12 120 *e*LR LR 21 32 32.0
comp=Z,2µm,32.0s,baz=300
SKAG Skagway 73.31 32 *e*P **P 21 10 28.9 +1.2**
INK Inuvik 74.58 22 P **P 21 10 35.4 +0.3**
comp=Z,44nm,1.0s,baz=266,slow=6.3,SNR=39
INK Inuvik 74.58 22 *e*P **P 21 10 35.2 +0.1**
DIB Dawson Inlet, 74.84 38 *e*P P 21 10 41.9 +5.1
comp=Z,22nm,0.9s
WRAK Wrangell Islan 74.85 35 *e*P **P 21 10 38.5 +1.7**
DGAR Diego Garcia 75.41 259 *e*P **P 21 10 38.9 -2.0**
DGAR Diego Garcia 75.41 259 *e*P **P 21 10 38.9 -2.0**
DLBC Dease Lake 76.05 33 LR LR 21 41 24.1
comp=Z,812nm,20.0s,baz=296,slow=33
DLBC Dease Lake 76.05 33 *e*P **P 21 10 44.8 +1.0**
SVE Sverdlovsk 76.41 326*de*P **P 21 10 45.6 -0.2**
SVE *e*S **S 21 20 29.6 +0.1**
SVE pmax pmax
comp=Z,51nm,1.4s
SVE MLR MLR
comp=Z,1µm,18.0s
TAOE Nuku Hiva Isla 76.91 102 *e*LR LR 21 34 02.6
comp=Z,2µm,23.2s,baz=309
AB31 Akbulak array 77.38 318 P **P 21 10 49.4 -2.0**
AB31 pmax pmax
comp=Z,17nm,0.9s
ABKAR Akbulak array 77.38 318 *e*P **P 21 10 50.4 -1.0**
BBB Bella Bella 77.55 39 LR LR 21 38 56.1
comp=Z,1µm,21.8s,baz=265,slow=31
ARU Arti 77.58 325 P **P 21 10 51.8 -0.5**
comp=Z,14nm,0.5s,baz=102,slow=4.6,SNR=39
ARU Arti 77.58 325*c i*P **P 21 10 51.6 -0.8**
ARU 21 13 43.5
ARU PPP PPP 21 15 33.1
ARU S **S 21 20 43.8 +1.5**
ARU pmax pmax
comp=Z,63nm,1.7s
ARU MLR MLR
comp=Z,1µm,21.0s
SOKR Solikamsk 78.23 329*c i*P **P 21 10 54.1 -1.7**
SOKR S **S 21 20 47.0 -2.1**
SOKR pmax pmax
comp=Z,36nm,1.3s
SOKR MLR MLR
comp=Z,1µm,18.0s
AKTO Aktyubinsk 78.50 319 P **P 21 10 57.0 -0.7**
comp=Z,6.3nm,0.8s,baz=75,slow=7.0,SNR=18
AKTO LR LR 21 46 35.2
comp=Z,2µm,20.1s,baz=80,slow=36
AKTO Aktyubinsk 78.50 319 P **P 21 10 53.5 -4.1**
AKTO pmax pmax
comp=Z,20nm,1.5s
GEYT Alibeck 80.11 307 P **P 21 11 07.0 +0.3**
comp=Z,5.8nm,0.9s,baz=73,slow=1.5,SNR=11
GEYT LR LR 21 48 44.5
comp=Z,905nm,21.8s,baz=100,slow=37
NLWA Neilton Lookou 80.89 43 *e*P **P 21 11 13.8 +3.1**
PGC Sidney 80.96 42 *e*P **P 21 11 10.4 -0.6**
E03A Lebam 81.23 44 *e*P **P 21 11 11.3 -1.2**
A04D Lummi Island 81.44 42 P **P 21 11 14.2 +0.7**
baz=280
LLLB Lillooet 81.63 40 *e*P **P 21 11 18.1 +3.5**
G03D McMinnville, O 81.67 46 P **P 21 11 15.6 +0.8**
baz=280
F04D Rainier, OR 81.69 45 P **P 21 11 16.1 +1.1**
baz=280
I03D Drain, OR 81.88 47 P **P 21 11 16.4 +0.5**
baz=280
B05A Bryant 81.92 42 P **P 21 11 16.4 +0.3**
baz=281
MBW Mount Baker 81.95 42 P **P 21 11 18.7 +2.3**
L02D Cave Junction, 81.97 49 P **P 21 11 17.1 +0.5**
baz=280
JCW Jim Creek 82.04 42 *e*P **P 21 11 19.6 +2.9**
KHMM Horse Mountain 82.10 50 *e*P **P 21 11 19.8 +2.3**
FL2 Flat Top 2 82.12 44 *e*P **P 21 11 21.4 +4.0**
F04A Amboy 82.12 45 *e*P **P 21 11 18.9 +1.7**
WSAR Wadi Sarin 82.18 292 P **P 21 11 17.9 0.0**
comp=Z,4.8nm,0.5s,baz=123,slow=5.0,SNR=12
D05A Enumclaw 82.18 43 *e*P **P 21 11 17.8 +0.3**
TDL Tradedollar La 82.19 44 *e*P **P 21 11 20.8 +3.1**
HUMO Hull Mountain 82.36 48 *e*P **P 21 11 21.3 +2.8**
LON Longmire 82.39 44 *e*P **P 21 11 19.2 +0.5**
LON Longmire 82.39 44 *e*P **P 21 11 19.2 +0.5**
I04A Tendick Farm, 82.53 47 P **P 21 11 20.8 +1.3**
baz=281
M02C Callahan 82.66 49 P **P 21 11 22.0 +1.8**
baz=281,SNR=9.2
N02D Trinity Center 82.85 50 P **P 21 11 22.5 +1.2**
baz=281
J04D Umpqua Nationa 82.85 47 P **P 21 11 23.1 +1.7**
baz=281
VFP Flag Point 82.90 45 P **P 21 11 24.6 +3.1**
YKW3 Yellowknife Ar 82.98 27 *e*P **P 21 11 21.2 -0.1**
YKA Yellowknife Ar 83.00 27 P **P 21 11 21.9 +0.5**
comp=Z,10nm,0.6s,baz=285,slow=5.1,SNR=37
YKA LR LR 21 48 08.5
comp=E,81nm,20.0s,baz=0.0,slow=36
YKB5 Yellowknife Ar 83.00 27 *e*P **P 21 11 21.2 -0.2**
G05D Wamic, OR 83.02 45 P **P 21 11 23.5 +1.6**
baz=282
WDC Whiskeytown Da 83.04 50 *e*P **P 21 11 20.9 -1.2**
WDC Whiskeytown Da 83.04 50 *e*P **P 21 11 20.9 -1.2**
LTY Liberty 83.05 43 *e*P **P 21 11 23.4 +1.2**
CROR Criterion Ridg 83.30 46 P **P 21 11 26.5 +3.0**
M04C Macdoel 83.33 49 P **P 21 11 25.6 +1.8**
baz=282,SNR=12
J05D Fort Rock, OR 83.46 47 P **P 21 11 26.5 +2.0**
baz=282,SNR=13
G06A Carlson Farm, 83.49 45 *e*P **P 21 11 23.9 -0.5**
O03D Paynes Creek 83.65 50 P **P 21 11 27.4 +2.0**
baz=282
B08A Colville Reser 83.70 42 *e*P **P 21 11 25.7 +0.3**
E07A Sunnyside 83.74 44 *e*P **P 21 11 25.3 -0.4**
K05A Summer Lake 83.82 48 *e*P **P 21 11 29.5 +3.1**
HAWA Hanford 84.00 44 *e*P **P 21 11 30.5 +3.6**
UOSS Minazif 84.03 294 *e*P **P 21 11 23.3 -4.2**
ORV Oroville 84.03 51 *e*P **P 21 11 29.5 +2.2**
ORV Oroville 84.03 51 *e*P **P 21 11 29.5 +2.2**
HOPEN Hopen 84.14 348 *e*P **P 21 11 29.2 +2.2**
HOPEN IAmb IAmb 21 11 48.2
comp=Z,1µm,2.8s
HOPEN IAMs_20 IAMs_20 21 49 35.5
comp=Z,940nm,19.5s
D08A Wollman Farm, 84.26 43 *e*P **P 21 11 29.9 +1.7**
MOD Modoc Plateau 84.43 48 *e*P **P 21 11 30.0 +0.6**
C09A Chrisman Ranch 84.52 42 *e*P **P 21 11 31.4 +1.8**
AFDM Forest Hills D 84.56 51 *e*P **P 21 11 28.4 -1.5**
G08A Pilot Rock 84.63 45 *e*P **P 21 11 32.3 +2.0**
SPA0 Spitsbergen Ar 84.67 351 *e*P **P 21 11 28.9 -0.9**
SPA0 Spitsbergen Ar 84.67 351 *e*P **P 21 11 30.2 +0.5**
KBS Kingsbay 84.81 352 *e*P **P 21 11 31.8 +1.4**
KBS IAmb IAmb 21 11 54.5
comp=Z,17nm,0.9s
KBS *e*PP **PP 21 14 51.6 +5.3**
KBS *e*S **S 21 21 58.0 +1.3**
KBS Kingsbay 84.81 352 *e*P **P 21 11 29.8 -0.6**
KBS Kingsbay 84.81 352 *e*P **P 21 11 29.8 -0.6**
RES Resolute Bay 84.90 13 LR LR 21 49 25.3
comp=Z,217nm,20.5s,baz=298,slow=36
E09A Wood Farm, Sta 84.91 44 *e*P **P 21 11 31.3 -0.2**
NEW Newport 85.16 42 LR LR 21 44 28.5
comp=Z,506nm,19.9s,baz=274,slow=32
NEW Newport 85.16 42 P **P 21 11 34.8 +2.0**
baz=284
NEW Newport 85.16 42 *e*P **P 21 11 34.9 +2.0**
NEW pmax pmax
comp=Z,31nm,1.0s
NEW Newport 85.16 42 *e*P **P 21 11 34.9 +2.0**
CMB Columbia Colle 85.20 52 *e*P **P 21 11 33.8 +0.5**
CMB Columbia Colle 85.20 52 *e*P **P 21 11 33.8 +0.5**
WVOR Wild Horse Val 85.51 48 *e*P **P 21 11 36.2 +1.4**
WVOR Wild Horse Val 85.51 48 *e*P **P 21 11 36.2 +1.4**
HSPB Hornsund (broa 85.59 350 *e*P **P 21 11 34.9 +0.6**
HSPB IAmb IAmb 21 12 08.4

comp=Z,312nm,2.4s
HSPB ePP **PP** 21 14 59.3 +6.7
HSPB eS **S** 21 22 09.5 +5.1
RKT Rikitea 85.62 115 eS **S** 21 22 00.4 -6.1
comp=Z,889nm,28.8s
RKT eSS **SS** 21 27 39.0 -4.2
comp=Z,253nm,27.0s
RKT Rikitea 85.62 115 eLR LR 21 38 30.9
comp=Z,1µm,29.2s,baz=291
F10A Beach Ranch, E 85.65 44 eP **P** 21 11 34.9 -0.5
EDM Edmonton 86.16 36 eP **P** 21 11 37.9 +0.2
EDM Edmonton 86.16 36 eP **P** 21 11 37.9 +0.2
APA Apatity 86.19 339⇓ *i*P **P** 21 11 34.3 -3.2
APA pmax pmax
comp=Z,2.0nm,1.2s
KLMR Klimovskoe 86.33 332 eP **P** 21 11 35.9 -2.3
KLMR pmax pmax
comp=Z,38nm,1.3s
TVH1 TV Hill, Hawth 86.35 52 eP **P** 21 11 37.3 -2.0
PKM Mcpherson Peak 86.36 55 P **P** 21 11 40.9 +1.6
baz=284
SCZ2 Santa Cruz Isl 86.71 56 P **P** 21 11 42.0 +1.2
baz=284
VES Vestal, Richgr 86.72 54 P **P** 21 11 42.1 +1.4
baz=284
BSMT Bassoo Peak 86.78 42 eP **P** 21 11 42.5 +1.4
WALA Waterton Lakes 87.01 40 eP **P** 21 11 42.3 +0.3
BLMT Blacktail Moun 87.01 41 eP **P** 21 11 42.1 -0.1
ISA Isabella, Lake 87.25 54 P **P** 21 11 44.5 +1.1
baz=284
MFID Camas Ranch 87.27 46 eP **P** 21 11 45.0 +1.6
CWC Cottonwood Cre 87.37 53 P **P** 21 11 45.5 +1.4
baz=284
SWMT Swartz Lake 87.39 42 eP **P** 21 11 45.1 +1.2
MSO Missoula 87.62 43 P **P** 21 11 46.6 +1.6
baz=287
HAMF Hammerfest 87.70 344 eP **P** 21 11 45.2 +0.5
HAMF IAmb IAmb 21 12 07.0
comp=Z,544nm,2.5s
HAMF IAMs_20 IAMs_20 21 54 40.7
comp=Z,922nm,18.5s
GRAC Grapevine Rang 87.78 53 P **P** 21 11 47.3 +1.4
baz=285
ARA0 ARCESS Array S 87.78 342 eP **P** 21 11 44.1 -1.1
ARCES ARCESS Array B 87.78 342 P **P** 21 11 44.4 -0.8
comp=Z,29nm,1.1s,baz=54,slow=6.3,SNR=19
ARCES LR LR 21 55 21.1
comp=Z,692nm,18.1s,baz=67,slow=38
ARE0 ARCESS Array S 87.78 342 eP **P** 21 11 45.1 -0.1
ARE0 IAmb IAmb 21 11 45.8
comp=Z,36nm,1.1s
ARE0 IAMs_20 IAMs_20 21 54 54.4
comp=Z,947nm,19.1s
ARE0 ARCESS Array S 87.78 342 eP **P** 21 11 44.8 -0.4
EDW2 Edwards Air Fo 87.82 55 P **P** 21 11 48.1 +2.0
baz=284
SCI2 San Clemente I 87.84 57 P **P** 21 11 48.0 +1.8
baz=284
LRMC Laurel Mtn Rad 87.92 54 P **P** 21 11 48.5 +1.8
baz=285
MPMC Manual Prospec 87.92 54 P **P** 21 11 47.9 +1.1
baz=285
CHMT Chamberlain Mo 88.05 42 eP **P** 21 11 48.0 +0.8
GROC Groznyy 88.15 314 eP **P** 21 11 43.7 -3.7
GROC pmax pmax
comp=Z,51nm,1.6s
MIR Mirnyy 88.21 199 eP **P** 21 11 47.0 0.0
MIR pmax pmax
comp=Z,3.0nm,1.6s
HLID Hailey 88.22 46 P **P** 21 11 49.9 +1.9
baz=286
HLID Hailey 88.22 46 eP **P** 21 11 51.6 +3.6
BFSC Mount Baldy Ra 88.25 55 P **P** 21 11 49.5 +1.2
baz=285
FURC Furnace Creek, 88.31 53 P **P** 21 11 49.8 +1.5
baz=285
VRH Novokhopyorsk 88.40 322 eP **P** 21 11 47.0 -1.4
VRH pmax pmax
comp=Z,30nm,0.6s
RRX Edison Barstow 88.61 55 P **P** 21 11 51.2 +1.3
baz=285
GSC Goldstone, Bar 88.65 54 P **P** 21 11 52.4 +2.3
baz=285
GSC Goldstone, Bar 88.65 54 eP **P** 21 11 52.1 +2.0
GSC Goldstone, Bar 88.65 54 eP **P** 21 11 52.1 +2.0
TPNV Topopah Spring 88.66 52 P **P** 21 11 51.1 +0.8
baz=285
TPNV Topopah Spring 88.66 52 eP **P** 21 11 54.2 +3.9
TPNV pmax pmax
comp=Z,20nm,0.9s
TPNV Topopah Spring 88.66 52 eP **P** 21 11 54.2 +3.9
MURC Murrieta 88.78 56 P **P** 21 11 51.2 +0.5
baz=285
R11A Troy Canyon, C 88.80 51 P **P** 21 11 52.5 +1.6
baz=286
R11A Troy Canyon, C 88.80 51 eP **P** 21 11 53.8 +3.0
LRM Limekiln Ridge 88.90 43 eP **P** 21 11 54.1 +2.8
SHOC Shoshone, Teco 88.92 53 P **P** 21 11 52.8 +1.5
baz=285
MCMT McKenzie Canyo 88.93 44 eP **P** 21 11 54.9 +3.4
DLMT Dillon 88.94 44 eP **P** 21 11 53.6 +2.2
109C Camp Elliot, M 89.03 57 P **P** 21 11 53.0 +1.2
baz=285
MOS Moscow 89.11 327 eP **P** 21 11 49.8 -1.9
MOS *e* 21 11 57.5
MOS pmax pmax
comp=Z,100nm,1.5s
MOS pmax pmax
comp=Z,59nm,1.2s
MOS MLR MLR
comp=N,1µm,19.0s
MOS MLR MLR
comp=E,1µm,19.0s
MOS MLR MLR
comp=Z,1µm,19.0s
HEC Hector,Ludlow 89.15 55 P **P** 21 11 53.7 +1.2
baz=285
TUQ Turquoise Moun 89.31 54 P **P** 21 11 54.5 +1.2
baz=286
TBLG Delisi 89.32 313 P **P** 21 11 51.4 -1.7
TBLG Delisi 89.32 313 P **P** 21 11 51.4 -1.7
PFO Pinyon Flats O 89.37 56 P **P** 21 11 54.0 +0.4
comp=Z,4.1nm,0.8s,baz=281,slow=5.8,SNR=1.7
PFO LR LR 21 47 25.9
comp=Z,1µm,19.7s,baz=251,slow=32
PFO Pinyon Flats O 89.37 56 P **P** 21 11 54.9 +1.3
baz=285
PFO Pinyon Flats O 89.37 56 eP P 21 11 58.9 +5.3
TPFO Pinon Flats 89.37 56 P **P** 21 11 54.9 +1.3
baz=285
BAR Barrett 89.44 57 eP **P** 21 11 58.5 +4.7
comp=Z,18nm,1.0s
GOF Gofitskoye 89.50 316⇑ *e*P **P** 21 11 53.9 +0.1
GOF pmax pmax
comp=Z,66nm,1.3s
BOZ Bozeman (W) 89.50 43 P **P** 21 11 55.6 +1.6
baz=288
BOZ Bozeman (W) 89.50 43 eP **P** 21 11 57.5 +3.5
BOZ pmax pmax
comp=Z,27nm,1.4s
BOZ Bozeman (W) 89.50 43 eP **P** 21 11 57.5 +3.5
MONP2 Monument Peak 89.59 56 P **P** 21 11 55.1 +0.4
baz=285
ZEI Tsey 89.60 314 eP **P** 21 11 51.2 -3.4
ZEI pmax pmax
comp=Z,47nm,0.6s
NCK Nalchik 89.60 315⇑ *i*P **P** 21 11 54.5 +0.2
NCK pmax pmax
comp=Z,26nm,1.4s
TRO Tromso 89.61 344 eP **P** 21 11 53.8 0.0
TRO IAmb IAmb 21 11 55.7
comp=Z,42nm,1.4s
SHPR Sheep Range 89.62 53 eP **P** 21 11 58.4 +3.6
BELC Belle Mtn. Jos 89.64 55 P **P** 21 11 55.7 +0.8
baz=286
GMRC Granite Mounta 89.70 54 P **P** 21 11 56.6 +1.5
baz=286
GNI Garni 89.77 311 P **P** 21 11 54.6 -0.8
comp=Z,3.3nm,0.7s,baz=192,slow=1.4,SNR=8.8
GNI Garni 89.77 311 *d* iP **P** 21 11 55.6 +0.2
GNI pmax pmax
comp=Z,68nm,1.7s
DAG Danmarks Havn 89.85 356 *i* P **P** 21 11 53.9 -0.8
comp=Z,8.7nm,0.9s
HVU Hansel Valley 89.89 47 eP **P** 21 12 00.0 +4.1
HVU pmax pmax
comp=Z,45nm,1.4s
IKP In-Ko-Pah, Jac 89.91 57 P **P** 21 11 57.3 +1.2
baz=286
OBN Obninsk 89.91 327 P **P** 21 11 54.6 -0.8
comp=Z,13nm,0.5s,baz=27,slow=6.8,SNR=16
OBN Obninsk 89.91 327 *c* iP **P** 21 11 54.3 -1.1
OBN *i* S **SKSac** 21 22 21.4 -3.2
OBN pmax pmax
comp=Z,45nm,1.1s
OBN MLR MLR
comp=Z,1µm,19.0s
VSR Storozhevoye 89.91 323 eP **P** 21 11 53.3 -2.2
VSR pmax pmax
comp=Z,90nm,1.3s
EGMT Eagleton 89.95 40 P **P** 21 11 56.8 +0.9
baz=290
BGU Big Grassy Mou 89.96 48 eP **P** 21 12 00.9 +4.6
comp=Z,8.1nm,1.0s
ONI Oni 89.97 314 P **P** 21 11 54.7 -1.4
ONI Oni 89.97 314 P **P** 21 11 54.7 -1.4
KBZ Khabaz 90.01 315 P **P** 21 11 55.3 -0.9
comp=Z,12nm,1.1s,baz=58,slow=5.7,SNR=15
KBZ LR LR 21 57 13.2
comp=Z,797nm,18.1s,baz=58,slow=39
SWSC Sam W. Stewart 90.08 56 P **P** 21 11 57.7 +1.0
baz=286
KVAR Kislovodsk Arr 90.08 315 P **P** 21 11 55.2 -1.4
comp=Z,8.8nm,0.9s,baz=54,slow=12,SNR=8.0
KIV Kislovodsk 90.09 315 *c* iP **P** 21 11 55.5 -1.2
KIV pmax pmax
comp=Z,17nm,1.0s
KIV Kislovodsk 90.09 315 eP **P** 21 11 55.4 -1.3
BC3 Big Chuckawall 90.17 55 P **P** 21 11 57.8 +0.5
baz=286
BGD Bogdanovka 90.27 312 P **P** 21 11 57.5 -0.3
IRM Iron Mountain 90.28 55 P **P** 21 11 58.2 +0.4
baz=286
NEY Neytrino 90.28 315⇑ *i*P **P** 21 11 58.5 +0.8
NEY *e**PP **pP** 21 12 06.9 +1.1
NEY pmax pmax
comp=Z,3.0nm,1.1s
AKH Akhalkalaki 90.30 313⇑ *i*P **P** 21 11 57.6 -0.3
DUG Dugway, Tooele 90.34 49 P **P** 21 11 58.5 +0.5
baz=288
DUG Dugway, Tooele 90.34 49 eP **P** 21 12 02.0 +4.0
DUG pmax pmax
comp=Z,28nm,1.1s
DUG Dugway, Tooele 90.34 49 eP **P** 21 12 02.0 +4.0
IMW Indian Meadow 90.52 45 eP **P** 21 12 03.7 +4.7
comp=Z,8.3nm,0.9s
NEE2 Needles Airpor 90.53 54 P **P** 21 11 59.8 +1.0
baz=286
FLWY Flagg Ranch 90.63 44 eP **P** 21 12 03.2 +3.8
CCUT Cedar City 90.71 51 eP **P** 21 12 04.5 +4.6
comp=Z,14nm,1.0s
GLA Glamis 90.83 56 P **P** 21 12 01.4 +1.1
baz=286
Y12C Blythe 90.89 55 P **P** 21 12 02.1 +1.6
baz=286
VNDA Vanda 90.91 177 P **P** 21 11 59.4 -0.1
comp=Z,3.2nm,1.1s,baz=318,slow=4.9,SNR=4.0
VNDA LR LR 21 53 53.4
comp=Z,225nm,18.2s,baz=344,slow=36
VNDA Vanda 90.91 177 P **P** 21 11 59.4 -0.1
VNDA pmax pmax
comp=Z,1.0nm,0.8s
VNDA MLR MLR
comp=Z,225nm,18.2s
W13A Hualapai Mount 91.01 54 eP **P** 21 12 04.8 +3.5
PDMCI Parker Dam,Lak 91.03 55 P **P** 21 12 02.8 +1.7
baz=287
RLMT Red Lodge 91.25 43 P **P** 21 12 03.9 +1.7
baz=290
RLMT Red Lodge 91.25 43 eP **P** 21 12 05.7 +3.5
KNB Kanab 91.28 52 eP **P** 21 12 07.2 +4.7
KNB pmax pmax
comp=Z,30nm,1.1s
KNB Kanab 91.28 52 eP **P** 21 12 07.2 +4.7
comp=Z,30nm,1.1s
STEI Steigen 91.74 343 eP **P** 21 12 03.3 -0.4
STEI IAmb IAmb 21 12 04.0
comp=Z,36nm,1.1s
113A Mohawk Valley, 91.77 56 eP **P** 21 12 08.4 +3.8
BW06 Boulder Array 91.84 45 P **P** 21 12 06.1 +1.0
baz=290
BW06 Boulder Array 91.84 45 eP **P** 21 12 06.1 +1.0
PD31 Pinedale Array 91.84 45 eP **P** 21 12 05.8 +0.7
PDAR Pinedale Array 91.84 45 P **P** 21 12 05.8 +0.7
comp=Z,1.2nm,0.6s,baz=207,slow=3.0,SNR=8.8
PDAR LR LR 21 50 17.0
comp=Z,970nm,19.6s,baz=312,slow=34
FFC Flin Flon 91.88 32 eP **P** 21 12 06.5 +1.8
FFC pmax pmax
comp=Z,11nm,1.1s
FFC Flin Flon 91.88 32 eP **P** 21 12 06.5 +1.8
FIA1 FINESS Array S 91.92 335 eP **P** 21 12 03.1 -1.6
FIA0 FINESS Array S 91.92 335 eP **P** 21 12 02.9 -1.8
FIA0 FINESS Array S 91.92 335 eP **P** 21 12 02.9 -1.8
FINES FINESS Array B 91.92 335 P **P** 21 12 02.9 -1.8
comp=Z,7.5nm,0.5s,baz=69,slow=3.6,SNR=51
FINES LR LR 21 56 21.5
comp=Z,474nm,20.0s,baz=60,slow=37
Y14A Wickenburg 92.04 55 eP **P** 21 12 08.4 +2.5
LOF Lofoten 92.07 344 eP **P** 21 12 07.6 +2.4
SRU San Rafael Swe 92.35 49 eP **P** 21 12 11.9 +4.5
SRU pmax pmax
comp=Z,8.0nm,0.7s
SRU San Rafael Swe 92.35 49 eP **P** 21 12 11.9 +4.5
comp=Z,8.2nm,0.7s
LAO LASA Array 92.67 41 P **P** 21 12 07.7 -0.9
baz=292
214A Organ Pipe Nat 92.78 56 P **P** 21 12 11.2 +1.8
baz=287
WUAZ Wupatki 92.85 53 P **P** 21 12 11.0 +1.2
baz=288
VSU Vasula 93.20 333⇓ *i*P **P** 21 12 09.6 -1.0
VSU pmax pmax
comp=Z,55nm,1.1s
ANN Anapa 93.33 317 eP **P** 21 12 13.5 +2.0
ANN pmax pmax
comp=Z,46nm,1.1s
PV09 Paradox Valley 93.58 49 eP **P** 21 12 18.0 +4.7
K22A Casper 93.98 45 P **P** 21 12 15.6 +0.7
baz=292
W18A Petrified Fore 94.24 53 P **P** 21 12 16.9 +0.6
baz=289
JMIC Jan Mayen 94.30 352 eP **P** 21 12 17.6 +2.1
TUC Tucson 94.31 56 P **P** 21 12 16.7 +0.3
baz=288
A26A Wade Farm, Ken 94.37 38 P **P** 21 12 16.4 +0.1
baz=296
MVCO Mesa Verde 94.49 50 P **P** 21 12 17.3 -0.1
baz=290
SUMG Summit 94.51 1 *i* P **P** 21 12 17.4 +0.5
comp=Z,8.7nm,1.1s
SUMG Summit 94.51 1 eP **P** 21 12 20.3 +3.4
SUMG pmax pmax
comp=Z,10.0nm,1.1s
SUMG Summit 94.51 1 eP **P** 21 12 20.3 +3.4
N23A Red Feather La 95.03 46 P **P** 21 12 19.7 -0.1
baz=292
N23A Red Feather La 95.03 46 eP P 21 12 24.9 +5.0
comp=Z,60nm,1.8s
RSSD Black Hills 95.09 43 P **P** 21 12 20.4 +0.5
baz=294
H25A Fruitdale 95.17 42 P **P** 21 12 20.6 +0.5
baz=294
S22A 4UR Ranch, Cre 95.55 49 P **P** 21 12 22.1 -0.2
baz=291
ISCO Idaho Springs 95.68 47 P **P** 21 12 21.3 -1.5
baz=292
AKASG Malin Array Be 95.83 325 P **P** 21 12 20.6 -2.3
comp=Z,0.8nm,0.4s,baz=50,slow=5.3,SNR=22
AKASG LR LR 21 58 23.8
comp=Z,2µm,18.6s,baz=55,slow=37
AKBB Malin Array Si 95.83 325 eP **P** 21 12 21.4 -1.5
AKBB Malin Array Si 95.83 325 eP **P** 21 12 21.4 -1.5
KIEV Kiev 95.84 325 *i* iP **P** 21 12 20.8 -2.1
KIEV pmax pmax
comp=Z,10.0nm,1.3s
KIEV Kiev 95.84 325 eP **P** 21 12 21.4 -1.5
AK11 Malin Array Si 95.87 325 eP **P** 21 12 21.6 -1.5
121A Cookes Peak, D 96.64 55 P **P** 21 12 27.4 +0.2
baz=290
ANMO Albuquerque 96.83 52 P **P** 21 12 27.6 -0.5
baz=291
ANMO Albuquerque 96.83 52⇑ eP **P** 21 12 27.7 -0.3
ANMO *i* *SP **sP** 21 12 38.4 -0.6
ANMO pmax pmax
comp=Z,1.0nm,0.8s
ULM Lac du Bonnet 97.28 35 LR LR 21 56 22.9
comp=Z,1µm,18.8s,baz=322,slow=35
C31A Landman Farms, 97.43 37 P Pdif 21 12 30.7 +0.4
baz=299
HFS Hagfors 97.53 338 P **P** 21 12 29.5 -0.9
comp=Z,3.8nm,0.7s,baz=72,slow=4.7,SNR=14
NC405 NORSAR Array S 97.55 339 eP **P** 21 12 29.6 -0.9
SORM Soroca 97.57 323⇓ *i*P **P** 21 12 29.1 -1.7
SORM Soroca 97.57 323⇓ P **P** 21 12 29.1 -1.7
DOMB Dombas 97.76 341 IAMs_20 IAMs_20 21 58 17.8
comp=Z,1µm,19.2s
NC204 NORSAR Array S 97.76 340 eP Pdif 21 12 35.3 +3.8
NB2 NORSAR Subarra 97.77 339 P **P** 21 12 29.8 -1.8
comp=Z,7.9nm,0.9s,baz=46,slow=4.6
NB2 NORSAR Subarra 97.77 339 P **P** 21 12 29.8 -1.8
baz=46,slow=4.6
NB200 NORSAR Array S 97.77 339 eP **P** 21 12 29.7 -1.8
NOA NORSAR Array B 97.77 339 P **P** 21 12 29.7 -1.8
comp=Z,6.1nm,1.1s,baz=46,slow=4.8,SNR=4.5
NOA LR LR 21 59 36.1
comp=Z,500nm,20.8s,baz=65,slow=37
NC602 NORSAR Array S 97.88 339 IAMs_20 IAMs_20 22 01 38.6
comp=Z,1µm,19.5s
BR101 Keskin Array S 97.91 314 eP **P** 21 12 31.0 -1.8
BR131 Keskin Array S 97.91 314 eP **P** 21 12 32.1 -0.7
BRTR Keskin Array B 97.91 314 P **P** 21 12 31.0 -1.8
comp=Z,4.4nm,1.1s,baz=76,slow=4.5,SNR=17
BRTR LR LR 22 01 09.0
comp=Z,366nm,20.3s,baz=41,slow=38
BRTR Keskin Array B 97.91 314 *i* P **P** 21 12 31.5 -1.3
BRTR pmax pmax
comp=Z,7.0nm,1.2s
AKN Aaknes 98.30 342 IAMs_20 IAMs_20 22 05 03.4
comp=Z,1µm,20.9s
BR231 Keskin MP Arra 98.47 314 eP **P** 21 12 32.1 -3.1
PRAR RASCA 99.20 323⇑ *i*P **Pdif** 21 12 37.5 -0.7
MAW Mawson 99.21 203 P **Pdif** 21 12 38.0 +0.5
comp=Z,2.0nm,0.7s,baz=349,slow=5.9,SNR=4.8
MAW LR LR 21 53 38.2
comp=Z,193nm,21.4s,baz=62,slow=33
MMAI Mount Meron Ar 99.23 307 P **Pdif** 21 12 37.4 -1.3
comp=Z,3.7nm,1.0s,baz=84,slow=7.4,SNR=5.4
KONO Kongsberg 99.34 339 IAMs_20 IAMs_20 22 00 55.4
comp=Z,1µm,21.4s
TESR Tescani 99.38 322⇑ *i*P **Pdif** 21 12 37.7 -1.3
TLB Topalu 99.47 320⇓ *i*P **Pdif** 21 12 36.5 -2.9
TLB Topalu 99.47 320⇓ P **Pdif** 21 12 36.5 -2.9
BUR08 Bucovina Ar. S 99.65 324 eP **Pdif** 21 12 39.9 -0.4
BURAR Bucovina Array 99.65 324⇓ *i*P **Pdif** 21 12 39.7 -0.6
BURAR Bucovina Array 99.65 324⇓ P **Pdif** 21 12 39.7 -0.6
VRI Vrincioaia 99.66 322⇓ *i*P **Pdif** 21 12 38.9 -1.3
VRI Vrincioaia 99.66 322⇓ P **Pdif** 21 12 38.9 -1.3
PLOR Plostina 99.71 322⇓ *i*P **Pdif** 21 12 38.8 -1.7
PLOR Plostina 99.71 322⇓ P **Pdif** 21 12 38.8 -1.7
KWP Kalwaria Pacla 99.97 326 eP **Pdif** 21 12 41.4 -0.2
MLR Muntele Rosu 100.32 322⇓ *i*P **Pdif** 21 12 43.5 +0.2
MLR Muntele Rosu 100.32 322⇓ P **Pdif** 21 12 43.6 +0.2
MLR Muntele Rosu 100.32 322 ePdif **Pdif** 21 12 43.3 -0.1
DOPR Dopca 100.41 322⇑ *i*P **Pdif** 21 12 43.3 -0.3
HOMB Hombersund 100.73 339 ePP PP 21 16 52.6 +1.1
HOMB eSKSac **SKSac** 21 23 24.4 +2.2
UZH Uzhgorod 100.75 326 eP **Pdif** 21 12 42.4 -2.6
STHS Stebnicka Huta 100.88 327 ePDIFF **Pdif** 21 12 44.6 -1.0
VOIR 100.89 322⇓ *i*P **Pdif** 21 12 49.0 +3.2
VOIR 100.89 322⇓ P **Pdif** 21 12 49.0 +3.2
CRVS Cervenica-Dubn 101.05 326 ePDIFF **Pdif** 21 12 46.2 -0.2
LTX Lajitas 101.08 56 eP **Pdif** 21 12 48.5 +1.5
LTX Lajitas 101.08 56 ePdif **Pdif** 21 12 48.5 +1.5
LTX ePKKPbc **PKKPbc** 21 28 57.4 -1.0
TXAR Lajitas Array 101.08 56 P **Pdif** 21 12 48.5 +1.5
comp=Z,0.3nm,0.8s,baz=305,slow=3.2,SNR=2.6
TXAR PKKPbc **PKKPbc** 21 28 57.4 -1.0
comp=Z,0.1nm,0.3s,baz=94,slow=4.6,SNR=2.5
ARR Arges 101.17 322⇑ *i*P **Pdif** 21 12 46.9 -0.2
STAV Stavanger 101.20 340 ePP PP 21 16 57.3 +2.4
STAV IAMs_20 IAMs_20 22 04 06.1
comp=Z,866nm,20.0s
NIE Niedzica 101.38 327 eP **Pdif** 21 12 48.0 +0.1
DRGR 101.54 324⇑ *i*P **Pdif** 21 12 48.3 -0.4
DRGR 101.54 324⇑ P **Pdif** 21 12 48.3 -0.4
LOT Lotru 101.65 322⇑ *i*P **Pdif** 21 12 49.2 0.0
OKC Ostrava-Krasne 102.25 328 ePP PP 21 17 04.4 +1.1
OKC eSKS 21 23 35.0
OKC AMS AMS 22 06 10.0
comp=Z,1µm,16.5s
SIRR Siria 102.43 324⇑ *i*P **Pdif** 21 12 52.4 -0.2
PSZ Piszkesteto 102.47 326⇓ *i*P **Pdif** 21 12 52.5 -0.3
PSZ Piszkesteto 102.47 326⇓ P **Pdif** 21 12 52.5 -0.3
PSZ Piszkesteto 102.47 326 ePdif **Pdif** 21 12 52.6 -0.3
VYHS Vyhne 102.70 327 ePDIFF **Pdif** 21 12 53.3 -0.4
BZS Buzias 102.82 323⇑ *i*P **Pdif** 21 12 53.2 -1.1
BZS Buzias 102.82 323⇑ P **Pdif** 21 12 53.2 -1.1
DPC Dobruska-Polom 102.85 329 ePDIFF **Pdif** 21 12 49.3 -5.1
DPC eSKS 21 23 33.8
DPC eSP **SP** 21 26 12.2 -0.3
DPC AMS AMS 22 01 10.0
comp=Z,800nm,20.3s
UPC Upice 102.90 330 eSKS 21 23 35.3
UPC eSP **SP** 21 26 12.6 -0.4
UPC AMS AMS 22 09 20.0
comp=Z,800nm,16.4s
MDVR Moldovita 103.23 323⇓ *i*P **Pdif** 21 12 55.8 -0.4
VTS Vitosha 103.51 320⇓ *i*P **Pdif** 21 12 57.5 -0.1
VTS Vitosha 103.51 320⇓ P **Pdif** 21 12 57.5 -0.1
PVCC Panska Ves 103.59 330 AMS AMS 22 04 00.0
comp=Z,1µm,18.8s
CLL Collm 103.82 332 ePP PP 21 17 14.0 -0.9
CLL eSKSac **SKSac** 21 23 39.0 +1.9
CLL eSdif **Sdif** 21 24 46.0 -0.7
CLL ePS **PS** 21 26 25.0 -1.2
CLL ePPS PPS 21 27 08.0
CLL eSS SKKPbc 21 32 18.0 -12
CLL eSSS SSS 21 36 18.0
CLL *e* 21 41 36.0
CLL Lm MLR 22 07 00.0
comp=N,800nm,19.5s
CLL Lm MLR 22 07 00.0
comp=E,500nm,20.6s
CLL Lm MLR 22 07 00.0
comp=Z,1µm,20.2s
GOPC GO Pecny, Ondr 103.89 330 eSKS 21 23 38.4
GOPC eSP **SP** 21 26 29.8 +6.4
GOPC *ex* x 21 32 25.8
GOPC AMS AMS 22 11 00.0
comp=Z,700nm,16.9s
TREC Trest 103.94 329 AMS AMS 22 02 50.0
comp=Z,1µm,19.0s
PRU Pruhonice 103.96 330 eSKS 21 23 40.7
PRU eSP **SP** 21 26 24.0 -0.1
PRU *ex* x 21 32 23.9
PRU AMS AMS 22 07 30.0
comp=Z,800nm,15.8s
NKC Novy Kostel 104.81 331 ePKKS 21 32 34.2
NKC AMS AMS 22 06 40.0
comp=Z,1µm,18.4s
KHC Kasperske Hory 105.00 330 ePDIFF **Pdif** 21 13 02.9 -1.1
KHC eSKS 21 23 45.4
KHC eSP **SP** 21 26 38.7 +3.7
KHC eSS **SKKPbc** 21 32 29.2 +2.2
KHC AMS AMS 22 02 10.0
comp=Z,1µm,22.4s
GERES GERESS Array B 105.13 329 PP PP 21 17 21.2 -3.7
comp=Z,0.5nm,0.6s,baz=51,slow=0.9,SNR=4.2
SYO Syowa Base 107.83 201⇑ *e*P **PKiKP** 21 17 19.0 -4.2
LSZ Lusaka 119.43 260 ePKIKP **PKPdf** 21 17 48.5 +1.5
LSZ Lusaka 119.43 260 ePKPdf **PKPdf** 21 17 48.5 +1.5
ESDC Sonseca Array 120.35 333 PKP **PKPdf** 21 17 48.9 +0.8
comp=Z,0.5nm,0.6s,baz=12,slow=2.0,SNR=3.5
ESDC PP **PP** 21 19 12.6 -0.7
comp=Z,1.3nm,0.9s,baz=1.1,slow=6.8,SNR=5.2
BOSA Boshof 122.65 244 PKP **PKPdf** 21 17 53.7 +0.8
comp=Z,3.4nm,0.9s,baz=111,slow=1.6,SNR=5.1
MDT Midelt 126.21 329 PKP **PKPdf** 21 18 00.9 +1.2
comp=Z,4.1nm,1.0s,baz=170,slow=3.3,SNR=3.6
TAM Tamanrasset 127.07 312 ePKIKP **PKPdf** 21 18 03.9 +2.3
TAM Tamanrasset 127.07 312 ePKPdf **PKPdf** 21 18 03.9 +2.3
SDV Santo Domingo 137.95 61 PKP **PKPdf** 21 18 23.3 +0.9
comp=Z,1.8nm,0.3s,baz=15,slow=0.9,SNR=3.6
PLCA Paso Flores 138.09 138 PKP **PKPdf** 21 18 23.0 +1.3
comp=Z,8.4nm,1.0s,baz=236,slow=3.6,SNR=5.5

PLCA	**Paso Flores**	**138.09**	**138**	*e*PKPdf	**PKPdf**	**21**	**18**	**24.6 +2.8**
PB10	**IPOC Station P**	**144.26**	**112**	*e*PKPdf	**PKPdf**	**21**	**18**	**35.7 +2.6**
DBIC	**Dimbokro**	**144.68**	**302**	PKP	PKPbc	21	18	33.5 +0.5
	comp=Z,97nm,0.8s,baz=41,slow=3.5,SNR=77							
KIC	**Kosan Boka**	**144.75**	**301**	*e*PKP1	PKPbc	21	18	33.6 +0.4
	comp=Z,397nm,1.1s							
TIC	**Toumodi**	**144.82**	**302**	*e*PKP1	PKPbc	21	18	33.7 +0.2
LIC	**Lamto**	**145.06**	**302**	*e*PKP1	**PKPdf**	**21**	**18**	**34.7 -0.2**
	comp=Z,381nm,0.7s							
TRQA	**Tornquist**	**145.08**	**140**	*e*PKPbc	**PKPdf**	**21**	**18**	**35.0 +0.8**
PB01	**IPOC Station P**	**145.62**	**108**	*e*PKPdf	**PKPab**	**21**	**18**	**38.1 +1.8**
LPAZ	**La Paz**	**147.26**	**100**	PKPbc	**PKPbc**	**21**	**18**	**41.9 +0.3**
	comp=Z,8.6nm,0.7s,baz=258,slow=3.9,SNR=17							
SAML	**Samuel**	**151.49**	**85**	*e*PKPdf	**PKPdf**	**21**	**18**	**46.7 +1.4**
SAML				*e*PKPab	**PKPab**	**21**	**19**	**00.1 +0.2**
PTGA	**Pitinga**	**151.89**	**66**	PKP	**PKPdf**	**21**	**18**	**46.5 +0.5**
	comp=Z,4.3nm,0.8s,baz=175,slow=19,SNR=4.5							
PTGA				PKPbc	**PKPbc**	**21**	**18**	**51.3 -1.1**
	comp=Z,7.0nm,0.8s,baz=356,slow=1.4,SNR=6.0							
PTGA	**Pitinga**	**151.89**	**66**	*e*PKPdf	**PKPdf**	**21**	**18**	**47.8 +1.8**

IDC 22 21:08:26.8±1.3, 12°96′N×145°67′E, h0km, mb3.5/4, mb1 3.8/4, mb1mx3.4/55, mbtmp3.5/4, Error ellipse: s-maj=30.2km s-min=19.1km az=63.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**1.00**	**309**	Pn	Pn	21 08 48.6	+0.5
	118nm,0.3s,baz=134,slow=10.0,SNR=13						
GUMO				Sn	Sn	21 09 02.3	-0.7
	166nm,0.3s,baz=0.6,slow=22,SNR=10						
WRA	**Warramunga Arr**	**34.54**	**199**	P	P	21 15 15.5	-1.8
	0.3nm,0.6s,baz=21,slow=10.0,SNR=6.5						
ASAR	**Alice Springs**	**38.18**	**198**	P	P	21 15 49.5	+1.2
	0.3nm,0.8s,baz=26,slow=8.7,SNR=6.0						
CMAR	**Chiang Mai Arr**	**45.22**	**283**	P	P	21 16 46.6	+0.4
	0.3nm,0.4s,baz=74,slow=6.7,SNR=4.1						
ILAR	**Eielson Array**	**68.80**	**25**	P	P	21 19 32.5	-0.1
	0.3nm,0.6s,baz=246,slow=7.6,SNR=3.1						

*NSSC **22** 21:20:28.5±1.6, 38°.17′N×41°.90′E, h36km±749km, MD2.7, ML3.6*
*ISK **22** 21:20:37.0, 38°.58′N×39°.65′E, h5km, ML3.6*
*CSEM **22** 21:20:38.6±0.1, 38°.58′N×39°.65′E, h2km, ML3.6, Error ellipse: s-maj=3.7km s-min=3.0km az=19.0*
*IDC **22** 21:20:38.7±1.0, 38°.65′N×39°.55′E, h0km, mb3.6/4, mb1 3.5/9, mb1mx3.4/54, mbtmp3.6/9, ML3.3/4, MS3.2/4, Ms1 3.2/4, ms1mx2.8/42, Error ellipse: s-maj=19.4km s-min=9.8km az=163.0*
*DDA **22** 21:20:38.0, 38°.58′N×39°.64′E, h15km, MI3.9*
ISC 22 21:20:38.0±1.1, 38°.56′N±0°.01×39°.64′E±0°.01, h1km±9km, n125, σ1§96/169, mb3.6/5, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SVRC	**Sivrice-ELAZID**	**0.31**	**236**	PG	**Pg**	**21**	**20**	**44.3 +0.3**
SVRC				*e*SG	**Sb**	**21**	**20**	**50.5 -1.7**
SVRC	**Sivrice-ELAZID**	**0.31**	**236**	*i* Pg	**Pg**	**21**	**20**	**44.3 +0.3**
SVRC				*e*Sg	**Sb**	**21**	**20**	**50.5 -1.7**
PTK	**Pertek**	**0.39**	**330**	PG	**Pb**	**21**	**20**	**45.4 -2.3**
PTK				*e*SG	**Sb**	**21**	**20**	**51.8 -2.5**
PTK	**Pertek**	**0.39**	**330**	*i* Pg	**Pb**	**21**	**20**	**45.4 -2.3**
PTK				*e*Sg	**Sb**	**21**	**20**	**51.8 -2.5**
ELZG	**Elazig**	**0.52**	**264**	*i* P	**Pg**	**21**	**20**	**47.7 -0.1**
ELZG				*i* S	**Sb**	**21**	**20**	**56.8 -1.1**
ELZG	**Elazig**	**0.52**	**264**	P	**Pg**	**21**	**20**	**47.7 -0.1**
ELZG				S	**Sb**	**21**	**20**	**56.8 -1.1**
TNCL	**Tunceli-Merkez**	**0.56**	**352**	*i* P	**Pb**	**21**	**20**	**48.4 -2.3**
TNCL				*i* S	**Sb**	**21**	**20**	**56.8 -2.5**
TNCL	**Tunceli-Merkez**	**0.56**	**352**	P	**Pb**	**21**	**20**	**48.4 -2.3**
TNCL				S	**Sb**	**21**	**20**	**56.8 -2.5**
DYBB	**Diyarbakir**	**0.72**	**147**	*e*PG	**Pb**	**21**	**20**	**52.9 -0.5**
DYBB				*e*SG	**Sb**	**21**	**21**	**04.1 +0.4**
DIYA	**Diyarbakir**	**0.74**	**149**	*i* P	**Pb**	**21**	**20**	**53.1 -0.5**
DIYA				*i* S	**Sn**	**21**	**21**	**05.5 -2.0**
DIYA	**Diyarbakir**	**0.74**	**149**	P	**Pb**	**21**	**20**	**53.1 -0.5**
DIYA				S	**Sn**	**21**	**21**	**05.5 -2.0**
DIY	**Diyarbakir**	**0.81**	**145**	*e*Pg	**Pg**	**21**	**20**	**52.9 -0.5**
DIY				*e*Sg	**Sg**	**21**	**21**	**04.1 +0.2**
BNGB	**Bingˆ¶l**	**0.92**	**62**	*e*PG	**Pb**	**21**	**20**	**55.1 -1.8**
BNGB				*e*SG	**Sb**	**21**	**21**	**08.7 -1.0**
REFA	**Refahiye_ERZ¯**	**1.08**	**321**	*i* P	Pn	21	21	05.7 +5.3
REFA				*i* S	Sn	21	21	26.7 +11
YEDI	**Yedisu-Bingol**	**1.13**	**39**	*e*PN	**Pb**	**21**	**20**	**58.8 -1.6**
YEDI	**Yedisu-Bingol**	**1.13**	**39**	*e*Pn	**Pb**	**21**	**20**	**58.8 -1.6**
KEMA	**Kemaliye**	**1.14**	**309**	*i* P	**Pg**	**21**	**20**	**58.3 -1.5**
KEMA				*i* S	**Sn**	**21**	**21**	**16.7 -0.8**
KEMA	**Kemaliye**	**1.14**	**309**	P	**Pg**	**21**	**20**	**58.3 -1.5**
KEMA				S	**Sn**	**21**	**21**	**16.7 -0.8**
EUZM	**Uzumlu**	**1.15**	**2**	*i* P	**Pb**	**21**	**20**	**59.2 -1.5**
EUZM				*i* S	**Sn**	**21**	**21**	**15.5 -2.2**
EUZM	**Uzumlu**	**1.15**	**2**	P	**Pb**	**21**	**20**	**59.2 -1.5**
EUZM				S	**Sn**	**21**	**21**	**15.5 -2.2**
BNGL	**BINGOL**	**1.25**	**71**	*i* P	**Pn**	**21**	**21**	**01.9 -0.8**
BNGL				*i* S	**Sn**	**21**	**21**	**23.8 +3.5**
MAZI	**Mazidag**	**1.27**	**149**	*e*PN	**Pb**	**21**	**21**	**02.0 -0.7**
MAZI	**Mazidag**	**1.27**	**149**	*e*Pn	**Pb**	**21**	**21**	**02.0 -0.7**
SVAN	**Silvan-Diyarba**	**1.29**	**108**	*e*PN	**Pb**	**21**	**21**	**03.2 +0.1**
SVAN	**Silvan-Diyarba**	**1.29**	**108**	*e*Pn	**Pb**	**21**	**21**	**03.2 +0.1**
AKCD	**Akcadag**	**1.37**	**260**	*i* P	**Pn**	**21**	**21**	**02.8 -1.6**
AKCD				*i* S	**Sn**	**21**	**21**	**24.6 +1.4**
AKCD	**Akcadag**	**1.37**	**260**	P	**Pn**	**21**	**21**	**02.8 -1.6**
AKCD				S	**Sn**	**21**	**21**	**24.6 +1.4**
BTMN	**Batman**	**1.45**	**117**	*i* P	**Pg**	**21**	**21**	**05.2 -0.5**
BTMN				*i* S	**Sg**	**21**	**21**	**26.9 +2.4**
BTMN	**Batman**	**1.45**	**117**	P	**Pg**	**21**	**21**	**05.2 -0.5**
BTMN				S	**Sg**	**21**	**21**	**26.9 +2.4**
ECAT	**Cat-ERZURUM**	**1.48**	**44**	*i* P	**Pg**	**21**	**21**	**05.0 -1.3**
ECAT				*i* S	**Sg**	**21**	**21**	**31.4 +6.0**
ECAT	**Cat-ERZURUM**	**1.48**	**44**	P	**Pg**	**21**	**21**	**05.0 -1.3**
ATAB	**Bozova**	**1.52**	**225**	*i* P	**Pg**	**21**	**21**	**06.4 -0.7**
ATAB				*i* S	**Sg**	**21**	**21**	**28.4 +1.7**
ATAB	**Bozova**	**1.52**	**225**	P	**Pg**	**21**	**21**	**06.4 -0.7**
ATAB				S	**Sg**	**21**	**21**	**28.4 +1.7**
MARD	**Mardin**	**1.54**	**144**	*i* P	**Pb**	**21**	**21**	**06.0 -1.3**
MARD				*i* S	**Sg**	**21**	**21**	**26.7 -0.5**
KOPT	**Kop Dagi**	**1.60**	**24**	*i* P	**Pg**	**21**	**21**	**07.8 -0.9**
KOPT				*i* S	**Sg**	**21**	**21**	**35.9 +6.3**
KOPT	**Kop Dagi**	**1.60**	**24**	P	**Pg**	**21**	**21**	**07.8 -0.9**
KELT	**Kelkit**	**1.62**	**350**	*i* P	**Pg**	**21**	**21**	**07.9 -1.1**
KELT				*i* S	**Sg**	**21**	**21**	**29.2 -0.7**
KELT	**Kelkit**	**1.62**	**350**	P	**Pg**	**21**	**21**	**07.9 -1.1**
KELT				S	**Sg**	**21**	**21**	**29.2 -0.7**
DARE	**Darende-Malaty**	**1.69**	**271**	*e*PN	**Pg**	**21**	**21**	**09.6 -0.7**
DARE	**Darende-Malaty**	**1.69**	**271**	*e*Pn	**Pg**	**21**	**21**	**09.6 -0.7**
CUKAN	**kangal_SIVAS**	**1.85**	**295**	*i* P	**Pb**	**21**	**21**	**11.4 -1.3**
CUKAN				*i* S	**Sg**	**21**	**21**	**42.0 +4.4**
CUKAN	**kangal_SIVAS**	**1.85**	**295**	P	**Pb**	**21**	**21**	**11.4 -1.3**
GUMT	**Gumushane**	**1.91**	**356**	*e*PN	**Pb**	**21**	**21**	**12.2 -1.4**
GUMT	**Gumushane**	**1.91**	**356**	*e*Pn	**Pb**	**21**	**21**	**12.2 -1.4**
CUZAR	**Zara_SIVAS**	**1.97**	**313**	*i* P	**Pb**	**21**	**21**	**13.7 -0.9**
CUZAR				*i* S	**Sg**	**21**	**21**	**43.8 +2.6**
CUZAR	**Zara_SIVAS**	**1.97**	**313**	P	**Pb**	**21**	**21**	**13.7 -0.9**
SUSE	**Susehri**	**1.99**	**326**	*i* P	**Pg**	**21**	**21**	**15.3 -0.8**
SUSE				*i* S	**Sg**	**21**	**21**	**45.7 +3.8**
SUSE	**Susehri**	**1.99**	**326**	P	**Pg**	**21**	**21**	**15.3 -0.8**
GZT	**Gaziantep**	**2.03**	**234**	*i* P	**Pb**	**21**	**21**	**13.6 -2.1**
GZT				*i* S	**Sg**	**21**	**21**	**47.0 +3.8**
TATV	**Tatvan**	**2.06**	**91**	*i* P	**Pb**	**21**	**21**	**15.3 -1.0**
TATV				*i* S	**Sg**	**21**	**21**	**43.0 -1.3**
TATV	**Tatvan**	**2.06**	**91**	P	**Pb**	**21**	**21**	**15.3 -1.0**
TATV				S	**Sg**	**21**	**21**	**43.0 -1.3**
HOMI	**Horasan**	**2.30**	**49**	*i* P	**Pb**	**21**	**21**	**19.1 -1.3**
HOMI				*i* S	**Sg**	**21**	**21**	**58.5 +6.5**
CUALT	**Altinyayla-SIV**	**2.36**	**289**	*i* P	**Pb**	**21**	**21**	**18.3 -3.0**
CUALT				*i* S	**Sg**	**21**	**21**	**54.1 +0.4**
CUALT	**Altinyayla-SIV**	**2.36**	**289**	P	**Pb**	**21**	**21**	**18.3 -3.0**
GAZ	**Gaziantep**	**2.37**	**235**	*e*PN	**Pn**	**21**	**21**	**18.6 +0.6**
GAZ	**Gaziantep**	**2.37**	**235**	*e*Pn	**Pn**	**21**	**21**	**18.6 +0.6**
MACK	**Trabzon**	**2.39**	**2**	*i* P	**Pg**	**21**	**21**	**22.4 -1.3**
MACK				*i* S	**Sg**	**21**	**21**	**55.3 +0.7**
MACK	**Trabzon**	**2.39**	**2**	P	**Pg**	**21**	**21**	**22.4 -1.3**
KMRS	**Kahramanmaras**	**2.40**	**245**	*e*PN	**Pb**	**21**	**21**	**19.5 -2.5**
KMRS	**Kahramanmaras**	**2.40**	**245**	*e*Pn	**Pb**	**21**	**21**	**19.5 -2.5**
KTUT	**Trabzon**	**2.43**	**2**	*e*PN	**Pb**	**21**	**21**	**19.2 -3.2**
KTUT	**Trabzon**	**2.43**	**2**	*e*Pn	**Pb**	**21**	**21**	**19.2 -3.2**
SIRN	**S¯¯rnak**	**2.44**	**115**	*i* P	**Pn**	**21**	**21**	**18.4 -0.5**
SIRN				*i* S	**Sg**	**21**	**21**	**54.9 -1.3**
SIRN	**S¯¯rnak**	**2.44**	**115**	P	**Pn**	**21**	**21**	**18.4 -0.5**
SIRT	**Sirnak**	**2.45**	**115**	*e*PN	**Pn**	**21**	**21**	**19.7 +0.5**
SIRT	**Sirnak**	**2.45**	**115**	*e*Pn	**Pn**	**21**	**21**	**19.7 +0.5**
SVSK	**Karacayir**	**2.46**	**304**	*e*PN	**Pb**	**21**	**21**	**20.2 -2.7**
SVSK	**Karacayir**	**2.46**	**304**	*e*Pn	**Pb**	**21**	**21**	**20.2 -2.7**
ESPY	**Espiye-Giresun**	**2.46**	**344**	*e*PN	**Pn**	**21**	**21**	**19.2 0.0**
ESPY	**Espiye-Giresun**	**2.46**	**344**	*e*Pn	**Pn**	**21**	**21**	**19.2 0.0**
HCB	**Kahramanmara¯**	**2.47**	**242**	*i* P	**Pn**	**21**	**21**	**19.5 +0.1**
HCB				*i* S	**Sb**	**21**	**21**	**51.6 -2.6**
SARI	**SarD1z-Kayseri**	**2.53**	**268**	*e*PN	**Pn**	**21**	**21**	**21.0 +0.7**
GEVA	**Gevas**	**2.70**	**94**	*i* P	**Pb**	**21**	**21**	**24.4 -2.7**
GEVA				*i* S	**Sg**	**21**	**22**	**02.2 -2.5**
GEVA	**Gevas**	**2.70**	**94**	P	**Pb**	**21**	**21**	**24.4 -2.7**
SLMH	**Al Salmeh**	**2.71**	**211**	*e*P	**Pn**	**21**	**21**	**23.0 +0.4**
SLMH				*e*S	**Sg**	**21**	**22**	**04.7 -0.2**
SLMH				AML	AML	21	22	13.3
	comp=N,974nm,0.6s							
SLMH				AML	AML	21	22	19.0
	comp=E,1μm,0.7s							
KSRV	**Kasrt alli**	**2.73**	**191**	*e*P	**Pn**	**21**	**21**	**24.3 +1.3**
KSRV				*e*S	**Sg**	**21**	**22**	**04.5 -1.3**
KSRV				AML	AML	21	22	14.4
	comp=N,489nm,0.5s							
KSRV				AML	AML	21	22	15.2
	comp=E,248nm,0.5s							
AGRB	**Hanur-Agry**	**2.80**	**68**	*e*PN	**Pb**	**21**	**21**	**24.9 -4.0**
AGRB	**Hanur-Agry**	**2.80**	**68**	*e*Pn	**Pb**	**21**	**21**	**24.9 -4.0**
VANB	**Van**	**2.94**	**88**	*e*PN	**Pn**	**21**	**21**	**26.5 +0.6**
VANB	**Van**	**2.94**	**88**	*e*Pn	**Pn**	**21**	**21**	**26.5 +0.6**
TOKT	**Tokat**	**2.97**	**307**	*e*PN	**Pn**	**21**	**21**	**27.3 +1.0**
TOKT	**Tokat**	**2.97**	**307**	*e*Pn	**Pn**	**21**	**21**	**27.3 +1.0**
BNN	**Bunyan**	**2.98**	**277**	*e*PN	**Pn**	**21**	**21**	**27.0 +0.5**
BNN	**Bunyan**	**2.98**	**277**	*e*Pn	**Pn**	**21**	**21**	**27.0 +0.5**
DAGI	**Agillar**	**3.07**	**34**	*i* P	**Pn**	**21**	**21**	**28.6 +0.9**
DAGI				*i* S	**Sg**	**21**	**22**	**21.2 +4.7**
KOZT	**Kozan**	**3.19**	**252**	*e*PN	**Pn**	**21**	**21**	**29.9 +0.6**
KOZT	**Kozan**	**3.19**	**252**	*e*Pn	**Pn**	**21**	**21**	**29.9 +0.6**
KARS	**Kars**	**3.37**	**51**	*e*PN	**Pn**	**21**	**21**	**33.3 +1.5**
KARS	**Kars**	**3.37**	**51**	*e*Pn	**Pn**	**21**	**21**	**33.3 +1.5**
HKR	**Hakkari**	**3.38**	**106**	*e*PN	**Pn**	**21**	**21**	**33.3 +1.2**
HKR	**Hakkari**	**3.38**	**106**	*e*Pn	**Pn**	**21**	**21**	**33.3 +1.2**
CLDR	**Caldiran**	**3.39**	**79**	*e*PN	**Pn**	**21**	**21**	**33.8 +1.6**
CLDR	**Caldiran**	**3.39**	**79**	*e*Pn	**Pn**	**21**	**21**	**33.8 +1.6**
CUKT	**Cukurca**	**3.40**	**111**	*e*PN	**Pn**	**21**	**21**	**33.3 +1.0**
CUKT	**Cukurca**	**3.40**	**111**	*e*Pn	**Pn**	**21**	**21**	**33.3 +1.0**
CEYT	**Ceyhan**	**3.45**	**245**	*e*PN	**Pn**	**21**	**21**	**34.4 +1.7**
CEYT	**Ceyhan**	**3.45**	**245**	*e*Pn	**Pn**	**21**	**21**	**34.4 +1.7**
TAHT	**Tahtakopru-Hat**	**3.50**	**233**	*e*PN	**Pn**	**21**	**21**	**34.6 +1.1**
TAHT	**Tahtakopru-Hat**	**3.50**	**233**	*e*Pn	**Pn**	**21**	**21**	**34.6 +1.1**
KVT	**Kavak**	**3.74**	**313**	*e*PN	**Pn**	**21**	**21**	**38.5 +1.7**
KVT	**Kavak**	**3.74**	**313**	*e*Pn	**Pn**	**21**	**21**	**38.5 +1.7**
KARA	**Karaisali**	**3.85**	**252**	*e*PN	**Pn**	**21**	**21**	**39.6 +1.3**
KARA	**Karaisali**	**3.85**	**252**	*e*Pn	**Pn**	**21**	**21**	**39.6 +1.3**
NIG	**Nigde**	**3.98**	**265**	*e*PN	**Pn**	**21**	**21**	**41.4 +1.1**
NIG	**Nigde**	**3.98**	**265**	*e*Pn	**Pn**	**21**	**21**	**41.4 +1.1**
CORM	**Corum**	**4.20**	**294**	*e*PN	**Pn**	**21**	**21**	**44.8 +1.5**
CORM	**Corum**	**4.20**	**294**	*e*Pn	**Pn**	**21**	**21**	**44.8 +1.5**
GNI	**Garni**	**4.26**	**67**	Pn	**Pn**	**21**	**21**	**46.1 +2.0**
	comp=E,1.0nm,0.3s,baz=343,slow=7.7,SNR=4.1							
GNI				Pg	**Pg**	**21**	**21**	**58.7 -1.0**
	comp=E,0.7nm,0.3s,baz=304,slow=3.7,SNR=14							
KAMT	**Kaman**	**4.69**	**282**	*e*PN	**Pn**	**21**	**21**	**51.8 +1.9**
KAMT	**Kaman**	**4.69**	**282**	*e*Pn	**Pn**	**21**	**21**	**51.8 +1.9**
BRTR	**Keskin Array B**	**4.81**	**286**	Pn	**Pn**	**21**	**21**	**52.6 +1.1**
	comp=E,1.0nm,0.3s,baz=106,slow=12,SNR=30							
BRTR				Lg	Lg	21	23	09.8
	baz=88,slow=35,SNR=1.5							
MARH	**Ras Al Marh**	**5.19**	**210**	*e*P	**Pn**	**21**	**21**	**57.3 +0.3**
MARH				*e*S	**Sn**	**21**	**22**	**59.7 +2.1**
MARH				AML	AML	21	23	31.6
	comp=E,97nm,0.6s							
MARH				AML	AML	21	23	46.7
	comp=N,146nm,0.7s							
KBZ	**Khabaz**	**5.72**	**24**	LR	LR	21	24	28.5
	comp=N,189nm,20.2s,baz=197,slow=41							
KVAR	**Kislovodsk Arr**	**5.87**	**22**	Pn	**Pn**	**21**	**22**	**08.4 +2.3**
	baz=189,slow=7.6,SNR=4.4							
KVAR				LR	LR	21	24	28.5
	comp=N,209nm,21.1s,baz=188,slow=40							
SALA	**Sala**	**6.29**	**203**	*e*P	**Pn**	**21**	**22**	**08.1 -4.0**
SALA				*e*S	**Sn**	**21**	**23**	**19.8 -4.9**
SALA				AML	AML	21	24	09.4
	comp=E,7.1nm,0.6s							
SALA				AML	AML	21	24	25.2
	comp=N,74nm,0.6s							
MMAI	**Mount Meron Ar**	**6.51**	**213**	Pn	**Pn**	**21**	**22**	**17.6 +2.6**
	comp=N,2.0nm,0.3s,baz=58,slow=14,SNR=13							
MMAI				Lg	Lg	21	24	05.5
	comp=N,1.4nm,0.3s,baz=22,slow=31,SNR=4.1							
TCHB	**Talchebab**	**6.59**	**208**	*e*P	**Pn**	**21**	**22**	**15.1 -0.9**
TCHB				*e*S	**Sn**	**21**	**23**	**30.9 -0.8**
TCHB				AML	AML	21	24	28.9
	comp=E,88nm,0.6s							
TCHB				AML	AML	21	24	31.7
	comp=N,74nm,0.7s							
ASF	**Jabal al Asfar**	**6.75**	**200**	Pn	**Pn**	**21**	**22**	**19.1 +0.9**
	comp=N,0.4nm,0.3s,baz=326,slow=21,SNR=11							
ASF				Lg	Lg	21	24	18.1
	comp=N,0.5nm,0.3s,baz=72,slow=20,SNR=3.3							
EIL	**Elat**	**9.68**	**205**	LR	LR	21	27	22.0
	comp=N,222nm,20.1s,baz=222,slow=41							
IDI	**Anoyia**	**12.24**	**259**	LR	LR	21	28	23.9
	comp=N,120nm,20.1s,baz=260,slow=38							
GERES	**GERESS Array B**	**21.29**	**307**	P	**P**	**21**	**25**	**29.7 +3.8**
	comp=N,0.4nm,0.7s,baz=111,slow=11,SNR=3.9							
ARU	**Arti**	**21.85**	**29**	P	**P**	**21**	**25**	**31.1 -0.6**
	comp=N,0.7nm,0.4s,baz=240,slow=8.1,SNR=3.0							
KEST	**Kesra**	**24.26**	**273**	P	**P**	**21**	**25**	**58.2 +1.6**
	comp=N,3.7nm,0.7s,baz=153,slow=5.1,SNR=4.9							
FINES	**FINESS Array B**	**24.41**	**344**	P	**P**	**21**	**25**	**57.4 -0.3**
	comp=N,0.9nm,0.7s,baz=146,slow=10,SNR=4.5							
MKAR	**Makanchi Array**	**32.09**	**61**	P	**P**	**21**	**27**	**07.7 +1.2**
	comp=N,0.2nm,0.2s,baz=265,slow=9.7,SNR=3.7							

*IDC **22** 21:44:51.4±4.8, 23°.20′N×94°.02′E, h43km±44km, mb3.3/5, mb1 3.4/6, mb1mx3.2/46, mbtmp3.4/6, ML3.4/1, Error ellipse: s-maj=77.3km s-min=18.1km az=64.0*
ISC 22 21:44:51.5±1.0, 22°.9′N±0°.1×93°.7′E±0°.1, h53km, n12, σ2§29/15, mb3.2/5, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHL	**Shillong**	**3.14**	**329**	*e*PN	**Pn**	**21**	**45**	**42.0 +3.3**
SHL				*e*SN	**Sn**	**21**	**46**	**16.0 +0.9**
CMAR	**Chiang Mai Arr**	**6.61**	**131**	P	**Pn**	**21**	**46**	**25.7 -0.5**
	0.2nm,0.3s,baz=312,slow=13,SNR=4.3							
PKIN	**Phulchoki**	**8.83**	**304**	*e*P	**Pn**	**21**	**46**	**59.3 +2.5**
	8.5nm,0.4s							
KKN	**Kakani**	**9.03**	**305**	*e*P	**Pn**	**21**	**47**	**01.9 +2.5**
	3.6nm,0.2s							
KKN				*e*S	**Sn**	**21**	**48**	**37.5 -2.3**
DMN	**Daman**	**9.07**	**303**	*e*P	**Pn**	**21**	**47**	**02.6 +2.6**
	6.2nm,0.3s							
GKN	**Gorkha**	**9.63**	**304**	*e*P	**Pn**	**21**	**47**	**09.6 +2.0**
	24nm,0.3s							
GKN				*e*S	**Sn**	**21**	**48**	**51.7 -2.7**
PYUN	**Piuthan**	**10.96**	**301**	*e*P	**Pn**	**21**	**47**	**27.6 +1.8**
	6.1nm,0.4s							
MKAR	**Makanchi Array**	**25.58**	**342**	P	**P**	**21**	**50**	**14.5 -1.1**
	0.5nm,0.6s,baz=150,slow=9.5,SNR=7.8							
SONM	**Songino Array**	**26.92**	**19**	P	**P**	**21**	**50**	**25.4 -2.4**
	0.3nm,0.6s,baz=201,slow=7.7,SNR=3.1							
KURBB	**Kurchatov Arra**	**30.12**	**341**	P	**P**	**21**	**50**	**54.3 -1.8**
	0.3nm,0.7s,baz=156,slow=7.1,SNR=3.2							
WRA	**Warramunga Arr**	**58.19**	**134**	P	**P**	**21**	**54**	**40.8 +0.3**
	0.3nm,0.5s,baz=323,slow=7.5,SNR=15							
ASAR	**Alice Springs**	**60.57**	**137**	P	**P**	**21**	**54**	**58.2 +1.4**
	0.7nm,0.6s,baz=321,slow=6.7,SNR=10							

IDC 22 21:52:28.1±6.4, 15°.07′S×176°.11′W, h0km, mb3.4/2, mb1 3.6/2, mb1mx3.4/33, mbtmp3.4/2, Error ellipse: s-maj=390.3km s-min=89.6km az=151.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**47.38**	**257**	P	P	22	01	04.0 -0.5
	0.2nm,0.7s,baz=92,slow=6.4,SNR=3.5							
ASAR	**Alice Springs**	**47.73**	**252**	P	P	22	01	07.3 +0.1
	0.4nm,0.4s,baz=85,slow=8.3,SNR=7.4							
BRTR	**Keskin Array B**	**144.23**	**319**	PKP	PKPdf	22	12	06.3 -0.3
	0.4nm,0.4s,baz=75,slow=1.6,SNR=3.3							

IDC 22 22:21:51.2±1.7, 3°.38S×141°.18E, h0km, mb3.4/2, mb1 3.8/3, mb1mx3.4/36, mbtmp3.5/3, ML3.2/1, Error ellipse: s-maj=305.6km s-min=29.5km az=111.0, New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**17.77**	**202**	P	Pn	22	25	59.5 -0.7
	0.1nm,0.3s,baz=23,slow=12,SNR=5.2							
ASAR	**Alice Springs**	**21.36**	**199**	P	P	22	26	40.7 +0.3
	0.1nm,0.3s,baz=27,slow=10,SNR=2.9							
ILAR	**Eielson Array**	**85.42**	**24**	P	P	22	34	30.4 0.0
	0.9nm,0.6s,baz=250,slow=5.0,SNR=14							

*ISCJB **22** 22:32:39.5±1.6, 37°.69′N±0°.04×142°.09′E±0°.09, h1km±13km, mb3.6/3, Error ellipse: s-maj=13.2km s-min=6.2km az=21.1*
*IDC **22** 22:32:39.5±2.8, 37°.18′N×142°.39′E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.3/50, mbtmp3.4/4, ML2.9/1, Error ellipse: s-maj=72.1km s-min=30.7km az=54.0*
*JMA **22** 22:32:40.4±0.2, 37°.62′N×142°.15′E, h25km±3km, M3.6*
ISC 22 22:32:37.5±2.1, 37°.69′N±0°.05×142°.22′E±0°.08, h5km±12km, n24, σ1§41/27, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.03**	**318**	P	**Pn**	**22**	**32**	**59.4 +0.8**
JIO				S	**Sn**	**22**	**33**	**12.3 -1.1**
JFK	**Kawauchi**	**1.12**	**254**	P	**Pn**	**22**	**32**	**59.2 -0.6**
JFK				*e*S	**Sb**	**22**	**33**	**12.3 -1.9**
JMM	**Marumori**	**1.15**	**279**	P	**Pg**	**22**	**33**	**00.3 +0.8**
JMM				S	**Sb**	**22**	**33**	**14.1 -0.9**
ONAJ	**Iwakimizuishiy**	**1.28**	**243**	P	**Pn**	**22**	**33**	**01.2 -0.8**
JOU	**Ok

	baz=223,SNR=7.2						
O56A				S	Sn	23 04 30.9	0.0
	baz=223						
O56A				Sb	Sb	23 04 44.0	+2.8
	baz=223						
N54A	**Moraine State**	**4.06**	**21**	P	Pn	23 03 42.9	+0.1
	baz=203,SNR=9.5						
N54A				S	Sn	23 04 31.8	+0.8
	baz=203						
M54A	**Oil Creek Stat**	**4.65**	**22**	P	Pn	23 03 50.5	-0.5
	baz=204						
M54A				S	Sn	23 04 45.2	-0.5
	baz=204						
SSPA	**Standing Stone**	**4.67**	**41**	*e*Pn	Pn	23 03 51.6	+0.4
SSPA				*e*Sn	Sn	23 04 45.6	-0.5
SSPA				*e*Sb	Sb	23 05 00.9	+1.9
SFIN	**Lafayette**	**5.13**	**310**	P	Pn	23 03 56.4	-1.1
	baz=126						
SFIN	**Lafayette**	**5.13**	**310**	*e*Pn	Pn	23 03 59.6	+2.2
	15nm,0.6s						
SFIN				*e*Sn	Sn	23 05 02.7	+5.3
AAM	**Ann Arbor**	**5.26**	**346**	*e*Pn	Pn	23 04 01.1	+1.8
	20nm,0.6s						
AAM				*e*Sb	Sb	23 05 19.6	+3.5
S45A	**Carrier Mills**	**5.30**	**277**	P	Pn	23 03 59.9	0.0
	baz=93						
Q44A	**Meyer Farm, Va**	**5.83**	**289**	P	Pn	23 04 06.0	-1.2
	baz=104						
V45A	**Humboldt**	**5.83**	**258**	P	Pn	23 04 06.5	-0.7
	baz=73						
S44A	**Carbondale**	**5.84**	**277**	P	Pn	23 04 05.9	-1.3
	baz=92						
TIGA	**Tifton**	**5.90**	**194**	P	Pn	23 04 08.8	+0.7
	baz=12						
TIGA	**Tifton**	**5.90**	**194**	*e*Pn	Pn	23 04 08.4	+0.3
	12nm,0.7s						
Z48A	**Northport**	**5.96**	**232**	P	Pn	23 04 08.7	-0.3
	baz=48						
N59A	**State Game Lan**	**6.07**	**50**	P	Pn	23 04 10.5	0.0
	baz=235						
N59A				Sb	Sb	23 05 43.2	+3.8
	baz=235						
Y46A	**Houston**	**6.53**	**242**	P	Pn	23 04 16.8	0.0
	baz=57						
147A	**Livingston**	**6.88**	**231**	S	Sn	23 05 40.2	-0.3
	baz=46						
P42A	**Winchester**	**7.01**	**292**	S	Sn	23 05 41.0	-2.8
	baz=107						
146A	**Union**	**7.40**	**234**	S	Sn	23 05 53.8	+0.4
	baz=49						
U42A	**Revenden**	**7.50**	**266**	P	Pn	23 04 30.4	+0.2
	baz=80						
U42A				S	Sn	23 05 55.8	-0.2
	baz=80						
P41A	**Barry, Barry**	**7.57**	**292**	S	Sn	23 05 57.2	-0.3
	baz=106						
V42A	**Cord**	**7.73**	**262**	P	Pn	23 04 32.9	-0.4
	baz=76						
S41A	**Jillco Farms,**	**7.81**	**276**	P	Pn	23 04 34.5	+0.1
	baz=90,SNR=8.0						
S41A				S	Sn	23 06 03.2	-0.3
	baz=90						
T41A	**Mountain View**	**7.84**	**272**	P	Pn	23 04 35.4	+0.6
	baz=86						
Q40A	**Laux Farm, Aux**	**8.19**	**286**	P	Pn	23 04 40.4	+0.9
	baz=99						
R40A	**Maddies Statio**	**8.25**	**281**	P	Pn	23 04 41.2	+0.8
	baz=94,SNR=7.7						
P40A	**Paris**	**8.27**	**289**	P	Pn	23 04 40.3	-0.3
	baz=103						
O40A	**La Belle**	**8.30**	**294**	P	Pn	23 04 41.1	+0.1
	baz=107						
S40A	**Lebanon**	**8.41**	**276**	P	Pn	23 04 42.7	+0.1
	baz=89,SNR=7.1						
T40A	**Mansfield**	**8.44**	**273**	P	Pn	23 04 43.1	+0.1
	baz=86,SNR=8.7						
346A	**Big Creek Wild**	**8.50**	**229**	P	Pn	23 04 44.0	+0.2
	baz=44						
W41A	**Tony Mavity, V**	**8.57**	**259**	P	Pn	23 04 42.4	-2.3
	baz=73						
W41B	**Gary Mavity, V**	**8.57**	**259**	P	Pn	23 04 41.7	-3.0
	baz=73						
J41A	**Loganville**	**8.71**	**317**	P	Pn	23 04 43.5	-3.2
	baz=132						
U40A	**Yellville**	**8.79**	**268**	P	Pn	23 04 48.2	+0.4
	baz=81						
R39A	**Chumby, Stover**	**8.86**	**281**	P	Pn	23 04 47.5	-1.2
	baz=94						
Q39A	**Willow Grove F**	**8.89**	**285**	P	Pn	23 04 48.6	-0.5
	baz=98						
K40A	**Colesburg**	**8.94**	**311**	P	Pn	23 04 49.7	-0.2
	baz=125						
S39A	**Bolivar**	**9.06**	**277**	P	Pn	23 04 51.5	-0.1
	baz=89,SNR=6.3						
T39A	**Clever**	**9.13**	**272**	P	Pn	23 04 51.0	-1.5
	baz=85						
Q38A	**Cooks Store, C**	**9.37**	**284**	P	Pn	23 04 55.5	-0.2
	baz=97						
R38A	**Fenwick Farm,**	**9.53**	**280**	P	Pn	23 04 57.6	-0.4
	baz=92						
MIAR	**Mount Ida**	**9.80**	**258**	P	Pn	23 05 01.9	+0.3
	baz=70						
U38A	**Gravette**	**10.00**	**269**	P	Pn	23 05 05.2	+0.8
	baz=82						
P37A	**Lathrop**	**10.02**	**288**	P	Pn	23 05 04.1	-0.6
	baz=100						
V38A	**Canehill**	**10.12**	**266**	P	Pn	23 05 04.2	-1.8
	baz=78						
S37A	**Fort Scott**	**10.26**	**277**	P	Pn	23 05 08.4	+0.5
	baz=89						
R37A	**Teagarden Farm**	**10.26**	**280**	P	Pn	23 05 07.4	-0.5
	baz=92						
X38A	**Whitesboro**	**10.74**	**260**	P	Pn	23 05 14.8	+0.2
	baz=72						
P35A	**Duane Minner,**	**11.29**	**286**	P	Pn	23 05 21.0	-1.1
	baz=97						
F36A	**Milaca**	**12.24**	**319**	P	Pn	23 05 33.5	-1.5
	baz=131						
E36A	**McGregor**	**12.55**	**321**	P	Pn	23 05 37.5	-1.7
	baz=134						
WMOK	**Wichita Mounta**	**13.86**	**265**	P	Pn	23 05 53.7	-3.5
	baz=75						
ULM	**Lac du Bonnet**	**16.44**	**327**	Pn	**P**	23 06 33.5	-0.8
	0.2nm,0.3s,baz=138,slow=9.8,SNR=4.8						
ULM				Lg	Lg	23 11 19.0	
	0.2nm,0.3s,baz=244,slow=8.8,SNR=3.0						
TXAR	**Lajitas Array**	**19.75**	**253**	P	Pn	23 07 12.2	-0.3
	0.0nm,0.3s,baz=76,slow=11,SNR=5.7						
PV04	**Paradox Valley**	**21.31**	**281**	*e*P	**P**	23 07 32.0	+4.0
ILAR	**Eielson Array**	**46.46**	**328**	P	**P**	23 11 09.8	+2.0
	0.2nm,0.5s,baz=94,slow=5.7,SNR=4.0						
LPAZ	**La Paz**	**54.77**	**164**	P	**P**	23 12 10.0	-1.7
	1.0nm,0.9s,baz=353,slow=8.1,SNR=3.4						

IDC 22 23:03:50.6±2.2, 6.91S×128.87E, h0km, mb3.6/1, mb1 3.8/3, mb1mx3.5/21, mbtmp3.6/3, ML3.8/2, Error ellipse: s-maj=118.7km s-min=32.6km az=67.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**14.00**	**158**	Pn	Pn	23 07 09.4	-1.1
	0.5nm,0.3s,baz=337,slow=13,SNR=19						
WRA				Sn	Sn	23 09 33.5	-13
	0.8nm,0.3s,baz=341,slow=22,SNR=8.8						
ASAR	**Alice Springs**	**17.35**	**164**	P	P	23 07 55.2	-0.7
	0.3nm,0.3s,baz=341,slow=12,SNR=13						
ASAR				S	Sn	23 10 55.4	-13
	0.2nm,0.3s,baz=354,slow=28,SNR=3.8						
MKAR	**Makanchi Array**	**67.54**	**327**	P	P	23 14 48.9	0.0
	0.3nm,0.4s,baz=133,slow=7.3,SNR=3.6						

MAN 22 23:06:56, 9.58N×122.25E, h56km, mb4.4, ML3.2, MS3.1, 1C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.00**	**103**	⇑*i*P	Pn	23 07 14.8	+0.8
SNPH				*i* S	Sn	23 07 29.2	+1.9
DCPH	**Dipolog City**	**1.47**	**132**	⇓*e*P	Pn	23 07 22.2	+2.0
RCP	**Roxas**	**2.03**	**14**	⇓*e*P	Pn	23 07 28.8	+0.9
RCP				*e*S	Sn	23 07 54.3	+2.2

IDC 22 23:12:23.3±2.4, 6.05N×124.23E, h546km±29km, mb3.1/8, mb1 3.2/8, mb1mx2.9/33, mbtmp4.1/8, Error ellipse: s-maj=56.5km s-min=12.4km az=64.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**27.57**	**299**	P	P	23 17 26.8	-0.2
	0.8nm,0.6s,baz=125,slow=7.8,SNR=4.6						
WRA	**Warramunga Arr**	**27.68**	**159**	P	P	23 17 27.3	-0.6
	1.4nm,0.3s,baz=332,slow=11,SNR=16						
WRA				ScP	ScP	23 23 16.5	-0.1
	0.4nm,0.9s,baz=347,slow=3.4,SNR=3.9						
ASAR	**Alice Springs**	**31.01**	**163**	P	P	23 17 57.2	+0.4
	1.3nm,0.5s,baz=341,slow=6.8,SNR=24						
SONM	**Songino Array**	**44.34**	**343**	P	P	23 19 45.7	+0.4
	0.4nm,0.4s,baz=157,slow=7.7,SNR=3.8						
MKAR	**Makanchi Array**	**54.24**	**326**	P	P	23 20 58.5	+0.4
	3.4nm,0.4s,baz=120,slow=7.9,SNR=62						
MKAR				PcP	PcP	23 21 53.5	-0.4
	0.4nm,0.4s,baz=112,slow=4.8,SNR=3.1						
ZALV	**Zalesovo Beam**	**57.41**	**334**	P	P	23 21 19.0	-0.9
	0.7nm,0.4s,baz=120,slow=6.0,SNR=3.8						
NRIK	**Noril'sk**	**67.61**	**347**	P	P	23 22 25.6	+0.1
	0.9nm,0.4s,baz=135,slow=5.7,SNR=3.6						
FINES	**FINESS Array B**	**88.62**	**332**	P	P	23 24 16.8	-1.4
	0.5nm,0.6s,baz=64,slow=6.3,SNR=4.2						

IDC 22 23:36:52.9±6.2, 36.27N×70.03E, h0km, mb3.7/3, mb1 3.6/7, mb1mx3.4/48, mbtmp3.6/7, ML3.3/4, MS2.9/1, Ms1 2.9/1, ms1mx2.3/33, Error ellipse: s-maj=94.6km s-min=26.7km az=163.0
NNC 22 23:37:00.2±2.5, 36.83N×69.56E, h0km, mb4.1, mpv3.7, Error ellipse: s-maj=27.6km s-min=17.4km az=108.0
ISC 22 23:36:58.4±2.4, 36.6N±0.2×69.6E±0.1, h10km, n12, σ0s96/15, 4C-5D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MNAS	**Manas**	**6.28**	**20**	⇓Pn	**Pn**	**23 38 31.8**	**+0.6**
	2.7nm,0.4s						
MNAS				⇓Sn	**Sn**	**23 39 43.1**	**0.0**
	5.1nm,0.6s						
MNAS				⇑Lg	Lg	23 40 14.0	
	3.0nm,0.5s						
KK31	**Karatay Array**	**6.52**	**6**	⇑Pn	**Pn**	**23 38 34.8**	**+0.4**
	4.3nm,0.5s,baz=199,slow=14,SNR=29						
KK31				⇓Sn	**Sn**	**23 39 48.6**	**-0.2**
	8.4nm,0.9s						
KK31				⇑Lg	Lg	23 40 18.8	
	4.5nm,0.7s,baz=199,slow=30,SNR=3.6						
AAK	**Ala-Archa**	**7.11**	**31**	Pn	**Pn**	**23 38 41.3**	**-1.2**
	1.0nm,0.3s,baz=248,slow=5.4,SNR=6.7						
AAK				Sn	**Sn**	**23 40 03.6**	**+0.2**
	0.2nm,0.3s,baz=338,slow=19,SNR=3.5						
AAK	**Ala-Archa**	**7.11**	**31**	⇓Pn	**Pn**	**23 38 42.2**	**-0.3**
	3.6nm,0.6s						
AAK				⇑Sn	**Sn**	**23 40 04.7**	**+1.2**
	4.7nm,0.7s						
AAK				⇓Lg	Lg	23 40 37.5	
	4.8nm,0.7s						
GEYT	**Alibeck**	**9.24**	**282**	Pn	**Pn**	**23 39 12.1**	**+0.5**
	0.3nm,0.3s,baz=104,slow=10,SNR=4.5						
GEYT				Sn	**Sn**	**23 40 54.3**	**-1.3**
	0.3nm,0.3s,baz=84,slow=29,SNR=3.6						
MKAR	**Makanchi Array**	**13.89**	**39**	Pn	**Pn**	**23 40 14.2**	**-1.1**
	0.1nm,0.3s,baz=220,slow=11,SNR=2.5						
AKTO	**Aktyubinsk**	**16.13**	**333**	Pn	**Pn**	**23 40 44.4**	**-0.7**
	0.2nm,0.3s,baz=149,slow=11,SNR=5.7						
BVAR	**Borovoye Array**	**16.42**	**2**	Pn	**Pn**	**23 40 47.3**	**-1.4**
	0.5nm,0.3s,baz=162,slow=12,SNR=12						
GNI	**Garni**	**19.77**	**288**	LR	LR	23 52 49.0	
	comp=Z,34nm,18.2s,baz=172,slow=47						
ZALV	**Zalesovo Beam**	**20.30**	**27**	P	Pn	23 41 31.6	-4.6
	1.7nm,0.6s,baz=214,slow=12,SNR=7.9						
ARU	**Arti**	**21.17**	**343**	P	**P**	**23 41 44.1**	**+0.5**
	1.7nm,0.5s,baz=149,slow=5.8,SNR=5.2						
FINES	**FINESS Array B**	**36.76**	**326**	P	**P**	**23 44 06.8**	**+1.2**
	1.1nm,0.8s,baz=115,slow=12,SNR=2.7						

ISCJB 22 23:38:04.8±0.5, 39.14N±0.04×29.02E±0.04, h20km±8km, Error ellipse: s-maj=7.6km s-min=4.8km az=150.4
CSEM 22 23:38:04.5±0.1, 39.14N×28.99E, h18km±1km, MD2.7, Error ellipse: s-maj=2.6km s-min=2.1km az=144.0
ISK 22 23:38:04.0, 39.15N×29.00E, h16km, ML1.9
DDA 22 23:38:05.4, 39.09N×29.04E, h7km, Md2.7
ISC 22 23:38:04.5±1.0, 39.14N±0.04×29.00E±0.03, h17km±10km, n22, σ0s41/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.24**	**247**	*i* P	**Pb**	**23 38 11.2**	**+0.6**
DEMI				*i* S	**Sb**	**23 38 14.9**	**+0.4**
DEMI	**Demirci**	**0.24**	**247**	P	**Pb**	**23 38 11.1**	**+0.6**
DEMI				S	**Sb**	**23 38 14.9**	**+0.4**
GEDZ	**Gediz**	**0.33**	**106**	*e*PG	**Pb**	**23 38 12.2**	**+0.2**
GEDZ				*e*SG	**Sg**	**23 38 16.4**	**+0.2**
GEDZ	**Gediz**	**0.33**	**106**	*e*Pg	**Pb**	**23 38 12.2**	**+0.2**
GEDZ				*e*Sg	**Sg**	**23 38 16.5**	**+0.2**
GDZ	**Gediz**	**0.37**	**97**	*i* P	**Pg**	**23 38 12.6**	**+0.2**
GDZ				*i* S	**Sg**	**23 38 17.4**	**-0.2**
GDZ	**Gediz**	**0.37**	**97**	P	**Pg**	**23 38 12.6**	**+0.2**
GDZ				S	**Sg**	**23 38 17.5**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**48**	PG	**Pb**	**23 38 14.3**	**-0.2**
TVSB				*e*SG	**Sg**	**23 38 20.4**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**48**	*i* Pg	**Pb**	**23 38 14.3**	**-0.2**
TVSB				*e*Sg	**Sg**	**23 38 20.4**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**203**	*e*PG	**Pb**	**23 38 18.2**	**+0.3**
KULA				*e*SG	**Sb**	**23 38 27.4**	**+0.4**
KULA	**Kula-Manisa**	**0.68**	**203**	*e*Pg	**Pb**	**23 38 18.2**	**+0.3**
KULA				*e*Sg	**Sb**	**23 38 27.4**	**+0.4**
MANT	**Manisa**	**0.73**	**209**	*i* P	**Pg**	**23 38 18.6**	**-0.3**
MANT				*i* S	**Sg**	**23 38 27.6**	**-1.1**
MANT	**Manisa**	**0.73**	**209**	P	**Pg**	**23 38 18.6**	**-0.3**
MANT				S	**Sg**	**23 38 27.6**	**-1.1**
BALB	**Balikesir**	**1.01**	**300**	*e*PG	**Pn**	**23 38 24.0**	**+0.2**
BALB	**Balikesir**	**1.01**	**300**	*e*Pg	**Pn**	**23 38 24.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*PN	**Pn**	**23 38 26.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*Pn	**Pn**	**23 38 26.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*PN	**Pn**	**23 38 26.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*Pn	**Pn**	**23 38 26.8**	**-0.2**
IZI	**Iznik**	**1.25**	**17**	*e*PN	**Pn**	**23 38 27.0**	**-0.3**
IZI	**Iznik**	**1.25**	**17**	*e*Pn	**Pn**	**23 38 27.0**	**-0.3**
SHUT	**Suhut-Afyon**	**1.34**	**115**	*e*PN	**Pb**	**23 38 29.3**	**0.0**
SHUT	**Suhut-Afyon**	**1.34**	**115**	*e*Pn	**Pb**	**23 38 29.3**	**0.0**

IDC 22 23:38:47.3±1.4, 55.24S×29.07W, h0km, mb3.8/1, mb1 4.1/1, mb1mx3.6/18, mbtmp3.8/1, MS3.1/2, Ms1 3.1/2, ms1mx2.8/13, Error ellipse: s-maj=102.6km s-min=48.0km az=90.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**30.81**	**281**	LR	LR	23 57 34.5	
	comp=Z,42nm,18.7s,baz=164,slow=37						
CPUP	**Villa Florida**	**35.48**	**313**	LR	LR	00 01 16.9	
	comp=Z,22nm,18.4s,baz=166,slow=38						
VNDA	**Vanda**	**47.33**	**183**	P	P	23 47 21.9	-0.1
	1.1nm,0.8s,baz=180,slow=5.7,SNR=5.2						
H10S2	**ASCENSION HYDR**	**47.56**	**19**	T	T	00 39 28.2	
	baz=192						
H10S3	**ASCENSION HYDR**	**47.56**	**19**	T	T	00 39 30.5	
	baz=192						
H10S1	**ASCENSION HYDR**	**47.58**	**19**	T	T	00 39 23.9	
	baz=192						
ILAR	**Eielson Array**	**148.78**	**313**	PKPbc	PKPbc	23 58 34.5	-0.6
	0.9nm,0.7s,baz=130,slow=2.3,SNR=9.4						
SONM	**Songino Array**	**151.74**	**86**	PKPbc	PKPbc	23 58 42.7	-0.2
	0.3nm,0.5s,baz=209,slow=2.8,SNR=2.4						

KRSC 22 23:46:46.5±0.8, 55.27N×163.05E, h63km±21km, ML3.9, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KBG	**Krutoberegovo**	**1.00**	**349**	*i* P	Pn	23 47 05.5	+0.9
KBG				*e*S	Sn	23 47 18.7	+0.6
MKZ	**Mys Kozlova**	**1.05**	**227**	*e*P	Pn	23 47 06.7	+1.5
MKZ				*e*S	Sn	23 47 20.3	+1.2
ZLN	**Zelenaya**	**1.48**	**301**	*e*P	Pn	23 47 13.1	+2.1
ZLN				*e*S	Sn	23 47 31.6	+2.2
CIRR	**Tsirk**	**1.55**	**304**	*e*S	Sn	23 47 33.1	+1.8
LGNR	**Loginova**	**1.56**	**302**	*e*P	Pn	23 47 14.6	+2.3
LGNR				*e*S	Sn	23 47 34.5	+2.7
SMKR	**Semkarok**	**1.58**	**326**	*e*P	Pn	23 47 14.3	+1.9
SMKR				*e*S	Sn	23 47 33.3	+1.3
KZV	**Kizimen**	**1.59**	**265**	*e*P	Pn	23 47 14.4	+1.9
KZV				*e*S	Sn	23 47 33.5	+1.3
BZMR	**Bezymyannaya**	**1.60**	**296**	*e*P	Pn	23 47 14.4	+1.8
BDR	**Baidarnaya**	**1.66**	**322**	*e*P	Pn	23 47 15.6	+2.2
BDR				*e*S	Sn	23 47 36.0	+2.2
TUMR	**Tumrok**	**1.66**	**272**	*e*P	Pn	23 47 16.2	+2.7
TUMR				*e*S	Sn	23 47 36.9	+3.0
KMNR	**Kamenistaya**	**1.67**	**288**	*e*P	Pn	23 47 16.1	+2.5
KMNR				*e*S	Sn	23 47 36.9	+2.8
BKI	**Bering**	**1.68**	**91**	*e*P	Pn	23 47 16.2	+2.7
BKI				*e*S	Sn	23 47 36.2	+2.2
KIRR	**Kirishev**	**1.68**	**295**	*e*P	Pn	23 47 16.5	+2.7
KIRR				*e*S	Sn	23 47 37.9	+3.5
KRSR	**Krestovskiy**	**1.69**	**305**	*e*P	Pn	23 47 15.6	+1.7
KRSR				*e*S	Sn	23 47 36.0	+1.4
KLY	**Klyuchi**	**1.71**	**309**	*e*P	Pn	23 47 14.8	+0.8
KLY				*e*S	Sn	23 47 34.6	-0.2
SRKR	**Sorokina**	**1.74**	**323**	*e*P	Pn	23 47 16.5	+2.0
KPT	**Kopyto**	**1.75**	**295**	*e*P	Pn	23 47 17.2	+2.6
KPT				*e*S	Sn	23 47 39.1	+3.2
KOZ	**Kozyrevsk**	**1.96**	**295**	*e*P	Pn	23 47 20.5	+3.0
KOZ				*e*S	Sn	23 47 45.1	+4.1
ESO	**Esso**	**2.55**	**287**	*e*P	Pn	23 47 27.6	+2.1
ESO				*e*S	Sn	23 47 56.6	+1.2
SPN	**Mys Shipunski**	**2.81**	**220**	*e*P	Pn	23 47 30.7	+1.7
SPN				*e*S	Sn	23 48 01.9	+0.2
NLC	**Nalytchevo**	**3.03**	**227**	*e*P	Pn	23 47 33.9	+2.0
NLC				*e*S	Sn	23 48 09.3	+2.4
SDLR	**Sedlovina**	**3.16**	**232**	*e*P	Pn	23 47 37.1	+3.3
SDLR				*e*S	Sn	23 48 12.8	+2.5
KRER	**Koryakskii**	**3.20**	**234**	*e*P	Pn	23 47 38.1	+3.6
KRX	**Arik**	**3.21**	**235**	*e*P	Pn	23 47 37.9	+3.3
KRX				*e*S	Sn	23 48 14.5	+2.8
UGLR	**Uglovaya**	**3.23**	**232**	*e*P	Pn	23 47 38.3	+3.5
UGLR				*e*S	Sn	23 48 15.0	+3.0
AVH	**Avacha**	**3.23**	**233**	*e*P	Pn	23 47 38.6	+3.8
AVH				*e*S	Sn	23 48 15.6	+3.5
KOK	**Koryaka**	**3.26**	**234**	*e*P	Pn	23 47 37.6	+2.4
GNL	**Ganaly**	**3.37**	**244**	*i* P	Pn	23 47 40.5	+3.8
DALK	**Dalny**	**3.38**	**230**	*e*P	Pn	23 47 40.0	+3.3
DALK				*e*S	Sn	23 48 17.0	+1.4
KRMR	**Karymshinskiy**	**3.79**	**232**	*e*P	Pn	23 47 46.9	+4.5
RUS	**Russkaya**	**3.91**	**225**	*e*P	Pn	23 47 47.5	+3.5
RUS				*e*S	Sn	23 48 31.3	+2.7
ASAK	**Asacha**	**4.21**	**229**	*e*P	Pn	23 47 52.3	+4.2
TILK	**Tilichiki**	**5.44**	**16**	*e*P	Pn	23 48 06.6	+1.7

NEIC 22 23:54:32.0, 9.58S×79.45W, h50km, mb4.2/8, After ARE., Off coast of northern Peru

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NNA	**Nana**	**3.50**	**133**	*e*Pn	Pn	23 55 25.1	+1.0
NNA				*e*Sn	Sn	23 56 06.0	+1.7
SAML	**Samuel**	**16.07**	**89**	*e*Pn	Pn	23 58 14.7	0.0
WMOK	**Wichita Mounta**	**47.73**	**338**	P	P	00 03 02.9	-1.1
	1.0nm,0.8s						
ANMO	**Albuquerque**	**51.13**	**331**	*e*P	P	00 03 30.2	0.0
	0.2nm,0.4s						
CMB	**Columbia Colle**	**60.87**	**324**	P	P	00 04 39.5	-0.1
	1.9nm,0.5s						
WALA	**Waterton Lakes**	**65.77**	**336**	*e*P	P	00 05 11.6	-0.4
	2.9nm,1.0s						
NEW	**Newport**	**66.51**	**334**	*e*P	P	00 05 16.1	-0.5
	1.5nm,0.8s						
FCC	**Fort Churchill**	**69.13**	**352**	*e*P	P	00 05 31.6	-1.1
	3.0nm,1.0s						
SUMG	**Summit**	**86.18**	**11**	*e*P	P	00 07 07.3	-0.7
	1.9nm,0.7s						
COLA	**College**	**89.69**	**337**	*e*P	P	00 07 23.4	-0.9
	3.3nm,0.4s						

ISCJB 23 00:07:25.0±0.7, 39.12N±0.05×29.05E±0.06, h25km±9km, Error ellipse: s-maj=11.1km s-min=5.2km az=139.8
CSEM 23 00:07:24.9±0.2, 39.14N×29.02E, h10km, MD2.8, Error ellipse: s-maj=7.1km s-min=4.3km az=136.0
ISK 23 00:07:24.3, 39.14N×28.99E, h15km, ML1.6
DDA 23 00:07:25.7, 39.09N×29.07E, h7km, Md2.8
ISC 23 00:07:24.9±1.1, 39.11N±0.05×29.06E±0.04, h23km±10km, n14, σ0s36/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.28**	**256**	*i* P	**Pb**	**00 07 31.8**	**+0.3**
DEMI				*i* S	**Sb**	**00 07 35.8**	**-0.2**
DEMI	**Demirci**	**0.28**	**256**	P	**Pb**	**00 07 31.8**	**+0.3**
DEMI				S	**Sb**	**00 07 35.8**	**-0.2**
GDZ	**Gediz**	**0.33**	**94**	*i* P	**Pb**	**00 07 32.4**	**0.0**
GDZ				*i* S	**Sb**	**00 07 37.2**	**-0.3**
GDZ	**Gediz**	**0.33**	**94**	P	**Pb**	**00 07 32.4**	**0.0**
GDZ				S	**Sb**	**00 07 37.2**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**42**	PG	**Pb**	**00 07 34.4**	**-0.1**
TVSB				*e*SG	**Sb**	**00 07 41.4**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**42**	*i* Pg	**Pb**	**00 07 34.4**	**-0.1**
TVSB				*e*Sg	**Sb**	**00 07 41.4**	**+0.4**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*PG	**Pb**	**00 07 38.0**	**-0.1**
KULA				*e*SG	**Sb**	**00 07 47.8**	**+0.8**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*Pg	**Pb**	**00 07 38.0**	**-0.1**
KULA				*e*Sg	**Sb**	**00 07 47.8**	**+0.8**
MANT	**Manisa**	**0.73**	**213**	*i* P	**Pb**	**00 07 39.1**	**-0.1**
MAN

baz=150,slow=75,SNR=8.9
KSRS Korea Array 143.16 297 PKP PKPbc 00 43 42.2 +1.1
0.5nm,0.3s,baz=89,slow=3.7,SNR=4.9
ZALV Zalesovo Beam 153.00 1 PKP **PKPdf 00 43 59.5 -0.2**
0.3nm,0.4s,baz=18,slow=5.0,SNR=3.1
ZALV PKPbc **PKPbc 00 44 06.5 -0.5**
1.0nm,0.6s,baz=358,slow=3.6,SNR=5.7
SONM Songino Array 153.66 328 PKPbc **PKPbc 00 44 09.1 +0.2**
0.3nm,0.5s,baz=90,slow=2.9,SNR=2.4
MKAR Makanchi Array 159.97 7 PKP **PKPdf 00 44 09.2 +0.2**
0.5nm,0.8s,baz=46,slow=4.2,SNR=4.4

*IDC **23** 00:33:35.4±2.3, 42˚.11S×173˚.39E, h0km, mb3.3/2, mb1 3.7/4, mb1mx3.5/32, mbtmp3.5/4, ML3.8/2, MS3.5/1, Ms1 3.5/1, ms1mx2.8/10, Error ellipse: s-maj=64.8km s-min=24.9km az=136.0*
*ISCJB **23** 00:33:37.7±0.4, 42˚.15S±0˚.02×173˚.14E±0˚.04, h20km±4km, mb3.8/6, MS3.4/1, Error ellipse: s-maj=5.1km s-min=3.0km az=35.2*
*WEL **23** 00:33:37.8±0.1, 42˚.10S×173˚.13E, h11km±1km, ML4.3/67, Mw4.0, Error ellipse: s-maj=1.3km s-min=0.7km az=90.0*
WEL Felt from Wellington to Canterbury, maximum reported intensity MM 4.
*NEIC **23** 00:33:37.9, 42˚.10S×173˚.13E, h12km, mb4.3/4, ML4.3(WEL), After WEL.*
NEIC Felt in the northern part of the South Island.
ISC 23 00:33:37.4±1.1, 42˚.11S±0˚.02×173˚.16E±0˚.03, h11km±7km, n95, σ1§32/92, mb3.7/6, 8C-6D, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
THZ	**Tophouse**	**0.39**	**331**	⇓P*	**Pb**	**00 33 45.7**	**-0.8**
THZ				S*	**Sg**	**00 33 50.5**	**+0.1**
THZ				S*	**Sb**	**00 33 50.6**	**-1.9**
THZ				AML	AML	00 33 50.8	
THZ				AML	AML	00 33 50.9	
KHZ	**Kahutara**	**0.42**	**138**	⇓P*	**Pb**	**00 33 46.8**	**0.0**
KHZ				S*	**Sb**	**00 33 53.1**	**-0.1**
KHZ				S*	**Sg**	**00 33 53.4**	**+2.2**
KHZ				AML	AML	00 33 53.4	
KHZ				AML	AML	00 33 53.4	
BSWZ	**Blackbirch Sta**	**0.66**	**54**	P*	**Pg**	**00 33 50.0**	**-0.2**
BSWZ				*e*S*	**Sb**	**00 34 01.3**	**+1.2**
BSWZ				AML	AML	00 34 06.7	
CMWZ	**Cape Campbell**	**0.86**	**66**	P*	**Pn**	**00 33 55.4**	**-0.1**
CMWZ				AML	AML	00 34 14.3	
CMWZ				AML	AML	00 34 17.0	
TUWZ	**Tuamarina**	**0.89**	**41**	⇑P*	**Pg**	**00 33 54.2**	**-0.4**
TUWZ				*e*S*	**Sn**	**00 34 08.7**	**-0.1**
TUWZ				AML	AML	00 34 10.3	
NNZ	**Nelson**	**0.90**	**10**	⇑P*	**Pg**	**00 33 54.1**	**-0.7**
NNZ				AML	AML	00 34 10.0	
NNZ				AML	AML	00 34 10.0	
NNZ				AML	AML	00 34 10.0	
LTZ	**Lake Taylor**	**0.94**	**224**	⇑P*	**Pb**	**00 33 55.5**	**-0.3**
LTZ				AML	AML	00 34 11.2	
DSZ	**Denniston Nort**	**1.08**	**289**	⇓P*	**Pn**	**00 33 58.6**	**+0.1**
DSZ				AML	AML	00 34 16.8	
DSZ				AML	AML	00 34 16.8	
DSZ				AML	AML	00 34 16.9	
DSZ				AML	AML	00 34 16.9	
TCW	**Tory Channel**	**1.22**	**43**	⇑P*	**Pg**	**00 33 59.5**	**-1.4**
TCW				AML	AML	00 34 20.7	
TCW				AML	AML	00 34 21.5	
QRZ	**Quartz Range**	**1.37**	**339**	⇓PN	**Pb**	**00 34 02.6**	**-0.4**
QRZ				SN	**Sb**	**00 34 20.3**	**-0.2**
QRZ				AML	AML	00 34 22.9	
SNZO	**South Karori**	**1.40**	**56**	*e*Pn	**Pb**	**00 34 03.7**	**+0.1**
BHW	**Baring Head**	**1.46**	**62**	AML	AML	00 34 33.5	
BHW				AML	AML	00 34 40.5	
WEL	**Wellington**	**1.46**	**56**	PN	**Pn**	**00 34 04.2**	**+0.6**
WEL				AML	AML	00 34 30.6	
WEL				AML	AML	00 34 33.8	
OXZ	**Oxford**	**1.48**	**214**	⇑PN	**Pn**	**00 34 03.5**	**-0.5**
OXZ				AML	AML	00 34 24.1	
OXZ				AML	AML	00 34 30.2	
CRLZ	**Canterbury Las**	**1.52**	**195**	PN	**Pn**	**00 34 03.8**	**-0.7**
CRLZ				AML	AML	00 34 27.4	
CRLZ				AML	AML	00 34 34.5	
MQZ	**McQueen's Vall**	**1.64**	**193**	PN	**Pn**	**00 34 05.0**	**-1.2**
MQZ				SN	**Sn**	**00 34 26.1**	**-1.3**
MQZ				AML	AML	00 34 26.4	
PLWZ	**Palliser**	**1.65**	**72**	PN	**Pn**	**00 34 05.9**	**-0.5**
PLWZ				AML	AML	00 34 49.6	
PLWZ				AML	AML	00 34 57.6	
MSWZ	**Moikau Station**	**1.71**	**67**	⇑PN	**Pn**	**00 34 06.7**	**-0.4**
MSWZ				AML	AML	00 34 40.6	
MSWZ				AML	AML	00 34 42.4	
CAW	**Cannon Point**	**1.74**	**56**	PN	**Pn**	**00 34 07.7**	**+0.1**
CAW				AML	AML	00 34 41.6	
CAW				AML	AML	00 34 43.0	
KIW	**Kapiti Island**	**1.81**	**47**	PN	**Pn**	**00 34 09.1**	**+0.6**
KIW				AML	AML	00 34 40.1	
KIW				AML	AML	00 34 41.0	
PAWZ	**Paruwai Farm**	**1.84**	**68**	PN	**Pn**	**00 34 08.6**	**-0.4**
PAWZ				AML	AML	00 34 45.2	
PAWZ				AML	AML	00 34 46.4	
OGWZ	**Otaki Gorge**	**1.98**	**50**	PN	**Pn**	**00 34 11.3**	**+0.3**
OGWZ				AML	AML	00 34 46.6	
OGWZ				AML	AML	00 34 57.3	
MTW	**Mount Morrison**	**1.99**	**62**	PN	**Pn**	**00 34 10.3**	**-0.7**
MTW				AML	AML	00 34 54.6	
MTW				AML	AML	00 34 55.0	
TRWZ	**Traveller**	**2.02**	**70**	PN	**Pn**	**00 34 10.6**	**-0.8**
TRWZ				AML	AML	00 34 56.9	
TRWZ				AML	AML	00 35 01.0	
WVZ	**Waitaha Valley**	**2.04**	**241**	PN	**Pn**	**00 34 12.7**	**+1.0**
WVZ				AML	AML	00 34 48.7	
WVZ				AML	AML	00 34 48.7	
HOWZ	**Holdsworth Sta**	**2.14**	**56**	PN	**Pn**	**00 34 12.6**	**-0.5**
HOWZ				AML	AML	00 34 54.0	
HOWZ				AML	AML	00 34 56.5	
RPZ	**Rata Peaks**	**2.23**	**223**	Pn	**Pn**	**00 34 13.8**	**-0.6**
	43nm,0.3s,baz=81,slow=4.4,SNR=209						
RPZ				Sn	**Sn**	**00 34 41.7**	**-0.3**
	58nm,0.3s,baz=136,slow=22,SNR=12						
RPZ	**Rata Peaks**	**2.23**	**223**	*e*Pn	**Pn**	**00 34 14.5**	**+0.1**
RPZ				Sn	**Sn**	**00 34 41.7**	**-0.3**
RPZ	**Rata Peaks**	**2.23**	**223**	⇑PN	**Pn**	**00 34 13.8**	**-0.6**
RPZ				AML	AML	00 34 45.6	
RPZ				AML	AML	00 35 01.1	
MRZ	**Mangatainoka R**	**2.32**	**52**	PN	**Pn**	**00 34 14.9**	**-0.7**
MRZ				AML	AML	00 35 03.5	
MRZ				AML	AML	00 35 04.7	
OHWZ	**Ohakea**	**2.50**	**41**	PN	**Pn**	**00 34 19.6**	**+1.6**
POWZ	**Post Office Ro**	**2.60**	**50**	AML	AML	00 35 05.5	
POWZ				AML	AML	00 35 20.5	
BFZ	**Birch Farm**	**2.72**	**59**	PN	**Pn**	**00 34 21.3**	**+0.2**
BFZ				AML	AML	00 35 18.5	
BFZ				AML	AML	00 35 20.5	
WAZ	**Wanganui**	**2.72**	**31**	PN	**Pn**	**00 34 23.8**	**+2.6**
WAZ				AML	AML	00 35 19.0	
WAZ				AML	AML	00 35 27.7	
LREZ	**Lake Rotokare**	**2.81**	**20**	AML	AML	00 35 19.2	
LREZ				AML	AML	00 35 32.9	
FOZ	**Fox Glacier**	**2.85**	**239**	⇓PN	**Pn**	**00 34 23.5**	**+0.8**
FOZ				AML	AML	00 35 04.0	
FOZ				AML	AML	00 35 26.0	
PREZ	**Palmer Road**	**2.86**	**16**	AML	AML	00 35 14.0	
PREZ				AML	AML	00 35 19.0	
KHEZ	**Kahui Hut**	**2.88**	**13**	PN	**Pb**	**00 34 26.3**	**-2.6**
DVHZ	**Dannevirke**	**2.90**	**52**	AML	AML	00 35 20.4	
DVHZ				AML	AML	00 35 28.2	
TSZ	**Takapari Road**	**2.94**	**47**	PN	**Pn**	**00 34 23.7**	**-0.4**
TSZ				AML	AML	00 35 19.0	
TSZ				AML	AML	00 35 24.8	
PKE	**Pukeiti**	**2.98**	**12**	PN	**Pn**	**00 34 26.8**	**+2.2**
PKE				AML	AML	00 35 21.4	
PKE				AML	AML	00 35 21.5	
LBZ	**Lake Benmore**	**3.15**	**223**	PN	**Pn**	**00 34 26.5**	**-0.5**
LBZ				AML	AML	00 35 05.7	
LBZ				AML	AML	00 35 07.2	
MHEZ	**Mangahewa**	**3.15**	**17**	PN	**Pb**	**00 34 30.3**	**-3.1**
PNHZ	**Pukenui**	**3.17**	**47**	AML	AML	00 35 30.5	
PNHZ				AML	AML	00 35 30.6	
VRZ	**Vera Road**	**3.22**	**23**	PN	**Pn**	**00 34 30.9**	**+3.0**
VRZ				AML	AML	00 35 32.6	
VRZ				AML	AML	00 35 33.7	
MTVZ	**Mangateitei**	**3.23**	**34**	Pn	**Pb**	**00 34 35.3**	**+0.4**
MTVZ	**Mangateitei**	**3.23**	**34**	PN	**Pb**	**00 34 35.3**	**+0.4**
MTVZ				AML	AML	00 35 30.5	
MTVZ				AML	AML	00 35 37.8	
WNVZ	**Wahianoa**	**3.34**	**34**	⇓PN	**Pn**	**00 34 31.1**	**+1.4**
MOVZ	**Moawhango**	**3.34**	**37**	PN	**Pn**	**00 34 29.8**	**+0.2**
MOVZ				AML	AML	00 35 38.2	
MOVZ				AML	AML	00 35 39.6	
WHVZ	**Whangaehu Hut**	**3.37**	**34**	PN	**Pn**	**00 34 31.5**	**+1.3**
WHVZ				AML	AML	00 34 41.5	
WHVZ				AML	AML	00 34 41.8	
FWVZ	**Far West T-bar**	**3.38**	**33**	PN	**Pn**	**00 34 31.7**	**+1.3**
FWVZ				AML	AML	00 35 36.0	
FWVZ				AML	AML	00 35 36.5	
TUVZ	**Tukino**	**3.41**	**35**	PN	**Pn**	**00 34 32.0**	**+1.3**
TUVZ				AML	AML	00 34 41.4	
TUVZ				AML	AML	00 34 43.0	
KRHZ	**Kereru**	**3.46**	**46**	PN	**Pn**	**00 34 30.5**	**-0.8**
KRHZ				AML	AML	00 35 36.1	
KRHZ				AML	AML	00 35 42.2	
ODZ	**Otahua Downs**	**3.46**	**211**	⇑PN	**Pn**	**00 34 30.1**	**-1.2**
ODZ				AML	AML	00 34 48.8	
ODZ				AML	AML	00 35 23.4	
NGZ	**Ngauruhoe**	**3.46**	**33**	PN	**Pn**	**00 34 32.8**	**+1.4**
NGZ				AML	AML	00 35 38.7	
NGZ				AML	AML	00 35 42.1	
TWVZ	**Taurewa**	**3.49**	**30**	PN	**Pn**	**00 34 33.2**	**+1.4**
TWVZ				AML	AML	00 35 35.9	
TWVZ				AML	AML	00 35 36.9	
OTVZ	**Oturere**	**3.50**	**34**	PN	**Pn**	**00 34 33.2**	**+1.3**
OTVZ				AML	AML	00 35 43.0	
OTVZ				AML	AML	00 35 47.8	
WTVZ	**West Tongariro**	**3.51**	**33**	PN	**Pn**	**00 34 33.4**	**+1.3**
WTVZ				AML	AML	00 34 44.1	
WTVZ				AML	AML	00 34 44.1	
KRVZ	**Karewarewa**	**3.55**	**33**	PN	**Pn**	**00 34 34.0**	**+1.4**
KRVZ				AML	AML	00 35 40.8	
KRVZ				AML	AML	00 35 44.7	
KWHZ	**Kaweka Forest**	**3.65**	**44**	PN	**Pn**	**00 34 33.1**	**-0.8**
KWHZ				AML	AML	00 35 43.1	
KWHZ				AML	AML	00 35 47.3	
KATZ	**Kakaramea**	**3.67**	**32**	AML	AML	00 35 45.6	
RITZ	**Rihia Road**	**3.74**	**34**	Pn	**Pb**	**00 34 42.1**	**-1.4**
RITZ	**Rihia Road**	**3.74**	**34**	AML	AML	00 34 53.1	
RITZ				AML	AML	00 34 53.7	
RATZ	**Rangitukua**	**3.80**	**32**	Pn	**Pb**	**00 34 42.7**	**-1.8**
RATZ	**Rangitukua**	**3.80**	**32**	AML	AML	00 34 52.8	
RATZ				AML	AML	00 34 53.3	
HIZ	**Hauiti**	**3.81**	**20**	PN	**Pn**	**00 34 37.6**	**+1.5**
HIZ				AML	AML	00 35 42.9	
HIZ				AML	AML	00 35 44.1	
BKZ	**Black Stump Fm**	**3.88**	**42**	PN	**Pn**	**00 34 35.0**	**-2.1**
BKZ				AML	AML	00 35 49.1	
BKZ				AML	AML	00 35 51.6	
WATZ	**Wairara**	**3.92**	**31**	Pn	**Pb**	**00 34 45.9**	**-0.7**
WATZ	**Wairara**	**3.92**	**31**	AML	AML	00 35 56.7	
WATZ				AML	AML	00 36 10.3	
WKZ	**Wanaka**	**4.06**	**227**	PN	**Pn**	**00 34 38.4**	**-1.2**
WKZ				AML	AML	00 35 29.4	
WKZ				AML	AML	00 35 58.5	
KUTZ	**Kaahu Road**	**4.15**	**30**	AML	AML	00 35 01.2	
KUTZ				AML	AML	00 35 07.5	
TLZ	**Tolley Road**	**4.19**	**26**	AML	AML	00 35 51.4	
TLZ				AML	AML	00 36 07.0	
EAZ	**Earnscleugh**	**4.19**	**221**	PN	**Pn**	**00 34 40.2**	**-1.1**
EAZ				AML	AML	00 35 33.4	
EAZ				AML	AML	00 35 37.3	
HHSZ	**Highcliff Hill**	**4.21**	**205**	PN	**Pn**	**00 34 30.3**	**-1.2**
SNGZ	**Shannon Statio**	**4.60**	**45**	AML	AML	00 35 23.7	
SNGZ				AML	AML	00 36 29.9	
TUZ	**Tuapeka**	**4.61**	**212**	PN	**Pn**	**00 34 46.2**	**-0.9**
TUZ				AML	AML	00 36 13.3	
TUZ				AML	AML	00 37 16.8	
TARZ	**Mount Tarawera**	**4.64**	**35**	AML	AML	00 35 07.6	
TARZ				AML	AML	00 35 09.2	
TOZ	**Tahuroa Road**	**4.72**	**23**	AML	AML	00 35 47.1	
TOZ				AML	AML	00 35 49.0	
URZ	**Urewera**	**4.89**	**39**	Pn	**Pn**	**00 34 48.6**	**-2.3**
	2.0nm,0.3s,baz=255,slow=8.5,SNR=8.9						
URZ				Sn	**Sn**	**00 35 44.1**	**-3.3**
	6.6nm,0.3s,baz=87,slow=22,SNR=1.5						
URZ	**Urewera**	**4.89**	**39**	*e*Pn	**Pn**	**00 34 50.7**	**-0.2**
URZ				Sn	**Sn**	**00 35 44.1**	**-3.3**
MKAZ	**Moumakai**	**5.23**	**18**	PN	**Pn**	**00 34 57.2**	**+1.6**
MKAZ				AML	AML	00 36 10.7	
MKAZ				AML	AML	00 36 36.6	
SYZ	**Scrubby Hill**	**5.29**	**212**	PN	**Pn**	**00 34 55.4**	**-0.9**
WHZ	**Wether Hill Ro**	**5.34**	**223**	Pn	**Pn**	**00 34 57.9**	**+0.8**
	19nm,0.5s						
WHZ	**Wether Hill Ro**	**5.34**	**223**	PN	**Pn**	**00 34 54.9**	**-2.1**
AFI	**Afiamalu**	**30.98**	**29**	*e*P	**P**	**00 39 55.9**	**+1.0**
	2.7nm,0.3s						
HNR	**Honiara**	**34.56**	**337**	*e*P	**P**	**00 40 27.8**	**+1.6**
ASAR	**Alice Springs**	**37.35**	**287**	P	**P**	**00 40 51.2**	**+1.1**
	0.1nm,0.4s,baz=129,slow=7.3,SNR=3.0						
WRA	**Warramunga Arr**	**39.48**	**292**	P	**P**	**00 41 08.9**	**+1.0**
	0.2nm,0.4s,baz=127,slow=8.5,SNR=3.1						
WRA				LR	LR	00 56 46.0	
	comp=Z,64nm,21.0s,baz=310,slow=35						
KKM	**Kota Kinabalu**	**70.50**	**298**	*e*P	**P**	**00 44 52.6**	**+0.1**
	0.5nm,0.4s						
TATO	**Taipei**	**82.05**	**314**	*e*P	**P**	**00 45 57.9**	**+0.3**
	1.9nm,0.3s						
TRQA	**Tornquist**	**85.74**	**139**	*e*P	**P**	**00 46 17.6**	**+0.9**
	0.2nm,0.6s						
COLA	**College**	**110.92**	**17**	*e*PKP	**PKiKP**	**00 52 07.3**	**-2.1**
RSSD	**Black Hills**	**113.35**	**51**	PKP	**PKiKP**	**00 52 14.4**	**-0.7**
BRTR	**Keskin Array B**	**149.52**	**279**	PKPbc	**PKPbc**	**00 53 28.6**	**+1.9**
	0.2nm,0.7s,baz=95,slow=3.6,SNR=1.3						
FINES	**FINESS Array B**	**152.38**	**326**	PKPab	**PKPab**	**00 53 41.0**	**-1.6**
	1.1nm,0.9s,baz=90,slow=4.2,SNR=4.1						

*IDC **23** 00:38:05.8±1.3, 5˚.94S×104˚.05E, h0km, mb3.8/7, mb1 3.9/7, mb1mx3.6/40, mbtmp3.8/7, Error ellipse: s-maj=54.2km s-min=20.0km az=46.0*
*ISCJB **23** 00:38:09.3±0.6, 6˚.22S±0˚.05×103˚.86E±0˚.05, h42km, mb4.0/9, Error ellipse: s-maj=7.3km s-min=6.7km az=172.0*
*NEIC **23** 00:38:10.2±0.6, 6˚.13S×103˚.91E, h35km, mb4.6/2, Error ellipse: s-maj=13.7km s-min=8.4km az=204.0*
*DJA **23** 00:38:13.8±1.0, 6˚S±4˚×10˚4E±˚, h22km±7km, M4.1/8, MLv4.1/8*
ISC 23 00:38:11.3±0.7, 6˚.14S±0˚.06×103˚.98E±0˚.06, h42km, n29, σ1§92/26, mb3.7/9, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KASI	**Kota Agung**	**0.80**	**40**	P	**Pn**	**00 38 26.8**	**+0.6**
KASI				S	**Sn**	**00 38 36.7**	**-0.2**
LWLI	**Liwa**	**1.11**	**4**	P	**Pn**	**00 38 32.1**	**+1.5**
LWLI				S	**Sn**	**00 38 45.8**	**+1.0**
BLSI	**Bandar Lampung**	**1.48**	**59**	P	**Pn**	**00 38 36.8**	**+1.4**
BLSI				S	**Sn**	**00 38 54.0**	**+0.5**
KLI	**Kotabumi**	**1.54**	**35**	P	**Pn**	**00 38 38.1**	**+1.8**
KLSI		**1.62**	**28**	P	**Pn**	**00 38 39.1**	**+1.7**
CGJI	**Cibinong**	**1.77**	**106**	P	**Pn**	**00 38 40.7**	**+1.2**
LHSI	**Lahat**	**2.34**	**349**	P	**Pn**	**00 38 50.6**	**+3.3**
KSI	**Kapahiang**	**2.83**	**331**	P	**Pn**	**00 38 58.0**	**+3.9**
CNJI	**Cibinong**	**3.34**	**111**	P	**Pn**	**00 39 03.7**	**+2.6**
CISI	**Cisompet, Garu**	**4.06**	**111**	P	**Pn**	**00 39 15.2**	**+4.1**
CISI	**Cisompet, Garu**	**4.06**	**111**	*e*Sn	**Sn**	**00 39 57.4**	**-0.1**
CMJI	**Cimerak**	**4.73**	**110**	P	**Pn**	**00 39 23.2**	**+3.0**
COCO	**West Island**	**9.27**	**229**	*e*Pn	**Pn**	**00 40 20.0**	**-2.4**
CMAR	**Chiang Mai Arr**	**24.94**	**349**	P	**P**	**00 43 30.0**	**-0.9**
	0.8nm,0.3s,baz=181,slow=8.9,SNR=4.7						
H01W3	**Cape Leeuwin H**	**30.11**	**163**	T	T	01 16 22.4	
	baz=342,slow=76,SNR=3.9						
H01W1	**Cape Leeuwin H**	**30.12**	**163**	T	T	01 16 23.9	
	baz=342,slow=76,SNR=2.9						
H01W2	**Cape Leeuwin H**	**30.12**	**163**	T	T	01 16 22.5	
	baz=342,slow=76,SNR=2.4						
H08S2	**Diego Garcia H**	**31.29**	**265**	T	T	01 18 15.0	
	baz=89,slow=76,SNR=8.7						
H08S3	**Diego Garcia H**	**31.30**	**265**	T	T	01 18 21.1	
	baz=89,slow=76,SNR=7.7						
H08S1	**Diego Garcia H**	**31.31**	**265**	T	T	01 18 15.8	
	baz=89,slow=76,SNR=6.8						
WRA	**Warramunga Arr**	**32.53**	**118**	P	**P**	**00 44 38.2**	**-0.4**
	0.3nm,0.5s,baz=290,slow=10,SNR=3.1						
ASAR	**Alice Springs**	**33.64**	**124**	P	**P**	**00 44 49.9**	**+1.7**
	0.3nm,0.5s,baz=307,slow=8.0,SNR=3.0						
YHNB	**Yeheng**	**35.00**	**28**	*e*P	**P**	**00 44 59.2**	**-0.8**
	1.3nm,0.4s						
HNR	**Honiara**	**55.51**	**97**	*e*P	**P**	**00 47 42.5**	**-0.2**
	10nm,0.7s						
MKAR	**Makanchi Array**	**56.10**	**342**	P	**P**	**00 47 45.5**	**-0.9**
	0.4nm,0.5s,baz=153,slow=9.2,SNR=6.4						
USRK	**Usuriysk Ar.**	**56.11**	**24**	P	**P**	**00 47 45.4**	**-1.0**
	1.9nm,0.6s,baz=221,slow=8.9,SNR=3.8						
GEYT	**Alibeck**	**61.15**	**320**	P	**P**	**00 48 21.8**	**+0.1**
	0.7nm,0.4s,baz=167,slow=7.1,SNR=2.7						
BRTR	**Keskin Array B**	**79.02**	**312**	P	**P**	**00 50 11.6**	**+0.2**
	0.6nm,0.7s,baz=150,slow=5.3,SNR=4.1						
TXAR	**Lajitas Array**	**145.17**	**45**	PKP	**PKPdf**	**00 57 45.2**	**0.0**
	0.6nm,0.7s,baz=310,slow=1.2,SNR=6.7						

IDC 23 00:40:57.9±1.9, 2˚.14N×126˚.59E, h0km, mb3.6/4, mb1 3.9/4, mb1mx3.5/37, mbtmp3.7/4, Error ellipse: s-maj=118.6km s-min=22.6km az=69.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**20.14**	**183**	P	P	00 45 33.9	+0.2
	1.9nm,0.8s,baz=11,slow=10,SNR=4.3						
WRA	**Warramunga Arr**	**23.23**	**161**	P	P	00 46 06.5	-0.4
	0.3nm,0.4s,baz=340,slow=11,SNR=14						
ASAR	**Alice Springs**	**26.62**	**165**	P	P	00 46 38.7	+0.3
	0.5nm,0.4s,baz=345,slow=9.8,SNR=9.5						
MKAR	**Makanchi Array**	**58.78**	**326**	P	P	00 50 57.9	-0.2
	0.6nm,0.5s,baz=120,slow=7.4,SNR=10						

*ISCJB **23** 00:48:39.1±0.7, 20˚.92S±0˚.09×174˚.1W±0˚.1, h26km, mb4.4/11, MS3.4/4, Error ellipse: s-maj=17.7km s-min=10.5km az=34.5*
*IDC **23** 00:48:39.0±1.2, 21˚.16S×174˚.52W, h0km, mb3.9/6, mb1 4.2/7, mb1mx3.9/39, mbtmp4.0/7, ML3.9/1, MS3.3/5, Ms1 3.4/5, ms1mx2.9/31, Error ellipse: s-maj=43.3km s-min=26.5km az=113.0*
*NEIC **23** 00:48:42.3±0.7, 20˚.97S×174˚.08W, h35km, mb4.6/4, Error ellipse: s-maj=20.8km s-min=12.3km az=124.0*
ISC 23 00:48:41.5±0.8, 21˚.1S±0˚.1×174˚.1W±0˚.1, h26km, n22, σ1§95/18, mb4.3/11, MS3.4/4, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.45**	**18**	Sn	**Sn**	**00 51 49.9**	**-2.6**
	3.3nm,0.3s,baz=196,slow=18,SNR=2.3						
MSVF	**Nonsavu**	**8.10**	**293**	*e*Pn	**Pn**	**00 50 37.5**	**0.0**
DZM	**Mont Dzumac**	**18.11**	**263**	LR	LR	00 57 47.7	
	comp=Z,72nm,18.3s,baz=244,slow=31						
URZ	**Urewera**	**18.74**	**202**	P	**P**	**00 52 55.2**	**-3.1**
	0.4nm,0.3s,baz=43,slow=15,SNR=3.5						
PPT	**Papeete**	**23.41**	**86**	LR	LR	01 01 17.9	
	comp=Z,69nm,18.5s,baz=296,slow=32						
ASAR	**Alice Springs**	**47.92**	**257**	P	**P**	**00 57 16.6**	**-1.5**
	2.6nm,0.9s,baz=91,slow=8.4,SNR=18						
WRA	**Warramunga Arr**	**48.12**	**262**	P	**P**	**00 57 17.8**	**-1.8**
	1.9nm,0.9s,baz=97,slow=8.0,SNR=9.7						
WRA				PcP	**PcP**	**00 58 47.0**	**0.0**
	0.6nm,0.9s,baz=100,slow=3.5,SNR=2.6						
VNDA	**Vanda**	**57.70**	**186**	P	**P**	**00 58 31.0**	**+1.6**
	0.3nm,0.6s,baz=66,slow=5.4,SNR=2.5						
MJAR	**Matsushiro Arr**	**72.86**	**321**	P	**P**	**01 00 09.1**	**+0.9**
	1.0nm,1.1s,baz=148,slow=7.2,SNR=3.2						
PLCA	**Paso Flores**	**86.23**	**132**	LR	LR	01 30 52.5	
	comp=Z,20nm,20.8s,baz=184,slow=29						
REDW	**Red Top Meadow**	**86.45**	**41**	*e*P	**P**	**01 01 20.7**	**-1.3**
	1.5nm,0.3s						
TPAW	**Teton Pass**	**86.46**	**41**	*e*P	**P**	**01 01 20.7**	**-1.4**
	1.0nm,0.3s						
SNOW	**Snow King Moun**	**86.56**	**41**	*e*P	**P**	**01 01 19.6**	**-3.0**
	33nm,0.5s						
IMW	**Indian Meadow**	**86.69**	**40**	*e*P	**P**	**01 01 22.5**	**-0.8**
	3.7nm,0.3s						
MOOW	**Moose Ponds**	**86.72**	**40**	*e*P	**P**	**01 01 21.0**	**-2.4**
	1.2nm,0.4s						
SEY	**Seymchan**	**87.79**	**345**	P	**P**	**01 01 30.1**	**+2.4**
	1.3nm,0.7s,baz=112,slow=8.2,SNR=6.1						
ILAR	**Eielson Array**	**88.10**	**11**	P	**P**	**01 01 31.6**	**+2.3**
	0.3nm,0.8s,baz=220,slow=6.8,SNR=3.4						
CMAR	**Chiang Mai Arr**	**93.73**	**288**	LR	LR	01 45 01.8	
	comp=Z,9.6nm,18.7s,baz=220,slow=36						
LPAZ	**La Paz**	**98.48**	**111**	LR	LR	01 39 58.8	
	comp=Z,15nm,18.1s,baz=295,slow=31						
AKASG	**Malin Array Be**	**145.19**	**334**	PKPbc	**PKPdf**	**01 08 17.0**	**+0.4**
	0.3nm,0.3s,baz=36,slow=3.7,SNR=3.7						
BRTR	**Keskin Array B**	**149.87**	**314**	PKPbc	**PKPbc**	**01 08 30.9**	**+1.2**
	1.1nm,1.0s,baz=90,slow=3.0,SNR=4.8						
GERES	**GERESS Array B**	**151.58**	**349**	PKPbc	**PKPbc**	**01 08 33.7**	**+0.3**
	0.6nm,0.8s,baz=335,slow=4.3,SNR=4.3						

*CSEM **23** 00:55:29.4±0.3, 36˚.74N×3˚.14E, h5km, ML3.6, Error ellipse: s-maj=8.9km s-min=6.9km az=65.0*
*CRAAG **23** 00:55:30.2, 36˚.70N×3˚.20E, MI3.6*
*MDD **23** 00:55:32.0±0.3, 36˚.74

	2.8nm,0.3s,SNR=7.9							
EMOS	**Mosqueruela**	**4.61**	**322**	P	**Pn**	**00 56 39.7**	**+1.0**
	5.0nm,0.4s,SNR=17							
EMOS				S	**Sn**	**00 57 29.0**	**-3.3**
	7.3nm,0.3s							
EMOS	**Mosqueruela**	**4.61**	**322**	P	**Pn**	**00 56 39.7**	**+1.0**
	5.0nm,0.4s,SNR=17							
EMOS				S	**Sn**	**00 57 29.0**	**-3.3**
	7.3nm,0.3s							
ERTA	**Horta de San J**	**4.75**	**332**	P	**Pn**	**00 56 42.0**	**+1.6**
	0.4nm,0.2s,SNR=7.9							
ERTA				S	**Sn**	**00 57 31.8**	**-3.6**
	1.8nm,0.2s,SNR=7.9							
ERTA	**Horta de San J**	**4.75**	**332**	P	**Pn**	**00 56 42.0**	**+1.6**
	0.4nm,0.2s,SNR=7.9							
ERTA				S	**Sn**	**00 57 31.8**	**-3.6**
	1.8nm,0.2s,SNR=7.9							
SESP	**Santiago Espad**	**4.79**	**288**	P	**Pn**	**00 56 42.0**	**+0.9**
	10nm,0.5s,SNR=7.9							
SESP				S	**Sn**	**00 57 36.2**	**-0.5**
	4.4nm,0.3s,SNR=7.9							
SESP	**Santiago Espad**	**4.79**	**288**	P	**Pn**	**00 56 42.0**	**+0.9**
	10nm,0.5s,SNR=7.9							
SESP				S	**Sn**	**00 57 36.2**	**-0.5**
	4.4nm,0.3s,SNR=7.9							
EPOB	**Poblet**	**4.87**	**340**	P	**Pn**	**00 56 45.8**	**+3.7**
	0.7nm,0.3s,SNR=7.9							
EPOB				S	**Sn**	**00 57 36.4**	**-2.1**
	0.8nm,0.2s,SNR=7.9							
EPOB	**Poblet**	**4.87**	**340**	P	**Pn**	**00 56 45.8**	**+3.7**
	0.7nm,0.3s,SNR=7.9							
EPOB				S	**Sn**	**00 57 36.4**	**-2.1**
	0.8nm,0.2s,SNR=7.9							
EBER	**Berja**	**4.92**	**273**	P	**Pn**	**00 56 41.3**	**-1.6**
	0.5nm,0.2s,SNR=7.9							
EBER				S	**Sn**	**00 57 37.2**	**-2.6**
	1.1nm,0.3s,SNR=7.9							
EBER	**Berja**	**4.92**	**273**	P	**Pn**	**00 56 41.3**	**-1.6**
	0.5nm,0.2s,SNR=7.9							
EBER				S	**Sn**	**00 57 37.2**	**-2.6**
	1.1nm,0.3s,SNR=7.9							
CFON	**Fontmartina**	**5.02**	**353**	P	**Pn**	**00 56 44.6**	**+0.4**
	0.2nm,0.3s,SNR=12							
CFON				S	**Sn**	**00 57 37.1**	**-5.0**
	4.8nm,0.2s							
CFON	**Fontmartina**	**5.02**	**353**	P	**Pn**	**00 56 44.6**	**+0.4**
	0.2nm,0.3s,SNR=12							
EQES	**Quesada**	**5.13**	**283**	P	**Pn**	**00 56 47.1**	**+1.3**
	5.4nm,0.3s,SNR=34							
EQES				S	**Sn**	**00 57 44.2**	**-0.8**
	2.5nm,0.3s							
EQES	**Quesada**	**5.13**	**283**	P	**Pn**	**00 56 47.1**	**+1.3**
	5.4nm,0.3s,SNR=34							
EQES				S	**Sn**	**00 57 44.2**	**-0.8**
	2.5nm,0.3s							
EMIR	**Miracle**	**5.30**	**346**	P	**Pn**	**00 56 49.8**	**+1.7**
	3.5nm,0.2s,SNR=20							
EMIR				S	**Sn**	**00 57 46.0**	**-3.1**
	9.0nm,0.2s							
EMIR	**Miracle**	**5.30**	**346**	P	**Pn**	**00 56 49.8**	**+1.7**
	3.5nm,0.2s,SNR=20							
EMIR				S	**Sn**	**00 57 46.0**	**-3.1**
	9.0nm,0.2s							
EJON	**La Jonquera**	**5.67**	**357**	P	**Pn**	**00 56 54.2**	**+1.1**
	1.5nm,0.2s,SNR=7.9							
EJON				S	**Sn**	**00 57 54.5**	**-3.7**
	0.4nm,0.1s,SNR=7.9							
EJON	**La Jonquera**	**5.67**	**357**	P	**Pn**	**00 56 54.2**	**+1.1**
	1.5nm,0.2s,SNR=7.9							
CLLI	**Llivia**	**5.78**	**351**	P	**Pn**	**00 56 56.6**	**+1.9**
	0.2nm,0.3s,SNR=7.8							
CLLI				S	**Sn**	**00 57 57.3**	**-3.7**
	0.7nm,0.3s							
CLLI	**Llivia**	**5.78**	**351**	P	**Pn**	**00 56 56.6**	**+1.9**
	0.2nm,0.3s,SNR=7.8							
CSOR	**Sort**	**5.83**	**344**	P	**Pn**	**00 56 57.1**	**+1.8**
	1.4nm,0.3s,SNR=11							
CSOR				S	**Sn**	**00 57 59.0**	**-3.0**
	3.4nm,0.5s							
CSOR	**Sort**	**5.83**	**344**	P	**Pn**	**00 56 57.1**	**+1.8**
	1.4nm,0.3s,SNR=11							
EGOR	**Sierra Gorda,**	**5.89**	**275**	P	**Pn**	**00 56 58.3**	**+2.0**
	0.7nm,0.4s,SNR=7.9							
EGOR	**Sierra Gorda,**	**5.89**	**275**	P	**Pn**	**00 56 58.3**	**+2.0**
	0.7nm,0.4s,SNR=7.9							
ESDC	**Sonseca Array**	**6.36**	**299**	P	**Pn**	**00 57 02.8**	**+0.2**
	0.6nm,0.6s,baz=114,slow=13,SNR=12							
ESDC				S	**Sn**	**00 58 16.1**	**+0.8**
	0.3nm,0.5s,baz=116,slow=23,SNR=3.7							
ESDC	**Sonseca Array**	**6.36**	**299**	P	**Pn**	**00 57 02.8**	**+0.2**
	0.6nm,0.6s,SNR=12							
ESDC				S	**Sn**	**00 58 16.1**	**+0.8**
	0.3nm,0.5s,SNR=3.7							
EADA	**Adamuz**	**6.37**	**285**	P	**Pn**	**00 57 02.1**	**-0.6**
	0.2nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**6.37**	**285**	P	**Pn**	**00 57 02.1**	**-0.6**
	0.2nm,0.2s,SNR=7.9							
GUD	**Guadarrama**	**6.95**	**306**	P	**Pn**	**00 57 12.4**	**+1.7**
	0.7nm,0.5s,SNR=7.9							
GUD	**Guadarrama**	**6.95**	**306**	P	**Pn**	**00 57 12.4**	**+1.7**
	0.7nm,0.5s,SNR=7.9							
ATE	**Arette**	**6.99**	**336**	S	**Sn**	**00 58 28.1**	**-2.5**
	0.3nm,0.5s,SNR=7.9							
ECAB	**El Cabril**	**7.01**	**283**	P	**Pn**	**00 57 09.8**	**-1.7**
	SNR=7.9							
ECAB	**El Cabril**	**7.01**	**283**	P	**Pn**	**00 57 09.8**	**-1.7**
	SNR=7.9							
EARI	**Arriondas**	**9.19**	**318**	P	**Pn**	**00 57 42.4**	**+1.1**
	3.3nm,0.6s,SNR=9.1							
EARI	**Arriondas**	**9.19**	**318**	P	**Pn**	**00 57 42.4**	**+1.1**
	3.3nm,0.6s,SNR=9.1							
ECAL	**Calabor**	**9.29**	**307**	P	**Pn**	**00 57 46.2**	**+3.4**
	5.5nm,0.8s,SNR=4.1							

*ISCJB **23** 00:56:25.9±2.6, 8.6S±0.4×105.9E±0.5, h22km, mb3.7/6, Error ellipse: s-maj=83.7km s-min=21.6km az=139.0*
*IDC **23** 00:56:29.9±2.2, 8.55S×105.88E, h32km±5km, mb3.5/6, mb1 3.7/6, mb1mx3.4/39, mbtmp3.7/6, Error ellipse: s-maj=74.3km s-min=20.0km az=48.0*

ISC 23 00:56:28.7±2.4, 8.5S±0.4×105.9E±0.4, h22km, n9, σ0§46/11, mb3.8/6, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**27.67**	**346**	P	**P**	**01 02 15.1**	**-0.1**
	0.8nm,0.4s,baz=185,slow=9.0,SNR=4.4						
CMAR				pP	**sP**	**01 02 24.6**	**+0.1**
	1.0nm,0.5s,baz=172,slow=9.1,SNR=2.1						
WRA	**Warramunga Arr**	**29.75**	**116**	P	**P**	**01 02 33.4**	**-0.5**
	0.4nm,0.9s,baz=285,slow=12,SNR=2.6						
WRA				pP	**sP**	**01 02 44.0**	**+0.7**
	0.5nm,0.6s,baz=286,slow=11,SNR=3.6						
H08S2	**Diego Garcia H**	**33.09**	**269**	T	T	01 37 45.9	
	baz=94,slow=75,SNR=6.5						
H08S3	**Diego Garcia H**	**33.10**	**269**	T	T	01 37 45.1	
	baz=94,slow=75,SNR=5.9						
H08S1	**Diego Carcia H**	**33.11**	**269**	T	T	01 37 46.3	
	baz=94,slow=75,SNR=6.1						
KSRS	**Korea Array**	**50.15**	**23**	P	**P**	**01 05 22.6**	**+0.1**
	0.9nm,0.7s,baz=221,slow=7.6,SNR=5.4						
KSRS				pP	**sP**	**01 05 31.9**	**-0.2**
	0.6nm,0.3s,baz=236,slow=8.6,SNR=2.0						
SONM	**Songino Array**	**56.10**	**0**	P	**P**	**01 06 06.5**	**+0.1**
	0.4nm,0.5s,baz=177,slow=5.8,SNR=3.5						
MKAR	**Makanchi Array**	**58.95**	**341**	P	**P**	**01 06 26.0**	**-0.3**
	0.7nm,0.6s,baz=158,slow=7.9,SNR=8.0						
MKAR				pP	**sP**	**01 06 36.4**	**+0.3**
	0.6nm,0.6s,baz=140,slow=8.7,SNR=5.2						
ZALV	**Zalesovo Beam**	**64.73**	**346**	P	**P**	**01 07 05.6**	**+0.5**
	0.5nm,0.4s,baz=130,slow=6.4,SNR=3.2						
ZALV				pP	**sP**	**01 07 14.2**	**-0.6**
	0.3nm,0.3s,baz=189,slow=5.7,SNR=2.1						

PGC 23 01:03:54.4±6.1, 49.18N×128.07W, h10km, MLSn1.8/7, Mw2.4/7, 153km Wsw of Gold R., Bc Vancouver Island, Canada Region, Vancouver Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDB	**Eliza Dome**	**0.93**	**41**	Pn	Pg	01 04 10.7	-1.7
EDB	**Eliza Dome**	**0.93**	**41**	Pn	Pg	01 04 10.7	-1.7
BPBC	**Brooks Peninsu**	**1.00**	**11**	Pn	Pg	01 04 12.0	-1.7
BPBC	**Brooks Peninsu**	**1.00**	**11**	Pn	Pg	01 04 12.0	-1.7
MAYB	**Maynard**	**1.36**	**25**	Pn	Pn	01 04 17.5	-2.0
MAYB	**Maynard**	**1.36**	**25**	Pn	Pn	01 04 17.5	-2.0
WOSB	**Woss**	**1.39**	**44**	Pn	Pn	01 04 18.3	-1.6
WOSB	**Woss**	**1.39**	**44**	Pn	Pn	01 04 18.3	-1.6
HOLB	**Holberg**	**1.47**	**358**	Pn	Pn	01 04 18.9	-2.0
HOLB	**Holberg**	**1.47**	**358**	Pn	Pn	01 04 18.9	-2.0
OZB	**Mount Ozzard**	**1.71**	**96**	Sn	Sn	01 04 42.1	-4.1
OZB	**Mount Ozzard**	**1.71**	**96**	Sn	Sn	01 04 42.1	-4.1
NCRB	**Newcastle Ridg**	**1.79**	**46**	Pn	Pn	01 04 24.1	-1.4
NCRB	**Newcastle Ridg**	**1.79**	**46**	Pn	Pn	01 04 24.1	-1.4
CBB	**Campbell River**	**1.96**	**63**	Sn	Sg	01 04 56.5	-0.8
CBB	**Campbell River**	**1.96**	**63**	Sn	Sg	01 04 56.5	-0.8
BBB	**Bella Bella**	**3.01**	**360**	Pn	Pn	01 04 40.2	-1.9
BBB	**Bella Bella**	**3.01**	**360**	Pn	Pn	01 04 40.2	-1.9

*TEH **23** 01:04:48.0, 27.75N×54.87E, h24km, ML3.2*
*ISCJB **23** 01:04:49.4±0.8, 27.78N±0.07×54.77E±0.06, h20km, mb3.4/4, Error ellipse: s-maj=12.5km s-min=5.1km az=34.4*
*CSEM **23** 01:04:49.1±0.3, 27.72N×54.85E, h10km, ML3.2, Error ellipse: s-maj=9.6km s-min=3.8km az=29.0*
*IDC **23** 01:04:50.8±18.0, 28.40N×54.89E, h0km, mb3.6/4, mb1 3.6/4, mb1mx3.4/40, mbtmp3.6/4, Error ellipse: s-maj=370.7km s-min=34.5km az=1.0*

ISC 23 01:04:50.1±0.9, 27.75N±0.06×54.85E±0.04, h20km, n33, σ1§12/39, mb3.5/4, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDS	**Bandar-Abbas**	**1.22**	**106**	*e*Pg	**Pn**	**01 05 12.1**	**-0.1**
GENO	**Geno**	**1.22**	**106**	*e*Pg	**Pb**	**01 05 12.4**	**-0.3**
GENO	**Geno**	**1.22**	**106**	*e*Pg	**Pb**	**01 05 12.4**	**-0.3**
IBND	**Bandar-abas**	**1.53**	**101**	*e*Pg	**Pb**	**01 05 18.1**	**+0.4**
IBND				*e*Sg	**Sb**	**01 05 39.0**	**+2.3**
IBND				*e*AMB	AMB	01 05 53.1	
	comp=Z,8μm,0.3s						
IBND	**Bandar-abas**	**1.53**	**101**	*e*Pg	**Pb**	**01 05 18.1**	**+0.4**
IBND				*e*Sg	**Sb**	**01 05 39.0**	**+2.3**
GHIR	**Ghir-Karzin**	**1.73**	**288**	*e*Pn	**Pn**	**01 05 20.0**	**+0.8**
GHIR				*e*Sg	**Sb**	**01 05 45.8**	**+3.1**
NIAN	**Nian**	**1.77**	**96**	*e*Pn	**Pn**	**01 05 20.2**	**+0.6**
NIAN	**Nian**	**1.77**	**96**	*e*Pn	**Pn**	**01 05 20.2**	**+0.6**
KHSK	**Kohestak**	**2.19**	**116**	*e*Pn	**Pn**	**01 05 25.3**	**-0.1**
KHSK	**Kohestak**	**2.19**	**116**	*e*Pn	**Pn**	**01 05 25.3**	**-0.1**
ISRV	**Sarvestan**	**2.23**	**317**	*e*Pn	**Pn**	**01 05 27.2**	**+0.9**
ISRV				*e*AMB	AMB	01 06 10.3	
	comp=Z,1μm,0.3s						
ISRV	**Sarvestan**	**2.23**	**317**	*e*Pn	**Pn**	**01 05 27.2**	**+0.9**
NGRK	**Negar Kerman**	**2.51**	**41**	*e*Pn	**Pn**	**01 05 30.2**	**+0.1**
NGRK	**Negar Kerman**	**2.51**	**41**	*e*Pn	**Pn**	**01 05 30.2**	**+0.1**
KRBR	**Kerman**	**2.78**	**37**	*e*Pn	**Pn**	**01 05 34.2**	**+0.4**
KRBR				*e*Sg	**Sb**	**01 06 13.4**	**+0.2**
KHGB	**Koh Gabri**	**2.98**	**28**	*e*Pn	**Pn**	**01 05 37.5**	**+1.1**
KHGB	**Koh Gabri**	**2.98**	**28**	*e*Pn	**Pn**	**01 05 37.5**	**+1.1**
CHMN	**Cheshme madani**	**3.16**	**48**	*e*Pn	**Pn**	**01 05 41.5**	**+2.4**
CHMN	**Cheshme madani**	**3.16**	**48**	*e*Pn	**Pn**	**01 05 41.5**	**+2.4**
IMEH	**Mehriz**	**3.63**	**357**	*e*Pn	**Pn**	**01 05 45.6**	**+0.1**
IMEH				*e*AMB	AMB	01 06 03.0	
	comp=Z,336nm,0.2s						
IMEH	**Mehriz**	**3.63**	**357**	*e*Pn	**Pn**	**01 05 45.6**	**+0.1**
IBAF	**Bafgh**	**3.88**	**9**	*e*Pn	**Pn**	**01 05 48.9**	**+0.2**
IBAF				*e*AMB	AMB	01 05 50.1	
	comp=Z,358nm,0.1s						
IBAF	**Bafgh**	**3.88**	**9**	*e*Pn	**Pn**	**01 05 48.9**	**+0.2**
ISAD	**Sadrabad**	**4.27**	**347**	*e*Pn	**Pn**	**01 05 55.4**	**+1.1**
ISAD				*e*AMB	AMB	01 05 58.6	
	comp=Z,169nm,0.1s						
ISAD	**Sadrabad**	**4.27**	**347**	*e*Pn	**Pn**	**01 05 55.4**	**+1.1**
IRAM	**Ramesheh**	**4.58**	**333**	*e*Pn	**Pn**	**01 05 58.7**	**+0.2**
IRAM				*e*Sn	**Sn**	**01 06 50.6**	**-0.6**
IRAM				*e*AMB	AMB	01 06 56.9	
	comp=Z,132nm,0.2s						
IRAM	**Ramesheh**	**4.58**	**333**	*e*Pn	**Pn**	**01 05 58.7**	**+0.2**
IRAM				*e*Sn	**Sn**	**01 06 50.6**	**-0.6**
IPIR	**Pirpir**	**5.99**	**326**	*e*Pn	**Pn**	**01 06 18.0**	**0.0**
IPIR				*e*AMB	AMB	01 07 27.4	
	comp=Z,135nm,0.3s						
IPIR	**Pirpir**	**5.99**	**326**	*e*Pn	**Pn**	**01 06 18.0**	**0.0**
BRTR	**Keskin Array B**	**21.25**	**310**	P	**P**	**01 09 34.7**	**-0.4**
	comp=Z,0.5nm,0.6s,baz=122,slow=12,SNR=3.4						
MKAR	**Makanchi Array**	**28.72**	**41**	P	**P**	**01 10 45.4**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=230,slow=7.8,SNR=3.4						
ZALV	**Zalesovo Beam**	**34.16**	**32**	P	**P**	**01 11 32.5**	**-1.2**
	comp=Z,0.9nm,0.5s,baz=239,slow=10,SNR=5.0						
FINES	**FINESS Array B**	**38.79**	**338**	P	**P**	**01 12 11.7**	**-1.3**
	comp=Z,2.0nm,1.0s,baz=134,slow=10.0,SNR=3.7						

*CSEM **23** 01:10:15.0, 36.88N×45.21E, h6km, ML2.6*

TEH 23 01:10:15.0, 36.88N×45.21E, h6km, ML2.6, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUKT	**Cukurca**	**1.33**	**286**	*e*PN	Pn	01 10 39.4	-0.8
HKR	**Hakkari**	**1.36**	**301**	*e*PN	Pn	01 10 39.5	-1.2
ISHB	**Shabestar**	**1.44**	**13**	*e*Pg	Pn	01 10 40.3	-1.5
ISHB				*e*Sg	Sb	01 10 59.6	-1.3
ISHB				*e*AMB	AMB	01 11 05.1	
	comp=Z,957nm,0.1s						
ITBZ	**Tabriz**	**1.54**	**29**	*e*Pg	Pn	01 10 42.0	-1.2
ITBZ				*e*Sg	Sn	01 11 03.1	-0.5
ITBZ				*e*AMB	AMB	01 11 05.7	
	comp=Z,903nm,0.3s						
ITBZ	**Tabriz**	**1.54**	**29**	*e*Pg	Pn	01 10 42.0	-1.2
ITBZ				*e*Sg	Sn	01 11 03.1	-0.5
IMRD	**Marand**	**1.87**	**12**	*e*Pn	Pn	01 10 47.9	+0.2
IMRD				*e*Sg	Sb	01 11 13.8	+0.4
IMRD				*e*AMB	AMB	01 11 20.5	
	comp=Z,702nm,0.2s						
IMRD	**Marand**	**1.87**	**12**	*e*Pn	Pn	01 10 47.9	+0.2
IMRD				*e*Sg	Sb	01 11 13.8	+0.4
IHRS	**Heris**	**2.04**	**45**	*e*AMB	AMB	01 10 56.4	
	comp=Z,270nm,0.2s						
ISRB	**Sarab**	**2.17**	**64**	*e*Pn	Pn	01 10 51.7	-0.2
ISRB				*e*AMB	AMB	01 10 57.9	
	comp=Z,430nm,0.1s						
ISRB	**Sarab**	**2.17**	**64**	*e*Pn	Pn	01 10 51.7	-0.2
SIRT	**Sirnak**	**2.30**	**286**	*e*PN	Pn	01 10 52.6	-0.9
MAZI	**Mazidag**	**3.85**	**280**	*e*PN	Pn	01 11 12.9	-1.9

IDC 23 01:16:11.2±2.5, 4.21S×131.28E, h0km, mb3.5/1, mb1 3.8/4, mb1mx3.5/29, mbtmp3.6/4, ML3.7/3, Error ellipse: s-maj=102.2km s-min=28.0km az=80.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**14.87**	**201**	Pn	Pn	01 19 42.8	-0.2
	0.3nm,0.3s,baz=33,slow=12,SNR=8.1						
FITZ				Sn	Sn	01 22 27.6	-1.0
	0.1nm,0.3s,baz=231,slow=16,SNR=1.3						
WRA	**Warramunga Arr**	**15.92**	**169**	Pn	Pn	01 19 55.0	-1.9
	0.2nm,0.3s,baz=355,slow=13,SNR=9.5						
WRA				Sn	Sn	01 22 47.7	-6.5
	0.1nm,0.3s,baz=348,slow=25,SNR=5.5						
ASAR	**Alice Springs**	**19.51**	**173**	P	Pn	01 20 41.4	0.0
	0.2nm,0.3s,baz=350,slow=9.3,SNR=7.0						
MKAR	**Makanchi Array**	**66.63**	**326**	P	P	01 27 03.6	-0.1
	0.3nm,0.5s,baz=116,slow=7.9,SNR=4.2						

*ISCJB **23** 01:27:30.9±0.6, 7.47S±0.05×156.80E±0.05, h402km±7km, mb4.4/68, Error ellipse: s-maj=8.2km s-min=7.1km az=137.0*
*NEIC **23** 01:27:33.1±0.5, 7.47S×156.82E, h415km±5km, mb4.5/38, Error ellipse: s-maj=6.5km s-min=5.3km az=127.0*
*IDC **23** 01:27:33.5±0.6, 7.51S×156.72E, h416km±6km, mb3.9/18, mb1 4.0/21, mb1mx3.9/29, mbtmp4.7/21, Error ellipse: s-maj=12.2km s-min=7.8km az=102.0*

ISC 23 01:27:32.6±0.5, 7.56S±0.06×156.89E±0.06, h410km±5km, n134, σ1§55/150, mb4.4/68, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**3.55**	**122**	P	**P**	**01 28 40.9**	**-0.2**
	128nm,0.3s,baz=228,slow=4.9,SNR=50						
HNR				S	**S**	**01 29 35.0**	**-1.8**
	43nm,0.3s,baz=262,slow=21,SNR=8.0						
HNR	**Honiara**	**3.55**	**122**	*e*P	**P**	**01 28 40.0**	**-1.1**
HNR				*e*S	**S**	**01 29 30.0**	**-6.8**
HNR	**Honiara**	**3.55**	**122**	*e*Pn	**P**	**01 28 40.6**	**-0.5**
HNR				*e*S	**S**	**01 29 35.5**	**-1.3**
PMG	**Port Moresby**	**9.80**	**258**	P	**P**	**01 29 49.1**	**+1.2**
	2.2nm,0.3s,baz=73,slow=4.4,SNR=5.5						
PMG	**Port Moresby**	**9.80**	**258**	*e*Pn	**P**	**01 29 49.0**	**+1.2**
	41nm,0.7s						
COEN	**Coen**	**14.90**	**244**	*e*Pn	**P**	**01 30 45.4**	**+1.7**
	35nm,0.8s						
CTA	**Charters Tower**	**16.17**	**219**	P	**P**	**01 30 59.1**	**+1.7**
	3.2nm,0.3s,baz=46,slow=12,SNR=32						
CTA				S	**S**	**01 33 49.6**	**+2.7**
	0.2nm,0.3s,baz=310,slow=21,SNR=8.5						
CTAO	**Charters Tower**	**16.17**	**219**	*e*Pn	**P**	**01 30 58.8**	**+1.4**
	102nm,0.6s						
JAY	**Jayapura**	**16.88**	**286**	P	**P**	**01 31 03.4**	**-1.7**
	0.3nm,0.3s,baz=92,slow=22,SNR=10						
DZM	**Mont Dzumac**	**17.12**	**148**	P	**P**	**01 31 08.9**	**+1.4**
	1.1nm,0.3s,baz=246,slow=5.1,SNR=10						
EIDS	**Eidsvold**	**18.56**	**197**	*e*P	**P**	**01 31 23.3**	**+0.6**
	27nm,0.6s						
WRAB	**Tennant Creek**	**25.07**	**238**	*e*P	**P**	**01 32 21.9**	**-0.5**
	15nm,0.4s						
WB2	**Warramunga Arr**	**25.08**	**238**	*e*P	**P**	**01 32 22.0**	**-0.5**
	20nm,0.4s						
WRA	**Warramunga Arr**	**25.09**	**238**	P	**P**	**01 32 22.1**	**-0.5**
	14nm,0.4s,baz=62,slow=8.8,SNR=194						
WRA				PcP	**PcP**	**01 35 44.5**	**+0.3**
	4.1nm,0.6s,baz=64,slow=2.6,SNR=12						
WRA				S	**S**	**01 36 14.8**	**-1.9**
	2.9nm,0.6s,baz=62,slow=14,SNR=6.8						
SIJI	**Sorong**	**26.39**	**283**	S	**S**	**01 36 29.5**	**-7.9**
	133nm,0.4s,baz=87,slow=18,SNR=2.8						
AS01	**Alice Springs**	**27.22**	**231**	*e*P	**P**	**01 32 40.4**	**-1.0**
AS31	**Alice Springs**	**27.25**	**231**	*e*P	**P**	**01 32 41.2**	**-0.5**
	3.6nm,0.4s						
ASAR	**Alice Springs**	**27.25**	**231**	P	**P**	**01 32 40.8**	**-0.9**
	7.0nm,0.6s,baz=62,slow=9.0,SNR=71						
ASAR				pP	**pP**	**01 33 55.5**	**+1.4**
	1.8nm,0.9s,baz=64,slow=9.4,SNR=2.0						
ASAR				PcP	**PcP**	**01 35 49.6**	**+0.3**
	1.7nm,0.5s,baz=75,slow=2.4,SNR=8.3						
ASAR				S	**S**	**01 36 47.7**	**-3.0**
	1.3nm,0.7s,baz=61,slow=15,SNR=7.0						
STKA	**Stephens Creek**	**28.09**	**208**	P	**P**	**01 32 48.8**	**-0.1**
	1.6nm,0.4s,baz=40,slow=13,SNR=5.1						
STKA				PcP	**PcP**	**01 35 51.3**	**+0.1**
	1.7nm,0.9s,baz=348,slow=2.5,SNR=3.5						
FITZ	**Fitzroy Crossi**	**32.17**	**248**	*e*P	**P**	**01 33 23.1**	**-1.5**
	8.9nm,0.6s						
FORT	**Forrest**	**35.51**	**226**	*e*P	**P**	**01 33 53.2**	**+0.3**
KAPI	**Kappang**	**36.99**	**272**	*e*P	**P**	**01 34 04.9**	**-0.7**
	17nm,0.6s						
RPZ	**Rata Peaks**	**38.09**	**163**	P	**P**	**01 34 15.5**	**+1.3**
	12nm,0.8s,baz=237,slow=3.7,SNR=5.7						
MBWA	**Marble Bar**	**38.34**	**245**	*e*P	**P**	**01 34 15.0**	**-1.6**
	55nm,0.6s						
KKM	**Kota Kinabalu**	**42.77**	**287**	*e*P	**P**	**01 34 51.6**	**-0.9**
	16nm,0.4s						
NWAO	**Narrogin (SRO)**	**44.55**	**230**	*e*P	**P**	**01 35 06.1**	**0.0**
	25nm,0.6s						
YULB	**Yu-li**	**46.44**	**312**	*e*P	**P**	**01 35 20.3**	**-0.5**
	13nm,0.7s						
NACB	**Ninganchiao**	**46.70**	**314**	*e*P	**P**	**01 35 22.9**	**+0.2**
	23nm,0.5s						
SSLB	**Suanghung**	**46.93**	**313**	*e*P	**P**	**01 35 23.7**	**-0.8**
	12nm,0.7s						
YHNB	**Yeheng**	**47.16**	**314**	*e*P	**P**	**01 35 26.7**	**+0.3**
	23nm,0.7s						
MJAR	**Matsushiro Arr**	**47.24**	**339**	P	**P**	**01 35 25.0**	**-1.7**
	6.7nm,0.6s,baz=167,slow=8.4,SNR=16						
MAJO	**Matsushiro**	**47.24**	**339**	*e*P	**P**	**01 35 25.8**	**-0.9**
	15nm,0.5s						
MAT	**Matsushiro**	**47.24**	**339**	P	**P**	**01 35 25.5**	**-1.2**
MJB9	**Matsu-Tunnel**	**47.25**	**339**	*e*P	**P**	**01 35 25.8**	**-0.9**
	3.8nm,0.5s						
JNU	**Nakatsue**	**47.42**	**330**	P	**P**	**01 35 27.9**	**-0.3**
	8.8nm,0.8s,baz=143,slow=3.6,SNR=9.7						
JNU	**Nakatsue**	**47.42**	**330**	*e*P	**P**	**01 35 28.0**	**-0.1**
KSRS	**Korea Array**	**52.33**	**331**	P	**P**	**01 36 04.0**	**-0.3**
	7.3nm,0.9s,baz=150,slow=8.1,SNR=29						
KSRS				PcP	**PcP**	**01 37 09.8**	**+0.6**
	1.3nm,0.6s,baz=164,slow=3.3,SNR=4.6						
KSAR	**Wonju Array Be**	**52.34**	**331**	P	**P**	**01 36 04.0**	**-0.4**
KSAR				PcP	**PcP**	**01 37 09.8**	**+0.6**
KS01	**Wonju Array Si**	**52.36**	**331**	*e*P

GTA					pmax		pmax	
	comp=Z,9.0nm,1.1s							
SBA	**Scott Base**	**70.45**	**178**	*e*P		**P**		**01 38 06.3 +2.7**
	comp=Z,6.6nm,1.0s							
SONM	**Songino Array**	**70.83**	**327**	P		**P**		**01 38 06.6 +0.2**
	comp=Z,6.0nm,0.7s,baz=140,slow=6.5,SNR=36							
SONM					pP		**pP**	**01 39 37.5 +1.5**
	comp=Z,1.4nm,1.0s,baz=143,slow=6.5,SNR=2.7							
LSA	**Lhasa**	**73.14**	**304**	*e*P		**P**		**01 38 21.2 +0.4**
	comp=Z,6.2nm,0.6s							
BILL	**Bilibino**	**75.71**	**4**	*e*P		**P**		**01 38 34.1 +0.1**
	comp=Z,10.0nm,0.5s							
GUN	**Gumba**	**77.02**	**301**	*e*P		**P**		**01 38 42.5 -0.1**
	comp=Z,26nm,0.4s							
PALK	**Pallekele**	**77.39**	**279**	*e*P		**P**		**01 38 44.6 +0.1**
	comp=Z,11nm,0.5s							
KKN	**Kakani**	**77.50**	**301**	*e*P		**P**		**01 38 44.9 -0.2**
	comp=Z,20nm,0.4s							
DMN	**Daman**	**77.60**	**300**	*e*P		**P**		**01 38 45.7 0.0**
	comp=Z,19nm,0.4s							
SVW2	**Sparrevohn**	**77.82**	**22**	*e*P		**P**		**01 38 46.1 +0.3**
	comp=Z,18nm,1.3s							
GKN	**Gorkha**	**78.10**	**301**	*e*P		**P**		**01 38 47.9 -0.4**
	comp=Z,37nm,0.5s							
PYUN	**Piuthan**	**79.53**	**300**	*e*P		**P**		**01 38 55.1 -0.9**
WMQ	**Urumqi**	**80.52**	**317**	*e*P		**P**		**01 39 02.6 +1.9**
WMQ					pP		pP	01 39 13.0 -80
WMQ					pmax		pmax	
	comp=Z,11nm,0.6s							
WMQ					pmax		pmax	
	comp=Z,93nm,4.1s							
KTH	**Kantishna Hill**	**81.06**	**21**	*e*P		**P**		**01 39 02.3 -0.8**
	comp=Z,3.7nm,0.8s							
TRF	**Thorofare Moun**	**81.23**	**21**	*e*P		**P**		**01 39 04.1 0.0**
	comp=Z,9.6nm,1.3s							
MCK	**McKinley**	**81.88**	**21**	*e*P		**P**		**01 39 06.8 -0.4**
	comp=Z,11nm,0.8s							
QSPA	**South Pole Qui**	**82.42**	**180**	*e*P		**P**		**01 39 10.7 +0.5**
	comp=Z,66nm,0.6s							
CCB	**Clear Creek Bu**	**82.81**	**21**	*e*P		**P**		**01 39 11.1 -0.9**
	comp=Z,3.7nm,1.0s							
COLA	**College**	**82.93**	**21**	*e*P		**P**		**01 39 11.0 -1.6**
	comp=Z,4.5nm,0.6s							
IL1	**Eielson Array**	**83.21**	**21**	*e*P		**P**		**01 39 12.4 -1.6**
ILAR	**Eielson Array**	**83.21**	**21**	P		**P**		**01 39 12.7 -1.3**
	comp=Z,2.0nm,0.6s,baz=257,slow=5.4,SNR=24							
ILAR					pP		**pP**	**01 40 47.7 +0.8**
	comp=Z,0.7nm,0.9s,baz=282,slow=5.3,SNR=4.0							
ILAR					PKKPbc		**PKKPbc**	**01 57 30.8 -4.5**
	comp=Z,0.4nm,0.8s,baz=333,slow=0.9,SNR=4.2							
ILB	**Eielson Array**	**83.21**	**21**	*e*P		**P**		**01 39 12.9 -1.1**
DOT	**Dot Lake**	**83.65**	**23**	*e*P		**P**		**01 39 16.6 +0.3**
	comp=Z,7.7nm,0.8s							
MAW	**Mawson**	**84.61**	**203**	P		**P**		**01 39 21.3 +0.4**
	comp=Z,4.7nm,0.7s,baz=104,slow=7.0,SNR=8.5							
MKAR	**Makanchi Array**	**85.07**	**318**	P		**P**		**01 39 23.3 -0.4**
	comp=Z,8.3nm,0.6s,baz=97,slow=5.9,SNR=103							
MKAR					pP		**pP**	**01 40 56.3 -0.7**
	comp=Z,1.4nm,0.7s,baz=104,slow=4.8,SNR=6.2							
ZALV	**Zalesovo Beam**	**85.70**	**326**	P		**P**		**01 39 24.9 -1.6**
	comp=Z,5.7nm,0.4s,baz=122,slow=5.5,SNR=24							
ZALV					pP		**pP**	**01 40 59.1 -0.9**
	comp=Z,0.7nm,0.4s,baz=98,slow=10,SNR=2.3							
NMTM	**Middletown**	**87.47**	**51**	*e*P		**P**		**01 39 34.7 -0.6**
KSH	**Kashi**	**87.81**	**310**	*e*P		**P**		**01 39 38.5 +1.4**
KSH					e**p**P		pP	01 41 13.4 +2.3
KSH					e**s**P		sP	01 41 55.3 +1.7
KSH					e**P**P		**PP**	**01 43 15.3 +5.3**
KSH	**Kashi**	**87.81**	**310**	S		**S**		**01 49 45.3 +0.8**
KSH					pmax		pmax	
	comp=Z,5.0nm,0.7s							
KSH					pmax		pmax	
	comp=Z,61nm,3.0s							
AAK	**Ala-Archa**	**89.50**	**313**	*e*P		**P**		**01 39 44.4 -0.5**
	comp=Z,3.7nm,0.7s							
ELK	**Elko**	**93.26**	**50**	*e*P		**P**		**01 40 02.5 0.0**
	comp=Z,3.6nm,0.7s							
BRVK	**Borovoye**	**93.94**	**323**	*e*P		**P**		**01 40 03.2 -1.7**
	comp=Z,5.7nm,0.7s							
NAIU	**Northern Antel**	**95.56**	**49**	*e*P		**P**		**01 40 11.5 -1.4**
MOUT	**Mount Ogden**	**95.84**	**49**	*e*P		**P**		**01 40 15.1 +0.8**
TUC	**Tucson**	**95.94**	**58**	*e*P		**P**		**01 40 15.6 +0.9**
	comp=Z,1.8nm,0.8s							
YKA	**Yellowknife Ar**	**95.95**	**28**	P		**P**		**01 40 13.7 -0.2**
	comp=Z,1.3nm,0.6s,baz=268,slow=4.4,SNR=11							
YKA					pP		**pP**	**01 41 50.5 +1.9**
	comp=Z,1.9nm,0.8s,baz=269,slow=4.7,SNR=9.8							
MCU	**Monte Cristo P**	**96.14**	**49**	*e*P		**P**		**01 40 17.9 +2.3**
HTU	**Hoyt Peak**	**96.30**	**50**	*e*P		**P**		**01 40 17.4 +1.0**
PDAR	**Pinedale Array**	**97.68**	**48**	pP		pP		01 41 59.6 +2.3
	comp=Z,1.4nm,0.8s,baz=225,slow=1.9,SNR=9.5							
ABKAR	**Akbulak array**	**100.21**	**319**	*e*Pdif		**Pdif**		**01 40 30.9 -2.3**
	comp=Z,0.9nm,0.7s							
FINES	**FINESS Array B**	**115.21**	**336**	PKP		**PKPdf**		**01 45 24.9 -0.9**
	comp=Z,1.3nm,0.7s,baz=108,slow=2.8,SNR=14							
AKASG	**Malin Array Be**	**119.08**	**325**	PKP		**PKPdf**		**01 45 32.8 -0.7**
	comp=Z,1.5nm,0.4s,baz=47,slow=2.7,SNR=7.7							
BRTR	**Keskin Array B**	**120.14**	**312**	PKP		**PKPdf**		**01 45 35.5 -0.7**
	comp=Z,1.1nm,0.7s,baz=119,slow=2.7,SNR=8.3							
BOSA	**Boshof**	**121.12**	**230**	PKP		**PKPdf**		**01 45 38.4 0.0**
	comp=Z,2.2nm,0.7s,baz=180,slow=3.2,SNR=5.2							
CSS	**Mathiatis**	**121.65**	**306**	*e*PKPdf		**PKPdf**		**01 45 38.6 -0.4**
LSZ	**Lusaka**	**124.34**	**246**	*e*PKPdf		**PKPdf**		**01 45 45.0 +0.1**
KECS	**Kecovo**	**125.12**	**326**	*e*PKP		**PKPdf**		**01 45 50.2 +4.9**
PSZ	**Piszkesteto**	**125.76**	**326**	*e*PKPdf		**PKPdf**		**01 45 46.8 +0.2**
DPC	**Dobruska-Polom**	**126.22**	**330**	*e*PKPdf		**PKPdf**		**01 45 48.0 +0.6**
PRU	**Pruhonice**	**127.33**	**330**	*e*PKPdf		**PKPdf**		**01 45 49.9 +0.5**
KHC	**Kasperske Hory**	**128.37**	**330**	*e*PKPdf		**PKPdf**		**01 45 51.8 +0.3**
GERES	**GERESS Array B**	**128.49**	**330**	PKP		**PKPdf**		**01 45 52.2 +0.4**
	comp=Z,0.9nm,0.5s,baz=121,slow=1.5,SNR=11							
LPAZ	**La Paz**	**129.54**	**118**	PKP		**PKPdf**		**01 45 55.9 +0.5**
	comp=Z,1.3nm,0.6s,baz=317,slow=2.7,SNR=7.4							
LPAZ					SKPbc		SKPbc	01 48 40.9 +2.6
	comp=Z,3.4nm,0.9s,baz=262,slow=3.4,SNR=11							
WLF	**Walferdange**	**131.40**	**335**	*e*PKPdf		**PKPdf**		**01 45 56.5 -0.6**
MVO	**Moncorvo**	**143.60**	**339**	*e*PKPdf		PKPbc		01 46 18.6 +0.5
POLO	**Lamas de Olo**	**143.68**	**340**	*e*PKPdf		PKPab		01 46 18.3 0.0
ESDC	**Sonseca Array**	**143.70**	**335**	PKP		PKPab		01 46 18.4 0.0
	comp=Z,2.9nm,0.8s,baz=21,slow=3.0,SNR=16							
PVRL	**Vila Real**	**143.74**	**340**	*e*PKPdf		PKPbc		01 46 18.8 +0.3
MTE	**Manteigas**	**144.46**	**339**	*e*PKPdf		**PKPdf**		**01 46 21.8 +0.4**
PMRV	**Marv??o**	**145.26**	**338**	*e*PKPdf		**PKPab**		**01 46 23.9 -0.2**
PTOM	**Tomar**	**145.46**	**340**	*e*PKPdf		**PKPab**		**01 46 24.5 -0.3**
PESTR	**Estremoz**	**145.83**	**338**	*e*PKPdf		**PKPbc**		**01 46 25.4 +0.3**
PBAR	**Barrancos**	**146.23**	**337**	*e*PKPdf		**PKPab**		**01 46 28.4 +0.5**
BDFB	**Brasilia**	**146.24**	**133**	PKPbc		**PKPab**		**01 46 28.5 -0.2**
	baz=258,slow=0.9							
EVO	**Evora**	**146.28**	**338**	*e*PKPdf		**PKPbc**		**01 46 26.7 +0.3**
PNCL	**Nicolau / Gran**	**146.84**	**339**	*e*PKPdf		**PKPbc**		**01 46 28.4 +0.5**
PTEO	**Sao Teotonio**	**147.41**	**338**	*e*PKPdf		**PKPbc**		**01 46 30.5 +1.0**
TAM	**Tamanrasset**	**148.58**	**302**	*e*PKPbc		**PKPbc**		**01 46 33.5 +0.3**

*CSEM **23** 02:17:05.6±0.1, 41°.26N×43°.57E, h12km, ML2.2, Error ellipse: s-maj=3.5km s-min=3.2km az=88.0*
*TIF **23** 02:17:05.3, 41°.27N×43°.59E, h17km*
*DDA **23** 02:17:05.2, 41°.28N×43°.57E, h7km, Md3.0*
*ISCJB **23** 02:17:06.2±0.5, 41°.24N±0°.03×43°.55E±0°.03, h9km±3km, Error ellipse: s-maj=4.6km s-min=3.5km az=149.8*

ISC 23 02:17:05.6±0.8, **41°.26N**±0°.02×**43°.56E**±0°.02, **h13**km±4km, **n22**, σ0**°65**/44, **Turkey-Georgia-Armenia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGD	**Bogdanovka**	**0.03**	**82**	P	**Pg**	**02 17 08.3**	**+0.2**
BGD				S	**Sg**	**02 17 10.1**	**+0.1**
BGD	**Bogdanovka**	**0.03**	**82**	P	**Pg**	**02 17 08.4**	**+0.2**
BGD				S	**Sg**	**02 17 10.1**	**+0.1**
AKH	**Akhalkalaki**	**0.16**	**342**	P	**Pb**	**02 17 09.7**	**-0.9**
AKH				S	**Sg**	**02 17 12.0**	**-0.2**
EAK	**Akyaka**	**0.57**	**176**	*i* P	**Pg**	**02 17 17.0**	**+0.2**
EAK				*i* S	**Sb**	**02 17 25.2**	**-0.5**
EAK	**Akyaka**	**0.57**	**176**	P	**Pg**	**02 17 17.0**	**+0.2**
EAK				S	**Sb**	**02 17 25.2**	**-0.5**
KZR	**Kazreti**	**0.66**	**79**	P	**Pb**	**02 17 18.2**	**-0.7**
KZR				S	**Sb**	**02 17 27.0**	**-1.0**
EPOS	**Posof**	**0.67**	**292**	*i* P	**Pb**	**02 17 18.9**	**-0.3**
EPOS				*i* S	**Sb**	**02 17 28.4**	**-0.1**
EPOS	**Posof**	**0.67**	**292**	P	**Pb**	**02 17 18.9**	**-0.3**
EPOS				S	**Sb**	**02 17 28.4**	**-0.1**
DIGO	**Kars**	**0.86**	**189**	*i* P	**Pb**	**02 17 22.2**	**-0.3**
DIGO				*i* S	**Sb**	**02 17 35.0**	**+1.0**
DIGO	**Kars**	**0.86**	**189**	P	**Pb**	**02 17 22.2**	**-0.3**
DIGO				S	**Sb**	**02 17 35.0**	**+1.0**
TBLG	**Delisi**	**1.00**	**62**	P	**Pb**	**02 17 24.6**	**-0.3**
TBLG				S	**Sn**	**02 17 38.8**	**-0.7**
TBLG	**Delisi**	**1.00**	**62**	P	**Pg**	**02 17 24.2**	**-0.7**
TBLG				S	**Sb**	**02 17 38.1**	**+0.1**
SEAG	**Tbilisi Sea**	**1.06**	**61**	P	**Pn**	**02 17 25.8**	**-0.4**
SEAG				S	**Sn**	**02 17 40.4**	**-0.5**
DUS	**Dusheti**	**1.19**	**46**	P	**Pg**	**02 17 30.4**	**+1.8**
DUS				S	**Sn**	**02 17 46.1**	**+1.9**
ARTV	**Artvin**	**1.23**	**267**	*i* P	**Pn**	**02 17 28.7**	**0.0**
ARTV				*i* S	**Sb**	**02 17 44.0**	**-0.7**
ARTV	**Artvin**	**1.23**	**267**	P	**Pn**	**02 17 28.7**	**0.0**
ARTV				S	**Sb**	**02 17 44.0**	**-0.7**
DAGI	**Agillar**	**1.25**	**262**	*i* P	**Pg**	**02 17 29.4**	**-0.4**
DAGI				*i* S	**Sg**	**02 17 46.5**	**+0.4**
ONI	**Oni**	**1.33**	**357**	P	**Pb**	**02 17 30.2**	**-0.3**
ONI				S	**Sg**	**02 17 49.0**	**+0.5**
ONI	**Oni**	**1.33**	**357**	P	**Pb**	**02 17 30.2**	**-0.3**
ONI				S	**Sg**	**02 17 49.0**	**+0.5**
GUDG	**Gudauri**	**1.39**	**29**	P	**Pg**	**02 17 32.3**	**+0.1**
GUDG				S	**Sg**	**02 17 51.1**	**+0.9**
DBOC	**Borcka**	**1.43**	**274**	*i* P	**Pb**	**02 17 32.0**	**-0.1**
DBOC				*i* S	**Sb**	**02 17 50.2**	**0.0**
DBOC	**Borcka**	**1.43**	**274**	P	**Pb**	**02 17 32.0**	**-0.1**
DBOC				S	**Sb**	**02 17 50.2**	**0.0**

*ISCJB **23** 02:20:01.7±0.5, 39°.10N±0°.04×29°.02E±0°.05, h13km±5km, Error ellipse: s-maj=7.5km s-min=4.5km az=135.5*
*CSEM **23** 02:20:01.6±0.1, 39°.12N×29°.00E, h10km, MD2.7, Error ellipse: s-maj=4.6km s-min=3.2km az=126.0*
*ISK **23** 02:20:01.4, 39°.10N×29°.07E, h15km, ML2.1*
*DDA **23** 02:20:01.7, 39°.13N×28°.99E, h7km, Md2.7*

ISC 23 02:20:01.6±0.9, **39°.10N**±0°.03×**29°.03E**±0°.03, **h14**km±8km, **n24**, σ0**°40**/34, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**258**	*i* P	**Pg**	**02 20 07.3**	**+0.2**
DEMI				*i* S	**Sg**	**02 20 10.7**	**0.0**
DEMI	**Demirci**	**0.25**	**258**	P	**Pg**	**02 20 07.3**	**+0.2**
DEMI				S	**Sg**	**02 20 10.7**	**0.0**
GEDZ	**Gediz**	**0.30**	**100**	*e*PG	**Pg**	**02 20 07.4**	**-0.4**
GEDZ	**Gediz**	**0.30**	**100**	*e*Pg	**Pg**	**02 20 07.4**	**-0.4**
GDZ	**Gediz**	**0.35**	**91**	*i* P	**Pb**	**02 20 09.9**	**+0.3**
GDZ				*i* S	**Sb**	**02 20 15.4**	**+0.3**
GDZ	**Gediz**	**0.35**	**91**	P	**Pb**	**02 20 09.9**	**+0.3**
GDZ				S	**Sb**	**02 20 15.4**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**02 20 11.3**	**+0.1**
TVSB				*e*SG	**Sg**	**02 20 18.1**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**02 20 11.3**	**+0.1**
TVSB				*e*Sg	**Sg**	**02 20 18.1**	**+0.4**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pb**	**02 20 15.3**	**+0.5**
KULA				*e*SG	**Sb**	**02 20 24.1**	**+0.4**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pb**	**02 20 15.3**	**+0.5**
KULA				*e*Sg	**Sb**	**02 20 24.1**	**+0.4**
MANT	**Manisa**	**0.71**	**212**	*i* P	**Pg**	**02 20 15.0**	**-0.4**
MANT				*i* S	**Sg**	**02 20 24.0**	**-0.8**
MANT	**Manisa**	**0.71**	**212**	P	**Pg**	**02 20 15.0**	**-0.4**
MANT				S	**Sg**	**02 20 24.0**	**-0.8**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pb**	**02 20 25.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pb**	**02 20 25.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pn**	**02 20 24.7**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pn**	**02 20 24.7**	**-0.4**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**02 20 25.9**	**-0.4**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**02 20 25.9**	**-0.4**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**02 20 28.4**	**-0.4**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**02 20 28.4**	**-0.4**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**02 20 28.8**	**+0.2**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**02 20 28.8**	**+0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**02 20 31.7**	**0.0**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**02 20 31.7**	**0.0**

*IDC **23** 02:36:36.2±1.2, 18°.47S×173°.95W, h0km, mb4.0/4, mb1 4.4/4, mb1mx3.9/25, mbtmp4.1/4, MS3.4/5, Ms1 3.4/5, ms1mx3.0/34, Error ellipse: s-maj=37.9km s-min=19.3km az=114.0*
*NEIC **23** 02:36:40.0±0.8, 18°.00S×174°.01W, h35km, mb4.2/4, Error ellipse: s-maj=31.6km s-min=13.9km az=127.0*

ISC 23 02:36:46.8±0.9, **18°.2S**±0°.2×**174°.1W**±0°.2, **h90**km, **n25**, σ1**°51**/12, **mb4.2/7, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.78**	**28**	Pn	Pn	02 37 46.1	-10
	2.9nm,0.3s,baz=221,slow=17,SNR=2.6						
AFI				Sn	Sn	02 38 33.0	-18
	19nm,0.3s,baz=94,slow=21,SNR=7.2						
AFI				LR	LR	02 39 30.2	
	comp=Z,125nm,21.3s,baz=66,slow=35						
MSVF	**Nonsavu**	**7.53**	**272**	*e*Pn	Pn	02 38 41.7	+7.6
RAR	**Rarotonga**	**13.78**	**105**	LR	LR	02 43 44.3	
	comp=Z,105nm,20.7s,baz=285,slow=31						
DZM	**Mont Dzumac**	**18.72**	**255**	LR	LR	02 46 53.1	
	comp=Z,232nm,19.3s,baz=36,slow=33						
DZM	**Mont Dzumac**	**18.72**	**255**	*e*P	**P**	**02 40 59.1**	**+0.6**
	9.4nm,0.9s						
URZ	**Urewera**	**21.45**	**199**	P	**P**	**02 41 25.2**	**-2.6**
	5.8nm,0.6s,baz=28,slow=17,SNR=3.8						
URZ				S	**S**	**02 45 21.0**	**+0.4**
	13nm,1.0s,baz=215,slow=21,SNR=2.2						
PAE	**Paea**	**23.29**	**93**	*e*T	T	03 04 53.9	
	5.6nm,0.2s						
PPT2	**Papeete2**	**23.30**	**92**	*e*LR	LR	02 46 58.3	
	326nm,27.0s						
PPT2	**Papeete2**	**23.30**	**92**	*e*T	T	03 04 55.6	
	4.0nm,0.3s						
PPT	**Papeete**	**23.30**	**92**	LR	LR	02 48 05.6	
	comp=Z,87nm,20.3s,baz=236,slow=30						
TBI	**Tubuai**	**23.55**	**107**	*e*LR	LR	02 47 12.5	
	250nm,27.8s						
TVO	**Taravao**	**23.59**	**93**	*e*T	T	03 05 16.0	
	1.7nm,0.3s						
VAH	**Vaihoa**	**25.47**	**87**	*e*T	T	03 07 35.8	
	7.4nm,0.2s						
RKT	**Rikitea**	**36.82**	**104**	*e*T	T	03 21 50.9	
	2.5nm,0.4s						
H11N3	**WAKE ISLAND Hy**	**42.04**	**333**	T	T	03 29 36.9	
	baz=152,slow=76,SNR=8.3						
H11N1	**WAKE ISLAND Hy**	**42.05**	**333**	T	T	03 29 36.9	
	baz=152,slow=76,SNR=11						
H11N2	**WAKE ISLAND Hy**	**42.06**	**333**	T	T	03 29 38.2	
	baz=152,slow=76,SNR=12						
WRAB	**Tennant Creek**	**48.65**	**259**	*e*P	**P**	**02 45 21.7**	**-0.4**
	3.5nm,0.7s						
WRA	**Warramunga Arr**	**48.66**	**259**	P	**P**	**02 45 22.1**	**-0.1**
	1.8nm,0.6s,baz=98,slow=6.1,SNR=30						
WRA				LR	LR	03 04 53.1	
	comp=Z,92nm,20.2s,baz=225,slow=35						
ASAR	**Alice Springs**	**48.71**	**254**	P	**P**	**02 45 22.2**	**-0.3**
	7.4nm,0.7s,baz=88,slow=8.5,SNR=44						
ASAR				PcP	**PcP**	**02 46 47.5**	**+1.0**
	0.3nm,0.6s,baz=107,slow=4.1,SNR=2.3						
TXAR	**Lajitas Array**	**82.67**	**56**	P	**P**	**02 49 01.6**	**+0.7**
	0.2nm,0.8s,baz=206,slow=6.0,SNR=2.4						
MCK	**McKinley**	**83.95**	**11**	*e*P	**P**	**02 49 04.6**	**-2.0**
	0.8nm,0.5s						
COLA	**College**	**85.19**	**11**	*e*P	**P**	**02 49 11.1**	**-1.6**
	1.6nm,0.6s						
SNAA	**Sanae**	**90.18**	**177**	*e*P	**P**	**02 49 38.4**	**+1.6**
BRTR	**Keskin Array B**	**147.85**	**318**	PKPbc	**PKPab**	**02 56 26.2**	**+1.6**
	0.4nm,0.7s,baz=48,slow=2.1,SNR=3.1						

*NIED **23** 02:37:00, 37°.40N×141°.60E, h5km, Mw4.2 Best double couple: M0 2.44000×10^15 NP1:φ=189.00000°, δ=49.00000°, λ=-128.00000°. NP2:φ=59.00000°, δ=54.00000°, λ=-55.00000°.*
*JMA **23** 02:37:13.2±0.1, 37°.36N×141°.62E, h26km±2km, M4.6*
JMA Felt I J1.
*ISCJB **23** 02:37:14.7±0.7, 37°.53N±0°.04×141°.50E±0°.04, h23km±4km, mb4.5/73, MS3.6/13, Error ellipse: s-maj=7.0km s-min=4.5km az=143.0*
*IDC **23** 02:37:16.8±4.1, 37°.40N×141°.53E, h33km±30km, mb4.1/26, mb1 4.3/29, mb1mx4.2/55, mbtmp4.3/29, ML3.4/3, MS3.4/12, Ms1 3.5/12, ms1mx3.2/54, Error ellipse: s-maj=16.2km s-min=12.8km az=121.0*
*MOS **23** 02:37:17.4±1.0, 37°.75N×141°.34E, h36km, mb4.7/39, Error ellipse: s-maj=9.1km s-min=5.6km az=100.5*
*NEIC **23** 02:37:18.6±1.4, 37°.64N×141°.36E, h34km±10km, mb4.6/29, Error ellipse: s-maj=6.3km s-min=3.8km az=139.0*
NEIC Recorded [1 JMA] in Fukushima and Miyagi.

ISC 23 02:37:17.2±1.0, **37°.53N**±0°.05×**141°.55E**±0°.04, **h29**km±6km, **n166**, σ1**°72**/175, **mb4.5**/73, **MS3.6**/13, **2C-2D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.56**	**253**	P	Pb	02 37 24.6	-4.0
JFK				S	**Sb**	**02 37 32.8**	**-3.6**
JMM	**Marumori**	**0.69**	**299**	P	**Pn**	**02 37 28.5**	**-2.4**
JMM				S	**Sb**	**02 37 39.7**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.73**	**235**	P	Pn	02 37 26.5	-5.1
ONAJ				S	**Sb**	**02 37 35.9**	**-5.3**
JIO	**Ouri**	**0.94**	**350**	P	**Pn**	**02 37 32.9**	**-1.5**
JFT	**Otama**	**0.96**	**270**	P	**Pn**	**02 37 32.4**	**-2.4**
JFT				S	**Sn**	**02 37 46.0**	**-1.5**
JOU	**Okura**	**1.09**	**320**	P	**Pn**	**02 37 36.1**	**-0.4**
JOU				S	**Sb**	**02 37 52.8**	**+1.5**
JHO	**Hitachi**	**1.21**	**221**	P	Pn	02 37 32.7	-5.4
JYS	**Shirataka**	**1.36**	**301**	P	**Pn**	**02 37 40.0**	**-0.2**
JYS				S	**Sb**	**02 38 00.0**	**+0.9**
JMK	**Ichinoseki**	**1.44**	**350**	P	**Pn**	**02 37 41.0**	**-0.3**
JFY	**Yanaizu**	**1.47**	**266**	P	**Pn**	**02 37 39.8**	**-2.0**
JFY				e**S**	**Sn**	**02 37 59.9**	**-0.2**
MJAR	**Matsushiro Arr**	**2.85**	**251**	Pn	**Pn**	**02 37 59.2**	**-1.5**
	4.9nm,0.3s,baz=80,slow=8.7,SNR=25						
MAJO	**Matsushiro**	**2.85**	**251**	*e*P	**Pn**	**02 37 59.2**	**-1.5**
MAJO	**Matsushiro**	**2.85**	**251**	*e*Pn	**Pn**	**02 37 59.5**	**-1.2**
MAT	**Matsushiro**	**2.85**	**251**	P	**Pn**	**02 37 59.3**	**-1.4**
MAT				S	**Sn**	**02 38 37.6**	**+3.6**
INU	**Inuyama**	**4.25**	**241**	*e*Pn	**Pn**	**02 38 20.8**	**+0.8**
ERM	**Erimo**	**4.65**	**15**	*e*P	**Pn**	**02 38 24.6**	**-0.8**
ERM	**Erimo**	**4.65**	**15**	*e*Pn	**Pn**	**02 38 25.4**	**+0.1**
ASAJ	**Asahikawa**	**6.63**	**7**	Pn	**Pn**	**02 38 52.0**	**-0.6**
	baz=214,slow=8.5						
KUR	**Kuril'sk**	**9.04**	**30**	P	**Pn**	**02 39 25.8**	**+0.2**
KUR				S	**Sn**	**02 41 02.1**	**-4.2**
KUR				pmax	pmax		
	comp=Z,18nm,0.7s						
MSHR	**Mys Shultsa**	**9.43**	**306**	*e*P	**Pn**	**02 39 30.0**	**-0.9**
YSS	**Yuzh-Sakhalins**	**9.46**	**5**	*e*P	**Pn**	**02 39 30.0**	**-1.4**
YSS				e**S**	Sn	02 41 06.8	-10
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
YSS				MLR	MLR		
	comp=Z,300nm,16.0s						
YSS	**Yuzh-Sakhalins**	**9.46**	**5**	*e*Pn	**Pn**	**02 39 29.9**	**-1.4**
JNU	**Nakatsue**	**9.76**	**246**	Pn	**Pn**	**02 39 36.0**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=36,slow=19,SNR=2.5						
USRK	**Ussuriysk Ar.**	**9.84**	**316**	Pn	**Pn**	**02 39 40.9**	**+4.4**
	comp=Z,0.3nm,0.3s,baz=130,slow=13,SNR=21						
USRK				LR	LR	02 43 09.5	
	comp=Z,332nm,19.2s,baz=142,slow=36						
KSRS	**Korea Array**	**10.83**	**274**	Pn	**Pn**	**02 39 53.3**	**+3.2**
	comp=Z,0.2nm,0.3s,baz=92,slow=14,SNR=7.6						
KSRS				LR	LR	02 43 38.2	
	comp=Z,213nm,20.8s,baz=78,slow=35						
KSAR	**Wonju Array Be**	**10.86**	**274**	P	**Pn**	**02 39 53.3**	**+2.7**
KSAR	**Wonju Array Be**	**10.86**	**274**	Pn	**Pn**	**02 39 53.3**	**+2.7**
**MD

H11S3 **WAKE ISLAND Hy** 29.04 124 T T 03 13 26.0
baz=316,slow=75,SNR=474
H11S2 **WAKE ISLAND Hy** 29.06 124 T T 03 13 27.1
baz=316,slow=75,SNR=346
CD2 Chengdu 31.78 269 *e*P **P** **02 43 38.0 -1.1**
GTA Gaotai 32.52 286 *e*P **P** **02 43 44.8 -0.8**
GTA pP pP 02 43 53.3 -0.8
GTA sP sP 02 43 57.1 -0.6
GTA PcP **PcP** **02 46 32.6 +0.7**
GTA S **S** **02 48 59.3 +0.3**
GTA sS sS 02 49 12.5 -0.6
GTA SS **SnSn** **02 50 58.4 +4.7**
GTA pmax pmax
comp=Z,3.0nm,1.1s
GTA pmax pmax
comp=Z,69nm,5.7s
GTA LR LR
comp=N,120nm,15.2s
GTA LR LR
comp=E,100nm,16.2s
GTA LR LR
comp=Z,110nm,16.6s
TIXI Tiksi 34.81 353 *e*P **P** **02 44 05.1 +0.2**
TIXI pmax pmax
comp=Z,4.0nm,0.9s
KMI Kunming 35.15 261 P **P** **02 44 08.3 -0.3**
KMI pmax pmax
comp=Z,11nm,1.0s
WMQ Urumqi 40.72 296 *e*P **P** **02 44 56.6 +1.4**
WMQ pmax pmax
comp=Z,6.0nm,0.6s
ZAA0 Zalesovo Array 41.66 312 *e*P **P** **02 45 02.0 -0.8**
ZALV Zalesovo Beam 41.66 312 P **P** **02 45 02.0 -0.8**
comp=Z,7.0nm,0.8s,baz=91,slow=7.0,SNR=26
ZALV Zalesovo Beam 41.66 312 P **P** **02 45 02.0 -0.8**
ZALV pmax pmax
comp=Z,7.0nm,0.8s
CMAR Chiang Mai Arr 41.73 255 P **P** **02 45 04.2 +0.5**
comp=Z,0.9nm,0.3s,baz=47,slow=6.6,SNR=3.3
CMAR Chiang Mai Arr 41.73 255 P **P** **02 45 04.2 +0.5**
CMAR pmax pmax
comp=Z,2.0nm,0.4s
NVS Novosibirsk 42.58 313 *i*P **P** **02 45 09.7 -0.5**
MK01 Makanchi Array 43.95 302 *e*P **P** **02 45 20.5 -0.9**
MK31 Makanchi Array 43.95 302 *i*P **P** **02 45 20.8 -0.7**
MK31 pmax pmax
comp=Z,7.0nm,0.7s
MK31 Makanchi Array 43.95 302 *e*P **P** **02 45 21.2 -0.3**
MKAR Makanchi Array 43.95 302 P **P** **02 45 20.8 -0.7**
comp=Z,7.2nm,0.8s,baz=88,slow=10.0,SNR=55
MKAR LR LR 03 03 35.7
comp=Z,37nm,21.9s,baz=78,slow=36
MKAR Makanchi Array 43.95 302 *e*P **P** **02 45 21.2 -0.3**
MAKZ Makanchi 44.16 302 P **P** **02 45 21.9 -1.2**
MAKZ pmax pmax
comp=Z,9.0nm,1.0s
MAKZ Makanchi 44.16 302 *e*P **P** **02 45 23.0 -0.1**
comp=Z,7.9nm,0.8s
KDAK Kodiak Island 46.66 42 *i*P **P** **02 45 42.8 +0.1**
KTH Kantishna Hill 47.28 34 *e*P **P** **02 45 49.0 +1.5**
comp=Z,11nm,1.4s
MDM Murphy Dome 48.44 32 *e*P **P** **02 45 57.6 +1.1**
comp=Z,7.4nm,1.2s
IL1 Eielson Array 49.02 33 *e*P **P** **02 46 00.8 -0.1**
ILAR Eielson Array 49.02 33 P **P** **02 46 00.9 -0.1**
comp=Z,2.5nm,0.8s,baz=270,slow=6.3,SNR=32
ILB Eielson Array 49.02 33 *e*P **P** **02 46 01.2 +0.3**
TKM2 Tokmak 2 49.49 298 P **P** **02 46 02.6 -2.5**
TKM2 pmax pmax
comp=Z,5.0nm,1.0s
DIV Divide 49.82 37 *e*P **P** **02 46 07.3 +0.2**
comp=Z,5.6nm,0.8s
VOSK Vostochnaya 50.03 312 P **P** **02 46 07.0 -1.8**
VOSK pmax pmax
comp=Z,5.0nm,0.9s
VOSK Vostochnaya 50.03 312 *e*P **P** **02 46 08.2 -0.6**
comp=Z,4.1nm,0.8s
OTUK Ortayu 50.23 306 P **P** **02 46 09.4 -1.0**
OTUK pmax pmax
comp=Z,6.0nm,1.0s
KSH Kashi 50.30 294 *e*P **P** **02 46 12.8 +1.6**
KSH *e*pP pP 02 46 20.1 0.0
KSH PcS **PcS** **02 51 27.6 +0.6**
KSH S **S** **02 53 21.8 -0.4**
KSH pmax pmax
comp=Z,76nm,4.0s
KSH LR LR
comp=N,80nm,8.2s
KSH LR LR
comp=E,100nm,5.8s
KSH LR LR
comp=Z,130nm,10.9s
BVAR Borovoye Array 50.32 312 P **P** **02 46 10.5 -0.5**
comp=Z,1.7nm,0.6s,baz=106,slow=8.4,SNR=9.0
BVAR PcP **PcP** **02 47 28.1 -1.3**
comp=Z,1.5nm,0.6s,baz=104,slow=4.7,SNR=4.2
BRVK Borovoye 50.38 312 *i*P **P** **02 46 10.8 -0.6**
BRVK pmax pmax
comp=Z,12nm,1.7s
BRVK Borovoye 50.38 312 *e*P **P** **02 46 10.3 -1.1**
comp=Z,4.1nm,0.6s
MENT Mentasta 50.57 35 *e*P **P** **02 46 15.6 +2.9**
comp=Z,5.2nm,0.6s
INK Inuvik 53.90 27 P **P** **02 46 37.8 +0.5**
comp=Z,1.9nm,0.4s,baz=275,slow=6.8,SNR=6.5
INK Inuvik 53.90 27 *e*P **P** **02 46 38.5 +1.2**
comp=Z,14nm,1.4s
SVE Sverdlovsk 54.85 318 *e*P **P** **02 46 44.4 0.0**
SVE pmax pmax
comp=Z,16nm,1.0s
ARU Arti 56.06 318 LR LR 03 13 08.5
comp=Z,56nm,18.1s,baz=48,slow=38
ARU Arti 56.06 318 *d*P **P** **02 46 52.6 -0.6**
ARU 02 47 48.9
ARU 02 48 53.5
ARU S **S** **02 54 41.9 +2.2**
ARU SS **SS** **02 58 23.1 -2.4**
ARU pmax pmax
comp=Z,26nm,1.7s
ARU Arti 56.06 318 *e*P **P** **02 46 52.8 -0.4**
comp=Z,18nm,1.1s
WRAB Tennant Creek 57.55 188 *i*P **P** **02 47 04.0 -0.1**
WRAB pmax pmax
comp=Z,53nm,2.5s
WRAB Tennant Creek 57.55 188 *e*P **P** **02 47 05.4 +1.4**
comp=Z,7.8nm,0.9s
WB2 Warramunga Arr 57.56 188 *e*P **P** **02 47 06.0 +1.9**
comp=Z,8.1nm,0.8s
WRA Warramunga Arr 57.57 188 P **P** **02 47 01.3 -2.8**
comp=Z,6.1nm,0.9s,baz=5.2,slow=7.4,SNR=23
WRA pP **pP** **02 47 14.1 +0.9**
comp=Z,3.0nm,0.6s,baz=360,slow=7.4,SNR=9.0
WRA Warramunga Arr 57.57 188 *i*P **P** **02 47 02.2 -2.0**
WRA pmax pmax
comp=Z,6.0nm,0.9s
AB31 Akbulak array 57.70 310 P **P** **02 47 03.6 -1.3**
AB31 pmax pmax
comp=Z,4.0nm,0.6s
ABKAR Akbulak array 57.70 310 *e*P **P** **02 47 04.2 -0.7**
comp=Z,6.0nm,0.6s
DLBC Dease Lake 58.17 38 *e*P **P** **02 47 10.5 +2.3**
comp=Z,13nm,1.3s
AKTO Aktyubinsk 58.42 312 P **P** **02 47 08.9 -1.0**
baz=70,slow=11
AKTO Aktyubinsk 58.42 312 P **P** **02 47 09.0 -1.0**
AS01 Alice Springs 61.29 188 *e*P **P** **02 47 31.7 +1.9**
ASAR Alice Springs 61.29 188 P **P** **02 47 27.7 -2.2**
comp=Z,3.1nm,0.8s,baz=6.7,slow=6.8,SNR=21
YKA Yellowknife Ar 63.33 30 P **P** **02 47 42.5 -0.5**
comp=Z,0.9nm,0.7s,baz=301,slow=6.4,SNR=7.0
YKA Yellowknife Ar 63.33 30 *i*P **P** **02 47 43.0 0.0**
YKA pmax pmax
comp=Z,1.0nm,0.7s
KLMR Klimovskoe 63.40 328 *e*P **P** **02 47 41.6 -1.9**
KLMR *e* 02 50 02.7
KLMR pmax pmax
comp=Z,6.0nm,0.8s
ARCES ARCESS Array B 63.57 339 P **P** **02 47 44.9 +0.3**
comp=Z,3.9nm,0.8s,baz=58,slow=7.7,SNR=7.1
GEYT Alibeck 63.69 299 P **P** **02 47 45.7 -0.2**
comp=Z,6.8nm,0.9s,baz=54,slow=3.8,SNR=10
OBN Obninsk 67.76 323 *i*P **P** **02 48 11.9 +0.1**
OBN *i* 02 48 37.7
OBN pmax pmax
comp=Z,8.0nm,0.7s
OBN MLR MLR
comp=Z,42nm,15.0s
FIA1 FINESS Array S 68.42 332 *e*P **P** **02 48 15.4 -0.4**
FINES FINESS Array B 68.43 332 P **P** **02 48 15.4 -0.4**
comp=Z,7.1nm,0.8s,baz=51,slow=7.6,SNR=21
FINES LR LR 03 20 17.2
comp=Z,37nm,18.2s,baz=32,slow=38
FORT Forrest 69.12 192 *e*P **P** **02 48 22.0 +1.6**
comp=Z,170nm,0.7s
VSU Vasula 70.08 330 *i*P **P** **02 48 26.8 +0.6**
VSU pmax pmax
comp=Z,44nm,1.7s
SUMG Summit 70.19 0 *e*P **P** **02 48 27.9 +0.8**
SUMG pmax pmax
comp=Z,5.0nm,0.8s
SUMG Summit 70.19 0 *e*P **P** **02 48 27.9 +0.8**
comp=Z,4.9nm,0.8s
KVAR Kislovodsk Arr 70.66 311 P **P** **02 48 30.2 +0.1**
comp=Z,9.1nm,0.9s,baz=80,slow=22,SNR=6.4
KBZ Khabaz 70.66 311 P **P** **02 48 30.2 +0.2**
comp=Z,5.2nm,0.9s,baz=56,slow=4.2,SNR=6.4
WSAR Wadi Sarin 70.84 285 LR LR 03 23 51.4
comp=Z,28nm,18.2s,baz=74,slow=39
GNI Garni 71.50 307 LR LR 03 22 03.6
comp=Z,33nm,19.9s,baz=80,slow=38
BMO Blue Mountains 71.51 47 *e*P **P** **02 48 36.2 +1.0**
comp=Z,1.6nm,0.6s
FFC Flin Flon 73.23 33 *e*P **P** **02 48 45.2 0.0**
FFC pmax pmax
comp=Z,8.0nm,1.2s
FFC Flin Flon 73.23 33 *e*P **P** **02 48 45.2 0.0**
comp=Z,8.2nm,1.2s
HFS Hagfors 73.68 336 P **P** **02 48 47.4 -0.4**
comp=Z,2.5nm,0.5s,baz=66,slow=7.0,SNR=13
LRM Limekiln Ridge 73.72 44 *e*P **P** **02 48 49.4 +0.9**
NB2 NORSAR Subarra 73.77 337 P **P** **02 48 48.0 -0.3**
comp=Z,3.2nm,0.6s,baz=39,slow=6.2
NOA NORSAR Array B 73.77 337 P **P** **02 48 48.2 -0.2**
comp=Z,2.7nm,0.6s,baz=38,slow=5.9,SNR=9.6
NOA LR LR 03 23 58.5
comp=Z,35nm,19.6s,baz=290,slow=38
NBO02 NORSAR Array S 73.87 337 *e*P **P** **02 48 48.8 -0.2**
HLID Hailey 73.96 47 *e*P **P** **02 48 51.0 +1.1**
comp=Z,11nm,2.0s
AKASG Malin Array Be 73.97 322 P **P** **02 48 48.9 -0.7**
comp=Z,2.3nm,0.5s,baz=44,slow=6.7,SNR=11
AKASG Malin Array Be 73.97 322 *i*P **P** **02 48 49.2 -0.4**
AKASG pmax pmax
comp=Z,2.0nm,0.5s
KIEV Kiev 73.98 322 *i*P **P** **02 48 49.2 -0.5**
KIEV pmax pmax
comp=Z,7.0nm,1.2s
BOZ Bozeman (W) 74.28 44 *e*P **P** **02 48 52.8 +1.1**
BOZ pmax pmax
comp=Z,6.0nm,1.3s
BOZ Bozeman (W) 74.28 44 *e*P **P** **02 48 52.8 +1.1**
comp=Z,5.9nm,1.3s
R11A Troy Canyon, C 76.37 52 *e*P **P** **02 49 04.9 +1.0**
comp=Z,5.1nm,1.4s
TPNV Topopah Spring 76.79 54 *e*P **P** **02 49 07.2 +0.9**
TPNV pmax pmax
comp=Z,4.0nm,0.9s
TPNV Topopah Spring 76.79 54 *e*P **P** **02 49 07.2 +0.9**
comp=Z,3.7nm,0.9s
BW06 Boulder Array 77.24 46 *e*P **P** **02 49 08.9 +0.1**
PDAR Pinedale Array 77.24 46 P **P** **02 49 08.8 0.0**
comp=Z,0.8nm,0.6s,baz=292,slow=3.0,SNR=8.2
BUR08 Bucovina Ar. S 77.98 322 *e*P **P** **02 49 13.0 +0.3**
BRTR Keskin Array B 78.60 312 P **P** **02 49 15.9 -0.4**
comp=Z,1.0nm,0.8s,baz=93,slow=5.1,SNR=5.1
BRTR Keskin Array B 78.60 312 *i*P **P** **02 49 16.7 +0.4**
BRTR pmax pmax
comp=Z,1.0nm,0.8s
LCMT Little Creek M 78.66 52 *e*P **P** **02 49 18.1 +1.4**
comp=Z,5.7nm,1.2s
BR231 Keskin MP Arra 79.04 312 *e*P **P** **02 49 16.5 -2.2**
MLR Muntele Rosu 79.08 320 P **P** **02 49 18.7 -0.1**
comp=Z,0.3nm,0.6s,baz=0.0,slow=2.0,SNR=4.8
U15A North Rim 79.62 52 *e*P **P** **02 49 23.4 +1.3**
comp=Z,17nm,1.9s
DPC Dobruska-Polom 80.10 328 *e*P **P** **02 49 24.3 +0.1**
PSZ Piszkesteto 80.32 324 *e*P **P** **02 49 25.5 +0.1**
PSZ pmax pmax
comp=Z,3.0nm,0.7s
PSZ Piszkesteto 80.32 324 *e*P **P** **02 49 25.4 +0.1**
comp=Z,3.3nm,0.7s
PV10 Paradox Valley 80.37 49 *e*P **P** **02 49 27.4 +1.3**
ISCO Idaho Springs 81.43 46 *e*P **P** **02 49 32.4 +0.6**
ISCO Idaho Springs 81.43 46 *e*P **P** **02 49 32.4 +0.6**
MMAI Mount Meron Ar 81.77 305 P **P** **02 49 31.8 -1.6**
comp=Z,4.4nm,0.9s,baz=27,slow=6.6,SNR=3.6
KHC Kasperske Hory 82.18 328 *e*P **P** **02 49 35.1 -0.1**
GERES GERESS Array B 82.35 328 P **P** **02 49 35.9 -0.4**
comp=Z,1.1nm,0.6s,baz=31,slow=6.3,SNR=9.4
SDCO Great Sand Dun 82.88 47 *e*P **P** **02 49 39.6 +0.2**
comp=Z,0.7nm,0.6s
SOKA Soboth 83.44 326 *e*P P 02 49 36.7 -5.2
comp=Z,2.6nm,0.8s
ANMO Albuquerque 84.19 50 *i*P **P** **02 49 45.0 -1.1**
ANMO pmax pmax
comp=Z,3.0nm,1.2s
ANMO Albuquerque 84.19 50 *e*P **P** **02 49 47.6 +1.6**
comp=Z,4.4nm,1.4s
EIL Elat 84.20 303 LR LR 03 30 01.6
comp=Z,40nm,18.6s,baz=52,slow=38
BFO Black Forest 84.92 331 *i*P **P** **02 49 50.0 +0.7**
FETA Feichten 85.02 329 *i*P **P** **02 49 49.6 -0.4**
comp=Z,1.3nm,0.5s
TXAR Lajitas Array 89.73 52 P **P** **02 50 13.0 0.0**
comp=Z,0.8nm,0.6s,baz=294,slow=3.5,SNR=10
LPAZ Laz 146.35 59 PKPbc **PKPdf** **02 56 55.3 +0.2**
comp=Z,1.7nm,0.8s,baz=290,slow=2.1,SNR=7.3

*MOS **23** 02:49:22.8±1.6,41.°14N×43.°34E,h8km,mb4.1/1,Error ellipse: s-maj=11.6km s-min=5.0km az=78.0*
*DDA **23** 02:49:23.0,41.°27N×43.°57E,h4km,Ml3.7*
*NSSP **23** 02:49:23.9,41.°25N×43.°62E,h5km,Ms3.3*
*IASPEI **23** 02:49:23.8±0.9,41.°26N±0.°03×43.°57E±0.°02,h13km±5km, Error ellipse: s-maj=4.3km s-min=3.4km az=178.6, GT5 selection from ISC bulletin GT5 identified by Bond˜ji and McLaughlin (2009) selection criteria Bond˜ji and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **23** 02:49:23.7±0.3,41.°23N±0.°01×43.°55E±0.°02,h2km±2km, Error ellipse: s-maj=2.5km s-min=2.1km az=8.9*
*TIF **23** 02:49:23.3,41.°27N×43.°59E,h18km*
*AZER **23** 02:49:24.8±0.1,40.°87N×43.°87E,h3km, Error ellipse: s-maj=3.5km s-min=2.4km az=339.0*
*CSEM **23** 02:49:24.1±0.2,41.°22N×43.°55E,h2km,ML3.4, Error ellipse: s-maj=3.7km s-min=3.1km az=20.0*
*ISK **23** 02:49:25.5,41.°21N×43.°45E,h10km,MD3.2*

ISC 23 02:49:24.0±0.8,41.°23N±0.°01×43.°55E±0.°01,h8km±5km, n115,σ1§31/184,22C-16D,Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BGD	**Bogdanovka**	**0.05**	**50**	P		**Pg**	**02 49 26.4**	**+0.3**
BGD				S		**Sg**	**02 49 28.2**	**+0.7**
BGD	**Bogdanovka**	**0.05**	**50**	P		**Pg**	**02 49 26.4**	**+0.3**
AKH	**Akhalkalaki**	**0.18**	**348**	P		**Pg**	**02 49 27.6**	**-0.3**
AKH				S		**Sg**	**02 49 30.1**	**-0.5**
AKH	**Akhalkalaki**	**0.18**	**348**	PG		**Pg**	**02 49 27.6**	**-0.3**
AKH	**Akhalkalaki**	**0.18**	**348**	P		**Pg**	**02 49 27.6**	**-0.3**
AKH				S		**Sg**	**02 49 30.1**	**-0.5**
BAW	**Bavra**	**0.22**	**120**	*i* P		Pg	02 49 34.0	+5.4
GMRZ	**Gyumri**	**0.47**	**153**	*e*P		**Pn**	**02 49 37.0**	**-0.3**
GMRZ				S		**Sb**	**02 49 45.0**	**+3.1**
EAK	**Akyaka**	**0.55**	**175**	*i* P		**Pg**	**02 49 35.0**	**+0.4**
EAK				*i* S		**Sb**	**02 49 42.9**	**-1.1**
EAK	**Akyaka**	**0.55**	**175**	P		**Pg**	**02 49 35.0**	**+0.4**
EAK				S		**Sb**	**02 49 42.9**	**-1.1**
STE	**Stepanavan**	**0.67**	**110**	⇑P		**Pg**	**02 49 36.0**	**-0.9**
STE				S		**Sg**	**02 49 45.2**	**-0.4**
EPOS	**Posof**	**0.67**	**294**	*i* P		**Pg**	**02 49 37.0**	**0.0**
EPOS				*i* S		**Sg**	**02 49 46.5**	**+0.7**
EPOS	**Posof**	**0.67**	**294**	P		**Pg**	**02 49 37.0**	**0.0**
EPOS				S		**Sg**	**02 49 46.5**	**+0.7**
KZR	**Kazreti**	**0.67**	**77**	P		**Pg**	**02 49 36.2**	**-0.8**
KZR				S		**Sg**	**02 49 45.1**	**-0.7**
KZR	**Kazreti**	**0.67**	**77**	P		**Pg**	**02 49 36.2**	**-0.8**
KZR S **Sg** **02 49 45.1 -0.7**
STEZ Stepenevan 0.69 109 ⇑*i*P **Pg** **02 49 36.0 -1.3**
STEZ ⇑*i*S **Sg** **02 49 45.2 -1.0**
KARS Kars 0.70 211 *e*PG **Pb** **02 49 38.7 +0.1**
KARS *e*SG **Sb** **02 49 47.9 -0.5**
DIGO Kars 0.82 189 *i* P **Pg** **02 49 40.2 +0.3**
DIGO *i* S **Sg** **02 49 51.1 +0.4**
TBLG Delisi 1.03 60 P **Pg** **02 49 42.4 -1.4**
TBLG S **Sg** **02 49 56.3 -0.8**
TBLG Delisi 1.03 60 PG **Pg** **02 49 42.4 -1.4**
TBLG Delisi 1.03 60 P **Pg** **02 49 42.4 -1.4**
TBLG S **Sg** **02 49 56.1 -1.0**
SEAG Tbilisi Sea 1.08 60 P **Pg** **02 49 43.6 -1.4**
SEAG S **Sg** **02 49 57.8 -1.2**
SEAG Tbilisi Sea 1.08 60 P **Pg** **02 49 43.5 -1.4**
SEAG S **Sg** **02 49 58.3 -0.7**
SENK Senkaya-Erzuru 1.12 234 *e*PG **Pb** **02 49 45.9 +0.1**
SENK *e*SG **Sn** **02 50 01.5 -0.6**
ARTV Artvin 1.22 268 *i* P **Pb** **02 49 46.8 -0.7**
ARTV *i* S **Sg** **02 50 01.7 -1.6**
DUS Dusheti 1.22 45 P **Pb** **02 49 46.6 -0.8**
DUS S **Sb** **02 49 59.9 -3.5**
DUS Dusheti 1.22 45 PG **Pg** **02 49 50.0 +2.5**
DUS S **Sn** **02 50 04.3 +0.1**
DUS Dusheti 1.22 45 Pg **Pg** **02 49 50.0 +2.5**
DUS S **Sn** **02 50 04.3 +0.1**
DAGI Agillar 1.24 263 *i* P **Pn** **02 49 47.3 -0.5**
DAGI *i* S **Sb** **02 50 02.3 -1.7**
ONI Oni 1.36 357 P **Pn** **02 49 48.2 -1.2**
ONI S **Sb** **02 50 06.7 -0.7**
ONI Oni 1.36 357 PG **Pn** **02 49 48.2 -1.2**
ONI S **Sb** **02 50 06.7 -0.7**
QZX Qazax, Azerbai 1.39 97 ⇑P **Pn** **02 49 49.2 -0.6**
QZX ⇑S **Sn** **02 50 08.3 0.0**
QZX Qazax, Azerbai 1.39 97 P **Pn** **02 49 49.2 -0.6**
QZX S **Sn** **02 50 08.3 0.0**
DDEM Demirkent 1.40 257 *i* P **Pn** **02 49 49.7 -0.2**
DDEM *i* S **Sn** **02 50 08.7 +0.1**
DDEM Demirkent 1.40 257 P **Pn** **02 49 49.7 -0.2**
DDEM S **Sn** **02 50 08.7 +0.1**
GNI Garni 1.41 139 ⇓*i*P **Pb** **02 49 50.7 -0.1**
GNI ⇑*i*S **Sg** **02 50 10.2 +0.8**
GNI Garni 1.41 139 *d*PG **Pb** **02 49 50.6 -0.1**
GNI Garni 1.41 139 *i* Pg **Pb** **02 49 50.6 -0.1**
DBOC Borcka 1.42 275 *i* P **Pn** **02 49 50.1 -0.1**
DBOC *i* S **Sn** **02 50 08.9 -0.2**
DBOC Borcka 1.42 275 P **Pn** **02 49 50.1 -0.1**
DBOC S **Sn** **02 50 08.9 -0.2**
ZEI Tsey 1.58 10 *e*PN **Pn** **02 49 52.0 -0.5**
DIGR Digorskoe uzhe 1.67 1 *i* PN **Pn** **02 49 53.9 +0.1**
DIGR *e*S **Sb** **02 50 17.0 +0.6**
DIGR Digorskoe uzhe 1.67 1 *i* Pn **Pn** **02 49 53.9 +0.1**
DIGR *e*Sg **Sb** **02 50 17.0 +0.6**
LACR Lac 1.69 19 *e*PN **Pn** **02 49 53.9 -0.1**
LACR Lac 1.69 19 *e*Pn **Pn** **02 49 53.9 -0.1**
HOMI Horasan 1.72 227 *i* P **Pb** **02 49 55.7 -0.4**
HOMI *i* S **Sg** **02 50 20.6 +1.3**
GDB GEDABAY 1.75 106 ⇑P **Pn** **02 49 55.0 +0.2**
GDB ⇑S **Sn** **02 50 17.6 +0.2**
GDB GEDABAY 1.75 106 P **Pn** **02 49 55.0 +0.2**
GDB S **Sn** **02 50 17.6 +0.2**
CHVG Ch'k'valeri 1.84 324 *e*PN **Pn** **02 49 56.4 +0.4**
CHVG Ch'k'valeri 1.84 324 P **Pn** **02 49 56.9 +0.9**
CHVG S **Sb** **02 50 21.6 +0.4**
CHVG Ch'k'valeri 1.84 324 *e*Pn **Pn** **02 49 56.4 +0.4**
CHVG Ch'k'valeri 1.84 324 P **Pn** **02 49 56.9 +0.9**
CHVG S **Sb** **02 50 21.6 +0.4**
KORR Kora 1.89 12 ⇑*i*PN **Pb** **02 49 59.1 +0.2**
KORR Kora 1.89 12 *i* Pn **Pb** **02 49 59.1 +0.2**
TUTA Tutak 1.91 197 *i* P **Pg** **02 50 01.0 +0.3**
TUTA *i* S **Sg** **02 50 28.8 +3.4**
TUTA Tutak 1.91 197 P **Pg** **02 50 01.0 +0.3**
VADZ Vardenis 1.98 122 *e*P **Pb** **02 50 00.0 -0.4**
VADZ ⇑*e*S **Sg** **02 50 29.0 +1.4**
VLKR Vladikavkaz 2.00 25 *e*PN **Pb** **02 50 00.8 +0.1**
VLKR *e*S **Sg** **02 50 28.6 +0.3**
VLKR Vladikavkaz 2.00 25 *e*Pn **Pb** **02 50 00.8 +0.1**
VLKR *e*Sb **Sg** **02 50 28.6 +0.3**
ARNR Ardon 2.02 16 *e*PN **Pb** **02 50 01.0 -0.1**
ARNR *e*S **Sg** **02 50 28.7 -0.4**
ARNR Ardon 2.02 16 *e*Pn **Pb** **02 50 01.0 -0.1**
ARNR *e*Sn **Sg** **02 50 28.7 -0.4**
KMGR Komgaron 2.07 28 *e*PN **Pb** **02 50 01.7 -0.2**
KMGR *e*S **Sg** **02 50 30.2 -0.5**
KMGR Komgaron 2.07 28 *e*Pn **Pb** **02 50 01.7 -0.2**
KMGR *e*Sn **Sg** **02 50 30.2 -0.5**
CLDR Caldiran 2.10 172 *e*PN **Pb** **02 50 02.3 -0.3**
NEY Neytrino 2.11 343 *i* PN **Pb** **02 50 01.5 -1.1**
NEY Neytrino 2.11 343 *i* Pn **Pb** **02 50 01.5 -1.1**
STDR Stavd-Durt 2.17 10 *e*PN **Pg** **02 50 04.8 -0.9**
STDR *e*S **Sg** **02 50 34.3 +0.5**
STDR Stavd-Durt 2.17 10 *e*Pn **Pg** **02 50 04.8 -0.9**
STDR *e*Sn **Sg** **02 50 34.3 +0.5**
GANJ Ganja 2.18 105 ⇓P **Pb** **02 50 02.3 -1.5**
GANJ ⇑S **Sb** **02 50 30.4 -0.6**
NCK Nalchik 2.26 1 *e*PN **Pb** **02 50 03.5 -1.7**
NCK Nalchik 2.26 1 *e*Pn **Pb** **02 50 03.5 -1.7**
ZKTA Zakatala 2.35 79 ⇑P **Pn** **02 50 04.7 +1.7**
ZKTA ⇑S **Sb** **02 50 37.0 +1.3**
NAX Nakhchivan 2.54 143 ⇑P **Pn** **02 50 05.3 -0.3**
NAX ⇓S **Sn** **02 50 34.0 -2.8**
NAX Nakhchivan 2.54 143 P **Pn** **02 50 05.3 -0.3**
NAX S **Sn** **02 50 34.0 -2.8**
GROC Groznyy 2.58 40 PN **Pb** **02 50 10.5 -0.1**
GROC *e* 02 50 45.5
GROC pmax pmax
comp=Z,20nm,0.5s
GROC smax smax
comp=E,120nm,0.7s
GROC smax smax
comp=E,192nm,1.1s
GROC smax smax
comp=N,122nm,0.5s
GROC Groznyy 2.58 40 Pn **Pb** **02 50 10.5 -0.1**
comp=N,20nm,0.5s
GROC *e*Sn **Sg** **02 50 45.5 -1.6**
comp=N,122nm,0.5s
KOPT Kop Dagi 2.62 243 *i* P **Pg** **02 50 14.1 -0.1**
KOPT *i* S Sg 02 50 57.6 +10
VANB Van 2.63 183 *e*PN **Pb** **02 50 09.9 -1.7**
VANB Van 2.63 183 *e*Pn **Pb** **02 50 09.9 -1.7**
MNGR Mingechevir, A 2.72 99 ⇑S **Sn** **02 50 43.2 +2.2**
MNGR Mingechevir, A 2.72 99 S **Sn** **02 50 43.2 +2.2**
GRS Goris 2.74 128 *e*P **Pn** **02 50 04.0 -4.5**
SEKA Sheki 2.76 89 ⇓P **Pn** **02 50 10.1 +1.5**
SEKA ⇑S **Sb** **02 50 45.9 -1.6**
KIV Kislovodsk 2.80 347 *e*PN **Pn** **02 50 10.7 +1.5**
KIV Kislovodsk 2.80 347 *e*Pn **Pn** **02 50 10.7 +1.5**
GNBR Gunib 2.81 65 *e*PN **Pb** **02 50 14.1 -0.3**
GNBR *e* 02 50 51.4
GNBR pmax pmax
comp=Z,24nm,0.8s
GNBR smax smax
comp=E,96nm,0.8s
GNBR smax smax
comp=E,80nm,0.8s
GNBR smax smax
comp=N,54nm,0.5s
GNBR Gunib 2.81 65 *e*Pn **Pb** **02 50 14.1 -0.3**
comp=N,24nm,0.8s
GNBR *e*Sn **Sb** **02 50 51.4 +2.4**
comp=N,54nm,0.5s
MACK Trabzon 2.87 265 *i* P **Pb** **02 50 14.6 -0.9**
MACK *i* S **Sb** **02 50 52.4 +1.6**
MACK Trabzon 2.87 265 P **Pb** **02 50 14.6 -0.9**
BRDA Brd 2.92 108 ⇑P **Pn** **02 50 11.0 +0.2**
BRDA ⇑S **Sn** **02 50 47.3 +1.2**
AKT Akhty 3.16 84 *e*PN **Pn** **02 50 16.4 +2.2**
AKT *e* 02 50 59.3
AKT pmax pmax
comp=Z,20nm,0.6s
AKT smax smax
comp=N,59nm,0.6s
AKT smax smax
comp=N,45nm,0.4s
AKT smax smax
comp=E,46nm,0.6s
AKT Akhty 3.16 84 *e*Pn **Pn** **02 50 16.4 +2.2**
comp=E,20nm,0.6s
AKT *e*Sn **Sb** **02 50 59.3 +0.1**
comp=E,45nm,0.4s

QBL	**Gabala**	**3.26**	**94**	⇓P		**Pn**	**02 50 17.0**	**+1.6**
QBL				⇑S		**Sn**	**02 50 57.1**	**+2.7**
ZRD	**Zardab**	**3.29**	**105**	⇓P		**Pn**	**02 50 16.2**	**+0.4**
ZRD				⇓S		**Sn**	**02 50 55.3**	**+0.3**
XNQ	**Khinaliq**	**3.47**	**89**	⇓P		**Pn**	**02 50 20.4**	**+1.9**
XNQ				⇓S		**Sn**	**02 51 02.5**	**+2.7**
IML	**Ismayilli**	**3.54**	**96**	⇓P		**Pn**	**02 50 20.7**	**+1.5**
IML				⇓S		**Sn**	**02 51 02.8**	**+1.5**
QSAR	**Qusar**	**3.56**	**84**	⇓S		**Sn**	**02 51 04.7**	**+2.7**
KDMR	**Kurdemir**	**3.62**	**102**	⇓P		**Pn**	**02 50 21.0**	**+0.6**
QUBA	**Quba, Azerbaij**	**3.73**	**86**	⇑P		**Pn**	**02 50 24.1**	**+2.1**
QUBA				⇓S		**Sn**	**02 51 08.0**	**+1.9**
QUBA	**Quba, Azerbaij**	**3.73**	**86**	P		**Pn**	**02 50 24.1**	**+2.1**
QUBA				S		**Sn**	**02 51 08.0**	**+1.9**
GOF	**Gofitskoye**	**3.84**	**355**	⇑*e*PN		**Pb**	**02 50 28.2**	**-3.9**
GOF				*e*S		**Sg**	**02 51 29.7**	**+2.3**
GOF	comp=Z,15nm,0.5s			pmax	pmax			
GOF	comp=N,35nm,0.6s			smax	smax			
GOF	comp=E,36nm,0.9s			smax	smax			
GOF	**Gofitskoye**	**3.84**	**355**	*e*Pn		**Pb**	**02 50 28.2**	**-3.9**
GOF	comp=E,15nm,0.5s							
GOF	comp=E,35nm,0.6s			*e*Sg		**Sg**	**02 51 29.7**	**+2.3**
SAAT	**Saatly**	**3.96**	**109**	⇓S		**Sn**	**02 51 10.0**	**-1.7**
SAAT	**Saatly**	**3.96**	**109**	S		**Sn**	**02 51 10.0**	**-1.7**
GLBA	**Clilabad**	**4.21**	**117**	⇑P		**Pn**	**02 50 28.3**	**-0.2**
GLBA	**Clilabad**	**4.21**	**117**	P		**Pn**	**02 50 28.3**	**-0.2**
ANN	**Anapa**	**5.73**	**311**	*e*P		**Pn**	**02 50 50.0**	**+0.7**
ANN				*e*S		**Sn**	**02 51 56.6**	**+1.5**
ANN	comp=Z,26nm,0.9s			pmax	pmax			
ANN	**Anapa**	**5.73**	**311**	*e*P		**Pn**	**02 50 50.0**	**+0.7**
ANN	comp=Z,26nm,0.9s			*e*S		**Sn**	**02 51 56.6**	**+1.5**
APE	**Apeiranthos**	**14.58**	**259**	*e*P		**Pn**	**02 52 48.8**	**-1.8**
APE	comp=Z,7.0nm,1.2s			pmax	pmax			
APE	**Apeiranthos**	**14.58**	**259**	*e*P		**Pn**	**02 52 48.8**	**-1.8**
OBN	**Obninsk**	**14.64**	**344**	*i* P		**Pn**	**02 52 51.9**	**+0.6**
OBN	comp=Z,5.0nm,0.8s			pmax	pmax			
OBN	**Obninsk**	**14.64**	**344**	*i* P		**Pn**	**02 52 51.9**	**+0.6**
ARU	**Arti**	**18.07**	**28**	*e*P		**P**	**02 53 37.3**	**+1.6**
ARU	comp=Z,2.0nm,1.0s			pmax	pmax			
ARU	**Arti**	**18.07**	**28**	*e*P		**P**	**02 53 37.3**	**+1.6**
BRVK	**Borovoye**	**21.55**	**48**	*e*P		**P**	**02 54 14.3**	**+0.6**
BRVK	**Borovoye**	**21.55**	**48**	*e*P		**P**	**02 54 14.3**	**+0.6**

MOS ***23*** *02:56:48.7±1.0,29.°20S×69.°88W,h86km,mb5.4/53,Error ellipse: s-maj=11.8km s-min=6.3km az=99.9*

GUC ***23*** *02:56:50.8±0.6,29.°32S×70.°47W,h136km±16km,ML5.9*

GCMT ***23*** *02:56:51.3±0.1,29.°41S×70.°05W,h127km,MW5.5/121, Moment Tensor Solution. s118,c193; s121,c224; Duration: 1s3 Moment tensor: Scale 10^17^Nm; Mrr1.75±.02; Mθθ-0.16±.03; Mϕϕ-1.59±.03; Mrθ0.56±.02; Mθϕ-0.71±.03; Mrϕ0.20±.02; Best double couple: Ms1.91600×10^17^ NP1:ϕs36.00000°,δ53.00000°, λ107.00000°. NP2:ϕs189.00000°,δ40.00000°,λ68.00000°. Principal axes: T 1.9040, Plg75.0000°, Azm360.0000°; N 0.0260, Plg14.0000°, Azm205.0000°; P -1.9280, Plg6.0000°, Azm114.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***23*** *02:56:51.4±0.4,29.°34S×69.°71W,h103km±3km,mb5.5/256, MW5.5,MD5.4(SJA) Error ellipse: s-maj=4.4km s-min=2.6km az=75.0,Moment Tensor Solution. s29 Moment tensor: Scale 10^17^Nm; Mrr1.29; Mθθ0.06; Mϕϕ-1.35; Mrθ1.10; Mθϕ-0.43; Mrϕ1.54; Best double couple: Ms2.40000×10^17^ NP1:ϕs178.00000°,δ21.00000°, λ58.00000°. NP2:ϕs32.00000°,δ73.00000°,λ101.00000°. Principal axes: T 2.3200, Plg61.0000°, Azm318.0000°; N 0.0600, Plg11.0000°, Azm208.0000°; P -2.3800, Plg27.0000°, Azm113.0000°;*

NEIC Felt [III] at San Juan. Also felt at La Rioja. Felt [V] at Coquimbo and La Serena; [IV] at Andacollo, Copiapo, Monte Patria, Ovalle, Punitaqui, Rio Hurtado, Tierra Amarilla and Vicuna; [III] at La Higuera, Paiguano and Vallenar; [II] at Alto del Carmen, Combarbala, Illapel, Los Loros, Rancagua, San Bernardo, Santiago and Tiltil, Chile. Also felt at Limache.

ISCJB ***23*** *02:56:51.3±0.3,29.°21S±0.°02×69.°76W±0.°04,h113km±2km, mb5.4/275 Error ellipse: s-maj=5.4km s-min=3.2km az=162.2*

SJA ***23*** *02:56:51.4±0.9,29.°30S×69.°98W,h118km±16km,ML5.4, MW5.0*

IDC ***23*** *02:56:53.9±0.3,29.°32S×69.°93W,h126km±2km,mb4.8/25, mb1 4.9/27,mb1mx4.8/32,mbtmp5.2/27,MS4.2/10, Ms1 4.2/10,ms1mx4.0/17,Error ellipse: s-maj=12.4km s-min=7.8km az=77.0*

BJI ***23*** *02:56:54.5,28.°81S×70.°30W,h135km,mB5.4/27*

ISC 23 02:56:53.6±0.2,29.°35S±0.°03×69.°98W±0.°04,h125km±1km**, h125**km**:pP-P,n1206,σ1s20/1307,mb5.4**/275**,28C-14D, Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
LCO	**Las Campanas**	**0.72**	**298**	*e*P		**Pn**	**02 57 11.8**	**-2.1**
LCO				*e*S		**Sn**	**02 57 26.3**	**-3.0**
LCO	**Las Campanas**	**0.72**	**298**	⇓*i*P		**Pn**	**02 57 11.6**	**-2.4**
LCO				*i* S		**Sn**	**02 57 26.5**	**-2.8**
LCO	comp=E,381μm,0.3s			IAML			02 57 28.1	
LCO	**Las Campanas**	**0.72**	**298**	*e*P		**Pn**	**02 57 10.9**	**-3.0**
LCO				*e*S		**Sn**	**02 57 25.6**	**-3.7**
LCO	comp=E,381μm,0.3s			IAML			02 57 28.1	
LCO	**Las Campanas**	**0.72**	**298**	*e*Pn		**Pn**	**02 57 11.6**	**-2.4**
LCO				*e*Sn		**Sn**	**02 57 25.9**	**-3.4**
VACH	**Vallenar**	**1.03**	**318**	⇑*i*P		**Pn**	**02 57 15.1**	**-1.4**
VACH				*i* S		**Sn**	**02 57 31.8**	**-2.0**
VACH	**Vallenar**	**1.03**	**318**	*e*P		**Pn**	**02 57 13.9**	**-2.5**
VACH				*e*S		**Sn**	**02 57 30.5**	**-3.2**
TLL	**Tololo Astrono**	**1.09**	**221**	⇑*i*P		**Pn**	**02 57 14.8**	**-2.4**
TLL				*i* S		**Sn**	**02 57 32.3**	**-2.8**
TLL	comp=N,393μm,0.6s			IAML			02 57 35.4	
TLL	**Tololo Astrono**	**1.09**	**221**	*e*P		**Pn**	**02 57 14.4**	**-2.9**
TLL				*e*S		**Sn**	**02 57 31.6**	**-3.6**
TLL	comp=N,393μm,0.6s			IAML			02 57 35.4	
VCA	**Vinchina**	**1.67**	**69**	*e*P		**Pn**	**02 57 24.3**	**+0.8**
VCA	comp=Z,104μm,0.3s			IAML			02 57 49.0	
CPCH	**Copiapo**	**2.01**	**350**	⇑*i*P		**Pn**	**02 57 25.2**	**-2.3**
CPCH				*i* S		**Sn**	**02 57 51.0**	**-2.5**
CPCH	**Copiapo**	**2.01**	**350**	⇓*e*P		**Pn**	**02 57 25.3**	**-2.2**
CPCH				*e*S		**Sn**	**02 57 50.9**	**-2.5**
RTLL	**Cerro Villicun**	**2.36**	**147**	*e*P		**Pn**	**02 57 31.2**	**-0.7**
SJA	**San Juan**	**2.49**	**151**	*e*P		**Pn**	**02 57 33.1**	**-0.5**
RTLS	**Leoncito**	**2.51**	**167**	*e*P		**Pn**	**02 57 33.3**	**-0.7**
AVFE	**Valle Fertil**	**2.55**	**121**	⇓*e*P		**Pn**	**02 57 33.6**	**-0.6**
AVFE	comp=Z,21μm,0.3s			IAML			02 58 06.5	
RTCV	**Cerro Valdivia**	**2.79**	**154**	*e*P		**Pn**	**02 57 36.2**	**-1.3**
AUSP	**Uspallata**	**2.91**	**170**	*e*P		**Pn**	**02 57 38.9**	**-0.3**
ASAL	**Salagasta**	**3.38**	**163**	⇓*e*P		**Pn**	**02 57 44.7**	**-0.4**
ACHE	**Chepes**	**3.39**	**123**	*e*P		**Pn**	**02 57 44.5**	**-0.7**
ARCO	**CERRO ARCO**	**3.59**	**166**	*e*P		**Pn**	**02 57 48.2**	**+0.2**
ARCO				*e*S		**Sn**	**02 58 22.6**	**-7.5**
ARCO	comp=Z,7μm,0.5s			IAML			02 58 32.8	
ROCH	**El Roble**	**3.72**	**194**	*e*P		**Pn**	**02 57 46.2**	**-3.5**
ROC1	**El Roble**	**3.72**	**194**	*e*P		**Pn**	**02 57 46.3**	**-3.5**
ROC1	**El Roble**	**3.72**	**194**	*e*Pn		**Pn**	**02 57 46.1**	**-3.7**
CYA	**Choya**	**3.77**	**77**	*e*P		**Pn**	**02 57 48.9**	**-1.3**
CYA	comp=Z,6μm,0.5s			IAML			02 58 34.7	
ACAN	**Cantantal**	**3.77**	**141**	⇓*e*P		**Pn**	**02 57 49.4**	**-0.8**
PEL	**Peldehue**	**3.83**	**189**	⇓*i*P		**Pn**	**02 57 48.5**	**-2.6**
AAGR	**Agrelo**	**3.85**	**166**	⇓*e*P		**Pn**	**02 57 51.1**	**-0.2**
CLCH	**Cerro Calan**	**4.06**	**187**	⇑*i*P		**Pn**	**02 57 52.1**	**-2.0**
PB14	**IPOC Station P**	**4.72**	**355**	*e*P		**Pn**	**02 57 59.9**	**-3.3**
PB14	**IPOC Station P**	**4.72**	**355**	*e*P		**Pn**	**02 57 59.1**	**-4.1**
PB14				*e*S		**Sn**	**02 58 52.7**	**-4.6**
FSA	**Cafayete**	**4.79**	**49**	*e*P		**Pn**	**02 58 03.4**	**-0.7**
FSA	comp=Z,718nm,0.8s			IAML			02 58 04.4	
AHML	**Horco Molle**	**4.83**	**59**	⇓*e*P		**Pn**	**02 58 02.1**	**-2.3**
TCA	**Tanti**	**5.05**	**114**	*e*P		**Pn**	**02 58 05.3**	**-2.1**
TCA	comp=Z,2μm,0.5s			IAML			02 59 08.2	
ANCH	**Antofagasta**	**5.66**	**356**	⇑*i*P		**Pn**	**02 58 11.8**	**-3.7**
PB10	**IPOC Station P**	**5.83**	**355**	*e*Pn		**Pn**	**02 58 13.7**	**-4.2**
SUCO	**SUCO**	**5.90**	**134**	*e*P		**Pn**	**02 58 16.0**	**-2.8**
SUCO	comp=Z,2μm,0.6s			IAML			03 00 06.8	
LVC	**Limon Verde**	**6.78**	**8**	P		**Pn**	**02 58 27.3**	**-3.7**
LVC	comp=Z,1μm,0.3s,baz=170,slow=10,SNR=141			S		**Sn**	**02 59 41.9**	**-5.1**
PB04	comp=Z,2μm,0.3s,baz=240,slow=12,SNR=4.3 **IPOC Station P**	**6.99**	**359**	*e*Pn		Pn	02 58 27.9	-5.8
PB09	**IPOC Station P**	**7.55**	**5**	*e*P		**Pn**	**02 58 37.8**	**-3.4**
PB01	**IPOC Station P**	**8.28**	**3**	*e*Pn		Pn	02 58 45.2	-5.8
TRQA	**Tornquist**	**10.94**	**145**	*e*Pn		**Pn**	**02 59 23.2**	**-3.4**
TRQA				*e*Sn		**Sn**	**03 01 20.9**	**-6.1**
PLCA	**Paso Flores**	**11.37**	**182**	*e*P		**Pn**	**02 59 28.8**	**-3.4**
PLCA	**Paso Flores**	**11.37**	**182**	P		**Pn**	**02 59 28.9**	**-3.4**
PLCA	comp=Z,1.7nm,0.3s,baz=23,slow=11,SNR=22 **Paso Flores**	**11.37**	**182**	*e*P		**Pn**	**02 59 31.1**	**-1.2**
PLCA	**Paso Flores**	**11.37**	**182**	*e*Pn		**Pn**	**02 59 31.1**	**-1.2**
CPUP	**Villa Florida**	**11.59**	**78**	P		Pn	02 59 29.8	-5.4
CPUP	comp=Z,2.7nm,0.3s,baz=259,slow=12,SNR=91 **Villa Florida**	**11.59**	**78**	*e*Pn		Pn	02 59 30.2	-5.0
LPAZ	**La Paz**	**13.11**	**8**	P		**Pn**	**02 59 52.5**	**-3.2**
LPAZ	comp=Z,3.0nm,0.3s,baz=183,slow=7.2,SNR=92			LR		LR	03 06 16.8	
SIV	comp=Z,1μm,21.2s,baz=166,slow=43 **San Ignacio**	**15.62**	**34**	P		**Pn**	**03 00 24.9**	**-2.1**
SIV	comp=Z,3.3nm,0.3s,baz=234,slow=9.5,SNR=38			LR		LR	03 07 22.5	
CHRN	comp=Z,561nm,18.1s,baz=214,slow=40 **Cochrane**	**17.99**	**186**	*e*P		**P**	**03 00 55.4**	**+1.1**
NNA	comp=Z,31nm,0.8s **Nana**	**18.42**	**338**	P		**P**	**03 00 59.4**	**0.0**
NNA	comp=Z,1.6nm,0.3s,baz=201,slow=6.3,SNR=14 **Nana**	**18.42**	**338**	*i* P		**Pn**	**03 01 02.1**	**+1.1**
NNA	**Nana**	**18.42**	**338**	*e*P		**Pn**	**03 01 00.8**	**-0.2**
SPB	comp=Z,55nm,0.8s **Sao Paulo**	**20.96**	**79**	*e*P		**P**	**03 01 26.1**	**-0.7**
SAML	comp=Z,144nm,0.9s **Samuel**	**21.27**	**19**	*e*P		**P**	**03 01 29.6**	**-0.5**
ATAH	comp=Z,85nm,0.9s **Atahualpa**	**23.48**	**339**	P		**P**	**03 01 52.7**	**+0.1**
EFI	comp=Z,11nm,0.6s,baz=163,slow=7.0,SNR=16 **East Falkland**	**24.01**	**162**	*e*P		**P**	**03 01 52.7**	**-3.8**
EFI	comp=Z,71nm,0.9s			pmax	pmax			
EFI	**East Falkland**	**24.01**	**162**	*e*P		**P**	**03 01 56.6**	**0.0**
BDFB	**Brasilia**	**24.39**	**61**	P		**P**	**03 02 00.2**	**-0.3**
BDFB	comp=Z,16nm,0.6s,baz=263,slow=8.5 **Brasilia**	**24.39**	**61**	*e*P		**P**	**03 02 01.6**	**+1.0**
USHA	comp=Z,554nm,2.0s **Ushuaia**	**25.49**	**178**	P		**P**	**03 02 09.5**	**-0.5**
USHA	comp=Z,232nm,1.0s,baz=343,slow=6.7,SNR=12			pP		**pP**	**03 02 38.4**	**+1.7**
PTGA	comp=Z,284nm,0.8s,baz=308,slow=6.2,SNR=4.9 **Pitinga**	**30.02**	**20**	P		**P**	**03 02 49.4**	**-1.3**
OTAV	comp=Z,8.1nm,0.3s,baz=202,slow=11,SNR=46 **Otavalo**	**30.52**	**343**	*e*P		**P**	**03 02 56.1**	**+0.5**
OTAV	**Otavalo**	**30.52**	**343**	*e*P		**P**	**03 02 57.3**	**+1.7**
OTAV	comp=Z,76nm,1.6s			*e*PcP		**PcP**	**03 05 52.2**	**+0.4**
CMBC	**Cumbal**	**31.04**	**345**	*e*P		**P**	**03 03 01.7**	**+1.5**
FLOC	**Florencia**	**31.23**	**349**	*e*P		**P**	**03 03 02.5**	**+1.1**
CRUC	**La Cruz**	**31.46**	**347**	*e*P		**P**	**03 03 05.3**	**+1.5**
POPC	**Popayan, Colom**	**32.35**	**347**	*e*P		P	03 03 02.1	-9.4
GRGC	**Isla de Gorgon**	**33.11**	**345**	*e*P		**P**	**03 03 19.4**	**+1.5**
PRAC	**Prado**	**33.21**	**351**	*e*P		**P**	**03 03 20.2**	**+1.5**
PRAC	**Prado**	**33.21**	**351**	*e*P		**P**	**03 03 19.4**	**+0.6**
ROSC	comp=Z,94nm,0.9s			LR		LR	03 17 02.1	
VILC	**Villavicencio,**	**33.46**	**353**	*e*P		**P**	**03 03 21.2**	**+0.2**
CHIC	**Chingaza**	**33.98**	**353**	*e*P		**P**	**03 03 24.3**	**-1.5**
TOLC	**Tolima**	**34.13**	**350**	*e*P		**P**	**03 03 28.7**	**+1.7**
ROSC	**El Rosal**	**34.25**	**352**	P		**P**	**03 03 29.2**	**+1.1**
ROSC	comp=Z,311nm,19.6s,baz=174,slow=35 **El Rosal**	**34.25**	**352**	*e*P		**P**	**03 03 29.9**	**+1.8**
NORC	comp=Z,27nm,0.6s **Norcasia**	**35.03**	**351**	*e*P		**P**	**03 03 34.2**	**-0.2**
RUSC	**La Rusia**	**35.17**	**355**	*e*P		**P**	**03 03 36.6**	**+0.5**
RUSC	**La Rusia**	**35.17**	**355**	*e*P		**P**	**03 03 36.0**	**-0.1**
HELC	comp=Z,76nm,0.9s **Santa Helena**	**35.74**	**351**	*e*P		**P**	**03 03 40.7**	**-0.1**
HELC	**Santa Helena**	**35.74**	**351**	*e*P		**P**	**03 03 40.3**	**-0.6**
BARC	comp=Z,690nm,1.4s **Barichara**	**35.87**	**355**	*e*P		**P**	**03 03 40.3**	**-1.5**
BRRC	**Barranca, Sant**	**36.42**	**354**	*e*P		**P**	**03 03 43.6**	**-2.7**
DBBC	**Dabeiba**	**36.65**	**350**	*e*P		**P**	**03 03 50.0**	**+1.7**
CBRI	**Barrientos, No**	**36.95**	**355**	*e*P		**P**	**03 03 48.6**	**-2.3**
GRMC	**Gramalote, San**	**36.95**	**355**	*e*P		**P**	**03 03 52.3**	**+1.4**
OCAC	**Ocana**	**37.51**	**355**	*e*P		**P**	**03 03 51.6**	**-4.0**
SDV	**Santo Domingo**	**38.02**	**359**	P		**P**	**03 03 58.8**	**-1.2**
SDV	comp=Z,27nm,0.6s,baz=169,slow=8.2,SNR=37 **Santo Domingo**	**38.02**	**359**	*e*P		**P**	**03 03 56.8**	**-3.2**
SDV	**Santo Domingo**	**38.02**	**359**	*e*P		**P**	**03 03 58.7**	**-1.2**
PCRV	comp=Z,39nm,0.8s **Puerto La Cruz**	**39.63**	**8**	P		**P**	**03 04 12.6**	**-0.6**
RCBR	comp=Z,27nm,0.7s,baz=170,slow=3.4,SNR=8.9 **Riachuelo**	**39.77**	**61**	P		**P**	**03 04 14.8**	**+0.4**
FDF	comp=Z,27nm,1.0s,baz=224,slow=10,SNR=5.5 **Fort de France**	**44.65**	**12**	*e*P		**P**	**03 04 51.8**	**-2.1**
FDF	comp=Z,60nm,0.8s			pmax	pmax			
FDF	**Fort de France**	**44.65**	**12**	*e*P		**P**	**03 04 51.8**	**-2.1**
CELP	comp=Z,60nm,0.8s **Cerrillos**	**47.26**	**4**	*e*P		**P**	**03 05 12.9**	**-1.4**
SJG	**San Juan**	**47.33**	**5**	P		**P**	**03 05 12.9**	**-1.9**
SJG	comp=Z,28nm,0.5s,baz=128,slow=6.9,SNR=16			sP		**sP**	**03 05 59.0**	**+1.4**
SJG	comp=Z,22nm,0.7s,baz=234,slow=2.0,SNR=2.7 **San Juan**	**47.33**	**5**	*e*P		**P**	**03 05 13.3**	**-1.5**
SJG	comp=Z,105nm,1.4s			sP		**sP**	**03 05 59.0**	**+1.4**
BANI	**BANI**	**47.46**	**360**	*e*P		**P**	**03 05 16.8**	**+0.8**
CBYP	**Canovanas**	**47.51**	**5**	*e*P		**P**	**03 05 14.4**	**-1.9**
SDD	comp=Z,60nm,0.9s **Santo Domingo**	**47.53**	**0**	*e*P		**P**	**03 05 16.4**	**0.0**
SDDR	comp=Z,318nm,0.7s **Presa de Saban**	**48.07**	**358**	*e*P		**P**	**03 05 20.3**	**-0.3**
GTBY	comp=Z,53nm,1.1s **Guantanamo Bay**	**49.24**	**354**	*e*P		**P**	**03 05 29.7**	**+0.3**
CCIG	comp=Z,87nm,0.6s **Comitan**	**50.16**	**332**	*e*P		**P**	**03 05 37.0**	**+0.3**
GRTK	comp=Z,54nm,1.3s **Grand Turk**	**50.58**	**359**	*e*P		**P**	**03 05 38.9**	**-0.6**
CMIG	comp=Z,60nm,0.6s **Matias Romero**	**52.06**	**329**	P		**P**	**03 05 51.5**	**+0.8**
CMIG	comp=Z,21nm,0.8s,baz=129,slow=4.3,SNR=22			sP		**sP**	**03 06 34.0**	**+0.2**
VNA1	comp=Z,22nm,0.8s,baz=126,slow=6.0,SNR=5.3 **Neumayer--Stat**	**53.30**	**159**	P		**P**	**03 06 00.2**	**+1.1**
TLIG	**Tlapa**	**54.19**	**326**	*e*P		**P**	**03 06 07.3**	**+0.8**
SNAA	comp=Z,31nm,0.8s **Sanae**	**55.26**	**159**	P		**P**	**03 06 12.9**	**-0.5**
SNAA	**Sanae**	**55.26**	**159**	P		**P**	**03 06 13.1**	**-0.3**
SNAA	comp=Z,22nm,0.9s,baz=279,slow=7.6,SNR=107			pP		**pP**	**03 06 43.6**	**+0.6**
SNAA	comp=Z,14nm,0.6s,baz=306,slow=6.1,SNR=4.2			sP		**sP**	**03 06 57.0**	**+0.1**
SNAA	comp=Z,37nm,1.0s,baz=303,slow=14,SNR=4.3 **Sanae**	**55.26**	**159**	*c* *i*P		**P**	**03 06 12.9**	**-0.5**
SNAA	**Sanae**	**55.26**	**159**	*e*P		**P**	**03 06 13.1**	**-0.3**
SNAA	comp=Z,85nm,1.3s			pP		**pP**	**03 06 43.6**	**+0.6**
SNAA				sP		**sP**	**03 06 57.0**	**+0.1**
MOIG	**Morelia**	**57.29**	**325**	*e*P		**P**	**03 06 30.8**	**+2.1**
RKT	comp=Z,64nm,0.8s **Rikitea**	**57.99**	**260**	*e*S		**S**	**03 14 23.8**	**-0.5**
RKT	comp=Z,739nm,27.2s **Rikitea**	**57.99**	**260**	*e*T		T	04 08 07.0	
NVL	comp=Z,7.5nm,0.3s **N'lazarevskaya**	**59.91**	**158**	*e*P		**P**	**03 06 46.4**	**+0.5**
NVL				*e**PP		**pP**	**03 07 17.0**	**+1.1**
NVL				*e*S		**S**	**03 14 47.3**	**-0.4**
NVL				*e*SS		SS	03 18 59.2	+14
ZAIG	**Zacatecas**	**60.58**	**325**	*e*P		**P**	**03 06 53.3**	**+1.9**
QSPA	comp=Z,47nm,1.3s **South Pole Qui**	**60.87**	**180**	*e*P		**P**	**03 06 53.0**	**+0.3**
BBSR	comp=Z,262nm,1.6s **BB Station**	**61.59**	**5**	*e*P		**P**	**03 06 57.9**	**+0.3**
035Z	comp=Z,30nm,0.8s **Hargill**	**61.69**	**331**	P		**P**	**03 06 59.8**	**+1.4**
645A	baz=152 **Chauvin**	**61.70**	**340**	P		**P**	**03 07 00.6**	**+2.1**
TIGA	baz=159 **Tifton**	**61.83**	**347**	P		**P**	**03 06 59.2**	**-0.1**
TIGA	baz=166,SNR=6.9 **Tifton**	**61.83**	**347**	*e*P		**P**	**03 06 58.2**	**-1.0**
035A	comp=Z,48nm,0.9s **Encino**	**62.12**	**332**	P		**P**	**03 07 02.8**	**+1.4**
546A	baz=152,SNR=6.8 **Siddell**	**62.17**	**341**	P		**P**	**03 07 03.5**	**+1.9**
545A	baz=160 **Edgard**	**62.22**	**340**	P		**P**	**03 07 03.9**	**+2.0**
448A	baz=160 **Bay Minette**	**62.32**	**343**	P		**P**	**03 07 04.4**	**+1.8**
BRAL	baz=162 **Brewton**	**62.34**	**343**	*e*P		**P**	**03 07 02.6**	**-0.1**
BRAL	comp=Z,44nm,0.6s			*e*PcP		**PcP**	**03 07 41.2**	**0.0**
447A	**Lucedale**	**62.40**	**342**	P		**P**	**03 07 03.3**	**+0.2**
034A	baz=161 **Hebbronville**	**62.48**	**331**	P		**P**	**03 07 05.0**	**+1.3**
544A	baz=152,SNR=15 **White Castle**	**62.48**	**339**	P		**P**	**03 07 05.6**	**+1.9**
446A	baz=159 **Poplarville**	**62.59**	**341**	P		**P**	**03 07 05.2**	**+0.8**
RGRS	baz=161 **Roger Stewart**	**62.67**	**350**	*e*P		**P**	**03 07 05.2**	**+0.4**
543A	comp=Z,531nm,0.6s **St. Manvill**	**62.68**	**339**	P		**P**	**03 07 07.2**	**+2.2**
348A	baz=158 **Jackson**	**62.79**	**343**	P		**P**	**03 07 06.0**	**+0.3**
445A	baz=162 **Amite**	**62.82**	**340**	P		**P**	**03 07 07.2**	**+1.3**
NHSC	baz=160 **New Hope**	**62.87**	**350**	*e*P		**P**	**03 07 06.5**	**+0.4**
NHSC	comp=Z,221nm,1.4s			*e*PcP		**PcP**	**03 07 43.7**	**+0.4**
934A	**Benavides**	**62.88**	**332**	P		**P**	**03 07 07.7**	**+1.3**
444A	baz=152,SNR=14 **Pine Grove**	**62.92**	**340**	P		**P**	**03 07 08.0**	**+1.4**
347A	baz=160,SNR=7.8 **Saraland**	**62.95**	**342**	P		**P**	**03 07 06.8**	**+0.1**
737A	baz=162,SNR=5.5 **Port Lavaca**	**63.08**	**334**	P		**P**	**03 07 09.4**	**+1.8**
541A	baz=154 **Lake Charles**	**63.09**	**337**	P		**P**	**03 07 08.8**	**+1.1**
346A	baz=157 **Big Creek Wild**	**63.18**	**341**	P		**P**	**03 07 08.8**	**+0.5**
835A	baz=161 **Beeville**	**63.20**	**333**	P		**P**	**03 07 10.4**	**+1.9**
933A	baz=153 **Laredo**	**63.21**	**331**	P		**P**	**03 07 09.9**	**+1.3**
345A	baz=151,SNR=16 **Thompson Farm,**	**63.27**	**341**	P		**P**	**03 07 09.6**	**+0.7**
443A	baz=160 **Delano Plantat**	**63.29**	**339**	P		**P**	**03 07 10.4**	**+1.4**
834A	baz=159 **Tilden**	**63.35**	**332**	P		**P**	**03 07 11.3**	**+1.8**
248A	baz=152,SNR=18 **Dixon Mills**	**63.39**	**343**	P		**P**	**03 07 09.4**	**-0.2**
736A	baz=162,SNR=8.8 **Circle Diamond**	**63.49**	**334**	P		**P**	**03 07 12.5**	**+2.1**
540A	baz=154,SNR=29 **Vidor**	**63.50**	**337**	P		**P**	**03 07 12.4**	**+2.1**
247A	baz=156 **Quitman**	**63.58**	**342**	P		**P**	**03 07 11.1**	**+0.2**
344A	baz=162 **Westbrook Farm**	**63.61**	**340**	P		**P**	**03 07 11.9**	**+0.8**
637A	baz=160,SNR=16 **Eagle Lake**	**63.65**	**334**	P		**P**	**03 07 12.9**	**+1.6**
539A	baz=154,SNR=9.8 **Cross D Ranch,**	**63.66**	**336**	P		**P**	**03 07 13.1**	**+1.6**
735A	baz=156 **Kenedy**	**63.70**	**333**	P		**P**	**03 07 13.6**	**+1.8**
GOGA	baz=153,SNR=7.6 **Godfrey**	**63.72**	**347**	*e*P		**P**	**03 07 11.0**	**-0.7**
GOGA	comp=Z,81nm,1.5s			pmax	pmax			
GOGA	**Godfrey**	**63.72**	**347**	*e*P		**P**	**03 07 11.0**	**-0.7**
441A	comp=Z,82nm,1.5s **DeRidder**	**63.73**	**338**	P		**P**	**03 07 13.4**	**+1.5**
833A	baz=157,SNR=6.1 **Chaparral WMA,**	**63.88**	**331**	P		**P**	**03 07 14.2**	**+1.3**
245A	baz=151,SNR=42 **St. Alle Sta**	**63.91**	**341**	P		**P**	**03 07 13.6**	**+0.5**
636A	baz=160,SNR=11 **Smothers Creek**	**63.96**	**334**	P		**P**	**03 07 14.9**	**+1.5**
440A	baz=154,SNR=16 **Kirbyville**	**63.98**	**337**	P		**P**	**03 07 14.4**	**+0.8**
734A	baz=157 **La Parita Cree**	**63.99**	**332**	P		**P**	**03 07 14.9**	**+1.3**
342A	baz=152,SNR=16 **Flagon Creek P**	**64.02**	**339**	P		**P**	**03 07 15.1**	**+1.3**
538A	baz=158,SNR=14 **Harpers Horsep**	**64.04**	**336**	P		**P**	**03 07 14.6**	**+0.6**
147A	baz=155 **Livingston**	**64.08**	**343**	P		**P**	**03 07 13.9**	**-0.3**
832A	baz=162 **Faith Ranch, C**	**64.09**	**331**	P		**P**	**03 07 15.5**	**+1.1**
LRAL	baz=151,SNR=45 **Lakeview Retre**	**64.11**	**344**	*e*P		**P**	**03 07 13.7**	**-0.6**
244A	comp=Z,83nm,1.5s **Avery Jackson**	**64.15**	**341**	P		**P**	**03

baz=159
534A **Blanco** 65.00 333 P P 03 07 20.5 +0.2
baz=152,SNR=14
338A **Crockett** 65.00 336 P P 03 07 21.5 +1.3
baz=156,SNR=9.3
436A **Wall Ranch, Ga** 65.02 335 P P 03 07 21.3 +1.0
baz=154
KMSC **Kings Mountain** 65.03 350 P P 03 07 20.1 -0.3
baz=169,SNR=12
KMSC **Kings Mountain** 65.03 350 eP P 03 07 20.0 -0.3
comp=Z,21nm,0.9s
KMSC e 03 08 05.2
240A **Hunter Patters** 65.10 338 P P 03 07 21.9 +1.1
baz=157,SNR=10
Z45A **Winona** 65.12 342 P P 03 07 21.5 +0.6
baz=161,SNR=5.8
Y47A **UCPARC, Winfie** 65.14 344 P P 03 07 20.8 -0.3
baz=163,SNR=24
NATX **Nacogdoches** 65.15 337 P P 03 07 22.2 +1.2
baz=156,SNR=9.0
NATX **Nacogdoches** 65.15 337 eP P 03 07 22.3 +1.2
comp=Z,102nm,0.9s
NATX e 03 08 06.6
337A **Centerville** 65.17 336 P P 03 07 22.5 +1.2
baz=155
Z44A **Pea Ridge, Bel** 65.23 341 P P 03 07 22.2 +0.6
baz=160,SNR=10
SLBS **Sierra La Lagu** 65.25 320 eP P 03 07 24.1 +2.0
comp=Z,47nm,0.8s
533A **Kerrville** 65.27 332 P P 03 07 22.8 +0.8
baz=152,SNR=40
239A **Gary** 65.32 337 P P 03 07 23.3 +1.1
baz=156,SNR=7.0
435B **Jarrell** 65.33 334 P P 03 07 23.0 +0.7
baz=153,SNR=7.2
141A **Papa Simpson,** 65.34 339 P P 03 07 23.3 +0.9
baz=158,SNR=12
Y46A **Houston** 65.38 343 P P 03 07 22.2 -0.4
baz=162,SNR=21
Z43A **Armstrong Fami** 65.40 340 P P 03 07 23.5 +0.8
baz=160
238A **Jacksonville** 65.53 337 P P 03 07 24.7 +1.1
baz=156,SNR=8.9
Y45A **Yeager Farm, C** 65.54 342 P P 03 07 24.0 +0.4
baz=161,SNR=15
336A **Riesel** 65.59 335 P P 03 07 24.8 +0.8
baz=154,SNR=29
HPIG 65.59 325 eP P 03 07 25.1 +0.8
comp=Z,38nm,0.9s
140A **Cam and Jess,** 65.59 338 P P 03 07 25.0 +1.1
baz=157
434A **Burnet** 65.62 333 P P 03 07 24.5 +0.3
baz=153,SNR=34
Z42A **Norrel Spur, H** 65.67 340 P P 03 07 24.7 +0.2
baz=159,SNR=5.5
335A **Moody** 65.71 334 P P 03 07 25.3 +0.6
baz=154,SNR=20
237A **Washetta, Mont** 65.77 336 P P 03 07 26.2 +1.1
baz=155,SNR=12
LPIG **La Paz** 65.78 320 P P 03 07 26.0 +0.7
comp=Z,25nm,0.3s,baz=208,slow=4.0,SNR=4.0
Y44A **Strider, Charl** 65.81 342 P P 03 07 25.8 +0.5
baz=160
433A **Art** 65.89 333 P P 03 07 26.5 +0.5
baz=152,SNR=81
CPCT **Cooper Cave** 65.90 347 eP P 03 07 25.4 -0.5
comp=Z,25nm,0.9s
139A **Bunkhouse Ranc** 65.90 338 P P 03 07 26.6 +0.7
baz=157
Z41A **Richland Creek** 65.92 339 P P 03 07 26.9 +0.9
baz=158,SNR=12
JCT **Junction City** 65.94 332 P P 03 07 27.1 +0.9
baz=152,SNR=35
JCT **Junction City** 65.94 332 eP P 03 07 27.2 +0.9
JCT pmax pmax
comp=Z,78nm,0.7s
JCT **Junction City** 65.94 332 eP P 03 07 27.2 +0.9
comp=Z,78nm,0.7s
TKL **Tuckaleechee C** 65.95 348 eP P 03 07 25.5 -0.7
TKL pmax pmax
comp=Z,76nm,1.2s
TKL **Tuckaleechee C** 65.95 348 eP P 03 07 25.5 -0.7
comp=Z,76nm,1.2s
SWET **Sewanee** 65.96 346 eP P 03 07 25.9 -0.4
comp=Z,19nm,0.8s
Y43A **Makayla and Ka** 65.97 341 P P 03 07 27.2 +0.8
baz=160
X45A **UM Field Stati** 66.03 342 P P 03 07 26.0 -0.7
baz=161,SNR=13
334A **Lometa** 66.07 334 P P 03 07 27.5 +0.5
baz=153,SNR=39
Z40A **Long Farm, Mag** 66.11 339 P P 03 07 28.2 +0.9
baz=158,SNR=8.7
138A **Matatall Enter** 66.11 337 P P 03 07 28.4 +1.1
baz=156,SNR=9.2
OXF **Oxford** 66.12 343 eP P 03 07 26.5 -0.8
OXF pmax pmax
comp=Z,156nm,1.4s
OXF **Oxford** 66.12 343 eP P 03 07 26.5 -0.8
comp=Z,156nm,1.4s
Y42A **Garnett, Star** 66.15 340 P P 03 07 28.0 +0.5
baz=159,SNR=8.6
CCAR **Cane Creek** 66.22 340 eP P 03 07 28.9 +0.9
comp=Z,91nm,1.0s
137A **Heron Place, G** 66.29 336 P P 03 07 29.7 +1.3
baz=155,SNR=14
X44A **Crenshaw** 66.30 342 P P 03 07 28.3 -0.1
baz=161,SNR=7.4
Z39A **Irene McRaven,** 66.34 338 P P 03 07 29.6 +0.8
baz=157,SNR=5.7
333A **Richland Sprin** 66.35 333 P P 03 07 29.4 +0.5
baz=152,SNR=74
WHTX **Lake Whitney,** 66.36 335 P P 03 07 29.4 +0.5
baz=154,SNR=10
WHTX **Lake Whitney,** 66.36 335 eP P 03 07 29.4 +0.5
comp=Z,65nm,0.8s
WLAR **White Oak Lake** 66.41 339 eP P 03 07 30.4 +1.3
comp=Z,201nm,1.1s
Y41A **Eaglette Beard** 66.44 340 P P 03 07 30.1 +0.8
baz=158,SNR=14
136A **Ennis** 66.45 336 P P 03 07 30.1 +0.7
baz=155,SNR=6.1
X43A **Marvell** 66.52 341 P P 03 07 30.7 +0.8
baz=160,SNR=18
Z38A **Mt. Pleasant** 66.62 337 P P 03 07 31.3 +0.8
baz=156
234A **Clairette** 66.62 334 P P 03 07 31.2 +0.6
baz=153,SNR=40
TX31 **Lajitas Ar. Si** 66.63 328 eP P 03 07 31.6 +0.8
TXAR **Lajitas Array** 66.63 328 P P 03 07 31.3 +0.5
comp=Z,12nm,0.6s,baz=153,slow=8.4,SNR=207
TXAR pP pP 03 08 01.2 -0.3
comp=Z,3.4nm,0.6s,baz=145,slow=9.1,SNR=2.8
TXAR sP sP 03 08 15.3 +0.3
comp=Z,19nm,0.8s,baz=156,slow=7.0,SNR=9.0
TXAR PKP2ab 03 36 07.7
comp=Z,0.6nm,0.9s,baz=153,slow=0.3,SNR=6.9
TXAR **Lajitas Array** 66.63 328 P P 03 07 31.3 +0.5
TXAR *PP pP 03 08 01.2 -0.3
TXAR pmax pmax
comp=Z,12nm,0.6s
TXAR pmax pmax
comp=Z,3.0nm,0.6s
TXAR pmax pmax
comp=Z,19nm,0.8s
W45A **Hickory Valley** 66.67 343 P P 03 07 30.4 -0.4
baz=162
Y40A **Okolona** 66.76 339 P P 03 07 31.7 +0.3
baz=158,SNR=9.0
TZTN **Tazewell** 66.78 348 eP P 03 07 30.8 -0.7
comp=Z,80nm,1.4s
Z37A **Pogue Cattle C** 66.79 337 P P 03 07 32.3 +0.7
baz=156,SNR=5.2
W44A **Shelby Farms P** 66.82 342 P P 03 07 31.5 -0.2
baz=161
135A **Vickery Place,** 66.85 335 P P 03 07 32.3 +0.3
baz=154,SNR=6.4
233A **Rising Star** 66.93 333 P P 03 07 33.2 +0.6
baz=153,SNR=50
BLA **Blacksburg** 66.93 351 eP P 03 07 32.6 +0.1
BLA pmax pmax
comp=Z,46nm,1.1s
BLA **Blacksburg** 66.93 351 eP P 03 07 32.6 +0.1
comp=Z,46nm,1.1s
Y39A **Lockesburg** 66.95 338 P P 03 07 33.0 +0.4
baz=157,SNR=9.1
X41A **Kaden, Bauxite** 66.98 340 P P 03 07 32.8 +0.1
baz=158
X40A **Basin Creek Fa** 67.07 340 P P 03 07 33.3 0.0
baz=158,SNR=5.5
134A **White-Moore Ra** 67.11 334 P P 03 07 34.0 +0.3
baz=153,SNR=22
Z36A **Blue Ridge** 67.14 336 P P 03 07 34.5 +0.7
baz=155,SNR=47
Y38A **Idabel** 67.15 338 P P 03 07 34.3 +0.4
baz=156,SNR=8.9
V45A **Humboldt** 67.17 343 P P 03 07 33.3 -0.6
baz=162
UALR **University of** 67.19 340 eP P 03 07 34.1 +0.1
comp=Z,30nm,1.1s
WVT **Waverly** 67.26 344 eP P 03 07 33.9 -0.6
WVT pmax pmax
comp=Z,73nm,0.8s
WVT **Waverly** 67.26 344 eP P 03 07 33.9 -0.6
comp=Z,73nm,0.8s
MIAR **Mount Ida** 67.35 339 P P 03 07 35.2 +0.1
baz=158,SNR=33
MIAR **Mount Ida** 67.35 339 eP P 03 07 35.3 +0.1
MIAR pmax pmax
comp=Z,240nm,1.9s
MIAR **Mount Ida** 67.35 339 eP P 03 07 35.2 +0.1
comp=Z,240nm,1.9s
133A **Hamilton Ranch** 67.46 334 P P 03 07 36.3 +0.4
baz=153,SNR=36
Z35A **Perchaven, San** 67.48 335 P P 03 07 36.6 +0.6
baz=154,SNR=25
X39A **Fountain Ranch** 67.49 339 P P 03 07 36.5 +0.5
baz=157,SNR=39
Y37A **Hugo** 67.50 337 P P 03 07 36.7 +0.6
baz=156,SNR=18
W41A **Tony Mavity, V** 67.53 340 P P 03 07 36.2 0.0
baz=159,SNR=28
W41B **Gary Mavity, V** 67.53 340 P P 03 07 36.2 0.0
baz=159,SNR=28
CBN **Corbin Frederi** 67.56 354 eP P 03 07 37.2 +0.9
comp=Z,103nm,1.4s
V43A **Jonesboro** 67.62 342 P P 03 07 37.0 +0.2
baz=160
X301 **Greenbrier Sit** 67.63 340 eP P 03 07 37.1 +0.2
comp=Z,420nm,2.0s
WHAR **Wooly Hollow** 67.65 340 eP P 03 07 37.1 +0.1
comp=Z,66nm,1.0s
Y36A **Durant** 67.65 337 P P 03 07 37.3 +0.2
baz=155,SNR=7.4
X201 **Greenbrier Sit** 67.67 340 eP P 03 07 37.4 +0.2
comp=Z,149nm,1.4s
GLAT **Glass** 67.75 343 eP P 03 07 39.8 +2.2
ABTX **Abilene, Hawle** 67.76 333 P P 03 07 38.2 +0.4
baz=152,SNR=33
ABTX **Abilene, Hawle** 67.76 333 eP P 03 07 38.4 +0.6
comp=Z,477nm,1.9s
ABTX e 03 08 22.5
Z34A **Collier Ranch,** 67.76 335 P P 03 07 38.2 +0.4
baz=154,SNR=27
W40A **Ferguson Farm,** 67.79 340 P P 03 07 38.4 +0.5
baz=158,SNR=13
X38A **Whitesboro** 67.86 338 P P 03 07 39.1 +0.7
baz=156,SNR=26
V42A **Cord** 67.87 341 P P 03 07 37.8 -0.6
baz=160,SNR=18
Y35A **Marietta** 67.92 336 P P 03 07 39.3 +0.6
baz=154,SNR=23
SBA **Scott Base** 67.97 191 eP P 03 07 39.8 +1.3
SBA pmax pmax
comp=Z,100nm,1.8s
SBA **Scott Base** 67.97 191 eP P 03 07 39.8 +1.3
comp=Z,100nm,1.8s
X37A **Clayton** 67.97 338 P P 03 07 39.3 +0.3
baz=156,SNR=34
Z33A **Whitaker Ranch** 68.00 334 P P 03 07 39.9 +0.6
baz=153,SNR=51
W39A **Magazine** 68.01 339 P P 03 07 40.0 +0.7
baz=158,SNR=40
V41A **Mountainview** 68.07 341 P P 03 07 39.6 -0.1
baz=159,SNR=34
W38A **Poteau** 68.13 338 P P 03 07 40.6 +0.6
baz=157,SNR=31
U43A **Rector** 68.14 342 P P 03 07 39.8 -0.2
baz=161
Y34A **Reagan Ranch,** 68.23 335 P P 03 07 40.9 +0.2
baz=154,SNR=20
PARMO **Parma** 68.24 343 eP P 03 07 41.1 +0.5
X36A **Centrahoma** 68.28 337 P P 03 07 40.8 -0.2
baz=155,SNR=40
V40A **Witts Springs** 68.29 340 P P 03 07 40.9 -0.2
baz=158,SNR=22
U42A **Revenden** 68.34 342 P P 03 07 41.1 -0.2
baz=160,SNR=51
X35A **Drake** 68.35 336 P P 03 07 41.2 -0.2
baz=155,SNR=25
W37B **Quinton** 68.49 338 P P 03 07 42.4 +0.1
baz=156,SNR=71
U41A **Viola** 68.53 341 P P 03 07 42.2 -0.3
baz=159,SNR=29
PBMO **Poplar Bluff** 68.53 342 eP P 03 07 42.4 -0.1
comp=Z,105nm,1.0s
V39A **Pettigrew** 68.56 339 P P 03 07 43.0 +0.2
baz=158,SNR=51
Y33A **Hilltop Ranch,** 68.59 335 P P 03 07 43.3 +0.3
baz=153,SNR=10
SDMD **Soldier's Deli** 68.70 354 eP P 03 07 44.4 +1.0
comp=Z,25nm,1.2s
W36A **Wetumka** 68.76 337 P P 03 07 43.5 -0.4
baz=155,SNR=6.0
U40A **Yellville** 68.81 340 P P 03 07 44.2 0.0
baz=158,SNR=36
V38A **Canehill** 68.82 339 P P 03 07 44.3 0.0
baz=157,SNR=70
X34A **Smith Ranch, M** 68.83 336 P P 03 07 45.0 +0.6
baz=154,SNR=27
S45A **Carrier Mills** 68.92 344 P P 03 07 44.3 -0.5
baz=162,SNR=11
WCI **Wyandotte Cave** 68.94 346 eP P 03 07 43.9 -1.1
WCI pmax pmax
comp=Z,39nm,1.0s
WCI **Wyandotte Cave** 68.94 346 eP P 03 07 43.9 -1.1
comp=Z,39nm,1.0s
USIN **University of** 68.98 345 eP P 03 07 44.7 -0.5
comp=Z,235nm,1.6s
VNDA **Vanda** 68.99 191 P P 03 07 45.9 +0.9
comp=Z,6.0nm,0.8s,baz=129,slow=5.4,SNR=33
VNDA **Vanda** 68.99 191 eP P 03 07 45.8 +0.9
VNDA pmax pmax
comp=Z,27nm,1.2s
VNDA **Vanda** 68.99 191 eP P 03 07 45.8 +0.9
comp=Z,27nm,1.2s
W35A **Tecumseh** 68.99 337 P P 03 07 44.8 -0.5
baz=155,SNR=13
U39A **Green Forest** 69.02 340 P P 03 07 45.6 +0.1
baz=158,SNR=32
X33A **Lawton** 69.02 335 P P 03 07 45.7 +0.1
baz=153
HHAR **Hobbs** 69.06 339 eP P 03 07 45.8 0.0
comp=Z,273nm,1.8s
V37A **Hulbert** 69.08 338 P P 03 07 45.9 0.0
baz=156,SNR=37
S44A **Carbondale** 69.09 344 P P 03 07 45.5 -0.4
baz=162,SNR=20
SIUC **Southern Illin** 69.11 344 eP P 03 07 45.7 -0.3
comp=Z,73nm,0.8s
PSUB **Penn St. - Bra** 69.11 355 eP P 03 07 46.5 +0.5
comp=Z,31nm,1.0s
T41A **Mountain View** 69.14 341 P P 03 07 46.3 0.0
baz=160,SNR=59
S43A **Fulton Ridge,** 69.18 343 P P 03 07 46.3 -0.2
baz=161,SNR=45
X32A **Elmer** 69.21 334 P P 03 07 46.8 0.0
baz=153,SNR=12
MVL **Millersville** 69.25 355 eP P 03 07 47.6 +0.8
comp=Z,17nm,0.8s
V36A **Jenks** 69.25 338 P P 03 07 46.9 0.0
baz=156,SNR=52
WMOK **Wichita Mounta** 69.30 335 P P 03 07 47.0 -0.4
baz=153,SNR=24
WMOK **Wichita Mounta** 69.30 335 eP P 03 07 46.2 -1.2
WMOK pmax pmax
comp=Z,77nm,1.6s
WMOK **Wichita Mounta** 69.30 335 eP P 03 07 46.2 -1.2
comp=Z,77nm,1.6s
TUL1 **Leonard** 69.31 338 P P 03 07 47.2 -0.2
baz=156,SNR=44
TUL1 **Leonard** 69.31 338 eP P 03 07 47.3 -0.1
comp=Z,100nm,0.9s
TUL1 e 03 08 32.2
U38A **Gravette** 69.35 339 P P 03 07 47.5 0.0
baz=157,SNR=30
W34A **Bridge Creek,** 69.38 336 P P 03 07 47.7 -0.1
baz=154,SNR=8.1
W34A **Bridge Creek,** 69.38 336 eP P 03 07 47.9 +0.1
comp=Z,44nm,0.9s
W34A ePcP PcP 03 08 11.8 +1.4
MNTX **Cornudas Mount** 69.42 328 P P 03 07 47.7 -0.4
baz=147,SNR=46
MNTX **Cornudas Mount** 69.42 328 eP P 03 07 47.7 -0.4
comp=Z,21nm,0.8s
T40A **Mansfield** 69.45 341 P P 03 07 48.0 -0.2
baz=159,SNR=17
V35A **Meyer Ranch, C** 69.53 337 P P 03 07 48.5 -0.2
baz=155,SNR=9.2
SYO **Syowa Base** 69.54 159 iP P 03 07 46.8 -1.6
U37A **Salina** 69.55 339 P P 03 07 48.8 +0.1
baz=156,SNR=61
W33A **Caddo, Fort Co** 69.56 335 P P 03 07 49.7 +0.8
baz=154,SNR=31
R44A **Waltonville** 69.58 344 P P 03 07 48.2 -0.7
baz=162,SNR=15
T39A **Clever** 69.58 340 P P 03 07 48.9 -0.1
baz=158,SNR=37
S41A **Jillco Farms,** 69.64 342 P P 03 07 49.3 0.0
baz=160,SNR=60
O56A **Blue Knob Stat** 69.72 353 P P 03 07 50.3 +0.5
baz=172,SNR=13
U36A **Oologah** 69.73 338 P P 03 07 49.8 -0.1
baz=156,SNR=7.5
LUPA **Lehigh Univers** 69.77 356 eP P 03 07 51.0 +0.9
comp=Z,24nm,0.8s
BRNJ **Basking Ridge** 69.81 356 eP P 03 07 51.1 +0.9
comp=Z,50nm,0.8s
OLIL **Olney** 69.81 345 eP P 03 07 49.4 -0.9
comp=Z,70nm,1.1s
W32A **Sentinel** 69.82 335 P P 03 07 50.9 +0.4
baz=153,SNR=68
V34A **Guthrie** 69.83 336 P P 03 07 50.6 0.0
baz=154,SNR=38
V34A **Guthrie** 69.83 336 eP P 03 07 50.6 0.0
comp=Z,82nm,0.8s
V34A e 03 08 34.8
S40A **Lebanon** 69.86 341 P P 03 07 50.8 +0.1
baz=159,SNR=33
T38A **Diamond** 69.87 339 P P 03 07 50.9 +0.2
baz=157,SNR=76
CPNY **Central Park** 69.88 357 eP P 03 07 51.5 +0.8
comp=Z,49nm,1.1s
BLO **Bloomington** 69.89 346 eP P 03 07 50.1 -0.7
BLO pmax pmax
comp=Z,180nm,1.8s
BLO **Bloomington** 69.89 346 eP P 03 07 50.1 -0.7
comp=Z,182nm,1.8s
HSIG 70.00 322 eP P 03 07 52.9 +1.2
comp=Z,66nm,1.1s
SSPA **Standing Stone** 70.02 354 eP P 03 07 51.8 +0.3
comp=Z,109nm,1.5s
U35A **Pawnee** 70.05 337 P P 03 07 52.1 +0.3
baz=155,SNR=8.3
V33A **Lossen Ranch,** 70.09 336 P P 03 07 52.4 +0.2
baz=154,SNR=31
PAL **Palisades** 70.09 357 eP P 03 07 52.7 +0.7
PAL pmax pmax
comp=Z,85nm,1.6s
PAL **Palisades** 70.09 357 eP P 03 07 52.7 +0.7
comp=Z,85nm,1.6s
N59A **State Game Lan** 70.12 355 P P 03 07 52.9 +0.7
baz=174,SNR=26
T37A **Cheneyville 18** 70.14 339 P P 03 07 52.3 -0.1
baz=157,SNR=51
S39A **Bolivar** 70.19 340 P P 03 07 52.8 +0.2
baz=158,SNR=58
Q44A **Meyer Farm, Va** 70.19 344 P P 03 07 51.7 -0.9
baz=162,SNR=7.1
MSTX **Muleshoe** 70.20 331 P P 03 07 53.3 +0.3
baz=150,SNR=60
MSTX **Muleshoe** 70.20 331 eP P 03 07 52.8 -0.2
comp=Z,68nm,0.7s
ODNJ **Ogdensburg** 70.21 356 eP P 03 07 53.4 +0.7
comp=Z,24nm,0.9s
TBI **Tubuai** 70.21 254 eS S 03 16 55.6 +0.6
comp=Z,305nm,29.2s
TBI **Tubuai** 70.21 254 eLR LR 03 29 30.2
comp=Z,286nm,36.5s
TBI **Tubuai** 70.21 254 eT T 04 23 18.0
comp=Z,12nm,0.2s
ACSO **Alum Creek Sta** 70.28 349 eP P 03 07 52.7 -0.5
comp=Z,52nm,0.8s
ACSO e 03 08 38.4
V32A **Arapaho** 70.28 335 P P 03 07 53.8 +0.5
baz=153,SNR=8.5
S38A **Stockton** 70.30 340 P P 03 07 53.2 -0.1
baz=158,SNR=57
YLE **Yale** 70.36 358 eP P 03 07 54.6 +1.0
comp=Z,216nm,1.5s
U34A **Anderson Ranch** 70.38 337 P P 03 07 53.7 -0.2
baz=154,SNR=18
U34A **Anderson Ranch** 70.38 337 eP P 03 07 53.8 -0.2
comp=Z,45nm,0.8s
U34A e 03 08 15.6
Q43A **New Douglas** 70.39 344 P P 03 07 53.5 -0.3
baz=162,SNR=18
T36A **Boggs Farm, Ca** 70.39 338 P P 03 07 54.0 +0.1
baz=156,SNR=20
R40A **Maddies Statio** 70.44 342 P P 03 07 54.3 +0.1
baz=159,SNR=69
T35A **Sooner Cattle** 70.47 338 P P 03 07 54.5 +0.1
baz=155,SNR=18
AMTX **Amarillo** 70.55 333 P P 03 07 55.3 +0.2
baz=151
AMTX **Amarillo** 70.55 333 eP P 03 07 55.5 +0.4
comp=Z,387nm,2.0s
Q42A **Golden Eagle** 70.57 343 P P 03 07 54.7 -0.2
baz=161,SNR=28
N54A **Moraine State** 70.57 352 P P 03 07 54.9 0.0
baz=170,SNR=11
U33A **Lingo Farm, Me** 70.58 336 P P 03 07 54.7 -0.4
baz=154,SNR=5.5
R39A **Chumby, Stover** 70.68 341 P P 03 07 55.6 0.0
baz=159,SNR=41
S37A **Fort Scott** 70.70 339 P P 03 07 55.7 -0.1
baz=157,SNR=47
T34A **McClaskey Farm** 70.79 337 P P 03 07 56.7 +0.4
baz=155,SNR=22
R38A **Fenwick Farm,** 70.81 340 P P 03 07 56.3 -0.2
baz=158,SNR=30
U32A **Winter Ranch,** 70.85 336 P P 03 07 57.2 +0.5
baz=153,SNR=28
S36A **Lake Cedric, C** 70.91 339 P P 03 07 56.9 -0.1
baz=156,SNR=15
BRYW **Bryant College** 70.93 359 eP P 03 07 57.8 +0.8
comp=Z,48nm,0.8s
Q40A **Laux Farm, Aux** 71.05 342 P P 03 07 57.7 -0.1
baz=160,SNR=24
M54A **Oil Creek Stat** 71.07 352 P P 03 07 57.8 -0.2
baz=171,SNR=11
S35A **Otter Creek Ra** 71.10 338 P P 03 07 58.2 0.0
baz=156,SNR=27
P42A **Winchester** 71.16 343 P P 03 07 57.9 -0.6
baz=161,SNR=16
SFIN **Lafayette** 71.17 346 P P 03 07 57.3 -1.3
baz=164,SNR=12
SFIN **Lafayette** 71.17 346 eP P 03 07 57.5 -1.1
comp=Z,206nm,1.8s
T33A **Patterson Ranc** 71.21 336 P P 03 07 59.5 +0.7
baz=154,SNR=11
R37A **Teagarden Farm** 71.21 340 P P 03 07 58.7 -0.1
baz=157,SNR=12
121A **Cookes Peak, D** 71.24 327 P P 03 08 00.8 +1.4
baz=146,SNR=33
121A **Cookes Peak, D** 71.24 327 eP P 03 08 00.6 +1.2
comp=Z,125nm,1.4s
ALLY **Alegheny Colle** 71.27 352 eP P 03 07 59.0 -0.1
comp=Z,29nm,0.9s
QUA2 **Belchertown** 71.31 358 eP P 03 07 59.7 +0.4
comp=Z,23nm,1.1s
MEH **Mehetia** 71.32 260 eT T 04 24 41.5
comp=Z,22nm,0.2s
Q39A **Willow Grove F** 71.34 341 P P 03 07 59.3 -0.3
baz=159,SNR=27
S34A **Willow Spring** 71.38 338 P P 03 07 59.9 0.0
baz=155,SNR=16
WES **Weston** 71.39 359 eP P 03 08 00.6 +0.8
WES pmax pmax
comp=Z,55nm,1.2s
WES **Weston** 71.39 359 eP P 03 08 00.6 +0.8
comp=Z,54nm,1.2s
BINY **Binghamton** 71.41 355 eP P 03 08 00.5 +0.5
comp=Z,94nm,1.5s

P41A **Barry, Barry** 71.42 343 P P 03 07 59.5 -0.5
baz=160,SNR=10
R36A **Gordon, Harris** 71.43 339 P P 03 07 59.8 -0.3
baz=156,SNR=9.7
Q38A **Cooks Store, C** 71.45 341 P P 03 08 00.3 +0.1
baz=158,SNR=50
HRV **Adam Dziewonsk** 71.52 359 eP P 03 08 01.2 +0.7
HRV pmax pmax
comp=Z,22nm,0.8s
HRV **Adam Dziewonsk** 71.52 359 eP P 03 08 01.2 +0.7
comp=Z,22nm,0.8s
T32A **Huddler Ranch,** 71.53 336 P P 03 08 01.7 +0.8
baz=153,SNR=26
P40A **Paris** 71.54 342 P P 03 08 00.9 +0.1
baz=160,SNR=52
S33A **Kaszmaul Farm,** 71.58 337 P P 03 08 01.5 +0.4
baz=154,SNR=8.2
Q37A **Longview Farm,** 71.61 340 P P 03 08 00.9 -0.4
baz=157,SNR=6.6
LIC **Lamto** 71.64 72 eP P 03 08 01.7 -0.3
comp=Z,78nm,0.8s
R35A **Emporia Munici** 71.65 339 P P 03 08 01.9 +0.4
baz=156
O42A **Bath** 71.67 344 P P 03 08 01.4 -0.2
baz=161,SNR=6.1
P39B **Salisbury** 71.70 342 P P 03 08 01.4 -0.3
baz=159,SNR=22
ERPA **Erie** 71.71 352 eP P 03 08 02.0 +0.3
comp=Z,304nm,2.0s
O41A **Passleys Farm,** 71.79 343 P P 03 08 01.6 -0.7
baz=161,SNR=21
TRY **Troy** 71.81 357 eP P 03 08 03.1 +0.8
comp=Z,55nm,0.8s
HDIL **Hopedale** 71.83 345 P P 03 08 02.0 -0.5
baz=162,SNR=11
HDIL **Hopedale** 71.83 345 eP P 03 08 02.0 -0.5
comp=Z,66nm,0.8s
HDIL e 03 08 47.1
TIC **Toumodi** 71.88 71 eP P 03 08 03.1 -0.3
KIC **Kosan Boka** 71.95 72 eP P 03 08 03.7 -0.2
comp=Z,289nm,1.4s
R34A **Isabella, Hill** 71.97 338 P P 03 08 03.8 +0.4
baz=155,SNR=23
Q36A **Arnold C. Orve** 72.00 339 P P 03 08 03.4 -0.1
baz=157
S32A **Newby Ranch, P** 72.00 336 P P 03 08 04.4 +0.8
baz=154,SNR=5.7
DBIC **Dimbokro** 72.03 71 P P 03 08 04.2 -0.1
comp=Z,36nm,0.8s,baz=221,slow=3.7,SNR=39
DBIC pP pP 03 08 36.6 +1.3
comp=Z,42nm,0.8s,baz=210,slow=7.3,SNR=7.1
DBIC LR LR 03 38 06.7
comp=Z,241nm,18.9s,baz=228,slow=34
DBIC **Dimbokro** 72.03 71 eP P 03 08 04.2 -0.1
DBIC pmax pmax
comp=Z,49nm,0.8s
DBIC **Dimbokro** 72.03 71 eP P 03 08 04.2 -0.1
comp=Z,49nm,0.8s
DBIC pP pP 03 08 36.6 +1.3
BNM **Barren Site** 72.04 329 eP P 03 08 05.5 +1.3
P38A **Dawn** 72.04 341 P P 03 08 03.6 -0.2
baz=158,SNR=18
O40A **La Belle** 72.05 343 P P 03 08 03.7 -0.1
baz=160,SNR=15
Q35A **Mercer Eighty,** 72.08 339 P P 03 08 03.7 -0.3
baz=156,SNR=6.6
MMNY **Mt. Morris Dam** 72.10 354 eP P 03 08 04.2 +0.2
Y22D **IRIS PASSCAL I** 72.11 328 P P 03 08 06.1 +1.6
baz=146
LPM **Los Pinos Moun** 72.17 329 eP P 03 08 06.2 +1.3
R33A **Olander Ranch,** 72.22 337 P P 03 08 05.1 +0.2
baz=154,SNR=17
P37A **Lathrop** 72.24 340 P P 03 08 04.3 -0.6
baz=158,SNR=19
O39A **Kirksville** 72.36 342 P P 03 08 05.4 -0.2
baz=159,SNR=11
TVO **Taravao** 72.37 259 eT T 04 26 06.4
comp=Z,1.3nm,0.3s
AAM **Ann Arbor** 72.40 349 eP P 03 08 05.9 +0.1
AAM pmax pmax
comp=Z,114nm,1.4s
AAM **Ann Arbor** 72.40 349 eP P 03 08 05.9 +0.1
comp=Z,114nm,1.4s
Q34A **Chapman** 72.43 338 P P 03 08 06.2 0.0
baz=155,SNR=6.9
ACCN **Adirondack Com** 72.46 357 eP P 03 08 06.7 +0.6
comp=Z,126nm,1.7s
FFD **Franklin Falls** 72.48 359 eP P 03 08 07.8 +1.5
comp=Z,258nm,1.8s
LAZ **Ladron** 72.48 328 eP P 03 08 08.3 +1.6
KSU1 **Kansas State U** 72.49 339 P P 03 08 06.2 -0.2
baz=156,SNR=5.2
KSU1 **Kansas State U** 72.49 339 eP P 03 08 06.7 +0.2
comp=Z,37nm,0.9s
O38A **Galt** 72.49 341 P P 03 08 06.1 -0.3
baz=158
P36A **Good Intent, A** 72.53 340 P P 03 08 06.1 -0.5
baz=157,SNR=30
TUC **Tucson** 72.53 325 P P 03 08 08.0 +1.0
baz=143
TUC **Tucson** 72.53 325 eP P 03 08 08.0 +1.0
TUC pmax pmax
comp=Z,69nm,1.5s
TUC **Tucson** 72.53 325 eP P 03 08 08.0 +1.0
comp=Z,69nm,1.5s
TIAR **Tiarei** 72.55 259 eT T 04 26 21.6
comp=Z,6.4nm,0.2s
R32A **Long Quarter,** 72.57 337 P P 03 08 07.4 +0.4
baz=154,SNR=20
ANMO **Albuquerque** 72.63 329 P P 03 08 08.9 +1.2
baz=147
ANMO **Albuquerque** 72.63 329 c iP P 03 08 08.8 +1.2
ANMO pmax pmax
comp=Z,141nm,2.5s
ANMO **Albuquerque** 72.63 329 eP P 03 08 08.9 +1.2
comp=Z,91nm,1.4s
P35A **Duane Minner,** 72.69 339 P P 03 08 07.3 -0.3
baz=156,SNR=20
O37A **Wolven Farm, M** 72.72 341 P P 03 08 07.5 -0.3
baz=158,SNR=7.6
HNH **Hanover** 72.73 358 eP P 03 08 08.8 +1.1
comp=Z,37nm,0.8s
PPT2 **Papeete2** 72.74 259 eS S 03 17 24.4 0.0
comp=Z,365nm,26.8s
PPT2 **Papeete2** 72.74 259 eLR LR 03 30 34.4
comp=Z,231nm,27.5s
PPT **Papeete** 72.75 259 P P 03 08 10.2 +1.6
comp=Z,44nm,0.8s,baz=80,slow=5.7,SNR=5.3
Q33A **Connelly Farm,** 72.79 338 P P 03 08 08.6 +0.3
baz=155,SNR=8.5
O36A **Bolckow** 72.92 340 P P 03 08 08.4 -0.6
baz=157,SNR=11
N39A **Derby Farms, D** 72.93 342 P P 03 08 08.5 -0.5
baz=159,SNR=9.1
P34A **Walnut Farm, R** 72.96 339 P P 03 08 09.4 +0.1
baz=156,SNR=32
Q32A **Meitler Ranch,** 73.03 337 P P 03 08 10.1 +0.4
baz=154,SNR=23
N38A **Joes South For** 73.05 342 P P 03 08 09.3 -0.4
baz=159
MDV **Middlebury** 73.05 358 eP P 03 08 09.8 +0.2
NCB **Newcomb** 73.07 357 eP P 03 08 10.3 +0.5
comp=Z,0.7nm,1.8s
P33A **Williams Farm,** 73.14 338 P P 03 08 10.5 +0.2
baz=155
LBNH **Lisbon** 73.25 359 eP P 03 08 12.1 +1.2
LBNH pmax pmax
comp=Z,26nm,1.0s
LBNH **Lisbon** 73.25 359 eP P 03 08 12.1 +1.2
comp=Z,26nm,0.9s
CBKS **Cedar Bluff** 73.28 336 P P 03 08 11.8 +0.6
baz=153,SNR=17
CBKS **Cedar Bluff** 73.28 336 eP P 03 08 11.9 +0.7
CBKS pmax pmax
comp=Z,95nm,0.7s
CBKS **Cedar Bluff** 73.28 336 eP P 03 08 11.9 +0.7
comp=Z,95nm,0.7s
N37A **Lee Faris, Mou** 73.28 341 P P 03 08 11.0 -0.2
baz=158,SNR=10
214A **Organ Pipe Nat** 73.30 323 P P 03 08 13.1 +1.6
baz=142,SNR=27
214A **Organ Pipe Nat** 73.30 323 eP P 03 08 12.9 +1.5
comp=Z,895nm,1.4s
214A e 03 08 57.4
O35A **Humboldt** 73.33 340 P P 03 08 10.7 -0.7
baz=156
M39A **Webster** 73.40 343 P P 03 08 11.3 -0.5
baz=160
O34A **Beatrice** 73.50 339 P P 03 08 12.4 0.0
baz=156,SNR=7.6
L41A **Preston** 73.55 344 P P 03 08 12.0 -0.6
baz=161,SNR=12
N36A **Muff Farm, Cla** 73.55 340 P P 03 08 12.4 -0.3
baz=157,SNR=14
WVL **Waterville** 73.56 0 eP P 03 08 13.5 +0.9
comp=Z,61nm,1.3s
T25A **Trinidad** 73.61 332 P P 03 08 14.7 +1.4
baz=149,SNR=61
T25A **Trinidad** 73.61 332 eP P 03 08 14.8 +1.4
comp=Z,223nm,1.5s
P32A **Huiting Farm,** 73.61 337 P P 03 08 13.1 0.0
baz=154,SNR=15
M38A **Pleasantville** 73.62 342 P P 03 08 12.7 -0.4
baz=159,SNR=11
O33A **Hebron** 73.69 338 P P 03 08 13.7 +0.2
baz=155,SNR=20
L40A **Anamosa** 73.71 344 P P 03 08 13.5 0.0
baz=161
LONY **Lake Ozonia** 73.73 357 eP P 03 08 13.9 +0.3
comp=Z,49nm,1.3s
LONY e 03 08 59.4
N35A **Tabor** 73.80 340 P P 03 08 13.9 -0.2
baz=157,SNR=15
M37A **Trindle Farm,** 73.84 341 P P 03 08 14.6 +0.2
baz=158,SNR=33
FRNY **Flat Rock** 73.90 357 eP P 03 08 14.9 +0.3
comp=Z,18nm,0.8s
X18A **Snowflake** 73.91 326 eP P 03 08 16.6 +1.5
comp=Z,130nm,1.7s
L39A **Vinton** 73.97 343 P P 03 08 14.9 -0.2
baz=160,SNR=13
K41A **Shullsburg** 74.01 345 P P 03 08 15.0 -0.3
baz=161,SNR=8.2
N34A **Lincoln** 74.04 339 P P 03 08 15.4 -0.1
baz=156,SNR=20
O32A **Brockman Farm,** 74.08 338 P P 03 08 16.2 +0.3
baz=154,SNR=7.6
SCIA **State Center** 74.08 342 eP P 03 08 15.8 0.0
comp=Z,206nm,1.6s
M36A **Felix, Anita** 74.10 341 P P 03 08 15.7 -0.1
baz=157,SNR=11
GGN **Saint George** 74.17 2 eP P 03 08 16.4 +0.3
comp=Z,30nm,0.8s
L38A **Oak Wood Farm,** 74.23 342 P P 03 08 16.3 -0.3
baz=159,SNR=16
SADO **Sadowa** 74.24 353 eP P 03 08 16.2 -0.3
comp=Z,92nm,1.4s
N33A **J Bar K, Exete** 74.24 339 P P 03 08 16.9 +0.2
baz=155
PKME **Peaks-Kenny Pk** 74.26 1 eP P 03 08 17.4 +0.8
comp=Z,135nm,1.8s
W18A **Petrified Fore** 74.28 327 P P 03 08 18.7 +1.5
baz=144,SNR=16
W18A **Petrified Fore** 74.28 327 eP P 03 08 18.8 +1.5
comp=Z,147nm,1.3s
JFWS **Jewell Farm** 74.29 345 eP P 03 08 16.7 -0.2
JFWS pmax pmax
comp=Z,58nm,1.0s
JFWS **Jewell Farm** 74.29 345 eP P 03 08 16.7 -0.2
comp=Z,58nm,1.0s
K40A **Colesburg** 74.29 344 P P 03 08 16.5 -0.4
baz=161,SNR=12
PLVO **Plevna** 74.31 355 eP P 03 08 17.1 +0.1
comp=Z,78nm,1.5s
M35A **Neola** 74.37 340 P P 03 08 17.2 -0.2
baz=157
L37A **Phoenix Point,** 74.43 342 P P 03 08 17.4 -0.3
baz=158,SNR=13
113A **Mohawk Valley,** 74.44 323 eP P 03 08 19.9 +1.8
comp=Z,48nm,1.3s
K39A **Oelwein** 74.48 343 P P 03 08 17.4 -0.6
baz=160,SNR=24
KSCO **Kaye Shedlock'** 74.52 334 P P 03 08 19.7 +1.2
baz=151,SNR=15
KSCO **Kaye Shedlock'** 74.52 334 eP P 03 08 19.7 +1.2
comp=Z,254nm,1.4s
N32A **Stulken Farm,** 74.54 338 P P 03 08 18.8 +0.3
baz=154
X16A **Lo Mia Camp, P** 74.55 325 eP P 03 08 20.4 +1.5
comp=Z,103nm,1.4s
SDCO **Great Sand Dun** 74.57 331 P P 03 08 20.2 +1.1
baz=148,SNR=72
SDCO **Great Sand Dun** 74.57 331 eP P 03 08 20.2 +1.1
comp=Z,49nm,1.0s
K38A **Parkersburg** 74.65 343 P P 03 08 18.6 -0.5
baz=159,SNR=8.0
L36A **Harm Buss Farm** 74.66 341 P P 03 08 19.0 -0.1
baz=158,SNR=11
J41A **Loganville** 74.66 345 P P 03 08 18.7 -0.4
baz=162,SNR=19
M34A **Aspy Farms, Fr** 74.67 340 P P 03 08 19.2 0.0
baz=156,SNR=8.8
N31A **Bailey Ranch,** 74.81 338 P P 03 08 20.8 +0.7
baz=154,SNR=6.6
J40A **Soldiers Grove** 74.86 344 P P 03 08 19.9 -0.3
baz=161,SNR=31
L35A **Bielow Farm, R** 74.92 341 P P 03 08 20.4 -0.1
baz=157,SNR=11
M33A **Taylor Creek F** 74.92 339 P P 03 08 20.1 -0.5
baz=155
Y14A **Wickenburg** 74.95 324 eP P 03 08 22.3 +1.2
comp=Z,867nm,2.0s
LMN **Caledonia Moun** 74.99 4 eP P 03 08 21.4 +0.5
comp=Z,46nm,0.8s
K37A **Belmond** 74.99 342 P P 03 08 20.4 -0.6
baz=159,SNR=7.5
GLMI **Grayling** 75.02 349 eP P 03 08 21.9 +0.8
GLMI ePcP PcP 03 08 33.3 -0.9
L34A **Svendsen Farm,** 75.03 340 P P 03 08 21.4 +0.2
baz=156
J39A **Decorah** 75.03 344 P P 03 08 20.6 -0.6
baz=160,SNR=40
BGNE **Belgrade** 75.07 338 P P 03 08 21.8 +0.3
baz=155
BGNE **Belgrade** 75.07 338 eP P 03 08 22.5 +0.9
comp=Z,148nm,0.9s
K36A **Gilmore City** 75.09 342 P P 03 08 21.6 0.0
baz=158,SNR=12
S22A **4UR Ranch, Cre** 75.14 331 P P 03 08 23.5 +1.2
baz=147,SNR=49
S22A **4UR Ranch, Cre** 75.14 331 eP P 03 08 23.6 +1.2
comp=Z,53nm,1.2s
J38A **Wedel Dairy, R** 75.21 343 P P 03 08 21.6 -0.6
baz=160,SNR=19
GLA **Glamis** 75.22 322 P P 03 08 23.9 +1.3
baz=140,SNR=13
GLA **Glamis** 75.22 322 eP P 03 08 24.0 +1.4
GLA pmax pmax
comp=Z,38nm,1.0s
GLA **Glamis** 75.22 322 eP P 03 08 24.0 +1.4
comp=Z,38nm,0.9s
M31A **Lambtecht Ranc** 75.28 338 P P 03 08 23.7 +1.0
baz=154,SNR=12
TRQ **Mont Tremblant** 75.33 357 eP P 03 08 22.8 -0.2
K35A **Storm Lake** 75.39 341 P P 03 08 23.3 0.0
baz=157
WUAZ **Wupatki** 75.39 326 P P 03 08 25.5 +1.9
baz=143,SNR=46
WUAZ **Wupatki** 75.39 326 eP P 03 08 25.3 +1.6
comp=Z,476nm,2.0s
MVCO **Mesa Verde** 75.42 329 P P 03 08 25.3 +1.4
baz=146,SNR=82
MVCO **Mesa Verde** 75.42 329 eP P 03 08 25.3 +1.4
comp=Z,664nm,2.0s
Q24A **Divide** 75.47 332 P P 03 08 25.4 +1.2
baz=149,SNR=49
Q24A **Divide** 75.47 332 eP P 03 08 25.4 +1.2
comp=Z,73nm,0.8s
J37A **Redenius Farm,** 75.48 342 P P 03 08 23.4 -0.4
baz=159,SNR=12
L33A **Hoskins** 75.48 339 P P 03 08 23.7 -0.1
baz=155
SUR **Sutherland** 75.54 119 eP P 03 08 22.9 -1.9
comp=Z,27nm,0.9s
SUR epP pP 03 08 58.2 +2.1
L32A **Elgin** 75.57 339 P P 03 08 24.8 +0.5
baz=155
Y12C **Blythe** 75.60 323 P P 03 08 26.2 +1.5
baz=141,SNR=14
Y12C **Blythe** 75.60 323 eP P 03 08 25.5 +0.9
comp=Z,41nm,0.9s
K34A **Le Mars** 75.61 340 P P 03 08 24.6 +0.1
baz=156,SNR=5.6
IKP **In-Ko-Pah, Jac** 75.61 321 P P 03 08 26.2 +1.4
baz=139,SNR=15
SWSC **Sam W. Stewart** 75.66 322 P P 03 08 26.5 +1.5
baz=140,SNR=9.0
J36A **Seneca 1, Swea** 75.70 342 P P 03 08 24.8 -0.2
baz=158,SNR=12
K33A **Hardington** 75.80 340 P P 03 08 25.7 +0.1
baz=156
PDMCI **Parker Dam,Lak** 75.83 323 P P 03 08 26.9 +1.0
baz=141,SNR=6.9
I38A **Scanlan Farm,** 75.85 344 P P 03 08 25.4 -0.4
baz=160,SNR=41
BAR **Barrett** 75.94 321 eP P 03 08 27.9 +1.3
comp=Z,206nm,2.0s
MONP2 **Monument Peak** 75.96 321 P P 03 08 28.4 +1.4
baz=139,SNR=13
J35A **Milford** 75.98 341 P P 03 08 26.0 -0.6
baz=157
OGNE **Ogallala** 75.99 336 P P 03 08 27.5 +0.7
baz=151
L31A **Butterfield Fa** 75.99 338 P P 03 08 27.5 +0.8
baz=154,SNR=14
BC3 **Big Chuckawall** 76.02 322 P P 03 08 28.5 +1.3
baz=140,SNR=22
I37A **Lemond, Waseca** 76.09 343 P P 03 08 27.2 0.0
baz=159,SNR=44
J34A **George** 76.12 341 P P 03 08 27.4 0.0
baz=157,SNR=6.2
K32A **Verdigre** 76.15 339 P P 03 08 27.4 -0.2
baz=155
PV01 **Paradox Valley** 76.22 330 eP P 03 08 29.1 +0.7
IRM **Iron Mountain** 76.24 323 P P 03 08 29.8 +1.4
baz=140,SNR=9.4
I36A **Fitzsimmons Fa** 76.26 342 P P 03 08 27.9 -0.3
baz=158,SNR=6.9
W13A **Hualapai Mount** 76.31 324 eP P 03 08 30.5 +1.5
comp=Z,22nm,0.9s
109C **Camp Elliot, M** 76.34 321 P P 03 08 29.9 +1.1
baz=139
K31A **O'Neill** 76.36 339 P P 03 08 29.5 +0.7
baz=154,SNR=13
ISCO **Idaho Springs** 76.37 332 P P 03 08 30.4 +1.1
baz=148,SNR=55
ISCO **Idaho Springs** 76.37 332 eP P 03 08 30.3 +1.1
ISCO pmax pmax
comp=Z,39nm,1.0s
ISCO **Idaho Springs** 76.37 332 eP P 03 08 30.3 +1.1
comp=Z,39nm,1.0s
I35A **Creekview Farm** 76.37 342 P P 03 08 28.6 -0.2
baz=158,SNR=16
SMCO **Snowmass** 76.40 331 eP P 03 08 31.2 +1.6
comp=Z,139nm,1.1s
PV05 **Paradox Valley** 76.41 329 eP P 03 08 30.6 +1.2
NEE2 **Needles Airpor** 76.43 323 P P 03 08 30.4 +1.0
baz=141
J33A **Davis** 76.44 340 P P 03 08 29.3 0.0
baz=156,SNR=9.1
H37A **Iberke Farm, C** 76.50 343 P P 03 08 29.4 -0.1
baz=159,SNR=9.0
TPFO **Pinon Flats** 76.52 322 P P 03 08 31.6 +1.6
baz=139,SNR=14
PFO **Pinyon Flats O** 76.53 322 P P 03 08 31.6 +1.5
baz=139,SNR=13
PFO **Pinyon Flats O** 76.53 322 eP P 03 08 31.6 +1.5
PFO pmax pmax
comp=Z,100nm,1.5s
PFO **Pinyon Flats O** 76.53 322 eP P 03 08 31.6 +1.5
comp=Z,100nm,1.5s
LMQ **La Malbaie** 76.54 360 eP P 03 08 30.0 +0.3
U15A **North Rim** 76.56 326 eP P 03 08 32.2 +1.8
comp=Z,50nm,0.8s
BELC **Belle Mtn. Jos** 76.57 322 P P 03 08 31.8 +1.4
baz=140,SNR=10
PV04 **Paradox Valley** 76.58 329 eP P 03 08 31.1 +0.7
PV10 **Paradox Valley** 76.63 329 eP P 03 08 31.4 +0.7
K30A **Basset** 76.69 338 P P 03 08 31.2 +0.6
baz=154,SNR=10
ECSD **EROS data Cent** 76.72 340 P P 03 08 30.8 0.0
baz=156,SNR=6.5
ECSD **EROS Data Cent** 76.72 340 eP P 03 08 31.0 +0.2
comp=Z,54nm,0.9s
H36A **Jessenland, He** 76.76 343 P P 03 08 31.0 0.0
baz=158,SNR=18
J32A **Parkston** 76.76 339 P P 03 08 30.9 -0.1
baz=155,SNR=6.3
PV09 **Paradox Valley** 76.77 329 eP P 03 08 32.9 +1.3
I34A **Hadley** 76.78 341 P P 03 08 31.1 0.0
baz=157
MURC **Murrieta** 76.92 321 P P 03 08 33.7 +1.5
baz=139,SNR=15
LDFC **Landfair** 76.93 323 eP P 03 08 34.4 +2.1
comp=Z,55nm,0.9s
J31A **Geddes** 76.96 339 P P 03 08 32.1 -0.1
baz=154,SNR=6.8
GMRC **Granite Mounta** 76.99 323 P P 03 08 34.2 +1.5
baz=140,SNR=41
I33A **Coleman** 77.06 340 P P 03 08 32.6 0.0
baz=156
SPMN **Marine on St.** 77.08 344 P P 03 08 32.2 -0.5
baz=160,SNR=19
SPMN **Marine on St.** 77.08 344 eP P 03 08 32.2 -0.5
comp=Z,36nm,0.9s
COWI **Conover** 77.08 346 eP P 03 08 32.6 -0.2
comp=Z,66nm,1.4s
H35A **Sunnyside Ranc** 77.11 342 P P 03 08 32.6 -0.3
baz=158,SNR=44
MAW **Mawson** 77.12 163 P P 03 08 33.2 +0.4
comp=Z,46nm,0.8s,baz=216,slow=6.7,SNR=57
MAW LR LR 03 44 26.3
comp=Z,124nm,18.3s,baz=228,slow=37
MAW **Mawson** 77.12 163 eP P 03 08 33.3 +0.5
MAW pmax pmax
comp=Z,49nm,1.4s
MAW **Mawson** 77.12 163 eP P 03 08 33.3 +0.5
comp=Z,49nm,1.4s
EKU **East Kanab** 77.18 326 eP P 03 08 35.7 +1.9
SCI2 **San Clemente I** 77.21 320 P P 03 08 35.0 +1.2
baz=138,SNR=5.8
J30A **Dallas** 77.23 338 P P 03 08 33.6 0.0
baz=154,SNR=6.0
I32A **Karley and Nic** 77.24 340 P P 03 08 33.8 +0.1
baz=155
KNB **Kanab** 77.29 326 eP P 03 08 36.2 +1.8
KNB pmax pmax
comp=Z,310nm,1.4s
KNB **Kanab** 77.29 326 eP P 03 08 36.2 +1.8
comp=Z,305nm,1.5s
G36A **St. Michael** 77.32 343 P P 03 08 33.7 -0.4
baz=159,SNR=7.0
H34A **Spellman Lake,** 77.34 341 P P 03 08 34.2 0.0
baz=157,SNR=17
PKCU **Pink Cliffs** 77.38 327 eP P 03 08 36.7 +1.7
comp=Z,31nm,0.9s
HEC **Hector,Ludlow** 77.38 322 P P 03 08 36.4 +1.6
baz=140,SNR=8.2
VLDQ **Val d'Or** 77.40 355 eP P 03 08 34.7 +0.3
comp=Z,73nm,1.3s
N23A **Red Feather La** 77.43 333 P P 03 08 36.4 +1.2
baz=148,SNR=24
N23A **Red Feather La** 77.43 333 eP P 03 08 36.4 +1.2
comp=Z,189nm,1.8s
CIS **Catalina Islan** 77.45 320 P P 03 08 35.6 +0.5
baz=138
LCMT **Little Creek M** 77.49 326 eP P 03 08 36.8 +1.3
comp=Z,179nm,1.9s
G35A **Watkins** 77.50 343 P P 03 08 35.3 +0.2
baz=158,SNR=10
MMU **Miners Mountai** 77.51 328 eP P 03 08 37.0 +1.3
I31A **Royce, Wessing** 77.56 339 P P 03 08 35.4 -0.1
baz=154
PHWY **Pilot Hill** 77.58 333 eP P 03 08 37.0 +1.0
comp=Z,48nm,0.8s
FMP **Fort Macarthur** 77.61 320 P P 03 08 37.1 +1.1
baz=138
H33A **Prehn Over Nor** 77.62 341 P P 03 08 35.9 +0.1
baz=156,SNR=33
TUQ **Turquoise Moun** 77.63 323 P P 03 08 37.5 +1.2
baz=140,SNR=25
BFSC **Mount Baldy Ra** 77.65 321 P P 03 08 37.6 +1.2
baz=139,SNR=11
H32A **Carlson Farm,** 77.66 340 P P 03 08 35.9 -0.1
baz=156,SNR=11
O20A **White River Ci** 77.73 331 P P 03 08 38.1 +1.3
baz=146,SNR=69
O20A **White River Ci** 77.73 331 eP P 03 08 38.1 +1.3
comp=Z,580nm,1.9s
BHU **Blowhard Mount** 77.76 326 eP P 03 08 39.0 +1.7
RRX **Edison Barstow** 77.77 322 P P 03 08 38.3 +1.4
baz=139
MTPU **Mount Pierson** 77.80 327 eP P 03 08 38.7 +1.3
comp=Z,56nm,0.9s

G34A	Benson	77.83	342	P		P	03 08 36.5	-0.4	
	baz=157,SNR=14								
F36A	Milaca	77.85	343	P		P	03 08 36.6	-0.4	
	baz=159,SNR=27								
MWC	Mount Wilson	77.86	321	eP		P	03 08 39.0	+1.4	
MWC				pmax		pmax			
	comp=Z,43nm,1.0s								
MWC	Mount Wilson	77.86	321	eP		P	03 08 39.0	+1.4	
	comp=Z,43nm,1.0s								
SZCU	Shurtz Canyon	77.88	326	eP		P	03 08 39.3	+1.7	
	comp=Z,198nm,1.4s								
PASC	Pasadena Art C	77.89	321	eP		P	03 08 39.5	+1.9	
	comp=Z,212nm,1.9s								
SRU	San Rafael Swe	77.89	329	eP		P	03 08 38.7	+1.0	
SRU				pmax		pmax			
	comp=Z,76nm,0.6s								
SRU	San Rafael Swe	77.89	329	eP		P	03 08 38.7	+1.0	
	comp=Z,76nm,0.6s								
H31A	Wolsey	77.95	340	P		P	03 08 37.8	+0.1	
	baz=155,SNR=11								
SNCC	San Nicolas Is	77.96	319	P		P	03 08 38.2	+0.2	
	baz=137								
CCUT	Cedar City	77.98	326	eP		P	03 08 39.2	+0.9	
	comp=Z,415nm,1.9s								
GSC	Goldstone, Bar	77.99	322	P		P	03 08 39.6	+1.5	
	baz=139,SNR=20								
GSC	Goldstone, Bar	77.99	322	eP		P	03 08 39.7	+1.5	
GSC				pmax		pmax			
	comp=Z,47nm,1.1s								
GSC	Goldstone, Bar	77.99	322	eP		P	03 08 39.7	+1.5	
	comp=Z,47nm,1.1s								
G33A	Ortonville	78.01	341	P		P	03 08 37.4	-0.5	
	baz=156								
SHPR	Sheep Range	78.06	324	eP		P	03 08 40.1	+1.5	
	comp=Z,70nm,1.3s								
SUSD	Miller	78.07	339	P		P	03 08 38.4	+0.1	
	baz=154								
F35A	Swanville	78.11	343	P		P	03 08 38.1	-0.4	
	baz=158,SNR=7.9								
SHOC	Shoshone, Teco	78.17	323	P		P	03 08 40.0	+0.9	
	baz=140,SNR=7.5								
MSU	Marysvale	78.17	327	eP		P	03 08 40.7	+1.4	
MSU	Marysvale	78.17	327	eP		P	03 08 40.7	+1.4	
F34A	Alexandria	78.24	342	P		P	03 08 38.8	-0.3	
	baz=157,SNR=8.8								
E37A	Wrenshall	78.24	344	P		P	03 08 38.7	-0.4	
	baz=160								
P17A	Butcher Ranch,	78.28	329	eP		P	03 08 40.9	+1.1	
	comp=Z,67nm,0.9s								
EDW2	Edwards Air Fo	78.32	321	P		P	03 08 40.8	+0.9	
	baz=138,SNR=16								
BLG	Laguna Peak, P	78.33	320	P		P	03 08 41.1	+1.1	
	baz=138								
TMUT	Trail Mountain	78.35	329	eP		P	03 08 41.6	+1.2	
	comp=Z,206nm,1.6s								
G32A	Webster	78.36	341	P		P	03 08 39.3	-0.6	
	baz=156								
E36A	McGregor	78.40	344	P		P	03 08 39.7	-0.3	
	baz=159,SNR=33								
SGU	Sterling	78.46	328	eP		P	03 08 42.5	+1.6	
OSI	Osito Audit: C	78.52	321	P		P	03 08 41.7	+0.6	
	baz=138								
OSI	Osito Audit: C	78.52	321	eP		P	03 08 42.8	+1.8	
	comp=Z,301nm,2.0s								
G31A	Conde	78.55	340	P		P	03 08 40.5	-0.4	
	baz=155								
F33A	5 Mile Ranch,	78.56	342	P		P	03 08 40.4	-0.5	
	baz=157,SNR=11								
SCZ2	Santa Cruz Isl	78.57	320	P		P	03 08 42.3	+1.0	
	baz=137								
LRMC	Laurel Mtn Rad	78.60	322	P		P	03 08 42.8	+1.2	
	baz=139								
E35A	Pequot Lakes	78.72	343	P		P	03 08 41.4	-0.5	
	baz=158,SNR=5.4								
TSUM	Tsumeb	78.78	106	eP		P	03 08 43.4	+0.3	
	comp=Z,29nm,0.8s								
D37A	Cotton	78.80	345	P		P	03 08 41.9	-0.4	
	baz=160,SNR=14								
F32A	Veblen	78.82	341	P		P	03 08 42.0	-0.4	
	baz=156								
E34A	Wadena	78.88	343	P		P	03 08 42.1	-0.6	
	baz=158								
FURC	Furnace Creek,	78.91	323	P		P	03 08 44.2	+1.1	
	baz=139,SNR=16								
C39A	Grand Marais	78.92	346	P		P	03 08 42.4	-0.4	
	baz=162,SNR=18								
MPMC	Manual Prospec	78.93	322	P		P	03 08 43.6	+0.2	
	baz=139,SNR=20								
SBC	Santa Barbara	78.94	320	P		P	03 08 45.6	+2.3	
	baz=137								
TPNV	Topopah Spring	78.95	324	P		P	03 08 45.1	+1.5	
	baz=140,SNR=26								
TPNV	Topopah Spring	78.95	324	eP		P	03 08 45.1	+1.5	
TPNV				pmax		pmax			
	comp=Z,140nm,1.6s								
TPNV	Topopah Spring	78.95	324	eP		P	03 08 45.1	+1.5	
	comp=Z,143nm,1.6s								
ARVC	Arvin	78.96	321	P		P	03 08 43.4	0.0	
	baz=138								
PSUT	Pine Spring	78.99	326	eP		P	03 08 45.1	+1.4	
	comp=Z,24nm,0.9s								
D36A	Goodland	78.99	344	P		P	03 08 43.0	-0.3	
	baz=159,SNR=5.5								
DRLN	Deer Lake	79.04	8	eP		P	03 08 43.7	+0.2	
	comp=Z,43nm,0.9s								
C38A	Sawbill Land.	79.07	346	P		P	03 08 42.8	-0.9	
	baz=161,SNR=21								
E33A	Westby DABS, E	79.09	342	P		P	03 08 42.9	-1.0	
	baz=157								
D35A	Remer	79.12	344	P		P	03 08 43.7	-0.3	
	baz=159,SNR=34								
F31A	Hecla	79.14	340	P		P	03 08 44.0	-0.1	
	baz=155,SNR=12								
DAC	Darwin (Calif)	79.15	323	eP		P	03 08 45.8	+1.1	
DAC				pmax		pmax			
	comp=Z,42nm,1.0s								
DAC	Darwin (Calif)	79.15	323	eP		P	03 08 45.8	+1.1	
	comp=Z,42nm,1.0s								
K22A	Casper	79.15	333	P		P	03 08 45.4	+0.9	
	baz=148,SNR=51								
K22A	Casper	79.15	333	eP		P	03 08 45.6	+1.1	
	comp=Z,652nm,1.9s								
ISA	Isabella, Lake	79.16	322	P		P	03 08 46.1	+1.5	
	baz=138								
ISA	Isabella, Lake	79.16	322	eP		P	03 08 46.5	+1.9	
ISA				pmax		pmax			
	comp=Z,29nm,0.9s								
ISA	Isabella, Lake	79.16	322	eP		P	03 08 46.5	+1.9	
	comp=Z,29nm,0.9s								
C37A	Embarrass	79.28	345	P		P	03 08 44.7	-0.2	
	baz=160,SNR=16								
PKM	Mcpherson Peak	79.33	320	P		P	03 08 47.3	+1.7	
	baz=137,SNR=28								
EYMN	Ely	79.34	345	P		P	03 08 44.8	-0.4	
	baz=161,SNR=16								
EYMN	Ely	79.34	345	eP		P	03 08 44.8	-0.4	
	comp=Z,175nm,1.8s								
F30A	Leola	79.34	340	P		P	03 08 45.4	+0.2	
	baz=154								
D34A	Park Rapids	79.41	343	P		P	03 08 45.0	-0.6	
	baz=158,SNR=10								
C36A	Pine Crest Far	79.46	345	P		P	03 08 45.7	-0.1	
	baz=160,SNR=18								
E32A	Braaten, Kindr	79.46	341	P		P	03 08 46.2	+0.3	
	baz=156								
HTU	Hoyt Peak	79.47	329	eP		P	03 08 47.7	+1.3	
RSSD	Black Hills	79.48	336	P		P	03 08 47.1	+0.8	
	baz=150								
RSSD	Black Hills	79.48	336	eP		P	03 08 47.1	+0.8	
RSSD				pmax		pmax			
	comp=Z,38nm,0.8s								
RSSD	Black Hills	79.48	336	eP		P	03 08 47.1	+0.8	
	comp=Z,38nm,0.8s								
JLU	Jordanelle	79.52	329	eP		P	03 08 47.7	+1.0	
	comp=Z,59nm,0.8s								
CWC	Cottonwood Cre	79.53	322	P		P	03 08 47.9	+1.3	
	baz=139								
GRAC	Grapevine Rang	79.57	323	P		P	03 08 48.1	+1.3	
	baz=139,SNR=15								
F29A	Eureka	79.59	339	P		P	03 08 46.9	+0.3	
	baz=154,SNR=6.8								
VES	Vestal, Richgr	79.62	321	P		P	03 08 48.1	+1.1	
	baz=138,SNR=22								
D33A	AnnSam, Waubun	79.63	342	P		P	03 08 46.5	-0.2	
	baz=157,SNR=14								
E31A	Nome	79.66	341	P		P	03 08 47.1	+0.1	
	baz=155,SNR=24								
C35A	Jirik Farms, M	79.68	344	P		P	03 08 46.8	-0.2	
	baz=159,SNR=22								
R11A	Troy Canyon, C	79.69	325	P		P	03 08 48.9	+1.4	
	baz=141,SNR=71								
R11A	Troy Canyon, C	79.69	325	eP		P	03 08 48.8	+1.2	
	comp=Z,80nm,1.4s								
FSU	Fish Springs	79.70	327	eP		P	03 08 48.8	+1.3	
CTU	Camp Tracy	79.72	329	eP		P	03 08 48.7	+1.0	
	comp=Z,64nm,0.9s								
SMMC	Simmler	79.74	320	P		P	03 08 49.5	+1.8	
	baz=137,SNR=6.7								
H25A	Fruitdale	79.76	336	P		P	03 08 48.1	+0.5	
	baz=150,SNR=7.5								
DUG	Dugway, Tooele	79.81	328	P		P	03 08 49.1	+1.1	
	baz=143,SNR=64								
DUG	Dugway, Tooele	79.81	328	eP		P	03 08 48.8	+0.7	
DUG				pmax		pmax			
	comp=Z,55nm,1.0s								
DUG	Dugway, Tooele	79.81	328	eP		P	03 08 48.8	+0.7	
	comp=Z,55nm,0.9s								
C34A	RKJ Ranch, Bem	79.86	343	P		P	03 08 47.9	-0.1	
	baz=158								
TCUT	Toone Canyon	79.92	329	eP		P	03 08 50.1	+1.4	
	comp=Z,76nm,0.8s								
D32A	Dogwood Acres,	79.95	342	P		P	03 08 48.6	+0.2	
	baz=156								
FPU	Francis Peak	80.03	329	eP		P	03 08 50.4	+0.9	
RCTC	Rector, Farmer	80.06	322	P		P	03 08 50.1	+0.8	
	baz=138								
D31A	Mcclaflin, Tow	80.06	341	P		P	03 08 49.3	+0.2	
	baz=156,SNR=11								
TIN	Tinemaha, Big	80.07	323	P		P	03 08 51.1	+1.6	
	baz=138								
PAGB	Antelope Grade	80.19	321	eP		P	03 08 51.6	+1.5	
	comp=Z,132nm,1.6s								
C33A	Trail	80.19	343	P		P	03 08 49.7	0.0	
	baz=157,SNR=14								
NAIU	Northern Antel	80.20	329	eP		P	03 08 50.8	+0.6	
SNUT	Stansbury Nort	80.22	329	eP		P	03 08 50.7	+0.4	
B35A	Bob, Littlefor	80.23	344	P		P	03 08 49.7	-0.2	
	baz=159,SNR=32								
MCU	Monte Cristo P	80.24	330	eP		P	03 08 51.3	+0.8	
RSUT	Red Spur Mount	80.34	330	eP		P	03 08 51.7	+0.6	
HWUT	Hardware Ranch	80.38	330	eP		P	03 08 51.8	+0.6	
	comp=Z,457nm,2.0s								
C32A	Crookston	80.45	342	P		P	03 08 51.0	-0.1	
	baz=156								
BW06	Boulder Array	80.47	332	P		P	03 08 52.1	+0.3	
	baz=146,SNR=46								
BW06	Boulder Array	80.47	332	eP		P	03 08 52.0	+0.3	
	comp=Z,145nm,1.7s								
PD31	Pinedale Array	80.47	332	eP		P	03 08 52.0	+0.3	
PDAR	Pinedale Array	80.47	332	P		P	03 08 51.7	0.0	
	comp=Z,14nm,0.6s,baz=126,slow=6.5,SNR=132								
PDAR				sP		sP	03 09 37.2	+0.6	
	comp=Z,7.9nm,0.8s,baz=124,slow=4.5,SNR=3.1								
PDAR				PKKPbc		PKKPbc	03 27 30.8	-3.4	
	comp=Z,0.3nm,0.3s,baz=155,slow=1.4,SNR=4.7								
BGU	Big Grassy Mou	80.49	328	eP		P	03 08 52.3	+0.6	
	comp=Z,140nm,1.7s								
SPUT	South Promonto	80.53	329	eP		P	03 08 52.8	+0.8	
	comp=Z,382nm,2.0s								
SPUT				epP		pP	03 09 24.4	+0.8	
B34A	Aery, Baudette	80.58	344	P		P	03 08 51.6	-0.2	
	baz=158,SNR=21								
B33A	Robert and Kas	80.61	343	P		P	03 08 51.8	-0.1	
	baz=157,SNR=7.6								
BOSA	Boshof	80.66	117	P		P	03 08 52.4	-0.7	
	comp=Z,19nm,0.9s,baz=267,slow=4.8,SNR=23								
BOSA				pP		pP	03 09 25.1	+0.4	
	comp=Z,14nm,0.6s,baz=247,slow=3.9,SNR=5.9								
BOSA				LR		LR	03 39 52.5		
	comp=Z,164nm,18.7s,baz=231,slow=32								
BOSA	Boshof	80.66	117	eP		P	03 08 52.5	-0.6	
BOSA				e*PP		pP	03 09 26.0	+1.3	
BOSA	Boshof	80.66	117	eP		P	03 08 52.5	-0.6	
BOSA				epP		pP	03 09 26.0	+1.3	
LTU	Little Mountai	80.67	329	eP		P	03 08 52.9	+0.3	
AGMN	Agassiz Nation	80.71	343	P		P	03 08 52.4	-0.1	
	baz=157,SNR=29								
AGMN	Agassiz Nation	80.71	343	eP		P	03 08 52.5	+0.1	
	comp=Z,58nm,0.9s								
C31A	Landman Farms,	80.75	341	P		P	03 08 52.9	+0.2	
	baz=156,SNR=31								
MLAC	Mammoth, Mammc	80.82	323	P		P	03 08 54.9	+1.2	
	baz=138								
PMPB	Monarch Peak	80.84	321	eP		P	03 08 56.3	+2.7	
	comp=Z,244nm,1.8s								
TORD	Tondi Ar. Bea	80.95	69	LR		LR	03 44 08.9		
	comp=Z,188nm,18.4s,baz=225,slow=35								
B32A	Ashes, Strandq	80.97	342	P		P	03 08 53.9	0.0	
	baz=157,SNR=23								
HVU	Hansel Valley	81.06	329	eP		P	03 08 55.6	+0.9	
HVU				pmax		pmax			
	comp=Z,63nm,1.2s								
HVU	Hansel Valley	81.06	329	eP		P	03 08 55.6	+0.9	
	comp=Z,63nm,1.2s								
AHID	Aurn Hatcher	81.12	331	eP		P	03 08 55.5	+0.5	
	comp=Z,46nm,0.8s								
A33A	Warroad	81.18	343	P		P	03 08 55.1	+0.2	
	baz=158,SNR=27								
B31A	Greenbush Farm	81.30	342	P		P	03 08 55.5	-0.1	
	baz=156,SNR=12								
MDND	Maddock	81.33	340	P		P	03 08 56.3	+0.5	
	baz=154,SNR=8.1								
MDND	Maddock	81.33	340	eP		P	03 08 56.6	+0.7	
	comp=Z,343nm,1.2s								
A32A	Rocking H Ranc	81.44	343	P		P	03 08 55.9	-0.4	
	baz=157,SNR=6.8								
D26A	Manning	81.48	338	P		P	03 08 57.0	+0.3	
	baz=152								
REDW	Red Top Meadow	81.50	331	eP		P	03 08 57.6	+0.5	
	comp=Z,92nm,1.5s								
SNOW	Snow King Moun	81.54	331	eP		P	03 08 58.1	+0.7	
	comp=Z,110nm,1.6s								
LOHW	Long Hollow	81.60	331	eP		P	03 08 58.3	+0.7	
	comp=Z,26nm,0.8s								
A31A	Linda, St. Vin	81.64	342	P		P	03 08 57.2	-0.2	
	baz=156,SNR=6.4								
TPAW	Teton Pass	81.64	331	eP		P	03 08 58.6	+0.7	
	comp=Z,162nm,1.9s								
MOOW	Moose Ponds	81.77	331	eP		P	03 08 58.2	-0.3	
	comp=Z,126nm,2.0s								
WAKR	Walker	81.79	323	eP		P	03 09 00.2	+1.5	
	comp=Z,189nm,1.9s								
CMB	Columbia Colle	81.94	322	eP		P	03 09 00.0	+0.7	
CMB				pmax		pmax			
	comp=Z,54nm,1.6s								
CMB	Columbia Colle	81.94	322	eP		P	03 09 00.0	+0.7	
	comp=Z,54nm,1.6s								
IMW	Indian Meadow	81.97	331	eP		P	03 09 00.4	+0.8	
	comp=Z,22nm,0.8s								
FLWY	Flagg Ranch	82.02	332	eP		P	03 09 00.9	+1.1	
	comp=Z,43nm,0.8s								
BMN	Battle Mountai	82.10	326	eP		P	03 09 00.3	0.0	
BMN				pmax		pmax			
	comp=Z,15nm,1.3s								
BMN	Battle Mountai	82.10	326	eP		P	03 09 00.3	0.0	
	comp=Z,15nm,1.3s								
YPP	Pitchstone Pla	82.22	332	eP		P	03 09 02.7	+1.7	
	comp=Z,63nm,1.8s								
H17A	Grant Village	82.23	332	P		P	03 09 01.6	+0.6	
	baz=145								
H17A	Grant Village	82.23	332	eP		P	03 09 02.5	+1.6	
	comp=Z,11nm,0.7s								
RLMT	Red Lodge	82.30	333	P		P	03 09 02.0	+0.7	
	baz=146,SNR=51								
RLMT	Red Lodge	82.30	333	eP		P	03 09 01.9	+0.7	
	comp=Z,62nm,0.7s								
PNTR	Pine Nut	82.30	323	eP		P	03 09 02.9	+1.5	
	comp=Z,94nm,0.7s								
C25A	Freed Ranch, W	82.34	338	P		P	03 09 02.0	+0.9	
	baz=151								
YFT	Old Faithful	82.38	332	eP		P	03 09 04.1	+2.4	
	comp=Z,30nm,0.9s								
LAO	LASA Array	82.47	336	P		P	03 09 02.5	+0.6	
	baz=148,SNR=10								
LAO	LASA Array	82.47	336	eP		P	03 09 00.8	-1.1	
	comp=Z,49nm,0.8s								
ULM	Lac du Bonnet	82.51	344	P		P	03 09 01.6	-0.3	
	comp=Z,34nm,0.7s,baz=159,slow=5.3,SNR=32								
ULM				sP		sP	03 09 45.9	-1.1	
	comp=Z,19nm,0.8s,baz=156,slow=4.3,SNR=3.5								
ULM				PKPPKP		P'P'df	03 35 34.4	+4.3	
	comp=Z,2.8nm,0.8s,baz=72,slow=3.2,SNR=3.0								
ULM	Lac du Bonnet	82.51	344	eP		P	03 09 01.6	-0.3	
ULM				pmax		pmax			
	comp=Z,480nm,2.0s								
ULM	Lac du Bonnet	82.51	344	eP		P	03 09 01.6	-0.3	
	comp=Z,478nm,2.0s								
ULM				sP		sP	03 09 45.9	-1.1	
ULM				P'P'			03 35 34.4		
B26A	Jensen Ranch,	82.60	339	P		P	03 09 02.7	+0.2	
	baz=152								
YMR	Madison River	82.61	332	eP		P	03 09 04.7	+1.8	
	comp=Z,56nm,0.9s								
LBTB	Lobatse	82.64	114	eP		P	03 09 03.1	-0.4	
LBTB				pmax		pmax			
	comp=Z,54nm,1.1s								
LBTB	Lobatse	82.64	114	eP		P	03 09 03.1	-0.4	
	comp=Z,54nm,1.1s								
PAHR	Pah Rah Range	82.65	324	eP		P	03 09 04.3	+1.2	
	comp=Z,92nm,1.3s								
YHH	Holmes Hill	82.66	332	eP		P	03 09 04.5	+1.2	
	comp=Z,268nm,1.8s								
YMC	Maple Creek	82.70	332	eP		P	03 09 03.7	+0.4	
YHB	Horse Butte	82.78	332	eP		P	03 09 05.2	+1.5	
	comp=Z,19nm,0.8s								
B25A	Knox Farm, Ray	82.80	338	P		P	03 09 04.2	+0.7	
	baz=151								
AFDM	Forest Hills D	82.92	322	eP		P	03 09 05.1	+0.7	
	comp=Z,40nm,1.1s								
QLMT	Earthquake Lak	82.94	332	eP		P	03 09 05.9	+1.3	
A26A	Wade Farm, Ken	83.00	339	P		P	03 09 04.9	+0.3	
	baz=152,SNR=6.6								
GCMT	Greycliff	83.01	333	eP		P	03 09 05.3	+0.5	
HLID	Hailey	83.21	329	P		P	03 09 06.9	+1.0	
	baz=142,SNR=51								
HLID	Hailey	83.21	329	eP		P	03 09 06.9	+1.0	
	comp=Z,34nm,1.0s								
DGMT	Dagmar	83.31	338	P		P	03 09 07.1	+0.9	
	baz=150,SNR=9.7								
DGMT	Dagmar	83.31	338	eP		P	03 09 07.0	+0.9	
	comp=Z,104nm,0.8s								
MIR	Mirnyy	83.52	173	i P		P	03 09 07.0	-0.1	
MIR				pmax		pmax			
	comp=Z,8.0nm,1.5s								
MCMT	McKenzie Canyo	83.53	331	eP		P	03 09 07.1	-0.5	
ORV	Oroville	83.65	322	eP		P	03 09 09.1	+1.0	
ORV				pmax		pmax			
	comp=Z,230nm,1.7s								
ORV	Oroville	83.65	322	eP		P	03 09 09.1	+1.0	
	comp=Z,226nm,1.7s								
BOZ	Bozeman (W)	83.68	332	P		P	03 09 08.5	+0.2	
	baz=144,SNR=22								
BOZ	Bozeman (W)	83.68	332	eP		P	03 09 08.5	+0.2	
BOZ				pmax		pmax			
	comp=Z,87nm,1.8s								
BOZ	Bozeman (W)	83.68	332	eP		P	03 09 08.5	+0.2	
	comp=Z,86nm,1.8s								
MFID	Camas Ranch	83.73	328	eP		P	03 09 09.2	+0.6	
	comp=Z,36nm,1.1s								
DLMT	Dillon	83.85	331	eP		P	03 09 10.2	+1.0	
	comp=Z,97nm,1.5s								
SCHQ	Schefferville	83.88	2	P		P	03 09 08.4	-0.5	
	comp=Z,6.5nm,0.5s,baz=195,slow=6.1,SNR=9.2								
SCHQ				LR		LR	03 48 38.4		
	comp=Z,46nm,20.5s,baz=222,slow=37								
SCHQ	Schefferville	83.88	2	eP		P	03 09 08.6	-0.3	
	comp=Z,129nm,1.7s								
HOPS	Hopland Field	84.09	321	eP		P	03 09 12.9	+2.6	
	comp=Z,107nm,1.4s								
LRM	Limekiln Ridge	84.16	332	eP		P	03 09 11.6	+0.8	
WVOR	Wild Horse Val	84.31	326	eP		P	03 09 12.0	+0.5	
WVOR				pmax		pmax			
	comp=Z,69nm,1.6s								
WVOR	Wild Horse Val	84.31	326	eP		P	03 09 12.0	+0.5	
	comp=Z,69nm,1.6s								
O03D	Paynes Creek	84.34	323	P		P	03 09 11.5	-0.1	
	baz=136,SNR=14								
HRY	Holter Researc	84.63	333	eP		P	03 09 13.9	+0.9	
MOD	Modoc Plateau	84.74	325	eP		P	03 09 14.6	+0.9	
	comp=Z,32nm,1.0s								
EGMT	Eagleton	84.89	334	P		P	03 09 14.3	0.0	
	baz=146,SNR=18								
EGMT	Eagleton	84.89	334	eP		P	03 09 14.0	-0.3	
	comp=Z,73nm,1.2s								
WDC	Whiskeytown Da	84.94	323	eP		P	03 09 14.1	-0.4	
WDC				pmax		pmax			
	comp=Z,79nm,1.6s								
WDC	Whiskeytown Da	84.94	323	eP		P	03 09 14.1	-0.4	
	comp=Z,78nm,1.6s								
N02D	Trinity Center	85.31	323	P		P	03 09 16.5	0.0	
	baz=136,SNR=7.1								
KMRM	Mail Ridge	85.31	322	eP		P	03 09 19.4	+2.9	
	comp=Z,158nm,1.5s								
CHMT	Chamberlain Mo	85.37	332	eP		P	03 09 17.3	+0.5	
M04C	Macdoel	85.44	324	P		P	03 09 17.6	+0.4	
	baz=136,SNR=17								
BMO	Blue Mountains	85.52	328	eP		P	03 09 17.6	+0.1	
BMO				pmax		pmax			
	comp=Z,19nm,1.0s								
BMO	Blue Mountains	85.52	328	eP		P	03 09 17.6	+0.1	
	comp=Z,19nm,0.9s								
MSO	Missoula	85.59	331	P		P	03 09 18.4	+0.7	
	baz=142,SNR=24								
MSO	Missoula	85.59	331	eP		P	03 09 18.4	+0.7	
	comp=Z,164nm,2.0s								
K05A	Summer Lake	85.65	325	eP		P	03 09 19.4	+1.2	
	comp=Z,372nm,1.8s								
M02C	Callahan	85.69	323	P		P	03 09 18.5	+0.2	
	baz=136,SNR=6.4								
SLMT	Seeley Lake	85.73	332	eP		P	03 09 19.0	+0.5	
KHMM	Horse Mountain	85.78	322	eP		P	03 09 21.6	+2.7	
	comp=Z,44nm,1.1s								
JCC	Jacoby Creek,	85.90	322	eP		P	03 09 21.7	+2.4	
	comp=Z,186nm,1.5s								
K04D	Chiloquin, OR	86.01	324	P		P	03 09 20.7	+0.8	
	baz=136								
SWMT	Swartz Lake	86.15	332	eP		P	03 09 21.0	+0.5	
J05D	Fort Rock, OR	86.23	325	P		P	03 09 21.8	+0.8	
	baz=

baz=140,SNR=14
NEW Newport 88.06 331 *e*P **P** **03 09 29.5 -0.1**
NEW pmax pmax
comp=Z,20nm,1.0s
NEW Newport 88.06 331 *e*P **P** **03 09 29.5 -0.1**
comp=Z,20nm,1.0s
URZ Urewera 88.10 227 *e*P **P** **03 09 32.7 +2.5**
comp=Z,60nm,1.1s
FFC Flin Flon 88.15 342 *e*P **P** **03 09 29.7 -0.1**
FFC pmax pmax
comp=Z,33nm,1.2s
FFC Flin Flon 88.15 342 *e*P **P** **03 09 29.7 -0.1**
comp=Z,33nm,1.2s
COR Corvallis 88.20 325 *e*P **P** **03 09 31.7 +1.5**
COR Corvallis 88.20 325 *e*P **P** **03 09 31.7 +1.5**
comp=Z,514nm,1.9s
C09A Chrisman Ranch 88.20 330 *e*P **P** **03 09 30.6 +0.3**
comp=Z,51nm,0.9s
LTZ Lake Taylor 88.24 221 *e*P **P** **03 09 32.5 +1.7**
comp=Z,208nm,1.4s
MESJ Messejana 88.33 44 *e*P **P** **03 09 31.2 +0.2**
MESJ AMb AMB 03 09 34.8
comp=Z,29nm,1.9s
MESJ Messejana 88.33 44 *e*P **P** **03 09 31.2 +0.2**
RPZ Rata Peaks 88.33 219 *e*P **P** **03 09 33.4 +2.1**
comp=Z,157nm,1.4s
THZ Tophouse 88.52 222 *e*P **P** **03 09 34.2 +2.0**
comp=Z,504nm,1.8s
G03D McMinnville, O 88.63 325 P **P** **03 09 32.1 -0.2**
baz=136
ETW Entiat 88.97 329 P **P** **03 09 34.3 +0.2**
LON Longmire 89.03 327 *e*P **P** **03 09 34.1 -0.1**
LON pmax pmax
comp=Z,19nm,1.0s
LON Longmire 89.03 327 *e*P **P** **03 09 34.1 -0.1**
comp=Z,19nm,1.1s
B08A Colville Reser 89.09 330 *e*P **P** **03 09 34.0 -0.4**
comp=Z,25nm,1.1s
F04D Rainier, OR 89.12 326 P **P** **03 09 35.5 +0.9**
baz=136
TAM Tamanrasset 89.20 63 *e*P **P** **03 09 35.8 +0.1**
TAM pmax pmax
comp=Z,8.0nm,0.8s
TAM Tamanrasset 89.20 63 *e*P **P** **03 09 35.8 +0.1**
comp=Z,8.3nm,0.8s
D05A Enumclaw 89.43 327 *e*P **P** **03 09 36.6 +0.6**
comp=Z,265nm,1.8s
LSZ Lusaka 89.54 107 *e*P **P** **03 09 38.4 +0.9**
LSZ pmax pmax
comp=Z,140nm,1.9s
LSZ Lusaka 89.54 107 *e*P **P** **03 09 38.4 +0.9**
comp=Z,136nm,1.9s
E03A Lebam 89.72 326 *e*P **P** **03 09 38.5 +1.2**
comp=Z,206nm,1.9s
FCC Fort Churchill 90.05 348 *e*P **P** **03 09 39.0 +0.5**
FCC pmax pmax
comp=Z,310nm,2.0s
FCC Fort Churchill 90.05 348 *e*P **P** **03 09 39.0 +0.5**
comp=Z,314nm,2.0s
B05A Bryant 90.27 328 P **P** **03 09 39.6 -0.2**
baz=136,SNR=10
CMW Cultus Mountai 90.39 328 P **P** **03 09 40.4 -0.2**
EDM Edmonton 90.46 336 *e*P **P** **03 09 39.7 -1.0**
EDM pmax pmax
comp=Z,43nm,0.7s
EDM Edmonton 90.46 336 *e*P **P** **03 09 39.7 -1.0**
comp=Z,43nm,0.7s
NLWA Neilton Lookou 90.47 327 *e*P **P** **03 09 41.6 +0.7**
comp=Z,72nm,1.6s
A04D Lummi Island 90.88 328 P **P** **03 09 42.8 +0.2**
baz=136
PAB San Pablo 91.76 45 *e*P **P** **03 09 46.9 -0.2**
PAB pmax pmax
comp=Z,8.0nm,1.0s
PAB San Pablo 91.76 45 *e*P **P** **03 09 46.9 -0.2**
comp=Z,8.0nm,1.0s
LLLB Lillooet 91.87 330 *e*P **P** **03 09 47.4 0.0**
comp=Z,47nm,1.4s
ESDC Sonseca Array 92.07 45 P **P** **03 09 48.6 0.0**
comp=Z,1.1nm,0.6s,baz=237,slow=5.3,SNR=11
ESDC sP **sP** **03 10 35.5 +1.6**
comp=Z,0.4nm,0.5s,baz=226,slow=4.8,SNR=2.7
ESDC LR LR 03 48 25.6
comp=Z,105nm,20.5s,baz=200,slow=34
ES19 SONSECA Array 92.13 45 *e*P **P** **03 09 48.4 -0.4**
YKA Yellowknife Ar 98.25 341 P **P** **03 10 15.5 -0.5**
comp=Z,5.5nm,0.7s,baz=138,slow=4.2,SNR=47
YKA sP **sP** **03 11 01.8 +0.3**
comp=Z,2.4nm,0.7s,baz=140,slow=4.3,SNR=4.0
YKA PP **PP** **03 14 12.9 -4.8**
comp=Z,0.6nm,0.8s,baz=146,slow=7.9,SNR=3.3
YKA PKiKP **PKiKP** **03 14 51.3 +3.4**
comp=Z,0.4nm,0.6s,baz=144,slow=2.3,SNR=4.0
KEST Kesra 98.74 54 LR LR 03 58 31.1
comp=Z,167nm,18.1s,baz=190,slow=38
SSB Saint Sauveur 100.42 44 *e*P **Pdif** **03 10 27.1 +0.9**
SSB Saint Sauveur 100.42 44 *e*Pdif **Pdif** **03 10 27.1 +0.9**
DLBC Dease Lake 100.69 332 P **Pdif** **03 10 27.6 +0.5**
comp=Z,5.0nm,0.8s,baz=123,slow=7.2,SNR=8.7
DLBC pP pP 03 10 59.2 -0.4
comp=Z,2.7nm,0.8s,baz=120,slow=5.6,SNR=3.4
DLBC sP sP 03 11 13.2 +0.5
comp=Z,4.0nm,0.8s,baz=186,slow=7.2,SNR=3.1
DZM Mont Dzumac 105.41 233 *e*PKP 03 15 02.6
GERES GERESS Array B 107.61 44 PKiKP **PKiKP** **03 15 05.6 0.0**
comp=Z,0.5nm,0.6s,baz=186,slow=1.3,SNR=7.5
GERES PKKPbc **PKKPbc** **03 26 22.0 +0.7**
comp=Z,0.1nm,0.3s,baz=206,slow=3.8,SNR=4.6
GERES PKKP **PKKPdf** **03 26 35.8 +0.9**
comp=Z,0.1nm,0.3s,baz=348,slow=5.7,SNR=3.9
KHC Kasperske Hory 107.66 43 *e*SP SP 03 24 34.8 -2.4
CLL Collm 108.22 41 *e*SP SP 03 24 45.0 +2.3
CLL LmV 03 58 00.0
comp=Z,100nm,21.4s
UPC Upice 109.65 43 *e*SP SP 03 24 55.4 -1.8
ILAR Eielson Array 110.84 333 Pdiff **Pdif** **03 11 11.1 -1.0**
comp=Z,0.2nm,0.7s,baz=151,slow=2.1,SNR=3.3
ILAR PKiKP **PKiKP** **03 15 11.3 +0.3**
comp=Z,0.8nm,0.7s,baz=161,slow=0.7,SNR=7.4
ILAR PP PP 03 15 41.5 -10
comp=Z,0.3nm,0.7s,baz=94,slow=6.5,SNR=4.1
ILAR PKKPbc **PKKPbc** **03 26 08.0 -3.3**
comp=Z,0.2nm,0.4s,baz=312,slow=4.3,SNR=6.6
PSZ Piszkesteto 111.07 46 *e*PKiKP **PKiKP** **03 15 11.5 -0.6**
PSZ Piszkesteto 111.07 46 *e*PKP **PKiKP** **03 15 11.4 -0.6**
COLA College 111.26 333 *e*PKiKP **PKiKP** **03 15 10.4 -1.4**
COLA College 111.26 333 *e*PKP **PKiKP** **03 15 10.4 -1.4**
BZS Buzias 111.37 49⇑*i*P **PKiKP** **03 15 11.6 -1.0**
BZS Buzias 111.37 49⇑PKiKP **PKiKP** **03 15 11.6 -1.0**
MDM Murphy Dome 111.45 333 *e*Pdif **Pdif** **03 11 15.9 +1.1**
STKA Stephens Creek 112.12 209 PKiKP **PKiKP** **03 15 14.7 0.0**
comp=Z,1.7nm,0.6s,baz=137,slow=7.0,SNR=4.4
BPAW Bear Paw Mtn. 112.22 332 *e*PKP **PKiKP** **03 15 12.9 -0.8**
DRGR 112.48 48⇑*i*P **PKiKP** **03 15 15.0 +0.2**
DRGR 112.48 48⇑PKiKP **PKiKP** **03 15 15.0 +0.2**
ARR Arges 113.29 50⇓*i*P **PKiKP** **03 15 16.4 0.0**
KWP Kalwaria Pacla 113.39 45 *e*PKP **PKiKP** **03 15 17.1 +0.8**
MLR Muntele Rosu 114.20 50⇑*i*P PKPdf 03 15 18.2 0.0
MLR Muntele Rosu 114.20 50⇑PKiKP PKPdf 03 15 18.2 0.0
BURAR Bucovina Array 114.36 48⇓*i*P PKPdf 03 15 19.9 +1.5
BURAR Bucovina Array 114.36 48⇓PKiKP PKPdf 03 15 19.9 +1.5
VRI Vrincioaia 114.84 50⇑*i*P PKPdf 03 15 18.5 -0.7
VRI Vrincioaia 114.84 50⇑PKiKP PKPdf 03 15 18.5 -0.7
SUW Suwalki 114.96 41 *e*PKP PKPdf 03 15 19.1 -0.1
TLB Topalu 115.35 52⇑*i*P **PKPdf** **03 15 20.0 -0.2**
TLB Topalu 115.35 52⇑PKiKP **PKPdf** **03 15 20.0 -0.2**
CFR Carcaliu 115.58 51⇑*i*P **PKPdf** **03 15 20.5 -0.1**
CFR Carcaliu 115.58 51⇑PKiKP **PKPdf** **03 15 20.5 -0.1**
TLCR 116.05 51⇓*i*P **PKPdf** **03 15 21.4 -0.1**
TLCR 116.05 51⇓PKiKP **PKPdf** **03 15 21.4 -0.1**
CSS Mathiatis 116.31 63 *e*PKPdf **PKPdf** **03 15 22.4 0.0**
MILM Milestii Mici 116.52 49⇑*i*P **PKPdf** **03 15 21.7 -0.7**
MMAI Mount Meron Ar 117.32 66 PKP **PKPdf** **03 15 24.8 +0.2**
comp=Z,0.5nm,0.3s,baz=163,slow=2.1,SNR=4.0
BR231 Keskin MP Arra 117.36 58 *e*PKPdf **PKPdf** **03 15 25.7 +1.3**
AK11 Malin Array Si 117.68 45 *e*PKPdf **PKPdf** **03 15 23.3 -1.2**
KIEV Kiev 117.70 45 *i* PKiKP **PKPdf** **03 15 22.4 -2.1**
KIEV Kiev 117.70 45 *e*PKPdf **PKPdf** **03 15 23.4 -1.1**
KIEV *e*PKPdf **PKiKP** **03 15 23.6 -0.9**
AKASG Malin Array Be 117.72 45 PKP **PKPdf** **03 15 23.5 -1.1**
comp=Z,1.1nm,0.6s,baz=265,slow=2.7,SNR=14
AKASG pPKP **pPKPdf** **03 15 58.8 +0.5**
comp=Z,1.8nm,0.7s,baz=267,slow=2.5,SNR=2.8
AKBB Malin Array Si 117.72 45 *e*PKiKP **PKPdf** **03 15 23.9 -0.7**
AKBB Malin Array Si 117.72 45 *e*PKPdf **PKPdf** **03 15 23.9 -0.7**

SPITS Spitsbergen Ar 117.75 13 PKP **PKPdf** **03 15 23.7 -0.3**
comp=Z,0.6nm,0.3s,baz=168,slow=4.3,SNR=8.6
FORT Forrest 117.79 198 *e*PKPdf **PKPdf** **03 15 24.9 -0.6**
VSU Vasula 117.93 36 *i* PKiKP **PKPdf** **03 15 23.8 -0.9**
BR131 Keskin Array S 117.96 58 *e*PKPdf **PKPdf** **03 15 25.4 -0.3**
BRTR Keskin Array B 117.96 58 PKP **PKPdf** **03 15 25.2 -0.4**
comp=Z,2.4nm,0.7s,baz=174,slow=2.8,SNR=16
BRTR pPKP **pPKPdf** **03 16 00.0 +0.7**
comp=Z,1.5nm,1.0s,baz=194,slow=2.5,SNR=3.0
BRTR sPKP 03 16 13.7
comp=Z,2.9nm,0.7s,baz=217,slow=2.2,SNR=8.2
BRTR PKKPab **PKKPab** **03 25 50.3 +2.5**
comp=Z,0.9nm,0.6s,baz=86,slow=4.4,SNR=5.7
FINES FINESS Array B 118.16 33 PKP **PKPdf** **03 15 25.1 0.0**
comp=Z,1.8nm,0.8s,baz=160,slow=4.8,SNR=9.4
FINES PKKPbc **PKKPab** **03 25 44.2 -1.4**
comp=Z,1.3nm,0.5s,baz=64,slow=8.7,SNR=10
CTAO Charters Tower 119.70 220 *e*PKiKP **PKPdf** **03 15 29.5 0.0**
CTAO Charters Tower 119.70 220 *e*PKPdf **PKPdf** **03 15 29.5 0.0**
ANN Anapa 121.90 53 *i* PKiKP **PKPdf** **03 15 32.1 -0.7**
ANN pmax pmax
comp=Z,124nm,1.6s
ASAR Alice Springs 122.50 206 PKP **PKPdf** **03 15 33.8 -1.0**
comp=Z,4.5nm,0.3s,baz=133,slow=1.9,SNR=71
ASAR pPKP **pPKPdf** **03 16 07.0 -1.4**
comp=Z,4.3nm,0.7s,baz=146,slow=2.0,SNR=5.8
ASAR sPKP 03 16 20.9
comp=Z,2.4nm,0.7s,baz=139,slow=2.1,SNR=3.1
ASAR PKKPbc **PKKPbc** **03 25 28.9 -0.4**
comp=Z,1.2nm,0.6s,baz=333,slow=3.4,SNR=11
ASAR SKKPbc SKKPbc 03 29 05.8 +1.7
comp=Z,0.5nm,0.7s,baz=350,slow=5.8,SNR=4.8
AS31 Alice Springs 122.50 206 *e*PKPdf **PKPdf** **03 15 33.8 -1.1**
OBN Obninsk 122.82 41 PKP **PKPdf** **03 15 33.6 -0.7**
comp=Z,8.3nm,0.3s,baz=297,slow=4.5,SNR=9.2
OBN Obninsk 122.82 41 *i* PKiKP **PKPdf** **03 15 33.8 -0.4**
OBN pmax pmax
comp=Z,22nm,1.3s
VSR Storozhevoye 124.00 46 *e*PKiKP **PKPdf** **03 15 35.2 -1.4**
VSR pmax pmax
comp=Z,40nm,1.6s
KLMR Klimovskoe 124.60 34 *e*PKiKP **PKPdf** **03 15 34.9 -2.6**
KLMR pmax pmax
comp=Z,44nm,1.3s
NEY Neytrino 125.39 56 *i* PKiKP **PKPdf** **03 15 38.8 -1.0**
KIV Kislovodsk 125.47 55 *e*PKiKP **PKPdf** **03 15 40.2 +0.4**
KIV Kislovodsk 125.47 55 *e*PKPdf **PKPdf** **03 15 40.2 +0.4**
KVAR Kislovodsk Arr 125.47 55 PKP **PKPdf** **03 15 40.2 +0.4**
comp=Z,12nm,0.9s,baz=289,slow=2.3,SNR=10.0
KBZ Khabaz 125.58 55 PKP **PKPdf** **03 15 40.0 +0.1**
comp=Z,8.3nm,1.0s,baz=226,slow=2.7,SNR=9.4
AKH Akhalkalaki 125.65 58⇑*i*P **PKPdf** **03 15 41.0 +0.6**
WB2 Warramunga Arr 125.67 208 *e*PKPdf **PKPdf** **03 15 40.3 -0.7**
WRA Warramunga Arr 125.67 208 PKP **PKPdf** **03 15 40.4 -0.6**
comp=Z,22nm,0.5s,baz=151,slow=1.9,SNR=299
WRA pPKP **pPKPdf** **03 16 13.6 -1.0**
comp=Z,9.0nm,0.8s,baz=155,slow=1.7,SNR=4.7
WRA sPKP 03 16 27.3
comp=Z,3.3nm,0.6s,baz=163,slow=1.6,SNR=4.9
WRAB Tennant Creek 125.68 208*c* *i*PKiKP **PKPdf** **03 15 40.5 -0.5**
WRAB pmax pmax
comp=Z,172nm,1.7s
WRAB Tennant Creek 125.68 208 *e*PKPdf **PKPdf** **03 15 40.3 -0.7**
GOF Gofitskoye 125.87 54⇑*e*PKiKP **PKPdf** **03 15 40.1 -0.4**
GOF pmax pmax
comp=Z,22nm,0.9s
NCK Nalchik 126.05 56 *i* PKiKP **PKPdf** **03 15 40.0 -0.9**
COEN Coen 126.35 221 *e*PKPdf **PKPdf** **03 15 43.3 +0.9**
GNI Garni 126.37 60 PKP **PKPdf** **03 15 42.3 +0.5**
comp=Z,2.8nm,0.5s,baz=214,slow=3.6,SNR=5.7
GNI Garni 126.37 60 *e*PKPdf **PKPdf** **03 15 41.6 -0.2**
PMG Port Moresby 127.42 229 PKP **PKPdf** **03 15 44.9 +0.5**
comp=Z,16nm,1.0s,baz=149,slow=7.4,SNR=4.0
H11S2 WAKE ISLAND Hy 127.51 272 T T 05 35 25.9
baz=115,slow=75,SNR=33
H11S1 WAKE ISLAND Hy 127.52 272 T T 05 35 27.3
baz=115,slow=75,SNR=38
H11S3 WAKE ISLAND Hy 127.52 272 T T 05 35 27.2
baz=115,slow=75,SNR=43
H11N3 WAKE ISLAND Hy 127.80 273 T T 05 35 60.0
baz=112,slow=74,SNR=5.5
H11N1 WAKE ISLAND Hy 127.81 273 T T 05 35 57.1
baz=112
H11N2 WAKE ISLAND Hy 127.81 273 T T 05 35 57.9
baz=112,slow=74,SNR=17
MBWA Marble Bar 128.92 192 *e*PKPdf **PKPdf** **03 15 46.9 -0.2**
FITZ Fitzroy Crossi 130.48 200 *e*PKPdf **PKPdf** **03 15 50.1 0.0**
UOSS Minazif 132.25 82 *e*PKPdf **PKPdf** **03 15 52.6 -0.6**
MTN Manton Dam 133.37 209 *e*PKPdf **PKPdf** **03 15 56.4 +0.8**
ARU Arti 135.04 38 PKP **PKPdf** **03 15 58.2 +0.8**
comp=Z,7.1nm,0.6s,baz=284,slow=2.2,SNR=12
ARU PP **PP** **03 18 31.6 -2.6**
comp=Z,1.4nm,0.3s,baz=282,slow=3.8,SNR=3.7
ARU SKPbc **SKPbc** **03 19 18.1 +1.6**
comp=Z,1.3nm,0.3s,baz=265,slow=3.2,SNR=3.7
ARU Arti 135.04 38 *i* PKiKP **PKPdf** **03 15 57.9 +0.4**
ARU 03 18 31.2
AKTO Aktyubinsk 135.94 46 PKP **PKPdf** **03 15 59.6 +0.3**
comp=Z,2.7nm,0.8s,baz=204,slow=0.3,SNR=13
AKTO PP **PP** **03 18 37.5 -2.6**
comp=Z,1.5nm,0.6s,baz=302,slow=6.4,SNR=3.0
TIXI Tiksi 136.41 351 PKhKP PKPpre 03 15 55.2
comp=Z,3.6nm,0.6s,baz=93,slow=2.0,SNR=3.2
TIXI PKP **PKPdf** **03 16 00.5 +0.9**
comp=Z,5.7nm,0.6s,baz=65,slow=2.6,SNR=7.5
TIXI Tiksi 136.41 351 *i* PKiKP **PKPdf** **03 15 59.3 -0.3**
GEYT Alibeck 136.42 65 PKhKP PKPpre 03 15 56.0
comp=Z,6.0nm,1.0s,baz=289,slow=4.4,SNR=3.3
GEYT PKP **PKPdf** **03 16 00.1 -0.5**
comp=Z,4.0nm,0.7s,baz=274,slow=3.9,SNR=7.0
GEYT pPKP pPKPdf 03 16 35.2 +0.9
comp=Z,2.4nm,0.6s,baz=235,slow=5.2,SNR=2.2
GEYT sPKP 03 16 48.7
comp=Z,4.7nm,0.8s,baz=258,slow=5.9,SNR=3.8
SEY Seymchan 136.78 333 PKhKP PKPpre 03 15 53.0
comp=Z,3.6nm,0.6s,baz=124,slow=4.3,SNR=17
SEY PKP **PKiKP** **03 16 01.7 -0.6**
comp=Z,10nm,0.6s,baz=85,slow=0.7,SNR=22
SEY pPKP pPKPdf 03 16 35.7 +1.5
comp=Z,6.1nm,0.8s,baz=120,slow=6.4,SNR=2.7
SEY sPKP 03 16 48.0
comp=Z,9.3nm,0.8s,baz=119,slow=3.4,SNR=5.7
SEY PP **PP** **03 18 44.8 0.0**
comp=Z,0.9nm,0.4s,baz=56,slow=7.5,SNR=3.6
GENI Genyem 137.08 227 PKP **PKPdf** **03 16 06.6 +4.0**
AB31 Akbulak array 137.34 48 *i* PKiKP **PKPdf** **03 16 01.8 -0.2**
AB31 pmax pmax
comp=Z,8.0nm,0.7s
ABKAR Akbulak array 137.34 48 *e*PKPpre PKPpre 03 15 53.3
ABKAR *e*PKPdf **PKPdf** **03 16 02.3 +0.3**
NRIK Noril'sk 137.92 12 PKP **PKPdf** **03 16 03.3 +0.8**
comp=Z,2.3nm,0.4s,baz=15,slow=3.3,SNR=5.7
PEA0 Petropavlovsk- 138.03 318 *e*PKPdf **PKPdf** **03 16 04.0 +0.9**
PETK Petropavlovsk- 138.03 318 PKP **PKPdf** **03 16 04.0 +0.9**
comp=Z,6.6nm,0.7s,baz=94,slow=4.9,SNR=6.7
PETK sPKP 03 16 49.3
comp=Z,10nm,0.8s,baz=93,slow=6.5,SNR=5.1
SOEI Soe 138.77 202 PKP **PKPdf** **03 16 08.3 +2.4**
SOEI Soe 138.77 202 *e*PKPdf **PKPdf** **03 16 06.2 +0.4**
MA2 Magadan 139.15 329 *i* PKiKP **PKPdf** **03 16 05.4 +0.4**
MMRI Maumere 140.44 199 *e*PKPdf **PKPdf** **03 16 08.2 -0.6**
FAKI Fak Fak 141.49 217 *e*PKPdf **PKPdf** **03 16 11.3 +0.6**
TWSI Taliwang, Sumb 141.56 191 PKP **PKPdf** **03 16 05.1 -5.7**
TWSI PKP **PKiKP** **03 16 11.9 -1.7**
BRVK Borovoye 142.56 39 *i* PKiKP **PKPdf** **03 16 12.2 +0.9**
BRVK Borovoye 142.56 39 *e*PKPpre PKPpre 03 16 08.9
BVAR Borovoye Array 142.63 319 PKP PKPpre 03 16 07.5
comp=Z,1.4nm,0.5s,baz=289,slow=4.5,SNR=9.9
MSAI Masohi 142.78 212 PKP PKPdf 03 16 24.5 +12
PWJI Pagerwojo 142.81 183 PKP **PKPdf** **03 16 12.3 -0.7**
VOSK Vostochnaya 143.08 40 PKiKP PKPbc 03 16 09.2 -0.3
VOSK pmax pmax
comp=Z,16nm,1.1s
VOSK Vostochnaya 143.08 40 *e*PKPpre PKPpre 03 16 09.8
GUMO Guam 144.15 252 PKP **PKPab** **03 16 13.4 +0.2**
comp=Z,234nm,0.7s,baz=177,slow=10,SNR=20
GUMO Guam 144.15 252 *e*PKPdf **PKPab** **03 16 13.0 -0.2**
DBJI Dramaga 144.16 174 PKP **PKPdf** **03 16 16.3 +0.9**
KAPI Kappang 144.58 197 PKP PKPbc 03 16 15.3 +0.3
comp=Z,80nm,0.8s,baz=215,slow=3.1,SNR=34
KAPI pPKP pPKPdf 03 16 48.9 -0.9
comp=Z,38nm,0.8s,baz=148,slow=1.2,SNR=3.5
PALK Pallekele 144.73 123 PKP **PKPab** **03 16 15.3 -0.1**
comp=Z,71nm,1.2s,baz=296,slow=2.1,SNR=5.4
PALK Pallekele 144.73 123 *e*PKiKP PKPbc 03 16 16.0 +0.4
PALK Pallekele 144.73 123 *e*PKPdf PKPbc 03 16 16.0 +0.5

KDI Kendari 144.75 202 PKP PKPbc 03 16 15.8 +0.2
YAK Yakutsk 144.85 344 PKP **PKPab** **03 16 14.2 -0.2**
comp=Z,166nm,0.6s,baz=66,slow=0.3,SNR=34
YAK pPKP **pPKPdf** **03 16 47.7 -1.0**
comp=Z,73nm,0.7s,baz=108,slow=0.8,SNR=2.3
YAK Yakutsk 144.85 344*c* *i*PKiKP PKPbc 03 16 14.4 0.0
YAK *e* 03 19 40.2
YAK pmax pmax
comp=Z,150nm,0.8s
YAK pmax pmax
comp=N,34nm,1.3s
YAK pmax pmax
comp=E,25nm,0.9s
YAK pmax pmax
comp=N,31nm,1.4s
YAK pmax pmax
comp=E,15nm,1.3s
YAK pmax pmax
comp=Z,68nm,2.4s
KASI Kota Agung 144.92 170 PKP **PKPab** **03 16 16.4 +0.3**
KASI PKP **PKPab** **03 16 16.4 +0.3**
KASI PKP **PKPab** **03 16 16.4 +0.3**
KBL Kabul 145.01 71 *e*PKiKP PKPbc 03 16 14.8 -1.3
KBL Kabul 145.01 71 *e*PKPbc PKPbc 03 16 14.8 -1.3
SANI Sanana 145.24 209 PKP **PKPbc** **03 16 16.8 -0.3**
SANI PKP **PKPdf** **03 16 16.9 -0.3**
LWLI Liwa 145.35 170 PKP **PKPab** **03 16 20.5 +2.7**
OTUK Ortayu 145.54 46 PKiKP **PKPbc** **03 16 17.1 0.0**
OTUK pmax pmax
comp=Z,24nm,1.1s
KK31 Karatay Array 145.62 56 *i* PKP2 **PKPdf** **03 16 16.8 -0.2**
KK31 pmax pmax
comp=Z,10.0nm,0.7s
KKAR Karatay Array 145.62 56 *e*PKP2 **PKPdf** **03 16 17.3 +0.3**
KKAR Karatay Array 145.62 56 *e*PKPdf **PKPdf** **03 16 17.2 +0.3**
KLSI 145.78 171 PKP **PKPdf** **03 16 18.2 0.0**
KLSI PKP **PKPbc** **03 16 18.6 -0.2**
MNAI Manna 145.80 167 *e*PKPdf **PKPdf** **03 16 18.4 +0.2**
KUR Kuril'sk 146.33 309 *i* PKiKP **PKPdf** **03 16 17.8 -0.3**
KSI Kapahiang 146.42 167 PKP **PKPbc** **03 16 21.1 +0.3**
LHSI Lahat 146.43 168 PKP **PKPbc** **03 16 21.2 +0.5**
TTSI Tana Toraja 146.45 198 PKP **PKPab** **03 16 22.3 +0.5**
BBKI Banjar Baru 147.05 189 PKP **PKPbc** **03 16 23.4 +0.9**
MNAS Manas 147.18 56 PKiKP **PKPdf** **03 16 19.5 -0.3**
MNAS pmax pmax
comp=Z,49nm,1.4s
NKL Nikolayevsk 147.31 325 *i* PKP2 **PKPbc** **03 16 22.0 0.0**
NKL pmax pmax
comp=Z,1μm,4.0s
NKL pmax pmax
comp=E,70nm,1.2s
NKL pmax pmax
comp=Z,210nm,1.2s
LUWI Luwuk 147.41 204 PKP **PKPbc** **03 16 23.4 -0.1**
LUWI Luwuk 147.41 204 *e*PKPdf **PKPdf** **03 16 21.5 +0.6**
TYV Tymovskoe 147.47 321 *e*PKiKP **PKPdf** **03 16 20.5 +0.7**
TYV pmax pmax
comp=Z,60nm,1.0s
NVS Novosibirsk 148.06 30⇑*i*PKiKP **PKPdf** **03 16 22.0 +1.4**
NVS *i* 03 16 57.4
NVS pmax pmax
comp=Z,144nm,1.5s
NVS pmax pmax
comp=N,3.0nm,0.3s
NVS pmax pmax
comp=E,22nm,0.6s
KURBB Kurchatov Arra 148.22 39 PKP **PKPdf** **03 16 21.6 +0.6**
comp=E,33nm,0.7s,baz=303,slow=3.1,SNR=84
KURBB PKPbc **PKPbc** **03 16 25.1 +0.5**
comp=E,28nm,0.6s,baz=302,slow=3.0,SNR=135
KURBB pPKPbc **pPKPbc** **03 16 59.0 +1.1**
comp=E,12nm,0.8s,baz=301,slow=3.4,SNR=2.6
KURBB sPKPbc **sPKPbc** **03 17 12.5 +1.6**
comp=E,15nm,0.7s,baz=301,slow=3.2,SNR=6.9
KURK Kurchatov 148.22 39 PKiKP **PKPdf** **03 16 21.7 +0.6**
KURK 03 16 25.1
KURK 03 16 59.0
KURK pmax pmax
comp=Z,33nm,0.7s
KURK pmax pmax
comp=Z,28nm,0.6s
KURK pmax pmax
comp=Z,15nm,0.7s
KURK Kurchatov 148.22 39 PKP **PKPdf** **03 16 21.6 +0.6**
KURK PKPbc **PKPbc** **03 16 25.1 +0.5**
KURK pPKPbc **pPKPbc** **03 16 59.0 +1.1**
KURK sPKPbc **sPKPbc** **03 17 12.5 +1.6**
PDSI Padang 148.55 161 PKP **PKPbc** **03 16 26.3 -0.3**
AAK Ala-Archa 148.58 55 PKP **PKPdf** **03 16 23.8 +1.6**
comp=Z,4.1nm,0.8s,baz=235,slow=1.8,SNR=31
AAK PKPbc **PKiKP** **03 16 27.1 -0.3**
comp=Z,31nm,0.6s,baz=230,slow=1.3,SNR=41
AAK pPKPbc **pPKPbc** **03 16 59.6 +0.2**
comp=Z,20nm,0.8s,baz=254,slow=1.9,SNR=3.1
AAK sPKPbc **sPKPbc** **03 17 16.8 +4.4**
comp=Z,25nm,0.7s,baz=202,slow=3.1,SNR=4.5
AAK PP **PP** **03 19 56.8 -0.2**
comp=Z,1.8nm,0.4s,baz=186,slow=18,SNR=3.8
AAK Ala-Archa 148.58 55 *e*PKPdf **PKPdf** **03 16 23.3 +1.1**
AAK *e*PKPbc **PKPbc** **03 16 26.4 +0.4**
AAK pPKPbc **pPKPbc** **03 16 59.6 +0.2**
AAK sPKPbc **sPKPbc** **03 17 16.8 +4.4**
AAK PP **PP** **03 19 56.8 -0.2**
FRU Bishkek 148.62 55 *e*PKiKP **PKPdf** **03 16 22.0 -0.1**
FRU *e* 03 16 52.0
FRU *e* 03 19 56.0
FRU pmax pmax
comp=Z,470nm,2.0s
SDSI Sungai Dareh 148.79 163 PKP **PKPbc** **03 16 26.9 -0.2**
HYB Hyderabad 148.87 105 *i* PKP **PKPbc** **03 16 27.0 -0.2**
HYB *e* 03 16 31.5
HYB *e*PKP **pPKPdf** **03 17 01.0 +4.1**
HYB *e* 03 17 18.0
MRSI Marisa 149.12 204 PKP **PKPbc** **03 16 27.0 -1.0**
YSS Yuzh-Sakhalins 149.13 314 *e*PKiKP **PKPdf** **03 16 24.2 +1.6**
YSS pmax pmax
comp=Z,70nm,2.0s
YSS Yuzh-Sakhalins 149.13 314 *e*PKPbc **PKPbc** **03 16 27.2 +0.3**
YSS *e*PKPab **PKPab** **03 16 33.2 +1.5**
TKM2 Tokmak 2 149.30 54 PKHKP PKPpre 03 16 23.7
TKM2 pmax pmax
comp=Z,74nm,1.1s
ZAA0 Zalesovo Array 149.34 30 *e*PKPdf **PKPdf** **03 16 22.9 +0.1**
ZALV Zalesovo Beam 149.34 30 PKP **PKPdf** **03 16 22.9 +0.1**
comp=Z,68nm,0.7s,baz=302,slow=3.5,SNR=81
ZALV PKPbc **PKPbc** **03 16 27.4 +0.2**
comp=Z,105nm,0.6s,baz=305,slow=3.6,SNR=168
ZALV pPKPbc **pPKPbc** **03 17 01.7 +1.0**
comp=Z,31nm,0.6s,baz=305,slow=3.5,SNR=3.3
ZALV sPKPbc **sPKPbc** **03 17 15.2 +1.5**
comp=Z,49nm,0.7s,baz=304,slow=3.1,SNR=5.6
GSI Gunungsitoli 149.69 155 PKP **PKPbc** **03 16 30.2 +0.9**
GSI PKP **PKPbc** **03 16 30.3 +0.9**
GSI Gunungsitoli 149.69 155 *e*PKPbc **PKPbc** **03 16 30.1 +0.7**
MNSI Mandailing Nat 149.91 159 PKP **PKPbc** **03 16 29.3 -0.6**
MNSI PKP **PKiKP** **03 16 29.5 -1.3**
ASAJ Asahikawa 150.25 309 PKPbc **PKPbc** **03 16 27.8 -2.0**
baz=150,slow=1.8
ASAJ Asahikawa 150.25 309 *e*PKPbc **PKPbc** **03 16 30.0 +0.2**
KSH Kashi 150.29 61 *e*PKPbc **PKPdf** **03 16 25.8 +0.9**
KSH *e*PP **PP** **03 20 03.1 -3.9**
KSH SKKS 03 26 43.5
KSH LR LR
comp=Z,110nm,5.9s
KSH LR LR
comp=Z,150nm,10.4s
KSH LR LR
comp=Z,110nm,6.3s
SBSI Sibolga 150.39 157 PKP **PKPbc** **03 16 31.9 +0.8**
ERM Erimo 150.46 304 *e*PKiKP **PKPbc** **03 16 31.5 +1.2**
ERM Erimo 150.46 304 *e*PKPbc **PKPbc** **03 16 31.5 +1.2**
CLNS Chul'man 150.59 343 *e*PKiKP **PKPdf** **03 16 26.6 +1.9**
CLNS pmax pmax
comp=Z,25nm,0.6s
CLNS pmax pmax
comp=E,9.0nm,0.8s
CLNS pmax pmax
comp=N,13nm,1.0s
STKI Sintang 150.85 183 PKP **PKPbc** **03 16 33.0 +0.9**
TPTI 151.33 152 PKP **PKPbc** **03 16 32.7 -0.5**
TPTI PKP **PKPbc** **03 16 32.8 -0.5**
NDI New Delhi 151.35 83 *e*P **PKPdf** **03 16 20.0 -6.7**
BOD Bodaibo 151.41 356 *e*PKiKP **PKPdf** **03 16 25.2 -0.7**
BOD pmax pmax

	comp=Z,100nm,1.7s								
PSI	**Prapat**	**151.57**	**156**		PKP	**PKPdf**	**03 16 26.9**	**-0.7**
	comp=Z,14nm,0.6s,baz=191,slow=6.4,SNR=7.7								
PSI					PKPbc	**PKPbc**	**03 16 32.8**	**-1.2**
	comp=Z,20nm,0.6s,baz=202,slow=6.4,SNR=23								
PSI					PKPab	**PKPab**	**03 16 42.0**	**-0.7**
	comp=Z,15nm,0.6s,baz=237,slow=5.6,SNR=8.3								
PSI					pPKPbc	**pPKPbc**	**03 17 07.0**	**-0.5**
	comp=Z,12nm,0.8s,baz=187,slow=8.1,SNR=2.1								
PSI					sPKPbc	**sPKPbc**	**03 17 17.0**	**-3.4**
	comp=Z,33nm,0.9s,baz=247,slow=5.1,SNR=7.4								
PSI	**Prapat**	**151.57**	**156**	*e*	PKPdf	**PKPdf**	**03 16 27.5**	**-0.2**
PSI					PKPbc	**PKPbc**	**03 16 32.8**	**-1.2**
PSI					PKPab	**PKPab**	**03 16 42.0**	**-0.7**
PSI					pPKPbc	**pPKPbc**	**03 17 07.0**	**-0.5**
PSI					sPKPbc	**sPKPbc**	**03 17 17.0**	**-3.4**
KCSI	**Kotacane, Aceh**	**151.80**	**153**		PKP	**PKPbc**	**03 16 34.0**	**-0.4**
MAKZ	**Makanchi**	**152.09**	**44**		PKIKP	**PKPdf**	**03 16 26.7**	**-0.6**
MAKZ					pmax	pmax			
	comp=Z,39nm,0.8s								
MAKZ	**Makanchi**	**152.09**	**44**	*e*	PKPdf	**PKPdf**	**03 16 27.1**	**-0.2**
MK31	**Makanchi Array**	**152.28**	**43**	*i*	PKIKP	**PKPdf**	**03 16 27.3**	**-0.3**
MK31					pmax	pmax			
	comp=Z,26nm,0.7s								
MK31	**Makanchi Array**	**152.28**	**43**	*e*	PKPdf	**PKPdf**	**03 16 27.5**	**-0.1**
MKAR	**Makanchi Array**	**152.28**	**43**		PKP	**PKPdf**	**03 16 27.3**	**-0.3**
	comp=Z,2.1nm,0.7s,baz=333,slow=0.6,SNR=18								
MKAR					PKPbc	**PKPbc**	**03 16 34.5**	**+0.1**
	comp=Z,26nm,0.7s,baz=319,slow=1.9,SNR=114								
MKAR					PKPab	**PKPab**	**03 16 45.8**	**+0.9**
	comp=Z,11nm,0.6s,baz=292,slow=3.0,SNR=10.0								
MKAR					pPKPbc	**pPKPbc**	**03 17 08.0**	**-0.1**
	comp=Z,8.3nm,0.7s,baz=309,slow=1.8,SNR=2.3								
MKAR	**Makanchi Array**	**152.28**	**43**		PKIKP	**PKPdf**	**03 16 27.3**	**-0.3**
MKAR					pmax	pmax			
	comp=Z,9.0nm,0.8s								
MK01	**Makanchi Array**	**152.30**	**43**	*e*	PKPdf	**PKPdf**	**03 16 27.3**	**-0.3**
HABR	**Khabarovsk**	**152.93**	**322**	*ce*	PKIKP	**PKPdf**	**03 16 27.5**	**-0.9**
HABR				*e*			03 16 47.3		
HABR				*e*			03 16 53.3		
HABR				*e*			03 20 21.5		
HABR				*e*			03 23 25.3		
HABR				*e*	SS	SS	03 39 48.4	+5.4	
HABR				*e*	SSS	SSS	03 45 37.5		
HABR					pmax	pmax			
	comp=N,26nm,2.2s								
HABR					pmax	pmax			
	comp=E,27nm,2.1s								
HABR					pmax	pmax			
	comp=Z,70nm,2.2s								
LHMI	**Lhok Sumawe**	**153.01**	**150**		PKP	**PKPbc**	**03 16 38.0**	**+1.0**
LHMI	**Lhok Sumawe**	**153.01**	**150**	*e*	PKPbc	**PKPbc**	**03 16 36.2**	**-0.8**
IPM	**Ipoh**	**153.84**	**159**	*e*	PKPdf	**PKPdf**	**03 16 30.9**	**0.0**
IPM				*e*	PKPbc	**PKPbc**	**03 16 38.1**	**-0.7**
IPM				*e*	PKPab	**PKPab**	**03 16 51.9**	**-0.2**
KLR	**Kul'dur**	**154.15**	**326**		PKP	**PKPdf**	**03 16 29.6**	**-0.5**
	comp=Z,4.3nm,0.9s,baz=52,slow=2.1,SNR=21								
KLR					PKPbc	**PKPbc**	**03 16 38.4**	**0.0**
	comp=Z,8.0nm,0.5s,baz=65,slow=4.5,SNR=24								
KLR					PP	**PP**	**03 20 30.4**	**+2.6**
	comp=Z,0.8nm,0.5s,baz=68,slow=6.2,SNR=6.1								
KULM	**Kulim**	**154.48**	**158**	*e*	PKPdf	**PKPdf**	**03 16 32.0**	**+0.3**
KULM				*e*	PKPbc	**PKPbc**	**03 16 39.6**	**-0.6**
KULM				*e*	PKPab	**PKPab**	**03 16 54.4**	**-0.5**
MJAR	**Matsushiro Arr**	**155.34**	**294**		PKP	**PKPdf**	**03 16 32.3**	**+0.1**
	comp=Z,4.3nm,1.1s,baz=352,slow=0.3,SNR=13								
MJAR					PKPbc	PKPbc	03 16 42.0		
	comp=Z,2.5nm,0.5s,baz=80,slow=15,SNR=7.7								
MJAR					PKPab	**PKPab**	**03 16 58.9**	**+0.7**
	comp=Z,11nm,0.7s,baz=76,slow=6.2,SNR=16								
MJAR					PP	**PP**	**03 20 34.5**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=75,slow=5.9,SNR=2.6								
MAJO	**Matsushiro**	**155.34**	**294**	*e*	PKIKP	**PKPdf**	**03 16 32.4**	**+0.2**
MAJO	**Matsushiro**	**155.34**	**294**	*e*	PKPdf	**PKPdf**	**03 16 32.4**	**+0.2**
MAJO				*e*	PKPab	**PKPab**	**03 16 58.0**	**-0.3**
MJB9	**Matsu-Tunnel**	**155.34**	**294**	*e*	PKPdf	**PKPdf**	**03 16 32.5**	**+0.3**
INU	**Inuyama**	**156.46**	**292**	*e*	PKPdf	**PKPdf**	**03 16 34.9**	**+1.2**
INU				*e*	PKPab	**PKPab**	**03 17 05.2**	**+2.2**
MOY	**Mondy**	**156.71**	**14**	*e*	PKIKP	**PKPdf**	**03 16 35.1**	**+1.4**
MOY					pmax	pmax			
	comp=Z,154nm,2.5s								
WMQ	**Urumqi**	**157.07**	**45**		PKP	**PKPdf**	**03 16 35.0**	**+0.6**
WMQ					pPKP	PKPab	03 17 06.8	+1.3	
WMQ					PP	**PP**	**03 20 47.4**	**+2.9**
WMQ					SKKS		03 27 20.8		
WMQ					AMB	AMB			
	comp=Z,69nm,5.6s								
WMQ					LR	LR			
	comp=Z,160nm,29.8s								
WMQ					LR	LR			
	comp=Z,240nm,27.7s								
WMQ					LR	LR			
	comp=Z,190nm,26.4s								
USRK	**Ussuriysk Ar.**	**157.09**	**316**		PKP	**PKPdf**	**03 16 34.1**	**-0.2**
	comp=Z,2.3nm,0.6s,baz=45,slow=8.4,SNR=9.4								
USRK					PKPab	**PKPab**	**03 17 06.1**	**+0.7**
	comp=Z,7.1nm,0.8s,baz=70,slow=2.9,SNR=13								
USRK					PP	**PP**	**03 20 42.7**	**-1.8**
	comp=Z,0.8nm,0.5s,baz=76,slow=12,SNR=3.1								
TLY	**Talaya**	**157.19**	**10**		PKP	**PKPdf**	**03 16 34.3**	**+0.2**
	comp=Z,4.6nm,0.8s,baz=158,slow=3.5,SNR=10								
TLY					PKPab	**PKPab**	**03 17 04.9**	**-0.6**
	comp=Z,5.7nm,0.8s,baz=264,slow=4.8,SNR=5.0								
TLY	**Talaya**	**157.19**	**10**	*c i*	PKIKP	**PKPdf**	**03 16 34.9**	**+0.7**
TLY	**Talaya**	**157.19**	**10**	*e*	PKPdf	**PKPdf**	**03 16 35.8**	**+1.6**
TLY				*e*	PKPab	**PKPab**	**03 17 05.2**	**-0.3**
GKN	**Gorkha**	**157.69**	**87**	*eP*		**PKPab**	**03 17 07.3**	**-1.5**
	comp=Z,15nm,0.7s								
DMN	**Daman**	**158.04**	**88**	*eP*		**PKPab**	**03 17 09.0**	**-1.4**
	comp=Z,31nm,0.7s								
KKN	**Kakani**	**158.22**	**88**	*eP*		**PKPab**	**03 17 09.9**	**-1.3**
	comp=Z,52nm,1.0s								
PKIN	**Phulchoki**	**158.28**	**89**	*eP*		**PKPab**	**03 17 09.4**	**-2.1**
	comp=Z,9.8nm,0.6s								
PKIN	**Phulchoki**	**158.28**	**89**	*eP*		**PKPab**	**03 17 10.6**	**-0.9**
	comp=Z,10nm,0.6s								
ZAK	**Zakamensk**	**158.38**	**12**	*e*	PKIKP	**PKPdf**	**03 16 35.7**	**-0.1**
ZAK				*e*			03 17 10.4		
ZAK				*e*			03 20 47.8		
ZAK					pmax	pmax			
	comp=Z,18nm,1.9s								
ZAK					pmax	pmax			
	comp=Z,21nm,1.9s								
ZAK					pmax	pmax			
	comp=Z,9.0nm,1.9s								
GUN	**Gumba**	**158.76**	**88**	*eP*		**PKPab**	**03 17 11.9**	**-1.8**
SONA1	**Songino Array**	**161.32**	**8**	*e*	PKPdf	**PKPdf**	**03 16 38.7**	**-0.5**
SONM	**Songino Array**	**161.33**	**8**		PKP	**PKPdf**	**03 16 39.5**	**+0.2**
	comp=Z,4.6nm,1.1s,baz=268,slow=0.5,SNR=21								
SONM					PKPab	**PKPab**	**03 17 24.4**	**+0.6**
	comp=Z,4.1nm,0.7s,baz=336,slow=3.2,SNR=7.1								
SONM					PP	**PP**	**03 21 07.1**	**+0.4**
	comp=Z,1.6nm,1.0s,baz=336,slow=6.3,SNR=2.9								
JNU	**Nakatsue**	**161.78**	**287**		PKPab	**PKPab**	**03 17 26.6**	**+0.3**
	comp=Z,3.3nm,0.7s,baz=66,slow=7.6,SNR=4.1								
JNU					pPKPab	**pPKPab**	**03 17 57.4**	**-1.3**
	comp=Z,5.0nm,0.8s,baz=75,slow=6.6,SNR=2.9								
KSRS	**Korea Array**	**163.03**	**303**		PKP	**PKPdf**	**03 16 41.1**	**+0.1**
	comp=Z,10nm,1.2s,baz=113,slow=0.8,SNR=27								
KSRS					PKPab	**PKPab**	**03 17 28.5**	**-3.0**
	comp=Z,3.9nm,0.8s,baz=96,slow=0.7,SNR=8.5								
KS01	**Wonju Array Si**	**163.04**	**303**	*e*	PKPdf	**PKPdf**	**03 16 40.0**	**-1.1**
KSAR	**Wonju Array Be**	**163.06**	**303**		PKIKP	**PKPdf**	**03 16 41.2**	**+0.1**
KSAR							03 17 28.5		
KSAR	**Wonju Array Be**	**163.06**	**303**		PKP	**PKPdf**	**03 16 41.1**	**+0.1**
KSAR					PKPab	**PKPab**	**03 17 28.5**	**-3.2**
LSA	**Lhasa**	**163.56**	**84**	*e*	PKIKP	**PKPdf**	**03 16 44.0**	**+1.5**
LSA	**Lhasa**	**163.56**	**84**	*e*	PKPdf	**PKPdf**	**03 16 44.0**	**+1.5**
CM01	**Chiang Mai Arr**	**165.15**	**135**	*e*	PKPdf	**PKPdf**	**03 16 43.9**	**+0.3**
CMAR	**Chiang Mai Arr**	**165.17**	**135**		PKP	**PKPdf**	**03 16 43.8**	**+0.2**
	comp=Z,1.0nm,0.4s,baz=248,slow=2.2,SNR=13								
CMAR					PKPab	**PKPab**	**03 17 40.7**	**-0.6**
	comp=Z,1.9nm,0.5s,baz=234,slow=3.3,SNR=6.8								
CMAR					pPKPab	**pPKPab**	**03 18 14.3**	**+0.6**
	comp=Z,1.5nm,0.3s,baz=242,slow=4.0,SNR=2.0								
CHTO	**Chiang Mai**	**165.44**	**134**	*e*	PKIKP	**PKPdf**	**03 16 44.3**	**+0.5**
CHTO				*e*			03 17 42.1		
CHTO	**Chiang Mai**	**165.44**	**134**	*e*	PKPdf	**PKPdf**	**03 16 44.3**	**+0.5**
CHTO				*e*	PKPab	**PKPab**	**03 17 41.8**	**-0.7**
CHTO				*e*	PKPab	PKPab	03 17 42.1	-0.4	
GTA	**Gaotai**	**166.90**	**37**	⇑	PKP	**PKPdf**	**03 16 45.3**	**+0.8**
GTA					pPKP	pPKPdf	03 17 19.8	+1.3	
GTA					sPKP		03 17 35.5		
GTA					PKPab	**PKPab**	**03 17 49.3**	**+0.7**
GTA					PP	**PP**	**03 21 39.4**	**+2.8**
GTA					AMB	AMB			
	comp=Z,120nm,7.6s								
BJI	**Beijing**	**168.20**	**336**		PKP	**PKPdf**	**03 16 45.5**	**+0.3**
HHC	**Hu-ho-hao-te**	**168.46**	**354**	*e*	PKP	**PKPdf**	**03 16 46.3**	**+0.7**
HHC					PP	**PP**	**03 21 44.1**	**+0.3**
HHC					AMB	AMB			
	comp=Z,230nm,7.5s								
SSLB	**Suanglung**	**168.76**	**243**	*e*	PKPdf	**PKPdf**	**03 16 46.7**	**+0.5**
SSLB				*e*	PKPab	**PKPab**	**03 17 56.9**	**-0.4**
QIZ	**Qiongzhong**	**169.72**	**179**		PKP	**PKPdf**	**03 16 47.3**	**+0.5**
QIZ					PP	**PP**	**03 21 50.5**	**+0.6**
QIZ					AMB	AMB			
	comp=Z,160nm,14.6s								
QIZ					LR	LR			
	comp=Z,130nm,17.5s								
QIZ					LR	LR			
	comp=Z,100nm,25.1s								
QIZ	**Qiongzhong**	**169.72**	**179**	*e*	PKPdf	**PKPdf**	**03 16 48.5**	**+1.6**
QIZ				*e*	PKPab	**PKPab**	**03 18 00.1**	**-1.1**
TIA	**Tai'an**	**170.92**	**321**		PKP	**PKPdf**	**03 16 47.1**	**+0.1**
QZH	**Quanzhou**	**171.20**	**242**	*i*	PKP	**PKPdf**	**03 16 47.9**	**+0.4**
QZH					pPKP	**pPKPdf**	**03 17 21.5**	**+0.1**
QZH					PKPab	**PKPab**	**03 18 10.6**	**+2.1**
QZH				*e*	PP	**PP**	**03 22 01.0**	**+2.1**
LZH	**Lanzhou**	**171.50**	**36**	*e*	PKP	**PKPdf**	**03 16 49.5**	**+2.0**
LZH					pPKP	pPKPdf	03 17 17.0	-4.5	
LZH					PP	**PP**	**03 21 59.0**	**-0.8**
LZH					AMB	AMB			
	comp=Z,230nm,7.7s								
NJ2	**Nanjing**	**171.94**	**292**	*e*	PKP	**PKPdf**	**03 16 47.8**	**+0.2**
KMI	**Kunming**	**172.27**	**121**		PKP	**PKPdf**	**03 16 48.3**	**0.0**
KMI					sPKP		03 17 32.8		
KMI					PP	**PP**	**03 22 05.3**	**+0.9**
KMI					SS	SS	03 43 06.3	+1.4	
KMI					AMB	AMB			
	comp=Z,120nm,12.4s								
CD2	**Chengdu**	**174.35**	**72**		PKP	**PKPdf**	**03 16 48.4**	**-0.3**
CD2					pPKP	pPKPdf	03 17 20.6	-2.0	
CD2					PP	**PP**	**03 22 13.3**	**-1.5**
CD2					SKS	**SKSdf**	**03 23 40.5**	**+0.1**
CD2					SKKS	**SKKSac**	**03 28 47.8**	**-1.4**
CD2					SS	**SS**	**03 43 23.3**	**-2.1**
CD2					AMB	AMB			
	comp=Z,220nm,5.6s								
XAN	**Xi'an**	**175.23**	**11**		PKP	**PKPdf**	**03 16 48.9**	**0.0**
XAN					pPKP	pPKPdf	03 17 23.1	+0.3	
GYA	**Guiyang**	**175.86**	**133**		PKP	**PKPdf**	**03 16 49.3**	**0.0**
GYA					pPKP	pPKPdf	03 17 22.0	-1.3	
GYA					sPKP		03 17 34.6		
GYA					PKPab	**PKPab**	**03 18 30.4**	**+1.7**
GYA					PKS	**PKSdf**	**03 20 19.3**	**-2.4**
GYA					PP	**PP**	**03 22 23.8**	**+2.6**
GYA					AMB	AMB			
	comp=Z,140nm,8.4s								
WHN	**Wuhan**	**176.06**	**289**		PKP	**PKPdf**	**03 16 50.3**	**+1.2**
ENH	**Enshi**	**178.97**	**27**	*e*	PKPdf	**PKPdf**	**03 16 50.1**	**+0.5**

*ISCJB **23** 03:03:45.5±0.4,43.03N±0.02×17.85E±0.02,h1km±3km, Error ellipse: s-maj=3.9km s-min=2.3km az=39.5*
*PDG **23** 03:03:45.6±0.2,42.97N×17.82E,h8km, MD3.1/3, ML3.0/13, Error ellipse: s-maj=0.4km s-min=0.5km az=0.0*
*CSEM **23** 03:03:46.6±0.2, 43.01N×17.91E, h2km, ML3.0/5, Error ellipse: s-maj=4.1km s-min=2.5km az=44.0*
*BEO **23** 03:03:46.0±0.5,42.98N×17.80E, h4km±2km, M2.9/1*
*PRU **23** 03:03:48.2,43.06N×17.97E, h0km*

ISC 23 03:03:47.0±1.1, 43.01N±0.02×17.91E±0.02, h5km±9km, n118, σ1§20/193, 26C-24D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
TREB	**Trebinje**	**0.44**	**132**		*e*Pg		**Pg**	**03 03 54.3**	**-1.1**
TREB					*e*Sg		**Sg**	**03 04 01.5**	**+0.4**
TREB	**Trebinje**	**0.44**	**132**	⇑	*i*Pg		**Pg**	**03 03 54.3**	**-1.1**
TREB					*e*Sg		**Sg**	**03 04 01.5**	**+0.4**
BRY	**Bratogost**	**0.47**	**104**	⇑	*i*Pg		**Pg**	**03 03 55.5**	**-0.6**
BRY					*e*Sg		**Sb**	**03 04 04.0**	**-1.3**
BRY	**Bratogost**	**0.47**	**104**	⇑	*i*Pg		**Pg**	**03 03 55.5**	**-0.6**
BRY					*e*Sg		**Sb**	**03 04 04.0**	**-1.3**
HCY	**Herceg Novi**	**0.71**	**143**	⇑	*i*Pg		**Pg**	**03 03 59.1**	**-1.5**
HCY					*e*Sg		**Sg**	**03 04 10.5**	**+0.7**
HCY	**Herceg Novi**	**0.71**	**143**	⇑	*i*Pg		**Pg**	**03 03 59.1**	**-1.5**
HCY					*e*Sg		**Sg**	**03 04 09.9**	**+0.1**
UPM	**Unac-Piva**	**0.75**	**75**	⇓	*i*Pg		**Pg**	**03 04 00.7**	**-0.7**
UPM					*e*Sg		**Sb**	**03 04 14.1**	**+0.8**
UPM	**Unac-Piva**	**0.75**	**75**		P		**Pg**	**03 04 00.4**	**-1.0**
UPM	**Unac-Piva**	**0.75**	**75**	⇓	*i*Pg		**Pg**	**03 04 00.7**	**-0.7**
UPM					*e*Sg		**Sb**	**03 04 13.6**	**+0.3**
NKME	**Niksic**	**0.81**	**108**	⇑	*i*Pg		**Pg**	**03 04 01.5**	**-0.9**
NKME					*e*Sg		**Sb**	**03 04 14.9**	**+0.2**
NKME	**Niksic**	**0.81**	**108**	⇑	*i*Pg		**Pg**	**03 04 01.5**	**-0.9**
NKME					*e*Sg		**Sb**	**03 04 14.9**	**+0.2**
NKY	**Niksic**	**0.82**	**104**	⇓	*i*Pg		**Pg**	**03 04 02.2**	**-0.5**
NKY					*e*Sg		**Sb**	**03 04 15.5**	**+0.3**
NKY	**Niksic**	**0.82**	**104**	⇓	*i*Pg		**Pg**	**03 04 02.2**	**-0.5**
NKY					*e*Sg		**Sb**	**03 04 15.5**	**+0.3**
CEME	**Cevo**	**0.88**	**122**	⇓	*i*Pg		**Pg**	**03 04 02.3**	**-1.5**
CEME					*e*Sg		**Sb**	**03 04 17.0**	**+0.2**
CEME	**Cevo**	**0.88**	**122**	⇓	*i*Pg		**Pg**	**03 04 02.3**	**-1.5**
CEME					*e*Sg		**Sb**	**03 04 17.0**	**+0.2**
BUM	**Brajici-Budva**	**1.02**	**134**	⇑	*i*Pg		**Pg**	**03 04 05.1**	**-1.3**
BUM					*e*Sg		**Sb**	**03 04 21.5**	**+0.7**
BUM	**Brajici-Budva**	**1.02**	**134**	⇑	*i*Pg		**Pg**	**03 04 05.1**	**-1.3**
BUM					*e*Sg		**Sb**	**03 04 21.5**	**+0.7**
PLE	**Pljevlja**	**1.13**	**73**	⇓	*i*Pg		**Pg**	**03 04 07.8**	**-0.8**
PLE					*e*Sg		**Sn**	**03 04 26.6**	**+1.1**
PLE	**Pljevlja**	**1.13**	**73**	⇓	*i*Pg		**Pg**	**03 04 07.8**	**-0.8**
PLE					*e*Sg		**Sn**	**03 04 26.6**	**+1.1**
PDG	**Podgorica**	**1.15**	**120**	⇓	*i*P		**Pg**	**03 04 07.1**	**-1.9**
PDG	**Podgorica**	**1.15**	**120**		*e*Pg		**Pg**	**03 04 07.4**	**-1.6**
PDG					*e*Sg		**Sb**	**03 04 24.6**	**0.0**
PDG	**Podgorica**	**1.15**	**120**	⇓	*i*P		**Pg**	**03 04 07.1**	**-1.9**
PDG	**Podgorica**	**1.15**	**120**		*e*Pg		**Pg**	**03 04 07.4**	**-1.6**
PDG					*e*Sg		**Sb**	**03 04 24.2**	**-0.4**
PDG					S		**Sn**	**03 04 26.0**	**+0.1**
TTG	**Podgorica**	**1.15**	**120**	⇓	*i*Pg		**Pg**	**03 04 07.4**	**-1.6**
TTG					*e*Sg		**Sn**	**03 04 26.4**	**+0.5**
DRME	**Dracevica, Mon**	**1.25**	**131**	⇓	*i*Pg		**Pg**	**03 04 09.1**	**-1.8**
DRME					*e*Sg		**Sn**	**03 04 29.9**	**+1.5**
DRME	**Dracevica, Mon**	**1.25**	**131**	⇓	*i*Pg		**Pg**	**03 04 09.1**	**-1.8**
DRME					*e*Sg		**Sg**	**03 04 26.9**	**-0.3**
BBLS	**Lazići**	**1.38**	**51**		*e*Pn		**Pn**	**03 04 13.0**	**0.0**
BBLS					*e*Sg		**Sn**	**03 04 33.9**	**+2.2**
BBLS	**Lazići**	**1.38**	**51**	⇑	*i*Pg		**Pn**	**03 04 13.0**	**0.0**
BBLS					*e*Sg		**Sn**	**03 04 33.3**	**+1.6**
ULC	**Ulcinj**	**1.44**	**136**	⇑	*i*Pg		**Pn**	**03 04 12.0**	**-1.8**
ULC					*e*Sg		**Sg**	**03 04 35.2**	**+2.0**
ULC	**Ulcinj**	**1.44**	**136**		P		**Pn**	**03 04 12.2**	**-1.6**
ULC					*e*Sg		**Sg**	**03 04 35.2**	**+2.0**
BEY	**Berane**	**1.46**	**95**	⇓	*i*Pg		**Pn**	**03 04 14.0**	**-0.1**
BEY	**Berane**	**1.46**	**95**		P		**Pg**	**03 04 16.2**	**+1.2**
BEY					*e*Sg		**Sg**	**03 04 36.9**	**+3.0**
IVA	**Berane**	**1.46**	**95**	⇓	*i*Pg		**Pn**	**03 04 14.0**	**-0.1**
IVA					*e*Sg		**Sg**	**03 04 36.9**	**+3.0**
PVY	**Plav**	**1.56**	**105**		*e*Pn		**Pn**	**03 04 15.6**	**0.0**
PVY					*e*Sn		**Sg**	**03 04 39.3**	**+2.1**
DOB	**Doboj**	**1.72**	**4**	⇑	*i*Pn		**Pn**	**03 04 17.2**	**-0.4**
DOB					*e*Sn		**Sn**	**03 04 40.5**	**+0.4**
IVAS	**Ivanjica**	**1.73**	**70**		*e*Pn		**Pb**	**03 04 18.5**	**-0.8**
IVAS	**Ivanjica**	**1.73**	**70**		*e*Pn		**Pb**	**03 04 18.5**	**-0.8**
PEJK	**Peje**	**1.78**	**101**		P		**Pg**	**03 04 20.6**	**-0.5**
BLY	**Banja Luka**	**1.81**	**343**		*e*Pn		**Pn**	**03 04 19.7**	**+0.8**
BLY					*e*Sg		**Sg**	**03 04 45.4**	**+0.2**
BLY	**Banja Luka**	**1.81**	**343**	⇑	*i*Pn		**Pn**	**03 04 18.6**	**-0.3**
BLY					*e*Sn		**Sn**	**03 04 42.5**	**+0.2**
BLY					*e*Sg		**Sg**	**03 04 45.4**	**+0.2**
DIVS	**Divibare**	**1.86**	**54**		*e*Pn		**Pn**	**03 04 19.8**	**+0.1**
DIVS					*e*Sn		**Sb**	**03 04 44.6**	**-0.6**
DIVS	**Divibare**	**1.86**	**54**	⇑	*i*Pn		**Pn**	**03 04 19.7**	**+0.1**
DIVS					*e*Sn		**Sb**	**03 04 44.6**	**-0.6**
TEKS	**Tekeris**	**1.93**	**37**		*e*Pn		**Pn**	**03 04 20.3**	**-0.2**
TEKS					*e*Sn		**Sb**	**03 04 47.2**	**+0.1**
TEKS	**Tekeris**	**1.93**	**37**	⇑	*i*Pn		**Pn**	**03 04 20.5**	**0.0**
TEKS					*e*Sn		**Sb**	**03 04 46.8**	**-0.3**
MS1	**Monte Sant'Ang**	**1.96**	**229**		*e*P		**Pb**	**03 04 22.6**	**-0.6**
BAI	**Bari**	**2.06**	**202**		*e*P		**Pn**	**03 04 22.7**	**+0.5**
ZATK	**Zatriq**	**2.08**	**105**		P		**Pb**	**03 04 24.9**	**-0.3**
UDBI	**Udbina**	**2.17**	**315**		*e*Pn		**Pn**	**03 04 24.8**	**+1.0**
UDBI					Sn		**Sb**	**03 04 55.0**	**+1.0**
TRUS	**Trudelj**	**2.18**	**55**		*e*Pn		**Pn**	**03 04 24.0**	**+0.1**
TRUS	**Trudelj**	**2.18**	**55**		*e*Pn		**Pn**	**03 04 24.0**	**+0.1**
TIR	**Tirane**	**2.21**	**138**	⇑	*i*P		**Pn**	**03 04 24.4**	**+0.1**
TIR	**Tirane**	**2.21**	**138**		*e*Pn		**Pn**	**03 04 24.0**	**-0.3**
TIR					*e*Sn		**Sn**	**03 04 52.6**	**+0.6**
TIR	**Tirane**	**2.21**	**138**		*e*Pn		**Pn**	**03 04 24.0**	**-0.3**
TIR	**Tirane**	**2.21**	**138**	⇑	*i*P		**Pn**	**03 04 24.4**	**+0.1**
TIR					*e*Sn		**Sn**	**03 04 52.6**	**+0.6**
GRUS	**Gruza**	**2.22**	**66**		*e*Pn		**Pn**	**03 04 24.6**	**+0.1**
GRUS					*e*Sn		**Sb**	**03 04 54.3**	**-1.1**
GRUS	**Gruza**	**2.22**	**66**		*e*Pn		**Pn**	**03 04 24.6**	**+0.1**
GRUS					*e*Sn		**Sb**	**03 04 54.3**	**-1.1**
SELS	**Selova**	**2.36**	**84**		*e*Pn		**Pn**	**03 04 26.7**	**+0.3**
SELS					*e*Sn		**Sn**	**03 04 57.4**	**+1.6**
SELS	**Selova**	**2.36**	**84**		*e*Pn		**Pn**	**03 04 26.7**	**+0.3**
SELS					*e*Sn		**Sn**	**03 04 57.4**	**+1.6**
SG1	**Sgolgore (BA)**	**2.36**	**203**		*e*P		**Pn**	**03 04 27.4**	**+1.0**
TAR1	**Taranto**	**2.53**	**191**		*e*Pn		**Pn**	**03 04 26.5**	**-2.2**
FGSL	**Fruska Gora**	**2.54**	**32**		*e*Pn		**Pn**	**03 04 27.9**	**-1.0**
FRGS	**Fruska Gora**	**2.54**	**32**		*e*Pn		**Pn**	**03 04 27.9**	**-1.0**
NVLJ	**Novalja**	**2.69**	**306**		*e*Pn		**Pn**	**03 04 30.8**	**-0.1**
NVLJ							Sn	**03 05 05.4**	**+1.5**
NVLJ	**Novalja**	**2.69**	**306**		*e*Pn		**Pn**	**03 04 30.8**	**-0.1**
NVLJ							Sn	**03 05 05.4**	**+1.5**
BOVS	**Bovan**	**2.84**	**76**		*e*Pn		**Pn**	**03 04 33.1**	**+0.1**
BOVS	**Bovan**	**2.84**	**76**		*e*Pn		**Pn**	**03 04 33.1**	**+0.1**
BARS	**Barje**	**2.88**	**93**		*e*Pn		**Pn**	**03 04 34.6**	**+1.1**
BARS					*e*Sn		**Sn**	**03 05 10.2**	**+1.7**
BARS	**Barje**	**2.88**	**93**		*e*Pn		**Pn**	**03 04 34.6**	**+1.1**
BARS					*e*Sn		**Sn**	**03 05 10.2**	**+1.7**
BOLS	**Boljevac**	**3.06**

JOU	**Okura**	**2.13**	**251**	P	**Pn**	**03 04 31.1**	**-0.1**
JMM	**Marumori**	**2.27**	**238**	P	**Pn**	**03 04 32.2**	**-0.8**
JTM	**Tenmabayashi**	**2.36**	**316**	P	**Pn**	**03 04 35.1**	**+0.8**
MAT	**Matsushiro**	**4.72**	**239**	P	**Pn**	**03 05 10.7**	**+4.0**
MJAR	**Matsushiro Arr**	**4.72**	**239**	Pn	**Pn**	**03 05 07.2**	**+0.5**
	0.6nm,0.3s,baz=46,slow=9.7,SNR=6.8						
H11N2	**WAKE ISLAND Hy**	**28.10**	**127**	T	T	03 40 18.9	
	baz=320						
H11N1	**WAKE ISLAND Hy**	**28.11**	**127**	T	T	03 40 19.1	
	baz=320,slow=74,SNR=5.3						
H11N3	**WAKE ISLAND Hy**	**28.12**	**127**	T	T	03 40 19.9	
	baz=320,slow=74,SNR=4.3						
H11S1	**WAKE ISLAND Hy**	**28.91**	**129**	T	T	03 41 13.2	
	baz=315,slow=76,SNR=10.0						
H11S3	**WAKE ISLAND Hy**	**28.91**	**129**	T	T	03 41 11.2	
	baz=315,slow=76,SNR=9.0						
H11S2	**WAKE ISLAND Hy**	**28.92**	**129**	T	T	03 41 12.6	
	baz=315,slow=76,SNR=11						
ZALV	**Zalesovo Beam**	**41.61**	**311**	P	**P**	**03 11 41.8**	**+0.1**
	0.9nm,0.5s,baz=101,slow=6.0,SNR=2.8						
ILAR	**Eielson Array**	**46.98**	**33**	P	**P**	**03 12 24.8**	**+0.4**
	0.4nm,0.8s,baz=263,slow=6.3,SNR=4.8						
WRA	**Warramunga Arr**	**59.32**	**190**	P	**P**	**03 13 54.3**	**-1.3**
	0.3nm,0.7s,baz=7.7,slow=7.4,SNR=3.4						

IDC 23 03:15:41.1±52.0, 23°.06S×175°.36W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/33, mbtmp4.0/3, Error ellipse: s-maj=966.4km s-min=176.0km az=88.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.98**	**247**	P	P	03 23 09.4	+0.1
	1.2nm,0.3s,baz=90,slow=9.1,SNR=5.9						
ASAR	**Alice Springs**	**46.38**	**259**	P	P	03 24 09.2	-0.4
	0.5nm,0.4s,baz=96,slow=6.6,SNR=9.2						
WRA	**Warramunga Arr**	**46.73**	**264**	P	P	03 24 12.2	-0.1
	1.7nm,0.6s,baz=104,slow=8.0,SNR=6.2						

JMA 23 03:15:46.8±0.1, 37°.57N×142°.06E, h23km±3km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.96**	**258**	P	Pb	03 16 04.3	-0.6
JFK				S	Sb	03 16 16.8	-0.4
JIO	**Ouri**	**1.05**	**328**	P	Pn	03 16 05.6	-0.5
JIO				S	Sn	03 16 19.9	0.0
JMM	**Marumori**	**1.05**	**287**	P	Pn	03 16 05.6	-0.5
JMM				S	Sb	03 16 19.1	-0.4
ONAJ	**Iwakimizuishiy**	**1.11**	**245**	P	Pn	03 16 06.7	-0.3
ONAJ				S	Sb	03 16 20.4	-1.0
JOU	**Okura**	**1.36**	**306**	P	Pn	03 16 10.9	+0.5
JOU				S	Sb	03 16 28.6	+0.1
JFT	**Otama**	**1.37**	**268**	P	Pb	03 16 11.3	-0.5
JFT				S	Sn	03 16 28.4	+0.4
JMK	**Ichinoseki**	**1.53**	**335**	P	Pn	03 16 13.2	+0.5
JYS	**Shirataka**	**1.71**	**293**	P	Pn	03 16 16.0	+0.9
JYS				S	Sb	03 16 39.0	+0.5

IDC 23 03:16:50.9±2.1, 6°.45S×129°.41E, h0km, mb4.0/1, mb1 3.8/3, mb1mx3.5/43, mbtmp3.7/3, ML3.5/2, Error ellipse: s-maj=117.0km s-min=31.3km az=68.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.24**	**161**	Pn	Pn	03 20 13.3	-0.7
	0.2nm,0.3s,baz=340,slow=13,SNR=12						
WRA				Sn	Sn	03 22 39.9	-13
	0.3nm,0.3s,baz=337,slow=23,SNR=2.8						
ASAR	**Alice Springs**	**17.66**	**166**	P	Pn	03 20 59.0	+0.5
	0.3nm,0.3s,baz=346,slow=9.9,SNR=15						
ASAR				S	Sn	03 24 04.8	-11
	0.1nm,0.3s,baz=357,slow=29,SNR=4.0						
MKAR	**Makanchi Array**	**67.45**	**327**	P	P	03 27 48.5	0.0
	0.6nm,0.4s,baz=121,slow=7.1,SNR=6.2						

IDC 23 03:26:19.5±1.3, 17°.59N×145°.64E, h491km±19km, mb2.7/5, mb1 3.0/6, mb1mx2.7/35, mbtmp3.6/6, Error ellipse: s-maj=40.0km s-min=22.6km az=108.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**4.05**	**191**	P	P	03 27 38.7	+1.0
	5.6nm,0.3s,baz=356,slow=19,SNR=1.9						
GUMO				S	S	03 28 41.3	-0.1
	11nm,0.3s,baz=342,slow=20,SNR=6.8						
WRA	**Warramunga Arr**	**38.91**	**197**	P	P	03 33 02.3	0.0
	0.6nm,1.0s,baz=18,slow=8.9,SNR=3.6						
MKAR	**Makanchi Array**	**59.19**	**314**	P	P	03 35 33.3	+0.8
	0.3nm,0.4s,baz=91,slow=8.1,SNR=4.6						
ILAR	**Eielson Array**	**64.66**	**26**	P	P	03 36 07.7	-0.3
	0.2nm,0.4s,baz=257,slow=5.9,SNR=6.0						
YKA	**Yellowknife Ar**	**78.99**	**28**	P	P	03 37 32.1	+0.6
	0.2nm,0.4s,baz=287,slow=5.6,SNR=2.9						
FINES	**FINESS Array B**	**87.86**	**335**	P	P	03 38 14.2	-1.6
	1.1nm,0.8s,baz=58,slow=5.4,SNR=3.2						

JMA 23 04:03:28.2, 37°.67N×139°.92E, h7km±1km, M0.3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.31**	**213**	P	Pg	04 03 34.5	+0.1

IDC 23 04:09:32.8±3.3, 13°.07N×145°.65E, h46km±27km, mb3.3/5, mb1 3.5/5, mb1mx3.2/52, mbtmp3.5/5, Error ellipse: s-maj=40.3km s-min=19.8km az=85.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.92**	**304**	P	Pn	04 09 48.7	-0.6
	189nm,0.3s,baz=115,slow=5.0,SNR=82						
GUMO				S	Sn	04 10 02.3	+0.9
	227nm,0.3s,baz=324,slow=17,SNR=14						
WRA	**Warramunga Arr**	**34.64**	**199**	P	P	04 16 17.8	-0.2
	0.6nm,0.8s,baz=23,slow=10,SNR=5.2						
ASAR	**Alice Springs**	**38.28**	**198**	P	P	04 16 49.2	+0.2
	0.3nm,0.6s,baz=19,slow=15,SNR=3.4						
KURBB	**Kurchatov Arra**	**65.50**	**320**	P	P	04 20 10.6	-0.8
	0.4nm,0.4s,baz=99,slow=6.5,SNR=5.3						
ILAR	**Eielson Array**	**68.71**	**25**	P	P	04 20 31.9	+0.4
	0.1nm,0.5s,baz=270,slow=5.4,SNR=3.8						
BVAR	**Borovoye Array**	**70.80**	**322**	P	P	04 20 44.7	+0.1
	0.7nm,0.4s,baz=107,slow=9.2,SNR=3.1						

IDC ***23*** *04:09:39.4±1.0, 36°.88N×55°.02E, h0km, mb3.5/12, mb1 3.8/21, mb1mx3.7/55, mbtmp3.6/21, ML3.6/9, MS2.8/1, Ms1 2.8/1, ms1mx2.2/54, Error ellipse: s-maj=18.7km s-min=10.6km az=3.0*

CSEM ***23*** *04:09:40.6±0.2, 36°.91N×55°.33E, h2km, ML3.6, Error ellipse: s-maj=10.8km s-min=5.2km az=158.0*

THR ***23*** *04:09:40.0±0.5, 36°.85N×55°.40E, h6km±4km, ML3.5*

ISCJB ***23*** *04:09:41.9±0.3, 37°.14N±0°.03×55°.09E±0°.03, h24km, mb3.5/14, Error ellipse: s-maj=3.9km s-min=3.2km az=7.6*

TEH ***23*** *04:09:42.7, 36°.77N×55°.34E, h12km, ML3.9*

AZER ***23*** *04:09:42.7±99.0, 36°.87N×54°.82E, h26km±10km, Error ellipse: s-maj=156.3km s-min=7.3km az=302.0*

ISC 23 04:09:42.9±0.6, 37°.04N±0°.04×55°.19E±0°.03, h24km, n90, σ1s80/109, mb3.5/14, 9C-17D, Iran-Turkmenistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRVT	**Maraveh tapeh**	**0.95**	**49**	*e*Pg	**Pb**	**04 09 59.0**	**-1.8**
MRVT	**Maraveh tapeh**	**0.95**	**49**	*e*Pg	**Pb**	**04 09 59.0**	**-1.8**
IGLO	**Ghaloghah**	**1.22**	**244**	*e*Pg	**Pn**	**04 10 02.1**	**-2.5**
IGLO				*e*AMB	AMB	04 10 34.6	
	comp=Z,27μm,0.3s						
SHRO	**Shahrood**	**1.23**	**147**	*e*Pg	Pn	04 09 58.8	-6.0
SHRO				AML	AML	04 10 17.7	
	comp=E,767nm,0.3s						
IKIA	**Kiasar**	**1.47**	**236**	*e*AMB	AMB	04 10 09.0	
	comp=Z,17μm,0.1s						
IKIA				*e*Pn	**Pn**	**04 10 06.5**	**-1.6**
IANJ	**Anjilo**	**1.88**	**214**	*e*Pn	**Pn**	**04 10 12.0**	**-1.7**
IANJ				*e*Sg	**Sn**	**04 10 36.8**	**+0.1**
IANJ				*e*AMB	AMB	04 10 41.5	
	comp=Z,10μm,0.2s						
IANJ	**Anjilo**	**1.88**	**214**	*e*Pn	**Pn**	**04 10 12.0**	**-1.7**
IANJ				*e*Sg	**Sn**	**04 10 36.8**	**+0.1**
BJRD	**Bojnurd**	**1.89**	**69**	*e*Pg	**Pn**	**04 10 14.8**	**+1.0**
BJRD	**Bojnurd**	**1.89**	**69**	*e*Pg	**Pn**	**04 10 14.8**	**+1.0**
ISHM	**Shahmirzad**	**1.96**	**232**	*e*Pn	**Pn**	**04 10 15.0**	**0.0**
IALA	**Alasht**	**2.14**	**244**	*e*Pn	**Pn**	**04 10 18.6**	**+1.2**
IALA				*e*Sg	**Sb**	**04 10 50.0**	**+2.6**
IALA				*e*AMB	AMB	04 10 52.9	
	comp=Z,27μm,0.2s						
IALA	**Alasht**	**2.14**	**244**	*e*Pn	**Pn**	**04 10 18.6**	**+1.2**
IALA				*e*Sg	**Sb**	**04 10 50.0**	**+2.6**
ISFR	**Sfrayin**	**2.25**	**89**	*e*Pn	**Pn**	**04 10 18.6**	**-0.3**
ISFR				*e*AMB	AMB	04 10 56.4	
	comp=Z,10μm,0.3s						
ISFR	**Sfrayin**	**2.25**	**89**	*e*Pn	**Pn**	**04 10 18.6**	**-0.3**
IFIR	**Firoozkooh**	**2.41**	**235**	*e*Pn	**Pn**	**04 10 21.6**	**+0.5**
IFIR				*e*AMB	AMB	04 10 26.6	
	comp=Z,10μm,0.1s						
IFIR	**Firoozkooh**	**2.41**	**235**	*e*Pn	**Pn**	**04 10 21.6**	**+0.5**
IPRN	**Peran**	**2.43**	**252**	*e*Pn	**Pn**	**04 10 21.6**	**+0.4**
IPRN				*e*AMB	AMB	04 11 02.5	
	comp=N,42μm,0.2s						
ILAS	**Lasjerd**	**2.45**	**228**	*e*Pn	**Pn**	**04 10 21.8**	**+0.2**
ILAS				*e*AMB	AMB	04 11 01.7	
	comp=E,8μm,0.2s						
ILAS	**Lasjerd**	**2.45**	**228**	*e*Pn	**Pn**	**04 10 21.8**	**+0.2**
GEYT	**Alibeck**	**2.49**	**68**	Pn	**Pn**	**04 10 23.1**	**+1.1**
	comp=E,12nm,0.3s,baz=256,slow=12,SNR=27						
GEYT				Sn	**Sb**	**04 10 58.7**	**+1.4**
	comp=E,15nm,0.3s,baz=250,slow=30,SNR=4.0						
IEMG	**Emamgholi**	**2.79**	**81**	*e*Pn	**Pn**	**04 10 26.2**	**-0.1**
IEMG				*e*AMB	AMB	04 11 28.2	
	comp=Z,2μm,0.3s						
IEMG	**Emamgholi**	**2.79**	**81**	*e*Pn	**Pn**	**04 10 26.2**	**-0.1**
IAKL	**Akhelmad**	**2.89**	**98**	*e*Pn	**Pn**	**04 10 26.6**	**-1.2**
IAKL				*e*AMB	AMB	04 11 14.9	
	comp=Z,2μm,0.2s						
IDMV	**Damavand**	**2.94**	**241**	*e*Pn	**Pn**	**04 10 29.8**	**+1.4**
IDMV				*e*AMB	AMB	04 10 34.1	
	comp=Z,4μm,0.1s						
IDMV	**Damavand**	**2.94**	**241**	*e*Pn	**Pn**	**04 10 29.8**	**+1.4**
DAMV	**Damavand**	**2.96**	**243**	*e*Pn	**Pn**	**04 10 30.6**	**+2.0**
DAMV				AML	AML	04 11 20.7	
	comp=E,192nm,0.4s						
DAMV	**Damavand**	**2.96**	**243**	*e*Pn	**Pn**	**04 10 30.6**	**+2.0**
IAFJ	**Afjeh**	**3.04**	**248**	*e*Pn	**Pn**	**04 10 31.0**	**+1.2**
IAFJ	**Afjeh**	**3.04**	**248**	*e*Pn	**Pn**	**04 10 31.0**	**+1.2**
CHTH	**Charan**	**3.46**	**252**	*e*Pn	**Pn**	**04 10 38.0**	**+2.4**
CHTH	**Charan**	**3.46**	**252**	*e*Pn	**Pn**	**04 10 38.0**	**+2.4**
TABS	**Tabas**	**3.73**	**154**	*e*Pn	**Pn**	**04 10 36.6**	**-2.5**
TABS				AML	AML	04 11 42.7	
	comp=N,75nm,0.6s						
TABS	**Tabas**	**3.73**	**154**	*e*Pn	**Pn**	**04 10 36.6**	**-2.5**
IMHD	**Mahdasht**	**3.89**	**251**	*e*Pn	**Pn**	**04 10 42.7**	**+1.4**
IMHD				*e*AMB	AMB	04 11 00.7	
	comp=Z,1μm,0.2s						
IMHD	**Mahdasht**	**3.89**	**251**	*e*Pn	**Pn**	**04 10 42.7**	**+1.4**
GHVR	**GHOM**	**4.07**	**232**	*e*Pn	**Pn**	**04 10 45.5**	**+1.8**
GHVR				AML	AML	04 12 05.5	
	comp=E,125nm,0.8s						
GHVR				AML	AML	04 12 05.9	
	comp=N,62nm,0.5s						
GHVR	**GHOM**	**4.07**	**232**	*e*Pn	**Pn**	**04 10 45.5**	**+1.8**
QAM	**Ghamsar**	**4.48**	**224**	*e*Pn	**Pn**	**04 10 48.8**	**-0.7**
QAM				*e*AMB	AMB	04 12 18.0	
	comp=Z,1μm,0.3s						
IKLH	**Kolahrood**	**4.74**	**220**	*e*Pn	**Pn**	**04 10 52.1**	**-1.1**
IKLH	**Kolahrood**	**4.74**	**220**	*e*Pn	**Pn**	**04 10 52.1**	**-1.1**
IZEF	**Zefreh**	**4.75**	**210**	*e*Pn	**Pn**	**04 10 51.7**	**-1.6**
IZEF				*e*AMB	AMB	04 12 12.5	
	comp=Z,557nm,0.2s						
IZEF	**Zefreh**	**4.75**	**210**	*e*Pn	**Pn**	**04 10 51.7**	**-1.6**
ASAO	**Ashtian**	**4.88**	**241**	*e*Pn	**Pn**	**04 10 57.1**	**+2.1**
ASAO	**Ashtian**	**4.88**	**241**	*e*Pn	**Pn**	**04 10 57.1**	**+2.1**
ZNJK	**Zanjan**	**5.23**	**268**	*e*Pn	**Pn**	**04 11 03.2**	**+3.4**
ZNJK	**Zanjan**	**5.23**	**268**	*e*Pn	**Pn**	**04 11 03.2**	**+3.4**
ASTR	**Astara**	**5.29**	**289**	⇓P	**Pn**	**04 10 59.2**	**-1.2**
ASTR				⇓S	**Sn**	**04 11 58.1**	**-2.6**
ASTR	**Astara**	**5.29**	**289**	P	**Pn**	**04 10 59.2**	**-1.2**
LKRN	**Lenkeran, Azer**	**5.34**	**290**	⇓P	**Pn**	**04 11 00.3**	**-0.8**
LKRN				⇓S	**Sn**	**04 11 56.9**	**-4.9**
SHRT	**Shahrakht**	**5.37**	**128**	*e*Pn	**Pn**	**04 10 59.6**	**-2.0**
SHRT	**Shahrakht**	**5.37**	**128**	*e*Pn	**Pn**	**04 10 59.6**	**-2.0**
KHMZ	**Khomeyn**	**5.39**	**234**	*e*Pn	**Pn**	**04 11 03.8**	**+1.8**
KHMZ	**Khomeyn**	**5.39**	**234**	*e*Pn	**Pn**	**04 11 03.8**	**+1.8**
LRK	**Lerik**	**5.66**	**289**	⇓P	**Pn**	**04 11 08.6**	**-1.0**
LRK				⇓S	**Sn**	**04 12 08.5**	**-1.4**
ALIB	**Äli-Bayra**	**5.66**	**303**	⇓P	**Pn**	**04 11 07.7**	**+2.2**
ALIB				⇓S	**Sn**	**04 12 10.7**	**+1.0**
IRAM	**Ramesheh**	**5.71**	**205**	*e*Pn	**Pn**	**04 11 06.0**	**-0.4**
IRAM				*e*AMB	AMB	04 12 54.2	
	comp=N,285nm,0.3s						
IRAM	**Ramesheh**	**5.71**	**205**	*e*Pn	**Pn**	**04 11 06.0**	**-0.4**
GLBA	**Clilabad**	**5.79**	**294**	⇓P	**Pn**	**04 11 07.0**	**-0.3**
GLBA				⇓S	**Sn**	**04 12 11.2**	**-1.8**
SIZA	**Siyzn**	**6.34**	**311**	⇓P	**Pn**	**04 11 17.3**	**+2.3**
SIZA				⇓S	**Sn**	**04 12 27.0**	**+0.3**
XNQ	**Khinaliq**	**6.86**	**309**	⇑P	**Pn**	**04 11 23.4**	**+1.2**
XNQ				⇓S	**Sn**	**04 12 38.7**	**-0.9**
QSAR	**Qusar**	**6.99**	**312**	⇑P	**Pn**	**04 11 24.4**	**+0.6**
QSAR				⇑S	**Sn**	**04 12 41.7**	**-0.9**
SEKA	**Sheki**	**7.48**	**306**	⇓P	**Pn**	**04 11 30.1**	**-0.4**
SEKA				⇓S	**Sn**	**04 12 50.8**	**-3.8**
GANJ	**Ganja**	**7.80**	**300**	⇓P	**Pn**	**04 11 32.8**	**-2.2**
GANJ				⇑S	**Sn**	**04 12 59.7**	**-2.9**
ZKTA	**Zakatala**	**8.07**	**307**	⇑P	**Pn**	**04 11 38.8**	**+0.1**
ZKTA				⇓S	**Sn**	**04 13 07.8**	**-1.3**
GDB	**GEDABAY**	**8.23**	**299**	⇑P	**Pn**	**04 11 39.9**	**-1.0**
GDB				⇑S	**Sn**	**04 13 09.8**	**-3.4**
QZX	**Qazax, Azerbai**	**8.63**	**301**	⇑P	**Pn**	**04 11 45.8**	**-0.5**
QZX				⇑S	**Sn**	**04 13 17.6**	**-5.3**
KBZ	**Khabaz**	**11.51**	**309**	Pn	**Pn**	**04 12 24.6**	**-1.0**
	comp=N,0.4nm,0.3s,baz=111,slow=8.6,SNR=4.0						
KBZ				Sn	**Sn**	**04 14 30.8**	**-2.5**
	comp=N,0.3nm,0.3s,baz=311,slow=11,SNR=2.2						
KVAR	**Kislovodsk Ar**	**11.75**	**310**	Pn	**Pn**	**04 12 27.8**	**-1.3**
	baz=104,slow=8.9,SNR=6.4						
AKTO	**Aktyubinsk**	**13.55**	**8**	Pn	**Pn**	**04 12 53.3**	**-0.1**
	comp=N,0.3nm,0.3s,baz=169,slow=15,SNR=4.0						
AKTO				Sn	**Sn**	**04 15 18.4**	**-4.7**
	comp=N,0.2nm,0.3s,baz=229,slow=20,SNR=2.3						
AAK	**Ala-Archa**	**15.84**	**63**	Pn	**Pn**	**04 13 25.2**	**+0.8**
	comp=N,0.2nm,0.3s,baz=242,slow=7.5,SNR=4.3						
MMAI	**Mount Meron Ar**	**16.69**	**262**	Pn	**Pn**	**04 13 33.7**	**-1.6**
	comp=N,1.3nm,0.3s,baz=351,slow=15,SNR=5.4						
MMAI				LR	LR	04 20 20.6	
	comp=N,36nm,19.9s,baz=185,slow=39						
BRTR	**Keskin Array B**	**17.11**	**286**	P	**Pn**	**04 13 39.3**	**-1.2**
	comp=N,0.0nm,0.3s,baz=116,slow=8.2,SNR=2.4						
BVAR	**Borovoye Array**	**19.19**	**29**	P	**Pn**	**04 14 06.9**	**+1.1**
	comp=N,0.4nm,0.3s,baz=215,slow=10.0,SNR=6.2						
ARU	**Arti**	**19.53**	**6**	P	**Pn**	**04 14 11.5**	**+1.7**
	comp=N,0.0nm,0.3s,baz=263,slow=10,SNR=4.2						
KURBB	**Kurchatov Arra**	**21.51**	**43**	P	**P**	**04 14 31.7**	**+1.7**
	comp=N,0.3nm,0.3s,baz=243,slow=9.8,SNR=5.0						
MKAR	**Makanchi Array**	**22.30**	**56**	P	**P**	**04 14 39.4**	**+0.8**
	comp=N,0.9nm,0.7s,baz=247,slow=14,SNR=9.5						
AKASG	**Malin Array Be**	**23.02**	**315**	P	**P**	**04 14 45.3**	**-0.7**
	comp=N,0.9nm,0.4s,baz=123,slow=9.6,SNR=4.2						
MLR	**Muntele Rosu**	**23.45**	**300**	P	**P**	**04 14 51.3**	**+0.8**
	comp=N,0.4nm,0.8s,baz=95,slow=14,SNR=2.4						
STHS	**Stebnicka Huta**	**27.42**	**308**	*e*P	**P**	**04 15 28.3**	**+1.7**
	comp=N,1.2nm,0.9s						
STHS	**Stebnicka Huta**	**27.42**	**308**	*e*P	**P**	**04 15 28.2**	**+1.7**
VYHS	**Vyhne**	**28.78**	**305**	*e*P	**P**	**04 15 40.4**	**+1.7**
	comp=N,1.1nm,1.3s						
VYHS	**Vyhne**	**28.78**	**305**	*e*P	**P**	**04 15 40.4**	**+1.7**
GERES	**GERESS Array B**	**32.20**	**305**	P	**P**	**04 16 09.1**	**+0.1**
	comp=N,0.3nm,0.7s,baz=83,slow=11,SNR=3.5						
HFS	**Hagfors**	**35.00**	**325**	P	**P**	**04 16 35.4**	**+2.3**
	comp=N,1.7nm,0.7s,baz=108,slow=14,SNR=4.2						
SONM	**Songino Array**	**38.65**	**57**	P	**P**	**04 17 06.2**	**+1.7**
	comp=N,0.3nm,0.4s,baz=293,slow=12,SNR=2.3						
CMAR	**Chiang Mai Arr**	**42.49**	**104**	P	**P**	**04 17 37.4**	**+1.0**
	comp=N,0.5nm,0.3s,baz=301,slow=8.9,SNR=4.7						
EKA	**Eskdalemuir Ar**	**42.94**	**314**	P	**P**	**04 17 41.0**	**+1.4**
	comp=N,1.5nm,0.9s,baz=95,slow=8.8,SNR=3.0						
ESDC	**Sonseca Array**	**45.73**	**292**	P	**P**	**04 18 02.6**	**+0.4**
	comp=N,0.4nm,0.5s,baz=72,slow=8.2,SNR=2.9						
TORD	**Torodi Ar. Bea**	**53.18**	**258**	P	**P**	**04 18 57.8**	**-1.5**
	comp=N,0.5nm,0.9s,baz=56,slow=7.6,SNR=5.4						
KSRS	**Korea Array**	**56.48**	**66**	P	**P**	**04 19 22.6**	**-0.2**
	comp=N,0.6nm,0.4s,baz=263,slow=6.0,SNR=3.0						

IDC 23 04:18:44.2±5.2, 20°.79S×174°.73W, h0km, mb4.0/3, mb1 4.3/4, mb1mx3.8/36, mbtmp4.1/4, ML3.8/1, Error ellipse: s-maj=178.9km s-min=35.7km az=136.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.39**	**23**	Pn	Pn	04 20 33.7	+0.1
	1.5nm,0.3s,baz=87,slow=18,SNR=1.6						
AFI				Sn	Sn	04 21 48.1	-10
	1.3nm,0.3s,baz=266,slow=19,SNR=2.0						
ASAR	**Alice Springs**	**47.44**	**257**	P	P	04 27 20.7	-0.2
	1.9nm,0.8s,baz=90,slow=8.3,SNR=8.7						
WRA	**Warramunga Arr**	**47.59**	**262**	P	P	04 27 22.2	0.0
	1.5nm,0.8s,baz=100,slow=7.7,SNR=6.3						
FITZ	**Fitzroy Crossi**	**56.02**	**262**	P	P	04 28 25.1	0.0
	3.0nm,0.9s,baz=110,slow=12,SNR=2.7						
AKASG	**Malin Array Be**	**144.69**	**333**	PKP	PKPbc	04 38 21.9	+0.4
	0.1nm,0.3s,baz=40,slow=3.6,SNR=1.9						

DJA ***23*** *04:25:20.9±0.9, 3°.3S±10°×10°.3E±°, h222km±10km, M4.3/9, mb4.2/1, MLv4.3/9*

IDC ***23*** *04:25:23.3±2.5, 3°.13S×102°.77E, h222km±22km, mb3.5/15, mb1 3.6/16, mb1mx3.4/54, mbtmp4.1/16, Error ellipse: s-maj=25.2km s-min=9.7km az=53.0*

ISC 23 04:25:21.3±0.6, 3°.1S±0°.1×102°.9E±0°.1, h200km, n32, σ1s55/33, mb3.8/15, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSI	**Kapahiang**	**0.63**	**208**	P	**Pn**	**04 25 51.8**	**+2.8**
LHSI	**Lahat**	**0.97**	**139**	P	**Pn**	**04 25 53.2**	**+2.4**
MNAI	**Manna**	**1.26**	**177**	P	**Pn**	**04 25 55.5**	**+2.5**
LWLI	**Liwa**	**2.24**	**149**	P	**Pn**	**04 26 04.4**	**+1.9**
KLSI		**2.43**	**131**	P	**Pn**	**04 26 06.7**	**+2.3**
KLI	**Kotabumi**	**2.64**	**132**	P	**Pn**	**04 26 10.4**	**+3.6**
PPSI	**Pulau Pagai**	**2.89**	**276**	P	**Pn**	**04 26 12.5**	**+2.9**
KASI	**Kota Agung**	**2.90**	**146**	P	**Pn**	**04 26 10.9**	**+1.1**
PDSI	**Padang**	**3.25**	**312**	P	**Pn**	**04 26 15.8**	**+1.9**
CGJI	**Cibinong**	**4.48**	**141**	P	**Pn**	**04 26 28.4**	**-0.7**
CNJI	**Cibinong**	**5.95**	**135**	P	**Pn**	**04 26 46.6**	**-1.3**
PSI	**Prapat**	**7.07**	**326**	P	**Pn**	**04 27 01.1**	**-1.4**
	1.2nm,0.3s,baz=170,slow=11,SNR=3.4						
CMAR	**Chiang Mai Arr**	**21.76**	**350**	P	**P**	**04 29 57.4**	**+0.1**
	5.4nm,0.6s,baz=177,slow=9.4,SNR=20						
H08S2	**Diego Garcia H**	**30.59**	**260**	T	T	05 02 05.6	
	baz=84,slow=75,SNR=37						
H08S3	**Diego Garcia H**	**30.59**	**260**	T	T	05 02 03.3	
	baz=84,slow=75,SNR=39						
H08S1	**Diego Garcia H**	**30.60**	**260**	T	T	05 01 55.5	
	baz=84,slow=75,SNR=33						
WRA	**Warramunga Arr**	**34.96**	**121**	P	**P**	**04 31 55.1**	**+0.4**
	0.4nm,0.3s,baz=302,slow=8.4,SNR=16						
WRA				PcP	**PcP**	**04 34 22.8**	**+0.2**
	0.5nm,0.5s,baz=318,slow=2.0,SNR=6.0						
ASAR	**Alice Springs**	**36.29**	**127**	P	**P**	**04 32 06.8**	**+0.9**
	0.4nm,0.3s,baz=301,slow=7.5,SNR=9.0						
ASAR				PcP	**PcP**	**04 34 26.2**	**-0.3**
	0.5nm,0.4s,baz=287,slow=2.7,SNR=5.7						
ASAR				S	**S**	**04 37 29.8**	**-2.1**
	0.3nm,0.6s,baz=295,slow=15,SNR=4.2						
STKA	**Stephens Creek**	**46.28**	**133**	P	**P**	**04 33 27.6**	**+0.6**
	2.4nm,1.3s,baz=322,slow=11,SNR=4.6						
KSRS	**Korea Array**	**46.56**	**28**	P	**P**	**04 33 29.6**	**+0.5**
	1.5nm,0.7s,baz=213,slow=7.8,SNR=7.2						
SONM	**Songino Array**	**50.81**	**3**	P	**P**	**04 34 02.0**	**+0.6**
	5.8nm,0.7s,baz=181,slow=9

PBDV	**Barranco-do-Ve**	**2.52**	**81**	S	**Sn**	**04 27 14.7**	**+1.6**
	3.6nm,0.8s						
PVAQ	**Vaqueiros**	**2.71**	**78**	*e*Pn	**Pb**	**04 26 46.7**	**-3.2**
PVAQ				*e*Sn	**Sn**	**04 27 18.9**	**+1.1**
PVAQ				A	A	04 27 28.7	
	3.1nm,0.8s						
PVAQ	**Vaqueiros**	**2.71**	**78**	P	**Pb**	**04 26 46.7**	**-3.2**
PVAQ				S	**Sn**	**04 27 18.9**	**+1.1**
	3.1nm,0.8s						
PVAQ	**Vaqueiros**	**2.71**	**78**	P	**Pb**	**04 26 46.7**	**-3.2**
PVAQ				S	**Sn**	**04 27 18.9**	**+1.1**
	3.1nm,0.8s						
EVO	**Evora**	**2.91**	**55**	*e*Pn	**Pb**	**04 26 52.1**	**-1.3**
EVO				*e*Sn	**Sn**	**04 27 24.6**	**+1.8**
EVO				A	A	04 27 27.9	
	1.5nm,0.4s						
EVO	**Evora**	**2.91**	**55**	P	**Pb**	**04 26 52.1**	**-1.3**
EVO				S	**Sn**	**04 27 24.6**	**+1.8**
	1.5nm,0.4s						
EVO	**Evora**	**2.91**	**55**	P	**Pb**	**04 26 52.1**	**-1.3**
EVO				S	**Sn**	**04 27 24.6**	**+1.8**
	1.5nm,0.4s						
EGRO	**El Granado**	**2.92**	**76**	P	**Pb**	**04 26 50.0**	**-3.5**
	0.2nm,0.0s,SNR=7.9						
EGRO				S	**Sn**	**04 27 23.9**	**+1.0**
	0.5nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**2.92**	**76**	P	**Pb**	**04 26 50.0**	**-3.5**
	0.2nm,0.0s,SNR=7.9						
EGRO				S	**Sn**	**04 27 23.9**	**+1.0**
	0.5nm,0.1s,SNR=7.9						
PMTG	**Montargil**	**3.11**	**45**	*e*Sn	**Sn**	**04 27 29.7**	**+1.9**
PMTG				A	A	04 27 33.8	
	3.0nm,0.7s						
PMTG	**Montargil**	**3.11**	**45**	*e*Sn	**Sn**	**04 27 29.7**	**+1.9**
	3.0nm,0.7s						
PESTR	**Estremoz**	**3.37**	**53**	*e*Sn	**Sn**	**04 27 36.9**	**+2.7**
PESTR				A	A	04 27 38.6	
	2.0nm,0.7s						
PESTR	**Estremoz**	**3.37**	**53**	*e*Sn	**Sn**	**04 27 36.9**	**+2.7**
	2.0nm,0.7s						
PBAR	**Barrancos**	**3.43**	**67**	*e*Pn	**Pn**	**04 26 57.6**	**+2.7**
PBAR				*e*Sn	**Sn**	**04 27 37.2**	**+1.5**
PBAR				A	A	04 27 39.9	
	3.0nm,0.9s						
PBAR	**Barrancos**	**3.43**	**67**	P	**Pn**	**04 26 57.6**	**+2.7**
PBAR				S	**Sn**	**04 27 37.2**	**+1.5**
	3.0nm,0.9s						
PBAR	**Barrancos**	**3.43**	**67**	P	**Pn**	**04 26 57.6**	**+2.7**
PBAR				S	**Sn**	**04 27 37.2**	**+1.5**
	3.0nm,0.9s						
EMIN	**Mina Concepcio**	**3.59**	**75**	P	**Pn**	**04 26 58.8**	**+1.6**
	0.4nm,0.1s,SNR=7.9						
EMIN				S	**Sn**	**04 27 40.8**	**+1.1**
	0.2nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.59**	**75**	P	**Pn**	**04 26 58.8**	**+1.6**
	0.4nm,0.1s,SNR=7.9						
EMIN				S	**Sn**	**04 27 40.8**	**+1.1**
	0.2nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**3.69**	**59**	P	**Pn**	**04 27 00.3**	**+1.8**
	0.0nm,0.1s,SNR=7.9						
EBAD				S	**Sn**	**04 27 43.6**	**+1.5**
	1.2nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**3.69**	**59**	P	**Pn**	**04 27 00.3**	**+1.8**
	SNR=7.9						
EBAD				S	**Sn**	**04 27 43.6**	**+1.5**
	1.2nm,0.2s,SNR=7.9						
PMRV	**Marv??o**	**3.83**	**48**	*e*Sn	**Sn**	**04 27 46.3**	**+0.7**
PMRV				A	A	04 27 50.7	
	2.4nm,0.8s						
PMRV	**Marv??o**	**3.83**	**48**	S	**Sn**	**04 27 46.3**	**+0.7**
	2.4nm,0.8s						
PMRV	**Marv??o**	**3.83**	**48**	S	**Sn**	**04 27 46.3**	**+0.7**
	2.4nm,0.8s						
ESPR	**Espera**	**4.16**	**89**	P	**Pn**	**04 27 06.1**	**+1.1**
	0.4nm,0.1s,SNR=7.9						
ESPR	**Espera**	**4.16**	**89**	P	**Pn**	**04 27 06.1**	**+1.1**
	0.4nm,0.1s,SNR=7.9						
ECAB	**El Cabril**	**4.63**	**74**	P	**Pn**	**04 27 12.8**	**+1.3**
	0.3nm,0.1s,SNR=7.9						
ECAB				S	**Sn**	**04 28 04.4**	**-0.9**
	0.2nm,0.1s,SNR=7.9						
ECAB	**El Cabril**	**4.63**	**74**	P	**Pn**	**04 27 12.8**	**+1.3**
	0.3nm,0.1s,SNR=7.9						
ECAB				S	**Sn**	**04 28 04.4**	**-0.9**
	0.2nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**5.30**	**74**	P	**Pn**	**04 27 22.0**	**+1.4**
	0.2nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**04 28 22.1**	**+0.4**
	0.4nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**5.30**	**74**	P	**Pn**	**04 27 22.0**	**+1.4**
	0.2nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**04 28 22.1**	**+0.4**
	0.4nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**5.48**	**24**	S	**Sn**	**04 28 24.2**	**-2.1**
	0.6nm,0.2s,SNR=7.9						

NIED ***23*** *04:34:00, 38.˚90N×142.˚20E, h47km, Mw6.3 Best double couple: M0 3.07000×10^18 NP1:φs186.00000°, δ24.00000°, λ72.00000°. NP2:φs26.00000°, δ67.00000°, λ98.00000°.*

BJI ***23*** *04:34:21.3, 38.˚95N×142.˚10E, h40km, mb6.1/73, mB6.2/70, Ms6.4/94, Ms7 6.3/89*

MOS ***23*** *04:34:21.9±0.8, 38.˚97N×141.˚87E, h33km, mb6.1/143, MS6.3/32, Error ellipse: s-maj=5.5km s-min=3.5km az=93.7*

JMA ***23*** *04:34:23.8±0.1, 38.˚87N×142.˚09E, h47km±1km, M6.4 Broadband fault plane solution: P waves. NP1: φs27.00000°, δ70.00000°, λ96.00000°. NP2:φs190.00000°, δ20.00000°, λ74.00000°. Principal axes: T Plg64.0000°, Azm306.0000°; N Plg6.0000°, Azm205.0000°; P Plg25.0000°, Azm112.0000°;*

ISCJB ***23*** *04:34:24.2±0.2, 38.˚90N±0.˚01×141.˚92E±0.˚01, h54km±1km, mb5.9/514, MS6.0/462 Error ellipse: s-maj=2.5km s-min=1.7km az=155.8*

GCMT ***23*** *04:34:24.2±0.0, 38.˚96N×142.˚10E, h47km, MW6.3/140, Moment Tensor Solution. s140,c344; s139,c545; Duration: 3s6 Moment tensor: Scale 10^18Nm; Mrr2.82±.02; Mθθ-0.12±.01; Mφφ-2.70±.01; Mrθ1.20±.02; Mθφ-0.71±.01; Mrφ2.50±.02; Best double couple: M0 3.97800×10^18 NP1:φs22.00000°, δ67.00000°, λ96.00000°. NP2:φs187.00000°, δ24.00000°, λ76.00000°. Principal axes: T 3.9730, Plg67.0000°, Azm304.0000°; N 0.0110, Plg6.0000°, Azm200.0000°; P -3.9840, Plg22.0000°, Azm108.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC ***23*** *04:34:24.0±0.0, 38.˚75N×142.˚40E, h35km, Moment Tensor Solution. s70 Moment tensor: Scale 10^18Nm; Mrr2.27; Mθθ-0.29; Mφφ-1.98; Mrθ1.27; Mθφ-0.63; Mrφ3.11; Best double couple: M0 4.00000×10^18 NP1:φs21.00000°, δ73.00000°, λ92.00000°. NP2:φs195.00000°, δ17.00000°, λ84.00000°. Principal axes: T 4.0800, Plg61.0000°, Azm294.0000°; N -0.0900, Plg1.0000°, Azm200.0000°; P -3.9900, Plg28.0000°, Azm110.0000°;*

NEIC ***23*** *04:34:24.2±0.1, 38.˚90N×141.˚82E, h41km, mb5.9/298, ME5.9, MS5.9/296, MW6.3, MW6.4, MW6.3 Error ellipse: s-maj=2.9km s-min=1.9km az=139.0, Moment Tensor Solution. s11 Moment tensor: Scale 10^18Nm; Mrr2.96; Mθθ0.03; Mφφ-2.99; Mrθ1.61; Mθφ-1.37; Mrφ2.56; Best double couple: M0 4.50000×10^18 NP1:φs191.00000°, δ24.00000°, λ73.00000°. NP2:φs29.00000°, δ67.00000°, λ98.00000°. Principal axes: T 4.1900, Plg67.0000°, Azm314.0000°; N 0.4800, Plg7.0000°, Azm206.0000°; P -4.6800, Plg21.0000°, Azm114.0000°; Broadband fault plane solution: P waves. NP1:φs210.00000°, δ20.00000°, λ90.00000°. NP2:φs30.00000°, δ70.00000°, λ90.00000°. Principal axes: T Plg65.0000°, Azm300.0000°; N Plg0.0000°, Azm0.0000°; P Plg25.0000°, Azm120.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt [III] at Misawa. Also felt at Ageo, Furukawa, Koriyama, Mizusawa, Narita, Sendai, Tokyo and Tsukuba. Recorded [5U JMA] in Iwate.

IDC ***23*** *04:34:26.1±1.7, 38.˚86N×141.˚94E, h61km±15km, mb5.3/37, mb1 5.4/43, mb1mx5.4/52, mbtmp5.6/43, MS6.0/48, Ms1 6.0/48, ms1mx5.9/54 Error ellipse: s-maj=11.0km s-min=7.6km az=92.0*

NEIC ***23*** *04:34:36.5±0.0, 38.˚84N×142.˚26E, h48km, Moment Tensor Solution. s67 Moment tensor: Scale 10^18Nm; Mrr2.38; Mθθ-0.29; Mφφ-2.10; Mrθ1.12; Mθφ-0.31; Mrφ2.60; Best double couple: M0 3.60000×10^18 NP1:φs182.00000°, δ20.00000°, λ73.00000°. NP2:φs20.00000°, δ71.00000°, λ96.00000°. Principal axes: T 3.7700, Plg64.0000°, Azm300.0000°; N -0.3000, Plg6.0000°, Azm198.0000°; P -3.4700, Plg26.0000°, Azm105.0000°;*

ISC 23 04:34:24.5±0.3, 38.˚91N±0.˚02×141.˚92E±0.˚02, h46km±2km, h45km:pP-P, n2098, σ1946/2223, mb5.9/535, MS6.0/472, 314C-49D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.26**	**310**	⇓P			**Pn**	**04 34 33.7**	**+0.8**
JMK	**Ichinoseki**	**0.55**	**274**	⇓P			**Pn**	**04 34 37.3**	**+1.2**
JMK				*e*S			**Sn**	**04 34 47.0**	**+2.6**
JIO	**Ouri**	**0.64**	**225**	⇓P			**Pn**	**04 34 37.6**	**+0.3**
JIO				*e*S			**Sn**	**04 34 46.9**	**+0.4**
MIYJ	**Miyakonagasawa**	**0.67**	**353**	⇓P			**Pn**	**04 34 37.8**	**+0.1**
MIYJ				*i* S			**Sn**	**04 34 47.5**	**+0.4**
JOM	**Ohasama**	**0.74**	**319**	⇓P			**Pn**	**04 34 39.9**	**+1.2**
JOM				S			**Sn**	**04 34 51.2**	**+2.3**
JTH	**Tanohata**	**1.02**	**357**	⇓P			**Pn**	**04 34 42.3**	**-0.2**
JTH				*e*S			**Sn**	**04 34 56.4**	**+0.7**
JRG	**Rokugo**	**1.11**	**296**	⇓P			**Pn**	**04 34 45.1**	**+1.5**
JOU	**Okura**	**1.13**	**241**	⇓P			**Pn**	**04 34 44.6**	**+0.7**
JKZ	**Kuzumaki**	**1.16**	**337**	⇓P			**Pn**	**04 34 45.5**	**+1.1**
JYK	**Kaneyama**	**1.22**	**271**	⇓P			**Pn**	**04 34 46.6**	**+1.5**
JYK				*e*S			**Sn**	**04 35 03.5**	**+3.0**
JMM	**Marumori**	**1.37**	**221**	⇓P			**Pn**	**04 34 47.1**	**-0.1**
JMM				*e*S			**Sn**	**04 35 05.5**	**+1.3**
JYW	**Yuwa**	**1.47**	**296**	⇓P			**Pn**	**04 34 50.6**	**+2.1**
JANG	**Nango**	**1.49**	**348**	⇓P			**Pn**	**04 34 49.2**	**+0.3**
JANG				*e*S			**Sn**	**04 35 09.2**	**+2.1**
JYS	**Shirataka**	**1.61**	**245**	⇓P			**Pn**	**04 34 51.9**	**+1.4**
JAH	**Hinai**	**1.61**	**322**	⇓P			**Pn**	**04 34 52.2**	**+1.7**
JFK	**Kawauchi**	**1.75**	**208**	⇓P			**Pn**	**04 34 52.2**	**-0.3**
JYA	**Atsumi**	**1.76**	**260**	⇓P			**Pn**	**04 34 54.0**	**+1.5**
JTB	**Tobi-shima**	**1.86**	**279**	⇓P			**Pn**	**04 34 55.3**	**+1.4**
JTM	**Tenmabayashi**	**1.98**	**341**	⇓P			**Pn**	**04 34 56.6**	**+1.0**
JAW	**Awa shima**	**2.14**	**259**	⇓P			**Pn**	**04 34 59.6**	**+1.9**
JNS	**Sasagawa**	**2.32**	**243**	⇓P			**Pn**	**04 35 01.7**	**+1.5**
JHK	**Hiroka**	**2.83**	**235**	⇓P			**Pn**	**04 35 08.8**	**+1.6**
JIZZ	**Izumozaki**	**2.88**	**242**	⇓P			**Pn**	**04 35 10.4**	**+2.5**
JSD	**Sado**	**3.00**	**254**	⇓P			**Pn**	**04 35 10.8**	**+1.2**
ERM	**Erimo**	**3.24**	**17**	*d* iP			**Pn**	**04 35 12.2**	**-0.6**
ERM					pmax		pmax		
	comp=Z,1μm,1.0s								
ERM	**Erimo**	**3.24**	**17**	*e*Pn			**Pn**	**04 35 12.5**	**-0.3**
JNBK	**Urakawa-nobuka**	**3.42**	**10**	⇑P			**Pn**	**04 35 15.5**	**+0.2**
JJN	**Nakama**	**3.48**	**240**	⇓P			**Pn**	**04 35 18.5**	**+2.4**
JOSM	**Okushiri--Mats**	**3.67**	**330**	P			**Pn**	**04 35 20.0**	**+1.2**
MAJO	**Matsushiro**	**3.78**	**232**	*d* iP			**Pn**	**04 35 21.1**	**+0.9**
MAJO	**Matsushiro**	**3.78**	**232**	*e*Pn			**Pn**	**04 35 22.6**	**+2.3**
MAT	**Matsushiro**	**3.78**	**232**	P			**Pn**	**04 35 22.4**	**+2.2**
MAT				S			**Sn**	**04 36 08.6**	**+5.1**
MAT	**Matsushiro**	**3.78**	**232**	P			**Pn**	**04 35 22.6**	**+2.4**
MJAR	**Matsushiro Arr**	**3.78**	**232**	P			**Pn**	**04 35 22.6**	**+2.4**
	comp=Z,180nm,0.3s,baz=39,slow=10,SNR=567								
MJAR					LR		LR	04 37 05.0	
	comp=Z,287μm,20.6s,baz=65,slow=42								
MJB9	**Matsu-Tunnel**	**3.78**	**232**	*e*Pn			**Pn**	**04 35 22.7**	**+2.4**
JBT2	**Biratori 2**	**3.88**	**5**	⇑P			**Pn**	**04 35 21.6**	**+0.1**
JSZ	**Suzu**	**3.88**	**249**	⇓P			**Pn**	**04 35 23.1**	**+1.5**
JNG	**Nsakai**	**3.93**	**232**	⇓P			**Pn**	**04 35 25.0**	**+2.6**
JHG	**Hegura jima**	**4.07**	**256**	⇓P			**Pn**	**04 35 26.0**	**+1.8**
JOB	**Onbets**	**4.24**	**19**	⇑P			**Pn**	**04 35 25.7**	**-0.8**
JAR	**Ashorobuto**	**4.60**	**17**	⇑P			**Pn**	**04 35 30.1**	**-1.3**
JKK2	**Kamakawa 2**	**4.99**	**7**	P			**Pn**	**04 35 36.9**	**0.0**
ASAJ	**Asahikawa**	**5.22**	**5**	P			**Pn**	**04 35 41.3**	**+1.3**
	baz=180,slow=7.1								
ASAJ				S			**Sn**	**04 36 41.6**	**+2.7**
	comp=Z,208nm,0.3s,baz=143,slow=30,SNR=6.9								
ASAJ	**Asahikawa**	**5.22**	**5**	*e*Pn			**Pn**	**04 35 40.1**	**+0.1**
ASAJ				*e*Sn			**Sn**	**04 36 32.5**	**-6.5**
ASAJ				S			**Sn**	**04 36 41.6**	**+2.7**
INU	**Inuyama**	**5.29**	**229**	*e*Pn			**Pn**	**04 35 43.5**	**+2.5**
YUK	**Yuzh-Kuril'sk**	**5.91**	**29**	*i* P			**Pn**	**04 35 47.9**	**-1.5**
JHJ2	**Mitsune**	**6.04**	**197**	*e*Pn			**Pn**	**04 35 52.2**	**+1.0**
JHJ2				*e*Sn			**Sn**	**04 36 54.8**	**-4.2**
JHJ	**Hachijo jima 2**	**6.04**	**197**	P			**Pn**	**04 35 51.3**	**0.0**
	comp=Z,186nm,0.3s,baz=207,slow=2.3,SNR=12								
JHJ				S			**Sn**	**04 36 59.6**	**+0.6**
	comp=Z,989nm,0.3s,baz=285,slow=20,SNR=7.6								
JWT	**Wachi**	**6.35**	**237**	⇑P			**Pn**	**04 35 59.4**	**+3.9**
JMIK	**Miki**	**6.86**	**235**	⇓P			**Pn**	**04 36 06.0**	**+3.4**
KUR	**Kuril'sk**	**7.71**	**33**	*d* iP			**Pn**	**04 36 12.3**	**-1.7**
KUR				*i* S			**Sn**	**04 37 34.8**	**-5.1**
KUR					pmax		pmax		
	comp=Z,8μm,3.4s								
KUR					pmax		pmax		
	comp=E,270nm,1.0s								
KUR					pmax		pmax		
	comp=Z,707nm,1.0s								
KUR					pmax		pmax		
	comp=N,250nm,0.3s								
KUR					smax		smax		
	comp=N,3μm,0.7s								
KUR					smax		smax		
	comp=E,4μm,0.7s								
KUR					smax		smax		
	comp=N,20μm,3.6s								
KUR					smax		smax		
	comp=E,12μm,3.6s								
KUR					MLR		MLR		
	comp=N,34μm,20.0s								
KUR					MLR		MLR		
	comp=E,23μm,20.0s								
KUR					MLR		MLR		
	comp=Z,24μm,20.0s								
JHS	**Saijyo**	**8.06**	**244**	⇓P			**Pn**	**04 36 23.2**	**+4.2**
YSS	**Yuzh-Sakhalins**	**8.06**	**4**	⇑P			**Pn**	**04 36 19.0**	**+0.1**
YSS				*e*S			**Sn**	**04 37 47.1**	**-1.5**
YSS					pmax		pmax		
	comp=N,9μm,6.0s								
YSS					pmax		pmax		
	comp=Z,10μm,6.0s								
YSS					pmax		pmax		
	comp=N,900nm,1.4s								
YSS					pmax		pmax		
	comp=Z,1μm,1.4s								
YSS					pmax		pmax		
	comp=E,210nm,1.0s								
YSS					MLR		MLR		
	comp=N,74μm,18.0s								
YSS					MLR		MLR		
	comp=E,58μm,18.0s								
YSS					MLR		MLR		
	comp=Z,78μm,18.0s								
YSS	**Yuzh-Sakhalins**	**8.06**	**4**	*e*Pn			**Pn**	**04 36 18.9**	**+0.1**
MSHR	**Mys Shultsa**	**8.95**	**298**	*c* iP			**Pn**	**04 36 31.0**	**-0.1**
USRK	**Ussuriysk Ar.**	**9.13**	**309**	P			**Pn**	**04 36 35.7**	**+2.2**
	comp=Z,37nm,0.3s,baz=119,slow=19,SNR=124								
USRK					LR		LR	04 40 02.6	
	comp=Z,202μm,19.9s,baz=113,slow=37								
UGL	**Uglegorsk**	**10.16**	**1**	*e*P			**Pn**	**04 36 47.0**	**-0.6**
UGL				*e*S			**Sn**	**04 38 37.0**	**-3.1**
UGL					pmax		pmax		
	comp=Z,291nm,1.0s								
UGL					pmax		pmax		
	comp=N,5μm,11.0s								
UGL					pmax		pmax		
	comp=Z,4μm,11.0s								
UGL					pmax		pmax		
	comp=E,1μm,8.0s								
UGL					smax		smax		
	comp=N,8μm,12.0s								
UGL					smax		smax		
	comp=E,11μm,12.0s								
UGL					MLR		MLR		
	comp=N,70μm,18.0s								
UGL					MLR		MLR		
	comp=E,80μm,18.0s								
UGL					MLR		MLR		
	comp=Z,36μm,18.0s								
JNU	**Nakatsue**	**10.64**	**240**	P			**Pn**	**04 36 57.3**	**+2.9**
	comp=Z,14nm,0.3s,baz=55,slow=5.8,SNR=89								
JNU					LR		LR	04 41 25.1	
	comp=Z,663nm,19.1s,baz=43,slow=39								
JNU	**Nakatsue**	**10.64**	**240**	*e*Pn			**Pn**	**04 36 57.0**	**+2.6**
	comp=Z,143nm,0.8s								
HABR	**Khabarovsk**	**10.77**	**335**	*c* iP			**Pn**	**04 36 54.9**	**-1.0**
HABR				*e*S			**Sn**	**04 38 54.8**	**-0.1**
HABR					pmax		pmax		
	comp=Z,254nm,2.2s								
HABR					pmax		pmax		
	comp=N,157nm,2.2s								
HABR					pmax		pmax		
	comp=E,168nm,2.2s								
HABR					MLR		MLR		
	comp=Z,79μm,12.0s								
MDJ	**Mudanjiang**	**10.82**	**306**	P			**Pn**	**04 36 59.3**	**+2.6**
MDJ				S			**Sn**	**04 39 01.6**	**+5.2**
MDJ				PcP			**PcP**	**04 42 56.0**	**+1.5**
MDJ				ScP			**ScP**	**04 46 25.6**	**+2.5**
MDJ				ScS			**ScS**	**04 50 01.1**	**+2.9**
MDJ					pmax		pmax		
	comp=Z,1μm,1.0s								
MDJ					pmax		pmax		
	comp=E,8μm,6.6s								
MDJ					LR		LR		
	comp=Z,71μm,19.6s								
MDJ					LR		LR		
	comp=Z,107μm,20.7s								
MDJ					LR		LR		
	comp=Z,179μm,21.1s								
MDJ	**Mudanjiang**	**10.82**	**306**	*e*Pn			**Pn**	**04 37 00.1**	**+3.4**
KSRS	**Korea Array**	**11.12**	**267**	P			**Pn**	**04 37 05.0**	**+4.3**
	comp=Z,5.9nm,0.3s,baz=80,slow=14,SNR=141								
KSRS					LR		LR	04 41 20.8	
	comp=Z,110μm,19.6s,baz=84,slow=37								
KS01	**Wonju Array Si**	**11.13**	**267**	*e*Pn			**Pn**	**04 37 04.0**	**+3.0**
KS15	**Wonju Array Si**	**11.15**	**267**	*e*Pn			**Pn**	**04 37 05.4**	**+4.2**
KSAR	**Wonju Array Be**	**11.15**	**267**	P			**Pn**	**04 37 05.1**	**+3.9**
KSAR	**Wonju Array Be**	**11.15**	**267**	P			**Pn**	**04 37 05.0**	**+3.9**
CBIJ	**Chichi jima**	**11.79**	**179**	*e*Pn			**Pn**	**04 37 10.0**	**0.0**
TYV	**Tymovskoe**	**11.96**	**2**	*e*P			**Pn**	**04 37 08.5**	**-3.7**
TYV					pmax		pmax		
	comp=N,88nm,0.8s								
TYV					pmax		pmax		
	comp=E,176nm,0.8s								
TYV					pmax		pmax		
	comp=E,6μm,7.0s								
TYV					MLR		MLR		
	comp=E,73μm,23.0s								
INCN	**Inchon**	**12.12**	**268**	P			Pn	04 37 19.6	+5.1
	SNR=34								
INCN	**Inchon**	**12.12**	**268**	Pn			Pn	04 37 19.6	+5.1
	SNR=34								
INCN	**Inchon**	**12.12**	**268**	*e*Pn			**Pn**	**04 37 13.9**	**-0.6**
KLR	**Kul'dur**	**12.63**	**328**	P			**Pn**	**04 37 22.9**	**+1.6**
	comp=E,2.9nm,0.3s,baz=132,slow=12,SNR=125								
KLR					LR		LR	04 42 24.5	
	comp=E,186μm,18.1s,baz=142,slow=38								
KLR	**Kul'dur**	**12.63**	**328**	*c* iP			**Pn**	**04 37 20.3**	**-1.1**
CN2	**Changchun**	**13.30**	**297**	*e*P			**Pn**	**04 37 27.0**	**-3.5**
CN2				*e*S			**Sn**	**04 40 03.1**	**+6.2**
CN2					pmax		pmax		
	comp=E,5μm,5.0s								
CN2					LR		LR		
	comp=E,49μm,18.0s								
CN2					LR		LR		
	comp=E,68μm,18.0s								
CN2					LR		LR		
	comp=E,73μm,20.0s								
NKL	**Nikolayevsk**	**14.27**	**357**	*i* P			**Pn**	**04 37 40.0**	**-3.5**
NKL				*i* S			**Sn**	**04 40 17.0**	**-3.2**
NKL					pmax		pmax		
	comp=N,6μm,6.0s								
NKL					pmax		pmax		
	comp=E,1μm,6.0s								
NKL					pmax		pmax		
	comp=Z,7μm,6.0s								
NKL					pmax		pmax		
	comp=N,50nm,1.0s								
NKL					pmax		pmax		
	comp=Z,17nm,1.0s								
NKL					smax		smax		
	comp=E,14μm,11.0s								
NKL					MLR		MLR		
	comp=E,65μm,20.0s								
NKL					MLR		MLR		
	comp=N,34μm,15.0s								
NKL					MLR		MLR		
	comp=Z,51μm,15.0s								
SNY	**Shenyang**	**14.29**	**288**	⇑P			**Pn**	**04 37 45.1**	**+1.2**
SNY				S			Sn	04 40 30.0	+9.1
SNY					pmax		pmax		
	comp=Z,9μm,10.2s								
SNY					LR		LR		
	comp=Z,46μm,23.1s								
SNY					LR		LR		
	comp=Z,89μm,21.6s								
SNY					LR		LR		
	comp=Z,159μm,28.6s								
OKH	**Okha**	**14.66**	**2**	⇑*i* P			**Pn**	**04 37 46.2**	**-2.5**
OKH				*i* S			**Sn**	**04 40 28.0**	**-1.7**
OKH					pmax		pmax		
	comp=Z,9μm,6.0s								
OKH					smax		smax		
	comp=E,19μm,17.0s								
OKH					smax		smax		
	comp=Z,49μm,19.0s								
SKR	**Severo-Kuril's**	**15.46**	**36**	*c* iP			**Pn**	**04 37 56.0**	**-3.2**
SKR				*i* S			**Sn**	**04 40 50.0**	**+0.8**
SKR					pmax		pmax		
	comp=Z,2μm,3.5s								
SKR					pmax		pmax		
	comp=Z,351nm,0.8s								
SKR					MLR		MLR		
	comp=Z,22μm,16.0s								
DL2	**Dalian**	**15.80**	**276**	⇑*i* P			**Pn**	**04 38 05.5**	**+1.8**
DL2				S			**Sn**	**04 41 02.6**	**+4.9**
DL2					pmax		pmax		
	comp=Z,430nm,0.9s								
DL2					pmax		pmax		
	comp=Z,12μm,7.9s								
DL2					LR		LR		
	comp=Z,46μm,14.8s								
DL2					LR		LR		
	comp=Z,80μm,15.0s								
DL2					LR		LR		
	comp=Z,109μm,25.5s								
JOW	**Kunigami**	**16.61**	**228**	*e*Pn			**Pn**	**04 38 12.7**	**-1.3**
	comp=Z,189nm,1.0s								
PEA0	**Petropavlovsk-**	**17.87**	**32**	*e*Pn			**Pn**	**04 38 26.3**	**-3.3**
PEA0B	**Petropavlovsk-**	**17.87**	**32**	*e*Pn			**Pn**	**04 38 27.3**	**-2.2**
	comp=Z,869nm,1.4s								
PETK	**Petropavlovsk-**	**17.87**	**32**	P			**Pn**	**04 38 26.6**	**-

TIA pmax pmax
comp=Z,7μm,5.0s
TIA LR LR
comp=Z,43μm,20.0s
TIA LR LR
comp=Z,56μm,22.0s
TIA LR LR
comp=Z,87μm,22.0s
BJI Beijing 19.89 281 P **P** **04 38 50.3 -1.6**
BJI S **S** **04 42 33.8 +0.5**
BJI pmax pmax
comp=Z,5μm,4.4s
BJI LR LR
comp=Z,23μm,15.2s
BJI LR LR
comp=Z,81μm,14.6s
BJI LR LR
comp=Z,83μm,32.0s
BJT Baijiatuau 19.90 281 *e*P **P** **04 38 50.4 -1.6**
BJT *e*S **S** **04 42 23.2 -10**
BJT pmax pmax
comp=Z,527nm,1.0s
BJT Baijiatuau 19.90 281 *e*P **P** **04 38 50.4 -1.6**
comp=Z,527nm,1.0s
BJT *e*S **S** **04 42 23.1 -10**
NJ2 Nanjing 19.97 257 *e*P **P** **04 38 51.3 -1.5**
NJ2 sP **pP** **04 39 08.0 +4.3**
NJ2 S **Sn** **04 42 37.8 -0.7**
NJ2 PcP **PcP** **04 43 07.8 0.0**
NJ2 pmax pmax
comp=Z,170nm,0.8s
NJ2 pmax pmax
comp=Z,20μm,10.1s
NJ2 LR LR
comp=Z,52μm,18.4s
NJ2 LR LR
comp=Z,48μm,16.8s
NJ2 LR LR
comp=Z,77μm,19.5s
CLNS Chul'man 21.15 334*c i*P **P** **04 39 05.3 -0.2**
CLNS *e* 04 39 20.1
CLNS *e*S **S** **04 42 57.4 -0.7**
CLNS pmax pmax
comp=Z,384nm,0.8s
CLNS pmax pmax
comp=N,379nm,1.0s
CLNS pmax pmax
comp=E,129nm,1.0s
CLNS pmax pmax
comp=Z,646nm,1.4s
CLNS pmax pmax
comp=N,562nm,1.5s
CLNS pmax pmax
comp=E,339nm,1.3s
CLNS smax smax
comp=N,618nm,1.7s
CLNS smax smax
comp=E,527nm,1.8s
MA2 Magadan 21.43 12 P **P** **04 39 08.5 +0.1**
comp=E,487nm,0.8s,baz=201,slow=9.4,SNR=173
MA2 LR LR 04 47 10.4
comp=E,27μm,21.9s,baz=197,slow=36
MA2 Magadan 21.43 12 *e*P **P** **04 39 08.3 -0.1**
comp=E,6μm,1.3s
YOJ Yonaguni jima 21.54 234 *e*P **P** **04 39 08.5 -1.3**
YOJ pmax pmax
comp=Z,150nm,0.6s
YOJ Yonaguni jima 21.54 234 *e*P **P** **04 39 08.5 -1.3**
comp=Z,148nm,0.6s
YOJ LR LR
comp=Z,45μm,22.0s
TATO Taipei 22.15 237 *e*P **P** **04 39 16.3 -0.1**
comp=Z,244nm,0.8s
TATO LR LR
comp=Z,63μm,19.0s
YHNB Yeheng 22.44 237 *e*P **P** **04 39 17.1 -2.5**
comp=Z,203nm,0.8s
YHNB LR LR
comp=Z,52μm,18.0s
NACB Ninganchiao 22.64 235 *e*P **P** **04 39 19.2 -2.4**
comp=Z,253nm,1.0s
NACB LR LR
comp=Z,51μm,21.0s
TIY Taiyuan 23.13 276 *e*P **P** **04 39 23.3 -3.4**
TIY S S 04 43 23.3 -11
TIY pmax pmax
comp=Z,100nm,0.5s
TIY pmax pmax
comp=Z,5μm,7.6s
TIY LR LR
comp=Z,30μm,14.7s
TIY LR LR
comp=Z,57μm,15.5s
TIY LR LR
comp=Z,86μm,16.5s
HHC Hu-ho-hao-te 23.32 284 *e*P **P** **04 39 26.1 -2.5**
HHC sP pP 04 39 39.8 -0.2
HHC S **S** **04 43 32.6 -5.3**
HHC sS sS 04 43 47.5 -10
HHC SS **SnSn** **04 44 19.8 +4.3**
HHC pmax pmax
comp=Z,230nm,1.5s
HHC pmax pmax
comp=Z,3μm,4.7s
HHC LR LR
comp=Z,18μm,16.2s
HHC LR LR
comp=Z,92μm,17.4s
HHC LR LR
comp=Z,102μm,14.9s
SSLB Suanglung 23.33 236 *e*P **P** **04 39 25.9 -2.8**
comp=Z,160nm,0.8s
SSLB *e*S **S** **04 43 35.2 -2.9**
SSLB LR LR
comp=Z,55μm,22.0s
YULB Yu-li 23.39 235 *e*P **P** **04 39 28.4 -0.8**
comp=Z,171nm,0.8s
YULB *e*S **S** **04 43 38.0 -1.0**
YULB LR LR
comp=Z,22μm,19.0s
CIT Chita 23.65 313 *e*P **P** **04 39 30.4 -1.1**
CIT *e* 04 39 43.3
CIT *e* 04 39 59.9
CIT *e* 04 40 17.2
CIT *e* 04 43 42.0
CIT pmax pmax
comp=Z,1μm,1.8s
TPUB Ta-pu 23.88 236 *e*P **P** **04 39 31.1 -2.8**
comp=Z,385nm,1.0s
TPUB LR LR
comp=Z,49μm,21.0s
TWG Pinlang 23.95 234 *e*P **P** **04 39 32.4 -2.1**
comp=Z,2μm,0.7s
TWG LR LR
comp=Z,80μm,20.0s
WHN Wuhan 24.08 258 ⇓P **P** **04 39 34.8 -0.8**
WHN S **S** **04 43 47.3 -2.7**
WHN LR LR
comp=Z,13μm,13.3s
WHN LR LR
comp=Z,115μm,15.5s
WHN LR LR
comp=Z,176μm,19.4s
QZH Quanzhou 24.12 242⇑*i*P **P** **04 39 34.6 -1.4**
QZH sP **pP** **04 39 49.9 +1.9**
QZH S **S** **04 43 48.0 -2.7**
QZH sS **sS** **04 44 08.5 -2.2**
QZH pmax pmax
comp=Z,230nm,0.8s
QZH pmax pmax
comp=Z,13μm,9.3s
QZH LR LR
comp=Z,22μm,11.8s
QZH LR LR
comp=Z,48μm,15.2s
QZH LR LR
comp=Z,85μm,25.0s
YAK Yakutsk 24.34 346 P **P** **04 39 35.6 -2.0**
comp=Z,359nm,0.5s,baz=344,slow=2.6,SNR=49
YAK S **S** **04 43 51.8 -1.6**
comp=Z,46nm,0.5s,baz=90,slow=20,SNR=8.3
YAK Yakutsk 24.34 346*c i*P **P** **04 39 36.5 -1.1**
YAK *e**PP **pP** **04 39 50.3 +0.6**
YAK *e* 04 40 07.6
YAK *e* 04 43 16.7
YAK *e*S **S** **04 43 51.5 -2.0**
YAK *e**SS **sS** **04 44 10.8 -2.8**
YAK *e*SS **SnSn** **04 44 41.0 +1.3**
YAK *e* 04 50 37.5
YAK pmax pmax
comp=Z,260nm,1.4s
YAK pmax pmax
comp=E,89nm,1.4s
YAK pmax pmax
comp=N,1μm,1.9s
YAK pmax pmax
comp=Z,791nm,1.6s
YAK pmax pmax
comp=E,951nm,1.7s
YAK pmax pmax
comp=N,1μm,1.9s
YAK smax smax
comp=N,17μm,4.0s
YAK smax smax
comp=E,11μm,3.0s
YAK Yakutsk 24.34 346 *e*P **P** **04 39 35.3 -2.3**
comp=E,633nm,0.9s
YAK S **S** **04 43 51.9 -1.6**
YAK LR LR
comp=Z,33μm,22.0s
BTO Baotou 24.52 284 *e*P **P** **04 39 38.1 -1.6**
SEY Seymchan 24.87 11 P **P** **04 39 43.6 +1.1**
comp=Z,372nm,0.8s,baz=206,slow=7.1,SNR=294
SEY S **S** **04 44 08.4 +6.3**
comp=Z,22nm,0.9s,baz=270,slow=20,SNR=7.6
SEY LR LR 04 49 42.8
comp=Z,31μm,21.8s,baz=196,slow=37
SEY Seymchan 24.87 11*c i*P **P** **04 39 43.4 +0.9**
GUMO Guam 25.36 173 LR LR 04 49 43.4
comp=Z,16μm,21.9s,baz=16,slow=36
SMY Shemya 26.08 47 *e*P **P** **04 39 51.7 -1.8**
SMY pmax pmax
comp=Z,720nm,1.2s
SMY Shemya 26.08 47 *e*P **P** **04 39 51.7 -1.8**
comp=Z,721nm,1.2s
BOD Bodaibo 26.18 325⇓*i*P **P** **04 39 54.2 -0.2**
BOD *e* 04 44 28.4
BOD pmax pmax
comp=Z,714nm,1.4s
XAN Xi'an 26.89 270 P **P** **04 40 00.0 -1.1**
XAN pP pP 04 40 10.8 -2.4
XAN sP sP 04 40 16.3 -2.4
XAN S **S** **04 44 27.0 -7.7**
XAN pmax pmax
comp=Z,250nm,0.6s
XAN pmax pmax
comp=Z,8μm,11.5s
XAN LR LR
comp=Z,26μm,19.3s
XAN LR LR
comp=Z,47μm,19.3s
XAN LR LR
comp=Z,59μm,24.4s
SONA1 Songino Array 27.11 301 *e*P **P** **04 40 02.0 -1.1**
SONM Songino Array 27.12 301 P **P** **04 40 02.9 -0.3**
comp=Z,62nm,0.7s,baz=96,slow=8.5,SNR=159
SONM LR LR 04 51 22.2
comp=Z,57μm,19.1s,baz=103,slow=37
CVP Callao Caves 27.45 225⇓*e*P **P** **04 40 05.4 -0.8**
ENH Enshi 27.94 262 *e*P **P** **04 40 10.3 -0.3**
comp=Z,654nm,0.8s
ENH LR LR
comp=Z,35μm,22.0s
H11N2 WAKE ISLAND Hy 28.82 124 T T 05 10 39.9
baz=317,slow=75
H11N1 WAKE ISLAND Hy 28.83 124 T T 05 10 42.0
baz=317,slow=75,SNR=130
H11N3 WAKE ISLAND Hy 28.84 124 T T 05 10 42.1
baz=317,slow=75
HKC Hong Kong Obse 28.90 243⇑P **P** **04 40 20.0 +0.9**
GZH Guangzhou 28.98 245 P **P** **04 40 15.3 -4.5**
GZH PP **PnPn** **04 41 08.9 -4.3**
GZH S **S** **04 44 58.8 -8.8**
GZH SS **SnSn** **04 46 26.9 -6.8**
GZH pmax pmax
comp=Z,12μm,9.0s
WAKE Wake Island 28.99 125 PFAKE 04 40 30.0 +10
WAKE LR LR
comp=Z,36μm,19.0s
IRK Irkutsk 29.17 310 *e*P **P** **04 40 21.6 +0.3**
IRK *e*S **S** **04 45 10.3 +0.1**
IRK pmax pmax
comp=Z,857nm,3.7s
TLY Talaya 29.44 308 P **P** **04 40 24.4 +0.7**
comp=Z,105nm,0.7s,baz=118,slow=1.8,SNR=142
TLY LR LR 04 52 57.9
comp=Z,86μm,18.5s,baz=120,slow=38
TLY Talaya 29.44 308*c i*P **P** **04 40 23.9 +0.2**
TLY *e* 04 41 29.3
TLY *e*S **S** **04 45 15.1 +0.6**
TLY pmax pmax
comp=Z,149nm,0.8s
TLY MLR MLR
comp=Z,74μm,18.0s
TLY Talaya 29.44 308 *e*P **P** **04 40 23.9 +0.2**
comp=Z,125nm,0.7s
MCO Taipa Grande 29.45 244 P **P** **04 40 26.0 +2.0**
ZAK Zakamensk 29.46 306 *e*P **P** **04 40 23.7 -0.3**
ZAK pmax pmax
comp=Z,142nm,1.1s
H11S1 WAKE ISLAND Hy 29.60 126 T T 05 11 39.3
baz=319,slow=76,SNR=975
H11S3 WAKE ISLAND Hy 29.60 126 T T 05 11 40.3
baz=319,slow=76,SNR=1515
H11S2 WAKE ISLAND Hy 29.61 126 T T 05 11 40.7
baz=319,slow=76,SNR=1203
LZH Lanzhou 30.20 277 *e*P **P** **04 40 30.3 -0.4**
LZH pP pP 04 40 38.3 -4.5
LZH sP sP 04 40 45.1 -3.2
LZH PP **PnPn** **04 41 31.3 +1.8**
LZH S **S** **04 45 25.0 -2.0**
LZH pmax pmax
comp=Z,770nm,1.0s
LZH pmax pmax
comp=Z,3μm,4.7s
LZH LR LR
comp=Z,26μm,13.5s
LZH LR LR
comp=Z,48μm,13.9s
LZH LR LR
comp=Z,78μm,16.7s
TGY Tagaytay City 30.89 223 P **P** **04 40 34.5 -2.3**
comp=Z,111nm,0.3s,baz=176,slow=16,SNR=5.3
TGY Tagaytay City 30.89 223 P **P** **04 40 34.5 -2.3**
TGY pmax pmax
comp=Z,128nm,0.4s
MOY Mondy 31.07 308 *e*P **P** **04 40 38.1 -0.1**
MOY pmax pmax
comp=Z,663nm,4.0s
GYA Guiyang 31.97 258⇑*i*P **P** **04 40 45.8 -0.6**
GYA pP pP 04 40 58.3 -0.2
GYA PP **PP** **04 41 59.3 +0.2**
GYA PcP **PcP** **04 43 37.6 +2.0**
GYA S **S** **04 45 52.1 -2.7**
GYA sS sS 04 46 13.0 -2.2
GYA ScP **ScP** **04 47 16.8 +1.6**
GYA SS **SnSn** **04 47 48.3 +1.6**
GYA ScS **ScS** **04 51 13.0 -1.1**
GYA pmax pmax
comp=Z,530nm,0.9s
GYA pmax pmax
comp=Z,3μm,12.5s
GYA LR LR
comp=Z,28μm,19.9s
GYA LR LR
comp=Z,27μm,21.4s
GYA LR LR
comp=Z,44μm,22.3s
BILL Bilibino 32.11 17 *e*P **P** **04 40 46.6 -0.4**
BILL pmax pmax
comp=Z,138nm,1.0s
BILL MLR MLR
comp=Z,14μm,20.0s
BILL Bilibino 32.11 17 *e*P **P** **04 40 46.6 -0.4**
comp=Z,138nm,1.0s
BILL LR LR
comp=Z,14μm,20.0s
CD2 Chengdu 32.12 267⇑*i*P **P** **04 40 47.3 -0.2**
CD2 pP pP 04 40 57.3 -2.4
CD2 sP sP 04 41 01.8 -3.3
CD2 PP **PP** **04 42 00.3 -0.3**
CD2 S **S** **04 45 58.1 +1.3**
CD2 sS sS 04 46 15.4 -1.8
CD2 pmax pmax
comp=Z,790nm,0.8s
CD2 pmax pmax
comp=Z,5μm,6.8s
CD2 LR LR
comp=Z,37μm,19.9s
CD2 LR LR
comp=Z,42μm,24.8s
CD2 LR LR
comp=Z,48μm,17.9s
RCP Roxas 32.15 217⇑*e*P **P** **04 40 52.0 +4.2**
GTA Gaotai 32.44 284⇑P **P** **04 40 50.1 -0.3**
GTA pP pP 04 41 00.5 -2.0
GTA sP sP 04 41 04.5 -3.5
GTA PP **PnPn** **04 41 59.8 +1.4**
GTA PcP **PcP** **04 43 37.8 +1.1**
GTA S **S** **04 46 02.5 +0.6**
GTA sS sS 04 46 18.4 -3.9
GTA ScP **ScP** **04 47 17.3 +0.7**
GTA PcS **PcS** **04 47 21.4 -0.5**
GTA SS **SnSn** **04 48 00.3 +2.6**
GTA ScS **ScS** **04 51 15.8 -0.3**
GTA pmax pmax
comp=Z,4μm,7.1s
GTA LR LR
comp=Z,25μm,18.1s
GTA LR LR
comp=Z,82μm,18.5s
GTA LR LR
comp=Z,96μm,19.0s
TIXI Tiksi 33.48 353 P **P** **04 40 58.2 -0.7**
comp=Z,22nm,0.6s,baz=145,slow=9.6,SNR=38
TIXI LR LR 04 55 55.5
comp=Z,32μm,18.7s,baz=142,slow=38
TIXI Tiksi 33.48 353*c i*P **P** **04 40 58.1 -0.7**
TIXI pmax pmax
comp=Z,39nm,1.0s
TIXI MLR MLR
comp=Z,26μm,18.0s
TIXI Tiksi 33.48 353 *e*P **P** **04 40 57.8 -1.0**
comp=Z,193nm,1.4s
QIZ Qiongzhong 34.09 244 P **P** **04 41 05.8 +1.0**
QIZ PP **PP** **04 42 24.3 +1.7**
QIZ S **S** **04 46 28.3 +0.7**
QIZ sS **sS** **04 46 46.6 -1.4**
QIZ pmax pmax
comp=Z,4μm,12.1s
QIZ LR LR
comp=Z,26μm,18.2s
QIZ LR LR
comp=Z,31μm,16.9s
QIZ Qiongzhong 34.09 244 *e*P **P** **04 41 06.3 +1.5**
comp=Z,39nm,0.8s
QIZ LR LR
comp=Z,33μm,18.0s
PATS Pohnpei 35.20 151 PFAKE 04 41 30.0 +16
PATS LR LR
comp=Z,25μm,22.0s
MIDW Midway 35.30 95 *e*P **P** **04 41 16.1 +1.1**
comp=Z,486nm,1.4s
MIDW LR LR
comp=Z,36μm,22.0s
CTBH Cotabato--PC H 35.35 211⇓*i*P **P** **04 41 17.2 +1.6**
KMI Kunming 35.68 259 P **P** **04 41 19.0 +0.3**
KMI pP pP 04 41 29.1 -1.8
KMI sP sP 04 41 33.0 -3.3
KMI PP **PP** **04 42 42.8 +2.6**
KMI S **S** **04 46 47.4 -4.9**
KMI PcS **PcS** **04 47 32.4 -1.5**
KMI pmax pmax
comp=Z,480nm,1.1s
KMI pmax pmax
comp=Z,5μm,6.6s
KMI LR LR
comp=Z,31μm,18.9s
KMI LR LR
comp=Z,35μm,19.6s
KMI LR LR
comp=Z,52μm,20.2s
NIKH Nikolski High 36.26 51 PFAKE 04 41 40.0 +17
NIKH LR LR
comp=Z,23μm,22.0s
KRAR Krasnoyarsk 36.41 314 *e*P **P** **04 41 24.3 0.0**
KRAR MLR MLR
comp=Z,344μm,20.0s
GAMB Gambell 36.91 32 PFAKE 04 41 40.0 +12
GAMB LR LR
comp=Z,7μm,22.0s
UNV Unalaska Valle 37.70 49 PFAKE 04 41 50.0 +15
UNV LR LR
comp=Z,10μm,21.0s
KWAJ Kwajalein Atol 37.82 136 PFAKE 04 41 50.0 +13
KWAJ LR LR
comp=Z,48μm,22.0s
AKUT Akutan 38.14 49 PFAKE 04 41 50.0 +11
AKUT LR LR
comp=Z,9μm,20.0s
NONG Nongkai 39.52 249 P **P** **04 41 51.5 +0.6**
comp=Z,169nm,0.8s,comp=Z,4μm
SKNT Sakolnakorn 39.62 247 P **P** **04 41 52.2 +0.4**
comp=Z,180nm,1.9s,comp=Z,6μm
UBPT Khong Chiam 39.70 244 P **P** **04 41 53.4 +1.0**
comp=Z,309nm,2.1s,comp=Z,5μm
MYLDM Lahad Datu 39.73 218 *e*P **P** **04 41 54.4 +1.8**
comp=Z,258nm,1.0s
KKM Kota Kinabalu 40.14 222 *e*P **P** **04 41 57.5 +1.3**
comp=Z,395nm,1.7s
KKM LR LR
comp=Z,9μm,21.0s
WMQ Urumqi 40.38 295⇑*i*P **P** **04 41 59.1 +1.2**
WMQ pP pP 04 42 14.3 +4.0
WMQ PP **PnPn** **04 43 37.5 +2.1**
WMQ PcS **PcS** **04 47 51.1 +0.2**
WMQ S **S** **04 48 03.5 +0.7**
WMQ sS sS 04 48 21.8 -1.7
WMQ pmax pmax
comp=Z,890nm,0.8s
WMQ pmax pmax
comp=Z,9μm,5.2s
WMQ LR LR
comp=Z,20μm,14.2s
WMQ LR LR
comp=Z,23μm,19.3s
WMQ LR LR
comp=Z,33μm,27.2s
ZAA0 Zalesovo Array 40.97 311 *e*P **P** **04 42 02.5 0.0**
ZALV Zalesovo Beam 40.97 311 P **P** **04 42 02.8 +0.2**
comp=Z,171nm,0.5s,baz=86,slow=7.5,SNR=522
ZALV PcP **PcP** **04 44 02.2 +0.3**
comp=Z,46nm,0.6s,baz=107,slow=3.5,SNR=5.6
ZALV LR LR 05 00 01.7
comp=Z,63μm,18.1s,baz=86,slow=37
MANU Manus Island 41.06 172 PFAKE 04 42 20.0 +16
MANU LR LR
comp=Z,8μm,22.0s
SDPT Sand Point 41.21 47 PFAKE 04 42 20.0 +16
SDPT LR LR
comp=Z,13μm,21.0s
JAY Jayapura 41.24 182 P **P** **04 42 03.6 -1.5**
comp=Z,3.9nm,1.0s,baz=271,slow=23,SNR=7.9
JAY LR LR 04 59 55.4
comp=Z,139nm,19.3s,baz=358,slow=37
LOEI Loei 41.25 251 P **P** **04 42 02.5 -2.8**
comp=Z,115nm,0.8s,comp=Z,2μm
CMAI Chiengmai2 41.42 255 P **P** **04 42 07.4 +0.6**
comp=Z,2μm,1.0s,comp=Z,35μm
KMSI Cibinong 41.55 208 P **P** **04 42 12.4 +4.8**
UTTA Uttaradit 41.63 251 P **P** **04 42 08.8 +0.5**
comp=Z,41nm,0.9s,comp=Z,335nm
NRIK Noril'sk 41.74 334 P **P** **04 42 08.4 -0.2**
comp=Z,70nm,0.5s,baz=118,slow=6.6,SNR=99
NRIK S **S** **04 48 21.2 -1.0**
comp=Z,10.0nm,0.6s,baz=127,slow=5.1,SNR=3.3
NRIK LR LR 05 00 29.8
comp=Z,91μm,19.7s,baz=107,slow=37
NRIK Noril'sk 41.74 334 P **P** **04 42 08.4 -0.2**
NRIK S **S** **04 48 21.2 -1.0**
NRIK pmax pmax
comp=Z,71nm,0.5s
NRIK smax smax
comp=N,10.0nm,0.6s
NRIK MLR MLR
comp=Z,91μm,19.7s
CHAI Chaiyaphum 41.76 248 P **P** **04 42 09.4 0.0**
comp=Z,57nm,0.9s,comp=Z,385nm

LAMP Lampang 41.83 253 P P 04 42 10.9 +0.9
comp=Z,63nm,0.9s,comp=Z,482nm
NVS Novosibirsk 41.85 312⇓ iP P 04 42 10.7 +0.9
NVS i 04 42 28.7
NVS eS S 04 48 25.8 +1.6
NVS pmax pmax
comp=Z,254nm,0.8s
NVS pmax pmax
comp=N,32nm,0.4s
NVS pmax pmax
comp=E,132nm,0.5s
NVS smax smax
comp=N,57nm,1.1s
NVS smax smax
comp=E,314nm,2.0s
ZSN Zaisan 41.95 301 iP P 04 42 05.8 -4.9
comp=E,7μm,0.9s
ZSN iS S 04 48 22.2 -3.6
ZSN LR LR 04 59 20.2
comp=E,6μm,12.5s
CMMT Chiang Mai 42.16 254 P P 04 42 12.9 +0.1
comp=E,248nm,0.8s,comp=E,4μm
CHTO Chiang Mai 42.17 254 P P 04 42 13.0 +0.2
comp=E,1μm,0.9s,comp=E,18μm
CHTO Chiang Mai 42.17 254 eP P 04 42 13.2 +0.5
CHTO pmax pmax
comp=Z,170nm,0.8s
CHTO Chiang Mai 42.17 254 P P 04 42 13.3 +0.6
SNR=46
CHTO Chiang Mai 42.17 254 eP P 04 42 13.2 +0.5
comp=Z,174nm,0.8s
CHTO LR LR
comp=Z,16μm,20.0s
CHGN Chignik 42.35 46 eP P 04 42 12.3 -1.5
CMAR Chiang Mai Arr 42.38 254 P P 04 42 15.2 +0.6
comp=Z,20nm,0.6s,baz=44,slow=7.6,SNR=51
CMAR PcP PcP 04 44 07.7 +0.4
comp=Z,11nm,0.6s,baz=38,slow=1.4,SNR=4.1
CMAR LR LR 05 01 51.8
comp=Z,14μm,19.6s,baz=64,slow=39
CM01 Chiang Mai Arr 42.40 254 eP P 04 42 13.7 -0.9
MRSI Marisa 42.41 210 P P 04 42 15.4 +0.7
LSA Lhasa 42.47 273 P P 04 42 17.4 +1.7
LSA pP pP 04 42 26.9 -1.2
LSA sP sP 04 42 34.1 +0.6
LSA S S 04 48 33.8 -1.0
LSA pmax pmax
comp=Z,130nm,0.6s
LSA pmax pmax
comp=Z,5μm,14.9s
LSA LR LR
comp=Z,11μm,22.3s
LSA LR LR
comp=Z,19μm,22.3s
LSA LR LR
comp=Z,50μm,27.3s
LSA Lhasa 42.47 273 eP P 04 42 16.1 +0.4
LSA pmax pmax
comp=Z,116nm,0.8s
LSA MLR MLR
comp=Z,44μm,21.0s
LSA Lhasa 42.47 273 eP P 04 42 16.1 +0.4
comp=Z,116nm,0.8s
LSA LR LR
comp=Z,44μm,21.0s
SUKH Sukhothai 42.48 252 P P 04 42 15.8 +0.6
comp=Z,49nm,1.0s,comp=Z,421nm
FAKI Fak Fak 42.57 194 P P 04 42 17.4 +1.4
FAKI Fak Fak 42.57 194 eP P 04 42 16.4 +0.4
comp=Z,138nm,0.9s
FAKI LR LR
comp=Z,27μm,22.0s
SANI Sanana 43.33 204 P P 04 42 21.8 -0.3
MK01 Makanchi Array 43.48 300 eP P 04 42 21.8 -1.4
LUWI Luwuk 43.48 208 P P 04 42 23.0 -0.4
comp=Z,357nm,1.4s,comp=Z,5μm
LUWI Luwuk 43.48 208 eP P 04 42 21.9 -1.4
comp=Z,389nm,1.1s
MK31 Makanchi Array 43.49 301 iP P 04 42 23.9 +0.8
MK31 pmax pmax
comp=Z,341nm,0.8s
MK31 Makanchi Array 43.49 301 eP P 04 42 23.9 +0.8
MKAR Makanchi Array 43.49 301 P P 04 42 23.9 +0.7
comp=Z,288nm,0.8s,baz=85,slow=9.8,SNR=1489
MKAR S S 04 48 49.2 +0.7
comp=Z,5.7nm,0.9s,baz=86,slow=6.1,SNR=3.4
MKAR LR LR 05 01 10.6
comp=Z,34μm,21.5s,baz=66,slow=37
MKAR Makanchi Array 43.49 301 iP P 04 42 23.8 +0.7
MKAR pmax pmax
comp=Z,297nm,0.8s
CHBT CHBT 43.63 244 P P 04 42 25.5 +0.9
comp=Z,162nm,0.8s,comp=Z,8μm
TT01 Tatalina 43.65 36 eP P 04 42 25.1 +0.9
TTA Tatalina 43.66 36 eP P 04 42 25.1 +0.7
TTA pmax pmax
comp=Z,94nm,1.0s
TTA Tatalina 43.66 36 eP P 04 42 25.1 +0.7
comp=Z,94nm,1.0s
MAKZ Makanchi 43.69 301 P P 04 42 25.6 +0.8
MAKZ pmax pmax
comp=Z,469nm,1.1s
MAKZ Makanchi 43.69 301 eP P 04 42 25.6 +0.8
comp=Z,416nm,0.9s
MAKZ LR LR
comp=Z,45μm,21.0s
SVW2 Sparrevohn 43.79 39 eP P 04 42 27.0 +1.5
comp=Z,141nm,1.0s
UMPA Umpang Tak 43.85 251 P P 04 42 28.7 +2.3
comp=Z,70nm,1.1s,comp=Z,1μm
SHL Shillong 43.86 268 eP P 04 42 27.0 +0.4
SHL IAmb IAmb 04 42 30.4
comp=Z,268nm,1.1s
SHL eS S 04 48 56.0 +1.4
RABL Rabaul 43.92 165 PFAKE 04 42 40.0 +13
RABL LR LR
comp=Z,8μm,21.0s
SEM Semipalatinsk 44.14 306 iP P 04 42 35.7 +7.4
comp=Z,2μm,1.0s
SEM eS S 04 49 06.8 +8.9
SEM LR LR 05 00 32.0
comp=Z,8μm,13.2s
PATY Pattaya 44.55 246 P P 04 42 35.0 +3.0
comp=Z,36nm,1.1s,comp=Z,4μm
BNDI Bandanaira 44.63 197 P P 04 42 33.0 +0.5
SRDT SRDT 44.86 249 P P 04 42 35.4 +1.0
comp=Z,368nm,1.2s,comp=Z,12μm
KURK Kurchatov 45.11 307 P P 04 42 37.0 +0.9
KURK pmax pmax
comp=Z,729nm,0.7s
KURK Kurchatov 45.11 307 P P 04 42 37.0 +0.9
OHAK Old Harbor 45.11 44 eP P 04 42 36.2 +0.3
comp=Z,230nm,1.3s
OHAK LR LR
comp=Z,13μm,21.0s
KURBB Kurchatov Arra 45.18 307 P P 04 42 37.0 +0.3
comp=Z,729nm,0.7s,baz=81,slow=8.1,SNR=2546
SBUM Sibu 45.28 224 eP P 04 42 38.5 +0.7
comp=Z,66nm,1.0s
SBUM LR LR
comp=Z,14μm,20.0s
PPLA Purkeypile 45.41 36 eP P 04 42 40.1 +1.7
comp=Z,743nm,1.6s
KDAK Kodiak Island 45.44 43 iP P 04 42 38.4 -0.1
KDAK Kodiak Island 45.44 43 eP P 04 42 38.8 +0.2
comp=Z,142nm,0.8s
KDAK LR LR
comp=Z,23μm,22.0s
CAST Castle Rocks 45.45 35 eP P 04 42 40.0 +1.4
comp=Z,149nm,1.2s
HOM Homer 45.79 40 eP P 04 42 42.9 +1.7
comp=Z,468nm,1.3s
BPAW Bear Paw Mtn. 45.94 34 eP P 04 42 43.4 +0.9
comp=Z,160nm,1.2s
KTH Kantishna Hill 45.97 35 eP P 04 42 44.0 +1.2
comp=Z,368nm,1.2s
CNPM China Poot 46.00 41 eP P 04 42 44.2 +1.2
comp=Z,77nm,0.8s
SHLS Shalkode 46.05 296 iP P 04 42 42.1 -1.8
comp=Z,2μm,0.9s
SHLS eS S 04 49 25.6 -0.6
SHLS LR LR 05 02 15.7
comp=Z,3μm,12.2s
MLY Manley 46.05 33 eP P 04 42 44.4 +1.1
comp=Z,128nm,1.2s
TRF Thorofare Moun 46.26 35 eP P 04 42 45.7 +0.5
comp=Z,331nm,1.7s

PDGK Podgornoye 46.28 296 P P 04 42 45.4 +0.1
PDGK pmax pmax
comp=Z,176nm,0.7s
COLD Coldfoot 46.32 30 eP P 04 42 46.4 +1.0
comp=Z,120nm,1.1s
TTSI Tana Toraja 46.47 211 P P 04 42 47.4 +0.4
TDK Taldygorghan 46.55 299 iP P 04 42 45.8 -1.8
comp=Z,1μm,1.5s
TDK eS S 04 49 32.8 0.0
TDK LR LR 05 02 31.9
comp=Z,8μm,18.7s
KPKS Kokpek 46.80 297 iP P 04 42 47.6 -1.9
comp=Z,2μm,1.0s
KPKS iS S 04 49 35.9 -0.6
KPKS LR LR 05 02 29.9
comp=Z,11μm,14.3s
SEW Seward 46.85 40 eP P 04 42 50.4 +0.8
comp=Z,210nm,1.3s
MCK McKinley 46.85 35 eP P 04 42 49.9 +0.3
MCK pmax pmax
comp=Z,183nm,1.0s
MCK McKinley 46.85 35 eP P 04 42 49.9 +0.3
comp=Z,183nm,1.0s
PMR Palmer 46.89 38 eP P 04 42 49.6 -0.2
PMR pmax pmax
comp=Z,93nm,1.0s
PMR Palmer 46.89 38 eP P 04 42 49.6 -0.2
comp=Z,93nm,1.0s
PMR LR LR
comp=Z,10μm,22.0s
TARA Tarawa 46.90 135 eP P 04 42 51.2 +0.7
comp=Z,1μm,1.9s
TARA LR LR
comp=Z,33μm,20.0s
RND Reindeer 46.91 35 eP P 04 42 50.1 0.0
RND pmax pmax
comp=Z,270nm,1.3s
RND Reindeer 46.91 35 eP P 04 42 50.1 0.0
comp=Z,270nm,1.3s
ZHN Zhinishke 47.06 297 iP P 04 42 49.7 -1.9
comp=Z,1μm,0.9s
ZHN eS S 04 49 39.9 -0.5
ZHN LR LR 05 02 55.8
comp=Z,1μm,12.6s
SATY Saty 47.11 296 iP P 04 42 49.9 -2.1
comp=Z,2μm,0.9s
SATY eS S 04 49 40.6 -0.5
SATY LR LR 05 02 32.1
comp=Z,7μm,15.8s
MDM Murphy Dome 47.12 33 eP P 04 42 52.5 +0.8
comp=Z,454nm,1.4s
WRH Wood River Hil 47.20 34 eP P 04 42 52.6 +0.4
comp=Z,112nm,1.0s
SML Sawmill 47.25 37 eP P 04 42 53.2 +0.4
SML pmax pmax
comp=Z,290nm,1.2s
SML Sawmill 47.25 37 eP P 04 42 53.2 +0.4
comp=Z,290nm,1.2s
COLA College 47.28 33 eP P 04 42 53.8 +1.0
COLA pmax pmax
comp=Z,280nm,1.1s
COLA College 47.28 33 eP P 04 42 53.8 +1.0
comp=Z,279nm,1.1s
COLA LR LR
comp=Z,6μm,22.0s
RAMN Ramite 47.29 273 eP P 04 42 54.6 +0.8
comp=Z,651nm,0.7s
CCB Clear Creek Bu 47.31 33 eP P 04 42 53.4 +0.3
comp=Z,180nm,1.4s
SPSI Sidrap Palu 47.32 211 P P 04 42 53.0 -0.7
GUN Gumba 47.39 274 eP P 04 42 55.5 +0.8
comp=Z,804nm,0.6s
DHY Denali Highway 47.59 36 eP P 04 42 55.8 +0.2
comp=Z,180nm,1.2s
JOHN Johnston Islan 47.63 104 PFAKE 04 43 10.0 +14
JOHN LR LR
comp=Z,32μm,20.0s
STKI Sintang 47.68 223 P P 04 42 57.7 +1.1
IL1 Eielson Array 47.70 33 eP P 04 42 55.3 -0.9
ILAR Eielson Array 47.70 33 P P 04 42 56.1 0.0
comp=Z,55nm,0.7s,baz=266,slow=5.8,SNR=501
ILAR S S 04 49 48.8 +0.2
comp=Z,0.9nm,0.8s,baz=294,slow=4.4,SNR=2.3
ILAR LR LR 05 06 08.7
comp=Z,6μm,18.5s,baz=286,slow=40
ILB Eielson Array 47.70 33 eP P 04 42 56.2 0.0
SCM Sheep Creek Mo 47.72 37 eP P 04 42 57.1 +0.6
SCM pmax pmax
comp=Z,180nm,1.0s
SCM Sheep Creek Mo 47.72 37 eP P 04 42 57.1 +0.6
comp=Z,181nm,1.0s
KKN Kakani 47.92 274 eP P 04 42 59.3 +0.7
comp=Z,895nm,0.6s
PKIN Phulchoki 47.93 274 eP P 04 42 59.3 +0.5
comp=Z,369nm,0.6s
GLI Glacier Island 47.93 39 eP P 04 42 58.2 +0.2
comp=Z,116nm,0.9s
SURA Surathani 48.02 243 P P 04 43 01.5 +2.3
comp=Z,99nm,1.2s
MDOK Medeo 48.02 297 iP P 04 42 57.3 -1.8
comp=Z,555nm,0.8s
MDOK LR LR 05 02 47.7
comp=Z,9μm,15.0s
AAA Alma-Ata 48.06 297 eP P 04 43 00.8 +1.5
AAA pmax pmax
comp=Z,9μm,6.9s
AAA MLR MLR
comp=Z,31μm,21.0s
AAA Alma-Ata 48.06 297 iP P 04 42 57.9 -1.5
comp=Z,2μm,0.9s
AAA eS S 04 49 54.5 +0.1
AAA LR LR 05 03 03.7
comp=Z,6μm,15.4s
DMN Daman 48.14 274 eP P 04 43 00.9 +0.5
comp=Z,478nm,1.0s
FID Port Fidalgo 48.25 39 eP P 04 43 00.8 +0.3
comp=Z,133nm,1.1s
KAPI Kappang 48.28 210 P P 04 43 00.6 -0.6
comp=Z,41nm,0.6s,baz=283,slow=14,SNR=19
KAPI LR LR 05 03 56.3
comp=Z,4μm,20.7s,baz=18,slow=37
KAPI Kappang 48.28 210 eP P 04 43 01.5 +0.3
comp=Z,694nm,1.6s
FYU Fort Yukon 48.29 31 eP P 04 43 02.4 +1.7
comp=Z,250nm,0.9s
KUU Kurty 48.29 298 iP P 04 42 59.2 -1.9
comp=Z,3μm,0.9s
KUU iS S 04 49 57.3 -0.3
KUU LR LR 05 03 51.7
comp=Z,9μm,14.4s
GKN Gorkha 48.32 275 eP P 04 43 02.2 +0.6
comp=Z,705nm,0.8s
PMG Port Moresby 48.32 173 S S 04 49 57.2 -1.0
comp=Z,6.5nm,0.7s,baz=292,slow=18,SNR=1.5
PMG LR LR 05 01 48.0
comp=Z,7μm,21.9s,baz=346,slow=34
PMG Port Moresby 48.32 173 eP P 04 42 59.9 -1.5
PMG pmax pmax
comp=Z,71nm,0.9s
PMG Port Moresby 48.32 173 eP P 04 43 01.6 +0.2
comp=Z,76nm,1.0s
PMG S S 04 49 57.2 -1.0
KLU Klutina 48.43 38 eP P 04 43 02.7 +0.8
comp=Z,166nm,1.0s
KLU LR LR
comp=Z,12μm,21.0s
PAX Paxson 48.47 36 eP P 04 43 02.8 +0.6
PAX pmax pmax
comp=Z,73nm,1.0s
PAX Paxson 48.47 36 eP P 04 43 02.8 +0.6
comp=Z,73nm,1.0s
DIV Divide 48.54 38 eP P 04 43 03.7 +0.9
comp=Z,604nm,1.6s
DIV LR LR
comp=Z,9μm,22.0s
EYAK Cordova Ski Ar 48.63 39 eP P 04 43 04.2 +0.8
comp=Z,169nm,1.1s
SURT Suratani 48.75 244 P P 04 43 06.2 +1.3
comp=Z,128nm,0.8s,comp=Z,2μm
SKLT Songkhla 48.77 241 P P 04 43 06.2 +1.2
comp=Z,280nm,1.4s,comp=Z,5μm
TRTT Trang 48.92 242 P P 04 43 07.8 +1.6
comp=Z,153nm,0.9s,comp=Z,4μm
BRZS Berezniki 48.98 307 eP P 04 43 04.7 -1.6
comp=Z,815nm,0.7s
BRZS eS S 04 50 06.6 -0.5
BRZS LR LR 05 04 01.9

KRAB Krabi 48.99 243 P P 04 43 07.7 +1.0
comp=Z,261nm,0.6s,comp=Z,4μm
BMNS Besmoynak 49.00 297 iP P 04 43 04.6 -2.1
comp=Z,6μm,0.8s
BMNS iS S 04 50 07.2 -0.7
BMNS LR LR 05 04 01.4
comp=Z,12μm,15.7s
BBKI Banjar Baru 49.02 217 P P 04 43 07.1 +0.3
DOT Dot Lake 49.03 35 eP P 04 43 06.3 -0.1
comp=Z,147nm,0.7s
TKM2 Tokmak 2 49.11 297 P P 04 43 09.0 +1.4
TKM2 pmax pmax
comp=Z,367nm,0.9s
BMRM Bremner River 49.13 38 eP P 04 43 08.2 +0.9
comp=Z,160nm,0.9s
BMRM LR LR
comp=Z,15μm,22.0s
RAGM Ragged Mountai 49.18 39 eP P 04 43 09.0 +1.3
comp=Z,163nm,1.1s
KOLN Koldanda 49.23 275 eP P 04 43 09.5 +0.8
comp=Z,489nm,0.7s
MENT Mentasta 49.27 36 eP P 04 43 09.4 +1.2
comp=Z,157nm,0.9s
MENT LR LR
comp=Z,11μm,22.0s
VOSK Vostochnaya 49.34 311 P P 04 43 09.0 0.0
VOSK pmax pmax
comp=Z,206nm,0.8s
VOSK Vostochnaya 49.34 311 eP P 04 43 09.2 +0.3
comp=Z,219nm,0.6s
VOSK LR LR
comp=Z,39μm,19.0s
BOK Bokaro 49.44 269 eP P 04 43 10.1 0.0
BOK IAmb IAmb 04 43 14.6
comp=Z,63nm,0.7s
BTLS Baital 49.50 300 iP P 04 43 08.3 -1.9
comp=Z,698nm,0.8s
BTLS iS S 04 50 13.6 -0.9
BTLS LR LR 05 04 17.6
comp=Z,4μm,14.1s
PYUN Piuthan 49.55 276 eP P 04 43 12.0 +0.9
comp=Z,2μm,0.9s
BVA0 Borovoye Array 49.62 311 P P 04 43 11.6 +0.5
BVA0 pmax pmax
comp=Z,171nm,0.6s
BVAR Borovoye Array 49.62 311 P P 04 43 11.5 +0.4
comp=Z,187nm,0.5s,baz=76,slow=8.4,SNR=806
BVAR PcP PcP 04 44 32.1 +0.1
comp=Z,94nm,0.7s,baz=96,slow=6.0,SNR=4.8
BVAR LR LR 05 05 11.1
comp=Z,44μm,19.8s,baz=78,slow=37
BVAR Borovoye Array 49.62 311 P P 04 43 11.5 +0.4
BVAR 04 44 32.1
BVAR pmax pmax
comp=Z,188nm,0.5s
BVAR pmax pmax
comp=Z,94nm,0.7s
BVAR MLR MLR
comp=Z,44μm,19.8s
OTUK Ortayu 49.67 305 P P 04 43 12.2 +0.7
OTUK pmax pmax
comp=Z,218nm,0.8s
BRVK Borovoye 49.67 311c iP P 04 43 11.8 +0.3
BRVK pmax pmax
comp=Z,476nm,1.2s
BRVK MLR MLR
comp=Z,104μm,18.0s
BRVK Borovoye 49.67 311 eP P 04 43 12.1 +0.6
comp=Z,275nm,0.6s
BRVK LR LR
comp=Z,44μm,20.0s
FRU Bishkek 49.82 297⇑ iP P 04 43 12.0 -0.8
FRU i 04 43 24.0
FRU i 04 45 10.0
FRU iS S 04 50 20.0 +0.9
FRU iSS SS 04 53 53.0 +1.3
FRU pmax pmax
comp=Z,2μm,2.7s
FRU pmax pmax
comp=Z,5μm,3.0s
FRU smax smax
comp=E,8μm,8.0s
FRU pmax pmax
comp=E,25μm,18.0s
PKDT Phuket 49.82 243 P P 04 43 14.7 +1.6
comp=E,798nm,1.0s,comp=E,10μm
CRQM Cirque 49.87 38 eP P 04 43 14.1 +1.1
comp=E,277nm,1.0s
CRQM LR LR
comp=Z,8μm,20.0s
AAK Ala-Archa 49.97 297 LR LR 05 05 59.8
comp=Z,26μm,19.4s,baz=60,slow=38
AAK Ala-Archa 49.97 297 P P 04 43 14.4 +0.3
AAK pmax pmax
comp=Z,165nm,1.3s
AAK Ala-Archa 49.97 297 P P 04 43 14.8 +0.7
SNR=61
AAK Ala-Archa 49.97 297 eP P 04 43 14.7 +0.6
comp=Z,107nm,0.6s
KSH Kashi 50.03 293⇑ iP P 04 43 18.9 +4.4
KSH esP sP 04 43 33.4 +0.8
KSH ePP PP 04 45 14.9 +5.3
KSH eScP ScP 04 48 29.9 +4.2
KSH PcS PcS 04 48 34.3 +3.3
KSH S S 04 50 26.9 +4.6
KSH ScS ScS 04 53 04.9 +2.9
KSH pmax pmax
comp=Z,63nm,0.9s
KSH pmax pmax
comp=Z,5μm,5.1s
KSH LR LR
comp=Z,20μm,14.5s
KSH LR LR
comp=Z,9μm,13.8s
KSH LR LR
comp=Z,21μm,17.1s
KULM Kulim 50.12 239 eP P 04 43 16.2 +1.0
comp=Z,96nm,0.8s
KULM LR LR
comp=Z,17μm,22.0s
EGAK Eagle 50.14 33 eP P 04 43 15.1 +0.3
comp=Z,142nm,0.8s
EGAK LR LR
comp=Z,7μm,19.0s
DGPR DIGLIPUR 50.19 253 eP P 04 43 16.1 +0.4
BALM Baldy 50.20 38 eP P 04 43 16.3 +0.8
BALM pmax pmax
comp=Z,160nm,1.2s
BALM Baldy 50.20 38 eP P 04 43 16.3 +0.8
comp=Z,160nm,1.2s
BALM LR LR
comp=Z,8μm,20.0s
IPM Ipoh 50.47 238 eP P 04 43 18.1 +0.1
comp=Z,122nm,0.9s
IPM LR LR
comp=Z,23μm,21.0s
MYKOM Kota Tinggi 50.71 233 eP P 04 43 20.7 +0.9
comp=Z,70nm,0.8s
MYKOM LR LR
comp=Z,13μm,21.0s
MMRI Maumere 50.73 205 P P 04 43 19.5 -0.3
MMRI Maumere 50.73 205 eP P 04 43 19.6 -0.1
comp=Z,284nm,1.1s
HNR Honiara 50.94 157 P P 04 43 21.6 +0.2
comp=Z,54nm,0.3s,baz=266,slow=13,SNR=2.4
HNR LR LR 05 03 14.4
comp=Z,28μm,21.6s,baz=322,slow=34
HNR Honiara 50.94 157 eP P 04 43 35.0 +14
PTH Pithoragarh 51.01 279 eP P 04 43 22.8 +0.7
DAWY Dawson 51.01 34 eP P 04 43 22.0 +0.6
comp=Z,40nm,0.9s
DAWY LR LR
comp=Z,10μm,22.0s
EDFI Ende, Flores 51.02 206 P P 04 43 20.9 -1.2
SOEI Soe 51.14 203 eP P 04 43 22.1 -0.9
comp=Z,283nm,0.8s
SOEI LR LR
comp=Z,6μm,20.0s
MNAS Manas 51.40 298 P P 04 43 26.0 +1.1
MNAS pmax pmax
comp=Z,247nm,0.8s
PCA Pinnacle 51.40 39 eP P 04 43 26.0 +1.5
comp=Z,468nm,1.7s
KEKH Kekaha 52.22 91 PFAKE 04 43 40.0 +9.0
KEKH LR LR
comp=Z,6μm,18.0s
DDI Dehra Dun 52.31 281 eP P 04 43 31.5 -0.2

DDI IAmb IAmb 04 43 39.7
comp=Z,163nm,0.9s
MTN Manton Dam 52.47 193 *e*P **P 04 43 32.2 -0.5**
MTN comp=Z,181nm,1.0s LR LR
comp=Z,5μm,19.0s
INK Inuvik 52.54 28 P **P 04 43 33.5 +0.8**
INK comp=Z,78nm,0.8s,baz=291,slow=6.9,SNR=103 S **S 04 50 56.4 +0.7**
comp=Z,3.2nm,1.1s,baz=198,slow=13,SNR=5.2
INK Inuvik 52.54 28 *e*P **P 04 43 33.5 +0.8**
INK pmax pmax
comp=Z,83nm,0.9s
INK Inuvik 52.54 28 *e*P **P 04 43 33.5 +0.8**
INK comp=Z,84nm,0.8s S **S 04 50 56.4 +0.7**
KK31 Karatay Array 52.55 299 *i*P **P 04 43 33.3 +0.1**
KKAR Karatay Array 52.55 299 *e*P **P 04 43 33.6 +0.4**
KKAR Karatay Array 52.55 299 *e*P **P 04 43 33.6 +0.4**
comp=Z,344nm,0.8s
HYT Haines Junctio 52.56 38 *e*P **P 04 43 34.9 +1.7**
comp=Z,261nm,1.0s
HYT LR LR
comp=Z,9μm,22.0s
SDNR Sundarnagar 52.60 283 *e*P **P 04 43 33.6 -0.2**
COEN Coen 52.61 178 *e*P **P 04 43 34.3 +0.6**
comp=Z,119nm,1.0s
SMLA Simla 52.62 283 *e*P **P 04 43 33.9 +0.1**
SMLA IAmb IAmb 04 43 36.8
comp=Z,2μm,0.1s
TWSI Taliwang, Sumb 52.82 212 P **P 04 43 34.5 -0.9**
PSI Prapat 53.11 238 *e*P **P 04 43 38.0 +0.2**
PSI pmax pmax
comp=Z,86nm,0.9s
PSI Prapat 53.11 238 *e*P **P 04 43 38.0 +0.2**
comp=Z,86nm,0.9s
PSI LR LR
comp=Z,20μm,22.0s
THN Thein Dam 53.12 285 *e*P **P 04 43 36.2 -1.3**
THN *e*S **S 04 51 04.0 -0.7**
PONG Pong 53.16 284 *e*P **P 04 43 38.0 +0.1**
PONG *ex* x 04 44 18.0
BRLS Borolday 53.23 299 *i*P **P 04 43 36.9 -1.3**
BRLS *i*S **S 04 51 05.5 -0.5**
BRLS LR LR 05 06 28.3
comp=Z,694nm,13.9s
IUG Iuzhnay 53.23 298 *i*P **P 04 43 36.3 -2.1**
comp=Z,2μm,1.4s
IUG *e*S **S 04 51 05.6 -0.7**
IUG LR LR 05 06 43.3
comp=Z,2μm,12.3s
CMBY CAMPBELL BAY 53.55 246 *e*P **P 04 43 41.0 +0.1**
BKNI Bangkinang 53.60 234 *e*P **P 04 43 42.1 +0.9**
comp=Z,418nm,0.8s
BKNI LR LR
comp=Z,15μm,22.0s
OPA Opana 53.71 90 *e*P **P 04 43 42.7 +0.7**
OPA pmax pmax
comp=Z,350nm,1.1s
OPA Opana 53.71 90 *e*P **P 04 43 42.7 +0.7**
comp=Z,352nm,1.1s
OPA LR LR
comp=Z,7μm,20.0s
NDI New Delhi 53.73 280 *e*P P 04 43 35.5 -6.6
NDI *e*S S 04 51 04.0 -9.1
JAGI Jajag, Banyuwa 53.75 215 *e*P **P 04 43 40.9 -1.3**
comp=Z,57nm,1.0s
CHLP Challavanipeta 53.76 265 *e*P **P 04 43 42.9 +0.5**
CHLP IAmb IAmb 04 43 45.9
comp=Z,111nm,0.9s
CHLP *e*S **S 04 51 14.5 +0.8**
CHLP IVMs_BB IVMs_BB 05 07 10.7
comp=Z,6μm,23.9s
KIP Kipapa 53.85 91 PFAKE 04 44 00.0 +17
KIP LR LR
comp=Z,7μm,21.0s
HON Honolulu 53.91 91 PFAKE 04 44 00.0 +17
HON LR LR
comp=Z,8μm,22.0s
SKAG Skagway 53.97 39 *e*P **P 04 43 45.6 +2.2**
comp=Z,77nm,1.0s
SKAG LR LR
comp=Z,6μm,21.0s
SVE Sverdlovsk 54.02 318 *d*P **P 04 43 44.7 +1.0**
SVE *e*PPP PPP 04 47 03.9
SVE *e*S **S 04 51 15.2 -1.0**
SVE *e* 04 53 25.2
SVE *e*SSS SSS 04 56 50.7
SVE pmax pmax
comp=Z,570nm,0.7s
SVE pmax pmax
comp=Z,3μm,11.2s
SVE MLR MLR
comp=Z,54μm,16.0s
SVE MLR MLR
comp=E,52μm,20.0s
VIS Vishakhapatnam 54.78 265 *i*P **P 04 43 51.0 +1.2**
VIS IAmb IAmb 04 43 53.4
comp=Z,95nm,0.8s
VIS *i*x x 04 51 37.1
UGM Wanagama 54.96 219 *e*P **P 04 43 50.4 -0.7**
comp=Z,339nm,1.0s
SOKR Solikamsk 55.09 322 *c*P **P 04 43 49.4 -2.0**
SOKR S **S 04 51 27.7 -2.7**
SOKR SS **SS 04 55 19.9 +5.8**
SOKR pmax pmax
comp=Z,118nm,0.7s
SOKR MLR MLR
comp=Z,17μm,15.0s
GSI Gunungsitoli 55.12 238 *e*P **P 04 43 52.4 +0.1**
comp=Z,1μm,1.5s
GSI LR LR
comp=Z,17μm,20.0s
ARU Arti 55.23 318 LR LR 05 09 49.7
comp=Z,68μm,20.3s,baz=68,slow=38
ARU Arti 55.23 318 *c*P **P 04 43 52.9 +0.4**
ARU 04 44 52.3
ARU 04 45 58.9
ARU PPP PPP 04 47 12.5
ARU S **S 04 51 33.8 +1.3**
ARU 04 53 36.1
ARU SS **SS 04 55 22.1 +5.6**
ARU SSS SSS 04 57 23.4
ARU pmax pmax
comp=Z,397nm,0.7s
ARU pmax pmax
comp=Z,3μm,10.9s
ARU smax smax
comp=N,1μm,10.2s
ARU MLR MLR
comp=Z,67μm,18.0s
ARU Arti 55.23 318 *e*P **P 04 43 52.8 +0.2**
comp=Z,401nm,0.6s
CISI Cisompet, Garu 56.03 222 PFAKE 04 44 10.0 +11
CISI LR LR
comp=Z,5μm,22.0s
MNAI Manna 56.11 229 *e*P **P 04 44 00.3 +0.9**
MNAI LR LR
comp=Z,6μm,18.0s
BHPL Bhopal 56.33 274 *e*P **P 04 43 59.7 -1.2**
PVM Polavaram 56.38 265 *e*P **P 04 44 01.9 +0.6**
PVM IAmb IAmb 04 44 07.1
comp=Z,90nm,0.9s
PVM *e*S **S 04 51 48.2 -0.5**
PVM IVMs_BB IVMs_BB 05 08 16.9
comp=Z,5μm,21.5s
CRAG Craig 56.40 43 *e*P **P 04 44 02.9 +2.0**
comp=Z,176nm,1.4s
CRAG LR LR
comp=Z,9μm,22.0s
HPAH Hawaii Prepara 56.42 90 PFAKE 04 44 10.0 +8.3
HPAH LR LR
comp=Z,6μm,21.0s
WRAK Wrangell Islan 56.47 42 *e*P **P 04 44 03.2 +1.8**
comp=Z,78nm,1.2s
WRAK LR LR
comp=Z,6μm,21.0s
POHA Pohakuloa 56.70 91 *e*P **P 04 44 04.4 +0.6**
comp=Z,2μm,1.3s
POHA LR LR
comp=Z,6μm,21.0s
DLBC Dease Lake 56.91 39 P **P 04 44 06.3 +1.7**
comp=Z,24nm,0.8s,baz=294,slow=7.2,SNR=29
DLBC LR LR 05 07 22.7
comp=Z,3μm,21.5s,baz=307,slow=35
DLBC Dease Lake 56.91 39 *e*P **P 04 44 06.3 +1.7**
comp=Z,99nm,1.1s
AB31 Akbulak array 57.05 309 P **P 04 44 05.8 +0.2**
AB31 pmax pmax
comp=Z,171nm,0.6s
ABKAR Akbulak array 57.05 309 *e*P **P 04 44 05.8 +0.2**
comp=Z,407nm,0.7s
UWE Uwekahuna 57.08 91 PFAKE 04 44 20.0 +14
UWE LR LR
comp=Z,8μm,22.0s
KBL Kabul 57.13 290 *e*P **P 04 44 06.6 -0.1**
KBL pmax pmax
comp=Z,200nm,0.8s
KBL Kabul 57.13 290 *e*P **P 04 44 06.6 -0.1**
comp=Z,202nm,0.8s
KBL LR LR
comp=Z,21μm,21.0s
RPR Rampur 57.27 269 *e*P **P 04 44 07.6 0.0**
RPR IAmb IAmb 04 44 17.9
comp=Z,121nm,0.8s
RPR *e*S **S 04 52 00.6 0.0**
DIB Dawson Inlet, 57.61 45 *e*P **P 04 44 12.5 +3.1**
comp=Z,149nm,1.5s
DIB LR LR
comp=Z,8μm,21.0s
AKTO Aktyubinsk 57.73 311 LR LR 05 10 28.3
comp=Z,30μm,19.1s,baz=66,slow=37
SRSP Sriramsagar 57.97 269 *e*P **P 04 44 11.9 -0.7**
SRSP IAmb IAmb 04 44 15.1
comp=Z,216nm,1.0s
SRSP *e*S **S 04 52 07.7 -2.1**
SRSP IVMs_BB IVMs_BB 05 12 03.1
comp=Z,5μm,18.9s
HOPEN Hopen 58.32 346 ⇑*i*P **P 04 44 14.7 +0.6**
HOPEN IVmB_BB 04 44 15.7
comp=Z,6μm,4.4s
HOPEN *es*P **pP 04 44 30.6 +3.5**
HOPEN *e*S **S 04 52 12.5 -0.2**
HOPEN IVMs_BB IVMs_BB 05 12 31.6
comp=Z,5μm,15.3s
ADKI Addanki 58.48 265 *e*P **P 04 44 18.5 +2.4**
ADKI IAmb IAmb 04 44 28.6
comp=Z,119nm,1.2s
FUNA Funafuti 58.54 135 PFAKE 04 44 30.0 +14
FUNA LR LR
comp=Z,34μm,22.0s
NJS Nagarjunasagar 58.58 266 *e*P **P 04 44 16.8 0.0**
NJS IAmb IAmb 04 44 19.5
comp=Z,74nm,1.2s
NJS *e*S **S 04 52 16.6 -1.1**
HYB Hyderabad 58.67 268 ⇑*i*P **P 04 44 17.5 0.0**
HYB *e*pP **pP 04 44 28.5 -1.9**
HYB *e*PcP **PcP 04 45 08.0 +0.9**
HYB *e*PP **PP 04 46 26.0 -1.5**
HYB *e* 04 48 08.0
HYB *e*ScP **ScP 04 49 06.0 +2.3**
HYB *e*S **S 04 52 18.0 -0.9**
HYB LR LR
comp=Z,13nm,16.0s
HYB Hyderabad 58.67 268 *e*P **P 04 44 16.8 -0.7**
HYB IAmb IAmb 04 44 18.5
comp=Z,53nm,0.5s
HYBB Hyderabad (bro 58.67 268 *e*P **P 04 44 17.2 -0.2**
HYBB IAmb IAmb 04 44 18.6
comp=Z,49nm,0.7s
HYBB *e*S **S 04 52 19.3 +0.4**
FITZ Fitzroy Crossi 58.73 198 P **P 04 44 17.8 +0.1**
comp=Z,28nm,0.6s,baz=15,slow=5.9,SNR=54
FITZ Fitzroy Crossi 58.73 198 *e*P **P 04 44 17.7 +0.1**
comp=Z,190nm,1.5s
SPA0 Spitsbergen Ar 58.76 349 ⇑*i*P **P 04 44 17.3 +0.1**
SPA0 IVmB_BB 04 44 18.4
comp=Z,5μm,4.3s
SPA0 *e*S **S 04 52 17.9 -0.6**
SPA0 IVMs_BB IVMs_BB 05 06 37.5
comp=Z,3μm,28.7s
SPA0 Spitsbergen Ar 58.76 349 *e*P **P 04 44 17.9 +0.6**
CTA Charters Tower 58.83 175 P **P 04 44 18.9 +0.5**
comp=Z,6.6nm,0.5s,baz=348,slow=7.6,SNR=10
CTAO Charters Tower 58.83 175 *e*P **P 04 44 19.4 +1.1**
CTAO pmax pmax
comp=Z,410nm,0.6s
CTAO Charters Tower 58.83 175 *e*P **P 04 44 19.4 +1.1**
comp=Z,407nm,0.6s
CTAO LR LR
comp=Z,9μm,22.0s
KBS Kingsbay 58.88 350 ⇑*i*P **P 04 44 18.4 +0.4**
KBS IVmB_BB 04 44 19.7
comp=Z,4μm,4.2s
KBS *es*P **pP 04 44 34.8 +3.8**
KBS *e*S **S 04 52 20.9 +1.0**
KBS IVMs_BB IVMs_BB 05 09 52.6
comp=Z,3μm,21.8s
KBS Kingsbay 58.88 350 *e*P **P 04 44 18.8 +0.8**
KBS pmax pmax
comp=Z,150nm,1.0s
KBS Kingsbay 58.88 350 *e*P **P 04 44 18.8 +0.8**
comp=Z,154nm,1.0s
KBS LR LR
comp=Z,8μm,21.0s
WRAB Tennant Creek 58.97 188 *c*P **P 04 44 18.0 -1.3**
WRAB pmax pmax
comp=Z,127nm,0.8s
WRAB Tennant Creek 58.97 188 *e*P **P 04 44 18.3 -0.9**
comp=Z,165nm,0.9s
WRAB LR LR
comp=Z,7μm,21.0s
WB2 Warramunga Arr 58.98 188 *e*P **P 04 44 17.5 -1.9**
WRA Warramunga Arr 58.98 188 P **P 04 44 18.4 -0.9**
comp=Z,86nm,0.7s,baz=5.2,slow=7.1,SNR=121
WRA LR LR 05 09 23.6
comp=Z,6μm,21.4s,baz=5.0,slow=36
WRA PKP2bc 05 14 03.8
comp=Z,4.3nm,0.9s,baz=201,slow=2.2,SNR=11
SRLM Srisailam 59.17 266 *e*P **P 04 44 20.7 -0.2**
SRLM IAmb IAmb 04 44 24.9
comp=Z,88nm,1.1s
SRLM *e*S **S 04 52 25.1 -0.3**
SRLM IVMs_BB IVMs_BB 05 10 27.6
comp=Z,4μm,24.4s
RCLA Racherla 59.49 266 *e*P **P 04 44 23.4 +0.2**
RCLA IAmb IAmb 04 44 34.1
comp=Z,125nm,0.9s
RCLA *e*S **S 04 52 29.4 -0.2**
RCLA IVMs_BB IVMs_BB 05 10 11.6
comp=Z,5μm,20.6s
HSPB Hornsund (broa 59.70 348 ⇑*i*P **P 04 44 24.4 +0.7**
HSPB IVmB_BB 04 44 25.1
comp=Z,5μm,4.6s
HSPB *es*P **pP 04 44 40.6 +4.0**
HSPB *e*PP **PP 04 46 36.4 +1.2**
HSPB *e*S **S 04 52 30.4 -0.2**
HSPB IVMs_BB IVMs_BB 05 12 56.2
comp=Z,4μm,22.2s
KLRI Killari 59.82 269 *e*P **P 04 44 25.1 -0.4**
KLRI IAmb IAmb 04 44 27.6
comp=Z,235nm,0.9s
KLRI *e*S **S 04 52 31.6 -2.3**
KLRI IVMs_BB IVMs_BB 05 11 34.9
comp=Z,8μm,23.8s
MDRS Chennai 59.92 262 *e*P **P 04 44 26.4 +0.4**
MDRS IAmb IAmb 04 44 30.1
comp=Z,90nm,0.7s
SKHT Srikalahasti 59.93 263 *e*P **P 04 44 27.1 +0.9**
SKHT IAmb IAmb 04 44 39.0
comp=Z,151nm,0.8s
BBB Bella Bella 60.45 45 LR LR 05 07 06.6
comp=Z,4μm,21.7s,baz=296,slow=32
BBB Bella Bella 60.45 45 *e*P **P 04 44 30.9 +1.7**
comp=Z,74nm,1.1s
LVZ Lovozero 60.57 335 *c*P **P 04 44 28.5 -1.3**
LVZ pmax pmax
comp=Z,49nm,0.8s
LVZ MLR MLR
comp=Z,25μm,18.0s
LVZ Lovozero 60.57 335 *e*P **P 04 44 29.4 -0.4**
comp=Z,61nm,0.8s
LVZ LR LR
comp=Z,27μm,19.0s
RES Resolute Bay 60.68 15 LR LR 05 13 43.9
comp=Z,4μm,20.1s,baz=310,slow=39
RES Resolute Bay 60.68 15 *e*P **P 04 44 30.7 +0.3**
RES pmax pmax
comp=Z,120nm,1.0s
RES Resolute Bay 60.68 15 *e*P **P 04 44 30.7 +0.3**
comp=Z,119nm,0.9s
BJO Bjornoya 60.71 345 ⇑*i*P **P 04 44 31.0 +0.3**
BJO IVmB_BB 04 44 33.8
comp=Z,4μm,8.5s
BJO *e*S **S 04 52 43.9 +0.2**
BJO IVMs_BB IVMs_BB 05 14 29.2
comp=Z,6μm,15.8s
URV Uravakonda 61.12 266 *e*P **P 04 44 34.3 0.0**
URV IAmb IAmb 04 44 34.8
comp=Z,417nm,2.1s
URV *e*S **S 04 52 47.8 -2.6**
APA Apatity 61.14 335 ⇓*i*P **P 04 44 32.3 -1.4**
APA *i* 04 45 18.0
APA *i* 04 46 57.0
APA *i*S **S 04 52 41.0 -8.3**
APA *i*PS **PnS 04 53 06.0 -2.1**
APA *i*SS **SS 04 56 58.0 +9.1**
APA pmax pmax
comp=Z,72nm,0.8s
APA MLR MLR
comp=Z,33μm,16.0s
POO Poona 61.70 272 *e*P **P 04 44 37.7 -0.6**
YKA Yellowknife Ar 61.99 31 P **P 04 44 39.3 -0.1**
comp=Z,23nm,0.7s,baz=303,slow=6.7,SNR=162
YKA LR LR 05 12 00.2
comp=Z,504nm,21.5s,baz=0.0,slow=36
YKA PKPPKP **P'P'df 05 13 49.0 -4.3**
comp=Z,1.6nm,0.8s,baz=128,slow=2.6,SNR=11
HAMF Hammerfest 62.18 341 ⇑*i*P **P 04 44 40.1 -0.4**
HAMF IVmB_BB 04 44 41.0
comp=Z,4μm,4.4s
HAMF *e*S **S 04 53 01.3 -1.0**
HAMF IVMs_BB IVMs_BB 05 13 48.8
comp=Z,5μm,22.1s
BOM Bombay 62.30 273 *i*x P 04 44 48.4 +6.2
BOM AMb AMB 04 45 18.2
comp=Z,547nm,10.8s
BOM *ex* **S 04 53 09.1 +3.8**
BHJ Bhuj 62.35 279 *e*P **P 04 44 39.6 -2.9**
ARA0 ARCESS Array S 62.38 339 *e*P **P 04 44 41.4 -0.6**
ARCES ARCESS Array B 62.38 339 P **P 04 44 42.1 +0.1**
comp=Z,34nm,0.6s,baz=51,slow=6.7,SNR=71
ARCES LR LR 05 14 56.9
comp=Z,9μm,21.2s,baz=48,slow=39
ARE0 ARCESS Array S 62.38 339 ⇑*i*P **P 04 44 42.2 +0.2**
ARE0 IVmB_BB 04 44 43.2
comp=Z,4μm,4.2s
ARE0 *e*S **S 04 53 03.9 -1.0**
ARE0 IVMs_BB IVMs_BB 05 16 23.2
comp=Z,6μm,16.2s
ARE0 ARCESS Array S 62.38 339 *e*P **P 04 44 42.2 +0.2**
comp=Z,414nm,2.0s
ARE0 LR LR
comp=Z,15μm,22.0s
KLMR Klimovskoe 62.39 327 *c*P **P 04 44 42.0 -0.1**
KLMR *e*S **S 04 53 10.5 +5.3**
KLMR pmax pmax
comp=Z,148nm,1.0s
ASAR Alice Springs 62.70 188 P **P 04 44 44.1 -0.5**
comp=Z,40nm,0.7s,baz=12,slow=6.0,SNR=87
ASAR LR LR 05 11 49.8
comp=Z,8μm,21.6s,baz=3.0,slow=36
ASAR PKPPKP **P'P'df 05 13 46.4 +4.8**
comp=Z,0.8nm,0.9s,baz=210,slow=4.3,SNR=4.4
ASAR Alice Springs 62.70 188 P **P 04 44 44.1 -0.5**
ASAR pmax pmax
comp=Z,41nm,0.7s
ASAR MLR MLR
comp=Z,8μm,21.6s
PALK Pallekele 63.17 257 *e*P **P 04 44 48.8 +0.7**
PALK pmax pmax
comp=Z,78nm,1.0s
PALK Pallekele 63.17 257 *e*P **P 04 44 48.8 +0.7**
comp=Z,78nm,1.0s
PALK LR LR
comp=Z,12μm,22.0s
MBWA Marble Bar 63.27 203 *e*P **P 04 44 47.8 -0.6**
comp=Z,50nm,0.8s
MBWA LR LR
comp=Z,3μm,21.0s
GEYT Alibeck 63.29 298 P **P 04 44 49.0 +0.4**
comp=Z,162nm,0.8s,baz=33,slow=3.5,SNR=77
GEYT LR LR 05 14 19.2
comp=Z,22μm,18.5s,baz=40,slow=38
DAG Danmarks Havn 63.94 355 ⇑*i*P **P 04 44 52.0 -0.2**
comp=Z,167nm,0.9s
TRO Tromso 64.07 341 ⇑*i*P **P 04 44 53.3 +0.2**
TRO IVmB_BB 04 44 54.3
comp=Z,4μm,4.2s
TRO *es*P **pP 04 45 09.7 +3.5**
TRO *e*PP **PP 04 47 14.7 +0.9**
TRO *e*S **S 04 53 26.1 +0.2**
TRO IVMs_BB IVMs_BB 05 18 19.0
comp=Z,6μm,15.0s
EIDS Eidsvold 64.52 171 *e*P **P 04 44 57.6 +1.0**
comp=Z,110nm,0.8s
EIDS *e*PcP **PcP 04 45 33.2 +2.9**
EIDS LR LR
comp=Z,6μm,22.0s
LLLB Lillooet 64.63 45 *e*P **P 04 44 57.7 +0.5**
comp=Z,178nm,1.5s
LLLB LR LR
comp=Z,7μm,20.0s
PGC Sidney 64.75 47 *e*P **P 04 44 59.7 +1.8**
comp=Z,159nm,1.5s
DZM Mont Dzumac 64.87 155 *e*P **P 04 45 00.6 +1.6**
comp=Z,397nm,1.4s
DZM *e*S **S 04 53 38.6 +1.6**
comp=Z,17μm,37.7s
DZM Mont Dzumac 64.87 155 *e*LR LR 05 04 26.1
comp=Z,41μm,22.3s
DZM Mont Dzumac 64.87 155 *e*P **P 04 44 59.5 +0.5**
DZM LR LR
comp=Z,23μm,21.0s
A04D Lummi Island 65.14 47 P **P 04 45 00.5 0.0**
baz=301
NLWA Neilton Lookou 65.16 48 *e*P **P 04 45 02.4 +1.8**
comp=Z,221nm,1.4s
NLWA LR LR
comp=Z,7μm,22.0s
TRD Trivandrum 65.26 261 *e*P **P 04 45 01.3 -0.4**
GNW Green Mountain 65.67 48 P **P 04 45 04.9 +1.0**
MSVF Nonsavu 65.72 142 PFAKE 04 45 20.0 +15
MSVF LR LR
comp=Z,14μm,20.0s
B05A Bryant 65.72 47 P **P 04 45 04.8 +0.5**
baz=302,SNR=9.5
E03A Lebam 65.78 49 *e*P **P 04 45 06.8 +2.2**
comp=Z,202nm,1.1s
JCW Jim Creek 65.86 47 P **P 04 45 05.7 +0.5**
COCO West Island 65.97 229 *e*P **P 04 45 06.6 +0.5**
COCO pmax pmax
comp=Z,227nm,0.4s
COCO MLR MLR
comp=Z,4μm,20.0s
COCO West Island 65.97 229 *e*P **P 04 45 06.6 +0.5**
comp=Z,227nm,0.4s
COCO LR LR
comp=Z,4μm,20.0s
MOS Moscow 65.98 323 *α*i P **P 04 45 06.3 +0.5**
MOS *e* 04 45 19.5
MOS *e* 04 47 30.1
MOS *e*PPP PPP 04 49 07.7
MOS *i*S **S 04 53 48.5 -1.3**
MOS *i* 04 54 04.9
MOS *e* 04 54 58.2
MOS *e*SSS SSS 05 01 07.5
MOS pmax pmax
comp=Z,460nm,1.6s
MOS pmax pmax
comp=E,120nm,1.3s
MOS pmax pmax
comp=N,144nm,1.4s
MOS pmax pmax
comp=Z,4μm,3.8s
MOS pmax pmax
comp=N,2μm,3.7s
MOS pmax pmax
comp=E,2μm,4.0s
MOS smax smax
comp=E,2μm,4.0s
MOS smax smax
comp=N,4μm,6.0s
MOS MLR MLR
comp=N,20μm,16.0s
MOS MLR MLR
comp=E,23μm,16.0s
MOS MLR MLR

comp=Z,35µm,16.0s
KULLO Kullorsuaq 66.07 6⇑ *i*P P 04 45 05.7 -0.3
comp=Z,87nm,0.8s
KULLO *i* 04 47 30.8
STEI Steigen 66.23 341⇑ *i*P P 04 45 07.0 -0.1
STEI IVmB_BB 04 45 10.1
comp=Z,3µm,4.2s
F04D Rainier, OR 66.34 49 P P 04 45 08.9 +0.6
baz=302
D05A Enumclaw 66.36 48 *e*P P 04 45 09.9 +1.6
comp=Z,462nm,1.6s
VRH Novokhopyorsk 66.46 318 *e*P P 04 45 08.7 -0.2
VRH *e*S S 04 53 52.0 -3.7
VRH pmax pmax
comp=Z,150nm,0.5s
VRH pmax pmax
comp=Z,210nm,0.7s
VRH smax smax
comp=N,170nm,1.5s
VRH MLR MLR
comp=Z,1µm,15.0s
LOF Lofoten 66.51 341⇑ *i*P P 04 45 08.0 -0.9
LOF IVmB_BB 04 45 11.3
comp=Z,4µm,5.8s
LOF *e*sP pP 04 45 25.2 +3.1
LOF *e*S S 04 53 55.4 -0.4
LOF IVMs_BB IVMs_BB 05 18 20.8
comp=Z,6µm,18.5s
PNT Penticton 66.55 45 P P 04 45 09.7 +0.1
PNT Penticton 66.55 45 P P 04 45 09.7 +0.1
G03D McMinnville, O 66.66 50 P P 04 45 11.2 +0.9
baz=302
TDL Tradedollar La 66.67 49 P P 04 45 11.4 +0.9
RCM Mount Rainier- 66.69 48 P P 04 45 12.2 +1.2
LON Longmire 66.69 48 *e*P P 04 45 11.1 +0.5
LON pmax pmax
comp=Z,39nm,1.0s
LON Longmire 66.69 48 P P 04 45 11.0 +0.4
OBN Obninsk 66.84 323 LR LR 05 16 59.6
comp=Z,29µm,18.2s,baz=53,slow=38
OBN Obninsk 66.84 323*c* *i*P P 04 45 11.2 0.0
OBN *i* 04 45 29.7
OBN *i* 04 47 34.3
OBN *i*S S 04 54 00.3 +0.2
OBN *i*SS SS 04 58 14.9 -3.0
OBN pmax pmax
comp=Z,143nm,1.1s
OBN MLR MLR
comp=Z,26µm,16.0s
OBN Obninsk 66.84 323 *e*P P 04 45 11.4 +0.2
comp=Z,182nm,0.8s
COR Corvallis 66.97 51 *e*P P 04 45 13.8 +1.5
COR pmax pmax
comp=Z,185nm,1.1s
COR Corvallis 66.97 51 *e*P P 04 45 13.8 +1.5
comp=Z,186nm,1.1s
B08A Colville Reser 67.23 46 *e*P P 04 45 14.3 +0.4
comp=Z,342nm,1.8s
B08A LR LR
comp=Z,6µm,22.0s
WTV Waterville 67.24 46 P P 04 45 14.2 +0.1
NAC Naches 67.27 48 P P 04 45 15.0 +0.8
FIA1 FINESS Array S 67.34 332 *e*P P 04 45 14.3 0.0
comp=Z,254nm,0.8s
FINES FINESS Array B 67.34 332 P P 04 45 14.2 -0.1
comp=Z,213nm,0.8s,baz=42,slow=7.0,SNR=194
FINES LR LR 05 16 35.0
comp=Z,32µm,21.8s,baz=49,slow=38
I03D Drain, OR 67.42 52 P P 04 45 15.5 +0.4
baz=303
VORR Voronezh 67.51 319⇑ *i*P P 04 45 14.0 -1.5
VORR pmax pmax
comp=Z,700nm,3.0s
EDM Edmonton 67.63 39 *e*P P 04 45 16.8 +0.4
EDM pmax pmax
comp=Z,100nm,0.9s
EDM Edmonton 67.63 39 *e*P P 04 45 16.8 +0.4
comp=Z,102nm,0.9s
EDM LR LR
comp=Z,8µm,21.0s
VSR Storozhevoye 67.79 319 *e*P P 04 45 17.5 +0.2
VSR *e*S S 04 54 06.9 -4.8
VSR pmax pmax
comp=Z,160nm,0.7s
VSR pmax pmax
comp=Z,70nm,0.3s
VSR smax smax
comp=E,2µm,9.3s
VSR MLR MLR
comp=Z,37µm,13.0s
G05D Wamic, OR 67.80 49 P P 04 45 17.9 +0.3
baz=303
KONS Konsvik 67.85 340 *e*P P 04 45 17.1 -0.4
KONS IVmB_BB 04 45 18.2
comp=Z,3µm,4.6s
E07A Sunnyside 67.93 47 *e*P P 04 45 19.4 +1.1
comp=Z,279nm,1.6s
I04A Tendick Farm, 67.94 51 P P 04 45 19.0 +0.5
baz=303,SNR=8.4
AFI Afiamalu 68.04 131 PFAKE 04 45 30.0 +11
AFI LR LR
comp=Z,12µm,21.0s
L02D Cave Junction, 68.09 53 P P 04 45 20.7 +1.2
baz=303
C09A Chrisman Ranch 68.13 46 *e*P P 04 45 20.2 +0.6
comp=Z,71nm,0.6s
C09A LR LR
comp=Z,6µm,21.0s
D08A Wollman Farm, 68.18 47 *e*P P 04 45 20.2 +0.3
comp=Z,277nm,1.8s
HAWA Hanford 68.20 47 *e*P P 04 45 21.6 +1.6
comp=Z,247nm,1.8s
HAWA LR LR
comp=Z,4µm,22.0s
G06A Carlson Farm, 68.20 49 *e*P P 04 45 21.5 +1.4
comp=Z,312nm,1.8s
HUMO Hull Mountain 68.25 52 *e*P P 04 45 21.1 +0.7
comp=Z,96nm,1.5s
I05D Terrebonne, OR 68.28 50 P P 04 45 20.3 -0.4
baz=304,SNR=8.0
JMIC Jan Mayen 68.37 350⇑ *i*P P 04 45 21.4 +0.7
JMIC IVmB_BB 04 45 38.4
comp=Z,3µm,6.7s
JMIC *e*PP PP 04 47 53.4 +2.1
JMIC *e*S S 04 54 23.2 +5.1
JMIC IVMs_BB IVMs_BB 05 13 55.0
comp=Z,2µm,8.9s
J04D Umpqua Nationa 68.42 51 P P 04 45 22.1 +0.3
baz=304
NEW Newport 68.51 45 LR LR 05 12 14.8
comp=Z,3µm,21.7s,baz=300,slow=33
NEW Newport 68.51 45 P P 04 45 22.3 +0.4
baz=305,SNR=37
NEW Newport 68.51 45 *e*P P 04 45 22.4 +0.4
NEW pmax pmax
comp=Z,160nm,1.4s
NEW Newport 68.51 45 *e*P P 04 45 22.4 +0.4
comp=Z,165nm,1.4s
GROC Groznyy 68.54 309 *e*P P 04 45 22.0 -0.2
GROC pmax pmax
comp=Z,297nm,1.3s
KHMM Horse Mountain 68.72 54 *e*P P 04 45 25.8 +2.3
comp=Z,282nm,1.6s
SUMG Summit 68.81 0⇑ *i*P P 04 45 24.5 +0.6
comp=Z,144nm,0.8s
SUMG Summit 68.81 0 *e*P P 04 45 24.5 +0.6
SUMG pmax pmax
comp=Z,240nm,1.1s
SUMG Summit 68.81 0 *e*P P 04 45 24.5 +0.6
comp=Z,240nm,1.1s
SUMG LR LR
comp=Z,10µm,20.0s
YBH Yreka Blue Hor 68.89 53 *e*P P 04 45 25.6 +1.1
YBH Yreka Blue Hor 68.89 53 *e*P P 04 45 25.6 +1.1
E09A Wood Farm, Sta 68.93 47 *e*P P 04 45 26.1 +1.6
comp=Z,234nm,1.4s
J05D Fort Rock, OR 68.93 51 P P 04 45 25.9 +1.1
baz=304,SNR=12
K04D Chiloquin, OR 68.98 52 P P 04 45 26.1 +0.9
baz=304
M02C Callahan 68.98 53 P P 04 45 25.6 +0.5
baz=304
VSU Vasula 69.04 329*c* *i*P P 04 45 25.1 +0.1
VSU pmax pmax
comp=Z,470nm,0.8s
VSU MLR MLR
comp=Z,93µm,19.0s
KMRM Mail Ridge 69.09 55 PFAKE 04 45 40.0 +14
KMRM LR LR
comp=Z,10µm,20.0s
GOF Gofitskoye 69.15 311⇑ *i*P P 04 45 26.4 +0.5
GOF pmax pmax
comp=Z,415nm,0.8s
G08A Pilot Rock 69.16 48 *e*P P 04 45 27.5 +1.3
comp=Z,132nm,1.8s
N02D Trinity Center 69.31 54 P P 04 45 28.1 +0.9
baz=304,SNR=6.8
M04C Macdoel 69.40 53 P P 04 45 28.4 +0.7
baz=304,SNR=13
K05A Summer Lake 69.45 51 *e*P P 04 45 29.2 +1.1
comp=Z,289nm,1.4s
ARMA Armidale 69.57 171 PFAKE 04 45 40.0 +11
ARMA LR LR
comp=Z,8µm,22.0s
WDC Whiskeytown Da 69.63 54 *e*P P 04 45 30.7 +1.7
WDC pmax pmax
comp=Z,120nm,1.4s
WDC Whiskeytown Da 69.63 54 *e*P P 04 45 30.7 +1.7
comp=Z,116nm,1.4s
NCK Nalchik 69.70 310*c* *i*P P 04 45 30.0 +0.5
NCK pmax pmax
comp=Z,84nm,0.9s
NCK MLR MLR
comp=Z,19µm,21.0s
F10A Beach Ranch, E 69.76 47 *e*P P 04 45 31.1 +1.2
comp=Z,62nm,1.1s
DGRG David-gareji 69.78 307 P P 04 45 30.1 +0.1
DGRG David-gareji 69.78 307 P P 04 45 30.1 +0.1
WALA Waterton Lakes 69.78 43 *e*P P 04 45 30.5 +0.5
comp=Z,144nm,1.4s
WALA LR LR
comp=Z,5µm,20.0s
DUS Dusheti 69.83 308 P P 04 45 34.7 +4.4
DUS Dusheti 69.83 308 P P 04 45 34.7 +4.4
ZEI Tsey 69.92 309 *e*P P 04 45 27.1 -3.9
ZEI *e*S S 04 54 35.0 -2.7
ZEI pmax pmax
comp=Z,237nm,0.8s
ZEI pmax pmax
comp=N,306nm,0.8s
ZEI pmax pmax
comp=E,407nm,0.8s
ZEI MLR MLR
comp=Z,14µm,13.0s
ZEI MLR MLR
comp=N,11µm,14.0s
ZEI MLR MLR
comp=E,11µm,13.0s
SEAG Tbilisi Sea 69.95 308 P P 04 45 31.8 +0.7
KIV Kislovodsk 69.98 311 P P 04 45 31.6 +0.4
KIV Kislovodsk 69.98 311 *e*P P 04 45 32.1 +0.9
KIV pmax pmax
comp=Z,440nm,0.9s
KIV Kislovodsk 69.98 311 P P 04 45 32.2 +0.9
SNR=111
KIV Kislovodsk 69.98 311 P P 04 45 32.2 +0.9
SNR=111
KIV Kislovodsk 69.98 311 *e*P P 04 45 32.1 +0.9
comp=Z,435nm,0.9s
KIV LR LR
comp=Z,15µm,18.0s
KBZ Khabaz 69.99 310 P P 04 45 31.9 +0.7
comp=Z,167nm,0.8s,baz=61,slow=5.5,SNR=93
KBZ LR LR 05 21 05.7
comp=Z,10µm,18.2s,baz=38,slow=40
TBLG Delisi 70.01 308 P P 04 45 31.5 +0.1
TBLG Delisi 70.01 308 P P 04 45 31.5 +0.1
BSMT Bassoo Peak 70.03 44 *e*P P 04 45 32.2 +0.6
BLMT Blacktail Moun 70.16 44 *e*P P 04 45 33.8 +1.4
HOPS Hopland Field 70.18 56 PFAKE 04 45 50.0 +18
HOPS LR LR
comp=Z,10µm,19.0s
O03D Paynes Creek 70.26 54 P P 04 45 32.9 -0.1
baz=305,SNR=9.7
MOD Modoc Plateau 70.28 52 *e*P P 04 45 34.7 +1.5
comp=Z,130nm,1.6s
SCO Scoresbysund 70.28 354⇑ *i*P P 04 45 33.2 +0.7
comp=Z,111nm,1.2s
ONI Oni 70.31 309 P P 04 45 34.0 +0.8
ONI Oni 70.31 309 P P 04 45 34.0 +0.8
JTMT Jette 70.36 44 *e*P P 04 45 34.3 +0.8
BMO Blue Mountains 70.36 48 *e*P P 04 45 34.0 +0.4
comp=Z,276nm,1.9s
BMO LR LR
comp=Z,4µm,22.0s
NEY Neytrino 70.37 310*c* *i*P P 04 45 34.7 +1.0
NEY pmax pmax
comp=Z,34nm,0.9s
NEY MLR MLR
comp=Z,14µm,17.0s
STKA Stephens Creek 70.43 180 P P 04 45 32.9 -0.8
comp=Z,11nm,0.7s,baz=357,slow=7.1,SNR=16
STKA LR LR 05 13 59.5
comp=Z,5µm,21.3s,baz=18,slow=34
STKA Stephens Creek 70.43 180 *e*P P 04 45 33.9 +0.1
STKA pmax pmax
comp=Z,19nm,0.8s
STKA Stephens Creek 70.43 180 *e*P P 04 45 33.9 +0.1
comp=Z,19nm,0.8s
YBMT Yellow Bay 70.44 44 *e*P P 04 45 35.5 +1.5
GDXM Geysers 70.47 56 PFAKE 04 45 50.0 +16
GDXM LR LR
comp=Z,12µm,19.0s
FORT Forrest 70.53 193 *e*P P 04 45 34.0 -0.3
comp=Z,1µm,0.7s
SWMT Swartz Lake 70.66 44 *e*P P 04 45 35.8 +0.5
MCCM Marconi Confer 70.79 56 PFAKE 04 45 50.0 +14
MCCM LR LR
comp=Z,9µm,21.0s
ORV Oroville 70.87 54 *e*P P 04 45 36.6 0.0
ORV pmax pmax
comp=Z,160nm,1.6s
ORV Oroville 70.87 54 *e*P P 04 45 36.6 0.0
comp=Z,161nm,1.6s
ORV LR LR
comp=Z,7µm,22.0s
GNI Garni 70.91 306 P P 04 45 37.5 +0.5
GNI Garni 70.91 306*c* *i*P P 04 45 38.1 +1.1
GNI pmax pmax
comp=Z,254nm,1.0s
GNI MLR MLR
comp=Z,63µm,19.0s
GNI Garni 70.91 306 P P 04 45 38.1 +1.1
SNR=31
GNI Garni 70.91 306 P P 04 45 38.1 +1.1
SNR=31
GNI Garni 70.91 306 *e*P P 04 45 38.2 +1.2
comp=Z,232nm,1.0s
GNI LR LR
comp=Z,22µm,19.0s
AKH Akhalkalaki 70.96 308⇑ *i*P P 04 45 38.7 +1.3
AKH Akhalkalaki 70.96 308 P P 04 45 38.5 +1.1
AKH Akhalkalaki 70.96 308 P P 04 45 38.5 +1.1
BGD Bogdanovka 70.98 308 P P 04 45 38.9 +1.4
WVOR Wild Horse Val 70.98 51 *e*P P 04 45 38.1 +0.7
WVOR pmax pmax
comp=Z,310nm,1.9s
WVOR Wild Horse Val 70.98 51 *e*P P 04 45 38.1 +0.7
comp=Z,313nm,1.9s
WVOR LR LR
comp=Z,4µm,22.0s
BIDO Bidbid 71.00 285 P P 04 45 38.2 +0.6
SNR=14
BIDO Bidbid 71.00 285 P P 04 45 38.2 +0.6
SNR=14
BANOM Banah 71.00 288 P P 04 45 38.2 +0.5
BANOM Banah 71.00 288 P P 04 45 38.0 +0.4
SNR=15
BANOM Banah 71.00 288 P P 04 45 38.0 +0.4
SNR=15
CHVG Ch'k'valeri 71.06 310 P P 04 45 38.3 +0.6
SLMT Seeley Lake 71.09 44 *e*P P 04 45 38.1 +0.1
MSO Missoula 71.10 45 P P 04 45 38.0 0.0
baz=307,SNR=18
MSO Missoula 71.10 45 *e*P P 04 45 38.0 0.0
comp=Z,75nm,1.3s
MICGM Minsk 71.17 326⇑ *i*P P 04 45 39.0 +0.9
MICGM PM 04 45 40.0
comp=Z,0.7nm,1.6s
MICGM PM 04 45 40.0
comp=N,0.6nm,1.5s
MICGM PM 04 45 40.0
comp=E,0.3nm,1.7s
MICGM PM 04 45 40.0
comp=Z,6.1nm,4.0s
MICGM *e*PcP pP 04 45 55.0 +3.6
MICGM *e*PP PP 04 48 14.0 -1.7
MICGM *e*PPP PPP 04 50 12.0
MICGM *e*S S 04 54 53.0 +1.6
MICGM *e*PS PnS 04 55 28.0 +3.7
MICGM *e*SS SS 04 58 20.0 -65
MICGM *e*SSS SSS 05 02 38.0
MICGM *e*LR LR 05 09 26.0
MICGM LRM MLR 05 20 40.0
comp=Z,62nm,16.0s
MICGM LRM MLR 05 20 44.0
comp=N,21nm,15.0s
MICGM LRM MLR 05 20 44.0
comp=E,25nm,16.0s
MNK Minsk 71.17 326⇑ *i*P P 04 45 39.0 +0.9
MNK *e* 04 48 14.0
MNK *e*S S 04 54 53.0 +1.6
MNK *e*PS PnS 04 55 28.0 +3.7
MNK *e*SS SS 04 59 20.0 -4.7
MNK *e*SSS SSS 05 02 32.0
MNK pmax pmax
comp=Z,7µm,4.0s
MNK pmax pmax
comp=E,330nm,1.7s
MNK pmax pmax
comp=N,630nm,1.5s
MNK pmax pmax
comp=Z,740nm,1.6s
MNK MLR MLR
comp=Z,62µm,16.0s
MNK MLR MLR
comp=E,25µm,16.0s
MNK MLR MLR
comp=N,21µm,15.0s
EAK Akyaka 71.31 307⇑ *i*P P 04 45 40.2 +0.8
SMDO Samad 71.32 285 P P 04 45 40.3 +0.6
SNR=16
SMDO Samad 71.32 285 P P 04 45 40.3 +0.6
SNR=16
EPOS Posof 71.38 309⇑ *i*P P 04 45 40.7 +0.8
NACGM Naroch 71.38 327 *e*P P 04 45 38.0 -1.4
NACGM *e*P P 04 45 40.0 +0.6
NACGM *e*PP PP 04 48 18.0 +0.5
NACGM *e*PPP PPP 04 50 02.0
NACGM *e*S S 04 54 52.0 -1.8
NACGM *e*SS SS 04 59 44.0 +16
NACGM *e*SSS SSS 05 02 42.0
NACGM *e*LQ LQ 05 09 52.0
NACGM *e*LR LR 05 14 01.0
NACGM LRM MLR 05 19 34.0
comp=E,44nm,18.0s
NACGM LRM MLR 05 19 36.0
comp=Z,70nm,18.0s
NACGM LRM MLR 05 19 40.0
comp=N,48nm,18.0s
CHMT Chamberlain Mo 71.42 44 *e*P P 04 45 40.1 0.0
AFDM Forest Hills D 71.55 55 *e*P P 04 45 41.8 +1.0
comp=N,101nm,1.5s
AFDM LR LR
comp=Z,7µm,20.0s
BBOO Buckleboo 71.57 185 *e*P P 04 45 39.8 -0.9
comp=Z,170nm,0.8s
BBOO LR LR
comp=Z,6µm,21.0s
HOQ Hoqain 71.57 286 P P 04 45 41.3 +0.2
SNR=27
HOQ Hoqain 71.57 286 P P 04 45 41.3 +0.2
SNR=27
DIGO Kars 71.61 307⇑ *i*P P 04 45 42.0 +0.6
UOSS Minazif 71.62 287 *e*P P 04 45 41.4 0.0
comp=Z,156nm,0.9s
UOSS LR LR
comp=Z,8µm,20.0s
JMDO Jabal Madar 71.67 284 P P 04 45 41.7 0.0
SNR=20
JMDO Jabal Madar 71.67 284 P P 04 45 41.7 0.0
SNR=20
HATD Hatta, Dubai 71.75 287 P P 04 45 42.5 +0.4
HATD Hatta, Dubai 71.75 287 P P 04 45 42.5 +0.4
SNR=30
HATD Hatta, Dubai 71.75 287 P P 04 45 42.5 +0.4
SNR=30
ILULI Ilulissat 71.76 5⇑ *i*P P 04 45 41.0 -0.4
comp=Z,89nm,0.8s
comp=Z,8µm,20.0s
LHI Lord Howe Isla 71.87 165 PFAKE 04 45 50.0 +7.6
LHI LR LR
comp=Z,8µm,22.0s
ASHO Ashiyiah 71.88 287 P P 04 45 43.4 +0.4
ASHO Ashiyiah 71.88 287 P P 04 45 43.3 +0.4
SNR=25
ASHO Ashiyiah 71.88 287 P P 04 45 43.3 +0.4
SNR=25
FFC Flin Flon 71.91 33 *e*P P 04 45 42.6 0.0
FFC pmax pmax
comp=Z,86nm,0.9s
FFC Flin Flon 71.91 33 *e*P P 04 45 42.6 0.0
comp=Z,86nm,0.9s
FFC LR LR
comp=Z,4µm,18.0s
DYDN Diyadin 71.92 306⇑ *i*P P 04 45 44.3 +1.0
SOC Sochi 71.95 312*c* *i*P P 04 45 42.9 -0.1
SOC *e**PP pP 04 45 51.5 -4.8
SOC *e**SP PcP 04 45 56.0 -5.5
SOC *e* 04 48 21.7
SOC *e*PPP PPP 04 50 05.8
SOC *e*S S 04 55 02.1 +1.4
SOC *e*SS SS 04 59 34.4 -2.8
SOC pmax pmax
comp=Z,92nm,0.6s
SOC MLR MLR
comp=Z,17µm,18.0s
NAZ Nazwa, Dubai 72.00 288 P P 04 45 43.5 -0.1
NAZ Nazwa, Dubai 72.00 288 P P 04 45 43.7 0.0
SNR=12
NAZ Nazwa, Dubai 72.00 288 P P 04 45 43.7 0.0
SNR=12
ARTV Artvin 72.05 309⇑ *i*P P 04 45 44.4 +0.4
MFID Camas Ranch 72.07 48 *e*P P 04 45 44.5 +0.5
comp=Z,129nm,1.3s
DBOC Borcka 72.11 309⇑ *i*P P 04 45 44.1 0.0
PAHR Pah Rah Range 72.11 53 *e*P P 04 45 44.9 +0.5
comp=Z,128nm,1.3s
DAGI Agillar 72.12 309⇑ *i*P P 04 45 45.0 +0.7
FCC Fort Churchill 72.14 27 *e*P P 04 45 43.6 -0.3
FCC pmax pmax
comp=Z,120nm,1.1s
FCC Fort Churchill 72.14 27 *e*P P 04 45 43.6 -0.3
comp=Z,116nm,1.1s
FCC LR LR
comp=Z,5µm,19.0s
FAQ Al Faqa, Dubai 72.19 288 P P 04 45 44.7 0.0
FAQ Al Faqa, Dubai 72.19 288 P P 04 45 44.8 0.0
SNR=18
FAQ Al Faqa, Dubai 72.19 288 P P 04 45 44.8 0.0
SNR=18
ARQ Araqi 72.31 286 P P 04 45 45.9 +0.4
SNR=25
ARQ Araqi 72.31 286 P P 04 45 45.9 +0.4
SNR=25
HRY Holter Researc 72.32 44 *e*P P 04 45 46.3 +0.9
DDEM Demirkent 72.33 308⇑ *i*P P 04 45 45.8 +0.3
PNTR Pine Nut 72.34 54 *e*P P 04 45 47.5 +1.7
comp=Z,236nm,1.5s
NC405 NORSAR Array S 72.40 337 *e*P P 04 45 45.7 +0.3
NC303 NORSAR Array S 72.42 337 *e*P P 04 45 45.6 +0.1
MOL Molde 72.43 340⇑ *i*P P 04 45 45.9 +0.3
MOL IVmB_BB 04 45 48.8
comp=Z,4µm,4.0s
MOL *e*sP PcP 04 46 02.9 -0.3
MOL *e*S S 04 55 05.7 0.0
MOL IVMs_BB IVMs_BB 05 20 56.0
comp=Z,7µm,20.2s
DOMB Dombas 72.44 339⇑ *i*P P 04 45 45.8 +0.1
DOMB IVmB_BB 04 45 46.7
comp=Z,4µm,4.2s
DOMB *e*PP PP 04 48 20.6 -5.8
DOMB *e*S S 04 55 05.0 -0.8
DOMB IVMs_BB IVMs_BB 05 20 47.3
comp=Z,14µm,17.9s
CMB Columbia Colle 72.46 55 *e*P P 04 45 47.2 +0.9
CMB pmax pmax

comp=Z,85nm,1.2s
CMB Columbia Colle 72.46 55 *e*P **P 04 45 47.2 +0.9**
comp=Z,85nm,1.2s
CMB LR LR
comp=Z,9µm,21.0s
SAO San Andreas Ge 72.51 57 PFAKE 04 46 00.0 +13
SAO LR LR
comp=Z,7µm,22.0s
ANN Anapa 72.52 314*c i*P **P 04 45 45.4 -1.0**
ANN *e**PP **pP 04 45 55.0 -4.7**
ANN *e* 04 46 01.7
ANN *e* 04 48 27.6
ANN *e*PPP PPP 04 50 07.4
ANN *e*S **S 04 55 08.0 +0.8**
ANN *e*SS **SS 04 59 41.8 -4.0**
ANN pmax pmax
comp=E,75nm,1.6s
ANN pmax pmax
comp=N,55nm,1.6s
ANN pmax pmax
comp=Z,243nm,1.6s
ANN smax smax
comp=E,5µm,9.4s
ANN smax smax
comp=N,3µm,9.4s
ANN MLR MLR
comp=N,24µm,20.0s
ANN MLR MLR
comp=Z,17µm,20.0s
ANN MLR MLR
comp=E,17µm,20.0s
LRM Limekiln Ridge 72.53 45 *e*P **P 04 45 47.1 +0.3**
TUTA Tutak 72.55 307⇑*i*P **P 04 45 47.2 +0.2**
NC204 NORSAR Array S 72.56 338 *e*P **P 04 45 47.1 +0.6**
NB201 NORSAR Array S 72.58 337 *e*P **P 04 45 46.7 +0.1**
EGMT Eagleton 72.60 42 P **P 04 45 46.5 -0.5**
baz=309,SNR=33
EGMT Eagleton 72.60 42 *e*P **P 04 45 47.2 +0.2**
comp=E,458nm,1.8s
EGMT LR LR
comp=Z,7µm,22.0s
NB2 NORSAR Subarra 72.61 337 P **P 04 45 46.6 -0.1**
comp=Z,517nm,1.7s,baz=38,slow=6.2
NB2 NORSAR Subarra 72.61 337 P **P 04 45 46.6 -0.1**
baz=38,slow=6.2
NOA NORSAR Array B 72.61 337 P **P 04 45 46.7 0.0**
comp=Z,125nm,1.0s,baz=39,slow=4.8,SNR=113
NOA LR LR 05 20 22.3
comp=Z,30µm,21.5s,baz=40,slow=38
TVAN Van 72.69 306⇑*i*P P 04 45 52.7 +4.8
NBO02 NORSAR Array S 72.71 337 *e*P **P 04 45 46.6 -0.6**
DLMT Dillon 72.73 45 *e*P **P 04 45 48.6 +0.7**
comp=Z,131nm,1.1s
HOMI Horasan 72.74 308⇑*i*P **P 04 45 49.0 +0.9**
NBO00 NORSAR Array S 72.75 337 *e*P **P 04 45 47.6 +0.1**
NC602 NORSAR Array S 72.75 337⇑*i*P **P 04 45 47.3 -0.2**
NC602 IVmB_BB 04 45 48.2
comp=Z,4µm,4.3s
NC602 *e*S **S 04 55 06.9 -2.5**
NC602 IVMs_BB IVMs_BB 05 20 10.7
comp=Z,12µm,21.9s
NC602 NORSAR Array S 72.75 337 *e*P **P 04 45 47.4 -0.2**
WAKR Walker 72.79 54 *e*P **P 04 45 50.1 +1.7**
comp=Z,88nm,1.3s
WAKR LR LR
comp=Z,9µm,22.0s
HLID Hailey 72.80 48 P **P 04 45 48.5 +0.1**
baz=308,SNR=26
HLID Hailey 72.80 48 *e*P **P 04 45 49.0 +0.7**
comp=E,89nm,1.4s
HLID LR LR
comp=Z,4µm,22.0s
LCCM Lewis and Clar 72.83 45 *e*P **P 04 45 49.1 +0.6**
NAO01 NORSAR Array S 72.86 337 *e*P **P 04 45 48.1 0.0**
AKN Aaknes 72.90 340⇑*i*P **P 04 45 48.8 +0.3**
AKN IVmB_BB 04 45 49.9
comp=Z,4µm,4.2s
AKN *e*PP **PP 04 48 32.6 +2.2**
AKN *e*S **SKiKP 04 55 15.2 -2.0**
AKN IVMs_BB IVMs_BB 05 21 19.5
comp=Z,9µm,17.8s
MCMT McKenzie Canyo 72.92 46 *e*P **P 04 45 49.9 +0.7**
BMN Battle Mountai 73.02 52 *e*P **P 04 45 50.6 +0.9**
BMN pmax pmax
comp=Z,180nm,1.5s
BMN Battle Mountai 73.02 52 *e*P **P 04 45 50.6 +0.9**
comp=Z,182nm,1.5s
GEVA Gevas 73.04 306⇑*i*P **P 04 45 50.3 +0.5**
AKASG Malin Array Be 73.06 322 P **P 04 45 49.3 -0.2**
comp=Z,105nm,0.6s,baz=45,slow=6.4,SNR=217
AKASG LR LR 05 20 56.1
comp=Z,32µm,18.8s,baz=50,slow=38
AKASG Malin Array Be 73.06 322 P **P 04 45 49.3 -0.2**
AKASG pmax pmax
comp=Z,105nm,0.6s
AKASG MLR MLR
comp=Z,32µm,18.8s
AKBB Malin Array Si 73.06 322 *e*P **P 04 45 49.4 -0.1**
AKBB pmax pmax
comp=Z,131nm,0.7s
AKBB MLR MLR
comp=Z,32µm,18.0s
AKBB Malin Array Si 73.06 322 *e*P **P 04 45 49.4 -0.1**
comp=Z,131nm,0.7s
AKBB LR LR
comp=Z,32µm,18.0s
KIEV Kiev 73.07 322 *e*P **P 04 45 49.3 -0.2**
KIEV pmax pmax
comp=Z,130nm,0.7s
KIEV Kiev 73.07 322 *e*P **P 04 45 49.3 -0.2**
comp=Z,129nm,0.7s
KIEV LR LR
comp=Z,32µm,19.0s
HAKT HAKKARI 73.07 305⇑*i*P **P 04 45 49.5 -0.7**
BOZ Bozeman (W) 73.09 45 P **P 04 45 50.0 0.0**
baz=309,SNR=38
BOZ Bozeman (W) 73.09 45 *e*P **P 04 45 50.7 +0.7**
BOZ pmax pmax
comp=Z,110nm,1.2s
BOZ Bozeman (W) 73.09 45 *e*P **P 04 45 50.7 +0.7**
comp=Z,108nm,1.2s
BOZ LR LR
comp=Z,4µm,22.0s
AK11 Malin Array Si 73.10 322 *e*P **P 04 45 49.2 -0.5**
PMPB Monarch Peak 73.26 57 *e*pP pP 04 46 04.8 +0.5
SUW Suwalki 73.52 327 *e*P **P 04 45 52.1 -0.1**
SUW *e*PcP **PcP 04 46 08.5 +0.4**
SUW *e*PP **PP 04 48 34.0 -1.8**
SUW *e*S **SKiKP 04 55 16.5 -1.9**
SUW LMZ LR 05 20 12.9
comp=Z,25µm,18.9s
ECAT Cat-ERZURUM 73.57 308⇑*i*P **P 04 45 53.5 +0.4**
KOPT Kop Dagi 73.62 308⇑*i*P **P 04 45 53.5 +0.1**
OSL Oslo 73.63 337⇑*i*P **P 04 45 53.0 +0.3**
OSL IVmB_BB 04 45 53.6
comp=Z,4µm,4.6s
OSL IVMs_BB IVMs_BB 05 20 56.5
comp=Z,9µm,18.4s
QLMT Earthquake Lak 73.71 45 *e*P **P 04 45 54.7 +0.9**
BNGL BINGÖL 73.86 307⇑*i*P **P 04 45 55.8 +1.1**
YHB Horse Butte 73.89 45 *e*P **P 04 45 56.5 +1.7**
comp=Z,67nm,1.0s
YHB LR LR
comp=Z,3µm,21.0s
PAGB Antelope Grade 73.90 57 *e*P **P 04 45 56.5 +1.7**
comp=Z,156nm,1.3s
PAGB LR LR
comp=Z,6µm,20.0s
FOO Floro 73.91 340⇑*i*P **P 04 45 54.6 +0.3**
FOO IVmBBB 04 45 59.5
comp=Z,3µm,3.8s
FOO *es*P **PcP 04 46 10.9 +1.4**
FOO *e*PP **PP 04 48 39.1 +0.2**
FOO *e*S **S 04 55 23.2 +0.9**
FOO IVMs_BB IVMs_BB 05 22 01.4
comp=Z,10µm,19.5s
SIRN S¨¨rnak 73.94 305⇑*i*P **P 04 45 55.2 +0.2**
SFJD Kangerlussuaq 73.98 5 *i*P **P 04 45 54.7 +0.1**
comp=Z,107nm,1.0s
comp=Z,10µm,22.0s
SFJD Kangerlussuaq 73.98 5 *e*P **P 04 45 54.6 0.0**
SFJD pmax pmax
comp=Z,100nm,1.0s
SFJD Kangerlussuaq 73.98 5 *e*P **P 04 45 54.6 0.0**
comp=Z,103nm,0.9s
SFJD LR LR
comp=Z,12µm,22.0s
YHH Holmes Hill 74.06 45 *e*P **P 04 45 57.5 +1.6**
comp=Z,66nm,1.2s
YHH LR LR
comp=Z,3µm,20.0s
GCMT Greycliff 74.06 44 *e*P **P 04 45 57.5 +1.8**
YMR Madison River 74.07 45 *e*P **P 04 45 57.8 +1.9**
comp=Z,67nm,1.0s
YMR LR LR
comp=Z,3µm,21.0s
CAN Canberra 74.16 174 *e*P **P 04 45 56.9 +0.9**
comp=Z,37nm,0.7s
CAN LR LR
comp=Z,7µm,20.0s
CNB Canberra Magne 74.18 174 P **P 04 45 55.0 -1.2**
baz=30,SNR=40
KONO Kongsberg 74.21 337⇑*i*P **P 04 45 56.2 +0.1**
KONO IVmB_BB 04 45 57.2
comp=Z,4µm,4.2s
KONO *e*PP **PP 04 48 40.2 -1.3**
KONO *e*S **S 04 55 25.0 -0.8**
KONO IVMs_BB IVMs_BB 05 21 15.3
comp=Z,12µm,20.8s
KONO Kongsberg 74.21 337*c i*P **P 04 45 55.8 -0.3**
KONO pmax pmax
comp=Z,206nm,0.8s
KONO Kongsberg 74.21 337 *e*P **P 04 45 56.7 +0.7**
comp=Z,215nm,1.5s
KONO LR LR
comp=Z,34µm,20.0s
RCTC Rector, Farmer 74.22 56 P **P 04 45 57.9 +1.4**
baz=307
MCID Moose Creek 74.25 46 *e*P **P 04 45 58.5 +1.6**
SIM Simferopol' 74.27 315*ce*P **P 04 45 57.0 +0.3**
SIM *e*S **S 04 55 26.1 -1.0**
SIM pmax pmax
comp=Z,155nm,0.8s
SIM MLR MLR
comp=Z,15µm,16.0s
YFT Old Faithful 74.28 45 *e*P **P 04 46 00.2 +3.1**
comp=Z,204nm,1.6s
KELT Kelkit 74.30 309⇑*i*P **P 04 45 58.2 +1.0**
EUZM Uzumlu 74.30 308⇑*i*P **P 04 45 58.0 +0.8**
SMMC Simmler 74.32 57 P **P 04 45 58.5 +1.3**
baz=307
KLNR Kaliningrad 74.32 329*c i*P **P 04 45 56.6 -0.2**
KLNR pmax pmax
comp=Z,264nm,1.0s
KLNR MLR MLR
comp=Z,32µm,18.0s
YPP Pitchstone Pla 74.41 45 *e*P **P 04 46 00.2 +2.3**
comp=Z,76nm,1.3s
GRSN GIRESUNGRSN 74.41 310 *i* P **P 04 45 55.7 -2.0**
TIN Tinemaha, Big 74.42 55 P **P 04 45 59.6 +1.7**
baz=307
BTMN Batman 74.42 306⇑*i*P **P 04 45 58.7 +0.8**
SUE Sulen 74.44 340⇑*i*P **P 04 45 57.4 0.0**
SUE IVmB_BB 04 46 00.8
comp=Z,4µm,3.8s
SUE *e*PP **PP 04 48 45.5 +2.2**
SUE *e*S **S 04 55 30.0 +1.7**
SUE IVMs_BB IVMs_BB 05 22 05.1
comp=Z,9µm,20.0s
LKWY Lake 74.44 45 *e*P **P 04 46 02.0 +3.9**
LKWY pmax pmax
comp=Z,69nm,1.1s
LKWY Lake 74.44 45 *e*P **P 04 46 02.0 +3.9**
comp=Z,69nm,1.1s
LKWY LR LR
comp=Z,7µm,21.0s
H17A Grant Village 74.46 45 P **P 04 46 00.5 +2.4**
baz=310,SNR=21
H17A Grant Village 74.46 45 *e*P **P 04 46 01.1 +2.9**
comp=Z,118nm,1.1s
IMW Indian Meadow 74.57 46 *e*P **P 04 46 00.3 +1.4**
comp=Z,56nm,0.9s
FLWY Flagg Ranch 74.59 46 *e*P **P 04 46 01.1 +2.2**
comp=Z,234nm,1.6s
VES Vestal, Richgr 74.60 56 P **P 04 45 59.0 +0.2**
baz=307,SNR=14
ORDU Ordu-Boztepe 74.62 310⇑*i*P **P 04 45 58.3 -0.6**
PKM Mcpherson Peak 74.69 58 P **P 04 45 59.5 -0.1**
baz=307
RLMT Red Lodge 74.71 44 P **P 04 46 00.3 +0.7**
baz=310,SNR=17
RLMT Red Lodge 74.71 44 *e*P **P 04 46 00.3 +0.7**
comp=Z,189nm,1.8s
RLMT LR LR
comp=Z,4µm,22.0s
TNCL Tunceli-Merkez 74.75 308⇑*i*P **P 04 46 00.8 +1.0**
MOOW Moose Ponds 74.77 46 *e*P **P 04 46 01.3 +1.4**
comp=Z,92nm,1.3s
ASK Askoy 74.80 339 *e*P **P 04 45 59.9 +0.5**
ASK IVmB_BB 04 46 02.9
comp=Z,4µm,4.2s
ASK *e*PP **PP 04 48 48.7 +2.2**
TPAW Teton Pass 74.82 46 *e*P **P 04 46 01.5 +1.1**
comp=Z,136nm,1.3s
BER Bergen 74.84 339⇑*i*P **P 04 46 00.3 +0.6**
BER IVmB_BB 04 46 01.1
comp=Z,4µm,4.5s
BER *e*PP **PP 04 48 49.3 +2.5**
BER *e*S **S 04 55 33.1 +0.2**
BER IVMs_BB IVMs_BB 05 22 14.1
comp=Z,10µm,20.8s
FRB Frobisher Bay 74.85 14 LR LR 05 20 38.0
comp=Z,8µm,22.0s,baz=334,slow=37
HVU Hansel Valley 74.86 48 *e*P **P 04 46 02.4 +2.0**
HVU pmax pmax
comp=Z,59nm,1.0s
HVU Hansel Valley 74.86 48 *e*P **P 04 46 02.4 +2.0**
comp=Z,59nm,1.0s
ODD1 Odda 74.87 338⇑*i*P **P 04 46 00.5 +0.5**
ODD1 IVmB_BB 04 46 03.4
comp=Z,4µm,3.9s
ODD1 *e*PP **PP 04 48 51.7 +4.6**
ODD1 IVMs_BB IVMs_BB 05 22 00.7
comp=Z,14µm,19.4s
CWC Cottonwood Cre 74.89 55 P **P 04 46 00.5 -0.2**
baz=307
SUSE Susehri 74.89 310⇑*i*P **P 04 46 01.1 +0.4**
LOHW Long Hollow 74.94 46 *e*P **P 04 46 02.6 +1.7**
comp=Z,188nm,1.9s
SNOW Snow King Moun 74.95 46 *e*P **P 04 46 03.1 +2.0**
comp=Z,156nm,1.6s
REDW Red Top Meadow 74.96 46 *e*P **P 04 46 02.5 +1.4**
comp=Z,120nm,1.3s
REDW LR LR
comp=Z,4µm,22.0s
GRAC Grapevine Rang 75.00 55 P **P 04 46 01.9 +0.7**
baz=308,SNR=7.5
SBC Santa Barbara 75.02 58 P **P 04 46 01.6 +0.4**
baz=307
REFA Refahiye_ERZ¯ 75.06 309⇑*i*P **P 04 46 00.3 -1.3**
NWAO Narrogin (SRO) 75.07 201 P **P 04 45 59.9 -1.3**
comp=Z,41nm,0.8s,baz=259,slow=8.2,SNR=17
NWAO Narrogin (SRO) 75.07 201 *e*P **P 04 46 01.0 -0.3**
NWAO pmax pmax
comp=Z,120nm,1.4s
NWAO Narrogin (SRO) 75.07 201 *e*P **P 04 46 01.0 -0.3**
comp=Z,121nm,1.4s
NWAO LR LR
comp=Z,3µm,21.0s
MARD Mardin 75.08 306⇑*i*P **P 04 46 02.5 +0.8**
ISA Isabella, Lake 75.10 56 P **P 04 46 01.1 -0.7**
baz=307
ISA Isabella, Lake 75.10 56 *e*P **P 04 46 02.3 +0.5**
ISA pmax pmax
comp=Z,55nm,1.3s
ISA Isabella, Lake 75.10 56 *e*P **P 04 46 02.3 +0.5**
comp=Z,55nm,1.4s
DGMT Dagmar 75.12 39 P **P 04 46 01.7 +0.1**
baz=313,SNR=13
DGMT Dagmar 75.12 39 *e*P **P 04 46 01.8 +0.1**
comp=Z,135nm,1.3s
DGMT LR LR
comp=Z,7µm,22.0s
DIYA Diyarbakir 75.12 307⇑*i*P **P 04 46 02.6 +0.7**
ARVC Arvin 75.19 57 P **P 04 46 02.2 0.0**
baz=307
SORM Soroca 75.19 321⇑*i*P **P 04 46 02.0 0.0**
AHID Auburn Hatcher 75.20 47 *e*P **P 04 46 03.0 +0.6**
comp=Z,106nm,1.4s
AHID LR LR
comp=Z,5µm,22.0s
BGU Big Grassy Mou 75.24 49 *e*P **P 04 46 04.4 +1.7**
comp=Z,56nm,1.1s
BGU LR LR
comp=Z,4µm,22.0s
LTU Little Mountai 75.28 48 *e*P **P 04 46 03.6 +0.7**
R11A Troy Canyon, C 75.29 53 P **P 04 46 03.5 +0.5**
baz=308,SNR=44
R11A Troy Canyon, C 75.29 53 *e*P **P 04 46 03.5 +0.5**
comp=Z,179nm,1.6s
LAO LASA Array 75.30 41 P **P 04 46 03.2 +0.4**
baz=312,SNR=19
LAO LASA Array 75.30 41 *e*P **P 04 46 03.4 +0.6**
comp=Z,211nm,1.4s
LAO LR LR
comp=Z,5µm,20.0s
DAC Darwin (Calif) 75.30 55 *e*P **P 04 46 03.2 +0.1**
DAC pmax pmax
comp=Z,80nm,1.4s
DAC Darwin (Calif) 75.30 55 *e*P **P 04 46 03.2 +0.1**
comp=Z,80nm,1.4s
KEMA Kemaliye 75.30 309⇑*i*P **P 04 46 03.5 +0.6**
BLS5 Blasjo 75.32 338⇑*i*P **P 04 46 03.1 +0.6**
BLS5 IVmB_BB 04 46 20.7
comp=Z,4µm,5.2s
BLS5 *e*S **S 04 55 39.1 +0.8**
BLS5 IVMs_BB IVMs_BB 05 22 04.3
comp=Z,14µm,22.2s
SPUT South Promonto 75.34 49 PFAKE 04 46 20.0 +17
SPUT LR LR
comp=Z,4µm,20.0s
SCZ2 Santa Cruz Isl 75.35 58 P **P 04 46 03.7 +0.5**
baz=307
CUZAR Zara_SIVAS 75.35 310⇑*i*P **P 04 46 02.7 -0.6**
SAMS Samsun-Alacam 75.37 312⇑*i*P **P 04 46 03.1 -0.1**
ELZG Elazig 75.48 308⇑*i*P **P 04 46 05.2 +1.1**
MPMC Manual Prospec 75.50 55 P **P 04 46 04.5 +0.2**
baz=308,SNR=18
OSI Osito Audit: C 75.57 57 P **P 04 46 05.0 +0.5**
baz=308
OSI Osito Audit: C 75.57 57 PFAKE 04 46 20.0 +15
OSI LR LR
comp=Z,8µm,22.0s
FURC Furnace Creek, 75.65 55 P **P 04 46 05.5 +0.7**
baz=308
BLG Laguna Peak, P 75.65 58 P **P 04 46 04.9 -0.1**
baz=308
HOMB Homborsund 75.66 337⇑*i*P **P 04 46 04.1 -0.3**
HOMB IVmB_BB 04 46 05.6
comp=Z,5µm,4.0s
HOMB *e*PP **PP 04 48 54.5 +0.8**
HOMB *e*S **S 04 55 41.5 -0.4**
HOMB IVMs_BB IVMs_BB 05 22 24.2
comp=Z,12µm,16.9s
HWUT Hardware Ranch 75.67 48 *e*P **P 04 46 06.0 +0.9**
comp=Z,190nm,1.4s
HWUT LR LR
comp=Z,3µm,20.0s
LRMC Laurel Mtn Rad 75.72 56 P **P 04 46 05.5 0.0**
baz=308
KIS Kishinev 75.73 319⇑*i*P **P 04 46 04.0 -1.1**
comp=Z,3µm,3.5s
KIS Kishinev 75.73 319 *i* PcP **PcP 04 46 18.0 +0.4**
KIS Kishinev 75.73 319 *i* PPP PPP 04 50 40.0
KIS Kishinev 75.73 319 *i* PS 04 56 40.0
KIS *i* SS SS 05 00 52.0 +18
KIS *i* SSS SSS 05 04 10.0
KIS *e*LQ LQ 05 12 00.0
KIS comp=Z,17µm,23.0s LRM MLR 05 22 04.0
comp=Z,38µm,16.0s
KIS Kishinev 75.73 319α*i*P **P 04 46 04.0 -1.1**
KIS *i* 04 46 18.0
KIS *i* 04 48 54.0
KIS *i* PPP PPP 04 50 40.0
KIS *i* S **S 04 55 40.0 -3.2**
KIS *i* 04 56 02.0
KIS *i* PS PnS 04 56 40.0 +16
KIS pmax pmax
comp=Z,3µm,3.5s
KIS pmax pmax
comp=E,900nm,3.0s
KIS pmax pmax
comp=Z,5µm,7.0s
KIS pmax pmax
comp=N,2µm,6.0s
KIS pmax pmax
comp=E,2µm,4.0s
KIS pmax pmax
comp=Z,6µm,8.0s
KIS smax smax
comp=N,3µm,12.0s
KIS smax smax
comp=E,1µm,10.0s
KIS MLR MLR
comp=N,24µm,16.0s
KIS MLR MLR
comp=Z,37µm,16.0s
KIS MLR MLR
comp=E,19µm,17.0s
KIS MLR MLR
comp=Z,38µm,16.0s
RSUT Red Spur Mount 75.73 48 *e*P **P 04 46 06.5 +0.9**
TPNV Topopah Spring 75.74 54 P **P 04 46 05.5 -0.1**
baz=308,SNR=35
TPNV Topopah Spring 75.74 54 *e*P **P 04 46 06.0 +0.4**
TPNV pmax pmax
comp=Z,150nm,1.2s
TPNV Topopah Spring 75.74 54 *e*P **P 04 46 06.0 +0.4**
comp=Z,148nm,1.2s
TPNV LR LR
comp=Z,8µm,21.0s
SCER sogukcermik 75.76 310⇑*i*P **P 04 46 06.5 +0.9**
B25A Knox Farm, Ray 75.76 39 P **P 04 46 04.2 -1.2**
baz=313
FSU Fish Springs 75.78 50 *e*P **P 04 46 06.5 +0.8**
MCU Monte Cristo P 75.79 48 *e*P **P 04 46 06.8 +0.8**
HAVZ Havza 75.83 312⇑*i*P **P 04 46 06.2 +0.4**
DUG Dugway, Tooele 75.83 50 P **P 04 46 06.7 +0.8**
baz=309,SNR=38
DUG Dugway, Tooele 75.83 50 *e*P **P 04 46 06.9 +0.9**
DUG pmax pmax
comp=Z,140nm,1.2s
DUG Dugway, Tooele 75.83 50 *e*P **P 04 46 06.9 +0.9**
comp=Z,139nm,1.3s
DUG LR LR
comp=Z,4µm,20.0s
BORG Borgarnes 75.84 353 *e*P **P 04 46 07.3 +1.9**
BORG pmax pmax
comp=Z,120nm,0.9s
BORG Borgarnes 75.84 353 *e*P **P 04 46 07.3 +1.9**
comp=Z,119nm,0.8s
BORG LR LR
comp=Z,5µm,21.0s
KMY Karmoy 75.84 339 *e*P **P 04 46 06.9 +1.4**
KMY IVmB_BB 04 46 09.0
comp=Z,193nm,6.3s
TOKA Tokat 75.85 311⇑*i*P **P 04 46 06.9 +0.9**
SNCC San Nicolas Is 75.87 59 P **P 04 46 07.2 +1.0**
baz=307
SNCC San Nicolas Is 75.87 59 PFAKE 04 46 20.0 +14
SNCC LR LR
comp=Z,7µm,20.0s
A26A Wade Farm, Ken 75.88 38 P **P 04 46 06.4 +0.5**
baz=314
EDW2 Edwards Air Fo 75.89 57 P **P 04 46 06.7 +0.4**
baz=308,SNR=17
CUKAN kangal_SIVAS 75.89 309⇑*i*P **P 04 46 07.1 +0.7**
STAV Stavanger 75.95 338⇑*i*P **P 04 46 06.6 +0.5**
STAV IVmB_BB 04 46 07.4
comp=Z,4µm,4.1s
STAV *es*P **pP 04 46 22.7 +3.3**
STAV *e*S **S 04 55 45.4 +0.3**
STAV IVMs_BB IVMs_BB 05 22 33.4
comp=Z,13µm,22.4s
BSD Bornholm Skovb 75.98 332⇑*i*P **P 04 46 06.2 -0.1**
comp=Z,157nm,0.8s
BSD *i* 04 46 22.5
comp=Z,25µm,20.0s
SNART Snartemo 76.00 337 *e*P **P 04 46 06.9 +0.5**
SNART IVmB_BB 04 46 07.7
comp=Z,3µm,2.9s
SNART *e*PP **PP 04 48 57.5 +0.9**
SNART IVMs_BB IVMs_BB 05 21 36.5
comp=Z,7µm,24.8s
BW06 Boulder Array 76.07 46 P **P 04 46 07.7 +0.3**
baz=310,SNR=42
BW06 Boulder Array 76.07 46 *e*P **P 04 46 07.4 0.0**
comp=Z,44nm,1.0s

BW06					LR	LR			
	comp=Z,5µm,22.0s								
PD31	**Pinedale Array**	**76.07**	**46**	*e*P	**P**	**P**	**04 46 07.5**	**0.0**
PDAR	**Pinedale Array**	**76.07**	**46**	P	**P**	**P**	**04 46 07.5**	**0.0**
	comp=Z,9.5nm,0.7s,baz=268,slow=2.2,SNR=102								
PDAR					LR	LR	05 15 37.1		
	comp=Z,2µm,21.5s,baz=328,slow=32								
TCUT	**Toone Canyon**	**76.07**	**48**	*e*P	**P**	**P**	**04 46 08.3**	**+0.9**
	comp=Z,168nm,1.1s								
TCUT					LR	LR			
	comp=Z,5µm,20.0s								
BOYT	**Boyabat**	**76.08**	**312**⇑	*i*P	**P**	**P**	**04 46 08.2**	**+0.9**
BEL	**Belsk**	**76.09**	**327**	*e*P	**P**	**P**	**04 46 08.1**	**+1.0**
BEL				*e*S	**S**	**S**	**04 55 48.2**	**+1.2**
BEL				*e*SKSac	**SKSac**	**SKSac**	**04 56 04.8**	**-9.2**
BEL				LMZ	LR	LR	05 21 12.2		
	comp=Z,19µm,22.8s								
LVV	**L'vov**	**76.10**	**324**	*d i*P	**P**	**P**	**04 46 07.5**	**+0.3**
LVV				*e*			04 46 23.4		
LVV				*e*			04 48 55.5		
LVV				*e*PPP	PPP	PPP	04 50 46.5		
LVV				*e*S	**S**	**S**	**04 55 43.9**	**-3.3**
LVV				*e*PS	**PnS**	**PnS**	**04 56 20.9**	**-7.8**
LVV				*e*SSS	SSS	SSS	05 03 52.1		
LVV				pmax	pmax	pmax			
	comp=Z,500nm,1.8s								
LVV				MLR	MLR	MLR			
	comp=N,19µm,15.0s								
LVV				MLR	MLR	MLR			
	comp=E,19µm,15.0s								
LVV				MLR	MLR	MLR			
	comp=Z,29µm,15.0s								
C25A	**Freed Ranch, W**	**76.10**	**39**	P	**P**	**P**	**04 46 07.9**	**+0.6**
	baz=313								
CTU	**Camp Tracy**	**76.14**	**49**	*e*P	**P**	**P**	**04 46 08.9**	**+1.1**
	comp=Z,224nm,1.3s								
B26A	**Jensen Ranch,**	**76.14**	**38**	P	**P**	**P**	**04 46 08.2**	**+0.7**
	baz=314,SNR=5.2								
PASC	**Pasadena Art C**	**76.19**	**57**	PFAKE			04 46 20.0	+12	
PASC				LR	LR				
	comp=Z,7µm,20.0s								
IAS	**Iasi**	**76.23**	**320**⇑	*i*P	**P**	**P**	**04 46 08.9**	**+1.0**
PSUT	**Pine Spring**	**76.24**	**52**	*e*P	**P**	**P**	**04 46 10.7**	**+2.2**
	comp=Z,60nm,1.0s								
MWC	**Mount Wilson**	**76.25**	**57**	*e*P	**P**	**P**	**04 46 09.5**	**+1.0**
MWC				pmax	pmax	pmax			
	comp=Z,140nm,1.5s								
MWC	**Mount Wilson**	**76.25**	**57**	*e*P	**P**	**P**	**04 46 09.5**	**+1.0**
	comp=Z,136nm,1.5s								
MWC				LR	LR				
	comp=Z,7µm,20.0s								
AKCD	**Akcadag**	**76.26**	**308**⇑	*i*P	**P**	**P**	**04 46 09.2**	**+0.8**
CUALT	**Altinyayla-SIV**	**76.35**	**310**⇑	*i*P	**P**	**P**	**04 46 09.8**	**+0.8**
JLU	**Jordanelle**	**76.37**	**49**	PFAKE			04 46 20.0	+11	
JLU				LR	LR				
	comp=Z,5µm,22.0s								
GSC	**Goldstone, Bar**	**76.40**	**56**	P	**P**	**P**	**04 46 08.7**	**-0.5**
	baz=308,SNR=8.3								
GSC	**Goldstone, Bar**	**76.40**	**56**	*e*P	**P**	**P**	**04 46 09.8**	**+0.6**
GSC				pmax	pmax	pmax			
	comp=Z,120nm,1.5s								
GSC	**Goldstone, Bar**	**76.40**	**56**	*e*P	**P**	**P**	**04 46 09.8**	**+0.6**
	comp=Z,122nm,1.5s								
FMP	**Fort Macarthur**	**76.40**	**58**	P	**P**	**P**	**04 46 09.0**	**-0.2**
	baz=308								
COP	**Copenhagen**	**76.43**	**333**⇑	*i*P	**P**	**P**	**04 46 09.5**	**+0.6**
	comp=Z,254nm,0.8s								
	comp=Z,22µm,19.0s								
GKP	**Gorka Klasztor**	**76.50**	**329**	*e*P	**P**	**P**	**04 46 09.7**	**+0.4**
GKP				*e*PcP	**pP**	**pP**	**04 46 26.5**	**+3.8**
GKP				*e*PP	**PP**	**PP**	**04 48 59.7**	**-1.2**
GKP				*e*S	**S**	**S**	**04 55 51.0**	**-0.4**
GKP				*e*SKSac	**SKSac**	**SKSac**	**04 56 08.2**	**-8.7**
GKP				*e*ScS	**SKKSac**	**SKKSac**	**04 56 13.6**	**-3.8**
GKP				LMZ	LR	LR	05 22 20.3		
	comp=Z,47µm,20.0s								
BFSC	**Mount Baldy Ra**	**76.50**	**57**	P	**P**	**P**	**04 46 09.8**	**-0.1**
	baz=308,SNR=6.2								
CIS	**Catalina Islan**	**76.51**	**58**	P	**P**	**P**	**04 46 09.9**	**+0.1**
	baz=308								
RRX	**Edison Barstow**	**76.54**	**56**	P	**P**	**P**	**04 46 09.6**	**-0.3**
	baz=308								
ATAB	**Bozova**	**76.54**	**307**⇑	*i*P	**P**	**P**	**04 46 11.0**	**+1.0**
CUSAR	**Sarkisla-SIVAS**	**76.56**	**310**⇑	*i*P	**P**	**P**	**04 46 11.2**	**+1.0**
CTAK	**Corum_Osmancik**	**76.64**	**312**⇑	*i*P	**P**	**P**	**04 46 11.3**	**+0.7**
SCI2	**San Clemente I**	**76.68**	**58**	P	**P**	**P**	**04 46 10.9**	**+0.1**
	baz=308								
SHPR	**Sheep Range**	**76.70**	**54**	*e*P	**P**	**P**	**04 46 11.9**	**+0.8**
	comp=Z,84nm,1.2s								
SHPR				LR	LR				
	comp=Z,7µm,20.0s								
COAL	**Corum-Alaca**	**76.78**	**311**⇑	*i*P	**P**	**P**	**04 46 11.8**	**+0.4**
LLD	**Lille Linde**	**76.78**	**333**⇑	*i*P	**P**	**P**	**04 46 12.1**	**+1.2**
	comp=Z,201nm,0.8s								
KWP	**Kalwaria Pacla**	**76.84**	**324**	*e*P	**P**	**P**	**04 46 12.4**	**+1.0**
KWP				*e*S	**S**	**S**	**04 55 55.5**	**+0.2**
KWP				*e*SKSac	**SKSac**	**SKSac**	**04 56 16.0**	**-3.7**
KWP				LMZ	LR	LR	05 21 50.1		
	comp=Z,7µm,25.2s								
TUQ	**Turquoise Moun**	**76.88**	**55**	P	**P**	**P**	**04 46 11.9**	**-0.1**
	baz=309,SNR=14								
MUD	**Monsted U'grnd**	**76.92**	**335**⇑	*i*P	**P**	**P**	**04 46 12.3**	**+0.7**
	comp=Z,119nm,0.9s								
	comp=Z,34µm,19.0s								
TLCR		**76.95**	**318**⇑	*i*P	**P**	**P**	**04 46 12.5**	**+0.5**
BBRC	**Big Bear Solar**	**76.96**	**57**	P	**P**	**P**	**04 46 12.4**	**-0.2**
	baz=308								
D26A	**Manning**	**76.97**	**39**	P	**P**	**P**	**04 46 12.0**	**-0.2**
	baz=314								
HEC	**Hector,Ludlow**	**76.99**	**56**	P	**P**	**P**	**04 46 12.8**	**+0.2**
	baz=308								
ILGA	**Ilgaz**	**77.00**	**312**⇑	*i*P	**P**	**P**	**04 46 13.8**	**+1.1**
RGN	**Rugen**	**77.00**	**332**	*e*P	**P**	**P**	**04 46 12.2**	**+0.1**
	comp=Z,233nm,0.9s								
RGN				LR	LR				
	comp=Z,32µm,20.0s								
GZT	**Gaziantep**	**77.07**	**308**	*i* P	**P**	**P**	**04 46 13.7**	**+0.7**
BUR08	**Bucovina Ar. S**	**77.08**	**322**	*e*P	**P**	**P**	**04 46 13.3**	**+0.5**
BURAR	**Bucovina Array**	**77.09**	**322**⇑	*i*P	**P**	**P**	**04 46 13.5**	**+0.6**
KSRV	**Kasrt alli**	**77.10**	**306**	*e*P	**P**	**P**	**04 46 14.5**	**+1.4**
KSRV	**Kasrt alli**	**77.10**	**306**	*e*P	**P**	**P**	**04 46 14.7**	**+1.6**
TESR	**Tescani**	**77.15**	**320**⇑	*i*P	**P**	**P**	**04 46 13.4**	**+0.2**
CCUT	**Cedar City**	**77.16**	**52**	*e*P	**P**	**P**	**04 46 13.5**	**-0.2**
	comp=Z,109nm,1.3s								
CCUT				LR	LR				
	comp=Z,4µm,19.0s								
MURC	**Murrieta**	**77.19**	**57**	P	**P**	**P**	**04 46 13.5**	**-0.2**
	baz=308								
MSU	**Marysvale**	**77.28**	**51**	*e*P	**P**	**P**	**04 46 11.1**	**-3.2**
MSU	**Marysvale**	**77.28**	**51**	*e*P	**P**	**P**	**04 46 11.1**	**-3.2**
SZCU	**Shurtz Canyon**	**77.30**	**52**	*e*P	**P**	**P**	**04 46 15.5**	**+1.0**
	comp=Z,153nm,1.5s								
SZCU				LR	LR				
	comp=Z,4µm,20.0s								
CFR	**Carcaliu**	**77.31**	**318**⇑	*i*P	**P**	**P**	**04 46 14.3**	**+0.3**
TMUT	**Trail Mountain**	**77.35**	**50**	*e*P	**P**	**P**	**04 46 15.2**	**+0.4**
	comp=Z,86nm,1.3s								
TMUT				LR	LR				
	comp=Z,4µm,21.0s								
BTIN	**Bart¯-n**	**77.45**	**314**⇑	*i*P	**P**	**P**	**04 46 14.6**	**-0.4**
GMRC	**Granite Mounta**	**77.46**	**55**	P	**P**	**P**	**04 46 15.4**	**+0.1**
	baz=309,SNR=13								
ODBI	**Odobesti**	**77.46**	**319**⇑	*i*P	**P**	**P**	**04 46 17.1**	**+2.2**
RAO	**Raoul Island**	**77.47**	**145**	PFAKE			04 46 30.0	+15	
RAO				LR	LR				
	comp=Z,10µm,20.0s								
HCB	**Kahramanmara¯**	**77.48**	**308**⇑	*i*P	**P**	**P**	**04 46 15.7**	**+0.5**
P17A	**Butcher Ranch,**	**77.52**	**49**	*e*P	**P**	**P**	**04 46 16.5**	**+0.9**
	comp=Z,182nm,1.2s								
P17A				LR	LR				
	comp=Z,5µm,20.0s								
ELDT	**Eldivan**	**77.53**	**312**⇑	*i*P	**P**	**P**	**04 46 15.9**	**+0.2**
CDAG	**Cicekdag**	**77.54**	**311**⇑	*i*P	**P**	**P**	**04 46 15.4**	**-0.2**
VRI	**Vrincioaia**	**77.56**	**320**⇑	*i*P	**P**	**P**	**04 46 16.3**	**+0.8**
SLMH	**Al Salmeh**	**77.56**	**307**	*e*P	**P**	**P**	**04 46 16.5**	**+0.8**
SLMH	**Al Salmeh**	**77.56**	**307**	*e*P	**P**	**P**	**04 46 16.6**	**+1.0**
MTPU	**Mount Pierson**	**77.57**	**51**	*e*P	**P**	**P**	**04 46 17.3**	**+1.2**
	comp=Z,156nm,1.3s								
LCMT	**Little Creek M**	**77.58**	**52**	*e*P	**P**	**P**	**04 46 16.8**	**+0.9**
	comp=Z,131nm,1.4s								
LCMT				LR	LR				
	comp=Z,6µm,20.0s								
PLOR	**Plostina**	**77.61**	**320**⇑	*i*P	**P**	**P**	**04 46 16.6**	**+0.8**
STHS	**Stebnicka Huta**	**77.65**	**325**	*e*P	**P**	**P**	**04 46 17.2**	**+1.2**
STHS				*es*P	**pP**	**pP**	**04 46 30.5**	**+1.1**
TIRR	**Tirgusor**	**77.65**	**318**	*e*P	**P**	**P**	**04 46 15.9**	**-0.1**
TIRR				pmax	pmax				
	comp=Z,55nm,0.9s								
TIRR	**Tirgusor**	**77.65**	**318**	*e*P	**P**	**P**	**04 46 15.9**	**-0.1**
	comp=Z,55nm,0.9s								
PFO	**Pinyon Flats O**	**77.67**	**57**	P	**P**	**P**	**04 46 15.7**	**-0.8**
	baz=309,SNR=7.7								
PFO	**Pinyon Flats O**	**77.67**	**57**	*e*P	**P**	**P**	**04 46 17.3**	**+0.9**
PFO				pmax	pmax				
	comp=Z,74nm,1.2s								
PFO	**Pinyon Flats O**	**77.67**	**57**	*e*P	**P**	**P**	**04 46 17.3**	**+0.9**
	comp=Z,74nm,1.3s								
PFO				LR	LR				
	comp=Z,8µm,20.0s								
ANDN	**Andirin**	**77.67**	**308**⇑	*i*P	**P**	**P**	**04 46 16.8**	**+0.4**
TPFO	**Pinon Flats**	**77.67**	**57**	P	**P**	**P**	**04 46 16.0**	**-0.5**
	baz=309,SNR=7.1								
109C	**Camp Elliot, M**	**77.69**	**58**	P	**P**	**P**	**04 46 16.3**	**-0.1**
	baz=309								
OJC	**Ojcow**	**77.70**	**326**	*e*P	**P**	**P**	**04 46 17.0**	**+0.7**
OJC				*e*PcP	**pP**	**pP**	**04 46 33.3**	**+3.7**
OJC				*e*PP	**PP**	**PP**	**04 49 10.3**	**-0.9**
OJC				*e*S	**S**	**S**	**04 56 04.2**	**-0.5**
OJC				*e*SKSac	**SKSac**	**SKSac**	**04 56 21.1**	**-4.8**
OJC				LMZ	LR	LR	05 23 36.5		
	comp=Z,48µm,17.9s								
OJC	**Ojcow**	**77.70**	**326**	*e*P	**P**	**P**	**04 46 16.9**	**+0.7**
OJC				pmax	pmax	pmax			
	comp=Z,270nm,1.2s								
OJC	**Ojcow**	**77.70**	**326**	*e*P	**P**	**P**	**04 46 16.9**	**+0.7**
	comp=Z,269nm,1.2s								
ULM	**Lac du Bonnet**	**77.72**	**34**	P	**P**	**P**	**04 46 15.7**	**-0.6**
	comp=Z,23nm,0.8s,baz=320,slow=7.1,SNR=24								
ULM				LR	LR	LR	05 24 43.3		
	comp=Z,3µm,18.1s,baz=324,slow=39								
ULM	**Lac du Bonnet**	**77.72**	**34**	*e*P	**P**	**P**	**04 46 15.6**	**-0.6**
ULM				pmax	pmax	pmax			
	comp=Z,160nm,1.6s								
ULM	**Lac du Bonnet**	**77.72**	**34**	*e*P	**P**	**P**	**04 46 15.6**	**-0.6**
	comp=Z,164nm,1.6s								
BELC	**Belle Mtn. Jos**	**77.73**	**56**	P	**P**	**P**	**04 46 16.4**	**-0.3**
	baz=309								
KUZU	**Kuzuini**	**77.74**	**307**⇑	*i*P	**P**	**P**	**04 46 17.4**	**+0.7**
UZH	**Uzhgorod**	**77.75**	**324**⇑	*i*P	**P**	**P**	**04 46 15.5**	**-0.9**
UZH				*e*			04 46 22.7		
UZH				*e*			04 46 23.5		
UZH				*e*			04 49 09.9		
UZH				*e*S	**S**	**S**	**04 56 02.1**	**-3.0**
UZH				*e*			05 01 05.0		
UZH				MLR	MLR	MLR			
	comp=N,13µm,15.0s								
UZH				MLR	MLR	MLR			
	comp=E,18µm,15.0s								
UZH				MLR	MLR	MLR			
	comp=Z,3µm,15.0s								
HARR	**Harsova**	**77.75**	**318**⇑	*i*P	**P**	**P**	**04 46 17.7**	**+1.2**
TLB	**Topalu**	**77.76**	**318**⇓	*i*P	**P**	**P**	**04 46 16.9**	**+0.3**
GRER		**77.77**	**319**⇑	*i*P	**P**	**P**	**04 46 18.6**	**+2.0**
MDND	**Maddock**	**77.77**	**37**	P	**P**	**P**	**04 46 16.3**	**-0.3**
	baz=316								
MDND	**Maddock**	**77.77**	**37**	*e*P	**P**	**P**	**04 46 17.8**	**+1.2**
	comp=Z,216nm,1.0s								
MDND				LR	LR				
	comp=Z,7µm,22.0s								
K22A	**Casper**	**77.83**	**45**	P	**P**	**P**	**04 46 16.5**	**-0.8**
	baz=312,SNR=20								
K22A	**Casper**	**77.83**	**45**	*e*P	**P**	**P**	**04 46 17.2**	**-0.1**
	comp=Z,242nm,1.6s								
KNB	**Kanab**	**77.83**	**52**	*e*P	**P**	**P**	**04 46 18.6**	**+1.2**
KNB				pmax	pmax	pmax			
	comp=Z,210nm,1.3s								
KNB	**Kanab**	**77.83**	**52**	*e*P	**P**	**P**	**04 46 18.6**	**+1.2**
	comp=Z,208nm,1.4s								
KNB				LR	LR				
	comp=Z,6µm,19.0s								
BMR	**Baia Mare**	**77.87**	**323**⇑	*i*P	**P**	**P**	**04 46 18.1**	**+0.9**
PKCU	**Pink Cliffs**	**77.88**	**52**	*e*P	**P**	**P**	**04 46 20.0**	**+2.2**
	comp=Z,136nm,1.4s								
ARCR	**ARCALIA**	**77.88**	**322**⇓	*i*P	**P**	**P**	**04 46 18.7**	**+1.5**
SRU	**San Rafael Swe**	**77.88**	**49**	*e*P	**P**	**P**	**04 46 18.1**	**+0.5**
SRU				pmax	pmax	pmax			
	comp=Z,69nm,0.8s								
SRU	**San Rafael Swe**	**77.88**	**49**	*e*P	**P**	**P**	**04 46 18.1**	**+0.5**
	comp=Z,69nm,0.8s								
SRU				LR	LR				
	comp=Z,5µm,20.0s								
BR131	**Keskin Array S**	**77.91**	**312**	*e*P	**P**	**P**	**04 46 18.1**	**+0.4**
BRTR	**Keskin Array B**	**77.91**	**312**	P	**P**	**P**	**04 46 17.9**	**+0.2**
	comp=Z,36nm,0.5s,baz=87,slow=2.8,SNR=190								
BRTR				PP	**PP**	**PP**	**04 49 19.6**	**+6.1**
	comp=Z,20nm,1.0s,baz=64,slow=5.6,SNR=3.8								
BRTR				LR	LR	LR	05 26 01.9		
	comp=Z,6µm,19.3s,baz=50,slow=40								
CRVS	**Cervenica-Dubn**	**77.93**	**324**	*e*P	**P**	**P**	**04 46 18.1**	**+0.6**
CRVS				*e*S	**S**	**S**	**04 56 06.5**	**-0.7**
YAHY	**KAYSERI_Yahyal**	**77.94**	**309**⇑	*i*P	**P**	**P**	**04 46 18.0**	**+0.1**
TRPA	**Tarpa**	**77.99**	**323**⇑	*e*P	**P**	**P**	**04 46 18.8**	**+1.0**
MMU	**Miners Mountai**	**78.01**	**50**	*e*P	**P**	**P**	**04 46 19.6**	**+1.2**
H25A	**Fruitdale**	**78.05**	**42**	P	**P**	**P**	**04 46 17.6**	**-0.7**
	baz=314								
NIE	**Niedzica**	**78.07**	**325**	*e*P	**P**	**P**	**04 46 19.4**	**+1.1**
NIE				*e*S	**S**	**S**	**04 56 09.9**	**+1.1**
NIE				*e*SKSac	**SKSac**	**SKSac**	**04 56 26.3**	**-2.3**
NIE				*e*ScS	**ScS**	**ScS**	**04 56 31.9**	**-2.3**
NIE				LMZ	LR	LR	05 23 51.4		
	comp=Z,32µm,17.7s								
BCAM	**Yenicaga**	**78.10**	**313**⇑	*i*P	**P**	**P**	**04 46 19.1**	**+0.4**
A31A	**Linda, St. Vin**	**78.10**	**35**	P	**P**	**P**	**04 46 17.8**	**-0.6**
	baz=317								
BAR	**Barrett**	**78.11**	**58**	*e*P	**P**	**P**	**04 46 19.8**	**+1.0**
	comp=Z,35nm,1.0s								
BAR				LR	LR				
	comp=Z,4µm,20.0s								
NEE2	**Needles Airpor**	**78.13**	**55**	P	**P**	**P**	**04 46 19.3**	**+0.5**
	baz=309								
MONP2	**Monument Peak**	**78.14**	**57**	P	**P**	**P**	**04 46 18.8**	**-0.4**
	baz=309								
DOPR	**Dopca**	**78.16**	**320**⇑	*i*P	**P**	**P**	**04 46 20.2**	**+1.4**
RSSD	**Black Hills**	**78.16**	**42**	P	**P**	**P**	**04 46 19.0**	**-0.2**
	baz=313								
RSSD	**Black Hills**	**78.16**	**42**	*e*P	**P**	**P**	**04 46 19.0**	**-0.2**
RSSD				pmax	pmax	pmax			
	comp=Z,120nm,1.3s								
RSSD	**Black Hills**	**78.16**	**42**	*e*P	**P**	**P**	**04 46 19.0**	**-0.2**
	comp=Z,115nm,1.4s								
RSSD				LR	LR				
	comp=Z,3µm,21.0s								
ISR	**Istrita**	**78.17**	**319**⇑	*i*P	**P**	**P**	**04 46 20.4**	**+1.5**
IRM	**Iron Mountain**	**78.18**	**56**	P	**P**	**P**	**04 46 19.3**	**+0.2**
	baz=309								
MLR	**Muntele Rosu**	**78.21**	**320**⇓	*i*P	**P**	**P**	**04 46 20.2**	**+0.9**
MLR	**Muntele Rosu**	**78.21**	**320**	*e*P	**P**	**P**	**04 46 18.8**	**-0.5**
MLR				pmax	pmax	pmax			
	comp=Z,90nm,1.0s								
MLR	**Muntele Rosu**	**78.21**	**320**	*e*P	**P**	**P**	**04 46 18.8**	**-0.5**
	comp=Z,90nm,1.0s								
MLR				LR	LR				
	comp=Z,37µm,19.0s								
B31A	**Greenbush Farm**	**78.26**	**36**	P	**P**	**P**	**04 46 18.8**	**-0.5**
	baz=317,SNR=11								
BC3	**Big Chuckawall**	**78.30**	**56**	P	**P**	**P**	**04 46 19.6**	**-0.3**
	baz=309								
AKO	**Adana**	**78.30**	**309**⇑	*i*P	**P**	**P**	**04 46 20.5**	**+0.8**
ANTO	**Ankara**	**78.31**	**312**	*e*P	**P**	**P**	**04 46 19.9**	**+0.1**
ANTO				pmax	pmax	pmax			
	comp=Z,430nm,0.8s								
ANTO	**Ankara**	**78.31**	**312**	*e*P	**P**	**P**	**04 46 19.9**	**+0.1**
	comp=Z,430nm,0.8s								
BBAL	**Bala**	**78.33**	**312**⇑	*i*P	**P**	**P**	**04 46 20.2**	**+0.1**
BR231	**Keskin MP Arra**	**78.33**	**312**	*e*P	**P**	**P**	**04 46 18.7**	**-1.3**
W13A	**Hualapai Mount**	**78.39**	**54**	*e*P	**P**	**P**	**04 46 20.9**	**+0.3**
	comp=Z,43nm,1.1s								
A32A	**Rocking H Ranc**	**78.42**	**35**	P	**P**	**P**	**04 46 19.5**	**-0.7**
	baz=317,SNR=19								
IKP	**In-Ko-Pah, Jac**	**78.50**	**57**	P	**P**	**P**	**04 46 21.2**	**+0.2**
	baz=309								
CJR	**Cluj-Napoca**	**78.51**	**322**⇑	*i*P	**P**	**P**	**04 46 22.1**	**+1.3**
SWSC	**Sam W. Stewart**	**78.52**	**57**	P	**P**	**P**	**04 46 21.1**	**+0.1**
	baz=309								
AKSY	**AKSARAY - Alti**	**78.54**	**311**⇑	*i*P	**P**	**P**	**04 46 21.3**	**+0.2**
O20A	**White River Ci**	**78.54**	**47**	P	**P**	**P**	**04 46 21.4**	**+0.1**
	baz=312,SNR=20								
O20A	**White River Ci**	**78.54**	**47**	*e*P	**P**	**P**	**04 46 21.5**	**+0.2**
	comp=Z,76nm,1.0s								
O20A				LR	LR				
	comp=Z,4µm,22.0s								
U15A	**North Rim**	**78.54**	**52**	*e*P	**P**	**P**	**04 46 22.2**	**+0.8**
	comp=Z,90nm,1.0s								
U15A				LR	LR				
	comp=Z,8µm,22.0s								
YURE	**YUREGIR**	**78.59**	**308**⇑	*i*P	**P**	**P**	**04 46 22.4**	**+1.1**
SULR		**78.62**	**319**⇓	*i*P	**P**	**P**	**04 46 22.6**	**+1.3**
LANS	**Liptovska Anna**	**78.64**	**326**	*e*P	**P**	**P**	**04 46 23.0**	**+1.6**
LANS				*es*P	**pP**	**pP**	**04 46 36.9**	**+2.0**
KECS	**Kecovo**	**78.68**	**325**	*e*P	**P**	**P**	**04 46 21.8**	**+0.2**
KECS				*e*PCP	**PcP**	**PcP**	**04 46 29.3**	**-1.1**
KECS				*es*P	**pP**	**pP**	**04 46 37.1**	**+2.0**
KECS				*e*PP	**PP**	**PP**	**04 49 16.6**	**-2.8**
C31A	**Landman Farms,**	**78.68**	**36**	P	**P**	**P**	**04 46 21.2**	**-0.4**
	baz=317,SNR=10								
KKUL	**Konya-Kulu**	**78.69**	**311**⇑	*i*P	**P**	**P**	**04 46 22.6**	**+0.6**
VOIR		**78.70**	**320**⇑	*i*P	**P**	**P**	**04 46 22.6**	**+0.7**
OKC	**Ostrava-Krasne**	**78.70**	**327**⇑	*i*P	**P**	**P**	**04 46 22.2**	**+0.5**
OKC				*e*S	**S**	**S**	**04 56 16.4**	**+1.0**
OKC				*e*SKS	**SKSac**	**SKSac**	**04 56 32.7**	**-0.3**
OKC				AMS	AMS	AMS	05 23 50.0		
	comp=Z,23µm,16.8s								
KSP	**Ksiaz**	**78.72**	**328**	*e*P	**P**	**P**	**04 46 22.5**	**+0.7**
KSP				*e*S	**S**	**S**	**04 56 15.5**	**0.0**
KSP				*e*SKSac	**SKKSac**	**SKKSac**	**04 56 33.3**	**-1.0**
KSP				LMZ	LR	LR	05 23 27.2		
	comp=Z,30µm,21.4s								
PDMCI	**Parker Dam,Lak**	**78.73**	**55**	P	**P**	**P**	**04 46 22.4**	**+0.3**
	baz=310,SNR=11								
SAHE	**Sakarya_HENDEK**	**78.76**	**314**⇑	*i*P	**P**	**P**	**04 46 21.7**	**-0.6**
B32A	**Ashes, Strandq**	**78.79**	**35**	P	**P**	**P**	**04 46 21.5**	**-0.7**
	baz=318,SNR=31								
YAYL	**Yayladag**	**78.81**	**307**⇑	*i*P	**P**	**P**	**04 46 20.9**	**-1.9**
Y12C	**Blythe**	**78.84**	**56**	P	**P**	**P**	**04 46 22.6**	**-0.2**
	baz=310,SNR=8.0								
Y12C	**Blythe**	**78.84**	**56**	*e*P	**P**	**P**	**04 46 23.3**	**+0.6**
	comp=Z,68nm,1.1s								
Y12C				LR	LR				
	comp=Z,4µm,20.0s								
MTUR	**Matau**	**78.84**	**320**⇓	*i*P	**P**	**P**	**04 46 24.5**	**+1.8**
BIGH	**Upper Bighouse**	**78.85**	**343**⇑	*e*P	**P**	**P**	**04 46 22.0**	**-0.3**
BIGH				AMS	AMS	AMS	05 25 55.4		
	comp=Z,12µm,18.7s								
BTAS	**Taskesti**	**78.87**	**314**⇑	*i*P	**P**	**P**	**04 46 22.8**	**-0.1**
DRGR		**78.88**	**322**⇑	*i*P	**P**	**P**	**04 46 23.2**	**+0.4**
MLA1	**Latheron**	**78.89**	**342**	*e*P	**P**	**P**	**04 46 22.7**	**+0.2**
A33A	**Warroad**	**78.90**	**34**	P	**P**	**P**	**04 46 22.1**	**-0.7**
	baz=318,SNR=22								
ARR	**Arges**	**78.95**	**320**⇑	*i*P	**P**	**P**	**04 46 24.8**	**+1.5**
KAND	**Kocaeli-Kandir**	**78.97**	**314**⇑	*i*P	**P**	**P**	**04 46 23.4**	**+0.1**
DGAR	**Diego Garcia**	**78.98**	**251**	*e*P	**P**	**P**	**04 46 23.0**	**-0.7**
DGAR	**Diego Garcia**	**78.98**	**251**	PFAKE			04 46 30.0	+6.3
DGAR				LR	LR				
	comp=Z,6µm,19.0s								
MORC	**Moravsky Berou**	**79.00**	**327**⇑	*i*P	**P**	**P**	**04 46 24.5**	**+1.1**
MORC	**Moravsky Berou**	**79.00**	**327**	*e*P	**P**	**P**	**04 46 24.1**	**+0.6**
MORC				pmax	pmax	pmax			
	comp=Z,400nm,0.9s								
MORC	**Moravsky Berou**	**79.00**	**327**	*e*P	**P**	**P**	**04 46 24.1**	**+0.6**
	comp=Z,398nm,0.9s								
MORC				LR	LR				
	comp=Z,131µm,19.0s								
DED	**Mersin**	**79.01**	**309**⇑	*i*P	**P**	**P**	**04 46 23.6**

CLL pmax pmax
comp=Z,150nm,0.8s
CLL Collm 79.67 330 *e*P **P** 04 46 25.3 -1.6
comp=Z,152nm,0.8s
CLL LR LR
comp=Z,22µm,18.0s
PV01 Paradox Valley 79.67 49 *e*P **P** 04 46 28.0 +0.4
MME1 Meikle Cairn 79.67 342 *e*P **P** 04 46 27.6 +0.7
Y14A Wickenburg 79.69 55 *e*P **P** 04 46 28.0 +0.5
comp=Z,309nm,1.2s
WUAZ Wupatki 79.69 53 P **P** 04 46 28.0 +0.4
baz=311,SNR=18
WUAZ Wupatki 79.69 53 *e*P **P** 04 46 28.2 +0.6
comp=Z,124nm,1.3s
WUAZ LR LR
comp=Z,6µm,21.0s
KIZK Mersin 79.73 309⇑ *i*P **P** 04 46 27.6 +0.1
BUY Buyukada 79.73 315⇑ *i*P **P** 04 46 27.6 +0.2
SIRR Siria 79.76 322⇑ *i*P **P** 04 46 28.3 +0.7
VRAC Vranov 79.76 327⇑ *i*P **P** 04 46 28.5 +1.0
F31A Hecla 79.84 38 P **P** 04 46 27.8 -0.3
baz=317,SNR=18
RRR Rubha Reidh 79.86 343⇑ *e*P **P** 04 46 28.0 +0.2
MARH Ras Al Marh 79.87 306 *e*P **P** 04 46 28.4 -0.3
MARH Ras Al Marh 79.87 306 *e*P **P** 04 46 29.3 +0.6
E32A Braaten, Kindr 79.87 37 P **P** 04 46 27.7 -0.4
baz=317
MDO Dochfour 79.90 342 *e*P **P** 04 46 27.4 -0.7
SMCO Snowmass 79.91 47 *e*P **P** 04 46 29.4 +0.4
comp=Z,95nm,1.4s
SMCO LR LR
comp=Z,4µm,20.0s
ELBA Catalca 79.91 315⇑ *i*P **P** 04 46 28.6 +0.2
DRUM Mains of Drumt 79.91 341⇑ *e*P **P** 04 46 28.2 +0.1
DRUM AMS AMS 05 25 51.9
comp=Z,11µm,18.0s
KMER Konya-Meram 79.94 311⇑ *i*P **P** 04 46 28.6 -0.3
113A Mohawk Valley, 79.95 56 *e*P **P** 04 46 29.3 +0.5
comp=Z,92nm,1.5s
113A LR LR
comp=Z,6µm,20.0s
RRH Rhenigidale 80.00 344⇑ *e*P **P** 04 46 28.9 +0.4
SMOL Smolenice 80.01 326 *e*P **P** 04 46 30.3 +1.4
SMOL *e*PCP **PcP** 04 46 35.8 -0.4
SMOL *e*pP **pP** 04 46 40.5 -1.8
SMOL *e*sP **sP** 04 46 45.3 -2.2
ZALF Zalf 80.03 304 *e*P **P** 04 46 29.8 +0.5
ZALF Zalf 80.03 304 *e*P **P** 04 46 29.9 +0.6
D33A AnnSam, Waubun 80.03 36 P **P** 04 46 28.3 -0.7
baz=318,SNR=6.5
GOPC GO Pecny, Ondr 80.05 328⇑ *i*P **P** 04 46 29.7 +0.6
GOPC *e*S **S** 04 56 31.9 +2.2
GOPC *e*XS **ScS** 04 56 49.6 -0.7
GOPC AMS AMS 05 24 20.0
comp=Z,32µm,18.5s
B35A Bob, Littlefor 80.06 34 P **P** 04 46 28.9 -0.3
baz=319,SNR=12
KAC Achnashellach 80.07 343⇑ *e*P **P** 04 46 29.4 +0.4
C34A RKJ Ranch, Bem 80.08 35 P **P** 04 46 28.8 -0.5
baz=319
BUD Budapest 80.08 325⇑ *e*P **P** 04 46 30.0 +0.8
IGD Bursa 80.09 314⇑ *i*P **P** 04 46 28.3 -1.1
PRU Pruhonice 80.09 329⇑ *i*P **P** 04 46 29.7 +0.4
PRU *e*PCP **PcP** 04 46 36.1 -0.4
PRU *e*S **S** 04 56 31.4 +1.3
PRU *e*XS **ScS** 04 56 50.1 -0.4
PRU AMS AMS 05 24 30.0
comp=Z,36µm,21.2s
NRS Narsarsuaq 80.10 4 *i*P **P** 04 46 27.9 -1.1
comp=Z,96nm,1.2s
comp=Z,9µm,24.0s
BOLV Bolvadin 80.14 312⇑ *i*P **P** 04 46 30.2 +0.3
SRE Strehaia 80.17 321⇑ *i*P **P** 04 46 31.5 +1.7
TREC Trest 80.24 328⇑ *i*P **P** 04 46 30.8 +0.7
TREC *e*S **S** 04 56 34.2 +2.5
TREC AMS AMS 05 24 40.0
comp=Z,28µm,17.6s
BZS Buzias 80.25 322⇑ *i*P **P** 04 46 30.3 +0.1
ISCO Idaho Springs 80.26 46 P **P** 04 46 29.1 -1.6
baz=313,SNR=33
ISCO Idaho Springs 80.26 46 *e*P **P** 04 46 31.4 +0.6
ISCO pmax pmax
comp=Z,85nm,1.2s
ISCO Idaho Springs 80.26 46 *e*P **P** 04 46 31.4 +0.6
comp=Z,85nm,1.3s
ISCO LR LR
comp=Z,4µm,21.0s
KPL Plockton 80.30 343⇑ *e*P **P** 04 46 30.4 +0.2
KPL AMB AMB 04 46 32.6
comp=Z,311nm,1.7s
KPL AMS AMS 05 26 47.8
comp=Z,7µm,18.4s
G31A Conde 80.33 38 P **P** 04 46 30.4 -0.2
baz=317,SNR=15
MVCO Mesa Verde 80.33 50 P **P** 04 46 30.4 -0.7
baz=312,SNR=24
MVCO Mesa Verde 80.33 50 *e*P **P** 04 46 31.6 +0.5
comp=Z,245nm,1.7s
MVCO LR LR
comp=Z,4µm,21.0s
EDRB Edirne 80.34 317 P **P** 04 46 31.2 +0.5
ERMK Ermenek 80.36 310⇑ *i*P **P** 04 46 30.0 -1.3
X16A Lo Mia Camp, P 80.37 53 *e*P **P** 04 46 32.2 +0.9
comp=Z,67nm,1.1s
D34A Park Rapids 80.37 36 P **P** 04 46 30.1 -0.7
baz=318,SNR=12
EDU Dundee 80.37 341 *e*P **P** 04 46 30.8 +0.1
F32A Veblen 80.37 37 P **P** 04 46 30.0 -0.9
baz=317,SNR=12
E33A Westby DABS, E 80.43 36 P **P** 04 46 30.5 -0.7
baz=318,SNR=22
C35A Jirik Farms, M 80.45 35 P **P** 04 46 30.6 -0.7
baz=319,SNR=16
CSKK Cs˙‡kako 80.51 325⇑ *e*P **P** 04 46 32.1 +0.5
SUSD Miller 80.53 39 P **P** 04 46 30.9 -0.9
baz=316,SNR=8.8
SALA Sala 80.55 304 *e*P **P** 04 46 31.8 -0.6
SALA Sala 80.55 304 *e*P **P** 04 46 32.7 +0.4
BRBR Barbar 80.60 305 *e*P **P** 04 46 35.0 +2.5
G32A Webster 80.65 38 P **P** 04 46 31.9 -0.5
baz=317,SNR=11
BAGO Egridir - ISPA 80.72 312⇑ *i*P **P** 04 46 32.8 -0.2
GDZ Gediz 80.73 313⇑ *i*P **P** 04 46 32.7 -0.4
NKC Novy Kostel 80.73 330⇑ *i*P **P** 04 46 33.1 +0.3
NKC *e*S **S** 04 56 37.4 +0.5
NKC AMS AMS 05 25 20.0
comp=Z,26µm,17.3s
H31A Wolsey 80.74 39 P **P** 04 46 31.9 -1.0
baz=317,SNR=11
PHNC Paralimni 80.76 308 P **P** 04 46 35.2 +2.0
F33A 5 Mile Ranch, 80.79 37 P **P** 04 46 32.9 -0.2
baz=318,SNR=19
E34A Wadena 80.81 36 P **P** 04 46 32.4 -0.8
baz=319
MDVR Moldovita 80.81 321⇑ *i*P **P** 04 46 33.7 +0.4
MPEP Malo Peshtene 80.84 319 *e*P **P** 04 46 34.4 +1.0
D35A Remer 80.89 35 P **P** 04 46 32.5 -1.2
baz=319,SNR=9.2
C36A Pine Crest Far 80.91 34 P **P** 04 46 33.1 -0.6
baz=320,SNR=12
SART Tekirdag 80.91 316⇑ *i*P **P** 04 46 33.2 -0.7
RAR Rarotonga 80.94 126 PFAKE 04 46 50.0 +16
RAR LR LR
comp=Z,8µm,22.0s
S22A 4UR Ranch, Cre 80.95 48 P **P** 04 46 34.2 -0.4
baz=313,SNR=40
S22A 4UR Ranch, Cre 80.95 48 *e*P **P** 04 46 35.4 +0.8
comp=Z,60nm,1.1s
S22A LR LR
comp=Z,6µm,22.0s
W18A Petrified Fore 80.97 52 P **P** 04 46 34.2 -0.3
baz=312
W18A Petrified Fore 80.97 52 *e*P **P** 04 46 36.2 +1.7
comp=Z,45nm,1.0s
W18A LR LR
comp=Z,6µm,21.0s
EDI Edinburgh 80.97 341⇑ *e*P **P** 04 46 33.5 -0.4
EDI AMB AMB 04 46 35.1
comp=Z,184nm,4.3s
EDI AMS AMS 05 26 24.0
comp=Z,9µm,19.2s
GAZI Gazipasa 81.00 310⇑ *i*P **P** 04 46 32.4 -2.0
KNL Bal¯kesir 81.01 315⇑ *i*P **P** 04 46 33.5 -0.9
EAB Aberfoyle 81.02 342⇑ *e*P **P** 04 46 34.4 +0.3
I31A Royce, Wessing 81.03 39 P **P** 04 46 34.0 -0.5
baz=317
J30A Dallas 81.06 40 P **P** 04 46 34.2 -0.5
baz=316,SNR=12
KESN Edirne-Kesan 81.09 316⇑ *i*P **P** 04 46 35.2 -0.1
214A Organ Pipe Nat 81.09 56 P **P** 04 46 34.1 -0.9
baz=311
214A Organ Pipe Nat 81.09 56 *e*P **P** 04 46 36.2 +1.2
comp=Z,238nm,1.2s
Q24A Divide 81.09 47 P **P** 04 46 35.1 -0.2
baz=314,SNR=14
Q24A Divide 81.09 47 *e*P **P** 04 46 35.9 +0.6
comp=Z,96nm,1.6s
E35A Pequot Lakes 81.12 36 P **P** 04 46 34.0 -0.8
baz=319,SNR=14
CONA Conrad Observa 81.13 327 *i*P **P** 04 46 35.6 +0.6
comp=Z,105nm,0.8s,SNR=52
KHC Kasperske Hory 81.15 329⇑ *i*P **P** 04 46 35.4 +0.4
KHC *e*PCP **PcP** 04 46 42.1 +0.9
KHC *e*S **S** 04 56 43.0 +1.7
KHC *e*XS **ScS** 04 56 59.7 +0.3
KHC AMS AMS 05 25 00.0
comp=Z,42µm,18.7s
KHC Kasperske Hory 81.15 329 *e*P **P** 04 46 35.5 +0.4
KHC pmax pmax
comp=Z,37nm,0.8s
KHC Kasperske Hory 81.15 329 *e*P **P** 04 46 35.5 +0.4
comp=Z,37nm,0.8s
KHC LR LR
comp=Z,17µm,19.0s
KDZ Kurdzhali 81.18 317 *e*P **P** 04 46 36.7 +1.4
DEMI Demirci 81.19 314⇑ *i*P **P** 04 46 34.9 -0.6
PGB Panagyurishte 81.20 319 *e*P **P** 04 46 36.0 +0.6
G33A Ortonville 81.20 38 P **P** 04 46 35.1 -0.2
baz=318,SNR=32
D36A Goodland 81.21 34 P **P** 04 46 34.6 -0.7
baz=320,SNR=7.4
C37A Embarrass 81.22 34 P **P** 04 46 34.7 -0.6
baz=320,SNR=15
CSS Mathiatis 81.22 308 P **P** 04 46 35.8 +0.2
CSS Mathiatis 81.22 308 P **P** 04 46 36.0 +0.4
CSS Mathiatis 81.22 308 *e*P **P** 04 46 35.9 +0.2
comp=Z,26nm,0.8s
CSS LR LR
comp=Z,2µm,22.0s
X18A Snowflake 81.22 53 *e*P **P** 04 46 36.5 +0.6
comp=Z,78nm,1.4s
X18A LR LR
comp=Z,6µm,20.0s
H32A Carlson Farm, 81.23 39 P **P** 04 46 35.0 -0.5
baz=317,SNR=12
F34A Alexandria 81.31 36 P **P** 04 46 35.4 -0.5
baz=319,SNR=10.0
GEC2 GERESS Array S 81.33 328 *e*P **P** 04 46 36.1 +0.1
GEC2 pmax pmax
comp=Z,260nm,1.8s
GEC2 GERESS Array S 81.33 328 *e*P **P** 04 46 36.1 +0.1
comp=Z,257nm,1.8s
GEC2 LR LR
comp=Z,36µm,20.0s
GERES GERESS Array B 81.33 328 P **P** 04 46 36.0 +0.1
comp=Z,33nm,0.7s,baz=35,slow=4.9,SNR=105
GERES PKKPbc **PKKPbc** 05 05 09.9 +0.3
comp=Z,0.9nm,0.6s,baz=225,slow=3.0,SNR=6.9
GERES LR LR 05 25 37.9
comp=Z,35µm,20.1s,baz=26,slow=38
BALY Balya 81.33 315⇑ *i*P **P** 04 46 35.2 -0.9
GEA0 GERESS Array S 81.33 328 *e*P **P** 04 46 35.3 -0.7
EYMN Ely 81.34 33 P **P** 04 46 35.7 -0.3
baz=321,SNR=14
EYMN Ely 81.34 33 *e*P **P** 04 46 35.5 -0.6
comp=Z,90nm,1.1s
EYMN LR LR
comp=Z,4µm,20.0s
ALN Alexandroupoli 81.38 316 P **P** 04 46 36.4 +0.1
PGBU Glenifferbraes 81.40 342⇑ *e*P **P** 04 46 36.5 +0.4
PGBU AMS AMS 05 26 49.9
comp=Z,9µm,18.6s
WTSB Winterswijk 81.40 334 *e*P **P** 04 46 36.0 -0.2
comp=Z,199nm,1.2s
H33A Prehn Over Nor 81.43 38 P **P** 04 46 36.3 -0.2
baz=318,SNR=48
ENEZ Enez 81.43 316 P **P** 04 46 36.9 +0.3
OGNE Ogallala 81.44 43 P **P** 04 46 36.6 -0.1
baz=315,SNR=11
OGNE Ogallala 81.44 43 *e*P **P** 04 46 37.6 +0.8
comp=Z,217nm,1.4s
OGNE LR LR
comp=Z,3µm,19.0s
J31A Geddes 81.47 40 P **P** 04 46 36.6 -0.2
baz=317,SNR=8.2
K30A Basset 81.47 41 P **P** 04 46 36.6 -0.3
baz=316,SNR=18
ESK Eskdalemuir 81.52 341 *e*P **P** 04 46 36.6 -0.2
ESK pmax pmax
comp=Z,191nm,1.6s
ESK Eskdalemuir 81.52 341 *e*P **P** 04 46 36.6 -0.2
comp=Z,191nm,1.6s
RZN Rozhen 81.53 318 *e*P **P** 04 46 37.3 0.0
G34A Benson 81.54 37 P **P** 04 46 36.9 -0.2
baz=318,SNR=34
D37A Cotton 81.55 34 P **P** 04 46 35.9 -1.2
baz=320,SNR=7.0
I32A Karley and Nic 81.56 39 P **P** 04 46 36.4 -0.9
baz=317,SNR=8.7
F35A Swanville 81.58 36 P **P** 04 46 36.6 -0.7
baz=319,SNR=12
KULA Kula-Manisa 81.59 313 P **P** 04 46 36.4 -1.2
TAU Tasmania Unive 81.59 176 PFAKE 04 46 50.0 +13
TAU LR LR
comp=Z,10µm,21.0s
C38A Sawbill Land, 81.61 33 P **P** 04 46 36.3 -1.2
baz=321,SNR=18
SZAC Souni 81.64 308 P **P** 04 46 38.6 +0.8
GRFO Grafenberg 81.64 330 *e*P **P** 04 46 38.3 +0.7
GRFO pmax pmax
comp=Z,210nm,1.1s
GRFO Grafenberg 81.64 330 *e*P **P** 04 46 38.3 +0.7
comp=Z,214nm,1.1s
GRFO LR LR
comp=Z,18µm,18.0s
KORT Korkueli 81.65 311⇑ *i*P **P** 04 46 36.7 -1.3
VTS Vitosha 81.66 319 P **P** 04 46 38.3 +0.3
VTS Vitosha 81.66 319⇑ *i*P **P** 04 46 38.6 +0.6
VTS Vitosha 81.66 319 *e*P **P** 04 46 38.3 +0.3
VTS pmax pmax
comp=Z,180nm,0.9s
VTS Vitosha 81.66 319 *e*P **P** 04 46 39.1 +1.1
VTS Vitosha 81.66 319 *e*P **P** 04 46 38.2 +0.3
comp=Z,177nm,0.9s
VTS LR LR
comp=Z,28µm,18.0s
MANT Manisa 81.66 313⇑ *i*P **P** 04 46 36.6 -1.6
E36A McGregor 81.67 35 P **P** 04 46 37.1 -0.7
baz=320,SNR=29
BHH Howats Hill 81.72 341⇑ *e*P **P** 04 46 38.0 +0.1
SDCO Great Sand Dun 81.72 48 P **P** 04 46 37.9 -0.7
baz=313,SNR=28
SDCO Great Sand Dun 81.72 48 *e*P **P** 04 46 39.1 +0.5
comp=Z,100nm,1.6s
SDCO LR LR
comp=Z,5µm,21.0s
AKMC Akamas 81.79 309 P **P** 04 46 38.7 +0.1
ARSA Arzberg 81.80 326 *i*P **P** 04 46 39.0 +0.5
comp=Z,50nm,0.8s,SNR=28
BEHE Becsehely 81.85 325⇑ *e*P **P** 04 46 39.4 +0.7
J32A Parkston 81.86 40 P **P** 04 46 38.4 -0.4
baz=317,SNR=5.2
MOA Molln 81.87 327 *i*P **P** 04 46 39.3 +0.4
comp=Z,71nm,1.3s,SNR=28
I33A Coleman 81.87 39 P **P** 04 46 38.2 -0.7
baz=318,SNR=13
PPCY Paphos 81.88 309 P **P** 04 46 39.2 +0.2
H34A Spellman Lake, 81.91 38 P **P** 04 46 38.6 -0.5
baz=318,SNR=7.6
K31A O'Neill 81.95 41 P **P** 04 46 38.9 -0.5
baz=317,SNR=23
GOLH Golhisar 81.95 312⇑ *i*P **P** 04 46 38.8 -0.7
GADA Gvkgeada 81.96 316 P **P** 04 46 39.0 -0.4
SMTH Samothraki Isl 81.96 316 P **P** 04 46 38.9 -0.5
EZN Ezine 81.98 315 P **P** 04 46 39.4 -0.1
E37A Wrenshall 82.02 34 P **P** 04 46 38.6 -0.9
baz=320
C39A Grand Marais 82.02 32 P **P** 04 46 38.7 -0.9
baz=322
F36A Milaca 82.05 36 P **P** 04 46 38.4 -1.3
baz=320,SNR=7.5
GMK Mull of Kintyr 82.09 342⇑ *e*P **P** 04 46 40.2 +0.4
G35A Watkins 82.10 36 P **P** 04 46 39.7 -0.3
baz=319,SNR=8.0
MMB Musomiste 82.11 318 *e*P **P** 04 46 41.1 +0.9
BOZC Bozcaada 82.12 316⇑ *i*P **P** 04 46 39.6 -0.7
KAVA Kavala 82.13 317 P **P** 04 46 40.0 -0.2
AYVA Ayvalik 82.14 315⇑ *i*P **P** 04 46 40.0 -0.3
KESW Keswick, Cumbr 82.15 340⇑ *e*P **P** 04 46 40.5 +0.4
KESW AMS AMS 05 27 08.6
comp=Z,15µm,18.9s
DIVS Divibare 82.15 322 P **P** 04 46 40.3 -0.2
TUC Tucson 82.16 55 P **P** 04 46 41.0 +0.3
baz=311
TUC Tucson 82.16 55 *e*P **P** 04 46 41.1 +0.4
TUC pmax pmax
comp=Z,66nm,1.2s
TUC Tucson 82.16 55 *e*P **P** 04 46 41.1 +0.4
comp=Z,66nm,1.2s
TUC LR LR
comp=Z,6µm,21.0s
ECSD EROS Data Cent 82.20 39 P **P** 04 46 40.4 -0.3
baz=318,SNR=47
ECSD EROS Data Cent 82.20 39 *e*P **P** 04 46 40.2 -0.4
comp=Z,111nm,1.4s
ECSD LR LR
comp=Z,6µm,22.0s
NVR Nevrokopi 82.22 318 P **P** 04 46 41.3 +0.5
L31A Butterfield Fa 82.23 41 P **P** 04 46 40.6 -0.3
baz=317,SNR=28
KKB Krupnik 82.25 319 *e*P **P** 04 46 42.1 +1.2
GAL1 Galloway 82.31 341⇑ *e*P **P** 04 46 41.1 +0.2
GAL1 AMS AMS 05 27 16.2
comp=Z,5µm,18.8s
K32A Verdigre 82.31 40 P **P** 04 46 40.6 -0.7
baz=317
H35A Sunnyside Ranc 82.33 37 P **P** 04 46 41.2 0.0
baz=319,SNR=68
J33A Davis 82.33 39 P **P** 04 46 40.8 -0.5
baz=318,SNR=9.7
I34A Hadley 82.33 38 P **P** 04 46 41.1 -0.3
baz=318
LMK Market Rasen 82.38 338⇑ *e*P **P** 04 46 41.2 -0.1
LMK AMB AMB 04 46 42.7
comp=Z,392nm,1.7s
LMK AMS AMS 05 26 17.8
comp=Z,19µm,22.0s
PRK Paraskevi 82.42 315 P **P** 04 46 41.5 -0.3
G36A St. Michael 82.42 36 P **P** 04 46 41.3 -0.5
baz=320,SNR=8.6
PERS Pernice 82.45 326⇑ *i*P **P** 04 46 42.1 +0.1
PERS *e*PP **PP** 04 49 53.6 +2.9
SOKA Soboth 82.46 326 *i*P **P** 04 46 42.4 +0.4
comp=Z,205nm,1.0s,SNR=68
KSCO Kaye Shedlock' 82.47 45 P **P** 04 46 41.3 -1.0
baz=315,SNR=10
KSCO Kaye Shedlock' 82.47 45 *e*P **P** 04 46 42.3 0.0
comp=Z,181nm,1.4s
SRS Serrai 82.52 318 P **P** 04 46 42.1 -0.3
LIA Limnos Island 82.55 316 P **P** 04 46 42.0 -0.5
AKAS Kas 82.61 311⇑ *i*P **P** 04 46 42.3 -0.8
FETY Fethiye 82.64 312 P **P** 04 46 42.9 -0.2
SIGR SIGRI 82.67 315 P **P** 04 46 42.7 -0.4
KSL Kastellorizon 82.68 311 P **P** 04 46 42.1 -1.1
HGN Heimansgroeve 82.71 334 *e*P **P** 04 46 42.8 -0.2
comp=Z,276nm,1.5s
HGN *e*PP PP 04 50 10.9 +18
HGN *e*S S 04 56 46.2 -11
WACR West Acre 82.75 337⇑ *e*P **P** 04 46 42.9 -0.3
WACR AMS AMS 05 26 26.3
comp=Z,24µm,21.2s
TURN Turunc 82.75 312⇑ *i*P **P** 04 46 45.0 +1.4
YER Yerkesik 82.76 312 P **P** 04 46 44.1 +0.4
M31A Lambtecht Ranc 82.76 42 P **P** 04 46 42.7 -0.9
baz=317,SNR=10
BEBN Eben Emael 82.77 334 P **P** 04 46 43.3 -0.1
T25A Trinidad 82.77 48 P **P** 04 46 43.4 -0.6
baz=314,SNR=31
T25A Trinidad 82.77 48 *e*P **P** 04 46 43.9 -0.1
comp=Z,47nm,0.9s
L32A Elgin 82.78 41 P **P** 04 46 43.0 -0.7
baz=317
HIZ Hauiti 82.78 155 PFAKE 04 47 00.0 +17
HIZ LR LR
comp=Z,8µm,21.0s
IDGL Inch Island, C 82.79 343⇑ *e*P **P** 04 46 43.8 +0.4
IDGL AMB AMB 04 46 45.8
comp=Z,369nm,4.6s
OBKA Obir 82.80 326 *i*P **P** 04 46 43.9 +0.1
comp=Z,63nm,0.9s,SNR=14
MEM Membach 82.81 333 P **P** 04 46 43.6 0.0
comp=Z,51nm,0.8s
K33A Hardington 82.84 40 P **P** 04 46 43.7 -0.3
baz=318,SNR=6.1
H36A Jessenland, He 82.84 37 P **P** 04 46 44.1 +0.2
baz=320,SNR=23
J34A Georgs 82.85 39 P **P** 04 46 43.4 -0.6
baz=318,SNR=6.5
KNT Kendrikon 82.85 318 P **P** 04 46 43.5 -0.6
URLA Izmir 82.86 314⇑ *i*P **P** 04 46 43.3 -0.9
SOH Sokhos 82.86 318 P **P** 04 46 44.0 -0.2
SPMN Marine on St. 82.86 36 P **P** 04 46 43.5 -0.5
baz=320,SNR=11
SPMN Marine on St. 82.86 36 *e*P **P** 04 46 43.5 -0.5
comp=Z,47nm,1.1s
SPMN LR LR
comp=Z,6µm,21.0s
KBA Koelnbreinsper 82.86 327 *i*P **P** 04 46 44.4 +0.2
comp=Z,77nm,1.0s,SNR=38
OUR Ouranopolis 82.88 317 P **P** 04 46 43.9 -0.3
I35A Creekview Farm 82.89 38 P **P** 04 46 43.7 -0.5
baz=319,SNR=10.0
VAY Valandovo 82.91 319 P **P** 04 46 44.6 +0.3
VAY Valandovo 82.91 319⇑ *i*P **P** 04 46 44.9 +0.6
DGB ¯zmir 82.92 314⇑ *i*P **P** 04 46 43.6 -0.8
CRES Cresnjev 82.93 325 *e*P **P** 04 46 44.2 -0.2
WIM Isle of Man 82.95 341⇑ *e*P **P** 04 46 44.4 +0.1
GCAM G?zelcaml? 82.96 313⇑ *i*P **P** 04 46 45.0 +0.4
SKO Skopje 83.01 320 P **P** 04 46 45.6 +0.7
SKO Skopje 83.01 320⇑ *i*P **P** 04 46 45.9 +1.0
PLE Pljevlja 83.02 322⇑ *i*P **P** 04 46 45.2 +0.2
L33A Hoskins 83.03 40 P **P** 04 46 44.1 -0.9
baz=318
LAZ Ladron 83.03 51 *e*P **P** 04 46 45.7 +0.3
LAZ *e*S **S** 04 57 05.8 +4.3
ANMO Albuquerque 83.07 50 P **P** 04 46 46.3 +0.7
baz=313
ANMO Albuquerque 83.07 50*c* *i*P **P** 04 46 45.7 +0.1
ANMO pmax pmax
comp=Z,21nm,1.1s
ANMO Albuquerque 83.07 50 *e*P **P** 04 46 46.2 +0.7
comp=Z,79nm,1.3s
ANMO LR LR
comp=Z,5µm,21.0s
MYKA Terra Mystica 83.09 327 *i*P **P** 04 46 45.0 -0.3
comp=Z,58nm,0.8s,SNR=19
IVA Berane 83.11 321⇑ *i*P **P** 04 46 45.7 +0.2
PLG Polygyros 83.14 317 P **P** 04 46 45.5 -0.1
BGNE Belgrade 83.14 41 P **P** 04 46 45.6 +0.1
baz=317,SNR=16
BGNE Belgrade 83.14 41 *e*P **P** 04 46 45.3 -0.3
comp=Z,202nm,0.9s
BGNE LR LR
comp=Z,6µm,22.0s
CHOS Chios island 83.14 315 P **P** 04 46 45.7 0.0
MXZ Matakaoa Point 83.15 152 PFAKE 04 47 00.0 +15
MXZ LR LR
comp=Z,8µm,21.0s
J35A Milford 83.15 38 P **P** 04 46 44.9 -0.7
baz=319,SNR=6.9
N31A Bailey Ranch, 83.15 42 P **P** 04 46 45.2 -0.5
baz=317
HORT Hortiatis 83.16 318 P **P** 04 46 44.9 -0.8
STU Stuttgart 83.17 331 *e*P **P** 04 46 45.5 0.0
STU pmax pmax
comp=Z,110nm,0.8s
STU Stuttgart 83.17 331 *e*P **P** 04 46 45.5 0.0
comp=Z,113nm,0.8s
STU LR LR
comp=Z,20µm,19.0s
LJU Ljubljana 83.17 326⇑ *e*P **P** 04 46 45.3 -0.3
LJU *e* 04 47 01.9
LJU *e*PP **PP** 04 49 59.6 +3.1
LJU *e* 04 50 15.4
LJU *e* 04 51 50.9
LJU *e*S **S** 04 56 59.2 -2.9

LJU *e* 04 57 19.6
LJU *e* 04 57 47.8
LJU *eSS* SS 05 02 43.1 +17
SMG Samos 83.18 314 P **P** 04 46 45.5 -0.3
GMM Mts of Mourne 83.19 342⇑ *eP* **P** 04 46 45.6 +0.1
THE Thessaloniki 83.20 318 P **P** 04 46 45.2 -0.6
BCLA Clavier 83.22 334 P **P** 04 46 45.6 -0.1
UCC Uccle 83.22 334 P **P** 04 46 46.0 +0.3
I36A Fitzsimmons Fa 83.22 37 P **P** 04 46 45.9 0.0
baz=320,SNR=13
K34A Le Mars 83.23 39 P **P** 04 46 45.3 -0.7
baz=318,SNR=19
STNC Stoke 83.24 339 *eP* **P** 04 46 46.1 +0.3
STNC AMB AMB 04 46 49.8
comp=Z,315nm,3.6s
STNC AMS AMS 05 27 06.5
comp=Z,17μm,21.8s
GRG Griva 83.26 318 P **P** 04 46 45.8 -0.4
BOJS Bojanci 83.27 325⇑ *eP* **P** 04 46 46.0 -0.2
BOJS *ePP* **PP** 04 49 60.0 +2.6
BOJS *e* 04 50 14.2
BDRM Kayabasi 83.29 313⇑ *iP* **P** 04 46 46.2 -0.2
PVY Plav 83.29 321⇑ *iP* **P** 04 46 46.4 0.0
CWF Charnwood Fore 83.30 339⇑ *eP* **P** 04 46 45.7 -0.4
CWF AMS AMS 05 26 44.5
comp=Z,17μm,22.3s
CWF Charnwood Fore 83.30 339 *eP* **P** 04 46 46.4 +0.3
comp=Z,86nm,0.9s
CWF LR LR
comp=Z,24μm,22.0s
H37A Dierke Farm, C 83.31 36 P **P** 04 46 45.9 -0.4
baz=320,SNR=15
URZ Urewera 83.33 153 PFAKE 04 47 00.0 +14
URZ LR LR
comp=Z,9μm,22.0s
PAIG Paliouri 83.34 317 P **P** 04 46 46.1 -0.4
UPM Unac-Piva 83.34 322⇑ *iP* **P** 04 46 46.4 -0.4
BODT Bodrum 83.37 313 P **P** 04 46 46.6 -0.2
Y22D IRIS PASSCAL I 83.39 51 P **P** 04 46 47.8 +0.7
baz=313
Y22D IRIS PASSCAL I 83.39 51 *eP* **P** 04 46 49.5 +2.4
comp=Z,135nm,1.0s
Y22D LR LR
comp=Z,8μm,22.0s
WATA Walderalm 83.39 329 *i P* **P** 04 46 47.1 +0.2
comp=Z,46nm,0.7s,SNR=26
LPM Los Pinos Moun 83.40 51 *eP* **P** 04 46 47.9 +0.6
SCHQ Schefferville 83.42 16 P **P** 04 46 46.3 -0.4
comp=Z,52nm,0.9s,baz=351,slow=5.4,SNR=36
SCHQ LR LR 05 27 38.7
comp=Z,2μm,20.4s,baz=343,slow=38
SCHQ Schefferville 83.42 16 *eP* **P** 04 46 46.6 -0.1
comp=Z,51nm,0.8s
WTTA Wattenberg 83.42 328 *i P* **P** 04 46 47.3 +0.2
comp=Z,64nm,1.2s,SNR=23
O31A Woolen Ranch, 83.44 43 P **P** 04 46 46.3 -0.9
baz=317,SNR=7.9
ABTA Abfaltersbach 83.48 328 *i P* **P** 04 46 46.6 -0.6
comp=Z,83nm,1.3s,SNR=20
ARG Arkhangelos 83.48 312 P **P** 04 46 47.6 +0.2
SNF Seneffe 83.49 334 P **P** 04 46 47.0 -0.2
M33A Taylor Creek F 83.51 40 P **P** 04 46 46.3 -1.1
baz=318,SNR=8.5
BNM Barren Site 83.51 51 *eP* **P** 04 46 48.4 +0.5
I37A Lemond, Waseca 83.52 37 P **P** 04 46 47.5 0.0
baz=320,SNR=30
LANF Langenberg 83.52 332⇑ *eP* **P** 04 46 47.5 +0.1
N32A Stulken Farm, 83.54 42 P **P** 04 46 46.5 -1.1
baz=317
WPM1 Penmaenmawr 83.55 340⇑ *eP* **P** 04 46 47.5 +0.1
WLF Walferdange 83.55 333 P **P** 04 46 47.9 +0.5
comp=Z,143nm,2.6s
WLF Walferdange 83.55 333 *eP* **P** 04 46 48.0 +0.5
WLF pmax pmax
comp=Z,350nm,1.9s
WLF Walferdange 83.55 333 *eP* **P** 04 46 48.0 +0.5
comp=Z,346nm,1.9s
WLF LR LR
comp=Z,24μm,22.0s
MOTA Moosalm 83.58 329 *i P* **P** 04 46 48.0 +0.2
comp=Z,112nm,0.9s,SNR=87
WPS Cemaes, Angles 83.58 341⇑ *eP* **P** 04 46 47.3 -0.2
WPS AMB AMB 04 46 48.9
comp=Z,229nm,4.1s
WPS AMS AMS 05 27 52.5
comp=Z,13μm,19.5s
J36A Seneca 1, Swea 83.59 38 P **P** 04 46 47.3 -0.5
baz=319,SNR=13
NKY Niksic 83.59 322⇑ *iP* **P** 04 46 47.8 -0.2
RETA Reutte 83.60 329 *i P* **P** 04 46 48.4 +0.5
comp=Z,208nm,1.0s,SNR=52
K35A Storm Lake 83.62 39 P **P** 04 46 47.3 -0.7
baz=319,SNR=6.8
L34A Svendsen Farm, 83.62 40 P **P** 04 46 47.3 -0.7
baz=318,SNR=13
NKME Niksic 83.65 322⇑ *iP* **P** 04 46 47.9 -0.3
FOEL Foel Wylfa 83.69 340⇑ *eP* **P** 04 46 48.5 +0.3
FOEL AMB AMB 04 46 49.9
comp=Z,360nm,2.6s
FOEL AMS AMS 05 27 52.6
comp=Z,17μm,21.0s
YLL Llanberis 83.73 340⇑ *eP* **P** 04 46 48.8 +0.5
DOU Dourbes 83.73 334 P **P** 04 46 48.2 -0.2
comp=Z,57nm,2.4s
BRY Bratogost 83.75 322⇑ *iP* **P** 04 46 48.2 -0.6
PDG Podgorica 83.75 321 P **P** 04 46 48.7 +0.1
PDG Podgorica 83.75 321⇑ *iP* **P** 04 46 49.0 +0.4
TTG Podgorica 83.75 321⇑ *iP* **P** 04 46 48.6 0.0
NIS1 Nisyros Isl. 83.76 313 P **P** 04 46 48.5 -0.3
TRI Trieste 83.77 326 *eP* **P** 04 46 48.2 -0.4
TRI pmax pmax
comp=Z,80nm,0.8s
TRI Trieste 83.77 326 *eP* **P** 04 46 48.2 -0.4
comp=Z,80nm,0.8s
TRI LR LR
comp=Z,30μm,20.0s
AOS Alonnisos 83.77 316 P **P** 04 46 48.7 -0.1
NISR Nisiros 83.78 313 P **P** 04 46 48.4 -0.5
COWI Conover 83.79 33 *eP* **P** 04 46 48.1 -0.8
comp=Z,54nm,1.2s
COWI LR LR
comp=Z,4μm,21.0s
UDBI Udbina 83.80 324 P **P** 04 46 50.8 +1.8
CEME Cevo 83.83 321⇑ *iP* **P** 04 46 48.8 -0.3
LIT Litokhoron 83.84 318 P **P** 04 46 47.5 -1.7
LLW Llanuwchllyn 83.85 340⇑ *eP* **P** 04 46 48.4 -0.5
BFO Black Forest 83.86 331 *eP* **P** 04 46 49.1 0.0
BFO pmax pmax
comp=Z,300nm,1.4s
BFO Black Forest 83.86 331 *eP* **P** 04 46 49.1 0.0
comp=Z,296nm,1.4s
BFO LR LR
comp=Z,18μm,19.0s
M34A Aspy Farms, Fr 83.87 40 P **P** 04 46 48.6 -0.7
baz=318,SNR=7.5
121A Cookes Peak, D 83.90 53 P **P** 04 46 50.4 +0.6
baz=313,SNR=18
121A Cookes Peak, D 83.90 53 *eP* **P** 04 46 50.4 +0.6
comp=Z,89nm,1.1s
O32A Brockman Farm, 83.91 42 P **P** 04 46 48.2 -1.4
baz=317
FNA Florina 83.92 319 P **P** 04 46 49.0 -0.6
BKZ Black Stump Fm 83.92 154 PFAKE 04 47 00.0 +11
BKZ LR LR
comp=Z,18μm,21.0s
L35A Bielow Farm, R 83.93 39 P **P** 04 46 48.9 -0.7
baz=319,SNR=5.1
HLM1 Long Mynd 83.94 339⇑ *eP* **P** 04 46 49.7 +0.3
HLM1 AMB AMB 04 46 50.9
comp=Z,235nm,4.1s
HLM1 AMS AMS 05 26 54.4
comp=Z,15μm,22.1s
ELSH Elham, Standar 83.96 336 *eP* **P** 04 46 49.5 0.0
ELSH AMS AMS 05 28 19.7
comp=Z,26μm,18.4s
OHR Ohrid 83.97 319⇑ *iP* **P** 04 46 49.9 +0.1
DRME Dracevica, Mon 83.97 321⇑ *iP* **P** 04 46 49.7 -0.1
J37A Redenius Farm, 83.98 37 P **P** 04 46 48.9 -0.9
baz=320,SNR=25
FETA Feichten 83.99 329 *i P* **P** 04 46 50.2 +0.2
comp=Z,101nm,1.0s,SNR=82
I38A Scanlan Farm, 83.99 36 P **P** 04 46 49.1 -0.7
baz=321,SNR=18
N33A J Bar K, Exete 83.99 41 P **P** 04 46 48.8 -1.1
baz=318

SKIA Skiathos 84.00 317 P **P** 04 46 49.2 -0.8
XOR Xorichti 84.00 317 P **P** 04 46 49.2 -0.8
NEO Neokhori 84.03 317 P **P** 04 46 49.3 -0.9
BUM Brajici-Budva 84.03 321⇑ *iP* **P** 04 46 49.8 -0.4
KZN Kozani 84.06 318 P **P** 04 46 49.2 -1.2
K36A Gilmore City 84.06 38 P **P** 04 46 49.7 -0.5
baz=319,SNR=16
FYTO Fytoko, Volos 84.11 317 P **P** 04 46 49.8 -0.7
ULC Ulcinj 84.11 321⇑ *iP* **P** 04 46 50.5 0.0
HCY Herceg Novi 84.11 322⇑ *iP* **P** 04 46 50.0 -0.5
DAVA Damuels 84.11 329 *i PcP* **P** 04 46 51.0 +0.3
comp=Z,194nm,1.0s,SNR=96
SSW Stow on the Wo 84.14 338⇑ *eP* **P** 04 46 50.7 +0.3
CBKS Cedar Bluff 84.19 44 P **P** 04 46 50.0 -1.0
baz=316
CBKS Cedar Bluff 84.19 44 *eP* **P** 04 46 51.3 +0.3
CBKS pmax pmax
comp=Z,81nm,1.1s
CBKS Cedar Bluff 84.19 44 *eP* **P** 04 46 51.3 +0.3
comp=Z,80nm,1.1s
CBKS LR LR
comp=Z,3μm,22.0s
DSB Dublin 84.20 341 *eP* **P** 04 46 51.2 +0.5
comp=Z,113nm,1.0s
DSB LR LR
comp=Z,8μm,19.0s
P32A Huiting Farm, 84.21 43 P **P** 04 46 50.2 -0.9
baz=317,SNR=21
HSIG 84.22 57 *eP* **P** 04 46 52.4 +1.1
comp=Z,117nm,1.4s
HSIG LR LR
comp=Z,5μm,19.0s
TIR Tirane 84.26 320⇓ *iP* **P** 04 46 51.3 0.0
TIR Tirane 84.26 320 *eP* **P** 04 46 51.6 +0.3
TIR pmax pmax
comp=Z,160nm,0.9s
TIR Tirane 84.26 320 *eP* **P** 04 46 51.6 +0.3
comp=Z,155nm,0.9s
TIR LR LR
comp=Z,42μm,20.0s
EREA Eretria 84.29 316 P **P** 04 46 50.4 -1.1
M35A Neola 84.34 40 P **P** 04 46 51.4 -0.2
baz=319,SNR=18
SMIA Simia 84.34 317 P **P** 04 46 51.1 -0.7
K37A Belmond 84.36 38 P **P** 04 46 51.2 -0.5
baz=320,SNR=56
L36A Harm Buss Farm 84.36 39 P **P** 04 46 51.5 -0.3
baz=319
APE Apeiranthos 84.37 314 P **P** 04 46 50.8 -1.2
APE Apeiranthos 84.37 314 *c iP* **P** 04 46 50.6 -1.4
APE pmax pmax
comp=Z,109nm,0.8s
APE MLR MLR
comp=Z,9μm,20.0s
ECH Echery 84.39 332⇑ *eP* **P** 04 46 51.9 0.0
STRD Stroud 84.40 339⇑ *eP* **P** 04 46 52.0 +0.3
STRD AMB AMB 04 46 53.2
comp=Z,392nm,1.8s
STRD AMS AMS 05 27 30.0
comp=Z,16μm,21.7s
N34A Lincoln 84.40 41 P **P** 04 46 50.9 -1.1
baz=318,SNR=8.6
O33A Hebron 84.41 42 P **P** 04 46 51.1 -1.0
baz=318,SNR=13
MCH1 Michaelchurch 84.44 339⇑ *eP* **P** 04 46 52.1 +0.2
MCH1 AMB AMB 04 46 53.4
comp=Z,303nm,2.7s
MCH1 AMS AMS 05 27 07.6
comp=Z,18μm,22.0s
HMNX Herstmonceux 84.45 337⇑ *eP* **P** 04 46 52.7 +0.7
HMNX AMS AMS 05 26 45.8
comp=Z,23μm,22.9s
PENT Pentalofos 84.47 319 P **P** 04 46 51.8 -0.7
J38A Wedel Dairy, R 84.48 37 P **P** 04 46 51.6 -0.7
baz=321,SNR=28
THL Klokotos Trika 84.48 318 P **P** 04 46 50.8 -1.6
SRIG Santa Rosalia 84.48 59 PFAKE 04 47 00.0 +7.4
SRIG LR LR
comp=Z,9μm,21.0s
FUORN Ofenpass-Fuorn 84.50 329 *eP* **P** 04 46 53.2 +0.5
comp=Z,218nm,0.8s
FUORN LR LR
comp=Z,35nm,18.0s
KARP Karpathos 84.51 312 P **P** 04 46 52.2 -0.5
KARP Karpathos 84.51 312 *eP* **P** 04 46 52.4 -0.3
comp=Z,94nm,0.9s
KARP LR LR
comp=Z,4μm,20.0s
MONM Monmouth 84.52 339⇑ *eP* **P** 04 46 52.0 -0.3
MONM AMB AMB 04 46 53.8
comp=Z,332nm,3.2s
MONM AMS AMS 05 27 22.2
comp=Z,17μm,23.1s
SWN1 Swindon 84.53 338 *eP* **P** 04 46 52.1 -0.3
SWN1 AMB AMB 04 46 55.0
comp=Z,476nm,2.0s
SWN1 AMS AMS 05 27 44.0
comp=Z,20μm,21.9s
KPRO Kipourio 84.53 318 P **P** 04 46 51.6 -1.2
WOL Wolverton 84.53 338⇑ *eP* **P** 04 46 52.0 -0.4
WOL AMB AMB 04 46 53.6
comp=Z,271nm,2.8s
WOL AMS AMS 05 27 32.0
comp=Z,21μm,21.2s
ATAL Atalanti 84.58 317 P **P** 04 46 52.0 -0.9
PTL Penteli 84.59 316 P **P** 04 46 51.7 -1.3
OLDB Oldbury-Upon-S 84.61 339⇑ *eP* **P** 04 46 52.8 0.0
OLDB AMS AMS 05 27 36.7
comp=Z,18μm,22.3s
LKR Lokris 84.62 316 P **P** 04 46 52.2 -0.9
LPW Lampeter 84.62 340⇑ *eP* **P** 04 46 53.0 +0.1
LPW AMB AMB 04 46 55.1
comp=Z,258nm,1.7s
LPW AMS AMS 05 28 50.6
comp=Z,17μm,19.5s
ATHU Athens Univers 84.69 316 P **P** 04 46 51.9 -1.6
Q32A Meitler Ranch, 84.69 43 P **P** 04 46 52.7 -0.8
baz=317,SNR=8.4
HGH Gray Hill 84.70 339⇑ *eP* **P** 04 46 53.4 +0.1
MOF Molkenrain 84.71 331⇑ *eP* **P** 04 46 53.4 -0.1
AGG Agios Georgios 84.71 317 P **P** 04 46 51.9 -1.7
AGG Agios Georgios 84.71 317 *eP* **P** 04 46 52.4 -1.2
AGG pmax pmax
comp=Z,190nm,0.8s
AGG Agios Georgios 84.71 317 *eP* **P** 04 46 52.4 -1.2
comp=Z,192nm,0.8s
AGG LR LR
comp=Z,77μm,20.0s
ATH Athens Observa 84.73 316 P **P** 04 46 52.4 -1.3
BATH Bath 84.74 338⇑ *eP* **P** 04 46 53.1 -0.3
BATH AMS AMS 05 28 12.8
comp=Z,18μm,20.9s
IGLA Glengowla, Co 84.74 343⇑ *eP* **P** 04 46 53.1 -0.4
VLY Voula,Athens 84.77 315 P **P** 04 46 52.0 -1.9
M36A Felix, Anita 84.79 39 P **P** 04 46 53.5 -0.5
baz=319,SNR=23
L37A Phoenix Point, 84.79 38 P **P** 04 46 53.7 -0.3
baz=320,SNR=12
O34A Beatrice 84.79 41 P **P** 04 46 53.1 -0.9
baz=318,SNR=16
VILL Villia 84.81 316 P **P** 04 46 52.5 -1.7
N35A Tabor 84.82 40 P **P** 04 46 53.9 -0.2
baz=319,SNR=21
THEF They Montfort 84.82 332⇑ *eP* **P** 04 46 54.0 0.0
J39A Decorah 84.82 36 P **P** 04 46 52.9 -1.2
baz=321,SNR=38
P33A Williams Farm, 84.82 42 P **P** 04 46 53.3 -0.9
baz=318
K38A Parkersburg 84.86 37 P **P** 04 46 53.5 -0.7
baz=320,SNR=10
CMBO Columbo, Santo 84.86 314 P **P** 04 46 52.6 -1.8
SANT Santorini 84.91 313 P **P** 04 46 52.9 -1.7
SANT Santorini 84.91 313 *eP* **P** 04 46 53.0 -1.7
comp=Z,135nm,1.0s
SANT LR LR
comp=Z,10μm,20.0s
VAH Vaihoa 84.92 114 *eP* **P** 04 46 54.7 -0.1
comp=Z,141nm,1.3s
TUE Suetta 84.99 329 *eP* **P** 04 46 55.2 0.0
comp=Z,172nm,1.1s
TUE LR LR
comp=Z,23μm,20.0s
JAN Janina 85.02 318 P **P** 04 46 54.3 -0.9
R32A Long Quarter, 85.03 43 P **P** 04 46 54.3 -1.0
baz=317,SNR=8.9
DSF Desfina 85.05 317 P **P** 04 46 53.3 -2.1

EVR Evrytania 85.06 317 P **P** 04 46 54.6 -0.9
Q33A Connelly Farm, 85.07 43 P **P** 04 46 54.3 -1.2
baz=318,SNR=26
LTK Loutraki 85.10 316 P **P** 04 46 53.2 -2.4
THZ Tophouse 85.11 157 PFAKE 04 47 10.0 +15
THZ LR LR
comp=Z,9μm,20.0s
PPT Papeete 85.12 117 LR LR 05 17 39.7
comp=Z,12μm,22.0s,baz=283,slow=30
O35A Humboldt 85.13 41 P **P** 04 46 54.8 -0.8
baz=319,SNR=11
PPT2 Papeete2 85.14 117 *eP* **P** 04 46 56.2 +0.2
comp=Z,111nm,1.3s
PPT2 Papeete2 85.14 117 *eS* **S** 04 57 21.6 -0.8
comp=Z,5μm,25.5s
PPT2 *eSS* **SS** 05 02 58.5 +1.1
comp=Z,3μm,25.0s
PPT2 Papeete2 85.14 117 *e*LR LR 05 13 46.2
comp=Z,37μm,24.2s,baz=316
PPT2 Papeete2 85.14 117 *eT* T 06 20 53.3
comp=Z,81nm,0.3s
L38A Oak Wood Farm, 85.16 38 P **P** 04 46 55.3 -0.5
baz=320,SNR=21
PAE Paea 85.18 117 *eP* **P** 04 46 56.0 -0.1
comp=Z,29nm,1.3s
PAE Paea 85.18 117 *eT* T 06 20 55.9
comp=Z,12nm,0.3s
M37A Trindle Farm, 85.19 39 P **P** 04 46 55.3 -0.7
baz=320,SNR=18
N36A Muff Farm, Cla 85.19 40 P **P** 04 46 55.7 -0.2
baz=319,SNR=15
P34A Walnut Farm, R 85.19 42 P **P** 04 46 55.3 -0.7
baz=318,SNR=23
SCIA State Center 85.22 38 *eP* **P** 04 46 56.4 +0.3
comp=Z,132nm,1.0s
SCIA LR LR
comp=Z,7μm,20.0s
J40A Soldiers Grove 85.22 36 P **P** 04 46 55.1 -1.0
baz=322,SNR=17
K39A Oelwein 85.23 37 P **P** 04 46 55.2 -1.0
baz=321,SNR=15
ANX Ano Chora 85.24 317 P **P** 04 46 56.8 +0.4
THAL Thalero 85.25 316 P **P** 04 46 54.5 -1.8
SNZO South Karori 85.26 156 *eP* **P** 04 46 54.3 -1.6
comp=Z,660nm,1.6s
SNZO LR LR
comp=Z,19μm,22.0s
MHLO Agia Marina, M 85.27 314 P **P** 04 46 54.4 -2.0
KALE Kalithea 85.27 317 P **P** 04 46 55.1 -1.4
TIAR Tiarei 85.27 117 *eP* **P** 04 46 56.7 +0.1
comp=Z,23nm,0.9s
TIAR Tiarei 85.27 117 *eT* T 06 21 02.8
comp=Z,26nm,0.3s
DSL Palaion Diasel 85.28 318 P **P** 04 46 56.1 -0.4
SERG Sergoula 85.30 317 P **P** 04 46 58.2 +1.6
DID Didima 85.33 316 P **P** 04 46 53.9 -2.8
SGD Sagiada 85.37 319 P **P** 04 46 56.3 -0.6
IGT Igoumenitsa 85.38 319 P **P** 04 46 56.3 -0.6
S32A Newby Ranch, P 85.43 44 P **P** 04 46 56.8 -0.5
baz=317,SNR=12
PVO Paravola 85.43 317 P **P** 04 46 56.7 -0.5
LAKA Lakka 85.47 317 P **P** 04 46 56.2 -1.2
TVO Taravao 85.49 117 *eP* **P** 04 46 58.0 +0.3
comp=Z,80nm,1.4s
TVO Taravao 85.49 117 *eT* T 06 21 03.0
comp=Z,6.3nm,0.4s
R33A Olander Ranch, 85.50 43 P **P** 04 46 57.1 -0.5
baz=318,SNR=11
KEK Kerkira 85.52 319 P **P** 04 46 56.5 -1.1
KLV Kalavryta, Ach 85.52 317 P **P** 04 46 56.0 -1.7
J41A Loganville 85.57 35 P **P** 04 46 57.3 -0.5
baz=322,SNR=32
K40A Colesburg 85.58 36 P **P** 04 46 56.9 -1.0
baz=321,SNR=26
Q34A Chapman 85.60 42 P **P** 04 46 57.6 -0.5
baz=318,SNR=8.6
M38A Pleasantville 85.60 38 P **P** 04 46 57.7 -0.2
baz=320,SNR=17
N37A Lee Faris, Mou 85.61 39 P **P** 04 46 57.6 -0.5
baz=320,SNR=23
NPS Neapolis 85.61 313 P **P** 04 46 57.0 -1.2
P35A Duane Minner, 85.62 41 P **P** 04 46 57.2 -0.9
baz=319,SNR=12
L39A Vinton 85.62 37 P **P** 04 46 57.6 -0.5
baz=321,SNR=43
PDO Prodromos 85.63 318 P **P** 04 46 57.3 -0.9
KSU1 Kansas State U 85.64 42 P **P** 04 46 57.5 -0.7
baz=318,SNR=10
KSU1 Kansas State U 85.64 42 *eP* **P** 04 46 57.8 -0.5
comp=Z,47nm,0.9s
KSU1 LR LR
comp=Z,6μm,21.0s
O36A Bolckow 85.71 40 P **P** 04 46 58.3 -0.2
baz=319,SNR=22
HTL Hartland 85.75 339⇑ *eP* **P** 04 46 59.0 +0.5
HTL AMB AMB 04 47 00.1
comp=Z,144nm,3.1s
HTL AMS AMS 05 28 55.0
comp=Z,8μm,19.9s
LAST Lasithi 85.76 313 P **P** 04 46 58.5 -0.5
LAST Lasithi 85.76 313 *eP* **P** 04 46 59.5 +0.5
comp=Z,217nm,0.8s
LAST LR LR
comp=Z,7μm,20.0s
LKD2 Lefkada island 85.76 318 P **P** 04 46 57.3 -1.6
JFWS Jewell Farm 85.82 36 *eP* **P** 04 46 58.3 -0.8
JFWS pmax pmax
comp=Z,35nm,0.9s
JFWS Jewell Farm 85.82 36 *eP* **P** 04 46 58.2 -0.8
comp=Z,35nm,0.8s
JFWS LR LR
comp=Z,7μm,22.0s
T32A Huddler Ranch, 85.82 44 P **P** 04 46 58.8 -0.4
baz=317,SNR=19
AXS Araxos 85.82 317 P **P** 04 46 58.0 -1.1
DRO Drossia 85.83 317 P **P** 04 46 58.7 -0.5
LTZ Lake Taylor 85.86 158 PFAKE 04 47 10.0 +11
LTZ LR LR
comp=Z,12μm,22.0s
FOZ Fox Glacier 85.86 160 PFAKE 04 47 10.0 +11
FOZ LR LR
comp=Z,10μm,21.0s
RLS Riolos of Patr 85.88 317 P **P** 04 46 58.9 -0.5
SENIN Lac Senin/Sane 85.88 330 *eP* **P** 04 46 59.3 -0.3
comp=Z,84nm,0.8s
SENIN LR LR
comp=Z,20μm,19.0s
VLX Vlachokerasia 85.89 316 P **P** 04 46 58.1 -1.5
R34A Isabella, Hill 85.90 43 P **P** 04 46 58.9 -0.6
baz=318,SNR=9.4
KHZ Kahutara 85.90 157 PFAKE 04 47 10.0 +11
KHZ LR LR
comp=Z,10μm,19.0s
AMTX Amarillo 85.93 48 P **P** 04 46 59.8 0.0
baz=316
AMTX Amarillo 85.93 48 *eP* **P** 04 47 00.3 +0.4
comp=Z,65nm,0.8s
AMTX LR LR
comp=Z,4μm,20.0s
MSTX Muleshoe 85.94 49 P **P** 04 46 58.9 -1.0
baz=315,SNR=17
MSTX Muleshoe 85.94 49 *eP* **P** 04 46 59.9 -0.1
comp=Z,66nm,1.1s
MNTX Cornudas Mount 85.95 52 P **P** 04 46 59.6 -0.3
baz=314,SNR=24
MNTX Cornudas Mount 85.95 52 *eP* **P** 04 47 00.1 +0.1
comp=Z,72nm,1.5s
MNTX LR LR
comp=Z,3μm,20.0s
P36A Good Intent, A 85.97 41 P **P** 04 46 59.3 -0.5
baz=319,SNR=32
IDI Anoyia 86.00 313 P **P** 04 46 58.8 -1.4
IDI Anoyia 86.00 313 *eP* **P** 04 46 59.3 -0.9
comp=Z,80nm,0.7s
IDI LR LR
comp=Z,5μm,20.0s
S33A Kaszmaul Farm, 86.02 44 P **P** 04 47 00.1 -0.1
baz=318
K41A Shullsburg 86.03 36 P **P** 04 46 59.4 -0.7
baz=322,SNR=20
L40A Anamosa 86.04 37 P **P** 04 46 59.6 -0.6
baz=321,SNR=26
M39A Webster 86.04 38 P **P** 04 46 59.8 -0.4
baz=321,SNR=36
N38A Joes South For 86.06 39 P **P** 04 47 00.0 -0.3
baz=320,SNR=15
VLI Veliai 86.06 315 P **P** 04 46 57.2 -3.2

O37A Wolven Farm, M 86.09 40 P P 04 46 60.0 -0.5
baz=320,SNR=15
DYA Yadsworthy 86.10 339⇑ eP P 04 47 00.1 -0.1
DYA AMB AMB 04 47 01.4
comp=Z,239nm,1.7s
DYA AMS AMS 05 28 54.9
comp=Z,19µm,20.4s
DYA Yadsworthy 86.10 339 eP P 04 47 00.8 +0.5
comp=Z,194nm,1.3s
DYA LR LR
comp=Z,24µm,21.0s
Q35A Mercer Eighty, 86.11 42 P P 04 46 59.9 -0.7
baz=319,SNR=37
AMT Artemida-Makis 86.14 316 P P 04 46 59.9 -0.8
KFL Anninata 86.20 317 P P 04 47 00.1 -0.9
SIVA Sivas 86.24 313 P P 04 47 01.1 -0.2
TAOE Nuku Hiva Isla 86.24 104 eS S 04 57 31.8 -1.8
comp=Z,13µm,25.3s
TAOE eSS SS 05 03 16.9 +3.2
comp=Z,3µm,29.3s
TAOE Nuku Hiva Isla 86.24 104 eLR LR 05 14 09.3
comp=Z,43µm,32.5s,baz=318
TAOE Nuku Hiva Isla 86.24 104 eT T 06 22 15.0
comp=Z,72nm,0.2s
TAOE Nuku Hiva Isla 86.24 104 PFAKE 04 47 10.0 +8.4
TAOE LR LR
comp=Z,18µm,22.0s
VLS Valsamata 86.25 318 P P 04 47 00.6 -0.7
T33A Patterson Ranc 86.26 44 P P 04 47 00.7 -0.7
baz=318,SNR=8.9
ITM Ithomi 86.28 316 P P 04 46 59.6 -1.8
OXZ Oxford 86.29 158 PFAKE 04 47 10.0 +9.0
OXZ LR LR
comp=Z,13µm,22.0s
VAM Vamos 86.31 314 P P 04 47 00.5 -1.1
VAL Valentia 86.32 343 ⇓iP P 04 47 01.3 0.0
VAL Valentia 86.32 343 eS S 04 57 33.4 +0.4
KYTH Kithira 86.33 315 P P 04 46 59.9 -1.8
Q36A Arnold C. Orve 86.33 41 P P 04 47 01.0 -0.7
baz=319,SNR=9.5
N39A Derby Farms, D 86.35 38 P P 04 47 01.7 0.0
baz=321,SNR=21
U32A Winter Ranch, 86.36 45 P P 04 47 02.3 +0.4
baz=317
L41A Preston 86.36 36 P P 04 47 01.5 -0.3
baz=322,SNR=9.4
RPZ Rata Peaks 86.37 159 PFAKE 04 47 10.0 +8.6
RPZ LR LR
comp=Z,8µm,21.0s
MEH Mehetia 86.38 116 eT T 06 22 25.9
comp=Z,601nm,0.3s
IMMV Iera Moni Meta 86.39 314 P P 04 47 00.9 -1.1
S34A Willow Spring 86.41 43 P P 04 47 02.1 0.0
baz=318,SNR=13
P37A Lathrop 86.43 40 P P 04 47 01.6 -0.5
baz=320,SNR=32
R35A Emporia Munici 86.43 42 P P 04 47 02.3 +0.2
baz=319,SNR=26
VLC Villacollemand 86.45 327 PFAKE 04 47 10.0 +7.8
VLC LR LR
comp=Z,13µm,22.0s
O38A Galt 86.46 39 P P 04 47 02.0 -0.2
baz=320,SNR=6.7
ANKY Antikythira Is 86.48 314 P P 04 47 01.6 -0.8
ZKS Zakynthos 86.51 317 P P 04 47 01.0 -1.6
VLDQ Val d'Or 86.55 25 eP P 04 47 01.2 -1.3
comp=Z,98nm,1.0s
VLDQ LR LR
comp=Z,6µm,22.0s
AQU L'Aquila 86.57 324 eP P 04 47 03.5 +0.7
AQU pmax pmax
comp=Z,170nm,1.2s
AQU L'Aquila 86.57 324 eP P 04 47 03.5 +0.7
comp=Z,175nm,1.2s
AQU LR LR
comp=Z,52nm,18.0s
PYL PYLOS 86.58 316 P P 04 47 01.1 -1.8
JQE Queens East 86.65 337⇑ eP P 04 47 02.6 -0.3
JRS Jersey 86.67 337 eP P 04 47 03.1 0.0
CCA1 Carnmenellis 86.68 340⇑ eP P 04 47 03.2 +0.1
CCA1 AMB AMB 04 47 04.4
comp=Z,254nm,3.1s
CCA1 AMS AMS 05 30 11.3
comp=Z,13µm,19.6s
CRLZ Canterbury Las 86.69 158 PFAKE 04 47 10.0 +7.1
CRLZ LR LR
comp=Z,12µm,22.0s
GLMI Grayling 86.70 31 eP P 04 47 03.6 +0.3
comp=Z,174nm,0.9s
GLMI LR LR
comp=Z,4µm,20.0s
JSA Saint Aubin 86.70 337⇑ eP P 04 47 03.3 +0.1
JSA AMS AMS 05 29 00.9
comp=Z,18µm,20.9s
RSL Roselend 86.70 330⇑ eP P 04 47 03.2 -0.4
DAMY Dhamar 86.71 286 eP P 04 47 05.2 +0.9
comp=Z,522nm,2.0s
DAMY LR LR
comp=Z,7µm,19.0s
LBZ Lake Benmore 86.76 160 eP P 04 47 06.0 +2.8
comp=Z,165nm,1.4s
LBZ LR LR
comp=Z,14µm,22.0s
GVD Gavdhos 86.78 313 P P 04 47 03.2 -0.7
R36A Gordon, Harris 86.79 42 P P 04 47 03.4 -0.5
baz=319,SNR=22
P38A Dawn 86.81 40 P P 04 47 03.7 -0.2
baz=320,SNR=19
U33A Lingo Farm, Me 86.81 44 P P 04 47 04.1 0.0
baz=318,SNR=9.8
O39A Kirksville 86.81 39 P P 04 47 03.7 -0.3
baz=321,SNR=10.0
MQZ McQueen's Vall 86.81 158 PFAKE 04 47 20.0 +16
MQZ LR LR
comp=Z,11µm,22.0s
V32A Arapaho 86.82 45 P P 04 47 05.1 +0.9
baz=317,SNR=9.5
S35A Otter Creek Ra 86.85 43 P P 04 47 04.2 0.0
baz=318,SNR=54
WKZ Wanaka 86.86 161 PFAKE 04 47 20.0 +16
WKZ LR LR
comp=Z,19µm,22.0s
T34A McClaskey Farm 86.87 43 P P 04 47 04.1 -0.3
baz=318,SNR=16
Q37A Longview Farm, 86.91 41 P P 04 47 03.7 -0.8
baz=320,SNR=9.3
DCZ Deep Cove 87.01 163 PFAKE 04 47 20.0 +16
DCZ LR LR
comp=Z,5µm,21.0s
U34A Anderson Ranch 87.12 44 P P 04 47 05.0 -0.6
baz=318,SNR=15
U34A Anderson Ranch 87.12 44 eP P 04 47 06.2 +0.6
comp=Z,147nm,1.3s
U34A LR LR
comp=Z,4µm,21.0s
W32A Sentinel 87.14 46 P P 04 47 05.8 +0.1
baz=317,SNR=19
MLZ Mavora Lakes 87.15 162 PFAKE 04 47 20.0 +15
MLZ LR LR
comp=Z,6µm,19.0s
R37A Teagarden Farm 87.15 41 P P 04 47 04.9 -0.7
baz=319,SNR=18
V33A Lossen Ranch, 87.16 45 P P 04 47 05.3 -0.5
baz=318
S36A Lake Cedric, C 87.20 42 P P 04 47 05.9 0.0
baz=319,SNR=30
BNI Bardonecchia 87.22 330 PFAKE 04 47 20.0 +14
BNI LR LR
comp=Z,24µm,22.0s
O40A La Belle 87.24 38 P P 04 47 05.6 -0.5
baz=321,SNR=40
Q38A Cooks Store, C 87.27 40 P P 04 47 05.8 -0.5
baz=320,SNR=34
CUC Castrocucco 87.29 322 eP P 04 47 05.0 -1.3
comp=Z,38nm,1.3s
CUC LR LR
comp=Z,13µm,19.0s
P39B Salisbury 87.30 39 P P 04 47 06.2 -0.1
baz=321,SNR=5.7
GDM Grand'Maison 87.31 330⇑ eP P 04 47 06.6 +0.1
T35A Sooner Cattle 87.31 43 P P 04 47 06.3 -0.2
baz=318,SNR=15
GRN Grenoble 87.42 331⇑ eP P 04 47 06.9 0.0
TIP Timpagrande 87.45 321 P P 04 47 06.7 -0.5
TIP Timpagrande 87.45 321 eP P 04 47 07.2 -0.1
comp=Z,67nm,1.0s
TIP LR LR
comp=Z,24µm,19.0s
ODZ Otahua Downs 87.49 160 eP P 04 47 07.8 +1.1
comp=Z,197nm,1.8s
ODZ LR LR
comp=Z,12µm,22.0s
Q39A Willow Grove F 87.53 40 P P 04 47 07.3 -0.1
baz=320,SNR=83
T36A Boggs Farm, Ca 87.54 43 P P 04 47 07.7 +0.1
baz=319,SNR=31
W33A Caddo, Fort Co 87.55 45 P P 04 47 07.6 -0.1
baz=317,SNR=13
S37A Fort Scott 87.57 42 P P 04 47 07.3 -0.4
baz=319,SNR=40
V34A Guthrie 87.57 44 P P 04 47 07.4 -0.4
baz=318,SNR=13
V34A Guthrie 87.57 44 eP P 04 47 07.8 0.0
comp=Z,118nm,1.4s
V34A LR LR
comp=Z,4µm,22.0s
PLDF La Plantade 87.59 332 eP P 04 47 08.3 +0.6
WHZ Wether Hill Ro 87.60 162 PFAKE 04 47 20.0 +13
WHZ LR LR
comp=Z,6µm,22.0s
U35A Pawnee 87.60 44 P P 04 47 07.5 -0.4
baz=318,SNR=26
P40A Paris 87.61 39 P P 04 47 07.6 -0.3
baz=321,SNR=19
X32A Elmer 87.63 46 P P 04 47 07.5 -0.5
baz=317,SNR=21
WMOK Wichita Mounta 87.68 46 P P 04 47 07.8 -0.5
baz=317,SNR=23
WMOK Wichita Mounta 87.68 46 eP P 04 47 08.0 -0.3
WMOK pmax pmax
comp=Z,53nm,1.3s
WMOK Wichita Mounta 87.68 46 eP P 04 47 08.0 -0.3
comp=Z,53nm,1.4s
WMOK LR LR
comp=Z,4µm,21.0s
AGO Saint Agoulin 87.69 333⇑ eP P 04 47 08.9 +0.7
R38A Fenwick Farm, 87.72 41 P P 04 47 07.2 -1.1
baz=320,SNR=22
O41A Passleys Farm, 87.72 38 P P 04 47 07.8 -0.6
baz=322,SNR=29
SSB Saint Sauveur 87.84 331⇑ eP P 04 47 08.8 -0.1
SSB Saint Sauveur 87.84 331 eP P 04 47 08.9 0.0
SSB pmax pmax
comp=Z,150nm,1.7s
SSB Saint Sauveur 87.84 331 eP P 04 47 08.9 0.0
comp=Z,150nm,1.7s
SSB LR LR
comp=Z,20µm,19.0s
W34A Bridge Creek, 87.88 45 P P 04 47 09.3 +0.1
baz=318,SNR=7.7
W34A Bridge Creek, 87.88 45 eP P 04 47 10.4 +1.1
comp=Z,148nm,1.5s
W34A LR LR
comp=Z,4µm,20.0s
LPIG La Paz 87.91 61 P P 04 47 10.4 +0.9
comp=Z,11nm,0.5s,baz=45,slow=8.6,SNR=2.0
LPIG LR LR 05 20 42.9
comp=Z,5µm,20.2s,baz=312,slow=32
P41A Barry, Barry 87.98 38 P P 04 47 09.6 0.0
baz=322,SNR=14
X33A Lawton 87.98 46 P P 04 47 09.4 -0.3
baz=317,SNR=8.5
PYM Petit Puy Mans 88.00 333⇑ eP P 04 47 10.3 +0.6
V35A Meyer Ranch, C 88.00 44 P P 04 47 09.0 -0.8
baz=318,SNR=6.5
T37A Cheneyville 18 88.00 42 P P 04 47 09.5 -0.2
baz=319,SNR=18
Q40A Laux Farm, Aux 88.01 39 P P 04 47 09.6 -0.1
baz=321,SNR=29
O42A Bath 88.03 37 P P 04 47 09.3 -0.6
baz=322
R39A Chumby, Stover 88.06 40 P P 04 47 09.6 -0.4
baz=320,SNR=56
HDIL Hopedale 88.12 36 P P 04 47 09.9 -0.3
baz=323,SNR=19
HDIL Hopedale 88.12 36 eP P 04 47 10.1 -0.1
comp=Z,103nm,0.8s
HDIL LR LR
comp=Z,5µm,20.0s
U36A Oologah 88.12 43 P P 04 47 09.8 -0.5
baz=319,SNR=9.1
S38A Stockton 88.14 41 P P 04 47 09.6 -0.9
baz=320,SNR=17
Y33A Hilltop Ranch, 88.30 46 P P 04 47 10.9 -0.3
baz=317,SNR=8.8
X34A Smith Ranch, M 88.31 45 P P 04 47 11.5 +0.2
baz=318,SNR=10
LBL Lubilhac 88.36 332 eP P 04 47 12.1 +0.7
P42A Winchester 88.39 38 P P 04 47 11.3 -0.3
baz=322,SNR=31
S39A Bolivar 88.39 41 P P 04 47 10.6 -1.0
baz=320,SNR=42
T38A Diamond 88.39 42 P P 04 47 11.1 -0.5
baz=320,SNR=45
W35A Tecumseh 88.43 45 P P 04 47 11.8 -0.1
baz=318,SNR=11
SLBS Sierra La Lagu 88.44 61 PFAKE 04 47 20.0 +7.9
SLBS LR LR
comp=Z,6µm,20.0s
U37A Salina 88.44 43 P P 04 47 11.6 -0.3
baz=319,SNR=14
TUL1 Leonard 88.45 43 P P 04 47 11.8 -0.1
baz=319,SNR=13
TUL1 Leonard 88.45 43 eP P 04 47 12.3 +0.4
comp=Z,47nm,1.0s
TUL1 LR LR
comp=Z,4µm,21.0s
R40A Maddies Statio 88.46 40 P P 04 47 11.3 -0.6
baz=321,SNR=60
V36A Jenks 88.46 44 P P 04 47 12.1 +0.1
baz=319,SNR=12
FRNF Fournols 88.47 333⇑ eP P 04 47 13.6 +1.7
CEL Celeste 88.59 320 eP P 04 47 11.9 -0.7
comp=Z,121nm,0.8s
CEL LR LR
comp=Z,23µm,21.0s
TX31 Lajitas Ar. Si 88.66 53 eP P 04 47 13.1 0.0
TXAR Lajitas Array 88.66 53 P P 04 47 13.1 -0.1
comp=Z,8.4nm,0.6s,baz=298,slow=3.4,SNR=114
TXAR PKKPbc PKKPbc 05 04 53.5 +1.3
comp=Z,0.7nm,0.7s,baz=144,slow=5.2,SNR=7.2
TXAR LR LR 05 22 09.3
comp=Z,4µm,20.7s,baz=0.0,slow=32
TXAR Lajitas Array 88.66 53 P P 04 47 13.1 -0.1
TXAR pmax pmax
comp=Z,9.0nm,0.6s
ABTX Abilene, Hawle 88.73 48 P P 04 47 13.4 +0.1
baz=317,SNR=9.7
ABTX Abilene, Hawle 88.73 48 eP P 04 47 13.4 +0.1
comp=Z,67nm,1.1s
ABTX LR LR
comp=Z,4µm,22.0s
Z33A Whitaker Ranch 88.75 47 P P 04 47 13.0 -0.4
baz=317,SNR=8.7
W36A Wetumka 88.79 44 P P 04 47 13.5 -0.1
baz=319,SNR=11
U38A Gravette 88.80 42 P P 04 47 13.1 -0.5
baz=320,SNR=15
V37A Hulbert 88.82 43 P P 04 47 13.3 -0.4
baz=319,SNR=28
Y34A Reagan Ranch, 88.83 46 P P 04 47 13.7 0.0
baz=318,SNR=7.0
Q42A Golden Eagle 88.83 38 P P 04 47 13.6 0.0
baz=322,SNR=11
SADO Sadowa 88.85 28 eP P 04 47 12.9 -0.7
comp=Z,33nm,1.1s
SADO LR LR
comp=Z,4µm,20.0s
T39A Clever 88.87 41 P P 04 47 13.0 -0.9
baz=320,SNR=15
S40A Lebanon 88.88 40 P P 04 47 13.2 -0.7
baz=321,SNR=37
X35A Drake 88.94 45 P P 04 47 14.0 -0.2
baz=318,SNR=17
HPIG 89.06 56 PFAKE 04 47 30.0 +15
HPIG LR LR
comp=Z,7µm,22.0s
TBI Tubuai 89.15 121 ePP PP 04 50 48.1 +1.9
comp=Z,646nm,28.5s
TBI eS S 04 58 00.0 -0.7
comp=Z,5µm,25.2s
TBI eSS SS 05 04 01.9 +6.0
comp=Z,2µm,31.2s
TBI Tubuai 89.15 121 eLR LR 05 15 08.4
comp=Z,20µm,34.0s,baz=318
TBI Tubuai 89.15 121 eT T 06 25 52.9
comp=Z,420nm,0.3s
HHAR Hobbs 89.15 42 eP P 04 47 14.8 -0.4
comp=Z,54nm,1.2s
HHAR LR LR
comp=Z,6µm,22.0s
X36A Centrahoma 89.15 45 P P 04 47 15.2 -0.1
baz=319,SNR=16
TRQ Mont Tremblant 89.16 24 eP P 04 47 14.7 -0.4
133A Hamilton Ranch 89.16 47 P P 04 47 15.3 -0.1
baz=317,SNR=9.1
Z34A Collier Ranch, 89.17 46 P P 04 47 15.0 -0.4
baz=318,SNR=8.8
AAM Ann Arbor 89.17 32 eP P 04 47 15.6 +0.4
AAM pmax pmax
comp=Z,64nm,0.8s
AAM Ann Arbor 89.17 32 eP P 04 47 15.6 +0.4
comp=Z,64nm,0.8s
AAM LR LR
comp=Z,5µm,20.0s
Q43A New Douglas 89.20 38 P P 04 47 15.2 -0.1
baz=322,SNR=10
T40A Mansfield 89.22 41 P P 04 47 14.8 -0.7
baz=321,SNR=44
V38A Canehill 89.22 43 P P 04 47 15.0 -0.6
baz=320,SNR=42
W37B Quinton 89.22 44 P P 04 47 15.8 +0.2
baz=319,SNR=15
LMQ La Malbaie 89.24 21 eP P 04 47 15.2 -0.2
LMQ LR LR
comp=Z,6µm,22.0s
SFIN Lafayette 89.26 35 P P 04 47 15.5 -0.1
baz=324,SNR=22
SFIN Lafayette 89.26 35 eP P 04 47 15.5 -0.1
comp=Z,69nm,0.9s
SFIN LR LR
comp=Z,5µm,21.0s
S41A Jillco Farms, 89.27 40 P P 04 47 15.4 -0.3
baz=321,SNR=31
Y35A Marietta 89.27 45 P P 04 47 15.3 -0.5
baz=318
U39A Green Forest 89.31 42 P P 04 47 15.7 -0.3
baz=320,SNR=72
PLVO Plevna 89.35 26 eP P 04 47 15.6 -0.3
comp=Z,44nm,0.9s
PLVO LR LR
comp=Z,6µm,20.0s
Q44A Meyer Farm, Va 89.56 37 P P 04 47 17.0 0.0
baz=323,SNR=7.8
Z35A Perchaven, San 89.57 46 P P 04 47 16.9 -0.3
baz=318,SNR=14
233A Rising Star 89.60 48 P P 04 47 17.7 +0.2
baz=317,SNR=21
V39A Pettigrew 89.64 42 P P 04 47 17.0 -0.6
baz=320,SNR=38
U40A Yellville 89.66 41 P P 04 47 16.9 -0.7
baz=321,SNR=77
134A White-Moore Ra 89.66 47 P P 04 47 17.6 0.0
baz=318,SNR=7.8
X37A Clayton 89.67 44 P P 04 47 17.6 -0.1
baz=319,SNR=12
T41A Mountain View 89.68 40 P P 04 47 17.1 -0.6
baz=321,SNR=43
Y36A Durant 89.69 45 P P 04 47 17.2 -0.5
baz=319,SNR=14
W38A Poteau 89.77 43 P P 04 47 17.9 -0.2
baz=320,SNR=17
X38A Whitesboro 89.90 44 P P 04 47 19.0 +0.2
baz=319,SNR=24
Y37A Hugo 89.99 45 P P 04 47 19.1 -0.1
baz=319,SNR=7.9
R44A Waltonville 90.05 38 P P 04 47 19.0 -0.3
baz=323,SNR=14
234A Clairette 90.05 47 P P 04 47 19.4 -0.1
baz=318,SNR=20
135A Vickery Place, 90.06 47 P P 04 47 19.5 -0.1
baz=318,SNR=5.7
333A Richland Sprin 90.06 48 P P 04 47 19.7 +0.1
baz=317,SNR=36
W39A Magazine 90.06 43 P P 04 47 19.2 -0.2
baz=320,SNR=9.4
Z36A Blue Ridge 90.08 45 P P 04 47 19.4 -0.2
baz=319,SNR=14
V40A Witts Springs 90.10 42 P P 04 47 18.6 -1.1
baz=321,SNR=17
S43A Fulton Ridge, 90.10 39 P P 04 47 19.3 -0.4
baz=322,SNR=14
OLIL Olney 90.13 37 eP P 04 47 20.3 +0.6
comp=Z,84nm,0.9s
OLIL LR LR
comp=Z,5µm,21.0s
U41A Viola 90.14 41 P P 04 47 19.0 -0.9
baz=321,SNR=27
JCT Junction City 90.19 49 P P 04 47 20.0 -0.2
baz=317,SNR=14
JCT Junction City 90.19 49 eP P 04 47 20.0 -0.2
JCT pmax pmax
comp=Z,35nm,0.9s
JCT Junction City 90.19 49 eP P 04 47 20.0 -0.2
comp=Z,36nm,0.8s
JCT LR LR
comp=Z,6µm,22.0s
S44A Carbondale 90.41 38 P P 04 47 20.9 -0.2
baz=323,SNR=6.9
SIUC Southern Illin 90.41 38 eP P 04 47 21.0 0.0
comp=Z,178nm,1.1s
SIUC LR LR
comp=Z,5µm,20.0s
X39A Fountain Ranch 90.41 43 P P 04 47 21.4 +0.3
baz=320,SNR=31
433A Art 90.41 49 P P 04 47 20.4 -0.8
baz=317,SNR=20
W40A Ferguson Farm, 90.44 42 P P 04 47 20.6 -0.7
baz=320,SNR=13
CLTB Caltabellotta 90.44 322 PFAKE 04 47 30.0 +8.7
CLTB LR LR
comp=Z,12µm,19.0s
WHTX Lake Whitney, 90.45 47 P P 04 47 21.3 -0.1
baz=318,SNR=11
WHTX Lake Whitney, 90.45 47 eP P 04 47 21.4 +0.1
comp=Z,50nm,0.8s
WHTX LR LR
comp=Z,5µm,21.0s
V41A Mountainview 90.45 41 P P 04 47 20.4 -0.9
baz=321,SNR=38
U42A Revenden 90.48 40 P P 04 47 21.3 -0.1
baz=322,SNR=15
334A Lometa 90.48 48 P P 04 47 21.6 +0.1
baz=318,SNR=24
BLO Bloomington 90.50 36 eP P 04 47 22.3 +0.9
BLO pmax pmax
comp=Z,110nm,1.5s
BLO Bloomington 90.50 36 eP P 04 47 22.3 +0.9
comp=Z,109nm,1.5s
BLO LR LR
comp=Z,5µm,21.0s
Y38A Idabel 90.52 44 P P 04 47 20.6 -1.0
baz=320,SNR=14
BUF Buffalo 90.54 29 eP P 04 47 22.1 +0.5
DRLN Deer Lake 90.54 13 eP P 04 47 21.9 +0.4
comp=Z,107nm,1.7s
DRLN LR LR
comp=Z,9µm,22.0s
PBMO Poplar Bluff 90.55 39 eP P 04 47 21.6 -0.1
comp=Z,112nm,1.2s
PBMO LR LR
comp=Z,4µm,22.0s
LONY Lake Ozonia 90.57 25 eP P 04 47 21.1 -0.6
comp=Z,28nm,1.1s
LONY LR LR
comp=Z,5µm,21.0s
Z37A Pogue Cattle C 90.58 45 P P 04 47 21.9 0.0
baz=319
LRDF Laroque-de-Fa 90.59 331 eP P 04 47 22.4 +0.6
136A Ennis 90.61 46 P P 04 47 21.5 -0.6
baz=318,SNR=5.9
MIAR Mount Ida 90.67 43 P P 04 47 22.2 -0.1
baz=320,SNR=48
MIAR Mount Ida 90.67 43 eP P 04 47 22.3 0.0
MIAR pmax pmax
comp=Z,61nm,1.0s
MIAR Mount Ida 90.67 43 eP P 04 47 22.3 0.0
comp=Z,61nm,1.0s
MIAR LR LR
comp=Z,5µm,22.0s
VSL Villasalto 90.68 325 PFAKE 04 47 30.0 +7.7
VSL LR LR

comp=Z,20µm,20.0s
FRNY Flat Rock 90.70 24 eP P 04 47 22.0 -0.3
comp=Z,17nm,0.9s
FRNY LR LR
comp=Z,4µm,22.0s
X201 Greenbrier Sit 90.73 42 eP P 04 47 22.1 -0.5
comp=Z,88nm,1.2s
X201 LR LR
comp=Z,5µm,22.0s
S45A Carrier Mills 90.74 38 P P 04 47 22.4 -0.2
baz=323,SNR=6.0
X301 Greenbrier Sit 90.75 42 eP P 04 47 22.2 -0.4
comp=Z,126nm,1.6s
X301 LR LR
comp=Z,5µm,22.0s
WHAR Wooly Hollow 90.77 42 eP P 04 47 22.4 -0.3
comp=Z,65nm,0.9s
WHAR LR LR
comp=Z,5µm,21.0s
ERPA Erie 90.80 30 eP P 04 47 23.2 +0.4
comp=Z,90nm,0.8s
ERPA LR LR
comp=Z,4µm,20.0s
V42A Cord 90.83 41 P P 04 47 22.3 -0.7
baz=321,SNR=14
434A Burnet 90.85 48 P P 04 47 22.9 -0.4
baz=318,SNR=18
Y39A Lockesburg 90.85 44 P P 04 47 23.1 -0.1
baz=320,SNR=25
W41A Tony Mavity, V 90.88 42 P P 04 47 23.0 -0.3
baz=321,SNR=26
W41B Gary Mavity, V 90.88 42 P P 04 47 22.7 -0.6
baz=321,SNR=26
U43A Rector 90.89 40 P P 04 47 22.8 -0.5
baz=322
Z38A Mt. Pleasant 90.89 45 P P 04 47 22.7 -0.7
baz=319
H06N1 SOCORRO T-PHAS 90.92 65 T T 06 28 24.4
SNR=45
533A Kerrville 90.94 49 P P 04 47 23.6 -0.1
baz=317,SNR=7.9
USIN University of 90.94 37 PFAKE 04 47 40.0 +16
USIN LR LR
comp=Z,6µm,20.0s
137A Heron Place, G 90.96 46 P P 04 47 23.5 -0.2
baz=319
PARMO Parma 90.98 39 eP P 04 47 24.3 +0.6
335A Moody 90.99 47 P P 04 47 23.5 -0.3
baz=318,SNR=7.9
MMNY Mt. Morris Dam 91.06 28 eP P 04 47 23.9 -0.1
X40A Basin Creek Fa 91.10 42 P P 04 47 23.5 -0.8
baz=321,SNR=20
ALLY Alegheny Colle 91.14 30 eP P 04 47 25.3 +1.0
comp=Z,102nm,1.0s
UALR University of 91.14 42 eP P 04 47 25.3 +0.8
comp=Z,20nm,0.8s
UALR LR LR
comp=Z,4µm,21.0s
WDD Wied Dalam 91.17 320 PFAKE 04 47 40.0 +15
WDD LR LR
comp=Z,14µm,21.0s
ACSO Alum Creek Sta 91.18 33 eP P 04 47 24.6 +0.1
comp=Z,60nm,0.9s
ACSO LR LR
comp=Z,4µm,22.0s
PVMO Portageville 91.20 39 PFAKE 04 47 40.0 +15
PVMO LR LR
comp=Z,4µm,22.0s
Y40A Okolona 91.23 43 P P 04 47 24.8 -0.1
baz=320
336A Riesel 91.25 47 P P 04 47 24.9 -0.2
baz=318
VALF Valcebollere 91.25 332 eP P 04 47 25.4 +0.3
NCB Newcomb 91.26 25 eP P 04 47 24.8 -0.1
comp=Z,0.4nm,0.8s
NCB LR LR
comp=Z,100nm,21.0s
X41A Kaden, Bauxite 91.27 42 P P 04 47 25.0 -0.1
baz=321,SNR=11
435B Jarrell 91.27 48 P P 04 47 25.0 -0.2
baz=318
V43A Jonesboro 91.27 40 P P 04 47 25.3 +0.2
baz=322
138A Matatall Enter 91.28 45 P P 04 47 25.1 -0.1
baz=319
534A Blanco 91.30 49 P P 04 47 24.9 -0.5
baz=318,SNR=24
633A Saathoff Ranch 91.30 50 P P 04 47 25.5 +0.1
baz=317,SNR=6.2
Z39A Irene McRaven, 91.33 44 P P 04 47 25.6 +0.2
baz=320
WCI Wyandotte Cave 91.37 36 eP P 04 47 25.4 -0.1
WCI pmax pmax
comp=Z,35nm,0.9s
WCI Wyandotte Cave 91.37 36 eP P 04 47 25.4 -0.1
comp=Z,35nm,0.9s
WCI LR LR
comp=Z,5µm,21.0s
237A Washetta, Mont 91.37 46 P P 04 47 25.6 -0.1
baz=319
M54A Oil Creek Stat 91.44 30 P P 04 47 25.3 -0.5
baz=329,SNR=13
RESF Ens 91.50 333⇑ eP P 04 47 27.3 +1.1
VIEF Viey 91.55 333⇑ eP P 04 47 27.3 +0.9
V44A Blytheville 91.57 40 P P 04 47 26.4 0.0
baz=322
WLAR White Oak Lake 91.57 43 eP P 04 47 26.8 +0.3
comp=Z,91nm,1.0s
WLAR LR LR
comp=Z,6µm,21.0s
MDV Middlebury 91.58 25 eP P 04 47 26.5 +0.2
PKME Peaks-Kenny Pk 91.62 21 eP P 04 47 26.9 +0.4
comp=Z,60nm,1.2s
PKME LR LR
comp=Z,4µm,19.0s
ATE Arette 91.63 334 eP P 04 47 26.7 +0.1
139A Bunkhouse Ranc 91.65 45 P P 04 47 26.9 +0.1
baz=320
832A Faith Ranch, C 91.67 51 P P 04 47 27.4 +0.3
baz=317
Y41A Eaglette Beard 91.69 43 P P 04 47 26.9 -0.1
baz=321,SNR=13
436A Wall Ranch, Ga 91.73 47 P P 04 47 27.5 +0.2
baz=318,SNR=5.6
Z40A Long Farm, Mag 91.75 44 P P 04 47 27.4 +0.1
baz=320,SNR=7.5
238A Jacksonville 91.76 45 P P 04 47 28.1 +0.7
baz=319
LBNH Lisbon 91.76 24 eP P 04 47 28.6 +1.4
LBNH pmax pmax
comp=Z,57nm,1.3s
LBNH Lisbon 91.76 24 eP P 04 47 28.6 +1.4
comp=Z,57nm,1.3s
LBNH LR LR
comp=Z,7µm,21.0s
LARF Larrau 91.77 334⇑ eP P 04 47 27.6 +0.3
733A Divot King Ran 91.77 50 P P 04 47 27.8 +0.3
baz=317
N54A Moraine State 91.78 30 P P 04 47 27.2 -0.2
baz=329,SNR=9.7
535A Dale 91.83 48 P P 04 47 27.5 -0.3
baz=318
337A Centerville 91.84 46 P P 04 47 27.8 -0.1
baz=319
634A China Grove, S 91.85 49 P P 04 47 28.0 +0.1
baz=318
ACCN Adirondack Com 91.97 25 eP P 04 47 28.1 -0.1
comp=Z,60nm,1.1s
ACCN LR LR
comp=Z,6µm,22.0s
833A Chaparral WMA, 92.00 51 P P 04 47 28.6 0.0
baz=317
437A Phantom Ranch, 92.06 47 P P 04 47 28.9 +0.1
baz=319
Z41A Richland Creek 92.06 43 P P 04 47 28.7 -0.1
baz=321
536A Bastrop 92.09 48 P P 04 47 29.2 +0.3
baz=318,SNR=7.4
X43A Marvell 92.09 41 P P 04 47 28.8 -0.1
baz=322,SNR=5.7
V45A Humboldt 92.10 39 P P 04 47 28.3 -0.6
baz=323
CCAR Cane Creek 92.10 42 eP P 04 47 30.3 +1.4
comp=Z,72nm,0.8s
CCAR LR LR
comp=Z,4µm,22.0s
MET Memphis--Engin 92.10 40 PFAKE 04 47 40.0 +11
MET LR LR
comp=Z,4µm,20.0s
239A Gary 92.11 45 P P 04 47 28.6 -0.4
baz=320
734A La Parita Cree 92.12 50 P P 04 47 29.4 +0.3
baz=317
140A Cam and Jess, 92.12 44 P P 04 47 29.3 +0.2
baz=320
HNH Hanover 92.13 24 eP P 04 47 30.3 +1.4
comp=Z,56nm,1.0s
HNH LR LR
comp=Z,8µm,22.0s
338A Crockett 92.14 46 P P 04 47 29.1 -0.1
baz=319
W44A Shelby Farms P 92.15 40 P P 04 47 29.0 -0.1
baz=322
WVL Waterville 92.15 22 eP P 04 47 29.4 +0.5
comp=Z,66nm,1.1s
WVL LR LR
comp=Z,7µm,21.0s
Y42A Garnett, Star 92.16 42 P P 04 47 28.9 -0.3
baz=321,SNR=11
635A Leesville 92.19 49 P P 04 47 29.0 -0.5
baz=318
NATX Nacogdoches 92.19 45 P P 04 47 29.2 -0.2
baz=320
NATX Nacogdoches 92.19 45 PFAKE 04 47 40.0 +11
NATX LR LR
comp=Z,7µm,21.0s
BINY Binghamton 92.22 27 eP P 04 47 29.4 0.0
comp=Z,45nm,1.1s
BINY LR LR
comp=Z,5µm,21.0s
LMN Caledonia Moun 92.27 18 eP P 04 47 29.9 +0.4
comp=Z,35nm,0.8s
LMN LR LR
comp=Z,6µm,20.0s
WVT Waverly 92.34 38 eP P 04 47 29.8 -0.2
WVT pmax pmax
comp=Z,70nm,1.5s
WVT Waverly 92.34 38 eP P 04 47 29.8 -0.2
comp=Z,70nm,1.5s
WVT LR LR
comp=Z,5µm,22.0s
GGN Saint George 92.43 20 eP P 04 47 31.1 +0.9
comp=Z,38nm,1.1s
W45A Hickory Valley 92.45 40 P P 04 47 29.9 -0.6
baz=323,SNR=6.9
240A Hunter Patters 92.48 45 P P 04 47 31.3 +0.5
baz=320
X44A Crenshaw 92.48 41 P P 04 47 30.7 0.0
baz=322
438A Sam Houston St 92.50 47 P P 04 47 29.8 -1.1
baz=319
Z42A Norrel Spur, H 92.51 43 P P 04 47 30.9 +0.1
baz=321,SNR=8.3
141A Papa Simpson, 92.51 44 P P 04 47 30.0 -0.8
baz=320
537A Green Hill Far 92.52 48 P P 04 47 30.5 -0.4
baz=319
636A Smothers Creek 92.54 48 P P 04 47 31.5 +0.4
baz=318,SNR=12
FFD Franklin Falls 92.54 24 eP P 04 47 31.7 +1.0
comp=Z,290nm,1.8s
FFD LR LR
comp=Z,11µm,20.0s
Y43A Makayla and Ka 92.54 42 P P 04 47 29.7 -1.3
baz=322
TRY Troy 92.55 25 eP P 04 47 31.3 +0.4
comp=Z,80nm,1.2s
TRY LR LR
comp=Z,11µm,22.0s
735A Kenedy 92.56 49 P P 04 47 31.6 +0.4
baz=318
339A Huntington 92.58 46 P P 04 47 30.9 -0.2
baz=320
933A Laredo 92.58 51 P P 04 47 31.6 +0.3
baz=317,SNR=11
EMMW East Machias 92.64 20 PFAKE 04 47 40.0 +8.8
EMMW LR LR
comp=Z,10µm,21.0s
834A Tilden 92.65 50 P P 04 47 32.4 +0.9
baz=317
OXF Oxford 92.85 40 eP P 04 47 33.1 +0.7
OXF pmax pmax
comp=Z,110nm,1.1s
OXF Oxford 92.85 40 eP P 04 47 33.1 +0.7
comp=Z,112nm,1.1s
OXF LR LR
comp=Z,4µm,21.0s
KSPA Keystone Colle 92.86 27 eP P 04 47 33.1 +0.8
comp=Z,132nm,1.8s
KSPA LR LR
comp=Z,4µm,21.0s
439A Center Grove, 92.87 46 P P 04 47 31.5 -1.1
baz=319
Y44A Strider, Charl 92.87 41 P P 04 47 32.4 -0.1
baz=322
SSPA Standing Stone 92.88 29 eP P 04 47 33.2 +0.8
comp=Z,59nm,1.3s
SSPA LR LR
comp=Z,3µm,20.0s
340A Bronson 92.88 45 P P 04 47 32.4 -0.2
baz=320
736A Circle Diamond 92.92 49 P P 04 47 33.7 +0.9
baz=318,SNR=8.4
X45A UM Field Stati 92.93 40 P P 04 47 31.7 -1.1
baz=323,SNR=6.5
Z43A Armstrong Fami 92.93 42 P P 04 47 32.2 -0.5
baz=322
O56A Blue Knob Stat 92.94 30 P P 04 47 32.7 -0.1
baz=330,SNR=11
241A Mo Tay, Goldon 92.95 44 P P 04 47 33.2 +0.3
baz=320
MCWV Mont Chateau 92.95 31 PFAKE 04 47 40.0 +7.2
MCWV LR LR
comp=Z,3µm,21.0s
637A Eagle Lake 92.99 48 P P 04 47 32.5 -0.6
baz=319
934A Benavides 93.05 51 P P 04 47 34.1 +0.6
baz=317
142A Monroe 93.07 43 P P 04 47 33.2 -0.3
baz=321
143A Socs Landing, 93.24 43 P P 04 47 34.2 0.0
baz=321
Y45A Yeager Farm, C 93.29 41 P P 04 47 34.2 -0.2
baz=322,SNR=7.0
Z44A Pea Ridge, Bel 93.30 42 P P 04 47 34.5 0.0
baz=322,SNR=6.7
242A Grayson 93.33 44 P P 04 47 34.0 -0.7
baz=321
341A Kurthwood 93.34 45 P P 04 47 34.3 -0.4
baz=320
034A Hebbronville 93.34 51 P P 04 47 35.5 +0.7
baz=317,SNR=7.9
QUA2 Belchertown 93.39 25 PFAKE 04 47 50.0 +15
QUA2 LR LR
comp=Z,6µm,22.0s
N59A State Game Lan 93.42 28 P P 04 47 33.6 -1.4
baz=332,SNR=14
HRV Adam Dziewonsk 93.44 24 eP P 04 47 36.2 +1.3
HRV pmax pmax
comp=Z,150nm,1.8s
HRV Adam Dziewonsk 93.44 24 eP P 04 47 36.2 +1.3
comp=Z,145nm,1.8s
HRV LR LR
comp=Z,10µm,22.0s
KVTX Kingsville 93.47 50 PFAKE 04 47 50.0 +15
KVTX LR LR
comp=Z,3µm,19.0s
Z45A Winona 93.61 41 P P 04 47 35.9 0.0
baz=322
Y46A Houston 93.62 40 P P 04 47 35.9 0.0
baz=323,SNR=19
WES Weston 93.62 24 eP P 04 47 36.5 +0.7
WES pmax pmax
comp=Z,290nm,2.0s
WES Weston 93.62 24 eP P 04 47 36.5 +0.7
comp=Z,285nm,2.0s
WES LR LR
comp=Z,12µm,21.0s
ODNJ Ogdensburg 93.69 27 eP P 04 47 36.6 +0.5
comp=Z,45nm,1.6s
KEST Kesra 93.77 323 P P 04 47 36.3 -0.4
comp=Z,22nm,1.0s,baz=325,slow=3.8,SNR=14
KEST LR LR 05 34 52.7
comp=Z,34µm,18.2s,baz=340,slow=39
KEST Kesra 93.77 323 eP P 04 47 36.4 -0.4
comp=Z,28nm,1.0s
LUPA Lehigh Univers 93.84 28 eP P 04 47 38.9 +2.0
comp=Z,103nm,1.6s
ZAIG Zacatecas 93.98 57 eP P 04 47 39.8 +1.6
comp=Z,29nm,1.1s
SWET Sewanee 93.98 37 eP P 04 47 36.9 -0.7
comp=Z,15nm,1.1s
TZTN Tazewell 94.00 35 eP P 04 47 37.9 +0.2
comp=Z,42nm,1.1s
PAL Palisades 94.00 26 eP P 04 47 38.3 +0.8
PAL pmax pmax
comp=Z,170nm,1.8s
PAL Palisades 94.00 26 eP P 04 47 38.3 +0.8
comp=Z,167nm,1.8s
BRNJ Basking Ridge 94.06 27 eP P 04 47 38.7 +0.9
comp=Z,68nm,1.4s
VBMS Vicksburg 94.08 42 P P 04 47 38.3 +0.2
baz=322
145A Houston Renfro 94.09 42 P P 04 47 38.2 +0.1
baz=322
Y47A UCPARC, Winfie 94.11 40 P P 04 47 37.3 -1.0
baz=324,SNR=5.9
Z46A Louisville 94.13 41 P P 04 47 38.7 +0.4
baz=323
244A Avery, Jackson 94.13 43 P P 04 47 38.3 0.0
baz=322,SNR=7.3
PSUB Penn St. - Bra 94.41 28 eP P 04 47 39.7 +0.3
comp=Z,44nm,1.5s
CPCT Cooper Cave 94.45 36 eP P 04 47 39.4 -0.4
comp=Z,18nm,1.1s
146A Union 94.51 41 P P 04 47 40.3 +0.2
baz=323
245A Little AP, Sta 94.55 42 P P 04 47 40.2 0.0
baz=322,SNR=8.1
Z47A Carrollton 94.56 40 P P 04 47 39.7 -0.6
baz=323
344A Westbrook Farm 94.57 43 P P 04 47 40.6 +0.3
baz=322
FURI Furi 94.62 285 epP pP 04 47 51.4 -3.5
TKL Tuckaleechee C 94.63 36 eP P 04 47 40.3 -0.3
TKL Tuckaleechee C 94.63 36 eP P 04 47 40.2 -0.3
comp=Z,24nm,0.9s
Z48A Northport 94.68 40 P P 04 47 39.5 -1.3
baz=324
PBRG Braganca 94.75 337⇑ eP P 04 47 40.6 -0.4
comp=Z,45nm,1.4s
PBRG Braganca 94.75 337 ePP PP 04 51 31.6 +2.8
BLA Blacksburg 94.80 33 eP P 04 47 41.9 +0.5
BLA pmax pmax
comp=Z,37nm,1.1s
BLA Blacksburg 94.80 33 eP P 04 47 41.9 +0.5
comp=Z,37nm,1.1s
BLA LR LR
comp=Z,4µm,22.0s
147A Livingston 94.88 41 P P 04 47 40.7 -1.1
baz=323
PGAV Gavieira, Arco 95.05 338⇑ eP P 04 47 42.2 -0.3
comp=Z,60nm,1.8s
PGAV Gavieira, Arco 95.05 338 ePP PP 04 51 34.0 +2.7
PGAV eSKS S 04 58 39.4 -14
PGAV eSS SS 05 05 40.1 +22
PGAV Gavieira, Arco 95.05 338 eLQ LQ 05 16 52.1
PGAV eLR LR 05 19 49.3
comp=Z,12µm,20.0s
CBN Corbin Frederi 95.18 30 PFAKE 04 47 50.0 +7.0
CBN LR LR
comp=Z,4µm,21.0s
247A Quitman 95.20 41 P P 04 47 43.2 -0.1
baz=323
LRAL Lakeview Retre 95.23 39 eP P 04 47 43.3 -0.1
comp=Z,15nm,1.0s
346A Big Creek Wild 95.29 42 P P 04 47 43.3 -0.3
baz=322
MVO Moncorvo 95.42 337 eP P 04 47 43.8 -0.4
comp=Z,45nm,1.4s
MVO Moncorvo 95.42 337 ePP PP 04 51 37.0 +2.9
MVO eSKS **SKSac 04 58 24.1 +7.6**
MVO eSS SS 05 05 45.5 +22
MVO Moncorvo 95.42 337 eLQ LQ 05 16 21.5
MVO eLR LR 05 20 05.4
comp=Z,21µm,22.0s
POLO Lamas de Olo 95.46 338⇑ eP P 04 47 44.2 -0.2
comp=Z,27nm,1.7s
POLO Lamas de Olo 95.46 338 ePP PP 04 51 37.2 +2.8
POLO eSKS **SKSac 04 58 12.1 -4.6**
POLO eSS SS 05 05 55.2 +31
PVRL Vila Real 95.52 337 eP P 04 47 43.8 -0.8
PVRL Vila Real 95.52 337 ePP PP 04 51 38.9 +4.0
ES19 SONSECA Array 95.73 334 eP P 04 47 45.2 -0.4
347A Saraland 95.76 42 P P 04 47 45.3 -0.5
baz=323
ESDC Sonseca Array 95.78 334 P P 04 47 45.4 -0.4
comp=Z,14nm,0.9s,baz=19,slow=4.3,SNR=39
ESDC LR LR 05 36 07.7
comp=Z,17µm,19.1s,baz=30,slow=39
ESLA Sonseca Array 95.78 334 eP P 04 47 45.5 -0.3
comp=Z,56nm,1.8s
446A Poplarville 95.81 42 P P 04 47 45.4 -0.6
baz=322
PAB San Pablo 96.02 334 eP P 04 47 47.0 0.0
PAB San Pablo 96.02 334 eP P 04 47 47.0 0.0
comp=Z,23nm,1.3s
PAB LR LR
comp=Z,25µm,19.0s
PVIS Viseu 96.09 337 eP P 04 47 47.3 +0.1
PVIS Viseu 96.09 337 ePP PP 04 51 46.6 +7.3
KMSC Kings Mountain 96.15 34 P P 04 47 47.2 -0.3
baz=328,SNR=7.0
KMSC Kings Mountain 96.15 34 eP P 04 47 47.6 0.0
comp=Z,14nm,0.8s
MTE Manteigas 96.27 337⇑ eP P 04 47 48.0 -0.1
comp=Z,32nm,2.1s
MTE Manteigas 96.27 337 ePP PP 04 51 37.9 -2.8
MTE eSKS **SKSac 04 58 26.5 +5.5**
MTE eSS SS 05 06 08.4 +33
MTE Manteigas 96.27 337 eLQ LQ 05 16 42.9
MTE eLR LR 05 20 00.7
comp=Z,18µm,18.0s
MTE Manteigas 96.27 337 PFAKE 04 48 00.0 +12
MTE LR LR
comp=Z,20µm,22.0s
GOGA Godfrey 96.63 37 eP P 04 47 49.9 +0.2
GOGA Godfrey 96.63 37 eP P 04 47 49.9 +0.2
comp=Z,73nm,1.9s
GOGA LR LR
comp=Z,6µm,21.0s
BRAL Brewton 96.71 41 PFAKE 04 48 00.0 +10
BRAL LR LR
comp=Z,5µm,21.0s
PCAS Casmilo, Conde 96.88 338 eP P 04 47 50.0 -0.7
PCAS Casmilo, Conde 96.88 338 ePP PP 04 51 48.4 +3.1
PCAS eSKS S 04 58 50.7 -19
PCAS eSS SS 05 06 13.6 +30
JSC Jenkinsville 96.91 35 eP P 04 47 51.4 +0.5
JSC Jenkinsville 96.91 35 eP P 04 47 51.4 +0.5
comp=Z,91nm,0.8s
PMRV Marv??o 97.12 337⇑ eP P 04 47 51.3 -0.5
comp=Z,24nm,2.8s
PMRV Marv??o 97.12 337 ePP PP 04 51 49.4 +2.2
PMRV eSKS **SKSac 04 58 31.6 +6.3**
PMRV eSS SS 05 06 14.2 +27
PMRV Marv??o 97.12 337 eLQ LQ 05 17 45.4
PMRV eLR LR 05 20 37.0
comp=Z,17µm,22.0s
PTOM Tomar 97.25 337 eP P 04 47 51.6 -0.8
PTOM Tomar 97.25 337 ePP PP 04 51 49.9 +1.7
CNNC Cliffs of the 97.54 32 PFAKE 04 48 10.0 +16
CNNC LR LR
comp=Z,5µm,20.0s
PESTR Estremoz 97.69 336 eP P 04 47 52.0 -2.4
PESTR Estremoz 97.69 336 ePP PP 04 51 53.7 +2.1
PESTR eSKS **SKSac 04 58 32.0 +3.7**
PESTR eSS SS 05 06 25.9 +31
PMTG Montargil 97.70 337⇑ eP P 04 47 53.2 -1.2
PMTG Montargil 97.70 337 ePP PP 04 51 54.1 +2.5
PMTG eSKS **SKSac 04 58 34.3 +6.0**
PMTG eSS SS 05 06 26.4 +31
PMAFR Mafra 98.12 338 eP P 04 47 55.9 -0.5
PMAFR Mafra 98.12 338 ePP PP 04 51 57.2 +2.3
PMAFR eSKS **SKSac 04 58 37.1 +6.6**
PMAFR eSS SS 05 06 26.8 +25
EVO Evora 98.13 337⇑ eP P 04 47 56.1 -0.3
EVO Evora 98.13 337 ePP PP 04 51 56.5 +1.6
PBAR Barrancos 98.15 336⇑ eP P 04 47 56.2 -0.3
PBAR Barrancos 98.15 336 ePP PP 04 51 57.4 +2.3
PBAR eSKS **SKSac 04 58 35.7 +5.1**

TIGA	**Tifton**	**98.20**	**38**	*e*P		**P**	**04 47 56.5**	**-0.3**	
	baz=326								
PMST	**Lisbon--Monsan**	**98.30**	**338**	*e*P		Pdif	04 47 59.1	+2.0	
PMST	**Lisbon--Monsan**	**98.30**	**338**	*e*PP		PP	04 51 59.0	+2.8	
LIS	**Lisbon**	**98.31**	**338**	*e*P		**P**	**04 47 56.9**	**-0.3**	
LIS					AMS	AMS	05 36 51.1		
	comp=Z,19μm,24.7s								
LIS	**Lisbon**	**98.31**	**338**	*e*P		**P**	**04 47 56.5**	**-0.6**	
LIS	**Lisbon**	**98.31**	**338**	*e*PP		PP	04 51 57.0	+0.8	
LIS	**Lisbon**	**98.31**	**338**	*e*P		**P**	**04 47 56.9**	**-0.3**	
NHSC	**New Hope**	**98.38**	**35**		PFAKE		04 48 10.0	+12	
NHSC					LR	LR			
	comp=Z,8μm,22.0s								
PBEJ	**Beja**	**98.55**	**336**	*e*P		**P**	**04 47 57.2**	**-1.1**	
PBEJ	**Beja**	**98.55**	**336**	*e*PP		PP	04 52 01.3	+3.2	
PNCL	**Nicolau / Gran**	**98.68**	**337**	*e*P		**P**	**04 47 58.5**	**-0.3**	
PNCL	**Nicolau / Gran**	**98.68**	**337**	*e*PP		PP	04 51 59.3	+0.2	
PNCL				*e*SKS		S	04 59 03.6	-21	
PNCL				*e*SS		SS	05 06 41.3	+32	
MESJ	**Messejana**	**98.83**	**336**	*e*P		**P**	**04 47 59.4**	**-0.1**	
MESJ				*e*S		**SKSac**	**04 58 34.3**	**+0.3**	
MESJ					AMS	AMS	05 35 42.7		
	comp=Z,16μm,25.5s								
MESJ	**Messejana**	**98.83**	**336**[1]	*e*P		Pdif	04 47 59.5	0.0	
MESJ	**Messejana**	**98.83**	**336**	*e*PP		PP	04 52 01.6	+1.3	
MESJ	**Messejana**	**98.83**	**336**	*e*P		**P**	**04 47 59.4**	**-0.1**	
PCVE	**Castro Verde**	**98.96**	**336**	*e*P		**P**	**04 47 59.6**	**-0.5**	
PCVE	**Castro Verde**	**98.96**	**336**	*e*PP		PP	04 52 00.9	-0.4	
PCVE				*e*SKS		**SKSac**	**04 58 33.7**	**-1.0**	
PCVE				*e*SS		SS	05 06 38.5	+25	
PVAQ	**Vaqueiros**	**99.07**	**336**[1]	*e*P		**Pdif**	**04 48 00.6**	**0.0**	
PVAQ	**Vaqueiros**	**99.07**	**336**	*e*PP		PP	04 52 03.3	+1.2	
PVAQ				*e*SKS		**SKSac**	**04 58 37.6**	**+2.4**	
PVAQ	**Vaqueiros**	**99.07**	**336**	*e*LQ		LQ	05 18 00.0		
PVAQ				*e*LR		LR	05 21 38.7		
	comp=Z,34μm,22.0s								
RKT	**Rikitea**	**99.09**	**112**	*e*PP		PP	04 52 04.7	+0.8	
	comp=Z,561nm,29.0s								
RKT				*e*SKSac		**SKSac**	**04 58 35.0**	**-0.3**	
	comp=Z,5μm,30.0s								
RKT				*e*SP		**SP**	**05 00 54.4**	**-0.5**	
	comp=Z,5μm,30.5s								
RKT				*e*SS		**SS**	**05 06 16.8**	**-1.0**	
	comp=Z,5μm,29.8s								
RKT	**Rikitea**	**99.09**	**112**	*e*LR		LR	05 20 05.2		
	comp=Z,25μm,27.2s,baz=309								
PTEO	**Sao Teotonio**	**99.26**	**337**	*e*P		**Pdif**	**04 48 04.2**	**+2.8**	
PTEO	**Sao Teotonio**	**99.26**	**337**	*e*PP		PP	04 52 07.1	+3.6	
PBDV	**Barranco-do-Ve**	**99.29**	**336**[1]	*e*P		**Pdif**	**04 48 01.3**	**-0.3**	
PBDV	**Barranco-do-Ve**	**99.29**	**336**	*e*PP		PP	04 52 04.9	+1.1	
PBDV				*e*SKS		**SKSac**	**04 58 42.4**	**+6.0**	
PBDV				*e*SS		SS	05 06 46.4	+29	
MORF	**Marmelete**	**99.45**	**337**	*e*P		**Pdif**	**04 48 02.4**	**0.0**	
MORF				*e*S		**SKSac**	**04 58 37.4**	**+0.1**	
MORF					AMS	AMS	05 39 11.3		
	comp=Z,14μm,19.9s								
MORF	**Marmelete**	**99.45**	**337**	*i* P		**Pdif**	**04 48 01.3**	**-1.1**	
MORF	**Marmelete**	**99.45**	**337**	*e*PP		PP	04 52 07.6	+2.5	
MORF				*e*SKS		**SKSac**	**04 58 39.7**	**+2.4**	
MORF	**Marmelete**	**99.45**	**337**	*e*P		**Pdif**	**04 48 02.4**	**0.0**	
MORF				*e*S		**SKSac**	**04 58 37.4**	**+0.1**	
PFVI	**Vila Bisbo**	**99.67**	**337**	*e*P		**Pdif**	**04 48 02.5**	**-0.8**	
PFVI	**Vila Bisbo**	**99.67**	**337**	*e*PP		PP	04 52 09.3	+2.6	
PFVI				*e*SKS			04 58 27.1		
PFVI				*e*SS		SS	05 06 51.5	+29	
RER	**Riviere de l'E**	**100.13**	**251**		PFAKE		04 48 20.0	+14	
RER					LR	LR			
	comp=Z,5μm,19.0s								
H07S1	**FLORES T-PHASE**	**101.83**	**355**	*e*LQ		LQ	05 23 43.5		
PGRA	**Graciosa**	**101.88**	**352**	*e*LQ		LQ	05 24 05.7		
KMBO	**Kilima Mbogo**	**102.11**	**278**	P		**Pdif**	**04 48 14.2**	**-0.6**	
	comp=Z,8.1nm,0.9s,baz=31,slow=7.3,SNR=14								
KMBO	**Kilima Mbogo**	**102.11**	**278**	*e*P		**Pdif**	**04 48 15.2**	**+0.4**	
KMBO					MLR	MLR			
	comp=Z,5μm,20.0s								
KMBO	**Kilima Mbogo**	**102.11**	**278**	*e*Pdif		**Pdif**	**04 48 15.2**	**+0.4**	
KMBO					LR	LR			
	comp=Z,5μm,20.0s								
ROSA	**Rosais**	**102.22**	**352**	*e*LQ		LQ	05 23 56.6		
PSET	**Sete Cidades**	**102.80**	**350**	*e*LQ		LQ	05 23 39.5		
CMLA	**Cha da Macela**	**102.83**	**350**	*e*LQ		LQ	05 24 01.7		
CMLA	**Cha da Macela**	**102.83**	**350**		PFAKE		04 48 30.0	+13	
CMLA					LR	LR			
	comp=Z,4μm,19.0s								
PSMN	**Pico do Norte,**	**103.51**	**349**	*e*LQ		LQ	05 23 34.4		
PTCN	**Pitcairn Islan**	**103.81**	**111**		PFAKE		04 48 30.0	+8.3	
PTCN					LR	LR			
	comp=Z,8μm,21.0s								
BBSR	**BB Station**	**104.88**	**23**		PFAKE		04 48 40.0	+13	
BBSR					LR	LR			
	comp=Z,2μm,21.0s								
ABPO	**Ambohimpanom**	**105.25**	**258**		PFAKE		04 52 50.0		
ABPO					LR	LR			
	comp=Z,2μm,21.0s								
PMPS	**Porto Santo**	**105.60**	**341**	*e*PP		PP	04 52 54.7	+3.7	
PMOZ	**Porto Moniz, M**	**106.04**	**342**	*e*P		**Pdif**	**04 48 33.0**	**+1.2**	
PMOZ	**Porto Moniz, M**	**106.04**	**342**	*e*PP		PP	04 52 56.9	+2.5	
PMOZ	**Porto Moniz, M**	**106.04**	**342**	*e*LR		LR	05 24 59.7		
	comp=Z,7μm,20.0s								
FUL	**Funchal**	**106.13**	**341**	*e*PP		PP	04 53 01.5	+6.5	
TAM	**Tamanrasset**	**106.28**	**318**	*e*P		**Pdif**	**04 48 34.1**	**+0.9**	
TAM					MLR	MLR			
	comp=Z,9μm,21.0s								
TAM	**Tamanrasset**	**106.28**	**318**	*e*Pdif		**Pdif**	**04 48 34.1**	**+0.9**	
TAM					LR	LR			
	comp=Z,9μm,21.0s								
MBAR	**Mbarara**	**106.76**	**283**		PFAKE		04 53 00.0		
MBAR					LR	LR			
	comp=Z,650nm,19.0s								
PAF	**Port-aux-Franc**	**108.25**	**221**		PFAKE		04 53 00.0		
PAF					LR	LR			
	comp=Z,3μm,19.0s								
GTBY	**Guantanamo Bay**	**111.96**	**38**		PFAKE		04 53 10.0		
GTBY					LR	LR			
	comp=Z,3μm,20.0s								
MTDJ	**Mount Denham**	**112.21**	**41**		PFAKE		04 53 10.0		
MTDJ					LR	LR			
	comp=Z,3μm,22.0s								
GRTK	**Grand Turk**	**112.38**	**33**		PFAKE		04 53 10.0		
GRTK					LR	LR			
	comp=Z,4μm,21.0s								
SDDR	**Presa de Saban**	**114.54**	**35**		PFAKE		04 53 10.0	+10	
SDDR					LR	LR			
	comp=Z,4μm,20.0s								
TORD	**Torodi Ar. Bea**	**116.28**	**316**		PKP	**PKPdf**	**04 53 02.5**	**-0.9**	
	comp=Z,7.2nm,1.0s,baz=9.0,slow=1.2,SNR=22								
VNDA	**Vanda**	**116.81**	**175**		PKKPbc	PKKPbc	05 03 29.9	-0.6	
	comp=Z,1.9nm,0.9s,baz=340,slow=2.1,SNR=7.0								
SJG	**San Juan**	**117.48**	**30**		PFAKE		04 53 20.0	+14	
SJG					LR	LR			
	comp=Z,5μm,22.0s								
SBA	**Scott Base**	**117.48**	**174**		PFAKE		04 53 20.0	+16	
SBA					LR	LR			
	comp=Z,2μm,22.0s								
LSZ	**Lusaka**	**117.83**	**273**	*e*PKIKP		**PKPdf**	**04 53 06.7**	**+0.3**	
LSZ					MLR	MLR			
	comp=Z,4μm,20.0s								
LSZ	**Lusaka**	**117.83**	**273**	*e*PKPdf		**PKPdf**	**04 53 06.7**	**+0.3**	
LSZ					LR	LR			
	comp=Z,4μm,20.0s								
PAYG	**Puerto Ayora**	**119.03**	**65**		PFAKE		04 53 20.0	+11	
PAYG					LR	LR			
	comp=Z,7μm,21.0s								
ANWB	**Willy Bob**	**119.49**	**26**		PFAKE		04 53 20.0	+11	
ANWB					LR	LR			
	comp=Z,2μm,22.0s								
RPN	**Rapa Nui**	**120.47**	**102**		PFAKE		04 53 20.0	+9.0	
RPN					LR	LR			
	comp=Z,4μm,22.0s								
MAW	**Mawson**	**121.40**	**206**		PKP	**PKPdf**	**04 53 10.4**	**-1.1**	
	comp=Z,6.5nm,0.7s,baz=275,slow=5.1,SNR=3.8								
DBBC	**Dabeiba**	**122.22**	**46**	*e*P		**PKPdf**	**04 53 15.6**	**+0.7**	
FDF	**Fort de France**	**122.44**	**27**		PFAKE		04 53 30.0	+15	
FDF					LR	LR			
	comp=Z,4μm,22.0s								
OCAC	**Ocana**	**122.79**	**43**	*e*P		**PKPdf**	**04 53 15.7**	**-0.4**	
HELC	**Santa Helena**	**123.28**	**46**	*e*P		**PKPdf**	**04 53 17.3**	**0.0**	
HELC	**Santa Helena**	**123.28**	**46**	*e*PKPdf		**PKPdf**	**04 53 17.4**	**0.0**	
GRMC	**Gramalote, San**	**123.50**	**43**	*e*P		**PKPdf**	**04 53 17.4**	**-0.1**	
CBRI	**Barrientos, No**	**123.51**	**43**	*e*P		**PKPdf**	**04 53 17.3**	**-0.2**	
BRRC	**Barranca, Sant**	**123.53**	**44**	*e*P		**PKPdf**	**04 53 17.3**	**-0.1**	
SDV	**Santo Domingo**	**123.63**	**40**	*e*P		**PKPdf**	**04 53 17.3**	**-0.4**	
SDV	**Santo Domingo**	**123.63**	**40**	*e*PKPdf		**PKPdf**	**04 53 17.4**	**-0.4**	
SDV					LR	LR			
	comp=Z,3μm,21.0s								
GIRC	**Giron, Santand**	**123.83**	**43**	*e*P		**PKPdf**	**04 53 17.0**	**-1.1**	
NORC	**Norcasia**	**124.17**	**46**	*e*P		**PKPdf**	**04 53 18.9**	**+0.3**	
BARC	**Barichara**	**124.25**	**44**	*e*P		**PKPdf**	**04 53 17.3**	**-1.7**	
BBGH	**Gun Hill**	**124.46**	**26**		PFAKE		04 53 30.0	+11	
BBGH					LR	LR			
	comp=Z,4μm,21.0s								
GRGR	**Grenville**	**124.65**	**28**		PFAKE		04 53 30.0	+11	
GRGR					LR	LR			
	comp=Z,3μm,22.0s								
SACV	**Santiago Islan**	**124.72**	**343**		PFAKE		04 53 30.0	+10	
SACV					LR	LR			
	comp=Z,3μm,22.0s								
RUSC	**La Rusia**	**124.88**	**44**	*e*P		**PKPdf**	**04 53 20.2**	**-0.4**	
RUSC	**La Rusia**	**124.88**	**44**	*e*PKPdf		**PKPdf**	**04 53 20.0**	**-0.6**	
ROSC	**El Rosal**	**125.07**	**46**	PKP		**PKPdf**	**04 53 20.4**	**-0.4**	
	comp=Z,17nm,0.7s,baz=99,slow=7.6,SNR=11								
ROSC	**El Rosal**	**125.07**	**46**	*e*PKPdf		**PKPdf**	**04 53 22.0**	**+1.2**	
DBIC	**Dimbokro**	**125.18**	**318**	PKP		**PKPdf**	**04 53 20.0**	**-0.5**	
	comp=Z,17nm,0.7s,baz=18,slow=2.2,SNR=26								
LBTB	**Lobatse**	**125.24**	**265**	*e*PKIKP		**PKPdf**	**04 53 20.2**	**-0.2**	
LBTB	**Lobatse**	**125.24**	**265**	*e*PKPdf		**PKPdf**	**04 53 20.2**	**-0.2**	
TIC	**Toumodi**	**125.28**	**318**	*e*PKP1		**PKPdf**	**04 53 19.7**	**-1.0**	
KIC	**Kosan Boka**	**125.38**	**318**	*e*PKP1		**PKPdf**	**04 53 20.6**	**-0.3**	
	comp=Z,43nm,0.8s								
POPC	**Popayan, Colom**	**125.56**	**50**	*e*P		**PKPdf**	**04 53 21.8**	**+0.3**	
CHIC	**Chingaza**	**125.57**	**46**	*e*P		**PKPdf**	**04 53 20.6**	**-1.2**	
LIC	**Lamto**	**125.64**	**318**	*e*PKP1		**PKPdf**	**04 53 20.4**	**-1.0**	
	comp=Z,92nm,1.0s								
PRAC	**Prado**	**125.67**	**47**	*e*P		**PKPdf**	**04 53 21.0**	**-0.5**	
PRAC	**Prado**	**125.67**	**47**	*e*PKPdf		**PKPdf**	**04 53 20.8**	**-0.7**	
VILC	**Villavicencio,**	**126.02**	**46**	*e*P		**PKPdf**	**04 53 22.6**	**+0.3**	
CMBC	**Cumbal**	**126.12**	**52**	*e*P		**PKPdf**	**04 53 24.3**	**+1.4**	
OTAV	**Otavalo**	**126.28**	**53**	*e*P		**PKPdf**	**04 53 21.8**	**-1.4**	
OTAV	**Otavalo**	**126.28**	**53**	*e*PKPdf		**PKPdf**	**04 53 22.9**	**-0.3**	
OTAV					LR	LR			
	comp=Z,3μm,20.0s								
SJAC	**San Juan de Ar**	**126.56**	**47**	*e*P		**PKPdf**	**04 53 21.8**	**-1.5**	
FLOC	**Florencia**	**126.94**	**50**	*e*P		**PKPdf**	**04 53 24.3**	**+0.4**	
BOSA	**Boshof**	**127.29**	**261**	PKhKP		PKPpre	04 53 13.8		
	comp=Z,2.2nm,0.7s,baz=5.4,slow=3.0,SNR=4.8								
BOSA					PKP	**PKPdf**	**04 53 24.3**	**+0.1**	
	comp=Z,20nm,0.7s,baz=66,slow=1.7,SNR=32								
BOSA	**Boshof**	**127.29**	**261**	PKPpre		PKPpre	04 53 13.8		
BOSA				*e*PKPdf		**PKiKP**	**04 53 25.1**	**+0.4**	
TSUM	**Tsumeb**	**128.35**	**276**	*e*PKPdf		**PKPdf**	**04 53 28.0**	**+1.5**	
TSUM					LR	LR			
	comp=Z,4μm,21.0s								
QSPA	**South Pole Qui**	**128.65**	**180**	*e*PKPdf		**PKPdf**	**04 53 25.5**	**0.0**	
QSPA					LR	LR			
	comp=Z,4μm,22.0s								
SYO	**Syowa Base**	**130.06**	**207**[1]	*e*X		**Pdif**	**04 50 15.6**	**-1.8**	
SUR	**Sutherland**	**132.41**	**259**		PFAKE		04 53 50.0	+16	
SUR					LR	LR			
	comp=Z,8μm,20.0s								
NNA	**Nana**	**136.41**	**63**		PFAKE		04 53 50.0	+8.3	
NNA					LR	LR			
	comp=Z,3μm,21.0s								
PTGA	**Pitinga**	**137.03**	**33**	*e*PKPpre		PKPpre	04 53 33.2		
NVL	**N'lazarevskaya**	**139.18**	**203**	*e*PKHKP		PKPpre	04 53 36.3		
NVL				*e*SS		SS	05 14 45.9	-6.8	
NVL					MLR	MLR			
	comp=Z,7μm,26.0s								
ASCN	**Ascension**	**142.49**	**319**	*e*PKPpre		PKPpre	04 53 49.8		
ASCN				*e*PKPdf		**PKPdf**	**04 53 53.4**	**+0.6**	
ASCN					LR	LR			
	comp=Z,5μm,22.0s								
SAML	**Samuel**	**142.62**	**44**	*e*PKPpre		PKPpre	04 53 49.3		
SAML					LR	LR			
	comp=Z,3μm,20.0s								
SHEL	**Horse Pasture**	**143.62**	**300**	*e*PKIKP		PKPbc	04 53 53.3	+1.1	
SHEL					MLR	MLR			
	comp=Z,3μm,20.0s								
SHEL	**Horse Pasture**	**143.62**	**300**	*e*PKPdf		PKPbc	04 53 53.3	+1.1	
SHEL					LR	LR			
	comp=Z,3μm,20.0s								
LPAZ	**La Paz**	**145.37**	**58**	PKPbc		**PKPbc**	**04 53 57.7**	**-0.7**	
	comp=Z,28nm,0.8s,baz=355,slow=6.2,SNR=100								
LPAZ	**La Paz**	**145.37**	**58**	*e*PKPbc		**PKPbc**	**04 53 57.6**	**-0.8**	
RCBR	**Riachuelo**	**147.00**	**356**	*e*PKPbc		**PKPbc**	**04 54 02.4**	**-0.2**	
RCBR					LR	LR			
	comp=Z,4μm,21.0s								
PB01	**IPOC Station P**	**147.70**	**66**	*e*PKPdf		**PKPdf**	**04 54 02.4**	**+0.8**	
PB04	**IPOC Station P**	**148.04**	**68**	*e*PKPdf		**PKPbc**	**04 54 03.8**	**-1.6**	
PB10	**IPOC Station P**	**148.47**	**70**	*e*PKPdf		**PKPdf**	**04 54 04.1**	**+1.4**	
LVC	**Limon Verde**	**149.11**	**67**	*e*PKPbc		**PKPbc**	**04 54 09.1**	**+0.6**	
LVC					LR	LR			
	comp=Z,6μm,22.0s								
PMSA	**Palmer Station**	**149.97**	**158**	PKPbc		**PKPbc**	**04 54 06.6**	**-2.1**	
	comp=Z,20nm,1.0s,baz=331,slow=19,SNR=2.2								
PMSA	**Palmer Station**	**149.97**	**158**	PKPbc		**PKPbc**	**04 54 06.6**	**-2.1**	
PMSA					LR	LR			
	comp=Z,5μm,22.0s								
LCO	**Las Campanas**	**151.33**	**80**	*e*PKPbc		**PKPbc**	**04 54 13.6**	**+0.1**	
LCO				*e*PKPab		**PKPab**	**04 54 22.1**	**+0.4**	
HJA	**Humahuaca**	**151.98**	**64**[1]	*e*P		**PKPbc**	**04 54 15.6**	**+0.4**	
ROC1	**El Roble**	**152.78**	**88**	*e*P		**PKPbc**	**04 54 15.8**	**-0.9**	
ROC1	**El Roble**	**152.78**	**88**	*e*PKPbc		**PKPbc**	**04 54 16.4**	**-0.2**	
VCA	**Vinchina**	**153.10**	**77**	*e*P		**PKPdf**	**04 54 09.8**	**-0.2**	
AGUA	**GUANDACOL**	**153.25**	**79**	*e*P		**PKPdf**	**04 54 10.7**	**+0.7**	
RTLS	**Leoncito**	**153.66**	**84**	*e*P		**PKPdf**	**04 54 10.6**	**-0.3**	
AUSP	**Uspallata**	**153.76**	**85**	*e*P		**PKPdf**	**04 54 11.9**	**+1.0**	
AMOG	**MOGNA**	**153.91**	**82**	*e*P		**PKPdf**	**04 54 10.8**	**-0.1**	
RTLL	**Cerro Villicun**	**154.09**	**82**	*e*P		**PKPdf**	**04 54 11.0**	**-0.2**	
USHA	**Ushuaia**	**154.12**	**138**	PKPbc		**PKPbc**	**04 54 17.6**	**-0.9**	
	comp=Z,36nm,1.0s,baz=114,slow=10.0,SNR=2.7								
USHA				PKPab		**PKPab**	**04 54 31.4**	**-1.0**	
	comp=Z,176nm,1.1s,baz=221,slow=2.4,SNR=5.2								
RTCV	**Cerro Valdivia**	**154.27**	**84**	*e*P		**PKPdf**	**04 54 12.0**	**+0.6**	
ASAL	**Salagasta**	**154.33**	**85**	*e*P		**PKPdf**	**04 54 12.0**	**+0.5**	
CYA	**Choya**	**154.76**	**74**	*e*P		**PKPdf**	**04 54 11.8**	**-0.4**	
PLCA	**Paso Flores**	**155.07**	**105**	PKP		**PKPdf**	**04 54 10.8**	**-1.5**	
	comp=Z,1.8nm,0.7s,baz=353,slow=8.1,SNR=2.5								
PLCA				PKPab		**PKPab**	**04 54 35.5**	**-1.5**	
	comp=Z,18nm,0.9s,baz=273,slow=3.3,SNR=4.9								
PLCA	**Paso Flores**	**155.07**	**105**	PKP		**PKPdf**	**04 54 10.8**	**-1.5**	
PLCA				*e*PKPbc		PKPbc	04 54 22.3		
PLCA				PKPab		**PKPab**	**04 54 35.5**	**-1.5**	
BDFB	**Brasilia**	**155.23**	**23**	PKP		**PKPdf**	**04 54 12.9**	**-0.3**	
	comp=Z,4.2nm,0.8s,baz=343,slow=20								
BDFB				PKPab		**PKPab**	**04 54 39.2**	**+1.1**	
	baz=343,slow=20								
BDFB	**Brasilia**	**155.23**	**23**	*e*PKPdf		**PKPdf**	**04 54 16.3**	**+3.1**	
BDFB				PKPab		**PKPab**	**04 54 39.2**	**+1.1**	
TCA	**Tanti**	**157.09**	**79**	*e*P		**PKPdf**	**04 54 14.0**	**-1.2**	
CPUP	**Villa Florida**	**159.55**	**58**	PKP		**PKPdf**	**04 54 18.9**	**+0.7**	
	comp=Z,5.0nm,1.1s,baz=324,slow=6.0,SNR=4.1								
CPUP				PKPab		**PKPab**	**04 54 55.0**	**-1.6**	
	comp=Z,3.9nm,0.8s,baz=327,slow=3.7,SNR=8.7								
CPUP	**Villa Florida**	**159.55**	**58**	PKIKP		**PKPdf**	**04 54 18.9**	**+0.7**	
CPUP							04 54 55.0		
CPUP					pmax	pmax			
	comp=Z,3.0nm,0.9s								
CPUP					pmax	pmax			
	comp=Z,4.0nm,0.8s								
EFI	**East Falkland**	**161.09**	**139**		PFAKE		04 54 30.0	+11	
EFI					LR	LR			
	comp=Z,8μm,21.0s								
TRQA	**Tornquist**	**161.28**	**95**		PFAKE		04 54 30.0	+10	
TRQA					LR	LR			
	comp=Z,5μm,20.0s								
SPB	**Sao Paulo**	**162.78**	**30**		PFAKE		04 54 30.0	+8.3	
SPB					LR	LR			
	comp=Z,7μm,22.0s								
HOPE	**Hope Point**	**164.59**	**184**		PFAKE		04 54 30.0	+7.6	
HOPE					LR	LR			
	comp=Z,4μm,22.0s								

IDC ***23*** *04:36:59.4±0.8, 13°.10N×145°.68E, h0km, mb4.4/12, mb1 4.6/12,mb1mx4.4/48,mbtmp4.4/12, Error ellipse: s-maj=21.0km s-min=15.0km az=74.0*
NEIC ***23*** *04:37:00.8±0.4, 13°.09N×145°.59E, h10km, mb4.8/2, Error ellipse: s-maj=14.4km s-min=8.6km az=89.0*
ISCJB ***23*** *04:37:03.3±0.6, 13°.02N±0°.07×145°.67E±0°.09, h43km, mb4.5/15, Error ellipse: s-maj=13.8km s-min=9.4km az=152.3*

ISC 23 04:37:05.3±0.7, 13°.06N±0°.10×145°.6E±0°.1, h43km, n22, σ0^{s}89/21, mb4.5/15, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.88**	**307**	Pn	**Pn**	**04 37 20.3**	**-0.9**
	3μm,0.3s,baz=114,slow=6.5,SNR=82						
GUMO				Sn	**Sn**	**04 37 35.0**	**+2.2**
	3μm,0.3s,baz=24,slow=20,SNR=14						
H11N1	**WAKE ISLAND Hy**	**21.47**	**69**	T	T	05 04 04.8	
	baz=255,slow=75,SNR=5.7						
H11N2	**WAKE ISLAND Hy**	**21.48**	**69**	T	T	05 04 03.8	
	baz=255,slow=75,SNR=5.6						
H11N3	**WAKE ISLAND Hy**	**21.49**	**69**	T	T	05 04 04.8	
	baz=255,slow=75,SNR=5.6						
PMG	**Port Moresby**	**22.37**	**176**	P	**P**	**04 42 01.3**	**+1.3**
	13nm,0.9s,baz=31,slow=5.5,SNR=3.7						
MJAR	**Matsushiro Arr**	**24.31**	**345**	P	**P**	**04 42 18.6**	**-0.2**
	3.0nm,0.6s,baz=163,slow=9.3,SNR=3.3						
WRAB	**Tennant Creek**	**34.60**	**199**	*e*P	**P**	**04 43 49.5**	**-0.9**
	6.2nm,0.6s						
WRA	**Warramunga Arr**	**34.61**	**199**	P	**P**	**04 43 50.5**	**0.0**
	5.0nm,0.7s,baz=22,slow=9.8,SNR=28						
ASAR	**Alice Springs**	**38.25**	**197**	P	**P**	**04 44 21.9**	**+0.4**
	2.5nm,0.7s,baz=26,slow=8.5,SNR=24						
PETK	**Petropavlovsk-**	**41.10**	**11**	P	**P**	**04 44 45.1**	**+0.2**
	5.5nm,0.8s,baz=184,slow=5.6,SNR=3.3						
CMAR	**Chiang Mai Arr**	**45.12**	**283**	P	**P**	**04 45 18.1**	**+0.2**
	4.6nm,0.6s,baz=84,slow=5.9,SNR=3.5						
MNAI	**Manna**	**45.74**	**251**	*e*P	**P**	**04 45 21.9**	**-0.9**
SONM	**Songino Array**	**47.57**	**325**	P	**P**	**04 45 36.8**	**0.0**
	1.7nm,0.4s,baz=123,slow=7.5,SNR=4.2						
SONM				PcP	**PcP**	**04 47 07.4**	**+1.2**
	2.1nm,0.6s,baz=132,slow=2.1,SNR=5.2						
MKAR	**Makanchi Array**	**62.36**	**316**	P	**P**	**04 47 23.6**	**0.0**
	2.1nm,0.4s,baz=93,slow=8.3,SNR=5.5						
ILAR	**Eielson Array**	**68.75**	**25**	P	**P**	**04 48 04.2**	**-0.3**
	2.3nm,0.5s,baz=247,slow=6.0,SNR=7.2						
BRVK	**Borovoye**	**70.84**	**322**	*e*P	**P**	**04 48 16.4**	**-1.2**
	42nm,0.6s						
INK	**Inuvik**	**74.59**	**22**	*e*P	**P**	**04 48 39.5**	**0.0**
	20nm,1.1s						
YKA	**Yellowknife Ar**	**83.01**	**27**	P	**P**	**04 49 26.6**	**+0.8**
	2.0nm,0.5s,baz=286,slow=5.1,SNR=8.1						
ARCES	**ARCESS Array B**	**87.80**	**342**	P	**P**	**04 49 49.6**	**0.0**
	2.7nm,0.6s,baz=61,slow=7.3,SNR=3.5						
FINES	**FINESS Array B**	**91.94**	**335**	P	**P**	**04 50 08.1**	**-1.0**
	4.5nm,0.8s,baz=63,slow=4.2,SNR=6.3						
TORD	**Torodi Ar. Bea**	**135.74**	**305**	PKP	**PKPdf**	**04 56 22.9**	**+0.7**
	3.7nm,1.0s,baz=35,slow=3.1,SNR=3.4						
DBIC	**Dimbokro**	**144.70**	**302**	PKP	**PKPdf**	**04 56 38.2**	**-0.2**
	17nm,0.5s,baz=46,slow=3.8,SNR=25						

ISCJB ***23*** *04:40:17.6±0.1, 24°.33S±0°.02×178°.87W±0°.03, h350km, mb5.2/191, Error ellipse: s-maj=3.7km s-min=2.6km az=39.0*
IDC

TARA	Tarawa	26.70	341	*e*P		P	04 45 27.2	+0.1
	comp=Z,271nm,1.1s							
TBI	Tubuai	26.84	94	*e*P		P	04 45 29.6	+1.3
	comp=Z,234nm,1.2s							
ARMA	Armidale	26.93	250	P		P	04 45 31.0	+1.8
	baz=27,SNR=30							
ARMA	Armidale	26.93	250	*e*P		P	04 45 30.6	+1.5
	comp=Z,128nm,0.8s							
MGCD	Mangrove Creek	27.77	244	P		P	04 45 38.7	+2.2
	baz=28,SNR=13							
PAE	Paea	28.03	82	*e*P		P	04 45 38.5	-0.3
	comp=Z,21nm,1.1s							
PPT2	Papeete2	28.05	82	*e*P		P	04 45 39.2	0.0
	comp=Z,105nm,1.2s							
PPT	Papeete	28.06	82	P		P	04 45 38.9	-0.3
	comp=Z,131nm,1.1s,baz=223,slow=20,SNR=6.9							
TIAR	Tiarei	28.27	82	*e*P		P	04 45 41.1	+0.1
	comp=Z,48nm,1.0s							
TVO	Taravao	28.29	83	*e*P		P	04 45 40.9	-0.3
	comp=Z,22nm,0.9s							
RMQ	Roma	29.36	259	P		P	04 45 52.9	+2.4
	baz=30,SNR=5.6							
YNG	Young	30.20	243	P		P	04 45 59.7	+2.0
	baz=30,SNR=13							
MILA	Mila	30.22	237	P		P	04 46 00.2	+2.2
	baz=30,SNR=7.6							
VAH	Vaihoa	30.62	79	*e*P		P	04 46 01.0	-0.6
	comp=Z,87nm,1.0s							
CMSA	Cobar Meteorol	32.11	249	P		P	04 46 15.7	+1.3
	baz=32,SNR=14							
CTA	Charters Tower	32.58	270	P		P	04 46 19.9	+1.3
	comp=Z,333nm,0.5s,baz=94,slow=10,SNR=184							
CTA				S		S	04 51 07.2	-0.8
	comp=Z,15nm,1.1s,baz=198,slow=22,SNR=6.9							
CTAO	Charters Tower	32.58	270	*e*P		P	04 46 19.4	+0.8
CTAO				*e*S		S	04 51 06.4	-1.6
CTAO				pmax		pmax		
	comp=Z,407nm,0.6s							
CTAO	Charters Tower	32.58	270	*e*P		P	04 46 19.4	+0.8
	comp=Z,407nm,0.6s							
CTAO				*e*S		S	04 51 06.3	-1.6
TOO	Toolangi	33.18	238	P		P	04 46 25.2	+1.6
	baz=33,SNR=21							
QLP	Quilpie	33.40	258	P		P	04 46 26.5	+0.9
	baz=34,SNR=7.6							
MOO	Moorlands	33.41	229	P		P	04 46 26.8	+1.4
	baz=34,SNR=8.5							
MTSU	Mount Surprise	34.85	273	P		P	04 46 39.4	+1.4
	baz=35,SNR=141							
STKA	Stephens Creek	35.61	249	P		P	04 46 45.3	+1.1
	comp=Z,76nm,0.6s,baz=92,slow=10,SNR=23							
STKA	Stephens Creek	35.61	249	P		P	04 46 45.4	+1.1
	baz=36,SNR=17							
PMG	Port Moresby	35.65	289	P		P	04 46 45.5	+0.7
	comp=Z,672nm,0.9s,baz=107,slow=4.9,SNR=67							
PMG	Port Moresby	35.65	289	*d* iP		P	04 46 45.2	+0.4
PMG				pmax		pmax		
	comp=Z,2µm,0.9s							
PMG	Port Moresby	35.65	289	*e*P		P	04 46 45.5	+0.7
	comp=Z,569nm,0.8s							
ARPS	Mount Arapiles	35.89	240	P		P	04 46 47.8	+1.3
	baz=36,SNR=7.2							
COEN	Coen	37.26	279	P		P	04 46 59.3	+1.1
	baz=37,SNR=68							
COEN	Coen	37.26	279	*e*P		P	04 46 59.4	+1.1
	comp=Z,232nm,1.1s							
HTT	Hallett	37.93	246	P		P	04 47 04.6	+0.9
	baz=38,SNR=21							
PATS	Pohnpei	38.13	321	P		P	04 47 05.9	+0.5
	baz=38,SNR=3.3							
PATS	Pohnpei	38.13	321	*e*P		P	04 47 06.3	+0.9
	comp=Z,98nm,0.7s							
QIS	Mount Isa	38.53	267	P		P	04 47 08.6	-0.2
	baz=39,SNR=7.3							
MANU	Manus Island	39.45	299	*e*P		P	04 47 16.5	+0.1
	comp=Z,189nm,1.2s							
BBOO	Buckleboo	40.31	247	P		P	04 47 23.2	-0.1
	baz=40,SNR=19							
ASAR	Alice Springs	43.06	261	P		P	04 47 45.7	+0.3
	comp=Z,160nm,1.0s,baz=94,slow=8.3,SNR=67							
ASAR				PcP		PcP	04 49 27.9	-0.4
	comp=Z,9.0nm,0.8s,baz=100,slow=4.2,SNR=3.8							
ASAR				ScP		ScP	04 52 45.5	-0.1
	comp=Z,13nm,0.8s,baz=89,slow=3.6,SNR=4.7							
ASAR				S		S	04 53 41.7	-2.9
	comp=Z,7.4nm,0.8s,baz=96,slow=15,SNR=10							
WB2	Warramunga Arr	43.47	266	*e*P		P	04 47 48.4	-0.3
WB2				*e*S		S	04 53 47.2	-3.3
WRAB	Tennant Creek	43.47	266	*d* iP		P	04 47 48.1	-0.6
WRAB				pmax		pmax		
	comp=Z,537nm,1.0s							
WRAB	Tennant Creek	43.47	266	*e*P		P	04 47 48.3	-0.3
	comp=Z,225nm,0.9s							
WRA	Warramunga Arr	43.48	266	P		P	04 47 48.5	-0.3
	comp=Z,188nm,0.6s,baz=96,slow=8.5,SNR=62							
WRA				PcP		PcP	04 49 29.6	-0.2
	comp=Z,13nm,0.8s,baz=97,slow=3.2,SNR=3.8							
WRA				ScP		ScP	04 52 47.8	+0.5
	comp=Z,16nm,1.0s,baz=101,slow=4.1,SNR=5.1							
WRA				S		S	04 53 45.3	-5.4
	comp=Z,18nm,0.9s,baz=108,slow=15,SNR=15							
JAY	Jayapura	44.67	293	P		P	04 47 58.1	0.0
	comp=Z,12nm,0.7s,baz=98,slow=23,SNR=41							
JAY	Jayapura	44.67	293	P		P	04 47 58.1	0.0
GENI	Genyem	45.08	292	P		P	04 48 01.5	+0.2
	comp=Z,562nm,0.9s,comp=Z,5µm							
FORT	Forrest	47.22	250	P		P	04 48 17.2	-0.4
	baz=47,SNR=53							
FORT	Forrest	47.22	250	*e*P		P	04 48 16.8	-0.8
	comp=Z,3µm,0.6s							
KDU	Kakadu	47.41	275	P		P	04 48 18.9	-0.4
	baz=48,SNR=22							
WRKA	Warakurna	47.83	257	P		P	04 48 22.3	-0.2
	baz=48,SNR=43							
MTN	Manton Dam	48.58	274	P		P	04 48 27.3	-0.8
	baz=49,SNR=18							
MTN	Manton Dam	48.58	274	*e*P		P	04 48 27.4	-0.8
	comp=Z,73nm,0.6s							
HPAH	Hawaii Prepara	49.44	29	*e*P		P	04 48 35.6	+1.1
	comp=Z,128nm,1.0s							
GUMO	Guam	51.72	313	P		P	04 48 51.9	+0.5
	comp=Z,529nm,0.7s,baz=181,slow=24,SNR=45							
GUMO	Guam	51.72	313	*e*P		P	04 48 51.6	+0.2
GUMO				pmax		pmax		
	comp=Z,529nm,0.6s							
GUMO	Guam	51.72	313	*e*P		P	04 48 51.6	+0.2
	comp=Z,529nm,0.6s							
FAKI	Fak Fak	51.74	286	P		P	04 48 51.0	-0.7
	comp=Z,187nm,0.9s							
FAKI	Fak Fak	51.74	286	*e*P		P	04 48 51.0	-0.7
	comp=Z,149nm,1.0s							
FITZ	Fitzroy Crossi	51.90	265	P		P	04 48 52.8	+0.1
	comp=Z,196nm,0.8s,baz=91,slow=4.3,SNR=43							
FITZ				S		S	04 55 46.0	-2.2
	comp=Z,5.5nm,0.9s,baz=224,slow=19,SNR=7.5							
FITZ	Fitzroy Crossi	51.90	265	P		P	04 48 52.9	+0.1
	baz=52,SNR=50							
FITZ	Fitzroy Crossi	51.90	265	*e*P		P	04 48 52.9	+0.1
	comp=Z,169nm,0.8s							
FITZ				S		S	04 55 46.0	-2.2
KMBL	Kambalda	52.41	248	P		P	04 48 55.8	-0.5
	baz=53,SNR=6.3							
BNDI	Bandanaira	53.06	283	P		P	04 49 00.9	-0.4
	comp=Z,657nm,1.1s,comp=Z,10µm							
SBA	Scott Base	54.09	184	*e*P		P	04 49 10.8	+3.2
	comp=Z,27nm,1.0s							
VNDA	Vanda	54.11	185	P		P	04 49 09.3	+1.5
	comp=Z,9.2nm,0.9s,baz=2.5,slow=7.7,SNR=54							
VNDA				PcP		PcP	04 50 08.1	+0.5
	comp=Z,5.7nm,0.7s,baz=322,slow=4.6,SNR=7.2							
MSAI	Masohi	54.46	284	P		P	04 49 10.9	-0.4
	comp=Z,79nm,0.7s,comp=Z,3µm							
KLBR	Kellerberrin	55.86	247	P		P	04 49 20.5	-0.5
	baz=56,SNR=44							
SOEI	Soe	55.97	275	P		P	04 49 23.8	+1.7
	comp=Z,537nm,0.8s,comp=Z,4µm							
SOEI	Soe	55.97	275	*e*P		P	04 49 23.3	+1.2
	comp=Z,434nm,0.9s							
RKGY	Rocky Gully	56.05	244	P		P	04 49 22.3	0.0
	baz=56,SNR=19							
MEEK	Meekatharra	56.06	253	P		P	04 49 21.4	-1.1
	baz=56,SNR=7.0							
NWAO	Narrogin (SRO)	56.09	246	P		P	04 49 21.6	-1.0
	comp=Z,52nm,0.9s,baz=353,slow=7.9,SNR=8.0							
NWAO	Narrogin (SRO)	56.09	246	P		P	04 49 22.5	-0.1
	baz=56,SNR=8.2							
NWAO				P		P	04 49 22.5	-0.1
	baz=56,SNR=8.2							
NWAO	Narrogin (SRO)	56.09	246	*e*P		P	04 49 21.7	-0.9
NWAO				pmax		pmax		
	comp=Z,77nm,1.0s							
NWAO	Narrogin (SRO)	56.09	246	*e*P		P	04 49 21.6	-0.9
	comp=Z,77nm,1.0s							
NLAI	Namlea	56.13	283	P		P	04 49 23.2	+0.1
	comp=Z,237nm,1.0s							
BATI	Baumata	56.35	274	P		P	04 49 25.9	+1.2
	comp=Z,61nm,0.9s							
MBWA	Marble Bar	56.39	260	*e*P		P	04 49 24.3	-0.6
	comp=Z,115nm,1.0s							
BLDU	Ballidu	56.91	248	P		P	04 49 27.6	-0.8
	baz=57,SNR=60							
MORW	Morawa	57.78	250	P		P	04 49 33.8	-0.6
	baz=58,SNR=22							
MMRI	Maumere	58.25	275	P		P	04 49 37.6	-0.2
	comp=Z,342nm,1.1s							
MMRI	Maumere	58.25	275	*e*P		P	04 49 37.8	0.0
	comp=Z,259nm,0.9s							
H01W1	Cape Leeuwin H	58.31	243	P		P	04 49 39.0	+1.3
	baz=102,slow=7.5,SNR=3.8							
H01W2	Cape Leeuwin H	58.33	243	P		P	04 49 39.5	+1.7
	baz=102,slow=7.5,SNR=4.6							
H01W3	Cape Leeuwin H	58.33	243	P		P	04 49 38.7	+0.9
	baz=102,slow=7.5,SNR=4.7							
WSI	Waingapu	59.62	273	P		P	04 49 47.9	+0.8
	comp=Z,1µm,1.1s,comp=Z,12µm							
GIRL	Giralia	60.90	257	P		P	04 49 56.4	+0.8
	baz=61,SNR=7.1							
LUWI	Luwuk	60.98	283	*e*P		P	04 49 56.8	+0.5
	comp=Z,281nm,1.0s							
KAPI	Kappang	61.96	278	P		P	04 50 02.4	-0.4
	comp=Z,32nm,0.7s,baz=140,slow=3.7,SNR=12							
KAPI	Kappang	61.96	278	*e*P		P	04 50 02.9	+0.1
	comp=Z,56nm,1.0s							
PLAI	Plampang	62.23	273	P		P	04 50 04.1	-0.5
	comp=Z,450nm,0.8s,comp=Z,4µm							
SPSI	Sidrap Palu	62.39	279	P		P	04 50 04.3	-1.3
	comp=Z,126nm,0.8s							
TWSI	Taliwang, Sumb	63.09	272	P		P	04 50 09.4	-0.8
	comp=Z,175nm,1.3s							
IGBI	Denpasar	64.64	272	P		P	04 50 20.9	+0.7
SRBI	Singaraja	64.86	272	P		P	04 50 20.6	-1.0
	comp=Z,128nm,1.2s,comp=Z,6µm							
JAGI	Jajag, Banyuwa	65.68	272	P		P	04 50 25.4	-1.4
	comp=Z,108nm,0.7s							
JAGI	Jajag, Banyuwa	65.68	272	*e*P		P	04 50 25.3	-1.6
	comp=Z,74nm,0.7s							
QSPA	South Pole Qui	65.82	180	*e*P		P	04 50 28.5	+1.4
ABJI	Asem Bagus	65.86	272	P		P	04 50 34.7	+6.7
GMJI	Gumukmas	66.40	271	P		P	04 50 30.1	-1.3
	comp=Z,134nm,0.8s							
BLJI	Banyuglugur	66.47	272	P		P	04 50 31.9	+0.1
MYLDM	Lahad Datu	67.65	287	*e*P		P	04 50 41.0	+1.8
	comp=Z,64nm,0.9s							
PWJI	Pagerwojo	67.99	271	P		P	04 50 40.7	-0.6
	comp=Z,178nm,0.7s							
PCJI	Pacitan	68.50	271	P		P	04 50 44.4	0.0
	comp=Z,392nm,0.7s							
UGM	Wanagama	69.20	271	P		P	04 50 48.2	-0.6
	comp=Z,154nm,1.3s							
UGM	Wanagama	69.20	271	*e*P		P	04 50 48.4	-0.4
	comp=Z,294nm,1.3s							
KKM	Kota Kinabalu	70.06	287	*e*P		P	04 50 53.9	-0.1
	comp=Z,138nm,0.7s							
TGY	Tagaytay City	70.11	296	P		P	04 50 54.6	+0.5
	comp=Z,132nm,0.3s,baz=314,slow=15,SNR=3.7							
STKI	Sintang	71.59	279	P		P	04 51 03.5	+0.4
	comp=Z,150nm,0.8s,comp=Z,11µm							
CISI	Cisompet, Garu	71.81	270	P		P	04 51 03.8	-0.7
	comp=Z,139nm,0.6s,comp=Z,18µm							
CISI	Cisompet, Garu	71.81	270	*e*P		P	04 51 03.2	-1.3
	comp=Z,106nm,0.9s							
SBUM	Sibu	71.96	281	*e*P		P	04 51 04.7	-0.5
	comp=Z,42nm,1.1s							
JOW	Kunigami	72.05	311	*e*P		P	04 51 06.0	+0.6
	comp=Z,199nm,0.7s							
LEM	Lembang	72.28	270	P		P	04 51 13.0	+5.7
CNJI	Cibinong	72.54	270	P		P	04 51 07.2	-1.4
	comp=Z,196nm,0.9s							
INU	Inuyama	72.56	323	*e*P		P	04 51 07.8	-0.4
	comp=Z,21nm,0.9s							
MJAR	Matsushiro Arr	72.82	325	P		P	04 51 09.1	-0.7
	comp=Z,14nm,0.7s,baz=160,slow=5.8,SNR=28							
MAJO	Matsushiro	72.82	325	*e*P		P	04 51 07.6	-2.2
MAJO				pmax		pmax		
	comp=Z,136nm,1.0s							
MAJO	Matsushiro	72.82	325	*e*P		P	04 51 09.0	-0.8
	comp=Z,25nm,0.9s							
MAT	Matsushiro	72.82	325	P		P	04 51 09.1	-0.7
MJB9	Matsu-Tunnel	72.83	325	*e*P		P	04 51 09.7	-0.2
	comp=Z,6.6nm,0.9s							
CGJI	Cibinong	74.12	270	P		P	04 51 16.3	-1.5
	comp=Z,250nm,0.7s,comp=Z,4µm							
YOJ	Yonaguni jima	74.33	306	*e*P		P	04 51 17.9	-0.8
YOJ				pmax		pmax		
	comp=Z,155nm,1.0s							
YOJ	Yonaguni jima	74.33	306	*e*P		P	04 51 17.9	-0.8
	comp=Z,155nm,1.0s							
JNU	Nakatsue	74.53	318	P		P	04 51 19.6	-0.1
	comp=Z,30nm,0.9s,baz=91,slow=3.9,SNR=20							
JNU	Nakatsue	74.53	318	*e*P		P	04 51 19.4	-0.3
	comp=Z,32nm,0.6s							
ERM	Erimo	74.74	332	*e*P		P	04 51 19.5	-1.1
ERM				pmax		pmax		
	comp=Z,29nm,0.9s							
TWG	Pinlang	74.82	304	*e*P		P	04 51 20.4	-1.2
	comp=Z,235nm,0.6s							
YULB	Yu-li	74.98	305	*e*P		P	04 51 20.1	-2.3
	comp=Z,22nm,0.6s							
NACB	Ninganchiao	75.21	305	*e*P		P	04 51 22.5	-1.2
	comp=Z,128nm,0.7s							
TPUB	Ta-pu	75.43	304	*e*P		P	04 51 23.6	-1.5
	comp=Z,82nm,0.7s							
SSLB	Suanglung	75.46	305	*e*P		P	04 51 23.8	-1.4
	comp=Z,106nm,0.9s							
KASI	Kota Agung	75.64	270	P		P	04 51 24.8	-1.6
	comp=Z,173nm,0.7s							
YHNB	Yeheng	75.66	306	*e*P		P	04 51 25.3	-1.0
	comp=Z,103nm,0.7s							
TATO	Taipei	75.75	306	*e*P		P	04 51 26.3	-0.4
	comp=Z,241nm,0.8s							
KLSI		75.76	271	P		P	04 51 25.3	-1.8
	comp=Z,40nm,0.8s							
LWLI	Liwa	76.24	271	P		P	04 51 29.0	-0.9
	comp=Z,262nm,0.8s							
ASAJ	Asahikawa	76.69	332	*e*P		P	04 51 32.9	+1.3
	comp=Z,52nm,0.8s							
NIKH	Nikolski High	77.39	6	*e*P		P	04 51 35.1	-0.1
	comp=Z,174nm,0.8s							
MNAI	Manna	77.51	271	*e*P		P	04 51 36.9	+0.1
	comp=Z,174nm,0.8s							
MAW	Mawson	77.79	200	P		P	04 51 38.3	+0.9
	comp=Z,34nm,0.6s,baz=131,slow=6.3,SNR=56							
MAW	Mawson	77.79	200	P		P	04 51 38.3	+0.9
	baz=78,SNR=30							
MAW	Mawson	77.79	200	*e*P		P	04 51 38.2	+0.9
MAW				pmax		pmax		
	comp=Z,8.0nm,0.7s							
MAW	Mawson	77.79	200	*e*P		P	04 51 38.2	+0.9
	comp=Z,8.1nm,0.7s							
QZH	Quanzhou	77.89	304	⇑ *i*P		P	04 51 39.3	+0.7
QZH				pmax		pmax		
	comp=Z,130nm,0.8s							
UNV	Unalaska Valle	78.51	7	*e*P		P	04 51 40.4	-0.8
	comp=Z,54nm,0.9s							
YSS	Yuzh-Sakhalins	78.93	334	*e*P		P	04 51 45.3	+1.6
YSS				pmax		pmax		
	comp=Z,48nm,0.9s							
YSS	Yuzh-Sakhalins	78.93	334	*e*P		P	04 51 45.3	+1.6
	comp=Z,48nm,0.9s							
MYKOM	Kotaginggi	79.22	277	*e*P		P	04 51 46.0	-0.1
	comp=Z,41nm,0.8s							
KSRS	Korea Array	79.23	320	P		P	04 51 46.2	+0.7
	comp=Z,16nm,0.8s,baz=134,slow=6.0,SNR=39							
KSRS				PP		PP	04 54 51.6	+0.4
	comp=Z,2.2nm,0.8s,baz=141,slow=7.9,SNR=4.1							
KS15	Wonju Array Si	79.25	319	*e*P		P	04 51 46.4	+0.8
KSAR	Wonju Array Be	79.25	319	P		P	04 51 46.2	+0.6
KSAR							04 54 51.6	
KSAR	Wonju Array Be	79.25	319	P		P	04 51 46.2	+0.6
KSAR				PP		PP	04 54 51.6	+0.3
KS01	Wonju Array Si	79.26	320	*e*P		P	04 51 45.1	-0.7
PET	Petropavlovsk	79.42	346	⇑ *i*P		P	04 51 45.7	-0.5
PET				pmax		pmax		
	comp=Z,47nm,0.6s							
PET	Petropavlovsk	79.42	346	*e*P		P	04 51 45.7	-0.5
	comp=Z,30nm,0.6s							
PEA0	Petropavlovsk-	79.71	346	*e*P		P	04 51 47.4	-0.4
PEA0B	Petropavlovsk-	79.71	346	*e*P		P	04 51 47.8	0.0
	comp=Z,50nm,0.6s							
PETK	Petropavlovsk-	79.71	346	P		P	04 51 47.4	-0.4
	comp=Z,35nm,0.6s,baz=107,slow=7.5,SNR=30							
SCI2	San Clemente I	80.83	48	P		P	04 51 55.3	+1.1
	baz=233							
MSHR	Mys Shultsa	80.94	325	*e*P		P	04 51 53.8	-0.7
PKM	Mcpherson Peak	81.14	45	P		P	04 51 57.0	+0.9
	baz=232							
USRK	Ussuriysk Ar.	81.67	327	P		P	04 51 58.9	+0.6
	comp=Z,15nm,0.7s,baz=111,slow=4.1,SNR=26							
NJ2	Nanjing	81.73	311	*e*P		P	04 51 59.6	+0.8
NJ2				pmax		pmax		
	comp=Z,58nm,1.0s							
QIZ	Qiongzhong	81.75	295	P		P	04 52 00.4	+1.1
QIZ				pmax		pmax		
	comp=Z,20nm,0.8s							
CHGN	Chignik	82.09	11	*e*P		P	04 51 59.9	-0.2
MURC	Murrieta	82.11	48	P		P	04 52 02.0	+1.1
	baz=234							
TYV	Tymovskoe	82.17	337	*e*P		P	04 51 57.5	-3.2
TYV				pmax		pmax		
	comp=E,11nm,0.8s							
TYV				pmax		pmax		
	comp=Z,22nm,0.8s							
BFSC	Mount Baldy Ra	82.18	47	P		P	04 52 02.3	+0.9
	baz=234,SNR=5.2							
VES	Vestal, Richgr	82.20	45	P		P	04 52 02.1	+0.9
	baz=233							
MONP2	Monument Peak	82.23	49	P		P	04 52 02.2	+0.5
	baz=235,SNR=8.5							
IKP	In-Ko-Pah, Jac	82.31	49	P		P	04 52 02.7	+0.7
	baz=235,SNR=5.7							
EDW2	Edwards Air Fo	82.33	46	P		P	04 52 03.1	+1.1
	baz=233,SNR=8.1							
ISA	Isabella, Lake	82.48	46	P		P	04 52 03.9	+1.1
	baz=233							
ISA	Isabella, Lake	82.48	46	*e*P		P	04 52 04.3	+1.5
ISA				pmax		pmax		
	comp=Z,12nm,0.8s							
ISA	Isabella, Lake	82.48	46	*e*P		P	04 52 04.3	+1.5
	comp=Z,12nm,0.8s							
PFO	Pinyon Flats O	82.62	48	P		P	04 52 04.0	+0.4
	comp=Z,4.3nm,0.7s,baz=283,slow=3.9,SNR=4.4							
PFO	Pinyon Flats O	82.62	48	P		P	04 52 04.3	+0.7
	baz=234							
PFO	Pinyon Flats O	82.62	48	*e*P		P	04 52 04.8	+1.2
PFO				pmax		pmax		
	comp=Z,9.0nm,1.0s							
PFO	Pinyon Flats O	82.62	48	*e*P		P	04 52 04.8	+1.2
	comp=Z,9.3nm,1.0s							
TPFO	Pinon Flats	82.62	48	P		P	04 52 04.8	+1.2
	baz=234							
MNSI	Mandailing Nat	82.68	274	P		P	04 52 02.2	-2.0
SWSC	Sam W. Stewart	82.69	49	P		P	04 52 05.3	+1.5
	baz=235							
CMB	Columbia Colle	82.72	43	*e*P		P	04 52 04.9	+1.0
CMB				pmax		pmax		
	comp=Z,10.0nm,0.8s							
CMB	Columbia Colle	82.72	43	*e*P		P	04 52 04.9	+1.0
	comp=Z,9.5nm,0.8s							
LRMC	Laurel Mtn Rad	82.89	46	P		P	04 52 06.3	+1.3
	baz=234							
IPM	Ipoh	82.90	278	*e*P		P	04 52 04.8	-0.6
	comp=Z,55nm,0.7s							
SYO	Syowa Base	82.91	193	⇑ *e*P		P	04 52 01.2	-3.1
SYO	Syowa Base	82.91	193	⇓ *i*PcP		P	04 52 06.1	+1.8
AFDM	Forest Hills D	82.93	42	*e*P		P	04 52 06.2	+1.3
	comp=Z,9.7nm,1.1s							
ORV	Oroville	82.99	41	*e*P		P	04 52 06.3	+1.1
ORV				pmax		pmax		
	comp=Z,6.0nm,0.8s							
ORV	Oroville	82.99	41	*e*P		P	04 52 06.3	+1.1
	comp=Z,6.1nm,0.8s							
BELC	Belle Mtn. Jos	83.16	48	P		P	04 52 07.7	+1.4
	baz=235,SNR=9.2							
MDJ	Mudanjiang	83.18	326	P		P	04 52 06.4	+0.4
MDJ				pmax		pmax		
	comp=Z,24nm,0.9s							
MDJ	Mudanjiang	83.18	326	*e*P		P	04 52 06.5	+0.5
	comp=Z,24nm,0.8s							
N02D	Trinity Center	83.19	39	P		P	04 52 08.1	+1.8
	baz=230							
CWC	Cottonwood Cre	83.20	45	P		P	04 52 07.9	+1.3
	baz=233							
O03D	Paynes Creek	83.28	40	P		P	04 52 07.9	+1.2
	baz=230							
BC3	Big Chuckawall	83.33	49	P		P	04 52 08.6	+1.4
	baz=235							
HABR	Khabarovsk	83.35	331	*e*P		P	04 52 04.1	-2.6
HABR				*e*S		S	05 01 46.3	-11
HABR				*e*S		PnS	05 03 40.8	-0.4
HABR				*e*SS		SS	05 07 26.1	-6.4
HABR				*e*SSS		SSS	05 10 59.1	
HABR				pmax		pmax		
	comp=Z,24nm,1.5s							
HABR				pmax		pmax		
	comp=E,26nm,1.3s							
HABR				pmax		pmax		
	comp=N,9.0nm,1.3s							
HABR				MLR		MLR		
	comp=Z,2µm,21.0s							
MPMC	Manual Prospec	83.36	46	P		P	04 52 08.4	+1.0
	baz=234,SNR=5.5							
GSC	Goldstone, Bar	83.37	47	P		P	04 52 08.4	+1.1

TPNV pmax pmax
comp=Z,12nm,1.0s
TPNV Topopah Spring 84.69 46 *e*P **P** **04 52 15.2 +1.2**
comp=Z,12nm,1.0s
GSI Gunungsitoli 84.72 274 P **P** **04 52 15.2 +0.7**
comp=Z,98nm,0.8s
CN2 Changchun 84.83 323 *e*P **P** **04 52 14.0 -0.3**
CN2 pmax pmax
comp=Z,30nm,0.8s
VNA1 Neumayer--Stat 85.11 177 P **P** **04 52 15.7 +0.4**
Y14A Wickenburg 85.18 50 *e*P **P** **04 52 17.8 +1.5**
W13A Hualapai Mount 85.22 48 *e*P **P** **04 52 17.9 +1.2**
CHBT CHBT 85.28 286 P **P** **04 52 19.1 +2.0**
comp=Z,48nm,0.8s,comp=Z,4µm
K05A Summer Lake 85.35 39 *e*P **P** **04 52 18.9 +1.8**
comp=Z,85nm,1.8s
KLR Kul'dur 85.39 330 P **P** **04 52 17.2 +0.3**
comp=Z,7.1nm,0.6s,baz=162,slow=3.2,SNR=14
KLR Kul'dur 85.39 330 *e*P **P** **04 52 15.4 -1.5**
TRTT Trang 85.52 281 P **P** **04 52 20.2 +1.8**
comp=Z,38nm,0.9s
SKNT Sakolnakorn 85.72 291 P **P** **04 52 19.7 +0.4**
comp=Z,261nm,0.9s
TUC Tucson 85.87 52 P **P** **04 52 21.2 +1.4**
baz=238
TUC Tucson 85.87 52 *e*P **P** **04 52 21.6 +1.8**
TUC pmax pmax
comp=Z,21nm,1.0s
TUC Tucson 85.87 52 *e*P **P** **04 52 21.6 +1.8**
comp=Z,22nm,1.0s
CNPM China Poot 86.51 14 *e*P **P** **04 52 22.7 +0.6**
comp=Z,62nm,0.8s
X16A Lo Mia Camp, P 86.53 50 *e*P **P** **04 52 24.4 +1.4**
HOM Homer 86.55 13 *e*P **P** **04 52 23.4 +1.2**
comp=Z,197nm,0.8s
SURT Suratani 86.79 281 P **P** **04 52 26.7 +2.2**
comp=Z,19nm,1.6s
NONG Nongkai 86.92 291 P **P** **04 52 26.0 +1.0**
comp=Z,77nm,0.9s
CHAI Chaiyaphum 86.96 289 P **P** **04 52 26.4 +1.2**
comp=Z,8.9nm,1.0s
SVW2 Sparrevohn 87.11 11 *e*P **P** **04 52 24.5 -0.4**
comp=Z,13nm,0.7s
SZCU Shurtz Canyon 87.14 46 *e*P **P** **04 52 27.8 +1.9**
comp=Z,13nm,0.9s
MA2 Magadan 87.20 345 P **P** **04 52 25.0 -0.4**
comp=Z,30nm,0.7s,baz=121,slow=4.1,SNR=15
MA2 Magadan 87.20 345 *e*P **P** **04 52 24.6 -0.8**
MA2 pmax pmax
comp=Z,146nm,0.8s
MA2 Magadan 87.20 345 *e*P **P** **04 52 24.6 -0.8**
comp=Z,146nm,0.8s
PLCA Paso Flores 87.22 134 P **P** **04 52 26.6 +0.4**
comp=Z,4.3nm,0.7s,baz=250,slow=6.3,SNR=9.9
SEW Seward 87.43 14 *e*P **P** **04 52 26.5 +0.1**
comp=Z,30nm,1.0s
ENH Enshi 87.55 305 *e*P **P** **04 52 27.8 0.0**
comp=Z,62nm,0.9s
D05A Emmclaw 87.60 35 *e*P **P** **04 52 29.8 +2.2**
comp=Z,30nm,1.1s
PHET Kaeng Krachan 87.72 285 P **P** **04 52 30.6 +1.7**
comp=Z,33nm,0.9s,comp=Z,251nm
GYA Guiyang 87.88 300 P **P** **04 52 31.0 +1.5**
GYA pP pP 04 53 56.4 +5.1
GYA sP sP 04 54 34.6 +6.9
GYA PP **PP** **04 56 04.9 +3.3**
GYA SKS **SKSac** **05 02 22.0 -2.1**
GYA S **S** **05 02 41.3 -1.1**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,6.2s
G08A Pilot Rock 88.04 38 *e*P **P** **04 52 30.6 +0.7**
comp=Z,9.0nm,0.6s
BJT Baijiatuan 88.04 316 *e*P **P** **04 52 30.2 +0.4**
BJT pmax pmax
comp=Z,17nm,0.8s
BJT Baijiatuan 88.04 316 *e*P **P** **04 52 30.2 +0.4**
comp=Z,16nm,0.8s
PBKT Sadao Pong 88.13 289 P **P** **04 52 32.2 +1.5**
comp=Z,31nm,0.9s
A04D Lummi Island 88.22 33 P **P** **04 52 31.5 +1.2**
baz=229
B05A Bryant 88.24 34 P **P** **04 52 31.9 +1.4**
baz=230
LOEI Loei 88.28 290 P **P** **04 52 32.8 +1.3**
comp=Z,132nm,1.1s
HAWA Hanford 88.40 37 *e*P **P** **04 52 32.6 +1.2**
comp=Z,17nm,1.1s
TLIG Tlapa 88.56 70 *e*P **P** **04 52 34.0 +1.1**
comp=Z,12nm,0.7s
GLI Glacier Island 88.66 15 *e*P **P** **04 52 32.2 0.0**
comp=Z,100nm,0.8s
FID Port Fidalgo 88.69 15 *e*P **P** **04 52 32.6 +0.2**
comp=Z,50nm,1.0s
EYAK Cordova Ski Ar 88.69 16 *e*P **P** **04 52 33.0 +0.7**
comp=Z,32nm,0.9s
TT01 Tatalina 88.74 10 *e*P **P** **04 52 32.7 +0.2**
TTA Tatalina 88.76 10 *e*P **P** **04 52 32.7 0.0**
TTA Tatalina 88.76 10 *e*P **P** **04 52 32.7 0.0**
SRDT SRDT 88.78 286 P **P** **04 52 36.5 +2.7**
comp=Z,110nm,1.2s,comp=Z,9µm
PMR Palmer 88.83 14 *e*P **P** **04 52 32.0 -0.9**
PMR pmax pmax
comp=Z,36nm,0.9s
PMR Palmer 88.83 14 *e*P **P** **04 52 32.0 -0.9**
comp=Z,36nm,0.9s
UTTA Uttaradit 88.99 290 P **P** **04 52 36.6 +1.9**
comp=Z,6.3nm,1.0s,comp=Z,112nm
D08A Wollman Farm, 89.14 36 *e*P **P** **04 52 36.0 +1.3**
comp=Z,9.8nm,0.8s
DIV Divide 89.19 15 *e*P **P** **04 52 35.2 +0.5**
comp=Z,45nm,0.9s
SML Sawmill 89.20 14 *e*P **P** **04 52 34.5 -0.3**
SML pmax pmax
comp=Z,6.0nm,1.0s
SML Sawmill 89.20 14 *e*P **P** **04 52 34.5 -0.3**
comp=Z,6.1nm,1.0s
TMUT Trail Mountain 89.30 46 *e*P **P** **04 52 37.8 +1.7**
comp=Z,14nm,0.7s
BMRM Bremner River 89.34 16 *e*P **P** **04 52 36.1 +0.7**
comp=Z,47nm,0.8s
F10A Beach Ranch, E 89.42 38 *e*P **P** **04 52 36.8 +0.5**
comp=Z,14nm,0.8s
WRAK Wrangell Islan 89.44 24 *e*P **P** **04 52 36.0 +0.1**
comp=Z,29nm,0.9s
KLU Klutina 89.47 15 *e*P **P** **04 52 36.5 +0.4**
comp=Z,35nm,1.2s
MNTX Cornudas Mount 89.52 55 P **P** **04 52 37.9 +0.9**
baz=241
CRQM Cirque 89.53 17 *e*P **P** **04 52 37.3 +0.8**
comp=Z,46nm,1.1s
HLID Hailey 89.64 41 P **P** **04 52 37.9 +0.5**
baz=235
SUKH Sukhothai 89.67 289 P **P** **04 52 39.7 +1.8**
comp=Z,10nm,1.0s,comp=Z,96nm
TXAR Lajitas Array 89.69 58 P **P** **04 52 39.2 +1.3**
comp=Z,6.2nm,0.8s,baz=207,slow=8.0,SNR=11
TXAR PKKPbc **PKKPbc** **05 10 09.8 -0.1**
comp=Z,0.7nm,0.6s,baz=65,slow=3.6,SNR=8.9
TXAR PKPPKP **P'P'df** **05 18 18.4 +0.9**
comp=Z,0.3nm,0.8s,baz=49,slow=2.3,SNR=3.8
PCA Pinnacle 89.77 18 *e*P **P** **04 52 38.2 +0.8**
comp=Z,32nm,0.9s
XAN Xi'an 89.83 308 P **P** **04 52 38.8 +0.4**
XAN pmax pmax
comp=Z,57nm,0.7s
LLLB Lillooet 89.86 32 *e*P **P** **04 52 39.0 +0.9**
SEY Seymchan 89.86 347 P **P** **04 52 36.5 -1.2**
comp=Z,14nm,0.7s,baz=148,slow=5.5,SNR=22
CAST Castle Rocks 89.90 12 *e*P **P** **04 52 36.5 -1.5**
comp=Z,56nm,0.8s
BALM Baldy 89.98 17 *e*P **P** **04 52 39.3 +0.8**
BALM pmax pmax
comp=Z,32nm,0.8s
BALM Baldy 89.98 17 *e*P **P** **04 52 39.3 +0.8**
comp=Z,32nm,0.8s
LAMP Lampang 90.12 290 P **P** **04 52 41.8 +1.8**
comp=Z,25nm,1.0s,comp=Z,173nm
TCUT Toone Canyon 90.15 44 *e*P **P** **04 52 41.5 +1.5**
comp=Z,117nm,2.0s
KTH Kantishna Hill 90.24 12 *e*P **P** **04 52 38.7 -0.9**
comp=Z,43nm,0.9s
TRF Thorofare Moun 90.27 12 *e*P **P** **04 52 39.1 -0.7**
comp=Z,55nm,0.8s
ANMO Albuquerque 90.32 52 P **P** **04 52 41.1 +0.3**
baz=240
ANMO Albuquerque 90.32 52 *e*P **P** **04 52 38.4 -2.4**
ANMO pmax pmax
comp=Z,5.0nm,1.0s
KMI Kunming 90.40 297 P **P** **04 52 42.4 +0.9**
KMI pP pP 04 54 09.3 +5.8
KMI pmax pmax
comp=Z,29nm,1.3s
RND Reindeer 90.51 13 *e*P **P** **04 52 40.6 -0.3**
RND pmax pmax
comp=Z,44nm,0.8s
RND Reindeer 90.51 13 *e*P **P** **04 52 40.6 -0.3**
comp=Z,44nm,0.8s
DHY Denali Highway 90.53 14 *e*P **P** **04 52 42.1 +1.1**
comp=Z,58nm,1.8s
CMAR Chiang Mai Arr 90.68 290 P **P** **04 52 43.9 +1.3**
comp=Z,22nm,0.9s,baz=138,slow=3.2,SNR=41
CMAR PP **PP** **04 56 23.7 -0.1**
comp=Z,8.9nm,0.9s,baz=130,slow=6.2,SNR=16
BPAW Bear Paw Mtn. 90.72 12 *e*P **P** **04 52 41.2 -0.5**
comp=Z,2.5nm,1.2s
MCK McKinley 90.79 13 *e*P **P** **04 52 41.8 -0.3**
MCK pmax pmax
comp=Z,29nm,1.0s
MCK McKinley 90.79 13 *e*P **P** **04 52 41.8 -0.3**
comp=Z,29nm,1.0s
CMMT Chiang Mai 90.83 290 P **P** **04 52 44.4 +1.1**
comp=Z,242nm,0.8s
CHTO Chiang Mai 90.83 290 P **P** **04 52 44.5 +1.2**
comp=Z,1um,0.8s
CHTO Chiang Mai 90.83 290 *e*P **P** **04 52 44.6 +1.2**
CHTO pmax pmax
comp=Z,33nm,0.9s
CHTO Chiang Mai 90.83 290 *e*P **P** **04 52 44.6 +1.3**
comp=Z,33nm,0.9s
CMAI Chiengmai2 91.22 291 P **P** **04 52 46.5 +1.2**
S22A 4UR Ranch, Cre 91.44 49 P **P** **04 52 46.2 +0.1**
baz=240
HHC Hu-ho-hao-te 91.45 315 *e*P **P** **04 52 45.6 -0.2**
HHC pmax pmax
comp=Z,25nm,1.5s
MLY Manley 91.61 12 *e*P **P** **04 52 45.1 -0.8**
comp=Z,33nm,1.5s
WRH Wood River Hil 91.62 13 *e*P **P** **04 52 45.2 -0.6**
comp=Z,17nm,0.8s
DOT Dot Lake 91.77 15 *e*P **P** **04 52 47.0 +0.3**
comp=Z,40nm,1.0s
DLBC Dease Lake 91.78 23 P **P** **04 52 46.8 0.0**
comp=Z,2.3nm,0.8s,baz=0.0,slow=0.0,SNR=2.7
CCB Clear Creek Bu 91.83 13 *e*P **P** **04 52 45.9 -0.9**
comp=Z,12nm,0.8s
COLA College 92.02 13 *e*P **P** **04 52 47.3 -0.4**
COLA pmax pmax
comp=Z,14nm,0.8s
COLA College 92.02 13 *e*P **P** **04 52 47.3 -0.4**
comp=Z,14nm,0.8s
MDM Murphy Dome 92.02 13 *e*P **P** **04 52 47.1 -0.6**
comp=Z,17nm,1.0s
IL1 Eielson Array 92.13 13 *e*P **P** **04 52 47.2 -1.0**
ILAR Eielson Array 92.13 13 P **P** **04 52 47.4 -0.9**
comp=Z,4.1nm,0.7s,baz=215,slow=5.4,SNR=31
ILAR PKiKP **PKiKP** **04 57 34.6 -1.2**
comp=Z,0.4nm,0.6s,baz=232,slow=4.2,SNR=3.8
ILAR PKKP **PKKPdf** **05 10 01.5 -1.2**
comp=Z,0.4nm,0.9s,baz=9.3,slow=1.9,SNR=4.9
ILB Eielson Array 92.13 13 *e*P **P** **04 52 47.6 -0.6**
BW06 Boulder Array 92.19 44 *e*P **P** **04 52 49.5 +0.2**
PD31 Pinedale Array 92.19 44 *e*P **P** **04 52 50.0 +0.6**
PDAR Pinedale Array 92.19 44 P **P** **04 52 49.5 +0.2**
comp=Z,2.3nm,0.8s,baz=197,slow=2.5,SNR=6.6
PDAR PP **PP** **04 56 33.6 -1.9**
comp=Z,1.9nm,1.0s,baz=232,slow=7.3,SNR=4.8
PDAR PKKP **PKKPdf** **05 10 02.6 +0.6**
comp=Z,0.3nm,0.5s,baz=94,slow=7.2,SNR=4.3
PDAR PKPPKP **P'P'df** **05 18 14.6 +1.8**
comp=Z,0.5nm,0.9s,baz=111,slow=8.1,SNR=3.7
CD2 Chengdu 92.20 303 *e*P **P** **04 52 49.6 +0.2**
CD2 pP pP 04 54 15.0 +3.5
CD2 sP sP 04 54 53.1 +5.3
CD2 SKS **SKSac** **05 02 46.3 -2.2**
CD2 S **S** **05 03 20.1 -1.2**
CD2 sS sS 05 05 53.3 +5.5
CD2 SS **SS** **05 09 41.9 +0.5**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.4s
933A Laredo 92.36 61 P **P** **04 52 50.4 +0.2**
baz=244
SDCO Great Sand Dun 92.36 49 P **P** **04 52 50.5 +0.2**
baz=241
BOZ Bozeman (W) 92.45 40 P **P** **04 52 51.3 +0.9**
baz=237
MSTX Muleshoe 92.53 54 P **P** **04 52 51.5 +0.6**
baz=242
BILL Bilibino 92.69 354 *e*P **P** **04 52 49.8 -0.9**
BILL Bilibino 92.69 354 *e*P **P** **04 52 49.8 -0.9**
LCO Las Campanas 92.93 124 *e*P **P** **04 52 53.1 -0.1**
comp=Z,11nm,1.0s
DAWY Dawson 93.26 16 *e*P **P** **04 52 54.2 +0.7**
EGAK Eagle 93.41 15 *e*P **P** **04 52 54.3 +0.2**
comp=Z,16nm,0.9s
533A Kerrville 93.62 59 P **P** **04 52 56.4 +0.4**
baz=244
COLD Coldfoot 93.69 11 *e*P **P** **04 52 55.3 -0.1**
comp=Z,7.4nm,0.9s
433A Art 93.87 58 P **P** **04 52 57.3 +0.3**
baz=244
534A Blanco 94.04 59 P **P** **04 52 58.0 +0.2**
baz=244
K22A Casper 94.06 45 P **P** **04 52 58.5 +0.7**
baz=241
333A Richland Sprin 94.20 58 P **P** **04 52 58.5 0.0**
baz=244
LZH Lanzhou 94.46 308 *e*P **P** **04 53 02.8 +3.0**
LZH pP pP 04 54 31.8 +10
LZH sP sP 04 55 03.6 +5.3
LZH pmax pmax
comp=Z,30nm,1.0s
YAK Yakutsk 95.31 338 *e*P **P** **04 53 00.6 -2.2**
YAK pmax pmax
comp=Z,20nm,0.8s
INK Inuvik 98.08 15 *e*P Pdif **04 53 14.5 -0.6**
INK pmax pmax
comp=Z,9.0nm,1.1s
INK Inuvik 98.08 15 *e*P Pdif 04 53 14.5 -0.6
comp=Z,9.3nm,1.1s
SONM Songino Array 98.09 319 P Pdif 04 53 16.8 +1.0
comp=Z,1.7nm,0.9s,baz=124,slow=5.4,SNR=3.7
SONM PP **PP** **04 57 16.5 -4.1**
comp=Z,3.9nm,0.9s,baz=118,slow=7.0,SNR=7.9
SONM PKiKP **PKiKP** **04 57 47.0 +0.1**
comp=Z,1.3nm,0.8s,baz=116,slow=3.4,SNR=2.0
GTA Gaotai 98.77 309 P Pdif 04 53 19.3 +0.2
GTA pmax pmax
comp=Z,15nm,1.7s
YKA Yellowknife Ar 100.22 25 P **Pdif** **04 53 26.2 +1.5**
comp=Z,1.0nm,0.8s,baz=247,slow=4.0,SNR=3.6
YKA PKiKP **PKiKP** **04 57 50.0 +0.1**
comp=Z,0.3nm,0.6s,baz=239,slow=1.3,SNR=3.7
YKA PKKPbc **PKKPbc** **05 09 39.9 -3.4**
comp=Z,0.9nm,0.6s,baz=41,slow=2.5,SNR=9.3
FFC Flin Flon 102.25 35 *e*P **Pdif** **04 53 34.6 +0.6**
FFC Flin Flon 102.25 35 *e*Pdif **Pdif** **04 53 34.6 +0.6**
ZALV Zalesovo Beam 112.93 320 PKiKP **PKiKP** **04 58 12.2 -1.6**
comp=Z,3.2nm,0.4s,baz=178,slow=1.2,SNR=15
MK31 Makanchi Array 113.21 312 *i* PKIKP **PKiKP** **04 58 12.9 -1.8**
MK31 pmax pmax
comp=Z,4.0nm,0.6s
MKAR Makanchi Array 113.21 312 PKiKP **PKiKP** **04 58 13.4 -1.3**
comp=Z,4.9nm,0.6s,baz=205,slow=0.9,SNR=26
MKAR PKKPbc **PKKPbc** **05 09 01.4 -1.0**
comp=Z,0.7nm,0.5s,baz=267,slow=2.3,SNR=7.0
MAKZ Makanchi 113.42 312 PKIKP **PKiKP** **04 58 13.0 -2.1**
MAKZ pmax pmax
comp=Z,9.0nm,0.9s
KURK Kurchatov 116.22 316 PKIKP **PKPdf** **04 58 19.0 -1.3**
KURK pmax pmax
comp=Z,4.0nm,0.9s
KURK Kurchatov 116.22 316 PKP **PKPdf** **04 58 19.0 -1.3**
KURK PP PP 04 59 24.2 -7.8
KURBB Kurchatov Arra 116.27 316 PKP **PKPdf** **04 58 19.0 -1.3**
comp=Z,7.7nm,0.6s,baz=103,slow=1.8,SNR=11
KURBB PP PP 04 59 24.2 -8.1
comp=Z,4.4nm,0.9s,baz=97,slow=5.7,SNR=5.0
KSH Kashi 116.39 304 *e*PKP **PKPdf** **04 58 21.3 +0.1**
KSH *es*PKP 05 00 22.0
KSH PKS **PKSdf** **05 01 56.8 -1.1**
KSH SKS **SKSdf** **05 04 58.1 -1.4**
KSH SKKS **SKKSac** **05 05 48.9 -8.7**
TKM2 Tokmak 2 117.23 307 PKIKP **PKPdf** **04 58 21.2 -1.6**
TKM2 pmax pmax
comp=Z,6.0nm,0.7s
AAK Ala-Archa 118.00 307 PKP **PKPdf** **04 58 23.0 -1.2**
comp=Z,5.3nm,0.6s,baz=153,slow=4.5,SNR=4.7
AAK Ala-Archa 118.00 307 *i* PKIKP **PKPdf** **04 58 22.4 -1.8**
AAK Ala-Archa 118.00 307 *e*PKPdf **PKPdf** **04 58 23.3 -1.0**
MNAS Manas 119.43 306 PKIKP **PKPdf** **04 58 25.5 -1.5**
MNAS pmax pmax
comp=Z,13nm,0.6s
OTUK Ortayu 120.08 313 PKIKP **PKPdf** **04 58 26.5 -1.4**
OTUK pmax pmax
comp=Z,16nm,0.6s
PKME Peaks-Kenny Pk 120.30 50 *e*PKPdf **PKPdf** **04 58 27.4 -0.9**
SUR Sutherland 120.64 199 *e*PKPdf **PKPdf** **04 58 29.6 -0.3**
KK31 Karatay Array 120.96 307 *i* PKIKP **PKPdf** **04 58 28.2 -1.5**
KK31 pmax pmax
comp=Z,10.0nm,0.6s
KKAR Karatay Array 120.96 307 *e*PKIKP **PKPdf** **04 58 28.4 -1.3**
KKAR Karatay Array 120.96 307 *e*PKPdf **PKPdf** **04 58 28.4 -1.3**
VOSK Vostochnaya 121.08 318 PKIKP **PKPdf** **04 58 27.7 -1.9**
VOSK pmax pmax
comp=Z,16nm,0.7s
BVA0 Borovoye Array 121.44 319 PKIKP **PKPdf** **04 58 28.7 -1.6**
BVA0 pmax pmax
comp=Z,15nm,0.6s
BVAR Borovoye Array 121.44 319 PKP **PKPdf** **04 58 29.3 -1.0**
comp=Z,19nm,0.6s,baz=111,slow=1.4,SNR=27
BRVK Borovoye 121.50 319 *i* PKIKP **PKPdf** **04 58 28.0 -2.4**
BRVK Borovoye 121.50 319 *e*PKPdf **PKPdf** **04 58 29.1 -1.3**
BOSA Boshof 122.55 205 PKP **PKPdf** **04 58 32.9 -0.6**
comp=Z,5.9nm,0.7s,baz=132,slow=3.3,SNR=6.6
KBS Kingsbay 125.05 357 *e*PKPdf **PKPdf** **04 58 36.6 +0.1**
SPA0 Spitsbergen Ar 125.56 356 *e*PKPdf **PKPdf** **04 58 37.3 -0.3**
SPITS Spitsbergen Ar 125.56 356 PKP **PKPdf** **04 58 36.8 -0.7**
comp=Z,17nm,0.6s,baz=76,slow=4.4,SNR=23
DAG Danmarks Havn 126.54 6 *i* P **PKPdf** **04 58 37.5 -1.9**
comp=Z,6.4nm,0.7s
SVE Sverdlovsk 126.62 324 *e*PKIKP **PKPdf** **04 58 39.4 -0.7**
SVE pmax pmax
comp=Z,19nm,0.8s
SUMG Summit 126.97 14 *i* P **PKPdf** **04 58 40.1 -0.8**
comp=Z,24nm,1.2s
ARU Arti 127.82 324 PKP **PKPdf** **04 58 42.2 -0.2**
comp=Z,21nm,0.5s,baz=92,slow=1.0,SNR=23
ARU Arti 127.82 324 *i* PKIKP **PKPdf** **04 58 41.3 -1.1**
ARU 05 00 48.9
ARU 05 05 13.1
ARU SS SS 05 17 24.8 -8.8
ARU Arti 127.82 324 *e*PKPdf **PKPdf** **04 58 41.3 -1.1**
ABKAR Akbulak array 128.24 315 *e*PKPdf **PKPdf** **04 58 42.1 -1.3**
AKTO Aktyubinsk 129.32 316 PKP **PKPdf** **04 58 44.5 -1.0**
comp=Z,13nm,0.6s,baz=86,slow=3.6,SNR=22
GEYT Alibeck 130.10 300 PKP **PKPdf** **04 58 46.2 -1.1**
comp=Z,14nm,0.8s,baz=236,slow=0.5,SNR=15
GEYT SKPbc **SKPbc** **05 01 36.1 -0.7**
comp=Z,6.9nm,0.8s,baz=135,slow=0.2,SNR=6.8
HAMF Hammerfest 131.79 350 *e*PKPdf **PKPdf** **04 58 49.3 -0.2**
ARCES ARCESS Array B 132.46 349 PKP **PKPdf** **04 58 49.9 -0.9**
comp=Z,16nm,0.6s,baz=20,slow=1.8,SNR=5.2
ARCES SKPbc **SKPbc** **05 01 42.8 -1.5**
comp=Z,6.7nm,0.8s,baz=45,slow=1.9,SNR=6.2
ARE0 ARCESS Array S 132.46 349 *e*PKPdf **PKPdf** **04 58 50.1 -0.7**
LSZ Lusaka 132.68 217 *e*PKPdf **PKPdf** **04 58 52.5 -0.6**
LSZ Lusaka 132.68 217 *e*PKPdf **PKPdf** **04 58 52.5 -0.6**
LSZ *es*SKPdf **SKPab** **05 01 51.3 +2.6**
TRO Tromso 133.40 352 *e*PKPdf **PKPdf** **04 58 51.9 -0.7**
KLMR Klimovskoe 134.98 335 *e*PKIKP PKPpre 04 58 48.7
KLMR pmax pmax
comp=Z,12nm,0.8s
KMBO Kilima Mbogo 136.87 239 PKhKP PKPpre 04 58 57.0
comp=Z,1.7nm,0.6s,baz=55,slow=16,SNR=4.4
KMBO PKP **PKPdf** **04 59 01.0 -0.1**
comp=Z,5.5nm,1.0s,baz=6.4,slow=1.6,SNR=6.9
KMBO SKP 05 02 00.8
comp=Z,8.6nm,0.9s,baz=44,slow=3.6,SNR=13
KMBO Kilima Mbogo 136.87 239 *e*PKIKP **PKPdf** **04 59 00.8 -0.3**
FINES FINESS Array B 139.13 342 PKhKP PKPpre 04 58 52.8
comp=Z,4.5nm,0.7s,baz=64,slow=4.9,SNR=12
FINES SKP 05 02 03.0
comp=Z,11nm,0.6s,baz=54,slow=3.3,SNR=15
OBN Obninsk 139.65 329 *i* PKIKP **PKPdf** **04 59 01.9 -2.6**
OBN *i* 05 02 04.1
OBN pmax pmax
comp=Z,12nm,1.1s
GNI Garni 140.31 304 *i* PKIKP **PKPdf** **04 59 05.6 -0.9**
GNI Garni 140.31 304 *e*PKPdf **PKPdf** **04 59 06.0 -0.5**
KBZ Khabaz 140.85 310 PKhKP PKPpre 04 59 00.3
comp=Z,3.1nm,0.8s,baz=166,slow=4.9,SNR=4.2
KIV Kislovodsk 140.94 311 *e*PKIKP **PKPdf** **04 59 07.1 -0.3**
KIV Kislovodsk 140.94 311 *e*PKPdf **PKPdf** **04 59 07.0 -0.3**
AKH Akhalkalaki 141.00 306 ‖ *i* P **PKPdf** **04 59 02.3 -5.4**
NEY Neytrino 141.10 310 *i* PKIKP **PKPdf** **04 59 04.4 -3.4**
DOMB Dombas 141.86 354 *e*PKPdf **PKPdf** **04 59 02.7 -5.7**
AKN Aaknes 141.90 356 *e*PKPdf **PKPdf** **04 59 05.8 -2.7**
NB2 NORSAR Subarra 142.60 352 PKP **PKPdf** **04 59 05.2 -4.5**
comp=Z,7.1nm,0.6s,baz=16,slow=3.2
NB2 NORSAR Subarra 142.60 352 PKP **PKPdf** **04 59 05.2 -4.5**
baz=16,slow=3.2
NOA NORSAR Array B 142.60 352 PKhKP PKPpre 04 59 05.6
comp=Z,18nm,0.7s,baz=21,slow=3.8,SNR=68
NOA SKPbc **SKPbc** **05 02 12.4 -1.5**
comp=Z,2.4nm,0.8s,baz=16,slow=4.3,SNR=3.9
NC602 NORSAR Array S 142.85 352 *e*PKPdf **PKPdf** **04 59 06.1 -4.0**
HFS Hagfors 143.11 350 PKhKP PKPpre 04 59 07.2
comp=Z,40nm,0.4s,baz=11,slow=1.5,SNR=32
SUE Sulen 143.14 357 *e*PKPdf PKPab 04 59 07.8 +0.6
ASK Askoy 143.69 357 ‖ *e*PKPdf PKPab 04 59 09.5 +0.1
OSL Oslo 143.73 352 *e*PKPab PKPab 04 59 09.2 -0.3
BER Bergen 143.79 357 *e*PKPbc PKPab 04 59 09.7 0.0
MICGM Minsk 143.86 334 *e*P PKPab 04 59 10.0 -0.3
MNK Minsk 143.86 334 *e*PKIKP PKPab 04 59 10.0 -0.3
NACGM Naroch 144.00 335 *e* **PKPab** **04 59 10.0 -0.8**
LRW Lerwick 144.11 2 *e*P **PKPab** **04 59 10.2 -0.8**
KONO Kongsberg 144.15 353 *e*PKPbc **PKPab** **04 59 10.6 -0.6**
KONO *ep*PKPdf **pPKPdf** **05 00 42.7 +3.5**
KONO Kongsberg 144.15 353 *d* *i*PKIKP **PKPab** **04 59 09.8 -1.4**
KONO Kongsberg 144.15 353 *e*PKPdf **PKPab** **04 59 10.5 -0.7**
ODD1 Odda 144.17 355 ‖ *e*PKP **PKPab** **04 59 10.8 -0.5**
ANN Anapa 144.20 314 *i* PKHKP PKPpre 04 59 08.2
ANN pmax pmax
comp=Z,265nm,1.1s
BLS5 Blasjo 144.67 355 *e*PKPab PKPbc 04 59 12.7 -0.5
KMY Karmoy 144.96 356 *e*PKPab **PKPdf** **04 59 13.8 0.0**
STAV Stavanger 145.21 356 *e*PKPbc **PKPdf** **04 59 14.0 -0.2**
HOMB Hombersund 145.62 353 *e*PKPbc **PKPdf** **04 59 15.6 +0.6**
SNART Snartemo 145.68 354 *e*PKPbc **PKPdf** **04 59 15.4 +0.4**
AKASG Malin Array Be 145.86 328 PKPbc **PKPdf** **04 59 15.2 -0.4**
comp=Z,41nm,0.7s,baz=44,slow=4.0,SNR=132
AKASG SKPbc **SKPbc** **05 02 18.9 -2.9**
comp=Z,3.5nm,0.7s,baz=44,slow=3.1,SNR=5.2
KIEV Kiev 145.88 328 *i* PKIKP **PKPdf** **04 59 14.2 -1.4**
KIEV Kiev 145.88 328 *e*PKPbc **PKPdf** **04 59 15.5 -0.2**
RRH Rhenigidale 145.90 8 *e*P **PKPdf** **04 59 16.1 +0.7**
SUW Suwalki 146.04 337 *e*PKP **PKPdf** **04 59 16.6 +0.8**
RRR Rubha Reidh 146.06 7 *e*P **PKPdf** **04 59 16.1 +0.4**
SIM Simferopol' 146.28 316 *d* *i*PKP2 **PKPdf** **04 59 18.3 +1.7**
SIM pmax pmax
comp=Z,80nm,0.6s
SLMH Al Salmeh 146.30 299 *e*P **PKPdf** **04 59 17.6 +0.7**
KAC Achnashellach 146.46 6 *e*P **PKPdf** **04 59 17.9 +1.5**
KLNR Kaliningrad 146.55 340 *i* PKP2 **PKPdf** **04 59 17.9 +1.3**
MCD Coleburn Disti 146.56 4 *e*P **PKPdf** **04 59 17.7 +1.1**
KPL Plockton 146.59 7 *e*P **PKPdf** **04 59 18.1 +1.5**
MDO Dochfour 146.61 5 *e*P **PKPdf** **04 59 17.9 +1.2**
MME1 Meikle Cairn 146.84 4 *e*P **PKPdf** **04 59 18.0 +0.9**
ZALF Zalf 147.25 294 *e*P **PKPdf** **04 59 20.7 +2.1**
DRUM Mains of Drumt 147.27 4 *e*P **PKPdf** **04 59 19.8 +2.0**
MUD Monsted U'grnd 147.32 352 *i* P **PKPdf** **04 59 20.5 +2.6**
comp=Z,45nm,0.8s
COP Copenhagen 147.54 348 *i* P **PKPdf** **04 59 21.0 +2.7**
comp=Z,56nm,0.8s
BSD Bornholm Skovb 147.55 345 *i* P **PKPdf** **04 59 20.5 +2.2**
comp=Z,94nm,0.9s
EDU Dundee 147.60 4 *e*P **PKPdf** **04 59 20.5 +2.1**
ASF Jabal al Asfar 147.69 292 PKPbc **PKPbc** **04 59 22.9 +0.2**
comp=Z,25nm,0.9s,baz=40,slow=1.0,SNR=31
SALA Sala 147.77 293 *e*P **PKPdf** **04 59 22.4 +2.8**
MARH Ras Al Marh 147.82 296 *e*P **PKPdf** **04 59 22.7 +2.8**
EAB Aberfoyle 147.85 6 *e*P **PKPdf** **04 59 21.6 +2.8**
SORM Soroca 147.93 325 ‖ *i*P **PKPdf** **04 59 21.8 +2.6**

PGBU	Glenifferbraes	148.21	6	*e*P		PKPdf	04 59 22.2	+2.9
EDI	Edinburgh	148.21	5	*e*P		PKPdf	04 59 22.1	+2.7
ESY	Stoneypath	148.25	4	*e*P		PKPdf	04 59 21.2	+1.7
BRBR	Barbar	148.34	295	*e*P		PKPbc	04 59 24.1	-0.4
KIS	Kishinev	148.37	323	*e*P		PKPdf	04 59 22.0	+2.1
KIS	Kishinev	148.37	323	*e*PKIKP		PKPdf	04 59 22.0	+2.1
KIS				*e*			04 59 25.0	
GKP	Gorka Klasztor	148.60	341	*e*PKP		PKPbc	04 59 23.8	-0.4
BEL	Belsk	148.65	336	*e*PKP		PKPbc	04 59 24.5	+0.1
BRTR	Keskin Array B	148.67	307	PKPbc		PKPdf	04 59 24.0	+3.2
	comp=Z,14nm,0.7s,baz=138,slow=4.2,SNR=25							
MMAI	Mount Meron Ar	148.85	294	PKPbc		PKPbc	04 59 25.9	+0.3
	comp=Z,62nm,0.6s,baz=73,slow=5.6,SNR=68							
LVV	L'vov	148.89	331	*c i*PKP2		PKPbc	04 59 24.6	-0.5
LEOM	Leova	149.00	322	⇑*i*P		PKPbc	04 59 25.0	-0.4
GAL1	Galloway	149.12	7	*e*P		PKPbc	04 59 24.7	-0.7
ANTO	Ankara	149.23	308	*e*PKP2		PKPbc	04 59 25.9	-0.5
ANTO	Ankara	149.23	308	*e*PKPbc		PKPbc	04 59 25.9	-0.5
TLCR		149.41	320	⇑*i*P		PKPbc	04 59 25.6	-0.9
EIL	Elat	149.51	288	PKPbc		PKPbc	04 59 27.2	0.0
	comp=Z,39nm,0.8s,baz=339,slow=2.7,SNR=29							
PRAR	RASCA	149.53	325	⇑*i*P		PKPbc	04 59 26.9	+0.1
KESW	Keswick, Cumbr	149.54	5	*e*P		PKPdf	04 59 24.3	+2.7
GMM	Mts of Mourne	149.59	8	*e*P		PKPbc	04 59 25.7	-0.9
KWP	Kalwaria Pacla	149.61	332	*e*PKP		PKPbc	04 59 26.8	-0.1
CFR	Carcaliu	149.81	320	⇑*i*P		PKPbc	04 59 26.6	-0.8
WIM	Isle of Man	149.83	7	*e*P		PKPbc	04 59 26.6	-0.7
TESR	Tescani	149.85	324	⇑*i*P		PKPdf	04 59 26.3	+4.0
BURAR	Bucovina Array	149.88	327	⇓*i*P		PKPdf	04 59 22.5	0.0
TLB	Topalu	150.20	320	⇑*i*P		PKPbc	04 59 28.1	-0.3
VRI	Vrincioaia	150.21	323	⇑*i*P		PKPbc	04 59 27.7	-0.7
HARR	Harsova	150.21	320	⇑*i*P		PKPbc	04 59 28.1	-0.3
CSS	Mathiatis	150.22	298	P		PKPbc	04 59 28.6	-0.2
CSS	Mathiatis	150.22	298	*e*PKPbc		PKPdf	04 59 27.5	+4.2
PLOR	Plostina	150.26	323	⇑*i*P		PKPbc	04 59 28.2	-0.4
MAMC	Mammari	150.26	299	P		PKPbc	04 59 29.0	+0.1
OJC	Ojcow	150.33	336	*e*PKP		PKPbc	04 59 28.3	-0.3
STHS	Stebnicka Huta	150.39	333	*e*PKP		PKPbc	04 59 29.2	+0.5
UZH	Uzhgorod	150.54	331	*e*PKIKP		PKPbc	04 59 28.5	-0.6
UZH				*e*			04 59 33.7	
SZAC	Souni	150.62	298	P		PKPbc	04 59 29.6	-0.2
CRVS	Cervenica-Dubn	150.69	332	*e*PKP		PKPbc	04 59 29.2	-0.3
ISR	Istrita	150.76	322	⇑*i*P		PKPbc	04 59 28.6	-1.2
NIE	Niedzica	150.77	334	*e*PKP		PKPbc	04 59 30.0	+0.3
WPM1	Penmaenmawr	150.79	6	*e*P		PKPbc	04 59 28.6	-0.9
MLR	Muntele Rosu	150.87	323	PKPbc		PKPbc	04 59 28.8	-1.3
	comp=Z,3.2nm,0.6s,baz=287,slow=9.6,SNR=3.3							
MLR	Muntele Rosu	150.87	323	⇑*i*P		PKPdf	04 59 28.1	+4.0
DOPR	Dopca	150.87	324	⇑*i*P		PKPbc	04 59 30.3	+0.3
AKMC	Akamas	151.00	299	P		PKPbc	04 59 29.5	-1.1
KSP	Ksiaz	151.01	340	*e*PKP		PKPbc	04 59 30.3	+0.2
SECR		151.08	322	⇑*i*P		PKPbc	04 59 30.3	-0.2
STNC	Stoke	151.10	4	*e*P		PKPbc	04 59 29.4	-0.8
LLW	Llanuwchllyn	151.22	6	*e*P		PKPbc	04 59 29.6	-0.9
OKC	Ostrava-Krasne	151.25	337	⇑*e*PKP		PKPbc	04 59 30.6	-0.1
OKC				*e*PKPAB		PKPab	04 59 39.9	-0.2
CJR	Cluj-Napoca	151.30	327	⇑*i*P		PKPbc	04 59 31.1	+0.1
LANS	Liptovska Anna	151.31	335	*e*PKP		PKPbc	04 59 31.7	+0.8
UPC	Upice	151.39	340	⇑*e*PKP		PKPbc	04 59 31.0	0.0
VOIR		151.39	324	⇑*i*P		PKPbc	04 59 30.9	-0.4
DPC	Dobruska-Polom	151.43	340	⇑*e*PKP		PKPbc	04 59 31.3	+0.2
DPC				*ex*		x	04 59 34.4	
DPC				*e*pPKP		pPKPdf	05 01 06.3	+15
KECS	Kecovo	151.43	333	*e*PKP		PKPbc	04 59 30.6	-0.5
KECS				*e*			04 59 40.0	
CWF	Charnwood Fore	151.50	3	*e*P		PKPbc	04 59 30.2	-0.9
CLL	Collm	151.51	344	⇓*i*PKPbc		PKPbc	04 59 30.9	-0.3
CLL	comp=Z,92nm,0.8s			⇑*i*PKPab		PKiKP	04 59 34.5	+3.0
	comp=Z,93nm,0.7s							
CLL				*i*			04 59 40.7	
CLL				*e*pPKPbc		pPKPbc	05 01 05.0	+7.6
MORC	Moravsky Berou	151.51	338	⇑*i*P		PKPdf	04 59 24.7	-0.1
KRLC	Kraliky	151.52	339	⇑*e*PKP		PKPbc	04 59 31.4	0.0
KRLC				*ex*		x	04 59 34.6	
WACR	West Acre	151.58	1	*e*P		PKPbc	04 59 30.3	-1.0
ARR	Arges	151.66	324	⇓*i*P		PKPdf	04 59 26.0	+0.8
DRGR		151.68	328	⇑*i*P		PKPdf	04 59 29.8	+4.6
PVCC	Panska Ves	151.80	342	⇑*e*PKP		PKPbc	04 59 31.9	0.0
PVCC				*ex*		x	04 59 35.5	
LPW	Lampeter	151.90	7	*e*P		PKPbc	04 59 30.8	-1.3
HUMR	Humele	152.00	322	⇑*i*P		PKPbc	04 59 32.0	-0.5
LOT	Lotru	152.07	325	⇑*i*P		PKPdf	04 59 25.3	-0.6
VYHS	Vyhne	152.09	334	*e*PKP		PKPbc	04 59 32.3	-0.4
VYHS				*e*			04 59 43.6	
PSZ	Piszkesteto	152.12	333	⇑*i*P		PKPbc	04 59 32.5	-0.3
PSZ	Piszkesteto	152.12	333	*e*PKIKP		PKPdf	04 59 25.3	-0.5
PSZ	Piszkesteto	152.12	333	*e*PKPdf		PKPdf	04 59 25.3	-0.5
PSZ				*e*PKPbc		PKPbc	04 59 32.4	-0.4
VRAC	Vranov	152.24	338	PKPbc		PKPbc	04 59 31.7	-1.2
	comp=Z,8.2nm,0.8s,baz=61,slow=2.9,SNR=6.5							
VRAC				PKPab		PKPab	04 59 44.3	0.0
	comp=Z,10nm,0.7s,baz=64,slow=7.3,SNR=7.9							
VRAC	Vranov	152.24	338	⇑*i*P		PKPbc	04 59 31.0	-1.9
SSW	Stow on the Wo	152.24	4	*e*P		PKPbc	04 59 32.0	-0.8
GOPC	GO Pecny, Ondr	152.29	341	⇑*e*PKP		PKPbc	04 59 32.8	-0.2
GOPC				*ex*		x	04 59 36.2	
PRU	Pruhonice	152.29	341	⇑*e*PKP		PKPbc	04 59 32.6	-0.4
PRU				*e*PKPAB		PKPab	04 59 44.3	-0.1
MONM	Monmouth	152.29	5	*e*P		PKPbc	04 59 31.7	-1.2
SIRR	Siria	152.56	328	⇑*i*P		PKPbc	04 59 33.8	0.0
SMOL	Smolenice	152.61	336	*e*PKP		PKPbc	04 59 34.3	+0.5
TREC	Trest	152.62	339	⇑*e*PKP		PKPbc	04 59 33.3	-0.5
NKC	Novy Kostel	152.64	344	⇑*e*PKP		PKPbc	04 59 33.8	0.0
NKC				*e*PKPAB		PKPab	04 59 45.5	-0.4
WOL	Wolverton	152.93	3	*e*P		PKPbc	04 59 33.2	-1.1
BZS	Buzias	153.05	327	⇑*i*P		PKPdf	04 59 26.3	-0.9
KHC	Kasperske Hory	153.34	342	*e*PKPDF		PKPdf	04 59 25.5	-2.0
KHC				⇑*e*PKP		PKPbc	04 59 34.9	-0.5
KHC				*e*PKPAB		PKPab	04 59 48.9	-0.1
KHC	Kasperske Hory	153.34	342	*e*PKIKP		PKPdf	04 59 26.5	-1.0
KHC				*e*			04 59 48.4	
KHC	Kasperske Hory	153.34	342	*e*PKPdf		PKPdf	04 59 26.5	-1.0
KHC				*e*PKPbc		PKPbc	04 59 34.9	-0.5
KHC				*e*PKPab		PKPab	04 59 48.4	-0.5
GRFO	Grafenberg	153.44	345	*e*PKIKP		PKPdf	04 59 26.8	-0.8
GRFO	Grafenberg	153.44	345	*e*PKPdf		PKPdf	04 59 26.8	-0.8
GRFO				*e*PKPbc		PKPbc	04 59 34.8	-0.7
GRFO				*e*PKPab		PKPab	04 59 49.5	+0.2
MEM	Membach	153.44	353	PKPbc		PKPbc	04 59 35.2	-0.2
MEM				PKPab		PKPab	04 59 48.5	-0.7
GERES	GERESS Array B	153.56	341	PKP		PKPdf	04 59 27.1	-0.8
	comp=Z,2.5nm,0.8s,baz=48,slow=2.0,SNR=17							
GERES				PKPbc		PKPbc	04 59 34.7	-1.2
	comp=Z,4.0nm,0.6s,baz=29,slow=3.0,SNR=18							
MDVR	Moldovita	153.59	326	⇑*i*P		PKPdf	04 59 26.5	-1.5
CONA	Conrad Observa	153.67	337	*i* PKPdf		PKPdf	04 59 27.2	-0.9
	comp=Z,6.4nm,1.0s							
CONA				*i* PKiKP		PKPbc	04 59 36.0	-0.2
	comp=Z,16nm,0.9s							
CONA				*i* PKPab		PKPab	04 59 50.8	+0.3
	comp=Z,17nm,1.1s							
SNF	Seneffe	153.69	356	PKPab		PKPab	04 59 50.0	-0.3
BCLA	Clavier	153.69	354	PKPab		PKPab	04 59 49.7	-0.6
DOU	Dourbes	154.08	355	PKPbc		PKPbc	04 59 36.8	-0.1
DOU				PKPab		PKPab	04 59 51.4	-0.6
VTS	Vitosha	154.21	320	⇑*i*P		PKPbc	04 59 37.3	-0.3
MOA	Molln	154.27	339	*i* PKPdf		PKPdf	04 59 27.7	-1.2
	comp=Z,9.4nm,1.1s							
MOA				*i* PKiKP		PKPbc	04 59 37.1	-0.3
	comp=Z,8.0nm,0.8s							
MOA				*i* PKPab		PKPab	04 59 53.1	+0.1
	comp=Z,13nm,1.2s							
WLF	Walferdange	154.35	353	PKPbc		PKPbc	04 59 41.6	+4.2
WLF				PKPab		PKPab	04 59 53.2	0.0
WLF	Walferdange	154.35	353	*e*PKIKP		PKPdf	04 59 28.8	-0.1
WLF				*e*			04 59 52.8	
WLF	Walferdange	154.35	353	*e*PKPdf		PKPdf	04 59 28.8	-0.1
WLF				*e*PKPbc		PKPbc	04 59 37.4	-0.1
WLF				*e*PKPab		PKPab	04 59 52.8	-0.4
ARSA	Arzberg	154.37	337	*i* PKPab		PKPab	04 59 51.2	-2.2
	comp=Z,9.5nm,1.0s							
STU	Stuttgart	154.74	348	*e*PKIKP		PKPdf	04 59 28.2	-1.3
STU				*e*			04 59 54.0	
STU	Stuttgart	154.74	348	*e*PKPdf		PKPdf	04 59 28.2	-1.3
STU				*e*PKPbc		PKPbc	04 59 37.9	-0.4
STU				*e*PKPab		PKPab	04 59 54.0	-0.9
LANF	Langenberg	154.79	350	PKP		PKPdf	04 59 31.1	+1.6
SOKA	Soboth	155.03	337	*i* PKPdf		PKPdf	04 59 28.9	-1.1
	comp=Z,1.4nm,0.9s							
SOKA				*i* PKPab		PKPab	04 59 56.5	+0.2
	comp=Z,13nm,1.3s							
KBA	Koelnbreinsper	155.25	340	*i* PKPdf		PKPdf	04 59 29.1	-1.4
	comp=Z,11nm,1.1s							
BFO	Black Forest	155.32	349	*e*PKIKP		PKPdf	04 59 29.2	-1.1
BFO				*e*			04 59 56.5	
BFO	Black Forest	155.32	349	*e*PKPdf		PKPdf	04 59 29.2	-1.1
BFO				*e*PKPbc		PKPbc	04 59 39.2	
BFO				*e*PKPab		PKPab	04 59 56.5	-0.9
VAY	Valandovo	155.37	319	*e*PKP		PKPab	04 59 58.1	+0.2
WTTA	Wattenberg	155.58	343	*i* PKPab		PKPab	04 59 58.9	+0.2
	comp=Z,13nm,0.6s							
RETA	Reutte	155.60	344	*i* PKPab		PKPab	04 59 58.2	-0.5
	comp=Z,8.8nm,0.6s							
SKO	Skopje	155.62	321	*i* PKP		PKPab	04 59 59.5	+0.5
ECH	Echery	155.63	350	PKP		PKPdf	04 59 31.9	+1.2
MOTA	Moosalm	155.65	344	*i* PKPdf		PKPdf	04 59 29.8	-1.2
	comp=Z,7.0nm,0.8s							
MOTA				*i* PKPab		PKPab	04 59 58.8	-0.2
	comp=Z,7.2nm,0.6s							
ABTA	Abfaltersbach	155.80	341	*i* PKPdf		PKPdf	04 59 29.7	-1.4
	comp=Z,16nm,1.0s							
ABTA				*i* PKPab		PKPab	04 59 59.2	-0.4
	comp=Z,11nm,0.7s							
MOF	Molkenrain	155.99	350	PKP		PKPdf	04 59 32.8	+1.5
DAVA	Damuels	156.00	345	*i* PKPdf		PKPdf	04 59 30.7	-0.7
	comp=Z,3.6nm,0.6s							
DAVA				*i* PKPab		PKPab	04 59 59.0	-1.5
	comp=Z,18nm,0.8s							
FETA	Feichten	156.04	344	*i* PKPdf		PKPdf	04 59 30.9	-0.5
	comp=Z,5nm,0.9s							
DAVOX	Davos/Dischmat	156.48	345	PKPab		PKPab	05 00 02.3	-0.3
	comp=Z,16nm,0.6s,baz=351,slow=3.2,SNR=11							
OHR	Ohrid	156.54	320	*i* PKP		PKPab	05 00 02.8	-0.2
AQU	L'Aquila	159.31	334	*e*PKIKP		PKPdf	04 59 34.8	-0.7
AQU	L'Aquila	159.31	334	*e*PKPdf		PKPdf	04 59 34.8	-0.7
AQU				*e*PKPab		PKPab	05 00 15.0	0.0
TIP	Timpagrande	160.14	322	*e*PKPdf		PKPdf	04 59 35.4	-1.2
TIP				*e*PKPab		PKPab	05 00 18.3	-0.4
LIC	Lamto	161.09	161	*e*PKIKP		PKPdf	04 59 37.7	-0.5
	comp=Z,68nm,1.3s							
KIC	Kosan Boka	161.31	161	*e*PKIKP		PKPdf	04 59 38.0	-0.5
	comp=Z,43nm,1.2s							
TIC	Toumodi	161.49	160	*e*PKIKP		PKPdf	04 59 38.0	-0.7
DBIC	Dimbokro	161.57	161	PKPab		PKPab	05 00 25.6	+0.3
	comp=Z,8.1nm,0.8s,baz=141,slow=4.5,SNR=5.3							
ESDC	Sonseca Array	164.03	15	PKPab		PKPab	05 00 35.6	0.0
	comp=Z,6.4nm,1.0s,baz=347,slow=4.3,SNR=10							
KEST	Kesra	166.57	330	PKP		PKPdf	04 59 41.5	-1.2
	comp=Z,6.3nm,1.0s,baz=279,slow=23,SNR=3.9							
KEST				PKPab		PKPab	05 00 46.5	-0.5
	comp=Z,7.1nm,0.8s,baz=295,slow=3.4,SNR=5.1							
TORD	Torodi Ar. Bea	168.94	183	PKP		PKPdf	04 59 43.5	-1.3
	comp=Z,9.7nm,0.8s,baz=317,slow=0.5,SNR=22							
TORD				PKPab		PKPab	05 00 57.5	-0.2
	comp=Z,6.2nm,0.6s,baz=173,slow=4.2,SNR=29							

WEL 23 05:05:53.3±0.4, 36°.93S×177°.58E, h123km±4km, ML3.6/16, 4C, Error ellipse: s-maj=4.5km s-min=4.5km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HAZ	Te Kaha	0.84	169	⇑PN	Pn	05 06 14.1	+0.1
HAZ				SN	Sn	05 06 29.7	0.0
HAZ				AML	AML	05 06 31.7	
HAZ				AML	AML	05 06 31.7	
MXZ	Matakaoa Point	0.86	138	PN	Pn	05 06 14.3	+0.1
MXZ				SN	Sn	05 06 30.2	+0.3
PKGZ	Pakihiroa	1.03	158	PN	Pn	05 06 15.9	-0.1
RUGZ	Raukumara Rang	1.04	176	⇑PN	Pn	05 06 15.4	-0.6
RUGZ				SN	Sn	05 06 32.3	-1.0
WMGZ	Waiomatatini S	1.11	144	PN	Pn	05 06 16.2	-0.4
WMGZ				AML	AML	05 06 35.0	
WMGZ				AML	AML	05 06 35.2	
PUZ	Puketiti	1.26	155	PN	Pn	05 06 17.7	-0.5
PUZ				SN	Sn	05 06 36.7	-0.5
PUZ				AML	AML	05 06 48.6	
TWGZ	Tauwhareparae	1.28	166	⇑PN	Pn	05 06 18.9	+0.4
TWGZ				SN	Sn	05 06 38.1	+0.4
TWGZ				AML	AML	05 06 41.0	
URZ	Urewera	1.38	196	⇑PN	Pn	05 06 19.6	+0.2
URZ				SN	Sn	05 06 39.9	+0.5
URZ				AML	AML	05 06 41.2	
MWZ	Matawai	1.40	182	PN	Pn	05 06 19.6	-0.2
MWZ				AML	AML	05 06 40.0	
MWZ				AML	AML	05 06 40.0	
MWZ				AML	AML	05 06 40.3	
TKGZ	Te Karaka	1.52	172	PN	Pn	05 06 20.7	-0.4
TKGZ				AML	AML	05 06 44.4	
TKGZ				AML	AML	05 06 45.4	
RAGZ	Rawiri	1.57	185	PN	Pn	05 06 22.0	+0.3
RAGZ				AML	AML	05 06 45.1	
RAGZ				AML	AML	05 06 47.0	
CNGZ	Carnagh Statio	1.63	162	PN	Pn	05 06 22.3	0.0
MUGZ	Murupara	1.67	202	PN	Pn	05 06 23.3	+0.4
RIGZ	Rimuhau	1.78	175	PN	Pn	05 06 23.7	-0.5
RIGZ				AML	AML	05 06 50.0	
RIGZ				AML	AML	05 06 50.3	
SNGZ	Shannon Statio	1.86	186	AML	AML	05 06 52.1	
SNGZ				AML	AML	05 06 52.3	
KNZ	Kokohu	2.09	178	PN	Pn	05 06 27.0	-0.9
KNZ				AML	AML	05 07 07.0	
BKZ	Black Stump Fm	2.39	201	AML	AML	05 07 06.4	
KWHZ	Kaweka Forest	2.65	200	AML	AML	05 07 19.0	
PXZ	Pawanui	3.15	190	PN	Pn	05 06 39.4	-2.1
PXZ				AML	AML	05 06 41.9	
PXZ				AML	AML	05 07 18.2	
BFZ	Birch Farm	3.89	195	AML	AML	05 07 36.2	
BFZ				AML	AML	05 08 13.8	
MRZ	Mangatainoka R	4.04	202	AML	AML	05 08 37.8	
MRZ				AML	AML	05 08 37.8	

IDC 23 05:11:37.9±2.6, 54°.12N×86°.40E, h0km, mb1 3.2/2, mb1mx3.0/41, mbtmp3.2/2, ML2.6/2, Error ellipse: s-maj=20.3km s-min=12.9km az=58.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	ZALESOVO INFRA	0.95	260	*i*		05 18 00.0	
	baz=80,slow=321,SNR=2.0						
ZALV	Zalesovo Beam	0.95	260	Pg	Pg	05 11 55.2	-0.9
	1.4nm,0.3s,baz=80,slow=18,SNR=7.9						
ZALV				Lg	Lg	05 12 09.8	
	1.6nm,0.3s,baz=78,slow=28,SNR=10						
KURBB	Kurchatov Arra	5.96	237	Pn	Pn	05 13 08.0	+0.7
	0.1nm,0.3s,baz=55,slow=14,SNR=4.2						
KURBB				Lg	Lg	05 14 46.8	
	0.0nm,0.3s,baz=52,slow=29,SNR=3.5						
MKAR	Makanchi Array	7.79	201	Pn	Pn	05 13 33.6	+1.1
	0.2nm,0.3s,baz=20,slow=13,SNR=6.3						

DDA 23 05:28:05.8, 39°.12N×29°.03E, h7km, Md2.6
ISCJB 23 05:28:06.2±0.5, 39°.09N±0°.04×29°.04E±0°.04, h10km±5km, Error ellipse: s-maj=6.4km s-min=4.3km az=153.8
ISK 23 05:28:06.1, 39°.15N×29°.03E, h7km, ML2.4
CSEM 23 05:28:06.3±0.1, 39°.10N×29°.02E, h10km, MD2.6, Error ellipse: s-maj=3.0km s-min=2.5km az=145.0

ISC 23 05:28:06.3±0.9, 39°.10N±0°.03×29°.03E±0°.02, h13km±8km, n32, σ0°.46/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	Demirci	0.25	256	*i* P	Pg	05 28 11.9	+0.2
DEMI				*i* S	Sg	05 28 15.4	+0.1
DEMI	Demirci	0.25	256	P	Pg	05 28 11.9	+0.2
DEMI				S	Sg	05 28 15.4	+0.1
GEDZ	Gediz	0.30	101	*e*PG	Pb	05 28 13.5	-0.2
GEDZ	Gediz	0.30	101	*e*Pg	Pb	05 28 13.5	-0.2
GDZ	Gediz	0.35	92	*i* P	Pg	05 28 13.5	0.0
GDZ				*i* S	Sg	05 28 18.4	+0.1
GDZ	Gediz	0.35	92	P	Pg	05 28 13.5	0.0
GDZ				S	Sg	05 28 18.4	+0.1
TVSB	Tavsanli	0.48	44	*e*PG	Pg	05 28 15.5	-0.4
TVSB				*e*SG	Sg	05 28 21.6	-0.7
TVSB	Tavsanli	0.48	44	*e*Pg	Pg	05 28 15.5	-0.4
TVSB				*e*Sg	Sg	05 28 21.6	-0.7
KULA	Kula-Manisa	0.66	206	*e*PG	Pg	05 28 19.1	0.0
KULA	Kula-Manisa	0.66	206	*e*Pg	Pg	05 28 19.1	0.0
MANT	Manisa	0.71	211	*i* P	Pg	05 28 19.2	-1.0
MANT				*i* S	Sg	05 28 28.8	-0.9
MANT	Manisa	0.71	211	P	Pg	05 28 19.2	-1.0
MANT				S	Sg	05 28 28.8	-0.9
KHL	Karahalli	0.87	154	*e*PG	Pb	05 28 23.8	+0.4
KHL	Karahalli	0.87	154	*e*Pg	Pb	05 28 23.8	+0.4
AKS	Akhisar	0.97	257	*e*PG	Pb	05 28 25.2	+0.1
AKS	Akhisar	0.97	257	*e*Pg	Pb	05 28 25.2	+0.1
BALB	Balikesir	1.04	301	*e*PG	Pn	05 28 26.8	+0.1
BALB	Balikesir	1.04	301	*e*Pg	Pn	05 28 26.8	+0.1
CAVI	Cavuskoy	1.26	29	*e*PN	Pg	05 28 30.3	-0.3
CAVI	Cavuskoy	1.26	29	*e*Pn	Pg	05 28 30.3	-0.3
BALY	Balya	1.27	301	*i* P	Pg	05 28 30.6	-0.1
BALY				*i* S	Sn	05 28 47.0	+0.3
BALY	Balya	1.27	301	P	Pg	05 28 30.6	-0.1
BALY				S	Sn	05 28 47.0	+0.3
MDNY	Mudanya-Bursa	1.27	355	*e*PN	Pn	05 28 30.0	+0.2
MDNY	Mudanya-Bursa	1.27	355	*e*Pn	Pn	05 28 30.0	+0.2
KCTX	Karacabey (Bur	1.27	336	*e*PN	Pn	05 28 30.0	+0.1
KCTX	Karacabey (Bur	1.27	336	*e*Pn	Pn	05 28 30.0	+0.1
IZI	Iznik	1.28	15	*e*PN	Pg	05 28 30.5	-0.4
IZI	Iznik	1.28	15	*e*Pn	Pg	05 28 30.5	-0.4
ARMT	Armutlu	1.47	355	*e*PN	Pn	05 28 32.9	+0.3
ARMT	Armutlu	1.47	355	*e*Pn	Pn	05 28 32.9	+0.3
GULT	Gulveren	1.75	40	*e*PN	Pn	05 28 37.4	+0.8
GULT	Gulveren	1.75	40	*e*Pn	Pn	05 28 37.4	+0.8

MEX 23 05:32:27.4±0.3, 14°.53N×92°.26W, h86km±5km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	Comitan	1.74	4	*e*P	Pn	05 32 55.0	-1.3
CCIG				*e*S	Sn	05 33 16.7	-1.5

ISCJB 23 05:51:29.3±0.7, 37°.67N±0°.02×25°.74E±0°.02, h3km±6km, Error ellipse: s-maj=2.7km s-min=2.2km az=154.8
DDA 23 05:51:29.9, 37°.65N×25°.78E, h6km, Md3.5
ISK 23 05:51:29.8, 37°.69N×25°.75E, h12km, ML3.4
ATH 23 05:51:30.2, 37°.64N×25°.79E, h32km±1km, ML3.6/12, Error ellipse: s-maj=1.6km s-min=0.7km az=150.0
CSEM 23 05:51:30.3±0.1, 37°.64N×25°.75E, h10km, ML3.6, Error ellipse: s-maj=2.4km s-min=2.2km az=130.0
THE 23 05:51:31.6, 37°.63N×25°.79E, h18km±1km, ML3.9/6, Error ellipse: s-maj=1.9km s-min=0.5km az=87.0

ISC 23 05:51:30.2±1.0, 37°.65N±0°.01×25°.76E±0°.02, h11km±9km, n205, σ0°.86/257, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
APE	Apeiranthos	0.60	198	*e*PG	Pg	05 51 42.0	0.0
APE				*e*SG	Sb	05 51 52.9	+1.5
APE	Apeiranthos	0.60	198	P	Pb	05 51 42.5	-0.3
APE	Apeiranthos	0.60	198	*e*Pg	Pg	05 51 42.0	0.0
APE	Apeiranthos	0.60	198	P	Pb	05 51 42.5	-0.3
APE				*e*Sg	Sb	05 51 52.9	+1.5
APE	Apeiranthos	0.60	198	P	Pg	05 51 41.9	-0.1
APE				S	Sn	05 51 53.4	-1.2
APE				AML	AML	05 51

comp=E,13814µm,1.0s

BDRM	**Kayabasi**	**1.46**	**113**	*i* P	**Pg**	05 51 58.0	**-0.3**
BDRM				*i* S	**Sg**	05 52 18.1	**+0.8**
BDRM	**Kayabasi**	**1.46**	**113**	P	**Pg**	05 51 58.0	**-0.3**
BDRM				S	**Sg**	05 52 18.1	**+0.8**
NIS1	**Nisyros Isl.**	**1.54**	**132**	*e*PN	**Pb**	05 51 58.4	**-0.4**
NIS1	**Nisyros Isl.**	**1.54**	**132**	*e*Pn	**Pb**	05 51 58.4	**-0.4**
PTL	**Penteli**	**1.55**	**286**	P	**Pn**	05 51 57.4	**-0.4**
PTL	**Penteli**	**1.55**	**286**	P	**Pn**	05 51 57.8	**0.0**
PTL				S	**Sg**	05 52 20.2	**0.0**
PTL	**Penteli**	**1.55**	**286**	P	**Pn**	05 51 57.8	**0.0**
PTL				S	**Sg**	05 52 20.2	**0.0**
PTL				AML	AML	05 52 22.7	

comp=E,7507µm,0.5s

PTL				AML	AML	05 52 23.0		

comp=N,3495µm,0.4s

SKY	**Skiros Island**	**1.56**	**323**	P	**Pn**	05 51 57.7	**-0.1**
SKY	**Skiros Island**	**1.56**	**323**	P	**Pn**	05 51 57.7	**-0.1**
SIGR	**SIGRI**	**1.56**	**3**	*e*PN	**Pn**	05 51 57.6	**-0.4**
SIGR	**SIGRI**	**1.56**	**3**	P	**Pn**	05 51 57.4	**-0.5**
SIGR	**SIGRI**	**1.56**	**3**	*e*Pn	**Pn**	05 51 57.6	**-0.4**
SIGR	**SIGRI**	**1.56**	**3**	P	**Pn**	05 51 57.0	**-0.9**
VLY	**Voula,Athens**	**1.57**	**278**	P	**Pn**	05 51 58.1	**0.0**
VLY				S	**Sn**	05 52 18.3	**-0.1**
VLY	**Voula,Athens**	**1.57**	**278**	P	**Pn**	05 51 58.1	**0.0**
VLY				S	**Sn**	05 52 18.3	**-0.1**
VLY	**Voula,Athens**	**1.57**	**278**	P	**Pn**	05 51 58.1	**0.0**
VLY				S	**Sb**	05 52 19.1	**0.0**
VLY				AML	AML	05 52 22.5	

comp=N,6949µm,0.5s

VLY				AML	AML	05 52 24.9		

comp=E,6042µm,0.4s

ATHU	**Athens Univers**	**1.60**	**282**	P	**Pn**	05 51 58.3	**-0.1**
ATHU	**Athens Univers**	**1.60**	**282**	P	**Pn**	05 51 58.3	**-0.1**
ATHU				S	**Sb**	05 52 20.2	**+0.3**
ATHU	**Athens Univers**	**1.60**	**282**	P	**Pn**	05 51 58.1	**-0.3**
ATHU				S	**Sb**	05 52 20.2	**+0.3**
ATHU				AML	AML	05 52 23.3	

comp=E,1491µm,0.4s

ATHU				AML	AML	05 52 23.5		

comp=N,1974µm,0.4s

EREA	**Eretria**	**1.64**	**299**	P	**Pn**	05 51 59.1	**+0.1**
EREA				S	**Sn**	05 52 19.5	**-0.5**
EREA	**Eretria**	**1.64**	**299**	P	**Pn**	05 51 59.1	**+0.1**
EREA				S	**Sn**	05 52 19.5	**-0.5**
EREA	**Eretria**	**1.64**	**299**	P	**Pn**	05 51 59.3	**+0.3**
MLSB	**Milas**	**1.64**	**102**	*e*PN	**Pb**	05 52 00.4	**-0.1**
MLSB	**Milas**	**1.64**	**102**	*e*Pn	**Pb**	05 52 00.4	**-0.1**
PRK	**Paraskevi**	**1.65**	**14**	P	**Pn**	05 51 58.5	**-0.6**
PRK	**Paraskevi**	**1.65**	**14**	P	**Pn**	05 51 58.5	**-0.6**
PRK				S	**Sn**	05 52 20.2	**0.0**
PRK	**Paraskevi**	**1.65**	**14**	P	**Pn**	05 51 57.7	**-1.4**
PRK				S	**Sn**	05 52 20.2	**0.0**
PRK				AML	AML	05 52 27.8	

comp=E,3524µm,1.0s

PRK				AML	AML	05 52 27.8		

comp=N,2789µm,0.5s

ATH	**Athens Observa**	**1.65**	**282**	P	**Pn**	05 51 59.3	**+0.2**
ATH	**Athens Observa**	**1.65**	**282**	P	**Pn**	05 51 59.3	**+0.2**
ATH				S	**Sb**	05 52 20.9	**-0.5**
DKL	**Dikili**	**1.68**	**32**	*e*PN	**Pn**	05 51 58.8	**-0.8**
DKL	**Dikili**	**1.68**	**32**	*e*Pn	**Pn**	05 51 58.8	**-0.8**
AYDB	**Zeytinkoy-Aydi**	**1.71**	**79**	*e*PN	**Pn**	05 52 00.4	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.71**	**79**	*e*Pn	**Pn**	05 52 00.4	**+0.3**
AYVA	**Ayvalik**	**1.81**	**23**	*i* P	**Pg**	05 52 04.4	**-0.6**
AYVA				*i* S	**Sg**	05 52 30.5	**+1.9**
AYVA	**Ayvalik**	**1.81**	**23**	P	**Pg**	05 52 04.4	**-0.6**
VILL	**Villia**	**2.00**	**286**	P	**Pn**	05 52 04.1	**+0.1**
VILL	**Villia**	**2.00**	**286**	P	**Pn**	05 52 04.1	**+0.1**
DID	**Didima**	**2.01**	**267**	P	**Pn**	05 52 04.0	**-0.1**
DID	**Didima**	**2.01**	**267**	P	**Pn**	05 52 04.0	**-0.1**
DID	**Didima**	**2.01**	**267**	P	**Pn**	05 52 03.5	**-0.6**
AKS	**Akhisar**	**2.03**	**52**	*e*PN	**Pn**	05 52 04.6	**+0.2**
AKS	**Akhisar**	**2.03**	**52**	*e*Pn	**Pn**	05 52 04.6	**+0.2**
YER	**Yerkesik**	**2.07**	**103**	*e*PN	**Pn**	05 52 06.0	**+1.0**
YER	**Yerkesik**	**2.07**	**103**	*e*Pn	**Pn**	05 52 06.0	**+1.0**
AOS	**Alonnisos**	**2.12**	**316**	P	**Pn**	05 52 05.8	**+0.2**
AOS	**Alonnisos**	**2.12**	**316**	P	**Pn**	05 52 05.8	**+0.2**
AOS	**Alonnisos**	**2.12**	**316**	P	**Pn**	05 52 05.4	**-0.2**
BOZC	**Bozcaada**	**2.21**	**6**	*i* P	**Pn**	05 52 06.1	**-0.7**
BOZC				*i* S	**Sg**	05 52 43.7	**+2.6**
LTK	**Loutraki**	**2.24**	**281**	P	**Pn**	05 52 07.5	**+0.2**
LTK	**Loutraki**	**2.24**	**281**	P	**Pn**	05 52 07.2	**-0.1**
LTK	**Loutraki**	**2.24**	**281**	P	**Pn**	05 52 07.2	**-0.1**
SKIA	**Skiathos**	**2.36**	**311**	P	**Pn**	05 52 09.2	**+0.3**
SKIA	**Skiathos**	**2.36**	**311**	P	**Pn**	05 52 09.2	**+0.3**
SKIA	**Skiathos**	**2.36**	**311**	P	**Pn**	05 52 09.3	**+0.5**
MANT	**Manisa**	**2.36**	**68**	*e*P	**Pn**	05 52 07.7	**-1.5**
MANT				*i* S	**Sb**	05 52 41.2	**-1.0**
MANT	**Manisa**	**2.36**	**68**	P	**Pn**	05 52 07.7	**-1.5**
MANT				S	**Sb**	05 52 41.2	**-1.0**
KARP	**Karpathos**	**2.38**	**151**	*e*PN	**Pn**	05 52 10.1	**+0.9**
KARP	**Karpathos**	**2.38**	**151**	P	**Pn**	05 52 08.8	**-0.4**
KARP	**Karpathos**	**2.38**	**151**	P	**Pn**	05 52 08.8	**-0.4**
KARP	**Karpathos**	**2.38**	**151**	*e*Pn	**Pn**	05 52 10.1	**+0.9**
KARP				S	**Sn**	05 52 35.8	**-2.5**
KARP	**Karpathos**	**2.38**	**151**	P	**Pn**	05 52 09.2	**0.0**
KARP				S	**Sn**	05 52 35.8	**-2.5**
KARP				AML	AML	05 52 50.8	

comp=E,564µm,0.7s

KARP				AML	AML	05 52 52.5		

comp=N,666µm,0.6s

ATAL	**Atalanti**	**2.40**	**297**	P	**Pn**	05 52 10.9	**+1.5**
ATAL	**Atalanti**	**2.40**	**297**	P	**Pn**	05 52 10.9	**+1.5**
VLI	**Veliai**	**2.44**	**249**	P	**Pn**	05 52 09.6	**-0.3**
VLI	**Veliai**	**2.44**	**249**	P	**Pn**	05 52 09.6	**-0.3**
VLI	**Veliai**	**2.44**	**249**	P	**Pn**	05 52 08.3	**-1.6**
KULA	**Kula-Manisa**	**2.45**	**68**	*e*PN	**Pn**	05 52 10.8	**+0.7**
KULA	**Kula-Manisa**	**2.45**	**68**	*e*Pn	**Pn**	05 52 10.9	**+0.7**
DALY	**Dalyan (Mu˘la**	**2.45**	**109**	*e*PN	**Pn**	05 52 11.3	**+1.2**
DALY	**Dalyan (Mu˘la**	**2.45**	**109**	*e*Pn	**Pn**	05 52 11.3	**+1.2**
IDI	**Anoyia**	**2.46**	**197**	P	**Pn**	05 52 09.3	**-1.0**
IDI	**Anoyia**	**2.46**	**197**	P	**Pn**	05 52 09.3	**-1.0**
THAL	**Thalero**	**2.48**	**280**	P	**Pn**	05 52 11.3	**+0.7**
THAL	**Thalero**	**2.48**	**280**	P	**Pn**	05 52 11.3	**+0.7**
GADA	**Gvkgeada**	**2.54**	**2**	*e*PN	**Pn**	05 52 11.4	**0.0**
GADA	**Gvkgeada**	**2.54**	**2**	*e*Pn	**Pn**	05 52 11.4	**0.0**
BALY	**Balya**	**2.55**	**34**	*i* P	**Pn**	05 52 09.7	**-1.8**
BALY				*i* S	**Sg**	05 52 53.0	**+0.9**
BALY	**Balya**	**2.55**	**34**	P	**Pn**	05 52 09.7	**-1.8**
ZKR	**Zakros**	**2.55**	**172**	P	**Pn**	05 52 12.6	**+1.0**
ZKR	**Zakros**	**2.55**	**172**	P	**Pn**	05 52 12.6	**+1.0**
NEO	**Neokhori**	**2.59**	**311**	P	**Pn**	05 52 12.6	**+0.5**
NEO	**Neokhori**	**2.59**	**311**	P	**Pn**	05 52 12.6	**+0.5**
BALB	**Balikesir**	**2.59**	**39**	*e*PN	**Pn**	05 52 11.9	**-0.2**
BALB	**Balikesir**	**2.59**	**39**	*e*Pn	**Pn**	05 52 11.9	**-0.2**
DENT	**Denizli**	**2.60**	**87**	*e*PN	**Pn**	05 52 12.7	**+0.5**
DENT	**Denizli**	**2.60**	**87**	*e*Pn	**Pn**	05 52 12.7	**+0.5**
XOR	**Xorichti**	**2.65**	**311**	P	**Pn**	05 52 12.7	**-0.2**
XOR	**Xorichti**	**2.65**	**311**	P	**Pn**	05 52 12.7	**-0.2**
ANKY	**Antikythira Is**	**2.66**	**229**	P	**Pn**	05 52 13.4	**+0.5**
ANKY	**Antikythira Is**	**2.66**	**229**	P	**Pn**	05 52 13.4	**+0.5**
DSF	**Desfina**	**2.66**	**288**	P	**Pn**	05 52 13.2	**+0.1**
DSF	**Desfina**	**2.66**	**288**	P	**Pn**	05 52 13.2	**+0.1**
DSF	**Desfina**	**2.66**	**288**	P	**Pn**	05 52 13.9	**+0.8**
VLX	**Vlachokerasia**	**2.70**	**265**	P	**Pn**	05 52 14.0	**+0.3**
VLX	**Vlachokerasia**	**2.70**	**265**	P	**Pn**	05 52 14.0	**+0.3**
VLX	**Vlachokerasia**	**2.70**	**265**	P	**Pn**	05 52 15.3	**+1.6**
DEMI	**Demirci**	**2.71**	**58**	*e*P	**Pb**	05 52 18.1	**-0.8**
DEMI				*i* S	**Sg**	05 52 55.7	**-1.7**
DEMI	**Demirci**	**2.71**	**58**	P	**Pb**	05 52 18.0	**-0.8**
GELI	**Tayfur-Gelibol**	**2.80**	**11**	*e*PN	**Pn**	05 52 15.0	**0.0**
GELI	**Tayfur-Gelibol**	**2.80**	**11**	*e*Pn	**Pn**	05 52 15.0	**0.0**
SMTH	**Samothraki Isl**	**2.83**	**356**	P	**Pn**	05 52 13.3	**-2.0**
SMTH	**Samothraki Isl**	**2.83**	**356**	P	**Pn**	05 52 13.3	**-2.0**
GONE	**Gonen-Balikesi**	**2.83**	**32**	*e*PN	**Pn**	05 52 15.8	**+0.5**
GONE	**Gonen-Balikesi**	**2.83**	**32**	*e*Pn	**Pn**	05 52 15.8	**+0.5**
LPK	**Lapseki**	**2.83**	**16**	*e*PN	**Pn**	05 52 15.4	**0.0**
LPK	**Lapseki**	**2.83**	**16**	*e*Pn	**Pn**	05 52 15.4	**0.0**
FETY	**Fethiye**	**2.84**	**110**	*e*PN	**Pn**	05 52 16.6	**+1.1**
FETY	**Fethiye**	**2.84**	**110**	*e*Pn	**Pn**	05 52 16.6	**+1.1**
KLV	**Kalavryta, Ach**	**2.88**	**279**	P	**Pn**	05 52 16.3	**+0.1**
KLV	**Kalavryta, Ach**	**2.88**	**279**	P	**Pn**	05 52 16.3	**+0.1**
KLV	**Kalavryta, Ach**	**2.88**	**279**	P	**Pn**	05 52 16.8	**+0.6**
KALE	**Kalithea**	**2.95**	**286**	P	**Pn**	05 52 18.0	**+0.9**
KALE	**Kalithea**	**2.95**	**286**	P	**Pn**	05 52 18.0	**+0.9**
KRBG	**Karabiga-Canak**	**2.99**	**23**	*e*PN	**Pn**	05 52 17.4	**-0.2**
KRBG	**Karabiga-Canak**	**2.99**	**23**	*e*Pn	**Pn**	05 52 17.4	**-0.2**
TRIZ	**Trizonia**	**3.00**	**285**	P	**Pn**	05 52 19.8	**+2.2**
TRIZ	**Trizonia**	**3.00**	**285**	P	**Pn**	05 52 19.8	**+2.2**
GLHS	**Glhisar (BURDU**	**3.02**	**98**	*e*PN	**Pn**	05 52 19.0	**+1.0**
GLHS	**Glhisar (BURDU**	**3.02**	**98**	*e*Pn	**Pn**	05 52 19.0	**+1.0**
OUR	**Ouranopolis**	**3.02**	**333**	*e*PN	**Pn**	05 52 18.4	**+0.4**
OUR	**Ouranopolis**	**3.02**	**333**	*e*Pn	**Pn**	05 52 18.4	**+0.4**
AGG	**Agios Georgios**	**3.03**	**298**	*e*PN	**Pn**	05 52 18.1	**0.0**
AGG	**Agios Georgios**	**3.03**	**298**	*e*Pn	**Pn**	05 52 18.1	**0.0**
AGG	**Agios Georgios**	**3.03**	**298**	P	**Pn**	05 52 20.4	**+2.3**
AGG	**Agios Georgios**	**3.03**	**298**	P	**Pn**	05 52 20.4	**+2.3**
ERIK	**Erikli-Kesan**	**3.08**	**11**	*e*PN	**Pn**	05 52 19.3	**+0.6**
ERIK	**Erikli-Kesan**	**3.08**	**11**	*e*Pn	**Pn**	05 52 19.3	**+0.6**
ITM	**Ithomi**	**3.09**	**262**	P	**Pn**	05 52 20.8	**+1.9**
ITM	**Ithomi**	**3.09**	**262**	P	**Pn**	05 52 20.8	**+1.9**
EDC	**Edincik**	**3.16**	**31**	*e*PN	**Pn**	05 52 20.3	**+0.4**
EDC	**Edincik**	**3.16**	**31**	*e*Pn	**Pn**	05 52 20.3	**+0.4**
DRO	**Drossia**	**3.22**	**277**	P	**Pn**	05 52 19.5	**-1.3**
DRO	**Drossia**	**3.22**	**277**	P	**Pn**	05 52 19.5	**-1.3**
RKY	**Sarkoy-Tekirda**	**3.23**	**20**	*e*PN	**Pn**	05 52 21.5	**+0.6**
RKY	**Sarkoy-Tekirda**	**3.23**	**20**	*e*Pn	**Pn**	05 52 21.5	**+0.6**
ALN	**Alexandroupoli**	**3.25**	**4**	*e*PN	**Pn**	05 52 21.7	**+0.5**
ALN	**Alexandroupoli**	**3.25**	**4**	P	**Pn**	05 52 20.1	**-1.1**
ALN	**Alexandroupoli**	**3.25**	**4**	*e*Pn	**Pn**	05 52 21.7	**+0.5**
ALN	**Alexandroupoli**	**3.25**	**4**	P	**Pn**	05 52 20.1	**-1.1**
MRMT	**Marmara Adasi**	**3.28**	**25**	*e*PN	**Pn**	05 52 21.3	**-0.3**
MRMT	**Marmara Adasi**	**3.28**	**25**	*e*Pn	**Pn**	05 52 21.3	**-0.3**
PYL	**PYLOS**	**3.29**	**258**	P	**Pn**	05 52 24.5	**+2.8**
EVR	**Evrytania**	**3.36**	**293**	P	**Pn**	05 52 25.3	**+2.6**
EVR	**Evrytania**	**3.36**	**293**	P	**Pn**	05 52 25.3	**+2.6**
TVSB	**Tavsanli**	**3.42**	**57**	*e*PN	**Pn**	05 52 24.5	**+1.0**
TVSB	**Tavsanli**	**3.42**	**57**	*e*Pn	**Pn**	05 52 24.5	**+1.0**
HORT	**Hortiatis**	**3.60**	**326**	*e*PN	**Pn**	05 52 27.2	**+1.1**
HORT	**Hortiatis**	**3.60**	**326**	*e*Pn	**Pn**	05 52 27.2	**+1.1**
KNT	**Kendrikon**	**4.15**	**329**	*e*PN	**Pn**	05 52 34.5	**+1.0**
KNT	**Kendrikon**	**4.15**	**329**	*e*Pn	**Pn**	05 52 34.5	**+1.0**
GRG	**Griva**	**4.21**	**323**	*e*PN	**Pn**	05 52 35.5	**+1.2**
GRG	**Griva**	**4.21**	**323**	*e*Pn	**Pn**	05 52 35.6	**+1.2**

*DDA **23** 05:54:51.4, 37˚.86N×43˚.23E, h7km, Md3.2*
*CSEM **23** 05:54:51.9±0.2, 37˚.85N×43˚.27E, h2km, MD3.2, Error ellipse: s-maj=4.7km s-min=3.9km az=53.0*
*ISK **23** 05:54:52.0, 37˚.79N×43˚.26E, h8km, MD3.2*
ISC 23 05:54:51.7±1.1, 37˚.85N±0˚.02×43˚.26E±0˚.02, h4km±12km, n34, σ0°91/53, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAKT	**HAKKARI**	**0.46**	**130**	*i* P	**Pg**	05 55 00.4	**-0.2**
HAKT				*i* S	**Sb**	05 55 08.5	**-1.3**
HKR	**Hakkari**	**0.47**	**126**	*e*PG	**Pg**	05 55 00.3	**-0.4**
HKR				*e*SG	**Sg**	05 55 08.0	**+1.2**
HKR	**Hakkari**	**0.47**	**126**	*e*Pg	**Pg**	05 55 00.3	**-0.4**
HKR				*e*Sg	**Sg**	05 55 08.0	**+1.2**
GEVA	**Gevas**	**0.49**	**341**	*i* P	**Pg**	05 55 00.5	**-0.6**
GEVA				*i* S	**Sb**	05 55 09.1	**-1.5**
GEVA	**Gevas**	**0.49**	**341**	P	**Pg**	05 55 00.5	**-0.6**
GEVA				S	**Sb**	05 55 09.1	**-1.5**
BASK	**Baskale_VAN**	**0.62**	**71**	*i* P	**Pg**	05 55 03.3	**-0.3**
BASK				*i* S	**Sb**	05 55 14.0	**-0.4**
CUKT	**Cukurca**	**0.66**	**155**	*e*PG	**Pg**	05 55 03.9	**-0.5**
CUKT				*e*SG	**Sg**	05 55 13.6	**+0.6**
CUKT	**Cukurca**	**0.66**	**155**	*e*Pg	**Pg**	05 55 03.9	**-0.5**
CUKT				*e*Sg	**Sg**	05 55 13.6	**+0.6**
TVAN	**Van**	**0.69**	**9**	*i* P	**Pn**	05 55 09.2	**+0.8**
TVAN				*i* S	**Sn**	05 55 21.5	**+1.8**
TVAN	**Van**	**0.69**	**9**	P	**Pn**	05 55 09.2	**+0.8**
SIRT	**Sirnak**	**0.74**	**242**	*e*PG	**Pg**	05 55 06.2	**+0.3**
SIRT	**Sirnak**	**0.74**	**242**	*e*Pg	**Pg**	05 55 06.2	**+0.3**
VANB	**Van**	**0.75**	**8**	*e*PG	**Pg**	05 55 05.9	**-0.2**
VANB				*e*SG	**Sb**	05 55 17.4	**-0.6**
VANB	**Van**	**0.75**	**8**	*e*Pg	**Pg**	05 55 05.9	**-0.2**
VANB				*e*Sg	**Sb**	05 55 17.4	**-0.6**
SIRN	**S¨–rnak**	**0.76**	**242**	*i* P	**Pg**	05 55 06.7	**+0.4**
SIRN				*i* S	**Sg**	05 55 16.7	**+0.5**
SIRN	**S¨–rnak**	**0.76**	**242**	P	**Pg**	05 55 06.7	**+0.4**
SIRN				S	**Sg**	05 55 16.7	**+0.5**
TATV	**Tatvan**	**1.02**	**310**	*i* P	**Pg**	05 55 10.4	**-0.9**
TATV				*i* S	**Sb**	05 55 25.5	**-0.5**
TATV	**Tatvan**	**1.02**	**310**	P	**Pg**	05 55 10.4	**-0.9**
TATV				S	**Sb**	05 55 25.5	**-0.5**
BTMN	**Batman**	**1.58**	**272**	*i* P	**Pn**	05 55 20.4	**-0.2**
BTMN				*i* S	**Sg**	05 55 43.4	**+1.0**
BTMN	**Batman**	**1.58**	**272**	P	**Pn**	05 55 20.4	**-0.2**
BTMN				S	**Sg**	05 55 43.4	**+1.0**
TUTA	**Tutak**	**1.59**	**347**	*i* P	**Pn**	05 55 20.5	**-0.4**
TUTA				*i* S	**Sg**	05 55 44.3	**+1.6**
TUTA	**Tutak**	**1.59**	**347**	P	**Pn**	05 55 20.5	**-0.4**
TUTA				S	**Sg**	05 55 44.3	**+1.6**
SVAN	**Silvan-Diyarba**	**1.66**	**281**	*e*PN	**Pb**	05 55 22.5	**-0.4**
SVAN	**Silvan-Diyarba**	**1.66**	**281**	*e*Pn	**Pb**	05 55 22.5	**-0.4**
AGRB	**Hanur-Agry**	**1.73**	**353**	*e*PN	**Pb**	05 55 23.6	**-0.7**
AGRB	**Hanur-Agry**	**1.73**	**353**	*e*Pn	**Pb**	05 55 23.6	**-0.7**
MAZI	**Mazidag**	**2.27**	**261**	*e*PN	**Pb**	05 55 31.9	**-1.4**
MAZI	**Mazidag**	**2.27**	**261**	*e*Pn	**Pb**	05 55 31.9	**-1.4**
BNGB	**Bing¨l**	**2.33**	**300**	*e*PN	**Pb**	05 55 32.7	**-1.6**
DIY	**Diyarbakir**	**2.40**	**272**	*e*Pn	**Pn**	05 55 33.5	**+1.6**
BINT	**Bingol**	**2.41**	**296**	*e*Pn	**Pn**	05 55 32.7	**+0.7**
DYBB	**Diyarbakir**	**2.47**	**273**	*e*PN	**Pn**	05 55 33.5	**+0.6**
PTK	**Pertek**	**3.21**	**290**	*e*PN	**Pn**	05 55 44.1	**+0.9**
PTK	**Pertek**	**3.21**	**290**	*e*Pn	**Pn**	05 55 44.1	**+0.9**

*ISCJB **23** 05:57:23.4±0.8, 24˚.62N±0˚.07×122˚.90E±0˚.03, h95km±7km, Error ellipse: s-maj=10.9km s-min=3.8km az=177.4*
*TAP **23** 05:57:23.2, 24˚.60N×122˚.90E, h99km±2km, ML3.1, C*
*JMA **23** 05:57:23.7±0.2, 24˚.60N×122˚.91E, h97km±2km, M1.5*
ISC 23 05:57:23.9±1.7, 24˚.60N±0˚.09×122˚.89E±0˚.03, h94km±11km, n27, σ0°84/45, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.15**	**159**	P	**Pn**	05 57 37.7	**+0.5**
JYNG				S	**Sn**	05 57 47.8	**+0.8**
YOJ	**Yonaguni jima**	**0.17**	**139**	P	**Pn**	05 57 37.5	**+0.3**
YOJ				S	**Sn**	05 57 47.7	**+0.5**
IRIF	**Iriomote-Funau**	**0.81**	**108**	P	**Pn**	05 57 41.8	**0.0**
IRIF				S	**Sn**	05 57 55.3	**+0.1**
TWB1	**Santiao Chiao** baz=291	**0.91**	**297**	*e*P	**Pn**	05 57 42.0	**-0.9**
TWC	**Suao** baz=270	**0.94**	**271**	*e*P	**Pn**	05 57 42.7	**-0.5**
TWC				*e*S	**Sn**	05 57 57.0	**-0.7**
HATJ	**Hateruma jima**	**0.99**	**122**	*e*S	**Sn**	05 57 58.7	**0.0**
ENA	**Nanau** baz=254	**1.06**	**261**	*e*P	**Pn**	05 57 44.4	**-0.1**
JKRS	**Kuro-shima**	**1.08**	**109**	P	**Pn**	05 57 45.0	**+0.2**
JKRS				S	**Sn**	05 58 00.8	**+0.3**
NWF	**Wu-fen Shan** baz=294	**1.11**	**295**	*e*P	**Pn**	05 57 45.5	**+0.3**
TWE	**Neicheng** baz=272	**1.12**	**277**	*e*P	**Pn**	05 57 44.9	**-0.3**
JIJ	**Ishigaki jima**	**1.17**	**101**	P	**Pn**	05 57 45.6	**-0.2**
JIJ				S	**Sn**	05 58 01.4	**-0.9**
ENTT	**Nioudou** baz=266	**1.20**	**272**	P	**Pn**	05 57 47.1	**+0.9**
ENTT				*e*S	**Sn**	05 58 03.0	**0.0**
TWD	**Chiawan** baz=247	**1.28**	**247**	*e*P	**Pn**	05 57 44.1	**-3.0**
JISG	**Ishigakijimahi**	**1.30**	**90**	P	**Pn**	05 57 47.3	**0.0**
JISG				S	**Sn**	05 58 04.2	**-0.8**
NSK	**Sanguang** baz=265	**1.39**	**274**	*e*P	**Pn**	05 57 49.0	**+0.5**
NSK				*e*S	**Sn**	05 58 07.2	**0.0**
WHF	**Hehuan Shan** baz=259	**1.54**	**253**	P	**Pn**	05 57 50.6	**-0.2**
WHF				*e*S	**Sn**	05 58 10.1	**-1.0**
TWT	**Tachien** baz=253	**1.60**	**258**	*e*P	**Pn**	05 57 52.0	**+0.8**
TWT				S	**Sn**	05 58 11.8	**-0.1**
JTJ	**Tarama**	**1.65**	**88**	*e*S	**Sn**	05 58 12.8	**-0.1**
WDT	**Danda** baz=242	**1.81**	**243**	P	**Pn**	05 57 53.7	**-0.4**
WDT				*e*S	**Sn**	05 58 15.3	**-1.6**
TWF1	**Yuli** baz=228	**1.91**	**230**	*e*P	**Pn**	05 57 54.4	**-0.7**
SMLT	**Sun Moon Lake**	**1.95**	**249**	*e*P	**Pn**	05 57 56.2	**+0.6**
TYC	**Yuchr** baz=245	**1.98**	**250**	*e*P	**Pn**	05 57 56.3	**+0.4**
TYC				*e*S	**Sn**	05 58 20.9	**+0.5**
YUS	**Yu-Shan** baz=232	**2.08**	**238**	*e*P	**Pn**	05 57 58.1	**+0.3**
YUS				*e*S	**Sn**	05 58 22.1	**-1.5**
ALS	**Alishan** baz=235	**2.19**	**241**	*e*P	**Pn**	05 57 59.6	**+0.7**
ALS				*e*S	**Sn**	05 58 26.8	**+1.0**
CHN5	**Tsauling** baz=237	**2.25**	**244**	*e*P	**Pn**	05 58 00.7	**+1.1**
CHN5				S	**Sn**	05 58 27.9	**+1.0**
STYT	**Tauyuan** baz=230	**2.42**	**234**	*e*P	**Pn**	05 58 02.1	**+0.3**
STYT				*e*S	**Sn**	05 58 30.6	**-0.1**
CHN4	**Tsaushan** baz=232	**2.44**	**240**	*e*P	**Pn**	05 58 02.2	**+0.2**
CHN4				*e*S	**Sn**	05 58 32.7	**+1.5**

*IDC **23** 06:07:46.5±1.0, 14˚.57N×92˚.46W, h0km, mb4.2/16, mb1 4.4/18, mb1mx4.2/43, mbtmp4.2/18, ML3.9/2, Error ellipse: s-maj=36.3km s-min=14.0km az=48.0*
*NEIC **23** 06:07:49.7, 14˚.00N×93˚.03W, h22km, mb4.5/74, MD3.9(MEX), After MEX.*
*ISCJB **23** 06:07:50.2±0.4, 14˚.30N±0˚.04×92˚.85W±0˚.04, h37km, mb4.4/72, Error ellipse: s-maj=7.6km s-min=3.8km az=43.1*
*MEX **23** 06:07:50.4±0.8, 14˚.05N×93˚.03W, h22km±641km, MD3.9*
ISC 23 06:07:50.9±0.5, 14˚.21N±0˚.06×93˚.02W±0˚.05, h37km, n275, σ1°38/267, mb4.4/74, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.23**	**22**	*e*P	**Pn**	06 08 26.4	**+0.9**
CCIG				*i* S	**Sn**	06 08 53.6	**+1.7**
CCIG	**Comitan**	**2.23**	**22**	*e*Pn	**Pn**	06 08 28.7	**+3.1**
CCIG				*e*S	**Sn**	06 08 54.2	**+2.2**
HUIG	**Huatulco**	**3.37**	**298**	*e*P	**Pn**	06 08 44.4	**+3.5**
HUIG				*i* S	**Sn**	06 09 18.7	**-0.9**
HUIG	**Huatulco**	**3.37**	**298**	*e*P	**Pn**	06

ROSC	El Rosal	20.64	115	*e*P		Pn	06 12 31.1	+0.9
	21nm,0.9s								
PRAC	Prado	20.70	119	*e*P		P	06 12 26.8	-1.4
PRAC	Prado	20.70	119	*e*P		Pn	06 12 31.8	+1.1
	38nm,1.4s								
X34A	Smith Ranch, M	20.77	349	P		Pn	06 12 30.4	-0.9
	baz=167,SNR=6.0								
MNTX	Cornudas Mount	20.77	329	P		Pn	06 12 30.1	-1.2
	baz=145,SNR=16								
MNTX	Cornudas Mount	20.77	329	*e*P		P	06 12 29.9	+1.1
	8.2nm,0.9s								
W38A	Poteau	20.82	357	P		P	06 12 30.2	+1.0
	baz=176,SNR=5.5								
X33A	Lawton	20.84	347	P		Pn	06 12 31.4	-0.8
	baz=165,SNR=5.8								
CBRI	Barrientos, No	20.86	106	*e*P		Pn	06 12 35.0	+2.3
W41B	Gary Mavity, V	20.89	2	P		P	06 12 30.4	+0.5
	baz=182								
X32A	Elmer	20.91	345	P		P	06 12 31.2	+1.0
	baz=163,SNR=8.9								
W39A	Magazine	20.91	358	P		P	06 12 31.4	+1.2
	baz=178								
BARC	Barichara	20.91	109	*e*P		P	06 12 31.1	+0.4
X301	Greenbrier Sit	20.95	1	*e*P		P	06 12 31.6	+1.0
	16nm,1.2s								
GOGA	Godfrey	21.00	23	*e*P		P	06 12 30.5	-0.7
WHAR	Wooly Hollow	21.00	2	*e*P		P	06 12 31.6	+0.4
	27nm,1.4s								
X201	Greenbrier Sit	21.01	2	*e*P		P	06 12 31.0	-0.2
	10nm,1.0s								
WMOK	Wichita Mounta	21.10	347	P		P	06 12 32.7	+0.4
	baz=164,SNR=6.5								
WMOK	Wichita Mounta	21.10	347	*e*P		P	06 12 33.8	+1.5
	7.9nm,1.2s								
W35A	Tecumseh	21.14	351	P		P	06 12 33.5	+0.8
	baz=170,SNR=8.6								
FLOC	Florencia	21.26	125	*e*P		P	06 12 33.8	-0.4
RUSC	La Rusia	21.28	111	*e*P		P	06 12 34.2	-0.7
RUSC	La Rusia	21.28	111	*e*P		P	06 12 36.8	+2.0
	17nm,1.2s								
W34A	Bridge Creek,	21.37	349	*e*P		P	06 12 36.3	+1.1
	11nm,0.7s								
W33A	Caddo, Fort Co	21.43	348	P		P	06 12 37.3	+1.5
	baz=166								
V41A	Mountainview	21.50	2	P		P	06 12 37.5	+0.9
	baz=182,SNR=14								
V40A	Witts Springs	21.51	0	P		P	06 12 36.4	-0.2
	baz=180								
V39A	Pettigrew	21.55	359	P		P	06 12 37.2	+0.1
	baz=178,SNR=8.3								
MSTX	Muleshoe	21.57	337	P		P	06 12 37.9	+0.5
	baz=154								
MSTX	Muleshoe	21.57	337	*e*P		P	06 12 37.7	+0.3
	21nm,1.1s								
W32A	Sentinel	21.57	346	P		P	06 12 38.4	+1.1
	baz=164,SNR=6.0								
V38A	Canehill	21.60	357	P		P	06 12 37.7	0.0
	baz=176,SNR=8.3								
V37A	Hulbert	21.67	355	P		P	06 12 38.2	-0.1
	baz=174,SNR=5.8								
SJAC	San Juan de Ar	21.73	118	*e*P		P	06 12 41.9	+2.6
V35A	Meyer Ranch, C	21.74	352	P		P	06 12 39.8	+0.7
	baz=170								
TUL1	Leonard	21.76	354	P		P	06 12 39.9	+0.6
	baz=173								
TUL1	Leonard	21.76	354	*e*P		P	06 12 40.8	+1.5
	12nm,0.8s								
GNAR	Gosnell	21.84	7	*e*P		P	06 12 41.3	+1.2
V34A	Guthrie	21.91	350	P		P	06 12 41.5	+0.6
	baz=168,SNR=6.6								
V34A	Guthrie	21.91	350	*e*P		P	06 12 41.7	+0.8
	17nm,0.9s								
HHAR	Hobbs	22.00	358	*e*P		P	06 12 43.3	+1.4
	16nm,1.2s								
AMTX	Amarillo	22.02	341	P		P	06 12 43.9	+1.6
	baz=157								
AMTX	Amarillo	22.02	341	*e*P		P	06 12 44.0	+1.8
	36nm,1.1s								
V33A	Lossen Ranch,	22.04	349	P		P	06 12 42.8	+0.5
	baz=166,SNR=11								
U40A	Yellville	22.06	0	P		P	06 12 42.9	+0.3
	baz=180,SNR=12								
U41A	Viola	22.07	2	P		P	06 12 43.8	+1.2
	baz=183,SNR=9.6								
U39A	Green Forest	22.09	359	P		P	06 12 42.9	+0.1
	baz=179,SNR=8.6								
U42A	Revenden	22.11	4	P		P	06 12 42.7	-0.4
	baz=185								
U38A	Gravette	22.18	357	P		P	06 12 45.1	+1.3
	baz=177								
U37A	Salina	22.19	356	P		P	06 12 43.9	0.0
	baz=175								
WVT	Waverly	22.32	11	*e*P		P	06 12 45.7	+0.4
	9.8nm,1.1s								
U34A	Anderson Ranch	22.50	350	P		P	06 12 47.2	-0.1
	baz=169								
U34A	Anderson Ranch	22.50	350	*e*P		P	06 12 47.7	+0.4
	17nm,1.0s								
U34A				*e*pP		pP	06 12 52.9	-4.1
SDV	Santo Domingo	22.55	101	P		P	06 12 44.0	-4.2
	2.1nm,0.5s,baz=349,slow=10,SNR=2.3								
SDV	Santo Domingo	22.55	101	*e*P		P	06 12 49.2	+0.9
	17nm,0.8s								
PBMO	Poplar Bluff	22.60	5	*e*P		P	06 12 48.3	0.0
	8.4nm,0.9s								
U33A	Lingo Farm, Me	22.60	349	P		P	06 12 48.0	-0.3
	baz=167,SNR=12								
JSC	Jenkinsville	22.64	26	*e*P		P	06 12 48.9	+0.1
	12nm,1.1s								
121A	Cookes Peak, D	22.68	326	P		P	06 12 51.5	+2.0
	baz=141,SNR=16								
121A	Cookes Peak, D	22.68	326	*e*P		P	06 12 51.0	+1.6
	26nm,1.0s								
319A	Douglas	22.68	322	*e*P		P	06 12 51.9	+2.5
	13nm,1.1s								
T39A	Clever	22.73	359	P		P	06 12 49.2	-0.5
	baz=179,SNR=17								
T38A	Diamond	22.77	357	P		P	06 12 49.3	-0.7
	baz=177								
T41A	Mountain View	22.77	3	P		P	06 12 50.3	+0.1
	baz=183,SNR=16								
T35A	Sooner Cattle	22.83	353	P		P	06 12 49.0	-1.7
	baz=171,SNR=7.2								
T40A	Mansfield	22.86	1	P		P	06 12 50.0	-1.0
	baz=181,SNR=6.5								
T37A	Cheneyville 18	22.89	356	P		P	06 12 50.7	-0.7
	baz=175,SNR=16								
T36A	Boggs Farm, Ca	22.90	354	P		P	06 12 50.9	-0.6
	baz=173,SNR=7.2								
TKL	Tuckaleechee C	22.92	20	P		P	06 12 47.8	-3.9
	3.4nm,0.9s,baz=177,slow=13,SNR=1.7								
TKL	Tuckaleechee C	22.92	20	*e*P		P	06 12 51.5	-0.2
	18nm,1.0s								
T34A	McClaskey Farm	23.03	351	P		P	06 12 52.5	-0.2
	baz=170,SNR=6.1								
S40A	Lebanon	23.30	1	P		P	06 12 54.7	-0.8
	baz=181,SNR=12								
S41A	Jillco Farms,	23.32	3	P		P	06 12 54.3	-1.3
	baz=183,SNR=9.9								
S38A	Stockton	23.34	358	P		P	06 12 55.5	-0.4
	baz=178,SNR=8.1								
KMSC	Kings Mountain	23.36	25	P		P	06 12 55.3	-0.8
	baz=209								
KMSC	Kings Mountain	23.36	25	*e*P		P	06 12 55.1	-1.0
	22nm,1.3s								
BNM	Barren Site	23.37	331	*e*P		P	06 12 57.9	+1.5
S39A	Bolivar	23.39	359	P		P	06 12 55.8	-0.6
	baz=179,SNR=23								
T32A	Huddler Ranch,	23.48	348	P		P	06 12 57.7	+0.5
	baz=166								
LPM	Los Pinos Moun	23.50	331	*e*P		P	06 12 59.7	+1.9
S37A	Fort Scott	23.52	356	P		P	06 12 57.1	-0.5
	baz=176,SNR=8.8								
S36A	Lake Cedric, C	23.54	355	P		P	06 12 57.3	-0.4
	baz=174,SNR=8.5								
S35A	Otter Creek Ra	23.57	353	P		P	06 12 58.0	-0.1
	baz=172,SNR=6.5								
S44A	Carbondale	23.63	7	P		P	06 12 58.4	-0.3
	baz=189								
SIUC	Southern Illin	23.66	8	*e*P		P	06 12 58.8	-0.1
	17nm,0.9s								
LAZ	Ladron	23.82	330	*e*P		P	06 13 02.2	+1.5
R38A	Fenwick Farm,	23.90	358	P		P	06 13 00.8	-0.4
	baz=178,SNR=21								
ANMO	Albuquerque	23.95	332	P		P	06 13 03.0	+1.1
	baz=147								
ANMO	Albuquerque	23.95	332	*e*P		P	06 13 03.6	+1.7
	7.2nm,1.0s								
R40A	Maddies Statio	24.00	1	P		P	06 13 01.6	-0.5
	baz=182,SNR=9.1								
R39A	Chumby, Stover	24.01	360	P		P	06 13 01.4	-0.8
	baz=180,SNR=8.0								
R36A	Gordon, Harris	24.12	355	P		P	06 13 03.5	+0.2
	baz=174,SNR=6.3								
R35A	Emporia Munici	24.19	354	P		P	06 13 04.1	+0.2
	baz=173								
TUC	Tucson	24.25	321	P		P	06 13 07.0	+2.4
	baz=134								
TUC	Tucson	24.25	321	*e*P		P	06 13 07.2	+2.6
	9.4nm,1.2s								
R34A	Isabella, Hill	24.29	352	P		P	06 13 05.4	+0.5
	baz=170,SNR=6.4								
Q37A	Longview Farm,	24.61	357	P		P	06 13 07.7	0.0
	baz=177								
R32A	Long Quarter,	24.64	349	P		P	06 13 08.2	+0.2
	baz=167,SNR=7.8								
WCI	Wyandotte Cave	24.66	13	*e*P		P	06 13 07.0	-1.2
	8.6nm,0.8s								
Q38A	Cooks Store, C	24.66	359	P		P	06 13 08.3	+0.1
	baz=179,SNR=11								
Q35A	Mercer Eighty,	24.70	354	P		P	06 13 08.0	-0.5
	baz=173,SNR=9.6								
Q40A	Laux Farm, Aux	24.71	2	P		P	06 13 07.0	-1.6
	baz=182								
Q39A	Willow Grove F	24.74	0	P		P	06 13 08.1	-0.8
	baz=180,SNR=7.2								
Q34A	Chapman	24.86	353	P		P	06 13 09.9	-0.1
	baz=171								
CNNC	Cliffs of the	24.99	30	*e*P		P	06 13 09.9	-1.2
	18nm,0.9s								
T25A	Trinidad	25.00	338	P		P	06 13 13.3	+1.8
	baz=153,SNR=9.1								
T25A	Trinidad	25.00	338	*e*P		P	06 13 13.8	+2.2
	14nm,1.0s								
KSU1	Kansas State U	25.00	353	P		P	06 13 10.9	-0.4
	baz=172,SNR=6.1								
KSU1	Kansas State U	25.00	353	*e*P		P	06 13 10.8	-0.4
	32nm,0.9s								
Q32A	Meitler Ranch,	25.17	350	P		P	06 13 12.5	-0.3
	baz=167,SNR=5.5								
P39B	Salisbury	25.19	0	P		P	06 13 11.6	-1.3
	baz=181								
CBKS	Cedar Bluff	25.22	348	*e*P		P	06 13 13.7	+0.4
	16nm,0.8s								
P40A	Paris	25.24	2	P		P	06 13 12.0	-1.4
	baz=182,SNR=8.6								
214A	Organ Pipe Nat	25.29	318	P		P	06 13 15.1	+1.1
	baz=130								
P37A	Lathrop	25.31	358	P		P	06 13 13.4	-0.7
	baz=177								
P35A	Duane Minner,	25.36	355	P		P	06 13 14.1	-0.4
	baz=173,SNR=8.2								
P36A	Good Intent, A	25.39	356	P		P	06 13 13.3	-1.5
	baz=175								
P34A	Walnut Farm, R	25.47	353	P		P	06 13 16.1	+0.7
	baz=172,SNR=12								
P32A	Huiting Farm,	25.79	350	P		P	06 13 18.2	-0.2
	baz=168								
O40A	La Belle	25.84	2	P		P	06 13 17.4	-1.4
	baz=182								
SDCO	Great Sand Dun	25.94	337	P		P	06 13 21.8	+1.7
	baz=152,SNR=13								
SDCO	Great Sand Dun	25.94	337	*e*P		P	06 13 22.0	+1.9
	11nm,1.2s								
O34A	Beatrice	26.08	354	P		P	06 13 20.7	-0.3
	baz=172								
X16A	Lo Mia Camp, P	26.12	324	*e*P		P	06 13 23.8	+2.1
	2.6nm,0.9s								
KSCO	Kaye Shedlock'	26.12	343	*e*P		P	06 13 22.3	+0.7
	16nm,0.3s								
S22A	4UR Ranch, Cre	26.46	335	P		P	06 13 26.6	+1.7
	baz=149								
S22A	4UR Ranch, Cre	26.46	335	*e*P		P	06 13 27.0	+2.1
	7.7nm,1.4s								
N37A	Lee Faris, Mou	26.48	358	P		P	06 13 25.1	+0.6
	baz=177								
N38A	Joes South For	26.49	360	P		P	06 13 23.9	-0.9
	baz=180								
MVCO	Mesa Verde	26.74	332	P		P	06 13 28.7	+1.4
	baz=32								
MVCO	Mesa Verde	26.74	332	*e*P		P	06 13 29.1	+1.7
	16nm,1.5s								
M39A	Webster	27.18	1	P		P	06 13 29.9	-1.1
	baz=182								
CDVI	St. Croix	27.38	79	*e*P		P	06 13 35.1	+2.2
	72nm,0.6s								
PV01	Paradox Valley	27.54	333	*e*P		P	06 13 36.7	+2.3
PV05	Paradox Valley	27.73	332	*e*P		P	06 13 37.2	+1.0
SMCO	Snowmass	27.75	336	*e*P		P	06 13 37.9	+1.3
	6.5nm,1.3s								
ISCO	Idaho Springs	27.79	339	P		P	06 13 37.8	+1.0
	baz=153								
L40A	Anamosa	27.80	3	P		P	06 13 36.1	-0.4
	baz=184								
PV04	Paradox Valley	27.90	333	*e*P		P	06 13 39.2	+1.6
PV10	Paradox Valley	27.94	332	*e*P		P	06 13 39.6	+1.5
U15A	North Rim	28.05	326	*e*P		P	06 13 41.3	+2.1
	7.2nm,1.3s								
JFWS	Jewell Farm	28.71	4	*e*P		P	06 13 44.6	+0.1
	6.1nm,0.8s								
CCUT	Cedar City	29.46	326	*e*P		P	06 13 53.2	+1.6
	3.6nm,1.0s								
ECSD	EROS Data Cent	29.59	355	P		P	06 13 51.3	-1.0
	baz=173								
ECSD	EROS Data Cent	29.59	355	*e*P		P	06 13 51.8	-0.6
	6.7nm,1.0s								
H32A	Carlson Farm,	30.43	354	P		P	06 13 58.6	-1.3
	baz=172								
SPMN	Marine on St.	30.92	0	P		P	06 14 03.3	-0.8
	baz=180								
R11A	Troy Canyon, C	31.26	324	P		P	06 14 08.9	+1.5
	baz=134								
PDAR	Pinedale Array	31.83	337	P		P	06 14 12.5	0.0
	1.3nm,0.8s,baz=129,slow=8.2,SNR=3.8								
E36A	McGregor	32.21	360	P		P	06 14 14.0	-1.5
	baz=180								
E35A	Pequot Lakes	32.27	358	P		P	06 14 15.7	-0.3
	baz=178								
D35A	Remer	32.79	359	P		P	06 14 19.2	-1.3
	baz=178								
REDW	Red Top Meadow	32.84	336	*e*P		P	06 14 23.1	+1.8
	13nm,1.1s								
D37A	Cotton	32.86	1	P		P	06 14 20.3	-0.8
	baz=181,SNR=5.1								
SNOW	Snow King Moun	32.89	336	*e*P		P	06 14 23.6	+1.8
	14nm,0.9s								
LOHW	Long Hollow	32.95	336	*e*P		P	06 14 23.8	+1.5
	10nm,1.4s								
TPAW	Teton Pass	32.99	336	*e*P		P	06 14 23.8	+1.2
	9.3nm,1.1s								
MOOW	Moose Ponds	33.12	336	*e*P		P	06 14 24.1	+0.3
	5.0nm,1.0s								
C35A	Jirik Farms, M	33.41	359	P		P	06 14 24.9	-1.0
	baz=178,SNR=6.4								
H17A	Grant Village	33.61	337	*e*P		P	06 14 29.4	+1.4
	4.3nm,0.9s								
EYMN	Ely	33.66	2	*e*P		P	06 14 27.8	-0.4
	14nm,1.2s								
B35A	Bob, Littlefor	34.06	359	P		P	06 14 30.3	-1.3
	baz=179								
AGMN	Agassiz Nation	34.07	357	*e*P		P	06 14 31.0	-0.7
	15nm,1.5s								
B34A	Aery, Baudette	34.21	358	P		P	06 14 31.5	-1.3
	baz=177								
B32A	Ashes, Strandq	34.21	356	P		P	06 14 31.7	-1.2
	baz=174								
QLMT	Earthquake Lak	34.30	336	*e*P		P	06 14 36.6	+2.7
HLID	Hailey	34.53	332	*e*P		P	06 14 37.6	+1.7
	4.0nm,1.0s								
MCMT	McKenzie Canyo	34.86	335	*e*P		P	06 14 41.2	+2.3
BOZ	Bozeman (W)	35.06	337	P		P	06 14 42.1	+1.6
	baz=148								
BOZ	Bozeman (W)	35.06	337	*e*P		P	06 14 41.3	+0.9
	4.4nm,1.1s								
DLMT	Dillon	35.20	336	*e*P		P	06 14 43.8	+2.1
	9.3nm,0.9s								
LRM	Limekiln Ridge	35.52	336	*e*P		P	06 14 46.3	+1.8
PTGA	Pitinga	35.93	112	P		P	06 14 48.5	+0.4
	12nm,0.8s,baz=302,slow=8.1,SNR=26								
PTGA	Pitinga	35.93	112	*e*P		P	06 14 49.2	+1.1
	13nm,0.8s								
ULM	Lac du Bonnet	36.02	357	P		P	06 14 45.9	-2.6
	4.4nm,0.8s,baz=189,slow=4.4,SNR=4.8								
EGMT	Eagleton	36.47	341	P		P	06 14 52.7	+0.3
	baz=152								
EGMT	Eagleton	36.47	341	*e*P		P	06 14 53.3	+0.9
	19nm,1.3s								
CHMT	Chamberlain Mo	36.74	337	*e*P		P	06 14 56.0	+1.1
SWMT	Swartz Lake	37.52	337	*e*P		P	06 15 02.5	+1.1
F10A	Beach Ranch, E	37.66	332	*e*P		P	06 15 03.5	+0.9
	8.6nm,0.8s								
EDM	Edmonton	42.13	342	*e*P		P	06 15 40.1	+0.6
	17nm,0.8s								
YKA	Yellowknife Ar	50.60	347	P		P	06 16 45.8	0.0
	9.2nm,0.8s,baz=151,slow=7.3,SNR=63								
YKA				PcP		PcP	06 18 05.3	+2.3
	1.0nm,0.7s,baz=152,slow=4.2,SNR=5.7								
DLBC	Dease Lake	52.07	336	P		P	06 16 58.8	+1.8
	4.4nm,0.9s,baz=169,slow=7.2,SNR=5.4								
DLBC	Dease Lake	52.07	336	*e*P		P	06 16 58.4	+1.4
	29nm,1.8s								
CPUP	Villa Florida	53.18	139	P		P	06 17 06.6	+1.1
	0.9nm,0.7s,baz=271,slow=17,SNR=2.2								
BDFB	Brasilia	53.47	122	P		P	06 17 08.2	+0.3
	3.4nm,0.9s,baz=76,slow=8.3								
INK	Inuvik	59.96	344	P		P	06 17 53.0	-0.2
	6.5nm,0.9s,baz=128,slow=8.4,SNR=8.1								
PAX	Paxson	60.86	335	*e*P		P	06 18 00.2	+0.7
	5.6nm,1.2s								
IL1	Eielson Array	62.26	337	*e*P		P	06 18 09.2	+0.4
ILAR	Eielson Array	62.26	337	P		P	06 18 09.3	+0.5
	2.3nm,1.0s,baz=138,slow=4.7,SNR=20								
ILB	Eielson Array	62.26	337	*e*P		P	06 18 09.0	+0.2
RND	Reindeer	62.43	335	*e*P		P	06 18 11.3	+1.2
	10nm,1.0s								
MCK	McKinley	62.60	335	*e*P		P	06 18 11.7	+0.6
	4.9nm,1.0s								
TRF	Thorofare Moun	63.03	335	*e*P		P	06 18 15.0	+0.8
	7.7nm,1.0s								
KTH	Kantishna Hill	63.33	335	*e*P		P	06 18 17.0	+0.9
	15nm,1.6s								
CAST	Castle Rocks	63.76	335	*e*P		P	06 18 18.9	0.0
	4.3nm,1.0s								
MLY	Manley	63.85	336	*e*P		P	06 18 20.0	+0.6
	5.4nm,1.0s								
ESDC	Sonseca Array	80.36	52	P		P	06 19 56.1	-2.6
	1.0nm,0.7s,baz=286,slow=6.4,SNR=7.1								
NOA	NORSAR Array B	84.44	28	P		P	06 20 18.1	-1.4
	2.0nm,0.9s,baz=292,slow=4.8,SNR=4.0								
DBIC	Dimbokro	86.62	84	P		P	06 20 29.6	-1.6
	5.1nm,0.9s,baz=31,slow=1.4,SNR=3.0								
GERES	GERESS Array B	90.07	39	P		P	06 20 43.6	-3.5
	0.2nm,0.2s,baz=197,slow=30,SNR=2.5								
GEA0	GERESS Array S	90.08	39	*e*P		P	06 20 47.7	+0.5
FINES	FINESS Array B	90.73	25	P		P	06 20 48.7	-1.0
	2.1nm,0.9s,baz=288,slow=5.9,SNR=5.4								
TORD	Torodi Ar. Bea	91.29	76	P		P	06 20 50.7	-2.6
	0.3nm,0.7s,baz=297,slow=6.2,SNR=2.5								
MKAR	Makanchi Array	119.14	4	PKP		PKPdf	06 26 34.4	-1.8
	0.2nm,0.5s,baz=50,slow=4.5,SNR=3.0								
WRA	Warramunga Arr	134.49	256	PKP		PKPdf	06 27 06.6	+0.6
	0.4nm,0.9s,baz=85,slow=2.4,SNR=3.0								
CMAR	Chiang Mai Arr	145.47	340	PKPbc		PKPab	06 27 26.3	+0.2
	3.0nm,0.5s,baz=340,slow=4.0,SNR=13								
CM01	Chiang Mai Arr	145.50	340	*e*PKPbc		PKPdf	06 27 25.8	-0.2

IDC ***23*** *06:27:03.6±1.1, 14.92N×93.37W, h0km, mb4.1/9, mb1 4.2/11, mb1mx4.1/38, mbtmp4.1/11, ML4.3/2, Error ellipse: s-maj=43.7km s-min=14.7km az=59.0*

MEX ***23*** *06:27:08.4±1.3, 14.55N×93.70W, h16km±17km, MD4.0*

ISCJB ***23*** *06:27:09.2±0.7, 14.71N±0.03×93.70W±0.03, h44km±6km, mb4.4/69, Error ellipse: s-maj=6.6km s-min=3.7km az=40.0*

NEIC ***23*** *06:27:09.3, 14.57N×93.65W, h24km, mb4.5/87, MD4.0(MEX), After MEX.*

ISC 23 06:27:09.2±0.7, 14.63N±0.06×93.77W±0.04, h36km±2km, n247, σ1°53/244, mb4.5/69, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TGBT	Tuxtla Gutierr	2.23	17	*e*P		Pn	06 27 43.0	-0.6
TGBT				*e*S		Sn	06 28 08.2	-1.8
CCIG	Comitan	2.27	44	*e*P		Pn	06 27 43.8	-0.6
CCIG				*e*S		Sn	06 28 09.9	-1.4
CCIG	Comitan	2.27	44	*e*Pn		Pn	06 27 44.1	-0.3
CCIG				*e*Sn		Sn	06 28 11.5	+0.3
HUIG	Huatulco	2.53	297	*e*P		Pn	06 27 45.9	-1.9
HUIG				*i* S		Sn	06 28 17.9	+0.6
HUIG	Huatulco	2.53	297	*e*P		Pn	06 27 46.0	-1.8
HUIG				*i* S		Sn	06 28 12.4	-4.9
CMIG	Matias Romero	2.67	336	Pn		Pn	06 27 47.6	-2.1
	60nm,0.3s,baz=144,slow=9.9,SNR=653							
CMIG				Sn		Sn	06 28 17.3	-3.6
	279nm,0.3s,baz=82,slow=15,SNR=12							
VHO	Vista Hermosa	3.75	311	*e*P		Pn	06 28 05.2	+0.5
VHO				*i* S		Sn	06 28 49.6	+1.9
VHO	Vista Hermosa	3.75	311	*e*P		Pn	06 28 05.2	+0.5
VHO				*e*S		Sn	06 28 50.0	+2.3
SNET	Serv Nac Est T	4.50	101	*e*Pn		Pn	06 28 16.7	+1.8
SNET				*e*Sn		Sn	06 29 07.2	+1.1
TLIG	Tlapa	5.46	303	*e*Pn		Pn	06 28 29.7	+1.6
MOIG	Morelia	8.69	306	*e*Pn		Pn	06 29 16.6	+3.9
ZAIG	Zacatecas	11.62	315	*e*Pn		Pn	06 29 55.9	+3.1
834A	Tilden	14.14	342	P		Pn	06 30 26.9	-0.2
	baz=160							
833A	Chaparral WMA,	14.59	340	P		Pn	06 30 33.4	+0.3
	baz=158,SNR=11							
733A	Divot King Ran	14.93	341	P		Pn	06 30 37.3	-0.3
	baz=158							
537A	Green Hill Far	15.55	352	P		P	06 30 51.4	+1.6
	baz=170,SNR=5.9							
633A	Saathoff Ranch	15.58	342	P		Pn	06 30 44.9	-1.4
	baz=160							
535

	34nm,0.6s							
Y41A	**Eaglette Beard**	19.20	3	P	Pn	06 31 31.6	+0.6	
	baz=183							
Z47A	**Carrollton**	19.20	15	P	P	06 31 30.4	+0.4	
	baz=196,SNR=6.7							
Y38A	**Idabel**	19.23	358	P	Pn	06 31 33.9	+2.4	
	baz=177							
CCAR	**Cane Creek**	19.29	5	*e*P	Pn	06 31 32.0	-0.1	
	31nm,0.7s							
LRAL	**Lakeview Retre**	19.33	17	*e*P	Pn	06 31 33.7	+1.0	
	24nm,1.3s							
Y35A	**Marietta**	19.42	352	P	Pn	06 31 33.9	+0.2	
	baz=170,SNR=17							
Z48A	**Northport**	19.50	16	P	P	06 31 33.5	+0.3	
	baz=198							
Y34A	**Reagan Ranch,**	19.58	350	P	P	06 31 34.5	+0.4	
	baz=168							
Y46A	**Houston**	19.68	12	P	Pn	06 31 37.5	+0.7	
	baz=194,SNR=14							
HELC	**Santa Helena**	19.79	113	*e*P	P	06 31 34.5	-2.5	
HELC	**Santa Helena**	19.79	113	*e*P	Pn	06 31 38.3	-0.4	
	15nm,0.9s							
Y33A	**Hilltop Ranch,**	19.79	348	P	P	06 31 37.6	+1.1	
	baz=166							
X41A	**Kaden, Bauxite**	19.81	3	P	P	06 31 36.1	-0.6	
	baz=183,SNR=7.0							
MIAR	**Mount Ida**	19.83	0	P	P	06 31 37.6	+0.8	
	baz=180,SNR=8.9							
MIAR	**Mount Ida**	19.83	0	*e*P	P	06 31 36.9	0.0	
	18nm,0.8s							
X35A	**Drake**	19.90	352	P	P	06 31 37.7	+0.1	
	baz=171,SNR=14							
Y47A	**UCPARC, Winfie**	19.92	15	P	P	06 31 38.3	+0.4	
	baz=197,SNR=20							
X37A	**Clayton**	19.93	356	P	Pn	06 31 39.6	-0.1	
	baz=175,SNR=9.2							
X38A	**Whitesboro**	19.98	357	P	P	06 31 38.7	+0.2	
	baz=177							
MNTX	**Cornudas Mount**	20.04	330	P	P	06 31 40.5	+1.3	
	baz=145,SNR=6.5							
MNTX	**Cornudas Mount**	20.04	330	*e*P	Pn	06 31 41.6	+0.5	
	4.5nm,0.8s							
UALR	**University of**	20.10	3	*e*P	P	06 31 39.5	-0.3	
	21nm,0.8s							
X45A	**UM Field Stati**	20.10	11	P	Pn	06 31 42.4	+0.6	
	baz=192							
OXF	**Oxford**	20.18	10	*e*P	P	06 31 42.0	+1.3	
	74nm,1.2s							
X33A	**Lawton**	20.28	349	P	P	06 31 42.7	+0.9	
	baz=166,SNR=8.3							
X32A	**Elmer**	20.33	347	P	P	06 31 43.6	+1.3	
	baz=164,SNR=20							
W38A	**Poteau**	20.36	358	P	Pn	06 31 45.5	+0.7	
	baz=178,SNR=5.9							
W37B	**Quinton**	20.48	356	P	Pn	06 31 46.7	+0.5	
	baz=175							
W39A	**Magazine**	20.48	360	P	P	06 31 44.9	+1.0	
	baz=180							
WMOK	**Wichita Mounta**	20.53	348	P	P	06 31 44.4	0.0	
	baz=166,SNR=6.8							
WMOK	**Wichita Mounta**	20.53	348	*e*P	P	06 31 44.8	+0.3	
	12nm,0.6s							
X301	**Greenbrier Sit**	20.56	3	*e*P	Pn	06 31 47.7	+0.6	
	14nm,0.9s							
X201	**Greenbrier Sit**	20.61	3	*e*P	Pn	06 31 48.3	+0.5	
	17nm,1.0s							
WHAR	**Wooly Hollow**	20.62	3	*e*P	Pn	06 31 48.2	+0.4	
	22nm,1.0s							
W35A	**Tecumseh**	20.63	353	P	P	06 31 46.0	+0.5	
	baz=171,SNR=13							
NORC	**Norcasia**	20.65	114	*e*P	P	06 31 45.5	-0.5	
POPC	**Popayan, Colom**	20.71	124	*e*P	Pn	06 31 48.3	-1.0	
CMBC	**Cumbal**	20.82	129	*e*P	Pn	06 31 50.1	-0.7	
OTAV	**Otavalo**	20.83	132	*e*P	P	06 31 49.7	+1.3	
OTAV	**Otavalo**	20.83	132	*e*P	Pn	06 31 50.2	-0.7	
	14nm,1.3s							
W34A	**Bridge Creek,**	20.83	351	P	P	06 31 48.1	+0.4	
	baz=169,SNR=7.0							
W34A	**Bridge Creek,**	20.83	351	*e*P	P	06 31 48.0	+0.3	
	22nm,0.8s							
W33A	**Caddo, Fort Co**	20.87	349	P	P	06 31 48.3	+0.1	
	baz=167,SNR=7.8							
GOGA	**Godfrey**	20.91	25	*e*P	Pn	06 31 50.8	-0.4	
	10nm,0.8s							
MSTX	**Muleshoe**	20.91	339	P	P	06 31 49.8	+1.1	
	baz=155,SNR=18							
MSTX	**Muleshoe**	20.91	339	*e*P	P	06 31 49.5	+0.8	
	22nm,0.9s							
W32A	**Sentinel**	20.99	347	P	P	06 31 49.6	0.0	
	baz=165,SNR=7.7							
HBAR	**Harrisburg**	21.02	7	*e*P	P	06 31 50.1	+0.3	
V41A	**Mountainview**	21.12	4	P	P	06 31 49.1	-1.7	
	baz=184,SNR=7.6							
V39A	**Pettigrew**	21.12	0	P	P	06 31 51.4	+0.5	
	baz=180,SNR=14							
V38A	**Canehill**	21.15	359	P	P	06 31 52.6	+1.5	
	baz=178,SNR=13							
V42A	**Cord**	21.20	5	P	P	06 31 53.0	+1.4	
	baz=186,SNR=9.1							
TUL1	**Leonard**	21.27	355	P	P	06 31 55.7	+3.2	
	baz=174,SNR=8.3							
TUL1	**Leonard**	21.27	355	*e*P	P	06 31 54.8	+2.3	
	27nm,0.7s							
V34A	**Guthrie**	21.38	352	P	P	06 31 53.9	+0.2	
	baz=170							
AMTX	**Amarillo**	21.39	342	P	P	06 31 54.0	+0.1	
	baz=158							
AMTX	**Amarillo**	21.39	342	*e*P	P	06 31 53.8	-0.1	
	42nm,0.7s							
ROSC	**El Rosal**	21.47	115	P	P	06 31 56.7	+1.5	
	10nm,0.8s,baz=48,slow=5.0,SNR=10							
ROSC	**El Rosal**	21.47	115	*e*P	P	06 31 58.2	+3.0	
	12nm,0.8s							
V33A	**Lossen Ranch,**	21.49	350	P	P	06 31 54.0	-0.8	
	baz=168,SNR=12							
PRAC	**Prado**	21.54	118	*e*P	P	06 31 57.9	+2.3	
PRAC	**Prado**	21.54	118	*e*P	P	06 31 56.7	+1.1	
	19nm,0.6s							
HHAR	**Hobbs**	21.56	360	*e*P	P	06 31 56.7	+1.1	
	16nm,0.8s							
U40A	**Yellville**	21.65	2	P	P	06 31 58.3	+1.8	
	baz=182,SNR=11							
GRMC	**Gramalote, San**	21.67	106	*e*P	P	06 31 58.5	+1.5	
CBRI	**Barrientos, No**	21.68	106	*e*P	P	06 31 58.2	+1.0	
SWET	**Sewanee**	21.68	18	*e*P	P	06 31 56.2	-0.7	
	3.7nm,0.7s							
U41A	**Viola**	21.69	4	P	P	06 31 56.7	-0.2	
	baz=184							
U37A	**Salina**	21.72	357	P	P	06 31 57.3	+0.1	
	baz=176							
U38A	**Gravette**	21.73	359	P	P	06 31 57.3	0.0	
	baz=178,SNR=7.4							
BARC	**Barichara**	21.74	109	*e*P	P	06 31 59.5	+1.6	
U42A	**Revenden**	21.75	6	P	P	06 32 00.2	+2.6	
	baz=186,SNR=11							
U35A	**Pawnee**	21.81	354	P	P	06 31 59.9	+1.7	
	baz=172							
319A	**Douglas**	21.90	322	*e*P	P	06 32 02.1	+2.6	
	17nm,0.9s							
121A	**Cookes Peak, D**	21.93	327	P	P	06 32 02.2	+2.5	
	baz=141							
121A	**Cookes Peak, D**	21.93	327	*e*P	P	06 32 01.9	+2.2	
	30nm,0.9s							
U34A	**Anderson Ranch**	21.98	352	*e*P	P	06 32 00.6	+0.5	
	18nm,0.6s							
U33A	**Lingo Farm, Me**	22.06	351	P	P	06 32 02.2	+1.3	
	baz=168,SNR=6.7							
WVT	**Waverly**	22.06	13	*e*P	P	06 32 01.5	+0.6	
	15nm,0.8s							
UTMT	**University of**	22.06	11	*e*P	P	06 32 02.7	+1.8	
	52nm,0.9s							
CHIC	**Chingaza**	22.09	115	*e*P	P	06 32 02.2	+0.3	
FLOC	**Florencia**	22.10	124	*e*P	P	06 32 02.4	+0.9	
RUSC	**La Rusia**	22.11	111	*e*P	P	06 32 01.6	-0.5	
RUSC	**La Rusia**	22.11	111	*e*P	P	06 32 03.2	+1.0	
	6.9nm,0.8s							
PBMO	**Poplar Bluff**	22.26	7	*e*P	P	06 32 01.9	-1.1	
	28nm,0.8s							
T39A	**Clever**	22.31	1	P	P	06 32 03.1	-0.4	
	baz=181							
T38A	**Diamond**	22.32	359	P	P	06 32 03.2	-0.5	
	baz=178,SNR=7.7							
CPCT	**Cooper Cave**	22.33	20	*e*P	P	06 32 06.6	+2.7	
	5.3nm,0.7s							
T36A	**Boggs Farm, Ca**	22.42	356	P	P	06 32 04.4	-0.4	
	baz=174,SNR=13							
T37A	**Cheneyville 18**	22.43	358	P	P	06 32 03.9	-0.9	
	baz=177,SNR=14							
T40A	**Mansfield**	22.46	3	P	P	06 32 04.2	-1.0	
	baz=183							
T34A	**McClaskey Farm**	22.51	353	P	P	06 32 05.1	-0.7	
	baz=171							
JSC	**Jenkinsville**	22.60	28	*e*P	P	06 32 08.7	+2.0	
	16nm,1.1s							
BNM	**Barren Site**	22.65	331	*e*P	P	06 32 11.1	+3.6	
TKL	**Tuckaleechee C**	22.78	21	P	P	06 32 03.4	-5.3	
	1.2nm,2.7s,baz=234,slow=17,SNR=2.0							
TKL	**Tuckaleechee C**	22.78	21	*e*P	P	06 32 10.1	+1.4	
	45nm,1.5s							
LPM	**Los Pinos Moun**	22.79	332	*e*P	P	06 32 10.4	+1.5	
LPM				*e*Sn	Sn	06 36 29.5	-2.3	
LPM	**Los Pinos Moun**	22.79	332	*e*Sn	Sn	06 36 29.5	-2.3	
S38A	**Stockton**	22.91	360	P	P	06 32 08.1	-1.8	
	baz=179,SNR=8.0							
S39A	**Bolivar**	22.97	1	P	P	06 32 08.9	-1.7	
	baz=181							
S37A	**Fort Scott**	23.06	358	P	P	06 32 10.9	-0.5	
	baz=177							
S36A	**Lake Cedric, C**	23.06	356	P	P	06 32 10.2	-1.3	
	baz=175,SNR=6.9							
S35A	**Otter Creek Ra**	23.07	355	P	P	06 32 10.5	-1.1	
	baz=173							
LAZ	**Ladron**	23.10	331	*e*P	P	06 32 13.4	+1.3	
ANMO	**Albuquerque**	23.23	333	*e*P	P	06 32 16.5	+3.0	
	4.9nm,0.8s							
SIUC	**Southern Illin**	23.34	9	*e*P	P	06 32 16.1	+1.9	
	57nm,1.1s							
SDV	**Santo Domingo**	23.35	102	P	P	06 32 10.8	-4.0	
	1.9nm,0.4s,baz=312,slow=16,SNR=2.7							
SDV	**Santo Domingo**	23.35	102	*e*P	P	06 32 13.7	-1.1	
SDV	**Santo Domingo**	23.35	102	*e*P	P	06 32 17.1	+2.3	
	10.0nm,0.9s							
R38A	**Fenwick Farm,**	23.46	360	P	P	06 32 13.4	-2.1	
	baz=179,SNR=8.1							
TUC	**Tucson**	23.46	322	P	P	06 32 16.9	+1.3	
	baz=135							
TUC	**Tucson**	23.46	322	*e*P	P	06 32 18.1	+2.4	
	14nm,1.1s							
R39A	**Chumby, Stover**	23.60	1	P	P	06 32 15.0	-1.8	
	baz=182							
R40A	**Maddies Statio**	23.61	3	P	P	06 32 16.1	-0.7	
	baz=183,SNR=5.3							
R36A	**Gordon, Harris**	23.65	357	P	P	06 32 15.0	-2.2	
	baz=176							
R32A	**Long Quarter,**	24.10	350	P	P	06 32 20.5	-1.0	
	baz=188,SNR=11							
Q35A	**Mercer Eighty,**	24.22	356	P	P	06 32 20.6	-1.9	
	baz=174							
Q38A	**Cooks Store, C**	24.24	0	P	P	06 32 20.8	-1.9	
	baz=180,SNR=10							
Q39A	**Willow Grove F**	24.33	1	P	P	06 32 22.4	-1.2	
	baz=182							
T25A	**Trinidad**	24.34	339	P	P	06 32 25.5	+1.6	
	baz=154							
T25A	**Trinidad**	24.34	339	*e*P	P	06 32 25.8	+1.9	
	14nm,0.8s							
WCI	**Wyandotte Cave**	24.42	14	*e*P	P	06 32 25.6	+1.2	
	18nm,0.8s							
KSU1	**Kansas State U**	24.50	355	*e*P	P	06 32 25.5	+0.4	
OLIL	**Olney**	24.53	11	*e*P	P	06 32 25.6	+0.3	
	23nm,0.9s							
X18A	**Snowflake**	24.61	326	*e*P	P	06 32 27.6	+1.1	
	11nm,0.9s							
Q32A	**Meitler Ranch,**	24.63	351	P	P	06 32 24.7	-1.6	
	baz=169,SNR=5.3							
P39B	**Salisbury**	24.78	2	P	P	06 32 25.8	-1.8	
	baz=182,SNR=7.5							
P37A	**Lathrop**	24.87	359	P	P	06 32 27.2	-1.2	
	baz=178							
P35A	**Duane Minner,**	24.88	356	P	P	06 32 27.2	-1.4	
	baz=175,SNR=9.9							
P36A	**Good Intent, A**	24.93	357	P	P	06 32 27.0	-2.0	
	baz=176,SNR=9.4							
BLO	**Bloomington**	25.27	13	*e*P	P	06 32 32.3	+0.2	
	50nm,1.8s							
SDCO	**Great Sand Dun**	25.27	338	P	P	06 32 32.6	+0.1	
	baz=152							
SDCO	**Great Sand Dun**	25.27	338	*e*P	P	06 32 33.8	+1.4	
	4.6nm,0.8s							
X16A	**Lo Mia Camp, P**	25.35	324	*e*P	P	06 32 35.1	+2.0	
	5.9nm,0.9s							
KSCO	**Kaye Shedlock'**	25.51	344	*e*P	P	06 32 35.7	+1.2	
	10nm,0.7s							
O33A	**Hebron**	25.57	353	P	P	06 32 34.1	-0.7	
	baz=171							
O34A	**Beatrice**	25.59	355	P	P	06 32 33.5	-1.5	
	baz=173							
O31A	**Woolen Ranch,**	25.89	350	P	P	06 32 37.4	-0.3	
	baz=167							
MVCO	**Mesa Verde**	26.03	332	*e*P	P	06 32 40.9	+1.5	
	7.7nm,0.9s							
N37A	**Lee Faris, Mou**	26.04	359	P	P	06 32 37.4	-1.7	
	baz=179							
N38A	**Joes South For**	26.07	1	P	P	06 32 37.8	-1.6	
	baz=181,SNR=8.8							
WUAZ	**Wupatki**	26.12	326	*e*P	P	06 32 41.4	+1.3	
	11nm,1.0s							
ATAH	**Atahualpa**	26.46	144	P	P	06 32 43.9	+0.3	
	12nm,0.8s,baz=339,slow=7.7,SNR=6.3							
M37A	**Trindle Farm,**	26.68	360	P	P	06 32 43.7	-1.2	
	baz=173,SNR=5.8							
PV01	**Paradox Valley**	26.83	333	*e*P	P	06 32 48.4	+1.9	
SMCO	**Snowmass**	27.08	337	*e*P	P	06 32 50.3	+1.4	
	5.5nm,1.0s							
ISCO	**Idaho Springs**	27.14	340	*e*P	P	06 32 49.7	+0.3	
	2.8nm,0.8s							
PV04	**Paradox Valley**	27.19	333	*e*P	P	06 32 50.2	+0.5	
PV10	**Paradox Valley**	27.24	333	*e*P	P	06 32 51.1	+1.0	
W13A	**Hualapai Mount**	27.26	322	*e*P	P	06 32 51.8	+1.5	
	5.1nm,1.4s							
U15A	**North Rim**	27.30	326	*e*P	P	06 32 52.8	+2.0	
	4.4nm,1.0s							
LDFC	**Landfair**	27.98	320	*e*P	P	06 32 59.2	+2.4	
	14nm,1.1s							
KNB	**Kanab**	28.02	326	*e*P	P	06 32 59.2	+2.1	
	3.1nm,0.7s							
LCMT	**Little Creek M**	28.25	326	*e*P	P	06 33 00.6	+1.5	
	2.6nm,1.1s							
JFWS	**Jewell Farm**	28.35	5	*e*P	P	06 32 58.8	-0.9	
	13nm,0.6s							
MTPU	**Mount Pierson**	28.46	328	*e*P	P	06 33 05.0	+3.8	
	3.2nm,0.9s							
CCUT	**Cedar City**	28.70	326	*e*P	P	06 33 04.6	+1.3	
	3.8nm,1.0s							
ECSD	**EROS Data Cent**	29.11	356	P	P	06 33 04.9	-1.6	
	baz=174							
ECSD	**EROS Data Cent**	29.11	356	*e*P	P	06 33 04.8	-1.8	
	6.6nm,0.7s							
H32A	**Carlson Farm,**	29.94	355	P	P	06 33 11.7	-2.2	
	baz=173							
SPMN	**Marine on St.**	30.51	1	P	P	06 33 17.6	-1.2	
	baz=182							
SPMN	**Marine on St.**	30.51	1	*e*P	P	06 33 17.7	-1.2	
	13nm,0.4s							
RSSD	**Black Hills**	30.67	345	*e*P	P	06 33 21.7	+1.1	
	3.0nm,0.8s							
PDAR	**Pinedale Array**	31.16	337	P	P	06 33 23.3	-1.7	
	0.5nm,0.9s,baz=156,slow=8.9,SNR=3.5							
COWI	**Conover**	31.61	6	*e*P	P	06 33 31.6	+3.0	
	27nm,1.9s							
E36A	**McGregor**	31.79	1	P	P	06 33 28.3	-1.8	
	baz=181							
REDW	**Red Top Meadow**	32.16	336	*e*P	P	06 33 35.3	+1.6	
	8.2nm,0.9s							
SNOW	**Snow King Moun**	32.21	336	*e*P	P	06 33 35.3	+1.1	
	14nm,0.8s							
LOHW	**Long Hollow**	32.28	337	*e*P	P	06 33 36.5	+1.7	
	3.4nm,0.8s							
TPAW	**Teton Pass**	32.31	336	*e*P	P	06 33 36.4	+1.3	
	6.5nm,1.0s							
IMW	**Indian Meadow**	32.65	337	*e*P	P	06 33 39.9	+1.8	
	3.7nm,0.8s							
BMN	**Battle Mountai**	32.86	326	*e*P	P	06 33 42.6	+2.7	
	4.5nm,1.0s							
MDND	**Maddock**	33.47	353	*e*P	P	06 33 44.6	-0.3	
	41nm,1.0s							
HLID	**Hailey**	33.82	333	*e*P	P	06 33 49.9	+1.8	
	9.6nm,0.9s							
MCMT	**McKenzie Canyo**	34.18	336	*e*P	P	06 33 53.5	+2.2	
BOZ	**Bozeman (W)**	34.39	338	*e*P	P	06 33 54.4	+1.3	
	5.0nm,0.9s							
DLMT	**Dillon**	34.52	336	*e*P	P	06 33 55.9	+1.7	
	10nm,1.0s							
LRM	**Limekiln Ridge**	34.85	337	*e*P	P	06 33 58.9	+1.8	
WVOR	**Wild Horse Val**	35.03	327	*e*P	P	06 34 00.5	+2.0	
	33nm,0.9s							
ULM	**Lac du Bonnet**	35.57	358	P	P	06 34 00.2	-2.8	
	2.1nm,0.5s,baz=173,slow=9.6,SNR=5.1							
ULM	**Lac du Bonnet**	35.57	358	*e*P	P	06 34 01.2	-1.7	
	37nm,2.0s							
EGMT	**Eagleton**	35.84	342	*e*P	P	06 34 07.5	+2.1	
	8.3nm,1.0s							
CHMT	**Chamberlain Mo**	36.07	337	*e*P	P	06 34 08.3	+0.8	
SLMT	**Seeley Lake**	36.43	337	*e*P	P	06 34 10.9	+0.3	
PTGA	**Pitinga**	36.76	112	*e*P	P	06 34 14.1	+0.5	
	5.3nm,1.0s							
SWMT	**Swartz Lake**	36.85	337	*e*P	P	06 34 14.8	+0.7	
F10A	**Beach Ranch, E**	36.95	332	*e*P	P	06 34 15.6	+0.6	
	13nm,0.7s							
SAML	**Samuel**	38.32	126	*e*P	P	06 34 25.0	-1.8	
	3.2nm,0.7s							
LPAZ	**La Paz**	39.81	140	P	P	06 34 39.1	-0.8	
	2.3nm,0.7s,baz=330,slow=4.9,SNR=18							
LPAZ	**La Paz**	39.81	140	*e*P	P	06 34 40.2	+0.3	
	2.6nm,0.8s							
CPUP	**Villa Florida**	53.98	139	P	P	06 36 27.9	-1.8	
	3.4nm,0.8s,baz=337,slow=8.0,SNR=6.9							
BDFB	**Brasilia**	54.30	122	P	P	06 36 32.9	+0.4	
	5.0nm,0.8s,baz=258,slow=8.9							
BDFB	**Brasilia**	54.30	122	*e*P	P	06 36 33.0	+0.5	
	24nm,1.4s							
PAX	**Paxson**	60.17	336	*e*P	P	06 37 13.9	+0.6	
	46nm,1.3s							
TRQA	**Tornquist**	60.30	151	*e*P	P	06 37 14.1	-0.2	
	20nm,1.5s							
MLY	**Manley**	63.18	336	*e*P	P	06 37 33.5	+0.1	
	138nm,2.0s							
TORD	**Torodi Ar. Bea**	91.89	76	P	P	06 40 11.9	-2.7	
	0.3nm,0.7s,baz=297,slow=6.3,SNR=2.6							
STKA	**Stephens Creek**	126.87	241	*e*PKPdf	PKPdf	06 46 09.9	+0.2	
CMAR	**Chiang Mai Arr**	144.82	339	PKP	PKPab	06 46 41.7	-0.5	
	2.2nm,0.4s,baz=347,slow=3.3,SNR=4.2							
NWAO	**Narrogin (SRO)**	146.47	232	*e*PKPdf	PKPbc	06 46 46.9	-0.2	

MOS ***23*** *06:28:29.2±1.0,54°.93N×161°.44W,h10km,mb6.0/98, MS4.9/52,Error ellipse: s-maj=6.4km s-min=4.1km az=88.3*

NEIC ***23*** *06:28:34.6,54°.70N×161°.15W,h23km,mb5.5/293, MS4.9/145,ML5.7(AEIC),After AEIC.*

NEIC Felt [IV] at Cold Bay.

ISCJB ***23*** *06:28:34.9±0.2,54°.88N±0°.02×161°.21W±0°.02,h53km±2km, mb5.6/516,MS4.8/200,Error ellipse: s-maj=2.8km s-min=1.5km az=10.8*

GCMT ***23*** *06:28:34.6±0.4,54°.71N×161°.29W,h43km±3km,MW5.7/69, Moment Tensor Solution. s38,c42; s69,c95; Duration: 1!6 Moment tensor: Scale 10¹⁷Nm; Mrr1.87±.19; Mθθ-1.47±.11; Mϕϕ-0.40±.11; Mrθ2.70±.21; Mrϕ-0.94±.06; Mθϕ1.91±.17; Best double couple: Mo3.83600×10¹⁷ NP1:ϕs55.00000°,δ75.00000°,λ87.00000°. NP2: ϕs245.00000°,δ15.00000°,λ99.00000°. Principal axes: T 3.7690, Plg60.0000°, Azm322.0000°; N 0.1280, Plg2.0000°, Azm56.0000°; P -3.9030, Plg30.0000°, Azm147.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

IDC ***23*** *06:28:35.5±1.3,54°.92N×161°.30W,h46km±10km,mb5.3/34, mb1 5.4/37,mb1mx5.3/45,mbtmp5.5/37,ML5.1/3,MS4.8/27, Ms1 4.8/27,ms1mx4.7/33 Error ellipse: s-maj=11.6km s-min=7.6km az=176.0*

BJI ***23*** *06:28:36.4,55°.08N×162°.01W,h56km,mb5.9/78, mB5.6/49,Ms5.2/60,Ms7 5.0/48*

ISC 23 06:28:35.7±0.3,54°.89N±0°.04×161°.28W±0°.03,h49km±2km, h48km:pP-P,n1858,σ1s08/1951,mb5.8/554,MS4.9/201, 305C-14D,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
DOL	**Dolgoi Island**	0.43	307	P	Pn	06 28 47.0	+1.0
PS4A	**Pavlof South-4**	0.56	324	P	Pn	06 28 49.4	+1.7
PVV	**Pavlof Volcano**	0.57	329	P	Pn	06 28 49.5	+1.8
DT1	**Dutton Round H**	0.62	291	P	Pn	06 28 49.0	+0.7
DTNA	**Dutton South F**	0.62	295	P	Pn	06 28 49.5	+1.1
SDPT	**Sand Point**	0.65	45	P	Pn	06 28 49.2	+0.5
SDPT				S	Sn	06 28 59.9	+1.9
SSLS	**Shishaldin Sou**	1.59	265	P	Pn	06 29 02.4	+1.0
SSLW	**Shishaldin Wes**	1.65	267	P	Pn	06 29 03.4	+1.2
WESN	**West Dahl Nort**	1.95	262	P	Pn	06 29 07.6	+1.3
WESE	**West Dahl East**	1.97	259	P	Pn	06 29 07.6	+1.0
WESP	**Westdahl Peak**	2.04	260	P	Pn	06 29 08.9	+1.3
CHGN	**Chignik**	2.15	48	P	Pn	06 29 10.6	+1.6
AZAC	**Aniakchak**	2.64	39	P	Pn	06 29 17.6	+1.7
AKSA	**Akutan Strait**	2.69	255	P	Pn	06 29 18.1	+1.7
ANNW	**Aniakchak Nort**	2.70	38	P	Pn	06 29 18.7	+2.1
AKUT	**Akutan**	2.73	256	P	Pn	06 29 18.0	+1.1
AKUT				S	Sn	06 29 52.5	+3.9
UNV	**Unalaska Valle**	3.23	253	P	Pn	06 29 24.1	+0.3
UNV				S	Sn	06 30 04.3	+3.3
MTBL	**Makushin Table**	3.29	256	P	Pn	06 29 25.6	+0.9
MCIR	**Makushin Cirqu**	3.41	256	P	Pn	06 29 27.4	+1.0
MGOD	**Makushin Gods**	3.46	254	P	Pn	06 29 27.7	+0.7
KELA	**Mount Kelaz**	4.69	38	P	Pn	06 29 46.0	+2.1
KABR	**Katmai Barrier**	4.77	45	P	Pn	06 29 46.4	+1.6
KVTA	**Katmai Vly 10**	4.81	41	P	Pn	06 29 47.5	+2.1
NIKH	**Nikolski High**	4.87	250	P	Pn	06 29 47.6	+1.3
NIKH				S	Sn	06 30 45.4	+4.0
KAWH	**Katmai**	5.00	43	P	Pn	06 29 49.6	+1.4
OH

PCA Pinnacle 12.42 57 *e*Pn **Pn** 06 31 31.1 +1.5
DHAK Deception Hill 13.23 62 *e*Pn **Pn** 06 31 41.8 +1.2
COLD Coldfoot 13.45 19 *e*Pn **Pn** 06 31 45.2 +1.6
HYT Haines Junctio 13.93 55 *e*Pn **Pn** 06 31 50.8 +0.6
FYU Fort Yukon 14.03 27 *e*Pn **Pn** 06 31 49.6 -1.8
EGAK Eagle 14.08 37 *e*Pn **Pn** 06 31 50.8 -1.3
DAWY Dawson 14.35 41 *e*Pn **Pn** 06 31 55.2 -0.4
SMY Shemya 14.69 272 *e*P **Pn** 06 32 02.3 +2.2
SMY Shemya 14.69 272 *e*Pn **Pn** 06 32 02.3 +2.2
SKAG Skagway 14.74 61 *e*Pn **Pn** 06 32 02.0 +1.1
CRAG Craig 16.05 76 *e*Pn **Pn** 06 32 18.8 +1.1
338nm,1.8s
WRAK Wrangell Islan 16.34 73 *e*Pn **P** 06 32 24.8 +1.1
143nm,1.2s
DIB Dawson Inlet, 16.95 84 *e*Pn **Pn** 06 32 29.7 +0.6
90nm,1.1s
DLBC Dease Lake 17.45 66 P **P** 06 32 37.0 +1.0
1.2nm,0.3s,baz=280,slow=12,SNR=32
DLBC S **Sn** 06 35 48.6 +0.2
0.6nm,0.3s,baz=259,slow=11,SNR=2.4
DLBC Dease Lake 17.45 66 *e*Pn **P** 06 32 37.5 +1.5
79nm,1.0s
DLBC S **Sn** 06 35 48.6 +0.2
INK Inuvik 18.59 33 P **P** 06 32 47.5 -0.9
9.9nm,0.3s,baz=234,slow=14,SNR=112
INK S **Sn** 06 36 14.3 -1.4
0.6nm,0.3s,baz=221,slow=20,SNR=4.5
INK ScP **ScP** 06 40 44.2 -2.2
0.3nm,0.3s,baz=262,slow=0.8,SNR=4.5
INK LR LR 06 40 51.2
comp=Z,6µm,19.0s,baz=228,slow=40
INK Inuvik 18.59 33 P **P** 06 32 47.5 -0.9
INK S **Sn** 06 36 14.4 -1.4
INK pmax pmax
comp=Z,10.0nm,0.3s
INK smax smax
comp=N,1.0nm,0.3s
INK MLR MLR
comp=Z,6µm,19.0s
INK Inuvik 18.59 33 *e*P **P** 06 32 46.3 -2.1
comp=Z,203nm,1.0s
INK S **Sn** 06 36 14.3 -1.4
INK ScP **ScP** 06 40 44.2 -2.2
BBB Bella Bella 19.79 84 P **Pn** 06 33 03.3 -0.1
comp=Z,0.2nm,0.3s,baz=287,slow=19,SNR=3.2
BILL Bilibino 20.00 324 *e*P **P** 06 33 05.0 +1.2
BILL pmax pmax
comp=Z,809nm,1.4s
BILL MLR MLR
comp=Z,7µm,20.0s
BILL Bilibino 20.00 324 *e*P **P** 06 33 05.0 +1.2
comp=Z,809nm,1.4s
BILL LR LR
comp=Z,7µm,20.0s
B928 Bamfield 22.94 90 P **P** 06 33 37.9 +2.6
PET Petropavlovsk 23.43 282 ⇓*i*P **P** 06 33 39.4 -0.8
PET *e*S **S** 06 37 46.2 -3.4
PET pmax pmax
comp=Z,1µm,6.6s
PET pmax pmax
comp=Z,670nm,1.1s
PET smax smax
comp=Z,2µm,19.0s
PET smax smax
comp=Z,2µm,17.0s
PET Petropavlovsk 23.43 282 *e*P **P** 06 33 39.4 -0.8
comp=Z,578nm,1.0s
PET LR LR
comp=Z,2µm,21.0s
PEA0 Petropavlovsk- 23.94 283 *e*P **P** 06 33 45.2 +0.3
PEA0B Petropavlovsk- 23.94 283 *e*P **P** 06 33 44.7 -0.2
comp=Z,225nm,0.7s
PETK Petropavlovsk- 23.94 283 P **P** 06 33 44.9 0.0
comp=Z,225nm,0.6s,baz=76,slow=11,SNR=326
PETK PcP **PcP** 06 37 24.9 -1.0
comp=Z,19nm,0.9s,baz=80,slow=5.6,SNR=3.8
PETK LR LR 06 43 06.5
comp=Z,1µm,21.8s,baz=84,slow=36
PETK Petropavlovsk- 23.94 283 P **P** 06 33 44.9 0.0
PETK 06 37 24.9
PETK pmax pmax
comp=Z,225nm,0.6s
PETK MLR MLR
comp=Z,1µm,21.8s
LLLB Lillooet 24.00 84 *e*P **P** 06 33 47.8 +2.3
comp=Z,93nm,1.3s
PGC Sidney 24.00 89 *e*P **P** 06 33 46.8 +1.3
comp=Z,32nm,0.9s
A04D Lummi Island 24.39 89 P **P** 06 33 50.5 +1.4
baz=299
NLWA Neilton Lookou 24.40 92 *e*P **P** 06 33 50.8 +1.6
comp=Z,82nm,0.9s
NLWA LR LR
comp=Z,3µm,20.0s
SEY Seymchan 24.73 308 P **P** 06 33 51.0 -1.0
comp=Z,98nm,0.7s,baz=105,slow=8.5,SNR=361
SEY Seymchan 24.73 308 *c i*P **P** 06 33 51.1 -0.9
YKA Yellowknife Ar 24.91 53 P **P** 06 33 54.3 +0.7
comp=Z,19nm,0.4s,baz=271,slow=8.9,SNR=249
YKA PcP **PcP** 06 37 27.8 0.0
comp=Z,7.0nm,0.7s,baz=265,slow=1.9,SNR=5.3
YKA ScP **ScP** 06 41 01.3 -1.1
comp=Z,6.3nm,0.8s,baz=273,slow=2.4,SNR=9.9
YKA LR LR 06 44 02.1
comp=Z,107nm,18.9s,baz=180,slow=37
YKA P3KPbc 07 06 56.7
comp=Z,0.9nm,0.7s,baz=94,slow=5.4,SNR=9.6
YKA Yellowknife Ar 24.91 53 P **P** 06 33 54.3 +0.7
YKA 06 37 27.8
YKA pmax pmax
comp=Z,17nm,0.5s
B05A Bryant 24.97 89 P **P** 06 33 56.1 +1.8
baz=300
E03A Lebam 25.03 94 *e*P **P** 06 33 56.8 +1.9
comp=Z,92nm,1.0s
JCW Jim Creek 25.10 89 P **P** 06 33 57.8 +2.2
B06A Marblemount 25.20 88 *e*P **P** 06 33 57.2 +0.8
comp=Z,144nm,1.8s
RPW Rockport 25.22 88 P **P** 06 33 59.3 +2.7
D05A Enumclaw 25.59 91 *e*P **P** 06 34 02.9 +2.9
comp=Z,178nm,1.3s
SKR Severo-Kuril's 25.81 278 *e*P **P** 06 34 01.4 -0.4
SKR *e* 06 34 50.9
SKR pmax pmax
comp=Z,227nm,0.7s
SKR pmax pmax
comp=Z,700nm,3.5s
OBSR Observation Ro 25.85 92 P **P** 06 34 04.8 +2.2
MA2 Magadan 25.90 300 P **P** 06 34 02.9 +0.2
comp=Z,210nm,0.9s,baz=84,slow=10,SNR=50
MA2 PcP **PcP** 06 37 29.6 -0.6
comp=Z,14nm,0.9s,baz=14,slow=8.3,SNR=3.4
MA2 Magadan 25.90 300 *e*P **P** 06 34 02.5 -0.1
comp=Z,993nm,0.9s
MA2 PcP **PcP** 06 37 29.6 -0.6
MA2 LR LR
comp=Z,2µm,19.0s
LON Longmire 25.93 92 *e*P **P** 06 34 05.6 +2.5
LON pmax pmax
comp=Z,33nm,1.0s
LON Longmire 25.93 92 *e*P **P** 06 34 05.6 +2.5
comp=Z,33nm,1.0s
G03D McMinnville, O 25.96 96 P **P** 06 34 03.8 +0.5
baz=305
F04A Amboy 26.03 94 *e*P **P** 06 34 05.5 +1.5
comp=Z,43nm,1.1s
MTMW Mount Mitchell 26.10 94 P **P** 06 34 08.2 +3.5
TWW Teanaway 26.27 90 P **P** 06 34 09.6 +3.4
LTY Liberty 26.32 90 *e*P **P** 06 34 08.5 +1.8
comp=Z,30nm,1.0s
VLMM Larch Mountain 26.48 94 P **P** 06 34 13.5 +5.4
NAC Naches 26.51 91 P **P** 06 34 10.7 +2.4
B08A Colville Reser 26.52 87 *e*P **P** 06 34 09.9 +1.5
comp=Z,36nm,1.1s
I03D Drain, OR 26.82 99 P **P** 06 34 11.6 +0.5
baz=308
G05D Wamic, OR 27.06 94 P **P** 06 34 13.5 +0.2
baz=305
E07A Sunnyside 27.16 91 *e*P **P** 06 34 16.3 +2.1
comp=Z,23nm,0.7s
I04A Tendick Farm, 27.30 98 P **P** 06 34 16.9 +1.5
baz=308
CROR Criterion Ridg 27.40 94 P **P** 06 34 18.2 +1.8
C09A Chrisman Ranch 27.42 87 *e*P **P** 06 34 17.9 +1.4
comp=Z,27nm,1.2s
D08A Wollman Farm, 27.43 89 *e*P **P** 06 34 18.1 +1.5
comp=Z,18nm,0.9s
HAWA Hanford 27.44 91 *e*P **P** 06 34 18.2 +1.6
comp=Z,29nm,0.8s
HAWA LR LR
comp=Z,2µm,19.0s
G06A Carlson Farm, 27.46 94 *e*P **P** 06 34 18.6 +1.7
comp=Z,69nm,1.9s
VTHM Trough 27.53 94 P **P** 06 34 19.4 +1.8
I05D Terrebonne, OR 27.58 96 P **P** 06 34 19.0 +1.0
baz=306,SNR=7.2
L02D Cave Junction, 27.65 102 P **P** 06 34 19.4 +0.9
baz=310
HUMO Hull Mountain 27.73 100 *e*P **P** 06 34 20.1 +0.9
comp=Z,68nm,1.9s
EDM Edmonton 27.75 73 *e*P **P**
EDM pmax pmax
comp=Z,62nm,0.8s
EDM Edmonton 27.75 73 *e*P **P** 06 34 20.3 +0.9
comp=Z,62nm,0.8s
J04D Umpqua Nationa 27.81 98 P **P** 06 34 21.5 +1.3
baz=308,SNR=7.0
NEW Newport 27.84 85 P **P** 06 34 21.1 +0.9
comp=Z,8.7nm,1.0s,baz=295,slow=7.0,SNR=9.4
NEW LR LR 06 44 24.6
comp=Z,1µm,19.5s,baz=182,slow=34
NEW Newport 27.84 85 P **P** 06 34 21.1 +0.9
baz=300
NEW Newport 27.84 85 *e*P **P** 06 34 21.7 +1.4
comp=Z,25nm,1.0s
KRMB Red Mountain 27.89 103 *e*P **P** 06 34 21.7 +0.8
comp=Z,89nm,1.3s
E09A Wood Farm, Sta 28.18 89 *e*P **P** 06 34 24.1 +0.9
comp=Z,27nm,0.9s
J05D Fort Rock, OR 28.28 97 P **P** 06 34 25.4 +1.0
baz=308
JCC Jacoby Creek, 28.30 104 *e*P **P** 06 34 24.7 +0.4
comp=Z,87nm,1.2s
G08A Pilot Rock 28.39 92 *e*P **P** 06 34 26.4 +1.2
comp=Z,22nm,1.3s
K04D Chiloquin, OR 28.40 99 P **P** 06 34 26.6 +1.2
baz=309
M02C Callahan 28.57 102 P **P** 06 34 27.9 +1.1
baz=311
K05A Summer Lake 28.83 98 *e*P **P** 06 34 32.3 +3.1
comp=Z,34nm,0.9s
M04C Macdoel 28.89 100 P **P** 06 34 30.9 +1.2
baz=310
N02D Trinity Center 28.93 103 P **P** 06 34 31.5 +1.4
baz=312
F10A Beach Ranch, E 29.01 89 *e*P **P** 06 34 33.0 +2.3
comp=Z,13nm,0.7s
MIDW Midway 29.10 210 PFAKE 06 34 40.0 +8.5
MIDW LR LR
comp=Z,2µm,20.0s
WALA Waterton Lakes 29.29 82 *e*P **P** 06 34 34.3 +1.1
comp=Z,63nm,1.7s
WDC Whiskeytown Da 29.29 103 *e*P **P** 06 34 36.4 +3.2
WDC pmax pmax
comp=Z,16nm,1.1s
WDC Whiskeytown Da 29.29 103 *e*P **P** 06 34 36.4 +3.2
comp=Z,16nm,1.1s
BSMT Bassoo Peak 29.40 84 P **P** 06 34 35.8 +1.5
BLMT Blacktail Moun 29.56 84 *e*P **P** 06 34 37.0 +1.2
BMO Blue Mountains 29.60 91 *e*P **P** 06 34 37.6 +1.6
comp=Z,23nm,1.4s
BMO LR LR
comp=Z,3µm,21.0s
MOD Modoc Plateau 29.69 99 *e*P **P** 06 34 39.8 +3.0
comp=Z,21nm,0.8s
JTMT Jette 29.74 84 *e*P **P** 06 34 38.8 +1.6
YBMT Yellow Bay 29.84 84 *e*P **P** 06 34 39.5 +1.4
SWMT Swartz Lake 30.03 84 *e*P **P** 06 34 42.6 +2.8
WVOR Wild Horse Val 30.30 96 PFAKE 06 35 00.0 +18
WVOR LR LR
comp=Z,2µm,20.0s
MSO Missoula 30.43 85 P **P** 06 34 44.4 +1.1
baz=303
SLMT Seeley Lake 30.46 84 *e*P **P** 06 34 44.8 +1.1
ORV Oroville 30.57 103 *e*P **P** 06 34 46.8 +2.3
ORV pmax pmax
comp=Z,9.0nm,0.8s
ORV Oroville 30.57 103 *e*P **P** 06 34 46.8 +2.3
comp=Z,8.7nm,0.8s
CHMT Chamberlain Mo 30.78 85 *e*P **P** 06 34 47.9 +1.4
AFDM Forest Hills D 31.29 104 *e*P **P** 06 34 53.1 +2.3
comp=Z,19nm,1.2s
AFDM *e*PcP **PcP** 06 37 44.7 +0.7
MFID Camas Ranch 31.31 92 *e*P **P** 06 34 52.6 +1.5
comp=Z,22nm,0.9s
PAHR Pah Rah Range 31.66 101 *e*P **P** 06 34 55.2 +0.9
comp=Z,39nm,1.1s
HRY Holter Researc 31.71 84 *e*P **P** 06 34 55.9 +1.4
RES Resolute Bay 31.96 27 *e*P **P** 06 34 56.7 +0.4
RES pmax pmax
comp=Z,45nm,0.9s
RES Resolute Bay 31.96 27 *e*P **P** 06 34 56.7 +0.4
comp=Z,45nm,0.9s
PNTR Pine Nut 31.96 102 *e*P **P** 06 34 59.1 +2.1
comp=Z,54nm,0.8s
HLID Hailey 32.04 91 P **P** 06 34 58.3 +0.7
baz=307
HLID Hailey 32.04 91 *e*P **P** 06 34 59.1 +1.5
comp=Z,14nm,0.9s
HLID LR LR
comp=Z,2µm,19.0s
EGMT Eagleton 32.19 81 P **P** 06 34 59.2 +0.5
baz=302
EGMT Eagleton 32.19 81 *e*P **P** 06 34 59.4 +0.7
comp=Z,138nm,1.9s
EGMT LR LR
comp=Z,1µm,19.0s
MCMT McKenzie Canyo 32.19 88 *e*P **P** 06 35 01.3 +2.3
CMB Columbia Colle 32.25 104 *e*P **P** 06 35 01.9 +2.5
CMB pmax pmax
comp=Z,14nm,1.0s
CMB Columbia Colle 32.25 104 *e*P **P** 06 35 01.9 +2.5
comp=Z,14nm,1.0s
BMN Battle Mountai 32.41 98 *e*P **P** 06 35 02.8 +2.0
BMN pmax pmax
comp=Z,20nm,0.9s
BMN Battle Mountai 32.41 98 *e*P **P** 06 35 02.8 +2.0
comp=Z,20nm,0.9s
BOZ Bozeman (W) 32.42 86 P **P** 06 35 01.7 +0.9
baz=304
BOZ Bozeman (W) 32.42 86 *e*P **P** 06 35 02.2 +1.3
BOZ pmax pmax
comp=Z,42nm,1.8s
BOZ MLR MLR
comp=Z,774nm,19.0s
BOZ Bozeman (W) 32.42 86 *e*P **P** 06 35 02.2 +1.3
comp=Z,42nm,1.8s
BOZ LR LR
comp=Z,774nm,19.0s
WAKR Walker 32.46 103 *e*P **P** 06 35 03.6 +2.3
comp=Z,23nm,0.9s
TIXI Tiksi 33.15 327 *c i*P **P** 06 35 06.1 -0.7
TIXI pmax pmax
comp=Z,35nm,0.8s
TIXI Tiksi 33.15 327 *e*P **P** 06 35 06.7 -0.1
comp=Z,49nm,1.1s
TIXI *e*PcP **PcP** 06 37 48.5 +0.1
TIXI LR LR
comp=Z,2µm,19.0s
FFC Flin Flon 33.28 65 *e*P **P** 06 35 08.3 +0.2
FFC pmax pmax
comp=Z,34nm,1.4s
FFC MLR MLR
comp=Z,1µm,19.0s
FFC Flin Flon 33.28 65 *e*P **P** 06 35 08.3 +0.2
comp=Z,34nm,1.4s
FFC LR LR
comp=Z,1µm,19.0s
TYV Tymovskoe 33.30 287 *e*P **P** 06 35 06.2 -2.1
TYV pmax pmax
comp=Z,229nm,1.0s
TYV MLR MLR
comp=E,2µm,20.0s
NKL Nikolayevsk 33.31 291 *i*P **P** 06 35 07.7 -0.6
NKL *e* 06 36 36.0
NKL pmax pmax
comp=N,43nm,1.0s
NKL pmax pmax
comp=E,60nm,1.0s
NKL pmax pmax
comp=Z,210nm,1.0s
NKL pmax pmax
comp=Z,500nm,1.0s
YHH Holmes Hill 33.37 86 *e*P **P** 06 35 11.1 +1.8
comp=Z,26nm,0.9s
YMR Madison River 33.37 87 *e*P **P** 06 35 10.9 +1.7
comp=Z,27nm,0.8s
MLAC Mammoth, Mammo 33.41 103 P **P** 06 35 10.7 +1.1
baz=315
KIP Kipapa 33.51 174 PFAKE 06 35 20.0 +10
KIP LR LR
comp=Z,4µm,21.0s
YFT Old Faithful 33.57 87 *e*P **P** 06 35 12.9 +1.8
comp=Z,25nm,1.0s
H17A Grant Village 33.76 87 P **P** 06 35 13.6 +0.9
baz=306
H17A Grant Village 33.76 87 *e*P **P** 06 35 14.1 +1.4
comp=Z,45nm,1.4s
LKWY Lake 33.76 86 PFAKE 06 35 30.0 +17
LKWY LR LR
comp=Z,1µm,21.0s
IMW Indian Meadow 33.84 88 *e*P **P** 06 35 14.7 +1.2
comp=Z,12nm,0.9s
FLWY Flagg Ranch 33.87 87 *e*P **P** 06 35 16.2 +2.6
comp=Z,20nm,0.7s
PAGB Antelope Grade 33.99 107 *e*P **P** 06 35 16.8 +2.4
comp=Z,24nm,0.9s
RLMT Red Lodge 34.08 85 P **P** 06 35 16.3 +0.8
baz=305,SNR=11
RLMT Red Lodge 34.08 85 *e*P **P** 06 35 17.2 +1.8
comp=Z,36nm,1.1s
RLMT LR LR
comp=Z,1µm,21.0s
TPAW Teton Pass 34.09 88 *e*P **P** 06 35 17.9 +2.3
comp=Z,20nm,1.1s
HVU Hansel Valley 34.09 92 *e*P **P** 06 35 17.0 +1.5
HVU pmax pmax
comp=Z,18nm,0.9s
HVU Hansel Valley 34.09 92 *e*P **P** 06 35 17.0 +1.5
comp=Z,18nm,0.9s
RCTC Rector, Farmer 34.13 105 P **P** 06 35 17.2 +1.6
baz=316
TIN Tinemaha, Big 34.16 103 P **P** 06 35 16.8 +0.8
baz=315
LOHW Long Hollow 34.21 88 *e*P **P** 06 35 18.1 +1.5
comp=Z,33nm,1.8s
SMMC Simmler 34.43 107 P **P** 06 35 19.6 +1.2
baz=317
AHID Auburn Hatcher 34.44 89 *e*P **P** 06 35 20.5 +1.9
comp=Z,12nm,0.8s
AHID LR LR
comp=Z,1µm,20.0s
BGU Big Grassy Mou 34.50 94 *e*P **P** 06 35 20.3 +1.3
comp=Z,19nm,1.0s
VES Vestal, Richgr 34.55 106 P **P** 06 35 20.8 +1.6
baz=317,SNR=12
CWC Cottonwood Cre 34.68 104 P **P** 06 35 21.2 +0.6
baz=316
GRAC Grapevine Rang 34.69 103 P **P** 06 35 20.7 +0.2
baz=315,SNR=15
R11A Troy Canyon, C 34.75 99 P **P** 06 35 22.2 +1.0
baz=313,SNR=98
R11A Troy Canyon, C 34.75 99 *e*P **P** 06 35 22.6 +1.4
comp=Z,47nm,1.0s
PKM Mcpherson Peak 34.85 108 P **P** 06 35 23.2 +1.1
baz=318
HWUT Hardware Ranch 34.90 91 *e*P **P** 06 35 23.3 +0.7
comp=Z,19nm,1.0s
HWUT LR LR
comp=Z,2µm,21.0s
LAO LASA Array 34.93 80 P **P** 06 35 22.9 +0.4
baz=304
LAO LASA Array 34.93 80 *e*P **P** 06 35 24.4 +1.9
comp=Z,35nm,1.0s
LAO LR LR
comp=Z,1µm,21.0s
ISA Isabella, Lake 35.02 105 P **P** 06 35 24.7 +1.3
baz=317
ISA Isabella, Lake 35.02 105 *e*P **P** 06 35 25.5 +2.1
ISA pmax pmax
comp=Z,25nm,1.3s
ISA Isabella, Lake 35.02 105 *e*P **P** 06 35 25.5 +2.1
comp=Z,24nm,1.3s
DAC Darwin (Calif) 35.07 104 *e*P **P** 06 35 25.3 +1.3
DAC pmax pmax
comp=Z,19nm,0.7s
DAC Darwin (Calif) 35.07 104 *e*P **P** 06 35 25.3 +1.3
comp=Z,19nm,0.7s
DGMT Dagmar 35.10 76 P **P** 06 35 24.5 +0.6
baz=302,SNR=6.6
DGMT Dagmar 35.10 76 *e*P **P** 06 35 24.7 +0.8
comp=Z,82nm,1.4s
DGMT LR LR
comp=Z,2µm,19.0s
DUG Dugway, Tooele 35.10 94 P **P** 06 35 25.0 +0.9
baz=311,SNR=14
DUG Dugway, Tooele 35.10 94 *e*P **P** 06 35 25.8 +1.6
DUG pmax pmax
comp=Z,27nm,1.0s
DUG MLR MLR
comp=Z,834nm,21.0s
DUG Dugway, Tooele 35.10 94 *e*P **P** 06 35 25.8 +1.6
comp=Z,27nm,1.0s
DUG LR LR
comp=Z,834nm,21.0s
YAK Yakutsk 35.19 310 *e*P **P** 06 35 23.4 -1.1
YAK *e**PP **pP** 06 35 32.5 -4.8
YAK *e* 06 36 37.8
YAK *e*PPP PPP 06 36 56.3
YAK *e* 06 37 53.9
YAK *e*S **S** 06 40 54.0 +0.1
YAK *e*SS **SnSn** 06 43 07.6 -6.6
YAK *e*SSS SSS 06 43 32.4
YAK *e* 06 45 36.1
YAK pmax pmax
comp=Z,169nm,0.8s
YAK pmax pmax
comp=N,17nm,0.9s
YAK pmax pmax
comp=E,104nm,1.0s
YAK pmax pmax
comp=Z,53nm,1.1s
YAK pmax pmax
comp=N,36nm,1.4s
YAK pmax pmax
comp=E,43nm,1.7s
YAK smax smax
comp=N,23nm,1.3s
YAK smax smax
comp=E,47nm,1.1s
YAK MLR MLR
comp=Z,3µm,20.0s
YAK MLR MLR
comp=N,1µm,19.0s
YAK MLR MLR
comp=E,2µm,17.0s
YAK Yakutsk 35.19 310 *e*P **P** 06 35 23.6 -0.9
comp=E,345nm,0.7s
YAK *e*PcP **PcP** 06 37 54.8 +0.4
YAK LR LR
comp=Z,4µm,20.0s
ARVC Arvin 35.22 106 P **P** 06 35 26.2 +1.2
baz=317
YUK Yuzh-Kuril'sk 35.22 274 *i*P **P** 06 35 24.9 0.0
SBC Santa Barbara 35.24 108 P **P** 06 35 26.5 +1.3
baz=318
MPMC Manual Prospec 35.29 104 P **P** 06 35 27.5 +1.7
baz=316,SNR=41
YSS Yuzh-Sakhalins 35.30 281 ⇓*e*P **P** 06 35 26.3 +0.7
YSS *e*S **S** 06 40 59.0 +3.0
YSS pmax pmax
comp=Z,50nm,0.6s
YSS MLR MLR
comp=E,700nm,19.0s
YSS MLR MLR
comp=Z,1µm,19.0s
YSS Yuzh-Sakhalins 35.30 281 *e*P **P** 06 35 26.7 +1.1
comp=Z,38nm,0.6s
YSS LR LR
comp=Z,691nm,20.0s
TCUT Toone Canyon 35.31 92 *e*P **P** 06 35 26.5 +0.4
comp=Z,45nm,1.3s
BW06 Boulder Array 35.33 88 P **P** 06 35 26.7 +0.4
baz=308
BW06 Boulder Array 35.33 88 *e*P **P** 06 35 27.1 +0.8
comp=Z,5.3nm,0.6s
BW06 LR LR
comp=Z,742nm,22.0s
PD31 Pinedale Array 35.33 88 *e*P **P** 06 35 27.7 +1.4
PDAR Pinedale Array 35.33 88 P **P** 06 35 26.4 +0.1

comp=Z,3.4nm,0.6s,baz=300,slow=3.3,SNR=10
PDAR ScP **ScP** **06 41 35.4 -1.5**
comp=Z,2.5nm,1.1s,baz=263,slow=2.5,SNR=4.3
PDAR LR LR 06 48 06.1
comp=Z,660nm,21.7s,baz=334,slow=33
PDAR P3KPbc 07 06 12.1
comp=Z,1.8nm,0.9s,baz=111,slow=6.5,SNR=10
FURC Furnace Creek, 35.34 103 P **P** **06 35 27.9 +1.9**
baz=316,SNR=13
POHA Pohakuloa 35.35 171 PFAKE 06 35 40.0 +13
POHA LR LR
comp=Z,2µm,21.0s
TPNV Topopah Spring 35.35 102 P **P** **06 35 28.1 +1.8**
baz=315,SNR=66
TPNV Topopah Spring 35.35 102 *e*P **P** **06 35 28.3 +1.9**
TPNV pmax pmax
comp=Z,67nm,0.9s
TPNV Topopah Spring 35.35 102 *e*P **P** **06 35 28.3 +1.9**
comp=Z,67nm,0.9s
FCC Fort Churchill 35.57 56 *e*P **P** **06 35 28.8 +1.0**
FCC pmax pmax
comp=Z,276nm,2.0s
FCC Fort Churchill 35.57 56 *e*P **P** **06 35 28.8 +1.0**
comp=Z,276nm,2.0s
LRMC Laurel Mtn Rad 35.60 105 P **P** **06 35 29.9 +1.4**
baz=317
SCZ2 Santa Cruz Isl 35.61 109 P **P** **06 35 29.7 +1.2**
baz=319
JLU Jordanelle 35.62 93 *e*P **P** **06 35 30.5 +1.8**
comp=Z,12nm,1.1s
OSI Osito Audit: C 35.65 107 P **P** **06 35 30.7 +1.8**
baz=318
B25A Knox Farm, Ray 35.78 76 P **P** **06 35 30.8 +1.0**
baz=303
BLG Laguna Peak, P 35.84 108 P **P** **06 35 30.7 +0.3**
baz=318
EDW2 Edwards Air Fo 35.86 106 P **P** **06 35 32.2 +1.5**
baz=317,SNR=7.0
C25A Freed Ranch, W 36.04 77 P **P** **06 35 33.2 +1.2**
baz=303
A26A Wade Farm, Ken 36.07 74 P **P** **06 35 33.1 +0.9**
baz=302
SHOC Shoshone, Teco 36.08 103 P **P** **06 35 33.7 +1.3**
baz=316
GSC Goldstone, Bar 36.22 104 P **P** **06 35 35.2 +1.5**
baz=317,SNR=20
GSC Goldstone, Bar 36.22 104 *e*P **P** **06 35 36.6 +2.9**
GSC pmax pmax
comp=Z,29nm,1.0s
GSC Goldstone, Bar 36.22 104 *e*P **P** **06 35 36.6 +2.9**
comp=Z,29nm,1.0s
SNCC San Nicolas Is 36.24 109 P **P** **06 35 34.6 +0.8**
baz=319
B26A Jensen Ranch, 36.25 75 P **P** **06 35 34.8 +1.0**
baz=303
SHPR Sheep Range 36.28 101 *e*P **P** **06 35 36.3 +2.0**
comp=Z,14nm,0.9s
MWC Mount Wilson 36.31 107 *e*P **P** **06 35 36.9 +2.3**
MWC pmax pmax
comp=Z,48nm,1.1s
MWC Mount Wilson 36.31 107 *e*P **P** **06 35 36.9 +2.3**
comp=Z,48nm,1.1s
RRX Edison Barstow 36.42 105 P **P** **06 35 36.0 +0.7**
baz=317
BFSC Mount Baldy Ra 36.52 106 P **P** **06 35 37.6 +1.2**
baz=318,SNR=10
FMP Fort Macarthur 36.56 107 P **P** **06 35 37.9 +1.4**
baz=318
CCUT Cedar City 36.57 98 *e*P **P** **06 35 37.6 +0.7**
comp=Z,20nm,1.0s
MSU Marysvale 36.59 96 *e*P **P** **06 35 39.0 +1.9**
MSU Marysvale 36.59 96 *e*P **P** **06 35 39.0 +1.9**
TUQ Turquoise Moun 36.61 103 P **P** **06 35 38.7 +1.5**
baz=316,SNR=14
TMUT Trail Mountain 36.62 94 *e*P **P** **06 35 39.1 +1.7**
comp=Z,20nm,0.8s
SZCU Shurtz Canyon 36.70 98 *e*P **P** **06 35 39.9 +2.0**
comp=Z,23nm,1.0s
CIS Catalina Islan 36.73 108 P **P** **06 35 39.6 +1.6**
baz=319
P17A Butcher Ranch, 36.77 93 *e*P **P** **06 35 39.5 +1.0**
comp=Z,13nm,1.0s
HEC Hector,Ludlow 36.82 104 P **P** **06 35 40.7 +1.8**
baz=317
D26A Manning 36.88 77 P **P** **06 35 40.3 +1.1**
baz=304
MTPU Mount Pierson 36.91 96 *e*P **P** **06 35 41.5 +1.6**
comp=Z,20nm,1.1s
BBRC Big Bear Solar 36.91 105 P **P** **06 35 40.9 +1.1**
baz=318
SCI2 San Clemente I 36.97 109 P **P** **06 35 41.0 +0.9**
baz=319
LCMT Little Creek M 37.01 99 *e*P **P** **06 35 42.4 +1.9**
comp=Z,27nm,0.8s
ASAJ Asahikawa 37.05 277 *e*P **P** **06 35 41.1 +0.6**
comp=Z,56nm,0.8s
SRU San Rafael Swe 37.14 94 *e*P **P** **06 35 42.9 +1.2**
SRU pmax pmax
comp=Z,43nm,1.0s
SRU San Rafael Swe 37.14 94 *e*P **P** **06 35 42.9 +1.2**
comp=Z,42nm,1.0s
K22A Casper 37.16 86 P **P** **06 35 42.7 +1.0**
baz=308
K22A Casper 37.16 86 *e*P **P** **06 35 42.4 +0.7**
comp=Z,36nm,1.1s
GMRC Granite Mounta 37.23 104 P **P** **06 35 43.4 +0.9**
baz=317
PKCU Pink Cliffs 37.25 97 *e*P **P** **06 35 43.6 +0.8**
comp=Z,23nm,0.8s
KNB Kanab 37.25 98 *e*P **P** **06 35 44.5 +1.9**
KNB pmax pmax
comp=Z,26nm,0.9s
KNB Kanab 37.25 98 *e*P **P** **06 35 44.5 +1.9**
comp=Z,26nm,0.9s
MURC Murrieta 37.25 106 P **P** **06 35 43.5 +1.0**
baz=318
LDFC Landfair 37.33 103 *e*P **P** **06 35 45.2 +1.9**
comp=Z,78nm,1.0s
EKU East Kanab 37.40 98 *e*P **P** **06 35 45.7 +1.9**
BELC Belle Mtn. Jos 37.62 105 P **P** **06 35 47.2 +1.5**
baz=318,SNR=15
H25A Fruitdale 37.63 81 P **P** **06 35 46.5 +0.9**
baz=307,SNR=8.5
PFO Pinyon Flats O 37.65 106 P **P** **06 35 47.5 +1.5**
comp=Z,11nm,0.9s,baz=323,slow=5.3,SNR=12
PFO ScP **ScP** **06 41 45.0 -0.5**
comp=Z,5.4nm,0.9s,baz=334,slow=6.9,SNR=4.5
PFO LR LR 06 48 18.0
comp=Z,2µm,20.8s,baz=315,slow=31
PFO Pinyon Flats O 37.65 106 P **P** **06 35 47.3 +1.3**
baz=318,SNR=10
PFO Pinyon Flats O 37.65 106 *e*P **P** **06 35 48.3 +2.3**
comp=Z,22nm,0.9s
PFO ScP **ScP** **06 41 45.0 -0.5**
TPFO Pinon Flats 37.66 106 P **P** **06 35 47.2 +1.1**
baz=318,SNR=11
RSSD Black Hills 37.68 82 P **P** **06 35 46.6 +0.3**
baz=307
RSSD Black Hills 37.68 82 *e*P **P** **06 35 47.3 +1.1**
RSSD pmax pmax
comp=Z,34nm,0.7s
RSSD Black Hills 37.68 82 *e*P **P** **06 35 47.3 +1.1**
comp=Z,34nm,0.7s
O20A White River Ci 37.78 91 P **P** **06 35 47.7 +0.6**
baz=311,SNR=16
O20A White River Ci 37.78 91 *e*P **P** **06 35 47.8 +0.8**
comp=Z,52nm,0.9s
NEE2 Needles Airpor 37.83 103 P **P** **06 35 48.9 +1.5**
baz=317
109C Camp Elliot, M 37.84 107 P **P** **06 35 48.8 +1.5**
baz=319,SNR=6.3
U15A North Rim 37.97 98 *e*P **P** **06 35 50.3 +1.5**
comp=Z,29nm,0.9s
IRM Iron Mountain 37.98 104 P **P** **06 35 50.4 +1.7**
baz=317,SNR=38
MDND Maddock 38.01 74 P **P** **06 35 48.9 +0.3**
baz=304,SNR=11
MDND Maddock 38.01 74 *e*P **P** **06 35 50.5 +1.8**
comp=Z,338nm,1.3s
W13A Hualapai Mount 38.01 101 *e*P **P** **06 35 50.9 +1.8**
comp=Z,36nm,0.8s
ERM Erimo 38.03 274 *d*i*P* **P** **06 35 48.5 -0.3**
ERM pmax pmax
comp=Z,148nm,1.2s
ERM Erimo 38.03 274 *e*P **P** **06 35 49.0 +0.2**
comp=Z,174nm,1.3s
ERM LR LR
comp=Z,2µm,22.0s

BC3 Big Chuckawall 38.18 105 P **P** **06 35 51.0 +0.6**
baz=318
MONP2 Monument Peak 38.21 106 P **P** **06 35 52.1 +1.3**
baz=319,SNR=12
BAR Barrett 38.23 107 *e*P **P** **06 35 53.6 +2.8**
comp=Z,37nm,1.1s
PV09 Paradox Valley 38.35 93 *e*P **P** **06 35 53.0 +1.0**
PDMCI Parker Dam,Lak 38.44 103 P **P** **06 35 54.1 +1.7**
baz=317,SNR=18
PV10 Paradox Valley 38.49 93 *e*P **P** **06 35 54.6 +1.4**
SWSC Sam W. Stewart 38.52 106 P **P** **06 35 54.9 +1.8**
baz=318,SNR=6.6
PV04 Paradox Valley 38.55 93 *e*P **P** **06 35 53.5 0.0**
IKP In-Ko-Pah, Jac 38.57 106 P **P** **06 35 55.2 +1.5**
baz=319,SNR=8.5
N23A Red Feather La 38.61 88 P **P** **06 35 54.9 +0.8**
baz=310
N23A Red Feather La 38.61 88 *e*P **P** **06 35 56.0 +1.8**
comp=Z,19nm,0.9s
JOHN Johnston Islan 38.61 193 PFAKE
JOHN LR LR 06 36 10.0 +16
comp=Z,180nm,21.0s
Y12C Blythe 38.63 104 P **P** **06 35 55.9 +1.8**
baz=318,SNR=21
Y12C Blythe 38.63 104 *e*P **P** **06 35 56.0 +1.9**
comp=Z,69nm,1.0s
PV05 Paradox Valley 38.66 94 *e*P **P** **06 35 55.5 +1.0**
ULM Lac du Bonnet 38.72 69 P **P** **06 35 55.2 +0.6**
comp=Z,28nm,0.5s,baz=306,slow=8.4,SNR=82
ULM LR LR 06 52 10.1
comp=Z,2µm,19.4s,baz=258,slow=36
ULM Lac du Bonnet 38.72 69 *e*P **P** **06 35 55.1 +0.5**
comp=Z,92nm,1.1s
A31A Linda, St. Vin 38.73 71 P **P** **06 35 55.4 +0.7**
baz=304
HABR Khabarovsk 38.76 288 *c e*P **P** **06 35 53.2 -1.7**
HABR *e* 06 38 04.2
HABR *e*S **S** **06 41 47.9 -0.6**
HABR *e* 06 41 53.8
HABR *e* 06 45 59.7
HABR pmax pmax
comp=N,30nm,1.0s
HABR pmax pmax
comp=E,90nm,1.0s
HABR pmax pmax
comp=Z,226nm,1.0s
HABR MLR MLR
comp=Z,905nm,19.0s
B31A Greenbush Farm 38.76 72 P **P** **06 35 55.7 +0.7**
baz=304,SNR=18
PV01 Paradox Valley 38.92 93 *e*P **P** **06 35 57.6 +0.8**
GLA Glamis 38.98 105 P **P** **06 35 58.7 +1.7**
baz=318,SNR=14
GLA Glamis 38.98 105 *e*P **P** **06 35 58.9 +1.9**
GLA pmax pmax
comp=Z,36nm,0.9s
GLA Glamis 38.98 105 *e*P **P** **06 35 58.9 +1.9**
comp=Z,36nm,0.9s
F29A Eureka 39.05 77 P **P** **06 35 57.8 +0.4**
baz=306
C31A Landman Farms, 39.07 73 P **P** **06 35 57.9 +0.3**
baz=305
A32A Rocking H Ranc 39.12 71 P **P** **06 35 58.3 +0.4**
baz=304,SNR=25
WUAZ Wupatki 39.14 99 P **P** **06 35 59.8 +1.3**
baz=315,SNR=27
WUAZ Wupatki 39.14 99 *e*P **P** **06 36 00.2 +1.8**
comp=Z,42nm,0.8s
WUAZ LR LR
comp=Z,1µm,21.0s
SMCO Snowmass 39.14 91 *e*P **P** **06 36 00.5 +1.7**
comp=Z,8.8nm,0.9s
Y14A Wickenburg 39.35 102 *e*P **P** **06 36 01.4 +1.3**
comp=Z,138nm,0.9s
B32A Ashes, Strandq 39.39 72 P **P** **06 36 00.6 +0.4**
baz=304,SNR=22
D31A Mcclaflin, Tow 39.51 74 P **P** **06 36 01.7 +0.4**
baz=305,SNR=8.2
ISCO Idaho Springs 39.52 89 P **P** **06 36 02.1 +0.3**
baz=311
ISCO Idaho Springs 39.52 89 PFAKE 06 36 10.0 +8.2
ISCO LR LR
comp=Z,2µm,20.0s
MVCO Mesa Verde 39.60 94 P **P** **06 36 03.0 +0.7**
baz=314,SNR=7.5
MVCO Mesa Verde 39.60 94 *e*P **P** **06 36 03.1 +0.7**
comp=Z,12nm,0.8s
MVCO LR LR
comp=Z,885nm,20.0s
CLNS Chul'man 39.62 304 *c e*P **P** **06 36 00.7 -1.4**
CLNS *e* 06 37 37.5
CLNS *e*PPP PPP 06 37 57.4
CLNS *e* 06 38 06.9
CLNS *e*S **S** **06 41 58.6 -2.7**
CLNS pmax pmax
comp=Z,27nm,0.7s
CLNS pmax pmax
comp=E,63nm,0.9s
CLNS pmax pmax
comp=N,19nm,0.7s
CLNS pmax pmax
comp=Z,10.0nm,1.0s
CLNS smax smax
comp=E,15nm,1.7s
CLNS smax smax
comp=N,14nm,1.3s
CLNS MLR MLR
comp=Z,1µm,19.0s
CLNS MLR MLR
comp=E,1µm,16.0s
CLNS MLR MLR
comp=N,568nm,19.0s
E31A Nome 39.70 75 P **P** **06 36 03.2 +0.3**
baz=306,SNR=10
A33A Warroad 39.71 70 P **P** **06 36 03.4 +0.5**
baz=304,SNR=25
C32A Crookston 39.72 72 P **P** **06 36 03.5 +0.5**
baz=305
113A Mohawk Valley, 39.78 104 *e*P **P** **06 36 05.6 +1.9**
comp=N,28nm,1.0s
AGMN Agassiz Nation 39.82 71 P **P** **06 36 04.1 +0.4**
baz=305,SNR=32
AGMN Agassiz Nation 39.82 71 *e*P **P** **06 36 04.2 +0.4**
comp=N,72nm,0.8s
AGMN LR LR
comp=Z,815nm,20.0s
F31A Hecla 39.91 76 P **P** **06 36 04.8 +0.2**
baz=306
B33A Robert and Kas 39.98 71 P **P** **06 36 05.7 +0.5**
baz=305,SNR=19
KLR Kul'dur 40.13 291 *c i*P **P** **06 36 05.8 -0.6**
E32A Braaten, Kindr 40.14 74 P **P** **06 36 06.4 -0.1**
baz=306
C33A Trail 40.18 72 P **P** **06 36 06.9 +0.2**
baz=305,SNR=9.3
S22A 4UR Ranch, Cre 40.19 92 P **P** **06 36 07.3 -0.1**
baz=313,SNR=8.8
S22A 4UR Ranch, Cre 40.19 92 *e*P **P** **06 36 07.7 +0.3**
comp=Z,18nm,1.3s
G31A Conde 40.32 77 P **P** **06 36 08.1 +0.1**
baz=307
Q24A Divide 40.34 89 P **P** **06 36 09.0 +0.4**
baz=312
Q24A Divide 40.34 89 *e*P **P** **06 36 09.5 +0.9**
comp=Z,10nm,0.8s
W18A Petrified Fore 40.36 98 P **P** **06 36 09.5 +0.9**
baz=316,SNR=8.3
W18A Petrified Fore 40.36 98 *e*P **P** **06 36 10.1 +1.4**
comp=Z,20nm,0.9s
B34A Aery, Baudette 40.37 71 P **P** **06 36 08.6 +0.3**
baz=305,SNR=28
SUSD Miller 40.38 78 P **P** **06 36 09.0 +0.5**
baz=308
D33A AnnSam, Waubun 40.50 73 P **P** **06 36 09.6 +0.2**
baz=306
F32A Veblen 40.54 75 P **P** **06 36 09.9 +0.1**
baz=307,SNR=8.1
H31A Wolsey 40.62 78 P **P** **06 36 10.7 +0.2**
baz=308,SNR=7.0
X18A Snowflake 40.66 98 *e*P **P** **06 36 12.8 +1.6**
comp=Z,35nm,0.9s
G32A Webster 40.70 76 P **P** **06 36 10.8 -0.4**
baz=307
C34A RKJ Ranch, Bem 40.71 72 P **P** **06 36 11.3 +0.1**
baz=306,SNR=7.9
J30A Dallas 40.77 80 P **P** **06 36 12.1 +0.3**
baz=309,SNR=24

E33A Westby DABS, E 40.78 74 P **P** **06 36 11.8 -0.1**
baz=306,SNR=8.2
OGNE Ogallala 40.83 85 P **P** **06 36 12.8 +0.4**
baz=310,SNR=5.7
OGNE Ogallala 40.83 85 *e*P **P** **06 36 13.2 +0.9**
comp=Z,53nm,0.8s
OGNE LR LR
comp=Z,757nm,22.0s
I31A Royce, Wessing 40.87 78 P **P** **06 36 12.8 +0.2**
baz=308
D34A Park Rapids 40.89 73 P **P** **06 36 12.8 +0.1**
baz=306
214A Organ Pipe Nat 40.93 104 P **P** **06 36 14.4 +1.2**
baz=319,SNR=14
214A Organ Pipe Nat 40.93 104 *e*P **P** **06 36 14.4 +1.2**
comp=Z,160nm,1.0s
B35A Bob, Littlefor 40.95 70 P **P** **06 36 13.2 +0.1**
baz=305,SNR=29
SDCO Great Sand Dun 40.96 91 P **P** **06 36 13.9 +0.2**
baz=313,SNR=14
SDCO Great Sand Dun 40.96 91 *e*P **P** **06 36 14.9 +1.2**
comp=Z,9.7nm,0.8s
SDCO LR LR
comp=Z,1µm,19.0s
F33A 5 Mile Ranch, 41.02 75 P **P** **06 36 13.9 +0.1**
baz=307
K30A Basset 41.11 81 P **P** **06 36 15.0 +0.5**
baz=309,SNR=15
C35A Jirik Farms, M 41.19 71 P **P** **06 36 15.1 0.0**
baz=306,SNR=24
H32A Carlson Farm, 41.20 77 P **P** **06 36 15.4 +0.1**
baz=308,SNR=13
J31A Geddes 41.21 80 P **P** **06 36 15.7 +0.3**
baz=309,SNR=7.5
E34A Wadena 41.24 73 P **P** **06 36 15.7 +0.1**
baz=306
G33A Ortonville 41.33 76 P **P** **06 36 16.2 -0.2**
baz=307,SNR=12
I32A Karley and Nic 41.48 78 P **P** **06 36 17.4 -0.2**
baz=308
H33A Prehn Over Nor 41.48 77 P **P** **06 36 17.6 0.0**
baz=308,SNR=13
KULLO Kullorsuaq 41.50 23⇑ *i*P **P** **06 36 17.8 +0.5**
KULLO *i* 06 38 13.7
D35A Remer 41.52 72 P **P** **06 36 18.3 +0.4**
baz=306,SNR=30
F34A Alexandria 41.63 74 P **P** **06 36 18.8 0.0**
baz=307,SNR=6.8
K31A O'Neill 41.63 80 P **P** **06 36 19.3 +0.5**
baz=309,SNR=6.0
E35A Pequot Lakes 41.64 73 P **P** **06 36 19.2 +0.3**
baz=307,SNR=26
J32A Parkston 41.67 79 P **P** **06 36 19.2 +0.1**
baz=309,SNR=7.5
G34A Benson 41.75 75 P **P** **06 36 19.8 0.0**
baz=308,SNR=12
KSCO Kaye Shedlock' 41.76 87 P **P** **06 36 20.3 +0.2**
baz=312,SNR=7.8
KSCO Kaye Shedlock' 41.76 87 *e*P **P** **06 36 21.3 +1.2**
comp=Z,75nm,1.0s
C36A Pine Crest Far 41.78 70 P **P** **06 36 20.2 +0.2**
baz=306,SNR=25
TUC Tucson 41.80 101 P **P** **06 36 21.4 +0.9**
baz=318
TUC Tucson 41.80 101 *e*P **P** **06 36 22.1 +1.7**
TUC pmax pmax
comp=Z,28nm,1.0s
TUC MLR MLR
comp=Z,1µm,21.0s
TUC Tucson 41.80 101 *e*P **P** **06 36 22.1 +1.7**
comp=Z,28nm,1.0s
TUC LR LR
comp=Z,1µm,21.0s
I33A Coleman 41.84 77 P **P** **06 36 20.3 -0.2**
baz=308
L31A Butterfield Fa 41.87 81 P **P** **06 36 21.3 +0.5**
baz=310
D36A Goodland 41.95 71 P **P** **06 36 21.5 +0.2**
baz=306,SNR=28
F35A Swanville 41.97 74 P **P** **06 36 21.8 +0.3**
baz=307,SNR=23
T25A Trinidad 42.01 91 P **P** **06 36 22.2 0.0**
baz=314,SNR=9.0
T25A Trinidad 42.01 91 *e*P **P** **06 36 23.3 +1.1**
comp=Z,35nm,1.0s
H34A Spellman Lake, 42.03 76 P **P** **06 36 21.9 -0.1**
baz=308,SNR=8.3
K32A Verdigre 42.05 80 P **P** **06 36 22.1 -0.1**
baz=309
ECSD EROS Data Cent 42.14 78 P **P** **06 36 22.6 -0.4**
baz=309,SNR=15
ECSD EROS Data Cent 42.14 78 *e*P **P** **06 36 22.8 -0.2**
comp=Z,20nm,0.9s
ECSD LR LR
comp=Z,2µm,22.0s
C37A Embarrass 42.15 70 P **P** **06 36 23.3 +0.2**
baz=306
J33A Davis 42.20 78 P **P** **06 36 23.3 -0.1**
baz=309
E36A McGregor 42.30 72 P **P** **06 36 24.5 +0.4**
baz=307,SNR=30
M31A Lambtecht Ranc 42.32 82 P **P** **06 36 24.6 +0.1**
baz=310
LAZ Ladron 42.36 96 *e*P **P** **06 36 26.4 +1.3**
D37A Cotton 42.36 71 P **P** **06 36 25.0 +0.2**
baz=307,SNR=22
ANMO Albuquerque 42.36 95 P **P** **06 36 25.3 +0.2**
baz=315
ANMO Albuquerque 42.36 95 *c e*P **P** **06 36 25.6 +0.5**
ANMO pmax pmax
comp=Z,10.0nm,1.2s
ANMO Albuquerque 42.36 95 *e*P **P** **06 36 25.4 +0.3**
comp=Z,7.0nm,0.9s
ANMO LR LR
comp=Z,620nm,22.0s
EYMN Ely 42.40 69 P **P** **06 36 25.1 +0.1**
baz=306,SNR=31
EYMN Ely 42.40 69 *e*P **P** **06 36 25.4 +0.4**
comp=Z,238nm,1.4s
EYMN LR LR
comp=Z,1µm,19.0s
G35A Watkins 42.41 74 P **P** **06 36 25.5 +0.4**
baz=308,SNR=13
L32A Elgin 42.45 80 P **P** **06 36 25.3 -0.2**
baz=310
H35A Sunnyside Ranc 42.54 75 P **P** **06 36 26.3 +0.2**
baz=308,SNR=17
F36A Milaca 42.55 73 P **P** **06 36 26.4 +0.2**
baz=308,SNR=23
H11N2 WAKE ISLAND Hy 42.58 227 T T 07 21 28.7
baz=27,slow=76,SNR=718
H11N3 WAKE ISLAND Hy 42.59 227 T T 07 21 29.2
baz=27,slow=76,SNR=721
H11N1 WAKE ISLAND Hy 42.60 227 T T 07 21 30.1
baz=27,slow=76,SNR=368
K33A Hardington 42.64 79 P **P** **06 36 27.4 +0.4**
baz=310,SNR=9.7
C38A Sawbill Land. 42.66 69 P **P** **06 36 27.2 +0.1**
baz=306,SNR=12
N31A Bailey Ranch, 42.68 83 P **P** **06 36 27.5 +0.1**
baz=311
Y22D IRIS PASSCAL I 42.72 96 P **P** **06 36 28.4 +0.4**
baz=316
E37A Wrenshall 42.74 72 P **P** **06 36 28.1 +0.4**
baz=307
BGNE Belgrade 42.75 81 P **P** **06 36 28.5 +0.6**
baz=310,SNR=7.8
BGNE Belgrade 42.75 81 *e*P **P** **06 36 28.7 +0.7**
comp=Z,141nm,0.9s
L33A Hoskins 42.76 80 P **P** **06 36 28.4 +0.3**
baz=310
J34A George 42.79 78 P **P** **06 36 28.1 -0.2**
baz=309
G36A St. Michael 42.81 74 P **P** **06 36 28.4 +0.1**
baz=308,SNR=20
BNM Barren Site 42.84 96 *e*P **P** **06 36 30.4 +1.5**
O31A Woolen Ranch, 42.91 84 P **P** **06 36 29.7 +0.5**
baz=311
I35A Creekview Farm 42.98 76 P **P** **06 36 29.5 -0.2**
baz=309
USRK Ussuriysk Ar. 43.01 284 P **P** **06 36 28.6 -1.4**
comp=Z,20nm,0.9s,baz=59,slow=7.5,SNR=28
USRK PcP **PcP** **06 38 20.0 +0.6**
comp=Z,13nm,0.6s,baz=63,slow=2.1,SNR=13
USRK LR LR 06 53 44.2
comp=Z,855nm,21.7s,baz=43,slow=35
N32A Stulken Farm, 43.09 82 P **P** **06 36 31.0 +0.3**
baz=311

K34A	**Le Mars**	43.10	78	P		P		06 36 30.9	+0.2	
	baz=310,SNR=16									
H36A	**Jessenland, He**	43.12	75	P		P		06 36 30.9	+0.1	
	baz=308,SNR=10									
J35A	**Milford**	43.16	77	P		P		06 36 31.2	-0.1	
	baz=309									
M33A	**Taylor Creek F**	43.19	80	P		P		06 36 31.6	+0.1	
	baz=310,SNR=9.0									
C39A	**Grand Marais**	43.21	69	P		P		06 36 31.2	-0.4	
	baz=307,SNR=6.4									
SPMN	**Marine on St.**	43.34	73	P		P		06 36 32.7	+0.1	
	baz=308,SNR=15									
SPMN	**Marine on St.**	43.34	73	*e*P		P		06 36 33.2	+0.5	
	comp=Z,75nm,1.3s									
121A	**Cookes Peak, D**	43.35	98	P		P		06 36 33.5	+0.4	
	baz=317,SNR=12									
121A	**Cookes Peak, D**	43.35	98	*e*P		P		06 36 34.1	+1.1	
319A	**Douglas**	43.35	101	*e*P		P		06 36 34.5	+1.5	
	comp=Z,20nm,0.9s									
L34A	**Svendsen Farm,**	43.40	79	P		P		06 36 33.1	-0.1	
	baz=310,SNR=7.9									
I36A	**Fitzsimmons Fa**	43.42	75	P		P		06 36 33.1	-0.2	
	baz=309									
O32A	**Brockman Farm,**	43.44	83	P		P		06 36 33.8	+0.3	
	baz=311									
K35A	**Storm Lake**	43.56	78	P		P		06 36 34.5	+0.1	
	baz=310,SNR=6.8									
CBKS	**Cedar Bluff**	43.56	85	P		P		06 36 35.0	+0.4	
	baz=312									
CBKS	**Cedar Bluff**	43.56	85	*e*P		P		06 36 36.4	+1.8	
CBKS				pmax		pmax				
	comp=Z,124nm,1.1s									
CBKS				MLR		MLR				
	comp=Z,607nm,20.0s									
CBKS	**Cedar Bluff**	43.56	85	*e*P		P		06 36 36.4	+1.8	
	comp=Z,124nm,1.1s									
CBKS				LR		LR				
	comp=Z,607nm,20.0s									
M34A	**Aspy Farms, Fr**	43.59	80	P		P		06 36 34.9	+0.2	
	baz=311									
N33A	**J Bar K, Exete**	43.59	81	P		P		06 36 34.8	0.0	
	baz=311									
P32A	**Huiting Farm,**	43.67	84	P		P		06 36 35.7	+0.3	
	baz=312,SNR=12									
J36A	**Seneca 1, Swea**	43.68	76	P		P		06 36 35.2	-0.1	
	baz=310,SNR=9.1									
H37A	**Dierke Farm, C**	43.68	74	P		P		06 36 35.3	0.0	
	baz=309,SNR=9.7									
H11S1	**WAKE ISLAND Hy**	43.75	227	T		T		07 22 49.5		
	baz=26,slow=76,SNR=214									
I37A	**Lemond, Waseca**	43.77	75	P		P		06 36 36.1	0.0	
	baz=309,SNR=21									
H11S2	**WAKE ISLAND Hy**	43.77	227	T		T		07 22 49.9		
	baz=26,slow=76,SNR=106									
H11S3	**WAKE ISLAND Hy**	43.77	227	T		T		07 22 52.8		
	baz=26,slow=76,SNR=130									
L35A	**Bielow Farm, R**	43.78	79	P		P		06 36 35.9	-0.3	
	baz=310									
O33A	**Hebron**	43.95	82	P		P		06 36 37.5	-0.2	
	baz=312,SNR=10									
K36A	**Gilmore City**	44.06	77	P		P		06 36 38.4	0.0	
	baz=310									
N34A	**Lincoln**	44.07	81	P		P		06 36 38.2	-0.3	
	baz=311,SNR=12									
MDJ	**Mudanjiang**	44.09	286	P		P		06 36 37.6	-1.0	
MDJ				pmax		pmax				
	comp=Z,69nm,0.8s									
MDJ				pmax		pmax				
	comp=Z,250nm,8.6s									
MDJ	**Mudanjiang**	44.09	286	*e*P		P		06 36 37.8	-0.9	
	comp=Z,67nm,0.9s									
MDJ				LR		LR				
	comp=Z,2μm,20.0s									
M35A	**Neola**	44.11	79	P		P		06 36 39.3	+0.4	
	baz=311,SNR=9.9									
Q32A	**Meitler Ranch,**	44.12	84	P		P		06 36 39.2	+0.2	
	baz=312,SNR=12									
J37A	**Redenius Farm,**	44.13	76	P		P		06 36 39.1	+0.1	
	baz=310,SNR=25									
HSIG		44.20	105	*e*P		P		06 36 41.0	+1.3	
	comp=Z,19nm,0.8s									
L36A	**Harm Buss Farm**	44.28	78	P		P		06 36 40.0	-0.3	
	baz=310									
P33A	**Williams Farm,**	44.32	83	P		P		06 36 40.6	0.0	
	baz=312									
I38A	**Scanlan Farm,**	44.35	74	P		P		06 36 40.7	-0.1	
	baz=309,SNR=24									
O34A	**Beatrice**	44.39	82	P		P		06 36 41.1	-0.1	
	baz=312,SNR=15									
R32A	**Long Quarter,**	44.42	85	P		P		06 36 41.7	+0.3	
	baz=313,SNR=8.7									
K37A	**Belmond**	44.43	77	P		P		06 36 41.3	-0.1	
	baz=310,SNR=26									
MSHR	**Mys Shultsa**	44.51	283	*c* i P		P		06 36 42.3	+0.3	
MAJO	**Matsushiro**	44.53	272	*c* i P		P		06 36 42.5	+0.2	
MAJO	**Matsushiro**	44.53	272	*e*P		P		06 36 42.2	-0.1	
	comp=Z,323nm,0.9s									
MAJO				LR		LR				
	comp=Z,1μm,22.0s									
MJAR	**Matsushiro Arr**	44.53	272	P		P		06 36 42.2	-0.1	
	comp=Z,78nm,0.7s,baz=40,slow=6.3,SNR=218									
MJAR				PcP		PcP		06 38 24.9	+0.1	
	comp=Z,18nm,1.0s,baz=27,slow=1.6,SNR=6.4									
MJAR				LR		LR		06 54 33.6		
	comp=Z,342nm,21.6s,baz=60,slow=35									
MJB9	**Matsu-Tunnel**	44.53	272	*e*P		P		06 36 42.4	0.0	
	comp=Z,80nm,0.9s									
Q33A	**Connelly Farm,**	44.53	84	P		P		06 36 42.6	+0.3	
	baz=312,SNR=15									
N35A	**Tabor**	44.54	80	P		P		06 36 42.3	0.0	
	baz=311,SNR=23									
M36A	**Felix, Anita**	44.63	79	P		P		06 36 43.0	0.0	
	baz=311,SNR=10									
J38A	**Wedel Dairy, R**	44.73	75	P		P		06 36 43.9	+0.1	
	baz=310,SNR=25									
P34A	**Walnut Farm, R**	44.74	82	P		P		06 36 43.8	-0.2	
	baz=312,SNR=8.6									
L37A	**Phoenix Point,**	44.78	77	P		P		06 36 44.3	+0.1	
	baz=310,SNR=30									
S32A	**Newby Ranch, P**	44.78	86	P		P		06 36 44.0	-0.3	
	baz=313									
O35A	**Humboldt**	44.78	81	P		P		06 36 44.1	-0.2	
	baz=312									
COWI	**Conover**	44.80	70	*e*P		P		06 36 44.5	+0.1	
	comp=Z,227nm,1.9s									
COWI				LR		LR				
	comp=Z,623nm,22.0s									
R33A	**Olander Ranch,**	44.91	84	P		P		06 36 45.4	0.0	
	baz=313,SNR=8.6									
N36A	**Muff Farm, Cla**	44.96	80	P		P		06 36 45.7	0.0	
	baz=311,SNR=10									
K38A	**Parkersburg**	44.99	76	P		P		06 36 45.9	-0.1	
	baz=310,SNR=6.8									
M37A	**Trindle Farm,**	45.08	78	P		P		06 36 46.7	+0.1	
	baz=311,SNR=17									
Q34A	**Chapman**	45.10	83	P		P		06 36 46.4	-0.4	
	baz=312,SNR=11									
J39A	**Decorah**	45.15	75	P		P		06 36 46.7	-0.4	
	baz=310,SNR=28									
T32A	**Huddler Ranch,**	45.15	86	P		P		06 36 47.5	+0.3	
	baz=314									
AMTX	**Amarillo**	45.16	91	P		P		06 36 47.6	+0.1	
	baz=315									
KSU1	**Kansas State U**	45.17	83	P		P		06 36 46.9	-0.5	
	baz=312									
KSU1	**Kansas State U**	45.17	83	*e*P		P		06 36 47.5	+0.2	
	comp=Z,37nm,0.9s									
KSU1				LR		LR				
	comp=Z,885nm,21.0s									
MSTX	**Muleshoe**	45.19	93	P		P		06 36 47.7	0.0	
	baz=316									
MSTX	**Muleshoe**	45.19	93	*e*P		P		06 36 48.2	+0.5	
	comp=Z,26nm,1.1s									
P35A	**Duane Minner,**	45.22	82	P		P		06 36 47.5	-0.2	
	baz=312,SNR=16									
L38A	**Oak Wood Farm,**	45.22	77	P		P		06 36 47.5	-0.2	
	baz=311,SNR=9.2									
SCIA	**State Center**	45.23	77	*e*P		P		06 36 48.1	+0.4	
	comp=Z,202nm,1.7s									
SCIA				LR		LR				
	comp=Z,1μm,20.0s									
MNTX	**Cornudas Mount**	45.34	97	P		P		06 36 49.4	+0.6	
	baz=318,SNR=15									
MNTX	**Cornudas Mount**	45.34	97	*e*P		P		06 36 50.0	+1.3	
	comp=Z,20nm,1.0s									
MNTX				LR		LR				
	comp=Z,2μm,22.0s									
R34A	**Isabella, Hill**	45.34	84	P		P		06 36 48.8	+0.1	
	baz=313,SNR=5.5									
S33A	**Kaszmaul Farm,**	45.39	85	P		P		06 36 49.2	0.0	
	baz=313,SNR=12									
O36A	**Bolckow**	45.41	80	P		P		06 36 49.2	0.0	
	baz=312,SNR=9.5									
N37A	**Lee Faris, Mou**	45.42	79	P		P		06 36 49.5	+0.1	
	baz=312,SNR=27									
K39A	**Oelwein**	45.45	75	P		P		06 36 48.9	-0.6	
	baz=310									
M38A	**Pleasantville**	45.56	78	P		P		06 36 50.1	-0.3	
	baz=311,SNR=8.0									
T33A	**Patterson Ranc**	45.61	86	P		P		06 36 50.9	0.0	
	baz=314									
P36A	**Good Intent, A**	45.62	81	P		P		06 36 50.7	-0.1	
	baz=312,SNR=32									
J40A	**Soldiers Grove**	45.64	74	P		P		06 36 50.7	-0.3	
	baz=310,SNR=28									
Q35A	**Mercer Eighty,**	45.66	82	P		P		06 36 51.3	+0.1	
	baz=313									
U32A	**Winter Ranch,**	45.66	87	P		P		06 36 51.3	+0.1	
	baz=314									
L39A	**Vinton**	45.77	76	P		P		06 36 51.6	-0.5	
	baz=311,SNR=11									
S34A	**Willow Spring**	45.83	84	P		P		06 36 52.1	-0.5	
	baz=313,SNR=5.6									
O37A	**Wolven Farm, M**	45.85	80	P		P		06 36 52.1	-0.6	
	baz=312,SNR=8.9									
K40A	**Colesburg**	45.88	75	P		P		06 36 52.3	-0.6	
	baz=311,SNR=10									
Q36A	**Arnold C. Orve**	45.92	82	P		P		06 36 52.7	-0.5	
	baz=313									
R35A	**Emporia Munici**	45.93	83	P		P		06 36 53.2	-0.2	
	baz=313									
N38A	**Joes South For**	45.95	78	P		P		06 36 53.1	-0.4	
	baz=312,SNR=8.8									
INU	**Iuyama**	46.05	271	*e*P		P		06 36 53.7	-0.6	
	comp=Z,136nm,0.8s									
J41A	**Loganville**	46.07	74	P		P		06 36 54.1	-0.3	
	baz=310,SNR=46									
V32A	**Arapaho**	46.10	88	P		P		06 36 54.7	0.0	
	baz=315									
M39A	**Webster**	46.10	77	P		P		06 36 54.6	0.0	
	baz=311,SNR=32									
P37A	**Lathrop**	46.13	80	P		P		06 36 54.5	-0.4	
	baz=312,SNR=12									
U33A	**Lingo Farm, Me**	46.13	86	P		P		06 36 54.8	-0.2	
	baz=314									
JFWS	**Jewell Farm**	46.23	74	*e*P		P		06 36 55.2	-0.5	
JFWS				pmax		pmax				
	comp=Z,50nm,0.7s									
JFWS				MLR		MLR				
	comp=Z,2μm,19.0s									
JFWS	**Jewell Farm**	46.23	74	*e*P		P		06 36 55.2	-0.5	
	comp=Z,50nm,0.7s									
JFWS				LR		LR				
	comp=Z,2μm,19.0s									
L40A	**Anamosa**	46.25	76	P		P		06 36 55.2	-0.6	
	baz=311,SNR=15									
T34A	**McClaskey Farm**	46.26	85	P		P		06 36 55.9	-0.1	
	baz=314,SNR=12									
O38A	**Galt**	46.27	79	P		P		06 36 55.4	-0.6	
	baz=312									
S35A	**Otter Creek Ra**	46.30	84	P		P		06 36 56.3	0.0	
	baz=314,SNR=12									
N39A	**Derby Farms, D**	46.31	78	P		P		06 36 56.0	-0.3	
	baz=312,SNR=15									
R36A	**Gordon, Harris**	46.33	83	P		P		06 36 56.4	-0.1	
	baz=313,SNR=6.2									
KBS	**Kingsbay**	46.38	2	⇑*i*P		P		06 36 57.6	+1.3	
KBS				IAmb		IAmb		06 36 58.1		
	comp=Z,95nm,0.8s									
KBS				*es*P		**sP**		06 37 13.8	-1.4	
KBS	**Kingsbay**	46.38	2	*e*P		P		06 36 57.6	+1.3	
KBS				pmax		pmax				
	comp=Z,150nm,1.1s									
KBS				MLR		MLR				
	comp=Z,755nm,19.0s									
KBS	**Kingsbay**	46.38	2	*e*P		P		06 36 57.6	+1.3	
	comp=Z,150nm,1.1s									
KBS				LR		LR				
	comp=Z,755nm,19.0s									
K41A	**Shullsburg**	46.40	75	P		P		06 36 56.6	-0.4	
	baz=311,SNR=33									
W32A	**Sentinel**	46.40	89	P		P		06 36 56.9	-0.2	
	baz=315									
HIA	**Hailar**	46.44	297	*e*P		P		06 36 56.6	-0.7	
HIA				pmax		pmax				
	comp=Z,51nm,0.7s									
HIA				MLR		MLR				
	comp=Z,2μm,21.0s									
HIA	**Hailar**	46.44	297	*e*P		P		06 36 56.6	-0.7	
	comp=Z,51nm,0.7s									
HIA				LR		LR				
	comp=Z,2μm,21.0s									
NRIK	**Noril'sk**	46.44	333	P		P		06 36 56.9	-0.1	
	comp=Z,64nm,0.6s,baz=58,slow=7.9,SNR=59									
NRIK				PcP		PcP		06 38 31.8	+1.0	
	comp=Z,40nm,1.0s,baz=62,slow=2.4,SNR=4.5									
NRIK				ScP		ScP		06 42 20.7	+0.9	
	comp=Z,5.5nm,0.9s,baz=102,slow=2.7,SNR=4.3									
NRIK				LR		LR		06 58 41.5		
	comp=Z,2μm,21.5s,baz=37,slow=39									
V33A	**Lossen Ranch,**	46.46	87	P		P		06 36 57.5	-0.1	
	baz=315									
U34A	**Anderson Ranch**	46.46	86	P		P		06 36 57.4	-0.2	
	baz=314,SNR=7.2									
U34A	**Anderson Ranch**	46.46	86	*e*P		P		06 36 57.9	+0.3	
	comp=Z,50nm,0.8s									
DAG	**Danmarks Havn**	46.48	11	⇑*i*P		P		06 36 57.4	+0.2	
	comp=Z,354nm,0.9s									
Q37A	**Longview Farm,**	46.55	81	P		P		06 36 57.6	-0.7	
	baz=313									
P38A	**Dawn**	46.57	80	P		P		06 36 57.8	-0.6	
	baz=312,SNR=24									
L41A	**Preston**	46.64	75	P		P		06 36 58.1	-0.7	
	baz=311,SNR=17									
S36A	**Lake Cedric, C**	46.69	83	P		P		06 36 59.0	-0.3	
	baz=314,SNR=6.5									
O39A	**Kirksville**	46.70	78	P		P		06 36 58.7	-0.7	
	baz=312									
T35A	**Sooner Cattle**	46.72	85	P		P		06 36 59.4	-0.2	
	baz=314									
R37A	**Teagarden Farm**	46.72	82	P		P		06 36 59.3	-0.2	
	baz=313									
W33A	**Caddo, Fort Co**	46.83	88	P		P		06 37 00.0	-0.4	
	baz=315									
SUMG	**Summit**	46.84	20	⇑*i*P		P		06 37 01.4	+0.8	
SUMG				*i*				06 37 18.8		
	comp=Z,127nm,0.8s									
SUMG	**Summit**	46.84	20	*e*P		P		06 37 01.3	+0.8	
SUMG				pmax		pmax				
	comp=Z,145nm,0.9s									
SUMG	**Summit**	46.84	20	*e*P		P		06 37 01.3	+0.8	
	comp=Z,145nm,0.9s									
X32A	**Elmer**	46.88	89	P		P		06 37 00.6	-0.2	
	baz=316,SNR=5.3									
CN2	**Changchun**	46.89	288	⇑P		P		06 36 59.5	-1.3	
CN2				PcP		PcP		06 38 30.0	-2.8	
CN2				pmax		pmax				
	comp=Z,340nm,0.8s									
CN2				pmax		pmax				
	comp=Z,400nm,4.0s									
CN2				LR		LR				
	comp=Z,800nm,20.0s									
CN2				LR		LR				
	comp=Z,800nm,20.0s									
V34A	**Guthrie**	46.90	87	P		P		06 37 00.6	-0.4	
	baz=315									
V34A	**Guthrie**	46.90	87	*e*P		P		06 37 02.2	+1.2	
	comp=Z,68nm,1.3s									
WMOK	**Wichita Mounta**	46.94	89	P		P		06 37 01.1	-0.2	
	baz=315,SNR=6.0									
WMOK	**Wichita Mounta**	46.94	89	*e*P		P		06 37 02.0	+0.7	
WMOK				pmax		pmax				
	comp=Z,25nm,0.8s									
WMOK				MLR		MLR				
	comp=Z,1μm,21.0s									
WMOK	**Wichita Mounta**	46.94	89	*e*P		P		06 37 02.0	+0.7	
	comp=Z,25nm,0.8s									
WMOK				LR		LR				
	comp=Z,1μm,21.0s									
Q38A	**Cooks Store, C**	46.97	81	P		P		06 37 00.8	-0.7	
	baz=313,SNR=12									
U35A	**Pawnee**	46.97	85	P		P		06 37 01.4	-0.1	
	baz=314,SNR=5.5									
T36A	**Boggs Farm, Ca**	46.98	84	P		P		06 37 01.2	-0.5	
	baz=314									
S37A	**Fort Scott**	47.10	83	P		P		06 37 01.7	-0.8	
	baz=314,SNR=5.7									
P39B	**Salisbury**	47.10	79	P		P		06 37 02.0	-0.5	
	baz=313,SNR=22									
W34A	**Bridge Creek,**	47.17	87	*e*P		P		06 37 02.7	-0.4	
	baz=315									
W34A	**Bridge Creek,**	47.17	87	*e*P		P		06 37 03.6	+0.5	
O40A	**La Belle**	47.17	78	P		P		06 37 02.7	-0.4	
	baz=312,SNR=20									
SPA0	**Spitsbergen Ar**	47.18	1	⇑*i*P		P		06 37 02.4	-0.3	
SPA0				IAmb		IAmb		06 37 03.4		
	comp=Z,146nm,1.4s									
SPA0	**Spitsbergen Ar**	47.18	1	*e*P		P		06 37 02.8	+0.1	
X33A	**Lawton**	47.24	89	P		P		06 37 03.5	-0.2	
	baz=316									
Q39A	**Willow Grove F**	47.28	80	P		P		06 37 03.3	-0.6	
	baz=313,SNR=9.6									
R38A	**Fenwick Farm,**	47.34	82	P		P		06 37 03.9	-0.5	
	baz=313									
V35A	**Meyer Ranch, C**	47.34	86	P		P		06 37 04.2	-0.2	
	baz=315,SNR=8.7									
P40A	**Paris**	47.48	79	P		P		06 37 04.8	-0.6	
	baz=313,SNR=25									
T37A	**Cheneyville 18**	47.49	83	P		P		06 37 05.0	-0.5	
	baz=314,SNR=7.9									
U36A	**Oologah**	47.53	85	P		P		06 37 05.4	-0.5	
	baz=314									
Y33A	**Hilltop Ranch,**	47.55	89	P		P		06 37 05.9	-0.2	
	baz=316									
X34A	**Smith Ranch, M**	47.59	88	P		P		06 37 06.0	-0.4	
	baz=315									
S38A	**Stockton**	47.72	82	P		P		06 37 06.8	-0.6	
	baz=314									
O41A	**Passleys Farm,**	47.74	77	P		P		06 37 06.7	-0.7	
	baz=312,SNR=9.6									
R39A	**Chumby, Stover**	47.74	81	P		P		06 37 07.1	-0.4	
	baz=313									
W35A	**Tecumseh**	47.75	87	P		P		06 37 07.2	-0.4	
	baz=315,SNR=6.1									
Q40A	**Laux Farm, Aux**	47.83	79	P		P		06 37 07.4	-0.7	
	baz=313,SNR=14									
TUL1	**Leonard**	47.84	85	P		P		06 37 07.7	-0.5	
	baz=315,SNR=8.2									
TUL1	**Leonard**	47.84	85	*e*P		P		06 37 08.4	+0.2	
	comp=Z,64nm,0.8s									
V36A	**Jenks**	47.84	85	P		P		06 37 07.6	-0.6	
	baz=315,SNR=6.7									
U37A	**Salina**	47.88	84	P		P		06 37 08.1	-0.4	
	baz=314									
SFJD	**Kangerlussuaq**	47.90	30	⇑*i*P		P		06 37 09.3	+1.1	
	comp=Z,186nm,0.8s									
SFJD	**Kangerlussuaq**	47.90	30	*e*P		P		06 37 09.4	+1.1	
	comp=Z,232nm,0.8s									
SFJD	**Kangerlussuaq**	47.90	30	PFAKE				06 37 20.0	+12	
SFJD				LR		LR				
	comp=Z,1μm,22.0s									
T38A	**Diamond**	47.91	83	P		P		06 37 08.1	-0.7	
	baz=314,SNR=10									
P41A	**Barry, Barry**	47.94	78	P		P		06 37 08.5	-0.4	
	baz=313,SNR=18									
ABTX	**Abilene, Hawle**	47.97	91	P		P		06 37 09.3	0.0	
	baz=317,SNR=8.6									
ABTX	**Abilene, Hawle**	47.97	91	*e*P		P		06 37 09.8	+0.5	
	comp=Z,55nm,1.1s									
Z33A	**Whitaker Ranch**	47.99	90	P		P		06 37 09.4	-0.1	
	baz=316,SNR=6.5									
S39A	**Bolivar**	48.01	82	P		P		06 37 08.7	-0.9	
	baz=314									
GLMI	**Grayling**	48.06	69	*e*P		P		06 37 10.3	+0.4	
	comp=Z,126nm,1.1s									
TX31	**Lajitas Ar. Si**	48.08	98	*e*P		P		06 37 10.8	+0.5	
TXAR	**Lajitas Array**	48.08	98	P		P		06 37 10.9	+0.5	
	comp=Z,12nm,0.8s,baz=305,slow=5.5,SNR=50									
TXAR				PcP		PcP		06 38 37.5	+0.1	
	comp=Z,7.0nm,0.7s,baz=198,slow=1.5,SNR=7.7									
TXAR				ScP		ScP		06 42 26.9	-0.6	
	comp=Z,2.9nm,1.0s,baz=270,slow=3.8,SNR=5.4									
TXAR				LR		LR		06 55 57.1		
	comp=Z,1μm,21.0s,baz=0.0,slow=34									
Y34A	**Reagan Ranch,**	48.09	89	P		P		06 37 10.3	0.0	
	baz=316,SNR=5.5									
W36A	**Wetumka**	48.13	86	P		P		06 37 10.3	-0.3	
	baz=315,SNR=5.0									
O42A	**Bath**	48.13	77	P		P		06 37 09.8	-0.7	
	baz=313									
R40A	**Maddies Statio**	48.20	80	P		P		06 37 10.1	-1.0	
	baz=314									
X35A	**Drake**	48.23	88	P		P		06 37 10.8	-0.5	
	baz=316									
V37A	**Hulbert**	48.23	85	P		P		06 37 10.7	-0.6	
	baz=315,SNR=8.4									
U38A	**Gravette**	48.27	84	P		P		06 37 11.1	-0.6	
	baz=314,SNR=14									
HDIL	**Hopedale**	48.33	76	P		P		06 37 11.6	-0.4	
	baz=312,SNR=42									
HDIL	**Hopedale**	48.33	76	*e*P		P		06 37 11.8	-0.2	
	comp=Z,162nm,0.7s									
HDIL				LR		LR				
	comp=Z,1μm,19.0s									
HSPB	**Hornsund (broa**	48.36	1	⇑*i*P		P		06 37 11.5	-0.2	
HSPB				IAmb		IAmb		06 37 12.7		
	comp=Z,170nm,1.6s									
133A	**Hamilton Ranch**	48.40	91	P		P		06 37 12.7	0.0	
	baz=317,SNR=14									
P42A	**Winchester**	48.40	78	P		P		06 37 11.8	-0.7	
	baz=313,SNR=12									
Z34A	**Collier Ranch,**	48.42	89	P		P		06 37 12.3	-0.5	
	baz=316									
T39A	**Clever**	48.44	82	P		P		06 37 11.8	-1.2	
	baz=314,SNR=14									
X36A	**Centrahoma**	48.46	87	P		P

135A	Vickery Place,	49.30	90	P		P	06 37 19.6	0.0	
	baz=317,SNR=5.7								
Y37A	Hugo	49.31	87	P		P	06 37 19.6	0.0	
	baz=316,SNR=8.0								
Z36A	Blue Ridge	49.35	88	P		P	06 37 19.3	-0.6	
	baz=316,SNR=9.7								
T41A	Mountain View	49.35	81	P		P	06 37 19.4	-0.5	
	baz=314								
JCT	Junction City	49.45	93	P		P	06 37 20.5	-0.2	
	baz=318,SNR=15								
JCT	Junction City	49.45	93	eP		P	06 37 20.9	+0.2	
JCT				pmax		pmax			
	comp=Z,43nm,0.9s								
JCT				MLR		MLR			
	comp=Z,891nm,22.0s								
JCT	Junction City	49.45	93	eP		P	06 37 20.9	+0.2	
	comp=Z,42nm,0.9s								
JCT				LR		LR			
	comp=Z,891nm,22.0s								
W39A	Magazine	49.50	84	P		P	06 37 20.6	-0.4	
	baz=315,SNR=14								
Q44A	Meyer Farm, Va	49.62	77	P		P	06 37 21.3	-0.6	
	baz=314,SNR=15								
V40A	Witts Springs	49.62	83	P		P	06 37 21.1	-0.8	
	baz=315,SNR=12								
VLDQ	Val d'Or	49.65	61	eP		P	06 37 20.5	-1.4	
	comp=Z,187nm,1.7s								
433A	Art	49.66	93	P		P	06 37 22.4	+0.1	
	baz=318,SNR=13								
SFIN	Lafayette	49.68	75	P		P	06 37 21.6	-0.7	
	baz=313,SNR=22								
SFIN	Lafayette	49.68	75	eP		P	06 37 22.2	-0.1	
	comp=Z,403nm,1.8s								
WHTX	Lake Whitney,	49.69	90	P		P	06 37 22.4	-0.1	
	baz=317,SNR=9.5								
WHTX	Lake Whitney,	49.69	90	eP		P	06 37 23.2	+0.7	
	comp=Z,68nm,1.0s								
334A	Lometa	49.72	91	P		P	06 37 22.8	0.0	
	baz=317,SNR=19								
U41A	Viola	49.75	82	P		P	06 37 22.5	-0.5	
	baz=315								
X39A	Fountain Ranch	49.80	85	P		P	06 37 23.2	-0.2	
	baz=316,SNR=8.9								
KSRS	Korea Array	49.80	280	P		P	06 37 23.6	+0.4	
	comp=Z,149nm,0.8s,baz=47,slow=7.1,SNR=582								
KSRS				PcP		PcP			
	comp=Z,30nm,0.9s,baz=52,slow=4.1,SNR=7.8								
KSRS				ScP		ScP	06 42 35.9	+1.3	
	comp=Z,2.4nm,0.8s,baz=42,slow=3.7,SNR=4.7								
KSRS				LR		LR	06 59 23.8		
	comp=Z,330nm,19.4s,baz=34,slow=37								
KS01	Wonju Array Si	49.80	280	eP		P	06 37 24.1	+0.8	
KS15	Wonju Array Si	49.83	280	eP		P	06 37 23.9	+0.4	
KSAR	Wonju Array Be	49.83	280	P		P	06 37 23.6	+0.1	
KSAR							06 38 44.3		
KSAR	Wonju Array Be	49.83	280	P		P	06 37 23.6	+0.1	
KSAR				PcP		PcP	06 38 44.3	+0.8	
KSAR				ScP		ScP	06 42 35.9	+1.2	
Y38A	Idabel	49.86	86	P		P	06 37 23.3	-0.4	
	baz=316								
Z37A	Pogue Cattle C	49.87	88	P		P	06 37 23.6	-0.3	
	baz=316								
136A	Ennis	49.87	89	P		P	06 37 23.8	0.0	
	baz=317,SNR=8.2								
W40A	Ferguson Farm,	49.91	84	P		P	06 37 23.6	-0.5	
	baz=315,SNR=12								
S43A	Fulton Ridge,	49.94	79	P		P	06 37 23.9	-0.5	
	baz=314,SNR=23								
V41A	Mountainview	50.01	83	P		P	06 37 24.1	-0.9	
	baz=315,SNR=18								
R44A	Waltonville	50.04	78	P		P	06 37 24.4	-0.6	
	baz=314,SNR=8.0								
MIAR	Mount Ida	50.08	85	P		P	06 37 25.3	-0.1	
	baz=316,SNR=17								
MIAR	Mount Ida	50.08	85	eP		P	06 37 25.6	+0.2	
MIAR				pmax		pmax			
	comp=Z,49nm,1.0s								
MIAR				MLR		MLR			
	comp=Z,516nm,20.0s								
MIAR	Mount Ida	50.08	85	eP		P	06 37 25.6	+0.2	
	comp=Z,49nm,1.0s								
MIAR				LR		LR			
	comp=Z,516nm,20.0s								
434A	Burnet	50.09	92	P		P	06 37 25.5	0.0	
	baz=318,SNR=17								
U42A	Revenden	50.14	81	P		P	06 37 24.3	-1.5	
	baz=315,SNR=5.8								
533A	Kerrville	50.19	93	P		P	06 37 26.4	0.0	
	baz=318								
Z38A	Mt. Pleasant	50.20	87	P		P	06 37 26.2	-0.1	
	baz=316								
236A	Katherine and	50.22	89	P		P	06 37 26.1	-0.4	
	baz=317								
SCHQ	Schefferville	50.22	49	P		P	06 37 26.5	+0.3	
	comp=Z,157nm,1.1s,baz=322,slow=7.5,SNR=39								
SCHQ				LR		LR	06 59 23.1		
	comp=Z,1μm,20.6s,baz=258,slow=37								
SCHQ	Schefferville	50.22	49	eP		P	06 37 26.5	+0.3	
	comp=Z,207nm,1.2s								
Y39A	Lockesburg	50.22	86	P		P	06 37 25.9	-0.6	
	baz=316								
335A	Moody	50.23	91	P		P	06 37 26.6	0.0	
	baz=317,SNR=11								
137A	Heron Place, G	50.23	88	P		P	06 37 26.3	-0.3	
	baz=317								
OLIL	Olney	50.25	77	eP		P	06 37 26.6	-0.1	
	comp=Z,370nm,1.7s								
X301	Greenbrier Sit	50.26	83	eP		P	06 37 26.0	-0.8	
	comp=Z,39nm,1.1s								
AAM	Ann Arbor	50.27	70	eP		P	06 37 26.4	-0.3	
AAM				pmax		pmax			
	comp=Z,25nm,0.9s								
AAM				MLR		MLR			
	comp=Z,1μm,20.0s								
AAM	Ann Arbor	50.27	70	eP		P	06 37 26.4	-0.3	
	comp=Z,25nm,0.9s								
AAM				LR		LR			
	comp=Z,1μm,20.0s								
WHAR	Wooly Hollow	50.29	83	eP		P	06 37 26.6	-0.4	
	comp=Z,24nm,0.8s								
PBMO	Poplar Bluff	50.30	80	eP		P	06 37 25.8	-1.3	
	comp=Z,34nm,0.8s								
S44A	Carbondale	50.32	79	P		P	06 37 26.5	-0.7	
	baz=314,SNR=7.6								
SIUC	Southern Illin	50.33	79	eP		P	06 37 26.9	-0.4	
	comp=Z,67nm,0.8s								
W41B	Gary Mavity, V	50.40	83	P		P	06 37 27.0	-0.8	
	baz=315,SNR=6.8								
V42A	Cord	50.44	82	P		P	06 37 27.5	-0.7	
	baz=315,SNR=5.9								
336A	Riesel	50.49	90	P		P	06 37 28.5	-0.1	
	baz=317,SNR=14								
435B	Jarrell	50.50	91	P		P	06 37 28.8	+0.1	
	baz=318								
INCN	Inchon	50.51	281	P		P	06 37 29.1	+0.4	
	SNR=16								
INCN	Inchon	50.51	281	P		P	06 37 29.1	+0.4	
	SNR=16								
INCN	Inchon	50.51	281	eP		P	06 37 29.1	+0.4	
	comp=Z,253nm,1.1s								
INCN				LR		LR			
	comp=Z,430nm,20.0s								
534A	Blanco	50.55	93	P		P	06 37 28.8	-0.3	
	baz=318,SNR=6.3								
X40A	Basin Creek Fa	50.55	84	P		P	06 37 28.3	-0.6	
	baz=316,SNR=6.6								
138A	Matatall Enter	50.57	88	P		P	06 37 28.9	-0.3	
	baz=317								
633A	Saathoff Ranch	50.57	94	P		P	06 37 29.0	-0.2	
	baz=318								
U43A	Rector	50.60	81	P		P	06 37 28.7	-0.7	
	baz=315								
UALR	University of	50.62	84	eP		P	06 37 29.2	-0.4	
	comp=Z,68nm,1.6s								
237A	Washetta, Mont	50.63	89	P		P	06 37 29.2	-0.5	
	baz=317								
Y40A	Okolona	50.63	85	P		P	06 37 29.0	-0.6	
	baz=316								
Z39A	Irene McRaven,	50.67	86	P		P	06 37 29.9	0.0	
	baz=316								
S45A	Carrier Mills	50.72	78	P		P	06 37 29.8	-0.4	
	baz=314,SNR=10.0								
X41A	Kaden, Bauxite	50.73	84	P		P	06 37 29.9	-0.5	
	baz=316								
PARMO	Parma	50.77	80	eP		P	06 37 30.4	-0.2	
BLO	Bloomington	50.83	75	eP		P	06 37 30.6	-0.4	
BLO				pmax		pmax			
	comp=Z,94nm,1.4s								
BLO	Bloomington	50.83	75	eP		P	06 37 30.6	-0.4	
	comp=Z,94nm,1.4s								
BJO	Bjornoya	50.88	360	⇑iP		P	06 37 31.3	+0.3	
BJO				IAmb		IAmb	06 37 32.3		
	comp=Z,297nm,1.5s								
V43A	Jonesboro	50.94	81	P		P	06 37 31.6	-0.3	
	baz=315								
139A	Bunkhouse Ranc	50.96	87	P		P	06 37 31.9	-0.1	
	baz=317,SNR=5.9								
WLAR	White Oak Lake	50.96	85	eP		P	06 37 32.6	+0.5	
	comp=Z,78nm,0.9s								
436A	Wall Ranch, Ga	50.97	91	P		P	06 37 32.1	-0.1	
	baz=318								
832A	Faith Ranch, C	50.99	95	P		P	06 37 32.6	+0.2	
	baz=319,SNR=15								
SADO	Sadowa	51.01	65	eP		P	06 37 32.0	-0.3	
	comp=Z,34nm,0.8s								
238A	Jacksonville	51.03	88	P		P	06 37 32.5	-0.1	
	baz=317								
USIN	University of	51.03	77	eP		P	06 37 32.4	-0.1	
	comp=Z,97nm,0.8s								
HBAR	Harrisburg	51.03	82	eP		P	06 37 33.4	+0.7	
733A	Divot King Ran	51.06	94	P		P	06 37 33.0	+0.2	
	baz=319,SNR=5.3								
535A	Dale	51.07	92	P		P	06 37 32.8	-0.1	
	baz=318,SNR=6.6								
337A	Centerville	51.09	89	P		P	06 37 33.0	-0.1	
	baz=317								
Z40A	Long Farm, Mag	51.11	86	P		P	06 37 33.1	-0.1	
	baz=316,SNR=7.0								
Y41A	Eaglette Beard	51.11	85	P		P	06 37 33.3	+0.1	
	baz=316,SNR=24								
JNU	Nakatsue	51.19	274	eP		P	06 37 34.1	+0.2	
	comp=Z,82nm,0.8s								
V44A	Blytheville	51.27	81	P		P	06 37 33.9	-0.5	
	baz=315								
833A	Chparral WMA,	51.30	95	P		P	06 37 34.9	+0.2	
	baz=319,SNR=7.4								
437A	Phantom Ranch,	51.30	90	P		P	06 37 35.1	+0.5	
	baz=318								
536A	Bastrop	51.33	91	P		P	06 37 34.8	-0.1	
	baz=318								
734A	La Parita Cree	51.38	94	P		P	06 37 35.3	0.0	
	baz=319,SNR=5.7								
239A	Gary	51.39	88	P		P	06 37 35.3	-0.1	
	baz=317								
338A	Crockett	51.39	89	P		P	06 37 35.1	-0.2	
	baz=317								
635A	Leesville	51.43	93	P		P	06 37 36.1	+0.4	
	baz=318,SNR=5.2								
Z41A	Richland Creek	51.45	85	P		P	06 37 35.6	-0.2	
	baz=316								
140A	Cam and Jess,	51.46	86	P		P	06 37 35.8	0.0	
	baz=317								
NATX	Nacogdoches	51.47	88	P		P	06 37 36.2	+0.3	
	baz=317,SNR=8.9								
NATX	Nacogdoches	51.47	88	eP		P	06 37 36.7	+0.8	
	comp=Z,75nm,0.9s								
NATX				LR		LR			
	comp=Z,2μm,19.0s								
UTMT	University of	51.50	80	eP		P	06 37 36.1	+0.1	
	comp=Z,164nm,1.2s								
HALT	Halls	51.53	80	eP		P	06 37 36.7	+0.4	
CCAR	Cane Creek	51.57	84	eP		P	06 37 37.4	+0.8	
	comp=Z,124nm,0.7s								
SCO	Scoresbysund	51.57	16	⇑iP		P	06 37 37.1	+0.9	
	comp=Z,54nm,0.8s								
WCI	Wyandotte Cave	51.62	76	eP		P	06 37 36.6	-0.4	
WCI				pmax		pmax			
	comp=Z,26nm,0.9s								
WCI	Wyandotte Cave	51.62	76	eP		P	06 37 36.6	-0.4	
	comp=Z,26nm,0.9s								
Y42A	Garnett, Star	51.62	84	P		P	06 37 37.2	+0.2	
	baz=316,SNR=5.1								
X43A	Marvell	51.65	83	P		P	06 37 36.8	-0.4	
	baz=316,SNR=6.8								
438A	Sam Houston St	51.75	90	P		P	06 37 38.5	+0.5	
	baz=318								
537A	Green Hill Far	51.76	91	P		P	06 37 38.0	-0.1	
	baz=318								
636A	Smothers Creek	51.77	92	P		P	06 37 38.3	0.0	
	baz=318								
240A	Hunter Patters	51.79	87	P		P	06 37 38.3	0.0	
	baz=317								
735A	Kenedy	51.81	93	P		P	06 37 38.6	+0.1	
	baz=319								
339A	Huntington	51.85	88	P		P	06 37 38.8	+0.1	
	baz=317								
141A	Papa Simpson,	51.87	86	P		P	06 37 39.3	+0.4	
	baz=317								
V45A	Humboldt	51.87	80	P		P	06 37 38.3	-0.6	
	baz=316,SNR=5.8								
PLVO	Pluna	51.90	64	eP		P	06 37 39.1	+0.1	
	comp=Z,53nm,0.9s								
933A	Laredo	51.90	95	P		P	06 37 39.4	+0.2	
	baz=320,SNR=13								
834A	Tilden	51.93	94	P		P	06 37 39.6	+0.2	
	baz=319								
Z42A	Norrel Spur, H	51.93	85	P		P	06 37 39.0	-0.4	
	baz=316,SNR=8.8								
IRK	Irkutsk	51.97	309	eP		P	06 37 39.1	-0.3	
IRK				e			06 39 43.9		
IRK				pmax		pmax			
	comp=Z,146nm,1.7s								
ACSO	Alum Creek Sta	52.06	72	eP		P	06 37 39.7	-0.5	
	comp=Z,183nm,1.9s								
ACSO				LR		LR			
	comp=Z,632nm,21.0s								
Y43A	Makayla and Ka	52.06	83	P		P	06 37 39.8	-0.4	
	baz=316								
X44A	Crenshaw	52.08	82	P		P	06 37 40.0	-0.5	
	baz=315,SNR=8.2								
439A	Center Grove,	52.12	89	P		P	06 37 40.8	0.0	
	baz=318								
538A	Harpers Horsep	52.13	90	P		P	06 37 41.0	+0.1	
	baz=318								
W45A	Hickory Valley	52.16	81	P		P	06 37 40.5	-0.5	
	baz=316,SNR=7.1								
736A	Circle Diamond	52.16	92	P		P	06 37 41.0	-0.1	
	baz=319								
340A	Bronson	52.17	88	P		P	06 37 41.1	0.0	
	baz=317								
637A	Eagle Lake	52.23	91	P		P	06 37 41.6	0.0	
	baz=318								
835A	Beeville	52.23	94	P		P	06 37 41.5	-0.1	
	baz=319								
WVT	Waverly	52.23	79	eP		P	06 37 41.5	-0.1	
WVT				pmax		pmax			
	comp=Z,76nm,0.7s								
WVT	Waverly	52.23	79	eP		P	06 37 41.5	-0.1	
	comp=Z,76nm,0.7s								
241A	Mo Tay, Goldon	52.29	86	P		P	06 37 41.7	-0.3	
	baz=317								
DL2	Dalian	52.32	286	P		P	06 37 41.3	-0.9	
DL2				pmax		pmax			
	comp=Z,320nm,0.7s								
934A	Benavides	52.35	95	P		P	06 37 42.3	-0.2	
	baz=320								
ERPA	Erie	52.37	68	eP		P	06 37 42.8	+0.2	
	comp=Z,84nm,1.0s								
TRQ	Mont Tremblant	52.38	61	eP		P	06 37 42.3	-0.4	
Z43A	Armstrong Fami	52.38	84	P		P	06 37 43.0	+0.3	
	baz=317								
BUF	Buffalo	52.42	67	eP		P	06 37 42.7	-0.1	
Y44A	Strider, Charl	52.43	83	P		P	06 37 42.7	-0.3	
	baz=316,SNR=19								
142A	Monroe	52.46	85	P		P	06 37 43.3	+0.1	
	baz=317								
OXF	Oxford	52.49	82	eP		P	06 37 43.2	-0.3	
OXF				pmax		pmax			
	comp=Z,371nm,1.4s								
OXF	Oxford	52.49	82	eP		P	06 37 43.2	-0.3	
	comp=Z,372nm,1.4s								
X45A	UM Field Stati	52.57	82	P		P	06 37 43.7	-0.3	
	baz=316,SNR=7.9								
ALLY	Alegheny Colle	52.62	69	eP		P	06 37 43.7	-0.6	
	comp=Z,135nm,1.0s								
440A	Kirbyville	52.62	88	P		P	06 37 44.4	-0.1	
	baz=318								
TLY	Talaya	52.64	309	c iP		P	06 37 45.1	+0.7	
TLY				pmax		pmax			
	comp=Z,144nm,0.9s								
TLY				MLR		MLR			
	comp=Z,684nm,18.0s								
TLY	Talaya	52.64	309	eP		P	06 37 44.0	-0.4	
	comp=Z,114nm,0.8s								
TLY				LR		LR			
	comp=Z,1μm,22.0s								
341A	Kurthwood	52.65	87	P		P	06 37 44.6	0.0	
	baz=318,SNR=9.4								
539A	Cross D Ranch,	52.66	90	P		P	06 37 44.9	+0.1	
	baz=318								
034A	Hebbronville	52.66	95	P		P	06 37 44.8	0.0	
	baz=320								
143A	Socs Landing,	52.66	85	P		P	06 37 45.0	+0.3	
	baz=317,SNR=14								
737A	Port Lavaca	52.67	92	P		P	06 37 44.8	0.0	
	baz=319								
242A	Grayson	52.70	86	P		P	06 37 45.2	+0.1	
	baz=317,SNR=8.5								
KVTX	Kingsville	52.75	94	PFAKE			06 38 00.0	+15	
KVTX				LR		LR			
	comp=Z,896nm,20.0s								
638A	Rosharon	52.75	91	P		P	06 37 45.3	-0.1	
	baz=318								
XMAS	Kiritimati	52.77	175	PFAKE			06 38 00.0	+14	
XMAS				LR		LR			
	comp=Z,6.0nm,21.0s								
Z44A	Pea Ridge, Bel	52.80	83	P		P	06 37 45.6	-0.2	
	baz=317,SNR=5.2								
Y45A	Yeager Farm, C	52.88	82	P		P	06 37 46.2	-0.2	
	baz=316,SNR=9.3								
JMIC	Jan Mayen	52.93	11	eP		P	06 37 47.1	+0.9	
JMIC				IAmb		IAmb	06 37 48.2		
	comp=Z,804nm,2.0s								
M54A	Oil Creek Stat	52.97	69	P		P	06 37 46.4	-0.6	
	baz=314,SNR=18								
540A	Vidor	53.01	89	P		P	06 37 47.4	+0.1	
	baz=318								
MMNY	Mt. Morris Dam	53.06	66	eP		P	06 37 47.4	-0.1	
738A	Farr-Stevens R	53.07	91	P		P	06 37 47.8	+0.1	
	baz=319								
035A	Encino	53.09	95	P		P	06 37 48.0	0.0	
	baz=320								
342A	Flagon Creek P	53.10	87	P		P	06 37 47.9	-0.1	
	baz=318,SNR=6.2								
Z45A	Winona	53.16	83	P		P	06 37 48.1	-0.3	
	baz=317,SNR=7.0								
N54A	Moraine State	53.18	69	P		P	06 37 47.9	-0.7	
	baz=314,SNR=14								
936A	North Padre Is	53.18	94	P		P	06 37 48.5	-0.2	
	baz=320								
243A	Waterproof	53.22	85	P		P	06 37 48.6	-0.2	
	baz=317								
Y46A	Houston	53.26	82	P		P	06 37 48.8	-0.3	
	baz=316,SNR=37								
144A	Alexander Plac	53.28	84	P		P	06 37 49.2	-0.1	
	baz=317,SNR=8.2								
035Z	Hargill	53.47	95	P		P	06 37 51.1	+0.3	
	baz=320								
LONY	Lake Ozonia	53.48	63	eP		P	06 37 50.0	-0.6	
	comp=Z,48nm,1.3s								
LONY				LR		LR			
	comp=Z,834nm,21.0s								
VBMS	Vicksburg	53.52	84	P		P	06 37 51.0	-0.1	
	baz=317,SNR=6.2								
244A	Avery, Jackson	53.56	85	P		P	06 37 51.2	-0.1	
	baz=317,SNR=15								
LMQ	La Malbaie	53.56	57	eP		P	06 37 50.7	-0.5	
343A	Vidalia	53.58	86	P		P	06 37 51.4	-0.1	
	baz=318								
541A	Lake Charles	53.58	88	P		P	06 37 51.2	-0.3	
	baz=318								
145A	Houston Renfro	53.58	84	P		P	06 37 51.4	-0.1	
	baz=317,SNR=5.8								
ZAK	Zakamensk	53.70	308	eP		P	06 37 51.7	-0.6	
ZAK				e			06 38 58.4		
ZAK				pmax		pmax			
	comp=Z,31nm,1.0s								
ZAK				pmax		pmax			
	comp=Z,46nm,1.0s								
ZAK				pmax		pmax			
	comp=Z,11nm,1.5s								
Z46A	Louisville	53.72	82	P		P	06 37 52.3	-0.2	
	baz=317,SNR=6.6								
ZAIG	Zacatecas	53.77	102	eP		P	06 37 53.7	+0.4	
	comp=Z,12nm,0.9s								
Y47A	UCPARC, Winfie	53.83	81	P		P	06 37 52.7	-0.6	
	baz=317,SNR=24								
MOY	Mondy	53.83	310	eP		P	06 37 53.7	+0.5	
MOY				pmax		pmax			
	comp=Z,76nm,1.3s								
FRNY	Flat Rock	53.83	62	eP		P	06 37 52.2	-1.0	
	comp=Z,26nm,0.8s								
542A	Morse	53.90	88	P		P	06 37 53.7	-0.1	
	baz=318								
344A	Westbrook Farm	53.97	85	P		P	06 37 54.2	-0.2	
	baz=318,SNR=15								
SWET	Sewanee	53.97	78	eP		P	06 37 53.6	-0.8	
	comp=Z,5.8nm,0.7s								
SONA1	Songino Array	54.02	304	eP		P	06 37 54.4	-0.4	
245A	Little AP, Sta	54.02	84	P		P	06 37 54.6	-0.2	
	baz=317								
SONM	Songino Array	54.03	304	P		P	06 37 54.5	-0.3	
	comp=Z,82nm,0.9s,baz=47,slow=6.3,SNR=214								
SONM				PcP		PcP	06 38 59.9	+0.6	
	comp=Z,80nm,1.0s,baz=61,slow=2.4,SNR=16								
SONM				ScP		ScP	06 42 53.4	+0.4	
	comp=Z,4.7nm,0.8s,baz=31,slow=3.4,SNR=7.3								
SONM				LR		LR	07 03 35.4		
	comp=Z,2μm,18.5s,baz=40,slow=39								
SONM				PKPPKP		P'P'df	07 08 13.5	-1.8	
	comp=Z,0.4nm,0.7s,baz=174,slow=4.5,SNR=3.7								
SONM				P4KPbc			07 15 17.2		
	comp=Z,2.0nm,0.6s,baz=47,slow=3.6,SNR=11								
146A	Union	54.06	83	P		P	06 37 54.8	-0.2	
	baz=317,SNR=16								
KRAR	Krasnoyarsk	54.07	318	⇑iP		P	06 37 55.1	+0.3	
NCB	Newcomb	54.11	63	eP		P	06 37 55.1	-0.2	
	comp=Z,1.4nm,1.6s								
Z47A	Carrollton	54.21	82	P		P	06 37 55.4	-0.7	
	baz=317,SNR=25								
543A	St. Martinvill	54.33	87	P		P	06 37 56.6	-0.4	
	baz=318								
TZTN	Tazewell	54.35	76	eP		P	06 37 56.9	-0.2	
	comp=Z,78nm,1.2s								
Z48A	Northport	54.38	81	P		P	06 37 56.5	-0.8	
	baz=317,SNR=18								
O56A	Blue Knob Stat	54.44	69	P		P	06 37 56.9	-0.8	
	baz=315,SNR=21								
BINY	Binghamton	54.44	66	eP		P	06 37 57.9	+0.1	
	comp=Z,106nm,1.4s								
BINY				LR		LR			
	comp=Z,816nm,21.0s								
246A	Jackson Lee, B	54.47	83	P		P	06 37 58.4	+0.4	
	baz=317								
345A	Thompson Farm,	54.48	85	P		P	06 37 58.5	+0.4	
	baz=318,SNR=6.3								
147A	Livingston	54.48	82	P		P	06 37 57.8	-0.3	
	baz=317,SNR=15								
444A	Pine Grove	54.50	86	P		P	06 37 58.2	0.0	
	baz=318								
BJI	Beijing	54.51	291	P		P	06 37 57.8	-0.4	
BJI				S		S	06 45 34.1	+0.6	
BJI				pmax		pmax			
	comp=Z,79nm,0.9s								
BJI				LR		LR			
	comp=Z,720nm,21.4s								
BJI				LR		LR			
	com

247A Quitman 54.74 83 P P 06 37 59.9 0.0
baz=317,SNR=11
ACCN Adirondack Com 54.81 63 *e*P P 06 38 00.3 -0.1
comp=Z,150nm,1.7s
TKL Tuckaleechee C 54.86 76 P P 06 37 59.8 -1.1
comp=Z,13nm,0.7s,baz=297,slow=4.0,SNR=10
TKL Tuckaleechee C 54.86 76 *e*P P 06 38 00.4 -0.5
TKL pmax pmax
comp=Z,87nm,1.4s
TKL Tuckaleechee C 54.86 76 *e*P P 06 38 00.3 -0.5
comp=Z,86nm,1.4s
LRAL Lakeview Retre 54.94 81 *e*P P 06 38 00.1 -1.3
comp=Z,14nm,0.8s
LBNH Lisbon 55.09 61 *e*P P 06 38 02.2 -0.2
LBNH pmax pmax
comp=Z,34nm,1.0s
LBNH Lisbon 55.09 61 *e*P P 06 38 02.2 -0.2
comp=Z,34nm,1.0s
545A Edgard 55.15 86 P P 06 38 02.6 -0.3
baz=318
248A Dixon Mills 55.21 82 P P 06 38 03.0 -0.3
baz=318
446A Poplarville 55.24 85 P P 06 38 03.4 -0.2
baz=318
347A Saraland 55.26 84 P P 06 38 03.7 -0.1
baz=318,SNR=12
TRY Troy 55.28 64 *e*P P 06 38 03.9 +0.2
comp=Z,60nm,1.1s
HNH Hanover 55.29 62 *e*P P 06 38 03.9 +0.1
comp=Z,60nm,1.0s
N59A State Game Lan 55.47 67 P P 06 38 04.6 -0.5
baz=316,SNR=13
645A Chauvin 55.52 87 P P 06 38 05.4 -0.2
baz=318
BLA Blacksburg 55.61 73 *e*P P 06 38 06.0 -0.2
BLA pmax pmax
comp=Z,193nm,1.8s
BLA MLR MLR
comp=Z,926nm,20.0s
BLA Blacksburg 55.61 73 *e*P P 06 38 06.0 -0.2
comp=Z,193nm,1.8s
BLA LR LR
comp=Z,926nm,20.0s
348A Jackson 55.62 83 P P 06 38 06.0 -0.3
baz=318,SNR=6.1
447A Lucedale 55.65 84 P P 06 38 06.1 -0.4
baz=318
PKME Peaks-Kenny Pk 55.68 59 *e*P P 06 38 06.2 -0.4
comp=Z,65nm,1.2s
PKME LR LR
comp=Z,1µm,21.0s
FFD Franklin Falls 55.78 62 *e*P P 06 38 07.6 +0.3
comp=Z,35nm,0.9s
ARA0 ARCESS Array S 55.78 357 *e*P P 06 38 06.5 -0.5
ARCES ARCESS Array B 55.78 357 P P 06 38 06.6 -0.4
comp=Z,38nm,0.8s,baz=22,slow=6.8,SNR=53
ARCES PcP PcP 06 39 06.1 +0.6
comp=Z,58nm,0.8s,baz=20,slow=4.0,SNR=13
ARCES LR LR 07 03 20.2
comp=Z,608nm,20.2s,baz=301,slow=37
ARCES P4KPbc 07 15 22.8
comp=Z,4.2nm,0.8s,baz=12,slow=8.7,SNR=5.1
ARE0 ARCESS Array S 55.78 357⇑ *i*P P 06 38 06.4 -0.6
ARE0 IAmb IAmb 06 38 07.0
comp=Z,60nm,0.9s
ARE0 *es*P **sP** 06 38 24.6 -1.5
ARE0 ARCESS Array S 55.78 357 *e*P P 06 38 06.7 -0.3
comp=Z,54nm,0.8s
TRO Tromso 55.78 360⇑ *i*P P 06 38 07.6 +0.7
TRO IAmb IAmb 06 38 08.0
comp=Z,100nm,0.6s
MVL Millersville 55.82 68 *e*P P 06 38 07.5 -0.1
comp=Z,13nm,0.9s
VWCC Virginia Weste 55.83 72 *e*P P 06 38 07.3 -0.5
646A Port Sulphur 55.88 86 P P 06 38 07.5 -0.6
baz=318
LUPA Lehigh Univers 55.91 67 *e*P P 06 38 08.3 0.0
comp=Z,62nm,1.0s
ODNJ Ogdensburg 55.96 66 *e*P P 06 38 08.8 +0.1
comp=Z,33nm,1.0s
SDMD Soldier's Deli 55.98 68 *e*P P 06 38 08.4 -0.3
comp=Z,25nm,1.0s
448A Bay Minette 56.00 83 P P 06 38 08.7 -0.4
baz=318
WVL Waterville 56.00 60 *e*P P 06 38 08.4 -0.5
comp=Z,68nm,1.1s
BRNJ Basking Ridge 56.27 66 *e*P P 06 38 11.2 +0.3
comp=Z,36nm,0.9s
QUA2 Belchertown 56.28 63 *e*P P 06 38 11.1 +0.3
comp=Z,29nm,0.9s
BRAL Brewton 56.29 83 *e*P P 06 38 10.8 -0.3
comp=Z,107nm,1.1s
BRAL LR LR
comp=Z,658nm,20.0s
PSUB Penn St. - Bra 56.35 67 *e*P P 06 38 11.1 -0.3
comp=Z,20nm,0.9s
PAL Palisades 56.39 65 *e*P P 06 38 11.9 +0.3
PAL pmax pmax
comp=Z,67nm,1.3s
PAL Palisades 56.39 65 *e*P P 06 38 11.9 +0.3
comp=Z,67nm,1.3s
HHC Hu-ho-hao-te 56.39 295 ⇑P P 06 38 12.4 +0.5
HHC SS SS 06 49 42.3 -3.4
HHC pmax pmax
comp=Z,90nm,0.9s
HHC pmax pmax
comp=Z,410nm,3.8s
HHC LR LR
comp=Z,640nm,21.1s
HHC LR LR
comp=Z,620nm,21.1s
HHC LR LR
comp=Z,1µm,18.7s
CPNY Central Park 56.51 65 *e*P P 06 38 12.6 +0.1
comp=Z,71nm,1.3s
HRV Adam Dziewonsk 56.52 62 *e*P P 06 38 12.9 +0.3
HRV pmax pmax
comp=Z,35nm,1.0s
HRV Adam Dziewonsk 56.52 62 *e*P P 06 38 12.9 +0.3
comp=Z,35nm,1.0s
CBN Corbin Frederi 56.56 70 PFAKE 06 38 30.0 +17
CBN LR LR
comp=Z,1µm,20.0s
KMSC Kings Mountain 56.60 75 P P 06 38 12.6 -0.8
baz=317,SNR=11
KMSC Kings Mountain 56.60 75 *e*P P 06 38 12.5 -0.8
comp=Z,43nm,1.0s
YLE Yale 56.67 64 *e*P P 06 38 13.8 +0.1
comp=Z,108nm,1.3s
YLE *ep*P **pP** 06 38 29.7 +2.6
GOGA Godfrey 56.67 78 *e*P P 06 38 12.3 -1.5
GOGA pmax pmax
comp=Z,28nm,1.0s
GOGA MLR MLR
comp=Z,2µm,20.0s
GOGA Godfrey 56.67 78 *e*P P 06 38 12.2 -1.5
comp=Z,28nm,1.0s
GOGA LR LR
comp=Z,2µm,20.0s
WES Weston 56.73 62 *e*P P 06 38 14.1 0.0
WES pmax pmax
comp=Z,110nm,1.1s
WES Weston 56.73 62 *e*P P 06 38 14.1 0.0
comp=Z,110nm,1.1s
TIA Tai'an 56.75 287 ⇑P P 06 38 14.3 0.0
TIA pmax pmax
comp=Z,100nm,1.1s
BORG Borgarnes 56.80 19 *e*P P 06 38 15.9 +1.7
BORG pmax pmax
comp=Z,70nm,0.8s
BORG MLR MLR
comp=Z,1µm,21.0s
BORG Borgarnes 56.80 19 *e*P P 06 38 16.3 +2.1
comp=Z,70nm,0.8s
BORG Borgarnes 56.80 19 *e*P P 06 38 15.9 +1.7
comp=Z,70nm,0.8s
BORG LR LR
comp=Z,1µm,21.0s
BCX Boston College 56.84 62 *e*P P 06 38 15.1 +0.2
comp=Z,90nm,1.2s
LVZ Lovozero 56.95 353 *c i*P P 06 38 15.0 -0.3
LVZ pmax pmax
comp=Z,195nm,1.0s
LVZ Lovozero 56.95 353 *e*P P 06 38 15.1 -0.3
comp=Z,151nm,0.9s
LVZ LR LR
comp=Z,1µm,22.0s

BRYW Bryant College 56.96 63 *e*P P 06 38 15.6 -0.2
comp=Z,76nm,1.1s
EMMW East Machias 56.98 58 *e*P P 06 38 15.8 0.0
comp=Z,59nm,0.7s
GGN Saint George 56.99 57 *e*P P 06 38 15.4 -0.5
comp=Z,296nm,1.9s
LOF Lofoten 57.23 2⇑ *i*P P 06 38 16.7 -0.5
LOF IAmb IAmb 06 38 19.9
comp=Z,62nm,0.8s
LOF *es*P **sP** 06 38 35.0 -1.3
JSC Jenkinsville 57.28 76 *e*P P 06 38 17.3 -0.8
JSC pmax pmax
comp=Z,72nm,1.4s
JSC Jenkinsville 57.28 76 *e*P P 06 38 17.2 -0.8
comp=Z,72nm,1.4s
APA Apatity 57.37 353⇑ *i*P P 06 38 17.0 -1.2
APA *i* 06 39 10.0
APA *i* 06 40 36.0
APA *i*S **S** 06 46 06.0 -4.7
APA pmax pmax
comp=Z,25nm,0.9s
APA MLR MLR
comp=Z,2µm,26.0s
JOW Kunigami 57.37 271 *e*P P 06 38 19.2 +0.4
comp=Z,272nm,1.2s
BTO Baotou 57.38 295 *e*P P 06 38 18.8 0.0
TARA Tarawa 57.38 211 PFAKE 06 38 30.0 +11
TARA LR LR
comp=Z,124nm,20.0s
LMN Caledonia Moun 57.43 55 *e*P P 06 38 18.8 -0.3
comp=Z,234nm,1.3s
STEI Steigen 57.47 2⇑ *i*P P 06 38 18.9 0.0
STEI IAmb IAmb 06 38 19.1
comp=Z,57nm,0.6s
TIGA Tifton 58.06 80 P P 06 38 23.1 -0.5
baz=318
DRLN Deer Lake 58.23 48 *e*P P 06 38 24.7 +0.2
comp=Z,160nm,0.9s
CNNC Cliffs of the 58.44 73 *e*P P 06 38 26.3 +0.1
comp=Z,155nm,1.8s
CNNC LR LR
comp=Z,956nm,19.0s
NVS Novosibirsk 58.53 322 *e*P P 06 38 26.0 -0.5
NVS *i* 06 39 17.3
NVS pmax pmax
comp=Z,28nm,0.7s
NVS pmax pmax
comp=N,7.0nm,0.6s
NVS pmax pmax
comp=E,2.0nm,0.4s
GUMO Guam 58.54 247 *e*P P 06 38 25.5 -1.6
GUMO pmax pmax
comp=Z,176nm,0.9s
GUMO Guam 58.54 247 *e*P P 06 38 25.5 -1.6
comp=Z,176nm,0.9s
ZAA0 Zalesovo Array 58.67 321 *e*P P 06 38 27.2 -0.3
ZALV Zalesovo Beam 58.67 321 P P 06 38 27.1 -0.4
comp=Z,23nm,0.6s,baz=39,slow=6.4,SNR=67
ZALV PcP PcP 06 39 17.7 +0.7
comp=Z,66nm,0.8s,baz=26,slow=3.7,SNR=22
ZALV LR LR 07 06 06.8
comp=Z,3µm,18.7s,baz=62,slow=38
NHSC New Hope 58.75 76 *e*P P 06 38 28.0 -0.4
comp=Z,99nm,1.1s
NHSC LR LR
comp=Z,2µm,20.0s
NJ2 Nanjing 58.84 282 *e*P P 06 38 28.4 -0.7
NJ2 pP **pP** 06 38 44.9 +2.3
NJ2 PcP **PcP** 06 39 17.8 -0.3
NJ2 S **S** 06 46 31.3 +0.4
NJ2 pmax pmax
comp=Z,160nm,0.8s
NJ2 LR LR
comp=Z,1µm,20.6s
NJ2 LR LR
comp=Z,990nm,20.6s
NJ2 LR LR
comp=Z,2µm,24.9s
KONS Konsvik 58.86 3⇑ *i*P P 06 38 28.6 0.0
KONS IAmb IAmb 06 38 29.1
comp=Z,59nm,0.7s
TLIG Tlapa 60.17 102 *e*P P 06 38 38.4 -0.1
comp=Z,29nm,1.0s
SOFL Sornfelli, Far 61.64 13⇑ *e*P P 06 38 48.9 +1.1
SOFL AMB AMB 06 38 49.5
comp=Z,258nm,0.9s
DWPF Disney Wildern 61.80 81 *e*P P 06 38 48.9 -0.4
comp=Z,229nm,1.8s
SOKR Solikamsk 61.87 339 *c i*P P 06 38 46.7 -2.6
SOKR pmax pmax
comp=Z,366nm,1.2s
SOKR MLR MLR
comp=Z,2µm,20.0s
YOJ Yonaguni jima 62.22 274 *e*P P 06 38 51.1 -1.1
YOJ pmax pmax
comp=Z,349nm,1.3s
YOJ Yonaguni jima 62.22 274 *e*P P 06 38 51.1 -1.1
comp=Z,349nm,1.3s
WHN Wuhan 62.51 285 ⇑P P 06 38 54.0 0.0
WHN pmax pmax
comp=Z,290nm,0.8s
MOL Molde 62.55 6⇑ *i*P P 06 38 54.3 +0.5
MOL IAmb IAmb 06 38 54.6
comp=Z,97nm,0.8s
TATO Taipei 62.70 275 PFAKE 06 39 10.0 +15
TATO LR LR
comp=Z,697nm,22.0s
XAN Xi'an 62.84 291 P P 06 38 56.1 -0.2
XAN pP pP 06 39 09.6 -0.4
XAN sP sP 06 39 16.3 +0.8
XAN PcP **PcP** 06 39 33.5 -0.7
XAN S **S** 06 47 16.8 -5.1
XAN pmax pmax
comp=Z,250nm,1.0s
XAN pmax pmax
comp=Z,680nm,6.0s
XAN LR LR
comp=Z,580nm,25.5s
XAN LR LR
comp=Z,660nm,21.4s
AKN Aaknes 62.91 6⇑ *i*P P 06 38 57.0 +0.8
AKN IAmb IAmb 06 38 57.9
comp=Z,343nm,0.9s
AKN *es*P **sP** 06 39 14.7 -0.8
YHNB Yeheng 63.01 275 *e*P P 06 38 56.1 -1.3
comp=Z,36nm,1.0s
YHNB LR LR
comp=Z,591nm,22.0s
DOMB Dombas 63.16 5⇑ *i*P P 06 38 58.1 +0.2
DOMB IAmb IAmb 06 38 58.8
comp=Z,118nm,0.7s
NACB Ninganchiao 63.26 274 *e*P P 06 38 57.5 -1.6
comp=Z,82nm,0.8s
FOO Floro 63.35 7⇑ *i*P P 06 38 59.3 +0.2
FOO IAmb IAmb 06 39 00.2
comp=Z,103nm,0.9s
KLMR Klimovskoe 63.43 349 *c i*P P 06 38 59.3 -0.3
KLMR *e* 06 39 35.3
KLMR pmax pmax
comp=Z,316nm,1.0s
GTA Gaotai 63.46 301 ⇑P P 06 38 59.8 -0.6
GTA pP pP 06 39 10.4 -3.7
GTA PcP **PcP** 06 39 35.6 -1.2
GTA S **S** 06 47 30.0 +0.3
GTA sS sS 06 47 46.8 -5.9
GTA pmax pmax
comp=Z,68nm,1.6s
GTA pmax pmax
comp=Z,460nm,5.9s
GTA LR LR
comp=Z,910nm,18.1s
GTA LR LR
comp=Z,1µm,17.6s
GTA LR LR
comp=Z,2µm,19.0s
SVE Sverdlovsk 63.55 336 *d i*P P 06 39 00.7 +0.2
SVE pmax pmax
comp=Z,178nm,1.0s
YEL1 Yell 63.83 11⇑ *e*P P 06 39 02.5 +0.2
FIA1 FINESS Array S 63.86 356 *e*P P 06 39 02.4 -0.1
comp=Z,276nm,1.0s
FINES FINESS Array B 63.86 356 P P 06 39 02.3 -0.2
comp=Z,106nm,0.6s,baz=18,slow=7.6,SNR=641
FINES LR LR 07 06 26.8
comp=Z,466nm,21.7s,baz=328,slow=36
FINES P4KPbc 07 15 57.1

comp=Z,2.2nm,0.8s,baz=349,slow=7.8,SNR=5.6
FINES FINESS Array B 63.86 356 *i*P P 06 39 02.2 -0.3
FINES pmax pmax
comp=Z,106nm,0.6s
SUE Sulen 63.87 8⇑ *i*P P 06 39 02.8 +0.3
SUE IAmb IAmb 06 39 03.6
comp=Z,68nm,0.9s
SSLB Suanglung 63.93 275 *e*P P 06 39 02.5 -1.0
comp=Z,158nm,1.1s
LZH Lanzhou 63.97 296 ⇑P P 06 39 04.4 +0.6
LZH pP pP 06 39 15.3 -2.3
LZH sP sP 06 39 21.9 -1.2
LZH PcP **PcP** 06 39 40.0 +1.0
LZH *e*S **S** 06 47 31.0 -5.2
LZH pmax pmax
comp=Z,210nm,1.0s
LZH pmax pmax
comp=Z,650nm,4.0s
NC204 NORSAR Array S 64.00 4 *e*P P 06 39 04.4 +0.8
YULB Yu-li 64.04 274 *e*P P 06 39 03.2 -1.0
comp=Z,114nm,1.4s
NC303 NORSAR Array S 64.08 4 *e*P P 06 39 04.5 +0.5
NC405 NORSAR Array S 64.21 4 *e*P P 06 39 05.3 +0.5
LRW Lerwick 64.23 11⇑ *e*P P 06 39 05.8 +0.9
LRW AMB AMB 06 39 06.8
comp=Z,255nm,0.8s
NBO02 NORSAR Array S 64.24 4 *e*P P 06 39 04.8 -0.2
NBO00 NORSAR Array S 64.25 4 *e*P P 06 39 05.8 +0.7
NB201 NORSAR Array S 64.25 4 *e*P P 06 39 05.3 +0.2
NB2 NORSAR Subarra 64.26 4 P P 06 39 05.6 +0.4
comp=Z,279nm,1.1s,baz=357,slow=6.5
NB2 NORSAR Subarra 64.26 4 P P 06 39 05.6 +0.4
baz=357,slow=6.5
NOA NORSAR Array B 64.26 4 P P 06 39 05.4 +0.2
comp=Z,136nm,0.9s,baz=356,slow=6.6,SNR=299
BVA0 Borovoye Array 64.28 328 P P 06 39 05.1 -0.3
BVA0 pmax pmax
comp=Z,48nm,0.7s
BVAR Borovoye Array 64.28 328 P4KPbc 07 16 01.0
comp=Z,1.8nm,0.9s,baz=46,slow=4.3,SNR=7.8
BRVK Borovoye 64.28 328 *c i*P P 06 39 05.4 0.0
BRVK pmax pmax
comp=Z,347nm,1.7s
BRVK Borovoye 64.28 328 *e*P P 06 39 05.6 +0.2
comp=Z,51nm,0.8s
BRVK LR LR
comp=Z,778nm,19.0s
VOSK Vostochnaya 64.36 328 P P 06 39 05.1 -0.8
VOSK pmax pmax
comp=Z,38nm,0.5s
VOSK Vostochnaya 64.36 328 *e*P P 06 39 05.7 -0.2
comp=Z,57nm,0.5s
ARU Arti 64.39 337 *c i*P P 06 39 05.7 -0.3
ARU *e* 06 39 40.0
ARU 06 41 24.9
ARU S **S** 06 47 41.7 +1.3
ARU SS **SS** 06 51 48.2 -1.6
ARU pmax pmax
comp=Z,193nm,1.0s
ARU MLR MLR
comp=Z,999nm,18.0s
ARU Arti 64.39 337 *e*P P 06 39 05.8 -0.3
comp=Z,176nm,1.0s
ARU LR LR
comp=Z,820nm,20.0s
QZH Quanzhou 64.39 277⇑ *i*P P 06 39 06.3 -0.2
QZH pmax pmax
comp=Z,210nm,1.0s
NAO01 NORSAR Array S 64.44 4 *e*P P 06 39 06.5 +0.1
ASK Askoy 64.47 7⇑ *i*P P 06 39 07.0 +0.5
ASK IAmb IAmb 06 39 07.8
comp=Z,130nm,1.0s
ASK *ep*P **pP** 06 39 19.8 -0.4
TPUB Ta-pu 64.49 275 *e*P P 06 39 06.8 -0.5
comp=Z,39nm,0.9s
BER Bergen 64.58 7⇑ *i*P P 06 39 07.0 -0.1
BER IAmb IAmb 06 39 08.5
comp=Z,258nm,1.3s
NC602 NORSAR Array S 64.58 4⇑ *i*P P 06 39 07.2 0.0
NC602 IAmb IAmb 06 39 08.1
comp=Z,150nm,1.2s
NC602 *es*P **sP** 06 39 25.8 -0.7
NC602 NORSAR Array S 64.58 4 *e*P P 06 39 07.2 0.0
TWG Pinlang 64.61 274 *e*P P 06 39 07.7 -0.3
comp=Z,106nm,0.8s
ODD1 Odda 65.14 7⇑ *i*P P 06 39 11.7 +0.7
ODD1 IAmb IAmb 06 39 12.4
comp=Z,178nm,1.0s
OSL Oslo 65.34 4 *e*P P 06 39 12.7 +0.5
OSL IAmb IAmb 06 39 13.4
comp=Z,160nm,1.4s
MK31 Makanchi Array 65.39 317 *i*P P 06 39 12.2 -0.6
MK31 pmax pmax
comp=Z,46nm,0.7s
MK31 Makanchi Array 65.39 317 *e*P P 06 39 12.0 -0.8
MKAR Makanchi Array 65.39 317 P P 06 39 11.9 -0.8
comp=Z,78nm,0.7s,baz=46,slow=6.2,SNR=480
MKAR PKPPKP P'P'df 07 07 48.9 -9.0
comp=Z,1.3nm,1.0s,baz=198,slow=3.5,SNR=5.1
MKAR LR LR 07 09 50.8
comp=Z,2µm,19.7s,baz=352,slow=38
MKAR P4KPbc 07 16 06.0
comp=Z,0.5nm,1.0s,baz=32,slow=7.1,SNR=3.8
MKAR Makanchi Array 65.39 317 *e*P P 06 39 12.1 -0.7
MK01 Makanchi Array 65.41 317 *e*P P 06 39 11.2 -1.7
ENH Enshi 65.41 288 *e*P P 06 39 13.0 -0.2
comp=Z,193nm,0.9s
ENH LR LR
comp=Z,604nm,22.0s
RSC Scourie 65.48 14⇑ *e*P P 06 39 13.6 +0.6
MAKZ Makanchi 65.50 318 P P 06 39 13.1 -0.4
MAKZ pmax pmax
comp=Z,60nm,0.6s
MAKZ Makanchi 65.50 318 *e*P P 06 39 12.6 -0.8
comp=Z,98nm,0.6s
BIGH Upper Bighouse 65.50 13⇑ *e*P P 06 39 14.2 +1.0
BIGH AMB AMB 06 39 15.3
comp=Z,525nm,1.0s
KONO Kongsberg 65.58 5⇑ *i*P P 06 39 14.5 +0.8
KONO IAmb IAmb 06 39 15.4
comp=Z,211nm,0.9s
KONO Kongsberg 65.58 5 *c i*P P 06 39 14.3 +0.6
KONO Kongsberg 65.58 5 *e*P P 06 39 14.6 +0.8
comp=Z,207nm,0.9s
KONO LR LR
comp=Z,881nm,22.0s
WMQ Urumqi 65.60 312 P P 06 39 14.9 +0.7
WMQ sP sP 06 39 35.8 +2.3
WMQ PcP **PcP** 06 39 46.1 +0.7
WMQ ScP 06 43 38.9
WMQ S **S** 06 47 58.3 +2.5
WMQ pmax pmax
comp=Z,190nm,0.7s
WMQ pmax pmax
comp=Z,390nm,4.8s
WMQ LR LR
comp=Z,1µm,22.5s
WMQ LR LR
comp=Z,770nm,20.1s
WMQ LR LR
comp=Z,2µm,28.2s
BLS5 Blasjo 65.61 7⇑ *i*P P 06 39 14.6 +0.6
BLS5 IAmb IAmb 06 39 15.4
comp=Z,163nm,0.8s
RRH Rhenigidale 65.68 15⇑ *i*P P 06 39 15.1 +0.7
KMY Karmoy 65.73 8 *e*P P 06 39 15.4 +0.7
KMY IAmb IAmb 06 39 16.7
comp=Z,6.9nm,1.2s
MLA1 Latheron 65.76 13⇑ *i*P P 06 39 15.7 +0.8
RRR Rubha Reidh 65.87 14⇑ *i*P P 06 39 16.2 +0.7
TAOE Nuku Hiva Isla 65.94 157 *e*LR LR 06 59 10.8
comp=Z,2µm,23.0s
TAOE Nuku Hiva Isla 65.94 157 *e*T T 07 50 40.0
comp=Z,62nm,0.3s
STAV Stavanger 66.04 7⇑ *i*P P 06 39 17.3 +0.7
KAC Achnashellach 66.28 14⇑ *e*P P 06 39 19.0 +0.7
KPL Plockton 66.39 14⇑ *e*P P 06 39 19.3 +0.4
KPL AMB AMB 06 39 20.4
comp=Z,154nm,0.8s
MDO Dochfour 66.47 13⇑ *i*P P 06 39 20.2 +0.8
MCD Coleburn Disti 66.47 13⇑ *i*P P 06 39 20.2 +0.7
SNART Snartemo 66.74 7⇑ *i*P P 06 39 22.1 +0.9
SNART IAmb IAmb 06 39 22.8
comp=Z,249nm,1.3s
MME1 Meikle Cairn 66.77 13⇑ *i*P P 06 39 21.8 +0.4

VSU Vasula 66.81 355 *c iP* **P** **06 39 21.8 +0.2**
VSU pmax pmax
comp=Z,729nm,0.9s
HOMB Homborsund 66.89 6 ⇑ *iP* **P** **06 39 22.8 +0.8**
HOMB IAmb IAmb 06 39 23.7
comp=Z,287nm,0.9s
DRUM Mains of Drumt 67.23 12 ⇑ *eP* **P** **06 39 24.9 +0.6**
DRUM AMB AMB 06 39 26.0
comp=Z,921nm,0.8s
EDU Dundee 67.52 13 ⇑ *iP* **P** **06 39 26.8 +0.7**
EAB Aberfoyle 67.69 14 ⇑ *iP* **P** **06 39 28.2 +1.0**
BBSR BB Station 67.73 65 PFAKE 06 39 40.0 +12
BBSR LR LR
comp=Z,412nm,20.0s
OTUK Ortayu 67.79 324 P **P** **06 39 27.8 -0.2**
OTUK pmax pmax
comp=Z,112nm,1.4s
CD2 Chengdu 68.02 293 P **P** **06 39 29.4 -0.4**
CD2 pP pP 06 39 42.4 -1.2
CD2 PP **PP** **06 41 59.0 -0.8**
CD2 S **S** **06 48 24.4 -1.0**
CD2 sS sS 06 48 46.6 -1.9
CD2 SS **SS** **06 52 47.3 -0.2**
CD2 pmax pmax
comp=Z,430nm,0.6s
CD2 pmax pmax
comp=Z,840nm,8.0s
CD2 LR LR
comp=Z,770nm,20.4s
CD2 LR LR
comp=Z,540nm,21.4s
CD2 LR LR
comp=Z,800nm,20.4s
PGBU Glenifferbraes 68.04 14 ⇑ *eP* **P** **06 39 30.0 +0.6**
PGBU AMB AMB 06 39 30.8
comp=Z,254nm,0.9s
EDI Edinburgh 68.10 13 ⇑ *eP* **P** **06 39 30.5 +0.7**
EDI AMB AMB 06 39 31.6
comp=Z,208nm,0.9s
ESY Stoneypath 68.18 13 ⇑ *iP* **P** **06 39 30.9 +0.6**
IDGL Inch Island, C 68.30 16 ⇑ *eP* **P** **06 39 32.0 +0.9**
IDGL AMB AMB 06 39 33.0
comp=Z,239nm,1.0s
GMK Mull of Kintyr 68.33 15 ⇑ *iP* **P** **06 39 32.0 +0.8**
MOS Moscow 68.65 349 *eP* **P** **06 39 32.2 -1.0**
MOS *e* 06 39 56.6
MOS pmax pmax
comp=Z,338nm,0.7s
MOS MLR MLR
comp=Z,1μm,23.0s
MUD Monsted U'grnd 68.74 6 ⇑ *iP* **P** **06 39 34.9 +1.2**
comp=Z,229nm,1.0s
GZH Guangzhou 68.83 280 P **P** **06 39 31.5 -3.3**
BHH Howats Hill 68.91 13 ⇑ *iP* **P** **06 39 35.6 +0.8**
GAL1 Galloway 68.92 14 ⇑ *eP* **P** **06 39 35.5 +0.6**
GAL1 AMB AMB 06 39 36.7
comp=Z,143nm,0.9s
AFI Afiamalu 69.11 191 PFAKE 06 39 50.0 +13
AFI LR LR
comp=Z,1μm,20.0s
BBO1 Bothel 69.25 13 ⇑ *iP* **P** **06 39 37.8 +0.8**
GMM Mts of Mourne 69.35 15 ⇑ *iP* **P** **06 39 38.1 +0.5**
PDGK Podgornoye 69.38 317 P **P** **06 39 38.7 +0.8**
PDGK pmax pmax
comp=Z,217nm,0.8s
OBN Obninsk 69.38 349 *c iP* **P** **06 39 37.5 -0.2**
OBN *i* 06 40 00.2
OBN pmax pmax
comp=Z,358nm,1.0s
OBN MLR MLR
comp=Z,869nm,20.0s
OBN Obninsk 69.38 349 *eP* **P** **06 39 37.5 -0.2**
comp=Z,302nm,0.9s
OBN LR LR
comp=Z,1μm,21.0s
KESW Keswick, Cumbr 69.41 13 ⇑ *eP* **P** **06 39 38.6 +0.7**
KESW AMB AMB 06 39 39.5
comp=Z,215nm,0.9s
IZAR Zarasai 69.55 355 *eP* **P** **06 39 39.2 +0.4**
IZAR IAmb IAmb 06 39 40.5
comp=Z,103nm,0.8s
IGLA Glengowla, Co 69.58 18 ⇑ *eP* **P** **06 39 39.7 +0.7**
IGLA AMB AMB 06 39 40.8
comp=Z,309nm,0.9s
WIM Isle of Man 69.63 14 ⇑ *eP* **P** **06 39 40.0 +0.7**
COP Copenhagen 69.66 4 ⇑ *iP* **P** **06 39 40.3 +0.8**
comp=Z,836nm,0.6s
GYA Guiyang 69.93 287 ⇑ *iP* **P** **06 39 41.8 0.0**
GYA pP pP 06 39 56.3 +0.6
GYA PcP **PcP** **06 40 05.0 +1.1**
GYA PP **PP** **06 42 19.6 +3.0**
GYA ScP 06 44 04.8
GYA S **S** **06 48 49.3 +1.1**
GYA sS sS 06 49 07.0 -4.5
GYA SS **SS** **06 53 17.4 +0.1**
GYA pmax pmax
comp=Z,30nm,1.1s
GYA pmax pmax
comp=Z,130nm,6.2s
GYA LR LR
comp=Z,520nm,18.7s
GYA LR LR
comp=Z,490nm,19.0s
GYA LR LR
comp=Z,460nm,19.2s
IDID Didziasalis 69.96 355 *eP* **P** **06 39 41.7 +0.4**
IDID IAmb IAmb 06 39 43.1
comp=Z,123nm,0.9s
LLD Lille Linde 70.01 4 *i P* **P** **06 39 42.5 +0.9**
comp=Z,202nm,0.9s
AKTO Aktyubinsk 70.03 334 P **P** **06 39 42.1 +0.3**
AKTO pmax pmax
comp=Z,199nm,0.9s
DSB Dublin 70.25 16 *eP* **P** **06 39 43.6 +0.5**
comp=Z,98nm,1.0s
BSD Bornholm Skovb 70.31 2 ⇑ *iP* **P** **06 39 43.8 +0.3**
comp=Z,90nm,0.7s
NACGM Naroch 70.37 355 *eP* **P** **06 39 43.0 -0.8**
NACGM eLR LR 06 58 04.0
WPS Cemaes, Angles 70.38 15 ⇑ *eP* **P** **06 39 44.2 +0.3**
WPS AMB AMB 06 39 45.0
comp=Z,81nm,1.1s
AAA Alma-Ata 70.41 319 *eP* **P** **06 39 45.4 +1.0**
AAA pmax pmax
comp=Z,700nm,2.9s
AAA MLR MLR
comp=Z,1μm,15.0s
WPM1 Penmaenmawr 70.60 14 ⇑ *eP* **P** **06 39 45.2 -0.1**
AB31 Akbulak array 70.61 333 *i P* **P** **06 39 45.6 +0.2**
AB31 pmax pmax
comp=Z,151nm,1.0s
ABKAR Akbulak array 70.61 333 *eP* **P** **06 39 45.7 +0.2**
YLL Llanberis 70.68 14 ⇑ *eP* **P** **06 39 45.8 +0.1**
MICGM Minsk 70.71 354 ⇑ *iP* **P** **06 39 46.0 +0.1**
MICGM PM 06 39 47.0
comp=Z,0.5nm,1.0s
MICGM PM 06 39 47.0
comp=N,0.4nm,1.0s
MICGM *e* 06 49 04.0
MICGM eLR LR 07 04 34.0
MNK Minsk 70.71 354 ⇑ *iP* **P** **06 39 46.0 +0.1**
MNK *e* 06 40 04.0
MNK pmax pmax
comp=N,440nm,1.0s
MNK pmax pmax
comp=Z,470nm,1.0s
VAH Vaihoa 70.81 166 *eT* T 07 56 38.6
comp=Z,12nm,0.3s
RGN Rugen 70.83 3 *eP* **P** **06 39 47.0 +0.4**
comp=Z,416nm,0.9s
KLNR Kaliningrad 70.86 359 *c iP* **P** **06 39 47.0 +0.2**
KLNR pmax pmax
comp=Z,498nm,0.8s
LMK Market Rasen 70.87 12 ⇑ *eP* **P** **06 39 47.9 +1.0**
LMK AMB AMB 06 39 49.0
comp=Z,473nm,1.0s
STNC Stoke 71.00 13 ⇑ *eP* **P** **06 39 48.7 +1.1**
STNC AMB AMB 06 39 50.0
comp=Z,294nm,1.0s
LLW Llanuwchllyn 71.03 14 ⇑ *eP* **P** **06 39 48.6 +0.7**
FOEL Foel Wylfa 71.06 14 ⇑ *eP* **P** **06 39 49.0 +0.9**
FOEL AMB AMB 06 39 50.2
comp=Z,395nm,0.9s
TKM2 Tokmak 2 71.22 319 P **P** **06 39 49.4 -0.1**
TKM2 pmax pmax
comp=Z,123nm,1.0s
SUW Suwalki 71.40 357 *eP* **P** **06 39 49.9 -0.2**
CWF Charnwood Fore 71.46 13 ⇑ *eP* **P** **06 39 51.2 +0.8**
CWF AMB AMB 06 39 52.0
comp=Z,153nm,1.0s
CWF Charnwood Fore 71.46 13 *eP* **P** **06 39 51.5 +1.0**
comp=Z,162nm,0.9s
HLM1 Long Mynd 71.47 14 ⇑ *eP* **P** **06 39 51.4 +0.8**
HLM1 AMB AMB 06 39 52.1
comp=Z,118nm,1.1s
FRU Bishkek 71.66 320 ⇑ *iP* **P** **06 39 51.0 -0.9**
FRU *e* 06 40 06.0
FRU *eS* **S** **06 49 09.0 +1.3**
FRU pmax pmax
comp=Z,310nm,1.6s
FRU smax smax
comp=E,1μm,18.0s
LPW Lampeter 71.69 15 ⇑ *eP* **P** **06 39 51.9 0.0**
LPW AMB AMB 06 39 53.0
comp=Z,65nm,1.1s
WACR West Acre 71.70 11 ⇑ *eP* **P** **06 39 52.4 +0.5**
MTDJ Mount Denham 71.72 84 *eP* **P** **06 39 52.5 -0.2**
comp=Z,119nm,1.0s
MTDJ LR LR
comp=Z,473nm,22.0s
GTBY Guantanamo Bay 71.77 81 PFAKE 06 40 10.0 +17
GTBY LR LR
comp=Z,875nm,20.0s
HNR Honiara 71.85 221 PFAKE 06 40 10.0 +17
HNR LR LR
comp=Z,455nm,19.0s
AAK Ala-Archa 71.88 320 *c iP* **P** **06 39 54.1 +0.7**
AAK pmax pmax
comp=Z,420nm,1.1s
AAK Ala-Archa 71.88 320 P **P** **06 39 54.3 +0.9**
SNR=64
AAK P **P** **06 39 54.3 +0.9**
SNR=64
AAK Ala-Archa 71.88 320 P **P** **06 39 54.3 +0.9**
SNR=64
AAK Ala-Archa 71.88 320 *eP* **P** **06 39 54.2 +0.7**
comp=Z,162nm,1.0s
AAK LR LR
comp=Z,2μm,19.0s
MCH1 Michaelchurch 71.96 14 ⇑ *eP* **P** **06 39 54.1 +0.7**
MCH1 AMB AMB 06 39 55.0
comp=Z,164nm,1.1s
MONM Monmouth 72.14 14 ⇑ *eP* **P** **06 39 55.4 +0.8**
MONM AMB AMB 06 39 56.1
comp=Z,136nm,1.0s
SSW Stow on the Wo 72.14 13 ⇑ *eP* **P** **06 39 55.5 +0.9**
GKP Gorka Klasztor 72.20 1 *eP* **P** **06 39 55.5 +0.6**
GKP *ePcP* **PcP** **06 40 13.1 +0.2**
STRD Stroud 72.29 13 ⇑ *eP* **P** **06 39 55.7 +0.3**
STRD AMB AMB 06 39 57.2
comp=Z,398nm,1.0s
HGH Gray Hill 72.33 14 ⇑ *eP* **P** **06 39 56.6 +0.8**
VORR Voronezh 72.44 347 *eP* **P** **06 39 55.0 -1.4**
VORR pmax pmax
comp=Z,250nm,1.0s
VRH Novokhopyorsk 72.55 345 *eP* **P** **06 39 56.8 -0.2**
VRH pmax pmax
comp=Z,390nm,0.6s
SWN1 Swindon 72.59 13 ⇑ *eP* **P** **06 39 58.0 +0.8**
SWN1 AMB AMB 06 39 59.1
comp=Z,363nm,0.9s
HTL Hartland 72.72 15 ⇑ *eP* **P** **06 39 59.0 +0.9**
HTL AMB AMB 06 40 00.2
comp=Z,110nm,1.0s
MNAS Manas 72.73 321 P **P** **06 39 58.4 -0.1**
MNAS pmax pmax
comp=Z,115nm,1.0s
GRTK Grand Turk 72.77 77 PFAKE 06 40 10.0 +11
GRTK LR LR
comp=Z,884nm,20.0s
PPT Papeete 72.86 168 LR LR 07 05 11.3
comp=Z,752nm,21.9s,baz=54,slow=30
WOL Wolverton 72.86 13 ⇑ *eP* **P** **06 39 59.1 +0.2**
WOL AMB AMB 06 40 00.6
comp=Z,375nm,1.0s
TIAR Tiarei 72.87 168 *eT* T 07 59 11.9
comp=Z,24nm,0.2s
PPT2 Papeete2 72.88 168 *eLR* LR 07 02 22.8
comp=Z,2μm,26.5s,baz=347
PPT2 Papeete2 72.88 168 *eT* T 07 59 12.4
comp=Z,7.4nm,0.3s
VSR Storozhevoye 72.89 347 *eP* **P** **06 39 59.0 -0.1**
VSR pmax pmax
comp=Z,320nm,0.6s
KK31 Karatay Array 72.90 323 *i P* **P** **06 39 59.0 -0.3**
KK31 pmax pmax
comp=Z,81nm,0.8s
KKAR Karatay Array 72.90 323 *eP* **P** **06 39 59.9 +0.6**
KKAR Karatay Array 72.90 323 *eP* **P** **06 39 59.9 +0.6**
PAE Paea 72.95 168 *eT* T 07 59 17.5
comp=Z,1.9nm,0.3s
TVO Taravao 73.11 168 *eT* T 07 59 29.5
comp=Z,4.0nm,0.3s
KMI Kunming 73.14 290 P **P** **06 40 01.0 -0.2**
KMI pP pP 06 40 14.3 -0.9
KMI sP PcP 06 40 19.8 +2.1
KMI S **SKiKP** **06 49 26.8 -1.8**
KMI pmax pmax
comp=Z,52nm,1.2s
KMI pmax pmax
comp=Z,390nm,4.2s
KMI LR LR
comp=Z,480nm,20.2s
KMI LR LR
comp=Z,450nm,21.0s
KMI LR LR
comp=Z,820nm,24.0s
DYA Yadsworthy 73.35 15 ⇑ *eP* **P** **06 40 02.4 +0.6**
DYA AMB AMB 06 40 03.1
comp=Z,186nm,1.1s
DYA Yadsworthy 73.35 15 *eP* **P** **06 40 02.7 +0.9**
comp=Z,196nm,0.9s
MEH Mehetia 73.35 167 *eT* T 07 59 48.4
comp=Z,14nm,0.3s
CCA1 Carnmenellis 73.39 16 ⇑ *eP* **P** **06 40 03.0 +0.9**
CCA1 AMB AMB 06 40 04.1
comp=Z,221nm,1.0s
HMNX Herstmonceux 73.50 12 ⇑ *eP* **P** **06 40 03.7 +1.1**
HMNX AMB AMB 06 40 04.7
comp=Z,211nm,1.2s
BEL Belsk 73.63 359 *eP* **P** **06 40 04.1 +0.7**
BEL *ePcP* **sP** **06 40 21.9 -1.0**
UCC Uccle 74.00 9 P **P** **06 40 06.3 +0.7**
KSH Kashi 74.01 317 ⇑ *iP* **P** **06 40 09.8 +3.8**
KSH *esP* sP 06 40 28.1 +2.6
KSH *ePP* **PP** **06 42 57.8 +6.8**
KSH S **S** **06 49 38.4 +3.8**
KSH SKS **SKSac** **06 50 08.4 -0.7**
KSH ScS **ScS** **06 50 13.3 +1.3**
KSH pmax pmax
comp=Z,340nm,0.8s
KSH LR LR
comp=Z,3μm,19.2s
KSH LR LR
comp=Z,890nm,19.8s
KSH LR LR
comp=Z,3μm,20.6s
QIZ Qiongzhong 74.03 280 P **P** **06 40 07.1 +0.9**
QIZ sP **sP** **06 40 24.6 -1.1**
QIZ S **S** **06 49 37.3 +2.2**
QIZ pmax pmax
comp=Z,70nm,0.8s
QIZ pmax pmax
comp=Z,330nm,5.1s
QIZ LR LR
comp=Z,370nm,24.5s
QIZ LR LR
comp=Z,510nm,22.2s
QIZ Qiongzhong 74.03 280 *eP* **P** **06 40 07.0 +0.7**
comp=Z,62nm,0.9s
QIZ LR LR
comp=Z,511nm,20.0s
CLL Collm 74.06 4 ⇑ *iP* **P** **06 40 06.4 +0.4**
comp=Z,153nm,1.0s
CLL *e* 06 40 24.0
CLL *ePP* PP 06 43 01.0 +10
CLL LmV 07 11 00.0
comp=Z,500nm,21.8s
CLL Collm 74.06 4 *eP* **P** **06 40 06.4 +0.4**
CLL pmax pmax
comp=Z,136nm,0.9s
CLL Collm 74.06 4 *eP* **P** **06 40 06.3 +0.4**
comp=Z,136nm,0.9s
BEBN Eben Emael 74.12 9 P **P** **06 40 06.9 +0.6**
comp=Z,34nm,1.3s
JAY Jayapura 74.33 242 P **P** **06 40 08.8 +0.8**
MEM Membach 74.33 8 P **P** **06 40 08.3 +0.8**
comp=Z,121nm,1.1s
AKASG Malin Array Be 74.41 353 P **P** **06 40 07.7 -0.2**
comp=Z,197nm,0.5s,baz=9.9,slow=5.9,SNR=211
AKASG LR LR 07 13 00.3
comp=Z,682nm,21.9s,baz=345,slow=36
AKASG Malin Array Be 74.41 353 *i P* **P** **06 40 07.6 -0.4**
AKASG pmax pmax
comp=Z,197nm,0.5s
AKBB Malin Array Si 74.41 353 *eP* **P** **06 40 07.8 -0.2**
AKBB pmax pmax
comp=Z,381nm,0.7s
AKBB Malin Array Si 74.41 353 *eP* **P** **06 40 07.8 -0.2**
comp=Z,381nm,0.7s
KIEV Kiev 74.42 353 *c iP* **P** **06 40 07.8 -0.2**
KIEV pmax pmax
comp=Z,415nm,0.8s
KIEV Kiev 74.42 353 *eP* **P** **06 40 07.6 -0.4**
comp=Z,379nm,0.7s
KIEV LR LR
comp=Z,731nm,21.0s
AK11 Malin Array Si 74.44 353 *eP* **P** **06 40 07.6 -0.6**
MSVF Nonsavu 74.45 200 ⇓ *iP* **P** **06 40 09.3 +0.7**
MSVF pmax pmax
comp=Z,72nm,1.2s
MSVF Nonsavu 74.45 200 PFAKE 06 40 20.0 +11
MSVF LR LR
comp=Z,2μm,21.0s
BCLA Clavier 74.46 9 P **P** **06 40 08.9 +0.6**
comp=Z,60nm,1.3s
KSP Ksiaz 74.62 2 *eP* **P** **06 40 10.0 +0.8**
KSP *ePcP* **sP** **06 40 27.2 -1.4**
GENI Genyem 74.67 242 P **P** **06 40 11.3 +1.4**
SDDR Presa de Saban 74.69 79 *eP* **P** **06 40 09.8 -0.3**
comp=Z,250nm,1.9s
SDDR LR LR
comp=Z,800nm,21.0s
DOU Dourbes 74.72 9 P **P** **06 40 10.5 +0.7**
comp=Z,58nm,1.2s
JSA Saint Aubin 74.82 14 ⇑ *eP* **P** **06 40 11.0 +0.6**
JSA AMB AMB 06 40 11.8
comp=Z,228nm,0.9s
JQE Queens East 74.82 14 ⇑ *eP* **P** **06 40 11.1 +0.7**
PVCC Panska Ves 74.89 3 ⇑ *iP* **P** **06 40 11.8 +1.0**
PVCC AMS AMS 07 19 50.0
comp=Z,600nm,18.9s
UPC Upice 74.95 2 ⇑ *iP* **P** **06 40 11.9 +0.8**
DPC Dobruska-Polom 75.11 2 ⇑ *iP* **P** **06 40 13.1 +1.0**
DPC *epP* **PcP** **06 40 21.3 -4.2**
DPC AMS AMS 07 20 00.0
comp=Z,600nm,21.1s
NKC Novy Kostel 75.11 4 ⇑ *iP* **P** **06 40 13.1 +1.0**
OJC Ojcow 75.26 359 *eP* **P** **06 40 13.5 +0.6**
OJC *ePcP* **sP** **06 40 31.2 -1.2**
OJC Ojcow 75.26 359 *eP* **P** **06 40 13.5 +0.6**
OJC pmax pmax
comp=Z,65nm,0.7s
OJC Ojcow 75.26 359 *eP* **P** **06 40 13.5 +0.6**
comp=Z,65nm,0.7s
WLF Walferdange 75.28 8 P **P** **06 40 14.3 +1.3**
comp=Z,145nm,1.2s
WLF Walferdange 75.28 8 *eP* **P** **06 40 14.3 +1.3**
WLF pmax pmax
comp=Z,210nm,1.0s
WLF MLR MLR
comp=Z,853nm,22.0s
WLF Walferdange 75.28 8 *eP* **P** **06 40 14.3 +1.3**
comp=Z,210nm,1.0s
WLF LR LR
comp=Z,853nm,22.0s
KRLC Kraliky 75.39 1 ⇑ *iP* **P** **06 40 14.6 +0.9**
PRU Pruhonice 75.43 3 ⇑ *iP* **P** **06 40 14.7 +0.8**
PRU *epP* **PcP** **06 40 21.2 -5.6**
PRU AMS AMS 07 20 40.0
comp=Z,600nm,16.3s
LSA Lhasa 75.49 301 P **P** **06 40 16.3 +1.1**
LSA pmax pmax
comp=Z,350nm,0.7s
LSA Lhasa 75.49 301 *eP* **P** **06 40 16.2 +1.1**
LSA pmax pmax
comp=Z,227nm,0.8s
LSA MLR MLR
comp=Z,2μm,19.0s
LSA Lhasa 75.49 301 *eP* **P** **06 40 16.2 +1.0**
comp=Z,227nm,0.8s
LSA LR LR
comp=Z,2μm,19.0s
GOPC GO Pecny, Ondr 75.51 3 ⇑ *iP* **P** **06 40 15.1 +0.7**
GOPC AMS AMS 07 20 00.0
comp=Z,600nm,20.6s
LVV L'vov 75.57 356 *d iP* **P** **06 40 15.2 +0.5**
LVV *eS* **S** **06 49 51.2 -0.2**
LVV MLR MLR
comp=E,300nm,18.0s
LVV MLR MLR
comp=N,200nm,19.0s
LVV MLR MLR
comp=Z,300nm,18.0s
GRFO Grafenberg 75.60 5 *eP* **P** **06 40 15.7 +0.8**
GRFO pmax pmax
comp=Z,143nm,0.9s
GRFO Grafenberg 75.60 5 *eP* **P** **06 40 15.7 +0.8**
comp=Z,143nm,0.9s
OKC Ostrava-Krasne 75.64 0 ⇑ *iP* **P** **06 40 15.9 +0.8**
MORC Moravsky Berou 75.70 1 ⇑ *iP* **P** **06 40 16.2 +0.8**
MORC Moravsky Berou 75.70 1 *eP* **P** **06 40 16.3 +0.8**
comp=Z,448nm,0.8s
KWP Kalwaria Pacla 75.80 357 *eP* **P** **06 40 17.0 +1.0**
KWP *ePcP* **sP** **06 40 34.7 -0.8**
STHS Stebnicka Huta 76.04 358 *eP* **P** **06 40 19.2 +1.8**
NIE Niedzica 76.05 359 *eP* **P** **06 40 18.4 +0.9**
NIE *ePcP* **sP** **06 40 35.4 -1.6**
LANF Langenberg 76.09 7 ⇑ *eP* **P** **06 40 18.7 +1.0**
TREC Trest 76.15 2 ⇑ *iP* **P** **06 40 18.8 +0.8**
TREC AMS AMS 07 21 00.0
comp=Z,600nm,17.9s
VRAC Vranov 76.16 1 ⇑ *iP* **P** **06 40 19.1 +1.0**
KHC Kasperske Hory 76.26 3 ⇑ *iP* **P** **06 40 19.8 +1.1**
KHC AMS AMS 07 20 30.0
comp=Z,600nm,18.6s
KHC Kasperske Hory 76.26 3 *eP* **P** **06 40 19.8 +1.1**
KHC pmax pmax
comp=Z,83nm,1.0s
KHC Kasperske Hory 76.26 3 *eP* **P** **06 40 19.8 +1.1**
comp=Z,83nm,1.0s
LANS Liptovska Anna 76.33 359 *eP* **P** **06 40 20.8 +1.7**
STU Stuttgart 76.40 6 *eP* **P** **06 40 20.3 +0.9**
STU pmax pmax
comp=Z,131nm,0.8s
STU Stuttgart 76.40 6 *eP* **P** **06 40 20.3 +0.9**
comp=Z,131nm,0.8s
GEC2 GERESS Array S 76.55 3 *eP* **P** **06 40 21.1 +0.7**
GEC2 pmax pmax
comp=Z,103nm,0.8s
GEC2 GERESS Array S 76.55 3 *eP* **P** **06 40 21.1 +0.7**
comp=Z,103nm,0.8s
GERES GERESS Array B 76.55 3 P **P** **06 40 21.1 +0.7**
comp=Z,65nm,0.7s,baz=356,slow=4.3,SNR=422
CRVS Cervenica-Dubn 76.55 358 *eP* **P** **06 40 21.3 +1.0**
GEA0 GERESS Array S 76.56 3 *eP* **P** **06 40 21.1 +0.7**
H07N1 FLORES T-PHASE 76.60 37 *eP* **P** **06 40 22.0 +1.2**
THEF They Montfort 76.69 9 ⇑ *eP* **P** **06 40 22.1 +1.0**
BFO Black Forest 76.78 7 *i P* **P** **06 40 22.2 +0.6**
BFO Black Forest 76.78 7 *eP* **P** **06 40 22.3 +0.6**
comp=Z,77nm,0.7s
BFO LR LR
comp=Z,450nm,20.0s
ECH Echery 76.80 8 ⇑ *eP* **P** **06 40 22.7 +0.9**
UZH Uzhgorod 76.81 358 ⇓ *iP* **P** **06 40 21.0 -0.7**
UZH *e* 06 40 25.3
UZH *e* 06 40 33.4
H07S1 FLORES T-PHASE 76.85 38 *eP* **P** **06 40 23.4 +1.2**
SMOL Smolenice 76.96 1 *eP* **P** **06 40 24.4 +1.8**
KECS Kecovo 76.99 359 *eP* **P** **06 40 23.5 +0.7**
VYHS Vyhne 76.99 360 *eP* **P** **06 40 23.9 +1.1**
SORM Soroca 77.03 353 ⇓ *iP* **P** **06 40 22.9 0.0**
MOF Molkenrain 77.16 8 ⇑ *eP* **P** **06 40 24.6 +0.7**
PMG Port Moresby 77.18 232 *c iP* **P** **06 40 23.9 -0.3**
PMG pmax pmax
comp=Z,390nm,1.1s

PMG	**Port Moresby**	**77.18**	**232**	*e*P		**P**	**06 40 24.4**	**+0.2**
	comp=Z,94nm,1.1s							
PMG				LR		LR		
	comp=Z,803nm,20.0s							
TRPA	**Tarpa**	**77.30**	**357**⇑	*e*P		**P**	**06 40 25.8**	**+1.3**
IDE	**Isla Desecheo**	**77.32**	**76**	*e*P		**P**	**06 40 24.9**	**-0.1**
CONA	**Conrad Observa**	**77.52**	**2**	*i* P		**P**	**06 40 27.0**	**+1.2**
	comp=Z,150nm,0.7s,SNR=76							
CONA				*i* pP		**PcP**	**06 40 33.3**	**-2.8**
	comp=Z,70nm,0.8s							
PSZ	**Piszkesteto**	**77.56**	**359**⇑	*i*P		**P**	**06 40 27.5**	**+1.5**
PSZ	**Piszkesteto**	**77.56**	**359**	*e*P		**P**	**06 40 27.6**	**+1.5**
PSZ				pmax	pmax			
	comp=Z,187nm,1.0s							
PSZ				MLR	MLR			
	comp=Z,639nm,21.0s							
PSZ	**Piszkesteto**	**77.56**	**359**	*e*P		**P**	**06 40 27.8**	**+1.8**
	comp=Z,187nm,1.0s							
PSZ	**Piszkesteto**	**77.56**	**359**	*e*P		**P**	**06 40 27.6**	**+1.5**
	comp=Z,187nm,1.0s							
PSZ				LR	LR			
	comp=Z,639nm,21.0s							
PSZ	**Piszkesteto**	**77.56**	**359**⇑	*e*P		**P**	**06 40 27.4**	**+1.5**
MOA	**Molln**	**77.56**	**3**	*i* P		**P**	**06 40 26.8**	**+0.8**
	comp=Z,38nm,0.8s,SNR=29							
BUR08	**Bucovina Ar. S**	**77.69**	**356**	*e*P		**P**	**06 40 27.6**	**+0.8**
BURAR	**Bucovina Array**	**77.72**	**356**⇑	*i*P		**P**	**06 40 27.6**	**+0.6**
BMR	**Baia Mare**	**77.73**	**357**⇑	*i*P		**P**	**06 40 28.0**	**+1.1**
RETA	**Reutte**	**77.77**	**6**	*i* P		**P**	**06 40 28.2**	**+1.0**
	comp=Z,64nm,0.8s,SNR=34							
DAVA	**Damuels**	**77.92**	**6**	*i* P		**P**	**06 40 29.0**	**+0.8**
	comp=Z,40nm,0.8s,SNR=30							
PRAR	**RASCA**	**77.92**	**355**⇑	*i*P		**P**	**06 40 28.2**	**+0.2**
MOTA	**Moosalm**	**77.93**	**5**	*i* P		**P**	**06 40 29.1**	**+0.8**
	comp=Z,134nm,0.8s,SNR=108							
WATA	**Walderalm**	**77.97**	**5**	*i* P		**P**	**06 40 29.4**	**+0.9**
	comp=Z,133nm,0.8s,SNR=79							
BUD	**Budapest**	**78.00**	**360**⇑	*e*P		**P**	**06 40 29.8**	**+1.4**
IAS	**Iasi**	**78.01**	**354**⇑	*i*P		**P**	**06 40 28.6**	**+0.1**
WTTA	**Wattenberg**	**78.04**	**5**	*i* P		**P**	**06 40 30.2**	**+1.3**
	comp=Z,145nm,0.7s,SNR=55							
SQTA	**Sankt Quirin**	**78.06**	**5**	*i* P		**P**	**06 40 30.2**	**+1.3**
CSKK	**Cs˙ǂkako**	**78.12**	**0**⇑	*e*P		**P**	**06 40 30.6**	**+1.5**
KIS	**Kishinev**	**78.13**	**353**⇑	*i*P		**P**	**06 40 28.0**	**-1.1**
	comp=Z,700nm,1.0s							
KIS				*i* pP		**pP**	**06 40 45.0**	**+1.8**
KIS				LRM	MLR		07 22 56.0	
	comp=Z,1μm,16.0s							
KIS	**Kishinev**	**78.13**	**353**⇑	*i*P		**P**	**06 40 28.9**	**-0.2**
KIS	**Kishinev**	**78.13**	**353**α	*i*P		**P**	**06 40 28.0**	**-1.1**
KIS				*i* *PP		**pP**	**06 40 45.0**	**+1.8**
KIS				*e*			06 50 40.0	
KIS				*e*			06 51 02.0	
KIS				*e*			06 51 20.0	
KIS				*e*			06 58 50.0	
KIS				pmax	pmax			
	comp=Z,700nm,1.0s							
KIS				pmax	pmax			
	comp=Z,1μm,1.0s							
KIS				MLR	MLR			
	comp=E,700nm,18.0s							
KIS				MLR	MLR			
	comp=Z,800nm,18.0s							
KIS				MLR	MLR			
	comp=Z,700nm,20.0s							
ARSA	**Arzberg**	**78.19**	**2**	*i* P		**P**	**06 40 31.0**	**+1.5**
	comp=Z,102nm,0.7s,SNR=66							
FETA	**Feichten**	**78.24**	**6**	*i* P		**P**	**06 40 31.2**	**+1.3**
	comp=Z,181nm,0.9s,SNR=98							
PGRA	**Graciosa**	**78.27**	**35**	*e*P		**P**	**06 40 31.4**	**+1.4**
	comp=Z,160nm,1.3s							
SJG	**San Juan**	**78.28**	**75**	P		**P**	**06 40 29.7**	**-0.6**
	comp=Z,17nm,0.7s,baz=298,slow=4.2,SNR=7.1							
SJG	**San Juan**	**78.28**	**75**	P		**P**	**06 40 29.7**	**-0.6**
SJG				LR	LR			
	comp=Z,569nm,21.0s							
ARCR	**ARCALIA**	**78.28**	**356**⇓	*i*P		**P**	**06 40 31.5**	**+1.5**
KBA	**Koelnbreinsper**	**78.30**	**4**	*i* P		**P**	**06 40 31.8**	**+1.5**
	comp=Z,183nm,0.7s,SNR=99							
GOF	**Gofitskoye**	**78.31**	**343**⇑	*i*P		**P**	**06 40 30.9**	**+0.7**
PCED	**Cedros**	**78.39**	**36**	*e*P		**P**	**06 40 32.0**	**+1.3**
	comp=Z,188nm,1.0s							
CALA	**Caldeira**	**78.43**	**36**	*e*P		**P**	**06 40 32.0**	**+1.0**
ROSA	**Rosais**	**78.46**	**36**	*e*P		**P**	**06 40 32.0**	**+0.9**
	comp=Z,223nm,1.2s							
ROSA	**Rosais**	**78.46**	**36**	*e*P		**P**	**06 40 32.3**	**+1.2**
	comp=Z,114nm,0.9s							
HOR	**Horta**	**78.50**	**36**	*e*P		**P**	**06 40 32.3**	**+1.0**
	comp=Z,210nm,0.9s							
SHL	**Shillong**	**78.51**	**298**	*e*P		**P**	**06 40 30.5**	**-1.3**
AGO	**Saint Agoulin**	**78.56**	**11**⇑	*e*P		**P**	**06 40 32.9**	**+1.3**
NONG	**Nongkai**	**78.57**	**285**	P		**P**	**06 40 31.6**	**-0.4**
	comp=Z,124nm,1.2s							
TBI	**Tubuai**	**78.58**	**169**	*e*LR		LR	07 05 02.7	
	comp=Z,3μm,27.5s,baz=343							
TBI	**Tubuai**	**78.58**	**169**	*e*T		T	08 06 19.0	
	comp=Z,38nm,0.3s							
PMAN	**Manadas**	**78.59**	**36**	*e*P		**P**	**06 40 33.3**	**+1.5**
	comp=Z,122nm,1.0s							
PICO	**Pico**	**78.59**	**36**	*e*P		**P**	**06 40 32.9**	**+1.0**
	comp=Z,135nm,1.0s							
ABTA	**Abfaltersbach**	**78.60**	**4**	*i* P		**P**	**06 40 32.7**	**+0.9**
	comp=Z,94nm,0.9s,SNR=50							
PCAN	**Candelaria**	**78.61**	**36**	*e*P		**P**	**06 40 33.3**	**+1.3**
	comp=Z,125nm,0.9s							
FUORN	**Ofenpass-Fuorn**	**78.61**	**6**	*e*P		**P**	**06 40 33.5**	**+1.4**
	comp=Z,181nm,1.0s							
SENIN	**Lac Senin/Sane**	**78.66**	**8**	*e*P		**P**	**06 40 33.3**	**+1.0**
	comp=Z,53nm,0.8s							
CJR	**Cluj-Napoca**	**78.69**	**357**⇑	*i*P		**P**	**06 40 33.2**	**+0.9**
LEOM	**Leova**	**78.69**	**353**⇑	*i*P		**P**	**06 40 32.5**	**+0.3**
TUE	**Stuetta**	**78.70**	**7**	*e*P		**P**	**06 40 33.9**	**+1.4**
	comp=Z,93nm,0.9s							
TUE				LR	LR			
	comp=Z,424nm,20.0s							
PLDF	**La Plantade**	**78.70**	**11**	*e*P		**P**	**06 40 33.6**	**+1.2**
TESR	**Tescani**	**78.75**	**354**⇑	*i*P		**P**	**06 40 32.8**	**+0.2**
SOKA	**Soboth**	**78.76**	**3**	*i* P		**P**	**06 40 33.7**	**+0.9**
	comp=Z,123nm,0.7s,SNR=61							
MYKA	**Terra Mystica**	**78.76**	**4**	*i* P		**P**	**06 40 33.4**	**+0.7**
	comp=Z,64nm,0.7s,SNR=19							
PERS	**Pernice**	**78.80**	**3**⇑	*i*P		**P**	**06 40 33.9**	**+1.0**
PYM	**Petit Puy Mans**	**78.85**	**11**⇑	*e*P		**P**	**06 40 34.3**	**+1.1**
ADH	**Angra Heroismo**	**78.85**	**35**	*e*P		**P**	**06 40 35.0**	**+1.7**
	comp=Z,98nm,0.9s							
OBKA	**Obir**	**78.91**	**3**	*i* P		**P**	**06 40 34.8**	**+1.2**
	comp=Z,503nm,0.7s,SNR=161							
SKNT	**Sakolnakorn**	**78.98**	**284**	P		**P**	**06 40 33.9**	**-0.4**
	comp=Z,290nm,0.9s							
BEHE	**Becsehely**	**79.00**	**1**⇑	*e*P		**P**	**06 40 35.3**	**+1.4**
KOGS	**Kog**	**79.01**	**2**⇑	*i*P		**P**	**06 40 35.0**	**+0.9**
FAKI	**Fak Fak**	**79.11**	**249**	P		**P**	**06 40 35.0**	**+0.1**
FAKI	**Fak Fak**	**79.11**	**249**	*e*P		**P**	**06 40 35.0**	**+0.1**
	comp=Z,78nm,0.9s							
FRNF	**Fournols**	**79.16**	**12**⇑	*e*P		**P**	**06 40 35.4**	**+0.5**
SIRR	**Siria**	**79.18**	**358**⇑	*i*P		**P**	**06 40 36.0**	**+1.0**
RSL	**Roselend**	**79.27**	**9**⇑	*e*P		**P**	**06 40 36.8**	**+1.2**
CMAI	**Chiengmai2**	**79.33**	**289**	P		**P**	**06 40 36.2**	**-0.1**
	comp=Z,2μm,1.0s,comp=Z,22μm							
DOPR	**Dopca**	**79.36**	**355**⇑	*i*P		**P**	**06 40 37.7**	**+1.8**
LJU	**Ljubljana**	**79.38**	**3**⇑	*i*P		**P**	**06 40 36.5**	**+0.4**
VRI	**Vrincioaia**	**79.39**	**354**⇑	*i*P		**P**	**06 40 36.9**	**+0.8**
LBL	**Lubilhac**	**79.39**	**11**	*e*P		**P**	**06 40 37.2**	**+1.0**
PLOR	**Plostina**	**79.41**	**354**⇓	*i*P		**P**	**06 40 36.9**	**+0.7**
ANN	**Anapa**	**79.42**	**347**	*e*P		P	06 40 30.0	-6.2
ANN				*e**PP		**PcP**	**06 40 42.5**	**-1.7**
ANN				*e*			06 43 31.7	
ANN				pmax	pmax			
	comp=Z,84nm,2.1s							
KIV	**Kislovodsk**	**79.44**	**343**	P		**P**	**06 40 37.3**	**+0.8**
KIV	**Kislovodsk**	**79.44**	**343**	*e*P		**P**	**06 40 37.3**	**+0.8**
KIV				pmax	pmax			
	comp=Z,313nm,0.8s							
KIV				MLR	MLR			
	comp=Z,691nm,21.0s							
KIV	**Kislovodsk**	**79.44**	**343**	P		**P**	**06 40 37.6**	**+1.1**
	SNR=54							
KIV				P		**P**	**06 40 37.6**	**+1.1**
	SNR=54							
KIV	**Kislovodsk**	**79.44**	**343**	P		**P**	**06 40 37.6**	**+1.1**
	SNR=54							
KIV	**Kislovodsk**	**79.44**	**343**	*e*P		**P**	**06 40 37.3**	**+0.8**
	comp=Z,312nm,0.8s							
KIV				LR	LR			
	comp=Z,691nm,21.0s							
ODBI	**Odobesti**	**79.47**	**354**⇑	*i*P		**P**	**06 40 38.3**	**+1.8**
SSB	**Saint Sauveur**	**79.48**	**10**⇑	*e*P		**P**	**06 40 37.5**	**+0.9**
SSB	**Saint Sauveur**	**79.48**	**10**	*e*P		**P**	**06 40 37.0**	**+0.4**
SSB				pmax	pmax			
	comp=Z,73nm,1.0s							
SSB				MLR	MLR			
	comp=Z,451nm,19.0s							
SSB	**Saint Sauveur**	**79.48**	**10**	*e*P		**P**	**06 40 37.0**	**+0.4**
	comp=Z,73nm,1.0s							
SSB				LR	LR			
	comp=Z,451nm,19.0s							
UBPT	**Khong Chiam**	**79.51**	**281**	P		**P**	**06 40 37.1**	**0.0**
	comp=Z,236nm,1.1s							
GUN	**Gumba**	**79.54**	**304**	*e*P		**P**	**06 40 38.3**	**+0.7**
	comp=Z,1μm,0.9s							
CRES	**Cresnjev**	**79.62**	**2**	*e*P		**P**	**06 40 37.7**	**+0.3**
KBZ	**Khabaz**	**79.62**	**342**	P		**P**	**06 40 38.5**	**+1.2**
	comp=Z,263nm,0.9s,baz=338,slow=3.4,SNR=231							
KBZ				LR		LR	07 21 48.0	
	comp=Z,583nm,20.3s,baz=336,slow=40							
GRN	**Grenoble**	**79.63**	**9**⇑	*e*P		**P**	**06 40 38.8**	**+1.3**
SIM	**Simferopol'**	**79.68**	**349**	*ce*P		**P**	**06 40 38.2**	**+0.5**
SIM				pmax	pmax			
	comp=Z,127nm,0.8s							
SIM				MLR	MLR			
	comp=Z,1μm,20.0s							
TRI	**Trieste**	**79.69**	**4**	*e*P		**P**	**06 40 37.2**	**-0.4**
TRI				pmax	pmax			
	comp=Z,86nm,0.7s							
TRI	**Trieste**	**79.69**	**4**	*e*P		**P**	**06 40 37.2**	**-0.4**
	comp=Z,86nm,0.7s							
GDM	**Grand'Maison**	**79.70**	**9**⇑	*e*P		**P**	**06 40 39.3**	**+1.3**
NCK	**Nalchik**	**79.72**	**342**	*ce*P		**P**	**06 40 39.4**	**+1.4**
NCK				pmax	pmax			
	comp=Z,630nm,0.9s							
MLR	**Muntele Rosu**	**79.80**	**355**⇑	*i*P		**P**	**06 40 39.1**	**+0.6**
MLR	**Muntele Rosu**	**79.80**	**355**	*e*P		**P**	**06 40 39.8**	**+1.3**
MLR				pmax	pmax			
	comp=Z,217nm,1.4s							
MLR	**Muntele Rosu**	**79.80**	**355**	*e*P		**P**	**06 40 39.8**	**+1.3**
	comp=Z,217nm,1.4s							
OZLJ	**Ozalj**	**79.83**	**2**	P		**P**	**06 40 37.3**	**-1.1**
BZS	**Buzias**	**79.83**	**358**⇑	*i*P		**P**	**06 40 39.2**	**+0.7**
GRER		**79.86**	**354**⇑	*i*P		**P**	**06 40 40.2**	**+1.6**
VOIR		**79.90**	**355**⇑	*i*P		**P**	**06 40 40.0**	**+1.0**
BNI	**Bardonecchia**	**79.91**	**9**	PFAKE			06 40 50.0	+11
BNI				LR	LR			
	comp=Z,753nm,20.0s							
KKN	**Kakani**	**79.93**	**304**	*e*P		**P**	**06 40 40.0**	**+0.4**
	comp=Z,663nm,0.9s							
TLCR		**79.93**	**353**⇓	*i*P		**P**	**06 40 39.8**	**+0.8**
LOT	**Lotru**	**79.94**	**356**⇑	*i*P		**P**	**06 40 39.4**	**+0.2**
CFR	**Carcaliu**	**79.98**	**353**⇑	*i*P		**P**	**06 40 39.8**	**+0.5**
ARR	**Arges**	**79.99**	**356**⇑	*i*P		**P**	**06 40 40.5**	**+1.1**
SISC	**Sisak**	**79.99**	**2**	P		**P**	**06 40 40.8**	**+1.4**
RAMN	**Ramite**	**80.00**	**303**	*e*P		**P**	**06 40 40.4**	**+0.4**
	comp=Z,1μm,0.7s							
PKIN	**Phulchoki**	**80.05**	**304**	*e*P		**P**	**06 40 40.6**	**+0.3**
	comp=Z,583nm,0.7s							
GKN	**Gorkha**	**80.05**	**305**	*e*P		**P**	**06 40 40.6**	**+0.4**
	comp=Z,1μm,0.8s							
LOEI	**Loei**	**80.07**	**286**	P		**P**	**06 40 38.1**	**-2.1**
	comp=Z,156nm,0.9s,comp=Z,2μm							
PSET	**Sete Cidades**	**80.11**	**34**	*e*P		**P**	**06 40 41.5**	**+1.4**
	comp=Z,230nm,1.1s							
MTUR	**Matau**	**80.11**	**355**⇑	*i*P		**P**	**06 40 42.1**	**+2.0**
NEY	**Neytrino**	**80.12**	**342**	*ce*P		**P**	**06 40 41.6**	**+1.3**
NEY				pmax	pmax			
	comp=Z,22nm,0.8s							
ISR	**Istrita**	**80.14**	**354**⇑	*i*P		**P**	**06 40 40.7**	**+0.5**
MYLDM	**Lahad Datu**	**80.16**	**265**	*e*P		**P**	**06 40 41.7**	**+1.0**
	comp=Z,92nm,1.0s							
DMN	**Daman**	**80.16**	**304**	*e*P		**P**	**06 40 41.5**	**+0.6**
	comp=Z,728nm,0.7s							
PDA	**Ponta Delgada**	**80.19**	**34**	*e*P		**P**	**06 40 41.8**	**+1.3**
	comp=Z,290nm,1.1s							
CMLA	**Cha da Macela**	**80.22**	**34**	*e*P		**P**	**06 40 40.5**	**-0.3**
	comp=Z,274nm,1.5s							
CMLA	**Cha da Macela**	**80.22**	**34**	PFAKE			06 41 00.0	+19
CMLA				LR	LR			
	comp=Z,494nm,19.0s							
THN	**Thein Dam**	**80.24**	**314**	*e*P		**P**	**06 40 39.6**	**-1.3**
SECR		**80.25**	**355**⇑	*i*P		**P**	**06 40 41.2**	**+0.4**
UTTA	**Uttaradit**	**80.27**	**287**	P		**P**	**06 40 41.0**	**-0.2**
	comp=Z,83nm,0.7s,comp=Z,604nm							
SOC	**Sochi**	**80.28**	**345**	*ce*	iP	**P**	**06 40 41.5**	**+0.6**
SOC				*e*			06 43 43.0	
SOC				*e*	S	**S**	**06 50 47.7**	**+5.4**
SOC				pmax	pmax			
	comp=Z,300nm,0.8s							
SOC				MLR	MLR			
	comp=Z,643nm,20.0s							
CMMT	**Chiang Mai**	**80.29**	**289**	P		**P**	**06 40 40.7**	**-0.7**
	comp=Z,124nm,0.8s,comp=Z,2μm							
CHTO	**Chiang Mai**	**80.29**	**289**	P		**P**	**06 40 40.8**	**-0.6**
	comp=Z,548nm,0.8s,comp=Z,7μm							
CHTO	**Chiang Mai**	**80.29**	**289**	*e*P		**P**	**06 40 41.1**	**-0.2**
CHTO				pmax	pmax			
	comp=Z,70nm,0.8s							
CHTO				MLR	MLR			
	comp=Z,677nm,20.0s							
CHTO	**Chiang Mai**	**80.29**	**289**	P		**P**	**06 40 41.3**	**0.0**
	SNR=21							
CHTO				P		**P**	**06 40 41.3**	**0.0**
	SNR=21							
CHTO	**Chiang Mai**	**80.29**	**289**	P		**P**	**06 40 41.3**	**0.0**
	SNR=21							
CHTO	**Chiang Mai**	**80.29**	**289**	*e*P		**P**	**06 40 41.1**	**-0.2**
	comp=Z,70nm,0.8s							
CHTO				LR	LR			
	comp=Z,677nm,20.0s							
BART	**Pico Bartolome**	**80.33**	**34**	*e*P		**P**	**06 40 42.7**	**+1.3**
	comp=Z,341nm,1.1s							
PGOR	**Pogoanele**	**80.33**	**354**⇑	*i*P		**P**	**06 40 42.0**	**+0.9**
ZEI	**Tsey**	**80.35**	**341**	*e*P		**P**	**06 40 39.5**	**-2.1**
ZEI				pmax	pmax			
	comp=Z,395nm,1.0s							
SDNR	**Sundarnagar**	**80.52**	**313**	*e*P		**P**	**06 40 42.0**	**-0.5**
PONG	**Pong**	**80.56**	**314**	*e*P		**P**	**06 40 43.0**	**+0.4**
CM31	**Chiang Mai Arr**	**80.58**	**289**	*e*P		**P**	**06 40 43.3**	**+0.4**
CMAR	**Chiang Mai Arr**	**80.58**	**289**	P		**P**	**06 40 43.2**	**+0.3**
	comp=Z,132nm,0.7s,baz=22,slow=5.8,SNR=293							
CMAR				LR		LR	07 19 32.8	
	comp=Z,371nm,19.4s,baz=234,slow=38							
TLB	**Topalu**	**80.58**	**353**⇑	*i*P		**P**	**06 40 43.0**	**+0.5**
SULR		**80.60**	**355**⇓	*i*P		**P**	**06 40 42.6**	**0.0**
CM01	**Chiang Mai Arr**	**80.60**	**288**	*e*P		**P**	**06 40 43.3**	**+0.3**
AMRR	**Amara**	**80.60**	**354**⇑	*i*P		**P**	**06 40 43.4**	**+0.8**
ONI	**Oni**	**80.63**	**342**	P		**P**	**06 40 43.5**	**+0.6**
ONI	**Oni**	**80.63**	**342**	P		**P**	**06 40 43.5**	**+0.6**
MDVR	**Moldovita**	**80.67**	**358**⇑	*i*P		**P**	**06 40 43.9**	**+0.8**
KOLN	**Koldanda**	**80.74**	**306**	*e*P		**P**	**06 40 44.3**	**+0.4**
	comp=Z,661nm,0.7s							
CHVG	**Ch'k'valeri**	**80.74**	**343**	P		**P**	**06 40 44.8**	**+1.3**
PYUN	**Piuthan**	**80.74**	**306**	*e*P		**P**	**06 40 44.3**	**+0.3**
	comp=Z,1μm,0.9s							
SRE	**Strehaia**	**80.75**	**357**⇓	*i*P		**P**	**06 40 44.4**	**+1.0**
OSSF	**Osses**	**80.75**	**15**	*e*P		**P**	**06 40 43.9**	**+0.4**
SMLA	**Simla**	**80.76**	**312**	*e*P		**P**	**06 40 44.2**	**+0.5**
KKM	**Kota Kinabalu**	**80.78**	**267**	*e*P		**P**	**06 40 44.5**	**+0.4**
	comp=Z,71nm,0.9s							
KKM				LR	LR			
	comp=Z,445nm,22.0s							
PGAV	**Gavieira, Arco**	**80.80**	**20**⇑	*e*P		**P**	**06 40 45.3**	**+1.4**
	comp=Z,128nm,1.0s							
PGAV				*i* P		**pP**	**06 40 58.5**	**+0.5**
PGAV				*ep*P		**sP**	**06 41 03.4**	**-0.1**
HUMR	**Humele**	**80.81**	**355**⇓	*i*P		**P**	**06 40 44.0**	**+0.2**
CVDA	**Cernavoda**	**80.83**	**353**⇑	*i*P		**P**	**06 40 44.8**	**+1.0**
NVLJ	**Novalja**	**80.86**	**3**	P		**P**	**06 40 44.5**	**+0.5**
RKT	**Rikitea**	**80.90**	**156**	*e*LR		LR	07 06 02.8	
	comp=Z,2μm,31.0s,baz=342							
RKT	**Rikitea**	**80.90**	**156**	*e*T		T	08 09 22.4	
	comp=Z,1.9nm,0.3s							
UDBI	**Udbina**	**80.92**	**2**	P		**P**	**06 40 45.4**	**+0.9**
PBKT	**Sadao Pong**	**80.99**	**286**	P		**P**	**06 40 44.7**	**-0.4**
	comp=Z,165nm,0.9s,comp=Z,2μm							
SUKH	**Sukhothai**	**80.99**	**287**	P		**P**	**06 40 45.1**	**0.0**
	comp=Z,27nm,0.8s,comp=Z,254nm							
ATE	**Arette**	**81.00**	**14**	*e*P		**P**	**06 40 45.1**	**+0.3**
LARF	**Larrau**	**81.01**	**14**	*e*P		**P**	**06 40 46.5**	**+1.6**
KBL	**Kabul**	**81.01**	**320**	*e*P		**P**	**06 40 44.4**	**-0.9**
KBL				pmax	pmax			
	comp=Z,326nm,0.9s							
KBL	**Kabul**	**81.01**	**320**	*e*P		**P**	**06 40 44.4**	**-0.9**
	comp=Z,326nm,0.9s							
PSMA	**Santa Maria**	**81.05**	**34**	*e*P		**P**	**06 40 45.7**	**+0.5**
	comp=Z,144nm,1.4s							
ANWB	**Willy Bob**	**81.06**	**72**	PFAKE			06 41 00.0	+15
ANWB				LR	LR			
	comp=Z,494nm,21.0s							
REYF	**Montagne du Re**	**81.06**	**14**	*e*P		**P**	**06 40 45.5**	**+0.3**
PSMN	**Pico do Norte,**	**81.07**	**34**	*e*P		**P**	**06 40 45.7**	**+0.4**
	comp=Z,120nm,1.7s							
VLC	**Villacollemand**	**81.07**	**6**	*e*P		**P**	**06 40 46.2**	**+1.0**
	comp=Z,70nm,1.0s							
VLC				LR	LR			
	comp=Z,314nm,21.0s							
DDI	**Dehra Dun**	**81.07**	**311**	*e*P		**P**	**06 40 44.0**	**-1.5**
DDI				*e*P		**P**	**06 40 46.0**	**+0.6**
SEAG	**Tbilisi Sea**	**81.17**	**341**	P		**P**	**06 40 47.2**	**+1.4**
TBLG	**Delisi**	**81.22**	**341**	P		**P**	**06 40 47.1**	**+1.1**
TBLG	**Delisi**	**81.22**	**341**	P		**P**	**06 40 47.1**	**+1.1**
PBRG	**Braganca**	**81.25**	**19**⇑	*e*P		**P**	**06 40 47.4**	**+1.2**
	comp=Z,99nm,1.8s							
VIEF	**Viey**	**81.30**	**14**	*e*P		**P**	**06 40 47.9**	**+1.4**
MANR	**Mangalia**	**81.31**	**353**⇑	*i*P		**P**	**06 40 47.5**	**+1.1**
DIVS	**Divibare**	**81.38**	**359**	P		**P**	**06 40 47.5**	**+0.6**
RESF	**Ens**	**81.42**	**14**	*e*P		**P**	**06 40 48.6**	**+1.4**
POLO	**Lamas de Olo**	**81.46**	**20**⇑	*e*P		**P**	**06 40 48.9**	**+1.5**
	comp=Z,82nm,1.7s							
POLO				*i* P		**pP**	**06 41 01.4**	**-0.2**
POLO				*ep*P		**sP**	**06 41 06.1**	**-0.9**
DZM	**Mont Dzumac**	**81.48**	**210**	P		**P**	**06 40 48.0**	**+0.5**
	comp=Z,11nm,0.9s,baz=94,slow=13,SNR=5.0							
DZM	**Mont Dzumac**	**81.48**	**210**	*e*P		**P**	**06 40 47.2**	**-0.3**
	comp=Z,67nm,1.3s							
GEYT	**Alibeck**	**81.57**	**330**	P		**P**	**06 40 49.0**	**+1.1**
	comp=Z,146nm,0.8s,baz=330,slow=5.1,SNR=172							
GEYT				LR	LR		07 21 24.7	
	comp=Z,2μm,19.9s,baz=325,slow=39							
LRDF	**Laroque-de-Fa**	**81.57**	**12**	*e*P		**P**	**06 40 49.1**	**+1.3**
PVRL	**Vila Real**	**81.58**	**20**⇑	*e*P		**P**	**06 40 49.5**	**+1.6**
	comp=Z,177nm,1.6s							
ZIMR		**81.66**	**355**⇓	*i*P		**P**	**06 40 49.2**	**+0.9**
AKH	**Akhalkalaki**	**81.76**	**341**⇑	*i*P		**P**	**06 40 50.4**	**+1.4**
AKH	**Akhalkalaki**	**81.76**	**341**	P		**P**	**06 40 50.5**	**+1.4**
AKH	**Akhalkalaki**	**81.76**	**341**	P		**P**	**06 40 50.5**	**+1.4**
EPOS	**Posof**	**81.81**	**342**⇑	*i*P		**P**	**06 40 50.5**	**+1.2**
MVO	**Moncorvo**	**81.81**	**19**⇑	*e*P		**P**	**06 40 50.6**	**+1.4**
	comp=Z,141nm,1.5s							
MVO				*ep*P		**sP**	**06 41 08.7**	**-0.2**
SANI	**Sanana**	**81.82**	**255**	P		**P**	**06 40 49.0**	**-0.5**
BGD	**Bogdanovka**	**81.88**	**341**	P		**P**	**06 40 51.5**	**+1.7**
PRD	**Provadia**	**82.00**	**354**	*e*P		**P**	**06 40 51.3**	**+1.2**
MRSI	**Marisa**	**82.02**	**259**	P		**P**	**06 40 49.8**	**-0.7**
SZH	**Strazhica**	**82.02**	**355**	*e*P		**P**	**06 40 50.3**	**+0.1**
VALF	**Valcebollere**	**82.04**	**12**	*e*P		**P**	**06 40 51.5**	**+1.0**
PVIS	**Viseu**	**82.08**	**20**⇑	*e*P		**P**	**06 40 52.0**	**+1.4**
	comp=Z,237nm,1.1s							
PVIS				*i* P		**pP**	**06 41 05.1**	**+0.3**
PVIS				*ep*P		**sP**	**06 41 10.0**	**-0.2**
DBOC	**Borcka**	**82.15**	**343**⇑	*i*P		**P**	**06 40 51.4**	**+0.5**
OCAC	**Ocana**	**82.15**	**87**	*e*P		**P**	**06 40 50.5**	**-0.9**
PLE	**Pljevlja**	**82.15

ILGA Ilgaz 83.57 349⇑ iP P 06 40 60.0 +1.4
PMTG Montargil 83.60 21⇑ eP P 06 40 59.4 +1.0
comp=Z,198nm,1.2s
PMTG i P pP 06 41 12.9 +0.3
PMTG epP sP 06 41 16.7 -1.4
KELT Kelkit 83.71 344⇑ iP P 06 41 00.5 +1.2
PMST Lisbon--Monsan 83.72 22⇑ eP P 06 41 00.5 +1.4
comp=Z,318nm,1.1s
LIS Lisbon 83.75 22 eP P 06 41 00.1 +0.9
LIS AMb AMB 06 41 01.1
comp=Z,100nm,0.8s
LIS Lisbon 83.75 22 eP P 06 41 00.1 +0.9
MMB Musomiste 83.80 356 eP P 06 41 01.0 +1.5
FDF Fort de France 83.80 73 PFAKE 06 41 10.0 +10
FDF LR LR
comp=Z,366nm,22.0s
ES19 SONSECA Array 83.81 17 eP P 06 41 00.4 +0.8
SUSE Susehri 83.81 345⇑ iP P 06 41 00.9 +1.2
ESDC Sonseca Array 83.82 17 P P 06 41 00.6 +0.9
comp=Z,99nm,0.8s,baz=344,slow=4.8,SNR=306
ESDC PP PP 06 44 12.2 -0.2
comp=Z,7.8nm,0.9s,baz=352,slow=8.5,SNR=6.6
ESDC PKKP PKKPdf 06 59 05.3 +2.8
comp=Z,0.5nm,0.5s,baz=70,slow=18,SNR=4.1
ESDC LR LR 07 20 09.6
comp=Z,234nm,20.3s,baz=330,slow=37
ESLA Sonseca Array 83.82 17 eP P 06 41 00.6 +0.9
comp=Z,139nm,0.9s
SRDT SRDT 83.82 286 P P 06 40 59.8 -0.1
comp=Z,674nm,0.8s,comp=Z,7µm
TUTA Tutak 83.83 341⇑ iP P 06 41 01.5 +1.5
CTAK Corum_Osmancik 83.84 348⇑ iP P 06 41 01.6 +1.7
PAB San Pablo 83.88 18 eP P 06 41 00.9 +0.9
PAB pmax pmax
comp=Z,68nm,0.9s
PAB MLR MLR
comp=Z,595nm,19.0s
PAB San Pablo 83.88 18 eP P 06 41 00.9 +0.9
comp=Z,68nm,0.9s
PAB LR LR
comp=Z,595nm,19.0s
PESTR Estremoz 83.92 20⇑ eP P 06 41 01.0 +0.9
comp=Z,216nm,1.2s
PESTR i P pP 06 41 13.6 -0.7
PESTR epP sP 06 41 18.7 -1.1
TOKA Tokat 83.95 346⇑ iP P 06 41 01.9 +1.6
BCAM Yenicaga 83.98 350⇑ iP P 06 41 01.3 +0.8
ISK Istanbul-Kandi 84.01 352 P P 06 41 00.9 +0.4
PATY Pattaya 84.01 284 P P 06 41 01.6 +0.8
comp=Z,31nm,0.8s
NVR Nevrokopi 84.03 356 P P 06 41 01.8 +1.1
EUZM Uzumlu 84.07 344⇑ iP P 06 41 02.5 +1.5
VAY Valandovo 84.10 357 P P 06 41 02.1 +1.2
VAY Valandovo 84.10 357⇑ iP P 06 41 02.2 +1.2
TIR Tirane 84.13 359⇑ iP P 06 41 02.1 +1.0
TIR Tirane 84.13 359 eP P 06 41 02.2 +1.1
TIR pmax pmax
comp=Z,212nm,0.7s
TIR MLR MLR
comp=Z,721nm,20.0s
TIR Tirane 84.13 359 eP P 06 41 02.2 +1.1
comp=Z,212nm,0.7s
TIR LR LR
comp=Z,721nm,20.0s
ELDT Eldivan 84.16 349⇑ iP P 06 41 02.8 +1.3
EVO Evora 84.16 21⇑ eP P 06 41 02.2 +0.9
comp=Z,157nm,1.2s
EVO i P pP 06 41 15.6 +0.1
EVO epP sP 06 41 20.8 -0.2
RUSC La Rusia 84.18 88 eP P 06 41 01.4 -1.0
RUSC La Rusia 84.18 88 eP P 06 41 01.3 -1.0
comp=Z,45nm,1.0s
CUZAR Zara_SIVAS 84.19 345⇑ iP P 06 41 03.3 +1.7
COAL Corum-Alaca 84.21 348⇑ iP P 06 41 03.2 +1.5
BUY Buyukada 84.21 352⇑ iP P 06 41 01.8 +0.3
KNT Kendrikon 84.25 357 P P 06 41 02.9 +1.1
SRS Serrai 84.27 356 P P 06 41 02.6 +0.7
SCER sogukcermik 84.31 346⇑ iP P 06 41 03.8 +1.6
ROSC El Rosal 84.32 90 P P 06 41 02.9 0.0
comp=Z,5.6nm,0.6s,baz=77,slow=5.1,SNR=8.0
ROSC LR LR 07 22 59.4
comp=Z,124nm,18.2s,baz=279,slow=39
ROSC El Rosal 84.32 90 eP P 06 41 03.3 +0.4
comp=Z,17nm,1.1s
BTAS Taskesti 84.33 351⇑ iP P 06 41 03.1 +0.9
PCI Palu 84.35 260 P P 06 41 02.3 -0.2
OHR Ohrid 84.35 358⇑ iP P 06 41 03.1 +0.8
KAVA Kavala 84.36 356 P P 06 41 03.0 +0.8
ALN Alexandroupoli 84.38 354 P P 06 41 03.0 +0.6
KESN Edirne-Kesan 84.41 354⇑ iP P 06 41 03.4 +0.4
PNCL Nicolau / Gran 84.46 21 eP P 06 41 03.3 +0.5
comp=Z,291nm,1.2s
PNCL i P pP 06 41 16.7 -0.3
PNCL epP sP 06 41 22.3 -0.2
GRG Griva 84.47 357 P P 06 41 04.1 +1.2
SART Tekirdag 84.52 354⇑ iP P 06 41 04.0 +0.8
ENEZ Enez 84.53 354 P P 06 41 03.8 +0.7
BNGL BINGOL 84.57 343⇑ iP P 06 41 05.3 +1.7
TVAN Van 84.57 341⇑ iP P 06 41 09.5 +5.8
SOH Sokhos 84.58 356 P P 06 41 04.1 +0.6
TNCL Tunceli-Merkez 84.68 344⇑ iP P 06 41 06.0 +1.9
PBEJ Beja 84.68 21 eP P 06 41 04.8 +0.8
comp=Z,87nm,1.2s
PBEJ i P pP 06 41 18.3 +0.1
PBEJ epP sP 06 41 23.4 -0.2
KEMA Kemaliye 84.69 345⇑ iP P 06 41 05.5 +1.3
PBAR Barrancos 84.70 20⇑ eP P 06 41 05.0 +0.9
comp=Z,346nm,1.2s
PBAR i P pP 06 41 18.4 +0.1
PBAR epP sP 06 41 23.4 -0.3
PHET Kaeng Krachan 84.71 285 P P 06 41 04.5 +0.1
comp=Z,70nm,0.8s,comp=Z,513nm
MESJ Messejana 84.78 21 eP P 06 41 05.4 +0.9
MESJ AMb AMB 06 41 06.7
comp=Z,65nm,1.2s
MESJ Messejana 84.78 21⇑ eP P 06 41 05.4 +0.9
comp=Z,67nm,1.5s
MESJ epP sP 06 41 23.9 -0.2
MESJ Messejana 84.78 21 eP P 06 41 05.4 +0.9
CUKAN kangal_SIVAS 84.80 346⇑ iP P 06 41 06.5 +1.7
HORT Hortiatis 84.81 357 P P 06 41 04.9 +0.2
POPC Popayan, Colom 84.82 93 eP P 06 41 04.2 -1.0
CHIC Chingaza 84.83 89 eP P 06 41 05.5 0.0
SMTH Samothraki Isl 84.83 355 P P 06 41 04.9 +0.2
ANTO Ankara 84.84 349 PFAKE 06 41 20.0 +15
ANTO LR LR
comp=Z,569nm,20.0s
GEVA Gevas 84.84 341⇑ iP P 06 41 06.0 +0.9
CUSAR Sarkisla-SIVAS 84.87 346⇑ iP P 06 41 05.8 +0.7
BR231 Keskin MP Arra 84.87 349 eP P 06 41 06.4 +1.3
BR131 Keskin Array S 84.89 349 eP P 06 41 06.0 +0.8
BRTR Keskin Array B 84.89 349 P P 06 41 06.0 +0.8
comp=Z,188nm,0.8s,baz=33,slow=2.9,SNR=577
BRTR PKKPbc PKKPbc 06 59 10.3 -0.1
comp=Z,1.9nm,0.8s,baz=164,slow=5.1,SNR=8.3
BRTR LR LR 07 24 19.5
comp=Z,288nm,18.8s,baz=191,slow=39
BRTR Keskin Array B 84.89 349 P P 06 41 06.0 +0.8
BRTR pmax pmax
comp=Z,183nm,0.8s
CDAG Cicekdag 84.90 348⇑ iP P 06 41 06.3 +1.1
PRAC Prado 84.90 91 eP P 06 41 03.8 -1.6
PRAC Prado 84.90 91 eP P 06 41 04.3 -1.1
comp=Z,47nm,0.9s
CUALT Altinyayla-SIV 84.94 346⇑ iP P 06 41 07.2 +1.7
PTEO Sao Teotonio 84.96 22⇑ eP P 06 41 06.3 +0.9
comp=Z,180nm,1.0s
PTEO i P pP 06 41 19.8 +0.2
PTEO epP sP 06 41 24.1 -0.9
PLG Polygyros 85.02 356 P P 06 41 05.9 +0.2
PCVE Castro Verde 85.02 21⇑ eP P 06 41 06.8 +1.1
comp=Z,78nm,1.6s
PCVE i P pP 06 41 20.1 +0.2
PCVE epP sP 06 41 24.5 -0.9
OUR Ouranopolis 85.04 356 P P 06 41 05.9 +0.2
KTI Kastanea 85.04 357 P P 06 41 06.7 +0.8
BORA Eskisehir 85.06 351⇑ iP P 06 41 06.6 +0.6
GADA Gvkgeada 85.09 354 P P 06 41 06.4 +0.4
KZN Kozani 85.14 358 P P 06 41 06.6 +0.3
MORF Marmelete 85.21 22 eP P 06 41 07.5 +0.8
MORF AMb AMB 06 41 09.7
comp=Z,167nm,1.4s
MORF Marmelete 85.21 22 eP P 06 41 07.6 +0.9
comp=Z,173nm,1.2s
MORF i P pP 06 41 21.1 +0.2
MORF epP sP 06 41 26.1 -0.3
MORF Marmelete 85.21 22 eP P 06 41 07.5 +0.8
PENT Pentalofos 85.26 358 P P 06 41 07.7 +0.7
KDI Kendari 85.27 256 P P 06 41 08.3 +1.1
PVAQ Vaqueiros 85.31 21 eP P 06 41 08.1 +1.0
comp=Z,114nm,1.5s
PVAQ i P pP 06 41 21.6 +0.2
LIT Litokhoron 85.32 357 P P 06 41 07.4 +0.2
PFVI Vila Bisbo 85.34 22 eP P 06 41 08.4 +1.1
comp=Z,134nm,1.5s
PFVI Vila Bisbo 85.34 22 eP P 06 41 08.3 +1.1
comp=Z,104nm,1.0s
ELZG Elazig 85.37 344⇑ iP P 06 41 09.5 +1.8
ESKT Eskisehir 85.39 351⇑ iP P 06 41 08.1 +0.5
LIA Limnos Island 85.42 355 P P 06 41 08.1 +0.5
PBDV Barranco-do-Ve 85.42 21⇑ eP P 06 41 08.8 +1.1
comp=Z,121nm,1.7s
PBDV i P pP 06 41 22.0 0.0
PBDV epP sP 06 41 27.5 +0.1
BOZC Bozcaada 85.43 354⇑ iP P 06 41 07.8 +0.1
BALY Balya 85.43 353⇑ iP P 06 41 08.3 +0.5
HAKT HAKKARI 85.45 340⇑ iP P 06 41 09.1 +1.0
CUC Castrocucco 85.45 2 eP P 06 41 07.8 -0.1
comp=Z,120nm,1.0s
CUC LR LR
comp=Z,334nm,22.0s
PAIG Paliouri 85.46 356 P P 06 41 07.6 -0.2
CMBC Cumbal 85.46 95 eP P 06 41 05.9 -2.8
KPRO Kipourio 85.50 358 P P 06 41 08.8 +0.7
KKUL Konya-Kulu 85.52 349⇑ iP P 06 41 09.5 +1.2
BTMN Batman 85.58 342⇑ iP P 06 41 10.3 +1.8
GRGR Grenville 85.64 75 PFAKE 06 41 20.0 +11
GRGR LR LR
comp=Z,457nm,20.0s
VSL Villasalto 85.64 7 eP P 06 41 08.5 -0.2
comp=Z,73nm,0.8s
VSL LR LR
comp=Z,427nm,19.0s
OTAV Otavalo 85.67 96 eP P 06 41 11.2 +1.5
OTAV Otavalo 85.67 96 eP P 06 41 09.9 +0.2
comp=Z,13nm,0.9s
OTAV LR LR
comp=Z,314nm,19.0s
DIYA Diyarbakir 85.75 343⇑ iP P 06 41 10.9 +1.5
KEK Kerkira 85.76 359 P P 06 41 10.0 +0.7
SJAC San Juan de Ar 85.80 90 eP P 06 41 07.9 -2.1
JAN Janina 85.80 358 P P 06 41 10.8 +1.2
SGD Sagiada 85.86 359 P P 06 41 10.7 +0.9
THL Klokotos Trika 85.87 357 P P 06 41 09.8 -0.1
AYVA Ayvalik 85.92 354⇑ iP P 06 41 10.4 +0.3
GDZ Gediz 85.94 352⇑ iP P 06 41 10.7 +0.3
IGT Igoumenitsa 85.94 359 P P 06 41 10.8 +0.6
AKSY ÅKSARAY - Alti 85.94 348⇑ iP P 06 41 11.4 +1.1
BWNR Bhubaneshwar 85.97 300 eP P 06 41 11.2 +0.6
BBGH Gun Hill 85.98 73 PFAKE 06 41 20.0 +9.3
BBGH LR LR
comp=Z,708nm,19.0s
SBUM Sibu 86.00 269 eP P 06 41 10.8 0.0
comp=Z,61nm,0.9s
FYTO Fytoko, Volos 86.00 357 P P 06 41 10.5 0.0
XOR Xorichi 86.03 357 P P 06 41 10.7 0.0
DEMI Demirci 86.04 352⇑ iP P 06 41 10.9 +0.1
NEO Neokhori 86.09 357 P P 06 41 10.9 -0.1
TTSI Tana Toraja 86.10 259 P P 06 41 11.0 -0.3
BOLV Bolvadin 86.17 350⇑ iP P 06 41 12.4 +0.9
FLOC Florencia 86.19 93 eP P 06 41 10.4 -1.4
AOS Alonnisos 86.20 356 P P 06 41 11.3 -0.2
SKIA Skiathos 86.22 356 P P 06 41 11.4 -0.2
MARD Mardin 86.23 343⇑ iP P 06 41 13.5 +1.6
KDHN Kadinhani 86.25 350⇑ iP P 06 41 12.5 +0.6
TIP Timpagrande 86.28 2 P P 06 41 12.6 +0.6
TIP Timpagrande 86.28 2 eP P 06 41 12.9 +0.9
comp=Z,216nm,1.0s
TIP LR LR
comp=Z,610nm,19.0s
YAHY KAYSERI_Yahyal 86.29 347⇑ iP P 06 41 13.4 +1.3
DSL Palaion Diasel 86.32 358 P P 06 41 12.9 +0.7
AGG Agios Georgios 86.40 357 P P 06 41 12.2 -0.3
AGG Agios Georgios 86.40 357 eP P 06 41 12.3 -0.3
AGG pmax pmax
comp=Z,475nm,0.8s
AGG Agios Georgios 86.40 357 eP P 06 41 12.3 -0.3
comp=Z,475nm,0.8s
ATAB Bozova 86.48 345⇑ iP P 06 41 14.6 +1.7
SMIA Simia 86.52 356 P P 06 41 12.9 -0.2
EVR Evrytania 86.52 358 P P 06 41 13.9 +0.7
KULA Kula-Manisa 86.57 352 P P 06 41 13.9 +0.4
MANT Manisa 86.60 352⇑ iP P 06 41 13.2 +0.8
ANDN Andirin 86.66 346⇑ iP P 06 41 15.1 +1.1
LKD2 Lefkada island 86.67 358 P P 06 41 14.2 +0.3
GZT Gaziantep 86.70 345⇑ iP P 06 41 15.6 +1.4
ATAL Atalanti 86.71 357 P P 06 41 13.6 -0.4
LKR Lokris 86.75 357 P P 06 41 13.4 -0.8
HCB Kahramanmara¯ 86.81 346⇑ iP P 06 41 15.8 +1.2
PVO Paravola 86.83 358 P P 06 41 15.3 +0.7
ANX Ano Chora 86.84 357 P P 06 41 15.8 +1.0
PDO Prodromos 86.86 358 P P 06 41 15.1 +0.4
URLA Izmir 86.87 354⇑ iP P 06 41 15.0 +0.1
CHOS Chios island 86.88 354 P P 06 41 15.0 +0.1
SPSI Sidrap Palu 86.88 259 P P 06 41 14.5 -0.6
AKO Adana 86.90 347⇑ iP P 06 41 15.7 +0.7
BAGO Egridir - ISPA 86.91 350⇑ iP P 06 41 15.1 0.0
EREA Eretria 86.95 356 P P 06 41 15.1 -0.1
KMER Konya-Meram 86.97 349⇑ iP P 06 41 16.0 +0.6
DSF Desfina 87.01 357 P P 06 41 15.0 -0.6
CTAO Charters Tower 87.02 228 eP P 06 41 15.5 -0.1
CTAO pmax pmax
comp=Z,38nm,0.9s
CTAO MLR MLR
comp=Z,2µm,19.0s
CTAO Charters Tower 87.02 228 eP P 06 41 15.5 -0.1
comp=Z,38nm,0.9s
CTAO LR LR
comp=Z,2µm,19.0s
SERG Sergoula 87.02 357 P P 06 41 16.4 +0.8
KALE Kalithea 87.04 357 P P 06 41 15.6 -0.1
KERG Konya-Eregli 87.11 348⇑ iP P 06 41 16.0 -0.2
CEL Celeste 87.19 2 eP P 06 41 15.4 -1.0
comp=Z,114nm,0.9s
CEL LR LR
comp=Z,532nm,20.0s
LAKA Lakka 87.19 357 P P 06 41 17.0 +0.6
MTKI Muara Teweh, K 87.20 264 P P 06 41 17.2 +0.5
VILL Villia 87.23 356 P P 06 41 15.9 -0.7
VLS Valsamata 87.28 359 P P 06 41 17.0 +0.2
PTL Penteli 87.32 356 P P 06 41 16.6 -0.4
KFL Anninata 87.35 358 P P 06 41 17.4 +0.3
PMPS Porto Santo 87.36 29 eP P 06 41 18.3 +1.0
comp=Z,196nm,1.0s
THAL Thalero 87.38 357 P P 06 41 17.0 -0.2
KLV Kalavryta, Ach 87.39 357 P P 06 41 17.7 +0.3
RLS Riolos of Patr 87.39 358 P P 06 41 18.3 +1.0
ATHU Athens Univers 87.41 356 P P 06 41 16.6 -0.8
BHPL Bhopal 87.47 308 eP P 06 41 17.6 -0.4
DRO Drossia 87.49 358 P P 06 41 18.6 +0.8
YURE YUREGIR 87.50 346 iP P 06 41 18.7 +0.8
PMAR Madeira 87.51 29 eP P 06 41 20.1 +1.9
comp=Z,249nm,1.3s
VLY Voula,Athens 87.52 356 P P 06 41 17.2 -0.8
KAPI Kappang 87.75 258 eP P 06 41 19.3 0.0
comp=Z,122nm,1.1s
KAPI LR LR
comp=Z,491nm,20.0s
ZKS Zakynthos 87.76 358 P P 06 41 18.7 -0.4
SURA Surathani 87.76 283 P P 06 41 20.2 +0.8
comp=Z,110nm,1.0s,comp=Z,6µm
GOLH Golhisar 87.77 351⇑ iP P 06 41 19.9 +0.7
CLTB Caltabellotta 87.78 4 eP P 06 41 19.5 +0.2
comp=Z,55nm,1.1s
CLTB LR LR
comp=Z,340nm,20.0s
AMT Artemida-Makis 87.91 358 P P 06 41 20.3 +0.5
KORT Korkueli 87.93 351⇑ iP P 06 41 19.8 -0.4
YER Yerkesik 87.97 352 P P 06 41 20.8 +0.6
ERMK Ermenek 88.02 349⇑ iP P 06 41 20.7 +0.1
MTN Manton Dam 88.02 244 eP P 06 41 20.3 -0.2
comp=Z,66nm,1.1s
BDRM Kayabasi 88.10 353⇑ iP P 06 41 20.2 -0.6
DGPR DIGLIPUR 88.18 290 eP P 06 41 21.5 +0.1
TURN Turunc 88.21 352⇑ iP P 06 41 21.7 +0.5
YAYL Yayladag 88.21 346⇑ iP P 06 41 20.2 -1.2
APE Apeiranthos 88.22 355⇑ iP P 06 41 19.8 -1.6
APE Apeiranthos 88.22 355 c iP P 06 41 19.8 -1.6
APE pmax pmax
comp=Z,101nm,1.5s
ITM Ithomi 88.25 357 P P 06 41 21.3 -0.2
CHLP Challavanipeta 88.35 300 eP P 06 41 22.0 -0.2
CHLP IAmb IAmb 06 41 23.4
comp=Z,141nm,0.9s
STKI Sintang 88.36 268 P P 06 41 22.2 0.0
FETY Fethiye 88.40 352 P P 06 41 22.3 +0.1
SURT Suratani 88.41 283 P P 06 41 23.1 +0.7
comp=Z,65nm,1.1s,comp=Z,732nm
GAZI Gazipasa 88.49 349⇑ iP P 06 41 21.7 -1.0
NGP Nagpur 88.52 306 eP P 06 41 22.6 -0.4
PYL PYLOS 88.54 358 P P 06 41 22.4 -0.4
VLI Veliai 88.68 357 P P 06 41 22.8 -0.7
AKAS Kas 88.76 351⇑ iP P 06 41 23.0 -1.0
KRAB Krabi 88.78 282 P P 06 41 25.1 +0.9
comp=Z,283nm,0.8s
TRTT Trang 88.81 282 P P 06 41 24.8 +0.4
comp=Z,161nm,1.1s
SKLT Songkhla 88.83 281 P P 06 41 25.3 +0.8
comp=Z,164nm,0.9s,comp=Z,2µm
ARG Arkhangelos 88.90 352 P P 06 41 23.9 -0.6
SANT Santorini 88.92 355 eP P 06 41 22.9 -1.8
comp=Z,68nm,0.7s
SANT LR LR
comp=Z,418nm,21.0s
SOEI Soe 89.13 252 P P 06 41 34.2 +8.3
SOEI Soe 89.13 252 eP P 06 41 25.3 -0.6
comp=Z,32nm,0.8s
KEST Kesra 89.38 8 P P 06 41 27.3 +0.4
comp=Z,41nm,1.0s,baz=204,slow=3.7,SNR=20
KEST Kesra 89.38 8 eP P 06 41 27.7 +0.8
comp=Z,37nm,0.9s
VIS Vishakhapatnam 89.38 301 eP P 06 41 27.2 +0.2
ANKY Antikythira Is 89.52 356 P P 06 41 27.4 0.0
PKDT Phuket 89.53 283 P P 06 41 28.6 +0.8
comp=Z,136nm,1.1s,comp=Z,2µm
PBA Port Blair 89.54 290 eP P 06 41 25.3 -2.5
PBA IAmb IAmb 06 41 27.6
comp=Z,88nm,1.2s
WDD Wied Dalam 89.56 3 PFAKE 06 41 40.0 +12
WDD LR LR
comp=Z,483nm,20.0s
CSS Mathiatis 89.63 348 P P 06 41 28.1 +0.1
CSS Mathiatis 89.63 348 eP P 06 41 28.2 +0.3
comp=Z,47nm,1.6s
CSS LR LR
comp=Z,145nm,21.0s
KARP Karpathos 89.63 353 eP P 06 41 27.3 -0.7
comp=Z,63nm,1.2s
EIDS Eidsvold 89.75 222 eP P 06 41 28.8 +0.4
comp=Z,55nm,1.5s
IDI Amoyia 90.03 355 eP P 06 41 28.7 -1.2
comp=Z,84nm,1.3s
LAST Lasithi 90.12 354 P P 06 41 30.0 -0.4
LAST Lasithi 90.12 354 eP P 06 41 30.7 +0.3
comp=Z,95nm,0.7s
MARH Ras Al Marh 90.13 345 eP P 06 41 31.9 +1.1
KULM Kulim 90.35 280 eP P 06 41 31.7 +0.1
comp=Z,46nm,0.9s
KULM LR LR
comp=Z,481nm,20.0s
RPR Rampur 90.38 304 eP P 06 41 31.9 +0.2
RPR IAmb IAmb 06 41 32.4
comp=Z,157nm,1.3s
PVM Polavaram 90.63 302 eP P 06 41 33.1 +0.3
PVM IAmb IAmb 06 41 33.9
comp=Z,256nm,0.7s
QASN Qassioun 90.65 345 eP P 06 41 33.8 +0.9
SRSP Sriramsagar 90.77 305 eP P 06 41 32.8 -0.7
SRSP IAmb IAmb 06 41 33.2
comp=Z,80nm,0.7s
IPM Ipoh 90.79 279 eP P 06 41 33.5 -0.2
comp=Z,52nm,0.7s
ZALF Zalf 91.09 344 eP P 06 41 35.4 +0.6
SALA Sala 91.39 345 eP P 06 41 37.0 +0.6
TCHB Talchebab 91.54 346 eP P 06 41 37.6 +0.7
ATAH Atahualpa 91.70 100 P P 06 41 39.0 +0.7
comp=Z,18nm,0.8s,baz=297,slow=2.0,SNR=14
HYBB Hyderabad (bro 91.97 304 eP P 06 41 38.9 -0.2
HYBB IAmb IAmb 06 41 39.6
comp=Z,180nm,1.0s
HYB Hyderabad 91.97 304⇑ iP P 06 41 40.0 +0.9
HYB Hyderabad 91.97 304 eP P 06 41 38.9 -0.2
KLRI Killari 92.33 306 eP P 06 41 40.2 -0.6
KLRI IAmb IAmb 06 41 41.0
comp=Z,277nm,0.8s
NJS Nagarjunasagar 92.35 303 eP P 06 41 40.6 -0.2
NJS IAmb IAmb 06 41 41.0
comp=Z,50nm,0.8s
WRAB Tennant Creek 92.38 238 c iP P 06 41 39.7 -1.1
WRAB pmax pmax
comp=Z,72nm,1.1s
WRAB Tennant Creek 92.38 238 eP P 06 41 39.6 -1.2
comp=Z,26nm,1.1s
WRAB LR LR
comp=Z,969nm,22.0s
WB2 Warramunga Arr 92.39 238 eP P 06 41 39.9 -0.9
comp=Z,25nm,1.0s
WRA Warramunga Arr 92.40 238 P P 06 41 39.2 -1.6
comp=Z,16nm,1.0s,baz=39,slow=5.3,SNR=63
WRA PKiKP PKiKP 06 46 28.9 -0.8
comp=Z,0.8nm,0.8s,baz=5.3,slow=1.8,SNR=5.5
WRA Warramunga Arr 92.40 238 iP P 06 41 39.7 -1.1
WRA pmax pmax
comp=Z,16nm,1.0s
LHMI Lhok Sumawe 92.50 283 P P 06 41 44.6 +3.1
LHMI Lhok Sumawe 92.50 283 eP P 06 41 41.9 +0.4
comp=Z,115nm,0.8s
ADKI Addanki 92.64 302 eP P 06 41 45.8 +3.7
CMBY CAMPBELL BAY 92.72 286 eP P 06 41 41.9 -0.6
SRLM Srisailam 92.94 303 eP P 06 41 43.1 -0.5
SRLM IAmb IAmb 06 41 43.9
comp=Z,120nm,1.3s
POO Poona 93.19 309 eP P 06 41 44.0 -0.7
BANOM Banah 93.29 327 P P 06 41 44.5 -0.6
BANOM Banah 93.29 327 P P 06 41 44.7 -0.4
SNR=5.8
BANOM P P 06 41 44.7 -0.4
SNR=5.8
BANOM Banah 93.29 327 P P 06 41 44.7 -0.4
SNR=5.8
PSI Prapat 93.36 280 eP P 06 41 45.3 -0.3
PSI pmax pmax
comp=Z,51nm,1.0s
PSI Prapat 93.36 280 eP P 06 41 45.3 -0.3
comp=Z,51nm,1.0s
RCLA Racherla 93.46 303 eP P 06 41 45.7 -0.3
RCLA IAmb IAmb 06 41 46.6
comp=Z,89nm,0.8s
UOSS Minazif 94.23 326 eP P 06 41 48.6 -0.8
comp=Z,62nm,1.1s
NAZ Nazwa, Dubai 94.37 327 P P 06 41 48.9 -1.2
HATD Hatta, Dubai 94.37 326 P P 06 41 49.1 -1.0
NGJI Ngawi 94.39 264 P P 06 41 51.3 +1.1
ASHO Ashiyiah 94.52 326 P P 06 41 49.7 -1.1
ASHO Ashiyiah 94.52 326 P P 06 41 49.0 -1.8
SNR=8.8
SKHT Srikalahasti 94.57 302 eP P 06 41 50.9 -0.1
SKHT IAmb IAmb 06 41 52.1
comp=Z,60nm,0.8s
FAQ Al Faqa, Dubai 94.61 327 P P 06 41 49.7 -1.5
MNSI Mandailing Nat 94.62 278 P P 06 41 52.7 +1.4
URV Uravakonda 94.72 304 eP P 06 41 50.6 -1.2
URV IAmb IAmb 06 41 51.4
comp=Z,36nm,0.8s
PWJI Pagerwojo 94.73 263 P P 06 41 50.4 -1.3
MDRS Chennai 94.88 301 eP P 06 41 52.4 -0.1
BIDO Bidbid 94.92 324 P P 06 41 51.5 -1.1
SNR=5.0
BIDO P P 06 41 51.5 -1.1
SNR=5.0
BIDO Bidbid 94.92 324 P P 06 41 51.5 -1.1
SNR=5.0
HOQ Hoqain 95.14 325 P P 06 41 52.5 -1.1
SNR=15
HOQ Hoqain 95.14 325 P P 06 41 52.5 -1.1
SNR=15
FITZ Fitzroy Crossi 95.29 246 eP P 06 41 53.7 -0.4
comp=Z,17nm,0.9s
GSI Gunungsitoli 95.35 280 P P 06 41 54.5 -0.1
GSI Gunungsitoli 95.35 280 eP P 06 41 54.1 -0.5
comp=Z,41nm,0.7s
SMDO Samad 95.38 324 P P 06 41 54.4 -0.4

	SNR=17								
SMDO	**Samad**	**95.38**	**324**	P		**P**	**06 41 54.4**	**-0.4**	
	SNR=17								
ARQ	**Araqi**	**95.63**	**326**	P		**P**	**06 41 55.5**	**-0.3**	
	SNR=20								
ARQ	**Araqi**	**95.63**	**326**	P		**P**	**06 41 55.5**	**-0.3**	
	SNR=20								
AS01	**Alice Springs**	**95.74**	**236**	*e*P		**P**	**06 41 55.4**	**-0.8**	
AS31	**Alice Springs**	**95.76**	**237**	*e*P		**P**	**06 41 55.8**	**-0.4**	
	comp=Z,2.1nm,0.9s								
ASAR	**Alice Springs**	**95.77**	**237**	P		**P**	**06 41 55.5**	**-0.8**	
	comp=Z,8.5nm,0.9s,baz=33,slow=4.1,SNR=57								
ASAR				PP		**PP**	**06 45 49.9**	**+1.1**	
	comp=Z,2.3nm,1.0s,baz=23,slow=8.3,SNR=3.7								
ASAR				PKIKP		**PKiKP**	**06 46 33.3**	**-2.2**	
	comp=Z,0.5nm,0.6s,baz=54,slow=1.6,SNR=4.1								
ASAR				PKKP		**PKKPdf**	**06 58 44.9**	**-0.2**	
	comp=Z,1.0nm,0.6s,baz=212,slow=2.0,SNR=9.7								
ASAR				LR		LR	07 21 46.9		
	comp=Z,414nm,19.1s,baz=156,slow=33								
JMDO	**Jabal Madar**	**96.00**	**324**	P		**P**	**06 41 56.6**	**-0.9**	
	SNR=9.3								
JMDO	**Jabal Madar**	**96.00**	**324**	P		**P**	**06 41 56.6**	**-0.9**	
	SNR=9.3								
KLSI		**96.11**	**271**	P		**P**	**06 41 56.6**	**-1.4**	
NNA	**Nana**	**96.52**	**101**	PFAKE			06 42 10.0	+10	
NNA				LR		LR			
	comp=Z,169nm,22.0s								
PTGA	**Pitinga**	**97.10**	**81**	PKKP		**PKKPdf**	**06 58 41.4**	**+0.3**	
	comp=Z,0.7nm,0.5s,baz=127,slow=4.8,SNR=4.5								
PTGA	**Pitinga**	**97.10**	**81**	*e*P		**P**	**06 42 02.0**	**-0.6**	
	comp=Z,20nm,1.4s								
PTGA				PKKP		**PKKPdf**	**06 58 41.4**	**+0.3**	
SNZO	**South Karori**	**98.00**	**198**	PFAKE			06 42 20.0	+14	
SNZO				LR		LR			
	comp=Z,2μm,20.0s								
STKA	**Stephens Creek**	**99.33**	**226**	P		**Pdif**	**06 42 10.8**	**-1.3**	
	comp=Z,3.1nm,0.9s,baz=329,slow=1.3,SNR=4.0								
MBWA	**Marble Bar**	**100.95**	**249**	PFAKE			06 42 30.0	+10	
MBWA				LR		LR			
	comp=Z,560nm,19.0s								
SACV	**Santiago Islan**	**101.73**	**42**	PFAKE			06 42 40.0	+17	
SACV				LR		LR			
	comp=Z,190nm,22.0s								
TAM	**Tamanrasset**	**101.81**	**12**	PFAKE			06 42 40.0	+16	
TAM				LR		LR			
	comp=Z,445nm,22.0s								
SAML	**Samuel**	**101.92**	**89**	PFAKE			06 42 40.0	+16	
SAML				LR		LR			
	comp=Z,302nm,20.0s								
LVC	**Limon Verde**	**109.52**	**102**	PKKPbc		PKKPbc	06 58 04.1	+0.5	
	comp=Z,14nm,0.8s,baz=254,slow=4.0,SNR=6.0								
LVC				PKKP		**PKKPab**	**06 58 17.7**	**+1.7**	
	comp=Z,31nm,0.8s,baz=155,slow=2.2,SNR=11								
TORD	**Torodi Ar. Bea**	**110.71**	**18**	Pdiff		**Pdif**	**06 43 03.2**	**0.0**	
	comp=Z,0.2nm,0.7s,baz=248,slow=1.6,SNR=2.1								
TORD				PKiKP		**PKiKP**	**06 47 02.0**	**-1.1**	
	comp=Z,0.7nm,0.4s,baz=340,slow=2.9,SNR=13								
TORD				PKKPbc		**PKKPbc**	**06 57 58.6**	**-0.6**	
	comp=Z,1.4nm,0.7s,baz=163,slow=2.0,SNR=11								
NWAO	**Narrogin (SRO)**	**111.70**	**244**	PFAKE			06 47 20.0		
NWAO				LR		LR			
	comp=Z,496nm,20.0s								
RCBR	**Riachuelo**	**114.52**	**63**	PFAKE			06 47 20.0	+10	
RCBR				LR		LR			
	comp=Z,302nm,21.0s								
DBIC	**Dimbokro**	**115.58**	**26**	PKP		**PKPdf**	**06 47 10.2**	**-2.1**	
	comp=Z,1.8nm,0.5s,baz=21,slow=1.3,SNR=4.1								
DBIC	**Dimbokro**	**115.58**	**26**	*e*PKIKP		**PKPdf**	**06 47 11.7**	**-0.7**	
DBIC	**Dimbokro**	**115.58**	**26**	*e*PKPdf		**PKPdf**	**06 47 11.7**	**-0.7**	
CPUP	**Villa Florida**	**119.02**	**95**	PKKPab		PKKPab	06 57 33.2	-0.9	
	comp=Z,7.7nm,0.8s,baz=127,slow=4.5,SNR=14								
PLCA	**Paso Flores**	**122.42**	**116**	PKP		**PKPdf**	**06 47 23.5**	**-1.2**	
	comp=Z,7.0nm,0.8s,baz=288,slow=2.8,SNR=9.6								
PLCA				PKKPbc		**PKKPbc**	**06 57 19.4**	**+1.0**	
	comp=Z,2.8nm,0.9s,baz=7.5,slow=9.1,SNR=3.6								
PLCA	**Paso Flores**	**122.42**	**116**	*e*PKPdf		**PKPdf**	**06 47 24.3**	**-0.4**	
PLCA				PKKPbc		**PKKPbc**	**06 57 19.4**	**+1.0**	
SPB	**Sao Paulo**	**122.62**	**85**	PFAKE			06 47 40.0	+14	
SPB				LR		LR			
	comp=Z,314nm,20.0s								
KMBO	**Kilima Mbogo**	**124.31**	**337**	PKP		**PKPdf**	**06 47 29.7**	**+0.2**	
	comp=Z,16nm,0.9s,baz=17,slow=4.5,SNR=30								
KMBO	**Kilima Mbogo**	**124.31**	**337**	*e*PKPdf		**PKPdf**	**06 47 30.6**	**+1.1**	
KMBO				LR		LR			
	comp=Z,397nm,20.0s								
MBAR	**Mbarara**	**125.00**	**345**	*e*PKIKP		**PKPdf**	**06 47 30.1**	**-0.6**	
MBAR				MLR		MLR			
	comp=Z,1μm,21.0s								
MBAR	**Mbarara**	**125.00**	**345**	*e*PKPdf		**PKPdf**	**06 47 30.1**	**-0.6**	
MBAR				LR		LR			
	comp=Z,1μm,21.0s								
TRQA	**Tornquist**	**125.08**	**108**	*e*PKPdf		**PKPdf**	**06 47 28.5**	**-1.3**	
TRQA				LR		LR			
	comp=Z,517nm,20.0s								
CHRN	**Cochrane**	**126.05**	**123**	*e*PKPdf		**PKPdf**	**06 47 31.3**	**0.0**	
ASCN	**Ascension**	**126.25**	**42**	PFAKE			06 47 50.0	+17	
ASCN				LR		LR			
	comp=Z,485nm,20.0s								
SBA	**Scott Base**	**133.94**	**189**	*e*PKIKP		**PKPdf**	**06 47 46.7**	**+1.3**	
SBA				MLR		MLR			
	comp=Z,569nm,19.0s								
SBA	**Scott Base**	**133.94**	**189**	*e*PKPdf		**PKPdf**	**06 47 46.7**	**+1.3**	
SBA				LR		LR			
	comp=Z,569nm,19.0s								
VNDA	**Vanda**	**134.12**	**190**	PKP		**PKPdf**	**06 47 44.5**	**-1.3**	
	comp=Z,1.8nm,0.9s,baz=351,slow=1.4,SNR=6.2								
VNDA				SKPab		**SKPbc**	**06 51 09.2**	**-1.5**	
	comp=Z,7.0nm,1.0s,baz=329,slow=3.6,SNR=12								
VNDA	**Vanda**	**134.12**	**190**	*e*PKIKP		**PKPdf**	**06 47 46.4**	**+0.6**	
VNDA	**Vanda**	**134.12**	**190**	*e*PKPdf		**PKPdf**	**06 47 46.4**	**+0.6**	
VNDA				SKPab		**SKPbc**	**06 51 09.2**	**-1.5**	
EFI	**East Falkland**	**136.13**	**119**	*e*PKIKP		**PKPdf**	**06 47 49.8**	**-0.4**	
EFI	**East Falkland**	**136.13**	**119**	*e*PKPdf		**PKPdf**	**06 47 49.8**	**-0.4**	
ABPO	**Ambohimpanom**	**138.13**	**317**	PFAKE			06 48 10.0	+15	
ABPO				LR		LR			
	comp=Z,190nm,20.0s								
LSZ	**Lusaka**	**139.79**	**346**	*e*PKHKP		PKPpre	06 47 50.9		
LSZ				MLR		MLR			
	comp=Z,471nm,20.0s								
LSZ	**Lusaka**	**139.79**	**346**	*e*PKPpre		PKPpre	06 47 50.9		
LSZ				LR		LR			
	comp=Z,471nm,20.0s								
TSUM	**Tsumeb**	**144.36**	**2**	PFAKE			06 48 20.0	+14	
TSUM				LR		LR			
	comp=Z,549nm,22.0s								
QSPA	**South Pole Qui**	**144.67**	**180**	*e*PKPdf		**PKPab**	**06 48 03.6**	**-0.5**	
QSPA				LR		LR			
	comp=Z,436nm,22.0s								
MATP	**Matopo**	**144.80**	**344**	*i* P		PKPbc	06 48 06.3	+0.1	
MATP				*i*			06 48 06.5		
	baz=70,slow=2.7								
HOPE	**Hope Point**	**148.70**	**112**	*e*PKPbc		**PKPbc**	**06 48 15.1**	**-1.1**	
LBTB	**Lobatse**	**149.73**	**348**	*e*PKPdf		**PKPdf**	**06 48 15.4**	**+0.3**	
LBTB				*e*PKPbc		**PKiKP**	**06 48 20.8**	**-0.1**	
BOSA	**Boshof**	**153.32**	**347**	*i* P		**PKPbc**	**06 48 26.2**	**-1.8**	
BOSA				*i*			06 48 26.6		
	baz=318,slow=1.1								
BOSA	**Boshof**	**153.32**	**347**	PKP		**PKPdf**	**06 48 20.0**	**-0.5**	
	comp=Z,7.7nm,0.9s,baz=318,slow=1.4,SNR=5.8								
BOSA				PKPbc		**PKPbc**	**06 48 27.9**	**-0.1**	
	comp=Z,26nm,0.7s,baz=7.3,slow=2.3,SNR=26								
BOSA	**Boshof**	**153.32**	**347**	*e*PKIKP		**PKPdf**	**06 48 20.6**	**+0.1**	
BOSA				*e*			06 48 28.1		
BOSA	**Boshof**	**153.32**	**347**	*e*PKPdf		**PKPdf**	**06 48 20.6**	**+0.1**	
BOSA				*e*PKPbc		**PKPbc**	**06 48 28.1**	**0.0**	
MAW	**Mawson**	**155.89**	**221**	PKP		**PKPdf**	**06 48 20.9**	**-1.7**	
	comp=Z,1.1nm,0.3s,baz=244,slow=12,SNR=4.4								
MAW				PKPab		**PKPab**	**06 48 50.1**	**+0.2**	
	comp=Z,18nm,1.0s,baz=69,slow=4.6,SNR=8.8								
MAW	**Mawson**	**155.89**	**221**	*e*PKIKP		**PKPdf**	**06 48 22.2**	**-0.4**	
MAW				*e*			06 48 49.9		
MAW	**Mawson**	**155.89**	**221**	*e*PKPdf		**PKPdf**	**06 48 22.2**	**-0.4**	
MAW				*e*PKPab		**PKPab**	**06 48 49.9**	**0.0**	
VNA1	**Neumayer--Stat**	**160.25**	**153**	PKP		**PKPdf**	**06 48 22.6**	**-5.2**	
SNAA	**Sanae**	**160.79**	**159**	PKP		**PKPdf**	**06 48 23.8**	**-4.7**	
SNAA	**Sanae**	**160.79**	**159**	*e*PKP2		**PKPab**	**06 49 09.0**	**-2.2**	
SNAA	**Sanae**	**160.79**	**159**	*e*PKPab		**PKPab**	**06 49 09.0**	**-2.2**	

IDC 23 06:37:45.9±3.3, 28°22S×176°40W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.6/26, mbtmp3.5/2, Error ellipse: s-maj=108.7km s-min=39.1km az=137.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.69**	**232**	Pn	Pn	06 38 16.5	-0.1
	93nm,0.3s,baz=72,slow=20,SNR=3.6						
RAO				Sn	Sn	06 38 34.3	-4.6
	108nm,0.3s,baz=102,slow=18,SNR=4.1						
ASAR	**Alice Springs**	**44.68**	**264**	P	P	06 46 00.1	-0.7
	0.2nm,0.4s,baz=103,slow=8.4,SNR=4.9						
WRA	**Warramunga Arr**	**45.48**	**269**	P	P	06 46 07.0	-0.2
	0.6nm,0.6s,baz=108,slow=6.1,SNR=5.1						
FINES	**FINESS Array B**	**143.55**	**342**	PKP	PKPbc	06 57 19.8	+0.6
	1.6nm,0.6s,baz=29,slow=3.2,SNR=5.9						
AKASG	**Malin Array Be**	**150.34**	**326**	PKPbc	PKPbc	06 57 39.6	+0.8
	0.1nm,0.3s,baz=45,slow=2.3,SNR=4.2						

IDC 23 06:40:03.9±54.0, 19°85S×179°11E, h0km, mb4.5/3, mb1 4.6/3, mb1mx3.9/27, mbtmp4.5/3, Error ellipse: s-maj=973.4km s-min=141.7km az=81.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**35.64**	**243**	P	P	06 47 03.8	0.0
	2.1nm,0.6s,baz=88,slow=13,SNR=7.3						
WRA	**Warramunga Arr**	**42.00**	**262**	P	P	06 47 57.1	-0.1
	3.5nm,0.5s,baz=98,slow=8.7,SNR=50						
ASAR	**Alice Springs**	**42.02**	**256**	P	P	06 47 57.2	-0.2
	5.9nm,0.5s,baz=89,slow=8.5,SNR=65						

IDC 23 06:58:00.4±3.5, 8°08S×158°99E, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.6/30, mbtmp3.8/3, Error ellipse: s-maj=150.0km s-min=37.1km az=135.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**26.62**	**241**	P	P	07 03 40.8	-0.1
	2.4nm,0.9s,baz=68,slow=9.7,SNR=4.7						
ILAR	**Eielson Array**	**82.96**	**20**	P	P	07 10 26.9	-0.1
	0.2nm,0.4s,baz=239,slow=5.0,SNR=8.1						
MKAR	**Makanchi Array**	**86.85**	**318**	P	P	07 10 47.4	+0.3
	0.4nm,0.8s,baz=87,slow=6.6,SNR=3.9						

IDC 23 06:58:05.8±1.9, 0.72N×125.72E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.5/34, mbtmp3.7/3, Error ellipse: s-maj=171.6km s-min=24.5km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.21**	**158**	P	P	07 03 02.8	-1.2
	2.7nm,0.9s,baz=336,slow=11,SNR=24						
ASAR	**Alice Springs**	**25.51**	**162**	P	P	07 03 37.1	+0.9
	0.5nm,0.4s,baz=338,slow=11,SNR=14						
MKAR	**Makanchi Array**	**59.47**	**327**	P	P	07 08 10.6	-0.1
	0.6nm,0.5s,baz=121,slow=6.8,SNR=7.7						

*ATH **23** 07:03:55.2, 38°12N×26°34E, h43km±1km, ML2.6/5, Error ellipse: s-maj=2.9km s-min=1.3km az=72.0*
*DDA **23** 07:03:55.6, 38°27N×26°56E, h23km, Md3.1*
*ISK **23** 07:03:55.5, 38°25N×26°53E, h5km, ML2.5*
*ISCJB **23** 07:03:56.1±0.5, 38°24N±0°02×26°50E±0°03, h9km±3km, Error ellipse: s-maj=5.0km s-min=3.0km az=145.0*
*CSEM **23** 07:03:56.3±0.1, 38°24N×26°51E, h8km, MD3.1, Error ellipse: s-maj=4.0km s-min=2.6km az=52.0*
*THE **23** 07:03:56.6, 38°19N×26°46E, h25km±2km, ML3.0/4, Error ellipse: s-maj=4.5km s-min=0.5km az=234.0*

ISC 23 07:03:55.3±0.9, 38°21N±0°02×26°49E±0°02, h13km±6km, n71, σ0°96/106, 1D, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URLA	**Izmir**	**0.17**	**30**	*i* P	**Pg**	**07 03 59.4**	**0.0**
URLA				*i* S	**Sg**	**07 04 01.8**	**-0.3**
URLA	**Izmir**	**0.17**	**30**	P	**Pg**	**07 03 59.4**	**0.0**
URLA				S	**Sg**	**07 04 01.8**	**-0.3**
DGB	**˜zmir**	**0.35**	**117**	*i* P	**Pb**	**07 04 03.0**	**-0.4**
DGB				*i* S	**Sb**	**07 04 08.2**	**-0.7**
CHOS	**Chios island**	**0.38**	**297**	*e*PG	**Pb**	**07 04 04.1**	**0.0**
CHOS				*e*SG	**Sb**	**07 04 10.5**	**+0.6**
CHOS	**Chios island**	**0.38**	**297**	P	**Pb**	**07 04 04.7**	**+0.6**
CHOS				S	**Sb**	**07 04 10.8**	**+0.9**
CHOS	**Chios island**	**0.38**	**297**	*e*Pg	**Pb**	**07 04 04.1**	**0.0**
CHOS	**Chios island**	**0.38**	**297**	P	**Pb**	**07 04 04.7**	**+0.6**
CHOS				*e*Sg	**Sb**	**07 04 10.5**	**+0.6**
CHOS	**Chios island**	**0.38**	**297**	P	**Pb**	**07 04 04.9**	**+0.8**
CHOS				S	**Sb**	**07 04 11.2**	**+1.3**
CHOS				AML	AML	07 04 11.6	
	comp=N,1966μm,0.3s						
CHOS				AML	AML	07 04 12.2	
	comp=E,3041μm,0.4s						
SMG	**Samos**	**0.57**	**151**	P	**Pb**	**07 04 07.6**	**+0.3**
SMG				S	**Sb**	**07 04 16.0**	**+0.6**
SMG	**Samos**	**0.57**	**151**	P	**Pb**	**07 04 07.6**	**+0.3**
SMG				S	**Sb**	**07 04 16.0**	**+0.6**
SMG	**Samos**	**0.57**	**151**	P	**Pb**	**07 04 07.4**	**+0.1**
SMG				S	**Sb**	**07 04 16.9**	**+1.5**
SMG				AML	AML	07 04 19.1	
	comp=N,3951μm,0.2s						
SMG				AML	AML	07 04 19.1	
	comp=E,3485μm,0.3s						
IZM	**Izmir**	**0.64**	**73**	*e*PG	**Pg**	**07 04 07.6**	**-0.2**
IZM				*e*SG	**Sb**	**07 04 16.6**	**-0.7**
IZM	**Izmir**	**0.64**	**73**	*e*Pg	**Pg**	**07 04 07.6**	**-0.2**
IZM				*e*Sg	**Sb**	**07 04 16.6**	**-0.7**
GCAM	**G?zelcaml?**	**0.78**	**131**	*i* P	**Pb**	**07 04 10.9**	**+0.1**
GCAM				*i* S	**Sb**	**07 04 21.6**	**+0.3**
GCAM	**G?zelcaml?**	**0.78**	**131**	P	**Pb**	**07 04 10.9**	**+0.1**
GCAM				S	**Sb**	**07 04 21.6**	**+0.3**
PRK	**Paraskevi**	**1.05**	**351**	P	**Pg**	**07 04 15.2**	**-0.3**
PRK				S	**Sg**	**07 04 29.0**	**-0.2**
PRK	**Paraskevi**	**1.05**	**351**	P	**Pg**	**07 04 15.2**	**-0.3**
PRK				S	**Sg**	**07 04 29.0**	**-0.2**
PRK	**Paraskevi**	**1.05**	**351**	P	**Pb**	**07 04 15.0**	**-0.4**
PRK				AML	AML	07 04 31.5	
	comp=E,1591μm,0.8s						
PRK				S	**Sn**	**07 04 31.7**	**+1.5**
PRK				AML	AML	07 04 31.8	
	comp=N,1158μm,0.4s						
AYVA	**Ayvalik**	**1.11**	**8**	*i* P	**Pb**	**07 04 16.1**	**-0.3**
AYVA				*i* S	**Sn**	**07 04 32.6**	**+0.9**
AYVA	**Ayvalik**	**1.11**	**8**	P	**Pb**	**07 04 16.0**	**-0.3**
AYVA				S	**Sn**	**07 04 32.6**	**+0.9**
SIGR	**SIGRI**	**1.11**	**334**	*e*PN	**Pn**	**07 04 16.6**	**-0.1**
SIGR				*e*SN	**Sn**	**07 04 31.9**	**0.0**
SIGR	**SIGRI**	**1.11**	**334**	P	**Pb**	**07 04 16.2**	**-0.3**
SIGR				S	**Sb**	**07 04 30.4**	**-0.5**
SIGR	**SIGRI**	**1.11**	**334**	*e*Pn	**Pn**	**07 04 16.6**	**-0.1**
SIGR	**SIGRI**	**1.11**	**334**	P	**Pg**	**07 04 17.0**	**+0.2**
SIGR				S	**Sb**	**07 04 30.4**	**-0.5**
SIGR				*e*Sn	**Sn**	**07 04 31.9**	**0.0**
SIGR	**SIGRI**	**1.11**	**334**	P	**Pg**	**07 04 17.0**	**+0.2**
SIGR				S	**Sb**	**07 04 30.1**	**-0.8**
SIGR				AML	AML	07 04 31.3	
	comp=N,527μm,0.4s						
SIGR				AML	AML	07 04 31.3	
	comp=E,541μm,0.4s						
AYDB	**Zeytinkoy-Aydi**	**1.14**	**103**	*e*PN	**Pg**	**07 04 17.3**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.14**	**103**	*e*Pn	**Pg**	**07 04 17.3**	**0.0**
AKS	**Akhisar**	**1.23**	**57**	*e*PN	**Pg**	**07 04 19.1**	**0.0**
AKS	**Akhisar**	**1.23**	**57**	*e*Pn	**Pg**	**07 04 19.1**	**0.0**
BODT	**Bodrum**	**1.32**	**150**	*e*PN	**Pg**	**07 04 21.6**	**+0.9**
BODT	**Bodrum**	**1.32**	**150**	P	**Pn**	**07 04 18.4**	**-1.2**
BODT	**Bodrum**	**1.32**	**150**	P	**Pn**	**07 04 18.4**	**-1.2**
BODT	**Bodrum**	**1.32**	**150**	*e*Pn	**Pg**	**07 04 21.6**	**+0.9**
APE	**Apeiranthos**	**1.37**	**214**	*e*PN	**Pg**	**07 04 22.5**	**+0.8**
APE	**Apeiranthos**	**1.37**	**214**	*e*Pn	**Pg**	**07 04 22.5**	**+0.8**
APE	**Apeiranthos**	**1.37**	**214**	P	**Pn**	**07 04 16.7**	**-3.6**
APE				S	**Sn**	**07 04 34.2**	**-4.1**
APE				AML	AML	07 04 45.2	
	comp=E,151μm,0.2s						
APE				AML	AML	07 04 46.5	
	comp=N,215μm,0.2s						
MLSB	**Milas**	**1.37**	**131**	*e*PN	**Pg**	**07 04 21.6**	**-0.1**
MLSB	**Milas**	**1.37**	**131**	*e*Pn	**Pg**	**07 04 21.6**	**-0.1**
BDRM	**Kayabasi**	**1.37**	**146**	*i* P	**Pg**	**07 04 22.1**	**+0.3**
BDRM				*i* S	**Sg**	**07 04 41.8**	**+2.2**
BDRM	**Kayabasi**	**1.37**	**146**	P	**Pg**	**07 04 22.1**	**+0.3**
BDRM				S	**Sg**	**07 04 41.8**	**+2.2**
EZN	**Ezine**	**1.62**	**356**	*e*PN	**Pb**	**07 04 25.1**	**+0.1**
EZN	**Ezine**	**1.62**	**356**	*e*Pn	**Pb**	**07 04 25.1**	**+0.1**
MANT	**Manisa**	**1.65**	**80**	*i* P	**Pb**	**07 04 25.2**	**-0.6**
MANT				*i* S	**Sb**	**07 04 45.6**	**-1.1**
MANT	**Manisa**	**1.65**	**80**	P	**Pb**	**07 04 25.2**	**-0.6**
MANT				S	**Sb**	**07 04 45.6**	**-1.1**
BOZC	**Bozcaada**	**1.66**	**348**	*i* P	**Pn**	**07 04 23.9**	**-0.3**
BOZC				*i* S	**Sb**	**07 04 46.8**	**+0.1**
KULA	**Kula-Manisa**	**1.74**	**79**	*e*PN	**Pb**	**07 04 27.2**	**+0.1**
KULA	**Kula-Manisa**	**1.74**	**79**	P	**Pb**	**07 04 27.3**	**+0.1**
KULA	**Kula-Manisa**	**1.74**	**79**	*e*Pn	**Pb**	**07 04 27.2**	**+0.1**
BALY	**Balya**	**1.76**	**30**	*i* P	**Pb**	**07 04 27.5**	**-0.1**
BALY				*i* S	**Sb**	**07 04 49.1**	**-0.6**
BALY	**Balya**	**1.76**	**30**	P	**Pb**	**07 04 27.5**	**-0.1**
BALY				S	**Sb**	**07 04 49.1**	**-0.6**
YER	**Yerkesik**	**1.79**	**126**	*e*PN	**Pb**	**07 04 28.1**	**+0.1**
YER	**Yerkesik**	**1.79**	**126**	*e*Pn	**Pb**	**07 04 28.1**	**+0.1**
BALB	**Balikesir**	**1.79**	**37**	*e*PN	**Pb**	**07 04 27.5**	**-0.6**
BALB	**Balikesir**	**1.79**	**37**	*e*Pn	**Pb**	**07 04 27.5**	**-0.6**
DEMI	**Demirci**	**1.93**	**64**	*i* P	**Pb**	**07 04 31.1**	**+0.5**
DEMI				*i* S	**Sb**	**07 04 55.2**	**+0.6**
DEMI	**Demirci**	**1.93**	**64**	P	**Pb**	**07 04 31.0**	**+0.5**
DEMI				S	**Sb**	**07 04 55.2**	**+0.6**
LIA	**Limnos Island**	**1.97**	**329**	P	**Pn**	**07 04 29.5**	**+1.1**
LIA				S	**Sn**	**07 04 51.0**	**-1.9**
GADA	**Gvkgeada**	**2.03**	**347**	*e*PN	**Pn**	**07 04 30.4**	**+1.1**
GADA	**Gvkgeada**	**2.03**	**347**	*e*Pn	**Pn**	**07 04 30.4**	**+1.1**
LPK	**Lapseki**	**2.17**	**6**	*e*PN	**Pb**	**07 04 33.0**	**-1.5**
LPK	**Lapseki**	**2.17**	**6**	*e*Pn	**Pb**	**07 04 33.0**	**-1.5**
GELI	**Tayfur-Gelibol**	**2.18**	**360**	*e*PN	**Pb**	**07 04 33.5**	**-1.2**
GELI	**Tayfur-Gelibol**	**2.18**	**360**	*e*Pn	**Pb**	**07 04 33.5**	**-1.2**
KRBG	**Karabiga-Canak**	**2.27**	**16**	*e*PN	**Pn**	**07 04 34.0**	**+1.4**
KRBG	**Karabiga-Canak**	**2.27**	**16**	*e*Pn	**Pn**	**07 04 34.0**	**+1.4**
SMTH	**Samothraki Isl**	**2.38**	**342**	P	**Pn**	**07 04 34.1**	**+0.1**
SMTH	**Samothraki Isl**	**2.38**	**342**	P	**Pn**	**07 04 34.1**	**+0.1**
KCTX	**Karacabey (Bur**	**2.51**	**35**	*e*PN	**Pn**	**07 04 37.1**	**+1.2**
KCTX	**Karacabey (Bur**	**2.51**	**35**	*e*Pn	**Pn**	**07 04 37.2**	**+1.2**
MRMT	**Marmara Adasi**	**2.54**	**19**	*e*PN	**Pn**	**07 04 38.0**	**+1.6**
MRMT	**Marmara Adasi**	**2.54**	**19**	*e*Pn	**Pn**	**07 04 38.0**	**+1.6**

*IDC **23** 07:32:10.7±0.6, 55°32S×27°80W, h0km, mb4.4/9, mb1 4.5/10, mb1mx4.2/21, mbtmp4.4/10, ML4.8/1, Error ellipse: s-maj=22.7km s-min=17.8km az=52.0*
*NEIC **23** 07:32:11.9±4.3, 55°35S×27°91W, h9km±26km, mb4.9/3, Error ellipse: s-maj=11.5km s-min=9.1km az=55.0*
*ISCJB **23** 07:32:12.4±0.5, 55°31S±0°07×28°0W±0°2, h26km, mb4.5/14, Error ellipse: s-maj=12.6km s-min=9.7km az=166.6*

ISC 23 07:32:14.5±0.5, 55°35S±0°10×27°9W±0°1, h26km, n38, σ0°81/33, mb4.6/13, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HOPE	**Hope Point**	**5.06**	**279**	*e*Pn	**Pn**	**07 33 27.2**	**-1.3**
	241nm,0.3s						
HOPE				*e*Sn	Sn	07 34 18.2	-7.9
VNA1	**Neumayer--Stat**	**17.61**	**158**	P	**P**	**07 36 18.7**	**+0.3**
SNAA	**Sanae**	**19.56**	**156**	P	**P**	**07 36 39.4**	**-0.5**
SNAA	**Sanae**	**19.56**	**156**	P	**P**	**07 36 39.6**	**-0.4**
	3.1nm,0.3s,baz=300,slow=10,SNR=248						
SNAA	**Sanae**	**19.56**	**156**	*e*P	**P**	**07 36 39.0**	**-0.9**
TRIS	**Tristan da Cun**	**21.15**	**37**	*e*P	**P**	**07 36 57.7**	**+0.3**
	21nm,0.3s						
PLCA	**Paso Flores**	**31.46**	**280**	P	**P**	**07 38 36.4**	**+2.6**
	4.2nm,1.0s,baz=284,slow=16,SNR=3.1						
QSPA	**South Pole Qui**	**34.90**	**180**	*e*P	**P**	**07 39 03.5**	**-0.1**
	12nm,0.7s						

KNT	**Kendrikon**	**0.72**	**193**	P	**Pg**	07 32 31.1	-0.1
KNT				S	**Sg**	07 32 39.7	-1.0
KNT				AML	AML	07 32 40.7	
	comp=E,1956µm,0.1s						
KNT				AML	AML	07 32 41.1	
	comp=N,2432µm,0.1s						
VTS	**Vitosha**	**0.73**	**6**	P	**Pb**	07 32 31.9	-0.1
VTS				S	**Sb**	07 32 41.7	-0.3
VTS	**Vitosha**	**0.73**	**6**	*e*Pg	**Pg**	07 32 31.5	+0.1
VTS				*e*Sg	**Sg**	07 32 40.4	-0.7
VTS	**Vitosha**	**0.73**	**6**	*i* Pg	**Pg**	07 32 31.9	-0.1
VTS	**Vitosha**	**0.73**	**6**	*e*Pg	**Pg**	07 32 31.5	+0.1
VTS	**Vitosha**	**0.73**	**6**	P	**Pb**	07 32 31.9	-0.1
VTS				*e*Sg	**Sg**	07 32 40.4	-0.7
VTS				S	**Sb**	07 32 41.7	-0.3
NVR	**Nevrokopi**	**0.76**	**132**	P	**Pg**	07 32 32.2	+0.2
NVR				S	**Sb**	07 32 42.6	-0.2
NVR	**Nevrokopi**	**0.76**	**132**	P	**Pg**	07 32 32.2	+0.2
NVR				S	**Sg**	07 32 42.4	+0.4
SRS	**Serrai**	**0.83**	**154**	P	**Pg**	07 32 33.3	0.0
SRS				S	**Sg**	07 32 44.4	+0.3
SRS	**Serrai**	**0.83**	**154**	P	**Pg**	07 32 33.3	0.0
SRS				S	**Sg**	07 32 44.4	+0.3
SRS	**Serrai**	**0.83**	**154**	P	**Pg**	07 32 33.3	0.0
SRS				AML	AML	07 32 44.8	
	comp=E,831µm,0.3s						
SRS				S	**Sb**	07 32 44.9	+0.2
SRS				AML	AML	07 32 46.9	
	comp=N,1044µm,0.2s						
PGB	**Panagyurishte**	**1.04**	**48**	P	**Pb**	07 32 37.0	-0.2
GRG	**Griva**	**1.05**	**211**	P	**Pb**	07 32 36.9	-0.5
GRG				S	**Sb**	07 32 50.7	-0.4
GRG	**Griva**	**1.05**	**211**	P	**Pb**	07 32 37.1	-0.3
GRG				S	**Sb**	07 32 50.8	-0.4
GRG	**Griva**	**1.05**	**211**	P	**Pb**	07 32 37.1	-0.3
GRG				S	**Sb**	07 32 50.8	-0.4
GRG				AML	AML	07 32 51.3	
	comp=N,888µm,0.3s						
GRG				AML	AML	07 32 51.9	
	comp=E,1065µm,0.3s						
SOH	**Sokhos**	**1.06**	**170**	P	**Pg**	07 32 37.7	+0.1
SOH				S	**Sn**	07 32 52.5	-0.1
SOH	**Sokhos**	**1.06**	**170**	P	**Pg**	07 32 37.7	+0.1
SOH				S	**Sn**	07 32 52.5	-0.1
SOH				AML	AML	07 32 53.6	
	comp=N,1401µm,0.4s						
SOH				AML	AML	07 32 54.0	
	comp=E,1096µm,0.5s						
RZN	**Rozhen**	**1.21**	**98**	P	**Pg**	07 32 40.8	+0.2
THE	**Thessaloniki**	**1.24**	**185**	P	**Pb**	07 32 40.7	+0.2
THE	**Thessaloniki**	**1.24**	**185**	P	**Pb**	07 32 40.7	+0.2
THE				S	**Sb**	07 32 56.3	-0.1
THE	**Thessaloniki**	**1.24**	**185**	P	**Pg**	07 32 40.9	-0.2
THE				S	**Sb**	07 32 56.3	-0.1
THE				AML	AML	07 32 59.4	
	comp=N,346µm,0.4s						
THE				AML	AML	07 32 59.6	
	comp=E,355µm,0.3s						
HORT	**Hortiatis**	**1.27**	**180**	P	**Pb**	07 32 41.1	0.0
HORT				S	**Sb**	07 32 55.8	-1.5
HORT	**Hortiatis**	**1.27**	**180**	P	**Pb**	07 32 41.1	0.0
HORT				S	**Sb**	07 32 57.2	-0.1
HORT	**Hortiatis**	**1.27**	**180**	P	**Pg**	07 32 41.5	0.0
HORT				S	**Sb**	07 32 57.2	-0.1
HORT				AML	AML	07 33 00.3	
	comp=E,369µm,0.2s						
HORT				AML	AML	07 33 02.8	
	comp=N,356µm,0.4s						
BARS	**Barje**	**1.35**	**315**	*e*Pg	**Pb**	07 32 42.5	0.0
BARS				*e*Sg	**Sn**	07 33 00.0	+0.2
BARS	**Barje**	**1.35**	**315**	*e*Pg	**Pb**	07 32 42.5	0.0
BARS				*e*Sg	**Sn**	07 33 00.0	+0.2
KAVA	**Kavala**	**1.36**	**129**	P	**Pg**	07 32 43.3	-0.2
KAVA	**Kavala**	**1.36**	**129**	P	**Pg**	07 32 43.3	-0.2
KAVA				S	**Sg**	07 33 01.5	+0.3
KAVA	**Kavala**	**1.36**	**129**	P	**Pg**	07 32 43.6	+0.1
ZAPS	**Zavoj**	**1.45**	**346**	*e*Pg	**Pn**	07 32 43.5	+0.2
ZAPS				*e*Sg	**Sn**	07 33 01.4	-0.9
PLG	**Polygyros**	**1.51**	**170**	P	**Pn**	07 32 43.8	-0.3
PLG	**Polygyros**	**1.51**	**170**	P	**Pn**	07 32 44.8	-0.4
PLG				S	**Sn**	07 33 03.7	0.0
PLG	**Polygyros**	**1.51**	**170**	P	**Pb**	07 32 44.8	-0.4
PLG				S	**Sn**	07 33 03.7	0.0
PLG				AML	AML	07 33 08.2	
	comp=N,141µm,0.4s						
PLG				AML	AML	07 33 08.6	
	comp=E,200µm,0.4s						
MPEP	**Malo Peshtene**	**1.56**	**17**	P	**Pg**	07 32 47.6	+0.4
OUR	**Ouranopolis**	**1.66**	**156**	P	**Pn**	07 32 45.5	-0.7
OUR	**Ouranopolis**	**1.66**	**156**	P	**Pn**	07 32 45.5	-0.7
FNA	**Florina**	**1.70**	**231**	P	**Pn**	07 32 47.5	+0.8
FNA	**Florina**	**1.70**	**231**	P	**Pn**	07 32 47.5	+0.8
SELS	**Selova**	**2.00**	**313**	*e*Pn	**Pn**	07 32 51.7	+0.8
SELS				*e*Sg	**Sg**	07 33 00.4	-1.2
BOVS	**Bovan**	**2.05**	**330**	*e*Pn	**Pn**	07 32 52.3	+0.8
BOVS				*e*Sg	**Sb**	07 33 20.6	+0.8
BOVS	**Bovan**	**2.05**	**330**	*e*Pn	**Pn**	07 32 52.3	+0.8
BOVS				*e*Sg	**Sb**	07 33 20.6	+0.8
ZAGS	**Zajecar**	**2.05**	**342**	*e*Pn	**Pn**	07 32 51.8	+0.3
ZAGS				*e*Sn	**Sn**	07 33 17.2	+0.2
ZAGS	**Zajecar**	**2.05**	**342**	*e*Pn	**Pn**	07 32 51.8	+0.3
ZAGS				*e*Sn	**Sn**	07 33 17.2	+0.2
BOLS	**Boljevac**	**2.14**	**337**	*e*Pn	**Pn**	07 32 52.8	+0.1
BOLS				*e*Sg	**Sb**	07 33 22.3	-0.1
BOLS	**Boljevac**	**2.14**	**337**	*e*Pn	**Pn**	07 32 52.8	+0.1
BOLS				*e*Sg	**Sb**	07 33 22.3	-0.1
SMTH	**Samothraki Isl**	**2.30**	**127**	P	**Pn**	07 32 55.1	+0.2
SMTH	**Samothraki Isl**	**2.30**	**127**	P	**Pn**	07 32 55.1	+0.2
ALN	**Alexandroupoli**	**2.41**	**113**	P	**Pn**	07 32 58.5	+2.1
ALN	**Alexandroupoli**	**2.41**	**113**	P	**Pn**	07 32 58.5	+2.1
ALN	**Alexandroupoli**	**2.41**	**113**	P	**Pb**	07 32 59.2	-1.3
GRUS	**Gruza**	**2.68**	**320**	*e*Pn	**Pn**	07 33 00.8	+0.6
GRUS	**Gruza**	**2.68**	**320**	*e*Pn	**Pn**	07 33 00.8	+0.6
KUBS	**Kucevo**	**2.75**	**338**	*e*Pn	**Pn**	07 33 00.0	-1.2
KUBS	**Kucevo**	**2.75**	**338**	*e*Pn	**Pn**	07 33 00.0	-1.2
IVAS	**Ivanjica**	**2.77**	**309**	*e*Pn	**Pn**	07 33 01.8	+0.3
IVAS				*e*Sn	**Sn**	07 33 36.5	+1.6
IVAS	**Ivanjica**	**2.77**	**309**	*e*Pn	**Pn**	07 33 01.8	+0.3
IVAS				*e*Sn	**Sn**	07 33 36.5	+1.6
TRUS	**Trudelj**	**3.08**	**321**	*e*Pn	**Pn**	07 33 04.2	-1.5
TRUS	**Trudelj**	**3.08**	**321**	*e*Pn	**Pn**	07 33 04.2	-1.5
DIVS	**Divibare**	**3.20**	**315**	*e*Pn	**Pn**	07 33 07.3	-0.1
DIVS				*e*Sn	**Sn**	07 33 44.8	-0.6
DIVS	**Divibare**	**3.20**	**315**	*e*Pn	**Pn**	07 33 07.3	-0.1
DIVS				*e*Sn	**Sn**	07 33 44.8	-0.6
BBLS	**Lazići**	**3.38**	**308**	*e*Pn	**Pn**	07 33 10.6	+0.7
BBLS				*e*Sn	**Sn**	07 33 50.8	+0.9
BBLS	**Lazići**	**3.38**	**308**	*e*Pn	**Pn**	07 33 10.6	+0.7
BBLS				*e*Sn	**Sn**	07 33 50.8	+0.9
BZS	**Buzias**	**3.90**	**344**	*e*Pn	**Pn**	07 33 16.3	-0.7
BZS	**Buzias**	**3.90**	**344**	*e*Pn	**Pn**	07 33 16.3	-0.7

MEX 23 07:34:24.4±0.4, 14°40N×93°08W, h108km±34km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.08**	**26**	*e*P	Pn	07 34 57.4	-1.2
CCIG				*e*S	Sn	07 35 22.9	-1.7

JMA 23 07:36:13.9±0.1, 37°81N×145°09E, h27km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.97**	**296**	P	Pn	07 37 00.9	+1.7
OFUJ				S	Sn	07 37 35.7	+1.7
JIO	**Ouri**	**3.02**	**283**	P	Pn	07 37 01.4	+1.5
JIO				S	Sn	07 37 36.7	+1.5
MIYJ	**Miyakonagasawa**	**3.11**	**306**	P	Pn	07 37 02.6	+1.5
MIYJ				S	Sn	07 37 38.8	+1.4
JMK	**Ichinoseki**	**3.25**	**292**	P	Pn	07 37 04.8	+1.8
JMK				S	Sn	07 37 42.9	+2.1
JOM	**Ohasama**	**3.41**	**300**	P	Pn	07 37 07.2	+2.0
JOM				S	Sn	07 37 47.7	+3.0
JOU	**Okura**	**3.54**	**280**	P	Pn	07 37 09.2	+2.2
JOU				S	Sn	07 37 50.0	+2.0
JFT	**Otama**	**3.78**	**267**	P	Pn	07 37 12.5	+2.1
JFT				S	Sn	07 37 55.5	+1.4
JRG	**Rokugo**	**3.83**	**296**	P	Pn	07 37 13.9	+2.8
JRG				S	Sn	07 37 58.6	+3.3
JYK	**Kaneyama**	**3.88**	**288**	P	Pn	07 37 14.3	+2.6
JYK				S	Sn	07 37 59.6	+3.2
JAH	**Hinai**	**4.21**	**306**	P	Pn	07 37 19.0	+2.8
JTM	**Tenmabayashi**	**4.31**	**315**	P	Pn	07 37 19.7	+2.1
JTM				S	Sn	07 38 08.6	+1.6
JOT	**Ohata**	**4.74**	**320**	P	Pn	07 37 25.5	+1.9
JOT				S	Sn	07 38 18.9	+1.3
JCH	**Churui**	**4.98**	**345**	P	Pn	07 37 26.4	-0.4
JCH				S	Sn	07 38 20.9	-2.5
JKB	**Kayabe**	**5.13**	**324**	P	Pn	07 37 30.4	+1.5
NEM2	**Nemuro 2**	**5.57**	**5**	P	Pn	07 37 31.4	-3.6
NEM2				S	Sn	07 38 30.0	-8.1
JOSM	**Okushiri--Mats**	**6.07**	**316**	P	Pn	07 37 43.9	+2.1
JTKR	**Abashiri--Toko**	**6.22**	**352**	P	Pn	07 37 43.0	-0.9
JTKR				S	Sn	07 38 49.3	-4.7

IDC 23 07:43:43.4±2.5, 54°29N×86°05E, h0km, mb1 3.0/2, mb1mx2.9/45, mbtmp3.0/2, ML2.8/2, Error ellipse: s-maj=19.0km s-min=11.6km az=50.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**0.80**	**246**	*i*		07 49 00.0	
	baz=62, slow=317, SNR=2.8						
ZALV	**Zalesovo Beam**	**0.80**	**245**	Pg	Pg	07 43 57.8	-0.9
	0.6nm,0.3s,baz=62,slow=17,SNR=6.5						
ZALV				Lg	Lg	07 44 10.2	
	2.9nm,0.3s,baz=68,slow=30,SNR=20						
ZALV				Rg	Rg	07 44 15.6	
	8.5nm,0.9s,baz=69,slow=28,SNR=21						
KURBB	**Kurchatov Arra**	**5.88**	**234**	Pn	Pn	07 45 12.3	+0.7
	0.2nm,0.3s,baz=50,slow=13,SNR=5.8						
MKAR	**Makanchi Array**	**7.87**	**199**	Pn	Pn	07 45 40.0	+1.0
	0.2nm,0.3s,baz=20,slow=14,SNR=11						

*BJI **23** 07:51:48.5, 7°10S×129°62E, h211km, mb4.5/16, mB4.6/12*
*DJA **23** 07:51:52.2±0.6, 7°S±4°×12°9E±°, h159km±20km, M4.9/2, mB5.1/1, mb4.8/2, MLv4.9/2, Mw(mB)4.5/1*
*IDC **23** 07:51:53.6±1.9, 6°73S×129°16E, h217km±19km, mb3.8/13, mb1 4.0/17, mb1mx3.8/31, mbtmp4.4/17, MS3.9/1, Ms1 3.9/1, ms1mx2.9/32, Error ellipse: s-maj=21.6km s-min=10.2km az=76.0*
*ISCJB **23** 07:51:54.9±0.2, 6°84S±0.03°×129°11E±0.05, h250km, mb4.4/40, Error ellipse: s-maj=6.7km s-min=3.8km az=172.3*
*NEIC **23** 07:51:54.2±0.5, 6°74S×129°11E, h224km±5km, mb4.8/24, Error ellipse: s-maj=7.3km s-min=4.8km az=75.0*

ISC 23 07:51:55.9±0.4, 6°87S±0.04°×129°22E±0.05, h250km, n86, σ28°47/102, mb4.4/40, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAUI	**Saumlaki**	**2.34**	**118**	P	**Pn**	07 52 41.1	-0.5
SAUI				S	**S**	07 53 10.8	-6.8
SAUI	**Saumlaki**	**2.34**	**118**	*e*Pn	**Pn**	07 52 41.0	-0.5
SAUI				*e*S	**S**	07 53 11.6	-6.0
FAKI	**Fak Fak**	**4.95**	**38**	P	**Pn**	07 53 08.0	-3.2
FAKI				S	**S**	07 54 02.3	-8.9
FAKI	**Fak Fak**	**4.95**	**38**	*e*Pn	**Pn**	07 53 08.1	-3.2
FAKI				*e*S	**S**	07 54 03.2	-8.0
SOEI	**Soe**	**5.68**	**239**	P	**Pn**	07 53 18.3	-1.9
SOEI				S	S	07 54 18.8	-8.7
SOEI	**Soe**	**5.68**	**239**	*e*Pn	**Pn**	07 53 18.6	-1.6
SOEI				*e*S	**S**	07 54 23.5	-4.0
SANI	**Sanana**	**5.78**	**326**	P	**Pn**	07 53 20.0	-1.4
MTN	**Manton Dam**	**6.22**	**163**	*e*Pn	**Pn**	07 53 26.2	-0.7
MTN				*e*S	**S**	07 54 35.1	-4.7
SIJI	**Sorong**	**6.30**	**19**	P	**Pn**	07 53 23.6	-4.4
	7.8nm,0.3s,baz=172,slow=15,SNR=2.5						
SIJI				S	**S**	07 54 33.2	-8.4
	23nm,0.3s,baz=91,slow=23,SNR=6.6						
SWI	**Sorong**	**6.31**	**19**	P	**Pn**	07 53 24.7	-3.3
SWI				S	S	07 54 31.3	-10
BATI	**Baumata**	**6.42**	**239**	P	**Pn**	07 53 28.8	-0.6
PLAI	**Plampang**	**11.50**	**260**	P	**Pn**	07 54 29.7	-0.8
FITZ	**Fitzroy Crossi**	**11.69**	**197**	P	**Pn**	07 54 33.9	-1.9
	4.8nm,0.3s,baz=24,slow=9.8,SNR=64						
FITZ				S	**S**	07 56 43.0	-3.4
	1.5nm,0.3s,baz=247,slow=21,SNR=3.6						
FITZ	**Fitzroy Crossi**	**11.69**	**197**	*e*Pn	**Pn**	07 54 34.4	-1.4
FITZ				S	**S**	07 56 43.0	-3.4
WRAB	**Tennant Creek**	**13.90**	**160**	*e*Pn	**Pn**	07 55 02.6	-0.4
WRA	**Warramunga Arr**	**13.91**	**160**	P	**Pn**	07 55 02.2	-0.8
	2.4nm,0.3s,baz=349,slow=11,SNR=65						
WRA				S	**S**	07 57 33.2	-4.0
	1.9nm,0.3s,baz=339,slow=22,SNR=6.9						
WB2	**Warramunga Arr**	**13.91**	**160**	*e*Pn	**Pn**	07 55 02.4	-0.7
JAGI	**Jajag, Banyuwa**	**15.02**	**263**	*e*Pn	**Pn**	07 55 14.4	-2.1
COEN	**Coen**	**15.42**	**118**	*e*P	**Pn**	07 55 22.9	+1.6
	122nm,1.4s						
MBWA	**Marble Bar**	**16.91**	**212**	*e*P	**Pn**	07 55 37.8	-1.1
	47nm,1.8s						
AS31	**Alice Springs**	**17.29**	**165**	*e*P	**Pn**	07 55 43.7	+0.4
	11nm,0.4s						
ASAR	**Alice Springs**	**17.29**	**165**	P	**Pn**	07 55 43.6	+0.3
	4.8nm,0.3s,baz=346,slow=10,SNR=376						
ASAR				S	**S**	07 58 47.2	-0.8
	0.4nm,0.3s,baz=348,slow=23,SNR=11						
AS01	**Alice Springs**	**17.30**	**165**	*e*P	**Pn**	07 55 43.2	-0.2
CTA	**Charters Tower**	**21.11**	**130**	P	**P**	07 56 23.6	+1.8
	2.5nm,0.3s,baz=307,slow=12,SNR=7.7						
CTAO	**Charters Tower**	**21.11**	**130**	*e*P	**P**	07 56 23.9	+2.2
	24nm,1.6s						
STKA	**Stephens Creek**	**27.43**	**157**	P	**P**	07 57 20.2	+1.4
	1.4nm,0.4s,baz=325,slow=14,SNR=3.0						
TPUB	**Ta-pu**	**31.14**	**345**	*e*P	**P**	07 57 48.9	-2.8
	17nm,1.3s						
YOJ	**Yonaguni jima**	**31.73**	**349**	*e*P	**P**	07 57 55.9	-0.9
	21nm,0.7s						
YHNB	**Yeheng**	**32.27**	**347**	*e*P	**P**	07 58 01.1	-0.5
	29nm,1.3s						
CAN	**Canberra**	**33.65**	**150**	*e*P	**P**	07 58 16.8	+3.4
	159nm,1.9s						
CMAR	**Chiang Mai Arr**	**39.06**	**311**	P	**P**	07 58 58.9	-0.3
	2.1nm,0.6s,baz=139,slow=7.1,SNR=9.1						
GYA	**Guiyang**	**39.71**	**327**	*e*P	**P**	07 59 05.8	+1.2
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
NJ2	**Nanjing**	**39.95**	**346**	*e*P	**P**	07 59 05.3	-1.0
NJ2				S	**S**	08 04 54.0	+1.5
NJ2				pmax	pmax		
	comp=Z,20nm,0.5s						
NJ2				LR	LR		
	comp=N,1µm,22.0s						
NJ2				LR	LR		
	comp=E,2µm,19.9s						
NJ2				LR	LR		
	comp=Z,1µm,18.8s						
KMI	**Kunming**	**40.94**	**322**	P	P	07 59 19.0	+4.2
KMI				pmax	pmax		
	comp=Z,13nm,0.6s						
MAJO	**Matsushiro**	**44.00**	**10**	*e*P	**P**	07 59 38.2	-0.7
	10.0nm,0.8s						
MJAR	**Matsushiro Arr**	**44.00**	**10**	P	**P**	07 59 37.4	-1.6
	4.4nm,0.7s,baz=189,slow=9.4,SNR=17						
MJB9	**Matsu-Tunnel**	**44.01**	**10**	*e*P	**P**	07 59 38.2	-0.7
	2.5nm,0.8s						
KSAR	**Wonju Array Be**	**44.10**	**358**	P	**P**	07 59 39.9	+0.2
KSRS	**Korea Array**	**44.11**	**359**	P	**P**	07 59 39.9	+0.1
	2.1nm,0.6s,baz=179,slow=11,SNR=12						
KS01	**Wonju Array Si**	**44.14**	**358**	*e*P	**P**	07 59 39.5	-0.5
HHC	**Hu-ho-hao-te**	**50.19**	**343**	*e*P	**P**	08 00 28.3	+1.7
HHC				S	**S**	08 07 23.9	+4.8
HHC				pmax	pmax		
	comp=Z,110nm,5.0s						
HHC				LR	LR		
	comp=N,140nm,17.4s						
HHC				LR	LR		
	comp=E,110nm,18.7s						
USRK	**Ussuriysk Ar.**	**50.90**	**3**	P	**P**	08 00 31.9	+0.2
	4.3nm,0.6s,baz=175,slow=5.9,SNR=10						
WHZ	**Wether Hill Ro**	**51.24**	**146**	*e*P	**P**	08 00 37.0	+2.7
	141nm,1.7s						
MDJ	**Mudanjiang**	**51.25**	**0**	P	**P**	08 00 36.4	+2.1
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.4s						
MDJ				pmax	pmax		
	comp=Z,69nm,7.2s						
RPZ	**Rata Peaks**	**51.81**	**142**	*e*P	**P**	08 00 42.0	+3.5
	97nm,1.7s						
ASAJ	**Asahikawa**	**52.17**	**12**	*e*P	**P**	08 00 42.1	+1.0
	14nm,1.2s						
RAO	**Raoul Island**	**54.43**	**121**	LR	LR	08 23 03.5	
	comp=Z,121nm,21.1s,baz=283,slow=34						
KLR	**Kul'dur**	**55.91**	**2**	P	**P**	08 01 08.2	+0.2
	2.5nm,0.8s,baz=210,slow=3.0,SNR=7.8						
SONM	**Songino Array**	**58.08**	**342**	P	**P**	08 01 24.1	+0.8
	1.1nm,0.6s,baz=162,slow=6.1,SNR=4.8						
WMQ	**Urumqi**	**62.87**	**327**	*e*P	**P**	08 01 57.6	+1.9
WMQ				pmax	pmax		
	comp=Z,16nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,130nm,4.3s						
PEA0	**Petropavlovsk-**	**64.45**	**19**	*e*P	**P**	08 02 07.1	+1.5
PETK	**Petropavlovsk-**	**64.45**	**19**	P	**P**	08 02 06.6	+0.9
	5.0nm,0.6s,baz=177,slow=3.5,SNR=6.9						
KSH	**Kashi**	**67.41**	**318**	*e*P	**P**	08 02 26.8	+1.9
KSH				*e*pP	pP	08 03 18.4	-3.8
KSH				*e*sP	sP	08 03 42.6	-6.5
KSH				PcS		08 06 56.4	
KSH				S	**S**	08 11 03.1	+2.7
KSH				ScS	**ScS**	08 11 59.5	+0.7
KSH				pmax	pmax		
	comp=Z,44nm,2.9s						
KSH				LR	LR		
	comp=N,100nm,6.8s						
KSH				LR	LR		
	comp=E,96nm,7.5s						
KSH				LR	LR		
	comp=Z,130nm,7.5s						
MK01	**Makanchi Array**	**67.68**	**327**	*e*P	**P**	08 02 26.9	+0.6
MK01				*e*PcP	**PcP**	08 02 52.0	+0.7
MK31	**Makanchi Array**	**67.70**	**327**	*e*P	**P**	08 02 26.9	+0.4
MK31				*e*PcP	**PcP**	08 02 52.6	+1.2
MKAR	**Makanchi Array**	**67.70**	**327**	P	**P**	08 02 27.0	+0.5
	2.5nm,0.4s,baz=126,slow=7.6,SNR=44						
MKAR	**Makanchi Array**	**67.70**	**327**	*e*P	**P**	08 02 26.9	+0.5
MKAR				*e*PcP	**PcP**	08 02 52.6	+1.2
MAKZ	**Makanchi**	**67.88**	**327**	*e*P	**P**	08 02 28.0	+0.4
	2.2nm,0.5s						
ZAA0	**Zalesovo Array**	**71.13**	**334**	*e*P	**P**	08 02 47.2	0.0
ZALV	**Zalesovo Beam**	**71.13**	**334**	P	**P**	08 02 46.3	-0.9
	2.1nm,0.5s,baz=128,slow=5.5,SNR=8.2						
VOSK	**Vostochnaya**	**77.08**	**328**	*e*P	**P**	08 03 21.6	0.0
	2.6nm,0.5s						
TIXI	**Tiksi**	**78.36**	**360**	*e*P	**P**	08 03 29.1	+0.9
	8.4nm,0.4s						
NRIK	**Noril'sk**	**81.25**	**346**	P	**P**	08 03 43.7	0.0
	2.3nm,0.4s,baz=124,slow=6.4,SNR=6.0						
ABKAR	**Akbulak array**	**81.93**	**322**	*e*P	**P**	08 03 48.1	+0.3
SDPT	**Sand Point**	**84.63**	**33**	*e*P	**P**	08 04 02.0	+0.7
	68nm,1.1s						
OHAK	**Old Harbor**	**89.01**	**32**	*e*P	**P**	08 04 23.5	+1.2
	206nm,1.9s						
TT01	**Tatalina**	**89.21**	**26**	*e*P	**P**	08 04 24.2	+1.1
TTA	**Tatalina**	**89.22**	**26**	*e*P	**P**	08 04 24.3	+1.0
	19nm,1.9s						
PPLA	**Purkeypile**	**90.90**	**27**	*e*P	**P**	08 04 32.1	+0.8
	16nm,1.5s						
MLY	**Manley**	**91.99**	**25**	*e*P	**P**	08 04 37.1	+1.0
	13nm,2.0s						
RND	**Reindeer**	**92.49**	**26**	*e*P	**P**	08 04 38.4	-0.1
	4.9nm,1.2s						
WRH	**Wood River Hil**	**93.00**	**25**	*e*P	**P**	08 04 41.1	+0.4
	14nm,1.8s						
ILAR	**Eielson Array**	**93.56**	**25**	P	**P**	08 04 42.1	-1.1
	0.6nm,0.8s,baz=264,slow=4.6,SNR=6.8						
DOT	**Dot Lake**	**94.65**	**27**	*e*P	**P**	08 04 48.6	+0.2
	48nm,2.0s						
CRQM	**Cirque**	**94.79**	**29**	*e*P	**P**	08 04 50.3	+1.1
	6.1nm,0.8s						
SNOW	**Snow King Moun**	**116.31**	**45**	*e*PKPdf	**PKPdf**	08 10 11.7	+1.4
BW06	**Boulder Array**	**117.35**	**45**	*e*PKPdf	**PKPdf**	08 10 13.8	+1.6
P18A	**Preston Nutter**	**117.72**	**49**	*e*PKPdf	**PKPdf**	08 10 13.6	+0.4
TXAR	**Lajitas Array**	**125.53**	**59**	PKP	**PKPdf**	08 10 28.4	+0.1
	0.2nm,0.6s,baz=208,slow=2.4,SNR=3.9						
TORD	**Torodi Ar. Bea**	**128.03**	**281**	PKP	**PKPdf**	08 10 33.9	+0.7
	0.4nm,0.6s,baz=76,slow=3.0,SNR=5.3						
GLAT	**Glass**	**134.26**	**45**	*e*PKPdf	**PKPdf**	08 10 45.5	+1.1
BINY	**Binghamton**	**138.34**	**28**	*e*PKPdf	**PKPdf**	08 10 52.0	+0.1
CPUP	**Villa Florida**	**146.39**	**169**	PKPbc	**PKPab**	08 11 09.9	+0.4
	2.4nm,0.9s,baz=96,slow=3.5,SNR=4.6						
CPUP	**Villa Florida**	**146.39**	**169**	*e*PKPbc	**PKPab**	08 11 10.1	+0.6
LPAZ	**La Paz**	**151.28**	**143**	PKPbc	**PKPbc**	08 11 23.6	+2.0
	0.3nm,0.3s,baz=243,slow=6.8,SNR=5.4						
LPAZ	**La Paz**	**151.28**	**143**

n32,σ1$09/52,22C-11D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRZ	**Przheval'sk** baz=2.0	**1.61**	**356**	⇑*e*P	**Pn**	**08 58 11.4**	**-1.4**
PRZ	baz=2.0			⇑*i*S	**Sb**	**08 58 34.2**	**-0.3**
KDJ	**Kajisay** baz=325	**1.61**	**321**	⇓*e*P	**Pn**	**08 58 10.5**	**-2.5**
KDJ	baz=325			⇓*i*S	**Sn**	**08 58 31.7**	**-2.4**
ANVS	**Anan'yevo** baz=345	**2.01**	**341**	⇑*e*P	**Pn**	**08 58 18.7**	**+0.3**
ANVS	baz=345			⇑*e*S	**Sn**	**08 58 44.6**	**+0.7**
SATY	**Saty** 140nm,0.4s	**2.18**	**357**	*e*P	**Pg**	**08 58 26.1**	**+0.3**
SATY	114nm,0.3s			*e*S	**Sb**	**08 58 52.6**	**+1.6**
ULHL	**Ulahol** baz=311	**2.20**	**309**	⇑*i*P	**Pn**	**08 58 21.1**	**+0.1**
ULHL	baz=311			⇑*i*S	**Sn**	**08 58 48.7**	**+0.1**
ZHN	**Zhinishke** 54nm,0.3s	**2.29**	**358**	*e*P	**Pb**	**08 58 25.4**	**-0.2**
ZHN	164nm,0.3s			*e*S	**Sn**	**08 58 51.5**	**+0.9**
TNSS	**Tian-Shan** 71nm,0.4s	**2.47**	**332**	*e*P	**Pb**	**08 58 29.4**	**+0.6**
TNSS	124nm,0.8s			*e*S	**Sb**	**08 58 58.6**	**-0.9**
SHLS	**Shalkode** 37nm,0.3s	**2.49**	**23**	*e*P	**Pg**	**08 58 32.4**	**+0.8**
SHLS	94nm,0.6s			*e*S	**Sg**	**08 59 03.7**	**-0.1**
BOOM	**Boomskoye usch** baz=312	**2.52**	**310**	⇑*i*P	**Pn**	**08 58 25.4**	**-0.1**
BOOM	baz=312			⇑*i*S	**Sn**	**08 58 56.2**	**-0.4**
MDOK	**Medeo** 44nm,0.4s	**2.54**	**335**	*e*P	**Pb**	**08 58 30.4**	**+0.5**
MDOK	69nm,0.4s			*e*S	**Sb**	**08 58 59.7**	**-1.6**
PDGK	**Podgornoye** 24nm,0.5s	**2.55**	**16**	⇓Pn	**Pb**	**08 58 28.5**	**-1.4**
PDGK	68nm,0.6s			⇑Lg	Lg	08 59 04.0	
KOTS	**Kotyrbulak**	**2.58**	**336**	*e*P	**Pb**	**08 58 32.0**	**+1.4**
KOTS				*e*S	**Sb**	**08 59 02.7**	**+0.1**
KPKS	**Kokpek** 134nm,0.4s	**2.59**	**2**	*e*P	**Pg**	**08 58 33.2**	**-0.4**
KPKS	357nm,0.4s			*e*S	**Sb**	**08 59 04.7**	**+2.0**
IZV	**Izvestkoviy** 45nm,0.5s	**2.59**	**327**	*e*P	**Pb**	**08 58 31.3**	**+0.6**
IZV	105nm,0.6s			*e*S	**Sb**	**08 59 01.7**	**-1.1**
KNDC	**Almaty** 46nm,0.5s	**2.61**	**334**	⇑Pg	**Pb**	**08 58 31.5**	**+0.4**
KNDC	138nm,0.6s			⇓Lg	Lg	08 59 03.9	
KZA	**Kyzart** baz=298	**2.75**	**297**	⇑*i*P	**Pn**	**08 58 29.3**	**+0.6**
KZA	baz=298			⇑*i*S	**Sn**	**08 59 04.3**	**+2.0**
KTMS	**Ketmen** 17nm,0.5s	**2.90**	**27**	*e*P	**Pg**	**08 58 39.6**	**+0.2**
KTMS	62nm,0.5s			*e*S	**Sg**	**08 59 16.0**	**-1.0**
TKM2	**Tokmak 2** baz=315	**3.00**	**314**	⇑*i*P	**Pn**	**08 58 32.6**	**+0.6**
TKM2	baz=315			⇑*i*S	**Sn**	**08 59 08.7**	**+0.4**
TKM2	**Tokmak 2** 11nm,0.5s	**3.00**	**314**	⇓Pn	**Pn**	**08 58 33.4**	**+1.4**
TKM2	17nm,0.4s			⇑Lg	Lg	08 59 13.5	
DGS	**Degeres** 25nm,0.4s	**3.13**	**320**	*e*P	**Pb**	**08 58 40.2**	**+0.3**
DGS	64nm,0.5s			*e*S	**Sb**	**08 59 16.7**	**-1.7**
KTBS	**Karatobe**	**3.15**	**335**	*e*P	**Pb**	**08 58 41.5**	**+1.2**
KTBS				*e*S	**Sb**	**08 59 19.2**	**+0.4**
CHKK	**Chushkaly** 25nm,0.4s	**3.20**	**340**	*e*P	**Pb**	**08 58 42.1**	**+1.1**
CHKK	93nm,0.3s			*e*S	**Sb**	**08 59 20.1**	**-0.1**
MNBS	**Baschi** 47nm,0.6s	**3.20**	**358**	*e*P	**Pb**	**08 58 42.1**	**+1.0**
MNBS	184nm,0.5s			*e*S	**Sb**	**08 59 19.9**	**-0.5**
KBK	**Karagaybulak** baz=306	**3.22**	**305**	⇑*i*P	**Pn**	**08 58 35.5**	**+0.5**
KBK	baz=306			⇑*i*S	**Sn**	**08 59 14.6**	**+0.9**
ARLS	**Aral** baz=289	**3.32**	**289**	⇓*i*P	**Pn**	**08 58 36.1**	**-0.3**
ARLS	baz=289			⇓*e*S	**Sn**	**08 59 15.1**	**-1.1**
ARXS	**Arharly** 21nm,0.3s	**3.37**	**351**	*e*P	**Pb**	**08 58 44.8**	**+0.7**
ARXS	54nm,0.4s			*e*S	**Sb**	**08 59 24.8**	**-0.5**
AAK	**Ala-Archa** 7.3nm,0.4s	**3.50**	**301**	⇑Pg	**Pb**	**08 58 44.5**	**-1.7**
AAK	17nm,0.6s			⇓Lg	Lg	08 59 29.1	
MNAS	**Manas** 3.7nm,0.7s	**4.79**	**292**	⇓Pg	**Pb**	**08 59 08.1**	**-0.3**
MNAS	6.1nm,0.8s			⇑Lg	Lg	09 00 08.8	
KK31	**Karatay Array** 1.1nm,0.6s,baz=113,slow=16	**6.38**	**293**	⇑Pg	**Pb**	**08 59 37.1**	**+1.8**
KK31	0.9nm,0.4s,baz=113,slow=26,SNR=4.4			⇓Lg	Lg	09 01 01.1	
MK31	**Makanchi Array** 0.4nm,0.4s	**6.50**	**23**	⇑Lg	Lg	09 01 09.6	
OTUK	**Ortayu** 1.5nm,0.6s	**8.59**	**331**	⇓Lg	Lg	09 02 07.4	
KURBB	**Kurchatov Arra** 15nm,1.4s	**9.74**	**360**	⇑Lg	Lg	09 02 52.0	

*IDC **23** 08:58:22.2±1.0, 13.°08N×145.°74E, h0km, mb3.5/6, mb1 3.7/6, mb1mx3.5/48, mbtmp3.5/6, Error ellipse: s-maj=28.4km s-min=20.9km az=84.0*

*ISCJB **23** 08:58:26.6±0.9, 13.°1N±0.°1×145.°7E±0.°1, h43km, mb3.4/6, Error ellipse: s-maj=22.0km s-min=11.7km az=44.8*

ISC 23 08:58:28.4±1.1, 13.°1N±0.°2×145.°6E±0.°2, h43km, n7, σ0$76/8, mb3.4/6, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam** 134nm,0.3s,baz=124,slow=9.5,SNR=86	**0.86**	**305**	Pn	**Pn**	**08 58 43.6**	**-0.5**
GUMO	186nm,0.3s,baz=156,slow=20,SNR=19			Sn	**Sn**	**08 58 55.8**	**+0.2**
WRA	**Warramunga Arr** 0.3nm,0.9s,baz=20,slow=9.8,SNR=3.0	**34.64**	**199**	P	**P**	**09 05 13.5**	**-0.4**
ASAR	**Alice Springs** 0.2nm,0.6s,baz=26,slow=9.2,SNR=5.8	**38.27**	**197**	P	**P**	**09 05 45.0**	**+0.2**
KURBB	**Kurchatov Arra** 0.6nm,0.5s,baz=103,slow=6.7,SNR=3.9	**65.46**	**320**	P	**P**	**09 09 07.2**	**+0.3**
ILAR	**Eielson Array** 0.1nm,0.4s,baz=245,slow=6.1,SNR=4.7	**68.72**	**25**	P	**P**	**09 09 26.5**	**-1.0**
BVAR	**Borovoye Array** 0.6nm,0.5s,baz=80,slow=8.1,SNR=2.4	**70.75**	**322**	P	**P**	**09 09 41.2**	**+1.0**
YKA	**Yellowknife Ar** 0.3nm,0.6s,baz=285,slow=4.9,SNR=2.9	**82.98**	**27**	P	**P**	**09 10 49.4**	**+0.6**

IDC 23 09:15:07.8±2.2, 17.°14S×178.°80W, h517km±29km, mb3.1/4, mb1 3.4/5, mb1mx3.0/27, mbtmp4.1/5, Error ellipse: s-maj=110.1km s-min=19.0km az=157.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu** 1.9nm,0.3s,baz=260,slow=19,SNR=3.5	**7.50**	**66**	P	P	09 16 59.4	-0.3
STKA	**Stephens Creek** 1.3nm,0.4s,baz=88,slow=13,SNR=8.4	**38.67**	**240**	P	P	09 21 46.8	-0.1
WRA	**Warramunga Arr** 0.8nm,0.6s,baz=92,slow=7.0,SNR=26	**44.41**	**259**	P	P	09 22 32.2	-0.3
ASAR	**Alice Springs** 8.3nm,0.6s,baz=90,slow=8.0,SNR=173	**44.64**	**254**	P	P	09 22 34.5	+0.2
ASAR				PcP	PcP	09 24 05.0	-1.1

2011 JUL

	0.2nm,0.7s,baz=98,slow=4.8,SNR=2.7						
TXAR	**Lajitas Array** 0.2nm,0.7s,baz=219,slow=5.7,SNR=3.4	**85.91**	**58**	P	P	09 26 53.6	+0.4

*CSEM **23** 10:40:39.2±0.2, 38.°38N×21.°78E, h10km, ML1.7, Error ellipse: s-maj=5.5km s-min=4.7km az=117.0*

*ATH **23** 10:40:40.4, 38.°30N×21.°77E, h11km±1km, ML1.7/4, Error ellipse: s-maj=1.9km s-min=0.9km az=121.0*

THE 23 10:40:40.6, 38.°33N×21.°76E, h9km±1km, ML1.9/6, Error ellipse: s-maj=1.2km s-min=0.4km az=171.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.05**	**158**	P	Pg	10 40 42.2	-0.2
UPR				S	Sg	10 40 43.6	-0.1
UPR	**University Cam**	**0.05**	**158**	P	Pg	10 40 42.2	-0.2
UPR				S	Sg	10 40 43.6	-0.1
UPR	**University Cam**	**0.05**	**158**	P	Pg	10 40 42.1	-0.3
UPR				S	Sg	10 40 43.5	-0.2
KALE	**Kalithea**	**0.30**	**78**	P	Pg	10 40 46.7	+0.1
KALE				S	Sg	10 40 51.3	+0.6
KALE	**Kalithea**	**0.30**	**78**	P	Pg	10 40 46.7	+0.1
KALE				S	Sg	10 40 51.3	+0.6
KALE	**Kalithea**	**0.30**	**78**	P	Pg	10 40 47.0	+0.4
KALE				S	Sg	10 40 50.0	-0.7
KALE	comp=E,397μm,0.2s			AML	AML	10 40 55.3	
KALE	comp=N,504μm,0.3s			AML	AML	10 40 56.5	
AXS	**Araxos**	**0.33**	**247**	P	Pg	10 40 46.8	-0.4
AXS	**Araxos**	**0.33**	**247**	P	Pg	10 40 46.8	-0.4
AXS				S	Sg	10 40 51.0	-0.6
AXS	**Araxos**	**0.33**	**247**	P	Pg	10 40 46.7	-0.5
AXS				S	Sg	10 40 51.0	-0.6
PVO	**Paravola**	**0.34**	**327**	P	Pg	10 40 47.3	-0.1
PVO				S	Sg	10 40 52.9	+1.0
PVO	**Paravola**	**0.34**	**327**	P	Pg	10 40 46.8	-0.6
PVO				S	Sg	10 40 52.9	+1.0
PVO	**Paravola**	**0.34**	**327**	P	Pg	10 40 46.9	-0.5
PVO				S	Sb	10 40 54.2	-0.2
RLS	**Riolos of Patr**	**0.36**	**221**	P	Pg	10 40 47.5	-0.1
RLS				S	Sg	10 40 53.1	+0.7
RLS	**Riolos of Patr**	**0.36**	**221**	P	Pg	10 40 47.5	-0.1
RLS				S	Sg	10 40 53.1	+0.7
RLS	**Riolos of Patr**	**0.36**	**221**	S	Sg	10 40 51.9	-0.4
RLS	comp=E,251μm,0.2s			AML	AML	10 40 53.5	
RLS	comp=N,234μm,0.2s			AML	AML	10 40 58.4	
DRO	**Drossia**	**0.38**	**186**	P	Pg	10 40 47.6	-0.4
DRO				S	Sg	10 40 54.0	+1.0
DRO	**Drossia**	**0.38**	**186**	P	Pg	10 40 47.9	-0.1
DRO				S	Sg	10 40 54.0	+1.0
DRO	**Drossia**	**0.38**	**186**	P	Pg	10 40 47.9	-0.2
DRO				S	Sb	10 40 54.4	-1.1
DRO	comp=E,1140μm,0.2s			AML	AML	10 40 55.3	
DRO	comp=N,599μm,0.2s			AML	AML	10 40 55.9	
KLV	**Kalavryta, Ach**	**0.42**	**133**	P	Pg	10 40 48.4	-0.4
KLV				S	Sg	10 40 54.9	+0.6
KLV	**Kalavryta, Ach**	**0.42**	**133**	P	Pg	10 40 48.4	-0.4
KLV				S	Sg	10 40 54.9	+0.6
KLV	**Kalavryta, Ach**	**0.42**	**133**	P	Pg	10 40 48.8	0.0
KLV				S	Sg	10 40 53.0	-1.3
KLV	comp=E,192μm,0.2s			AML	AML	10 40 56.8	
KLV	comp=N,186μm,0.3s			AML	AML	10 40 59.5	
PDO	**Prodromos**	**0.53**	**301**	P	Pg	10 40 50.5	-0.4
PDO				S	Sg	10 40 58.2	+0.4
PDO	**Prodromos**	**0.53**	**301**	P	Pg	10 40 50.0	-0.9
PDO				S	Sg	10 40 58.2	+0.4
PDO	**Prodromos**	**0.53**	**301**	P	Pg	10 40 50.0	-0.9
EVR	**Evrytania**	**0.59**	**3**	S	Sb	10 41 00.9	-0.8
EVR	**Evrytania**	**0.59**	**3**	P	Pb	10 40 54.0	+0.9
DSF	**Desfina**	**0.61**	**82**	P	Pg	10 40 51.8	-0.5
DSF				S	Sg	10 41 00.9	+0.6
DSF	**Desfina**	**0.61**	**82**	P	Pg	10 40 51.5	-0.8
DSF				S	Sg	10 40 59.4	-0.9
DSF	**Desfina**	**0.61**	**82**	P	Pg	10 40 51.5	-0.9
DSF				S	Sg	10 40 59.4	-0.9
VTN	**Vitineika**	**0.61**	**228**	P	Pg	10 40 51.5	-1.0
VTN	**Vitineika**	**0.61**	**228**	P	Pg	10 40 51.5	-1.0
AMT	**Artemida-Makis**	**0.80**	**183**	P	Pb	10 40 56.5	-0.1
AMT	**Artemida-Makis**	**0.80**	**183**	P	Pb	10 40 56.5	-0.1
KFL	**Anninata**	**0.80**	**254**	P	Pg	10 40 54.1	-1.9
KFL	**Anninata**	**0.80**	**254**	P	Pg	10 40 54.1	-1.9
AGG	**Agios Georgios**	**0.82**	**32**	P	Pg	10 40 55.9	-0.6
AGG	**Agios Georgios**	**0.82**	**32**	P	Pg	10 40 55.2	-1.2
AGG	**Agios Georgios**	**0.82**	**32**	P	Pg	10 40 55.1	-1.3
ZKS	**Zakynthos**	**1.00**	**231**	P	Pg	10 40 58.8	-1.0
ZKS	**Zakynthos**	**1.00**	**231**	P	Pg	10 40 58.8	-1.0
VLX	**Vlachokerasia**	**1.07**	**153**	P	Pg	10 40 58.6	-2.6
VLX	**Vlachokerasia**	**1.07**	**153**	P	Pg	10 40 58.6	-2.6

*ATH **23** 10:40:50.9, 39.°54N×23.°45E, h28km±1km, ML3.1/7, Error ellipse: s-maj=1.2km s-min=0.7km az=90.0*

*ISCJB **23** 10:40:51.5±0.4, 39.°55N±0.°02×23.°42E±0.°02, h10km±3km, Error ellipse: s-maj=3.2km s-min=2.5km az=0.9*

*CSEM **23** 10:40:51.6±0.1, 39.°55N×23.°37E, h10km, ML3.1, Error ellipse: s-maj=3.8km s-min=3.0km az=85.0*

*ISK **23** 10:40:51.4, 39.°56N×23.°41E, h8km, ML3.1*

*THE **23** 10:40:51.7, 39.°54N×23.°41E, h16km±1km, ML3.1/6, Error ellipse: s-maj=1.2km s-min=0.4km az=159.0*

ISC 23 10:40:51.5±0.9, 39.°55N±0.°01×23.°41E±0.°02, h14km±7km, n134, σ0$97/165, 2C-3D, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
XOR	**Xorichti**	**0.25**	**222**	P	**Pg**	**10 40 57.0**	**+0.1**
XOR				S	**Sg**	**10 41 00.8**	**+0.3**
XOR	**Xorichti**	**0.25**	**222**	P	**Pg**	**10 40 57.0**	**+0.1**
XOR				S	**Sg**	**10 41 00.8**	**+0.3**
XOR	**Xorichti**	**0.25**	**222**	P	**Pg**	**10 40 56.4**	**-0.4**
NEO	**Neokhori**	**0.28**	**211**	P	**Pg**	**10 40 57.6**	**+0.1**
NEO	**Neokhori**	**0.28**	**211**	P	**Pg**	**10 40 57.6**	**+0.1**
NEO	**Neokhori**	**0.28**	**211**	P	**Pg**	**10 40 57.0**	**-0.5**
SKIA	**Skiathos**	**0.39**	**173**	P	**Pg**	**10 40 59.6**	**+0.3**
SKIA				S	**Sg**	**10 41 04.7**	**+0.2**
SKIA	**Skiathos**	**0.39**	**173**	P	**Pg**	**10 40 59.6**	**+0.3**
SKIA				S	**Sg**	**10 41 04.7**	**+0.2**
SKIA	**Skiathos**	**0.39**	**173**	P	**Pb**	**10 40 59.8**	**-0.4**
SKIA				S	**Sg**	**10 41 03.9**	**-0.6**
SKIA	comp=N,7371μm,0.4s			AML	AML	10 41 10.9	
SKIA	comp=E,6698μm,0.4s			AML	AML	10 41 11.7	
PAIG	**Paliouri**	**0.43**	**29**	P	**Pb**	**10 41 00.7**	**-0.3**
PAIG				S	**Sb**	**10 41 07.1**	**-0.2**
PAIG	**Paliouri**	**0.43**	**29**	P	**Pb**	**10 41 00.7**	**-0.3**
PAIG				S	**Sg**	**10 41 06.2**	**+0.3**
PAIG	**Paliouri**	**0.43**	**29**	P	**Pb**	**10 41 01.2**	**+0.3**
PAIG				S	**Sg**	**10 41 06.2**	**+0.3**
PAIG	comp=N,5930μm,0.4s			AML	AML	10 41 10.4	
PAIG	comp=E,4840μm,0.6s			AML	AML	10 41 14.7	
AOS	**Alonnisos**	**0.53**	**136**	PG	**Pg**	**10 41 02.0**	**+0.1**
AOS				*e*SG	**Sb**	**10 41 09.8**	**-0.3**
AOS	**Alonnisos**	**0.53**	**136**	P	**Pg**	**10 41 01.7**	**-0.2**
AOS				S	**Sb**	**10 41 09.5**	**-0.6**
AOS	**Alonnisos**	**0.53**	**136**	P	**Pg**	**10 41 02.0**	**+0.1**
AOS				S	**Sg**	**10 41 09.2**	**+0.3**
AOS	**Alonnisos**	**0.53**	**136**	P	**Pg**	**10 41 02.0**	**+0.1**
AOS				S	**Sg**	**10 41 09.2**	**+0.3**
AOS	comp=N,4595μm,0.3s			AML	AML	10 41 11.2	
AOS	comp=E,2892μm,0.5s			AML	AML	10 41 16.2	
SMIA	**Simia**	**0.69**	**193**	P	**Pg**	**10 41 04.8**	**-0.2**
SMIA	**Simia**	**0.69**	**193**	P	**Pg**	**10 41 04.8**	**-0.2**
PLG	**Polygyros**	**0.82**	**2**	P	**Pb**	**10 41 07.4**	**-0.3**
PLG	**Polygyros**	**0.82**	**2**	P	**Pg**	**10 41 07.9**	**+0.4**
PLG				S	**Sg**	**10 41 18.9**	**+0.6**
PLG	**Polygyros**	**0.82**	**2**	P	**Pg**	**10 41 08.0**	**+0.4**
PLG				S	**Sg**	**10 41 18.9**	**+0.6**
PLG	comp=N,3359μm,0.4s			AML	AML	10 41 20.4	
PLG	comp=E,2972μm,0.5s			AML	AML	10 41 21.1	
LIT	**Litokhoron**	**0.90**	**308**	P	**Pg**	**10 41 09.1**	**+0.2**
LIT				S	**Sg**	**10 41 21.3**	**+0.7**
LIT	**Litokhoron**	**0.90**	**308**	P	**Pg**	**10 41 09.1**	**+0.2**
OUR	**Ouranopolis**	**0.90**	**29**	PG	**Pb**	**10 41 08.9**	**0.0**
OUR	**Ouranopolis**	**0.90**	**29**	P	**Pg**	**10 41 09.1**	**+0.2**
OUR				S	**Sg**	**10 41 20.9**	**+0.2**
OUR	**Ouranopolis**	**0.90**	**29**	P	**Pg**	**10 41 09.1**	**+0.2**
OUR				S	**Sg**	**10 41 20.9**	**+0.2**
OUR	**Ouranopolis**	**0.90**	**29**	P	**Pn**	**10 41 10.1**	**+0.3**
LKR	**Lokris**	**0.95**	**200**	P	**Pn**	**10 41 10.9**	**+0.3**
LKR	**Lokris**	**0.95**	**200**	P	**Pn**	**10 41 10.9**	**+0.3**
AGG	**Agios Georgios**	**0.99**	**238**	PG	**Pn**	**10 41 11.0**	**+0.1**
AGG				*e*SG	**Sn**	**10 41 25.6**	**+0.7**
AGG	**Agios Georgios**	**0.99**	**238**	*i* Pg	**Pn**	**10 41 11.0**	**-0.1**
AGG				S	**Sn**	**10 41 25.3**	**+0.4**
AGG	**Agios Georgios**	**0.99**	**238**	P	**Pn**	**10 41 11.1**	**-0.1**
AGG				S	**Sn**	**10 41 25.3**	**+0.4**
AGG	comp=N,8707μm,1.0s			AML	AML	10 41 34.1	
AGG	comp=E,6250μm,0.9s			AML	AML	10 41 34.4	
HORT	**Hortiatis**	**1.07**	**347**	PG	**Pb**	**10 41 11.8**	**-0.2**
HORT				*e*SG	**Sn**	**10 41 27.1**	**0.0**
HORT	**Hortiatis**	**1.07**	**347**	P	**Pb**	**10 41 11.5**	**-0.5**
HORT				S	**Sg**	**10 41 26.6**	**+0.3**
HORT	**Hortiatis**	**1.07**	**347**	*i* Pg	**Pb**	**10 41 11.8**	**-0.2**
HORT	**Hortiatis**	**1.07**	**347**	P	**Pg**	**10 41 12.4**	**+0.1**
HORT				S	**Sg**	**10 41 26.6**	**+0.3**
HORT				*e*Sg	**Sn**	**10 41 27.1**	**0.0**
HORT	**Hortiatis**	**1.07**	**347**	P	**Pg**	**10 41 12.4**	**+0.1**
HORT				S	**Sb**	**10 41 25.3**	**-0.7**
HORT	comp=N,1158μm,0.6s			AML	AML	10 41 31.6	
HORT	comp=E,1560μm,0.6s			AML	AML	10 41 44.5	
THL	**Klokotos Trika**	**1.08**	**271**	P	**Pb**	**10 41 11.5**	**-0.5**
THL				S	**Sn**	**10 41 27.4**	**+0.4**
SKY	**Skiros Island**	**1.11**	**127**	P	**Pb**	**10 41 12.5**	**-0.1**
SKY				S	**Sb**	**10 41 26.4**	**-0.5**
SKY	**Skiros Island**	**1.11**	**127**	P	**Pb**	**10 41 12.5**	**-0.1**
SKY				S	**Sb**	**10 41 26.4**	**-0.5**
THE	**Thessaloniki**	**1.13**	**343**	P	**Pb**	**10 41 11.7**	**-1.2**
THE	**Thessaloniki**	**1.13**	**343**	P	**Pb**	**10 41 12.7**	**-0.2**
THE	**Thessaloniki**	**1.13**	**343**	P	**Pb**	**10 41 12.7**	**-0.2**
EREA	**Eretria**	**1.20**	**160**	P	**Pn**	**10 41 13.0**	**-1.0**
EREA	**Eretria**	**1.20**	**160**	P	**Pb**	**10 41 14.1**	**0.0**
EREA				S	**Sb**	**10 41 28.0**	**-1.5**
EREA	**Eretria**	**1.20**	**160**	P	**Pb**	**10 41 14.1**	**0.0**
EREA				S	**Sb**	**10 41 28.0**	**-1.5**
EREA	comp=N,3491μm,0.4s			AML	AML	10 41 34.0	
EREA	comp=E,2367μm,0.3s			AML	AML	10 41 34.0	
SOH	**Sokhos**	**1.27**	**358**	P	**Pn**	**10 41 14.4**	**-0.6**
SOH	**Sokhos**	**1.27**	**358**	P	**Pg**	**10 41 15.8**	**-0.2**
SOH				S	**Sn**	**10 41 32.0**	**+0.1**
SOH	**Sokhos**	**1.27**	**358**	P	**Pg**	**10 41 15.8**	**-0.2**
SOH				S	**Sn**	**10 41 32.0**	**+0.1**
DSF	**Desfina**	**1.33**	**211**	P	**Pn**	**10 41 15.5**	**-0.2**
DSF	**Desfina**	**1.33**	**211**	P	**Pn**	**10 41 15.5**	**-0.2**
LIA	**Limnos Island**	**1.41**	**75**	P	**Pn**	**10 41 15.9**	**-0.9**
KZN	**Kozani**	**1.47**	**301**	P	**Pn**	**10 41 16.2**	**-1.5**
KALE	**Kalithea**	**1.52**	**221**	P	**Pb**	**10 41 19.6**	**0.0**
KALE	**Kalithea**	**1.52**	**221**	P	**Pb**	**10 41 19.6**	**0.0**
PTL	**Penteli**	**1.54**	**166**	P	**Pn**	**10 41 18.6**	**-0.1**
PTL	**Penteli**	**1.54**	**166**	P	**Pn**	**10 41 18.6**	**-0.1**
LTK	**Loutraki**	**1.56**	**193**	P	**Pb**	**10 41 20.6**	**+0.3**
LTK	**Loutraki**	**1.56**	**193**	P	**Pb**	**10 41 20.6**	**+0.3**
SRS	**Serrai**	**1.57**	**5**	P	**Pn**	**10 41 18.2**	**-0.9**
SRS	**Serrai**	**1.57**	**5**	P	**Pn**	**10 41 19.2**	**+0.1**
SRS	**Serrai**	**1.57**	**5**	P	**Pn**	**10 41 19.2**	**+0.1**
ATH	**Athens Observa**	**1.59**	**171**	P	**Pn**	**10 41 18.9**	**-0.4**
GRG	**Griva**	**1.60**	**332**	PN	**Pb**	**10 41 20.2**	**-0.8**
GRG	**Griva**	**1.60**	**332**	P	**Pn**	**10 41 19.4**	**-0.1**
GRG	**Griva**	**1.60**	**332**	P	**Pn**	**10 41 19.7**	**+0.2**
GRG	**Griva**	**1.60**	**332**	*i* Pn	**Pb**	**10 41 20.2**	**-0.8**
GRG	**Griva**	**1.60**	**332**	P	**Pn**	**10 41 19.7**	**+0.2**
ATHU	**Athens Univers**	**1.61**	**169**	P	**Pn**	**10 41 19.0**	**-0.6**
ATHU	**Athens Univers**	**1.61**	**169**	P	**Pn**	**10 41 19.0**	**-0.6**
KPRO	**Kipourio**	**1.63**	**285**	P	**Pn**	**10 41 20.5**	**+0.6**
KPRO	**Kipourio**	**1.63**	**285**	P	**Pn**	**10 41 20.5**	**+0.6**
KNT	**Kendrikon**	**1.66**	**347**	PN	**Pb**	**10 41 22.2**	**+0.4**
KNT	**Kendrikon**	**1.66**	**347**	P	**Pn**	**10 41 19.2**	**-1.0**
KNT	**Kendrikon**	**1.66**	**347**	P	**Pn**	**10 41 19.2**	**-1.0**
KNT	**Kendrikon**	**1.66**	**347**	*i* Pn	**Pb**	**10 41 22.2**	**+0.4**
KNT	**Kendrikon**	**1.66**	**347**	P	**Pb**	**10 41 22.3**	**+0.4**
KAVA	**Kavala**	**1.67**	**30**	P	**Pn**	**10 41 19.5**	**-1.0**
KAVA	**Kavala**	**1.67**	**30**	P	**Pn**	**10 41 19.5**	**-1.0**
KAVA	**Kavala**	**1.67**	**30**	P	**Pn**	**10 41 18.9**	**-1.5**
VLY	**Voula,Athens**	**1.72**	**170**	P	**Pn**	**10 41 20.9**	**-0.2**
VLY	**Voula,Athens**	**1.72**	**170**	P	**Pn**	**10 41 20.9**	**-0.2**
SMTH	**Samothraki Isl**	**1.87**	**60**	P	**Pn**	**10 41 20.8**	**-2.4**
SMTH	**Samothraki Isl**	**1.87**	**60**	P	**Pn**	**10 41 20.8**	**-2.4**
VAY	**Valandovo**	**1.88**	**340**	*e*Pn	**Pn**	**10 41 22.9**	**-0.5**
VAY	**Valandovo**	**1.88**	**340**	*e*Pn	**Pn**	**10 41 22.8**	**-0.5**
SIGR	**SIGRI**	**1.93**	**99**	PN	**Pb**	**10 41 26.3**	**-0.2**
SIGR	**SIGRI**	**1.93**	**99**	*i* Pn	**Pb**	**10 41 26.3**	**-0.2**
FNA	**Florina**	**1.99**	**309**	PN	**Pn**	**10 41 25.5**	**+0.7**
FNA	**Florina**	**1.99**	**309**	P	**Pn**	**10 41 24.8**	**0.0**
FNA	**Florina**	**1.99**	**309**	*i* Pn	**Pn**	**10 41 25.5**	**+0.7**
FNA	**Florina**	**1.99**	**309**	P	**Pn**	**10 41 24.8**	**0.0**
GADA	**Gvkgeada**	**2.02**	**71**	PN	**Pb**	**10 41 27.1**	**-1.0**
GADA	**Gvkgeada**	**2.02**	**71**	*i* Pn	**Pb**	**10 41 27.1**	**-1.0**
DID	**Didima**	**2.04**	**184**	P	**Pn**	**10 41 25.5**	**-0.1**
DID	**Didima**	**2.04**	**184**	P	**Pn**	**10 41 25.5**	**-0.1**
EZN	**Ezine**	**2.27**	**82**	*e*PN	**Pb**	**10 41 30.8**	**-1.4**
EZN	**Ezine**	**2.27**	**82**	*e*Pn	**Pb**	**10 41 30.8**	**-1.4**
CHOS	**Chios island**	**2.37**	**119**	PN	**Pn**	**10 41 30.8**	**+0.7**
CHOS	**Chios island**	**2.37**	**119**	P	**Pn**	**10 41 30.4**	**+0.3**
CHOS	**Chios island**	**2.37**	**119**	*i* Pn	**Pn**	**10 41 30.8**	**+0.

JOU	**Okura**	**1.23 272**	P	Pn	10 44 48.7	+1.0
JOU			S	Sn	10 45 04.2	+1.1
JOM	**Ohasama**	**1.36 328**	P	Pn	10 44 50.4	+1.0
JOM			S	Sn	10 45 07.7	+1.6
JFK	**Kawauchi**	**1.44 229**	P	Pn	10 44 50.0	-0.6
JFK			S	Sn	10 45 05.9	-2.4
JYK	**Kaneyama**	**1.58 292**	P	Pn	10 44 53.6	+1.2
JYK			*e*S	Sn	10 45 13.4	+1.8
JRG	**Rokugo**	**1.64 311**	P	Pn	10 44 54.9	+1.6
JRG			S	Sn	10 45 16.8	+3.7
JFT	**Otama**	**1.70 242**	P	Pn	10 44 55.4	+1.3
JFT			S	Sn	10 45 15.8	+1.1
JYS	**Shirataka**	**1.71 267**	P	Pn	10 44 55.5	+1.3
JYS			S	Sn	10 45 16.3	+1.5

WEL 23 10:49:37.1±0.2,**38°26S**×**178°70E, h28**km±1km, **ML3.6**/42, **9C-2D, Error ellipse: s-maj=2.3km s-min=0.9km az=90.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**0.40**	**298**	P*	Pb	10 49 45.2	-0.7
PUZ				S*	Sb	10 49 52.1	+0.2
PUZ				AML	AML	10 49 52.9	
CNGZ	**Carnagh Statio**	**0.45**	**240**	⇓P*	Pn	10 49 47.4	-0.3
CNGZ				S*	Sb	10 49 53.2	0.0
CNGZ				AML	AML	10 49 59.7	
WMGZ	**Waiomatatini S**	**0.50**	**333**	⇑P*	Pb	10 49 47.7	+0.2
WMGZ				S*	Sn	10 49 55.6	-0.4
WMGZ				AML	AML	10 49 58.0	
TWGZ	**Tauwhareparae**	**0.58**	**278**	⇑P*	Pb	10 49 48.5	-0.3
TWGZ				S*	Sn	10 49 57.8	-0.3
TWGZ				AML	AML	10 49 58.3	
PKGZ	**Pakihiroa**	**0.62**	**307**	⇑P*	Pb	10 49 49.2	-0.4
PKGZ				S*	Sb	10 49 58.3	+0.3
TKGZ	**Te Karaka**	**0.70**	**255**	⇑P*	Pb	10 49 50.4	-0.3
TKGZ				S*	Sn	10 50 00.9	-0.1
TKGZ				AML	AML	10 50 01.7	
MXZ	**Matakaoa Point**	**0.77**	**336**	PN	Pb	10 49 51.7	-0.2
MXZ				SN	Sn	10 50 03.0	+0.4
MXZ				AML	AML	10 50 03.8	
MXZ				AML	AML	10 50 03.8	
RUGZ	**Raukumara Rang**	**0.86**	**290**	⇑PN	Pn	10 49 52.4	-1.1
RUGZ				SN	Sb	10 50 04.7	-0.1
RIGZ	**Rimuhau**	**0.86**	**239**	PN	Pn	10 49 53.0	-0.5
RIGZ				SN	Sn	10 50 05.6	+0.5
RIGZ				AML	AML	10 50 07.4	
HAZ	**Te Kaha**	**0.89**	**304**	⇑PN	Pn	10 49 52.6	-1.0
HAZ				AML	AML	10 50 06.3	
HAZ				AML	AML	10 50 07.6	
PRGZ	**Paritu Road**	**0.92**	**224**	PN	Pn	10 49 54.0	-0.2
PRGZ				AML	AML	10 50 13.0	
PRGZ				AML	AML	10 50 13.3	
MWZ	**Matawai**	**0.93**	**265**	PN	Pn	10 49 53.5	-0.9
MWZ				AML	AML	10 50 06.8	
MWZ				AML	AML	10 50 06.8	
MWZ				AML	AML	10 50 07.1	
MWZ				AML	AML	10 50 07.7	
RAGZ	**Rawiri**	**1.04**	**257**	⇑PN	Pn	10 49 55.1	-0.8
RAGZ				AML	AML	10 50 14.6	
RAGZ				AML	AML	10 50 15.4	
MHGZ	**Mahia Peninsul**	**1.09**	**215**	PN	Pn	10 49 56.1	-0.4
MHGZ				AML	AML	10 50 12.9	
KNZ	**Kokohu**	**1.11**	**226**	PN	Pn	10 49 56.0	-0.8
KNZ				AML	AML	10 50 18.5	
SNGZ	**Shannon Statio**	**1.19**	**244**	PN	Pn	10 49 57.2	-0.7
SNGZ				AML	AML	10 50 13.6	
SNGZ				AML	AML	10 50 14.2	
URZ	**Urewera**	**1.25**	**270**	⇑PN	Pn	10 49 58.4	-0.4
URZ				AML	AML	10 50 18.0	
URZ				AML	AML	10 50 21.1	
WHHZ	**Waihua**	**1.41**	**234**	PN	Pn	10 50 00.4	-0.5
WHHZ				AML	AML	10 50 20.6	
WHHZ				AML	AML	10 50 22.7	
MUGZ	**Murupara**	**1.54**	**261**	⇓PN	Pn	10 50 02.7	0.0
EDRZ	**Edgecumbe**	**1.56**	**275**	AML	AML	10 50 22.1	
EDRZ				AML	AML	10 50 27.8	
MARZ	**Manawahe**	**1.62**	**279**	AML	AML	10 50 28.9	
MARZ				AML	AML	10 50 10.2	
ARHZ	**Aropaoanui**	**1.67**	**233**	PN	Pn	10 50 04.0	-0.4
ARHZ				AML	AML	10 50 26.7	
ARHZ				AML	AML	10 50 26.7	
NMHZ	**Naumai**	**1.70**	**240**	PN	Pn	10 50 04.6	-0.4
NMHZ				AML	AML	10 50 26.9	
NMHZ				AML	AML	10 50 28.0	
RRRZ	**Republican Roa**	**1.73**	**267**	AML	AML	10 50 28.9	
RRRZ				AML	AML	10 50 35.3	
TARZ	**Mount Tarawera**	**1.73**	**270**	PN	Pn	10 50 05.5	+0.1
TARZ				AML	AML	10 50 18.9	
TARZ				AML	AML	10 50 19.1	
OPRZ	**Ohinepanea**	**1.75**	**283**	⇑PN	Pn	10 50 04.8	-0.8
OPRZ				AML	AML	10 50 35.2	
OPRZ				AML	AML	10 50 36.3	
MRHZ	**Matea Rd**	**1.88**	**252**	PN	Pn	10 50 27.2	-0.3
MRHZ				AML	AML	10 50 32.4	
MRHZ				AML	AML	10 50 32.9	
BKZ	**Black Stump Fm**	**1.95**	**242**	PN	Pn	10 50 07.9	-0.5
BKZ				AML	AML	10 50 32.4	
BKZ				AML	AML	10 50 32.9	
MCHZ	**McNeill Hill**	**1.96**	**232**	PN	Pn	10 50 07.9	-0.7
MCHZ				AML	AML	10 50 33.1	
MCHZ				AML	AML	10 50 36.2	
TGRZ	**Tauranga**	**2.00**	**285**	PN	Pn	10 50 08.2	-0.8
KAHZ	**Kahuranaki**	**2.09**	**222**	PN	Pn	10 50 09.3	-1.1
KWHZ	**Kaweka Forest**	**2.13**	**236**	PN	Pn	10 50 10.1	-0.7
KWHZ				AML	AML	10 50 36.1	
KWHZ				AML	AML	10 50 37.7	
PXZ	**Pawanui**	**2.27**	**218**	PN	Pn	10 50 11.5	-1.3
PXZ				AML	AML	10 50 42.2	
KRHZ	**Kereru**	**2.28**	**232**	PN	Pn	10 50 11.7	-1.3
KRHZ				AML	AML	10 50 38.9	
KRHZ				AML	AML	10 50 41.1	
BHHZ	**Black Hill Sta**	**2.40**	**238**	PN	Pn	10 50 13.8	-0.7
WPHZ	**Waipukurau**	**2.52**	**224**	PN	Pn	10 50 14.8	-1.4
WPHZ				AML	AML	10 50 52.5	
KRVZ	**Karewarewa**	**2.54**	**250**	PN	Pn	10 50 16.1	-0.4
OTVZ	**Oturere**	**2.54**	**248**	PN	Pn	10 50 16.5	-0.1
PNHZ	**Pukenui**	**2.55**	**229**	PN	Pn	10 50 14.8	-1.8
PNHZ				AML	AML	10 50 45.5	
PNHZ				AML	AML	10 51 54.7	
PRHZ	**Porangahau**	**2.57**	**218**	PN	Pn	10 50 14.8	-2.1
MOVZ	**Moawhango**	**2.57**	**243**	PN	Pn	10 50 16.5	-0.5
TOZ	**Tahuroa Road**	**2.58**	**281**	PN	Pn	10 50 16.3	-0.8
TUVZ	**Tukino**	**2.59**	**246**	PN	Pn	10 50 17.3	0.0
NGZ	**Ngauruhoe**	**2.59**	**248**	PN	Pn	10 50 16.8	-0.5
WHVZ	**Whangaehu Hut**	**2.64**	**246**	PN	Pn	10 50 17.7	-0.4
TSZ	**Takapari Road**	**2.79**	**229**	PN	Pn	10 50 17.8	-2.1
ANWZ	**Angora Road**	**2.79**	**218**	PN	Pn	10 50 17.5	-2.5
ANWZ				AML	AML	10 50 52.7	
KUZ	**Kuaotunu**	**2.81**	**302**	PN	Pn	10 50 18.9	-1.3
DVHZ	**Dannevirke**	**2.83**	**223**	PN	Pn	10 50 18.4	-2.1
DVHZ				AML	AML	10 50 40.1	
DVHZ				AML	AML	10 50 48.0	
MKAZ	**Moumakai**	**3.04**	**291**	PN	Pn	10 50 22.5	-0.8
BFZ	**Birch Farm**	**3.08**	**217**	PN	Pn	10 50 21.5	-2.3
BFZ				AML	AML	10 50 56.2	
BFZ				AML	AML	10 51 23.1	
POWZ	**Post Office Ro**	**3.12**	**226**	PN	Pn	10 50 22.6	-1.8
POWZ				AML	AML	10 51 02.3	
POWZ				AML	AML	10 51 07.4	
VRZ	**Vera Road**	**3.21**	**253**	PN	Pn	10 50 25.6	0.0
WAZ	**Wanganui**	**3.26**	**242**	PN	Pn	10 50 26.1	-0.2
WAZ				AML	AML	10 51 09.7	
TIWZ	**Tintock**	**3.33**	**220**	AML	AML	10 50 30.3	
MRZ	**Mangatainoka R**	**3.41**	**224**	PN	Pn	10 50 25.6	-2.7
MRZ				AML	AML	10 51 04.9	
MRZ				AML	AML	10 52 56.2	
HOWZ	**Holdsworth Sta**	**3.61**	**222**	PN	Pn	10 50 28.2	-3.0
HOWZ				AML	AML	10 51 09.1	
MTW	**Mount Morrison**	**3.80**	**219**	PN	Pn	10 50 30.3	-3.5
MTW				AML	AML	10 50 40.4	
CAW	**Cannon Point**	**3.99**	**223**	PN	Pn	10 50 33.2	-3.3
TUWZ	**Tuamarina**	**4.84**	**228**	PN	Pn	10 50 43.8	-4.2
NNZ	**Nelson**	**5.06**	**233**	PN	Pn	10 50 47.2	-3.9
NNZ				AML	AML	10 53 17.2	
NNZ				AML	AML	10 53 17.2	
QRZ	**Quartz Range**	**5.42**	**240**	PN	Pn	10 50 52.3	-3.7
THZ	**Tophouse**	**5.66**	**230**	PN	Pn	10 50 55.7	-3.7
THZ				AML	AML	10 52 11.9	
KHZ	**Kahutara**	**5.73**	**222**	PN	Pn	10 50 56.1	-4.1
CTZ	**Chatham Island**	**6.51**	**149**	PN	Pn	10 51 12.3	+1.3

*NEIC **23** 10:55:43.9, 15°.60N×94°.62W, h38km, MD4.3(MEX), After MEX.*

MEX 23 10:55:42.0±0.8,**15°.40N**×**94°.74W, h16**km±62km, **MD4.2, Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.37**	**286**	*e*P	Pn	10 56 03.3	-3.2
HUIG				*i* S	Sn	10 56 18.5	-5.8
VHO	**Vista Hermosa**	**2.54**	**311**	*e*P	Pn	10 56 20.8	-2.0
VHO				*i* S	Sn	10 56 49.2	-4.3
VHO	**Vista Hermosa**	**2.54**	**311**	*e*P	Pn	10 56 21.8	-1.0
VHO				*i* S	Sn	10 56 49.2	-4.3
CCIG	**Comitan**	**2.65**	**70**	*e*Pn	Pn	10 56 23.0	-1.2
TPIG	**Tehuac#an**	**3.92**	**320**	*i* P	Pn	10 56 38.7	-3.0
TPIG				*i* S	Sn	10 57 23.6	-3.8
TLIG	**Tlapa**	**4.26**	**301**	*e*P	Pn	10 56 44.6	-1.7
TLIG				*i* S	Sn	10 57 32.9	-2.9
TLIG	**Tlapa**	**4.26**	**301**	*e*Pn	Pn	10 56 46.2	-0.1
JCT	**Junction City**	**15.72**	**344**	*e*Pn	Pn	10 59 19.8	-3.1
JCT				Sn	Sn	11 02 13.2	-3.5

*IDC **23** 11:00:45.7±1.3, 54°.61N×161°.67W, h0km, mb3.8/7, mb1 3.9/8, mb1mx3.6/52, mbtmp3.7/8, ML3.6/1, MS2.8/1, Ms1 2.8/1, ms1mx2.2/43, Error ellipse: s-maj=32.3km s-min=24.7km az=177.0*

*ISCJB **23** 11:00:48.1±0.7, 54°.50N±0°.06×160°.91W±0°.06, h10km, mb3.7/7, MS2.7/1, Error ellipse: s-maj=8.6km s-min=4.3km az=158.6*

*NEIC **23** 11:00:51.7, 54°.68N×161°.12W, h14km, ML3.5(AEIC), After AEIC.*

ISC 23 11:00:49.0±0.9,**54°.60N**±0°.08×**161°.00W**±0°.06,**h10**km,**n39, σ1s80/33, mb4.1/7, Alaska Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DOL	**Dolgoi Island**	**0.74**	**318**	P	Pb	11 01 04.5	+0.5
SDPT	**Sand Point**	**0.81**	**22**	P	Pb	11 01 07.0	+1.8
SDPT				S	Sb	11 01 17.5	+1.3
DRIA	**Deer Island**	**0.82**	**297**	P	Pg	11 01 05.4	+0.7
PS4A	**Pavlof South-4**	**0.90**	**327**	P	Pg	11 01 06.9	+0.7
DT1	**Dutton Round H**	**0.90**	**305**	P	Pg	11 01 06.6	+0.3
PVV	**Pavlof Volcano**	**0.90**	**330**	P	Pg	11 01 07.0	+0.7
DTNA	**Dutton South F**	**0.91**	**308**	P	Pg	11 01 07.0	+0.6
PS1A	**Pavlof South-1**	**0.93**	**333**	P	Pg	11 01 07.6	+0.8
PN6	**Pavlof North-6**	**1.01**	**329**	P	Pg	11 01 09.3	+1.0
SSLS	**Shishaldin Sou**	**1.74**	**275**	P	Pn	11 01 20.7	+1.4
SSLS				S	Sn	11 01 42.2	+0.6
WESN	**West Dahl Not**	**2.08**	**271**	P	Pn	11 01 25.3	+1.4
WESP	**Westdahl Peak**	**2.17**	**269**	P	Pn	11 01 27.0	+1.9
CHGN	**Chignik**	**2.26**	**40**	P	Pn	11 01 28.4	+2.1
AZAC	**Aniakchak**	**2.79**	**33**	P	Pn	11 01 35.5	+1.8
AKUT	**Akutan**	**2.83**	**263**	P	Pn	11 01 35.9	+1.8
AKUT				S	Sn	11 02 08.8	+0.6
ANNE	**Aniakchak Nort**	**2.86**	**34**	P	Pn	11 01 36.2	+1.7
UNV	**Unalaska Valle**	**3.31**	**259**	P	Pn	11 01 41.9	+1.1
MTBL	**Makushin Table**	**3.38**	**262**	P	Pn	11 01 43.3	+1.4
KABR	**Katmai Barrier**	**4.88**	**41**	P	Pn	11 02 04.3	+1.9
KDAK	**Kodiak Island**	**5.68**	**52**	P	Pn	11 02 14.5	+1.2
CNPM	**China Poot**	**7.26**	**43**	P	Pn	11 02 37.2	+2.2
BPAW	**Bear Paw Mtn.** 0.7nm,0.8s	**10.80**	**24**	*e*Pn	Pn	11 03 24.8	+1.4
PAX	**Paxson** 1.9nm,0.3s	**11.60**	**37**	*e*Pn	Pn	11 03 34.8	+0.3
ILAR	**Eielson Array** 0.1nm,0.3s,baz=222,slow=14,SNR=6.5	**12.41**	**29**	Pn	Pn	11 03 42.8	-2.7
ILAR	0.0nm,0.3s,baz=222,slow=21,SNR=2.7			Sn	Sn	**11 05 57.1**	**-6.5**
DAWY	**Dawson** 1.2nm,0.6s	**14.46**	**40**	*e*Pn	Pn	**11 04 13.0**	**-0.5**
YKA	**Yellowknife Ar** 0.2nm,0.5s,baz=270,slow=8.7,SNR=4.1	**24.96**	**53**	P	P	**11 06 12.2**	**+0.1**
NEW	**Newport** comp=Z.20nm,19.2s,baz=288,slow=32	**27.71**	**85**	LR	LR	11 15 54.7	
H11N2	**WAKE ISLAND Hy 42.50** baz=27,slow=75,SNR=6.4	**228**		T	T	11 53 43.6	
H11N3	**WAKE ISLAND Hy 42.51** baz=27,slow=75,SNR=5.9	**228**		T	T	11 53 40.9	
H11N1	**WAKE ISLAND Hy 42.52** baz=27,slow=75,SNR=4.9	**228**		T	T	11 53 44.1	
H11S1	**WAKE ISLAND Hy 43.67** baz=26,slow=75,SNR=6.5	**227**		T	T	11 55 12.2	
H11S2	**WAKE ISLAND Hy 43.68** baz=26,slow=75,SNR=4.6	**227**		T	T	11 55 14.4	
H11S3	**WAKE ISLAND Hy 43.68** baz=26,slow=75,SNR=2.9	**227**		T	T	11 55 13.5	
TXAR	**Lajitas Array** 0.2nm,0.8s,baz=299,slow=4.0,SNR=2.7	**47.89**	**98**	P	**P**	**11 09 28.5**	**+1.3**
TXAR	0.1nm,0.5s,baz=354,slow=2.7,SNR=3.7			PcP	**PcP**	**11 10 55.1**	**-0.5**
FINES	**FINESS Array B** 1.3nm,0.8s,baz=359,slow=7.0,SNR=7.5	**64.17**	**356**	P	P	11 11 20.1	-2.9
MKAR	**Makanchi Array** 0.4nm,0.5s,baz=41,slow=5.0,SNR=5.1	**65.72**	**318**	P	P	11 11 30.1	-3.3
AKASG	**Malin Array Be** 1.3nm,0.4s,baz=8.7,slow=5.7,SNR=7.2	**74.72**	**353**	P	P	11 12 25.4	-3.0
CMAR	**Chiang Mai Arr** 0.8nm,0.3s,baz=19,slow=5.7,SNR=4.6	**80.82**	**289**	P	**P**	**11 13 00.8**	**-2.1**
BRTR	**Keskin Array B** 1.1nm,0.8s,baz=11,slow=2.5,SNR=4.3	**85.21**	**349**	P	**P**	**11 13 23.6**	**-1.9**

*GII **23** 11:01:30.1±0.0, 28°.90N×34°.77E, h1km, MD2.4/3*

SGS 23 11:01:30.2,28°.78N×34°.69E,h23km, Egypt

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAQS	**Haql**	**0.34**	**36**	S	Sb	11 01 42.6	-0.1
HAQS				P	Pb	11 01 37.4	-0.3
HAQS	**Haql**	**0.34**	**36**	S	Sb	11 01 42.6	-0.1
HAQS				P	Pb	11 01 37.3	-0.4
RSHS		**0.48**	**169**	S	Sb	11 01 46.7	-0.1
RSHS				P	Pb	11 01 39.6	-0.5
RSHS		**0.48**	**169**	S	Sb	11 01 46.6	-0.2
RSHS				P	Pb	11 01 39.6	-0.5
BDAS	**Al Bad'**	**0.50**	**134**	S	Sb	11 01 47.2	0.0
BDAS				P	Pb	11 01 39.8	-0.5
BDAS	**Al Bad'**	**0.50**	**134**	S	Sb	11 01 47.2	0.0
BDAS				P	Pb	11 01 39.8	-0.6
HQLS		**0.61**	**32**	S	Sb	11 01 50.7	+0.1
HQLS				P	Pb	11 01 41.8	-0.5
HQLS		**0.61**	**32**	S	Sb	11 01 50.7	+0.1
HQLS				P	Pb	11 01 41.8	-0.5
JLOS		**0.70**	**93**	S	Sb	11 01 52.8	-0.5
JLOS				P	Pb	11 01 43.3	-0.5
JLOS		**0.70**	**93**	S	Sb	11 01 52.9	-0.4
JLOS				P	Pb	11 01 43.3	-0.5
EIL	**Elat**	**0.92**	**14**	Pg	Pb	11 01 47.1	-0.4
EIL				Sg	Sb	11 01 59.3	0.0
MBRI	**Mt Berech**	**1.03**	**11**	Pg	Pn	11 01 49.1	-0.3
MBRI				Sg	Sn	11 02 03.5	+0.3
HRFI	**Mount Harif**	**1.29**	**13**	Pg	Pn	11 01 53.3	+0.4
HRFI				Sg	Sb	11 02 11.2	+1.2
KRMI	**Paran Flat**	**1.34**	**1**	Pg	Pn	11 01 54.0	+0.5
KRMI				Sg	Sb	11 02 12.4	+1.1
PRNI	**Paran**	**1.59**	**10**	Pn	Pb	11 01 58.4	-0.6
PRNI				Sn	Sb	11 02 20.1	+1.4
TBKS	**Tabuk**	**1.72**	**108**	S	Sb	11 02 24.4	+2.1
TBKS				P	Pb	11 02 01.7	+0.6
RMNI	**Mount Ramon**	**1.81**	**2**	Pn	Pb	11 02 02.4	-0.4
RMNI				Sn	Sb	11 02 26.2	+1.1
ZFRI	**Zfri**	**1.82**	**13**	Pn	Pb	11 02 02.3	-0.5
ZFRI				Sn	Sb	11 02 26.5	+1.3
KZIT	**Kziot**	**2.14**	**353**	Pn	Pb	11 02 06.7	-1.5
KZIT				Sn	Sb	11 02 35.3	+1.0
MZDA	**Masada**	**2.59**	**13**	Pn	Pn	11 02 12.9	+2.2
YTIR	**Yattir**	**2.60**	**8**	Pn	Pn	11 02 12.1	+1.1
DSI	**Dead Sea**	**2.85**	**12**	Pn	Pn	11 02 16.9	+2.6

*ISCJB **23** 11:23:17.2±1.9, 44°.27N±0°.08×82°.4E±0°.2, h5km±18km, Error ellipse: s-maj=24.0km s-min=6.3km az=33.1*

*SOME **23** 11:23:17.6, 44°.48N×82°.20E, h15km*

*NNC **23** 11:23:19.4±2.5, 44°.40N×82°.06E, h0km, mb2.7, mpv2.2, Error ellipse: s-maj=31.9km s-min=11.1km az=124.0*

ISC 23 11:23:14.5±2.0,**44°.42N**±0°.06×**82°.32E**±0°.09,**h3**km±14km,
n10, σ0s57/20, 6C, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen** 4.2nm,0.5s	**1.72**	**236**	*e*P	Pb	**11 23 46.8**	**0.0**
KTMS				*e*S	Sn	**11 24 08.0**	**+0.1**
	22nm,0.7s						
DJR	**Jarkent** 4.8nm,0.6s	**1.81**	**268**	*e*P	Pg	**11 23 49.3**	**+0.1**
DJR				*e*S	Sg	**11 24 12.8**	**0.0**
	7.8nm,0.4s						
SHLS	**Shalkode** 6.2nm,0.1s	**2.17**	**235**	*e*P	Pg	**11 23 56.4**	**+0.4**
SHLS				*e*S	Sg	**11 24 23.9**	**-0.2**
	13nm,0.1s						
KAPS	**Kapalarasan** 2.8nm,0.6s	**2.28**	**293**	⇑*i*P	Pg	**11 23 57.4**	**-0.8**
KAPS				*e*S	Sb	**11 24 25.8**	**+0.9**
	10.0nm,0.7s						
PDGK	**Podgornoye** 0.7nm,0.4s	**2.32**	**243**	⇑Pn	Pb	**11 23 56.3**	**-0.6**
PDGK				⇑Sn	Sb	**11 24 25.7**	**-0.2**
	5.8nm,0.6s						
MK31	**Makanchi Array** 0.7nm,0.3s,baz=182,slow=17,SNR=9.6	**2.38**	**360**	Pn	Pg	**11 23 59.9**	**-0.2**
MK31				⇑Sn	Sg	**11 24 31.5**	**+0.6**
	0.6nm,0.3s,baz=187,slow=28,SNR=7.2						
MAKZ	**Makanchi**	**2.41**	**354**	⇑Pn	Pb	**11 23 58.0**	**-0.4**
MAKZ				⇑Sn	Sg	**11 24 32.3**	**+0.6**
KPKS	**Kokpek** 1.6nm,0.1s	**2.79**	**251**	*e*P	Pb	**11 24 05.5**	**+0.4**
KPKS				*e*S	Sb	**11 24 39.5**	**-0.1**
	24nm,0.5s						
MNBS	**Baschi** 4.0nm,0.6s	**2.83**	**265**	*e*P	Pb	**11 24 05.4**	**-0.4**
MNBS				*e*S	Sb	**11 24 39.8**	**-1.1**
	15nm,0.4s						
ARXS	**Arharly** 3.7nm,0.4s	**3.23**	**268**	*e*P	Pb	**11 24 13.2**	**+0.7**
ARXS				*e*S	Sb	**11 24 52.6**	**+0.4**
	6.3nm,0.7s						

*ISCJB **23** 11:44:43.8±0.8, 15°.24S±0°.09×73°.6W±0°.1, h98km, mb3.7/4, Error ellipse: s-maj=18.7km s-min=7.6km az=143.6*

*IDC **23** 11:44:47.5±2.1, 15°.22S×73°.45W, h111km±19km, mb3.5/4, mb1 3.7/9, mb1mx3.5/28, mbtmp4.0/9, Error ellipse: s-maj=34.6km s-min=19.3km az=36.0*

ISC 23 11:44:45.8±0.8,**15°.2S**±0°.1×**73°.5W**±0°.1,**h98**km,**n11, σ1s69/13, mb3.7/4, Southern Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana** 4.0nm,0.3s,baz=143,slow=9.9,SNR=5.3	**4.55**	**315**	P	Pn	**11 45 55.1**	**+2.6**
NNA				S	Sn	**11 46 40.7**	**-3.5**
	8.4nm,0.3s,baz=171,slow=19,SNR=7.1						
LPAZ	**La Paz** 1.9nm,0.3s,baz=303,slow=6.7,SNR=35	**5.31**	**102**	P	Pn	**11 46 05.0**	**+1.6**
LVC	**Limon Verde** 45nm,0.3s,baz=358,slow=7.5,SNR=17	**8.55**	**150**	P	Pn	**11 46 48.3**	**+1.1**
LVC				S	Sn	**11 48 21.5**	**-0.6**
	126nm,0.3s,baz=334,slow=18,SNR=12						
SIV	**San Ignacio** 0.3nm,0.3s,baz=281,slow=4.3,SNR=3.1	**12.03**	**95**	P	Pn	**11 47 32.5**	**-1.6**
PTGA	**Pitinga** 2.4nm,0.3s,baz=208,slow=16,SNR=30	**19.68**	**44**	P	**P**	**11 49 07.5**	**+0.2**
SDV	**Santo Domingo** 3.9nm,0.7s,baz=165,slow=20,SNR=5.5	**24.13**	**7**	P	**P**	**11 49 53.5**	**+0.5**
TXAR	**Lajitas Array** 0.3nm,0.6s,baz=152,slow=8.6,SNR=5.9	**53.00**	**327**	P	**P**	**11 53 52.6**	**-0.2**
TORD	**Torodi Ar. Bea** 0.8nm,0.8s,baz=268,slow=4.3,SNR=5.2	**79.59**	**73**	P	**P**	**11 56 41.7**	**-1.1**
ESDC	**Sonseca Array** 0.9nm,0.8s,baz=245,slow=5.5,SNR=4.3	**84.60**	**47**	P	**P**	**11 57 08.7**	**+0.1**
ZALV	**Zalesovo Beam** 0.5nm,0.4s,baz=314,slow=3.7,SNR=4.0	**137.81**	**19**	PKP	**PKPdf**	**12 03 59.5**	**+0.9**
SONM	**Songino Array** 0.6nm,0.6s,baz=24,slow=1.7,SNR=3.7	**147.49**	**0**	PKPbc	**PKPbc**	**12 04 18.9**	**+0.2**

MEX 23 11:48:42.5±0.8,**15°.19N**×**90°.56W, h214**km±109km, **MD4.0, Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.87**	**306**	*i* P	Pn	11 49 19.1	-1.9
CCIG				*i* S	S	11 49 48.8	-2.0

*IDC **23** 12:18:06.8±2.5, 12°.32N×122°.23E, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.4/44, mbtmp3.6/4, ML4.5/1, MS2.8/1, Ms1 2.8/1, ms1mx2.3/25, Error ellipse: s-maj=101.1km s-min=21.8km az=52.0*

*MAN **23** 12:18:07, 12°.35N×121°.54E, h41km, mb4.6, ML3.5, MS3.4*

*ISCJB **23** 12:18:09.8±0.9, 12°.43N±0°.05×121°.81E±0°.08, h19km, mb3.5/3, MS2.6/1, Error ellipse: s-maj=11.3km s-min=6.5km az=170.9*

ISC 23 12:18:09.4±0.8,**12°.40N**±0°.04×**121°.88E**±0°.06,**h19**km,**n13, σ2s48/16, mb3.5/3, 4C-3D, Mindoro**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KALP	**Kalibo**	**0.85**	**148**	*e*P	Pg	**12 18 26.4**	**+0.4**
RCP	**Roxas**	**1.19**	**135**	⇓*e*P	Pn	**12 18 31.3**	**+0.3**
RCP				*e*S	Sg	**12 18 48.2**	**+0.1**
PGP	**Puerto Galera**	**1.42**	**320**	⇓*e*P	Pn	12 18 28.7	-5.5
PGP				*i* S	Sn	**12 18 45.6**	**-6.7**
GQP	**Guinayangan**	**1.59**	**20**	⇑*e*P	Pn	**12 18 36.0**	**-0.5**
GQP				*i* S	Sb	**12 18 58.0**	**+0.1**
JAP	**San Jose, Anti**	**1.65**	**178**	⇓*i* P	Pn	**12 18 38.4**	**+1.1**
MMPH	**Masbate**	**1.70**	**91**	*e*P	Pn	**12 18 38.7**	**+0.7**
MMPH				*e*S	Sg	**12

TKM2	**Tokmak 2**	**4.16**	**43**	⇑Pn	**Pn**	**12 46 43.7**	**+0.1**
	5.4nm,0.7s							
TKM2				⇑Lg	Lg	12 47 53.1		
	5.5nm,0.5s							
KST	**Kastek**	**4.43**	**44**	*e*P	**Pb**	**12 47 01.4**	**+3.5**
	5.0nm,0.5s							
KST				*e*S	**Sg**	**12 48 00.2**	**-2.1**
	11nm,0.5s							
DGS	**Degeres**	**4.48**	**41**	*e*P	**Pb**	**12 47 02.7**	**+4.0**
	7.0nm,0.5s							
DGS				*e*S	**Sg**	**12 48 01.3**	**-2.3**
	16nm,0.6s							
TNSS	**Tian-Shan**	**4.98**	**50**	*e*P	**Pg**	**12 47 13.4**	**-2.0**
	6.4nm,0.4s							
TNSS				*e*S	**Sg**	**12 48 19.9**	**0.0**
	8.9nm,0.5s							
KUU	**Kurty**	**5.23**	**39**	*e*P	**Pg**	**12 47 17.0**	**-3.1**
	4.4nm,0.6s							
KUU				*e*S	**Sg**	**12 48 25.6**	**-2.4**
	10nm,0.6s							
PDGK	**Podgornoye**	**6.71**	**57**	⇓Pn	**Pn**	**12 47 20.1**	**+1.4**
	2.1nm,0.7s							
PDGK				⇑Lg	Lg	12 49 15.7		
	7.1nm,0.7s							
OTUK	**Ortayu**	**8.33**	**3**	⇑Pn	**Pn**	**12 47 41.9**	**+1.1**
	0.8nm,0.6s							
OTUK				⇓Lg	Lg	12 50 09.6		
	3.1nm,0.6s							
AB31	**Akbulak array**	**12.56**	**322**	P	**Pn**	**12 48 36.0**	**-2.7**
	1.3nm,0.6s,baz=128,slow=13,SNR=19							
AB31				⇓S	**Sn**	**12 50 58.1**	**-0.4**
	1.4nm,0.8s,baz=135,slow=23,SNR=5.2							
AKTO	**Aktyubinsk**	**14.28**	**322**	⇓P	**Pn**	**12 48 58.7**	**-3.4**
	3.5nm,0.8s							
AKTO				⇓S	**Sn**	**12 51 46.9**	**+6.5**
	1.0nm,0.6s							

*IDC **23** 12:53:00.7±0.6,3.98N×82.58W,h0km,mb4.3/17, mb1 4.5/21,mb1mx4.4/41,mbtmp4.3/21,ML3.6/4,MS4.1/23, Ms1 4.1/23,ms1mx4.0/29,Error ellipse: s-maj=21.5km s-min=12.0km az=55.0*

*ISCJB **23** 12:53:02.0±0.2,3.92N±0.03×82.57W±0.02,h14km, mb4.6/102,MS4.0/19,Error ellipse: s-maj=5.1km s-min=2.8km az=30.7*

*NEIC **23** 12:53:03.0±0.3,3.78N×82.64W,h10km,mb4.7/93,Error ellipse: s-maj=7.2km s-min=4.4km az=35.0*

*BJI **23** 12:53:03.1,3.80N×82.70W,h10km,mB5.3/8,Ms5.2/6, Ms7 4.9/6*

*GCMT **23** 12:53:03.0±0.2,3.95N×82.65W,h24km±1km,MW5.0/96, Moment Tensor Solution. s33,c42; s96,c139; Duration: 0 Moment tensor: Scale 10^16^Nm; Mrr-0.13±.14; Mθθ-0.27±.11; Mφφ0.40±.15; Mrθ0.02±.14; Mrφ4.03±.12; Mθφ0.81±.17; Best double couple: Mφ4.12400×10^16^ NP1:φ358.00000°,δ90.00000°,λ169.00000°. NP2: φ88.00000°,δ79.00000°,λ0.00000°. Principal axes: T 4.1950, Plg8.0000°, Azm312.0000°; N -0.1410, Plg79.0000°, Azm177.0000°; P -4.0530, Plg8.0000°, Azm43.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 23 12:53:02.8±0.4,3.81N±0.05×82.70W±0.05,h14km,n274, σ1§69/269,mb4.7/102,MS4.1/19,1D,South of Panama

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op		ISC	h	m	s	ISC
MAPC	**Malpelo**	**1.11**	**80**	*e*P		Pb	12	53	18.6	-5.3
TUMC	**Tumaco**	**4.43**	**116**	*e*P		Pn	12	54	02.7	-7.0
GRGC	**Isla de Gorgon**	**4.60**	**100**	*e*P		**Pn**	**12**	**54**	**09.3**	**-2.7**
AZU	**Azuero**	**4.64**	**31**	⇓*i*P		**Pn**	**12**	**54**	**10.1**	**-2.4**
MALC	**Bahia Malaga**	**5.36**	**88**	*e*P		**Pn**	**12**	**54**	**22.5**	**0.0**
OTAV	**Otavalo**	**5.53**	**130**	*e*P		**Pn**	**12**	**54**	**22.9**	**-2.3**
OTAV	**Otavalo**	**5.53**	**130**	*e*Pn		**Pn**	**12**	**54**	**23.2**	**-2.0**
OTAV				*e*Sn		**Sn**	**12**	**55**	**24.0**	**-5.0**
CMBC	**Cumbal**	**5.64**	**120**	*e*P		**Pn**	**12**	**54**	**25.4**	**-1.3**
SOLC	**Bahia Solano**	**5.79**	**65**	*e*P		**Pn**	**12**	**54**	**24.7**	**-3.8**
UPA	**Univ. de Panam**	**6.03**	**31**	*i* P		**Pn**	**12**	**54**	**30.1**	**-1.6**
POPC	**Popayan, Colom**	**6.15**	**102**	*e*P		**Pn**	**12**	**54**	**31.8**	**-1.7**
CRUC	**La Cruz**	**6.16**	**111**	*e*P		**Pn**	**12**	**54**	**34.0**	**+0.2**
HDC	**Heredia**	**6.31**	**347**	*e*Pn		**Pn**	**12**	**54**	**32.9**	**-2.8**
HDC				*e*Sn		**Sn**	**12**	**55**	**45.4**	**-2.4**
CAPC	**Capurgana**	**7.16**	**48**	*e*P		**Pn**	**12**	**54**	**46.9**	**-0.4**
DBBC	**Dabeiba**	**7.21**	**63**	*e*P		**Pn**	**12**	**54**	**47.1**	**-0.8**
FLOC	**Florencia**	**7.38**	**107**	*e*P		**Pn**	**12**	**54**	**49.7**	**-0.5**
TOLC	**Tolima**	**7.40**	**84**	*e*P		**Pn**	**12**	**54**	**51.2**	**+0.3**
HELC	**Santa Helena**	**7.53**	**71**	*e*P		**Pn**	**12**	**54**	**51.7**	**-0.9**
HELC	**Santa Helena**	**7.53**	**71**	*e*Pn		**Pn**	**12**	**54**	**52.3**	**-0.3**
PRAC	**Prado**	**7.80**	**90**	*e*P		**Pn**	**12**	**54**	**57.3**	**+1.2**
PRAC	**Prado**	**7.80**	**90**	*e*Pn		**Pn**	**12**	**54**	**57.5**	**+1.4**
NORC	**Norcasia**	**8.00**	**77**	*e*P		**Pn**	**12**	**54**	**59.6**	**+0.7**
ROSC	**El Rosal**	**8.42**	**83**	Pn		**Pn**	**12**	**55**	**06.0**	**+1.1**
	9.2nm,0.3s,baz=185,slow=7.4,SNR=9.8									
ROSC				Sn		**Sn**	**12**	**56**	**42.2**	**+2.2**
	baz=258,slow=20,SNR=1.3									
ROSC				LR		LR	12	58	14.6	
	comp=Z,914nm,21.8s,baz=278,slow=38									
ROSC	**El Rosal**	**8.42**	**83**	*e*P		**Pn**	**12**	**55**	**08.9**	**+4.0**
ROSC	**El Rosal**	**8.42**	**83**	*e*Pn		**Pn**	**12**	**55**	**06.8**	**+1.9**
ROSC				*e*Sn		**Sn**	**12**	**56**	**37.3**	**-2.8**
SJAC	**San Juan de Ar**	**8.75**	**93**	*e*P		**Pn**	**12**	**55**	**09.5**	**+0.3**
PAYG	**Puerto Ayora**	**8.79**	**240**	*e*Pn		**Pn**	**12**	**55**	**10.3**	**+0.7**
CHIC	**Chingaza**	**8.98**	**84**	*e*P		**Pn**	**12**	**55**	**13.4**	**+0.8**
VILC	**Villavicencio,**	**8.99**	**88**	*e*P		**Pn**	**12**	**55**	**14.3**	**+1.8**
BRRC	**Barranca, Sant**	**9.53**	**69**	*e*P		**Pn**	**12**	**55**	**20.2**	**+0.5**
RUSC	**La Rusia**	**9.80**	**77**	*e*P		**Pn**	**12**	**55**	**26.9**	**+2.9**
RUSC	**La Rusia**	**9.80**	**77**	*e*Pn		**Pn**	**12**	**55**	**26.1**	**+2.1**
BARC	**Barichara**	**9.88**	**73**	*e*P		**Pn**	**12**	**55**	**25.2**	**+0.5**
OCAC	**Ocana**	**10.32**	**64**	*e*P		**Pn**	**12**	**55**	**32.3**	**+1.6**
GRMC	**Gramalote, San**	**10.59**	**68**	*e*P		**Pn**	**12**	**55**	**33.8**	**-0.6**
CBRI	**Barrientos, No**	**10.59**	**68**	*e*P		**Pn**	**12**	**55**	**35.4**	**+0.9**
ATAH	**Atahualpa**	**11.69**	**158**	Pn		**Pn**	**12**	**55**	**52.7**	**+3.0**
	1.1nm,0.3s,baz=7.7,slow=6.8,SNR=6.8									
ATAH				Sn		**Sn**	**12**	**58**	**02.5**	**+2.2**
	0.7nm,0.3s,baz=313,slow=19,SNR=2.3									
ATAH				LR		LR	13	00	10.2	
	comp=Z,4μm,19.1s,baz=334,slow=36									
SDV	**Santo Domingo**	**13.01**	**67**	Pn		**Pn**	**12**	**56**	**06.6**	**-1.0**
	0.6nm,0.3s,baz=238,slow=11,SNR=24									
SDV				LR		LR	13	00	59.9	
	comp=Z,1μm,19.4s,baz=242,slow=37									
SDV	**Santo Domingo**	**13.01**	**67**	*e*P		**Pn**	**12**	**56**	**06.9**	**-0.7**
SDV	**Santo Domingo**	**13.01**	**67**	*e*Pn		**Pn**	**12**	**56**	**07.3**	**-0.3**
NNA	**Nana**	**16.74**	**160**	Pn		**P**	**12**	**57**	**01.0**	**+1.6**
	2.4nm,0.3s,baz=336,slow=11,SNR=14									
NNA				LR		LR	13	03	02.1	
	comp=Z,602nm,19.1s,baz=322,slow=36									
NNA	**Nana**	**16.74**	**160**	*e*Pn		**Pn**	**12**	**56**	**57.4**	**+0.3**
	55nm,0.9s									
CMIG	**Matias Romero**	**17.81**	**319**	P		**Pn**	**12**	**57**	**09.5**	**-1.0**
	0.1nm,0.3s,baz=130,slow=9.9,SNR=12									
CMIG				LR		LR	13	02	42.6	
	comp=Z,815nm,21.1s,baz=131,slow=33									
SDDR	**Presa de Saban**	**18.76**	**36**	*e*P		**Pn**	**12**	**57**	**22.8**	**+0.6**
	60nm,1.0s									
PCRV	**Puerto La Cruz**	**19.01**	**70**	P		**P**	**12**	**57**	**23.4**	**-1.0**
	0.6nm,0.3s,baz=204,slow=7.4,SNR=7.5									
PCRV				LR		LR	13	06	01.0	
	comp=Z,644nm,20.5s,baz=250,slow=41									
TLIG	**Tlapa**	**20.71**	**312**	*e*P		Pn	12	57	44.6	-0.8
	45nm,1.4s									
MPR	**Mayaguez**	**20.91**	**46**	*e*P		**P**	**12**	**57**	**45.9**	**+0.8**
	303nm,2.0s									
CELP	**Cerrillos**	**21.22**	**47**	*e*P		**P**	**12**	**57**	**48.3**	**-0.2**
SJG	**San Juan**	**21.56**	**48**	P		**P**	**12**	**57**	**51.1**	**-1.0**
	19nm,0.8s,baz=249,slow=9.5,SNR=6.7									
SJG	**San Juan**	**21.56**	**48**	*e*P		**P**	**12**	**57**	**51.9**	**-0.2**
	60nm,1.2s									
HUMP	**Col San Antoni**	**21.80**	**48**	*e*P		**P**	**12**	**57**	**55.2**	**+0.5**
	65nm,1.1s									
PTGA	**Pitinga**	**23.16**	**101**	P		**P**	**12**	**58**	**08.0**	**-1.2**
	16nm,1.0s,baz=282,slow=11,SNR=24									
PTGA				LR		LR	13	07	22.2	
	comp=Z,641nm,18.7s,baz=285,slow=37									
PTGA	**Pitinga**	**23.16**	**101**	*e*P		**P**	**12**	**58**	**09.0**	**-0.3**
	47nm,1.1s									
SAML	**Samuel**	**23.22**	**123**	*e*P		**P**	**12**	**58**	**04.4**	**-5.4**
	82nm,1.3s									
FDF	**Fort de France**	**23.85**	**62**	*e*P		**P**	**12**	**58**	**15.9**	**-0.1**
	157nm,1.3s									
DWPF	**Disney Wildern**	**24.20**	**3**	*e*P		**P**	**12**	**58**	**20.4**	**+1.3**
	76nm,1.4s									
LPAZ	**La Paz**	**24.62**	**145**	P		**P**	**12**	**58**	**24.6**	**+0.9**
	29nm,0.8s,baz=333,slow=8.9,SNR=59									
LPAZ				LR		LR	13	09	31.3	
	comp=Z,571nm,19.8s,baz=300,slow=40									
LPAZ	**La Paz**	**24.62**	**145**	*e*P		**P**	**12**	**58**	**24.7**	**+0.9**
	66nm,1.2s									
PB11	**IPOC Station P**	**26.70**	**152**	*e*P		**P**	**12**	**58**	**42.8**	**+0.7**
	24nm,0.8s									
SIV	**San Ignacio**	**29.06**	**133**	P		**P**	**12**	**59**	**04.0**	**+0.9**
	1.5nm,0.8s,baz=318,slow=11,SNR=3.4									
SIV				LR		LR	13	11	06.1	
	comp=Z,1μm,18.2s,baz=347,slow=37									
LVC	**Limon Verde**	**29.51**	**153**	P		**P**	**12**	**59**	**09.7**	**+2.4**
	8.4nm,0.8s,baz=323,slow=5.1,SNR=2.7									
LVC				LR		LR	13	11	32.3	
	comp=Z,965nm,21.8s,baz=328,slow=38									
JCT	**Junction City**	**31.06**	**331**	P		**P**	**12**	**59**	**20.3**	**-0.4**
	14nm,1.4s									
H06E1	**SOCORRO T-PHAS**	**31.34**	**301**	T		T	13	32	15.1	
	SNR=14									
SWET	**Sewanee**	**31.40**	**355**	*e*P		**P**	**12**	**59**	**25.3**	**+1.7**
	2.4nm,1.2s									
CPCT	**Cooper Cave**	**31.53**	**357**	*e*P		**P**	**12**	**59**	**26.8**	**+2.1**
	3.8nm,0.9s									
UALR	**University of**	**32.09**	**345**	*e*P		P	12	59	34.9	+5.3
	26nm,1.3s									
MIAR	**Mount Ida**	**32.21**	**343**	P		**P**	**12**	**59**	**30.4**	**-0.3**
	baz=159									
MIAR	**Mount Ida**	**32.21**	**343**	*e*P		**P**	**12**	**59**	**30.1**	**-0.5**
	15nm,1.1s									
TXAR	**Lajitas Array**	**32.25**	**324**	P		**P**	**12**	**59**	**31.3**	**+0.1**
	0.5nm,0.7s,baz=138,slow=7.7,SNR=7.3									
TXAR				PcP		**PcP**	**13**	**02**	**18.5**	**-1.2**
	0.2nm,0.6s,baz=152,slow=4.0,SNR=2.5									
TXAR				LR		LR	13	12	13.1	
	comp=Z,118nm,19.9s,baz=0.0,slow=36									
TX31	**Lajitas Ar. Si**	**32.25**	**324**	*e*P		**P**	**12**	**59**	**32.0**	**+0.8**
X39A	**Fountain Ranch**	**32.34**	**342**	P		**P**	**12**	**59**	**31.6**	**-0.2**
	baz=158									
W41B	**Gary Mavity, V**	**32.44**	**345**	P		**P**	**12**	**59**	**31.6**	**-1.1**
	baz=162									
WVT	**Waverly**	**32.51**	**352**	*e*P		**P**	**12**	**59**	**37.0**	**+3.7**
	4.3nm,1.0s									
X301	**Greenbrier Sit**	**32.54**	**345**	*e*P		**P**	**12**	**59**	**33.0**	**-0.6**
	32nm,1.6s									
WHAR	**Wooly Hollow**	**32.56**	**345**	*e*P		**P**	**12**	**59**	**33.4**	**-0.3**
	13nm,0.9s									
X201	**Greenbrier Sit**	**32.59**	**345**	*e*P		**P**	**12**	**59**	**33.3**	**-0.7**
	10nm,1.0s									
X38A	**Whitesboro**	**32.71**	**341**	P		**P**	**12**	**59**	**34.9**	**-0.1**
	baz=157									
X37A	**Clayton**	**32.81**	**340**	P		**P**	**12**	**59**	**34.8**	**-1.1**
	baz=156									
W39A	**Magazine**	**32.88**	**343**	P		**P**	**12**	**59**	**36.2**	**-0.3**
	baz=159									
V41A	**Mountainview**	**33.00**	**346**	P		**P**	**12**	**59**	**36.3**	**-1.3**
	baz=162									
V40A	**Witts Springs**	**33.19**	**345**	P		**P**	**12**	**59**	**38.2**	**-1.1**
	baz=161									
U42A	**Revenden**	**33.33**	**347**	P		**P**	**12**	**59**	**40.6**	**+0.2**
	baz=164									
V39A	**Pettigrew**	**33.44**	**344**	P		**P**	**12**	**59**	**41.2**	**-0.3**
	baz=160									
V38A	**Canehill**	**33.68**	**343**	P		**P**	**12**	**59**	**42.2**	**-1.4**
	baz=159									
U40A	**Yellville**	**33.72**	**345**	P		**P**	**12**	**59**	**42.8**	**-1.0**
	baz=162									
U39A	**Green Forest**	**33.91**	**344**	P		**P**	**12**	**59**	**44.1**	**-1.4**
	baz=160									
V37A	**Hulbert**	**33.93**	**342**	P		**P**	**12**	**59**	**44.4**	**-1.3**
	baz=157									
HHAR	**Hobbs**	**33.94**	**344**	*e*P		**P**	**12**	**59**	**45.1**	**-0.7**
	9.3nm,1.0s									
TUL1	**Leonard**	**34.16**	**341**	*e*P		**P**	**12**	**59**	**49.4**	**+1.7**
	24nm,1.3s									
WMOK	**Wichita Mounta**	**34.21**	**336**	*e*P		**P**	**12**	**59**	**52.2**	**+4.0**
	12nm,1.9s									
U38A	**Gravette**	**34.21**	**343**	P		**P**	**12**	**59**	**47.0**	**-1.2**
	baz=159									
T40A	**Mansfield**	**34.39**	**346**	P		**P**	**12**	**59**	**48.8**	**-0.8**
	baz=162									
U37A	**Salina**	**34.40**	**342**	P		**P**	**12**	**59**	**48.5**	**-1.3**
	baz=158									
T38A	**Diamond**	**34.74**	**344**	P		**P**	**12**	**59**	**52.3**	**-0.4**
	baz=159									
S40A	**Lebanon**	**34.81**	**346**	P		**P**	**12**	**59**	**51.8**	**-1.5**
	baz=163									
MNTX	**Cornudas Mount**	**34.99**	**325**	P		**P**	**12**	**59**	**55.2**	**+0.2**
	baz=138,SNR=12									
MNTX	**Cornudas Mount**	**34.99**	**325**	*e*P		**P**	**12**	**59**	**55.1**	**+0.2**
	11nm,1.1s									
T37A	**Cheneyville 18**	**35.01**	**343**	P		**P**	**12**	**59**	**54.4**	**-0.5**
	baz=158,SNR=9.6									
S39A	**Bolivar**	**35.10**	**345**	P		**P**	**12**	**59**	**54.2**	**-1.6**
	baz=161,SNR=11									
OLIL	**Olney**	**35.11**	**353**	*e*P		**P**	**13**	**00**	**00.6**	**+4.7**
	18nm,1.0s									
S38A	**Stockton**	**35.20**	**344**	P		**P**	**12**	**59**	**55.4**	**-1.3**
	baz=160									
T36A	**Boggs Farm, Ca**	**35.24**	**342**	P		**P**	**12**	**59**	**56.6**	**-0.4**
	baz=157									
T35A	**Sooner Cattle**	**35.31**	**341**	P		**P**	**12**	**59**	**57.3**	**-0.4**
	baz=156									
MSTX	**Muleshoe**	**35.36**	**330**	P		**P**	**12**	**59**	**58.5**	**+0.3**
	baz=144									
MSTX	**Muleshoe**	**35.36**	**330**	*e*P		**P**	**12**	**59**	**58.6**	**+0.3**
	15nm,1.1s									
S37A	**Fort Scott**	**35.57**	**343**	P		**P**	**12**	**59**	**59.1**	**-0.7**
	baz=159,SNR=11									
R39A	**Chumby, Stover**	**35.62**	**346**	P		**P**	**12**	**59**	**59.4**	**-0.8**
	baz=162									
R38A	**Fenwick Farm,**	**35.72**	**345**	P		**P**	**12**	**59**	**59.7**	**-1.3**
	baz=161									
U32A	**Winter Ranch,**	**35.73**	**337**	P		**P**	**13**	**00**	**01.1**	**-0.2**
	baz=151									
S36A	**Lake Cedric, C**	**35.76**	**342**	P		**P**	**13**	**00**	**00.2**	**-1.3**
	baz=158									
Q40A	**Laux Farm, Aux**	**36.05**	**348**	P		**P**	**13**	**00**	**03.2**	**-0.7**
	baz=164									
ACSO	**Alum Creek Sta**	**36.26**	**360**	*e*P		**P**	**13**	**00**	**10.5**	**+4.8**
	18nm,1s									
Q39A	**Willow Grove F**	**36.30**	**346**	P		**P**	**13**	**00**	**06.1**	**0.0**
	baz=162									
Q38A	**Cooks Store, C**	**36.38**	**346**	P		**P**	**13**	**00**	**06.0**	**-0.7**
	baz=161									
P39B	**Salisbury**	**36.67**	**347**	P		**P**	**13**	**00**	**07.4**	**-1.9**
	baz=163,SNR=5.5									
SSPA	**Standing Stone**	**36.92**	**6**	*e*P		**P**	**13**	**00**	**14.0**	**+2.7**
	9.2nm,1.0s									
121A	**Cookes Peak, D**	**37.00**	**323**	P		**P**	**13**	**00**	**14.3**	**+2.0**
	baz=135									
121A	**Cookes Peak, D**	**37.00**	**323**	*e*P		**P**	**13**	**00**	**13.9**	**+1.6**
	11nm,1.0s									
HDIL	**Hopedale**	**37.07**	**352**	*e*P		**P**	**13**	**00**	**16.8**	**+4.2**
	16nm,0.6s									
P37A	**Lathrop**	**37.15**	**345**	P		**P**	**13**	**00**	**12.5**	**-0.8**
	baz=160									
KSU1	**Kansas State U**	**37.34**	**342**	*e*P		P	13	00	20.5	+5.6
	15nm,0.9s									
P36A	**Good Intent, A**	**37.41**	**344**	P		**P**	**13**	**00**	**15.2**	**-0.3**
	baz=159									
BNM	**Barren Site**	**37.51**	**326**	*e*P		**P**	**13**	**00**	**18.6**	**+1.9**
LAZ	**Ladron**	**37.98**	**326**	*e*P		**P**	**13**	**00**	**22.6**	**+1.9**
ANMO	**Albuquerque**	**38.02**	**327**	P		**P**	**13**	**00**	**22.3**	**+1.3**
	baz=139									
ANMO	**Albuquerque**	**38.02**	**327**	*e*P		**P**	**13**	**00**	**22.3**	**+1.3**
	7.9nm,0.9s									
O34A	**Beatrice**	**38.36**	**343**	P		**P**	**13**	**00**	**23.0**	**-0.6**
	baz=157									
BINY	**Binghamton**	**38.70**	**8**	*e*P		**P**	**13**	**00**	**29.3**	**+3.0**
	15nm,1.1s									
T25A	**Trinidad**	**38.70**	**332**	P		**P**	**13**	**00**	**28.2**	**+1.5**
	baz=144,SNR=18									
T25A	**Trinidad**	**38.70**	**332**	*e*P		**P**	**13**	**00**	**28.4**	**+1.7**
	32nm,1.3s									
CPUP	**Villa Florida**	**38.74**	**142**	P		**P**	**13**	**00**	**25.6**	**-1.3**
	2.9nm,0.8s,baz=320,slow=7.3,SNR=6.9									
CPUP				LR		LR	13	18	07.1	
	comp=Z,368nm,18.1s,baz=326,slow=39									
CPUP	**Villa Florida**	**38.74**	**142**	*e*P		**P**	**13**	**00**	**26.5**	**-0.4**
MMNY	**Mt. Morris Dam**	**38.99**	**6**	*e*P		**P**	**13**	**00**	**33.5**	**+4.7**
BDFB	**Brasilia**	**39.39**	**120**	LR		LR	13	17	31.0	
	comp=Z,438nm,18.9s,baz=168,slow=37									
KSCO	**Kaye Shedlock'**	**39.45**	**335**	*e*P		**P**	**13**	**00**	**34.0**	**+1.1**
	6.2nm,0.4s									
TRY	**Troy**	**39.59**	**10**	*e*P		**P**	**13**	**00**	**34.1**	**+0.4**
	30nm,1.0s									
SDCO	**Great Sand Dun**	**39.70**	**331**	P		**P**	**13**	**00**	**36.4**	**+1.2**
	baz=143,SNR=21									
SDCO	**Great Sand Dun**	**39.70**	**331**	*e*P		**P**	**13**	**00**	**36.5**	**+1.3**
	17nm,1.1s									
J41A	**Loganville**	**39.92**	**352**	P		**P**	**13**	**00**	**36.8**	**+0.2**
	baz=168									
S22A	**4UR Ranch, Cre**	**40.35**	**330**	P		**P**	**13**	**00**	**41.7**	**+1.1**
	baz=141,SNR=7.6									
S22A	**4UR Ranch, Cre**	**40.35**	**330**	*e*P		**P**	**13**	**00**	**42.1**	**+1.5**
	15nm,1.5s									
X16A	**Lo Mia Camp, P**	**40.50**	**322**	*e*P		**P**	**13**	**00**	**43.3**	**+1.6**
J36A	**Seneca 1, Swea**	**40.69**	**347**	P		**P**	**13**	**00**	**41.5**	**-1.5**
	baz=162									
MVCO	**Mesa Verde**	**40.80**	**328**	P		**P**	**13**	**00**	**45.0**	**+0.7**
	baz=138,SNR=9.4									
MVCO	**Mesa Verde**	**40.80**	**328**	*e*P		**P**	**13**	**00**	**45.3**	**+1.1**
	20nm,1.3s									
WUAZ	**Wupatki**	**41.21**	**324**	P		**P**	**13**	**00**	**48.6**	**+1.1**
	baz=134,SNR=6.2									
WUAZ	**Wupatki**	**41.21**	**324**	*e*P		**P**	**13**	**00**	**48.7**	**+1.1**
	10nm,0.9s									
PLVO	**Plevna**	**41.36**	**6**	*e*P		**P**	**13**	**00**	**53.1**	**+4.7**
	7.7nm,0.8s									
ISCO	**Idaho Springs**	**41.40**	**333**	P		**P**	**13**	**00**	**50.2**	**+1.0**
	baz=144									
ISCO	**Idaho Springs**	**41.40**	**333**	*e*P		**P**	**13**	**00**	**50.5**	**+1.3**
	17nm,1.6s									
PV01	**Paradox Valley**	**41.53**	**329**	*e*P		**P**	**13**	**00**	**51.7**	**+1.4**
SMCO	**Snowmass**	**41.54**	**331**	*e*P		**P**	**13**	**00**	**52.6**	**+2.1**
	19nm,1.4s									
ECSD	**EROS Data Cent**	**41.63**	**345**	P		**P**	**13**	**00**	**49.0**	**-1.6**
	baz=159									
ECSD	**EROS Data Cent**	**41.63**	**345**	*e*P		**P**	**13**	**00**	**48.9**	**-1.8**
	11nm,1.3s									
PV05	**Paradox Valley**	**41.77**	**328**	*e*P		**P**	**13**	**00**	**53.3**	**+1.1**
PV04	**Paradox Valley**	**41.90**	**329**	*e*P		**P**	**13**	**00**	**54.2**	**+1.0**
PV10	**Paradox Valley**	**41.96**	**329**	*e*P		**P**	**13**	**00**	**54.6**	**+0.9**
SPMN	**Marine on St.**	**42.19**	**349**	P		**P**	**13**	**00**	**56.4**	**+1.2**
	baz=165									
SPMN	**Marine on St.**	**42.19**	**349**	*e*P		**P**	**13**	**00**	**56.1**	**+0.9**
	25nm,1.3s									
H33A	**Prehn Over Nor**	**42.54**	**345**	P		**P**	**13**	**00**	**57.9**	**-0.3**
	baz=159									
PHWY	**Pilot Hill**	**42.56**	**334**	*e*P		**P**	**13**	**01**	**01.1**	**+2.5**
	13nm,1.4s									
BC3	**Big Chuckawall**	**42.58**	**318**	P		**P**	**13**	**00**	**58.7**	**0.0**
	baz=127									
O20A	**White River Ci**	**42.90**	**331**	*e*P		**P**	**13**	**01**	**04.0**	**+2.7**
	8.5nm,0.9s									
PKCU	**Pink Cliffs**	**43.08**	**325**	*e*P		**P**	**13**	**01**	**05.5**	**+2.5**
	12nm,1.0s									
BELC	**Belle Mtn. Jos**	**43.15**	**318**	P		**P**	**13**	**01**	**03.8**	**+0.4**
	baz=127									
SRU	**San Rafael Swe**	**43.28**	**328**	*e*P		**P**	**13**	**01**	**05.6**	**+1.2**
	10nm,1.0s									
LCMT	**Little Creek M**	**43.33**	**324**	*e*P		**P**	**13**	**01**	**07.0**	**+2.2**
	13nm,1.7s									
GMRC	**Granite Mounta**	**43.40**	**319**	P		**P**	**13**	**01**	**05.8**	**+0.4**
	baz=128									
**M

D08A	**Wollman Farm,**	**53.24**	**330**	*e*P	**P**	**13 02 23.7**	**+2.7**
B08A	**Colville Reser**	**54.33**	**331**	*e*P	**P**	**13 02 31.5**	**+2.5**
EDM	**Edmonton**	**55.33**	**338**	*e*P	**P**	**13 02 35.5**	**-0.6**
YKA	**Yellowknife Ar**	**63.15**	**344**	P	**P**	**13 03 29.0**	**-1.0**
	4.1nm,0.9s,baz=140,slow=6.7,SNR=20						
YKA				LR	LR	13 31 13.0	
	comp=Z,7.5nm,21.3s,baz=180,slow=36						
DLBC	**Dease Lake**	**65.68**	**335**	*e*P	**P**	**13 03 47.2**	**+0.4**
	12nm,1.0s						
PPT	**Papeete**	**69.26**	**250**	LR	LR	13 27 38.1	
	comp=Z,112nm,18.2s,baz=72,slow=30						
PPT2	**Papeete2**	**69.27**	**250**	*e*S	**S**	**13 13 13.4**	**-3.4**
	42nm,25.8s						
PPT2	**Papeete2**	**69.27**	**250**	*e*LR	LR	13 25 12.6	
	518nm,25.5s						
TBI	**Tubuai**	**70.37**	**244**	*e*S	**S**	**13 13 26.1**	**-3.3**
	53nm,26.5s						
TBI	**Tubuai**	**70.37**	**244**	*e*LR	LR	13 25 43.8	
	441nm,27.8s						
INK	**Inuvik**	**72.81**	**342**	P	**P**	**13 04 31.3**	**+0.6**
	4.1nm,0.9s,baz=104,slow=9.4,SNR=6.1						
INK	**Inuvik**	**72.81**	**342**	*e*P	**P**	**13 04 31.2**	**+0.5**
	11nm,1.1s						
BMRM	**Bremner River**	**73.33**	**333**	*e*P	**P**	**13 04 35.1**	**+1.1**
	16nm,1.1s						
EGAK	**Eagle**	**73.55**	**338**	*e*P	**P**	**13 04 37.2**	**+2.1**
	4.8nm,0.9s						
SUMG	**Summit**	**73.85**	**13**	*e*P	**P**	**13 04 35.8**	**-1.5**
	15nm,1.0s						
DOT	**Dot Lake**	**74.19**	**336**	*e*P	**P**	**13 04 39.5**	**+0.6**
	24nm,1.1s						
SML	**Sawmill**	**75.31**	**333**	*e*P	**P**	**13 04 46.6**	**+1.1**
	3.0nm,1.1s						
ILAR	**Eielson Array**	**75.77**	**337**	P	**P**	**13 04 47.4**	**-0.6**
	1.4nm,0.8s,baz=128,slow=4.3,SNR=16						
ILAR				LR	LR	13 40 32.4	
	comp=Z,99nm,20.1s,baz=124,slow=38						
TRF	**Thorofare Moun**	**76.71**	**335**	*e*P	**P**	**13 04 55.6**	**+2.0**
	8.9nm,1.0s						
KTH	**Kantishna Hill**	**77.01**	**335**	*e*P	**P**	**13 04 56.8**	**+1.6**
	11nm,1.0s						
KTH				*e*PP	**PP**	**13 07 51.1**	**+2.6**
BPAW	**Bear Paw Mtn.**	**77.21**	**335**	*e*P	**P**	**13 04 56.9**	**+0.7**
	2.3nm,1.0s						
BPAW				*e*PP	**PP**	**13 07 46.6**	**-3.5**
PPLA	**Purkeypile**	**77.36**	**334**	*e*P	**P**	**13 04 56.8**	**-0.4**
	27nm,1.3s						
DBIC	**Dimbokro**	**77.51**	**84**	P	**P**	**13 04 58.2**	**-0.6**
	6.7nm,1.0s,baz=182,slow=6.7,SNR=3.6						
DBIC				LR	LR	13 37 06.0	
	comp=Z,35nm,21.9s,baz=246,slow=34						
COLD	**Coldfoot**	**77.92**	**338**	*e*P	**P**	**13 05 02.5**	**+2.4**
	7.1nm,1.2s						
ESDC	**Sonseca Array**	**78.91**	**50**	P	**P**	**13 05 04.8**	**-1.5**
	1.5nm,0.5s,baz=274,slow=5.1,SNR=14						
TORD	**Torodi Ar. Bea**	**83.69**	**77**	P	**P**	**13 05 31.4**	**-0.6**
	1.3nm,0.7s,baz=281,slow=4.2,SNR=8.3						
NOA	**NORSAR Array B**	**88.60**	**29**	LR	LR	13 41 37.8	
	comp=Z,48nm,20.8s,baz=265,slow=33						
KEST	**Kesra**	**89.47**	**54**	LR	LR	13 42 59.1	
	comp=Z,51nm,19.9s,baz=300,slow=34						
GERES	**GERESS Array B**	**91.38**	**41**	P	**P**	**13 06 07.1**	**-1.6**
	0.3nm,0.5s,baz=193,slow=5.5,SNR=3.5						
GERES				LR	LR	13 42 29.9	
	comp=Z,71nm,19.1s,baz=268,slow=33						
ARCES	**ARCESS Array B**	**92.75**	**20**	LR	LR	13 42 42.4	
	comp=Z,52nm,21.4s,baz=280,slow=32						
QSPA	**South Pole Qui**	**93.83**	**180**	*e*P	**P**	**13 06 20.6**	**+1.1**
	27nm,1.0s						
FINES	**FINESS Array B**	**95.54**	**27**	LR	LR	13 44 55.3	
	comp=Z,73nm,21.4s,baz=246,slow=33						
VNDA	**Vanda**	**99.07**	**191**	LR	LR	13 43 28.8	
	comp=Z,44nm,19.9s,baz=126,slow=30						
ZALV	**Zalesovo Beam**	**121.51**	**9**	PKP	**PKPdf**	**13 11 55.2**	**-0.9**
	0.5nm,0.6s,baz=308,slow=2.3,SNR=3.2						
MKAR	**Makanchi Array**	**127.90**	**13**	PKP	**PKPdf**	**13 12 08.7**	**+0.1**
	0.4nm,0.7s,baz=4.4,slow=2.6,SNR=3.0						
SONM	**Songino Array**	**127.96**	**352**	PKP	**PKPdf**	**13 12 07.2**	**-1.6**
	0.4nm,0.6s,baz=358,slow=4.3,SNR=2.4						
WMQ	**Urumqi**	**131.81**	**9**	*e*PKP	**PKPdf**	**13 12 13.8**	**-2.3**
KSH	**Kashi**	**132.63**	**22**	*e*PKP	**PKPdf**	**13 12 18.9**	**+1.0**
KSH				*e*PP	**PP**	**13 14 43.4**	**+2.7**
KSH				PKS	**PKSdf**	**13 15 53.6**	**-0.8**
KSH				SKS	**SKSdf**	**13 19 27.4**	**-1.9**
KSH				SKKS	**SKKSac**	**13 21 35.4**	**-2.5**
KSH				LR	LR		
	comp=N,180nm,6.4s						
KSH				LR	LR		
	comp=E,170nm,6.3s						
KSH				LR	LR		
	comp=Z,80nm,5.8s						
HHC	**Hu-ho-hao-te**	**133.68**	**345**	*e*PKP	**PKPdf**	**13 12 16.4**	**-3.4**
HHC				PP	**PP**	**13 14 50.3**	**+3.1**
HHC				AMB	AMB		
	comp=Z,30nm,7.5s						
HHC				LR	LR		
	comp=N,120nm,17.4s						
HHC				LR	LR		
	comp=E,130nm,17.4s						
HHC				LR	LR		
	comp=Z,130nm,18.7s						
ASAR	**Alice Springs**	**139.53**	**237**	PKhKP	PKPpre	13 12 27.6	
	0.6nm,0.8s,baz=104,slow=2.0,SNR=4.0						
WRA	**Warramunga Arr**	**140.50**	**243**	PKhKP	PKPpre	13 12 27.0	
	0.5nm,0.7s,baz=97,slow=1.8,SNR=3.6						
WRA				PKP	**PKPdf**	**13 12 30.8**	**-2.0**
	0.8nm,0.7s,baz=96,slow=1.9,SNR=4.5						
ENH	**Enshi**	**144.16**	**342**	*e*PKPdf	**PKPdf**	**13 12 39.1**	**0.0**
H01W1	**Cape Leeuwin H**	**145.34**	**205**	T	T	15 55 51.6	
	baz=149,slow=76,SNR=3.6						
H01W2	**Cape Leeuwin H**	**145.34**	**205**	T	T	15 55 56.0	
	baz=149,slow=76,SNR=3.5						
H01W3	**Cape Leeuwin H**	**145.35**	**205**	T	T	15 55 53.0	
	baz=149,slow=76,SNR=4.1						
FITZ	**Fitzroy Crossi**	**148.83**	**241**	PKPbc	**PKPbc**	**13 12 52.6**	**+1.5**
	2.7nm,0.8s,baz=146,slow=2.5,SNR=3.4						

IDC 23 13:02:30.4±2.9, 6°89S×129°53E, h138km±38km, mb3.1/1, mb1 3.5/5, mb1mx3.1/36, mbtmp3.9/5, Error ellipse: s-maj=66.7km s-min=20.7km az=89.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**6.23**	**16**	P	Pn	13 04 00.6	+0.4
	19nm,0.3s,baz=180,slow=18,SNR=2.1						
SIJI				S	Sn	13 05 06.2	-4.1
	29nm,0.3s,baz=184,slow=18,SNR=2.8						
FITZ	**Fitzroy Crossi**	**11.77**	**198**	P	Pn	13 05 13.2	-0.8
	0.5nm,0.3s,baz=29,slow=11,SNR=8.4						
FITZ				S	Sn	13 07 16.2	-7.8
	0.4nm,0.3s,baz=63,slow=18,SNR=2.7						
WRA	**Warramunga Arr**	**13.79**	**161**	P	Pn	13 05 38.9	-1.2
	0.4nm,0.3s,baz=346,slow=13,SNR=20						
WRA				S	Sn	13 08 04.2	-8.5
	0.8nm,0.3s,baz=333,slow=22,SNR=8.6						
ASAR	**Alice Springs**	**17.20**	**166**	P	Pn	13 06 23.8	+1.4
	0.2nm,0.3s,baz=343,slow=10.0,SNR=25						
ASAR				S	S	13 09 28.4	-5.7
	0.2nm,0.3s,baz=348,slow=26,SNR=6.5						
MKAR	**Makanchi Array**	**67.88**	**327**	P	P	13 13 13.9	-0.1
	0.2nm,0.3s,baz=127,slow=8.0,SNR=2.6						

*DDA **23** 13:21:12.2, 39°09N×29°04E, h8km, Md3.2*
*ISCJB **23** 13:21:13.5±0.5, 39°07N±0°04×29°04E±0°03, h2km±6km, Error ellipse: s-maj=6.1km s-min=3.3km az=176.9*
*ISK **23** 13:21:13.0, 39°09N×29°04E, h5km, ML2.8*
*CSEM **23** 13:21:13.7±0.2, 39°06N×29°05E, h2km, MD3.2, Error ellipse: s-maj=4.3km s-min=3.6km az=165.0*

IDC 23 13:21:13.1±1.0, 39°08N±0°02×29°05E±0°02, h7km±9km, n63, σ0°60/82, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**263**	*i* P	**Pg**	**13 21 18.4**	**+0.1**
DEMI				*i* S	**Sg**	**13 21 22.0**	**+0.2**
DEMI	**Demirci**	**0.26**	**263**	P	**Pg**	**13 21 18.4**	**+0.1**
DEMI				S	**Sg**	**13 21 22.0**	**+0.2**
GEDZ	**Gediz**	**0.28**	**96**	*e*PG	**Pb**	**13 21 19.8**	**-0.8**
GEDZ				*e*SG	**Sb**	**13 21 24.6**	**-0.9**
GEDZ	**Gediz**	**0.28**	**96**	*e*Pg	**Pb**	**13 21 19.8**	**-0.8**
GEDZ				*e*Sg	**Sb**	**13 21 24.7**	**-0.9**
GDZ	**Gediz**	**0.34**	**88**	*i* P	**Pg**	**13 21 20.1**	**+0.3**
GDZ				*i* S	**Sg**	**13 21 24.9**	**+0.7**
GDZ	**Gediz**	**0.34**	**88**	P	**Pg**	**13 21 20.0**	**+0.3**
GDZ				S	**Sg**	**13 21 24.9**	**+0.7**
TVSB	**Tavsanli**	**0.49**	**41**	*e*PG	**Pg**	**13 21 22.7**	**0.0**
TVSB	**Tavsanli**	**0.49**	**41**	*e*Pg	**Pg**	**13 21 22.7**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*PG	**Pg**	**13 21 26.1**	**+0.7**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*Pg	**Pg**	**13 21 26.1**	**+0.7**
MANT	**Manisa**	**0.70**	**213**	*i* P	**Pg**	**13 21 25.5**	**-1.0**
MANT				*i* S	**Sg**	**13 21 34.9**	**-0.7**
MANT	**Manisa**	**0.70**	**213**	P	**Pg**	**13 21 25.5**	**-1.0**
MANT				S	**Sg**	**13 21 34.9**	**-0.7**
KHL	**Karahalli**	**0.84**	**153**	*e*PG	**Pn**	**13 21 31.3**	**0.0**
KHL	**Karahalli**	**0.84**	**153**	*e*Pg	**Pn**	**13 21 31.3**	**0.0**
AKS	**Akhisar**	**0.98**	**259**	*e*PG	**Pb**	**13 21 32.7**	**+0.3**
AKS	**Akhisar**	**0.98**	**259**	*e*Pg	**Pb**	**13 21 32.7**	**+0.3**
BALB	**Balikesir**	**1.07**	**302**	*e*PG	**Pn**	**13 21 34.6**	**+0.1**
BALB				*e*SG	**Sn**	**13 21 50.4**	**+0.9**
BALB	**Balikesir**	**1.07**	**302**	*e*Pg	**Pn**	**13 21 34.6**	**+0.1**
BALB				*e*Sg	**Sn**	**13 21 50.4**	**+0.9**
IGD	**Bursa**	**1.19**	**6**	*i* P	**Pg**	**13 21 34.1**	**-1.9**
IGD				*i* S	**Sg**	**13 21 50.0**	**-1.5**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*PN	**Pn**	**13 21 38.0**	**+0.6**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*Pn	**Pn**	**13 21 38.0**	**+0.6**
BALY	**Balya**	**1.29**	**301**	*i* P	**Pg**	**13 21 37.4**	**-0.5**
BALY				*i* S	**Sb**	**13 21 54.3**	**-0.2**
BALY	**Balya**	**1.29**	**301**	P	**Pg**	**13 21 37.3**	**-0.5**
BALY				S	**Sb**	**13 21 54.3**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*PN	**Pb**	**13 21 38.0**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*Pn	**Pb**	**13 21 38.0**	**+0.2**
IZI	**Iznik**	**1.30**	**14**	*e*PN	**Pb**	**13 21 38.3**	**+0.4**
IZI	**Iznik**	**1.30**	**14**	*e*Pn	**Pb**	**13 21 38.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pb**	**13 21 38.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pb**	**13 21 38.0**	**+0.1**
BORA	**Eskisehir**	**1.35**	**53**	*i* P	**Pn**	**13 21 38.2**	**-0.3**
BORA				*i* S	**Sb**	**13 21 56.5**	**+0.2**
BORA	**Eskisehir**	**1.35**	**53**	P	**Pn**	**13 21 38.2**	**-0.3**
BORA				S	**Sb**	**13 21 56.5**	**+0.2**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	**Pg**	**13 21 40.4**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn	**Pg**	**13 21 40.4**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**219**	*e*PN	**Pg**	**13 21 41.5**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**219**	*e*Pn	**Pg**	**13 21 41.5**	**+0.6**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*PN	**Pg**	**13 21 41.6**	**+0.6**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*Pn	**Pg**	**13 21 41.6**	**+0.6**
ESKT	**Eskisehir**	**1.47**	**72**	*e*PN	**Pg**	**13 21 41.5**	**+0.2**
ESKT	**Eskisehir**	**1.47**	**72**	*i* P	**Pn**	**13 21 40.3**	**+0.2**
ESKT				*i* S	**Sg**	**13 22 00.4**	**+0.1**
ESKT	**Eskisehir**	**1.47**	**72**	*e*Pn	**Pg**	**13 21 41.5**	**+0.2**
SEYT	**Eskypehyr**	**1.47**	**72**	P	**Pn**	**13 21 40.3**	**+0.3**
SEYT				S	**Sg**	**13 22 00.4**	**+0.1**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN	**Pg**	**13 21 41.6**	**-0.1**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn	**Pg**	**13 21 41.7**	**-0.1**
SBT5	**Esenkoy-Cinarc**	**1.56**	**355**	*e*PN	**Pg**	**13 21 43.3**	**+0.3**
SBT5				*e*SN	**Sg**	**13 22 04.1**	**+0.9**
SBT5	**Esenkoy-Cinarc**	**1.56**	**355**	*e*Pn	**Pg**	**13 21 43.3**	**+0.3**
SBT5				*e*Sn	**Sg**	**13 22 04.1**	**+0.9**
EDC	**Edincik**	**1.56**	**325**	*e*PN	**Pg**	**13 21 43.1**	**0.0**
EDC	**Edincik**	**1.56**	**325**	*e*Pn	**Pg**	**13 21 43.1**	**0.0**
GULT	**Gulveren**	**1.77**	**39**	*e*PN	**Pg**	**13 21 46.4**	**-0.6**
GULT	**Gulveren**	**1.77**	**39**	*e*Pn	**Pg**	**13 21 46.4**	**-0.6**
SBT2	**Guzelce-Avcila**	**1.85**	**347**	*e*PN	**Pg**	**13 21 47.8**	**-0.7**
SBT2	**Guzelce-Avcila**	**1.85**	**347**	*e*Pn	**Pg**	**13 21 47.8**	**-0.7**
MRMT	**Marmara Adasi**	**1.89**	**324**	*e*PN	**Pb**	**13 21 47.5**	**-0.5**
MRMT	**Marmara Adasi**	**1.89**	**324**	*e*Pn	**Pb**	**13 21 47.5**	**-0.5**
SBT3	**Marmara-Eregli**	**1.99**	**336**	*e*PN	**Pb**	**13 21 49.6**	**+0.1**
SBT3	**Marmara-Eregli**	**1.99**	**336**	*e*Pn	**Pb**	**13 21 49.6**	**+0.1**
SBT4	**Kumbag-Tekirda**	**2.10**	**327**	*e*PN	**Pb**	**13 21 50.9**	**-0.5**
SBT4	**Kumbag-Tekirda**	**2.10**	**327**	*e*Pn	**Pb**	**13 21 50.9**	**-0.5**
SILT	**Sile**	**2.12**	**12**	*e*PN	**Pb**	**13 21 51.6**	**-0.3**
SILT	**Sile**	**2.12**	**12**	*e*Pn	**Pb**	**13 21 51.6**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.16**	**319**	*e*PN	**Pb**	**13 21 51.4**	**-1.1**
RKY	**Sarkoy-Tekirda**	**2.16**	**319**	*e*Pn	**Pb**	**13 21 51.4**	**-1.1**
KLYT	**Kilyos**	**2.17**	**360**	*e*PN	**Pb**	**13 21 52.0**	**-0.8**
KLYT	**Kilyos**	**2.17**	**360**	*e*Pn	**Pb**	**13 21 52.0**	**-0.8**

IDC 23 13:33:33.0±10.0, 17°09S×178°91W, h584km±100km, mb2.8/4, mb1 3.0/4, mb1mx2.8/22, mbtmp3.8/4, Error ellipse: s-maj=128.5km s-min=39.2km az=131.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.62**	**240**	P	P	13 40 07.2	-0.3
	1.0nm,0.7s,baz=86,slow=8.9,SNR=4.5						
WRA	**Warramunga Arr**	**44.32**	**259**	P	P	13 40 52.1	-0.4
	0.3nm,0.4s,baz=92,slow=8.1,SNR=21						
WRA				PcP	PcP	13 42 23.6	-0.2
	0.6nm,1.0s,baz=90,slow=3.8,SNR=3.5						
ASAR	**Alice Springs**	**44.56**	**253**	P	P	13 40 54.5	+0.2
	2.7nm,0.4s,baz=90,slow=7.6,SNR=148						
ASAR				PcP	PcP	13 42 24.2	-0.4
	0.2nm,0.4s,baz=102,slow=3.9,SNR=4.2						
ILAR	**Eielson Array**	**85.20**	**13**	P	P	13 45 08.0	-0.1
	0.5nm,1.1s,baz=218,slow=4.5,SNR=3.8						

*CSEM **23** 13:33:48.8±0.6, 39°77N×38°71E, h2km, MD2.6, Error ellipse: s-maj=12.8km s-min=10.4km az=108.0*
*ISK **23** 13:33:51.3, 40°06N×38°66E, h9km, ML2.5*
*ISCJB **23** 13:33:52.3±0.8, 40°07N±0°05×38°67E±0°04, h10km, Error ellipse: s-maj=7.5km s-min=4.7km az=178.3*
*DDA **23** 13:33:52.5, 40°06N×38°68E, h7km, Md2.6*

IRC 23 13:33:51.3±1.0, 40°06N±0°06×38°67E±0°03, h10km, n13, σ0°45/18, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SUSE	**Susehri**	**0.39**	**293**	*i* P	**Pb**	**13 34 00.6**	**+0.3**
SUSE				*i* S	**Sb**	**13 34 06.3**	**-0.1**
SUSE	**Susehri**	**0.39**	**293**	P	**Pb**	**13 34 00.6**	**+0.3**
SUSE				S	**Sb**	**13 34 06.3**	**-0.1**
KELT	**Kelkit**	**0.46**	**79**	*i* P	**Pb**	**13 34 01.6**	**-0.1**
KELT				*i* S	**Sb**	**13 34 08.4**	**-0.2**
KELT	**Kelkit**	**0.46**	**79**	P	**Pb**	**13 34 01.6**	**-0.1**
KELT				S	**Sb**	**13 34 08.4**	**-0.2**
REFA	**Refahiye_ERZ**	**0.67**	**173**	*e*P	Pg	13 33 56.1	-8.1
REFA				*i* S	Sg	13 33 59.1	-14
REFA	**Refahiye_ERZ**	**0.67**	**173**	P	Pg	13 33 56.1	-8.2
REFA				S	Sg	13 33 59.1	-14
GUMT	**Gumushane**	**0.74**	**57**	*e*PG	**Pg**	**13 34 05.4**	**-0.2**
GUMT				*e*SG	**Sb**	**13 34 17.7**	**+1.1**
GUMT	**Gumushane**	**0.74**	**57**	*e*Pg	**Pg**	**13 34 05.4**	**-0.2**
GUMT				*e*Sg	**Sb**	**13 34 17.7**	**+1.1**
ESPY	**Espiye-Giresun**	**0.86**	**3**	*e*PG	**Pn**	**13 34 09.2**	**-0.3**
ESPY				*e*SG	**Sb**	**13 34 19.7**	**+0.1**
ESPY	**Espiye-Giresun**	**0.86**	**3**	*e*Pg	**Pn**	**13 34 09.2**	**-0.3**
SVSK	**Karacayir**	**1.29**	**264**	*e*PN	**Pg**	**13 34 16.0**	**-0.1**
SVSK	**Karacayir**	**1.29**	**264**	*e*Pn	**Pg**	**13 34 16.0**	**-0.1**
PTK	**Pertek**	**1.29**	**154**	*e*PN	**Pg**	**13 34 16.2**	**+0.1**

*ISCJB **23** 13:54:15.0±0.2, 10°79N±0°03×85°73W±0°03, h30km, mb4.8/183, MS4.0/21, Error ellipse: s-maj=5.1km s-min=2.4km az=43.2*
*CASC **23** 13:54:15.9±1.5, 10°50N×85°98W, h21km±7km, MD5.0, ML4.6, mb4.9(NEIC)*
*MOS **23** 13:54:15.4±1.3, 10°82N×85°66W, h33km, mb5.1/40, Error ellipse: s-maj=14.5km s-min=5.4km az=113.6*
*IDC **23** 13:54:15.4±0.6, 10°90N×85°62W, h25km±3km, mb4.5/22, mb1 4.6/24, mb1mx4.5/39, mbtmp4.6/24, ML4.4/2, MS3.9/22, Ms1 3.9/22, ms1mx3.8/31, Error ellipse: s-maj=19.8km s-min=8.6km az=62.0*
*GCMT **23** 13:54:16.1±0.2, 10°51N×86°01W, h34km±1km, MW5.1/93, Moment Tensor Solution. s42,c56; s93,c137; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-0.16±.16; Mθθ 1.63±.12; Mϕϕ-1.47±.13; Mrθ 1.56±.14; Mθϕ-4.19±.10; Mϕr-0.99±.15; Best double couple: M=4.78700×10^16 NP1:ϕs178.00000°, δ78.00000°, λ165.00000°. NP2: ϕs172.00000°, δ76.00000°, λ13.00000°. Principal axes: T 5.1850, Plg19.0000°, Azm35.0000°; N -0.7990, Plg71.0000°, Azm218.0000°; P -4.3890, Plg1.0000°, Azm125.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **23** 13:54:16.1±0.2, 10°75N×85°68W, mb4.9/172, ML5.5(UCR) Error ellipse: s-maj=6.5km s-min=3.6km az=48.0*
NEIC Felt [IV] at Bagaces, Liberia, Nicoya, Santa Cruz and Sardinal; [III] at Belen. Also felt at Canas, Filadelfia, Fortuna, Nosara, Sabanilla, Santa Elena de La Cruz and Tilaran.
*BJI **23** 13:54:19.8, 10°70N×85°80W, h63km, mB5.2/10, Ms5.1/6, Ms7 5.1/6*

ISC 23 13:54:16.3±0.5, 10°64N±0°04×85°83W±0°04, h33km±2km, n613, σ1°44/619, mb4.8/183, MS4.0/21, 3C-6D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CONN	**Concepcion**	**0.94**	**12**	*e*P	**Pb**	**13 54 35.9**	**+1.7**
JCR	**Jicaral**	**1.06**	**138**	‖ *i*P	**Pn**	**13 54 34.8**	**-0.2**
MGAN	**Managua**	**1.55**	**345**	*e*P	**Pb**	**13 54 41.6**	**0.0**
MGAN				*e*S	**Sb**	**13 55 06.5**	**+2.7**
TISN	**Laguna Tiscapa**	**1.55**	**344**	*e*P	**Pb**	**13 54 43.8**	**-0.7**
XAVN	**Gruta Xavier**	**1.57**	**342**	*e*P	**Pb**	**13 54 44.3**	**-0.6**
COPN	**Copaltepe**	**1.70**	**334**	*e*P	**Pn**	**13 54 45.4**	**+1.6**
HDC	**Heredia**	**1.81**	**110**	*e*Pn	**Pb**	**13 54 48.1**	**-0.8**
HDC	**Heredia**	**1.81**	**110**	‖ *e*P	**Pb**	**13 54 47.7**	**-1.2**
MOMN	**Momotombo**	**1.89**	**339**	*e*P	**Pn**	**13 54 48.0**	**+1.6**
CNGN	**Cerro Negro**	**2.03**	**335**	*e*P	**Pn**	**13 54 50.0**	**+1.6**
QCR	**Quepos**	**2.04**	**126**	‖ *i*P	**Pn**	**13 54 48.9**	**+0.5**
BUS	**Buena Vista**	**2.31**	**118**	‖ *i*P	**Pn**	**13 54 54.4**	**+1.8**
CNCH	**Conchagua**	**3.27**	**323**	*e*P	**Pn**	**13 55 06.2**	**+0.7**
ACR	**Cerro Adams**	**3.29**	**127**	‖ *i*P	**Pn**	**13 55 07.4**	**+1.7**
BRU2	**Volcan**	**3.60**	**120**	*e*P	**Pn**	**13 55 12.0**	**+1.9**
TBS2		**3.63**	**120**	*e*P	**Pn**	**13 55 12.5**	**+2.0**
VSM	**San Miguel**	**3.66**	**319**	*e*P	**Pn**	**13 55 11.5**	**+0.6**
LCY	**Lacayo**	**3.67**	**319**	*e*P	**Pn**	**13 55 11.5**	**+0.6**
PACA	**Pacayal**	**3.72**	**319**	*e*P	**Pn**	**13 55 12.9**	**+1.3**
PACA				*e*S	**Sn**	**13 55 55.9**	**+1.5**
CAHU	**Cacacuatique**	**3.88**	**323**	*e*P	**Pn**	**13 55 13.9**	**-0.1**
SNVI	**San Vicente**	**4.17**	**315**	*e*P	**Pn**	**13 55 17.8**	**0.0**
LFRS	**El Faro**	**4.33**	**314**	*e*P	**Pn**	**13 55 21.4**	**+1.4**
LFU	**La Fuente**	**4.45**	**314**	*e*P	**Pn**	**13 55 22.3**	**+0.6**
SNET	**Serv Nac Est T**	**4.50**	**313**	*e*P	**Pn**	**13 55 22.5**	**+0.2**
BOQS	**Boqueron**	**4.56**	**313**	*e*P	**Pn**	**13 55 23.9**	**+0.6**
SBLS	**San Blas**	**4.88**	**311**	*e*P	**Pn**	**13 55 28.8**	**+1.1**
MONT	**Ecomontaæa**	**4.91**	**311**	*e*P	**Pn**	**13 55 29.8**	**+1.6**
IXG	**Ixpaco**	**5.72**	**308**	*e*P	**Pn**	**13 55 41.0**	**+1.8**
ZANG	**Zanguenga, Cho**	**6.11**	**105**	*e*P	**Pn**	**13 55 46.1**	**+1.6**
CCIG	**Comitan**	**8.31**	**313**	*e*Pn	**Pn**	**13 56 18.1**	**+3.4**
CAPC	**Capurgana**	**8.60**	**103**	*e*P	**Pn**	**13 56 21.4**	**+2.8**
DBBC	**Dabeiba**	**10.17**	**110**	*e*P	Pn	13 56 47.1	+6.9
CMIG	**Matias Romero**	**10.88**	**307**	Pn	**Pn**	**13 56 51.2**	**+1.4**
	comp=E,6.3nm,0.3s,baz=87,slow=9.3,SNR=109						
CMIG				Sn	**Sn**	**13 58 46.4**	**-4.1**
	baz=90,slow=15,SNR=1.1						
MTDJ	**Mount Denham**	**11.02**	**46**	*e*Pn	**Pn**	**13 56 54.5**	**+2.6**
HELC	**Santa Helena**	**11.11**	**113**	*e*P	**Pn**	**13 56 56.7**	**+3.4**
NORC	**Norcasia**	**11.97**	**114**	*e*P	Pn	13 57 12.8	+7.9
TOLC	**Tolima**	**12.03**	**119**	*e*P	**P**	**13 57 19.1**	**+0.6**
POPC	**Popayan, Colom**	**12.14**	**131**	*e*P	**Pn**	**13 57 10.8**	**+3.4**
OTAV	**Otavalo**	**12.68**	**144**	*e*P	**Pn**	**13 57 15.2**	**+0.3**
OTAV	**Otavalo**	**12.68**	**144**	*e*Pn	**Pn**	**13 57 13.3**	**-1.6**
ROSC	**El Rosal**	**12.78**	**116**	Pn	**Pn**	**13 57 18.9**	**+2.7**
	comp=E,1.2nm,0.3s,baz=346,slow=17,SNR=2.3						
ROSC				LR	LR	14 02 58.6	
	comp=E,431nm,20.7s,baz=16,slow=41						
ROSC	**El Rosal**	**12.78**	**116**	*e*P	**P**	**13 57 29.8**	**+3.0**
PRAC	**Prado**	**12.85**	**122**	*e*P	**Pn**	**13 57 18.0**	**+1.1**
BARC	**Barichara**

baz=148,SNR=21
145A **Houston Renfro** 22.18 351 P P 13 59 10.7 +0.9
baz=169
LRAL **Lakeview Retre** 22.31 357 eP P 13 59 11.9 +0.7
comp=Z,34nm,0.8s
338A **Crockett** 22.41 338 P P 13 59 13.0 +0.8
baz=154,SNR=7.6
436A **Wall Ranch, Ga** 22.47 335 P P 13 59 15.0 +2.1
baz=150
633A **Saathoff Ranch** 22.49 328 P P 13 59 12.2 -1.0
baz=143,SNR=16
Z47A **Carrollton** 22.55 355 P P 13 59 15.2 +1.5
baz=174,SNR=6.4
NATX **Nacogdoches** 22.55 340 P P 13 59 14.7 +1.0
baz=156,SNR=5.0
NATX **Nacogdoches** 22.55 340 eP P 13 59 13.1 -0.7
comp=Z,74nm,0.8s
337A **Centerville** 22.59 337 P P 13 59 15.0 +0.9
baz=153
534A **Blanco** 22.60 330 P P 13 59 14.4 0.0
baz=146,SNR=30
Z46A **Louisville** 22.63 353 P P 13 59 16.0 +1.4
baz=172,SNR=5.8
Z48A **Northport** 22.68 356 P P 13 59 16.2 +1.0
baz=175,SNR=13
239A **Gary** 22.72 341 P P 13 59 16.7 +1.1
baz=157
GOGA **Godfrey** 22.77 5 eP P 13 59 14.3 -1.7
GOGA e 14 03 06.3
GOGA pmax pmax
comp=Z,79nm,1.3s
GOGA **Godfrey** 22.77 5 eP P 13 59 14.3 -1.7
comp=Z,79nm,1.3s
GOGA ePcP PcP 14 03 06.3 -0.8
Z45A **Winona** 22.90 352 P P 13 59 18.7 +1.3
baz=170
533A **Kerrville** 22.91 329 P P 13 59 17.3 -0.4
baz=144,SNR=7.2
Z44A **Pea Ridge, Bel** 22.92 350 P P 13 59 18.3 +0.7
baz=168
238A **Jacksonville** 22.93 339 P P 13 59 18.6 +0.9
baz=156
140A **Cam and Jess,** 23.03 343 P P 13 59 17.6 -1.1
baz=160
336A **Riesel** 23.03 335 P P 13 59 19.2 +0.5
baz=151,SNR=6.0
434A **Burnet** 23.16 332 P P 13 59 20.2 +0.1
baz=147,SNR=12
237A **Washetta, Mont** 23.17 338 P P 13 59 20.8 +0.7
baz=154
335A **Moody** 23.18 334 P P 13 59 20.7 +0.4
baz=150,SNR=8.5
Y47A **UCPARC, Winfie** 23.23 356 P P 13 59 22.0 +1.3
baz=175,SNR=18
Y46A **Houston** 23.30 354 P P 13 59 22.1 +0.6
baz=172,SNR=13
Y45A **Yeager Farm, C** 23.37 352 P P 13 59 24.1 +2.1
baz=170
Z41A **Richland Creek** 23.41 345 P P 13 59 22.4 -0.1
baz=162
433A **Art** 23.50 330 P P 13 59 22.3 -1.2
baz=145,SNR=19
138A **Matatall Enter** 23.52 340 P P 13 59 24.6 +1.0
baz=156,SNR=6.8
334A **Lometa** 23.58 333 P P 13 59 23.6 -0.7
baz=148,SNR=27
JCT **Junction City** 23.63 329 P P 13 59 24.4 -0.4
baz=143,SNR=10
JCT **Junction City** 23.63 329 eP P 13 59 19.9 -4.9
JCT pmax pmax
comp=Z,33nm,0.9s
JCT **Junction City** 23.63 329 eP P 13 59 19.9 -4.9
comp=Z,33nm,0.9s
WHTX **Lake Whitney,** 23.81 335 P P 13 59 25.8 -0.6
baz=150,SNR=11
WHTX **Lake Whitney,** 23.81 335 eP P 13 59 25.4 -1.0
comp=Z,68nm,0.9s
136A **Ennis** 23.86 337 P P 13 59 27.5 +0.7
baz=153,SNR=9.2
WLAR **White Oak Lake** 23.89 345 eP P 13 59 27.7 +0.6
comp=Z,85nm,1.1s
JSC **Jenkinsville** 23.90 9 eP P 13 59 27.7 +0.5
JSC pmax pmax
comp=Z,93nm,1.0s
JSC **Jenkinsville** 23.90 9 eP P 13 59 27.7 +0.5
comp=Z,93nm,1.0s
333A **Richland Sprin** 23.92 331 P P 13 59 27.0 -0.5
baz=146,SNR=18
OXF **Oxford** 23.98 353 eP P 13 59 25.9 -2.1
OXF pmax pmax
comp=Z,156nm,1.1s
OXF **Oxford** 23.98 353 eP P 13 59 25.9 -2.1
comp=Z,156nm,1.1s
234A **Clairette** 24.11 334 P P 13 59 28.6 -0.7
baz=149,SNR=17
Z37A **Pogue Cattle C** 24.19 340 P P 13 59 30.8 +0.9
baz=156
NNA **Nana** 24.19 158 P P 13 59 31.4 +1.3
comp=Z,13nm,0.7s,baz=321,slow=3.5,SNR=4.8
NNA **Nana** 24.19 158 i P P 13 59 33.0 +2.9
NNA **Nana** 24.19 158 eP P 13 59 29.6 -0.5
comp=Z,46nm,1.3s
Y40A **Okolona** 24.24 345 P P 13 59 30.3 0.0
baz=162
135A **Vickery Place,** 24.28 336 P P 13 59 30.3 -0.4
baz=151
Y39A **Lockesburg** 24.39 343 P P 13 59 31.5 -0.2
baz=160,SNR=9.5
233A **Rising Star** 24.46 332 P P 13 59 32.8 +0.3
baz=147
SWET **Sewanee** 24.46 360 eP P 13 59 32.6 +0.1
comp=Z,13nm,0.8s
Z36A **Blue Ridge** 24.54 338 P P 13 59 33.8 +0.7
baz=154,SNR=6.6
Y38A **Idabel** 24.57 342 P P 13 59 32.6 -0.8
baz=158
134A **White-Moore Ra** 24.57 334 P P 13 59 32.7 -0.8
baz=150,SNR=9.3
X40A **Basin Creek Fa** 24.59 346 P P 13 59 33.5 0.0
baz=163,SNR=11
W45A **Hickory Valley** 24.59 353 P P 13 59 33.8 +0.3
baz=172
CPCT **Cooper Cave** 24.73 3 eP P 13 59 35.4 +0.6
comp=Z,34nm,0.9s
KMSC **Kings Mountain** 24.73 9 P P 13 59 35.1 +0.2
baz=190,SNR=21
KMSC **Kings Mountain** 24.73 9 P P 13 59 34.4 -0.4
comp=Z,71nm,0.8s
UALR **University of** 24.75 347 eP P 13 59 34.0 -1.0
comp=Z,62nm,0.8s
MIAR **Mount Ida** 24.82 345 P P 13 59 35.4 -0.3
baz=161,SNR=44
MIAR **Mount Ida** 24.82 345 eP P 13 59 34.5 -1.2
MIAR pmax pmax
comp=Z,53nm,0.9s
MIAR **Mount Ida** 24.82 345 eP P 13 59 34.5 -1.2
comp=Z,53nm,0.9s
Y37A **Hugo** 24.90 340 P P 13 59 36.1 -0.3
baz=156
X39A **Fountain Ranch** 24.94 344 P P 13 59 36.5 -0.2
baz=160,SNR=21
133A **Hamilton Ranch** 24.97 333 P P 13 59 37.6 +0.5
baz=148,SNR=17
TXAR **Lajitas Array** 24.97 321 P P 13 59 37.0 -0.2
comp=Z,16nm,0.6s,baz=142,slow=8.9,SNR=202
TXAR PcP PcP 14 03 12.6 +0.5
comp=Z,1.7nm,0.8s,baz=123,slow=4.6,SNR=3.5
TXAR ScP ScP 14 06 50.0 +1.2
comp=Z,2.3nm,0.8s,baz=141,slow=6.7,SNR=14
TXAR LR LR 14 11 07.7
comp=Z,132nm,21.4s,baz=0.0,slow=41
TX31 **Lajitas Ar. Si** 24.97 321 eP P 13 59 36.7 -0.5
TKL **Tuckaleechee C** 24.98 4 P P 13 59 35.9 -1.1
comp=Z,30nm,0.9s,baz=174,slow=13,SNR=24
TKL **Tuckaleechee C** 24.98 4 eP P 13 59 37.7 +0.7
TKL pmax pmax
comp=Z,41nm,0.9s
TKL **Tuckaleechee C** 24.98 4 eP P 13 59 37.7 +0.7
comp=Z,40nm,0.9s
W41A **Tony Mavity, V** 25.11 348 P P 13 59 38.3 +0.1
baz=165
W41B **Gary Mavity, V** 25.11 348 P P 13 59 38.2 0.0
baz=165,SNR=15
Z34A **Collier Ranch,** 25.20 336 P P 13 59 38.4 -0.7
baz=151,SNR=7.8
X301 **Greenbrier Sit** 25.21 347 eP P 13 59 38.8 -0.3
comp=Z,51nm,1.4s
WHAR **Wooly Hollow** 25.23 348 eP P 13 59 38.6 -0.7
comp=Z,42nm,1.0s
X201 **Greenbrier Sit** 25.25 347 eP P 13 59 38.3 -1.2
comp=Z,42nm,1.2s
X38A **Whitesboro** 25.29 342 P P 13 59 39.8 -0.1
baz=159,SNR=24
ABTX **Abilene, Hawle** 25.31 332 P P 13 59 40.0 -0.1
baz=146,SNR=14
ABTX **Abilene, Hawle** 25.31 332 eP P 13 59 38.6 -1.5
comp=Z,55nm,0.8s
W40A **Ferguson Farm,** 25.31 346 P P 13 59 40.2 +0.2
baz=163,SNR=13
Y35A **Marietta** 25.33 338 P P 13 59 40.4 +0.1
baz=153,SNR=9.2
X37A **Clayton** 25.38 341 P P 13 59 40.5 -0.2
baz=157,SNR=9.2
WVT **Waverly** 25.44 356 eP P 13 59 41.0 -0.2
WVT pmax pmax
comp=Z,32nm,1.1s
WVT **Waverly** 25.44 356 eP P 13 59 41.0 -0.2
comp=Z,32nm,1.1s
Z33A **Whitaker Ranch** 25.48 334 P P 13 59 41.7 0.0
baz=149,SNR=15
W39A **Magazine** 25.50 345 P P 13 59 41.8 0.0
baz=161,SNR=17
W38A **Poteau** 25.57 343 P P 13 59 42.4 0.0
baz=160,SNR=20
Y34A **Reagan Ranch,** 25.65 337 P P 13 59 42.4 -0.7
baz=152
V41A **Mountainview** 25.68 348 P P 13 59 43.0 -0.4
baz=165,SNR=13
X36A **Centrahoma** 25.69 340 P P 13 59 43.0 -0.4
baz=155,SNR=5.9
X35A **Drake** 25.75 338 P P 13 59 43.6 -0.5
baz=154
V40A **Witts Springs** 25.84 347 P P 13 59 44.8 -0.2
baz=164,SNR=13
TZTN **Tazewell** 25.87 4 eP P 13 59 44.4 -0.8
comp=Z,36nm,0.8s
W37B **Quinton** 25.91 342 P P 13 59 45.0 -0.5
baz=158,SNR=13
Y33A **Hilltop Ranch,** 26.04 335 P P 13 59 46.1 -0.6
baz=150,SNR=19
U42A **Revenden** 26.06 350 P P 13 59 46.6 -0.3
baz=168,SNR=6.7
V39A **Pettigrew** 26.07 345 P P 13 59 47.0 0.0
baz=162,SNR=14
X34A **Smith Ranch, M** 26.25 337 P P 13 59 48.5 -0.1
baz=152,SNR=6.4
V38A **Canehill** 26.29 344 P P 13 59 48.2 -0.7
baz=160,SNR=7.4
U40A **Yellville** 26.38 347 P P 13 59 49.5 -0.2
baz=164,SNR=15
X33A **Lawton** 26.46 336 P P 13 59 50.1 -0.3
baz=151,SNR=6.7
V37A **Hulbert** 26.51 343 P P 13 59 50.0 -0.9
baz=159,SNR=6.5
U39A **Green Forest** 26.55 346 P P 13 59 50.2 -1.1
baz=163
V36A **Jenks** 26.66 341 P P 13 59 51.6 -0.7
baz=157,SNR=5.9
X32A **Elmer** 26.68 335 P P 13 59 51.9 -0.5
baz=149,SNR=8.1
TUL1 **Leonard** 26.73 342 P P 13 59 52.4 -0.6
baz=158
TUL1 **Leonard** 26.73 342 eP P 13 59 50.8 -2.1
comp=Z,31nm,0.9s
WMOK **Wichita Mounta** 26.74 336 P P 13 59 52.2 -0.8
baz=150,SNR=28
WMOK **Wichita Mounta** 26.74 336 eP P 13 59 52.1 -1.0
WMOK pmax pmax
comp=Z,66nm,1.0s
WMOK **Wichita Mounta** 26.74 336 eP P 13 59 52.0 -1.0
comp=Z,66nm,1.0s
W34A **Bridge Creek,** 26.79 338 P P 13 59 52.3 -1.2
baz=153,SNR=6.4
W34A **Bridge Creek,** 26.79 338 eP P 13 59 50.5 -2.9
comp=Z,50nm,0.8s
T41A **Mountain View** 26.83 349 P P 13 59 53.2 -0.5
baz=167,SNR=9.9
U38A **Gravette** 26.83 345 P P 13 59 52.9 -0.9
baz=161,SNR=7.4
BLA **Blacksburg** 26.90 10 P P 13 59 53.5 -1.0
BLA pmax pmax
comp=Z,29nm,0.9s
BLA **Blacksburg** 26.90 10 P P 13 59 53.5 -1.0
comp=Z,29nm,0.9s
U37A **Salina** 26.99 343 P P 13 59 54.5 -0.7
baz=159
S45A **Carrier Mills** 27.03 355 P P 13 59 55.0 -0.6
baz=174
S43A **Fulton Ridge,** 27.09 353 P P 13 59 55.7 -0.4
baz=170,SNR=6.0
S44A **Carbondale** 27.11 354 P P 13 59 56.2 -0.1
baz=172,SNR=8.0
T39A **Clever** 27.14 347 P P 13 59 55.9 -0.7
baz=163
V34A **Guthrie** 27.23 339 P P 13 59 56.2 -1.3
baz=154
V34A **Guthrie** 27.23 339 eP P 13 59 53.3 -4.1
comp=Z,30nm,0.8s
USIN **University of** 27.26 357 eP P 13 59 56.1 -1.6
comp=Z,29nm,0.9s
W32A **Sentinel** 27.26 335 P P 13 59 57.3 -0.5
baz=150
S41A **Jillco Farms,** 27.35 350 P P 13 59 57.9 -0.6
baz=167,SNR=9.5
T38A **Diamond** 27.37 345 P P 13 59 58.0 -0.6
baz=161,SNR=5.7
WCI **Wyandotte Cave** 27.47 359 eP P 13 59 58.4 -1.2
WCI pmax pmax
comp=Z,51nm,0.8s
WCI **Wyandotte Cave** 27.47 359 eP P 13 59 58.4 -1.2
comp=Z,51nm,0.8s
S40A **Lebanon** 27.50 348 P P 13 59 59.0 -0.8
baz=165
T37A **Cheneyville 18** 27.61 344 P P 14 00 00.1 -0.7
baz=160,SNR=14
R44A **Waltonville** 27.64 354 P P 14 00 00.8 -0.3
baz=173,SNR=5.5
MNTX **Cedas Mount** 27.68 322 P P 14 00 00.9 -0.7
baz=135,SNR=9.0
MNTX **Cornudas Mount** 27.68 322 eP P 14 00 00.3 -1.2
comp=Z,8.9nm,0.8s
V32A **Arapaho** 27.70 336 P P 14 00 01.5 -0.2
baz=151
S39A **Bolivar** 27.76 347 P P 14 00 01.4 -0.8
baz=164,SNR=9.5
T36A **Boggs Farm, Ca** 27.82 343 P P 14 00 01.6 -1.1
baz=158,SNR=8.4
S38A **Stockton** 27.84 346 P P 14 00 01.8 -1.1
baz=162
MSTX **Muleshoe** 27.93 329 P P 14 00 03.2 -0.6
baz=142
MSTX **Muleshoe** 27.93 329 P P 14 00 02.5 -1.4
comp=Z,27nm,0.8s
MSTX ePcP PcP 14 03 18.8 -0.1
PTGA **Pitinga** 28.10 112 P P 14 00 06.1 +0.7
comp=Z,4.6nm,0.8s,baz=294,slow=10,SNR=10.0
PTGA sP pP 14 00 15.2 +0.4
comp=Z,9.0nm,0.8s,baz=314,slow=10.0,SNR=9.8
PTGA LR LR 14 12 20.9
comp=Z,389nm,19.2s,baz=304,slow=39
AMTX **Amarillo** 28.13 332 P P 14 00 04.8 -0.8
baz=145
AMTX **Amarillo** 28.13 332 eP P 14 00 04.8 -0.8
comp=Z,45nm,1.2s
S37A **Fort Scott** 28.19 345 P P 14 00 05.3 -0.6
baz=161,SNR=11
Q44A **Meyer Farm, Va** 28.29 355 P P 14 00 07.0 +0.2
baz=173,SNR=10
R39A **Chumby, Stover** 28.30 348 P P 14 00 05.8 -1.2
baz=165,SNR=8.0
S36A **Lake Cedric, C** 28.36 344 P P 14 00 06.4 -1.1
baz=159,SNR=6.7
R38A **Fenwick Farm,** 28.37 347 P P 14 00 06.3 -1.2
baz=163,SNR=6.5
Q42A **Golden Eagle** 28.46 352 P P 14 00 07.6 -0.7
baz=170
S35A **Otter Creek Ra** 28.53 342 P P 14 00 07.7 -1.3
baz=158
Q39A **Willow Grove F** 29.00 348 P P 14 00 11.8 -1.4
baz=165
Q38A **Cooks Store, C** 29.05 347 P P 14 00 12.2 -1.4
baz=164
Q35A **Mercer Eighty,** 29.54 344 P P 14 00 17.2 -0.8
baz=159
ACSO **Alum Creek Sta** 29.58 4 eP P 14 00 16.3 -2.0
comp=Z,33nm,0.6s
SFIN **Lafayette** 29.64 358 P P 14 00 18.2 -0.6
baz=177
SFIN **Lafayette** 29.64 358 eP P 14 00 17.7 -1.1
comp=Z,32nm,0.9s
P38A **Dawn** 29.67 348 P P 14 00 18.0 -1.0
baz=164,SNR=5.5
O42A **Bath** 29.68 353 P P 14 00 19.1 0.0
baz=171
O41A **Passleys Farm,** 29.70 352 P P 14 00 18.4 -0.9
baz=170
121A **Cookes Peak, D** 29.73 320 eP P 14 00 20.2 +0.3
comp=Z,20nm,0.8s
SDMD **Soldier's Deli** 29.75 14 eP P 14 00 19.4 -0.4
comp=Z,7.7nm,0.8s
SAML **Samuel** 29.78 130 eP P 14 00 19.8 -0.5
comp=Z,21nm,1.0s
Q34A **Chapman** 29.86 342 P P 14 00 19.8 -1.0
baz=157
HDIL **Hopedale** 29.95 355 P P 14 00 21.1 -0.4
baz=173,SNR=11
HDIL **Hopedale** 29.95 355 eP P 14 00 20.6 -0.9
comp=Z,57nm,0.9s
P36A **Good Intent, A** 30.04 345 P P 14 00 21.2 -1.2
baz=161
O39A **Kirksville** 30.09 350 P P 14 00 22.1 -0.7
baz=166
BNM **Barren Site** 30.16 324 eP P 14 00 24.1 +0.3
P35A **Duane Minner,** 30.16 344 P P 14 00 22.8 -0.7
baz=160
O56A **Blue Knob Stat** 30.20 11 P P 14 00 24.6 +0.7
baz=194
Q33A **Connelly Farm,** 30.20 341 P P 14 00 23.2 -0.7
baz=156
P34A **Walnut Farm, R** 30.41 343 P P 14 00 24.6 -1.1
baz=158,SNR=5.4
MVL **Millersville** 30.43 14 eP P 14 00 26.6 +0.9
comp=Z,18nm,1.2s
O36A **Bolckow** 30.47 346 P P 14 00 24.6 -1.6
baz=162
LAZ **Ladron** 30.63 324 eP P 14 00 28.3 +0.3
ANMO **Albuquerque** 30.64 325 P P 14 00 28.0 +0.1
baz=137
ANMO **Albuquerque** 30.64 325 eP P 14 00 28.2 +0.2
ANMO pmax pmax
comp=Z,7.0nm,1.0s
ANMO **Albuquerque** 30.64 325 eP P 14 00 27.4 -0.6
comp=Z,7.0nm,0.9s
N39A **Derby Farms, D** 30.69 350 P P 14 00 27.1 -1.0
baz=167,SNR=5.3
SSPA **Standing Stone** 30.69 12 eP P 14 00 27.4 -0.8
comp=Z,22nm,0.8s
N37A **Lee Faris, Mou** 30.90 348 P P 14 00 28.7 -1.2
baz=164
O34A **Beatrice** 30.96 344 P P 14 00 29.4 -1.1
baz=159,SNR=7.0
P32A **Huiting Farm,** 31.02 341 P P 14 00 30.6 -0.5
baz=155,SNR=7.2
O33A **Hebron** 31.11 342 P P 14 00 30.9 -1.0
baz=157
N36A **Muff Farm, Cla** 31.12 347 P P 14 00 30.5 -1.4
baz=162
M39A **Webster** 31.22 351 P P 14 00 32.4 -0.3
baz=168
T25A **Trinidad** 31.25 331 P P 14 00 33.8 +0.5
baz=143
N35A **Tabor** 31.32 346 P P 14 00 32.9 -0.8
baz=161
N59A **State Game Lan** 31.44 15 P P 14 00 35.2 +0.4
baz=199
TUC **Tucson** 31.54 317 eP P 14 00 34.9 -0.9
TUC pmax pmax
comp=Z,7.0nm,0.8s
TUC **Tucson** 31.54 317 eP P 14 00 34.9 -0.9
comp=Z,7.3nm,0.8s
L41A **Preston** 31.58 353 P P 14 00 35.0 -0.9
baz=171,SNR=14
L40A **Anamosa** 31.66 352 P P 14 00 35.5 -1.1
baz=170,SNR=8.9
L39A **Vinton** 31.82 351 P P 14 00 36.7 -1.4
baz=168
M35A **Neola** 31.91 346 P P 14 00 37.8 -1.1
baz=161
LPAZ **La Paz** 31.98 147 P P 14 00 41.2 +0.9
comp=Z,3.7nm,0.8s,baz=336,slow=9.0,SNR=10
LPAZ LR LR 14 14 26.7
comp=Z,215nm,19.3s,baz=314,slow=38
LPAZ **La Paz** 31.98 147 eP P 14 00 40.4 0.0
LPAZ **La Paz** 31.98 147 eP P 14 00 40.5 0.0
comp=Z,8.2nm,1.0s
KSCO **Kaye Shedlock'** 31.98 335 P P 14 00 38.9 -0.8
baz=147
L38A **Oak Wood Farm,** 32.00 350 P P 14 00 38.5 -1.1
baz=166,SNR=10
K41A **Shullsburg** 32.08 354 P P 14 00 39.7 -0.7
baz=171,SNR=9.1
L37A **Phoenix Point,** 32.12 349 P P 14 00 39.8 -1.0
baz=165
SDCO **Great Sand Dun** 32.26 330 P P 14 00 42.4 +0.1
baz=142,SNR=27
SDCO **Great Sand Dun** 32.26 330 eP P 14 00 42.1 -0.2
comp=Z,9.3nm,0.8s
K40A **Colesburg** 32.27 353 P P 14 00 41.3 -0.7
baz=170,SNR=7.0
K39A **Oelwein** 32.38 352 P P 14 00 42.4 -0.6
baz=169,SNR=10.0
JFWS **Jewell Farm** 32.38 354 eP P 14 00 41.3 -1.7
JFWS pmax pmax
comp=Z,25nm,0.8s
JFWS **Jewell Farm** 32.38 354 eP P 14 00 41.3 -1.7
comp=Z,25nm,0.8s
X18A **Snowflake** 32.41 321 eP P 14 00 41.6 -1.9
comp=Z,9.2nm,0.9s
K38A **Parkersburg** 32.46 350 P P 14 00 42.6 -1.0
baz=167
BINY **Binghamton** 32.60 14 eP P 14 00 44.6 -0.3
comp=Z,40nm,1.0s
W18A **Petrified Fore** 32.67 322 eP P 14 00 46.7 +0.8
comp=Z,18nm,0.8s
MMNY **Mt. Morris Dam** 32.71 11 eP P 14 00 45.0 -0.8
K37A **Belmond** 32.72 349 P P 14 00 44.8 -1.1
baz=165,SNR=5.8
K36A **Gilmore City** 32.75 348 P P 14 00 45.6 -0.6
baz=164
J40A **Soldiers Grove** 32.91 353 P P 14 00 46.7 -1.0
baz=171,SNR=12
S22A **4UR Ranch, Cre** 32.93 328 P P 14 00 48.3 +0.1
baz=139,SNR=7.1
S22A **4UR Ranch, Cre** 32.93 328 eP P 14 00 48.4 +0.1
comp=Z,10nm,1.1s
J39A **Decorah** 32.97 352 P P 14 00 47.9 -0.2
baz=169,SNR=6.7
J38A **Wedel Dairy, R** 33.06 351 P P 14 00 47.3 -1.7
baz=168
X16A **Lo Mia Camp, P** 33.27 319 eP P 14 00 52.4 +1.3
comp=Z,6.6nm,0.6s
J36A **Seneca 1, Swea** 33.40 349 P P 14 00 50.6 -1.2
baz=164,SNR=8.1
L31A **Butterfield Fa** 33.42 342 P P 14 00 51.6 -0.5
baz=156
MVCO **Mesa Verde** 33.42 326 eP P 14 00 52.0 -0.4
comp=Z,12nm,0.9s
TRY **Troy** 33.69 16 eP P 14 00 55.0 +0.6
comp=Z,24nm,0.8s
I38A **Scanlan Farm,** 33.75 352 P P 14 00 54.1 -0.8
baz=168
I37A **Lemond, Waseca** 33.89 350 P P 14 00 54.9 -1.3
baz=166
WUAZ **Wupatki** 33.94 321 eP P 14 00 58.1 +1.2
comp=Z,14nm,1.0s
ISCO **Idaho Springs** 33.94 332 P P 14 00 56.8 -0.2
baz=143
ISCO **Idaho Springs** 33.94 332 eP P 14 00 54.4 -2.6
ISCO e 14 03 36.0
ISCO pmax pmax
comp=Z,5.0nm,0.9s
ISCO **Idaho Springs** 33.94 332 eP P 14 00 54.4 -2.6
comp=Z,5.5nm,0.9s
ISCO ePcP PcP 14 03 36.0 +1.0
I35A **Creekview Farm** 34.03 348 P P 14 00 55.9 -1.5
baz=164
SMCO **Snowmass** 34.10 330 eP P 14 00 58.9 +0.3
comp=Z,10nm,1.0s
K30A **Basset** 34.11 342 P P 14 00 57.4 -0.7
baz=155
PV01 **Paradox Valley** 34.13 327 eP P 14 00 58.7 +0.1
PB11 **IPOC Station P** 34.15 152 eP P 14 00 59.2 +0.4
comp=Z,27nm,0.9s
ECSD **EROS Data Cent** 34.27 346 P P 14 00 57.2 -2.2

baz=161,SNR=7.3
ECSD EROS Data Cent 34.27 346 *e*P P 14 00 56.1 -3.3
comp=Z,11nm,1.0s
PV05 Paradox Valley 34.37 326 *e*P P 14 00 59.8 -0.9
SADO Sadowa 34.49 8 P P 14 00 59.5 -1.8
comp=Z,14nm,0.7s,baz=218,slow=8.3,SNR=14
SADO Sadowa 34.49 8 *e*P P 14 00 60.0 -1.4
comp=Z,20nm,0.8s
PV04 Paradox Valley 34.50 327 *e*P P 14 01 01.1 -0.6
PV10 Paradox Valley 34.56 327 *e*P P 14 01 01.9 -0.5
GLA Glamis 34.74 314 *e*P P 14 01 06.2 +2.4
GLA pmax pmax
comp=Z,43nm,0.5s
GLA Glamis 34.74 314 *e*P P 14 01 06.2 +2.4
comp=Z,43nm,0.5s
N23A Red Feather La 34.97 333 P P 14 01 05.2 -0.7
baz=144,SNR=7.0
N23A Red Feather La 34.97 333 *e*P P 14 01 06.1 +0.2
comp=Z,9.3nm,0.8s
SPMN Marine on St. 34.98 351 P P 14 01 05.1 -0.5
baz=168
SPMN Marine on St. 34.98 351 *e*P P 14 01 05.0 -0.5
comp=Z,30nm,0.9s
PDMCI Parker Dam,Lak 34.98 317 P P 14 01 07.0 +1.3
baz=125,SNR=5.3
PHWY Pilot Hill 35.09 334 *e*P P 14 01 06.6 -0.3
comp=Z,5.7nm,0.8s
U15A North Rim 35.09 321 *e*P P 14 01 08.9 +1.9
comp=Z,8.8nm,1.0s
PLVO Plevna 35.09 11 *e*P P 14 01 07.3 +0.8
comp=Z,28nm,1.2s
LONY Lake Ozonia 35.22 14 *e*P P 14 01 07.3 -0.4
comp=Z,37nm,0.9s
W13A Hualapai Mount 35.28 318 *e*P P 14 01 10.1 +1.5
comp=Z,6.3nm,0.8s
PB01 IPOC Station P 35.35 153 *e*P P 14 01 10.8 +1.7
comp=Z,15nm,0.8s
SWSC Sam W. Stewart 35.38 313 P P 14 01 10.6 +1.5
baz=122
IKP In-Ko-Pah, Jac 35.44 313 P P 14 01 11.1 +1.3
baz=121
COWI Conover 35.45 356 *e*P P 14 01 09.3 -0.3
comp=Z,9.5nm,0.8s
O20A White River Ci 35.46 330 P P 14 01 10.0 0.0
baz=140
O20A White River Ci 35.46 330 *e*P P 14 01 10.3 +0.3
comp=Z,15nm,0.9s
BC3 Big Chuckawall 35.51 315 P P 14 01 11.8 +1.3
baz=123
G33A Ortonville 35.62 347 P P 14 01 09.3 -1.7
baz=162
FRNY Flat Rock 35.67 15 *e*P P 14 01 11.8 +0.3
comp=Z,61nm,1.9s
MMU Miners Mountai 35.68 324 *e*P P 14 01 12.5 +0.5
F36A Milaca 35.71 351 P P 14 01 10.0 -1.9
baz=167
PKCU Pink Cliffs 35.77 323 *e*P P 14 01 14.9 +2.1
comp=Z,20nm,1.1s
SRU San Rafael Swe 35.89 326 *e*P P 14 01 13.9 +0.2
SRU pmax pmax
comp=Z,16nm,0.9s
SRU San Rafael Swe 35.89 326 *e*P P 14 01 13.9 +0.2
comp=Z,16nm,0.9s
LCMT Little Creek M 36.05 321 *e*P P 14 01 16.6 +1.6
comp=Z,5.5nm,1.0s
SIV San Ignacio 36.07 137 P P 14 01 15.7 +0.4
comp=Z,10nm,1.1s,baz=323,slow=11,SNR=11
SIV PcP PcP 14 03 41.6 +0.4
comp=Z,5.0nm,0.6s,baz=225,slow=1.1,SNR=8.4
SIV LR LR 14 17 31.6
comp=Z,195nm,19.2s,baz=336,slow=39
LDFC Landfair 36.08 317 *e*P P 14 01 18.7 +3.4
comp=Z,12nm,0.9s
BELC Belle Mtn. Jos 36.08 315 P P 14 01 16.0 +0.7
baz=123
MTPU Mount Pierson 36.09 323 *e*P P 14 01 16.5 +0.8
comp=Z,7.0nm,1.0s
PFO Pinyon Flats O 36.20 314 P P 14 01 17.4 +1.1
comp=Z,6.5nm,0.8s,baz=105,slow=6.4,SNR=8.9
PFO Pinyon Flats O 36.20 314 P P 14 01 17.6 +1.3
baz=122
PFO Pinyon Flats O 36.20 314 *e*P P 14 01 18.2 +1.9
PFO pmax pmax
comp=Z,13nm,0.4s
PFO Pinyon Flats O 36.20 314 *e*P P 14 01 18.2 +1.9
comp=Z,13nm,0.4s
F33A 5 Mile Ranch, 36.20 348 P P 14 01 14.1 -1.9
baz=162,SNR=13
P17A Butcher Ranch, 36.27 327 *e*P P 14 01 17.6 +0.7
comp=Z,16nm,0.9s
GMRC Granite Mounta 36.28 316 P P 14 01 18.4 +1.3
baz=124
TMUT Trail Mountain 36.40 326 *e*P P 14 01 19.0 +0.8
comp=Z,8.2nm,0.9s
MSU Marysvale 36.40 324 *e*P P 14 01 19.4 +1.3
MSU Marysvale 36.40 324 *e*P P 14 01 19.4 +1.3
CCUT Cedar City 36.47 322 *e*P P 14 01 20.1 +1.3
comp=Z,8.3nm,0.9s
WVL Waterville 36.57 20 *e*P P 14 01 21.4 +2.2
comp=Z,110nm,1.6s
K22A Casper 36.65 334 P P 14 01 19.6 -0.5
baz=144
K22A Casper 36.65 334 *e*P P 14 01 20.2 +0.1
comp=Z,13nm,1.0s
MURC Murrieta 36.71 313 P P 14 01 22.5 +1.9
baz=121
TRQ Mont Tremblant 36.74 13 *e*P P 14 01 19.9 -0.8
HEC Hector,Ludlow 36.77 316 P P 14 01 22.5 +1.4
baz=123,SNR=5.4
RSSD Black Hills 36.89 338 P P 14 01 22.6 +0.4
baz=149
RSSD Black Hills 36.89 338 *e*P P 14 01 22.4 +0.2
RSSD pmax pmax
comp=Z,9.0nm,0.8s
RSSD Black Hills 36.89 338 *e*P P 14 01 22.4 +0.2
comp=Z,8.8nm,0.8s
SHPR Sheep Range 36.95 319 *e*P P 14 01 27.0 +4.2
comp=Z,3.3nm,1.0s
LVC Limon Verde 36.97 153 P P 14 01 24.9 +1.6
comp=Z,79nm,1.0s,baz=305,slow=6.0,SNR=16
LVC Limon Verde 36.97 153 *e*P P 14 01 25.5 +2.2
comp=Z,27nm,1.0s
E31A Nome 37.24 346 P P 14 01 22.9 -2.0
baz=160,SNR=8.1
PKME Peaks-Kenny Pk 37.31 19 *e*P P 14 01 25.9 +0.5
comp=Z,70nm,1.7s
GSC Goldstone, Bar 37.35 316 *e*P P 14 01 28.6 +2.5
GSC pmax pmax
comp=Z,6.0nm,1.1s
GSC Goldstone, Bar 37.35 316 *e*P P 14 01 28.6 +2.5
comp=Z,5.8nm,1.1s
JLU Jordanelle 37.45 327 *e*P P 14 01 27.6 +0.5
comp=Z,5.8nm,0.8s
CIS Catalina Islan 37.49 312 P P 14 01 27.9 +0.7
baz=119,SNR=8.6
MWC Mount Wilson 37.65 314 *e*P P 14 01 30.9 +2.2
MWC pmax pmax
comp=Z,10.0nm,0.9s
MWC Mount Wilson 37.65 314 *e*P P 14 01 30.9 +2.2
comp=Z,9.6nm,0.9s
D31A Mcclaflin, Tow 37.66 347 P P 14 01 26.8 -1.6
baz=160,SNR=8.4
CTU Camp Tracy 37.68 327 *e*P P 14 01 29.6 +0.7
comp=Z,23nm,0.9s
TCUT Toone Canyon 37.80 328 *e*P P 14 01 30.8 +0.7
comp=Z,18nm,1.0s
DUG Dugway, Tooele 37.91 326 P P 14 01 31.4 +0.6
baz=133,SNR=7.7
DUG Dugway, Tooele 37.91 326 *e*P P 14 01 31.8 +1.0
DUG pmax pmax
comp=Z,7.0nm,0.9s
DUG Dugway, Tooele 37.91 326 *e*P P 14 01 31.8 +1.0
comp=Z,7.1nm,0.9s
TPNV Topopah Spring 37.91 319 P P 14 01 32.0 +1.1
baz=126,SNR=11
TPNV Topopah Spring 37.91 319 *e*P P 14 01 32.5 +1.6
TPNV pmax pmax
comp=Z,11nm,0.8s
TPNV Topopah Spring 37.91 319 *e*P P 14 01 32.5 +1.6
comp=Z,11nm,0.8s
EDW2 Edwards Air Fo 37.94 315 P P 14 01 32.3 +1.2
baz=122
VLDQ Val d'Or 38.01 9 *e*P P 14 01 31.6 +0.3
comp=Z,20nm,1.0s
GGN Saint George 38.03 22 *e*P P 14 01 32.5 +0.9
comp=Z,37nm,1.6s
FURC Furnace Creek, 38.04 318 P P 14 01 33.0 +1.3
baz=124

LRMC Laurel Mtn Rad 38.05 316 P P 14 01 33.0 +1.0
baz=122
BW06 Boulder Array 38.11 331 P P 14 01 31.8 -0.8
baz=140,SNR=7.9
BW06 Boulder Array 38.11 331 *e*P P 14 01 31.2 -1.3
PD31 Pinedale Array 38.11 331 *e*P P 14 01 31.8 -0.8
PDAR Pinedale Array 38.11 331 P P 14 01 31.7 -0.8
comp=Z,5.3nm,0.8s,baz=124,slow=9.5,SNR=35
PDAR PcP PcP 14 03 47.0 -0.2
comp=Z,1.7nm,0.8s,baz=116,slow=4.1,SNR=3.7
PDAR ScP ScP 14 07 33.0 +0.3
comp=Z,0.9nm,0.7s,baz=147,slow=5.4,SNR=7.2
PDAR LR LR 14 19 40.9
comp=Z,215nm,21.3s,baz=142,slow=40
RSUT Red Spur Mount 38.18 328 *e*P P 14 01 33.2 -0.1
MPMC Manual Prospec 38.23 317 P P 14 01 34.2 +0.5
baz=123,SNR=7.9
HWUT Hardware Ranch 38.24 328 *e*P P 14 01 33.5 -0.1
comp=Z,18nm,0.7s
R11A Troy Canyon, C 38.34 321 P P 14 01 35.2 +0.7
baz=128
R11A Troy Canyon, C 38.34 321 *e*P P 14 01 35.6 +1.1
comp=Z,15nm,1.6s
C31A Landman Farms, 38.37 347 P P 14 01 32.5 -1.9
baz=161,SNR=6.3
B34A Aery, Baudette 38.44 351 P P 14 01 32.7 -2.3
baz=166
AGMN Agassiz Nation 38.47 349 P P 14 01 34.6 -0.6
baz=164
BGU Big Grassy Mou 38.53 326 *e*P P 14 01 37.0 +0.9
comp=Z,9.5nm,1.0s
B32A Ashes, Strandq 38.69 349 P P 14 01 35.5 -1.6
baz=163,SNR=15
AHID Auburn Hatcher 38.85 330 *e*P P 14 01 39.2 +0.4
comp=Z,10nm,0.7s
MDND Maddock 38.86 345 P P 14 01 37.5 -1.0
baz=158,SNR=9.1
MDND Maddock 38.86 345 *e*P P 14 01 37.6 -0.9
comp=Z,60nm,0.8s
D26A Manning 38.90 342 P P 14 01 37.7 -1.2
baz=153
B31A Greenbush Farm 38.94 347 P P 14 01 37.7 -1.5
baz=161,SNR=6.4
HVU Hansel Valley 38.99 327 *e*P P
HVU pmax pmax
comp=Z,9.0nm,0.8s
HVU Hansel Valley 38.99 327 *e*P P 14 01 40.1 +0.2
comp=Z,8.9nm,0.8s
A33A Warroad 39.00 350 P P 14 01 37.8 -1.9
baz=165
LMQ La Malbaie 39.05 17 *e*P P 14 01 39.0 -1.0
REDW Red Top Meadow 39.18 331 *e*P P 14 01 41.4 -0.1
comp=Z,36nm,1.2s
A32A Rocking H Ranc 39.18 349 P P 14 01 41.0 -0.2
baz=163
VES Vestal, Richgr 39.20 315 P P 14 01 43.0 +1.4
baz=121
SNOW Snow King Moun 39.21 331 *e*P P 14 01 42.1 +0.3
comp=Z,29nm,1.0s
PKM Mcpherson Peak 39.23 313 P P 14 01 43.4 +1.3
baz=120
LOHW Long Hollow 39.25 331 *e*P P 14 01 41.8 -0.4
comp=Z,19nm,1.5s
TPAW Teton Pass 39.32 331 *e*P P 14 01 42.9 +0.1
comp=Z,14nm,0.8s
MOOW Moose Ponds 39.42 331 *e*P P 14 01 43.1 -0.4
comp=Z,9.5nm,0.9s
LMN Caledonia Moun 39.42 23 *e*P P 14 01 43.1 -0.1
comp=Z,30nm,1.0s
IMW Indian Meadow 39.62 331 *e*P P 14 01 44.8 -0.5
comp=Z,7.4nm,0.8s
FLWY Flagg Ranch 39.65 332 *e*P P 14 01 45.7 +0.2
comp=Z,11nm,0.8s
RLMT Red Lodge 39.81 334 P P 14 01 46.2 -0.6
baz=142,SNR=8.9
RLMT Red Lodge 39.81 334 *e*P P 14 01 46.1 -0.6
comp=Z,8.1nm,0.6s
YPP Pitchstone Pla 39.84 332 *e*P P 14 01 52.5 +5.3
comp=Z,5.4nm,0.9s
LAO LASA Array 39.88 338 P P 14 01 46.8 -0.3
baz=148,SNR=7.3
LAO LASA Array 39.88 338 *e*P P 14 01 46.6 -0.5
comp=Z,13nm,0.8s
YMR Madison River 40.22 332 *e*P P 14 01 51.2 +1.0
comp=Z,13nm,0.7s
ULM Lac du Bonnet 40.35 350 P P 14 01 48.5 -2.4
comp=Z,6.4nm,0.8s,baz=166,slow=10,SNR=6.2
ULM ScP ScP 14 07 39.6 -1.3
comp=Z,1.6nm,0.5s,baz=114,slow=1.5,SNR=3.0
ULM LR LR 14 20 11.1
comp=Z,140nm,19.1s,baz=66,slow=39
ULM Lac du Bonnet 40.35 350 *e*P P 14 01 50.0 -0.9
ULM pmax pmax
comp=Z,45nm,1.4s
ULM Lac du Bonnet 40.35 350 *e*P P 14 01 50.0 -0.9
comp=Z,45nm,1.4s
ULM ScP ScP 14 07 39.6 -1.3
YHB Horse Butte 40.39 332 *e*P P 14 01 52.4 +0.8
comp=Z,12nm,0.7s
GCMT Greycliff 40.52 334 *e*P P 14 01 52.0 -0.5
BMN Battle Mountai 40.62 322 *e*P P 14 01 54.3 +0.8
BMN pmax pmax
comp=Z,19nm,0.8s
BMN Battle Mountai 40.62 322 *e*P P 14 01 54.3 +0.8
comp=Z,19nm,0.8s
DGMT Dagmar 40.73 341 P P 14 01 54.1 0.0
baz=152,SNR=6.3
DGMT Dagmar 40.73 341 *e*P P 14 01 53.8 -0.2
comp=Z,36nm,0.6s
WAKR Walker 40.88 318 *e*P P 14 01 57.4 +1.7
comp=Z,14nm,0.9s
HLID Hailey 41.11 328 P P 14 01 57.2 -0.3
baz=134,SNR=22
HLID Hailey 41.11 328 *e*P P 14 01 57.4 0.0
comp=Z,7.6nm,0.6s
BGMT Barton Gulch 41.15 332 *e*P P 14 01 58.2 +0.3
MCMT McKenzie Canyo 41.23 331 *e*P P 14 01 59.2 +0.7
CMB Columbia Colle 41.25 317 *e*P P 14 01 59.8 +1.3
CMB pmax pmax
comp=Z,6.0nm,0.9s
CMB Columbia Colle 41.25 317 *e*P P 14 01 59.8 +1.3
comp=Z,5.7nm,0.9s
BOZ Bozeman (W) 41.27 332 P P 14 01 58.4 -0.4
baz=139,SNR=16
BOZ Bozeman (W) 41.27 332 *e*P P 14 01 58.3 -0.4
BOZ pmax pmax
comp=Z,8.0nm,0.6s
BOZ Bozeman (W) 41.27 332 *e*P P 14 01 58.3 -0.4
comp=Z,8.4nm,0.6s
DLMT Dillon 41.51 331 *e*P P 14 02 01.0 +0.3
comp=Z,13nm,1.0s
PAHR Pah Rah Range 41.52 320 *e*P P 14 02 02.8 +1.9
comp=Z,8.8nm,1.0s
MFID Camas Ranch 41.75 327 *e*P P 14 02 03.0 +0.3
comp=Z,6.2nm,0.8s
LRM Limekiln Ridge 41.78 332 *e*P P 14 02 02.9 -0.2
LCO Las Campanas 42.04 160 *e*P P 14 02 06.4 +1.1
comp=Z,21nm,0.9s
AFDM Forest Hills D 42.12 318 *e*P P 14 02 07.2 +1.5
comp=Z,4.9nm,1.1s
HRY Holter Researc 42.17 333 *e*P P 14 02 06.4 +0.3
EGMT Eagleton 42.34 336 P P 14 02 06.7 -0.6
baz=144
EGMT Eagleton 42.34 336 *e*P P 14 02 06.8 -0.6
comp=Z,12nm,0.9s
WVOR Wild Horse Val 42.69 324 *e*P P 14 02 10.5 +0.1
WVOR pmax pmax
comp=Z,22nm,0.9s
WVOR Wild Horse Val 42.69 324 *e*P P 14 02 10.5 +0.1
comp=Z,22nm,0.9s
ORV Oroville 42.80 318 *e*P P 14 02 12.6 +1.5
ORV pmax pmax
comp=Z,10.0nm,0.9s
ORV Oroville 42.80 318 *e*P P 14 02 12.6 +1.5
comp=Z,10nm,0.9s
CHMT Chamberlain Mo 42.97 332 *e*P P 14 02 12.1 -0.5
MSO Missoula 43.22 332 P P 14 02 13.7 -0.9
baz=137,SNR=6.2
MSO Missoula 43.22 332 *e*P P 14 02 13.7 -0.9
comp=Z,14nm,1.2s
SLMT Seeley Lake 43.32 333 *e*P P 14 02 15.1 -0.4
MOD Modoc Plateau 43.36 322 *e*P P 14 02 15.7 -0.1
comp=Z,8.2nm,1.0s
O03D Paynes Creek 43.39 319 P P 14 02 15.5 -0.5
baz=123
BMO Blue Mountains 43.51 327 *e*P P 14 02 15.5 -1.4
comp=Z,7.8nm,0.8s

JTMT Jette 44.05 332 *e*P P 14 02 20.7 -0.6
K05A Summer Lake 44.20 323 *e*P P 14 02 24.4 +1.8
comp=Z,12nm,1.0s
F10A Beach Ranch, E 44.22 329 *e*P P 14 02 22.0 -0.6
comp=Z,17nm,0.9s
M04C Macdoel 44.23 321 P P 14 02 22.6 -0.2
baz=124,SNR=15
M02C Callahan 44.65 320 P P 14 02 24.5 -1.7
baz=122
G08A Pilot Rock 44.68 327 *e*P P 14 02 25.6 -0.7
comp=Z,4.9nm,1.0s
YBH Yreka Blue Hor 44.75 320 *e*P P 14 02 26.0 -0.9
YBH pmax pmax
comp=Z,34nm,1.7s
YBH Yreka Blue Hor 44.75 320 *e*P P 14 02 26.0 -0.9
comp=Z,34nm,1.7s
KHMM Horse Mountain 44.94 319 *e*P P 14 02 30.0 +1.5
comp=Z,22nm,0.9s
DRLN Deer Lake 45.13 26 *e*P P 14 02 28.8 -0.9
comp=Z,113nm,1.8s
J04D Umpqua Nationa 45.22 322 P P 14 02 31.1 +0.4
baz=125,SNR=9.7
HUMO Hull Mountain 45.38 321 *e*P P 14 02 33.3 +1.5
comp=Z,8.0nm,0.9s
I05D Terrebonne, OR 45.41 324 P P 14 02 32.7 +0.6
baz=126,SNR=10
G06A Carlson Farm, 45.56 326 *e*P P 14 02 34.2 +1.0
comp=Z,14nm,1.3s
ROC1 El Roble 45.62 162 *e*P P 14 02 34.8 +0.8
comp=Z,24nm,0.9s
BDFB Brasilia 45.65 124 P P 14 02 35.5 +1.1
comp=Z,8.5nm,0.8s,baz=258,slow=8.0
BDFB Brasilia 45.65 124 *e*P P 14 02 36.6 +2.2
BDFB pmax pmax
comp=Z,38nm,0.8s
BDFB Brasilia 45.65 124 *e*P P 14 02 36.6 +2.2
comp=Z,48nm,0.8s
HAWA Hanford 45.70 328 *e*P P 14 02 33.8 -0.4
comp=Z,14nm,0.8s
I04A Tendick Farm, 45.72 323 P P 14 02 34.1 -0.4
baz=125,SNR=18
IRO Indian Ridge 45.75 323 *e*P P 14 02 34.6 -0.2
FFC Flin Flon 45.80 347 *e*P P 14 02 38.1 +3.2
FFC pmax pmax
comp=Z,22nm,1.4s
FFC Flin Flon 45.80 347 *e*P P 14 02 38.1 +3.2
comp=Z,22nm,1.4s
G05D Wamic, OR 45.95 325 P P 14 02 36.9 +0.7
baz=127,SNR=11
C09A Chrisman Ranch 45.99 330 *e*P P 14 02 36.1 -0.5
comp=Z,11nm,1.0s
CPUP Villa Florida 46.03 143 P P 14 02 36.5 -0.6
comp=Z,7.1nm,1.0s,baz=335,slow=7.9,SNR=8.4
CPUP LR LR 14 24 03.8
comp=Z,100nm,18.4s,baz=318,slow=39
I03D Drain, OR 46.22 322 P P 14 02 38.9 +0.5
baz=124
SCHQ Schefferville 46.58 15 P P 14 02 38.5 -2.5
comp=Z,14nm,0.6s,baz=228,slow=6.0,SNR=11
SCHQ LR LR 14 23 17.1
comp=Z,318nm,18.1s,baz=210,slow=38
SCHQ Schefferville 46.58 15 *e*P P 14 02 39.1 -1.9
comp=Z,83nm,1.8s
B08A Colville Reser 46.89 330 *e*P P 14 02 42.8 -0.8
comp=Z,11nm,1.2s
G03D McMinnville, O 47.03 324 P P 14 02 45.1 +0.4
baz=125,SNR=6.4
LON Longmire 47.14 327 *e*P P 14 02 45.1 -0.5
LON pmax pmax
comp=Z,8.0nm,0.9s
LON Longmire 47.14 327 *e*P P 14 02 45.1 -0.5
comp=Z,8.3nm,0.9s
D05A Enumclaw 47.51 327 *e*P P 14 02 48.3 -0.1
comp=Z,28nm,1.2s
F03A Seaside 47.62 325 *e*P P 14 02 50.3 +1.0
comp=Z,61nm,0.9s
EDM Edmonton 47.87 338 *e*P P 14 02 49.8 -1.4
EDM pmax pmax
comp=Z,23nm,1.0s
EDM Edmonton 47.87 338 *e*P P 14 02 49.8 -1.4
comp=Z,23nm,1.0s
B06A Marblemount 48.08 329 *e*P P 14 02 52.1 -0.6
comp=Z,15nm,0.8s
B05A Bryant 48.23 328 P P 14 02 51.8 -2.1
baz=129
FCC Fort Churchill 48.43 354 *e*P P 14 02 56.6 +1.4
FCC pmax pmax
comp=Z,18nm,1.2s
FCC Fort Churchill 48.43 354 *e*P P 14 02 56.6 +1.4
comp=Z,18nm,1.2s
NLWA Neilton Lookou 48.65 326 *e*P P 14 02 57.3 0.0
comp=Z,14nm,0.9s
A04D Lummi Island 48.84 328 P P 14 02 57.5 -1.0
baz=128
PGC Sidney 49.18 328 *e*P P 14 03 01.4 +0.2
comp=Z,13nm,1.0s
LLLB Lillooet 49.62 331 *e*P P 14 03 04.5 -0.1
comp=Z,9.8nm,0.8s
PLCA Paso Flores 53.03 165 P P 14 03 30.5 +0.2
comp=Z,17nm,1.0s,baz=9.3,slow=8.2,SNR=18
PLCA pP pP 14 03 39.5 -0.7
comp=Z,9.2nm,0.8s,baz=359,slow=7.6,SNR=5.8
PLCA Paso Flores 53.03 165 *e*P P 14 03 31.0 +0.7
PLCA *PP pP 14 03 39.5 -0.7
PLCA pmax pmax
comp=Z,16nm,0.8s
PLCA Paso Flores 53.03 165 *e*P P 14 03 31.0 +0.7
comp=Z,16nm,0.8s
PLCA pP pP 14 03 39.5 -0.7
YKA Yellowknife Ar 55.77 344 P P 14 03 47.6 -2.2
comp=Z,1.4nm,0.6s,baz=143,slow=7.1,SNR=13
YKA pP pP 14 03 57.0 -2.7
comp=Z,1.7nm,0.5s,baz=142,slow=6.7,SNR=8.0
YKA LR LR 14 29 38.9
comp=Z,12nm,19.0s,baz=180,slow=38
TAOE Nuku Hiva Isla 57.41 252 *e*T T 15 05 45.0
comp=Z,132nm,0.3s
DLBC Dease Lake 58.21 334 *e*P P 14 04 07.9 +0.6
comp=Z,10nm,1.0s
RKT Rikitea 58.64 235 *e*T T 15 07 15.9
comp=Z,21nm,0.2s
INK Inuvik 65.40 342 P P 14 04 53.1 -2.2
comp=Z,2.3nm,0.8s,baz=128,slow=10,SNR=4.8
INK Inuvik 65.40 342 *e*P P 14 04 54.0 -1.4
INK pmax pmax
comp=Z,7.0nm,0.9s
INK Inuvik 65.40 342 *e*P P 14 04 54.0 -1.4
comp=Z,7.2nm,0.9s
VAH Vaihoa 66.39 248 *e*T T 15 16 58.5
comp=Z,15nm,0.3s
DOT Dot Lake 66.72 336 *e*P P 14 05 03.1 -1.0
comp=Z,14nm,0.8s
SUMG Summit 67.95 14 *e*P P 14 05 11.4 -0.7
SUMG pmax pmax
comp=Z,26nm,1.0s
SUMG Summit 67.95 14 *e*P P 14 05 11.4 -0.7
comp=Z,26nm,1.0s
IL1 Eielson Array 68.31 336 *e*P P 14 05 12.4 -1.6
ILAR Eielson Array 68.31 336 P P 14 05 12.1 -2.0
comp=Z,1.7nm,0.6s,baz=128,slow=4.0,SNR=28
ILAR pP pP 14 05 21.6 -2.5
comp=Z,3.1nm,0.6s,baz=122,slow=4.2,SNR=13
ILAR LR LR 14 38 25.5
comp=Z,131nm,21.0s,baz=122,slow=39
ILB Eielson Array 68.31 336 *e*P P 14 05 12.7 -1.3
RND Reindeer 68.62 334 *e*P P 14 05 15.3 -0.8
RND pmax pmax
comp=Z,21nm,0.8s
RND Reindeer 68.62 334 *e*P P 14 05 15.3 -0.8
comp=Z,20nm,0.8s
CCB Clear Creek Bu 68.63 336 *e*P P 14 05 15.6 -0.4
comp=Z,6.9nm,1.4s
WRH Wood River Hil 68.68 336 *e*P P 14 05 15.9 -0.5
comp=Z,6.3nm,1.1s
COLA College 68.73 336 *e*P P 14 05 16.0 -0.6
COLA pmax pmax
comp=Z,7.0nm,1.4s
KDAK Kodiak Island 68.73 328 *i*P P 14 05 16.5 -0.2
MCK McKinley 68.77 335 *e*P P 14 05 17.2 +0.2
MCK pmax pmax
comp=Z,11nm,1.0s
MCK McKinley 68.77 335 *e*P P 14 05 17.2 +0.2
comp=Z,11nm,1.0s
PPT Papeete 68.91 246 LR LR 14 27 55.0
comp=Z,107nm,18.3s,baz=26,slow=29
PPT2 Papeete2 68.92 246 *e*S S 14 14 24.7 +3.3
comp=Z,73nm,26.5s

PPT2	Papeete2	68.92	246	*e*LR	LR	14 26 01.2					
	comp=Z,229nm,27.0s,baz=74										
TRF	Thorofare Moun	69.25	334	*e*P	P	14 05 19.8	-0.3				
	comp=Z,9.7nm,0.8s										
KTH	Kantishna Hill	69.55	334	*e*P	P	14 05 20.7	-1.1				
	comp=Z,8.3nm,0.9s										
BPAW	Bear Paw Mtn.	69.74	335	*e*P	P	14 05 21.4	-1.5				
	comp=Z,10.0nm,0.8s										
MLY	Manley	69.94	336	*e*P	P	14 05 23.1	-1.0				
	comp=Z,7.2nm,0.9s										
CAST	Castle Rocks	70.00	334	*e*P	P	14 05 23.0	-1.6				
	comp=Z,6.9nm,1.0s										
COLD	Coldfoot	70.46	338	*e*P	P	14 05 27.8	+0.5				
	comp=Z,7.4nm,1.1s										
TBI	Tubuai	70.79	241	*e*S	S	14 14 48.6	+5.5				
	comp=Z,59nm,24.5s										
TBI	Tubuai	70.79	241	*e*LR	LR	14 27 07.6					
	comp=Z,196nm,27.8s,baz=66										
TBI	Tubuai	70.79	241	*e*T	T	15 22 29.8					
	comp=Z,15nm,0.3s										
TT01	Tatalina	71.60	333	*e*P	P	14 05 32.9	-1.3				
MDT	Midelt	76.98	59	P	P	14 06 04.8	-1.5				
	comp=Z,4.0nm,1.1s,baz=281,slow=9.3,SNR=4.9										
ESDC	Sonseca Array	77.06	52	P	P	14 06 03.8	-2.8				
	comp=Z,2.2nm,0.8s,baz=281,slow=5.5,SNR=13										
ESDC				LR	LR	14 35 19.6					
	comp=Z,192nm,20.7s,baz=250,slow=32										
ES19	SONSECA Array	77.11	52	*e*P	P	14 06 04.4	-2.5				
DBIC	Dimbokro	79.96	85	LR	LR	14 41 02.4					
	comp=Z,46nm,20.9s,baz=259,slow=35										
NOA	NORSAR Array B	84.17	29	P	P	14 06 42.4	-1.8				
	comp=Z,2.0nm,1.1s,baz=282,slow=4.8,SNR=2.9										
TORD	Torodi Ar. Bea	85.25	78	P	P	14 06 49.9	-0.6				
	comp=Z,0.3nm,0.6s,baz=301,slow=5.2,SNR=2.7										
BILL	Bilibino	86.77	339	*e*P	P	14 06 56.7	-0.3				
BILL				pmax	pmax						
	comp=Z,15nm,1.4s										
CLL	Collm	87.25	38	*i* sP	sP	14 07 20.2	+6.4				
	comp=Z,16nm,1.3s										
CLL				LmV		14 42 00.0					
	comp=Z,100nm,20.4s										
ARCES	ARCESS Array B	87.37	19	P	P	14 06 59.4	-0.5				
	comp=Z,2.8nm,0.5s,baz=266,slow=5.1,SNR=2.1										
ARCES				LR	LR	14 47 21.3					
	comp=Z,54nm,18.0s,baz=280,slow=37										
KEST	Kesra	88.03	54	LR	LR	14 43 38.0					
	comp=Z,65nm,19.7s,baz=232,slow=34										
GERES	GERESS Array B	88.27	41	sP	sP	14 07 15.2	-3.7				
	comp=Z,0.1nm,0.3s,baz=276,slow=2.7,SNR=1.2										
GERES				LR	LR	14 43 55.3					
	comp=Z,98nm,18.6s,baz=278,slow=34										
FINES	FINESS Array B	90.88	26	LR	LR	14 44 12.9					
	comp=Z,132nm,21.6s,baz=247,slow=33										
PETK	Petropavlovsk-	96.76	327	LR	LR	14 53 06.7					
	comp=Z,21nm,21.8s,baz=59,slow=36										
NRIK	Noril'sk	100.08	2	LR	LR	14 54 20.3					
	comp=Z,123nm,21.3s,baz=336,slow=36										
ZALV	Zalesovo Beam	115.17	6	PKP	PKPdf	14 12 53.7	-0.7				
	comp=Z,0.4nm,0.5s,baz=306,slow=2.8,SNR=3.2										
SONM	Songino Array	120.78	350	PKP	PKPdf	14 13 04.7	-0.8				
	comp=Z,0.9nm,0.6s,baz=22,slow=3.0,SNR=3.6										
MKAR	Makanchi Array	121.85	10	PKP	PKPdf	14 13 05.5	-2.0				
	comp=Z,0.3nm,0.3s,baz=323,slow=1.8,SNR=4.7										
AAK	Ala-Archa	124.00	17	⫝̸*i*PKIKP	PKPdf	14 13 12.8	+0.9				
WMQ	Urumqi	125.48	6	*e*PKP	PKPdf	14 13 17.3	+2.7				
WMQ				AMB	AMB						
	comp=Z,93nm,4.1s										
HHC	Hu-ho-hao-te	126.31	344	*e*PKP	PKPdf	14 13 18.5	+2.2				
HHC				PP	PP	14 15 18.6	+8.6				
HHC				SKKS		14 22 04.5					
HHC				SS	SS	14 32 15.0	+4.3				
HHC				AMB	AMB						
	comp=Z,22nm,7.5s										
HHC				LR	LR						
	comp=Z,130nm,17.4s										
HHC				LR	LR						
	comp=Z,150nm,17.4s										
HHC				LR	LR						
	comp=Z,81nm,16.2s										
KSH	Kashi	127.31	18	*e*PKP	PKPdf	14 13 18.1	-0.2				
KSH				SKS	SKSdf	14 20 24.5	-3.5				
KSH				SKKS	SKKSac	14 22 04.0	-9.5				
KSH				AMB	AMB						
	comp=Z,80nm,4.5s										
KSH				LR	LR						
	comp=Z,92nm,4.7s										
KSH				LR	LR						
	comp=Z,85nm,5.3s										
KSH				LR	LR						
	comp=Z,150nm,6.2s										
GTA	Gaotai	129.93	354	*e*PKP	PKPdf	14 13 23.3	0.0				
STKA	Stephens Creek	131.47	237	PKP	PKPdf	14 13 25.3	-0.9				
	comp=Z,1.6nm,0.8s,baz=43,slow=2.7,SNR=3.2										
LZH	Lanzhou	132.64	349	*e*PKP	PKPdf	14 13 31.3	+2.8				
LZH				sPKP		14 13 57.0					
CD2	Chengdu	137.67	348	PKP	PKPdf	14 13 35.4	-2.5				
ASAR	Alice Springs	140.03	246	PKhKP	PKPpre	14 13 33.0					
	comp=Z,1.1nm,1.0s,baz=116,slow=3.5,SNR=6.8										
ASAR				PKP	PKPdf	14 13 42.2	-0.2				
	comp=Z,2.1nm,0.7s,baz=90,slow=1.7,SNR=15										
ASAR				SKPbc	SKPbc	14 17 17.2	+1.1				
	comp=Z,0.7nm,0.7s,baz=105,slow=2.5,SNR=5.2										
WRAB	Tennant Creek	140.24	252	⫝̸*i*PKIKP	PKPdf	14 13 43.6	+0.8				
WRAB				pmax	pmax						
	comp=Z,12nm,1.0s										
WRA	Warramunga Arr	140.25	252	PKhKP	PKPpre	14 13 34.0					
	comp=Z,1.0nm,0.7s,baz=96,slow=2.9,SNR=7.8										
WRA				PKP	PKPdf	14 13 42.6	-0.2				
	comp=Z,3.5nm,0.8s,baz=92,slow=2.7,SNR=16										
WRA				SKPbc	SKiKP	14 17 20.0	+0.7				
	comp=Z,0.8nm,0.8s,baz=92,slow=3.4,SNR=4.6										
GYA	Guiyang	141.17	342	*e*PKP	PKPdf	14 13 41.8	-2.7				
GYA				sPKP		14 14 07.3					
GYA				PP	PP	14 16 47.4	+2.7				
GYA				AMB	AMB						
	comp=Z,120nm,7.5s										
KMI	Kunming	143.48	347	PKP	PKPbc	14 13 45.9	-0.1				
CMAR	Chiang Mai Arr	150.71	351	PKP	PKPdf	14 13 59.4	-1.3				
	comp=Z,1.8nm,0.8s,baz=328,slow=2.5,SNR=8.5										
CMAR				PKPbc	PKPbc	14 14 04.3	-1.9				
	comp=Z,5.2nm,1.0s,baz=334,slow=2.8,SNR=16										

INMG ***23*** *13:55:50.4±0.9, 32.˚38N×7.˚70W, h10km, ML2.3, Error ellipse: s-maj=8.6km s-min=3.4km az=38.0*
CSEM ***23*** *13:55:52.8±0.4, 32.˚61N×7.˚53W, h10km, ML2.3, Error ellipse: s-maj=10.5km s-min=7.0km az=93.0*

MDD 23 13:55:50.1±0.7, 32.˚28N×7.˚59W, h0km, mb3.6/5, Error ellipse: s-maj=9.9km s-min=5.7km az=95.0, PRXIMO, Morocco

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PFVI	Vila Bisbo	4.95	348	*e*Pn	Pn	13 57 03.9	-1.8
PFVI	Vila Bisbo	4.95	348	*e*Pn	Pn	13 57 03.9	-1.8
PBDV	Barranco-do-Ve	4.96	357	*e*Pn	Pn	13 57 03.0	-2.9
PBDV				*e*Sn	Sn	13 57 58.0	-6.1
PBDV	Barranco-do-Ve	4.96	357	P	Pn	13 57 03.0	-2.9
PBDV				S	Sn	13 57 58.0	-6.1
PBDV	Barranco-do-Ve	4.96	357	P	Pn	13 57 03.0	-2.9
PBDV				S	Sn	13 57 58.0	-6.1
PVAQ	Vaqueiros	5.12	359	*e*Pn	Pn	13 57 04.5	-3.5
PVAQ				*e*Sn	Sn	13 58 00.8	-7.0
PVAQ				A	A	13 58 04.7	
	2.6nm,0.4s						
PVAQ	Vaqueiros	5.12	359	P	Pn	13 57 04.5	-3.5
PVAQ				S	Sn	13 58 00.8	-7.0
	2.6nm,0.4s						
PVAQ	Vaqueiros	5.12	359	P	Pn	13 57 04.5	-3.5
PVAQ				S	Sn	13 58 00.8	-7.0
	2.6nm,0.4s						
EGRO	El Granado	5.25	1	P	Pn	13 57 07.2	-2.5
	0.4nm,0.1s,SNR=7.9						
EGRO				S	Sn	13 58 03.4	-7.6
	1.1nm,0.2s,SNR=7.9						
EGRO	El Granado	5.25	1	P	Pn	13 57 07.2	-2.6
	0.4nm,0.1s,SNR=7.9						
EGRO				S	Sn	13 58 03.4	-7.6
	1.1nm,0.2s,SNR=7.9						
PTEO	Sao Teotonio	5.34	350	*e*Pn	Pn	13 57 08.0	-3.1
PTEO	Sao Teotonio	5.34	350	P	Pn	13 57 08.0	-3.1
PTEO	Sao Teotonio	5.34	350	P	Pn	13 57 08.0	-3.1
PCVE	Castro Verde	5.36	356	*e*Pn	Pn	13 57 08.2	-3.1
PCVE				*e*Sn	Sn	13 58 06.7	-7.0
PCVE				A	A	13 58 12.0	
	2.3nm,0.5s						
PCVE	Castro Verde	5.36	356	P	Pn	13 57 08.2	-3.1
PCVE				S	Sn	13 58 06.7	-7.0
	2.3nm,0.5s						
EMIN	Mina Concepcio	5.53	8	P	Pn	13 57 10.1	-3.6
	0.6nm,0.2s,SNR=10						
EMIN				S	Sn	13 58 09.7	-8.3
	0.9nm,0.2s,SNR=7.9						
EMIN	Mina Concepcio	5.53	8	P	Pn	13 57 10.1	-3.6
	0.6nm,0.2s,SNR=10						
EMIN				S	Sn	13 58 09.7	-8.3
	0.9nm,0.2s,SNR=7.9						
MESJ	Messejana	5.58	355	*e*Pn	Pn	13 57 10.8	-3.5
MESJ				*e*Sn	Sn	13 58 11.9	-7.2
MESJ				A	A	13 58 15.0	
	2.1nm,0.5s						
MESJ	Messejana	5.58	355	P	Pn	13 57 10.8	-3.5
MESJ				S	Sn	13 58 11.9	-7.2
	2.1nm,0.5s						
MESJ	Messejana	5.58	355	P	Pn	13 57 10.8	-3.5
MESJ				S	Sn	13 58 11.9	-7.2
	2.1nm,0.5s						
PNCL	Nicolau / Gran	5.87	353	*e*Pn	Pn	13 57 14.8	-3.6
PNCL				*e*Sn	Sn	13 58 19.2	-7.2
PNCL	Nicolau / Gran	5.87	353	*e*Pn	Pn	13 57 14.8	-3.6
PNCL				*e*Sn	Sn	13 58 19.2	-7.2
PBAR	Barrancos	5.90	4	*e*Pn	Pn	13 57 16.0	-2.8
PBAR				*e*Sn	Sn	13 58 20.2	-7.0
PBAR				A	A	13 58 20.8	
	2.1nm,0.4s						
PBAR	Barrancos	5.90	4	P	Pn	13 57 16.0	-2.8
PBAR				S	Sn	13 58 20.2	-7.0
	2.1nm,0.4s						
PBAR	Barrancos	5.90	4	P	Pn	13 57 16.0	-2.8
PBAR				S	Sn	13 58 20.2	-7.0
	2.1nm,0.4s						
ECAB	El Cabril	6.05	16	P	Pn	13 57 18.1	-2.8
	0.2nm,0.1s,SNR=7.9						
ECAB				S	Sn	13 58 22.8	-8.1
	1.7nm,0.5s,SNR=7.9						
ECAB	El Cabril	6.05	16	P	Pn	13 57 18.1	-2.8
	0.2nm,0.1s,SNR=7.9						
ECAB				S	Sn	13 58 22.8	-8.1
	1.7nm,0.5s,SNR=7.9						
EADA	Adamuz	6.37	22	P	Pn	13 57 22.8	-2.6
	0.3nm,0.1s,SNR=7.9						
EADA				S	Sn	13 58 31.6	-7.2
	1.4nm,0.5s,SNR=7.9						
EADA	Adamuz	6.37	22	P	Pn	13 57 22.8	-2.5
	0.3nm,0.1s,SNR=7.9						
EADA				S	Sn	13 58 31.6	-7.2
	1.4nm,0.5s,SNR=7.9						
EBAD	Badajoz	6.48	4	P	Pn	13 57 23.4	-3.4
	0.3nm,0.1s,SNR=7.9						
EBAD	Badajoz	6.48	4	P	Pn	13 57 23.4	-3.4
	0.3nm,0.1s,SNR=7.9						
PMTG	Montargil	6.80	356	*e*Pn	Pn	13 57 28.0	-3.1
PMTG				*e*Sn	Sn	13 58 41.6	-7.6
PMTG	Montargil	6.80	356	*e*Pn	Pn	13 57 28.0	-3.1
PMTG				*e*Sn	Sn	13 58 41.6	-7.6
PMRV	Marv??o	7.14	1	*e*Pn	Pn	13 57 32.5	-3.3
PMRV	Marv??o	7.14	1	P	Pn	13 57 32.5	-3.3
PMRV	Marv??o	7.14	1	P	Pn	13 57 32.5	-3.3

CSEM ***23*** *14:03:07.8±0.4, 39.˚26N×36.˚50E, h2km, MD2.7, Error ellipse: s-maj=8.9km s-min=6.8km az=18.0*
ISK ***23*** *14:03:07.4, 39.˚29N×36.˚49E, h8km, ML2.5*
DDA ***23*** *14:03:07.1, 39.˚20N×36.˚52E, h7km, Md2.7*

ISC 23 14:03:08.0±1.0, 39.˚25N±0.˚05×36.˚52E±0.˚03, h10km±8km, n19, σ0.˚84/30, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CUALT	Altinyayla-SIV	0.19	83	*i* P	Pg	14 03 11.6	-0.5
CUALT				*i* S	Sg	14 03 15.1	+0.2
CUALT	Altinyayla-SIV	0.19	83	P	Pg	14 03 11.6	-0.5
CUALT				S	Sg	14 03 15.1	+0.2
CUSAR	Sarkisla-SIVAS	0.27	309	*i* P	Pg	14 03 13.0	-0.5
CUSAR				*i* S	Sg	14 03 18.4	+1.2
CUSAR	Sarkisla-SIVAS	0.27	309	P	Pg	14 03 13.0	-0.5
CUSAR				S	Sg	14 03 18.4	+1.2
SVSK	Karacayir	0.76	29	*e*PG	Pg	14 03 21.3	-1.4
SVSK				*e*SG	Sb	14 03 33.2	-0.6
SVSK	Karacayir	0.76	29	*e*Pg	Pg	14 03 21.3	-1.4
SVSK				*e*Sg	Sb	14 03 33.2	-0.6
SCER	sogukcermik	0.77	38	*i* P	Pg	14 03 22.7	-0.2
SCER				*i* S	Sb	14 03 34.3	+0.1
SCER	sogukcermik	0.77	38	P	Pg	14 03 22.7	-0.2
SCER				S	Sb	14 03 34.3	+0.1
SARI	SarD1z-Kayseri	0.84	185	*e*PG	Pb	14 03 24.5	-0.3
YOZ	Yozgat	1.00	293	*e*PG	Pg	14 03 26.6	-0.7
YOZ	Yozgat	1.00	293	*e*Pg	Pg	14 03 26.6	-0.7
DARE	Darende-Malaty	1.01	132	*e*PG	Pn	14 03 28.7	+0.4
DARE	Darende-Malaty	1.01	132	*e*Pg	Pn	14 03 28.7	+0.4
KEMA	Kemaliye	1.54	89	*i* P	Pn	14 03 34.9	-0.6
KEMA				*i* S	Sg	14 03 57.7	+0.4
KEMA	Kemaliye	1.54	89	P	Pn	14 03 34.9	-0.6
KEMA				S	Sg	14 03 57.7	+0.4
SUSE	Susehri	1.61	53	*i* P	Pg	14 03 38.7	-0.3
SUSE				*i* S	Sg	14 04 02.2	+2.2
SUSE	Susehri	1.61	53	P	Pg	14 03 38.7	-0.3
PTK	Pertek	2.27	98	*e*PN	Pn	14 03 46.7	+1.1
PTK	Pertek	2.27	98	*e*Pn	Pn	14 03 46.7	+1.1

NIED ***23*** *14:22:00, 36.˚20N×140.˚10E, h56km, Mw3.9 Best double couple: M0 8.06000×10^14 NP1: ϕs=283.00000°, δ29.00000°, λ136.00000°. NP2: ϕs=53.00000°, δ70.00000°, λ68.00000°.*
ISCJB ***23*** *14:22:26.0±0.6, 36.˚26N±0.˚04×140.˚16E±0.˚06, h59km±4km, mb3.9/10, MS2.9/3, Error ellipse: s-maj=7.9km s-min=6.8km az=10.5*
JMA ***23*** *14:22:27.6±0.1, 36.˚18N×140.˚11E, h51km±1km, M4.0 Broadband fault plane solution: P waves. NP1: ϕs=42.00000°, δ72.00000°, λ89.00000°. NP2: ϕs=225.00000°, δ18.00000°, λ93.00000°. Principal axes: T Plg63.0000°, Azm311.0000°; N Plg1.0000°, Azm43.0000°; P Plg27.0000°, Azm133.0000°;*
JMA Felt II J1.
IDC ***23*** *14:22:30.5±2.0, 36.˚49N×140.˚01E, h68km±15km, mb3.6/9, mb1 3.6/13, mb1mx3.5/45, mbtmp3.8/13, MS2.9/5, Ms1 2.9/5, ms1mx2.6/42 Error ellipse: s-maj=21.8km s-min=14.7km az=143.0*

ISC 23 14:22:27.4±0.7, 36.˚25N±0.˚05×140.˚13E±0.˚05, h52km±5km, n33, σ1.˚27/35, mb3.8/10, MS2.8/3, 1C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	Yasato	0.05	115	⫝̸P	Pn	14 22 35.6	+0.3
JYT				S	Sn	14 22 41.2	+0.3
JAG	Ashikaga	0.58	288	⫝̸P	Pn	14 22 40.0	+0.3
JAG				S	Sn	14 22 48.6	0.0
JKT	Katashina	0.88	306	⫝̸P	Pn	14 22 44.1	+0.4
JKT				S	Sn	14 22 56.5	+0.9
JRY	Ryogami san	1.02	257	⫝̸P	Pn	14 22 45.3	-0.2
JRY				S	Sn	14 22 58.2	-0.7
JOD2	Odawara 2	1.30	221	P	Pn	14 22 49.5	+0.2
JOD2				*e*S	Sn	14 23 04.1	-1.5
MJAR	Matsushiro Arr	1.58	281	P	Pn	14 22 53.0	-0.1
	71nm,0.3s,baz=80,slow=15,SNR=784						
MJAR				LR	LR	14 23 06.2	
	comp=Z,29nm,19.4s,baz=120,slow=25						
MJAR				S	Sn	14 23 12.5	+0.1
	36nm,0.3s,baz=94,slow=18,SNR=14						
MAT	Matsushiro	1.58	281	P	Pn	14 22 52.7	-0.4
MAT				S	Sn	14 23 10.9	-1.5
JHJ	Hachijo jima 2	3.14	185	P	Pn	14 23 13.8	-0.6
	24nm,0.3s,baz=51,slow=7.5,SNR=7.0						
JHJ				S	Sn	14 23 48.9	-1.6
	44nm,0.3s,baz=221,slow=23,SNR=3.4						
ASAJ	Asahikawa	8.08	13	P	Pn	14 24 21.8	-0.3
	baz=214,slow=8.2						
ASAJ				S	Sn	14 25 51.4	-0.6
	baz=204,slow=20						
JNU	Nakatsue	8.24	250	P	Pn	14 24 27.0	+2.7
	0.1nm,0.3s,baz=54,slow=8.7,SNR=3.3						
KSRS	Korea Array	9.86	281	LR	LR	14 28 32.4	
	comp=Z,33nm,19.2s,baz=76,slow=37						
USRK	Ussuriysk Ar.	10.09	324	P	Pn	14 24 48.0	-1.5
	0.1nm,0.3s,baz=123,slow=13,SNR=2.3						
KLR	Kul'dur	14.35	337	P	Pn	14 25 46.3	-1.2
	0.2nm,0.3s,baz=139,slow=9.3,SNR=3.0						
KLR				LR	LR	14 30 51.6	
	comp=Z,52nm,19.8s,baz=132,slow=36						
GUMO	Guam	22.96	168	P	P	14 27 32.0	+4.5
	38nm,0.9s,baz=190,slow=23,SNR=2.8						
MA2	Magadan	24.34	13	LR	LR	14 38 54.2	
	comp=Z,16nm,18.1s,baz=88,slow=41						
YAK	Yakutsk	26.62	349	LR	LR	14 37 39.5	
	comp=Z,30nm,20.2s,baz=96,slow=34						
SONM	Songino Array	27.39	306	P	P	14 28 07.3	-0.7
	0.7nm,0.5s,baz=101,slow=7.5,SNR=3.7						
H11N2	WAKE ISLAND Hy	28.66	118	T	T	14 58 27.9	
	baz=312,slow=74,SNR=16						
H11N1	WAKE ISLAND Hy	28.67	118	T	T	14 58 27.7	
	baz=312,slow=74,SNR=21						
H11N3	WAKE ISLAND Hy	28.68	118	T	T	14 58 28.7	
	baz=312,slow=74,SNR=7.3						
H11S1	WAKE ISLAND Hy	29.33	120	T	T	14 59 20.1	
	baz=314,slow=76,SNR=13						
H11S3	WAKE ISLAND Hy	29.33	120	T	T	14 59 19.2	
	baz=314,slow=76,SNR=15						
H11S2	WAKE ISLAND Hy	29.35	120	T	T	14 59 21.7	
	baz=314,slow=76,SNR=7.8						
ZALV	Zalesovo Beam	41.69	313	P	P	14 30 10.3	-0.5
	1.6nm,0.6s,baz=83,slow=7.0,SNR=7.1						
ZALV				PcP	PcP	14 32 05.9	-0.7
	0.5nm,0.3s,baz=90,slow=2.9,SNR=3.3						
MKAR	Makanchi Array	43.67	303	P	P	14 30 26.3	-0.7
	0.9nm,0.7s,baz=94,slow=8.7,SNR=12						
MKAR				PcP	PcP	14 32 13.5	+0.1
	0.1nm,0.4s,baz=88,slow=3.3,SNR=3.2						
HNR	Honiara	49.12	154	LR	LR	14 50 33.3	
	comp=Z,31nm,21.8s,baz=63,slow=34						
ILAR	Eielson Array	50.70	32	P	P	14 31 22.2	+0.7
	0.5nm,0.7s,baz=274,slow=6.0,SNR=6.9						
ILAR				pP	sP	14 31 40.9	-0.5
	0.9nm,0.8s,baz=276,slow=6.1,SNR=5.9						
FINES	FINESS Array B	69.02	332	P	P	14 33 26.6	-0.5
	2.6nm,0.9s,baz=57,slow=7.0,SNR=3.8						
AKASG	Malin Array Be	74.28	322	P	P	14 33 58.1	-0.9
	1.1nm,0.5s,baz=47,slow=6.0,SNR=4.6						
NB2	NORSAR Subarra	74.50	337	P	P	14 33 59.0	-1.2
	comp=Z,0.7nm,0.6s,baz=40,slow=5.9						
NOA	NORSAR Array B	74.50	337	P	P	14 33 59.1	-1.1
	comp=Z,1.1nm,0.7s,baz=13,slow=4.1,SNR=4.0						
BRTR	Keskin Array B	78.59	311	P	P	14 34 25.4	+1.5
	comp=Z,0.4nm,0.6s,baz=56,slow=5.4,SNR=3.5						
TXAR	Lajitas Array	91.41	52	P	P	14 35 29.1	+0.8
	comp=Z,0.2nm,0.6s,baz=302,slow=4.0,SNR=5.4						

BJI ***23*** *14:24:39.3, 7.˚79S×128.˚73E, h162km, mb4.8/57, mB4.7/33*
ISCJB ***23*** *14:24:41.2±0.2, 7.˚49S±0.˚02×128.˚49E±0.˚02, h151km, mb4.8/92, Error ellipse: s-maj=3.3km s-min=3.0km az=6.5*
NEIC ***23*** *14:24:42.5±0.6, 7.˚39S×128.˚41E, h147km±5km, mb4.9/40, Error ellipse: s-maj=5.6km s-min=4.9km az=56.0*
NEIC Felt at Darwin, Australia.
MOS ***23*** *14:24:43.3±1.2, 7.˚32S×128.˚41E, h164km, mb4.7/28, Error ellipse: s-maj=10.9km s-min=6.2km az=108.6*
DJA ***23*** *14:24:43.4±0.2, 8.˚S±2.˚×12.˚8E±.˚, h134km±2km, M5.2/38, mb5.1/38, mB5.5/7, MLv5.5/2, Mw(mB)5.0/7*
IDC ***23*** *14:24:44.4±1.1, 7.˚40S×128.˚52E, h160km±9km, mb4.5/22, mb1 4.6/26, mb1mx4.5/33, mbtmp5.0/26, MS3.4/5, Ms1 3.4/5, ms1mx2.9/39, Error ellipse: s-maj=11.3km s-min=7.6km az=76.0*
KLM ***23*** *14:24:51.5, 7.˚61S×128.˚16E, h196km, mb5.1, MS5.8*

ISC 23 14:24:42.6±0.3, 7.˚50S±0.˚03×128.˚43E±0.˚04, h151km, n246, σ1.˚90/297, mb4.8/91, 9C-15D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAUI	Saumlaki	2.88	100	P	Pn	14 25 28.6	+0.1
SAUI				S	Sn	14 26 06.0	+2.0
SAUI	Saumlaki	2.88	100	*e*Pn	Pn	14 25 30.0	+1.4
BNDI	Bandanaira	3.30	26	P	Pn	14 25 35.8	+2.0
MSAI	Masohi	4.16	7	P	Pn	14 25 47.2	+2.2
NLAI	Namlea	4.43	343	P	Pn	14 25 50.6	+2.0
SOEI	Soe	4.69	241	P	Pn	14 25 52.0	0.0
SOEI				S	Sn	14 26 44.8	-1.3
SOEI	Soe	4.69	241	*e*Pn	Pn	14 25 53.7	+1.6
SOEI				*e*Sn	Sn	14 26 46.5	+0.4
FAKI	Fak Fak	5.93	40	P	Pn	14 26 07.5	-0.9
FAKI				S	Sn	14 27 12.4	-3.2
FAKI	Fak Fak	5.93	40	*e*Pn	Pn	14 26 06.9	-1.5
FAKI				*e*Sn	Sn	14 27 11.8	-3.8
SANI	Sanana	5.94	336	P	Pn	14 26 10.8	+2.3
MTN	Manton Dam	5.94	154	P	Pn	14 26 08.5	-0.1
	baz=5.9,SNR=526						
MTN	Manton Dam	5.94	154	*e*Pn	Pn	14 26 08.5	-0.1
MMRI	Maumere

PWJI Pagerwojo 16.48 267 P P 14 28 24.4 -0.9
65nm,0.8s
AS31 Alice Springs 16.91 162 eP Pn 14 28 30.1 -0.3
68nm,0.6s
ASAR Alice Springs 16.91 163 P Pn 14 28 32.1 +1.7
21nm,0.3s,baz=340,slow=11,SNR=664
ASAR S 14 31 31.0 -7.5
6.3nm,0.3s,baz=342,slow=22,SNR=7.6
AS01 Alice Springs 16.92 162 eP P 14 28 29.6 -0.5
PCJI Pacitan 17.11 267 P P 14 28 31.0 -1.1
86nm,0.9s
SDKM Sandakan 17.21 319 ⇓P Pn 14 28 38.3 +4.2
PBKI Pangkalan Bun 17.36 285 P Pn 14 28 38.5 +2.7
590nm,0.9s,4µm
UGM Wanagama 17.75 267 P P 14 28 39.5 +0.2
147nm,1.9s
STKI Sintang 18.50 293 P Pn 14 28 50.5 +1.1
PMG Port Moresby 18.62 97 P Pn 14 28 50.6 -0.2
1.5nm,0.3s,baz=270,slow=7.3,SNR=9.3
PMG Port Moresby 18.62 97 d iP Pn 14 28 53.0 +2.2
PMG Port Moresby 18.62 97 eP Pn 14 28 51.5 +0.7
59nm,0.9s
SBUM Sibu 18.96 301 ⇑P Pn 14 28 56.6 +1.9
SBUM Sibu 18.96 301 eP Pn 14 28 54.0 -0.7
56nm,0.8s
MANU Manus Island 19.63 75 eP Pn 14 29 02.7 +0.2
374nm,1.9s
CISI Cisompet, Garu 20.44 268 P Pn 14 29 10.6 -1.7
114nm,0.6s
CISI Cisompet, Garu 20.44 268 eP P 14 29 06.0 -2.4
87nm,0.8s
CTA Charters Tower 21.33 128 P P 14 29 19.5 +1.7
11nm,0.7s,baz=300,slow=12,SNR=17
CTA S 14 33 02.8 -3.0
3.1nm,0.6s,baz=313,slow=19,SNR=3.3
CTAO Charters Tower 21.33 128 eP P 14 29 19.3 +1.5
CTAO pmax pmax
comp=Z,20nm,0.9s
CTAO Charters Tower 21.33 128 eP P 14 29 19.3 +1.5
comp=Z,20nm,0.9s
CGJI Cibinong 22.58 271 P P 14 29 28.3 -2.3
TGY Tagaytay City 22.71 341 P P 14 29 32.0 +0.2
comp=Z,265nm,0.4s,baz=186,slow=4.3,SNR=9.4
PPBI Pangkal Pinang 22.83 282 P P 14 29 34.9 +2.0
comp=Z,74nm,1.2s
FORT Forrest 23.16 181 eP P 14 29 37.1 +1.3
comp=Z,970nm,0.8s
KLSI 23.73 275 P P 14 29 46.5 +5.4
comp=Z,16nm,0.9s
DSRI Dabo 24.78 285 P P 14 29 54.2 +3.5
comp=Z,95nm,1.1s
LHSI Lahat 25.05 277 P P 14 29 59.1 +6.0
comp=Z,22nm,0.7s
MYKOM Kota Tinggi 26.20 290 ⇑P P 14 30 06.3 +2.8
MYKOM Kota Tinggi 26.20 290 eP P 14 30 04.7 +1.1
comp=Z,43nm,1.2s
GUMO Guam 26.56 38 P P 14 30 06.1 -0.6
comp=Z,32nm,0.4s,baz=169,slow=0.7,SNR=11
GUMO Guam 26.56 38 eP P 14 30 05.2 -1.5
GUMO pmax pmax
comp=Z,90nm,1.0s
GUMO Guam 26.56 38 eP P 14 30 05.2 -1.5
comp=Z,90nm,1.0s
STKA Stephens Creek 27.18 155 P P 14 30 13.6 +1.5
comp=Z,40nm,0.5s,baz=328,slow=9.3,SNR=164
STKA LR LR 14 42 38.8
comp=Z,126nm,18.7s,baz=332,slow=40
STKA Stephens Creek 27.18 155 eP P 14 30 13.2 +1.1
STKA pmax pmax
comp=Z,9.0nm,0.6s
STKA Stephens Creek 27.18 155 eP P 14 30 13.2 +1.1
comp=Z,9.1nm,0.6s
NWAO Narrogin (SRO) 27.35 201 P P 14 30 15.0 +1.4
comp=Z,35nm,0.6s,baz=266,slow=8.0,SNR=51
NWAO Narrogin (SRO) 27.35 201 eP P 14 30 14.6 +1.0
NWAO pmax pmax
comp=Z,36nm,0.8s
NWAO Narrogin (SRO) 27.35 201 eP P 14 30 14.6 +1.0
comp=Z,36nm,0.8s
IPM Ipoh 29.82 293 eP P 14 30 35.7 -0.1
comp=Z,15nm,0.7s
MNSI Mandailing Nat 29.93 285 P P 14 30 36.6 -0.1
comp=Z,25nm,0.8s
KULM Kulim 30.49 294 eP P 14 30 40.9 -0.8
comp=Z,18nm,0.8s
PSI Prapat 31.17 288 P P 14 30 47.4 -0.3
comp=Z,31nm,0.9s,baz=104,slow=5.1,SNR=21
PSI Prapat 31.17 288 eP P 14 30 47.1 -0.7
comp=Z,37nm,0.9s
SSLB Suanglung 31.94 347 eP P 14 30 52.8 -1.4
comp=Z,7.9nm,0.9s
UBPT Khong Chiam 32.09 315 P P 14 30 56.7 +1.1
comp=Z,35nm,0.7s
YOJ Yonaguni jima 32.20 351 eP P 14 30 55.6 -0.8
YOJ pmax pmax
comp=Z,43nm,0.6s
YOJ Yonaguni jima 32.20 351 eP P 14 30 55.6 -0.8
comp=Z,43nm,0.6s
TRTT Trang 32.45 297 P P 14 31 01.2 +2.4
comp=Z,36nm,1.0s
YHNB Yeheng 32.71 348 eP P 14 30 59.3 -1.6
comp=Z,18nm,0.9s
KRAB Krabi 33.06 298 P P 14 31 06.0 +1.9
comp=Z,39nm,0.7s
JOW Kunigami 34.13 360 eP P 14 31 12.2 -1.0
comp=Z,30nm,0.8s
SKNT Sakolnakorn 34.29 315 P P 14 31 15.7 +1.0
comp=Z,34nm,0.8s
NONG Nongkai 35.61 316 P P 14 31 26.8 +0.8
comp=Z,19nm,1.9s
LOEI Loei 36.58 313 P P 14 31 33.1 -1.2
comp=Z,14nm,2.1s
UTTA Uttaradit 37.25 313 P P 14 31 41.3 +1.4
comp=Z,11nm,0.8s,comp=Z,81nm
SUKH Sukhothai 37.76 311 P P 14 31 46.0 +1.8
comp=Z,11nm,0.8s,comp=Z,81nm
LAMP Lampang 38.42 313 P P 14 31 51.7 +2.0
comp=Z,8.3nm,0.8s
CMAR Chiang Mai Arr 38.88 312 P P 14 31 54.8 +1.2
comp=Z,8.3nm,0.9s,baz=143,slow=7.2,SNR=36
CMAR PcP PcP 14 34 03.1 +1.5
comp=Z,2.3nm,0.6s,baz=158,slow=2.6,SNR=7.7
CMAR ScP ScP 14 37 36.2 +0.4
comp=Z,1.9nm,0.7s,baz=150,slow=3.8,SNR=9.2
CMMT Chiang Mai 39.10 312 P P 14 31 56.6 +1.2
comp=Z,18nm,1.0s
CHTO Chiang Mai 39.10 312 P P 14 31 56.6 +1.2
comp=Z,83nm,1.0s
CHTO Chiang Mai 39.10 312 eP P 14 31 56.3 +0.9
CHTO pmax pmax
comp=Z,19nm,1.0s
CHTO Chiang Mai 39.10 312 eP P 14 31 56.3 +0.9
comp=Z,19nm,1.0s
CMAI Chiengmai2 39.74 314 P P 14 32 01.9 +1.0
comp=Z,290nm,1.0s
GYA Guiyang 39.82 329 eP P 14 32 02.8 +1.4
GYA pP pP 14 32 37.0 +2.5
GYA sP sP 14 32 55.4 +3.8
GYA S S 14 37 55.3 +0.5
GYA pmax pmax
comp=Z,10.0nm,1.0s
WHN Wuhan 40.17 341 ⇑P P 14 32 05.3 +1.3
NJ2 Nanjing 40.38 347 eP P 14 32 06.6 +0.9
NJ2 pmax pmax
comp=Z,23nm,0.5s
JNU Nakatsue 40.46 3 P P 14 32 06.0 -0.5
baz=211,slow=6.1
KMI Kunming 40.95 323 P P 14 32 12.6 +1.7
KMI pmax pmax
comp=Z,12nm,0.7s
JHJ Hachijo jima 2 41.81 14 LR LR 14 45 34.6
comp=Z,79nm,21.8s,baz=268,slow=30
KS15 Wonju Array Si 44.71 359 eP P 14 32 40.3 -0.3
KS01 Wonju Array Si 44.74 359 eP P 14 32 40.8 -0.1
TIA Tai'an 44.76 347 eP P 14 32 40.3 -0.8
TIA pmax pmax
comp=Z,10.0nm,0.8s
MAJO Matsushiro 44.76 11 d iP P 14 32 39.5 -1.6
MAJO pmax pmax
comp=Z,70nm,0.6s
MAJO Matsushiro 44.76 11 eP P 14 32 39.4 -1.6
comp=Z,15nm,0.6s
MAT Matsushiro 44.76 11 P P 14 32 39.5 -1.6
MJAR Matsushiro Arr 44.76 11 P P 14 32 39.7 -1.4
comp=Z,6.3nm,0.5s,baz=185,slow=9.3,SNR=72
MJAR ScP ScP 14 37 58.2 -0.8
comp=Z,2.3nm,0.7s,baz=198,slow=5.2,SNR=8.0

MJB9 Matsu-Tunnel 44.76 11 eP P 14 32 39.6 -1.5
comp=Z,3.8nm,0.7s
CD2 Chengdu 44.91 329 eP P 14 32 43.4 +0.9
CD2 pP pP 14 33 17.5 +1.3
CD2 sP sP 14 33 34.9 +1.8
CD2 PcS PcS 14 38 15.8 +0.4
CD2 S S 14 39 10.9 +1.7
CD2 sS sS 14 40 10.9 +3.0
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
XAN Xi'an 45.26 337 P P 14 32 42.5 -2.6
XAN pP pP 14 33 17.5 -1.4
XAN pmax pmax
comp=Z,16nm,0.8s
BJT Baijiatuau 48.62 347 P P 14 33 08.5 -2.5
BJT pmax pmax
comp=Z,15nm,0.6s
BJT Baijiatuau 48.62 347 P P 14 33 08.5 -2.5
comp=Z,14nm,0.6s
BJI Beijing 48.64 347 P P 14 33 11.5 +0.4
BJI S S 14 40 04.4 +2.7
BJI pmax pmax
comp=Z,42nm,0.6s
BJI LR LR
comp=Z,74nm,27.8s
BJI LR LR
comp=Z,140nm,32.2s
BJI LR LR
comp=Z,79nm,25.8s
LZH Lanzhou 49.13 334 eP P 14 33 16.8 +1.6
LZH pP pP 14 33 50.6 +1.1
LZH sP sP 14 34 11.9 +5.6
LZH pmax pmax
comp=Z,50nm,1.0s
LZH pmax pmax
comp=Z,94nm,4.0s
MSHR Mys Shultsa 49.90 3 c eP P 14 33 21.5 +0.8
HHC Hu-ho-hao-te 50.55 343 eP P 14 33 26.8 +1.0
HHC sP sP 14 34 24.6 +7.6
HHC PP PP 14 35 25.6 +2.4
HHC S S 14 40 30.3 +1.7
HHC sS sS 14 41 31.3 +2.9
HHC ScS ScS 14 42 59.5 -1.9
HHC pmax pmax
comp=Z,21nm,1.4s
HHC pmax pmax
comp=Z,68nm,5.0s
HHC LR LR
comp=Z,90nm,14.9s
HHC LR LR
comp=Z,120nm,14.9s
HHC LR LR
comp=Z,74nm,16.2s
LSA Lhasa 51.50 318 eP P 14 33 33.5 0.0
LSA pmax pmax
comp=Z,8.0nm,0.8s
LSA Lhasa 51.50 318 eP P 14 33 33.5 0.0
comp=Z,7.9nm,0.8s
USRK Ussuriysk Ar. 51.56 3 P P 14 33 33.3 +0.2
comp=Z,5.5nm,0.5s,baz=184,slow=7.8,SNR=17
RPZ Rata Peaks 51.80 141 eP P 14 33 36.8 +1.7
comp=Z,139nm,1.6s
MDJ Mudanjiang 51.88 1 P P 14 33 36.8 +1.3
MDJ pP pP 14 34 10.6 +0.5
MDJ sP sP 14 34 27.8 +1.0
MDJ PP PP 14 35 36.4 +1.3
MDJ S S 14 40 51.4 +4.9
MDJ sS sS 14 41 46.3 -0.2
MDJ SS SS 14 44 24.5 -1.1
MDJ pmax pmax
comp=Z,10.0nm,0.7s
MDJ pmax pmax
comp=Z,50nm,6.3s
MDJ LR LR
comp=Z,85nm,28.9s
MDJ LR LR
comp=Z,81nm,29.8s
MDJ LR LR
comp=Z,100nm,23.0s
ASAJ Asahikawa 52.95 13 eP P 14 33 41.7 -1.6
comp=Z,14nm,0.7s
GTA Gaotai 53.68 333 eP P 14 33 49.8 +0.9
GTA pP pP 14 34 29.3 +5.5
GTA sP sP 14 34 46.5 +6.1
GTA ScP ScP 14 38 36.4 -0.7
GTA S S 14 41 09.3 -2.0
GTA SS SS 14 44 51.0 -3.4
GTA pmax pmax
comp=Z,27nm,1.0s
GTA pmax pmax
comp=Z,95nm,7.4s
GTA LR LR
comp=Z,63nm,15.2s
GTA LR LR
comp=Z,68nm,15.2s
GTA LR LR
comp=Z,78nm,16.6s
GUN Gumba 54.12 312 eP P 14 33 52.8 +0.2
comp=Z,61nm,0.6s
PKIN Phulchoki 54.29 312 eP P 14 33 53.8 0.0
comp=Z,22nm,0.6s
KKN Kakani 54.50 312 eP P 14 33 55.2 0.0
comp=Z,24nm,0.6s
DMN Daman 54.53 312 eP P 14 33 55.5 0.0
comp=Z,28nm,0.7s
GKN Gorkha 55.09 312 eP P 14 33 59.4 0.0
comp=Z,41nm,0.5s
YSS Yuzh-Sakhalins 55.69 12 ⇑i P P 14 34 03.0 -0.1
YSS pmax pmax
comp=Z,40nm,0.5s
YSS Yuzh-Sakhalins 55.69 12 eP P 14 34 03.1 0.0
comp=Z,31nm,0.6s
KOLN Koldanda 55.73 311 eP P 14 34 04.3 +0.2
comp=Z,57nm,0.7s
HABR Khabarovsk 56.04 5 eP P 14 34 03.3 -2.2
HABR e*PP pP 14 34 38.2 -2.4
HABR e*SP sP 14 34 54.9 -2.3
HABR e 14 36 09.6
HABR eS S 14 41 38.8 -3.3
HABR e 14 43 37.2
HABR eSS SS 14 45 28.6 -2.3
HABR pmax pmax
comp=Z,9.0nm,1.1s
HABR pmax pmax
comp=E,20nm,1.1s
HABR pmax pmax
comp=N,4.0nm,1.1s
HABR MLR MLR
comp=Z,24nm,20.0s
PYUN Piuthan 56.37 311 eP P 14 34 08.8 +0.2
comp=Z,90nm,0.7s
KLR Kul'dur 56.56 3 P P 14 34 09.6 +0.3
comp=Z,2.9nm,0.7s,baz=195,slow=6.0,SNR=8.3
KLR Kul'dur 56.56 3 d iP P 14 34 08.9 -0.4
SONM Songino Array 58.44 343 P P 14 34 23.6 +1.1
comp=Z,18nm,0.9s,baz=161,slow=8.0,SNR=70
SONA1 Songino Array 58.45 343 eP P 14 34 23.5 +0.9
TYV Tymovskoe 59.42 10 eP P 14 34 29.5 +0.4
TYV pmax pmax
comp=Z,13nm,0.8s
ZAK Zakamensk 61.64 342 eP P 14 34 44.1 -0.2
ZAK pmax pmax
comp=Z,4.0nm,1.0s
TLY Talaya 62.68 343 eP P 14 34 52.5 +1.4
TLY pmax pmax
comp=Z,6.0nm,0.8s
TLY MLR MLR
comp=Z,105nm,26.0s
WMQ Urumqi 62.98 328 P P 14 34 54.5 +1.2
WMQ PcP PcP 14 35 30.5 +0.6
WMQ S S 14 43 07.9 -3.7
WMQ ScS SKSac 14 44 24.8 -6.8
WMQ pmax pmax
comp=Z,27nm,0.9s
WMQ pmax pmax
comp=Z,120nm,5.2s
WMQ LR LR
comp=Z,210nm,20.6s
WMQ LR LR
comp=Z,160nm,21.8s
WMQ LR LR
comp=Z,240nm,22.0s
MOY Mondy 63.47 341 eP P 14 34 58.0 +1.5

MOY pmax pmax
comp=Z,16nm,1.4s
PEA0 Petropavlovsk- 65.29 19 eP P 14 35 08.8 +0.6
PEA0B Petropavlovsk- 65.29 19 eP P 14 35 08.9 +0.8
comp=Z,35nm,0.6s
PETK Petropavlovsk- 65.29 19 P P 14 35 08.7 +0.6
comp=Z,31nm,0.6s,baz=172,slow=3.5,SNR=78
KSH Kashi 67.34 318 eP P 14 35 22.8 +1.1
KSH ePcP PcP 14 35 48.8 +0.6
KSH epP pP 14 35 59.9 +1.9
KSH PcS 14 39 52.1
KSH S S 14 44 03.8 -1.4
KSH ScS SKSac 14 45 02.0 -3.1
KSH pmax pmax
comp=Z,7.0nm,0.6s
KSH LR LR
comp=Z,74nm,4.8s
KSH LR LR
comp=Z,100nm,5.5s
KSH LR LR
comp=Z,89nm,7.1s
MK01 Makanchi Array 67.78 328 eP P 14 35 24.1 0.0
MK31 Makanchi Array 67.80 328 eP P 14 35 23.9 -0.3
MK31 Makanchi Array 67.80 328 eP P 14 35 23.9 -0.3
MKAR Makanchi Array 67.80 328 P P 14 35 24.8 +0.5
comp=Z,10nm,0.6s,baz=125,slow=7.4,SNR=82
MAKZ Makanchi 67.98 328 P P 14 35 25.2 -0.1
MAKZ pmax pmax
comp=Z,17nm,1.2s
MAKZ Makanchi 67.98 328 eP P 14 35 25.7 +0.4
comp=Z,12nm,0.8s
MA2 Magadan 69.20 12 P P 14 35 31.2 -1.4
comp=Z,11nm,0.8s,baz=190,slow=2.5,SNR=4.8
YAK Yakutsk 69.33 1 P P 14 35 33.7 +0.4
comp=Z,52nm,0.6s,baz=216,slow=0.8,SNR=21
YAK Yakutsk 69.33 1 eP P 14 35 33.4 +0.1
YAK e 14 35 55.9
YAK e*PP pP 14 36 08.5 -1.3
YAK e 14 38 07.3
YAK ePPP PPP 14 39 50.3
YAK eS S 14 44 27.8 +0.3
YAK e 14 45 19.0
YAK eSS SS 14 48 57.5 -0.2
YAK pmax pmax
comp=Z,21nm,0.8s
YAK pmax pmax
comp=N,3.0nm,0.8s
YAK pmax pmax
comp=Z,29nm,2.2s
YAK pmax pmax
comp=N,15nm,2.0s
YAK pmax pmax
comp=E,21nm,2.7s
YAK smax smax
comp=N,11nm,2.3s
YAK smax smax
comp=E,16nm,2.0s
YAK Yakutsk 69.33 1 eP P 14 35 33.2 -0.1
comp=E,57nm,0.7s
TKM2 Tokmak 2 69.39 321 P P 14 35 35.2 +0.8
TKM2 pmax pmax
comp=Z,9.0nm,0.9s
AAK Ala-Archa 69.93 321 ⇓i P P 14 35 39.0 +1.3
AAK pmax pmax
comp=Z,28nm,0.9s
AAK Ala-Archa 69.93 321 eP P 14 35 38.7 +1.0
comp=Z,10nm,0.9s
MNAS Manas 71.12 320 P P 14 35 45.2 +0.4
MNAS pmax pmax
comp=Z,13nm,1.0s
ZAA0 Zalesovo Array 71.35 335 eP P 14 35 45.4 -0.4
ZALV Zalesovo Beam 71.35 335 P P 14 35 45.7 -0.1
comp=Z,13nm,0.7s,baz=128,slow=5.0,SNR=44
VNDA Vanda 72.15 173 P P 14 35 51.6 +1.3
comp=Z,6.9nm,0.6s,baz=320,slow=6.4,SNR=64
VNDA LR LR 15 05 21.3
comp=Z,27nm,21.7s,baz=336,slow=34
VNDA Vanda 72.15 173 eP P 14 35 51.5 +1.3
comp=Z,7.7nm,0.7s
SEY Seymchan 72.59 11 P P 14 35 53.9 +1.0
comp=Z,17nm,0.5s,baz=204,slow=4.9,SNR=88
SEY Seymchan 72.59 11 ⇓eP P 14 35 53.8 +0.8
NVS Novosibirsk 72.64 335 ⇓i P P 14 35 53.4 0.0
NVS i S S 14 45 02.5 -3.5
NVS pmax pmax
comp=N,5.0nm,0.5s
NVS pmax pmax
comp=E,4.0nm,0.5s
NVS pmax pmax
comp=Z,6.0nm,0.5s
NVS smax smax
comp=N,19nm,2.5s
NVS smax smax
comp=E,30nm,2.5s
KKAR Karatay Array 72.70 319 eP P 14 35 53.4 -0.7
KKAR pmax pmax
comp=Z,2.0nm,0.4s
KKAR Karatay Array 72.70 319 eP P 14 35 53.4 -0.7
comp=Z,2.3nm,0.4s
SBA Scott Base 73.05 172 eP P 14 35 57.2 +1.6
SBA pmax pmax
comp=Z,10.0nm,0.9s
SBA Scott Base 73.05 172 eP P 14 35 57.2 +1.6
comp=Z,9.7nm,0.9s
MAW Mawson 73.92 201 P P 14 36 02.3 +1.5
comp=Z,6.9nm,0.7s,baz=91,slow=8.5,SNR=7.4
MAW Mawson 73.92 201 eP P 14 36 02.9 +2.1
MAW pmax pmax
comp=Z,7.0nm,1.4s
MAW Mawson 73.92 201 eP P 14 36 02.9 +2.1
comp=Z,6.6nm,1.4s
OTUK Ortayu 74.14 325 P P 14 36 03.4 +1.0
OTUK pmax pmax
comp=Z,47nm,0.7s
VOSK Vostochnaya 77.20 328 P P 14 36 19.5 -0.2
VOSK pmax pmax
comp=Z,14nm,0.7s
VOSK Vostochnaya 77.20 328 eP P 14 36 18.3 -1.4
comp=Z,14nm,0.6s
BVA0 Borovoye Array 77.66 328 P P 14 36 22.3 0.0
BVA0 pmax pmax
comp=Z,16nm,1.3s
BRVK Borovoye 77.73 328 c iP P 14 36 22.8 +0.2
BRVK pmax pmax
comp=Z,39nm,1.0s
BRVK Borovoye 77.73 328 eP P 14 36 22.3 -0.3
comp=Z,14nm,0.9s
TIXI Tiksi 78.98 0 ⇓eP P 14 36 28.9 -0.2
TIXI pmax pmax
comp=Z,10.0nm,0.6s
TIXI Tiksi 78.98 0 eP P 14 36 28.6 -0.5
comp=Z,12nm,0.6s
GEYT Alibeck 79.35 311 P P 14 36 32.2 +0.3
comp=Z,2.1nm,0.6s,baz=186,slow=3.0,SNR=4.7
NRIK Noril'sk 81.67 346 P P 14 36 43.3 -0.3
comp=Z,7.7nm,0.6s,baz=138,slow=5.5,SNR=10
AB31 Akbulak array 81.94 322 i P P 14 36 44.5 -0.9
AB31 pmax pmax
comp=Z,5.0nm,0.6s
ABKAR Akbulak array 81.94 322 eP P 14 36 44.8 -0.5
QSPA South Pole Qui 82.48 180 eP P 14 36 49.1 +1.0
SYO Syowa Base 82.64 201 ⇓eP P 14 36 49.0 +0.4
AKTO Aktyubinsk 83.52 323 P P 14 36 53.5 0.0
AKTO pmax pmax
comp=Z,11nm,0.8s
SVE Sverdlovsk 84.39 329 ⇑eP P 14 36 58.4 +0.6
SVE pmax pmax
comp=Z,17nm,0.9s
ARU Arti 85.31 328 c iP P 14 37 02.3 -0.1
ARU 14 40 18.6
ARU S S 14 47 12.3 -7.8
ARU SS SS 14 52 52.8 -5.6
ARU pmax pmax
comp=Z,13nm,1.0s
ARU Arti 85.31 328 eP P 14 37 00.5 -1.9
comp=Z,8.9nm,0.7s
NCK Nalchik 91.37 314 ⇓eP P 14 37 30.0 -1.5
NCK pmax pmax
comp=Z,14nm,0.4s
CAST Castle Rocks 91.97 26 eP P 14 37 34.7 +0.9
MLY Manley 92.89 25 eP P 14 37 37.8 -0.3
RND Reindeer 93.39 27 eP P 14 37 38.7 -1.8
RND Reindeer 93.39 27 eP P 14 37 38.7 -1.8
MCK McKinley 93.41 26 eP P 14 37 39.0 -1.5
MCK McKinley 93.41 26 eP P 14 37 39.0 -1.5

COLD	Coldfoot	93.53	23	eP	P	14 37 40.2	-0.7
WRH	Wood River Hil	93.90	26	eP	P	14 37 41.7	-0.9
DHY	Denali Highway	94.00	27	eP	P	14 37 42.6	-0.7
CCB	Clear Creek Bu	94.05	25	eP	P	14 37 41.7	-1.6
COLA	College	94.07	25	eP	P	14 37 43.2	-0.2
COLA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
IL1	Eielson Array	94.46	25	eP	P	14 37 42.7	-2.6
ILAR	Eielson Array	94.46	25	P	P	14 37 43.8	-1.4
	comp=Z,1.2nm,0.8s,baz=263,slow=4.2,SNR=13						
ILAR				PKKP	PKKPdf	14 54 44.1	-1.6
	comp=Z,0.4nm,0.8s,baz=24,slow=1.3,SNR=5.4						
SNAA	Sanae	94.81	194	c iP	P	14 37 48.5	+1.6
SNAA	Sanae	94.81	194	eP	P	14 37 48.0	+1.1
BOSA	Boshof	97.87	240	P	Pdif	14 38 02.8	+1.0
	comp=Z,2.6nm,0.8s,baz=140,slow=9.0,SNR=3.8						
ARCES	ARCESS Array B	101.50	340	P	Pdif	14 38 16.3	-0.5
	comp=Z,3.9nm,0.6s,baz=58,slow=4.6,SNR=3.9						
AKASG	Malin Array Be	101.59	320	PKiKP	PKiKP	14 42 41.5	+1.0
	comp=Z,0.8nm,0.6s,baz=52,slow=1.5,SNR=4.5						
KIEV	Kiev	101.60	320	⇓eP	Pdif	14 38 15.0	-2.6
FINES	FINESS Array B	102.45	331	P	Pdif	14 38 22.9	+1.8
	comp=Z,2.5nm,1.1s,baz=94,slow=13,SNR=2.6						
FINES				PKiKP	PKiKP	14 42 42.5	+0.7
	comp=Z,2.3nm,0.9s,baz=101,slow=1.9,SNR=5.8						
YKA	Yellowknife Ar	108.88	26	PKiKP	PKiKP	14 42 53.8	+0.2
	comp=Z,1.1nm,0.7s,baz=282,slow=1.7,SNR=6.3						
YKA				PKKPbc	PKKPbc	14 54 02.5	-2.1
	comp=Z,0.7nm,0.5s,baz=109,slow=3.4,SNR=5.0						
GERES	GERESS Array B	111.80	320	PKiKP	PKiKP	14 42 59.9	+0.1
	comp=Z,1.4nm,0.6s,baz=53,slow=2.0,SNR=11						
PDAR	Pinedale Array	118.34	45	PKP	PKPdf	14 43 11.9	-0.7
	comp=Z,1.1nm,0.7s,baz=261,slow=1.4,SNR=10.0						
PDAR				PKKPab	PKKPab	14 53 35.1	+1.2
	comp=Z,0.9nm,0.7s,baz=111,slow=5.0,SNR=8.9						
ANMO	Albuquerque	122.85	53	⇓iPKiKP	PKPdf	14 43 22.9	+1.4
ANMO				pmax	pmax		
	comp=Z,5.0nm,2.5s						
TXAR	Lajitas Array	126.52	59	PKP	PKPdf	14 43 29.9	+1.3
	comp=Z,0.5nm,0.6s,baz=194,slow=2.9,SNR=7.7						
TXAR				SKPbc	SKPbc	14 46 33.2	
	comp=Z,0.6nm,0.9s,baz=281,slow=2.6,SNR=4.0						
ESDC	Sonseca Array	126.76	315	PKP	PKPdf	14 43 29.5	+0.8
	comp=Z,0.6nm,0.7s,baz=29,slow=4.4,SNR=5.2						
TORD	Torodi Ar. Bea	127.38	281	PKP	PKPdf	14 43 31.0	+0.6
	comp=Z,3.5nm,0.7s,baz=64,slow=1.9,SNR=23						
PLCA	Paso Flores	128.92	161	PKP	PKPdf	14 43 34.6	+1.7
	comp=Z,3.3nm,0.8s,baz=172,slow=7.1,SNR=4.4						
SCHQ	Schefferville	131.24	12	PKP	PKPdf	14 43 36.8	+0.1
	comp=Z,4.3nm,0.6s,baz=265,slow=9.1,SNR=3.4						
SCHQ				SKPbc	SKPbc	14 46 46.3	-1.3
	comp=Z,15nm,0.8s,baz=13,slow=4.5,SNR=9.2						
DBIC	Dimbokro	133.65	272	PKP	PKPdf	14 43 43.2	+0.9
	comp=Z,3.9nm,0.8s,baz=88,slow=5.3,SNR=5.3						
DBIC				SKPbc	SKPbc	14 46 55.8	-1.5
	comp=Z,5.3nm,0.9s,baz=138,slow=6.4,SNR=4.9						
CPUP	Villa Florida	145.91	171	PKPbc	PKPab	14 44 06.2	+0.5
	comp=Z,9.6nm,0.8s,baz=212,slow=1.6,SNR=19						
CPUP				SKPbc	SKiKP	14 47 30.4	-0.3
	comp=Z,1.1nm,0.7s,baz=180,slow=4.0,SNR=4.4						
NNA	Nana	148.28	127	i PKP2	PKPab	14 44 14.1	-1.4
LPAZ	La Paz	151.24	145	PKPbc	PKPbc	14 44 21.4	+1.5
	comp=Z,5.9nm,0.6s,baz=309,slow=1.8,SNR=23						
LPAZ				PKPab	PKPab	14 44 29.4	+1.2
	comp=Z,9.8nm,0.6s,baz=171,slow=3.9,SNR=17						

MEX 23 14:47:48.2±0.3, 15°28N×93°27W, h71km±51km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	Comitan	1.48	48	i P	Pn	14 48 11.4	-1.6
CCIG				eS	Sn	14 48 30.4	-1.4

MEX 23 14:53:13.6±0.5, 16°47N×95°66W, h28km±22km, MD4.0, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HUIG	Huatulco	0.81	212	eP	Pb	14 53 26.4	-2.7
HUIG				eS	Sb	14 53 36.7	-3.1
PANG	Puerto Angel	1.11	225	eP	Pn	14 53 31.3	-2.0
PANG				eS	Sn	14 53 44.5	-3.3
VHO	Vista Hermosa	1.19	301	eP	Pn	14 53 32.4	-2.2
VHO				eS	Sn	14 53 46.3	-3.7
TPIG	Tehuac#an	2.53	320	i P	Pn	14 53 58.3	-2.7
TPIG				i S	Sn	14 54 20.5	-2.6
TLIG	Tlapa	2.98	292	i P	Pn	14 53 58.2	-1.1
TLIG				i S	Sn	14 54 31.2	-3.0

*ISCJB **23** 14:55:05.7±1.1, 36°34N±0°.06×70°.6E±0°.1, h35km, Error ellipse: s-maj=14.2km s-min=6.5km az=155.1*
*NNC **23** 14:55:14.5±5.3, 37°.00N×70°.17E, h0km, mb3.9, mpv3.4, Error ellipse: s-maj=44.3km s-min=28.5km az=163.0*
ISC 23 14:55:06.8±1.4, 36°29N±0°.09×70°.3E±0°.1, h35km, n6, σ3$00/11, 8C-1D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
THN	Thein Dam	5.87	129	eP	Pn	14 56 31.0	-0.3
THN				eS	Sn	14 57 36.0	-1.4
MNAS	Manas	6.42	14	⇑Pn	Pn	14 56 44.1	+5.2
	1.3nm,0.4s						
MNAS				⇑Sn	Sn	14 57 49.6	-1.3
	6.2nm,0.4s						
KK31	Karatay Array	6.81	1	⇑Pn	Pn	14 56 47.7	+3.5
	1.6nm,0.3s,baz=184,slow=12,SNR=5.0						
KK31				⇑Sn	Sn	14 58 01.3	+0.9
	1.3nm,0.3s,baz=183,slow=32,SNR=5.5						
AAK	Ala-Archa	7.11	26	⇑Pn	Pn	14 56 49.6	+1.2
	1.4nm,0.3s						
AAK				⇑Sn	Sn	14 58 07.6	-0.4
	3.5nm,0.5s						
AB31	Akbulak array	15.02	333	P	Pn	14 58 37.5	+1.2
	2.4nm,0.6s,baz=155,slow=12,SNR=46						
AB31				⇑S	Sn	15 01 14.5	-6.9
	0.3nm,0.3s,baz=154,slow=23,SNR=2.8						
AKTO	Aktyubinsk	16.71	332	⇓P	P	14 59 00.5	+0.5
	3.2nm,0.9s						
AKTO				⇑S	Sn	15 02 00.3	-2.0
	0.8nm,0.6s						

IDC 23 15:07:56.7±2.8, 29°52S×176°67W, h95km±17km, mb3.2/2, mb1 3.4/2, mb1mx3.1/30, mbtmp3.5/2, Error ellipse: s-maj=51.5km s-min=36.8km az=10.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.12	283	P	Pn	15 08 17.4	-0.7
	131nm,0.3s,baz=108,slow=20,SNR=2.5						
RAO				S	Sn	15 08 34.5	+0.4
	369nm,0.3s,baz=90,slow=20,SNR=4.4						
ASAR	Alice Springs	44.31	265	P	P	15 15 57.4	-0.1
	0.3nm,0.7s,baz=104,slow=7.6,SNR=7.8						
ASAR				PcP	PcP	15 17 41.0	+0.8
	0.6nm,1.1s,baz=113,slow=3.8,SNR=2.8						
WRA	Warramunga Arr	45.23	271	P	P	15 16 03.7	-1.0
	0.6nm,0.5s,baz=111,slow=7.6,SNR=12						
FINES	FINESS Array B	144.69	341	PKP	PKPab	15 27 20.6	0.0
	1.8nm,0.7s,baz=99,slow=1.8,SNR=5.3						
AKASG	Malin Array Be	151.27	325	PKPbc	PKPbc	15 27 39.0	+0.3
	0.5nm,0.4s,baz=48,slow=3.0,SNR=4.4						
TORD	Torodi Ar. Bea	163.64	174	PKPab	PKPab	15 28 40.3	-0.8
	0.4nm,0.8s,baz=185,slow=4.9,SNR=2.8						

*ISCJB **23** 15:27:27.0±0.7, 6°.80N±0°.04×73°.08W±0°.06, h163km±6km, Error ellipse: s-maj=10.8km s-min=4.8km az=32.9*
*FUNV **23** 15:27:27.4, 6°.67N×73°.12W, h166km, MW2.9*
*RSNC **23** 15:27:29.4±0.6, 6°.74N×73°.11W, h150km±4km, ML2.6*
ISC 23 15:27:26.9±1.5, 6°.78N±0°.05×73°.07W±0°.06, h165km±9km, n21, σ0$89/33, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BARC	Barichara	0.21	211	eP	Pn	15 27 49.5	+0.1
BARC				eS	Sn	15 28 04.8	-1.7
BARC				i		15 28 06.5	
	comp=Z,126nm,0.4s						
BTLC	Betulia, Santa	0.24	307	eP	Pn	15 27 49.8	+0.5
GIRC	Giron, Santand	0.33	339	eP	Pn	15 27 49.7	+0.2
PAMC	Pamplona, Colo	0.67	33	eP	Pn	15 27 52.0	+0.6
PAMC				eS	Sn	15 28 09.7	-0.5
BRRC	Barranca, Sant	0.71	298	eP	Pn	15 27 51.4	+0.3
BRRC				eS	Sn	15 28 08.9	-0.7
BRRC				i		15 28 11.9	
	comp=Z,106nm,0.2s						
RUSC	La Rusia	0.88	181	eP	Pn	15 27 53.1	+0.4
RUSC				eS	Sn	15 28 11.8	-0.8
RUSC				i		15 28 13.8	
	comp=Z,68nm,0.2s						
CBRI	Barrientos, No	0.97	16	eP	Pn	15 27 54.0	+0.9
CBRI				eS	Sn	15 28 13.8	+0.5
CBRI				i		15 28 18.2	
	comp=Z,32nm,0.4s						
CAPV	Capacho	1.32	35	eP	Pn	15 27 57.4	+1.3
CAPV				eS	Sn	15 28 18.6	-0.1
OCAC	Ocana	1.48	351	eP	Pn	15 27 58.6	+1.1
OCAC				eS	Sn	15 28 21.7	+0.5
OCAC				i		15 28 24.8	
	comp=Z,49nm,0.4s						
NORC	Norcasia	2.15	236	eP	Pn	15 28 05.2	+0.4
NORC				eS	Sn	15 28 33.0	-1.0
CHIC	Chingaza	2.23	197	eP	Pn	15 28 07.3	+1.3
CHIC				eS	Sn	15 28 36.1	-0.2
CHIC				i		15 28 42.8	
	comp=Z,33nm,0.5s						
SOCV	Socops	2.66	56	eP	Pn	15 28 11.6	+0.8
SOCV				eS	Sn	15 28 43.3	-1.4
VIGV	El Vigia	2.66	39	eP	Pn	15 28 12.2	+1.4
VIGV				eS	Sn	15 28 44.9	+0.1
TOLC	Tolima	3.12	226	eP	Pn	15 28 17.9	+1.2
DBBC	Dabeiba	3.12	275	eP	Pn	15 28 16.7	+0.2
DBBC				i		15 28 55.9	
	comp=Z,9.6nm,0.3s						
PRAC	Prado	3.54	211	eP	Pn	15 28 23.0	+1.3
SJAC	San Juan de Ar	3.59	194	eP	Pn	15 28 23.1	+0.7
VIRV	Villa del Rosa	3.76	10	eP	Pn	15 28 24.2	-0.3
VIRV				eS	Sn	15 29 08.1	-1.5
CURV	Curarigua	4.45	44	eP	Pn	15 28 34.0	+0.4
BAUV	El Baul	5.43	66	eP	Pn	15 28 45.8	-0.5
MONV	Montecano	5.99	31	eP	Pn	15 28 53.6	-0.1

*IDC **23** 15:37:42.5±0.8, 0°.29S×132°.59E, h0km, mb4.1/12, mb1 4.3/15, mb1mx4.1/34, mbtmp4.2/15, ML4.4/3, MS3.3/13, Ms1 3.4/13, ms1mx3.1/41, Error ellipse: s-maj=20.5km s-min=11.5km az=82.0*
*ISCJB **23** 15:37:45.1±0.5, 0°.28S±0°.04×132°.64E±0°.04, h33km, mb4.2/16, MS3.4/9, Error ellipse: s-maj=6.0km s-min=5.6km az=20.8*
*DJA **23** 15:37:45.5±0.4, 0°.5S±4°×13°.3E±°, h10km, M4.7/14, mb4.8/14, mB5.4/4, MLv4.7/6, Mw(mB)4.8/4*
*NEIC **23** 15:37:47.4±0.6, 0°.36S×132°.56E, h35km, mb4.2/4, Error ellipse: s-maj=16.7km s-min=8.8km az=78.0*
ISC 23 15:37:47.2±0.6, 0°.31S±0°.06×132°.64E±0°.07, h33km, n47, σ1$79/45, mb4.2/16, MS3.4/9, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIJI	Sorong	1.48	248	Pn	Pn	15 38 09.9	-1.6
	12nm,0.3s,baz=270,slow=24,SNR=68						
SIJI				Sn	Sn	15 38 29.6	-0.2
	18nm,0.3s,baz=270,slow=24,SNR=14						
SWI	Sorong	1.48	248	P	Pn	15 38 11.1	-0.4
SWI				S	Sn	15 38 29.0	-0.8
FAKI	Fak Fak	2.62	189	P	Pn	15 38 27.6	+0.4
FAKI				S	Sn	15 39 00.7	+2.8
FAKI	Fak Fak	2.62	189	ePn	Pn	15 38 27.6	+0.4
FAKI				eSn	Sn	15 38 57.7	-0.1
MSAI	Masohi	4.78	231	P	Pn	15 38 56.9	0.0
MSAI				S	Sn	15 39 54.4	+3.2
BNDI	Bandanaira	4.99	213	P	Pn	15 38 59.9	0.0
LBMI	Labuha	5.15	266	P	Pn	15 39 01.7	-0.3
NLAI	Namlea	6.25	242	P	Pn	15 39 16.7	-0.5
NLAI				S	Sn	15 40 28.9	+1.4
SANI	Sanana	6.87	255	P	Pn	15 39 25.3	-0.3
LUWI	Luwuk	9.89	266	P	Pn	15 40 07.5	+0.3
KDI	Kendari	10.64	250	P	Pn	15 40 17.1	-0.4
PCI	Palu	12.81	267	P	Pn	15 40 47.2	0.0
TTSI	Tana Toraja	13.10	258	P	Pn	15 40 50.2	-0.8
SPSI	Sidrap Palu	13.36	254	P	Pn	15 40 54.6	0.0
KAPI	Kappang	13.69	250	Pn	Pn	15 40 57.7	-1.4
	2.4nm,0.3s,baz=27,slow=16,SNR=4.5						
KAPI				LR	LR	15 46 07.9	
	comp=Z,98nm,19.4s,baz=97,slow=37						
BBKI	Banjar Baru	18.06	260	P	P	15 41 58.0	+2.1
	67nm,1.2s						
GUMO	Guam	18.38	41	LR	LR	15 48 23.1	
	comp=Z,90nm,19.9s,baz=227,slow=35						
TGY	Tagaytay City	18.42	321	LR	LR	15 51 46.6	
	comp=Z,30nm,18.0s,baz=236,slow=46						
FITZ	Fitzroy Crossi	18.97	201	P	P	15 42 05.3	-0.6
	1.0nm,0.3s,baz=52,slow=13,SNR=11						
FITZ				S	Sn	15 45 24.4	-14
	0.4nm,0.3s,baz=314,slow=16,SNR=4.8						
FITZ				LR	LR	15 50 49.9	
	comp=Z,62nm,19.9s,baz=12,slow=42						
FITZ	Fitzroy Crossi	18.97	201	eP	P	15 42 02.0	-3.9
	10nm,0.6s						
FITZ				S	Sn	15 45 24.4	-14
WRAB	Tennant Creek	19.57	175	eP	P	15 42 11.3	-1.2
	8.3nm,0.6s						
WRAB				eSn	S	15 45 52.2	+0.4
WRA	Warramunga Arr	19.58	175	P	P	15 42 12.5	-0.1
	0.8nm,0.3s,baz=352,slow=12,SNR=34						
WRA				S	S	15 45 45.1	-6.9
	0.5nm,0.3s,baz=351,slow=20,SNR=7.4						
PBKI	Pangkalan Bun	21.09	263	P	P	15 42 28.6	-0.5
	148nm,1.1s						
STKI	Sintang	21.16	271	P	P	15 42 30.7	+0.8
	11nm,0.5s,8µm						
ASAR	Alice Springs	23.25	177	P	P	15 42 51.8	-0.1
	17nm,1.0s,baz=356,slow=10,SNR=55						
ASAR				S	S	15 47 07.3	+5.4
	2.6nm,1.0s,baz=356,slow=25,SNR=4.7						
ASAR				LR	LR	15 53 09.0	
	comp=Z,161nm,21.9s,baz=358,slow=40						
CTA	Charters Tower	23.75	147	LR	LR	15 53 54.3	
	comp=Z,139nm,22.0s,baz=348,slow=41						
CTAO	Charters Tower	23.75	147	eP	P	15 42 55.9	-0.8
	39nm,1.0s						
KSI	Kapahiang	30.20	263	P	P	15 44 05.2	+10
STKA	Stephens Creek	32.52	166	P	P	15 44 15.6	+0.6
	3.3nm,0.8s,baz=15,slow=8.5,SNR=5.1						
STKA				LR	LR	16 00 00.4	
	comp=Z,84nm,20.4s,baz=13,slow=41						
JNU	Nakatsue	33.30	357	P	P	15 44 22.2	+0.3
	3.6nm,0.9s,baz=186,slow=7.0,SNR=3.1						
PSI	Prapat	33.87	275	P	P	15 44 26.1	-1.0
	3.4nm,0.4s,baz=118,slow=8.4,SNR=4.7						
NWAO	Narrogin (SRO)	35.54	203	P	P	15 44 41.1	-0.2
	12nm,0.8s,baz=251,slow=7.5,SNR=7.6						
MJAR	Matsushiro Arr	37.03	7	LR	LR	15 58 50.4	
	comp=Z,64nm,18.3s,baz=100,slow=34						
KSRS	Korea Array	37.83	354	LR	LR	16 01 36.6	
	comp=Z,43nm,18.2s,baz=182,slow=38						
CMAR	Chiang Mai Arr	38.00	301	P	P	15 45 03.5	+1.0
	0.3nm,0.3s,baz=123,slow=7.2,SNR=5.7						
H11N1	WAKE ISLAND Hy	39.02	57	T	T	16 26 50.6	
	baz=246,slow=75,SNR=20						
H11N2	WAKE ISLAND Hy	39.04	57	T	T	16 26 51.5	
	baz=246,slow=75,SNR=19						
H11N3	WAKE ISLAND Hy	39.04	57	T	T	16 26 53.6	
	baz=246,slow=75,SNR=32						
SONM	Songino Array	53.11	338	P	P	15 47 02.7	+1.0
	0.2nm,0.4s,baz=153,slow=13,SNR=4.4						
SONM				LR	LR	16 08 44.8	
	comp=Z,27nm,21.0s,baz=134,slow=35						
PETK	Petropavlovsk-	57.19	18	LR	LR	16 08 13.9	
	comp=Z,24nm,21.6s,baz=161,slow=32						
MKAR	Makanchi Array	64.25	324	P	P	15 48 19.1	0.0
	2.0nm,0.9s,baz=115,slow=7.6,SNR=9.5						
ZALV	Zalesovo Beam	66.89	332	P	P	15 48 35.1	-0.8
	0.8nm,0.5s,baz=104,slow=6.3,SNR=4.4						
GEYT	Alibeck	78.01	309	P	P	15 49 43.3	+0.6
	1.0nm,0.5s,baz=71,slow=4.9,SNR=3.5						
VNDA	Vanda	78.75	174	P	P	15 49 47.1	+1.2
	0.8nm,0.6s,baz=323,slow=5.4,SNR=6.0						
VNDA				LR	LR	16 22 48.2	
	comp=Z,36nm,21.2s,baz=323,slow=34						
ABKAR	Akbulak array	79.00	320	eP	P	15 49 46.6	-1.2
	1.6nm,0.8s						
ILAR	Eielson Array	86.22	25	P	P	15 50 24.4	-0.6
	0.6nm,0.9s,baz=267,slow=5.2,SNR=5.9						
BBB	Bella Bella	95.92	38	LR	LR	16 26 38.1	
	comp=Z,24nm,20.4s,baz=266,slow=31						

*ISCJB **23** 16:06:38.3±0.5, 18°.64N±0°.06×121°.2E±0°.1, h89km, mb3.6/8, Error ellipse: s-maj=16.1km s-min=7.4km az=166.3*
*IDC **23** 16:06:39.9±3.0, 18°.59N×121°.31E, h89km±29km, mb3.3/8, mb1 3.4/11, mb1mx3.2/59, mbtmp3.7/11, MS3.0/3, Ms1 3.1/3, ms1mx2.6/25, Error ellipse: s-maj=28.3km s-min=13.5km az=76.0*
ISC 23 16:06:39.9±0.6, 18°.63N±0°.08×121°.3E±0°.1, h89km, n16, σ1$03/18, mb3.5/8, 1C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CVP	Callao Caves	1.03	154	⇓eP	Pn	16 06 58.5	-1.5
CVP				eS	Sn	16 07 16.5	+1.6
PCPH	Palayan	3.06	184	⇑eP	Pn	16 07 25.8	-0.5
TGY	Tagaytay City	4.52	185	P	Pn	16 07 46.6	+0.5
	8.6nm,0.3s,baz=112,slow=18,SNR=2.3						
JNU	Nakatsue	16.77	29	P	P	16 10 31.4	+1.2
	0.1nm,0.3s,baz=214,slow=7.3,SNR=3.5						
KSRS	Korea Array	19.62	16	P	P	16 11 01.8	+0.5
	0.1nm,0.3s,baz=202,slow=12,SNR=7.0						
CMAR	Chiang Mai Arr	21.24	273	P	P	16 11 19.1	+0.2
	0.3nm,0.5s,baz=91,slow=11,SNR=3.3						
CMAR				LR	LR	16 19 22.9	
	comp=Z,20nm,18.0s,baz=45,slow=36						
GUMO	Guam	23.14	99	LR	LR	16 19 40.4	
	comp=Z,21nm,19.1s,baz=292,slow=34						
PSI	Prapat	27.00	237	LR	LR	16 22 05.5	
	comp=Z,110nm,19.4s,baz=201,slow=34						
SONM	Songino Array	31.58	341	P	P	16 12 53.1	-1.1
	0.3nm,0.4s,baz=160,slow=9.2,SNR=2.4						
WRA	Warramunga Arr	40.40	161	P	P	16 14 08.0	-1.5
	0.3nm,0.4s,baz=342,slow=9.1,SNR=12						
WRA				PcP	PcP	16 16 12.0	+0.9
	0.4nm,0.9s,baz=344,slow=3.2,SNR=5.7						
MKAR	Makanchi Array	42.55	320	P	P	16 14 26.1	-0.8
	0.5nm,0.7s,baz=118,slow=8.3,SNR=5.9						
MKAR				PcP	PcP	16 16 17.9	0.0
	0.4nm,0.7s,baz=81,slow=4.5,SNR=3.2						
ASAR	Alice Springs	43.79	163	P	P	16 14 36.3	-0.8
	0.3nm,0.5s,baz=340,slow=6.7,SNR=13						
ASAR				PcP	PcP	16 16 23.0	+0.7
	0.2nm,0.6s,baz=350,slow=4.7,SNR=3.7						
SEY	Seymchan	49.15	18	P	P	16 15 19.3	+0.9
	0.6nm,0.5s,baz=225,slow=20,SNR=3.2						
BVAR	Borovoye Array	52.13	324	PcP	PcP	16 16 51.7	0.0
	0.6nm,0.6s,baz=86,slow=2.0,SNR=4.6						
NRIK	Noril'sk	54.79	346	P	P	16 15 59.5	-0.7
	2.7nm,0.7s,baz=182,slow=1.9,SNR=5.8						
AKTO	Aktyubinsk	58.91	318	P	P	16 16 30.9	+1.3
	0.7nm,0.5s,baz=75,slow=6.1,SNR=3.7						

*ISCJB **23** 16:13:39.6±0.4, 54°.99N±0°.06×161°.19W±0°.06, h56km, mb4.4/47, MS3.0/2, Error ellipse: s-maj=9.3km s-min=3.1km az=154.4*
*IDC **23** 16:13:39.6±0.9, 54°.96N×161°.36W, h42km±7km, mb4.0/35, mb1 4.1/38, mb1mx4.0/72, mbtmp4.2/38, ML4.0/3, MS3.1/5, Ms1 3.1/5, ms1mx2.8/69, Error ellipse: s-maj=18.1km s-min=11.3km az=169.0*
*NEIC **23** 16:13:39.7, 54°.76N×161°.20W, h33km, mb4.2/2, ML4.1(AEIC), After AEIC.*
ISC 23 16:13:40.7±0.5, 54°.84N±0°.08×161°.19W±0°.05, h56km, n136, σ1$46/139, mb4.4/47, MS3.3/3, 6C-4D, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DOL	Dolgoi Island	0.49	308	P	Pn	16 13 50.9	-1.4
PS4A	Pavlof South-4	0.63	323	P	Pn	16 13 53.3	-0.6
PVV	Pavlof Volcano	0.63	327	P	Pn	16 13 53.3	-0.6
SDPT	Sand Point	0.65	39	ePn	Pn	16 13 52.8	-1.3
DT1	Dutton Round H	0.68	293	P	Pn	16 13 53.0	-1.5
DTNA	Dutton South F	0.69	297	P	Pn	16 13 53.5	-1.1
VNKR	Veniaminof 5	1.58	40	P	Pn	16 14 07.0	+0.6
VNKR				S	Sn	16 14 27.7	+2.0
SSLI	Shishaldin Nor	1.62	270	P	Pn	16 14 07.6	+0.6
SSLS	Shishaldin Sou	1.63	267	P	Pn	16 14 06.5	-0.6
SSLW	Shishaldin Wes	1.70	269	P	Pn	16 14 07.5	-0.5
WESN	West Dahl Nort	1.99	263	P	Pn	16 14 11.7	-0.2
WESE	West Dahl East	2.01	261	P	Pn	16 14 11.7	-0.6
WESP	Westdahl Peak	2.08	262	P	Pn	16 14 13.0	-0.2
CHGN	Chignik	2.15	46	ePn	Pn	16 14 14.8	+0.7
AZAC	Aniakchak	2.65	38	P	Pn	16 14 21.6	+0.7
ANNW	Aniakchak Nort	2.71	37	P	Pn	16 14 23.5	+1.7
AKUT	Akutan	2.77	257	ePn	Pn	16 14 22.2	-0.3
UNV	Unalaska Valle	3.27	254	ePn	Pn	16 14 28.2	-1.1
MCIR	Makushin Cirqu	3.45	257	P	Pn	16 14 32.5	+0.6
KELA	Mount Kelaz	4.69	38	P	Pn	16 14 50.5	+1.5
KABR	Katmai Barrier	4.77	44	P	Pn	16 14 50.6	+0.6
OHAK	Old Harbor	5.03	59	ePn	Pn	16 14 52.1	-1.3
KAHC	Katmai Hardscr	5.11	39	P	Pn	16 14 56.7	+2.0
SPIA	Saint Paul Isl	5.59	298	ePn	Pn	16 15 01.8	+0.7
KDAK	Kodiak Island	5.62	55	ePn	Pn	16 15 00.4	-1.2
SVW2	Spargrevohn

baz=30
H11S3 WAKE ISLAND Hy 43.77 227 T T 17 07 59.4
baz=30
FRB Frobisher Bay 44.05 40 P **P** **16 21 41.9 -0.4**
12nm,0.9s,baz=282,slow=7.6,SNR=4.7
MJAR Matsushiro Arr 44.58 272 P **P** **16 21 45.9 -1.1**
1.4nm,0.6s,baz=320,slow=7.8,SNR=7.0
SPITS Spitsbergen Ar 47.23 1 P **P** **16 22 06.6 -0.7**
5.6nm,0.9s,baz=64,slow=5.7,SNR=4.1
TXAR Lajitas Array 48.03 98 P **P** **16 22 14.8 +0.6**
0.3nm,0.6s,baz=293,slow=6.2,SNR=5.7
TXAR pP **pP** **16 22 26.7 -2.2**
0.7nm,0.6s,baz=306,slow=5.7,SNR=7.4
LPIG La Paz 48.34 108 LR LR 16 39 47.3
comp=Z,31nm,18.3s,baz=250,slow=32
KSRS Korea Array 49.86 280 P **P** **16 22 27.7 -0.3**
2.9nm,0.6s,baz=44,slow=7.2,SNR=29
KS01 Wonju Array Si 49.86 280 *e*P **P** **16 22 27.5 -0.5**
KS15 Wonju Array Si 49.89 280 *e*P **P** **16 22 28.3 +0.1**
KSAR Wonju Array Be 49.89 280 P **P** **16 22 27.7 -0.5**
SCHQ Schefferville 50.21 49 P **P** **16 22 30.1 -0.3**
2.8nm,0.6s,baz=296,slow=6.3,SNR=5.1
WVT Waverly 52.20 79 *e*P **P** **16 22 45.6 +0.1**
5.5nm,0.6s
SONA1 Songino Array 54.09 304 *e*P **P** **16 22 59.3 -0.2**
SONM Songino Array 54.10 304 P **P** **16 22 59.0 -0.6**
0.8nm,0.4s,baz=26,slow=9.7,SNR=7.1
SONM PcP **PcP** **16 24 03.9 +0.2**
0.9nm,0.6s,baz=68,slow=2.6,SNR=3.9
ARCES ARCESS Array B 55.83 357 P **P** **16 23 10.5 -1.1**
0.9nm,0.4s,baz=2.8,slow=7.4,SNR=5.7
ARCES PcP **PcP** **16 24 09.6 -0.3**
1.3nm,0.6s,baz=1.4,slow=3.6,SNR=3.5
ZALV Zalesovo Beam 58.74 321 P **P** **16 23 31.7 -0.6**
0.5nm,0.3s,baz=68,slow=8.2,SNR=2.4
ZALV PcP **PcP** **16 24 21.5 0.0**
1.1nm,0.6s,baz=25,slow=5.1,SNR=5.4
KURK Kurchatov 63.59 322 P **P** **16 24 04.7 -0.4**
KURBB Kurchatov Arra 63.70 322 P **P** **16 24 04.7 -1.1**
0.2nm,0.3s,baz=37,slow=5.9,SNR=7.3
KURBB PcP **PcP** **16 24 40.0 -1.5**
0.7nm,0.7s,baz=30,slow=3.6,SNR=7.2
FINES FINESS Array B 63.91 356 P **P** **16 24 06.2 -0.8**
2.3nm,0.5s,baz=15,slow=7.8,SNR=36
NB2 NORSAR Subarra 64.30 4 P **P** **16 24 09.2 -0.5**
comp=Z,1.2nm,0.5s,baz=350,slow=6.5
NOA NORSAR Array B 64.30 4 P **P** **16 24 09.6 -0.1**
comp=Z,2.8nm,0.8s,baz=355,slow=6.4,SNR=7.7
BVAR Borovoye Array 64.34 328 P **P** **16 24 10.1 +0.1**
comp=Z,0.9nm,0.5s,baz=37,slow=4.7,SNR=6.8
ARU Arti 64.45 337 P **P** **16 24 10.1 -0.6**
comp=Z,2.2nm,0.4s,baz=352,slow=5.0,SNR=4.7
HFS Hagfors 65.30 3 P **P** **16 24 15.7 -0.4**
comp=Z,5.0nm,0.4s,baz=29,slow=3.4,SNR=64
MKAR Makanchi Array 65.46 317 P **P** **16 24 16.7 -0.8**
comp=Z,1.5nm,0.5s,baz=46,slow=5.4,SNR=16
MKAR pP **pP** **16 24 29.3 -3.5**
comp=Z,0.4nm,0.4s,baz=40,slow=5.8,SNR=3.2
WMQ Urumqi 65.67 312 *e*P **P** **16 24 22.3 +3.4**
EKA Eskdalemuir Ar 68.72 13 P **P** **16 24 38.2 +0.3**
comp=Z,4.3nm,0.6s,baz=341,slow=4.7,SNR=18
AKTO Aktyubinsk 70.09 335 P **P** **16 24 46.0 -0.5**
comp=Z,3.2nm,0.8s,baz=34,slow=5.6,SNR=11
KMI Kunming 73.20 290 P **P** **16 25 08.8 +3.0**
KMI pP PcP 16 25 21.9 -0.2
KMI pmax pmax
comp=Z,6.0nm,0.9s
KSH Kashi 74.08 317 *e*P **P** **16 25 14.1 +3.5**
KSH *e*pP PcP 16 25 24.8 -0.8
KSH *es*P pP 16 25 28.9 +2.7
KSH *e*PP **PP** **16 28 00.5 +4.6**
KSH S **S** **16 34 42.8 +3.8**
KSH Kashi 74.08 317 ScS **ScS** **16 35 18.5 +2.5**
KSH pmax pmax
comp=Z,7.0nm,0.6s
KSH pmax pmax
comp=Z,38nm,3.4s
KSH LR LR
comp=N,160nm,10.4s
KSH LR LR
comp=E,230nm,8.8s
KSH LR LR
comp=Z,220nm,8.3s
AKASG Malin Array Be 74.47 353 P **P** **16 25 11.7 -0.8**
comp=Z,7.3nm,0.5s,baz=10.0,slow=5.9,SNR=31
MORC Moravsky Berou 75.75 1⇑ *i* P **P** **16 25 19.8 -0.2**
VRAC Vranov 76.20 1 P **P** **16 25 22.7 +0.2**
comp=Z,3.3nm,0.6s,baz=21,slow=6.7,SNR=5.5
GERES GERESS Array B 76.59 3 P **P** **16 25 25.2 +0.4**
comp=Z,1.8nm,0.7s,baz=5.7,slow=5.4,SNR=13
CONA Conrad Observa 77.57 2 *i* P **P** **16 25 29.2 -1.1**
comp=Z,3.8nm,0.6s
BURAR Bucovina Array 77.77 356⇑ *i* P **P** **16 25 31.1 -0.4**
MOTA Moosalm 77.98 5 *i* P **P** **16 25 33.2 +0.5**
comp=Z,3.8nm,0.8s
ARSA Arzberg 78.24 2 *i* P **P** **16 25 31.6 -2.5**
comp=Z,6.3nm,1.1s
FETA Feichten 78.28 6 *i* P **P** **16 25 35.3 +0.9**
comp=Z,4.5nm,0.8s
KBA Koelnbreinsper 78.35 4 *i* P **P** **16 25 35.3 +0.5**
comp=Z,10nm,1.1s
DAVOX Davos/Dischmat 78.47 6 P **P** **16 25 35.1 -0.4**
comp=Z,2.4nm,0.6s,baz=220,slow=5.9,SNR=5.5
DRGR 78.68 357 ||*i* P **P** **16 25 36.4 -0.1**
SOKA Soboth 78.80 3 *i* P **P** **16 25 38.3 +1.2**
comp=Z,9.7nm,1.3s
MYKA Terra Mystica 78.81 4 *e*P **P** **16 25 38.7 +1.5**
comp=Z,2.3nm,0.6s
OBKA Obir 78.96 3 *i* P **P** **16 25 38.9 +0.9**
comp=Z,12nm,0.6s
DOPR Dopca 79.41 355 ||*i* P **P** **16 25 41.3 +0.9**
GUN Gumba 79.61 304 *e*P **P** **16 25 43.0 +0.8**
KBZ Khabaz 79.68 342 P **P** **16 25 42.2 +0.4**
comp=Z,5.1nm,0.9s,baz=313,slow=4.3,SNR=6.2
MLR Muntele Rosu 79.86 355 P **P** **16 25 43.6 +0.6**
comp=Z,0.3nm,0.5s,baz=314,slow=8.7,SNR=3.9
BZS Buzias 79.89 358⇑ *i* P **P** **16 25 41.4 -1.6**
VOIR 79.95 356 ⇑ *i* P **P** **16 25 41.7 -1.8**
VOIR 79.95 356 ||*i* P **P** **16 25 44.4 +0.9**
VOIR 79.95 356 ||*i* P **P** **16 25 45.5 +2.0**
KKN Kakani 79.99 304 *e*P **P** **16 25 44.7 +0.6**
comp=Z,14nm,0.5s
CFR Carcaliu 80.04 353⇑ *i* P **P** **16 25 43.7 -0.1**
PKIN Phulchoki 80.12 304 *e*P **P** **16 25 44.8 -0.1**
comp=Z,10nm,0.6s
GKN Gorkha 80.12 305 *e*P **P** **16 25 44.5 -0.3**
comp=Z,26nm,0.7s
DMN Daman 80.23 304 *e*P **P** **16 25 45.4 -0.1**
comp=Z,18nm,0.5s
CMAR Chiang Mai Arr 80.64 289 P **P** **16 25 47.1 -0.4**
comp=Z,2.9nm,0.6s,baz=18,slow=5.6,SNR=19
MDVR Moldovita 80.72 358⇑ *i* P **P** **16 25 47.0 -0.5**
PYUN Piuthan 80.81 306 *e*P **P** **16 25 48.3 -0.2**
GEYT Alibeck 81.64 330 P **P** **16 25 52.3 -0.2**
comp=Z,3.2nm,0.8s,baz=2.9,slow=3.0,SNR=6.5
ESDC Sonseca Array 83.85 17 P **P** **16 26 04.4 +0.4**
comp=Z,2.4nm,0.7s,baz=344,slow=4.6,SNR=17
ESDC pP **pP** **16 26 18.0 -1.9**
comp=Z,0.4nm,0.5s,baz=343,slow=4.5,SNR=2.7
BRTR Keskin Array B 84.95 349 P **P** **16 26 09.9 +0.3**
comp=Z,3.5nm,0.8s,baz=37,slow=2.3,SNR=20
RAO Raoul Island 84.98 195 P **P** **16 26 11.6 +2.2**
comp=Z,565nm,0.4s,baz=86,slow=19,SNR=3.4
WRA Warramunga Arr 92.41 238 P **P** **16 26 43.6 -1.5**
comp=Z,0.2nm,0.7s,baz=36,slow=6.0,SNR=3.4
ASAR Alice Springs 95.78 237 P **P** **16 27 00.4 -0.1**
comp=Z,0.4nm,1.0s,baz=119,slow=7.7,SNR=3.3

*ISCJB **23** 16:21:05.6±0.8, 6°.9N±0°.1×128°.72E±0°.09, h33km, mb3.7/8, Error ellipse: s-maj=15.8km s-min=11.2km az=25.4*
*IDC **23** 16:21:05.0±1.0, 6°.54N×127°.43E, h0km, mb3.8/8, mb1 3.8/8, mb1mx3.6/44, mbtmp3.8/8, Error ellipse: s-maj=72.8km s-min=16.3km az=75.0*
ISC 23 16:21:09.0±1.0, 6°.8N±0°.1×128°.6E±0°.1, h35km, n10, σ1§98/10, mb3.9/8, 2C, East of Philippine Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DMPH	**Davao City--Mi**	**3.09**	**275**⇑	*e*P	Pn	16 22 03.4	+8.0
DMPH				*e*S	**Sn**	**16 22 31.6**	**+0.4**
GSPH	**General Santos**	**3.71**	**259**⇑	*i*P	**Pn**	**16 22 04.9**	**+1.0**
GSPH				*i*S	Sn	16 22 34.2	-12
FITZ	**Fitzroy Crossi**	**24.91**	**187**	P	**P**	**16 26 28.2**	**-0.8**
	1.8nm,0.9s,baz=0.0,slow=15,SNR=3.0						
WRA	**Warramunga Arr**	**27.16**	**168**	P	**P**	**16 26 49.9**	**+0.6**
	0.2nm,0.7s,baz=348,slow=10,SNR=4.2						
ASAR	**Alice Springs**	**30.72**	**170**	P	**P**	**16 27 20.9**	**-0.1**
	0.1nm,0.3s,baz=339,slow=7.3,SNR=4.6						
SONM	**Songino Array**	**45.07**	**339**	P	**P**	**16 29 21.6**	**-0.1**
	0.3nm,0.4s,baz=161,slow=9.2,SNR=2.5						
MKAR	**Makanchi Array**	**56.18**	**323**	P	**P**	**16 30 43.4**	**-2.1**
	1.3nm,0.4s,baz=115,slow=7.6,SNR=27						
KURBB	**Kurchatov Arra**	**60.23**	**326**	P	**P**	**16 31 11.6**	**-2.0**
	2.2nm,0.7s,baz=126,slow=6.3,SNR=30						
TIXI	**Tiksi**	**64.78**	**0**	P	**P**	**16 31 47.2**	**+3.5**
	0.8nm,0.4s,baz=259,slow=5.2,SNR=3.8						
BVAR	**Borovoye Array**	**65.82**	**326**	P	**P**	**16 31 48.7**	**-2.1**
	1.1nm,0.5s,baz=126,slow=9.3,SNR=7.6						

MAN 23 16:32:37, 8°.60N×126°.19E, h31km, mb4.0, ML2.8, MS2.5, 3C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**0.45**	**157**⇓	*i*P	Pn	16 32 47.7	+0.4
BIPH				*i*S	Sn	16 32 54.6	+0.3
CGP	**Cagayan de Oro**	**1.48**	**265**⇑	*e*P	Pn	16 33 01.4	-0.1
CGP				*i*S	Sn	16 33 20.8	+0.9
DMPH	**Davao City--Mi**	**1.65**	**204**⇑	*e*P	Pb	16 33 10.9	+4.1
DMPH				*e*S	Sb	16 33 33.3	+6.1
CTBH	**Cotabato--PC H**	**2.36**	**235**⇑	*i*P	Pn	16 33 15.3	+1.7

*ISK **23** 16:32:58.3, 37°.79N×43°.98E, h9km, ML2.5*
*ISCJB **23** 16:32:59.4±0.9, 37°.80N±0°.03×43°.95E±0°.08, h3km±8km, Error ellipse: s-maj=10.9km s-min=4.4km az=16.8*
*CSEM **23** 16:32:59.1±0.4, 37°.80N×43°.95E, h8km, ML2.5, Error ellipse: s-maj=10.8km s-min=4.8km az=101.0*
*DDA **23** 16:32:59.4, 37°.77N×43°.94E, h7km, Md2.6*
ISC 23 16:32:58.7±1.3, 37°.80N±0°.03×43°.98E±0°.06, h3km±11km, n19, σ1§33/34, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BASK	**Baskale_VAN**	**0.26**	**5**	*i* P	**Pb**	**16 33 05.4**	**-0.7**
BASK				*i* S	**Sb**	**16 33 10.0**	**-1.1**
BASK	**Baskale_VAN**	**0.26**	**5**	P	**Pb**	**16 33 05.4**	**-0.7**
BASK				S	**Sb**	**16 33 10.0**	**-1.1**
HKR	**Hakkari**	**0.29**	**221**	PG	**Pg**	**16 33 04.5**	**+0.3**
HKR				*e*SG	**Sg**	**16 33 09.1**	**+1.1**
HKR	**Hakkari**	**0.29**	**221**	*i* Pg	**Pg**	**16 33 04.5**	**+0.3**
HKR				*e*Sg	**Sg**	**16 33 09.1**	**+1.1**
HAKT	**HAKKARI**	**0.32**	**222**	*i* P	**Pg**	**16 33 05.1**	**+0.2**
HAKT				*i* S	**Sg**	**16 33 09.9**	**+0.8**
HAKT	**HAKKARI**	**0.32**	**222**	P	**Pg**	**16 33 05.1**	**+0.2**
HAKT				S	**Sg**	**16 33 09.9**	**+0.8**
CUKT	**Cukurca**	**0.62**	**208**	*e*PG	**Pb**	**16 33 10.9**	**-1.4**
CUKT				*e*SG	**Sb**	**16 33 19.6**	**-1.9**
CUKT	**Cukurca**	**0.62**	**208**	*e*Pg	**Pb**	**16 33 10.9**	**-1.4**
CUKT				*e*Sg	**Sb**	**16 33 19.6**	**-1.9**
TVAN	**Van**	**0.86**	**329**	*i* P	**Pn**	**16 33 20.8**	**+2.8**
TVAN				*i* S	**Sn**	**16 33 34.9**	**+3.8**
GEVA	**Gevas**	**0.89**	**306**	*i* P	**Pb**	**16 33 15.9**	**-1.0**
GEVA				*i* S	**Sb**	**16 33 29.1**	**-0.2**
GEVA	**Gevas**	**0.89**	**306**	P	**Pb**	**16 33 15.9**	**-1.0**
GEVA				S	**Sb**	**16 33 29.1**	**-0.2**
VANB	**Van**	**0.92**	**330**	*e*PG	**Pg**	**16 33 14.9**	**-1.4**
VANB				*e*SG	**Sg**	**16 33 27.2**	**-1.1**
VANB	**Van**	**0.92**	**330**	*e*Pg	**Pg**	**16 33 15.0**	**-1.4**
VANB				*e*Sg	**Sg**	**16 33 27.2**	**-1.1**
SIRN	**S˜−rnak**	**1.28**	**257**	*i* P	**Pg**	**16 33 23.9**	**+0.8**
SIRN				*i* S	**Sn**	**16 33 40.9**	**-0.3**
SIRN	**S˜−rnak**	**1.28**	**257**	P	**Pg**	**16 33 23.9**	**+0.8**
SIRN				S	**Sn**	**16 33 40.9**	**-0.3**
CLDR	**Caldiran**	**1.34**	**358**	*e*PN	**Pg**	**16 33 25.5**	**+1.0**
CLDR	**Caldiran**	**1.34**	**358**	*e*Pn	**Pg**	**16 33 25.5**	**+1.0**
AGRB	**Hanur-Agry**	**1.94**	**337**	*e*PN	**Pn**	**16 33 32.4**	**-0.3**
AGRB	**Hanur-Agry**	**1.94**	**337**	*e*Pn	**Pn**	**16 33 32.4**	**-0.3**

*IDC **23** 16:34:39.0±0.3, 13°.16N×145°.58E, h0km, mb4.8/45, mb1 4.8/46, mb1mx4.8/52, mbtmp4.8/46, ML3.2/1, MS5.1/20, Ms1 5.1/20, ms1mx4.8/32, Error ellipse: s-maj=12.5km s-min=8.2km az=76.0*
*ISCJB **23** 16:34:39.2±1.0, 13°.32N±0°.03×145°.36E±0°.02, h2km±6km, mb5.2/226, MS5.3/209, Error ellipse: s-maj=4.9km s-min=3.5km az=159.3*
*DJA **23** 16:34:41.9-1.2, 13°.N-5°×14°.6E±°, h30km±9km, M5.7/38, mb5.5/38, mB6.1/23, Mw(mB)5.8/23*
*GCMT **23** 16:34:41.2±0.1, 12°.96N×145°.56E, h16km, MW5.6/114, Moment Tensor Solution. s102,c190; s114,c286; Duration: 1§6 Moment tensor: Scale 10^{17}Nm; M_{rr}1.99±.04; $M_{\theta\theta}$-0.30±.03; $M_{\phi\phi}$-1.69±.03; $M_{r\theta}$-0.17±.08; $M_{\theta\phi}$-1.45±.02; $M_{\phi r}$2.37±.10; Best double couple: M_o3.34700×10^{17} NP1:ϕ_s7.00000°, δ70.00000°, λ67.00000°. NP2:ϕ_s238.00000°, δ31.00000°, λ137.00000°. Principal axes: T 3.3360, Plg59.0000°, Azm244.0000°; N 0.0200, Plg22.0000°, Azm15.0000°; P -3.3580, Plg21.0000°, Azm114.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **23** 16:34:41.8±0.1, 13°.11N×145°.25E, h14km, mb5.4/125, MS5.4/151, MW5.5 Error ellipse: s-maj=4.9km s-min=3.7km az=123.0, Moment Tensor Solution. s30 Moment tensor: Scale 10^{17}Nm; M_{rr}1.19; $M_{\theta\theta}$0.07; $M_{\theta\phi}$-1.26; $M_{r\theta}$0.01; $M_{\theta\phi}$-1.41; $M_{\phi r}$1.18; Best double couple: M_o2.20000×10^{17} NP1:ϕ_s246.00000°, δ40.00000°, λ144.00000°. NP2:ϕ_s5.00000°, δ68.00000°, λ55.00000°. Principal axes: T 1.8700, Plg54.0000°, Azm232.0000°; N 0.5700, Plg32.0000°, Azm119.0000°; P -2.4500, Plg16.0000°, Azm119.0000°;*
NEIC Felt [III] at Barrigada and [II] at Andersen AFB and Santa Rita. Also felt at Agat, Dededo, Tamuning and Yigo.
*BJI **23** 16:34:42.9, 13°.32N×145°.29E, h23km, mb5.0/35, mB5.3/71, Ms5.4/86, Ms7 5.3/81*
*MOS **23** 16:34:42.8±1.2, 13°.20N×145°.22E, h29km, mb5.4/53, MS5.3/30, Error ellipse: s-maj=8.2km s-min=4.8km az=103.9*
ISC 23 16:34:43.9±0.5, 13°.15N±0°.03×145°.47E±0°.04, h28km±2km, n719, σ1§82/651, mb5.3/231, MS5.4/227, 32C-21D, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**0.73**	**307**	Pn	**Pn**	**16 34 58.4**	**+0.1**
	8µm,0.3s,baz=115,slow=6.2,SNR=812						
GUMO				Sn	**Sn**	**16 35 12.0**	**+3.5**
	8µm,0.3s,baz=348,slow=20,SNR=24						
GUMO	**Guam**	**0.73**	**307**	*e*P	**Pn**	**16 34 58.5**	**+0.1**
GUMO				*e*		16 35 07.0	
GUMO	**Guam**	**0.73**	**307**	*e*Pn	**Pn**	**16 34 58.5**	**+0.1**
GUMO				*e*Sn	**Sb**	**16 35 07.0**	**-0.7**
GUMO				Sn	**Sn**	**16 35 12.0**	**+3.5**
PATS	**Pohnpei**	**14.12**	**115**	*e*Pn	Pn	16 37 55.1	-7.1
MANU	**Manus Island**	**15.21**	**173**	*e*Pn	**Pn**	**16 38 19.0**	**+2.0**
	226nm,1.3s						
JAY	**Jayapura**	**16.27**	**197**	Pn	**Pn**	**16 38 30.8**	**+0.2**
	0.1nm,0.3s,baz=86,slow=23,SNR=6.7						
JAY				LR	LR	16 45 57.0	
	comp=Z,189nm,18.5s,baz=359,slow=42						
JAY	**Jayapura**	**16.27**	**197**	P	**P**	**16 38 32.7**	**-0.7**
GENI	**Genyem**	**16.50**	**199**	P	**P**	**16 38 36.0**	**0.0**
SWI	**Sorong**	**19.81**	**226**	P	**Pn**	**16 39 15.7**	**+1.6**
JHJ	**Hachijo jima 2**	**20.54**	**346**	LR	LR	16 45 46.3	
	comp=Z,4µm,18.1s,baz=176,slow=32						
FAKI	**Fak Fak**	**20.67**	**220**	P	Pn	16 39 24.5	+0.3
FAKI	**Fak Fak**	**20.67**	**220**	*e*P	**P**	**16 39 20.9**	**-0.8**
	524nm,1.3s						
JOW	**Kunigami**	**21.09**	**313**	*e*P	**P**	**16 39 25.7**	**-0.5**
	272nm,1.3s						
H11S3	**WAKE ISLAND Hy**	**21.09**	**73**	T	T	17 01 31.0	
	baz=246,slow=74,SNR=11						
H11S1	**WAKE ISLAND Hy**	**21.10**	**73**	T	T	17 01 35.5	
	baz=246,slow=74,SNR=8.3						
H11S2	**WAKE ISLAND Hy**	**21.11**	**73**	T	T	17 01 34.6	
	baz=246,slow=74,SNR=8.2						
WAKE	**Wake Island**	**21.23**	**71**	PFAKE		16 39 40.0	+12
WAKE				LR	LR		
	comp=Z,6µm,20.0s						
LLP	**Lapu-Lapu**	**21.24**	**265**⇑	*e*P	**P**	**16 39 28.5**	**+0.6**
H11N1	**WAKE ISLAND Hy**	**21.55**	**70**	T	T	17 02 42.2	
	baz=241,slow=76,SNR=15						
H11N2	**WAKE ISLAND Hy**	**21.56**	**70**	T	T	17 02 43.6	
	baz=241,slow=76,SNR=14						
H11N3	**WAKE ISLAND Hy**	**21.57**	**70**	T	T	17 02 36.8	
	baz=241,slow=76,SNR=19						
CTBH	**Cotabato--PC H**	**21.69**	**256**⇑	*i*P	**P**	**16 39 33.3**	**+0.4**
RCP	**Roxas**	**22.25**	**268**⇑	*e*P	**P**	**16 39 38.9**	**0.0**
LBMI	**Labuha**	**22.48**	**234**	P	**P**	**16 39 44.6**	**+3.4**
PMG	**Port Moresby**	**22.48**	**176**	P	**P**	**16 39 40.4**	**-0.8**
	comp=Z,88nm,1.0s,baz=350,slow=11,SNR=14						
PMG	**Port Moresby**	**22.48**	**176**	*de*P	**P**	**16 39 40.2**	**-1.0**
PMG				pmax	pmax		
	comp=Z,505nm,1.2s						
PMG				MLR	MLR		
	comp=Z,13µm,17.0s						
PMG	**Port Moresby**	**22.48**	**176**	*e*P	**P**	**16 39 38.8**	**-2.4**
	comp=Z,100nm,0.9s						
PMG				LR	LR		
	comp=Z,2µm,19.0s						
MSAI	**Masohi**	**23.20**	**226**	P	**P**	**16 39 51.7**	**+2.9**
INU	**Inuyama**	**23.38**	**342**	*e*P	**P**	**16 39 50.4**	**0.0**
	comp=Z,170nm,1.3s						
TGY	**Tagaytay City**	**23.86**	**275**	P	**P**	**16 39 56.8**	**+1.5**
	comp=Z,414nm,0.6s,baz=57,slow=3.0,SNR=12						
TGY				LR	LR	16 48 57.3	
	comp=Z,6µm,19.7s,baz=76,slow=36						
JNU	**Nakatsue**	**23.93**	**329**	P	**P**	**16 39 56.0**	**+0.3**
	comp=Z,9.0nm,0.6s,baz=192,slow=3.3,SNR=22						
JNU	**Nakatsue**	**23.93**	**329**	*e*P	**P**	**16 39 55.3**	**-0.4**
	comp=Z,37nm,0.8s						
MJAR	**Matsushiro Arr**	**24.18**	**346**	P	**P**	**16 39 56.2**	**-1.8**
	comp=Z,4.7nm,0.5s,baz=166,slow=9.8,SNR=30						
MJAR				LR	LR	16 49 01.8	
	comp=Z,5µm,19.8s,baz=150,slow=36						
MAJO	**Matsushiro**	**24.19**	**346**‖	*e*P	**P**	**16 39 56.2**	**-1.8**
MAJO				pmax	pmax		
	comp=Z,276nm,1.8s						
MAJO				MLR	MLR		
	comp=Z,32µm,18.0s						
MAJO	**Matsushiro**	**24.19**	**346**	*e*P	**P**	**16 39 56.3**	**-1.8**
	comp=Z,62nm,0.8s						
MAJO				LR	LR		
	comp=Z,4µm,20.0s						
MAT	**Matsushiro**	**24.19**	**346**	P	**P**	**16 39 56.3**	**-1.7**
MAT				S	**S**	**16 44 14.8**	**+0.2**
MJB9	**Matsu-Tunnel**	**24.19**	**346**	*e*P	**P**	**16 39 56.8**	**-1.3**
	comp=Z,16nm,0.8s						
SANI	**Sanana**	**24.53**	**233**	P	**P**	**16 40 03.9**	**+2.5**
KMSI	**Cibinong**	**24.68**	**241**	P	**P**	**16 40 05.4**	**+2.6**
YULB	**Yu-li**	**25.07**	**297**	*e*P	**P**	**16 40 03.5**	**-2.7**
	comp=Z,196nm,1.5s						
TWG	**Pinlang**	**25.08**	**296**	P	**P**	**16 40 04.2**	**-2.1**
	comp=Z,274nm,1.1s						
YHNB	**Yeheng**	**25.46**	**300**	*e*P	**P**	**16 40 08.8**	**-1.0**
	comp=Z,137nm,1.7s						
YHNB				LR	LR		
	comp=Z,15µm,20.0s						
TATO	**Taipei**	**25.48**	**301**	PFAKE		16 40 20.0	+10
TATO				LR	LR		
	comp=Z,11µm,20.0s						
SSLB	**Suanglung**	**25.50**	**298**	*e*P	**P**	**16 40 09.1**	**-1.0**
	comp=Z,106nm,1.1s						
TPUB	**Ta-pu**	**25.62**	**297**	*e*P	**P**	**16 40 08.9**	**-2.3**
	comp=Z,59nm,1.0s						
MRSI	**Marisa**	**26.50**	**243**	P	**P**	**16 40 21.7**	**+2.5**
LUWI	**Luwuk**	**26.56**	**240**	P	**P**	**16 40 22.3**	**+2.5**
LUWI	**Luwuk**	**26.56**	**240**	*e*P	**P**	**16 40 18.2**	**-1.6**
	comp=Z,490nm,0.9s						
HNR	**Honiara**	**26.65**	**147**	P	**P**	**16 40 24.8**	**+4.3**
	comp=Z,24nm,0.7s,baz=37,slow=20,SNR=2.0						
HNR				LR	LR	16 50 54.3	
	comp=Z,6µm,19.6s,baz=318,slow=37						
COEN	**Coen**	**27.03**	**185**	*e*P	**P**	**16 40 22.8**	**-1.2**
	comp=Z,59nm,1.0s						
MYLDM	**Lahad Datu**	**27.75**	**256**	*e*P	**P**	**16 40 32.9**	**+2.4**
	comp=Z,196nm,1.2s						
QZH	**Quanzhou**	**27.92**	**299**⇑	*i*P	**P**	**16 40 28.9**	**-3.0**
QZH				PP	**PnPn**	**16 41 19.8**	**+0.6**
QZH				pmax	pmax		
	comp=Z,2µm,11.2s						
QZH				LR	LR		
	comp=Z,3µm,14.1s						
QZH				LR	LR		
	comp=Z,4µm,12.9s						
QZH				LR	LR		
	comp=Z,8µm,18.3s						
KDI	**Kendari**	**28.35**	**235**	P	**P**	**16 40 38.2**	**+2.4**
	comp=Z,47nm,1.3s,comp=Z,1µm						
SSE	**Sheshan**	**28.61**	**313**	P	**P**	**16 40 35.3**	**-2.7**
SSE				S	**S**	**16 45 24.1**	**-0.7**
SSE				pmax	pmax		
	comp=Z,160nm,4.0s						
SSE				LR	LR		
	comp=Z,2µm,18.9s						
SSE				LR	LR		
	comp=Z,3µm,18.9s						
SSE				LR	LR		
	comp=Z,4µm,15.4s						
ERM	**Erimo**	**28.83**	**356**	PFAKE		16 40 50.0	+10
ERM				LR	LR		
	comp=Z,5µm,20.0s						
KSRS	**Korea Array**	**28.83**	**330**	P	**P**	**16 40 38.9**	**-0.9**
	comp=Z,6.9nm,0.8s,baz=147,slow=9.1,SNR=26						
KS15	**Wonju Array Si**	**28.84**	**330**	*e*P	**P**	**16 40 40.5**	**+0.6**
KSAR	**Wonju Array Be**	**28.84**	**330**	P	**P**	**16 40 38.9**	**-1.0**
KSAR	**Wonju Array Be**	**28.84**	**330**	P	**P**	**16 40 38.9**	**-1.0**
SDKM	**Sandakan**	**28.85**	**258**	⇑P	**P**	**16 40 41.6**	**+1.2**
KS01	**Wonju Array Si**	**28.86**	**330**	*e*P	**P**	**16 40 40.5**	**+0.3**
PCI	**Palu**	**29.00**	**243**	P	**P**	**16 40 44.1**	**+2.4**
	comp=Z,40nm,1.8s,comp=Z,965nm						
MTN	**Manton Dam**	**29.48**	**209**	*e*P	**P**	**16 40 44.4**	**-1.4**
	comp=Z,40nm,0.8s						
INCN	**Inchon**	**29.49**	**329**	PFAKE		16 41 00.0	+14
INCN				LR	LR		
	comp=Z,3µm,19.0s						
TARA	**Tarawa**	**29.61**	**111**	PFAKE		16 41 00.0	+13
TARA				LR	LR		
	comp=Z,409nm,19.0s						
KKM	**Kota Kinabalu**	**29.67**	**259**	PFAKE		16 41 00.0	+12
KKM				LR	LR		
	comp=Z,3µm,22.0s						
TTSI	**Tana Toraja**	**30.12**	**239**	P	**P**	**16 40 54.0**	**+2.5**
NJ2	**Nanjing**	**30.80**	**312**	*e*P	**P**	**16 40 56.3**	**-1.1**
NJ2				PP	**PnPn**	**16 42 00.8**	**+2.8**
NJ2				PcP	**PcP**	**16 43 59.5**	**+5.2**
NJ2				sS	S	16 46 14.3	+15
NJ2				pmax	pmax		
	comp=Z,17nm,0.5s						
NJ2				pmax	pmax		
	comp=Z,710nm,8

CTAO MLR MLR
comp=Z,2µm,19.0s
CTAO Charters Tower 33.04 179 P **P** **16 41 15.0 -2.1**
comp=Z,29nm,1.1s
CTAO LR LR
comp=Z,2µm,19.0s
DL2 Dalian 33.22 325⇑ *i*P **P** **16 41 17.3 -1.2**
DL2 PcP **PcP** **16 44 04.3 +3.5**
DL2 S **S** **16 46 39.0 +2.3**
DL2 pmax pmax
comp=Z,19nm,1.1s
DL2 pmax pmax
comp=Z,590nm,11.3s
DL2 LR LR
comp=Z,2µm,17.1s
DL2 LR LR
comp=Z,2µm,17.3s
DL2 LR LR
comp=Z,4µm,19.6s
MTKI Muara Teweh, K 33.39 248 P **P** **16 41 22.7 +2.3**
WHN Wuhan 33.51 306 *e*P **P** **16 41 24.9 +3.7**
WSI Waingapu 33.74 229 P **P** **16 41 25.7 +2.4**
YSS Yuzh-Sakhalins 33.77 357 *e*P **P** **16 41 21.5 -1.7**
YSS *e* 16 41 31.1
YSS *e*PPP PPP 16 42 54.0
YSS *e* 16 44 03.0
YSS *e*S S 16 46 34.0 -11
YSS *e* 16 46 47.0
YSS pmax pmax
comp=Z,10.0nm,1.1s
YSS MLR MLR
comp=Z,3µm,18.0s
YSS MLR MLR
comp=N,2µm,15.0s
YSS MLR MLR
comp=N,2µm,14.0s
YSS Yuzh-Sakhalins 33.77 357 PFAKE 16 41 40.0 +17
YSS LR LR
comp=Z,874nm,19.0s
MDJ Mudanjiang 34.17 340 P **P** **16 41 26.0 -0.7**
MDJ PP **PP** **16 42 43.1 -1.2**
MDJ S **S** **16 46 48.8 -2.5**
MDJ pmax pmax
comp=Z,410nm,9.0s
MDJ LR LR
comp=Z,3µm,18.8s
MDJ LR LR
comp=Z,2µm,20.0s
MDJ LR LR
comp=Z,5µm,20.0s
MDJ Mudanjiang 34.17 340 *e*P **P** **16 41 24.2 -2.5**
comp=Z,45nm,1.4s
MDJ LR LR
comp=Z,5µm,21.0s
TIA Tai'an 34.27 317 *e*P **P** **16 41 27.8 0.0**
TIA PP **PnPn** **16 42 43.5 +1.0**
TIA S **S** **16 46 55.8 +2.5**
TIA pmax pmax
comp=Z,670nm,10.0s
TIA LR LR
comp=Z,7µm,18.0s
TIA LR LR
comp=Z,5µm,18.0s
TIA LR LR
comp=Z,10µm,17.0s
SNY Shenyang 34.33 330 P **P** **16 41 26.9 -1.3**
SNY pmax pmax
comp=Z,590nm,8.2s
SNY LR LR
comp=Z,2µm,18.1s
SNY LR LR
comp=Z,4µm,16.7s
SNY LR LR
comp=Z,6µm,17.9s
SBUM Sibu 34.56 255⇑ P **P** **16 41 31.2 +0.7**
SBUM Sibu 34.56 255 *e*P **P** **16 41 30.9 +0.4**
comp=Z,120nm,1.5s
BBKI Banjar Baru 34.60 244 P **P** **16 41 33.0 +2.2**
WRAB Tennant Creek 34.65 199*c i*P **P** **16 41 30.1 -1.0**
WRAB pmax pmax
comp=Z,210nm,2.5s
WRAB MLR MLR
comp=Z,5µm,18.0s
WRAB Tennant Creek 34.65 199 *e*P **P** **16 41 28.7 -2.5**
comp=Z,72nm,1.0s
WRAB *e*PcP **PcP** **16 44 03.6 -1.5**
WRAB LR LR
comp=Z,3µm,22.0s
WB2 Warramunga Arr 34.66 199 *e*P **P** **16 41 30.0 -1.2**
WRA Warramunga Arr 34.66 199 P **P** **16 41 30.1 -1.2**
comp=Z,10nm,0.6s,baz=22,slow=9.8,SNR=95
WRA LR LR 16 55 40.0
comp=Z,2µm,20.2s,baz=0.0,slow=36
WRA Warramunga Arr 34.66 199 *i*P **P** **16 41 30.1 -1.2**
WRA pmax pmax
comp=Z,17nm,0.6s
QIZ Qiongzhong 34.68 284 P **P** **16 41 31.5 0.0**
QIZ PP **PnPn** **16 42 46.4 -1.3**
QIZ pmax pmax
comp=Z,550nm,8.4s
QIZ LR LR
comp=Z,5µm,20.2s
QIZ LR LR
comp=Z,6µm,19.4s
QIZ Qiongzhong 34.68 284 PFAKE 16 41 40.0 +8.5
QIZ LR LR
comp=Z,6µm,20.0s
CN2 Changchun 35.05 334 *e*P P 16 41 42.1 +7.7
CN2 PP **PnPn** **16 42 50.8 -1.2**
CN2 *e*S **S** **16 47 01.4 -3.6**
CN2 SS **SS** **16 49 45.6 +7.8**
CN2 pmax pmax
comp=Z,10.0nm,0.5s
CN2 pmax pmax
comp=Z,400nm,7.0s
CN2 LR LR
comp=N,3µm,17.0s
CN2 LR LR
comp=E,4µm,17.0s
CN2 LR LR
comp=Z,5µm,17.0s
STKI Sintang 36.11 252 P **P** **16 41 44.5 +0.7**
comp=Z,58nm,0.8s,comp=Z,2µm
HABR Khabarovsk 36.26 348*c e*P **P** **16 41 42.2 -2.5**
HABR *e*'SP **pP** **16 41 48.8 -4.1**
HABR *e* 16 43 03.8
HABR *e* 16 44 06.9
HABR *e*S **S** **16 47 22.7 -0.7**
HABR *e*SS **SnSn** **16 49 50.4 -0.9**
HABR *e* 16 51 59.0
HABR pmax pmax
comp=E,15nm,1.7s
HABR pmax pmax
comp=N,15nm,2.2s
HABR pmax pmax
comp=Z,46nm,2.2s
HABR MLR MLR
comp=Z,3µm,20.0s
FITZ Fitzroy Crossi 36.70 213 P **P** **16 41 48.2 -0.6**
comp=Z,5.3nm,0.6s,baz=52,slow=6.2,SNR=20
FITZ LR LR 16 59 27.7
comp=Z,634nm,18.4s,baz=34,slow=40
FITZ Fitzroy Crossi 36.70 213 *e*P **P** **16 41 47.7 -1.1**
comp=Z,81nm,1.4s
FITZ *e*PcP **PcP** **16 44 07.0 -4.2**
PBKI Pangkalan Bun 37.06 247 P **P** **16 41 53.3 +1.4**
comp=Z,439nm,1.2s,comp=Z,5µm
BJT Baijiatuan 37.14 322 PFAKE 16 42 00.0 +7.7
BJT LR LR
comp=Z,3µm,19.0s
BJI Beijing 37.15 322 P **P** **16 41 51.8 -0.5**
BJI PP **PnPn** **16 43 18.8 +1.0**
BJI S **S** **16 47 41.8 +4.7**
BJI pmax pmax
comp=Z,660nm,6.2s
BJI LR LR
comp=Z,3µm,18.5s
BJI LR LR
comp=Z,2µm,17.3s
BJI LR LR
comp=Z,2µm,16.5s
ENH Enshi 37.31 303 *e*P **P** **16 41 52.6 -1.4**
comp=Z,20nm,0.8s
ENH *e*PcP **PcP** **16 44 13.7 +0.6**
ENH LR LR
comp=Z,5µm,20.0s

ABJI Asem Bagus 37.36 238 P P 16 42 14.1 +20
TYV Tymovskoe 37.68 357 *e*P **P** **16 41 56.5 -0.2**
TYV pmax pmax
comp=Z,26nm,0.8s
MIDW Midway 37.68 61 PFAKE 16 42 10.0 +13
MIDW LR LR
comp=Z,4µm,20.0s
KLR Kul'dur 37.71 345 P **P** **16 41 56.6 -0.4**
comp=Z,5.4nm,0.6s,baz=137,slow=5.6,SNR=17
KLR LR LR 16 56 03.6
comp=Z,1µm,20.3s,baz=158,slow=34
KLR Kul'dur 37.71 345*c i*P **P** **16 41 55.5 -1.5**
JAGI Jajag, Banyuwa 37.80 237 *e*P **P** **16 41 56.2 -2.0**
comp=Z,81nm,1.2s
JAGI *e*PcP **PcP** **16 44 17.7 +3.0**
BLJI Banyuglugur 37.86 238 P **P** **16 42 01.4 +2.7**
comp=Z,143nm,1.3s,comp=Z,4µm
TIY Taiyuan 38.24 316 *e*P **P** **16 42 03.0 +1.2**
TIY S **S** **16 47 58.5 +4.4**
TIY LR LR
comp=Z,4µm,18.1s
TIY LR LR
comp=Z,4µm,16.2s
TIY LR LR
comp=Z,7µm,16.8s
GMJI Gumukmas 38.27 238 P **P** **16 42 05.0 +2.8**
comp=Z,128nm,1.2s,comp=Z,2µm
AS01 Alice Springs 38.29 197 *e*P **P** **16 42 00.9 -1.3**
AS31 Alice Springs 38.30 197 *e*P **P** **16 42 01.1 -1.2**
comp=Z,8.9nm,0.6s
ASAR Alice Springs 38.30 197 P **P** **16 42 01.4 -0.9**
comp=Z,11nm,0.8s,baz=36,slow=8.0,SNR=91
ASAR LR LR 16 57 54.0
comp=Z,2µm,20.4s,baz=18,slow=36
GYA Guiyang 38.67 296 P **P** **16 42 05.6 0.0**
GYA pP pP 16 42 11.0 -2.9
GYA PP **PnPn** **16 43 38.6 +2.0**
GYA PcP **PcP** **16 44 19.3 +1.9**
GYA S **S** **16 48 05.4 +4.4**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,150nm,5.8s
GYA LR LR
comp=Z,820nm,17.7s
GYA LR LR
comp=Z,790nm,17.0s
GYA LR LR
comp=Z,860nm,17.2s
EIDS Eidsvold 38.68 172 *e*P **P** **16 42 04.2 -1.2**
comp=Z,24nm,1.3s
UBPT Khong Chiam 38.79 278 P **P** **16 42 10.4 +3.8**
comp=Z,23nm,2.0s,comp=Z,749nm
XAN Xi'an 39.12 308 P **P** **16 42 08.9 -0.3**
XAN pP sP 16 42 21.3 +0.5
XAN S **S** **16 48 08.1 +0.7**
XAN pmax pmax
comp=Z,15nm,0.8s
XAN LR LR
comp=Z,6µm,18.3s
UWJI Ujung Watu 39.42 242 P P 16 42 20.4 +8.6
NGJI Ngawi 39.45 241 P P 16 42 19.6 +7.5
PWJI Pagerwojo 39.50 240 P **P** **16 42 12.3 -0.2**
FUNA Funafuti 39.83 121 PFAKE 16 42 30.0 +15
FUNA LR LR
comp=Z,4µm,19.0s
NKL Nikolayevsk 40.08 356 *e*P **P** **16 42 21.0 +4.3**
NKL *e* 16 42 28.0
NKL *e* 16 43 50.0
NKL *e*S **S** **16 48 14.0 -7.0**
NKL smax smax
comp=E,600nm,14.0s
NKL MLR MLR
comp=N,2µm,17.0s
NKL MLR MLR
comp=E,1µm,18.0s
NKL MLR MLR
comp=Z,2µm,18.0s
PCJI Pacitan 40.12 240 P **P** **16 42 20.1 +2.5**
comp=Z,191nm,1.2s,comp=Z,4µm
WOJI Wonogiri, Jawa 40.15 241 P **P** **16 42 21.4 +3.5**
comp=Z,93nm,2.5s,comp=Z,4µm
SKNT Sakolnakorn 40.19 281 P **P** **16 42 19.5 +1.3**
comp=Z,54nm,1.8s
HHC Hu-ho-hao-te 40.48 319 *e*P **P** **16 42 21.0 +0.6**
HHC PP **PnPn** **16 44 01.6 +3.8**
HHC PcS **PcS** **16 48 10.3 -3.2**
HHC S **S** **16 48 28.9 +1.2**
HHC sS sS 16 48 37.6 -3.8
HHC ScS **ScS** **16 52 25.3 +0.5**
HHC pmax pmax
comp=Z,550nm,5.4s
HHC LR LR
comp=Z,3µm,17.4s
HHC LR LR
comp=Z,4µm,18.7s
HHC LR LR
comp=Z,4µm,21.1s
UGM Wanagama 40.53 241 P **P** **16 42 24.6 +3.5**
comp=Z,285nm,1.2s
DZM Mont Dzumac 40.60 149 P **P** **16 42 20.8 -0.8**
comp=Z,34nm,1.1s,baz=349,slow=8.1,SNR=5.3
DZM Mont Dzumac 40.60 149 *e*P **P** **16 42 20.8 -0.8**
comp=Z,106nm,1.2s
DZM *e*S **S** **16 48 28.9 -0.9**
comp=Z,2µm,23.8s
DZM *e*LR LR 16 53 37.9
comp=Z,12µm,30.6s
NONG Nongkai 40.99 282 P **P** **16 42 26.8 +2.0**
comp=Z,36nm,1.1s
PEA0 Petropavlovsk- 41.03 11 *e*P **P** **16 42 24.7 0.0**
PEA0B Petropavlovsk- 41.03 11 *e*P **P** **16 42 25.9 +1.3**
comp=Z,52nm,1.1s
PETK Petropavlovsk- 41.03 11 P **P** **16 42 25.3 +0.6**
comp=Z,9.4nm,0.9s,baz=187,slow=7.5,SNR=15
PET Petropavlovsk 41.14 12 *e*P **P** **16 42 26.2 +0.7**
PET *e*S **S** **16 48 39.1 +2.2**
PET pmax pmax
comp=Z,200nm,13.3s
PET pmax pmax
comp=Z,47nm,1.0s
PET smax smax
comp=Z,1µm,15.0s
PET smax smax
comp=Z,2µm,17.0s
PET Petropavlovsk 41.14 12 PFAKE 16 42 40.0 +14
PET LR LR
comp=Z,1µm,19.0s
HIA Hailar 41.78 335 *e*P **P** **16 42 30.1 -0.8**
HIA pmax pmax
comp=Z,21nm,0.7s
HIA MLR MLR
comp=Z,3µm,19.0s
HIA Hailar 41.78 335 *e*P **P** **16 42 30.1 -0.8**
comp=Z,21nm,0.7s
HIA LR LR
comp=Z,3µm,19.0s
JCJI Jatiwangi 41.79 244 P **P** **16 42 35.7 +4.3**
comp=Z,405nm,0.5s,comp=Z,7µm
KMI Kunming 41.92 293 P **P** **16 42 31.8 -0.8**
KMI pP sP 16 42 43.0 -1.3
KMI sP pP 16 42 47.6 +6.6
KMI PP **PP** **16 44 10.3 +0.5**
KMI S **S** **16 48 42.4 -7.2**
KMI sS sS 16 49 01.6 -1.8
KMI pmax pmax
comp=Z,550nm,8.8s
KMI LR LR
comp=Z,530nm,19.0s
KMI LR LR
comp=Z,3µm,20.8s
KMI LR LR
comp=Z,3µm,21.4s
CD2 Chengdu 42.22 302 P **P** **16 42 32.5 -2.3**
CD2 PP **PP** **16 44 10.8 -2.0**
CD2 PcS **PcS** **16 48 18.3 -2.3**
CD2 S **S** **16 48 53.8 +0.2**
CD2 sS sS 16 49 01.3 -6.1
CD2 pmax pmax
comp=Z,40nm,0.7s
CD2 pmax pmax
comp=Z,950nm,6.3s
CD2 LR LR
comp=Z,3µm,19.4s
CD2 LR LR
comp=Z,3µm,20.4s

CD2 LR LR
comp=Z,3µm,20.4s
MBWA Marble Bar 42.45 217 *e*P **P** **16 42 34.1 -2.6**
comp=Z,67nm,1.4s
MBWA LR LR
comp=Z,1µm,20.0s
KTGM Kuala Trenggan 42.45 263⇑ P **P** **16 42 38.0 +1.1**
CISI Cisompet, Garu 42.69 243 P **P** **16 42 40.1 +1.3**
comp=Z,93nm,0.6s
CISI Cisompet, Garu 42.69 243 *e*P **P** **16 42 35.7 -3.0**
comp=Z,141nm,1.1s
MYKOM Kota Tinggi 42.70 258⇓ P **P** **16 42 40.0 +1.1**
MYKOM Kota Tinggi 42.70 258 *e*P **P** **16 42 39.2 +0.4**
comp=Z,42nm,0.8s
PBKT Sadao Pong 43.08 280 P **P** **16 42 42.9 +1.0**
comp=Z,58nm,1.0s
KGM Kluang 43.14 259⇓ P **P** **16 42 43.2 +0.7**
DBJI Dramaga 43.16 245 P **P** **16 42 44.8 +2.3**
comp=Z,97nm,1.4s
UTTA Uttaradit 43.45 282 P **P** **16 42 46.9 +2.0**
comp=Z,5.7nm,0.9s,comp=Z,61nm
JOHN Johnston Islan 43.56 80 PFAKE 16 43 00.0 +14
JOHN LR LR
comp=Z,115nm,21.0s
ARMA Armidale 43.72 172 *e*P **P** **16 42 43.0 -3.9**
LZH Lanzhou 43.74 309 *e*P **P** **16 42 47.5 +0.3**
LZH pP pP 16 42 52.8 -2.8
LZH sP sP 16 42 55.6 -3.4
LZH PP **PP** **16 44 31.1 +1.8**
LZH S **S** **16 49 17.0 +0.8**
LZH sS sS 16 49 25.0 -5.0
LZH pmax pmax
comp=Z,35nm,1.2s
LZH pmax pmax
comp=Z,180nm,5.4s
LZH LR LR
comp=Z,1µm,12.0s
LZH LR LR
comp=Z,2µm,13.7s
LZH LR LR
comp=Z,3µm,16.8s
CGJI Cibinong 44.12 246 P **P** **16 42 48.5 -1.8**
KLI Kotabumi 44.12 249 P **P** **16 42 52.1 +1.8**
comp=Z,108nm,0.9s,comp=Z,2µm
KLSI 44.17 249 P **P** **16 42 50.5 -0.2**
comp=Z,60nm,0.8s,comp=Z,2µm
LAMP Lampang 44.33 283 P **P** **16 42 53.0 +1.1**
comp=Z,6.9nm,0.6s,comp=Z,81nm
SUKH Sukhothai 44.34 282 P **P** **16 42 55.4 +3.4**
comp=Z,4.8nm,0.8s,comp=Z,56nm
FRIM Kepong 44.43 261⇑ P **P** **16 42 54.0 +1.2**
MSVF Nonsavu 44.45 133⇓ *e*P **P** **16 42 53.9 +0.9**
MSVF pmax pmax
comp=Z,107nm,1.3s
MSVF MLR MLR
comp=Z,4µm,17.0s
MSVF Nonsavu 44.45 133 *e*P **P** **16 42 53.4 +0.4**
comp=Z,84nm,1.3s
MSVF LR LR
comp=Z,3µm,20.0s
IPM Ipoh 44.69 263 P **P** **16 42 51.1 -3.8**
comp=Z,37nm,1.2s
IPM *e*PcP **PcP** **16 44 36.6 -0.7**
KASI Kota Agung 44.72 248 P **P** **16 42 56.4 +1.3**
comp=Z,74nm,0.9s
KULM Kulim 44.86 264 *e*P **P** **16 42 52.8 -3.5**
comp=Z,112nm,1.6s
KULM LR LR
comp=Z,4µm,20.0s
CMAI Chiengmai2 44.90 285 P **P** **16 42 57.4 +0.7**
comp=Z,152nm,1.5s
LWLI Liwa 44.91 249 P **P** **16 42 56.6 -0.2**
comp=Z,312nm,0.7s,comp=Z,3µm
STKA Stephens Creek 44.93 185 P **P** **16 42 54.9 -1.5**
comp=Z,7.2nm,0.8s,baz=352,slow=9.2,SNR=16
STKA LR LR 17 03 56.1
comp=Z,2µm,18.6s,baz=4.7,slow=39
LHSI Lahat 44.93 251 P **P** **16 42 57.1 +0.3**
comp=Z,143nm,1.1s,comp=Z,3µm
CM01 Chiang Mai Arr 44.97 283 *e*P **P** **16 42 57.1 0.0**
CMMT Chiang Mai 44.98 283 P **P** **16 42 58.7 +1.6**
comp=Z,46nm,0.9s,comp=Z,501nm
CHTO Chiang Mai 44.98 283 P **P** **16 42 59.2 +2.0**
comp=Z,36nm,1.6s,comp=Z,2µm
CHTO Chiang Mai 44.98 283 *e*P **P** **16 42 55.8 -1.4**
CHTO *e* 16 44 39.2
CHTO pmax pmax
comp=Z,77nm,2.0s
CHTO MLR MLR
comp=Z,3µm,20.0s
CHTO Chiang Mai 44.98 283 *e*P **P** **16 42 55.8 -1.4**
comp=Z,77nm,2.0s
CHTO *e*PcP **PcP** **16 44 39.2 +1.0**
CHTO LR LR
comp=Z,3µm,20.0s
CM31 Chiang Mai Arr 44.98 283 *e*P **P** **16 42 56.7 -0.5**
CMAR Chiang Mai Arr 44.98 283 P **P** **16 42 56.8 -0.4**
comp=Z,11nm,0.5s,baz=81,slow=6.8,SNR=63
CMAR PcP **PcP** **16 44 38.9 +0.7**
comp=Z,4.2nm,0.5s,baz=92,slow=1.9,SNR=7.6
CMAR Chiang Mai Arr 44.98 283*c e*P **P** **16 42 56.7 -0.4**
CMAR pmax pmax
comp=Z,12nm,0.5s
UMPA Umpang Tak 45.12 280 P P 16 43 09.8 +12
MNAI Manna 45.66 250 P **P** **16 43 04.5 +1.9**
comp=Z,438nm,1.0s
MNAI Manna 45.66 250 *e*P **P** **16 43 00.8 -1.8**
comp=Z,885nm,1.4s
KSI Kapahiang 45.72 252 P **P** **16 43 02.9 -0.2**
comp=Z,171nm,0.9s,comp=Z,3µm
XMIS Christmas Isla 45.97 241 *e*P **P** **16 43 03.5 -1.5**
comp=Z,118nm,0.8s
MA2 Magadan 46.51 4 P **P** **16 43 08.4 -0.2**
comp=Z,18nm,0.8s,baz=166,slow=6.5,SNR=10
MA2 Magadan 46.51 4 *e*P **P** **16 43 08.9 +0.3**
MA2 pmax pmax
comp=Z,156nm,0.8s
MA2 MLR MLR
comp=Z,2µm,22.0s
MA2 Magadan 46.51 4 *e*P **P** **16 43 08.9 +0.3**
comp=Z,156nm,0.8s
MA2 LR LR
comp=Z,2µm,22.0s
PDSI Padang 46.76 256 P **P** **16 43 11.5 +0.2**
comp=Z,28nm,0.8s
FORT Forrest 46.78 201 *e*P **P** **16 43 08.5 -2.5**
comp=Z,407nm,1.0s
MNSI Mandailing Nat 47.07 259 P **P** **16 43 15.5 +1.8**
comp=Z,25nm,0.9s
PSI Prapat 47.14 262 *e*P **P** **16 43 13.5 -0.9**
PSI pmax pmax
comp=Z,17nm,0.9s
PSI Prapat 47.14 262 *e*P **P** **16 43 13.5 -0.9**
comp=Z,17nm,0.9s
SONM Songino Array 47.42 325 P **P** **16 43 16.4 +0.3**
comp=Z,3.1nm,0.4s,baz=132,slow=7.5,SNR=22
SONM PcP **PcP** **16 44 46.8 +0.5**
comp=Z,5.2nm,0.5s,baz=151,slow=3.1,SNR=7.6
SONM LR LR 17 03 11.3
comp=Z,4µm,19.7s,baz=117,slow=36
SONA1 Songino Array 47.42 325 *e*P **P** **16 43 15.9 -0.3**
GTA Gaotai 47.90 312 *e*P **P** **16 43 18.8 -1.1**
GTA pP pP 16 43 23.4 -5.0
GTA PcP **PcP** **16 44 49.3 +1.1**
GTA ScP **ScP** **16 48 41.4 +0.5**
GTA S **S** **16 50 14.8 -1.0**
GTA sS sS 16 50 23.9 -5.8
GTA ScS **ScS** **16 53 12.8 +1.0**
GTA SS **SS** **16 53 38.9 -5.7**
GTA pmax pmax
comp=Z,610nm,7.4s
GTA LR LR
comp=Z,2µm,17.1s
GTA LR LR
comp=Z,2µm,20.9s
GTA LR LR
comp=Z,2µm,19.5s
KCSI Kotacane, Aceh 48.07 263 P **P** **16 43 22.0 +0.5**
comp=Z,47nm,1.0s,comp=Z,5µm
CAN Canberra 48.32 176 PFAKE 16 43 30.0 +7.0
CAN LR LR
comp=Z,2µm,20.0s
GSI Gunungsitoli 48.84 260 P **P** **16 43 28.2 +0.8**
comp=Z,66nm,1.0s
GSI Gunungsitoli 48.84 260 *e*P **P** **16 43 25.3 -2.2**
comp=Z,86nm,1.2s

SEY **Seymchan** 49.95 4 P **P** 16 43 33.8 -1.3
comp=Z,7.0nm,0.6s,baz=170,slow=6.8,SNR=21
SEY **Seymchan** 49.95 4⇓ *e*P **P** 16 43 34.3 -0.8
YAK **Yakutsk** 50.11 350 P **P** 16 43 34.7 -1.6
comp=Z,42nm,0.6s,baz=358,slow=0.2,SNR=18
YAK **Yakutsk** 50.11 350 *e*P **P** 16 43 35.2 -1.1
YAK *e**PP **sP** 16 43 46.4 -1.7
YAK *e* 16 44 54.1
YAK *e* 16 45 30.2
YAK *e*PPP PPP 16 46 25.1
YAK *e*S **S** 16 50 44.5 -1.3
YAK *e**SS **sS** 16 51 04.0 +4.2
YAK *e* 16 53 20.4
YAK *e*SS **SS** 16 54 19.8 +0.7
YAK pmax pmax
comp=Z,16nm,0.9s
YAK pmax pmax
comp=Z,228nm,6.1s
YAK pmax pmax
comp=N,91nm,5.2s
YAK pmax pmax
comp=E,58nm,5.3s
YAK smax smax
comp=N,49nm,1.9s
YAK smax smax
comp=E,62nm,2.2s
YAK **Yakutsk** 50.11 350 *e*P **P** 16 43 34.1 -2.2
comp=E,60nm,0.7s
YAK LR LR
comp=Z,2µm,20.0s
AFI **Afiamalu** 50.17 121 PFAKE 16 43 50.0 +12
AFI LR LR
comp=Z,4µm,19.0s
ZAK **Zakamensk** 50.52 326 *e*P **P** 16 43 38.8 -1.0
ZAK *e* 16 44 57.9
ZAK pmax pmax
comp=Z,13nm,1.4s
ZAK pmax pmax
comp=Z,20nm,1.6s
BOD **Bodaibo** 50.53 339 *e*P **P** 16 43 38.8 -0.8
BOD pmax pmax
comp=Z,28nm,1.3s
IRK **Irkutsk** 51.02 329 *e*P **P** 16 43 42.8 -0.6
IRK *e*S **S** 16 50 59.0 +0.1
IRK pmax pmax
comp=Z,59nm,2.6s
TLY **Talaya** 51.03 328 P **P** 16 43 44.0 +0.5
comp=Z,2.2nm,0.6s,baz=158,slow=6.1,SNR=5.2
TLY **Talaya** 51.03 328*c* *i*P **P** 16 43 42.9 -0.6
TLY *e* 16 45 40.9
TLY *e*PPP PPP 16 46 44.2
TLY *e*S **S** 16 50 55.2 -3.9
TLY *e*SS **ScS** 16 53 33.3 +1.1
TLY pmax pmax
comp=Z,15nm,0.9s
TLY MLR MLR
comp=Z,2µm,18.0s
TLY **Talaya** 51.03 328 *e*P **P** 16 43 43.5 -0.1
comp=Z,17nm,0.8s
TLY LR LR
comp=Z,2µm,19.0s
SHL **Shillong** 51.73 292 *e*P **P** 16 43 50.0 +0.6
MOY **Mondy** 52.42 327 *e*P **P** 16 43 55.5 +1.5
LSA **Lhasa** 52.71 297 P **P** 16 43 58.0 +1.0
LSA pP **sP** 16 44 08.3 -0.5
LSA PP **PP** 16 45 56.8 +0.5
LSA S **S** 16 51 24.8 +1.1
LSA LR LR
comp=Z,670nm,27.8s
LSA LR LR
comp=Z,640nm,27.8s
LSA LR LR
comp=Z,2µm,31.2s
LSA **Lhasa** 52.71 297 *e*P **P** 16 43 57.0 0.0
LSA pmax pmax
comp=Z,18nm,0.8s
LSA MLR MLR
comp=Z,2µm,22.0s
LSA **Lhasa** 52.71 297 *e*P **P** 16 43 57.0 0.0
comp=Z,18nm,0.8s
LSA LR LR
comp=Z,2µm,22.0s
NWAO **Narrogin (SRO)** 53.17 210 *e*P **P** 16 43 58.5 -1.1
NWAO pmax pmax
comp=Z,20nm,0.9s
NWAO **Narrogin (SRO)** 53.17 210 *e*P **P** 16 43 58.5 -1.1
comp=Z,20nm,0.9s
NWAO LR LR
comp=Z,2µm,20.0s
KIP **Kipapa** 54.35 73 PFAKE 16 44 20.0 +11
KIP LR LR
comp=Z,5µm,20.0s
RAO **Raoul Island** 55.02 140 LR LR 17 06 08.6
comp=Z,3µm,19.0s,baz=323,slow=34
UNV **Unalaska Valle** 55.38 32 *e*P **P** 16 44 16.3 +0.9
comp=Z,104nm,1.2s
BILL **Bilibino** 56.49 9 *e*P **P** 16 44 24.5 +1.3
BILL pmax pmax
comp=Z,28nm,0.8s
BILL MLR MLR
comp=Z,2µm,22.0s
BILL **Bilibino** 56.49 9 *e*P **P** 16 44 24.5 +1.3
comp=Z,28nm,0.8s
BILL LR LR
comp=Z,2µm,22.0s
POHA **Pohakuloa** 56.74 75 PFAKE 16 44 40.0 +14
POHA LR LR
comp=Z,3µm,22.0s
GUN **Gumba** 57.20 295 *e*P **P** 16 44 29.2 -0.1
comp=Z,86nm,0.7s
PKIN **Phulchoki** 57.62 294 *e*P **P** 16 44 32.2 0.0
comp=Z,15nm,0.5s
KKN **Kakani** 57.73 295 *e*P **P** 16 44 32.6 -0.3
comp=Z,6.5nm,0.3s
GKN **Gorkha** 58.30 295 *e*P **P** 16 44 36.4 -0.5
comp=Z,31nm,0.6s
URZ **Urewera** 59.11 151 P **P** 16 44 39.5 -2.4
comp=Z,14nm,0.5s,baz=71,slow=4.3,SNR=15
URZ LR LR 17 08 49.2
comp=Z,2µm,19.0s,baz=336,slow=35
URZ **Urewera** 59.11 151 *e*P **P** 16 44 42.5 +0.6
comp=Z,104nm,1.6s
SDPT **Sand Point** 59.19 33 P **P** 16 44 43.0 +0.8
comp=Z,139nm,0.7s
KOLN **Koldanda** 59.22 295 *e*P **P** 16 44 43.0 -0.3
comp=Z,22nm,0.5s
TIXI **Tiksi** 59.33 354 P **P** 16 44 41.6 -1.3
comp=Z,2.8nm,0.3s,baz=124,slow=5.2,SNR=9.5
TIXI **Tiksi** 59.33 354⇓ *i*P **P** 16 44 41.6 -1.3
TIXI pmax pmax
comp=Z,6.0nm,1.4s
TIXI MLR MLR
comp=Z,1µm,17.0s
TIXI **Tiksi** 59.33 354 *e*P **P** 16 44 42.0 -0.9
comp=Z,7.8nm,0.8s
TIXI LR LR
comp=Z,1µm,19.0s
PYUN **Piuthan** 59.76 295 *e*P **P** 16 44 46.0 -1.0
SNZO **South Karori** 60.55 155 PFAKE 16 45 00.0 +8.3
SNZO LR LR
comp=Z,5µm,20.0s
RPZ **Rata Peaks** 61.23 159 P **P** 16 44 55.6 -0.8
comp=Z,16nm,0.7s,baz=290,slow=16,SNR=7.7
MK01 **Makanchi Array** 62.20 316 *e*P **P** 16 45 03.1 +0.1
MK31 **Makanchi Array** 62.21 316 *e*P **P** 16 45 02.9 -0.2
MK31 pmax pmax
comp=Z,4.0nm,0.5s
MK31 **Makanchi Array** 62.21 316 *e*P **P** 16 45 03.3 +0.2
MKAR **Makanchi Array** 62.21 316 P **P** 16 45 03.4 +0.3
comp=Z,7.2nm,0.7s,baz=91,slow=8.4,SNR=73
MKAR LR LR 17 13 27.0
comp=Z,2µm,18.5s,baz=98,slow=37
MKAR PKP2bc 17 14 16.0
comp=Z,0.2nm,0.3s,baz=273,slow=3.0,SNR=4.1
ZAA0 **Zalesovo Array** 62.31 324 *e*P **P** 16 45 03.2 -0.4
ZALV **Zalesovo Beam** 62.31 324 P **P** 16 45 03.1 -0.5
comp=Z,1.2nm,0.3s,baz=111,slow=6.2,SNR=12
ZALV PcP **PcP** 16 45 43.6 +0.4
comp=Z,7.2nm,0.5s,baz=119,slow=4.6,SNR=6.9
ZALV LR LR 17 12 44.8
comp=Z,2µm,19.7s,baz=74,slow=37
ZALV PKP2bc 17 14 16.9
comp=Z,0.9nm,0.7s,baz=305,slow=5.1,SNR=6.1
MAKZ **Makanchi** 62.42 316 *e*P **P** 16 45 04.5 0.0
MAKZ pmax pmax
comp=Z,20nm,0.8s
MAKZ **Makanchi** 62.42 316⇑ *e*P **P** 16 45 04.5 0.0
comp=Z,20nm,0.8s
NVS **Novosibirsk** 63.45 325⇑ *i*P **P** 16 45 11.7 +0.6
NVS *e* 16 47 34.8
NVS *i*S **S** 16 53 40.7 -1.6
NVS *e* 16 55 02.9
NVS pmax pmax
comp=Z,60nm,1.8s
NVS pmax pmax
comp=N,18nm,1.7s
NVS pmax pmax
comp=E,43nm,1.7s
NVS pmax pmax
comp=Z,19nm,1.4s
NVS pmax pmax
comp=N,6.0nm,1.1s
NVS pmax pmax
comp=E,20nm,1.3s
NVS smax smax
comp=N,24nm,2.5s
NVS smax smax
comp=E,35nm,2.7s
OHAK **Old Harbor** 63.60 32 *e*P **P** 16 45 12.8 +0.7
comp=E,69nm,1.2s
PDGK **Podgornoye** 63.65 312 P **P** 16 45 12.5 -0.1
PDGK pmax pmax
comp=Z,20nm,1.3s
RAR **Rarotonga** 63.70 122 LR LR 17 09 28.3
comp=Z,2µm,18.8s,baz=302,slow=33
RAR **Rarotonga** 63.70 122 PFAKE 16 45 30.0 +17
RAR LR LR
comp=Z,21µm,19.0s
SVW2 **Sparrevohn** 63.79 28 *e*P **P** 16 45 14.9 +1.6
comp=Z,29nm,1.1s
KDAK **Kodiak Island** 64.13 32 *i*P **P** 16 45 17.1 +1.6
KDAK **Kodiak Island** 64.13 32 *e*P **P** 16 45 16.3 +0.8
comp=Z,92nm,1.1s
KDAK LR LR
comp=Z,1µm,20.0s
TT01 **Tatalina** 64.28 26 *e*P **P** 16 45 16.6 +0.2
HYB **Hyderabad** 64.41 283 *i*P **P** 16 45 18.0 -0.2
KURK **Kurchatov** 65.29 320 P **P** 16 45 22.8 -0.5
KURK **Kurchatov** 65.29 320 P **P** 16 45 22.8 -0.5
KURK ⇑*e* 17 14 06.4
CNPM **China Poot** 65.31 30 *e*P **P** 16 45 24.0 +0.7
comp=Z,53nm,0.7s
KURBB **Kurchatov Arra** 65.33 320 P **P** 16 45 22.8 -0.8
comp=Z,13nm,0.4s,baz=104,slow=6.7,SNR=132
KURBB PKP2bc 17 14 06.4
comp=Z,0.9nm,0.9s,baz=288,slow=3.3,SNR=6.1
PPLA **Purkeypile** 65.92 26 *e*P **P** 16 45 28.2 +0.9
comp=Z,27nm,0.7s
PPLA *e*PP **PP** 16 47 51.5 -0.9
KSH **Kashi** 65.97 308 *e*P **P** 16 45 30.8 +2.7
KSH *e*PP **PP** 16 47 58.3 +4.9
KSH PcS 16 50 03.1
KSH S **S** 16 54 17.8 +3.6
KSH ScS **SKSac** 16 55 22.4 -0.1
KSH pmax pmax
comp=Z,290nm,5.8s
KSH LR LR
comp=Z,920nm,15.7s
KSH LR LR
comp=Z,2µm,20.3s
KSH LR LR
comp=Z,2µm,18.3s
CAST **Castle Rocks** 66.13 26 *e*P **P** 16 45 29.0 +0.5
comp=Z,51nm,0.8s
SEW **Seward** 66.34 30 *e*P **P** 16 45 30.1 +0.3
comp=Z,48nm,0.7s
TKM2 **Tokmak 2** 66.44 311 P **P** 16 45 29.1 -2.0
TKM2 pmax pmax
comp=Z,17nm,1.4s
KTH **Kantishna Hill** 66.67 26 *e*P **P** 16 45 32.0 -0.1
comp=Z,61nm,1.0s
NRIK **Noril'sk** 66.73 341 P **P** 16 45 31.9 -0.3
comp=Z,26nm,0.8s,baz=124,slow=7.9,SNR=7.8
NRIK LR LR 17 13 52.0
comp=Z,2µm,20.8s,baz=118,slow=35
BPAW **Bear Paw Mtn.** 66.82 25 *e*P **P** 16 45 32.9 0.0
comp=Z,44nm,1.0s
PMR **Palmer** 66.89 28 *e*P **P** 16 45 32.1 -1.2
PMR pmax pmax
comp=Z,31nm,0.6s
PMR **Palmer** 66.89 28 *e*P **P** 16 45 32.1 -1.2
comp=Z,31nm,0.6s
TRF **Thorofare Moun** 66.91 26 *e*P **P** 16 45 33.3 -0.4
comp=Z,53nm,1.1s
FRU **Bishkek** 67.16 311 *e*P **P** 16 45 34.0 -1.5
FRU *e* 16 45 49.0
FRU pmax pmax
comp=Z,52nm,2.3s
FRU pmax pmax
comp=E,2µm,17.0s
MLY **Manley** 67.21 24 *e*P **P** 16 45 35.6 +0.1
comp=E,30nm,0.9s
AAK **Ala-Archa** 67.23 311 P **P** 16 45 35.9 -0.2
comp=E,1.3nm,0.3s,baz=94,slow=5.8,SNR=4.1
AAK **Ala-Archa** 67.23 311*c* *i*P **P** 16 45 35.9 -0.2
AAK pmax pmax
comp=Z,20nm,1.9s
AAK MLR MLR
comp=Z,6µm,19.0s
AAK **Ala-Archa** 67.23 311 P **P** 16 45 35.9 -0.2
AAK LR LR
comp=Z,2µm,19.0s
SML **Sawmill** 67.31 28 *e*P **P** 16 45 36.2 +0.1
SML pmax pmax
comp=Z,77nm,1.0s
SML **Sawmill** 67.31 28 *e*P **P** 16 45 36.2 +0.1
comp=Z,77nm,1.0s
RND **Reindeer** 67.51 26 *e*P **P** 16 45 37.8 +0.4
RND pmax pmax
comp=Z,32nm,1.0s
RND **Reindeer** 67.51 26 *e*P **P** 16 45 37.8 +0.4
comp=Z,32nm,1.0s
MCK **McKinley** 67.57 26 *e*P **P** 16 45 37.5 -0.2
MCK pmax pmax
comp=Z,27nm,1.0s
MCK **McKinley** 67.57 26 *e*P **P** 16 45 37.5 -0.2
comp=Z,27nm,1.0s
SCM **Sheep Creek Mo** 67.78 28 *e*P **P** 16 45 39.5 +0.4
SCM pmax pmax
comp=Z,95nm,1.0s
SCM **Sheep Creek Mo** 67.78 28 *e*P **P** 16 45 39.5 +0.4
comp=Z,95nm,1.0s
FID **Port Fidalgo** 67.93 29 *e*P **P** 16 45 40.5 +0.5
comp=Z,34nm,0.8s
DHY **Denali Highway** 68.07 27 *e*P **P** 16 45 41.4 +0.4
comp=Z,16nm,0.8s
COLD **Coldfoot** 68.13 22 *e*P **P** 16 45 41.2 +0.1
comp=Z,26nm,0.8s
WRH **Wood River Hil** 68.13 25 *e*P **P** 16 45 40.3 -0.9
comp=Z,56nm,1.1s
MDM **Murphy Dome** 68.21 25 *e*P **P** 16 45 42.5 +0.8
comp=Z,25nm,0.9s
EYAK **Cordova Ski Ar** 68.24 30 *e*P **P** 16 45 42.3 +0.4
comp=Z,148nm,1.9s
CCB **Clear Creek Bu** 68.30 25 *e*P **P** 16 45 41.3 -0.8
comp=Z,35nm,1.2s
COLA **College** 68.34 25 *e*P **P** 16 45 42.4 0.0
COLA pmax pmax
comp=Z,16nm,0.8s
COLA MLR MLR
comp=Z,2µm,20.0s
COLA **College** 68.34 25 *e*P **P** 16 45 42.4 0.0
comp=Z,16nm,0.8s
COLA LR LR
comp=Z,2µm,20.0s
DIV **Divide** 68.35 29 *e*P **P** 16 45 42.9 +0.3
comp=Z,31nm,0.8s
KLU **Klutina** 68.36 29 *e*P **P** 16 45 42.8 +0.1
comp=Z,29nm,0.8s
HDA **Harding Lake** 68.59 26 *e*P **P** 16 45 44.0 -0.1
comp=Z,129nm,1.5s
IL1 **Eielson Array** 68.71 25 *e*P **P** 16 45 43.1 -1.7
ILAR **Eielson Array** 68.71 25 P **P** 16 45 43.0 -1.8
comp=Z,6.5nm,0.4s,baz=251,slow=5.3,SNR=89
ILB **Eielson Array** 68.71 25 *e*P **P** 16 45 43.6 -1.1
BMRM **Bremner River** 68.87 29 *e*P **P** 16 45 45.8 -0.2
comp=Z,46nm,0.9s
PAX **Paxson** 68.89 27 *e*P **P** 16 45 45.9 -0.1
PAX pmax pmax
comp=Z,27nm,0.8s
PAX **Paxson** 68.89 27 *e*P **P** 16 45 45.9 -0.1
comp=Z,27nm,0.8s
OTUK **Ortayu** 69.08 317 P **P** 16 45 47.4 0.0
OTUK pmax pmax
comp=Z,17nm,0.9s
CRQM **Cirque** 69.54 30 *e*P **P** 16 45 51.0 +0.8
comp=Z,42nm,0.7s
DOT **Dot Lake** 69.66 27 *e*P **P** 16 45 50.7 0.0
comp=Z,119nm,0.9s
MENT **Mentasta** 69.67 27 *e*P **P** 16 45 51.4 +0.6
comp=Z,19nm,0.7s
FYU **Fort Yukon** 69.82 23 *e*P **P** 16 45 53.2 +1.6
comp=Z,211nm,1.5s
BALM **Baldy** 69.97 30 *e*P **P** 16 45 52.7 -0.1
BALM pmax pmax
comp=Z,18nm,0.8s
BALM **Baldy** 69.97 30 *e*P **P** 16 45 52.7 -0.1
comp=Z,18nm,0.8s
KK31 **Karatay Array** 70.17 311 *e*P **P** 16 45 54.3 0.0
KK31 pmax pmax
comp=Z,5.0nm,0.7s
KKAR **Karatay Array** 70.17 311 *e*P **P** 16 45 54.6 +0.3
KKAR pmax pmax
comp=Z,12nm,0.9s
KKAR **Karatay Array** 70.17 311 *e*P **P** 16 45 54.6 +0.3
comp=Z,12nm,0.9s
VOSK **Vostochnaya** 70.25 321 P **P** 16 45 53.5 -1.0
VOSK pmax pmax
comp=Z,8.0nm,0.6s
VOSK **Vostochnaya** 70.25 321 *e*P **P** 16 45 53.5 -1.0
comp=Z,16nm,1.1s
BVA0 **Borovoye Array** 70.63 322 P **P** 16 45 56.1 -0.7
BVA0 pmax pmax
comp=Z,18nm,0.5s
BVAR **Borovoye Array** 70.63 322 P **P** 16 45 56.1 -0.7
comp=Z,19nm,0.5s,baz=108,slow=7.8,SNR=70
BRVK **Borovoye** 70.69 322 P **P** 16 45 56.8 -0.4
BRVK pmax pmax
comp=Z,18nm,0.5s
BRVK **Borovoye** 70.69 322 *e*P **P** 16 45 56.7 -0.5
comp=Z,29nm,0.6s
BRVK LR LR
comp=Z,3µm,19.0s
PCA **Pinnacle** 70.86 31 *e*P **P** 16 45 58.7 +0.6
comp=Z,34nm,0.8s
PPT **Papeete** 71.00 114 LR LR 17 13 12.4
comp=Z,2µm,18.8s,baz=256,slow=33
PPT2 **Papeete2** 71.01 114 *e*S **S** 16 55 19.3 +4.7
comp=Z,3µm,26.0s
PPT2 **Papeete2** 71.01 114 *e*LR LR 17 07 23.9
comp=Z,5µm,27.0s,baz=297
EGAK **Eagle** 71.11 26 *e*P **P** 16 45 59.9 +0.4
comp=Z,70nm,1.4s
EGAK LR LR
comp=Z,1µm,20.0s
DAWY **Dawson** 71.77 27 *e*P **P** 16 46 04.5 +0.9
comp=Z,53nm,1.3s
HYT **Haines Junctio** 72.29 30 *e*P **P** 16 46 08.1 +1.3
comp=Z,45nm,1.0s
TBI **Tubuai** 73.25 119 *e*S **S** 16 55 40.0 +0.1
comp=Z,2µm,29.8s
TBI **Tubuai** 73.25 119 *e*LR LR 17 08 16.6
comp=Z,3µm,31.5s,baz=299
SKAG **Skagway** 73.29 32 *e*P **P** 16 46 14.6 +2.0
comp=Z,32nm,1.0s
INK **Inuvik** 74.55 22 P **P** 16 46 19.1 -0.7
comp=Z,16nm,0.8s,baz=285,slow=4.8,SNR=23
INK **Inuvik** 74.55 22 *e*P **P** 16 46 19.4 -0.4
INK pmax pmax
comp=Z,45nm,1.0s
INK **Inuvik** 74.55 22 *e*P **P** 16 46 19.4 -0.4
comp=Z,45nm,0.9s
WRAK **Wrangell Islan** 74.84 35 *e*P **P** 16 46 20.7 -1.0
comp=Z,68nm,1.2s
WRAK LR LR
comp=Z,2µm,19.0s
DGAR **Diego Garcia** 75.33 259 PFAKE 16 46 40.0 +15
DGAR LR LR
comp=Z,2µm,21.0s
DLBC **Dease Lake** 76.03 33 *e*P **P** 16 46 29.2 +0.5
comp=Z,61nm,1.1s
SVE **Sverdlovsk** 76.28 326*de*P **P** 16 46 28.8 -1.2
SVE *e*S **S** 16 56 13.3 +0.5
SVE pmax pmax
comp=Z,32nm,1.1s
SVE MLR MLR
comp=Z,2µm,18.0s
SVE MLR MLR
comp=E,2µm,18.0s
TAOE **Nuku Hiva Isla** 77.02 102 *e*LR LR 17 10 01.8
comp=E,2µm,21.5s,baz=286
AB31 **Akbulak array** 77.25 318 *i*P **P** 16 46 35.0 -0.7
AB31 pmax pmax
comp=Z,11nm,0.5s
ABKAR **Akbulak array** 77.25 318 *e*P **P** 16 46 34.8 -0.9
ARU **Arti** 77.45 325 P **P** 16 46 35.4 -1.2
comp=Z,15nm,0.6s,baz=91,slow=5.1,SNR=30
ARU **Arti** 77.45 325*c* *i*P **P** 16 46 35.8 -0.8
ARU 16 49 26.3
ARU S **S** 16 56 27.2 +1.6
ARU SS **SS** 17 01 17.5 -6.8
ARU pmax pmax
comp=Z,41nm,1.7s
ARU MLR MLR
comp=Z,2µm,18.0s
ARU **Arti** 77.45 325 *e*P **P** 16 46 36.5 -0.1
comp=Z,16nm,0.6s
ARU LR LR
comp=Z,2µm,19.0s
SOKR **Solikamsk** 78.11 329⇑ *i*P P 16 46 49.9 +10
SOKR S **S** 16 56 34.3 +1.9
SOKR SS **SS** 17 01 39.6 +5.7
SOKR pmax pmax
comp=Z,16nm,0.8s
SOKR MLR MLR
comp=Z,2µm,19.0s
AKTO **Aktyubinsk** 78.37 319 P **P** 16 46 41.4 -0.5
comp=Z,2.7nm,0.6s,baz=95,slow=5.1,SNR=10
GEYT **Alibeck** 79.98 307 P **P** 16 46 51.9 +0.9
comp=Z,2.9nm,0.5s,baz=39,slow=0.9,SNR=9.6
NLWA **Neilton Lookou** 80.90 43 *e*P **P** 16 46 55.8 +0.1
comp=Z,28nm,1.0s
NLWA LR LR
comp=Z,688nm,20.0s
PGC **Sidney** 80.97 42 *e*P **P** 16 46 57.6 +1.6
comp=Z,33nm,1.1s
A04D **Lummi Island** 81.44 42 P **P** 16 46 59.1 +0.6
baz=280
LLLB **Lillooet** 81.63 40 *e*P **P** 16 47 02.5 +2.9
I03D **Drain, OR** 81.89 47 P **P** 16 47 01.3 +0.3
baz=280
B05A **Bryant** 81.92 42 P **P** 16 47 01.5 +0.5
baz=281
L02D **Cave Junction,** 81.98 49 P **P** 16 47 01.5 0.0
baz=281
HUMO **Hull Mountain** 82.37 48 P **P** 16 47 03.7 +0.1
comp=Z,203nm,1.2s
I04A **Tendick Farm,** 82.54 47 P **P** 16 47 04.8 +0.3
baz=281
M02C **Callahan** 82.68 49 P **P** 16 47 05.4 +0.1
baz=281,SNR=7.3
J04D **Umpqua Nationa** 82.86 47 P **P** 16 47 06.2 -0.2
baz=281
N02D **Trinity Center** 82.87 50 P **P** 16 47 06.3 0.0
baz=281
YKA **Yellowknife Ar** 82.98 27 P **P** 16 47 05.1 -1.2
comp=Z,9.7nm,0.6s,baz=284,slow=5.1,SNR=43
YKA **Yellowknife Ar** 82.98 27*ce*P **P** 16 47 05.9 -0.4
YKA pmax pmax
comp=Z,10.0nm,0.6s
WDC **Whiskeytown Da** 83.07 50 *e*P **P** 16 47 10.1 +2.9
WDC pmax pmax
comp=Z,29nm,1.2s
WDC **Whiskeytown Da** 83.07 50 *e*P **P** 16 47 10.1 +2.9
comp=Z,29nm,1.2s
M04C **Macdoel** 83.35 49 P **P** 16 47 09.2 +0.4
baz=282,SNR=12
J05D **Fort Rock, OR** 83.48 47 P **P** 16 47 09.8 +0.3
baz=282
G06A **Carlson Farm,** 83.50 45 *e*P **P** 16 47 12.8 +3.3
comp=Z,21nm,1.3s
O03D **Paynes Creek** 83.68 50 P **P** 16 47 10.9 +0.4
baz=282,SNR=8.4
B08A **Colville Reser** 83.71 42 *e*P **P** 16 47 11.1 +0.7
comp=Z,17nm,0.8s
K05A **Summer Lake** 83.84 48 *e*P **P** 16 47 12.6 +1.1
comp=Z,50nm,1.1s
HAWA **Hanford** 84.01 44 *e*P **P** 16 47 13.0 +1.1
comp=Z,15nm,0.9s
HAWA LR LR

comp=Z,966nm,19.0s
HOPEN Hopen 84.04 348 *e*P P 16 47 11.9 +0.4
HOPEN *e*S S 16 57 36.0 +2.3
HOPEN IAMs_20 IAMs_20 17 25 10.3
comp=Z,1µm,21.0s
ORV Oroville 84.06 51 *e*P P 16 47 13.6 +1.3
ORV pmax pmax
comp=Z,26nm,1.0s
ORV Oroville 84.06 51 *e*P P 16 47 13.6 +1.3
comp=Z,26nm,1.0s
D08A Wollman Farm, 84.27 43 *e*P P 16 47 16.0 +2.8
MOD Modoc Plateau 84.44 48 *e*P P 16 47 15.2 +0.8
comp=Z,24nm,1.0s
C09A Chrisman Ranch 84.53 42 *e*P P 16 47 15.2 +0.6
comp=Z,14nm,0.8s
SPA0 Spitsbergen Ar 84.57 351 *e*P P 16 47 13.7 -0.5
SPA0 IAmb IAmb 16 47 33.0
comp=Z,40nm,1.1s
SPA0 *e*S S 16 57 42.3 +3.2
SPA0 IAMs_20 IAMs_20 17 29 59.4
comp=Z,908nm,17.2s
AFDM Forest Hills D 84.58 51 *e*P P 16 47 16.4 +1.4
comp=Z,29nm,1.2s
G08A Pilot Rock 84.64 45 *e*P P 16 47 17.6 +2.2
comp=Z,24nm,1.4s
KBS Kingsbay 84.71 352 *e*P P 16 47 14.6 -0.3
KBS *e*S S 16 57 43.3 +2.9
KBS IAMs_20 IAMs_20 17 29 26.8
comp=Z,682nm,15.4s
KBS Kingsbay 84.71 352 PFAKE 16 47 30.0 +15
KBS LR LR
comp=Z,587nm,20.0s
NEW Newport 85.17 42 P P 16 47 18.2 +0.4
comp=Z,26nm,0.9s,baz=281,slow=3.9,SNR=20
NEW Newport 85.17 42 P P 16 47 18.0 +0.2
baz=284
NEW Newport 85.17 42 *e*P P 16 47 18.4 +0.6
NEW pmax pmax
comp=Z,26nm,0.9s
NEW Newport 85.17 42 *e*P P 16 47 18.4 +0.6
comp=Z,26nm,0.8s
NEW LR LR
comp=Z,921nm,20.0s
CMB Columbia Colle 85.23 52 *e*P P 16 47 19.0 +0.7
CMB pmax pmax
comp=Z,20nm,1.0s
CMB Columbia Colle 85.23 52 *e*P P 16 47 19.0 +0.7
comp=Z,20nm,1.0s
HSPB Hornsund (broa 85.49 350 *e*P P 16 47 18.0 -0.8
HSPB IAmb IAmb 16 47 31.2
comp=Z,91nm,1.6s
HSPB *e*S S 16 57 46.1 -1.9
HSPB IAMs_20 IAMs_20 17 32 47.7
comp=Z,959nm,20.3s
LVZ Lovozero 85.51 339⇓ *e*P P 16 47 20.5 +1.4
LVZ pmax pmax
comp=Z,42nm,2.1s
LVZ Lovozero 85.51 339 *e*P P 16 47 22.7 +3.6
comp=Z,28nm,1.0s
LVZ LR LR
comp=Z,1µm,19.0s
WVOR Wild Horse Val 85.53 48 *e*P P 16 47 21.2 +1.3
WVOR pmax pmax
comp=Z,84nm,1.9s
WVOR Wild Horse Val 85.53 48 *e*P P 16 47 21.2 +1.3
comp=Z,84nm,1.9s
WVOR LR LR
comp=Z,1µm,20.0s
PAHR Pah Rah Range 85.62 50 *e*P P 16 47 21.7 +1.3
comp=Z,19nm,1.1s
RKT Rikitea 85.74 115 *e*S S 16 57 54.4 +2.0
comp=Z,1µm,28.2s
RKT *e*SS SS 17 03 30.2 +0.4
comp=Z,411nm,26.2s
RKT Rikitea 85.74 115 *e*LR LR 17 13 58.6
comp=Z,2µm,29.0s,baz=290
WAKR Walker 85.85 52 *e*P P 16 47 24.5 +2.8
comp=Z,69nm,1.8s
BMO Blue Mountains 85.89 45 *e*P P 16 47 22.0 +0.5
BMO pmax pmax
comp=Z,67nm,1.5s
BMO Blue Mountains 85.89 45 *e*P P 16 47 22.1 +0.5
comp=Z,67nm,1.5s
BMO LR LR
comp=Z,2µm,21.0s
APA Apatity 86.08 339⇑ *i*P P 16 47 21.5 -0.3
APA pmax pmax
comp=Z,21nm,0.9s
APA MLR MLR
comp=Z,1µm,20.0s
EDM Edmonton 86.16 36 *e*P P 16 47 23.3 +0.7
EDM Edmonton 86.16 36 *e*P P 16 47 23.3 +0.7
KLMR Klimovskoe 86.21 332 *e*P P 16 47 20.3 -2.3
KLMR pmax pmax
comp=Z,29nm,1.5s
PKM Mcpherson Peak 86.40 55 P P 16 47 24.3 -0.1
baz=284
BJO Bjornoya 86.40 347 *e*S S 16 57 55.8 -1.2
BJO IAMs_20 IAMs_20 17 28 11.0
comp=Z,2µm,23.1s
RCTC Rector, Farmer 86.52 54 P P 16 47 23.9 -0.8
baz=284
VES Vestal, Richgr 86.75 54 P P 16 47 25.8 0.0
baz=284
BSMT Bassoo Peak 86.79 42 *e*P P 16 47 26.4 +0.4
WALA Waterton Lakes 87.01 40 *e*P P 16 47 29.2 +2.2
BLMT Blacktail Moun 87.02 41 *e*P P 16 47 28.9 +1.8
BMN Battle Mountai 87.05 49 *e*P P 16 47 28.4 +0.9
BMN pmax pmax
comp=Z,15nm,1.0s
BMN Battle Mountai 87.05 49 *e*P P 16 47 28.4 +0.9
comp=Z,15nm,0.9s
JTMT Jette 87.14 42 *e*P P 16 47 30.3 +2.7
ISA Isabella, Lake 87.28 54 P P 16 47 28.8 +0.3
baz=284
MFID Camas Ranch 87.28 46 *e*P P 16 47 28.9 +0.4
comp=Z,26nm,0.9s
SWMT Swartz Lake 87.39 42 *e*P P 16 47 30.9 +2.0
CWC Cottonwood Cre 87.40 53 P P 16 47 29.1 -0.1
baz=284
HAMF Hammerfest 87.59 344 *e*P P 16 47 28.9 -0.3
comp=Z,1µm,20.8s
HAMF IAmb IAmb 16 47 41.5
comp=Z,30nm,0.8s
HAMF *e*SKSac SKSac 16 57 57.4 +2.5
HAMF IAMs_20 IAMs_20 17 30 14.6
comp=Z,1µm,20.8s
MSO Missoula 87.62 42 P P 16 47 30.2 +0.2
baz=287
ARA0 ARCESS Array S 87.67 342 *e*P P 16 47 29.6 0.0
ARCES ARCESS Array B 87.67 342 P P 16 47 29.4 -0.2
comp=Z,11nm,0.6s,baz=72,slow=9.1,SNR=17
ARE0 ARCESS Array S 87.67 342 *e*P P 16 47 28.4 -1.2
ARE0 IAmb IAmb 16 47 51.4
comp=Z,24nm,0.8s
ARE0 *e*SKSac SKSac 16 57 53.0 -2.5
ARE0 IAMs_20 IAMs_20 17 31 58.4
comp=Z,1µm,18.6s
ARE0 ARCESS Array S 87.67 342 *e*P P 16 47 30.1 +0.4
SLMT Seeley Lake 87.80 42 *e*P P 16 47 31.8 +0.9
GRAC Grapevine Rang 87.81 53 P P 16 47 31.2 +0.2
baz=285,SNR=5.6
DAC Darwin (Calif) 87.82 53 *e*P P 16 47 32.0 +0.7
DAC Darwin (Calif) 87.82 53 *e*P P 16 47 31.9 +0.7
EDW2 Edwards Air Fo 87.85 55 P P 16 47 31.3 0.0
baz=285,SNR=6.9
LRMC Laurel Mtn Rad 87.95 54 P P 16 47 32.0 +0.2
baz=285,SNR=18
MPMC Manual Prospec 87.95 54 P P 16 47 31.9 0.0
baz=285,SNR=31
MWC Mount Wilson 87.96 55 *e*P P 16 47 34.0 +2.0
MWC Mount Wilson 87.96 55 *e*P P 16 47 34.0 +2.0
CHMT Chamberlain Mo 88.05 42 *e*P P 16 47 33.1 +0.9
HLID Hailey 88.23 46 P P 16 47 33.4 +0.4
baz=287
HLID Hailey 88.23 46 *e*P P 16 47 33.8 +0.8
HLID LR LR
comp=Z,1µm,20.0s
VRH Novokhopyorsk 88.27 322 *e*P P 16 47 32.9 +0.1
VRH pmax pmax
comp=Z,70nm,0.8s
BFSC Mount Baldy Ra 88.28 55 P P 16 47 33.7 +0.3
baz=285
FURC Furnace Creek, 88.34 53 P P 16 47 33.9 +0.5
baz=285,SNR=17
GSC Goldstone, Bar 88.69 54 P P 16 47 35.3 0.0
baz=285,SNR=22
GSC Goldstone, Bar 88.69 54 *e*P P 16 47 36.1 +0.8
GSC Goldstone, Bar 88.69 54 *e*P P 16 47 36.1 +0.8
TPNV Topopah Spring 88.69 52 P P 16 47 35.7 +0.4
baz=286,SNR=26
TPNV Topopah Spring 88.69 52 *e*P P 16 47 36.1 +0.8
TPNV Topopah Spring 88.69 52 *e*P P 16 47 36.1 +0.8
R11A Troy Canyon, C 88.82 51 P P 16 47 35.9 0.0
baz=286
R11A Troy Canyon, C 88.82 51 *e*P P 16 47 36.9 +1.0
LRM Limekiln Ridge 88.91 43 *e*P P 16 47 37.3 +1.0
MCMT McKenzie Canyo 88.94 44 *e*P P 16 47 40.2 +3.7
SHOC Shoshone, Teco 88.95 53 P P 16 47 36.6 +0.2
baz=286,SNR=8.4
DLMT Dillon 88.95 44 *e*P P 16 47 38.3 +2.0
MOS Moscow 88.99 327 *e*P P 16 47 32.9 -3.2
MOS *e*S SKSac 16 58 02.4 -1.4
MOS MLR MLR
comp=Z,2µm,18.0s
HRY Holter Researc 89.05 42 *e*P P 16 47 39.6 +2.8
TUQ Turquoise Moun 89.34 54 P P 16 47 38.2 -0.2
baz=286,SNR=7.7
GOF Gofitskoye 89.37 316⇑ *e*P P 16 47 37.5 -0.6
GOF *e*S SKSac 16 58 08.4 +1.8
GOF pmax pmax
comp=Z,64nm,1.5s
PFO Pinyon Flats O 89.40 56 P P 16 47 39.0 +0.3
baz=286,SNR=6.7
PFO Pinyon Flats O 89.40 56 *e*P P 16 47 39.7 +1.0
PFO Pinyon Flats O 89.40 56 *e*P P 16 47 39.7 +1.0
PFO LR LR
comp=Z,2µm,20.0s
TPFO Pinon Flats 89.41 56 P P 16 47 38.9 +0.2
baz=286,SNR=5.2
ZEI Tsey 89.47 314 *e*P P 16 47 36.0 -2.9
ZEI pmax pmax
comp=Z,54nm,0.8s
NCK Nalchik 89.47 315⇓ *e*P P 16 47 38.4 -0.3
NCK pmax pmax
comp=Z,34nm,1.1s
NCK MLR MLR
comp=Z,1µm,18.0s
BAR Barrett 89.48 57 *e*P P 16 47 40.5 +1.5
TRO Tromso 89.50 344 *e*P P 16 47 37.9 -0.3
comp=Z,2µm,17.1s
TRO IAmb IAmb 16 47 50.2
comp=Z,39nm,1.3s
TRO IAMs_20 IAMs_20 17 34 05.6
comp=Z,2µm,17.1s
BOZ Bozeman (W) 89.51 43 P P 16 47 39.0 0.0
baz=288
BOZ Bozeman (W) 89.51 43 *e*P P 16 47 39.8 +0.8
BOZ Bozeman (W) 89.51 43 *e*P P 16 47 39.8 +0.8
BOZ LR LR
comp=Z,739nm,20.0s
MONP2 Monument Peak 89.62 56 P P 16 47 39.4 -0.5
baz=286,SNR=21
GNI Garni 89.64 311⇑ *e*P P 16 47 40.4 +0.7
GNI pmax pmax
comp=Z,86nm,1.7s
GNI MLR MLR
comp=Z,3µm,19.0s
SHPR Sheep Range 89.65 53 *e*P P 16 47 41.2 +1.4
BELC Belle Mtn. Jos 89.67 55 P P 16 47 39.9 -0.1
baz=286
GMRC Granite Mounta 89.73 54 P P 16 47 40.2 0.0
baz=286,SNR=22
DAG Danmarks Havn 89.76 356 *i* P P 16 47 40.7 +1.4
comp=Z,13nm,1.1s
VSR Storozhevoye 89.78 323 *e*P P 16 47 38.3 -1.6
VSR pmax pmax
comp=Z,30nm,0.8s
OBN Obninsk 89.78 327 *d i*P P 16 47 39.0 -0.8
OBN *i* 16 47 43.4
OBN pmax pmax
comp=Z,53nm,1.9s
OBN MLR MLR
comp=Z,2µm,19.0s
OBN Obninsk 89.78 327 PFAKE 16 47 50.0 +10
OBN LR LR
comp=Z,2µm,19.0s
ONI Oni 89.84 314 P P 16 47 39.6 -0.9
KBZ Khabaz 89.88 315 P P 16 47 40.3 -0.2
comp=Z,14nm,0.5s,baz=120,slow=2.8,SNR=6.9
QLMT Earthquake Lak 89.90 44 *e*P P 16 47 44.0 +3.0
HVU Hansel Valley 89.91 47 *e*P P 16 47 42.7 +1.8
HVU Hansel Valley 89.91 47 *e*P P 16 47 42.7 +1.8
IKP In-Ko-Pah, Jac 89.94 57 P P 16 47 41.2 0.0
baz=286
EGMT Eagleton 89.95 40 PFAKE 16 47 50.0 +9.1
EGMT LR LR
comp=Z,815nm,20.0s
KIV Kislovodsk 89.96 315 PFAKE 16 47 50.0 +9.0
KIV LR LR
comp=Z,2µm,20.0s
LDFC Landfair 90.08 54 *e*P P 16 47 44.7 +2.8
NEY Neytrino 90.15 315⇓ *e*P P 16 47 43.4 +1.3
NEY pmax pmax
comp=Z,8.0nm,1.7s
BC3 Big Chuckawall 90.20 55 P P 16 47 42.6 +0.2
baz=286,SNR=5.5
IRM Iron Mountain 90.31 55 P P 16 47 42.9 0.0
baz=286,SNR=5.5
DUG Dugway, Tooele 90.36 49 P P 16 47 43.5 +0.5
baz=288
DUG Dugway, Tooele 90.36 49 *e*P P 16 47 44.5 +1.5
DUG Dugway, Tooele 90.36 49 *e*P P 16 47 44.5 +1.5
DUG LR LR
comp=Z,1µm,22.0s
IMW Indian Meadow 90.53 45 *e*P P 16 47 46.8 +2.8
H17A Grant Village 90.62 44 P P 16 47 44.6 +0.3
baz=289
FLWY Flagg Ranch 90.64 44 *e*P P 16 47 47.4 +3.0
TPAW Teton Pass 90.66 45 *e*P P 16 47 45.7 +1.2
comp=Z,12nm,1.0s
LKWY Lake 90.68 44 PFAKE 16 48 00.0 +15
LKWY LR LR
comp=Z,1µm,19.0s
MOOW Moose Ponds 90.71 45 *e*P P 16 47 44.0 -0.7
comp=Z,13nm,1.1s
CCUT Cedar City 90.73 51 *e*P P 16 47 45.9 +1.0
REDW Red Top Meadow 90.76 45 *e*P P 16 47 45.9 +0.9
comp=Z,32nm,1.5s
AHID Auburn Hatcher 90.78 46 PFAKE 16 48 00.0 +15
AHID LR LR
comp=Z,2µm,20.0s
HWUT Hardware Ranch 90.82 47 *e*P P 16 47 47.4 +2.1
HWUT LR LR
comp=Z,1µm,22.0s
GLA Glamis 90.87 56 P P 16 47 45.7 +0.3
baz=286
Y12C Blythe 90.92 55 P P 16 47 45.8 +0.2
baz=286
Y12C Blythe 90.92 55 *e*P P 16 47 47.1 +1.5
LCMT Little Creek M 90.98 52 *e*P P 16 47 47.5 +1.5
VNDA Vanda 91.00 176 P P 16 47 45.0 +0.1
comp=Z,1.3nm,1.0s,baz=89,slow=22,SNR=10.0
VNDA Vanda 91.00 176 *e*P P 16 47 45.1 +0.2
VNDA Vanda 91.00 176 *e*P P 16 47 45.1 +0.2
PDMCI Parker Dam,Lak 91.07 55 P P 16 47 47.0 +0.7
baz=287,SNR=6.0
RLMT Red Lodge 91.25 43 *e*P P 16 47 50.4 +3.1
RLMT LR LR
comp=Z,1µm,22.0s
MSU Marysvale 91.34 50 *e*P P 16 47 50.3 +2.6
MSU Marysvale 91.34 50 *e*P P 16 47 50.3 +2.6
MTPU Mount Pierson 91.47 50 *e*P P 16 47 50.1 +1.6
SBA Scott Base 91.65 176 *e*P P 16 47 49.8 +1.9
SBA Scott Base 91.65 176 *e*P P 16 47 49.8 +1.9
SBA LR LR
comp=Z,506nm,19.0s
FINES FINESS Array B 91.80 335 P P 16 47 47.0 -2.0
comp=Z,5.8nm,0.5s,baz=70,slow=4.1,SNR=36
FINES FINESS Array B 91.80 335 *i* P P 16 47 47.7 -1.3
FINES pmax pmax
comp=Z,6.0nm,0.5s
TMUT Trail Mountain 91.81 49 *e*P P 16 47 52.1 +2.1
BW06 Boulder Array 91.86 45 P P 16 47 50.4 +0.4
baz=290
BW06 Boulder Array 91.86 45 *e*P P 16 47 49.2 -0.9
BW06 LR LR
comp=Z,2µm,20.0s
PDAR Pinedale Array 91.86 45 P P 16 47 50.3 +0.2
comp=Z,1.3nm,0.7s,baz=263,slow=2.9,SNR=8.3
PDAR LR LR 17 25 50.7
comp=Z,1µm,19.6s,baz=312,slow=34
FFC Flin Flon 91.87 32 *e*P P 16 47 52.1 +2.5
FFC Flin Flon 91.87 32 *e*P P 16 47 52.1 +2.5
FFC LR LR
comp=Z,1µm,20.0s
LOF Lofoten 91.96 344 *e*P P 16 47 48.8 -0.9
comp=Z,1µm,19.1s
LOF IAMs_20 IAMs_20 17 33 37.0
comp=Z,1µm,19.1s
SOC Sochi 92.11 316 *e*P P 16 47 47.7 -3.2
SOC *e* 16 51 25.1
SOC *e*PPP PPP 16 53 35.0
SOC *e*S SKSac 16 58 19.2 -3.2
SOC pmax pmax
comp=Z,26nm,0.8s
SOC MLR MLR
comp=Z,988nm,16.0s
LAO LASA Array 92.67 41 P P 16 47 54.1 +0.5
baz=292
LAO LASA Array 92.67 41 *e*P P 16 47 55.8 +2.2
LAO LR LR
comp=Z,1µm,20.0s
214A Organ Pipe Nat 92.82 56 P P 16 47 54.8 +0.3
baz=287
WUAZ Wupatki 92.87 53 P P 16 47 55.2 +0.3
baz=288
WUAZ Wupatki 92.87 53 *e*P P 16 47 56.2 +1.4
WUAZ LR LR
comp=Z,1µm,20.0s
VSU Vasula 93.08 333⇓ *e*P P 16 47 54.2 -0.8
VSU pmax pmax
comp=Z,47nm,1.2s
VSU MLR MLR
comp=Z,2µm,17.0s
ANN Anapa 93.20 317 *e*P P 16 47 52.5 -3.4
ANN *e*PP PcP 16 47 58.7 +2.2
ANN *e*S SKSac 16 58 25.5 -2.9
ANN pmax pmax
comp=Z,48nm,1.5s
DGMT Dagmar 93.24 39 PFAKE 16 48 10.0 +14
DGMT LR LR
comp=Z,1µm,22.0s
PV01 Paradox Valley 94.14 49 *e*P P 16 48 03.8 +3.1
TUC Tucson 94.34 56 P P 16 48 02.2 +0.6
baz=289
TUC Tucson 94.34 56 *e*P P 16 48 04.5 +2.9
TUC Tucson 94.34 56 *e*P P 16 48 04.5 +2.9
TUC LR LR
comp=Z,3µm,20.0s
SUMG Summit 94.43 1 *i* P P 16 48 08.4 +6.9
comp=Z,8.1nm,1.1s
MVCO Mesa Verde 94.51 50 PFAKE 16 48 10.0 +7.6
MVCO LR LR
comp=Z,1µm,20.0s
N23A Red Feather La 95.05 46 *e*P P 16 48 07.7 +2.9
SIM Simferopol' 95.31 318 P P 16 48 03.6 -2.0
SIM 16 58 41.0
SIM pmax pmax
comp=Z,30nm,8.7s
S22A 4UR Ranch, Cre 95.57 49 *e*P P 16 48 10.3 +2.9
ISCO Idaho Springs 95.69 47 PFAKE 16 48 20.0 +12
ISCO LR LR
comp=Z,2µm,20.0s
AKASG Malin Array Be 95.70 325 P P 16 48 05.2 -2.0
comp=Z,1.0nm,0.5s,baz=54,slow=5.2,SNR=10.0
AKASG Malin Array Be 95.70 325 *c e*P P 16 48 05.6 -1.6
AKASG pmax pmax
comp=Z,1.0nm,0.5s
KIEV Kiev 95.72 325 *c i*P P 16 48 05.0 -2.3
KIEV pmax pmax
comp=Z,11nm,1.7s
KIEV Kiev 95.72 325 PFAKE 16 48 20.0 +13
KIEV LR LR
comp=Z,2µm,19.0s
SDCO Great Sand Dun 96.55 49 PFAKE 16 48 20.0 +8.2
SDCO LR LR
comp=Z,820nm,19.0s
ANMO Albuquerque 96.86 52⇓ *e*P P 16 48 13.9 +0.8
ANMO pmax pmax
comp=Z,5.0nm,1.6s
ANMO MLR MLR
comp=Z,1µm,18.0s
ANMO Albuquerque 96.86 52 PFAKE 16 48 30.0 +17
ANMO LR LR
comp=Z,1µm,19.0s
ULM Lac du Bonnet 97.27 35 P P 16 48 13.5 -0.9
comp=Z,1.6nm,0.5s,baz=141,slow=6.5,SNR=2.2
DOMB Dombas 97.64 341 IAMs_20 IAMs_20 17 33 59.7
comp=Z,2µm,24.3s
NB2 NORSAR Subarra 97.66 339 P P 16 48 15.3 -0.7
comp=Z,3.3nm,0.7s,baz=43,slow=5.1
NB2 NORSAR Subarra 97.66 339 P P 16 48 15.3 -0.7
baz=43,slow=5.1
NOA NORSAR Array B 97.66 339 P P 16 48 15.9 -0.1
comp=Z,2.5nm,0.7s,baz=45,slow=4.8,SNR=6.3
KIS Kishinev 97.71 322 *e*PP PP 16 52 10.0 -4.0
KIS LRM MLR 17 33 56.0
comp=Z,700nm,18.0s
OGNE Ogallala 97.75 45 PFAKE 16 48 30.0 +13
OGNE LR LR
comp=Z,1µm,20.0s
NC602 NORSAR Array S 97.76 339 *e*SKSac SKSac 16 58 52.0 0.0
NC602 *e*S S 16 59 39.2 -1.1
NC602 IAMs_20 IAMs_20 17 37 23.1
comp=Z,2µm,19.0s
BR131 Keskin Array S 97.78 314 *e*P P 16 48 16.6 -0.6
BRTR Keskin Array B 97.78 314 P P 16 48 16.5 -0.6
comp=Z,1.6nm,0.9s,baz=63,slow=3.3,SNR=9.3
AKN Aaknes 98.19 342 IAMs_20 IAMs_20 17 40 47.0
comp=Z,2µm,19.7s
AGMN Agassiz Nation 98.27 36 PFAKE 16 48 30.0 +11
AGMN LR LR
comp=Z,3µm,20.0s
BR231 Keskin MP Arra 98.34 314 *e*P P 16 48 16.9 -2.7
MNTX Cornudas Mount 98.87 55 *e*P Pdif 16 48 23.4 +1.4
MNTX LR LR
comp=Z,2µm,20.0s
LVV L'vov 99.02 326 *e*P Pdif 16 48 20.7 -1.6
LVV *e* 16 58 58.2
LVV *e*S S 16 59 38.9 -12
LVV MLR MLR
comp=N,1µm,19.0s
LVV MLR MLR
comp=E,2µm,19.0s
LVV MLR MLR
comp=Z,2µm,20.0s
SFJD Kangerlussuaq 99.20 6 PFAKE 16 48 30.0 +7.3
SFJD LR LR
comp=Z,995nm,21.0s
KONO Kongsberg 99.22 339 *e*SKSac SKSac 16 59 03.3 +4.0
KONO IAMs_20 IAMs_20 17 36 38.7
comp=Z,2µm,26.3s
KONO Kongsberg 99.22 339 PFAKE 16 48 30.0 +7.1
KONO LR LR
comp=Z,2µm,21.0s
FOO Floro 99.23 342 IAMs_20 IAMs_20 17 37 04.0
comp=Z,1µm,18.2s
BURAR Bucovina Array 99.53 324 ⇓ *i*P Pdif 16 48 25.4 +0.7
BURAR Bucovina Array 99.53 324 ⇓ *i*P Pdif 16 48 25.4 +0.7
VRI Vrincioaia 99.53 322 ⇓ *i*P Pdif 16 48 26.9 +2.3
VRI Vrincioaia 99.53 322 ⇓ P Pdif 16 48 26.9 +2.3
SUE Sulen 99.74 342 IAMs_20 IAMs_20 17 41 23.4
comp=Z,2µm,16.1s
CSS Mathiatis 99.93 309 PFAKE 16 48 40.0 +13
CSS LR LR
comp=Z,303nm,19.0s
ECSD EROS Data Cent 100.07 41 PFAKE 16 48 40.0 +13
ECSD LR LR
comp=Z,1µm,20.0s
BER Bergen 100.08 341 IAMs_20 IAMs_20 17 38 37.0
comp=Z,1µm,14.8s
MLR Muntele Rosu 100.19 322 P Pdif 16 48 27.1 -0.7
comp=Z,0.4nm,0.7s,baz=202,slow=9.6,SNR=3.1
MLR Muntele Rosu 100.19 322 ⇑ *i*P Pdif 16 48 28.9 +1.2
MLR Muntele Rosu 100.19 322 ⇑ P Pdif 16 48 28.9 +1.2
CBKS Cedar Bluff 100.25 46 PFAKE 16 48 40.0 +12
CBKS LR LR
comp=Z,1µm,19.0s
BLS5 Blasjo 100.46 340 IAMs_20 IAMs_20 17 39 54.2
comp=Z,1µm,15.6s
HOMB Homborsund 100.62 338 IAMs_20 IAMs_20 17 37 32.8
comp=Z,2µm,21.8s
VOIR 100.76 322 ⇑ *i*P Pdif 16 48 39.5 +9.3
VOIR 100.76 322 ⇑ P Pdif 16 48 39.5 +9.3
CRVS Cervenica-Dubn 100.93 326 *e*PDIFF Pdif 16 48 29.9 -0.9

EYMN	**Ely**	**100.93**	**35**	PFAKE			16 48 40.0	+9.2	
EYMN				LR	LR				
	comp=Z,2µm,19.0s								
ARR	**Arges**	**101.05 322**		⇑*i*P	**Pdif**		**16 48 35.7**	**+4.2**	
STAV	**Stavanger**	**101.09 340**		IAMs_20	IAMs_20		17 40 09.5		
	comp=Z,1µm,16.3s								
TXAR	**Lajitas Array**	**101.11**	**56**	P	**Pdif**		**16 48 32.6**	**+0.5**	
TXAR	comp=Z,1.7nm,1.2s,baz=270,slow=1.8,SNR=6.1			PKIKP	**PKiKP**		**16 52 57.7**	**+0.5**	
	comp=Z,0.5nm,0.9s,baz=228,slow=2.3,SNR=3.1								
DRGR		**101.41 324**		⇓*i*P	**Pdif**		**16 48 33.8**	**+0.7**	
DRGR		**101.41 324**		⇓P	**Pdif**		**16 48 33.9**	**+0.8**	
BORG	**Borgarnes**	**101.69 354**		PFAKE			16 48 50.0	+16	
BORG				LR	LR				
	comp=Z,570nm,19.0s								
KECS	**Kecovo**	**101.70 326**		*e*PDIFF	**Pdif**		**16 48 35.0**	**+0.8**	
ABPO	**Ambohimpanom**	**101.85 253**		PFAKE			16 48 50.0	+14	
ABPO				LR	LR				
	comp=Z,261nm,20.0s								
OKC	**Ostrava-Krasne**	**102.13 328**		*e*SKS			16 59 16.8		
OKC				*e*SP	**SP**		**17 01 46.5**	**-3.0**	
OKC				AMS	AMS		17 41 50.0		
	comp=Z,2µm,17.9s								
KSU1	**Kansas State U**	**102.29**	**45**	PFAKE			16 48 50.0	+13	
KSU1				LR	LR				
	comp=Z,1µm,22.0s								
PSZ	**Piszkesteto**	**102.35 326**		PFAKE			16 48 50.0	+13	
PSZ				LR	LR				
	comp=Z,2µm,20.0s								
VYHS	**Vyhne**	**102.58 327**		*e*PDIFF	**Pdif**		**16 48 37.8**	**-0.3**	
BZS	**Buzias**	**102.69 323**		⇑*i*P	**Pdif**		**16 48 39.0**	**+0.3**	
BZS	**Buzias**	**102.69 323**		⇑P	**Pdif**		**16 48 39.0**	**+0.3**	
WMOK	**Wichita Mounta**	**102.73**	**50**	PFAKE			16 48 50.0	+11	
WMOK				LR	LR				
	comp=Z,1µm,19.0s								
DPC	**Dobruska-Polom**	**102.73 329**		*e*SP	SP		17 01 56.5	+0.6	
DPC				AMS	AMS		17 40 40.0		
	comp=Z,1µm,17.0s								
UPC	**Upice**	**102.78 330**		*e*SKS	**SKSac**		**16 59 19.7**	**+2.7**	
UPC				*e*SDIF	**Sdif**		**17 00 19.6**	**-3.2**	
UPC				*e*SP	**SP**		**17 01 57.2**	**+0.8**	
UPC				*ex*	x		17 08 04.3		
UPC				AMS	AMS		17 39 20.0		
	comp=Z,1µm,20.8s								
QSPA	**South Pole Qui**	**103.00 180**		PFAKE			16 48 50.0	+10	
QSPA				LR	LR				
	comp=Z,1µm,19.0s								
SCIA	**State Center**	**103.15**	**41**	PFAKE			16 48 50.0	+9.2	
SCIA				LR	LR				
	comp=Z,870nm,20.0s								
COWI	**Conover**	**103.31**	**36**	PFAKE			16 48 50.0	+8.5	
COWI				LR	LR				
	comp=Z,2µm,19.0s								
PVCC	**Panska Ves**	**103.47 330**		AMS	AMS		17 39 50.0		
	comp=Z,2µm,17.5s								
CLL	**Collm**	**103.70 332**		*e*Pdif	**Pdif**		**16 48 40.0**	**-3.0**	
CLL				*e*PP	**PKiKP**		**16 53 01.0**	**-0.1**	
CLL				*e*SKSac	**SKSac**		**16 59 21.0**	**-0.2**	
CLL				*e*SKKSac	**SKKSac**		**17 00 01.0**	**-2.2**	
CLL				*e*Sdif	**Sdif**		**17 00 27.0**	**-3.3**	
CLL				*e*PS	**PS**		**17 02 12.0**	**+2.1**	
CLL				*e*PPS	PPS		17 02 52.0		
CLL				*e*			17 05 42.0		
CLL				*e*SS	SKKPbc		17 08 00.0	-15	
CLL				*e*SSS	SSS		17 11 54.0		
CLL				*e*			17 13 12.0		
CLL				*e*			17 17 30.0		
CLL				Lm	MLR		17 43 00.0		
	comp=N,900nm,19.3s								
CLL				Lm	MLR		17 43 00.0		
	comp=E,700nm,18.3s								
CLL				Lm	MLR		17 43 00.0		
	comp=Z,2µm,20.3s								
JCT	**Junction City**	**103.75**	**54**	PFAKE			16 49 00.0	+16	
JCT				LR	LR				
	comp=Z,1µm,19.0s								
GOPC	**GO Pecny, Ondr**	**103.77 330**		*e*PP	PP		16 53 03.1	+3.5	
GOPC				*e*SKS			16 59 20.2		
GOPC				*ex*	x		17 08 06.5		
GOPC				AMS	AMS		17 40 20.0		
	comp=Z,1µm,19.8s								
TREC	**Trest**	**103.82 329**		AMS	AMS		17 40 40.0		
	comp=Z,2µm,19.1s								
PRU	**Pruhonice**	**103.84 330**		*e*PP	PP		16 53 06.8	+6.7	
PRU				*e*SKS			16 59 26.0		
PRU				*e*SDIF	**Sdif**		**17 00 29.6**	**-2.0**	
PRU				*e*SP	**SP**		**17 02 04.6**	**-2.9**	
PRU				*ex*	x		17 08 12.0		
PRU				AMS	AMS		17 43 10.0		
	comp=Z,1µm,16.8s								
JFWS	**Jewell Farm**	**104.46**	**39**	PFAKE			16 49 00.0	+13	
JFWS				LR	LR				
	comp=Z,1µm,20.0s								
NKC	**Novy Kostel**	**104.68 331**		AMS	AMS		17 42 30.0		
	comp=Z,2µm,17.2s								
KHC	**Kasperske Hory**	**104.88 330**		*e*PDIFF	**Pdif**		**16 48 48.1**	**-0.3**	
KHC				*e*SKS			16 59 29.3		
KHC				*e*SP	**SP**		**17 02 17.2**	**-1.2**	
KHC				*ex*	x		17 08 21.3		
KHC				AMS	AMS		17 38 10.0		
	comp=Z,2µm,19.7s								
SANT	**Santorini**	**105.05 314**		PFAKE			16 49 00.0	+11	
SANT				LR	LR				
	comp=Z,766nm,19.0s								
TIR	**Tirane**	**106.15 320**		PFAKE			16 53 20.0		
TIR				LR	LR				
	comp=Z,1µm,20.0s								
HDIL	**Hopedale**	**106.37**	**40**	PFAKE			16 53 20.0		
HDIL				LR	LR				
	comp=Z,1µm,21.0s								
KVTX	**Kingsville**	**106.49**	**56**	PFAKE			16 53 20.0		
KVTX				LR	LR				
	comp=Z,2µm,20.0s								
MIAR	**Mount Ida**	**106.62**	**48**	PFAKE			16 53 20.0		
MIAR				LR	LR				
	comp=Z,2µm,20.0s								
NATX	**Nacogdoches**	**107.15**	**51**	PFAKE			16 53 20.0		
NATX				LR	LR				
	comp=Z,1µm,20.0s								
BFO	**Black Forest**	**107.94 332**		PFAKE			16 53 20.0		
BFO				LR	LR				
	comp=Z,2µm,19.0s								
WLF	**Walferdange**	**107.94 334**		PFAKE			16 53 20.0		
WLF				LR	LR				
	comp=Z,1µm,20.0s								
KMBO	**Kilima Mbogo**	**107.99 273**		PFAKE			16 53 20.0		
KMBO				LR	LR				
	comp=Z,786nm,21.0s								
AAM	**Ann Arbor**	**108.74**	**36**	PFAKE			16 53 20.0		
AAM				LR	LR				
	comp=Z,2µm,21.0s								
TUE	**Stuetta**	**108.78 330**		PFAKE			16 53 20.0		
TUE				LR	LR				
	comp=Z,2µm,19.0s								
RPN	**Rapa Nui**	**109.28 114**		PFAKE			16 53 20.0		
RPN				LR	LR				
	comp=Z,776nm,20.0s								
TIP	**Timpagrande**	**109.34 320**		PFAKE			16 53 20.0		
TIP				LR	LR				
	comp=Z,853nm,21.0s								
AQU	**L'Aquila**	**109.39 324**		PFAKE			16 53 20.0		
AQU				LR	LR				
	comp=Z,1µm,20.0s								
CUC	**Castrocucco**	**109.44 321**		PFAKE			16 53 20.0		
CUC				LR	LR				
	comp=Z,526nm,20.0s								
CEL	**Celeste**	**110.43 320**		PFAKE			16 53 30.0		
CEL				LR	LR				
	comp=Z,1µm,22.0s								
ACSO	**Alum Creek Sta**	**110.44**	**38**	PFAKE			16 53 30.0		
ACSO				LR	LR				
	comp=Z,1µm,21.0s								
BNI	**Bardonecchia**	**111.10 330**		PFAKE			16 53 30.0		
BNI				LR	LR				
	comp=Z,2µm,19.0s								
SSB	**Saint Sauveur**	**111.95 331**		PFAKE			16 53 30.0		
SSB				LR	LR				
	comp=Z,943nm,19.0s								
LONY	**Lake Ozonia**	**111.98**	**30**	PFAKE			16 53 30.0		
LONY				LR	LR				
	comp=Z,1µm,21.0s								
CLTB	**Caltabellotta**	**112.52 320**		PFAKE			16 53 30.0		
CLTB				LR	LR				
	comp=Z,473nm,20.0s								

WDD	**Wied Dalam**	**112.76 318**		PFAKE			16 53 30.0		
WDD				LR	LR				
	comp=Z,686nm,19.0s								
BINY	**Binghamton**	**113.03**	**32**	PFAKE			16 53 30.0		
BINY				LR	LR				
	comp=Z,2µm,19.0s								
BRAL	**Brewton**	**113.06**	**48**	PFAKE			16 53 30.0		
BRAL				LR	LR				
	comp=Z,2µm,22.0s								
VSL	**Villasalto**	**113.56 324**		PFAKE			16 53 30.0		
VSL				LR	LR				
	comp=Z,1µm,19.0s								
PKME	**Peaks-Kenny Pk**	**113.90**	**26**	PFAKE			16 53 30.0		
PKME				LR	LR				
	comp=Z,982nm,20.0s								
BLA	**Blacksburg**	**113.90**	**39**	PFAKE			16 53 30.0		
BLA				LR	LR				
	comp=Z,1µm,20.0s								
MBAR	**Mbarara**	**114.19 275**		PFAKE			16 53 30.0	+8.0	
MBAR				LR	LR				
	comp=Z,517nm,19.0s								
GOGA	**Godfrey**	**114.29**	**44**	PFAKE			16 53 30.0	+8.5	
GOGA				LR	LR				
	comp=Z,1µm,19.0s								
CBN	**Gotland Frederi**	**115.05**	**36**	PFAKE			16 53 30.0	+7.2	
CBN				LR	LR				
	comp=Z,2µm,20.0s								
NHSC	**New Hope**	**116.66**	**42**	PFAKE			16 53 40.0	+14	
NHSC				LR	LR				
	comp=Z,966nm,19.0s								
CNNC	**Cliffs of the**	**116.74**	**39**	PFAKE			16 53 40.0	+14	
CNNC				LR	LR				
	comp=Z,1µm,21.0s								
LSZ	**Lusaka**	**119.34 260**		*e*PKIKP	**PKPdf**		**16 53 33.4**	**+1.6**	
LSZ				MLR	MLR				
	comp=Z,498nm,19.0s								
LSZ	**Lusaka**	**119.34 260**		*e*PKPdf	**PKPdf**		**16 53 33.4**	**+1.6**	
LSZ				LR	LR				
	comp=Z,498nm,19.0s								
PBRG	**Braganca**	**119.61 336**		*e*PP	PP		16 54 58.3	+5.3	
PGAV	**Gavieira, Arco**	**120.06 338**		*e*PP	PP		16 54 58.7	+2.6	
PGAV	**Gavieira, Arco**	**120.06 338**		*e*LR	LR		17 33 47.0		
	comp=Z,1µm,18.0s								
ESDC	**Sonseca Array**	**120.23 333**		PP	PP		16 54 58.9	+1.5	
	comp=Z,1.5nm,0.8s,baz=33,slow=6.5,SNR=4.3								
MVO	**Moncorvo**	**120.27 336**		*e*PP	PP		16 54 59.4	+1.8	
MVO	**Moncorvo**	**120.27 336**		*e*LR	LR		17 33 00.6		
	comp=Z,1µm,18.0s								
PAB	**San Pablo**	**120.51 333**		PFAKE			16 53 40.0	+6.6	
PAB				LR	LR				
	comp=Z,1µm,20.0s								
MTE	**Manteigas**	**121.13 336**		*e*PP	PP		16 55 09.2	+5.8	
MTE	**Manteigas**	**121.13 336**		*e*LR	LR		17 34 47.2		
	comp=Z,1µm,20.0s								
MTE	**Manteigas**	**121.13 336**		PFAKE			16 53 50.0	+15	
MTE				LR	LR				
	comp=Z,1µm,20.0s								
PCAS	**Casmilo, Conde**	**121.80 337**		*e*PP	PP		16 55 13.4	+5.5	
PMRV	**Marv??o**	**121.89 335**		*e*PP	PP		16 55 14.1	+5.5	
PMRV	**Marv??o**	**121.89 335**		*e*LR	LR		17 34 07.8		
	comp=Z,895nm,22.0s								
PESTR	**Estremoz**	**122.45 335**		*e*PP	PP		16 55 19.8	+7.4	
PMTG	**Montargil**	**122.54 336**		*e*PP	PP		16 55 20.6	+7.7	
BOSA	**Boshof**	**122.59 244**		PKP	**PKPdf**		**16 53 37.8**	**+0.1**	
	comp=Z,2.5nm,0.9s,baz=137,slow=4.4,SNR=3.6								
PAYG	**Puerto Ayora**	**123.42**	**82**	PFAKE			16 53 50.0	+10	
PAYG				LR	LR				
	comp=Z,1µm,19.0s								
PNCL	**Nicolau / Gran**	**123.48 336**		*e*PP	PP		16 55 27.5	+8.2	
PCVE	**Castro Verde**	**123.69 335**		*e*PP	PP		16 55 29.1	+8.3	
PVAQ	**Vaqueiros**	**123.75 334**		*e*PP	PP		16 55 29.2	+8.0	
PVAQ	**Vaqueiros**	**123.75 334**		*e*LR	LR		17 34 56.1		
	comp=Z,2µm,20.0s								
PBDV	**Barranco-do-Ve**	**123.97 334**		*e*PP	PP		16 55 25.9	+3.2	
PFVI	**Vila Bisbo**	**124.44 335**		*e*PP	PP		16 55 33.6	+7.8	
MDT	**Midelt**	**126.08 329**		PKP	**PKPdf**		**16 53 46.0**	**+1.6**	
	comp=Z,2.5nm,0.9s,baz=309,slow=6.5,SNR=3.9								
BBSR	**BB Station**	**126.31**	**32**	PFAKE			16 54 00.0	+15	
BBSR				LR	LR				
	comp=Z,655nm,20.0s								
TAM	**Tamanrasset**	**126.94 312**		PFAKE			16 54 00.0	+14	
TAM				LR	LR				
	comp=Z,499nm,20.0s								
MTDJ	**Mount Denham**	**127.36**	**55**	PFAKE			16 54 00.0	+13	
MTDJ				LR	LR				
	comp=Z,621nm,20.0s								
GTBY	**Guantanamo Bay**	**128.28**	**51**	PFAKE			16 54 00.0	+11	
GTBY				LR	LR				
	comp=Z,913nm,20.0s								
CMLA	**Cha da Macela**	**128.65 351**		PFAKE			16 54 00.0	+11	
CMLA				LR	LR				
	comp=Z,510nm,22.0s								
TSUM	**Tsumeb**	**129.73 256**		PFAKE			16 54 00.0	+8.4	
TSUM				LR	LR				
	comp=Z,489nm,19.0s								
GRTK	**Grand Turk**	**130.22**	**47**	PFAKE			16 54 00.0	+7.7	
GRTK				LR	LR				
	comp=Z,1µm,20.0s								
PMOZ	**Porto Moniz, M**	**131.37 340**		*e*PP	PP		16 56 14.3	+2.9	
PMOZ	**Porto Moniz, M**	**131.37 340**		*e*LR	LR		17 38 43.0		
	comp=Z,574nm,20.0s								
SDDR	**Presa de Saban**	**131.72**	**49**	PFAKE			16 54 10.0	+15	
SDDR				LR	LR				
	comp=Z,918nm,22.0s								
OTAV	**Otavalo**	**134.49**	**76**	PFAKE			16 54 10.0	+8.8	
OTAV				LR	LR				
	comp=Z,758nm,20.0s								
TORD	**Torodi Ar. Bea**	**135.59 305**		PKhKP	PKPpre		16 53 49.3		
	comp=Z,0.3nm,0.3s,baz=74,slow=1.0,SNR=2.9								
TORD				PKP	**PKiKP**		**16 54 03.6**	**-0.6**	
	comp=Z,2.6nm,0.5s,baz=13,slow=2.2,SNR=15								
SJG	**San Juan**	**135.98**	**46**	PFAKE			16 54 20.0	+17	
SJG				LR	LR				
	comp=Z,692nm,20.0s								
SDV	**Santo Domingo**	**137.99**	**60**	*e*PKPdf	**PKPdf**		**16 54 07.7**	**+0.3**	
SDV				LR	LR				
	comp=Z,570nm,22.0s								
PLCA	**Paso Flores**	**138.22 138**		PKP	**PKPdf**		**16 54 07.9**	**+1.0**	
	comp=Z,3.6nm,0.9s,baz=266,slow=3.4,SNR=4.6								
NNA	**Nana**	**138.72**	**93**	PFAKE			16 54 20.0	+12	
NNA				LR	LR				
	comp=Z,876nm,19.0s								
HOPE	**Hope Point**	**138.94 178**		PFAKE			16 54 20.0	+12	
HOPE				LR	LR				
	comp=Z,477nm,20.0s								
ANWB	**Willy Bob**	**139.24**	**42**	PFAKE			16 54 20.0	+11	
ANWB				LR	LR				
	comp=Z,922nm,21.0s								
FDF	**Fort de France**	**141.76**	**44**	PFAKE			16 54 30.0	+16	
FDF				LR	LR				
	comp=Z,832nm,20.0s								
GRGR	**Grenville**	**143.19**	**48**	PFAKE			16 54 30.0	+14	
GRGR				LR	LR				
	comp=Z,713nm,20.0s								
BBGH	**Gun Hill**	**143.97**	**44**	PFAKE			16 54 30.0	+12	
BBGH				LR	LR				
	comp=Z,1µm,22.0s								
AMOG	**MOGNA**	**144.09 125**		*e*P	PKPbc		16 54 16.3	+0.6	
DBIC	**Dimbokro**	**144.55 302**		PKP	**PKPab**		**16 54 17.0**	**-0.3**	
	comp=Z,25nm,0.5s,baz=40,slow=3.6,SNR=38								
DBIC	**Dimbokro**	**144.55 302**		PKIKP	**PKPab**		**16 54 17.0**	**-0.3**	
ACAN	**Cantantal**	**144.58 128**		*e*P	PKPbc		16 54 17.2	0.0	
AGUA	**GUANDACOL**	**144.60 123**		*e*P	PKPbc		16 54 17.8	+0.3	
KIC	**Kosan Boka**	**144.62 301**		*e*PKP1	**PKPab**		**16 54 16.7**	**-0.9**	
	comp=Z,62nm,0.5s								
TIC	**Toumodi**	**144.70 302**		*e*PKP1	**PKPab**		**16 54 17.2**	**-0.7**	
LIC	**Lamto**	**144.93 302**		*e*PKP1	**PKPab**		**16 54 17.6**	**-1.1**	
	comp=Z,268nm,0.6s								
VCA	**Vinchina**	**145.09 122**		*e*P	**PKPdf**		**16 54 19.6**	**-0.1**	
TRQA	**Tornquist**	**145.21 140**		*e*PKPdf	**PKPdf**		**16 54 19.4**	**0.0**	
TRQA				LR	LR				
	comp=Z,733nm,19.0s								
ACHE	**Chepes**	**145.44 127**		*e*P	**PKPbc**		**16 54 20.1**	**-0.1**	
MRA	**San Martin**	**145.64 129**		*e*P	**PKPdf**		**16 54 19.9**	**-0.5**	
LVC	**Limon Verde**	**146.03 111**		*e*PKPdf	**PKPdf**		**16 54 21.9**	**+0.2**	
LVC				LR	LR				
	comp=Z,954nm,19.0s								
TCA	**Tanti**	**146.97 128**		*e*P	**PKPdf**		**16 54 23.2**	**+0.5**	
CYA	**Choya**	**147.18 123**		*e*P	**PKPbc**		**16 54 24.6**	**-0.6**	
LPAZ	**La Paz**	**147.38 100**		PKPbc	**PKPbc**		**16 54 26.6**	**-0.3**	
	comp=Z,6.4nm,0.8s,baz=241,slow=3.0,SNR=12								
FSA	**Cafayete**	**147.80 118**		*e*P	**PKPbc**		**16 54 27.3**	**+0.1**	
AHML	**Horco Molle**	**148.13 120**		*e*P	**PKPdf**		**16 54 25.1**	**+0.5**	
SACV	**Santiago Islan**	**150.04 338**		PFAKE			16 54 40.0	+1.4	
SACV				LR	LR				

	comp=Z,246nm,22.0s								
SAML	**Samuel**	**151.58**	**85**	*e*PKPdf	**PKPdf**		**16 54 31.2**	**+0.8**	
SAML				LR	LR				
	comp=Z,603nm,19.0s								
CPUP	**Villa Florida**	**154.91 125**		PKPbc	**PKPbc**		**16 54 42.4**	**-1.1**	
	comp=Z,2.8nm,0.8s,baz=252,slow=6.4,SNR=2.1								
ASCN	**Ascension**	**159.51 283**		PFAKE			16 54 50.0	+9.0	
ASCN				LR	LR				
	comp=Z,679nm,20.0s								
SPB	**Sao Paulo**	**163.96 132**		PFAKE			16 55 00.0	+15	
SPB				LR	LR				
	comp=Z,753nm,19.0s								
RCBR	**Riachuelo**	**172.60**	**11**	PFAKE			16 55 00.0	+8.5	
RCBR				LR	LR				
	comp=Z,644nm,19.0s								

IDC ***23*** *16:37:01.1±0.7, 13.00N×145.61E, h0km, mb4.7/25, mb1 4.7/25, mb1mx4.5/57, mbtmp4.6/25, Error ellipse: s-maj=20.2km s-min=16.3km az=69.0*
NEIC ***23*** *16:37:02.5±0.5, 13.01N×145.61E, h10km, mb4.5/1, Error ellipse: s-maj=18.1km s-min=11.8km az=88.0*
ISCJB ***23*** *16:37:05.6±0.5, 12.97N±0.08×145.61E±0.10, h43km, mb4.6/26, Error ellipse: s-maj=14.8km s-min=9.4km az=149.3*

ISC 23 16:37:07.4±0.7, 13.0N±0.1×145.6E±0.1, h43km, n31, σ1°09/29, mb4.6/24, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	Time	Res	ISC
GUMO	**Guam**	**0.89**	**312**	Pn		**Pn**	**16 37 22.7**	**-0.9**	
	1µm,0.3s,baz=141,slow=13,SNR=4.2								
GUMO				Sn		**Sn**	16 37 36.3	+1.0	
	2µm,0.3s,baz=331,slow=19,SNR=5.3								
MJAR	**Matsushiro Arr**	**24.36**	**346**	P		**P**	**16 42 20.2**	**-1.3**	
	5.1nm,0.8s,baz=169,slow=11,SNR=2.5								
KSRS	**Korea Array**	**29.01**	**330**	P		**P**	**16 43 04.6**	**+1.4**	
	3.3nm,0.8s,baz=151,slow=11,SNR=2.6								
KSAR	**Wonju Array Be**	**29.02**	**330**	P		**P**	**16 43 04.6**	**+1.3**	
USRK	**Ussuriysk Ar.**	**33.21**	**342**	P		**P**	**16 43 40.3**	**+0.3**	
	3.5nm,0.7s,baz=120,slow=5.7,SNR=3.1								
WRAB	**Tennant Creek**	**34.52**	**199**	P		**P**	**16 43 52.0**	**+0.2**	
	4.4nm,0.6s								
WRA	**Warramunga Arr**	**34.54**	**199**	P		**P**	**16 43 52.1**	**+0.2**	
	15nm,1.0s,baz=23,slow=9.0,SNR=5.4								
ASAR	**Alice Springs**	**38.17**	**197**	P		**P**	**16 44 23.4**	**+0.4**	
	5.3nm,0.8s,baz=22,slow=9.9,SNR=3.6								
CMAR	**Chiang Mai Arr**	**45.10**	**283**	P		**P**	**16 45 19.7**	**-0.1**	
	2.9nm,0.6s,baz=85,slow=6.8,SNR=4.9								
YAK	**Yakutsk**	**50.28**	**350**	P		**P**	**16 45 59.2**	**-0.1**	
	10.0nm,0.5s,baz=213,slow=2.2,SNR=2.3								
MKAR	**Makanchi Array**	**62.38**	**316**	P		**P**	**16 47 25.9**	**+0.1**	
	3.5nm,0.9s,baz=96,slow=7.7,SNR=3.4								
KURK	**Kurchatov**	**65.47**	**320**	P		**P**	**16 47 45.8**	**-0.2**	
KURBB	**Kurchatov Arra**	**65.51**	**320**	P		**P**	**16 47 45.8**	**-0.5**	
	23nm,0.8s,baz=102,slow=6.5,SNR=4.9								
NRIK	**Noril'sk**	**66.91**	**341**	P		**P**	**16 47 56.8**	**+1.9**	
	14nm,1.0s,baz=96,slow=9.6,SNR=3.9								
ILAR	**Eielson Array**	**68.82**	**25**	P		**P**	**16 48 07.0**	**-0.1**	
	6.0nm,1.0s,baz=257,slow=5.6,SNR=3.4								
BVAR	**Borovoye Array**	**70.81**	**322**	P		**P**	**16 48 18.9**	**-0.6**	
	11nm,0.7s,baz=103,slow=8.2,SNR=6.4								
INK	**Inuvik**	**74.66**	**22**	P		**P**	**16 48 41.8**	**-0.1**	
	18nm,1.1s,baz=257,slow=4.7,SNR=2.4								
ARU	**Arti**	**77.64**	**325**	P		**P**	**16 48 58.6**	**-0.5**	
	5.0nm,0.7s,baz=276,slow=19,SNR=2.8								
GEYT	**Alibeck**	**80.14**	**307**	P		**P**	**16 49 13.9**	**+0.5**	
	7.4nm,1.1s,baz=317,slow=50,SNR=2.6								
YKA	**Yellowknife Ar**	**83.08**	**27**	P		**P**	**16 49 28.4**	**+0.1**	
	2.7nm,0.5s,baz=285,slow=5.3,SNR=5.0								
ARCES	**ARCESS Array B**	**87.85**	**342**	P		**P**	**16 49 51.2**	**-0.8**	
	9.6nm,0.9s,baz=61,slow=7.4,SNR=2.2								
KBZ	**Khabaz**	**90.06**	**315**	P		**P**	**16 50 04.8**	**+2.1**	
	6.5nm,1.0s,baz=82,slow=7.1,SNR=1.9								
KVAR	**Kislovodsk Arr**	**90.12**	**315**	P		**P**	**16 50 04.3**	**+1.0**	
	5.6nm,0.9s,baz=146,slow=7.3,SNR=2.6								
PDAR	**Pinedale Array**	**91.91**	**45**	P		**P**	**16 50 13.5**	**+1.8**	
	0.3nm,0.5s,baz=224,slow=3.8,SNR=2.0								
FINES	**FINESS Array B**	**91.98**	**335**	P		**P**	**16 50 10.4**	**-1.0**	
	2.1nm,0.7s,baz=74,slow=6.4,SNR=4.1								
AKASG	**Malin Array Be**	**95.89**	**325**	P		**P**	**16 50 27.9**	**-1.6**	
	1.5nm,0.7s,baz=50,slow=5.9,SNR=3.1								
HFS	**Hagfors**	**97.59**	**338**	P		Pdif	16 50 37.3	+0.2	
	1.6nm,0.7s,baz=71,slow=11,SNR=2.5								
NOA	**NORSAR Array B**	**97.84**	**339**	P		Pdif	16 50 38.5	+0.2	
	1.7nm,0.9s,baz=43,slow=5.1,SNR=2.8								
BRTR	**Keskin Array B**	**97.95**	**314**	P		**P**	**16 50 38.3**	**-1.1**	
	2.9nm,1.2s,baz=110,slow=1.7,SNR=3.8								
TORD	**Torodi Ar. Bea**	**135.75**	**305**	PKP	**PKPdf**		**16 56 22.1**	**-2.2**	
	0.7nm,0.7s,baz=90,slow=1.4,SNR=2.2								
DBIC	**Dimbokro**	**144.70

TORD	**Torodi Ar. Bea**	**135.75**	**305**	PKP	**PKPdf**	**16 58 20.0**	**+0.7**
	0.7nm,0.7s,baz=81,slow=3.2,SNR=3.4						
DBIC	**Dimbokro**	**144.71**	**302**	PKP	**PKPdf**	**16 58 35.3**	**-0.2**
	16nm,0.6s,baz=39,slow=4.3,SNR=10.0						
KIC	**Kosan Boka**	**144.78**	**301**	*e*PKP1	**PKPdf**	**16 58 35.5**	**-0.1**
	30nm,0.6s						
TIC	**Toumodi**	**144.86**	**302**	*e*PKP1	**PKPdf**	**16 58 35.4**	**-0.3**
LIC	**Lamto**	**145.09**	**301**	*e*PKP1	**PKPdf**	**16 58 36.1**	**0.0**
	66nm,0.5s						
LPAZ	**La Paz**	**147.25**	**100**	PKPbc	**PKPbc**	**16 58 43.7**	**+1.0**
	1.0nm,0.3s,baz=90,slow=4.0,SNR=5.4						

*ISCJB **23** 16:50:23.2±0.3,41˚.44N±0˚.02×12˚.88E±0˚.02,h10km±2km, mb3.6/5,Error ellipse: s-maj=3.4km s-min=2.3km az=31.2*
*ROM **23** 16:50:24.8±0.1,41˚.49N×12˚.93E,h7km±1km,Ml3.6/56, Error ellipse: s-maj=1.5km s-min=0.8km az=37.0*
*CSEM **23** 16:50:24.5±0.2,41˚.46N×12˚.90E,h10km,ML4.1/20,Error ellipse: s-maj=5.4km s-min=2.8km az=27.0*
*LDG **23** 16:50:25.3±0.1,41˚.48N×12˚.96E,h10km,Md3.1/3,Ml3.2/3, Error ellipse: s-maj=3.3km s-min=1.6km az=30.0*
*IDC **23** 16:50:25.9±1.1,41˚.70N×12˚.57E,h0km,mb3.7/5, mb1 3.8/11,mb1mx3.6/50,mbtmp3.6/11,ML3.6/5,MS2.2/1, Ms1 2.2/1,ms1mx2.0/60,Error ellipse: s-maj=18.6km s-min=17.7km az=91.0*
*PRU **23** 16:50:28.0,41˚.50N×12˚.96E,h18km*

ISC 23 16:50:25.8±0.9,41˚.47N±0˚.02×12˚.94E±0˚.02,h10km±6km, n215,σ1§61/272,mb3.8/5,7C-8D,Southern Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
GIUL	**Giuliano Di Ro**	**0.25**	**70⇑**	*i*Pg	**Pg**		**16 50 30.6**	**-0.4**
GIUL				Sg	**Sg**		**16 50 34.4**	**-0.1**
	17µm,0.8s							
GIUL	**Giuliano Di Ro**	**0.25**	**70⇑**	*i*Pg	**Pg**		**16 50 30.6**	**-0.4**
GIUL				Sg	**Sg**		**16 50 34.4**	**-0.1**
	17µm,0.8s							
LAV9	**Lanuvio**	**0.27**	**319⇓**	*i*Pg	**Pg**		**16 50 31.5**	**+0.2**
	29µm,0.5s							
LAV9	**Lanuvio**	**0.27**	**319⇓**	*i*Pg	**Pg**		**16 50 31.5**	**+0.2**
	29µm,0.5s							
RDP	**Rocca di Papa**	**0.33**	**330⇓**	*i*Pg	**Pg**		**16 50 32.3**	**-0.1**
RDP				Sg	**Sg**		**16 50 36.9**	**0.0**
	18µm,0.5s							
RDP	**Rocca di Papa**	**0.33**	**330⇓**	*i*Pg	**Pg**		**16 50 32.3**	**-0.1**
RDP				Sg	**Sg**		**16 50 36.9**	**0.0**
	18µm,0.5s							
MA9	**Marino**	**0.36**	**325**	Pg	**Pg**		**16 50 32.7**	**-0.3**
	14µm,0.5s							
MA9	**Marino**	**0.36**	**325**	Pg	**Pg**		**16 50 32.7**	**-0.3**
	14µm,0.5s							
RMP	**Rome, Mte Porz**	**0.38**	**333⇓**	*i*Pg	**Pg**		**16 50 33.1**	**-0.3**
RMP				Sg	**Sb**		**16 50 39.5**	**-1.1**
	12µm,0.4s							
RMP	**Rome, Mte Porz**	**0.38**	**333⇓**	*i*Pg	**Pg**		**16 50 33.1**	**-0.3**
RMP				Sg	**Sb**		**16 50 39.5**	**-1.1**
	12µm,0.4s							
SAMA	**S.Maria delle**	**0.40**	**320⇓**	*i*Pg	**Pg**		**16 50 33.4**	**-0.3**
SAMA				Sg	**Sb**		**16 50 40.1**	**-1.1**
	4µm,0.6s							
SAMA	**S.Maria delle**	**0.40**	**320⇓**	*i*Pg	**Pg**		**16 50 33.4**	**-0.3**
SAMA				Sg	**Sb**		**16 50 40.1**	**-1.1**
	4µm,0.6s							
GUAR	**Guarcino**	**0.43**	**41⇑**	*i*Pg	**Pg**		**16 50 33.7**	**-0.5**
GUAR				Sg	**Sg**		**16 50 40.3**	**+0.4**
	12µm,0.6s							
GUAR	**Guarcino**	**0.43**	**41⇑**	*i*Pg	**Pg**		**16 50 33.7**	**-0.5**
GUAR				Sg	**Sg**		**16 50 40.3**	**+0.4**
	12µm,0.6s							
ROM9	**Roma**	**0.48**	**319**	Pg	**Pg**		**16 50 34.9**	**-0.2**
	7µm,0.5s							
ROM9	**Roma**	**0.48**	**319**	Pg	**Pg**		**16 50 34.9**	**-0.2**
	7µm,0.5s							
CERT	**Cerreto**	**0.48**	**4**	Pg	**Pg**		**16 50 34.5**	**-0.7**
CERT				Sg	**Sg**		**16 50 41.9**	**+0.4**
	11µm,0.4s							
CERT	**Cerreto**	**0.48**	**4**	Pg	**Pg**		**16 50 34.5**	**-0.7**
CERT				Sg	**Sg**		**16 50 41.9**	**+0.4**
	11µm,0.4s							
MTCE	**Montecelio**	**0.57**	**345**	Pg	**Pg**		**16 50 35.9**	**-1.0**
MTCE				Sg	**Sg**		**16 50 44.0**	**-0.4**
	3µm,0.5s							
MTCE	**Montecelio**	**0.57**	**345**	Pg	**Pg**		**16 50 35.9**	**-1.0**
MTCE				Sg	**Sg**		**16 50 44.0**	**-0.4**
	3µm,0.5s							
POFI	**Posta Fibreno**	**0.63**	**67**	Pg	**Pg**		**16 50 37.2**	**-0.8**
POFI				Sg	**Sb**		**16 50 47.4**	**-0.4**
	4µm,0.4s							
POFI	**Posta Fibreno**	**0.63**	**67**	Pg	**Pg**		**16 50 37.2**	**-0.8**
POFI				Sg	**Sb**		**16 50 47.4**	**-0.4**
	4µm,0.4s							
PTQR	**Pietraquaria**	**0.65**	**32**	Pg	**Pg**		**16 50 37.4**	**-1.0**
PTQR				Sg	**Sg**		**16 50 47.0**	**0.0**
PTQR	**Pietraquaria**	**0.65**	**32**	Pg	**Pg**		**16 50 37.4**	**-1.0**
PTQR				Sg	**Sg**		**16 50 47.0**	**0.0**
VVLD	**Villa Vallelon**	**0.65**	**52**	Pg	**Pg**		**16 50 37.4**	**-1.0**
VVLD				Sg	**Sg**		**16 50 47.1**	**+0.1**
	12µm,0.4s							
VVLD	**Villa Vallelon**	**0.65**	**52**	Pg	**Pg**		**16 50 37.4**	**-1.0**
VVLD				Sg	**Sg**		**16 50 47.1**	**+0.1**
	12µm,0.4s							
VENT	**Ventotene**	**0.77**	**151**	Pg	**Pg**		**16 50 40.2**	**-0.4**
	2µm,0.4s							
VENT	**Ventotene**	**0.77**	**151**	Pg	**Pg**		**16 50 40.2**	**-0.4**
	2µm,0.4s							
MODR	**Mondragone**	**0.78**	**114**	Pg	**Pg**		**16 50 40.1**	**-0.7**
MODR				Sg	**Sb**		**16 50 52.3**	**+0.3**
	3µm,0.7s							
MODR	**Mondragone**	**0.78**	**114**	Pg	**Pg**		**16 50 40.1**	**-0.7**
MODR				Sg	**Sb**		**16 50 52.3**	**+0.3**
	3µm,0.7s							
FIAM	**Fiamignano**	**0.81**	**10**	Pg	**Pg**		**16 50 39.9**	**-1.5**
FIAM				Sg	**Sg**		**16 50 51.8**	**-0.1**
	6µm,0.6s							
FIAM	**Fiamignano**	**0.81**	**10**	Pg	**Pg**		**16 50 39.9**	**-1.5**
FIAM				Sg	**Sg**		**16 50 51.8**	**-0.1**
	6µm,0.6s							
CERA	**Filignano**	**0.82**	**81**	Pg	**Pg**		**16 50 40.8**	**-0.8**
	4µm,0.6s							
CERA	**Filignano**	**0.82**	**81**	Pg	**Pg**		**16 50 40.8**	**-0.8**
	4µm,0.6s							
MSC	**Monte Massico**	**0.83**	**109**	Pg	**Pg**		**16 50 40.7**	**-1.0**
MSC	**Monte Massico**	**0.83**	**109**	Pg	**Pg**		**16 50 40.7**	**-1.0**
INTR	**Introdacqua**	**0.90**	**53**	Pg	**Pg**		**16 50 41.6**	**-1.6**
INTR				Sg	**Sg**		**16 50 55.0**	**0.0**
	5µm,0.7s							
INTR	**Introdacqua**	**0.90**	**53**	Pg	**Pg**		**16 50 41.6**	**-1.6**
INTR				Sg	**Sg**		**16 50 55.0**	**0.0**
	5µm,0.7s							
TOLF	**Tolfa**	**0.92**	**311**	Pg	**Pg**		**16 50 43.1**	**-0.3**
	2µm,0.8s							
TOLF	**Tolfa**	**0.92**	**311**	Pg	**Pg**		**16 50 43.1**	**-0.3**
	2µm,0.8s							
FAGN	**Fagnano**	**0.93**	**31**	Pg	**Pg**		**16 50 41.9**	**-1.8**
	16µm,0.5s							
FAGN	**Fagnano**	**0.93**	**31**	Pg	**Pg**		**16 50 41.9**	**-1.8**
	16µm,0.5s							
RNI2	**Rionero Sannit**	**0.94**	**75**	Pg	**Pg**		**16 50 43.1**	**-0.8**
RNI2				Sg	**Sb**		**16 50 56.6**	**-0.2**
	3µm,0.5s							
RNI2	**Rionero Sannit**	**0.94**	**75**	Pg	**Pg**		**16 50 43.1**	**-0.8**
RNI2				Sg	**Sb**		**16 50 56.6**	**-0.2**
	3µm,0.5s							
AQU	**L'Aquila**	**0.95**	**21**	Pg	**Pg**		**16 50 42.6**	**-1.4**
	4µm,0.7s							
AQU	**L'Aquila**	**0.95**	**21**	Pg	**Pg**		**16 50 42.6**	**-1.4**
	4µm,0.7s							
VAGA	**Valle Agricola**	**0.98**	**93**	Pg	**Pg**		**16 50 44.5**	**-0.1**
	2µm,0.4s							
VAGA	**Valle Agricola**	**0.98**	**93**	Pg	**Pg**		**16 50 44.5**	**-0.1**
	2µm,0.4s							
MIDA	**Miranda**	**1.00**	**80**	Pg	**Pg**		**16 50 43.7**	**-1.4**
	2µm,0.9s							
MIDA	**Miranda**	**1.00**	**80**	Pg	**Pg**		**16 50 43.7**	**-1.4**
	2µm,0.9s							
LNSS	**Leonessa**	**1.13**	**4**	Pg	**Pb**		**16 50 45.3**	**-2.2**
	3µm,0.5s							
LNSS	**Leonessa**	**1.13**	**4**	Pg	**Pb**		**16 50 45.3**	**-2.2**
	3µm,0.5s							
VCEL	**Villa Celiera**	**1.14**	**36**	Pg	**Pb**		**16 50 46.5**	**-1.2**
	4µm,0.7s							
VCEL	**Villa Celiera**	**1.14**	**36**	Pg	**Pb**		**16 50 46.5**	**-1.2**
	4µm,0.7s							
CESX	**Cesi**	**1.17**	**347**	Pg	**Pb**		**16 50 46.3**	**-1.7**
	3µm,0.8s							
CESX	**Cesi**	**1.17**	**347**	Pg	**Pb**		**16 50 46.3**	**-1.7**
	3µm,0.8s							
PTRJ	**Pietraroja**	**1.20**	**95**	Pg	**Pb**		**16 50 48.0**	**-0.7**
	3µm,0.7s							
PTRJ	**Pietraroja**	**1.20**	**95**	Pg	**Pb**		**16 50 48.0**	**-0.7**
	3µm,0.7s							
TRIV	**Trivento**	**1.25**	**76**	Pg	**Pn**		**16 50 48.1**	**-1.1**
	1µm,0.9s							
TRIV	**Trivento**	**1.25**	**76**	Pg	**Pn**		**16 50 48.1**	**-1.1**
	1µm,0.9s							
BSSO	**Busso**	**1.25**	**86**	Pg	**Pn**		**16 50 48.9**	**-0.4**
	4µm,1.7s							
BSSO	**Busso**	**1.25**	**86**	Pg	**Pn**		**16 50 48.9**	**-0.4**
	4µm,1.7s							
TERO	**Teramo**	**1.25**	**23**	Pg	**Pn**		**16 50 48.0**	**-1.4**
	2µm,0.5s							
TERO	**Teramo**	**1.25**	**23**	Pg	**Pn**		**16 50 48.0**	**-1.4**
	2µm,0.5s							
PAOL	**Paolisi**	**1.31**	**109**	Pg	**Pn**		**16 50 48.7**	**-1.4**
	1µm,0.9s							
PAOL	**Paolisi**	**1.31**	**109**	Pg	**Pn**		**16 50 48.7**	**-1.4**
	1µm,0.9s							
SACR	**S. Croce Del S**	**1.33**	**93**	Pg	**Pn**		**16 50 50.2**	**-0.3**
	943nm,0.8s							
SACR	**S. Croce Del S**	**1.33**	**93**	Pg	**Pn**		**16 50 50.2**	**-0.3**
	943nm,0.8s							
NRCA	**Norcia**	**1.37**	**6**	Pg	**Pn**		**16 50 49.5**	**-1.5**
	998nm,0.5s							
NRCA	**Norcia**	**1.37**	**6**	Pg	**Pn**		**16 50 49.5**	**-1.5**
	998nm,0.5s							
FRES	**Fresagrandinar**	**1.39**	**68**	Pg	**Pn**		**16 50 51.1**	**-0.1**
	3µm,1.5s							
FRES	**Fresagrandinar**	**1.39**	**68**	Pg	**Pn**		**16 50 51.1**	**-0.1**
	3µm,1.5s							
LATE	**Laterza**	**1.42**	**324**	Pg	**Pn**		**16 50 50.7**	**-0.9**
	839nm,0.7s							
LATE	**Laterza**	**1.42**	**324**	Pg	**Pn**		**16 50 50.7**	**-0.9**
	839nm,0.7s							
PSB1	**Pescosannita**	**1.43**	**99**	Pg	**Pn**		**16 50 51.4**	**-0.4**
	2µm,1.3s							
PSB1	**Pescosannita**	**1.43**	**99**	Pg	**Pn**		**16 50 51.4**	**-0.4**
	2µm,1.3s							
CIGN	**Sant'Elia a Pi**	**1.49**	**82**	Pg	**Pn**		**16 50 52.9**	**+0.4**
	3µm,2.4s							
CIGN	**Sant'Elia a Pi**	**1.49**	**82**	Pg	**Pn**		**16 50 52.9**	**+0.4**
	3µm,2.4s							
CESI	**CESI - Serrava**	**1.53**	**359**	Pg	**Pn**		**16 50 52.5**	**-0.7**
	581nm,0.6s							
CESI	**CESI - Serrava**	**1.53**	**359**	Pg	**Pn**		**16 50 52.5**	**-0.7**
	581nm,0.6s							
MGAB	**Montegabbione**	**1.56**	**337**	Pg	**Pn**		**16 50 52.8**	**-0.8**
	543nm,0.5s							
MGAB	**Montegabbione**	**1.56**	**337**	Pg	**Pn**		**16 50 52.8**	**-0.8**
	543nm,0.5s							
FDMO	**Fiordimonte**	**1.57**	**4**	Pg	**Pn**		**16 50 53.2**	**-0.5**
	846nm,0.6s							
FDMO	**Fiordimonte**	**1.57**	**4**	Pg	**Pn**		**16 50 53.2**	**-0.5**
	846nm,0.6s							
MRB1	**Monte Rocchett**	**1.57**	**102**	Pg	**Pn**		**16 50 53.3**	**-0.4**
	1µm,1.0s							
MRB1	**Monte Rocchett**	**1.57**	**102**	Pg	**Pn**		**16 50 53.3**	**-0.4**
	1µm,1.0s							
SACS	**San Casciano d**	**1.57**	**331**	Pg	**Pn**		**16 50 53.1**	**-0.7**
	466nm,1.1s							
MCIV	**Monte Civitell**	**1.61**	**325**	Pg	**Pn**		**16 50 53.5**	**-0.7**
	210nm,0.7s							
MCIV	**Monte Civitell**	**1.61**	**325**	Pg	**Pn**		**16 50 53.5**	**-0.7**
	210nm,0.7s							
MAON	**Monte Argentar**	**1.65**	**306**	Pg	**Pn**		**16 50 53.6**	**-1.2**
	264nm,0.8s							
MAON	**Monte Argentar**	**1.65**	**306**	Pg	**Pn**		**16 50 53.6**	**-1.2**
	264nm,0.8s							
MOCO	**Biccari - m.te**	**1.67**	**93**	Pg	**Pn**		**16 50 55.8**	**+0.6**
	671nm,1.5s							
ATCC	**AVT- Casa Cast**	**1.73**	**353**	Pg	**Pn**		**16 50 55.9**	**0.0**
	1µm,0.6s							
ATCC	**AVT- Casa Cast**	**1.73**	**353**	Pg	**Pn**		**16 50 55.9**	**0.0**
	1µm,0.6s							
ARCI	**Arcidosso**	**1.76**	**322**	Pg	**Pn**		**16 50 56.6**	**+0.3**
	664nm,1.9s							
ARCI	**Arcidosso**	**1.76**	**322**	Pg	**Pn**		**16 50 56.6**	**+0.3**
	664nm,1.9s							
ATTE	**AVT- Monte Tez**	**1.78**	**346**	Pg	**Pn**		**16 50 56.4**	**-0.2**
	869nm,1.2s							
ATTE	**AVT- Monte Tez**	**1.78**	**346**	Pg	**Pn**		**16 50 56.4**	**-0.2**
	869nm,1.2s							
SNTG	**Esanatoglia**	**1.78**	**0**	Pg	**Pn**		**16 50 56.3**	**-0.3**
	485nm,0.8s							
SNTG	**Esanatoglia**	**1.78**	**0**	Pg	**Pn**		**16 50 56.3**	**-0.3**
	485nm,0.8s							
CAFE	**Carife**	**1.79**	**104**	Pg	**Pn**		**16 50 57.0**	**+0.2**
CAFE	**Carife**	**1.79**	**104**	Pg	**Pn**		**16 50 57.0**	**+0.2**
SNAL	**S. Angelo Dei**	**1.80**	**107**	Pg	**Pn**		**16 50 56.8**	**-0.1**
	1µm,1.5s							
SNAL	**S. Angelo Dei**	**1.80**	**107**	Pg	**Pn**		**16 50 56.8**	**-0.1**
	1µm,1.5s							
MCRV	**Calabrutti - M**	**1.82**	**111**	Pg	**Pn**		**16 50 56.7**	**-0.5**
	277nm,1.0s							
MCRV	**Calabrutti - M**	**1.82**	**111**	Pg	**Pn**		**16 50 56.7**	**-0.5**
	277nm,1.0s							
SGTA	**Sant Agata di**	**1.86**	**100**	Pg	**Pn**		**16 50 57.9**	**+0.2**
	311nm,0.9s							
SGTA	**Sant Agata di**	**1.86**	**100**	Pg	**Pn**		**16 50 57.9**	**+0.2**
	311nm,0.9s							
ATVO	**AVT- Monte Val**	**1.95**	**349**	Pg	**Pn**		**16 50 59.3**	**+0.4**
	411nm,0.9s							
ATVO	**AVT- Monte Val**	**1.95**	**349**	Pg	**Pn**		**16 50 59.3**	**+0.4**
	411nm,0.9s							
CAFI	**Castiglion Fio**	**1.99**	**339**	Pg	**Pn**		**16 50 59.2**	**-0.3**
	212nm,0.8s							
CAFI	**Castiglion Fio**	**1.99**	**339**	Pg	**Pn**		**16 50 59.2**	**-0.3**
	212nm,0.8s							
CASP	**Castiglione de**	**2.03**	**311**	Pg	**Pn**		**16 50 58.9**	**-1.1**
	92nm,0.5s							
CASP	**Castiglione de**	**2.03**	**311**	Pg	**Pn**		**16 50 58.9**	**-1.1**
	92nm,0.5s							
CDRU	**Civita di Ruta**	**2.04**	**118**	Pg	**Pn**		**16 51 00.0**	**-0.3**
	58nm,0.7s							
CDRU	**Civita di Ruta**	**2.04**	**118**	Pg	**Pn**		**16 51 00.0**	**-0.3**
	58nm,0.7s							
MS1	**Monte Sant'Ang**	**2.27**	**83**	*e*Pn	**Pn**		**16 51 03.4**	**+0.1**
CDT	**Castel del Mon**	**2.55**	**98**	*e*Pn	**Pn**		**16 51 06.7**	**-0.4**
PTF	**Prato**	**2.84**	**332**	*e*P	**Pn**		**16 51 11.5**	**+0.3**
PTF	**Prato**	**2.84**	**332**	*e*P	**Pn**		**16 51 11.5**	**+0.3**
SG1	**Sgolgore (BA)**	**2.90**	**101**	*e*Pn	**Pn**		**16 51 11.9**	**0.0**
BAI	**Bari**	**2.99**	**96**	*e*Pn	**Pn**		**16 51 13.4**	**+0.2**
PGF	**Pioggiola**	**3.12**	**291**	*e*Pn	**Pn**		**16 51 14.1**	**-1.0**
PGF				*e*Sn	**Sn**		**16 51 49.7**	**-2.8**
	25nm,0.4s							
PGF	**Pioggiola**	**3.12**	**291**	*e*Pn	**Pn**		**16 51 14.1**	**-1.0**
PGF				*e*Sn	**Sn**		**16 51 49.7**	**-2.8**
	13nm,0.4s							
NVLJ	**Novalja**	**3.40**	**24**	*e*Pn	**Pn**		**16 51 18.4**	**-0.4**
NVLJ	**Novalja**	**3.40**	**24**	*e*Pn	**Pn**		**16 51 18.3**	**-0.5**
TAR1	**Taranto**	**3.42**	**105**	*e*Pn	**Pn**		**16 51 19.8**	**+0.7**
UDBI	**Udbina**	**3.69**	**33**	*i* Pn	**Pn**		**16 51 23.5**	**+0.6**
UDBI				Sn	**Sn**		**16 52 06.4**	**-0.1**
UDBI	**Udbina**	**3.69**	**33**	*i* Pn	**Pn**		**16 51 23.4**	**+0.5**
UDBI				Sn	**Sn**		**16 52 06.3**	**-0.2**
SKDS	**Skadanscina**	**4.15**	**11**	*i* Pn	**Pn**		**16 51 28.7**	**-0.4**
SKDS	**Skadanscina**	**4.15**	**11**	Pn	**Pn**		**16 51 28.7**	**-0.4**
VAE	**Valguarnera**	**4.15**	**164**	Pn	**Pb**		**16 51 34.9**	**-3.9**
	0.9nm,0.3s,baz=163,slow=19,SNR=2.7							
SBF	**Sospel**	**4.71**	**302**	*e*Pn	**Pn**		**16 51 35.7**	**-1.1**
SBF				*e*Sn	**Sn**		**16 52 27.3**	**-4.2**
	5.0nm,0.3s							
SBF	**Sospel**	**4.71**	**302**	*e*Pn	**Pn**		**16 51 35.7**	**-1.1**
SBF				*e*Sn	**Sn**		**16 52 27.3**	**-4.2**
	2.5nm,0.3s							
FRF	**La Foret Royal**	**5.09**	**296**	*e*Pn	**Pn**		**16 51 40.6**	**-1.5**
FRF	**La Foret Royal**	**5.09**	**296**	*e*Pn	**Pn**		**16 51 40.6**	**-1.5**
LMR	**La Mourre**	**5.11**	**293**	*e*Pn	**Pn**		**16 51 40.6**	**-1.7**
LMR				*e*Sn	**Sn**		**16 52 37.3**	**-4.0**
	8.0nm,0.5s							
LMR	**La Mourre**	**5.11**	**293**	*e*Pn	**Pn**		**16 51 40.6**	**-1.7**
LMR				*e*Sn	**Sn**		**16 52 37.3**	**-4.0**
	4.0nm,0.5s							
OBKA	**Obir**	**5.17**	**12**	*i* Pn	**Pn**		**16 51 43.1**	**-0.1**
	6.0nm,0.4s							
OBKA	**Obir**	**5.17**	**12**	Pn	**Pn**		**16 51 43.1**	**-0.1**
	6.0nm,0.4s							
MYKA	**Terra Mystica**	**5.18**	**5**	*i* Pn	**Pn**		**16 51 44.5**	**+1.1**
	4.2nm,0.4s							
MYKA				*i* Sn	**Sn**		**16 52 43.5**	**+0.3**
MYKA	**Terra Mystica**	**5.18**	**5**	Pn	**Pn**		**16 51 44.5**	**+1.1**
	4.2nm,0.4s							
MYKA				Sn	**Sn**		**16 52 43.5**	**+0.3**
ABTA	**Abfaltersbach**	**5.28**	**357**	*i* Pn	**Pn**		**16 51 44.8**	**0.0**
	7.0nm,0.5s							
ABTA				*i* Sn	**Sn**		**16 52 44.5**	**-1.2**
	22nm,0.6s							
ABTA	**Abfaltersbach**	**5.28**	**357**	Pn	**Pn**		**16 51 44.8**	**0.0**
	7.0nm,0.5s							
ABTA				Sn	**Sn**		**16 52 44.5**	**-1.2**
	22nm,0.6s							
BBLS	**Lazići**	**5.34**	**61**	*e*Pn	**Pn**		**16 51 46.2**	**+0.7**
SOKA	**Soboth**	**5.42**	**15**	*i* Pn	**Pn**		**16 51 47.6**	**+1.0**
	1.6nm,0.3s							
SOKA	**Soboth**	**5.42**	**15**	Pn	**Pn**		**16 51 47.6**	**+1.0**
	1.6nm,0.3s							
MBDF	**Montbardon**	**5.56**	**308**	*e*Pn	**Pn**		**16 51 48.4**	**-0.3**
MBDF	**Montbardon**	**5.56**	**308**	*e*Pn	**Pn**		**16 51 48.4**	**-0.3**
KBA	**Koelnbreinsper**	**5.61**	**3**	*e*Pn	**Pn**		**16 51 49.4**	**0.0**
	3.4nm,0.5s							
KBA				*i* Sn	**Sn**		**16 52 52.8**	**-1.2**
	9.8nm,0.4s							
KBA	**Koelnbreinsper**	**5.61**	**3**	Pn	**Pn**		**16 51 49.4**	**0.0**
	3.4nm,0.5s							
KBA				Sn	**Sn**		**16 52 52.8**	**-1.2**
	9.8nm,0.4s							
IVAS	**Ivanjica**	**5.73**	**66**	*e*Pn	**Pn**		**16 51 51.4**	**+0.5**
DAVOX	**Davos/Dischmat**	**5.75**	**339**	Pn	**Pn**		**16 51 51.3**	**+0.1**
	1.1nm,0.3s,baz=175,slow=21,SNR=9.4							
DAVOX				Sn	**Sn**		**16 52 57.5**	**+0.3**
	baz=166,slow=19,SNR=1.6							
DAVOX				LR	LR		16 53 40.5	
	comp=Z,25nm,21.2s,baz=270,slow=36							
FETA	**Feichten**	**5.77**	**345**	*i* Pn	**Pn**		**16 51 52.8**	**+1.3**
	1.1nm,0.4s							
FETA				*i* Sn	**Sn**		**16 53 00.7**	**+2.9**
	5.8nm,0.6s							
FETA	**Feichten**	**5.77**	**345**	Pn	**Pn**		**16 51 52.8**	**+1.3**
	1.1nm,0.4s							
DIVS	**Divibare**	**5.82**	**61**	*e*Pn	**Pn**		**16 51 52.7**	**+0.6**
WTTA	**Wattenberg**	**5.87**	**351**	*i* Pn	**Pn**		**16 51 54.5**	**+1.6**
	2.2nm,0.3s							
WTTA				*e*Sn	**Sn**		**16 53 00.5**	**+0.3**
	22nm,0.7s							
WATA	**Walderalm**	**5.94**	**351**	*e*Pn	**Pn**		**16 51 55.8**	**+2.0**
	3.5nm,0.3s							
WATA				*i* Sn	**Sn**		**16 53 05.3**	**+3.2**
	12nm,0.5s							
MOTA	**Moosalm**	**6.02**	**348**	*i* Pn	**Pn**		**16 51 56.3**	**+1.4**
	1.1nm,0.4s							
MOTA				*i* Sn	**Sn**		**16 53 05.3**	**+1.4**
	8.2nm,0.5s							
MOTA	**Moosalm**	**6.02**	**348**	Pn	**Pn**		**16 51 56.3**	**+1.4**
	1.1nm,0.4s							
LPG	**La Plagne**	**6.04**	**314**	*e*P	**Pn**		**16 51 56.6**	**+1.3**
LPL	**La Plagne**	**6.06**	**314**	*e*P	**Pn**		**16 51 57.1**	**+1.6**
ARSA	**Arzberg**	**6.07**	**17**	*i* Pn	**Pn**		**16 51 57.0**	**+1.5**
	1.9nm,0.5s							
ARSA				*i* Sn	**Sn**		**16 53 02.1**	**-2.9**
	5.8nm,0.5s							
ARSA	**Arzberg**	**6.07**	**17**	Pn	**Pn**		**16 51 57.0**	**+1.5**
	1.9nm,0.5s							
ARSA				Sn	**Sn**		**16 53 02.1**	**-2.9**
	5.8nm,0.5s							
TRUS	**Trudelj**	**6.14**	**61**	*e*Pn	**Pn**		**16 51 57.4**	**+0.9**
ORIF	**Oris-en-Rattie**	**6.20**	**306**	*e*P	**Pn**		**16 51 58.9**	**+1.5**
DAVA	**Damuels**	**6.21**	**340**	*i* Pn	**Pn**		**16 51 59.5**	**+1.9**
	3.1nm,0.5s							
DAVA				*i* Sn	**Sn**		**16 53 11.9**	**+3.2**
	8.2nm,0.6s							
GRUS	**Gruza**	**6.22**	**65**	*e*Pn	**Pn**		**16 51 58.0**	**+0.4**
KEST	**Kesra**	**6.38**	**207**	Pn	**Pn**		**16 52 03.3**	**+3.4**
	5.5nm,0.3s,baz=327,slow=4.7,SNR=42							
KEST

H11S3	WAKE ISLAND Hy 20.94	72	T	T		17 23 07.0		
	baz=261,slow=75,SNR=24							
H11S1	WAKE ISLAND Hy 20.95	72	T	T		17 23 07.9		
	baz=261,slow=75,SNR=21							
H11S2	WAKE ISLAND Hy 20.96	72	T	T		17 23 07.1		
	baz=261,slow=75,SNR=20							
H11N1	WAKE ISLAND Hy 21.41	69	T	T		17 23 42.7		
	baz=265,slow=75,SNR=6.0							
H11N2	WAKE ISLAND Hy 21.41	69	T	T		17 23 37.8		
	baz=265,slow=75,SNR=6.7							
H11N3	WAKE ISLAND Hy 21.42	69	T	T		17 23 44.9		
	baz=265,slow=75,SNR=6.9							
MJAR	Matsushiro Arr	24.29 345	P	P		17 01 12.0	-0.4	
	0.7nm,0.6s,baz=169,slow=10,SNR=3.8							
KSRS	Korea Array	28.97 330	P	P		17 01 53.2	-1.3	
	0.4nm,0.7s,baz=134,slow=8.7,SNR=4.4							
WRA	Warramunga Arr	34.66 199	P	P		17 02 44.6	0.0	
	0.6nm,0.6s,baz=21,slow=9.8,SNR=9.5							
ASAR	Alice Springs	38.29 198	P	P		17 03 15.7	+0.1	
	0.3nm,0.5s,baz=22,slow=8.6,SNR=15							
CMAR	Chiang Mai Arr	45.17 283	P	P		17 04 12.2	+0.3	
	0.9nm,0.6s,baz=80,slow=6.1,SNR=7.0							
SONM	Songino Array	47.57 325	P	P		17 04 30.1	-0.5	
	0.3nm,0.5s,baz=116,slow=6.6,SNR=2.5							
MKAR	Makanchi Array	62.37 316	P	P		17 06 17.9	+0.5	
	0.2nm,0.3s,baz=110,slow=5.9,SNR=4.7							
ILAR	Eielson Array	68.69 25	P	P		17 06 58.4	+0.5	
	0.6nm,0.8s,baz=251,slow=5.6,SNR=5.7							
YKA	Yellowknife Ar	82.95 27	P	P		17 08 19.9	+0.6	
	0.4nm,0.6s,baz=294,slow=4.6,SNR=2.6							
ARCES	ARCESS Array B	87.79 342	P	P		17 08 43.6	+0.3	
	0.9nm,0.8s,baz=68,slow=7.1,SNR=2.3							
FINES	FINESS Array B	91.93 335	P	P		17 09 02.5	-0.2	
	0.9nm,0.7s,baz=64,slow=6.3,SNR=3.6							
DBIC	Dimbokro	144.73 302	PKP	PKPdf		17 15 31.9	-0.3	
	4.5nm,0.9s,baz=122,slow=7.2,SNR=3.9							

*ISCJB **23** 16:56:53.3±0.3,44.98N±0.01×7.13E±0.03,h13km±2km, Error ellipse: s-maj=3.6km s-min=2.3km az=173.2*
*ROM **23** 16:56:53.7±0.1,44.98N×7.15E,h11km±2km,Md2.3/10, Ml2.2/9,Error ellipse: s-maj=2.2km s-min=1.3km az=107.0*
*CSEM **23** 16:56:53.6±0.1,44.97N×7.16E,h10km,ML2.7/18,Error ellipse: s-maj=3.0km s-min=1.9km az=82.0*
*GEN **23** 16:56:54.3,44.98N×7.14E,h10km,ML2.0*
*LDG **23** 16:56:54.5±0.1,44.98N×7.13E,h2km,Md2.6/5,Ml2.7/11, Error ellipse: s-maj=3.1km s-min=2.1km az=89.0*

ISC 23 16:56:54.0±0.9,44.97N±0.01×7.15E±0.02,h18km±3km, n62,σ1$30/104,Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BHB	Bricherasio	0.16	147	Pg		Pg	16 56 58.3	0.0
BHB				Sg		Sg	16 57 00.7	-0.6
	1μm,0.1s							
BHB	Bricherasio	0.16	147	P		Pg	16 56 58.3	0.0
BHB				Sg		Sg	16 57 00.7	-0.6
	1μm,0.1s							
RSP	Reno Superiore	0.20	26	Pg		Pg	16 56 58.8	-0.2
RSP				Sg		Sg	16 57 01.6	-0.8
	718nm,0.1s							
RSP	Reno Superiore	0.20	26	P		Pg	16 56 58.8	-0.2
RSP				Sg		Sg	16 57 01.6	-0.8
	718nm,0.1s							
RRL	Rocca Remolon	0.26	259	Pg		Pg	16 56 59.8	-0.2
RRL				Sg		Sg	16 57 03.4	-0.7
	317nm,0.3s							
RRL	Rocca Remolon	0.26	259	P		Pg	16 56 59.8	-0.2
RRL				Sg		Sg	16 57 03.4	-0.7
	317nm,0.3s							
MBDF	Montbardon	0.36	227	*e*Pg		Pb	16 57 01.7	-0.3
	SNR=1.0							
MBDF				*e*Sg		Sg	16 57 06.1	-0.8
	43nm,0.2s							
MBDF	Montbardon	0.36	227	*e*Pg		Pb	16 57 01.7	-0.3
	SNR=1.0							
MBDF				*e*Sg		Sg	16 57 06.1	-0.8
	21nm,0.2s							
PZZ	Stroppo	0.47	183	Pg		Pb	16 57 03.6	-0.2
PZZ				Sg		Sb	16 57 10.1	-0.3
	237nm,0.2s							
PZZ	Stroppo	0.47	183	P		Pb	16 57 03.4	-0.4
PZZ				S		Sg	16 57 09.4	-0.5
PZZ				Sg		Sb	16 57 10.1	-0.3
	237nm,0.2s							
DOI	San Damiano	0.47	171	Pg		Pb	16 57 03.6	-0.3
DOI				Sg		Sg	16 57 10.0	-0.1
	149nm,0.3s							
DOI	San Damiano	0.47	171	Pg		Pb	16 57 03.6	-0.3
DOI				Sg		Sg	16 57 10.0	-0.1
	149nm,0.3s							
LSD	Lago del Serru	0.49	359	Pg		Pg	16 57 03.8	-0.2
LSD				Sg		Sg	16 57 09.8	-0.9
	202nm,0.2s							
LSD	Lago del Serru	0.49	359	P		Pg	16 57 03.8	-0.2
LSD				Sg		Sg	16 57 09.8	-0.9
	202nm,0.2s							
LPG	La Plagne	0.59	332	*e*Pg		Pg	16 57 05.5	-0.4
	SNR=1.0							
LPG				*e*Sg		Sg	16 57 12.6	-1.4
	106nm,0.3s,SNR=1.0							
LPG	La Plagne	0.59	332	*e*Pg		Pg	16 57 05.5	-0.4
	SNR=1.0							
LPG				*e*Sg		Sg	16 57 12.6	-1.4
	53nm,0.3s,SNR=1.0							
LPL	La Plagne	0.62	332	*e*Pg		Pg	16 57 06.0	-0.3
	SNR=1.0							
LPL				*e*Sg		Sg	16 57 13.0	-1.6
	47nm,0.2s,SNR=1.0							
LPL	La Plagne	0.62	332	*e*Pg		Pg	16 57 06.0	-0.3
	SNR=1.0							
LPL				*e*Sg		Sg	16 57 13.0	-1.6
	24nm,0.2s,SNR=1.0							
TRAV	Traversella	0.69	38	Pg		Pg	16 57 07.2	-0.4
TRAV				Sg		Sg	16 57 16.0	-0.8
	52nm,0.3s							
TRAV	Traversella	0.69	38	Pg		Pg	16 57 07.2	-0.4
TRAV				S		Sg	16 57 15.7	-1.1
TRAV				Sg		Sg	16 57 16.0	-0.8
	52nm,0.3s							
ENR	Entracque	0.77	165	Pg		Pg	16 57 08.1	-1.0
	41nm,0.1s							
ENR	Entracque	0.77	165	Pg		Pg	16 57 08.1	-1.0
	41nm,0.1s							
ENR				S		Sg	16 57 18.2	-1.1
MRGE	Morge	0.80	356	Pg		Pb	16 57 09.5	0.0
	26nm,0.3s							
MRGE	Morge	0.80	356	Pg		Pb	16 57 09.5	0.0
	26nm,0.3s							
ORIF	Oris-en-Rattie	0.90	267	*e*Pg		Pg	16 57 10.9	-0.6
	SNR=1.0							
ORIF	Oris-en-Rattie	0.90	267	*e*Pn		Pn	16 57 12.9	+1.1
	SNR=1.0							
ORIF				*e*Sg		Sg	16 57 22.2	-1.2
	42nm,0.2s,SNR=1.0							
ORIF	Oris-en-Rattie	0.90	267	*e*Pg		Pg	16 57 10.9	-0.6
	SNR=1.0							
ORIF	Oris-en-Rattie	0.90	267	*e*Pn		Pn	16 57 12.9	+1.1
	SNR=1.0							
ORIF				*e*Sg		Sg	16 57 22.2	-1.2
	21nm,0.2s,SNR=1.0							
RORO	Rocca Rossa	1.08	142	P		Pg	16 57 13.8	-1.2
RORO				S		Sg	16 57 26.8	-2.4
DIX	Grande Dixence	1.12	9	Pg		Pb	16 57 15.3	+0.2
DIX	Grande Dixence	1.12	9	Pg		Pb	16 57 15.3	+0.2
SBF	Sospel	1.13	169	*e*Pn		Pb	16 57 14.5	-0.5
	SNR=1.0							
SBF				*e*Sg		Sb	16 57 30.2	+0.8
	27nm,0.3s,SNR=1.0							
SBF	Sospel	1.13	169	*e*Pn		Pb	16 57 14.5	-0.5
	SNR=1.0							
SBF				*e*Sg		Sb	16 57 30.2	+0.8
	14nm,0.3s,SNR=1.0							
IMI	Imperia	1.19	153	P		Pb	16 57 15.5	-0.5
IMI				S		Sb	16 57 30.5	-0.6
NEGI	Seborga	1.19	160	P		Pb	16 57 15.3	-0.8
NEGI				S		Sb	16 57 29.7	-1.5
FRF	La Foret Royal	1.46	194	*e*Pn		Pb	16 57 21.0	+0.5
	SNR=1.0							
FRF	La Foret Royal	1.46	194	*e*Pg		Pg	16 57 22.0	0.0
	SNR=1.0							
FRF				*e*Sg		Sg	16 57 41.2	+0.2
	21nm,0.2s,SNR=1.0							
FRF	La Foret Royal	1.46	194	*e*Pn		Pb	16 57 21.0	+0.5
	SNR=1.0							
FRF	La Foret Royal	1.46	194	*e*Pg		Pg	16 57 22.0	0.0
	SNR=1.0							
FRF				*e*Sg		Sg	16 57 41.2	+0.2
	10nm,0.2s,SNR=1.0							
LMR	La Mourre	1.70	196	*e*Pg		Pg	16 57 26.1	-0.6
	SNR=1.0							
LMR				*e*Sg		Sb	16 57 47.1	+1.4
	14nm,0.2s,SNR=1.0							
LMR	La Mourre	1.70	196	*e*Pg		Pg	16 57 26.1	-0.6
	SNR=1.0							
LMR				*e*Sg		Sb	16 57 47.1	+1.4
	7.0nm,0.2s,SNR=1.0							
VIVF	Saint-Julien-l	1.76	267	*e*Pn		Pn	16 57 25.0	+1.4
	SNR=1.0							
VIVF	Saint-Julien-l	1.76	267	*e*Pg		Pb	16 57 26.5	+0.7
	SNR=1.0							
VIVF				*e*Sg		Sb	16 57 48.3	+0.8
	6.1nm,0.2s,SNR=1.0							
VIVF	Saint-Julien-l	1.76	267	*e*Pn		Pn	16 57 25.0	+1.4
	SNR=1.0							
VIVF	Saint-Julien-l	1.76	267	*e*Pg		Pb	16 57 26.5	+0.7
	SNR=1.0							
VIVF				*e*Sg		Sb	16 57 48.3	+0.8
	3.0nm,0.2s,SNR=1.0							
CABF	La Chapelle	1.80	336	*e*Pg		Pb	16 57 27.0	+0.6
	SNR=1.0							
CABF				*e*Sg		Sg	16 57 51.8	-0.2
	7.0nm,0.3s							
CABF	La Chapelle	1.80	336	*e*Pg		Pb	16 57 27.0	+0.6
	SNR=1.0							
CABF				*e*Sg		Sg	16 57 51.8	-0.2
	3.5nm,0.3s							
LASF	Ste Croix	2.52	250	*e*Pn		Pn	16 57 35.8	+1.8
LASF				*e*Sn		Sn	16 58 04.7	+0.5
	1.9nm,0.2s							
LASF	Ste Croix	2.52	250	*e*Pn		Pn	16 57 35.8	+1.8
LASF				*e*Sn		Sn	16 58 04.7	+0.5
	0.9nm,0.2s							
SMF	Signal de Mont	2.85	307	*e*Pn		Pn	16 57 39.5	+0.9
	SNR=1.0							
SMF				*e*Sg		Sg	16 58 23.3	-2.3
	5.8nm,0.4s,SNR=1.0							
SMF	Signal de Mont	2.85	307	*e*Pn		Pn	16 57 39.5	+0.9
	SNR=1.0							
SMF				*e*Sg		Sg	16 58 23.3	-2.3
	2.9nm,0.4s,SNR=1.0							
HAU	Haudompre	3.08	350	*e*Pn		Pn	16 57 43.5	+1.7
	SNR=1.0							
HAU	Haudompre	3.08	350	*e*Pn		Pn	16 57 43.5	+1.7
	SNR=1.0							
BGF	Bois d'Agland	3.40	299	*e*Pn		Pn	16 57 48.2	+2.1
BGF	Bois d'Agland	3.40	299	*e*Pn		Pn	16 57 48.2	+2.1
CDF	Champ du Feu	3.44	1	*e*Pn		Pn	16 57 48.1	+1.3
	SNR=1.0							
CDF	Champ du Feu	3.44	1	*e*Pn		Pn	16 57 48.1	+1.3
	SNR=1.0							
CAF	Calviac	3.61	271	*e*Pn		Pn	16 57 50.6	+1.6
	SNR=1.0							
CAF	Calviac	3.61	271	*e*Pn		Pn	16 57 50.6	+1.6
	SNR=1.0							
MEZF	Maizieres J'vi	3.81	339	*e*Sg		Sg	16 58 52.3	-4.1
	3.0nm,0.5s,SNR=1.0							
MEZF	Maizieres J'vi	3.81	339	*e*Sg		Sg	16 58 52.3	-4.1
	1.5nm,0.5s,SNR=1.0							
EPF	Esparros	5.28	251	*e*Sg		Sg	16 59 36.9	-6.4
	2.3nm,0.6s,SNR=1.0							

*BJI **23** 17:05:05.1,13.10N×145.90E,h8km,mb4.7/6,mB5.2/5, Ms4.8/2,Ms7.4.5/1*
*ISCJB **23** 17:05:06.4±2.8,13.05N±0.03×145.58E±0.04, h13km±17km,mb4.8/154,MS4.1/6,Error ellipse: s-maj=6.2km s-min=5.3km az=18.2*
*IDC **23** 17:05:06.3±0.5,13.11N×145.64E,h0km,mb4.4/30, mb1 4.5/30,mb1mx4.4/53,mbtmp4.4/30,MS4.1/5, Ms1 4.2/5,ms1mx3.5/50,Error ellipse: s-maj=15.9km s-min=11.0km az=72.0*
*NEIC **23** 17:05:09.4±2.8,13.08N×145.54E,h20km±20km, mb4.9/114,Error ellipse: s-maj=5.8km s-min=4.5km az=101.0*
*MOS **23** 17:05:10.6±1.2,13.26N×145.43E,h33km,mb5.0/40,Error ellipse: s-maj=10.7km s-min=7.1km az=110.4*

ISC 23 17:05:08.7±2.8,13.07N±0.05×145.69E±0.06,h19km±11km, n258,σ1$43/256,mb4.9/154,MS4.2/6,7C-3D,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GUMO	Guam	0.95	303	Pn		Pn	17 05 27.4	+0.3
	2μm,0.3s,baz=128,slow=5.6,SNR=352							
GUMO				Sn		Sn	17 05 40.6	+0.5
	1μm,0.3s,baz=324,slow=19,SNR=30							
PATS	Pohnpei	13.89	115	*e*Pn		Pn	17 08 22.9	-1.7
PATS				*e*Sn		Sn	17 10 46.3	-12
MANU	Manus Island	15.11	174	*e*Pn		Pn	17 08 40.4	-0.8
	160nm,1.6s							
FAKI	Fak Fak	20.75	221	*e*P		Pn	17 09 50.8	-0.2
	89nm,1.1s							
H11S3	WAKE ISLAND Hy 20.91		72	T		T	17 31 48.9	
	baz=220							
H11S1	WAKE ISLAND Hy 20.92		72	T		T	17 32 31.1	
	baz=220							
H11S2	WAKE ISLAND Hy 20.92		72	T		T	17 32 09.0	
	baz=220							
WAKE	Wake Island	21.05	70	*e*P		P	17 09 49.1	-2.7
	279nm,1.3s							
JOW	Kunigami	21.30	313	*e*P		P	17 09 56.0	+1.6
	38nm,1.1s							
H11N1	WAKE ISLAND Hy 21.38		69	T		T	17 32 55.5	
	baz=258,slow=73,SNR=7.9							
H11N2	WAKE ISLAND Hy 21.39		69	T		T	17 33 03.4	
	baz=258,slow=73,SNR=7.9							
H11N3	WAKE ISLAND Hy 21.39		69	T		T	17 32 59.9	
	baz=258,slow=73,SNR=8.1							
PMG	Port Moresby	22.38	176	P		P	17 10 06.9	+0.8
	18nm,0.8s,baz=22,slow=7.9,SNR=5.4							
PMG	Port Moresby	22.38	176	*e*P		P	17 10 07.9	+1.9
PMG					pmax	pmax		
	comp=Z,17nm,0.8s							
PMG	Port Moresby	22.38	176	*e*P		P	17 10 07.9	+1.9
	comp=Z,17nm,0.8s							
INU	Inuyama	23.53	342	*e*P		P	17 10 18.2	+0.5
	comp=Z,42nm,1.3s							
TGY	Tagaytay City	24.08	275	P		P	17 10 23.7	+0.4
	comp=Z,169nm,0.4s,baz=303,slow=9.6,SNR=3.1							
TGY					LR	LR	17 19 32.4	
	comp=Z,294nm,19.7s,baz=110,slow=36							
JNU	Nakatsue	24.11	328	P		P	17 10 23.3	-0.1
	comp=Z,4.0nm,0.8s,baz=59,slow=3.6,SNR=7.1							
YOJ	Yonaguni jima	24.24	301	*e*P		P	17 10 23.5	-1.1
YOJ					pmax	pmax		
	comp=Z,39nm,1.3s							
YOJ	Yonaguni jima	24.24	301	*e*P		P	17 10 23.5	-1.1
	comp=Z,39nm,1.3s							
MJAR	Matsushiro Arr	24.32	345	P		P	17 10 23.8	-1.4
	comp=Z,2.6nm,0.5s,baz=173,slow=11,SNR=8.6							
MAJO	Matsushiro	24.32	345	*e*P		P	17 10 25.9	+0.6
MAJO					pmax	pmax		
	comp=Z,93nm,1.1s							
MAJO	Matsushiro	24.32	345	*e*P		P	17 10 25.6	+0.4
	comp=Z,19nm,1.2s							
MJB9	Matsu-Tunnel	24.32	345	*e*P		P	17 10 23.8	-1.5
	comp=Z,4.7nm,1.2s							
YULB	Yu-li	25.30	297	*e*P		P	17 10 34.1	-0.2
	comp=Z,10.0nm,1.0s							
TWG	Pinlang	25.31	296	*e*P		P	17 10 33.4	-1.0
	comp=Z,51nm,1.2s							
SAUI	Saumlaki	25.33	215	*e*P		P	17 10 34.7	+0.1
	comp=Z,319nm,1.0s							
YHNB	Yeheng	25.69	300	*e*P		P	17 10 35.7	-2.2
	comp=Z,68nm,1.9s							
SSLB	Suanglung	25.73	298	*e*P		P	17 10 37.8	-0.5
	comp=Z,14nm,0.9s							
TPUB	Ta-pu	25.85	297	*e*P		P	17 10 39.0	-0.3
	comp=Z,61nm,2.0s							
HNR	Honiara	26.46	147	LR		LR	17 21 30.2	
	comp=Z,476nm,18.2s,baz=344,slow=37							
HNR	Honiara	26.46	147	*e*P		P	17 10 42.5	-2.3
HNR					pmax	pmax		
	comp=Z,166nm,1.6s							
HNR	Honiara	26.46	147	*e*P		P	17 10 42.5	-2.3
	comp=Z,166nm,1.6s							
LUWI	Luwuk	26.71	240	*e*P		P	17 10 46.9	-0.2
	comp=Z,78nm,0.9s							
COEN	Coen	26.97	185	*e*P		P	17 10 50.0	+0.7
	comp=Z,32nm,1.4s							
MYLDM	Lahad Datu	27.94	256	*e*P		P	17 10 58.5	+0.3
	comp=Z,40nm,1.1s							
KSRS	Korea Array	29.01	330	P		P	17 11 06.3	-1.1
	comp=Z,1.8nm,0.7s,baz=145,slow=9.2,SNR=9.8							
KSRS					PcP	PcP	17 14 18.1	+2.4
	comp=Z,1.9nm,1.1s,baz=133,slow=2.9,SNR=7.3							
KS15	Wonju Array Si	29.02	330	*e*P		P	17 11 08.0	+0.5
KSAR	Wonju Array Be	29.02	330	P		P	17 11 06.3	-1.2
KSAR							17 14 18.2	
KSAR	Wonju Array Be	29.02	330	P		P	17 11 06.3	-1.2
KSAR					PcP	PcP	17 14 18.1	+2.3
KS01	Wonju Array Si	29.04	330	*e*P		P	17 11 07.8	+0.1
MTN	Manton Dam	29.51	210	*e*P		P	17 11 11.8	-0.3
	comp=Z,12nm,0.8s							
USRK	Ussuriysk Ar.	33.17	342	P		P	17 11 44.0	-0.1
	comp=Z,1.9nm,0.8s,baz=179,slow=9.5,SNR=4.6							
WRAB	Tennant Creek	34.64	199	i*e*P		P	17 11 57.3	+0.2
WRAB					pmax	pmax		
	comp=Z,51nm,1.7s							
WRAB	Tennant Creek	34.64	199	*e*P		P	17 11 57.0	-0.1
	comp=Z,12nm,0.7s							
WRAB				*e*PcP		PcP	17 14 31.4	+0.1
WB2	Warramunga Arr	34.65	199	*e*P		P	17 11 55.2	-2.0
WR1	Warramunga Arr	34.65	199	*e*P		P	17 11 57.5	+0.4
	comp=Z,14nm,0.8s							
WRA	Warramunga Arr	34.65	199	P		P	17 11 57.5	+0.3
	comp=Z,9.0nm,0.7s,baz=22,slow=9.8,SNR=64							
SBUM	Sibu	34.75	255	*e*P		P	17 11 58.8	+0.7
	comp=Z,15nm,0.8s							
FITZ	Fitzroy Crossi	36.75	213	*e*P		P	17 12 15.4	+0.2
	comp=Z,12nm,1.2s							
MIDW	Midway	37.54	61	*e*P		P	17 12 21.7	-0.1
	comp=Z,290nm,1.6s							
ENH	Enshi	37.54	303	*e*P		P	17 12 21.7	-0.2
	comp=Z,8.2nm,1.0s							
KLR	Kul'dur	37.85	345	P		P	17 12 23.3	-0.9
	comp=Z,1.9nm,0.6s,baz=132,slow=4.3,SNR=9.1							
KLR					PcP	PcP	17 14 41.7	+1.3
	comp=Z,1.3nm,0.6s,baz=329,slow=5.9,SNR=3.8							
AS01	Alice Springs	38.27	198	*e*P		P	17 12 28.3	+0.2
AS31	Alice Springs	38.28	198	*e*P		P	17 12 28.1	0.0
	comp=Z,2.9nm,0.6s							
ASAR	Alice Springs	38.29	198	P		P	17 12 28.6	+0.5
	comp=Z,4.1nm,0.7s,baz=24,slow=9.7,SNR=56							
DZM	Mont Dzumac	40.42	150	LR		LR	17 30 21.1	
	comp=Z,481nm,18.2s,baz=337,slow=37							
HHC	Hu-ho-hao-te	40.68	319	*e*P		P	17 12 50.4	+2.3
HHC				S		S	17 18 55.4	-2.1
HHC					pmax	pmax		
	comp=Z,18nm,1.3s							
HHC					pmax	pmax		
	comp=Z,190nm,5.6s							
HHC					LR	LR		
	comp=Z,190nm,12.3s							
HHC					LR	LR		
	comp=Z,360nm,14.8s							
PETK	Petropavlovsk-	41.07	11	P		P	17 12 51.9	+0.9
	comp=Z,2.3nm,0.7s,baz=146,slow=7.1,SNR=7.3							
PEA1	Petropavlovsk-	41.08	11	*e*P		P	17 12 51.9	+0.8
PET	Petropavlovsk	41.18	12	*e*P		P	17 12 48.5	-3.4
PET					pmax	pmax		
	comp=Z,32nm,1.2s							
PET	Petropavlovsk	41.18	12	*e*P		P	17 12 48.5	-3.4
	comp=Z,32nm,1.2s							
MBWA	Marble Bar	42.51	217	*e*P		P	17 13 02.6	-0.6
	comp=Z,56nm,1.9s							
CISI	Cisompet, Garu	42.84	244	*e*P		P	17 13 05.2	-0.8
	comp=Z,58nm,1.0s							
MYKOM	Kota Tinggi	42.90	258	*e*P		P	17 13 06.2	-0.2
	comp=Z,31nm,1.1s							
STKA	Stephens Creek	44.86	185	P		P	17 13 22.1	+0.2
	comp=Z,4.3nm,1.0s,baz=285,slow=4.0,SNR=3.8							
STKA	Stephens Creek	44.86	185	*e*P		P	17 13 21.5	-0.4
STKA					pmax	pmax		
	comp=Z,7.0nm,1.7s							
STKA	Stephens Creek	44.86	185	*e*P		P	17 13 21.5	-0.4
	comp=Z,6.6nm,1.7s							
KULM	Kulim	45.07	264	*e*P		P	17 13 23.8	-0.1
	comp=Z,33nm,1.5s							
CM01	Chiang Mai Arr	45.20	283	*e*P		P	17 13 23.8	-1.1
CM01				*e*PcP		PcP	17 15 06.7	+1.6
CHTO	Chiang Mai	45.21	284	*e*P		P	17 13 24.1	-0.9
CHTO					pmax	pmax		
	comp=Z,8.0nm,1.4s							
CHTO	Chiang Mai	45.21	284	*e*P		P	17 13 24.1	-0.9
	comp=Z,8.2nm,1.4s							
CM31	Chiang Mai Arr	45.21	283	*e*P		P	17 13 25.5	+0.5
CM31				*e*PcP		PcP	17 15 07.2	+2.1
CMAR	Chiang Mai Arr	45.21	283	P		P	17 13 25.4	+0.4
	comp=Z,3.2nm,0.6s,baz=82,slow=6.7,SNR=24							
CMAR					PcP	PcP	17 15 07.2	+2.1
	comp=Z,2.5nm,0.9s,baz=110,slow=1.8,SNR=7.0							
CMAR					LR	LR	17 32 58.6	
	comp=Z,114nm,18.2s,baz=85,slow=37							
CMAR	Chiang Mai Arr	45.21	283	*ce*P		P	17 13 25.3	+0.3
CMAR					pmax	pmax		
	comp=Z,3.0nm,0.6s							
MNAI	Manna	45.83	251	*e*P		P	17 13 28.6	-1.4
	comp=Z,193nm,1.1s							
XMIS	Christmas Isla	46.12	241	*e*P		P	17 13 31.0	-1.2
	comp=Z,155nm,1.3s							
MA2	Magadan	46.58	4	P		P	17 13 35.7	+0.5
PSI	Prapat	47.34	262	*e*P		P	17 13 40.2	-1.8
PSI					pmax	pmax		
	comp=Z,7.0nm,0.7s							
PSI	Prapat	47.34	262	*e*P		P	17 13 40.2	-1.8
	comp=Z,7.1nm,0.7s							
SONA0	Songino Array	47.61	325	*e*P		P	17 13 43.7	+0.1
	comp=Z,8.9nm,1.5s							
SONA0				*e*PcP		PcP	17 15 14.7	+1.5
SONM	Songino Array	47.61	325	P		P	17 13 43.7	+0.1
	comp=Z,1.1nm,0.6s,baz=147,slow=7.8,SNR

MK31 Makanchi Array 62.41 316 *e*P P 17 15 31.1 +0.5
MK31 pmax pmax
comp=Z,2.0nm,0.5s
MK31 Makanchi Array 62.41 316 *e*P P 17 15 30.8 +0.2
MK32 Makanchi Array 62.41 316 *e*P P 17 15 31.1 +0.5
MKAR Makanchi Array 62.41 316 P P 17 15 31.1 +0.5
comp=Z,2.0nm,0.4s,baz=90,slow=8.4,SNR=36
MKAR Makanchi Array 62.41 316 *e*P P 17 15 31.1 +0.5
MKAR pmax pmax
comp=Z,37nm,0.4s
MKAR Makanchi Array 62.41 316 *e*P P 17 15 31.1 +0.5
comp=Z,37nm,0.4s
ZAA0 Zalesovo Array 62.51 324 *e*P P 17 15 30.4 -0.6
ZALV Zalesovo Beam 62.51 324 P P 17 15 31.1 +0.1
comp=Z,0.8nm,0.4s,baz=99,slow=4.6,SNR=4.5
ZALV PcP **PcP 17 16 09.6 -0.5**
comp=Z,2.0nm,0.4s,baz=125,slow=4.6,SNR=7.3
ZAA1 Zalesovo Array 62.51 324 *e*P P 17 15 31.1 +0.1
ZAA1 *e*PcP **PcP 17 16 09.6 -0.5**
MAKZ Makanchi 62.63 316 P P 17 15 32.3 +0.3
MAKZ pmax pmax
comp=Z,3.0nm,0.6s
MAKZ Makanchi 62.63 316 *e*P P 17 15 32.4 +0.3
comp=Z,7.8nm,1.1s
NVS Novosibirsk 63.64 325 ǁ *i*P P 17 15 38.8 +0.3
NVS pmax pmax
comp=Z,10.0nm,1.2s
NVS pmax pmax
comp=N,4.0nm,1.3s
NVS pmax pmax
comp=E,9.0nm,1.3s
SVW2 Sparrevohn 63.76 28 *e*P P 17 15 40.9 +1.7
comp=E,11nm,1.3s
KDAK Kodiak Island 64.09 32 *e*P P 17 15 42.7 +1.4
KDAK pmax pmax
comp=Z,100nm,1.9s
KDAK Kodiak Island 64.09 32 *e*P P 17 15 42.7 +1.4
comp=Z,100nm,1.9s
TT01 Tatalina 64.26 26 *e*P P 17 15 44.1 +1.6
HOM Homer 65.12 30 *e*P P 17 15 48.2 +0.2
comp=Z,158nm,1.1s
CNPM China Poot 65.28 30 *e*P P 17 15 50.3 +1.1
comp=Z,43nm,1.4s
KURK Kurchatov 65.49 320 *e*P P 17 15 51.4 +0.7
KURK Kurchatov 65.49 320 *e*P P 17 15 51.4 +0.7
KURBB Kurchatov Arra 65.53 320 P P 17 15 51.4 +0.4
comp=Z,7.9nm,0.6s,baz=101,slow=6.7,SNR=88
PPLA Purkeypile 65.89 26 *e*P P 17 15 54.7 +1.4
comp=Z,15nm,1.1s
CAST Castle Rocks 66.11 26 *e*P P 17 15 56.2 +1.7
comp=Z,9.2nm,1.0s
KTH Kantishna Hill 66.65 26 *e*P P 17 15 58.5 +0.5
comp=Z,17nm,1.1s
BPAW Bear Paw Mtn. 66.80 25 *e*P P 17 15 59.7 +0.8
comp=Z,16nm,1.2s
PMR Palmer 66.86 28 *e*P P 17 15 58.9 -0.4
PMR pmax pmax
comp=Z,5.0nm,0.9s
PMR Palmer 66.86 28 *e*P P 17 15 58.9 -0.4
comp=Z,5.0nm,0.9s
NRIK Noril'sk 66.88 341 P P 17 15 59.1 -0.2
comp=Z,6.1nm,0.7s,baz=91,slow=8.9,SNR=4.6
TRF Thorofare Moun 66.89 26 *e*P P 17 15 58.4 -1.2
comp=Z,18nm,1.2s
MLY Manley 67.20 24 *e*P P 17 16 02.2 +0.8
comp=Z,17nm,1.4s
SML Sawmill 67.29 28 *e*P P 17 16 02.4 +0.3
SML pmax pmax
comp=Z,11nm,0.8s
SML Sawmill 67.29 28 *e*P P 17 16 02.4 +0.3
comp=Z,11nm,0.8s
RND Reindeer 67.49 26 *e*P P 17 16 04.0 +0.6
RND pmax pmax
comp=Z,31nm,1.8s
RND Reindeer 67.49 26 *e*P P 17 16 04.0 +0.6
comp=Z,31nm,1.8s
MCK McKinley 67.55 26 *e*P P 17 16 05.5 +1.9
MCK pmax pmax
comp=Z,39nm,2.0s
MCK McKinley 67.55 26 *e*P P 17 16 05.5 +1.9
comp=Z,39nm,2.0s
GLI Glacier Island 67.63 29 *e*P P 17 16 02.2 -1.9
comp=Z,12nm,1.0s
SCM Sheep Creek Mo 67.75 28 *e*P P 17 16 06.5 +1.5
SCM pmax pmax
comp=Z,17nm,1.0s
SCM Sheep Creek Mo 67.75 28 *e*P P 17 16 06.5 +1.5
comp=Z,17nm,1.0s
FID Port Fidalgo 67.90 29 *e*P P 17 16 07.4 +1.5
comp=Z,58nm,1.6s
DHY Denali Highway 68.05 27 *e*P P 17 16 07.6 +0.6
comp=Z,22nm,1.7s
WRH Wood River Hil 68.11 25 *e*P P 17 16 06.5 -0.6
comp=Z,9.8nm,1.0s
COLD Coldfoot 68.12 22 *e*P P 17 16 08.2 +1.1
comp=Z,24nm,1.6s
MDM Murphy Dome 68.19 25 *e*P P 17 16 07.0 -0.6
comp=Z,6.5nm,1.0s
EYAK Cordova Ski Ar 68.20 30 *e*P P 17 16 07.2 -0.6
comp=Z,9.2nm,0.6s
MCQ Macquarie Isla 68.24 172 *e*P P 17 16 06.6 -1.3
MCQ Macquarie Isla 68.24 172 *e*P P 17 16 06.6 -1.3
comp=Z,530nm,1.7s
CCB Clear Creek Bu 68.28 25 *e*P P 17 16 08.7 +0.5
comp=Z,9.4nm,1.3s
DIV Divide 68.32 29 *e*P P 17 16 08.6 0.0
comp=Z,18nm,1.4s
KLU Klutina 68.33 29 *e*P P 17 16 11.0 +2.4
comp=Z,10nm,1.0s
HDA Harding Lake 68.58 26 *e*P P 17 16 11.9 +1.9
comp=Z,82nm,2.0s
RAGM Ragged Mountai 68.69 30 *e*P P 17 16 13.7 +2.8
comp=Z,24nm,0.7s
ILAR Eielson Array 68.69 25 P P 17 16 11.0 +0.2
comp=Z,2.1nm,0.5s,baz=249,slow=5.8,SNR=29
ILB Eielson Array 68.69 25 *e*P P 17 16 10.3 -0.5
IL1 Eielson Array 68.70 25 *e*P P 17 16 10.3 -0.5
BMRM Bremner River 68.84 29 *e*P P 17 16 11.6 -0.3
comp=Z,9.5nm,1.0s
PAX Paxson 68.87 27 *e*P P 17 16 12.9 +0.9
PAX pmax pmax
comp=Z,7.0nm,1.0s
PAX Paxson 68.87 27 *e*P P 17 16 12.9 +0.9
comp=Z,6.9nm,1.0s
CRQM Cirque 69.50 30 *e*P P 17 16 16.7 +0.6
comp=Z,8.1nm,0.8s
DOT Dot Lake 69.63 27 *e*P P 17 16 18.1 +1.4
comp=Z,18nm,0.8s
MENT Mentasta 69.64 27 *e*P P 17 16 17.5 +0.8
comp=Z,26nm,0.2s
FYU Fort Yukon 69.81 23 *e*P P 17 16 18.6 +1.0
comp=Z,57nm,1.5s
BALM Baldy 69.93 30 *e*P P 17 16 19.3 +0.6
BALM pmax pmax
comp=Z,5.0nm,1.0s
BALM Baldy 69.93 30 *e*P P 17 16 19.3 +0.6
comp=Z,5.0nm,1.0s
KKAR Karatay Array 70.39 311 *e*P P 17 16 20.6 -1.1
KKAR pmax pmax
comp=Z,25nm,1.0s
KKAR Karatay Array 70.39 311 *e*P P 17 16 20.6 -1.1
comp=Z,25nm,1.0s
VOSK Vostochnaya 70.45 321 P P 17 16 16.9 -4.9
VOSK pmax pmax
comp=Z,3.0nm,0.7s
VOSK Vostochnaya 70.45 321 *e*P P 17 16 21.3 -0.5
comp=Z,8.8nm,1.4s
PPT Papeete 70.77 114 LR LR 17 43 30.7
comp=Z,178nm,19.6s,baz=312,slow=32
BVA0 Borovoye Array 70.83 322 *i* P P 17 16 24.0 -0.1
BVA0 pmax pmax
comp=Z,11nm,0.8s
BVAR Borovoye Array 70.83 322 P P 17 16 24.6 +0.4
comp=Z,10nm,0.5s,baz=108,slow=7.4,SNR=74
BRVK Borovoye 70.89 322 *d i*P P 17 16 25.1 +0.6
BRVK pmax pmax
comp=Z,33nm,1.0s
BRVK Borovoye 70.89 322 *e*P P 17 16 24.8 +0.3
comp=Z,9.5nm,0.6s
EGAK Eagle 71.09 26 *e*P P 17 16 26.8 +1.3
comp=Z,10nm,1.2s
DAWY Dawson 71.74 27 *e*P P 17 16 29.9 +0.4
comp=Z,20nm,1.5s
HYT Haines Junctio 72.25 30 *e*P P 17 16 34.7 +1.9
comp=Z,16nm,1.4s
SKAG Skagway 73.25 32 *e*P P 17 16 36.1 -2.4
comp=Z,10nm,1.2s

INK Inuvik 74.54 22 P P 17 16 47.6 +1.7
comp=Z,11nm,1.0s,baz=261,slow=8.2,SNR=13
INK Inuvik 74.54 22 *e*P P 17 16 46.9 +1.0
INK pmax pmax
comp=Z,13nm,1.0s
INK Inuvik 74.54 22 *e*P P 17 16 46.9 +1.0
comp=Z,13nm,1.0s
DLBC Dease Lake 75.99 33 *e*P P 17 16 56.7 +2.2
comp=Z,12nm,1.1s
SVE Sverdlovsk 76.47 326 ǁ *e*P P 17 16 58.1 +0.9
SVE pmax pmax
comp=Z,11nm,1.0s
ABKAR Akbulak array 77.46 318 *e*P P 17 17 02.8 -0.1
comp=Z,48nm,1.0s
ARU Arti 77.64 325 P P 17 17 04.0 +0.2
comp=Z,5.5nm,0.5s,baz=90,slow=3.0,SNR=12
ARU Arti 77.64 325 *c i*P P 17 17 03.7 -0.1
ARU S S 17 26 55.5 +0.9
ARU SS **SS 17 31 50.5 -3.5**
ARU pmax pmax
comp=Z,17nm,1.7s
ARU Arti 77.64 325 *e*P P 17 17 03.5 -0.3
comp=Z,7.5nm,0.6s
AKTO Aktyubinsk 78.58 319 P P 17 17 09.1 -0.1
comp=Z,2.0nm,0.7s,baz=98,slow=5.4,SNR=9.2
GEYT Alibeck 80.20 307 P P 17 17 19.3 +1.0
comp=Z,2.0nm,0.8s,baz=249,slow=4.1,SNR=5.6
PGC Sidney 80.88 42 *e*P P 17 17 20.6 -1.0
comp=Z,12nm,1.2s
E03A Lebam 81.15 44 *e*P P 17 17 23.1 -0.1
comp=Z,16nm,0.9s
HUMO Hull Mountain 82.27 48 *e*P P 17 17 33.8 +4.6
comp=Z,11nm,1.3s
YBH Yreka Blue Hor 82.61 49 *e*P P 17 17 33.7 +2.6
YBH pmax pmax
comp=Z,13nm,1.4s
YBH Yreka Blue Hor 82.61 49 *e*P P 17 17 33.6 +2.6
comp=Z,13nm,1.4s
YKA Yellowknife Ar 82.95 27 P P 17 17 33.5 +1.3
comp=Z,2.6nm,0.6s,baz=289,slow=5.3,SNR=12
YKB5 Yellowknife Ar 82.95 27 *e*P P 17 17 33.5 +1.3
LTY Liberty 82.97 43 *e*P P 17 17 37.9 +5.0
comp=Z,16nm,1.5s
B08A Colville Reser 83.63 42 *e*P P 17 17 36.4 +0.3
comp=Z,5.6nm,1.2s
ORV Oroville 83.94 51 *e*P P 17 17 37.6 -0.3
ORV pmax pmax
comp=Z,8.0nm,1.3s
ORV Oroville 83.94 51 *e*P P 17 17 37.5 -0.3
comp=Z,8.2nm,1.3s
D08A Wollman Farm, 84.18 43 *e*P P 17 17 41.8 +2.8
MOD Modoc Plateau 84.34 48 *e*P P 17 17 41.3 +1.3
comp=Z,4.5nm,1.0s
C09A Chrisman Ranch 84.44 42 *e*P P 17 17 41.9 +1.6
comp=Z,22nm,1.9s
AFDM Forest Hills D 84.47 51 *e*P P 17 17 43.8 +3.2
comp=Z,4.3nm,1.0s
NEW Newport 85.08 42 *e*P P 17 17 43.7 +0.2
NEW pmax pmax
comp=Z,6.0nm,1.0s
NEW Newport 85.08 42 *e*P P 17 17 43.7 +0.2
comp=Z,5.6nm,1.0s
BMO Blue Mountains 85.79 45 *e*P P 17 17 49.3 +2.1
BMO pmax pmax
comp=Z,6.0nm,1.0s
BMO Blue Mountains 85.79 45 *e*P P 17 17 49.2 +2.1
comp=Z,5.6nm,1.0s
EDM Edmonton 86.09 36 *e*P P 17 17 51.9 +3.5
EDM pmax pmax
comp=Z,12nm,1.1s
EDM Edmonton 86.09 36 *e*P P 17 17 51.9 +3.5
comp=Z,12nm,1.1s
KLMR Klimovskoe 86.38 332 *e*P P 17 17 46.8 -2.8
KLMR pmax pmax
comp=Z,8.0nm,1.1s
BSMT Bassoo Peak 86.70 42 *e*P P 17 17 53.5 +1.7
MFID Camas Ranch 87.19 46 *e*P P 17 17 56.0 +1.9
comp=Z,6.0nm,0.9s
ARCES ARCESS Array B 87.82 342 P P 17 17 56.3 -0.2
comp=Z,1.8nm,0.4s,baz=65,slow=7.1,SNR=8.0
HLID Hailey 88.14 46 *e*P P 17 18 00.4 +1.7
comp=Z,3.8nm,1.1s
VRH Novokhopyorsk 88.47 322 *e*P P 17 17 58.7 -1.2
VRH pmax pmax
comp=Z,10.0nm,0.5s
GSC Goldstone, Bar 88.56 54 *e*P P 17 18 03.9 +3.1
GSC pmax pmax
comp=Z,12nm,1.4s
GSC Goldstone, Bar 88.56 54 *e*P P 17 18 03.9 +3.1
comp=Z,12nm,1.4s
TPNV Topopah Spring 88.57 53 *e*P P 17 18 03.7 +2.8
TPNV pmax pmax
comp=Z,5.0nm,0.9s
TPNV Topopah Spring 88.57 53 *e*P P 17 18 03.6 +2.8
comp=Z,4.8nm,0.9s
R11A Troy Canyon, C 88.71 51 *e*P P 17 18 04.3 +2.8
comp=Z,6.0nm,1.4s
SHPR Sheep Range 89.53 53 *e*P P 17 18 08.6 +3.2
NCK Nalchik 89.68 315 ǁ *e*P P 17 18 04.6 -1.2
NCK pmax pmax
comp=Z,18nm,1.3s
OBN Obninsk 89.97 327 *i* P P 17 18 06.0 -0.8
OBN pmax pmax
comp=Z,9.0nm,1.1s
VSR Storozhevoye 89.98 323 *e*P P 17 18 06.0 -0.9
VSR pmax pmax
comp=Z,20nm,1.2s
PKCU Pink Cliffs 91.45 51 *e*P P 17 18 17.3 +2.8
comp=Z,23nm,1.7s
PD31 Pinedale Array 91.76 45 *e*P P 17 18 15.9 +0.2
PDAR Pinedale Array 91.76 45 P P 17 18 17.9 +2.1
comp=Z,0.3nm,0.7s,baz=235,slow=3.2,SNR=3.3
U15A North Rim 91.77 52 *e*P P 17 18 18.9 +3.0
comp=Z,4.2nm,1.1s
Y14A Wickenburg 91.95 55 *e*P P 17 18 19.6 +3.0
comp=Z,44nm,1.3s
FIA0 FINESS Array S 91.97 335 *e*P P 17 18 15.2 -0.8
FIA0 FINESS Array S 91.97 335 *e*P P 17 18 15.2 -0.8
FINES FINESS Array B 91.97 335 P P 17 18 15.2 -0.8
comp=Z,2.2nm,0.5s,baz=66,slow=4.3,SNR=26
FINES FINESS Array B 91.97 335 *i*P P 17 18 15.6 -0.4
FINES pmax pmax
comp=Z,2.0nm,0.5s
AKASG Malin Array Be 95.90 325 P P 17 18 32.8 -1.5
comp=Z,0.2nm,0.3s,baz=48,slow=6.3,SNR=4.2
AKASG Malin Array Be 95.90 325 *i*P P 17 18 31.7 -2.5
AKBB Malin Array Si 95.90 325 *e*P P 17 18 32.8 -1.5
AKBB pmax pmax
comp=Z,8.0nm,1.5s
AKBB Malin Array Si 95.90 325 *e*P P 17 18 32.8 -1.5
comp=Z,8.0nm,1.5s
BR101 Keskin Array S 98.00 314 *e*P P 17 18 44.0 -0.3
BRTR Keskin Array B 98.00 314 P P 17 18 44.0 -0.2
comp=Z,0.8nm,0.8s,baz=66,slow=6.1,SNR=4.8
BRTR Keskin Array B 98.00 314 P P 17 18 44.0 -0.2
LSZ Lusaka 119.54 260 PKP **PKPdf 17 23 59.9 +1.5**
comp=Z,0.5nm,0.3s,baz=34,slow=2.1,SNR=4.7
TOA1 Torodi Ar. Sit 135.81 305 *e*PKPdf PKPdf 17 24 29.4 +0.2
TORD Torodi Ar. Bea 135.81 305 PKP **PKPdf 17 24 29.4 +0.2**
comp=Z,0.8nm,0.7s,baz=40,slow=1.6,SNR=8.8
DBIC Dimbokro 144.77 302 PKP PKPbc 17 24 45.4 +1.0
comp=Z,21nm,0.7s,baz=37,slow=3.3,SNR=21
DBIC Dimbokro 144.77 302 *e*PKIKP PKPab 17 24 44.5 +0.2
DBIC Dimbokro 144.77 302 *e*PKPdf PKPab 17 24 44.5 +0.2
KIC Kosan Boka 144.85 302 *e*PKP1 PKPbc 17 24 45.5 +0.8
comp=Z,130nm,1.3s
TIC Toumodi 144.92 302 *e*PKP1 PKPbc 17 24 45.6 +0.7
LIC Lamto 145.16 302 *e*PKP1 PKPab 17 24 46.5 +0.8
comp=Z,140nm,0.9s
LPAZ La Paz 147.15 100 PKPbc **PKPbc 17 24 53.0 +0.7**
comp=Z,2.0nm,0.7s,baz=266,slow=2.8,SNR=7.9
LPAZ La Paz 147.15 100 *e*PKP2 PKPbc 17 24 52.9 +0.5
LPAZ La Paz 147.15 100 *e*PKPbc PKPbc 17 24 52.9 +0.5

*IDC **23** 17:20:23.9±1.9, 36°.74N×141°.77E, h0km, mb3.8/5, mb1 3.8/8, mb1mx3.6/39, mbtmp3.8/8, ML3.5/3, Error ellipse: s-maj=45.0km s-min=21.3km az=66.0*
*ISCJB **23** 17:20:28.2±0.7, 36°.62N±0°.03×141°.57E±0°.05, h42km±6km, mb4.6/16, Error ellipse: s-maj=7.4km s-min=4.9km az=12.5*
*NEIC **23** 17:20:28.2±2.7, 36°.71N×141°.71E, h29km±20km, mb4.8/12, Error ellipse: s-maj=8.6km s-min=7.9km az=48.0*
*JMA **23** 17:20:30.8±0.1, 36°.60N×141°.24E, h45km±2km, M3.7*
JMA Felt I J1.
ISC 23 17:20:28.6±1.5, **36°.62N**±0°.04×**141°.48E**±0°.06, **h28**km±10km, **n56**,σ**1s77**/61, **mb4.5**/16, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.73**	**312**	P	**Pb**	**17 20 42.8**	**-0.1**
ONAJ				S	**Sb**	**17 20 51.2**	**-1.5**
JHO	**Hitachi**	**0.74**	**270**	P	**Pb**	**17 20 42.1**	**-0.8**
JHO				S	**Sb**	**17 20 50.1**	**-2.5**
JFK	**Kawauchi**	**0.90**	**327**	P	**Pb**	**17 20 45.7**	**+0.1**
JFK				S	**Sb**	**17 20 56.0**	**-1.2**
JYT	**Yasato**	**1.11**	**250**	P	**Pn**	**17 20 47.3**	**-1.0**
JYT				*e*S	**Sn**	**17 20 59.7**	**-2.9**
JFT	**Otama**	**1.29**	**315**	P	**Pn**	**17 20 51.8**	**+1.1**
JFT				S	**Sn**	**17 21 06.6**	**-0.5**
JMM	**Marumori**	**1.36**	**336**	P	**Pn**	**17 20 53.1**	**+1.3**
JMM				S	**Sn**	**17 21 08.9**	**-0.1**
JFY	**Yanaizu**	**1.63**	**300**	P	**Pn**	**17 20 55.9**	**+0.4**
JFY				S	**Sn**	**17 21 14.5**	**-1.0**
JAG	**Ashikaga**	**1.65**	**264**	P	**Pn**	**17 20 55.3**	**-0.4**
JKT	**Katashina**	**1.80**	**275**	P	**Pn**	**17 20 58.2**	**+0.3**
MJAR	**Matsushiro Arr**	**2.64**	**269**	Pn	**Pn**	**17 21 09.7**	**+0.4**
	26nm,0.3s,baz=111,slow=10,SNR=438						
MJAR				Sn	**Sn**	**17 21 41.8**	**+1.4**
	8.4nm,0.3s,baz=269,slow=29,SNR=6.8						
MAJO	**Matsushiro**	**2.64**	**269**	*e*Pn	**Pn**	**17 21 10.6**	**+1.2**
MAT	**Matsushiro**	**2.64**	**269**	P	**Pn**	**17 21 10.2**	**+0.9**
MAT				S	**Sn**	**17 21 42.9**	**+2.5**
MJB9	**Matsu-Tunnel**	**2.64**	**269**	*e*Pn	**Pn**	**17 21 10.5**	**+1.1**
JHJ2	**Mitsune**	**3.75**	**202**	*e*Pn	**Pn**	**17 21 25.5**	**+0.8**
JHJ	**Hachijo jima 2**	**3.76**	**202**	Pn	**Pn**	**17 21 26.6**	**+1.9**
	28nm,0.3s,baz=73,slow=19,SNR=3.2						
JHJ				Sn	**Sn**	**17 22 09.2**	**+1.2**
	22nm,0.3s,baz=72,slow=20,SNR=2.9						
INU	**Inuyama**	**3.84**	**252**	*e*Pn	**Pn**	**17 21 27.8**	**+2.0**
ERM	**Erimo**	**5.55**	**13**	*e*Pn	**Pn**	**17 21 52.5**	**+3.3**
ERM				*e*Sn	**Sn**	**17 22 54.2**	**+2.2**
ASAJ	**Asahikawa**	**7.54**	**6**	*e*Pn	**Pn**	**17 22 19.9**	**+3.3**
JNU	**Nakatsue**	**9.38**	**251**	Pn	**Pn**	**17 22 44.7**	**+2.6**
	0.2nm,0.3s,baz=342,slow=3.2,SNR=2.6						
CBIJ	**Chichi jima**	**9.51**	**176**	*e*Pn	**Pn**	**17 22 45.6**	**+1.9**
KSRS	**Korea Array**	**10.88**	**278**	Pn	**Pn**	**17 23 06.9**	**+4.6**
	0.1nm,0.3s,baz=91,slow=13,SNR=4.2						
KSAR	**Wonju Array Be**	**10.91**	**278**	Pn	**Pn**	**17 23 06.9**	**+4.2**
YOJ	**Yonaguni jima**	**19.96**	**238**	*e*P	**Pn**	**17 25 00.8**	**+0.5**
	20nm,0.9s						
H11N2	**WAKE ISLAND Hy**	**27.89**	**120**	T	T	17 55 55.2	
	baz=313,slow=75,SNR=43						
H11N1	**WAKE ISLAND Hy**	**27.89**	**120**	T	T	17 55 53.6	
	baz=313,slow=75,SNR=44						
H11N3	**WAKE ISLAND Hy**	**27.90**	**120**	T	T	17 55 57.8	
	baz=313,slow=75,SNR=31						
SMY	**Shemya**	**27.93**	**44**	*e*P	**P**	**17 26 14.5**	**-1.6**
	508nm,1.8s						
SONA1	**Songino Array**	**28.06**	**305**	*e*P	**P**	**17 26 19.6**	**+1.9**
SONA0	**Songino Array**	**28.07**	**305**	*e*P	**P**	**17 26 18.6**	**+0.9**
	5.4nm,1.6s						
SONM	**Songino Array**	**28.07**	**305**	P	**P**	**17 26 18.6**	**+0.9**
	0.8nm,0.6s,baz=107,slow=9.9,SNR=3.6						
H11S1	**WAKE ISLAND Hy**	**28.59**	**122**	T	T	17 57 07.9	
	baz=314,slow=76,SNR=52						
H11S3	**WAKE ISLAND Hy**	**28.59**	**122**	T	T	17 56 46.8	
	baz=314,slow=76,SNR=32						
H11S2	**WAKE ISLAND Hy**	**28.60**	**122**	T	T	17 56 48.0	
	baz=314,slow=76,SNR=31						
AKUT	**Akutan**	**39.94**	**47**	*e*P	**P**	**17 27 57.7**	**-2.4**
	136nm,1.1s						
CM31	**Chiang Mai Arr**	**41.45**	**256**	*e*P	**P**	**17 28 13.5**	**+0.5**
CM01	**Chiang Mai Arr**	**41.46**	**256**	*e*P	**P**	**17 28 13.8**	**+0.7**
ZAA0	**Zalesovo Array**	**42.24**	**313**	*e*P	**P**	**17 28 19.4**	**+0.3**
ZAA1	**Zalesovo Array**	**42.24**	**313**	*e*P	**P**	**17 28 19.6**	**+0.5**
ZALV	**Zalesovo Beam**	**42.24**	**313**	P	**P**	**17 28 19.6**	**+0.5**
	1.1nm,0.4s,baz=96,slow=7.0,SNR=10						
MK01	**Makanchi Array**	**44.39**	**302**	*e*P	**P**	**17 28 37.5**	**+0.9**
MK31	**Makanchi Array**	**44.39**	**302**	*e*P	**P**	**17 28 37.2**	**+0.6**
MK32	**Makanchi Array**	**44.39**	**302**	*e*P	**P**	**17 28 36.3**	**-0.3**
MKAR	**Makanchi Array**	**44.39**	**302**	P	**P**	**17 28 36.3**	**-0.3**
	0.2nm,0.3s,baz=85,slow=11,SNR=4.9						
MKAR	**Makanchi Array**	**44.39**	**302**	*e*P	**P**	**17 28 37.1**	**+0.5**
	13nm,1.1s						
MAKZ	**Makanchi**	**44.60**	**303**	*e*P	**P**	**17 28 37.7**	**-0.6**
	6.6nm,1.8s						
TTA	**Tatalina**	**45.73**	**35**	*e*P	**P**	**17 28 43.6**	**-3.5**
	18nm,0.8s						
HOM	**Homer**	**47.77**	**39**	*e*P	**P**	**17 28 59.6**	**-3.3**
	164nm,1.0s						
MLY	**Manley**	**48.17**	**32**	*e*P	**P**	**17 29 05.8**	**-0.3**
	6.6nm,1.6s						
KLU	**Klutina**	**50.47**	**36**	*e*P	**P**	**17 29 21.4**	**-2.3**
	9.7nm,1.3s						
MID	**Middleton Isla**	**50.48**	**39**	*e*P	**P**	**17 29 23.2**	**-0.5**
	90nm,1.0s						
WRAB	**Tennant Creek**	**56.64**	**188**	*e*P	**P**	**17 30 09.6**	**+0.3**
	18nm,0.8s						
WR1	**Warramunga Arr**	**56.65**	**188**	*e*P	**P**	**17 30 09.8**	**+0.5**
WRA	**Warramunga Arr**	**56.65**	**188**	P	**P**	**17 30 09.8**	**+0.5**
	0.7nm,0.4s,baz=5.9,slow=7.3,SNR=19						
ABKAR	**Akbulak array**	**58.25**	**310**	*e*P	**P**	**17 30 19.8**	**-0.5**
	17nm,1.4s						
ASAR	**Alice Springs**	**60.38**	**188**	P	**P**	**17 30 36.0**	**+0.7**
	0.2nm,0.4s,baz=13,slow=9.2,SNR=5.1						
OGNE	**Ogallala**	**83.34**	**43**	*e*P	**P**	**17 32 50.2**	**-3.0**

*IDC **23** 17:39:51.4±1.5, 36°.27N×141°.27E, h0km, mb3.6/6, mb1 3.7/7, mb1mx3.5/44, mbtmp3.6/7, ML3.2/1, Error ellipse: s-maj=33.9km s-min=27.9km az=15.0*
*ISCJB **23** 17:39:56.0±0.9, 36°.32N±0°.04×141°.18E±0°.07, h41km±8km, mb3.6/6, Error ellipse: s-maj=10.0km s-min=7.0km az=6.5*
*JMA **23** 17:39:57.2±0.1, 36°.32N×141°.03E, h46km±1km, M3.2*
ISC 23 17:39:55.7±1.7, **36°.34N**±0°.04×**141°.18E**±0°.07, **h24**km±12km, **n22**,σ**1s27**/24, **mb3.5**/6, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.56**	**299**	P	**Pn**	**17 40 07.6**	**-0.6**
JHO				S	**Sb**	**17 40 14.8**	**+0.2**
CHOJ	**Chosi**	**0.69**	**203**	P	**Pn**	**17 40 09.9**	**0.0**
CHOJ				S	**Sb**	**17 40 18.7**	**+0.6**
JYT	**Yasato**	**0.81**	**262**	P	**Pb**	**17 40 10.6**	**-0.4**
JYT				S	**Sb**	**17 40 20.0**	**-1.5**
ONAJ	**Iwakimizuishiy**	**0.82**	**338**	P	**Pn**	**17 40 11.8**	**0.0**
ONAJ				S	**Sb**	**17 40 21.6**	**-0.4**
JFK	**Kawauchi**	**1.05**	**346**	P	**Pn**	**17 40 15.0**	**0.0**
JFT	**Otama**	**1.36**	**330**	P	**Pb**	**17 40 20.5**	**+0.1**
JFT				S	**Sb**	**17 40 36.6**	**-0.8**
JAG	**Ashikaga**	**1.40**	**274**	P	**Pn**	**17 40 19.1**	**-0.6**
JAG				S	**Sn**	**17 40 35.4**	**-2.0**
MJAR	**Matsushiro Arr**	**2.41**	**276**	Pn	**Pn**	**17 40 33.8**	**+0.2**
	4.8nm,0.3s,baz=108,slow=8.7,SNR=112						
MJAR				Sn	**Sn**	**17 41 03.5**	**+1.2**
	4.6nm,0.3s,baz=104,slow=11,SNR=6.2						
MAT	**Matsushiro**	**2.41**	**276**	P	**Pn**	**17 40 34.4**	**+0.8**
MAT				S	**Sn**	**17 41 03.6**	**+1.3**
KSRS	**Korea Array**	**10.68**	**280**	Pn	**Pn**	**17 42 31.4**	**+4.4**
	0.1nm,0.3s,baz=93,slow=14,SNR=6.0						
H11N2	**WAKE ISLAND Hy**	**27.96**	**119**	T	T	18 15 42.0	
	baz=308,slow=74						
H11N1	**WAKE ISLAND Hy**	**27.97**	**119**	T	T	18 15 46.5	
	baz=308,slow=74						
H11N3	**WAKE ISLAND Hy**	**27.98**	**119**	T	T	18 15 06.1	
	baz=308						
H11S1	**WAKE ISLAND Hy**	**28.65**	**122**	T	T	18 15 55.9	
	baz=314,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy**	**28.65**	**122**	T	T	18 15 58.2	
	baz=314,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**28.66**	**122**	T	T	18 15 57.4	
	baz=314,slow=76,SNR=14						
ZALV	**Zalesovo Beam**	**42.25**	**313**	P	**P**	**17 47 46.8**	**+0.1**
	0.4nm,0.5s,baz=87,slow=8.5,SNR=4.1						
MKAR	**Makanchi Array**	**44.33**	**303**	P	**P**	**17 48 03.5**	**-0.2**
	0.2nm,0.2s,baz=85,slow=8.8,SNR=3.4						
KURBB	**Kurchatov Arra**	**46.28**	**308**	P	**P**	**17 48 18.9**	**-0.2**
	1.3nm,0.5s,baz=84,slow=7.9,SNR=19						
ILAR	**Eielson Array**	**50.18**	**32**	P	**P**	**17 48 48.7**	**-0.3**
	0.4nm,0.5s,baz=281,slow=6.2,SNR=2.0						
BVAR	**Borovoye Array**	**50.80**	**313**	P	**P**	**17 48 54.9**	**+0.3**
	0.2nm,0.4s,baz=99,slow=7.4,SNR=3.2						
WRA	**Warramunga Arr**	**56.35**	**188**	P	**P**	**17 49 33.7**	**-1.1**
	0.5nm,1.0s,baz=6.0,slow=7.3,SNR=2.7						

*ISCJB **23** 17:43:57.0±0.5, 23°.23S±0°.03×66°.48W±0°.05, h200km, mb3.5/2, Error ellipse: s-maj=6.6km s-min=3.9km az=152.4*
*IDC **23** 17:43:58.0±1.1, 23°.11S×66°.63W, h226km±16km, mb3.2/2, mb1 3.4/6, mb1mx3.1/28, mbtmp3.9/6, Error ellipse: s-maj=25.2km s-min=15.5km az=115.0*
*GUC **23** 17:44:00.3±0.6, 23°.18S×67°.10W, h242km±35km, ML4.4*
*SJA **23** 17:44:27.0±0.9, 25°.61S×66°.68W, h230km±36km, ML3.5*

ISC 23 17:43:56.6±0.8, 23°.23S±0°.06×66°.49W±0°.07, h200km, n31, σ1§74/41, 6C-4D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.31**	**285**	P		**Pn**	**17 44 41.2**	**+2.4**
	1µm,0.3s,baz=105,slow=8.0,SNR=145							
LVC				S		**Sn**	**17 45 13.5**	**+1.9**
	314nm,0.3s,baz=289,slow=20,SNR=12							
PB06	**IPOC Station P**	**2.89**	**280**	⇓*iP*		**Pn**	**17 44 47.2**	**+2.1**
PB06				*eS*		**Sn**	**17 45 22.6**	**-0.2**
PB09	**IPOC Station P**	**2.92**	**299**	⇑*iP*		**Pn**	**17 44 47.9**	**+2.4**
PB09				*i* S		**Sn**	**17 45 25.0**	**+1.5**
PB09				IAML			17 45 29.5	
	comp=E,537nm,0.4s							
PB07	**IPOC Station P**	**3.48**	**295**	⇑*iP*		**Pn**	**17 44 53.5**	**+1.4**
PB07				*i* S		**Sn**	**17 45 33.8**	**-1.8**
PB07				IAML			17 45 34.9	
	comp=N,586nm,0.3s							
PB04	**IPOC Station P**	**3.49**	**284**	⇑*iP*		**Pn**	**17 44 53.5**	**+1.2**
PB04				*i* S		**Sn**	**17 45 34.7**	**-1.2**
PB04				IAML			17 45 39.4	
	comp=E,182nm,0.2s							
PB01	**IPOC Station P**	**3.53**	**308**	*eP*		**Pn**	**17 44 54.4**	**+1.7**
PB01				*eS*		**Sn**	**17 45 35.8**	**-0.8**
PB01				IAML			17 45 37.4	
	comp=N,542nm,0.2s							
ANCH	**Antofagasta**	**3.63**	**262**	⇑*iP*		**Pn**	**17 44 55.7**	**+1.9**
ANCH				*eS*		**Sn**	**17 45 37.0**	**-1.6**
PB10	**IPOC Station P**	**3.74**	**265**	⇑*iP*		**Pn**	**17 44 56.6**	**+1.4**
PB10				*i* S		**Sn**	**17 45 39.3**	**-1.8**
PB08	**IPOC Station P**	**3.95**	**321**	⇑*iP*		**Pn**	**17 45 00.4**	**+2.3**
PB08				*i* S		**Sn**	**17 45 46.8**	**+0.5**
CYA	**Choya**	**5.23**	**173**	⇓*eP*		**Pn**	**17 45 17.8**	**+3.9**
VCA	**Vinchina**	**5.70**	**195**	*eP*		**Pn**	**17 45 23.3**	**+3.2**
VCA				IAML			17 45 24.9	
	comp=Z,40nm,0.3s							
AGUA	**GUANDACOL**	**6.49**	**196**	*eP*		**Pn**	**17 45 32.1**	**+1.9**
LPAZ	**La Paz**	**7.08**	**347**	P		**Sn**	**17 45 40.0**	**+1.6**
	comp=Z,1.4nm,0.3s,baz=178,slow=8.0,SNR=45							
LPAZ				S		**Sn**	**17 46 59.6**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=338,slow=19,SNR=3.5							
ACDV	**Cuesta del Vie**	**7.30**	**198**	*eP*		**Pn**	**17 45 43.3**	**+2.5**
AROD	**Rodeo**	**7.41**	**200**	⇓*eP*		**Pn**	**17 45 45.0**	**+2.6**
AVFE	**Valle Fertil**	**7.45**	**186**	*eP*		**Pn**	**17 45 43.6**	**+0.9**
ACCO	**Cerro Coronel**	**7.68**	**197**	*eP*		**Pn**	**17 45 47.4**	**+1.5**
ACCO				IAML			17 45 49.0	
	comp=Z,18nm,0.5s							
AMOG	**MOGNA**	**7.88**	**193**	*eP*		**Pn**	**17 45 48.5**	**+0.1**
ACHE	**Chepes**	**7.90**	**181**	*eP*		**Pn**	**17 45 49.3**	**+0.6**
TCA	**Tanti**	**8.25**	**169**	*eP*		**Pn**	**17 45 54.4**	**+1.3**
TCA				IAML			17 45 56.2	
	comp=Z,8.7nm,0.2s							
RTLL	**Cerro Villicun**	**8.26**	**192**	*eP*		**Pn**	**17 45 53.5**	**+0.3**
SIV	**San Ignacio**	**8.83**	**36**	P		**Pn**	**17 46 00.6**	**-0.1**
	comp=Z,1.8nm,0.3s,baz=256,slow=1.4,SNR=33							
RTLS	**Leoncito**	**8.89**	**196**	*eP*		**Pn**	**17 46 02.9**	**+1.2**
MRA	**San Martin**	**9.18**	**176**	*eP*		**Pn**	**17 46 05.5**	**+0.2**
MRA				IAML			17 46 06.8	
	comp=Z,8.1nm,0.5s							
ASAL	**Salagasta**	**9.55**	**192**	⇓*eP*		**Pn**	**17 46 10.7**	**+0.6**
ARCO	**CERRO ARCO**	**9.81**	**192**	*eP*		**Pn**	**17 46 14.4**	**+0.8**
ARCO				IAML			17 46 16.1	
	comp=Z,9.6nm,0.2s							
PLCA	**Paso Flores**	**17.78**	**190**	P		**Pn**	**17 47 51.2**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=21,slow=17,SNR=3.5							
BDFB	**Brasilia**	**18.98**	**70**	P		**P**	**17 48 03.7**	**+0.4**
	baz=163,slow=20							
PTGA	**Pitinga**	**23.25**	**17**	P		**P**	**17 48 44.0**	**-2.3**
	comp=Z,1.1nm,0.6s,baz=323,slow=20,SNR=4.5							
TORD	**Torodi Ar. Bea**	**75.86**	**69**	P		**P**	**17 55 20.9**	**-0.4**
	comp=Z,0.6nm,0.5s,baz=256,slow=5.4,SNR=7.3							
MKAR	**Makanchi Array**	**145.64**	**39**	PKPbc		**PKPdf**	**18 03 08.6**	**-2.4**
	comp=Z,0.3nm,0.5s,baz=308,slow=2.8,SNR=7.0							

*ISCJB **23** 17:47:04.2±0.6, 22°.92S±0°.05×66°.25W±0°.05, h222km, mb3.5/4, Error ellipse: s-maj=7.0km s-min=6.0km az=2.3*
*SCB **23** 17:47:04.2±0.6, 22°.68S×66°.61W, h220km, Ml4.0/1, Error ellipse: s-maj=15.6km s-min=6.9km az=29.0*
*IDC **23** 17:47:04.7±1.0, 22°.86S×66°.28W, h232km±12km, mb3.3/4, mb1 3.4/8, mb1mx3.3/32, mbtmp3.9/8, Error ellipse: s-maj=18.3km s-min=13.7km az=107.0*
*GUC **23** 17:47:05.8±0.5, 22°.78S×66°.75W, h260km, ML4.6*

ISC 23 17:47:04.1±0.7, 22°.88S±0°.06×66°.32W±0°.06, h222km, n28, σ1§91/42, mb3.8/4, 10C, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MOCB	**Mochara**	**1.73**	**21**	*e*Pn		**Pn**	**17 47 46.2**	**+3.8**
MOCB				*e*Sn		**S**	**17 48 15.8**	**+3.7**
	574nm,0.7s							
LVC	**Limon Verde**	**2.41**	**276**	P		**Pn**	**17 47 51.6**	**+2.8**
	3µm,0.3s,baz=100,slow=5.6,SNR=59							
LVC				S		**S**	**17 48 26.4**	**+2.9**
	1µm,0.3s,baz=251,slow=21,SNR=23							
PB09	**IPOC Station P**	**2.91**	**291**	⇑*iP*		**Pn**	**17 47 57.1**	**+3.0**
PB09				*i* S		**S**	**17 48 35.9**	**+2.8**
PB09				IAML			17 48 38.1	
	comp=E,917nm,0.7s							
PB06	**IPOC Station P**	**3.01**	**273**	⇑*iP*		**Pn**	**17 47 57.3**	**+2.1**
PB06				*i* S		**S**	**17 48 36.6**	**+1.6**
PB06				IAML			17 48 41.5	
	comp=E,527nm,0.4s							
PB01	**IPOC Station P**	**3.46**	**301**	⇑*iP*		**Pn**	**17 48 02.3**	**+1.9**
PB01				*i* S		**S**	**17 48 45.3**	**+0.9**
PB01				IAML			17 48 47.1	
	comp=E,752nm,0.2s							
PB07	**IPOC Station P**	**3.50**	**288**	⇑*iP*		**Pn**	**17 48 02.7**	**+1.8**
PB07				*i* S		**S**	**17 48 45.4**	**+0.1**
PB07				IAML			17 48 46.0	
	comp=N,595nm,0.3s							
PB04	**IPOC Station P**	**3.58**	**278**	⇑*iP*		**Pn**	**17 48 03.5**	**+1.6**
PB04				*i* S		**S**	**17 48 47.2**	**+0.1**
PB04				IAML			17 48 49.9	
	comp=N,673nm,0.2s							
PB08	**IPOC Station P**	**3.79**	**315**	⇑*iP*		**Pn**	**17 48 07.5**	**+2.9**
PB08				*i* S		**S**	**17 48 53.9**	**+1.9**
PB08				IAML			17 48 57.2	
	comp=N,281nm,0.6s							
PB10	**IPOC Station P**	**3.95**	**260**	⇑*iP*		**Pn**	**17 48 07.5**	**+1.3**
HMBC	**Humberstone**	**4.21**	**307**	⇑*iP*		**Pn**	**17 48 10.1**	**+0.7**
HMBC				*i* S		**S**	**17 48 59.4**	**-1.4**
PB11	**IPOC Station P**	**4.39**	**314**	⇑*iP*		**Pn**	**17 48 12.6**	**+0.9**
PB11				*i* S		**S**	**17 49 04.0**	**-0.9**
MNMC	**Minye Minye**	**4.82**	**320**	⇑*iP*		**Pn**	**17 48 18.6**	**+1.4**
MNMC				*i* S		**S**	**17 49 14.5**	**-0.3**
BBOJ	**La Paz, Jacaqu**	**6.13**	**343**	*e*Pn		**Pn**	**17 48 37.1**	**+3.2**
BBOE	**La Paz, Chanca**	**6.23**	**345**	*e*Pn		**Pn**	**17 48 38.4**	**+3.1**
BBOD	**La Paz, Gloria**	**6.57**	**341**	*e*Pn		**Pn**	**17 48 42.0**	**+2.5**
LPAZ	**La Paz**	**6.77**	**345**	P		**Pn**	**17 48 44.1**	**+1.8**
	comp=N,1.2nm,0.3s,baz=129,slow=4.7,SNR=30							
LPAZ				S		**S**	**17 50 00.5**	**+0.2**
	comp=N,0.6nm,0.3s,baz=262,slow=22,SNR=11							
LPAZ	**La Paz**	**6.77**	**345**	*e*Pn		**Pn**	**17 48 43.9**	**+1.6**
LPAZ				*e*Sn		**S**	**17 49 59.3**	**-1.0**
BBOB	**La Paz, Bander**	**6.91**	**345**	*e*Pn		**Pn**	**17 48 45.3**	**+1.3**
BBOB				*e*Sn		**S**	**17 50 02.5**	**-0.9**
SIV	**San Ignacio**	**8.45**	**37**	P		**Pn**	**17 49 03.7**	**+0.4**
	comp=N,2.1nm,0.3s,baz=235,slow=7.8,SNR=24							
SIV	**San Ignacio**	**8.45**	**37**	*e*P		**Pn**	**17 49 04.1**	**+0.9**
PLCA	**Paso Flores**	**18.16**	**190**	P		**P**	**17 50 59.0**	**-1.2**
	comp=N,0.1nm,0.3s,baz=42,slow=12,SNR=2.9							
BDFB	**Brasilia**	**18.71**	**71**	P		**P**	**17 51 06.5**	**+0.1**
	baz=343,slow=20							
SNAA	**Sanae**	**60.20**	**161**	P		**P**	**17 56 48.4**	**0.0**
	comp=N,1.0nm,0.6s,baz=277,slow=3.6,SNR=11							
TXAR	**Lajitas Array**	**63.14**	**324**	P		**P**	**17 57 07.8**	**-0.8**
	comp=N,0.1nm,0.4s,baz=128,slow=5.8,SNR=2.5							
TORD	**Torodi Ar. Bea**	**75.58**	**69**	P		**P**	**17 58 22.9**	**-2.0**
	comp=N,1.1nm,0.4s,baz=264,slow=6.0,SNR=15							
BOSA	**Boshof**	**80.69**	**117**	P		**P**	**17 58 51.8**	**-1.1**
	comp=N,2.1nm,0.7s,baz=11,slow=10,SNR=2.8							
WRA	**Warramunga Arr**	**132.91**	**207**	PKP		**PKPdf**	**18 05 52.8**	**-0.8**
	comp=N,0.2nm,0.6s,baz=159,slow=1.7,SNR=3.5							
ZALV	**Zalesovo Beam**	**142.11**	**28**	PKP		**PKPdf**	**18 06 09.2**	**-0.2**
	comp=N,0.4nm,0.4s,baz=314,slow=4.2,SNR=2.4							

*MAN **23** 17:58:12, 12°.36N×121°.58E, h35km, mb4.4, ML3.2, MS3.1*
*IDC **23** 17:58:12.2±1.4, 12°.05N×121°.70E, h0km, mb3.3/4, mb1 3.6/5, mb1mx3.2/67, mbtmp3.4/5, ML4.1/1, Error ellipse: s-maj=63.8km s-min=19.3km az=60.0*
*ISCJB **23** 17:58:13.7±0.8, 12°.0N±0°.1×121°.56E±0°.09, h21km, mb3.2/4, Error ellipse: s-maj=20.6km s-min=8.3km az=31.3*

ISC 23 17:58:15.2±1.0, 12°.0N±0°.2×121°.7E±0°.2, h21km, n9, σ0§57/7, mb3.3/4, 3C-1D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RCP	**Roxas**	**1.16**	**114**	⇑*iP*		**Pn**	**17 58 35.9**	**-0.3**
RCP				*eS*		**Sn**	**17 58 51.5**	**0.0**
PGP	**Puerto Galera**	**1.61**	**335**	⇓*eP*		Pn	17 58 33.5	-8.8
PGP				*i* S		Sn	17 58 50.1	-12
GQP	**Guinayangan**	**2.00**	**22**	⇑*eP*		Pn	17 58 40.6	-7.2
LQP	**Lukban**	**2.06**	**357**	⇑*eP*		Pb	17 59 01.6	+10
TGY	**Tagaytay City**	**2.17**	**341**	Pn		**Pn**	**17 58 49.7**	**-0.4**
	55nm,0.3s,baz=286,slow=18,SNR=2.4							
CMAR	**Chiang Mai Arr**	**22.82**	**289**	P		**P**	**18 03 16.3**	**-0.6**
	0.4nm,0.6s,baz=106,slow=8.6,SNR=2.8							
WRA	**Warramunga Arr**	**34.15**	**158**	P		**P**	**18 04 58.8**	**-0.2**
	0.3nm,0.6s,baz=344,slow=9.1,SNR=5.0							
ASAR	**Alice Springs**	**37.46**	**161**	P		**P**	**18 05 27.7**	**+0.4**
	0.4nm,0.8s,baz=336,slow=6.4,SNR=7.1							
KURBB	**Kurchatov Arra**	**52.08**	**326**	P		**P**	**18 07 24.3**	**+0.7**
	0.3nm,0.8s,baz=124,slow=7.4,SNR=2.4							

IDC 23 17:58:54.8±3.9, 22°.30S×176°.15W, h0km, mb4.1/4, mb1 4.3/5, mb1mx3.9/38, mbtmp4.2/5, ML4.2/1, MS3.7/2, Ms1 3.7/2, ms1mx3.1/27, Error ellipse: s-maj=133.8km s-min=26.7km az=138.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**9.32**	**27**	Pn		Pn	18 01 10.0	-0.5
	2.4nm,0.3s,baz=274,slow=5.4,SNR=4.1							
AFI						Sn	18 02 56.8	+0.6
	3.4nm,0.3s,baz=172,slow=19,SNR=3.2							
RAR	**Rarotonga**	**15.25**	**89**	LR		LR	18 06 59.0	
	comp=Z,269nm,20.2s,baz=288,slow=32							
DZM	**Mont Dzumac**	**16.13**	**268**	*e*LR		LR	18 06 44.8	
	140nm,23.4s							
TBI	**Tubuai**	**24.61**	**98**	*e*LR		LR	18 09 35.5	
	171nm,22.8s							
PPT2	**Papeete2**	**25.39**	**84**	*e*LR		LR	18 10 14.0	
	168nm,22.0s							
CTA	**Charters Tower**	**35.07**	**266**	P		P	18 05 50.6	+0.7
	1.3nm,0.4s,baz=99,slow=12,SNR=5.2							
ASAR	**Alice Springs**	**45.82**	**258**	P		P	18 07 18.1	-0.7
	0.7nm,0.6s,baz=91,slow=6.5,SNR=6.6							
ASAR						LR	18 26 52.4	
	comp=Z,127nm,18.4s,baz=68,slow=37							
WRA	**Warramunga Arr**	**46.09**	**263**	P		P	18 07 19.5	-1.5
	2.1nm,0.9s,baz=100,slow=8.3,SNR=7.1							
CMAR	**Chiang Mai Arr**	**92.33**	**289**	P		P	18 12 09.6	+1.9
	2.4nm,1.0s,baz=123,slow=3.2,SNR=12							
AKASG	**Malin Array Be**	**145.41**	**331**	PKPbc		PKPbc	18 18 33.6	-0.9
	0.4nm,0.4s,baz=40,slow=5.1,SNR=5.4							
BRTR	**Keskin Array B**	**149.32**	**311**	PKPbc		PKPbc	18 18 44.7	-1.3
	0.9nm,0.8s,baz=64,slow=3.4,SNR=4.8							

*NEIC **23** 17:59:22.5±0.7, 74°.40N×132°.94E, h10km, mb4.9/3, Error ellipse: s-maj=20.0km s-min=12.5km az=131.0*
*IDC **23** 17:59:22.9±1.1, 74°.39N×134°.15E, h0km, mb3.6/5, mb1 3.8/6, mb1mx3.4/63, mbtmp3.5/6, ML5.3/1, Error ellipse: s-maj=36.2km s-min=19.6km az=142.0*

ISC 23 17:59:21.9±0.8, 74°.3N±0°.1×133°.1E±0°.2, h10km, n17, σ1§13/17, mb3.9/8, Laptev Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
TIXI	**Tiksi**	**2.92**	**207**	Pn		**Pb**	**18 00 13.1**	**-0.8**
	1.3nm,0.3s,baz=23,slow=8.8,SNR=15							
TIXI						Sn	**Sb**	**18 00 50.7**	**+1.1**
	4.6nm,0.3s,baz=314,slow=15,SNR=8.6							
TIXI	**Tiksi**	**2.92**	**207**	*e*Pn		**Pb**	**18 00 12.6**	**-1.3**
TIXI				*e*Sn		**Sb**	**18 00 50.7**	**+1.1**
KBS	**Kingsbay**	**23.54**	**336**	*e*P		**P**	**18 04 29.7**	**-1.9**
	43nm,1.2s							
SPA0	**Spitsbergen Ar**	**23.62**	**333**	*e*P		**P**	**18 04 34.1**	**+1.7**
SPITS	**Spitsbergen Ar**	**23.62**	**333**	P		**P**	**18 04 34.3**	**+1.9**
	5.3nm,0.8s,baz=199,slow=1.5,SNR=5.4							
ILAR	**Eielson Array**	**27.20**	**67**	P		**P**	**18 05 05.0**	**-0.1**
	0.4nm,0.7s,baz=320,slow=9.5,SNR=5.3							
ZAA0	**Zalesovo Array**	**27.95**	**250**	*e*P		**P**	**18 05 12.6**	**+0.7**
RES	**Resolute Bay**	**28.47**	**24**	*e*P		**P**	**18 05 15.4**	**-0.9**
	36nm,1.3s							
KURK	**Kurchatov**	**32.49**	**254**	*e*P		P	18 05 59.5	+7.5
KURBB	**Kurchatov Arra**	**32.60**	**254**	P		P	18 05 59.5	+6.6
	0.3nm,0.6s,baz=25,slow=8.4,SNR=3.9							
MK31	**Makanchi Array**	**35.16**	**248**	*e*P		**P**	**18 06 14.9**	**-0.4**
MKAR	**Makanchi Array**	**35.16**	**248**	PKPbc		**P**	**18 06 15.1**	**-0.2**
	1.6nm,0.8s,baz=310,slow=3.9,SNR=11							
MKAR	**Makanchi Array**	**35.16**	**248**	*e*P		**P**	**18 06 14.9**	**-0.4**
	11nm,0.8s							
MK01	**Makanchi Array**	**35.18**	**247**	*e*P		**P**	**18 06 14.7**	**-0.8**
PDAR	**Pinedale Array**	**56.04**	**52**	P		**P**	**18 09 01.2**	**+0.6**
	0.4nm,0.5s,baz=25,slow=4.5,SNR=4.6							
LTX	**Lajitas**	**70.22**	**51**	*e*P		**P**	**18 10 35.2**	**+0.5**
TXAR	**Lajitas Array**	**70.22**	**51**	P		**P**	**18 10 35.2**	**+0.5**
	0.3nm,0.7s,baz=343,slow=3.9,SNR=5.1							

*ISCJB **23** 18:02:48.6±0.4, 5°.64S±0°.03×131°.5E±0°.1, h54km, mb3.8/6, MS2.9/1, Error ellipse: s-maj=17.5km s-min=4.6km az=177.6*
*IDC **23** 18:02:50.5±2.7, 5°.57S×131°.42E, h47km±31km, mb3.5/5, mb1 3.6/8, mb1mx3.3/46, mbtmp3.7/8, ML3.8/4, MS3.1/1, Ms1 3.1/1, ms1mx2.7/21, Error ellipse: s-maj=54.9km s-min=23.3km az=89.0*
*NEIC **23** 18:02:52.9±1.3, 5°.57S×131°.35E, h73km±16km, mb4.6/2, Error ellipse: s-maj=23.8km s-min=10.3km az=87.0*

ISC 23 18:02:49.4±0.7, 5°.74S±0°.05×131°.58E±0°.09, h54km, n27, σ2§62/33, mb3.6/6, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**2.25**	**187**	*e*Pn		Pn	18 03 33.5	+9.3
FAKI	**Fak Fak**	**2.88**	**14**	*e*Pn		**Pn**	**18 03 34.4**	**+1.5**
FAKI				*e*Sn		**Sn**	**18 04 04.7**	**-1.6**
SIJI	**Sorong**	**4.85**	**356**	P		**Pn**	**18 03 59.2**	**-0.6**
	14nm,0.3s,baz=1.1,slow=12,SNR=1.4							
SIJI				S		Sn	18 04 45.3	-9.5
	13nm,0.3s,baz=89,slow=24,SNR=1.8							
MTN	**Manton Dam**	**7.07**	**184**	*e*Pn		Pn	18 04 36.9	+6.5
MTN				*e*Sn		**Sn**	**18 05 55.1**	**+5.6**
FITZ	**Fitzroy Crossi**	**13.59**	**205**	P		**Pn**	**18 06 00.1**	**+0.6**
	0.2nm,0.3s,baz=31,slow=12,SNR=17							
FITZ				S		**Sn**	**18 08 24.2**	**-4.7**
	0.2nm,0.3s,baz=72,slow=20,SNR=3.9							
FITZ	**Fitzroy Crossi**	**13.59**	**205**	*e*Pn		**Pn**	**18 06 00.4**	**+0.9**
FITZ				*e*Sn		Sn	18 08 19.0	-10
FITZ				S		**Sn**	**18 08 24.2**	**-4.7**
COEN	**Coen**	**14.04**	**126**	*e*Pn		**P**	**18 06 13.0**	**+1.0**
COEN				*e*Sn		**Sn**	**18 08 36.6**	**-3.4**
WR1	**Warramunga Arr**	**14.37**	**169**	*e*Pn		**P**	**18 06 13.2**	**-2.4**
WR1				*e*Sn		**Sn**	**18 08 47.6**	**-0.5**
WRA	**Warramunga Arr**	**14.37**	**169**	P		**P**	**18 06 13.2**	**-2.4**
	0.3nm,0.3s,baz=356,slow=13,SNR=14							
WRA				S		**Sn**	**18 08 47.6**	**-0.5**
	0.4nm,0.3s,baz=342,slow=22,SNR=7.0							
WB2	**Warramunga Arr**	**14.38**	**169**	*e*Pn		**Pn**	**18 06 10.8**	**+0.7**
AS31	**Alice Springs**	**17.96**	**173**	*e*P		**Pn**	**18 07 00.1**	**+4.6**
	1.6nm,1.3s							
AS31				*e*Sn		**Sn**	**18 10 10.5**	**-4.6**
ASAR	**Alice Springs**	**17.96**	**173**	P		**Pn**	**18 07 00.5**	**+5.0**
	0.3nm,0.3s,baz=355,slow=13,SNR=21							
ASAR				S		**Sn**	**18 10 15.2**	**0.0**
	0.1nm,0.3s,baz=358,slow=28,SNR=5.0							
AS01	**Alice Springs**	**17.97**	**173**	*e*P		**Pn**	**18 07 00.7**	**+5.1**
GUMO	**Guam**	**23.30**	**34**	LR		LR	18 18 10.5	
	comp=Z,43nm,18.2s,baz=20,slow=40							
CMAR	**Chiang Mai Arr**	**40.17**	**307**	P		**P**	**18 10 20.4**	**-0.3**
	0.4nm,0.5s,baz=119,slow=7.3,SNR=2.8							
MJAR	**Matsushiro Arr**	**42.52**	**8**	P		**P**	**18 10 39.4**	**-0.3**
	0.6nm,0.7s,baz=188,slow=8.5,SNR=4.1							
MK01	**Makanchi Array**	**68.03**	**326**	*e*P		**P**	**18 13 43.4**	**+0.1**
MK31	**Makanchi Array**	**68.05**	**326**	*e*P		**P**	**18 13 43.6**	**+0.2**
MK32	**Makanchi Array**	**68.05**	**326**	*e*P		**P**	**18 13 44.2**	**+0.9**
MKAR	**Makanchi Array**	**68.05**	**326**	P		**P**	**18 13 44.2**	**+0.9**
	0.8nm,0.5s,baz=114,slow=8.6,SNR=14							
MKAR	**Makanchi Array**	**68.05**	**326**	*e*P		**P**	**18 13 43.8**	**+0.4**
	9.1nm,0.6s							
MAKZ	**Makanchi**	**68.23**	**326**	*e*P		**P**	**18 13 44.6**	**+0.1**
	8.1nm,2.0s							
ZAA0	**Zalesovo Array**	**71.17**	**333**	*e*P		**P**	**18 14 00.8**	**-1.5**
ZALV	**Zalesovo Beam**	**71.17**	**333**	P		**P**	**18 14 01.9**	**-0.4**
	0.5nm,0.5s,baz=105,slow=5.8,SNR=3.5							
ZAA1	**Zalesovo Array**	**71.17**	**333**	*e*P		**P**	**18 14 01.9**	**-0.4**
KURBB	**Kurchatov Arra**	**72.27**	**328**	P		**P**	**18 14 09.6**	**+0.6**
	0.3nm,0.5s,baz=124,slow=4.8,SNR=5.3							
KURK	**Kurchatov**	**72.28**	**328**	*e*P		**P**	**18 14 09.6**	**+0.5**

*KRSC **23** 18:12:27.7±1.9, 49°.05N×156°.87E, h40km±25km, ML4.5*
*MOS **23** 18:12:27.2±1.1, 49°.35N×154°.88E, h112km, mb4.4/3, Error ellipse: s-maj=16.4km s-min=5.0km az=64.1*
*IDC **23** 18:12:30.4±3.0, 49°.43N×154°.80E, h115km±28km, mb3.3/8, mb1 3.4/11, mb1mx3.2/34, mbtmp3.7/11, Error ellipse: s-maj=27.5km s-min=17.5km az=139.0*

ISC 23 18:12:24.2±0.7, 49°.11N±0°.08×155°.24E±0°.08, h55km, n64, σ2§50/59, mb3.7/10, 1C-2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.68**	**20**	⇓*e*PN		Pn	18 12 55.3	+4.1
SKR				*i* S		**Sn**	**18 13 15.9**	**+4.4**
SKR				pmax		pmax		
	comp=Z,589nm,0.8s							
SKR				smax		smax		
	comp=E,836nm,0.2s							
SKR				smax		smax		
	comp=N,997nm,0.8s							
SKR	**Severo-Kuril's**	**1.68**	**20**	*e*P		Pn	18 12 55.2	+4.1
SKR				*e*S		**Sn**	**18 13 15.3**	**+3.8**
PAU	**Pauzhetka**	**2.57**	**23**	PN		Pn	18 13 07.4	+4.1
PAU				S		**Sn**	**18 13 36.3**	**+3.0**
PAU	**Pauzhetka**	**2.57**	**23**	*e*P		Pn	18 13 07.4	+4.1
PAU				*e*S		**Sn**	**18 13 36.3**	**+3.0**
RUS	**Russkaya**	**3.93**	**31**	PN		**Pn**	**18 13 24.2**	**+2.3**
RUS				S		**Sn**	**18 14 06.8**	**+0.2**
RUS	**Russkaya**	**3.93**	**31**	*e*P		**Pn**	**18 13 24.2**	**+2.3**
RUS				*e*S		**Sn**	**18 14 06.8**	**+0.2**
KRMR	**Karymshinskiy**	**4.15**	**25**	PN		Pn	18 13 29.0	+4.0
KRMR	**Karymshinskiy**	**4.15**	**25**	*e*P		Pn	18 13 29.0	+4.0
PETK	**Petropavlovsk-**	**4.30**	**20**	P		Pn	18 13 31.5	+4.5
	comp=N,10.0nm,0.3s,baz=178,slow=11,SNR=145							
PET	**Petropavlovsk**	**4.47**	**27**	*e*PN		**Pn**	**18 13 32.7**	**+3.3**
PET				*e*S		**Sn**	**18 14 22.2**	**+2.1**
PET				pmax		pmax		
	comp=Z,35nm,0.4s							
PET				smax		smax		
	comp=N,67nm,0.7s							
PET				smax		smax		
	comp=E,65nm,0.6s							
PET	**Petropavlovsk**	**4.47**	**27**	*e*P		**Pn**	**18 13 32.6**	**+3.2**
PET				*e*S		**Sn**	**18 14 21.3**	**+1.2**
DALK	**Dalny**	**4.51**	**28**	PN		**Pn**	**18 13 33.2**	**+3.3**
DALK				S		**Sn**	**18 14 22.6**	**+1.6**
DALK	**Dalny**	**4.51**	**28**	*e*P		**Pn**	**18 13 33.2**	**+3.3**
DALK				*e*S		**Sn**	**18 14 22.6**	**+1.

H11S3	**WAKE ISLAND Hy**	**31.91**	**159**	T		T	18 52 51.3		
	baz=346,slow=76,SNR=144								
H11S2	**WAKE ISLAND Hy**	**31.92**	**159**	T		T	18 52 52.8		
	baz=346,slow=76,SNR=114								
COLA	**College**	**33.41**	**41**	*e*P		**P**	**18 18 55.3**		**-1.7**
COLA					pmax	pmax			
	comp=Z,5.0nm,0.6s								
MKAR	**Makanchi Array**	**47.15**	**296**	P		**P**	**18 20 47.5**		**-3.3**
	comp=Z,0.5nm,0.8s,baz=63,slow=8.4,SNR=6.2								
CMAR	**Chiang Mai Arr**	**54.31**	**256**	P		**P**	**18 21 44.9**		**-0.1**
	comp=Z,1.3nm,0.4s,baz=30,slow=7.5,SNR=12								
FINES	**FINESS Array B**	**62.51**	**335**	P		**P**	**18 22 37.0**		**-4.5**
	comp=Z,1.9nm,1.0s,baz=45,slow=3.0,SNR=3.9								
FINES	**FINESS Array B**	**62.51**	**335**	*e*P		**P**	**18 22 39.2**		**-2.2**
FINES					pmax	pmax			
	comp=Z,2.0nm,1.0s								
WRA	**Warramunga Arr**	**71.22**	**201**	P		**P**	**18 23 37.1**		**-0.2**
	comp=Z,0.2nm,0.6s,baz=16,slow=6.7,SNR=3.2								
ASAR	**Alice Springs**	**74.91**	**200**	P		**P**	**18 23 59.8**		**+0.9**
	comp=Z,0.6nm,1.1s,baz=13,slow=5.6,SNR=3.6								
TXAR	**Lajitas Array**	**75.11**	**62**	P		**P**	**18 24 01.0**		**+0.5**
	comp=Z,0.3nm,0.5s,baz=305,slow=4.2,SNR=6.6								
TXAR					pP	**sP**	**18 24 26.0**		**+4.0**
	comp=Z,0.4nm,0.7s,baz=303,slow=7.0,SNR=3.4								

MEX 23 18:14:16.6±0.7, 13°60'N×91°56'W, h236km±42km, MD4.0, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
CCIG	**Comitan**	**2.72**	**348**	*e*P		Pn	18 15 04.4		-1.1
CCIG				*e*S		S	18 15 41.1		-2.8

*ISCJB **23** 18:18:04.0±0.4, 32°.19N±0°.02×115°.21W±0°.02, h23km±3km, Error ellipse: s-maj=3.5km s-min=3.4km az=176.7*
*ECX **23** 18:18:05.3±0.5, 32°.18N×115°.25W, h8km, MD2.9, ML3.1*
*NEIC **23** 18:18:05.3, 32°.18N×115°.25W, h8km, ML3.1(ECX), ML2.9(PAS), After ECX.*
*MEX **23** 18:18:06.7±0.5, 32°.25N×115°.19W, h12km±53km, MD3.9*

ISC 23 18:18:04.1±0.9, 32°.17N±0°.02×115°.26W±0°.02, h15km±6km, n55, σ1°35/83, 4C-4D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
MBIG	**Mexicali**	**0.24**	**13**	*e*P		**Pg**	**18 18 09.9**		**+0.5**
MBIG				*e*S		**Sg**	**18 18 12.2**		**-0.9**
CPBX	**Cerro Prieto**	**0.25**	**352**	*e*P		**Pg**	**18 18 10.0**		**+0.4**
CPBX				*e*S		**Sg**	**18 18 13.2**		**0.0**
CPBX				IAML			18 18 15.3		
	comp=N,9μm,0.2s								
CPBX				⇑*e*			18 18 15.3		
CPBX	**Cerro Prieto**	**0.25**	**352**	*e*P		**Pg**	**18 18 09.9**		**+0.3**
CPBX				*i* S		**Sg**	**18 18 13.3**		**0.0**
EMSC	**East Mesa**	**0.61**	**22**	⇓*i*P		**Pg**	**18 18 16.1**		**-0.1**
SGL	**Mount Signal**	**0.62**	**321**	⇓*i*P		**Pg**	**18 18 16.4**		**+0.1**
COA	**Coachella**	**0.70**	**10**	⇓*i*P		**Pg**	**18 18 17.3**		**-0.5**
WESC	**Westside Schoo**	**0.71**	**326**	*e*P		**Pg**	**18 18 17.9**		**-0.1**
ECBX	**El Chinero**	**0.72**	**166**	*e*P		**Pg**	**18 18 18.2**		**0.0**
ECBX				*e*S		**Sg**	**18 18 28.2**		**+0.4**
ECBX				IAML			18 18 29.1		
	comp=E,889nm,0.4s								
YUH	**Yuha Desert**	**0.73**	**310**	⇓*i*P		**Pg**	**18 18 18.0**		**-0.4**
RMX	**La Rumorosa**	**0.81**	**302**	*e*P		**Pg**	**18 18 19.2**		**-0.8**
RMX				*e*S		**Sg**	**18 18 30.3**		**-0.5**
RMX				⇑*e*			18 18 30.8		
RMX				IAML			18 18 30.8		
	comp=E,430nm,0.2s								
IKP	**In-Ko-Pah, Jac**	**0.86**	**304**	P		**Pg**	**18 18 20.4**		**-0.5**
	baz=123,SNR=30								
IKP				S		**Sg**	**18 18 31.7**		**-0.6**
	baz=123								
IKP	**In-Ko-Pah, Jac**	**0.86**	**304**	⇑*e*P		**Pg**	**18 18 20.6**		**-0.3**
SWSC	**Sam W. Stewart**	**0.90**	**330**	P		**Pg**	**18 18 20.1**		**-1.4**
	baz=149,SNR=17								
SWSC				S		**Sg**	**18 18 32.6**		**-0.7**
	baz=149								
GLA	**Glamis**	**0.95**	**23**	P		**Pg**	**18 18 20.7**		**-1.9**
	baz=202,SNR=41								
GLA				S		**Sg**	**18 18 32.6**		**-2.4**
	baz=202								
GLA	**Glamis**	**0.95**	**23**	*e*Pg		**Pg**	**18 18 20.6**		**-1.9**
GLA				*e*Sg		**Sg**	**18 18 32.7**		**-2.4**
ZAX	**El Zacaton**	**1.08**	**233**	*e*P		**Pg**	**18 18 24.2**		**-0.9**
ZAX				*e*S		**Sg**	**18 18 39.0**		**-0.2**
SPIG	**San Pedro Mart**	**1.14**	**189**	*e*P		**Pg**	**18 18 26.4**		**+0.2**
SPIG				*e*S		**Sg**	**18 18 40.3**		**-0.7**
SPIG	**San Pedro Mart**	**1.14**	**189**	*e*P		**Pg**	**18 18 26.4**		**+0.2**
SPIG				*e*S		**Sg**	**18 18 40.3**		**-0.7**
SPX	**San Pedro Mart**	**1.14**	**189**	*e*P		**Pg**	**18 18 25.5**		**-0.7**
CBX	**Cerro Bola**	**1.20**	**277**	*e*P		**Pg**	**18 18 25.9**		**-1.4**
CBX				*e*S		**Sg**	**18 18 41.8**		**-1.1**
CBX	**Cerro Bola**	**1.20**	**277**	*e*P		**Pg**	**18 18 26.4**		**-0.8**
CBX				IAML			18 18 43.6		
	comp=E,591nm,0.6s								
CBX				⇑*e*			18 18 43.6		
CBX	**Cerro Bola**	**1.20**	**277**	*e*P		**Pg**	**18 18 25.9**		**-1.4**
CBX				*e*S		**Sg**	**18 18 41.8**		**-1.1**
MONP2	**Monument Peak**	**1.22**	**307**	P		**Pg**	**18 18 25.4**		**-2.2**
	baz=126,SNR=21								
MONP2				S		**Sg**	**18 18 41.3**		**-2.3**
	baz=126								
TJIG	**Tijuana**	**1.23**	**283**	*e*P		**Pn**	**18 18 26.9**		**+0.2**
TJIG				*e*S		**Sb**	**18 18 41.9**		**-0.7**
TJIG	**Tijuana**	**1.23**	**283**	*e*P		**Pn**	**18 18 26.6**		**-0.1**
TJIG				*e*S		**Sb**	**18 18 43.0**		**+0.4**
ECNX	**Esteban Cantu**	**1.25**	**246**	*e*P		**Pn**	**18 18 26.8**		**-0.3**
BAR	**Barrett**	**1.30**	**293**	*e*Pn		**Pn**	**18 18 27.3**		**-0.4**
BAR				*e*Sn		**Sb**	**18 18 44.7**		**+0.1**
113A	**Mohawk Valley,**	**1.40**	**64**	*e*Pn		**Pn**	**18 18 27.6**		**-1.5**
113A				*e*Pg		**Pg**	**18 18 32.5**		**+1.5**
113A				*e*Sn		**Sb**	**18 18 44.6**		**-2.9**
BC3	**Big Chuckawall**	**1.49**	**354**	P		**Pn**	**18 18 28.8**		**-1.6**
	baz=173,SNR=26								
Y12C	**Blythe**	**1.69**	**21**	Pb		**Pn**	**18 18 34.6**		**+1.5**
	baz=201								
Y12C				S		**Sn**	**18 18 52.7**		**-1.8**
	baz=201								
Y12C	**Blythe**	**1.69**	**21**	*e*Pn		**Pn**	**18 18 33.2**		**+0.1**
Y12C				*e*Sn		**Sb**	**18 18 58.1**		**+2.1**
109C	**Camp Elliot, M**	**1.71**	**295**	P		**Pn**	**18 18 32.2**		**-1.2**
	baz=114,SNR=9.5								
109C				Sb		**Sn**	**18 18 57.0**		**+2.0**
	baz=114								
TPFO	**Pinon Flats**	**1.75**	**325**	P		**Pn**	**18 18 32.5**		**-1.6**
	baz=144,SNR=6.6								
TPFO				Sb		**Sn**	**18 18 58.4**		**+2.3**
	baz=144								
PFO	**Pinyon Flats O**	**1.75**	**325**	P		**Pn**	**18 18 32.6**		**-1.5**
	baz=144								
PFO				Sb		**Sn**	**18 18 59.2**		**+3.0**
	baz=144								
PFO	**Pinyon Flats O**	**1.75**	**325**	*e*Pn		**Pn**	**18 18 32.6**		**-1.5**
PFO				*e*Sn		**Sn**	**18 18 57.4**		**+1.1**
BELC	**Belle Mtn. Jos**	**1.93**	**341**	S		**Sn**	**18 18 59.4**		**-1.1**
	baz=161								
IRM	**Iron Mountain**	**1.98**	**3**	S		**Sn**	**18 19 01.0**		**-0.7**
	baz=182								
214A	**Organ Pipe Nat**	**2.09**	**95**	P		**Pn**	**18 18 36.4**		**-2.3**
	baz=277								
MURC	**Murrieta**	**2.16**	**312**	Sb		**Sb**	**18 19 11.6**		**+1.9**
	baz=130								
Y14A	**Wickenburg**	**2.59**	**46**	*e*Pn		**Pn**	**18 18 45.6**		**+0.1**
Y14A				*e*Pg		**Pb**	**18 18 50.6**		**+0.3**
Y14A				*e*Sn		**Sb**	**18 19 24.2**		**+2.3**
MWC	**Mount Wilson**	**3.11**	**312**	*e*Sg		**Sb**	**18 19 40.6**		**+3.5**
W13A	**Hualapai Mount**	**3.14**	**21**	*e*Pn		**Pn**	**18 18 53.3**		**+0.1**
W13A				*e*Sg		**Sb**	**18 19 39.8**		**+1.9**
PASC	**Pasadena Art C**	**3.16**	**310**	*e*Pn		**Pn**	**18 18 53.0**		**-0.3**
GSC	**Goldstone, Bar**	**3.38**	**338**	*e*Pn		**Pn**	**18 18 55.2**		**-1.2**
TUC	**Tucson**	**3.80**	**87**	*e*Pn		**Pn**	**18 19 00.5**		**-1.6**
X16A	**Lo Mia Camp, P**	**3.91**	**54**	*e*Pn		**Pn**	**18 19 04.3**		**+0.6**
U15A	**North Rim**	**4.91**	**29**	*e*Pn		**Pn**	**18 19 19.1**		**+1.6**
X18A	**Snowflake**	**5.03**	**61**	*e*Pn		**Pn**	**18 19 19.7**		**+0.6**
LCMT	**Little Creek M**	**5.11**	**18**	*e*Pn		**Pn**	**18 19 20.7**		**+0.5**
KNB	**Kanab**	**5.23**	**22**	*e*Pn		**Pn**	**18 19 23.5**		**+1.5**
PAGB	**Antelope Grade**	**5.46**	**312**	*e*Pn		**Pn**	**18 19 25.7**		**+0.8**
W18A	**Petrified Fore**	**5.46**	**56**	*e*Pn		**Pn**	**18 19 24.5**		**-0.7**
SRIG	**Santa Rosalia**	**5.50**	**151**	*e*Pn		Pn	18 19 21.7		-3.8
PKCU	**Pink Cliffs**	**5.79**	**24**	*e*Pn		**Pn**	**18 19 31.4**		**+1.6**
MSU	**Marysvale**	**6.81**	**21**	*e*Pn		**Pn**	**18 19 43.9**		**+0.2**

*JMA **23** 18:30:03.2, 23°.73N×121°.51E, h51km±1km, M3.1*
*ISCJB **23** 18:30:04.9±0.3, 23°.72N±0°.02×121°.67E±0°.02, h29km±2km, Error ellipse: s-maj=3.4km s-min=2.2km az=141.6*
*TAP **23** 18:30:05.0, 23°.73N×121°.62E, h34km, ML3.0, C*

ISC 23 18:30:05.3±0.9, 23°.73N±0°.02×121°.64E±0°.02, h32km±6km, n56, σ0°78/96, 9C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
TEGC	**Jichi Village**	**0.10**	**256**	*e*P		**Pb**	**18 30 11.6**		**+0.7**
	baz=248								
ESF	**Shoufeng Towns**	**0.19**	**318**	*e*P		**Pb**	**18 30 11.8**		**+0.1**
	baz=316								
ESL	**Shilin**	**0.21**	**293**	⇑*i*P		**Pb**	**18 30 11.4**		**-0.4**
	baz=285								
ESL				*e*S		**Sb**	**18 30 16.0**		**-0.3**
	baz=285								
HWA	**Hwalien**	**0.25**	**352**	P		**Pb**	**18 30 12.2**		**-0.1**
	baz=5.0								
TWD	**Chiawan**	**0.35**	**353**	*i* P		**Pb**	**18 30 13.3**		**-0.3**
	baz=350								
TWD				S		**Sb**	**18 30 19.7**		**+0.5**
	baz=350								
EHY	**Hungye**	**0.37**	**233**	⇑*i*P		**Pb**	**18 30 13.1**		**-0.8**
	baz=229								
EHY				S		**Sb**	**18 30 18.9**		**-0.9**
	baz=229								
TWF1	**Yuli**	**0.49**	**220**	⇑*i*P		**Pb**	**18 30 14.9**		**-0.8**
	baz=227								
TWF1				*e*S		**Sb**	**18 30 21.4**		**-1.5**
	baz=227								
WHF	**Hehuan Shan**	**0.54**	**320**	⇑*i*P		**Pb**	**18 30 15.7**		**-1.0**
	baz=314								
WHF				*e*S		**Sb**	**18 30 23.5**		**-1.1**
	baz=314								
TWT	**Tachien**	**0.67**	**321**	⇑*i*P		**Pb**	**18 30 18.3**		**-0.4**
	baz=315								
TWT				S		**Sb**	**18 30 26.9**		**-1.1**
	baz=315								
YUS	**Yu-Shan**	**0.68**	**249**	⇑*i*P		**Pb**	**18 30 18.7**		**-0.4**
	baz=248								
YUS				S		**Sb**	**18 30 27.1**		**-1.4**
	baz=248								
CHKT	**Chengkung**	**0.68**	**202**	*e*P		**Pn**	**18 30 18.6**		**-0.1**
	baz=188								
CHKT				*e*S		**Sb**	**18 30 28.3**		**+0.4**
	baz=188								
ENA	**Nanau**	**0.70**	**7**	*e*P		**Pn**	**18 30 18.3**		**-0.7**
	baz=357								
ENA				*e*S		**Sb**	**18 30 28.5**		**+0.1**
	baz=357								
SMLT	**Sun Moon Lake**	**0.70**	**283**	⇑*i*P		**Pn**	**18 30 18.4**		**-0.6**
	baz=284								
SMLT				S		**Sb**	**18 30 28.8**		**+0.2**
	baz=284								
TYC	**Yuchr**	**0.74**	**283**	⇑*i*P		**Pn**	**18 30 18.8**		**-0.7**
	baz=289								
TYC				*e*S		**Sb**	**18 30 29.0**		**-0.6**
	baz=289								
NNS	**Nan Shan**	**0.75**	**341**	*e*P		**Pn**	**18 30 19.0**		**-0.8**
	baz=342								
NNS				*e*S		**Sb**	**18 30 28.5**		**-1.5**
	baz=342								
ELDTW	**Lidau**	**0.79**	**227**	*e*P		**Pn**	**18 30 19.0**		**-1.3**
	baz=219								
ALS	**Alishan**	**0.80**	**254**	⇑*i*P		**Pn**	**18 30 20.5**		**-0.1**
	baz=260								
ALS				S		**Sb**	**18 30 30.9**		**-0.8**
	baz=260								
WNT	**Mingjian**	**0.89**	**280**	*e*P		**Pn**	**18 30 21.9**		**+0.4**
	baz=279								
WNT				*e*S		**Sn**	**18 30 34.0**		**+0.6**
	baz=279								
TWC	**Suao**	**0.89**	**12**	*e*P		**Pn**	**18 30 22.5**		**+0.9**
	baz=24								
TWC				S		**Sn**	**18 30 34.4**		**+1.0**
	baz=24								
CHN5	**Tsauling**	**0.90**	**262**	P		**Pn**	**18 30 22.0**		**+0.3**
	baz=261								
CHN5				S		**Sn**	**18 30 33.9**		**+0.3**
	baz=261								
ENTT	**Nioudou**	**0.91**	**356**	*e*P		**Pn**	**18 30 21.6**		**-0.2**
	baz=357								
NSK	**Sanguang**	**0.97**	**345**	*e*P		**Pn**	**18 30 22.7**		**-0.1**
	baz=354								
NSK				*e*S		**Sn**	**18 30 34.8**		**-0.7**
	baz=354								
TCU	**Taichung**	**0.98**	**295**	*e*P		**Pn**	**18 30 23.4**		**+0.6**
	baz=294								
TCU				*e*S		**Sn**	**18 30 36.4**		**+0.8**
	baz=294								
TWE	**Neicheng**	**0.98**	**1**	*e*P		**Pn**	**18 30 23.5**		**+0.6**
	baz=354								
TWE				*e*S		**Sn**	**18 30 36.8**		**+1.1**
	baz=354								
STYT	**Tauyuan**	**0.99**	**235**	P		**Pn**	**18 30 23.0**		**0.0**
	baz=229								
STYT				S		**Sn**	**18 30 36.1**		**+0.1**
	baz=229								
WGK	**Gukeng**	**0.99**	**268**	*e*P		**Pn**	**18 30 23.1**		**+0.2**
	baz=267								
WGK				S		**Sn**	**18 30 36.7**		**+0.8**
	baz=267								
TWQ1	**Liyutan**	**1.00**	**308**	P		**Pn**	**18 30 23.9**		**+0.8**
	baz=307								
TWQ1				*e*S		**Sn**	**18 30 36.7**		**+0.5**
	baz=307								
CHN4	**Tsaushan**	**1.04**	**249**	*e*P		**Pn**	**18 30 24.3**		**+0.7**
	baz=248								
CHN4				*e*S		**Sn**	**18 30 38.4**		**+1.5**
	baz=248								
TWG	**Pinlang**	**1.05**	**210**	*e*P		**Pn**	**18 30 23.4**		**-0.4**
	baz=198								
NSY	**Sanyi**	**1.05**	**310**	*e*P		**Pn**	**18 30 24.1**		**+0.2**
	baz=309								
NSY				*e*S		**Sn**	**18 30 38.7**		**+1.2**
	baz=309								
WTP	**Ta-pu**	**1.06**	**243**	*e*P		**Pn**	**18 30 24.1**		**+0.2**
	baz=242								
WTP				*e*S		**Sn**	**18 30 38.5**		**+0.8**
	baz=242								
NSTT	**Nanjuang**	**1.07**	**327**	P		**Pn**	**18 30 24.6**		**+0.6**
	baz=326								
NSTT				S		**Sn**	**18 30 37.9**		**+0.1**
	baz=326								
CHN2	**Minshiung**	**1.09**	**260**	*e*P		**Pn**	**18 30 24.6**		**+0.3**
	baz=259								
CHN2				*e*S		**Sn**	**18 30 39.5**		**+1.3**
	baz=259								
EGS		**1.14**	**13**	*e*P		**Pn**	**18 30 26.0**		**+1.1**
	baz=16								
CHY	**Chiayi**	**1.14**	**258**	*e*P		**Pn**	**18 30 25.9**		**+0.9**
	baz=257								
CHY				*e*S		**Sn**	**18 30 40.2**		**+0.6**
	baz=257								
TWK	**Hsinying**	**1.16**	**247**	*e*P		**Pn**	**18 30 25.8**		**+0.5**
	baz=246								
TWK				*e*S		**Sn**	**18 30 40.9**		**+0.9**
	baz=246								
CHN1	**Nanshi**	**1.16**	**242**	*e*P		**Pn**	**18 30 25.8**		**+0.5**
	baz=242								
CHN1				*e*S		**Sn**	**18 30 41.0**		**+0.9**
	baz=242								
SGST	**Jiashian**	**1.17**	**237**	*e*P		**Pn**	**18 30 26.4**		**+1.0**
	baz=229								
SGST				*e*S		**Sn**	**18 30 40.8**		**+0.5**
	baz=229								
WTCT	**Ta-ch'eng**	**1.25**	**276**	*e*P		**Pn**	**18 30 27.7**		**+1.1**
	baz=275								
WTCT				*e*S		**Sn**	**18 30 43.4**		**+1.0**
	baz=275								
ECL	**Taimali**	**1.30**	**209**	*e*P		**Pn**	**18 30 27.5**		**+0.4**
	baz=199								
WSF	**Szhu**	**1.31**	**266**	*e*P		**Pn**	**18 30 27.0**		**-0.3**
	baz=254								
WSF				*e*S		**Sn**	**18 30 44.9**		**+1.3**
	baz=254								
TWB1	**Santiao Chiao**	**1.31**	**14**	*e*P		**Pn**	**18 30 27.2**		**-0.1**
	baz=16								
NWF	**Wu-fen Shan**	**1.34**	**5**	*e*P		**Pn**	**18 30 28.6**		**+0.8**
	baz=351								
NWF				*e*S		**Sn**	**18 30 46.3**		**+1.7**
	baz=351								
CHN8	**Yiju**	**1.37**	**254**	*e*P		**Pn**	**18 30 27.9**		**-0.2**
	baz=253								
CHN8				*e*S		**Sn**	**18 30 46.2**		**+1.0**
	baz=253								
JYNG	**Yonagunijimaku**	**1.39**	**59**	P		**Pn**	**18 30 28.5**		**+0.1**
JYNG				*e*S		**Sn**	**18 30 45.8**		**+0.2**
TWM1	**Shoushan**	**1.44**	**231**	*e*P		**Pn**	**18 30 29.9**		**+0.7**
	baz=232								
YOJ	**Yonaguni jima**	**1.45**	**60**	*e*S		**Sn**	**18 30 46.9**		**-0.1**
EAST	**Anshuo**	**1.53**	**209**	*e*P		**Pn**	**18 30 31.5**		**+1.1**
	baz=199								
SCZT	**Fangliau**	**1.65**	**215**	*e*P		**Pn**	**18 30 33.9**		**+1.8**
	baz=215								
PNG	**Penghu**	**1.92**	**266**	*e*P		**Pn**	**18 30 36.0**		**+0.3**
	baz=254								
PNG				*e*S		**Sn**	**18 30 58.5**		**-0.3**
	baz=254								
IRIF	**Iriomote-Funau**	**2.00**	**72**	P		**Pn**	**18 30 37.2**		**+0.4**
HATJ	**Hateruma jima**	**2.00**	**80**	P		**Pn**	**18 30 37.1**		**+0.2**
JKRS	**Kuro-shima**	**2.22**	**76**	P		**Pn**	**18 30 40.6**		**+0.7**
JKRS				*e*S		**Sn**	**18 31 07.3**		**+1.1**
JIJ	**Ishigaki jima**	**2.37**	**74**	P		**Pn**	**18 30 41.9**		**0.0**
JIJ				*e*S		**Sn**	**18 31 09.3**		**-0.6**
JISG	**Ishigakijimahi**	**2.58**	**70**	P		**Pn**	**18 30 44.8**		**0.0**
JISG				*e*S		**Sn**	**18 31 14.3**		**-0.8**
JTJ	**Tarama**	**2.94**	**71**	P		**Pn**	**18 30 50.1**		**+0.4**

MAN 23 18:34:35, 15°.73N×121°.79E, h31km, mb4.1, ML2.9, MS2.6, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
PCPH	**Palayan**	**0.69**	**256**	⇑*e*P		Pn	18 34 49.0		+0.4
PCPH				*e*S		Sn	18 34 59.3		+1.1
GQP	**Guinayangan**	**1.92**	**161**	⇑*e*P		Pn	18 35 06.0		+0.4
GQP				*e*S		Sn	18 35 29.4		+0.7
CVP	**Callao Caves**	**1.96**	**1**	*e*P		Pn	18 35 06.0		-0.2

IDC 23 18:44:01.3±2.2, 6°.56S×129°.23E, h0km, mb3.2/1, mb1 3.1/3, mb1mx3.0/40, mbtmp2.9/3, ML2.9/2, Error ellipse: s-maj=154.6km s-min=31.3km az=68.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
WRA	**Warramunga Arr**	**14.20**	**160**	Pn		Pn	18 47 23.9		+0.1
	0.1nm,0.3s,baz=342,slow=13,SNR=5.8								
WRA				Sn		Sn	18 49 51.1		-11
	0.1nm,0.3s,baz=337,slow=22,SNR=5.0								
ASAR	**Alice Springs**	**17.59**	**166**	P		Pn	18 48 08.0		-0.1
	0.0nm,0.3s,baz=348,slow=8.5,SNR=3.4								
MKAR	**Makanchi Array**	**67.44**	**327**	P		P	18 54 58.9		0.0
	0.1nm,0.5s,baz=122,slow=5.2,SNR=2.0								

*IDC **23** 18:48:57.8±2.9, 34°.98S×179°.61W, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.6/32, mbtmp3.5/3, ML3.3/1, Error ellipse: s-maj=70.0km s-min=44.3km az=128.0*
*ISCJB **23** 18:49:03.8±1.4, 35°.04S±0°.08×179°.9W±0°.2, h43km, mb3.4/2, Error ellipse: s-maj=26.0km s-min=8.7km az=15.1*

ISC 23 18:49:04.6±2.0, 35°.0S±0°.1×179°.8W±0°.2, h43km, n18, σ0°70/25, East of North Island

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
WMGZ	**Waiomatatini S**	**3.13**	**207**	PN		**Pn**	**18 49 52.0**		**+0.6**
WMGZ				SN		**Sn**	**18 50 29.0**		**+1.6**
PKGZ	**Pakihiroa**	**3.32**	**210**	PN		**Pn**	**18 49 54.0**		**-0.1**
PKGZ				SN		**Sn**	**18 50 32.8**		**+0.6**
HAZ	**Te Kaha**	**3.34**	**215**	PN		**Pn**	**18 49 55.0**		**+0.8**
HAZ				SN		**Sn**	**18 50 32.9**		**+0.3**
PUZ	**Puketiti**	**3.41**	**207**	PN		**Pn**	**18 49 55.1**		**-0.1**
RUGZ	**Raukumara Rang**	**3.56**	**214**	PN		**Pn**	**18 49 58.1**		**+0.8**
RUGZ				SN		**Sn**	**18 50 38.5**		**+0.3**
TWGZ	**Tauwhareparae**	**3.61**	**209**	PN		**Pn**	**18 49 58.1**		**+0.1**
TWGZ				SN		**Sn**	**18 50 39.0**		**-0.3**
CNGZ	**Carnagh Statio**	**3.79**	**204**	PN		**Pn**	**18 50 00.8**		**+0.3**
URZ	**Urewera**	**4.06**	**217**	Pn		**Pn**	**18 50 03.5**		**-0.6**
	1.9nm,0.3s,baz=31,slow=12,SNR=24								
URZ				Sn		**Sn**	**18 50 48.7**		**-1.8**
	2.2nm,0.3s,baz=73,slow=19,SNR=4.4								
URZ	**Urewera**	**4.06**	**217**	PN		**Pn**	**18 50 03.5**		**-0.6**
RAGZ	**Rawiri**	**4.11**	**212**	PN		**Pn**	**18 50 04.3**		**-0.6**
RIGZ	**Rimuhau**	**4.15**	**207**	PN		**Pn**	**18 50 05.1**		**-0.4**
RIGZ				SN		**Sn**	**18 50 51.9**		**-0.8**
SNGZ	**Shannon Statio**	**4.38**	**211**	PN		**Pn**	**18 50 08.7**		**+0.1**
MUGZ	**Murupara**	**4.40**	**218**	PN		**Pn**	**18 50 08.2**		**-0.6**
MKAZ	**Moumakai**	**4.57**	**242**	PN		**Pn**	**18 50 11.5**		**+0.4**
BKZ	**Black Stump Fm**	**5.07**	**215**	PN		**Pn**	**18 50 18.0**		**-0.2**
ASAR	**Alice Springs**	**41.58**	**273**	P		**P**	**18 56 48.5**		**+0.2**
	0.5nm,0.7s,baz=118,slow=7.4,SNR=29								
WRA	**Warramunga Arr**	**42.99**	**278**	P		**P**	**18 57 00.2**		**+0.4**
	0.5nm,0.5s

ellipse: s-maj=7.3km s-min=5.5km az=95.0, Suspected Mining explosion.
NEIC 75 km [47 miles] WSW of Newcastle.

ISC 23 18:52:00.3±0.8, **43.50N**±0.04×**105.10W**±0.04, **h0**km, **n56,** σ1.9**69**/56, **Wyoming**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
RSSD	**Black Hills**	**0.99**	**51**	*e*Pb		**Pb**	**18 52 20.9**	**+0.4**
K22A	**Casper**	**1.34**	**231**	*e*Pn		**Pg**	**18 52 24.9**	**-1.1**
PHWY	**Pilot Hill**	**2.21**	**187**	*e*Pn		**Pn**	**18 52 37.8**	**-0.8**
N23A	**Red Feather La**	**2.68**	**194**	*e*Pn		**Pn**	**18 52 43.6**	**-1.3**
LAO	**LASA Array**	**3.29**	**346**	*e*Pn		**Pn**	**18 52 55.8**	**+2.7**
BW06	**Boulder Array**	**3.34**	**259**	*e*Pn		**Pn**	**18 52 53.3**	**-0.8**
PD31	**Pinedale Array**	**3.34**	**259**	*e*Pn		**Pn**	**18 52 53.6**	**-0.4**
PDAR	**Pinedale Array**	**3.34**	**259**	Pn		**Pn**	**18 52 52.6**	**-1.4**
	1.9nm,0.3s,baz=82,slow=18,SNR=23							
PDAR					Pg	**Pb**	**18 52 59.1**	**-1.5**
	4.7nm,0.3s,baz=70,slow=18,SNR=39							
PDAR					Lg	Lg	18 53 36.2	
	2.9nm,0.3s,baz=81,slow=19,SNR=4.2							
RLMT	**Red Lodge**	**3.40**	**300**	*e*Pn		**Pn**	**18 52 54.2**	**-0.7**
ISCO	**Idaho Springs**	**3.72**	**186**	*e*Pn		**Pn**	**18 53 02.8**	**+3.6**
GCMT	**Greycliff**	**3.98**	**307**	*e*Pn		**Pn**	**18 53 01.8**	**-1.0**
LOHW	**Long Hollow**	**4.00**	**274**	*e*Pn		**Pn**	**18 53 05.5**	**+2.4**
H17A	**Grant Village**	**4.06**	**285**	*e*Pn		**Pn**	**18 53 05.3**	**+1.5**
FLWY	**Flagg Ranch**	**4.10**	**280**	*e*Pn		**Pn**	**18 53 05.6**	**+1.2**
O20A	**White River Ci**	**4.10**	**216**	*e*Pn		**Pn**	**18 53 05.2**	**+0.7**
MOOW	**Moose Ponds**	**4.11**	**275**	*e*Pn		**Pn**	**18 53 05.5**	**+0.9**
SNOW	**Snow King Moun**	**4.12**	**271**	*e*Pn		**Pn**	**18 53 07.3**	**+2.6**
REDW	**Red Top Meadow**	**4.19**	**270**	*e*Pn		**Pn**	**18 53 06.5**	**+0.7**
YPP	**Pitchstone Pla**	**4.20**	**283**	*e*Pn		**Pn**	**18 53 05.7**	**-0.2**
IMW	**Indian Meadow**	**4.25**	**277**	*e*Pn		**Pn**	**18 53 06.9**	**+0.3**
TPAW	**Teton Pass**	**4.26**	**272**	*e*Pn		**Pn**	**18 53 08.0**	**+1.3**
YHH	**Holmes Hill**	**4.34**	**289**	*e*Pn		**Pn**	**18 53 09.3**	**+1.6**
AHID	**Auburn Hatcher**	**4.45**	**263**	*e*Pn		**Pn**	**18 53 13.4**	**+4.1**
Q24A	**Divide**	**4.53**	**180**	*e*Sg		**Sg**	**18 54 27.0**	**+1.1**
SMO	**Snowmass**	**4.54**	**199**	*e*Pn		**Pn**	**18 53 12.2**	**+1.5**
YHB	**Horse Butte**	**4.56**	**288**	*e*Pn		**Pn**	**18 53 12.8**	**+2.0**
KSCO	**Kaye Shedlock'**	**4.86**	**157**	*e*Pn		Pn	18 53 10.5	-4.2
DGMT	**Dagmar**	**5.01**	**7**	*e*Pg		**Pg**	**18 53 34.6**	**-1.8**
BOZ	**Bozeman (W)**	**5.14**	**297**	*e*Pb		**Pb**	**18 53 29.4**	**-1.7**
BOZ				*e*Sb		**Sb**	**18 54 35.8**	**+2.4**
HWUT	**Hardware Ranch**	**5.14**	**251**	*e*Pn		**Pn**	**18 53 19.8**	**+1.1**
TCUT	**Toone Canyon**	**5.25**	**245**	*e*Pn		**Pn**	**18 53 22.2**	**+1.9**
P18A	**Preston Nutter**	**5.46**	**227**	*e*Pn		**Pn**	**18 53 25.8**	**+2.5**
EGMT	**Eagleton**	**5.58**	**326**	*e*Pn		Pn	18 53 18.3	-6.2
MCMT	**McKenzie Canyo**	**5.73**	**286**	*e*Pn		**Pn**	**18 53 28.9**	**+2.0**
HRY	**Holter Researc**	**5.75**	**306**	*e*Pn		**Pn**	**18 53 27.3**	**+0.4**
MDND	**Maddock**	**5.81**	**40**	*e*Pn		**Pn**	**18 53 28.9**	**+1.2**
P17A	**Butcher Ranch,**	**5.84**	**228**	*e*Pn		**Pn**	**18 53 29.4**	**+1.0**
PV09	**Paradox Valley**	**5.85**	**213**	*e*Pn		**Pn**	**18 53 29.6**	**+0.9**
SPUT	**South Promonto**	**5.87**	**251**	*e*Pn		**Pn**	**18 53 28.7**	**+0.1**
HVU	**Hansel Valley**	**5.92**	**256**	*e*Pn		**Pn**	**18 53 29.6**	**+0.2**
PV10	**Paradox Valley**	**5.92**	**212**	*e*Pn		**Pn**	**18 53 32.1**	**+2.5**
PV01	**Paradox Valley**	**5.97**	**207**	*e*Pn		**Pn**	**18 53 28.7**	**-1.5**
SRU	**San Rafael Swe**	**5.99**	**225**	*e*Pn		**Pn**	**18 53 30.7**	**+0.3**
MPU	**Maple Canyon**	**6.00**	**237**	*e*Pn		**Pn**	**18 53 31.5**	**+1.0**
PV05	**Paradox Valley**	**6.21**	**211**	*e*Pn		**Pn**	**18 53 34.4**	**+1.0**
TMUT	**Trail Mountain**	**6.22**	**230**	*e*Pn		**Pn**	**18 53 35.5**	**+1.8**
NLU	**North Lily Min**	**6.31**	**238**	*e*Pn		**Pn**	**18 53 36.2**	**+1.4**
T25A	**Trinidad**	**6.38**	**175**	*e*Pn		**Pn**	**18 53 33.6**	**-2.1**
BGU	**Big Grassy Mou**	**6.42**	**249**	*e*Pn		**Pn**	**18 53 37.1**	**+0.8**
MSU	**Marysvale**	**7.31**	**229**	*e*Pn		**Pn**	**18 53 51.6**	**+3.1**
TCRU	**Three Creeks R**	**7.39**	**231**	*e*Pn		**Pn**	**18 53 50.3**	**+0.5**
MTPU	**Mount Pierson**	**7.66**	**227**	*e*Pn		**Pn**	**18 53 53.3**	**-0.1**
MFID	**Camas Ranch**	**7.81**	**273**	*e*Pn		**Pn**	**18 53 58.2**	**+3.0**
ULM	**Lac du Bonnet**	**9.24**	**40**	Pn		**Pn**	**18 54 12.8**	**-1.9**
	0.5nm,0.3s,baz=227,slow=16,SNR=3.9							
ULM					Lg	Lg	18 56 51.0	
	0.3nm,0.3s,baz=149,slow=22,SNR=3.4							
FIA0	**FINESS Array S**	**68.20**	**23**	*e*P		**P**	**19 03 03.0**	**+0.9**
FINES	**FINESS Array B**	**68.20**	**23**	P		**P**	**19 03 03.0**	**+0.9**
	2.4nm,0.9s,baz=332,slow=12,SNR=3.3							

WEL 23 19:01:44.1±0.2, **38.47S**×**178.28E**, **h35**km±2km, **ML3.7**/16, **8C-7D, Error ellipse: s-maj=2.3km s-min=1.0km az=90.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
CNGZ	**Carnagh Statio**	**0.06**	**255**	⇑P	N	Pn	19 01 49.4	-0.6
CNGZ					SN	Sn	19 01 54.7	+0.7
CNGZ					AML	AML	19 01 55.0	
TKGZ	**Te Karaka**	**0.34**	**275**	⇑P	N	Pn	19 01 51.7	-0.8
TKGZ					SN	Sn	19 01 58.1	-0.5
TKGZ					AML	AML	19 01 58.7	
TWGZ	**Tauwhareparae**	**0.37**	**321**	⇑P	N	Pn	19 01 52.3	-0.6
TWGZ					SN	Sn	19 01 59.3	0.0
TWGZ					AML	AML	19 02 01.9	
PUZ	**Puketiti**	**0.40**	**358**	⇓P	N	Pn	19 01 52.7	-0.5
PUZ					SN	Sn	19 01 59.9	+0.2
PUZ					AML	AML	19 02 00.6	
RIGZ	**Rimuhau**	**0.47**	**239**	⇓P	N	Pn	19 01 54.1	-0.2
RIGZ					SN	Sn	19 02 02.7	+1.3
RIGZ					AML	AML	19 02 03.1	
PRGZ	**Paritu Road**	**0.55**	**214**	⇓P	N	Pn	19 01 55.4	-0.1
PRGZ					SN	Sn	19 02 04.2	+0.8
PRGZ					AML	AML	19 02 12.3	
PKGZ	**Pakihiroa**	**0.60**	**345**	⇑P	N	Pn	19 01 56.0	-0.3
PKGZ					SN	Sn	19 02 05.4	+0.7
MWZ	**Matawai**	**0.60**	**283**	⇑P	N	Pn	19 01 55.4	-0.8
MWZ					SN	Sn	19 02 04.3	-0.5
MWZ					AML	AML	19 02 04.6	
WMGZ	**Waiomatatini S**	**0.66**	**9**	Pn	N	Pn	19 01 57.1	+0.2
WMGZ					SN	Sn	19 02 07.6	+1.6
WMGZ					AML	AML	19 02 08.7	
RAGZ	**Rawiri**	**0.68**	**267**	⇓P	N	Pn	19 01 56.8	-0.4
RAGZ					SN	Sn	19 02 07.5	+0.9
RAGZ					AML	AML	19 02 09.7	
RUGZ	**Raukumara Rang**	**0.69**	**316**	⇑P	N	Pn	19 01 56.7	-0.8
RUGZ					SN	Sn	19 02 07.3	+0.3
KNZ	**Kokohu**	**0.73**	**220**	⇓P	N	Pn	19 01 57.3	-0.6
KNZ					AML	AML	19 02 13.7	
KNZ					AML	AML	19 02 16.4	
MHGZ	**Mahia Peninsul**	**0.74**	**203**	Pn	N	Pn	19 01 58.1	0.0
MHGZ					AML	AML	19 02 16.6	
MHGZ					AML	AML	19 02 26.0	
SNGZ	**Shannon Statio**	**0.80**	**247**	⇓P	N	Pn	19 01 58.4	-0.5
SNGZ					AML	AML	19 02 14.2	
SNGZ					AML	AML	19 02 14.4	
HAZ	**Te Kaha**	**0.81**	**331**	⇑P	N	Pn	19 01 58.5	-0.5
HAZ					SN	Sn	19 02 10.3	+0.5
HAZ					AML	AML	19 02 12.3	
MXZ	**Matakaoa Point**	**0.91**	**1**	⇓P	N	Pn	19 02 00.8	+0.6
MXZ					AML	AML	19 02 15.9	
MXZ					AML	AML	19 02 18.8	
URZ	**Urewera**	**0.94**	**282**	⇑P	N	Pn	19 02 00.5	-0.3
URZ					AML	AML	19 02 16.1	
URZ					AML	AML	19 02 20.7	
MUGZ	**Murupara**	**1.18**	**269**		PN	Pn	19 02 04.3	+0.2
OPRZ	**Ohinepanea**	**1.50**	**294**		PN	Pn	19 02 07.9	-0.5
MRHZ	**Matea Rd**	**1.50**	**255**		PN	Pn	19 02 08.6	+0.1
MRHZ					AML	AML	19 02 37.5	
MRHZ					AML	AML	19 02 41.2	
BHHZ	**Black Hill Sta**	**2.01**	**239**		PN	Pn	19 02 14.9	-0.6
TSZ	**Takapari Road**	**2.40**	**228**		PN	Pn	19 02 19.1	-1.8
MRZ	**Mangatainoka R**	**3.02**	**223**		PN	Pn	19 02 27.2	-2.2
MRZ					SN	Sn	19 03 01.5	-2.9

*ISCJB **23** 19:05:11.9±0.3, 47.59N±0.04×145.73E±0.08, h450km, mb3.5/17, Error ellipse: s-maj=7.2km s-min=5.8km az=172.3*
*SKHL **23** 19:05:12.4±0.9, 47.67N×145.85E, h461km±20km, mb4.5/7, msh5.0/4*
*MOS **23** 19:05:12.2±1.2, 47.75N×145.64E, h446km, mb4.0/6, Error ellipse: s-maj=14.4km s-min=9.0km az=86.3*
*JMA **23** 19:05:13.3±0.5, 47.12N×145.90E, h473km, M3.4*
*IDC **23** 19:05:13.1±2.1, 47.77N×145.67E, h437km±24km, mb3.1/15, mb1 3.2/20, mb1mx3.1/37, mbtmp3.8/20, Error ellipse: s-maj=15.6km s-min=11.9km az=134.0*

ISC 23 19:05:13.4±0.5, **47.55N**±0.06×**145.63E**±0.07, **h450**km, **n59,** σ2.**20**/72, **mb3.6**/17, **3C, Sea of Okhotsk**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
YSS	**Yuzh-Sakhalins**	**2.05**	**254**	⇑*i*P	N	**P**	**19 06 15.3**	**+1.2**
YSS					*e*S	**S**	**19 07 03.3**	**-0.1**
YSS						pmax	pmax	
	comp=Z,130nm,0.7s							
YSS						smax	smax	
	comp=N,30nm,0.6s							
YSS						smax	smax	
	comp=E,30nm,0.8s							
YSS	**Yuzh-Sakhalins**	**2.05**	**254**	*e*P		**P**	**19 06 15.3**	**+1.2**
YSS						AMB	AMB	19 06 15.5
	comp=E,50nm,0.5s							
YSS					*e*S	**S**	**19 07 03.7**	**+0.3**
YSS					A	A	19 07 06.9	
	comp=E,110nm,0.4s							
KUR	**Kuril'sk**	**2.79**	**145**	*e*PN		**P**	**19 06 20.3**	**+1.4**
KUR					*e*S	**S**	**19 07 11.8**	**-0.2**
KUR						pmax	pmax	
	comp=Z,7.0nm,0.4s							
KUR						pmax	pmax	
	comp=E,2.0nm,0.1s							
KUR						pmax	pmax	
	comp=N,2.0nm,0.2s							
KUR						smax	smax	
	comp=N,28nm,0.4s							
KUR						smax	smax	
	comp=E,25nm,0.4s							
KUR	**Kuril'sk**	**2.79**	**145**	*e*P		**P**	**19 06 17.9**	**-1.0**
KUR					*e*S	**S**	**19 07 09.7**	**-2.3**
KUR					A	A	19 07 12.0	
	comp=E,60nm,0.8s							
UGL	**Uglegorsk**	**2.83**	**304**	*e*P		**P**	**19 06 19.5**	**+0.5**
UGL						AMB	AMB	19 06 20.3
	comp=E,260nm,0.7s							
JSE	**Soyaes**	**3.34**	**220**	P		**P**	**19 06 23.7**	**+0.7**
JWK2	**Keihoku**	**3.42**	**230**	P		**P**	**19 06 25.1**	**+1.5**
JWK2					*e*S	**S**	**19 07 22.5**	**+1.8**
YUK	**Yuzh-Kuril'sk**	**3.52**	**177**	*e*PN		**P**	**19 06 28.1**	**+3.6**
YUK					*e*S	**S**	**19 07 25.6**	**+3.3**
YUK						pmax	pmax	
	comp=Z,22nm,0.2s							
YUK						pmax	pmax	
	comp=N,9.0nm,0.1s							
YUK						pmax	pmax	
	comp=E,14nm,0.2s							
YUK						smax	smax	
	comp=N,70nm,0.4s							
YUK						smax	smax	
	comp=E,118nm,0.4s							
YUK	**Yuzh-Kuril'sk**	**3.52**	**177**	*e*P		**P**	**19 06 28.1**	**+3.6**
YUK						AMB	AMB	19 06 29.2
	comp=E,90nm,0.2s							
YUK						AMB	AMB	19 06 29.2
	comp=E,10.0nm,0.2s							
YUK						AMB	AMB	19 06 29.2
	comp=E,20nm,0.2s							
YUK					*e*S	**S**	**19 07 25.4**	**+3.1**
YUK					A	A	19 07 29.3	
	comp=E,70nm,0.4s							
YUK					A	A	19 07 29.3	
	comp=E,120nm,0.4s							
JRA	**Rausu**	**3.63**	**186**	P		**P**	**19 06 25.0**	**-0.4**
SHO	**Shikotan**	**3.78**	**167**	*e*PN		**P**	**19 06 23.6**	**-3.0**
SHO						pmax	pmax	
	comp=Z,13nm,0.3s							
SHO						pmax	pmax	
	comp=E,4.0nm,0.2s							
SHO						pmax	pmax	
	comp=N,12nm,0.3s							
SHO	**Shikotan**	**3.78**	**167**	*e*P		**P**	**19 06 23.6**	**-3.0**
SHO						AMB	AMB	19 06 24.6
	comp=N,10.0nm,0.3s							
SHO						AMB	AMB	19 06 24.6
	comp=N,40nm,0.3s							
SHO						AMB	AMB	19 06 24.6
	comp=N,70nm,0.3s							
SHO					A	A	19 07 11.7	
	comp=N,270nm,0.5s							
SHO					A	A	19 07 11.7	
	comp=N,300nm,0.5s							
SHO					*e*S	**S**	**19 07 20.4**	**-5.8**
JTKR	**Abashiri--Toko**	**3.78**	**199**	P		**P**	**19 06 26.6**	**0.0**
TYV	**Tymovskoe**	**3.84**	**331**	*e*PN		**P**	**19 06 23.5**	**-3.5**
TYV						pmax	pmax	
	comp=Z,31nm,0.8s							
TYV	**Tymovskoe**	**3.84**	**331**	*e*P		**P**	**19 06 25.7**	**-1.3**
TYV						AMB	AMB	19 06 26.2
	comp=Z,30nm,0.5s							
JSS	**Shosan**	**4.11**	**221**	P		**P**	**19 06 30.5**	**+1.0**
NEM2	**Nemuro 2**	**4.19**	**179**	P		**P**	**19 06 27.3**	**-2.9**
NEM2					*e*S	**S**	**19 07 26.7**	**-6.0**
JAK	**Akkeshi**	**4.60**	**189**	P		**P**	**19 06 31.8**	**-2.2**
JAK					*e*S	**S**	**19 07 34.3**	**-5.3**
JCH	**Churui**	**5.19**	**199**	P		**P**	**19 06 37.8**	**-1.8**
JCH					*e*S	**S**	**19 07 44.3**	**-5.6**
JNBK	**Urakawa-nobuka**	**5.65**	**202**	P		**P**	**19 06 42.6**	**-1.6**
JNBK					*e*S	**S**	**19 07 53.2**	**-5.1**
ERM	**Erimo**	**5.81**	**199**	*e*PN		**P**	**19 06 45.2**	**-0.6**
HABR	**Khabarovsk**	**7.16**	**281**	*e*PN		**P**	**19 06 58.1**	**-1.5**
HABR					*e*S	**S**	**19 08 23.7**	**-3.0**
HABR						pmax	pmax	
	comp=Z,6.0nm,0.8s							
HABR						pmax	pmax	
	comp=E,5.0nm,0.8s							
HABR						pmax	pmax	
	comp=N,1.0nm,0.4s							
HABR						MLR	MLR	
	comp=Z,26nm,12.0s							
HABR	**Khabarovsk**	**7.16**	**281**	*e*P		**P**	**19 06 58.1**	**-1.5**
KLR	**Kul'dur**	**9.39**	**285**	P		**P**	**19 07 23.7**	**0.0**
	comp=Z,0.5nm,0.3s,baz=106,slow=12,SNR=6.9							
KLR	**Kul'dur**	**9.39**	**285**	⇑*e*PN		**P**	**19 07 25.0**	**+1.3**
KLR	**Kul'dur**	**9.39**	**285**	*e*P		**P**	**19 07 25.0**	**+1.3**
EKMR	**Ekimchan**	**9.81**	**309**	*e*P		**P**	**19 07 29.2**	**+1.0**
EKMR						AMB	AMB	19 07 30.3
	comp=E,4.0nm,0.5s							
USRK	**Ussuriysk Ar.**	**10.09**	**256**	P		**P**	**19 07 32.2**	**+0.8**
	comp=Z,0.4nm,0.3s,baz=66,slow=12,SNR=6.1							
MJAR	**Matsushiro Arr**	**12.30**	**209**	P		**P**	**19 07 57.6**	**+2.1**
	comp=Z,0.2nm,0.3s,baz=15,slow=11,SNR=5.4							
BMKR	**Bomnak**	**12.73**	**310**	*e*P		**P**	**19 08 00.5**	**+0.7**
BMKR						AMB	AMB	19 08 02.5
	comp=Z,2.0nm,0.5s							
KROS	**Kirovskiy**	**13.60**	**307**	*e*P		**P**	**19 08 09.9**	**+0.7**
KROS						AMB	AMB	19 08 10.5
	comp=Z,8.0nm,0.9s							
SEY	**Seymchan**	**15.87**	**11**	P		**P**	**19 08 31.4**	**-2.0**
	comp=Z,0.2nm,0.3s,baz=187,slow=13,SNR=4.1							
KSRS	**Korea Array**	**16.47**	**239**	P		**P**	**19 08 42.4**	**+2.4**
	comp=Z,0.2nm,0.3s,baz=44,slow=10,SNR=7.5							
YAK	**Yakutsk**	**17.10**	**334**	P		**P**	**19 08 44.7**	**-1.6**
	comp=Z,0.0nm,0.3s,baz=183,slow=2.0,SNR=5.7							
YAK	**Yakutsk**	**17.10**	**334**	*e*P		**P**	**19 08 45.6**	**-0.7**
YAK						pmax	pmax	
	comp=Z,7.0nm,0.6s							
YAK	**Yakutsk**	**17.10**	**334**	*e*P		**P**	**19 08 45.5**	**-0.7**
SONM	**Songino Array**	**26.22**	**285**	P		**P**	**19 10 11.0**	**+0.5**
	comp=Z,0.6nm,0.4s,baz=81,slow=9.0,SNR=4.6							
ZALV	**Zalesovo Beam**	**37.94**	**303**	P		**P**	**19 11 50.0**	**-0.5**
	comp=Z,1.5nm,0.5s,baz=70,slow=6.9,SNR=9.9							
ZALV	**Zalesovo Beam**	**37.94**	**303**	P		**P**	**19 11 50.1**	**-0.5**
ZALV						pmax	pmax	
	comp=Z,1.0nm,0.5s							
ILAR	**Eielson Array**	**39.12**	**39**	P		**P**	**19 11 58.8**	**-1.3**
	comp=Z,0.6nm,0.5s,baz=248,slow=5.6,SNR=8.3							
MKAR	**Makanchi Array**	**41.98**	**293**	P		**P**	**19 12 23.7**	**+0.4**
	comp=Z,1.4nm,0.6s,baz=69,slow=5.9,SNR=18							
MKAR	**Makanchi Array**	**41.98**	**293**	*e*P		**P**	**19 12 23.6**	**+0.2**
MKAR						pmax	pmax	
	comp=Z,1.0nm,0.6s							
MKAR	**Makanchi Array**	**41.98**	**293**	*e*P		**P**	**19 12 23.5**	**+0.2**
INK	**Inuvik**	**43.70**	**32**	P		**P**	**19 12 35.0**	**-1.4**
	comp=Z,0.7nm,0.4s,baz=252,slow=20,SNR=3.6							
BRVK	**Borovoye**	**46.38**	**306**	*i* P		**P**	**19 12 57.5**	**+0.1**
BRVK						pmax	pmax	
	comp=Z,5.0nm,0.9s							
BRVK	**Borovoye**	**46.38**	**306**	*e*P		**P**	**19 12 57.5**	**+0.1**
CMAR	**Chiang Mai Arr**	**47.73**	**249**	*i* P		**P**	**19 13 07.5**	**-0.6**
CMAR	**Chiang Mai Arr**	**47.73**	**249**	*e*P		**P**	**19 13 07.5**	**-0.6**
YKA	**Yellowknife Ar**	**53.26**	**35**	P		**P**	**19 13 47.6**	**-0.5**
	comp=Z,0.6nm,0.7s,baz=314,slow=7.1,SNR=4.7							
FINES	**FINESS Array B**	**61.01**	**331**	P		**P**	**19 14 40.8**	**-0.7**
	comp=Z,1.2nm,0.6s,baz=33,slow=7.1,SNR=11							
GEYT	**Alibeck**	**61.74**	**296**	P		**P**	**19 14 47.2**	**+0.6**
	comp=Z,1.6nm,0.5s,baz=33,slow=3.5,SNR=5.9							
VSR	**Storozhevoye**	**63.18**	**317**	*e*P		**P**	**19 14 55.9**	**+0.2**
VSR						pmax	pmax	
	comp=Z,6.0nm,0.4s							
NOA	**NORSAR Array B**	**65.68**	**338**	P		**P**	**19 15 10.8**	**-0.7**
	comp=Z,0.7nm,0.6s,baz=32,slow=6.6,SNR=2.9							
WRA	**Warramunga Arr**	**67.94**	**191**	P		**P**	**19 15 27.3**	**+1.2**
	comp=Z,0.4nm,0.6s,baz=10,slow=6.5,SNR=4.2							
PDAR	**Pinedale Array**	**68.27**	**50**	P		**P**	**19 15 28.4**	**+0.1**
	comp=Z,0.8nm,0.5s,baz=30,slow=0.9,SNR=7.8							
ULM	**Lac du Bonnet**	**69.11**	**37**	P		**P**	**19 15 31.9**	**-1.0**
	comp=Z,3.1nm,0.7s,baz=25,slow=18,SNR=2.9							
ASAR	**Alice Springs**	**71.67**	**191**	P		**P**	**19 15 50.2**	**+1.8**
	comp=Z,0.2nm,0.5s,baz=1.5,slow=5.2,SNR=7.5							
STKA	**Stephens Creek**	**79.15**	**183**	P		**P**	**19 16 33.3**	**+3.3**
	comp=Z,1.2nm,0.8s,baz=342,slow=20,SNR=2.8							
TXAR	**Lajitas Array**	**81.41**	**56**	P		**P**	**19 16 43.3**	**+1.0**
	comp=Z,0.4nm,0.4s,baz=297,slow=5.0,SNR=12							

WEL 23 19:06:26.2±0.6, **36.89S**×**177.96E**, **h12**km, **ML3.5**/16, **2C-3D, Error ellipse: s-maj=4.0km s-min=3.9km az=90.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
MXZ	**Matakaoa Point**	**0.72**	**158**	⇑P*		Pg	19 06 39.8	-0.5
MXZ				S*		Sg	19 06 48.0	-1.9
MXZ					AML	AML	19 06 48.7	
MXZ					AML	AML	19 06 48.8	
MXZ					AML	AML	19 07 36.5	
HAZ	**Te Kaha**	**0.88**	**189**	⇓P*		Pg	19 06 41.7	-1.4
HAZ				S*		Sg	19 06 53.7	-0.9
HAZ					AML	AML	19 06 58.1	
HAZ					AML	AML	19 06 59.3	
HAZ					AML	AML	19 06 59.3	
WMGZ	**Waiomatatini S**	**0.99**	**159**	⇓P*		Pb	19 06 44.4	-1.0
WMGZ				S*		Sg	19 06 57.4	-1.0
WMGZ					AML	AML	19 06 57.9	
PKGZ	**Pakihiroa**	**1.00**	**175**	⇑P*		Pg	19 06 44.7	-0.9
PKGZ				S*		Sg	19 06 57.3	-1.3
RUGZ	**Raukumara Rang**	**1.10**	**192**	P*		Pb	19 06 45.0	-2.3
TWGZ	**Tauwhareparae**	**1.28**	**179**	PN		Pn	19 06 48.5	-1.6
TWGZ					AML	AML	19 07 06.6	
TWGZ					AML	AML	19 07 07.1	
MWZ	**Matawai**	**1.48**	**193**	P*		Pn	19 06 50.4	-2.4
MWZ					AML	AML	19 07 16.9	
MWZ					AML	AML	19 07 17.1	
URZ	**Urewera**	**1.52**	**206**	⇓P*		Pn	19 06 51.3	-2.0
URZ					AML	AML	19 07 08.7	
URZ					AML	AML	19 07 09.1	
TKGZ	**Te Karaka**	**1.55**	**183**		AML	AML	19 07 16.2	
TKGZ					AML	AML	19 07 16.6	
RAGZ	**Rawiri**	**1.66**	**195**	P*		Pn	19 06 53.9	-1.3
RAGZ					AML	AML	19 07 17.3	
RAGZ					AML	AML	19 07 24.6	
RIGZ	**Rimuhau**	**1.82**	**185**		AML	AML	19 07 27.5	
RIGZ					AML	AML	19 07 31.9	
MUGZ	**Murupara**	**1.84**	**210**	P*		Pn	19 06 56.0	-1.8
SNGZ	**Shannon Statio**	**1.95**	**194**	PN		Pn	19 06 58.0	-1.3
SNGZ					AML	AML	19 07 23.2	
SNGZ					AML	AML	19 07 23.3	
MHGZ	**Mahia Peninsul**	**2.26**	**181**		AML	AML	19 07 46.3	
MRHZ	**Matea Rd**	**2.29**	**212**		AML	AML	19 07 35.4	
MRHZ					AML	AML	19 07 35.6	
NMHZ	**Naumai**	**2.38**	**202**	PN		Pn	19 07 04.2	-1.1
NMHZ					AML	AML	19 07 38.9	
NMHZ					AML	AML	19 07 40.9	
ARHZ	**Aropaoanui**	**2.49**	**198**	PN		Pn	19 07 04.5	-2.1
ARHZ					AML	AML	19 07 34.6	
BKZ	**Black Stump Fm**	**2.55**	**207**	P*		Pn	19 07 05.8	-1.7
KWHZ	**Kaweka Forest**	**2.81**	**205**		AML	AML	19 07 52.5	
KWHZ					AML	AML	19 07 52.8	
BHHZ	**Black Hill Sta**	**3.00**	**209**	P*		Pn	19 07 12.0	-1.6
PXZ	**Pawanui**	**3.25**	**195**		AML	AML	19 07 56.2	
PXZ					AML	AML	19 08 29.6	

IDC 23 19:22:51.3±2.7, **6.63S**×**129.27E**, **h124**km±34km, **mb2.9**/1, **mb1 3.2**/4, **mb1mx2.9**/34, **mbtmp3.4**/4, **Error ellipse: s-maj=46.8

s-min=7.9km az=148.3

ISC 23 19:40:34.3±0.8, 13°1N±0°1×145°6E±0°1, h43km, n44, σ0889/41, mb4.2/21, MS3.6/5, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.88**	**301**	Pn		**Pn**	**19 40 50.4**	**+0.1**
	615nm,0.3s,baz=138,slow=9.2,SNR=323							
GUMO				Sn		**Sn**	**19 41 03.2**	**+1.2**
	1μm,0.3s,baz=73,slow=15,SNR=13							
GUMO	**Guam**	**0.88**	**301**	*e*Pn		**Pn**	**19 40 49.5**	**-0.8**
GUMO				*e*Sn		**Sn**	**19 41 01.4**	**-0.6**
PATS	**Pohnpei**	**13.95**	**115**	*e*Pn		Pn	19 43 45.2	-4.3
TGY	**Tagaytay City**	**24.03**	**275**	LR		LR	19 53 21.1	
	comp=Z,51nm,21.0s,baz=159,slow=32							
MJAR	**Matsushiro Arr**	**24.25**	**345**	P		**P**	**19 45 46.8**	**-0.6**
	0.3nm,0.4s,baz=169,slow=9.9,SNR=4.8							
MAJO	**Matsushiro**	**24.25**	**345**	*e*P		**P**	**19 45 47.2**	**-0.2**
	6.5nm,1.1s							
YULB	**Yu-li**	**25.23**	**297**	*e*P		**P**	**19 45 56.2**	**-0.2**
	8.7nm,1.2s							
SSLB	**Suanglung**	**25.66**	**298**	*e*P		**P**	**19 45 59.4**	**-0.9**
	10nm,1.2s							
WB2	**Warramunga Arr**	**34.69**	**199**	*e*P		**P**	**19 47 19.4**	**-0.8**
WR1	**Warramunga Arr**	**34.70**	**199**	*e*P		**P**	**19 47 19.8**	**-0.5**
	27nm,1.8s							
WRA	**Warramunga Arr**	**34.70**	**199**	P		**P**	**19 47 19.8**	**-0.5**
	1.3nm,0.7s,baz=22,slow=9.8,SNR=14							
AS01	**Alice Springs**	**38.31**	**197**	*e*P		**P**	**19 47 51.0**	**-0.1**
AS31	**Alice Springs**	**38.33**	**198**	*e*P		**P**	**19 47 51.9**	**+0.7**
	0.7nm,0.8s							
ASAR	**Alice Springs**	**38.33**	**198**	P		**P**	**19 47 51.4**	**+0.2**
	0.8nm,0.6s,baz=27,slow=7.7,SNR=24							
CMAR	**Chiang Mai Arr**	**45.15**	**283**	P		**P**	**19 48 47.5**	**+0.4**
	0.8nm,0.5s,baz=81,slow=6.5,SNR=12							
LSA	**Lhasa**	**52.88**	**297**	*e*P		**P**	**19 49 47.2**	**+0.5**
	2.9nm,1.0s							
MK01	**Makanchi Array**	**62.33**	**316**	*e*P		**P**	**19 50 52.8**	**+0.3**
MK31	**Makanchi Array**	**62.34**	**316**	*e*P		**P**	**19 50 52.6**	**+0.1**
MK32	**Makanchi Array**	**62.34**	**316**	*e*P		**P**	**19 50 53.5**	**+1.0**
MKAR	**Makanchi Array**	**62.34**	**316**	P		**P**	**19 50 53.5**	**+0.9**
	0.5nm,0.4s,baz=91,slow=8.0,SNR=12							
MKAR	**Makanchi Array**	**62.34**	**316**	*e*P		**P**	**19 50 52.4**	**-0.1**
	9.1nm,0.9s							
ZAA0	**Zalesovo Array**	**62.43**	**324**	*e*P		**P**	**19 50 53.1**	**+0.2**
ZALV	**Zalesovo Beam**	**62.43**	**324**	PcP		**PcP**	**19 51 32.0**	**0.0**
	0.4nm,0.4s,baz=142,slow=4.0,SNR=3.8							
ZALV				LR		LR	20 18 45.4	
	comp=Z,20nm,19.4s,baz=70,slow=37							
ZAA1	**Zalesovo Array**	**62.44**	**324**	*e*PcP		**PcP**	**19 51 32.0**	**0.0**
MAKZ	**Makanchi**	**62.56**	**316**	*e*P		**P**	**19 50 54.4**	**+0.5**
	1.6nm,0.8s							
KURBB	**Kurchatov Arra**	**65.46**	**320**	P		**P**	**19 51 12.5**	**-0.3**
	1.3nm,0.5s,baz=101,slow=6.8,SNR=8.5							
PPLA	**Purkeypile**	**65.86**	**26**	*e*P		**P**	**19 51 11.8**	**-3.6**
	8.9nm,0.7s							
ILAR	**Eielson Array**	**68.66**	**25**	P		**P**	**19 51 33.0**	**0.0**
	0.5nm,0.5s,baz=253,slow=6.3,SNR=5.8							
KKAR	**Karatay Array**	**70.32**	**311**	*e*P		**P**	**19 51 43.2**	**-0.4**
	12nm,0.9s							
VOSK	**Vostochnaya**	**70.37**	**321**	*e*P		**P**	**19 51 43.2**	**-0.6**
	5.2nm,1.6s							
BVAR	**Borovoye Array**	**70.75**	**322**	P		**P**	**19 51 46.6**	**+0.6**
	2.8nm,0.5s,baz=109,slow=7.4,SNR=20							
PPT	**Papeete**	**70.84**	**114**	LR		LR	20 17 49.6	
	comp=Z,41nm,20.1s,baz=346,slow=32							
INK	**Inuvik**	**74.50**	**22**	P		**P**	**19 52 09.3**	**+1.4**
	1.0nm,0.3s,baz=288,slow=20,SNR=3.7							
INK	**Inuvik**	**74.50**	**22**	*e*P		**P**	**19 52 09.7**	**+1.7**
	21nm,2.0s							
AKTO	**Aktyubinsk**	**78.50**	**319**	LR		LR	20 28 09.5	
	comp=Z,29nm,19.3s,slow=36							
YKA	**Yellowknife Ar**	**82.92**	**27**	P		**P**	**19 52 55.9**	**+1.6**
	0.9nm,0.5s,baz=286,slow=5.1,SNR=3.2							
FIA0	**FINESS Array S**	**91.89**	**335**	*e*P		**P**	**19 53 37.2**	**-0.7**
FINES	**FINESS Array B**	**91.89**	**335**	P		**P**	**19 53 37.2**	**-0.7**
	2.0nm,0.9s,baz=68,slow=5.8,SNR=6.1							
HFS	**Hagfors**	**97.50**	**338**	LR		LR	20 41 39.3	
	comp=Z,17nm,18.7s,baz=46,slow=38							
DBIC	**Dimbokro**	**144.71**	**302**	PKP		**PKPdf**	**20 00 07.4**	**0.0**
	4.1nm,0.8s,baz=84,slow=2.4,SNR=8.2							
DBIC	**Dimbokro**	**144.71**	**302**	*e*PKPdf		**PKPab**	**20 00 06.0**	**-0.2**
KIC	**Kosan Boka**	**144.78**	**302**	*e*PKP2		**PKPdf**	**20 00 07.5**	**-0.1**
	71nm,1.7s							
TIC	**Toumodi**	**144.85**	**302**	*e*PKP2		**PKPab**	**20 00 07.1**	**+0.3**
LIC	**Lamto**	**145.09**	**302**	*e*PKP2		**PKPdf**	**20 00 08.5**	**+0.4**
	37nm,0.9s							

IDC 23 19:48:56.3±3.8, 8°11S×122°21E, h176km±39km, mb2.7/1, mb1 3.0/4, mb1mx2.8/41, mbtmp3.4/4, Error ellipse: s-maj=110.2km s-min=13.9km az=57.0, Flores region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.48**	**162**	P		Pn	19 51 21.9	-0.3
	0.2nm,0.3s,baz=346,slow=8.7,SNR=14							
FITZ				S		Sn	19 53 13.1	-5.6
	0.2nm,0.3s,baz=291,slow=19,SNR=3.7							
WRA	**Warramunga Arr**	**16.62**	**136**	P		P	19 52 39.0	+0.2
	0.1nm,0.3s,baz=312,slow=12,SNR=12							
WRA				S		S	19 55 38.9	-4.2
	0.1nm,0.3s,baz=314,slow=24,SNR=4.0							
ASAR	**Alice Springs**	**19.10**	**145**	P		P	19 53 06.4	+0.6
	0.2nm,0.3s,baz=330,slow=12,SNR=23							
ASAR				S		S	19 56 34.3	+1.1
	0.0nm,0.3s,baz=308,slow=20,SNR=3.2							
MKAR	**Makanchi Array**	**65.17**	**331**	P		P	19 59 18.4	-0.1
	0.1nm,0.4s,baz=158,slow=4.7,SNR=3.8							

IDC 23 20:05:14.6±7.6, 16°46S×174°16W, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.4/32, mbtmp3.4/2, MS3.6/1, Ms1 3.6/1, ms1mx2.7/13, Error ellipse: s-maj=343.0km s-min=59.9km az=142.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**48.90**	**258**	P		P	20 14 02.5	-0.2
	0.1nm,0.3s,baz=94,slow=8.3,SNR=9.8							
ASAR	**Alice Springs**	**49.10**	**253**	P		P	20 14 04.2	0.0
	0.3nm,0.4s,baz=88,slow=7.8,SNR=18							
GUMO	**Guam**	**50.31**	**304**	LR		LR	20 30 27.3	
	comp=Z,67nm,21.1s,baz=176,slow=30							
BRTR	**Keskin Array B**	**146.50**	**319**	PKPbc		PKPdf	20 24 57.4	+0.5
	0.3nm,0.4s,baz=44,slow=4.4,SNR=2.5							

IDC 23 20:13:14.5±2.1,37°89N×144°55E,h0km,mb3.3/4, mb1 3.4/7,mb1mx3.3/56,mbtmp3.3/7,ML3.4/3,MS3.0/1, Ms1 3.0/1,ms1mx2.1/24,Error ellipse: s-maj=48.6km s-min=27.3km az=78.0

JMA 23 20:13:18.9±0.2,38°06N×144°10E,h37km,M3.4

ISCJB 23 20:13:19.5±1.0,38°05N±0°06×144°10E±0°07,h33km, mb3.3/4,MS2.9/1,Error ellipse: s-maj=8.6km s-min=7.9km az=179.2

ISC 23 20:13:20.9±1.4, 38°04N±0°07×144°16E±0°09, h35km, n19, σ1§50/27, mb3.3/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.21**	**299**	P		**Pn**	**20 13 53.9**	**-1.2**
OFUJ				S		**Sn**	**20 14 19.6**	**-1.6**
JIO	**Ouri**	**2.25**	**281**	P		**Pn**	**20 13 54.7**	**-0.9**
JIO				S		**Sn**	**20 14 20.2**	**-2.0**
JMK	**Ichinoseki**	**2.48**	**292**	P		**Pn**	**20 13 57.6**	**-1.1**
JMK				*e*S		**Sn**	**20 14 26.9**	**-0.9**
JOM	**Ohasama**	**2.66**	**303**	*e*S		**Sn**	**20 14 31.5**	**-0.7**
JMM	**Marumori**	**2.67**	**267**	P		**Pn**	**20 14 00.3**	**-1.0**
JMM				S		**Sn**	**20 14 30.6**	**-1.8**
JFK	**Kawauchi**	**2.69**	**256**	P		**Pn**	**20 14 00.1**	**-1.6**
JFK				*e*S		**Sn**	**20 14 30.6**	**-2.5**
JOU	**Okura**	**2.77**	**278**	P		**Pn**	**20 14 02.3**	**-0.5**
JOU				*e*S		**Sn**	**20 14 34.3**	**-0.8**
JRG	**Rokugo**	**3.07**	**297**	*e*S		**Sn**	**20 14 42.6**	**+0.2**
JFT	**Otama**	**3.08**	**261**	P		**Pn**	**20 14 06.5**	**-0.5**
JFT				*e*S		**Sn**	**20 14 42.3**	**-0.2**
JANG	**Nango**	**3.11**	**319**	*e*S		**Sn**	**20 14 41.4**	**-1.8**
JYK	**Kaneyama**	**3.11**	**287**	P		**Pn**	**20 14 07.2**	**-0.2**
JYK				*e*S		**Sn**	**20 14 43.0**	**-0.3**
MJAR	**Matsushiro Arr**	**4.98**	**254**	Pn		**Pn**	**20 14 33.6**	**+0.5**
	1.4nm,0.3s,baz=78,slow=15,SNR=15							
ASAJ	**Asahikawa**	**6.18**	**349**	Pn		**Pn**	**20 14 49.2**	**-0.4**
	1.0nm,0.3s,baz=160,slow=15,SNR=6.2							
ASAJ				Sn		**Sn**	**20 15 56.0**	**-3.0**
	0.3nm,0.3s,baz=131,slow=20,SNR=3.0							
KSRS	**Korea Array**	**12.87**	**272**	Pn		**Pn**	**20 16 23.4**	**+2.2**
	0.1nm,0.3s,baz=84,slow=14,SNR=3.6							
TLY	**Talaya**	**31.36**	**309**	LR		LR	20 32 12.1	
	comp=Z,24nm,19.0s,baz=186,slow=36							
MKAR	**Makanchi Array**	**45.44**	**302**	P		**P**	**20 21 37.4**	**+1.1**
	0.2nm,0.6s,baz=98,slow=8.9,SNR=2.7							
KURBB	**Kurchatov Arra**	**47.11**	**308**	P		**P**	**20 21 49.9**	**+0.6**
	0.2nm,0.7s,baz=82,slow=8.1,SNR=2.8							
BVAR	**Borovoye Array**	**51.51**	**312**	P		**P**	**20 22 25.2**	**+2.3**
	0.2nm,0.4s,baz=95,slow=7.2,SNR=2.5							
WRA	**Warramunga Arr**	**58.41**	**191**	P		**P**	**20 23 11.2**	**-1.7**
	0.5nm,0.7s,baz=13,slow=7.6,SNR=5.6							

NIED 23 20:21:00,38°10N×143°40E,h11km,Mw3.6 Best double couple: M₀2.91000×10¹⁴ NP1:φs7.00000°,δ20.00000°, λ-83.00000°. NP2:φs180.00000°,δ70.00000°, λ-92.00000°.

IDC 23 20:21:13.6±1.1,38°01N×143°63E,h0km,mb3.7/8, mb1 3.7/11,mb1mx3.5/71,mbtmp3.6/11,ML3.4/2,MS2.5/1, Ms1 2.5/1,ms1mx2.0/38,Error ellipse: s-maj=29.4km s-min=19.2km az=80.0

ISCJB 23 20:21:15.5±0.7,38°09N±0°05×143°39E±0°06,h19km, mb3.7/8,Error ellipse: s-maj=7.4km s-min=6.1km az=159.0

JMA 23 20:21:17.2±0.2,38°11N×143°35E,h39km,M3.6

ISC 23 20:21:17.1±1.0, 38°14N±0°07×143°40E±0°08, h19km, n26, σ1§48/32, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.65**	**282**	P		**Pn**	**20 21 44.2**	**-0.8**
JIO				S		**Sn**	**20 22 04.2**	**-1.4**
OFUJ	**Ofunato**	**1.65**	**305**	P		**Pn**	**20 21 44.3**	**-0.7**
OFUJ				S		**Sn**	**20 22 04.2**	**-1.5**
JMK	**Ichinoseki**	**1.89**	**296**	P		**Pn**	**20 21 48.0**	**-0.4**
JMK				S		**Sn**	**20 22 10.3**	**-1.4**
JMM	**Marumori**	**2.08**	**263**	P		**Pn**	**20 21 50.0**	**-0.9**
JMM				S		**Sn**	**20 22 13.6**	**-2.7**
JOM	**Ohasama**	**2.12**	**310**	P		**Pn**	**20 21 51.5**	**0.0**
JOM				S		**Sn**	**20 22 16.6**	**-0.7**
JFK	**Kawauchi**	**2.15**	**250**	P		**Pn**	**20 21 50.2**	**-1.7**
JFK				*e*S		**Sn**	**20 22 15.5**	**-2.6**
JOU	**Okura**	**2.17**	**277**	P		**Pn**	**20 21 52.1**	**-0.1**
JOU				*e*S		**Sn**	**20 22 17.7**	**-0.8**
JRG	**Rokugo**	**2.50**	**301**	P		**Pn**	**20 21 57.1**	**+0.4**
JFT	**Otama**	**2.51**	**257**	P		**Pn**	**20 21 56.6**	**-0.2**
JFT				*e*S		**Sn**	**20 22 25.5**	**-1.4**
JYK	**Kaneyama**	**2.51**	**289**	P		**Pn**	**20 21 57.0**	**+0.1**
MJAR	**Matsushiro Arr**	**4.44**	**250**	Pn		**Pn**	**20 22 24.0**	**+0.6**
	1.6nm,0.3s,baz=45,slow=10,SNR=22							
MAT	**Matsushiro**	**4.44**	**251**	P		**Pn**	**20 22 24.3**	**+0.9**
MAT				S		**Sn**	**20 23 16.2**	**+1.7**
ASAJ	**Asahikawa**	**6.00**	**354**	Pn		**Pn**	**20 22 45.1**	**+0.3**
	0.8nm,0.3s,baz=217,slow=17,SNR=7.5							
ASAJ				Sn		**Sn**	**20 23 49.5**	**-3.4**
	0.3nm,0.3s,baz=90,slow=20,SNR=2.2							
USRK	**Ussuriysk Ar.**	**10.52**	**309**	Pn		**Pn**	**20 23 49.3**	**+2.6**
	0.1nm,0.3s,baz=102,slow=14,SNR=4.9							
KSRS	**Korea Array**	**12.27**	**272**	LR		LR	20 28 58.3	
	comp=Z,18nm,18.4s,baz=200,slow=37							
H11N2	**WAKE ISLAND Hy**	**27.43**	**125**	T		T	20 55 40.3	
	baz=317,slow=75,SNR=17							
H11N1	**WAKE ISLAND Hy**	**27.43**	**125**	T		T	20 55 40.3	
	baz=317,slow=75,SNR=10							
H11N3	**WAKE ISLAND Hy**	**27.44**	**125**	T		T	20 55 40.3	
	baz=317,slow=75,SNR=14							
SONM	**Songino Array**	**28.51**	**302**	P		**P**	**20 27 11.7**	**+0.4**
	0.3nm,0.6s,baz=114,slow=7.8,SNR=3.7							
ZALV	**Zalesovo Beam**	**42.35**	**312**	P		**P**	**20 29 12.4**	**+2.7**
	0.4nm,0.3s,baz=93,slow=9.4,SNR=4.0							
MKAR	**Makanchi Array**	**44.88**	**302**	P		**P**	**20 29 31.2**	**+1.0**
	0.2nm,0.3s,baz=87,slow=10,SNR=3.7							
KURBB	**Kurchatov Arra**	**46.58**	**307**	P		**P**	**20 29 44.2**	**+0.7**
	1.6nm,0.5s,baz=81,slow=8.3,SNR=13							
ILAR	**Eielson Array**	**47.71**	**33**	P		**P**	**20 29 51.9**	**-0.3**
	0.4nm,0.7s,baz=265,slow=6.6,SNR=5.2							
WRA	**Warramunga Arr**	**58.40**	**190**	P		**P**	**20 31 10.0**	**-1.3**
	1.7nm,0.8s,baz=7.8,slow=7.0,SNR=19							
ASAR	**Alice Springs**	**62.12**	**190**	P		**P**	**20 31 35.8**	**-1.0**
	0.2nm,0.5s,baz=8.3,slow=7.0,SNR=4.2							
FINES	**FINESS Array B**	**68.56**	**333**	P		**P**	**20 32 18.8**	**+0.7**
	1.5nm,1.0s,baz=35,slow=5.1,SNR=2.7							

MEX 23 20:24:24.4±0.3, 16°38N×97°94W, h1km±14km, MD3.6, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.18**	**273**	*i* P		Pg	20 24 27.8	-0.1
PNIG				*e*S		Sg	20 24 30.3	+0.2
TLIG	**Tlapa**	**1.32**	**333**	*i* P		Pg	20 24 46.6	-3.1
TLIG				*i* S		Sg	20 25 03.0	-3.8
VHO	**Vista Hermosa**	**1.35**	**59**	*i* P		Pg	20 24 44.1	-6.2
VHO				*i* S		Sg	20 25 03.9	-3.8
MEIG	**Mezcala**	**2.22**	**314**	*i* P		Pn	20 24 59.5	-2.9
MEIG				*i* S		Sn	20 25 26.4	-4.2
PLIG	**Platanillo**	**2.49**	**324**	*i* P		Pn	20 25 02.9	-3.3
PLIG				*i* S		Sn	20 25 33.5	-3.7
ARIG	**Puente Sto Nin**	**2.97**	**310**	*i* P		Pn	20 25 10.7	-2.0
ARIG				*i* S		Sn	20 25 44.8	-4.2

WEL 23 20:27:26.3±0.4, 38°06S×176°39E, h146km±3km, ML3.5/28, 13C, Error ellipse: s-maj=2.9km s-min=2.3km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TARZ	**Mount Tarawera**	**0.20**	**153**	↑P	N	Pn	20 27 46.7	+0.5
OPRZ	**Ohinepanea**	**0.25**	**31**	↑P	N	Pn	20 27 46.6	+0.3
RRRZ	**Republican Roa**	**0.29**	**161**	↑P	N	Pn	20 27 46.6	+0.2
MUGZ	**Murupara**	**0.51**	**144**	↑P	N	Pn	20 27 47.2	-0.1
MUGZ					SN	Sn	20 28 03.1	-0.1
URZ	**Urewera**	**0.60**	**109**		PN	Pn	20 27 47.5	-0.2
URZ					SN	Sn	20 28 03.8	-0.2
URZ					AML	AML	20 28 07.4	
MRHZ	**Matea Rd**	**0.77**	**179**	↑P	N	Pn	20 27 49.0	+0.1
MRHZ					SN	Sn	20 28 05.6	-0.7
MRHZ					AML	AML	20 28 07.2	
RAGZ	**Rawiri**	**0.91**	**119**	↑P	N	Pn	20 27 50.3	+0.2
RAGZ				*e*	SN	Sn	20 28 08.3	+0.1
RAGZ					AML	AML	20 28 09.9	
MWZ	**Matawai**	**0.94**	**107**		PN	Pn	20 27 50.1	-0.1
MWZ					SN	Sn	20 28 09.1	+0.7
MWZ					AML	AML	20 28 10.2	
RUGZ	**Raukumara Rang**	**1.02**	**85**	↑P	N	Pn	20 27 50.1	-0.9
SNGZ	**Shannon Statio**	**1.03**	**134**	↑P	N	Pn	20 27 51.4	+0.3
SNGZ					AML	AML	20 28 11.4	
SNGZ					AML	AML	20 28 13.4	
NMHZ	**Naumai**	**1.08**	**163**		PN	Pn	20 27 52.1	+0.6
NMHZ					AML	AML	20 28 12.9	
NMHZ					AML	AML	20 28 13.1	
BKZ	**Black Stump Fm**	**1.10**	**176**	↑P	N	Pn	20 27 51.4	-0.3
BKZ					SN	Sn	20 28 10.1	-1.0
BKZ					AML	AML	20 28 13.3	
HAZ	**Te Kaha**	**1.14**	**75**	↑P	N	Pn	20 27 51.3	-0.6
HAZ					SN	Sn	20 28 10.2	-1.3
HAZ					AML	AML	20 28 11.4	
HAZ					AML	AML	20 28 14.3	
HAZ					AML	AML	20 28 14.7	
TKGZ	**Te Karaka**	**1.21**	**109**		PN	Pn	20 27 52.7	+0.2
TKGZ					SN	Sn	20 28 12.0	-0.5
TKGZ					AML	AML	20 28 15.5	
WHHZ	**Waihua**	**1.21**	**147**		PN	Pn	20 27 52.8	+0.2
WHHZ					AML	AML	20 28 14.1	
WHHZ					AML	AML	20 28 19.8	
RIGZ	**Rimuhau**	**1.25**	**121**		PN	Pn	20 27 53.3	+0.2
RIGZ					AML	AML	20 28 17.8	
RIGZ					AML	AML	20 28 18.7	
TWGZ	**Tauwhareparae**	**1.26**	**96**		PN	Pn	20 27 53.5	+0.4
TWGZ					AML	AML	20 28 15.7	
TWGZ					AML	AML	20 28 16.7	
ARHZ	**Aropaoanui**	**1.29**	**159**		PN	Pn	20 27 53.7	+0.3
ARHZ					AML	AML	20 28 15.9	
ARHZ					AML	AML	20 28 16.2	
TUVZ	**Tukino**	**1.34**	**205**		PN	Pn	20 27 54.0	0.0
PKGZ	**Pakihiroa**	**1.34**	**83**		PN	Pn	20 27 54.0	0.0
KWHZ	**Kaweka Forest**	**1.36**	**179**		PN	Pn	20 27 54.1	0.0
KWHZ					AML	AML	20 28 16.7	
KWHZ					AML	AML	20 28 16.7	
KNZ	**Kokohu**	**1.39**	**134**		PN	Pn	20 27 54.2	-0.1
KNZ					AML	AML	20 28 25.5	
MCHZ	**McNeill Hill**	**1.40**	**170**		PN	Pn	20 27 54.8	+0.3
MCHZ					AML	AML	20 28 20.3	
MOVZ	**Moawhango**	**1.43**	**200**		PN	Pn	20 27 54.2	-0.7
BHHZ	**Black Hill Sta**	**1.45**	**190**	↑	PN	Pn	20 27 54.6	-0.5
BHHZ					AML	AML	20 28 16.8	
BHHZ					AML	AML	20 28 17.4	
PUZ	**Puketiti**	**1.47**	**91**	↑	PN	Pn	20 27 54.9	-0.4
KRHZ	**Kereru**	**1.58**	**181**		AML	AML	20 28 19.9	
KRHZ					AML	AML	20 28 20.4	
MHGZ	**Mahia Peninsul**	**1.61**	**133**		PN	Pn	20 27 56.8	+0.1
WMGZ	**Waiomatatini S**	**1.62**	**82**	↑	PN	Pn	20 27 56.8	0.0
WMGZ					AML	AML	20 28 20.0	
WMGZ					AML	AML	20 28 22.9	
KAHZ	**Kahuranaki**	**1.77**	**168**		PN	Pn	20 27 58.4	-0.2
KAHZ					AML	AML	20 28 24.6	
KAHZ					AML	AML	20 28 25.8	
PNHZ	**Pukenui**	**1.85**	**185**		PN	Pn	20 27 58.7	-0.9
PNHZ					AML	AML	20 28 25.6	
TSZ	**Takapari Road**	**2.02**	**189**		PN	Pn	20 28 00.5	-1.0
DVHZ	**Dannevirke**	**2.24**	**184**		PN	Pn	20 28 02.5	-1.5
DVHZ					AML	AML	20 28 52.4	
POWZ	**Post Office Ro**	**2.38**	**192**		PN	Pn	20 28 04.2	-1.5
ANWZ	**Angora Road**	**2.40**	**178**		PN	Pn	20 28 04.8	-1.1
ANWZ					AML	AML	20 28 36.5	
ANWZ					AML	AML	20 28 38.1	
BFZ	**Birch Farm**	**2.62**	**182**		PN	Pn	20 28 06.9	-1.8
TIWZ	**Tintock**	**2.74**	**188**		PN	Pn	20 28 08.3	-1.9
TIWZ					AML	AML	20 28 42.3	
TIWZ					AML	AML	20 28 44.8	
OGWZ	**Otaki Gorge**	**2.91**	**199**		PN	Pn	20 28 10.7	-2.2
OGWZ					AML	AML	20 28 10.7	
OGWZ					AML	AML	20 28 48.5	
HOWZ	**Holdsworth Sta**	**2.91**	**193**		PN	Pn	20 28 10.0	-2.4
HOWZ					AML	AML	20 28 45.0	
HOWZ					AML	AML	20 28 45.7	
KIW	**Kapiti Island**	**3.02**	**202**		PN	Pn	20 28 11.1	-2.6
TMWZ	**Te Maipa**	**3.07**	**187**		PN	Pn	20 28 11.9	-2.4
TMWZ					AML	AML	20 28 49.5	
TMWZ					AML	AML	20 28 53.1	
MTW	**Mount Morrison**	**3.17**	**192**		PN	Pn	20 28 12.7	-2.9
CAW	**Cannon Point**	**3.21**	**198**	↑	PN	Pn	20 28 13.5	-2.7
PAWZ	**Paruwai Farm**	**3.40**	**192**		AML	AML	20 28 55.9	
MSWZ	**Moikau Station**	**3.46**	**194**		PN	Pn	20 28 16.3	-3.2
TCW	**Tory Channel**	**3.54**	**207**		PN	Pn	20 28 17.5	-2.9
PLWZ	**Palliser**	**3.61**	**194**		PN	Pn	20 28 18.0	-3.3
TUWZ	**Tuamarina**	**3.86**	**209**		PN	Pn	20 28 21.0	-3.5
NNZ	**Nelson**	**3.92**	**215**		PN	Pn	20 28 22.2	-3.0
BSWZ	**Blackbirch Sta**	**4.13**	**207**		PN	Pn	20 28 24.2	-3.3
THZ	**Tophouse**	**4.57**	**215**		PN	Pn	20 28 31.0	-2.9
KHZ	**Kahutara**	**4.87**	**206**		PN	Pn	20 28 34.1	-3.7

IDC 23 20:29:35.5±2.7, 12°98N×145°53E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.2/42, mbtmp3.3/3, MS3.0/1, Ms1 3.0/1, ms1mx2.4/14, Error ellipse: s-maj=66.1km s-min=18.8km az=65.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.88**	**313**	Pn		Pn	20 29 55.5	+0.2
	74nm,0.3s,baz=134,slow=11,SNR=29							
GUMO				Sn		Sn	20 30 09.1	+0.3
	55nm,0.3s,baz=88,slow=18,SNR=9.4							
MJAR	**Matsushiro Arr**	**24.37**	**346**	LR		LR	20 44 30.7	
	comp=Z,33nm,18.0s,baz=230,slow=37							
WRA	**Warramunga Arr**	**34.52**	**199**	P		P	20 36 26.1	+0.3
	0.4nm,0.8s,baz=22,slow=9.2,SNR=2.0							
ASAR	**Alice Springs**	**38.16**	**197**	P		P	20 36 56.3	-0.5
	0.3nm,0.9s,baz=33,slow=7.0,SNR=2.5							
MKAR	**Makanchi Array**	**62.37**	**316**	P		P	20 40 00.1	-0.1
	0.1nm,0.3s,baz=101,slow=7.5,SNR=2.3							

*IDC 23 20:29:58.8±1.4, 35°16N×30°29E, h0km

MMAI				Sn	**Sn**	**20 32 03.7**	**+0.8**
	14nm,0.3s,baz=313,slow=29,SNR=15						
KSDI	**Kefar Szold**	**4.71**	**113**	Pn	**Pn**	**20 31 12.8**	**+1.7**
KSDI				Sn	**Sn**	**20 32 06.3**	**+0.8**
KSDI	**Kefar Szold**	**4.71**	**113**	Pn	**Pn**	**20 31 12.8**	**+1.7**
KSDI				Sn	**Sn**	**20 32 06.3**	**+0.8**
SLTI	**Sal'it**	**4.77**	**126**	Pn	**Pn**	**20 31 13.4**	**+1.5**
SLTI				Sn	**Sn**	**20 32 07.1**	**0.0**
SLTI	**Sal'it**	**4.77**	**126**	Pn	**Pn**	**20 31 13.4**	**+1.5**
SLTI				Sn	**Sn**	**20 32 07.1**	**0.0**
BRBR	**Barbar**	**4.84**	**109**	*e*P	**Pn**	**20 31 15.2**	**+2.1**
BRBR				*e*S	**Sn**	**20 32 08.7**	**-0.4**
BRBR				AML	AML	20 32 14.8	
	comp=N,40nm,0.5s						
BRBR				AML	AML	20 32 15.4	
	comp=E,22nm,0.5s						
MMLI	**Mount Malkishu**	**4.91**	**122**	Pn	**Pn**	**20 31 15.1**	**+1.2**
MMLI				Sn	**Sn**	**20 32 11.6**	**+1.0**
MMLI	**Mount Malkishu**	**4.91**	**122**	Pn	**Pn**	**20 31 15.1**	**+1.2**
MMLI				Sn	**Sn**	**20 32 11.6**	**+1.0**
MARH	**Ras Al Marh**	**5.07**	**101**	*e*P	**Pn**	**20 31 18.6**	**+2.2**
MARH				*e*S	**Sn**	**20 32 14.8**	**-0.2**
MARH				AML	AML	20 32 21.5	
	comp=N,32nm,0.5s						
MARH				AML	AML	20 32 26.2	
	comp=E,16nm,0.4s						
HMDT	**Nahal Hemdat**	**5.09**	**123**	Pn	**Pn**	**20 31 18.9**	**+2.6**
HMDT				Sn	**Sn**	**20 32 16.1**	**+1.1**
HMDT	**Nahal Hemdat**	**5.09**	**123**	Pn	**Pn**	**20 31 18.9**	**+2.6**
HMDT				Sn	**Sn**	**20 32 16.1**	**+1.1**
AMAZ	**Amatzia**	**5.16**	**133**	Pn	**Pn**	**20 31 16.3**	**-1.0**
AMAZ				Sn	**Sn**	**20 32 17.0**	**+0.2**
AMAZ	**Amatzia**	**5.16**	**133**	Pn	**Pn**	**20 31 16.3**	**-1.0**
AMAZ				Sn	**Sn**	**20 32 17.0**	**+0.2**
TCHB	**Talchebab**	**5.18**	**117**	*e*P	**Pn**	**20 31 20.0**	**+2.4**
TCHB				*e*S	**Sn**	**20 32 14.8**	**-2.4**
TCHB				AML	AML	20 32 25.7	
	comp=E,51nm,0.4s						
TCHB				AML	AML	20 32 28.6	
	comp=N,44nm,0.5s						
BRTR	**Keskin Array B**	**5.23**	**28**	Pn	**Pn**	**20 31 20.4**	**+2.0**
	comp=N,0.3nm,0.3s,baz=203,slow=15,SNR=8.7						
BRTR				Sn	**Sn**	**20 32 18.2**	**-0.5**
	comp=N,0.1nm,0.3s,baz=216,slow=6.4,SNR=2.6						
KZIT	**Kziot**	**5.34**	**141**	Pn	**Pn**	**20 31 20.4**	**+0.6**
KZIT				Sn	**Sn**	**20 32 20.2**	**-1.0**
KZIT	**Kziot**	**5.34**	**141**	Pn	**Pn**	**20 31 20.4**	**+0.6**
KZIT				Sn	**Sn**	**20 32 20.2**	**-1.0**
DSI	**Dead Sea**	**5.42**	**130**	Pn	**Pn**	**20 31 22.4**	**+1.5**
DSI	**Dead Sea**	**5.42**	**130**	Pn	**Pn**	**20 31 22.4**	**+1.5**
MZBI	**Masada**	**5.58**	**132**	Pn	**Pn**	**20 31 24.8**	**+1.7**
MZBI				Sn	**Sn**	**20 32 27.8**	**+0.7**
MZBI	**Masada**	**5.58**	**132**	Pn	**Pn**	**20 31 24.8**	**+1.7**
MZBI				Sn	**Sn**	**20 32 27.8**	**+0.7**
MZDA	**Masada**	**5.59**	**132**	Pn	**Pn**	**20 31 25.2**	**+2.1**
MZDA				Sn	**Sn**	**20 32 27.1**	**-0.1**
MZDA	**Masada**	**5.59**	**132**	Pn	**Pn**	**20 31 25.2**	**+2.1**
MZDA				Sn	**Sn**	**20 32 27.1**	**-0.1**
ROOS	**tl_alroos**	**5.69**	**98**	*e*P	**Pn**	**20 31 27.5**	**+2.8**
ROOS				*e*S	**Sn**	**20 32 29.5**	**-0.5**
ROOS				AML	AML	20 32 40.4	
	comp=N,19nm,0.5s						
ROOS				AML	AML	20 32 52.5	
	comp=E,14nm,0.5s						
SALA	**Sala**	**5.73**	**113**	*e*P	**Pn**	**20 31 27.8**	**+2.5**
SALA				*e*S	**Sn**	**20 32 28.1**	**-2.9**
SALA				AML	AML	20 32 36.7	
	comp=E,2.8nm,0.5s						
SALA				AML	AML	20 32 39.1	
	comp=N,26nm,0.4s						
PRNI	**Paran**	**6.10**	**140**	Pn	**Pn**	**20 31 31.3**	**+1.1**
PRNI	**Paran**	**6.10**	**140**	Pn	**Pn**	**20 31 31.3**	**+1.1**
ZALF	**Zalf**	**6.10**	**109**	*e*P	**Pn**	**20 31 32.5**	**+2.2**
ZALF				*e*S	**Sn**	**20 32 37.0**	**-2.9**
ZALF				AML	AML	20 32 57.4	
	comp=E,8.1nm,0.6s						
ZALF				AML	AML	20 33 01.2	
	comp=N,6.1nm,0.6s						
ASF	**Jabal al Asfar**	**6.11**	**117**	Pn	**Pn**	**20 31 32.9**	**+2.4**
	comp=N,0.5nm,0.3s,baz=253,slow=8.7,SNR=4.8						
ASF				Sn	**Sn**	**20 32 44.1**	**+3.9**
	comp=N,0.6nm,0.3s,baz=15,slow=19,SNR=6.2						
HRFI	**Mount Harif**	**6.37**	**142**	Pn	**Pn**	**20 31 35.6**	**+1.7**
HRFI	**Mount Harif**	**6.37**	**142**	Pn	**Pn**	**20 31 35.6**	**+1.7**
MBRI	**Mt Berech**	**6.50**	**144**	Pn	**Pn**	**20 31 36.7**	**+0.8**
MBRI	**Mt Berech**	**6.50**	**144**	Pn	**Pn**	**20 31 36.7**	**+0.8**
EIL	**Elat**	**6.62**	**144**	Pn	**Pn**	**20 31 38.8**	**+1.4**
	comp=N,1.1nm,0.3s,baz=283,slow=2.3,SNR=11						
EIL				Sn	**Sn**	**20 32 51.4**	**-1.5**
	comp=N,1.6nm,0.3s,baz=347,slow=21,SNR=6.1						
EIL	**Elat**	**6.62**	**144**	Pn	**Pn**	**20 31 38.5**	**+1.1**
EIL	**Elat**	**6.62**	**144**	Pn	**Pn**	**20 31 38.5**	**+1.1**
KVAR	**Kislovodsk Arr**	**12.89**	**43**	Pn	**P**	**20 33 09.5**	**-4.7**
	baz=240,slow=20,SNR=1.8						
AKASG	**Malin Array Be**	**15.59**	**357**	Pn	**P**	**20 33 43.4**	**-0.5**
	comp=N,0.6nm,0.3s,baz=174,slow=8.8,SNR=8.8						
GERES	**GERESS Array B**	**18.48**	**323**	P	**P**	**20 34 16.0**	**+0.1**
	baz=138,slow=12,SNR=3.6						
GEYT	**Alibeck**	**22.35**	**75**	P	**P**	**20 35 01.5**	**+3.4**
	comp=N,0.6nm,0.4s,baz=268,slow=10,SNR=2.9						
AKTO	**Aktyubinsk**	**25.15**	**44**	P	**P**	**20 35 26.1**	**+1.0**
	comp=N,0.9nm,0.5s,baz=265,slow=4.9,SNR=4.8						
FINES	**FINESS Array B**	**26.48**	**355**	P	**P**	**20 35 36.0**	**-1.0**
	comp=N,2.9nm,1.0s,baz=149,slow=11,SNR=6.7						
NOA	**NORSAR Array B**	**28.72**	**340**	LR	LR	20 50 15.9	
	comp=N,13nm,18.0s,baz=215,slow=42						
ARCES	**ARCESS Array B**	**34.57**	**357**	P	**P**	**20 36 47.7**	**-0.7**
	comp=N,0.6nm,0.5s,baz=181,slow=7.0,SNR=5.2						
MKAR	**Makanchi Array**	**40.15**	**57**	P	**P**	**20 37 37.0**	**+1.1**
	comp=N,0.5nm,0.7s,baz=265,slow=10,SNR=3.8						
SONM	**Songino Array**	**56.10**	**52**	P	**P**	**20 39 39.8**	**+0.4**
	comp=N,0.5nm,0.5s,baz=280,slow=8.3,SNR=4.6						
SJG	**San Juan**	**85.01**	**289**	LR	LR	21 15 37.8	
	comp=N,18nm,19.0s,baz=122,slow=32						

*ISCJB **23** 20:45:50.4±0.5,39.°12N±0.°04×29.°01E±0.°03,h3km±6km, Error ellipse: s-maj=6.4km s-min=3.6km az=172.3*
*CSEM **23** 20:45:50.7±0.1,39.°11N×29.°02E,h8km,ML2.9,Error ellipse: s-maj=3.0km s-min=2.3km az=154.0*
*ISK **23** 20:45:50.3,39.°14N×28.°99E,h5km,ML2.4*
*DDA **23** 20:45:50.3,39.°11N×29.°05E,h7km,Ml2.9*

ISC 23 20:45:50.7±0.9,39.°10N±0.°03×29.°03E±0.°02,h13km±7km, n43,σ0°59/59,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**257**	*i* P	**Pg**	**20 45 56.4**	**+0.3**
DEMI				*i* S	**Sg**	**20 46 00.2**	**+0.5**
DEMI	**Demirci**	**0.25**	**257**	P	**Pg**	**20 45 56.4**	**+0.3**
DEMI				S	**Sg**	**20 46 00.2**	**+0.5**
GEDZ	**Gediz**	**0.30**	**101**	*e*PG	**Pb**	**20 45 57.9**	**-0.1**
GEDZ				*e*SG	**Sb**	**20 46 02.4**	**-0.5**
GEDZ	**Gediz**	**0.30**	**101**	*e*Pg	**Pb**	**20 45 57.9**	**-0.1**
GEDZ				*e*Sg	**Sb**	**20 46 02.4**	**-0.5**
GDZ	**Gediz**	**0.35**	**92**	*i* P	**Pg**	**20 45 57.7**	**-0.2**
GDZ				*i* S	**Sg**	**20 46 02.5**	**-0.2**
GDZ	**Gediz**	**0.35**	**92**	P	**Pg**	**20 45 57.7**	**-0.2**
GDZ				S	**Sg**	**20 46 02.5**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**20 45 59.8**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**20 45 59.8**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**20 46 03.5**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**	**20 46 03.5**	**0.0**
MANT	**Manisa**	**0.71**	**212**	*i* P	**Pg**	**20 46 03.5**	**-1.1**
MANT				*i* S	**Sg**	**20 46 13.2**	**-0.8**
MANT	**Manisa**	**0.71**	**212**	P	**Pg**	**20 46 03.5**	**-1.1**
MANT				S	**Sg**	**20 46 13.2**	**-0.8**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pg**	**20 46 09.0**	**-0.6**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pg**	**20 46 09.0**	**-0.6**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**20 46 09.8**	**-1.1**
BALB				*e*SG	**Sb**	**20 46 24.1**	**-0.2**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**20 46 09.8**	**-1.1**
BALB				*e*Sg	**Sb**	**20 46 24.1**	**-0.2**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pg**	**20 46 11.8**	**-1.4**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pb**	**20 46 14.5**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pb**	**20 46 14.5**	**0.0**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pg**	**20 46 15.3**	**+0.2**
BALY				*i* S	**Sn**	**20 46 32.1**	**+0.9**
BALY	**Balya**	**1.27**	**301**	P	**Pg**	**20 46 15.3**	**+0.2**
BALY				S	**Sn**	**20 46 32.1**	**+0.9**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pn**	**20 46 14.3**	**+0.1**
MDNY				*e*Sn	**Sn**	**20 46 31.9**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pn**	**20 46 14.3**	**+0.1**
MDNY				*e*Sn	**Sn**	**20 46 31.9**	**+0.7**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**20 46 14.7**	**-0.6**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**20 46 14.7**	**-0.6**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**20 46 14.8**	**-0.5**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**20 46 14.9**	**-0.5**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pn**	**20 46 15.6**	**+0.2**
BORA				*i* S	**Sb**	**20 46 33.6**	**+0.5**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pn**	**20 46 15.6**	**+0.2**
BORA				S	**Sb**	**20 46 33.6**	**+0.5**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pn**	**20 46 16.3**	**+0.2**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pn**	**20 46 16.3**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pb**	**20 46 17.1**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pb**	**20 46 17.2**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	**Pg**	**20 46 18.1**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn	**Pg**	**20 46 18.1**	**-0.7**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**20 46 17.7**	**-0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**20 46 17.7**	**-0.3**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pb**	**20 46 18.5**	**-0.6**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pb**	**20 46 18.5**	**-0.6**
IZM	**Izmir**	**1.55**	**244**	*e*PN	**Pb**	**20 46 19.4**	**0.0**
IZM	**Izmir**	**1.55**	**244**	*e*Pn	**Pb**	**20 46 19.4**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**20 46 21.9**	**+1.0**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**20 46 21.9**	**+1.0**

*ISCJB **23** 20:47:51.4±0.8,31.°76S±0.°07×138.°61E±0.°08,h10km, Error ellipse: s-maj=11.9km s-min=6.7km az=136.4*
*AUST **23** 20:47:55.3±0.6,31.°94S×138.°79E,h20km,Error ellipse: s-maj=8.2km s-min=4.7km az=151.0*
*IDC **23** 20:47:56.5±4.8,31.°54S×138.°85E,h0km,mb1 3.3/3, mb1mx3.2/21,mbtmp3.1/3,ML3.0/3,Error ellipse: s-maj=75.5km s-min=16.3km az=29.0*

ISC 23 20:47:53.4±1.0,31.°85S±0.°07×138.°75E±0.°07,h10km,n8, σ1°53/11,South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HTT	**Hallett**	**1.58**	**175**	P	**Pn**	**20 48 21.2**	**-0.3**
	baz=1.5						
STKA	**Stephens Creek**	**2.42**	**91**	Pn	**Pb**	**20 48 37.0**	**-0.1**
	4.1nm,0.3s,baz=275,slow=12,SNR=35						
STKA				Sn	**Sb**	**20 49 06.9**	**-0.1**
	6.4nm,0.3s,baz=306,slow=14,SNR=5.3						
STKA				Lg	Lg	20 49 10.8	
	17nm,0.3s,baz=338,slow=19,SNR=14						
STKA	**Stephens Creek**	**2.42**	**91**	P	**Pn**	**20 48 33.5**	**+0.5**
	baz=2.4						
ARPS	**Mount Arapiles**	**5.53**	**153**	P	**Pn**	**20 49 14.8**	**-1.0**
	baz=5.4						
CMSA	**Cobar Meteorol**	**5.93**	**89**	P	**Pn**	**20 49 20.8**	**-0.4**
	baz=5.9						
FORT	**Forrest**	**9.21**	**274**	P	**Pn**	**20 50 06.8**	**+0.5**
	baz=9.2						
ASAR	**Alice Springs**	**9.21**	**331**	Pn	**Pn**	**20 50 09.2**	**+2.8**
	0.1nm,0.3s,baz=153,slow=12,SNR=11						
ASAR				Sn	**Sn**	**20 51 48.1**	**-2.1**
	0.2nm,0.3s,baz=154,slow=22,SNR=6.0						
WRA	**Warramunga Arr**	**12.50**	**340**	Pn	**Pn**	**20 50 51.8**	**+0.4**
	0.1nm,0.3s,baz=159,slow=12,SNR=5.7						
WRA				Sn	**Sn**	**20 53 08.7**	**-2.2**
	0.1nm,0.3s,baz=166,slow=25,SNR=3.6						

*CSEM **23** 20:52:22.9,43.°87N×12.°03E,h8km,MD2.2/16,*
ROM 23 20:52:22.9±0.1,43.°87N×12.°03E,h8km,Md2.2/16,Ml1.5/8, Error ellipse: s-maj=1.6km s-min=0.9km az=15.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
T0502	**Localit^ San**	**0.09**	**69**	Pg	Pg	20 52 25.3	+0.3
T0502				Sg	Sg	20 52 27.2	+0.6
	720nm,0.1s						
SFI	**Santa Sofia**	**0.14**	**285**	Pg	Pg	20 52 26.2	+0.4
SFI				Sg	Sg	20 52 28.9	+1.0
	137nm,0.4s						
SFI	**Santa Sofia**	**0.14**	**285**	Pg	Pg	20 52 26.2	+0.4
SFI				Sg	Sg	20 52 28.9	+1.0
	137nm,0.4s						
ASQU	**Asqua**	**0.19**	**247**	Pg	Pg	20 52 27.3	+0.6
ASQU				Sg	Sg	20 52 31.0	+1.6
	148nm,0.2s						
ASQU	**Asqua**	**0.19**	**247**	Pg	Pg	20 52 27.3	+0.6
ASQU				Sg	Sg	20 52 31.0	+1.6
	148nm,0.2s						
CPGN	**Carpegna, Ital**	**0.22**	**108**	Pg	Pg	20 52 28.9	+1.5
	8μm,7.5s						
CPGN	**Carpegna, Ital**	**0.22**	**108**	Pg	Pg	20 52 28.9	+1.5
	8μm,7.5s						
PARC	**Parchiule**	**0.27**	**145**	Pg	Pg	20 52 28.8	+0.6
PARC				Sg	Sg	20 52 33.2	+1.4
	42nm,0.5s						
PARC	**Parchiule**	**0.27**	**145**	Pg	Pg	20 52 28.8	+0.6
PARC				Sg	Sg	20 52 33.2	+1.4
	42nm,0.5s						
VMG	**Vicchio**	**0.36**	**285**	Pg	Pg	20 52 30.6	+0.6
VMG				Sg	Sb	20 52 36.9	-0.6
VMG	**Vicchio**	**0.36**	**285**	Pg	Pg	20 52 30.6	+0.6
VMG				Sg	Sb	20 52 36.9	-0.6
BADI	**Badiali**	**0.39**	**156**	Pg	Pg	20 52 30.9	+0.3
BADI				Sg	Sb	20 52 37.8	-0.5
	36nm,0.2s						
BADI	**Badiali**	**0.39**	**156**	Pg	Pg	20 52 30.9	+0.3
BADI				Sg	Sb	20 52 37.8	-0.5
	36nm,0.2s						
ATMC	**Monte Cedrone**	**0.44**	**164**	Pg	Pg	20 52 31.8	+0.4
ATMC				Sg	Sb	20 52 39.2	-0.5
ATMC	**Monte Cedrone**	**0.44**	**164**	Pg	Pg	20 52 31.8	+0.4
ATMC				Sg	Sb	20 52 39.2	-0.5
PIEI	**Pieia**	**0.50**	**132**	Pg	Pg	20 52 32.7	+0.2
PIEI				Sg	Sb	20 52 40.9	-0.5
	64nm,1.9s						
PIEI	**Pieia**	**0.50**	**132**	Pg	Pg	20 52 32.7	+0.2
PIEI				Sg	Sb	20 52 40.9	-0.5
	64nm,1.9s						

ATPC	**Poggio Castell**	**0.50**	**141**	Pg	Pg	20 52 33.1	+0.6
ATPC				Sg	Sb	20 52 41.1	-0.3
ATPC	**Poggio Castell**	**0.50**	**141**	Pg	Pg	20 52 33.1	+0.6
ATPC				Sg	Sb	20 52 41.1	-0.3
SEI	**Scarperia**	**0.52**	**291**	Pg	Pg	20 52 33.2	+0.3
SEI				Sg	Sb	20 52 41.7	-0.3
SEI	**Scarperia**	**0.52**	**291**	Pg	Pg	20 52 33.2	+0.3
SEI				Sg	Sb	20 52 41.7	-0.3
CAFI	**Castiglion Fio**	**0.54**	**185**	Pg	Pg	20 52 33.9	+0.5
CAFI				Sg	Sb	20 52 42.5	-0.2
	15nm,0.6s						
CAFI	**Castiglion Fio**	**0.54**	**185**	Pg	Pg	20 52 33.9	+0.5
CAFI				Sg	Sb	20 52 42.5	-0.2
	15nm,0.6s						
ATVO	**AVT- Monte Val**	**0.56**	**150**	Pg	Pg	20 52 34.1	+0.4
ATVO				Sg	Sb	20 52 43.6	+0.4
ATVO	**AVT- Monte Val**	**0.56**	**150**	Pg	Pg	20 52 34.1	+0.4
ATVO				Sg	Sb	20 52 43.6	+0.4
FSSB	**Fossombrone**	**0.57**	**108**	Pg	Pg	20 52 34.3	+0.4
FSSB				Sg	Sb	20 52 43.8	+0.3
FSSB	**Fossombrone**	**0.57**	**108**	Pg	Pg	20 52 34.3	+0.4
FSSB				Sg	Sb	20 52 43.8	+0.3
MPAG	**Monte Paganucc**	**0.58**	**114**	Pg	Pg	20 52 34.5	+0.3
MPAG				Sg	Sb	20 52 43.2	-0.7
MPAG	**Monte Paganucc**	**0.58**	**114**	Pg	Pg	20 52 34.5	+0.3
MPAG				Sg	Sb	20 52 43.2	-0.7
SSFR	**Montelago di S**	**0.70**	**128**	Pg	Pg	20 52 36.6	+0.3
	19nm,0.2s						
SSFR	**Montelago di S**	**0.70**	**128**	Pg	Pg	20 52 36.6	+0.3
	19nm,0.2s						

*ATH **23** 20:53:49.9,41.°86N×20.°16E,h18km±5km,ML2.7/1,Error ellipse: s-maj=6.8km s-min=1.5km az=184.0*
*TIR **23** 20:53:49.5±0.7,41.°30N×20.°16E,h8km±11km,ML2.5*
*BEO **23** 20:53:50.6±0.3,41.°83N×20.°21E,h0km,M2.2/9*
*CSEM **23** 20:53:50.7±0.2,41.°84N×20.°17E,h2km,ML2.3,Error ellipse: s-maj=3.5km s-min=2.7km az=28.0*
*PDG **23** 20:53:50.9±0.2,41.°81N×20.°11E,h12km,ML2.6/13,Error ellipse: s-maj=0.4km s-min=0.5km az=0.0*
*ISCJB **23** 20:53:50.2±0.4,41.°83N±0.°02×20.°18E±0.°03,h1km±3km, Error ellipse: s-maj=4.0km s-min=2.6km az=37.0*
*SKO **23** 20:53:52.2,41.°78N×20.°09E,h5km*

ISC 23 20:53:50.6±1.1,41.°83N±0.°02×20.°16E±0.°02,h5km±9km, n84,σ0°88/136,14C-11D,Albania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIR	**Tirane**	**0.53**	**205**	*i* PG	**Pg**	**20 54 00.0**	**-0.9**
TIR				*i* SG	**Sg**	**20 54 08.1**	**+0.3**
TIR	**Tirane**	**0.53**	**205**	⇑*i*P	**Pg**	**20 54 01.1**	**+0.2**
TIR	**Tirane**	**0.53**	**205**	S	**Sg**	**20 54 08.9**	**+1.1**
TIR	**Tirane**	**0.53**	**205**	*e*Pg	**Pg**	**20 54 00.6**	**-0.3**
TIR				*e*Sg	**Sg**	**20 54 06.7**	**-1.1**
TIR	**Tirane**	**0.53**	**205**	*e*Pg	**Pg**	**20 54 00.6**	**-0.3**
TIR	**Tirane**	**0.53**	**205**	P	**Pg**	**20 54 01.0**	**+0.1**
TIR				*i* Sg	**Sg**	**20 54 08.1**	**+0.3**
	SNR=93						
TIR	**Tirane**	**0.53**	**205**	P	**Pg**	**20 54 00.7**	**-0.3**
TIR				S	**Sg**	**20 54 08.9**	**+1.1**
ULC	**Ulcinj**	**0.70**	**281**	⇑*i*Pg	**Pg**	**20 54 03.4**	**-0.6**
ULC				*e*Sg	**Sb**	**20 54 14.2**	**-1.0**
ULC	**Ulcinj**	**0.70**	**281**	P	**Pg**	**20 54 03.5**	**-0.6**
ULC				*e*Sg	**Sb**	**20 54 14.2**	**-1.0**
PVY	**Plav**	**0.78**	**349**	⇑*i*Pg	**Pg**	**20 54 05.4**	**-0.1**
PVY				*e*Sg	**Sb**	**20 54 18.5**	**+0.9**
PVY	**Plav**	**0.78**	**349**	⇑*i*Pg	**Pg**	**20 54 05.4**	**-0.1**
PVY				*e*Sg	**Sb**	**20 54 18.5**	**+0.9**
DRME	**Dracevica, Mon**	**0.81**	**296**	⇓*i*Pg	**Pg**	**20 54 05.6**	**-0.6**
DRME				*e*Sg	**Sb**	**20 54 18.4**	**-0.1**
DRME	**Dracevica, Mon**	**0.81**	**296**	*e*Pg	**Pg**	**20 54 05.1**	**-1.1**
DRME				*e*Sg	**Sg**	**20 54 17.3**	**+0.6**
OHR	**Ohrid**	**0.86**	**146**	*e*Pg	**Pg**	**20 54 07.6**	**+0.4**
OHR				*i* Sg	**Sb**	**20 54 19.6**	**-0.5**
PDG	**Podgorica**	**0.90**	**312**	⇑*i*P	**Pg**	**20 54 07.8**	**-0.1**
PDG	**Podgorica**	**0.90**	**312**	S	**Sb**	**20 54 20.9**	**-0.2**
PDG	**Podgorica**	**0.90**	**312**	*e*Pg	**Pg**	**20 54 06.9**	**-1.0**
PDG				*e*Sg	**Sb**	**20 54 20.4**	**-0.7**
PDG	**Podgorica**	**0.90**	**312**	⇑*i*Pg	**Pg**	**20 54 07.0**	**-1.0**
PDG	**Podgorica**	**0.90**	**312**	⇑*i*P	**Pg**	**20 54 07.8**	**-0.1**
PDG				*e*Sg	**Sb**	**20 54 20.4**	**-0.7**
TTG	**Podgorica**	**0.90**	**312**	⇑*i*Pg	**Pg**	**20 54 06.9**	**-1.0**
TTG				*e*Sg	**Sb**	**20 54 21.7**	**+0.6**
SKO	**Skopje**	**0.96**	**81**	*i* Pg	**Pn**	**20 54 10.7**	**-0.1**
SKO				*i* Sg	**Sn**	**20 54 24.3**	**-0.6**
SKO	**Skopje**	**0.96**	**81**	*i* Pg	**Pn**	**20 54 10.7**	**-0.1**
SKO				*i* Sg	**Sn**	**20 54 24.3**	**-0.6**
BUM	**Brajici-Budva**	**1.05**	**297**	⇑*i*Pg	**Pg**	**20 54 10.0**	**-0.9**
BUM				*e*Sg	**Sn**	**20 54 26.5**	**-0.8**
BUM	**Brajici-Budva**	**1.05**	**297**	⇑*i*Pg	**Pg**	**20 54 10.0**	**-0.9**
BUM				*e*Sg	**Sn**	**20 54 26.5**	**-0.8**
BEY	**Berane**	**1.06**	**349**	*e*Pg	**Pg**	**20 54 10.8**	**-0.1**
BEY				*e*Sg	**Sn**	**20 54 28.2**	**+0.8**
IVA	**Berane**	**1.06**	**349**	*e*Pg	**Pg**	**20 54 10.8**	**-0.1**
IVA				*e*Sg	**Sn**	**20 54 28.2**	**+0.8**
CEME	**Cevo**	**1.17**	**308**	⇓*i*Pg	**Pg**	**20 54 12.5**	**-0.5**
CEME				*e*Sg	**Sn**	**20 54 31.0**	**+0.9**
CEME	**Cevo**	**1.17**	**308**	⇓*i*Pg	**Pg**	**20 54 12.5**	**-0.5**
CEME				*e*Sg	**Sn**	**20 54 31.0**	**+0.9**
NKME	**Niksic**	**1.29**	**317**	*e*Pg	**Pn**	**20 54 14.5**	**-0.9**
NKME				*e*Sg	**Sn**	**20 54 34.8**	**+1.6**
NKME	**Niksic**	**1.29**	**317**	*e*Pg	**Pn**	**20 54 14.5**	**-0.9**
NKME				*e*Sg	**Sn**	**20 54 34.8**	**+1.6**
NKY	**Niksic**	**1.31**	**319**	⇓*i*Pg	**Pn**	**20 54 15.2**	**-0.5**
NKY				*e*Sg	**Sn**	**20 54 35.7**	**+2.1**
NKY	**Niksic**	**1.31**	**319**	⇓*i*Pg	**Pn**	**20 54 15.2**	**-0.5**
NKY				*e*Sg	**Sn**	**20 54 35.7**	**+2.1**
HCY	**Herceg Novi**

DIVS				*e*Sn	**Sn**	**20 54 56.3**	**-0.9**
IGT	**Igoumenitsa**	**2.30**	**177**	P	**Pn**	**20 54 30.2**	**+0.9**
IGT	**Igoumenitsa**	**2.30**	**177**	P	**Pn**	**20 54 30.2**	**+0.9**
ZAPS	**Zavoj**	**2.33**	**51**	*e*Pn	**Pn**	**20 54 31.1**	**+1.5**
ZAPS	**Zavoj**	**2.33**	**51**	*e*Pn	**Pn**	**20 54 31.1**	**+1.5**
VTS	**Vitosha**	**2.39**	**70**	⇓*i*P	**Pg**	**20 54 37.3**	**+0.9**
VTS	**Vitosha**	**2.39**	**70**	S	**Sn**	**20 55 00.2**	**0.0**
VTS	**Vitosha**	**2.39**	**70**	*e*Pn	**Pn**	**20 54 31.6**	**+1.1**
VTS	**Vitosha**	**2.39**	**70**	*e*Pn	**Pn**	**20 54 31.6**	**+1.1**
VTS				S	**Sn**	**20 55 00.2**	**0.0**
ZAGS	**Zajecar**	**2.50**	**37**	*e*Pn	**Pn**	**20 54 32.0**	**+0.1**
ZAGS				*e*Sn	**Sn**	**20 55 01.7**	**-1.0**
ZAGS	**Zajecar**	**2.50**	**37**	*e*Pn	**Pn**	**20 54 32.0**	**+0.1**
ZAGS				*e*Sn	**Sn**	**20 55 01.7**	**-1.0**
TEKS	**Tekeris**	**2.75**	**351**	*e*Pn	**Pn**	**20 54 36.8**	**+1.3**
TEKS	**Tekeris**	**2.75**	**351**	*e*Pn	**Pn**	**20 54 36.5**	**+1.0**
KUBS	**Kucevo**	**2.81**	**23**	*e*Pn	**Pn**	**20 54 35.6**	**-0.6**
KUBS	**Kucevo**	**2.81**	**23**	*e*Pn	**Pn**	**20 54 35.6**	**-0.6**
BZS	**Buzias**	**3.93**	**15**	⇑*i*P	**Pn**	**20 54 51.6**	**0.0**
BZS	**Buzias**	**3.93**	**15**	S	**Sn**	**20 55 35.9**	**-2.1**
BZS	**Buzias**	**3.93**	**15**	*e*Pn	**Pn**	**20 54 51.3**	**-0.3**
BZS	**Buzias**	**3.93**	**15**	*e*Pn	**Pn**	**20 54 51.3**	**-0.3**
BZS	**Buzias**	**3.93**	**15**	⇑*i*P	**Pn**	**20 54 51.6**	**0.0**
BZS				S	**Sn**	**20 55 35.9**	**-2.1**
UDBI	**Udbina**	**4.20**	**311**	*e*Pn	**Pn**	**20 54 57.4**	**+2.1**
UDBI				Sn	**Sn**	**20 55 46.3**	**+1.6**
UDBI	**Udbina**	**4.20**	**311**	*e*Pn	**Pn**	**20 54 57.4**	**+2.1**
UDBI				Sn	**Sn**	**20 55 46.2**	**+1.5**
NVLJ	**Novalja**	**4.73**	**307**	Sn	**Sn**	**20 55 57.3**	**-0.6**
NVLJ	**Novalja**	**4.73**	**307**	Sn	**Sn**	**20 55 57.2**	**-0.7**

*ISCJB **23** 21:07:26.3±0.7, 12°.97N±0°.09×47°.81E±0°.04, h10km, mb3.9/18, MS3.7/22, Error ellipse: s-maj=13.8km s-min=5.7km az=11.5*
*NEIC **23** 21:07:27.2±0.7, 12°.87N×47°.82E, h10km, mb4.1/6, Error ellipse: s-maj=16.2km s-min=13.0km az=154.0*
*CSEM **23** 21:07:28.0±0.4, 12°.98N×47°.80E, h10km, mb4.1/6, Error ellipse: s-maj=15.8km s-min=9.2km az=7.0*
*DHMR **23** 21:07:28.8±0.7, 12°.82N×47°.46E, h17km±7km, ML4.5*
*IDC **23** 21:07:28.2±1.1, 13°.15N×48°.19E, h0km, mb3.8/13, mb1 4.0/14, mb1mx3.8/44, mbtmp3.8/14, ML2.4/1, MS3.7/23, Ms1 3.7/23, ms1mx3.6/39, Error ellipse: s-maj=28.3km s-min=19.2km az=46.0*

ISC 23 21:07:27.9±0.7, 12°.93N±0°.08×47°.80E±0°.07, h10km, n52, σ1§70/43, mb4.0/18, MS3.7/22, Eastern Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BDHA	**Al Bayda'**	**2.41**	**296**	*i* P	**Pn**		**21 08 06.1**	**-1.5**
BDHA				*i* S	**Sn**		**21 08 36.0**	**-1.3**
BDHA				AML	AML		21 08 39.8	
	comp=N,5μm,0.9s							
BDHA	**Al Bayda'**	**2.41**	**296**	*i* P	**Pn**		**21 08 06.1**	**-1.5**
BDHA				*i* S	**Sn**		**21 08 36.0**	**-1.3**
DAMY	**Dhamar**	**3.69**	**297**	*e*Pn	**Pn**		**21 08 26.1**	**+0.8**
DAMY	**Dhamar**	**3.69**	**297**	*e*Pn	**Pn**		**21 08 26.1**	**+0.8**
DHBB	**Dhamar BB**	**3.69**	**297**	*i* P	**Pn**		**21 08 25.3**	**0.0**
DHBB				*i* S	**Sn**		**21 09 08.8**	**-0.2**
DHBB	**Dhamar BB**	**3.69**	**297**	*i* P	**Pn**		**21 08 25.3**	**0.0**
DHBB				*i* S	**Sn**		**21 09 08.9**	**-0.2**
UDYN	**Al 'Udayn**	**3.87**	**286**	*i* P	**Pn**		**21 08 26.1**	**-1.5**
UDYN				*i* S	**Sn**		**21 09 10.8**	**-2.4**
HAJJ	**Hajjah**	**4.91**	**305**	*i* S	**Sn**		**21 09 38.3**	**-0.8**
HAJJ	**Hajjah**	**4.91**	**305**	*i* S	**Sn**		**21 09 38.3**	**-0.8**
ATD	**Arta Tunnel**	**5.04**	**254**	Pn	**Pn**		**21 08 39.5**	**-4.1**
	comp=N,19nm,0.3s,baz=346,slow=4.6,SNR=139							
ATD				LR	LR		21 10 18.6	
	comp=N,2μm,18.7s,baz=116,slow=31							
KMBO	**Kilima Mbogo**	**17.45**	**218**	P	**P**		**21 11 39.4**	**+6.3**
	comp=N,0.0nm,0.3s,baz=30,slow=20,SNR=2.9							
KMBO	**Kilima Mbogo**	**17.45**	**218**	Pn	**Pn**		**21 11 31.6**	**-0.3**
KMBO	**Kilima Mbogo**	**17.45**	**218**	Pn	**Pn**		**21 11 31.6**	**-0.3**
EIL	**Elat**	**20.48**	**326**	P	Pn		21 12 09.4	+1.4
	comp=N,6.7nm,0.9s,baz=204,slow=1.0,SNR=5.7							
ASF	**Jabal al Asfar**	**21.61**	**334**	P	**P**		**21 12 21.5**	**+3.3**
	comp=N,3.6nm,1.0s,baz=147,slow=1.7,SNR=6.6							
CSS	**Mathiatis**	**25.55**	**332**	*e*P	**P**		**21 12 58.3**	**+1.3**
	comp=N,1.6nm,0.9s							
CSS	**Mathiatis**	**25.55**	**332**	*e*P	**P**		**21 12 58.3**	**+1.3**
	comp=N,1.6nm,0.9s							
GEYT	**Alibeck**	**26.54**	**18**	P	**P**		**21 13 05.9**	**0.0**
	comp=N,2.4nm,0.9s,baz=195,slow=11,SNR=5.7							
GEYT				LR	LR		21 24 23.6	
	comp=N,253nm,18.1s,baz=200,slow=39							
BRTR	**Keskin Array B**	**29.47**	**337**	P	**P**		**21 13 33.6**	**+1.4**
	comp=N,0.6nm,0.8s,baz=160,slow=12,SNR=3.7							
BRTR				LR	LR		21 25 23.6	
	comp=N,228nm,20.1s,baz=151,slow=37							
KBZ	**Khabaz**	**30.98**	**353**	LR	LR		21 27 53.1	
	comp=N,178nm,19.4s,baz=150,slow=40							
ABKAR	**Akbulak array**	**37.58**	**13**	*e*P	**P**		**21 14 40.7**	**-1.8**
	comp=N,2.2nm,0.8s							
ABKAR	**Akbulak array**	**37.58**	**13**	*e*P	**P**		**21 14 40.6**	**-1.8**
	comp=N,2.2nm,0.8s							
CEL	**Celeste**	**37.94**	**317**	*e*P	**P**		**21 14 46.6**	**+0.9**
	comp=N,7.9nm,0.6s							
CEL	**Celeste**	**37.94**	**317**	*e*P	**P**		**21 14 46.6**	**+0.9**
	comp=N,7.9nm,0.6s							
KIEV	**Kiev**	**40.60**	**342**	*e*P	**P**		**21 15 06.9**	**-0.8**
	comp=N,1.9nm,0.5s							
KIEV	**Kiev**	**40.60**	**342**	*e*P	**P**		**21 15 06.9**	**-0.8**
	comp=N,1.9nm,0.5s							
AKASG	**Malin Array Be**	**40.60**	**342**	P	**P**		**21 15 09.1**	**+1.4**
	comp=N,0.2nm,0.3s,baz=141,slow=6.2,SNR=6.5							
AKASG				LR	LR		21 33 39.0	
	comp=N,89nm,19.1s,baz=150,slow=39							
KEST	**Kesra**	**41.37**	**310**	LR	LR		21 33 03.9	
	comp=N,288nm,18.9s,baz=28,slow=37							
BRVK	**Borovoye**	**43.86**	**19**	*e*P	**P**		**21 15 33.1**	**-1.1**
	comp=N,3.6nm,0.8s							
BRVK	**Borovoye**	**43.86**	**19**	*e*P	**P**		**21 15 33.1**	**-1.1**
	comp=N,3.6nm,0.8s							
ARU	**Arti**	**44.19**	**9**	*e*P	**P**		**21 15 37.0**	**+0.1**
	comp=N,2.9nm,0.8s							
ARU	**Arti**	**44.19**	**9**	*e*P	**P**		**21 15 37.0**	**+0.1**
	comp=N,2.9nm,0.8s							
MKAR	**Makanchi Array**	**44.46**	**34**	P	**P**		**21 15 38.5**	**-0.7**
	comp=N,0.2nm,0.3s,baz=231,slow=7.1,SNR=4.8							
MKAR				LR	LR		21 36 39.1	
	comp=N,97nm,18.1s,baz=234,slow=40							
GERES	**GERESS Array B**	**45.55**	**329**	P	**P**		**21 15 47.9**	**-0.1**
	comp=N,0.4nm,0.6s,baz=140,slow=7.0,SNR=6.5							
GERES				LR	LR		21 35 56.6	
	comp=N,53nm,19.4s,baz=130,slow=38							
BOSA	**Boshof**	**46.70**	**208**	LR	LR		21 34 57.4	
	comp=N,108nm,18.9s,baz=36,slow=35							
CMAR	**Chiang Mai Arr**	**49.41**	**77**	P	**P**		**21 16 16.9**	**-1.5**
	comp=N,1.1nm,0.3s,baz=276,slow=8.5,SNR=9.4							
CMAR				LR	LR		21 37 10.0	
	comp=N,36nm,18.8s,baz=305,slow=36							
ZALV	**Zalesovo Beam**	**50.24**	**28**	P	**P**		**21 16 22.3**	**-1.8**
	comp=N,0.9nm,0.6s,baz=239,slow=8.4,SNR=3.9							
ZALV				LR	LR		21 40 13.8	
	comp=N,72nm,18.2s,baz=250,slow=39							
FINES	**FINESS Array B**	**50.93**	**347**	P	**P**		**21 16 29.1**	**0.0**
	comp=N,2.0nm,0.8s,baz=139,slow=9.2,SNR=3.4							
FINES				LR	LR		21 40 10.0	
	comp=N,76nm,21.3s,baz=150,slow=39							
DBIC	**Dimbokro**	**52.19**	**268**	LR	LR		21 40 45.0	
	comp=N,52nm,19.4s,baz=65,slow=38							
ESDC	**Sonseca Array**	**52.62**	**310**	LR	LR		21 40 21.6	
	comp=N,34nm,18.3s,baz=170,slow=37							
NOA	**NORSAR Array B**	**54.88**	**339**	LR	LR		21 43 31.0	
	comp=N,66nm,18.2s,baz=155,slow=40							
ARCES	**ARCESS Array B**	**58.30**	**351**	LR	LR		21 43 50.9	
	comp=N,61nm,20.7s,baz=148,slow=38							
SONM	**Songimo Array**	**59.56**	**42**	P	**P**		**21 17 30.8**	**-1.1**
	comp=N,0.4nm,0.8s,baz=249,slow=6.9,SNR=3.1							
SONM				LR	LR		21 47 59.3	
	comp=N,54nm,18.4s,baz=263,slow=41							
NRIK	**Noril'sk**	**61.71**	**15**	LR	LR		21 49 57.2	
	comp=N,117nm,18.6s,baz=268,slow=42							
TGY	**Tagaytay City**	**70.84**	**79**	LR	LR		21 48 42.9	
	comp=N,31nm,19.6s,baz=184,slow=35							
KAPI	**Kappang**	**73.64**	**99**	LR	LR		21 48 39.2	
	comp=N,38nm,18.8s,baz=293,slow=34							
WRA	**Warramunga Arr**	**91.15**	**110**	P	**P**		**21 20 34.1**	**+0.5**
	comp=N,0.9nm,0.6s,baz=297,slow=3.8,SNR=16							
ASAR	**Alice Springs**	**91.61**	**114**	P	**P**		**21 20 37.0**	**+1.2**
	comp=N,0.6nm,0.8s,baz=292,slow=4.6,SNR=10.0							
ASAR	**Alice Springs**	**91.61**	**114**	P	**P**		**21 20 37.0**	**+1.2**
SCHQ	**Schefferville**	**93.08**	**328**	LR	LR		22 06 39.9	
	comp=N,12nm,18.9s,baz=111,slow=38							
BDFB	**Brasilia**	**98.90**	**256**	LR	LR		22 00 34.3	
	comp=N,32nm,21.0s,baz=110,slow=32							
STKA	**Stephens Creek**	**99.89**	**120**	LR	LR		22 00 56.3	
	comp=N,77nm,18.4s,baz=209,slow=32							

IDC 23 21:11:23.9±3.0, 23°.52S×179°.51W, h0km, mb3.7/3, mb1 4.0/3, mb1mx3.6/35, mbtmp3.7/3, Error ellipse: s-maj=259.0km s-min=36.0km az=164.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.54**	**260**	P	P		21 19 21.5	-0.2
	0.5nm,0.8s,baz=98,slow=6.7,SNR=6.6							
WRA	**Warramunga Arr**	**42.89**	**266**	P	P		21 19 24.3	-0.2
	0.9nm,0.5s,baz=103,slow=8.2,SNR=18							
TXAR	**Lajitas Array**	**89.85**	**58**	P	P		21 24 25.1	0.0
	0.3nm,0.7s,baz=238,slow=7.2,SNH=3.5							

*ISCJB **23** 21:34:14.5±0.3, 45°.69N±0°.02×14°.41E±0°.02, h12km±3km, Error ellipse: s-maj=2.8km s-min=2.0km az=17.7*
*ROM **23** 21:34:14.2±0.8, 45°.59N×14°.37E, h10km, Md2.5/6, MI2.1/4, Error ellipse: s-maj=10.5km s-min=6.7km az=175.0*
*LJU **23** 21:34:14.2, 45°.68N×14°.41E, h18km, ML2.1*
*CSEM **23** 21:34:14.8±0.1, 45°.68N×14°.38E, h10km, ML2.8/23, Error ellipse: s-maj=2.6km s-min=1.8km az=15.0*

ISC 23 21:34:14.8±0.8, 45°.69N±0°.02×14°.39E±0°.01, h15km±4km, n100, σ0§53/165, 13C-5D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CEY	**Cerknica**	**0.06**	**27**	⇓*i*Pg	**Pg**		**21 34 17.8**	**0.0**
CEY				*i* Sg	**Sg**		**21 34 19.9**	**+0.1**
	comp=Z,184nm,0.1s							
CEY	**Cerknica**	**0.06**	**27**	Pg	**Pg**		**21 34 17.8**	**0.0**
CEY				*i* Sg	**Sg**		**21 34 19.9**	**+0.1**
	comp=Z,184nm,0.1s							
KNDS	**Knezji Dol**	**0.16**	**182**	⇓*i*Pg	**Pg**		**21 34 18.6**	**-0.4**
KNDS				*e*Sg	**Sg**		**21 34 21.5**	**-0.2**
	comp=Z,226nm,0.1s							
KNDS	**Knezji Dol**	**0.16**	**182**	⇓*i*Pg	**Pg**		**21 34 18.6**	**-0.4**
KNDS				*e*Sg	**Sg**		**21 34 21.5**	**-0.2**
	comp=Z,226nm,0.1s							
SKDS	**Skadanscina**	**0.30**	**242**	⇑*i*Pg	**Pg**		**21 34 20.8**	**-0.4**
SKDS				*i* Sg	**Sb**		**21 34 25.9**	**-0.7**
	comp=Z,101nm,0.0s							
SKDS	**Skadanscina**	**0.30**	**242**	⇑*i*Pg	**Pg**		**21 34 20.8**	**-0.4**
SKDS				*i* Sg	**Sb**		**21 34 25.9**	**-0.7**
	comp=Z,101nm,0.0s							
JAVS	**Javornik**	**0.31**	**313**	⇑*i*Pg	**Pb**		**21 34 21.2**	**-0.9**
JAVS				*i* Sg	**Sb**		**21 34 26.4**	**-0.6**
	comp=Z,154nm,0.1s							
JAVS	**Javornik**	**0.31**	**313**	⇑*i*Pg	**Pb**		**21 34 21.2**	**-0.9**
JAVS				*i* Sg	**Sb**		**21 34 26.4**	**-0.6**
	comp=Z,154nm,0.1s							
GBRS	**Gornja Briga**	**0.33**	**118**	⇑*i*Pg	**Pb**		**21 34 21.6**	**-0.9**
GBRS				*e*Sg	**Sg**		**21 34 26.5**	**0.0**
	comp=Z,116nm,0.1s							
VISS	**Visnje**	**0.34**	**70**	⇑*i*Pg	**Pg**		**21 34 21.6**	**-0.2**
VISS				*i* Sg	**Sg**		**21 34 26.5**	**-0.1**
	comp=Z,65nm,0.1s							
VISS	**Visnje**	**0.34**	**70**	⇑*i*Pg	**Pg**		**21 34 21.6**	**-0.2**
VISS				*i* Sg	**Sg**		**21 34 26.5**	**-0.1**
	comp=Z,65nm,0.1s							
LJU	**Ljubljana**	**0.37**	**15**	*i* Pg	**Pb**		**21 34 22.7**	**-0.4**
LJU				*i* Sg	**Sb**		**21 34 28.2**	**-0.5**
	comp=Z,25nm,0.1s							
LJU	**Ljubljana**	**0.37**	**15**	*i* Pg	**Pb**		**21 34 22.7**	**-0.4**
LJU				*i* Sg	**Sb**		**21 34 28.2**	**-0.5**
	comp=Z,25nm,0.1s							
CRNS	**Crni Vrh**	**0.40**	**347**	*i* Pg	**Pb**		**21 34 23.0**	**-0.7**
CRNS				*i* Sg	**Sb**		**21 34 29.9**	**+0.2**
	comp=Z,28nm,0.1s							
CRNS	**Crni Vrh**	**0.40**	**347**	*i* Pg	**Pb**		**21 34 23.0**	**-0.7**
CRNS				*i* Sg	**Sb**		**21 34 29.9**	**+0.2**
	comp=Z,28nm,0.1s							
TRI	**Trieste**	**0.44**	**273**	Pg	**Pg**		**21 34 23.1**	**-0.5**
TRI				Sg	**Sb**		**21 34 30.3**	**-0.3**
	comp=Z,33nm,0.7s							
TRI	**Trieste**	**0.44**	**273**	⇑*e*Pg	**Pg**		**21 34 23.1**	**-0.5**
TRI				*e*Sg	**Sb**		**21 34 30.6**	**0.0**
TRI	**Trieste**	**0.44**	**273**	Pg	**Pg**		**21 34 23.1**	**-0.5**
TRI				Sg	**Sb**		**21 34 30.3**	**-0.3**
	comp=Z,33nm,0.7s							
VNDS	**Vrh nad Dolski**	**0.47**	**28**	*i* Pg	**Pb**		**21 34 24.3**	**-0.5**
VNDS				*e*Sg	**Sg**		**21 34 30.2**	**-0.4**
	comp=Z,20nm,0.1s							
VNDS	**Vrh nad Dolski**	**0.47**	**28**	*i* Pg	**Pb**		**21 34 24.3**	**-0.5**
VNDS				*e*Sg	**Sg**		**21 34 30.2**	**-0.4**
	comp=Z,20nm,0.1s							
VOJS	**Vojsko**	**0.49**	**315**	⇑*i*Pg	**Pg**		**21 34 24.3**	**-0.4**
VOJS				*i* Sg	**Sb**		**21 34 32.3**	**0.0**
	comp=Z,44nm,0.1s							
VOJS	**Vojsko**	**0.49**	**315**	⇑*i*Pg	**Pg**		**21 34 24.3**	**-0.4**
VOJS				*i* Sg	**Sb**		**21 34 32.3**	**0.0**
	comp=Z,44nm,0.1s							
PDKS	**Podkum**	**0.57**	**48**	*i* Pg	**Pb**		**21 34 26.3**	**-0.2**
PDKS				*e*Sg	**Sg**		**21 34 33.6**	**0.0**
	comp=Z,46nm,0.1s							
PDKS	**Podkum**	**0.57**	**48**	*i* Pg	**Pb**		**21 34 26.3**	**-0.2**
PDKS				*e*Sg	**Sg**		**21 34 33.7**	**0.0**
	comp=Z,46nm,0.1s							
MOZS	**Mozjanca**	**0.61**	**4**	⇓*i*Pg	**Pb**		**21 34 27.3**	**+0.1**
MOZS	**Mozjanca**	**0.61**	**4**	⇓*i*Pg	**Pb**		**21 34 27.3**	**+0.1**
SABO	**M.te Sabotino**	**0.62**	**298**	Pn	**Pg**		**21 34 26.6**	**-0.5**
SABO				Sn	**Sb**		**21 34 36.2**	**+0.2**
	comp=Z,52nm,0.4s							
SABO	**M.te Sabotino**	**0.62**	**298**	⇑*e*Pg	**Pg**		**21 34 26.7**	**-0.5**
SABO				*e*Sg	**Sb**		**21 34 36.2**	**+0.2**
SABO	**M.te Sabotino**	**0.62**	**298**	*e*Pg	**Pg**		**21 34 26.7**	**-0.5**
SABO				*e*Sg	**Sb**		**21 34 36.2**	**+0.2**
BOJS	**Bojanci**	**0.63**	**106**	*i* Pg	**Pg**		**21 34 26.9**	**-0.4**
BOJS				*e*Sg	**Sg**		**21 34 35.0**	**-0.6**
	comp=Z,10.0nm,0.1s							
BOJS	**Bojanci**	**0.63**	**106**	*i* Pg	**Pg**		**21 34 26.9**	**-0.4**
BOJS				*e*Sg	**Sg**		**21 34 35.0**	**-0.6**
	comp=Z,10.0nm,0.1s							
GORS	**Gorjuse**	**0.69**	**337**	*i* Pg	**Pb**		**21 34 28.4**	**-0.2**
GORS				*i* Sg	**Sb**		**21 34 38.4**	**+0.5**
	comp=Z,47nm,0.2s							
GORS	**Gorjuse**	**0.69**	**337**	*i* Pg	**Pb**		**21 34 28.4**	**-0.2**
GORS				*i* Sg	**Sb**		**21 34 38.4**	**+0.5**
	comp=Z,47nm,0.2s							
LEGS	**Legarje**	**0.70**	**68**	*i* Pg	**Pb**		**21 34 28.5**	**-0.2**
LEGS				*i* Sg	**Sg**		**21 34 37.5**	**-0.3**
LEGS	**Legarje**	**0.70**	**68**	*i* Pg	**Pb**		**21 34 28.5**	**-0.2**
LEGS				*i* Sg	**Sg**		**21 34 37.5**	**-0.3**
CADS	**Cadrg**	**0.71**	**320**	*e*Pg	**Pg**		**21 34 27.8**	**-0.9**
CADS				*i* Sg	**Sb**		**21 34 39.1**	**+0.7**
	comp=Z,39nm,0.1s							
CADS	**Cadrg**	**0.71**	**320**	*e*Pg	**Pg**		**21 34 27.8**	**-0.9**
CADS				*i* Sg	**Sb**		**21 34 39.1**	**+0.7**
	comp=Z,39nm,0.1s							
DRE	**Drenchia**	**0.71**	**313**	*e*Pg	**Pg**		**21 34 28.2**	**-0.6**
DRE				*e*Sg	**Sb**		**21 34 39.2**	**+0.6**
DRE	**Drenchia**	**0.71**	**313**	*e*Pg	**Pg**		**21 34 28.2**	**-0.6**
DRE				*e*Sg	**Sb**		**21 34 39.2**	**+0.6**
OZLJ	**Ozalj**	**0.76**	**95**	*i* Pg	**Pg**		**21 34 29.1**	**-0.6**
OZLJ				Sg	**Sg**		**21 34 39.0**	**-0.7**
OZLJ	**Ozalj**	**0.76**	**95**	*i* Pg	**Pg**		**21 34 29.0**	**-0.6**
OZLJ				Sg	**Sg**		**21 34 38.9**	**-0.7**
CRES	**Cresnjev**	**0.76**	**79**	⇑*i*Pg	**Pb**		**21 34 29.4**	**-0.3**
CRES				*i* Sg	**Sg**		**21 34 39.3**	**-0.4**
	comp=Z,13nm,0.1s							
CRES	**Cresnjev**	**0.76**	**79**	⇑*i*Pg	**Pb**		**21 34 29.4**	**-0.3**
CRES				*i* Sg	**Sg**		**21 34 39.3**	**-0.4**
	comp=Z,13nm,0.1s							
ROBS	**Robic**	**0.83**	**313**	*i* Sg	**Sn**		**21 34 43.1**	**-0.8**
ROBS	**Robic**	**0.83**	**313**	*i* Sg	**Sn**		**21 34 43.1**	**-0.8**
OBKA	**Obir**	**0.83**	**8**	*e*Pg	**Pb**		**21 34 31.0**	**0.0**
	comp=Z,7.9nm,0.2s,SNR=29							
OBKA				*e*Sg	**Sb**		**21 34 43.2**	**+1.2**
	comp=Z,6.1nm,0.1s							
OBKA	**Obir**	**0.83**	**8**	Pg	**Pb**		**21 34 31.0**	**0.0**
	comp=Z,7.9nm,0.2s,SNR=29							
OBKA				Sg	**Sb**		**21 34 43.2**	**+1.2**
	comp=Z,6.1nm,0.1s							
COLI	**Coloredo**	**0.83**	**303**	*e*Pg	**Pb**		**21 34 30.6**	**-0.4**
COLI	**Coloredo**	**0.83**	**303**	*e*Pg	**Pb**		**21 34 30.6**	**-0.4**
DOBS	**Dobrina**	**0.89**	**58**	*i* Pg	**Pb**		**21 34 31.6**	**-0.3**
DOBS				*i* Sg	**Sb**		**21 34 43.8**	**+0.3**
	comp=Z,29nm,0.1s							
DOBS	**Dobrina**	**0.89**	**58**	*i* Pg	**Pb**		**21 34 31.6**	**-0.3**
DOBS				*i* Sg	**Sb**		**21 34 43.8**	**+0.3**
	comp=Z,29nm,0.1s							
GCIS	**Gornji Cirnik**	**0.89**	**78**	*i* Pg	**Pb**		**21 34 31.9**	**+0.1**
	comp=Z,8.0nm,0.1s							
GCIS	**Gornji Cirnik**	**0.89**	**78**	*i* Pg	**Pb**		**21 34 32.0**	**+0.1**
	comp=Z,8.0nm,0.1s							
GOLS	**Golise**	**0.92**	**69**	*i* Pg	**Pb**		**21 34 32.5**	**0.0**
GOLS				*e*Sg	**Sg**		**21 34 43.8**	**-1.1**
	comp=Z,52nm,0.3s							
GOLS	**Golise**	**0.92**	**69**	*i* Pg	**Pb**		**21 34 32.5**	**0.0**
GOLS				*e*Sg	**Sg**		**21 34 43.8**	**-1.1**
	comp=Z,52nm,0.3s							
VINO	**Villanova**	**0.96**	**307**	Pn	**Pg**		**21 34 32.5**	**-0.9**
VINO	**Villanova**	**0.96**	**307**	*e*Pg	**Pb**		**21 34 32.9**	**-0.3**
VINO				*e*Sg	**Sn**		**21 34 47.1**	**-0.1**
VINO	**Villanova**	**0.96**	**307**	Pn	**Pg**		**21 34 32.5**	**-0.9**
VINO	**Villanova**	**0.96**	**307**	*e*Pg	**Pb**		**21 34 32.9**	**-0.3**
VINO				*e*Sg	**Sn**		**21 34 47.1**	**-0.1**
BAD	**Bernadia**	**0.97**	**305**	*e*Pg	**Pn**		**21 34 33.7**	**-0.2**
BAD	**Bernadia**	**0.97**	**305**	*e*Pg	**Pn**		**21 34 33.7**	**-0.2**
LSR	**Lussari**	**0.99**	**323**	*e*Pg	**Pn**		**21 34 34.0**	**-0.4**
LSR	**Lussari**	**0.99**	**323**	*e*Pg	**Pn**		**21 34 34.0**	**-0.4**
ACOM	**Acomizza, Ital**	**1.05**	**325**	Pn	**Pn**		**21 34 35.2**	**0.0**
	comp=Z,101nm,1.1s							
ACOM	**Acomizza, Ital**	**1.05**	**325**	*e*Pg	**Pn**		**21 34 35.4**	**+0.2**
ACOM	**Acomizza, Ital**	**1.05**	**325**	*e*Pg	**Pn**		**21 34 35.4**	**+0.2**
PERS	**Pernice**	**1.08**	**28**	*i* Pg	**Pn**		**21 34 35.3**	**-0.1**
PERS				*e*Sg	**Sg**		**21 34 48.8**	**-0.9**
	comp=Z,41nm,0.2s							
PERS	**Pernice**	**1.08**	**28**	*i* Pg	**Pn**		**21 34 35.3**	**-0.1**
PERS				*e*Sg	**Sg**		**21 34 48.8**	**-0.9**
	comp=Z,41nm,0.2s							
MYKA	**Terra Mystica**	**1.08**	**331**	*e*Pn	**Pn**		**21 34 35.7**	**+0.3**
	comp=Z,1.5nm,0.2s							
MYKA				*e*Sg	**Sn**		**21 34 50.7**	**+0.6**
	comp=Z,15nm,0.2s,SNR=17							
MYKA	**Terra Mystica**	**1.08**	**331**	Pg	**Pn**		**21 34 35.7**	**+0.3**
	comp=Z,1.5nm,0.2s							
MYKA				Sg	**Sn**		**21 34 50.7**	**+0.6**
	comp=Z,15nm,0.2s,SNR=17							
SOKA	**Soboth**	**1.09**	**24**	*i* Pg	**Pn**		**21 34 35.7**	**+0.1**
	comp=Z,2.7nm,0.2s,SNR=14							
SOKA				*e*Sg	**Sb**		**21 34 49.6**	**+0.2**
	comp=Z,2.1nm,0.1s							
SOKA	**Soboth**	**1.09**	**24**	Pn	**Pn**		**21 34 35.7**	**+0.1**
	comp=Z,2.7nm,0.2s,SNR=14							
SOKA				Sg	**Sb**		**21 34 49.6**	**+0.2**
	comp=Z,2.1nm,0.1s							
BISS	**Bistriski jare**	**1.09**	**28**	*e*Pg

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.26**	**90**	*e*P	Pg	21 53 51.2	-0.6
COCH				*i* S	Sg	21 53 55.4	-0.4
COCH				IAML		21 53 56.0	
	comp=E,29μm,0.5s						
CCSP	**San Pedro de C**	**0.71**	**180**	*e*P	Pb	21 53 58.4	-1.3
CCSP				*i* S	Sb	21 54 07.9	-1.1
CCSP				IAML		21 54 09.5	
	comp=N,5μm,0.4s						
CCHI	**Chillan**	**0.95**	**120**	⇓*i*P	Pb	21 54 02.1	-1.7
CCHI				*i* S	Sb	21 54 14.5	-1.6
TALC	**Talca**	**1.40**	**59**	⇑*i*P	Pn	21 54 09.1	-1.4
TALC				*i* S	Sn	21 54 27.2	-1.3
NICH	**Los Niches**	**1.90**	**54**	⇑*i*P	Pn	21 54 17.3	-0.1
NICH				*i* S	Sn	21 54 41.5	+0.7

NIED **23** *21:56:00, 36.20N×141.50E, h23km, Mw4.2 Best double couple: M₀1.95000×10¹⁵ NP1:φ=203.00000°, δ=19.00000°, λ=85.00000°. NP2:φ=29.00000°, δ=71.00000°, λ=92.00000°.*
IDC **23** *21:56:15.9±0.6, 36.26N×141.54E, h0km, mb4.0/20, mb1 4.1/25, mb1mx4.1/41, mbtmp4.0/25, ML3.7/4, MS3.4/13, Ms1 3.4/13, ms1mx3.1/33, Error ellipse: s-maj=16.9km s-min=14.6km az=115.0*
ISCJB **23** *21:56:18.0±0.4, 36.29N±0.03×141.61E±0.05, h26km, mb4.1/35, MS3.5/9, Error ellipse: s-maj=6.3km s-min=4.1km az=20.6*
MOS **23** *21:56:18.5±1.1, 36.37N×141.53E, h26km, mb4.6/22, Error ellipse: s-maj=10.8km s-min=7.3km az=117.3*
JMA **23** *21:56:19.2±0.2, 36.24N×141.50E, h56km±3km, M3.9*
NEIC **23** *21:56:21.0±2.4, 36.30N×141.53E, h33km±16km, mb4.5/7, Error ellipse: s-maj=11.7km s-min=6.7km az=139.0*
ISC 23 21:56:20.2±0.5, 36.31N±0.04×141.41E±0.06, h26km, n82, σ1=39/85, mb4.3/35, MS3.5/9, 5C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.74**	**294**	P	**Pb**	**21 56 34.8**	**+0.2**
CHOJ	**Chosi**	**0.75**	**217**	P	**Pb**	**21 56 33.9**	**-0.8**
CHOJ				S	**Sb**	**21 56 44.8**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.93**	**328**	P	**Pn**	**21 56 37.4**	**-0.3**
JFK	**Kawauchi**	**1.14**	**338**	P	**Pn**	**21 56 40.3**	**-0.3**
JFT	**Otama**	**1.48**	**325**	P	**Pb**	**21 56 46.4**	**-0.7**
JAG	**Ashikaga**	**1.58**	**275**	P	**Pn**	**21 56 46.7**	**+0.1**
JMM	**Marumori**	**1.63**	**343**	P	**Pn**	**21 56 47.4**	**+0.1**
JMM				S	**Sb**	**21 57 09.3**	**-0.5**
BSO3	**Boso 3**	**1.67**	**206**	P	**Pn**	**21 56 47.1**	**-0.5**
BSO1	**Boso 1**	**1.69**	**192**	P	**Pn**	**21 56 46.3**	**-1.3**
BSO1				*e*S	**Sn**	**21 57 08.8**	**+0.7**
MJAR	**Matsushiro Arr**	**2.59**	**276**	Pn	**Pn**	**21 57 02.1**	**+1.6**
	31nm,0.3s,baz=113,slow=7.8,SNR=266						
MJAR				LR	LR	21 58 12.3	
	comp=Z,403nm,20.2s,baz=115,slow=44						
MAJO	**Matsushiro**	**2.59**	**276**	*d*P	**Pn**	**21 57 02.3**	**+1.7**
MAJO	**Matsushiro**	**2.59**	**276**	*e*Pn	**Pn**	**21 57 02.3**	**+1.7**
MAT	**Matsushiro**	**2.59**	**276**	P	**Pn**	**21 57 01.7**	**+1.1**
MAT				S	**Sb**	**21 57 35.4**	**-2.1**
JHJ	**Hachijo jima 2**	**3.45**	**203**	Pn	**Pn**	**21 57 12.6**	**+0.2**
	107nm,0.3s,baz=85,slow=21,SNR=13						
JHJ				Sn	**Sn**	**21 57 48.7**	**-3.7**
	122nm,0.3s,baz=68,slow=23,SNR=13						
ERM	**Erimo**	**5.86**	**13**	⇑*e*P	**Pn**	**21 57 46.0**	**+0.7**
ERM	**Erimo**	**5.86**	**13**	*e*Pn	**Pn**	**21 57 45.4**	**+0.1**
ASAJ	**Asahikawa**	**7.85**	**6**	Pn	**Pn**	**21 58 11.7**	**-1.0**
	baz=218,slow=12						
ASAJ				Sn	**Sn**	**21 59 39.2**	**-1.5**
	1.9nm,0.3s,baz=165,slow=19,SNR=4.9						
JNU	**Nakatsue**	**9.23**	**253**	Pn	**Pn**	**21 58 33.1**	**+1.3**
	0.3nm,0.3s,baz=4.4,slow=13,SNR=3.6						
JNU	**Nakatsue**	**9.23**	**253**	*e*Pn	**Pn**	**21 58 33.3**	**+1.5**
USRK	**Ussuriysk Ar.**	**10.67**	**321**	Pn	**Pn**	**21 58 54.5**	**+3.2**
	0.4nm,0.3s,baz=128,slow=15,SNR=7.5						
USRK				LR	LR	22 02 46.1	
	comp=Z,198nm,20.1s,baz=127,slow=36						
KSRS	**Korea Array**	**10.87**	**280**	Pn	**Pn**	**21 58 58.4**	**+4.4**
	0.3nm,0.3s,baz=94,slow=14,SNR=14						
KSRS				LR	LR	22 03 06.6	
	comp=Z,146nm,19.0s,baz=58,slow=37						
KSAR	**Wonju Array Be**	**10.90**	**280**	P	**Pn**	**21 58 58.4**	**+4.0**
KSAR	**Wonju Array Be**	**10.90**	**280**	Pn	**Pn**	**21 58 58.4**	**+4.0**
KLR	**Kul'dur**	**14.72**	**334**	Pn	**Pn**	**21 59 45.3**	**-1.2**
	0.2nm,0.3s,baz=156,slow=20,SNR=3.4						
KLR				LR	LR	22 05 13.5	
	comp=Z,138nm,18.9s,baz=152,slow=36						
YAK	**Yakutsk**	**26.78**	**348**	*e*P	**P**	**22 01 57.6**	**-0.1**
YAK				pmax	pmax		
	comp=Z,18nm,1.1s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.4s						
ENH	**Enshi**	**27.28**	**267**	*e*P	**P**	**22 02 02.1**	**-0.5**
	comp=N,7.7nm,0.5s						
SEY	**Seymchan**	**27.50**	**11**	P	**P**	**22 02 03.9**	**-0.3**
	comp=N,2.3nm,0.9s,baz=209,slow=8.9,SNR=4.0						
SEY	**Seymchan**	**27.50**	**11**	⇑*e*P	**P**	**22 02 06.6**	**+2.4**
H11N2	**WAKE ISLAND Hy**	**27.79**	**120**	T	T	22 30 59.2	
	baz=311,slow=75,SNR=30						
H11N1	**WAKE ISLAND Hy**	**27.79**	**120**	T	T	22 30 56.3	
	baz=311,slow=75,SNR=33						
H11N3	**WAKE ISLAND Hy**	**27.80**	**120**	T	T	22 30 59.7	
	baz=311,slow=75,SNR=24						
SONM	**Songino Array**	**28.19**	**305**	P	**P**	**22 02 11.2**	**+0.4**
	comp=N,2.5nm,0.6s,baz=105,slow=9.7,SNR=10						
SONM				LR	LR	22 13 10.5	
	comp=N,82nm,20.1s,baz=83,slow=36						
SONM	**Songino Array**	**28.19**	**305**	*e*P	**P**	**22 02 11.5**	**+0.8**
SONM				pmax	pmax		
	comp=Z,3.0nm,0.6s						
H11S1	**WAKE ISLAND Hy**	**28.47**	**122**	T	T	22 31 52.8	
	baz=314,slow=75,SNR=45						
H11S3	**WAKE ISLAND Hy**	**28.47**	**122**	T	T	22 31 55.1	
	baz=314,slow=75,SNR=40						
H11S2	**WAKE ISLAND Hy**	**28.49**	**122**	T	T	22 31 54.5	
	baz=314,slow=75,SNR=39						
ZAK	**Zakamensk**	**30.72**	**309**	*e*P	**P**	**22 02 32.7**	**-0.4**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.2s						
TLY	**Talaya**	**30.81**	**312**	P	**P**	**22 02 34.7**	**+1.0**
	comp=Z,1.0nm,0.2s,baz=82,slow=6.8,SNR=8.5						
TIXI	**Tiksi**	**36.01**	**353**	⇓*e*P	**P**	**22 03 18.6**	**-0.1**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.8s						
CMAR	**Chiang Mai Arr**	**41.32**	**256**	P	**P**	**22 04 04.0**	**+0.2**
	comp=Z,0.8nm,0.6s,baz=56,slow=6.3,SNR=5.5						
CMAR				LR	LR	22 22 11.4	
	comp=Z,25nm,18.5s,baz=70,slow=38						
ZALV	**Zalesovo Beam**	**42.40**	**313**	P	**P**	**22 04 13.0**	**+0.7**
	comp=Z,4.3nm,0.6s,baz=89,slow=6.5,SNR=18						
ZALV				PcP	**PcP**	**22 06 04.9**	**-0.2**
	comp=Z,0.8nm,0.6s,baz=81,slow=4.2,SNR=3.3						
ZALV				LR	LR	22 22 44.0	
	comp=Z,57nm,18.9s,baz=70,slow=37						
NVS	**Novosibirsk**	**43.34**	**314**	*e*P	**P**	**22 04 18.9**	**-1.0**
NVS				pmax	pmax		
	comp=E,10.0nm,1.5s						
NVS				pmax	pmax		
	comp=Z,13nm,1.5s						
MKAR	**Makanchi Array**	**44.51**	**303**	P	**P**	**22 04 29.9**	**+0.4**
	comp=Z,5.3nm,0.8s,baz=90,slow=8.0,SNR=35						
MKAR				LR	LR	22 23 59.8	
	comp=Z,51nm,18.4s,baz=72,slow=37						
COLA	**College**	**49.69**	**32**	*e*P	**P**	**22 05 09.0**	**-0.6**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
COLA	**College**	**49.69**	**32**	*e*P	**P**	**22 05 08.9**	**-0.6**
	comp=Z,1.6nm,0.6s						
ILAR	**Eielson Array**	**50.11**	**32**	P	**P**	**22 05 12.6**	**-0.1**
	comp=Z,1.1nm,0.9s,baz=271,slow=6.1,SNR=10						
AAK	**Ala-Archa**	**50.84**	**299**	⇓*e*P	**P**	**22 05 21.5**	**+2.7**
AAK				pmax	pmax		
	comp=Z,4.0nm,0.6s						
AAK	**Ala-Archa**	**50.84**	**299**	*e*P	**P**	**22 05 19.6**	**+0.8**
	comp=Z,2.6nm,1.1s						
BRVK	**Borovoye**	**51.12**	**313**	⇑*e*P	**P**	**22 05 20.8**	**+0.3**
BRVK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KKAR	**Karatay Array**	**53.49**	**301**	*e*P	**P**	**22 05 38.7**	**+0.4**
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KKAR	**Karatay Array**	**53.49**	**301**	*e*P	**P**	**22 05 38.7**	**+0.4**
	comp=Z,3.4nm,0.8s						
SVE	**Sverdlovsk**	**55.69**	**319**	*e*P	**P**	**22 05 55.0**	**+1.0**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**56.34**	**188**	P	**P**	**22 05 57.1**	**-1.9**
	comp=Z,1.0nm,0.6s,baz=2.7,slow=7.5,SNR=15						
WRA	**Warramunga Arr**	**56.34**	**188**	*e*P	**P**	**22 06 00.4**	**+1.4**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ARU	**Arti**	**56.90**	**319**	*c i*P	**P**	**22 06 02.6**	**-0.1**
ARU						22 06 57.5	
ARU						22 08 06.4	
ARU				S	**S**	**22 13 55.9**	**+1.2**
ARU				SS	**SS**	**22 17 38.5**	**-4.0**
ARU				pmax	pmax		
	comp=Z,13nm,1.7s						
ARU	**Arti**	**56.90**	**319**	*e*P	**P**	**22 06 02.6**	**-0.1**
	comp=Z,9.1nm,1.0s						
ARU				*e*		22 06 14.0	
ABKAR	**Akbulak array**	**58.41**	**310**	*e*P	**P**	**22 06 13.2**	**-0.1**
	comp=Z,3.8nm,0.6s						
ASAR	**Alice Springs**	**60.07**	**188**	P	**P**	**22 06 24.8**	**-0.3**
	comp=Z,0.1nm,0.3s,baz=13,slow=8.9,SNR=2.8						
GEYT	**Alibeck**	**64.19**	**299**	P	**P**	**22 06 52.9**	**+0.1**
	comp=Z,1.2nm,0.7s,baz=68,slow=16,SNR=4.1						
GEYT				LR	LR	22 35 08.8	
	comp=Z,30nm,19.0s,baz=120,slow=36						
KLMR	**Klimovskoe**	**64.37**	**328**	*e*P	**P**	**22 06 50.9**	**-2.6**
KLMR				pmax	pmax		
	comp=Z,4.0nm,0.9s						
YKA	**Yellowknife Ar**	**64.44**	**30**	P	**P**	**22 06 54.2**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=305,slow=6.5,SNR=6.4						
ARCES	**ARCESS Array B**	**64.67**	**340**	P	**P**	**22 06 55.8**	**+0.5**
	comp=Z,2.3nm,0.8s,baz=46,slow=8.7,SNR=5.6						
ARCES				LR	LR	22 37 55.4	
	comp=Z,35nm,22.0s,baz=49,slow=39						
FINES	**FINESS Array B**	**69.45**	**332**	P	**P**	**22 07 25.6**	**-0.1**
	comp=Z,2.3nm,0.7s,baz=57,slow=7.0,SNR=7.7						
FINES				LR	LR	22 39 49.2	
	comp=Z,20nm,18.4s,baz=40,slow=38						
FINES	**FINESS Array B**	**69.45**	**332**	*e*P	**P**	**22 07 26.2**	**+0.4**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
VSR	**Storozhevoye**	**69.48**	**319**	*e*P	**P**	**22 07 25.5**	**-0.6**
VSR				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KBZ	**Khabaz**	**71.37**	**311**	P	**P**	**22 07 37.7**	**-0.1**
	comp=Z,2.5nm,0.9s,baz=9.2,slow=1.0,SNR=4.1						
KBZ				LR	LR	22 42 50.2	
	comp=Z,27nm,18.0s,baz=68,slow=39						
NOA	**NORSAR Array B**	**74.85**	**337**	P	**P**	**22 07 58.1**	**0.0**
	comp=Z,1.6nm,0.8s,baz=37,slow=5.7,SNR=4.1						
NOA				LR	LR	22 44 23.3	
	comp=Z,35nm,18.6s,baz=235,slow=38						
NOA	**NORSAR Array B**	**74.85**	**337**	*e*P	**P**	**22 07 57.2**	**-1.0**
NOA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AKASG	**Malin Array Be**	**74.87**	**322**	P	**P**	**22 07 58.3**	**-0.1**
	comp=Z,2.7nm,0.6s,baz=47,slow=6.1,SNR=12						
AKASG	**Malin Array Be**	**74.87**	**322**	*e*P	**P**	**22 07 58.1**	**-0.3**
AKASG				pmax	pmax		
	comp=Z,3.0nm,0.6s						
KIEV	**Kiev**	**74.88**	**322**	*de*P	**P**	**22 07 58.5**	**+0.1**
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ELK	**Elko**	**76.02**	**50**	*e*P	**P**	**22 08 06.3**	**+0.8**
ELK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ELK	**Elko**	**76.02**	**50**	*e*P	**P**	**22 08 06.2**	**+0.8**
	comp=Z,5.1nm,0.8s						
PDAR	**Pinedale Array**	**78.17**	**45**	P	**P**	**22 08 17.6**	**0.0**
	comp=Z,0.3nm,0.5s,baz=17,slow=4.2,SNR=2.3						
BRTR	**Keskin Array B**	**79.33**	**312**	P	**P**	**22 08 24.1**	**+0.2**
	comp=Z,0.8nm,0.8s,baz=116,slow=5.7,SNR=6.1						
BRTR	**Keskin Array B**	**79.33**	**312**	*e*P	**P**	**22 08 24.6**	**+0.7**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
CLL	**Collm**	**81.72**	**330**	*e*P	**P**	**22 08 36.0**	**-0.3**
GERES	**GERESS Array B**	**83.33**	**328**	P	**P**	**22 08 44.4**	**-0.4**
	comp=Z,0.4nm,0.5s,baz=35,slow=5.4,SNR=5.4						
GERES	**GERESS Array B**	**83.33**	**328**	*e*P	**P**	**22 08 44.7**	**-0.1**
TXAR	**Lajitas Array**	**90.56**	**52**	P	**P**	**22 09 20.8**	**+0.4**
	comp=Z,0.1nm,0.7s,baz=320,slow=4.0,SNR=2.7						
LPAZ	**La Paz**	**147.06**	**61**	PKPbc	**PKPbc**	**22 16 01.0**	**-1.0**
	comp=Z,0.9nm,0.7s,baz=21,slow=6.7,SNR=4.0						
LPAZ	**La Paz**	**147.06**	**61**	PKP2	**PKPbc**	**22 16 01.0**	**-1.0**
LPAZ				pmax	pmax		
	comp=Z,1.0nm,0.7s						

NIED **23** *22:06:00, 37.30N×141.70E, h38km, Mw4.0 Best double couple: M₀1.20000×10¹⁵ NP1:φ=142.00000°, δ=37.00000°, λ=-31.00000°. NP2:φ=258.00000°, δ=72.00000°, λ=-123.00000°.*
ISCJB **23** *22:06:21.7±1.7, 37.27N±0.03×141.83E±0.05, h33km±14km, mb3.6/7, MS3.1/4, Error ellipse: s-maj=6.8km s-min=5.2km az=19.6*
JMA **23** *22:06:21.3±0.2, 37.30N×141.70E, h44km±3km, M4.2*
JMA Felt I J1.
IDC **23** *22:06:21.9±1.0, 37.25N×141.82E, h33km±6km, mb3.5/7, mb1 3.7/11, mb1mx3.5/33, mbtmp3.7/11, ML3.5/4, MS3.1/8, Ms1 3.1/8, ms1mx2.8/27, Error ellipse: s-maj=23.8km s-min=15.3km az=86.0*
ISC 23 22:06:20.3±0.8, 37.27N±0.04×141.80E±0.05, h23km±4km, n36, σ1=45/42, mb3.5/7, MS3.2/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.74**	**277**	P	**Pb**	**22 06 34.4**	**-0.2**
JFK				S	**Sb**	**22 06 43.3**	**-1.1**
ONAJ	**Iwakimizuishiy**	**0.82**	**258**	P	**Pb**	**22 06 35.5**	**-0.4**
ONAJ				S	**Sb**	**22 06 45.2**	**-1.3**
JMM	**Marumori**	**1.00**	**307**	P	**Pb**	**22 06 37.9**	**-1.0**
JMM				*e*S	**Sb**	**22 06 50.1**	**-1.5**
JHO	**Hitachi**	**1.19**	**237**	P	**Pn**	**22 06 40.3**	**-1.3**
JHO				*e*S	**Sn**	**22 06 54.4**	**-2.6**
JFT	**Otama**	**1.19**	**282**	P	**Pn**	**22 06 41.5**	**-0.1**
JFT				*e*S	**Sn**	**22 06 55.7**	**-1.4**
JIO	**Ouri**	**1.23**	**343**	P	**Pn**	**22 06 41.5**	**-0.7**
JIO				*e*S	**Sn**	**22 06 55.4**	**-2.7**
JOU	**Okura**	**1.41**	**321**	P	**Pn**	**22 06 44.8**	**+0.1**
JOU				*e*S	**Sn**	**22 07 01.8**	**-0.9**
JYS	**Shirataka**	**1.67**	**305**	P	**Pn**	**22 06 48.3**	**+0.1**
JYS				*e*S	**Sn**	**22 07 08.8**	**-0.1**
JFY	**Yanaizu**	**1.68**	**275**	P	**Pn**	**22 06 48.2**	**-0.1**
JFY				*e*S	**Sn**	**22 07 08.6**	**-0.5**
JMK	**Ichinoseki**	**1.74**	**345**	P	**Pn**	**22 06 49.1**	**0.0**
JMK				*e*S	**Sn**	**22 07 09.1**	**-1.5**
MJAR	**Matsushiro Arr**	**2.97**	**257**	Pn	**Pn**	**22 07 07.6**	**+1.5**
	3.8nm,0.3s,baz=80,slow=16,SNR=39						
MJAR				Sn	**Sb**	**22 07 44.2**	**-4.2**
	15nm,0.3s,baz=92,slow=30,SNR=7.4						
MJAR				LR	LR	22 08 35.9	
	comp=Z,100nm,19.4s,baz=70,slow=45						
MAT	**Matsushiro**	**2.97**	**257**	P	**Pn**	**22 07 07.4**	**+1.3**
MAT				S	**Sn**	**22 07 42.2**	**+1.1**
JHJ	**Hachijo jima 2**	**4.46**	**202**	Pn	**Pn**	**22 07 27.9**	**+1.3**
	26nm,0.3s,baz=66,slow=20,SNR=3.2						
JHJ				Sn	**Sn**	**22 08 16.4**	**-1.4**
	58nm,0.3s,baz=73,slow=24,SNR=6.4						
JHJ				LR	LR	22 09 27.8	
	comp=Z,219nm,18.1s,baz=88,slow=42						
ASAJ	**Asahikawa**	**6.86**	**5**	Pn	**Pn**	**22 07 59.0**	**-0.5**
	0.8nm,0.3s,baz=226,slow=9.3,SNR=7.1						
ASAJ				Sn	**Sn**	**22 09 15.4**	**-1.5**
	0.3nm,0.3s,baz=60,slow=16,SNR=3.0						
USRK	**Ussuriysk Ar.**	**10.16**	**316**	Pn	Pn	22 08 50.5	+5.7
	0.2nm,0.3s,baz=142,slow=14,SNR=4.4						
KSRS	**Korea Array**	**11.05**	**275**	Pn	**Pn**	**22 09 01.1**	**+4.2**
	0.2nm,0.3s,baz=94,slow=14,SNR=5.6						
KSRS				LR	LR	22 12 35.6	
	comp=Z,50nm,20.9s,baz=82,slow=34						
KLR	**Kul'dur**	**14.00**	**332**	Pn	**Pn**	**22 09 38.8**	**+1.6**
	0.1nm,0.3s,baz=146,slow=11,SNR=2.1						
KLR				LR	LR	22 14 31.2	
	comp=Z,83nm,18.6s,baz=146,slow=35						
YAK	**Yakutsk**	**25.91**	**347**	LR	LR	22 22 19.8	
	comp=Z,48nm,18.3s,baz=115,slow=37						
SONM	**Songino Array**	**27.91**	**303**	P	**P**	**22 12 09.4**	**+0.7**
	0.3nm,0.4s,baz=105,slow=11,SNR=2.5						
SONM				pP	**sP**	**22 12 18.8**	**+0.5**
	1.4nm,0.8s,baz=101,slow=8.4,SNR=5.8						
SONM				LR	LR	22 23 30.5	
	comp=Z,18nm,20.2s,baz=86,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.01**	**122**	T	T	22 41 46.0	
	baz=315						
H11N1	**WAKE ISLAND Hy**	**28.02**	**122**	T	T	22 42 30.1	
	baz=315,slow=74						
H11N3	**WAKE ISLAND Hy**	**28.02**	**122**	T	T	22 42 35.3	
	baz=315,slow=74						
H11S1	**WAKE ISLAND Hy**	**28.73**	**124**	T	T	22 43 18.2	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**28.73**	**124**	T	T	22 43 02.8	
	baz=314,slow=74						
H11S2	**WAKE ISLAND Hy**	**28.75**	**124**	T	T	22 42 39.7	
	baz=314,slow=74						
ZALV	**Zalesovo Beam**	**41.98**	**312**	P	**P**	**22 14 09.4**	**0.0**
	0.3nm,0.4s,baz=86,slow=4.5,SNR=2.4						
ZALV				pP	**sP**	**22 14 19.6**	**+0.4**
	2.1nm,0.8s,baz=77,slow=6.5,SNR=5.5						
MKAR	**Makanchi Array**	**44.25**	**302**	P	**P**	**22 14 27.5**	**-0.5**
	0.8nm,0.8s,baz=95,slow=8.6,SNR=6.9						
MKAR				pP	**sP**	**22 14 38.0**	**+0.4**
	2.0nm,0.8s,baz=88,slow=8.9,SNR=13						
ILAR	**Eielson Array**	**49.13**	**32**	P	**P**	**22 15 05.7**	**-0.1**
	0.4nm,0.8s,baz=270,slow=6.8,SNR=4.9						
ARU	**Arti**	**56.39**	**319**	LR	LR	22 42 35.7	
	comp=Z,29nm,20.1s,baz=79,slow=38						
WRA	**Warramunga Arr**	**57.34**	**188**	P	**P**	**22 16 06.1**	**-0.6**
	2.0nm,0.6s,baz=5.4,slow=7.4,SNR=27						
WRA				pP	**sP**	**22 16 16.4**	**-0.1**
	0.4nm,0.5s,baz=2.3,slow=7.5,SNR=2.3						
ASAR	**Alice Springs**	**61.07**	**188**	P	**P**	**22 16 32.2**	**-0.2**
	0.7nm,0.7s,baz=16,slow=6.8,SNR=8.3						
ASAR				LR	LR	22 42 30.4	
	comp=Z,34nm,19.3s,baz=49,slow=36						
GEYT	**Alibeck**	**63.99**	**299**	pP	pP	22 17 01.3	+2.1
	1.7nm,0.7s,baz=9.5,slow=4.5,SNR=5.1						
FINES	**FINESS Array B**	**68.75**	**332**	pP	pP	22 17 30.9	+1.7
	1.6nm,0.7s,baz=52,slow=9.0,SNR=2.9						
AKASG	**Malin Array Be**	**74.30**	**322**	pP	pP	22 18 05.5	+2.6
	1.4nm,0.6s,baz=46,slow=5.9,SNR=2.7						
TXAR	**Lajitas Array**	**89.73**	**53**	P	**P**	**22 19 17.9**	**+0.8**
	0.2nm,0.7s,baz=302,slow=4.1,SNR=3.2						
LPAZ	**La Paz**	**146.31**	**60**	PKPbc	**PKPbc**	**22 26 00.3**	**0.0**
	0.5nm,0.6s,baz=127,slow=17,SNR=3.6						

MEX 23 22:09:29.2±0.7, 14.42N×92.97W, h130km±44km, MD4.2, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.02**	**23**	*e*P	Pn	22 10 02.6	-1.0
CCIG				*i* S	Sn	22 10 28.0	-1.9

IDC **23** *22:13:30.3±2.0, 36.37N×141.41E, h0km, mb3.6/5, mb1 3.6/8, mb1mx3.5/35, mbtmp3.6/8, ML3.2/3, Error ellipse: s-maj=47.4km s-min=24.6km az=70.0*
ISCJB **23** *22:13:35.5±0.9, 36.32N±0.04×141.15E±0.08, h42km±8km, mb3.4/5, Error ellipse: s-maj=10.7km s-min=6.6km az=178.6*
JMA **23** *22:13:36.5±0.1, 36.32N×141.04E, h47km±1km, M3.3*
JMA Felt I J1.
ISC 23 22:13:34.7±1.6, 36.36N±0.04×141.21E±0.07, h24km±11km, n23, σ1=90/24, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.57**	**296**	P	**Pn**	**22 13 47.0**	**-0.3**
JHO				S	**Sb**	**22 13 54.4**	**+0.5**
CHOJ	**Chosi**	**0.71**	**203**	P	**Pn**	**22 13 49.2**	**0.0**
CHOJ				S	**Sb**	**22 13 57.9**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.81**	**336**	P	**Pn**	**22 13 51.1**	**+0.4**
ONAJ				S	**Sb**	**22 14 01.2**	**+0.5**
JYT	**Yasato**	**0.83**	**261**	P	**Pb**	**22 13 50.0**	**-0.4**
JYT				S	**Sb**	**22 13 59.5**	**-1.7**
JFK	**Kawauchi**	**1.04**	**345**	P	**Pb**	**22 13 54.3**	**+0.2**
JFT	**Otama**	**1.35**	**329**	P	**Pb**	**22 13 59.7**	**+0.4**
JFT				S	**Sb**	**22 14 15.9**	**-0.3**
JAG	**Ashikaga**	**1.42**	**273**	P	**Pn**	**22 13 58.5**	**-0.4**
MJAR	**Matsushiro Arr**	**2.42**	**275**	Pn	**Pn**	**22 14 13.2**	**+0.4**
	7.3nm,0.3s,baz=113,slow=8.8,SNR=122						
MJAR				Sn	**Sn**	**22 14 42.9**	**+1.2**
	4.5nm,0.3s,baz=80,slow=13,SNR=5.2						
MAT	**Matsushiro**	**2.43**	**275**	P	**Pn**	**22 14 13.5**	**+0.7**
MAT				S	**Sn**	**22 14 41.9**	**+0.1**
JHJ	**Hachijo jima 2**	**3.44**	**200**	Pn	**Pn**	**22 14 27.8**	**+1.0**
	4.1nm,0.3s,baz=232,slow=19,SNR=2.6						
ASAJ	**Asahikawa**	**7.82**	**7**	Sn	**Sn**	**22 16 52.3**	**-2.3**
	0.2nm,0.3s,baz=72,slow=20,SNR=2.0						
KSRS	**Korea Array**	**10.70**	**280**	Pn	**Pn**	**22 16 06.1**	**-0.2**
	0.1nm,0.3s,baz=112,slow=16,SNR=3.4						
H11N2	**WAKE ISLAND Hy**	**27.95**	**119**	T	T	22 48 57.6	
	baz=312,slow=75,SN

IMOL				Sg		**Sb**	**22 24 10.8**	**-1.2**
	28µm,18.0s							
BADI	**Badiali**	**0.50**	**146**	Pg		**Pg**	**22 24 04.5**	**0.0**
BADI				Sg		**Sg**	**22 24 12.0**	**+1.0**
	138nm,0.5s							
BADI	**Badiali**	**0.50**	**146**	Pg		**Pg**	**22 24 04.5**	**0.0**
BADI				Sg		**Sg**	**22 24 12.0**	**+1.0**
	138nm,0.5s							
ATMC	**Monte Cedrone**	**0.54**	**153**	Pg		**Pg**	**22 24 04.8**	**-0.4**
ATMC				Sg		**Sg**	**22 24 13.4**	**+1.2**
	212nm,0.4s							
ATMC	**Monte Cedrone**	**0.54**	**153**	Pg		**Pg**	**22 24 04.8**	**-0.4**
ATMC				Sg		**Sg**	**22 24 13.4**	**+1.2**
	212nm,0.4s							
PTF	**Prato**	**0.57**	**274**	Pg		**Pg**	**22 24 05.3**	**-0.6**
PTF				Sg		**Sg**	**22 24 14.0**	**+0.7**
PTF	**Prato**	**0.57**	**274**	Pg		**Pg**	**22 24 05.3**	**-0.6**
PTF				Sg		**Sg**	**22 24 14.0**	**+0.7**
FNVD	**Fontana Vidola**	**0.58**	**295**	Pg		**Pg**	**22 24 05.5**	**-0.6**
FNVD				Sg		**Sg**	**22 24 14.2**	**+0.5**
	157nm,0.3s							
FNVD	**Fontana Vidola**	**0.58**	**295**	Pg		**Pg**	**22 24 05.5**	**-0.6**
FNVD				Sg		**Sg**	**22 24 14.2**	**+0.5**
	157nm,0.3s							
CAFI	**Castiglion Fio**	**0.60**	**172**	Pg		**Pg**	**22 24 06.3**	**-0.1**
CAFI				Sg		**Sb**	**22 24 15.5**	**-1.1**
	116nm,0.5s							
CAFI	**Castiglion Fio**	**0.60**	**172**	Pg		**Pg**	**22 24 06.3**	**-0.1**
CAFI				Sg		**Sb**	**22 24 15.5**	**-1.1**
	116nm,0.5s							
CSNT	**Castellina Chi**	**0.61**	**222**	Pg		**Pg**	**22 24 06.2**	**-0.4**
CSNT				Sg		**Sb**	**22 24 15.9**	**-1.0**
	91nm,0.5s							
CSNT	**Castellina Chi**	**0.61**	**222**	Pg		**Pg**	**22 24 06.2**	**-0.4**
CSNT				Sg		**Sb**	**22 24 15.9**	**-1.0**
	91nm,0.5s							
ATPC	**Poggio Castell**	**0.62**	**135**	Pg		**Pg**	**22 24 06.5**	**-0.3**
	97nm,0.5s							
ATPC	**Poggio Castell**	**0.62**	**135**	Pg		**Pg**	**22 24 06.5**	**-0.3**
	97nm,0.5s							
PIEI	**Pieia**	**0.63**	**128**	Pg		**Pg**	**22 24 06.5**	**-0.4**
PIEI				Sg		**Sb**	**22 24 16.6**	**-0.8**
	45nm,0.3s							
PIEI	**Pieia**	**0.63**	**128**	Pg		**Pg**	**22 24 06.5**	**-0.4**
PIEI				Sg		**Sb**	**22 24 16.6**	**-0.8**
	45nm,0.3s							
CRMI	**Carmignano**	**0.66**	**259**	Pg		**Pg**	**22 24 07.0**	**-0.5**
CRMI				Sg		**Sg**	**22 24 16.5**	**+0.5**
	125nm,0.4s							
CRMI	**Carmignano**	**0.66**	**259**	Pg		**Pg**	**22 24 07.0**	**-0.5**
CRMI				Sg		**Sg**	**22 24 16.5**	**+0.5**
	125nm,0.4s							
ATVO	**AVT- Monte Val**	**0.67**	**143**	Pg		**Pg**	**22 24 07.5**	**-0.3**
ATVO				Sg		**Sb**	**22 24 18.2**	**-0.5**
	157nm,0.7s							
ATVO	**AVT- Monte Val**	**0.67**	**143**	Pg		**Pg**	**22 24 07.5**	**-0.3**
ATVO				Sg		**Sb**	**22 24 18.2**	**-0.5**
	157nm,0.7s							
FSSB	**Fossombrone**	**0.70**	**109**	Pg		**Pg**	**22 24 08.1**	**-0.3**
	97nm,0.4s							
FSSB	**Fossombrone**	**0.70**	**109**	Pg		**Pg**	**22 24 08.1**	**-0.3**
	97nm,0.4s							
MPAG	**Monte Paganucc**	**0.72**	**114**	Pg		**Pg**	**22 24 08.6**	**-0.1**
	43nm,0.6s							
MPAG	**Monte Paganucc**	**0.72**	**114**	Pg		**Pg**	**22 24 08.6**	**-0.1**
	43nm,0.6s							
ATTE	**AVT- Monte Tez**	**0.81**	**153**	Pg		**Pg**	**22 24 09.9**	**-0.6**
ATTE				Sg		**Sb**	**22 24 22.5**	**-0.2**
	65nm,0.4s							
ATTE	**AVT- Monte Tez**	**0.81**	**153**	Pg		**Pg**	**22 24 09.9**	**-0.6**
ATTE				Sg		**Sb**	**22 24 22.5**	**-0.2**
	65nm,0.4s							
MARN	**Marana (Italy)**	**1.77**	**345**	*e*Pg		**Pn**	**22 24 25.1**	**-1.1**
MARN				*e*Sg		**Sn**	**22 24 47.9**	**-1.2**
MARN	**Marana (Italy)**	**1.77**	**345**	*e*Pg		**Pn**	**22 24 25.1**	**-1.1**
MARN				*e*Sg		**Sn**	**22 24 47.9**	**-1.2**
CGRP	**Cima Grappa**	**1.96**	**359**	*e*Pg		**Pn**	**22 24 27.1**	**-1.7**
CGRP				*e*Sg		**Sn**	**22 24 52.1**	**-1.7**
DDS	**Dosso del Somm**	**2.01**	**347**	*e*Pn		**Pn**	**22 24 28.3**	**-1.3**
DDS	**Dosso del Somm**	**2.01**	**347**	*e*P		**Pn**	**22 24 28.3**	**-1.3**
RNI	**Roncone**	**2.23**	**337**	*e*Pn		**Pn**	**22 24 31.9**	**-0.8**
RNI	**Roncone**	**2.23**	**337**	*e*P		**Pn**	**22 24 31.9**	**-0.8**
SKDS	**Skadanscina**	**2.23**	**43**	*i* Pn		**Pn**	**22 24 30.9**	**-1.6**
SKDS	**Skadanscina**	**2.23**	**43**	*i* Pn		**Pn**	**22 24 30.9**	**-1.6**
NVLJ	**Novalja**	**2.26**	**73**	*e*Pn		**Pn**	**22 24 32.2**	**-0.6**
NVLJ				Sn		**Sn**	**22 25 01.2**	**+0.2**
NVLJ	**Novalja**	**2.26**	**73**	*e*Pn		**Pn**	**22 24 32.2**	**-0.6**
NVLJ				Sn		**Sn**	**22 25 01.1**	**+0.2**
CIMO	**Cimolais**	**2.42**	**10**	*e*Pn		**Pn**	**22 24 34.0**	**-1.1**
CIMO	**Cimolais**	**2.42**	**10**	*e*P		**Pn**	**22 24 34.0**	**-1.1**
VINO	**Villanova**	**2.54**	**23**	*e*Pn		**Pn**	**22 24 35.0**	**-1.8**
VINO	**Villanova**	**2.54**	**23**	*e*P		**Pn**	**22 24 35.0**	**-1.8**
ABTA	**Abfaltersbach**	**2.86**	**9**	*e*Pn		**Pn**	**22 24 41.5**	**+0.3**
	0.7nm,0.2s							
ABTA	**Abfaltersbach**	**2.86**	**9**	Pn		**Pn**	**22 24 41.5**	**+0.3**
	0.7nm,0.2s							
MYKA	**Terra Mystica**	**2.98**	**24**	Pn		**Pn**	**22 24 45.0**	**+2.1**
	0.3nm,0.1s							
MYKA	**Terra Mystica**	**2.98**	**24**	Pn		**Pn**	**22 24 45.0**	**+2.1**
	0.3nm,0.1s							
FETA	**Feichten**	**3.20**	**346**	*e*Pn		**Pn**	**22 24 47.0**	**+1.1**
	0.6nm,0.2s							
FETA	**Feichten**	**3.20**	**346**	Pn		**Pn**	**22 24 47.0**	**+1.1**
	0.6nm,0.2s							
OBKA	**Obir**	**3.21**	**35**	*i* Pn		**Pn**	**22 24 46.8**	**+0.8**
	1.1nm,0.3s							
OBKA	**Obir**	**3.21**	**35**	Pn		**Pn**	**22 24 46.8**	**+0.8**
	1.1nm,0.3s							
WATA	**Walderalm**	**3.42**	**357**	*e*Pn		**Pn**	**22 24 50.3**	**+1.4**
	0.4nm,0.1s							
WATA	**Walderalm**	**3.42**	**357**	Pn		**Pn**	**22 24 50.3**	**+1.4**
	0.4nm,0.1s							
MOTA	**Moosalm**	**3.46**	**351**	*i* Pn		**Pn**	**22 24 50.7**	**+1.2**
	2.0nm,0.3s							
MOTA	**Moosalm**	**3.46**	**351**	Pn		**Pn**	**22 24 50.7**	**+1.2**
	2.0nm,0.3s							
DAVA	**Damuels**	**3.64**	**338**	*e*Pn		**Pn**	**22 24 54.4**	**+2.5**
	0.4nm,0.0s							
DAVA				*e*Sn		**Sn**	**22 25 38.3**	**+3.1**
DAVA	**Damuels**	**3.64**	**338**	Pn		**Pn**	**22 24 54.4**	**+2.5**
	0.4nm,0.0s							
DAVA				Sn		**Sn**	**22 25 38.3**	**+3.1**
MOA	**Molln**	**4.27**	**22**	*i* Pn		**Pn**	**22 25 00.4**	**-0.1**
	0.3nm,0.2s							
MOA	**Molln**	**4.27**	**22**	Pn		**Pn**	**22 25 00.4**	**-0.1**
	0.3nm,0.2s							

IDC ***23*** *22:43:20.4±1.8, 35.˚48N×141.˚30E, h0km, mb3.5/4, mb1 3.6/7, mb1mx3.4/35, mbtmp3.5/7, ML3.2/2, MS2.5/4, Ms1 2.5/4, ms1mx2.4/29, Error ellipse: s-maj=47.0km s-min=21.5km az=75.0*

ISCJB ***23*** *22:43:22.7±1.2, 35.˚53N±0.˚05×141.˚30E±0.˚09, h33km±6km, mb3.5/4, MS2.5/1, Error ellipse: s-maj=12.5km s-min=7.3km az=160.7*

JMA ***23*** *22:43:25.6±0.1, 35.˚54N×140.˚97E, h38km±1km, M3.1*

ISC 23 22:43:23.2±1.9, 35.˚53N±0.˚05×141.˚2E±0.˚1, h17km±13km, n24, σ1§13/20, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.30**	**304**	P	**Pn**	**22 43 32.6**	**-0.3**
CHOJ				S	**Sn**	**22 43 37.6**	**-1.4**
BSO4	**Boso 4**	**0.87**	**232**	P	**Pb**	**22 43 39.7**	**0.0**
BSO1	**Boso 1**	**0.89**	**190**	P	**Pg**	**22 43 40.7**	**+0.3**
BSO3	**Boso 3**	**0.91**	**217**	P	**Pb**	**22 43 40.4**	**+0.1**
JYT	**Yasato**	**1.05**	**312**	P	**Pb**	**22 43 42.4**	**-0.5**
JYT				*e*S	**Sb**	**22 43 54.4**	**-2.0**
JAG	**Ashikaga**	**1.65**	**303**	P	**Pn**	**22 43 51.1**	**-0.3**
JOD2	**Odawara 2**	**1.72**	**262**	P	**Pn**	**22 43 51.6**	**-0.8**
MJAR	**Matsushiro Arr**	**2.60**	**294**	Pn	**Pn**	**22 44 05.4**	**+0.9**
	4.8nm,0.3s,baz=98,slow=8.9,SNR=47						
MJAR					**Sn**	**22 44 37.1**	**+1.4**
	2.2nm,0.3s,baz=219,slow=47,SNR=3.5						
MJAR					LR	22 44 49.8	
	comp=Z,20nm,19.6s,baz=125,slow=33						
MAT	**Matsushiro**	**2.60**	**294**	P	**Pn**	**22 44 05.4**	**+0.9**
MAT				S	**Sn**	**22 44 38.2**	**+2.4**
JHJ	**Hachijo jima 2**	**2.67**	**206**	Pn	**Pn**	**22 44 04.8**	**-0.5**
	9.1nm,0.3s,baz=90,slow=8.1,SNR=1.8						
JHJ					**Sn**	**22 44 36.0**	**-1.3**
	54nm,0.3s,baz=270,slow=20,SNR=3.0						
ASAJ	**Asahikawa**	**8.64**	**7**	Pn	**Pn**	**22 45 27.3**	**-0.1**
	baz=50,slow=7.9						
KSRS	**Korea Array**	**10.84**	**284**	LR	LR	22 49 56.0	
	comp=Z,56nm,20.0s,baz=116,slow=36						
KLR	**Kul'dur**	**15.34**	**336**	LR	LR	22 52 19.2	
	comp=Z,33nm,18.8s,baz=127,slow=35						
YAK	**Yakutsk**	**27.49**	**348**	LR	LR	23 00 35.7	
	comp=Z,13nm,19.6s,baz=72,slow=38						
H11N2	**WAKE ISLAND Hy**	**27.59**	**118**	T	T	23 18 25.0	
	baz=310,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**27.59**	**118**	T	T	23 18 19.4	
	baz=310,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**27.60**	**118**	T	T	23 18 23.1	
	baz=310,slow=75,SNR=12						
H11S3	**WAKE ISLAND Hy**	**28.24**	**120**	T	T	23 18 59.8	
	baz=312,slow=75,SNR=51						
H11S1	**WAKE ISLAND Hy**	**28.25**	**120**	T	T	23 19 03.4	
	baz=312,slow=75,SNR=62						
H11S2	**WAKE ISLAND Hy**	**28.26**	**120**	T	T	23 19 08.7	
	baz=312,slow=75,SNR=45						
SONM	**Songino Array**	**28.48**	**306**	P	**P**	**22 49 18.0**	**+0.4**
	0.2nm,0.4s,baz=98,slow=8.9,SNR=1.3						
ZALV	**Zalesovo Beam**	**42.79**	**314**	P	**P**	**22 51 20.6**	**+0.9**
	0.3nm,0.4s,baz=57,slow=5.3,SNR=2.1						
WRA	**Warramunga Arr**	**55.55**	**188**	P	**P**	**22 52 56.6**	**-1.0**
	0.5nm,0.5s,baz=3.5,slow=7.8,SNR=6.8						
ASAR	**Alice Springs**	**59.28**	**188**	P	**P**	**22 53 24.1**	**+0.2**
	0.4nm,1.1s,baz=16,slow=11,SNR=2.0						

SCB ***23*** *22:45:09.2±0.5, 20.˚40S×71.˚55W, h31km, Ml4.9/1, Error ellipse: s-maj=12.0km s-min=2.9km az=60.0*

GUC ***23*** *22:45:21.2±0.7, 20.˚21S×70.˚68W, h17km±24km, ML5.1*

GCMT ***23*** *22:45:21.0±0.3, 20.˚12S×70.˚94W, h28km, MW5.0/73, Moment Tensor Solution. s43,c53; s73,c97; Duration: 0 Moment tensor: Mo16Nm; Mrr3.38±.16; Mθθ0.15±.09; Mϕϕ-3.53±.11; Mrθ0.40±.15; Mθϕ0.62±.07; Mrϕ-2.45±.18; Best double couple: Mo4.29500×10^16 NP1:φs171.00000°, δ63.00000°, λ90.00000°. NP2: φs351.00000°, δ27.00000°, λ90.00000°. Principal axes: T 4.1700, Plg72.0000°, Azm81.0000°; N 0.2530, Plg0.0000°, Azm351.0000°; P -4.4210, Plg18.0000°, Azm261.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***23*** *22:45:21.9±1.2, 20.˚02S×70.˚45W, h33km, mb5.0/11 Error ellipse: s-maj=15.4km s-min=7.2km az=113.3*

BJI ***23*** *22:45:21.5, 20.˚10S×70.˚60W, h21km, mB5.3/24, Ms5.3/13, Ms7 5.0/15*

NEIC ***23*** *22:45:21.0, 20.˚21S×70.˚68W, h17km, mb5.0/55, ML5.1(GUC), After GUC.*

NEIC Felt [III] at Alto Hospicio and Iquique.

ISCJB ***23*** *22:45:23.6±0.5, 20.˚04S±0.˚02×70.˚50W±0.˚04, h56km±4km, mb4.9/73, MS4.5/15, Error ellipse: s-maj=6.6km s-min=3.7km az=162.5*

IDC ***23*** *22:45:24.3±1.9, 20.˚08S×70.˚45W, h45km±17km, mb4.5/18, mb1 4.5/22, mb1mx4.5/26, mbtmp4.7/22, ML4.1/4, MS4.4/17, Ms1 4.4/17, ms1mx4.2/22, Error ellipse: s-maj=16.8km s-min=12.6km az=64.0*

ISC 23 22:45:24.1±0.9, 20.˚15S±0.˚03×70.˚57W±0.˚05, h43km±7km, n545, σ1§10/555, mb4.9/73, MS4.5/15, 22C-12D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HMBC	**Humberstone**	**0.65**	**101**	⇑*i*P	**Pn**	**22 45 35.2**	**-1.9**
HMBC				*i* S	**Sn**	**22 45 44.5**	**-1.9**
PSGC	**Pisagua**	**0.69**	**37**	⇓*i*P	**Pn**	**22 45 35.5**	**-2.1**
PSGC				*i* S	**Sn**	**22 45 46.2**	**-1.1**
PB11	**IPOC Station P**	**0.94**	**66**	⇓*i*P	**Pn**	**22 45 39.9**	**-1.2**
PB11				*i* S	**Sn**	**22 45 53.8**	**+0.4**
PB11	**IPOC Station P**	**0.94**	**66**	*e*Pg	**Pn**	**22 45 40.2**	**-0.8**
PB08	**IPOC Station P**	**1.33**	**90**	⇑*i*P	**Pn**	**22 45 46.3**	**-0.2**
PB08				*i* S	**Sn**	**22 46 05.6**	**+2.4**
PB01	**IPOC Station P**	**1.35**	**132**	⇓*i*P	**Pn**	**22 45 45.8**	**-0.7**
PB01				*i* S	**Sn**	**22 46 04.3**	**+1.0**
PB01				IAML		22 46 10.1	
	comp=E,39µm,0.4s						
PB01	**IPOC Station P**	**1.35**	**132**	*e*Pn	**Pn**	**22 45 46.1**	**-0.5**
MNMC	**Minye Minye**	**1.37**	**42**	⇑*i*P	**Pn**	**22 45 46.8**	**-0.2**
PB12	**IPOC Station P**	**1.54**	**8**	⇑*i*P	**Pn**	**22 45 47.6**	**-1.7**
PB12				*i* S	**Sn**	**22 46 09.0**	**+0.9**
PB07	**IPOC Station P**	**1.69**	**158**	⇑*i*P	**Pn**	**22 45 49.9**	**-1.5**
PB07				*i* S	**Sn**	**22 46 12.1**	**+0.2**
PB07				IAML		22 46 19.9	
	comp=E,23µm,0.6s						
PB09	**IPOC Station P**	**2.05**	**143**	⇑*i*P	**Pn**	**22 45 56.8**	**+0.5**
PB09				*e*S	**Sn**	**22 46 23.7**	**+2.9**
PB13	**IPOC Station P**	**2.07**	**29**	⇑*i*P	**Pn**	**22 45 56.7**	**-0.1**
PB13				*e*S	**Sn**	**22 46 25.1**	**+3.4**
PB04	**IPOC Station P**	**2.21**	**170**	⇑*i*P	**Pn**	**22 45 56.0**	**-2.4**
PB04				IAML		22 46 38.0	
	comp=E,17µm,0.8s						
PB04	**IPOC Station P**	**2.21**	**170**	*e*Pn	**Pn**	**22 45 56.4**	**-2.0**
PB06	**IPOC Station P**	**2.71**	**160**	⇑*i*P	**Pn**	**22 46 03.4**	**-1.9**
PB06				IAML		22 46 51.5	
	comp=N,15µm,0.7s						
LVC	**Limon Verde**	**2.90**	**148**	P	**Pn**	**22 46 08.7**	**+0.7**
	comp=N,4µm,0.3s,baz=334,slow=8.8,SNR=630						
LVC				S	**Sn**	**22 46 43.6**	**+1.8**
	comp=N,8µm,0.3s,baz=10,slow=9.0,SNR=4.4						
LVC				LR	LR	22 47 37.1	
	comp=N,19µm,19.8s,baz=326,slow=46						
LVC	**Limon Verde**	**2.90**	**148**	*e*Pn	**Pn**	**22 46 08.3**	**+0.2**
LVC				S	**Sn**	**22 46 43.6**	**+1.8**
PB10	**IPOC Station P**	**3.35**	**180**	*e*P	**Pn**	**22 46 10.3**	**-3.6**
PB10	**IPOC Station P**	**3.35**	**180**	*e*Pn	**Pn**	**22 46 10.7**	**-3.3**
BBOJ	**La Paz, Jacaqu**	**3.88**	**36**	⇑*i*Pn	**Pn**	**22 46 24.7**	**+3.0**
BBOD	**La Paz, Gloria**	**3.96**	**28**	⇑*i*Pn	**Pn**	**22 46 25.0**	**+2.1**
BBOE	**La Paz, Chanca**	**4.13**	**37**	⇑*i*Pn	**Pn**	**22 46 28.3**	**+3.1**
LPAZ	**La Paz**	**4.49**	**31**	P	Pn	22 46 35.6	+5.5
	comp=N,9.2nm,0.3s,baz=230,slow=8.9,SNR=101						
LPAZ				S	Sn	22 47 40.9	+20
	baz=188,slow=15,SNR=1.5						
LPAZ				LR	LR	22 48 43.2	
	comp=N,6µm,19.1s,baz=234,slow=46						
LPAZ	**La Paz**	**4.49**	**31**	*e*P	**Pn**	**22 46 31.3**	**+1.2**
LPAZ	**La Paz**	**4.49**	**31**	*e*Pn	**Pn**	**22 46 31.3**	**+1.2**
LPAZ				S	Sn	22 47 40.9	+20
LPAZ	**La Paz**	**4.49**	**31**	⇑*i*Pn	**Pn**	**22 46 32.4**	**+2.3**
BBOB	**La Paz, Bander**	**4.61**	**31**	⇑*i*Pn	**Pn**	**22 46 33.9**	**+2.1**
MOCB	**Mochara**	**4.74**	**104**	⇑*i*Pn	Pn	22 46 37.5	+4.0
MOCB				⇑*i*Sn	Sn	22 47 41.6	+14
	comp=N,870nm,1.0s						
LCO	**Las Campanas**	**8.82**	**181**	*e*Pn	Pn	22 47 33.8	+4.5
	comp=N,55nm,0.8s						
SIV	**San Ignacio**	**9.93**	**67**	P	**Pn**	**22 47 43.5**	**-0.8**
	comp=N,3.7nm,0.3s,baz=264,slow=16,SNR=44						
SIV				S	**Sn**	**22 49 34.9**	**+0.3**
	comp=N,0.6nm,0.3s,baz=282,slow=18,SNR=1.8						
SIV				LR	LR	22 52 12.0	
	comp=N,4µm,18.3s,baz=266,slow=42						
SIV	**San Ignacio**	**9.93**	**67**	⇓*i*P	**Pn**	**22 47 43.0**	**-1.4**
NNA	**Nana**	**10.11**	**322**	P	**Pn**	**22 47 49.0**	**+2.2**
	comp=N,2.2nm,0.3s,baz=144,slow=14,SNR=3.6						
NNA				S	Sn	22 49 26.5	-12
	comp=N,2.3nm,0.3s,baz=219,slow=14,SNR=2.7						
NNA				LR	LR	22 51 38.9	
	comp=N,672nm,19.4s,baz=152,slow=37						
NNA	**Nana**	**10.11**	**322**	*e*P	**Pn**	**22 47 49.0**	**+2.2**
SAML	**Samuel**	**13.23**	**34**	*e*Pn	**Pn**	**22 48 27.5**	**-1.9**
CPUP	**Villa Florida**	**13.63**	**119**	P	**Pn**	**22 48 34.1**	**-0.7**
	comp=N,0.2nm,0.3s,baz=296,slow=12,SNR=7.9						
CPUP				S	**Sn**	**22 51 09.9**	**+5.0**
	comp=N,0.1nm,0.3s,baz=41,slow=19,SNR=1.8						
CPUP				LR	LR	22 54 43.0	
	comp=N,1µm,20.8s,baz=299,slow=41						
ATAH	**Atahualpa**	**15.00**	**329**	P	**Pn**	**22 48 54.6**	**+0.9**
	comp=N,0.3nm,0.3s,baz=52,slow=18,SNR=2.2						
TRQA	**Tornquist**	**19.34**	**159**	*e*P	**P**	**22 49 45.9**	**+0.1**
	comp=N,155nm,1.8s						
PLCA	**Paso Flores**	**20.52**	**180**	P	**P**	**22 49 57.9**	**-0.8**
	comp=N,20nm,0.9s,baz=28,slow=9.4,SNR=9.1						
PLCA				LR	LR	22 58 29.1	
	comp=N,563nm,19.5s,baz=16,slow=38						
PLCA	**Paso Flores**	**20.52**	**180**	*e*P	**P**	**22 49 59.2**	**+0.5**
PLCA	**Paso Flores**	**20.52**	**180**	*e*P	**P**	**22 49 59.3**	**+0.5**
	comp=N,103nm,1.6s						
OTAV	**Otavalo**	**21.68**	**338**	*e*P	P	22 50 19.0	+7.2
OTAV	**Otavalo**	**21.68**	**338**	*e*P	**P**	**22 50 13.0**	**+1.2**
	comp=N,47nm,1.2s						
SPB	**Sao Paulo**	**21.74**	**103**	*e*P	**P**	**22 50 12.8**	**+0.9**
	comp=N,40nm,1.0s						
PTGA	**Pitinga**	**21.91**	**30**	P	**P**	**22 50 12.2**	**-1.6**
	comp=N,37nm,0.7s,baz=211,slow=11,SNR=32						
PTGA				S	**S**	**22 54 12.6**	**-1.0**
	comp=N,3.5nm,0.7s,baz=308,slow=18,SNR=2.3						
PTGA	**Pitinga**	**21.91**	**30**	*e*P	**P**	**22 50 12.3**	**-1.5**
	comp=N,40nm,0.7s						
PTGA				S	**S**	**22 54 12.6**	**-1.0**
BDFB	**Brasilia**	**21.92**	**82**	P	**P**	**22 50 13.4**	**-0.7**
	comp=N,9.2nm,0.5s,baz=258,slow=9.4						
BDFB				LR	LR	22 59 56.0	
	comp=N,2µm,19.4s,baz=169,slow=40						
BDFB	**Brasilia**	**21.92**	**82**	*e*P	**P**	**22 50 13.5**	**-0.5**
BDFB				pmax	pmax		
	comp=Z,60nm,0.8s						
BDFB	**Brasilia**	**21.92**	**82**	*e*P	**P**	**22 50 13.5**	**-0.5**
	comp=Z,60nm,0.8s						
CMBC	**Cumbal**	**22.13**	**340**	*e*P	**P**	**22 50 20.1**	**+3.5**
FLOC	**Florencia**	**22.17**	**346**	*e*P	**P**	**22 50 13.3**	**-3.2**
PRAC	**Prado**	**24.09**	**349**	*e*P	**P**	**22 50 34.4**	**-1.4**
	comp=Z,185nm,1.8s						
ROSC	**El Rosal**	**25.11**	**351**	P	**P**	**22 50 45.6**	**+0.2**
	comp=Z,5.7nm,0.4s,baz=145,slow=11,SNR=5.7						
ROSC				LR	LR	23 01 55.6	
	comp=Z,716nm,18.2s,baz=198,slow=40						
ROSC	**El Rosal**	**25.11**	**351**	*e*P	**P**	**22 50 43.9**	**-1.5**
NORC	**Norcasia**	**25.90**	**350**	*e*P	**P**	**22 50 49.5**	**-2.7**
RUSC	**La Rusia**	**26.00**	**354**	*e*P	**P**	**22 50 52.4**	**-1.2**
RUSC	**La Rusia**	**26.00**	**354**	*e*P	**P**	**22 50 52.6**	**-1.0**
	comp=Z,32nm,1.0s						
HELC	**Santa Helena**	**26.63**	**349**	*e*P	**P**	**22 50 57.8**	**-1.4**
	comp=Z,47nm,0.8s						
BARC	**Barichara**	**26.70**	**354**	*e*P	**P**	**22 50 58.0**	**-1.6**
CBRI	**Barrientos, No**	**27.78**	**355**	*e*P	**P**	**22 51 06.0**	**-3.3**
GRMC	**Gramalote, San**	**27.78**	**355**	*e*P	**P**	**22 51 07.1**	**-2.2**
SDV	**Santo Domingo**	**28.85**	**360**	P	**P**	**22 51 17.5**	**-1.4**
	comp=Z,9.1nm,0.6s,baz=208,slow=5.3,SNR=7.8						
SDV	**Santo Domingo**	**28.85**	**360**	*e*P	**P**	**22 51 17.1**	**-1.8**
	comp=Z,16nm,0.8s						
RCBR	**Riachuelo**	**36.55**	**72**	P	**P**	**22 52 24.4**	**-1.6**
	comp=Z,17nm,0.7s,baz=248,slow=11,SNR=12						
SJG	**San Juan**	**38.27**	**7**	*e*P	**P**	**22 52 38.2**	**-2.1**
SJG				pmax	pmax		
	comp=Z,48nm,0.9s						
SJG	**San Juan**	**38.27**	**7**	*e*P	**P**	**22 52 38.2**	**-2.1**
	comp=Z,48nm,0.9s						
MPR	**Mayaguez**	**38.27**	**5**	*e*P	**P**	**22 52 38.3**	**-2.1**
	comp=Z,1µm,1.0s						
CBYP	**Canovanas**	**38.46**	**7**	*e*P	**P**	**22 52 39.5**	**-2.5**
	comp=Z,77nm,0.9s						
ZAIG	**Zacatecas**	**52.87**	**322**	*e*P	**P**	**22 54 37.6**	**+1.5**
	comp=Z,12nm,1.0s						
NHSC	**New Hope**	**53.75**	**350**	*e*P	**P**	**22 54 42.6**	**+0.6**
	comp=Z,51nm,1.0s						
347A	**Saraland**	**54.08**	**341**	P	**P**	**22 54 44.0**	**-0.5**
	baz=159,SNR=5.5						
248A	**Dixon Mills**	**54.49**	**342**	P	**P**	**22 54 46.6**	**-0.8**
	baz=160						
GOGA	**Godfrey**	**54.66**	**347**	*e*P	**P**	**22 54 48.1**	**-0.6**
GOGA				pmax	pmax		
	comp=Z,7.0nm,1.0s						
GOGA	**Godfrey**	**54.66**	**347**	*e*P	**P**	**22 54 48.0**	**-0.6**
	comp=Z,7.1nm,1.0s						
247A	**Quitman**	**54.71**	**341**	P	**P**	**22 54 48.7**	**-0.3**
	baz=159						
JSC	**Jenkinsville**	**55.08**	**349**	*e*P	**P**	**22 54 51.5**	**-0.1**
JSC				pmax	pmax		
	comp=Z,11nm,0.9s						
JSC	**Jenkinsville**	**55.08**	**349**	*e*P	**P**	**22 54 51.5**	**-0.1**
	comp=Z,10nm,0.9s						
736A	**Circle Diamond**	**55.11**	**332**	P	**P**	**22 54 52.7**	**+0.7**
	baz=150						
LRAL	**Lakeview Retre**	**

W41B **Gary Mavity, V** 58.74 339 P P 22 55 16.9 -0.7
baz=156,SNR=6.3
X39A **Fountain Ranch** 58.79 337 P P 22 55 18.3 +0.3
baz=154,SNR=12
X301 **Greenbrier Sit** 58.85 339 eP P 22 55 18.0 -0.4
WHAR **Wooly Hollow** 58.86 339 eP P 22 55 18.3 -0.1
Y37A **Hugo** 58.88 336 P P 22 55 19.3 +0.7
baz=153,SNR=9.2
X201 **Greenbrier Sit** 58.89 339 eP P 22 55 18.2 -0.5
Z35A **Perchaven, San** 58.97 334 P P 22 55 19.7 +0.5
baz=151
W40A **Ferguson Farm,** 59.04 339 P P 22 55 19.6 -0.1
baz=155,SNR=8.8
133A **Hamilton Ranch** 59.05 332 P P 22 55 19.8 -0.1
baz=149
X38A **Whitesboro** 59.20 337 P P 22 55 20.9 +0.1
baz=154,SNR=15
V41A **Mountainview** 59.27 340 P P 22 55 21.0 -0.3
baz=156,SNR=6.9
W39A **Magazine** 59.29 338 P P 22 55 21.2 -0.2
baz=155,SNR=11
X37A **Clayton** 59.33 336 P P 22 55 21.6 -0.1
baz=153,SNR=16
Y35A **Marietta** 59.38 334 P P 22 55 22.0 -0.1
baz=151
ABTX **Abilene, Hawle** 59.39 332 P P 22 55 21.8 -0.4
baz=148,SNR=6.3
ABTX **Abilene, Hawle** 59.39 332 eP P 22 55 22.1 -0.1
W38A **Poteau** 59.44 337 P P 22 55 22.3 -0.2
baz=154,SNR=8.7
U42A **Revenden** 59.50 341 P P 22 55 22.4 -0.4
baz=158,SNR=6.0
V40A **Witts Springs** 59.51 339 P P 22 55 22.4 -0.6
baz=156,SNR=6.5
RKT **Rikitea** 59.51 254 eS S 23 03 30.0 -0.2
comp=Z,643nm,28.0s
RKT eLR LR 23 12 57.7
comp=Z,382nm,29.5s
RKT **Rikitea** 59.51 254 eT T 00 01 05.0
comp=Z,1.9nm,0.2s
Z33A **Whitaker Ranch** 59.57 333 P P 22 55 23.4 0.0
baz=149,SNR=5.3
PBMO **Poplar Bluff** 59.65 342 eP P 22 55 22.9 -0.9
X36A **Centrahoma** 59.69 335 P P 22 55 23.7 -0.5
baz=152
U41A **Viola** 59.71 340 P P 22 55 23.4 -0.9
baz=157
Y34A **Reagan Ranch,** 59.72 334 P P 22 55 24.2 -0.2
baz=150,SNR=7.3
X35A **Drake** 59.78 335 P P 22 55 24.1 -0.8
baz=151,SNR=5.2
V39A **Pettigrew** 59.82 338 P P 22 55 24.4 -0.7
baz=155,SNR=14
W37B **Quinton** 59.84 337 P P 22 55 24.9 -0.3
baz=153,SNR=9.2
WCI **Wyandotte Cave** 59.92 346 eP P 22 55 24.5 -1.2
WCI **Wyandotte Cave** 59.92 346 eP P 22 55 24.5 -1.2
S45A **Carrier Mills** 59.97 344 P P 22 55 25.1 -0.9
baz=161,SNR=7.6
U40A **Yellville** 60.02 339 P P 22 55 25.9 -0.6
baz=156,SNR=11
V38A **Canehill** 60.11 338 P P 22 55 25.9 -1.1
baz=154,SNR=18
Y33A **Hilltop Ranch,** 60.13 333 P P 22 55 26.7 -0.6
baz=150
W36A **Wetumka** 60.14 336 P P 22 55 25.9 -1.3
baz=152,SNR=6.1
S44A **Carbondale** 60.16 343 P P 22 55 26.0 -1.4
baz=160
SIUC **Southern Illin** 60.17 343 eP P 22 55 26.4 -1.1
U39A **Green Forest** 60.26 339 P P 22 55 27.0 -1.1
baz=155,SNR=7.6
S43A **Fulton Ridge,** 60.28 342 P P 22 55 27.0 -1.1
baz=159,SNR=6.6
T41A **Mountain View** 60.30 341 P P 22 55 27.3 -1.0
baz=157,SNR=6.5
X34A **Smith Ranch, M** 60.31 334 P P 22 55 27.1 -1.4
baz=150,SNR=5.7
HHAR **Hobbs** 60.32 338 eP P 22 55 28.2 -0.4
V37A **Hulbert** 60.39 337 P P 22 55 28.2 -0.8
baz=154,SNR=12
W35A **Tecumseh** 60.40 335 P P 22 55 27.7 -1.4
baz=152
O56A **Blue Knob Stat** 60.56 353 P P 22 55 29.6 -0.5
baz=172,SNR=12
V36A **Jenks** 60.60 336 P P 22 55 29.6 -0.8
baz=153,SNR=7.8
U38A **Gravette** 60.62 338 P P 22 55 29.3 -1.3
baz=154,SNR=5.4
R44A **Waltonville** 60.63 343 P P 22 55 29.2 -1.4
baz=160
T40A **Mansfield** 60.64 340 P P 22 55 29.3 -1.4
baz=156,SNR=5.2
TUL1 **Leonard** 60.66 337 P P 22 55 30.0 -0.8
baz=153,SNR=9.1
TUL1 **Leonard** 60.66 337 eP P 22 55 30.5 -0.3
X32A **Elmer** 60.76 333 P P 22 55 30.3 -1.3
baz=149
S41A **Jillco Farms,** 60.79 341 P P 22 55 30.4 -1.3
baz=157,SNR=12
T39A **Clever** 60.80 339 P P 22 55 30.8 -1.0
baz=156,SNR=9.0
WMOK **Wichita Mounta** 60.82 334 P P 22 55 30.5 -1.5
baz=150
W34A **Bridge Creek,** 60.83 335 P P 22 55 30.8 -1.2
baz=151
U37A **Salina** 60.85 337 P P 22 55 31.5 -0.6
baz=154,SNR=9.7
SSPA **Standing Stone** 60.85 354 eP P 22 55 32.5 +0.4
V35A **Meyer Ranch, C** 60.92 336 P P 22 55 31.5 -1.1
baz=152
N59A **State Game Lan** 60.94 355 P P 22 55 32.1 -0.6
baz=175
ODNJ **Ogdensburg** 61.03 357 eP P 22 55 33.2 0.0
S40A **Lebanon** 61.04 340 P P 22 55 32.5 -0.9
baz=157,SNR=5.8
W33A **Caddo, Fort Co** 61.04 334 P P 22 55 32.3 -1.2
baz=150
U36A **Oologah** 61.06 337 P P 22 55 32.9 -0.7
baz=153
T38A **Diamond** 61.12 338 P P 22 55 33.2 -0.8
baz=155,SNR=15
ACSO **Alum Creek Sta** 61.17 349 eP P 22 55 33.5 -0.7
Q44A **Meyer Farm, Va** 61.23 344 P P 22 55 33.5 -1.1
baz=160
V34A **Guthrie** 61.25 335 P P 22 55 34.0 -0.8
baz=151
W32A **Sentinel** 61.34 333 P P 22 55 34.6 -0.9
baz=149,SNR=14
S39A **Bolivar** 61.39 340 P P 22 55 34.8 -1.0
baz=156,SNR=12
MNTX **Cornudas Mount** 61.42 326 P P 22 55 34.8 -1.2
baz=143,SNR=6.6
MNTX **Cornudas Mount** 61.42 326 eP P 22 55 35.6 -0.5
U35A **Pawnee** 61.42 336 P P 22 55 35.4 -0.5
baz=152,SNR=7.7
T37A **Cheneyville 18** 61.42 338 P P 22 55 35.3 -0.7
baz=154,SNR=20
N54A **Moraine State** 61.42 352 P P 22 55 35.6 -0.3
baz=170,SNR=9.0
Q43A **New Douglas** 61.45 343 P P 22 55 34.7 -1.4
baz=160
S38A **Stockton** 61.53 339 P P 22 55 35.8 -0.9
baz=155,SNR=6.1
V33A **Lossen Ranch,** 61.55 335 P P 22 55 36.0 -0.9
baz=150,SNR=6.6
R40A **Maddies Statio** 61.60 341 P P 22 55 35.9 -1.2
baz=157,SNR=6.1
Q42A **Golden Eagle** 61.66 342 P P 22 55 36.5 -1.0
baz=159
T36A **Boggs Farm, Ca** 61.71 337 P P 22 55 37.3 -0.6
baz=153,SNR=6.0
BRYW **Bryant College** 61.76 359 eP P 22 55 38.5 +0.4
V32A **Arapaho** 61.77 334 P P 22 55 37.4 -1.0
baz=150
U34A **Anderson Ranch** 61.78 335 P P 22 55 37.4 -1.0
baz=151
U34A **Anderson Ranch** 61.78 335 eP P 22 55 38.1 -0.4
T35A **Sooner Cattle** 61.82 337 P P 22 55 37.9 -0.8
baz=152,SNR=7.5
R39A **Chumby, Stover** 61.87 340 P P 22 55 38.2 -0.7
baz=156,SNR=6.5
M54A **Oil Creek Stat** 61.92 352 P P 22 55 39.0 -0.2
baz=170,SNR=9.9
MSTX **Muleshoe** 61.95 330 P P 22 55 39.2 -0.5
baz=146,SNR=9.0
MSTX **Muleshoe** 61.95 330 eP P 22 55 39.5 -0.3
comp=Z,30nm,1.2s

S37A **Fort Scott** 61.96 338 P P 22 55 38.8 -0.7
baz=154,SNR=17
R38A **Fenwick Farm,** 62.03 339 P P 22 55 39.0 -1.0
baz=155,SNR=13
VNA1 **Neumayer--Stat** 62.07 160 P P 22 55 41.6 +1.7
ALLY **Alegheny Colle** 62.12 352 eP P 22 55 40.6 0.0
SFIN **Lafayette** 62.15 346 P P 22 55 38.6 -2.2
baz=163
SFIN **Lafayette** 62.15 346 eP P 22 55 39.1 -1.7
T34A **McCluskey Farm** 62.16 336 P P 22 55 40.4 -0.6
baz=152,SNR=5.9
S36A **Lake Cedric, C** 62.20 338 P P 22 55 40.5 -0.7
baz=154,SNR=12
P42A **Winchester** 62.23 343 P P 22 55 39.7 -1.6
baz=159
BINY **Binghamton** 62.23 355 eP P 22 55 41.3 0.0
U32A **Winter Ranch,** 62.32 334 P P 22 55 41.6 -0.5
baz=150
S35A **Otter Creek Ra** 62.42 337 P P 22 55 41.9 -0.7
baz=153,SNR=8.0
R37A **Teagarden Farm** 62.46 339 P P 22 55 42.1 -0.8
baz=154
Q39A **Willow Grove F** 62.51 340 P P 22 55 42.1 -1.2
baz=156,SNR=9.9
P41A **Barry, Barry** 62.52 342 P P 22 55 41.6 -1.6
baz=158,SNR=5.7
TRY **Troy** 62.63 357 eP P 22 55 45.1 +1.2
Q38A **Cooks Store, C** 62.64 340 P P 22 55 43.6 -0.4
baz=156,SNR=22
P40A **Paris** 62.67 341 P P 22 55 43.4 -0.9
baz=157,SNR=7.1
R36A **Gordon, Harris** 62.70 338 P P 22 55 43.7 -0.8
baz=154
O42A **Bath** 62.73 343 P P 22 55 43.1 -1.6
baz=160
S34A **Willow Spring** 62.73 336 P P 22 55 43.8 -1.0
baz=152
Q37A **Longview Farm,** 62.84 339 P P 22 55 44.3 -1.1
baz=155
P39B **Salisbury** 62.85 341 P P 22 55 44.5 -1.0
baz=157,SNR=5.7
HDIL **Hopedale** 62.86 344 P P 22 55 43.7 -1.8
baz=160
HDIL **Hopedale** 62.86 344 eP P 22 55 44.2 -1.3
O41A **Passleys Farm,** 62.88 343 P P 22 55 44.1 -1.5
baz=159,SNR=5.2
MMNY **Mt. Morris Dam** 62.93 354 eP P 22 55 46.1 +0.1
T32A **Huddler Ranch,** 62.98 335 P P 22 55 46.4 0.0
baz=150
O40A **La Belle** 63.17 342 P P 22 55 46.3 -1.2
baz=158
P38A **Dawn** 63.22 340 P P 22 55 46.8 -1.1
baz=156
Q36A **Arnold C. Orve** 63.26 338 P P 22 55 46.7 -1.5
baz=154
ACCN **Adirondack Com** 63.28 357 eP P 22 55 48.8 +0.6
R34A **Isabella, Hill** 63.31 337 P P 22 55 47.8 -0.7
baz=152,SNR=6.1
121A **Cookes Peak, D** 63.34 325 P P 22 55 49.8 +0.7
baz=141,SNR=5.7
Q35A **Mercer Eighty,** 63.37 338 P P 22 55 47.7 -1.2
baz=153
S32A **Newby Ranch, P** 63.43 335 P P 22 55 48.8 -0.6
baz=150
P37A **Lathrop** 63.45 340 P P 22 55 48.1 -1.4
baz=155,SNR=5.3
HNH **Hanover** 63.56 359 eP P 22 55 51.0 +0.9
Q34A **Chapman** 63.74 337 P P 22 55 50.9 -0.5
baz=152
P36A **Good Intent, A** 63.76 339 P P 22 55 50.2 -1.3
baz=154
KSU1 **Kansas State U** 63.78 338 P P 22 55 50.9 -0.7
baz=153
MDV **Middlebury** 63.88 358 eP P 22 55 52.6 +0.5
NCB **Newcomb** 63.89 357 eP P 22 55 52.7 +0.4
O37A **Wolven Farm, M** 63.91 340 P P 22 55 51.6 -0.8
baz=156
P35A **Duane Minner,** 63.96 338 P P 22 55 51.7 -1.1
baz=154
R32A **Long Quarter,** 63.97 336 P P 22 55 52.5 -0.4
baz=151
BNM **Barren Site** 63.99 327 eP P 22 55 54.4 +0.9
N39A **Derby Farms, D** 64.05 342 P P 22 55 52.5 -0.8
baz=157
SNAA **Sanae** 64.06 161 P P 22 55 53.9 +0.7
SNAA **Sanae** 64.06 161 *c i* P P 22 55 53.9 +0.7
SNAA **Sanae** 64.06 161 eP P 22 55 52.8 -0.4
LBNH **Lisbon** 64.08 359 eP P 22 55 54.5 +1.0
LBNH **Lisbon** 64.08 359 eP P 22 55 54.5 +1.0
P34A **Walnut Farm, R** 64.26 338 P P 22 55 54.1 -0.7
baz=153,SNR=5.7
Q32A **Meitler Ranch,** 64.41 336 P P 22 55 55.0 -0.8
baz=151
LAZ **Ladron** 64.45 327 eP P 22 55 57.7 +1.3
N37A **Lee Faris, Mou** 64.46 340 P P 22 55 55.6 -0.5
baz=156
M39A **Webster** 64.50 342 P P 22 55 55.4 -0.9
baz=158
ANMO **Albuquerque** 64.53 328 P P 22 55 56.5 -0.4
baz=143
ANMO **Albuquerque** 64.53 328 *c* eP P 22 55 56.9 0.0
ANMO pmax pmax
comp=Z,10.0nm,1.7s
ANMO **Albuquerque** 64.53 328 eP P 22 55 57.5 +0.6
LONY **Lake Ozonia** 64.56 357 eP P 22 55 57.0 +0.3
FRNY **Flat Rock** 64.73 358 eP P 22 55 58.2 +0.5
N36A **Muff Farm, Cla** 64.76 340 P P 22 55 57.1 -0.9
baz=155
O34A **Beatrice** 64.78 338 P P 22 55 57.4 -0.7
baz=153
L40A **Anamosa** 64.78 343 P P 22 55 57.1 -1.0
baz=159,SNR=6.5
TUC **Tucson** 64.83 323 eP P 22 55 59.7 +0.9
TUC **Tucson** 64.83 323 eP P 22 55 59.7 +0.9
M37A **Trindle Farm,** 65.00 341 P P 22 55 59.0 -0.6
baz=156,SNR=6.4
K41A **Shullsburg** 65.04 344 P P 22 55 58.8 -1.1
baz=160
L39A **Vinton** 65.05 343 P P 22 55 58.4 -1.5
baz=158,SNR=5.1
N34A **Linn** 65.29 339 P P 22 55 60.0 -1.5
baz=153
T25A **Trinidad** 65.31 331 P P 22 56 02.0 +0.1
baz=145,SNR=6.3
JFWS **Jewell Farm** 65.32 344 eP P 22 56 00.8 -0.8
JFWS **Jewell Farm** 65.32 344 eP P 22 56 00.8 -0.8
L38A **Oak Wood Farm,** 65.34 342 P P 22 56 00.5 -1.3
baz=157
K40A **Colesburg** 65.35 343 P P 22 56 00.4 -1.4
baz=159
K39A **Oelwein** 65.56 343 P P 22 56 01.7 -1.5
baz=158,SNR=5.2
J41A **Loganville** 65.68 345 P P 22 56 03.0 -1.0
baz=160
214A **Organ Pipe Nat** 65.74 321 P P 22 56 05.9 +1.3
baz=136
214A **Organ Pipe Nat** 65.74 321 eP P 22 56 05.4 +0.8
comp=Z,42nm,1.1s
K38A **Parkersburg** 65.75 342 P P 22 56 03.3 -1.1
baz=157
J40A **Soldiers Grove** 65.89 344 P P 22 56 03.7 -1.7
baz=159
KSCO **Kaye Shedlock'** 66.07 333 P P 22 56 06.9 +0.2
baz=147
KSCO **Kaye Shedlock'** 66.07 333 eP P 22 56 07.3 +0.6
J39A **Decorah** 66.09 343 P P 22 56 05.3 -1.3
baz=158,SNR=7.2
L35A **Bielow Farm, R** 66.11 340 P P 22 56 06.0 -0.8
baz=154
K37A **Belmond** 66.12 342 P P 22 56 06.0 -0.8
baz=156
N31A **Bailey Ranch,** 66.15 337 P P 22 56 07.6 +0.5
baz=151
M33A **Taylor Creek F** 66.18 338 P P 22 56 06.3 -0.9
baz=153
L34A **Svendsen Farm,** 66.26 339 P P 22 56 06.9 -0.8
baz=154
J38A **Wedel Dairy, R** 66.29 343 P P 22 56 06.6 -1.2
baz=158
SDCO **Great Sand Dun** 66.31 330 P P 22 56 08.9 +0.4
baz=144,SNR=20
SDCO **Great Sand Dun** 66.31 330 eP P 22 56 09.2 +0.8
J37A **Redenius Farm,** 66.59 342 P P 22 56 08.6 -1.2
baz=157
I38A **Scanlan Farm,** 66.92 343 P P 22 56 11.3 -0.6
baz=158,SNR=9.9
S22A **4UR Ranch, Cre** 66.93 329 P P 22 56 12.7 +0.2
baz=143
S22A **4UR Ranch, Cre** 66.93 329 eP P 22 56 13.2 +0.7
J34A **George** 67.30 340 P P 22 56 13.4 -0.9
baz=154
MVCO **Mesa Verde** 67.33 328 eP P 22 56 15.9 +0.9
WUAZ **Wupatki** 67.54 325 P P 22 56 17.8 +1.6
baz=139,SNR=9.5
WUAZ **Wupatki** 67.54 325 eP P 22 56 17.7 +1.6
H36A **Jessenland, He** 67.86 342 P P 22 56 17.3 -0.5
baz=156
ECSD **EROS Data Cent** 67.92 340 P P 22 56 17.4 -0.8
baz=154,SNR=9.2
ECSD **EROS Data Cent** 67.92 340 eP P 22 56 17.7 -0.5
K30A **Basset** 68.01 337 P P 22 56 18.8 0.0
baz=151
ISCO **Idaho Springs** 68.02 332 P P 22 56 19.4 +0.1
baz=145,SNR=7.0
ISCO **Idaho Springs** 68.02 332 eP P 22 56 19.6 +0.3
ISCO **Idaho Springs** 68.02 332 eP P 22 56 19.6 +0.3
PV01 **Paradox Valley** 68.08 328 eP P 22 56 20.9 +1.2
SPMN **Marine on St.** 68.14 343 P P 22 56 18.8 -0.7
baz=158
SMCO **Snowmass** 68.14 330 eP P 22 56 21.1 +0.9
comp=Z,7.9nm,1.1s
IKP **In-Ko-Pah, Jac** 68.21 320 P P 22 56 21.3 +0.9
baz=134
H35A **Sunnyside Ranc** 68.23 342 P P 22 56 19.6 -0.6
baz=156
J31A **Geddes** 68.24 338 P P 22 56 20.1 -0.2
baz=152
PV05 **Paradox Valley** 68.30 328 eP P 22 56 21.9 +0.9
BC3 **Big Chuckawall** 68.51 321 P P 22 56 23.1 +0.9
baz=135,SNR=7.2
J30A **Dallas** 68.53 338 P P 22 56 21.6 -0.5
baz=151
BAR **Barrett** 68.57 319 eP P 22 56 24.2 +1.6
NVL **N'lazarevskaya** 68.64 159 eP P 22 56 22.0 -0.4
IRM **Iron Mountain** 68.68 321 P P 22 56 24.5 +1.3
baz=135,SNR=13
H33A **Prehn Over Nor** 68.81 340 P P 22 56 23.2 -0.5
baz=154
F36A **Milaca** 68.92 343 P P 22 56 23.2 -1.2
baz=157
N23A **Red Feather La** 69.06 332 P P 22 56 26.3 +0.6
baz=145,SNR=5.3
BELC **Belle Mtn. Jos** 69.07 321 P P 22 56 27.0 +1.2
baz=134
TPFO **Pinon Flats** 69.07 320 P P 22 56 27.3 +1.4
baz=134,SNR=5.2
PFO **Pinyon Flats O** 69.08 320 P P 22 56 27.2 +1.3
baz=134,SNR=5.9
PFO **Pinyon Flats O** 69.08 320 eP P 22 56 27.5 +1.7
PFO **Pinyon Flats O** 69.08 320 eP P 22 56 27.5 +1.7
PHWY **Pilot Hill** 69.18 333 eP P 22 56 26.7 +0.2
comp=Z,8.7nm,1.0s
F35A **Swanville** 69.22 342 P P 22 56 25.1 -1.1
baz=156
F34A **Alexandria** 69.36 342 P P 22 56 26.0 -1.1
baz=155
GMRC **Granite Mounta** 69.42 321 P P 22 56 29.3 +1.3
baz=135,SNR=14
KNB **Kanab** 69.43 325 eP P 22 56 29.7 +1.7
KNB **Kanab** 69.43 325 eP P 22 56 29.7 +1.7
O20A **White River Ci** 69.50 330 P P 22 56 28.5 +0.1
baz=142,SNR=5.6
LIC **Lamto** 69.52 75 eP P 22 56 26.0 -2.8
comp=Z,36nm,1.1s
LCMT **Little Creek M** 69.66 325 eP P 22 56 31.1 +1.7
TIC **Toumodi** 69.70 75 eP P 22 56 28.5 -1.4
F33A **5 Mile Ranch,** 69.70 341 P P 22 56 28.6 -0.7
baz=154
SRU **San Rafael Swe** 69.81 328 eP P 22 56 31.3 +1.0
SRU **San Rafael Swe** 69.81 328 eP P 22 56 31.3 +1.0
KIC **Kosan Boka** 69.83 75 eP P 22 56 29.2 -1.6
comp=Z,49nm,1.2s
HEC **Hector,Ludlow** 69.85 321 P P 22 56 31.9 +1.4
baz=134,SNR=7.0
MTPU **Mount Pierson** 69.85 326 eP P 22 56 32.1 +1.3
DBIC **Dimbokro** 69.86 75 P P 22 56 29.8 -1.1
comp=Z,19nm,1.0s,baz=235,slow=4.3,SNR=12
DBIC LR LR 23 26 56.1
comp=Z,454nm,18.5s,baz=228,slow=36
SZCU **Shurtz Canyon** 70.00 325 eP P 22 56 33.4 +1.9
QSPA **South Pole Qui** 70.03 180 eP P 22 56 32.2 +0.9
comp=Z,54nm,1.0s
CCUT **Cedar City** 70.11 325 eP P 22 56 33.4 +1.1
P17A **Butcher Ranch,** 70.19 328 eP P 22 56 32.9 +0.3
MSU **Marysvale** 70.20 326 eP P 22 56 34.2 +1.4
MSU **Marysvale** 70.20 326 eP P 22 56 34.2 +1.4
BFSC **Mount Baldy Ra** 70.24 320 P P 22 56 34.1 +1.2
baz=133
TMUT **Trail Mountain** 70.29 328 eP P 22 56 34.7 +1.3
F31A **Hecla** 70.34 340 P P 22 56 32.7 -0.4
baz=153,SNR=5.3
SHPR **Sheep Range** 70.35 323 eP P 22 56 35.4 +1.8
GSC **Goldstone, Bar** 70.46 321 P P 22 56 35.4 +1.2
baz=134,SNR=7.1
GSC **Goldstone, Bar** 70.46 321 eP P 22 56 36.0 +1.8
GSC **Goldstone, Bar** 70.46 321 eP P 22 56 36.0 +1.8
K22A **Casper** 70.74 333 P P 22 56 36.0 +0.1
baz=144
K22A **Casper** 70.74 333 eP P 22 56 36.2 +0.4
comp=Z,37nm,1.7s
F29A **Eureka** 70.84 339 P P 22 56 35.7 -0.6
baz=151
EDW2 **Edwards Air Fo** 70.88 320 P P 22 56 37.7 +0.9
baz=133,SNR=5.5
RSSD **Black Hills** 70.92 335 P P 22 56 36.9 -0.2
baz=147
RSSD **Black Hills** 70.92 335 eP P 22 56 37.4 +0.4
RSSD pmax pmax
comp=Z,7.0nm,1.0s
RSSD **Black Hills** 70.92 335 eP P 22 56 37.4 +0.4
comp=Z,6.7nm,1.0s
B35A **Bob, Littlefor** 71.28 344 P P 22 56 37.9 -0.9
baz=157
TPNV **Topopah Spring** 71.28 323 P P 22 56 40.7 +1.4
baz=135,SNR=7.7
TPNV **Topopah Spring** 71.28 323 eP P 22 56 41.3 +2.0
TPNV **Topopah Spring** 71.28 323 eP P 22 56 41.3 +2.0
FURC **Furnace Creek,** 71.30 322 P P 22 56 40.9 +1.8
baz=134
MPMC **Manual Prospec** 71.38 321 P P 22 56 40.9 +1.0
baz=134,SNR=8.6
DAC **Darwin (Calif)** 71.59 321 eP P 22 56 42.1 +0.9
DAC pmax pmax
comp=Z,10.0nm,1.0s
DAC **Darwin (Calif)** 71.59 321 eP P 22 56 42.1 +0.9
comp=Z,9.8nm,1.0s
ISA **Isabella, Lake** 71.69 320 P P 22 56 43.0 +1.4
baz=133
B33A **Robert and Kas** 71.70 343 P P 22 56 40.4 -0.9
baz=155
DUG **Dugway, Tooele** 71.78 327 P P 22 56 43.2 +0.9
baz=139,SNR=13
DUG **Dugway, Tooele** 71.78 327 eP P 22 56 43.1 +0.9
DUG pmax pmax
comp=Z,13nm,1.0s
DUG **Dugway, Tooele** 71.78 327 eP P 22 56 43.1 +0.9
comp=Z,13nm,1.0s
AGMN **Agassiz Nation** 71.80 343 P P 22 56 41.1 -0.9
baz=155
AGMN **Agassiz Nation** 71.80 343 eP P 22 56 41.4 -0.5
C31A **Landman Farms,** 71.89 341 P P 22 56 41.8 -0.7
baz=153,SNR=6.4
R11A **Troy Canyon, C** 71.90 324 P P 22 56 43.8 +0.8
baz=136,SNR=8.7
R11A **Troy Canyon, C** 71.90 324 eP P 22 56 43.5 +0.5
comp=Z,10nm,1.3s
PKM **Mcpherson Peak** 71.99 319 P P 22 56 44.7 +1.1
baz=132,SNR=8.9
CWC **Cottonwood Cre** 71.99 321 P P 22 56 44.5 +0.9
baz=134
B32A **Ashes, Strandq** 72.08 342 P P 22 56 43.4 -0.3
baz=155,SNR=5.3
BW06 **Boulder Array** 72.18 331 P P 22 56 44.0 -0.7
baz=142,SNR=6.1
PDAR **Pinedale Array** 72.18 331 P P 22 56 44.7 +0.1
comp=Z,1.1nm,0.6s,baz=134,slow=5.2,SNR=12
VES **Vestal, Richgr** 72.18 320 P P 22 56 43.9 -0.6
baz=133,SNR=5.5
HWUT **Hardware Ranch** 72.23 329 eP P 22 56 45.1 +0.2
comp=Z,8.7nm,0.9s
A33A **Warroad** 72.25 343 P P 22 56 44.0 -0.6
baz=156
TBI **Tubuai** 72.47 251 eS S 23 06 08.5 +0.6
comp=Z,310nm,31.0s

TBI	**Tubuai**	**72.47**	**251**	*e*LR		LR	23 18 57.7	
	comp=Z,428nm,27.8s							
TBI	**Tubuai**	**72.47**	**251**	*e*T		T	00 16 59.6	
	comp=Z,2.5nm,0.2s							
D26A	**Manning**	**72.78**	**338**	P		**P**	**22 56 47.8**	**-0.1**
	baz=149							
AHID	**Auburn Hatcher**	**72.89**	**330**	*e*P		**P**	**22 56 49.4**	**+0.5**
	comp=Z,29nm,1.6s							
REDW	**Red Top Meadow**	**73.23**	**330**	*e*P		**P**	**22 56 50.2**	**-0.7**
	comp=Z,20nm,1.4s							
LOHW	**Long Hollow**	**73.31**	**331**	*e*P		**P**	**22 56 51.7**	**+0.4**
	comp=Z,8.1nm,1.1s							
TPAW	**Teton Pass**	**73.38**	**331**	*e*P		**P**	**22 56 52.2**	**+0.3**
	comp=Z,18nm,1.3s							
ULM	**Lac du Bonnet**	**73.58**	**343**	P		**P**	**22 56 51.1**	**-1.3**
	comp=Z,2.8nm,0.6s,baz=139,slow=4.2,SNR=5.3							
ULM				LR		LR	23 31 06.4	
	comp=Z,145nm,21.9s,baz=88,slow=37							
IMW	**Indian Meadow**	**73.69**	**331**	*e*P		**P**	**22 56 54.3**	**+0.6**
	comp=Z,23nm,1.3s							
FLWY	**Flagg Ranch**	**73.72**	**331**	*e*P		**P**	**22 56 54.6**	**+0.9**
	comp=Z,37nm,1.2s							
RLMT	**Red Lodge**	**73.90**	**333**	P		**P**	**22 56 55.0**	**+0.2**
	baz=142,SNR=8.6							
RLMT	**Red Lodge**	**73.90**	**333**	*e*P		**P**	**22 56 55.0**	**+0.2**
	comp=Z,5.8nm,0.8s							
LAO	**LASA Array**	**73.91**	**335**	P		**P**	**22 56 55.1**	**+0.5**
	baz=146,SNR=6.6							
LAO	**LASA Array**	**73.91**	**335**	*e*P		**P**	**22 56 54.9**	**+0.3**
	comp=Z,33nm,1.4s							
PPT2	**Papeete2**	**74.11**	**257**	*e*S		**S**	**23 06 27.0**	**+0.1**
	comp=Z,157nm,25.8s							
PPT2	**Papeete2**	**74.11**	**257**	*e*LR		LR	23 19 43.6	
	comp=Z,346nm,24.0s							
DGMT	**Dagmar**	**74.63**	**338**	P		**P**	**22 56 59.2**	**+0.5**
	baz=148							
SCHQ	**Schefferville**	**74.74**	**2**	P		**P**	**22 56 58.4**	**-0.8**
	comp=Z,1.2nm,0.3s,baz=180,slow=3.0,SNR=5.5							
SCHQ				LR		LR	23 31 33.4	
	comp=Z,95nm,20.1s,baz=208,slow=37							
HLID	**Hailey**	**75.08**	**329**	P		**P**	**22 57 02.7**	**+1.0**
	baz=138,SNR=25							
HLID	**Hailey**	**75.08**	**329**	*e*P		**P**	**22 57 02.6**	**+1.0**
	comp=Z,18nm,1.0s							
BOZ	**Bozeman (W)**	**75.35**	**332**	P		**P**	**22 57 03.6**	**+0.5**
	baz=141,SNR=11							
BOZ	**Bozeman (W)**	**75.35**	**332**	*e*P		**P**	**22 57 03.2**	**+0.1**
BOZ				pmax		pmax		
	comp=Z,15nm,1.3s							
BOZ	**Bozeman (W)**	**75.35**	**332**	*e*P		**P**	**22 57 03.2**	**+0.1**
	comp=Z,15nm,1.3s							
DLMT	**Dillon**	**75.57**	**331**	*e*P		**P**	**22 57 04.2**	**-0.1**
	comp=Z,17nm,1.2s							
MFID	**Camas Ranch**	**75.68**	**328**	*e*P		**P**	**22 57 05.8**	**+0.9**
	comp=Z,18nm,1.2s							
EGMT	**Eagleton**	**76.41**	**334**	P		**P**	**22 57 09.1**	**+0.2**
	baz=143,SNR=9.7							
EGMT	**Eagleton**	**76.41**	**334**	*e*P		**P**	**22 57 09.3**	**+0.3**
	comp=Z,28nm,1.2s							
WVOR	**Wild Horse Val**	**76.43**	**325**	*e*P		**P**	**22 57 10.2**	**+0.9**
WVOR				pmax		pmax		
	comp=Z,3.0nm,0.9s							
WVOR	**Wild Horse Val**	**76.43**	**325**	*e*P		**P**	**22 57 10.2**	**+0.9**
	comp=Z,2.9nm,0.9s							
O03D	**Paynes Creek**	**76.74**	**322**	P		**P**	**22 57 10.8**	**-0.2**
	baz=131							
SBA	**Scott Base**	**76.87**	**191**	*e*P		**P**	**22 57 12.7**	**+1.6**
SBA				pmax		pmax		
	comp=Z,10.0nm,1.3s							
SBA	**Scott Base**	**76.87**	**191**	*e*P		**P**	**22 57 12.7**	**+1.6**
	comp=Z,9.8nm,1.3s							
MOD	**Modoc Plateau**	**76.97**	**324**	*e*P		**P**	**22 57 13.3**	**+0.9**
	comp=Z,36nm,1.8s							
MSO	**Missoula**	**77.29**	**331**	P		**P**	**22 57 15.1**	**+1.1**
	baz=139,SNR=6.1							
BMO	**Blue Mountains**	**77.45**	**328**	*e*P		**P**	**22 57 15.5**	**+0.5**
	comp=Z,12nm,1.1s							
VNDA	**Vanda**	**77.90**	**190**	P		**P**	**22 57 18.0**	**+1.1**
	comp=Z,2.6nm,0.9s,baz=133,slow=3.9,SNR=18							
VNDA	**Vanda**	**77.90**	**190**	P		**P**	**22 57 18.0**	**+1.1**
SYO	**Syowa Base**	**78.30**	**160**	⇓*i*P		**P**	**22 57 19.4**	**+0.2**
TORD	**Torodi Ar. Bea**	**78.38**	**71**	P		**P**	**22 57 19.6**	**-1.0**
	comp=Z,34nm,0.8s,baz=251,slow=5.1,SNR=161							
TORD				LR		LR	23 31 04.7	
	comp=Z,586nm,18.8s,baz=240,slow=35							
J05D	**Fort Rock, OR**	**78.41**	**325**	P		**P**	**22 57 21.3**	**+0.9**
	baz=132,SNR=6.5							
BSMT	**Bassoo Peak**	**78.44**	**331**	P		**P**	**22 57 21.7**	**+1.2**
WALA	**Waterton Lakes**	**78.96**	**333**	*e*P		**P**	**22 57 23.6**	**+0.3**
	comp=Z,17nm,1.0s							
HAWA	**Hanford**	**79.64**	**328**	*e*P		**P**	**22 57 27.3**	**+0.4**
	comp=Z,20nm,1.1s							
NEW	**Newport**	**79.81**	**330**	*e*P		**P**	**22 57 28.2**	**+0.4**
NEW				pmax		pmax		
	comp=Z,5.0nm,1.0s							
NEW	**Newport**	**79.81**	**330**	*e*P		**P**	**22 57 28.2**	**+0.4**
	comp=Z,4.7nm,1.0s							
TBM	**Table Mountain**	**80.71**	**328**	P		**P**	**22 57 33.9**	**+1.2**
EDM	**Edmonton**	**81.89**	**336**	*e*P		**P**	**22 57 38.2**	**-0.5**
EDM				pmax		pmax		
	comp=Z,67nm,1.1s							
EDM	**Edmonton**	**81.89**	**336**	*e*P		**P**	**22 57 38.2**	**-0.5**
	comp=Z,67nm,1.1s							
TSUM	**Tsumeb**	**81.92**	**107**	*e*P		**P**	**22 57 40.6**	**+0.7**
	comp=Z,27nm,1.0s							
RPW	**Rockport**	**82.03**	**329**	P		**P**	**22 57 39.8**	**+0.1**
JCW	**Jim Creek**	**82.07**	**328**	P		**P**	**22 57 39.7**	**0.0**
PCVE	**Castro Verde**	**82.19**	**45**	*e*P		**P**	**22 57 41.5**	**+0.9**
	comp=Z,39nm,2.2s							
B05A	**Bryant**	**82.20**	**328**	P		**P**	**22 57 40.8**	**+0.4**
	baz=132,SNR=5.6							
PVAQ	**Vaqueiros**	**82.28**	**46**	*e*P		**P**	**22 57 42.1**	**+1.0**
	comp=Z,23nm,1.4s							
PVAQ	**Vaqueiros**	**82.28**	**46**	*e*LR		LR	23 27 10.8	
	comp=Z,156nm,22.0s							
CMW	**Cultus Mountai**	**82.31**	**328**	P		**P**	**22 57 41.6**	**+0.4**
MBW	**Mount Baker**	**82.45**	**329**	P		**P**	**22 57 41.9**	**-0.1**
PGC	**Sidney**	**83.13**	**328**	*e*P		**P**	**22 57 46.3**	**+1.1**
	comp=Z,3.1nm,0.6s							
PMRV	**Marv??o**	**83.58**	**44**	*e*LR		LR	23 26 04.6	
	comp=Z,127nm,20.0s							
MTE	**Manteigas**	**84.01**	**43**	*e*LR		LR	23 30 15.0	
	comp=Z,273nm,18.0s							
PGAV	**Gavieira, Arco**	**84.40**	**42**	*e*LR		LR	23 29 11.4	
	comp=Z,272nm,20.0s							
MVO	**Moncorvo**	**84.75**	**43**	*e*P		**P**	**22 57 54.0**	**+0.2**
	comp=Z,31nm,1.5s							
MVO	**Moncorvo**	**84.75**	**43**	*e*LR		LR	23 29 00.7	
	comp=Z,224nm,18.0s							
BOSA	**Boshof**	**85.45**	**119**	P		**P**	**22 57 56.4**	**-1.4**
	comp=Z,9.2nm,1.0s,baz=255,slow=7.4,SNR=4.9							
BOSA				LR		LR	23 33 06.8	
	comp=Z,221nm,20.0s,baz=255,slow=34							
TAM	**Tamanrasset**	**85.61**	**64**	*e*P		**P**	**22 57 59.0**	**+0.4**
TAM				pmax		pmax		
	comp=Z,28nm,1.0s							
TAM	**Tamanrasset**	**85.61**	**64**	*e*P		**P**	**22 57 59.0**	**+0.4**
	comp=Z,28nm,1.0s							
PAB	**San Pablo**	**85.65**	**45**	*e*P		**P**	**22 57 58.0**	**-0.4**
PAB				pmax		pmax		
	comp=Z,13nm,1.3s							
PAB	**San Pablo**	**85.65**	**45**	*e*P		**P**	**22 57 58.0**	**-0.4**
	comp=Z,13nm,1.3s							
ESDC	**Sonseca Array**	**85.97**	**45**	P		**P**	**22 57 59.8**	**-0.1**
	comp=Z,4.2nm,0.9s,baz=247,slow=5.9,SNR=16							
ESDC				LR		LR	23 32 33.7	
	comp=Z,127nm,21.4s,baz=225,slow=33							
MAW	**Mawson**	**86.06**	**164**	P		**P**	**22 57 59.5**	**-0.3**
	comp=Z,5.9nm,0.9s,baz=231,slow=7.8,SNR=5.7							
MAW				LR		LR	23 36 33.3	
	comp=Z,187nm,19.4s,baz=240,slow=36							
YKA	**Yellowknife Ar**	**89.41**	**341**	P		**P**	**22 58 15.5**	**-0.2**
	comp=Z,16nm,0.8s,baz=138,slow=4.9,SNR=76							
DLBC	**Dease Lake**	**92.30**	**333**	*e*P		**P**	**22 58 30.1**	**+0.7**
	comp=Z,9.3nm,0.9s							
KEST	**Kesra**	**93.74**	**53**	P		**P**	**22 58 36.7**	**+0.1**
	comp=Z,7.4nm,1.0s,baz=276,slow=6.7,SNR=3.0							
KEST				LR		LR	23 41 24.1	
	comp=Z,312nm,19.6s,baz=208,slow=36							
GERES	**GERESS Array B**	**101.25**	**42**	P		**Pdif**	**22 59 10.1**	**-0.1**
	comp=Z,0.6nm,0.8s,baz=269,slow=7.8,SNR=3.9							
GERES				PP		**PKiKP**	**23 03 31.8**	**-2.9**
	comp=Z,0.4nm,0.8s,baz=251,slow=6.1,SNR=2.3							
ILAR	**Eielson Array**	**102.37**	**335**	P		**Pdif**	**22 59 13.3**	**-1.4**
	comp=Z,0.4nm,0.9s,baz=150,slow=7.3,SNR=3.3							
ILAR				PP		**PP**	**23 03 28.8**	**+0.9**
	comp=Z,0.2nm,0.5s,baz=82,slow=8.9,SNR=3.3							
VSU	**Vasula**	**110.74**	**34**	*c i*PKIKP		**PKiKP**	**23 03 51.9**	**+0.1**
KIEV	**Kiev**	**111.45**	**42**	⇓*i*PKIKP		**PKiKP**	**23 03 53.0**	**-0.4**
AKASG	**Malin Array Be**	**111.46**	**42**	PKiKP		**PKiKP**	**23 03 52.1**	**-1.3**
	comp=Z,0.3nm,0.4s,baz=277,slow=1.6,SNR=4.2							
BRTR	**Keskin Array B**	**113.32**	**55**	PKiKP		**PKiKP**	**23 03 56.7**	**-0.8**
	comp=Z,0.9nm,0.7s,baz=205,slow=3.5,SNR=6.2							
BRTR				PP		**PP**	**23 04 47.8**	**-1.0**
	comp=Z,0.5nm,0.9s,baz=263,slow=7.1,SNR=3.0							
KBZ	**Khabaz**	**120.47**	**50**	PKP		**PKPdf**	**23 04 11.8**	**+0.9**
	comp=Z,5.6nm,0.8s,baz=229,slow=3.1,SNR=8.0							
NCK	**Nalchik**	**120.98**	**51**	⇑*i*PKIKP		**PKPdf**	**23 04 11.7**	**-0.3**
H11S2	**WAKE ISLAND Hyl**	**126.16**	**279**	T		T	01 23 50.8	
	baz=102,slow=74,SNR=126							
H11S1	**WAKE ISLAND Hyl**	**126.17**	**279**	T		T	01 23 50.5	
	baz=102,slow=74,SNR=134							
H11S3	**WAKE ISLAND Hyl**	**126.17**	**279**	T		T	01 23 52.1	
	baz=102,slow=74,SNR=192							
H11N3	**WAKE ISLAND Hyl**	**126.21**	**280**	T		T	01 23 17.1	
	baz=100,slow=75,SNR=88							
H11N2	**WAKE ISLAND Hyl**	**126.22**	**280**	T		T	01 23 42.7	
	baz=100,slow=75,SNR=106							
H11N1	**WAKE ISLAND Hyl**	**126.22**	**280**	T		T	01 23 31.4	
	baz=100,slow=75,SNR=62							
TIXI	**Tiksi**	**127.26**	**352**	⇓*e*PKIKP		**PKPdf**	**23 04 22.9**	**-0.2**
ARU	**Arti**	**127.89**	**33**	*i* PKIKP		**PKPdf**	**23 04 25.7**	**+1.0**
ARU							23 06 29.5	
ARU							23 11 36.0	
ARU				SS		SS	23 23 37.6	+0.6
ARU				MLR		MLR		
	comp=Z,135nm,20.0s							
SEY	**Seymchan**	**128.25**	**337**	⇓*e*PKIKP		**PKPdf**	**23 04 25.4**	**+0.2**
ASAR	**Alice Springs**	**130.34**	**210**	PKP		**PKPdf**	**23 04 30.5**	**-0.1**
	comp=Z,3.8nm,1.0s,baz=128,slow=2.3,SNR=21							
AB31	**Akbulak array**	**131.19**	**41**	*i* PKIKP		**PKPdf**	**23 04 32.1**	**+0.9**
AB31				pmax		pmax		
	comp=Z,9.0nm,1.0s							
ABKAR	**Akbulak array**	**131.19**	**41**	*e*PKPdf		**PKPdf**	**23 04 32.2**	**+1.0**
GEYT	**Alibeck**	**132.38**	**57**	PKP		**PKPdf**	**23 04 33.7**	**-0.2**
	comp=Z,1.6nm,0.7s,baz=316,slow=4.1,SNR=5.5							
WRA	**Warramunga Arr**	**133.28**	**213**	PKP		**PKPdf**	**23 04 36.0**	**-0.1**
	comp=Z,1.9nm,0.9s,baz=155,slow=1.6,SNR=8.6							
WRAB	**Tennant Creek**	**133.28**	**213**	⇓*e*PKIKP		**PKPdf**	**23 04 35.3**	**-0.9**
BRVK	**Borovoye**	**135.46**	**33**	⇓*i*PKIKP		**PKPdf**	**23 04 40.4**	**+1.2**
ZALV	**Zalesovo Beam**	**141.36**	**23**	PKhKP		PKPpre	23 04 43.2	
	comp=Z,2.3nm,0.8s,baz=306,slow=3.5,SNR=8.1							
ZALV				PKP		**PKPdf**	**23 04 47.9**	**-2.1**
	comp=Z,4.0nm,0.8s,baz=314,slow=2.4,SNR=13							
AAK	**Ala-Archa**	**143.08**	**45**	⇑*e*PKIKP		**PKPdf**	**23 04 52.9**	**-0.7**
AAK	**Ala-Archa**	**143.08**	**45**	*e*PKPdf		**PKPdf**	**23 04 53.2**	**-0.4**
MAKZ	**Makanchi**	**145.24**	**34**	PKIKP		**PKPbc**	**23 04 56.5**	**-0.3**
MAKZ				pmax		pmax		
	comp=Z,62nm,1.3s							
MK31	**Makanchi Array**	**145.41**	**34**	*i* PKIKP		**PKPdf**	**23 04 57.4**	**0.0**
MK31				pmax		pmax		
	comp=Z,57nm,1.2s							
MKAR	**Makanchi Array**	**145.41**	**34**	PKPbc		**PKPab**	**23 04 57.6**	**+0.1**
	comp=Z,38nm,0.9s,baz=323,slow=3.2,SNR=186							
KSH	**Kashi**	**145.42**	**49**	PKPbc		**PKPab**	**23 04 58.5**	**+0.5**
KSH				*e*pPKP		pPKPdf	23 05 08.3	-3.0
KSH				*e*sPKP			23 05 11.8	
KSH				PKS		**PKSdf**	**23 08 32.4**	**-0.9**
KSH				SKS		**SKSdf**	**23 12 02.1**	**-1.5**
KSH				AMB		AMB		
	comp=Z,67nm,5.8s							
KSH				LR		LR		
	comp=Z,80nm,4.8s							
KSH				LR		LR		
	comp=Z,58nm,5.2s							
KSH				LR		LR		
	comp=Z,110nm,6.7s							
PDGK	**Podgornoye**	**145.91**	**41**	PKP2		**PKPab**	**23 04 59.8**	**+0.3**
PDGK				pmax		pmax		
	comp=Z,38nm,1.1s							
KLR	**Kul'dur**	**145.93**	**334**	*c i*PKP2		**PKPbc**	**23 04 58.9**	**+0.1**
IRK	**Irkutsk**	**147.72**	**6**	*e*PKP2		**PKPbc**	**23 05 04.2**	**+0.3**
IRK				pmax		pmax		
	comp=Z,45nm,2.2s							
MOY	**Mondy**	**147.86**	**10**	*e*PKP2		**PKPbc**	**23 05 05.4**	**+1.0**
MOY				pmax		pmax		
	comp=Z,37nm,1.4s							
TLY	**Talaya**	**148.21**	**7**	*e*PKP2		**PKPbc**	**23 05 05.6**	**+0.4**
TLY				pmax		pmax		
	comp=Z,16nm,1.3s							
TLY	**Talaya**	**148.21**	**7**	*e*PKPdf		**PKPdf**	**23 05 02.5**	**+0.6**
TLY				*e*PKPab		**PKiKP**	**23 05 07.5**	**+0.6**
ZAK	**Zakamensk**	**149.44**	**8**	*e*PKP2		**PKPbc**	**23 05 08.7**	**+0.2**
ZAK				pmax		pmax		
	comp=Z,12nm,1.3s							
USRK	**Ussuriysk Ar.**	**149.54**	**327**	PKPbc		**PKPbc**	**23 05 08.8**	**0.0**
	comp=Z,16nm,0.9s,baz=22,slow=3.4,SNR=31							
MJAR	**Matsushiro Arr**	**150.02**	**309**	PKPbc		**PKPbc**	**23 05 09.8**	**-0.5**
	comp=Z,9.3nm,0.9s,baz=93,slow=1.4,SNR=29							
MAJO	**Matsushiro**	**150.02**	**309**	*d i*PKIKP		**PKPbc**	**23 05 10.9**	**+0.6**
MAJO	**Matsushiro**	**150.02**	**309**	*e*PKPdf		**PKPdf**	**23 05 06.6**	**+1.3**
MAJO				*e*PKPbc		**PKPbc**	**23 05 10.9**	**+0.6**
WMQ	**Urumqi**	**150.22**	**33**	PKPbc		**PKPbc**	**23 05 11.4**	**+0.8**
WMQ				PP		PP	23 08 55.0	+10
WMQ				AMB		AMB		
	comp=Z,100nm,4.3s							
WMQ				LR		LR		
	comp=Z,160nm,23.4s							
WMQ				LR		LR		
	comp=Z,170nm,22.0s							
WMQ				LR		LR		
	comp=Z,230nm,21.2s							
HYB	**Hyderabad**	**150.66**	**90**	*i* PKP		**PKPbc**	**23 05 13.0**	**+0.7**
MSHR	**Mys Shultsa**	**151.10**	**326**	⇓*i*PKIKP		**PKPbc**	**23 05 13.1**	**+0.5**
SONM	**Songino Array**	**152.27**	**4**	PKP		**PKPdf**	**23 05 09.7**	**+1.1**
	comp=Z,1.9nm,0.9s,baz=15,slow=0.7,SNR=10							
SONM				PKPbc		**PKPbc**	**23 05 14.6**	**-0.7**
	comp=Z,6.9nm,0.9s,baz=337,slow=1.8,SNR=29							
KSRS	**Korea Array**	**156.41**	**321**	PKP		**PKPdf**	**23 05 15.3**	**+0.9**
	comp=Z,2.7nm,1.0s,baz=37,slow=1.2,SNR=16							
KSRS				PKPab		**PKPab**	**23 05 43.5**	**+0.6**
	comp=Z,2.0nm,0.8s,baz=15,slow=3.2,SNR=6.3							
KSAR	**Wonju Array Be**	**156.44**	**321**	PKIKP		**PKPdf**	**23 05 15.4**	**+0.9**
KSAR	**Wonju Array Be**	**156.44**	**321**	PKP		**PKPdf**	**23 05 15.3**	**+0.9**
KSAR				PKPab		**PKPab**	**23 05 43.5**	**+0.5**
GTA	**Gaotai**	**159.09**	**21**	*e*PKP		**PKPdf**	**23 05 19.0**	**+1.1**
GTA				pPKP		pPKPdf	23 05 29.8	-1.7
HHC	**Hu-ho-hao-te**	**159.29**	**355**	*e*PKP		**PKPdf**	**23 05 15.3**	**-2.8**
HHC				sPKP			23 05 30.3	
HHC				PP		**PP**	**23 09 36.4**	**+0.9**
HHC				SS		SS	23 29 38.1	+1.0
HHC				AMB		AMB		
	comp=Z,82nm,8.7s							
HHC				LR		LR		
	comp=Z,220nm,16.2s							
HHC				LR		LR		
	comp=Z,230nm,16.2s							
HHC				LR		LR		
	comp=Z,240nm,18.7s							
NJ2	**Nanjing**	**165.45**	**326**	*e*PKP		**PKPdf**	**23 05 23.4**	**-0.9**
CD2	**Chengdu**	**168.13**	**24**	PKP		**PKPdf**	**23 05 25.8**	**-0.7**
CMAR	**Chiang Mai Arr**	**169.95**	**98**	PKP		**PKPdf**	**23 05 27.8**	**-0.1**
	comp=Z,0.5nm,0.5s,baz=277,slow=1.7,SNR=7.3							
CMAR				PKPab		**PKPab**	**23 06 43.1**	**+0.1**
	comp=Z,0.7nm,0.5s,baz=275,slow=4.9,SNR=4.7							
KMI	**Kunming**	**172.08**	**50**	PKP		**PKPdf**	**23 05 30.9**	**+1.8**
KMI				sPKP			23 05 39.0	
KMI				LR		LR		
	comp=Z,98nm,21.2s							
KMI				LR		LR		
	comp=Z,200nm,18.7s							
KMI				LR		LR		
	comp=Z,220nm,22.0s							
GYA	**Guiyang**	**173.22**	**22**	PKP		**PKPdf**	**23 05 28.3**	**-1.1**
GYA				PKPab		**PKPab**	**23 06 58.0**	**+0.9**
GYA				PP		**PP**	**23 10 50.9**	**+3.2**
GYA				AMB		AMB		
	comp=Z,120nm,8.2s							
QIZ	**Qiongzhong**	**178.82**	**199**	PKP		**PKPdf**	**23 05 30.0**	**-0.7**
QIZ				PP		PP	23 11 22.5	+8.3
QIZ				LR		LR		
	comp=Z,200nm,17.4s							

*IDC **23** 23:17:49.2±0.9, 3.°45N×79.°25W, h0km, mb3.7/6, mb1 4.1/10, mb1mx3.9/28, mbtmp4.0/10, ML3.6/4, MS3.0/1, Ms1 3.0/1, ms1mx2.6/35, Error ellipse: s-maj=27.3km s-min=20.0km az=49.0*
*ISCJB **23** 23:17:50.4±0.6, 3.°48N±0.°04×79.°17W±0.°04, h19km, mb3.6/6, Error ellipse: s-maj=6.3km s-min=5.3km az=153.5*
*RSNC **23** 23:17:50.5±1.0, 3.°48N×79.°16W, h4km±9km, ML3.3*

ISC 23 23:17:51.9±0.7, 3.°46N±0.°05×79.°16W±0.°05, h19km, n28, σ1§42/33, mb3.8/6, South of Panama

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
GRGC	**Isla de Gorgon**	**1.09**	**114**		*eP*		**Pn**	**23 18 10.0**	**-2.2**
GRGC					*i*			23 18 11.0	
	comp=Z,261nm,0.3s								
GRGC					*eS*		**Sb**	**23 18 23.8**	**-2.3**
TUMC	**Tumaco**	**1.68**	**165**		*eP*		**Pn**	**23 18 20.2**	**-0.1**
TUMC					*eS*		**Sn**	**23 18 41.7**	**+0.3**
TUMC					*i*			23 18 43.9	
	comp=Z,111nm,0.4s								
MALC	**Bahia Malaga**	**1.91**	**73**		*eP*		**Pn**	**23 18 22.6**	**-0.8**
MALC					*eS*		**Sn**	**23 18 46.6**	**-0.3**
MAPC	**Malpelo**	**2.50**	**283**		*eP*		**Pn**	**23 18 29.8**	**-1.8**
MAPC					*i*			23 18 40.5	
	comp=Z,135nm,0.2s								
CRUC	**La Cruz**	**2.90**	**130**		*eP*		**Pn**	**23 18 36.1**	**-1.3**
OTAV	**Otavalo**	**3.28**	**167**		*eP*		**Pn**	**23 18 42.8**	**+0.1**
OTAV					*i*			23 19 23.9	
	comp=Z,33nm,0.5s								
FLOC	**Florencia**	**3.97**	**118**		*eS*		**Sn**	**23 19 37.8**	**-0.2**
FLOC					*i*			23 19 40.8	
	comp=Z,85nm,0.6s								
TOLC	**Tolima**	**3.99**	**74**		*eP*		**Pn**	**23 18 52.0**	**-0.4**
PRAC	**Prado**	**4.28**	**86**		*i*		**Pn**	**23 18 58.8**	**+2.8**
	comp=Z,280nm,0.2s								
PRAC					*eS*		**Sn**	**23 19 45.1**	**-0.4**
HELC	**Santa Helena**	**4.53**	**53**		*eP*		**Pn**	**23 18 58.4**	**-1.3**
NORC	**Norcasia**	**4.76**	**64**		*eS*		**Sn**	**23 19 58.1**	**+0.6**
ROSC	**El Rosal**	**5.02**	**74**		Pn		**Pn**	**23 19 08.8**	**+2.2**
	comp=Z,18nm,0.3s,baz=320,slow=5.9,SNR=22								
ROSC					Sn		**Sn**	**23 20 07.2**	**+2.8**
	baz=274,slow=19,SNR=2.2								
ROSC					LR		LR	23 21 29.2	
	comp=Z,153nm,18.3s,baz=256,slow=43								
CHIC	**Chingaza**	**5.54**	**78**		*eS*		**Sn**	**23 20 17.8**	**+0.5**
SDV	**Santo Domingo**	**10.05**	**57**		Pn		**Pn**	**23 20 16.7**	**+1.3**
	comp=Z,2.3nm,0.3s,baz=184,slow=19,SNR=3.2								
SDV					Sn		**Sn**	**23 22 05.4**	**-2.5**
	comp=Z,0.9nm,0.3s,baz=254,slow=20,SNR=3.6								
NNA	**Nana**	**15.52**	**171**		Pn		**Pn**	**23 21 27.6**	**-2.3**
	comp=Z,0.7nm,0.3s,baz=299,slow=19,SNR=1.9								
PTGA	**Pitinga**	**19.63**	**102**		P		**Pn**	**23 22 20.7**	**-0.4**
	comp=Z,0.7nm,0.3s,baz=280,slow=14,SNR=9.7								
LPAZ	**La Paz**	**22.45**	**151**		P		**P**	**23 22 51.4**	**+0.8**
	comp=Z,2.6nm,0.7s,baz=345,slow=13,SNR=12								
SIV	**San Ignacio**	**26.34**	**138**		P		**P**	**23 23 28.5**	**+1.5**
	comp=Z,2.6nm,0.9s,baz=335,slow=8.1,SNR=4.0								
TXAR	**Lajitas Array**	**34.68**	**320**		PcP		**PcP**	**23 27 16.1**	**+1.4**
	comp=Z,0.2nm,0.6s,baz=140,slow=3.4,SNR=2.9								
YKA	**Yellowknife Ar**	**64.49**	**343**		P		**P**	**23 28 27.3**	**+0.3**
	comp=Z,0.8nm,0.8s,baz=114,slow=9.8,SNR=4.6								
ESDC	**Sonseca Array**	**76.42**	**50**		P		**P**	**23 29 41.3**	**+0.7**
	comp=Z,0.2nm,0.5s,baz=264,slow=6.6,SNR=3.1								
ILAR	**Eielson Array**	**77.51**	**336**		P		**P**	**23 29 46.7**	**+0.6**
	comp=Z,0.8nm,0.8s,baz=114,slow=4.0,SNR=8.3								
TORD	**Torodi Ar. Bea**	**80.33**	**77**		P		**P**	**23 30 02.1**	**-0.4**
	comp=Z,0.4nm,0.7s,baz=276,slow=2.8,SNR=3.3								
ZALV	**Zalesovo Beam**	**121.25**	**11**		PKP		**PKPdf**	**23 36 44.5**	**+0.8**
	comp=Z,0.4nm,0.5s,baz=299,slow=3.0,SNR

ϕ_e18.00000°, δ10.00000°, λ-52.00000°. Principal axes: T 1.5600, Plg37.0000°, Azm255.0000°; N 0.1840, Plg6.0000°, Azm160.0000°; P -1.7440, Plg52.0000°, Azm63.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

*ISCJB **23** 23:25:49.4±0.7, 8.94S±0.10×109.7W±0.1, h20km, mb4.5/18, MS4.3/19 Error ellipse: s-maj=18.7km s-min=11.1km az=36.3*

ISC 23 23:25:50.7±0.8, 9.1S±0.1×109.7W±0.1, h20km, n51, σ1°35/25, mb4.5/18, MS4.3/19, Central East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
RKT	**Rikitea**	**27.94**	**237**	*e*S		**S**	**23 36 23.9**	**+0.9**
	183nm,28.2s							
RKT				*e*LR		LR	23 38 50.8	
	3μm,27.5s,baz=59							
RKT	**Rikitea**	**27.94**	**237**	*e*T		T	00 01 03.6	
	2.5nm,0.3s							
CMIG	**Matias Romero**	**29.83**	**29**	LR		LR	23 40 00.7	
	comp=Z,312nm,21.7s,baz=208,slow=28							
TAOE	**Nuku Hiva Isla**	**30.05**	**268**	*e*LR		LR	23 39 43.8	
	723nm,26.5s							
ATAH	**Atahualpa**	**31.07**	**89**	LR		LR	23 41 32.0	
	comp=Z,627nm,18.1s,baz=269,slow=30							
NNA	**Nana**	**32.45**	**98**	LR		LR	23 41 58.4	
	comp=Z,248nm,18.4s,baz=266,slow=30							
ROSC	**El Rosal**	**37.89**	**70**	LR		LR	23 45 29.4	
	comp=Z,370nm,21.3s,baz=236,slow=31							
TXAR	**Lajitas Array**	**38.60**	**8**	P		**P**	**23 33 13.7**	**+1.0**
	0.5nm,0.8s,baz=181,slow=13,SNR=3.8							
TXAR					LR	LR	23 45 57.6	
	comp=Z,444nm,20.4s,baz=0.0,slow=31							
PPT	**Papeete**	**39.63**	**253**	LR		LR	23 45 22.0	
	comp=Z,667nm,18.5s,baz=52,slow=30							
PPT2	**Papeete2**	**39.63**	**253**	*e*S		**S**	**23 39 25.1**	**+1.1**
	125nm,25.8s							
PPT2				*e*LQ		LQ	23 42 36.0	
	2μm,29.5s							
PPT2				*e*LR		LR	23 44 16.9	
	2μm,25.0s,baz=78							
JCT	**Junction City**	**40.44**	**13**	*e*P		**P**	**23 33 30.1**	**+2.2**
TBI	**Tubuai**	**40.57**	**245**	*e*S		**S**	**23 39 39.8**	**+2.1**
	216nm,28.0s							
TBI				*e*LQ		LQ	23 42 55.2	
	1μm,29.8s							
TBI				*e*LR		LR	23 44 41.4	
	2μm,27.8s,baz=69							
TBI	**Tubuai**	**40.57**	**245**	*e*T		T	00 16 54.7	
	2.9nm,0.2s							
MNTX	**Cornudas Mount**	**40.73**	**6**	*e*P		**P**	**23 33 29.9**	**-0.4**
	8.1nm,1.2s							
LPAZ	**La Paz**	**41.15**	**104**	LR		LR	23 46 52.8	
	comp=Z,530nm,19.7s,baz=258,slow=30							
LVC	**Limon Verde**	**41.37**	**114**	P		**P**	**23 33 37.0**	**+0.8**
	5.1nm,0.4s							
PV01	**Paradox Valley**	**46.95**	**1**	*e*P		**P**	**23 34 21.6**	**+1.1**
	505nm,1.3s							
LRAL	**Lakeview Retre**	**47.12**	**26**	P		**P**	**23 34 24.2**	**+2.6**
	4.6nm,0.7s							
SIV	**San Ignacio**	**47.90**	**103**	LR		LR	23 51 15.2	
	comp=Z,292nm,20.2s,baz=292,slow=32							
ISCO	**Idaho Springs**	**48.75**	**4**	*e*P		**P**	**23 34 34.8**	**+0.3**
	4.0nm,1.0s							
O20A	**White River Ci**	**48.95**	**2**	*e*P		**P**	**23 34 36.3**	**+0.4**
	31nm,1.6s							
PDAR	**Pinedale Array**	**51.56**	**0**	P		**P**	**23 34 55.7**	**0.0**
	0.4nm,0.5s,baz=163,slow=6.5,SNR=1.7							
CPUP	**Villa Florida**	**52.42**	**116**	LR		LR	23 52 54.6	
	comp=Z,603nm,21.4s,baz=282,slow=31							
MFID	**Camas Ranch**	**52.51**	**354**	*e*P		**P**	**23 35 02.0**	**-0.6**
	10nm,1.2s							
HLID	**Hailey**	**52.53**	**356**	*e*P		**P**	**23 35 01.2**	**-1.6**
	4.2nm,1.2s							
MOOW	**Moose Ponds**	**52.55**	**359**	*e*P		**P**	**23 35 01.8**	**-1.3**
	7.9nm,1.4s							
IMW	**Indian Meadow**	**52.71**	**359**	*e*P		**P**	**23 35 03.8**	**-0.4**
	12nm,1.3s							
FLWY	**Flagg Ranch**	**52.89**	**359**	*e*P		**P**	**23 35 05.3**	**-0.2**
	20nm,1.3s							
EGMT	**Eagleton**	**56.82**	**360**	*e*P		**P**	**23 35 32.8**	**-1.0**
	25nm,1.5s							
ULM	**Lac du Bonnet**	**60.27**	**10**	LR		LR	23 59 09.9	
	comp=Z,181nm,20.1s,baz=154,slow=33							
BDFB	**Brasilia**	**60.47**	**103**	LR		LR	23 58 37.0	
	comp=Z,147nm,20.9s,baz=167,slow=32							
AFI	**Afiamalu**	**60.87**	**259**	LR		LR	23 56 09.8	
	comp=Z,222nm,18.4s,baz=78,slow=30							
URZ	**Iewera**	**71.24**	**223**	LR			00 04 08.3	
	comp=Z,381nm,18.3s,baz=104,slow=32							
YKA	**Yellowknife Ar**	**71.43**	**358**	P		**P**	**23 37 08.6**	**-0.7**
	0.7nm,0.9s,baz=155,slow=4.8,SNR=2.4							
YKA					LR	LR	00 05 36.2	
	comp=Z,28nm,18.2s,baz=180,slow=33							
SCHQ	**Schefferville**	**73.07**	**24**	LR		LR	00 08 15.3	
	comp=Z,322nm,19.9s,baz=230,slow=35							
ILAR	**Eielson Array**	**78.69**	**345**	P		**P**	**23 37 48.4**	**-2.8**
	0.3nm,0.7s,baz=149,slow=4.2,SNR=4.3							
ILAR					LR	LR	00 05 32.9	
	comp=Z,225nm,20.3s,baz=144,slow=30							
INK	**Inuvik**	**78.99**	**351**	P		**P**	**23 37 52.4**	**-0.3**
	0.8nm,0.5s,baz=168,slow=2.7,SNR=2.2							
VNDA	**Vanda**	**80.89**	**193**	LR		LR	00 06 44.6	
	comp=Z,95nm,19.1s,baz=102,slow=30							
DZM	**Mont Dzumac**	**80.98**	**249**	LR		LR	00 06 28.2	
	comp=Z,220nm,21.7s,baz=43,slow=30							
QSPA	**South Pole Qui**	**81.03**	**180**	*e*P		**P**	**23 38 02.9**	**-1.2**
	63nm,1.4s							
H11S2	**WAKE ISLAND Hy**	**86.81**	**289**	T		T	01 14 51.5	
	baz=99							
H11S1	**WAKE ISLAND Hy**	**86.81**	**289**	T		T	01 14 52.3	
	baz=99							
H11S3	**WAKE ISLAND Hy**	**86.83**	**289**	T		T	01 14 55.5	
	baz=99							
H11N3	**WAKE ISLAND Hy**	**86.84**	**290**	T		T	01 14 57.2	
	baz=102							
H11N2	**WAKE ISLAND Hy**	**86.86**	**290**	T		T	01 14 59.6	
	baz=102							
H11N1	**WAKE ISLAND Hy**	**86.86**	**290**	T		T	01 14 59.9	
	baz=102							
HNR	**Honiara**	**88.86**	**261**	LR		LR	00 10 39.0	
	comp=Z,118nm,18.3s,baz=32,slow=30							
BRTR	**Keskin Array B**	**135.29**	**41**	PKP		**PKPdf**	**23 45 09.4**	**-0.3**
	0.2nm,0.5s,baz=212,slow=6.9,SNR=1.9							
MKAR	**Makanchi Array**	**141.01**	**347**	PKhKP		PKPpre	23 45 15.7	
	0.4nm,0.8s,baz=39,slow=9.3,SNR=3.1							
GEYT	**Alibeck**	**149.22**	**19**	PKPbc		**PKPbc**	**23 45 37.0**	**-1.5**
	1.6nm,0.7s,baz=336,slow=3.2,SNR=3.8							
CMAR	**Chiang Mai Arr**	**150.67**	**292**	PKPbc		**PKPbc**	**23 45 41.1**	**-1.3**
	0.7nm,0.3s,baz=29,slow=2.1,SNR=5.4							

MEX 23 23:32:15.7±0.8, 13.39N×90.21W, h20km±999km, MD4.1, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op	ISC	h m s	ISC
CCIG	**Comitan**	**3.42**	**327**	*e*P		Pn	23 33 06.2	-2.0
CCIG				*i* S		Sn	23 33 44.7	-3.6

IDC 23 23:37:00.9±5.1, 8.50S×109.25W, h0km, mb3.5/3, mb1 3.9/3, mb1mx3.6/19, mbtmp3.5/3, MS3.7/3, Ms1 3.7/3, ms1mx3.3/15, Error ellipse: s-maj=279.1km s-min=51.2km az=110.0, Central East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op	ISC	h m s	ISC
RKT	**Rikitea**	**28.63**	**237**	*e*LR		LR	23 50 17.2	
	151nm,28.2s							
TXAR	**Lajitas Array**	**37.99**	**8**	P		P	23 44 20.8	-0.1
	0.3nm,0.7s,baz=173,slow=10.0,SNR=3.0							
PPT	**Papeete**	**40.23**	**253**	LR		LR	23 56 08.5	
	comp=Z,68nm,20.9s,baz=130,slow=28							
PPT2	**Papeete2**	**40.23**	**253**	*e*LR		LR	23 55 38.2	
	115nm,24.8s							
TBI	**Tubuai**	**41.22**	**244**	*e*LR		LR	23 56 00.4	
	162nm,26.8s							
PLCA	**Paso Flores**	**46.99**	**139**	LR		LR	00 00 11.5	
	comp=Z,115nm,18.6s,baz=338,slow=30							
RAR	**Rarotonga**	**50.24**	**250**	LR		LR	00 02 03.4	
	comp=Z,65nm,18.1s,baz=267,slow=30							
PDAR	**Pinedale Array**	**51.02**	**360**	P		P	23 46 04.5	-0.5
	0.3nm,0.6s,baz=193,slow=3.7,SNR=3.7							
ILAR	**Eielson Array**	**78.28**	**344**	P		P	23 49 02.9	+0.5
	0.6nm,0.8s,baz=144,slow=5.2,SNR=6.2							
H11S2	**WAKE ISLAND Hy**	**87.07**	**289**	T		T	01 25 58.7	
	baz=103							
H11S1	**WAKE ISLAND Hy**	**87.08**	**289**	T		T	01 25 59.8	
	baz=103							
H11S3	**WAKE ISLAND Hy**	**87.09**	**289**	T		T	01 25 58.0	
	baz=103							
H11N3	**WAKE ISLAND Hy**	**87.09**	**290**	T		T	01 26 01.6	
	baz=98							
H11N2	**WAKE ISLAND Hy**	**87.10**	**290**	T		T	01 26 07.7	
	baz=98							
H11N1	**WAKE ISLAND Hy**	**87.11**	**290**	T		T	01 26 05.7	
	baz=98							
CMAR	**Chiang Mai Arr**	**150.89**	**293**	PKP		PKPdf	23 56 51.1	+0.2
	0.3nm,0.4s,baz=133,slow=6.4,SNR=2.0							
CMAR					PKPbc	PKPbc	23 56 55.7	-0.9
	1.1nm,0.8s,baz=38,slow=1.2,SNR=7.2							

*NIED **23** 23:56:00, 38.40N×141.90E, h59km, Mw4.1 Best double couple: Mo1.53000×10^{15} NP1:ϕ_s198.00000°, δ43.00000°, λ87.00000°. NP2:ϕ_s22.00000°, δ47.00000°, λ93.00000°.*

*ISCJB **23** 23:56:14.6±0.7, 38.41N±0.04×141.99E±0.08, h63km±4km, mb4.2/27, Error ellipse: s-maj=10.6km s-min=4.8km az=22.2*

*JMA **23** 23:56:15.9±0.1, 38.41N×141.90E, h59km±1km, M4.2*

JMA Felt III J1.

*IDC **23** 23:56:16.3±0.6, 38.43N×141.86E, h63km±4km, mb3.9/23, mb1 4.0/29, mb1mx3.9/63, mbtmp4.2/29, MS3.1/4, Ms1 3.1/4, ms1mx2.8/38, Error ellipse: s-maj=13.8km s-min=10.9km az=110.0*

*NEIC **23** 23:56:17.1±0.6, 38.45N×141.93E, h70km±5km, mb4.4/4, Error ellipse: s-maj=8.4km s-min=4.6km az=124.0*

NEIC Recorded [3 JMA] in Iwate and Miyagi.

ISC 23 23:56:15.9±0.6, 38.40N±0.04×141.99E±0.06, h61km±5km, n65, σ1°06/77, mb4.2/27, 1C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op	ISC	h m s	ISC
JIO	**Ouri**	**0.51**	**277**	P		**Pn**	**23 56 27.2**	**-0.8**
JIO					S	**Sn**	**23 56 35.1**	**-1.7**
OFUJ	**Ofunato**	**0.73**	**340**	P		**Pn**	**23 56 30.1**	**-0.4**
OFUJ					S	**Sn**	**23 56 40.3**	**-0.9**
JMK	**Ichinoseki**	**0.82**	**313**	P		**Pn**	**23 56 31.1**	**-0.5**
JMK				*e*S		**Sn**	**23 56 42.1**	**-1.1**
JOU	**Okura**	**1.04**	**269**	P		**Pn**	**23 56 33.7**	**-0.8**
JOU				*e*S		**Sn**	**23 56 47.0**	**-1.4**
JMM	**Marumori**	**1.08**	**241**	P		**Pn**	**23 56 33.9**	**-1.1**
JMM				*e*S		**Sn**	**23 56 47.2**	**-2.0**
JOM	**Ohasama**	**1.20**	**333**	P		**Pn**	**23 56 36.3**	**-0.3**
JOM				*e*S		**Sn**	**23 56 51.5**	**-0.6**
JFK	**Kawauchi**	**1.36**	**221**	P		**Pn**	**23 56 38.0**	**-0.7**
JFK				*e*S		**Sn**	**23 56 54.8**	**-1.0**
JYK	**Kaneyama**	**1.38**	**293**	P		**Pn**	**23 56 38.3**	**-0.6**
JRG	**Rokugo**	**1.45**	**314**	P		**Pn**	**23 56 39.3**	**-0.7**
JYS	**Shirataka**	**1.52**	**264**	P		**Pn**	**23 56 40.3**	**-0.6**
JFT	**Otama**	**1.57**	**237**	P		**Pn**	**23 56 41.3**	**-0.3**
JYA	**Atsumi**	**1.80**	**277**	P		**Pn**	**23 56 44.0**	**-0.6**
MAJO	**Matsushiro**	**3.53**	**240**	*e*Pn		**Pn**	**23 57 09.6**	**+1.3**
MAT	**Matsushiro**	**3.53**	**240**	P		**Pn**	**23 57 09.5**	**+1.2**
MAT				*e*S		**Sn**	**23 57 50.9**	**+2.0**
MJAR	**Matsushiro Arr**	**3.53**	**240**	P		**Pn**	**23 57 09.4**	**+1.1**
	12nm,0.3s,baz=34,slow=14,SNR=143							
MJAR					S	Sn	23 57 59.2	+10
	5.3nm,0.3s,baz=152,slow=14,SNR=5.1							
MJAR					LR	LR	23 58 50.9	
	comp=Z,166nm,21.5s,baz=75,slow=45							
ERM	**Erimo**	**3.72**	**14**	*e*Pn		**Pn**	**23 57 11.9**	**+1.1**
JHJ	**Hachijo jima 2**	**5.56**	**199**	P		**Pn**	**23 57 36.5**	**+0.4**
	8.4nm,0.3s,baz=140,slow=5.4,SNR=2.6							
JHJ					S	**Sn**	**23 58 34.8**	**-3.9**
	35nm,0.3s,baz=73,slow=19,SNR=4.3							
ASAJ	**Asahikawa**	**5.73**	**4**	P		**Pn**	**23 57 37.5**	**-0.8**
	baz=245,slow=8.7							
ASAJ					S	**Sn**	**23 58 40.1**	**-2.5**
	3.2nm,0.3s,baz=349,slow=28,SNR=3.9							
ASAJ	**Asahikawa**	**5.73**	**4**	*e*Pn		**Pn**	**23 57 37.5**	**-0.8**
	36nm,0.4s							
ASAJ				*e*Sn		**Sn**	**23 58 41.7**	**-1.0**
USRK	**Ussuriysk Ar.**	**9.49**	**311**	P		**Pn**	**23 58 30.2**	**+0.4**
	1.3nm,0.3s,baz=116,slow=14,SNR=15							
USRK					LR	LR	00 02 03.8	
	comp=Z,91nm,19.1s,baz=57,slow=37							
JNU	**Nakatsue**	**10.45**	**243**	P		**Pn**	**23 58 43.7**	**+0.8**
	0.2nm,0.3s,baz=53,slow=10,SNR=2.9							
KSRS	**Korea Array**	**11.15**	**270**	P		**Pn**	**23 58 55.0**	**+2.5**
	1.6nm,0.3s,baz=82,slow=14,SNR=15							
KSRS					LR	LR	00 02 53.7	
	comp=Z,43nm,20.1s,baz=74,slow=36							
KSAR	**Wonju Array Be**	**11.19**	**269**	P		**Pn**	**23 58 55.0**	**+2.0**
KLR	**Kul'dur**	**13.10**	**329**	P		**Pn**	**23 59 18.6**	**-0.3**
	0.1nm,0.3s,baz=153,slow=14,SNR=2.5							
MA2	**Magadan**	**21.93**	**12**	P		**P**	**00 01 03.4**	**-0.5**
	4.8nm,0.3s,baz=188,slow=15,SNR=4.4							
SEY	**Seymchan**	**25.37**	**11**	P		**P**	**00 01 36.7**	**-0.2**
	3.8nm,0.9s,baz=205,slow=7.4,SNR=8.7							
SONM	**Songino Array**	**27.43**	**302**	P		**P**	**00 01 55.3**	**-0.6**
	0.9nm,0.5s,baz=104,slow=8.6,SNR=5.7							
ENH	**Enshi**	**27.93**	**263**	*e*P		**P**	**00 01 60.0**	**-0.4**
	9.5nm,0.6s							
H11N2	**WAKE ISLAND Hy**	**28.49**	**124**	T		T	00 32 42.7	
	baz=317,slow=75,SNR=464							
H11N1	**WAKE ISLAND Hy**	**28.50**	**124**	T		T	00 32 43.4	
	baz=317,slow=75,SNR=680							
H11N3	**WAKE ISLAND Hy**	**28.51**	**124**	T		T	00 32 28.4	
	baz=317,slow=75,SNR=519							
H11S1	**WAKE ISLAND Hy**	**29.25**	**126**	T		T	00 33 19.5	
	baz=318,slow=76,SNR=124							
H11S3	**WAKE ISLAND Hy**	**29.25**	**126**	T		T	00 33 24.7	
	baz=318,slow=76,SNR=227							
H11S2	**WAKE ISLAND Hy**	**29.27**	**126**	T		T	00 33 19.9	
	baz=318,slow=76,SNR=112							
ZALV	**Zalesovo Beam**	**41.35**	**311**	P		**P**	**00 03 55.1**	**-0.4**
	4.1nm,0.5s,baz=88,slow=8.2,SNR=26							
ZALV					PcP	**PcP**	**00 05 52.4**	**-0.3**
	1.1nm,0.3s,baz=102,slow=3.8,SNR=5.3							
MKAR	**Makanchi Array**	**43.80**	**301**	P		**P**	**00 04 14.5**	**-1.0**
	1.9nm,0.7s,baz=85,slow=10,SNR=16							
MKAR					pP	**pP**	**00 04 29.5**	**-1.6**
	2.0nm,0.7s,baz=84,slow=11,SNR=7.3							
COLA	**College**	**47.69**	**33**	*e*P		**P**	**00 04 45.9**	**+0.1**
	2.5nm,0.4s							
ILAR	**Eielson Array**	**48.10**	**33**	P		**P**	**00 04 49.9**	**+0.8**
	1.2nm,0.7s,baz=270,slow=6.6,SNR=18							
ILAR					pP	**pP**	**00 05 06.0**	**+1.1**
	1.4nm,0.7s,baz=268,slow=6.6,SNR=8.4							
AAK	**Ala-Archa**	**50.25**	**298**	*e*P		**P**	**00 05 06.5**	**+0.5**
	1.5nm,0.7s							
INK	**Inuvik**	**52.97**	**28**	P		**P**	**00 05 25.8**	**+0.2**
	1.9nm,0.9s,baz=312,slow=5.5,SNR=4.8							
INK					pP	**pP**	**00 05 42.4**	**+0.7**
	1.3nm,0.5s,baz=276,slow=6.7,SNR=3.4							
ABKAR	**Akbulak array**	**57.42**	**310**	*e*P		**P**	**00 05 57.1**	**-0.9**
	1.2nm,0.5s							
ABKAR				*e*			00 06 14.7	
FITZ	**Fitzroy Crossi**	**58.26**	**198**	P		**P**	**00 06 04.3**	**+0.2**
	1.2nm,0.7s,baz=18,slow=3.2,SNR=4.2							
FITZ					LR	LR	00 28 51.3	
	comp=Z,97nm,21.0s,baz=137,slow=34							
WRA	**Warramunga Arr**	**58.47**	**188**	P		**P**	**00 06 05.2**	**-0.4**
	5.2nm,0.5s,baz=6.0,slow=7.1,SNR=56							
ASAR	**Alice Springs**	**62.20**	**188**	P		**P**	**00 06 30.9**	**-0.2**
	2.0nm,0.7s,baz=7.8,slow=5.4,SNR=30							
YKA	**Yellowknife Ar**	**62.40**	**31**	P		**P**	**00 06 32.1**	**+0.2**
	0.8nm,0.6s,baz=308,slow=6.5,SNR=6.2							
ARCES	**ARCESS Array B**	**62.88**	**339**	P		**P**	**00 06 35.1**	**0.0**
	0.5nm,0.5s,baz=46,slow=7.2,SNR=6.2							
FINES	**FINESS Array B**	**67.82**	**332**	P		**P**	**00 07 06.6**	**-0.4**
	2.9nm,0.7s,baz=35,slow=7.8,SNR=14							
KBZ	**Khabaz**	**70.36**	**311**	P		**P**	**00 07 23.4**	**+0.3**
	2.0nm,0.7s,baz=190,slow=6.1,SNR=3.4							
HFS	**Hagfors**	**73.03**	**336**	P		**P**	**00 07 38.4**	**-0.4**
	2.3nm,0.4s,baz=48,slow=4.6,SNR=28							
NB2	**NORSAR Subarra**	**73.11**	**337**	P		**P**	**00 07 39.0**	**-0.3**
	comp=Z,4.3nm,0.8s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**73.11**	**337**	P		**P**	**00 07 39.1**	**-0.2**
	comp=Z,3.6nm,0.8s,baz=38,slow=5.8,SNR=8.8							
AKASG	**Malin Array Be**	**73.50**	**322**	P		**P**	**00 07 41.3**	**-0.4**
	comp=Z,1.0nm,0.4s,baz=46,slow=6.3,SNR=9.7							
PDAR	**Pinedale Array**	**76.39**	**46**	P		**P**	**00 07 59.9**	**+1.0**
	comp=Z,1.4nm,0.5s,baz=269,slow=1.9,SNR=17							
PDAR					pP	**pP**	**00 08 16.8**	**+1.1**
	comp=Z,1.0nm,0.5s,baz=266,slow=1.0,SNR=6.3							
BURAR	**Bucovina Array**	**77.53**	**322**	*i*P		**P**	**00 08 04.9**	**-0.1**
BRTR	**Keskin Array B**	**78.29**	**312**	P		**P**	**00 08 09.3**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=115,slow=3.8,SNR=5.3							
BRTR					pP	**pP**	**00 08 26.1**	**-0.3**
	comp=Z,0.3nm,0.5s,baz=76,slow=3.7,SNR=2.1							
ARR	**Arges**	**79.39**	**320**	*i*P		**P**	**00 08 16.9**	**+1.6**
DPC	**Dobruska-Polom**	**79.55**	**328**	*e*P		**P**	**00 08 16.9**	**+0.9**
PVCC	**Panska Ves**	**80.13**	**329**	*e*P		**P**	**00 08 20.1**	**+1.0**
PRU	**Pruhonice**	**80.56**	**329**	*e*P		**P**	**00 08 22.3**	**+0.9**
KHC	**Kasperske Hory**	**81.62**	**329**	*e*P		**P**	**00 08 27.3**	**+0.2**
GERES	**GERESS Array B**	**81.79**	**328**	P		**P**	**00 08 27.7**	**-0.5**
	comp=Z,0.8nm,0.6s,baz=46,slow=5.8,SNR=7.9							
EKA	**Eskdalemuir Ar**	**82.00**	**341**	P		**P**	**00 08 29.0**	**0.0**
	comp=Z,1.4nm,0.7s,baz=37,slow=4.8,SNR=3.7							
DAVOX	**Davos/Dischmat**	**85.00**	**329**	P		**P**	**00 08 44.9**	**+0.2**
	comp=Z,1.6nm,0.7s,baz=31,slow=12,SNR=2.6							
TXAR	**Lajitas Array**	**88.93**	**53**	P		**P**	**00 09 05.0**	**+0.9**
	comp=Z,0.8nm,0.6s,baz=288,slow=3.2,SNR=12							
TXAR					pP	**pP**	**00 09 22.4**	**+1.1**
	comp=Z,0.7nm,0.7s,baz=262,slow=3.0,SNR=5.6							
LPAZ	**La Paz**	**145.60**	**59**	PKPbc		**PKPab**	**00 15 49.0**	**-0.1**
	comp=Z,3.3nm,0.8s,baz=304,slow=2.5,SNR=14							

*IDC **24** 00:00:09.0±0.9, 10.56S×164.33E, h0km, mb4.2/16, mb1 4.3/19, mb1mx4.1/43, mbtmp4.2/19, ML4.4/3, Error ellipse: s-maj=26.2km s-min=17.7km az=134.0*

*ISCJB **24** 00:00:10.9±0.4, 10.62S±0.05×164.29E±0.05, h24km, mb4.4/31, Error ellipse: s-maj=7.8km s-min=7.0km az=160.3*

*NEIC **24** 00:00:15.1±1.1, 10.57S×164.26E, h41km±10km, mb4.4/16, Error ellipse: s-maj=8.1km s-min=7.7km az=134.0*

ISC 24 00:00:12.8±0.5, 10.57S±0.07×164.30E±0.08, h24km, n46, σ0°78/46, mb4.3/31, Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op	ISC	h m s	ISC
HNR	**Honiara**	**4.43**	**284**	Pn		**Pn**	**00 01 19.3**	**+0.8**
	39nm,0.3s,baz=148,slow=19,SNR=13							
HNR				Sn		**Sn**	**00 02 11.0**	**+1.6**
	88nm,0.3s,baz=170,slow=11,SNR=7.2							
HNR	**Honiara**	**4.43**	**284**	*e*P		**Pn**	**00 01 18.0**	**-0.5**
DZM	**Mont Dzumac**	**11.62**	**170**	Pn		**Pn**	**00 02 58.5**	**+1.1**
	4.0nm,0.3s,baz=356,slow=16,SNR=58							
DZM				Sn		**Sn**	**00 05 06.2**	**-0.3**
	0.2nm,0.3s,baz=39,slow=9.7,SNR=2.1							
PMG	**Port Moresby**	**16.92**	**272**	*e*Pn		**P**	**00 04 08.7**	**-1.3**
EIDS	**Eidsvold**	**19.33**	**219**	*e*P		**Pn**	**00 04 38.0**	**+0.3**
	5.5nm,0.7s							
CTA	**Charters Tower**	**19.79**	**239**	P		**Pn**	**00 04 42.0**	**-1.2**
	0.3nm,0.3s,baz=68,slow=19,SNR=3.9							
CTAO	**Charters Tower**	**19.79**	**239**	*e*P		**P**	**00 04 41.8**	**+0.2**
	5.8nm,0.4s							
H11S2	**WAKE ISLAND Hy**	**28.97**	**5**	T		T	00 36 33.4	
	baz=183							
H11S3	**WAKE ISLAND Hy**	**28.97**	**5**	T		T	00 36 34.8	
	baz=183							
H11S1	**WAKE ISLAND Hy**	**28.99**	**5**	T		T	00 36 34.7	
	baz=183							
WRAB	**Tennant Creek**	**30.31**	**249**	*e*P		**P**	**00 06 22.6**	**0.0**
	4.0nm,0.9s							
WRA	**Warramunga Arr**	**30.32**	**249**	P		**P**	**00 06 22.8**	**+0.1**
	0.4nm,0.4s,baz=80,slow=9.1,SNR=5.8							
ASAR	**Alice Springs**	**31.75**	**242**	P		**P**	**00 06 34.0**	**-1.3**
	0.6nm,0.5s,baz=66,slow=10.0,SNR=10							
FITZ	**Fitzroy Crossi**	**38.13**	**254**	P		**P**	**00 07 29.9**	**-0.5**
	5.3nm,0.9s,baz=96,slow=9.2,SNR=8.3							
MAJO	**Matsushiro**	**52.90**	**334**	*e*P		**P**	**00 09 28.0**	**+1.0**
	3.1nm,0.8s							
JNU	**Nakatsue**	**53.87**	**325**	P		**P**	**00 09 34.1**	**-0.1**
	3.0nm,0.7s,baz=121,slow=6.1,SNR=4.3							
KSRS	**Korea Array**	**58.69**	**326**	P		**P**	**00 10 08.6**	**+0.2**
	0.6nm,0.4s,baz=131,slow=6.8,SNR=4.9							
KSAR	**Wonju Array Be**	**58.70**	**326**	P		**P**	**00 10 08.6**	**+0.1**
USRK	**Ussuriysk Ar.**	**61.89**	**334**	P		**P**	**00 10 30.8**	**+0.5**
	1.7nm,0.6s,baz=142,slow=9.6,SNR=6.4							
**P

	4.1nm,0.7s								
YHNB	**Yeheng**	**34.33**	**349**	*e*P		**P**		**00 15 59.1**	**+0.7**
	6.3nm,1.0s								
MAJO	**Matsushiro**	**46.49**	**11**	*e*P		**P**		**00 17 38.9**	**0.0**
MIDW	**Midway**	**64.43**	**53**	*e*P		**P**		**00 19 48.8**	**+0.6**
	42nm,0.6s								
MKAR	**Makanchi Array**	**69.12**	**328**	P		**P**		**00 20 19.1**	**+1.3**
	1.8nm,0.7s,baz=124,slow=7.8,SNR=16								
MKAR	**Makanchi Array**	**69.12**	**328**	P		**P**		**00 20 19.1**	**+1.3**
MA2	**Magadan**	**70.92**	**12**	P		**P**		**00 20 28.8**	**+0.2**
	2.9nm,0.6s								
ZALV	**Zalesovo Beam**	**72.79**	**335**	P		**P**		**00 20 38.5**	**-1.5**
	0.2nm,0.3s,baz=121,slow=5.6,SNR=3.5								
ZALV	**Zalesovo Beam**	**72.79**	**335**	P		**P**		**00 20 38.5**	**-1.5**
BRVK	**Borovoye**	**79.06**	**329**	*e*P		**P**		**00 21 16.4**	**+0.6**
	1.9nm,0.6s								
ARU	**Arti**	**86.64**	**329**	*e*P		**P**		**00 21 54.9**	**-0.1**
	0.6nm,0.3s								
KIV	**Kislovodsk**	**93.10**	**314**	*e*P		**P**		**00 22 26.1**	**+0.3**
	1.8nm,0.4s								
PMR	**Palmer**	**94.57**	**28**	*e*P		**P**		**00 22 28.6**	**-3.4**
	1.1nm,0.4s								

MEX 24 00:11:50.7±0.6, 13°87'N×91°27'W, h234km±53km, MD4.0, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
CCIG	**Comitan**	**2.54**	**341**	*e*P		Pn	00 12 36.1	-1.4
CCIG				*i* S		S	00 13 12.0	-2.2

*ISCJB **24** 00:20:15.3±0.7, 6°84'N±0°04'×73°08'W±0°06, h149km±6km, Error ellipse: s-maj=11.1km s-min=4.7km az=33.7*
*FUNV **24** 00:20:16.1, 6°77'N×73°12'W, h152km, MW2.5*
*RSNC **24** 00:20:17.6±0.8, 6°80'N×73°14'W, h139km±5km, ML2.3*
ISC 24 00:20:15.0±1.4, 6°82'N±0°05'×73°07'W±0°06, h153km±8km, n18, σ1°04'/32, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
BTLC	**Betulia, Santa**	**0.22**	**295**	*e*P		**Pn**	**00 20 36.7**	**+0.6**
BARC	**Barichara**	**0.26**	**207**	*e*P		**Pn**	**00 20 36.2**	**+0.1**
BARC				*e*S		**Sn**	**00 20 50.6**	**-1.6**
BARC				*i*			00 20 52.6	
	comp=Z,36nm,0.2s							
GIRC	**Giron, Santand**	**0.28**	**334**	*e*P		**Pn**	**00 20 36.5**	**+0.4**
GIRC				*e*S		**Sn**	**00 20 51.4**	**-0.7**
PAMC	**Pamplona, Colo**	**0.63**	**35**	*e*P		**Pn**	**00 20 39.3**	**+1.3**
PAMC				*e*S		**Sn**	**00 20 56.0**	**+0.5**
BRRC	**Barranca, Sant**	**0.70**	**294**	*e*P		**Pn**	**00 20 38.2**	**+0.4**
BRRC				*e*S		**Sn**	**00 20 54.3**	**-1.0**
BRRC				*i*			00 20 59.5	
	comp=Z,63nm,0.1s							
CBRI	**Barrientos, No**	**0.93**	**17**	*e*P		**Pn**	**00 20 41.0**	**+1.3**
CBRI				*e*S		**Sn**	**00 20 58.5**	**-0.2**
CBRI				*i*			00 21 04.7	
	comp=Z,33nm,0.5s							
RUSC	**La Rusia**	**0.93**	**181**	*e*P		**Pn**	**00 20 40.0**	**-0.1**
RUSC				*e*S		**Sn**	**00 20 58.7**	**-0.5**
CAPV	**Capacho**	**1.27**	**36**	⇓*i*P		**Pn**	**00 20 44.5**	**+1.6**
CAPV				*e*S		**Sn**	**00 21 03.7**	**-0.4**
OCAC	**Ocana**	**1.43**	**350**	*e*P		**Pn**	**00 20 45.0**	**+0.7**
OCAC				*e*S		**Sn**	**00 21 06.3**	**-0.5**
OCAC				*i*			00 21 09.9	
	comp=Z,32nm,0.3s							
NORC	**Norcasia**	**2.19**	**235**	*e*P		**Pn**	**00 20 53.1**	**+0.5**
NORC				*e*S		**Sn**	**00 21 20.4**	**-1.2**
CHIC	**Chingaza**	**2.28**	**197**	*e*P		**Pn**	**00 20 55.1**	**+1.0**
CHIC				*e*S		**Sn**	**00 21 24.0**	**-0.1**
HELC	**Santa Helena**	**2.53**	**256**	*e*P		**Pn**	**00 20 58.5**	**+1.6**
VIGV	**El Vigia**	**2.62**	**40**	*e*P		**Pn**	**00 20 59.0**	**+1.2**
VIGV				*e*S		**Sn**	**00 21 30.9**	**+0.1**
SOCV	**Socops**	**2.63**	**56**	*e*P		**Pn**	**00 20 59.0**	**+1.1**
SOCV				*e*S		**Sn**	**00 21 30.0**	**-1.0**
PRAC	**Prado**	**3.58**	**210**	*e*P		**Pn**	**00 21 11.3**	**+1.3**
PRAC				*e*S		**Sn**	**00 21 51.6**	**-1.1**
VIRV	**Villa del Rosa**	**3.71**	**10**	*e*P		**Pn**	**00 21 11.6**	**-0.1**
VIRV				*e*S		**Sn**	**00 21 53.5**	**-2.3**
CURV	**Curarigua**	**4.41**	**44**	*e*P		**Pn**	**00 21 21.8**	**+0.9**
BAUV	**El Baul**	**5.41**	**67**	*e*P		**Pn**	**00 21 33.1**	**-0.8**

MEX 24 00:38:49.8±0.4, 13°90N×93°09W, h10km±410km, MD4.0, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
CCIG	**Comitan**	**2.54**	**21**	*e*P		Pn	00 39 28.8	-2.5
CCIG				*i* S		Sn	00 39 58.7	-3.6

*NNC **24** 00:54:58.5±4.6, 38°39N×71°56E, h0km, mb3.7, mpv3.3, Error ellipse: s-maj=33.7km s-min=31.6km az=176.0*
*KRNET **24** 00:55:05.5±0.1, 39°28N×71°66E, h5km, mb3.1*
ISC 24 00:55:07.7±2.5, 39°3N±0°1×71°69E±0°05, h10km, n12, σ2°57/24, 13C-9D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
DRK	**Karamyk**	**0.19**	**27**	⇓*e*P		**Pg**	**00 55 10.3**	**-1.6**
	baz=30							
DRK				⇓*e*S		**Sg**	**00 55 13.4**	**-1.3**
	baz=30							
BTK	**Batken**	**1.00**	**318**	⇓*e*P		**Pg**	**00 55 25.2**	**-1.8**
	baz=321							
BTK				⇓*e*S		**Sg**	**00 55 40.1**	**0.0**
	baz=321							
OHH	**Osh**	**1.47**	**34**	⇑*i*P		**Pn**	**00 55 34.6**	**+0.2**
	baz=34							
OHH				⇑*i*S		**Sg**	**00 55 55.8**	**+0.7**
	baz=34							
ARSB	**Arslanbob**	**2.24**	**26**	⇑*e*P		**Pn**	**00 55 47.0**	**+2.0**
	baz=26							
ARSB				⇑*e*S		**Sb**	**00 56 16.9**	**+0.8**
	baz=26							
AML	**Almayashu**	**3.20**	**28**	⇓*i*P		**Pn**	**00 56 01.4**	**+3.0**
	baz=28							
AML				⇓*i*S		**Sn**	**00 56 38.8**	**+2.0**
	baz=28							
MNAS	**Manas**	**3.23**	**11**	⇑Pn		**Pb**	**00 56 02.4**	**-2.8**
	2.9nm,0.4s							
MNAS				⇓Sn		**Sg**	**00 56 51.8**	**+0.4**
	15nm,0.5s							
ARLS	**Aral**	**3.24**	**37**	⇑*e*P		**Pn**	**00 56 00.2**	**+1.4**
	baz=37							
ARLS				⇑*e*S		**Sn**	**00 56 41.1**	**+3.6**
	baz=37							
EKS2	**Erkin-Say**	**3.70**	**25**	⇑*i*P		**Pn**	**00 56 08.3**	**+3.3**
	baz=25							
EKS2				⇑*i*S		**Sn**	**00 56 51.1**	**+2.4**
	baz=25							
KK31	**Karatay Array**	**3.89**	**347**	Pn		**Pn**	**00 56 10.9**	**+3.4**
	1.9nm,0.5s,baz=172,slow=13,SNR=50							
KK31						Sn	**00 57 10.9**	**-1.7**
	6.9nm,0.5s,baz=163,slow=30,SNR=7.7							
AAK	**Ala-Archa**	**3.94**	**32**	⇑*i*P		**Pn**	**00 56 11.7**	**+3.3**
	baz=32							
AAK				⇑*i*S		**Sn**	**00 56 57.2**	**+2.5**
	baz=32							
AAK	**Ala-Archa**	**3.94**	**32**	⇓Pn		**Pb**	**00 56 13.5**	**-3.9**
	3.4nm,0.4s							
AAK				⇓Sn		**Sg**	**00 57 10.2**	**-4.0**
	11nm,0.6s							
TKM2	**Tokmak 2**	**4.66**	**38**	⇑Pn		**Pn**	**00 56 21.5**	**+3.2**
	1.7nm,0.5s							
TKM2				⇑Sn		**Sb**	**00 57 26.9**	**+1.1**
	2.9nm,0.6s							

*KRNET **24** 00:58:26.7±0.1, 42°11N×69°94E, mb3.1*
*IDC **24** 00:58:30.0±1.8, 42°08N×69°87E, h0km, mb1 3.4/6, mb1mx3.2/46, mbtmp3.4/6, ML3.2/6, Error ellipse: s-maj=22.1km s-min=15.5km az=174.0*
*SOME **24** 00:58:31.5, 42°08N×70°22E, h15km*
*NNC **24** 00:58:33.2±2.6, 42°09N×70°25E, h0km, mb3.4, mpv3.3, Error ellipse: s-maj=17.3km s-min=8.4km az=46.0*
ISC 24 00:58:31.1±0.9, 42°06N±0°04'×70°23E±0°03, h15km±6km, n36, σ2°81/69, 30C-7D, Central Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
IUG	**luzhnay**	**0.17**	**301**	*e*P		**Pb**	**00 58 36.4**	**+0.4**
	5μm,0.1s							
IUG				*e*S		**Sb**	**00 58 40.1**	**+0.7**
	3μm,0.2s							
CHM	**Chimkent**	**0.53**	**299**	*e*P		**Pn**	**00 58 43.4**	**-0.8**
	55nm,0.1s							
CHM				*e*S		**Sb**	**00 58 51.1**	**+1.5**
	1μm,0.3s							
BRLS	**Borolday**	**0.83**	**331**	*e*P		**Pn**	**00 58 48.0**	**-0.3**
	5.6nm,0.2s							
BRLS				*e*S		**Sn**	**00 58 59.9**	**-0.4**
	72nm,0.2s							
KK31	**Karatay Array**	**1.06**	**11**	⇑P		**Pg**	**00 58 52.3**	**+0.7**
	6.8nm,0.3s,baz=186,slow=17,SNR=558							
KK31				⇓S		**Sn**	**00 59 07.4**	**+1.3**
	22nm,0.4s,baz=189,slow=31,SNR=16							
ARK	**Arkit**	**1.32**	**101**	⇑*e*P		**Pn**	**00 58 55.9**	**+0.8**
	baz=102							
ARK				⇑*e*S		**Sg**	**00 59 18.7**	**+5.0**
	baz=102							
MNAS	**Manas**	**1.74**	**75**	⇑*i*P		**Pb**	**00 59 03.3**	**+0.4**
	baz=78							
MNAS				⇑*e*S		**Sg**	**00 59 29.1**	**+1.9**
	baz=78							
MNAS	**Manas**	**1.74**	**75**	⇓Pn		**Pb**	**00 59 03.4**	**+0.6**
	14nm,0.4s							
MNAS				⇑Sn		**Sg**	**00 59 29.5**	**+2.3**
	47nm,0.3s							
BTK	**Batken**	**2.05**	**167**	⇑*e*P		**Pn**	**00 59 06.7**	**+1.6**
	baz=162							
BTK				⇑*e*S		**Sb**	**00 59 34.6**	**+1.2**
	baz=162							
ARSB	**Arslanbob**	**2.19**	**109**	⇑*e*P		**Pb**	**00 59 10.4**	**-0.1**
	baz=108							
ARSB				⇑*e*S		**Sg**	**00 59 41.2**	**-0.3**
	baz=108							
MRKS	**Merke**	**2.32**	**72**	*e*P		**Pb**	**00 59 13.6**	**+0.9**
	42nm,0.3s							
MRKS				*e*S		**Sb**	**00 59 43.9**	**+2.6**
	123nm,0.4s							
OHH	**Osh**	**2.46**	**128**	⇓*e*P		**Pn**	**00 59 13.1**	**+2.3**
	baz=126							
OHH				⇓*e*S		**Sb**	**00 59 46.8**	**+1.5**
	baz=126							
AML	**Almayashu**	**2.58**	**87**	⇑*i*P		**Pb**	**00 59 17.9**	**+0.6**
	baz=88							
AML				⇑*i*S		**Sb**	**00 59 51.9**	**+2.9**
	baz=88							
EKS2	**Erkin-Say**	**2.70**	**76**	⇑*i*P		**Pb**	**00 59 19.4**	**+0.3**
	baz=78							
EKS2				⇑*i*S		**Sb**	**00 59 55.1**	**+3.0**
	baz=78							
ARLS	**Aral**	**3.06**	**92**	⇓*e*P		**Pn**	**00 59 22.4**	**+3.3**
	baz=93							
ARLS				⇓*e*S		**Sb**	**01 00 02.0**	**-0.6**
	baz=93							
AAK	**Ala-Archa**	**3.21**	**78**	Pn		**Pb**	**00 59 27.7**	**-0.2**
	5.1nm,0.3s,baz=249,slow=1.5,SNR=10							
AAK						Sn	**01 00 12.2**	**-2.1**
	3.8nm,0.3s,baz=11,slow=21,SNR=8.7							
AAK	**Ala-Archa**	**3.21**	**78**	⇑*i*P		**Pb**	**00 59 26.3**	**-1.7**
	baz=80							
AAK				⇑*i*S		**Sb**	**01 00 07.2**	**+0.2**
	baz=80							
AAK	**Ala-Archa**	**3.21**	**78**	⇑Pg		**Pb**	**00 59 30.6**	**+2.6**
	4.8nm,0.3s							
AAK				⇑Lg		Lg	01 00 11.9	
	12nm,0.6s							
USP	**Ospenovka**	**3.37**	**68**	⇑*i*P		**Pn**	**00 59 27.3**	**+4.0**
	baz=70							
USP				⇑*i*S		**Sb**	**01 00 10.0**	**-1.5**
	baz=70							
CHMS	**Chumysh**	**3.47**	**73**	⇑*i*P		**Pb**	**00 59 30.0**	**-2.3**
	baz=74							
CHMS				⇑*i*S		**Sb**	**01 00 13.5**	**-0.8**
	baz=74							
KBK	**Karagaybulak**	**3.55**	**79**	⇑*i*P		**Pb**	**00 59 31.0**	**-2.7**
	baz=80							
KBK				⇑*i*S		**Sb**	**01 00 15.2**	**-1.4**
	baz=80							
KZA	**Kyzart**	**3.74**	**88**	⇑*i*P		**Pb**	**00 59 34.0**	**-3.1**
	baz=89							
KZA				⇑*i*S		**Sb**	**01 00 19.2**	**-3.1**
	baz=89							
TKM2	**Tokmak 2**	**4.06**	**76**	⇑*i*P		**Pb**	**00 59 38.3**	**-4.1**
	baz=77							
TKM2				⇑*i*S		**Sb**	**01 00 27.1**	**-4.4**
	baz=77							
TKM2	**Tokmak 2**	**4.06**	**76**	⇑Pn		Pn	00 59 37.8	+4.9
	3.5nm,0.4s							
TKM2				⇓Sn		**Sn**	**01 00 24.8**	**+4.4**
	7.9nm,0.5s							
BMNS	**Besmoynak**	**4.15**	**74**	*e*P		**Pb**	**00 59 46.2**	**+2.3**
	31nm,0.5s							
BMNS				*e*S		**Sb**	**01 00 38.6**	**+4.6**
	56nm,0.5s							
DGS	**Degeres**	**4.26**	**72**	*e*P		**Pb**	**00 59 48.4**	**+2.7**
	18nm,0.6s							
DGS				*e*S		**Sg**	**01 00 43.4**	**-4.3**
	25nm,0.6s							
KST	**Kastek**	**4.35**	**75**	*e*P		**Pb**	**00 59 50.1**	**+2.8**
	4.9nm,0.5s							
KST				*e*S		**Sg**	**01 00 46.1**	**-4.6**
	26nm,0.5s							
MTBS	**Maitube**	**4.70**	**75**	*e*P		**Pg**	**00 59 57.8**	**-3.2**
	3.0nm,0.1s							
MTBS				*e*S		**Sg**	**01 00 58.7**	**-3.2**
	16nm,0.7s							
KUU	**Kurty**	**4.84**	**66**	*e*P		**Pb**	**00 59 59.2**	**+3.6**
	11nm,0.3s							
KUU				*e*S		**Sg**	**01 01 01.4**	**-5.1**
	14nm,0.6s							
TNSS	**Tian-Shan**	**5.06**	**77**	*e*P		**Pg**	**01 00 04.9**	**-3.1**
	3.5nm,0.4s							
TNSS				*e*S		**Sg**	**01 01 11.0**	**-2.4**
	19nm,0.8s							
MDOK	**Medeo**	**5.15**	**75**	*e*P		**Pb**	**01 00 05.3**	**+4.3**
	8.3nm,0.5s							
MDOK				⇑*i*S		**Sg**	**01 01 11.3**	**-5.1**
	22nm,1.0s							
CHKK	**Chushkaly**	**5.29**	**68**	*e*P		**Pg**	**01 00 08.2**	**-4.1**
	1.9nm,0.3s							
CHKK				*e*S		**Sg**	**01 01 18.0**	**-2.7**
	22nm,0.8s							
MKAR	**Makanchi Array**	**9.84**	**57**	Pn		**Pn**	**01 00 55.2**	**+3.2**
	0.3nm,0.3s,baz=240,slow=14,SNR=15							
MKAR						Sn	**01 02 46.5**	**+4.3**
	0.1nm,0.3s,baz=259,slow=22,SNR=2.6							
MKAR						Lg	01 03 41.2	
	0.2nm,0.3s,baz=254,slow=29,SNR=5.7							
GEYT	**Alibeck**	**10.16**	**250**	Pn		**Pn**	**01 00 55.6**	**-0.9**
	0.6nm,0.3s,baz=64,slow=12,SNR=4.7							
GEYT						Sn	**01 02 45.6**	**-4.6**
	0.4nm,0.3s,baz=76,slow=18,SNR=3.1							
KURBB	**Kurchatov Arra**	**10.30**	**31**	Pn		**Pn**	**01 01 01.5**	**+3.2**
	0.1nm,0.3s,baz=222,slow=13,SNR=4.1							
KURBB						Sn	**01 02 53.1**	**-0.3**
	0.1nm,0.3s,baz=208,slow=14,SNR=4.4							
BVAR	**Borovoye Array**	**10.97**	**1**	Pn		**Pn**	**01 01 05.4**	**-2.0**
	0.2nm,0.3s,baz=169,slow=16,SNR=3.1							
BVAR						Sn	**01 03 12.9**	**+3.1**
	0.2nm,0.3s,baz=167,slow=26,SNR=4.1							
ZALV	**Zalesovo Beam**	**15.35**	**34**	Pn		**P**	**01 02 11.5**	**-0.1**
	0.2nm,0.3s,baz=230,slow=16,SNR=3.2							

IDC 24 01:03:32.0±1.5, 13°32N×145°24E, h63km±11km, mb3.4/7, mb1 3.6/7, mb1mx3.4/36, mbtmp3.7/7, MS3.4/4, Ms1 3.4/4, ms1mx3.0/23, Error ellipse: s-maj=33.4km s-min=19.1km az=108.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
GUMO	**Guam**	**0.45**	**306**	P		Pn	01 03 44.9	+1.1
	253nm,0.3s,baz=141,slow=11,SNR=64							
GUMO						S	01 03 57.2	+5.0
	503nm,0.3s,baz=356,slow=19,SNR=23							
PMG	**Port Moresby**	**22.66**	**175**	LR		LR	01 16 58.7	
	comp=Z,51nm,19.4s,baz=186,slow=36							
TGY	**Tagaytay City**	**23.63**	**275**	LR		LR	01 18 02.2	
	comp=Z,87nm,18.1s,baz=350,slow=37							
HNR	**Honiara**	**26.91**	**146**	LR		LR	01 19 48.2	
	comp=Z,110nm,18.2s,baz=323,slow=36							
KSRS	**Korea Array**	**28.58**	**330**	P		P	01 09 24.6	+2.4
	0.4nm,0.4s,baz=137,slow=11,SNR=3.1							
WRA	**Warramunga Arr**	**34.75**	**198**	P		P	01 10 16.5	-0.1
	0.5nm,0.8s,baz=24,slow=9.5,SNR=3.8							
ASAR	**Alice Springs**	**38.40**	**197**	P		P	01 10 47.0	-0.6
	0.3nm,0.6s,baz=29,slow=7.8,SNR=5.7							
CMAR	**Chiang Mai Arr**	**44.73**	**283**	P		P	01 11 40.6	+1.1
	0.6nm,0.3s,baz=82,slow=7.4,SNR=2.9							
MA2	**Magadan**	**46.36**	**4**	LR		LR	01 28 26.8	
	comp=Z,38nm,19.7s,baz=171,slow=32							
MKAR	**Makanchi Array**	**61.94**	**316**	P		P	01 13 43.9	-1.5
	0.5nm,0.8s,baz=94,slow=10,SNR=2.7							
ILAR	**Eielson Array**	**68.66**	**25**	P		P	01 14 29.1	+0.7
	0.5nm,0.5s,baz=246,slow=5.7,SNR=7.4							
INK	**Inuvik**	**74.48**	**22**	P		P	01 15 03.6	+0.3
	1.1nm,0.9s,baz=245,slow=3.9,SNR=2.8							
YKA	**Yellowknife Ar**	**82.93**	**27**	P		P	01 15 49.2	-0.7
	0.5nm,0.6s,baz=285,slow=4.8,SNR=3.5							
DBIC	**Dimbokro**	**144.28**	**302**	PKP		PKPdf	01 23 03.4	+1.3
	6.6nm,0.9s,baz=19,slow=1.7,SNR=5.2							

*ISCJB **24** 01:06:47.8±0.5, 39°28N±0°02'×27°77E±0°03, h6km±4km, Error ellipse: s-maj=4.3km s-min=3.4km az=9.4*
*ISK **24** 01:06:47.5, 39°26N×27°80E, h7km, MD2.8*
*DDA **24** 01:06:47.7, 39°28N×27°76E, h7km, Md2.8*
*CSEM **24** 01:06:48.1±0.1, 39°27N×27°78E, h10km, MD2.8, Error ellipse: s-maj=3.4km s-min=2.7km az=87.0*
ISC 24 01:06:48.0±1.1, 39°27N±0°02'×27°78E±0°02, h8km±9km, n41, σ0°848/62, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
BALB	**Balikesir**	**0.38**	**12**	*e*PG		**Pg**	**01 06 55.5**	**+0.1**
BALB				*e*SG		**Sb**	**01 07 02.2**	**-0.7**
BALB	**Balikesir**	**0.38**	**12**	*e*Pg		**Pg**	**01 06 55.5**	**+0.1**
BALB				*e*Sg		**Sb**	**01 07 02.2**	**-0.7**
AKS	**Akhisar**	**0.39**	**176**	*e*PG		**Pg**	**01 06 55.7**	**0.0**
AKS				*e*SG		**Sg**	**01 07 01.8**	**+1.0**
AKS	**Akhisar**	**0.39**	**176**	*e*Pg		**Pg**	**01 06 55.7**	**0.0**
AKS				*e*Sg		**Sg**	**01 07 01.8**	**+1.0**
BALY	**Balya**	**0.48**	**345**	*i* P		**Pg**	**01 06 57.3**	**-0.1**
BALY	**Balya**	**0.48**	**345**	P		**Pg**	**01 06 57.3**	**-0.1**
DEMI	**Demirci**	**0.76**	**107**	*i* P		**Pb**	**01 07 02.9**	**-0.6**
DEMI				*i* S		**Sb**	**01 07 14.0**	**-0.1**
DEMI	**Demirci**	**0.76**	**107**	P		**Pb**	**01 07 02.9**	**-0.6**
DEMI				S		**Sb**	**01 07 14.0**	**-0.1**
GONE	**Gonen-Balikesi**	**0.78**	**355**	*e*PG		**Pg**	**01 07 03.0**	**0.0**
GONE	**Gonen-Balikesi**	**0.78**	**355**	*e*Pg		**Pg**	**01 07 03.0**	**0.0**
AYVA	**Ayvalik**	**0.85**	**273**	*i* P		**Pg**	**01 07 03.9**	**-0.4**
AYVA				*i* S		**Sb**	**01 07 16.4**	**0.0**
AYVA	**Ayvalik**	**0.85**	**273**	P		**Pg**	**01 07 03.9**	**-0.4**
AYVA				S		**Sb**	**01 07 16.4**	**0.0**
IZM	**Izmir**	**0.96**	**205**	*e*PG		**Pg**	**01 07 05.8**	**-0.7**
IZM				*e*SG		**Sb**	**01 07 19.8**	**0.0**
IZM	**Izmir**	**0.96**	**205**	*e*Pg		**Pg**	**01 07 05.8**	**-0.7**
IZM				*e*Sg		**Sb**	**01 07 19.8**	**0.0**
MANT	**Manisa**	**0.99**	**142**	*i* P		**Pg**	**01 07 06.6**	**-0.4**
MANT				*i* S		**Sg**	**01 07 19.6**	**-0.2**
MANT	**Manisa**	**0.99**	**142**	P		**Pg**	**01 07 06.6**	**-0.4**
MANT				S		**Sg**	**01 07 19.6**	**-0.2**
KNL	**Bal¯kesir**	**1.02**	**349**	*i* P		**Pg**	**01 07 06.6**	**-0.9**
KULA	**Kula-Manisa**	**1.02**	**137**	*e*PG		**Pg**	**01 07 07.0**	**-0.6**
KULA	**Kula-Manisa**	**1.02**	**137**	*e*Pg		**Pg**	**01 07 07.0**	**-0.6**
EDC	**Edincik**	**1.08**	**3**	*e*PN		**Pb**	**01 07 08.7**	**-0.2**
EDC	**Edincik**	**1.08**	**3**	*e*Pn		**Pb**	**01 07 08.7**	**-0.2**
KCTX	**Karacabey (Bur**	**1.09**	**24**	*e*PN		**Pg**	**01 07 08.4**	**-0.4**
KCTX				*e*SN		**Sb**	**01 07 23.9**	**+0.5**
KCTX	**Karacabey (Bur**	**1.09**	**24**	*e*Pn		**Pg**	**01 07 08.5**	**-0.4**
KCTX				*e*Sn		**Sb**	**01 07 23.9**	**+0.5**
KRBG	**Karabiga-Canak**	**1.18**	**342**	*e*PN		**Pg**	**01 07 10.3**	**-0.4**
KRBG	**Karabiga-Canak**	**1.18**	**342**	*e*Pn		**Pg**	**01 07 10.3**	**-0.4**
URLA	**Izmir**	**1.30**	**226**	*i* P		**Pg**	**01 07 12.7**	**-0.2**
URLA				*i* S		**Sn**	**01 07 30.1**	**+0.2**
URLA	**Izmir**	**1.30**	**226**	P		**Pg**	**01 07 12.7**	**-0.2**
URLA				S		**Sn**	**01 07 30.1**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.32**	**176**	*e*PN		**Pn**	**01 07 12.3**	**-0.6**
AYDB				*e*SN		**Sn**	**01 07 31.5**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.32**	**176**	*e*Pn		**Pn**	**01 07 12.3**	**-0.6**
AYDB				*e*Sn		**Sn**	**01 07 31.5**	**+0.7**
GDZ	**Gediz**	**1.33**	**97**	*i* P		**Pg**	**01 07 14.1**	**+0.5**
GDZ				*i* S		**Sn**	**01 07 32.0**	**+1.0**
GDZ	**Gediz**	**1.33**	**97**	P		**Pg**	**01 07 14.1**	**+0.5**
GDZ				S		**Sn**	**01 07 32.0**	**+1.0**
MRMT	**Marmara Adasi**	**1.34**	**354**	*e*PN		**Pg**	**01 07 13.7**	**0.0**
MRMT	**Marmara Adasi**	**1.34**	**354**	*e*Pn		**Pg**	**01 07 13.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.39**	**37**	*e*PN		**Pb**	**01 07 13.8**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.39**	**37**	*e*Pn		**Pb**	**01 07 13.8**	**-0.3**
DGB	**¯zmir**	**1.41**	**210**	*i* P		**Pn**	**01 07 13.9**	**+0.1**
DGB				*i* S		**Sb**	**01 07 32.1**	**-0.3**
BOZC	**Bozcaada**	**1.45**	**294**	*i* P		**Pn**	**01 07 13.9**	**-0.6**
SIGR	**SIGRI**	**1.50**	**268**	*e*PN		**Pb**	**01 07 16.1**	**+0.1**
SIGR	**SIGRI**	**1.50**	**268**	*e*Pn		**Pb**	**01 07 16.1**	**+0.1**
CHOS	**Chios island**	**1.61**	**237**	*e*PN		**Pn**	**01 07 17.2**	**+0.5**
CHOS	**Chios island**	**1.61**	**237**	*e*Pn		**Pn**	**

USRK	**Ussuriysk Ar.**	**10.60**	**310**	Pn		**Pn**	**01 22 48.7**	**+1.2**
	0.2nm,0.3s,baz=113,slow=12,SNR=4.6							
USRK				LR		LR	01 26 55.2	
	comp=Z,218nm,18.1s,baz=114,slow=38							
JNU	**Nakatsue**	**11.25**	**248**	Pn		**Pn**	**01 22 56.5**	**-0.1**
	0.2nm,0.3s,baz=32,slow=13,SNR=2.7							
KSRS	**Korea Array**	**12.24**	**272**	Pn		**Pn**	**01 23 11.7**	**+1.8**
	0.2nm,0.3s,baz=89,slow=14,SNR=11							
KSRS				LR		LR	01 27 36.5	
	comp=Z,113nm,18.2s,baz=146,slow=36							
KSAR	**Wonju Array Be**	**12.27**	**272**	Pn		**Pn**	**01 23 11.7**	**+1.3**
KLR	**Kul'dur**	**14.03**	**327**	Pn		**Pn**	**01 23 36.1**	**+1.7**
	0.2nm,0.3s,baz=144,slow=17,SNR=3.4							
PETK	**Petropavlovsk-**	**18.12**	**29**	P		**P**	**01 24 27.2**	**0.0**
	0.2nm,0.3s,baz=179,slow=5.8,SNR=3.6							
MA2	**Magadan**	**22.14**	**10**	P		**P**	**01 25 11.2**	**+0.4**
	8.3nm,0.8s,baz=217,slow=6.6,SNR=3.8							
YAK	**Yakutsk**	**25.53**	**345**	P		**P**	**01 25 43.1**	**-0.4**
	12nm,0.5s,baz=189,slow=2.2,SNR=4.5							
YAK	**Yakutsk**	**25.53**	**345**	*e*P		**P**	**01 25 42.7**	**-0.8**
	20nm,0.8s							
SEY	**Seymchan**	**25.60**	**10**	P		**P**	**01 25 44.9**	**+0.7**
	5.7nm,0.8s,baz=187,slow=7.8,SNR=17							
H11N2	**WAKE ISLAND Hy**	**27.36**	**125**	T		T	01 54 48.5	
	baz=317,slow=75,SNR=38							
H11N1	**WAKE ISLAND Hy**	**27.36**	**125**	T		T	01 54 49.8	
	baz=317,slow=75,SNR=18							
H11N3	**WAKE ISLAND Hy**	**27.37**	**125**	T		T	01 54 51.4	
	baz=317,slow=75,SNR=29							
H11S1	**WAKE ISLAND Hy**	**28.13**	**127**	T		T	01 55 45.6	
	baz=318,slow=76,SNR=14							
H11S3	**WAKE ISLAND Hy**	**28.13**	**127**	T		T	01 55 47.8	
	baz=318,slow=76,SNR=16							
H11S2	**WAKE ISLAND Hy**	**28.14**	**127**	T		T	01 55 48.8	
	baz=318,slow=76,SNR=9.3							
SONM	**Songino Array**	**28.57**	**302**	P		**P**	**01 26 12.1**	**+0.9**
	0.8nm,0.7s,baz=107,slow=7.7,SNR=3.1							
TLY	**Talaya**	**30.91**	**309**	LR		LR	01 39 34.2	
	comp=Z,58nm,20.6s,baz=146,slow=38							
ZALV	**Zalesovo Beam**	**42.44**	**312**	P		**P**	**01 28 09.8**	**+0.1**
	1.4nm,0.6s,baz=83,slow=7.8,SNR=7.6							
ZALV				PcP		**PcP**	**01 30 02.6**	**+0.3**
	2.0nm,0.5s,baz=102,slow=2.4,SNR=6.8							
CMAR	**Chiang Mai Arr**	**43.22**	**256**	P		**P**	**01 28 17.6**	**+1.2**
	0.8nm,0.3s,baz=67,slow=3.0,SNR=2.8							
CMAR				LR		LR	01 48 52.1	
	comp=Z,23nm,18.5s,baz=160,slow=40							
MKAR	**Makanchi Array**	**44.94**	**302**	P		**P**	**01 28 30.0**	**0.0**
	1.2nm,0.6s,baz=88,slow=10,SNR=9.0							
ILAR	**Eielson Array**	**47.88**	**33**	P		**P**	**01 28 53.5**	**+0.7**
	2.3nm,0.8s,baz=270,slow=6.4,SNR=12							
DIV	**Divide**	**48.60**	**38**	*e*P		**P**	**01 28 59.5**	**+1.0**
	6.3nm,0.6s							
BRVK	**Borovoye**	**51.15**	**312**	*e*P		**P**	**01 29 18.0**	**+0.2**
	4.5nm,0.5s							
INK	**Inuvik**	**52.85**	**28**	P		**P**	**01 29 31.1**	**+0.9**
	1.2nm,0.7s,baz=290,slow=5.6,SNR=3.0							
ARU	**Arti**	**56.69**	**319**	*e*P		**P**	**01 29 57.9**	**-0.3**
	2.3nm,0.6s							
WRAB	**Tennant Creek**	**58.21**	**190**	*e*P		**P**	**01 30 08.4**	**-0.9**
	7.0nm,0.8s							
WRA	**Warramunga Arr**	**58.22**	**190**	P		**P**	**01 30 08.4**	**-0.9**
	7.4nm,0.8s,baz=8.7,slow=7.1,SNR=48							
WRA				PcP		**PcP**	**01 31 01.0**	**+0.5**
	1.2nm,0.6s,baz=2.5,slow=4.3,SNR=6.1							
ABKAR	**Akbulak array**	**58.52**	**310**	*e*P		**P**	**01 30 10.4**	**-0.8**
	1.4nm,0.6s							
ASAR	**Alice Springs**	**61.95**	**190**	P		**P**	**01 30 34.5**	**-0.3**
	1.9nm,0.7s,baz=9.7,slow=6.6,SNR=17							
YKA	**Yellowknife Array**	**62.22**	**31**	P		**P**	**01 30 37.1**	**+0.8**
	0.7nm,0.7s,baz=301,slow=5.9,SNR=4.6							
ARCES	**ARCESS Array B**	**63.66**	**340**	P		**P**	**01 30 45.6**	**-0.2**
	0.8nm,0.6s,baz=64,slow=8.1,SNR=4.6							
GEYT	**Alibeck**	**64.73**	**299**	P		**P**	**01 30 54.2**	**+0.8**
	1.3nm,0.9s,baz=46,slow=4.2,SNR=3.4							
FINES	**FINESS Array B**	**68.70**	**333**	P		**P**	**01 31 18.3**	**+0.1**
	2.5nm,0.7s,baz=30,slow=8.8,SNR=7.2							
SUMG	**Summit**	**69.75**	**1**	*e*P		**P**	**01 31 25.5**	**+0.5**
	4.0nm,0.6s							
KBZ	**Khabaz**	**71.46**	**311**	P		**P**	**01 31 36.1**	**+0.7**
	3.1nm,0.9s,baz=277,slow=6.4,SNR=3.9							
FFC	**Flin Flon**	**72.08**	**34**	*e*P		**P**	**01 31 39.1**	**+0.1**
	3.2nm,0.7s							
ELK	**Elko**	**73.77**	**51**	*e*P		**P**	**01 31 48.3**	**-1.2**
	2.3nm,0.8s							
NB2	**NORSAR Subarra**	**73.91**	**338**	P		**P**	**01 31 50.1**	**+0.3**
	comp=Z,2.1nm,0.7s,baz=36,slow=6.2							
NOA	**NORSAR Array B**	**73.91**	**338**	P		**P**	**01 31 49.7**	**-0.1**
	comp=Z,1.8nm,0.8s,baz=9.0,slow=6.8,SNR=3.9							
AKASG	**Malin Array Be**	**74.50**	**323**	P		**P**	**01 31 53.3**	**+0.1**
	comp=Z,0.4nm,0.4s,baz=49,slow=7.6,SNR=5.2							
R11A	**Troy Canyon, C**	**74.97**	**53**	*e*P		**P**	**01 31 57.1**	**+0.6**
	comp=Z,0.6nm,0.6s							
PDAR	**Pinedale Array**	**75.91**	**47**	P		**P**	**01 32 02.6**	**+0.7**
	comp=Z,0.6nm,0.6s,baz=258,slow=1.4,SNR=8.4							
ULM	**Lac du Bonnet**	**77.87**	**34**	P		**P**	**01 32 11.9**	**-0.6**
	comp=Z,1.9nm,0.8s,baz=118,slow=20,SNR=3.2							
BRTR	**Keskin Array B**	**79.38**	**312**	P		**P**	**01 32 21.5**	**+0.3**
	comp=Z,0.4nm,0.7s,baz=54,slow=6.1,SNR=3.3							
GERES	**GERESS Array B**	**82.72**	**329**	P		**P**	**01 32 39.4**	**+0.7**
	comp=Z,0.2nm,0.5s,baz=28,slow=4.4,SNR=4.0							
TXAR	**Lajitas Array**	**88.33**	**54**	P		**P**	**01 33 07.6**	**+0.6**
	comp=Z,0.3nm,0.6s,baz=264,slow=2.2,SNR=4.8							
TORD	**Torodi Ar. Bea**	**117.74**	**317**	PKP		**PKPdf**	**01 39 01.0**	**-0.7**
	comp=Z,0.2nm,0.4s,baz=21,slow=2.1,SNR=6.4							
LPAZ	**La Paz**	**144.89**	**61**	PKP		**PKPdf**	**01 39 52.5**	**-0.7**
	comp=Z,0.7nm,0.5s,baz=22,slow=5.6,SNR=6.3							
LCO	**Las Campanas**	**150.36**	**83**	*e*PKPbc		**PKPbc**	**01 40 07.0**	**+0.3**

MEX 24 01:26:36.5±0.6, 13°27N×91°41W, h197km±43km, MD4.0, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CCIG	**Comitan**	**3.08**	**347**	*i* P		Pn	01 27 26.5	-0.6
CCIG				*e*S		Sn	01 28 04.3	-2.4

*ISCJB **24** 01:35:31.6±0.5, 39°06N±0°03×29°02E±0°04, h7km±5km, Error ellipse: s-maj=5.8km s-min=4.6km az=164.4*
*CSEM **24** 01:35:31.7±0.1, 39°06N×29°03E, h8km, MD2.6, Error ellipse: s-maj=3.7km s-min=3.0km az=130.0*
*ISK **24** 01:35:31.1, 39°08N×29°03E, h8km, MD2.8*
*DDA **24** 01:35:31.8, 39°07N×29°02E, h7km, Md2.6*
ISC 24 01:35:31.8±0.9, 39°05N±0°03×29°02E±0°02, h12km±7km, n31, σ0°32/45, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DEMI	**Demirci**	**0.23**	**269**	*i* P		**Pg**	**01 35 36.9**	**0.0**
DEMI				*i* S		**Sg**	**01 35 40.1**	**-0.1**
DEMI	**Demirci**	**0.23**	**269**	P		**Pg**	**01 35 36.8**	**0.0**
DEMI				S		**Sg**	**01 35 40.1**	**-0.1**
GDZ	**Gediz**	**0.36**	**83**	*i* P		**Pg**	**01 35 39.2**	**+0.1**
GDZ				*i* S		**Sg**	**01 35 44.4**	**+0.4**
GDZ	**Gediz**	**0.36**	**83**	P		**Pg**	**01 35 39.2**	**+0.1**
GDZ				S		**Sg**	**01 35 44.4**	**+0.4**
TVSB	**Tavsanli**	**0.53**	**40**	*e*PG		**Pg**	**01 35 41.8**	**-0.4**
KULA	**Kula-Manisa**	**0.60**	**208**	*e*PG		**Pg**	**01 35 43.8**	**+0.3**
KULA				*e*SG		**Sb**	**01 35 52.9**	**+0.1**
KULA	**Kula-Manisa**	**0.60**	**208**	*e*Pg		**Pg**	**01 35 43.8**	**+0.3**
KULA				*e*Sg		**Sb**	**01 35 52.9**	**+0.1**
MANT	**Manisa**	**0.66**	**213**	*i* P		**Pg**	**01 35 44.2**	**-0.5**
MANT				*i* S		**Sg**	**01 35 53.3**	**-0.2**
MANT	**Manisa**	**0.66**	**213**	P		**Pg**	**01 35 44.2**	**-0.5**
MANT				S		**Sg**	**01 35 53.3**	**-0.2**
BALB	**Balikesir**	**1.06**	**304**	*e*PG		**Pg**	**01 35 52.0**	**-0.2**
BALB				*e*SG		**Sn**	**01 36 07.0**	**-0.2**
BALB	**Balikesir**	**1.06**	**304**	*e*Pg		**Pg**	**01 35 52.0**	**-0.2**
BALB				*e*Sg		**Sn**	**01 36 07.0**	**-0.2**
BALY	**Balya**	**1.28**	**303**	*i* P		**Pb**	**01 35 56.1**	**+0.1**
BALY	**Balya**	**1.28**	**303**	P		**Pb**	**01 35 56.1**	**+0.1**
SHUT	**Suhut-Afyon**	**1.30**	**112**	*e*PN		**Pn**	**01 35 55.5**	**-0.4**
SHUT	**Suhut-Afyon**	**1.30**	**112**	*e*Pn		**Pn**	**01 35 55.5**	**-0.4**
CAVI	**Cavuskoy**	**1.32**	**29**	*e*PN		**Pn**	**01 35 55.5**	**-0.6**
CAVI				*e*SN		**Sn**	**01 36 13.9**	**+0.3**
CAVI	**Cavuskoy**	**1.32**	**29**	*e*Pn		**Pn**	**01 35 55.5**	**-0.6**
CAVI				*e*Sn		**Sn**	**01 36 14.0**	**+0.3**
KCTX	**Karacabey (Bur**	**1.32**	**337**	*e*PN		**Pn**	**01 35 55.7**	**-0.4**
KCTX				*e*SN		**Sn**	**01 36 14.3**	**+0.6**
KCTX	**Karacabey (Bur**	**1.32**	**337**	*e*Pn		**Pn**	**01 35 55.7**	**-0.4**
KCTX				*e*Sn		**Sn**	**01 36 14.3**	**+0.6**
IZI	**Iznik**	**1.33**	**15**	*e*PN		**Pb**	**01 35 56.8**	**-0.1**
IZI	**Iznik**	**1.33**	**15**	*e*Pn		**Pb**	**01 35 56.8**	**-0.1**
BORA	**Eskisehir**	**1.39**	**53**	*i* P		**Pg**	**01 35 58.3**	**-0.2**
BORA	**Eskisehir**	**1.39**	**53**	P		**Pg**	**01 35 58.3**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.41**	**219**	*e*PN		**Pg**	**01 35 59.0**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.41**	**219**	*e*Pn		**Pg**	**01 35 59.0**	**+0.1**
ARMT	**Armutlu**	**1.52**	**356**	*e*PN		**Pn**	**01 35 59.2**	**+0.3**
ARMT	**Armutlu**	**1.52**	**356**	*e*Pn		**Pn**	**01 35 59.2**	**+0.3**
EDC	**Edincik**	**1.57**	**326**	*e*PN		**Pn**	**01 35 59.9**	**+0.3**
EDC	**Edincik**	**1.57**	**326**	*e*Pn		**Pn**	**01 35 59.9**	**+0.3**
GULT	**Gulveren**	**1.80**	**39**	*e*PN		**Pn**	**01 36 02.6**	**-0.2**
GULT	**Gulveren**	**1.80**	**39**	*e*Pn		**Pn**	**01 36 02.6**	**-0.2**

IDC 24 01:50:20.8±11.0, 56°15S×27°31W, h135km±105km, mb3.7/5, mb1 3.9/5, mb1mx3.7/24, mbtmp4.1/5, Error ellipse: s-maj=41.3km s-min=21.3km az=73.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CPUP	**Villa Florida**	**36.83**	**311**	P		P	01 57 14.8	-0.8
	0.8nm,0.4s,baz=170,slow=12,SNR=4.3							
VNDA	**Vanda**	**46.47**	**183**	P		P	01 58 33.4	0.0
	1.0nm,0.6s,baz=190,slow=6.5,SNR=13							
LPAZ	**La Paz**	**50.38**	**305**	P		P	01 59 05.2	+0.4
	10nm,0.8s,baz=156,slow=4.3,SNR=6.7							
TORD	**Torodi Ar. Bea**	**73.17**	**30**	P		P	02 01 36.7	+0.2
	0.2nm,0.5s,baz=180,slow=2.9,SNR=3.7							
ASAR	**Alice Springs**	**98.92**	**163**	P		P	02 03 44.9	-0.8
	0.4nm,0.7s,baz=179,slow=3.7,SNR=4.3							
ILAR	**Eielson Array**	**150.13**	**312**	PKPbc		PKPbc	02 09 53.5	-0.5
	1.4nm,0.6s,baz=97,slow=2.3,SNR=13							

*SCB **24** 01:54:09.1±0.8, 20°34S×71°31W, h10km, Ml5.0/1, Error ellipse: s-maj=20.1km s-min=4.6km az=61.0*
*IDC **24** 01:54:17.4±0.5, 20°03S×70°48W, h0km, mb4.6/17, mb1 4.7/20, mb1mx4.7/24, mbtmp4.7/20, ML4.1/2, MS4.2/20, Ms1 4.1/20, ms1mx4.0/32, Error ellipse: s-maj=17.5km s-min=11.1km az=70.0*
*GUC **24** 01:54:19.9±0.5, 20°19S×70°66W, h40km±1km, ML4.2*
*ISCJB **24** 01:54:20.9±0.1, 20°04S±0°02×70°53W±0°04, h35km, mb4.8/97, MS4.2/17, Error ellipse: s-maj=5.5km s-min=2.6km az=150.4*
*GCMT **24** 01:54:21.2±0.3, 20°22S×70°95W, h23km±1km, MW5.0/65, Moment Tensor Solution. s38,c44; s65,c89; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr=3.25±.17; Mθθ=0.43±.09; Mϕϕ=-2.82±.12; Mrθ=0.68±.14; Mrϕ=0.78±.07; Mθϕ=-2.23±.17; Best double couple: Mw=3.91 90×10^16 NP1:ϕs=163.0000°, δ63.00000°, λ90.00000°. NP2: ϕs=344.00000°, δ27.00000°, λ90.00000°. Principal axes: T 4.0180, Plg72.0000°, Azm73.0000°; N -0.1970, Plg0.0000°, Azm163.0000°; P -3.8190, Plg18.0000°, Azm253.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **24** 01:54:21.2±1.3, 20°10S×70°47W, h22km±9km, mb5.0/83 Error ellipse: s-maj=6.4km s-min=3.6km az=64.0*
NEIC Felt [II] at Alto Hospicio, Cuya and Iquique.
*MOS **24** 01:54:21.6±1.5, 20°07S×70°68W, h33km, mb5.0/21, Error ellipse: s-maj=14.0km s-min=7.2km az=111.8*
*BJI **24** 01:54:22.9, 20°00S×70°40W, h25km, mB5.3/19, Ms5.3/8, Ms7 5.2/9*
ISC 24 01:54:21.7±0.5, 20°07S±0°03×70°59W±0°04, h27km±3km, h27km:pP-P, n518, σ1°9$42/543, mb4.9/97, MS4.2/17, 7C-5D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PSGC	**Pisagua**	**0.64**	**43**	*i* P		**Pb**	**01 54 34.5**	**+0.1**
PSGC				*i* S		**Sn**	**01 54 45.8**	**+1.5**
PSGC				IAML			01 54 46.8	
	comp=E,14μm,0.3s							
HMBC	**Humberstone**	**0.69**	**108**	*i* P		**Pb**	**01 54 34.0**	**-1.3**
HMBC				*i* S		**Sb**	**01 54 44.8**	**+0.3**
HMBC				IAML			01 54 52.8	
	comp=N,26μm,0.6s							
MNMC	**Minye Minye**	**1.32**	**45**	*i* P		**Pb**	**01 54 45.7**	**-0.3**
MNMC				*i* S		**Sb**	**01 55 04.9**	**+2.3**
PB08	**IPOC Station P**	**1.35**	**93**	*i* P		**Pn**	**01 54 45.4**	**+0.3**
PB08				*i* S		**Sb**	**01 55 04.7**	**+1.0**
PB08				IAML			01 55 16.5	
	comp=E,7μm,1.1s							
PB01	**IPOC Station P**	**1.42**	**134**	*e*Pn		**Pn**	**01 54 44.9**	**-0.8**
PB12	**IPOC Station P**	**1.46**	**10**	*i*P		**Pn**	**01 54 47.1**	**+0.7**
PB12				*i* S		**Sb**	**01 55 08.3**	**+1.7**
PB13	**IPOC Station P**	**2.00**	**31**	*i*P		**Pb**	**01 54 56.3**	**-1.5**
PB13				*i* S		**Sb**	**01 55 23.6**	**+1.1**
PB09	**IPOC Station P**	**2.13**	**144**	*i* P		**Pn**	**01 54 55.4**	**-0.3**
PB09				*i* S		**Sn**	**01 55 20.9**	**-0.5**
PB03	**IPOC Station P**	**2.29**	**170**	*i*P		**Pn**	**01 54 59.2**	**-2.9**
PB04				*i* S		**Sn**	**01 55 23.0**	**-2.4**
PB04	**IPOC Station P**	**2.29**	**170**	*e*Pn		**Pn**	**01 54 56.5**	**-1.4**
LVC	**Limon Verde**	**2.98**	**149**	Pn		**Pn**	**01 55 07.5**	**+0.1**
	comp=E,5μm,0.3s,baz=330,slow=8.4,SNR=444							
LVC				Sn		**Sn**	**01 55 43.2**	**+0.7**
	comp=E,5μm,0.3s,baz=47,slow=20,SNR=6.6							
LVC				Lg		Lg	01 55 51.5	
	comp=E,14μm,0.3s,baz=42,slow=21,SNR=16							
LVC	**Limon Verde**	**2.98**	**149**	*i* S		**Sn**	**01 55 41.1**	**-1.3**
LVC	**Limon Verde**	**2.98**	**149**	*e*Pn		**Pn**	**01 55 07.4**	**-0.1**
LVC				Sn		**Sn**	**01 55 43.2**	**+0.7**
LVC				*e*Sg		**Sb**	**01 55 50.6**	**+0.2**
PB10	**IPOC Station P**	**3.43**	**179**	*e*Pn		**Pn**	**01 55 09.4**	**-4.0**
BBOJ	**La Paz, Jacaqu**	**3.82**	**37**	*e*Pn		**Pn**	**01 55 24.0**	**+4.7**
BBOD	**La Paz, Gloria**	**3.90**	**29**	*e*Pn		**Pn**	**01 55 24.7**	**+4.4**
BBOE	**La Paz, Chanca**	**4.07**	**38**	*e*Pn		**Pn**	**01 55 27.3**	**+4.6**
LPAZ	**La Paz**	**4.42**	**32**	Pn		**Pn**	**01 55 31.6**	**+4.1**
	comp=E,2.9nm,0.3s,baz=289,slow=5.7,SNR=64							
LPAZ				Pg		**Pb**	**01 55 35.1**	**-4.0**
	comp=E,8.0nm,0.3s,baz=289,slow=5.9,SNR=120							
LPAZ				Lg		Lg	01 56 44.4	
	comp=E,6.0nm,0.3s,baz=205,slow=17,SNR=1.4							
LPAZ				LR		LR	01 56 53.8	
	comp=E,1μm,18.1s,baz=237,slow=36							
LPAZ	**La Paz**	**4.42**	**32**	*e*P		**Pn**	**01 55 32.1**	**+4.5**
LPAZ	**La Paz**	**4.42**	**32**	*e*Pn		**Pn**	**01 55 32.1**	**+4.5**
LPAZ				Lg		Lg	01 56 44.4	
LPAZ	**La Paz**	**4.42**	**32**	*e*Pn		**Pn**	**01 55 31.8**	**+4.2**
BBOB	**La Paz, Bander**	**4.55**	**31**	*e*Pn		**Pn**	**01 55 33.3**	**+4.1**
MOCB	**Mochara**	**4.78**	**105**	*e*Pn		**Pn**	**01 55 36.6**	**+4.2**
MOCB				*e*Sn		**Sb**	**01 56 40.4**	**-2.0**
	comp=E,2μm,1.5s							
AHML	**Horco Molle**	**8.25**	**145**	*e*P		**Pn**	**01 56 21.6**	**+2.0**
AHML				*e*S		**Sn**	**01 57 51.0**	**-0.9**
VCA	**Vinchina**	**8.90**	**166**	*e*P		**Pn**	**01 56 27.6**	**-1.1**
VCA				*e*S		**Sn**	**01 58 08.1**	**-0.1**
LCO	**Las Campanas**	**8.91**	**181**	*e*P		Pn	01 56 34.7	+5.8
LCO	**Las Campanas**	**8.91**	**181**	*e*Pn		**Pn**	**01 56 26.8**	**-2.1**
LCO				*e*Lg		Lg	01 58 28.4	
CYA	**Choya**	**9.41**	**153**	*e*P		**Pn**	**01 56 35.1**	**-0.5**
AGUA	**GUANDACOL**	**9.57**	**169**	*e*P		Pn	01 56 32.1	-5.8
AGUA				*e*S		Sn	01 58 43.2	+19
SIV	**San Ignacio**	**9.92**	**67**	Pn		**Pn**	**01 56 42.5**	**0.0**
	comp=E,4.6nm,0.3s,baz=270,slow=10,SNR=38							
SIV				Sn		**Sn**	**01 58 30.3**	**-2.8**
	baz=263,slow=18,SNR=1.7							
SIV				LR		LR	02 01 11.8	
	comp=E,3μm,18.4s,baz=266,slow=42							
SIV	**San Ignacio**	**9.92**	**67**	*e*P		**Pn**	**01 56 43.5**	**+1.0**
NNA	**Nana**	**10.03**	**322**	Pn		**Pn**	**01 56 44.7**	**+0.6**
	comp=E,1.7nm,0.3s,baz=156,slow=12,SNR=3.4							
NNA				Sn		**Sn**	**01 58 30.5**	**-5.3**
	comp=E,2.3nm,0.3s,baz=259,slow=18,SNR=3.1							
NNA				LR		LR	02 00 37.4	
	comp=E,583nm,18.9s,baz=151,slow=38							
NNA	**Nana**	**10.03**	**322**	*e*P		**Pn**	**01 56 43.6**	**-0.5**
NNA				*e*			01 58 34.3	
NNA	**Nana**	**10.03**	**322**	*e*Pn		**Pn**	**01 56 43.6**	**-0.5**
NNA				*e*Sn		**Sn**	**01 58 34.3**	**-1.5**
AROD	**Rodeo**	**10.11**	**174**	*e*P		**Pn**	**01 56 48.6**	**+3.2**
AROD				*e*S		**Sn**	**01 58 46.5**	**+8.5**
ACDV	**Cuesta del Vie**	**10.15**	**173**	*e*P		**Pn**	**01 56 44.0**	**-1.8**
ACDV				*e*S		**Sn**	**01 58 47.6**	**+8.8**
ACCO	**Cerro Coronel**	**10.57**	**173**	*e*P		**Pn**	**01 56 49.6**	**-2.0**
ACCO				*e*S		Sn	01 59 12.4	+23
RTLL	**Cerro Villicun**	**11.38**	**171**	*e*P		**Pn**	**01 56 57.9**	**-4.6**
RTLL				*e*S		Sn	01 58 58.2	-11
ACHE	**Chepes**	**11.60**	**163**	*e*P		Pn	01 57 13.8	+8.1
RTLS	**Leoncito**	**11.74**	**175**	*e*P		**Pn**	**01 57 04.0**	**-3.7**
RTLS				*e*S		**Sn**	**01 59 25.3**	**+7.2**
RTCV	**Cerro Valdivia**	**11.89**	**172**	*e*P		**Pn**	**01 57 10.6**	**+1.1**
AUSP	**Uspallata**	**12.16**	**175**	*e*P		P	01 57 19.7	-6.0
ASAL	**Salagasta**	**12.57**	**173**	*e*P		**Pn**	**01 57 16.3**	**-2.5**
ASAL				*e*S		Sn	01 59 49.3	+11
ARCO	**CERRO ARCO**	**12.81**	**174**	*e*P		**Pn**	**01 57 24.8**	**+2.6**
ARCO				*e*S		Sn	01 59 56.3	+12
ROC1	**El Roble**	**12.87**	**182**	*e*P		**P**	**01 57 31.0**	**-2.6**
ROC1				*e*S		Sn	02 00 02.9	+18
SAML	**Samuel**	**13.17**	**34**	*e*Pn		**Pn**	**01 57 27.1**	**+0.2**
CPUP	**Villa Florida**	**13.69**	**120**	Pn		**Pn**	**01 57 32.9**	**-1.2**
	comp=E,0.2nm,0.3s,baz=304,slow=12,SNR=6.3							
CPUP				LR		LR	02 03 42.5	
	comp=E,1μm,20.8s,baz=298,slow=42							
CPUP	**Villa Florida**	**13.69**	**120**	*e*P		**Pn**	**01 57 35.1**	**+1.0**
CPUP	**Villa Florida**	**13.69**	**120**	*e*Pn		**Pn**	**01 57 35.1**	**+1.0**
ATAH	**Atahualpa**	**14.92**	**328**	Pn		**P**	**01 57 55.2**	**-1.4**
	comp=E,0.5nm,0.3s,baz=132,slow=14,SNR=1.8							
CANA	**Caviahue**	**17.77**	**181**	*e*P		**P**	**01 58 28.2**	**+0.4**
TRQA	**Tornquist**	**19.43**	**159**	*e*P		**P**	**01 58 44.6**	**-1.3**
	comp=E,20nm,0.8s							
PLCA	**Paso Flores**	**20.60**	**180**	P		**P**	**01 58 57.5**	**-1.2**
	comp=E,9.0nm,0.8s,baz=18,slow=10,SNR=9.1							
PLCA				LR		LR	02 07 27.5	
	comp=E,480nm,18.3s,baz=12,slow=38							
PLCA	**Paso Flores**	**20.60**	**180**	*e*P		**P**	**01 58 58.3**	**-0.4**
PLCA	**Paso Flores**	**20.60**	**180**	*e*P		**P**	**01 58 58.4**	**-0.4**
	comp=E,105nm,1.8s							
OTAV	**Otavalo**	**21.60**	**338**	*e*P		**P**	**01 59 09.6**	**-0.5**
	comp=E,1.5nm,0.6s							
SPB	**Sao Paulo**	**21.78**	**103**	*e*P		**P**	**01 59 10.8**	**-0.6**
	comp=E,133nm,1.9s							
PTGA	**Pitinga**	**21.85**	**30**	P		**P**	**01 59 10.7**	**-1.5**
	comp=E,17nm,0.4s,baz=206,slow=12,SNR=22							
PTGA				S		S	02 03 01.2	-11
	comp=E,1.7nm,0.7s,baz=300,slow=20,SNR=1.7							
PTGA				Lg		Lg	02 05 55.0	
	comp=E,2.5nm,0.8s,baz=126,slow=19,SNR=2.1							
PTGA				LR		LR	02 08 33.6	
	comp=E,967nm,18.7s,baz=207,slow=39							
BDFB	**Brasilia**	**21.93**	**82**	P		**P**	**01 59 12.5**	**-0.8**
	comp=E,7.0nm,0.5s,baz=260,slow=18							
BDFB				LR		LR	02 08 55.7	
	comp=E,2μm,19.6s,baz=168,slow=40							
BDFB	**Brasilia**	**21.93**	**82**	*e*P		**P**	**01 59 14.6**	**+1.3**
BDFB				pmax		pmax		
	comp=Z,51nm,0.9s							
BDFB	**Brasilia**	**21.93**	**82**	*e*P		**P**	**01 59 14.6**	**+1.3**
	comp=Z,51nm,0.9s							
PRAC	**Prado**	**24.00**	**349**	*e*P		**P**	**01 59 34.5**	**+0.2**
	comp=Z,130nm,1.7s							
ROSC	**El Rosal**	**25.02**	**351**	P		**P**	**01 59 45.9**	**+1.9**
	comp=Z,7.3nm,0.5s,baz=122,slow=22,SNR=5.0

Y40A	Okolona	57.96	338	P		P	02 04 12.5	+0.7	
	baz=155								
234A	Clairette	58.11	332	P		P	02 04 13.5	+0.6	
	baz=149,SNR=6.4								
Y39A	Lockesburg	58.19	337	P		P	02 04 14.1	+0.8	
	baz=154								
WVT	Waverly	58.22	344	eP		P	02 04 12.3	-1.2	
WVT				pmax		pmax			
	comp=Z,9.0nm,0.8s								
WVT	Waverly	58.22	344	eP		P	02 04 12.3	-1.2	
	comp=Z,9.2nm,0.8s								
UALR	University of	58.33	339	eP		P	02 04 14.7	+0.4	
	comp=Z,10nm,0.9s								
Y38A	Idabel	58.41	336	P		P	02 04 15.0	+0.1	
	baz=153								
233A	Rising Star	58.46	332	P		P	02 04 15.3	0.0	
	baz=148								
Z36A	Blue Ridge	58.50	335	P		P	02 04 16.3	+0.8	
	baz=151,SNR=6.2								
MIAR	Mount Ida	58.55	338	P		P	02 04 15.9	+0.1	
	baz=154,SNR=10								
MIAR	Mount Ida	58.55	338	eP		P	02 04 16.0	+0.1	
MIAR				pmax		pmax			
	comp=Z,16nm,0.9s								
MIAR	Mount Ida	58.55	338	eP		P	02 04 16.0	+0.1	
	comp=Z,16nm,0.9s								
TX31	Lajitas Ar. Si	58.56	326	eP		P	02 04 16.4	+0.3	
TXAR	Lajitas Array	58.56	326	P		P	02 04 16.4	+0.2	
	comp=Z,2.0nm,1.0s,baz=148,slow=8.6,SNR=12								
TXAR				LR		LR	02 26 51.0		
	comp=Z,77nm,20.3s,baz=0.0,slow=33								
134A	White-Moore Ra	58.58	333	P		P	02 04 16.1	0.0	
	baz=150								
W41A	Tony Mavity, V	58.66	339	P		P	02 04 16.2	-0.4	
	baz=156,SNR=5.1								
W41B	Gary Mavity, V	58.66	339	P		P	02 04 16.4	-0.2	
	baz=156,SNR=5.1								
X39A	Fountain Ranch	58.71	337	P		P	02 04 17.4	+0.4	
	baz=154,SNR=9.6								
X301	Greenbrier Sit	58.77	339	eP		P	02 04 17.7	+0.4	
	comp=Z,7.6nm,0.9s								
WHAR	Wooly Hollow	58.78	339	eP		P	02 04 17.2	-0.2	
	comp=Z,8.1nm,1.0s								
Y37A	Hugo	58.80	336	P		P	02 04 18.1	+0.5	
	baz=152,SNR=5.6								
X201	Greenbrier Sit	58.80	339	eP		P	02 04 17.6	0.0	
	comp=Z,7.3nm,1.0s								
W40A	Ferguson Farm,	58.95	339	P		P	02 04 19.3	+0.7	
	baz=155,SNR=8.4								
X38A	Whitesboro	59.11	337	P		P	02 04 20.3	+0.6	
	baz=153,SNR=13								
V41A	Mountainview	59.19	340	P		P	02 04 20.2	0.0	
	baz=156,SNR=5.5								
Z34A	Collier Ranch,	59.19	333	P		P	02 04 21.0	+0.7	
	baz=150								
W39A	Magazine	59.20	338	P		P	02 04 20.7	+0.3	
	baz=154,SNR=7.4								
X37A	Clayton	59.24	336	P		P	02 04 21.4	+0.8	
	baz=153,SNR=11								
ABTX	Abilene, Hawle	59.31	332	P		P	02 04 21.4	+0.2	
	baz=148								
ABTX	Abilene, Hawle	59.31	332	eP		P	02 04 21.4	+0.2	
	comp=Z,16nm,1.2s								
W38A	Poteau	59.35	337	P		P	02 04 22.2	+0.8	
	baz=154,SNR=8.7								
U42A	Revenden	59.41	341	P		P	02 04 21.3	-0.5	
	baz=157								
V40A	Witts Springs	59.42	339	P		P	02 04 21.4	-0.6	
	baz=156								
Z33A	Whitaker Ranch	59.48	333	P		P	02 04 22.7	+0.3	
	baz=149								
RKT	Rikitea	59.52	254	eS		S	02 12 32.0	+0.8	
RKT				eLR		LR	02 21 55.0		
	comp=Z,381nm,30.2s								
PBMO	Poplar Bluff	59.56	342	eP		P	02 04 22.2	-0.6	
	comp=Z,11nm,1.0s								
X36A	Centrahoma	59.60	335	P		P	02 04 23.1	-0.1	
	baz=152								
Y34A	Reagan Ranch,	59.63	334	P		P	02 04 23.9	+0.5	
	baz=150,SNR=5.8								
X35A	Drake	59.70	335	P		P	02 04 23.6	-0.2	
	baz=151,SNR=5.7								
V39A	Pettigrew	59.73	338	P		P	02 04 24.2	0.0	
	baz=155,SNR=12								
W37B	Quinton	59.75	337	P		P	02 04 24.3	+0.1	
	baz=153,SNR=8.8								
WCI	Wyandotte Cave	59.83	346	eP		P	02 04 23.8	-0.9	
WCI				pmax		pmax			
	comp=Z,18nm,1.3s								
WCI	Wyandotte Cave	59.83	346	eP		P	02 04 23.8	-0.9	
	comp=Z,18nm,1.3s								
S45A	Carrier Mills	59.88	344	P		P	02 04 24.9	-0.1	
	baz=160								
U40A	Yellville	59.94	339	P		P	02 04 25.3	-0.1	
	baz=156,SNR=8.8								
MVL	Millersville	59.99	355	eP		P	02 04 26.4	+0.7	
	comp=Z,10nm,1.1s								
V38A	Canehill	60.02	338	P		P	02 04 25.5	-0.6	
	baz=154,SNR=13								
Y33A	Hilltop Ranch,	60.04	333	P		P	02 04 26.3	+0.1	
	baz=149								
W36A	Wetumka	60.05	336	P		P	02 04 25.5	-0.8	
	baz=152								
S44A	Carbondale	60.08	343	P		P	02 04 26.1	-0.2	
	baz=160								
U39A	Green Forest	60.17	339	P		P	02 04 26.6	-0.5	
	baz=155,SNR=6.5								
S43A	Fulton Ridge,	60.19	342	P		P	02 04 25.8	-1.4	
	baz=159								
T41A	Mountain View	60.21	341	P		P	02 04 26.6	-0.7	
	baz=157,SNR=5.9								
X34A	Smith Ranch, M	60.22	334	P		P	02 04 27.4	0.0	
	baz=150								
HHAR	Hobbs	60.24	338	eP		P	02 04 27.4	-0.1	
	comp=Z,23nm,1.3s								
V37A	Hulbert	60.31	337	P		P	02 04 27.8	-0.2	
	baz=153,SNR=7.0								
W35A	Tecumseh	60.32	335	P		P	02 04 27.2	-0.9	
	baz=151								
O56A	Blue Knob Stat	60.48	353	P		P	02 04 29.4	+0.3	
	baz=171,SNR=9.2								
V36A	Jenks	60.52	336	P		P	02 04 29.0	-0.4	
	baz=152,SNR=8.5								
T40A	Mansfield	60.55	340	P		P	02 04 29.2	-0.4	
	baz=156								
TUL1	Leonard	60.57	337	P		P	02 04 29.8	+0.1	
	baz=153,SNR=6.6								
TUL1	Leonard	60.57	337	eP		P	02 04 29.9	+0.1	
	comp=Z,21nm,1.0s								
S41A	Jillco Farms,	60.71	341	P		P	02 04 29.7	-1.0	
	baz=157,SNR=6.8								
T39A	Clever	60.72	339	P		P	02 04 29.9	-0.9	
	baz=155,SNR=6.4								
WMOK	Wichita Mounta	60.73	334	P		P	02 04 30.8	-0.2	
	baz=149								
WMOK	Wichita Mounta	60.73	334	eP		P	02 04 29.5	-1.4	
WMOK				e			02 05 14.9		
WMOK				pmax		pmax			
	comp=Z,2.0nm,0.8s								
WMOK	Wichita Mounta	60.73	334	eP		P	02 04 29.5	-1.4	
	comp=Z,1.6nm,0.8s								
WMOK				ePcP		PcP	02 05 14.8	+0.1	
U37A	Salina	60.77	337	P		P	02 04 30.7	-0.3	
	baz=153,SNR=7.5								
SSPA	Standing Stone	60.77	354	eP		P	02 04 30.9	-0.1	
	comp=Z,27nm,1.4s								
S40A	Lebanon	60.95	340	P		P	02 04 31.4	-0.9	
	baz=156								
W33A	Caddo, Fort Co	60.96	334	P		P	02 04 32.6	+0.1	
	baz=150,SNR=5.2								
U36A	Oologah	60.98	337	P		P	02 04 32.4	-0.1	
	baz=153								
T38A	Diamond	61.04	338	P		P	02 04 32.6	-0.3	
	baz=154,SNR=11								
Q44A	Meyer Farm, Va	61.15	344	P		P	02 04 32.1	-1.6	
	baz=160								
V34A	Guthrie	61.17	335	P		P	02 04 33.0	-0.8	
	baz=151								
V34A	Guthrie	61.17	335	eP		P	02 04 33.6	-0.3	
	comp=Z,12nm,0.9s								
W32A	Sentinel	61.26	333	P		P	02 04 34.2	-0.3	
	baz=149,SNR=10								
S39A	Bolivar	61.30	340	P		P	02 04 34.2	-0.5	
	baz=156,SNR=11								
U35A	Pawnee	61.33	336	P		P	02 04 34.7	-0.3	
	baz=152,SNR=12								
MNTX	Cornudas Mount	61.33	326	P		P	02 04 34.8	-0.2	
	baz=142,SNR=8.3								
MNTX	Cornudas Mount	61.33	326	eP		P	02 04 34.7	-0.4	
	comp=Z,5.3nm,1.0s								
T37A	Cheneyville 18	61.34	338	P		P	02 04 34.6	-0.3	
	baz=154,SNR=14								
N54A	Moraine State	61.34	352	P		P	02 04 35.1	+0.2	
	baz=170,SNR=6.8								
Q43A	New Douglas	61.37	343	P		P	02 04 34.0	-1.1	
	baz=159								
S38A	Stockton	61.44	339	P		P	02 04 35.3	-0.4	
	baz=155,SNR=7.0								
V33A	Lossen Ranch,	61.46	335	P		P	02 04 35.5	-0.4	
	baz=150,SNR=5.4								
R40A	Maddies Statio	61.52	341	P		P	02 04 35.2	-1.0	
	baz=157,SNR=7.0								
Q42A	Golden Eagle	61.57	342	P		P	02 04 35.4	-1.1	
	baz=159								
T36A	Boggs Farm, Ca	61.62	337	P		P	02 04 36.2	-0.7	
	baz=153,SNR=6.6								
BRYW	Bryant College	61.67	359	eP		P	02 04 37.9	+0.8	
	comp=Z,69nm,1.2s								
T35A	Sooner Cattle	61.73	337	P		P	02 04 37.1	-0.5	
	baz=152,SNR=6.9								
R39A	Chumby, Stover	61.78	340	P		P	02 04 37.1	-0.8	
	baz=156,SNR=6.3								
M54A	Oil Creek Stat	61.83	352	P		P	02 04 38.2	-0.1	
	baz=170,SNR=6.8								
MSTX	Muleshoe	61.87	330	P		P	02 04 38.4	-0.4	
	baz=145,SNR=6.0								
MSTX	Muleshoe	61.87	330	eP		P	02 04 38.6	-0.2	
	comp=Z,15nm,1.1s								
S37A	Fort Scott	61.88	338	P		P	02 04 37.7	-0.9	
	baz=154,SNR=12								
R38A	Fenwick Farm,	61.95	339	P		P	02 04 38.5	-0.6	
	baz=155,SNR=11								
T34A	McClaskey Farm	62.08	336	P		P	02 04 39.4	-0.5	
	baz=152,SNR=5.2								
Q40A	Laux Farm, Aux	62.10	341	P		P	02 04 39.8	-0.3	
	baz=157								
S36A	Lake Cedric, C	62.11	338	P		P	02 04 39.5	-0.6	
	baz=153,SNR=9.9								
AMTX	Amarillo	62.12	331	P		P	02 04 40.0	-0.4	
	baz=147								
BINY	Binghamton	62.15	355	eP		P	02 04 41.2	+0.9	
	comp=Z,28nm,1.1s								
VNA1	Neumayer--Stat	62.16	160	P		P	02 04 39.3	-0.8	
HRV	Adam Dziewonsk	62.26	359	eP		P	02 04 41.0	-0.1	
HRV						pmax		pmax	
	comp=Z,21nm,1.1s								
HRV	Adam Dziewonsk	62.26	359	eP		P	02 04 41.0	-0.1	
	comp=Z,21nm,1.1s								
S35A	Otter Creek Ra	62.34	337	P		P	02 04 41.4	-0.2	
	baz=153								
R37A	Teagarden Farm	62.37	339	P		P	02 04 41.3	-0.6	
	baz=154								
Q39A	Willow Grove F	62.43	340	P		P	02 04 41.7	-0.5	
	baz=156,SNR=6.3								
ERPA	Erie	62.48	352	eP		P	02 04 42.8	+0.3	
	comp=Z,30nm,0.9s								
TRY	Troy	62.55	357	eP		P	02 04 43.8	+0.9	
	comp=Z,38nm,1.1s								
Q38A	Cooks Store, C	62.55	340	P		P	02 04 42.5	-0.6	
	baz=156,SNR=14								
O42A	Bath	62.64	343	P		P	02 04 42.1	-1.5	
	baz=159								
S34A	Willow Spring	62.65	336	P		P	02 04 43.2	-0.5	
	baz=152								
Q37A	Longview Farm,	62.75	339	P		P	02 04 43.5	-0.9	
	baz=155								
P39B	Salisbury	62.76	341	P		P	02 04 43.4	-1.0	
	baz=156								
HDIL	Hopedale	62.77	344	P		P	02 04 43.0	-1.6	
	baz=160								
O41A	Passleys Farm,	62.79	343	P		P	02 04 43.3	-1.3	
	baz=156,SNR=5.1								
MMNY	Mt. Morris Dam	62.84	354	eP		P	02 04 45.4	+0.5	
O40A	La Belle	63.08	342	P		P	02 04 45.9	-0.7	
	baz=158								
P38A	Dawn	63.13	340	P		P	02 04 45.9	-1.0	
	baz=156								
Q36A	Arnold C. Orve	63.17	338	P		P	02 04 46.1	-1.1	
	baz=154								
ACCN	Adirondack Com	63.20	357	eP		P	02 04 48.3	+1.0	
	comp=Z,16nm,1.2s								
R34A	Isabella, Hill	63.23	337	P		P	02 04 47.0	-0.6	
	baz=152								
121A	Cookes Peak, D	63.26	325	P		P	02 04 46.8	-1.4	
	baz=140								
S32A	Newby Ranch, P	63.35	335	P		P	02 04 48.1	-0.3	
	baz=150								
P37A	Lathrop	63.36	340	P		P	02 04 47.4	-1.1	
	baz=155								
HNH	Hanover	63.47	359	eP		P	02 04 50.9	+1.8	
	comp=Z,34nm,1.2s								
Q34A	Chapman	63.66	337	P		P	02 04 49.9	-0.5	
	baz=152								
P36A	Good Intent, A	63.67	339	P		P	02 04 49.6	-1.0	
	baz=154								
KSU1	Kansas State U	63.70	338	P		P	02 04 49.7	-1.0	
	baz=153								
O37A	Wen Farm, M	63.82	340	P		P	02 04 51.4	-0.1	
	baz=155								
Q33A	Connelly Farm,	64.06	337	P		P	02 04 52.8	-0.3	
	baz=151								
SNAA	Sanae	64.14	161	P		P	02 04 53.2	-0.2	
SNAA	Sanae	64.14	161	c iP		P	02 04 52.8	-0.6	
SNAA	Sanae	64.14	161	eP		P	02 04 52.7	-0.6	
	comp=Z,32nm,1.3s								
P34A	Walnut Farm, R	64.17	338	P		P	02 04 53.3	-0.5	
	baz=152,SNR=5.9								
Q32A	Meitler Ranch,	64.32	336	P		P	02 04 54.4	-0.4	
	baz=151								
LAZ	Ladron	64.37	327	eP		P	02 04 56.8	+1.4	
LAZ				epP		sP	02 05 06.4	-0.8	
N37A	Lee Faris, Mou	64.38	340	P		P	02 04 54.2	-0.9	
	baz=155								
M39A	Webster	64.42	342	P		P	02 04 54.3	-1.1	
	baz=157								
ANMO	Albuquerque	64.45	328	⇓ iP		P	02 04 56.9	+0.9	
ANMO						pmax		pmax	
	comp=Z,6.0nm,1.7s								
ANMO	Albuquerque	64.45	328	eP		P	02 04 56.9	+0.9	
	comp=Z,17nm,1.8s								
FRNY	Flat Rock	64.64	358	eP		P	02 04 57.6	+0.8	
	comp=Z,24nm,1.2s								
FRNY				epP		sP	02 05 09.4	+0.8	
N36A	Muff Farm, Cla	64.67	340	P		P	02 04 56.9	-0.1	
	baz=155								
L40A	Anamosa	64.69	343	P		P	02 04 56.4	-0.8	
	baz=158								
O33A	Hebron	64.91	337	P		P	02 04 58.1	-0.5	
	baz=152								
M37A	Trindle Farm,	64.91	341	P		P	02 04 58.6	0.0	
	baz=156,SNR=6.0								
L39A	Vinton	64.97	343	P		P	02 04 58.4	-0.5	
	baz=158								
N34A	Lincoln	65.20	339	P		P	02 04 59.8	-0.8	
	baz=153								
T25A	Trinidad	65.22	331	P		P	02 05 01.2	+0.2	
	baz=145								
L38A	Oak Wood Farm,	65.26	342	P		P	02 04 59.7	-1.1	
	baz=157								
K40A	Colesburg	65.26	343	P		P	02 04 59.7	-1.2	
	baz=159								
K39A	Oelwein	65.47	343	P		P	02 05 01.3	-0.9	
	baz=158,SNR=5.6								
J41A	Loganville	65.59	345	P		P	02 05 02.2	-0.8	
	baz=160								
L36A	Harm Buss Farm	65.74	341	P		P	02 05 03.7	-0.3	
	baz=155								
J40A	Soldiers Grove	65.81	344	P		P	02 05 03.5	-0.9	
	baz=159								
J39A	Decorah	66.01	343	P		P	02 05 04.9	-0.7	
	baz=158,SNR=5.7								
K37A	Belmond	66.03	342	P		P	02 05 04.9	-0.9	
	baz=156								
TRQ	Mont Tremblant	66.07	357	eP		P	02 05 06.3	+0.3	
TRQ				epP		sP	02 05 18.7	+0.8	
L34A	Svendsen Farm,	66.17	339	P		P	02 05 06.4	-0.3	
	baz=153								
SDCO	Great Sand Dun	66.22	330	P		P	02 05 08.5	+1.0	
	baz=144,SNR=12								
SDCO	Great Sand Dun	66.22	330	eP		P	02 05 07.8	+0.3	
	comp=Z,16nm,1.3s								
J37A	Redenius Farm,	66.50	342	P		P	02 05 08.2	-0.7	
	baz=156								
J36A	Seneca 1, Swea	66.75	341	P		P	02 05 09.5	-0.9	
	baz=156								
I38A	Scanlan Farm,	66.83	343	P		P	02 05 10.0	-0.9	
	baz=158,SNR=5.2								
S22A	4UR Ranch, Cre	66.85	329	P		P	02 05 11.4	-0.1	
	baz=143								
S22A	4UR Ranch, Cre	66.85	329	eP		P	02 05 12.6	+1.0	
	comp=Z,6.2nm,1.4s								
S22A				epP		sP	02 05 24.1	+0.7	
MVCO	Mesa Verde	67.25	328	eP		P	02 05 14.3	+0.3	
	comp=Z,20nm,1.5s								
WUAZ	Wupatki	67.45	325	P		P	02 05 16.6	+1.3	
	baz=138,SNR=7.0								
WUAZ	Wupatki	67.45	325	eP		P	02 05 17.0	+1.7	
	comp=Z,10nm,1.0s								
GLA	Glamis	67.64	321	P		P	02 05 17.5	+1.2	
	baz=135								
ECSD	EROS Data Cent	67.83	340	P		P	02 05 16.6	-0.6	
	baz=154,SNR=7.5								
ECSD	EROS Data Cent	67.83	340	eP		P	02 05 17.1	-0.2	
	comp=Z,25nm,1.6s								
K30A	Basset	67.92	337	P		P	02 05 17.9	0.0	
	baz=150								
ISCO	Idaho Springs	67.94	332	P		P	02 05 19.1	+0.7	
	baz=144,SNR=6.0								
ISCO	Idaho Springs	67.94	332	eP		P	02 05 19.3	+0.9	
ISCO				pmax		pmax			
	comp=Z,13nm,1.4s								
ISCO	Idaho Springs	67.94	332	eP		P	02 05 19.3	+0.9	
	comp=Z,13nm,1.4s								
PV01	Paradox Valley	68.00	328	eP		P	02 05 20.1	+1.4	
SMCO	Snowmass	68.06	330	eP		P	02 05 20.6	+1.3	
	comp=Z,7.7nm,1.1s								
IKP	In-Ko-Pah, Jac	68.13	320	P		P	02 05 20.9	+1.4	
	baz=134								
VLDQ	Val d'Or	68.14	355	eP		P	02 05 19.6	+0.5	
BC3	Big Chuckawall	68.43	321	P		P	02 05 21.9	+0.5	
	baz=135								
J30A	Dallas	68.44	338	P		P	02 05 22.2	+1.0	
	baz=151								
MONP2	Monument Peak	68.49	320	P		P	02 05 23.4	+1.5	
	baz=134								
BAR	Barrett	68.49	319	eP		P	02 05 23.5	+1.8	
	comp=Z,8.9nm,0.9s								
W13A	Hualapai Mount	68.54	323	eP		P	02 05 23.9	+1.8	
IRM	Iron Mountain	68.60	321	P		P	02 05 23.6	+1.3	
	baz=135,SNR=7.0								
NVL	N'lazarevskaya	68.72	159	eP		P	02 05 22.6	+0.1	
F36A	Milaca	68.84	343	P		P	02 05 22.8	-0.7	
	baz=157								
N23A	Red Feather La	68.97	332	P		P	02 05 25.6	+0.8	
	baz=144								
N23A	Red Feather La	68.97	332	eP		P	02 05 25.8	+0.9	
BELC	Belle Mtn. Jos	69.00	321	P		P	02 05 26.2	+1.3	
	baz=134								
TPFO	Pinon Flats	69.00	320	P		P	02 05 26.8	+1.9	
	baz=134,SNR=6.3								
PFO	Pinyon Flats O	69.00	320	P		P	02 05 26.2	+1.2	
	baz=134,SNR=5.1								
PFO	Pinyon Flats O	69.00	320	eP		P	02 05 26.7	+1.7	
PFO				e*PP		sP	02 05 35.9	-0.9	
PFO				pmax		pmax			
	comp=Z,7.0nm,0.9s								
PFO	Pinyon Flats O	69.00	320	eP		P	02 05 26.7	+1.7	
	comp=Z,6.8nm,0.9s								
PFO				epP		sP	02 05 35.9	-0.9	
PHWY	Pilot Hill	69.09	333	eP		P	02 05 26.5	+0.9	
	comp=Z,22nm,1.6s								
GMRC	Granite Mounta	69.34	321	P		P	02 05 28.6	+1.5	
	baz=135,SNR=9.1								
KNB	Kanab	69.35	325	eP		P	02 05 29.4	+2.3	
KNB				pmax		pmax			
	comp=Z,30nm,1.4s								
KNB	Kanab	69.35	325	eP		P	02 05 29.4	+2.3	
	comp=Z,30nm,1.4s								
O20A	White River Ci	69.41	330	P		P	02 05 28.3	+0.9	
	baz=142,SNR=6.0								
O20A	White River Ci	69.41	330	eP		P	02 05 28.6	+1.1	
O20A				epP		sP	02 05 38.7	-0.6	
O20A				ePcP		PcP	02 05 48.8	-1.9	
LIC	Lamto	69.52	75	eP		P	02 05 26.8	-1.6	
LCMT	Little Creek M	69.58	325	eP		P	02 05 30.4	+1.9	
	comp=Z,16nm,1.6s								
TIC	Toumodi	69.69	75	eP		P	02 05 27.5	-2.0	
SRU	San Rafael Swe	69.73	328	eP		P	02 05 30.6	+1.2	
SRU				pmax		pmax			
	comp=Z,9.0nm,1.0s								
SRU	San Rafael Swe	69.73	328	eP		P	02 05 30.6	+1.2	
	comp=Z,8.9nm,1.0s								
MTPU	Mount Pierson	69.77	326	eP		P	02 05 31.5	+1.6	
	comp=Z,13nm,1.5s								
KIC	Kosan Boka	69.83	75	eP		P	02 05 28.5	-1.9	
	comp=Z,46nm,1.2s								
DBIC	Dimbokro	69.85	75	P		P	02 05 29.5	-1.0	
	comp=Z,12nm,1.0s,baz=213,slow=6.2,SNR=7.4								
DBIC				LR		LR	02 34 59.1		
	comp=Z,374nm,19.2s,baz=227,slow=35								
SZCU	Shurtz Canyon	69.92	325	eP		P	02 05 32.5	+1.8	
	comp=Z,25nm,1.6s								
DRLN	Deer Lake	69.98	9	eP		P	02 05 30.6	+0.1	
CCUT	Cedar City	70.03	325	eP		P	02 05 32.8	+1.4	
	comp=Z,14nm,1.1s								
P17A	Butcher Ranch,	70.11	328	eP		P	02 05 33.1	+1.4	
	comp=Z,23nm,1.3s								
MSU	Marysvale	70.12	326	eP		P	02 05 33.7	+1.8	
MSU	Marysvale	70.12	326	eP		P	02 05 33.7	+1.8	
QSPA	South Pole Qui	70.12	180	eP		P	02 05 31.4	0.0	
	comp=Z,47nm,1.1s								
SHPR	Sheep Range	70.27	323	eP		P	02 05 34.8	+2.0	
	comp=Z,5.1nm,0.9s								
GSC	Goldstone, Bar	70.38	321	P		P	02 05 34.7	+1.4	
	baz=134,SNR=5.7								
GSC	Goldstone, Bar	70.38	321	eP		P	02 05 34.6	+1.2	
GSC				pmax		pmax			
	comp=Z,7.0nm,0.9s								
GSC	Goldstone, Bar	70.38	321	eP		P	02 05 34.6	+1.2	
	comp=Z,6.8nm,0.9s								
F29A	Eureka	70.75	339	P		P	02 05 35.9	+0.6	
	baz=151								
EDW2	Edwards Air Fo	70.80	320	P		P	02 05 36.9	+1.0	
	baz=133								
RSSD	Black Hills	70.83	335	P		P	02 05 36.5	+0.4	
	baz=147								
RSSD	Black Hills	70.83	335	eP		P	02 05 37.0	+0.9	
RSSD				pmax		pmax			
	comp=Z,7.0nm,0.9s								
RSSD	Black Hills	70.83	335	eP		P	02 05 37.0	+0.9	
	comp=Z,6.6nm,

BW06	**Boulder Array**	**72.09**	**331**	*e*P	**P**	**02 05 44.1**	**+0.4**
PD31	**Pinedale Array**	**72.09**	**331**	*e*P	**P**	**02 05 44.2**	**+0.4**
PDAR	**Pinedale Array**	**72.09**	**331**	P	**P**	**02 05 43.8**	**0.0**
	comp=Z,1.0nm,0.6s,baz=127,slow=5.6,SNR=8.7						
PDAR				LR	LR	02 40 18.1	
	comp=Z,83nm,18.4s,baz=122,slow=38						
HWUT	**Hardware Ranch**	**72.14**	**329**	*e*P	**P**	**02 05 44.9**	**+0.9**
SPUT	**South Promonto**	**72.35**	**328**	*e*P	**P**	**02 05 46.5**	**+1.2**
BGU	**Big Grassy Mou**	**72.36**	**328**	*e*P	**P**	**02 05 46.5**	**+1.2**
MDND	**Maddock**	**72.44**	**340**	P	**P**	**02 05 45.5**	**0.0**
	baz=151,SNR=5.1						
MDND	**Maddock**	**72.44**	**340**	*e*P	**P**	**02 05 46.0**	**+0.6**
TBI	**Tubuai**	**72.47**	**251**	*e*S	**S**	**02 15 11.0**	**+2.0**
	comp=Z,106nm,28.2s						
TBI	**Tubuai**	**72.47**	**251**	*e*LR	LR	02 28 01.0	
	comp=Z,343nm,27.0s,baz=124						
AHID	**Auburn Hatcher**	**72.81**	**330**	*e*P	**P**	**02 05 48.9**	**+0.9**
HVU	**Hansel Valley**	**72.87**	**328**	*e*P	**P**	**02 05 49.3**	**+1.0**
HVU	**Hansel Valley**	**72.87**	**328**	*e*P	**P**	**02 05 49.3**	**+1.0**
REDW	**Red Top Meadow**	**73.15**	**330**	*e*P	**P**	**02 05 49.8**	**-0.3**
LOHW	**Long Hollow**	**73.23**	**331**	*e*P	**P**	**02 05 51.6**	**+1.1**
TPAW	**Teton Pass**	**73.30**	**331**	*e*P	**P**	**02 05 52.5**	**+1.5**
TPAW				*e*pP	**sP**	**02 06 03.4**	**+0.5**
MOOW	**Moose Ponds**	**73.40**	**331**	*e*P	**P**	**02 05 51.0**	**-0.5**
	comp=Z,7.5nm,1.3s						
ULM	**Lac du Bonnet**	**73.49**	**343**	P	**P**	**02 05 50.9**	**-0.7**
	comp=Z,2.5nm,0.5s,baz=147,slow=8.1,SNR=6.4						
ULM				LR	LR	02 40 16.6	
	comp=Z,114nm,22.0s,baz=10,slow=38						
IMW	**Indian Meadow**	**73.61**	**331**	*e*P	**P**	**02 05 54.0**	**+1.2**
FLWY	**Flagg Ranch**	**73.64**	**331**	*e*P	**P**	**02 05 52.9**	**0.0**
	comp=Z,14nm,0.9s						
TVH3	**East Aurora ar**	**73.65**	**322**	*e*P	**P**	**02 05 55.0**	**+2.0**
B26A	**Jensen Ranch,**	**73.78**	**339**	P	**P**	**02 05 54.2**	**+0.8**
	baz=149						
RLMT	**Red Lodge**	**73.82**	**333**	P	**P**	**02 05 54.8**	**+0.9**
	baz=142,SNR=5.9						
RLMT	**Red Lodge**	**73.82**	**333**	*e*P	**P**	**02 05 55.1**	**+1.1**
	comp=Z,7.9nm,0.8s						
LAO	**LASA Array**	**73.83**	**335**	P	**P**	**02 05 54.4**	**+0.7**
	baz=145,SNR=5.2						
LAO	**LASA Array**	**73.83**	**335**	*e*P	**P**	**02 05 54.5**	**+0.7**
WAKR	**Walker**	**74.10**	**322**	*e*P	**P**	**02 05 57.9**	**+2.1**
PPT2	**Papeete2**	**74.11**	**257**	*e*S	**S**	**02 15 28.4**	**+0.5**
	comp=Z,121nm,25.2s						
PPT2	**Papeete2**	**74.11**	**257**	*e*LR	LR	02 28 41.9	
	comp=Z,308nm,24.0s						
YMR	**Madison River**	**74.21**	**331**	*e*P	**P**	**02 05 59.4**	**+3.1**
YHH	**Holmes Hill**	**74.25**	**331**	*e*P	**P**	**02 05 59.0**	**+2.4**
YERR	**Yerington**	**74.32**	**323**	*e*P	**P**	**02 05 58.8**	**+1.9**
GCMT	**Greycliff**	**74.52**	**333**	*e*P	**P**	**02 05 59.1**	**+1.2**
DGMT	**Dagmar**	**74.55**	**338**	P	**P**	**02 05 58.1**	**+0.2**
	baz=147						
SCHQ	**Schefferville**	**74.66**	**2**	P	**P**	**02 05 58.5**	**+0.1**
	comp=Z,1.1nm,0.3s,baz=202,slow=3.4,SNR=3.1						
SCHQ				LR	LR	02 40 52.4	
	comp=Z,73nm,19.4s,baz=312,slow=38						
PAHR	**Pah Rah Range**	**74.89**	**323**	*e*P	**P**	**02 06 02.1**	**+2.0**
HLID	**Hailey**	**75.00**	**329**	P	**P**	**02 06 01.9**	**+1.1**
	baz=138,SNR=20						
HLID	**Hailey**	**75.00**	**329**	*e*P	**P**	**02 06 02.4**	**+1.6**
	comp=Z,12nm,1.0s						
MCMT	**McKenzie Canyo**	**75.20**	**330**	*e*P	**P**	**02 06 03.7**	**+1.7**
BOZ	**Bozeman (W)**	**75.27**	**332**	P	**P**	**02 06 02.8**	**+0.6**
	baz=140,SNR=9.5						
BOZ	**Bozeman (W)**	**75.27**	**332**	*e*P	**P**	**02 06 03.0**	**+0.8**
BOZ				pmax	pmax		
	comp=Z,8.0nm,1.1s						
BOZ	**Bozeman (W)**	**75.27**	**332**	*e*P	**P**	**02 06 03.0**	**+0.8**
	comp=Z,8.2nm,1.1s						
AFDM	**Forest Hills D**	**75.29**	**322**	*e*P	**P**	**02 06 03.6**	**+1.3**
DLMT	**Dillon**	**75.49**	**331**	*e*P	**P**	**02 06 04.9**	**+1.4**
	comp=Z,17nm,1.3s						
MFID	**Camas Ranch**	**75.59**	**328**	*e*P	**P**	**02 06 05.8**	**+1.6**
LRM	**Limekiln Ridge**	**75.77**	**331**	*e*P	**P**	**02 06 06.5**	**+1.3**
ORV	**Oroville**	**76.00**	**322**	*e*P	**P**	**02 06 08.1**	**+1.7**
ORV	**Oroville**	**76.00**	**322**	*e*P	**P**	**02 06 08.1**	**+1.7**
EGMT	**Eagleton**	**76.32**	**334**	P	**P**	**02 06 08.4**	**+0.2**
	baz=142,SNR=9.0						
EGMT	**Eagleton**	**76.32**	**334**	*e*P	**P**	**02 06 08.8**	**+0.6**
	comp=Z,13nm,0.9s						
MOD	**Modoc Plateau**	**76.89**	**324**	*e*P	**P**	**02 06 12.9**	**+1.4**
	comp=Z,6.2nm,0.9s						
CHMT	**Chamberlain Mo**	**76.96**	**332**	*e*P	**P**	**02 06 13.3**	**+1.4**
MSO	**Missoula**	**77.21**	**331**	*e*P	**P**	**02 06 14.7**	**+1.5**
SLMT	**Seeley Lake**	**77.32**	**332**	*e*P	**P**	**02 06 15.2**	**+1.4**
BMO	**Blue Mountains**	**77.37**	**328**	*e*P	**P**	**02 06 15.2**	**+1.1**
	comp=Z,5.4nm,0.9s						
SWMT	**Swartz Lake**	**77.75**	**332**	*e*P	**P**	**02 06 17.6**	**+1.4**
K05A	**Summer Lake**	**77.77**	**325**	*e*P	**P**	**02 06 18.5**	**+1.9**
VNDA	**Vanda**	**77.98**	**190**	P	**P**	**02 06 17.1**	**+0.1**
	comp=Z,1.2nm,0.5s,baz=275,slow=7.5,SNR=13						
VNDA	**Vanda**	**77.98**	**190**	*e*P	**P**	**02 06 17.0**	**0.0**
VNDA	**Vanda**	**77.98**	**190**	*e*P	**P**	**02 06 17.0**	**0.0**
YBMT	**Yellow Bay**	**78.02**	**332**	*e*P	**P**	**02 06 19.4**	**+1.7**
F10A	**Beach Ranch, E**	**78.13**	**329**	*e*P	**P**	**02 06 19.6**	**+1.3**
BSMT	**Bassoo Peak**	**78.36**	**331**	*e*P	**P**	**02 06 21.0**	**+1.4**
TORD	**Torodi Ar. Bea**	**78.37**	**71**	P	**P**	**02 06 18.7**	**-1.5**
	comp=Z,20nm,0.8s,baz=251,slow=5.4,SNR=92						
TORD				LR	LR	02 40 04.5	
	comp=Z,457nm,18.8s,baz=235,slow=35						
WALA	**Waterton Lakes**	**78.87**	**333**	*e*P	**P**	**02 06 22.0**	**-0.4**
	comp=Z,9.9nm,0.8s						
FFC	**Flin Flon**	**79.18**	**342**	*e*P	**P**	**02 06 23.9**	**+0.1**
FFC				pmax	pmax		
	comp=Z,6.0nm,1.1s						
FFC	**Flin Flon**	**79.18**	**342**	*e*P	**P**	**02 06 23.9**	**+0.1**
	comp=Z,6.4nm,1.1s						
HAWA	**Hanford**	**79.56**	**328**	*e*P	**P**	**02 06 27.6**	**+1.5**
B08A	**Colville Reser**	**80.83**	**329**	*e*P	**P**	**02 06 33.5**	**+0.7**
D05A	**Enumclaw**	**81.34**	**327**	*e*P	**P**	**02 06 36.5**	**+0.9**
EDM	**Edmonton**	**81.81**	**336**	*e*P	**P**	**02 06 37.3**	**-0.7**
EDM				pmax	pmax		
	comp=Z,29nm,0.8s						
EDM	**Edmonton**	**81.81**	**336**	*e*P	**P**	**02 06 37.3**	**-0.7**
	comp=Z,28nm,0.8s						
TSUM	**Tsumeb**	**81.96**	**107**	*e*P	**P**	**02 06 39.2**	**-0.6**
	comp=Z,29nm,1.2s						
MDT	**Midelt**	**82.05**	**51**	LR	LR	02 42 19.7	
	comp=Z,132nm,19.4s,slow=35						
PGC	**Sidney**	**83.05**	**328**	*e*P	**P**	**02 06 45.6**	**+1.2**
	comp=Z,8.4nm,0.8s						
BOSA	**Boshof**	**85.51**	**119**	P	**P**	**02 06 57.8**	**0.0**
	comp=Z,6.8nm,1.1s,baz=233,slow=3.4,SNR=3.4						
BOSA				LR	LR	02 41 34.8	
	comp=Z,176nm,18.4s,baz=264,slow=33						
TAM	**Tamanrasset**	**85.59**	**64**	*e*P	**P**	**02 06 58.5**	**+0.3**
TAM				pmax	pmax		
	comp=Z,43nm,1.3s						
TAM	**Tamanrasset**	**85.59**	**64**	*e*P	**P**	**02 06 58.5**	**+0.3**
	comp=Z,43nm,1.3s						
ESDC	**Sonseca Array**	**85.93**	**45**	P	**P**	**02 06 59.6**	**+0.3**
	comp=Z,4.0nm,1.0s,baz=240,slow=5.0,SNR=13						
ESDC				LR	LR	02 41 23.5	
	comp=Z,105nm,21.5s,baz=245,slow=33						
ESLA	**Sonseca Array**	**85.93**	**45**	*e*P	**P**	**02 07 00.1**	**+0.7**
ES19	**SONSECA Array**	**85.99**	**45**	*e*P	**P**	**02 06 59.1**	**-0.6**
MAW	**Mawson**	**86.14**	**164**	LR	LR	02 45 32.1	
	comp=Z,132nm,19.6s,baz=240,slow=36						
YKA	**Yellowknife Ar**	**89.32**	**341**	P	**P**	**02 07 15.1**	**+0.1**
	comp=Z,11nm,0.8s,baz=137,slow=4.9,SNR=71						
YKA				LR	LR	02 50 47.0	
	comp=Z,14nm,20.3s,baz=180,slow=38						
DLBC	**Dease Lake**	**92.22**	**333**	*e*P	**P**	**02 07 29.0**	**+0.2**
	comp=Z,5.8nm,0.9s						
KEST	**Kesra**	**93.70**	**53**	LR	LR	02 50 24.1	
	comp=Z,266nm,19.7s,baz=247,slow=36						
KDAK	**Kodiak Island**	**102.58**	**327**	*i* P	**Pdif**	**02 08 18.8**	**+3.4**
COLA	**College**	**102.70**	**335**	*i* P	**Pdif**	**02 08 17.4**	**+1.6**
COLA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
VYHS	**Vyhne**	**104.38**	**43**	*e*PDIFF	**Pdif**	**02 08 25.6**	**+1.8**
STHS	**Stebnicka Huta**	**106.14**	**43**	*e*PDIFF	**Pdif**	**02 08 33.7**	**+2.2**
BRTR	**Keskin Array B**	**113.28**	**54**	PKiKP	**PKiKP**	**02 12 56.0**	**-1.2**
	comp=Z,0.3nm,0.8s,baz=193,slow=2.2,SNR=4.0						
LVZ	**Lovozero**	**114.16**	**24**	⇑*i*PKIKP	PKPdf	02 12 59.5	+1.6
KLMR	**Klimovskoe**	**117.10**	**31**	*e*PKIKP	**PKPdf**	**02 13 02.5**	**-1.2**
KLMR				pmax	pmax		
	comp=Z,6.0nm,1.5s						
KIV	**Kislovodsk**	**120.28**	**50**	*e*PKIKP	**PKPdf**	**02 13 10.5**	**0.0**
KIV	**Kislovodsk**	**120.28**	**50**	*e*PKPdf	**PKPdf**	**02 13 10.5**	**0.0**
NEY	**Neytrino**	**120.31**	**51**	⇓*i*PKIKP	**PKPdf**	**02 13 12.0**	**+1.3**
KBZ	**Khabaz**	**120.43**	**50**	PKP	**PKPdf**	**02 13 11.2**	**+0.6**
	comp=Z,3.0nm,0.9s,baz=307,slow=4.0,SNR=4.8						
GNI	**Garni**	**121.82**	**55**	*e*PKIKP	**PKPdf**	**02 13 14.4**	**+0.8**
GNI	**Garni**	**121.82**	**55**	*e*PKPdf	**PKPdf**	**02 13 14.4**	**+0.8**
H11S2	**WAKE ISLAND Hyl**	**126.12**	**279**	T	T	04 32 44.1	
	baz=102,slow=74,SNR=154						
H11S1	**WAKE ISLAND Hyl**	**126.13**	**279**	T	T	04 32 48.5	
	baz=102,slow=74,SNR=126						
H11S3	**WAKE ISLAND Hyl**	**126.14**	**279**	T	T	04 32 45.8	
	baz=102,slow=74,SNR=87						
H11N3	**WAKE ISLAND Hyl**	**126.17**	**280**	T	T	04 32 46.2	
	baz=101,slow=74,SNR=53						
H11N2	**WAKE ISLAND Hyl**	**126.19**	**280**	T	T	04 32 49.7	
	baz=101,slow=74,SNR=76						
H11N1	**WAKE ISLAND Hyl**	**126.19**	**280**	T	T	04 32 49.1	
	baz=101,slow=74,SNR=47						
CTAO	**Charters Tower**	**126.20**	**224**	*e*PKIKP	**PKPdf**	**02 13 22.6**	**+0.1**
CTAO	**Charters Tower**	**126.20**	**224**	*e*PKPdf	**PKPdf**	**02 13 22.6**	**+0.1**
ARU	**Arti**	**127.83**	**33**	*i* PKIKP	**PKPdf**	**02 13 25.0**	**+0.6**
ARU						02 15 28.4	
ARU						02 20 33.1	
ARU				SS	SS	02 32 38.3	+1.1
ARU	**Arti**	**127.83**	**33**	*e*PKPdf	**PKPdf**	**02 13 24.6**	**+0.2**
SEY	**Seymchan**	**128.16**	**337**	PKP	**PKPdf**	**02 13 25.6**	**+0.7**
	comp=Z,4.8nm,0.8s,baz=60,slow=4.3,SNR=11						
SEY	**Seymchan**	**128.16**	**337**	⇓*e*PKIKP	**PKPdf**	**02 13 24.2**	**-0.7**
ASAR	**Alice Springs**	**130.41**	**210**	PKP	**PKPdf**	**02 13 29.5**	**-1.0**
	comp=Z,2.6nm,1.0s,baz=157,slow=2.2,SNR=15						
ABKAR	**Akbulak array**	**131.14**	**41**	*e*PKPdf	**PKPdf**	**02 13 31.0**	**0.0**
GEYT	**Alibeck**	**132.35**	**57**	PKP	**PKPdf**	**02 13 33.8**	**+0.1**
	comp=Z,1.3nm,0.7s,baz=189,slow=8.6,SNR=4.6						
WRA	**Warramunga Arr**	**133.34**	**213**	PKP	**PKPdf**	**02 13 35.7**	**-0.4**
	comp=Z,1.2nm,0.7s,baz=152,slow=1.6,SNR=11						
WRAB	**Tennant Creek**	**133.34**	**213**	*e*PKIKP	**PKPdf**	**02 13 35.8**	**-0.3**
WRAB	**Tennant Creek**	**133.34**	**213**	*e*PKPdf	**PKPdf**	**02 13 35.8**	**-0.3**
BRVK	**Borovoye**	**135.40**	**33**	⇓*e*PKIKP	**PKPdf**	**02 13 39.8**	**+1.0**
BRVK	**Borovoye**	**135.40**	**33**	*e*PKPdf	**PKPdf**	**02 13 39.3**	**+0.5**
MBWA	**Marble Bar**	**137.80**	**194**	*e*PKPdf	**PKPdf**	**02 13 44.7**	**+0.3**
ZALV	**Zalesovo Beam**	**141.29**	**23**	PKhKP	PKPpre	02 13 43.8	
	comp=Z,1.3nm,0.5s,baz=290,slow=4.4,SNR=5.9						
ZALV				PKP	**PKPdf**	**02 13 50.6**	**+1.0**
	comp=Z,2.4nm,0.5s,baz=301,slow=2.3,SNR=11						
FRU	**Bishkek**	**143.03**	**44**	*e*PKIKP	**PKPdf**	**02 13 54.0**	**+0.9**
AAK	**Ala-Archa**	**143.03**	**45**	⇓*e*PKIKP	**PKPdf**	**02 13 52.1**	**-1.2**
AAK	**Ala-Archa**	**143.03**	**45**	*e*PKPdf	**PKPdf**	**02 13 54.1**	**+0.8**
MKAR	**Makanchi Array**	**145.35**	**33**	PKPbc	**PKPbc**	**02 13 56.8**	**-0.1**
	comp=Z,27nm,0.9s,baz=320,slow=3.4,SNR=84						
KSH	**Kashi**	**145.38**	**49**	*e*PKPbc	**PKPdf**	**02 13 57.5**	**0.0**
KSH				*e*pPKP	pPKPdf	02 14 08.6	+2.0
KSH				*e*sPKP		02 14 12.1	
KSH				*e*PP	**PP**	**02 17 21.3**	**+4.0**
KSH				SKS	**SKSdf**	**02 21 03.3**	**-1.7**
KSH				SKKS	**SKKSac**	**02 24 06.3**	**-1.8**
KSH				SS	**SS**	**02 36 07.0**	**-0.6**
KSH				AMB	AMB		
	comp=Z,67nm,4.1s						
KSH				LR	LR		
	comp=Z,65nm,8.7s						
KSH				LR	LR		
	comp=Z,94nm,5.2s						
KSH				LR	LR		
	comp=Z,97nm,6.1s						
KLR	**Kul'dur**	**145.85**	**334**	PKPbc	**PKPab**	**02 13 58.6**	**-0.2**
	comp=Z,7.1nm,0.9s,baz=32,slow=3.3,SNR=20						
KLR	**Kul'dur**	**145.85**	**334**	*c i* PKP2	**PKPbc**	**02 13 58.1**	**-0.2**
SOEI	**Soe**	**146.96**	**208**	*e*PKPbc	**PKPab**	**02 14 03.5**	**-0.7**
MOY	**Mondy**	**147.78**	**10**	*e*PKP2	**PKPbc**	**02 14 05.0**	**+1.0**
FAKI	**Fak Fak**	**147.99**	**227**	*e*PKPbc	**PKPbc**	**02 14 05.6**	**+0.1**
TLY	**Talaya**	**148.12**	**7**	*e*PKP2	**PKPbc**	**02 14 05.2**	**+0.4**
TLY				pmax	pmax		
	comp=Z,12nm,1.5s						
MMRI	**Maumere**	**148.81**	**205**	*e*PKPbc	**PKPbc**	**02 14 08.3**	**+0.7**
ZAK	**Zakamensk**	**149.36**	**8**	*e*PKP2	**PKPbc**	**02 14 07.7**	**-0.4**
ZAK				pmax	pmax		
	comp=Z,10.0nm,1.3s						
USRK	**Ussuriysk Ar.**	**149.46**	**327**	PKPbc	**PKPbc**	**02 14 08.9**	**+0.6**
	comp=Z,10nm,0.9s,baz=222,slow=1.7,SNR=16						
MJAR	**Matsushiro Arr**	**149.95**	**309**	PKPbc	**PKPbc**	**02 14 10.1**	**+0.2**
	comp=Z,8.2nm,1.0s,baz=98,slow=1.4,SNR=24						
MAJO	**Matsushiro**	**149.95**	**309**	⇓*i* PKP2	**PKPbc**	**02 14 10.0**	**+0.1**
MAJO	**Matsushiro**	**149.95**	**309**	*e*PKPbc	**PKPbc**	**02 14 10.0**	**+0.1**
MAJO				*e*PKPab	**PKPab**	**02 14 16.6**	**+1.0**
MAT	**Matsushiro**	**149.95**	**309**	PKP	**PKPbc**	**02 14 09.4**	**-0.5**
YMQ	**Urumqi**	**150.16**	**33**	PKPbc	**PKPbc**	**02 14 10.8**	**+0.6**
WMQ				AMB	AMB		
	comp=Z,140nm,4.4s						
WMQ				LR	LR		
	comp=Z,150nm,20.0s						
WMQ				LR	LR		
	comp=Z,160nm,20.2s						
WMQ				LR	LR		
	comp=Z,160nm,21.0s						
HYB	**Hyderabad**	**150.68**	**90**	*i* PKP	**PKPbc**	**02 14 12.0**	**-0.2**
MSHR	**Mys Shultsa**	**151.02**	**326**	*i* PKIKP	**PKPbc**	**02 14 12.7**	**+0.5**
SONM	**Songino Array**	**152.19**	**4**	PKP	**PKPdf**	**02 14 08.8**	**+0.6**
	comp=Z,1.4nm,0.9s,baz=15,slow=1.6,SNR=6.0						
SONM				PKPbc	**PKiKP**	**02 14 15.3**	**+0.1**
	comp=Z,4.3nm,0.8s,baz=335,slow=2.1,SNR=20						
CN2	**Changchun**	**152.80**	**334**	*e*PKPbc	**PKPdf**	**02 14 09.3**	**+0.3**
KSRS	**Korea Array**	**156.34**	**321**	PKP	**PKPdf**	**02 14 14.4**	**+0.3**
	comp=Z,2.0nm,0.9s,baz=76,slow=1.5,SNR=12						
KSAR	**Wonju Array Be**	**156.37**	**321**	PKIKP	**PKPdf**	**02 14 14.4**	**+0.2**
KSAR	**Wonju Array Be**	**156.37**	**321**	PKP	**PKPdf**	**02 14 14.4**	**+0.2**
GTA	**Gaotai**	**159.02**	**21**	*e*PKP	**PKPdf**	**02 14 17.9**	**+0.3**
GTA				pPKP	pPKPdf	02 14 28.0	+1.2
GTA				*s*PKP		02 14 32.6	
GTA				PKPab	**PKPab**	**02 14 54.4**	**+0.4**
HHC	**Hu-ho-hao-te**	**159.20**	**355**	*e*PKP	**PKPdf**	**02 14 15.4**	**-2.4**
HHC				AMB	AMB		
	comp=Z,51nm,4.3s						
CD2	**Chengdu**	**168.06**	**24**	PKP	**PKPdf**	**02 14 25.4**	**-0.8**
CMAR	**Chiang Mai Arr**	**169.98**	**97**	PKPab	**PKPab**	**02 15 42.8**	**-0.1**
	comp=Z,1.0nm,0.4s,baz=285,slow=5.6,SNR=4.3						
GYA	**Guiyang**	**173.15**	**21**	PKP	**PKPdf**	**02 14 28.3**	**-0.9**
GYA				PKPab	**PKPab**	**02 15 57.5**	**+1.0**
GYA				PKS	**PKSdf**	**02 17 58.0**	**-3.7**
GYA				PP	**PP**	**02 19 50.8**	**+3.7**
GYA				AMB	AMB		
	comp=Z,120nm,8.0s						

*ISCJB **24** 02:00:39.1±0.8, 30°.28N±0°.09×138°.6E±0°.2, h440km, mb3.1/6, Error ellipse: s-maj=21.5km s-min=11.9km az=11.6*
*IDC **24** 02:00:40.3±0.9, 30°.37N×138°.70E, h444km±15km, mb2.8/6, mb1 3.0/10, mb1mx2.8/31, mbtmp3.7/10, Error ellipse: s-maj=34.5km s-min=15.1km az=71.0*
ISC 24 02:00:40.3±1.1, 30°.3N±0°.1×138°.6E±0°.2, h440km, n11, σ0$65/12, mb3.2/6, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.97**	**19**	P		**P**		**02 01 47.2**	**+1.1**
	24nm,0.3s,baz=240,slow=20,SNR=8.2								
JHJ				S		**S**		**02 02 39.3**	**-0.5**
	35nm,0.3s,baz=108,slow=20,SNR=3.6								
MJAR	**Matsushiro Arr**	**6.21**	**357**	P		**P**		**02 02 15.9**	**-0.4**
	0.9nm,0.3s,baz=170,slow=11,SNR=18								
MAT	**Matsushiro**	**6.22**	**357**	P		**P**		**02 02 15.8**	**-0.5**
KSRS	**Korea Array**	**11.37**	**312**	P		**P**		**02 03 13.4**	**+1.2**
	0.3nm,0.3s,baz=125,slow=9.2,SNR=5.1								
USRK	**Ussuriysk Ar.**	**14.81**	**341**	P		**P**		**02 03 49.4**	**-0.1**
	0.3nm,0.3s,baz=166,slow=12,SNR=6.8								
CMAR	**Chiang Mai Arr**	**37.82**	**261**	P		**P**		**02 07 17.9**	**+0.1**
	0.8nm,0.3s,baz=49,slow=6.1,SNR=5.0								
MKAR	**Makanchi Array**	**46.01**	**307**	P		**P**		**02 08 22.6**	**0.0**
	0.5nm,0.7s,baz=86,slow=9.4,SNR=3.1								
WRA	**Warramunga Arr**	**50.14**	**185**	P		**P**		**02 08 53.7**	**-0.1**
	0.3nm,0.3s,baz=4.0,slow=8.0,SNR=11								
ASAR	**Alice Springs**	**53.87**	**185**	P		**P**		**02 09 21.1**	**+0.3**
	0.2nm,0.7s,baz=8.0,slow=14,SNR=3.8								
FINES	**FINESS Array B**	**73.66**	**332**	P		**P**		**02 11 27.3**	**-0.1**
	1.0nm,0.8s,baz=45,slow=3.5,SNR=5.2								
BRTR	**Keskin Array B**	**81.52**	**311**	P		**P**		**02 12 10.2**	**-0.7**
	0.4nm,0.7s,baz=85,slow=2.3,SNR=2.5								

*ISCJB **24** 02:03:12.3±0.8, 14°.6S±0°.1×73°.76W±0°.09, h87km, mb3.7/3, Error ellipse: s-maj=19.5km s-min=5.5km az=38.5*
*IDC **24** 02:03:14.1±1.5, 14°.50S×73°.68W, h82km±14km, mb3.5/3, mb1 3.8/10, mb1mx3.6/28, mbtmp4.0/10, Error ellipse: s-maj=34.2km s-min=9.5km az=34.0*
ISC 24 02:03:13.5±0.8, 14°.69S±0°.1×73°.80W±0°.1, h87km, n12, σ1$35/16, mb3.7/3, Central Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**4.00**	**312**	P			**Pn**	**02 04 12.5**	**0.0**
	32nm,0.3s,baz=136,slow=11,SNR=28								
NNA				S			**Sn**	**02 04 58.2**	**-0.1**
	27nm,0.3s,baz=249,slow=20,SNR=7.7								
LPAZ	**La Paz**	**5.69**	**107**	P			**Pn**	**02 04 36.9**	**+0.9**
	3.4nm,0.3s,baz=298,slow=9.3,SNR=78								
LPAZ				S			**Sn**	**02 05 42.0**	**+1.7**
	baz=170,slow=17,SNR=1.5								
ATAH	**Atahualpa**	**8.76**	**329**	P			**Pn**	**02 05 17.5**	**-0.3**
	0.7nm,0.3s,baz=143,slow=10,SNR=2.7								
ATAH				S			**Sn**	**02 06 54.5**	**-0.6**
	0.5nm,0.3s,baz=288,slow=20,SNR=1.9								
LVC	**Limon Verde**	**9.13**	**150**	P			**Pn**	**02 05 23.7**	**+0.9**
	30nm,0.3s,baz=350,slow=12,SNR=2.3								
LVC				S			**Sn**	**02 07 02.0**	**-2.1**
	68nm,0.3s,baz=38,slow=23,SNR=6.0								
SIV	**San Ignacio**	**12.34**	**98**	P			**Pn**	**02 06 04.4**	**-1.7**
	0.6nm,0.3s,baz=294,slow=15,SNR=7.0								
CPUP	**Villa Florida**	**19.26**	**130**	P			**P**	**02 07 32.6**	**+1.4**
	0.1nm,0.3s,baz=316,slow=7.6,SNR=4.2								
PTGA	**Pitinga**	**19.48**	**46**	P			**P**	**02 07 31.5**	**-2.1**
	0.2nm,0.3s,baz=221,slow=20,SNR=2.5								
TXAR	**Lajitas Array**	**52.42**	**327**	P			**P**	**02 12 18.0**	**+0.7**
	0.3nm,0.5s,baz=151,slow=9.3,SNR=6.9								
TORD	**Torodi Ar. Bea**	**79.68**	**73**	P			**P**	**02 15 11.2**	**-0.9**
	1.5nm,0.7s,baz=262,slow=5.2,SNR=7.8								
ESDC	**Sonseca Array**	**84.42**	**47**	P			**P**	**02 15 37.0**	**+0.4**
	0.6nm,0.7s,baz=252,slow=5.1,SNR=5.7								
ZALV	**Zalesovo Beam**	**137.39**	**19**	PKP			**PKPdf**	**02 22 28.3**	**+1.5**
	0.3nm,0.3s,baz=318,slow=1.9,SNR=3.0								
SONM	**Songino Array**	**146.96**	**360**	PKPbc			**PKPbc**	**02 22 47.4**	**+1.2**
	0.2nm,0.4s,baz=3.8,slow=4.3,SNR=2.6								

JMA 24 02:13:27.3±0.2, 38°.33N×144°.61E, h43km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.42**	**289**	P			Pn	02 14 05.8	+1.5
MIYJ	**Miyakonagasawa**	**2.51**	**301**	P			Pn	02 14 06.8	+1.3
MIYJ				S			Sn	02 14 36.1	+1.2
JIO	**Ouri**	**2.57**	**274**	P			Pn	02 14 07.6	+1.3
JIO				*e*S			Sn	02 14 37.3	+1.0
JMK	**Ichinoseki**	**2.73**	**284**	P			Pn	02 14 10.1	+1.6
JMK				*e*S

KDMR	**Kurdemir**	**2.27**	**3**	P		**Pn**	**02 34 00.1 +1.7**
	SNR=7.3						
KDMR				S		**Sb**	**02 34 31.3 +1.1**
GBS	**Qobustan**	**2.53**	**16**	⇑P		**Pn**	**02 34 03.1 +1.1**
	SNR=4.2						
GBS				⇓S		**Sb**	**02 34 38.0 +0.4**
GBS	**Qobustan**	**2.53**	**16**	P		**Pn**	**02 34 03.1 +1.1**
	SNR=4.2						
GBS				S		**Sb**	**02 34 38.0 +0.4**
IML	**Ismayilli**	**2.69**	**2**	⇑P		**Pn**	**02 34 05.5 +1.3**
	SNR=7.9						
IML				⇑S		**Sb**	**02 34 40.9 -1.3**
IML	**Ismayilli**	**2.69**	**2**	P		**Pn**	**02 34 05.5 +1.3**
	SNR=7.9						
IML				S		**Sb**	**02 34 40.9 -1.3**
PQL	**Pirkuli**	**2.72**	**9**	⇓P		**Pn**	**02 34 05.4 +0.7**
	SNR=3.2						
PQL				⇓S		**Sb**	**02 34 42.2 -0.9**
PQL	**Pirkuli**	**2.72**	**9**	P		**Pn**	**02 34 05.4 +0.7**
	SNR=3.2						
PQL				S		**Sb**	**02 34 42.2 -0.9**
MNGR	**Mingechevir, A**	**2.77**	**345**	⇓P		**Pn**	**02 34 06.9 +1.7**
MNGR				⇓S		**Sb**	**02 34 44.1 -0.3**
MNGR	**Mingechevir, A**	**2.77**	**345**	P		**Pn**	**02 34 06.9 +1.7**
MNGR				S		**Sb**	**02 34 44.1 -0.3**
ATGJ	**Altiaghaj**	**2.84**	**14**	⇓P		**Pn**	**02 34 08.1 +1.8**
ATGJ				⇓S		**Sn**	**02 34 43.6 +2.4**
ATGJ	**Altiaghaj**	**2.84**	**14**	P		**Pn**	**02 34 08.1 +1.8**
ATGJ				S		**Sn**	**02 34 43.6 +2.4**
QBL	**Gabala**	**2.84**	**357**	⇓P		**Pn**	**02 34 08.0 +1.7**
	SNR=3.5						
QBL				⇑S		**Sn**	**02 34 44.6 +3.4**
QBL	**Gabala**	**2.84**	**357**	P		**Pn**	**02 34 08.0 +1.7**
	SNR=3.5						
QBL				S		**Sn**	**02 34 44.6 +3.4**
GANJ	**Ganja**	**2.87**	**333**	⇓P		**Pn**	**02 34 08.6 +2.0**
	SNR=9.4						
GANJ				⇓S		**Sb**	**02 34 45.9 -1.5**
GANJ	**Ganja**	**2.87**	**333**	P		**Pn**	**02 34 08.6 +2.0**
	SNR=9.4						
GANJ				S		**Sb**	**02 34 45.9 -1.5**
MAKU	**Maku**	**2.91**	**297**	*e*Pn		**Pb**	**02 34 11.8 -0.8**
MAKU	**Maku**	**2.91**	**297**	*e*Pn		**Pb**	**02 34 11.8 -0.8**
SIZA	**Siyzn**	**3.04**	**12**	⇓P		**Pn**	**02 34 10.1 +1.0**
	SNR=7.8						
SIZA				⇑S		**Sn**	**02 34 49.2 +3.1**
SIZA	**Siyzn**	**3.04**	**12**	P		**Pn**	**02 34 10.1 +1.0**
	SNR=7.8						
SIZA				S		**Sn**	**02 34 49.2 +3.1**
SNGE	**Sanandaj**	**3.06**	**191**	*e*Pn		**Pn**	**02 34 11.1 +1.7**
SNGE				*e*Sg		**Sb**	**02 34 53.7 +0.8**
SNGE	**Sanandaj**	**3.06**	**191**	*e*Pn		**Pn**	**02 34 11.1 +1.7**
SNGE				*e*Sg		**Sb**	**02 34 53.7 +0.8**
XNQ	**Khinaliq**	**3.07**	**1**	⇑P		**Pn**	**02 34 11.4 +1.9**
	SNR=10						
XNQ				⇓S		**Sn**	**02 34 50.8 +3.9**
XNQ	**Khinaliq**	**3.07**	**1**	P		**Pn**	**02 34 11.4 +1.9**
	SNR=10						
XNQ				S		**Sn**	**02 34 50.8 +3.9**
THKV	**Tehran--Karaj**	**3.15**	**133**	*e*PN5			02 34 14.0
THKV				AML		AML	02 35 00.6
	comp=E,129nm,0.0s						
THKV				AML		AML	02 35 02.0
	comp=N,134nm,0.4s						
GDB	**GEDABAY**	**3.16**	**327**	⇑P		**Pn**	**02 34 12.8 +2.0**
	SNR=9.7						
GDB				⇓S		**Sb**	**02 34 55.4 -0.5**
GDB	**GEDABAY**	**3.16**	**327**	P		**Pn**	**02 34 12.8 +2.0**
	SNR=9.7						
GDB				S		**Sb**	**02 34 55.4 -0.5**
SEKA	**Sheki**	**3.17**	**348**	⇓P		**Pn**	**02 34 12.5 +1.6**
	SNR=14						
SEKA				⇑S		**Sn**	**02 34 53.3 +4.0**
SEKA	**Sheki**	**3.17**	**348**	P		**Pn**	**02 34 12.5 +1.6**
	SNR=14						
SEKA				S		**Sn**	**02 34 53.3 +4.0**
QUBA	**Quba, Azerbaij**	**3.27**	**6**	⇓P		**Pn**	**02 34 13.8 +1.6**
	SNR=6.1						
QUBA				⇓S		**Sb**	**02 34 56.9 -1.9**
QUBA	**Quba, Azerbaij**	**3.27**	**6**	P		**Pn**	**02 34 13.8 +1.6**
	SNR=6.1						
QUBA				S		**Sb**	**02 34 56.9 -1.9**
GNI	**Garni**	**3.28**	**310**	Pn		**Pb**	**02 34 20.3 +1.4**
	comp=N,7.5nm,0.3s,baz=328,slow=3.5,SNR=14						
GNI				Sn		**Sg**	**02 35 04.0 -1.2**
	comp=N,6.3nm,0.3s,baz=348,slow=23,SNR=4.9						
QSAR	**Qusar**	**3.41**	**3**	⇓P		**Pn**	**02 34 15.8 +1.6**
QSAR				⇓S		**Sb**	**02 35 00.7 -2.3**
QZX	**Qazax, Azerbai**	**3.60**	**326**	⇑P		**Pn**	**02 34 19.3 +2.6**
	SNR=8.1						
QZX				⇓S		**Sb**	**02 35 05.7 -2.8**
QZX	**Qazax, Azerbai**	**3.60**	**326**	P		**Pn**	**02 34 19.3 +2.6**
	SNR=8.1						
QZX				S		**Sb**	**02 35 05.7 -2.8**
IVIS	**Veis**	**3.70**	**195**	*e*Pn		**Pn**	**02 34 20.4 +2.3**
IVIS				*e*AMB		AMB	02 34 34.2
	comp=Z,322nm,0.3s						
IVIS	**Veis**	**3.70**	**195**	*e*Pn		**Pn**	**02 34 20.4 +2.3**
ZKTA	**Zakatala**	**3.70**	**343**	⇑P		**Pn**	**02 34 20.3 +2.3**
	SNR=9.1						
ZKTA				⇓S		**Sn**	**02 35 06.2 +4.0**
IPRN	**Peran**	**3.90**	**117**	*e*Pn		**Pn**	**02 34 21.6 +0.7**
IPRN				*e*AMB		AMB	02 35 11.6
	comp=Z,3μm,0.1s						
DGRG	**David-gareji**	**3.93**	**329**	P		**Pb**	**02 34 29.3 -0.5**
IGHG	**Ghaleghazi**	**3.95**	**198**	*e*Pn		**Pn**	**02 34 23.7 +2.0**
IGHG				*e*AMB		AMB	02 34 36.9
	comp=Z,1μm,0.3s						
IGHG	**Ghaleghazi**	**3.95**	**198**	*e*Pn		**Pn**	**02 34 23.7 +2.0**
IDMV	**Damavand**	**4.07**	**127**	*e*Pn		**Pn**	**02 34 25.1 +1.7**
IDMV				*e*AMB		AMB	02 35 44.5
	comp=Z,332nm,0.3s						
IDMV	**Damavand**	**4.07**	**127**	*e*Pn		**Pn**	**02 34 25.1 +1.7**
KZR	**Kazreti**	**4.31**	**321**	P		**Pb**	**02 34 39.4 +3.1**
IALA	**Alasht**	**4.31**	**116**	*e*Pn		**Pn**	**02 34 27.6 +0.9**
IALA				*e*AMB		AMB	02 35 26.1
	comp=Z,658nm,0.2s						
IALA	**Alasht**	**4.31**	**116**	*e*Pn		**Pn**	**02 34 27.6 +0.9**
TBLG	**Delisi**	**4.43**	**326**	P		**Pn**	**02 34 28.9 +0.9**
IFIR	**Firoozkooh**	**4.50**	**122**	*e*Pn		**Pn**	**02 34 29.9 +0.5**
IFIR				*e*AMB		AMB	02 34 37.8
	comp=Z,301nm,0.1s						
IFIR	**Firoozkooh**	**4.50**	**122**	*e*Pn		**Pn**	**02 34 29.9 +0.5**
BGD	**Bogdanovka**	**4.66**	**314**	P		**Pg**	**02 34 47.5 -1.7**
IGLO	**Ghaloghah**	**4.88**	**107**	*e*Pn		**Pn**	**02 34 35.6 +1.1**
IGLO				*e*AMB		AMB	02 35 41.3
	comp=Z,807nm,0.3s						
IKIA	**Kiasar**	**4.89**	**111**	*e*Pn		**Pn**	**02 34 35.7 +1.1**
IKIA				*e*AMB		AMB	02 35 39.0
	comp=Z,228nm,0.1s						
IKIA	**Kiasar**	**4.89**	**111**	*e*Pn		**Pn**	**02 34 35.7 +1.1**
GUDG	**Gudauri**	**5.14**	**329**	P		Pb	02 34 45.9 -4.7
GEYT	**Alibeck**	**7.96**	**88**	Pn		**Pn**	**02 35 14.9 -1.6**
	comp=Z,1.3nm,0.3s,baz=272,slow=16,SNR=8.4						
GEYT				Sn		**Sn**	**02 36 42.0 -5.1**
	comp=Z,0.5nm,0.3s,baz=297,slow=22,SNR=2.6						
GEYT				Lg		Lg	02 37 30.6
	comp=Z,0.8nm,0.3s,baz=184,slow=11,SNR=3.2						
AB31	**Akbulak array**	**14.07**	**34**	⇓P		Pn	02 36 33.2 -6.9
	comp=Z,0.5nm,0.3s,baz=203,slow=11,SNR=16						
AB31				⇓S		Sn	02 38 56.5 -20
	comp=Z,0.3nm,0.3s,baz=198,slow=17,SNR=7.6						
AKTO	**Aktyubinsk**	**14.23**	**27**	Pn		**Pn**	**02 36 38.8 -3.6**
	comp=Z,0.8nm,0.3s,baz=200,slow=13,SNR=12						
AKTO				Sn		Sn	02 39 11.2 -10
	comp=Z,0.4nm,0.3s,baz=297,slow=20,SNR=7.7						
AKTO	**Aktyubinsk**	**14.23**	**27**	⇓P		**Pn**	**02 36 39.2 -3.1**
	comp=Z,2.2nm,0.5s						
AKTO				⇑S		**Sn**	**02 39 13.4 -7.3**
	comp=Z,2.1nm,0.5s						
ARU	**Arti**	**19.63**	**18**	P		**P**	**02 37 48.5 -1.0**
	comp=Z,0.0nm,0.3s,baz=201,slow=7.4,SNR=9.2						
ARU				S		S	02 41 16.5 -15
	comp=Z,0.0nm,0.3s,baz=270,slow=20,SNR=3.1						
BVAR	**Borovoye Array**	**21.49**	**39**	P		**P**	**02 38 09.7 0.0**
	comp=Z,1.5nm,0.4s,baz=230,slow=9.1,SNR=15						
KURBB	**Kurchatov Arra**	**24.94**	**50**	P		**P**	**02 38 44.9 +0.6**
	comp=Z,0.2nm,0.2s,baz=246,slow=6.0,SNR=2.6						
MKAR	**Makanchi Array**	**26.55**	**60**	P		**P**	**02 38 59.9 +0.9**
	comp=Z,0.5nm,0.6s,baz=257,slow=11,SNR=3.7						
MKAR				LR		LR	02 50 11.3
	comp=Z,21nm,18.1s,baz=195,slow=38						
FINES	**FINESS Array B**	**27.07**	**337**	P		**P**	**02 39 06.8 +3.3**
	comp=Z,1.3nm,0.8s,baz=142,slow=16,SNR=3.0						
SADO	**Sadowa**	**84.74**	**325**	LR		LR	03 22 44.1

comp=Z,13nm,20.0s,baz=2.0,slow=35

JMA 24 02:36:56.9±0.1, 39.50N×142.92E, h17km±2km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.85**	**275**	P		Pb	02 37 12.8	-0.5
MIYJ				S		Sb	02 37 24.1	-0.3
JTH	**Tanohata**	**0.93**	**299**	P		Pb	02 37 14.2	-0.3
JTH				S		Sb	02 37 26.4	-0.1
OFUJ	**Ofunato**	**1.06**	**247**	P		Pb	02 37 16.2	-0.5
OFUJ				*e*S		Sb	02 37 30.4	+0.1
JOM	**Ohasama**	**1.26**	**269**	P		Pn	02 37 19.8	+0.1
JOM				*e*S		Sb	02 37 36.1	0.0
JKZ	**Kuzumaki**	**1.32**	**292**	P		Pb	02 37 20.9	-0.3
JKZ				S		Sn	02 37 37.4	-0.4
JANG	**Nango**	**1.39**	**309**	P		Pn	02 37 21.1	-0.4
JMK	**Ichinoseki**	**1.43**	**248**	P		Pn	02 37 22.1	+0.1
JMK				*e*S		Sn	02 37 40.1	-0.3
JIO	**Ouri**	**1.61**	**230**	P		Pn	02 37 24.5	0.0
JRG	**Rokugo**	**1.77**	**267**	P		Pb	02 37 28.8	-0.1
JRG				S		Sb	02 37 51.9	+1.0
JAH	**Hinai**	**1.89**	**292**	P		Pb	02 37 30.3	-0.6
JAH				S		Sb	02 37 54.3	+0.1
JTM	**Tenmabayashi**	**1.92**	**313**	P		Pn	02 37 29.7	+1.0
JTM				S		Sn	02 37 53.5	+1.1

*ISCJB **24** 02:48:10.8±0.8, 51.51N±0.04×16.14E±0.04, h0km, Error ellipse: s-maj=5.8km s-min=3.5km az=16.1*
*WAR **24** 02:48:13.1, 51.52N×16.11E, h1km, Mw2.1*
*CSEM **24** 02:48:13.1±0.5, 51.48N×16.14E, h2km, ML2.8/7, Error ellipse: s-maj=8.4km s-min=4.5km az=2.0*

ISC 24 02:48:12.1±1.2, 51.56N±0.05×16.16E±0.03, h0km, n28, σ0s59/56, Poland

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KSP	**Ksiaz**	**0.72**	**173**	*e*Pg		**Pg**	**02 48 26.0**	**+0.1**
KSP				*e*Sg		**Sg**	**02 48 34.9**	**-0.3**
KSP	**Ksiaz**	**0.72**	**173**	*e*Pg		**Pg**	**02 48 26.0**	**+0.1**
KSP				*e*Sg		**Sg**	**02 48 34.9**	**-0.3**
KSP	**Ksiaz**	**0.72**	**173**	*e*Pg		**Pg**	**02 48 26.0**	**+0.1**
KSP				*e*Sg		**Sg**	**02 48 34.9**	**-0.3**
UPC	**Upice**	**1.06**	**185**	*e*PG		**Pg**	**02 48 32.3**	**0.0**
UPC				*e*SG		**Sg**	**02 48 45.5**	**-0.5**
	comp=Z,16nm,0.3s							
UPC	**Upice**	**1.06**	**185**	Pg		**Pg**	**02 48 32.3**	**0.0**
UPC				Sg		**Sg**	**02 48 45.5**	**-0.5**
	16nm,0.3s							
DPC	**Dobruska-Polom**	**1.22**	**175**	*e*PG		**Pg**	**02 48 35.0**	**-0.3**
DPC				*e*SG		**Sg**	**02 48 50.3**	**-0.8**
	comp=Z,6.9nm,0.3s							
DPC	**Dobruska-Polom**	**1.22**	**175**	Pg		**Pg**	**02 48 35.0**	**-0.3**
DPC				Sg		**Sg**	**02 48 50.3**	**-0.8**
	6.9nm,0.3s							
PVCC	**Panska Ves**	**1.44**	**225**	*e*PG		**Pn**	**02 48 39.4**	**0.0**
PVCC				*e*SG		**Sg**	**02 48 58.1**	**-0.2**
	comp=Z,31nm,0.2s							
PVCC	**Panska Ves**	**1.44**	**225**	Pg		**Pn**	**02 48 39.4**	**0.0**
PVCC				Sg		**Sg**	**02 48 58.1**	**-0.2**
	31nm,0.2s							
KRLC	**Kraliky**	**1.54**	**165**	*e*PG		**Pn**	**02 48 40.8**	**0.0**
KRLC				*e*SG		**Sg**	**02 49 00.8**	**-0.6**
KRLC	**Kraliky**	**1.54**	**165**	Pg		**Pn**	**02 48 40.8**	**0.0**
KRLC				Sg		**Sg**	**02 49 00.8**	**-0.6**
GOPC	**GO Pecny, Ondr**	**1.86**	**208**	*e*PG		**Pg**	**02 48 47.4**	**-0.4**
GOPC				*e*SG		**Sb**	**02 49 10.2**	**-0.6**
GOPC	**GO Pecny, Ondr**	**1.86**	**208**	Pg		**Pg**	**02 48 47.4**	**-0.4**
GOPC				Sg		**Sb**	**02 49 10.2**	**-0.6**
PRU	**Pruhonice**	**1.88**	**214**	*e*PN		**Pn**	**02 48 45.6**	**+0.2**
PRU				*e*PG		**Pb**	**02 48 46.5**	**-0.7**
PRU				*e*SG		**Sb**	**02 49 10.5**	**-0.7**
	comp=Z,9.2nm,0.3s							
PRU	**Pruhonice**	**1.88**	**214**	Pn		**Pn**	**02 48 45.6**	**+0.2**
CLL	**Collm**	**1.99**	**264**	Lm		MLR	02 50 00.0	
	comp=Z,200nm,20.6s							
CLL	**Collm**	**1.99**	**264**	*e*Pn		**Pn**	**02 48 46.0**	**-1.0**
CLL				*e*Pg		**Pb**	**02 48 49.0**	**-0.2**
CLL				*e*Sg		**Sg**	**02 49 16.0**	**0.0**
	comp=Z,5.0nm,0.6s							
OKC	**Ostrava-Krasne**	**2.14**	**143**	*e*PG		**Pg**	**02 48 52.6**	**-0.4**
OKC				*e*SG		**Sb**	**02 49 19.3**	**+0.6**
	comp=Z,3.6nm,0.4s							
OKC	**Ostrava-Krasne**	**2.14**	**143**	Pg		**Pg**	**02 48 52.6**	**-0.4**
OKC				Sg		**Sb**	**02 49 19.3**	**+0.6**
	comp=Z,3.6nm,0.4s							
TREC	**Trest**	**2.31**	**191**	*e*PN		**Pn**	**02 48 52.3**	**+0.9**
TREC				*e*PG		**Pb**	**02 48 55.2**	**+0.6**
TREC				*e*SG		**Sb**	**02 49 23.9**	**+0.3**
	comp=Z,3.5nm,0.4s							
TREC	**Trest**	**2.31**	**191**	Pn		**Pn**	**02 48 52.3**	**+0.9**
OJC	**Ojcow**	**2.67**	**119**	*e*Pg		**Pg**	**02 49 02.9**	**-0.2**
OJC				*e*Sg		**Sg**	**02 49 37.6**	**0.0**
OJC	**Ojcow**	**2.67**	**119**	*e*Pg		**Pg**	**02 49 02.9**	**-0.2**
OJC				*e*Sg		**Sg**	**02 49 37.6**	**0.0**
OJC	**Ojcow**	**2.67**	**119**	*e*Pg		**Pg**	**02 49 02.9**	**-0.2**
OJC				*e*Sg		**Sg**	**02 49 37.6**	**0.0**
NKC	**Novy Kostel**	**2.70**	**242**	*e*PG		**Pg**	**02 49 04.6**	**+0.8**
NKC				*e*SG		**Sg**	**02 49 38.2**	**-0.6**
	comp=Z,8.6nm,0.4s							
NKC	**Novy Kostel**	**2.70**	**242**	Pg		**Pg**	**02 49 04.6**	**+0.8**
NKC				Sg		**Sg**	**02 49 38.2**	**-0.6**
	comp=Z,8.6nm,0.4s							
KHC	**Kasperske Hory**	**2.94**	**215**	*e*PN		**Pn**	**02 49 01.1**	**+1.0**
KHC				*e*PG		**Pb**	**02 49 06.0**	**+0.6**
KHC				*e*SN		**Sn**	**02 49 35.4**	**-0.7**
KHC				*e*SG		**Sb**	**02 49 43.8**	**+2.0**
KHC	**Kasperske Hory**	**2.94**	**215**	Pn		**Pn**	**02 49 01.1**	**+1.0**

*CSEM **24** 03:16:32.4, 34.79N×23.64E, h30km, ML2.4/1*
ATH 24 03:16:32.4, 34.79N×23.64E, h30km±1km, ML2.4/1, Error ellipse: s-maj=8.9km s-min=2.0km az=41.0, Crete

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GVD	**Gavdhos**	**0.37**	**82**	P		Pn	03 16 41.5	-0.2
GVD				S		Sb	03 16 46.9	+0.3
GVD	**Gavdhos**	**0.37**	**82**	P		Pn	03 16 41.5	-0.3
GVD				S		Sb	03 16 46.9	+0.2
GVD				AML		AML	03 16 47.6	
	comp=N,1179μm,0.3s							
GVD				AML		AML	03 16 48.6	
	comp=E,1428μm,0.3s							
IMMV	**Iera Moni Meta**	**0.73**	**22**	P		Pn	03 16 47.5	+0.8
IMMV	**Iera Moni Meta**	**0.73**	**22**	P		Pn	03 16 47.5	+0.8
VAM	**Vamos**	**0.77**	**36**	P		Pb	03 16 47.5	+0.2
ANKY	**Antikythira Is**	**1.11**	**346**	P		Pn	03 16 52.5	+0.5
ANKY	**Antikythira Is**	**1.11**	**346**	P		Pn	03 16 52.5	+0.5
IDI	**Anoyia**	**1.14**	**64**	P		Pb	03 16 54.5	+0.9
IDI	**Anoyia**	**1.14**	**64**	P		Pb	03 16 54.5	+0.9
LAST	**Lasithi**	**1.55**	**76**	P		Pb	03 16 59.7	-0.9
LAST	**Lasithi**	**1.55**	**76**	P		Pb	03 16 59.7	-0.9

*ISCJB **24** 03:39:44.4±0.8, 35.52N±0.06×27.24E±0.04, h12km±4km, Error ellipse: s-maj=11.0km s-min=4.6km az=156.6*
*ISK **24** 03:39:44.2, 35.54N×27.29E, h15km, ML2.4*
*THE **24** 03:39:44.0, 35.52N×27.31E, h2km±1km, ML2.8/3, Error ellipse: s-maj=1.7km s-min=0.6km az=340.0*
*CSEM **24** 03:39:44.3±0.2, 35.51N×27.26E, h10km, ML2.4, Error ellipse: s-maj=7.3km s-min=3.0km az=158.0*
*DDA **24** 03:39:57.8, 35.61N×27.36E, h9km, Md3.2*

ISC 24 03:39:41.1±1.3, 35.35N±0.05×27.40E±0.03, h5km±10km, n55, σ0s84/67, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KARP	**Karpathos**	**0.28**	**315**	PG		**Pg**	**03 39 47.6**	**+1.0**
KARP				*e*SG		**Sg**	**03 39 50.7**	**+0.4**
KARP	**Karpathos**	**0.28**	**315**	P		**Pg**	**03 39 46.7**	**+0.1**
KARP				S		**Sg**	**03 39 48.9**	**-1.4**
KARP	**Karpathos**	**0.28**	**315**	P		**Pg**	**03 39 46.7**	**+0.1**
KARP	**Karpathos**	**0.28**	**315**	*i* Pg		**Pg**	**03 39 47.6**	**+1.0**
KARP				S		**Sg**	**03 39 48.9**	**-1.4**
KARP				*e*Sg		Sg	03 39 50.7	+0.4
ARG	**Arkhangelos**	**1.05**	**34**	P		**Pn**	**03 40 02.2**	**-0.2**
ARG				S		**Sb**	**03 40 16.4**	**+0.7**
ARG	**Arkhangelos**	**1.05**	**34**	P		**Pn**	**03 40 02.2**	**-0.2**
ARG				S		**Sb**	**03 40 16.4**	**+0.7**
NIS1	**Nisyros Isl.**	**1.26**	**352**	*e*PG		**Pn**	**03 40 05.4**	**0.0**
NIS1	**Nisyros Isl.**	**1.26**	**352**	*e*Pg		**Pn**	**03 40 05.4**	**0.0**
NPS	**Neapolis**	**1.47**	**267**	P		**Pg**	**03 40 09.2**	**0.0**
NPS	**Neapolis**	**1.47**	**267**	P		**Pg**	**03 40 09.2**	**0.0**
LAST	**Lasithi**	**1.59**	**264**	P		**Pg**	**03 40 10.9**	**-0.6**
LAST	**Lasithi**	**1.59**	**264**	P		**Pg**	**03 40 10.9**	**-0.6**
BODT	**Bodrum**	**1.71**	**358**	*e*PN		**Pn**	**03 40 11.8**	**+0.2**
BODT	**Bodrum**	**1.71**	**358**	*e*Pn		**Pn**	**03 40 11.8**	**+0.2**
BDRM	**Kayabasi**	**1.71**	**1**	*i* P		**Pn**	**03 40 11.6**	**0.0**
BDRM				*i* S		**Sn**	**03 40 32.9**	**-1.0**
BDRM	**Kayabasi**	**1.71**	**1**	P		**Pn**	**03 40 11.6**	**0.0**
BDRM				S		**Sn**	**03 40 32.9**	**-1.0**
DALY	**Dalyan (Mu¨la**	**1.78**	**34**	*e*PN		**Pb**	**03 40 14.4**	**+0.2**
DALY	**Dalyan (Mu¨la**	**1.78**	**34**	*e*Pn		**Pb**	**03 40 14.4**	**+0.2**
FETY	**Fethiye**	**1.87**	**46**	*e*PN		**Pg**	**03 40 16.4**	**-0.6**
FETY	**Fethiye**	**1.87**	**46**	*e*Pn		**Pg**	**03 40 16.4**	**-0.6**
THR6	**Thira Island,**	**1.91**	**302**	P		**Pn**	**03 40 14.0**	**-0.3**
THR6	**Thira Island,**	**1.91**	**302**	P		**Pn**	**03 40 14.0**	**-0.3**
YER	**Yerkesik**	**1.92**	**21**	*e*PN		**Pb**	**03 40 15.6**	**-1.0**
YER	**Yerkesik**	**1.92**	**21**	*e*Pn		**Pb**	**03 40 15.6**	**-1.0**
THR3	**Thira Island,**	**1.94**	**304**	P		**Pn**	**03 40 14.5**	**-0.2**
THR3	**Thira Island,**	**1.94**	**304**	P		**Pn**	**03 40 14.5**	**-0.2**
MLSB	**Milas**	**1.97**	**9**	*e*PN		**Pn**	**03 40 15.6**	**+0.5**
MLSB	**Milas**	**1.97**	**9**	*e*Pn		**Pn**	**03 40 15.6**	**+0.5**
CMBO	**Columbo, Santo**	**1.97**	**305**	P		**Pn**	**03 40 14.9**	**-0.2**
CMBO	**Columbo, Santo**	**1.97**	**305**	P		**Pn**	**03 40 14.9**	**-0.2**
THR5	**Thira Island,**	**1.98**	**303**	*e*PN		**Pn**	**03 40 15.1**	**-0.2**
THR5	**Thira Island,**	**1.98**	**303**	P		**Pn**	**03 40 15.1**	**-0.2**
THR5	**Thira Island,**	**1.98**	**303**	P		**Pn**	**03 40 15.1**	**-0.2**
AKAS	**Kas**	**2.00**	**63**	*i* P		**Pg**	**03 40 18.4**	**-1.0**
AKAS				*i* S		**Sg**	**03 40 46.3**	**+1.0**
AKAS	**Kas**	**2.00**	**63**	P		**Pg**	**03 40 18.4**	**-1.0**
AKAS				S		**Sg**	**03 40 46.3**	**+1.0**
IDI	**Anoyia**	**2.06**	**269**	P		**Pn**	**03 40 16.8**	**+0.5**
IDI				S		**Sn**	**03 40 42.9**	**+0.5**
IDI	**Anoyia**	**2.06**	**269**	P		**Pn**	**03 40 16.8**	**+0.5**
IDI				S		**Sn**	**03 40 42.9**	**+0.5**
SIVA	**Sivas**	**2.15**	**262**	P		**Pb**	**03 40 20.4**	**-0.1**
SIVA	**Sivas**	**2.15**	**262**	P		**Pb**	**03 40 20.4**	**-0.1**
APE	**Apeiranthos**	**2.29**	**319**	*e*PN		**Pn**	**03 40 20.2**	**+0.7**
APE	**Apeiranthos**	**2.29**	**319**	P		**Pn**	**03 40 19.1**	**-0.4**
APE	**Apeiranthos**	**2.29**	**319**	P		**Pn**	**03 40 19.1**	**-0.4**
APE	**Apeiranthos**	**2.29**	**319**	*e*Pn		**Pn**	**03 40 20.2**	**+0.7**
ELL	**Elmali**	**2.46**	**55**	*e*PN		**Pb**	**03 40 25.0**	**-0.9**
ELL	**Elmali**	**2.46**	**55**	*e*Pn		**Pb**	**03 40 25.0**	**-0.9**
GLHS	**Glhisar (BURDU**	**2.47**	**43**	*e*PN		**Pb**	**03 40 24.4**	**-1.7**
GLHS	**Glhisar (BURDU**	**2.47**	**43**	*e*Pn		**Pb**	**03 40 24.4**	**-1.7**
GOLH	**Golhisar**	**2.57**	**42**	*i* P		**Pb**	**03 40 27.1**	**-0.6**
GOLH				*i* S		**Sg**	**03 41 06.6**	**+3.0**
GOLH	**Golhisar**	**2.57**	**42**	P		**Pb**	**03 40 27.1**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**2.62**	**8**	*e*PN		**Pn**	**03 40 24.8**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**2.62**	**8**	*e*Pn		**Pn**	**03 40 24.8**	**+0.6**
KULA	**Kula-Manisa**	**3.32**	**17**	*e*PN		**Pn**	**03 40 35.4**	**+1.7**
KULA	**Kula-Manisa**	**3.32**	**17**	*e*Pn		**Pn**	**03 40 35.4**	**+1.7**
VLI	**Veliai**	**3.87**	**292**	P		**Pn**	**03 40 41.2**	**0.0**
VLI	**Veliai**	**3.87**	**292**	P		**Pn**	**03 40 41.2**	**0.0**

*ISCJB **24** 03:47:32.7±0.5, 39.93N±0.01×24.01E±0.02, h7km±4km, Error ellipse: s-maj=2.6km s-min=2.4km az=33.9*
*ATH **24** 03:47:32.9, 39.94N×23.98E, h

FYTO	**Fytoko, Volos**	**0.97**	**238**	P	**Pg**	**03 47 51.6**	**-0.1**
FYTO				S	**Sb**	**03 48 04.9**	**+0.2**
FYTO	**Fytoko, Volos**	**0.97**	**238**	P	**Pg**	**03 47 51.6**	**-0.1**
FYTO				S	**Sb**	**03 48 04.9**	**+0.2**
SOH	**Sokhos**	**1.01**	**331**	P	**Pb**	**03 47 52.4**	**-0.3**
SOH				S	**Sb**	**03 48 06.5**	**+0.4**
SOH	**Sokhos**	**1.01**	**331**	P	**Pn**	**03 47 53.6**	**+0.2**
SOH				S	**Sb**	**03 48 06.5**	**+0.4**
SOH	**Sokhos**	**1.01**	**331**	P	**Pn**	**03 47 53.6**	**+0.2**
SOH				S	**Sg**	**03 48 05.8**	**0.0**
SOH				AML	AML	03 48 08.6	
	comp=E,3665µm,0.5s						
SOH				AML	AML	03 48 10.4	
	comp=N,3064µm,0.3s						
THE	**Thessaloniki**	**1.05**	**312**	P	**Pb**	**03 47 53.0**	**-0.3**
THE				S	**Sb**	**03 48 07.2**	**0.0**
THE	**Thessaloniki**	**1.05**	**312**	P	**Pb**	**03 47 53.0**	**-0.3**
THE				S	**Sb**	**03 48 07.2**	**0.0**
THE	**Thessaloniki**	**1.05**	**312**	P	**Pb**	**03 47 52.8**	**-0.5**
KAVA	**Kavala**	**1.14**	**20**	P	**Pb**	**03 47 54.6**	**-0.2**
KAVA	**Kavala**	**1.14**	**20**	P	**Pn**	**03 47 54.9**	**0.0**
KAVA	**Kavala**	**1.14**	**20**	P	**Pn**	**03 47 54.9**	**0.0**
SKY	**Skiros Island**	**1.14**	**158**	P	**Pg**	**03 47 55.1**	**+0.2**
SKY	**Skiros Island**	**1.14**	**158**	P	**Pg**	**03 47 55.1**	**+0.2**
LIT	**Litokhoron**	**1.17**	**279**	P	**Pb**	**03 47 54.4**	**-0.9**
LIT	**Litokhoron**	**1.17**	**279**	P	**Pg**	**03 47 55.6**	**+0.1**
LIT	**Litokhoron**	**1.17**	**279**	P	**Pg**	**03 47 55.6**	**+0.1**
SMIA	**Simia**	**1.21**	**210**	P	**Pn**	**03 47 55.9**	**-0.1**
SMIA				S	**Sn**	**03 48 13.9**	**+1.4**
SMIA	**Simia**	**1.21**	**210**	P	**Pn**	**03 47 55.9**	**-0.1**
SMIA				S	**Sn**	**03 48 13.9**	**+1.4**
SMIA				AML	AML	03 48 17.9	
	comp=N,5645µm,0.5s						
SMIA				AML	AML	03 48 19.5	
	comp=E,1927µm,0.5s						
SRS	**Serrai**	**1.22**	**346**	P	**Pn**	**03 47 56.1**	**-0.1**
SRS	**Serrai**	**1.22**	**346**	P	**Pb**	**03 47 56.4**	**+0.1**
SRS	**Serrai**	**1.22**	**346**	P	**Pb**	**03 47 56.4**	**+0.1**
SMTH	**Samothraki Isl**	**1.29**	**65**	P	**Pn**	**03 47 56.5**	**-0.7**
SMTH	**Samothraki Isl**	**1.29**	**65**	P	**Pn**	**03 47 56.5**	**-0.7**
SMTH	**Samothraki Isl**	**1.29**	**65**	P	**Pn**	**03 47 55.5**	**-1.6**
NVR	**Nevrokopi**	**1.42**	**356**	P	**Pn**	**03 47 59.1**	**+0.2**
NVR	**Nevrokopi**	**1.42**	**356**	P	**Pn**	**03 47 59.1**	**+0.2**
ATAL	**Atalanti**	**1.45**	**212**	P	**Pn**	**03 47 59.1**	**-0.2**
ATAL	**Atalanti**	**1.45**	**212**	P	**Pn**	**03 47 59.1**	**-0.2**
GADA	**Gvkgeada**	**1.48**	**79**	*e*PN	**Pn**	**03 47 59.9**	**+0.1**
GADA	**Gvkgeada**	**1.48**	**79**	*e*Pn	**Pn**	**03 47 59.9**	**+0.1**
KNT	**Kendrikon**	**1.49**	**326**	*e*PN	**Pb**	**03 48 00.7**	**0.0**
KNT	**Kendrikon**	**1.49**	**326**	P	**Pb**	**03 48 00.4**	**-0.3**
KNT	**Kendrikon**	**1.49**	**326**	P	**Pb**	**03 48 00.4**	**-0.3**
KNT	**Kendrikon**	**1.49**	**326**	*e*Pn	**Pb**	**03 48 00.7**	**0.0**
KNT	**Kendrikon**	**1.49**	**326**	P	**Pb**	**03 48 01.2**	**+0.5**
LKR	**Lokris**	**1.49**	**211**	P	**Pn**	**03 47 59.5**	**-0.4**
LKR	**Lokris**	**1.49**	**211**	P	**Pn**	**03 47 59.5**	**-0.4**
LKR	**Lokris**	**1.49**	**211**	P	**Pn**	**03 47 58.8**	**-1.1**
THL	**Klokotos Trika**	**1.57**	**257**	P	**Pn**	**03 48 00.8**	**-0.1**
THL	**Klokotos Trika**	**1.57**	**257**	P	**Pn**	**03 48 00.8**	**-0.1**
AGG	**Agios Georgios**	**1.57**	**235**	*e*PN	**Pn**	**03 48 01.0**	**0.0**
AGG	**Agios Georgios**	**1.57**	**235**	P	**Pn**	**03 48 01.3**	**+0.3**
AGG	**Agios Georgios**	**1.57**	**235**	P	**Pn**	**03 48 01.3**	**+0.3**
AGG	**Agios Georgios**	**1.57**	**235**	P	**Pn**	**03 48 01.0**	**0.0**
BOZC	**Bozcaada**	**1.59**	**93**	*i* P	**Pn**	**03 48 01.4**	**+0.3**
BOZC				*i* S	**Sn**	**03 48 20.0**	**-1.7**
GRG	**Griva**	**1.59**	**311**	*e*PN	**Pb**	**03 48 02.2**	**-0.3**
GRG	**Griva**	**1.59**	**311**	P	**Pb**	**03 48 02.4**	**-0.1**
GRG	**Griva**	**1.59**	**311**	*e*Pn	**Pb**	**03 48 02.2**	**-0.3**
GRG	**Griva**	**1.59**	**311**	P	**Pb**	**03 48 03.2**	**+0.7**
SIGR	**SIGRI**	**1.61**	**116**	*e*PN	**Pb**	**03 48 01.9**	**-0.9**
SIGR	**SIGRI**	**1.61**	**116**	P	**Pn**	**03 48 01.7**	**+0.3**
SIGR	**SIGRI**	**1.61**	**116**	*e*Pn	**Pn**	**03 48 01.9**	**-0.9**
SIGR	**SIGRI**	**1.61**	**116**	P	**Pn**	**03 48 01.4**	**0.0**
MMB	**Musomiste**	**1.67**	**353**	P	**Pn**	**03 48 02.3**	**0.0**
KZN	**Kozani**	**1.75**	**283**	P	**Pn**	**03 48 04.2**	**+0.8**
KZN	**Kozani**	**1.75**	**283**	P	**Pn**	**03 48 04.2**	**+0.8**
VAY	**Valandovo**	**1.76**	**322**	*e*Pn	**Pb**	**03 48 06.2**	**+0.8**
VAY				*e*Sn	**Sg**	**03 48 29.0**	**-0.7**
VAY	**Valandovo**	**1.76**	**322**	*e*Pn	**Pb**	**03 48 06.2**	**+0.8**
VAY				*e*Sn	**Sg**	**03 48 29.0**	**-0.7**
EZN	**Ezine**	**1.80**	**93**	*e*PN	**Pn**	**03 48 04.3**	**+0.3**
EZN	**Ezine**	**1.80**	**93**	*e*Pn	**Pn**	**03 48 04.3**	**+0.3**
ENEZ	**Enez**	**1.84**	**63**	*e*PN	**Pn**	**03 48 04.9**	**+0.3**
ENEZ	**Enez**	**1.84**	**63**	P	**Pn**	**03 48 04.8**	**+0.2**
ENEZ	**Enez**	**1.84**	**63**	*e*Pn	**Pn**	**03 48 04.9**	**+0.3**
RZN	**Rozhen**	**1.84**	**17**	P	**Pn**	**03 48 05.5**	**+0.7**
ALN	**Alexandroupoli**	**1.84**	**58**	*e*PN	**Pn**	**03 48 05.3**	**+0.7**
ALN	**Alexandroupoli**	**1.84**	**58**	P	**Pn**	**03 48 04.4**	**-0.2**
ALN	**Alexandroupoli**	**1.84**	**58**	P	**Pn**	**03 48 04.4**	**-0.2**
ALN	**Alexandroupoli**	**1.84**	**58**	*e*Pn	**Pn**	**03 48 05.3**	**+0.7**
ALN	**Alexandroupoli**	**1.84**	**58**	P	**Pn**	**03 48 04.3**	**-0.3**
PTL	**Penteli**	**1.88**	**183**	P	**Pn**	**03 48 05.0**	**-0.3**
PTL	**Penteli**	**1.88**	**183**	P	**Pn**	**03 48 05.0**	**-0.3**
PRK	**Paraskevi**	**1.89**	**111**	P	**Pb**	**03 48 06.6**	**-1.0**
PRK	**Paraskevi**	**1.89**	**111**	P	**Pb**	**03 48 06.6**	**-1.0**
DSF	**Desfina**	**1.90**	**217**	P	**Pn**	**03 48 05.2**	**-0.3**
DSF	**Desfina**	**1.90**	**217**	P	**Pn**	**03 48 05.2**	**-0.3**
DSF	**Desfina**	**1.90**	**217**	P	**Pn**	**03 48 04.7**	**-0.8**
GELI	**Tayfur-Gelibol**	**1.96**	**75**	*e*PN	**Pn**	**03 48 06.8**	**+0.6**
GELI	**Tayfur-Gelibol**	**1.96**	**75**	*e*Pn	**Pn**	**03 48 06.8**	**+0.6**
EVR	**Evrytania**	**1.97**	**240**	P	**Pn**	**03 48 04.9**	**-1.6**
EVR	**Evrytania**	**1.97**	**240**	P	**Pn**	**03 48 04.9**	**-1.6**
KPRO	**Kipourio**	**2.02**	**272**	P	**Pn**	**03 48 05.5**	**+1.3**
KPRO	**Kipourio**	**2.02**	**272**	P	**Pn**	**03 48 05.5**	**+1.3**
KDZ	**Kurdzhali**	**2.03**	**32**	P	**Pn**	**03 48 06.8**	**-0.5**
KKB	**Krupnik**	**2.05**	**341**	P	**Pn**	**03 48 08.1**	**+0.5**
ERIK	**Erikli-Kesan**	**2.06**	**68**	*e*PN	**Pn**	**03 48 07.7**	**0.0**
ERIK	**Erikli-Kesan**	**2.06**	**68**	*e*Pn	**Pn**	**03 48 07.7**	**0.0**
LTK	**Loutraki**	**2.07**	**203**	P	**Pn**	**03 48 07.9**	**+0.1**
LTK	**Loutraki**	**2.07**	**203**	P	**Pn**	**03 48 07.9**	**+0.1**
VLY	**Voula,Athens**	**2.08**	**184**	P	**Pn**	**03 48 07.1**	**-0.8**
VLY	**Voula,Athens**	**2.08**	**184**	P	**Pn**	**03 48 07.1**	**-0.8**
ANX	**Ano Chora**	**2.09**	**231**	P	**Pn**	**03 48 08.4**	**+0.2**
ANX	**Ano Chora**	**2.09**	**231**	P	**Pn**	**03 48 08.4**	**+0.2**
LPK	**Lapseki**	**2.17**	**77**	*e*PN	**Pn**	**03 48 09.5**	**+0.4**
LPK	**Lapseki**	**2.17**	**77**	*e*PN	**Pn**	**03 48 09.5**	**+0.4**
FNA	**Florina**	**2.17**	**294**	*e*PN	**Pn**	**03 48 10.4**	**+1.2**
FNA	**Florina**	**2.17**	**294**	*e*PN	**Pn**	**03 48 10.5**	**+1.2**
FNA	**Florina**	**2.17**	**294**	P	**Pb**	**03 48 11.0**	**-1.5**
FNA	**Florina**	**2.17**	**294**	P	**Pb**	**03 48 11.0**	**-1.5**
CHOS	**Chios island**	**2.22**	**133**	*e*PN	**Pn**	**03 48 10.5**	**+0.5**
CHOS	**Chios island**	**2.22**	**133**	P	**Pn**	**03 48 10.5**	**+0.5**
CHOS	**Chios island**	**2.22**	**133**	P	**Pn**	**03 48 10.5**	**+0.5**
CHOS	**Chios island**	**2.22**	**133**	P	**Pn**	**03 48 09.5**	**-0.5**
KESN	**Edirne-Kesan**	**2.24**	**66**	*i* P	**Pn**	**03 48 10.8**	**+0.3**
KESN	**Edirne-Kesan**	**2.24**	**66**	P	**Pn**	**03 48 10.8**	**+0.3**
PVO	**Paravola**	**2.32**	**236**	P	**Pn**	**03 48 12.6**	**+1.3**
PVO	**Paravola**	**2.32**	**236**	P	**Pn**	**03 48 12.6**	**+1.3**
KLV	**Kalavryta, Ach**	**2.37**	**218**	P	**Pn**	**03 48 12.0**	**0.0**
KLV	**Kalavryta, Ach**	**2.37**	**218**	P	**Pn**	**03 48 12.0**	**0.0**
DSL	**Palaion Diasel**	**2.38**	**251**	P	**Pn**	**03 48 12.0**	**-0.1**
DSL	**Palaion Diasel**	**2.38**	**251**	P	**Pn**	**03 48 12.0**	**-0.1**
DKL	**Dikili**	**2.41**	**110**	*e*PN	**Pn**	**03 48 13.0**	**+0.5**
DKL	**Dikili**	**2.41**	**110**	*e*Pn	**Pn**	**03 48 13.0**	**+0.5**
DIM	**Dimitrovgrad**	**2.42**	**28**	P	**Pn**	**03 48 13.4**	**+0.8**
DID	**Didima**	**2.49**	**194**	P	**Pn**	**03 48 12.9**	**-0.7**
DID	**Didima**	**2.49**	**194**	P	**Pn**	**03 48 12.9**	**-0.7**
RKY	**Sarkoy-Tekirda**	**2.55**	**72**	*e*PN	**Pn**	**03 48 14.9**	**+0.5**
RKY	**Sarkoy-Tekirda**	**2.55**	**72**	*e*Pn	**Pn**	**03 48 14.9**	**+0.5**
URLA	**Izmir**	**2.56**	**127**	*i* P	**Pn**	**03 48 15.2**	**+0.7**
URLA	**Izmir**	**2.56**	**127**	P	**Pn**	**03 48 15.2**	**+0.7**
KRBG	**Karabiga-Canak**	**2.57**	**79**	*e*PN	**Pn**	**03 48 15.7**	**+1.0**
KRBG	**Karabiga-Canak**	**2.57**	**79**	*e*Pn	**Pn**	**03 48 15.7**	**+1.0**
PGB	**Panagyurishte**	**2.62**	**3**	P	**Pn**	**03 48 16.1**	**+0.7**
DRO	**Drossia**	**2.66**	**223**	P	**Pn**	**03 48 17.2**	**+1.3**
DRO	**Drossia**	**2.66**	**223**	P	**Pn**	**03 48 17.2**	**+1.3**
OHR	**Ohrid**	**2.71**	**297**	*e*Pn	**Pb**	**03 48 20.0**	**-1.5**
OHR	**Ohrid**	**2.71**	**297**	*e*Pn	**Pb**	**03 48 20.0**	**-1.5**
VTS	**Vitosha**	**2.72**	**348**	P	**Pn**	**03 48 18.3**	**+1.3**
VTS	**Vitosha**	**2.72**	**348**	*i* P	**Pn**	**03 48 18.2**	**+1.3**
VTS	**Vitosha**	**2.72**	**348**	P	**Pn**	**03 48 18.3**	**+1.3**
VTS	**Vitosha**	**2.72**	**348**	P	**Pn**	**03 48 18.3**	**+1.3**
BALY	**Balya**	**2.80**	**93**	*i* P	**Pn**	**03 48 16.3**	**-1.5**
BALY	**Balya**	**2.80**	**93**	P	**Pn**	**03 48 16.3**	**-1.6**
EDRB	**Edirne**	**2.83**	**47**	*e*PN	**Pn**	**03 48 19.4**	**+1.2**
EDRB	**Edirne**	**2.83**	**47**	*e*PN	**Pn**	**03 48 19.4**	**+1.2**
MRMT	**Marmara Adasi**	**2.84**	**75**	*e*PN	**Pn**	**03 48 19.9**	**+1.5**
MRMT	**Marmara Adasi**	**2.84**	**75**	*e*Pn	**Pn**	**03 48 19.9**	**+1.5**
IZM	**Izmir**	**2.97**	**120**	*e*PN	**Pn**	**03 48 20.2**	**0.0**
IZM	**Izmir**	**2.97**	**120**	*e*Pn	**Pn**	**03 48 20.2**	**0.0**
EDC	**Edincik**	**3.00**	**81**	*e*PN	**Pn**	**03 48 21.4**	**+0.9**
EDC	**Edincik**	**3.00**	**81**	*e*Pn	**Pn**	**03 48 21.4**	**+0.9**
BALB	**Balikesir**	**3.01**	**94**	*e*PN	**Pn**	**03 48 21.6**	**+0.9**
BALB	**Balikesir**	**3.01**	**94**	*e*Pn	**Pn**	**03 48 21.6**	**+0.9**
APE	**Apeiranthos**	**3.10**	**157**	*e*PN	**Pn**	**03 48 22.2**	**+0.2**
APE	**Apeiranthos**	**3.10**	**157**	P	**Pn**	**03 48 21.1**	**-0.9**
APE	**Apeiranthos**	**3.10**	**157**	*e*Pn	**Pn**	**03 48 22.2**	**+0.2**
APE	**Apeiranthos**	**3.10**	**157**	P	**Pn**	**03 48 21.1**	**-0.9**
KEK	**Kerkira**	**3.24**	**267**	P	**Pn**	**03 48 26.8**	**+2.9**
BARS	**Barje**	**3.32**	**331**	*e*Pn	**Pn**	**03 48 25.8**	**+0.8**
KCTX	**Karacabey (Bur**	**3.36**	**83**	*e*PN	**Pn**	**03 48 27.1**	**+1.5**
KCTX	**Karacabey (Bur**	**3.36**	**83**	*e*Pn	**Pn**	**03 48 27.1**	**+1.5**
MPEP	**Malo Peshtene**	**3.43**	**357**	P	**Pn**	**03 48 28.1**	**+1.6**
AYDB	**Zeytinkoy-Aydi**	**3.63**	**122**	*e*PN	**Pn**	**03 48 30.0**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**3.63**	**122**	*e*Pn	**Pn**	**03 48 30.0**	**+0.6**
KULA	**Kula-Manisa**	**3.89**	**110**	*e*PN	**Pn**	**03 48 34.5**	**+1.6**
KULA	**Kula-Manisa**	**3.89**	**110**	*e*Pn	**Pn**	**03 48 34.5**	**+1.6**
BOVS	**Bovan**	**4.08**	**336**	*e*Pn	**Pn**	**03 48 36.2**	**+0.8**
ZAGS	**Zajecar**	**4.09**	**342**	*e*Pn	**Pn**	**03 48 35.9**	**+0.3**
TVSB	**Tavsanli**	**4.25**	**95**	*e*PN	**Pn**	**03 48 39.0**	**+1.2**
TVSB	**Tavsanli**	**4.25**	**95**	*e*Pn	**Pn**	**03 48 39.0**	**+1.2**
PDG	**Podgorica**	**4.36**	**306**	*i*P	**Pb**	**03 48 45.1**	**-4.6**
IVAS	**Ivanjica**	**4.64**	**323**	*e*Pn	**Pn**	**03 48 46.3**	**+3.1**
GRUS	**Gruza**	**4.65**	**329**	*e*Pn	**Pn**	**03 48 44.3**	**+1.0**
KUBS	**Kucevo**	**4.80**	**340**	*e*Pn	**Pn**	**03 48 44.6**	**-0.7**
TRUS	**Trudelj**	**5.05**	**329**	*e*Pn	**Pn**	**03 48 49.6**	**+0.8**
DIVS	**Divibare**	**5.12**	**326**	*e*Pn	**Pn**	**03 48 50.5**	**+0.7**
MDVR	**Moldovita**	**5.13**	**342**	*i*P	**Pn**	**03 48 50.7**	**+0.7**
MDVR	**Moldovita**	**5.13**	**342**	*i*P	**Pn**	**03 48 50.7**	**+0.7**
ARR	**Arges**	**5.45**	**5**	*i*P	**Pn**	**03 48 55.8**	**+1.4**
ARR	**Arges**	**5.45**	**5**	*i*P	**Pn**	**03 48 55.8**	**+1.4**
VOIR		**5.56**	**8**	*i*P	**Pn**	**03 48 57.7**	**+1.9**
VOIR		**5.56**	**8**	*i*P	**Pn**	**03 48 57.7**	**+1.9**
MLR	**Muntele Rosu**	**5.74**	**14**	*i*P	**Pn**	**03 49 01.4**	**+3.1**
MLR	**Muntele Rosu**	**5.74**	**14**	*i*P	**Pn**	**03 49 01.4**	**+3.1**
BZS	**Buzias**	**5.95**	**344**	*i*P	**Pn**	**03 49 01.3**	**+0.3**
BZS	**Buzias**	**5.95**	**344**	*i*P	**Pn**	**03 49 01.3**	**+0.3**
DOPR	**Dopca**	**6.12**	**9**	*i*P	**Pn**	**03 49 05.3**	**+1.8**
DOPR	**Dopca**	**6.12**	**9**	*i*P	**Pn**	**03 49 05.3**	**+1.8**
PLOR	**Plostina**	**6.23**	**17**	*i*P	**Pn**	**03 49 08.5**	**+3.5**
VRI	**Vrincioaia**	**6.26**	**18**	*i*P	**Pn**	**03 49 08.6**	**+3.2**
VRI	**Vrincioaia**	**6.26**	**18**	*i*P	**Pn**	**03 49 08.6**	**+3.2**
TESR	**Tescani**	**6.86**	**16**	*i*P	**Pn**	**03 49 16.8**	**+3.2**
TESR	**Tescani**	**6.86**	**16**	*i*P	**Pn**	**03 49 16.8**	**+3.2**
BURAR	**Bucovina Array**	**7.73**	**6**	*i*P	**Pn**	**03 49 27.5**	**+1.8**
BURAR	**Bucovina Array**	**7.73**	**6**	*i*P	**Pn**	**03 49 27.5**	**+1.8**

*ISCJB **24** 03:51:19.4±0.9, 13°.46N±0°.06×125°.6E±0°.2, h24km, mb3.5/6, Error ellipse: s-maj=23.8km s-min=8.7km az=5.4*
*IDC **24** 03:51:24.4±0.9, 13°.37N×125°.41E, h53km±8km, mb3.3/6, mb1 3.5/6, mb1mx3.2/47, mbtmp3.6/6, Error ellipse: s-maj=55.2km s-min=14.8km az=73.0*

ISC 24 03:51:22.5±0.8, 13°.41N±0°.07×125°.4E±0°.2, h24km, n8, σ1°88/13, mb3.7/6, 2D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**2.28**	**191**	*i*P		**Pn**	**03 51 59.0**	**+0.4**
PLP				*e*S		**Sn**	**03 52 26.3**	**+0.4**
RCP	**Roxas**	**3.21**	**235**	*i*P		**Pn**	**03 52 11.4**	**0.0**
KSRS	**Korea Array**	**24.05**	**5**	P		**P**	**03 56 35.0**	**-0.8**
	0.3nm,0.4s,baz=181,slow=11,SNR=3.6							
KSRS				pP		**sP**	**03 56 48.1**	**+2.3**
	1.6nm,0.9s,baz=182,slow=11,SNR=5.0							
WRA	**Warramunga Arr**	**34.28**	**165**	P		**P**	**03 58 04.8**	**-2.3**
	0.6nm,0.5s,baz=347,slow=9.0,SNR=8.8							
ASAR	**Alice Springs**	**37.77**	**167**	P		**P**	**03 58 35.5**	**-1.4**
	0.8nm,0.5s,baz=352,slow=8.2,SNR=21							
ASAR				pP		**sP**	**03 58 49.6**	**+2.5**
	0.7nm,0.6s,baz=341,slow=7.3,SNR=3.7							
SONM	**Songino Array**	**37.81**	**339**	P		**P**	**03 58 36.0**	**-1.1**
	0.6nm,0.6s,baz=155,slow=7.8,SNR=2.4							
MKAR	**Makanchi Array**	**49.06**	**322**	P		**P**	**04 00 06.6**	**-1.1**
	0.2nm,0.4s,baz=122,slow=7.4,SNR=3.4							
MKAR				pP		**sP**	**04 00 19.5**	**+1.5**
	0.8nm,0.6s,baz=117,slow=8.2,SNR=6.1							
BVAR	**Borovoye Array**	**58.64**	**325**	P		**P**	**04 01 16.5**	**-1.2**
	0.4nm,0.5s,baz=130,slow=7.8,SNR=3.2							
BVAR				pP		**sP**	**04 01 31.2**	**+3.1**
	0.7nm,0.5s,baz=119,slow=5.3,SNR=3.7							

*IDC **24** 03:56:36.1±0.6, 13°.06N×145°.64E, h0km, mb4.2/24, mb1 4.3/24, mb1mx4.2/47, mbtmp4.2/24, MS3.8/24, Ms1 3.8/24, ms1mx3.5/56, Error ellipse: s-maj=17.4km s-min=13.4km az=68.0*
*NEIC **24** 03:56:37.7±0.3, 13°.00N×145°.52E, h10km, mb4.5/13, Error ellipse: s-maj=9.2km s-min=6.5km az=95.0*
*ISCJB **24** 03:56:40.5±0.4, 12°.95N±0°.05×145°.47E±0°.08, h43km, mb4.3/38, MS3.8/24, Error ellipse: s-maj=11.2km s-min=7.5km az=176.2*

ISC 24 03:56:42.2±0.5, 12°.97N±0°.08×145°.5E±0°.1, h43km, n68, σ0°84/54, mb4.4/38, MS3.8/24, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.88**	**314**	Pn		**Pn**	**03 56 57.7**	**-0.5**
	567nm,0.3s,baz=115,slow=5.1,SNR=182							
GUMO				Sn		**Sn**	**03 57 10.9**	**+1.1**
	1µm,0.3s,baz=15,slow=19,SNR=22							
H11N1	**WAKE ISLAND Hy**	**21.57**	**69**	T		T	04 24 38.5	
	baz=258,slow=73,SNR=9.6							
H11N2	**WAKE ISLAND Hy**	**21.58**	**69**	T		T	04 24 40.0	
	baz=258,slow=73,SNR=11							
H11N3	**WAKE ISLAND Hy**	**21.59**	**69**	T		T	04 24 40.1	
	baz=258,slow=73,SNR=7.3							
PMG	**Port Moresby**	**22.29**	**176**	P		**P**	**04 01 36.2**	**+0.2**
	8.7nm,0.6s,baz=6.3,slow=16,SNR=3.7							
PMG	**Port Moresby**	**22.29**	**176**	*e*P		**P**	**04 01 36.4**	**+0.4**
	15nm,0.8s							
TGY	**Tagaytay City**	**23.92**	**276**	P		**P**	**04 01 54.3**	**+1.8**
	93nm,0.3s,baz=57,slow=17,SNR=2.8							
TGY				LR		LR	04 11 05.3	
	comp=Z,228nm,20.1s,baz=192,slow=36							
JNU	**Nakatsue**	**24.11**	**329**	P		**P**	**04 01 53.5**	**-0.4**
	2.8nm,0.8s,baz=147,slow=8.7,SNR=4.1							
MJAR	**Matsushiro Arr**	**24.37**	**346**	P		**P**	**04 01 54.8**	**-1.6**
	2.3nm,0.7s,baz=168,slow=9.7,SNR=8.5							
MAJO	**Matsushiro**	**24.37**	**346**	*e*P		**P**	**04 01 55.7**	**-0.6**
	6.7nm,0.8s							
HNR	**Honiara**	**26.47**	**147**	LR		LR	04 12 58.8	
	comp=Z,221nm,18.7s,baz=332,slow=37							
LUWI	**Luwuk**	**26.51**	**240**	*e*P		**P**	**04 02 15.3**	**-0.6**
	24nm,0.7s							
COEN	**Coen**	**26.86**	**185**	*e*P		**P**	**04 02 18.9**	**-0.1**
	12nm,0.8s							
KSRS	**Korea Array**	**29.01**	**330**	P		**P**	**04 02 37.0**	**-1.0**
	0.6nm,0.4s,baz=153,slow=9.2,SNR=1.5							
KSRS				PcP		**PcP**	**04 05 46.6**	**+0.8**
	0.5nm,0.3s,baz=149,slow=2.9,SNR=5.7							
KSAR	**Wonju Array Be**	**29.02**	**330**	P		**P**	**04 02 37.0**	**-1.1**
KSAR				PcP		**PcP**	**04 05 46.6**	**+0.8**
KAPI	**Kappang**	**31.21**	**237**	*e*P		**P**	**04 02 56.6**	**-1.2**
	4.9nm,0.7s							
USRK	**Ussuriysk Ar.**	**33.21**	**342**	P		**P**	**04 03 15.0**	**0.0**
	1.3nm,0.7s,baz=187,slow=6.7,SNR=3.3							
USRK				LR		LR	04 15 29.5	
	comp=Z,137nm,19.4s,baz=152,slow=34							
WRAB	**Tennant Creek**	**34.49**	**199**	*e*P		**P**	**04 03 26.1**	**-0.3**
	8.1nm,1.0s							
WRA	**Warramunga Arr**	**34.51**	**199**	P		**P**	**04 03 26.5**	**0.0**
	2.9nm,0.7s,baz=22,slow=9.8,SNR=33							
FITZ	**Fitzroy Crossi**	**36.58**	**213**	LR		LR	04 19 07.8	
	comp=Z,49nm,20.5s,baz=44,slow=37							
KLR	**Kul'dur**	**37.90**	**345**	LR		LR	04 18 22.4	
	comp=Z,96nm,19.7s,slow=34							
ASAR	**Alice Springs**	**38.14**	**197**	P		**P**	**04 03 58.0**	**+0.4**
	2.0nm,0.6s,baz=22,slow=8.7,SNR=38							
ASAR				LR		LR	04 19 59.6	
	comp=Z,108nm,19.4s,baz=26,slow=37							
PETK	**Petropavlovsk-**	**41.20**	**11**	P		**P**	**04 04 20.1**	**-2.5**
	1.4nm,0.7s,baz=176,slow=4.3,SNR=1.7							
CMAR	**Chiang Mai Arr**	**45.07**	**283**	P		**P**	**04 04 54.1**	**-0.3**
	1.2nm,0.3s,baz=81,slow=6.5,SNR=5.7							
CMAR				LR		LR	04 23 53.9	
	comp=Z,105nm,18.1s,baz=114,slow=36							
MNAI	**Manna**	**45.64**	**251**	*e*P		**P**	**04 04 58.6**	**-0.3**
SONM	**Songino Array**	**47.60**	**325**	P		**P**	**04 05 14.4**	**+0.4**
	0.9nm,0.5s,baz=132,slow=8.1,SNR=4.6							
SONM				PcP		**PcP**	**04 06 44.8**	**+1.5**
	0.9nm,0.6s,baz=139,slow=3.1,SNR=4.1							
AFI	**Afiamalu**	**50.04**	**121**	LR		LR	04 24 45.4	
	comp=Z,137nm,19.0s,baz=294,slow=34							
SEY	**Seymchan**	**50.13**	**4**	P		**P**	**04 05 35.2**	**+2.3**
	0.5nm,0.3s,baz=180,slow=5.1,SNR=2.5							
YAK	**Yakutsk**	**50.30**	**350**	LR		LR	04 26 58.0	
	comp=Z,67nm,21.7s,baz=174,slow=36							
MKAR	**Makanchi Array**	**62.37**	**316**	P		**P**	**04 06 60.0**	**-0.6**
	0.5nm,0.5s,baz=88,slow=8.4,SNR=5.7							
MKAR				LR		LR	04 35 44.2	
	comp=Z,59nm,19.2s,baz=91,slow=38							
ZALV	**Zalesovo Beam**	**62.49**	**324**	P		**P**	**04 07 01.6**	**+0.5**
	2.2nm,1.1s,baz=110,slow=3.8,SNR=3.1							
ZALV				PcP		**PcP**	**04 07 41.2**	**+1.1**
	1.9nm,0.7s,baz=132,slow=4.4,SNR=6.0							
ZALV				LR		LR	04 34 42.7	
	comp=Z,81nm,20.3s,baz=70,slow=37							
RAR	**Rarotonga**	**63.56**	**122**	LR		LR	04 27 13.4	
	comp=Z,75nm,21.2s,baz=285,slow=29							
KURK	**Kurchatov**	**65.46**	**320**	P		**P**	**04 07 20.8**	**0.0**
KURBB	**Kurchatov Arra**	**65.50**	**320**	P		**P**	**04 07 20.8**	**-0.2**
	3.0nm,0.6s,baz=101,slow=6.7,S

LAKA	**Lakka**	**0.19**	**115**	P	**Pg**	**04 44 09.9**	**+0.2**
LAKA				S	**Sg**	**04 44 13.0**	**+0.6**
LAKA	**Lakka**	**0.19**	**115**	P	**Pg**	**04 44 09.7**	**0.0**
LAKA				S	**Sg**	**04 44 12.7**	**+0.3**
LAKA				AML	AML	04 44 13.4	
	comp=E,848μm,0.2s						
LAKA				AML	AML	04 44 13.6	
	comp=N,418μm,0.1s						
LAKA	**Lakka**	**0.19**	**115**	P	**Pg**	**04 44 09.8**	**+0.2**
LAKA				S	**Sg**	**04 44 13.0**	**+0.6**
LAKA				AML	AML	04 44 13.4	
	comp=E,848μm,0.2s						
LAKA				AML	AML	04 44 13.6	
	comp=N,418μm,0.1s						
TRIZ	**Trizonia**	**0.25**	**79**	P	**Pg**	**04 44 11.1**	**+0.3**
TRIZ				S	**Sg**	**04 44 15.0**	**+0.8**
TRIZ	**Trizonia**	**0.25**	**79**	S	**Sg**	**04 44 15.0**	**+0.8**
SERG	**Sergoula**	**0.25**	**68**	P	**Pg**	**04 44 11.2**	**+0.4**
SERG				S	**Sb**	**04 44 15.8**	**-1.2**
ANX	**Ano Chora**	**0.30**	**25**	P	**Pg**	**04 44 12.2**	**+0.4**
ANX				S	**Sb**	**04 44 17.8**	**-0.7**
ANX	**Ano Chora**	**0.30**	**25**	S	**Sb**	**04 44 17.8**	**-0.7**
ANX				AML	AML	04 44 19.3	
	comp=N,692μm,0.4s						
ANX				AML	AML	04 44 19.9	
	comp=E,837μm,0.2s						
KALE	**Kalithea**	**0.31**	**76**	P	**Pg**	**04 44 12.1**	**+0.2**
KALE				S	**Sg**	**04 44 16.4**	**+0.4**
KALE	**Kalithea**	**0.31**	**76**	P	**Pg**	**04 44 12.1**	**+0.2**
KALE				S	**Sg**	**04 44 16.4**	**+0.4**
KALE	**Kalithea**	**0.31**	**76**	P	**Pg**	**04 44 12.0**	**+0.2**
KALE	**Kalithea**	**0.31**	**76**	P	**Pg**	**04 44 12.1**	**+0.2**
AXS	**Araxos**	**0.33**	**248**	P	**Pg**	**04 44 12.2**	**0.0**
AXS	**Araxos**	**0.33**	**248**	P	**Pg**	**04 44 12.2**	**0.0**
AXS	**Araxos**	**0.33**	**248**	P	**Pg**	**04 44 12.3**	**+0.1**
AXS	**Araxos**	**0.33**	**248**	P	**Pg**	**04 44 12.1**	**-0.2**
RLS	**Riolos of Patr**	**0.35**	**222**	P	**Pg**	**04 44 12.8**	**+0.2**
RLS				S	**Sg**	**04 44 18.2**	**+1.0**
RLS	**Riolos of Patr**	**0.35**	**222**	P	**Pg**	**04 44 12.8**	**+0.2**
RLS				S	**Sg**	**04 44 18.2**	**+1.0**
RLS	**Riolos of Patr**	**0.35**	**222**	S	**Sb**	**04 44 18.8**	**-0.9**
RLS				AML	AML	04 44 20.1	
	comp=E,333μm,0.2s						
RLS				AML	AML	04 44 21.4	
	comp=N,285μm,0.2s						
RLS	**Riolos of Patr**	**0.35**	**222**	S	**Sb**	**04 44 18.8**	**-0.9**
RLS				AML	AML	04 44 20.1	
	comp=E,333μm,0.2s						
RLS				AML	AML	04 44 21.4	
	comp=N,285μm,0.2s						
PVO	**Paravola**	**0.35**	**328**	P	**Pg**	**04 44 12.8**	**+0.1**
PVO				S	**Sg**	**04 44 18.1**	**+0.8**
PVO	**Paravola**	**0.35**	**328**	P	**Pg**	**04 44 12.8**	**+0.1**
PVO				S	**Sg**	**04 44 18.1**	**+0.8**
PVO	**Paravola**	**0.35**	**328**	P	**Pg**	**04 44 13.1**	**+0.4**
PVO				S	**Sb**	**04 44 19.1**	**-0.6**
PVO	**Paravola**	**0.35**	**328**	P	**Pg**	**04 44 12.7**	**0.0**
PVO				S	**Sb**	**04 44 19.5**	**-0.2**
DRO	**Drossia**	**0.37**	**186**	P	**Pg**	**04 44 13.0**	**0.0**
DRO				S	**Sg**	**04 44 18.6**	**+0.7**
DRO	**Drossia**	**0.37**	**186**	P	**Pg**	**04 44 13.0**	**0.0**
DRO				S	**Sg**	**04 44 18.6**	**+0.7**
DRO	**Drossia**	**0.37**	**186**	P	**Pg**	**04 44 12.7**	**-0.2**
DRO				S	**Sb**	**04 44 19.2**	**-1.0**
DRO	**Drossia**	**0.37**	**186**	P	**Pg**	**04 44 12.8**	**-0.2**
DRO				AML	AML	04 44 19.4	
	comp=E,1576μm,0.3s						
DRO				S	**Sb**	**04 44 20.0**	**-0.2**
DRO				AML	AML	04 44 23.0	
	comp=N,894μm,0.3s						
KLV	**Kalavryta, Ach**	**0.41**	**132**	P	**Pg**	**04 44 13.8**	**0.0**
KLV				S	**Sg**	**04 44 20.4**	**+1.1**
KLV	**Kalavryta, Ach**	**0.41**	**132**	P	**Pg**	**04 44 13.8**	**0.0**
KLV				S	**Sg**	**04 44 20.4**	**+1.1**
KLV	**Kalavryta, Ach**	**0.41**	**132**	P	**Pg**	**04 44 13.8**	**0.0**
KLV				S	**Sb**	**04 44 21.1**	**-0.5**
KLV				AML	AML	04 44 22.4	
	comp=E,224μm,0.3s						
KLV				AML	AML	04 44 25.1	
	comp=N,269μm,0.2s						
KLV	**Kalavryta, Ach**	**0.41**	**132**	P	**Pg**	**04 44 13.6**	**-0.2**
KLV				S	**Sb**	**04 44 21.1**	**-0.5**
KLV				AML	AML	04 44 22.4	
	comp=E,224μm,0.3s						
KLV				AML	AML	04 44 25.1	
	comp=N,269μm,0.2s						
PDO	**Prodromos**	**0.53**	**302**	P	**Pg**	**04 44 15.5**	**-0.6**
PDO				S	**Sg**	**04 44 24.0**	**+0.9**
PDO	**Prodromos**	**0.53**	**302**	P	**Pg**	**04 44 15.5**	**-0.6**
PDO				S	**Sg**	**04 44 24.0**	**+0.9**
PDO	**Prodromos**	**0.53**	**302**	P	**Pg**	**04 44 15.0**	**-1.1**
PDO	**Prodromos**	**0.53**	**302**	P	**Pg**	**04 44 14.7**	**-1.3**
EVR	**Evrytania**	**0.60**	**4**	P	**Pg**	**04 44 17.4**	**0.0**
EVR				S	**Sg**	**04 44 26.1**	**+0.9**
EVR	**Evrytania**	**0.60**	**4**	P	**Pg**	**04 44 17.4**	**0.0**
EVR				S	**Sg**	**04 44 26.1**	**+0.9**
EVR	**Evrytania**	**0.60**	**4**	P	**Pg**	**04 44 17.6**	**+0.2**
EVR	**Evrytania**	**0.60**	**4**	P	**Pg**	**04 44 17.4**	**0.0**
EVR				S	**Sb**	**04 44 27.3**	**+0.2**
EVR				AML	AML	04 44 30.4	
	comp=N,154μm,0.2s						
VTN	**Vitineika**	**0.60**	**229**	P	**Pb**	**04 44 18.5**	**0.0**
VTN	**Vitineika**	**0.60**	**229**	P	**Pg**	**04 44 17.7**	**+0.3**
VTN	**Vitineika**	**0.60**	**229**	P	**Pb**	**04 44 18.5**	**0.0**
DSF	**Desfina**	**0.61**	**81**	P	**Pg**	**04 44 17.2**	**-0.4**
DSF	**Desfina**	**0.61**	**81**	P	**Pg**	**04 44 17.2**	**-0.4**
DSF	**Desfina**	**0.61**	**81**	P	**Pg**	**04 44 16.5**	**-1.0**
DSF	**Desfina**	**0.61**	**81**	P	**Pg**	**04 44 16.6**	**-1.0**
THAL	**Thalero**	**0.77**	**111**	P	**Pb**	**04 44 21.0**	**-0.2**
THAL	**Thalero**	**0.77**	**111**	P	**Pb**	**04 44 21.4**	**+0.2**
THAL	**Thalero**	**0.77**	**111**	P	**Pb**	**04 44 21.1**	**-0.2**
AMT	**Artemida-Makis**	**0.79**	**183**	P	**Pg**	**04 44 20.5**	**-0.4**
AMT				S	**Sb**	**04 44 32.6**	**+0.3**
AMT	**Artemida-Makis**	**0.79**	**183**	P	**Pg**	**04 44 20.5**	**-0.4**
AMT				S	**Sb**	**04 44 32.6**	**+0.3**
AMT	**Artemida-Makis**	**0.79**	**183**	P	**Pb**	**04 44 22.1**	**+0.5**
AMT	**Artemida-Makis**	**0.79**	**183**	P	**Pb**	**04 44 21.7**	**+0.2**
KFL	**Anninata**	**0.79**	**255**	P	**Pb**	**04 44 21.7**	**0.0**
KFL	**Anninata**	**0.79**	**255**	P	**Pb**	**04 44 21.9**	**+0.2**
KFL	**Anninata**	**0.79**	**255**	P	**Pb**	**04 44 21.7**	**0.0**
AGG	**Agios Georgios**	**0.83**	**32**	P	**Pg**	**04 44 20.6**	**-1.2**
AGG	**Agios Georgios**	**0.83**	**32**	P	**Pg**	**04 44 20.9**	**-0.8**
AGG	**Agios Georgios**	**0.83**	**32**	P	**Pg**	**04 44 20.6**	**-1.2**
PROD	**Prodromos**	**0.90**	**93**	P	**Pg**	**04 44 22.4**	**-0.6**
PROD	**Prodromos**	**0.90**	**93**	P	**Pg**	**04 44 22.5**	**-0.6**
PROD	**Prodromos**	**0.90**	**93**	P	**Pg**	**04 44 22.4**	**-0.6**
VLS	**Valsamata**	**0.93**	**262**	P	**Pg**	**04 44 23.3**	**-0.4**
VLS	**Valsamata**	**0.93**	**262**	P	**Pg**	**04 44 23.3**	**-0.4**
LKD2	**Lefkada island**	**0.98**	**299**	P	**Pg**	**04 44 23.6**	**-1.1**
LKD2	**Lefkada island**	**0.98**	**299**	P	**Pg**	**04 44 23.5**	**-1.1**
LKD2	**Lefkada island**	**0.98**	**299**	P	**Pg**	**04 44 23.6**	**-1.1**
ZKS	**Zakynthos**	**0.99**	**231**	P	**Pg**	**04 44 24.8**	**0.0**
ZKS	**Zakynthos**	**0.99**	**231**	P	**Pg**	**04 44 24.7**	**-0.1**
ZKS	**Zakynthos**	**0.99**	**231**	P	**Pg**	**04 44 24.8**	**0.0**
LTK	**Loutraki**	**1.00**	**107**	P	**Pg**	**04 44 25.1**	**+0.2**
LKR	**Lokris**	**1.03**	**71**	P	**Pg**	**04 44 24.8**	**-0.7**
LKR	**Lokris**	**1.03**	**71**	P	**Pg**	**04 44 25.4**	**-0.1**
LKR	**Lokris**	**1.03**	**71**	P	**Pg**	**04 44 24.8**	**-0.7**
VLX	**Vlachokerasia**	**1.07**	**152**	P	**Pg**	**04 44 25.7**	**-0.5**
VLX	**Vlachokerasia**	**1.07**	**152**	P	**Pg**	**04 44 25.7**	**-0.5**
ITM	**Ithomi**	**1.15**	**173**	P	**Pb**	**04 44 27.1**	**-0.6**
ITM	**Ithomi**	**1.15**	**173**	P	**Pb**	**04 44 27.1**	**-0.6**
VIL2	**Platees**	**1.19**	**95**	P	**Pg**	**04 44 29.7**	**+1.1**
THL	**Klokotos Trika**	**1.26**	**9**	P	**Pg**	**04 44 31.4**	**+1.5**
PYL	**PYLOS**	**1.42**	**181**	P	**Pb**	**04 44 32.5**	**+0.1**
PYL	**PYLOS**	**1.42**	**181**	P	**Pb**	**04 44 32.5**	**+0.1**
DID	**Didima**	**1.42**	**124**	P	**Pb**	**04 44 32.5**	**+0.1**
DID	**Didima**	**1.42**	**124**	P	**Pb**	**04 44 32.3**	**-0.2**
DID	**Didima**	**1.42**	**124**	P	**Pb**	**04 44 32.5**	**+0.1**

*NIED **24** 04:49:00,38.°90N×143.°90E,h5km,Mw3.8 Best double couple: M₀4.79000×10¹⁴ NP1:φs34.00000°,δ30.00000°, λ-97.00000°. NP2:φs222.00000°,δ60.00000°, λ-86.00000°.*
*IDC **24** 04:49:19.4±0.8,38.°67N×144.°34E,h0km,mb3.7/13, mb1 3.9/17,mb1mx3.7/60,mbtmp3.7/17,ML3.2/3,MS2.9/4, Ms1 2.9/4,ms1mx2.6/31,Error ellipse: s-maj=21.2km s-min=17.8km az=114.0*
*JMA **24** 04:49:23.1±0.2,38.°88N×143.°85E,h10km,M4.0*

ISC 24 04:49:20.5±3.8,38.°84N±0.°06×144.°03E±0.°06,h4km±23km, n30,σ2°22/38,mb3.9/13,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.85**	**278**	P		**Pn**	**Pn**	**04 49 53.6**	**+0.5**
OFUJ				S		**Sn**	**Sn**	**04 50 15.0**	**-2.0**
MIYJ	**Miyakonagasawa**	**1.87**	**294**	P		**Pn**	**Pn**	**04 49 53.5**	**+0.3**
MIYJ				S		**Sb**	**Sb**	**04 50 16.0**	**-2.8**
JIO	**Ouri**	**2.13**	**260**	P		**Pn**	**Pn**	**04 49 57.7**	**+0.8**
JIO				*e*S		**Sn**	**Sn**	**04 50 22.0**	**-1.8**
JMK	**Ichinoseki**	**2.19**	**274**	P		**Pb**	**Pb**	**04 49 59.1**	**-1.6**
JMK				*e*S		**Sb**	**Sb**	**04 50 24.9**	**-3.4**
JOM	**Ohasama**	**2.22**	**287**	P		**Pn**	**Pn**	**04 49 59.1**	**+1.0**
JOM				S		**Sb**	**Sb**	**04 50 25.8**	**-3.2**
JANG	**Nango**	**2.47**	**309**	P		**Pn**	**Pn**	**04 50 01.5**	**-0.1**
JOU	**Okura**	**2.68**	**261**	P		**Pn**	**Pn**	**04 50 05.5**	**+1.1**
JOU				*e*S		**Sn**	**Sn**	**04 50 36.7**	**-0.6**
JYK	**Kaneyama**	**2.87**	**273**	P		**Pn**	**Pn**	**04 50 08.3**	**+1.3**
JYK				*e*S		**Sn**	**Sn**	**04 50 42.1**	**+0.2**
JFT	**Otama**	**3.19**	**247**	P		**Pn**	**Pn**	**04 50 13.4**	**+1.9**
JFT				S		**Sn**	**Sn**	**04 50 50.4**	**+0.3**
MJAR	**Matsushiro Arr**	**5.16**	**245**	Pn		**Pn**	**Pn**	**04 50 40.4**	**+2.0**
	3.9nm,0.3s,baz=61,slow=11,SNR=32								
MJAR				Sn			**Sn**	**04 51 39.2**	**+0.8**
	baz=315,slow=29,SNR=2.4								
MJAR				LR		LR		04 52 57.0	
	comp=Z,50nm,19.8s,baz=65,slow=41								
MAT	**Matsushiro**	**5.16**	**245**	P		**Pn**	**Pn**	**04 50 40.5**	**+2.0**
MAT				S		**Sn**	**Sn**	**04 51 40.2**	**+1.8**
ASAJ	**Asahikawa**	**5.38**	**349**	Pn		**Pn**	**Pn**	**04 50 42.0**	**+0.5**
ASAJ				Sn		**Sn**	**Sn**	**04 51 40.5**	**-3.3**
JHJ	**Hachijo jima 2**	**6.67**	**212**	Sn		**Sn**	**Sn**	**04 52 08.9**	**-6.8**
	18nm,0.3s,baz=82,slow=23,SNR=3.0								
USRK	**Ussuriysk Ar.**	**10.49**	**305**	Pn		**Pn**	**Pn**	**04 51 55.1**	**+3.5**
	0.4nm,0.3s,baz=112,slow=16,SNR=5.3								
KSRS	**Korea Array**	**12.76**	**269**	Pn		Pn	Pn	04 52 27.4	+4.8
	0.2nm,0.3s,baz=73,slow=14,SNR=3.4								
KSRS				LR		LR	LR	04 57 13.6	
	comp=Z,7.8nm,18.1s,baz=205,slow=36								
SEY	**Seymchan**	**24.65**		P		**P**	**04 54 43.4**	**+1.5**	
	2.0nm,0.7s,baz=190,slow=7.8,SNR=7.0								
SONM	**Songino Array**	**28.57**	**301**	P		**P**	**04 55 21.4**	**+3.8**	
	0.4nm,0.3s,baz=78,slow=7.7,SNR=6.0								
ZALV	**Zalesovo Beam**	**42.26**	**311**	P		**P**	**04 57 17.1**	**+2.4**	
	0.4nm,0.4s,baz=87,slow=8.8,SNR=2.7								
NRIK	**Noril'sk**	**42.52**	**334**	LR		LR		05 15 14.4	
	comp=Z,43nm,18.5s,baz=213,slow=36								
MKAR	**Makanchi Array**	**44.94**	**301**	P		**P**	**04 57 39.2**	**+2.8**	
	0.3nm,0.5s,baz=98,slow=7.4,SNR=3.9								
KURBB	**Kurchatov Arra**	**46.54**	**307**	P		**P**	**04 57 49.0**	**+0.1**	
	0.4nm,0.4s,baz=80,slow=8.5,SNR=5.1								
ILAR	**Eielson Array**	**46.86**	**33**	P		**P**	**04 57 50.9**	**-0.4**	
	0.9nm,0.8s,baz=267,slow=6.3,SNR=11								
INK	**Inuvik**	**51.83**	**28**	P		**P**	**04 58 30.0**	**+0.8**	
	1.6nm,0.4s,baz=264,slow=9.2,SNR=16								
WRA	**Warramunga Arr**	**59.17**	**191**	P		**P**	**04 59 21.4**	**-1.2**	
	0.7nm,0.5s,baz=10,slow=7.2,SNR=9.4								
ASAR	**Alice Springs**	**62.90**	**190**	P		**P**	**04 59 45.8**	**-2.0**	
	0.3nm,0.7s,baz=12,slow=5.7,SNR=3.6								
FINES	**FINESS Array B**	**68.17**	**333**	P		**P**	**05 00 21.1**	**-0.4**	
	0.9nm,0.7s,baz=70,slow=6.3,SNR=5.5								
NOA	**NORSAR Array B**	**73.30**	**338**	P		**P**	**05 00 53.5**	**+0.7**	
	0.8nm,0.6s,baz=37,slow=5.9,SNR=3.8								
AKASG	**Malin Array Be**	**74.11**	**323**	P		**P**	**05 00 57.9**	**+0.2**	
	0.5nm,0.4s,baz=45,slow=6.4,SNR=3.3								
PPT	**Papeete**	**83.63**	**118**	LR		LR		05 38 37.1	
	comp=Z,45nm,18.9s,baz=148,slow=36								
TXAR	**Lajitas Array**	**87.38**	**54**	P		**P**	**05 02 08.2**	**-1.0**	
	0.2nm,0.7s,baz=328,slow=3.3,SNR=3.5								

*NEIC **24** 04:54:56.7,32.°08N×115.°24W,h10km,ML2.9(PAS),After PAS.*

MEX 24 04:54:59.2±0.5,32.°19N×115.°11W,h16km±58km,MD3.8, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.28**	**325**	*e*P		Pg		04 55 03.3	-2.0
CPBX				*e*S		Sg		04 55 07.2	-2.2
SPIG	**San Pedro Mart**	**1.18**	**195**	*e*P		Pn		04 55 18.0	-3.4
SPIG				*e*S		Sb		04 55 32.0	-4.5
SPIG	**San Pedro Mart**	**1.18**	**195**	*e*P		Pn		04 55 18.0	-3.4
SPIG				*e*S		Sb		04 55 31.9	-4.7
SPX	**San Pedro Mart**	**1.18**	**195**	*e*P		Pn		04 55 17.0	-4.4
SPX				*e*S		Sb		04 55 31.0	-5.6
CBX	**Cerro Bola**	**1.32**	**276**	*e*P		Pn		04 55 19.2	-3.9
CBX				*e*S		Sb		04 55 34.3	-6.1
CBX	**Cerro Bola**	**1.32**	**276**	*e*P		Pn		04 55 19.2	-3.9
CBX				*e*S		Sb		04 55 34.3	-6.1
TJIG	**Tijuana**	**1.35**	**281**	*e*P		Pn		04 55 19.5	-3.8
TJIG				*e*S		Sn		04 55 35.9	-5.1
PFO	**Pinyon Flats O**	**1.82**	**322**	*e*Pn		Pn		04 55 25.8	-4.1
PFO				*e*Sn		Sn		04 55 50.7	-2.0
214A	**Organ Pipe Nat**	**1.97**	**96**	*e*Pn		Pn		04 55 29.3	-2.6
214A				*e*Sn		Sn		04 55 56.5	+0.2

GUC 24 04:57:28.1±0.7,22.°10S×70.°60W,h37km±4km,ML3.6, 4C-4D,Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB04	**IPOC Station P**	**0.48**	**120**	⇑*i*P		Pn		04 57 38.6	0.0
PB04				*i* S		Sn		04 57 46.4	+0.5
PB07	**IPOC Station P**	**0.76**	**61**	⇑*i*P		Pn		04 57 42.6	+0.2
PB07				*i* S		Sn		04 57 52.5	-0.2
PB07				IAML				04 57 53.1	
	comp=N,7μm,0.4s								
PB06	**IPOC Station P**	**1.13**	**123**	⇓*i*P		Pn		04 57 48.4	+0.9
PB06				*i* S		Sn		04 58 03.5	+1.7
PB06				IAML				04 58 04.0	
	comp=E,3μm,0.1s								
PB09	**IPOC Station P**	**1.29**	**77**	⇓*i*P		Pn		04 57 51.1	+1.3
PB09				*i* S		Sn		04 58 08.2	+2.3
PB09				IAML				04 58 09.2	
	comp=N,2μm,0.7s								
PB10	**IPOC Station P**	**1.41**	**178**	⇑*i*P		Pn		04 57 52.6	+1.3
PB10				*i* S		Sn		04 58 11.2	+2.6
PB10				IAML				04 58 15.3	
	comp=E,962nm,0.5s								
PB01	**IPOC Station P**	**1.47**	**45**	⇑*i*P		Pn		04 57 53.7	+1.5
PB01				*i* S		Sn		04 58 12.0	+1.8
PB01				IAML				04 58 13.3	
	comp=E,2μm,0.3s								
HMBC	**Humberstone**	**1.93**	**20**	⇓*i*P		Pn		04 57 59.8	+1.3
HMBC				*i* S		Sn		04 58 25.2	+3.7
HMBC				IAML				04 58 32.9	
	comp=E,790nm,0.4s								
PB08	**IPOC Station P**	**2.37**	**35**	⇓*i*P		Pn		04 58 07.7	+2.9
PB08				*i* S		Sn		04 58 37.0	+4.3
PB08				IAML				04 58 44.5	
	comp=N,494nm,0.3s								

MEX 24 05:01:23.7±0.4,14.°04N×91.°76W,h58km±36km,MD3.7, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.26**	**351**	*i* P		Pn		05 01 57.2	-1.7
CCIG				*i* S		Sn		05 02 24.1	-1.7

DJA 24 05:26:29.2±0.3,1.°S±2.°×12.°0E±.°,h10km,M3.9/6,MLv3.9/6, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PCI	**Palu**	**0.50**	**355**	P		Pg		05 26 39.5	+0.5
PCI				S		Sb		05 26 47.2	-0.4
TTSI	**Tana Toraja**	**1.62**	**182**	P		Pn		05 26 55.6	-2.3
SPSI	**Sidrap Palu**	**2.54**	**182**	P		Pn		05 27 10.5	0.0
SPSI				S		Sn		05 27 42.7	+1.2
MRSI	**Marisa**	**2.79**	**48**	P		Pn		05 27 14.1	+0.2
LUWI	**Luwuk**	**2.91**	**83**	P		Pn		05 27 15.8	+0.1
LUWI				S		Sn		05 27 36.3	-14
GTOI	**Gorontalo**	**3.73**	**57**	P		Pn		05 27 26.7	-0.2

*SOME **24** 06:04:59.0,44.°70N×82.°12E,h0km*
*ISCJB **24** 06:05:00.8±1.4,44.°63N±0.°06×82.°3E±0.°1,h10km,Error ellipse: s-maj=14.1km s-min=5.5km az=31.7*

*NNC **24** 06:05:00.3±1.9,44.°67N×82.°02E,h0km,mb3.1,mpv2.6, Error ellipse: s-maj=24.1km s-min=8.9km az=119.0*

ISC 24 06:04:58.8±1.9,44.°70N±0.°05×82.°24E±0.°09,h10km,n9, σ0°96/17,4C-2D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.79**	**259**	*e*P		**Pb**		**06 05 31.9**	**+0.2**
	9.6nm,0.2s								
DJR				*e*S		**Sg**		**06 05 55.8**	**-0.5**
	6.9nm,0.2s								
KTMS	**Ketmen**	**1.85**	**228**	*e*P		**Pb**		**06 05 33.0**	**+0.3**
	3.0nm,0.2s								
KTMS				*e*S		**Sg**		**06 05 57.6**	**-0.5**
	23nm,0.4s								
MK31	**Makanchi Array**	**2.10**	**1**	⇑Pn		**Pb**		**06 05 37.7**	**+0.7**
	2.2nm,0.3s,baz=191,slow=16,SNR=101								
MK31				⇑Sn		**Sg**		**06 06 05.4**	**-0.8**
	1.9nm,0.3s,baz=183,slow=25,SNR=21								
MAKZ	**Makanchi**	**2.12**	**355**	⇓Pn		**Pb**		**06 05 37.3**	**0.0**
	2.0nm,0.5s								
MAKZ				⇓Sn		**Sg**		**06 06 05.7**	**-1.2**
	4.5nm,0.5s								
KAPS	**Kapalarasan**	**2.13**	**287**	*e*P		**Pb**		**06 05 37.1**	**-0.4**
	2.7nm,0.1s								
KAPS				*e*S		**Sb**		**06 06 04.5**	**+0.5**
	8.9nm,0.3s								
SHLS	**Shalkode**	**2.29**	**229**	*e*P		**Pb**		**06 05 40.3**	**-0.1**
	2.3nm,0.1s								
SHLS				*e*S		**Sb**		**06 06 09.9**	**+1.0**
	13nm,0.3s								
PDGK	**Podgornoye**	**2.41**	**236**	⇑Pg		**Pb**		**06 05 41.0**	**-1.3**
	4.8nm,0.9s								
PDGK				⇑Lg		Lg		06 06 14.1	
	7.7nm,0.6s								
MNBS	**Baschi**	**2.82**	**259**	*e*P		**Pb**		**06 05 48.4**	**-0.9**
	3.5nm,0.2s								
MNBS				*e*S		**Sb**		**06 06 23.8**	**-0.1**
	16nm,0.2s								
ARXS	**Arharly**	**3.19**	**263**	*e*P		**Pb**		**06 05 55.9**	**+0.2**
	2.1nm,0.3s								
ARXS				*e*S		**Sb**		**06 06 37.1**	**+2.4**
	8.5nm,0.5s								

*IDC **24** 06:07:47.6±2.0,18.°55S×167.°50E,h0km,mb3.8/5, mb1 4.1/6,mb1mx3.8/28,mbtmp3.8/6,ML3.7/1,MS3.4/9, Ms1 3.4/9,ms1mx3.2/33,Error ellipse: s-maj=51.6km s-min=27.3km az=110.0*
*ISCJB **24** 06:07:50.3±1.3,18.°49S±0.°08×167.°3E±0.°2,h25km, mb3.8/5,MS3.5/7,Error ellipse: s-maj=33.9km s-min=10.7km az=4.8*

ISC 24 06:07:51.5±1.5,18.°5S±0.°1×167.°5E±0.°3,h25km,n13, σ1°22/7,mb3.8/5,MS3.4/7,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.67**	**195**	Pn		**Pn**		**06 08 45.9**	**-0.9**
	5.8nm,0.3s,baz=54,slow=7.2,SNR=54								
DZM				Sn		**Sn**		**06 09 30.3**	**+1.1**
	7.3nm,0.3s,baz=134,slow=22,SNR=13								
DZM				LR		LR		06 09 40.4	
	comp=Z,162nm,18.5s,baz=20,slow=31								
HNR	**Honiara**	**11.61**	**320**	LR		LR		06 13 43.8	
	comp=Z,127nm,21.1s,baz=158,slow=31								
URZ	**Urewera**	**21.39**	**159**	LR		LR		06 19 17.8	
	comp=Z,112nm,18.4s,baz=5.5,slow=32								
RPZ	**Rata Peaks**	**25.30**	**174**	LR		LR		06 22 55.8	
	comp=Z,193nm,18.5s,baz=342,slow=36								
STKA	**Stephens Creek**	**26.84**	**235**	LR		LR		06 23 39.3	
	comp=Z,62nm,18.6s,baz=26,slow=35								
WRA	**Warramunga Arr**	**31.29**	**262**	P		**P**		**06 14 08.9**	**-0.9**
	0.5nm,1.0s,baz=102,slow=7.6,SNR=3.2								
ASAR	**Alice Springs**	**31.69**	**255**	P		**P**		**06 14 13.2**	**-0.2**
	0.8nm,0.5s,baz=82,slow=8.6,SNR=13								
ASAR				LR		LR		06 25 52.3	
	comp=Z,77nm,19.7s,baz=90,slow=34								
GUMO	**Guam**	**38.91**	**323**	LR		LR		06 29 07.4	
	comp=Z,51nm,19.1s,baz=150,slow=33								
CMAR	**Chiang Mai Arr**	**76.68**	**295**	P		**P**		**06 19 42.5**	**+1.6**
	1.1nm,0.3s,baz=99,slow=5.6,SNR=2.4								
MAW	**

8.7nm,0.3s,baz=270,slow=20,SNR=3.8
FITZ Fitzroy Crossi 15.72 195 P **P** **06 25 26.5 -1.7**
0.2nm,0.3s,baz=5.0,slow=9.0,SNR=3.1
WRA Warramunga Arr 17.59 166 P **Pn** **06 25 48.5 +0.3**
0.4nm,0.3s,baz=335,slow=13,SNR=27
WRA S **Sn** **06 29 03.0 -0.5**
0.1nm,0.3s,baz=345,slow=19,SNR=4.2
ASAR Alice Springs 21.11 169 P **P** **06 26 29.7 +2.2**
3.5nm,0.6s,baz=348,slow=9.2,SNR=38
ASAR S **S** **06 30 20.7 -0.6**
0.7nm,0.8s,baz=351,slow=17,SNR=4.7
MKAR Makanchi Array 64.64 326 P **P** **06 32 20.4 +0.2**
0.4nm,0.6s,baz=128,slow=7.9,SNR=5.1
ZALV Zalesovo Beam 67.77 333 P **P** **06 32 40.2 +0.2**
0.5nm,0.4s,baz=123,slow=5.5,SNR=3.6

CSEM ***24*** *06:26:01.4±0.2,38.31N×21.77E,h1km,ML0.7,Error ellipse: s-maj=4.3km s-min=3.7km az=138.0,Suspected Mining explosion.*

ATH 24 06:26:01.1,38.31N×21.75E,h10km±2km,ML0.7/4,Error ellipse: s-maj=2.3km s-min=0.9km az=145.0,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.04**	**129**	P	Pg	06 26 02.3	-0.6
UPR				S	Sg	06 26 04.8	+0.6
UPR	**University Cam**	**0.04**	**129**	P	Pg	06 26 02.3	-0.6
UPR				S	Sg	06 26 04.8	+0.6
SERG	**Sergoula**	**0.26**	**66**	P	Pg	06 26 06.5	+0.1
SERG				S	Sg	06 26 11.1	+1.1
AXS	**Araxos**	**0.31**	**249**	P	Pg	06 26 07.9	+0.6
AXS				S	Sg	06 26 10.9	-0.6
AXS	**Araxos**	**0.31**	**249**	P	Pg	06 26 07.9	+0.6
AXS				S	Sg	06 26 10.9	-0.6
ANX	**Ano Chora**	**0.32**	**25**	P	Pg	06 26 08.0	+0.6
ANX				S	Sg	06 26 11.8	+0.1
ANX	**Ano Chora**	**0.32**	**25**	P	Pg	06 26 08.0	+0.6
ANX				S	Sg	06 26 11.8	+0.1
ANX				AML	AML	06 26 13.0	
	comp=N,46μm,0.2s						
ANX				AML	AML	06 26 13.1	
	comp=E,29μm,0.1s						
KALE	**Kalithea**	**0.32**	**75**	P	Pg	06 26 07.3	-0.2
KALE				S	Sg	06 26 11.7	0.0
KALE	**Kalithea**	**0.32**	**75**	P	Pg	06 26 07.3	-0.1
KALE				S	Sg	06 26 11.7	0.0
KALE				AML	AML	06 26 13.4	
	comp=N,25μm,0.2s						
KALE				AML	AML	06 26 15.9	
	comp=E,30μm,0.2s						
RLS	**Riolos of Patr**	**0.33**	**222**	P	Pg	06 26 08.1	+0.4
DRO	**Drossia**	**0.35**	**185**	P	Pg	06 26 08.5	+0.4
DRO				S	Sb	06 26 14.2	-1.0
DRO	**Drossia**	**0.35**	**185**	P	Pg	06 26 08.5	+0.4
DRO				S	Sb	06 26 14.2	-1.0
DRO				AML	AML	06 26 16.7	
	comp=E,57μm,0.2s						
DRO				AML	AML	06 26 18.8	
	comp=N,35μm,0.2s						
PVO	**Paravola**	**0.35**	**331**	P	Pg	06 26 07.4	-0.7
PVO				S	Sb	06 26 14.8	-0.4
PVO	**Paravola**	**0.35**	**331**	P	Pg	06 26 07.4	-0.7
PVO				AML	AML	06 26 14.4	
	comp=Z,102μm,0.3s						
PVO				AML	AML	06 26 14.6	
	comp=E,68μm,0.2s						
PVO				S	Sb	06 26 14.8	-0.5
KLV	**Kalavryta, Ach**	**0.41**	**130**	P	Pg	06 26 09.3	+0.1
KLV				S	Sg	06 26 14.2	-0.4
KLV	**Kalavryta, Ach**	**0.41**	**130**	P	Pg	06 26 09.3	+0.1
KLV				S	Sg	06 26 14.2	-0.4
DSF	**Desfina**	**0.62**	**80**	P	Pg	06 26 11.9	-1.2
DSF	**Desfina**	**0.62**	**80**	P	Pg	06 26 11.9	-1.2

DDA 24 06:26:55.8,39.12N×27.57E,h7km,Md2.6,Suspected Mining explosion.,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALY	**Balya**	**0.62**	**4**	*i* P	Pg	06 27 08.4	+0.6
MANT	**Manisa**	**1.00**	**129**	*i* P	Pg	06 27 14.8	-0.1
URLA	**Izmir**	**1.07**	**225**	*i* P	Pg	06 27 16.2	-0.1
URLA				*i* S	Sn	06 27 31.8	-0.6
DGB	**˙zmir**	**1.19**	**207**	*i* P	Pg	06 27 18.2	-0.4
DGB				*i* S	Sg	06 27 34.0	-0.1
BOZC	**Bozcaada**	**1.38**	**302**	*i* P	Pn	06 27 21.6	+0.2

MEX 24 06:31:13.4±0.7,13.72N×94.28W,h20km,MD4.1,Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**3.28**	**39**	*eP*	Pn	06 32 01.1	-2.9
CCIG				*eS*	Sn	06 32 39.3	-3.2

NIED ***24*** *06:36:00,39.90N×142.30E,h47km,Mw3.9 Best double couple: M07.85000×10^14 NP1:φ=213.00000°,δ=14.00000°, λ=107.00000°. NP2:φ=15.00000°,δ=77.00000°,λ=86.00000°.*
JMA ***24*** *06:36:15.1±0.1,39.94N×142.32E,h42km±1km,M3.7*
IDC ***24*** *06:36:16.9±3.7,39.96N×142.52E,h68km±31km,mb3.6/13, mb1 3.7/16,mb1mx3.5/53,mbtmp3.9/16,ML3.0/3,MS3.0/4, Ms1 3.0/4,ms1mx2.6/46,Error ellipse: s-maj=32.3km s-min=16.9km az=74.0*

ISC 24 06:36:10.1±2.1,40.02N±0.05×142.56E±0.08,h10km±11km, n35,σ1=55/35,mb4.0/13,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.55**	**261**	P	**Pn**	**06 36 24.2**	**+0.3**
JTH				S	**Sb**	**06 36 30.7**	**+1.1**
MIYJ	**Miyakonagasawa**	**0.73**	**232**	P	**Pn**	**06 36 26.2**	**-0.2**
MIYJ				*i* S	**Sg**	**06 36 33.8**	**+0.2**
JANG	**Nango**	**0.88**	**294**	P	**Pn**	**06 36 29.0**	**+0.6**
JKZ	**Kuzumaki**	**0.95**	**268**	P	**Pn**	**06 36 29.8**	**+0.3**
JKZ				S	**Sg**	**06 36 40.0**	**-0.7**
JOM	**Ohasama**	**1.12**	**241**	P	**Pb**	**06 36 31.7**	**+0.1**
JOM				S	**Sg**	**06 36 43.8**	**-2.5**
OFUJ	**Ofunato**	**1.17**	**217**	P	**Pb**	**06 36 32.7**	**+0.4**
OFUJ				S	**Sb**	**06 36 45.7**	**-1.8**
JTM	**Tenmabayashi**	**1.37**	**304**	P	**Pg**	**06 36 37.0**	**+0.6**
JTM				*e*S	**Sb**	**06 36 53.1**	**-0.3**
JAH	**Hinai**	**1.49**	**277**	P	**Pn**	**06 36 37.5**	**+0.7**
JAH				*e*S	**Sn**	**06 36 53.9**	**-2.4**
JMK	**Ichinoseki**	**1.49**	**225**	P	**Pn**	**06 36 37.2**	**+0.3**
JRG	**Rokugo**	**1.61**	**248**	P	**Pn**	**06 36 39.3**	**+0.7**
MAT	**Matsushiro**	**4.88**	**226**	P	**Pn**	**06 37 26.6**	**+3.1**
MAT				*e*S	**Sn**	**06 38 24.0**	**+4.0**
MJAR	**Matsushiro Arr**	**4.88**	**226**	P	**Pn**	**06 37 26.1**	**+2.6**
	1.9nm,0.3s,baz=32,slow=13,SNR=41						
MJAR				S	**Sb**	**06 38 33.2**	**-1.2**
	baz=276,slow=24,SNR=2.7						
USRK	**Ussuriysk Ar.**	**8.90**	**301**	P	**Pn**	**06 38 22.9**	**+4.3**
	0.2nm,0.3s,baz=104,slow=13,SNR=12						
KSRS	**Korea Array**	**11.72**	**262**	P	Pn	06 39 02.5	+5.2
	0.3nm,0.3s,baz=76,slow=14,SNR=3.5						
KSRS				LR	LR	06 42 39.7	
	comp=Z,39nm,18.6s,baz=111,slow=33						
KLR	**Kul'dur**	**11.99**	**324**	LR	LR	06 43 41.8	
	comp=Z,63nm,18.7s,baz=128,slow=37						
SONM	**Songino Array**	**27.00**	**299**	P	**P**	**06 41 51.7**	**-0.4**
	0.4nm,0.6s,baz=92,slow=10,SNR=2.9						
H11N2	**WAKE ISLAND Hy 29.06**	**127**		T	T	07 12 54.6	
	baz=318,slow=75,SNR=401						
H11N1	**WAKE ISLAND Hy 29.07**	**127**		T	T	07 12 58.2	
	baz=318,slow=75,SNR=361						
H11N3	**WAKE ISLAND Hy 29.08**	**127**		T	T	07 12 58.8	
	baz=318,slow=75,SNR=281						
H11S1	**WAKE ISLAND Hy 29.88**	**129**		T	T	07 13 58.7	
	baz=320,slow=76,SNR=26						
H11S3	**WAKE ISLAND Hy 29.88**	**129**		T	T	07 14 05.3	
	baz=320,slow=76,SNR=23						
H11S2	**WAKE ISLAND Hy 29.89**	**129**		T	T	07 13 57.2	
	baz=320,slow=76,SNR=26						
ZALV	**Zalesovo Beam**	**40.63**	**310**	P	**P**	**06 43 50.0**	**+0.1**
	1.0nm,0.4s,baz=64,slow=6.8,SNR=4.3						
MKAR	**Makanchi Array**	**43.36**	**300**	P	**P**	**06 44 12.0**	**-0.4**
	0.7nm,0.6s,baz=87,slow=8.8,SNR=7.1						
KURBB	**Kurchatov Arra**	**44.93**	**306**	P	**P**	**06 44 24.3**	**-0.5**
	1.7nm,0.6s,baz=79,slow=8.6,SNR=18						
ILAR	**Eielson Array**	**46.50**	**34**	P	**P**	**06 44 37.0**	**0.0**
	0.2nm,0.5s,baz=263,slow=5.6,SNR=4.2						
BVAR	**Borovoye Array**	**49.27**	**311**	P	**P**	**06 44 58.5**	**-0.1**
	0.7nm,0.5s,baz=69,slow=7.9,SNR=3.2						
ARU	**Arti**	**54.75**	**317**	P	**P**	**06 45 39.6**	**+0.2**
	2.9nm,0.6s,baz=90,slow=7.1,SNR=5.9						
AKTO	**Aktyubinsk**	**57.38**	**311**	P	**P**	**06 45 58.8**	**+0.5**
	1.5nm,0.7s,baz=71,slow=12,SNR=4.7						
WRA	**Warramunga Arr**	**60.15**	**189**	P	**P**	**06 46 16.8**	**-1.0**
	1.4nm,0.8s,baz=6.2,slow=7.0,SNR=9.3						
ASAR	**Alice Springs**	**63.87**	**189**	P	**P**	**06 46 42.2**	**-0.6**
	0.6nm,0.8s,baz=8.8,slow=6.2,SNR=5.2						
FINES	**FINESS Array B**	**66.60**	**332**	P	**P**	**06 46 59.9**	**-0.1**
	1.4nm,0.7s,baz=78,slow=8.8,SNR=5.0						
KBZ	**Khabaz**	**69.65**	**310**	LR	LR	07 21 54.4	
	comp=Z,19nm,18.5s,baz=346,slow=39						
NOA	**NORSAR Array B**	**71.78**	**337**	P	**P**	**06 47 32.5**	**+0.2**
	1.0nm,0.8s,baz=38,slow=6.4,SNR=3.8						
NOA				LR	LR	07 25 17.9	
	comp=Z,7.8nm,18.5s,baz=170,slow=41						
AKASG	**Malin Array Be**	**72.49**	**322**	P	**P**	**06 47 35.9**	**-0.7**
	1.1nm,0.5s,baz=44,slow=6.4,SNR=5.9						

IDC 24 06:38:40.6±1.6,2.13N×126.43E,h0km,mb3.6/5, mb1 3.8/5,mb1mx3.5/48,mbtmp3.6/5,MS3.1/1,Ms1 3.3/1, ms1mx2.3/37,Error ellipse: s-maj=112.4km s-min=20.6km az=69.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**20.12**	**182**	P	P	06 43 16.0	-0.2
	2.4nm,1.0s,baz=22,slow=15,SNR=5.1						
WRA	**Warramunga Arr**	**23.27**	**161**	P	P	06 43 49.8	-0.2
	1.4nm,0.5s,baz=340,slow=11,SNR=22						
ASAR	**Alice Springs**	**26.65**	**165**	P	P	06 44 21.8	+0.5
	0.4nm,0.4s,baz=342,slow=7.3,SNR=9.7						
CMAR	**Chiang Mai Arr**	**31.45**	**303**	LR	LR	06 58 32.4	
	comp=Z,34nm,19.4s,baz=111,slow=38						
MKAR	**Makanchi Array**	**58.70**	**326**	P	P	06 48 39.9	-0.2
	0.2nm,0.4s,baz=132,slow=7.4,SNR=4.7						
KURBB	**Kurchatov Arra**	**62.92**	**328**	P	P	06 49 08.7	0.0
	0.3nm,0.6s,baz=129,slow=6.3,SNR=2.7						

IDC ***24*** *06:40:20.7±1.2,50.92N×173.82E,h0km,mb3.6/6, mb1 4.0/7,mb1mx3.5/58,mbtmp3.6/7,ML3.0/1,Error ellipse: s-maj=41.4km s-min=22.5km az=170.0*
ISCJB ***24*** *06:40:23.7±1.1,51.0N±0.2×173.7E±0.2,h33km,mb3.6/6, Error ellipse: s-maj=32.6km s-min=15.2km az=173.9*

ISC 24 06:40:26.0±1.1,51.1N±0.2×173.65E±0.09,h35km,n7, σ1=65/8,mb3.6/6,Near Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PETK	**Petropavlovsk-**	**10.04**	**288**	Pn	**Pn**	**06 42 48.8**	**+1.3**
	0.6nm,0.3s,baz=99,slow=18,SNR=6.4						
PETK				Sn	**Sn**	**06 44 36.5**	**-2.2**
	0.3nm,0.3s,baz=127,slow=20,SNR=3.5						
ILAR	**Eielson Array**	**24.55**	**41**	P	**P**	**06 45 40.2**	**-1.7**
	0.7nm,0.7s,baz=244,slow=8.2,SNR=8.2						
YKA	**Yellowknife Ar**	**38.85**	**45**	P	**P**	**06 47 47.0**	**-0.2**
	1.0nm,0.8s,baz=290,slow=8.4,SNR=4.0						
PDAR	**Pinedale Array**	**50.88**	**68**	P	**P**	**06 49 23.4**	**0.0**
	1.5nm,0.9s,baz=318,slow=2.0,SNR=8.4						
KURBB	**Kurchatov Arra**	**55.80**	**310**	P	**P**	**06 50 00.8**	**+1.6**
	0.1nm,0.3s,baz=46,slow=6.5,SNR=2.9						
TXAR	**Lajitas Array**	**63.37**	**76**	P	**P**	**06 50 52.3**	**+0.6**
	0.6nm,0.7s,baz=301,slow=5.3,SNR=9.2						
WRA	**Warramunga Arr**	**78.67**	**217**	P	**P**	**06 52 23.3**	**-1.0**
	0.5nm,1.0s,baz=32,slow=5.8,SNR=3.0						

IDC ***24*** *06:43:57.9±8.0,51.76N×175.93W,h39km±68km,mb3.6/11, mb1 3.8/12,mb1mx3.5/55,mbtmp3.8/12,ML4.4/1,MS3.0/1, Ms1 3.0/1,ms1mx2.3/40,Error ellipse: s-maj=35.4km s-min=15.9km az=171.0*
NEIC ***24*** *06:43:59.0,51.56N×175.86W,h24km,ML4.1(AEIC),After AEIC.*

ISC 24 06:43:59.0±0.7,51.6N±0.1×175.92W±0.04,h47km,n42, σ1=44/41,mb3.8/11,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETKA	**Kagalaska Isla**	**0.37**	**306**	P	**Pn**	**06 44 09.2**	**+0.7**
GSCK	**Great Sitkin C**	**0.40**	**338**	P	**Pn**	**06 44 09.5**	**+0.6**
GSMY	**Great Sitkin M**	**0.41**	**348**	P	**Pn**	**06 44 09.3**	**+0.3**
GSTD	**Great Sitkin T**	**0.44**	**342**	P	**Pn**	**06 44 09.9**	**+0.5**
ADAG	**Mount Adagdak**	**0.54**	**309**	P	**Pn**	**06 44 12.0**	**+1.5**
KIRH	**Kanaga Island**	**0.77**	**290**	P	**Pn**	**06 44 14.5**	**+0.9**
KIKV	**Kanaga Island**	**0.81**	**287**	P	**Pn**	**06 44 14.9**	**+0.8**
KICM	**Kanaga Island**	**0.84**	**290**	P	**Pn**	**06 44 15.4**	**+1.0**
TAPA	**Tanaga Point A**	**1.19**	**279**	P	**Pn**	**06 44 20.3**	**+1.1**
TAFL	**Tanaga Flats**	**1.23**	**276**	P	**Pn**	**06 44 20.9**	**+1.1**
KOKL	**Mount Kliuchef**	**1.27**	**57**	P	**Pn**	**06 44 20.8**	**+0.5**
KOFP	**Korovin Flat P**	**1.29**	**60**	P	**Pn**	**06 44 21.1**	**+0.5**
KOKV	**Korovin Volcan**	**1.30**	**56**	P	**Pn**	**06 44 21.7**	**+0.9**
KOKV				S	**Sn**	**06 44 38.8**	**+1.7**
TAFP	**Tanaga Falls P**	**1.30**	**282**	P	**Pn**	**06 44 22.1**	**+1.3**
TAFP				S	**Sn**	**06 44 40.1**	**+3.1**
KONE	**Korovin Northe**	**1.34**	**55**	P	**Pn**	**06 44 22.6**	**+1.3**
KONE				S	**Sn**	**06 44 40.2**	**+2.3**
KOSE	**Korovin Southe**	**1.35**	**58**	P	**Pn**	**06 44 22.5**	**+1.0**
GAEA	**Gareloi East**	**1.76**	**276**	P	**Pn**	**06 44 28.8**	**+1.8**
GALAA	**Gareloi Lava P**	**1.78**	**275**	P	**Pn**	**06 44 29.1**	**+1.9**
NIKH	**Nikolski High**	**4.54**	**70**	P	**Pn**	**06 45 07.5**	**+2.4**
UNV	**Unalaska Valle**	**6.13**	**65**	P	**Pn**	**06 45 29.8**	**+2.9**
SPIA	**Saint Paul Isl**	**6.46**	**29**	P	**Pn**	**06 45 34.1**	**+2.8**
ILAR	**Eielson Array**	**19.93**	**38**	P	**P**	**06 48 24.1**	**-2.3**
	0.5nm,0.3s,baz=213,slow=10,SNR=31						
INK	**Inuvik**	**26.22**	**35**	P	**P**	**06 49 27.2**	**-1.6**
	0.4nm,0.4s,baz=238,slow=7.2,SNR=5.8						
INK				PcP	**PcP**	**06 52 54.0**	**-0.2**
	0.9nm,0.5s,baz=288,slow=1.6,SNR=6.1						
KLR	**Kul'dur**	**32.83**	**287**	P	**P**	**06 50 27.5**	**-0.2**
	1.0nm,0.3s,baz=74,slow=12,SNR=5.2						
KLR				LR	LR	07 03 21.2	
	comp=Z,23nm,18.9s,baz=102,slow=36						
YKA	**Yellowknife Ar**	**33.74**	**47**	P	**P**	**06 50 34.8**	**-0.6**
	0.6nm,0.7s,baz=282,slow=8.4,SNR=6.3						
YKA				PcP	**PcP**	**06 53 13.9**	**+0.1**
	1.3nm,0.7s,baz=287,slow=3.4,SNR=9.8						
H11N2	**WAKE ISLAND Hy 34.59**	**209**		T	T	07 27 36.6	
	baz=18,slow=76,SNR=385						
H11N3	**WAKE ISLAND Hy 34.59**	**209**		T	T	07 27 30.0	
	baz=18,slow=76,SNR=391						
H11N1	**WAKE ISLAND Hy 34.60**	**209**		T	T	07 27 35.0	
	baz=18,slow=76,SNR=432						
H11S1	**WAKE ISLAND Hy 35.80**	**209**		T	T	07 29 08.6	
	baz=19,slow=76,SNR=268						
H11S2	**WAKE ISLAND Hy 35.81**	**209**		T	T	07 29 09.8	
	baz=19,slow=76,SNR=233						
H11S3	**WAKE ISLAND Hy 35.81**	**209**		T	T	07 29 06.6	
	baz=19,slow=76,SNR=139						
KSRS	**Korea Array**	**41.43**	**273**	P	**P**	**06 51 42.0**	**+1.3**
	1.1nm,0.6s,baz=53,slow=8.1,SNR=6.8						
KSAR	**Wonju Array Be**	**41.46**	**273**	P	**P**	**06 51 42.0**	**+1.0**
PDAR	**Pinedale Array**	**44.51**	**74**	P	**P**	**06 52 05.6**	**-0.3**
	0.5nm,0.6s,baz=295,slow=4.2,SNR=6.3						
TXAR	**Lajitas Array**	**56.84**	**83**	P	**P**	**06 53 38.2**	**-0.5**
	0.2nm,0.4s,baz=298,slow=5.3,SNR=4.5						
KURK	**Kurchatov**	**60.12**	**315**	P	**P**	**06 54 01.1**	**-0.1**
KURBB	**Kurchatov Arra**	**60.23**	**315**	P	**P**	**06 54 01.1**	**-0.8**
	0.7nm,0.5s,baz=44,slow=6.6,SNR=7.3						
MKAR	**Makanchi Array**	**61.26**	**310**	P	**P**	**06 54 07.1**	**-1.9**
	0.3nm,0.4s,baz=48,slow=6.5,SNR=6.9						
CMAR	**Chiang Mai Arr**	**72.76**	**278**	P	**P**	**06 55 22.1**	**-0.3**
	1.6nm,0.3s,baz=26,slow=5.8,SNR=6.3						
WRA	**Warramunga Arr**	**83.47**	**226**	P	**P**	**06 56 20.6**	**-0.8**
	0.4nm,0.5s,baz=32,slow=6.0,SNR=7.4						
ASAR	**Alice Springs**	**86.92**	**225**	P	**P**	**06 56 38.6**	**0.0**
	0.4nm,0.8s,baz=31,slow=4.4,SNR=5.4						
BOSA	**Boshof**	**152.06**	**317**	PKPbc	**PKPbc**	**07 03 47.7**	**-1.2**
	1.6nm,0.6s,baz=18,slow=3.3,SNR=7.2						

IDC 24 06:48:47.6±3.5,54.60N×86.50E,h0km,mb1 2.9/2, mb1mx2.9/48,mbtmp2.9/2,ML2.6/2,Error ellipse: s-maj=30.6km s-min=18.6km az=42.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.18**	**237**	*i*		06 56 50.0	
	baz=56,slow=322,SNR=1.4						
ZALV	**Zalesovo Beam**	**1.18**	**237**	Pg	Pg	06 49 08.6	-1.6
	1.3nm,0.3s,baz=56,slow=16,SNR=14						
ZALV				Lg	Lg	06 49 26.5	
	1.0nm,0.3s,baz=53,slow=27,SNR=5.0						
KURBB	**Kurchatov Arra**	**6.28**	**234**	Pn	Pn	06 50 22.6	+1.3
	0.1nm,0.3s,baz=49,slow=14,SNR=8.0						
MKAR	**Makanchi Array**	**8.26**	**201**	Pn	Pn	06 50 49.2	+0.7
	0.1nm,0.3s,baz=24,slow=13,SNR=5.9						

NEIC 24 06:57:46.7,51.59N×175.86W,h34km,ML3.5(AEIC), After AEIC.,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETKA	**Kagalaska Isla**	**0.43**	**309**	P	Pn	06 57 56.7	+0.1
GSCK	**Great Sitkin C**	**0.46**	**336**	P	Pn	06 57 56.9	-0.1
GSMY	**Great Sitkin M**	**0.47**	**345**	P	Pb	06 57 56.8	-0.1
GSTD	**Great Sitkin T**	**0.50**	**339**	P	Pb	06 57 57.3	0.0
GSTD				S	Sn	06 58 06.0	+1.1
ADAG	**Mount Adagdak**	**0.60**	**311**	P	Pb	06 57 59.5	+0.6
KIRH	**Kanaga Island**	**0.83**	**292**	P	Pn	06 58 01.9	0.0
KIKV	**Kanaga Island**	**0.86**	**290**	P	Pn	06 58 02.3	-0.1
KICM	**Kanaga Island**	**0.89**	**292**	P	Pn	06 58 03.0	+0.3
TAPA	**Tanaga Point A**	**1.24**	**281**	P	Pn	06 58 07.8	+0.2
KOKL	**Mount Kliuchef**	**1.26**	**54**	P	Pn	06 58 08.4	+0.5
KOKL				S	Sn	06 58 24.4	+0.6
TAFL	**Tanaga Flats**	**1.28**	**278**	P	Pn	06 58 08.4	+0.3
KOFP	**Korovin Flat P**	**1.29**	**57**	P	Pn	06 58 08.7	+0.4
KOKV	**Korovin Volcan**	**1.30**	**53**	P	Pn	06 58 09.4	+0.9
KOKV				S	Sb	06 58 26.1	-0.9
KOSE	**Korovin Southe**	**1.35**	**55**	P	Pn	06 58 09.9	+0.8
TAFP	**Tanaga Falls P**	**1.36**	**284**	P	Pn	06 58 09.6	+0.4
TAFP				S	Sn	06 58 26.9	+0.9
GAEA	**Gareloi East**	**1.81**	**277**	P	Pn	06 58 16.4	+1.0
GAEA				S	Sb	06 58 40.1	-1.2
GALAA	**Gareloi Lava P**	**1.82**	**277**	P	Pn	06 58 16.1	+0.5

IDC ***24*** *07:00:58.8±0.7,38.44N×21.77E,h0km,mb4.1/20, mb1 4.2/24,mb1mx4.0/48,mbtmp4.1/24,ML3.7/4,MS3.3/12, Ms1 3.3/12,ms1mx2.8/61,Error ellipse: s-maj=15.2km s-min=13.2km az=37.0*
ISCJB ***24*** *07:00:59.2±0.2,38.32N±0.01×21.74E±0.01,h9km±1km, mb4.0/19,MS3.3/6,Error ellipse: s-maj=2.0km s-min=1.6km az=39.0*
PDG ***24*** *07:00:59.7±0.7,38.29N×21.78E,h9km±1km,ML4.1/11, Error ellipse: s-maj=0.8km s-min=0.9km az=0.0*
THE ***24*** *07:00:59.5,38.33N×21.76E,h2km,ML3.9/17,Error ellipse: s-maj=0.7km s-min=0.3km az=201.0*
CSEM ***24*** *07:00:59.7±0.1,38.29N×21.78E,h2km,ML3.7,Error ellipse: s-maj=2.2km s-min=1.7km az=43.0*
ATH ***24*** *07:00:59.1,38.30N×21.78E,h18km,ML3.7/24,Error ellipse: s-maj=0.8km s-min=0.5km az=227.0*
IASPEI ***24*** *07:00:59.3±0.8,38.32N±0.02×21.76E±0.01,h7km±4km, mb4.1/19,MS3.3/6,Error ellipse: s-maj=2.2km s-min=2.0km az=162.3,GT5 selection from ISC bulletin GT5 identified by Bond˙jr and McLaughlin (2009) selection criteria Bond˙jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*

ISC 24 07:00:59.6±0.6,38.30N±0.01×21.77E±0.01,h7km±3km, n343,σ1=21/456,mb4.1/19,MS3.3/6,32C-15D,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.03**	**142**	P	**Pg**	**07 01 01.0**	**0.0**
UPR				S	**Sg**	**07 01 02.2**	**+0.3**
UPR	**University Cam**	**0.03**	**142**	P	**Pg**	**07 01 00.3**	**-0.7**
UPR				S	**Sg**	**07 01 01.6**	**-0.3**
UPR	**University Cam**	**0.03**	**142**	P	**Pg**	**07 01 00.3**	**-0.7**
UPR				S	**Sg**	**07 01 01.6**	**-0.3**
VVK	**Vomvokou**	**0.12**	**17**	P	**Pg**	**07 01 02.2**	**-0.1**
VVK				S	**Sg**	**07 01 04.6**	**+0.4**
LAKA	**Lakka**	**0.18**	**111**	P	**Pg**	**07 01 03.5**	**+0.2**
LAKA				S	**Sg**	**07 01 06.4**	**+0.7**
LAKA	**Lakka**	**0.18**	**111**	P	**Pg**	**07 01 03.5**	**+0.2**
LAKA				S	**Sg**	**07 01 06.4**	**+0.7**
LAKA	**Lakka**	**0.18**	**111**	P	**Pg**	**07 01 03.9**	**+0.6**
LAKA				S	**Sg**	**07 01 06.5**	**+0.7**
TRIZ	**Trizonia**	**0.25**	**76**	P	**Pg**	**07 01 04.8**	**+0.3**
TRIZ				S	**Sg**	**07 01 09.1**	**+1.2**
SERG	**Sergoula**	**0.25**	**64**	P	**Pg**	**07 01 04.1**	**-0.5**
SERG				S	**Sg**	**07 01 08.1**	**+0.1**
SERG	**Sergoula**	**0.25**	**64**	P	**Pg**	**07 01 04.1**	**-0.5**
SERG				S	**Sg**	**07 01 08.1**	**+0.1**
KALE	**Kalithea**	**0.31**	**73**	P	**Pg**	**07 01 05.3**	**-0.4**
KALE				S	**Sg**	**07 01 10.3**	**+0.6**
KALE	**Kalithea**	**0.31**	**73**	P	**Pg**	**07 01 05.3**	**-0.4**
KALE				S	**Sg**	**07 01 10.3**	**+0.6**
KALE	**Kalithea**	**0.31**	**73**	P	**Pg**	**07 01 06.0**	**+0.3**
KALE				AML	AML	07 01 11.6	
	comp=N,43734μm,0.2s						
KALE				S	**Sb**	**07 01 12.0**	**-0.7**
KALE				AML	AML	07 01 16.9	
	comp=E,44968μm,0.6s						
ANX	**Ano Chora**	**0.31**	**23**	P	**Pg**	**07 01 05.5**

EVR					AML	AML	07 01 29.9		
	comp=N,14976µm,1.0s								
THAL	**Thalero**	**0.76**	**110**	P		**Pg**	**07 01 13.8**	**-0.3**	
THAL	**Thalero**	**0.76**	**110**	P		**Pg**	**07 01 13.8**	**-0.3**	
AMT	**Artemida-Makis**	**0.77**	**183**	P		**Pg**	**07 01 14.4**	**-0.1**	
AMT				S		**Sb**	**07 01 26.0**	**-0.1**	
AMT	**Artemida-Makis**	**0.77**	**183**	P		**Pg**	**07 01 14.4**	**-0.1**	
AMT				S		**Sb**	**07 01 26.0**	**-0.1**	
AMT	**Artemida-Makis**	**0.77**	**183**	P		**Pg**	**07 01 13.9**	**-0.5**	
AMT				S		**Sb**	**07 01 26.7**	**+0.6**	
AMT					AML	AML	07 01 34.5		
	comp=E,18225µm,0.8s								
AMT					AML	AML	07 01 35.1		
	comp=N,24658µm,0.9s								
KFL	**Anninata**	**0.80**	**256**	P		**Pg**	**07 01 14.7**	**-0.2**	
KFL	**Anninata**	**0.80**	**256**	P		**Pg**	**07 01 14.9**	**0.0**	
KFL				S		**Sb**	**07 01 26.5**	**-0.2**	
KFL	**Anninata**	**0.80**	**256**	P		**Pg**	**07 01 14.9**	**0.0**	
KFL				S		**Sb**	**07 01 26.5**	**-0.2**	
AGG	**Agios Georgios**	**0.84**	**31**	P		**Pg**	**07 01 14.8**	**-1.0**	
AGG				S		**Sg**	**07 01 26.5**	**-0.3**	
AGG	**Agios Georgios**	**0.84**	**31**	P		**Pg**	**07 01 14.8**	**-1.0**	
AGG				S		**Sg**	**07 01 26.5**	**-0.3**	
AGG	**Agios Georgios**	**0.84**	**31**	P		**Pg**	**07 01 14.2**	**-1.6**	
AGG				S		**Sb**	**07 01 28.4**	**+0.3**	
AGG					AML	AML	07 01 32.7		
	comp=N,25271µm,0.4s								
AGG					AML	AML	07 01 33.7		
	comp=E,20962µm,0.5s								
TRIP	**Tripoli**	**0.87**	**153**	P		**Pg**	**07 01 16.0**	**-0.4**	
TRIP	**Tripoli**	**0.87**	**153**	P		**Pg**	**07 01 16.0**	**-0.4**	
PROD	**Prodromos**	**0.89**	**93**	P		**Pg**	**07 01 16.6**	**-0.2**	
PROD				S		**Sb**	**07 01 30.2**	**+0.6**	
PROD	**Prodromos**	**0.89**	**93**	P		**Pg**	**07 01 16.6**	**-0.2**	
PROD				S		**Sb**	**07 01 30.2**	**+0.6**	
PROD					AML	AML	07 01 34.0		
	comp=N,20574µm,0.6s								
PROD					AML	AML	07 01 34.5		
	comp=E,17292µm,0.4s								
VLS	**Valsamata**	**0.94**	**263**	P		**Pg**	**07 01 16.5**	**-1.1**	
VLS	**Valsamata**	**0.94**	**263**	P		**Pg**	**07 01 16.5**	**-1.1**	
VLS				S		**Sb**	**07 01 31.3**	**+0.6**	
DSL	**Palaion Diasel**	**0.98**	**328**	P		**Pg**	**07 01 16.5**	**-1.9**	
DSL	**Palaion Diasel**	**0.98**	**328**	P		**Pg**	**07 01 17.3**	**-1.1**	
DSL				S		**Sb**	**07 01 32.9**	**+0.8**	
DSL	**Palaion Diasel**	**0.98**	**328**	P		**Pg**	**07 01 17.3**	**-1.1**	
DSL				S		**Sb**	**07 01 32.9**	**+0.8**	
DSL					AML	AML	07 01 40.5		
	comp=E,8220µm,0.5s								
DSL					AML	AML	07 01 43.1		
	comp=N,9810µm,0.6s								
ZKS	**Zakynthos**	**0.98**	**232**	P		**Pg**	**07 01 17.9**	**-0.6**	
ZKS	**Zakynthos**	**0.98**	**232**	P		**Pg**	**07 01 17.9**	**-0.6**	
ZKS				S		**Sb**	**07 01 32.6**	**+0.5**	
ZKS	**Zakynthos**	**0.98**	**232**	P		**Pg**	**07 01 17.4**	**-1.1**	
ZKS				S		**Sb**	**07 01 32.6**	**+0.5**	
ZKS					AML	AML	07 01 50.1		
	comp=N,47718µm,0.7s								
ZKS					AML	AML	07 01 50.1		
	comp=E,24370µm,0.7s								
LTK	**Loutraki**	**0.99**	**106**	P		**Pg**	**07 01 18.0**	**-0.5**	
LTK				S		**Sb**	**07 01 32.9**	**+0.6**	
LTK	**Loutraki**	**0.99**	**106**	P		**Pg**	**07 01 18.1**	**-0.5**	
LTK				S		**Sb**	**07 01 32.8**	**+0.6**	
LTK	**Loutraki**	**0.99**	**106**	P		**Pg**	**07 01 18.1**	**-0.5**	
LTK				S		**Sb**	**07 01 32.8**	**+0.6**	
LTK					AML	AML	07 01 35.2		
	comp=N,8245µm,0.9s								
LTK					AML	AML	07 01 35.2		
	comp=E,10353µm,0.7s								
LKR	**Lokris**	**1.03**	**70**	P		**Pg**	**07 01 18.6**	**-0.7**	
LKR				S		**Sb**	**07 01 34.1**	**+0.7**	
LKR	**Lokris**	**1.03**	**70**	P		**Pg**	**07 01 18.6**	**-0.7**	
LKR				S		**Sb**	**07 01 33.4**	**0.0**	
LKR	**Lokris**	**1.03**	**70**	P		**Pg**	**07 01 18.3**	**-1.1**	
LKR				S		**Sb**	**07 01 33.4**	**0.0**	
LKR					AML	AML	07 01 38.6		
	comp=N,8545µm,0.5s								
LKR					AML	AML	07 01 41.0		
	comp=E,7454µm,0.4s								
VLX	**Vlachokerasia**	**1.05**	**152**	P		**Pg**	**07 01 19.4**	**-0.4**	
VLX	**Vlachokerasia**	**1.05**	**152**	P		**Pg**	**07 01 19.4**	**-0.4**	
VLX				S		**Sg**	**07 01 33.0**	**-0.5**	
VLX	**Vlachokerasia**	**1.05**	**152**	P		**Pg**	**07 01 18.9**	**-0.9**	
VLX				S		**Sg**	**07 01 33.0**	**-0.5**	
VLX					AML	AML	07 01 39.2		
	comp=N,10060µm,0.8s								
VLX					AML	AML	07 01 43.6		
	comp=E,11991µm,0.5s								
ATAL	**Atalanti**	**1.06**	**68**	P		**Pg**	**07 01 18.2**	**-1.7**	
ATAL				S		**Sb**	**07 01 34.5**	**+0.2**	
ATAL	**Atalanti**	**1.06**	**68**	P		**Pg**	**07 01 18.2**	**-1.7**	
ATAL				S		**Sg**	**07 01 33.7**	**0.0**	
ATAL	**Atalanti**	**1.06**	**68**	P		**Pg**	**07 01 17.3**	**-2.7**	
ATAL				S		**Sg**	**07 01 33.6**	**0.0**	
ATAL					AML	AML	07 01 35.2		
	comp=N,6637µm,0.7s								
ATAL					AML	AML	07 01 39.2		
	comp=E,4146µm,0.5s								
ITM	**Ithomi**	**1.13**	**173**	P		**Pg**	**07 01 21.0**	**-0.3**	
ITM				S		**Sn**	**07 01 37.7**	**+0.1**	
ITM	**Ithomi**	**1.13**	**173**	P		**Pg**	**07 01 21.0**	**-0.3**	
ITM				S		**Sb**	**07 01 36.5**	**+0.1**	
ITM	**Ithomi**	**1.13**	**173**	P		**Pg**	**07 01 20.7**	**-0.6**	
ITM				S		**Sb**	**07 01 36.5**	**+0.1**	
ITM					AML	AML	07 01 41.7		
	comp=N,8666µm,0.7s								
ITM					AML	AML	07 01 45.5		
	comp=E,7044µm,0.9s								
VIL2	**Platees**	**1.19**	**94**	P		**Pg**	**07 01 22.0**	**-0.4**	
VIL2				S		**Sb**	**07 01 38.9**	**+0.9**	
VILL	**Villia**	**1.23**	**96**	P		**Pg**	**07 01 22.1**	**-1.0**	
VILL				S		**Sn**	**07 01 40.8**	**+0.8**	
VILL	**Villia**	**1.23**	**96**	P		**Pg**	**07 01 22.1**	**-1.0**	
VILL				S		**Sg**	**07 01 38.9**	**-0.1**	
SMIA	**Simia**	**1.27**	**63**	P		**Pg**	**07 01 23.1**	**-0.8**	
SMIA	**Simia**	**1.27**	**63**	P		**Pg**	**07 01 23.1**	**-0.8**	
SMIA				S		**Sb**	**07 01 40.6**	**+0.2**	
SMIA	**Simia**	**1.27**	**63**	P		**Pb**	**07 01 24.1**	**+0.2**	
SMIA				S		**Sb**	**07 01 40.6**	**+0.2**	
SMIA					AML	AML	07 01 47.0		
	comp=E,11690µm,0.5s								
SMIA					AML	AML	07 01 47.5		
	comp=N,14806µm,0.5s								
THL	**Klokotos Trika**	**1.27**	**9**	P		**Pg**	**07 01 22.8**	**-1.2**	
THL				S		**Sb**	**07 01 40.9**	**+0.4**	
THL	**Klokotos Trika**	**1.27**	**9**	P		**Pg**	**07 01 23.5**	**-0.6**	
THL				S		**Sb**	**07 01 40.9**	**+0.4**	
PYL	**PYLOS**	**1.41**	**181**	P		**Pn**	**07 01 25.4**	**-0.2**	
PYL	**PYLOS**	**1.41**	**181**	P		**Pn**	**07 01 25.4**	**-0.2**	
PYL				S		**Sn**	**07 01 45.4**	**+1.0**	
PYL	**PYLOS**	**1.41**	**181**	P		**Pn**	**07 01 25.0**	**-0.7**	
PYL				S		**Sn**	**07 01 45.4**	**+1.0**	
PYL					AML	AML	07 01 53.1		
	comp=E,4611µm,0.5s								
PYL					AML	AML	07 01 57.7		
	comp=N,3524µm,0.9s								
DID	**Didima**	**1.41**	**124**	P		**Pn**	**07 01 25.3**	**-0.4**	
DID	**Didima**	**1.41**	**124**	P		**Pn**	**07 01 25.4**	**-0.3**	
DID				S		**Sn**	**07 01 45.2**	**+0.6**	
DID	**Didima**	**1.41**	**124**	P		**Pn**	**07 01 25.4**	**-0.3**	
DID				S		**Sn**	**07 01 45.2**	**+0.6**	
DID					AML	AML	07 01 51.3		
	comp=N,6676µm,0.6s								
DID					AML	AML	07 01 52.2		
	comp=E,9494µm,0.8s								
FYTO	**Fytoko, Volos**	**1.43**	**39**	P		**Pn**	**07 01 25.3**	**-0.7**	
FYTO				S		**Sg**	**07 01 45.4**	**-0.3**	
FYTO	**Fytoko, Volos**	**1.43**	**39**	P		**Pn**	**07 01 26.3**	**+0.3**	
FYTO				S		**Sg**	**07 01 45.4**	**-0.3**	
FYTO	**Fytoko, Volos**	**1.43**	**39**	P		**Pn**	**07 01 26.3**	**+0.3**	
FYTO				S		**Sn**	**07 01 46.1**	**+1.0**	
FYTO					AML	AML	07 01 50.6		
	comp=N,3367µm,1.1s								
FYTO					AML	AML	07 01 50.8		
	comp=E,1706µm,0.7s								
NEO	**Neokhori**	**1.52**	**48**	P		**Pn**	**07 01 26.4**	**-0.8**	
NEO	**Neokhori**	**1.52**	**48**	P		**Pn**	**07 01 27.3**	**+0.1**	
NEO	**Neokhori**	**1.52**	**48**	P		**Pn**	**07 01 27.3**	**+0.1**	
JAN	**Janina**	**1.53**	**332**	P		**Pb**	**07 01 28.5**	**+0.2**	
XOR	**Xorichti**	**1.54**	**46**	P		**Pn**	**07 01 27.1**	**-0.4**	
XOR	**Xorichti**	**1.54**	**46**	P		**Pn**	**07 01 27.1**	**-0.4**	
XOR					S	**Sg**	**07 01 49.2**	**+0.2**	
XOR	**Xorichti**	**1.54**	**46**	P		**Pn**	**07 01 26.8**	**-0.7**	
XOR					S	**Sg**	**07 01 49.2**	**+0.2**	
XOR					AML	AML	07 01 52.4		
	comp=N,4893µm,0.6s								
XOR					AML	AML	07 01 56.6		
	comp=E,2475µm,1.0s								
ATH	**Athens Observa**	**1.57**	**102**	P		**Pn**	**07 01 27.9**	**0.0**	
ATH				S		**Sb**	**07 01 49.3**	**+0.2**	
ATH	**Athens Observa**	**1.57**	**102**	P		**Pn**	**07 01 27.9**	**0.0**	
ATH				S		**Sn**	**07 01 49.1**	**+0.6**	
SKIA	**Skiathos**	**1.58**	**57**	P		**Pn**	**07 01 27.9**	**-0.2**	
SKIA	**Skiathos**	**1.58**	**57**	P		**Pn**	**07 01 27.9**	**-0.2**	
SKIA	**Skiathos**	**1.58**	**57**	P		**Pn**	**07 01 27.9**	**-0.2**	
ATHU	**Athens Univers**	**1.63**	**101**	P		**Pn**	**07 01 28.6**	**-0.1**	
ATHU	**Athens Univers**	**1.63**	**101**	P		**Pn**	**07 01 29.1**	**+0.4**	
ATHU				S		**Sn**	**07 01 49.5**	**-0.4**	
ATHU	**Athens Univers**	**1.63**	**101**	P		**Pn**	**07 01 29.1**	**+0.4**	
ATHU				S		**Sn**	**07 01 49.5**	**-0.4**	
ATHU					AML	AML	07 01 51.6		
	comp=N,1366µm,0.9s								
ATHU					AML	AML	07 01 55.2		
	comp=E,880µm,0.4s								
IGT	**Igoumenitsa**	**1.66**	**318**	P		**Pn**	**07 01 28.5**	**-0.6**	
IGT	**Igoumenitsa**	**1.66**	**318**	P		**Pn**	**07 01 29.4**	**+0.3**	
IGT	**Igoumenitsa**	**1.66**	**318**	P		**Pn**	**07 01 29.4**	**+0.3**	
VLY	**Voula,Athens**	**1.66**	**105**	P		**Pn**	**07 01 29.1**	**-0.1**	
VLY	**Voula,Athens**	**1.66**	**105**	P		**Pn**	**07 01 29.1**	**-0.1**	
VLY				S		**Sb**	**07 01 52.0**	**+0.3**	
VLY	**Voula,Athens**	**1.66**	**105**	P		**Pn**	**07 01 28.6**	**-0.5**	
VLY				S		**Sb**	**07 01 52.0**	**+0.3**	
VLY					AML	AML	07 01 58.3		
	comp=E,2595µm,0.6s								
VLY					AML	AML	07 02 01.8		
	comp=N,3460µm,0.7s								
PTL	**Penteli**	**1.67**	**98**	P		**Pn**	**07 01 29.4**	**+0.1**	
PTL				S		**Sn**	**07 01 51.9**	**+0.8**	
PTL	**Penteli**	**1.67**	**98**	P		**Pn**	**07 01 29.4**	**+0.1**	
PTL				S		**Sn**	**07 01 51.9**	**+0.8**	
PTL	**Penteli**	**1.67**	**98**	P		**Pn**	**07 01 29.4**	**+0.1**	
PTL				S		**Sn**	**07 01 50.3**	**-0.7**	
PTL					AML	AML	07 02 01.3		
	comp=N,2368µm,0.8s								
PTL					AML	AML	07 02 03.8		
	comp=E,2587µm,0.6s								
KPRO	**Kipourio**	**1.68**	**349**	P		**Pg**	**07 01 32.0**	**+0.2**	
KPRO	**Kipourio**	**1.68**	**349**	P		**Pg**	**07 01 32.0**	**+0.2**	
EREA	**Eretria**	**1.71**	**85**	P		**Pn**	**07 01 30.0**	**+0.3**	
EREA	**Eretria**	**1.71**	**85**	P		**Pn**	**07 01 30.1**	**+0.3**	
EREA	**Eretria**	**1.71**	**85**	P		**Pn**	**07 01 30.1**	**+0.3**	
VLI	**Veliai**	**1.84**	**149**	P		**Pn**	**07 01 32.1**	**+0.6**	
VLI	**Veliai**	**1.84**	**149**	P		**Pn**	**07 01 32.1**	**+0.6**	
VLI	**Veliai**	**1.84**	**149**	P		**Pn**	**07 01 31.6**	**0.0**	
AOS	**Alonnisos**	**1.87**	**62**	P		**Pn**	**07 01 31.5**	**-0.4**	
AOS	**Alonnisos**	**1.87**	**62**	P		**Pn**	**07 01 31.5**	**-0.4**	
AOS	**Alonnisos**	**1.87**	**62**	P		**Pn**	**07 01 30.8**	**-1.1**	
LIT	**Litokhoron**	**1.88**	**17**	P		**Pn**	**07 01 32.0**	**-0.2**	
LIT	**Litokhoron**	**1.88**	**17**	P		**Pn**	**07 01 32.3**	**+0.1**	
LIT	**Litokhoron**	**1.88**	**17**	P		**Pn**	**07 01 32.3**	**+0.1**	
PENT	**Pentalofos**	**1.95**	**346**	P		**Pb**	**07 01 36.0**	**+0.5**	
PENT	**Pentalofos**	**1.95**	**346**	P		**Pb**	**07 01 36.0**	**+0.5**	
KZN	**Kozani**	**2.00**	**0**	P		**Pb**	**07 01 36.8**	**+0.5**	
KEK	**Kerkira**	**2.08**	**313**	P		**Pn**	**07 01 34.9**	**0.0**	
KEK	**Kerkira**	**2.08**	**313**	P		**Pn**	**07 01 36.5**	**+1.6**	
PAIG	**Paliouri**	**2.20**	**42**	P		**Pn**	**07 01 35.8**	**-0.7**	
PAIG	**Paliouri**	**2.20**	**42**	P		**Pn**	**07 01 35.8**	**-0.7**	
PAIG	**Paliouri**	**2.20**	**42**	P		**Pn**	**07 01 34.9**	**-1.7**	
SKY	**Skiros Island**	**2.25**	**74**	P		**Pn**	**07 01 36.8**	**-0.5**	
SKY	**Skiros Island**	**2.25**	**74**	P		**Pn**	**07 01 36.8**	**-0.5**	
KYTH	**Kithira**	**2.28**	**153**	P		**Pn**	**07 01 39.2**	**+1.6**	
KYTH	**Kithira**	**2.28**	**153**	P		**Pn**	**07 01 39.2**	**+1.6**	
SERI	**Serifos**	**2.44**	**117**	P		**Pn**	**07 01 38.4**	**-1.5**	
SERI	**Serifos**	**2.44**	**117**	P		**Pn**	**07 01 38.4**	**-1.5**	
PLG	**Polygyros**	**2.44**	**32**	P		**Pn**	**07 01 39.8**	**-0.1**	
PLG	**Polygyros**	**2.44**	**32**	P		**Pn**	**07 01 39.8**	**-0.1**	
PLG	**Polygyros**	**2.44**	**32**	P		**Pn**	**07 01 39.2**	**-0.7**	
FNA	**Florina**	**2.49**	**353**	P		**Pb**	**07 01 43.7**	**-1.1**	
FNA	**Florina**	**2.49**	**353**	P		**Pb**	**07 01 43.7**	**-1.1**	
HORT	**Hortiatis**	**2.51**	**24**	P		**Pn**	**07 01 41.0**	**+0.1**	
HORT	**Hortiatis**	**2.51**	**24**	P		**Pn**	**07 01 41.0**	**+0.1**	
MHLO	**Agia Marina, M**	**2.64**	**127**	P		**Pn**	**07 01 44.0**	**+1.3**	
MHLO	**Agia Marina, M**	**2.64**	**127**	P		**Pn**	**07 01 44.0**	**+1.3**	
GRG	**Griva**	**2.69**	**10**	P		**Pn**	**07 01 43.5**	**+0.1**	
GRG	**Griva**	**2.69**	**10**	P		**Pn**	**07 01 44.5**	**+1.1**	
GRG	**Griva**	**2.69**	**10**	P		**Pn**	**07 01 44.5**	**+1.1**	
ANKY	**Antikythira Is**	**2.73**	**153**	P		**Pb**	**07 01 46.5**	**-2.1**	
ANKY	**Antikythira Is**	**2.73**	**153**	P		**Pb**	**07 01 46.5**	**-2.1**	
SOH	**Sokhos**	**2.80**	**26**	P		**Pn**	**07 01 46.0**	**+1.2**	
SOH				S		**Sn**	**07 02 21.0**	**+2.2**	
SOH	**Sokhos**	**2.80**	**26**	P		**Pn**	**07 01 46.0**	**+1.2**	
SOH				S		**Sn**	**07 02 21.0**	**+2.2**	
OHR	**Ohrid**	**2.90**	**345**	*i* Pn		**Pn**	**07 01 49.3**	**+3.0**	
OHR				*e*Sn		**Sb**	**07 02 30.1**	**+2.7**	
OHR	**Ohrid**	**2.90**	**345**	*i* Pn		**Pn**	**07 01 49.2**	**+3.0**	
KNT	**Kendrikon**	**2.98**	**17**	P		**Pn**	**07 01 46.6**	**-0.8**	
KNT	**Kendrikon**	**2.98**	**17**	P		**Pn**	**07 01 48.5**	**+1.2**	
KNT	**Kendrikon**	**2.98**	**17**	P		**Pn**	**07 01 48.5**	**+1.2**	
VAY	**Valandovo**	**3.08**	**11**	*i* Pn		**Pn**	**07 01 46.8**	**-1.8**	
VAY				*e*Sn		**Sn**	**07 02 22.5**	**-3.2**	
VAY	**Valandovo**	**3.08**	**11**	*i* Pn		**Pn**	**07 01 46.7**	**-1.8**	
VAY				*e*Sn		**Sn**	**07 02 22.4**	**-3.2**	
SRS	**Serrai**	**3.14**	**26**	P		**Pn**	**07 01 49.4**	**-0.1**	
SRS	**Serrai**	**3.14**	**26**	P		**Pn**	**07 01 49.4**	**-0.1**	
SRS	**Serrai**	**3.14**	**26**	P		**Pn**	**07 01 50.9**	**+1.4**	
APE	**Apeiranthos**	**3.23**	**111**	P		**Pn**	**07 01 51.0**	**+0.2**	
APE	**Apeiranthos**	**3.23**	**111**	*i*P		**Pn**	**07 01 50.9**	**+0.2**	
APE	**Apeiranthos**	**3.23**	**111**	P		**Pn**	**07 01 51.0**	**+0.2**	
APE				S		**Sn**	**07 02 28.4**	**-1.1**	
APE	**Apeiranthos**	**3.23**	**111**	P		**Pn**	**07 01 50.3**	**-0.5**	
SIGR	**SIGRI**	**3.32**	**73**	P		**Pn**	**07 01 51.9**	**-0.1**	
SIGR	**SIGRI**	**3.32**	**73**	P		**Pn**	**07 01 51.9**	**-0.1**	
CHOS	**Chios island**	**3.37**	**87**	P		**Pn**	**07 01 52.6**	**-0.2**	
CHOS	**Chios island**	**3.37**	**87**	P		**Pn**	**07 01 53.2**	**+0.4**	
CHOS	**Chios island**	**3.37**	**87**	P		**Pn**	**07 01 53.2**	**+0.4**	
TIR	**Tirane**	**3.37**	**335**	*i*P		**Pn**	**07 01 55.0**	**+2.3**	
TIR	**Tirane**	**3.37**	**335**	*i*P		**Pn**	**07 01 55.0**	**+2.3**	
KAVA	**Kavala**	**3.42**	**37**	P		**Pn**	**07 01 51.9**	**-1.5**	
KAVA	**Kavala**	**3.42**	**37**	P		**Pn**	**07 01 51.9**	**-1.5**	
NVR	**Nevrokopi**	**3.44**	**27**	P		**Pn**	**07 01 53.9**	**+0.2**	
NVR	**Nevrokopi**	**3.44**	**27**	P		**Pn**	**07 01 53.9**	**+0.2**	
SKO	**Skopje**	**3.67**	**356**	*i* Pn		**Pn**	**07 01 59.5**	**+2.6**	
SKO				*e*Sn		**Sn**	**07 02 45.1**	**+4.7**	
SKO	**Skopje**	**3.67**	**356**	*i* Pn		**Pn**	**07 01 59.4**	**+2.6**	
SKO				*e*Sn		**Sn**	**07 02 45.0**	**+4.7**	
BOZC	**Bozcaada**	**3.67**	**64**	*i* P		**Pn**	**07 01 56.8**	**0.0**	
URLA	**Izmir**	**3.80**	**88**	*i* P		**Pn**	**07 01 59.3**	**+0.8**	
URLA	**Izmir**	**3.80**	**88**	P		**Pn**	**07 01 59.3**	**+0.8**	
IDI	**Anoyia**	**3.92**	**139**	Pn		**Pn**	**07 02 02.6**	**+2.4**	
	comp=E,5.2nm,0.3s,baz=333,slow=13,SNR=41								
IDI					Sn	**Sn**	**07 02 48.0**	**+1.5**	
	comp=E,5.3nm,0.3s,baz=240,slow=20,SNR=4.3								
IDI					LR	LR	07 03 52.5		
	comp=E,233nm,18.6s,baz=280,slow=43								
IDI	**Anoyia**	**3.92**	**139**	P		**Pn**	**07 02 01.0**	**+0.8**	
IDI	**Anoyia**	**3.92**	**139**	P		**Pn**	**07 02 01.0**	**+0.8**	
TIP	**Timpagrande**	**4.01**	**284**	P		**Pn**	**07 02 02.2**	**+0.7**	
TIP	**Timpagrande**	**4.01**	**284**	P		**Pn**	**07 02 02.2**	**+0.7**	
DGB	**˜zmir**	**4.04**	**92**	*i* P		**Pn**	**07 02 02.9**	**+1.1**	
SMG	**Samos**	**4.05**	**97**	P		**Pn**	**07 02 03.0**	**+1.0**	
SMG	**Samos**	**4.05**	**97**	P		**Pn**	**07 02 03.0**	**+1.0**	
TAR1	**Taranto**	**4.12**	**304**	*e*Pn		**Pn**	**07 02 04.1**	**+1.2**	
ULC	**Ulcinj**	**4.13**	**333**	*i*Pn		**Pn**	**07 02 03.8**	**+0.6**	
ULC				*e*Sn		**Sn**	**07 02 53.4**	**+1.6**	
ULC	**Ulcinj**	**4.13**	**333**	*i*Pn		**Pn**	**07 02 03.8**	**+0.6**	
ULC				*e*Sn		**Sn**	**07 02 53.4**	**+1.6**	
DRME	**Dracevica, Mon**	**4.35**	**334**	*i*Pn		**Pn**	**07 02 07.1**	**+1.0**	
DRME				*e*Sn		**Sn**	**07 02 59.0**	**+1.9**	
DRME	**Dracevica, Mon**	**4.35**	**334**	*i*Pn		**Pn**	**07 02 07.1**	**+1.0**	
DRME				*e*Sn		**Sn**	**07 02 59.0**	**+1.9**	
GCAM	**G?zelcaml?**	**4.36**	**96**	*i* P		**Pn**	**07 02 07.5**	**+1.3**	
GCAM	**G?zelcaml?**	**4.36**	**96**	P		**Pn**	**07 02 07.5**	**+1.3**	
VTS	**Vitosha**	**4.42**	**14**	P		**Pn**	**07 02 07.4**	**+0.2**	
VTS	**Vitosha**	**4.42**	**14**	*i*P		**Pn**	**07 02 08.8**	**+1.6**	
VTS	**Vitosha**	**4.42**	**14**	P		**Pn**	**07 02 07.4**	**+0.2**	
PVY	**Plav**	**4.50**	**343**	*i*Pn		**Pn**	**07 02 10.0**	**+1.7**	
PVY				*e*Sn		**Sn**	**07 03 03.0**	**+2.0**	
PVY	**Plav**	**4.50**	**343**	*i*Pn		**Pn**	**07 02 10.0**	**+1.7**	
PVY				*e*Sn		**Sn**	**07 03 03.0**	**+2.0**	
BARS	**Barje**	**4.51**	**0**	*e*Pn		**Pn**	**07 02 09.9**	**+1.6**	
PDG	**Podgorica**	**4.54**	**336**	*i*P		**Pn**	**07 02 10.7**	**+1.9**	
PDG	**Podgorica**	**4.54**	**336**	*i*Pn		**Pn**	**07 02 10.0**	**+1.2**	
PDG				*e*Sn		**Sn**	**07 03 03.8**	**+2.0**	
TTG	**Podgorica**	**4.54**	**336**	*i*Pn		**Pn**	**07 02 10.0**	**+1.2**	
TTG				*e*Sn		**Sn**	**07 03 03.8**	**+2.0**	
BUM	**Brajici-Budva**	**4.56**	**332**	*i*Pn		**Pn**	**07 02 09.6**	**+0.6**	
BUM				*e*Sn		**Sn**	**07 03 03.6**	**+1.4**	
BUM	**Brajici-Budva**	**4.56**	**332**	*i*Pn		**Pn**	**07 02 09.6**	**+0.6**	
BUM				*e*Sn		**Sn**	**07 03 03.6**	**+1.4**	
BDRM	**Kayabasi**	**4.67**	**104**	*i* P		**Pn**	**07 02 12.2**	**+1.6**	
BDRM	**Kayabasi**	**4.67**	**104**	P		**Pn**	**07 02 12.2**	**+1.6**	
SG1	**Sgolgore (BA)**	**4.67**	**304**	*e*Pn		**Pn**	**07 02 11.2**	**+0.6**	
BAI	**Bari**	**4.69**	**308**	*e*Pn		**Pn**	**07 02 11.0**	**+0.2**	
CEME	**Cevo**	**4.76**	**334**	*i*P		**Pn**	**07 02 12.1**	**+0.3**	
CEME				*e*Sn		**Sn**	**07 03 08.8**	**+1.5**	
CEME	**Cevo**	**4.76**	**334**	*i*Pn		**Pn**	**07 02 12.1**	**+0.3**	
CEME				*e*Sn		**Sn**	**07 03 08.8**	**+1.5**	
BEY	**Berane**	**4.78**	**343**	*i*Pn		**Pn**	**07 02 13.1**	**+1.0**	
BEY				*e*Sn		**Sn**	**07 03 09.4**	**+1.6**	
IVA	**Berane**	**4.78**	**343**	*i*Pn		**Pn**	**07 02 13.1**	**+1.0**	
IVA				*e*Sn		**Sn**	**07 03 09.4**	**+1.6**	
HCY	**Herceg Novi**	**4.83**	**330**	*i*Pn		**Pn**	**07 02 12.5**	**-0.3**	
HCY				*e*Sn		**Sn**	**07 03 10.5**	**+1.5**	
HCY	**Herceg Novi**	**4.83**	**330**	*i*Pn		**Pn**	**07 02 12.5**	**-0.3**	
HCY				*e*Sn		**Sn**	**07 03 10.5**	**+1.5**	
NKME	**Niksic**	**4.95**	**335**	*i*Pn		**Pn**	**07 02 16.5**	**+2.2**	
NKME				*e*Sn		**Sn**	**07 03 13.3**	**+1.5**	
NKME	**Niksic**	**4.95**	**335**	*i*Pn		**Pn**	**07 02 16.5**	**+2.2**	
NKME				*e*Sn		**Sn**	**07 03 13.3**	**+1.5**	
CDT	**Castel del Mon**	**5.06**	**305**	*e*Pn		**Pn**	**07 02 16.3**	**+0.4**	
BRY	**Bratogost**	**5.21**	**333**	*i*Pn		**Pn**	**07 02 18.9**	**+0.9**	
BRY				*e*Sn		**Sn**	**07 03 19.3**	**+0.9**	
BRY	**Bratogost**	**5.21**	**333**	*i*Pn		**Pn**	**07 02 18.9**	**+0.9**	
BRY				*e*Sn		**Sn**	**07 03 19.3**	**+0.9**	
BOVS	**Bovan**	**5.33**	**360**	*e*Pn		**Pn**	**07 02 21.1**	**+1.6**	
PLE	**Pljevlja**	**5.33

DAVA	**Damuels**	**12.51**	**320**	Pn	**Pn**	**07 04 00.0**	**+1.9**
	comp=E,1.4nm,0.3s						
GOPC	**GO Pecny, Ondr**	**12.63**	**339**	AMS	AMS	07 09 20.0	
	comp=E,400nm,9.3s						
DPC	**Dobruska-Polom**	**12.65**	**344**	AMS	AMS	07 10 10.0	
PRU	**Pruhonice**	**12.77**	**338**	AMS	AMS	07 09 30.0	
	comp=E,300nm,13.1s						
UPC	**Upice**	**12.87**	**343**	AMS	AMS	07 11 40.0	
	comp=E,200nm,9.8s						
PVCC	**Panska Ves**	**13.25**	**340**	AMS	AMS	07 09 40.0	
	comp=E,300nm,11.4s						
AKASG	**Malin Array Be**	**13.48**	**21**	Pn	**Pn**	**07 04 12.3**	**+1.2**
	comp=E,0.4nm,0.3s,baz=206,slow=12,SNR=2.9						
SUW	**Suwalki**	**15.74**	**3**	*e*P	**P**	**07 04 45.4**	**-0.2**
OBN	**Obninsk**	**19.57**	**26**	LR	LR	07 13 10.8	
	comp=E,76nm,18.4s,baz=269,slow=38						
ESDC	**Sonseca Array**	**20.03**	**282**	P	**P**	**07 05 33.6**	**+0.5**
	comp=E,3.7nm,0.8s,baz=79,slow=11,SNR=17						
HFS	**Hagfors**	**22.44**	**349**	P	**P**	**07 05 57.5**	**-1.4**
	comp=E,3.1nm,0.4s,baz=167,slow=10.0,SNR=23						
HFS				LR	LR	07 15 04.8	
	comp=E,77nm,18.7s,baz=160,slow=38						
FINES	**FINESS Array B**	**23.32**	**5**	P	**P**	**07 06 06.4**	**-1.5**
	comp=E,2.5nm,0.7s,baz=174,slow=9.3,SNR=12						
FINES				LR	LR	07 16 22.8	
	comp=E,78nm,18.2s,baz=211,slow=40						
NOA	**NORSAR Array B**	**23.70**	**347**	P	**P**	**07 06 10.6**	**-1.2**
	comp=E,1.3nm,0.5s,baz=160,slow=9.8,SNR=11						
NOA				LR	LR	07 16 14.9	
	comp=E,35nm,20.3s,baz=150,slow=39						
EKA	**Eskdalemuir Ar**	**23.90**	**324**	P	**P**	**07 06 12.9**	**-0.8**
	comp=E,2.7nm,0.6s,baz=135,slow=9.5,SNR=11						
TORD	**Torodi Ar. Bea**	**30.75**	**221**	P	**P**	**07 07 15.8**	**+0.2**
	comp=E,3.7nm,0.8s,baz=31,slow=8.9,SNR=25						
ARCES	**ARCESS Array B**	**31.36**	**3**	P	**P**	**07 07 19.6**	**-0.9**
	comp=E,2.1nm,0.7s,baz=196,slow=8.4,SNR=6.5						
ARCES				LR	LR	07 20 43.9	
	comp=E,67nm,19.4s,baz=253,slow=38						
DBIC	**Dimbokro**	**39.66**	**224**	P	**P**	**07 08 34.3**	**+2.0**
	comp=E,3.4nm,0.9s,baz=348,slow=10.0,SNR=4.2						
KURBB	**Kurchatov Arra**	**41.37**	**54**	P	**P**	**07 08 45.7**	**-0.3**
	comp=E,3.7nm,0.8s,baz=282,slow=8.8,SNR=38						
KURBB				PcP	**PcP**	**07 10 44.4**	**+0.2**
	comp=E,0.9nm,0.8s,baz=273,slow=3.9,SNR=5.5						
MKAR	**Makanchi Array**	**44.40**	**59**	P	**P**	**07 09 10.6**	**-0.1**
	comp=E,9.9nm,0.5s,baz=279,slow=7.0,SNR=129						
MKAR				PcP	**PP**	**07 10 54.2**	**+0.2**
	comp=E,0.9nm,0.7s,baz=293,slow=2.0,SNR=4.3						
ZALV	**Zalesovo Beam**	**44.88**	**48**	P	**P**	**07 09 13.9**	**-0.5**
	comp=E,7.3nm,0.5s,baz=275,slow=8.7,SNR=23						
SONM	**Songino Array**	**59.62**	**51**	P	**P**	**07 11 03.7**	**-0.5**
	comp=E,1.0nm,0.7s,baz=285,slow=8.6,SNR=6.0						
BOSA	**Boshof**	**66.65**	**177**	LR	LR	07 46 18.7	
	comp=E,45nm,19.5s,baz=22,slow=41						
INK	**Inuvik**	**72.10**	**351**	P	**P**	**07 12 24.5**	**+0.5**
	comp=E,1.7nm,1.0s,baz=39,slow=7.3,SNR=3.7						
KLR	**Kul'dur**	**73.15**	**40**	P	**P**	**07 12 30.4**	**-0.3**
	comp=E,1.2nm,0.6s,baz=319,slow=7.3,SNR=5.4						
YKA	**Yellowknife Ar**	**73.60**	**340**	P	**P**	**07 12 33.2**	**+0.1**
	comp=E,0.2nm,0.5s,baz=59,slow=8.7,SNR=3.6						
ULM	**Lac du Bonnet**	**76.17**	**324**	P	**P**	**07 12 48.7**	**+0.5**
	comp=E,3.2nm,0.9s,baz=68,slow=4.6,SNR=4.6						
ULM				LR	LR	07 48 13.5	
	comp=E,33nm,18.7s,baz=301,slow=37						
ILAR	**Eielson Array**	**76.87**	**355**	P	**P**	**07 12 51.0**	**-0.9**
	comp=E,1.0nm,0.9s,baz=355,slow=4.5,SNR=7.9						
KSRS	**Korea Array**	**78.49**	**51**	P	**P**	**07 13 00.7**	**-0.7**
	comp=E,1.8nm,0.7s,baz=315,slow=4.9,SNR=6.5						
PDAR	**Pinedale Array**	**87.99**	**326**	P	**P**	**07 13 49.7**	**-0.9**
	comp=E,0.7nm,0.9s,baz=65,slow=5.1,SNR=3.6						
TXAR	**Lajitas Array**	**95.59**	**314**	P	**P**	**07 14 25.3**	**-0.7**
	comp=E,0.8nm,1.0s,baz=46,slow=3.6,SNR=5.9						

*ISCJB **24** 07:30:16.3±0.3,58°44N±0°03×153°55W±0°05,h79km±4km, mb3.6/5, Error ellipse: s-maj=5.1km s-min=3.6km az=139.1*

*IDC **24** 07:30:18.6±5.8,58°60N×153°72W,h72km±52km,mb3.3/5, mb1 3.6/9,mb1mx3.3/58,mbtmp3.6/9,ML3.6/4,MS3.1/3, Ms1 3.1/3,ms1mx2.5/27, Error ellipse: s-maj=44.8km s-min=17.8km az=30.0*

*NEIC **24** 07:30:18.6,58°42N×153°61W,h55km, ML3.4(AEIC), After AEIC.*

ISC 24 07:30:17.5±0.8,58°45N±0°03×153°58W±0°03,h65km±7km, n93,σ0°92/102,mb3.6/5,Kodiak Island region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FOPK	**Fourpeaked Vol**	**0.32**	**10**	P	**Pn**	**07 30 28.2**	**-0.1**
FOSS	**Fourpeaked Sta**	**0.36**	**351**	P	**Pn**	**07 30 28.5**	**-0.2**
FONW	**Fourpeaked Sta**	**0.43**	**336**	P	**Pn**	**07 30 28.6**	**-0.7**
KAPH	**Katmai Pasha**	**0.43**	**291**	P	**Pn**	**07 30 29.3**	**0.0**
KAPH				S	**Sn**	**07 30 38.4**	**+0.5**
CDD	**Cape Douglas**	**0.49**	**356**	P	**Pn**	**07 30 30.0**	**+0.2**
KAWH	**Katmai**	**0.64**	**265**	P	**Pn**	**07 30 31.2**	**-0.3**
KAHC	**Katmai Hardscr**	**0.77**	**286**	P	**Pn**	**07 30 32.6**	**-0.5**
KAKN	**Katmai Knife C**	**0.79**	**260**	P	**Pn**	**07 30 32.8**	**-0.4**
KAKN				S	**Sn**	**07 30 45.2**	**+0.4**
KABR	**Katmai Barrier**	**0.80**	**247**	P	**Pn**	**07 30 32.7**	**-0.6**
MCNL	**McNeil River**	**0.84**	**332**	P	**Pn**	**07 30 34.0**	**+0.2**
KDAK	**Kodiak Island**	**0.85**	**141**	P	**Pn**	**07 30 33.8**	**0.0**
KDAK				S	**Sn**	**07 30 46.6**	**+0.8**
AUI	**Augustine Isla**	**0.90**	**5**	P	**Pn**	**07 30 35.0**	**+0.6**
AUI				S	**Sn**	**07 30 48.2**	**+1.3**
AUSE	**Augustine SEas**	**0.90**	**6**	P	**Pn**	**07 30 35.1**	**+0.6**
KVTA	**Katmai Vly 10**	**0.90**	**267**	P	**Pn**	**07 30 34.5**	**-0.1**
AUE	**Augustine Isla**	**0.92**	**7**	P	**Pn**	**07 30 35.6**	**+0.9**
AUL	**Augustine Lava**	**0.94**	**5**	P	**Pn**	**07 30 35.7**	**+0.7**
KELA	**Mount Kelaz**	**1.14**	**271**	P	**Pn**	**07 30 37.3**	**-0.2**
OPT	**Oil Point**	**1.22**	**8**	P	**Pn**	**07 30 39.5**	**+0.8**
OHAK	**Old Harbor**	**1.24**	**173**	P	**Pn**	**07 30 38.4**	**-0.4**
OHAK				S	**Sn**	**07 30 54.5**	**-0.2**
PLWL	**Peulik Whale M**	**1.51**	**256**	P	**Pn**	**07 30 42.3**	**-0.1**
ILS	**Iliamna Low So**	**1.54**	**10**	P	**Pn**	**07 30 43.4**	**+0.5**
HOM	**Homer**	**1.58**	**39**	P	**Pn**	**07 30 44.7**	**+1.5**
IVE	**Iliamna Volcan**	**1.60**	**10**	P	**Pn**	**07 30 44.0**	**+0.3**
PLK2	**Peulik 2**	**1.61**	**246**	P	**Pn**	**07 30 44.0**	**+0.3**
PLK3	**Peulik 3**	**1.62**	**243**	P	**Pn**	**07 30 44.5**	**+0.6**
PLK3				S	**Sn**	**07 31 04.3**	**+0.5**
CNPM	**China Poot**	**1.63**	**47**	P	**Pn**	**07 30 44.6**	**+0.6**
CNPM				S	**Sn**	**07 31 05.1**	**+1.1**
ILIM	**Iliamna**	**1.67**	**11**	P	**Pn**	**07 30 45.1**	**+0.5**
PLK4	**Peulik 4**	**1.69**	**242**	P	**Pn**	**07 30 45.1**	**+0.3**
PLK1	**Peulik 1**	**1.73**	**249**	P	**Pn**	**07 30 45.7**	**+0.4**
PLK5	**Peulik 5**	**1.80**	**257**	P	**Pn**	**07 30 46.9**	**+0.6**
RDWB	**Redoubt West**	**2.08**	**10**	P	**Pn**	**07 30 51.0**	**+0.8**
NCT	**North Crescent**	**2.15**	**9**	P	**Pn**	**07 30 52.2**	**+1.1**
RDJH	**Redoubt Jeurge**	**2.19**	**10**	P	**Pn**	**07 30 52.7**	**+1.1**
SLKM	**Skilak Lake**	**2.69**	**38**	P	**Pn**	**07 30 59.6**	**+1.2**
SEW	**Seward**	**2.69**	**50**	*e*Pn	**Pn**	**07 30 58.1**	**-0.2**
SEW				Sn	**Sn**	**07 31 32.6**	**+2.8**
CKL	**Chakachamna La**	**2.83**	**12**	P	**Pn**	**07 31 01.8**	**+1.4**
SVW2	**Sparrevohn**	**2.85**	**340**	P	**Pn**	**07 31 00.9**	**+0.4**
SPWE	**Spurr West**	**2.88**	**10**	P	**Pn**	**07 31 01.6**	**+0.5**
STLK	**Strandline Lak**	**3.19**	**15**	P	**Pn**	**07 31 06.5**	**+1.4**
RC01	**Rabbit Creek A**	**3.29**	**35**	P	**Pn**	**07 31 07.3**	**+0.9**
CHGN	**Chignik**	**3.39**	**233**	P	**Pn**	**07 31 08.2**	**+0.4**
PWL	**Port Wells**	**3.60**	**45**	P	**Pn**	**07 31 10.5**	**-0.2**
SKT	**Skwentna**	**3.69**	**15**	P	**Pn**	**07 31 12.7**	**+0.7**
PMR	**Palmer**	**3.87**	**33**	*e*Pn	**Pn**	**07 31 14.2**	**-0.2**
PMR				*e*Sn	**Sn**	**07 31 54.7**	**-3.7**
KNK	**Knik Glacier**	**3.94**	**39**	P	**Pn**	**07 31 16.8**	**+1.4**
GHO	**Glory Hole Cre**	**4.07**	**33**	P	**Pn**	**07 31 17.5**	**+0.3**
GLI	**Glacier Island**	**4.10**	**51**	P	**Pn**	**07 31 17.2**	**-0.3**
SML	**Sawmill**	**4.27**	**36**	*e*Pn	**Pn**	**07 31 20.3**	**+0.3**
SML				*e*Sn	**Sn**	**07 32 07.1**	**-1.4**
FID	**Port Fidalgo**	**4.29**	**54**	P	**Pn**	**07 31 19.6**	**-0.5**
JPK	**Jack Peak**	**4.40**	**51**	P	**Pn**	**07 31 21.4**	**-0.2**
EYAK	**Cordova Ski Ar**	**4.51**	**59**	P	**Pn**	**07 31 23.0**	**-0.2**
PPLA	**Purkeypile**	**4.52**	**8**	*e*Pn	**Pn**	**07 31 24.4**	**+1.0**
VLZ	**Valdez**	**4.55**	**51**	P	**Pn**	**07 31 23.8**	**+0.2**
SCM	**Sheep Creek Mo**	**4.62**	**40**	P	**Pn**	**07 31 25.6**	**+0.9**
TT01	**Tatalina**	**4.63**	**346**	P	**Pn**	**07 31 25.5**	**+0.7**
KLU	**Klutina**	**4.91**	**48**	P	**Pn**	**07 31 29.5**	**+0.7**
TRF	**Thorofare Moun**	**5.27**	**16**	P	**Pn**	**07 31 34.1**	**+0.3**
KTH	**Kantishna Hill**	**5.29**	**13**	P	**Pn**	**07 31 34.0**	**+0.2**
RND	**Reindeer**	**5.48**	**23**	P	**Pn**	**07 31 36.6**	**+0.1**
DHY	**Denali Highway**	**5.55**	**31**	P	**Pn**	**07 31 37.9**	**+0.4**
KHIT	**Khitrov Hills**	**5.64**	**65**	P	**Pn**	**07 31 38.2**	**-0.4**
MCK	**McKinley**	**5.76**	**21**	P	**Pn**	**07 31 40.3**	**0.0**
BPAW	**Bear Paw Mtn.**	**5.81**	**11**	P	**Pn**	**07 31 41.0**	**+0.1**
KULT	**Kultieth River**	**5.84**	**67**	P	**Pn**	**07 31 41.4**	**0.0**
ISLE	**Juniper Island**	**6.12**	**65**	P	**Pn**	**07 31 45.0**	**-0.2**
KIAG	**Kiagna River**	**6.20**	**62**	P	**Pn**	**07 31 46.5**	**0.0**
MESA	**MESA**	**6.21**	**69**	P	**Pn**	**07 31 46.6**	**+0.1**
BAGL	**Bagley Icefiel**	**6.21**	**66**	P	**Pn**	**07 31 46.4**	**+0.1**
PTPK	**Patty Peak**	**6.24**	**59**	P	**Pn**	**07 31 47.5**	**+0.5**
GRNC	**Granite Creek**	**6.43**	**64**	P	**Pn**	**07 31 49.6**	**+0.1**
RKAV	**Rock Avalanche**	**6.52**	**68**	P	**Pn**	**07 31 51.3**	**+0.5**
WRH	**Wood River Hil**	**6.59**	**21**	P	**Pn**	**07 31 51.5**	**-0.1**
TABL	**Table Mountain**	**6.65**	**67**	P	**Pn**	**07 31 52.9**	**+0.3**
SAMH	**Samovar Hills**	**6.77**	**70**	P	**Pn**	**07 31 54.8**	**+0.6**
PCA	**Pinnacle**	**7.03**	**71**	P	**Pn**	**07 31 57.3**	**-0.3**
IL1	**Eielson Array**	**7.10**	**24**	P	**Pn**	**07 31 58.5**	**-0.1**
ILAR	**Eielson Array**	**7.10**	**24**	P	**Pn**	**07 31 58.4**	**-0.1**
	0.9nm,0.3s,baz=217,slow=14,SNR=32						
ILAR				S	**Sn**	**07 33 16.7**	**-1.0**
	1.6nm,0.3s,baz=91,slow=21,SNR=7.6						
ILB	**Eielson Array**	**7.10**	**24**	P	**Pn**	**07 31 58.0**	**-0.6**
BCA3	**Beaver Creek A**	**7.40**	**46**	P	**Pn**	**07 32 02.7**	**0.0**
IM3	**Indian Mountai**	**7.57**	**359**	P	**Pn**	**07 32 04.7**	**-0.2**
DHAK	**Deception Hill**	**8.02**	**79**	P	**Pn**	**07 32 10.7**	**-0.4**
BM3	**Burnt Mountain**	**9.88**	**21**	P	**Pn**	**07 32 36.2**	**-0.3**
DLBC	**Dease Lake**	**12.32**	**80**	P	**Pn**	**07 33 11.2**	**+1.2**
	0.6nm,0.3s,baz=248,slow=11,SNR=9.8						
DLBC				S	**Sn**	**07 35 21.2**	**-4.2**
	0.2nm,0.3s,baz=242,slow=21,SNR=2.7						
INK	**Inuvik**	**13.28**	**34**	P	**Pn**	**07 33 24.1**	**+1.4**
	0.0nm,0.3s,baz=228,slow=12,SNR=2.2						
YKA	**Yellowknife Ar**	**19.41**	**61**	P	**P**	**07 34 38.2**	**+0.3**
	0.2nm,0.3s,baz=271,slow=9.8,SNR=16						
SEY	**Seymchan**	**26.15**	**303**	P	**P**	**07 35 43.8**	**-1.3**
	1.0nm,0.5s,baz=73,slow=17,SNR=5.7						
RES	**Resolute Bay**	**26.80**	**30**	LR	LR	07 47 47.9	
	comp=Z,20nm,18.4s,baz=327,slow=39						
PDAR	**Pinedale Array**	**31.36**	**100**	P	**P**	**07 36 33.4**	**+1.5**
	0.5nm,0.5s,baz=315,slow=7.0,SNR=7.0						
TXAR	**Lajitas Array**	**44.75**	**108**	P	**P**	**07 38 25.6**	**+1.4**
	0.3nm,0.6s,baz=329,slow=6.3,SNR=5.1						
TLY	**Talaya**	**53.62**	**311**	LR	LR	08 02 14.7	
	comp=Z,32nm,18.9s,baz=320,slow=36						
SONM	**Songino Array**	**55.47**	**306**	P	**P**	**07 39 45.6**	**+0.4**
	0.6nm,0.5s,baz=34,slow=7.4,SNR=3.4						
ZALV	**Zalesovo Beam**	**58.45**	**324**	P	**P**	**07 40 04.9**	**-1.1**
	0.4nm,0.3s,baz=60,slow=8.7,SNR=3.2						
GUMO	**Guam**	**63.76**	**252**	LR	LR	08 03 57.7	
	comp=Z,18nm,21.6s,baz=100,slow=32						

*ISCJB **24** 07:38:31.8±0.4,9°79N±0°04×78°88W±0°06,h58km, mb4.0/11,MS2.9/7, Error ellipse: s-maj=8.2km s-min=4.7km az=160.0*

*IDC **24** 07:38:35.4±2.9,9°64N×78°94W,h80km±27km,mb3.7/11, mb1 4.0/13,mb1mx3.8/28,mbtmp4.1/13,MS2.9/10, Ms1 2.9/10,ms1mx2.8/27, Error ellipse: s-maj=26.5km s-min=15.2km az=56.0*

ISC 24 07:38:33.5±0.6,9°80N±0°07×78°92W±0°07,h58km,n49, σ1°43/46,mb3.8/11,MS3.0/7,3C-1D,Panama

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CAPC	**Capurgana**	**1.93**	**127**	*e*P	**Pn**	**07 39 03.1**	**-0.9**
DBBC	**Dabeiba**	**3.85**	**136**	*e*P	**Pn**	**07 39 32.0**	**+1.6**
SOLC	**Bahia Solano**	**3.85**	**157**	*e*P	**Pn**	**07 39 27.8**	**-2.6**
HELC	**Santa Helena**	**4.91**	**137**	*e*P	**Pn**	**07 39 45.7**	**+0.5**
OCAC	**Ocana**	**5.74**	**105**	*e*P	**Pn**	**07 39 56.0**	**-0.3**
BRRC	**Barranca, Sant**	**5.80**	**117**	*e*P	**Pn**	**07 39 57.0**	**-0.1**
NORC	**Norcasia**	**5.81**	**136**	*e*P	**Pn**	**07 39 58.3**	**+1.0**
MALC	**Bahia Malaga**	**5.96**	**165**	*e*P	**Pn**	**07 39 58.1**	**-1.1**
GIRC	**Giron, Santand**	**6.27**	**115**	*e*P	**Pn**	**07 40 03.6**	**0.0**
MAPC	**Malpelo**	**6.35**	**205**	*e*P	**Pn**	**07 40 02.5**	**-2.1**
GRMC	**Gramalote, San**	**6.38**	**108**	*e*P	**Pn**	**07 40 04.1**	**-1.1**
CBRI	**Barrientos, No**	**6.39**	**108**	*e*P	**Pn**	**07 40 05.4**	**+0.1**
BARC	**Barichara**	**6.51**	**119**	*e*P	**Pn**	**07 40 06.8**	**-0.1**
ROSC	**El Rosal**	**6.71**	**137**	P	**Pn**	**07 40 12.2**	**+2.2**
	2.3nm,0.3s,baz=16,slow=3.2,SNR=14						
ROSC				S	**Sn**	**07 41 29.8**	**+4.5**
	1.6nm,0.3s,baz=18,slow=20,SNR=5.8						
GRGC	**Isla de Gorgon**	**6.80**	**174**	*e*P	**Pn**	**07 40 11.0**	**+0.3**
RUSC	**La Rusia**	**6.96**	**123**	*e*P	**Pn**	**07 40 11.4**	**-2.0**
PRAC	**Prado**	**7.25**	**146**	*e*P	**Pn**	**07 40 17.1**	**+0.2**
CHIC	**Chingaza**	**7.27**	**135**	*e*P	**Pn**	**07 40 19.2**	**+1.6**
MCJ	**Malvern**	**8.16**	**8**	*i*P	**Pn**	**07 40 29.9**	**+0.4**
SDV	**Santo Domingo**	**8.22**	**96**	P	**Pn**	**07 40 30.9**	**+0.5**
	10.0nm,0.3s,baz=291,slow=7.6,SNR=21						
SDV				S	**Sn**	**07 41 59.1**	**-2.9**
	26nm,0.3s,baz=351,slow=20,SNR=10.0						
SDV	**Santo Domingo**	**8.22**	**96**	*e*P	**Pn**	**07 40 29.1**	**-1.4**
CRUC	**La Cruz**	**8.41**	**166**	*e*P	**Pn**	**07 40 35.9**	**+2.7**
HOJ	**Hope**	**8.42**	**14**	*i*P	**Pn**	**07 40 34.0**	**+1.1**
STH	**Stony Hill**	**8.47**	**14**	*i*P	**Pn**	**07 40 34.4**	**+0.7**
BBJ	**Bamboo Saint A**	**8.68**	**10**	*i*P	**Pn**	**07 40 37.3**	**+0.8**
FLC	**Florencia**	**8.79**	**158**	*e*P	**Pn**	**07 40 37.7**	**-0.3**
CMBC	**Cumbal**	**8.87**	**173**	*e*P	**Pn**	**07 40 40.1**	**+0.6**
OTAV	**Otavalo**	**9.51**	**177**	*e*P	**Pn**	**07 40 48.5**	**+0.1**
SJG	**San Juan**	**14.88**	**55**	P	**Pn**	**07 41 59.0**	**-1.6**
	1.1nm,0.3s,baz=207,slow=17,SNR=4.0						
SJG				S	Sn	07 44 31.2	-13
	2.6nm,0.3s,baz=43,slow=19,SNR=7.3						
SJG				LR	LR	07 47 23.6	
	comp=Z,40nm,19.5s,baz=238,slow=35						
ATAH	**Atahualpa**	**16.84**	**178**	LR	LR	07 48 58.5	
	comp=Z,43nm,18.6s,baz=11,slow=37						
CMIG	**Matas Romero**	**17.13**	**297**	LR	LR	07 49 36.7	
	comp=Z,18nm,18.5s,baz=169,slow=38						
PTGA	**Pitinga**	**21.57**	**118**	P	**P**	**07 43 16.9**	**-1.5**
	0.8nm,0.5s,baz=305,slow=16,SNR=2.0						
PTGA				LR	LR	07 52 56.0	
	comp=Z,67nm,19.0s,baz=332,slow=40						
NNA	**Nana**	**21.75**	**175**	LR	LR	07 53 35.5	
	comp=Z,25nm,18.3s,baz=351,slow=42						
TKL	**Tuckaleechee C**	**26.11**	**351**	LR	LR	07 54 30.7	
	comp=Z,37nm,18.7s,baz=132,slow=36						
LPAZ	**La Paz**	**28.04**	**158**	P	**P**	**07 44 18.6**	**-1.6**
	0.4nm,0.4s,baz=342,slow=6.4,SNR=5.1						
TXAR	**Lajitas Array**	**30.23**	**313**	P	**P**	**07 44 39.7**	**+0.7**
	2.0nm,0.8s,baz=132,slow=9.0,SNR=23						
TXAR				PcP	**PcP**	**07 47 38.3**	**-0.5**
	0.3nm,0.8s,baz=116,slow=4.1,SNR=4.0						
TXAR				LR	LR	07 58 18.0	
	comp=Z,14nm,20.6s,baz=0.0,slow=39						
CPUP	**Cupp**	**41.60**	**150**	LR	LR	08 06 43.3	
	comp=Z,36nm,18.2s,baz=292,slow=41						
PDAR	**Pinedale Array**	**42.36**	**326**	P	**P**	**07 46 23.1**	**+0.7**
	1.1nm,0.6s,baz=122,slow=11,SNR=13						
ULM	**Lac du Bonnet**	**42.70**	**344**	P	**P**	**07 46 25.4**	**+0.7**
	6.5nm,0.5s,baz=150,slow=8.7,SNR=24						
ULM				LR	LR	08 05 23.4	
	comp=Z,26nm,19.0s,baz=306,slow=38						
SCHQ	**Schefferville**	**45.93**	**10**	P	**P**	**07 46 52.3**	**+1.9**
	8.5nm,0.7s,baz=205,slow=6.3,SNR=9.6						
NEW	**Newport**	**49.96**	**327**	LR	LR	08 09 37.3	
	comp=Z,8.2nm,21.5s,baz=110,slow=37						
YKA	**Yellowknife Ar**	**58.57**	**341**	P	**P**	**07 48 23.7**	**-0.3**
	2.9nm,0.7s,baz=130,slow=7.3,SNR=29						
INK	**Inuvik**	**68.33**	**341**	P	**P**	**07 49 28.8**	**+0.5**
	1.6nm,0.6s,baz=81,slow=6.3,SNR=5.0						
ILAR	**Eielson Array**	**71.86**	**335**	P	**P**	**07 49 49.8**	**-0.3**
	1.0nm,0.8s,baz=104,slow=4.1,SNR=8.8						
ESDC	**Sonseca Array**	**72.24**	**52**	P	**P**	**07 49 53.2**	**+0.4**
	0.8nm,0.7s,baz=282,slow=7.8,SNR=4.4						
TORD	**Torodi Ar. Bea**	**78.76**	**78**	P	**P**	**07 50 30.7**	**+0.1**
	0.3nm,0.5s,baz=284,slow=6.9,SNR=5.8						
ASAR	**Alice Springs**	**145.79**	**242**	PKPbc	**PKPdf**	**07 58 05.4**	**-1.1**
	3.7nm,0.8s,baz=111,slow=3.5,SNR=33						
WRA	**Warramunga Arr**	**146.38**	**249**	PKPbc	**PKPdf**	**07 58 07.0**	**-0.6**
	0.9nm,0.5s,baz=102,slow=3.1,SNR=16						
CMAR	**Chiang Mai Arr**	**151.84**	**4**	PKPbc	**PKPbc**	**07 58 21.8**	**-1.1**
	0.9nm,0.5s,baz=318,slow=3.1,SNR=7.0						

IDC 24 07:48:54.8±1.9,4°67N×125°82E,h0km,mb3.6/4, mb1 3.8/4,mb1mx3.4/51,mbtmp3.6/4,Error ellipse: s-maj=115.5km s-min=24.3km az=69.0,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**22.63**	**180**	P	P	07 53 58.9	+1.4
	1.6nm,0.3s,baz=354,slow=11,SNR=12						
WRA	**Warramunga Arr**	**25.85**	**161**	P	P	07 54 27.8	-0.6
	0.3nm,0.4s,baz=338,slow=9.9,SNR=9.6						
ASAR	**Alice Springs**	**29.25**	**165**	P	P	07 54 58.2	-0.6
	0.2nm,0.4s,baz=338,slow=7.8,SNR=11						
MKAR	**Makanchi Array**	**56.27**	**325**	P	P	07 58 37.2	0.0
	0.2nm,0.3s,baz=123,slow=6.1,SNR=6.1						

*IDC **24** 07:54:46.1±2.1,37°31N×142°33E,h0km,mb3.4/3, mb1 3.5/4,mb1mx3.2/51,mbtmp3.3/4,ML2.8/1, Error ellipse: s-maj=45.6km s-min=31.4km az=59.0*

*ISCJB **24** 07:54:49.8±1.5,37°32N±0°05×141°96E±0°08,h16km±8km, mb3.4/3, Error ellipse: s-maj=11.3km s-min=7.7km az=28.6*

*JMA **24** 07:54:51.2±0.1,37°30N×141°89E,h28km±3km,M3.4*

ISC 24 07:54:48.8±2.1,37°29N±0°05×141°93E±0°08,h11km±11km, n15,σ1°12/24,mb3.6/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.84**	**275**	P	**Pn**	**07 55 06.4**	**-0.3**
JFK				S	**Sb**	**07 55 16.7**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.92**	**258**	P	**Pg**	**07 55 07.5**	**+1.0**
ONAJ				S	**Sb**	**07 55 18.7**	**-0.4**
JMM	**Marumori**	**1.07**	**303**	P	**Pg**	**07 55 09.7**	**+0.4**
JMM				S	**Sb**	**07 55 22.9**	**-0.4**
JIO	**Ouri**	**1.25**	**339**	P	**Pb**	**07 55 12.2**	**-0.1**
JHO	**Hitachi**	**1.28**	**238**	P	**Pb**	**07 55 12.9**	**-0.1**
JFT	**Otama**	**1.29**	**281**	P	**Pg**	**07 55 13.8**	**+0.3**
JFT				S	**Sn**	**07 55 29.4**	**-0.6**
JOU	**Okura**	**1.47**	**317**	P	**Pb**	**07 55 16.2**	**+0.1**
JOU				S	**Sb**	**07 55 34.4**	**-0.4**
JYS	**Shirataka**	**1.74**	**303**	P	**Pb**	**07 55 20.7**	**-0.1**
JYS				*e*S	**Sb**	**07 55 42.1**	**-0.7**
JMK	**Ichinoseki**	**1.75**	**342**	P	**Pb**	**07 55 20.2**	**-0.7**
JMK				S	**Sn**	**07 55 40.7**	**-0.7**
JFY	**Yanaizu**	**1.78**	**274**	S	**Sn**	**07 55 42.8**	**+0.7**
MJAR	**Matsushiro Arr**	**3.07**	**257**	Pn	**Pb**	**07 55 40.7**	**-2.8**
	1.0nm,0.3s,baz=72,slow=7.8,SNR=9.5						
MJAR				Sn	**Sb**	**07 56 20.1**	**-0.9**
	1.3nm,0.3s,baz=78,slow=11,SNR=5.7						
MAT	**Matsushiro**	**3.08**	**257**	P	**Pb**	**07 55 42.4**	**-1.1**
MAT				S	**Sn**	**07 56 17.2**	**+3.1**
MKAR	**Makanchi Array**	**44.33**	**302**	P	**P**	**08 02 59.8**	**+1.0**
	0.2nm,0.5s,baz=85,slow=8.5,SNR=3.0						
KURBB

GSI eSn **Sn** **08 28 37.9 -7.4**
PSI Prapat 12.61 323 P **Pn** **08 26 29.9 -2.5**
0.5nm,0.3s,baz=120,slow=14,SNR=2.6
PSI Prapat 12.61 323 P **Pn** **08 26 30.0 -2.5**
IPM Ipoh 12.99 335 ⇑P **P** **08 26 48.6 +2.4**
IPM Ipoh 12.99 335 ePn **Pn** **08 26 39.0 +1.5**
KTGM Kuala Trenggan 13.08 345 ⇓P **P** **08 26 46.7 -0.6**
KAPI Kappang 13.47 81 ePn **Pn** **08 26 45.5 +1.5**
KULM Kulim 13.88 335 ⇑P **P** **08 26 53.0 -3.1**
WSI Waingapu 13.90 100 P **Pn** **08 26 51.3 +1.4**
713nm,0.6s
BSSI Bau Bau, Buton 14.03 86 P **Pn** **08 26 53.8 +2.2**
156nm,0.5s
TTSI Tana Toraja 14.03 73 P **P** **08 26 56.6 -1.2**
TPTI 14.06 319 P **P** **08 26 55.6 -2.5**
BASI Baing, Sumba 14.26 102 P **Pn** **08 26 56.3 +1.6**
EDFI Ende, Flores 15.18 96 P **Pn** **08 27 04.4 -2.3**
MMRI Maumere 15.71 95 P **Pn** **08 27 11.3 -2.2**
335nm,0.8s,4µm
MMRI Maumere 15.71 95 ePn **Pn** **08 27 14.8 +1.3**
243nm,0.8s
TSM Tawau 16.31 45 ⇓P **P** **08 27 26.2 +3.1**
KDI Kendari 16.48 79 P **P** **08 27 26.4 +1.3**
60nm,0.8s,829nm
KKM Kota Kinabalu 16.57 36 ⇓P **P** **08 27 25.9 -0.2**
KKM Kota Kinabalu 16.57 36 ePn **Pn** **08 27 24.1 -0.3**
116nm,1.2s
KKM eSn **Sn** **08 30 24.8 -2.8**
GIRL Giralia 16.90 154 P **Pn** **08 27 28.1 -0.3**
baz=17,SNR=39
KRAB Krabi 17.13 335 P **P** **08 27 35.8 +3.6**
34nm,0.7s
BATI Baumata 17.26 100 P **P** **08 27 35.4 +1.6**
108nm,0.9s,1µm
MRSI Marisa 17.36 64 P **P** **08 27 35.4 +0.6**
70nm,0.6s,2µm
MYLDM Lahad Datu 17.38 44 ePn **P** **08 27 37.2 +2.2**
197nm,1.3s
LUWI Luwuk 17.49 70 P **P** **08 27 38.1 +1.9**
LUWI Luwuk 17.49 70 ePn **P** **08 27 36.6 +0.4**
87nm,0.7s
SOEI Soe 17.80 99 P **P** **08 27 40.4 +0.6**
SOEI Soe 17.80 99 ePn **P** **08 27 40.1 +0.3**
166nm,0.7s
SOEI eSn **S** **08 30 59.8 -1.8**
MBWA Marble Bar 18.76 138 eP **Pn** **08 27 51.6 +0.5**
28nm,0.8s
MBWA eSn Sn 08 31 05.9 -15
SANI Sanana 20.21 76 P **P** **08 28 05.4 -0.7**
CHBT CHBT 20.45 349 P Pn 08 28 12.2 +1.0
48nm,1.3s
NLAI Namlea 21.00 80 P **P** **08 28 16.4 +1.8**
174nm,0.5s,2µm
FITZ Fitzroy Crossi 21.52 121 P **P** **08 28 20.9 +0.9**
19nm,0.9s,baz=286,slow=4.2,SNR=26
FITZ S **S** **08 32 10.8 -5.0**
2.0nm,0.5s,baz=150,slow=22,SNR=1.4
FITZ Fitzroy Crossi 21.52 121 P **P** **08 28 21.2 +1.1**
baz=22,SNR=23
FITZ Fitzroy Crossi 21.52 121 eP **P** **08 28 20.9 +0.9**
30nm,0.8s
FITZ S **S** **08 32 10.8 -5.0**
MEEK Meekatharra 22.35 150 P **P** **08 28 31.4 +2.4**
baz=23,SNR=5.6
MTN Manton Dam 24.91 104 P **P** **08 28 53.3 -0.2**
baz=25,SNR=58
MTN Manton Dam 24.91 104 eP **P** **08 28 51.5 -2.1**
58nm,0.5s
SWI Sorong 25.61 76 P **P** **08 28 59.5 -0.4**
UTTA Uttaradit 25.67 347 P **P** **08 29 04.7 +4.3**
4.8nm,0.8s
TGY Tagaytay City 25.79 34 LR LR 08 41 33.4
comp=Z,244nm,19.8s,baz=184,slow=42
FAKI Fak Fak 26.10 81 P **P** **08 29 04.0 -0.5**
95nm,1.3s,2µm
FAKI Fak Fak 26.10 81 eP **P** **08 29 03.9 -0.6**
130nm,1.3s
KDU Kakadu 26.17 104 P **P** **08 29 04.5 -0.6**
baz=26,SNR=12
QIZ Qiongzhong 26.50 7 P **P** **08 29 10.4 +2.5**
QIZ pmax pmax
comp=Z,78nm,7.8s
CMAR Chiang Mai Arr 26.75 344 P **P** **08 29 07.8 -2.5**
7.5nm,0.6s,baz=180,slow=8.6,SNR=44
CMAR PcP **PcP** **08 32 33.7 +1.2**
4.6nm,0.7s,baz=199,slow=3.3,SNR=10
CMAR ScP **ScP** **08 36 08.3 +0.2**
1.6nm,0.3s,baz=205,slow=2.9,SNR=6.8
CMAR LR LR 08 39 34.2
comp=Z,240nm,20.3s,baz=196,slow=36
CMAR Chiang Mai Arr 26.75 344 *ceP* **P** **08 29 07.9 -2.3**
CMAR pmax pmax
comp=Z,8.0nm,0.6s
CHTO Chiang Mai 27.09 344 eP **P** **08 29 10.8 -2.5**
CHTO pmax pmax
comp=Z,7.0nm,0.7s
CHTO Chiang Mai 27.09 344 eP **P** **08 29 10.8 -2.5**
comp=Z,7.0nm,0.7s
WRKA Warakurna 27.27 132 P **P** **08 29 15.7 +0.8**
baz=28,SNR=28
NWAO Narrogin (SRO) 27.29 160 LR LR 08 39 06.2
comp=Z,526nm,21.7s,baz=214,slow=34
KMBL Kambalda 27.86 151 P **P** **08 29 21.2 +1.1**
baz=28,SNR=4.8
H01W3 Cape Leeuwin H 28.24 167 T T 08 59 04.9
baz=345,slow=76,SNR=822
H01W1 Cape Leeuwin H 28.25 166 T T 08 59 05.0
baz=345,slow=76,SNR=696
H01W2 Cape Leeuwin H 28.25 167 T T 08 59 05.8
baz=345,slow=76,SNR=820
PALK Pallekele 29.51 299 LR LR 08 39 56.7
comp=Z,327nm,21.8s,baz=116,slow=33
WRA Warramunga Arr 29.78 118 P **P** **08 29 37.8 +0.5**
comp=Z,13nm,0.5s,baz=291,slow=10,SNR=268
WRA PcP **PcP** **08 32 40.5 +0.4**
comp=Z,3.2nm,0.5s,baz=306,slow=2.1,SNR=6.5
WRA ScP **ScP** **08 36 17.9 +0.3**
comp=Z,1.3nm,0.6s,baz=299,slow=2.9,SNR=4.7
WRA LR LR 08 40 52.3
comp=Z,152nm,20.1s,baz=285,slow=35
WRAB Tennant Creek 29.79 118 eP **P** **08 29 38.0 +0.6**
WRAB pmax pmax
comp=Z,25nm,0.6s
WRAB Tennant Creek 29.79 118 eP **P** **08 29 38.0 +0.6**
comp=Z,25nm,0.6s
WB2 Warramunga Arr 29.79 118 eP **P** **08 29 37.8 +0.4**
FORT Forrest 30.82 142 P **P** **08 29 46.9 +0.5**
baz=31,SNR=7.4
FORT Forrest 30.82 142 eP **P** **08 29 47.0 +0.7**
comp=Z,186nm,0.7s
ASAR Alice Springs 30.92 125 P **P** **08 29 47.9 +0.5**
comp=Z,13nm,0.8s,baz=302,slow=8.2,SNR=90
ASAR PcP **PcP** **08 32 43.6 +0.6**
comp=Z,3.6nm,0.7s,baz=328,slow=2.0,SNR=8.4
ASAR S **S** **08 34 46.6 -1.3**
comp=Z,3.5nm,1.1s,baz=291,slow=16,SNR=6.6
ASAR ScP **ScP** **08 36 20.5 -0.7**
comp=Z,2.2nm,0.8s,baz=343,slow=2.9,SNR=5.8
ASAR LR LR 08 42 15.8
comp=Z,212nm,21.4s,baz=305,slow=36
AS31 Alice Springs 30.92 125 eP **P** **08 29 48.1 +0.8**
comp=Z,3.9nm,0.7s
AS01 Alice Springs 30.96 125 eP **P** **08 29 48.0 +0.4**
KMI Kunming 32.55 354 P P 08 30 06.6 +4.8
KMI pmax pmax
comp=Z,13nm,1.3s
KMI LR LR
comp=Z,370nm,11.5s
KMI LR LR
comp=Z,260nm,12.3s
H08S2 Diego Garcia H 33.63 267 T T 09 05 37.4
baz=92,slow=76,SNR=296
H08S3 Diego Garcia H 33.64 267 T T 09 05 36.8
baz=92,slow=76,SNR=230
H08S1 Diego Carcia H 33.65 267 T T 09 05 36.7
baz=92,slow=76,SNR=201
GYA Guiyang 33.68 0 P P 08 30 16.6 +5.1
GYA PcP **PcP** **08 32 54.4 +3.9**
GYA S **S** **08 35 38.0 +7.1**
GYA ScP **ScP** **08 36 33.3 +2.7**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.2s
GYA LR LR
comp=Z,520nm,17.2s
GYA LR LR
comp=Z,490nm,17.8s
YULB Yu-li 33.91 25 eP **P** **08 30 13.7 +0.3**
comp=Z,7.7nm,1.0s
JAY Jayapura 34.49 84 P **P** **08 30 16.2 -2.5**
QIS Mount Isa 34.66 116 P **P** **08 30 21.1 +1.1**
baz=35,SNR=66
H08N1 Diego Carcia H 35.16 270 T T 09 08 14.0
baz=85,slow=75,SNR=28
H08N2 Diego Garcia H 35.18 270 T T 09 08 15.0
baz=85,slow=75,SNR=32
H08N3 Diego Garcia H 35.18 270 T T 09 08 15.3
baz=85,slow=75,SNR=30
COEN Coen 36.66 103 P **P** **08 30 37.0 -0.2**
baz=37,SNR=41
COEN Coen 36.66 103 eP **P** **08 30 36.9 -0.4**
comp=Z,43nm,0.6s
HYB Hyderabad 36.98 312 *i* P **P** **08 30 41.0 +1.1**
CD2 Chengdu 38.20 356 eP **P** **08 30 53.8 +3.8**
CD2 pP sP 08 31 08.3 -2.5
CD2 sP pP 08 31 15.1 +11
CD2 S **S** **08 36 46.8 +7.0**
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,220nm,5.2s
CD2 LR LR
comp=Z,230nm,17.7s
CD2 LR LR
comp=Z,310nm,16.5s
MTSU Mount Surprise 38.38 110 P **P** **08 30 53.0 +1.2**
baz=38,SNR=118
RAMN Ramite 39.20 331 eP **P** **08 30 56.9 -1.8**
comp=Z,28nm,0.5s
HTT Hallett 39.66 135 P **P** **08 31 03.5 +1.2**
baz=40,SNR=13
LSA Lhasa 39.72 339 P **P** **08 31 01.6 -1.7**
LSA pmax pmax
comp=Z,9.0nm,0.9s
LSA Lhasa 39.72 339 eP **P** **08 31 01.8 -1.5**
LSA pmax pmax
comp=Z,10.0nm,0.5s
LSA Lhasa 39.72 339 eP **P** **08 31 01.8 -1.5**
comp=Z,9.9nm,0.5s
PKIN Phulchoki 40.30 331 eP **P** **08 31 06.5 -1.4**
comp=Z,10nm,0.5s
PMG Port Moresby 40.33 96 *ce*P **P** **08 31 08.2 +0.1**
PMG pmax pmax
comp=Z,282nm,1.2s
PMG Port Moresby 40.33 96 eP **P** **08 31 08.8 +0.7**
comp=Z,64nm,0.8s
GUN Gumba 40.35 331 eP **P** **08 31 05.9 -2.5**
comp=Z,40nm,0.5s
DMN Daman 40.47 330 eP **P** **08 31 06.9 -2.4**
comp=Z,29nm,0.6s
KKN Kakani 40.54 331 eP **P** **08 31 07.3 -2.5**
comp=Z,25nm,0.6s
CTAO Charters Tower 40.57 112 eP **P** **08 31 11.0 +1.0**
CTAO pmax pmax
comp=Z,53nm,1.0s
CTAO Charters Tower 40.57 112 eP **P** **08 31 11.0 +1.0**
comp=Z,53nm,1.0s
QLP Quilpie 40.65 123 P **P** **08 31 12.6 +2.1**
baz=41,SNR=5.4
STKA Stephens Creek 40.79 131 P **P** **08 31 13.2 +1.6**
comp=Z,124nm,0.6s,baz=307,slow=7.9,SNR=470
STKA PcP **PcP** **08 33 12.5 +0.5**
comp=Z,15nm,0.6s,baz=333,slow=5.1,SNR=3.9
STKA S **S** **08 37 18.7 0.0**
comp=Z,2.6nm,0.9s,baz=0.0,slow=20,SNR=2.7
STKA LR LR 08 49 24.5
comp=Z,173nm,20.1s,baz=284,slow=38
STKA Stephens Creek 40.79 131 P **P** **08 31 13.3 +1.6**
baz=41,SNR=336
STKA Stephens Creek 40.79 131 eP **P** **08 31 13.2 +1.6**
comp=Z,28nm,0.7s
STKA PcP **PcP** **08 33 12.5 +0.5**
STKA S **S** **08 37 18.7 0.0**
GKN Gorkha 41.03 330 eP **P** **08 31 11.5 -2.3**
comp=Z,36nm,0.5s
MANU Manus Island 41.14 85 eP **P** **08 31 14.6 -0.1**
comp=Z,90nm,0.7s
POO Poona 41.20 309 eP **P** **08 31 12.0 -3.2**
XAN Xi'an 41.30 3 P **P** **08 31 13.3 -2.5**
XAN pmax pmax
comp=Z,18nm,0.7s
XAN LR LR
comp=Z,390nm,18.4s
XAN LR LR
comp=Z,670nm,22.5s
KOLN Koldanda 41.37 329 eP **P** **08 31 13.8 -2.8**
comp=Z,48nm,0.6s
PYUN Piuthan 41.95 328 eP **P** **08 31 18.6 -2.8**
comp=Z,13nm,0.4s
LZH Lanzhou 43.35 357 eP **P** **08 31 30.9 -1.6**
LZH pP pP 08 31 43.8 -3.2
LZH sP sP 08 31 51.9 -1.5
LZH pmax pmax
comp=Z,24nm,1.0s
LZH pmax pmax
comp=Z,73nm,5.8s
LZH LR LR
comp=Z,180nm,12.7s
LZH LR LR
comp=Z,220nm,12.6s
LZH LR LR
comp=Z,280nm,13.4s
ARPS Mount Arapiles 43.49 137 P **P** **08 31 36.1 +2.5**
baz=44,SNR=6.3
CMSA Cobar Meteorol 43.75 129 P **P** **08 31 37.6 +1.9**
baz=44,SNR=100
RMQ Roma 44.45 120 P **P** **08 31 43.7 +2.3**
baz=45,SNR=8.9
EIDS Eidsvold 46.15 118 P **P** **08 31 56.5 +1.7**
baz=46,SNR=8.1
EIDS Eidsvold 46.15 118 eP **P** **08 31 56.4 +1.5**
comp=Z,17nm,0.8s
TOO Toolangi 46.39 136 P **P** **08 31 59.8 +3.2**
baz=47,SNR=8.0
YNG Young 46.97 131 P **P** **08 32 04.0 +2.8**
baz=47,SNR=6.9
GTA Gaotai 47.00 353 ⇑P **P** **08 31 59.9 -1.5**
GTA pP pP 08 32 12.1 -3.9
GTA sP sP 08 32 17.8 -4.6
GTA PcP **PcP** **08 33 33.1 +0.1**
GTA S **S** **08 38 51.3 +2.2**
GTA sS sS 08 39 12.6 -1.1
GTA ScS **ScS** **08 41 46.6 -4.4**
GTA SS **SS** **08 42 12.6 -4.2**
GTA pmax pmax
comp=Z,14nm,0.9s
GTA pmax pmax
comp=Z,130nm,6.4s
GTA LR LR
comp=Z,230nm,20.9s
GTA LR LR
comp=Z,250nm,23.8s
SDNR Sundarnagar 47.86 326 *ex* **P** **08 32 08.0 -0.1**
ARMA Armidale 48.07 125 P **P** **08 32 12.5 +2.5**
baz=48,SNR=12
BJI Beijing 48.08 10 P P 08 32 15.1 +5.5
BJI S **S** **08 39 09.8 +5.7**
BJI pmax pmax
comp=Z,9.0nm,0.6s
BJI LR LR
comp=Z,130nm,18.6s
BJI LR LR
comp=Z,160nm,20.9s
HHC Hu-ho-hao-te 48.27 5 eP P 08 32 17.3 +6.1
HHC ScP **ScP** **08 37 29.3 +1.7**
HHC ScS **ScS** **08 42 00.3 +1.0**
HHC pmax pmax
comp=Z,16nm,1.4s
HHC pmax pmax
comp=Z,100nm,3.4s
HHC LR LR
comp=Z,200nm,18.7s
HHC LR LR
comp=Z,170nm,18.7s
KSAR Wonju Array Be 48.94 23 P **P** **08 32 15.2 -1.0**
KSAR 08 33 39.6
KSAR Wonju Array Be 48.94 23 P **P** **08 32 15.2 -1.0**
KSAR PcP **PcP** **08 33 39.6 -0.2**
KSRS Korea Array 48.96 23 P **P** **08 32 15.2 -1.2**
comp=Z,2.4nm,0.5s,baz=206,slow=8.4,SNR=15
KSRS PcP **PcP** **08 33 39.6 -0.3**
comp=Z,2.8nm,0.8s,baz=205,slow=4.5,SNR=6.4
KSRS LR LR 08 55 50.4
comp=Z,42nm,19.0s,baz=205,slow=40
KSRS Korea Array 48.96 23 P **P** **08 32 15.2 -1.2**
KSRS 08 33 39.6
KSRS pmax pmax
comp=Z,3.0nm,0.5s
KSRS pmax pmax
comp=Z,3.0nm,0.8s
KSRS MLR MLR
comp=Z,42nm,19.0s
MJAR Matsushiro Arr 52.93 32 P **P** **08 32 42.7 -3.6**
comp=Z,2.7nm,0.6s,baz=212,slow=8.1,SNR=19
MJAR PcP **PcP** **08 33 54.4 -0.3**
comp=Z,1.7nm,0.8s,baz=197,slow=3.8,SNR=3.4
MJAR ScP **ScP** **08 37 47.0 -0.6**
comp=Z,0.5nm,0.6s,baz=183,slow=4.5,SNR=3.9
MJAR LR LR 08 56 03.9
comp=Z,40nm,21.8s,baz=190,slow=37
WMQ Urumqi 53.75 343 eP P 08 32 57.1 +4.8
WMQ pP sP 08 33 13.8 +0.3
WMQ PcP **PcP** **08 33 59.5 +1.8**
WMQ S **S** **08 40 29.5 +6.8**
WMQ pmax pmax
comp=Z,7.0nm,0.6s
WMQ pmax pmax
comp=Z,160nm,4.6s
WMQ LR LR
comp=Z,210nm,25.7s
WMQ LR LR
comp=Z,260nm,25.6s
CN2 Changchun 53.82 17 ⇑P **P** **08 32 50.0 -2.7**
CN2 *ep*P pP 08 33 09.0 +1.4
CN2 *eS* **S** **08 40 21.0 -2.4**
CN2 *eSS* **SKiKP** **08 44 02.3 +0.6**
CN2 pmax pmax
comp=Z,10.0nm,1.2s
CN2 LR LR
comp=Z,200nm,22.0s
CN2 LR LR
comp=Z,200nm,22.0s
KSH Kashi 54.55 331 eP **P** **08 33 00.8 +2.6**
KSH *ep*P pP 08 33 16.3 +3.2
KSH *es*P sP 08 33 23.3 +3.8
KSH PcS **PcS** **08 38 00.9 +0.2**
KSH S **S** **08 40 34.1 +0.4**
KSH ScS **ScS** **08 42 40.9 -2.0**
KSH SS **SS** **08 44 17.5 +0.2**
KSH pmax pmax
comp=Z,65nm,3.9s
KSH LR LR
comp=Z,140nm,8.0s
KSH LR LR
comp=Z,140nm,8.1s
KSH LR LR
comp=Z,140nm,6.2s
SONM Songino Array 55.02 360 P **P** **08 32 59.9 -1.6**
comp=Z,3.9nm,0.5s,baz=180,slow=9.0,SNR=23
SONM PcP **PcP** **08 34 02.2 -0.3**
comp=Z,19nm,1.0s,baz=181,slow=4.0,SNR=17
SONM ScP **ScP** **08 37 55.8 -0.8**
comp=Z,0.7nm,0.4s,baz=191,slow=2.9,SNR=4.2
SONM LR LR 08 59 19.7
comp=Z,279nm,18.9s,baz=176,slow=39
USRK Ussuriysk Ar. 56.34 22 P **P** **08 33 08.7 -2.2**
comp=Z,6.3nm,0.4s,baz=199,slow=5.4,SNR=29
USRK LR LR 08 58 35.3
comp=Z,70nm,20.2s,baz=192,slow=38
ZAK Zakamensk 57.63 358 eP **P** **08 33 17.4 -2.6**
AAK Ala-Archa 57.69 333 eP **P** **08 33 20.1 -0.6**
AAK pmax pmax
comp=Z,13nm,1.1s
AAK Ala-Archa 57.69 333 eP **P** **08 33 19.9 -0.7**
comp=Z,3.3nm,0.8s
AAK *e*PcP **PcP** **08 34 14.1 +1.0**
FRU Bishkek 57.79 333 eP **P** **08 33 20.0 -1.2**
FRU *e* 08 34 14.0
MK31 Makanchi Array 58.09 341 P **P** **08 33 20.2 -3.0**
MK31 pmax pmax
comp=Z,5.0nm,0.6s
MKAR Makanchi Array 58.09 341 P **P** **08 33 20.6 -2.6**
comp=Z,8.1nm,0.5s,baz=147,slow=8.3,SNR=43
MKAR ScP **ScP** **08 38 09.9 -0.2**
comp=Z,0.5nm,0.7s,baz=109,slow=7.8,SNR=2.7
MKAR LR LR 09 02 07.3
comp=Z,98nm,20.9s,baz=155,slow=40
MNAS Manas 58.51 331 P **P** **08 33 23.9 -2.5**
MNAS pmax pmax
comp=Z,26nm,1.1s
UOSS Minazif 58.52 305 eP **P** **08 33 27.7 +1.1**
ASHO Ashiyiah 58.52 305 P **P** **08 33 27.9 +1.3**
HATD Hatta, Dubai 58.52 305 P **P** **08 33 28.0 +1.4**
BANOM Banah 58.88 306 P **P** **08 33 30.2 +1.1**
FAQ Al Faqa, Dubai 58.92 305 P **P** **08 33 30.7 +1.3**
NAZ Nazwa, Dubai 58.98 305 P **P** **08 33 31.2 +1.5**
DZM Mont Dzumac 59.50 111 *e*LR LR 08 51 29.4
comp=Z,340nm,32.8s
KK31 Karatay Array 59.94 330 P **P** **08 33 32.2 -3.9**
KK31 pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 59.94 330 eP **P** **08 33 34.2 -1.9**
KKAR *e* 08 34 21.9
KKAR pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 59.94 330 eP **P** **08 33 34.2 -1.9**
comp=Z,3.5nm,0.6s
KKAR *e*PcP **PcP** **08 34 21.9 0.0**
KLR Kul'dur 60.61 19 *ci*P **P** **08 33 38.0 -2.5**
ASAJ Asahikawa 60.82 29 eP **P** **08 33 39.5 -2.6**
comp=Z,1.5nm,0.5s
HABR Khabarovsk 61.09 21 eP **P** **08 33 39.5 -4.2**
HABR *e**PP **pP** **08 33 53.4 -5.5**
HABR *e**SP **sP** **08 33 59.3 -5.8**
HABR *e* 08 34 22.5
HABR *e* 08 35 54.2
HABR *eS* **S** **08 41 54.4 -4.2**
HABR *e* 08 42 11.4
HABR *e* 08 42 18.5
HABR *e* 08 43 26.2
HABR pmax pmax
comp=N,2.0nm,0.5s
HABR pmax pmax
comp=E,7.0nm,0.9s
HABR pmax pmax
comp=Z,15nm,0.9s
HABR MLR MLR
comp=Z,48nm,21.0s
YSS Yuzh-Sakhalins 63.02 27 ⇑eP **P** **08 33 54.6 -2.1**
YSS pmax pmax
comp=Z,30nm,1.4s
YSS Yuzh-Sakhalins 63.02 27 eP **P** **08 33 54.8 -1.9**
comp=Z,22nm,0.8s
OTUK Ortayu 63.03 335 P **P** **08 33 53.9 -2.9**
OTUK pmax pmax
comp=Z,21nm,1.2s
GEYT Alibeck 63.70 319 P **P** **08 34 01.4 -0.1**
comp=Z,34nm,0.8s,baz=144,slow=5.5,SNR=48
GEYT LR LR 09 03 51.3
comp=Z,74nm,20.3s,baz=210,slow=38
ZALV Zalesovo Beam 63.80 346 P **P** **08 33 58.8 -2.9**
comp=Z,4.0nm,0.3s,baz=191,slow=7.1,SNR=16
ZALV PcP **PcP** **08 34 35.7 -1.5**
comp=Z,6.9nm,0.6s,baz=174,slow=4.3,SNR=7.2
ZALV LR LR 09 04 17.5
comp=Z,119nm,20.1s,baz=250,slow=38
RPZ Rata Peaks 66.64 134 LR LR 09 02 52.2
comp=Z,303nm,19.2s,baz=261,slow=35
MAW Mawson 66.80 197 P **P** **08 34 23.9 +2.9**
comp=Z,6.6nm,0.6s,baz=60,slow=4.8,SNR=8.4
MAW LR LR 08 59 00.0
comp=Z,44nm,21.7s,baz=60,slow=32
BVA0 Borovoye Array 67.53 337 *i* P **P** **08 34 24.0 -1.8**
BVA0 pmax pmax
comp=Z,12nm,0.7s
BRVK Borovoye 67.60 337 *de*P **P** **08 34 24.4 -1.8**
BRVK pmax pmax
comp=Z,33nm,0.8s
BRVK Borovoye 67.60 337 eP **P** **08 34 24.1 -2.1**
comp=Z,28nm,0.7s
KMBO Kilima Mbogo 69.20 272 P **P** **08 34 39.2 +1.8**
comp=Z,1.7nm,0.6s,baz=77,slow=8.2,SNR=4.8
KMBO LR LR 08 59 37.6
comp=Z,218nm,21.3s,baz=97,slow=31
AB31 Akbulak array 69.48 330 *i* P **P** **08 34 36.7 -1.4**
AB31 pmax pmax
comp=Z,42nm,0.6s
ABKAR Akbulak array 69.48 330 eP **P** **08 34 36.8 -1.3**

comp=Z,83nm,0.8s
URZ Urewera 70.29 128 P **P** **08 34 44.7 +1.4**
comp=Z,10nm,0.6s,baz=330,slow=2.5,SNR=5.2
AKTO Aktyubinsk 71.19 330 P **P** **08 34 46.9 -1.6**
AKTO pmax pmax
comp=Z,27nm,1.0s
YAK Yakutsk 71.56 11 *e*P **P** **08 34 47.8 -2.6**
YAK pmax pmax
comp=Z,12nm,0.9s
YAK pmax pmax
comp=E,5.0nm,1.1s
YAK pmax pmax
comp=N,11nm,1.4s
GNI Garni 73.85 315 *e*P **P** **08 35 05.0 +0.2**
GNI pmax pmax
comp=Z,73nm,0.6s
GNI Garni 73.85 315 *e*P **P** **08 35 05.0 +0.2**
comp=Z,73nm,0.6s
SVE Sverdlovsk 74.16 336⇑ *e*P **P** **08 35 05.5 -0.5**
SVE pmax pmax
comp=Z,67nm,1.1s
PETK Petropavlovsk- 74.24 29 P **P** **08 35 04.7 -1.8**
comp=Z,3.9nm,0.5s,baz=164,slow=1.5,SNR=17
PETK LR LR 09 12 22.3
comp=Z,16nm,18.1s,baz=238,slow=40
TBLG Delisi 74.51 317 P **P** **08 35 09.0 +0.6**
TBLG Delisi 74.51 317 P **P** **08 35 09.0 +0.6**
ARU Arti 74.75 335*c i*P **P** **08 35 09.0 -0.4**
ARU *e*PP **PcP** 08 35 21.4 -1.9
ARU 08 37 50.4
ARU S **S** **08 44 42.6 +1.0**
ARU pmax pmax
comp=Z,82nm,1.7s
ARU Arti 74.75 335 *e*P **P** **08 35 08.4 -1.0**
comp=Z,24nm,0.6s
GUDG Gudauri 75.00 317 P **P** **08 35 12.2 +0.7**
ZEI Tsey 75.52 318 *e*P **P** **08 35 14.2 -0.2**
ZEI pmax pmax
comp=Z,75nm,0.6s
VNDA Vanda 75.66 169 P **P** **08 35 16.3 +1.9**
comp=Z,8.3nm,0.9s,baz=307,slow=5.8,SNR=44
ONI Oni 75.74 317 P **P** **08 35 16.4 +0.9**
ONI Oni 75.74 317 P **P** **08 35 16.4 +0.9**
NCK Nalchik 76.02 318*c i*P **P** **08 35 15.9 -1.1**
NCK pmax pmax
comp=Z,17nm,0.9s
NEY Neytrino 76.50 318⇓ *i*P **P** **08 35 21.1 +1.1**
NEY pmax pmax
comp=Z,3.0nm,0.8s
KBZ Khabaz 76.58 318 P **P** **08 35 20.5 +0.4**
comp=Z,18nm,0.9s,baz=118,slow=4.7,SNR=26
KBZ LR LR 09 13 19.6
comp=Z,22nm,21.3s,baz=95,slow=39
SBA Scott Base 76.74 169 *e*P **P** **08 35 23.4 +2.9**
SBA pmax pmax
comp=Z,8.0nm,0.9s
SBA Scott Base 76.74 169 *e*P **P** **08 35 23.4 +2.9**
comp=Z,8.1nm,0.9s
LSZ Lusaka 76.77 256 *e*P **P** **08 35 24.2 +2.2**
LSZ pmax pmax
comp=Z,7.0nm,0.6s
LSZ Lusaka 76.77 256 *e*P **P** **08 35 24.2 +2.2**
comp=Z,7.0nm,0.6s
KIV Kislovodsk 76.81 318 P **P** **08 35 22.1 +0.5**
KIV Kislovodsk 76.81 318 *e*P **P** **08 35 21.4 -0.2**
KIV pmax pmax
comp=Z,22nm,0.9s
KIV MLR MLR
comp=Z,28nm,18.0s
KIV Kislovodsk 76.81 318 *e*P **P** **08 35 21.9 +0.3**
comp=Z,22nm,0.6s
GOF Gofitskoye 77.03 319⇑ *e*P **P** **08 35 23.1 +0.4**
GOF pmax pmax
comp=Z,111nm,1.8s
SOKR Solikamsk 77.51 337*c i*P **P** **08 35 23.0 -2.0**
SOKR pmax pmax
comp=Z,50nm,1.1s
NRIK Noril'sk 77.70 353 P **P** **08 35 24.3 -1.6**
comp=Z,9.1nm,0.3s,baz=136,slow=5.3,SNR=18
NRIK LR LR 09 12 36.1
comp=Z,164nm,20.5s,baz=160,slow=38
BOSA Boshof 78.75 242 P **P** **08 35 35.5 +2.6**
comp=Z,6.3nm,0.6s,baz=82,slow=4.1,SNR=17
BOSA LR LR 09 03 50.0
comp=Z,66nm,21.6s,baz=40,slow=30
TIXI Tiksi 80.29 7 *e*P **P** **08 35 36.5 -3.5**
TIXI pmax pmax
comp=Z,21nm,1.0s
AFI Afiamalu 80.33 103 P **P** **08 35 43.2 +1.6**
comp=Z,22nm,0.9s,baz=282,slow=20
VRH Novokhopyorsk 80.39 325 *e*P **P** **08 35 41.0 0.0**
CSS Mathiatis 80.58 307 P **P** **08 35 43.1 +0.7**
CSS Mathiatis 80.58 307 *e*P **P** **08 35 43.4 +1.0**
comp=Z,15nm,0.8s
BRTR Keskin Array B 81.68 312 P **P** **08 35 48.1 -0.2**
comp=Z,22nm,0.7s,baz=142,slow=6.9,SNR=115
BRTR LR LR 09 12 33.5
comp=Z,54nm,21.7s,baz=108,slow=36
VSR Storozhevoye 81.87 324 *e*P **P** **08 35 48.5 -0.4**
SIM Simferopol' 82.89 317 *e*P **P** **08 35 55.3 +0.9**
SIM pmax pmax
comp=Z,46nm,0.8s
MOS Moscow 84.43 328 *e*P **P** **08 36 01.5 -0.4**
MOS *e* 08 36 22.2
MOS *e*S **S** **08 46 20.4 -3.4**
MOS pmax pmax
comp=Z,73nm,0.9s
OBN Obninsk 84.77 327*c i*P **P** **08 36 03.6 0.0**
OBN *e**PP **pP** **08 36 17.7 -1.8**
OBN *SP **sP** **08 36 24.0 -1.6**
OBN *e*S **S** **08 46 20.8 -6.4**
OBN *e*SS **SS** **08 51 54.3 -6.0**
OBN pmax pmax
comp=Z,50nm,0.9s
OBN MLR MLR
comp=Z,72nm,23.0s
OBN Obninsk 84.77 327 *e*P **P** **08 36 03.8 +0.1**
comp=Z,35nm,0.6s
KLMR Klimovskoe 85.50 333 *e*P **P** **08 36 03.1 -4.1**
KLMR pmax pmax
comp=Z,90nm,1.4s
BILL Bilibino 86.08 19⇑ *e*P **P** **08 36 09.5 -0.4**
BILL *e* 08 36 24.1
BILL pmax pmax
comp=Z,3.0nm,1.2s
BILL MLR MLR
comp=Z,219nm,24.0s
TLCR 86.57 316⇑ *i*P **P** **08 36 13.9 +1.1**
TLCR 86.57 316 ⇑⇑ *i*P **P** **08 36 13.9 +1.1**
TLB Topalu 86.96 316⇑ *i*P **P** **08 36 15.6 +0.8**
TLB Topalu 86.96 316 ⇑⇑ *i*P **P** **08 36 15.6 +0.8**
CFR Carcaliu 87.04 316⇑ *i*P **P** **08 36 15.9 +0.8**
CFR Carcaliu 87.04 316 ⇑⇑ *i*P **P** **08 36 15.9 +0.8**
HARR Harsova 87.06 316⇓ *i*P **P** **08 36 15.4 +0.1**
HARR Harsova 87.06 316 ⇓⇓ *i*P **P** **08 36 15.4 +0.1**
LEOM Leova 87.27 317⇑ *i*P **P** **08 36 17.0 +0.8**
LEOM Leova 87.27 317 ⇑⇑ *i*P **P** **08 36 17.0 +0.8**
SORM Soroca 87.59 319⇑ *i*P **P** **08 36 18.4 +0.7**
SORM Soroca 87.59 319 ⇑⇑ *i*P **P** **08 36 18.4 +0.7**
AKASG Malin Array Be 87.67 322 P **P** **08 36 17.3 -0.7**
comp=Z,13nm,0.8s,baz=84,slow=4.9,SNR=45
AKASG PP **PP** **08 39 41.3 -2.8**
comp=Z,0.7nm,0.5s,baz=91,slow=6.5,SNR=5.3
AKASG LR LR 09 22 47.3
comp=Z,30nm,18.1s,baz=100,slow=41
KIEV Kiev 87.67 322*c i*P **P** **08 36 17.2 -0.9**
KIEV Kiev 87.67 322 *e*P **P** **08 36 17.3 -0.7**
comp=Z,11nm,0.6s
KIEV *e*PP **PP** **08 39 42.5 -1.6**
GRER 87.88 316⇑ *i*P **P** **08 36 21.5 +2.3**
ODBI Odobesti 87.91 316⇑ *i*P **P** **08 36 21.5 +2.2**
ISR Istrita 88.12 316⇓ *i*P **P** **08 36 21.1 +0.7**
ISR Istrita 88.12 316 ⇓⇓ *i*P **P** **08 36 21.1 +0.7**
VRI Vrincioaia 88.16 317⇑ *i*P **P** **08 36 21.8 +1.3**
VRI Vrincioaia 88.16 317 ⇑⇑ *i*P **P** **08 36 21.8 +1.3**
PLOR Plostina 88.21 317⇑ *i*P **P** **08 36 21.9 +1.1**
PLOR Plostina 88.21 317 ⇑⇑ *i*P **P** **08 36 21.9 +1.1**
TESR Tescani 88.35 317⇑ *i*P **P** **08 36 22.4 +1.0**
SECR 88.43 316⇓⇓ *i*P **P** **08 36 23.6 +1.8**
MLR Muntele Rosu 88.61 316⇑ *i*P **P** **08 36 23.8 +1.0**
MLR Muntele Rosu 88.61 316 ⇑⇑ *i*P **P** **08 36 23.8 +1.0**
PTL Penteli 88.70 308 P **P** **08 36 23.5 +0.2**
PRAR RASCA 88.81 318⇑ *i*P **P** **08 36 24.0 +0.4**
SNAA Sanae 88.95 197 P **P** **08 36 26.8 +2.9**
SNAA Sanae 88.95 197 P **P** **08 36 26.9 +3.0**
comp=Z,6.5nm,0.7s,baz=122,slow=6.1,SNR=21
SNAA Sanae 88.95 197 *e*P **P** **08 36 26.0 +2.1**
DOPR Dopca 89.09 316⇑ *i*P **P** **08 36 26.0 +1.1**
DID Didima 89.09 308 P **P** **08 36 24.8 -0.4**
VOIR 89.22 316⇓ *i*P **P** **08 36 25.9 +0.3**
VOIR 89.22 316 ⇓⇓ *i*P **P** **08 36 25.9 +0.3**
ATAL Atalanti 89.47 309 P **P** **08 36 26.7 -0.1**
ARR Arges 89.49 316⇓ *i*P **P** **08 36 27.4 +0.5**
BURAR Bucovina Array 89.53 318⇓ *i*P **P** **08 36 28.5 +1.4**
BURAR Bucovina Array 89.53 318 ⇓⇓ *i*P **P** **08 36 28.5 +1.4**
VTS Vitosha 90.00 313⇑ *i*P **P** **08 36 30.0 +0.6**
VTS Vitosha 90.00 313 ⇑⇑ *i*P **P** **08 36 30.0 +0.6**
KLV Kalavryta, Ach 90.03 308 P **P** **08 36 30.0 +0.4**
LVZ Lovozero 90.08 339 *e*P **P** **08 36 28.1 -1.0**
LVZ pmax pmax
comp=Z,22nm,1.0s
LIT Litokhoron 90.11 310 P **P** **08 36 29.8 0.0**
SERG Sergoula 90.17 309 P **P** **08 36 30.4 +0.3**
ANX Ano Chora 90.30 309 P **P** **08 36 32.4 +1.5**
THL Klokotos Trika 90.38 310 P **P** **08 36 30.6 -0.5**
EVR Evrytania 90.44 309 P **P** **08 36 32.2 +0.7**
DEV Deva 90.78 316⇓ *i*P **P** **08 36 34.3 +1.5**
DEV Deva 90.78 316 ⇓⇓ *i*P **P** **08 36 34.3 +1.5**
PDO Prodromos 90.87 309 P **P** **08 36 34.4 +1.0**
DRGR 91.06 317⇑ *i*P **P** **08 36 32.2 -2.0**
DRGR 91.06 317 ⇑⇑ *i*P **P** **08 36 32.2 -2.0**
MDVR Moldovita 91.43 315⇓ *i*P **P** **08 36 36.3 +0.4**
BZS Buzias 91.63 316⇑ *i*P **P** **08 36 37.2 +0.5**
BZS Buzias 91.63 316 ⇑⇑ *i*P **P** **08 36 37.2 +0.5**
FINES FINESS Array B 91.87 332 P **P** **08 36 37.1 -0.4**
comp=Z,6.3nm,0.7s,baz=118,slow=5.6,SNR=35
FINES LR LR 09 23 34.8
comp=Z,14nm,19.3s,baz=56,slow=39
SUW Suwalki 91.99 324 *e*P **P** **08 36 38.0 -0.1**
CRVS Cervenica-Dubn 92.23 319 *e*P **P** **08 36 41.9 +2.4**
STHS Stebnicka Huta 92.45 319 *e*P **P** **08 36 41.2 +0.7**
STHS *e*pP **pP** **08 36 58.6 +2.2**
STHS *e*sP **sP** **08 37 06.4 +3.9**
KECS Kecovo 92.81 318 *e*P **P** **08 36 42.0 -0.1**
KECS *e*PP **PP** **08 40 26.8 +1.8**
LANS Liptovska Anna 93.56 319 *e*P **P** **08 36 48.2 +2.5**
ARCES ARCESS Array B 93.73 340 P **P** **08 36 45.0 -0.9**
comp=Z,6.3nm,0.5s,baz=92,slow=5.8,SNR=30
ARCES LR LR 09 24 38.3
comp=Z,70nm,18.1s,baz=91,slow=39
VYHS Vyhne 93.90 318 *e*P **P** **08 36 45.8 -1.4**
VYHS *e*pP **pP** **08 37 05.7 +2.6**
VYHS *e*sP **sP** **08 37 11.1 +1.9**
UNV Unalaska Valle 94.21 36 *e*P **P** **08 36 46.9 -1.6**
MORC Moravsky Berou 94.88 319⇑ *i*P **P** **08 36 52.0 +0.3**
MORC Moravsky Berou 94.88 319 ⇑⇑ *i*P **P** **08 36 52.0 +0.3**
DPC Dobruska-Polom 95.72 320 *e*P **P** **08 36 56.3 +0.8**
GERES GERESS Array B 97.32 318 P **P** **08 37 02.8 -0.1**
comp=Z,0.9nm,0.6s,baz=104,slow=4.3,SNR=9.5
GERES PP **PP** **08 40 59.0 -1.1**
comp=Z,0.3nm,0.5s,baz=75,slow=4.2,SNR=4.1
GERES LR LR 09 26 02.3
comp=Z,30nm,20.7s,baz=88,slow=38
NB2 NORSAR Subarra 98.97 331 P **P** **08 37 09.7 -0.2**
comp=Z,2.0nm,0.7s,baz=90,slow=4.6
NOA NORSAR Array B 98.97 331 P **P** **08 37 09.9 0.0**
comp=Z,0.9nm,0.6s,baz=88,slow=4.6,SNR=3.6
NOA LR LR 09 26 35.5
comp=Z,43nm,21.9s,baz=75,slow=38
TBI Tubuai 99.89 115 *e*LR LR 09 10 17.0
comp=Z,101nm,32.5s
PPT2 Papeete2 100.97 109 *e*LR LR 09 10 46.0
comp=Z,126nm,24.0s
ILAR Eielson Array 103.77 25 PKiKP **PKiKP** **08 41 49.9 +1.0**
comp=Z,0.3nm,0.8s,baz=258,slow=3.9,SNR=3.8
TORD Torodi Ar. Bea 105.94 282 PKiKP **PKiKP** **08 41 54.7 +0.4**
comp=Z,0.4nm,0.8s,baz=105,slow=1.6,SNR=2.8
YKA Yellowknife Ar 117.45 20 PKP **PKPdf** **08 42 14.2 -0.5**
comp=Z,1.2nm,0.6s,baz=350,slow=1.5,SNR=11
B05A Bryant 122.31 36 P **PKPdf** **08 42 25.2 +0.7**
baz=299
I03D Drain, OR 123.57 42 P **PKPdf** **08 42 27.9 +0.9**
baz=295
EDM Edmonton 124.12 28 *e*PKIKP **PKPdf** **08 42 28.2 +0.3**
EDM Edmonton 124.12 28 *e*PKPdf **PKPdf** **08 42 28.1 +0.3**
I04A Tendick Farm, 124.14 41 P **PKPdf** **08 42 28.6 +0.3**
baz=296
HUMO Hull Mountain 124.28 43 *e*PKPdf **PKPdf** **08 42 29.2 +0.7**
J04D Umpqua Nationa 124.58 42 P **PKPdf** **08 42 30.2 +0.9**
baz=296
I05D Terrebonne, OR 124.60 40 P **PKPdf** **08 42 30.2 +1.1**
baz=297
M02C Callahan 124.85 44 P **PKPdf** **08 42 30.7 +1.0**
baz=294
N02D Trinity Center 125.12 44 P **PKPdf** **08 42 31.2 +1.0**
baz=294
J05D Fort Rock, OR 125.14 41 P **PKPdf** **08 42 31.4 +1.1**
baz=297
NEW Newport 125.16 34 P **PKPdf** **08 42 31.1 +1.0**
baz=304
NEW Newport 125.16 34 *e*PKIKP **PKPdf** **08 42 30.1 +0.1**
NEW Newport 125.16 34 *e*PKPdf **PKPdf** **08 42 30.1 +0.1**
O03D Paynes Creek 126.02 45 P **PKPdf** **08 42 32.1 +0.1**
baz=294
MOD Modoc Plateau 126.36 42 *e*PKPdf **PKPdf** **08 42 33.6 +0.9**
BMO Blue Mountains 126.87 38 *e*PKIKP **PKPdf** **08 42 33.6 +0.1**
BMO Blue Mountains 126.87 38 *e*PKPdf **PKPdf** **08 42 33.6 +0.1**
WVOR Wild Horse Val 127.22 41 *e*PKIKP **PKPdf** **08 42 35.7 +1.4**
WVOR *e* 08 42 52.1
WVOR Wild Horse Val 127.22 41 *e*PKPdf **PKPdf** **08 42 35.7 +1.4**
WVOR *ep*PKPdf **pPKPdf** **08 42 52.0 +1.2**
FFC Flin Flon 127.63 20 *e*PKIKP **PKPdf** **08 42 34.6 +0.1**
FFC Flin Flon 127.63 20 *e*PKPdf **PKPdf** **08 42 34.6 +0.1**
MSO Missoula 127.75 34 P **PKPdf** **08 42 35.5 +0.3**
baz=306
MFID Camas Ranch 128.53 39 *e*PKPdf **PKPdf** **08 42 38.0 +1.2**
MFID *ep*PKPdf **pPKPdf** **08 42 54.2 +1.0**
EGMT Eagleton 129.24 31 P **PKPdf** **08 42 38.8 +0.9**
baz=311
EGMT Eagleton 129.24 31 *e*PKPdf **PKPdf** **08 42 38.5 +0.6**
EGMT *ep*PKPdf **pPKPdf** **08 42 55.3 +0.9**
HLID Hailey 129.32 38 P **PKPdf** **08 42 40.1 +1.8**
baz=303
HLID Hailey 129.32 38 *e*PKPdf **PKPdf** **08 42 39.4 +1.0**
DLMT Dillon 129.37 35 *e*PKPdf **PKPdf** **08 42 38.6 +0.3**
BOZ Bozeman (W) 129.74 34 P **PKPdf** **08 42 40.0 +0.9**
baz=308
BOZ Bozeman (W) 129.74 34 *e*PKIKP **PKPdf** **08 42 39.9 +0.9**
BOZ Bozeman (W) 129.74 34 *e*PKPdf **PKPdf** **08 42 39.9 +0.9**
GRAC Grapevine Rang 130.55 47 P **PKPdf** **08 42 42.0 +1.4**
baz=296
MPMC Manual Prospec 130.86 48 P **PKPdf** **08 42 42.6 +1.1**
baz=295
LRMC Laurel Mtn Rad 130.95 49 P **PKPdf** **08 42 43.3 +1.7**
baz=294
EDW2 Edwards Air Fo 130.96 50 P **PKPdf** **08 42 43.1 +1.6**
baz=294
FURC Furnace Creek, 131.14 47 P **PKPdf** **08 42 43.5 +1.8**
baz=296
R11A Troy Canyon, C 131.20 44 P **PKPdf** **08 42 43.4 +1.3**
baz=298
BFSC Mount Baldy Ra 131.46 50 P **PKPdf** **08 42 44.1 +1.5**
baz=293
SNOW Snow King Moun 131.56 36 *e*PKPdf **PKPdf** **08 42 44.1 +1.4**
REDW Red Top Meadow 131.56 36 *e*PKPdf **PKPdf** **08 42 42.8 +0.1**
GSC Goldstone, Bar 131.68 49 P **PKPdf** **08 42 44.6 +1.6**
baz=295
SHOC Shoshone, Teco 131.81 48 P **PKPdf** **08 42 44.4 +1.3**
baz=296
LAO LASA Array 131.91 30 P **PKPdf** **08 42 44.1 +1.1**
baz=314
LAO LASA Array 131.91 30 *e*PKPdf **PKPdf** **08 42 43.7 +0.7**
LAO *ep*PKPdf **pPKPdf** **08 43 01.6 +2.1**
PLCA Paso Flores 132.00 183 PKP **PKPdf** **08 42 46.0 +2.6**
comp=Z,1.3nm,0.6s,baz=180,slow=1.6,SNR=4.9
PLCA Paso Flores 132.00 183 PKiKP **PKPdf** **08 42 46.0 +2.6**
MURC Murrieta 132.06 51 P **PKPdf** **08 42 45.4 +1.7**
baz=293
DUG Dugway, Tooele 132.14 41 P **PKPdf** **08 42 44.9 +1.2**
baz=302
DUG Dugway, Tooele 132.14 41 *e*PKIKP **PKPdf** **08 42 43.3 -0.4**
DUG Dugway, Tooele 132.14 41 *e*PKPdf **PKPdf** **08 42 43.3 -0.4**
HWUT Hardware Ranch 132.15 39 *e*PKPdf **PKPdf** **08 42 44.6 +0.8**
SCHQ Schefferville 132.41 355 PKP **PKPdf** **08 42 44.3 +0.7**
comp=Z,5.8nm,0.7s,baz=11,slow=2.6,SNR=6.8
SCHQ SKPbc **SKPbc** **08 46 05.1 -0.7**
comp=Z,5.5nm,0.6s,baz=23,slow=3.0,SNR=8.3
BW06 Boulder Array 132.67 36 P **PKPdf** **08 42 45.4 +0.6**
baz=308
PDAR Pinedale Array 132.68 36 PKhKP PKPpre 08 42 41.6
comp=Z,1.0nm,0.6s,baz=169,slow=0.5,SNR=4.9
PDAR PKP **PKPdf** **08 42 45.1 +0.3**
comp=Z,1.6nm,0.6s,baz=118,slow=0.9,SNR=18
PDAR SKPbc **SKPbc** **08 46 06.6 -0.9**
comp=Z,1.0nm,0.7s,baz=256,slow=2.2,SNR=6.6
GMRC Granite Mounta 132.75 49 P **PKPdf** **08 42 47.0 +2.0**
baz=296
BELC Belle Mtn. Jos 132.82 50 P **PKPdf** **08 42 47.5 +2.4**
baz=294
IKP In-Ko-Pah, Jac 133.27 52 P **PKPdf** **08 42 48.4 +2.4**
baz=293
ULM Lac du Bonnet 133.43 20 PKP **PKPdf** **08 42 46.2 +0.6**
comp=Z,4.5nm,0.8s,baz=313,slow=2.1,SNR=8.3
ULM SKPbc **SKPbc** **08 46 07.4 -2.1**
comp=Z,3.2nm,0.6s,baz=324,slow=6.1,SNR=5.8
D26A Manning 133.46 27 P **PKPdf** **08 42 47.5 +1.7**
baz=319
B31A Greenbush Farm 134.34 22 P **PKPdf** **08 42 47.6 +0.2**
baz=326
B32A Ashes, Strandq 134.77 21 P **PKPdf** **08 42 48.3 +0.1**
baz=327
RSSD Black Hills 134.81 31 P **PKPdf** **08 42 48.5 -0.2**
baz=315
RSSD Black Hills 134.81 31 *e*PKIKP **PKPdf** **08 42 48.6 -0.2**
RSSD Black Hills 134.81 31 *e*PKPdf **PKPdf** **08 42 48.6 -0.1**
C31A Landman Farms, 134.83 23 P **PKPdf** **08 42 48.3 0.0**
baz=325
O20A White River Ci 135.06 38 P **PKPdf** **08 42 50.4 +1.1**
baz=307
O20A White River Ci 135.06 38 *e*PKPdf **PKPdf** **08 42 50.2 +1.0**
O20A *e*SKPbc **SKPbc** **08 46 15.9 +0.5**
D31A Mcclaflin, Tow 135.44 23 P **PKPdf** **08 42 49.8 +0.3**
baz=325
C34A RKJ Ranch, Bem 135.99 21 P **PKPdf** **08 42 50.4 -0.1**
baz=329
PV01 Paradox Valley 136.02 41 *e*PKPdf **PKPdf** **08 42 52.6 +1.4**
MVCO Mesa Verde 136.59 42 PKPdf **PKPdf** **08 42 50.5 -1.8**
SDCO Great Sand Dun 138.20 39 P **PKPdf** **08 42 55.9 +0.6**
baz=308
ECSD EROS Data Cent 138.59 25 *e*PKPdf **PKPdf** **08 42 55.9 +0.4**
K32A Verdigre 138.84 28 P **PKPdf** **08 42 55.6 -0.4**
baz=322
I37A Lemond, Waseca 139.64 22 P **PKPdf** **08 42 57.2 -0.2**
baz=329
J36A Seneca 1, Swea 139.86 24 P **PKPdf** **08 42 58.1 +0.3**
baz=327
L35A Bielow Farm, R 140.36 26 P **PKPdf** **08 42 59.4 +0.7**
baz=325
J39A Decorah 140.85 21 P **PKPdf** **08 42 59.2 -0.4**
baz=331
O34A Beatrice 141.38 29 P PKPpre 08 42 54.2
baz=322
J41A Loganville 141.40 19 P PKPpre 08 42 54.0
baz=333
R32A Long Quarter, 141.69 33 P PKPpre 08 42 55.7
baz=318
MNTX Cornudas Mount 141.77 47 P PKPpre 08 42 57.4
baz=303
MNTX Cornudas Mount 141.77 47 *e*PKPdf PKPpre 08 42 57.6
K41A Shullsburg 141.98 20 P PKPpre 08 42 56.1
baz=333
N37A Lee Faris, Mou 142.05 26 P PKPpre 08 42 57.1
baz=326
R33A Olander Ranch, 142.16 32 P PKPpre 08 42 57.7
baz=318
Q34A Chapman 142.23 30 P PKPpre 08 42 57.3
baz=320
MSTX Muleshoe 142.27 41 *e*PKPdf **PKPdf** **08 43 03.1 +0.6**
R34A Isabella, Hill 142.55 31 P PKPpre 08 42 58.8
baz=319
O37A Wolven Farm, M 142.56 26 P PKPpre 08 42 58.9
baz=325
Q35A Mercer Eighty, 142.73 30 P PKPpre 08 42 58.5
baz=322
CPUP Villa Florida 142.92 205 PKP **PKPdf** **08 43 02.2 -1.6**
comp=Z,4.1nm,0.6s,baz=165,slow=2.6,SNR=16
P37A Lathrop 142.94 27 P PKPpre 08 42 58.9
baz=324
O39A Kirksville 143.17 25 P PKPbc 08 43 00.7 -0.1
baz=328
P38A Dawn 143.27 26 P PKPbc 08 43 00.5 -0.6
baz=326
R36A Gordon, Harris 143.41 30 P PKPab 08 43 00.4 -0.1
baz=322
Q37A Longview Farm, 143.47 28 P PKPab 08 43 00.3 -0.4
baz=324
S35A Otter Creek Ra 143.50 31 P PKPab 08 43 00.9 +0.1
baz=320
T34A McClaskey Farm 143.54 33 P PKPab 08 43 01.0 0.0
baz=318
O40A La Belle 143.55 24 P PKPbc 08 43 01.5 -0.4
baz=329
W32A Sentinel 143.73 37 P PKPbc 08 43 02.7 +0.1
baz=314
R37A Teagarden Farm 143.74 29 P PKPab 08 43 01.2 -0.5
baz=323
Q38A Cooks Store, C 143.78 27 P PKPab 08 43 01.6 -0.3
baz=325
U34A Anderson Ranch 143.78 34 P PKPab 08 43 02.1 +0.1
baz=317
S36A Lake Cedric, C 143.83 30 P PKPab 08 43 01.9 -0.2
baz=321
O41A Passleys Farm, 143.95 23 P PKPab 08 43 01.8 -0.6
baz=330
T35A Sooner Cattle 143.98 32 P PKPab 08 43 02.7 0.0
baz=319
P40A Paris 143.98 25 P PKPab 08 43 02.1 -0.5
baz=328
Q39A Willow Grove F 144.00 26 P PKPab 08 43 02.3 -0.3
baz=326
HDIL Hopedale 144.15 21 P **PKPab** **08 43 02.6 -0.6**
baz=333
HDIL Hopedale 144.15 21 *e*PKPdf **PKPab** **08 43 02.3 -0.9**
W33A Caddo, Fort Co 144.17 36 P PKPbc 08 43 04.1 +0.2
baz=315
S37A Fort Scott 144.18 29 P **PKPab** **08 43 02.7 -0.7**
baz=322
O42A Bath 144.18 22 P **PKPab** **08 43 02.5 -0.8**
baz=331
X32A Elmer 144.19 38 P PKPbc 08 43 04.0 0.0
baz=313
T36A Boggs Farm, Ca 144.20 31 P **PKPab** **08 43 03.2 -0.3**
baz=320
V34A Guthrie 144.23 34 P **PKPab** **08 43 03.6 -0.1**
baz=317
V34A Guthrie 144.23 34 *e*PKPdf **PKPab** **08 43 03.8 +0.2**
P41A Barry, Barry 144.26 23 P **PKPab** **08 43 03.1 -0.6**
baz=330
U35A Pawnee 144.27 33 P **PKPab** **08 43 03.6 -0.1**
baz=318
WMOK Wichita Mounta 144.27 37 P **PKPab** **08 43 03.7 -0.2**
baz=314
WMOK Wichita Mounta 144.27 37 *e*PKIKP **PKPab** **08 43 03.8 -0.1**
WMOK Wichita Mounta 144.27 37 *e*PKPdf **PKPab** **08 43 03.8 -0.1**
TXAR Lajitas Array 144.28 49 PKP PKPbc 08 43 04.9 +0.3
comp=Z,7.4nm,0.6s,baz=300,slow=1.2,SNR=172
TXAR SKPbc **SKPbc** **08 46 40.3 -0.5**
comp=Z,1.2nm,0.8s,baz=241,slow=1.1,SNR=3.6
R38A Fenwick Farm, 144.28 28 P **PKPab** **08 43 02.4 -1.3**
baz=324
Q40A Laux Farm, Aux 144.42 25 P **PKPab** **08 43 03.6 -0.7**
baz=328
W34A Bridge Creek, 144.51 35 P **PKPab** **08 43 04.7 0.0**
baz=316
W34A Bridge Creek, 144.51 35 *e*PKPdf PKPbc 08 43 05.0 0.0
R39A Chumby, Stover 144.57 27 P **PKPab** **08 43 03.9 -0.9**
baz=326
X33A Lawton 144.58 37 P **PKPab** **08 43 04.5 -0.5**
baz=314
P42A Winchester 144.61 23 P **PKPab** **08 43 04.0 -0.9**
baz=331
T37A Chenyville 18 144.63 30 P **PKPab** **08 43 04.2 -0.9**
baz=322
V35A Meyer Ranch, C 144.66 34 P **PKPab** **08 43 04.7 -0.5**
baz=318
S38A Stockton 144.72 29 P **PKPab** **08 43 04.2 -1.2**
baz=324
U36A Oologah 144.78 32 P **PKPab** **08 43 05.2 -0.4**
baz=320
Y33A Hilltop Ranch, 144.87 38 P **PKPab** **08 43 05.5 -0.6**
baz=314
X34A Smith Ranch, M 144.93 36 P **PKPab** **08 43 06.0 -0.3**
baz=315
R40A Maddies Statio 144.93 26 P **PKPab** **08 43 05.4 -0.8**
baz=327
S39A Bolivar 144.95 28 P **PKPab** **08 43 05.0 -1.2**
baz=325

T38A	Diamond baz=322	145.01	30	P		PKPbc	08 43 05.6 -0.9
SFIN	Lafayette baz=336	145.03	18	P		PKPbc	08 43 05.8 -0.6
SFIN	Lafayette	145.03	18	ePKPbc		PKPbc	08 43 05.8 -0.6
W35A	Tecumseh baz=317	145.08	34	P		PKPbc	08 43 06.1 -0.7
U37A	Salina baz=321	145.09	31	P		PKPbc	08 43 06.0 -0.8
TUL1	Leonard baz=319	145.11	32	P		PKPbc	08 43 06.3 -0.6
TUL1	Leonard	145.11	32	ePKPbc		PKPbc	08 43 06.5 -0.4
Q42A	Golden Eagle baz=330	145.12	23	P		PKPbc	08 43 05.9 -0.9
V36A	Jenks baz=319	145.13	33	P		PKPbc	08 43 06.5 -0.4
ABTX	Abilene, Hawle baz=311	145.15	40	P		PKPdf	08 43 07.4 -0.1
ABTX	Abilene, Hawle	145.15	40	ePKPbc		PKPdf	08 43 07.4 -0.1
Z33A	Whitaker Ranch baz=312	145.27	39	P		PKPab	08 43 07.5 -0.1
BINY	Binghamton	145.30	3	ePKPbc		PKPbc	08 43 06.6 -0.6
S40A	Lebanon baz=326	145.40	27	P		PKPbc	08 43 06.8 -0.9
Q43A	New Douglas baz=331	145.42	22	P		PKPbc	08 43 07.0 -0.8
Y34A	Reagan Ranch, baz=315	145.42	37	P		PKPbc	08 43 07.8 -0.1
U38A	Gravette baz=322	145.43	30	P		PKPdf	08 43 07.0 -0.8
W36A	Wetumka baz=318	145.45	34	P		PKPdf	08 43 07.4 -0.5
T39A	Clever baz=324	145.46	29	P		PKPdf	08 43 07.2 -0.7
V37A	Hulbert baz=320	145.48	32	P		PKPdf	08 43 07.4 -0.5
X35A	Drake baz=316	145.57	35	P		PKPdf	08 43 07.8 -0.3
133A	Hamilton Ranch baz=312	145.62	40	P		PKPab	08 43 09.2 +0.2
M54A	Oil Creek Stat baz=349	145.63	8	P		PKPdf	08 43 07.4 -0.6
Q44A	Meyer Farm, Va baz=332	145.71	22	P		PKPdf	08 43 08.0 -0.2
Z34A	Collier Ranch, baz=314	145.73	38	P		PKPbc	08 43 08.8 -0.1
S41A	Jilco Farms, baz=327	145.74	26	P		PKPdf	08 43 08.1 -0.2
T40A	Mansfield baz=325	145.76	27	P		PKPdf	08 43 07.9 -0.5
X36A	Centrahoma baz=317	145.80	35	P		PKPbc	08 43 08.9 -0.2
V38A	Canehill baz=321	145.87	31	P		PKPdf	08 43 08.4 -0.3
Y35A	Marietta baz=316	145.88	36	P		PKPdf	08 43 08.9 +0.2
W37B	Quinton baz=319	145.89	33	P		PKPbc	08 43 09.0 -0.3
U39A	Green Forest baz=323	145.93	29	P		PKPdf	08 43 08.2 -0.5
233A	Rising Star baz=311	146.02	41	P		PKPab	08 43 10.3 -0.2
N54A	Moraine State baz=349	146.12	9	P		PKPdf	08 43 09.1 +0.2
Z35A	Perchaven, San baz=315	146.16	37	P		PKPbc	08 43 10.1 -0.1
134A	White-Moore Ra baz=313	146.18	39	P		PKPab	08 43 10.9 -0.1
T41A	Mountain View baz=326	146.19	27	P		PKPdf	08 43 09.3 +0.2
U40A	Yellville baz=324	146.25	29	P		PKPdf	08 43 09.5 +0.3
R44A	Waltonville baz=332	146.26	22	P		PKPbc	08 43 09.8 -0.5
ACSO	Alum Creek Sta	146.26	13	ePKPdf		PKPdf	08 43 08.7 -0.4
ACSO				ePKPbc		PKPbc	08 43 09.6 -0.7
V39A	Pettigrew baz=322	146.28	30	P		PKPdf	08 43 09.5 +0.1
Y36A	Durant baz=317	146.33	35	P		PKPbc	08 43 10.3 -0.4
X37A	Clayton baz=319	146.33	34	P		PKPbc	08 43 10.3 -0.3
JCT	Junction City baz=308	146.39	44	P		PKPab	08 43 11.6 -0.4
JCT	Junction City	146.39	44	ePKP2		PKPdf	08 43 10.3 +0.6
JCT	Junction City	146.39	44	ePKPdf		PKPdf	08 43 10.3 +0.6
333A	Richland Sprin baz=310	146.41	42	P		PKPbc	08 43 11.3 +0.3
W38A	Poteau baz=320	146.43	32	P		PKPbc	08 43 10.6 -0.3
S43A	Fulton Ridge, baz=330	146.46	24	P		PKPdf	08 43 09.9 +0.3
234A	Clairette baz=312	146.52	40	P		PKPbc	08 43 11.7 +0.4
X38A	Whitesboro baz=320	146.57	33	P		PKPbc	08 43 11.4 0.0
N59A	State Game Lan baz=356	146.59	3	P		PKPbc	08 43 11.6 +0.4
135A	Vickery Place, baz=314	146.60	38	P		PKPbc	08 43 12.0 +0.5
Y37A	Hugo baz=318	146.65	35	P		PKPbc	08 43 11.1 -0.5
S44A	Carbondale baz=331	146.68	23	P		PKPbc	08 43 10.9 -0.6
Z36A	Blue Ridge baz=316	146.69	36	P		PKPbc	08 43 11.5 -0.3
U41A	Viola baz=326	146.69	28	P		PKPbc	08 43 11.0 -0.7
433A	Art baz=309	146.70	42	P		PKPbc	08 43 11.9 0.0
SSPA	Standing Stone	146.71	6	ePKPdf		PKPdf	08 43 09.6 -0.3
SSPA				ePKPbc		PKPbc	08 43 10.9 -0.7
V40A	Witts Springs baz=324	146.71	29	P		PKPdf	08 43 10.7 +0.6
W39A	Magazine baz=322	146.71	31	P		PKPbc	08 43 11.1 -0.6
334A	Lometa baz=311	146.90	41	P		PKPbc	08 43 12.4 0.0
S45A	Carrier Mills baz=332	146.95	22	P		PKPbc	08 43 11.8 -0.5
WHTX	Lake Whitney, baz=313	146.96	39	P		PKPbc	08 43 12.9 +0.4
O56A	Blue Knob Stat baz=351	146.99	7	P		PKPbc	08 43 11.9 -0.6
U42A	Revenden baz=327	147.00	27	P		PKPbc	08 43 12.0 -0.5
V41A	Mountainview baz=325	147.04	28	P		PKPbc	08 43 11.8 -0.9
X39A	Fountain Ranch baz=320	147.07	32	P		PKPbc	08 43 12.8 0.0
W40A	Ferguson Farm, baz=323	147.07	30	P		PKPbc	08 43 12.3 -0.5
T44A	Benton baz=330	147.07	24	P		PKPbc	08 43 12.1 -0.6
533A	Kerrville baz=309	147.16	43	P		PKPbc	08 43 13.5 +0.3
Y38A	Idabel baz=319	147.18	34	P		PKPbc	08 43 12.5 -0.6
136A	Ennis baz=315	147.19	37	P		PKPbc	08 43 13.4 +0.2
434A	Burnet baz=310	147.21	42	P		PKPbc	08 43 13.1 -0.2
Z37A	Pogue Cattle C baz=317	147.21	36	P		PKPbc	08 43 13.4 +0.1
WCI	Wyandotte Cave	147.25	19	ePKP2		PKPdf	08 43 10.9 0.0
WCI	Wyandotte Cave	147.25	19	ePKPdf		PKPdf	08 43 10.8 0.0
WCI				ePKPbc		PKPbc	08 43 12.9 -0.3
MIAR	Mount Ida baz=321	147.32	32	P		PKPbc	08 43 13.5 0.0
MIAR	Mount Ida	147.32	32	ePKP2		PKPbc	08 43 13.6 +0.1
MIAR	Mount Ida	147.32	32	ePKPbc		PKPbc	08 43 13.6 +0.1
V42A	Cord baz=326	147.38	27	P		PKPbc	08 43 12.7 -0.9
633A	Saathoff Ranch baz=308	147.44	44	P		PKPbc	08 43 14.7 +0.7
335A	Moody baz=312	147.45	40	P		PKPbc	08 43 14.2 +0.3
Y39A	Lockesburg baz=320	147.52	33	P		PKPbc	08 43 13.9 -0.2
832A	Faith Ranch, C baz=305	147.56	47	P		PKPbc	08 43 15.2 +0.8
137A	Heron Place, G baz=316	147.57	36	P		PKPbc	08 43 14.9 +0.7
534A	Blanco baz=309	147.57	43	P		PKPbc	08 43 14.4 0.0
435B	Jarrell baz=311	147.68	41	P		PKPbc	08 43 14.7 +0.1
336A	Riesel	147.75	39	P		PKPbc	08 43 15.1 +0.4
733A	Divot King Ran baz=313	147.80	46	P		PKPbc	08 43 15.7 +0.7
Y40A	Okolona baz=307	147.89	32	P		PKPbc	08 43 14.9 -0.2
833A	Chaparral WMA, baz=321	147.96	46	P		PKPbc	08 43 16.5 +1.1
237A	Washetta, Mont baz=306	147.96	37	P		PKPbc	08 43 16.2 +0.9
535A	Dale baz=315	148.18	42	P		PKPbc	08 43 16.6 +0.6
436A	Wall Ranch, Ga baz=310	148.19	40	P		PKPbc	08 43 16.8 +0.8
734A	La Parita Cree baz=312	148.24	45	P		PKPbc	08 43 17.1 +1.0
139A	Bunkhouse Ranc baz=308	148.30	35	P		PKPbc	08 43 16.7 +0.5
Y41A	Eaglette Beard baz=318	148.34	31	P		PKPbc	08 43 16.4 +0.1
238A	Jacksonville baz=322	148.37	36	P		PKPbc	08 43 17.4 +1.0
337A	Centerville baz=316	148.39	38	P		PKPbc	08 43 17.8 +1.3
Z40A	Long Farm, Mag baz=314	148.41	33	P		PKPbc	08 43 16.9 +0.4
635A	Leesville baz=320	148.45	43	P		PKPbc	08 43 17.8 +1.1
933A	Laredo baz=309	148.45	47	P		PKPbc	08 43 18.3 +1.6
437A	Phantom Ranch, baz=305	148.57	39	P		PKPbc	08 43 18.1 +1.2
834A	Tilden baz=314	148.68	46	P		PKPbc	08 43 18.6 +1.4
X43A	Marvell baz=307	148.68	28	P		PKPbc	08 43 17.0 0.0
338A	Crockett baz=326	148.71	38	P		PKPbc	08 43 18.2 +0.9
Z41A	Richland Creek baz=315	148.73	32	P		PKPbc	08 43 17.5 +0.2
239A	Gary baz=321	148.74	36	P		PKPbc	08 43 18.1 +0.8
735A	Kenedy baz=317	148.75	44	P		PKPbc	08 43 18.8 +1.3
140A	Cam and Jess, baz=309	148.78	34	P		PKPbc	08 43 18.1 +0.6
Y42A	Garnett, Star baz=324	148.79	30	P		PKPbc	08 43 18.0 +0.6
NATX	Nacogdoches baz=317	148.81	36	P		PKPbc	08 43 18.0 +0.4
NATX	Nacogdoches	148.81	36	ePKPbc		PKPbc	08 43 17.9 +0.4
636A	Smothers Creek baz=311	148.87	42	P		PKPbc	08 43 19.5 +1.7
W45A	Hickory Valley baz=329	148.90	25	P		PKPbc	08 43 17.2 -0.4
537A	Green Hill Far baz=312	148.96	41	P		PKPbc	08 43 19.4 +1.5
934A	Benavides baz=306	149.00	47	P		PKPbc	08 43 19.9 +1.8
X44A	Crenshaw baz=327	149.03	27	P		PKPbc	08 43 17.9 0.0
438A	Sam Houston St baz=314	149.04	39	P		PKPbc	08 43 19.4 +1.3
835A	Beeville baz=308	149.09	45	P		PKPbc	08 43 20.1 +1.8
Y43A	Makayla and Ka baz=325	149.15	29	P		PKPbc	08 43 18.7 +0.5
141A	Papa Simpson, baz=320	149.18	33	P		PKPbc	08 43 18.9 +0.5
339A	Huntington baz=316	149.18	37	P		PKPbc	08 43 19.1 +0.6
034A	Hebbronville baz=305	149.19	48	P		PKPbc	08 43 20.6 +2.0
736A	Circle Diamond baz=310	149.20	43	P		PKPbc	08 43 20.6 +2.0
637A	Eagle Lake baz=312	149.38	41	P		PKPbc	08 43 20.6 +1.6
538A	Harpers Horsep baz=314	149.39	39	P		PKPbc	08 43 21.0 +1.9
X45A	UM Field Stati baz=328	149.43	26	P		PKPbc	08 43 18.6 -0.4
439A	Center Grove, baz=316	149.44	38	P		PKPbc	08 43 20.3 +1.2
Y44A	Strider, Charl baz=326	149.45	28	P		PKPbc	08 43 19.2 +0.2
340A	Bronson baz=318	149.51	36	P		PKPbc	08 43 20.0 +0.7
241A	Mo Tay, Goldon baz=320	149.61	34	P		PKPbc	08 43 20.5 +1.0
TZTN	Tazewell	149.62	16	ePKPdf		PKPdf	08 43 14.7 -0.1
TZTN				ePKPbc		PKPbc	08 43 19.2 -0.3
035A	Encino baz=306	149.69	47	P		PKPbc	08 43 21.8 +1.9
BLA	Blacksburg	149.70	11	ePKP2		PKPbc	08 43 19.3 -0.4
BLA	Blacksburg	149.70	11	ePKPbc		PKPbc	08 43 19.3 -0.4
LVC	Limon Verde	149.80	189	ePKPbc		PKPbc	08 43 23.1 +2.3
LVC				ePKPab		PKPab	08 43 29.1 +3.0
Y45A	Yeager Farm, C baz=327	149.83	27	P		PKPbc	08 43 20.2 +0.2
143A	Socs Landing, baz=323	149.89	31	P		PKPbc	08 43 20.6 +0.5
Z44A	Pea Ridge, Bel baz=325	149.91	29	P		PKPbc	08 43 20.5 +0.3
440A	Kirbyville baz=317	149.96	37	P		PKPbc	08 43 21.7 +1.3
035Z	Hargill baz=305	149.99	48	P		PKPbc	08 43 22.3 +1.8
341A	Kurthwood baz=319	149.99	35	P		PKPbc	08 43 21.4 +0.9
Y46A	Houston baz=329	150.12	26	P		PKPbc	08 43 20.4 -0.3
Z45A	Winona baz=327	150.18	28	P		PKPbc	08 43 21.1 +0.2
342A	Flagon Creek P baz=320	150.43	34	P		PKPbc	08 43 22.8 +1.3
144A	Alexander Plac baz=325	150.44	30	P		PKPbc	08 43 21.7 +0.2
Y47A	UCPARC, Winfie baz=330	150.53	25	P		PKPbc	08 43 21.0 -0.7
Z46A	Louisville baz=328	150.67	27	P		PKPbc	08 43 22.4 +0.4
145A	Houston Renfro baz=326	150.70	29	P		PKPbc	08 43 22.5 +0.4
VBMS	Vicksburg baz=324	150.72	30	P		PKPbc	08 43 22.5 +0.3
244A	Avery, Jackson baz=324	150.78	31	P		PKPbc	08 43 22.5 +0.2
Z47A	Carrollton baz=329	151.05	26	P		PKPbc	08 43 22.6 -0.3
Z48A	Northport baz=330	151.11	25	P		PKPbc	08 43 22.4 -0.6
245A	Little AP, Sta baz=325	151.18	30	P		PKPbc	08 43 23.6 +0.3
344A	Westbrook Farm baz=323	151.22	32	P		PKPbc	08 43 24.0 +0.7
147A	Livingston baz=329	151.41	27	P		PKPbc	08 43 23.5 -0.2
KMSC	Kings Mountain baz=344	151.51	13	P		PKPbc	08 43 23.7 -0.3
KMSC	Kings Mountain	151.51	13	ePKPbc		PKPbc	08 43 23.6 -0.3
LRAL	Lakeview Retre	151.64	24	ePKPdf		PKPdf	08 43 18.1 0.0
LRAL				ePKPbc		PKPbc	08 43 24.1 -0.2
LRAL				ePKPab		PKPab	08 43 33.0 +0.1
345A	Thompson Farm, baz=324	151.70	31	P		PKPbc	08 43 25.0 +0.5
247A	Quitman baz=327	151.78	28	P		PKPbc	08 43 25.3 +0.7
346A	Big Creek Wild baz=325	151.92	30	P		PKPbc	08 43 25.3 +0.3
CNNC	Cliffs of the	152.03	8	ePKPdf		PKPdf	08 43 19.5 +0.9
CNNC				ePKPbc		PKPbc	08 43 25.0 -0.1
CNNC				ePKPab		PKPab	08 43 33.7 -0.8
248A	Dixon Mills baz=329	152.13	26	P		PKPbc	08 43 25.9 +0.5
347A	Saraland baz=327	152.35	28	P		PKPbc	08 43 26.6 +0.6
GOGA	Godfrey	152.57	18	ePKIKP		PKPdf	08 43 19.8 +0.4
GOGA	Godfrey	152.57	18	ePKPdf		PKPdf	08 43 19.8 +0.4
GOGA				ePKPbc		PKiKP	08 43 26.6 0.0
348A	Jackson baz=328	152.64	27	P		PKPbc	08 43 27.2 +0.6
BRAL	Brewton	153.23	26	ePKPdf		PKPdf	08 43 20.1 -0.3
BRAL				ePKPbc		PKiKP	08 43 28.8 +0.8
LPAZ	La Paz comp=Z,1.4nm,0.9s,baz=117,slow=2.3,SNR=5.8	155.83	193	PKP		PKPdf	08 43 27.7 +2.5
LPAZ	comp=Z,3.2nm,0.8s,baz=188,slow=3.4,SNR=9.5			PKPab		PKPab	08 43 54.6 +2.9
SAML	Samuel	160.72	213	ePKPdf		PKPdf	08 43 30.6 +0.2

*ISCJB **24** 08:24:39.5±0.3,28°.55S±0°.03×67°.49W±0°.05,h131km±4km, mb4.0/11, Error ellipse: s-maj=7.1km s-min=4.6km az=21.2*

*NEIC **24** 08:24:39.6±0.8,28°.55S×67°.44W,h116km±7km, mb4.4/4, Error ellipse: s-maj=10.0km s-min=8.9km az=118.0*

*SJA **24** 08:24:39.5±0.8,28°.58S×67°.58W,h143km±5km, ML4.1, MW3.9*

*IDC **24** 08:24:41.4±0.6,28°.45S×67°.45W,h130km±4km, mb3.9/8, mb1 3.9/12, mb1mx3.8/29, mbtmp4.2/12, MS3.3/2, Ms1 3.3/2, ms1mx2.7/17, Error ellipse: s-maj=20.7km s-min=13.0km az=69.0*

ISC 24 08:24:40.8±0.5, 28°.52S±0°.04×67°.50W±0°.04, h128km±4km, h127km; pP-P, n49, σ1§87/71, mb4.0/11, 10D, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VCA	Vinchina	0.65	251	⇓eP	Pn	08 25 01.1	+0.4
VCA				eS	Sn	08 25 15.1	-0.8
AGUA	GUANDACOL	1.29	222	eP	Pn	08 25 06.4	-0.1
AGUA				eS	Sn	08 25 25.9	-0.2
CYA	Choya	1.50	87	eP	Pn	08 25 10.2	+1.5
AVFE	Valle Fertil	2.13	179	eP	Pn	08 25 16.0	-0.3
AVFE				eS	Sn	08 25 43.3	-0.2
AVFE	comp=Z,475nm,0.4s			IAML		08 25 45.1	
AROD	Rodeo	2.38	226	eS	Sn	08 25 49.3	0.0
ACCO	Cerro Coronel	2.47	213	eP	Pn	08 25 20.4	-0.4
ACCO				⇓eS	Sn	08 25 51.3	-0.2
ACCO	comp=Z,1μm,0.4s			IAML		08 25 51.9	
AMOG	MOGNA	2.56	199	eP	Pn	08 25 21.2	-0.5
AMOG				eS	Sn	08 25 51.6	-1.5
AHML	Horco Molle	2.59	49	eP	Pn	08 25 22.9	+0.9
AHML				eS	Sn	08 25 50.6	-3.2
AHML	comp=Z,309nm,0.7s			IAML		08 26 18.6	
ACHE	Chepes	2.73	165	eP	Pn	08 25 24.2	+0.3
ACHE				eS	Sn	08 25 54.1	-3.0
FSA	Cafayete	2.76	30	⇓eP	Pn	08 25 26.3	+1.9
FSA				eS	Sn	08 25 55.3	-2.7
LCO	Las Campanas	2.85	259	⇓eP	Pn	08 25 25.1	-0.4
LCO				eS	Sn	08 25 57.8	-2.3
LCO	Las Campanas	2.85	259	ePn	Pn	08 25 24.6	-1.0
LCO				eSn	Sn	08 25 57.7	-2.4
RTLL	Cerro Villicun	2.92	197	⇓eP	Pn	08 25 25.6	-0.7
RTLL				eS	Sn	08 25 59.2	-2.2
RTCV	Cerro Valdivia	3.45	195	⇓eP	Pn	08 25 32.5	-0.7
RTLS	Leoncito	3.62	205	⇓eP	Pn	08 25 34.7	-0.9
ACAN	Cantantal	3.75	176	eP	Pn	08 25 37.0	-0.2
ACAN				eS	Sn	08 26 07.1	-14
TCA	Tanti	3.77	139	⇓eP	Pn	08 25 37.6	+0.1
AUSP	Uspallata	4.03	203	eP	Pn	08 25 40.5	-0.6
MRA	San Martin	4.18	159	eP	Pn	08 25 42.5	-0.4
ASAL	Salagasta	4.21	195	eP	Pn	08 25 42.7	-0.6
ARCO	CERRO ARCO	4.48	196	eP	Pn	08 25 46.0	-1.0
ARCO				eS	Sn	08 26 29.9	-8.5
ARCO	comp=Z,292nm,0.4s			IAML		08 26 40.3	
SUCO	SUCO	5.31	156	⇓eP	Pn	08 25 57.2	-0.7
ROC1	El Roble	5.37	213	eP	Pn	08 25 55.4	-3.5
HJA	Humahuaca	5.62	20	⇓eP	Pn	08 26 04.6	+2.0
LVC	Limon Verde comp=Z,172nm,0.3s,baz=178,slow=9.1,SNR=64	6.02	348	P	Pn	08 26 08.1	+0.2
LVC	comp=Z,234nm,0.3s,baz=203,slow=14,SNR=5.1			S	Sn	08 27 10.5	-5.4
LVC	Limon Verde comp=Z,11nm,0.3s	6.02	348	ePn	Pn	08 26 07.7	-0.3
LVC				S	Sn	08 27 10.5	-5.4
LVC				eSn	Sn	08 27 12.2	-3.8
CPUP	Villa Florida comp=Z,0.8nm,0.3s,baz=258,slow=12,SNR=11	9.30	79	P	Pn	08 26 49.9	-1.9
LPAZ	La Paz comp=Z,0.1nm,0.3s,baz=172,slow=6.1,SNR=7.9	12.19	357	P	Pn	08 27 30.7	-0.1
LPAZ	comp=Z,42nm,20.0s,baz=91,slow=40			LR	LR	08 32 52.1	
SIV	San Ignacio comp=Z,0.3nm,0.3s,baz=206,slow=8.5,SNR=4.9	13.81	27	P	Pn	08 27 50.4	-0.9
SAML	Samuel comp=Z,11nm,0.9s	19.89	13	eP	P	08 29 01.5	-0.8
PTGA	Pitinga comp=Z,5.5nm,0.6s,baz=196,slow=9.2,SNR=16	28.56	16	P	P	08 30 24.9	+0.2
SNAA	Sanae comp=Z,3.1nm,0.8s,baz=297,slow=6.8,SNR=7.7	55.27	160	P	P	08 34 00.3	-0.1
QSPA	South Pole Qui comp=Z,38nm,1.2s	61.70	180	eP	P	08 34 45.6	+0.5
TXAR	Lajitas Airpo comp=Z,0.2nm,0.7s,baz=168,slow=6.3,SNR=3.3	67.12	326	P	P	08 35 21.4	+0.6
TXAR	comp=Z,0.2nm,0.8s,baz=153,slow=8.1,SNR=2.3			pP	pP	08 35 54.1	+2.1
DBIC	Dimbokro comp=Z,1.7nm,0.6s,baz=226,slow=6.4,SNR=4.0	69.71	70	P	P	08 35 37.7	+0.6
TORD	Torodi Ar. Bea comp=Z,2.5nm,0.6s,baz=261,slow=5.2,SNR=32	78.64	68	P	P	08 36 29.7	+0.8
TORD	comp=Z,1.1nm,0.8s,baz=257,slow=5.1,SNR=2.8			pP	pP	08 36 59.8	-1.2
BOSA	Boshof comp=Z,3.9nm,0.8s,baz=258,slow=3.9,SNR=2.4	79.10	117	P	P	08 36 31.2	-0.4
HWUT	Hardware Ranch comp=Z,1.6nm,0.6s	80.80	328	eP	P	08 36 40.9	+0.6
HWUT				ePcP	PcP	08 36 45.9	-0.6
HWUT				epP	pP	08 37 13.7	+1.2
PDAR	Pinedale Array comp=Z,0.7nm,0.5s,baz=127,slow=7.2,SNR=12	80.81	330	P	P	08 36 40.7	+0.3
PDAR	comp=Z,0.3nm,0.6s,baz=120,slow=8.4,SNR=2.2			pP	pP	08 37 14.2	+1.6
ULM	Lac du Bonnet comp=Z,0.9nm,0.5s,baz=210,slow=8.1,SNR=3.5	82.37	342	P	P	08 36 47.5	-0.5
KEST	Kesra comp=Z,50nm,21.0s,baz=284,slow=35	96.51	53	LR	LR	09 21 10.5	
YKA	Yellowknife Ar comp=Z,0.3nm,0.6s,baz=154,slow=5.0,SNR=3.3	98.20	340	P	P	08 38 02.5	-0.2
DOT	Dot Lake	109.50	333	ePKPdf	PKiKP	08 42 58.1	+2.7
ASAR	Alice Springs comp=Z,1.3nm,0.5s,baz=137,slow=1.7,SNR=19	124.16	204	PKP	PKPdf	08 43 24.1	-0.8
ASAR	comp=Z,0.3nm,0.5s,baz=99,slow=1.5,SNR=2.5			pPKP	pPKPdf	08 43 59.0	-0.1
WRA	Warramunga Arr comp=Z,3.3nm,0.7s,baz=165,slow=1.6,SNR=40	127.40	206	PKP	PKPdf	08 43 30.6	-0.5
WRA	comp=Z,0.5nm,0.6s,baz=159,slow=1.8,SNR=2.7			pPKP	pPKPdf	08 44 05.5	+0.1
ZALV	Zalesovo Beam comp=Z,3.0nm,0.4s,baz=320,slow=4.5,SNR=14	147.54	31	PKPbc	PKPbc	08 44 08.7	-0.8
ZALV	comp=Z,3.7nm,0.7s,baz=296,slow=4.2,SNR=5.6			pPKPbc	pPKPbc	08 44 44.2	+0.7
MKAR	Makanchi Array comp=Z,2.1nm,0.7s,baz=300,slow=2.2,SNR=16	150.19	44	PKPbc	PKPbc	08 44 16.9	+0.5
MKAR	comp=Z,1.2nm,0.6s,baz=329,slow=2.1,SNR=4.4			pPKPbc	pPKPbc	08 44 51.4	+0.8
KSRS	Korea Array comp=Z,0.4nm,0.5s,baz=52,slow=2.3,SNR=3.4	164.31	309	PKP	PKPdf	08 44 30.4	+1.3
KSAR	Wonju Array Be	164.34	309	PKP	PKPdf	08 44 30.4	+1.2

*ISCJB **24** 08:37:18.0±2.0,29°.39S±0°.10×176°.6W±0°.2,h31km, mb4.0/2,MS3.1/2, Error ellipse: s-maj=20.2km s-min=12.1km az=154.7*

*IDC **24** 08:37:24.4±3.7,29°.35S×176°.93W,h52km±23km,mb3.9/2, mb1 4.2/3,mb1mx3.6/19,mbtmp4.3/3,ML4.1/1,MS3.3/3, Ms1 3.3/3,ms1mx2.9/25, Error ellipse: s-maj=46.9km s-min=37.5km az=26.0*

ISC 24 08:37:21.1±1.2, 29°.3S±0°.1×176°.8W±0°.1, h31km, n15, σ1§17/12, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island comp=Z,506nm,0.3s,baz=78,slow=16,SNR=6.2	1.02	273	P	Pb	08 37 40.4	+0.2
RAO	comp=Z,770nm,0.3s,baz=0.2,slow=23,SNR=6.5			S	Sb	08 37 53.1	0.0
URZ	Urewera 0.6nm,0.3s,baz=332,slow=19,SNR=3.8	10.27	208	P	Pn	08 39 44.8	-1.5
URZ	1.1nm,0.3s,baz=327,slow=20,SNR=2.1			S	Sn	08 41 42.0	+1.6
DZM	Mont Dzumac 310nm,25.6s	16.76	292	eLR	LR	08 45 14.6	
RAR	Rarotonga comp=Z,139nm,21.4s,baz=266,slow=29	17.34	66	LR	LR	08 45 50.5	
RPZ	Rata Peaks 0.7nm,0.3s,baz=83,slow=18,SNR=3.4	17.36	211	P	P	08 41 22.3	+0.2
TBI	Tubuai 101nm,28.5s	25.14	83	eLR	LR	08 48 49.3	

PPT2	**Papeete2**	**27.46**	**71**	*e*LR	LR	08 49 53.5		
	98nm,25.5s							
PPT	**Papeete**	**27.47**	**71**	LR	LR	08 50 41.4		
	comp=Z,43nm,20.2s,baz=231,slow=29							
ASAR	**Alice Springs**	**44.26**	**265**	P	**P**	**08 45 27.4**	**-0.6**	
	1.7nm,0.6s,baz=106,slow=7.0,SNR=27							
WRA	**Warramunga Arr**	**45.15**	**270**	P	**P**	**08 45 34.3**	**-0.8**	
	2.5nm,0.7s,baz=109,slow=8.0,SNR=19							
GUMO	**Guam**	**56.49**	**314**	LR	LR	09 09 12.7		
	comp=Z,21nm,18.8s,baz=145,slow=34							
FINES	**FINESS Array B**	**144.48**	**341**	PKP	**PKPab**	**08 56 51.6**	**-0.3**	
	2.6nm,0.9s,baz=354,slow=2.8,SNR=4.4							
AKASG	**Malin Array Be**	**151.07**	**325**	PKPbc	**PKPbc**	**08 57 10.1**	**-0.6**	
	0.9nm,0.5s,baz=44,slow=2.6,SNR=3.9							
BRTR	**Keskin Array B**	**153.00**	**301**	PKPbc	**PKPbc**	**08 57 18.0**	**+2.4**	
	0.6nm,0.8s,baz=100,slow=4.8,SNR=3.2							
BRTR				PKPab	**PKPab**	**08 57 27.6**	**+0.5**	
	0.6nm,0.8s,baz=116,slow=4.8,SNR=4.0							
TORD	**Torodi Ar. Bea**	**163.85**	**175**	PKPab	**PKPab**	**08 58 14.0**	**0.0**	
	0.2nm,0.6s,baz=193,slow=3.3,SNR=2.5							

IDC 24 09:11:39.8±4.3, 3°17S×134°44E, h0km, mb3.1/2, mb1 3.5/3, mb1mx3.2/27, mbtmp3.1/3, ML3.1/1, Error ellipse: s-maj=405.9km s-min=34.7km az=98.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**16.67**	**180**	Pn	Pn	09 15 35.5	+0.5
	0.1nm,0.3s,baz=357,slow=12,SNR=4.8						
ASAR	**Alice Springs**	**20.38**	**181**	P	P	09 16 18.0	-0.3
	0.2nm,0.5s,baz=16,slow=9.3,SNR=3.5						
ILAR	**Eielson Array**	**88.03**	**25**	P	P	09 24 31.8	0.0
	0.3nm,0.7s,baz=249,slow=5.7,SNR=5.7						

MEX 24 09:23:08.4±0.6, 13°48N×90°20W, h16km±999km, MD3.9, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**3.36**	**326**	*e*P	Pn	09 23 58.5	-1.9
CCIG				*e*S	Sn	09 24 36.0	-4.0

*IDC **24** 09:32:37.5±7.5, 24°.56N×123°.31E, h0km, mb3.9/6, mb1 3.9/6, mb1mx3.5/51, mbtmp3.9/6, Error ellipse: s-maj=150.0km s-min=134.1km az=18.0*
*JMA **24** 09:33:14.8±0.3, 25°.30N×122°.60E, h239km±3km, M4.0*
ISC 24 09:32:58.4±1.8, 26°.94N±0°.04×122°.51E±0°.05, h8km±12km, n28, σ1s77/44, mb3.8/6, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**2.51**	**170**	P	**Pg**	**09 33 48.5**	**+2.0**
YOJ				S	**Sb**	**09 34 15.3**	**+0.7**
JYNG	**Yonagunijimaku**	**2.51**	**171**	P	**Pg**	**09 33 48.3**	**+1.8**
JYNG				*e*S	**Sb**	**09 34 14.5**	**-0.1**
IRIF	**Iriomote-Funau**	**2.81**	**157**	P	**Pg**	**09 33 51.2**	**-1.2**
IRIF				S	**Sb**	**09 34 20.3**	**-3.2**
JISG	**Ishigakijimahi**	**2.85**	**145**	P	**Pg**	**09 33 53.3**	**+0.5**
JISG				S	**Sb**	**09 34 23.7**	**-0.8**
JIJ	**Ishigaki jima**	**2.96**	**150**	P	**Pg**	**09 33 53.6**	**-1.5**
JIJ				S	**Sn**	**09 34 23.0**	**+1.7**
JKRS	**Kuro-shima**	**3.01**	**153**	P	**Pb**	**09 33 54.0**	**+1.8**
JKRS				S	**Sn**	**09 34 23.9**	**+1.3**
JTJ	**Tarama**	**3.02**	**139**	P	**Pg**	**09 33 56.9**	**+0.6**
JTJ				S	**Sb**	**09 34 29.2**	**-0.3**
HATJ	**Hateruma jima**	**3.10**	**158**	P	**Pb**	**09 33 54.2**	**+0.5**
HATJ				S	**Sn**	**09 34 24.1**	**-0.7**
JIKM	**Ikemajima**	**3.18**	**129**	P	**Pg**	**09 34 00.9**	**+1.6**
JIKM				S	**Sb**	**09 34 34.9**	**+1.0**
JIRB	**Irabujima**	**3.19**	**131**	P	**Pg**	**09 34 00.0**	**+0.5**
JIRB				S	**Sb**	**09 34 34.0**	**-0.2**
JMJ	**Miyako jima 2**	**3.28**	**130**	P	**Pg**	**09 34 01.5**	**+0.3**
JMJ				S	**Sb**	**09 34 36.8**	**-0.1**
JOGS	**Gusukube**	**3.39**	**129**	P	**Pg**	**09 34 02.8**	**-0.6**
JOGS				S	**Sb**	**09 34 38.9**	**-1.2**
JKE	**Kume jima 2**	**3.87**	**98**	P	**Pg**	**09 34 14.8**	**+2.2**
JKE				*e*S	**Sg**	**09 35 01.5**	**-1.3**
JAGN	**Aguni-jima**	**4.24**	**94**	P	**Pg**	**09 34 19.7**	**0.0**
JAGN				S	**Sg**	**09 35 10.7**	**-4.0**
JJT2	**Tamagusuku 2**	**4.75**	**98**	P	**Pb**	**09 34 24.8**	**+2.8**
JJT2				S	**Sb**	**09 35 18.7**	**-0.7**
JIH	**Iheya**	**4.87**	**88**	P	**Pb**	**09 34 27.7**	**+3.8**
JIH				S	**Sb**	**09 35 25.7**	**+3.1**
JNTH	**Nagotoyohara**	**4.95**	**94**	P	**Pb**	**09 34 27.4**	**+2.2**
JNTH				S	**Sb**	**09 35 23.7**	**-1.2**
JOW	**Kunigami**	**5.15**	**90**	P	**Pb**	**09 34 30.1**	**+1.4**
JOW				S	**Sb**	**09 35 28.5**	**-2.2**
JOKE	**Okinoerabujima**	**5.41**	**84**	P	**Pb**	**09 34 34.7**	**+1.5**
JTK	**Tokunoshima**	**5.79**	**80**	P	**Pb**	**09 34 39.8**	**+0.2**
JAMN	**Amaminishikomi**	**6.05**	**76**	P	**Pb**	**09 34 43.7**	**-0.4**
JMZ	**Minamidaito 2**	**7.89**	**96**	P	Pn	09 35 03.0	+10
SONM	**Songino Array**	**24.38**	**333**	P	**P**	**09 38 20.0**	**+2.8**
	0.7nm,0.5s,baz=156,slow=27.4,SNR=3.5						
MKAR	**Makanchi Array**	**37.27**	**313**	P	**P**	**09 40 09.4**	**-1.3**
	0.7nm,0.4s,baz=102,slow=10,SNR=8.5						
ZALV	**Zalesovo Beam**	**38.65**	**325**	P	**P**	**09 40 21.4**	**-0.7**
	0.8nm,0.4s,baz=123,slow=8.2,SNR=2.8						
KURBB	**Kurchatov Arra**	**40.84**	**317**	P	**P**	**09 40 39.0**	**-1.5**
	0.6nm,0.6s,baz=91,slow=6.5,SNR=6.7						
BVAR	**Borovoye Array**	**46.36**	**319**	P	**P**	**09 41 22.6**	**-2.3**
	0.5nm,0.3s,baz=99,slow=9.2,SNR=3.5						
FINES	**FINESS Array B**	**69.69**	**329**	P	P	09 44 03.5	-4.8
	2.5nm,0.9s,baz=60,slow=7.1,SNR=2.6						

*ISCJB **24** 09:33:36.9±0.2, 40°.33S±0°.02×174°.17E±0°.03, h123km±2km, mb4.4/14, Error ellipse: s-maj=4.0km s-min=2.5km az=25.1*
*NEIC **24** 09:33:38.1, 40°.31S×174°.16E, h124km, mb4.7/8, After WEL.*
NEIC Felt at Kaponga and Wellington. Felt widely on the North Island and in the northern part of the South Island.
*WEL **24** 09:33:38.1±0.1, 40°.30S×174°.16E, h124km±1km, ML5.2/55, Mw4.5, Error ellipse: s-maj=0.8km s-min=0.3km az=90.0*
WEL Felt between Hawke''s Bay and Nelson, maximum reported intensity MM 6.
*IDC **24** 09:33:38.2±0.8, 40°.28S×174°.34E, h120km±6km, mb4.0/6, mb1 4.1/8, mb1mx3.9/30, mbtmp4.4/8, MS2.8/2, Ms1 2.8/2, ms1mx2.5/26, Error ellipse: s-maj=23.2km s-min=10.1km az=149.0*
ISC 24 09:33:38.7±0.6, 40°.35S±0°.03×174°.15E±0°.03, h122km±4km, n191, σ1s80/223, mb4.5/14, 43C-36D, Cook Strait

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DUWZ	**D'Urville Isla**	**0.48**	**201**	PN	**Pn**	**09 33 56.1**	**-0.7**
KIW	**Kapiti Island**	**0.77**	**131**	⇑PN	**Pn**	**09 33 58.3**	**-0.5**
KIW				AML	AML	09 34 13.3	
KIW				AML	AML	09 34 13.9	
TCW	**Tory Channel**	**0.86**	**174**	PN	**Pn**	**09 33 59.6**	**+0.1**
TCW				AML	AML	09 34 14.9	
TCW				AML	AML	09 34 15.2	
WAZ	**Wanganui**	**0.88**	**47**	⇑PN	**Pn**	**09 33 58.8**	**-0.9**
WAZ				SN	**Sn**	**09 34 14.4**	**-1.2**
OHWZ	**Ohakea**	**0.90**	**81**	⇑PN	**Pn**	**09 33 59.6**	**-0.3**
OHWZ				SN	**Sn**	**09 34 15.5**	**-0.5**
OGWZ	**Otaki Gorge**	**0.90**	**121**	⇑PN	**Pn**	**09 33 59.6**	**-0.3**
OGWZ				AML	AML	09 34 16.1	
OGWZ				AML	AML	09 34 16.1	
LREZ	**Lake Rotokare**	**0.91**	**12**	PN	**Pn**	**09 33 59.3**	**-0.8**
LREZ				SN	**Sn**	**09 34 14.8**	**-1.4**
NMEZ	**Namu Road**	**0.96**	**347**	⇓PN	**Pn**	**09 33 59.4**	**-1.1**
NMEZ				SN	**Sn**	**09 34 15.1**	**-1.9**
PREZ	**Palmer Road**	**1.01**	**0**	⇓PN	**Pn**	**09 34 00.1**	**-1.0**
PREZ				SN	**Sn**	**09 34 16.0**	**-1.9**
CAW	**Cannon Point**	**1.02**	**138**	⇓PN	**Pn**	**09 34 01.0**	**-0.1**
CAW				SN	**Sn**	**09 34 17.6**	**-0.5**
CAW				AML	AML	09 34 21.1	
WEL	**Wellington**	**1.04**	**153**	⇓PN	**Pn**	**09 34 01.2**	**0.0**
WEL				AML	AML	09 34 19.4	
WEL				AML	AML	09 34 19.4	
WEL				AML	AML	09 34 20.5	
WEL				AML	AML	09 34 20.5	
SNZO	**South Karori**	**1.04**	**156**	*e*Pn	**Pn**	**09 34 01.3**	**0.0**
SNZO				*e*Sn	**Sn**	**09 34 18.0**	**-0.4**
KHEZ	**Kahui Hut**	**1.06**	**354**	⇓PN	**Pn**	**09 34 00.6**	**-1.0**
KHEZ				SN	**Sn**	**09 34 16.5**	**-2.4**
TUWZ	**Tuamarina**	**1.09**	**188**	⇑PN	**Pn**	**09 34 01.4**	**-0.3**
TUWZ				AML	AML	09 34 19.0	
TUWZ				AML	AML	09 34 19.2	
NWEZ	**Newall Road**	**1.10**	**348**	⇓PN	**Pn**	**09 34 00.9**	**-1.0**
NWEZ				SN	**Sn**	**09 34 17.6**	**-1.8**
MRZ	**Mangatainoka R**	**1.13**	**106**	⇑PN	**Pn**	**09 34 01.8**	**-0.4**
MRZ				AML	AML	09 34 18.9	
MRZ				AML	AML	09 34 18.9	
DREZ	**Durham Road**	**1.16**	**2**	⇓PN	**Pn**	**09 34 01.6**	**-0.9**
PKE	**Pukeiti**	**1.17**	**354**	⇓PN	**Pn**	**09 34 01.5**	**-1.1**
HOWZ	**Holdsworth Sta**	**1.17**	**118**	⇓PN	**Pn**	**09 34 02.3**	**-0.4**
HOWZ				SN	**Sn**	**09 34 18.6**	**-2.2**
HOWZ				AML	AML	09 34 20.2	
BHW	**Baring Head**	**1.19**	**153**	⇓PN	**Pn**	**09 34 02.6**	**-0.1**
BHW				AML	AML	09 34 21.6	
BHW				AML	AML	09 34 21.9	
POWZ	**Post Office Ro**	**1.24**	**92**	⇑PN	**Pn**	**09 34 02.6**	**-0.7**
POWZ				AML	AML	09 34 21.7	
POWZ				AML	AML	09 34 22.9	
MHEZ	**Mangahewa**	**1.28**	**6**	⇓PN	**Pn**	**09 34 03.0**	**-0.8**
MTW	**Mount Morrison**	**1.30**	**128**	⇓PN	**Pn**	**09 34 03.7**	**-0.3**
MTW				AML	AML	09 34 23.1	
MTW				AML	AML	09 34 23.3	
VRZ	**Vera Road**	**1.31**	**21**	⇓PN	**Pn**	**09 34 03.2**	**-0.9**
VRZ				SN	**Sn**	**09 34 22.1**	**-1.4**
QRZ	**Quartz Range**	**1.32**	**249**	⇑PN	**Pn**	**09 34 03.1**	**-1.1**
MSWZ	**Moikau Station**	**1.35**	**142**	⇓PN	**Pn**	**09 34 04.4**	**-0.1**
MSWZ				AML	AML	09 34 24.2	
MSWZ				AML	AML	09 34 25.7	
BSWZ	**Blackbirch Sta**	**1.38**	**189**	PN	**Pn**	**09 34 05.1**	**+0.3**
BSWZ				AML	AML	09 34 26.5	
BSWZ				AML	AML	09 34 26.6	
TIWZ	**Tintock**	**1.39**	**108**	⇑PN	**Pn**	**09 34 04.6**	**-0.4**
TIWZ				PN	AML	09 34 24.5	
TIWZ				AML	AML	09 34 25.5	
CMWZ	**Cape Campbell**	**1.40**	**178**	PN	**Pn**	**09 34 05.8**	**+0.8**
CMWZ				AML	AML	09 34 27.2	
CMWZ				AML	AML	09 34 31.2	
PRWZ	**Pori Road**	**1.40**	**99**	⇑PN	**Pn**	**09 34 04.8**	**-0.3**
PRWZ				AML	AML	09 34 25.3	
PRWZ				AML	AML	09 34 25.4	
PKVZ	**Pokaka**	**1.41**	**41**	⇑PN	**Pn**	**09 34 04.3**	**-0.9**
PAWZ	**Paruwai Farm**	**1.41**	**137**	⇓PN	**Pn**	**09 34 05.1**	**-0.1**
PAWZ				AML	AML	09 34 25.4	
PAWZ				AML	AML	09 34 25.6	
TSZ	**Takapari Road**	**1.42**	**79**	PN	**Pn**	**09 34 04.4**	**-1.0**
TSZ				AML	AML	09 34 24.0	
TSZ				AML	AML	09 34 25.3	
PLWZ	**Palliser**	**1.47**	**146**	⇓PN	**Pn**	**09 34 05.8**	**-0.1**
PLWZ				AML	AML	09 34 27.2	
PLWZ				AML	AML	09 34 27.5	
TMWZ	**Te Maipa**	**1.52**	**120**	⇓PN	**Pn**	**09 34 06.2**	**-0.2**
TMWZ				AML	AML	09 34 27.3	
TMWZ				AML	AML	09 34 27.9	
DRZ	**Dome Shelter**	**1.53**	**46**	⇓PN	**Pn**	**09 34 05.9**	**-1.0**
FWVZ	**Far West T-bar**	**1.54**	**45**	PN	**Pn**	**09 34 05.4**	**-1.5**
WHVZ	**Whangaehu Hut**	**1.54**	**46**	PN	**Pn**	**09 34 05.5**	**-1.5**
DVHZ	**Dannevirke**	**1.54**	**89**	⇑PN	**Pn**	**09 34 05.8**	**-0.9**
DVHZ				AML	AML	09 34 26.6	
DVHZ				AML	AML	09 34 26.7	
MOVZ	**Moawhango**	**1.55**	**53**	⇑PN	**Pn**	**09 34 05.6**	**-1.4**
MOVZ				SN	**Sn**	**09 34 26.0**	**-2.4**
TRWZ	**Traveller**	**1.56**	**132**	⇓PN	**Pn**	**09 34 06.8**	**-0.2**
TRWZ				AML	AML	09 34 28.6	
TRWZ				AML	AML	09 34 30.0	
TUVZ	**Tukino**	**1.59**	**47**	⇑PN	**Pn**	**09 34 06.3**	**-1.1**
TWVZ	**Taurewa**	**1.62**	**38**	⇑PN	**Pn**	**09 34 06.4**	**-1.5**
NGZ	**Ngauruhoe**	**1.62**	**44**	⇑PN	**Pn**	**09 34 06.4**	**-1.4**
BFZ	**Birch Farm**	**1.63**	**102**	*e*Pn	**Pn**	**09 34 07.4**	**-0.3**
BFZ				*e*Sn	**Sn**	**09 34 27.4**	**-2.5**
BFZ	**Birch Farm**	**1.63**	**102**	⇑PN	**Pn**	**09 34 07.1**	**-0.6**
BFZ				AML	AML	09 34 29.0	
BFZ				AML	AML	09 34 29.0	
BFZ				AML	AML	09 34 29.3	
BFZ				AML	AML	09 34 29.3	
PNHZ	**Pukenui**	**1.63**	**75**	⇑PN	**Pn**	**09 34 06.5**	**-1.3**
PNHZ				AML	AML	09 34 29.7	
PNHZ				AML	AML	09 34 30.4	
CPWZ	**Castlepoint**	**1.66**	**110**	PN	**Pn**	**09 34 08.2**	**+0.2**
CPWZ				AML	AML	09 34 32.1	
CPWZ				AML	AML	09 34 32.9	
WTVZ	**West Tongariro**	**1.66**	**42**	⇑PN	**Pn**	**09 34 06.8**	**-1.4**
OTVZ	**Oturere**	**1.67**	**45**	⇑PN	**Pn**	**09 34 07.2**	**-1.2**
THZ	**Tophouse**	**1.69**	**213**	*e*Pn	**Pn**	**09 34 08.7**	**+0.1**
THZ				*e*Sn	**Sn**	**09 34 32.7**	**+1.4**
THZ	**Tophouse**	**1.69**	**213**	⇑PN	**Pn**	**09 34 06.4**	**-0.1**
KRVZ	**Karewarewa**	**1.70**	**43**	⇑PN	**Pn**	**09 34 07.3**	**-1.5**
BHHZ	**Black Hill Sta**	**1.71**	**60**	⇑PN	**Pn**	**09 34 07.2**	**-1.5**
BHHZ				AML	AML	09 34 31.7	
BHHZ				AML	AML	09 34 34.6	
WPHZ	**Waipukurau**	**1.78**	**81**	⇑PN	**Pn**	**09 34 08.5**	**-1.0**
WPHZ				AML	AML	09 34 32.7	
WPHZ				AML	AML	09 34 33.0	
ANWZ	**Angora Road**	**1.78**	**94**	⇑PN	**Pn**	**09 34 08.9**	**-0.6**
ANWZ				AML	AML	09 34 33.1	
ANWZ				AML	AML	09 34 34.9	
KATZ	**Kakaramea**	**1.82**	**41**	⇑PN	**Pn**	**09 34 08.7**	**-1.5**
KRHZ	**Kereru**	**1.85**	**68**	⇑PN	**Pn**	**09 34 09.0**	**-1.4**
KRHZ				AML	AML	09 34 34.1	
KRHZ				AML	AML	09 34 35.9	
PRHZ	**Porangahau**	**1.90**	**88**	⇑PN	**Pn**	**09 34 10.2**	**-0.8**
PRHZ				AML	AML	09 34 37.8	
PRHZ				AML	AML	09 34 38.5	
RITZ	**Rihia Road**	**1.91**	**44**	⇑PN	**Pn**	**09 34 09.9**	**-1.2**
HIZ	**Hauiti**	**1.92**	**17**	*e*Pn	**Pn**	**09 34 09.9**	**-1.3**
HIZ				*e*Sn	**Sn**	**09 34 33.7**	**-2.4**
HIZ	**Hauiti**	**1.92**	**17**	⇓PN	**Pn**	**09 34 09.8**	**-1.4**
RATZ	**Rangitukua**	**1.94**	**41**	⇓PN	**Pn**	**09 34 10.2**	**-1.4**
KWHZ	**Kaweka Forest**	**1.98**	**63**	⇑PN	**Pn**	**09 34 10.6**	**-1.4**
KWHZ				AML	AML	09 34 37.4	
KWHZ				AML	AML	09 34 44.0	
WATZ	**Wairara**	**2.05**	**37**	⇑PN	**Pn**	**09 34 11.7**	**-1.2**
HATZ	**Hinemaiaia**	**2.09**	**46**	PN	**Pn**	**09 34 11.4**	**-2.0**
PXZ	**Pawanui**	**2.10**	**82**	PN	**Pn**	**09 34 12.2**	**-1.3**
PXZ				AML	AML	09 34 41.1	
PXZ				AML	AML	09 34 41.1	
PXZ				AML	AML	09 34 45.1	
PXZ				AML	AML	09 34 45.2	
KHZ	**Kahutara**	**2.11**	**192**	*e*Pn	**Pn**	**09 34 13.9**	**+0.3**
KHZ				*e*Sn	**Sn**	**09 34 36.1**	**-1.9**
KHZ	**Kahutara**	**2.11**	**192**	⇓PN	**Pn**	**09 34 13.8**	**+0.3**
KHZ				AML	AML	09 34 40.6	
KHZ				AML	AML	09 34 40.6	
KHZ				AML	AML	09 34 40.7	
KHZ				AML	AML	09 34 40.7	
MCHZ	**McNeill Hill**	**2.16**	**66**	⇑PN	**Pn**	**09 34 13.1**	**-1.1**
MCHZ				AML	AML	09 34 41.1	
MCHZ				AML	AML	09 34 41.7	
BKZ	**Black Stump Fm**	**2.16**	**57**	*e*Pn	**Pn**	**09 34 12.6**	**-1.7**
BKZ				*e*Sn	**Sn**	**09 34 38.2**	**-3.3**
BKZ	**Black Stump Fm**	**2.16**	**57**	⇓PN	**Pn**	**09 34 12.4**	**-1.9**
BKZ				AML	AML	09 34 39.4	
BKZ				AML	AML	09 34 40.6	
KAHZ	**Kahuranaki**	**2.17**	**76**	PN	**Pn**	**09 34 13.1**	**-1.2**
KAHZ				AML	AML	09 34 42.5	
KAHZ				AML	AML	09 34 42.8	
WHTZ	**Whakaora**	**2.19**	**40**	PN	**Pn**	**09 34 13.6**	**-1.0**
DSZ	**Denniston Nort**	**2.25**	**231**	PN	**Pn**	**09 34 15.0**	**-0.4**
KUTZ	**Kaahu Road**	**2.27**	**35**	⇑PN	**Pn**	**09 34 14.5**	**-1.1**
TLZ	**Tolley Road**	**2.29**	**28**	⇑PN	**Pn**	**09 34 14.4**	**-1.5**
MRHZ	**Matea Rd**	**2.32**	**50**	⇑PN	**Pn**	**09 34 14.0**	**-2.3**
MRHZ				AML	AML	09 34 42.6	
MRHZ				AML	AML	09 34 42.9	
CKHZ	**Cape Kidnapper**	**2.35**	**74**	PN	**Pn**	**09 34 15.8**	**-0.8**
CKHZ				AML	AML	09 34 45.7	
CKHZ				AML	AML	09 34 45.8	
NMHZ	**Naumai**	**2.40**	**59**	PN	**Pn**	**09 34 16.0**	**-1.4**
NMHZ				AML	AML	09 34 55.5	
NMHZ				AML	AML	09 34 56.6	
WPRZ	**Whakapapatarin**	**2.40**	**41**	⇑PN	**Pn**	**09 34 15.7**	**-1.7**
ARHZ	**Aropaoanui**	**2.45**	**64**	⇓PN	**Pn**	**09 34 16.2**	**-1.6**
ARHZ				AML	AML	09 34 46.9	
ARHZ				AML	AML	09 34 53.1	
ALRZ	**Allen Road**	**2.47**	**44**	⇑PN	**Pn**	**09 34 16.1**	**-2.0**
GRRZ	**Galatos Road**	**2.51**	**38**	PN	**Pn**	**09 34 17.4**	**-1.3**
PRRZ	**Plateau Road**	**2.54**	**44**	⇓PN	**Pn**	**09 34 17.1**	**-1.9**
HRRZ	**Handcock Road**	**2.56**	**41**	⇑PN	**Pn**	**09 34 17.9**	**-1.5**
HSRZ	**Hossack Road**	**2.61**	**39**	⇑PN	**Pn**	**09 34 18.5**	**-1.4**
UTU	**Utuhina**	**2.69**	**37**	PN	**Pn**	**09 34 19.9**	**-1.1**
WHHZ	**Waihua**	**2.70**	**63**	PN	**Pn**	**09 34 19.3**	**-1.8**
WHHZ				AML	AML	09 34 54.7	
WHHZ				AML	AML	09 34 55.3	
HLRZ	**Highlands Stat**	**2.71**	**40**	PN	**Pn**	**09 34 20.0**	**-1.2**
RRRZ	**Republican Roa**	**2.72**	**43**	PN	**Pn**	**09 34 19.3**	**-2.1**
MUGZ	**Murupara**	**2.76**	**48**	PN	**Pn**	**09 34 19.3**	**-2.6**
TARZ	**Mount Tarawera**	**2.79**	**42**	PN	**Pn**	**09 34 20.9**	**-1.5**
LTZ	**Lake Taylor**	**2.81**	**210**	*e*Pn	**Pn**	**09 34 22.2**	**-0.3**
LTZ				*e*Sn	**Sn**	**09 34 52.9**	**-3.4**
LTZ	**Lake Taylor**	**2.81**	**210**	⇑PN	**Pn**	**09 34 21.6**	**-0.9**
TOZ	**Tahuroa Road**	**2.82**	**22**	PN	**Pn**	**09 34 20.9**	**-1.8**
SNGZ	**Shannon Statio**	**2.92**	**59**	PN	**Pn**	**09 34 21.7**	**-2.3**
SNGZ				AML	AML	09 34 57.6	
SNGZ				AML	AML	09 35 04.1	
KNZ	**Kokohu**	**3.03**	**65**	⇓PN	**Pn**	**09 34 22.8**	**-2.5**
KNZ				AML	AML	09 35 00.1	
KNZ				AML	AML	09 35 01.4	
TGRZ	**Tauranga**	**3.09**	**33**	⇑PN	**Pn**	**09 34 25.2**	**-1.1**
URZ	**Urewera**	**3.11**	**49**	P	**Pn**	**09 34 23.2**	**-3.2**
	32nm,0.3s,baz=236,slow=8.2,SNR=166						
URZ				S	**Sn**	**09 34 59.1**	**-4.1**
	156nm,0.3s,baz=111,slow=18,SNR=52						
URZ				LR	LR	09 35 58.7	
	comp=Z,113nm,19.1s,baz=252,slow=48						
URZ	**Urewera**	**3.11**	**49**	*e*Pn	**Pn**	**09 34 23.5**	**-3.0**
URZ				*e*Sn	**Sn**	**09 34 58.9**	**-4.3**
URZ	**Urewera**	**3.11**	**49**	PN	**Pn**	**09 34 23.4**	**-3.0**
URZ				AML	AML	09 34 59.6	
URZ				AML	AML	09 34 59.8	
INZ	**Inchbonnie**	**3.12**	**220**	PN	**Pn**	**09 34 25.9**	**-0.7**
OPRZ	**Ohinepanea**	**3.13**	**38**	PN	**Pn**	**09 34 25.0**	**-1.6**
MHGZ	**Mahia Peninsul**	**3.13**	**69**	PN	**Pn**	**09 34 24.6**	**-2.2**
MHGZ				AML	AML	09 35 03.8	
MHGZ				AML	AML	09 35 05.4	
PRGZ	**Paritu Road**	**3.22**	**65**	PN	**Pn**	**09 34 25.3**	**-2.6**
PRGZ				AML	AML	09 35 03.8	
PRGZ				AML	AML	09 35 04.2	
RIGZ	**Rimuhau**	**3.24**	**61**	PN	**Pn**	**09 34 25.8**	**-2.4**
RIGZ				AML	AML	09 35 05.6	
RIGZ				AML	AML	09 35 07.9	
KBAZ	**Karaka Road Bo**	**3.31**	**10**	PN	**Pn**	**09 34 28.3**	**-0.7**
MWZ	**Matawai**	**3.31**	**53**	⇑PN	**Pn**	**09 34 26.0**	**-3.1**
MWZ				AML	AML	09 35 04.7	
MWZ				AML	AML	09 35 04.7	
MWZ				AML	AML	09 35 05.9	
MWZ				AML	AML	09 36 56.2	
AWAZ	**Awhitu Peninsu**	**3.31**	**7**	PN	**Pn**	**09 34 28.1**	**-1.0**
MKAZ	**Moumakai**	**3.34**	**14**	⇓PN	**Pn**	**09 34 28.1**	**-1.4**
OXZ	**Oxford**	**3.36**	**207**	*e*Pn	**Pn**	**09 34 29.3**	**-0.4**
OXZ				*e*Sn	**Sn**	**09 35 05.0**	**-4.2**
OXZ	**Oxford**	**3.36**	**207**	⇓PN	**Pn**	**09 34 27.8**	**-2.0**
CRLZ	**Canterbury Las**	**3.41**	**199**	*e*Pn	**Pn**	**09 34 29.0**	**-1.4**
CRLZ				*e*Sn	**Sn**	**09 35 04.8**	**-5.7**
CRLZ	**Canterbury Las**	**3.41**	**199**	PN	**Pn**	**09 34 28.7**	**-1.8**
WTAZ	**Waiatarua**	**3.43**	**6**	PN	**Pn**	**09 34 30.2**	**-0.6**
TKGZ	**Te Karaka**	**3.44**	**57**	⇓PN	**Pn**	**09 34 28.2**	**-2.7**
TKGZ				AML	AML	09 35 09.3	
TKGZ				AML	AML	09 35 09.3	
ETAZ	**East Tamaki Re**	**3.45**	**10**	PN	**Pn**	**09 34 29.8**	**-1.1**
HBAZ	**Herne Bay Bore**	**3.53**	**8**	PN	**Pn**	**09 34 31.1**	**-0.8**
MQZ	**McQueen's Vall**	**3.53**	**198**	*e*Pn	**Pn**	**09 34 30.1**	**-1.9**
MQZ				*e*Sn	**Sn**	**09 35 06.7**	**-6.5**
MQZ	**McQueen's Vall**	**3.53**	**198**	⇓PN	**Pn**	**09 34 29.9**	**-2.0**
RVAZ	**Riverhead Bore**	**3.59**	**5**	PN	**Pn**	**09 34 31.9**	**-0.9**
RUGZ	**Raukumara Rang**	**3.63**	**50**	PN	**Pn**	**09 34 29.9**	**-3.6**
CNGZ	**Carnagh Statio**	**3.66**	**61**	⇓PN	**Pn**	**09 34 31.2**	**-2.4**
CNGZ				AML	AML	09 35 15.

KSAR	**Wonju Array Be**	**88.28**	**325**	P	**P**	09 46 16.5	**+0.5**
KSAR				pP	**pP**	09 46 47.8	**+0.4**
KS01	**Wonju Array Si**	**88.30**	**325**	*e*P	**P**	09 46 17.4	**+1.3**
CMAR	**Chiang Mai Arr**	**91.02**	**293**	P	**P**	09 46 30.3	**+1.0**
	1.1nm,0.9s,baz=119,slow=3.2,SNR=4.6						
EMMW	**East Machias**	**135.34**	**63**	*e*PKPdf	**PKPdf**	09 52 42.9	**-0.6**
KBZ	**Khabaz**	**144.05**	**292**	PKP	PKPbc	09 52 57.5	-0.2
	1.3nm,0.6s,baz=137,slow=2.3,SNR=3.4						
LIC	**Lamto**	**146.01**	**181**	*e*PKIKP	**PKPbc**	09 53 04.6	**-0.1**
	84nm,1.4s						
KIC	**Kosan Boka**	**146.14**	**182**	*e*PKIKP	**PKPbc**	09 53 05.1	**+0.1**
	48nm,1.0s						
TIC	**Toumodi**	**146.43**	**181**	*e*PKIKP	**PKPbc**	09 53 05.2	**-0.7**
ARA0	**ARCESS Array S**	**146.44**	**341**	*e*PKPdf	**PKPbc**	09 53 03.7	**-0.6**
ARCES	**ARCESS Array B**	**146.44**	**341**	PKPbc	**PKPbc**	09 53 04.2	**-0.1**
	2.9nm,0.8s,baz=34,slow=7.3,SNR=5.5						
ARCES				pPKPbc	pPKPbc	09 53 36.3	-0.5
	1.7nm,0.6s,baz=70,slow=4.0,SNR=3.3						
ARE0	**ARCESS Array S**	**146.44**	**341**	*e*PKPdf	**PKPbc**	09 53 03.7	**-0.6**
DBIC	**Dimbokro**	**146.45**	**182**	PKPbc	**PKPbc**	09 53 06.2	**+0.3**
	9.1nm,0.7s,baz=172,slow=6.3,SNR=7.9						
BRTR	**Keskin Array B**	**149.93**	**282**	PKPbc	**PKPbc**	09 53 14.0	**-0.6**
	0.2nm,0.3s,baz=178,slow=4.0,SNR=2.8						
BRTR				PKPab	**PKPab**	09 53 20.5	**-0.1**
	0.9nm,0.7s,baz=147,slow=6.5,SNR=4.9						
FINES	**FINESS Array B**	**151.32**	**328**	PKPbc	**PKPbc**	09 53 15.6	**-1.3**
	1.6nm,0.8s,baz=48,slow=4.8,SNR=3.4						
TOA0	**Torodi Ar. Sit**	**152.10**	**196**	*e*PKPbc	**PKPbc**	09 53 19.8	**-0.3**
TORD	**Torodi Ar. Bea**	**152.10**	**196**	PKPbc	**PKPbc**	09 53 19.6	**-0.5**
	0.8nm,0.4s,baz=136,slow=0.8,SNR=9.6						
TORD				PKPab	**PKPab**	09 53 30.0	**+0.1**
	4.2nm,0.7s,baz=164,slow=3.7,SNR=14						

*ISCJB **24** 09:34:19.3±0.5, 37.°03N±0.°04×71.°61E±0.°06, h106km, mb3.6/2, Error ellipse: s-maj=7.7km s-min=5.0km az=150.1*
*IDC **24** 09:34:20.4±5.5, 37.°09N×71.°43E, h99km±31km, mb3.4/2, mb1 3.4/8, mb1mx3.1/57, mbtmp3.7/8, Error ellipse: s-maj=68.2km s-min=19.7km az=152.0*
*NNC **24** 09:34:26.1±2.2, 37.°43N×71.°40E, h129km±34km, mb3.0, mpv3.9, Error ellipse: s-maj=20.1km s-min=11.4km az=148.0*
ISC 24 09:34:18.6±0.7, 36.°98N±0.°06×71.°58E±0.°06, h106km, n20, σ2$82/29, 7C-3D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DZET	**Dzherino**	**2.84**	**311**	⇓P		**Pn**	**09 35 05.0**	**+2.5**
	31nm,0.3s							
DZET				⇑S		**Sn**	**09 35 36.9**	**+0.7**
	82nm,0.3s							
MNAS	**Manas**	**5.55**	**7**	⇑P		**Pn**	**09 35 41.5**	**+2.6**
	6.3nm,0.4s							
MNAS				⇑S		**Sn**	**09 36 39.6**	**-1.9**
	11nm,0.4s							
THN	**Thein Dam**	**5.67**	**142**	*e*P		Pn	09 35 46.0	+5.5
THN				*e*S		**Sn**	**09 36 48.4**	**+4.1**
AAK	**Ala-Archa**	**6.08**	**21**	P		**Pn**	**09 35 49.0**	**+3.0**
	8.7nm,0.3s,baz=175,slow=6.5,SNR=26							
AAK				S		**Sn**	**09 36 54.0**	**-0.3**
	1.8nm,0.3s,baz=317,slow=20,SNR=2.4							
AAK	**Ala-Archa**	**6.08**	**21**	⇑P		**Pn**	**09 35 48.8**	**+2.7**
	11nm,0.3s							
AAK				S		**Sn**	**09 36 53.3**	**-1.0**
	9.5nm,0.7s							
KK31	**Karatay Array**	**6.17**	**353**	P		**Pn**	**09 35 49.7**	**+2.5**
	1.3nm,0.3s,baz=174,slow=11,SNR=132							
KK31				⇑S		**Sn**	**09 36 52.7**	**-3.6**
	6.9nm,0.4s,baz=170,slow=20,SNR=4.6							
TKM2	**Tokmak 2**	**6.69**	**26**	⇓P		**Pn**	**09 35 56.8**	**+2.3**
	8.6nm,0.5s							
TKM2				⇓S		**Sn**	**09 37 10.7**	**+1.5**
	4.7nm,0.8s							
GEYT	**Alibeck**	**10.74**	**279**	P		**Pn**	**09 36 50.1**	**+0.7**
	1.6nm,0.3s,baz=108,slow=9.3,SNR=6.5							
GEYT				S		**Sn**	**09 38 45.0**	**-2.6**
	1.1nm,0.3s,baz=264,slow=27,SNR=2.3							
MKAR	**Makanchi Array**	**12.63**	**36**	P		**Pn**	**09 37 15.6**	**+1.2**
	0.1nm,0.3s,baz=228,slow=14,SNR=6.0							
PYUN	**Piuthan**	**13.07**	**129**	*e*P		**Pn**	**09 37 20.9**	**+0.5**
	14nm,0.3s							
PYUN				*e*S		Sn	09 39 34.6	-10
KOLN	**Koldanda**	**13.68**	**129**	*e*P		**Pn**	**09 37 29.1**	**+0.7**
	6.4nm,0.4s							
KOLN				*e*S		**Sn**	**09 39 50.4**	**-8.8**
GKN	**Gorkha**	**14.18**	**125**	*e*P		**Pn**	**09 37 35.8**	**+1.0**
	8.0nm,0.3s							
KURBB	**Kurchatov Arra**	**14.52**	**18**	P		**Pn**	**09 37 38.3**	**-0.5**
	baz=210,slow=13,SNR=3.2							
AB31	**Akbulak array**	**14.90**	**329**	⇑P		**Pn**	**09 37 44.6**	**+0.9**
	0.2nm,0.3s,baz=157,slow=10,SNR=15							
AB31				⇑S		**Sn**	**09 40 22.8**	**-5.2**
	3.3nm,0.8s,baz=155,slow=22,SNR=7.5							
PKIN	**Phulchoki**	**14.97**	**125**	*e*P		**P**	**09 37 46.3**	**-1.5**
	3.8nm,0.2s							
BVAR	**Borovoye Array**	**16.07**	**357**	P		**P**	**09 37 59.9**	**+0.4**
	0.2nm,0.3s,baz=160,slow=9.5,SNR=4.3							
AKTO	**Aktyubinsk**	**16.61**	**328**	P		**P**	**09 38 07.6**	**+2.0**
	0.2nm,0.3s,baz=139,slow=11,SNR=3.1							
ZALV	**Zalesovo Beam**	**19.29**	**24**	P		**Pn**	**09 38 36.5**	**-0.5**
	0.7nm,0.3s,baz=212,slow=12,SNR=8.3							
FINES	**FINESS Array B**	**37.35**	**326**	P		**P**	**09 41 20.9**	**+0.5**
	1.0nm,0.6s,baz=124,slow=7.5,SNR=6.5							
NOA	**NORSAR Array B**	**44.28**	**323**	P		**P**	**09 42 19.6**	**+2.2**
	0.3nm,0.4s,baz=94,slow=7.7,SNR=2.6							

*CSEM **24** 09:40:45.0, 38.°32N×21.°76E, h9km, ML1.2/7*
ATH 24 09:40:45.0, 38.°32N×21.°76E, h9km±2km, ML1.2/7, Error ellipse: s-maj=2.5km s-min=0.8km az=141.0, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
UPR	**University Cam**	**0.04**	**142**	P		Pg	09 40 46.6	-0.2
UPR				S		Sg	09 40 48.0	-0.1
UPR	**University Cam**	**0.04**	**142**	P		Pg	09 40 46.6	-0.2
UPR				S		Sg	09 40 48.0	-0.1
LAKA	**Lakka**	**0.19**	**113**	P		Pg	09 40 49.4	+0.4
LAKA				S		Sg	09 40 51.7	0.0
LAKA	**Lakka**	**0.19**	**113**	P		Pg	09 40 49.4	+0.4
LAKA				S		Sg	09 40 51.7	0.0
LAKA				AML		AML	09 40 52.6	
	comp=E,117μm,0.2s							
LAKA				AML		AML	09 40 53.6	
	comp=N,75μm,0.3s							
TRIZ	**Trizonia**	**0.26**	**78**	P		Pb	09 40 51.0	-0.8
ANX	**Ano Chora**	**0.31**	**25**	P		Pg	09 40 51.7	+0.5
ANX				S		Sg	09 40 55.0	-0.3
ANX	**Ano Chora**	**0.31**	**25**	P		Pg	09 40 51.7	+0.5
ANX				S		Sg	09 40 55.0	-0.4
KALE	**Kalithea**	**0.31**	**76**	P		Pg	09 40 51.5	+0.2
KALE				S		Sg	09 40 56.3	+0.9
KALE	**Kalithea**	**0.31**	**76**	P		Pg	09 40 51.5	+0.3
KALE				S		Sg	09 40 56.4	+0.9
KALE				AML		AML	09 40 59.2	
	comp=N,73μm,0.2s							
KALE				AML		AML	09 41 02.5	
	comp=E,88μm,0.2s							
AXS	**Araxos**	**0.32**	**248**	P		Pg	09 40 51.8	+0.4
AXS	**Araxos**	**0.32**	**248**	P		Pg	09 40 51.8	+0.4
RLS	**Riolos of Patr**	**0.34**	**222**	P		Pg	09 40 52.0	+0.2
RLS				S		Sg	09 40 56.6	+0.2
RLS	**Riolos of Patr**	**0.34**	**222**	S		Sg	09 40 56.6	+0.2
RLS				AML		AML	09 40 59.0	
	comp=E,62μm,0.2s							
RLS				AML		AML	09 40 59.8	
	comp=N,70μm,0.4s							
PVO	**Paravola**	**0.35**	**329**	P		Pg	09 40 51.9	-0.1
PVO				S		Sg	09 40 57.6	+0.9
PVO	**Paravola**	**0.35**	**329**	P		Pg	09 40 51.9	-0.1
PVO				S		Sg	09 40 57.6	+0.9
PVO				AML		AML	09 40 59.0	
	comp=E,448μm,0.2s							
PVO				AML		AML	09 40 59.1	
	comp=N,381μm,0.2s							
DRO	**Drossia**	**0.36**	**186**	P		Pg	09 40 52.0	-0.2
DRO				S		Sb	09 40 58.3	-1.2
DRO	**Drossia**	**0.36**	**186**	P		Pg	09 40 52.0	-0.2
DRO				S		Sb	09 40 58.3	-1.2
DRO				AML		AML	09 40 58.6	
	comp=N,207μm,0.3s							
DRO				AML		AML	09 40 58.7	
	comp=E,372μm,0.2s							
KLV	**Kalavryta, Ach**	**0.41**	**131**	P		Pg	09 40 52.4	-0.7
KLV				S		Sg	09 40 58.1	-0.5
KLV	**Kalavryta, Ach**	**0.41**	**131**	P		Pg	09 40 52.4	-0.7
KLV				S		Sg	09 40 58.1	-0.4
PDO	**Prodromos**	**0.53**	**302**	P		Pg	09 40 54.4	-1.0
PDO				S		Sg	09 41 03.2	+0.9
PDO	**Prodromos**	**0.53**	**302**	P		Pg	09 40 54.4	-1.0
PDO				S		Sg	09 41 03.2	+0.9
PDO				AML		AML	09 41 06.7	
	comp=E,68μm,0.3s							
PDO				AML		AML	09 41 07.5	
	comp=N,101μm,0.2s							
EVR	**Evrytania**	**0.60**	**4**	P		Pg	09 40 57.0	+0.3
EVR				S		Sb	09 41 05.8	-0.7
EVR	**Evrytania**	**0.60**	**4**	P		Pg	09 40 57.0	+0.3
EVR				S		Sb	09 41 05.8	-0.7
EVR				AML		AML	09 41 09.7	
	comp=N,32μm,0.2s							
DSF	**Desfina**	**0.61**	**81**	P		Pg	09 40 56.0	-0.9
DSF	**Desfina**	**0.61**	**81**	P		Pg	09 40 56.0	-1.0
AGG	**Agios Georgios**	**0.84**	**32**	P		Pg	09 41 00.5	-0.7
AGG	**Agios Georgios**	**0.84**	**32**	P		Pg	09 41 00.5	-0.7

*TIR **24** 09:53:06.8±0.7, 40.°76N×19.°74E, h6km, ML3.0*
*ATH **24** 09:53:07.1, 40.°88N×19.°47E, h66km±4km, ML2.7/13, Error ellipse: s-maj=4.2km s-min=1.2km az=328.0*
*CSEM **24** 09:53:08.5±0.2, 40.°83N×19.°57E, h20km, ML2.7, Error ellipse: s-maj=6.9km s-min=3.5km az=79.0*
*SKO **24** 09:53:08.2, 40.°86N×19.°76E, h36km*
*THE **24** 09:53:09.3, 40.°79N×19.°74E, h13km±7km, ML2.9/4, Error ellipse: s-maj=10.1km s-min=1.1km az=299.0*
ISC 24 09:53:07.6±1.1, 40.°81N±0.°02×19.°66E±0.°03, h12km±9km, n109, σ1$16/157, 1C-3D, Albania

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TIR	**Tirane**	**0.56**	**16**	*i* PG		**Pg**	**09 53 18.9**	**+0.3**
TIR				*i* SG		**Sb**	**09 53 28.7**	**+1.4**
TIR	**Tirane**	**0.56**	**16**	⇓*i*P		**Pb**	**09 53 19.2**	**-0.2**
TIR	**Tirane**	**0.56**	**16**	P		**Pg**	**09 53 18.5**	**0.0**
TIR	**Tirane**	**0.56**	**16**	*i* Pg		**Pg**	**09 53 18.9**	**+0.3**
	SNR=94							
TIR				*i* Sg		**Sb**	**09 53 28.7**	**+1.4**
	SNR=94							
TIR	**Tirane**	**0.56**	**16**	P		**Pg**	**09 53 18.5**	**0.0**
TIR				S		**Sn**	**09 53 31.7**	**+1.1**
TIR				AML		AML	09 53 34.3	
	comp=N,1409μm,0.5s							
TIR				AML		AML	09 53 34.6	
	comp=E,1682μm,0.4s							
OHR	**Ohrid**	**0.92**	**70**	*i* Pg		**Pg**	**09 53 24.2**	**-1.1**
OHR				*i* Sg		**Sg**	**09 53 36.3**	**-1.0**
OHR	**Ohrid**	**0.92**	**70**	*i* Pg		**Pg**	**09 53 24.2**	**-1.1**
OHR				*i* Sg		**Sg**	**09 53 36.2**	**-1.0**
KEK	**Kerkira**	**1.10**	**174**	P		**Pb**	**09 53 28.9**	**+0.4**
KEK				S		**Sn**	**09 53 44.5**	**+0.6**
KEK	**Kerkira**	**1.10**	**174**	P		**Pb**	**09 53 28.9**	**+0.4**
KEK				S		**Sn**	**09 53 44.5**	**+0.6**
SGD	**Sagiada**	**1.27**	**160**	P		**Pn**	**09 53 31.6**	**+0.4**
SGD				S		**Sg**	**09 53 48.5**	**+0.3**
SGD	**Sagiada**	**1.27**	**160**	P		**Pn**	**09 53 31.6**	**+0.4**
SGD				S		**Sb**	**09 53 48.5**	**+0.7**
SGD	**Sagiada**	**1.27**	**160**	P		**Pb**	**09 53 31.7**	**+0.2**
SGD				S		**Sb**	**09 53 48.5**	**+0.7**
PENT	**Pentalofos**	**1.28**	**118**	P		**Pg**	**09 53 34.1**	**+1.8**
PENT				S		**Sn**	**09 53 50.8**	**+2.2**
PENT	**Pentalofos**	**1.28**	**118**	P		**Pg**	**09 53 34.1**	**+1.8**
PENT				S		**Sn**	**09 53 50.8**	**+2.2**
PENT				AML		AML	09 53 53.5	
	comp=N,360μm,0.6s							
PENT				AML		AML	09 53 54.4	
	comp=E,321μm,0.4s							
FNA	**Florina**	**1.30**	**91**	P		**Pn**	**09 53 31.5**	**-0.2**
FNA				S		**Sb**	**09 53 48.7**	**-0.1**
FNA	**Florina**	**1.30**	**91**	P		**Pn**	**09 53 31.5**	**-0.2**
FNA				S		**Sg**	**09 53 50.7**	**+1.0**
FNA	**Florina**	**1.30**	**91**	P		**Pn**	**09 53 30.5**	**-1.2**
FNA				S		**Sg**	**09 53 50.7**	**+1.0**
FNA				AML		AML	09 53 54.9	
	comp=N,1319μm,0.4s							
FNA				AML		AML	09 53 55.0	
	comp=E,938μm,0.3s							
IGT	**Igoumenitsa**	**1.38**	**158**	P		**Pn**	**09 53 33.2**	**+0.6**
IGT				S		**Sb**	**09 53 51.2**	**+0.4**
IGT	**Igoumenitsa**	**1.38**	**158**	P		**Pn**	**09 53 33.2**	**+0.6**
IGT				S		**Sb**	**09 53 51.2**	**+0.4**
IGT	**Igoumenitsa**	**1.38**	**158**	P		**Pg**	**09 53 34.8**	**+0.8**
IGT				S		**Sg**	**09 53 51.9**	**0.0**
IGT				AML		AML	09 53 55.6	
	comp=E,411μm,0.4s							
IGT				AML		AML	09 53 57.5	
	comp=N,599μm,0.4s							
JAN	**Janina**	**1.47**	**141**	P		**Pb**	**09 53 34.7**	**-0.2**
JAN				S		**Sb**	**09 53 53.8**	**+0.3**
JAN	**Janina**	**1.47**	**141**	P		**Pb**	**09 53 34.7**	**-0.2**
JAN				S		**Sb**	**09 53 53.8**	**+0.3**
JAN	**Janina**	**1.47**	**141**	S		**Sg**	**09 53 54.7**	**-0.2**
JAN				AML		AML	09 53 59.6	
	comp=E,452μm,0.3s							
KPRO	**Kipourio**	**1.56**	**123**	P		**Pg**	**09 53 37.1**	**-0.4**
KPRO	**Kipourio**	**1.56**	**123**	P		**Pg**	**09 53 37.1**	**-0.4**
KPRO				AML		AML	09 54 06.6	
	comp=N,204μm,0.6s							
KPRO				AML		AML	09 54 09.6	
	comp=E,275μm,0.4s							
PDG	**Podgorica**	**1.65**	**350**	⇓*i*P		**Pb**	**09 53 38.4**	**+0.5**
KZN	**Kozani**	**1.69**	**107**	P		**Pg**	**09 53 39.9**	**0.0**
KZN				S		**Sb**	**09 54 00.1**	**+0.3**
SKO	**Skopje**	**1.77**	**49**	*i* Pn		**Pn**	**09 53 39.0**	**+0.9**
SKO				*i* Sg		**Sb**	**09 54 01.8**	**-0.5**
SKO	**Skopje**	**1.77**	**49**	*i* Pn		**Pn**	**09 53 39.0**	**+0.9**
SKO				*i* Sg		**Sb**	**09 54 01.7**	**-0.5**
DSL	**Palaion Diasel**	**2.01**	**146**	P		**Pb**	**09 53 43.8**	**-0.2**
DSL				S		**Sn**	**09 54 05.7**	**-0.6**
DSL	**Palaion Diasel**	**2.01**	**146**	P		**Pb**	**09 53 43.8**	**-0.2**
DSL				S		**Sn**	**09 54 05.7**	**-0.6**
DSL				AML		AML	09 54 18.4	
	comp=E,329μm,0.4s							
DSL				AML		AML	09 54 19.5	
	comp=N,212μm,0.4s							
GRG	**Griva**	**2.09**	**85**	P		**Pn**	**09 53 42.7**	**+0.3**
GRG	**Griva**	**2.09**	**85**	P		**Pn**	**09 53 43.5**	**+1.1**
GRG				S		**Sn**	**09 54 07.4**	**-0.9**
GRG	**Griva**	**2.09**	**85**	P		**Pn**	**09 53 43.5**	**+1.1**
GRG				S		**Sn**	**09 54 07.5**	**-0.9**
GRG				AML		AML	09 54 22.4	
	comp=N,120μm,0.5s							
GRG				AML		AML	09 54 24.5	
	comp=E,106μm,0.6s							
LKD2	**Lefkada island**	**2.16**	**159**	P		**Pn**	**09 53 43.7**	**+0.3**
LKD2	**Lefkada island**	**2.16**	**159**	P		**Pn**	**09 53 43.7**	**+0.3**
LKD2				S		**Sn**	**09 54 10.3**	**+0.2**
LKD2	**Lefkada island**	**2.16**	**159**	P		**Pn**	**09 53 43.0**	**-0.4**
LKD2				S		**Sn**	**09 54 10.3**	**+0.2**
LKD2				AML		AML	09 54 20.8	
	comp=N,220μm,0.5s							
LKD2				AML		AML	09 54 21.7	
	comp=E,275μm,0.4s							
THL	**Klokotos Trika**	**2.19**	**124**	P		**Pb**	**09 53 45.9**	**-1.2**
THL				S		**Sb**	**09 54 14.6**	**+0.4**
LIT	**Litokhoron**	**2.27**	**107**	P		**Pn**	**09 53 46.7**	**+1.7**
LIT	**Litokhoron**	**2.27**	**107**	P		**Pn**	**09 53 46.7**	**+1.7**
LIT				AML		AML	09 54 28.1	
	comp=E,81μm,0.4s							
LIT				AML		AML	09 54 30.3	
	comp=N,65μm,0.5s							
KNT	**Kendrikon**	**2.48**	**81**	P		**Pn**	**09 53 48.6**	**+0.8**
KNT	**Kendrikon**	**2.48**	**81**	P		**Pn**	**09 53 48.6**	**+0.8**
KNT				AML		AML	09 54 19.9	
	comp=N,85μm,0.5s							
KNT				AML		AML	09 54 20.5	
	comp=E,42μm,0.4s							
PDO	**Prodromos**	**2.50**	**151**	P		**Pn**	**09 53 48.2**	**+0.1**
PDO	**Prodromos**	**2.50**	**151**	P		**Pn**	**09 53 48.2**	**+0.1**
EVR	**Evrytania**	**2.51**	**138**	P		**Pn**	**09 53 49.2**	**+0.9**
EVR	**Evrytania**	**2.51**	**138**	P		**Pn**	**09 53 49.2**	**+0.9**
BARS	**Barje**	**2.57**	**38**	*e*Pn		**Pn**	**09 53 50.1**	**+1.0**
PVO	**Paravola**	**2.62**	**146**	P		**Pb**	**09 53 52.5**	**-2.0**
PVO	**Paravola**	**2.62**	**146**	P		**Pb**	**09 53 52.5**	**-2.0**
HORT	**Hortiatis**	**2.62**	**93**	P		**Pn**	**09 53 49.2**	**-0.6**
HORT	**Hortiatis**	**2.62**	**93**	P		**Pn**	**09 53 49.2**	**-0.6**
AGG	**Agios Georgios**	**2.72**	**130**	P		**Pn**	**09 53 52.7**	**+1.6**
AGG				S		**Sb**	**09 54 27.2**	**-2.4**
AGG	**Agios Georgios**	**2.72**	**130**	P		**Pn**	**09 53 52.7**	**+1.6**
AGG				S		**Sb**	**09 54 27.2**	**-2.4**
AGG				AML		AML	09 54 35.6	
	comp=E,140μm,0.6s							
AGG				AML		AML	09 54 45.3	
	comp=N,190μm,0.6s							
VLS	**Valsamata**	**2.73**	**164**	P		**Pn**	**09 53 49.2**	**-2.0**
VLS				S		**Sn**	**09 54 23.2**	**-0.9**
IVAS	**Ivanjica**	**2.79**	**7**	*e*Pn		**Pn**	**09 53 52.3**	**+0.2**
SOH	**Sokhos**	**2.81**	**89**	P		**Pn**	**09 53 53.3**	**+1.0**
SOH	**Sokhos**	**2.81**	**89**	P		**Pn**	**09 53 53.3**	**+1.0**
KFL	**Anninata**	**2.83**	**162**	P		**Pn**	**09 53 52.3**	**-0.3**
KFL	**Anninata**	**2.83**	**162**	P		**Pn**	**09 53 52.3**	**-0.3**
PLG	**Polygyros**	**2.92**	**97**	P		**Pn**	**09 53 55.6**	**+1.8**
PLG				S		**Sn**	**09 54 29.8**	**+1.0**
PLG	**Polygyros**	**2.92**	**97**	P		**Pn**	**09 53 55.6**	**+1.8**
PLG				S		**Sn**	**09 54 29.8**	**+1.0**
AXS	**Araxos**	**2.93**	**152**	P		**Pn**	**09 53 54.0**	**+0.1**
AXS	**Araxos**	**2.93**	**152**	P		**Pn**	**09 53 54.0**	**+0.1**
SRS	**Serrai**	**3.00**	**83**	P		**Pn**	**09 53 55.5**	**+0.6**
SRS	**Serrai**	**3.00**	**83**	P		**Pn**	**09 53 55.5**	**+0.6**
SERG	**Sergoula**	**3.03**	**141**	P		**Pn**	**09 53 58.4**	**+3.1**
XOR	**Xorichti**	**3.07**	**117**	P		**Pn**	**09 53 58.2**	**+2.3**
XOR	**Xorichti**	**3.07**	**117**	P		**Pn**	**09 53 58.2**	**+2.3**
TRIZ	**Trizonia**	**3.07**	**142**	P		**Pn**	**09 53 57.7**	**+1.8**
KALE	**Kalithea**	**3.08**	**141**	P		**Pn**	**09 53 57.0**	**+0.9**
KALE				S		**Sn**	**09 54 32.3**	**-0.7**
KALE	**Kalithea**	**3.08**	**141**	P		**Pn**	**09 53 57.0**	**+0.9**
KALE				S		**Sn**	**09 54 32.3**	**-0.7**
KALE				AML		AML	09 54 59.7	
	comp=N,64μm,0.7s							
KALE				AML		AML	09 55 04.2	
	comp=E,54μm,1.0s							
LAKA	**Lakka**	**3.13**	**144**	P		**Pn**	**09 53 57.6**	**+0.8**
LAKA				S		**Sn**	**09 54 35.2**	**+1.1**
LAKA	**Lakka**	**3.13**	**144**	P		**Pn**	**09 53 57.6**	**+0.8**
LAKA				S		**Sn**	**09 54 35.2**	**+1.1**
GRUS	**Gruza**	**3.18**	**14**	*e*Pn		**Pn**	**09 53 58.1**	**+0.8**
PAIG	**Paliouri**	**3.20**	**105**	P		**Pn**	**09 53 56.7**	**-0.9**
PAIG	**Paliouri**	**3.20**	**105**	P		**Pn**	**09 53 56.7**	**-0.9**
BOVS	**Bovan**	**3.21**	**28**	*e*Pn		**Pn**	**09 53 58.2**	**+0.4**
NVR	**Nevrokopi**	**3.22**	**79**	P		**Pn**	**09 53 57.2**	**-0.8**
ZKS	**Zakynthos**	**3.23**	**164**	P		**Pn**	**09 53 56.6**	**-1.5**
ZKS	**Zakynthos**	**3.23**	**164**	P		**Pn**	**09 53 56.6**	**-1.5**
DSF	**Desfina**	**3.26**	**136**	P		**Pn**	**09 54 01.1**	**+2.5**
DSF				S		**Sn**	**09 54 36.1**	**-1.3**
DSF	**Desfina**	**3.26**	**136**	P		**Pn**	**09 54 01.1**	**+2.5**
DSF				S		**Sn**	**09 54 36.1**	**-1.3**
DRO	**Drossia**	**3.27**	**150**	P		**Pn**	**09 53 58.9**	**+0.3**
DRO				S		**Sn**	**09 54 37.7**	**+0.3**
DRO	**Drossia**	**3.27**	**150**	P		**Pn**	**09 53 58.9**	**+0.3**
DRO				S		**Sn**	**09 54 37.7**	**+0.3**
DIVS	**Divibare**	**3.30**	**4**	*e*Pn		**Pn**	**09 53 59.2**	**+0.1**
ZAPS	**Zavoj**	**3.31**	**41**	⇓*i*Pn		**Pn**	**09 54 01.1**	**+1.8**
ATAL	**Atalanti**	**3.34**	**128**	P		**Pn**	**09 54 01.6**	**+1.9**
ATAL	**Atalanti**	**3.34**	**128**	P		**Pn**	**09 54 01.6**	**+1.9**
SKIA	**Skiathos**	**3.35**	**118**	P		**Pn**	**09 54 00.3**	**+0.5**
SKIA	**Skiathos**	**3.35**	**118**	P		**Pn**	**09 54 00.3**	**+0.5**
KLV	**Kalavryta, Ach**	**3.37**	**144**	P		**Pn**	**09 54 02.2**	**+2.1**
KLV	**Kalavryta, Ach**	**3.37**	**144**	P		**Pn**	**09 54 02.1**	**+2.1**
ZAGS	**Zajecar**	**3.56**	**32**	⇑*i*Pn		**Pn**	**09 54 03.2**	**+0.6**
AMT	**Artemida-Makis**	**3.64**	**153**	P		**Pn**	**09 54 04.3**	**+0.5**
AMT	**Artemida-Makis**	**3.64**	**153**	P		**Pn**	**09 54 04.3**	**+0.5**
TEKS	**Tekeris**	**3.74**	**359**	*e*Pn		**Pn**	**09 54 04.8**	**-0.3**
KUBS	**Kucevo**	**3.90**	**22**	*e*Pn		**Pn**	**09 54 06.1**	**-1.2**
ITM	**Ithomi**	**4.03**	**153**	P		**Pn**	**09 54 09.5**	**+0.4**
ITM	**Ithomi**	**4.03**	**153**	P		**Pn**	**09 54 09.5**	**+0.4**
PYL	**PYLOS**	**4.23**	**157**	P		**Pn**	**09 54 13.5**	**+1.6**
PYL	**PYLOS**	**4.23**	**157**	P		**Pn**	**09 54 13.5**	**+1.6**
DID	**Didima**	**4.32**	**139**	P		**Pn**	**09 54 13.0**	**0.0**

Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.59**	**252**	P	**Pn**	**09 59 19.8**	**+0.3**
JFK				S	**Sb**	**09 59 26.9**	**-0.6**
JMM	**Marumori**	**0.69**	**297**	P	**Pn**	**09 59 21.7**	**+0.8**
JMM				S	**Sb**	**09 59 30.5**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.76**	**234**	P	**Pb**	**09 59 21.9**	**-0.4**
JIO	**Ouri**	**0.92**	**349**	P	**Pb**	**09 59 26.2**	**+1.3**
JIO				S	**Sn**	**09 59 37.9**	**+1.8**
JFT	**Otama**	**0.98**	**269**	P	**Pn**	**09 59 25.4**	**+0.5**
JFT				S	**Sb**	**09 59 36.5**	**-2.1**
JOU	**Okura**	**1.09**	**319**	P	**Pb**	**09 59 27.3**	**-0.4**
JOU				*e*S	**Sn**	**09 59 40.7**	**+0.4**
JYS	**Shirataka**	**1.37**	**300**	P	**Pn**	**09 59 30.8**	**+0.6**
JYS				*e*S	**Sn**	**09 59 47.0**	**-0.2**
JMK	**Ichinoseki**	**1.43**	**349**	P	**Pb**	**09 59 33.0**	**-0.4**
JMK				S	**Sb**	**09 59 50.5**	**-0.7**
JFY	**Yanaizu**	**1.49**	**265**	P	**Pn**	**09 59 31.9**	**-0.1**
JYK	**Kaneyama**	**1.67**	**325**	P	**Pn**	**09 59 35.9**	**+1.6**
JNS	**Sasagawa**	**1.81**	**279**	P	**Pn**	**09 59 36.8**	**+0.5**
MJAR	**Matsushiro Arr**	**2.87**	**251**	Pn	**Pn**	**09 59 51.4**	**+0.4**
	2.4nm,0.3s,baz=78,slow=17,SNR=20						
MJAR				Sn	**Sn**	**10 00 28.0**	**+3.5**
	2.7nm,0.3s,baz=80,slow=14,SNR=4.7						
MJAR				LR	LR	10 00 59.0	
	comp=Z,54nm,18.2s,baz=95,slow=40						
MAT	**Matsushiro**	**2.88**	**251**	P	**Pn**	**09 59 51.8**	**+0.8**
MAT				S	**Sn**	**10 00 27.2**	**+2.8**
JHJ	**Hachijo jima 2**	**4.66**	**199**	Pn	**Pn**	**10 00 17.1**	**+1.7**
	12nm,0.3s,baz=49,slow=19,SNR=2.5						
USRK	**Ussuriysk Ar.**	**9.83**	**315**	Pn	Pn	10 01 32.3	+5.9
	0.3nm,0.3s,baz=119,slow=15,SNR=5.1						
USRK				LR	LR	10 04 50.0	
	comp=Z,30nm,19.0s,baz=167,slow=35						
KSRS	**Korea Array**	**10.85**	**274**	Pn	**Pn**	**10 01 43.3**	**+2.9**
	0.1nm,0.3s,baz=85,slow=13,SNR=5.9						
KSRS				LR	LR	10 05 40.6	
	comp=Z,15nm,18.7s,baz=150,slow=36						
SONM	**Songino Array**	**27.61**	**303**	P	**P**	**10 04 51.2**	**-0.6**
	0.5nm,0.6s,baz=99,slow=7.7,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**28.31**	**122**	T	T	10 35 09.8	
	baz=314,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy**	**28.32**	**122**	T	T	10 35 13.4	
	baz=314,slow=75,SNR=35						
H11N3	**WAKE ISLAND Hy**	**28.32**	**122**	T	T	10 35 14.4	
	baz=314,slow=75,SNR=21						
H11S1	**WAKE ISLAND Hy**	**29.04**	**124**	T	T	10 36 04.6	
	baz=316,slow=75,SNR=16						
H11S3	**WAKE ISLAND Hy**	**29.04**	**124**	T	T	10 36 03.7	
	baz=316,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy**	**29.05**	**124**	T	T	10 36 06.4	
	baz=316,slow=75,SNR=17						
ZALV	**Zalesovo Beam**	**41.66**	**312**	P	**P**	**10 06 52.0**	**-0.5**
	0.8nm,0.6s,baz=72,slow=4.8,SNR=4.3						
ILAR	**Eielson Array**	**48.99**	**33**	P	**P**	**10 07 50.7**	**+0.2**
	0.2nm,0.8s,baz=268,slow=5.7,SNR=3.0						
WRA	**Warramunga Arr**	**57.59**	**188**	P	**P**	**10 08 53.2**	**-0.9**
	0.4nm,0.4s,baz=5.6,slow=7.1,SNR=17						
ASAR	**Alice Springs**	**61.32**	**188**	P	**P**	**10 09 19.4**	**-0.4**
	0.3nm,0.8s,baz=7.7,slow=7.6,SNR=4.0						
FINES	**FINESS Array B**	**68.42**	**332**	P	**P**	**10 10 04.9**	**-0.7**
	2.6nm,1.0s,baz=28,slow=8.6,SNR=6.0						
LPAZ	**La Paz**	**146.32**	**59**	PKPbc	**PKPdf**	**10 18 42.7**	**-2.1**
	0.8nm,1.0s,baz=282,slow=9.3,SNR=2.9						

BJI ***24*** *10:09:41.4, 1.°20N×128.°55E,h130km,mb4.6/30,mB4.8/24*
ISCJB ***24*** *10:09:46.8±0.6, 1.°92N±0.°03×128.°28E±0.°04, h132km±6km, mb4.6/77, Error ellipse: s-maj=6.6km s-min=4.2km az=145.5*
IDC ***24*** *10:09:47.0±0.8, 1.°92N×128.°25E,h120km±7km,mb4.0/23, mb1 4.1/23,mb1mx4.0/48,mbtmp4.4/23,MS2.7/2, Ms1 2.7/2,ms1mx2.4/41,Error ellipse: s-maj=20.1km s-min=8.4km az=77.0*
MOS ***24*** *10:09:49.0±1.2, 1.°93N×128.°18E,h154km,mb4.7/30,Error ellipse: s-maj=17.0km s-min=6.8km az=108.8*
NEIC ***24*** *10:09:49.2±0.7, 1.°91N×128.°23E,h140km±6km,mb4.7/34, Error ellipse: s-maj=6.0km s-min=3.6km az=61.0*
NEIC Felt on Pulau Ternate.
DJA ***24*** *10:09:51.2±0.6,2.°N±5.°×12.°8E±.°,h127km±4km,M4.8/18, mb4.9/18,mB5.3/5,MLv4.7/7,Mw(mB)4.8/5*
ISC 24 10:09:47.7±0.5,1.°92N±0.°04×128.°30E±0.°05,h125km±4km, h125km;pP-P,n198,o137/229,mb4.7/77,6C,Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LBMI	**Labuha**	**2.66**	**198**	P	**Pn**	**10 10 28.0**	**-1.8**
SWI	**Sorong**	**4.05**	**133**	P	**Pn**	**10 10 51.4**	**+3.4**
SWI				S	**Sn**	**10 11 34.4**	**-0.4**
KMSI	**Cibinong**	**4.52**	**253**	P	**Pn**	**10 10 54.1**	**-0.3**
SANI	**Sanana**	**4.57**	**210**	P	**Pn**	**10 10 53.0**	**-2.0**
SANI				S	**Sn**	**10 11 42.9**	**-4.4**
NLAI	**Namlea**	**5.26**	**193**	P	**Pn**	**10 11 03.0**	**-1.3**
NLAI				S	**Sn**	**10 12 04.0**	**0.0**
GTOI	**Gorontalo**	**5.44**	**257**	P	**Pn**	**10 11 07.6**	**+0.9**
FAKI	**Fak Fak**	**6.22**	**141**	*e*Pn	**Pn**	**10 11 20.3**	**+3.1**
FAKI				*e*Sn	**Sn**	**10 12 32.9**	**+5.9**
LUWI	**Luwuk**	**6.26**	**242**	P	**Pn**	**10 11 19.6**	**+1.8**
LUWI				S	**Sn**	**10 12 29.1**	**+1.0**
LUWI	**Luwuk**	**6.26**	**242**	*e*Pn	**Pn**	**10 11 18.7**	**+0.9**
LUWI				*e*Sn	**Sn**	**10 12 35.4**	**+7.3**
MRSI	**Marisa**	**6.52**	**257**	P	**Pn**	**10 11 20.7**	**-0.5**
KDI	**Kendari**	**8.14**	**224**	P	**Pn**	**10 11 42.7**	**-0.5**
PCI	**Palu**	**8.92**	**252**	P	**Pn**	**10 11 54.4**	**+0.8**
	84nm,0.9s,0.3nm						
TTSI	**Tana Toraja**	**9.81**	**240**	P	**Pn**	**10 12 04.6**	**-1.0**
MYLDM	**Lahad Datu**	**10.31**	**289**	*e*Pn	**Pn**	**10 12 13.9**	**+1.6**
KAPI	**Kappang**	**10.97**	**231**	*e*Pn	**Pn**	**10 12 21.3**	**0.0**
KKM	**Kota Kinabalu**	**12.73**	**289**	*e*Pn	**Pn**	**10 12 45.6**	**+1.1**
MTN	**Manton Dam**	**14.93**	**169**	P	**Pn**	**10 13 12.4**	**-0.2**
	baz=15,SNR=11						
MTN	**Manton Dam**	**14.93**	**169**	*e*Pn	**Pn**	**10 13 12.3**	**-0.2**
SBUM	**Sibu**	**16.08**	**272**	*e*Pn	**Pn**	**10 13 25.8**	**-1.1**
	20nm,1.5s						
PWJI	**Pagerwojo**	**19.19**	**239**	P	**Pn**	**10 14 03.7**	**-0.5**
	61nm,0.8s						
FITZ	**Fitzroy Crossi**	**20.07**	**187**	P	**P**	**10 14 10.5**	**-0.9**
	1.5nm,0.5s,baz=16,slow=9.2,SNR=8.0						
FITZ	**Fitzroy Crossi**	**20.07**	**187**	P	**P**	**10 14 11.2**	**-0.1**
	baz=20,SNR=7.3						
FITZ	**Fitzroy Crossi**	**20.07**	**187**	*e*P	**P**	**10 14 10.4**	**-0.9**
	7.6nm,1.2s						
GUMO	**Guam**	**20.07**	**54**	LR	LR	10 21 08.9	
	comp=Z,21nm,19.2s,baz=204,slow=34						
UGM	**Wanagama**	**20.25**	**241**	*e*P	**P**	**10 14 14.5**	**+1.1**
	898nm,2.0s						
COEN	**Coen**	**21.59**	**137**	P	**P**	**10 14 28.5**	**+0.7**
	baz=22,SNR=6.6						
COEN	**Coen**	**21.59**	**137**	*e*P	**P**	**10 14 27.9**	**+0.2**
	106nm,2.0s						
CISI	**Cisompet, Garu**	**22.50**	**245**	*e*P	**P**	**10 14 36.9**	**-0.3**
	64nm,1.1s						
WRAB	**Tennant Creek**	**22.51**	**165**	*ce*P	**P**	**10 14 37.1**	**-0.1**
WRAB				pmax	pmax		
	comp=Z,161nm,1.6s						
WRAB	**Tennant Creek**	**22.51**	**165**	*e*P	**P**	**10 14 37.4**	**+0.2**
	comp=Z,26nm,0.6s						
WRA	**Warramunga Arr**	**22.52**	**165**	P	**P**	**10 14 36.8**	**-0.4**
	comp=Z,17nm,0.5s,baz=350,slow=9.8,SNR=146						
WRA	**Warramunga Arr**	**22.52**	**165**	*ce*P	**P**	**10 14 35.9**	**-1.3**
WRA				pmax	pmax		
	comp=Z,17nm,0.5s						
WB2	**Warramunga Arr**	**22.52**	**165**	*e*P	**P**	**10 14 37.4**	**+0.2**
	comp=Z,117nm,1.6s						
WB2				*e*S	**S**	**10 18 34.8**	**-0.5**
WC3	**Warramunga Arr**	**22.54**	**165**	P	**P**	**10 14 37.6**	**+0.1**
	baz=22						
WC3	**Warramunga Arr**	**22.54**	**165**	*e*S	**S**	**10 18 35.5**	**-0.2**
YOJ	**Yonaguni jima**	**22.99**	**348**	*e*P	**P**	**10 14 42.0**	**+0.3**
YOJ				pmax	pmax		
	comp=Z,25nm,1.0s						
YOJ	**Yonaguni jima**	**22.99**	**348**	*e*P	**P**	**10 14 42.0**	**+0.3**
	comp=Z,25nm,1.0s						
TNG	**Tangerang**	**23.07**	**249**	P	**P**	**10 14 46.2**	**+3.6**
	comp=Z,967nm,0.6s						
MBWA	**Marble Bar**	**24.42**	**200**	*e*P	**P**	**10 14 54.5**	**-0.3**
	comp=Z,17nm,1.0s						
MBWA				*e*PcP	**PcP**	**10 18 30.3**	**-0.5**
KLSI		**24.45**	**254**	P	**P**	**10 14 56.6**	**+1.4**
	comp=Z,19nm,2.5s						
RABL	**Rabaul**	**24.60**	**104**	*e*P	**P**	**10 14 57.4**	**+0.8**
	comp=Z,138nm,0.6s						
JOW	**Kunigami**	**24.77**	**360**	*e*P	**P**	**10 14 56.0**	**-2.0**
	comp=Z,76nm,1.5s						
QIZ	**Qiongzhong**	**24.82**	**314**	P	**P**	**10 14 59.8**	**+1.3**
QIS	**Mount Isa**	**24.93**	**154**	P	**P**	**10 15 00.3**	**+0.8**
	baz=25,SNR=88						
MTSU	**Mount Surprise**	**25.41**	**142**	P	**P**	**10 15 05.0**	**+1.2**
	baz=25,SNR=8.0						
XMIS	**Christmas Isla**	**25.69**	**241**	*e*P	**P**	**10 15 05.3**	**-1.2**
AS31	**Alice Springs**	**26.01**	**168**	*e*P	**P**	**10 15 09.3**	**+0.1**
	comp=Z,3.4nm,0.8s						
AS31				*e*PcP	**PcP**	**10 18 34.2**	**-0.1**
ASAR	**Alice Springs**	**26.01**	**168**	P	**P**	**10 15 09.3**	**+0.1**
	comp=Z,3.7nm,0.5s,baz=352,slow=8.1,SNR=84						
ASAR				PcP	**PcP**	**10 18 34.0**	**-0.3**
	comp=Z,4.8nm,0.5s,baz=350,slow=2.1,SNR=23						
AS01	**Alice Springs**	**26.02**	**168**	*e*P	**P**	**10 15 09.4**	**+0.1**
AS01				*e*PcP	**PcP**	**10 18 34.0**	**-0.4**
WRKA	**Warakurna**	**26.80**	**180**	P	**P**	**10 15 16.1**	**-0.2**
	baz=27,SNR=21						
CTA	**Charters Tower**	**28.08**	**142**	P	**P**	**10 15 27.1**	**-0.7**
	comp=Z,2.2nm,0.7s,baz=324,slow=14,SNR=3.0						
CTAO	**Charters Tower**	**28.08**	**142**	*e*P	**P**	**10 15 27.6**	**-0.2**
CTAO				pmax	pmax		
	comp=Z,11nm,1.2s						
CTAO	**Charters Tower**	**28.08**	**142**	*e*P	**P**	**10 15 27.6**	**-0.2**
	comp=Z,11nm,1.2s						
MNSI	**Mandailing Nat**	**28.74**	**268**	P	**P**	**10 15 34.2**	**+0.5**
	comp=Z,14nm,0.6s						
MEEK	**Meekatharra**	**29.89**	**198**	P	**P**	**10 15 42.6**	**-1.1**
	baz=30,SNR=3.4						
GSI	**Gunungsitoli**	**30.72**	**269**	P	**P**	**10 15 50.7**	**-0.5**
GSI	**Gunungsitoli**	**30.72**	**269**	*e*P	**P**	**10 15 49.5**	**-1.7**
	comp=Z,43nm,0.8s						
GYA	**Guiyang**	**32.05**	**321**	P	**P**	**10 16 04.6**	**+1.7**
GYA				pP	pP	10 16 32.3	+2.1
GYA				sP	sP	10 16 48.0	+3.4
GYA				PP	**PnPn**	**10 17 15.4**	**+1.9**
GYA				PcP	**PcP**	**10 18 51.5**	**+1.8**
GYA				S	**S**	**10 21 06.9**	**+0.9**
GYA				sS	sS	10 21 56.0	+2.4
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
QLP	**Quilpie**	**32.24**	**153**	P	**P**	**10 16 04.8**	**+0.5**
	baz=32,SNR=12						
FORT	**Forrest**	**32.52**	**180**	*e*P	**P**	**10 16 06.4**	**-0.3**
	comp=Z,173nm,0.9s						
FORT				*e*PcP	**PcP**	**10 18 50.5**	**-0.3**
CM01	**Chiang Mai Arr**	**33.12**	**302**	*e*P	**P**	**10 16 11.5**	**-0.7**
CMAR	**Chiang Mai Arr**	**33.15**	**302**	P	**P**	**10 16 13.4**	**+1.0**
	comp=Z,0.5nm,0.5s,baz=138,slow=7.4,SNR=6.3						
CMAR	**Chiang Mai Arr**	**33.15**	**302**	*ce*P	**P**	**10 16 14.1**	**+1.7**
KMBL	**Kambalda**	**33.66**	**190**	P	**P**	**10 16 16.0**	**-0.7**
	baz=34,SNR=4.3						
KMI	**Kunming**	**33.76**	**315**	P	**P**	**10 16 20.3**	**+2.4**
KMI				pmax	pmax		
	comp=Z,20nm,0.6s						
BLDU	**Ballidu**	**34.19**	**198**	P	**P**	**10 16 20.0**	**-1.3**
	baz=34,SNR=8.6						
KLBR	**Kellerberrin**	**34.80**	**196**	P	**P**	**10 16 25.6**	**-0.9**
	baz=35,SNR=7.1						
EIDS	**Eidsvold**	**34.97**	**142**	P	**P**	**10 16 28.5**	**+0.5**
	baz=35,SNR=3.5						
EIDS	**Eidsvold**	**34.97**	**142**	*e*P	**P**	**10 16 28.7**	**+0.7**
	comp=Z,14nm,0.8s						
KSAR	**Wonju Array Be**	**35.35**	**359**	P	**P**	**10 16 31.2**	**+0.1**
KSAR						10 18 59.4	
KSAR	**Wonju Array Be**	**35.35**	**359**	P	**P**	**10 16 31.2**	**+0.1**
KSAR				pP	**pP**	**10 16 57.1**	**-1.6**
KSAR				PcP	**PcP**	**10 18 59.4**	**+0.7**
KSRS	**Korea Array**	**35.36**	**359**	P	**P**	**10 16 31.2**	**0.0**
	comp=Z,1.6nm,0.5s,baz=175,slow=10.0,SNR=12						
KSRS				pP	**pP**	**10 16 57.2**	**-1.6**
	comp=Z,2.0nm,0.8s,baz=176,slow=9.2,SNR=4.3						
KSRS				PcP	**PcP**	**10 18 59.4**	**+0.6**
	comp=Z,1.2nm,0.5s,baz=196,slow=2.5,SNR=9.5						
KSRS				LR	LR	10 32 16.7	
	comp=Z,9.9nm,18.1s,baz=114,slow=38						
MAJO	**Matsushiro**	**35.65**	**14**	*e*P	**P**	**10 16 33.0**	**-0.7**
MAJO				pmax	pmax		
	comp=Z,26nm,0.8s						
MAJO	**Matsushiro**	**35.65**	**14**	*e*P	**P**	**10 16 33.4**	**-0.4**
	comp=Z,5.8nm,0.8s						
MJAR	**Matsushiro Arr**	**35.65**	**14**	P	**P**	**10 16 32.3**	**-1.5**
	comp=Z,2.9nm,0.7s,baz=184,slow=9.6,SNR=17						
MJB9	**Matsu-Tunnel**	**35.65**	**14**	*e*P	**P**	**10 16 33.4**	**-0.4**
	comp=Z,1.5nm,0.8s						
STKA	**Stephens Creek**	**35.90**	**161**	P	**P**	**10 16 36.7**	**+0.7**
	comp=Z,48nm,0.4s,baz=344,slow=8.2,SNR=302						
STKA				PcP	**PcP**	**10 19 00.1**	**-0.3**
	comp=Z,2.1nm,0.6s,baz=354,slow=5.9,SNR=4.3						
STKA	**Stephens Creek**	**35.90**	**161**	P	**P**	**10 16 36.7**	**+0.7**
	baz=36,SNR=284						
STKA	**Stephens Creek**	**35.90**	**161**	*e*P	**P**	**10 16 36.6**	**+0.7**
STKA				*e*		10 19 00.4	
STKA				pmax	pmax		
	comp=Z,11nm,0.8s						
STKA	**Stephens Creek**	**35.90**	**161**	*e*P	**P**	**10 16 36.5**	**+0.6**
	comp=Z,11nm,0.8s						
STKA				*e*PcP	**PcP**	**10 19 00.3**	**-0.1**
NWAO	**Narrogin (SRO)**	**36.20**	**196**	P	**P**	**10 16 37.4**	**-1.1**
	comp=Z,5.1nm,0.7s,baz=289,slow=5.6,SNR=5.3						
NWAO	**Narrogin (SRO)**	**36.20**	**196**	*e*P	**P**	**10 16 37.8**	**-0.7**
NWAO				pmax	pmax		
	comp=Z,37nm,1.5s						
NWAO	**Narrogin (SRO)**	**36.20**	**196**	*e*P	**P**	**10 16 37.8**	**-0.7**
	comp=Z,37nm,1.5s						
HTT	**Hallett**	**36.56**	**165**	P	**P**	**10 16 42.8**	**+1.2**
	baz=36,SNR=6.8						
CD2	**Chengdu**	**37.02**	**324**	*e*P	**P**	**10 16 45.0**	**-0.6**
CD2				pP	pP	10 17 13.3	0.0
CD2				sP	sP	10 17 28.3	+0.7
CD2				S	**S**	**10 22 22.3**	**+0.2**
CD2				SS	**SnSn**	**10 25 10.0**	**+0.1**
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.0s						
CMSA	**Cobar Meteorol**	**37.15**	**155**	P	**P**	**10 16 47.2**	**+0.7**
	baz=37,SNR=28						
ARMA	**Armidale**	**39.10**	**147**	P	**P**	**10 17 03.9**	**+0.9**
	baz=39,SNR=8.2						
ARMA	**Armidale**	**39.10**	**147**	*e*P	**P**	**10 17 04.0**	**+0.9**
	comp=Z,20nm,0.8s						
BJI	**Beijing**	**39.51**	**345**	P	**P**	**10 17 06.5**	**+0.3**
BJI				pP	**pP**	**10 17 34.4**	**+0.2**
BJI				sP	**sP**	**10 17 49.0**	**+0.6**
BJI				S	**S**	**10 23 03.0**	**+3.8**
BJI				pmax	pmax		
	comp=Z,12nm,0.9s						
BJI				pmax	pmax		
	comp=Z,130nm,5.0s						
ARPS	**Mount Arapiles**	**40.50**	**163**	P	**P**	**10 17 15.6**	**+1.3**
	baz=40,SNR=20						
YNG	**Young**	**40.68**	**154**	P	**P**	**10 17 17.9**	**+2.0**
	baz=41,SNR=5.2						
LZH	**Lanzhou**	**40.85**	**329**	*e*P	**P**	**10 17 19.6**	**+2.1**
LZH				pP	pP	10 17 47.0	+1.3
LZH				sP	sP	10 18 03.3	+3.4
LZH				pmax	pmax		
	comp=Z,22nm,1.0s						
LZH				pmax	pmax		
	comp=Z,170nm,5.6s						
HHC	**Hu-ho-hao-te**	**41.61**	**341**	*e*P	**P**	**10 17 25.6**	**+2.1**
HHC				S	**S**	**10 23 33.6**	**+3.0**
HHC				pmax	pmax		
	comp=Z,12nm,1.5s						
HHC				pmax	pmax		
	comp=Z,35nm,4.9s						
H11N1	**WAKE ISLAND Hy**	**41.66**	**62**	T	T	11 02 54.6	
	baz=248,slow=75,SNR=7.3						
H11N2	**WAKE ISLAND Hy**	**41.67**	**62**	T	T	11 02 55.0	
	baz=248,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**41.67**	**62**	T	T	11 02 39.9	
	baz=248,slow=75,SNR=10						
CN2	**Changchun**	**41.78**	**357**	*e*P	**P**	**10 17 27.5**	**+2.7**
CAN	**Canberra**	**41.80**	**154**	*e*P	**P**	**10 17 27.0**	**+1.8**
CAN				pmax	pmax		
	comp=Z,68nm,1.8s						
CAN	**Canberra**	**41.80**	**154**	*e*P	**P**	**10 17 27.0**	**+1.8**
	comp=Z,68nm,1.8s						
USRK	**Ussuriysk Ar.**	**42.23**	**4**	P	**P**	**10 17 28.5**	**+0.1**
	comp=Z,2.7nm,0.6s,baz=189,slow=7.3,SNR=6.7						
TOO	**Toolangi**	**42.40**	**160**	P	**P**	**10 17 31.9**	**+2.0**
	baz=42,SNR=12						
GTA	**Gaotai**	**45.45**	**329**	*e*P	**P**	**10 17 55.3**	**+0.9**
GTA				pP	pP	10 18 23.3	+0.2
GTA				sP	sP	10 18 38.1	+1.0
GTA				PcP	**PcP**	**10 19 32.4**	**+0.9**
GTA				S	**S**	**10 24 28.4**	**+1.7**
GTA				sS	sS	10 25 18.8	+2.6
GTA				SS	**SS**	**10 27 47.8**	**-4.5**
GTA				pmax	pmax		
	comp=Z,6.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,50nm,5.9s						
GTA				LR	LR		
	comp=Z,67nm,15.7s						
GTA				LR	LR		
	comp=Z,97nm,19.0s						
GTA				LR	LR		
	comp=Z,71nm,18.5s						
KLR	**Kul'dur**	**47.23**	**3**	P	**P**	**10 18 08.0**	**+0.1**
	comp=Z,1.1nm,0.6s,baz=238,slow=9.6,SNR=4.2						
KLR	**Kul'dur**	**47.23**	**3**	*e*P	**P**	**10 18 07.0**	**-0.9**
SONM	**Songino Array**	**49.51**	**341**	P	**P**	**10 18 26.1**	**+0.5**
	comp=Z,4.8nm,0.7s,baz=154,slow=8.1,SNR=32						
SONM				PcP	**PcP**	**10 19 45.7**	**-0.1**
	comp=Z,2.5nm,0.7s,baz=161,slow=4.4,SNR=8.7						
SONA1	**Songino Array**	**49.52**	**341**	*e*P	**P**	**10 18 26.2**	**+0.5**
SONA1				*e*PcP	**PcP**	**10 19 45.8**	**0.0**
WMQ	**Urumqi**	**55.10**	**325**	P	**P**	**10 19 07.6**	**+0.6**
WMQ				pP	pP	10 19 36.8	+0.2
WMQ				pmax	pmax		
	comp=Z,17nm,0.7s						
WMQ				pmax	pmax		
	comp=Z,87nm,4.1s						
PEA0	**Petropavlovsk-**	**56.53**	**21**	*e*P	**P**	**10 19 16.8**	**0.0**
PETK	**Petropavlovsk-**	**56.53**	**21**	P	**P**	**10 19 17.1**	**+0.3**
	comp=Z,1.9nm,0.6s,baz=187,slow=4.8,SNR=4.5						
PETK				pP	**pP**	**10 19 45.4**	**-1.2**
	comp=Z,5.7nm,0.8s,baz=188,slow=3.5,SNR=6.8						
LBZ	**Lake Benmore**	**59.31**	**146**	*e*P	**P**	**10 19 37.0**	**+0.5**
	comp=Z,166nm,1.7s						
THZ	**Tophouse**	**59.31**	**142**	*e*P	**P**	**10 19 36.5**	**-0.1**
	comp=Z,258nm,1.8s						
PDGK	**Podgornoye**	**59.80**	**321**	P	**P**	**10 19 37.8**	**-2.0**
PDGK				pmax	pmax		
	comp=Z,8.0nm,0.8s						
MK01	**Makanchi Array**	**59.91**	**325**	*e*P	**P**	**10 19 40.5**	**-0.1**
MK31	**Makanchi Array**	**59.93**	**325**	*e*P	**P**	**10 19 40.4**	**-0.3**
MK31				pmax	pmax		
	comp=Z,9.0nm,0.6s						
MK31	**Makanchi Array**	**59.93**	**325**	*e*P	**P**	**10 19 41.0**	**+0.3**
MKAR	**Makanchi Array**	**59.93**	**325**	P	**P**	**10 19 40.9**	**+0.2**
	comp=Z,13nm,0.4s,baz=119,slow=8.6,SNR=171						
MKAR				pP	**pP**	**10 20 09.3**	**-1.4**
	comp=Z,1.6nm,0.5s,baz=115,slow=7.3,SNR=2.5						
MKAR				PcP	**PcP**	**10 20 25.2**	**-0.5**
	comp=Z,4.0nm,0.7s,baz=116,slow=5.5,SNR=7.7						
YAK	**Yakutsk**	**59.97**	**1**	*i* P	**P**	**10 19 40.7**	**+0.1**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s						
MAKZ	**Makanchi**	**60.12**	**325**	P	**P**	**10 19 41.6**	**-0.4**
MAKZ				pmax	pmax		
	comp=Z,11nm,0.5s						
MAKZ	**Makanchi**	**60.12**	**325**	*e*P	**P**	**10 19 42.0**	**0.0**
	comp=Z,15nm,0.6s						
BKZ	**Black Stump Fm**	**60.19**	**138**	*e*P	**P**	**10 19 42.6**	**-0.1**
	comp=Z,246nm,2.0s						
KSH	**Kashi**	**60.43**	**315**	*e*P	**P**	**10 19 45.8**	**+1.4**
KSH				*ep*P	pP	10 20 15.9	+1.4
KSH				*es*P	sP	10 20 29.4	+1.2
KSH				S	**S**	**10 27 48.9**	**-1.0**
KSH				ScS	SKKSac	10 29 20.1	-3.2
KSH				pmax	pmax		
	comp=Z,39nm,3.1s						
AAK	**Ala-Archa**	**62.75**	**318**	*e*P	**P**	**10 19 59.9**	**0.0**
AAK				pmax	pmax		
	comp=Z,4.0nm,1.1s						
ZAA0	**Zalesovo Array**	**62.91**	**333**	*e*P	**P**	**10 19 59.5**	**-1.0**
ZALV	**Zalesovo Beam**	**62.91**	**333**	P	**P**	**10 19 59.5**	**-1.1**
	comp=Z,2.1nm,0.5s,baz=126,slow=6.0,SNR=11						
SEY	**Seymchan**	**63.45**	**12**	*e*P	**P**	**10 20 04.5**	**+0.6**
NVS	**Novosibirsk**	**64.19**	**333**	*e*P	**P**	**10 20 07.4**	**-1.5**
KK31	**Karatay Array**	**65.62**	**317**	*i* P	**P**	**10 20 18.3**	**-0.2**
KK31				pmax	pmax		
	comp=Z,8.0nm,1.0s						
KKAR	**Karatay Array**	**65.62**	**317**	*e*P	**P**	**10 20 18.3**	**-0.2**
KKAR	**Karatay Array**	**65.62**	**317**	*e*P	**P**	**10 20 18.3**	**-0.2**
VOSK	**Vostochnaya**	**69.23**	**327**	*e*P	**P**	**10 20 40.3**	**-0.7**
VOSK				pmax	pmax		
	comp=Z,9.0nm,0.6s						
VOSK	**Vostochnaya**	**69.23**	**327**	*e*P	**P**	**10 20 40.2**	**

BRTR	**Keskin Array B**	**92.38**	**310**	P	**P**	**10 22 43.0**	**-1.7**
	comp=Z,0.8nm,0.7s,baz=120,slow=7.3,SNR=3.9						
BRTR	**Keskin Array B**	**92.38**	**310**	*ce*P	**P**	**10 22 43.5**	**-1.1**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ARA0	**ARCESS Array S**	**92.68**	**340**	*e*P	**P**	**10 22 43.9**	**-1.3**
ARCES	**ARCESS Array B**	**92.68**	**340**	P	**P**	**10 22 43.9**	**-1.3**
	comp=Z,3.4nm,0.6s,baz=79,slow=6.3,SNR=12						
ARE0	**ARCESS Array S**	**92.68**	**340**	*e*P	**P**	**10 22 44.6**	**-0.5**
	comp=Z,21nm,1.3s						
FINES	**FINESS Array B**	**94.16**	**332**	P	**P**	**10 22 50.9**	**-1.2**
	comp=Z,1.2nm,0.5s,baz=56,slow=3.4,SNR=12						
KIEV	**Kiev**	**94.29**	**321**	*e*P	**P**	**10 22 50.9**	**-2.1**
KIEV				pmax	pmax		
	comp=Z,1.0nm,0.9s						
IDI	**Anoyia**	**99.82**	**306**	LR	LR	11 14 01.7	
	comp=Z,108nm,20.6s,baz=82,slow=39						
MNTX	**Cornudas Mount**	**119.15**	**52**	*e*PKPdf	**PKPdf**	**10 28 22.9**	**+0.2**
ECSD	**EROS Data Cent**	**119.35**	**36**	*e*PKPdf	**PKPdf**	**10 28 22.2**	**-0.4**
ES19	**SONSECA Array**	**119.79**	**319**	*e*PKPdf	**PKPdf**	**10 28 23.1**	**-0.5**
TX31	**Lajitas Ar. Si**	**121.43**	**54**	*e*PKPdf	**PKPdf**	**10 28 27.7**	**+0.5**
TXAR	**Lajitas Array**	**121.43**	**54**	PKP	**PKPdf**	**10 28 26.8**	**-0.4**
	comp=Z,0.4nm,0.7s,baz=275,slow=1.6,SNR=7.1						
TXAR				PKKPbc	**PKKPbc**	**10 38 28.6**	**-0.1**
	comp=Z,0.4nm,0.9s,baz=90,slow=3.8,SNR=3.8						
MTE	**Manteigas**	**121.75**	**321**	*e*PKPdf	**PKPdf**	**10 28 27.0**	**-0.4**
COWI	**Conover**	**121.89**	**30**	*e*PKPdf	**PKPdf**	**10 28 27.5**	**0.0**
WMOK	**Wichita Mounta**	**122.79**	**46**	*e*PKIKP	**PKPdf**	**10 28 29.2**	**-0.4**
WMOK	**Wichita Mounta**	**122.79**	**46**	*e*PKPdf	**PKPdf**	**10 28 29.2**	**-0.4**
W34A	**Bridge Creek,**	**123.26**	**45**	*e*PKPdf	**PKPdf**	**10 28 29.7**	**-0.7**
TORD	**Torodi Ar. Bea**	**124.97**	**287**	PKP	**PKPdf**	**10 28 32.9**	**-1.3**
	comp=Z,0.9nm,0.7s,baz=61,slow=2.2,SNR=7.0						
MIAR	**Mount Ida**	**126.55**	**43**	*e*PKIKP	**PKPdf**	**10 28 37.0**	**+0.3**
MIAR	**Mount Ida**	**126.55**	**43**	*e*PKPdf	**PKPdf**	**10 28 37.0**	**+0.3**
SSPA	**Standing Stone**	**131.37**	**27**	*e*PKPdf	**PKPdf**	**10 28 46.0**	**+0.3**
TZTN	**Tazewell**	**131.60**	**35**	*e*PKPdf	**PKPdf**	**10 28 47.1**	**+0.8**
LRAL	**Lakeview Retre**	**131.84**	**41**	*e*PKPdf	**PKPdf**	**10 28 48.0**	**+1.2**
TKL	**Tuckaleechee C**	**132.09**	**36**	*e*PKIKP	**PKPdf**	**10 28 48.1**	**+0.9**
TKL	**Tuckaleechee C**	**132.09**	**36**	*e*PKPdf	**PKPdf**	**10 28 48.1**	**+0.9**
ODNJ	**Ogdensburg**	**132.39**	**23**	*e*PKPdf	**PKPdf**	**10 28 47.4**	**-0.2**
ROC1	**El Roble**	**144.18**	**152**	*e*PKPdf	PKPbc	10 29 08.1	-0.1
ASAL	**Salagasta**	**145.49**	**154**	*e*P	**PKPbc**	**10 29 12.1**	**0.0**
AUSP	**Uspallata**	**145.56**	**153**	*e*P	**PKPab**	**10 29 13.3**	**+0.4**
RTLS	**Leoncito**	**145.96**	**153**	*e*P	**PKPbc**	**10 29 13.7**	**-0.1**
AMOG	**MOGNA**	**147.05**	**153**	*e*P	**PKPbc**	**10 29 16.4**	**-0.3**
AGUA	**GUANDACOL**	**148.27**	**151**	*e*P	**PKPbc**	**10 29 20.3**	**+0.2**
FSA	**Cafayete**	**152.30**	**151**	*e*P	**PKPbc**	**10 29 30.3**	**+0.4**
LVC	**Limon Verde**	**153.49**	**142**	*e*PKPbc	**PKPbc**	**10 29 33.8**	**+0.9**
CPUP	**Villa Florida**	**155.13**	**168**	PKPbc	PKPdf	10 29 35.4	+8.6
	comp=Z,2.6nm,0.7s,baz=52,slow=3.0,SNR=5.8						
LPAZ	**La Paz**	**158.42**	**132**	PKPab	**PKPab**	**10 30 08.9**	**+1.8**
	comp=Z,0.7nm,0.5s,baz=257,slow=2.0,SNR=5.0						

MEX 24 10:10:29.6±0.8, 18°.05N×101°.95W, h43km±5km, MD3.8, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.64**	**134**	*e*P	Pn	10 10 40.7	-1.6
ZIIG				*e*S	Sn	10 10 49.4	-1.9
ARIG	**Puente Sto Nin**	**1.54**	**81**	*e*P	Pn	10 10 52.2	-2.4
ARIG				*e*S	Sn	10 11 10.8	-2.6
MOIG	**Morelia**	**1.77**	**24**	*e*P	Pn	10 10 56.8	-1.2
MOIG				*i* S	Sn	10 11 17.1	-2.4
CAIG	**El Cayaco**	**1.89**	**122**	*e*P	Pn	10 10 57.6	-1.8
CAIG				*i* S	Sn	10 11 19.5	-2.4
MEIG	**Mezcala**	**2.22**	**93**	*e*P	Pn	10 11 02.8	-1.2
MEIG				*e*S	Sn	10 11 28.8	-1.5
PLIG	**Platanillo**	**2.35**	**81**	*e*P	Pn	10 11 04.8	-1.0
PLIG				*e*S	Sn	10 11 31.9	-1.5
YAIG	**Yautepec**	**2.85**	**73**	*e*P	Pn	10 11 11.8	-1.0
YAIG				*e*S	Sn	10 11 45.0	-0.9

*IDC **24** 10:10:37.0±1.2, 39°.07N×22°.07E, h0km, mb3.4/6, mb1 3.5/7, mb1mx3.4/43, mbtmp3.4/7, ML3.0/1, MS2.5/1, Ms1 2.5/1, ms1mx2.0/26, Error ellipse: s-maj=34.1km s-min=21.4km az=151.0*

*ATH **24** 10:10:38.9, 38°.99N×22°.15E, h23km±1km, ML3.2/12, Error ellipse: s-maj=1.3km s-min=0.8km az=268.0*

*CSEM **24** 10:10:38.9±0.1, 38°.99N×22°.14E, h2km, ML3.2, Error ellipse: s-maj=2.3km s-min=1.8km az=84.0*

*ISCJB **24** 10:10:39.1±0.4, 39°.01N±0°.01×22°.11E±0°.02, h14km±3km, mb3.4/5, Error ellipse: s-maj=2.7km s-min=2.2km az=169.1*

*THE **24** 10:10:39.2, 39°.00N×22°.14E, h5km±1km, ML3.3/12, Error ellipse: s-maj=1.2km s-min=0.4km az=176.0*

ISC 24 10:10:39.1±0.8, 39°.01N±0°.01×22°.13E±0°.01, h14km±5km, n169, σ1°25/227, mb3.4/5, 8C-8D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGG	**Agios Georgios**	**0.16**	**86**	P	**Pg**	**10 10 43.3**	**+0.2**
AGG				S	**Sg**	**10 10 45.0**	**-0.8**
AGG	**Agios Georgios**	**0.16**	**86**	P	**Pg**	**10 10 43.2**	**+0.2**
AGG				S	**Sg**	**10 10 45.0**	**-0.8**
AGG	**Agios Georgios**	**0.16**	**86**	P	**Pg**	**10 10 43.2**	**+0.1**
AGG				S	**Sg**	**10 10 46.6**	**+0.8**
EVR	**Evrytania**	**0.27**	**249**	P	**Pg**	**10 10 44.5**	**-0.3**
EVR				S	**Sg**	**10 10 48.7**	**0.0**
EVR	**Evrytania**	**0.27**	**249**	P	**Pg**	**10 10 44.5**	**-0.3**
EVR				S	**Sg**	**10 10 48.4**	**-0.3**
EVR	**Evrytania**	**0.27**	**249**	P	**Pg**	**10 10 43.9**	**-1.0**
EVR				S	**Sg**	**10 10 48.4**	**-0.3**
EVR				AML	AML	10 10 56.2	
	comp=N,7142μm,0.4s						
ANX	**Ano Chora**	**0.45**	**201**	P	**Pg**	**10 10 47.6**	**-0.5**
ANX				S	**Sg**	**10 10 54.3**	**+0.2**
ANX	**Ano Chora**	**0.45**	**201**	P	**Pg**	**10 10 47.6**	**-0.5**
ANX				S	**Sg**	**10 10 54.3**	**+0.2**
THL	**Klokotos Trika**	**0.56**	**351**	P	**Pg**	**10 10 50.1**	**0.0**
THL				S	**Sb**	**10 10 58.8**	**+0.2**
THL	**Klokotos Trika**	**0.56**	**351**	P	**Pg**	**10 10 49.7**	**-0.4**
THL				S	**Sb**	**10 10 58.8**	**+0.2**
SERG	**Sergoula**	**0.60**	**185**	P	**Pg**	**10 10 50.0**	**-0.9**
SERG				S	**Sg**	**10 10 59.0**	**+0.2**
SERG	**Sergoula**	**0.60**	**185**	P	**Pg**	**10 10 50.0**	**-0.9**
SERG				S	**Sg**	**10 10 59.0**	**+0.2**
PVO	**Paravola**	**0.61**	**230**	P	**Pg**	**10 10 50.5**	**-0.6**
PVO				S	**Sb**	**10 10 59.8**	**-0.3**
PVO	**Paravola**	**0.61**	**230**	P	**Pg**	**10 10 50.5**	**-0.6**
PVO				S	**Sb**	**10 10 59.8**	**-0.3**
KALE	**Kalithea**	**0.62**	**179**	P	**Pg**	**10 10 50.1**	**-1.2**
KALE				S	**Sg**	**10 10 59.7**	**+0.2**
KALE	**Kalithea**	**0.62**	**179**	P	**Pg**	**10 10 50.1**	**-1.2**
KALE				S	**Sg**	**10 10 59.7**	**+0.2**
KALE	**Kalithea**	**0.62**	**179**	P	**Pg**	**10 10 49.8**	**-1.5**
KALE				S	**Sb**	**10 11 00.4**	**+0.1**
KALE				AML	AML	10 11 04.3	
	comp=N,8616μm,0.7s						
KALE				AML	AML	10 11 04.8	
	comp=E,6067μm,0.5s						
TRIZ	**Trizonia**	**0.65**	**184**	P	**Pg**	**10 10 50.1**	**-1.6**
TRIZ				S	**Sb**	**10 11 01.2**	**+0.2**
DSF	**Desfina**	**0.68**	**152**	P	**Pg**	**10 10 51.2**	**-1.1**
DSF	**Desfina**	**0.68**	**152**	P	**Pg**	**10 10 51.2**	**-1.1**
DSF				S	**Sg**	**10 11 00.8**	**-0.5**
DSF	**Desfina**	**0.68**	**152**	P	**Pg**	**10 10 50.4**	**-1.9**
DSF				S	**Sg**	**10 11 00.8**	**-0.5**
FYTO	**Fytoko, Volos**	**0.75**	**58**	P	**Pg**	**10 10 53.3**	**-0.3**
FYTO				S	**Sg**	**10 11 03.6**	**+0.1**
FYTO	**Fytoko, Volos**	**0.75**	**58**	P	**Pg**	**10 10 53.3**	**-0.3**
FYTO				S	**Sg**	**10 11 03.6**	**+0.1**
FYTO	**Fytoko, Volos**	**0.75**	**58**	P	**Pg**	**10 10 53.0**	**-0.7**
FYTO				S	**Sn**	**10 11 05.8**	**-0.5**
ATAL	**Atalanti**	**0.77**	**114**	P	**Pg**	**10 10 53.4**	**-0.6**
ATAL	**Atalanti**	**0.77**	**114**	P	**Pg**	**10 10 53.4**	**-0.6**
ATAL				S	**Sg**	**10 11 02.6**	**-1.5**
ATAL	**Atalanti**	**0.77**	**114**	P	**Pg**	**10 10 53.4**	**-0.6**
ATAL				S	**Sg**	**10 11 02.6**	**-1.5**
ATAL				AML	AML	10 11 07.9	
	comp=N,2442μm,0.2s						
ATAL				AML	AML	10 11 08.1	
	comp=E,1420μm,0.5s						
LKR	**Lokris**	**0.77**	**118**	P	**Pg**	**10 10 53.4**	**-0.7**
LKR				S	**Sg**	**10 11 03.4**	**-0.8**
LKR	**Lokris**	**0.77**	**118**	P	**Pg**	**10 10 53.4**	**-0.7**
LKR				S	**Sg**	**10 11 03.4**	**-0.8**
LKR	**Lokris**	**0.77**	**118**	P	**Pg**	**10 10 53.5**	**-0.7**
LKR				S	**Sg**	**10 11 02.9**	**-1.3**
LKR				AML	AML	10 11 06.9	
	comp=N,3758μm,0.2s						
LKR				AML	AML	10 11 07.0	
	comp=E,5939μm,0.2s						
UPR	**University Cam**	**0.77**	**200**	P	**Pg**	**10 10 53.2**	**-1.0**
UPR	**University Cam**	**0.77**	**200**	P	**Pg**	**10 10 53.2**	**-1.0**
UPR	**University Cam**	**0.77**	**200**	P	**Pn**	**10 10 55.7**	**+0.1**
LAKA	**Lakka**	**0.78**	**189**	P	**Pg**	**10 10 53.3**	**-1.0**
LAKA				S	**Sb**	**10 11 05.1**	**+0.2**
LAKA	**Lakka**	**0.78**	**189**	P	**Pg**	**10 10 53.3**	**-1.0**
LAKA				S	**Sg**	**10 11 04.2**	**-0.3**
LAKA	**Lakka**	**0.78**	**189**	P	**Pg**	**10 10 52.6**	**-1.7**
LAKA				S	**Sg**	**10 11 04.2**	**-0.3**
DSL	**Palaion Diasel**	**0.81**	**279**	P	**Pg**	**10 10 54.2**	**-0.7**
DSL	**Palaion Diasel**	**0.81**	**279**	P	**Pg**	**10 10 54.2**	**-0.7**
PDO	**Prodromos**	**0.84**	**241**	P	**Pg**	**10 10 55.3**	**-0.2**
PDO				S	**Sb**	**10 11 07.6**	**+0.9**
PDO	**Prodromos**	**0.84**	**241**	P	**Pg**	**10 10 55.3**	**-0.2**
PDO				S	**Sb**	**10 11 07.6**	**+0.9**
PDO	**Prodromos**	**0.84**	**241**	P	**Pn**	**10 10 56.1**	**-0.4**
PDO				S	**Sn**	**10 11 09.2**	**+0.4**
PDO				AML	AML	10 11 09.9	
	comp=E,7088μm,0.5s						
PDO				AML	AML	10 11 10.3	
	comp=N,6618μm,0.5s						
SMIA	**Simia**	**0.85**	**99**	P	**Pb**	**10 10 55.2**	**-0.5**
SMIA				S	**Sg**	**10 11 06.5**	**-0.4**
SMIA	**Simia**	**0.85**	**99**	P	**Pb**	**10 10 55.2**	**-0.5**
SMIA				S	**Sg**	**10 11 06.5**	**-0.4**
SMIA	**Simia**	**0.85**	**99**	P	**Pg**	**10 10 56.2**	**+0.6**
SMIA				S	**Sb**	**10 11 07.9**	**+0.8**
XOR	**Xorichti**	**0.90**	**66**	P	**Pb**	**10 10 56.5**	**0.0**
XOR				S	**Sn**	**10 11 09.8**	**-0.4**
XOR	**Xorichti**	**0.90**	**66**	P	**Pb**	**10 10 56.5**	**0.0**
XOR				S	**Sn**	**10 11 09.8**	**-0.4**
XOR	**Xorichti**	**0.90**	**66**	P	**Pn**	**10 10 57.9**	**+0.5**
XOR				S	**Sn**	**10 11 10.3**	**+0.1**
XOR				AML	AML	10 11 11.6	
	comp=E,2776μm,0.5s						
XOR				AML	AML	10 11 14.4	
	comp=N,5497μm,0.7s						
NEO	**Neokhori**	**0.90**	**71**	P	**Pb**	**10 10 56.5**	**-0.1**
NEO				S	**Sg**	**10 11 09.5**	**+1.1**
NEO	**Neokhori**	**0.90**	**71**	P	**Pb**	**10 10 56.5**	**-0.1**
NEO				S	**Sg**	**10 11 09.5**	**+1.1**
NEO	**Neokhori**	**0.90**	**71**	P	**Pg**	**10 10 56.8**	**+0.2**
NEO				S	**Sn**	**10 11 10.3**	**+0.1**
NEO				AML	AML	10 11 14.1	
	comp=N,6344μm,0.4s						
NEO				AML	AML	10 11 14.2	
	comp=E,3331μm,0.3s						
PROD	**Prodromos**	**0.96**	**141**	P	**Pb**	**10 10 55.9**	**-1.7**
PROD				S	**Sg**	**10 11 10.6**	**+0.2**
PROD	**Prodromos**	**0.96**	**141**	P	**Pb**	**10 10 55.9**	**-1.7**
PROD				S	**Sg**	**10 11 10.6**	**+0.2**
PROD				AML	AML	10 11 13.2	
	comp=N,3150μm,0.4s						
PROD				AML	AML	10 11 15.1	
	comp=E,2761μm,0.4s						
KLV	**Kalavryta, Ach**	**0.97**	**179**	P	**Pb**	**10 10 56.3**	**-1.4**
KLV				S	**Sb**	**10 11 10.3**	**0.0**
KLV	**Kalavryta, Ach**	**0.97**	**179**	P	**Pb**	**10 10 56.3**	**-1.4**
KLV				S	**Sb**	**10 11 10.3**	**0.0**
KLV	**Kalavryta, Ach**	**0.97**	**179**	P	**Pb**	**10 10 55.8**	**-1.9**
KLV				S	**Sn**	**10 11 12.4**	**+0.6**
AXS	**Araxos**	**1.00**	**216**	P	**Pb**	**10 10 57.9**	**-0.4**
AXS	**Araxos**	**1.00**	**216**	P	**Pb**	**10 10 57.9**	**-0.4**
AXS	**Araxos**	**1.00**	**216**	P	**Pg**	**10 10 58.6**	**+0.1**
SKIA	**Skiathos**	**1.05**	**81**	P	**Pb**	**10 10 58.3**	**-0.8**
SKIA	**Skiathos**	**1.05**	**81**	P	**Pb**	**10 10 58.4**	**-0.8**
THAL	**Thalero**	**1.06**	**156**	P	**Pb**	**10 10 59.1**	**-0.1**
THAL	**Thalero**	**1.06**	**156**	P	**Pb**	**10 10 59.1**	**-0.1**
THAL	**Thalero**	**1.06**	**156**	P	**Pg**	**10 11 00.2**	**+0.7**
RLS	**Riolos of Patr**	**1.08**	**209**	P	**Pb**	**10 10 59.4**	**-0.2**
RLS	**Riolos of Patr**	**1.08**	**209**	P	**Pb**	**10 10 59.4**	**-0.2**
DRO	**Drossia**	**1.11**	**197**	P	**Pb**	**10 10 59.5**	**-0.5**
DRO	**Drossia**	**1.11**	**197**	P	**Pb**	**10 10 59.5**	**-0.5**
DRO	**Drossia**	**1.11**	**197**	P	**Pb**	**10 10 59.5**	**-0.5**
KPRO	**Kipourio**	**1.11**	**328**	P	**Pb**	**10 11 00.0**	**-0.2**
KPRO				S	**Sn**	**10 11 15.7**	**+0.2**
KPRO	**Kipourio**	**1.11**	**328**	P	**Pb**	**10 11 00.0**	**-0.2**
KPRO				S	**Sn**	**10 11 15.7**	**+0.2**
KPRO	**Kipourio**	**1.11**	**328**	P	**Pb**	**10 10 59.1**	**-1.0**
KPRO				S	**Sn**	**10 11 16.7**	**+1.2**
KPRO				AML	AML	10 11 23.5	
	comp=N,4033μm,0.6s						
KPRO				AML	AML	10 11 25.0	
	comp=E,2788μm,0.6s						
LIT	**Litokhoron**	**1.12**	**14**	P	**Pn**	**10 11 00.5**	**0.0**
LIT	**Litokhoron**	**1.12**	**14**	P	**Pn**	**10 11 00.7**	**+0.2**
LIT	**Litokhoron**	**1.12**	**14**	P	**Pn**	**10 11 00.7**	**+0.2**
JAN	**Janina**	**1.18**	**303**	P	**Pb**	**10 11 01.5**	**+0.2**
JAN	**Janina**	**1.18**	**303**	P	**Pb**	**10 11 01.5**	**+0.2**
LTK	**Loutraki**	**1.19**	**146**	P	**Pn**	**10 11 01.1**	**-0.2**
LTK	**Loutraki**	**1.19**	**146**	P	**Pb**	**10 11 01.5**	**+0.1**
LTK	**Loutraki**	**1.19**	**146**	P	**Pb**	**10 11 01.4**	**+0.1**
VIL2	**Platees**	**1.20**	**131**	P	**Pb**	**10 11 01.9**	**+0.3**
VIL2				S	**Sg**	**10 11 19.6**	**+1.7**
VIL2				AML	AML	10 11 29.3	
	comp=N,2011μm,0.4s						
VIL2				AML	AML	10 11 29.6	
	comp=E,1638μm,0.5s						
VILL	**Villia**	**1.26**	**132**	P	**Pn**	**10 11 02.0**	**-0.3**
VILL	**Villia**	**1.26**	**132**	P	**Pn**	**10 11 02.0**	**-0.3**
VILL				S	**Sg**	**10 11 19.6**	**-0.1**
KZN	**Kozani**	**1.32**	**348**	P	**Pb**	**10 11 03.6**	**-0.2**
KZN	**Kozani**	**1.32**	**348**	P	**Pb**	**10 11 03.9**	**+0.1**
AOS	**Alonnisos**	**1.37**	**83**	P	**Pn**	**10 11 03.5**	**-0.3**
AOS	**Alonnisos**	**1.37**	**83**	P	**Pn**	**10 11 03.5**	**-0.3**
AOS	**Alonnisos**	**1.37**	**83**	P	**Pn**	**10 11 02.5**	**-1.3**
PENT	**Pentalofos**	**1.41**	**327**	P	**Pb**	**10 11 05.0**	**-0.2**
PENT	**Pentalofos**	**1.41**	**327**	P	**Pn**	**10 11 05.0**	**-0.2**
PENT	**Pentalofos**	**1.41**	**327**	P	**Pn**	**10 11 04.8**	**+0.3**
PAIG	**Paliouri**	**1.51**	**52**	P	**Pn**	**10 11 04.1**	**-1.6**
PAIG	**Paliouri**	**1.51**	**52**	P	**Pn**	**10 11 04.1**	**-1.6**
AMT	**Artemida-Makis**	**1.51**	**193**	P	**Pb**	**10 11 06.9**	**-0.1**
AMT	**Artemida-Makis**	**1.51**	**193**	P	**Pb**	**10 11 06.9**	**-0.1**
AMT	**Artemida-Makis**	**1.51**	**193**	P	**Pg**	**10 11 08.6**	**+0.4**
EREA	**Eretria**	**1.53**	**112**	P	**Pg**	**10 11 08.1**	**-0.5**
EREA				S	**Sb**	**10 11 26.9**	**+0.4**
EREA	**Eretria**	**1.53**	**112**	P	**Pg**	**10 11 08.1**	**-0.5**
EREA				S	**Sb**	**10 11 26.9**	**+0.4**
EREA				AML	AML	10 11 33.6	
	comp=E,1303μm,0.4s						
EREA				AML	AML	10 11 35.8	
	comp=N,1012μm,0.6s						
ATH	**Athens Observa**	**1.62**	**129**	P	**Pb**	**10 11 08.4**	**-0.4**
ATH				S	**Sn**	**10 11 27.8**	**-0.1**
VLX	**Vlachokerasia**	**1.65**	**173**	P	**Pb**	**10 11 10.1**	**+0.8**
VLX	**Vlachokerasia**	**1.65**	**173**	P	**Pb**	**10 11 10.2**	**+0.8**
PTL	**Penteli**	**1.67**	**125**	P	**Pn**	**10 11 08.2**	**+0.3**
PTL	**Penteli**	**1.67**	**125**	P	**Pn**	**10 11 08.5**	**+0.6**
PTL	**Penteli**	**1.67**	**125**	P	**Pn**	**10 11 08.5**	**+0.6**
PTL				S	**Sn**	**10 11 27.3**	**-1.8**
PTL				AML	AML	10 11 40.9	
	comp=N,473μm,0.5s						
PTL				AML	AML	10 11 41.0	
	comp=E,480μm,0.8s						
ZKS	**Zakynthos**	**1.68**	**219**	P	**Pn**	**10 11 08.4**	**+0.3**
ZKS	**Zakynthos**	**1.68**	**219**	P	**Pn**	**10 11 08.4**	**+0.3**
DID	**Didima**	**1.74**	**149**	P	**Pn**	**10 11 09.2**	**+0.3**
DID	**Didima**	**1.74**	**149**	P	**Pn**	**10 11 09.6**	**+0.7**
DID	**Didima**	**1.74**	**149**	P	**Pn**	**10 11 09.6**	**+0.7**
VLY	**Voula,Athens**	**1.75**	**131**	P	**Pn**	**10 11 09.6**	**+0.6**
VLY	**Voula,Athens**	**1.75**	**131**	P	**Pn**	**10 11 09.6**	**+0.6**
VLY	**Voula,Athens**	**1.75**	**131**	P	**Pn**	**10 11 09.4**	**+0.5**
KEK	**Kerkira**	**1.94**	**292**	P	**Pn**	**10 11 12.7**	**+1.1**
KEK	**Kerkira**	**1.94**	**292**	P	**Pn**	**10 11 12.7**	**+1.1**
OUR	**Ouranopolis**	**1.95**	**47**	P	**Pn**	**10 11 12.0**	**+0.3**
OUR	**Ouranopolis**	**1.95**	**47**	P	**Pn**	**10 11 12.0**	**+0.3**
OHR	**Ohrid**	**2.33**	**335**	*e*Pn	**Pn**	**10 11 15.8**	**-1.4**
OHR				*e*Sn	**Sn**	**10 11 43.4**	**-2.2**
OHR	**Ohrid**	**2.33**	**335**	*e*Pn	**Pn**	**10 11 15.7**	**-1.4**
OHR				*e*Sn	**Sn**	**10 11 43.3**	**-2.2**
VAY	**Valandovo**	**2.33**	**8**	*e*Pn	**Pn**	**10 11 17.2**	**+0.2**
VAY				*e*Sn	**Sn**	**10 11 44.5**	**-1.0**
VAY	**Valandovo**	**2.33**	**8**	*e*Pn	**Pn**	**10 11 17.2**	**+0.2**
VAY				*e*Sn	**Sn**	**10 11 44.5**	**-1.0**
VLI	**Veliai**	**2.38**	**164**	P	**Pn**	**10 11 18.1**	**+0.4**
VLI	**Veliai**	**2.38**	**164**	P	**Pn**	**10 11 18.1**	**+0.4**
VLI	**Veliai**	**2.38**	**164**	P	**Pn**	**10 11 17.7**	**+0.1**
SRS	**Serrai**	**2.38**	**28**	P	**Pn**	**10 11 17.7**	**-0.1**
SRS	**Serrai**	**2.38**	**28**	P	**Pn**	**10 11 17.7**	**-0.1**
TIR	**Tirane**	**2.91**	**324**	*i* P	**Pb**	**10 11 29.5**	**-1.2**
TIR	**Tirane**	**2.91**	**324**	*i* P	**Pb**	**10 11 29.5**	**-1.2**
SKO	**Skopje**	**3.00**	**350**	*e*Pn	**Pn**	**10 11 23.3**	**-3.0**
SKO	**Skopje**	**3.00**	**350**	*e*Pn	**Pn**	**10 11 23.3**	**-3.0**
VTS	**Vitosha**	**3.67**	**13**	*i* P	**Pn**	**10 11 38.0**	**+2.4**
VTS	**Vitosha**	**3.67**	**13**	*i* P	**Pn**	**10 11 38.0**	**+2.4**
BARS	**Barje**	**3.81**	**357**	*e*Pn	**Pn**	**10 11 39.3**	**+1.9**
PDG	**Podgorica**	**4.05**	**328**	*i* P	**Pb**	**10 11 46.8**	**-3.4**
BOVS	**Bovan**	**4.63**	**356**	*e*Pn	**Pn**	**10 11 50.3**	**+1.7**
IVAS	**Ivanjica**	**4.80**	**343**	*e*Pn	**Pn**	**10 11 53.4**	**+2.4**
ZAGS	**Zajecar**	**4.80**	**1**	*e*Pn	**Pn**	**10 11 51.5**	**+0.6**
GRUS	**Uzuza**	**4.99**	**348**	*e*Pn	**Pn**	**10 11 55.0**	**+1.5**
DIVS	**Divibare**	**5.33**	**343**	*e*Pn	**Pn**	**10 11 59.3**	**+1.0**
TRUS	**Trudelj**	**5.37**	**347**	*e*Pn	**Pn**	**10 12 00.1**	**+1.4**
MDVR	**Moldovita**	**5.77**	**357**	*i* P	**Pn**	10 12 09.4	+5.0
TEKS	**Tekeris**	**5.86**	**342**	*e*Pn	**Pn**	**10 12 07.3**	**+1.7**
FGSL	**Fruska Gora**	**6.38**	**345**	*e*Pn	**Pn**	**10 12 13.9**	**+1.3**
LOT	**Lotru**	**6.55**	**10**	*i* P	**Sn**	**10 13 27.5**	**-2.0**
BZS	**Buzias**	**6.61**	**357**	*i* P	**Pn**	**10 12 19.8**	**+4.0**
ARR	**Arges**	**6.62**	**16**	*i* P	**Pn**	**10 12 19.6**	**+3.6**
ARR	**Arges**	**6.62**	**16**	*i* P	**Pn**	**10 12 19.6**	**+3.6**
MLR	**Muntele Rosu**	**7.07**	**22**	*i* P	**Pn**	**10 12 26.1**	**+3.9**
PLOR	**Plostina**	**7.61**	**25**	*i* P	**Pn**	**10 12 32.4**	**+2.9**
PLOR	**Plostina**	**7.61**	**25**	*i* P	**Pn**	**10 12 32.4**	**+2.9**
VRI	**Vrincioaia**	**7.65**	**25**	*i* P	**Pn**	**10 12 33.4**	**+3.3**
VRI	**Vrincioaia**	**7.65**	**25**	*i* P	**Pn**	**10 12 33.4**	**+3.3**
BRTR	**Keskin Array B**	**8.95**	**82**	Pn	**Pn**	**10 12 50.5**	**+2.5**
	comp=E,0.2nm,0.3s,baz=255,slow=12,SNR=3.7						
PSZ	**Piszkesteto**	**9.05**	**350**	*i* P	Pn	10 12 54.8	+5.5
SOKA	**Soboth**	**9.26**	**328**	*i* Pn	**Pn**	**10 12 54.7**	**+2.4**
	comp=E,0.7nm,0.4s						
SOKA	**Soboth**	**9.26**	**328**	Pn	**Pn**	**10 12 54.7**	**+2.4**
	comp=E,0.7nm,0.4s						
ARSA	**Arzberg**	**9.54**	**332**	*i* Pn	**Pn**	**10 13 00.5**	**+4.5**
	comp=E,0.5nm,0.3s						
ARSA	**Arzberg**	**9.54**	**332**	Pn	**Pn**	**10 13 00.5**	**+4.5**
	comp=E,0.5nm,0.3s						
CONA	**Conrad Observa**	**10.01**	**335**	*i* Pn	**Pn**	**10 13 04.1**	**+1.7**
	comp=E,0.4nm,0.3s						
CONA	**Conrad Observa**	**10.01**	**335**	Pn	**Pn**	**10 13 04.1**	**+1.7**
	comp=E,0.4nm,0.3s						
MOA	**Molln**	**10.52**	**330**	*i* Pn	**Pn**	**10 13 11.5**	**+2.1**
	comp=E,0.3nm,0.1s						
MOA	**Molln**	**10.52**	**330**	Pn	**Pn**	**10 13 11

IDC ***24*** *10:21:12.3±1.0, 2°.59N×66°.38E, h0km, mb3.9/12, mb1 4.1/13, mb1mx3.8/53, mbtmp4.0/13, ML4.3/1, MS3.8/10, Ms1 3.8/10, ms1mx3.4/56, Error ellipse: s-maj=31.2km s-min=18.2km az=44.0*

ISCJB ***24*** *10:21:13.5±0.8, 2°.6N±0°.1×66°.5E±0°.1, h20km, mb4.1/15, MS3.7/9, Error ellipse: s-maj=22.8km s-min=12.9km az=41.5*

NEIC ***24*** *10:21:13.8±0.6, 2°.58N×66°.43E, h10km, mb4.3/2, Error ellipse: s-maj=18.4km s-min=11.3km az=218.0*

ISC 24 10:21:15.3±0.9, 2°.6N±0°.2×66°.4E±0°.1, h20km, n34, σ0s98/20, mb4.0/15, MS3.7/9, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res
H08N2	**Diego Garcia H**	**9.94**	**153**	T		T	10 33 55.0	
	baz=333,slow=76,SNR=420							
H08N3	**Diego Garcia H**	**9.95**	**153**	T		T	10 33 56.1	
	baz=333,slow=76,SNR=421							
H08N1	**Diego Carcia H**	**9.96**	**153**	T		T	10 33 56.6	
	baz=333,slow=76,SNR=427							
PALK	**Pallekele**	**14.95**	**71**	Pn		**Pn**	**10 24 44.8**	**-1.0**
	1.2nm,0.3s,baz=297,slow=11,SNR=5.6							
PALK				LR		LR	10 29 20.7	
	comp=Z,619nm,20.2s,baz=296,slow=32							
PALK	**Pallekele**	**14.95**	**71**	*eP*		**Pn**	**10 24 44.7**	**-1.0**
	23nm,1.0s							
WSAR	**Wadi Sarin**	**21.90**	**340**	LR		LR	10 32 49.3	
	comp=Z,254nm,21.3s,baz=196,slow=32							
ATD	**Arta Tunnel**	**25.03**	**292**	LR		LR	10 34 43.5	
	comp=Z,79nm,21.3s,baz=292,slow=32							
OPO	**Ambohidratompo**	**28.29**	**221**	LR		LR	10 35 45.4	
	comp=Z,491nm,19.6s,baz=10,slow=31							
KMBO	**Kilima Mbogo**	**29.41**	**263**	LR		LR	10 39 04.4	
	comp=Z,121nm,18.2s,baz=92,slow=36							
PSI	**Prapat**	**32.45**	**89**	LR		LR	10 38 23.1	
	comp=Z,198nm,21.1s,baz=240,slow=32							
COCO	**West Island**	**33.57**	**117**	*eP*		**P**	**10 27 52.8**	**-1.5**
	304nm,0.5s							
CMAR	**Chiang Mai Arr**	**35.54**	**61**	P		**P**	**10 28 13.6**	**+2.3**
	0.6nm,0.4s,baz=230,slow=7.0,SNR=2.4							
CMAR				LR		LR	10 41 58.6	
	comp=Z,131nm,20.4s,baz=278,slow=35							
MKAR	**Makanchi Array**	**46.16**	**15**	P		**P**	**10 29 38.1**	**-0.5**
	0.4nm,0.8s,baz=199,slow=7.6,SNR=3.2							
ABKAR	**Akbulak array**	**46.85**	**354**	*eP*		**P**	**10 29 44.5**	**+0.6**
	0.9nm,0.6s							
BRTR	**Keskin Array B**	**47.47**	**325**	P		**P**	**10 29 49.6**	**+0.6**
	0.6nm,0.7s,baz=134,slow=10,SNR=3.4							
AKTO	**Aktyubinsk**	**48.23**	**353**	P		**P**	**10 29 55.1**	**+0.6**
	3.4nm,0.7s,baz=166,slow=7.3,SNR=10							
BOSA	**Boshof**	**50.22**	**229**	LR		LR	10 49 48.2	
	comp=Z,175nm,18.3s,baz=39,slow=34							
ZALV	**Zalesovo Beam**	**53.40**	**13**	P		**P**	**10 30 33.1**	**-0.3**
	2.2nm,0.6s,baz=207,slow=8.6,SNR=10							
SONM	**Songino Array**	**56.71**	**31**	P		**P**	**10 30 57.0**	**-0.7**
	0.7nm,0.7s,baz=224,slow=5.7,SNR=8.3							
H01W3	**Cape Leeuwin H**	**58.16**	**134**	T		T	11 33 53.0	
	baz=300,slow=75,SNR=67							
H01W2	**Cape Leeuwin H**	**58.17**	**134**	T		T	11 33 53.8	
	baz=300,slow=75,SNR=57							
H01W1	**Cape Leeuwin H**	**58.18**	**134**	T		T	11 33 55.9	
	baz=300,slow=75,SNR=61							
NWAO	**Narrogin (SRO)**	**59.53**	**131**	LR		LR	10 51 45.2	
	comp=Z,57nm,18.6s,baz=162,slow=31							
KSRS	**Korea Array**	**66.01**	**50**	LR		LR	11 03 32.3	
	comp=Z,75nm,18.9s,baz=245,slow=38							
WRA	**Warramunga Arr**	**70.21**	**112**	P		**P**	**10 32 28.1**	**+0.7**
	1.8nm,0.7s,baz=292,slow=5.5,SNR=24							
WRAB	**Tennant Creek**	**70.22**	**112**	*eP*		**P**	**10 32 28.4**	**+1.0**
	4.4nm,0.9s							
ASAR	**Alice Springs**	**70.53**	**116**	P		**P**	**10 32 29.9**	**+0.6**
	0.8nm,0.8s,baz=286,slow=5.8,SNR=15							
NOA	**NORSAR Array B**	**71.57**	**335**	P		**P**	**10 32 33.3**	**-1.6**
	0.9nm,1.0s,baz=110,slow=6.6,SNR=4.0							
KLR	**Kul'dur**	**72.11**	**39**	P		**P**	**10 32 38.8**	**+0.4**
	1.8nm,0.8s,baz=293,slow=4.1,SNR=4.6							
ESDC	**Sonseca Array**	**73.33**	**311**	P		**P**	**10 32 45.5**	**-0.3**
	0.5nm,0.7s,baz=80,slow=5.0,SNR=7.3							
STKA	**Stephens Creek**	**78.79**	**123**	P		**P**	**10 33 17.7**	**+0.6**
	1.6nm,0.9s,baz=305,slow=10,SNR=3.0							
PDAR	**Pinedale Array**	**134.73**	**356**	PKP		**PKPdf**	**10 40 33.5**	**+0.3**
	0.3nm,0.6s,baz=96,slow=3.0,SNR=3.7							
MNTX	**Cornudas Mount**	**145.05**	**348**	*e*PKPdf		**PKPdf**	**10 40 51.8**	**-0.2**
TXAR	**Lajitas Array**	**146.90**	**344**	PKPbc		**PKPab**	**10 40 58.2**	**-0.2**
	2.5nm,0.6s,baz=54,slow=3.2,SNR=46							

IDC ***24*** *10:34:51.7±5.0, 7°.88S×118°.41E, h0km, mb3.8/3, mb1 4.0/5, mb1mx3.6/56, mbtmp3.8/5, ML3.7/2, Error ellipse: s-maj=175.6km s-min=26.3km az=70.0*

ISCJB ***24*** *10:34:52.3±0.5, 8°.04S±0°.05×117°.84E±0°.03, h33km, mb3.9/3, Error ellipse: s-maj=7.9km s-min=4.5km az=177.8*

DJA ***24*** *10:34:52.2±0.7, 8°.S±3°×11°.8E±°, h16km±6km, M4.3/13, mB5.1/2, mb4.4/4, MLv4.2/13, Mw(mB)4.4/2*

ISC 24 10:34:54.3±0.9, 8°.12S±0°.06×117°.81E±0°.04, h35km, n16, σ1s10/22, mb3.9/3, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res
PLAI	**Plampang**	**0.71**	**183**	P		**Pn**	**10 35 06.9**	**-0.9**
PLAI				S		**Sn**	**10 35 17.8**	**+0.3**
TWSI	**Taliwang, Sumb**	**1.11**	**236**	P		**Pn**	**10 35 12.6**	**-0.7**
TWSI				S		**Sn**	**10 35 28.6**	**+1.2**
IGBI	**Denpasar**	**2.73**	**255**	P		**Pn**	**10 35 35.6**	**0.0**
IGBI				S		**Sn**	**10 36 09.6**	**+2.1**
ABJI	**Asem Bagus**	**3.56**	**275**	P		**Pn**	**10 35 46.9**	**-0.2**
JAGI	**Jajag, Banyuwa**	**3.64**	**264**	P		**Pn**	**10 35 47.5**	**-0.7**
JAGI				S		**Sn**	**10 36 29.2**	**-0.8**
EDFI	**Ende, Flores**	**3.89**	**100**	P		**Pn**	**10 35 51.7**	**+0.1**
EDFI				S		**Sn**	**10 36 35.8**	**-0.4**
BLJI	**Banyuglugur**	**4.20**	**275**	P		**Pn**	**10 35 55.7**	**-0.1**
GMJI	**Gumukmas**	**4.33**	**268**	P		**Pn**	**10 35 57.7**	**+0.1**
TTSI	**Tana Toraja**	**5.42**	**22**	P		**Pn**	**10 36 12.1**	**-0.6**
BATI	**Baumata**	**6.14**	**110**	P		**Pn**	**10 36 24.4**	**+1.9**
	18nm,1.3s							
SOEI	**Soe**	**6.58**	**105**	P		**Pn**	**10 36 31.1**	**+2.4**
FITZ	**Fitzroy Crossi**	**12.51**	**143**	Pn		**Pn**	**10 37 50.1**	**+0.3**
	0.2nm,0.3s,baz=329,slow=13,SNR=6.9							
FITZ				Sn		**Sn**	**10 40 06.3**	**-1.7**
	0.2nm,0.3s,baz=205,slow=21,SNR=5.7							
WRA	**Warramunga Arr**	**19.86**	**128**	P		**P**	**10 39 21.4**	**-1.1**
	0.4nm,0.3s,baz=303,slow=13,SNR=31							
ASAR	**Alice Springs**	**21.84**	**137**	P		**P**	**10 39 44.0**	**+0.1**
	5.1nm,0.9s,baz=313,slow=10,SNR=38							
STKA	**Stephens Creek**	**32.38**	**140**	P		**P**	**10 41 21.3**	**+0.6**
	1.6nm,0.6s,baz=317,slow=10,SNR=8.1							
KSRS	**Korea Array**	**46.31**	**11**	P		**P**	**10 43 16.2**	**-0.5**
	0.5nm,0.5s,baz=190,slow=6.2,SNR=2.8							

IDC ***24*** *10:38:52.3±0.5, 28°.22N×66°.39E, h0km, mb4.6/38, mb1 4.6/41, mb1mx4.5/60, mbtmp4.6/41, ML4.4/2, MS4.3/43, Ms1 4.3/43, ms1mx4.1/61, Error ellipse: s-maj=12.7km s-min=10.3km az=179.0*

BJI ***24*** *10:38:53.4, 28°.40N×66°.51E, h8km, mb4.7/54, mB5.0/44, Ms4.7/48, Ms7 4.5/44*

GCMT ***24*** *10:38:54.0±0.3, 28°.03N×66°.17E, h13km±1km, MW4.9/81, Moment Tensor Solution. s22,c23; s81,c113; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr0.69±.11; Mθθ-2.66±.11; Mφφ 1.98±.09; Mrθ 0.98±.23; Mθφ -1.08±.07; Mφr-0.55±.22; Best double couple: Mo2.81700×10^16 NP1:φs213.00000°, δ64.00000°, λ8.00000°. Principal axes: T 2.5440, Plg23.0000°, Azm74.0000°; N 0.5560, Plg63.0000°, Azm286.0000°; P -3.0900, Plg13.0000°, Azm169.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***24*** *10:38:54.0±0.2, 28°.27N×66°.37E, h10km, mb5.0/51 Error ellipse: s-maj=4.4km s-min=3.6km az=197.0*

ISCJB ***24*** *10:38:55.6±0.2, 28°.29N±0°.02×66°.48E±0°.02, h33km, mb4.8/111, MS4.3/65, Error ellipse: s-maj=3.1km s-min=2.6km az=20.2*

MOS ***24*** *10:38:56.1±1.3, 28°.34N×66°.44E, h33km, mb5.1/37, MS4.4/8, Error ellipse: s-maj=7.3km s-min=4.5km az=87.5*

ISC 24 10:38:57.3±0.5, 28°.22N±0°.04×66°.42E±0°.03, h32km±3km, h32km:pP-P, n324, σ1s90/343, mb4.9/112, MS4.4/65, 23C-15D, Pakistan

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

BHJ	**Bhuj**	**5.74**	**149**	*eP*		**Pn**	**10 40 16.9**	**-3.4**
BHJ				*eS*		**Sn**	**10 41 25.1**	**+0.1**
THW	**Thamme Wali**	**6.47**	**44**	↑P		**Pn**	**10 40 29.5**	**-0.9**
SARP	**Sargodha**	**6.56**	**54**	P		**Pn**	**10 40 29.9**	**-1.6**
KBL	**Kabul**	**6.69**	**19**	*eP*		**Pn**	**10 40 33.3**	**-0.2**
KBL	**Kabul**	**6.69**	**19**	*ePn*		**Pn**	**10 40 33.3**	**-0.2**
CEP	**Cherat**	**7.31**	**39**	P		**Pn**	**10 40 40.3**	**-1.7**
WSAR	**Wadi Sarin**	**8.59**	**237**	Pn		**Pn**	**10 40 56.2**	**-3.3**
	6.8nm,0.3s,baz=88,slow=9.0,SNR=32							
WSAR				Sn		Sn	10 42 21.1	-14
	2.2nm,0.3s,baz=292,slow=19,SNR=2.8							
WSAR				LR		LR	10 45 18.3	
	comp=Z,3μm,19.5s,baz=89,slow=45							
WBK	**Wadi Bani Khal**	**8.74**	**232**	Pn		**Pn**	**10 40 58.8**	**-2.8**
	SNR=6.6							
WBK	**Wadi Bani Khal**	**8.74**	**232**	P		**Pn**	**10 40 58.8**	**-2.8**
	SNR=6.6							
WBK				S		Sn	10 42 29.5	-10
BIDO	**Bidbid**	**8.81**	**240**	P		**Pn**	**10 41 01.6**	**-0.8**
	SNR=5.3							
PONG	**Pong**	**9.06**	**63**	*eP*		**Pn**	**10 41 05.0**	**-0.8**
PONG				*ex*		**Sn**	**10 42 48.0**	**+1.3**
THN	**Thein Dam**	**9.07**	**60**	*eP*		**Pn**	**10 41 04.7**	**-1.2**
THN				*eS*		**Sn**	**10 42 48.0**	**+1.1**
SMDO	**Samad**	**9.13**	**238**	Pn		**Pn**	**10 41 04.5**	**-2.4**
	SNR=27							
SMDO	**Samad**	**9.13**	**238**	P		**Pn**	**10 41 04.5**	**-2.4**
	SNR=27							
BANOM	**Banah**	**9.30**	**258**	P		**Pn**	**10 41 07.3**	**-2.0**
BANOM	**Banah**	**9.30**	**258**	Pn		**Pn**	**10 41 06.7**	**-2.6**
	SNR=22							
BANOM	**Banah**	**9.30**	**258**	P		**Pn**	**10 41 06.7**	**-2.6**
	SNR=22							
JWA	**Jwalamukhi**	**9.33**	**65**	*eP*		**Pn**	**10 41 07.0**	**-2.5**
JWA				*eS*		**Sn**	**10 42 53.0**	**-0.4**
HOQ	**Hoqain**	**9.41**	**243**	Pn		**Pn**	**10 41 07.6**	**-3.1**
	SNR=29							
HOQ	**Hoqain**	**9.41**	**243**	P		**Pn**	**10 41 07.6**	**-3.1**
	SNR=29							
JMDO	**Jabal Madar**	**9.51**	**234**	Pn		**Pn**	**10 41 09.9**	**-2.1**
	SNR=26							
JMDO	**Jabal Madar**	**9.51**	**234**	P		**Pn**	**10 41 09.9**	**-2.1**
	SNR=26							
NDI	**New Delhi**	**9.52**	**85**	*eP**		Pn	10 41 03.0	-9.2
NDI				*eS*		Sn	10 42 46.5	-12
UOSS	**Minazif**	**9.70**	**253**	*ePn*		**Pn**	**10 41 10.9**	**-3.8**
SDNR	**Sundarnagar**	**9.73**	**68**	*eP*		**Pn**	**10 41 14.0**	**-1.1**
SDNR				*eS*		**Sn**	**10 43 03.0**	**-0.2**
SMLA	**Simla**	**9.79**	**70**	*eP*		**Pn**	**10 41 14.8**	**-1.0**
SMLA				*eS*		**Sn**	**10 43 04.0**	**-0.6**
HATD	**Hatta, Dubai**	**9.81**	**252**	P		**Pn**	**10 41 13.1**	**-3.1**
ASHO	**Ashiyiah**	**9.93**	**252**	P		**Pn**	**10 41 15.1**	**-2.7**
ASHO	**Ashiyiah**	**9.93**	**252**	P		**Pn**	**10 41 15.5**	**-2.3**
	SNR=28							
NAZ	**Nazwa, Dubai**	**10.15**	**254**	P		**Pn**	**10 41 19.3**	**-1.5**
ARQ	**Araqi**	**10.15**	**244**	P		**Pn**	**10 41 20.4**	**-0.5**
	SNR=20							
FAQ	**Al Faqa, Dubai**	**10.29**	**253**	P		**Pn**	**10 41 20.8**	**-2.0**
DDI	**Dehra Dun**	**10.38**	**76**	*eP*		**Pn**	**10 41 22.9**	**-1.1**
DDI				*ex*		**Sn**	**10 43 15.5**	**-3.7**
DZET	**Dzherino**	**10.75**	**10**	P		**Pn**	**10 41 27.8**	**-1.3**
DZET				pmax		pmax		
	comp=Z,36nm,0.9s							
BHPL	**Bhopal**	**11.09**	**114**	*eP*		**Pn**	**10 41 31.2**	**-2.5**
GEYT	**Alibeck**	**11.92**	**326**	Pn		**Pn**	**10 41 43.9**	**-1.2**
	baz=156,slow=17,SNR=3.0							
GEYT				LR		LR	10 46 40.3	
	comp=Z,1μm,18.4s,baz=140,slow=39							
NGP	**Nagpur**	**13.46**	**119**	*eP*		**Pn**	**10 42 05.3**	**-0.9**
NGP				lAmb		lAmb	10 42 10.5	
	comp=Z,17nm,0.8s							
KLRI	**Killari**	**13.77**	**135**	*ePn*		**Pn**	**10 42 09.8**	**-0.5**
KSH	**Kashi**	**13.77**	**33**	*eP*		Pn	10 42 02.8	-7.6
KSH				*epP*		P	10 42 08.4	-10
KSH				*esP*			10 42 12.4	
KSH				S		Sn	10 44 27.4	-15
KSH				pmax		pmax		
	comp=Z,33nm,0.6s							
KSH				LR		LR		
	comp=Z,3μm,13.3s							
KSH				LR		LR		
	comp=Z,5μm,15.5s							
KSH				LR		LR		
	comp=Z,2μm,8.5s							
IUG	**Iuzhnay**	**14.21**	**11**	*i* P		**Pn**	**10 42 13.1**	**-3.2**
	comp=Z,370nm,1.5s							
IUG				*eS*		**Sn**	**10 44 49.2**	**-3.6**
IUG				LR		LR	10 47 28.4	
	comp=Z,724nm,11.0s							
SRSP	**Sriramsagar**	**14.31**	**128**	*eP*		**Pn**	**10 42 17.5**	**-0.2**
PYUN	**Piuthan**	**14.62**	**87**	*eP*		**Pn**	**10 42 18.3**	**-3.8**
	comp=Z,27nm,0.3s							
PYUN				*eS*		**Sn**	**10 44 56.8**	**-6.5**
RPR	**Rampur**	**15.03**	**126**	*ePn*		**Pn**	**10 42 24.4**	**-3.1**
BRLS	**Borolday**	**15.04**	**10**	*i* P		Pn	10 42 19.8	-7.6
	comp=Z,173nm,1.4s							
BRLS				*eS*		Sn	10 45 01.8	-11
BRLS				LR		LR	10 47 49.7	
	comp=Z,641nm,12.8s							
MNAS	**Manas**	**15.07**	**18**	P		**Pn**	**10 42 23.7**	**-4.3**
MNAS				pmax		pmax		
	comp=Z,47nm,1.5s							
KOLN	**Koldanda**	**15.19**	**88**	*eP*		**Pn**	**10 42 25.7**	**-4.0**
	comp=Z,48nm,0.6s							
KK31	**Karatay Array**	**15.22**	**11**	*i* P		**Pn**	**10 42 27.0**	**-2.8**
KK31				pmax		pmax		
	comp=Z,27nm,0.8s							
KKAR	**Karatay Array**	**15.22**	**11**	*eP*		**Pn**	**10 42 26.5**	**-3.3**
KKAR	**Karatay Array**	**15.22**	**11**	*ePn*		**Pn**	**10 42 26.5**	**-3.3**
HYBB	**Hyderabad (bro**	**15.50**	**131**	*ePn*		**Pn**	**10 42 33.5**	**-0.2**
HYB	**Hyderabad**	**15.50**	**131**	*i* P		**P**	**10 42 39.0**	**+1.2**
HYB				*eS*		**Sn**	**10 45 25.0**	**+0.5**
AAK	**Ala-Archa**	**15.81**	**22**	Pn		**Pn**	**10 42 35.5**	**-2.1**
	comp=Z,0.8nm,0.3s,baz=194,slow=14,SNR=21							
AAK				LR		LR	10 49 53.5	
	comp=Z,2μm,20.6s,baz=197,slow=42							
AAK	**Ala-Archa**	**15.81**	**22**	*d* iP		**Pn**	**10 42 34.8**	**-2.8**
AAK	**Ala-Archa**	**15.81**	**22**	*ePn*		**Pn**	**10 42 34.4**	**-3.2**
	comp=Z,18nm,0.8s							
FRU	**Bishkek**	**16.02**	**22**	*eP*		**Pn**	**10 42 37.0**	**-3.3**
FRU				*eS*		**Sn**	**10 45 30.0**	**-6.9**
FRU				pmax		pmax		
	comp=Z,117nm,2.0s							
FRU				pmax		pmax		
	comp=E,126nm,2.4s							
GKN	**Gorkha**	**16.08**	**86**	*eP*		**Pn**	**10 42 38.1**	**-3.1**
	comp=E,32nm,0.5s							
DMN	**Daman**	**16.53**	**88**	*eP*		**Pn**	**10 42 44.2**	**-2.9**
	comp=E,48nm,0.7s							
URV	**Uravakonda**	**16.60**	**140**	*ePn*		**P**	**10 42 50.1**	**+0.2**
NJS	**Nagarjunasagar**	**16.62**	**132**	*ePn*		**Pn**	**10 42 48.0**	**0.0**
BMNS	**Besmoynak**	**16.63**	**24**	*eP*		**Pn**	**10 42 44.8**	**-3.3**
	comp=E,219nm,1.5s							
BMNS				*eS*		**Sn**	**10 45 48.1**	**-3.8**
BMNS				LR		LR	10 49 07.8	
	comp=E,637nm,10.6s							
KKN	**Kakani**	**16.67**	**87**	*eP*		**Pn**	**10 42 44.8**	**-3.9**
SRLM	**Srisailam**	**16.68**	**134**	*ePn*		**Pn**	**10 42 48.5**	**-0.3**
PKIN	**Phulchoki**	**16.79**	**88**	*eP*		**Pn**	**10 42 46.0**	**-4.4**
PKIN	**Phulchoki**	**16.79**	**88**	*eP*		**Pn**	**10 42 46.8**	**-3.6**
GUN	**Gumba**	**17.18**	**86**	*eP*		**Pn**	**10 42 52.4**	**-2.9**
	comp=E,194nm,0.7s							
GUN				*eS*		**Sn**	**10 45 57.0**	**-8.7**
AAA	**Alma-Ata**	**17.19**	**27**	*eP*		**Pn**	**10 42 52.8**	**-2.3**
AAA				pmax		pmax		
	comp=Z,700nm,3.0s							
RCLA	**Racherla**	**17.21**	**135**	*ePn*		**Pn**	**10 42 56.0**	**+0.7**
MDOK	**Medeo**	**17.21**	**27**	*i* P		**Pn**	**10 42 51.9**	**-3.5**
	comp=Z,59nm,1.3s							
MDOK				*eS*		**Sn**	**10 46 02.0**	**-3.8**
MDOK				LR		LR	10 49 51.0	
	comp=Z,592nm,12.2s							
KUU	**Kurty**	**17.56**	**24**	*eP*		**Pn**	**10 42 56.3**	**-3.2**
	comp=Z,237nm,1.5s							
KUU				*eS*		**Sn**	**10 46 10.3**	**-3.7**
KUU				LR		LR	10 49 24.1	
	comp=Z,779nm,11.1s							
ADKI	**Addanki**	**17.57**	**132**	*ePn*		**Pn**	**10 42 59.3**	**-0.5**
SATY	**Saty**	**17.70**	**30**	*eP*		**Pn**	**10 42 58.6**	**-2.7**
	comp=Z,112nm,1.1s							
SATY				LR		LR	10 49 33.3	
	comp=Z,1μm,12.6s							
PVM	**Polavaram**	**17.75**	**125**	*ePn*		**Pn**	**10 43 01.9**	**-0.2**
RAMN	**Ramite**	**17.94**	**89**	*eP*		**Pn**	**10 43 01.9**	**-2.7**
	comp=Z,56nm,0.6s							

BOK	**Bokaro**	**18.04**	**100**	*eP*		**Pn**	**10 43 03.8**	**-1.9**
KPKS	**Kokpek**	**18.14**	**30**	*eP*		**Pn**	**10 43 03.5**	**-3.3**
	comp=Z,533nm,1.2s							
KPKS				LR		LR	10 49 57.5	
	comp=Z,846nm,12.8s							
SHLS	**Shalkode**	**18.25**	**32**	*eP*		**P**	**10 43 07.8**	**-0.4**
	comp=Z,218nm,1.0s							
SHLS				LR		LR	10 50 03.0	
	comp=Z,510nm,13.2s							
CHLP	**Challavanipeta**	**18.84**	**117**	*ePn*		**Pn**	**10 43 15.2**	**-0.2**
SKHT	**Srikalahasti**	**18.99**	**137**	*ePn*		**Pn**	**10 43 17.9**	**+0.8**
GNI	**Garni**	**21.46**	**309**	P		**P**	**10 43 43.7**	**+0.6**
	comp=Z,15nm,0.8s,baz=138,slow=0.7,SNR=5.0							
GNI				LR		LR	10 53 07.7	
	comp=Z,448nm,20.7s,baz=121,slow=40							
GNI	**Garni**	**21.46**	**309**	*de*P		**P**	**10 43 45.2**	**+2.1**
GNI				pmax		pmax		
	comp=Z,48nm,0.9s							
GNI	**Garni**	**21.46**	**309**	*eP*		**P**	**10 43 41.8**	**-1.3**
	comp=Z,35nm,1.1s							
AB31	**Akbulak array**	**21.59**	**348**	*i* P		**P**	**10 43 43.1**	**-1.1**
AB31				pmax		pmax		
	comp=Z,58nm,0.8s							
ABKAR	**Akbulak array**	**21.59**	**348**	*eP*		**P**	**10 43 43.3**	**-0.9**
LSA	**Lhasa**	**21.68**	**80**	P		**P**	**10 43 47.3**	**+1.3**
LSA				pmax		pmax		
	comp=Z,26nm,0.8s							
LSA	**Lhasa**	**21.68**	**80**	*eP*		**P**	**10 43 47.0**	**+1.0**
LSA				pmax		pmax		
	comp=Z,34nm,0.9s							
LSA	**Lhasa**	**21.68**	**80**	*eP*		**P**	**10 43 47.0**	**+1.0**
	comp=Z,34nm,0.9s							
MAKZ	**Makanchi**	**22.21**	**29**	P		**P**	**10 43 47.6**	**-3.4**
MAKZ				pmax		pmax		
	comp=Z,46nm,1.1s							
MAKZ	**Makanchi**	**22.21**	**29**	*eP*		**P**	**10 43 49.3**	**-1.7**
	comp=Z,31nm,0.9s							
MK01	**Makanchi Array**	**22.32**	**30**	*eP*		**P**	**10 43 50.0**	**-2.2**
MK31	**Makanchi Array**	**22.34**	**30**	*i* P		**P**	**10 43 49.4**	**-3.0**
MK31				pmax		pmax		
	comp=Z,27nm,0.9s							
MK31	**Makanchi Array**	**22.34**	**30**	*eP*		**P**	**10 43 49.0**	**-3.4**
MKAR	**Makanchi Array**	**22.34**	**30**	P		**P**	**10 43 50.3**	**-2.1**
	comp=Z,39nm,1.0s,baz=220,slow=11,SNR=38							
MKAR				LR		LR	10 53 40.0	
	comp=Z,1μm,18.2s,baz=218,slow=40							
MKAR	**Makanchi Array**	**22.34**	**30**	*eP*		**P**	**10 43 49.2**	**-3.1**
SHL	**Shillong**	**22.86**	**91**	*eP*		**P**	**10 43 57.5**	**-0.7**
SHL				lAmb		lAmb	10 43 60.0	
	comp=Z,102nm,2.1s							
AKTO	**Aktyubinsk**	**23.09**	**346**	P		**P**	**10 43 59.3**	**-0.9**
	comp=Z,8.7nm,0.9s,baz=144,slow=11,SNR=23							
AKTO				LR		LR	10 54 15.6	
	comp=Z,1μm,18.8s,baz=155,slow=40							
AKTO	**Aktyubinsk**	**23.09**	**346**	P		**P**	**10 43 59.6**	**-0.6**
AKTO				pmax		pmax		
	comp=Z,53nm,1.5s							
WMQ	**Urumqi**	**23.11**	**42**	||*i* P		**P**	**10 44 01.8**	**+1.3**
WMQ				pP		pP	10 44 06.6	-2.6
WMQ				PP		**PnPn**	**10 44 30.3**	**+4.1**
WMQ				S		**S**	**10 48 11.3**	**+1.6**
WMQ				SS		**SnSn**	**10 48 52.8**	**+8.9**
WMQ				pmax		pmax		
	comp=Z,84nm,1.1s							
WMQ				pmax		pmax		
	comp=Z,520nm,3.6s							
WMQ				LR		LR		
	comp=Z,3μm,17.2s							
WMQ				LR		LR		
	comp=Z,2μm,18.8s							
WMQ				LR		LR		
	comp=Z,2μm,22.2s							
ZEI	**Tsey**	**23.30**	**315**	*eP*		**P**	**10 44 02.6**	**0.0**
ZEI				pmax		pmax		
	comp=Z,29nm,0.4s							
NCK	**Nalchik**	**23.86**	**316**	*eP*		**P**	**10 44 09.2**	**+1.4**
NCK				pmax		pmax		
	comp=Z,11nm,1.2s							
KURBB	**Kurchatov Arra**	**24.19**	**19**	P		**P**	**10 44 09.7**	**-1.0**
	comp=Z,34nm,1.0s,baz=211,slow=9.1,SNR=49							
NEY	**Neytrino**	**24.28**	**314**	*eP*		**P**	**10 44 13.7**	**+1.9**
KURK	**Kurchatov**	**24.30**	**19**	P		**P**	**10 44 09.7**	**-2.0**
KURK	**Kurchatov**	**24.30**	**19**	P		**P**	**10 44 09.7**	**-2.0**
KBZ	**Khabaz**	**24.41**	**316**	P

GTA SS **SnSn** **10 51 32.8 +6.5**
GTA pmax pmax
comp=Z,9.0nm,1.1s
GTA pmax pmax
comp=Z,83nm,6.2s
GTA LR LR
comp=Z,490nm,16.6s
GTA LR LR
comp=Z,560nm,17.1s
GTA LR LR
comp=Z,630nm,17.6s
CHTO Chiang Mai 31.18 100 *e*P **P** **10 45 12.1 -1.6**
CHTO pmax pmax
comp=Z,10.0nm,1.1s
CHTO Chiang Mai 31.18 100 *e*P **P** **10 45 12.1 -1.6**
comp=Z,9.9nm,1.1s
CMAR Chiang Mai Arr 31.32 101 P **P** **10 45 15.4 +0.5**
comp=Z,1.6nm,0.7s,baz=290,slow=8.7,SNR=5.1
CMAR PcP **PcP** **10 48 10.2 +1.6**
comp=Z,3.6nm,0.6s,baz=287,slow=4.5,SNR=11
CMAR LR LR 11 00 32.7
comp=Z,288nm,18.8s,baz=286,slow=42
CMAR Chiang Mai Arr 31.32 101 *ce*P **P** **10 45 17.8 +2.9**
CMAR pmax pmax
comp=Z,2.0nm,0.7s
CM01 Chiang Mai Arr 31.35 101 *e*P **P** **10 45 15.9 +0.7**
SOKR Solikamsk 32.06 351 *d*/P **P** **10 45 20.6 -0.2**
SOKR pmax pmax
comp=Z,81nm,1.2s
SOKR MLR MLR
comp=Z,743nm,16.0s
LZH Lanzhou 32.49 66 *e*P **P** **10 45 25.0 -0.2**
LZH pP pP 10 45 31.0 -3.5
LZH sP sP 10 45 33.9 -4.5
LZH pmax pmax
comp=Z,21nm,1.0s
LZH pmax pmax
comp=Z,150nm,4.0s
LZH LR LR
comp=Z,540nm,13.1s
LZH LR LR
comp=Z,550nm,12.6s
LZH LR LR
comp=Z,790nm,15.4s
CD2 Chengdu 32.49 76 *e*P **P** **10 45 24.8 -0.4**
CD2 pP pP 10 45 32.3 -2.1
CD2 sP sP 10 45 35.5 -2.8
CD2 PP **PP** **10 46 38.4 -0.4**
CD2 S **S** **10 50 39.1 +0.9**
CD2 sS sS 10 50 51.8 -1.8
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.0s
CD2 LR LR
comp=Z,810nm,15.3s
CD2 LR LR
comp=Z,550nm,10.3s
CD2 LR LR
comp=Z,730nm,12.1s
KMI Kunming 32.53 87 P **P** **10 45 27.3 +1.6**
KMI pP pP 10 45 33.8 -1.2
KMI sP sP 10 45 36.6 -2.3
KMI S **S** **10 50 41.6 +2.4**
KMI pmax pmax
comp=Z,11nm,0.7s
KMI pmax pmax
comp=Z,44nm,4.7s
KMI LR LR
comp=Z,290nm,15.8s
KMI LR LR
comp=Z,270nm,18.0s
KMI LR LR
comp=Z,450nm,17.0s
OBN Obninsk 34.44 330⇑ *e*P **P** **10 45 42.0 +0.3**
OBN *e**PP **pP** **10 45 51.1 +0.1**
OBN *e**SP **sP** **10 45 57.1 +2.2**
OBN *e* 10 46 54.7
OBN PPP PPP 10 47 11.0
OBN *e*S **S** **10 51 08.3 +0.7**
OBN SS **SnSn** **10 53 23.0 +3.5**
OBN pmax pmax
comp=Z,5.0nm,0.8s
OBN pmax pmax
comp=Z,507nm,15.0s
TLB Topalu 34.57 309⇓ *i*P P 10 46 00.8 +18
MOY Mondy 34.86 38 *e*P **P** **10 45 46.8 +1.2**
MOY pmax pmax
comp=Z,23nm,1.6s
LAST Lasithi 35.33 292 *e*P **P** **10 45 49.5 -0.3**
comp=Z,18nm,1.2s
PETR Petresti 35.43 310⇓ *i*P P 10 46 05.3 +15
SORM Soroca 35.45 315⇑ *i*P **P** **10 45 48.3 -2.2**
SORM Soroca 35.45 315 ⇑P **P** **10 45 48.3 -2.2**
ZAK Zakamensk 35.58 41 *e*P **P** **10 45 51.1 -0.6**
ZAK pmax pmax
comp=Z,11nm,1.1s
GYA Guiyang 35.68 83 P **P** **10 45 54.0 +1.1**
GYA pP pP 10 46 01.3 -1.0
GYA PP **PP** **10 47 15.6 +1.3**
GYA PcP **PcP** **10 48 22.4 +1.5**
GYA S **S** **10 51 28.0 +0.3**
GYA sS sS 10 51 41.5 -1.7
GYA SS **SnSn** **10 53 48.3 -2.3**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA LR LR
comp=Z,520nm,17.0s
GYA LR LR
comp=Z,490nm,17.2s
GYA LR LR
comp=Z,460nm,16.8s
IDI Anoyia 35.81 292 *e*P **P** **10 45 53.1 -0.8**
comp=Z,13nm,1.1s
VRI Vrincioaia 35.81 310⇑ *i*P P 10 46 03.3 +10
VRI Vrincioaia 35.81 310 ⇑P P 10 46 03.3 +10
PLOR Plostina 35.86 310⇑ *i*P **P** **10 45 54.5 +0.4**
PLOR Plostina 35.86 310 ⇑P **P** **10 45 54.5 +0.4**
DGAR Diego Garcia 35.90 170 *e*P **P** **10 45 53.9 -0.7**
DGAR pmax pmax
comp=Z,113nm,1.0s
DGAR Diego Garcia 35.90 170 *e*P **P** **10 45 53.9 -0.7**
comp=Z,112nm,1.0s
AKASG Malin Array Be 35.90 319 P **P** **10 45 53.2 -1.1**
comp=Z,1.2nm,0.5s,baz=110,slow=7.4,SNR=8.9
AKASG PcP **PcP** **10 48 21.3 +0.4**
comp=Z,0.4nm,0.4s,baz=91,slow=2.3,SNR=4.2
AKASG LR LR 11 01 43.4
comp=Z,281nm,21.3s,baz=90,slow=38
AKASG Malin Array Be 35.90 319 *ce*P **P** **10 45 58.7 +4.4**
AKASG pmax pmax
comp=Z,1.0nm,0.6s
AKBB Malin Array Si 35.90 319 *e*P **P** **10 45 54.1 -0.3**
AKBB pmax pmax
comp=Z,30nm,1.6s
AKBB Malin Array Si 35.90 319 *e*P **P** **10 45 54.0 -0.3**
comp=Z,30nm,1.6s
KIEV Kiev 35.91 319 *e*P **P** **10 45 52.3 -2.1**
KIEV pmax pmax
comp=Z,4.0nm,1.1s
KIEV Kiev 35.91 319 *e*P **P** **10 45 54.0 -0.4**
comp=Z,32nm,1.7s
TESR Tescani 36.04 311⇑ *i*P **P** **10 45 56.2 +0.6**
MLR Muntele Rosu 36.24 309⇓ *i*P **P** **10 45 58.5 +1.0**
MLR Muntele Rosu 36.24 309 ⇓P **P** **10 45 58.5 +1.0**
MLR Muntele Rosu 36.24 309 *e*P **P** **10 45 57.7 +0.2**
comp=Z,24nm,1.2s
TLY Talaya 36.34 39 P **P** **10 45 58.2 +0.1**
comp=Z,4.3nm,0.7s,baz=242,slow=8.3,SNR=5.6
TLY LR LR 11 03 14.9
comp=Z,592nm,18.5s,baz=242,slow=40
TLY Talaya 36.34 39 *e*P **P** **10 45 59.6 +1.5**
TLY *e*S **S** **10 51 38.2 +1.2**
TLY pmax pmax
comp=Z,7.0nm,0.6s
TLY MLR MLR
comp=Z,448nm,16.0s
TLY Talaya 36.34 39 *e*P **P** **10 45 59.1 +1.0**
comp=Z,8.1nm,0.8s
SONM Songino Array 36.56 47 P **P** **10 46 01.2 +0.9**
comp=Z,12nm,0.9s,baz=251,slow=8.5,SNR=45
SONA1 Songino Array 36.57 47 *e*P **P** **10 46 01.1 +0.7**
XAN Xi'an 36.65 70 P **P** **10 46 00.8 -0.2**
XAN pP pP 10 46 10.3 -0.1
XAN S **S** **10 51 39.0 -3.2**

XAN pmax pmax
comp=Z,11nm,0.9s
XAN pmax pmax
comp=Z,100nm,5.7s
XAN LR LR
comp=Z,610nm,20.4s
XAN LR LR
comp=Z,1μm,20.4s
VOIR 36.84 309⇑ *i*P **P** **10 46 02.3 -0.3**
VOIR 36.84 309 ⇑P **P** **10 46 02.3 -0.3**
IRK Irkutsk 36.93 39 *e*P **P** **10 46 03.4 +0.3**
IRK pmax pmax
comp=Z,33nm,1.4s
ARR Arges 37.11 309⇑ *i*P **P** **10 46 04.7 -0.1**
BURAR Bucovina Array 37.29 313⇑ *i*P **P** **10 46 06.4 0.0**
BURAR Bucovina Array 37.29 313 ⇑P **P** **10 46 06.4 0.0**
KLMR Klimovskoe 37.31 339 *e*P **P** **10 46 04.5 -1.7**
KLMR *e* 10 47 29.6
KLMR pmax pmax
comp=Z,19nm,1.0s
BUR08 Bucovina Ar. S 37.31 313 *e*P **P** **10 46 05.0 -1.6**
DRGR 38.73 311⇓ *i*P **P** **10 46 17.0 -1.5**
DRGR 38.73 311 ⇓P **P** **10 46 17.0 -1.5**
HHC Hu-ho-hao-te 38.87 59 *e*P **P** **10 46 19.3 -0.5**
HHC PP **PnPn** **10 47 53.8 +2.4**
HHC S **S** **10 52 16.4 +0.6**
HHC sS sS 10 52 27.6 -3.7
HHC ScS **ScS** **10 56 31.8 +4.5**
HHC pmax pmax
comp=Z,19nm,1.5s
HHC pmax pmax
comp=Z,130nm,5.0s
HHC LR LR
comp=Z,420nm,13.6s
HHC LR LR
comp=Z,700nm,14.8s
HHC LR LR
comp=Z,600nm,18.5s
MDVR Moldovita 39.02 307⇓ *i*P **P** **10 46 21.1 +0.1**
BZS Buzias 39.24 309⇓ *i*P **P** **10 46 22.8 +0.1**
BZS Buzias 39.24 309 ⇓P **P** **10 46 22.8 +0.1**
UZH Uzhgorod 39.45 313 *e*P **P** **10 46 23.3 -1.1**
UZH *e* 10 46 38.5
GSI Gunungsitoli 40.04 126 *e*P **P** **10 46 30.9 +1.2**
comp=Z,23nm,0.6s
KMBO Kilima Mbogo 40.42 229 LR LR 11 03 54.9
comp=Z,268nm,20.4s,baz=90,slow=37
KECS Kecovo 40.58 313 *e*P **P** **10 46 36.4 +2.6**
QIZ Qiongzhong 40.65 93 P **P** **10 46 34.8 +0.1**
QIZ S **S** **10 52 44.8 +2.1**
QIZ pmax pmax
comp=Z,12nm,2.0s
QIZ LR LR
comp=Z,210nm,20.1s
QIZ LR LR
comp=Z,240nm,23.4s
NIE Niedzica 40.91 314 *e*P **P** **10 46 37.9 +1.3**
WHN Wuhan 41.59 75 P P 10 46 33.4 -8.9
VYHS Vyhne 41.65 312 *e*P **P** **10 46 41.1 -1.5**
BJI Beijing 42.35 60 P **P** **10 46 49.0 +0.6**
BJI S **S** **10 53 08.6 +1.2**
BJI sS **sS** **10 53 19.8 -3.2**
BJI pmax pmax
comp=Z,13nm,1.4s
BJI pmax pmax
comp=Z,200nm,3.8s
BJI LR LR
comp=Z,320nm,17.5s
BJI LR LR
comp=Z,500nm,15.0s
BJI LR LR
comp=Z,350nm,18.1s
OKC Ostrava-Krasne 42.37 314 AMS AMS 11 11 00.0
comp=Z,300nm,19.1s
FINES FINESS Array B 42.63 333 P **P** **10 46 50.0 -0.4**
comp=Z,5.1nm,0.7s,baz=132,slow=10,SNR=15
NRIK Noril'sk 42.96 11 P **P** **10 46 53.5 +0.5**
comp=Z,28nm,1.0s,baz=198,slow=5.3,SNR=20
NRIK LR LR 11 07 53.4
comp=Z,1μm,18.2s,baz=206,slow=40
CUC Castrocucco 42.99 299 *e*P **P** **10 46 53.3 -0.4**
comp=Z,11nm,0.8s
TIA Tai'an 43.23 66 *e*P **P** **10 46 56.8 +1.2**
TIA pmax pmax
comp=Z,20nm,1.1s
VRAC Vranov 43.26 313 LR LR 11 07 35.0
comp=Z,212nm,21.6s,baz=103,slow=40
DPC Dobruska-Polom 43.63 315 *e*P **P** **10 47 02.4 +3.7**
DPC *ex* x 10 47 13.3
DPC AMS AMS 11 10 40.0
comp=Z,300nm,15.6s
UPC Upice 43.85 315 AMS AMS 11 10 50.0
comp=Z,300nm,15.3s
TREC Trest 43.97 313 AMS AMS 11 10 10.0
comp=Z,200nm,12.5s
GOPC GO Pecny, Ondr 44.52 314 AMS AMS 11 11 10.0
comp=Z,300nm,13.2s
PRU Pruhonice 44.69 314 AMS AMS 11 11 10.0
PVCC Panska Ves 44.76 315 AMS AMS 11 12 00.0
comp=Z,300nm,14.2s
GEA0 GERESS Array S 45.07 312 *e*P **P** **10 47 09.1 -1.2**
GEC2 GERESS Array S 45.07 312 *e*P **P** **10 47 08.4 -1.9**
GEC2 pmax pmax
comp=Z,4.0nm,1.0s
GEC2 GERESS Array S 45.07 312 *e*P **P** **10 47 08.4 -1.9**
comp=Z,4.1nm,1.0s
GERES GERESS Array B 45.07 312 P **P** **10 47 09.4 -0.9**
comp=Z,0.5nm,0.5s,baz=99,slow=5.8,SNR=7.7
GERES PcP **PcP** **10 48 51.3 +0.7**
comp=Z,1.0nm,0.8s,baz=111,slow=3.0,SNR=3.8
KHC Kasperske Hory 45.19 312 *e*P **P** **10 47 15.3 +4.2**
KHC *ex* x 10 47 31.1
KHC AMS AMS 11 12 40.0
comp=Z,300nm,13.5s
NKC Novy Kostel 46.06 314 AMS AMS 11 12 50.0
comp=Z,400nm,13.8s
FUORN Ofenpass-Fuorn 47.19 309 *e*P **P** **10 47 26.0 -1.2**
comp=Z,8.4nm,1.2s
DAVOX Davos/Dischmat 47.46 309 LR LR 11 11 23.0
comp=Z,152nm,19.3s,baz=85,slow=41
ARA0 ARCESS Array S 47.56 342 *e*P **P** **10 47 28.9 -0.5**
ARCES ARCESS Array B 47.56 342 P **P** **10 47 29.4 -0.1**
comp=Z,2.4nm,0.5s,baz=128,slow=7.9,SNR=8.6
ARCES LR LR 11 09 29.8
comp=Z,1μm,18.2s,baz=128,slow=39
HFS Hagfors 47.57 327 LR LR 11 08 60.0
comp=Z,389nm,21.9s,baz=102,slow=38
KEST Kesra 48.41 294 P **P** **10 47 37.4 +0.8**
comp=Z,6.5nm,0.7s,baz=61,slow=2.5,SNR=7.8
NC405 NORSAR Array S 48.79 328 *e*P **P** **10 47 39.0 -0.1**
NB2 NORSAR Subarra 49.00 328 P **P** **10 47 40.1 -0.6**
comp=Z,4.2nm,1.0s,baz=107,slow=7.9
NOA NORSAR Array B 49.00 328 P **P** **10 47 40.7 0.0**
comp=Z,3.1nm,0.8s,baz=108,slow=7.5,SNR=6.9
NOA LR LR 11 10 05.9
comp=Z,213nm,21.7s,baz=115,slow=38
NBO02 NORSAR Array S 49.17 328 *e*P **P** **10 47 40.2 -1.8**
CN2 Changchun 49.22 55 *e*P **P** **10 47 43.4 +0.8**
KS15 Wonju Array Si 51.67 63 *e*P **P** **10 48 01.2 0.0**
KSAR Wonju Array Be 51.67 63 P **P** **10 48 01.2 0.0**
KSAR Wonju Array Be 51.67 63 P **P** **10 48 01.1 0.0**
KS01 Wonju Array Si 51.67 63 *e*P **P** **10 48 00.9 -0.3**
KSRS Korea Array 51.69 63 P **P** **10 48 01.1 -0.2**
comp=Z,8.1nm,0.9s,baz=271,slow=7.1,SNR=39
KSRS LR LR 11 12 43.6
comp=Z,132nm,18.3s,baz=230,slow=39
MDJ Mudanjiang 52.15 54 P **P** **10 48 05.3 +0.7**
MDJ pmax pmax
comp=Z,7.0nm,0.7s
MDJ pmax pmax
comp=Z,42nm,5.9s
MDJ LR LR
comp=Z,650nm,15.4s
MDJ LR LR
comp=Z,160nm,14.0s
MDJ LR LR
comp=Z,590nm,15.4s
YAK Yakutsk 52.99 32 P **P** **10 48 10.3 -0.3**
comp=Z,11nm,0.5s,baz=84,slow=1.6,SNR=6.9
YAK LR LR 11 11 58.5
comp=Z,334nm,19.1s,baz=264,slow=38
YAK Yakutsk 52.99 32 *e*P **P** **10 48 10.7 +0.1**
YAK pmax pmax
comp=Z,36nm,1.0s
YAK pmax pmax
comp=E,21nm,1.4s

YAK pmax pmax
comp=N,6.0nm,0.9s
YAK MLR MLR
comp=Z,378nm,15.0s
YAK MLR MLR
comp=E,322nm,17.0s
YAK MLR MLR
comp=N,129nm,18.0s
YAK Yakutsk 52.99 32 *e*P **P** **10 48 10.2 -0.4**
comp=N,50nm,1.1s
KLR Kul'dur 53.37 48 P **P** **10 48 13.7 +0.1**
comp=N,10nm,1.0s,baz=287,slow=9.3,SNR=17
KLR LR LR 11 14 11.0
comp=N,685nm,18.9s,baz=266,slow=40
KLR Kul'dur 53.37 48⇓ *i*P **P** **10 48 12.8 -0.8**
MSHR Mys Shultsa 53.47 56 *ce*P **P** **10 48 15.5 +1.1**
USRK Ussuriysk Ar. 53.90 54 LR LR 11 14 24.2
comp=N,565nm,20.2s,baz=275,slow=40
SPITS Spitsbergen Ar 54.75 349 LR LR 11 15 50.7
comp=N,389nm,19.3s,baz=145,slow=40
TIXI Tiksi 54.87 20 *e*P **P** **10 48 25.9 +1.7**
TIXI pmax pmax
comp=Z,18nm,1.0s
JNU Nakatsue 54.90 68 P **P** **10 48 25.4 +0.3**
comp=Z,14nm,0.9s,baz=38,slow=0.8,SNR=9.0
JNU Nakatsue 54.90 68 *e*P **P** **10 48 26.7 +1.6**
comp=Z,8.6nm,1.0s
ES19 SONSECA Array 58.09 301 *e*P **P** **10 48 46.2 -1.5**
ESDC Sonseca Array 58.14 301 P **P** **10 48 47.1 -1.0**
comp=Z,2.4nm,0.7s,baz=65,slow=7.6,SNR=16
PAB San Pablo 58.46 301 *e*P **P** **10 48 48.9 -1.5**
PAB pmax pmax
comp=Z,26nm,1.6s
PAB San Pablo 58.46 301 *e*P **P** **10 48 48.9 -1.5**
comp=Z,26nm,1.6s
JMIC Jan Mayen 58.69 338 LR LR 11 15 36.4
comp=Z,478nm,18.2s,baz=70,slow=38
MAJO Matsushiro 59.94 62 *e*P **P** **10 48 59.9 -0.6**
MAJO pmax pmax
comp=Z,43nm,1.1s
MJAR Matsushiro Arr 59.94 62 P **P** **10 49 00.3 -0.3**
comp=Z,4.2nm,1.1s,baz=287,slow=9.4,SNR=11
MDT Midelt 60.31 294 LR LR 11 19 13.6
comp=Z,99nm,21.4s,slow=40
YSS Yuzh-Sakhalins 60.96 50 *e*P **P** **10 49 07.0 -0.3**
YSS MLR MLR
comp=Z,7μm,17.0s
YSS MLR MLR
comp=N,5μm,20.0s
YSS Yuzh-Sakhalins 60.96 50 *e*P **P** **10 49 06.6 -0.7**
comp=N,31nm,1.3s
DAG Danmarks Havn 61.63 345 *i*P **P** **10 49 12.2 +0.9**
TOA0 Torodi Ar. Sit 61.75 270 *e*P **P** **10 49 12.8 -0.3**
comp=N,9.7nm,0.8s
TORD Torodi Ar. Bea 61.75 270 P **P** **10 49 12.1 -1.0**
comp=N,8.9nm,0.9s,baz=61,slow=6.5,SNR=49
TORD LR LR 11 18 54.7
comp=N,205nm,18.9s,baz=60,slow=39
MA2 Magadan 63.31 35 P **P** **10 49 21.9 -1.0**
comp=N,6.4nm,0.8s,baz=275,slow=1.1,SNR=3.9
SEY Seymchan 63.47 31 *ce*P **P** **10 49 23.4 -0.4**
BORG Borgarnes 63.91 331 LR LR 11 19 21.0
comp=N,354nm,19.8s,baz=79,slow=38
BORG Borgarnes 63.91 331 *e*P **P** **10 49 26.1 -0.6**
BORG Borgarnes 63.91 331 *e*P **P** **10 49 26.1 -0.6**
comp=N,291nm,1.8s
LBTB Lobatse 65.91 221 *e*P **P** **10 49 41.3 +0.9**
LBTB pmax pmax
comp=Z,32nm,1.5s
LBTB Lobatse 65.91 221 *e*P **P** **10 49 41.3 +0.9**
comp=Z,32nm,1.5s
TSUM Tsumeb 66.72 231 *e*P **P** **10 49 46.6 +0.9**
comp=Z,19nm,1.4s
SUMG Summit 67.65 342 *i*P **P** **10 49 51.2 0.0**
comp=Z,12nm,0.7s
SUMG Summit 67.65 342 *e*P **P** **10 49 51.2 0.0**
SUMG pmax pmax
comp=Z,13nm,0.7s
SUMG Summit 67.65 342 *e*P **P** **10 49 51.2 0.0**
comp=Z,12nm,0.7s
BILL Bilibino 67.73 24⇑ *i*P **P** **10 49 52.7 +1.5**
BILL *i**PP **pP** **10 50 01.5 +0.3**
BILL *e**SP **sP** **10 50 10.2 +5.3**
BILL *e* 10 50 17.0
BILL pmax pmax
comp=Z,19nm,1.0s
BILL MLR MLR
comp=Z,380nm,19.0s
PEA0 Petropavlovsk- 68.69 40 *e*P **P** **10 49 57.3 -0.2**
PETK Petropavlovsk- 68.69 40 P **P** **10 49 57.1 -0.4**
comp=Z,10nm,1.1s,baz=262,slow=4.5,SNR=6.2
PETK LR LR 11 22 57.8
comp=Z,136nm,18.4s,baz=293,slow=38
BOSA Boshof 68.90 218 P **P** **10 49 58.8 -0.4**
comp=Z,2.9nm,0.6s,baz=46,slow=5.9,SNR=6.4
BOSA LR LR 11 17 24.9
comp=Z,172nm,22.0s,baz=30,slow=34
BOSA Boshof 68.90 218 *e*P **P** **10 49 59.4 +0.1**
comp=Z,73nm,1.8s
DBIC Dimbokro 70.38 267 P **P** **10 50 07.8 -0.8**
comp=Z,4.3nm,0.7s,baz=32,slow=5.8,SNR=7.0
DBIC LR LR 11 23 59.7
comp=Z,251nm,18.1s,baz=39,slow=38
DBIC Dimbokro 70.38 267 *e*P **P** **10 50 07.1 -1.5**
DBIC pmax pmax
comp=Z,50nm,1.9s
DBIC Dimbokro 70.38 267 *e*P **P** **10 50 07.1 -1.5**
comp=Z,50nm,1.9s
KIC Kosan Boka 70.42 267 *e*P **P** **10 50 08.8 -0.1**
comp=Z,21nm,0.9s
TIC Toumodi 70.54 267 *e*P **P** **10 50 09.3 -0.3**
LIC Lamto 70.74 267 *e*P **P** **10 50 10.4 -0.4**
comp=Z,59nm,1.5s
FITZ Fitzroy Crossi 73.49 122 LR LR 11 27 29.7
comp=Z,75nm,18.1s,slow=40
FITZ Fitzroy Crossi 73.49 122 *e*P **P** **10 50 28.0 +1.0**
comp=Z,19nm,1.5s
COLD Coldfoot 80.94 14 *e*P **P** **10 51 08.6 +0.4**
comp=Z,18nm,1.0s
WRA Warramunga Arr 81.22 118 P **P** **10 51 10.2 -0.3**
comp=Z,6.0nm,0.9s,baz=320,slow=4.7,SNR=43
WRA LR LR 11 29 02.4
comp=Z,91nm,20.8s,baz=285,slow=37
WRA Warramunga Arr 81.22 118 *i*P **P** **10 51 10.1 -0.3**
WRA pmax pmax
comp=Z,5.0nm,0.6s
WRAB Tennant Creek 81.23 118 *ce*P **P** **10 51 11.4 +1.0**
WRAB pmax pmax
comp=Z,65nm,2.5s
WRAB Tennant Creek 81.23 118 *e*P **P** **10 51 09.9 -0.5**
comp=Z,16nm,1.1s
WB2 Warramunga Arr 81.23 118 *e*P **P** **10 51 10.2 -0.3**
FYU Fort Yukon 82.49 12 *e*P **P** **10 51 16.9 +0.6**
comp=Z,64nm,1.4s
INK Inuvik 82.63 7 P **P** **10 51 17.1 +0.1**
comp=Z,9.2nm,0.8s,baz=2.2,slow=8.8,SNR=22
INK Inuvik 82.63 7 *e*P **P** **10 51 17.3 +0.3**
INK pmax pmax
comp=Z,11nm,0.8s
INK Inuvik 82.63 7 *e*P **P** **10 51 17.2 +0.3**
comp=Z,11nm,0.8s
MLY Manley 82.68 15 *e*P **P** **10 51 17.2 -0.2**
comp=Z,11nm,1.0s
AS31 Alice Springs 82.99 121 *e*P **P** **10 51 19.8 +0.1**
comp=Z,3.0nm,0.6s
ASAR Alice Springs 82.99 121 P **P** **10 51 18.9 -0.6**
comp=Z,7.2nm,0.5s,baz=303,slow=5.4,SNR=159
ASAR LR LR 11 32 47.3
comp=Z,92nm,18.0s,baz=303,slow=39
ASAR Alice Springs 82.99 121 P **P** **10 51 19.0 -0.6**
AS01 Alice Springs 83.02 121 *e*P **P** **10 51 19.5 -0.3**
FORT Forrest 83.04 130 *e*P **P** **10 51 20.4 +0.8**
comp=Z,319nm,0.6s
MDM Murphy Dome 83.30 14 *e*P **P** **10 51 20.9 +0.3**
comp=Z,18nm,1.0s
BPAW Bear Paw Mtn. 83.41 16 *e*P **P** **10 51 21.5 +0.3**
comp=Z,43nm,1.9s
COLA College 83.46 14 *e*P **P** **10 51 21.7 +0.4**
COLA pmax pmax
comp=Z,14nm,0.9s
COLA College 83.46 14 *e*P **P** **10 51 21.7 +0.4**
comp=Z,14nm,0.9s
CCB Clear Creek Bu 83.66 14 *e*P **P** **10 51 23.3 +0.9**
comp=Z,9.4nm,1.3s
CAST Castle Rocks 83.72 16 *e*P **P** **10 51 22.8 0.0**
comp=Z,17nm,1.0s
IL1 Eielson Array 83.75 14 *e*P **P** **10 51 22.2 -0.7**

ILAR	**Eielson Array**	**83.75**	**14**	P		**P**	**10 51 21.9**	**-0.9**
	comp=Z,3.9nm,1.0s,baz=330,slow=4.3,SNR=19							
ILAR				PP		**PP**	**10 54 36.4**	**+1.0**
	comp=Z,1.8nm,1.1s,baz=326,slow=9.1,SNR=7.3							
ILAR				LR		LR	11 33 13.7	
	comp=Z,270nm,21.8s,baz=321,slow=39							
ILB	**Eielson Array**	**83.75**	**14**	*e*P		**P**	**10 51 22.1**	**-0.8**
WRH	**Wood River Hil**	**83.75**	**14**	*e*P		**P**	**10 51 23.3**	**+0.4**
	comp=Z,5.6nm,1.0s							
KTH	**Kantishna Hill**	**83.89**	**16**	*e*P		**P**	**10 51 24.0**	**+0.3**
	comp=Z,9.9nm,1.0s							
EGAK	**Eagle**	**84.85**	**11**	*e*P		**P**	**10 51 28.7**	**+0.3**
	comp=Z,14nm,1.3s							
DAWY	**Dawson**	**85.81**	**11**	*e*P		**P**	**10 51 32.9**	**-0.5**
	comp=Z,9.2nm,0.8s							
PMR	**Palmer**	**86.00**	**16**	*e*P		**P**	**10 51 34.5**	**+0.3**
PMR				pmax		pmax		
	comp=Z,13nm,1.0s							
PMR	**Palmer**	**86.00**	**16**	*e*P		**P**	**10 51 34.5**	**+0.3**
	comp=Z,12nm,1.0s							
SML	**Sawmill**	**86.01**	**16**	*e*P		**P**	**10 51 35.0**	**+0.6**
SML				pmax		pmax		
	comp=Z,19nm,1.0s							
SML	**Sawmill**	**86.01**	**16**	*e*P		**P**	**10 51 35.0**	**+0.6**
	comp=Z,19nm,1.0s							
SCHQ	**Schefferville**	**88.06**	**335**	LR		LR	11 31 38.4	
	comp=Z,188nm,21.4s,baz=91,slow=36							
KDAK	**Kodiak Island**	**88.29**	**20**	*e*P		**P**	**10 51 46.3**	**+0.9**
KDAK	**Kodiak Island**	**88.29**	**20**	*e*P		**P**	**10 51 45.0**	**-0.4**
	comp=Z,122nm,1.8s							
HYT	**Haines Junctio**	**89.15**	**11**	*e*P		**P**	**10 51 49.9**	**+0.3**
	comp=Z,8.2nm,0.8s							
YKA	**Yellowknife Ar**	**89.60**	**0**	P		**P**	**10 51 51.2**	**-0.2**
	comp=Z,4.7nm,0.8s,baz=351,slow=4.9,SNR=24							
YKA				LR		LR	11 36 15.3	
	comp=Z,17nm,19.9s,baz=0.0,slow=38							
STKA	**Stephens Creek**	**93.16**	**125**	P		**P**	**10 52 09.0**	**+0.6**
	comp=Z,1.5nm,0.6s,baz=311,slow=7.1,SNR=5.3							
STKA				LR		LR	11 38 44.3	
	comp=Z,164nm,18.1s,baz=263,slow=39							
MAW	**Mawson**	**95.56**	**181**	P		**P**	**10 52 19.6**	**+1.1**
	comp=Z,3.6nm,0.9s,baz=6.5,slow=8.7,SNR=5.4							
MAW				LR		LR	11 29 38.4	
	comp=Z,123nm,19.2s,baz=60,slow=32							
HNR	**Honiara**	**97.48**	**97**	LR		LR	11 37 50.3	
	comp=Z,15nm,21.1s,baz=192,slow=36							
MNTX	**Cornudas Mount**	**119.91**	**352**	*e*PKPdf		**PKPdf**	**10 57 45.7**	**+0.8**
JCT	**Junction City**	**120.17**	**346**	*e*PKIKP		**PKPdf**	**10 57 46.0**	**+0.5**
JCT	**Junction City**	**120.17**	**346**	*e*PKPdf		**PKPdf**	**10 57 46.0**	**+0.5**
TX31	**Lajitas Ar. Sí**	**121.99**	**350**	*e*PKPdf		**PKPdf**	**10 57 50.3**	**+1.2**
TXAR	**Lajitas Array**	**121.99**	**350**	PKP		**PKPdf**	**10 57 49.5**	**+0.4**
	comp=Z,1.0nm,0.6s,baz=175,slow=1.9,SNR=26							
HPIG		**124.64**	**351**	*e*PKPdf		**PKPdf**	**10 57 55.3**	**+1.0**

*CSEM **24** 10:40:56.2, 36.87N×55.21E, h5km, ML3.0*

TEH 24 10:40:56.2, 36.87N×55.21E, h5km, ML3.0, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGLO	**Ghaloghah**	**1.17**	**252**	*e*Pg	Pg	10 41 16.9	-1.7
IGLO				*e*AMB	AMB	10 41 45.4	
	comp=Z,1μm,0.2s						
IKIA	**Kiasar**	**1.40**	**242**	*e*Pg	Pn	10 41 20.9	-1.7
IKIA				*e*AMB	AMB	10 41 22.9	
	comp=Z,665nm,0.1s						
IKIA	**Kiasar**	**1.40**	**242**	*e*Pg	Pn	10 41 20.9	-1.7
IANJ	**Anjilo**	**1.75**	**217**	*e*Pn	Pn	10 41 27.1	-0.3
IANJ				*e*AMB	AMB	10 41 52.6	
	comp=Z,327nm,0.2s						
IANJ	**Anjilo**	**1.75**	**217**	*e*Pn	Pn	10 41 27.1	-0.3
ISHM	**Shahmirzad**	**1.88**	**236**	*e*Pn	Pn	10 41 29.8	+0.6
ISHM				*e*AMB	AMB	10 42 01.1	
	comp=Z,791nm,0.2s						
IALA	**Alasht**	**2.09**	**249**	*e*AMB	AMB	10 42 04.5	
	comp=Z,1μm,0.1s						
ISFR	**Sfrayin**	**2.24**	**85**	*e*Pn	Pn	10 41 33.6	-0.7
ISFR				*e*AMB	AMB	10 42 22.3	
	comp=Z,270nm,0.2s						
ISFR	**Sfrayin**	**2.24**	**85**	*e*Pn	Pn	10 41 33.6	-0.7
IFIR	**Firoozkooh**	**2.33**	**239**	*e*Pn	Pn	10 41 35.1	-0.4
IFIR				*e*AMB	AMB	10 42 17.6	
	comp=N,504nm,0.0s						
IFIR	**Firoozkooh**	**2.33**	**239**	*e*Pn	Pn	10 41 35.1	-0.4
IPRN	**Peran**	**2.39**	**256**	*e*Pn	Pn	10 41 36.2	0.0
IPRN				*e*Sg	Sb	10 42 10.4	+0.6
IPRN				*e*AMB	AMB	10 42 14.3	
	comp=Z,1μm,0.1s						
IDMV	**Damavand**	**2.87**	**244**	*e*Pn	Pn	10 41 42.7	-0.2
IDMV				*e*AMB	AMB	10 41 50.5	
	comp=Z,261nm,0.2s						
IDMV	**Damavand**	**2.87**	**244**	*e*Pn	Pn	10 41 42.7	-0.2

MAN 24 10:40:59, 11.83N×124.30E, h96km, mb4.4, ML3.2, MS3.0, 2D, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**0.93**	**135**	↓*e*P	Pn	10 41 19.3	+0.8
PLP				*i* S	Sn	10 41 34.6	+1.6
RCP	**Roxas**	**1.55**	**260**	↓*e*P	Pn	10 41 26.8	+1.2
RCP				*i* S	Sn	10 41 46.9	+1.0

IDC 24 10:46:42.7±1.3, 2.50N×66.41E, h0km, mb3.7/6, mb1 3.8/6, mb1mx3.5/52, mbtmp3.7/6, MS3.8/6, Ms1 3.8/6, ms1mx3.3/48, Error ellipse: s-maj=48.4km s-min=24.6km az=49.0, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H**	**9.89**	**152**	T	T	10 59 23.8	
	baz=332,slow=76,SNR=298						
H08N3	**Diego Garcia H**	**9.90**	**153**	T	T	10 59 22.8	
	baz=332,slow=76,SNR=266						
H08N1	**Diego Garcia H**	**9.91**	**152**	T	T	10 59 25.4	
	baz=332,slow=76,SNR=261						
WSAR	**Wadi Sarin**	**21.95**	**341**	LR	LR	10 58 06.6	
	comp=Z,258nm,19.1s,baz=198,slow=31						
GEYT	**Alibeck**	**36.07**	**349**	LR	LR	11 07 46.5	
	comp=Z,149nm,20.9s,baz=280,slow=35						
MKAR	**Makanchi Array**	**46.23**	**15**	LR	LR	11 13 56.7	
	comp=Z,64nm,19.7s,baz=241,slow=35						
AKTO	**Aktyubinsk**	**48.29**	**353**	P	P	10 55 25.4	-0.2
	0.8nm,0.5s,baz=174,slow=11,SNR=3.3						
ZALV	**Zalesovo Beam**	**53.47**	**13**	P	P	10 56 06.0	+1.5
	0.3nm,0.3s,baz=198,slow=9.3,SNR=3.6						
ZALV				LR	LR	11 18 28.0	
	comp=Z,113nm,20.6s,baz=250,slow=36						
SONM	**Songino Array**	**56.78**	**31**	P	P	10 56 27.6	-1.3
	0.2nm,0.4s,baz=218,slow=9.1,SNR=2.9						
SONM				LR	LR	11 20 56.1	
	comp=Z,139nm,19.8s,baz=262,slow=36						
H01W3	**Cape Leeuwin H**	**58.14**	**134**	T	T	11 59 26.5	
	baz=300,slow=75,SNR=25						
H01W2	**Cape Leeuwin H**	**58.14**	**134**	T	T	11 59 26.1	
	baz=300,slow=75,SNR=23						
H01W1	**Cape Leeuwin H**	**58.16**	**134**	T	T	11 59 28.0	
	baz=300,slow=75,SNR=26						
NRIK	**Norilʹsk**	**68.21**	**8**	LR	LR	11 30 56.7	
	comp=Z,60nm,18.6s,baz=178,slow=39						
WRA	**Warramunga Arr**	**70.21**	**112**	P	P	10 57 58.1	0.0
	0.6nm,0.6s,baz=292,slow=5.6,SNR=9.8						
ASAR	**Alice Springs**	**70.52**	**116**	P	P	10 57 59.9	-0.1
	0.4nm,0.8s,baz=287,slow=5.7,SNR=6.9						
ESDC	**Sonseca Array**	**73.35**	**311**	P	P	10 58 15.9	-0.8
	0.4nm,0.6s,baz=102,slow=5.1,SNR=3.6						
TXAR	**Lajitas Array**	**146.95**	**344**	PKPbc	PKPbc	11 06 28.7	+0.6
	1.0nm,0.7s,baz=51,slow=3.2,SNR=15						

MEX 24 10:52:16.8±0.7, 16.64N×99.37W, h2km±4km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.52**	**296**	*e*P	Pg	10 52 22.8	-4.0
ACX				*i* S	Sg	10 52 30.6	-3.0
ACP2	**Acapulco**	**0.55**	**296**	*e*P	Pg	10 52 27.0	-0.3
ACP2				*e*S	Sg	10 52 34.7	+0.3
CAIG	**El Cayaco**	**0.95**	**296**	*e*P	Pg	10 52 33.2	-1.8
CAIG				*e*S	Sg	10 52 45.3	-2.0
TLIG	**Tlapa**	**1.20**	**40**	*e*P	Pg	10 52 37.0	-2.8
TLIG				*e*S	Sg	10 52 51.7	-3.7
PNIG	**Pinotepa**	**1.22**	**101**	*e*P	Pg	10 52 37.1	-3.1
PNIG				*e*S	Sg	10 52 52.4	-3.6
MEIG	**Mezcala**	**1.30**	**350**	*e*P	Pg	10 52 38.4	-3.4
MEIG				*e*S	Sg	10 52 55.5	-3.2
PLIG	**Platanillo**	**1.75**	**356**	*e*P	Pn	10 52 44.1	-4.1
PLIG				*e*S	Sn	10 53 06.1	-5.0
ARIG	**Puente Sto Nin**	**1.88**	**330**	*e*P	Pn	10 52 46.7	-3.3
ARIG				*e*S	Sn	10 53 10.3	-4.0
ZIIG	**Zihuatanejo**	**2.22**	**296**	*e*P	Pn	10 52 52.0	-2.6
ZIIG				*e*S	Sn	10 53 18.1	-4.6

*IDC **24** 11:02:42.6±2.5, 39.10N×142.79E, h0km, mb3.7/3, mb1 3.7/5, mb1mx3.4/48, mbtmp3.6/5, ML2.7/2, Error ellipse: s-maj=63.9km s-min=27.5km az=68.0*
*ISCJB **24** 11:02:50.9±1.2, 38.89N±0.05×142.0E±0.1, h55km±7km, mb3.7/3, Error ellipse: s-maj=17.3km s-min=7.3km az=14.2*
*JMA **24** 11:02:52.0±0.1, 38.89N×141.97E, h50km±1km, M3.6*
JMA Felt II J1.

ISC 24 11:02:51.3±1.8, 38.88N±0.06×142.1E±0.1, h45km±12km, n21, σ1°28/22, mb3.7/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.37**	**302**	P	Pn	**11 03 01.3**	**+0.6**
OFUJ				S	Sn	**11 03 07.6**	**+0.2**
JMK	**Ichinoseki**	**0.67**	**276**	P	Pn	**11 03 04.4**	**0.0**
JMK				S	Sn	**11 03 13.0**	**-0.8**
JIO	**Ouri**	**0.71**	**233**	P	Pn	**11 03 04.9**	**-0.1**
JIO				S	Sn	**11 03 13.7**	**-1.1**
JOM	**Ohasama**	**0.84**	**315**	P	Pn	**11 03 07.0**	**+0.2**
JOM				S	Sn	**11 03 17.8**	**-0.3**
JOU	**Okura**	**1.22**	**245**	P	Pn	**11 03 11.6**	**-0.3**
JOU				S	Sn	**11 03 26.2**	**-1.0**
JRG	**Rokugo**	**1.23**	**295**	P	Pn	**11 03 11.9**	**-0.1**
JYK	**Kaneyama**	**1.33**	**272**	P	Pn	**11 03 13.3**	**-0.2**
JMM	**Marumori**	**1.43**	**225**	P	Pn	**11 03 14.3**	**-0.5**
JMM				S	Sn	**11 03 30.1**	**-1.8**
JANG	**Nango**	**1.55**	**344**	P	Pn	**11 03 16.6**	**+0.2**
MJAR	**Matsushiro Arr**	**3.85**	**234**	Pn	Pn	**11 03 51.1**	**+3.1**
	1.4nm,0.3s,baz=40,slow=12,SNR=19						
MAT	**Matsushiro**	**3.85**	**234**	P	Pn	**11 03 50.8**	**+2.7**
MAT				*e*S	Sn	**11 04 34.4**	**+2.3**
USRK	**Ussuriysk Ar.**	**9.23**	**308**	Pn	Pn	**11 05 01.7**	**-0.2**
	0.2nm,0.3s,baz=121,slow=14,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.71**	**125**	T	T	11 39 15.1	
	baz=317,slow=75,SNR=93						
H11N1	**WAKE ISLAND Hy**	**28.72**	**125**	T	T	11 39 15.9	
	baz=317,slow=75,SNR=102						
H11N3	**WAKE ISLAND Hy**	**28.73**	**125**	T	T	11 39 16.4	
	baz=317,slow=75,SNR=65						
H11S1	**WAKE ISLAND Hy**	**29.49**	**127**	T	T	11 40 08.7	
	baz=318,slow=76,SNR=27						
H11S3	**WAKE ISLAND Hy**	**29.49**	**127**	T	T	11 40 17.7	
	baz=318,slow=76,SNR=45						
H11S2	**WAKE ISLAND Hy**	**29.50**	**127**	T	T	11 40 04.9	
	baz=318,slow=76,SNR=30						
MKAR	**Makanchi Array**	**43.60**	**301**	P	**P**	**11 10 50.8**	**-0.2**
	0.8nm,0.6s,baz=83,slow=10.0,SNR=8.0						
BVAR	**Borovoye Array**	**49.73**	**311**	P	**P**	**11 11 38.6**	**-0.2**
	0.5nm,0.3s,baz=59,slow=12,SNR=3.5						
WRA	**Warramunga Arr**	**58.96**	**188**	P	**P**	**11 12 45.8**	**-0.4**
	0.7nm,1.1s,baz=6.2,slow=7.0,SNR=8.8						

*IDC **24** 11:20:08.0±1.6, 35.98N×70.92E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/39, mbtmp3.6/4, Error ellipse: s-maj=62.9km s-min=36.0km az=47.0*
*ISCJB **24** 11:20:29.8±1.1, 36.49N±0.08×71.0E±0.1, h188km, mb3.4/4, Error ellipse: s-maj=14.0km s-min=9.6km az=35.8*
*NNC **24** 11:20:37.0±1.9, 36.99N×70.79E, h208km±32km, mb2.3, mpv3.5, Error ellipse: s-maj=31.1km s-min=12.5km az=128.0*

ISC 24 11:20:30.8±1.3, 36.5N±0.1×71.01E±0.10, h188km, n9, σ1°87/14, mb3.4/4, 7C-3D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.85**	**323**	⇑P	**Pn**	**11 21 20.3**	**+2.3**
	10nm,0.3s						
DZET				⇑S	**Sn**	**11 21 54.5**	**-0.6**
	46nm,0.3s						
MNAS	**Manas**	**6.05**	**11**	⇑P	**Pn**	**11 22 01.3**	**+2.7**
	1.5nm,0.4s						
MNAS				⇓S	**Sn**	**11 23 07.1**	**-0.9**
	6.9nm,0.5s						
KK31	**Karatay Array**	**6.57**	**357**	⇑P	**Pn**	**11 22 05.4**	**+0.2**
	1.0nm,0.5s,baz=177,slow=13,SNR=11						
KK31				⇓S	**Sn**	**11 23 16.2**	**-3.7**
	3.3nm,0.5s,baz=188,slow=24,SNR=13						
AAK	**Ala-Archa**	**6.66**	**23**	⇑P	**Pn**	**11 22 08.4**	**+1.9**
	2.7nm,0.5s						
AAK				⇑S	**Sn**	**11 23 21.8**	**-0.4**
	3.1nm,0.5s						
TKM2	**Tokmak 2**	**7.29**	**28**	⇑P	**Pn**	**11 22 16.1**	**+1.3**
	3.3nm,0.6s						
TKM2				⇓S	**Sn**	**11 23 36.3**	**-1.0**
	1.2nm,0.6s						
FINES	**FINESS Array B**	**37.45**	**326**	P	**P**	**11 27 26.6**	**+0.9**
	1.2nm,0.9s,baz=113,slow=9.5,SNR=1.2						
ARCES	**ARCESS Array B**	**41.11**	**338**	P	**P**	**11 27 56.9**	**+1.0**
	0.9nm,0.4s,baz=108,slow=7.7,SNR=2.1						
TORD	**Torodi Ar. Bea**	**65.72**	**269**	P	**P**	**11 30 54.2**	**-1.4**
	0.2nm,0.4s,baz=50,slow=5.6,SNR=1.9						
WRA	**Warramunga Arr**	**82.01**	**122**	P	**P**	**11 32 28.9**	**-1.0**
	0.3nm,0.9s,baz=326,slow=4.8,SNR=1.7						

*KRSC **24** 11:42:56.4±1.2, 54.05N×159.07E, h201km±11km, ML3.8*
*ISCJB **24** 11:42:57.8±0.6, 54.04N±0.04×159.1E±0.1, h196km±5km, mb3.1/3, Error ellipse: s-maj=12.2km s-min=4.6km az=26.4*
*IDC **24** 11:42:57.8±1.4, 53.46N×158.78E, h221km±12km, mb2.9/3, mb1 3.0/3, mb1mx2.7/49, mbtmp3.5/3, Error ellipse: s-maj=60.2km s-min=24.9km az=167.0*

ISC 24 11:42:58.0±0.9, 54.06N±0.05×159.01E±0.07, h198km±7km, n36, σ1°04/49, mb3.1/3, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KII	**Karymskiy**	**0.26**	**95**	*e*P	**Pn**	**11 43 24.1**	**-0.1**
GNL	**Ganaly**	**0.73**	**241**	*e*P	**Pn**	**11 43 25.6**	**-0.4**
GNL				*e*S	**S**	**11 43 46.8**	**-0.8**
KRX	**Arik**	**0.73**	**197**	*e*P	**Pn**	**11 43 26.4**	**+0.3**
KRER	**Koryakskii**	**0.77**	**192**	*e*P	**Pn**	**11 43 26.8**	**+0.4**
SDLR	**Sedlovina**	**0.79**	**186**	*i* P	**Pn**	**11 43 26.9**	**+0.5**
KOK	**Koryaka**	**0.80**	**196**	*e*P	**Pn**	**11 43 27.1**	**+0.7**
AVH	**Avacha**	**0.81**	**192**	*e*P	**Pn**	**11 43 26.9**	**+0.5**
UGLR	**Uglovaya**	**0.86**	**187**	*e*P	**Pn**	**11 43 27.3**	**+0.5**
NLC	**Nalytchevo**	**0.91**	**167**	*i* P	**Pn**	**11 43 27.1**	**+0.2**
NLC				*i* S	**S**	**11 43 49.5**	**+0.3**
DALK	**Dalny**	**1.04**	**189**	*i* P	**Pn**	**11 43 28.1**	**+0.3**
DALK				*i* S	**S**	**11 43 50.7**	**0.0**
SPN	**Mys Shipunski**	**1.14**	**147**	*e*P	**Pn**	**11 43 28.5**	**0.0**
SPN				*e*S	**S**	**11 43 51.2**	**-0.8**
PETK	**Petropavlovsk-**	**1.23**	**220**	P	**Pn**	**11 43 29.0**	**-0.2**
	5.4nm,0.3s,baz=63,slow=9.6,SNR=64						
PETK				S	**S**	**11 43 52.6**	**-0.7**
	0.2nm,0.3s,baz=136,slow=42,SNR=3.5						
KRMR	**Karymshinskiy**	**1.34**	**204**	*e*P	**Pn**	**11 43 30.3**	**+0.2**
KRMR				*e*S	**S**	**11 43 55.5**	**+0.7**
TUMR	**Tumrok**	**1.39**	**28**	*e*P	**Pn**	**11 43 31.2**	**+0.6**
TUMR				*e*S	**S**	**11 43 56.9**	**+0.8**
RUS	**Russkaya**	**1.66**	**191**	*e*P	**Pn**	**11 43 32.8**	**-0.1**
RUS				*e*S	**S**	**11 43 59.4**	**-0.5**
MKZ	**Mys Kozlova**	**1.67**	**72**	*i* P	**Pn**	**11 43 33.4**	**+0.4**
MKZ				*e*S	**S**	**11 43 58.5**	**-1.6**
ASAK	**Asacha**	**1.81**	**202**	*e*P	**Pn**	**11 43 32.9**	**-1.6**
KMNR	**Kamenistaya**	**1.84**	**22**	*e*P	**Pn**	**11 43 35.5**	**+0.7**
KMNR				*e*S	**S**	**11 44 04.2**	**+0.7**
ESO	**Esso**	**1.88**	**355**	*i* P	**Pn**	**11 43 34.3**	**-0.8**
KPT	**Kopyto**	**2.04**	**20**	*e*P	**Pn**	**11 43 36.4**	**-0.3**
KPT				*e*S	**S**	**11 44 05.7**	**-1.3**
KIRR	**Kirishev**	**2.05**	**21**	*e*P	**Pn**	**11 43 36.4**	**-0.5**
BZMR	**Bezymyannaya**	**2.07**	**24**	*e*P	**Pn**	**11 43 37.1**	**0.0**
KOZ	**Kozyrevsk**	**2.07**	**14**	*e*P	**Pn**	**11 43 36.5**	**-0.4**
ZLN	**Zelenaya**	**2.22**	**27**	*e*P	**Pn**	**11 43 39.4**	**+0.7**
LGNR	**Loginova**	**2.25**	**25**	*e*P	**Pn**	**11 43 39.9**	**+0.7**
CIRR	**Tsirk**	**2.29**	**25**	*e*P	**Pn**	**11 43 39.8**	**+0.3**
KLY	**Klyuchi**	**2.45**	**22**	*e*P	**Pn**	**11 43 41.7**	**+0.7**
BDR	**Baidarnaya**	**2.81**	**26**	*e*P	**Pn**	**11 43 46.1**	**+0.8**
SRKR	**Sorokina**	**2.88**	**24**	*e*P	**Pn**	**11 43 46.7**	**+0.6**
SMKR	**Semkarok**	**2.89**	**28**	*e*P	**Pn**	**11 43 47.4**	**+1.2**
KBG	**Krutoberegovo**	**3.06**	**42**	*e*P	**Pn**	**11 43 47.7**	**-0.3**
KBG				*e*S	**S**	**11 44 24.7**	**-2.6**
SKR	**Severo-Kuril's**	**3.82**	**209**	*e*P	**Pn**	**11 43 57.8**	**+0.4**
SKR				*e*S	**S**	**11 44 43.0**	**-0.9**
BKI	**Bering**	**4.21**	**71**	*e*S	**S**	**11 44 49.4**	**-3.2**
ILAR	**Eielson Array**	**28.61**	**46**	P	**P**	**11 48 37.4**	**+1.9**
	0.2nm,0.7s,baz=257,slow=6.5,SNR=4.4						
INK	**Inuvik**	**33.51**	**38**	P	**P**	**11 49 20.5**	**+2.3**
	0.3nm,0.3s,baz=284,slow=8.3,SNR=10						
MKAR	**Makanchi Array**	**47.16**	**294**	P	**P**	**11 51 08.5**	**-1.8**
	0.4nm,0.5s,baz=60,slow=9.0,SNR=4.8						

*DDA **24** 11:46:59.9, 39.62N×28.57E, h7km, Md2.6*
*IASPEI **24** 11:47:00.4±0.9, 39.58N±0.02×28.60E±0.03, h7km±6km, Error ellipse: s-maj=4.1km s-min=3.3km az=79.2, GT5 selection from ISC bulletin GT5 identified by Bondˇjr and McLaughlin (2009) selection criteria Bondˇjr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **24** 11:47:00.3±0.5, 39.59N±0.03×28.61E±0.04, h3km±5km, Error ellipse: s-maj=5.5km s-min=4.3km az=172.1*
*ISK **24** 11:47:00.5, 39.61N×28.61E, h5km, ML2.3*
*CSEM **24** 11:47:00.7±0.1, 39.59N×28.61E, h5km, ML2.3, Error ellipse: s-maj=3.8km s-min=3.0km az=77.0*

ISC 24 11:47:00.4±0.9, 39.59N±0.02×28.61E±0.03, h6km±6km, n51, σ0°58/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DST	**Dursunbey**	**0.02**	**23**	*e*PG	**Pg**	**11 47 01.8**	**+0.2**
DST	**Dursunbey**	**0.02**	**23**	*e*Pg	**Pg**	**11 47 01.8**	**+0.2**
DEMI	**Demirci**	**0.55**	**171**	*i* P	**Pb**	**11 47 12.3**	**-0.2**
DEMI				*i* S	**Sn**	**11 47 24.7**	**+0.2**
DEMI	**Demirci**	**0.55**	**171**	P	**Pb**	**11 47 12.3**	**-0.2**
BALB	**Balikesir**	**0.57**	**275**	*e*PG	**Pg**	**11 47 11.2**	**-0.1**
BALB	**Balikesir**	**0.57**	**275**	*e*Pg	**Pg**	**11 47 11.2**	**-0.1**
TVSB	**Tavsanli**	**0.67**	**102**	*e*PG	**Pg**	**11 47 13.9**	**+0.6**
TVSB				*e*SG	**Sb**	**11 47 23.7**	**-0.6**
TVSB	**Tavsanli**	**0.67**	**102**	*e*Pg	**Pg**	**11 47 13.9**	**+0.6**
TVSB				*e*Sg	**Sb**	**11 47 23.7**	**-0.6**
KCTX	**Karacabey (Bur**	**0.70**	**344**	*e*PG	**Pg**	**11 47 13.4**	**-0.5**
KCTX	**Karacabey (Bur**	**0.70**	**344**	*e*Pg	**Pg**	**11 47 13.4**	**-0.5**
MDNY	**Mudanya-Bursa**	**0.81**	**15**	*e*PG	**Pg**	**11 47 15.3**	**-0.6**
MDNY	**Mudanya-Bursa**	**0.81**	**15**	*e*Pg	**Pg**	**11 47 15.3**	**-0.6**
IGD	**Bursa**	**0.81**	**34**	*i* P	**Pg**	**11 47 15.4**	**-0.6**
IGD				*i* S	**Sb**	**11 47 27.2**	**-1.0**
GDZ	**Gediz**	**0.84**	**126**	*i* P	**Pb**	**11 47 17.5**	**0.0**
GDZ				*i* S	**Sn**	**11 47 33.4**	**+1.8**
GDZ	**Gediz**	**0.84**	**126**	P	**Pb**	**11 47 17.5**	**0.0**
AKS	**Akhisar**	**0.94**	**221**	*e*PG	**Pb**	**11 47 19.6**	**+0.4**
AKS	**Akhisar**	**0.94**	**221**	*e*Pg	**Pb**	**11 47 19.6**	**+0.4**
EDC	**Edincik**	**0.95**	**323**	*e*PG	**Pb**	**11 47 19.1**	**-0.2**
EDC	**Edincik**	**0.95**	**323**	*e*Pg	**Pb**	**11 47 19.1**	**-0.2**
ARMT	**Armutlu**	**0.99**	**11**	*e*PG	**Pb**	**11 47 19.6**	**-0.5**
ARMT				*e*SG	**Sb**	**11 47 33.5**	**0.0**
ARMT	**Armutlu**	**0.99**	**11**	*e*Pg	**Pb**	**11 47 19.6**	**-0.5**
ARMT				*e*Sg	**Sb**	**11 47 33.5**	**0.0**
IZI	**Iznik**	**1.00**	**41**	*e*PG	**Pb**	**11 47 19.8**	**-0.4**
IZI	**Iznik**	**1.00**	**41**	*e*Pg	**Pb**	**11 47 19.8**	**-0.4**
SBT5	**Esenkoy-Cinarc**	**1.06**	**11**	*e*PG	**Pn**	**11 47 21.5**	**-0.3**
SBT5	**Esenkoy-Cinarc**	**1.06**	**11**	*e*Pg	**Pn**	**11 47 21.5**	**-0.3**
MANT	**Manisa**	**1.10**	**182**	*i* P	**Pg**	**11 47 20.5**	**-0.9**
MANT				*i* S	**Sg**	**11 47 34.9**	**-0.8**
MANT	**Manisa**	**1.10**	**182**	P	**Pg**	**11 47 20.5**	**-0.9**
MANT				S	**Sg**	**11 47 34.9**	**-0.8**
CAVI	**Cavuskoy**	**1.13**	**57**	*e*PN	**Pb**	**11 47 22.1**	**-0.2**
CAVI	**Cavuskoy**	**1.13**	**57**	*e*Pn	**Pb**	**11 47 22.1**	**-0.2**
ADVT	**Abdulvahap**	**1.21**	**45**	*e*Pn	**Pn**	**11 47 24.4**	**+0.5**
ADVT	**Abdulvahap**	**1.21**	**45**	*e*Pn	**Pn**	**11 47 24.4**	**+0.5**
MRMT	**Marmara Adasi**	**1.28**	**323**	*e*PN	**Pn**	**11 47 24.9**	**0.0**
MRMT	**Marmara Adasi**	**1.28**	**323**	*e*Pn	**Pn**	**11 47 24.9**	**0.0**
SBT2	**Guzelce

KCTX	Karacabey (Bur	1.46	34	*e*PN		Pn	12 03 57.3	0.0
KCTX	Karacabey (Bur	1.46	34	*e*Pn		Pn	12 03 57.3	0.0
GELI	Tayfur-Gelibol	1.48	335	*e*PN		Pb	12 03 58.2	-0.4
GELI	Tayfur-Gelibol	1.48	335	*e*Pn		Pb	12 03 58.2	-0.4
MRMT	Marmara Adasi	1.56	8	*e*PN		Pn	12 03 59.2	+0.4
MRMT	Marmara Adasi	1.56	8	*e*Pn		Pn	12 03 59.2	+0.4
GADA	Gvkgeada	1.57	317	*e*PN		Pn	12 03 58.4	-0.3
GADA	Gvkgeada	1.57	317	*e*Pn		Pn	12 03 58.4	-0.3
RKY	Sarkoy-Tekirda	1.63	357	*e*PN		Pb	12 04 00.6	-0.6
RKY	Sarkoy-Tekirda	1.63	357	*e*Pn		Pb	12 04 00.6	-0.6
GDZ	Gediz	1.70	88	*i* P		Pg	12 04 03.2	-0.3
GDZ				*i* S		Sb	12 04 25.0	+1.3
GDZ	Gediz	1.70	88	P		Pg	12 04 03.2	-0.3
GDZ				S		Sb	12 04 25.0	+1.3
ERIK	Erikli-Kesan	1.72	340	*e*PN		Pn	12 04 01.1	+0.2
ERIK	Erikli-Kesan	1.72	340	*e*Pn		Pn	12 04 01.1	+0.2
SBT4	Kumbag-Tekirda	1.78	6	*e*PN		Pn	12 04 02.5	+1.0
SBT4	Kumbag-Tekirda	1.78	6	*e*Pn		Pn	12 04 02.5	+1.0
ENEZ	Enez	1.90	333	*e*PN		Pn	12 04 03.4	+0.1
ENEZ	Enez	1.90	333	*e*Pn		Pn	12 04 03.4	+0.1
SBT3	Marmara-Eregli	1.90	16	*e*PN		Pn	12 04 03.9	+0.7
SBT3	Marmara-Eregli	1.90	16	*e*Pn		Pn	12 04 03.9	+0.7
ARMT	Armutlu	1.93	38	*e*PN		Pn	12 04 04.3	+0.5
ARMT	Armutlu	1.93	38	*e*Pn		Pn	12 04 04.3	+0.5
SBT5	Esenkoy-Cinarc	1.99	37	*e*PN		Pn	12 04 05.3	+0.8
SBT5	Esenkoy-Cinarc	1.99	37	*e*Pn		Pn	12 04 05.3	+0.8
ALN	Alexandroupoli	2.08	333	*e*PN		Pn	12 04 06.4	+0.6
ALN	Alexandroupoli	2.08	333	*e*Pn		Pn	12 04 06.4	+0.6

IDC ***24*** *12:16:07.8±1.7, 36°.77N×143°.83E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.3/43, mbtmp3.3/4, ML3.2/2, Error ellipse: s-maj=45.5km s-min=30.0km az=114.0*

JMA ***24*** *12:16:11.5±0.2, 36°.79N×143°.61E, h53km, M3.3*

ISC 24 12:16:09.3±2.4, 36°.80N±0°.10×143°.8E±0°.2, h84km±59km**, n19, σ2$00/30, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.43**	**284**	P	**Pn**	**12 16 47.4**	**+0.4**
JFK				*e*S	**Sn**	**12 17 14.2**	**-1.7**
ONAJ	**Iwakimizuishiy**	**2.44**	**278**	P	**Pn**	**12 16 47.8**	**+0.6**
ONAJ				*e*S	**Sn**	**12 17 15.3**	**-1.0**
JIO	**Ouri**	**2.57**	**311**	P	**Pn**	**12 16 49.9**	**+1.1**
JIO				*e*S	**Sn**	**12 17 18.2**	**-1.0**
JHO	**Hitachi**	**2.62**	**267**	P	**Pn**	**12 16 49.8**	**+0.2**
JFT	**Otama**	**2.88**	**286**	P	**Pn**	**12 16 53.9**	**+0.9**
JFT				*e*S	**Sn**	**12 17 26.4**	**+0.1**
JMK	**Ichinoseki**	**2.98**	**317**	P	**Pn**	**12 16 56.2**	**+1.8**
JMK				*e*S	**Sn**	**12 17 29.2**	**+0.1**
BSO1	**Boso 1**	**3.15**	**228**	*e*S	**Sn**	**12 17 32.9**	**+0.3**
JOM	**Ohasama**	**3.33**	**324**	P	**Pn**	**12 17 01.3**	**+2.1**
JOM				*e*S	**Sn**	**12 17 37.4**	**-0.3**
JYK	**Kaneyama**	**3.46**	**309**	P	**Pn**	**12 17 02.8**	**+1.8**
JYK				*e*S	**Sn**	**12 17 41.9**	**+1.0**
JAG	**Ashikaga**	**3.54**	**265**	P	**Pn**	**12 17 03.0**	**+1.1**
JAG				*e*S	**Sn**	**12 17 41.8**	**-0.9**
JRY	**Ryogami san**	**4.05**	**260**	P	**Pn**	**12 17 09.7**	**+0.8**
JRY				*e*S	**Sn**	**12 17 52.5**	**-2.6**
MJAR	**Matsushiro Arr** 1.0nm,0.3s,baz=92,slow=15,SNR=9.9	**4.52**	**268**	Pn	**Pn**	**12 17 17.6**	**+2.2**
MAT	**Matsushiro**	**4.52**	**268**	P	**Pn**	**12 17 17.7**	**+2.3**
MAT				*e*S	**Sn**	**12 18 02.2**	**-4.5**
JOT	**Ohata**	**5.06**	**336**	P	**Pn**	**12 17 24.8**	**+2.2**
JCH	**Churui**	**5.82**	**357**	P	**Pn**	**12 17 33.9**	**+0.9**
JCH				*e*S	**Sn**	**12 18 35.4**	**-2.9**
NEM2	**Nemuro 2**	**6.72**	**12**	P	**Pn**	**12 17 45.6**	**+0.3**
NEM2				*e*S	**Sn**	**12 18 55.6**	**-4.7**
ASAJ	**Asahikawa** 0.5nm,0.3s,baz=208,slow=12,SNR=2.2	**7.37**	**353**	Pn	**Pn**	**12 17 56.2**	**+2.1**
ASAJ				Sn	**Sn**	**12 19 14.2**	**-1.9**
ILAR	**Eielson Array** 0.3nm,0.7s,baz=261,slow=6.0,SNR=3.8	**48.66**	**32**	P	P	12 24 53.5	+9.0
WRA	**Warramunga Arr** 0.5nm,1.0s,baz=11,slow=7.3,SNR=2.6	**57.14**	**191**	P	P	12 25 56.1	+8.8

IDC ***24*** *12:19:23.5±1.5, 47°.62N×123°.24W, h0km, mb3.4/3, mb1 3.6/7, mb1mx3.4/42, mbtmp3.4/7, ML3.5/4, MS3.0/4, Ms1 3.0/4, ms1mx2.6/24, Error ellipse: s-maj=31.6km s-min=11.9km az=35.0*

ISCJB ***24*** *12:19:27.4±0.1, 47°.74N±0°.01×123°.20W±0°.02, h55km±3km, mb3.6/5, MS3.7/1, Error ellipse: s-maj=2.7km s-min=1.8km az=149.3*

NEIC ***24*** *12:19:28.6, 47°.71N×123°.18W, h42km, mb4.0/4, MW3.8, MD3.7(SEA), Moment Tensor Solution. s11 Moment tensor: Scale 10¹⁴Nm; Mrr=5.02; Mθθ=5.81; Mϕϕ=0.79; Mrθ=0.37; Mθϕ=0.70; Mϕr=-2.06; Best double couple: M=5.90000×10¹⁴ NP1:ϕs=63.00000°, δ=48.00000°, λ=-121.00000°. NP2:ϕs=285.00000°, δ=50.00000°, λ=-60.00000°. Principal axes: T 5.8900, Plg1.0000°, Azm354.0000°; N 0.0000, Plg23.0000°, Azm85.0000°; P -5.8900, Plg67.0000°, Azm262.0000°; After SEA.*

NEIC Felt [III] at Chimacum and [II] on Bainbridge Island and at Bremerton, Brinnon, Gig Harbor, Hoodsport, Olympia, Port Ludlow, Port Orchard, Poulsbo, Seabeck, Seattle and Silverdale. Felt widely in the Puget Sound region. Also felt at Victoria, British Columbia.

PGC ***24*** *12:19:28.3±0.0, 47°.74N×123°.20W, h45km, ML3.3/35, 67km west of Seattle, Wa Washington*

PNSN ***24*** *12:19:28.7, 47°.71N×123°.18W, h42km, MD3.7, Fault plane solution: NP1:ϕs=270.00000°, δ40.00000°, NP2: ϕs=90.00000°, δ50.00000°, Principal axes: T Plg5.0000°, Azm180.0000°; P Plg85.0000°, Azm0.0000°;*

ISC 24 12:19:28.8±0.8, 47°.74N±0°.02×123°.23W±0°.02, h45km±9km**, n185, σ1$21/226, mb3.4/5, Washington**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HDW	**Hoodsport**	**0.15**	**127**	P	**Pn**	**12 19 35.2**	**-1.2**
OSD	**Olympics--Snow**	**0.33**	**285**	P	**Pn**	**12 19 37.9**	**-0.2**
SMW	**South Mountain**	**0.42**	**191**	P	**Pn**	**12 19 38.3**	**-0.6**
BABE	**Bainbridge Sch**	**0.49**	**105**	*e*Pn	**Pn**	**12 19 40.0**	**-0.2**
NLWA	**Neilton Lookou**	**0.56**	**232**	*e*Pn	**Pn**	**12 19 40.0**	**-0.5**
NLWA				*e*Sn	**Sn**	**12 19 49.8**	**+0.9**
SCCW	**Shoreline CC**	**0.58**	**88**	*e*Pn	**Pn**	**12 19 40.4**	**-0.5**
VGZ	**Gonzales**	**0.68**	**355**	P	**Pn**	**12 19 41.4**	**-0.7**
VGZ				S	**Sn**	**12 19 50.9**	**-0.8**
SVOH	**Skagit Valley**	**0.68**	**36**	P	**Pn**	**12 19 41.7**	**-0.4**
SVOH				S	**Sn**	**12 19 51.1**	**-0.5**
WISH	**Wishkah**	**0.72**	**211**	P	**Pn**	**12 19 42.3**	**-0.3**
WISH				S	**Sn**	**12 19 52.6**	**0.0**
CPW	**Capitol Peak**	**0.77**	**175**	P	**Pn**	**12 19 42.5**	**-0.9**
OFR	**Olym-F Res Ctr**	**0.81**	**284**	P	**Pn**	**12 19 44.0**	**+0.1**
OFR				S	**Sn**	**12 19 54.4**	**-0.4**
B009	**North Saanich**	**0.92**	**351**	P	**Pn**	**12 19 44.8**	**-0.6**
B009				S	**Sn**	**12 19 56.8**	**-0.7**
B011	**North Saanich**	**0.93**	**351**	P	**Pn**	**12 19 44.9**	**-0.5**
B011				S	**Sn**	**12 19 56.5**	**-1.1**
B05A	**Bryant** baz=233	**0.93**	**55**	P	**Pn**	**12 19 44.7**	**-0.7**
B010	**North Saanich**	**0.93**	**351**	P	**Pn**	**12 19 44.9**	**-0.6**
B010				S	**Sn**	**12 19 56.7**	**-0.9**
PGC	**Sidney**	**0.93**	**351**	P	**Pn**	**12 19 44.9**	**-0.5**
PGC				S	**Sn**	**12 19 56.9**	**-0.7**
PGC	**Sidney**	**0.93**	**351**	*e*Pn	**Pn**	**12 19 44.9**	**-0.5**
PGC				*e*Sn	**Sn**	**12 19 57.1**	**-0.4**
ELW	**Echo Lake**	**0.95**	**104**	P	**Pn**	**12 19 44.7**	**-1.1**
ELW				S	**Sn**	**12 19 56.7**	**-1.4**
LZB	**Mount Lazard**	**0.96**	**336**	P	**Pn**	**12 19 45.4**	**-0.6**
LZB				S	**Sn**	**12 19 57.7**	**-0.8**
MCW	**Mount Constitu**	**0.98**	**16**	P	**Pn**	**12 19 45.9**	**-0.3**
MCW				S	**Sn**	**12 19 58.0**	**-1.0**
JCW	**Jim Creek**	**0.98**	**62**	P	**Pn**	**12 19 45.5**	**-0.8**
JCW	**Jim Creek**	**0.98**	**62**	*e*Pn	**Pn**	**12 19 45.5**	**-0.8**
D05A	**Enumclaw**	**1.00**	**123**	P	**Pn**	**12 19 45.7**	**-0.8**
D05A				S	**Sn**	**12 19 58.6**	**-0.9**
D05A	**Enumclaw**	**1.00**	**123**	*e*Pn	**Pn**	**12 19 45.8**	**-0.8**
D05A				*e*Sn	**Sn**	**12 19 59.6**	**+0.2**
CMW	**Cultus Mountai**	**1.01**	**47**	P	**Pn**	**12 19 46.4**	**-0.4**
CMW				S	**Sn**	**12 19 59.2**	**-0.7**
B941	**Kapowsin**	**1.02**	**137**	*e*Pn	**Pn**	**12 19 45.1**	**-1.5**
A04D	**Lummi Island** baz=197,SNR=291	**1.04**	**19**	P	**Pn**	**12 19 46.7**	**-0.3**
CDMR	**Cedar Moraine**	**1.04**	**107**	*e*Pn	**Pn**	**12 19 46.0**	**-1.1**
OCP	**Olym-Cheeka Pk**	**1.09**	**301**	P	**Pn**	**12 19 47.2**	**-0.5**
OCP				S	**Sn**	**12 20 01.9**	**+0.2**
OCP	**Olym-Cheeka Pk**	**1.09**	**301**	*e*Pn	**Pn**	**12 19 47.3**	**-0.5**
PFB	**Port Renfrew**	**1.17**	**316**	P	**Pn**	**12 19 48.0**	**-0.8**
PFB				S	**Sn**	**12 20 02.5**	**-1.0**
E03A	**Lebam**	**1.21**	**191**	P	**Pn**	**12 19 48.6**	**-0.8**
E03A				S	**Sn**	**12 20 02.9**	**-1.6**
E03A	**Lebam**	**1.21**	**191**	*e*Pn	**Pn**	**12 19 48.4**	**-0.9**
E03A				*e*Sn	**Sn**	**12 20 02.6**	**-1.9**
GOBB	**Galiano Island**	**1.23**	**351**	P	**Pn**	**12 19 49.4**	**-0.2**
BPCB	**Bare Point**	**1.23**	**345**	P	**Pn**	**12 19 49.1**	**-0.4**
BPCB				S	**Sn**	**12 20 03.3**	**-1.7**
OBSR	**Observation Ro**	**1.27**	**131**	*e*Pn	**Pn**	**12 19 49.3**	**-1.2**
FMW	**Mount Fremont**	**1.33**	**127**	Pn	**Pn**	**12 19 50.0**	**-1.2**
RPW	**Rockport**	**1.35**	**58**	Pn	**Pn**	**12 19 51.0**	**-0.3**
RPW	**Rockport**	**1.35**	**58**	*e*Pn	**Pn**	**12 19 51.1**	**-0.3**
YOUB	**Youbou, Lake C**	**1.35**	**330**	Pn	**Pn**	**12 19 50.7**	**-0.7**
LON	**Longmire**	**1.38**	**135**	Pn	**Pn**	**12 19 50.6**	**-1.1**
LON				Sn	**Sn**	**12 20 07.2**	**-1.6**
LON	**Longmire**	**1.38**	**135**	*e*Pn	**Pn**	**12 19 50.5**	**-1.3**
LON				*e*Sn	**Sn**	**12 20 07.0**	**-1.9**
B06A	**Marblemount**	**1.41**	**56**	Pn	**Pn**	**12 19 51.6**	**-0.3**
B06A				Sn	**Sn**	**12 20 08.1**	**-1.2**
B06A	**Marblemount**	**1.41**	**56**	*e*Pn	**Pn**	**12 19 51.7**	**-0.3**
B06A				*e*Sn	**Sn**	**12 20 09.4**	**+0.1**
GPW	**Glacier Peak**	**1.46**	**74**	Pn	**Pn**	**12 19 52.6**	**-0.3**
TDL	**Tradedollar La**	**1.55**	**153**	*e*Pn	**Pn**	**12 19 53.5**	**-0.6**
NLLB	**Nanaimo Lost L**	**1.57**	**342**	Pn	**Pn**	**12 19 54.0**	**-0.3**
NLLB				Sn	**Sn**	**12 20 11.1**	**-2.4**
B201	**Coldwater, Mou**	**1.58**	**155**	*e*Pn	**Pn**	**12 19 53.7**	**-0.7**
C06D	**Leavenworth** baz=263	**1.58**	**82**	P	**Pn**	**12 19 54.3**	**-0.1**
MGB	**Mount Grey**	**1.60**	**323**	Pn	**Pn**	**12 19 54.3**	**-0.5**
MGB				Sn	**Sn**	**12 20 13.6**	**-0.6**
FL2	**Flat Top 2**	**1.66**	**158**	*e*Pn	**Pn**	**12 19 54.9**	**-0.6**
F04D	**Rainier, OR** baz=356,SNR=70	**1.66**	**175**	P	**Pn**	**12 19 55.0**	**-0.4**
BIB	**Bowen Island**	**1.67**	**358**	Pn	**Pn**	**12 19 55.7**	**+0.1**
B928	**Bamfield**	**1.68**	**311**	Pn	**Pn**	**12 19 54.8**	**-0.8**
B928				Sn	**Sn**	**12 20 14.7**	**-1.3**
B928	**Bamfield**	**1.68**	**311**	*e*Pn	**Pn**	**12 19 54.9**	**-0.8**
BMSB	**Bamfield Mari**	**1.68**	**311**	Pn	**Pn**	**12 19 54.9**	**-0.9**
BMSB				Sn	**Sn**	**12 20 15.1**	**-1.0**
GHNB	**Nanoose**	**1.71**	**337**	Pn	**Pn**	**12 19 55.7**	**-0.4**
GHNB				Sn	**Sn**	**12 20 16.2**	**-0.5**
LVP	**Lakeview Peak**	**1.76**	**161**	*e*Pn	**Pn**	**12 19 56.5**	**-0.4**
LTY	**Liberty**	**1.80**	**105**	Pn	**Pn**	**12 19 57.0**	**-0.4**
LTY				Sn	**Sn**	**12 20 17.1**	**+0.3**
LTY	**Liberty**	**1.80**	**105**	*e*Pn	**Pn**	**12 19 57.2**	**-0.3**
LTY				*e*Sn	**Sn**	**12 20 18.6**	**-0.5**
B927	**Port Alberni**	**1.82**	**325**	Pn	**Pn**	**12 19 57.2**	**-0.4**
B927				Sn	**Sn**	**12 20 18.9**	**-0.5**
F03A	**Seaside**	**1.82**	**187**	*e*Pn	**Pn**	**12 19 57.0**	**-0.7**
F03A				*e*Sn	**Sn**	**12 20 19.0**	**-0.5**
ALB	**Alberni**	**1.87**	**326**	Pn	**Pn**	**12 19 58.0**	**-0.3**
F04A	**Amboy**	**1.89**	**163**	*e*Pn	**Pn**	**12 19 58.1**	**-0.5**
SHB	**Sechelt**	**1.91**	**347**	Pn	**Pn**	**12 19 58.9**	**-0.1**
SHB				Sn	**Sn**	**12 20 21.9**	**0.0**
WPB	**Watts Point**	**1.92**	**0**	Pn	**Pn**	**12 19 59.0**	**-0.1**
OZB	**Mount Ozzard**	**1.94**	**310**	Pn	**Pn**	**12 19 58.5**	**-0.9**
OZB				Sn	**Sn**	**12 20 20.8**	**-1.9**
ETW	**Entiat**	**1.96**	**93**	*e*Pn	**Pn**	**12 19 59.4**	**-0.4**
TXB	**Texada**	**2.12**	**338**	Pn	**Pn**	**12 20 01.8**	**0.0**
TOFB	**Tofino**	**2.28**	**309**	Pn	**Pn**	**12 20 02.9**	**-1.0**
TOFB				Sn	**Sn**	**12 20 28.3**	**-1.9**
BTB	**Buttle Lake**	**2.31**	**320**	Pn	**Pn**	**12 20 04.0**	**-0.5**
WSLR	**Whistler**	**2.40**	**5**	Pn	**Pn**	**12 20 06.0**	**+0.4**
MWAB	**Mount Washingt**	**2.43**	**326**	Pn	**Pn**	**12 20 06.2**	**0.0**
G03D	**McMinnville, O** baz=1.3,SNR=533	**2.53**	**181**	P	**Pn**	**12 20 07.1**	**-0.2**
G03D				S	**Sn**	**12 20 36.6**	**-0.3**
	baz=1.3						
G04A	**Mulino**	**2.58**	**168**	*e*Pn	**Pn**	**12 20 08.1**	**0.0**
E07A	**Sunnyside**	**2.59**	**116**	*e*Pn	**Pn**	**12 20 07.5**	**-0.7**
NC89	**ODP889**	**2.60**	**292**	Pn	**Pn**	**12 20 10.1**	**+2.0**
NC89				Sn	**Sn**	**12 20 37.4**	**-0.9**
B08A	**Colville Reser**	**2.69**	**75**	Pn	**Pn**	**12 20 08.9**	**-0.7**
B08A	**Colville Reser**	**2.69**	**75**	*e*Pn	**Pn**	**12 20 08.8**	**-0.8**
SPLB	**Strathcona Par**	**2.69**	**324**	Pn	**Pn**	**12 20 09.4**	**-0.1**
CBB	**Campbell River**	**2.70**	**329**	Pn	**Pn**	**12 20 09.4**	**-0.3**
ETB	**Estevan Point**	**2.74**	**308**	Pn	**Pn**	**12 20 10.2**	**-0.1**
GDR	**Gold River**	**2.76**	**319**	Pn	**Pn**	**12 20 10.3**	**-0.2**
G05D	**Wamic, OR** baz=333,SNR=22	**2.82**	**151**	P	**Pn**	**12 20 11.6**	**+0.1**
HAWA	**Hanford**	**2.86**	**117**	*e*Pn	**Pn**	**12 20 11.1**	**-0.9**
PNT	**Penticton**	**2.87**	**55**	Pn	**Pn**	**12 20 11.9**	**-0.2**
PNT	**Penticton**	**2.87**	**55**	*e*Pn	**Pn**	**12 20 11.9**	**-0.2**
D08A	**Wollman Farm,**	**3.00**	**102**	*e*Pn	**Pn**	**12 20 15.1**	**+1.2**
LLLB	**Lillooet**	**3.01**	**17**	Pn	**Pn**	**12 20 14.2**	**+0.2**
LLLB				Sn	**Sn**	**12 20 47.8**	**-0.9**
LLLB	**Lillooet**	**3.01**	**17**	*e*Pn	**Pn**	**12 20 14.2**	**+0.2**
NC27	**ODP1027**	**3.06**	**272**	Pn	**Pn**	**12 20 11.8**	**-2.4**
NC27				Sn	**Sn**	**12 20 44.9**	**-4.5**
G06A	**Carlson Farm,**	**3.08**	**143**	*e*Pn	**Pn**	**12 20 14.8**	**-0.2**
COR	**Corvallis**	**3.15**	**181**	*e*Pn	**Pn**	**12 20 15.2**	**-0.1**
NCRB	**Newcastle Ridg**	**3.25**	**326**	Pn	**Pn**	**12 20 17.5**	**+0.1**
WOSB	**Woss**	**3.28**	**319**	Pn	**Pn**	**12 20 18.1**	**+0.4**
C09A	**Chrisman Ranch**	**3.34**	**87**	Pn	**Pn**	**12 20 17.2**	**-1.3**
C09A	**Chrisman Ranch**	**3.34**	**87**	*e*Pn	**Pn**	**12 20 17.2**	**-1.3**
EDB	**Eliza Dome**	**3.34**	**311**	Pn	**Pn**	**12 20 18.5**	**-0.1**
DPW	**Davenport**	**3.39**	**86**	*e*Pn	**Pn**	**12 20 18.0**	**-1.2**
I05D	**Terrebonne, OR** baz=340,SNR=24	**3.65**	**158**	P	**Pn**	**12 20 22.5**	**-0.3**
TLCB	**Telegraph Cove**	**3.68**	**321**	Pn	**Pn**	**12 20 23.9**	**+0.8**
E09A	**Wood Farm, Sta**	**3.68**	**108**	*e*Pn	**Pn**	**12 20 23.0**	**-0.2**
MAYB	**Maynard**	**3.72**	**317**	Pn	**Pn**	**12 20 24.4**	**+0.6**
IRO	**Indian Ridge**	**3.79**	**169**	*e*Pn	**Pn**	**12 20 25.3**	**+0.4**
G08A	**Pilot Rock**	**3.83**	**128**	*e*Pn	**Pn**	**12 20 24.5**	**-0.8**
BPBC	**Brooks Peninsu**	**3.85**	**311**	Pn	**Pn**	**12 20 25.9**	**+0.3**
I04A	**Tendick Farm,** baz=352	**3.98**	**171**	P	**Pn**	**12 20 27.5**	**+0.1**
I03D	**Drain, OR** baz=1.6	**4.04**	**181**	P	**Pn**	**12 20 27.6**	**-0.5**
PHC	**Port Hardy**	**4.05**	**319**	Pn	**Pn**	**12 20 28.9**	**+0.7**
NEW	**Newport** 3.0nm,0.3s,baz=262,slow=11,SNR=30	**4.13**	**80**	Pn	**Pn**	**12 20 27.9**	**-1.4**
NEW				Lg	Lg	12 21 28.8	
	2.7nm,0.3s,baz=49,slow=21,SNR=4.4						
NEW				LR	LR	12 22 16.3	
	comp=Z,80nm,19.2s,baz=253,slow=42						
NEW	**Newport** baz=264	**4.13**	**80**	P	**Pn**	**12 20 28.0**	**-1.4**
NEW	**Newport**	**4.13**	**80**	*e*Pn	**Pn**	**12 20 28.3**	**-1.1**
NEW				Lg	Lg	12 21 28.8	
HOLB	**Holberg**	**4.33**	**314**	Pn	**Pn**	**12 20 32.6**	**+0.4**
HOLB				Sn	**Sn**	**12 21 19.6**	**-1.8**
F10A	**Beach Ranch, E**	**4.48**	**111**	*e*Pn	**Pn**	**12 20 33.5**	**-0.7**
DBO	**Dodson Butte**	**4.62**	**180**	*e*Pn	**Pn**	**12 20 36.2**	**+0.1**
DOWB	**Downie Slide**	**4.87**	**37**	Pn	**Pn**	**12 20 39.0**	**-0.5**
BMO	**Blue Mountains**	**5.02**	**123**	*e*Pn	**Pn**	**12 20 41.1**	**-0.5**
BLBC	**Blue River**	**5.02**	**29**	Pn	**Pn**	**12 20 41.3**	**-0.5**
HUMO	**Hull Mountain**	**5.13**	**178**	*e*Pn	**Pn**	**12 20 43.8**	**+0.6**
UBRB	**Upper Baezaeko**	**5.19**	**354**	Pn	**Pn**	**12 20 44.3**	**+0.3**
UBRB				Sn	**Sn**	**12 21 40.8**	**-1.8**
K05A	**Summer Lake**	**5.28**	**161**	*e*Pn	**Pn**	**12 20 46.4**	**+1.1**
MNB	**Mounoet Dainar**	**5.45**	**33**	Pn	**Pn**	**12 20 48.0**	**+0.3**
BBB	**Bella Bella** 1.4nm,0.3s,baz=161,slow=7.6,SNR=64	**5.45**	**327**	Pn	**Pn**	**12 20 47.2**	**-0.2**
BBB				Lg	Lg	12 22 12.8	
	0.6nm,0.3s,baz=31,slow=14,SNR=2.2						
BBB				LR	LR	12 22 53.9	
	comp=Z,94nm,19.3s,baz=268,slow=38						
BBB	**Bella Bella**	**5.45**	**327**	Pn	**Pn**	**12 20 47.8**	**+0.3**
BBB	**Bella Bella**	**5.45**	**327**	*e*Pn	**Pn**	**12 20 49.0**	**+1.6**
BBB				Lg	Lg	12 22 12.8	
L02D	**Cave Junction,** baz=3.0	**5.59**	**183**	P	**Pn**	**12 20 49.1**	**-0.2**
BSMT	**Bassoo Peak**	**5.69**	**86**	*e*Pn	**Pn**	**12 20 49.3**	**-1.7**
BLMT	**Blacktail Moun**	**5.97**	**84**	*e*Pn	**Pn**	**12 20 54.2**	**-0.6**
YBH	**Yreka Blue Hor**	**6.02**	**176**	*e*Pn	**Pn**	**12 20 54.6**	**-0.7**
JTMT	**Jette**	**6.03**	**87**	Pn	**Pn**	**12 20 53.6**	**-1.9**
JTMT	**Jette**	**6.03**	**87**	*e*Pn	**Pn**	**12 20 53.7**	**-1.9**
MOD	**Modoc Plateau**	**6.19**	**159**	*e*Pn	**Pn**	**12 20 59.2**	**+1.4**
YBMT	**Yellow Bay**	**6.21**	**85**	Pn	**Pn**	**12 20 56.6**	**-1.5**
YBMT	**Yellow Bay**	**6.21**	**85**	*e*Pn	**Pn**	**12 20 58.4**	**+0.4**
WVOR	**Wild Horse Val**	**6.22**	**147**	*e*Pn	**Pn**	**12 20 59.2**	**+1.0**
KRMB	**Red Mountain**	**6.23**	**185**	*e*Pn	**Pn**	**12 20 58.3**	**-0.1**
SWMT	**Swartz Lake**	**6.24**	**89**	Pn	**Pn**	**12 20 55.6**	**-2.9**
SWMT	**Swartz Lake**	**6.24**	**89**	*e*Pn	**Pn**	**12 20 57.5**	**-0.9**
WALA	**Waterton Lakes**	**6.34**	**75**	*e*Pn	**Pn**	**12 21 00.1**	**+0.3**
MSO	**Missoula**	**6.38**	**95**	*e*Pn	**Pn**	**12 20 59.7**	**-0.7**
SLMT	**Seeley Lake**	**6.62**	**91**	Pn	**Pn**	**12 21 01.4**	**-2.2**
SLMT	**Seeley Lake**	**6.62**	**91**	*e*Pn	**Pn**	**12 21 02.8**	**-0.8**
MFID	**Camas Ranch**	**6.75**	**127**	*e*Pn	**Pn**	**12 21 05.5**	**0.0**
BPMT	**Black Pine Rid**	**6.80**	**97**	Pn	**Pn**	**12 21 04.6**	**-1.7**
CHMT	**Chamberlain Mo**	**6.83**	**93**	*e*Pn	**Pn**	**12 21 05.7**	**-0.9**
KHMM	**Horse Mountain**	**6.87**	**183**	*e*Pn	**Pn**	**12 21 07.5**	**+0.4**
JCC	**Jacoby Creek,**	**6.94**	**185**	*e*Pn	**Pn**	**12 21 08.2**	**+0.3**
OVMT	**Ovando**	**6.98**	**92**	Pn	**Pn**	**12 21 07.0**	**-1.6**
WDC	**Whiskeytown Da**	**7.17**	**176**	*e*Pn	**Pn**	**12 21 12.0**	**+0.9**
BNB	**Barry Inlet**	**7.31**	**315**	Pn	**Pn**	**12 21 13.9**	**+1.0**
HLID	**Hailey**	**7.45**	**121**	*e*Pn	**Pn**	**12 21 14.1**	**-1.0**
KMRM	**Mail Ridge**	**7.52**	**183**	*e*Pn	**Pn**	**12 21 16.9**	**+0.9**
LRM	**Limekiln Ridge**	**7.64**	**101**	*e*Pn	**Pn**	**12 21 18.4**	**+0.7**
DLMT	**Dillon**	**7.71**	**104**	*e*Pn	**Pn**	**12 21 20.5**	**+2.0**
MCMT	**McKenzie Canyo**	**7.76**	**108**	*e*Pn	**Pn**	**12 21 21.0**	**+1.7**
MOBC	**Moresby Island**	**7.77**	**317**	Pn	**Pn**	**12 21 18.9**	**-0.4**
KIPM	**Iron Peak**	**7.93**	**181**	*e*Pn	**Pn**	**12 21 22.7**	**+1.1**
DIB	**Dawson Inlet,**	**8.04**	**316**	*e*Pn	**Pn**	**12 21 25.8**	**+2.8**
BOZ	**Bozeman (W)** 3.7nm,0.3s	**8.24**	**100**	*e*Pn	Pn	12 21 17.2	-8.7
EDM	**Edmonton**	**8.35**	**45**	*e*Pn	**Pn**	**12 21 26.6**	**-0.6**
HOPS	**Hopland Field**	**8.74**	**179**	*e*Pn	**Pn**	**12 21 33.7**	**+1.1**
AFDM	**Forest Hills D**	**8.94**	**169**	*e*Pn	**Pn**	**12 21 36.7**	**+1.3**
YMR	**Madison River**	**9.04**	**105**	*e*Pn	**Pn**	**12 21 38.1**	**+1.3**
YPP	**Pitchstone Pla**	**9.31**	**107**	*e*Pn	**Pn**	**12 21 40.1**	**-0.6**
MCCM	**Marconi Confer**	**9.59**	**178**	*e*Pn	**Pn**	**12 21 46.0**	**+1.8**
SNOW	**Snow King Moun**	**9.73**	**111**	*e*Pn	**Pn**	**12 21 47.2**	**+0.9**
MOUT	**Mount Ogden**	**10.42**	**125**	*e*Sn	**Sn**	**12 23 46.5**	**-4.8**
MCU	**Monte Cristo P**	**10.44**	**123**	*e*Sn	**Sn**	**12 23 59.0**	**+7.1**
PDAR	**Pinedale Array** 0.0nm,0.3s,baz=289,slow=9.4,SNR=2.2	**10.84**	**112**	Pn	**Pn**	**12 22 03.6**	**+2.1**
DLBC	**Dease Lake** 0.1nm,0.3s,baz

Error ellipse: s-maj=3.7km s-min=2.8km az=76.1,GT5 selection from ISC bulletin GT5 identified by Bond¨ır and McLaughlin (2009) selection criteria Bond¨ır and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009

CSEM ***24*** *12:48:29.2±0.1,39.61N×28.55E, h2km, ML3.3, Error ellipse: s-maj=1.9km s-min=1.9km az=72.0*

THE ***24*** *12:48:31.4,39.57N×28.57E, h19km±2km, ML3.3/2, Error ellipse: s-maj=2.7km s-min=0.8km az=83.0*

ISC 24 12:48:28.9±0.8, 39°62N±0.01×28°56E±0.01, h8km±5km, n162, σ0.972/207, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DST	**Dursunbey**	**0.05**	**105**	*e*PG	**Pg**	**12 48 30.5**	**-0.2**
DST				*e*SG	**Sg**	**12 48 32.6**	**+0.6**
DST	**Dursunbey**	**0.05**	**105**	*e*Pg	**Pg**	**12 48 30.5**	**-0.2**
DST				*e*Sg	**Sg**	**12 48 32.6**	**+0.6**
BALB	**Balikesir**	**0.52**	**273**	*e*PG	**Pg**	**12 48 39.3**	**+0.3**
BALB	**Balikesir**	**0.52**	**273**	*e*Pg	**Pg**	**12 48 39.3**	**+0.3**
DEMI	**Demirci**	**0.59**	**168**	*i* P	**Pg**	**12 48 40.4**	**+0.2**
DEMI				*i* S	**Sg**	**12 48 48.0**	**+0.1**
DEMI	**Demirci**	**0.59**	**168**	P	**Pg**	**12 48 40.4**	**+0.2**
DEMI				S	**Sg**	**12 48 48.0**	**+0.1**
KCTX	**Karacabey (Bur**	**0.67**	**347**	*e*PG	**Pg**	**12 48 41.6**	**-0.2**
KCTX	**Karacabey (Bur**	**0.67**	**347**	*e*Pg	**Pg**	**12 48 41.6**	**-0.2**
TVSB	**Tavsanli**	**0.72**	**103**	*e*PG	**Pg**	**12 48 43.1**	**+0.4**
TVSB	**Tavsanli**	**0.72**	**103**	*e*Pg	**Pg**	**12 48 43.1**	**+0.4**
BALY	**Balya**	**0.73**	**280**	*i* P	**Pg**	**12 48 43.2**	**+0.2**
BALY	**Balya**	**0.73**	**280**	P	**Pg**	**12 48 43.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**0.79**	**18**	*e*PG	**Pg**	**12 48 44.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**0.79**	**18**	*e*Pg	**Pg**	**12 48 44.4**	**+0.2**
GONE	**Gonen-Balikesi**	**0.80**	**303**	*e*PG	**Pg**	**12 48 44.3**	**+0.1**
GONE	**Gonen-Balikesi**	**0.80**	**303**	*e*Pg	**Pg**	**12 48 44.3**	**+0.1**
IGD	**Bursa**	**0.81**	**37**	*i* P	**Pg**	**12 48 43.1**	**-1.5**
IGD				*i* S	**Sb**	**12 48 56.2**	**-0.3**
GEDZ	**Gediz**	**0.87**	**131**	*e*PG	**Pg**	**12 48 46.1**	**+0.4**
GEDZ	**Gediz**	**0.87**	**131**	*e*Pg	**Pg**	**12 48 46.1**	**+0.4**
GDZ	**Gediz**	**0.89**	**126**	*i* P	**Pg**	**12 48 45.9**	**-0.1**
GDZ				*i* S	**Sn**	**12 49 02.5**	**+1.6**
GDZ	**Gediz**	**0.89**	**126**	P	**Pg**	**12 48 45.9**	**-0.1**
GDZ				S	**Sn**	**12 49 02.5**	**+1.6**
EDC	**Edincik**	**0.90**	**324**	*e*PG	**Pb**	**12 48 46.8**	**0.0**
EDC	**Edincik**	**0.90**	**324**	*e*Pg	**Pb**	**12 48 46.8**	**0.0**
AKS	**Akhisar**	**0.94**	**218**	*e*PG	**Pn**	**12 48 47.9**	**-0.4**
AKS	**Akhisar**	**0.94**	**218**	*e*Pg	**Pn**	**12 48 47.9**	**-0.4**
ARMT	**Armutlu**	**0.98**	**14**	*e*PG	**Pb**	**12 48 48.4**	**+0.4**
ARMT				*e*SG	**Sn**	**12 49 02.9**	**-0.1**
ARMT	**Armutlu**	**0.98**	**14**	*e*Pg	**Pb**	**12 48 48.4**	**+0.4**
ARMT				*e*Sg	**Sn**	**12 49 02.9**	**-0.1**
IZI	**Iznik**	**1.01**	**44**	*e*PG	**Pg**	**12 48 48.4**	**+0.2**
IZI	**Iznik**	**1.01**	**44**	*e*Pg	**Pg**	**12 48 48.4**	**+0.2**
KNL	**BaÐ¯kesir**	**1.03**	**310**	*i* P	**Pb**	**12 48 47.3**	**-1.6**
KNL				*i* S	**Sb**	**12 48 56.1**	**-0.9**
SBT5	**Esenkoy-Cinarc**	**1.04**	**14**	*e*PG	**Pn**	**12 48 49.8**	**+0.1**
SBT5	**Esenkoy-Cinarc**	**1.04**	**14**	*e*Pg	**Pn**	**12 48 49.8**	**+0.1**
KULA	**Kula-Manisa**	**1.10**	**176**	*e*PN	**Pb**	**12 48 50.2**	**-0.1**
KULA	**Kula-Manisa**	**1.10**	**176**	P	**Pb**	**12 48 50.1**	**-0.1**
KULA				S	**Sb**	**12 49 04.1**	**-0.7**
KULA	**Kula-Manisa**	**1.10**	**176**	P	**Pb**	**12 48 50.1**	**-0.1**
KULA				S	**Sb**	**12 49 04.1**	**-0.7**
MANT	**Manisa**	**1.12**	**180**	*i* P	**Pb**	**12 48 49.6**	**-1.1**
MANT				*i* S	**Sb**	**12 49 03.8**	**-1.7**
MANT	**Manisa**	**1.12**	**180**	P	**Pb**	**12 48 49.6**	**-1.1**
MANT				S	**Sb**	**12 49 03.8**	**-1.7**
CAVI	**Cavuskoy**	**1.15**	**59**	*e*PN	**Pn**	**12 48 51.2**	**-0.1**
CAVI	**Cavuskoy**	**1.15**	**59**	*e*Pn	**Pn**	**12 48 51.2**	**-0.1**
ADVT	**Abdulvahap**	**1.22**	**48**	*e*PN	**Pb**	**12 48 52.2**	**0.0**
ADVT	**Abdulvahap**	**1.22**	**48**	*e*Pn	**Pb**	**12 48 52.2**	**0.0**
MRMT	**Marmara Adasi**	**1.23**	**323**	*e*PN	**Pg**	**12 48 52.9**	**+0.3**
MRMT	**Marmara Adasi**	**1.23**	**323**	*e*Pn	**Pg**	**12 48 52.9**	**+0.3**
KRBG	**Karabiga-Canak**	**1.24**	**309**	*e*PN	**Pg**	**12 48 52.9**	**+0.2**
KRBG	**Karabiga-Canak**	**1.24**	**309**	*e*Pn	**Pg**	**12 48 52.9**	**+0.2**
SBT2	**Guzelce-Avcila**	**1.26**	**358**	*e*PN	**Pg**	**12 48 54.1**	**+1.0**
SBT2	**Guzelce-Avcila**	**1.26**	**358**	*e*Pn	**Pg**	**12 48 54.1**	**+1.0**
SBT3	**Marmara-Eregli**	**1.34**	**341**	*e*PN	**Pg**	**12 48 55.6**	**+0.9**
SBT3	**Marmara-Eregli**	**1.34**	**341**	*e*Pn	**Pg**	**12 48 55.6**	**+0.9**
DKL	**Dikili**	**1.39**	**248**	*e*PN	**Pb**	**12 48 54.9**	**-0.2**
DKL	**Dikili**	**1.39**	**248**	*e*Pn	**Pb**	**12 48 54.9**	**-0.2**
SBT4	**Kumbag-Tekirda**	**1.44**	**327**	*e*PN	**Pb**	**12 48 56.2**	**+0.3**
SBT4	**Kumbag-Tekirda**	**1.44**	**327**	*e*Pn	**Pb**	**12 48 56.2**	**+0.3**
HRT	**Hereke**	**1.47**	**35**	*e*PN	**Pb**	**12 48 56.6**	**+0.1**
HRT	**Hereke**	**1.47**	**35**	*e*Pn	**Pb**	**12 48 56.6**	**+0.1**
AYVA	**Ayvalik**	**1.48**	**259**	*i* P	**Pg**	**12 48 57.6**	**+0.3**
AYVA				*i* S	**Sg**	**12 49 17.9**	**+1.5**
AYVA	**Ayvalik**	**1.48**	**259**	P	**Pg**	**12 48 57.6**	**+0.3**
AYVA				S	**Sg**	**12 49 17.9**	**+1.5**
BORA	**Eskisehir**	**1.48**	**79**	*i* P	**Pb**	**12 48 56.9**	**+0.1**
BORA				*i* S	**Sg**	**12 49 16.4**	**-0.3**
BORA	**Eskisehir**	**1.48**	**79**	P	**Pb**	**12 48 56.9**	**+0.1**
BORA				S	**Sg**	**12 49 16.4**	**-0.3**
CUND	**Cunda Adasi-Ba**	**1.49**	**260**	*e*PN	**Pg**	**12 48 57.5**	**0.0**
CUND	**Cunda Adasi-Ba**	**1.49**	**260**	*e*Pn	**Pg**	**12 48 57.5**	**0.0**
ISK	**Istanbul-Kandi**	**1.50**	**15**	*e*PN	**Pb**	**12 48 57.5**	**+0.6**
ISK	**Istanbul-Kandi**	**1.50**	**15**	P	**Pn**	**12 48 56.0**	**0.0**
ISK				S	**Sg**	**12 49 16.8**	**-0.2**
ISK	**Istanbul-Kandi**	**1.50**	**15**	P	**Pn**	**12 48 56.0**	**0.0**
ISK	**Istanbul-Kandi**	**1.50**	**15**	*e*Pn	**Pb**	**12 48 57.5**	**+0.6**
ISK				S	**Sg**	**12 49 16.8**	**-0.2**
RKY	**Sarkoy-Tekirda**	**1.50**	**316**	*e*PN	**Pg**	**12 48 57.7**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.50**	**316**	*e*Pn	**Pg**	**12 48 57.7**	**-0.1**
SART	**Tekirdag**	**1.50**	**316**	*i* P	**Pb**	**12 48 57.1**	**0.0**
SART				*i* S	**Sg**	**12 49 18.3**	**+1.0**
SART	**Tekirdag**	**1.50**	**316**	P	**Pb**	**12 48 57.1**	**0.0**
SART				S	**Sg**	**12 49 18.3**	**+1.0**
CAND	**Candarli**	**1.51**	**245**	*e*PN	**Pb**	**12 48 57.0**	**-0.2**
ELBA	**Catalca**	**1.53**	**356**	*i* P	**Pn**	**12 48 54.9**	**-1.6**
ELBA				*i* S	**Sn**	**12 49 16.3**	**-0.3**
ELBA	**Catalca**	**1.53**	**356**	P	**Pn**	**12 48 54.9**	**-1.6**
ELBA				S	**Sn**	**12 49 16.3**	**-0.3**
LPK	**Lapseki**	**1.57**	**299**	*e*PN	**Pb**	**12 48 58.3**	**+0.1**
LPK	**Lapseki**	**1.57**	**299**	*e*Pn	**Pb**	**12 48 58.3**	**+0.1**
TKR	**Tekirdag**	**1.58**	**331**	*e*PN	**Pb**	**12 48 58.5**	**+0.2**
TKR	**Tekirdag**	**1.58**	**331**	*e*Pn	**Pb**	**12 48 58.5**	**+0.2**
IZM	**Izmir**	**1.58**	**220**	*e*PN	**Pb**	**12 48 58.2**	**-0.2**
IZM	**Izmir**	**1.58**	**220**	*e*Pn	**Pb**	**12 48 58.2**	**-0.2**
CTKS	**Kestanelik-??a**	**1.62**	**359**	*e*PN	**Pb**	**12 48 58.7**	**-0.3**
CTKS	**Kestanelik-??a**	**1.62**	**359**	*e*Pn	**Pb**	**12 48 58.7**	**-0.3**
KLYT	**Kilyos**	**1.68**	**13**	*e*PN	**Pb**	**12 48 59.7**	**-0.3**
KLYT	**Kilyos**	**1.68**	**13**	*e*Pn	**Pb**	**12 48 59.7**	**-0.3**
FOCM	**Fo¨ça**	**1.68**	**238**	*e*PN	**Pb**	**12 48 59.3**	**-0.8**
FOCM	**Fo¨ça**	**1.68**	**238**	*e*Pn	**Pb**	**12 48 59.3**	**-0.8**
GULT	**Gulveren**	**1.71**	**61**	*e*PN	**Pb**	**12 49 00.7**	**+0.1**
GULT	**Gulveren**	**1.71**	**61**	*e*Pn	**Pb**	**12 49 00.7**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.71**	**51**	*e*PN	**Pb**	**12 49 00.3**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.71**	**51**	*e*Pn	**Pb**	**12 49 00.4**	**-0.3**
EZN	**Ezine**	**1.73**	**278**	*e*PN	**Pb**	**12 49 00.2**	**-0.7**
EZN	**Ezine**	**1.73**	**278**	*e*Pn	**Pb**	**12 49 00.2**	**-0.7**
SILT	**Sile**	**1.74**	**28**	*e*PN	**Pb**	**12 49 00.8**	**-0.3**
SILT	**Sile**	**1.74**	**28**	*e*Pn	**Pb**	**12 49 00.8**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.75**	**198**	*e*PN	**Pb**	**12 49 00.9**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.75**	**198**	*e*Pn	**Pb**	**12 49 00.9**	**-0.4**
ESKT	**Eskisehir**	**1.77**	**92**	*e*PN	**Pb**	**12 49 01.6**	**-0.1**
ESKT	**Eskisehir**	**1.77**	**92**	*i* P	**Pb**	**12 49 02.1**	**+0.5**
ESKT				*i* S	**Sg**	**12 49 26.4**	**+0.5**
ESKT	**Eskisehir**	**1.77**	**92**	*e*Pn	**Pb**	**12 49 01.6**	**-0.1**
SEYT	**Eskypehyr**	**1.77**	**92**	P	**Pb**	**12 49 02.2**	**+0.5**
SEYT				S	**Sg**	**12 49 26.4**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.78**	**297**	*e*PN	**Pb**	**12 49 01.9**	**+0.2**
GELI	**Tayfur-Gelibol**	**1.78**	**297**	*e*Pn	**Pb**	**12 49 01.9**	**+0.2**
PRK	**Paraskevi**	**1.81**	**259**	P	**Pn**	**12 49 00.6**	**+0.3**
PRK				S	**Sn**	**12 49 23.4**	**0.0**
PRK	**Paraskevi**	**1.81**	**259**	P	**Pn**	**12 49 00.6**	**+0.3**
PRK				S	**Sn**	**12 49 23.4**	**0.0**
CTYL	**Yalikoy Yolu**	**1.87**	**354**	*e*PN	**Pb**	**12 49 02.3**	**-0.9**
CTYL	**Yalikoy Yolu**	**1.87**	**354**	*e*Pn	**Pb**	**12 49 02.3**	**-0.9**
KESN	**Edirne-Kesan**	**1.88**	**311**	*i* P	**Pb**	**12 49 03.2**	**-0.4**
KESN				*i* S	**Sg**	**12 49 28.8**	**-0.5**
KESN	**Edirne-Kesan**	**1.88**	**311**	P	**Pb**	**12 49 03.2**	**-0.4**
KESN				S	**Sg**	**12 49 28.8**	**-0.5**
SHUT	**Suhut-Afyon**	**1.88**	**124**	*e*PN	**Pb**	**12 49 02.9**	**-0.6**
SHUT	**Suhut-Afyon**	**1.88**	**124**	*e*Pn	**Pb**	**12 49 02.9**	**-0.6**
ERIK	**Erikli-Kesan**	**1.89**	**305**	*e*PN	**Pb**	**12 49 03.2**	**-0.4**
ERIK	**Erikli-Kesan**	**1.89**	**305**	*e*Pn	**Pb**	**12 49 03.2**	**-0.4**
DENT	**Denizli**	**1.90**	**169**	*e*PN	**Pb**	**12 49 02.7**	**-1.0**
DENT	**Denizli**	**1.90**	**169**	*e*Pn	**Pb**	**12 49 02.7**	**-1.0**
KAND	**Kocaeli-Kandir**	**1.93**	**40**	*i* P	**Pn**	**12 49 02.0**	**0.0**
KAND				*i* S	**Sn**	**12 49 25.4**	**-1.1**
KAND	**Kocaeli-Kandir**	**1.93**	**40**	P	**Pn**	**12 49 02.0**	**0.0**
KAND				S	**Sn**	**12 49 25.4**	**-1.1**
BOZC	**Bozcaada**	**1.94**	**277**	*i* P	**Pn**	**12 49 02.9**	**+0.8**
BOZC				*i* S	**Sb**	**12 49 27.6**	**-1.3**
URLA	**Izmir**	**1.98**	**231**	*i* P	**Pn**	**12 49 02.8**	**+0.1**
URLA				*i* S	**Sb**	**12 49 29.0**	**-0.9**
URLA	**Izmir**	**1.98**	**231**	P	**Pn**	**12 49 02.8**	**+0.1**
URLA				S	**Sb**	**12 49 29.0**	**-0.9**
GMLD	**Gumuldur**	**2.00**	**220**	*e*PN	**Pb**	**12 49 05.0**	**-0.5**
GMLD	**Gumuldur**	**2.00**	**220**	*e*Pn	**Pb**	**12 49 05.0**	**-0.5**
KUSD	**Kusadasi-Aydin**	**2.02**	**210**	*e*PN	**Pn**	**12 49 03.8**	**+0.6**
KUSD	**Kusadasi-Aydin**	**2.02**	**210**	*e*Pn	**Pn**	**12 49 03.8**	**+0.6**
DGB	**¨zmir**	**2.04**	**220**	*i* P	**Pg**	**12 49 08.0**	**+0.1**
DGB				*i* S	**Sg**	**12 49 33.6**	**-0.8**
BOLV	**Bolvadin**	**2.06**	**115**	*i* P	**Pn**	**12 49 05.2**	**+1.2**
BOLV				*i* S	**Sg**	**12 49 34.7**	**-0.5**
BOLV	**Bolvadin**	**2.06**	**115**	P	**Pn**	**12 49 05.2**	**+1.2**
BOLV				S	**Sg**	**12 49 34.7**	**-0.5**
GADA	**Gvkgeada**	**2.12**	**287**	*e*PN	**Pn**	**12 49 05.8**	**+1.2**
GADA	**Gvkgeada**	**2.12**	**287**	P	**Pn**	**12 49 05.3**	**+0.7**
GADA				S	**Sn**	**12 49 31.3**	**+0.1**
GADA	**Gvkgeada**	**2.12**	**287**	P	**Pn**	**12 49 05.3**	**+0.7**
GADA	**Gvkgeada**	**2.12**	**287**	*e*Pn	**Pn**	**12 49 05.8**	**+1.2**
GADA				S	**Sn**	**12 49 31.3**	**+0.1**
SIGR	**SIGRI**	**2.13**	**260**	P	**Pn**	**12 49 05.1**	**+0.4**
SIGR				S	**Sn**	**12 49 31.2**	**-0.2**
SIGR	**SIGRI**	**2.13**	**260**	P	**Pn**	**12 49 05.1**	**+0.4**
SIGR				S	**Sn**	**12 49 31.2**	**-0.2**
SAHE	**Sakarya_HENDEK**	**2.15**	**54**	*i* P	**Pb**	**12 49 08.4**	**+0.4**
SAHE				*i* S	**Sn**	**12 49 32.5**	**+0.7**
SAHE	**Sakarya_HENDEK**	**2.15**	**54**	P	**Pb**	**12 49 08.4**	**+0.4**
SAHE				S	**Sn**	**12 49 32.5**	**+0.7**
ENEZ	**Enez**	**2.15**	**302**	*e*PN	**Pn**	**12 49 06.3**	**+1.3**
ENEZ	**Enez**	**2.15**	**302**	P	**Pn**	**12 49 05.9**	**+0.8**
ENEZ	**Enez**	**2.15**	**302**	P	**Pn**	**12 49 05.9**	**+0.8**
ENEZ	**Enez**	**2.15**	**302**	*e*Pn	**Pn**	**12 49 06.3**	**+1.3**
GCAM	**G?zelcaml?**	**2.18**	**209**	*i* P	**Pg**	**12 49 10.8**	**+0.2**
GCAM				*i* S	**Sg**	**12 49 39.2**	**+0.4**
GCAM	**G?zelcaml?**	**2.18**	**209**	P	**Pg**	**12 49 10.8**	**+0.2**
MDUB	**Mudurnu**	**2.20**	**66**	*e*PN	**Pb**	**12 49 07.5**	**-1.4**
MDUB	**Mudurnu**	**2.20**	**66**	*e*Pn	**Pb**	**12 49 07.5**	**-1.4**
SVRH	**Sivrihisar-ESK**	**2.30**	**93**	*e*PN	**Pb**	**12 49 09.6**	**-1.0**
SVRH	**Sivrihisar-ESK**	**2.30**	**93**	*e*Pn	**Pb**	**12 49 09.6**	**-1.0**
CHOS	**Chios island**	**2.30**	**239**	*e*PN	**Pn**	**12 49 07.9**	**+0.7**
CHOS	**Chios island**	**2.30**	**239**	*e*Pn	**Pn**	**12 49 07.9**	**+0.7**
ALN	**Alexandroupoli**	**2.31**	**304**	*e*PN	**Pn**	**12 49 07.8**	**+0.6**
ALN	**Alexandroupoli**	**2.31**	**304**	P	**Pn**	**12 49 07.6**	**+0.4**
ALN	**Alexandroupoli**	**2.31**	**304**	*e*Pn	**Pn**	**12 49 07.8**	**+0.6**
BAGO	**Egridir - ISPA**	**2.38**	**132**	*i* P	**Pn**	**12 49 08.7**	**+0.4**
MLSB	**Milas**	**2.40**	**195**	*e*PN	**Pn**	**12 49 09.9**	**+1.5**
MLSB	**Milas**	**2.40**	**195**	*e*Pn	**Pn**	**12 49 09.9**	**+1.5**
SMTH	**Samothraki Isl**	**2.48**	**291**	P	**Pn**	**12 49 10.2**	**+0.7**
SMTH	**Samothraki Isl**	**2.48**	**291**	P	**Pn**	**12 49 10.2**	**+0.7**
YER	**Yerkesik**	**2.49**	**185**	*e*PN	**Pn**	**12 49 10.8**	**+1.1**
YER	**Yerkesik**	**2.49**	**185**	P	**Pn**	**12 49 09.6**	**-0.1**
YER	**Yerkesik**	**2.49**	**185**	P	**Pn**	**12 49 09.6**	**-0.1**
YER	**Yerkesik**	**2.49**	**185**	*e*Pn	**Pn**	**12 49 10.8**	**+1.1**
EDRB	**Edirne**	**2.62**	**329**	*e*PN	**Pn**	**12 49 13.1**	**+1.6**
EDRB	**Edirne**	**2.62**	**329**	*e*Pn	**Pn**	**12 49 13.1**	**+1.6**
BCK	**Bucak**	**2.68**	**143**	*e*PN	**Pn**	**12 49 14.4**	**+2.1**
BCK	**Bucak**	**2.68**	**143**	*e*Pn	**Pn**	**12 49 14.4**	**+2.1**
KIZT	**Kizilcal**	**2.68**	**105**	*e*PN	**Pn**	**12 49 13.8**	**+1.3**
KIZT	**Kizilcal**	**2.68**	**105**	*e*Pn	**Pn**	**12 49 13.8**	**+1.3**

SOME ***24*** *12:57:55.0,46.05N×84.83E, h5km*

ISC 24 12:57:52.3±5.3, 45°72N±0.09×85°0E±0.2, h10km, n5, σ0.977/8, 1C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZSN	**Zaisan**	**1.78**	**346**	*e*P	Pg	12 58 27.5	+1.0
	2.3nm,0.2s						
ZSN				*e*S	Sg	12 58 51.3	+1.7
	5.3nm,0.6s						
MK31	**Makanchi Array**	**2.18**	**301**	⇓Pn	**Pg**	**12 58 34.2**	**+0.2**
	2.3nm,0.3s,baz=117,slow=14,SNR=57						
MK31				⇑Sn	**Sg**	**12 59 02.6**	**+0.5**
	10nm,0.6s,baz=116,slow=28,SNR=20						
MAKZ	**Makanchi**	**2.37**	**298**	⇓Pn	**Pg**	**12 58 37.5**	**-0.2**
	7.1nm,0.5s						
MAKZ				⇓Sn	**Sg**	**12 59 08.7**	**+0.2**
	6.6nm,0.6s						
DJR	**Jarkent**	**3.96**	**251**	*e*P	**Pg**	**12 59 08.3**	**+0.2**
	1.2nm,0.2s						
DJR				*e*S	**Sg**	**13 00 00.4**	**+1.1**
	1.7nm,0.3s						
KAPS	**Kapalarasan**	**4.00**	**266**	*e*P	**Pg**	**12 59 07.9**	**-1.1**
	0.3nm,0.1s						
KAPS				*e*S	**Sg**	**13 00 00.2**	**-0.5**
	2.2nm,0.6s						

ISCJB ***24*** *13:10:58.7±0.5, 10°72S±0.08×165°28E±0.06, h31km, mb4.1/13, MS3.5/13, Error ellipse: s-maj=12.0km s-min=8.2km az=10.6*

NEIC ***24*** *13:11:01.4±1.3, 10.68S×165.24E, h40km±13km, mb4.7/3, Error ellipse: s-maj=13.7km s-min=10.1km az=167.0*

IDC ***24*** *13:11:03.8±2.7, 10.75S×165.18E, h60km±24km, mb3.8/12, mb1 4.0/13, mb1mx3.8/28, mbtmp4.1/13, ML4.8/2, MS3.5/16, Ms1 3.5/16, ms1mx3.3/29, Error ellipse: s-maj=20.0km s-min=16.8km az=28.0*

ISC 24 13:11:00.6±0.6, 10°69S±0.09×165°30E±0.07, h31km, n36, σ1.936/25, mb4.2/13, MS3.5/13, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.42**	**283**	P	**Pn**	**13 12 20.9**	**+1.6**
	98nm,0.3s,baz=125,slow=3.1,SNR=65						
HNR				*e*Sn	**Sn**	**13 13 22.3**	**+1.7**
	34nm,0.3s,baz=188,slow=20,SNR=4.1						
HNR				LR	LR	13 14 21.6	
	comp=Z,1μm,19.7s,baz=140,slow=37						
HNR	**Honiara**	**5.42**	**283**	*e*Pn	**Pn**	**13 12 20.5**	**+1.2**
	524nm,0.6s						
HNR				*e*Sn	**Sn**	**13 13 21.8**	**+1.2**
HNR				S	**Sn**	**13 13 22.3**	**+1.7**
DZM	**Mont Dzumac**	**11.37**	**175**	P	**Pn**	**13 13 42.3**	**+1.3**
	1.9nm,0.3s,baz=304,slow=16,SNR=24						
DZM				LR	LR	13 17 38.8	
	comp=Z,250nm,18.1s,baz=25,slow=35						
DZM	**Mont Dzumac**	**11.37**	**175**	*e*Pn	**Pn**	**13 13 42.0**	**+1.0**
	6.8nm,0.3s						
DZM				*e*LR	LR	13 16 26.4	
	257nm,24.6s						
DZM	**Mont Dzumac**	**11.37**	**175**	*e*Pn	**Pn**	**13 13 41.6**	**+0.7**
FUNA	**Funafuti**	**13.87**	**82**	Pn	**Pn**	**13 14 14.9**	**-0.3**
PMG	**Port Moresby**	**17.91**	**272**	LR	LR	13 21 30.6	
	comp=Z,330nm,20.0s,baz=118,slow=35						
EIDS	**Eidsvold**	**19.87**	**221**	*e*P	**Pn**	**13 15 29.8**	**-1.2**
	90nm,1.9s						
CTA	**Charters Tower**	**20.58**	**241**	P	**P**	**13 15 37.8**	**+0.7**
	4.6nm,0.9s,baz=79,slow=16,SNR=4.0						
CTAO	**Charters Tower**	**20.58**	**241**	*e*P	**P**	**13 15 34.9**	**-2.3**
COEN	**Coen**	**21.85**	**259**	*e*P	**P**	**13 15 51.0**	**+0.1**
	12nm,1.1s						
AFI	**Afiamalu**	**22.62**	**100**	P	**P**	**13 16 01.1**	**+1.9**
	50nm,1.1s,baz=41,slow=11,SNR=4.4						
AFI				LR	LR	13 23 22.6	
	comp=Z,266nm,18.4s,baz=292,slow=32						
H11S2	**WAKE ISLAND Hy 29.03**	**3**		T	T	13 47 24.4	
	baz=184,slow=76,SNR=433						
H11S3	**WAKE ISLAND Hy 29.04**	**3**		T	T	13 47 25.1	
	baz=184,slow=76,SNR=268						
H11S1	**WAKE ISLAND Hy 29.05**	**3**		T	T	13 47 26.1	
	baz=184,slow=76,SNR=330						
URZ	**Urewera**	**29.42**	**161**	LR	LR	13 27 54.8	
	comp=Z,110nm,18.9s,baz=340,slow=34						
H11N1	**WAKE ISLAND Hy 30.26**	**3**		T	T	13 49 01.4	
	baz=182,slow=76,SNR=245						
H11N3	**WAKE ISLAND Hy 30.26**	**3**		T	T	13 49 04.1	
	baz=182,slow=76,SNR=106						
H11N2	**WAKE ISLAND Hy 30.27**	**3**		T	T	13 48 57.3	
	baz=182,slow=76,SNR=185						
STKA	**Stephens Creek**	**30.40**	**223**	P	**P**	**13 17 09.6**	**-0.5**
	3.5nm,0.9s,baz=338,slow=8.1,SNR=4.6						
STKA				LR	LR	13 28 36.1	
	comp=Z,207nm,18.4s,baz=27,slow=35						
WRA	**Warramunga Arr**	**31.19**	**249**	P	**P**	**13 17 15.0**	**-2.3**
	0.8nm,0.8s,baz=81,slow=9.2,SNR=6.0						
ASAR	**Alice Springs**	**32.56**	**243**	P	**P**	**13 17 27.1**	**-2.3**
	0.7nm,0.6s,baz=63,slow=10,SNR=20						
ASAR				LR	LR	13 30 08.7	
	comp=Z,137nm,18.0s,baz=76,slow=35						
PPT	**Papeete**	**44.21**	**104**	LR	LR	13 34 30.5	
	comp=Z,66nm,18.4s,baz=286,slow=32						
TGY	**Tagaytay City**	**50.42**	**298**	LR	LR	13 39 08.8	
	comp=Z,47nm,19.6s,baz=60,slow=34						
MJAR	**Matsushiro Arr**	**53.46**	**333**	P	**P**	**13 20 16.5**	**-1.4**
	0.4nm,0.7s,baz=167,slow=5.6,SNR=4.1						
MJAR				LR	LR	13 40 28.4	
	comp=Z,14nm,21.8s,baz=355,slow=33						
PETK	**Petropavlovsk-**	**63.88**	**355**	LR	LR	13 43 48.2	
	comp=Z,20nm,20.8s,baz=147,slow=31						
KLR	**Kul'dur**	**66.56**	**337**	LR	LR	13 47 52.6	
	comp=Z,21nm,19.0s,slow=33						
CMAR	**Chiang Mai Arr**	**71.57**	**294**	P	**P**	**13 22 19.7**	**+0.3**
	1.2nm,0.7s,baz=129,slow=4.1,SNR=6.7						
CMAR				LR	LR	13 55 04.3	
	comp=Z,10nm,18.2s,baz=205,slow=37						
SONM	**Songino Array**	**78.12**	**324**	P	**P**	**13 22 56.6**	**-0.2**
	0.8nm,0.4s,baz=140,slow=6.1,SNR=9.4						
QSPA	**South Pole Qui**	**79.31**	**180**	*e*P	**P**	**13 23 03.8**	**+0.7**
	20nm,1.1s						
ILAR	**Eielson Array**	**83.32**	**19**	P	**P**	**13 23 24.6**	**+0.6**
	0.6nm,0.5s,baz=244,slow=4.9,SNR=14						
MAW	**Mawson**	**84.88**	**202**	P	**P**	**13 23 32.9**	**+0.8**
	2.8nm,0.7s,baz=93,slow=7.4,SNR=5.9						
MKAR	**Makanchi Array**	**92.97**	**317**	P	**P**	**13 24 10.2**	**-0.7**
	1.5nm,0.5s,baz=100,slow=6.8,SNR=9.3						
ZALV	**Zalesovo Beam**	**93.02**	**324**	P	**P**	**13 24 09.8**	**-1.1**
	0.6nm,0.6s,baz=127,slow=3.9,SNR=4.7						
ZALV		

*ISCJB **24** 14:27:49.5±1.1,38°.58N±0°.04×143°.06E±0°.09,h33km±9km, mb3.8/8,Error ellipse: s-maj=12.0km s-min=7.1km az=15.3*

*NEIC **24** 14:27:50.5±3.0,38°.64N×143°.28E,h30km±21km,mb4.1/1, Error ellipse: s-maj=17.0km s-min=7.8km az=113.0*

ISC 24 14:27:50.9±3.3,38°.63N±0°.07×142°.91E±0°.09,h24km±22km, n35,σ1§84/36,mb3.8/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.07**	**296**	P			**Pn**	**14 28 08.8**	**-1.7**
OFUJ				eS			**Sn**	**14 28 23.5**	**-1.1**
JIO	**Ouri**	**1.24**	**263**	P			**Pn**	**14 28 10.8**	**-1.9**
JIO				eS			**Sn**	**14 28 26.5**	**-2.2**
JMK	**Ichinoseki**	**1.36**	**284**	P			**Pn**	**14 28 13.2**	**-1.2**
JOM	**Ohasama**	**1.52**	**304**	P			**Pn**	**14 28 16.1**	**-0.5**
JOM				eS			**Sb**	**14 28 36.1**	**-1.1**
JTH	**Tanohata**	**1.54**	**329**	P			**Pn**	**14 28 17.1**	**+0.1**
JTH				eS			**Sb**	**14 28 37.7**	**-0.2**
JOU	**Okura**	**1.78**	**262**	P			**Pn**	**14 28 19.4**	**-0.9**
JMM	**Marumori**	**1.83**	**246**	P			**Pn**	**14 28 19.7**	**-1.2**
JMM				S			**Sn**	**14 28 43.1**	**-0.2**
JRG	**Rokugo**	**1.94**	**294**	P			**Pn**	**14 28 22.8**	**+0.5**
JYK	**Kaneyama**	**2.02**	**279**	P			**Pn**	**14 28 23.3**	**-0.2**
JANG	**Nango**	**2.05**	**329**	P			**Pn**	**14 28 24.7**	**+0.7**
JANG				eS			**Sb**	**14 28 50.4**	**-2.2**
JYS	**Shirataka**	**2.27**	**261**	P			**Pn**	**14 28 26.7**	**-0.3**
ERM	**Erimo**	**3.39**	**3**	Pn			**Pn**	**14 28 40.2**	**-2.1**
MJAR	**Matsushiro Arr** 1.4nm,0.3s,baz=69,slow=12,SNR=18	**4.28**	**242**	Pn			**Pn**	**14 28 57.5**	**+3.0**
MAJO	**Matsushiro**	**4.28**	**242**	*e*Pn			**Pn**	**14 28 56.4**	**+1.9**
MAT	**Matsushiro**	**4.28**	**242**	P			**Pn**	**14 28 57.1**	**+2.6**
MAT				eS			**Sn**	**14 29 40.2**	**-3.5**
ASAJ	**Asahikawa** 2.9nm,0.6s	**5.49**	**358**	*e*Pn			**Pn**	**14 29 11.8**	**+0.5**
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=112,slow=15,SNR=8.2	**9.91**	**308**	Pn			**Pn**	**14 30 15.2**	**+3.4**
KSRS	**Korea Array** 0.1nm,0.3s,baz=82,slow=14,SNR=5.3	**11.88**	**269**	Pn			**Pn**	**14 30 42.9**	**+4.1**
KSAR	**Wonju Array Be**	**11.91**	**269**	Pn			**Pn**	**14 30 42.9**	**+3.6**
KLR	**Kul'dur** 0.1nm,0.3s,baz=142,slow=19,SNR=3.2	**13.29**	**326**	Pn			**Pn**	**14 30 58.5**	**+0.5**
SEY	**Seymchan** 0.9nm,0.9s,baz=6.0,slow=19,SNR=1.8	**25.01**	**10**	P			**P**	**14 33 10.7**	**-2.0**
SONM	**Songino Array** 1.0nm,0.7s,baz=83,slow=8.9,SNR=5.2	**27.93**	**301**	P			**P**	**14 33 40.2**	**+0.8**
H11N2	**WAKE ISLAND Hy** baz=317,slow=76,SNR=20	**28.02**	**125**	T			T	15 02 52.0	
H11N1	**WAKE ISLAND Hy** baz=317,slow=76,SNR=25	**28.03**	**125**	T			T	15 02 54.4	
H11N3	**WAKE ISLAND Hy** baz=317,slow=76,SNR=30	**28.04**	**125**	T			T	15 02 55.3	
H11S1	**WAKE ISLAND Hy** baz=319,slow=75,SNR=3.4	**28.80**	**127**	T			T	15 03 53.4	
H11S3	**WAKE ISLAND Hy** baz=319,slow=75,SNR=4.4	**28.80**	**127**	T			T	15 04 03.1	
H11S2	**WAKE ISLAND Hy** baz=319,slow=75,SNR=2.8	**28.82**	**127**	T			T	15 03 52.0	
ZALV	**Zalesovo Beam** 1.0nm,0.6s,baz=79,slow=7.5,SNR=3.0	**41.74**	**311**	P			**P**	**14 35 38.0**	**+0.1**
MKAR	**Makanchi Array** 0.9nm,0.6s,baz=82,slow=10,SNR=9.3	**44.30**	**301**	P			**P**	**14 35 59.1**	**+0.4**
KURK	**Kurchatov**	**45.90**	**307**	P			**P**	**14 36 12.2**	**+0.9**
KURBB	**Kurchatov Arra** 1.8nm,0.6s,baz=80,slow=8.1,SNR=13	**45.98**	**307**	P			**P**	**14 36 12.2**	**+0.3**
ABKAR	**Akbulak array** 0.9nm,0.6s	**57.83**	**310**	*e*P			**P**	**14 37 40.9**	**+0.6**
WRA	**Warramunga Arr** 1.2nm,0.6s,baz=7.7,slow=7.2,SNR=20	**58.81**	**189**	P			**P**	**14 37 46.6**	**-0.8**
ASAR	**Alice Springs** 0.6nm,0.7s,baz=10,slow=5.8,SNR=8.5	**62.54**	**189**	P			**P**	**14 38 11.8**	**-0.9**

*NIED **24** 14:32:00,34°.00N×136°.10E,h38km,Mw4.8 Best double couple: M₀2.01000×10¹⁶ NP1:φ₀=262.00000°,δ57.00000°, λ141.00000°. NP2:φ₀=16.00000°,δ58.00000°,λ40.00000°.*

*BJI **24** 14:32:07.8,33°.75N×136°.51E,h43km,mb4.8/60,mB4.8/46, Ms4.4/62,Ms7 4.1/58*

*MOS **24** 14:32:10.2±1.0,33°.91N×136°.11E,h37km,mb4.9/33, MS4.2/6,Error ellipse: s-maj=8.0km s-min=5.0km az=89.4*

*ISCJB **24** 14:32:11.3±0.3,33°.90N±0°.02×136°.15E±0°.02,h44km±2km, mb4.7/130,MS4.2/33,Error ellipse: s-maj=3.6km s-min=2.6km az=151.4*

*JMA **24** 14:32:12.4,33°.92N×136°.14E,h42km,M4.8 Broadband fault plane solution: P waves. NP1:φ₀=16.00000°, δ72.00000°,λ58.00000°. NP2:φ₀=260.00000°,δ36.00000°, λ149.00000°. Principal axes: T Plg52.0000°, Azm249.0000°; N Plg30.0000°, Azm27.0000°; P Plg21.0000°, Azm130.0000°;*

JMA Felt IV J1.

*NEIC **24** 14:32:12.4±0.4,33°.87N×136°.14E,h43km±3km,mb4.7/71 Error ellipse: s-maj=4.3km s-min=2.8km az=141.0*

NEIC Felt [III] at Osaka and [II] at Kyoto. Also felt at Fujiidera, Higashiosaka, Ikoma, Kobe, Matsusaka, Suzuka and Tenri. Recorded [4 JMA] in Nara.

*IDC **24** 14:32:13.1±1.5,33°.89N×136°.11E,h49km±14km,mb4.1/28, mb1 4.2/33,mb1mx4.2/45,mbtmp4.4/33,ML4.4/5,MS4.0/21, Ms1 4.0/21,ms1mx3.7/39,Error ellipse: s-maj=12.5km s-min=10.7km az=94.0*

ISC 24 14:32:12.5±0.4,33°.88N±0°.03×136°.16E±0°.03,h43km±3km, h42km;pP-P,n323,σ1§39/378,mb4.7/136,MS4.1/34, 12C-12D,Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JKN2	**Miekihoku**	**0.37**	**15**	⇑P			**Pn**	**14 32 21.0**	**-0.7**
JKN2				S			**Sn**	**14 32 27.2**	**-1.0**
JWZ	**Kozaga**	**0.51**	**226**	⇑P			**Pn**	**14 32 23.3**	**-0.2**
JWZ				S			**Sn**	**14 32 31.2**	**0.0**
JWY	**Kouya**	**0.57**	**306**	⇓P			**Pn**	**14 32 24.0**	**-0.4**
JWY				S			**Sn**	**14 32 32.2**	**-0.7**
TTO1	**TONANKAI O.B.S**	**0.59**	**116**	⇓P			**Pn**	**14 32 24.9**	**+0.7**
JWM	**Minabe**	**0.67**	**267**	⇓P			**Pn**	**14 32 25.3**	**-0.2**
JWM				*i* S			**Sn**	**14 32 34.6**	**-0.3**
JIE	**Ise**	**0.68**	**42**	⇑P			**Pn**	**14 32 25.4**	**-0.4**
JIE				S			**Sn**	**14 32 34.5**	**-0.8**
TTO2	**TONANKAI O.B.S**	**0.74**	**101**	⇑P			**Pn**	**14 32 26.9**	**+0.6**
TSUJ	**Tsu 2**	**0.85**	**15**	⇓P			**Pn**	**14 32 27.4**	**-0.7**
TSUJ				S			**Sn**	**14 32 38.3**	**-1.1**
JHE	**Heguri**	**0.86**	**333**	⇓P			**Pn**	**14 32 27.6**	**-0.6**
JHE				S			**Sn**	**14 32 38.7**	**-1.0**
JAJ2	**Tsuna**	**1.18**	**297**	⇓P			**Pn**	**14 32 32.5**	**0.0**
JAJ2				S			**Sn**	**14 32 47.3**	**-0.1**
INU	**Inuyama**	**1.63**	**26**	*e*Pn			**Pn**	**14 32 38.1**	**-0.5**
JHJ	**Hachijo jima 2** 642nm,0.3s,baz=152,slow=21,SNR=108	**3.13**	**103**	P			**Pn**	**14 32 59.7**	**+0.4**
JHJ				S			**Sn**	**14 33 34.2**	**-1.2**
	782nm,0.3s,baz=107,slow=20,SNR=22								
MAJO	**Matsushiro**	**3.14**	**32**	*e*P			**Pn**	**14 32 59.3**	**-0.2**
MAJO	**Matsushiro**	**3.14**	**32**	*e*Pn			**Pn**	**14 32 59.2**	**-0.2**
MAT	**Matsushiro**	**3.14**	**32**	P			**Pn**	**14 32 59.3**	**-0.2**
MAT				S			**Sn**	**14 33 35.2**	**-0.5**
MAT	**Matsushiro**	**3.14**	**32**	P			Pn	14 33 07.2	+7.7
MAT				eS			Sn	14 33 45.0	+9.3
MJAR	**Matsushiro Arr** 30nm,0.3s,baz=193,slow=13,SNR=376	**3.14**	**32**	P			**Pn**	**14 32 59.7**	**+0.2**
MJAR				S			**Sn**	**14 33 36.2**	**+0.5**
	98nm,0.3s,baz=216,slow=24,SNR=8.1								
MJAR				LR			LR	14 34 20.7	
	comp=Z,2μm,21.3s,baz=215,slow=40								
MJB9	**Matsu-Tunnel**	**3.14**	**32**	*e*Pn			**Pn**	**14 32 59.2**	**-0.3**
JHJ2	**Mitsune**	**3.15**	**103**	*e*Pn			**Pn**	**14 32 59.5**	**-0.1**
JNU	**Nakatsue** 11nm,0.3s,baz=157,slow=7.0,SNR=105	**4.47**	**262**	P			**Pn**	**14 33 17.7**	**-0.1**
JNU				S			**Sn**	**14 34 06.3**	**-2.3**
	17nm,0.3s,baz=21,slow=12,SNR=4.3								
JNU	**Nakatsue**	**4.47**	**262**	*e*Pn			**Pn**	**14 33 16.7**	**-1.1**
JNU				S			**Sn**	**14 34 06.3**	**-2.3**
KSRS	**Korea Array** 13nm,0.3s,baz=114,slow=14,SNR=180	**7.59**	**300**	P			**Pn**	**14 34 01.8**	**+1.3**
KSRS				S			**Sn**	**14 35 23.9**	**-1.3**
	5.8nm,0.3s,baz=116,slow=25,SNR=15								
KSRS				LR			LR	14 37 10.9	
	comp=Z,1μm,18.8s,baz=92,slow=39								
KSRS				PcP			**PcP**	**14 40 40.7**	**+0.5**
	0.1nm,0.3s,baz=239,slow=0.7,SNR=4.2								
KS15	**Wonju Array Si**	**7.61**	**300**	*e*Pn			**Pn**	**14 34 01.4**	**+0.7**
KSAR	**Wonju Array Be**	**7.61**	**300**	P			**Pn**	**14 34 01.8**	**+1.0**
KSAR				S			**Sn**	**14 35 23.9**	**-1.8**
KSAR	**Wonju Array Be**	**7.61**	**300**	P			**Pn**	**14 34 01.8**	**+1.0**
KSAR				S			**Sn**	**14 35 23.9**	**-1.8**
KSAR				PcP			**PcP**	**14 40 40.7**	**+0.5**
KS01	**Wonju Array Si**	**7.62**	**300**	*e*Pn			**Pn**	**14 34 01.1**	**+0.2**
INCN	**Inchon**	**8.54**	**298**	*e*Pn			**Pn**	**14 34 13.4**	**-0.1**
MSHR	**Mys Shultsa**	**9.53**	**337**	*e*P			**Pn**	**14 34 26.4**	**-0.6**
JOW	**Kunigami**	**9.78**	**226**	*e*Pn			**Pn**	**14 34 31.5**	**+0.9**
ERM	**Erimo**	**9.82**	**32**	*e*P			**Pn**	**14 34 31.3**	**+0.3**
ERM	**Erimo**	**9.82**	**32**	*e*Pn			**Pn**	**14 34 31.4**	**+0.3**
USRK	**Ussuriysk Ar.** 0.6nm,0.3s,baz=168,slow=13,SNR=12	**10.80**	**344**	P			**Pn**	**14 34 45.8**	**+1.4**
USRK				S			**Sn**	**14 36 42.1**	**-1.7**
	0.7nm,0.3s,baz=158,slow=25,SNR=4.3								
USRK				LR			LR	14 38 40.0	
	comp=Z,460nm,19.0s,baz=155,slow=36								
ASAJ	**Asahikawa**	**11.38**	**24**	*e*Pn			**Pn**	**14 34 51.6**	**-0.7**
MDJ	**Mudanjiang**	**11.86**	**337**	P			**Pn**	**14 34 59.4**	**+0.5**
MDJ				S			**Sn**	**14 37 10.5**	**+0.7**
MDJ				PcP			**PcP**	**14 40 44.1**	**+0.1**
MDJ				ScP			**ScP**	**14 44 13.3**	**-0.1**
MDJ				PcS			**PcS**	**14 44 17.3**	**-0.6**
MDJ				ScS			**ScS**	**14 47 48.9**	**-0.1**
MDJ				pmax			pmax		
	comp=Z,13nm,1.3s								
MDJ				pmax			pmax		
	comp=Z,200nm,8.5s								
MDJ				LR			LR		
	comp=N,400nm,18.9s								
MDJ				LR			LR		
	comp=E,190nm,11.6s								
MDJ				LR			LR		
	comp=Z,650nm,17.1s								
MDJ	**Mudanjiang** 16nm,0.7s	**11.86**	**337**	*e*Pn			**Pn**	**14 35 00.4**	**+1.5**
YUK	**Yuzh-Kuril'sk**	**12.63**	**34**	*e*P			**Pn**	**14 35 08.8**	**-0.6**
CN2	**Changchun**	**12.94**	**323**	*e*P			**Pn**	**14 35 16.1**	**+2.4**
CN2				*es*P			P	14 35 26.3	+3.0
CN2				*e*S			**Sn**	**14 37 40.1**	**+3.9**
CN2				pmax			pmax		
	comp=Z,20nm,1.2s								
CN2				pmax			pmax		
	comp=Z,200nm,4.0s								
CN2				LR			LR		
	comp=N,600nm,16.0s								
CN2				LR			LR		
	comp=E,600nm,16.0s								
CN2				LR			LR		
	comp=Z,600nm,20.0s								
YSS	**Yuzh-Sakhalins**	**13.98**	**19**	*e*P			**Pn**	**14 35 27.0**	**-0.9**
YSS				*e*S			**Sn**	**14 38 02.0**	**+0.4**
YSS				pmax			pmax		
	comp=Z,10.0nm,0.6s								
YSS				MLR			MLR		
	comp=Z,3μm,15.0s								
YSS				MLR			MLR		
	comp=E,3μm,14.0s								
YSS	**Yuzh-Sakhalins**	**13.98**	**19**	*e*Pn			**Pn**	**14 35 25.9**	**-1.9**
KUR	**Kuril'sk**	**14.48**	**35**	*e*P			**Pn**	**14 35 34.2**	**-0.3**
HABR	**Khabarovsk**	**14.60**	**357**	P			**Pn**	**14 35 33.6**	**-2.5**
HABR				S			**Sn**	**14 38 15.0**	**-1.6**
HABR				pmax			pmax		
	comp=N,18nm,1.4s								
HABR				pmax			pmax		
	comp=E,12nm,1.4s								
HABR				pmax			pmax		
	comp=Z,21nm,1.4s								
HABR				MLR			MLR		
	comp=Z,311nm,13.0s								
KLR	**Kul'dur** comp=Z,1.0nm,0.3s,baz=158,slow=12,SNR=49	**15.68**	**349**	P			**Pn**	**14 35 51.1**	**+0.8**
KLR				LR			LR	14 41 54.0	
	comp=Z,437nm,18.2s,baz=164,slow=37								
KLR	**Kul'dur**	**15.68**	**349**	*d* P			**Pn**	**14 35 50.1**	**-0.2**
TIA	**Tai'an**	**15.76**	**284**	*e*P			**Pn**	**14 35 50.8**	**-0.6**
TIA				S			**S**	**14 38 52.4**	**-5.8**
TIA				pmax			pmax		
	comp=Z,10.0nm,1.5s								
TIA				LR			LR		
	comp=Z,540nm,12.0s								
TIA				LR			LR		
	comp=Z,1μm,16.0s								
TIA				LR			LR		
	comp=Z,1μm,17.0s								
YULB	**Yu-li** comp=Z,13nm,0.8s	**16.69**	**235**	*e*Pn			**Pn**	**14 36 02.5**	**-0.8**
BJI	**Beijing**	**17.10**	**297**	P			**Pn**	**14 36 08.6**	**+0.4**
BJI				pP			**pP**	**14 36 18.3**	**-1.5**
BJI				sP			**sP**	**14 36 24.8**	**-0.4**
BJI				S			**Sn**	**14 39 16.1**	**-1.2**
BJI				pmax			pmax		
	comp=Z,19nm,1.9s								
BJI				pmax			pmax		
	comp=Z,200nm,3.2s								
BJI				LR			LR		
	comp=Z,440nm,15.3s								
BJI				LR			LR		
	comp=Z,640nm,18.8s								
BJI				LR			LR		
	comp=Z,550nm,22.0s								
BJT	**Baijiatuan**	**17.10**	**297**	*e*P			**Pn**	**14 36 08.1**	**-0.1**
BJT				pmax			pmax		
	comp=Z,35nm,1.2s								
BJT	**Baijiatuan** comp=Z,35nm,1.2s	**17.10**	**297**	*e*Pn			**Pn**	**14 36 08.1**	**-0.1**
TPUB	**Ta-pu** comp=Z,28nm,0.7s	**17.21**	**236**	*e*Pn			**P**	**14 36 11.1**	**+0.1**
TWG	**Pinlang** comp=Z,84nm,0.8s	**17.23**	**234**	*e*Pn			**Pn**	**14 36 10.2**	**+0.1**
TYV	**Tymovskoe**	**17.62**	**14**	*e*P			**P**	**14 36 15.0**	**-0.2**
TYV				pmax			pmax		
	comp=E,11nm,0.8s								
TYV				pmax			pmax		
	comp=Z,62nm,1.0s								
QZH	**Quanzhou**	**17.69**	**244**	⇑ *i* P			**Pn**	**14 36 14.3**	**-1.3**
QZH				S			**Sn**	**14 39 30.0**	**-1.7**
QZH				pmax			pmax		
	comp=Z,70nm,0.8s								
QZH				pmax			pmax		
	comp=Z,510nm,4.2s								
QZH				LR			LR		
	comp=Z,810nm,17.8s								
QZH				LR			LR		
	comp=Z,850nm,17.1s								
QZH				LR			LR		
	comp=Z,480nm,12.9s								
WHN	**Wuhan**	**18.74**	**266**	⇑P			**Pn**	**14 36 29.5**	**+1.0**
WHN				S			**Sn**	**14 39 53.6**	**-3.6**
WHN				LR			LR		
	comp=Z,2μm,7.1s								
WHN				LR			LR		
	comp=Z,700nm,8.3s								
WHN				LR			LR		
	comp=Z,1μm,18.5s								
NKL	**Nikolayevsk**	**19.53**	**8**	*i* P			**P**	**14 36 36.0**	**-0.1**
NKL				pmax			pmax		
	comp=N,30nm,0.9s								
NKL				pmax			pmax		
	comp=Z,60nm,0.9s								
HIA	**Hailar**	**19.61**	**327**	*e*P			**P**	**14 36 36.9**	**-0.2**
HIA				pmax			pmax		
	comp=Z,36nm,1.0s								
HIA	**Hailar** comp=Z,36nm,1.0s	**19.61**	**327**	*e*P			**P**	**14 36 36.9**	**-0.2**
HHC	**Hu-ho-hao-te**	**20.71**	**297**	*e*P			Pn	14 36 51.3	-0.5
HHC				pP			pP	14 37 02.3	+2.7
HHC				sP			sP	14 37 07.5	+2.5
HHC				S			**S**	**14 40 36.8**	**-1.3**
HHC				SS			**SnSn**	**14 41 06.4**	**+6.8**
HHC				pmax			pmax		
	comp=Z,22nm,1.4s								
HHC				pmax			pmax		
	comp=Z,72nm,4.0s								
HHC				LR			LR		
	comp=Z,410nm,14.8s								
HHC				LR			LR		
	comp=Z,510nm,17.3s								
HHC				LR			LR		
	comp=Z,540nm,16.0s								
XAN	**Xi'an**	**22.57**	**278**	P			**P**	**14 37 10.1**	**+0.9**
XAN				pP			pP	14 37 21.1	+1.4
XAN				sP			sP	14 37 26.6	+1.5
XAN				S			**S**	**14 41 14.3**	**+0.5**
XAN				pmax			pmax		
	comp=Z,41nm,0.8s								
XAN				pmax			pmax		
	comp=Z,64nm,4.6s								
XAN				LR			LR		
	comp=Z,650nm,20.4s								
XAN				LR			LR		
	comp=Z,370nm,24.5s								
XAN				LR			LR		
	comp=Z,430nm,19.4s								
ENH	**Enshi** comp=Z,64nm,0.8s	**22.86**	**268**	*e*P			**P**	**14 37 11.1**	**-1.1**
TGY	**Tagaytay City** comp=Z,100nm,0.5s,baz=340,slow=8.9,SNR=3.6	**24.05**	**219**	P			**P**	**14 37 23.6**	**-0.2**
PEA0	**Petropavlovsk-**	**24.60**	**32**	*e*P			**P**	**14 37 29.3**	**+0.8**
PEA0B	**Petropavlovsk-** comp=Z,40nm,1.1s	**24.60**	**32**	*e*P			**P**	**14 37 28.3**	**-0.2**
PETK	**Petropavlovsk-** comp=Z,4.0nm,0.9s,baz=306,slow=5.0,SNR=5.6	**24.60**	**32**	P			**P**	**14 37 30.4**	**+1.9**
PET	**Petropavlovsk**	**24.97**	**33**	*e*P			P	14 37 42.8	+11
PET				pmax			pmax		
	comp=Z,21nm,1.2s								
PET				pmax			pmax		
	comp=Z,100nm,10.6s								
PET				MLR			MLR		
	comp=Z,400nm,15.0s								
PET				MLR			MLR		
	comp=Z,400nm,15.0s								
SONA1	**Songino Array**	**26.28**	**311**	*e*P			**P**	**14 37 42.6**	**-1.3**
SONM	**Songino Array** comp=Z,13nm,0.8s,baz=125,slow=8.6,SNR=41	**26.28**	**311**	P			**P**	**14 37 43.4**	**-0.5**
SONM				PcP			**PcP**	**14 41 08.2**	**-1.1**
	comp=Z,0.6nm,0.7s,baz=137,slow=5.1,SNR=2.7								
SONM				LR			LR	14 48 41.7	
	comp=Z,343nm,19.2s,baz=108,slow=38								
GYA	**Guiyang**	**26.49**	**262**	*e*P			**P**	**14 37 46.3**	**+0.3**
GYA				pmax			pmax		
	comp=Z,10.0nm,0.8s								
LZH	**Lanzhou**	**26.50**	**284**	*e*P			**P**	**14 37 50.0**	**+3.9**
LZH				pP			sP	14 38 02.3	-0.4
LZH				PP			**PnPn**	**14 38 35.0**	**+7.5**
LZH				*e*S			**S**	**14 42 17.0**	**-0.4**
LZH				SS			**SnSn**	**14 43 32.0**	**+10**
LZH				pmax			pmax		
	comp=Z,19nm,1.0s								
LZH				pmax			pmax		
	comp=Z,160nm,4.4s								
LZH				LR			LR		
	comp=Z,420nm,12.7s								
LZH				LR			LR		
	comp=Z,530nm,13.8s								
LZH				LR			LR		
	comp=Z,590nm,15.0s								
CD2	**Chengdu**	**27.45**	**273**	*e*P			**P**	**14 37 54.0**	**-0.5**
CD2				pP			pP	14 38 05.4	-0.6
CD2				sP			sP	14 38 10.8	-0.4
CD2				S			**S**	**14 42 32.0**	**-0.3**
CD2				sS			sS	14 42 51.9	+0.3
CD2				pmax			pmax		
	comp=Z,10.0nm,0.5s								
CD2				pmax			pmax		
	comp=Z,120nm,5.2s								
CD2				LR			LR		
	comp=Z,600nm,16.4s								
CD2				LR			LR		
	comp=Z,350nm,18.4s								
CD2				LR			LR		
	comp=Z,630nm,15.1s								
MA2	**Magadan** comp=Z,128nm,18.3s,baz=208,slow=38	**27.46**	**16**	LR			LR	14 49 41.2	
MA2	**Magadan**	**27.46**	**16**	*e*P			**P**	**14 37 52.8**	**-1.4**
QIZ	**Qiongzhong**	**27.71**	**244**	P			**P**	**14 37 56.3**	**-0.5**
QIZ				sP			**sP**	**14 38 13.3**	**-0.2**
QIZ				S			**S**	**14 42 37.3**	**+1.0**
QIZ				LR			LR		
	comp=Z,160nm,15.0s								
QIZ				LR			LR		
	comp=Z,190nm,19.4s								
QIZ				LR			LR		
	comp=Z,190nm,18.5s								
YAK	**Yakutsk** comp=Z,12nm,0.6s,baz=85,slow=1.0,SNR=10.0	**28.47**	**354**	P			**P**	**14 38 02.2**	**-0.9**
YAK				LR			LR	14 49 36.5	
	comp=Z,446nm,18.2s,baz=174,slow=37								
YAK	**Yakutsk**	**28.47**	**354**	*de*P			**P**	**14 38 01.7**	**-1.4**
YAK				*e*PP			**pP**	**14 38 13.1**	**-1.6**
YAK				*e*				14 38 54.6	
YAK				*e*PPP			PPP	14 39 03.5	
YAK				*e*S			**S**	**14 42 52.5**	**+5.1**
YAK				*e*SS			sS	14 43 14.6	+7.9
YAK				*e*SS			SnSn	14 44 26.3	+18
YAK				pmax			pmax		
	comp=E,1.0nm,0.8s								
YAK				pmax			pmax		
	comp=Z,13nm,0.9s								
YAK				pmax			pmax		
	comp=N,9.0nm,1.4s								
YAK				pmax			pmax		
	comp=Z,7.0nm,0.8s								
YAK				pmax			pmax		
	comp=N,5.0nm,0.9s								
YAK				pmax			pmax		
	comp=E,11nm,1.3s								
YAK				smax			smax		
	comp=N,34nm,2.0s								
YAK				smax			smax		
	comp=E,2.0nm,0.5s								
YAK				MLR			MLR		
	comp=E,100nm,17.0s								
YAK				MLR			MLR		
	comp=Z,405nm,17.0s								
YAK				MLR			MLR		
	comp=N,310nm,17.0s								
YAK	**Yakutsk** comp=N,18nm,0.9s	**28.47**	**354**	*e*P			**P**	**14 38 01.7**	**-1.4**
GTA	**Gaotai**	**29.54**	**291**	*e*P			**P**	**14 38 12.6**	**-0.5**
GTA				pP			sP	14 38 27.8	-2.0
GTA				sP			pP	14 38 33.3	+8.6
GTA				PcP			**PcP**	**14 41 18.1**	**+0.7**
GTA				S			**S**	**14 43 03.1**	**-2.0**
GTA				sS			sS	14 43 28.6	+4.2
GTA				SS			**SnSn**	**14 44 41.0**	**+5.5**
GTA				pmax			pmax		
	comp=N,6.0nm,1.0s								
GTA				pmax			pmax		
	comp=N,67nm,6.2s								
GTA				LR			LR		
	comp=N,220nm,19.0s								
GTA				LR			LR		
	comp=N,330nm,16.6s								
GTA				LR			LR		
	comp=N,340nm,19.0s								
KMI	**Kunming**	**30.26**	**262**	P			**P**	**14 38 20.3**	**+0.6**
KMI				pP			pP	14 38 30.3	-1.0
KMI				S			**S**	**14 43 16.9**	**+0.1**
KMI				sS			sS	14 43 35.8	-0.3
KMI				SS			**SnSn**	**14 44 53.1**	**-0.3**
KMI				pmax			pmax		
	comp=N,12nm,0.6s								
KMI				pmax			pmax		
	comp=N,54nm,4.4s				

TSM Tawau 34.00 214 ⇓P P 14 38 53.1 +0.8
UTTA Uttaradit 35.64 252 P P 14 39 07.1 +0.7
comp=N,3,8nm,1.0s
CMAI Chiengmai2 35.69 257 P P 14 39 08.6 +1.6
comp=N,132nm,1.2s
MRSI Marisa 35.81 205 P P 14 39 04.3 -3.5
LAMP Lampang 35.95 254 P P 14 39 10.9 +1.8
comp=N,3,2nm,0.7s
PBKT Sadao Pong 35.97 250 P P 14 39 10.2 +0.9
comp=N,27nm,1.0s
CMMT Chiang Mai 36.34 255 P P 14 39 13.1 +0.6
comp=N,15nm,0.8s
CHTO Chiang Mai 36.34 255 P P 14 39 13.1 +0.6
comp=N,128nm,1.2s
CHTO Chiang Mai 36.34 255 *e*P P 14 39 12.8 +0.3
CHTO pmax pmax
comp=Z,8.0nm,0.8s
CHTO Chiang Mai 36.34 255 *e*P P 14 39 12.8 +0.3
comp=Z,7.8nm,0.8s
SUKH Sukhothai 36.51 253 P P 14 39 15.7 +1.8
comp=Z,3.7nm,0.8s
CM31 Chiang Mai Arr 36.53 255 *e*P P 14 39 14.2 +0.1
CMAR Chiang Mai Arr 36.53 255 P P 14 39 14.7 +0.5
comp=Z,4.5nm,0.7s,baz=49,slow=7.7,SNR=42
CMAR PcP PcP 14 41 36.2 -0.8
comp=Z,1.7nm,0.8s,baz=36,slow=1.6,SNR=7.0
CMAR LR LR 14 54 00.9
comp=Z,167nm,21.8s,baz=62,slow=36
CM01 Chiang Mai Arr 36.54 255 *e*P P 14 39 13.9 -0.3
CM01 *e*PcP PcP 14 41 36.5 -0.6
CHBT CHBT 37.25 244 P P 14 39 21.8 +1.6
comp=Z,57nm,0.9s
TIXI Tiksi 38.03 356 P P 14 39 25.1 -1.1
comp=Z,20nm,0.7s,baz=127,slow=6.0,SNR=6.0
TIXI Tiksi 38.03 356*c i*P P 14 39 25.4 -0.7
TIXI pmax pmax
comp=Z,13nm,0.8s
LSA Lhasa 38.25 276 P P 14 39 29.9 +0.8
LSA pmax pmax
comp=Z,19nm,0.9s
LSA Lhasa 38.25 276 *e*P P 14 39 27.7 -1.4
LSA pmax pmax
comp=Z,12nm,0.8s
LSA Lhasa 38.25 276 *e*P P 14 39 27.7 -1.4
comp=Z,12nm,0.8s
BILL Bilibino 38.29 18⇓*e*P P 14 39 31.5 +3.1
BILL *e**PP pP 14 39 40.0 -0.2
BILL *e**SP sP 14 39 45.5 +0.2
BILL pmax pmax
comp=Z,6.0nm,0.8s
BILL MLR MLR
comp=Z,194nm,18.0s
SBUM Sibu 38.44 221 *e*P P 14 39 28.7 -1.5
comp=Z,6.4nm,1.1s
WMQ Urumqi 38.54 300 *e*P P 14 39 32.8 +1.9
WMQ pP pP 14 39 39.3 -3.4
WMQ sP sP 14 39 47.3 -0.4
WMQ PP PnPn 14 41 05.8 +4.1
WMQ S S 14 45 24.4 +0.6
WMQ ScS ScS 14 49 37.3 -0.5
WMQ pmax pmax
comp=Z,11nm,0.9s
WMQ pmax pmax
comp=Z,110nm,4.0s
WMQ LR LR
comp=Z,370nm,12.6s
WMQ LR LR
comp=Z,240nm,17.5s
WMQ LR LR
comp=Z,370nm,20.6s
SRDT SRDT 38.71 249 P P 14 39 34.0 +1.5
comp=Z,98nm,1.1s
PHET Kaeng Krachan 39.19 247 P P 14 39 37.9 +1.3
comp=Z,15nm,0.8s
ZAA0 Zalesovo Array 40.99 315 *e*P P 14 39 49.8 -1.3
ZAA0 *e*PcP PcP 14 41 49.8 -0.6
ZAA0 *e*PcP PcP 14 41 50.2 -0.2
ZALV Zalesovo Beam 40.99 315 P P 14 39 52.1 +1.1
comp=Z,1.1nm,0.8s,baz=120,slow=5.8,SNR=3.7
ZALV PcP PcP 14 41 49.6 -0.8
comp=Z,8.1nm,0.7s,baz=93,slow=3.0,SNR=20
ZALV LR LR 14 57 32.7
comp=Z,354nm,19.2s,baz=70,slow=37
BBKI Banjar Baru 42.24 213 P P 14 40 01.6 -0.1
MK01 Makanchi Array 42.24 304 *e*P P 14 40 01.4 0.0
MK31 Makanchi Array 42.25 304 *e*P P 14 40 01.7 +0.2
MK31 Makanchi Array 42.25 304 *e*P P 14 40 01.7 +0.2
MKAR Makanchi Array 42.25 304 P P 14 40 01.8 +0.3
comp=Z,2.1nm,0.7s,baz=90,slow=10,SNR=18
MKAR PcP PcP 14 41 54.1 -0.7
comp=Z,1.1nm,0.8s,baz=91,slow=2.3,SNR=3.6
MKAR LR LR 14 58 39.0
comp=Z,301nm,19.1s,baz=92,slow=38
MAKZ Makanchi 42.46 304 *e*P P 14 40 03.6 +0.4
MAKZ pmax pmax
comp=Z,19nm,1.6s
MAKZ Makanchi 42.46 304 *e*P P 14 40 03.6 +0.4
comp=Z,19nm,1.6s
KRAB Krabi 42.54 242 P P 14 40 05.3 +1.2
comp=Z,76nm,0.7s,comp=Z,579nm
RAMN Ramite 42.96 275 *e*P P 14 40 07.6 -0.1
comp=Z,38nm,0.8s
GUN Gumba 43.20 276 *e*P P 14 40 10.3 +0.4
comp=Z,42nm,0.6s
PKIN Phulchoki 43.72 276 *e*P P 14 40 13.6 -0.4
comp=Z,13nm,0.7s
KKN Kakani 43.74 276 *e*P P 14 40 14.1 0.0
comp=Z,21nm,0.8s
IPM Ipoh 43.83 236 ⇑P P 14 40 14.9 +0.4
IPM Ipoh 43.83 236 *e*P P 14 40 14.6 0.0
comp=Z,30nm,0.8s
DMN Daman 43.95 276 *e*P P 14 40 15.8 0.0
KGM Kluang 44.11 231 ⇓P P 14 40 17.5 +0.7
GKN Gorkha 44.20 277 *e*P P 14 40 17.7 +0.1
comp=Z,17nm,0.7s
NRIK Noril'sk 44.44 338 P P 14 40 18.0 -0.7
comp=Z,3.1nm,0.5s,baz=120,slow=6.1,SNR=7.3
NRIK LR LR 15 00 13.2
comp=Z,347nm,18.3s,baz=130,slow=38
KURK Kurchatov 44.58 310 P P 14 40 19.9 -0.3
KURK 14 42 01.8
KURK Kurchatov 44.58 310 P P 14 40 19.9 -0.3
KURK PcP PcP 14 42 01.8 -0.7
KURBB Kurchatov Arra 44.64 310 P P 14 40 19.9 -0.8
comp=Z,1.8nm,0.8s,baz=93,slow=7.3,SNR=12
KURBB PcP PcP 14 42 01.8 -0.9
comp=Z,1.6nm,0.7s,baz=86,slow=3.9,SNR=5.8
KOLN Koldanda 45.14 277 *e*P P 14 40 25.3 +0.1
comp=Z,31nm,0.9s
PYUN Piuthan 45.52 278 *e*P P 14 40 28.5 +0.3
comp=Z,83nm,0.9s
PSI Prapat 46.49 236 *e*P P 14 40 36.1 +0.3
PSI pmax pmax
comp=Z,18nm,0.8s
PSI Prapat 46.49 236 *e*P P 14 40 36.1 +0.3
comp=Z,18nm,0.8s
MTN Manton Dam 46.71 187 *e*P P 14 40 36.5 -0.8
comp=Z,28nm,0.6s
MNSI Mandailing Nat 47.49 234 P P 14 40 43.5 0.0
KSH Kashi 47.80 295 *e*P P 14 40 47.3 +1.5
KSH *e*pP pP 14 40 59.6 +1.7
KSH PcS PcS 14 46 10.8 +0.9
KSH S S 14 47 39.8 +0.1
KSH ScS ScS 14 50 34.1 -1.7
KSH pmax pmax
comp=Z,52nm,3.2s
KSH LR LR
comp=Z,74nm,7.3s
KSH LR LR
comp=Z,120nm,5.5s
KSH LR LR
comp=Z,140nm,7.7s
AAK Ala-Archa 48.25 299 *e*P P 14 40 48.0 -1.3
AAK pmax pmax
comp=Z,3.0nm,0.9s
GSI Gunungsitoli 48.49 236 P P 14 40 51.5 +0.3
GSI Gunungsitoli 48.49 236 *e*P P 14 40 50.7 -0.5
comp=Z,99nm,1.1s
KLSI 48.51 224 P P 14 40 51.6 +0.3
LHSI Lahat 48.53 226 P P 14 40 52.7 +1.2
KSI Kapahiang 48.95 227 P P 14 40 55.5 +0.7
VOSK Vostochnaya 49.24 313 *e*P P 14 40 55.8 -0.7
VOSK pmax pmax
comp=Z,5.0nm,0.8s
VOSK Vostochnaya 49.24 313 *e*P P 14 40 55.8 -0.7
comp=Z,5.2nm,0.8s

BRVK Borovoye 49.63 314*ce*P P 14 40 59.0 -0.5
BRVK pmax pmax
comp=Z,7.0nm,0.7s
BRVK Borovoye 49.63 314 *e*P P 14 40 59.1 -0.4
BRVK *e*PcP PcP 14 42 20.6 +0.2
CAST Castle Rocks 52.21 33 *e*P P 14 41 18.7 -0.1
comp=Z,5.2nm,1.0s
FITZ Fitzroy Crossi 52.66 193 *e*P P 14 41 22.4 -0.1
comp=Z,12nm,0.9s
WRAB Tennant Creek 53.54 182 *i*P P 14 41 28.7 -0.3
WRAB pmax pmax
comp=Z,71nm,0.9s
WRAB Tennant Creek 53.54 182 *e*P P 14 41 26.2 -2.8
comp=Z,27nm,0.9s
WB2 Warramunga Arr 53.55 182 *e*P P 14 41 28.3 -0.7
WRA Warramunga Arr 53.55 182 P P 14 41 28.6 -0.4
comp=Z,23nm,0.7s,baz=357,slow=7.5,SNR=125
WRA PcP PcP 14 42 35.4 0.0
comp=Z,1.7nm,0.6s,baz=355,slow=4.3,SNR=4.9
RND Reindeer 53.67 33 *e*P P 14 41 29.0 -0.6
RND pmax pmax
comp=Z,7.0nm,0.8s
RND Reindeer 53.67 33 *e*P P 14 41 29.0 -0.6
comp=Z,7.1nm,0.8s
MDM Murphy Dome 53.84 31 *e*P P 14 41 31.5 +0.8
comp=Z,19nm,0.9s
WRH Wood River Hil 53.93 31 *e*P P 14 41 31.1 -0.3
comp=Z,4.8nm,0.8s
IL1 Eielson Array 54.42 31 *e*P P 14 41 34.2 -0.7
ILAR Eielson Array 54.42 31 P P 14 41 33.6 -1.3
comp=Z,0.4nm,0.8s,baz=281,slow=5.4,SNR=4.7
ILAR LR LR 15 04 52.8
comp=Z,91nm,22.0s,baz=298,slow=36
ILB Eielson Array 54.42 31 *e*P P 14 41 34.8 -0.2
DOT Dot Lake 55.77 32 *e*P P 14 41 45.0 +0.2
comp=Z,15nm,1.0s
ARU Arti 55.90 319*c i*P P 14 41 45.2 -0.5
ARU 14 42 42.6
ARU 14 43 49.1
ARU S S 14 49 32.7 +2.6
ARU SS SS 14 53 08.5 -7.2
ARU pmax pmax
comp=Z,11nm,1.0s
ARU Arti 55.90 319 *e*P P 14 41 44.9 -0.8
comp=Z,7.4nm,0.7s
ABKAR Akbulak array 56.69 310 *e*P P 14 41 51.2 -0.3
EGAK Eagle 56.85 31 *e*P P 14 41 52.5 +0.1
AS01 Alice Springs 57.27 182 *e*P P 14 41 55.4 -0.3
AS31 Alice Springs 57.27 182 *e*P P 14 41 55.6 -0.2
comp=Z,4.7nm,0.6s
ASAR Alice Springs 57.27 182 P P 14 41 55.5 -0.2
comp=Z,10nm,0.7s,baz=12,slow=10,SNR=143
ASAR LR LR 15 04 32.4
comp=Z,47nm,21.5s,baz=4.5,slow=34
PALK Pallekele 57.47 256*ce*P P 14 41 59.2 +1.7
INK Inuvik 59.11 26 P P 14 42 09.1 +1.0
comp=Z,1.4nm,0.7s,baz=284,slow=4.5,SNR=3.6
GEYT Alibeck 61.57 298 P P 14 42 25.4 -0.1
comp=Z,2.1nm,0.7s,baz=80,slow=17,SNR=3.9
GEYT LR LR 15 10 33.0
comp=Z,116nm,21.9s,baz=75,slow=37
DZM Mont Dzumac 62.68 148 LR LR 15 07 37.7
comp=Z,81nm,18.2s,baz=43,slow=34
KLMR Klimovskoe 64.10 327 *e*P P 14 42 40.6 -1.2
KLMR pmax pmax
comp=Z,7.0nm,1.0s
FORT Forrest 64.77 188 *e*P P 14 42 46.2 -0.3
comp=Z,303nm,0.6s
ARCES ARCESS Array B 65.40 339 P P 14 42 52.4 +2.2
comp=Z,1.8nm,0.6s,baz=43,slow=5.5,SNR=4.7
ARCES LR LR 15 15 38.6
comp=Z,162nm,18.8s,baz=66,slow=40
STKA Stephens Creek 65.61 175 P P 14 42 52.0 0.0
comp=Z,9.6nm,0.7s,baz=346,slow=7.5,SNR=36
STKA Stephens Creek 65.61 175 *e*P P 14 42 51.9 0.0
STKA pmax pmax
comp=Z,2.0nm,0.7s
STKA Stephens Creek 65.61 175 *e*P P 14 42 51.9 0.0
comp=Z,2.3nm,0.7s
OBN Obninsk 68.00 322⇓*e*P P 14 43 08.5 +1.5
OBN pmax pmax
comp=Z,4.0nm,1.0s
OBN pmax pmax
comp=Z,346nm,17.0s
YKA Yellowknife Ar 68.64 28 P P 14 43 11.6 +0.7
comp=Z,1.8nm,1.1s,baz=295,slow=6.2,SNR=2.7
FINES FINESS Array B 69.55 331 P P 14 43 16.5 0.0
comp=Z,2.4nm,0.7s,baz=68,slow=4.4,SNR=13
KBZ Khabaz 69.64 309 P P 14 43 17.1 -0.2
comp=Z,5.0nm,0.9s,baz=85,slow=3.6,SNR=5.1
KBZ LR LR 15 16 40.1
comp=Z,107nm,18.8s,baz=66,slow=38
KIV Kislovodsk 69.67 310 *e*P P 14 43 17.4 -0.3
KIV pmax pmax
comp=Z,7.0nm,1.0s
KIV MLR MLR
comp=Z,89nm,17.0s
LLLB Lillooet 71.47 41 *e*P P 14 43 28.1 -0.4
comp=Z,7.5nm,1.2s
SUMG Summit 73.76 358 *e*P P 14 43 43.1 +0.9
SUMG Summit 73.76 358 *e*P P 14 43 43.0 +0.9
AKASG Malin Array Be 74.08 321 P P 14 43 42.9 -1.0
comp=Z,0.5nm,0.3s,baz=50,slow=5.9,SNR=6.7
AKASG LR LR 15 18 24.3
comp=Z,210nm,19.9s,baz=60,slow=37
KIEV Kiev 74.10 321 *e*P P 14 43 42.3 -1.7
KIEV pmax pmax
comp=Z,3.0nm,0.9s
HFS Hagfors 75.11 334 P P 14 43 49.1 -0.6
comp=Z,2.6nm,0.6s,baz=74,slow=5.3,SNR=8.0
NB2 NORSAR Subarra 75.35 336 P P 14 43 52.3 +1.2
comp=Z,2.5nm,0.7s,baz=43,slow=5.9
NOA NORSAR Array B 75.35 336 P P 14 43 52.1 +1.0
comp=Z,1.0nm,0.7s,baz=45,slow=5.8,SNR=3.7
NOA LR LR 15 18 02.5
comp=Z,53nm,21.5s,baz=65,slow=36
J05D Fort Rock, OR 75.73 47 P P 14 43 55.0 +1.2
baz=303
N02D Trinity Center 76.07 50 P P 14 43 57.3 +1.7
baz=303
M04C Maydel 76.18 49 P P 14 43 57.3 +0.9
baz=303
MOD Modoc Plateau 77.07 48 *e*P P 14 44 00.6 -0.9
comp=Z,3.8nm,0.8s
BMO Blue Mountains 77.20 44 *e*P P 14 44 02.5 +0.5
comp=Z,3.7nm,0.8s
BRTR Keskin Array B 77.63 310 P P 14 44 03.9 -0.7
comp=Z,1.7nm,0.8s,baz=90,slow=4.0,SNR=7.3
BRTR LR LR 15 21 12.2
comp=Z,42nm,19.4s,baz=43,slow=38
SLMT Seeley Lake 77.93 41 *e*P P 14 44 06.4 +0.2
BR231 Keskin MP Arra 78.12 310 *e*P P 14 44 04.8 -2.4
AFDM Forest Hills D 78.29 51 *e*P P 14 44 07.4 -0.8
comp=Z,4.0nm,1.1s
FFC Flin Flon 78.62 30 *e*P P 14 44 09.2 -0.4
FFC pmax pmax
comp=Z,8.0nm,1.0s
FFC Flin Flon 78.62 30 *e*P P 14 44 09.2 -0.4
comp=Z,8.1nm,1.0s
PAHR Pah Rah Range 78.88 50 *e*P P 14 44 10.2 -1.3
comp=Z,8.8nm,0.9s
MFID Camas Ranch 78.90 45 *e*P P 14 44 12.4 +0.9
comp=Z,2.7nm,0.7s
PNTR Pine Nut 79.10 50 *e*P P 14 44 12.8 0.0
comp=Z,8.0nm,0.8s
OJC Ojcow 79.16 324 *e*P P 14 44 12.4 -0.2
OJC pmax pmax
comp=Z,7.0nm,0.7s
OJC Ojcow 79.16 324 *e*P P 14 44 12.4 -0.2
comp=Z,6.5nm,0.7s
CMB Columbia Colle 79.19 51 *e*P P 14 44 13.4 +0.3
CMB pmax pmax
comp=Z,5.0nm,0.8s
CMB Columbia Colle 79.19 51 *e*P P 14 44 13.4 +0.3
comp=Z,4.9nm,0.8s
LRM Limekiln Ridge 79.37 41 *e*P P 14 44 13.9 -0.3
YERR Yerington 79.39 50 *e*P P 14 44 14.5 +0.2
comp=Z,10nm,0.9s
EGMT Eagleton 79.44 39 P P 14 44 15.2 +0.9
baz=310
EGMT Eagleton 79.44 39 *e*P P 14 44 15.2 +0.9
comp=Z,16nm,0.9s
WAKR Walker 79.53 51 *e*P P 14 44 13.4 -1.8
comp=Z,4.7nm,0.8s
DLMT Dillon 79.57 42 *e*P P 14 44 14.5 -0.7
comp=Z,6.1nm,0.9s
HLID Hailey 79.64 44 P P 14 44 16.1 +0.5
baz=307
HLID Hailey 79.64 44 *e*P P 14 44 15.9 +0.3
comp=Z,3.0nm,1.0s
BMN Battle Mountai 79.82 48 *e*P P 14 44 17.2 +0.6
BMN pmax pmax
comp=Z,6.0nm,0.8s
BMN Battle Mountai 79.82 48 *e*P P 14 44 17.2 +0.6
comp=Z,6.0nm,0.8s
BOZ Bozeman (W) 79.93 41 P P 14 44 18.2 +1.1
baz=309
BOZ Bozeman (W) 79.93 41 *e*P P 14 44 17.9 +0.8
BOZ pmax pmax
comp=Z,5.0nm,1.0s
BOZ Bozeman (W) 79.93 41 *e*P P 14 44 17.9 +0.8
comp=Z,4.5nm,1.0s
TVH3 East Aurora ar 80.02 50 *e*P P 14 44 18.4 +0.5
comp=Z,8.4nm,0.9s
TVH2 Borealis Mine 80.04 50 *e*P P 14 44 18.7 +0.7
comp=Z,4.9nm,0.8s
OKC Ostrava-Krasne 80.22 325 AMS AMS 15 24 20.0
comp=Z,300nm,17.9s
DPC Dobruska-Polom 80.74 326 *e*P P 14 44 21.6 +0.4
DPC *e*PCP PcP 14 44 25.3 -2.5
DPC *e*pP pP 14 44 34.2 +0.2
DPC AMS AMS 15 23 50.0
UPC Upice 80.77 326 AMS AMS 15 23 50.0
comp=Z,300nm,12.4s
VRAC Vranov 81.32 325 P P 14 44 23.4 -0.9
comp=Z,2.5nm,0.7s,baz=38,slow=5.6,SNR=5.1
IMW Indian Meadow 81.41 42 P P 14 44 25.8 +0.5
comp=Z,2.8nm,0.9s
FLWY Flagg Ranch 81.43 42 *e*P P 14 44 27.0 +1.7
comp=Z,43nm,1.8s
CLL Collm 81.58 328 *e*P P 14 44 24.0 -1.6
CLL Lm MLR 15 24 00.0
comp=Z,100nm,21.5s
TPAW Teton Pass 81.66 43 *e*P P 14 44 24.9 -1.7
comp=Z,4.6nm,0.8s
HVU Hansel Valley 81.68 45 *e*P P 14 44 27.7 +1.1
HVU pmax pmax
comp=Z,5.0nm,0.8s
HVU Hansel Valley 81.68 45 *e*P P 14 44 27.7 +1.1
comp=Z,4.6nm,0.8s
GOPC GO Pecny, Ondr 81.75 326 AMS AMS 15 24 30.0
comp=Z,200nm,16.6s
PRU Pruhonice 81.82 326 AMS AMS 15 24 30.0
comp=Z,200nm,16.2s
TREC Trest 81.86 325 AMS AMS 15 24 20.0
DAC Darwin (Calif) 82.02 52 *e*P P 14 44 27.1 -1.4
DAC pmax pmax
comp=Z,7.0nm,0.9s
DAC Darwin (Calif) 82.02 52 *e*P P 14 44 27.1 -1.4
comp=Z,6.6nm,0.9s
R11A Troy Canyon, C 82.07 49 P P 14 44 29.6 +0.9
baz=307
R11A Troy Canyon, C 82.07 49 *e*P P 14 44 29.1 +0.4
comp=Z,5.8nm,1.0s
FURC Furnace Creek, 82.38 51 P P 14 44 31.1 +1.0
baz=307,SNR=5.5
TPNV Topopah Spring 82.49 50 P P 14 44 31.9 +1.0
baz=307,SNR=6.0
TPNV Topopah Spring 82.49 50 *e*P P 14 44 31.3 +0.4
TPNV pmax pmax
comp=Z,14nm,0.9s
TPNV Topopah Spring 82.49 50 *e*P P 14 44 31.3 +0.4
comp=Z,14nm,0.9s
HWUT Hardware Ranch 82.50 44 *e*P P 14 44 30.9 +0.1
comp=Z,12nm,1.0s
EDW2 Edwards Air Fo 82.58 53 P P 14 44 31.6 +0.3
baz=306,SNR=5.5
CONA Conrad Observa 82.62 324 *i*P P 14 44 32.1 +0.8
comp=Z,8.1nm,1.4s
DUG Dugway, Tooele 82.64 46 P P 14 44 32.8 +1.2
baz=309
DUG Dugway, Tooele 82.64 46 *e*P P 14 44 32.1 +0.5
DUG pmax pmax
comp=Z,7.0nm,1.0s
DUG Dugway, Tooele 82.64 46 *e*P P 14 44 32.1 +0.5
comp=Z,7.4nm,1.0s
KHC Kasperske Hory 82.86 326 *e*P P 14 44 33.1 +0.7
KHC *e*PCP PcP 14 44 38.1 +0.9
KHC *e*pP pP 14 44 45.3 0.0
KHC AMS AMS 15 25 00.0
comp=Z,300nm,11.6s
KHC Kasperske Hory 82.86 326 *e*P P 14 44 32.7 +0.2
KHC pmax pmax
comp=Z,4.0nm,1.5s
KHC Kasperske Hory 82.86 326 *e*P P 14 44 32.7 +0.2
comp=Z,4.1nm,1.5s
BW06 Boulder Array 82.91 43 P P 14 44 33.8 +0.8
baz=310
BW06 Boulder Array 82.91 43 *e*P P 14 44 33.2 +0.2
PD31 Pinedale Array 82.91 43 *e*P P 14 44 33.3 +0.2
PDAR Pinedale Array 82.91 43 P P 14 44 33.8 +0.8
comp=Z,2.6nm,0.7s,baz=279,slow=2.7,SNR=27
GERES GERESS Array B 83.01 326 P P 14 44 33.6 +0.3
comp=Z,1.8nm,0.7s,baz=36,slow=5.0,SNR=19
GERES LR LR 15 25 22.4
comp=Z,144nm,18.6s,baz=66,slow=38
GEA0 GERESS Array S 83.02 326 *e*P P 14 44 32.5 -0.8
ARSA Arzberg 83.25 324 *i*P P 14 44 34.6 +0.2
comp=Z,5.3nm,1.1s
MOA Molln 83.45 325 *i*PcP P 14 44 36.9 +1.5
comp=Z,5.1nm,1.0s
SOKA Soboth 83.89 324 *i*P P 14 44 37.6 -0.2
comp=Z,6.6nm,0.8s
CCUT Cedar City 83.95 48 *e*P P 14 44 38.1 -0.4
comp=Z,3.9nm,1.0s
MSU Marysvale 84.08 47 *e*P P 14 44 39.7 +0.6
MSU Marysvale 84.08 47 *e*P P 14 44 39.7 +0.6
OBKA Obir 84.25 324 *i*PcP P 14 44 40.6 +0.9
comp=Z,13nm,1.8s
P17A Butcher Ranch, 84.34 46 *e*P P 14 44 41.2 +0.8
comp=Z,23nm,1.2s
LCMT Little Creek M 84.36 49 *e*P P 14 44 40.3 -0.2
comp=Z,8.1nm,1.0s
PFO Pinyon Flats O 84.36 53 P P 14 44 40.5 +0.1
baz=307,SNR=5.5
PFO Pinyon Flats O 84.36 53 *e*P P 14 44 40.6 +0.1
PFO pmax pmax
comp=Z,9.0nm,0.9s
PFO Pinyon Flats O 84.36 53 *e*P P 14 44 40.6 +0.1
comp=Z,9.3nm,0.9s
TPFO Pinon Flats 84.36 53 P P 14 44 40.5 0.0
baz=307,SNR=5.3
BELC Belle Mtn. Jos 84.43 53 P P 14 44 40.7 -0.1
baz=307
KBA Koelnbreinsper 84.43 325 *i*pP pP 14 44 52.1 -1.4
comp=Z,7.8nm,1.1s
ULM Lac du Bonnet 84.44 31 P P 14 44 40.1 -0.3
comp=Z,4.2nm,0.8s,baz=300,slow=3.8,SNR=5.6
ULM Lac du Bonnet 84.44 31 *e*P P 14 44 39.6 -0.8
ULM pmax pmax
comp=Z,8.0nm,1.0s
ULM Lac du Bonnet 84.44 31 *e*P P 14 44 39.6 -0.8
comp=Z,7.7nm,1.0s
SRU San Rafael Swe 84.70 46 *e*P P 14 44 41.7 -0.5
SRU pmax pmax
comp=Z,13nm,0.9s
SRU San Rafael Swe 84.70 46 *e*P P 14 44 41.7 -0.5
comp=Z,13nm,0.9s
BAR Barrett 84.78 54 *e*P P 14 44 42.7 +0.2
comp=Z,6.6nm,0.9s
MONP2 Monument Peak 84.82 54 P P 14 44 42.5 -0.5
baz=307,SNR=5.5
BC3 Big Chuckawall 85.00 53 P P 14 44 44.2 +0.5
baz=308
ABTA Abfaltersbach 85.07 325 *i*P P 14 44 43.4 -0.4
comp=Z,7.0nm,1.2s
WATA Walderalm 85.09 326 *i*PcP P 14 44 46.3 +2.4
comp=Z,2.5nm,0.7s
WTTA Wattenberg 85.11 326 *i*PcP P 14 44 45.0 +0.9
comp=Z,6.3nm,1.1s
MOTA Moosalm 85.30 326 *i*P P 14 44 44.3 -0.7
comp=Z,2.1nm,0.7s
U15A North Rim 85.32 49 *e*P P 14 44 45.9 +0.4
comp=Z,4.9nm,0.9s
RETA Reutte 85.35 326 *i*PcP P 14 44 45.2 0.0
comp=Z,0.2nm,0.3s
O20A White River Ci 85.37 44 P P 14 44 46.1 +0.5
baz=311
O20A White River Ci 85.37 44 *e*P P 14 44 45.6 +0.1
comp=Z,13nm,0.9s
A33A Warroad 85.64 31 P P 14 44 46.6 +0.2
baz=319
FETA Feichten 85.71 326 *i*PcP P 14 44 46.9 -0.1
comp=Z,3.0nm,1.1s

IDI	**Anoyia**	**85.85**	**310**	P		**P**	**14 44 46.4**	**-1.5**
	comp=Z,4.5nm,0.5s,baz=67,slow=8.7,SNR=6.7							
DAVA	**Damuels**	**85.91**	**327**	*i* P		**P**	**14 44 47.2**	**-0.9**
	comp=Z,6.2nm,0.9s							
PV09	**Paradox Valley**	**85.92**	**46**	*e*P		**P**	**14 44 49.4**	**+1.0**
PV10	**Paradox Valley**	**86.06**	**46**	*e*P		**P**	**14 44 50.0**	**+1.0**
PV04	**Paradox Valley**	**86.13**	**46**	*e*P		**P**	**14 44 50.5**	**+1.1**
N23A	**Red Feather La**	**86.17**	**42**	P		**P**	**14 44 50.0**	**+0.4**
	baz=319							
N23A	**Red Feather La**	**86.17**	**42**	*e*P		**P**	**14 44 49.9**	**+0.3**
	comp=Z,14nm,1.2s							
PV05	**Paradox Valley**	**86.22**	**46**	*e*P		**P**	**14 44 50.8**	**+1.0**
Y14A	**Wickenburg**	**86.43**	**51**	*e*P		**P**	**14 44 50.9**	**+0.1**
	comp=Z,19nm,0.9s							
WUAZ	**Wupatki**	**86.47**	**49**	*e*P		**P**	**14 44 50.6**	**-0.5**
	comp=Z,9.3nm,1.0s							
PV01	**Paradox Valley**	**86.50**	**46**	*e*P		**P**	**14 44 51.7**	**+0.5**
SMCO	**Snowmass**	**86.74**	**44**	*e*P		**P**	**14 44 53.1**	**+0.5**
	comp=Z,8.8nm,0.9s							
ISCO	**Idaho Springs**	**87.10**	**43**	*e*P		**P**	**14 44 55.0**	**+0.8**
ISCO				pmax	pmax			
	comp=Z,4.0nm,1.0s							
ISCO	**Idaho Springs**	**87.10**	**43**	*e*P		**P**	**14 44 55.0**	**+0.8**
	comp=Z,4.0nm,1.0s							
PPT2	**Papeete2**	**87.22**	**113**	*e*LR		LR	15 12 29.2	
	comp=Z,102nm,24.2s							
ECSD	**EROS Data Cent**	**89.00**	**35**	*e*P		**P**	**14 45 02.3**	**-0.5**
	comp=Z,5.7nm,1.1s							
TBI	**Tubuai**	**90.74**	**118**	*e*LR		LR	15 14 07.7	
	comp=Z,86nm,27.2s							
TX31	**Lajitas Ar. Si**	**95.43**	**49**	*e*P		**P**	**14 45 32.2**	**-0.7**
TXAR	**Lajitas Array**	**95.43**	**49**	P		**P**	**14 45 33.4**	**+0.4**
	comp=Z,1.2nm,0.9s,baz=287,slow=3.4,SNR=12							
RKT	**Rikitea**	**101.63**	**110**	*e*LR		LR	15 19 07.4	
	comp=Z,212nm,37.8s							
BOSA	**Boshof**	**121.69**	**255**	PKP		**PKPdf**	**14 51 01.3**	**-0.7**
	comp=Z,5.1nm,1.0s,baz=125,slow=1.5,SNR=5.0							
SAML	**Samuel**	**149.46**	**40**	*e*PKPbc		**PKPbc**	**14 51 56.9**	**-0.7**
SAML				*e*PKPab		**PKPab**	**14 52 03.1**	**+0.7**
LPAZ	**La Paz**	**152.00**	**57**	PKPbc		**PKPbc**	**14 52 04.2**	**-0.1**
	comp=Z,1.8nm,0.7s,baz=343,slow=3.0,SNR=10.0							

*ISK **24** 14:36:42.8, 39.°08N×29.°04E, h5km, ML2.8*
*ISCJB **24** 14:36:43.1±0.5, 39.°08N±0.°02×29.°03E±0.°03, h1km±5km, Error ellipse: s-maj=4.1km s-min=3.3km az=8.5*
*DDA **24** 14:36:43.3, 39.°08N×29.°04E, h7km, Ml3.0*
*CSEM **24** 14:36:43.5±0.1, 39.°07N×29.°03E, h5km, ML3.0, Error ellipse: s-maj=2.1km s-min=2.0km az=148.0*

ISC 24 14:36:43.5±1.0, 39.°08N±0.°02×29.°04E±0.°02, h7km±9km, n75, σ0°45/94, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DEMI	**Demirci**	**0.25**	**263**	*i* P		**Pg**	**14 36 48.8**	**+0.3**
DEMI				*i* S		**Sg**	**14 36 52.4**	**+0.4**
DEMI	**Demirci**	**0.25**	**263**	P		**Pg**	**14 36 48.8**	**+0.3**
DEMI				S		**Sg**	**14 36 52.4**	**+0.4**
GEDZ	**Gediz**	**0.29**	**96**	*e*PG		**Pg**	**14 36 49.2**	**-0.2**
GEDZ				*e*SG		**Sg**	**14 36 53.6**	**+0.3**
GEDZ	**Gediz**	**0.29**	**96**	*e*Pg		**Pg**	**14 36 49.2**	**-0.2**
GEDZ				*e*Sg		**Sg**	**14 36 53.6**	**+0.3**
GDZ	**Gediz**	**0.35**	**88**	*i* P		**Pg**	**14 36 50.2**	**-0.2**
GDZ				*i* S		**Sg**	**14 36 55.2**	**+0.3**
GDZ	**Gediz**	**0.35**	**88**	P		**Pg**	**14 36 50.2**	**-0.2**
GDZ				S		**Sg**	**14 36 55.2**	**+0.3**
TVSB	**Tavsanli**	**0.50**	**41**	*e*PG		**Pg**	**14 36 52.6**	**-0.6**
TVSB	**Tavsanli**	**0.50**	**41**	*e*Pg		**Pg**	**14 36 52.6**	**-0.6**
DST	**Dursunbey**	**0.62**	**329**	*e*PG		**Pg**	**14 36 55.1**	**-0.4**
DST	**Dursunbey**	**0.62**	**329**	*e*Pg		**Pg**	**14 36 55.1**	**-0.4**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*PG		**Pg**	**14 36 55.6**	**-0.1**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*Pg		**Pg**	**14 36 55.6**	**-0.1**
MANT	**Manisa**	**0.69**	**213**	*i* P		**Pg**	**14 36 55.8**	**-1.1**
MANT				*i* S		**Sg**	**14 37 05.5**	**-0.5**
MANT	**Manisa**	**0.69**	**213**	P		**Pg**	**14 36 55.8**	**-1.1**
MANT				S		**Sg**	**14 37 05.5**	**-0.5**
KHL	**Karahalli**	**0.84**	**153**	*e*PG		**Pg**	**14 36 59.6**	**0.0**
KHL				*e*SG		**Sb**	**14 37 11.6**	**-0.4**
KHL	**Karahalli**	**0.84**	**153**	*e*Pg		**Pg**	**14 36 59.7**	**0.0**
KHL				*e*Sg		**Sb**	**14 37 11.6**	**-0.4**
AKS	**Akhisar**	**0.97**	**259**	*e*PG		**Pb**	**14 37 02.5**	**-0.2**
AKS	**Akhisar**	**0.97**	**259**	*e*Pg		**Pb**	**14 37 02.5**	**-0.2**
BALB	**Balikesir**	**1.06**	**303**	*e*PG		**Pg**	**14 37 03.4**	**-0.5**
BALB				*e*SG		**Sb**	**14 37 18.4**	**+0.3**
BALB	**Balikesir**	**1.06**	**303**	*e*Pg		**Pg**	**14 37 03.4**	**-0.5**
BALB				*e*Sg		**Sb**	**14 37 18.5**	**+0.3**
IGD	**Bursa**	**1.19**	**6**	*i* P		**Pg**	**14 37 05.7**	**-0.8**
IGD				*i* S		**Sb**	**14 37 22.4**	**+0.3**
BALY	**Balya**	**1.28**	**302**	*i* P		**Pb**	**14 37 08.2**	**+0.2**
BALY	**Balya**	**1.28**	**302**	P		**Pb**	**14 37 08.2**	**+0.2**
CAVI	**Cavuskoy**	**1.29**	**29**	*e*PN		**Pg**	**14 37 07.8**	**-0.4**
CAVI				*e*SN		**Sn**	**14 37 26.1**	**+0.7**
CAVI	**Cavuskoy**	**1.29**	**29**	*e*Pn		**Pg**	**14 37 07.8**	**-0.4**
CAVI				*e*Sn		**Sn**	**14 37 26.1**	**+0.7**
SHUT	**Suhut-Afyon**	**1.29**	**113**	*e*PN		**Pg**	**14 37 07.8**	**-0.5**
SHUT	**Suhut-Afyon**	**1.29**	**113**	*e*Pn		**Pg**	**14 37 07.8**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*PN		**Pn**	**14 37 07.9**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*Pn		**Pn**	**14 37 07.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN		**Pn**	**14 37 07.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn		**Pn**	**14 37 07.9**	**-0.2**
IZI	**Iznik**	**1.30**	**15**	*e*PN		**Pb**	**14 37 08.2**	**-0.1**
IZI	**Iznik**	**1.30**	**15**	*e*Pn		**Pb**	**14 37 08.3**	**-0.1**
DENT	**Denizli**	**1.32**	**180**	*e*PN		**Pn**	**14 37 08.5**	**+0.1**
DENT	**Denizli**	**1.32**	**180**	*e*Pn		**Pn**	**14 37 08.5**	**+0.1**
BORA	**Eskisehir**	**1.36**	**53**	*i* P		**Pn**	**14 37 08.3**	**-0.7**
BORA				*i* S		**Sn**	**14 37 27.2**	**-0.1**
BORA	**Eskisehir**	**1.36**	**53**	P		**Pn**	**14 37 08.3**	**-0.7**
BORA				S		**Sn**	**14 37 27.2**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN		**Pb**	**14 37 10.1**	**-0.3**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn		**Pb**	**14 37 10.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**219**	*e*PN		**Pb**	**14 37 10.5**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**219**	*e*Pn		**Pb**	**14 37 10.5**	**-0.3**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*PN		**Pb**	**14 37 10.8**	**-0.2**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*Pn		**Pb**	**14 37 10.8**	**-0.2**
ESKT	**Eskisehir**	**1.48**	**72**	*e*PN		**Pn**	**14 37 10.5**	**-0.1**
ESKT	**Eskisehir**	**1.48**	**72**	*i* P		**Pg**	**14 37 12.2**	**+0.4**
ESKT	**Eskisehir**	**1.48**	**72**	*e*Pn		**Pn**	**14 37 10.5**	**-0.1**
SEYT	**Eskypehyr**	**1.48**	**72**	P		**Pg**	**14 37 12.2**	**+0.4**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN		**Pn**	**14 37 10.9**	**+0.1**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn		**Pn**	**14 37 10.9**	**+0.1**
BOLV	**Bolvadin**	**1.54**	**103**	*i* P		**Pg**	**14 37 12.9**	**-0.1**
BOLV				*i* S		**Sb**	**14 37 32.2**	**+0.1**
BOLV	**Bolvadin**	**1.54**	**103**	P		**Pg**	**14 37 12.9**	**-0.1**
BOLV				S		**Sb**	**14 37 32.2**	**+0.1**
IZM	**Izmir**	**1.54**	**245**	*e*PN		**Pn**	**14 37 11.7**	**+0.2**
IZM	**Izmir**	**1.54**	**245**	*e*Pn		**Pn**	**14 37 11.7**	**+0.2**
EDC	**Edincik**	**1.56**	**325**	*e*PN		**Pn**	**14 37 11.8**	**+0.2**
EDC	**Edincik**	**1.56**	**325**	*e*Pn		**Pn**	**14 37 11.8**	**+0.2**
SBT5	**Esenkoy-Cinarc**	**1.56**	**356**	*e*PN		**Pb**	**14 37 12.2**	**-0.4**
SBT5	**Esenkoy-Cinarc**	**1.56**	**356**	*e*Pn		**Pb**	**14 37 12.2**	**-0.4**
GULT	**Gulveren**	**1.77**	**40**	*e*PN		**Pn**	**14 37 15.0**	**+0.4**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn		**Pn**	**14 37 15.0**	**+0.4**
HRT	**Hereke**	**1.81**	**15**	*e*PN		**Pn**	**14 37 15.3**	**+0.2**
HRT	**Hereke**	**1.81**	**15**	*e*Pn		**Pn**	**14 37 15.4**	**+0.2**
SBT2	**Guzelce-Avcila**	**1.84**	**348**	*e*PN		**Pb**	**14 37 16.6**	**-0.9**
SBT2	**Guzelce-Avcila**	**1.84**	**348**	*e*Pn		**Pb**	**14 37 16.6**	**-0.9**
SPNC	**Sapanca-Adapaz**	**1.88**	**31**	*e*PN		**Pn**	**14 37 16.5**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.88**	**31**	*e*Pn		**Pn**	**14 37 16.5**	**+0.4**
MRMT	**Marmara Adasi**	**1.89**	**324**	*e*PN		**Pn**	**14 37 15.9**	**-0.3**
MRMT	**Marmara Adasi**	**1.89**	**324**	*e*Pn		**Pn**	**14 37 15.9**	**-0.3**
SBT3	**Marmara-Eregli**	**1.98**	**336**	*e*PN		**Pn**	**14 37 18.1**	**+0.9**
SBT3	**Marmara-Eregli**	**1.98**	**336**	*e*Pn		**Pn**	**14 37 18.2**	**+0.9**
ISK	**Istanbul-Kandi**	**1.99**	**0**	*e*PN		**Pn**	**14 37 17.9**	**+0.5**
ISK	**Istanbul-Kandi**	**1.99**	**0**	*e*Pn		**Pn**	**14 37 18.0**	**+0.5**
YER	**Yerkesik**	**2.03**	**197**	*e*PN		**Pn**	**14 37 18.9**	**+0.8**
YER	**Yerkesik**	**2.03**	**197**	*e*Pn		**Pn**	**14 37 18.9**	**+0.8**
SILT	**Sile**	**2.13**	**12**	*e*PN		**Pn**	**14 37 20.2**	**+0.8**
SILT	**Sile**	**2.13**	**12**	*e*Pn		**Pn**	**14 37 20.2**	**+0.8**

MEX 24 14:44:55.4±0.9, 17.°25N×92.°11W, h14km±999km, MD3.9, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CCIG	**Comitan**	**0.96**	**182**	*e*P		Pb	14 45 10.2	-3.8
CCIG				*i* S		Sb	14 45 22.3	-4.3

*CSEM **24** 14:51:50.7±0.4, 41.°78N×20.°14E, h5km, ML2.6, Error ellipse: s-maj=9.0km s-min=5.2km az=25.0*

*PDG **24** 14:51:50.9±0.2, 41.°77N×20.°13E, h10km, ML2.6/13, Error ellipse: s-maj=0.5km s-min=0.6km az=0.0*
*SKO **24** 14:51:51.5, 41.°88N×20.°13E, h18km*

ISC 24 14:51:50.8±1.2, 41.°76N±0.°04×20.°15E±0.°03, h9km±10km, n30, σ0°90/56, 6C-20D, Albania

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ULC	**Ulcinj**	**0.70**	**287**	↑*i* Pg		**Pg**	**14 52 03.8**	**-0.6**
ULC				*e*Sg		**Sb**	**14 52 14.6**	**-0.5**
ULC	**Ulcinj**	**0.70**	**287**	↑*i* Pg		**Pg**	**14 52 03.8**	**-0.6**
ULC				*e*Sg		**Sb**	**14 52 14.6**	**-0.5**
OHR	**Ohrid**	**0.81**	**143**	*i* Pg		**Pn**	**14 52 08.2**	**-0.3**
OHR				*i* Sg		**Sn**	**14 52 21.3**	**+0.6**
OHR	**Ohrid**	**0.81**	**143**	*i* Pg		**Pn**	**14 52 08.2**	**-0.3**
OHR				*i* Sg		**Sn**	**14 52 21.3**	**+0.6**
DRME	**Dracevica, Mon**	**0.83**	**301**	↑*i* Pg		**Pg**	**14 52 06.1**	**-0.8**
DRME				*e*Sg		**Sb**	**14 52 19.0**	**+0.2**
DRME	**Dracevica, Mon**	**0.83**	**301**	↑*i* Pg		**Pg**	**14 52 06.1**	**-0.8**
DRME				*e*Sg		**Sb**	**14 52 19.0**	**+0.2**
PVY	**Plav**	**0.84**	**350**	↓*i* Pg		**Pg**	**14 52 06.1**	**-0.9**
PVY				*e*Sg		**Sb**	**14 52 19.4**	**+0.2**
PVY	**Plav**	**0.84**	**350**	↓*i* Pg		**Pg**	**14 52 06.1**	**-0.9**
PVY				*e*Sg		**Sb**	**14 52 19.4**	**+0.2**
PDG	**Podgorica**	**0.94**	**315**	↓*i* Pg		**Pg**	**14 52 07.7**	**-1.2**
PDG				*e*Sg		**Sb**	**14 52 22.4**	**+0.5**
TTG	**Podgorica**	**0.94**	**315**	↓*i* Pg		**Pg**	**14 52 07.7**	**-1.2**
TTG				*e*Sg		**Sb**	**14 52 22.4**	**+0.5**
SKO	**Skopje**	**0.98**	**77**	*i* Pg		**Pg**	**14 52 09.4**	**-0.3**
SKO				*i* Sg		**Sb**	**14 52 23.1**	**0.0**
SKO	**Skopje**	**0.98**	**77**	*i* Pg		**Pg**	**14 52 09.4**	**-0.3**
SKO				*i* Sg		**Sb**	**14 52 23.1**	**0.0**
BUM	**Brajici-Budva**	**1.08**	**300**	↓*i* Pg		**Pg**	**14 52 10.8**	**-0.7**
BUM				*e*Sg		**Sn**	**14 52 27.6**	**+0.3**
BUM	**Brajici-Budva**	**1.08**	**300**	↓*i* Pg		**Pg**	**14 52 10.8**	**-0.7**
BUM				*e*Sg		**Sn**	**14 52 27.6**	**+0.3**
BEY	**Berane**	**1.12**	**350**	↓*i* Pg		**Pb**	**14 52 11.8**	**-0.7**
BEY				*e*Sg		**Sn**	**14 52 28.7**	**+0.3**
IVA	**Berane**	**1.12**	**350**	↓*i* Pg		**Pb**	**14 52 11.8**	**-0.7**
IVA				*e*Sg		**Sn**	**14 52 28.7**	**+0.3**
CEME	**Cevo**	**1.21**	**311**	↓*i* Pg		**Pb**	**14 52 13.1**	**-0.7**
CEME				*e*Sg		**Sn**	**14 52 32.2**	**+1.8**
CEME	**Cevo**	**1.21**	**311**	↓*i* Pg		**Pb**	**14 52 13.1**	**-0.7**
NKME	**Niksic**	**1.34**	**319**	↓*i* Pg		**Pn**	**14 52 15.4**	**-0.3**
NKME				*e*Sg		**Sg**	**14 52 35.6**	**+1.7**
NKME	**Niksic**	**1.34**	**319**	↓*i* Pg		**Pn**	**14 52 15.4**	**-0.3**
NKME				*e*Sg		**Sg**	**14 52 35.6**	**+1.7**
NKY	**Niksic**	**1.35**	**321**	↓*i* Pg		**Pn**	**14 52 15.2**	**-0.8**
NKY				*e*Sg		**Sg**	**14 52 36.2**	**+1.8**
NKY	**Niksic**	**1.35**	**321**	↓*i* Pg		**Pn**	**14 52 15.2**	**-0.8**
NKY				*e*Sg		**Sg**	**14 52 36.2**	**+1.8**
HCY	**Herceg Novi**	**1.41**	**300**	↓*i* Pg		**Pn**	**14 52 16.0**	**-0.7**
HCY				*e*Sg		**Sg**	**14 52 38.2**	**+2.1**
HCY	**Herceg Novi**	**1.41**	**300**	↓*i* Pg		**Pn**	**14 52 16.0**	**-0.7**
HCY				*e*Sg		**Sg**	**14 52 38.2**	**+2.1**
BRY	**Bratogost**	**1.65**	**314**	↓*i* Pn		**Pn**	**14 52 20.4**	**+0.3**
BRY				*e*Sn		**Sg**	**14 52 44.4**	**+0.6**
BRY	**Bratogost**	**1.65**	**314**	↓*i* Pn		**Pn**	**14 52 20.4**	**+0.3**
PLE	**Pljevlja**	**1.66**	**340**	↑*i* Pn		**Pb**	**14 52 21.3**	**-0.4**
PLE				*e*Sn		**Sg**	**14 52 45.2**	**+0.9**
PLE	**Pljevlja**	**1.66**	**340**	↑*i* Pn		**Pb**	**14 52 21.3**	**-0.4**
UPM	**Unac-Piva**	**1.71**	**328**	↓*i* Pn		**Pb**	**14 52 21.6**	**-0.9**
UPM				*e*Sn		**Sg**	**14 52 45.8**	**+0.1**
UPM	**Unac-Piva**	**1.71**	**328**	↓*i* Pn		**Pb**	**14 52 21.6**	**-0.9**

*IDC **24** 15:03:48.7±2.5, 2.°40S×99.°79E, h0km, mb3.8/6, mb1 4.0/6, mb1mx3.7/43, mbtmp3.8/6, Error ellipse: s-maj=120.9km s-min=17.4km az=56.0*
*ISCJB **24** 15:03:50.2±1.1, 2.°5S±0.°1×99.°6E±0.°2, h30km, mb4.0/6, Error ellipse: s-maj=29.7km s-min=11.2km az=149.8*
*NEIC **24** 15:03:53.7±0.9, 2.°42S×99.°76E, h35km, mb4.2/1, Error ellipse: s-maj=26.3km s-min=9.1km az=60.0*

ISC 24 15:03:52.8±1.3, 2.°5S±0.°1×99.°7E±0.°2, h30km, n17, σ0°73/11, mb4.1/6, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BKNI	**Bangkinang**	**3.05**	**25**	Pn		**Pn**	**15 04 39.4**	**+0.3**
MNAI	**Manna**	**3.74**	**121**	*e*Pn		**Pn**	**15 04 48.4**	**-0.2**
CMAR	**Chiang Mai Arr**	**20.79**	**358**	P		**P**	**15 08 30.6**	**-1.2**
	1.0nm,0.6s,baz=187,slow=10,SNR=10							
H08S2	**Diego Garcia H**	**27.61**	**258**	T		T	15 38 24.1	
	baz=80,slow=75,SNR=235							
H08S3	**Diego Garcia H**	**27.61**	**258**	T		T	15 38 21.0	
	baz=80,slow=75,SNR=236							
H08S1	**Diego Carcia H**	**27.62**	**258**	T		T	15 38 20.2	
	baz=80,slow=75,SNR=242							
H01W3	**Cape Leeuwin H**	**34.94**	**159**	T		T	15 47 33.3	
	baz=335,slow=74,SNR=3.8							
H01W2	**Cape Leeuwin H**	**34.96**	**159**	T		T	15 47 34.8	
	baz=335,slow=74,SNR=5.8							
H01W1	**Cape Leeuwin H**	**34.96**	**159**	T		T	15 47 41.8	
	baz=335							
WRA	**Warramunga Arr**	**38.00**	**120**	P		**P**	**15 11 08.5**	**0.0**
	1.3nm,0.4s,baz=307,slow=9.2,SNR=25							
WRAB	**Tennant Creek**	**38.01**	**120**	*e*P		**P**	**15 11 09.3**	**+0.7**
	2.1nm,0.6s							
ASAR	**Alice Springs**	**39.21**	**125**	P		**P**	**15 11 18.6**	**-0.1**
	0.8nm,0.7s,baz=296,slow=7.5,SNR=13							
STKA	**Stephens Creek**	**49.06**	**131**	P		**P**	**15 12 37.3**	**-0.1**
	2.4nm,1.0s,baz=318,slow=19,SNR=3.5							
MKAR	**Makanchi Array**	**51.39**	**345**	P		**P**	**15 12 55.6**	**+0.8**
	0.9nm,0.7s,baz=148,slow=8.0,SNR=11							
ZALV	**Zalesovo Beam**	**57.56**	**350**	P		**P**	**15 13 38.8**	**-0.7**
	1.4nm,0.7s,baz=158,slow=4.7,SNR=6.9							
BVAR	**Borovoye Array**	**60.51**	**340**	P		**P**	**15 13 59.8**	**-0.2**
	baz=140,slow=7.5							
TXAR	**Lajitas Array**	**145.22**	**37**	PKPbc		**PKPdf**	**15 23 29.5**	**+1.1**
	1.5nm,0.6s,baz=214,slow=1.1,SNR=13							

JMA 24 15:06:36.6±0.1, 35.°88N×140.°59E, h47km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**0.28**	**129**	P		Pn	15 06 45.4	+0.1
CHOJ				*e*S		Sn	15 06 51.6	+0.2
JYT	**Yasato**	**0.47**	**317**	P		Pn	15 06 47.5	+0.2
JYT				*e*S		Sn	15 06 55.6	+0.6
JHO	**Hitachi**	**0.73**	**359**	P		Pn	15 06 50.9	+0.3
JAG	**Ashikaga**	**1.07**	**301**	P		Pn	15 06 55.7	+0.5
JAG				*e*S		Sn	15 07 08.6	-0.3
BSO3	**Boso 3**	**1.08**	**183**	P		Pn	15 06 55.3	+0.2

*NIED **24** 15:07:00, 38.°80N×142.°10E, h47km, Mw5.1 Best double couple: M0=4.53000×10^16 NP1:φs=176.00000°, δ22.00000°, λ64.00000°. NP2:φs=24.00000°, δ70.00000°, λ100.00000°.*
*MOS **24** 15:07:08.2±0.8, 38.°95N×142.°03E, h48km, mb5.6/74, MS4.4/10, Error ellipse: s-maj=6.1km s-min=4.1km az=96.1*
*JMA **24** 15:07:08.8±0.1, 38.°84N×142.°12E, h44km±1km, M5.2 Broadband fault plane solution: P waves. NP1: φs=26.00000°, δ62.00000°, λ102.00000°. NP2: φs=182.00000°, δ30.00000°, λ69.00000°. Principal axes: T Plg71.0000°, Azm322.0000°; N Plg10.0000°, Azm200.0000°; P Plg16.0000°, Azm107.0000°;*
JMA Felt III J1.
*ISCJB **24** 15:07:08.8±0.3, 38.°85N±0.°02×142.°01E±0.°02, h55km±2km, mb5.1/292, MS4.5/70 Error ellipse: s-maj=3.4km s-min=2.2km az=153.7*
*BJI **24** 15:07:08.4, 38.°81N×141.°99E, h62km, mb5.2/83, mB5.0/56, Ms4.7/89, Ms7 4.6/85*
*IDC **24** 15:07:09.7±1.4, 38.°85N×142.°05E, h51km±11km, mb4.8/35, mb1 4.9/40, mb1mx4.8/48, mbtmp5.0/40, ML4.3/6, MS4.3/39, Ms1 4.3/39, ms1mx4.2/47, Error ellipse: s-maj=11.4km s-min=8.6km az=105.0*
*NEIC **24** 15:07:11.0±0.3, 38.°86N×141.°99E, h62km±3km, mb5.1/199, Error ellipse: s-maj=3.3km s-min=2.1km az=139.0*
NEIC Recorded [3 JMA] in Iwate and Miyagi.
*GCMT **24** 15:07:11.0±0.2, 38.°95N×142.°17E, h48km±1km, MW5.1/96, Moment Tensor Solution. s64,c100; s96,c171; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr4.93±.18; Mθθ0.04±.12; Mφφ-4.97±.12; Mrθ1.67±.10; Mφθ-0.84±.08; Mrφ3.32±.11; Best double couple: M0=6.24700×10^16 NP1:φs=20.00000°, δ63.00000°, λ100.00000°. NP2: φs=179.00000°, δ28.00000°, λ72.00000°. Principal axes: T 6.2420, Plg70.0000°, Azm310.0000°; N 0.0090, Plg9.0000°, Azm195.0000°; P -6.2520, Plg18.0000°, Azm102.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 24 15:07:09.3±0.4, 38.°89N±0.°03×142.°06E±0.°03, h50km±2km, h49km:pP-P, n933, σ1°35/1017, mb5.1/300, MS4.6/74, 87C-40D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**0.36**	**302**	↓P		**Pn**	**15 07 18.9**	**-0.1**
OFUJ				S		**Sn**	**15 07 25.8**	**-0.1**
JMK	**Ichinoseki**	**0.66**	**276**	↓P		**Pn**	**15 07 22.5**	**0.0**
JMK				S		**Sn**	**15 07 32.2**	**+0.2**
JIO	**Ouri**	**0.70**	**232**	↓P		**Pn**	**15 07 22.4**	**-0.7**
JIO				S		**Sn**	**15 07 31.5**	**-1.6**
MIYJ	**Miyakonagasawa**	**0.71**	**345**	↓P		**Pn**	**15 07 23.1**	**-0.1**
JOM	**Ohasama**	**0.84**	**315**	↓P		**Pn**	**15 07 25.3**	**+0.5**
JOM				S		**Sn**	**15 07 36.7**	**+0.5**
JTH	**Tanohata**	**1.06**	**352**	↓P		**Pn**	**15 07 27.6**	**-0.3**
JOU	**Okura**	**1.21**	**245**	↓P		**Pn**	**15 07 29.7**	**-0.2**
JOU				*e*S		**Sn**	**15 07 45.3**	**+0.1**
JRG	**Rokugo**	**1.22**	**295**	↓P		**Pn**	**15 07 30.6**	**+0.6**
JKZ	**Kuzumaki**	**1.23**	**333**	↓P		**Pn**	**15 07 30.9**	**+0.7**
JYK	**Kaneyama**	**1.33**	**272**	↓P		**Pn**	**15 07 31.9**	**+0.4**
JMM	**Marumori**	**1.43**	**225**	↓P		**Pn**	**15 07 31.9**	**-0.9**
JMM				S		**Sn**	**15 07 48.9**	**-1.5**
JANG	**Nango**	**1.54**	**344**	↓P		**Pn**	**15 07 34.7**	**+0.3**
JANG				S		**Sn**	**15 07 54.7**	**+1.4**
JYS	**Shirataka**	**1.70**	**248**	↓P		**Pn**	**15 07 36.9**	**+0.3**
JAH	**Hinai**	**1.70**	**320**	↓P		**Pn**	**15 07 37.7**	**+1.1**
JFK	**Kawauchi**	**1.78**	**212**	↓P		**Pn**	**15 07 36.7**	**-1.0**
JYA	**Atsumi**	**1.86**	**262**	↓P		**Pn**	**15 07 39.2**	**+0.5**
JTB	**Tobi-shima**	**1.97**	**280**	↓P		**Pn**	**15 07 40.7**	**+0.4**
JOG2	**Oga 2**	**2.04**	**301**	↓P		**Pn**	**15 07 41.5**	**+0.3**
JIW	**Iwasaki**	**2.33**	**318**	↓P		**Pn**	**15 07 46.3**	**+1.2**
JSI2	**Shiura 2**	**2.51**	**330**	↓P		**Pn**	**15 07 49.0**	**+1.4**
JOT	**Ohata**	**2.61**	**343**	↓P		**Pn**	**15 07 49.6**	**+0.6**
ERM	**Erimo**	**3.23**	**15**	*ce*P		**Pn**	**15 07 57.8**	**+0.3**
ERM				pmax	pmax			
	comp=Z,205nm,1.0s							
ERM	**Erimo**	**3.23**	**15**	*e*Pn		**Pn**	**15 07 57.5**	**0.0**
MJAR	**Matsushiro Arr**	**3.85**	**234**	P		**Pn**	**15 08

NKL MLR MLR
comp=E,500nm,20.0s
NKL MLR MLR
comp=N,400nm,15.0s
NKL MLR MLR
comp=Z,500nm,15.0s
SNY Shenyang 14.40 288 ⇓P **Pn 15 10 32.1 +2.0**
SNY pmax pmax
comp=Z,36nm,0.8s
SNY pmax pmax
comp=Z,600nm,9.4s
SNY LR LR
comp=Z,580nm,14.9s
SNY LR LR
comp=Z,2µm,18.2s
SNY LR LR
comp=Z,3µm,20.6s
SKR Severo-Kuril's 15.42 36 *e*P P 15 10 55.2 +8.1
SKR pmax pmax
comp=Z,300nm,1.9s
SKR MLR MLR
comp=Z,500nm,17.0s
SKR MLR MLR
comp=Z,600nm,16.0s
DL2 Dalian 15.91 276 P **Pn 15 10 50.4 +0.6**
DL2 S **Sn 15 13 46.1 +1.0**
DL2 pmax pmax
comp=Z,410nm,1.0s
DL2 pmax pmax
comp=Z,290nm,5.1s
DL2 LR LR
comp=Z,1µm,13.3s
DL2 LR LR
comp=Z,2µm,14.3s
DL2 LR LR
comp=Z,2µm,17.5s
JOW Kunigami 16.67 228 *e*Pn **Pn 15 10 57.4 -2.0**
comp=Z,49nm,1.0s
PEA0 Petropavlovsk- 17.84 32 *e*Pn **Pn 15 11 10.8 -2.9**
PETK Petropavlovsk- 17.84 32 P **Pn 15 11 10.4 -3.3**
baz=207,slow=9.5,SNR=4.5
PETK LR LR 15 19 08.1
comp=Z,371nm,19.0s,baz=217,slow=40
PET Petropavlovsk 18.18 34 *e*P **Pn 15 11 19.1 +1.2**
PET *e*S **Sn 15 14 36.6 -3.2**
PET pmax pmax
comp=Z,34nm,1.3s
PET pmax pmax
comp=Z,100nm,7.1s
PET MLR MLR
comp=Z,500nm,17.0s
PET MLR MLR
comp=Z,500nm,17.0s
PET Petropavlovsk 18.18 34 *e*P **P 15 11 17.1 -0.6**
comp=Z,35nm,1.1s
SSE Sheshan 18.76 252 P **Pn 15 11 24.8 -0.3**
SSE sP **sP 15 11 43.3 +1.5**
SSE S **Sn 15 14 52.6 -1.5**
SSE pmax pmax
comp=Z,71nm,1.2s
SSE LR LR
comp=Z,640nm,17.7s
SSE LR LR
comp=Z,650nm,17.7s
SSE LR LR
comp=Z,700nm,19.7s
HIA Hailar 19.03 310 *e*P **P 15 11 24.9 -2.2**
HIA pmax pmax
comp=Z,61nm,0.8s
HIA Hailar 19.03 310 *e*P **P 15 11 24.9 -2.2**
comp=Z,61nm,0.8s
TIA Tai'an 19.94 270 ⇑P **P 15 11 35.6 -1.4**
TIA PP **PnPn 15 11 51.8 -2.5**
TIA S **S 15 15 12.9 -5.7**
TIA pmax pmax
comp=Z,170nm,0.9s
TIA pmax pmax
comp=Z,400nm,4.6s
TIA LR LR
comp=Z,820nm,15.5s
TIA LR LR
comp=Z,1µm,15.5s
TIA LR LR
comp=Z,2µm,22.0s
BJI Beijing 20.00 282 P **P 15 11 36.4 -1.3**
BJI sP **sP 15 11 57.6 +2.2**
BJI S **S 15 15 15.1 -4.7**
BJI sS **sS 15 15 39.0 +0.8**
BJI ScS **ScS 15 23 07.3 +0.7**
BJI pmax pmax
comp=Z,39nm,1.1s
BJI pmax pmax
comp=Z,210nm,3.3s
BJI LR LR
comp=Z,490nm,15.3s
BJI LR LR
comp=Z,2µm,14.7s
BJI LR LR
comp=Z,910nm,15.7s
BJT Baijiatuau 20.01 281 *e*P **P 15 11 35.3 -2.5**
BJT pmax pmax
comp=Z,65nm,0.7s
BJT Baijiatuau 20.01 281 *e*P **P 15 11 35.3 -2.5**
comp=Z,65nm,0.7s
NJ2 Nanjing 20.07 257 *e*P **P 15 11 37.8 -0.6**
NJ2 S **S 15 15 19.5 -1.7**
NJ2 pmax pmax
comp=Z,33nm,0.9s
NJ2 LR LR
comp=Z,1µm,15.7s
NJ2 LR LR
comp=Z,790nm,19.0s
NJ2 LR LR
comp=Z,2µm,21.7s
CLNS Chul'man 21.23 333 *e*P **P 15 11 50.2 -0.6**
CLNS *e**PP **pP 15 12 05.4 +3.1**
CLNS *e* 15 12 11.8
CLNS *e*S **S 15 15 40.0 -3.9**
CLNS *e* 15 15 54.4
CLNS *e*SS **SnSn 15 16 17.8 +9.2**
CLNS pmax pmax
comp=N,80nm,0.8s
CLNS pmax pmax
comp=Z,157nm,0.9s
CLNS pmax pmax
comp=E,66nm,0.9s
CLNS pmax pmax
comp=Z,42nm,0.9s
CLNS pmax pmax
comp=E,68nm,1.0s
CLNS pmax pmax
comp=N,69nm,0.7s
CLNS smax smax
comp=N,179nm,10.0s
CLNS smax smax
comp=E,417nm,10.9s
CLNS MLR MLR
comp=N,1µm,15.0s
CLNS MLR MLR
comp=E,699nm,19.0s
CLNS MLR MLR
comp=Z,2µm,18.0s
MA2 Magadan 21.44 12 P **P 15 11 53.6 +0.7**
comp=Z,106nm,1.0s,baz=194,slow=10,SNR=25
MA2 Magadan 21.44 12 *e*P **P 15 11 53.4 +0.4**
comp=Z,664nm,1.1s
YOJ Yonaguni jima 21.61 234 *e*P **P 15 11 52.3 -2.8**
YOJ pmax pmax
comp=Z,41nm,0.7s
YOJ Yonaguni jima 21.61 234 *e*P **P 15 11 52.3 -2.8**
comp=Z,41nm,0.7s
TATO Taipei 22.23 237 *e*P **P 15 12 00.5 -1.3**
comp=Z,102nm,0.9s
YHNB Yeheng 22.52 237 *e*P **P 15 12 01.4 -3.5**
comp=Z,92nm,1.2s
TIY Taiyuan 23.24 276 *e*P **P 15 12 13.5 +1.2**
TIY S **S 15 16 12.6 -8.1**
TIY pmax pmax
comp=Z,100nm,0.9s
TIY pmax pmax
comp=Z,150nm,10.0s
TIY LR LR
comp=Z,760nm,15.6s
TIY LR LR
comp=Z,1µm,13.6s
TIY LR LR
comp=Z,2µm,17.1s

SSLB Suanglung 23.41 236 *e*P **P 15 12 10.5 -3.4**
comp=Z,65nm,1.2s
HHC Hu-ho-hao-te 23.43 285 ⇓P **P 15 12 12.8 -1.4**
HHC pP pP 15 12 23.8 -2.5
HHC sP sP 15 12 31.1 -1.2
HHC S **S 15 16 19.4 -4.5**
HHC sS sS 15 16 38.1 -7.1
HHC SS **SnSn 15 17 08.8 +5.9**
HHC pmax pmax
comp=Z,67nm,1.2s
HHC pmax pmax
comp=Z,220nm,5.0s
HHC LR LR
comp=Z,550nm,16.0s
HHC LR LR
comp=Z,2µm,17.3s
HHC LR LR
comp=Z,2µm,14.8s
YULB Yu-li 23.46 235 *e*P **P 15 12 10.3 -4.1**
comp=Z,47nm,0.8s
TPUB Ta-pu 23.96 236 *e*P **P 15 12 14.6 -4.5**
comp=Z,70nm,0.9s
WHN Wuhan 24.18 258 ⇓*i*P **P 15 12 21.1 +0.1**
WHN S **S 15 16 27.6 -8.2**
WHN pmax pmax
comp=Z,170nm,0.9s
WHN LR LR
comp=Z,2µm,18.2s
WHN LR LR
comp=Z,4µm,22.5s
WHN LR LR
comp=Z,3µm,19.6s
QZH Quanzhou 24.20 242 ⇑*i*P **P 15 12 18.5 -2.7**
QZH sP **pP 15 12 36.5 +2.5**
QZH S **S 15 16 27.8 -8.4**
QZH LR LR
comp=Z,860nm,13.7s
QZH LR LR
comp=Z,590nm,13.5s
QZH LR LR
comp=Z,1µm,13.7s
YAK Yakutsk 24.39 346 P **P 15 12 21.8 -0.8**
comp=Z,179nm,0.8s,baz=347,slow=6.8,SNR=100
YAK LR LR 15 22 27.6
comp=Z,653nm,19.0s,baz=164,slow=38
YAK Yakutsk 24.39 346 *ce*P **P 15 12 21.3 -1.3**
YAK *e**PP **pP 15 12 33.2 -2.1**
YAK *e*PPP PPP 15 12 59.5
YAK *e* 15 16 01.5
YAK *e*S **S 15 16 35.4 -3.1**
YAK *e*SSS SSS 15 17 27.8
YAK pmax pmax
comp=E,29nm,1.0s
YAK pmax pmax
comp=Z,260nm,0.9s
YAK pmax pmax
comp=N,112nm,1.0s
YAK pmax pmax
comp=Z,57nm,0.9s
YAK pmax pmax
comp=N,114nm,1.0s
YAK pmax pmax
comp=E,47nm,0.9s
YAK smax smax
comp=E,183nm,1.6s
YAK smax smax
comp=N,177nm,1.6s
YAK MLR MLR
comp=N,461nm,17.0s
YAK MLR MLR
comp=Z,637nm,17.0s
YAK MLR MLR
comp=E,320nm,17.0s
YAK Yakutsk 24.39 346 *e*P **P 15 12 20.9 -1.6**
comp=E,235nm,0.9s
BTO Baotou 24.63 284 *e*P **P 15 12 23.6 -1.5**
SEY Seymchan 24.88 11 P **P 15 12 28.8 +1.7**
comp=E,72nm,0.9s,baz=207,slow=7.3,SNR=97
SEY Seymchan 24.88 11 *ce*P **P 15 12 28.4 +1.4**
GUMO Guam 25.32 174 LR LR 15 22 24.2
comp=E,281nm,21.6s,baz=12,slow=36
BOD Bodaibo 26.27 325 *e*P **P 15 12 38.8 -0.9**
BOD pmax pmax
comp=Z,109nm,1.1s
XAN Xi'an 27.00 270 P **P 15 12 45.3 -1.3**
XAN pP pP 15 12 59.5 +0.2
XAN sP sP 15 13 06.6 +1.4
XAN S **S 15 17 18.0 -2.6**
XAN pmax pmax
comp=Z,100nm,0.6s
XAN pmax pmax
comp=Z,120nm,4.6s
XAN LR LR
comp=Z,580nm,18.4s
XAN LR LR
comp=Z,800nm,19.4s
XAN LR LR
comp=Z,910nm,20.4s
SONA1 Songino Array 27.22 301 *e*P **P 15 12 48.9 +0.4**
SONM Songino Array 27.23 301 P **P 15 12 49.4 +0.8**
comp=Z,24nm,0.8s,baz=98,slow=8.6,SNR=58
SONM PcP **PcP 15 16 08.5 +1.0**
comp=Z,1.7nm,0.6s,baz=123,slow=2.7,SNR=4.1
SONM ScP **ScP 15 19 43.8 +0.2**
comp=Z,1.2nm,0.9s,baz=131,slow=4.5,SNR=4.0
SONM LR LR 15 24 06.7
comp=Z,967nm,18.8s,baz=104,slow=37
ENH Enshi 28.05 262 *e*P **P 15 12 55.1 -0.8**
comp=Z,191nm,0.6s
H11N2 WAKE ISLAND Hy 28.72 125 T T 15 43 27.2
baz=317,slow=75,SNR=2240
H11N1 WAKE ISLAND Hy 28.73 125 T T 15 43 28.0
baz=317,slow=75,SNR=2756
H11N3 WAKE ISLAND Hy 28.73 125 T T 15 43 28.7
baz=317,slow=75,SNR=2717
IRK Irkutsk 29.27 310 *e*P **P 15 13 06.7 +0.1**
IRK *e* 15 13 22.1
IRK pmax pmax
comp=Z,123nm,1.2s
H11S1 WAKE ISLAND Hy 29.49 127 T T 15 44 19.6
baz=318,slow=76,SNR=549
H11S3 WAKE ISLAND Hy 29.49 127 T T 15 44 19.8
baz=318,slow=76,SNR=807
H11S2 WAKE ISLAND Hy 29.51 127 T T 15 44 27.4
baz=318,slow=76,SNR=463
ZAK Zakamensk 29.56 306 *e*P P 15 13 23.9 +15
ZAK pmax pmax
comp=Z,83nm,1.0s
LZH Lanzhou 30.31 277 *e*P **P 15 13 16.8 +0.7**
LZH pP pP 15 13 30.4 +1.4
LZH sP sP 15 13 36.9 +2.0
LZH PP **PnPn 15 14 17.3 +1.7**
LZH *e*S **S 15 18 09.4 -3.5**
LZH sS sS 15 18 31.1 -3.4
LZH SS **ScP 15 19 53.0 -0.6**
LZH pmax pmax
comp=Z,18nm,1.0s
LZH pmax pmax
comp=Z,91nm,4.0s
LZH LR LR
comp=Z,600nm,15.3s
LZH LR LR
comp=Z,860nm,13.2s
LZH LR LR
comp=Z,2µm,16.4s
MOY Mondy 31.17 308 *e*P **P 15 13 24.4 +0.9**
MOY pmax pmax
comp=Z,76nm,1.8s
GYA Guiyang 32.07 258 ⇑*i*P **P 15 13 30.8 -0.9**
GYA pP sP 15 13 48.0 -2.4
GYA PP **PnPn 15 14 41.3 +2.8**
GYA PcP **PcP 15 16 22.8 +2.5**
GYA S **S 15 18 37.1 -3.4**
GYA sS sS 15 19 05.9 +3.7
GYA ScP **ScP 15 19 59.4 -0.2**
GYA SS **SnSn 15 20 34.3 +0.5**
GYA pmax pmax
comp=Z,150nm,0.8s
GYA pmax pmax
comp=Z,140nm,7.2s
GYA LR LR
comp=Z,400nm,18.7s
GYA LR LR
comp=Z,670nm,18.7s
GYA LR LR
comp=Z,900nm,19.7s

BILL Bilibino 32.11 17 *ce*P **P 15 13 31.6 +0.2**
BILL *e* 15 13 45.4
BILL S S 15 18 30.0 -10
BILL pmax pmax
comp=Z,35nm,1.0s
BILL MLR MLR
comp=Z,240nm,19.0s
BILL Bilibino 32.11 17 *e*P **P 15 13 31.9 +0.5**
comp=Z,51nm,1.3s
CD2 Chengdu 32.22 268 P **P 15 13 32.1 -0.8**
CD2 pP pP 15 13 45.0 -0.8
CD2 sP sP 15 13 51.3 -0.3
CD2 PP **PP 15 14 45.5 -0.8**
CD2 S **S 15 18 42.3 -0.3**
CD2 sS sS 15 19 04.8 +0.5
CD2 pmax pmax
comp=Z,210nm,0.7s
CD2 pmax pmax
comp=Z,220nm,5.2s
CD2 LR LR
comp=Z,610nm,13.9s
CD2 LR LR
comp=Z,740nm,15.7s
CD2 LR LR
comp=Z,840nm,15.7s
GTA Gaotai 32.55 285 *e*P **P 15 13 35.6 -0.2**
GTA pP pP 15 13 47.3 -1.4
GTA sP sP 15 13 52.8 -1.7
GTA PcP **PcP 15 16 22.3 +0.9**
GTA S **S 15 18 47.3 -0.5**
GTA sS sS 15 19 07.3 -2.2
GTA ScP **ScP 15 20 02.8 +1.8**
GTA PcS **PcS 15 20 07.3 +0.7**
GTA SS **SnSn 15 20 46.3 +1.2**
GTA ScS **ScS 15 23 59.8 -0.9**
GTA pmax pmax
comp=Z,14nm,1.1s
GTA pmax pmax
comp=Z,180nm,5.9s
GTA LR LR
comp=Z,510nm,17.1s
GTA LR LR
comp=Z,2µm,18.5s
GTA LR LR
comp=Z,2µm,19.0s
TIXI Tiksi 33.52 352 *c i*P **P 15 13 43.8 +0.2**
TIXI pmax pmax
comp=Z,11nm,0.9s
QIZ Qiongzhong 34.18 244 P **P 15 13 51.3 +1.3**
QIZ PP **PP 15 15 07.8 -0.3**
QIZ S **S 15 19 13.1 0.0**
QIZ pmax pmax
comp=Z,120nm,8.0s
QIZ LR LR
comp=Z,410nm,18.6s
QIZ LR LR
comp=Z,630nm,14.9s
KMI Kunming 35.78 259 P **P 15 14 04.0 0.0**
KMI pP pP 15 14 15.8 -1.2
KMI sP sP 15 14 20.8 -2.0
KMI S **S 15 19 38.3 +0.3**
KMI sS sS 15 19 58.3 -1.5
KMI pmax pmax
comp=Z,90nm,1.2s
KMI pmax pmax
comp=Z,250nm,3.1s
KMI LR LR
comp=Z,580nm,19.5s
KMI LR LR
comp=Z,700nm,19.5s
KMI LR LR
comp=Z,920nm,17.4s
NONG Nongkai 39.61 250 P **P 15 14 36.7 +0.6**
comp=Z,44nm,0.8s
SKNT Sakolnakorn 39.71 247 P **P 15 14 37.6 +0.6**
comp=Z,28nm,1.1s
MYLDM Lahad Datu 39.77 218 ⇓P **P 15 14 39.7 +2.3**
MYLDM Lahad Datu 39.77 218 *e*P **P 15 14 38.2 +0.8**
comp=Z,63nm,1.1s
UBPT Khong Chiam 39.78 244 P **P 15 14 38.1 +0.6**
comp=Z,16nm,1.5s
SDKM Sandakan 40.03 221 ⇓P **P 15 14 40.6 +1.0**
WMQ Urumqi 40.49 295 ⇑*i*P **P 15 14 44.3 +1.0**
WMQ pP pP 15 14 56.8 +0.4
WMQ sP sP 15 15 01.9 -0.3
WMQ PP **PP 15 16 16.3 -0.7**
WMQ PcP **PcP 15 16 41.4 -3.7**
WMQ S **S 15 20 49.3 +0.7**
WMQ pmax pmax
comp=Z,140nm,1.0s
WMQ pmax pmax
comp=Z,590nm,3.8s
WMQ LR LR
comp=Z,710nm,15.0s
WMQ LR LR
comp=Z,810nm,20.7s
WMQ LR LR
comp=Z,1µm,23.2s
TSM Tawau 40.85 219 ⇓P **P 15 14 47.4 +1.0**
ZAA0 Zalesovo Array 41.07 311 *e*P **P 15 14 47.9 +0.1**
ZALV Zalesovo Beam 41.07 311 P **P 15 14 48.1 +0.3**
comp=Z,64nm,0.6s,baz=86,slow=6.9,SNR=225
ZALV PcP **PcP 15 16 46.3 -0.3**
comp=Z,22nm,1.0s,baz=132,slow=2.2,SNR=5.0
ZALV ScP **ScP 15 20 33.1 +0.9**
comp=Z,0.5nm,0.6s,baz=72,slow=9.3,SNR=2.6
ZALV LR LR 15 32 37.7
comp=Z,1µm,19.0s,baz=70,slow=37
CMAI Chiengmai2 41.52 256 P **P 15 14 53.1 +1.0**
comp=Z,606nm,0.9s
KMSI Cibinong 41.57 208 P **P 15 14 52.7 +0.4**
UTTA Uttaradit 41.72 252 P **P 15 14 54.3 +0.8**
comp=Z,8.1nm,0.8s,comp=Z,71nm
NRIK Noril'sk 41.81 334 P **P 15 14 53.8 +0.1**
comp=Z,24nm,0.7s,baz=110,slow=9.7,SNR=34
NRIK LR LR 15 33 15.0
comp=Z,1µm,19.5s,baz=105,slow=37
GTOI Gorontalo 41.88 209 P **P 15 14 54.8 0.0**
LAMP Lampang 41.93 253 P **P 15 14 55.6 +0.4**
comp=Z,9.4nm,0.7s,comp=Z,81nm
NVS Novosibirsk 41.95 312 ⇑*i*P **P 15 14 55.6 +0.6**
NVS *e*S **S 15 21 10.8 +1.0**
NVS pmax pmax
comp=Z,118nm,1.4s
NVS pmax pmax
comp=E,100nm,1.3s
NVS smax smax
comp=E,27nm,2.0s
CMMT Chiang Mai 42.26 254 P **P 15 14 58.2 +0.2**
comp=E,41nm,0.8s
CHTO Chiang Mai 42.27 254 P **P 15 14 58.2 +0.2**
comp=E,179nm,1.0s
CHTO Chiang Mai 42.27 254 *e*P **P 15 14 57.9 -0.1**
CHTO pmax pmax
comp=Z,30nm,0.7s
CHTO Chiang Mai 42.27 254 P **P 15 14 58.2 +0.2**
SNR=11
CHTO Chiang Mai 42.27 254 *e*P **P 15 14 57.9 -0.1**
comp=Z,30nm,0.7s
CM31 Chiang Mai Arr 42.48 254 *e*P **P 15 14 59.8 +0.1**
CMAR Chiang Mai Arr 42.48 254 P **P 15 15 00.1 +0.4**
comp=Z,4.0nm,0.7s,baz=46,slow=6.6,SNR=30
CMAR PcP **PcP 15 16 51.9 0.0**
comp=Z,5.3nm,0.9s,baz=11,slow=2.5,SNR=5.9
CMAR ScP **ScP 15 20 38.0 -0.4**
comp=Z,1.6nm,0.8s,baz=23,slow=2.9,SNR=6.4
CMAR LR LR 15 34 34.7
comp=Z,192nm,19.3s,baz=68,slow=39
CM01 Chiang Mai Arr 42.49 254 *e*P **P 15 14 59.5 -0.4**
SUKH Sukhothai 42.57 252 P **P 15 15 01.1 +0.7**
comp=Z,8.0nm,1.2s,comp=Z,76nm
LSA Lhasa 42.58 274 *e*P **P 15 15 01.5 +0.5**
LSA pmax pmax
comp=Z,55nm,1.3s
LSA Lhasa 42.58 274 *e*P **P 15 15 01.5 +0.5**
comp=Z,55nm,1.3s
MHMT Maesarieng 43.41 254 P **P 15 15 08.4 +1.1**
LUWI Luwuk 43.51 209 *e*P **P 15 15 07.0 -1.1**
comp=Z,53nm,0.9s
MK01 Makanchi Array 43.59 301 *e*P **P 15 15 08.8 +0.4**
MK31 Makanchi Array 43.59 301 *i*P **P 15 15 08.7 +0.2**
MK31 pmax pmax
comp=Z,76nm,0.7s
MK31 Makanchi Array 43.59 301 *e*P **P 15 15 08.9 +0.4**
MKAR Makanchi Array 43.59 301 P **P 15 15 09.2 +0.7**
comp=Z,74nm,0.7s,baz=86,slow=9.8,SNR=493

MKAR ScP **ScP** **15 20 42.9 +0.3**
comp=Z,1.5nm,0.8s,baz=98,slow=6.0,SNR=3.4
MKAR LR LR 15 33 55.2
comp=Z,510nm,21.2s,baz=67,slow=37
MKAR Makanchi Array 43.59 301 *i* P **P** **15 15 09.1 +0.7**
MKAR pmax pmax
comp=Z,75nm,0.7s
TT01 Tatalina 43.61 36 *e*P **P** **15 15 09.5 +1.1**
TTA Tatalina 43.62 36 *e*P **P** **15 15 09.4 +0.9**
TTA pmax pmax
comp=Z,27nm,1.4s
TTA Tatalina 43.62 36 *e*P **P** **15 15 09.4 +0.9**
comp=Z,26nm,1.4s
CHBT CHBT 43.72 244 P **P** **15 15 09.6 -0.1**
SVW2 Sparrevohn 43.75 38 *e*P **P** **15 15 11.6 +2.1**
comp=Z,26nm,0.9s
MAKZ Makanchi 43.80 301 *e*P **P** **15 15 10.6 +0.5**
MAKZ pmax pmax
comp=Z,128nm,1.0s
MAKZ Makanchi 43.80 301 *e*P **P** **15 15 10.6 +0.5**
comp=Z,128nm,1.0s
UMPA Umpang Tak 43.95 251 P **P** **15 15 13.4 +1.8**
SHL Shillong 43.96 268 *e*P **P** **15 15 12.5 +0.6**
SHL *e*S **S** **15 21 39.0 -1.4**
SRDT SRDT 44.95 249 P **P** **15 15 20.5 +0.9**
KURK Kurchatov 45.21 307 P **P** **15 15 22.3 +1.0**
KURK 15 17 00.2
KURK Kurchatov 45.21 307 P **P** **15 15 22.3 +1.0**
KURK PcP **PcP** **15 17 00.2 -0.4**
KURBB Kurchatov Arra 45.29 307 P **P** **15 15 22.3 +0.5**
comp=Z,257nm,0.8s,baz=82,slow=8.3,SNR=877
KURBB PcP **PcP** **15 17 00.2 -0.7**
comp=Z,4.3nm,0.7s,baz=82,slow=4.0,SNR=4.4
SBUM Sibu 45.34 224 *e*P **P** **15 15 22.6 0.0**
comp=Z,15nm,1.0s
PPLA Purkeypile 45.36 36 *e*P **P** **15 15 24.8 +2.2**
comp=Z,44nm,1.3s
KDAK Kodiak Island 45.39 43 *ce*P **P** **15 15 24.3 +1.8**
CAST Castle Rocks 45.41 35 *e*P **P** **15 15 24.6 +1.8**
comp=Z,20nm,1.1s
PHET Kaeng Krachan 45.54 247 P **P** **15 15 25.0 +0.8**
comp=Z,22nm,0.9s,comp=Z,215nm
BPAW Bear Paw Mtn. 45.90 34 *e*P **P** **15 15 28.1 +1.5**
comp=Z,16nm,1.2s
KTH Kantishna Hill 45.93 35 *e*P **P** **15 15 28.7 +1.8**
comp=Z,48nm,1.1s
MLY Manley 46.01 33 *e*P **P** **15 15 29.2 +1.7**
comp=Z,36nm,1.4s
TRF Thorofare Moun 46.22 35 *e*P **P** **15 15 31.0 +1.8**
comp=Z,18nm,1.2s
COLD Coldfoot 46.29 30 *e*P **P** **15 15 30.9 +1.4**
comp=Z,15nm,1.1s
RC01 Rabbit Creek A 46.59 38 *e*P **P** **15 15 32.4 +0.4**
comp=Z,32nm,1.0s
MCK McKinley 46.81 35 *e*P **P** **15 15 34.7 +0.9**
MCK pmax pmax
comp=Z,24nm,1.1s
MCK McKinley 46.81 35 *e*P **P** **15 15 34.7 +0.9**
comp=Z,24nm,1.1s
PMR Palmer 46.84 38 *e*P **P** **15 15 34.5 +0.6**
PMR pmax pmax
comp=Z,19nm,0.8s
PMR Palmer 46.84 38 *e*P **P** **15 15 34.5 +0.6**
comp=Z,19nm,0.8s
RND Reindeer 46.87 35 *e*P **P** **15 15 34.9 +0.7**
RND pmax pmax
comp=Z,36nm,1.1s
RND Reindeer 46.87 35 *e*P **P** **15 15 34.9 +0.7**
comp=Z,36nm,1.1s
MDM Murphy Dome 47.08 33 *e*P **P** **15 15 37.3 +1.5**
comp=Z,56nm,1.3s
WRH Wood River Hil 47.16 34 *e*P **P** **15 15 37.2 +0.8**
comp=Z,17nm,1.0s
SML Sawmill 47.20 37 *e*P **P** **15 15 37.9 +1.1**
SML pmax pmax
comp=Z,123nm,1.7s
SML Sawmill 47.20 37 *e*P **P** **15 15 37.9 +1.1**
comp=Z,123nm,1.7s
COLA College 47.24 33 *e*P **P** **15 15 37.6 +0.6**
COLA pmax pmax
comp=Z,15nm,0.8s
COLA College 47.24 33 *e*P **P** **15 15 37.6 +0.6**
comp=Z,15nm,0.8s
CCB Clear Creek Bu 47.27 33 *e*P **P** **15 15 38.0 +0.8**
comp=Z,8.1nm,0.6s
RAMN Ramite 47.40 273 *e*P **P** **15 15 39.6 +0.5**
comp=Z,255nm,0.9s
GUN Gumba 47.50 274 *e*P **P** **15 15 40.5 +0.5**
comp=Z,151nm,0.5s
DHY Denali Highway 47.55 36 *e*P **P** **15 15 40.6 +1.0**
comp=Z,28nm,1.3s
HDA Harding Lake 47.66 34 *e*P **P** **15 15 41.1 +0.9**
comp=Z,22nm,1.0s
IL1 Eielson Array 47.66 33 *e*P **P** **15 15 40.7 +0.4**
ILAR Eielson Array 47.66 33 P **P** **15 15 41.1 +0.8**
comp=Z,10nm,0.6s,baz=264,slow=5.9,SNR=253
ILB Eielson Array 47.66 33 *e*P **P** **15 15 40.9 +0.6**
SCM Sheep Creek Mo 47.68 37 *e*P **P** **15 15 41.4 +0.9**
SCM pmax pmax
comp=Z,34nm,1.0s
SCM Sheep Creek Mo 47.68 37 *e*P **P** **15 15 41.4 +0.9**
comp=Z,34nm,1.0s
KKN Kakani 48.03 275 *e*P **P** **15 15 44.5 +0.6**
comp=Z,221nm,0.7s
PKIN Phulchoki 48.04 274 *e*P **P** **15 15 44.2 +0.1**
comp=Z,74nm,0.7s
DMN Daman 48.25 274 *e*P **P** **15 15 46.2 +0.5**
comp=Z,165nm,1.2s
FYU Fort Yukon 48.25 31 *e*P **P** **15 15 46.6 +1.8**
comp=Z,76nm,1.4s
KAPI Kappang 48.32 210 *e*P **P** **15 15 46.0 +0.2**
comp=Z,113nm,1.6s
KLU Klutina 48.38 38 *e*P **P** **15 15 47.2 +1.2**
comp=Z,21nm,0.8s
GKN Gorkha 48.43 275 *e*P **P** **15 15 47.3 +0.4**
comp=Z,466nm,1.1s
DIV Divide 48.50 38 *e*P **P** **15 15 48.0 +1.2**
SURT Suratani 48.84 244 P **P** **15 15 50.6 +0.6**
comp=Z,23nm,2.4s
DOT Dot Lake 48.99 35 *e*P **P** **15 15 51.0 +0.4**
comp=Z,71nm,1.5s
KRAB Krabi 49.08 243 P **P** **15 15 52.8 +1.0**
BMRM Bremner River 49.08 38 *e*P **P** **15 15 52.5 +1.2**
comp=Z,26nm,1.0s
MENT Mentasta 49.23 36 *e*P **P** **15 15 54.0 +1.7**
comp=Z,17nm,0.8s
KOLN Koldanda 49.34 275 *e*P **P** **15 15 54.6 +0.6**
comp=Z,95nm,0.7s
VOSK Vostochnaya 49.44 311 *e*P **P** **15 15 54.2 0.0**
VOSK pmax pmax
comp=Z,105nm,0.9s
VOSK Vostochnaya 49.44 311 *e*P **P** **15 15 54.2 0.0**
comp=Z,105nm,0.9s
PYUN Piuthan 49.66 276 *e*P **P** **15 15 57.2 +0.8**
comp=Z,443nm,0.9s
BVA0 Borovoye Array 49.72 311 *i* P **P** **15 15 56.4 +0.1**
BVA0 pmax pmax
comp=Z,54nm,0.7s
BVAR Borovoye Array 49.72 311 P **P** **15 15 56.9 +0.6**
comp=Z,64nm,0.7s,baz=71,slow=7.9,SNR=300
BVAR PcP **PcP** **15 17 17.3 +0.6**
comp=Z,23nm,0.8s,baz=81,slow=3.9,SNR=5.6
OTUK Ortayu 49.77 305 P **P** **15 15 56.2 -0.6**
OTUK pmax pmax
comp=Z,91nm,0.9s
BRVK Borovoye 49.77 311 *e*P **P** **15 15 57.2 +0.5**
BRVK pmax pmax
comp=Z,78nm,0.7s
BRVK Borovoye 49.77 311 *e*P **P** **15 15 57.2 +0.5**
comp=Z,78nm,0.7s
CRQM Cirque 49.82 38 *e*P **P** **15 15 58.8 +1.6**
comp=Z,49nm,1.2s
FRU Bishkek 49.93 297⇑ *e*P **P** **15 15 58.0 0.0**
FRU *e* 15 23 15.0
FRU pmax pmax
comp=Z,90nm,2.0s
AAK Ala-Archa 50.08 297 *c i*P **P** **15 15 59.7 +0.4**
AAK pmax pmax
comp=Z,37nm,0.9s
AAK Ala-Archa 50.08 297 P **P** **15 15 59.8 +0.5**
SNR=12
AAK Ala-Archa 50.08 297 *e*P **P** **15 15 59.9 +0.5**
comp=Z,18nm,0.8s
EGAK Eagle 50.10 33 *e*P **P** **15 15 59.7 +0.7**
comp=Z,14nm,0.8s
KSH Kashi 50.14 293 *e*P **P** **15 16 04.1 +4.3**
KSH *e*pP sP 15 16 19.8 +0.8

KSH PcS **PcS** **15 21 17.6 +1.8**
KSH S **S** **15 23 11.4 +3.5**
KSH ScS **ScS** **15 25 46.9 +0.1**
KSH SS **SS** **15 26 42.9 +1.6**
KSH pmax pmax
comp=Z,26nm,0.8s
KSH LR LR
comp=Z,350nm,14.3s
KSH LR LR
comp=Z,95nm,6.3s
KSH LR LR
comp=Z,320nm,15.0s
KULM Kulim 50.20 239 *e*P **P** **15 16 00.6 +0.2**
comp=Z,29nm,0.8s
IPM Ipoh 50.55 238 *e*P **P** **15 16 03.0 0.0**
comp=Z,64nm,1.0s
MYKOM Kota Tinggi 50.78 233 *e*P **P** **15 16 05.1 +0.4**
comp=Z,68nm,1.5s
DAWY Dawson 50.97 34 *e*P **P** **15 16 06.8 +1.1**
comp=Z,5.0nm,0.8s
SOEI Soe 51.15 203 *e*P **P** **15 16 07.0 -0.6**
comp=Z,57nm,0.9s
MNAS Manas 51.51 298 P **P** **15 16 10.3 +0.2**
MNAS pmax pmax
comp=Z,69nm,0.8s
MTN Manton Dam 52.46 193 *e*P **P** **15 16 16.8 -0.3**
comp=Z,54nm,1.3s
INK Inuvik 52.51 28 P **P** **15 16 17.8 +0.9**
comp=Z,18nm,0.9s,baz=289,slow=6.4,SNR=32
INK Inuvik 52.51 28 *e*P **P** **15 16 18.3 +1.4**
INK pmax pmax
comp=Z,28nm,1.1s
INK Inuvik 52.51 28 *e*P **P** **15 16 18.3 +1.4**
comp=Z,28nm,1.1s
HYT Haines Junctio 52.51 38 *e*P **P** **15 16 18.8 +1.6**
comp=Z,42nm,1.0s
COEN Coen 52.58 179 *e*P **P** **15 16 18.7 +0.7**
comp=Z,26nm,1.0s
KK31 Karatay Array 52.66 299 *i* P **P** **15 16 18.4 0.0**
KK31 pmax pmax
comp=Z,54nm,0.9s
PSI Prapat 53.19 239 P **P** **15 16 22.7 0.0**
comp=Z,26nm,0.8s,baz=358,slow=4.8,SNR=13
PSI Prapat 53.19 239 *e*P **P** **15 16 22.8 0.0**
PSI pmax pmax
comp=Z,33nm,0.9s
PSI Prapat 53.19 239 *e*P **P** **15 16 22.8 0.0**
comp=Z,33nm,0.9s
BKNI Bangkinang 53.68 235 *e*P **P** **15 16 26.8 +0.6**
comp=Z,303nm,1.2s
NDI New Delhi 53.84 280 *e*P P 15 16 20.0 -7.3
SVE Sverdlovsk 54.11 318 *d i*P **P** **15 16 29.8 +1.0**
SVE pmax pmax
comp=Z,230nm,0.9s
SVE MLR MLR
comp=Z,978nm,16.0s
SOKR Solikamsk 55.18 322 *c i*P **P** **15 16 34.8 -1.7**
SOKR pmax pmax
comp=Z,108nm,1.4s
SOKR MLR MLR
comp=Z,321nm,16.0s
GSI Gunungsitoli 55.20 239 *e*P **P** **15 16 36.6 -0.6**
comp=Z,94nm,0.9s
ARU Arti 55.32 318 *c i*P **P** **15 16 38.1 +0.5**
ARU *PP **pP** **15 16 51.8 +0.5**
ARU 15 17 36.1
ARU 15 18 42.1
ARU S **S** **15 24 19.9 +2.0**
ARU SS **SS** **15 27 58.0 -4.2**
ARU pmax pmax
comp=Z,188nm,1.0s
ARU MLR MLR
comp=Z,1μm,18.0s
ARU Arti 55.32 318 *e*P **P** **15 16 37.8 +0.2**
comp=Z,172nm,1.0s
DLBC Dease Lake 56.86 39 P **P** **15 16 49.8 +1.1**
comp=Z,5.9nm,0.9s,baz=284,slow=9.3,SNR=12
DLBC Dease Lake 56.86 39 *e*P **P** **15 16 49.0 +0.3**
comp=Z,12nm,1.1s
AB31 Akbulak array 57.15 309 *i* P **P** **15 16 50.9 +0.1**
AB31 pmax pmax
comp=Z,46nm,0.6s
ABKAR Akbulak array 57.15 309 *e*P **P** **15 16 50.7 0.0**
KBL Kabul 57.24 290 *e*P **P** **15 16 51.4 -0.6**
KBL pmax pmax
comp=Z,53nm,1.0s
KBL Kabul 57.24 290 *e*P **P** **15 16 51.4 -0.6**
comp=Z,53nm,1.0s
AKTO Aktyubinsk 57.83 311 P **P** **15 16 55.5 0.0**
AKTO pmax pmax
comp=Z,76nm,1.0s
FITZ Fitzroy Crossi 58.74 198 P **P** **15 17 02.5 +0.3**
comp=Z,8.7nm,0.6s,baz=9.9,slow=6.6,SNR=37
FITZ Fitzroy Crossi 58.74 198 *e*P **P** **15 17 02.3 +0.2**
comp=Z,37nm,1.4s
HYB Hyderabad 58.78 268 *i* P **P** **15 17 03.0 +0.4**
CTA Charters Tower 58.80 175 P **P** **15 17 02.9 +0.4**
comp=Z,2.9nm,0.6s,baz=3.4,slow=7.8,SNR=7.0
KBS Kingsbay 58.92 350 *e*P **P** **15 17 03.4 +0.7**
KBS pmax pmax
comp=Z,47nm,0.9s
KBS Kingsbay 58.92 350 *e*P **P** **15 17 03.4 +0.7**
comp=Z,46nm,0.9s
WRAB Tennant Creek 58.95 188 *c i*P **P** **15 17 02.8 -0.8**
WRAB Tennant Creek 58.95 188 *e*P **P** **15 17 02.1 -1.5**
comp=Z,38nm,0.9s
WB2 Warramunga Arr 58.96 188 *e*P **P** **15 17 02.7 -1.0**
WRA Warramunga Arr 58.97 188 P **P** **15 17 02.6 -1.1**
comp=Z,26nm,0.6s,baz=6.9,slow=7.0,SNR=248
WRA LR LR 15 42 05.8
comp=Z,107nm,21.6s,baz=320,slow=36
WRA Warramunga Arr 58.97 188 *i* P **P** **15 17 03.0 -0.7**
WRA pmax pmax
comp=Z,26nm,0.6s
LVZ Lovozero 60.63 336 *e*P **P** **15 17 15.6 +0.9**
LVZ pmax pmax
comp=Z,26nm,1.1s
YKA Yellowknife Ar 61.95 31 P **P** **15 17 24.3 +0.7**
comp=Z,4.2nm,0.6s,baz=296,slow=6.7,SNR=17
YKA LR LR 15 44 33.5
comp=Z,7.4nm,22.0s,baz=0.0,slow=36
YKA Yellowknife Ar 61.95 31 *i* P **P** **15 17 24.2 +0.6**
YKA pmax pmax
comp=Z,4.0nm,0.6s
ARA0 ARCESS Array S 62.45 339 *e*P **P** **15 17 26.7 -0.2**
ARCES ARCESS Array B 62.45 339 P **P** **15 17 26.6 -0.2**
comp=Z,11nm,0.8s,baz=52,slow=7.9,SNR=19
ARCES LR LR 15 47 42.4
comp=Z,124nm,20.7s,baz=48,slow=39
ARCES ARCESS Array B 62.45 339 *e*P **P** **15 17 26.8 0.0**
ARE0 ARCESS Array S 62.45 339 *e*P **P** **15 17 27.1 +0.3**
comp=Z,29nm,1.1s
KLMR Klimovskoe 62.47 327 *e*P **P** **15 17 24.6 -2.5**
KLMR *e* 15 19 42.2
KLMR pmax pmax
comp=Z,80nm,1.4s
AS01 Alice Springs 62.69 188 *e*P **P** **15 17 28.3 -0.7**
AS31 Alice Springs 62.69 188 *e*P **P** **15 17 28.4 -0.6**
comp=Z,4.1nm,0.8s
ASAR Alice Springs 62.69 188 P **P** **15 17 28.7 -0.3**
comp=Z,12nm,0.7s,baz=5.3,slow=4.8,SNR=164
ASAR LR LR 15 44 30.9
comp=Z,127nm,21.7s,baz=3.0,slow=36
PALK Pallekele 63.27 257 P **P** **15 17 31.7 -1.5**
comp=Z,14nm,1.0s,baz=110,slow=1.4,SNR=3.6
MBWA Marble Bar 63.29 203 *e*P **P** **15 17 32.2 -0.7**
comp=Z,15nm,0.8s
GEYT Alibeck 63.40 298 P **P** **15 17 34.2 +0.5**
comp=Z,33nm,0.8s,baz=29,slow=3.4,SNR=72
GEYT LR LR 15 47 03.5
comp=Z,410nm,18.2s,baz=55,slow=38
DAG Danmarks Havn 63.97 355⇑ *i*P **P** **15 17 37.0 +0.2**
comp=Z,46nm,1.1s
LLLB Lillooet 64.57 45 *e*P **P** **15 17 41.2 0.0**
comp=Z,6.3nm,0.8s
PGC Sidney 64.69 47 *e*P **P** **15 17 43.1 +1.2**
comp=Z,8.7nm,0.8s
DZM Mont Dzumac 64.80 155 *e*LR LR 15 37 22.4
comp=Z,646nm,22.2s
NLWA Neilton Lookou 65.09 48 *e*P **P** **15 17 43.9 -0.7**
comp=Z,19nm,1.0s
B05A Bryant 65.66 47 P **P** **15 17 49.4 +1.2**
baz=302
COCO West Island 66.03 229 *ce*P **P** **15 17 53.5 +2.6**
MOS Moscow 66.07 323 *e*P **P** **15 17 50.8 +0.1**
MOS *e* 15 18 07.5

MOS pmax pmax
comp=Z,200nm,1.7s
MOS pmax pmax
comp=Z,139nm,1.2s
MOS MLR MLR
comp=Z,500nm,15.0s
D05A Enumclaw 66.29 48 *e*P **P** **15 17 55.5 +3.2**
comp=Z,27nm,1.1s
VRH Novokhopyorsk 66.56 318 *e*P **P** **15 17 53.3 -0.6**
VRH pmax pmax
comp=Z,30nm,0.6s
OBN Obninsk 66.92 323 *c i*P **P** **15 17 56.6 +0.4**
OBN *e*PP **pP** **15 18 09.5 -0.6**
OBN *i* *SP **sP** **15 18 13.6 -2.2**
OBN *e* 15 18 21.6
OBN *e* 15 20 24.8
OBN *e*SS SS 15 31 02.1 -1.3
OBN pmax pmax
comp=Z,90nm,1.1s
OBN pmax pmax
comp=Z,435nm,15.0s
OBN Obninsk 66.92 323 *e*P **P** **15 17 56.4 +0.3**
comp=Z,92nm,1.1s
B08A Colville Reser 67.17 46 *e*P **P** **15 17 58.6 +0.6**
comp=Z,7.6nm,1.0s
I03D Drain, OR 67.35 52 P **P** **15 18 00.6 +1.5**
baz=303
FINES FINESS Array B 67.42 332 P **P** **15 17 59.5 +0.3**
comp=Z,48nm,0.7s,baz=46,slow=8.2,SNR=114
FINES LR LR 15 49 39.8
comp=Z,421nm,18.9s,baz=53,slow=38
EDM Edmonton 67.58 39 *e*P **P** **15 18 00.8 +0.3**
EDM pmax pmax
comp=Z,28nm,1.3s
EDM Edmonton 67.58 39 *e*P **P** **15 18 00.8 +0.3**
comp=Z,28nm,1.3s
I04A Tendick Farm, 67.87 51 P **P** **15 18 03.5 +1.0**
baz=303
VSR Storozhevoye 67.88 319 *e*P **P** **15 18 02.1 -0.2**
VSR *e*SP **sP** **15 18 19.7 -2.2**
VSR pmax pmax
comp=Z,80nm,1.2s
VSR MLR MLR
comp=Z,910nm,18.0s
C09A Chrisman Ranch 68.07 46 *e*P **P** **15 18 04.1 +0.4**
comp=Z,9.8nm,0.8s
D08A Wollman Farm, 68.12 47 *e*P **P** **15 18 05.0 +1.0**
comp=Z,10nm,0.9s
J04D Umpqua Nationa 68.35 51 P **P** **15 18 05.8 +0.1**
baz=304
NEW Newport 68.45 45 P **P** **15 18 06.4 +0.4**
comp=Z,4.6nm,1.0s,baz=320,slow=6.9,SNR=7.5
NEW Newport 68.45 45 P **P** **15 18 06.9 +0.9**
baz=305
NEW Newport 68.45 45 *e*P **P** **15 18 06.9 +0.9**
NEW pmax pmax
comp=Z,11nm,0.9s
NEW Newport 68.45 45 *e*P **P** **15 18 06.9 +0.9**
comp=Z,11nm,0.9s
YBH Yreka Blue Hor 68.81 53 *e*P **P** **15 18 09.8 +1.3**
YBH pmax pmax
comp=Z,16nm,1.1s
YBH Yreka Blue Hor 68.81 53 *e*P **P** **15 18 09.8 +1.3**
comp=Z,16nm,1.1s
SUMG Summit 68.83 0⇑ *i*P **P** **15 18 09.6 +1.2**
comp=Z,34nm,0.7s
SUMG Summit 68.83 0 *e*P **P** **15 18 09.2 +0.8**
SUMG pmax pmax
comp=Z,34nm,0.7s
SUMG Summit 68.83 0 *e*P **P** **15 18 09.2 +0.8**
comp=Z,34nm,0.7s
M02C Callahan 68.91 53 P **P** **15 18 11.4 +2.3**
baz=304
VSU Vasula 69.12 329 *ce*P **P** **15 18 10.3 +0.4**
VSU pmax pmax
comp=Z,177nm,0.9s
N02D Trinity Center 69.24 54 P **P** **15 18 13.1 +2.0**
baz=304
GOF Gofitskoye 69.25 312⇑ *i*P **P** **15 18 11.8 +0.8**
GOF pmax pmax
comp=Z,162nm,1.0s
M04C Macdoel 69.33 53 P **P** **15 18 13.1 +1.4**
baz=304
K05A Summer Lake 69.38 51 *e*P **P** **15 18 13.5 +1.4**
comp=Z,25nm,1.2s
WDC Whiskeytown Da 69.56 54 *e*P **P** **15 18 14.0 +1.0**
WDC pmax pmax
comp=Z,16nm,1.4s
WDC Whiskeytown Da 69.56 54 *e*P **P** **15 18 14.0 +1.0**
comp=Z,16nm,1.4s
WALA Waterton Lakes 69.73 43 *e*P **P** **15 18 14.4 +0.4**
comp=Z,9.3nm,0.8s
NCK Nalchik 69.81 310 *e*P **P** **15 18 13.6 -0.9**
NCK pmax pmax
comp=Z,49nm,1.1s
GUDG Gudauri 69.86 309 P **P** **15 18 16.2 +1.1**
DGRG David-gareji 69.88 307 P **P** **15 18 15.5 +0.5**
DGRG David-gareji 69.88 307 P **P** **15 18 15.5 +0.5**
ZEI Tsey 70.02 309 *e*P **P** **15 18 14.0 -2.1**
ZEI pmax pmax
comp=Z,165nm,1.3s
KVAR Kislovodsk Arr 70.08 311 LR LR 15 51 41.1
comp=Z,144nm,18.6s,slow=38
KIV Kislovodsk 70.08 311 *e*P **P** **15 18 17.1 +0.8**
KIV pmax pmax
comp=Z,238nm,1.1s
KIV MLR MLR
comp=Z,211nm,17.0s
KIV Kislovodsk 70.08 311 P **P** **15 18 17.3 +1.0**
SNR=54
KIV Kislovodsk 70.08 311 *e*P **P** **15 18 17.0 +0.7**
comp=Z,204nm,1.0s
KBZ Khabaz 70.09 310 P **P** **15 18 17.1 +1.0**
comp=Z,60nm,0.9s,baz=39,slow=3.6,SNR=62
KBZ LR LR 15 54 00.2
comp=Z,200nm,18.3s,baz=38,slow=40
TBLG Delisi 70.11 308 P **P** **15 18 17.4 +1.0**
TBLG Delisi 70.11 308 P **P** **15 18 17.4 +1.0**
O03D Paynes Creek 70.19 54 P **P** **15 18 17.6 +0.7**
baz=304
MOD Modoc Plateau 70.21 52 *e*P **P** **15 18 18.1 +0.9**
comp=Z,6.0nm,0.8s
BMO Blue Mountains 70.30 48 *e*P **P** **15 18 18.6 +1.0**
BMO pmax pmax
comp=Z,7.0nm,0.9s
BMO Blue Mountains 70.30 48 *e*P **P** **15 18 18.6 +1.0**
comp=Z,6.7nm,0.9s
SCO Scoresbysund 70.32 354⇑ *i*P **P** **15 18 18.1 +1.0**
comp=Z,42nm,1.5s
STKA Stephens Creek 70.41 180 P **P** **15 18 17.2 -0.8**
comp=Z,2.7nm,0.7s,baz=356,slow=6.9,SNR=8.9
STKA LR LR 15 48 48.1
comp=Z,81nm,21.8s,baz=25,slow=36
ONI Oni 70.41 309 P **P** **15 18 19.1 +0.9**
ONI Oni 70.41 309 P **P** **15 18 19.1 +0.9**
FORT Forrest 70.53 193 *e*P **P** **15 18 18.3 -0.5**
comp=Z,304nm,0.8s
SWMT Swartz Lake 70.60 44 *e*P **P** **15 18 18.7 -0.7**
ORV Oroville 70.80 54 *e*P **P** **15 18 20.8 +0.2**
ORV Oroville 70.80 54 *e*P **P** **15 18 20.8 +0.2**
WSAR Wadi Sarin 70.89 285 LR LR 15 55 06.5
comp=Z,88nm,18.2s,baz=108,slow=41
WVOR Wild Horse Val 70.92 51 *e*P **P** **15 18 21.8 +0.4**
WVOR pmax pmax
comp=Z,8.0nm,1.0s
WVOR Wild Horse Val 70.92 51 *e*P **P** **15 18 21.8 +0.4**
comp=Z,8.1nm,1.0s
GNI Garni 71.01 306 LR LR 15 52 49.2
comp=Z,396nm,19.0s,baz=56,slow=39
GNI Garni 71.01 306 *ce*P **P** **15 18 22.3 +0.2**
GNI pmax pmax
comp=Z,269nm,1.4s
GNI Garni 71.01 306 *e*P **P** **15 18 22.4 +0.3**
comp=Z,75nm,1.2s
SLMT Seeley Lake 71.03 44 *e*P **P** **15 18 22.5 +0.4**
MSO Missoula 71.04 45 P **P** **15 18 22.0 -0.1**
baz=307
MSO Missoula 71.04 45 *e*P **P** **15 18 21.9 -0.1**
comp=Z,5.4nm,0.9s
BGD Bogdanovka 71.08 308 P **P** **15 18 24.1 +1.5**
IZAR Zarasai 71.12 327 *e*P **P** **15 18 23.0 +0.8**
IZAR IAmb IAmb 15 18 24.6
comp=Z,43nm,1.4s
IDID Didziasalis 71.20 327 *e*P **P** **15 18 23.6 +0.9**
IDID IAmb IAmb 15 18 25.0
comp=Z,34nm,1.1s

MICGM	**Minsk**	71.25	326	⇓	*e*P		**P**	**15 18 24.0 +1.0**
MICGM					PM			15 18 25.0
	comp=Z,0.2nm,1.0s							
MICGM					*e*LR		LR	15 51 52.0
MICGM					LRM		MLR	15 53 26.0
	comp=Z,1.7nm,16.0s							
MNK	**Minsk**	**71.25**	**326**	⇓	*e*P		**P**	**15 18 24.0 +1.0**
MNK					pmax		pmax	
	comp=Z,170nm,1.0s							
MNK					MLR		MLR	
	comp=Z,2µm,16.0s							
ISAL	**Salakas**	**71.29**	**327**		*e*P		**P**	**15 18 24.1 +0.9**
ISAL					IAmb		IAmb	15 18 25.7
	comp=Z,45nm,0.9s							
SMDO	**Samad**	**71.43**	**285**		P		**P**	**15 18 25.0 +0.2**
	SNR=5.7							
SMDO	**Samad**	**71.43**	**285**		P		**P**	**15 18 25.0 +0.2**
	SNR=5.7							
NACGM	**Naroch**	**71.46**	**327**		*e*P		**P**	**15 18 24.0 -0.3**
NACGM					PM			15 18 25.0
	comp=Z,0.2nm,1.0s							
NACGM					*e*LR		LR	15 51 06.0
AFDM	**Forest Hills D**	**71.48**	**55**		*e*P		**P**	**15 18 25.8 +1.0**
	comp=Z,5.2nm,1.0s							
HOQ	**Hoqain**	**71.69**	**286**		P		**P**	**15 18 26.4 +0.2**
	SNR=6.5							
HOQ	**Hoqain**	**71.69**	**286**		P		**P**	**15 18 26.4 +0.2**
	SNR=6.5							
UOSS	**Minazif**	**71.73**	**288**		*e*P		**P**	**15 18 26.0 -0.5**
	comp=Z,52nm,1.1s							
JMDO	**Jabal Madar**	**71.78**	**284**		P		**P**	**15 18 27.3 +0.5**
	SNR=6.2							
JMDO	**Jabal Madar**	**71.78**	**284**		P		**P**	**15 18 27.3 +0.5**
	SNR=6.2							
HATD	**Hatta, Dubai**	**71.86**	**287**		P		**P**	**15 18 27.9 +0.7**
	SNR=6.6							
HATD	**Hatta, Dubai**	**71.86**	**287**		P		**P**	**15 18 27.9 +0.7**
	SNR=6.6							
FFC	**Flin Flon**	**71.87**	**33**		*e*P		**P**	**15 18 27.1 +0.3**
FFC					pmax		pmax	
	comp=Z,19nm,0.9s							
FFC	**Flin Flon**	**71.87**	**33**		*e*P		**P**	**15 18 27.1 +0.3**
	comp=Z,19nm,0.9s							
ASHO	**Ashiyiah**	**71.99**	**287**		P		**P**	**15 18 28.7 +0.6**
	SNR=8.1							
ASHO	**Ashiyiah**	**71.99**	**287**		P		**P**	**15 18 28.7 +0.6**
	SNR=8.1							
MFID	**Camas Ranch**	**72.01**	**49**		*e*P		**P**	**15 18 28.4 +0.5**
	comp=Z,6.1nm,1.0s							
PAHR	**Pah Rah Range**	**72.04**	**53**		*e*P		**P**	**15 18 29.1 +0.8**
	comp=Z,12nm,0.9s							
SOC	**Sochi**	**72.05**	**312**		*e*P		**P**	**15 18 27.4 -0.6**
SOC					*e*			15 18 44.7
SOC					*e*			15 21 03.1
SOC					*e*PPP		PPP	15 22 49.0
SOC					*e*S		**S**	**15 27 43.5 -2.4**
SOC					*e*			15 28 24.8
SOC					pmax		pmax	
	comp=Z,56nm,0.9s							
SOC					MLR		MLR	
	comp=Z,318nm,18.0s							
FCC	**Fort Churchill**	**72.12**	**27**		*e*P		**P**	**15 18 28.3 +0.2**
FCC					pmax		pmax	
	comp=Z,46nm,1.3s							
FCC	**Fort Churchill**	**72.12**	**27**		*e*P		**P**	**15 18 28.3 +0.2**
	comp=Z,46nm,1.3s							
PNTR	**Pine Nut**	**72.27**	**54**		*e*P		**P**	**15 18 30.1 +0.4**
	comp=Z,15nm,1.0s							
CMB	**Columbia Colle**	**72.39**	**55**		*e*P		**P**	**15 18 30.8 +0.6**
CMB					pmax		pmax	
	comp=Z,28nm,1.8s							
CMB	**Columbia Colle**	**72.39**	**55**		*e*P		**P**	**15 18 30.8 +0.6**
	comp=Z,28nm,1.8s							
ARQ	**Araqi**	**72.42**	**286**		P		**P**	**15 18 31.7 +1.1**
	SNR=7.4							
NC405	**NORSAR Array S**	**72.47**	**337**		*e*P		**P**	**15 18 30.2 0.0**
LRM	**Limekiln Ridge**	**72.47**	**45**		*e*P		**P**	**15 18 31.1 +0.3**
NC303	**NORSAR Array S**	**72.48**	**337**		*e*P		**P**	**15 18 30.3 0.0**
EGMT	**Eagleton**	**72.55**	**42**		P		**P**	**15 18 32.1 +1.0**
	baz=309							
EGMT	**Eagleton**	**72.55**	**42**		*e*P		**P**	**15 18 31.5 +0.4**
	comp=Z,14nm,0.8s							
YERR	**Yerington**	**72.56**	**54**		*e*P		**P**	**15 18 32.3 +0.9**
	comp=Z,15nm,0.9s							
HFS	**Hagfors**	**72.61**	**336**		LR		LR	15 53 24.4
	comp=Z,754nm,18.6s,baz=41,slow=38							
ANN	**Anapa**	**72.62**	**314**		*e*P		**P**	**15 18 29.3 -2.1**
ANN					*i* *PP		**pP**	**15 18 41.4 -4.1**
ANN					*e*S		**S**	**15 27 49.0 -3.4**
ANN					pmax		pmax	
	comp=Z,77nm,1.4s							
ANN					MLR		MLR	
	comp=Z,368nm,19.0s							
NC204	**NORSAR Array S**	**72.62**	**338**		*e*P		**P**	**15 18 32.0 +0.7**
NB201	**NORSAR Array S**	**72.64**	**337**		*e*P		**P**	**15 18 31.6 +0.3**
DLMT	**Dillon**	**72.67**	**45**		*e*P		**P**	**15 18 32.2 +0.3**
	comp=Z,13nm,0.9s							
NB2	**NORSAR Subarra**	**72.68**	**337**		P		**P**	**15 18 31.5 0.0**
	comp=Z,69nm,1.2s,baz=37,slow=6.2							
NB2	**NORSAR Subarra**	**72.68**	**337**		P		**P**	**15 18 31.5 0.0**
	baz=37,slow=6.2							
NOA	**NORSAR Array B**	**72.68**	**337**		P		**P**	**15 18 31.9 +0.3**
	comp=Z,26nm,0.9s,baz=38,slow=5.9,SNR=39							
NOA					PP		**PP**	**15 21 15.4 +2.4**
	comp=Z,3.1nm,0.9s,baz=19,slow=7.1,SNR=3.5							
NOA					LR		LR	15 53 07.4
	comp=Z,477nm,21.4s,baz=40,slow=38							
WAKR	**Walker**	**72.72**	**54**		*e*P		**P**	**15 18 33.1 +0.7**
	comp=Z,5.8nm,0.9s							
HLID	**Hailey**	**72.74**	**48**		P		**P**	**15 18 33.6 +1.1**
	baz=308							
HLID	**Hailey**	**72.74**	**48**		*e*P		**P**	**15 18 33.2 +0.8**
	comp=Z,5.5nm,0.9s							
NBO02	**NORSAR Array S**	**72.78**	**337**		*e*P		**P**	**15 18 32.3 +0.2**
NBO00	**NORSAR Array S**	**72.81**	**337**		*e*P		**P**	**15 18 32.5 +0.1**
NC602	**NORSAR Array S**	**72.82**	**337**		*e*P		**P**	**15 18 32.3 0.0**
NAO01	**NORSAR Array S**	**72.93**	**337**		*e*P		**P**	**15 18 33.0 0.0**
BMN	**Battle Mountai**	**72.95**	**52**		*e*P		**P**	**15 18 33.2 -0.5**
BMN					pmax		pmax	
	comp=Z,6.0nm,0.6s							
BMN	**Battle Mountai**	**72.95**	**52**		*e*P		**P**	**15 18 33.2 -0.5**
	comp=Z,5.7nm,0.6s							
BOZ	**Bozeman (W)**	**73.03**	**45**		P		**P**	**15 18 34.9 +0.9**
	baz=309							
BOZ	**Bozeman (W)**	**73.03**	**45**		*e*P		**P**	**15 18 34.5 +0.4**
BOZ					pmax		pmax	
	comp=Z,10.0nm,0.8s							
BOZ	**Bozeman (W)**	**73.03**	**45**		*e*P		**P**	**15 18 34.5 +0.4**
	comp=Z,9.9nm,0.8s							
AKASG	**Malin Array Be**	**73.15**	**322**		P		**P**	**15 18 34.2 -0.2**
	comp=Z,21nm,0.6s,baz=45,slow=6.5,SNR=14							
AKBB	**Malin Array Si**	**73.15**	**322**		*e*P		**P**	**15 18 34.3 -0.1**
AKBB					pmax		pmax	
	comp=Z,84nm,1.1s							
AKBB	**Malin Array Si**	**73.15**	**322**		*e*P		**P**	**15 18 34.3 -0.1**
	comp=Z,84nm,1.1s							
KIEV	**Kiev**	**73.16**	**322**		*e*P		**P**	**15 18 34.3 -0.2**
KIEV					pmax		pmax	
	comp=Z,91nm,1.2s							
KIEV	**Kiev**	**73.16**	**322**		*e*P		**P**	**15 18 34.3 -0.2**
	comp=Z,91nm,1.2s							
AK11	**Malin Array Si**	**73.19**	**322**		*e*P		**P**	**15 18 34.1 -0.6**
TVH3	**East Aurora ar**	**73.19**	**54**		*e*P		**P**	**15 18 35.7 +0.5**
	comp=Z,9.1nm,0.9s							
TVH2	**Borealis Mine**	**73.22**	**54**		*e*P		**P**	**15 18 37.4 +2.0**
	comp=Z,7.8nm,1.0s							
SUW	**Suwalki**	**73.61**	**327**		*e*P		**P**	**15 18 37.1 +0.1**
PAGB	**Antelope Grade**	**73.83**	**57**		*e*P		**P**	**15 18 41.0 +2.3**
	comp=Z,11nm,0.9s							
YHB	**Horse Butte**	**73.83**	**45**		*e*P		**P**	**15 18 38.1 -0.8**
	comp=Z,12nm,0.7s							
GCMT	**Greycliff**	**74.01**	**44**		*e*P		**P**	**15 18 41.6 +1.8**
SIM	**Simferopol'**	**74.37**	**315**		*e*P		**P**	**15 18 42.3 +0.6**
IMW	**Indian Meadow**	**74.51**	**46**		*e*P		**P**	**15 18 43.6 +0.7**
	comp=Z,5.8nm,0.8s							
VES	**Vestal, Richgr**	**74.52**	**56**		P		**P**	**15 18 43.5 +0.8**
	baz=307							
FLWY	**Flagg Ranch**	**74.53**	**46**		*e*P		**P**	**15 18 44.6 +1.7**
	comp=Z,24nm,1.4s							
PKM	**Mcpherson Peak**	**74.61**	**58**		P		**P**	**15 18 44.9 +1.3**
	baz=307							
MOOW	**Moose Ponds**	**74.71**	**46**		*e*P		**P**	**15 18 45.5 +1.5**
	comp=Z,8.7nm,1.1s							
TPAW	**Teton Pass**	**74.76**	**46**		*e*P		**P**	**15 18 45.7 +1.3**
	comp=Z,8.6nm,1.1s							
HVU	**Hansel Valley**	**74.79**	**48**		*e*P		**P**	**15 18 45.6 +1.2**
HVU					pmax		pmax	
	comp=Z,9.0nm,0.9s							
HVU	**Hansel Valley**	**74.79**	**48**		*e*P		**P**	**15 18 45.6 +1.2**
	comp=Z,9.4nm,0.9s							
CWC	**Cottonwood Cre**	**74.81**	**55**		P		**P**	**15 18 45.7 +1.1**
	baz=307							
REDW	**Red Top Meadow**	**74.90**	**46**		*e*P		**P**	**15 18 45.7 +0.6**
	comp=Z,7.7nm,0.9s							
GRAC	**Grapevine Rang**	**74.93**	**55**		P		**P**	**15 18 46.9 +1.7**
	baz=308							
BGU	**Big Grassy Mou**	**75.18**	**49**		*e*P		**P**	**15 18 47.0 +0.4**
	comp=Z,6.3nm,0.9s							
R11A	**Troy Canyon, C**	**75.22**	**53**		P		**P**	**15 18 48.0 +1.0**
	baz=308							
R11A	**Troy Canyon, C**	**75.22**	**53**		*e*P		**P**	**15 18 48.0 +1.0**
	comp=Z,10nm,0.9s							
LAO	**LASA Array**	**75.24**	**41**		P		**P**	**15 18 47.4 +0.6**
	baz=312							
LAO	**LASA Array**	**75.24**	**41**		*e*P		**P**	**15 18 47.2 +0.4**
	comp=Z,26nm,1.1s							
SORM	**Soroca**	**75.28**	**321**	⇑	*i*P		**P**	**15 18 46.9 0.0**
SORM	**Soroca**	**75.28**	**321**	⇑	P		**P**	**15 18 46.9 0.0**
MPMC	**Manual Prospec**	**75.42**	**55**		P		**P**	**15 18 49.2 +0.9**
	baz=308							
FURC	**Furnace Creek,**	**75.57**	**55**		P		**P**	**15 18 49.8 +1.1**
	baz=308							
HWUT	**Hardware Ranch**	**75.61**	**48**		*e*P		**P**	**15 18 49.6 +0.5**
	comp=Z,14nm,1.1s							
LRMC	**Laurel Mtn Rad**	**75.65**	**56**		P		**P**	**15 18 50.0 +0.6**
	baz=308							
TPNV	**Topopah Spring**	**75.67**	**54**		P		**P**	**15 18 50.7 +1.1**
	baz=308							
TPNV	**Topopah Spring**	**75.67**	**54**		*e*P		**P**	**15 18 50.0 +0.4**
TPNV					pmax		pmax	
	comp=Z,14nm,0.8s							
TPNV	**Topopah Spring**	**75.67**	**54**		*e*P		**P**	**15 18 50.0 +0.4**
	comp=Z,14nm,0.8s							
DUG	**Dugway, Tooele**	**75.76**	**50**		P		**P**	**15 18 51.2 +1.3**
	baz=309							
DUG	**Dugway, Tooele**	**75.76**	**50**		*e*P		**P**	**15 18 51.3 +1.3**
DUG					pmax		pmax	
	comp=Z,13nm,0.9s							
DUG	**Dugway, Tooele**	**75.76**	**50**		*e*P		**P**	**15 18 51.3 +1.3**
	comp=Z,13nm,0.9s							
SNCC	**San Nicolas Is**	**75.79**	**59**		P		**P**	**15 18 50.4 +0.3**
	baz=307							
EDW2	**Edwards Air Fo**	**75.81**	**57**		P		**P**	**15 18 50.9 +0.6**
	baz=308							
KIS	**Kishinev**	**75.82**	**320**		*e*P		**P**	**15 18 49.0 -1.0**
KIS					LRM		MLR	15 54 46.0
	comp=Z,600nm,16.0s							
KIS	**Kishinev**	**75.82**	**320**		*e*P		**P**	**15 18 49.0 -1.0**
KIS					*e*			15 19 06.0
KIS					*e*			15 29 14.0
KIS					MLR		MLR	
	comp=Z,600nm,16.0s							
KIS					MLR		MLR	
	comp=N,400nm,17.0s							
KIS					MLR		MLR	
	comp=Z,600nm,16.0s							
A26A	**Wade Farm, Ken**	**75.83**	**38**		P		**P**	**15 18 50.9 +0.9**
	baz=314							
PDAR	**Pinedale Array**	**76.01**	**46**		P		**P**	**15 18 52.0 +0.5**
	comp=Z,3.5nm,0.7s,baz=318,slow=3.9,SNR=18							
PDAR					LR		LR	15 48 20.9
	comp=Z,34nm,21.8s,baz=324,slow=32							
BSD	**Bornholm Skovb**	**76.06**	**332**	⇑	*i*P		**P**	**15 18 51.5 +0.3**
	comp=Z,97nm,1.0s							
CTU	**Camp Tracy**	**76.08**	**49**		*e*P		**P**	**15 18 52.8 +1.0**
	comp=Z,16nm,0.9s							
BEL	**Belsk**	**76.18**	**327**		*e*P		**P**	**15 18 53.1 +1.2**
LVV	**L'vov**	**76.19**	**324**		*e*P		**P**	**15 18 52.9 +0.9**
LVV					*e*			15 19 07.4
LVV					*e*S		**S**	**15 28 40.8 +8.6**
LVV					*e*PS		**PnS**	**15 29 19.6 +5.1**
LVV					*e*SS		**SS**	**15 33 25.4 0.0**
LVV					MLR		MLR	
	comp=E,280nm,14.0s							
LVV					MLR		MLR	
	comp=N,530nm,15.0s							
LVV					MLR		MLR	
	comp=Z,540nm,15.0s							
GSC	**Goldstone, Bar**	**76.32**	**56**		P		**P**	**15 18 53.9 +0.7**
	baz=308							
GSC	**Goldstone, Bar**	**76.32**	**56**		*e*P		**P**	**15 18 54.3 +1.1**
GSC					pmax		pmax	
	comp=Z,6.0nm,1.1s							
GSC	**Goldstone, Bar**	**76.32**	**56**		*e*P		**P**	**15 18 54.3 +1.1**
	comp=Z,6.1nm,1.1s							
BFSC	**Mount Baldy Ra**	**76.42**	**57**		P		**P**	**15 18 54.5 +0.6**
	baz=308							
COP	**Copenhagen**	**76.50**	**333**	⇑	*i*P		**P**	**15 18 54.7 +1.0**
	comp=Z,74nm,0.9s							
GKP	**Gorka Klasztor**	**76.57**	**330**		*e*P		**P**	**15 18 55.5 +1.3**
SHPR	**Sheep Range**	**76.63**	**54**		*e*P		**P**	**15 18 56.0 +1.0**
	comp=Z,16nm,1.1s							
TUQ	**Turquoise Moun**	**76.81**	**55**		P		**P**	**15 18 56.7 +0.7**
	baz=308							
HEC	**Hector,Ludlow**	**76.92**	**56**		P		**P**	**15 18 57.7 +1.1**
	baz=306							
KWP	**Kalwaria Pacla**	**76.92**	**324**		*e*P		**P**	**15 18 58.2 +1.9**
D26A	**Manning**	**76.93**	**39**		P		**P**	**15 18 56.8 +0.5**
	baz=314							
MUD	**Monsted U'grnd**	**76.99**	**335**		*i* P		**P**	**15 18 56.6 +0.2**
	comp=Z,22nm,0.8s							
TLCR		**77.04**	**318**	⇑	*i*P		**P**	**15 18 57.4 +0.5**
TLCR		**77.04**	**318**	⇑	P		**P**	**15 18 57.4 +0.5**
CCUT	**Cedar City**	**77.09**	**52**		*e*P		**P**	**15 18 57.9 +0.2**
	comp=Z,10nm,0.9s							
BUR08	**Bucovina Ar. S**	**77.16**	**322**		*e*P		**P**	**15 18 58.3 +0.6**
BURAR	**Bucovina Array**	**77.18**	**322**	⇑	*i*P		**P**	**15 18 58.5 +0.7**
BURAR	**Bucovina Array**	**77.18**	**322**	⇑	P		**P**	**15 18 58.6 +0.8**
KSRV	**Kasrt alli**	**77.21**	**306**		*e*P		**P**	**15 18 58.6 +0.6**
MSU	**Marysvale**	**77.21**	**51**		*e*P		**P**	**15 18 59.7 +1.4**
MSU	**Marysvale**	**77.21**	**51**		*e*P		**P**	**15 18 59.7 +1.4**
SZCU	**Shurtz Canyon**	**77.24**	**52**		*e*P		**P**	**15 18 59.1 +0.6**
	comp=Z,9.5nm,0.8s							
TESR	**Tescani**	**77.24**	**320**	⇑	*i*P		**P**	**15 18 58.6 +0.5**
TMUT	**Trail Mountain**	**77.29**	**50**		*e*P		**P**	**15 19 00.6 +1.8**
GMRC	**Granite Mounta**	**77.38**	**56**		P		**P**	**15 18 59.8 +0.5**
	baz=309							
CFR	**Carcaliu**	**77.40**	**319**	⇓	*i*P		**P**	**15 18 59.2 +0.3**
CFR	**Carcaliu**	**77.40**	**319**	⇓	P		**P**	**15 18 59.2 +0.3**
P17A	**Butcher Ranch,**	**77.45**	**49**		*e*P		**P**	**15 19 00.5 +0.9**
	comp=Z,18nm,0.9s							
MTPU	**Mount Pierson**	**77.50**	**51**		*e*P		**P**	**15 19 01.6 +1.5**
	comp=Z,12nm,0.9s							
LCMT	**Little Creek M**	**77.51**	**52**		*e*P		**P**	**15 19 01.2 +1.3**
	comp=Z,16nm,0.9s							
PFO	**Pinyon Flats O**	**77.59**	**57**		P		**P**	**15 19 01.2 +0.7**
	baz=309							
TPFO	**Pinon Flats**	**77.60**	**57**		P		**P**	**15 19 01.1 +0.6**
	baz=309							
VRI	**Vrincioaia**	**77.65**	**320**	⇑	*i*P		**P**	**15 19 01.5 +1.1**
VRI	**Vrincioaia**	**77.65**	**320**	⇑	P		**P**	**15 19 01.5 +1.1**
BELC	**Belle Mtn. Jos**	**77.65**	**56**		P		**P**	**15 19 00.6 -0.2**
	baz=309							
ULM	**Lac du Bonnet**	**77.68**	**34**		P		**P**	**15 18 59.2 -1.2**
	comp=Z,10nm,1.1s,baz=303,slow=8.3,SNR=8.0							
ULM					LR		LR	15 53 50.8
	comp=Z,71nm,21.4s,baz=314,slow=36							
ULM	**Lac du Bonnet**	**77.68**	**34**		*e*P		**P**	**15 19 00.3 -0.1**
ULM					pmax		pmax	
	comp=Z,22nm,1.4s							
ULM	**Lac du Bonnet**	**77.68**	**34**		*e*P		**P**	**15 19 00.3 -0.1**
	comp=Z,22nm,1.4s							
JHLN	**Al Jahlan**	**77.68**	**306**		*e*P		**P**	**15 18 59.3 -1.5**
PLOR	**Plostina**	**77.70**	**320**	⇑	*i*P		**P**	**15 19 01.7 +1.0**
PLOR	**Plostina**	**77.70**	**320**	⇑	P		**P**	**15 19 01.7 +1.0**
STHS	**Stebnicka Huta**	**77.74**	**325**		*e*P		**P**	**15 19 02.3 +1.5**
STHS					*e*PP		**PP**	**15 21 55.7 -0.3**
OJC	**Ojcow**	**77.79**	**326**		*e*P		**P**	**15 19 02.1 +1.0**
OJC	**Ojcow**	**77.79**	**326**		*e*P		**P**	**15 19 01.6 +0.6**
OJC					pmax		pmax	
	comp=Z,88nm,1.1s							
OJC	**Ojcow**	**77.79**	**326**		*e*P		**P**	**15 19 01.6 +0.6**
	comp=Z,88nm,1.1s							
SRU	**San Rafael Swe**	**77.81**	**49**		*e*P		**P**	**15 19 02.3 +0.6**
SRU					pmax		pmax	
	comp=Z,21nm,0.8s							
SRU	**San Rafael Swe**	**77.81**	**49**		*e*P		**P**	**15 19 02.3 +0.6**
	comp=Z,21nm,0.8s							
UZH	**Uzhgorod**	**77.83**	**324**	⇑	*i*P		**P**	**15 19 01.5 +0.2**
UZH					*e*			15 19 14.7
UZH					*e*			15 19 20.1
HARR	**Harsova**	**77.84**	**318**	⇓	*i*P		**P**	**15 19 02.4 +1.0**
HARR	**Harsova**	**77.84**	**318**	⇓	P		**P**	**15 19 02.4 +1.0**
TLB	**Topalu**	**77.85**	**318**	⇑	*i*P		**P**	**15 19 02.3 +0.8**
TLB	**Topalu**	**77.85**	**318**	⇑	P		**P**	**15 19 02.4 +0.9**
GRER		**77.86**	**319**	⇑	*i*P		**P**	**15 19 03.8 +2.3**
MMU	**Miners Mountai**	**77.94**	**51**		*e*P		**P**	**15 19 04.1 +1.7**
H25A	**Fruitdale**	**78.00**	**42**		P		**P**	**15 19 04.0 +1.6**
	baz=314							
BR131	**Keskin Array S**	**78.01**	**312**		*e*P		**P**	**15 19 02.8 +0.1**
BRTR	**Keskin Array B**	**78.01**	**312**		P		**P**	**15 19 03.2 +0.6**
	comp=Z,9.6nm,0.7s,baz=88,slow=4.1,SNR=45							
BRTR					PP		**PP**	**15 21 59.0 +0.3**
	comp=Z,11nm,1.1s,baz=85,slow=5.2,SNR=9.0							
BRTR					LR		LR	15 58 46.9
	comp=Z,107nm,19.6s,baz=50,slow=40							
CRVS	**Cervenica-Dubn**	**78.02**	**325**		*e*P		**P**	**15 19 03.0 +0.6**
CRVS					*e*PP		**PP**	**15 21 59.4 +1.1**
MONP2	**Monument Peak**	**78.06**	**57**		P		**P**	**15 19 03.5 +0.3**
	baz=309							
TRPA	**Tarpa**	**78.08**	**323**	⇑	*e*P		**P**	**15 19 03.9 +1.2**
IRM	**Iron Mountain**	**78.11**	**56**		P		**P**	**15 19 03.9 +0.8**
	baz=309							
RSSD	**Black Hills**	**78.11**	**42**		P		**P**	**15 19 03.8 +0.5**
	baz=313							
NIE	**Niedzica**	**78.16**	**325**		*e*P		**P**	**15 19 04.6 +1.4**
BC3	**Big Chuckawall**	**78.22**	**56**		P		**P**	**15 19 04.7 +0.8**
	baz=309							
DOPR	**Dopca**	**78.25**	**320**	⇑	*i*P		**P**	**15 19 05.0 +1.3**
ISR	**Istrita**	**78.26**	**319**	⇑	*i*P		**P**	**15 19 05.3 +1.5**
ISR	**Istrita**	**78.26**	**319**	⇑	P		**P**	**15 19 05.3 +1.5**
MLR	**Muntele Rosu**	**78.30**	**320**	⇑	*i*P		**P**	**15 19 04.8 +0.6**
MLR	**Muntele Rosu**	**78.30**	**320**	⇑	P		**P**	**15 19 04.8 +0.6**
MLR	**Muntele Rosu**	**78.30**	**320**		*e*P		**P**	**15 19 04.5 +0.3**
	comp=Z,48nm,1.3s							
IKP	**In-Ko-Pah, Jac**	**78.42**	**57**		P		**P**	**15 19 05.7 +0.7**
	baz=309							
BR231	**Keskin MP Arra**	**78.43**	**312**		*e*P		**P**	**15 19 03.6 -1.3**
U15A	**North Rim**	**78.47**	**52**		*e*P		**P**	**15 19 06.6 +1.2**
	comp=Z,15nm,1.1s							
O20A	**White River Ci**	**78.48**	**47**		P		**P**	**15 19 06.3 +1.0**
	baz=312							
O20A	**White River Ci**	**78.48**	**47**		*e*P		**P**	**15 19 04.7 -0.6**
	comp=Z,9.9nm,0.8s							
SECR		**78.56**	**319**	⇓	*i*P		**P**	**15 19 07.0 +1.6**
CJR	**Cluj-Napoca**	**78.59**	**322**	⇑	*i*P		**P**	**15 19 07.2 +1.6**
CJR	**Cluj-Napoca**	**78.59**	**322**	⇑	P		**P**	**15 19 07.2 +1.6**
C31A	**Landman Farms,**	**78.64**	**36**		P		**P**	**15 19 05.8 0.0**
	baz=317							
PDMCI	**Parker Dam,Lak**	**78.66**	**55**		P		**P**	**15 19 07.2 +1.1**
	baz=310							
LANS	**Liptovska Anna**	**78.72**	**326**		*e*P		**P**	**15 19 08.1 +1.8**
LANS					*e*PP		**PP**	**15 22 05.6 +1.4**
B32A	**Ashes, Strandq**	**78.75**	**35**		P		**P**	**15 19 06.3 -0.1**
	baz=317							
Y12C	**Blythe**	**78.76**	**56**		P		**P**	**15 19 08.0 +1.2**
	baz=309							
Y12C	**Blythe**	**78.76**	**56**		*e*P		**P**	**15 19 07.7 +1.0**
	comp=Z,11nm,0.9s							
KECS	**Kecovo**	**78.76**	**325**		*e*P		**P**	**15 19 07.3 +0.8**
KECS					*e*pP		**pP**	**15 19 23.2 +2.5**
KECS					*e*sP		**sP**	**15 19 27.6 +1.3**
KECS					*e*PP		**PP**	**15 22 04.6 +0.1**
OKC	**Ostrava-Krasne**	**78.78**	**327**	⇑	*e*P		**P**	**15 19 07.5 +1.0**
OKC					*e*pP		**pP**	**15 19 23.0 +2.2**
OKC					AMS		AMS	15 56 40.0
	comp=Z,500nm,17.6s							
VOIR		**78.79**	**320**	⇑	*i*P		**P**	**15 19 07.9 +1.1**
VOIR		**78.79**	**320**	⇑	P		**P**	**15 19 07.9 +1.1**
KSP	**Ksiaz**	**78.80**	**328**		*e*P		**P**	**15 19 07.7 +1.1**
A33A	**Warroad**	**78.86**	**35**		P		**P**	**15 19 06.9 -0.1**
	baz=318							
DRGR		**78.96**	**322**	⇑	*i*P		**P**	**15 19 08.5 +0.8**
DRGR		**78.96**	**322**	⇑	P		**P**	**15 19 08.5 +0.8**
GLA	**Glamis**	**79.01**	**56**		P		**P**	**15 19 09.2 +1.1**
	baz=309							
PV09	**Paradox Valley**	**79.04**	**49**		*e*P		**P**	**15 19 09.5 +1.0**
ARR	**Arges**	**79.05**	**320**	⇓	*i*P		**P**	**15 19 10.2 +2.0**
F29A	**Eureka**	**79.05**	**39**		P		**P**	**15 19 08.7 +0.6**
	baz=316							
MORC	**Moravsky Berou**	**79.09**

PRU **Pruhonice** 80.17 329⇑ *e*P P 15 19 15.1 +1.0
PRU *e*PCP PcP 15 19 21.4 +0.2
PRU *ep*P pP 15 19 30.5 +2.1
PRU AMS AMS 15 57 30.0
comp=Z,600nm,19.3s
ISCO **Idaho Springs** 80.20 46 P P 15 19 15.2 +0.3
baz=313
ISCO **Idaho Springs** 80.20 46 *e*P P 15 19 14.4 -0.5
ISCO pmax pmax
comp=Z,7.0nm,0.9s
ISCO **Idaho Springs** 80.20 46 *e*P P 15 19 14.4 -0.5
comp=Z,7.2nm,0.9s
MVCO **Mesa Verde** 80.26 50 P P 15 19 16.1 +1.0
baz=312
MVCO **Mesa Verde** 80.26 50 *e*P P 15 19 15.6 +0.5
comp=Z,9.9nm,0.8s
G31A **Conde** 80.28 39 P P 15 19 15.7 +0.9
baz=317
X16A **Lo Mia Camp, P** 80.30 54 *e*P P 15 19 16.5 +1.2
comp=Z,8.5nm,0.9s
TREC **Trest** 80.32 328⇑ *e*P P 15 19 16.0 +1.1
TREC *ep*P pP 15 19 32.5 +3.2
TREC AMS AMS 15 57 40.0
comp=Z,500nm,19.1s
BZS **Buzias** 80.34 322⇑ *i*P P 15 19 15.3 +0.2
BZS **Buzias** 80.34 322 ⇑P P 15 19 15.3 +0.2
E33A **Westby DABS, E** 80.39 36 P P 15 19 16.0 +0.7
baz=318
C35A **Jirik Farms, M** 80.41 35 P P 15 19 15.5 0.0
baz=319
CSKK **Cs˙ákako** 80.60 325⇑ *e*P P 15 19 10.2 -6.2
G32A **Webster** 80.60 38 P P 15 19 16.8 +0.3
baz=317
SALA **Sala** 80.66 305 *e*P P 15 19 17.5 +0.3
F33A **5 Mile Ranch,** 80.75 37 P P 15 19 17.6 +0.3
baz=318
NKC **Novy Kostel** 80.81 330⇑ *e*P P 15 19 18.3 +0.7
NKC *e*PCP PcP 15 19 22.1 -2.0
NKC *ep*P sP 15 19 35.3 -2.1
NKC AMS AMS 15 58 10.0
comp=Z,500nm,15.2s
D35A **Remer** 80.85 35 P P 15 19 17.9 +0.1
baz=319
C36A **Pine Crest Far** 80.87 34 P P 15 19 18.1 +0.2
baz=320
S22A **4UR Ranch, Cre** 80.89 49 P P 15 19 19.8 +1.2
baz=313
S22A **4UR Ranch, Cre** 80.89 49 *e*P P 15 19 19.8 +1.2
comp=Z,11nm,1.2s
ASF **Jabal al Asfar** 80.90 304 LR LR 15 58 57.4
comp=Z,190nm,19.8s,slow=38
MDVR **Moldovita** 80.90 322⇑ *i*P P 15 19 18.7 +0.5
X18A **Snowflake** 81.15 53 *e*P P 15 19 20.9 +1.0
comp=Z,6.1nm,0.9s
G33A **Ortonville** 81.15 38 P P 15 19 20.1 +0.6
baz=318
D36A **Goodland** 81.17 35 P P 15 19 19.3 -0.2
baz=320
C37A **Embarrass** 81.18 34 P P 15 19 19.0 -0.5
baz=320
CONA **Conrad Observa** 81.22 327 *i*P P 15 19 21.0 +1.2
comp=Z,17nm,0.9s,SNR=20
KHC **Kasperske Hory** 81.23 329⇑ *i*P P 15 19 20.9 +1.1
KHC *e*PCP PcP 15 19 26.6 +0.6
KHC *ep*P pP 15 19 36.2 +2.0
KHC *ex* x 15 22 10.7
KHC AMS AMS 15 58 10.0
comp=Z,700nm,18.8s
KHC **Kasperske Hory** 81.23 329 *e*P P 15 19 20.4 +0.6
KHC pmax pmax
comp=Z,16nm,1.0s
KHC **Kasperske Hory** 81.23 329 *e*P P 15 19 20.4 +0.6
comp=Z,16nm,1.0s
F34A **Alexandria** 81.26 37 P P 15 19 20.5 +0.4
baz=318
EYMN **Ely** 81.31 33 P P 15 19 20.1 -0.1
baz=321
EYMN **Ely** 81.31 33 *e*P P 15 19 19.9 -0.3
comp=Z,23nm,1.2s
MMAI **Mount Meron Ar** 81.31 305 LR LR 15 59 03.3
comp=Z,138nm,19.6s,baz=65,slow=38
CSS **Mathiatis** 81.33 308 *e*P P 15 19 20.5 -0.1
comp=Z,5.6nm,0.8s
H33A **Prehn Over Nor** 81.39 38 P P 15 19 21.3 +0.5
baz=318
GEC2 **GERESS Array S** 81.41 328 *e*P P 15 19 20.9 +0.1
GEC2 pmax pmax
comp=Z,26nm,1.2s
GEC2 **GERESS Array S** 81.41 328 *e*P P 15 19 20.9 +0.1
comp=Z,26nm,1.2s
GERES **GERESS Array B** 81.41 328 P P 15 19 21.3 +0.4
comp=Z,10nm,0.8s,baz=35,slow=4.9,SNR=69
GERES PP PP 15 22 23.5 -3.0
comp=Z,1.9nm,0.9s,baz=33,slow=8.1,SNR=3.4
GEA0 **GERESS Array S** 81.41 328 *e*P P 15 19 20.8 -0.1
J31A **Geddes** 81.42 40 P P 15 19 21.3 +0.4
baz=317
K30A **Basset** 81.42 41 P P 15 19 21.8 +0.8
baz=316
G34A **Benson** 81.50 37 P P 15 19 21.7 +0.5
baz=318
I32A **Karley and Nic** 81.52 39 P P 15 19 21.0 -0.4
baz=317
EKA **Eskdalemuir Ar** 81.56 341 LR LR 15 59 51.9
comp=Z,232nm,19.1s,baz=0.0,slow=39
C38A **Sawbill Land.** 81.58 33 P P 15 19 21.5 -0.1
baz=321
E36A **McGregor** 81.63 35 P P 15 19 21.8 -0.2
baz=320
SDCO **Great Sand Dun** 81.66 48 P P 15 19 22.9 +0.2
baz=313
SDCO **Great Sand Dun** 81.66 48 *e*P P 15 19 22.2 -0.5
comp=Z,4.7nm,1.0s
GRFO **Grafenberg** 81.72 330 *e*P P 15 19 23.0 +0.6
GRFO pmax pmax
comp=Z,68nm,1.0s
GRFO **Grafenberg** 81.72 330 *e*P P 15 19 23.0 +0.6
comp=Z,68nm,1.0s
VTS **Vitosha** 81.75 319 P P 15 19 23.8 +1.0
VTS **Vitosha** 81.75 319⇑ *i*P P 15 19 24.0 +1.2
VTS **Vitosha** 81.75 319 ⇑P P 15 19 24.0 +1.2
VTS **Vitosha** 81.75 319 *e*P P 15 19 23.5 +0.7
comp=Z,45nm,0.8s
J32A **Parkston** 81.81 40 P P 15 19 23.0 +0.1
baz=317
I33A **Coleman** 81.83 39 P P 15 19 23.6 +0.6
baz=318
H34A **Spellman Lake,** 81.86 38 P P 15 19 23.7 +0.5
baz=318
ARSA **Arzberg** 81.89 326 *i*P P 15 19 24.2 +0.9
comp=Z,11nm,1.1s,SNR=13
K31A **O'Neill** 81.90 41 P P 15 19 24.3 +0.9
baz=317
MOA **Molln** 81.95 327 *i*P P 15 19 24.6 +1.0
comp=Z,8.0nm,0.8s,SNR=11
TUC **Tucson** 82.09 55 P P 15 19 25.7 +1.0
baz=311
TUC **Tucson** 82.09 55 *e*P P 15 19 25.9 +1.2
TUC pmax pmax
comp=Z,16nm,1.7s
TUC **Tucson** 82.09 55 *e*P P 15 19 25.9 +1.2
comp=Z,16nm,1.7s
ECSD **EROS Data Cent** 82.15 39 P P 15 19 24.9 +0.2
baz=318
ECSD **EROS Data Cent** 82.15 39 *e*P P 15 19 24.8 0.0
comp=Z,18nm,1.1s
DIVS **Divibare** 82.24 322 P P 15 19 25.5 +0.2
J33A **Davis** 82.28 39 P P 15 19 25.8 +0.4
baz=318
H35A **Sunnyside Ranc** 82.28 37 P P 15 19 26.0 +0.6
baz=319
I34A **Hadley** 82.29 38 P P 15 19 25.9 +0.4
baz=318
PERS **Pernice** 82.54 326 *e*P P 15 19 27.4 +0.6
SOKA **Soboth** 82.54 326 *i*P P 15 19 27.6 +0.7
comp=Z,39nm,1.0s,SNR=26
T25A **Trinidad** 82.71 48 P P 15 19 28.7 +0.7
baz=314
T25A **Trinidad** 82.71 48 *e*P P 15 19 27.9 -0.1
comp=Z,12nm,0.8s
M31A **Lambtecht Ranc** 82.71 42 P P 15 19 27.8 0.0
baz=317
L32A **Elgin** 82.73 41 P P 15 19 28.6 +0.8
baz=317
H36A **Jessenland, He** 82.80 37 P P 15 19 29.0 +0.9
baz=319
SPMN **Marine on St.** 82.82 36 *e*P P 15 19 27.2 -1.0

BEBN **Eben Emael** 82.84 334 P P 15 19 28.6 +0.4
comp=Z,12nm,1.2s
OBKA **Obir** 82.88 326 *i*P P 15 19 29.4 +0.7
comp=Z,6.2nm,0.6s
MEM **Membach** 82.89 334 P P 15 19 28.8 +0.4
comp=Z,14nm,1.1s
KBA **Koelnbreinsper** 82.95 327 *i*PcP P 15 19 30.8 +1.8
comp=Z,8.5nm,0.4s,SNR=10
KNT **Kendrikon** 82.95 318 P P 15 19 29.2 +0.3
LAZ **Ladron** 82.97 51 *e*P P 15 19 30.8 +1.4
VAY **Valandovo** 83.00 319 *i*P P 15 19 30.0 +0.8
ANMO **Albuquerque** 83.01 50 P P 15 19 31.5 +1.8
baz=313
ANMO **Albuquerque** 83.01 50 *e*P P 15 19 30.5 +0.9
ANMO pmax pmax
comp=Z,10.0nm,1.2s
ANMO **Albuquerque** 83.01 50 *e*P P 15 19 30.7 +1.1
comp=Z,9.3nm,1.1s
CRES **Cresnjev** 83.02 326 *e*P P 15 19 28.9 -0.3
BGNE **Belgrade** 83.09 41 *e*P P 15 19 29.8 0.0
comp=Z,34nm,0.8s
SKO **Skopje** 83.10 320 *i*P P 15 19 31.1 +1.3
MYKA **Terra Mystica** 83.17 327 *i*P P 15 19 30.3 +0.2
comp=Z,15nm,0.7s,SNR=9.3
STU **Stuttgart** 83.25 331 *e*P P 15 19 30.5 +0.2
STU pmax pmax
comp=Z,38nm,0.9s
STU **Stuttgart** 83.25 331 *e*P P 15 19 30.5 +0.2
comp=Z,38nm,0.9s
LJU **Ljubljana** 83.25 326 *i*P P 15 19 30.4 0.0
BCLA **Clavier** 83.29 334 P P 15 19 30.8 +0.3
BOJS **Bojanci** 83.36 325 *e*P P 15 19 31.2 +0.2
CWF **Charnwood Fore** 83.36 339 *e*P P 15 19 31.0 +0.2
comp=Z,32nm,1.2s
SCHQ **Schefferville** 83.42 16 P P 15 19 30.8 -0.3
comp=Z,11nm,0.8s,baz=338,slow=7.4,SNR=6.9
SCHQ LR LR 16 00 22.5
comp=Z,46nm,19.2s,baz=324,slow=38
BNM **Barren Site** 83.45 51 *e*P P 15 19 32.7 +0.8
WATA **Walderalm** 83.47 329 *i*PcP P 15 19 32.4 +0.7
comp=Z,7.0nm,0.6s,SNR=8.3
I37A **Lemond, Waseca** 83.47 37 P P 15 19 32.5 +0.9
baz=320
WTTA **Wattenberg** 83.50 329 *i*PcP P 15 19 32.8 +0.9
comp=Z,9.2nm,0.8s
J36A **Seneca 1, Swea** 83.55 38 P P 15 19 32.7 +0.7
baz=319
ABTA **Abfaltersbach** 83.56 328 *i*P P 15 19 31.7 -0.4
comp=Z,16nm,0.8s,SNR=8.2
LANF **Langenberg** 83.60 332⇑ *e*P P 15 19 32.7 +0.6
WLF **Walferdange** 83.63 333 P P 15 19 34.4 +2.1
MOTA **Moosalm** 83.66 329 *i*P P 15 19 33.2 +0.5
comp=Z,26nm,0.9s,SNR=28
319A **Douglas** 83.66 55 *e*P P 15 19 32.9 -0.1
comp=Z,19nm,0.8s
RETA **Reutte** 83.68 329 *i*PcP P 15 19 33.5 +0.9
comp=Z,37nm,0.9s,SNR=23
EIL **Elat** 83.80 303 LR LR 16 00 17.3
comp=Z,191nm,20.4s,baz=58,slow=38
DOU **Dourbes** 83.81 334 P P 15 19 33.5 +0.3
comp=Z,13nm,1.9s
121A **Cookes Peak, D** 83.83 53 P P 15 19 34.6 +0.8
baz=313
121A **Cookes Peak, D** 83.83 53 *e*P P 15 19 34.5 +0.7
comp=Z,9.0nm,0.8s
PDG **Podgorica** 83.84 321⇑ *i*P P 15 19 34.0 +0.5
TRI **Trieste** 83.85 326 *e*P P 15 19 32.2 -1.3
TRI pmax pmax
comp=Z,39nm,0.9s
TRI **Trieste** 83.85 326 *e*P P 15 19 32.1 -1.3
comp=Z,39nm,0.9s
LIT **Litokhoron** 83.93 318 P P 15 19 34.0 0.0
BFO **Black Forest** 83.94 331 *ce*P P 15 19 34.6 +0.7
BFO **Black Forest** 83.94 331 *e*P P 15 19 33.9 0.0
comp=Z,44nm,0.9s
J37A **Redenius Farm,** 83.94 37 P P 15 19 34.6 +0.7
baz=320
I38A **Scanlan Farm,** 83.95 36 P P 15 19 34.3 +0.3
baz=320
FNA **Florina** 84.01 319 P P 15 19 33.3 -1.2
K36A **Gilmore City** 84.02 38 P P 15 19 35.1 +0.7
baz=319
OHR **Ohrid** 84.06 320 *i*P P 15 19 35.0 +0.3
FETA **Feichten** 84.07 329 *i*P P 15 19 34.8 0.0
comp=Z,23nm,0.9s,SNR=20
XOR **Xorichti** 84.09 317 P P 15 19 34.4 -0.5
XOR **Xorichti** 84.09 317 P P 15 19 34.4 -0.5
CBKS **Cedar Bluff** 84.14 44 *e*P P 15 19 35.5 +0.3
CBKS pmax pmax
comp=Z,20nm,1.1s
CBKS **Cedar Bluff** 84.14 44 *e*P P 15 19 35.5 +0.3
comp=Z,20nm,1.1s
P32A **Hilting Farm,** 84.16 43 P P 15 19 34.1 -1.1
baz=317
DAVA **Damuels** 84.19 330 *i*PcP P 15 19 36.1 +0.7
comp=Z,47nm,1.0s,SNR=21
FYTO **Fytoko, Volos** 84.20 317 P P 15 19 35.1 -0.3
FYTO **Fytoko, Volos** 84.20 317 P P 15 19 35.1 -0.3
DSB **Dublin** 84.26 342 *e*P P 15 19 35.7 +0.3
comp=Z,34nm,1.0s
K37A **Belmond** 84.31 38 P P 15 19 36.3 +0.4
baz=320
N34A **Lincoln** 84.35 41 P P 15 19 36.2 +0.1
baz=318
J38A **Wedel Dairy, R** 84.44 37 P P 15 19 37.1 +0.6
baz=320
SMIA **Simia** 84.44 317 P P 15 19 36.4 -0.2
APE **Apeiranthos** 84.47 314⇑ *i*P P 15 19 33.8 -3.0
APE **Apeiranthos** 84.47 314 ⇑P P 15 19 33.8 -3.0
ECH **Echery** 84.47 332⇑ *e*P P 15 19 36.8 +0.2
KARP **Karpathos** 84.61 312 *e*P P 15 19 38.1 +0.5
comp=Z,26nm,0.9s
ATAL **Atalanti** 84.67 317 P P 15 19 37.2 -0.6
ATAL **Atalanti** 84.67 317 P P 15 19 37.2 -0.6
LKR **Lokris** 84.72 317 P P 15 19 37.1 -0.9
LKR **Lokris** 84.72 317 P P 15 19 37.1 -0.9
O34A **Beatrice** 84.74 41 P P 15 19 37.8 -0.3
baz=318
M36A **Felix, Anita** 84.74 39 P P 15 19 38.3 +0.2
baz=319
N35A **Tabor** 84.77 40 P P 15 19 38.8 +0.5
baz=319
J39A **Decorah** 84.78 36 P P 15 19 38.0 -0.2
baz=321,SNR=8.3
MOF **Molkenrain** 84.78 331⇑ *e*P P 15 19 38.6 +0.3
AGG **Agios Georgios** 84.80 317 *e*P P 15 19 37.1 -1.4
AGG pmax pmax
comp=Z,60nm,1.0s
AGG **Agios Georgios** 84.80 317 *e*P P 15 19 37.1 -1.4
comp=Z,60nm,1.0s
R32A **Long Quarter,** 84.97 43 P P 15 19 39.5 +0.2
baz=317
PPT **Papeete** 85.01 117 LR LR 15 50 20.3
comp=Z,182nm,21.4s,baz=325,slow=30
Q33A **Connelly Farm,** 85.02 43 P P 15 19 39.6 0.0
baz=318
PPT2 **Papeete2** 85.03 117 *e*S S 15 30 12.5 +7.1
comp=Z,73nm,25.0s
PPT2 **Papeete2** 85.03 117 *e*LR LR 15 46 26.8
comp=Z,574nm,24.5s,baz=306
PPT2 **Papeete2** 85.03 117 *e*T T 16 53 38.0
comp=Z,17nm,0.3s
TUE **Stuetta** 85.07 329 *e*P P 15 19 40.0 +0.1
comp=Z,29nm,0.9s
PAE **Paea** 85.07 117 *e*T T 16 53 41.0
comp=Z,2.1nm,0.3s
O35A **Humboldt** 85.08 41 P P 15 19 40.2 +0.4
baz=318
L38A **Oak Wood Farm,** 85.11 38 P P 15 19 39.9 0.0
baz=320
P34A **Walnut Farm, R** 85.14 42 P P 15 19 39.7 -0.4
baz=318
N36A **Muff Farm, Cla** 85.14 40 P P 15 19 40.4 +0.2
baz=319
M37A **Trindle Farm,** 85.14 39 P P 15 19 40.6 +0.5
baz=320
TIAR **Tiarei** 85.17 117 *e*T T 16 53 48.0
comp=Z,7.1nm,0.3s
J40A **Soldiers Grove** 85.17 36 P P 15 19 39.9 -0.3
baz=322
K39A **Oelwein** 85.18 37 P P 15 19 40.0 -0.3
baz=321,SNR=7.7
ANX **Ano Chora** 85.33 317 P P 15 19 40.7 -0.5
J41A **Loganville** 85.53 35 P P 15 19 41.8 -0.2
baz=322,SNR=5.2
K40A **Colesburg** 85.54 36 P P 15 19 41.7 -0.3
baz=321
Q34A **Chapman** 85.55 42 P P 15 19 42.0 -0.1
baz=318
N37A **Lee Faris, Mou** 85.56 39 P P 15 19 42.8 +0.6
baz=320
P35A **Duane Minner,** 85.57 41 P P 15 19 42.4 +0.1
baz=318
L39A **Vinton** 85.58 37 P P 15 19 42.7 +0.4
baz=321,SNR=12
KSU1 **Kansas State U** 85.58 42 P P 15 19 42.5 +0.1
baz=318
KSU1 **Kansas State U** 85.58 42 *e*P P 15 19 41.8 -0.6
comp=Z,12nm,0.8s
T32A **Huddler Ranch,** 85.76 44 P P 15 19 43.9 +0.6
baz=317
LAST **Lasithi** 85.85 313 *e*P P 15 19 44.2 +0.3
comp=Z,63nm,0.9s
MSTX **Muleshoe** 85.88 49 P P 15 19 44.5 +0.4
baz=315
MSTX **Muleshoe** 85.88 49 *e*P P 15 19 43.6 -0.4
comp=Z,8.9nm,0.9s
MNTX **Cornudas Mount** 85.89 52 P P 15 19 44.5 +0.5
baz=314
MNTX **Cornudas Mount** 85.89 52 *e*P P 15 19 44.0 0.0
comp=Z,10nm,1.4s
P36A **Good Intent, A** 85.92 41 P P 15 19 43.7 -0.3
baz=319
K41A **Shullsburg** 85.99 36 P P 15 19 44.3 0.0
baz=322
L40A **Anamosa** 85.99 37 P P 15 19 44.5 +0.2
baz=321,SNR=7.0
M39A **Webster** 86.00 38 P P 15 19 44.5 +0.1
baz=321,SNR=8.9
N38A **Joes South For** 86.01 39 P P 15 19 44.8 +0.4
baz=320
Q35A **Mercer Eighty,** 86.06 42 P P 15 19 45.1 +0.4
baz=318
IDI **Anoyia** 86.10 313 LR LR 16 03 21.7
comp=Z,73nm,19.1s,baz=68,slow=39
TAOE **Nuku Hiva Isla** 86.13 105 *e*LR LR 15 46 36.8
comp=Z,563nm,24.5s
MEH **Mehetia** 86.27 116 *e*T T 16 55 11.3
comp=Z,135nm,0.3s
N39A **Derby Farms, D** 86.30 38 P P 15 19 45.9 +0.1
baz=321,SNR=5.2
S34A **Willow Spring** 86.36 43 P P 15 19 47.0 +0.8
baz=318
P37A **Lathrop** 86.38 40 P P 15 19 46.5 +0.3
baz=320,SNR=6.3
R35A **Emporia Munici** 86.38 42 P P 15 19 47.2 +0.9
baz=318
VLDQ **Val d'Or** 86.53 25 *e*P P 15 19 45.6 -1.1
comp=Z,39nm,1.4s
R36A **Gordon, Harris** 86.74 42 P P 15 19 48.1 +0.1
baz=319,SNR=6.6
P38A **Dawn** 86.76 40 P P 15 19 48.5 +0.4
baz=320
V32A **Arapaho** 86.76 46 P P 15 19 49.5 +1.3
baz=317
RSL **Roselend** 86.78 330⇑ *e*P P 15 19 48.4 +0.1
S35A **Otter Creek Ra** 86.79 43 P P 15 19 48.9 +0.6
baz=318
U34A **Anderson Ranch** 87.06 44 *e*P P 15 19 49.8 +0.1
comp=Z,39nm,1.4s
R37A **Teagarden Farm** 87.10 41 P P 15 19 49.6 -0.2
baz=319,SNR=7.0
S36A **Lake Cedric, C** 87.14 42 P P 15 19 50.4 +0.4
baz=319,SNR=6.7
O40A **La Belle** 87.19 38 P P 15 19 50.1 -0.1
baz=321,SNR=10
Q38A **Cooks Store, C** 87.22 40 P P 15 19 50.5 +0.1
baz=320,SNR=6.2
P39B **Salisbury** 87.25 39 P P 15 19 50.9 +0.4
baz=320,SNR=6.4
Q39A **Willow Grove F** 87.48 40 P P 15 19 52.2 +0.6
baz=320,SNR=20
T36A **Boggs Farm, Ca** 87.49 43 P P 15 19 52.3 +0.6
baz=319
S37A **Fort Scott** 87.52 42 P P 15 19 51.7 -0.1
baz=319,SNR=7.3
V34A **Guthrie** 87.52 45 P P 15 19 52.5 +0.7
baz=318
V34A **Guthrie** 87.52 45 *e*P P 15 19 52.6 +0.7
comp=Z,34nm,1.5s
P40A **Paris** 87.56 39 P P 15 19 52.6 +0.6
baz=321,SNR=14
X32A **Elmer** 87.57 47 P P 15 19 52.9 +0.8
baz=317
WMOK **Wichita Mounta** 87.62 46 P P 15 19 53.1 +0.7
baz=317,SNR=9.2
WMOK **Wichita Mounta** 87.62 46 *e*P P 15 19 52.6 +0.2
WMOK pmax pmax
comp=Z,8.0nm,1.1s
WMOK **Wichita Mounta** 87.62 46 *e*P P 15 19 52.5 +0.2
comp=Z,7.8nm,1.1s
PLDF **La Plantade** 87.66 332 *e*P P 15 19 54.3 +1.8
R38A **Fenwick Farm,** 87.67 41 P P 15 19 52.2 -0.3
baz=320,SNR=6.4
O41A **Passleys Farm,** 87.67 38 P P 15 19 52.8 +0.3
baz=322,SNR=6.5
AGO **Saint Agoulin** 87.77 333 *e*P P 15 19 54.7 +1.8
P41A **Barry, Barry** 87.93 38 P P 15 19 54.3 +0.5
baz=322,SNR=9.6
T37A **Cheneyville 18** 87.95 42 P P 15 19 53.9 0.0
baz=319,SNR=6.4
Q40A **Laux Farm, Aux** 87.96 39 P P 15 19 54.1 +0.1
baz=321,SNR=8.6
R39A **Chumby, Stover** 88.01 40 P P 15 19 54.2 +0.1
baz=320,SNR=10
HDIL **Hopedale** 88.08 37 *e*P P 15 19 54.6 +0.2
comp=Z,40nm,1.0s
S38A **Stockton** 88.09 41 P P 15 19 54.4 -0.1
baz=320,SNR=5.1
S39A **Bolivar** 88.34 41 P P 15 19 55.4 -0.3
baz=320,SNR=9.3
T38A **Diamond** 88.34 42 P P 15 19 56.0 +0.2
baz=320,SNR=15
P42A **Winchester** 88.34 38 P P 15 19 56.2 +0.5
baz=322,SNR=7.4
U37A **Salina** 88.39 43 P P 15 19 56.3 +0.3
baz=319,SNR=5.5
TUL1 **Leonard** 88.40 43 *e*P P 15 19 56.3 +0.3
comp=Z,7.6nm,0.8s
R40A **Maddies Statio** 88.41 40 P P 15 19 56.2 +0.2
baz=321,SNR=9.8
TX31 **Lajitas Ar. Si** 88.59 53 *e*P P 15 19 57.6 +0.5
TXAR **Lajitas Array** 88.59 53 P P 15 19 57.8 +0.6
comp=Z,2.4nm,0.6s,baz=295,slow=3.1,SNR=34
TXAR LR LR 15 57 47.5
comp=Z,71nm,19.5s,baz=0.0,slow=34
ABTX **Abilene, Hawle** 88.67 48 *e*P P 15 19 58.1 +0.7
comp=Z,14nm,1.1s
CEL **Celeste** 88.68 321 *e*P P 15 19 57.5 +0.1
comp=Z,30nm,0.8s
U38A **Gravette** 88.74 42 P P 15 19 57.8 +0.2
baz=320,SNR=7.9
V37A **Hulbert** 88.77 43 P P 15 19 58.2 +0.4
baz=319,SNR=8.4
Q42A **Golden Eagle** 88.78 38 P P 15 19 58.6 +0.8
baz=322,SNR=5.3
T39A **Clever** 88.82 41 P P 15 19 58.1 +0.1
baz=320
S40A **Lebanon** 88.83 40 P P 15 19 58.1 +0.1
baz=321,SNR=7.1
X35A **Drake** 88.88 45 P P 15 19 58.9 +0.5
baz=318
TBI **Tubuai** 89.04 121 *e*S S 15 30 47.7 +4.0
comp=Z,66nm,23.8s
TBI **Tubuai** 89.04 121 *e*LR LR 15 47 53.3
comp=Z,301nm,22.5s,baz=309
TBI **Tubuai** 89.04 121 *e*T T 16 58 36.7
comp=Z,118nm,0.3s
X36A **Centrahoma** 89.09 45 P P 15 19 59.9 +0.6
baz=318
HHAR **Hobbs** 89.10 42 *e*P P 15 19 59.0 -0.3
comp=Z,8.4nm,0.9s
Z34A **Collier Ranch,** 89.11 46 P P 15 19 59.9 +0.5
baz=318
TRQ **Mont Tremblant** 89.14 24 *e*P P 15 19 59.4 0.0
AAM **Ann Arbor** 89.14 32 *e*P P 15 20 00.0 +0.6
AAM **Ann Arbor** 89.14 32 *e*P P 15 19 60.0 +0.6
T40A **Mansfield** 89.17 41 P P 15 19 59.7 0.0
baz=321,SNR=5.2
V38A **Canehill** 89.17 43 P P 15 19 59.9 +0.2
baz=320,SNR=13
S41A **Jillco Farms,** 89.22 40 P P 15 20 00.0 +0.2
baz=321,SNR=7.3
LMQ **La Malbaie** 89.23 21 *e*P P 15 19 59.8 +0.1

U39A	**Green Forest**	**89.26**	**42**	P		**P**	**15 20 00.5**	**+0.4**
	baz=320,SNR=14							
Z35A	**Perchaven, San**	**89.51**	**46**	P		**P**	**15 20 01.8**	**+0.5**
	baz=318							
Q44A	**Meyer Farm, Va**	**89.52**	**37**	P		**P**	**15 20 02.0**	**+0.8**
	baz=323							
233A	**Rising Star**	**89.54**	**48**	P		**P**	**15 20 02.3**	**+0.8**
	baz=317,SNR=6.4							
V39A	**Pettigrew**	**89.59**	**42**	P		**P**	**15 20 01.7**	**0.0**
	baz=320							
U40A	**Yellville**	**89.61**	**41**	P		**P**	**15 20 01.9**	**+0.2**
	baz=320,SNR=16							
X37A	**Clayton**	**89.61**	**44**	P		**P**	**15 20 02.3**	**+0.6**
	baz=319							
T41A	**Mountain View**	**89.63**	**40**	P		**P**	**15 20 02.1**	**+0.3**
	baz=321,SNR=13							
Y36A	**Durant**	**89.63**	**45**	P		**P**	**15 20 02.5**	**+0.7**
	baz=318							
W38A	**Poteau**	**89.71**	**43**	P		**P**	**15 20 03.1**	**+0.9**
	baz=320							
X38A	**Whitesboro**	**89.85**	**44**	P		**P**	**15 20 03.6**	**+0.8**
	baz=319,SNR=5.4							
ATD	**Arta Tunnel**	**89.90**	**285**	LR		LR	16 03 48.1	
	comp=Z,70nm,20.3s,baz=94,slow=38							
234A	**Clairette**	**89.99**	**47**	P		**P**	**15 20 04.5**	**+0.9**
	baz=318,SNR=7.1							
333A	**Richland Sprin**	**89.99**	**48**	P		**P**	**15 20 04.2**	**+0.6**
	baz=317,SNR=10							
R44A	**Waltonville**	**90.00**	**38**	P		**P**	**15 20 03.6**	**+0.1**
	baz=323							
W39A	**Magazine**	**90.01**	**43**	P		**P**	**15 20 04.0**	**+0.4**
	baz=320							
VAE	**Valguarnera**	**90.03**	**321**	LR		LR	16 05 52.1	
	comp=Z,344nm,18.4s,baz=86,slow=39							
V40A	**Witts Springs**	**90.04**	**42**	P		**P**	**15 20 03.7**	**-0.1**
	baz=320							
OLIL	**Olney**	**90.08**	**37**	*e*P		**P**	**15 20 04.3**	**+0.4**
	comp=Z,22nm,0.9s							
U41A	**Viola**	**90.09**	**41**	P		**P**	**15 20 04.2**	**+0.2**
	baz=321							
JCT	**Junction City**	**90.12**	**50**	*e*P		**P**	**15 20 04.3**	**0.0**
JCT				pmax		pmax		
	comp=Z,10.0nm,0.8s							
JCT	**Junction City**	**90.12**	**50**	*e*P		**P**	**15 20 04.3**	**0.0**
	comp=Z,9.9nm,0.8s							
433A	**Art**	**90.34**	**49**	P		**P**	**15 20 05.8**	**+0.5**
	baz=317							
X39A	**Fountain Ranch**	**90.35**	**43**	P		**P**	**15 20 06.3**	**+1.1**
	baz=320,SNR=6.3							
SIUC	**Southern Illin**	**90.36**	**38**	*e*P		**P**	**15 20 04.5**	**-0.7**
W40A	**Ferguson Farm,**	**90.39**	**42**	P		**P**	**15 20 05.6**	**+0.3**
	baz=320,SNR=5.8							
V41A	**Mountainview**	**90.40**	**41**	P		**P**	**15 20 05.5**	**+0.1**
	baz=321,SNR=9.2							
334A	**Lometa**	**90.42**	**48**	P		**P**	**15 20 06.1**	**+0.5**
	baz=318,SNR=7.5							
PBMO	**Poplar Bluff**	**90.50**	**40**	*e*P		**P**	**15 20 06.3**	**+0.4**
	comp=Z,22nm,1.0s							
MIAR	**Mount Ida**	**90.61**	**43**	P		**P**	**15 20 07.1**	**+0.6**
	baz=320,SNR=11							
MIAR	**Mount Ida**	**90.61**	**43**	*e*P		**P**	**15 20 07.0**	**+0.6**
MIAR				pmax		pmax		
	comp=Z,14nm,0.9s							
MIAR	**Mount Ida**	**90.61**	**43**	*e*P		**P**	**15 20 07.0**	**+0.6**
	comp=Z,14nm,0.9s							
X201	**Greenbrier Sit**	**90.68**	**42**	*e*P		**P**	**15 20 06.7**	**-0.1**
	comp=Z,16nm,1.0s							
X301	**Greenbrier Sit**	**90.70**	**42**	*e*P		**P**	**15 20 06.8**	**0.0**
	comp=Z,11nm,1.0s							
WHAR	**Wooly Hollow**	**90.72**	**42**	*e*P		**P**	**15 20 06.7**	**-0.2**
	comp=Z,18nm,0.9s							
V42A	**Cord**	**90.78**	**41**	P		**P**	**15 20 07.1**	**0.0**
	baz=321,SNR=6.0							
434A	**Burnet**	**90.78**	**48**	P		**P**	**15 20 07.6**	**+0.3**
	baz=317							
W41B	**Gary Mavity, V**	**90.83**	**42**	P		**P**	**15 20 07.6**	**+0.2**
	baz=321							
533A	**Kerrville**	**90.88**	**49**	P		**P**	**15 20 08.4**	**+0.6**
	baz=317							
H06E1	**SOCORRO T-PHAS**	**90.93**	**65**	T		T	17 02 07.8	
	SNR=5.2							
MMNY	**Mt. Morris Dam**	**91.03**	**28**	*e*P		**P**	**15 20 08.5**	**+0.3**
X40A	**Basin Creek Fa**	**91.05**	**43**	P		**P**	**15 20 09.2**	**+0.7**
	baz=320							
ACSO	**Alum Creek Sta**	**91.14**	**33**	*e*P		**P**	**15 20 09.2**	**+0.4**
	comp=Z,20nm,1.0s							
534A	**Blanco**	**91.24**	**49**	P		**P**	**15 20 09.9**	**+0.4**
	baz=317,SNR=6.5							
NCB	**Newcomb**	**91.24**	**25**	*e*P		**P**	**15 20 09.3**	**+0.1**
	comp=Z,0.3nm,1.4s							
KEST	**Kesra**	**93.86**	**323**	P		**P**	**15 20 21.4**	**-0.1**
	comp=Z,5.8nm,0.9s,baz=220,slow=5.9,SNR=4.6							
KEST				LR		LR	16 07 37.9	
	comp=Z,599nm,18.1s,baz=305,slow=39							
TKL	**Tuckaleechee C**	**94.59**	**36**	*e*P		**P**	**15 20 24.9**	**+0.1**
TKL				pmax		pmax		
	comp=Z,19nm,1.3s							
TKL	**Tuckaleechee C**	**94.59**	**36**	*e*P		**P**	**15 20 24.9**	**+0.1**
	comp=Z,19nm,1.3s							
ES19	**SONSECA Array**	**95.81**	**334**	*e*P		**P**	**15 20 30.1**	**-0.2**
ESDC	**Sonseca Array**	**95.85**	**334**	P		**P**	**15 20 29.8**	**-0.7**
	comp=Z,2.7nm,0.8s,baz=20,slow=4.0,SNR=13							
ESDC				LR		LR	16 08 43.2	
	comp=Z,280nm,18.9s,baz=30,slow=38							
RKT	**Rikitea**	**98.98**	**112**	*e*LR		LR	15 53 02.8	
	comp=Z,367nm,27.0s,baz=313							
KMBO	**Kilima Mbogo**	**102.22**	**279**	P		**Pdif**	**15 20 59.7**	**0.0**
	comp=Z,2.4nm,0.8s,baz=45,slow=16,SNR=4.6							
SDV	**Santo Domingo**	**123.58**	**40**	*e*PKPdf		**PKPdf**	**15 26 01.9**	**-0.1**
DBIC	**Dimbokro**	**125.27**	**318**	PKP		**PKPdf**	**15 26 04.7**	**-0.4**
	comp=Z,5.7nm,0.7s,baz=35,slow=4.9,SNR=5.2							
LBTB	**Lobatse**	**125.34**	**265**	*e*PKIKP		**PKPdf**	**15 26 04.9**	**0.0**
LBTB	**Lobatse**	**125.34**	**265**	*e*PKPdf		**PKPdf**	**15 26 04.9**	**0.0**
TIC	**Toumodi**	**125.38**	**319**	*e*PKIKP		**PKPdf**	**15 26 04.6**	**-0.7**
KIC	**Kosan Boka**	**125.47**	**318**	*e*PKIKP		**PKPdf**	**15 26 05.0**	**-0.4**
	comp=Z,159nm,2.1s							
LIC	**Lamto**	**125.73**	**318**	*e*PKIKP		**PKPdf**	**15 26 05.4**	**-0.5**
	comp=Z,47nm,1.4s							
BOSA	**Boshof**	**127.39**	**261**	PKP		**PKPdf**	**15 26 09.2**	**+0.4**
	comp=Z,4.4nm,0.7s,baz=57,slow=2.9,SNR=7.8							
BOSA				PKKP		**PKKPdf**	**15 36 20.1**	**-0.5**
	comp=Z,3.4nm,1.1s,baz=150,slow=8.9,SNR=3.6							
TSUM	**Tsumeb**	**128.46**	**276**			**PKPdf**	**15 26 11.9**	**+0.8**
PTGA	**Pitinga**	**137.00**	**33**	*e*PKPdf		**PKPdf**	**15 26 28.0**	**+0.8**
SAML	**Samuel**	**142.56**	**44**	*e*PKPpre		PKPpre	15 26 29.5	
SNAA	**Sanae**	**142.67**	**197**	*e*PKHKP		PKPpre	15 26 30.8	
SNAA	**Sanae**	**142.67**	**197**	*e*PKPpre		PKPpre	15 26 30.8	
LPAZ	**La Paz**	**145.30**	**58**	PKPbc		**PKPbc**	**15 26 42.1**	**-0.4**
	comp=Z,6.8nm,0.7s,baz=338,slow=3.6,SNR=29							
LPAZ	**La Paz**	**145.30**	**58**	*e*PKPbc		**PKPbc**	**15 26 42.4**	**-0.2**
PB11	**IPOC Station P**	**146.66**	**64**	*e*PKPdf		**PKPbc**	**15 26 45.4**	**-0.6**
PB01	**IPOC Station P**	**147.61**	**66**	*e*PKPdf		**PKPbc**	**15 26 47.3**	**-1.3**
LVC	**Limon Verde**	**149.02**	**67**	PKPbc		**PKPbc**	**15 26 52.9**	**+0.4**
	comp=Z,29nm,0.9s,baz=272,slow=6.5,SNR=4.9							
SIV	**San Ignacio**	**149.48**	**48**	PKPbc		**PKPbc**	**15 26 53.5**	**0.0**
	comp=Z,7.0nm,0.6s,baz=349,slow=1.5,SNR=5.2							
PMSA	**Palmer Station**	**149.91**	**158**	PKPbc		**PKPbc**	**15 26 52.1**	**-0.8**
	comp=Z,10.0nm,0.9s,baz=153,slow=16,SNR=4.4							
PMSA				PKPab		**PKPab**	**15 26 59.6**	**+0.9**
	comp=Z,13nm,1.0s,baz=346,slow=4.8,SNR=5.8							
LCO	**Las Campanas**	**151.22**	**80**	*e*PKPbc		**PKPbc**	**15 26 56.8**	**-0.8**

MAN ***24*** *15:14:10, 13.70N×120.35E, h100km, mb4.5, ML3.4, MS3.3*
IDC ***24*** *15:14:10.8±0.5, 13.72N×120.85E, h124km±3km, mb3.6/16, mb1 3.7/16, mb1mx3.4/42, mbtmp3.9/16, Error ellipse: s-maj=20.4km s-min=10.0km az=70.0*
ISC 24 15:14:09.0±0.7, 13.59N±0.07×120.37E±0.09, h100km, n22, σ2s99/28, mb4.0/16**, 1C-4D, Mindoro**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PGP	**Puerto Galera**	**0.57**	**98**	‖*i*P		**Pn**	**15 14 29.4**	**+4.0**
PGP				*i* S		**Sn**	**15 14 42.0**	**+4.4**
TGY	**Tagaytay City**	**0.75**	**47**	P		**Pn**	**15 14 30.5**	**+3.5**
	764nm,0.3s,baz=248,slow=2.5,SNR=51							
TGY				S		**Sn**	**15 14 43.6**	**+3.1**
	2μm,0.3s,baz=342,slow=20,SNR=67							
TGY	**Tagaytay City**	**0.75**	**47**	⇑*i*P		**Pn**	**15 14 30.4**	**+3.5**
TGY				*i* S		**Sn**	**15 14 44.4**	**+3.9**
LQP	**Lukban**	**1.25**	**65**	‖*i*P		**Pn**	**15 14 34.9**	**+2.4**
GQP	**Guinayangan**	**2.04**	**81**	‖*e*P		**Pn**	**15 14 44.4**	**+2.3**
PCPH	**Palayan**	**2.08**	**20**	‖*e*P		**Pn**	**15 14 42.9**	**+0.2**
PCPH				*e*S		**Sn**	**15 15 13.0**	**+4.6**
CMAR	**Chiang Mai Arr**	**21.15**	**286**	P		**P**	**15 18 50.7**	**+4.4**

	2.0nm,0.8s,baz=94,slow=7.0,SNR=7.6							
PSI	**Prapat**	**23.75**	**245**	P		**P**	**15 19 15.9**	**+3.3**
	3.0nm,0.4s,baz=63,slow=4.5,SNR=3.4							
KSRS	**Korea Array**	**24.70**	**14**	P		**P**	**15 19 18.4**	**-2.4**
	0.7nm,0.8s,baz=188,slow=1.7,SNR=4.0							
MJAR	**Matsushiro Arr**	**27.89**	**32**	P		**P**	**15 19 45.5**	**-4.1**
	0.2nm,0.3s,baz=209,slow=19,SNR=4.1							
WRA	**Warramunga Arr**	**36.04**	**157**	P		**P**	**15 20 59.9**	**-1.1**
	0.4nm,0.3s,baz=341,slow=9.1,SNR=9.3							
WRA				S		**S**	**15 26 27.4**	**-5.5**
	0.3nm,0.8s,baz=344,slow=15,SNR=3.0							
SONM	**Songino Array**	**36.08**	**344**	P		**P**	**15 21 01.0**	**-0.2**
	2.4nm,0.8s,baz=162,slow=11,SNR=8.6							
KLR	**Kul'dur**	**36.76**	**12**	P		**P**	**15 21 04.8**	**-1.9**
	1.4nm,0.5s,baz=235,slow=6.1,SNR=4.6							
ASAR	**Alice Springs**	**39.32**	**160**	P		**P**	**15 21 29.3**	**+0.7**
	0.7nm,0.4s,baz=335,slow=7.9,SNR=12							
ASAR				S		**S**	**15 27 20.3**	**-2.1**
	0.1nm,0.8s,baz=339,slow=12,SNR=4.3							
MKAR	**Makanchi Array**	**45.93**	**324**	P		**P**	**15 22 23.0**	**+1.1**
	1.8nm,0.7s,baz=123,slow=8.8,SNR=5.8							
ZALV	**Zalesovo Beam**	**49.01**	**333**	P		**P**	**15 22 45.4**	**-0.1**
	1.6nm,0.3s,baz=122,slow=6.8,SNR=9.7							
KURBB	**Kurchatov Arra**	**50.10**	**326**	P		**P**	**15 22 54.3**	**+0.4**
	4.6nm,0.6s,baz=131,slow=7.8,SNR=17							
BVAR	**Borovoye Array**	**55.69**	**326**	P		**P**	**15 23 33.7**	**-1.2**
	0.8nm,0.6s,baz=115,slow=6.5,SNR=3.4							
NRIK	**Noril'sk**	**59.45**	**347**	P		**P**	**15 23 59.9**	**-1.1**
	2.4nm,0.6s,baz=122,slow=4.4,SNR=4.4							
ILAR	**Eielson Array**	**78.99**	**26**	P		**P**	**15 25 58.6**	**-3.1**
	0.2nm,0.7s,baz=298,slow=3.9,SNR=3.5							
ARCES	**ARCESS Array B**	**79.08**	**339**	P		**P**	**15 26 01.4**	**-0.6**
	1.4nm,0.6s,baz=72,slow=7.8,SNR=4.0							
FINES	**FINESS Array B**	**80.23**	**331**	P		**P**	**15 26 07.8**	**-0.5**
	2.0nm,0.8s,baz=66,slow=3.4,SNR=2.5							

ISCJB ***24*** *15:16:20.9±0.4, 39.06N±0.02×27.30E±0.02, h4km±4km, Error ellipse: s-maj=3.4km s-min=2.9km az=30.6*
DDA ***24*** *15:16:20.9, 39.08N×27.30E, h7km, Ml3.2*
ISK ***24*** *15:16:20.8, 39.07N×27.28E, h8km, MD3.1*
CSEM ***24*** *15:16:21.2±0.1, 39.06N×27.29E, h5km, MD3.1, Error ellipse: s-maj=2.6km s-min=2.2km az=123.0*
ISC 24 15:16:21.0±1.0, 39.07N±0.02×27.30E±0.02, h11km±9km, n95, σ0s83/120, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DKL	**Dikili**	**0.30**	**271**	*e*P		**Pg**	**15 16 27.4**	**+0.3**
DKL				*e*SG		**Sg**	**15 16 31.8**	**+0.5**
DKL	**Dikili**	**0.30**	**271**	*e*Pg		**Pg**	**15 16 27.4**	**+0.3**
DKL				*e*Sg		**Sg**	**15 16 31.8**	**+0.5**
CAND	**Candarli**	**0.40**	**254**	*e*PG		**Pg**	**15 16 29.3**	**+0.4**
CAND				*e*SG		**Sb**	**15 16 35.5**	**-0.8**
AKS	**Akhisar**	**0.44**	**115**	*e*PG		**Pb**	**15 16 30.4**	**+0.4**
AKS	**Akhisar**	**0.44**	**115**	*e*Pg		**Pb**	**15 16 30.4**	**-0.4**
AYVA	**Ayvalik**	**0.53**	**297**	*i* P		**Pg**	**15 16 31.5**	**+0.2**
AYVA				*i* S		**Sb**	**15 16 39.1**	**-0.9**
AYVA	**Ayvalik**	**0.53**	**297**	P		**Pg**	**15 16 31.5**	**+0.2**
AYVA				S		**Sb**	**15 16 39.1**	**-0.9**
CUND	**Cunda Adasi-Ba**	**0.56**	**299**	*e*PG		**Pg**	**15 16 31.9**	**0.0**
CUND				*e*SG		**Sb**	**15 16 40.2**	**-0.6**
CUND	**Cunda Adasi-Ba**	**0.56**	**299**	*e*Pg		**Pg**	**15 16 31.9**	**0.0**
CUND				*e*Sg		**Sb**	**15 16 40.2**	**-0.6**
FOCM	**Fo˜§a**	**0.56**	**232**	*e*PG		**Pg**	**15 16 32.1**	**+0.1**
FOCM				*e*SG		**Sb**	**15 16 40.4**	**-0.6**
FOCM	**Fo˜§a**	**0.56**	**232**	*e*Pg		**Pg**	**15 16 32.1**	**+0.1**
FOCM				*e*Sg		**Sb**	**15 16 40.4**	**-0.6**
IZM	**Izmir**	**0.67**	**182**	*e*PG		**Pg**	**15 16 34.2**	**+0.3**
IZM	**Izmir**	**0.67**	**182**	*e*Pg		**Pg**	**15 16 34.2**	**+0.3**
BALY	**Balya**	**0.72**	**20**	*i* P		**Pg**	**15 16 35.2**	**+0.3**
BALY	**Balya**	**0.72**	**20**	P		**Pg**	**15 16 35.2**	**+0.3**
BALB	**Balikesir**	**0.73**	**38**	*e*PG		**Pg**	**15 16 35.2**	**+0.1**
BALB				*e*SG		**Sb**	**15 16 46.6**	**+0.8**
BALB	**Balikesir**	**0.73**	**38**	*e*Pg		**Pg**	**15 16 35.2**	**+0.1**
BALB				*e*Sg		**Sb**	**15 16 46.6**	**+0.8**
KRBN	**Karaburun**	**0.75**	**231**	*e*PG		**Pg**	**15 16 35.4**	**0.0**
KRBN	**Karaburun**	**0.75**	**231**	*e*Pg		**Pg**	**15 16 35.4**	**0.0**
URLA	**Izmir**	**0.89**	**218**	*i* P		**Pg**	**15 16 37.8**	**-0.4**
URLA				*i* S		**Sn**	**15 16 52.6**	**+0.1**
URLA	**Izmir**	**0.89**	**218**	P		**Pg**	**15 16 37.8**	**-0.4**
URLA				S		**Sn**	**15 16 52.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.03**	**17**	*e*PG		**Pg**	**15 16 40.7**	**0.0**
GONE	**Gonen-Balikesi**	**1.03**	**17**	*e*Pg		**Pg**	**15 16 40.7**	**0.0**
GMLD	**Gumuldur**	**1.03**	**197**	*e*PG		**Pg**	**15 16 40.4**	**-0.4**
GMLD	**Gumuldur**	**1.03**	**197**	*e*Pg		**Pg**	**15 16 40.4**	**-0.4**
DGB	**˜zmir**	**1.06**	**198**	*i* P		**Pg**	**15 16 40.8**	**-0.6**
DGB				*i* S		**Sn**	**15 16 56.5**	**-0.1**
EZN	**Ezine**	**1.07**	**316**	*e*PG		**Pb**	**15 16 41.5**	**0.0**
EZN	**Ezine**	**1.07**	**316**	*e*Pg		**Pb**	**15 16 41.5**	**0.0**
DEMI	**Demirci**	**1.10**	**91**	*i* P		**Pb**	**15 16 42.5**	**+0.3**
DEMI				*i* S		**Sg**	**15 16 57.0**	**+0.3**
DEMI	**Demirci**	**1.10**	**91**	P		**Pb**	**15 16 42.5**	**+0.3**
DEMI				S		**Sg**	**15 16 57.0**	**+0.3**
SIGR	**SIGRI**	**1.13**	**278**	*e*PN		**Pg**	**15 16 42.1**	**-0.7**
SIGR	**SIGRI**	**1.13**	**278**	*e*Pn		**Pg**	**15 16 42.1**	**-0.7**
MANT	**Manisa**	**1.14**	**120**	*i* P		**Pg**	**15 16 42.0**	**-0.9**
MANT				*i* S		**Sg**	**15 16 55.0**	**-2.7**
MANT	**Manisa**	**1.14**	**120**	P		**Pg**	**15 16 42.0**	**-0.9**
MANT				S		**Sg**	**15 16 55.0**	**-2.7**
DST	**Dursunbey**	**1.16**	**62**	*e*PN		**Pn**	**15 16 43.7**	**+0.5**
DST	**Dursunbey**	**1.16**	**62**	*e*Pn		**Pn**	**15 16 43.7**	**+0.5**
CHOS	**Chios island**	**1.18**	**236**	*e*PN		**Pg**	**15 16 43.4**	**-0.4**
CHOS	**Chios island**	**1.18**	**236**	*e*Pn		**Pg**	**15 16 43.4**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.21**	**157**	*e*PN		**Pg**	**15 16 44.1**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.21**	**157**	*e*Pn		**Pg**	**15 16 44.1**	**-0.2**
BOZC	**Bozcaada**	**1.24**	**309**	*i* P		**Pb**	**15 16 44.1**	**-0.3**
BOZC				*i* S		**Sb**	**15 17 00.6**	**+0.2**
KRBG	**Karabiga-Canak**	**1.33**	**360**	*e*PN		**Pn**	**15 16 45.4**	**-0.1**
KRBG	**Karabiga-Canak**	**1.33**	**360**	*e*Pn		**Pn**	**15 16 45.4**	**-0.1**
EDC	**Edincik**	**1.35**	**19**	*e*PN		**Pn**	**15 16 46.2**	**+0.3**
EDC	**Edincik**	**1.35**	**19**	*e*Pn		**Pn**	**15 16 46.2**	**+0.3**
GCAM	**G?zelcaml?**	**1.36**	**182**	*i* P		**Pb**	**15 16 46.6**	**+0.1**
GCAM				*i* S		**Sb**	**15 17 04.2**	**+0.2**
GCAM	**G?zelcaml?**	**1.36**	**182**	P		**Pb**	**15 16 46.6**	**+0.1**
GCAM				S		**Sb**	**15 17 04.2**	**+0.2**
LPK	**Lapseki**	**1.37**	**343**	*e*PN		**Pn**	**15 16 46.4**	**+0.3**
LPK	**Lapseki**	**1.37**	**343**	*e*Pn		**Pn**	**15 16 46.4**	**+0.3**
KCTX	**Karacabey (Bur**	**1.45**	**34**	*e*PN		**Pn**	**15 16 47.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.45**	**34**	*e*Pn		**Pn**	**15 16 47.1**	**-0.1**
GELI	**Tayfur-Gelibol**	**1.48**	**335**	*e*PN		**Pn**	**15 16 48.1**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.48**	**335**	*e*Pn		**Pn**	**15 16 48.1**	**+0.5**
MRMT	**Marmara Adasi**	**1.55**	**8**	*e*PN		**Pn**	**15 16 48.7**	**0.0**
MRMT	**Marmara Adasi**	**1.55**	**8**	*e*Pn		**Pn**	**15 16 48.7**	**0.0**
GADA	**Gvkgeada**	**1.56**	**317**	*e*PN		**Pn**	**15 16 49.2**	**+0.5**
GADA	**Gvkgeada**	**1.56**	**317**	*e*Pn		**Pn**	**15 16 49.2**	**+0.5**
RKY	**Sarkoy-Tekirda**	**1.62**	**357**	*e*PN		**Pn**	**15 16 50.4**	**+0.8**
RKY	**Sarkoy-Tekirda**	**1.62**	**357**	*e*Pn		**Pn**	**15 16 50.4**	**+0.8**
GDZ	**Gediz**	**1.70**	**89**	*i* P		**Pg**	**15 16 53.4**	**-0.2**
GDZ				*i* S		**Sg**	**15 17 15.6**	**-0.1**
GDZ	**Gediz**	**1.70**	**89**	P		**Pg**	**15 16 53.4**	**-0.2**
GDZ				S		**Sg**	**15 17 15.6**	**-0.1**
ERIK	**Erikli-Kesan**	**1.71**	**340**	*e*PN		**Pn**	**15 16 51.8**	**+1.0**
ERIK	**Erikli-Kesan**	**1.71**	**340**	*e*Pn		**Pn**	**15 16 51.8**	**+1.0**
TVSB	**Tavsanli**	**1.72**	**76**	*e*PN		**Pb**	**15 16 52.4**	**-0.4**
TVSB	**Tavsanli**	**1.72**	**76**	*e*Pn		**Pb**	**15 16 52.4**	**-0.4**
SBT4	**Kumbag-Tekirda**	**1.77**	**6**	*e*PN		**Pb**	**15 16 52.7**	**-0.7**
SBT4	**Kumbag-Tekirda**	**1.77**	**6**	*e*Pn		**Pb**	**15 16 52.7**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.79**	**43**	*e*PN		**Pn**	**15 16 53.0**	**+1.2**
MDNY	**Mudanya-Bursa**	**1.79**	**43**	*e*Pn		**Pn**	**15 16 53.0**	**+1.2**
KESN	**Edirne-Kesan**	**1.82**	**345**	*i* P		**Pn**	**15 16 52.5**	**-0.2**
KESN				*i* S		**Sg**	**15 17 18.7**	**-1.0**
KESN	**Edirne-Kesan**	**1.82**	**345**	P		**Pn**	**15 16 52.5**	**-0.2**
KESN				S		**Sg**	**15 17 18.7**	**-1.0**
SBT3	**Marmara-Eregli**	**1.89**	**16**	*e*PN		**Pb**	**15 16 54.8**	**-0.7**
SBT3	**Marmara-Eregli**	**1.89**	**16**	*e*Pn		**Pb**	**15 16 54.8**	**-0.7**
ARMT	**Armutlu**	**1.92**	**38**	*e*PN		**Pn**	**15 16 55.2**	**+1.5**
ARMT	**Armutlu**	**1.92**	**38**	*e*Pn		**Pn**	**15 16 55.2**	**+1.5**
SBT5	**Esenkoy-Cinarc**	**1.98**	**37**	*e*PN		**Pn**	**15 16 55.1**	**+0.6**
SBT5	**Esenkoy-Cinarc**	**1.98**	**37**	*e*Pn		**Pn**	**15 16 55.1**	**+0.6**
BODT	**Bodrum**	**2.00**	**180**	*e*PN		**Pn**	**15 16 55.8**	**+1.0**
BODT	**Bodrum**	**2.00**	**180**	*e*Pn		**Pn**	**15 16 55.8**	**+1.0**
SBT2	**Guzelce-Avcila**	**2.04**	**27**	*e*PN		**Pn**	**15 16 56.5**	**+1.3**
SBT2	**Guzelce-Avcila**	**2.04**	**27**	*e*Pn		**Pn**	**15 16 56.5**	**+1.3**
ALN	**Alexandroupoli**	**2.07**	**333**	*e*PN		**Pn**	**15 16 57.2**	**+1.5**
ALN	**Alexandroupoli**	**2.07**	**333**	*e*Pn		**Pn**	**15 16 57.2**	**+1.5**
YER	**Yerkesik**	**2.08**	**158**	*e*PN		**Pn**	**15 16 57.2**	**+1.3**
YER	**Yerkesik**	**2.08**	**158**	*e*Pn		**Pn**	**15 16 57.2**	**+1.3**
IZI	**Iznik**	**2.10**	**52**	*e*PN		**Pn**	**15 16 57.5**	**+1.2**
IZI	**Iznik**	**2.10**	**52**	*e*Pn		**Pn**	**15 16 57.5**	**+1.2**
CAVI	**Cavuskoy**	**2.27**	**59**	*e*PN		**Pn**	**15 17 00.4**	**+1.9**
CAVI	**Cavuskoy**	**2.27**	**59**	*e*Pn		**Pn**	**15 17 00.4**	**+1.9**
CTKS	**Kestanelik-??a**	**2.36**	**23**	*e*PN		**Pn**	**15 17 00.9**	**+1.2**
CTKS	**Kestanelik-??a**	**2.36**	**23**	*e*Pn		**Pn**	**15 17 00.9**	**+1.2**
APE	**Apeiranthos**	**2.43**	**216**	*e*PN		**Pn**	**15 17 01.9**	**+1.1**
APE	**Apeiranthos**	**2.43**	**216**	*e*Pn		**Pn**	**15 17 01.9**	**+1.1**
CTYL	**Yalikoy Yolu**	**2.52**	**17**	*e*PN		**Pn**	**15 17 03.8**	**+1.8**
CTYL	**Yalikoy Yolu**	**2.52**	**17**	*e*Pn		**Pn**	**15 17 03.8**	**+1.8**

ISCJB ***24*** *15:49:04.2±0.6, 14.67S±0.03×74.39W±0.04, h75km±5km, mb4.9/172, Error ellipse: s-maj=6.6km s-min=3.3km az=152.2*
MOS ***24*** *15:49:06.7±1.2, 14.66S×74.49W, h95km, mb4.9/26, Error ellipse: s-maj=14.5km s-min=7.0km az=111.8*
GCMT ***24*** *15:49:07.6±0.3, 15.02S×74.54W, h98km±3km, MW5.0/70, Moment Tensor Solution. s30,c32; s70,c90; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.04±.13; $M_{\theta\theta}$-1.37±.13; $M_{\phi\phi}$4.41±.16; $M_{r\theta}$0.25±.08; $M_{r\phi}$-2.74±.15; $M_{\theta\phi}$1.39±.14; Best double couple: M_o4.66400×10^{16} NP1:ϕ_s184.00000°,δ60.00000°,λ-53.00000°. NP2: ϕ_s308.00000°,δ46.00000°,λ-136.00000°. Principal axes: T 5.6690, Plg8.0000°, Azm249.0000°; N -2.0100, Plg31.0000°, Azm344.0000°; P -3.6590, Plg58.0000°, Azm146.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***24*** *15:49:07.6±0.1, 14.80S×74.31W, mb4.9/138 Error ellipse: s-maj=5.8km s-min=2.8km az=63.0*
*N

comp=Z,44nm,1.0s
TRQA Tornquist 25.59 157 *e*P **P** 15 54 27.9 0.0
comp=Z,24nm,0.9s
PLCA Paso Flores 25.99 173 P **P** 15 54 32.6 +1.1
comp=Z,14nm,0.8s,baz=11,slow=9.6,SNR=22
PLCA PcP **PcP** 15 57 59.2 +1.7
comp=Z,3.5nm,0.7s,baz=3.2,slow=4.8,SNR=4.3
PLCA Paso Flores 25.99 173 *e*P **P** 15 54 32.3 +0.8
PLCA Paso Flores 25.99 173 *e*P **P** 15 54 31.8 +0.3
comp=Z,25nm,0.9s
PLCA PcP **PcP** 15 57 59.2 +1.7
SPB Sao Paulo 26.88 113 *e*P **P** 15 54 39.9 +0.2
comp=Z,32nm,0.9s
CHRN Cochrane 32.32 178 *e*P **P** 15 55 26.7 -0.8
comp=Z,15nm,0.9s
CELP Cerrillos 33.64 14 *e*P **P** 15 55 37.5 -1.7
SJG San Juan 33.77 14 *e*P **P** 15 55 38.7 -1.7
SJG pmax pmax
comp=Z,23nm,0.8s
SJG San Juan 33.77 14 *e*P **P** 15 55 38.7 -1.7
comp=Z,23nm,0.8s
EFI East Falkland 38.99 164 *e*P **P** 15 56 24.2 -0.2
EFI pmax pmax
comp=Z,26nm,1.7s
USHA Ushuaia 40.15 175 P **P** 15 56 34.8 +0.8
comp=Z,125nm,0.9s,baz=323,slow=5.8,SNR=9.8
034A Hebbronville 47.88 330 P **P** 15 57 37.5 +1.3
baz=148
347A Saraland 47.97 344 P **P** 15 57 36.6 -0.1
baz=161,SNR=7.4
NHSC New Hope 48.02 353 *e*P **P** 15 57 36.9 -0.2
comp=Z,58nm,0.8s
934A Benavides 48.26 331 P **P** 15 57 40.8 +1.7
baz=148
248A Dixon Mills 48.41 345 P **P** 15 57 40.1 0.0
baz=163,SNR=6.9
933A Laredo 48.63 330 P **P** 15 57 42.5 +0.6
baz=147
344A Westbrook Farm 48.65 341 P **P** 15 57 42.3 +0.3
baz=159
GOGA Godfrey 48.78 350 *e*P **P** 15 57 41.6 -1.4
GOGA pmax pmax
comp=Z,19nm,1.0s
GOGA Godfrey 48.78 350 *e*P **P** 15 57 41.6 -1.4
comp=Z,19nm,1.0s
147A Livingston 49.10 345 P **P** 15 57 44.7 -0.7
baz=162
LRAL Lakeview Retre 49.13 346 *e*P **P** 15 57 44.2 -1.4
comp=Z,23nm,1.1s
Z47A Carrollton 49.55 345 P **P** 15 57 48.0 -0.8
baz=162,SNR=10.0
Z48A Northport 49.59 346 P **P** 15 57 48.2 -0.9
baz=163,SNR=12
633A Saathoff Ranch 50.14 332 P **P** 15 57 53.6 +0.2
baz=148,SNR=11
Z45A Winona 50.14 343 P **P** 15 57 53.3 0.0
baz=161
Y47A UCPARC, Winfie 50.16 345 P **P** 15 57 53.0 -0.5
baz=163
KMSC Kings Mountain 50.17 353 P **P** 15 57 53.5 0.0
baz=171,SNR=18
KMSC Kings Mountain 50.17 353 *e*P **P** 15 57 52.7 -0.8
comp=Z,34nm,0.8s
Z44A Pea Ridge, Bel 50.26 343 P **P** 15 57 54.3 +0.1
baz=160
Y46A Houston 50.40 344 P **P** 15 57 54.3 -0.9
baz=162
141A Papa Simpson, 50.41 340 P **P** 15 57 55.9 +0.6
baz=156
Y45A Yeager Farm, C 50.56 344 P **P** 15 57 56.3 -0.2
baz=161
140A Cam and Jess, 50.67 339 P **P** 15 57 58.5 +1.2
baz=156
Z42A Norrel Spur, H 50.72 341 P **P** 15 57 57.4 -0.2
baz=158
CPCT Cooper Cave 50.95 349 *e*P **P** 15 57 58.3 -1.1
comp=Z,9.1nm,0.9s
SWET Sewanee 51.00 348 *e*P **P** 15 57 58.4 -1.4
comp=Z,7.4nm,0.8s
TKL Tuckaleechee C 51.03 350 *e*P **P** 15 57 58.4 -1.5
TKL pmax pmax
comp=Z,24nm,1.0s
TKL Tuckaleechee C 51.03 350 *e*P **P** 15 57 58.4 -1.5
comp=Z,24nm,1.0s
Z40A Long Farm, Mag 51.18 340 P **P** 15 58 01.6 +0.5
baz=156
433A Art 51.20 333 P **P** 15 58 01.2 -0.1
baz=149,SNR=6.2
HPIG 51.46 324 *e*pP pP 15 58 27.4 +0.3
WLAR White Oak Lake 51.47 340 *e*P **P** 15 58 02.2 -1.1
comp=Z,66nm,1.0s
WHTX Lake Whitney, 51.56 335 *e*P **P** 15 58 03.2 -0.8
comp=Z,18nm,1.0s
WHTX *e*pP **pP** 15 58 26.7 -0.8
333A Richland Sprin 51.64 333 P **P** 15 58 04.1 -0.5
baz=149
Y40A Okolona 51.83 340 P **P** 15 58 06.2 +0.3
baz=156
TZTN Tazewell 51.86 351 *e*P **P** 15 58 05.0 -1.1
comp=Z,14nm,0.8s
VWCC Virginia Weste 52.10 354 *e*P **P** 15 58 07.6 -0.3
BLA Blacksburg 52.11 354 *e*P **P** 15 58 07.6 -0.4
BLA pmax pmax
comp=Z,19nm,0.8s
BLA Blacksburg 52.11 354 *e*P **P** 15 58 07.6 -0.4
comp=Z,19nm,0.8s
233A Rising Star 52.20 334 P **P** 15 58 08.9 +0.1
baz=150
UALR University of 52.23 341 *e*P **P** 15 58 07.9 -1.0
comp=Z,20nm,1.0s
TXAR Lajitas Array 52.24 327 P **P** 15 58 09.2 0.0
comp=Z,3.1nm,0.5s,baz=149,slow=9.0,SNR=48
TXAR pP **pP** 15 58 32.4 -0.4
comp=Z,4.7nm,0.8s,baz=145,slow=9.2,SNR=9.2
TXAR PcP **PcP** 15 59 19.7 +0.3
comp=Z,1.9nm,0.9s,baz=160,slow=6.7,SNR=1.9
TX31 Lajitas Ar. Si 52.24 327 *e*P **P** 15 58 08.8 -0.5
URVA University of 52.24 357 *e*P **P** 15 58 08.4 -0.5
WVT Waverly 52.28 346 *e*P **P** 15 58 07.3 -2.0
WVT pmax pmax
comp=Z,20nm,1.3s
WVT Waverly 52.28 346 *e*P **P** 15 58 07.3 -2.0
comp=Z,20nm,1.3s
134A White-Moore Ra 52.33 335 P **P** 15 58 10.0 +0.3
baz=151
MIAR Mount Ida 52.41 340 P **P** 15 58 10.3 0.0
baz=156,SNR=9.0
MIAR Mount Ida 52.41 340 *e*P **P** 15 58 09.5 -0.7
MIAR pmax pmax
comp=Z,30nm,1.5s
MIAR Mount Ida 52.41 340 *e*P **P** 15 58 09.5 -0.7
comp=Z,30nm,1.5s
X39A Fountain Ranch 52.56 339 P **P** 15 58 11.4 0.0
baz=156
W41B Gary Mavity, V 52.57 342 P **P** 15 58 10.9 -0.4
baz=158,SNR=10
Y37A Hugo 52.61 338 P **P** 15 58 12.4 +0.7
baz=154,SNR=5.6
X301 Greenbrier Sit 52.67 341 *e*P **P** 15 58 11.4 -0.8
comp=Z,19nm,1.1s
WHAR Wooly Hollow 52.69 342 *e*P **P** 15 58 11.3 -0.9
comp=Z,17nm,0.9s
133A Hamilton Ranch 52.71 334 P **P** 15 58 12.3 -0.2
baz=150
X201 Greenbrier Sit 52.71 342 *e*P **P** 15 58 11.5 -0.9
comp=Z,16nm,0.8s
W40A Ferguson Farm, 52.84 341 P **P** 15 58 13.7 +0.3
baz=157,SNR=8.6
V42A Cord 52.90 343 P **P** 15 58 12.3 -1.5
baz=159,SNR=5.9
X38A Whitesboro 52.95 339 P **P** 15 58 14.1 -0.1
baz=155
ABTX Abilene, Hawle 53.04 333 P **P** 15 58 15.1 +0.1
baz=149,SNR=5.7
ABTX Abilene, Hawle 53.04 333 *e*P **P** 15 58 14.4 -0.5
comp=Z,28nm,0.8s
ABTX *e*pP **pP** 15 58 38.5 -0.1
X37A Clayton 53.07 338 P **P** 15 58 15.4 +0.3
baz=154,SNR=9.3
W39A Magazine 53.08 340 P **P** 15 58 15.4 +0.3
baz=156,SNR=6.3
Y35A Marietta 53.08 336 P **P** 15 58 15.7 +0.6
baz=152
V41A Mountainview 53.11 342 P **P** 15 58 14.5 -0.9
baz=158,SNR=9.6
W38A Poteau 53.21 339 P **P** 15 58 16.2 +0.1
baz=155
Z33A Whitaker Ranch 53.23 334 P **P** 15 58 16.5 +0.1
baz=150,SNR=6.7
V40A Witts Springs 53.33 341 P **P** 15 58 16.8 -0.3
baz=158,SNR=15
U42A Revenden 53.37 343 P **P** 15 58 16.2 -1.0
baz=160,SNR=15
Y34A Reagan Ranch, 53.41 336 P **P** 15 58 17.6 0.0
baz=152
X35A Drake 53.49 337 P **P** 15 58 17.8 -0.4
baz=152
PBMO Poplar Bluff 53.55 344 *e*P **P** 15 58 17.1 -1.4
comp=Z,23nm,0.6s
U41A Viola 53.56 342 P **P** 15 58 17.7 -0.9
baz=159,SNR=17
W37B Quinton 53.59 339 P **P** 15 58 18.6 -0.3
baz=154
V39A Pettigrew 53.62 341 P **P** 15 58 19.0 -0.2
baz=157,SNR=11
Y33A Hilltop Ranch, 53.80 335 P **P** 15 58 20.6 +0.2
baz=150
U40A Yellville 53.85 342 P **P** 15 58 20.4 -0.4
baz=158,SNR=26
W36A Wetumka 53.87 338 P **P** 15 58 20.0 -0.9
baz=154
V38A Canehill 53.89 340 P **P** 15 58 20.8 -0.3
baz=156,SNR=9.2
WCI Wyandotte Cave 53.98 348 *e*P **P** 15 58 20.2 -1.5
WCI pmax pmax
comp=Z,60nm,0.9s
WCI Wyandotte Cave 53.98 348 *e*P **P** 15 58 20.2 -1.5
comp=Z,60nm,0.9s
X34A Smith Ranch, M 54.00 336 P **P** 15 58 22.2 +0.2
baz=152
USIN University of 54.01 347 *e*P **P** 15 58 20.1 -1.8
comp=Z,56nm,0.8s
SDMD Soldier's Deli 54.05 358 *e*P **P** 15 58 21.8 -0.3
comp=Z,13nm,0.8s
U39A Green Forest 54.06 341 P **P** 15 58 21.8 -0.6
baz=157,SNR=8.8
S44A Carbondale 54.11 345 P **P** 15 58 21.9 -0.8
baz=162,SNR=12
HHAR Hobbs 54.12 341 *e*P **P** 15 58 21.7 -1.1
comp=Z,19nm,1.1s
W35A Tecumseh 54.12 337 P **P** 15 58 21.8 -0.9
baz=153
SIUC Southern Illin 54.12 346 *e*P **P** 15 58 21.6 -1.2
comp=Z,41nm,0.8s
T41A Mountain View 54.16 343 P **P** 15 58 22.1 -0.9
baz=159,SNR=9.5
S43A Fulton Ridge, 54.20 345 P **P** 15 58 22.2 -1.1
baz=161,SNR=9.7
V36A Jenks 54.35 338 P **P** 15 58 24.1 -0.3
baz=154,SNR=6.3
TUL1 Leonard 54.41 339 P **P** 15 58 24.1 -0.8
baz=154
TUL1 Leonard 54.41 339 *e*P **P** 15 58 23.3 -1.5
TUL1 *e*pP **pP** 15 58 47.8 -0.8
U38A Gravette 54.41 340 P **P** 15 58 24.4 -0.5
baz=156,SNR=5.8
X32A Elmer 54.43 335 P **P** 15 58 24.6 -0.4
baz=150
T40A Mansfield 54.48 342 P **P** 15 58 24.4 -0.9
baz=158,SNR=7.4
WMOK Wichita Mounta 54.50 335 P **P** 15 58 24.4 -1.2
baz=151
WMOK Wichita Mounta 54.50 335 *e*P **P** 15 58 24.2 -1.4
WMOK pmax pmax
comp=Z,4.0nm,0.7s
WMOK Wichita Mounta 54.50 335 *e*P **P** 15 58 24.2 -1.4
comp=Z,3.8nm,0.7s
PSUB Penn St. - Bra 54.52 359 *e*P **P** 15 58 25.4 -0.2
comp=Z,14nm,0.8s
R44A Waltonville 54.60 346 P **P** 15 58 25.3 -0.9
baz=162,SNR=5.4
MVL Millersville 54.62 358 *e*P **P** 15 58 26.6 +0.4
comp=Z,19nm,0.7s
U37A Salina 54.62 340 P **P** 15 58 26.0 -0.4
baz=155
T39A Clever 54.62 341 P **P** 15 58 25.5 -0.9
baz=157,SNR=8.7
S41A Jillco Farms, 54.66 343 P **P** 15 58 25.9 -0.8
baz=159,SNR=17
W33A Caddo, Fort Co 54.73 336 P **P** 15 58 28.0 +0.7
baz=151
OLIL Olney 54.84 347 *e*P **P** 15 58 26.2 -1.7
comp=Z,50nm,0.8s
S40A Lebanon 54.89 342 P **P** 15 58 27.6 -0.8
baz=158,SNR=16
T38A Diamond 54.92 341 P **P** 15 58 28.2 -0.4
baz=156,SNR=14
BLO Bloomington 54.94 349 *e*P **P** 15 58 27.1 -1.5
BLO *e* 15 59 29.9
BLO Bloomington 54.94 349 *e*P **P** 15 58 27.1 -1.5
BLO *e*PcP **PcP** 15 59 29.9 +0.5
V34A Guthrie 54.97 337 *e*P **P** 15 58 27.6 -1.3
comp=Z,41nm,1.5s
O56A Blue Knob Stat 54.99 356 P **P** 15 58 29.5 +0.5
baz=175
MNTX Cornudas Mount 55.01 328 P **P** 15 58 29.0 -0.3
baz=143,SNR=5.3
MNTX Cornudas Mount 55.01 328 *e*P **P** 15 58 27.8 -1.5
comp=Z,14nm,1.4s
W32A Sentinel 55.02 335 P **P** 15 58 29.2 -0.2
baz=150
U35A Pawnee 55.15 338 P **P** 15 58 30.0 -0.2
baz=153,SNR=5.1
T37A Cheneyville 18 55.20 340 P **P** 15 58 30.4 -0.2
baz=156,SNR=9.5
Q44A Meyer Farm, Va 55.21 346 P **P** 15 58 29.5 -1.0
baz=163,SNR=22
S39A Bolivar 55.22 342 P **P** 15 58 29.9 -0.8
baz=158,SNR=20
SSPA Standing Stone 55.32 357 *e*P **P** 15 58 31.2 0.0
comp=Z,141nm,1.5s
S38A Stockton 55.34 341 P **P** 15 58 30.9 -0.6
baz=157,SNR=10
ACSO Alum Creek Sta 55.40 352 *e*P **P** 15 58 30.4 -1.5
comp=Z,34nm,0.9s
Q43A New Douglas 55.41 346 P **P** 15 58 31.1 -0.9
baz=162,SNR=6.9
V32A Arapaho 55.46 336 P **P** 15 58 32.5 +0.1
baz=151
R40A Mades Statio 55.47 343 P **P** 15 58 31.5 -0.9
baz=159,SNR=12
T36A Boggs Farm, Ca 55.47 339 P **P** 15 58 32.1 -0.4
baz=154
N59A State Game Lan 55.52 359 P **P** 15 58 33.4 +0.6
baz=178,SNR=9.1
T35A Sooner Cattle 55.56 339 P **P** 15 58 33.1 0.0
baz=154,SNR=6.7
MSTX Muleshoe 55.58 331 *e*P **P** 15 58 32.4 -1.0
MSTX *e*pP **pP** 15 58 55.4 -1.9
comp=Z,45nm,1.8s
Q42A Golden Eagle 55.59 345 P **P** 15 58 32.6 -0.7
baz=161,SNR=18
R39A Chumby, Stover 55.71 342 P **P** 15 58 33.4 -0.7
baz=158,SNR=5.8
U33A Lingo Farm, Me 55.72 337 P **P** 15 58 33.4 -0.9
baz=152
S37A Fort Scott 55.76 340 P **P** 15 58 33.9 -0.6
baz=156,SNR=8.3
N54A Moraine State 55.79 355 P **P** 15 58 34.4 -0.3
baz=173
R38A Fenwick Farm, 55.85 341 P **P** 15 58 34.6 -0.6
baz=157,SNR=18
T34A McClaskey Farm 55.90 338 P **P** 15 58 35.1 -0.5
baz=153,SNR=5.6
YLE Yale 55.92 1 *e*P **P** 15 58 35.8 +0.3
comp=Z,43nm,0.8s
S36A Lake Cedric, C 55.97 340 P **P** 15 58 35.4 -0.6
baz=155,SNR=7.7
Q40A Laux Farm, Aux 56.07 343 P **P** 15 58 35.9 -0.9
baz=159
P42A Winchester 56.17 345 P **P** 15 58 36.5 -1.0
baz=161,SNR=6.8
S35A Otter Creek Ra 56.18 339 P **P** 15 58 37.1 -0.4
baz=154,SNR=5.5
SFIN Lafayette 56.22 348 P **P** 15 58 36.2 -1.5
baz=165,SNR=5.2
SFIN Lafayette 56.22 348 *e*P **P** 15 58 35.6 -2.1
comp=Z,21nm,0.9s
R37A Teagarden Farm 56.26 341 P **P** 15 58 37.7 -0.4
baz=156,SNR=6.1
M54A Oil Creek Stat 56.30 355 P **P** 15 58 37.7 -0.6
baz=174,SNR=6.8
Q39A Willow Grove F 56.37 343 P **P** 15 58 38.1 -0.8
baz=158,SNR=10.0
P41A Barry, Barry 56.44 345 P **P** 15 58 38.1 -1.2
baz=160,SNR=7.4
Q38A Cooks Store, C 56.48 342 P **P** 15 58 39.4 -0.2
baz=158,SNR=31
P40A Paris 56.56 344 P **P** 15 58 39.2 -1.1
baz=159,SNR=9.2
BRYW Bryant College 56.56 3 *e*P **P** 15 58 40.2 0.0
comp=Z,42nm,0.8s
R35A Emporia Munici 56.72 340 P **P** 15 58 41.0 -0.3
baz=154
P39B Salisbury 56.72 343 P **P** 15 58 40.3 -1.1
baz=159,SNR=11
BINY Binghamton 56.80 359 *e*P **P** 15 58 42.2 +0.3
comp=Z,43nm,0.9s
BINY *e*pP **pP** 15 59 07.0 +1.2
O41A Passleys Farm, 56.81 345 P **P** 15 58 40.3 -1.6
baz=161
HDIL Hopedale 56.85 346 P **P** 15 58 40.5 -1.7
baz=163,SNR=13
HDIL Hopedale 56.85 346 *e*P **P** 15 58 40.4 -1.8
comp=Z,38nm,0.6s
319A Douglas 56.88 324 *e*P **P** 15 58 42.8 +0.1
319A *e*pP **pP** 15 59 06.0 -0.7
121A Cookes Peak, D 56.93 326 P **P** 15 58 43.6 +0.4
baz=141
121A Cookes Peak, D 56.93 326 *e*P **P** 15 58 43.4 +0.2
comp=Z,3.4nm,0.6s
Q36A Arnold C. Orve 57.05 341 P **P** 15 58 43.2 -0.5
baz=156
O40A La Belle 57.07 344 P **P** 15 58 42.8 -1.0
baz=160
Q35A Mercer Eighty, 57.15 340 P **P** 15 58 43.9 -0.5
baz=155
P37A Lathrop 57.28 342 P **P** 15 58 44.2 -1.1
baz=157,SNR=5.2
TRY Troy 57.32 1 *e*P **P** 15 58 46.0 +0.5
comp=Z,27nm,0.8s
O39A Kirksville 57.38 344 P **P** 15 58 45.2 -0.7
baz=159
MMNY Mt. Morris Dam 57.41 357 *e*P **P** 15 58 45.5 -0.6
RKT Rikitea 57.51 252 *e*LR LR 16 16 02.0
comp=Z,184nm,32.0s
RKT Rikitea 57.51 252 *e*T T 16 59 51.5
comp=Z,3.4nm,0.3s
P36A Good Intent, A 57.57 341 P **P** 15 58 46.3 -1.0
baz=156,SNR=5.0
R32A Long Quarter, 57.70 338 P **P** 15 58 47.7 -0.6
baz=152
P35A Duane Minner, 57.75 340 P **P** 15 58 47.8 -0.8
baz=155
O37A Wolven Farm, M 57.75 342 P **P** 15 58 48.0 -0.6
baz=157,SNR=6.2
Q33A Connelly Farm, 57.89 339 P **P** 15 58 49.3 -0.3
baz=153
N39A Derby Farms, D 57.95 344 P **P** 15 58 48.9 -1.0
baz=159
O36A Bolckow 57.96 341 P **P** 15 58 49.5 -0.6
baz=156
P34A Walnut Farm, R 58.03 340 P **P** 15 58 49.9 -0.7
baz=154
LAZ Ladron 58.05 328 *e*P **P** 15 58 48.5 -2.5
LAZ *e*pP **pP** 15 59 15.3 +0.3
N38A Joes South For 58.07 343 P **P** 15 58 50.1 -0.7
baz=158
ANMO Albuquerque 58.13 329 P **P** 15 58 51.3 -0.3
baz=143
ANMO Albuquerque 58.13 329 *d i*P **P** 15 58 51.5 -0.1
ANMO pmax pmax
comp=Z,10.0nm,2.3s
ANMO Albuquerque 58.13 329 *e*P **P** 15 58 50.5 -1.1
ANMO *e*pP **pP** 15 59 14.8 -0.8
Q32A Meitler Ranch, 58.14 338 P **P** 15 58 50.8 -0.5
baz=152
N37A Lee Faris, Mou 58.31 342 P **P** 15 58 52.3 -0.2
baz=157
HNH Hanover 58.32 2 *e*P **P** 15 58 52.0 -0.5
comp=Z,110nm,1.8s
HNH *e*pP **pP** 15 59 19.3 +2.8
M39A Webster 58.42 344 P **P** 15 58 52.1 -1.1
baz=160
TUC Tucson 58.42 324 P **P** 15 58 53.8 +0.3
baz=138
TUC Tucson 58.42 324 *e*P **P** 15 58 53.5 -0.1
TUC *e**PP **pP** 15 59 16.8 -0.8
TUC pmax pmax
comp=Z,9.0nm,1.2s
TUC Tucson 58.42 324 *e*P **P** 15 58 53.5 -0.1
comp=Z,8.9nm,1.2s
TUC *e*pP **pP** 15 59 16.8 -0.8
O34A Beatrice 58.56 340 P **P** 15 58 53.1 -1.1
baz=154
L41A Preston 58.57 346 P **P** 15 58 52.3 -1.9
baz=162
N36A Muff Farm, Cla 58.59 342 P **P** 15 58 53.8 -0.6
baz=156,SNR=7.0
MDV Middlebury 58.59 1 *e*P **P** 15 58 52.7 -1.7
L40A Anamosa 58.73 345 P **P** 15 58 54.1 -1.2
baz=161
N35A Tabor 58.84 341 P **P** 15 58 55.2 -0.9
baz=156
M37A Trindle Farm, 58.87 343 P **P** 15 58 55.8 -0.5
baz=158,SNR=10
T25A Trinidad 58.94 332 P **P** 15 58 57.5 +0.3
baz=146
T25A Trinidad 58.94 332 *e*P **P** 15 58 56.6 -0.6
comp=Z,11nm,1.0s
T25A *e*pP **pP** 15 59 20.7 -0.6
K41A Shullsburg 59.03 346 P **P** 15 58 55.9 -1.5
baz=162
M36A Felix, Anita 59.13 342 P **P** 15 58 57.5 -0.6
baz=157,SNR=5.8
LONY Lake Ozonia 59.20 360 *e*P **P** 15 58 58.4 -0.2
comp=Z,22nm,1.4s
L38A Oak Wood Farm, 59.25 344 P **P** 15 58 57.7 -1.2
baz=159,SNR=5.3
K40A Colesburg 59.31 346 P **P** 15 58 57.9 -1.4
baz=161
FRNY Flat Rock 59.42 1 *e*P **P** 15 59 00.1 0.0
comp=Z,26nm,1.0s
FRNY *e*pP **pP** 15 59 24.2 0.0
K39A Oelwein 59.50 345 P **P** 15 58 59.5 -1.1
baz=160
SADO Sadowa 59.51 356 *e*P **P** 15 58 59.2 -1.5
comp=Z,18nm,0.8s
PLVO Plevna 59.67 358 *e*P **P** 15 59 00.9 -0.9
comp=Z,18nm,1.0s
L36A Harm Buss Farm 59.69 343 P **P** 15 59 01.6 -0.3
baz=157
J41A Loganville 59.69 347 P **P** 15 59 01.1 -0.8
baz=162
J40A Soldiers Grove 59.88 346 P **P** 15 59 02.4 -0.9
baz=162
SDCO Great Sand Dun 59.94 332 P **P** 15 59 04.3 +0.1
baz=145,SNR=16
SDCO Great Sand Dun 59.94 332 *e*P **P** 15 59 04.3 +0.1
comp=Z,11nm,0.9s
W18A Petrified Fore 59.95 327 P **P** 15 59 05.2 +1.1
baz=140
K37A Belmond 60.01 344 P **P** 15 59 03.0 -1.2
baz=158
PKME Peaks-Kenny Pk 60.03 4 *e*P **P** 15 59 04.2 0.0
comp=Z,20nm,0.9s
J39A Decorah 60.05 346 P **P** 15 59 03.0 -1.4
baz=161
K36A Gilmore City 60.12 343 P **P** 15 59 04.5 -0.4
baz=158
X16A Lo Mia Camp, P 60.35 325 *e*P **P** 15 59 07.1 +0.2
X16A *e*pP **pP** 15 59 30.6 -0.5
K35A Storm Lake 60.42 342 P **P** 15 59 06.1 -0.8
baz=157
J37A Redenius Farm, 60.50 344 P **P** 15 59 06.6 -0.9
baz=159
S22A 4UR Ranch, Cre 60.55 331 P **P** 15 59 08.3 0.0
baz=143,SNR=5.5
S22A 4UR Ranch, Cre 60.55 331 *e*P **P** 15 59 08.7 +0.3
S22A *e*pP **pP** 15 59 32.2 -0.4
J36A Seneca 1, Swea 60.73 343 P **P** 15 59 08.0 -1.1
baz=158,SNR=7.6
Q24A Divide 60.77 333 *e*pP pP 15 59 34.0 -0.1
TRQ Mont Tremblant 60.81 360 *e*P **P** 15 59 09.1 -0.5
I38A Scanlan Farm, 60.87 345 P **P** 15 59 09.0 -1.0
baz=160,SNR=7.9
Y14A Wickenburg 60.88 324 *e*P **P** 15 59 10.5 +0.2
Y14A *e*pP **pP** 15 59 34.2 -0.3
MVCO Mesa Verde 60.93 329 P **P** 15 59 11.1 +0.2
baz=142
MVCO Mesa Verde 60.93 329 *e*P **P** 15 59 10.7 -0.2
comp=Z,7.4nm,1.0s
MVCO *e*pP **pP** 15 59 34.9 -0.2

L31A **Butterfield Fa** 61.06 339 P P 15 59 12.1 +0.7
baz=153
WUAZ **Wupatki** 61.13 326 eP P 15 59 11.3 -0.9
WUAZ epP pP 15 59 35.7 -0.7
K31A **O'Neill** 61.43 340 P P 15 59 13.9 0.0
baz=153
J33A **Davis** 61.48 341 P P 15 59 13.6 -0.6
baz=155
ISCO **Idaho Springs** 61.67 333 P P 15 59 15.3 -0.6
baz=145
ISCO **Idaho Springs** 61.67 333 eP P 15 59 16.1 +0.3
ISCO e*PP pP 15 59 39.3 -0.8
ISCO **Idaho Springs** 61.67 333 eP P 15 59 16.1 +0.3
ISCO epP pP 15 59 39.3 -0.8
PV01 **Paradox Valley** 61.70 330 eP P 15 59 15.5 -0.5
PV01 epP pP 15 59 39.9 -0.4
ECSD **EROS Data Cent** 61.75 342 P P 15 59 15.2 -0.8
baz=155,SNR=15
ECSD **EROS Data Cent** 61.75 342 eP P 15 59 14.6 -1.4
comp=Z,12nm,0.8s
SMCO **Snowmass** 61.77 332 eP P 15 59 16.6 -0.1
comp=Z,8.7nm,1.0s
H36A **Jessenland, He** 61.77 344 P P 15 59 15.4 -0.7
baz=158
I33A **Coleman** 62.09 342 P P 15 59 17.3 -0.9
baz=155
SPMN **Marine on St.** 62.09 345 P P 15 59 17.2 -1.0
baz=160,SNR=8.1
SPMN **Marine on St.** 62.09 345 eP P 15 59 16.9 -1.3
comp=Z,25nm,0.8s
BC3 **Big Chuckawall** 62.12 322 P P 15 59 19.8 +1.0
baz=134
H35A **Sunnyside Ranc** 62.13 344 P P 15 59 17.6 -0.9
baz=158,SNR=17
LMQ **La Malbaie** 62.24 3 eP P 15 59 18.9 -0.3
comp=Z,16nm,0.9s
I32A **Karley and Nic** 62.28 341 P P 15 59 18.9 -0.6
baz=155
IRM **Iron Mountain** 62.28 322 P P 15 59 20.4 +0.7
baz=134,SNR=5.0
U15A **North Rim** 62.30 326 eP P 15 59 20.1 -0.1
U15A epP pP 15 59 44.2 -0.3
J30A **Dallas** 62.30 340 P P 15 59 18.9 -0.8
baz=152
H34A **Spellman Lake,** 62.36 343 P P 15 59 19.6 -0.4
baz=156,SNR=11
G35A **Watkins** 62.52 344 P P 15 59 20.8 -0.2
baz=158
I31A **Royce, Wessing** 62.62 341 P P 15 59 21.5 -0.3
baz=154
PFO **Pinyon Flats O** 62.69 321 P P 15 59 23.4 +0.8
comp=Z,2.7nm,0.9s,baz=0.0,slow=0.0
PFO **Pinyon Flats O** 62.69 321 P P 15 59 23.6 +1.0
baz=133
PFO **Pinyon Flats O** 62.69 321 eP P 15 59 21.5 -1.1
PFO e*PP pP 15 59 46.5 -0.4
PFO **Pinyon Flats O** 62.69 321 eP P 15 59 21.5 -1.1
PFO epP pP 15 59 46.5 -0.4
N23A **Red Feather La** 62.71 334 eP P 15 59 21.9 -0.8
comp=Z,7.4nm,1.1s
VLDQ **Val d'Or** 62.76 358 eP P 15 59 22.2 -0.2
comp=Z,14nm,0.9s
F36A **Milaca** 62.87 345 P P 15 59 22.8 -0.5
baz=159,SNR=13
G33A **Ortonville** 63.03 343 P P 15 59 23.9 -0.5
baz=156
O20A **White River Ci** 63.12 331 P P 15 59 25.6 +0.2
baz=143
O20A **White River Ci** 63.12 331 eP P 15 59 24.6 -0.8
comp=Z,8.2nm,0.9s
F35A **Swanville** 63.13 344 P P 15 59 24.9 -0.2
baz=158,SNR=6.2
LCMT **Little Creek M** 63.25 326 eP P 15 59 26.7 +0.4
LCMT epP pP 15 59 49.9 -0.8
F34A **Alexandria** 63.26 344 P P 15 59 25.7 -0.3
baz=157
SRU **San Rafael Swe** 63.41 329 eP P 15 59 26.6 -0.7
SRU e*PP pP 15 59 51.5 -0.2
SRU pmax pmax
comp=Z,11nm,1.2s
SRU **San Rafael Swe** 63.41 329 eP P 15 59 26.6 -0.7
comp=Z,11nm,1.2s
SRU epP pP 15 59 51.5 -0.2
E36A **McGregor** 63.42 346 P P 15 59 26.7 -0.3
baz=160,SNR=11
MTPU **Mount Pierson** 63.45 327 eP P 15 59 28.0 +0.2
comp=Z,6.3nm,1.1s
F33A **5 Mile Ranch,** 63.58 343 P P 15 59 27.8 -0.3
baz=156
CCUT **Cedar City** 63.71 326 eP P 15 59 30.2 +0.8
CCUT epP pP 15 59 54.1 +0.4
MSU **Marysvale** 63.80 328 eP P 15 59 30.5 +0.6
MSU e*PP pP 15 59 54.1 -0.2
MSU **Marysvale** 63.80 328 eP P 15 59 30.5 +0.6
MSU epP pP 15 59 54.1 -0.2
P17A **Butcher Ranch,** 63.80 329 eP P 15 59 29.5 -0.3
comp=Z,44nm,1.8s
D37A **Cotton** 63.83 346 P P 15 59 29.3 -0.4
baz=160,SNR=7.3
BFSC **Mount Baldy Ra** 63.85 321 P P 15 59 30.6 +0.4
baz=132
E34A **Wadena** 63.90 344 P P 15 59 29.3 -0.8
baz=158
TMUT **Trail Mountain** 63.90 329 eP P 15 59 31.4 +0.7
TMUT epP pP 15 59 55.1 0.0
SHPR **Sheep Range** 63.95 324 eP P 15 59 31.4 +0.5
SHPR epP pP 15 59 54.8 -0.5
C39A **Grand Marais** 63.97 348 P P 15 59 29.8 -0.8
baz=163,SNR=7.5
GSC **Goldstone, Bar** 64.06 322 P P 15 59 32.1 +0.5
baz=134
GSC **Goldstone, Bar** 64.06 322 epP pP 15 59 56.4 +0.4
F31A **Hecla** 64.17 342 P P 15 59 31.6 -0.4
baz=154
C37A **Embarrass** 64.31 347 P P 15 59 32.3 -0.5
baz=161,SNR=7.5
EYMN **Ely** 64.37 347 eP P 15 59 31.9 -1.2
comp=Z,20nm,1.3s
K22A **Casper** 64.40 334 eP P 15 59 33.6 -0.1
comp=Z,31nm,1.6s
C36A **Pine Crest Far** 64.48 346 P P 15 59 33.4 -0.5
baz=160,SNR=6.1
RSSD **Black Hills** 64.63 337 P P 15 59 35.2 0.0
baz=148
RSSD **Black Hills** 64.63 337 eP P 15 59 34.8 -0.5
RSSD pmax pmax
comp=Z,22nm,1.5s
RSSD **Black Hills** 64.63 337 eP P 15 59 34.8 -0.5
comp=Z,22nm,1.5s
D33A **AnnSam, Waubun** 64.65 344 P P 15 59 34.2 -0.9
baz=157
E31A **Nome** 64.69 342 P P 15 59 35.3 0.0
baz=155
C35A **Jirik Farms, M** 64.70 346 P P 15 59 34.7 -0.7
baz=159
TPNV **Topopah Spring** 64.88 324 P P 15 59 38.2 +1.2
baz=135,SNR=6.0
TPNV **Topopah Spring** 64.88 324 eP P 15 59 37.5 +0.5
TPNV e*PP pP 16 00 01.4 0.0
TPNV **Topopah Spring** 64.88 324 eP P 15 59 37.5 +0.5
TPNV epP pP 16 00 01.4 0.0
C34A **RKJ Ranch, Bem** 64.88 345 P P 15 59 36.3 -0.2
baz=158
FURC **Furnace Creek,** 64.90 323 P P 15 59 37.5 +0.7
baz=134
SCZ2 **Santa Cruz Isl** 64.91 319 P P 15 59 37.7 +0.7
baz=131
MPMC **Manual Prospec** 64.98 322 P P 15 59 38.2 +0.5
baz=133
JLU **Jordanelle** 65.01 330 eP P 15 59 38.0 +0.2
comp=Z,54nm,1.9s
JLU epP pP 16 00 03.0 +0.7
B35A **Bob. Littlefor** 65.25 346 P P 15 59 38.2 -0.7
baz=159,SNR=5.7
DUG **Dugway, Tooele** 65.38 328 P P 15 59 41.4 +1.3
baz=139,SNR=15
DUG **Dugway, Tooele** 65.38 328 eP P 15 59 40.7 +0.6
DUG pmax pmax
comp=Z,42nm,1.8s
DUG **Dugway, Tooele** 65.38 328 eP P 15 59 40.7 +0.6
comp=Z,42nm,1.8s
TCUT **Toone Canyon** 65.39 330 eP P 15 59 40.6 +0.3
comp=Z,35nm,1.3s
R11A **Troy Canyon, C** 65.50 325 P P 15 59 42.0 +1.1
baz=136,SNR=8.7
R11A **Troy Canyon, C** 65.50 325 eP P 15 59 41.6 +0.7
comp=Z,14nm,1.5s
R11A epP pP 16 00 05.2 -0.3
CWC **Cottonwood Cre** 65.59 322 P P 15 59 42.3 +0.8
baz=133
B34A **Aery, Baudette** 65.59 345 P P 15 59 40.6 -0.5
baz=158,SNR=7.0
PKM **Mcpherson Peak** 65.61 320 P P 15 59 42.5 +0.8
baz=131
B33A **Robert and Kas** 65.63 345 P P 15 59 41.0 -0.3
baz=157
AGMN **Agassiz Nation** 65.72 344 P P 15 59 41.5 -0.4
baz=157
AGMN **Agassiz Nation** 65.72 344 eP P 15 59 41.0 -0.9
AGMN epP pP 16 00 05.7 -0.8
C31A **Landman Farms,** 65.77 343 P P 15 59 42.6 +0.3
baz=155
PD31 **Pinedale Array** 65.81 332 eP P 15 59 42.0 -0.9
PDAR **Pinedale Array** 65.81 332 P P 15 59 42.3 -0.6
comp=Z,2.0nm,0.9s,baz=134,slow=6.4,SNR=13
BW06 **Boulder Array** 65.81 332 P P 15 59 42.5 -0.4
baz=142,SNR=6.5
BW06 **Boulder Array** 65.81 332 eP P 15 59 42.6 -0.3
BW06 epP PcP 16 00 12.4 -0.9
HWUT **Hardware Ranch** 65.84 330 eP P 15 59 42.4 -0.7
comp=Z,13nm,1.2s
HWUT epP pP 16 00 07.0 -0.6
B32A **Ashes, Strandq** 65.99 344 P P 15 59 43.3 -0.3
baz=156
BGU **Big Grassy Mou** 66.04 329 eP P 15 59 43.7 -0.6
comp=Z,7.4nm,1.2s
A33A **Warrod** 66.20 345 P P 15 59 44.8 -0.2
baz=158,SNR=8.7
MDND **Maddock** 66.37 342 P P 15 59 46.2 +0.1
baz=153
MDND **Maddock** 66.37 342 eP P 15 59 45.9 -0.1
comp=Z,54nm,0.9s
MDND epP pP 16 00 12.4 +1.8
HVU **Hansel Valley** 66.56 330 eP P 15 59 47.4 -0.2
HVU e*PP pP 16 00 12.1 -0.1
HVU pmax pmax
comp=Z,13nm,1.3s
HVU **Hansel Valley** 66.56 330 eP P 15 59 47.4 -0.2
comp=Z,13nm,1.3s
HVU epP pP 16 00 12.1 -0.1
REDW **Red Top Meadow** 66.87 332 eP P 15 59 49.5 -0.1
comp=Z,11nm,1.2s
LOHW **Long Hollow** 66.95 332 eP P 15 59 50.3 +0.1
comp=Z,3.2nm,0.8s
TPAW **Teton Pass** 67.01 332 eP P 15 59 50.6 0.0
comp=Z,23nm,1.7s
MOOW **Moose Ponds** 67.12 332 eP P 15 59 50.8 -0.5
comp=Z,5.1nm,1.1s
PCCM **Crazy Canyon** 67.23 320 eP P 15 59 50.2 -1.6
IMW **Indian Meadow** 67.32 332 eP P 15 59 52.6 0.0
comp=Z,16nm,1.3s
TVH3 **East Aurora ar** 67.32 323 eP P 15 59 52.5 -0.2
comp=Z,18nm,1.8s
FLWY **Flagg Ranch** 67.36 332 eP P 15 59 53.1 +0.4
comp=Z,20nm,0.9s
ULM **Lac du Bonnet** 67.53 345 P P 15 59 52.4 -1.0
comp=Z,4.4nm,0.4s,baz=161,slow=7.6,SNR=11
ULM pP pP 16 00 17.1 -0.9
comp=Z,6.6nm,0.7s,baz=135,slow=6.1,SNR=5.6
ULM **Lac du Bonnet** 67.53 345 eP P 15 59 52.0 -1.4
comp=Z,8.7nm,0.8s
ULM epP pP 16 00 16.6 -1.4
RLMT **Red Lodge** 67.56 334 P P 15 59 54.5 +0.5
baz=143,SNR=6.5
RLMT **Red Lodge** 67.56 334 eP P 15 59 54.0 0.0
comp=Z,23nm,1.4s
LAO **LASA Array** 67.62 337 eP P 15 59 53.7 -0.4
comp=Z,63nm,0.2s
WAKR **Walker** 67.78 323 eP P 15 59 56.4 +0.9
comp=Z,26nm,1.9s
WAKR epP PcP 16 00 22.9 +1.3
YHB **Horse Butte** 68.11 333 eP P 15 59 58.0 +0.6
comp=Z,13nm,0.9s
VNA1 **Neumayer--Stat** 68.24 161 P P 15 59 59.8 +2.2
GCMT **Greycliff** 68.27 334 eP P 15 59 58.4 +0.1
PNTR **Pine Nut** 68.27 324 eP P 15 59 59.2 +0.7
comp=Z,7.2nm,0.9s
PNTR epP PcP 16 00 24.9 +1.3
PAHR **Pah Rah Range** 68.56 324 eP P 16 00 01.1 +0.8
comp=Z,17nm,1.1s
PAHR epP pP 16 00 25.5 +0.6
HLID **Hailey** 68.69 330 P P 16 00 02.1 +1.1
baz=138,SNR=12
HLID **Hailey** 68.69 330 eP P 16 00 01.7 +0.6
comp=Z,26nm,1.6s
BGMT **Barton Gulch** 68.86 332 eP P 16 00 02.9 +0.8
MCMT **McKenzie Canyo** 68.91 332 eP P 16 00 03.2 +0.8
BOZ **Bozeman (W)** 69.00 333 P P 16 00 02.9 +0.1
baz=141,SNR=9.0
BOZ **Bozeman (W)** 69.00 333 eP P 16 00 02.9 +0.1
BOZ pmax pmax
comp=Z,9.0nm,1.0s
BOZ **Bozeman (W)** 69.00 333 eP P 16 00 02.9 +0.1
comp=Z,9.0nm,1.0s
DLMT **Dillon** 69.21 332 eP P 16 00 04.5 +0.4
comp=Z,9.3nm,1.1s
MFID **Gas Ranch** 69.28 329 eP P 16 00 05.3 +0.7
comp=Z,27nm,1.0s
MFID epP pP 16 00 29.8 +0.4
ORV **Oroville** 69.68 323 eP P 16 00 32.3 +0.5
ORV e*PP pP 16 00 32.3 +0.5
ORV pmax pmax
comp=Z,12nm,0.9s
ORV **Oroville** 69.68 323 eP P 16 00 08.2 +1.2
comp=Z,12nm,0.9s
ORV epP pP 16 00 32.3 +0.5
SCHQ **Schefferville** 69.73 5 P P 16 00 06.5 -0.5
comp=Z,18nm,0.9s,baz=174,slow=4.9,SNR=8.8
SCHQ LR LR 16 32 12.3
comp=Z,39nm,19.6s,baz=194,slow=37
SCHQ **Schefferville** 69.73 5 eP P 16 00 06.5 -0.5
comp=Z,19nm,0.9s
EGMT **Eagleton** 70.09 336 P P 16 00 09.6 +0.2
baz=143,SNR=5.6
EGMT **Eagleton** 70.09 336 eP P 16 00 09.4 -0.1
comp=Z,17nm,1.0s
SNAA **Sanae** 70.21 161 P P 16 00 11.1 +1.3
SNAA **Sanae** 70.21 161 *d iP P 16 00 11.1 +1.3
SNAA **Sanae** 70.21 161 eP P 16 00 11.0 +1.1
comp=Z,50nm,0.8s
MOD **Modoc Plateau** 70.56 325 eP P 16 00 13.2 +0.7
comp=Z,12nm,1.1s
CHMT **Chamberlain Mo** 70.69 333 eP P 16 00 13.6 +0.3
TBI **Tubuai** 70.74 250 eS S 16 09 35.9 +15
comp=Z,99nm,28.2s
TBI **Tubuai** 70.74 250 eLR LR 16 22 09.9
comp=Z,129nm,33.0s
MSO **Missoula** 70.93 332 P P 16 00 15.7 +1.1
baz=139,SNR=9.5
MSO **Missoula** 70.93 332 eP P 16 00 15.4 +0.7
comp=Z,14nm,1.2s
SLMT **Seeley Lake** 71.05 333 eP P 16 00 15.7 +0.3
BMO **Blue Mountains** 71.06 329 eP P 16 00 15.2 -0.2
comp=Z,5.1nm,0.8s
N02D **Trinity Center** 71.30 323 P P 16 00 16.4 -0.5
baz=130
M04C **Maxdel** 71.34 324 P P 16 00 16.8 -0.4
baz=131
K05A **Summer Lake** 71.44 326 eP P 16 00 19.3 +1.4
comp=Z,44nm,1.8s
M02C **Callahan** 71.66 324 P P 16 00 19.1 0.0
baz=130
PPT2 **Papeete2** 71.77 256 eS S 16 09 48.5 +15
comp=Z,132nm,30.8s
PPT2 **Papeete2** 71.77 256 eLR LR 16 22 33.5
comp=Z,72nm,26.8s
PPT **Papeete** 71.77 256 LR LR 16 22 07.3
comp=Z,28nm,19.4s,baz=28,slow=28
F10A **Beach Ranch, E** 71.83 330 eP P 16 00 20.6 +0.7
comp=Z,10nm,0.8s
LIC **Lamto** 71.89 78 eP P 16 00 20.3 -0.6
comp=Z,45nm,0.9s
J05D **Fort Rock, OR** 72.00 326 P P 16 00 21.9 +0.7
baz=132
TIC **Taumodi** 72.02 78 eP P 16 00 21.2 -0.6
BSMT **Basseo Peak** 72.08 333 eP P 16 00 22.4 +0.8
DBIC **Dimbokro** 72.18 78 P P 16 00 22.5 -0.2
comp=Z,13nm,0.8s,baz=229,slow=7.2,SNR=13
DBIC **Dimbokro** 72.18 78 eP P 16 00 22.1 -0.6
DBIC pmax pmax
comp=Z,20nm,0.9s
DBIC **Dimbokro** 72.18 78 eP P 16 00 22.1 -0.6
comp=Z,20nm,0.9s
G08A **Pilot Rock** 72.19 329 eP P 16 00 22.9 +0.6
comp=Z,8.4nm,0.9s
KIC **Kosan Boka** 72.20 78 eP P 16 00 22.4 -0.4
comp=Z,44nm,0.8s
WALA **Waterton Lakes** 72.62 334 eP P 16 00 24.9 +0.2
comp=Z,6.8nm,0.9s
E09A **Wood Farm, Sta** 72.66 330 eP P 16 00 25.6 +0.7
comp=Z,8.9nm,0.8s
I05D **Terrebonne, OR** 72.77 327 P P 16 00 26.9 +1.3
baz=132,SNR=8.1
G06A **Carlson Farm,** 73.01 328 eP P 16 00 28.0 +1.1
comp=Z,19nm,1.5s
HAWA **Hanford** 73.25 329 eP P 16 00 29.2 +0.9
comp=Z,13nm,0.8s
G05D **Wamic, OR** 73.36 327 P P 16 00 30.5 +1.5
baz=132
I03D **Drain, OR** 73.43 325 P P 16 00 30.1 +0.7
baz=130
NEW **Newport** 73.44 332 P P 16 00 29.8 +0.4
baz=137
NEW **Newport** 73.44 332 eP P 16 00 28.8 -0.7
NEW pmax pmax
comp=Z,5.0nm,1.0s
NEW **Newport** 73.44 332 eP P 16 00 28.8 -0.7
comp=Z,5.4nm,1.0s
C09A **Chrisman Ranch** 73.64 331 eP P 16 00 32.0 +1.4
comp=Z,8.8nm,1.0s
F04A **Amboy** 74.40 327 eP P 16 00 35.9 +0.9
comp=Z,22nm,0.8s
B08A **Colville Reser** 74.53 331 eP P 16 00 36.3 +0.4
comp=Z,8.3nm,0.8s
NVL **N'lazarevskaya** 74.84 160 eP P 16 00 39.5 +2.3
NVL e*PP pP 16 01 03.8 +1.5
D05A **Enumclaw** 75.02 329 eP P 16 00 39.2 +0.6
comp=Z,30nm,0.8s
EDM **Edmonton** 75.61 337 eP P 16 00 41.5 -0.4
EDM e*PP pP 16 01 05.8 -1.2
EDM pmax pmax
comp=Z,25nm,0.8s
EDM **Edmonton** 75.61 337 eP P 16 00 41.5 -0.4
comp=Z,25nm,0.8s
EDM epP pP 16 01 05.8 -1.2
B05A **Bryant** 75.80 329 P P 16 00 43.4 +0.4
baz=132,SNR=7.5
NLWA **Neilton Lookou** 76.11 328 eP P 16 00 46.4 +1.5
comp=Z,18nm,0.8s
PGC **Sidney** 76.73 329 eP P 16 00 49.5 +1.3
comp=Z,13nm,1.0s
LLLB **Lillooet** 77.29 331 eP P 16 00 51.9 +0.5
comp=Z,14nm,1.3s
RAR **Rarotonga** 80.51 251 LR LR 16 27 53.9
comp=Z,88nm,21.8s,baz=100,slow=29
MORF **Marmelete** 80.65 47 eP P 16 01 09.5 -0.6
MORF AMb AMB 16 01 12.3
comp=Z,38nm,1.3s
MORF **Marmelete** 80.65 47 eP P 16 01 12.0 +1.9
comp=Z,41nm,2.0s
MORF epP pP 16 01 38.4 +2.9
MORF **Marmelete** 80.65 47 eP P 16 01 09.5 -0.6
PTEO **Sao Teotonio** 80.70 47 eP P 16 01 12.6 +2.3
comp=Z,70nm,1.3s
PNCL **Nicolau / Gran** 81.09 47 eP P 16 01 14.3 +1.9
comp=Z,22nm,0.9s
PBDV **Barranco-do-Ve** 81.13 48 eP P 16 01 14.4 +1.7
comp=Z,34nm,1.3s
MESJ **Messejana** 81.19 47 eP P 16 01 12.4 -0.5
MESJ AMb AMB 16 01 15.4
comp=Z,27nm,1.5s
MESJ **Messejana** 81.19 47 eP P 16 01 15.0 +2.1
comp=Z,23nm,1.7s
MESJ epP pP 16 01 37.7 -0.6
MESJ **Messejana** 81.19 47 eP P 16 01 12.4 -0.5
PCVE **Castro Verde** 81.23 47 eP P 16 01 15.0 +1.9
comp=Z,44nm,1.0s
PCVE epP pP 16 01 39.8 +1.3
SBA **Scott Base** 81.34 191 eP P 16 01 14.8 +1.7
SBA pmax pmax
comp=Z,10.0nm,1.1s
SBA **Scott Base** 81.34 191 eP P 16 01 14.8 +1.7
comp=Z,10nm,1.1s
PVAQ **Vaqueiros** 81.36 48 eP P 16 01 15.6 +1.8
comp=Z,36nm,1.7s
PBEJ **Beja** 81.52 47 eP P 16 01 16.4 +1.7
comp=Z,16nm,2.2s
PBEJ epP pP 16 01 42.5 +2.4
PMTG **Montargil** 81.74 46 eP P 16 01 16.9 +1.1
comp=Z,29nm,1.9s
PTOM **Tomar** 81.85 45 eP P 16 01 17.8 +1.4
comp=Z,55nm,1.3s
PESTR **Estremoz** 82.09 46 eP P 16 01 19.0 +1.3
comp=Z,25nm,1.8s
PBAR **Barrancos** 82.18 47 eP P 16 01 19.7 +1.6
comp=Z,40nm,2.1s
VNDA **Vanda** 82.41 191 P P 16 01 20.4 +1.7
comp=Z,4.6nm,0.9s,baz=130,slow=6.1,SNR=24
VNDA LR LR 16 31 40.5
comp=Z,25nm,21.5s,baz=182,slow=31
VNDA **Vanda** 82.41 191 eP P 16 01 20.1 +1.5
comp=Z,5.2nm,0.9s
PVIS **Viseu** 82.70 45 eP P 16 01 22.0 +1.2
comp=Z,46nm,1.4s
MTE **Manteigas** 82.80 45 eP P 16 01 22.1 +0.7
comp=Z,57nm,1.0s
MTE epP pP 16 01 48.9 +2.1
MTE **Manteigas** 82.80 45 eP P 16 01 22.0 +0.6
comp=Z,33nm,0.9s
MTE epP pP 16 01 48.0 +1.1
PCAB **Cabril** 83.06 44 eP P 16 01 22.0 -0.6
comp=Z,51nm,1.1s
POLO **Lamas de Olo** 83.06 44 eP P 16 01 23.9 +1.1
comp=Z,18nm,1.4s
POLO epP pP 16 01 49.8 +1.6
PVRL **Vila Real** 83.07 44 eP P 16 01 24.1 +1.4
comp=Z,39nm,0.9s
PVRL epP pP 16 01 50.4 +2.2
YKA **Yellowknife Ar** 83.28 342 P P 16 01 23.0 -0.2
comp=Z,5.5nm,0.8s,baz=136,slow=5.2,SNR=23
YKA pP pP 16 01 47.8 -0.8
comp=Z,2.0nm,0.8s,baz=137,slow=5.2,SNR=2.3
YKB5 **Yellowknife Ar** 83.28 342 eP P 16 01 22.7 -0.5
YKW3 **Yellowknife Ar** 83.33 342 eP P 16 01 22.6 -0.9
comp=Z,16nm,1.0s
MVO **Moncorvo** 83.49 45 ||eP P 16 01 26.0 +1.1
comp=Z,40nm,1.0s
MVO epP pP 16 01 52.9 +2.5
PBRG **Braganca** 83.96 44 eP P 16 01 27.9 +0.6
comp=Z,45nm,1.6s
PBRG epP pP 16 01 54.8 +2.0
SYO **Syowa Base** 84.48 161 ||eP P 16 01 26.2 -3.2
PAB **San Pablo** 84.66 47 eP P 16 01 31.6 +0.7
PAB e*PP pP 16 01 57.8 +1.4
PAB pmax pmax
comp=Z,29nm,0.9s
PAB **San Pablo** 84.66 47 eP P 16 01 31.6 +0.7
comp=Z,29nm,0.9s
PAB epP pP 16 01 57.8 +1.4
ESDC **Sonseca Array** 84.98 47 P P 16 01 33.5 +1.1
comp=Z,7.9nm,0.7s,baz=257,slow=5.5,SNR=42
ESDC pP pP 16 02 00.2 +2.2
comp=Z,12nm,0.9s,baz=253,slow=5.2,SNR=12
ESLA **Sonseca Array** 84.98 47 eP P 16 01 33.4 +0.9
ESLA epP pP 16 01 59.5 +1.4
ES19 **SONSECA Array** 85.04 47 eP P 16 01 33.2 +0.4
ES19 epP pP 16 01 59.4 +1.0
DLBC **Dease Lake** 85.97 334 eP P 16 01 37.2 +0.2
DLBC epP pP 16 02 02.7 +0.1
TAM **Tamanrasset** 86.70 66 eP P 16 01 42.4 +1.0
TAM e*PP pP 16 02 09.7 +2.6
TAM pmax pmax
comp=Z,27nm,1.1s
TAM **Tamanrasset** 86.70 66 eP P 16 01 42.4 +1.0
comp=Z,27nm,1.1s
TAM epP pP 16 02 09.7 +2.6
TSUM **Tsumeb** 87.05 109 eP P 16 01 43.9 +0.6
comp=Z,12nm,0.9s
SUMG **Summit** 90.42 10 *i P P 16 01 59.1 +0.8
comp=Z,41nm,0.9s
SUMG **Summit** 90.42 10 eP P 16 01 58.7 +0.4
SUMG **Summit** 90.42 10 eP P 16 01 58.6 +0.4
comp=Z,42nm,0.9s
BOSA **Boshof** 91.22 120 P P 16 02 03.1 +0.4
comp=Z,7.1nm,0.9s,baz=289,slow=4.2,SNR=5.1
EKA **Eskdalemuir Ar** 91.82 33 P P 16 02 04.3 -0.3
comp=Z,1.9nm,0.8s,baz=23,slow=20,SNR=3.6
MAW **Mawson** 92.10 165 P P 16 02 07.0 +1.2
comp=Z,11nm,0.9s,baz=234,slow=6.1,SNR=24

MAW	**Mawson**	**92.10**	**165**	*e*P	**P**	**16 02 06.8**	**+1.0**
MAW				pmax	pmax		
	comp=Z,3.0nm,1.0s						
MAW	**Mawson**	**92.10**	**165**	*e*P	**P**	**16 02 06.8**	**+1.0**
	comp=Z,3.3nm,1.0s						
DAWY	**Dawson**	**92.82**	**336**	*e*P	**P**	**16 02 08.8**	**-0.3**
	comp=Z,5.7nm,1.1s						
DAWY				*e*pP	**pP**	**16 02 34.2**	**-0.7**
INK	**Inuvik**	**92.99**	**341**	P	**P**	**16 02 09.6**	**-0.1**
	comp=Z,5.1nm,0.9s,baz=106,slow=3.7,SNR=9.8						
INK				pP	**pP**	**16 02 35.1**	**-0.4**
	comp=Z,2.0nm,0.8s,baz=36,slow=12,SNR=3.1						
INK	**Inuvik**	**92.99**	**341**	*e*P	**P**	**16 02 09.2**	**-0.5**
	comp=Z,8.9nm,1.0s						
INK				pP	**pP**	**16 02 35.1**	**-0.4**
KEST	**Kesra**	**93.60**	**54**	P	**P**	**16 02 14.8**	**+1.4**
	comp=Z,8.2nm,0.9s,baz=88,slow=3.5,SNR=6.9						
KEST	**Kesra**	**93.60**	**54**	*e*P	**P**	**16 02 16.1**	**+2.6**
EGAK	**Eagle**	**93.83**	**337**	*e*P	**P**	**16 02 13.0**	**-0.7**
	comp=Z,6.1nm,1.2s						
ILAR	**Eielson Array**	**96.06**	**336**	P	**P**	**16 02 23.1**	**-0.8**
	comp=Z,0.5nm,0.6s,baz=149,slow=3.7,SNR=11						
ILAR				pP	**pP**	**16 02 48.9**	**-0.9**
	comp=Z,0.5nm,0.8s,baz=161,slow=4.8,SNR=3.9						
COLA	**College**	**96.48**	**336**	*e*P	**P**	**16 02 26.1**	**+0.4**
COLA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
MDM	**Murphy Dome**	**96.66**	**336**	*e*P	**P**	**16 02 26.0**	**-0.6**
	comp=Z,4.9nm,0.9s						
DAVOX	**Davos/Dischmat**	**96.85**	**44**	P	**P**	**16 02 28.3**	**+0.1**
	comp=Z,5.8nm,0.8s,baz=265,slow=3.0,SNR=10						
DAVA	**Damuels**	**96.97**	**43**	*i* P	**P**	**16 02 29.3**	**+0.6**
	comp=Z,10nm,1.1s						
DAG	**Danmarks Havn**	**97.06**	**11**	*i* P	**P**	**16 02 27.5**	**-0.6**
	comp=Z,2.8nm,0.8s						
FETA	**Feichten**	**97.47**	**43**	*i* PcP	Pdif	16 02 31.6	+0.6
	comp=Z,6.0nm,0.9s						
MOTA	**Moosalm**	**97.80**	**43**	*i* P	**P**	**16 02 32.2**	**-0.1**
	comp=Z,5.8nm,0.8s						
WATA	**Walderalm**	**98.11**	**43**	*i* PcP	Pdif	16 02 34.6	+0.9
	comp=Z,3.6nm,0.7s						
WTTA	**Wattenberg**	**98.13**	**43**	*i* PcP	Pdif	16 02 34.8	+0.9
	comp=Z,11nm,1.4s						
COLD	**Coldfoot**	**98.19**	**338**	*e*P	**P**	**16 02 33.3**	**-0.1**
ABTA	**Abfaltersbach**	**98.60**	**44**	*i* Pdiff	Pdif	16 02 36.2	+0.4
	comp=Z,8.6nm,0.9s						
NKC	**Novy Kostel**	**99.30**	**41**	*e*PDIFF	**Pdif**	**16 02 39.8**	**+1.0**
NKC				*e*pP	**pP**	**16 03 06.9**	**+2.2**
MYKA	**Terra Mystica**	**99.34**	**44**	*i* Pdiff	**Pdif**	**16 02 39.5**	**+0.4**
	comp=Z,5.8nm,1.1s						
KHC	**Kasperske Hory**	**99.79**	**42**	*e*PDIFF	**Pdif**	**16 02 41.9**	**+0.8**
KHC				*e*pP	**pP**	**16 03 08.7**	**+1.7**
GEA0	**GERESS Array S**	**99.82**	**42**	*e*Pdif	**Pdif**	**16 02 41.1**	**-0.1**
GEA0				*e*pP	**pP**	**16 03 07.9**	**+0.7**
GERES	**GERESS Array B**	**99.82**	**42**	P	**Pdif**	**16 02 41.5**	**+0.2**
	comp=Z,1.9nm,0.8s,baz=250,slow=4.0,SNR=17						
CLL	**Collm**	**99.86**	**40**	*e*Pdif	**Pdif**	**16 02 41.0**	**-0.2**
CLL				*e*		16 03 08.0	
MOA	**Molln**	**100.00**	**43**	*i* Pdiff	**Pdif**	**16 02 42.3**	**+0.3**
	comp=Z,3.4nm,0.7s						
SOKA	**Soboth**	**100.29**	**44**	*i* Pdiff	**Pdif**	**16 02 41.9**	**-1.5**
	comp=Z,5.9nm,1.2s						
PRU	**Pruhonice**	**100.57**	**41**	*e*PDIFF	**Pdif**	**16 02 45.6**	**+1.2**
PRU				*e*pP	pP	16 03 12.2	+1.8
ARSA	**Arzberg**	**100.72**	**44**	*i* Pdiff	**Pdif**	**16 02 45.5**	**+0.3**
	comp=Z,5.3nm,1.4s						
UPC	**Upice**	**101.59**	**41**	*e*PDIFF	**Pdif**	**16 02 50.6**	**+1.6**
UPC				*e*pP	pP	16 03 17.3	+2.2
DPC	**Dobruska-Polom**	**101.76**	**41**	*e*PDIFF	**Pdif**	**16 02 51.5**	**+1.7**
DPC				*e*pP	pP	16 03 17.1	+1.2
OBN	**Obninsk**	**114.06**	**36**⇑	*e*PKIKP	PKPdf	16 07 36.6	+1.3
OBN				*e*		16 18 04.7	
OBN				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KIV	**Kislovodsk**	**119.64**	**48**	*e*PKIKP	**PKPdf**	**16 07 51.1**	**+4.5**
KIV				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KBZ	**Khabaz**	**119.83**	**48**	PKP	**PKPdf**	**16 07 47.1**	**+0.4**
	comp=Z,3.5nm,0.8s,baz=240,slow=2.6,SNR=5.7						
TIXI	**Tiksi**	**121.55**	**352**	*e*PKIKP	**PKPdf**	**16 07 49.6**	**+0.3**
TIXI				pmax	pmax		
	comp=Z,12nm,1.0s						
STKA	**Stephens Creek**	**122.10**	**216**	PKP	**PKPdf**	**16 07 51.3**	**-0.3**
	comp=Z,1.1nm,0.6s,baz=130,slow=5.2,SNR=6.6						
PETK	**Petropavlovsk-**	**124.16**	**325**	PKP	**PKPdf**	**16 07 55.3**	**+0.4**
	comp=Z,3.5nm,0.9s,baz=96,slow=11,SNR=3.7						
CTA	**Charters Tower**	**127.03**	**230**	PKP	**PKPdf**	**16 08 00.0**	**-1.4**
	comp=Z,3.3nm,0.9s,baz=27,slow=4.5,SNR=2.9						
ABKAR	**Akbulak array**	**129.47**	**37**	*e*PKPdf	**PKPdf**	**16 08 05.8**	**+0.8**
YAK	**Yakutsk**	**129.87**	**345**	*e*PKIKP	**PKPdf**	**16 08 05.5**	**+0.1**
YAK	**Yakutsk**	**129.87**	**345**	*e*PKPdf	**PKPdf**	**16 08 05.5**	**+0.1**
AS01	**Alice Springs**	**132.71**	**216**	*e*PKPdf	**PKPdf**	**16 08 11.6**	**-0.6**
AS01				*ep*PKPdf	**pPKPdf**	**16 08 37.7**	**-1.4**
ASAR	**Alice Springs**	**132.74**	**216**	PKP	**PKPdf**	**16 08 12.1**	**-0.2**
	comp=Z,1.7nm,0.7s,baz=134,slow=2.2,SNR=36						
ASAR				pPKP	**pPKPdf**	**16 08 38.1**	**-1.0**
	comp=Z,2.9nm,0.8s,baz=132,slow=2.1,SNR=10.0						
VOSK	**Vostochnaya**	**133.36**	**28**	*e*PKIKP	**PKPdf**	**16 08 13.3**	**+0.9**
VOSK	**Vostochnaya**	**133.36**	**28**	*e*PKPdf	**PKPdf**	**16 08 13.3**	**+0.9**
WB2	**Warramunga Arr**	**135.31**	**220**	*e*PKPdf	**PKPdf**	**16 08 17.3**	**+0.2**
WB2				*ep*PKPdf	**pPKPdf**	**16 08 43.0**	**-1.0**
WRA	**Warramunga Arr**	**135.31**	**220**	PKP	**PKPdf**	**16 08 17.7**	**+0.6**
	comp=Z,4.4nm,0.8s,baz=130,slow=2.1,SNR=25						
WRA				pPKP	**pPKPdf**	**16 08 43.4**	**-0.5**
	comp=Z,5.4nm,0.8s,baz=144,slow=1.9,SNR=14						
WRAB	**Tennant Creek**	**135.31**	**220**	*e*PKIKP	**PKPdf**	**16 08 16.0**	**-1.1**
WRAB	**Tennant Creek**	**135.31**	**220**	*e*PKPdf	**PKPdf**	**16 08 16.0**	**-1.1**
ZALV	**Zalesovo Beam**	**137.74**	**18**	PKhKP	PKPpre	16 08 11.4	
	comp=Z,1.0nm,0.6s,baz=66,slow=1.8,SNR=4.1						
ZALV				PKP	**PKPdf**	**16 08 21.3**	**+0.8**
	comp=Z,14nm,0.7s,baz=292,slow=2.5,SNR=50						
ZALV				pPKP	pPKPdf	16 08 47.5	+0.1
	comp=Z,9.7nm,0.9s,baz=299,slow=3.1,SNR=5.0						
KURK	**Kurchatov**	**138.14**	**26**	PKIKP	**PKPdf**	**16 08 19.6**	**-1.7**
KURK	**Kurchatov**	**138.14**	**26**	PKP	**PKPdf**	**16 08 19.6**	**-1.7**
KURBB	**Kurchatov Arra**	**138.17**	**26**	PKP	**PKPdf**	**16 08 19.6**	**-1.7**
	comp=Z,3.7nm,0.8s,baz=181,slow=7.3,SNR=14						
MAKZ	**Makanchi**	**142.56**	**27**	*e*PKHKP	PKPpre	16 08 24.7	
MAKZ	**Makanchi**	**142.56**	**27**	*e*PKPpre	PKPpre	16 08 24.7	
MK31	**Makanchi Array**	**142.70**	**27**	*e*PKPpre	PKPpre	16 08 25.6	
MKAR	**Makanchi Array**	**142.70**	**27**	PKhKP	PKPpre	16 08 25.6	
	comp=Z,2.7nm,0.9s,baz=296,slow=4.8,SNR=9.9						
MKAR	**Makanchi Array**	**142.70**	**27**	*e*PKPpre	PKPpre	16 08 25.3	
MK01	**Makanchi Array**	**142.73**	**27**	*e*PKPpre	PKPpre	16 08 25.3	
USRK	**Ussuriysk Ar.**	**143.14**	**328**	PKhKP	PKPpre	16 08 27.3	
	comp=Z,2.4nm,0.6s,baz=227,slow=1.2,SNR=5.3						
MJAR	**Matsushiro Arr**	**143.81**	**313**	PKhKP	PKPpre	16 08 29.1	
	comp=Z,4.3nm,0.6s,baz=101,slow=3.0,SNR=23						
MAJO	**Matsushiro**	**143.81**	**313**	*e*PKPpre	PKPpre	16 08 28.8	
MAT	**Matsushiro**	**143.81**	**313**	PKP	PKPab	16 08 29.0	-0.1
MJB9	**Matsu-Tunnel**	**143.81**	**313**	*e*PKPpre	PKPpre	16 08 28.9	
KSH	**Kashi**	**144.28**	**41**	PKP	**PKPdf**	**16 08 32.8**	**-0.1**
KSH				*ep*PKP	pPKPdf	16 08 59.5	-0.3
KSH				*es*PKP		16 09 10.6	
KSH				*e*PP	**PP**	**16 11 52.8**	**+4.3**
KSH				SKS	**SKSdf**	**16 15 30.4**	**-3.4**
KSH				SKKS	**SKKSac**	**16 18 31.3**	**-1.2**
KSH				AMB	AMB		
	comp=Z,49nm,3.6s						
KSH				LR	LR		
	comp=Z,86nm,6.2s						
KSH				LR	LR		
	comp=Z,74nm,5.8s						
KSH				LR	LR		
	comp=Z,84nm,7.1s						
ZAK	**Zakamensk**	**144.53**	**3**	*e*PKIKP	PKPbc	16 08 31.7	-0.1
ZAK				pmax	pmax		
	comp=Z,21nm,1.0s						
CN2	**Changchun**	**146.55**	**333**	*e*PKPbc	**PKPdf**	**16 08 36.3**	**-0.1**
SONA1	**Songino Array**	**147.11**	**359**	*e*PKPdf	**PKPdf**	**16 08 38.1**	**+0.6**
SONM	**Songino Array**	**147.13**	**359**	PKPbc	**PKPbc**	**16 08 38.7**	**-1.0**
	comp=Z,20nm,0.8s,baz=334,slow=1.9,SNR=90						
SONM				pPKPbc	**pPKPbc**	**16 09 06.7**	**+0.3**
	comp=Z,7.8nm,0.8s,baz=310,slow=1.3,SNR=5.6						
WMQ	**Urumqi**	**147.36**	**24**	PKPbc	**PKPbc**	**16 08 39.3**	**-1.1**
WMQ				LR	LR		
	comp=Z,150nm,29.2s						
THN	**Thein Dam**	**147.70**	**52**	*e*P	**PKPbc**	**16 08 41.8**	**+0.2**
SOEI	**Soe**	**149.31**	**218**	*e*PKPbc	**PKPbc**	**16 08 47.5**	**+1.1**
KSRS	**Korea Array**	**150.02**	**323**	PKP	**PKPdf**	**16 08 43.5**	**+1.3**
	comp=Z,11nm,1.1s,baz=31,slow=0.7,SNR=25						
KSRS				PKPbc	**PKPbc**	**16 08 47.6**	**+0.3**
	comp=Z,19nm,0.9s,baz=331,slow=3.0,SNR=70						
KS01	**Wonju Array Si**	**150.02**	**323**	*e*PKPdf	**PKPdf**	**16 08 42.3**	**0.0**
KS01				*e*PKPbc	**PKPbc**	**16 08 47.6**	**+0.2**
KS15	**Wonju Array Si**	**150.05**	**323**	*e*PKPdf	**PKPdf**	**16 08 41.2**	**-1.1**
KS15				*e*PKPbc	**PKPbc**	**16 08 47.8**	**+0.4**
KSAR	**Wonju Array Be**	**150.05**	**323**	PKP	**PKPdf**	**16 08 43.5**	**+1.2**
KSAR				PKPbc	**PKPbc**	**16 08 47.6**	**+0.2**
BJT	**Baijiatuau**	**153.29**	**342**	*e*PKIKP	**PKPbc**	**16 08 54.4**	**-0.4**
BJT	**Baijiatuau**	**153.29**	**342**	*e*PKPbc	**PKPbc**	**16 08 54.4**	**-0.4**
HHC	**Hu-ho-hao-te**	**153.60**	**350**	*e*PKPbc	**PKPdf**	**16 08 46.3**	**-1.5**
GTA	**Gaotai**	**155.03**	**11**	PKPbc	**PKPdf**	**16 08 51.3**	**+1.5**
GTA				pPKP	PKPab	16 09 14.1	-0.4
GTA				sPKP		16 09 25.1	
PYUN	**Piuthan**	**155.25**	**54**	*e*P	**PKPab**	**16 09 16.4**	**+0.4**
	comp=Z,42nm,0.8s						
GKN	**Gorkha**	**156.58**	**53**	*e*P	**PKPab**	**16 09 21.9**	**+0.3**
	comp=Z,44nm,0.9s						
DMN	**Daman**	**157.13**	**53**	*e*P	**PKPab**	**16 09 24.7**	**+0.6**
	comp=Z,36nm,0.7s						
KKN	**Kakani**	**157.18**	**52**	*e*P	**PKPab**	**16 09 24.7**	**+0.4**
	comp=Z,43nm,0.7s						
PKIN	**Phulchoki**	**157.37**	**53**	*e*P	**PKPab**	**16 09 25.1**	**-0.1**
	comp=Z,16nm,0.8s						
GUN	**Gumba**	**157.57**	**51**	*e*P	**PKPab**	**16 09 26.7**	**+0.6**
	comp=Z,71nm,0.8s						
LSA	**Lhasa**	**160.13**	**40**	*e*PKIKP	**PKPdf**	**16 08 58.1**	**+1.2**
LSA	**Lhasa**	**160.13**	**40**	*e*PKPdf	**PKPdf**	**16 08 58.1**	**+1.2**
ENH	**Enshi**	**164.26**	**347**	*e*PKPdf	**PKPdf**	**16 09 00.9**	**+0.5**
GYA	**Guiyang**	**168.43**	**355**	*e*PKP	**PKPdf**	**16 09 02.0**	**-1.9**
GYA				pPKP	pPKPdf	16 09 29.4	-1.6
GYA				PKPab	**PKPab**	**16 10 13.3**	**+0.1**
GYA				PKS	**PKSdf**	**16 12 33.6**	**-3.1**
GYA				PP	**PP**	**16 14 03.6**	**+2.7**
GYA				AMB	AMB		
	comp=Z,120nm,8.0s						
CHTO	**Chiang Mai**	**172.53**	**57**	*e*PKIKP	**PKPdf**	**16 09 05.5**	**-0.7**
CHTO	**Chiang Mai**	**172.53**	**57**	*e*PKPdf	**PKPdf**	**16 09 05.5**	**-0.7**
CMAR	**Chiang Mai Arr**	**172.71**	**60**	PKP	**PKPdf**	**16 09 06.0**	**-0.3**
	comp=Z,1.2nm,0.9s,baz=299,slow=2.0,SNR=9.1						
CMAR				pPKP	**pPKPdf**	**16 09 32.9**	**-0.5**
	comp=Z,2.0nm,1.1s,baz=261,slow=1.3,SNR=4.3						
CMAR				PKPab	**PKPab**	**16 10 31.9**	**-0.7**
	comp=Z,1.7nm,0.9s,baz=297,slow=5.1,SNR=8.5						
CM01	**Chiang Mai Arr**	**172.74**	**60**	*e*PKPdf	**PKPdf**	**16 09 06.4**	**+0.1**

IDC 24 16:26:43.9±3.1, 14°.63N×89°.55W, h0km, mb3.5/1, mb1 3.8/3, mb1mx3.5/33, mbtmp3.5/3, ML3.8/2, Error ellipse: s-maj=62.0km s-min=39.3km az=8.0, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**5.69**	**296**	Pn	Pn	16 28 10.0	+0.2
	0.9nm,0.3s,baz=105,slow=15,SNR=6.8						
CMIG				Sn	Sn	16 29 18.2	+2.3
	1.1nm,0.3s,baz=307,slow=15,SNR=2.7						
CMIG				Lg	Lg	16 29 40.0	
	2.3nm,0.3s,baz=230,slow=23,SNR=7.0						
TXAR	**Lajitas Array**	**19.61**	**321**	P	P	16 31 13.3	-0.7
	0.1nm,0.3s,baz=145,slow=11,SNR=12						
TKL	**Tuckaleechee C**	**21.57**	**13**	P	P	16 31 35.1	-0.1
	1.3nm,0.6s,baz=180,slow=11,SNR=3.4						
WRA	**Warramunga Arr**	**137.85**	**256**	PKP	PKPdf	16 46 09.1	-2.3
	0.3nm,0.7s,baz=84,slow=1.8,SNR=4.6						
CMAR	**Chiang Mai Arr**	**146.07**	**345**	PKPbc	PKPbc	16 46 27.0	+0.2
	0.3nm,0.4s,baz=350,slow=3.7,SNR=2.9						

DDA 24 16:41:04.7, 39°.56N×28°.30E, h6km, Md2.7
ISCJB 24 16:41:06.0±0.4, 39°.60N±0°.03×28°.62E±0°.04, h7km±4km, Error ellipse: s-maj=5.3km s-min=4.5km az=152.6
ISK 24 16:41:06.1, 39°.64N×28°.62E, h6km, MD2.6
CSEM 24 16:41:06.2±0.2, 39°.60N×28°.62E, h5km, MD2.6, Error ellipse: s-maj=5.3km s-min=4.4km az=78.0
ISC 24 16:41:06.2±0.8, 39°.59N±0°.02×28°.62E±0°.03, h8km±5km, n38, σ0°78/49, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DST	**Dursunbey**	**0.02**	**1**	PG	**Pg**	**16 41 07.5**	**-0.3**
DST				*e*SG	**Sg**	**16 41 08.9**	**0.0**
DST	**Dursunbey**	**0.02**	**1**	*i* Pg	**Pg**	**16 41 07.5**	**-0.3**
DST				*e*Sg	**Sg**	**16 41 08.9**	**0.0**
DEMI	**Demirci**	**0.55**	**172**	*i* P	**Pg**	**16 41 15.7**	**-1.1**
DEMI				*i* S	**Sg**	**16 41 25.1**	**+1.2**
DEMI	**Demirci**	**0.55**	**172**	P	**Pg**	**16 41 15.7**	**-1.1**
DEMI				S	**Sg**	**16 41 25.1**	**+1.2**
BALB	**Balikesir**	**0.57**	**276**	*e*PG	**Pg**	**16 41 18.2**	**-0.2**
BALB				*e*SG	**Sg**	**16 41 25.1**	**+0.3**
BALB	**Balikesir**	**0.57**	**276**	*e*Pg	**Pb**	**16 41 18.2**	**-0.2**
BALB				*e*Sg	**Sg**	**16 41 25.1**	**+0.3**
TVSB	**Tavsanli**	**0.67**	**101**	*e*PG	**Pb**	**16 41 19.6**	**-0.5**
TVSB				*e*SG	**Sb**	**16 41 28.9**	**-0.6**
TVSB	**Tavsanli**	**0.67**	**101**	*e*Pg	**Pb**	**16 41 19.6**	**-0.5**
TVSB				*e*Sg	**Sb**	**16 41 28.9**	**-0.6**
KCTX	**Karacabey (Bur**	**0.71**	**344**	*e*PG	**Pg**	**16 41 18.8**	**-1.1**
KCTX	**Karacabey (Bur**	**0.71**	**344**	*e*Pg	**Pg**	**16 41 18.8**	**-1.1**
MDNY	**Mudanya-Bursa**	**0.81**	**15**	*e*PG	**Pb**	**16 41 21.9**	**-0.6**
MDNY	**Mudanya-Bursa**	**0.81**	**15**	*e*Pg	**Pb**	**16 41 21.9**	**-0.6**
GDZ	**Gediz**	**0.83**	**126**	*i* P	**Pn**	**16 41 24.7**	**+0.4**
GDZ				*i* S	**Sn**	**16 41 39.4**	**+2.6**
GDZ	**Gediz**	**0.83**	**126**	P	**Pn**	**16 41 24.7**	**+0.4**
GONE	**Gonen-Balikesi**	**0.85**	**303**	*e*PG	**Pg**	**16 41 21.7**	**-0.9**
GONE	**Gonen-Balikesi**	**0.85**	**303**	*e*Pg	**Pg**	**16 41 21.7**	**-0.9**
AKS	**Akhisar**	**0.94**	**222**	*e*PG	**Pb**	**16 41 25.2**	**+0.5**
AKS	**Akhisar**	**0.94**	**222**	*e*Pg	**Pb**	**16 41 25.2**	**+0.5**
ARMT	**Armutlu**	**1.00**	**11**	*e*PG	**Pg**	**16 41 24.8**	**-0.5**
ARMT	**Armutlu**	**1.00**	**11**	*e*Pg	**Pg**	**16 41 24.8**	**-0.5**
IZI	**Iznik**	**1.00**	**41**	*e*PG	**Pg**	**16 41 25.0**	**-0.3**
IZI	**Iznik**	**1.00**	**41**	*e*Pg	**Pg**	**16 41 25.0**	**-0.3**
SBT5	**Esenkoy-Cinarc**	**1.06**	**11**	*e*PG	**Pg**	**16 41 25.9**	**-0.7**
SBT5	**Esenkoy-Cinarc**	**1.06**	**11**	*e*Pg	**Pg**	**16 41 25.9**	**-0.7**
MANT	**Manisa**	**1.09**	**183**	*i* P	**Pg**	**16 41 25.9**	**-1.3**
MANT				*i* S	**Sg**	**16 41 40.3**	**-1.1**
MANT	**Manisa**	**1.09**	**183**	P	**Pg**	**16 41 25.9**	**-1.3**
MANT				S	**Sg**	**16 41 40.3**	**-1.1**
CAVI	**Cavuskoy**	**1.12**	**56**	*e*PN	**Pg**	**16 41 27.4**	**-0.4**
CAVI	**Cavuskoy**	**1.12**	**56**	*e*Pn	**Pg**	**16 41 27.4**	**-0.4**
MRMT	**Marmara Adasi**	**1.28**	**323**	*e*PN	**Pb**	**16 41 30.9**	**+0.3**
MRMT	**Marmara Adasi**	**1.28**	**323**	*e*Pn	**Pb**	**16 41 30.9**	**+0.3**
SBT3	**Marmara-Eregli**	**1.39**	**339**	*e*PN	**Pb**	**16 41 32.2**	**0.0**
SBT3	**Marmara-Eregli**	**1.39**	**339**	*e*Pn	**Pb**	**16 41 32.3**	**0.0**
SBT4	**Kumbag-Tekirda**	**1.49**	**327**	*e*PN	**Pb**	**16 41 33.7**	**-0.3**
SBT4	**Kumbag-Tekirda**	**1.49**	**327**	*e*Pn	**Pb**	**16 41 33.7**	**-0.3**
CUND	**Cunda Adasi-Ba**	**1.53**	**261**	*e*PN	**Pb**	**16 41 35.2**	**+0.4**
CUND	**Cunda Adasi-Ba**	**1.53**	**261**	*e*Pn	**Pb**	**16 41 35.2**	**+0.4**
RKY	**Sarkoy-Tekirda**	**1.56**	**315**	*e*PN	**Pb**	**16 41 35.0**	**-0.3**
RKY	**Sarkoy-Tekirda**	**1.56**	**315**	*e*Pn	**Pb**	**16 41 35.0**	**-0.3**

IDC 24 16:43:32.0±1.0, 9°.23N×121°.27E, h0km, mb3.8/7, mb1 4.0/7, mb1mx3.5/43, mbtmp3.8/7, Error ellipse: s-maj=80.4km s-min=19.3km az=69.0
MAN 24 16:43:33, 9°.52N×121°.80E, h14km, mb4.4, ML3.3, MS3.1
ISCJB 24 16:43:35.0±0.8, 9°.45N±0°.07×121°.78E±0°.08, h37km, mb3.8/8, Error ellipse: s-maj=11.6km s-min=9.7km az=38.5
NEIC 24 16:43:37.1±0.8, 9°.13N×121°.12E, h35km, mb4.0/2, Error ellipse: s-maj=60.2km s-min=14.5km az=70.0
ISC 24 16:43:37.1±0.9, 9°.47N±0°.07×121°.8E±0°.1, h37km, n14, σ1°74/15, mb3.9/8, 2C-2D, Sulu Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**1.41**	**95**⇓	*i* P	**Pn**	**16 43 58.6**	**-1.7**
DCPH	**Dipolog City**	**1.75**	**120**⇓	*e*P	**Pn**	**16 44 03.6**	**-1.4**
RCP	**Roxas**	**2.27**	**24**⇓	*e*P	**Pn**	**16 44 10.6**	**-1.5**
LLP	**Lapu-Lapu**	**2.28**	**68**	*e*P	**Pn**	**16 44 11.1**	**-1.2**
LLP				*e*S	**Sn**	**16 44 39.8**	**+0.8**
CTBH	**Cotabato--PC H**	**3.28**	**133**⇑	*i* P	**Pn**	**16 44 26.4**	**+0.4**
FITZ	**Fitzroy Crossi**	**27.66**	**172**	P	**P**	**16 49 19.5**	**-2.1**
	2.4nm,0.9s,baz=9.5,slow=6.1,SNR=2.9						
FITZ	**Fitzroy Crossi**	**27.66**	**172**	*e*P	**P**	**16 49 18.4**	**-3.2**
	3.0nm,0.9s						
WRAB	**Tennant Creek**	**31.72**	**157**	*e*P	**P**	**16 49 58.0**	**+0.3**
	1.9nm,0.8s						
WRA	**Warramunga Arr**	**31.72**	**157**	P	**P**	**16 49 57.3**	**-0.4**
	0.9nm,0.6s,baz=339,slow=9.5,SNR=10						
ASAR	**Alice Springs**	**34.99**	**160**	P	**P**	**16 50 26.6**	**+0.4**
	0.5nm,0.5s,baz=340,slow=7.3,SNR=25						
STKA	**Stephens Creek**	**45.26**	**156**	P	**P**	**16 51 51.9**	**+0.7**
	2.4nm,0.9s,baz=315,slow=8.6,SNR=3.9						
MKAR	**Makanchi Array**	**50.09**	**325**	P	**P**	**16 52 29.2**	**+0.7**
	0.6nm,0.7s,baz=134,slow=8.8,SNR=6.3						
ILAR	**Eielson Array**	**82.06**	**26**	P	**P**	**16 55 56.5**	**+3.1**
	0.2nm,0.6s,baz=285,slow=4.6,SNR=3.2						
FINES	**FINESS Array B**	**84.49**	**331**	P	**P**	**16 56 04.7**	**-1.2**
	1.9nm,0.8s,baz=80,slow=4.1,SNR=5.6						

IDC 24 16:54:25.2±4.3, 22°.79S×65°.69W, h211km±55km, mb3.6/1, mb1 3.4/3, mb1mx3.1/18, mbtmp3.9/3, MS3.0/1, Ms1 3.0/1, ms1mx2.5/18, Error ellipse: s-maj=74.3km s-min=24.0km az=99.0
ISCJB 24 16:54:29.6±1.2, 22°.78S±0°.06×66°.41W±0°.09, h250km, mb3.8/1, Error ellipse: s-maj=11.2km s-min=7.4km az=16.9
GUC 24 16:54:30.0±0.4, 22°.71S×66°.89W, h290km, ML4.3
ISC 24 16:54:28.6±1.6, 22°.77S±0°.08×66°.4W±0°.1, h250km, n16, σ0°96/18, 9C-2D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB09	**IPOC Station P**	**2.84**	**289**⇑	*i* P	Pn	16 55 21.7	+2.1
PB09				*i* S	**S**	**16 56 00.7**	**+0.9**
PB09				IAML		16 56 05.1	
	comp=N,381nm,0.2s						
PB06	**IPOC Station P**	**2.97**	**271**⇑	*i* P	Pn	16 55 22.8	+1.9
PB06				*i* S	**S**	**16 56 02.5**	**+0.2**
PB06				IAML		16 56 04.7	
	comp=N,233nm,0.3s						
PB01	**IPOC Station P**	**3.37**	**300**⇑	*i* P	Pn	16 55 26.9	+1.5
PB01				*i* S	**S**	**16 56 10.5**	**+0.2**
PB01				IAML		16 56 11.6	
	comp=E,272nm,0.3s						
PB07	**IPOC Station P**	**3.43**	**287**⇑	*i* P	Pn	16 55 27.5	+1.4
PB07				*i* S	**S**	**16 56 11.2**	**-0.3**
PB07				IAML		16 56 12.4	
	comp=N,433nm,0.3s						
PB04	**IPOC Station P**	**3.53**	**276**⇑	*i* P	Pn	16 55 28.5	+1.3
PB04				*i* S	**S**	**16 56 13.0**	**-0.6**
PB04				IAML		16 56 16.9	
	comp=E,241nm,0.4s						
PB08	**IPOC Station P**	**3.69**	**315**⇑	*i* P	Pn	16 55 31.2	+2.0
PB08				*i* S	**S**	**16 56 19.0**	**+1.7**
PB08				IAML		16 56 19.5	
	comp=N,84nm,0.4s						
ANCH	**Antofagasta**	**3.83**	**255**⇑	*i* P	Pn	16 55 32.1	+1.6
ANCH		

GUDG			S	**Sn**	17 02 41.6	**-1.1**	
STDR	**Stavd-Durt**	**1.58 276**	*e*PG	**Pb**	17 02 25.4	**0.0**	
STDR			*e*S	**Sb**	17 02 46.0	**+0.6**	
STDR	**Stavd-Durt**	**1.58 276**	*e*Pg	**Pb**	17 02 25.4	**0.0**	
STDR			*e*Sg	**Sb**	17 02 46.0	**+0.6**	
KORR	**Kora**	**1.58 265**	*e*PG	**Pb**	17 02 24.9	**-0.6**	
KORR			*e*S	**Sb**	17 02 45.4	**-0.1**	
KORR	**Kora**	**1.58 265**	*e*Pg	**Pb**	17 02 24.9	**-0.6**	
KORR			*e*Sg	**Sb**	17 02 45.4	**-0.1**	
DUS	**Dusheti**	**1.60 225**	P	**Pb**	17 02 25.5	**-0.3**	
DUS			S	**Sg**	17 02 48.3	**+0.5**	
DUS	**Dusheti**	**1.60 225**	PG	**Pb**	17 02 25.5	**-0.3**	
DUS			S	**Sg**	17 02 48.3	**+0.5**	
DUS	**Dusheti**	**1.60 225**	Pg	**Pb**	17 02 25.5	**-0.3**	
DUS			Sg	**Sg**	17 02 48.3	**+0.5**	
TBLG	**Delisi**	**1.86 217**	P	**Pb**	17 02 29.8	**-0.4**	
TBLG			S	**Sb**	17 02 54.1	**+0.6**	
TBLG	**Delisi**	**1.86 217**	PN	**Pb**	17 02 29.8	**-0.4**	
TBLG			S	**Sb**	17 02 54.1	**+0.6**	
TBLG	**Delisi**	**1.86 217**	Pn	**Pb**	17 02 29.8	**-0.4**	
TBLG			Sg	**Sb**	17 02 54.1	**+0.6**	
DIGR	**Digorskoe uzhe**	**1.97 261**	*e*PN	**Pn**	17 02 30.6	**+1.0**	
DIGR	**Digorskoe uzhe**	**1.97 261**	*e*Pn	**Pn**	17 02 30.6	**+1.0**	
ONI	**Oni**	**2.14 253**	P	**Pn**	17 02 32.4	**+0.6**	
ONI			S	**Sb**	17 03 01.0	**-0.4**	
ONI	**Oni**	**2.14 253**	PN	**Pn**	17 02 32.4	**+0.6**	
ONI			S	**Sb**	17 03 01.0	**-0.4**	
ONI	**Oni**	**2.14 253**	Pn	**Pn**	17 02 32.4	**+0.6**	
ONI			Sb	**Sb**	17 03 01.0	**-0.4**	
NEY	**Neytrino**	**2.56 272**	*d i* PN	**Pg**	17 02 47.9	**+2.6**	
NEY	**Neytrino**	**2.56 272**	*i* Pn	**Pn**	17 02 47.9	**+2.6**	
GOF	**Gofitskoye**	**2.93 310**	*e*PN	Pn	17 02 34.3	-8.3	
GOF			*e*S	**Sg**	17 03 30.5	**+0.3**	
GOF	comp=Z,8.0nm,0.4s		pmax	pmax			
GOF	comp=N,25nm,0.5s		smax	smax			
GOF	comp=E,27nm,0.4s		smax	smax			
GOF	**Gofitskoye**	**2.93 310**	*e*Pn	Pn	17 02 34.3	-8.3	
GOF	comp=E,8.0nm,0.4s		*e*Sb	**Sg**	17 03 30.5	**+0.3**	
GOF	comp=E,25nm,0.5s						

*IDC **24** 17:11:56.6±0.9,51°.96N×167°.34W,h0km,mb3.8/17, mb1 4.0/17,mb1mx3.8/69,mbtmp3.9/17,MS3.3/2, Ms1 3.3/2,ms1mx2.4/44,Error ellipse: s-maj=24.9km s-min=18.1km az=2.0*

*ISCJB **24** 17:11:59.5±0.6,51°.95N±0°.05×167°.09W±0°.07,h33km, mb3.9/17,MS3.3/2,Error ellipse: s-maj=7.6km s-min=5.8km az=140.5*

*NEIC **24** 17:12:00.1,51°.99N×167°.13W,h36km,ML3.1(AEIC),After AEIC.*

ISC 24 17:12:01.7±0.8,52°03N±0°.09×167°22W±0°.06,h35km,n43, σ1§36/47,mb4.0/17,Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	**1.38**	**314**	P	**Pn**	**17 12 23.8**	**-0.6**
NIKH				S	**Sn**	**17 12 41.6**	**+0.3**
OKTU	**Okmok Mt. Tuli**	**1.45**	**340**	P	**Pn**	**17 12 25.8**	**+0.4**
OKER	**Okmok East Rim**	**1.52**	**341**	P	**Pn**	**17 12 26.9**	**+0.5**
OKWR	**Okmok West Rim**	**1.53**	**337**	P	**Pn**	**17 12 27.2**	**+0.6**
OKMK	**Okmok**	**1.70**	**336**	P	**Pn**	**17 12 27.1**	**-1.7**
MGOD	**Makushin Gods**	**1.78**	**7**	P	**Pn**	**17 12 29.6**	**-0.4**
UNV	**Unalaska Valle**	**1.87**	**13**	P	**Pn**	**17 12 31.2**	**+0.1**
UNV				S	**Sn**	**17 12 55.1**	**+1.5**
MCIR	**Makushin Cirqu**	**1.94**	**6**	P	**Pn**	**17 12 32.6**	**+0.5**
MTBL	**Makushin Table**	**1.97**	**9**	P	**Pn**	**17 12 32.5**	**-0.1**
AKRB	**Akutan Reef Bi**	**2.22**	**18**	P	**Pn**	**17 12 36.1**	**+0.2**
AKRB				S	**Sn**	**17 13 03.6**	**+1.5**
AKUT	**Akutan**	**2.28**	**22**	P	**Pn**	**17 12 36.2**	**-0.6**
AKUT				S	**Sn**	**17 13 04.5**	**+0.8**
AKGG	**Akutan Green G**	**2.30**	**18**	P	**Pn**	**17 12 36.4**	**-0.6**
AKSA	**Akutan Strait**	**2.30**	**23**	P	**Pn**	**17 12 36.2**	**-0.8**
WESP	**Westdahl Peak**	**2.89**	**30**	P	**Pn**	**17 12 45.8**	**+0.5**
DTNA	**Dutton South F**	**4.30**	**41**	P	**Pn**	**17 13 04.9**	**+0.3**
SDPT	**Sand Point**	**5.21**	**48**	P	**Pn**	**17 13 16.7**	**-0.2**
SDPT				S	**Sn**	**17 14 14.3**	**-1.3**
OHAK	**Old Harbor**	**9.60**	**52**	P	**Pn**	**17 14 15.0**	**-2.2**
PPLA	**Purkeypile** 6.8nm,0.7s	**13.52**	**31**	*e*Pn	**Pn**	**17 15 13.7**	**+2.8**
KTH	**Kantishna Hill** 12nm,0.9s	**14.39**	**30**	*e*Pn	**Pn**	**17 15 19.8**	**-2.9**
BPAW	**Bear Paw Mtn.** 2.0nm,0.8s	**14.77**	**29**	*e*Pn	**Pn**	**17 15 26.7**	**-1.1**
ILAR	**Eielson Array** 0.2nm,0.3s,baz=228,slow=11,SNR=10	**16.52**	**32**	Pn	**Pn**	**17 15 47.4**	**-3.0**
DOT	**Dot Lake** 6.8nm,0.6s	**16.83**	**37**	*e*Pn	**Pn**	**17 15 52.6**	**-1.7**
COLD	**Coldfoot** 9.8nm,0.7s	**17.39**	**22**	Pn	**Pn**	**17 15 58.6**	**-2.7**
DAWY	**Dawson** 12nm,0.9s	**18.83**	**39**	*e*P	**P**	**17 16 16.3**	**-1.9**
PETK	**Petropavlovsk-** 3.3nm,0.5s,baz=88,slow=15,SNR=8.2	**21.23**	**287**	P	**P**	**17 16 42.0**	**-2.2**
INK	**Inuvik** 6.3nm,0.5s,baz=236,slow=13,SNR=19	**22.92**	**32**	P	**P**	**17 17 01.4**	**-0.8**
INK	comp=Z,19nm,19.3s,baz=100,slow=39			LR	LR	17 27 03.5	
SEY	**Seymchan** 1.0nm,0.7s,baz=112,slow=5.7,SNR=4.3	**23.87**	**313**	P	**P**	**17 17 10.1**	**-1.3**
PDAR	**Pinedale Array** 0.2nm,0.4s,baz=294,slow=6.6,SNR=3.6	**39.16**	**80**	P	**P**	**17 19 26.9**	**+0.9**
SPITS	**Spitsbergen Ar** 3.4nm,0.8s,baz=46,slow=4.2,SNR=3.7	**50.04**	**359**	P	**P**	**17 20 52.6**	**+0.5**
TXAR	**Lajitas Array** 0.4nm,0.8s,baz=292,slow=6.4,SNR=5.2	**51.43**	**90**	P	**P**	**17 21 03.8**	**+0.5**
SONM	**Songino Array** 0.2nm,0.4s,baz=71,slow=4.9,SNR=2.2	**52.61**	**302**	P	**P**	**17 21 11.9**	**0.0**
ZALV	**Zalesovo Beam** 0.4nm,0.3s,baz=44,slow=8.6,SNR=2.8	**58.56**	**319**	P	**P**	**17 21 53.4**	**-0.9**
KURK	**Kurchatov**	**63.50**	**320**	P	**P**	**17 22 29.7**	**+1.8**
KURBB	**Kurchatov Arra** 0.4nm,0.6s,baz=43,slow=7.3,SNR=5.3	**63.61**	**320**	P	**P**	**17 22 29.7**	**+1.1**
BVAR	**Borovoye Array** 0.8nm,0.5s,baz=73,slow=4.8,SNR=4.4	**64.74**	**326**	P	**P**	**17 22 37.3**	**+1.4**
MKAR	**Makanchi Array** 0.3nm,0.6s,baz=48,slow=4.6,SNR=3.1	**64.99**	**315**	P	**P**	**17 22 39.3**	**+1.5**
FINES	**FINESS Array B** 1.3nm,0.7s,baz=38,slow=7.0,SNR=6.6	**66.38**	**353**	P	**P**	**17 22 47.1**	**+0.8**
HFS	**Hagfors** 1.5nm,0.4s,baz=9.9,slow=3.5,SNR=8.3	**68.19**	**360**	P	**P**	**17 22 58.8**	**+1.0**
AKASG	**Malin Array Be** 1.5nm,0.4s,baz=16,slow=5.9,SNR=5.3	**76.70**	**349**	P	**P**	**17 23 49.9**	**+1.2**
BRTR	**Keskin Array B** 0.3nm,0.5s,baz=21,slow=3.5,SNR=3.2	**86.83**	**344**	P	**P**	**17 24 42.9**	**+0.5**
WRA	**Warramunga Arr** 1.0nm,0.9s,baz=33,slow=6.0,SNR=7.3	**87.84**	**233**	P	**P**	**17 24 46.3**	**-1.0**
ROSC	**El Rosal** comp=Z,58nm,18.9s,baz=250,slow=38	**88.01**	**85**	LR	LR	18 07 06.7	
ASAR	**Alice Springs** 1.1nm,0.6s,baz=28,slow=4.5,SNR=24	**91.21**	**232**	P	**P**	**17 25 03.4**	**+0.4**

*NIED **24** 17:19:00,36°.60N×139°.60E,h5km,Mw3.9 Best double couple: M₀8.21000×10¹⁴ NP1:φs258.00000°,δ73.00000°, λ171.00000°. NP2:φs350.00000°,δ82.00000°,λ17.00000°.*

*ISCJB **24** 17:19:30.3±0.6,36°.61N±0°.03×139°.61E±0°.04,h13km±4km, mb3.6/6,MS2.9/4,Error ellipse: s-maj=5.6km s-min=5.1km az=42.6*

*JMA **24** 17:19:30.8,36°.63N×139°.61E,h5km±1km,M3.9 Broadband fault plane solution: P waves. NP1: φs269.00000°,δ88.00000°,λ-176.00000°. NP2: φs179.00000°,δ86.00000°,λ-2.00000°. Principal axes: T Plg1.0000°, Azm44.0000°; N Plg86.0000°, Azm300.0000°; P Plg4.0000°, Azm134.0000°;*

JMA Felt II J1.

*IDC **24** 17:19:30.2±0.9,36°.57N×139°.59E,h0km,mb3.7/7, mb1 3.8/11,mb1mx3.6/51,mbtmp3.7/11,ML3.0/3,MS2.9/7, Ms1 2.9/7,ms1mx2.7/43 Error ellipse: s-maj=16.0km s-min=11.4km az=168.0*

ISC 24 17:19:31.1±1.2,36°61N±0°.03×139°60E±0°.03,h5km±8km, n23,σ0§93/24,mb3.8/6,MS2.7/4,3C-2D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAG	**Ashikaga**	**0.22**	**214**	⇑P	**Pg**	**17 19 35.6**	**+0.2**
JKT	**Katashina**	**0.33**	**299**	⇓P	**Pg**	**17 19 37.4**	**-0.1**
JKT				S	**Sg**	**17 19 42.0**	**+0.2**
JSB	**Shiboa**	**0.44**	**35**	⇑P	**Pg**	**17 19 39.4**	**-0.2**
JSB				S	**Sg**	**17 19 45.8**	**+0.4**
JYT	**Yasato**	**0.61**	**128**	⇓P	**Pg**	**17 19 42.1**	**-0.7**
JYT				S	**Sg**	**17 19 50.4**	**-0.2**
JFY	**Yanaizu**	**0.80**	**6**	⇑P	**Pg**	**17 19 45.7**	**-0.8**
JFY				S	**Sg**	**17 19 55.6**	**-1.4**
MJAR	**Matsushiro Arr** 110nm,0.3s,baz=69,slow=17,SNR=1392	**1.12**	**267**	Pg	**Pg**	**17 19 51.4**	**-1.3**
MJAR	278nm,0.3s,baz=76,slow=31,SNR=43			Lg	Lg	17 20 05.3	
MJAR	comp=Z,81nm,19.6s,baz=65,slow=48			LR	LR	17 20 22.2	
MAT	**Matsushiro**	**1.13**	**267**	P	**Pg**	**17 19 52.1**	**-0.6**
MAT				S	**Sg**	**17 20 06.6**	**-0.7**
JHJ	**Hachijo jima 2** 35nm,0.3s,baz=106,slow=19,SNR=10	**3.48**	**178**	Pn	**Pn**	**17 20 26.4**	**+0.5**
JHJ	43nm,0.3s,baz=94,slow=23,SNR=5.8			Sn	**Sn**	**17 21 07.0**	**-0.6**
JHJ	comp=Z,130nm,18.8s,baz=317,slow=44			LR	LR	17 22 01.6	
ASAJ	**Asahikawa** baz=203,slow=12	**7.84**	**16**	Pn	**Pn**	**17 21 27.1**	**+1.3**
JNU	**Nakatsue** 0.1nm,0.3s,baz=76,slow=9.6,SNR=2.8	**7.97**	**247**	Pn	**Pn**	**17 21 28.9**	**+1.2**
KSRS	**Korea Array** 0.0nm,0.3s,baz=88,slow=15,SNR=2.5	**9.38**	**279**	Pn	**Pn**	**17 21 48.5**	**+1.6**
KSRS	comp=Z,50nm,19.4s,baz=128,slow=36			LR	LR	17 25 12.7	
USRK	**Ussuriysk Ar.** 3.5nm,0.9s,baz=251,slow=7.5,SNR=2.8	**9.55**	**325**	LR	LR	17 25 40.5	
PETK	**Petropavlovsk-** 1.5nm,0.8s,baz=209,slow=11,SNR=3.7	**20.80**	**32**	P	**P**	**17 24 13.9**	**+0.8**
GUMO	**Guam** comp=Z,20nm,19.8s,baz=67,slow=34	**23.40**	**167**	LR	LR	17 32 40.3	
MA2	**Magadan** comp=Z,35nm,19.4s,baz=196,slow=41	**24.10**	**14**	LR	LR	17 36 03.0	
SONM	**Songino Array** 0.2nm,0.4s,baz=35,slow=4.9,SNR=3.2	**26.83**	**305**	LR	LR	17 35 15.0	
SEY	**Seymchan** comp=Z,19nm,21.1s,baz=268,slow=35	**27.51**	**13**	P	**P**	**17 25 18.6**	**+0.4**
MKAR	**Makanchi Array** 0.2nm,0.6s,baz=76,slow=6.1,SNR=2.3	**43.12**	**302**	P	**P**	**17 27 31.4**	**-1.0**
ILAR	**Eielson Array** 0.5nm,0.8s,baz=280,slow=7.1,SNR=6.1	**50.63**	**32**	P	**P**	**17 28 30.0**	**-0.8**
WRA	**Warramunga Arr** 1.6nm,0.6s,baz=1.9,slow=7.6,SNR=33	**56.46**	**186**	P	**P**	**17 29 12.5**	**-1.6**
ASAR	**Alice Springs** 0.5nm,0.7s,baz=3.1,slow=6.3,SNR=15	**60.19**	**186**	P	**P**	**17 29 40.1**	**+0.1**
FINES	**FINESS Array B** comp=Z,28nm,18.9s,baz=80,slow=38	**68.51**	**332**	LR	LR	18 02 18.3	
NOA	**NORSAR Array B** 0.6nm,0.7s,baz=41,slow=5.9,SNR=2.9	**74.01**	**337**	P	**P**	**17 31 07.7**	**+0.2**

*HLW **24** 17:19:55.4,34°.55N×24°.39E,h33km±24km,Md4.2,MI3.8*
*CSEM **24** 17:19:56.9±0.3,34°.23N×24°.35E,h10km,ML3.0,Error ellipse: s-maj=8.9km s-min=4.2km az=77.0*
*ATH **24** 17:19:56.6,34°.23N×24°.35E,h14km±4km,ML3.2/4,Error ellipse: s-maj=6.9km s-min=1.8km az=14.0*
*THE **24** 17:19:59.7,34°.41N×24°.34E,h7km±1km,ML3.0/4,Error ellipse: s-maj=1.6km s-min=0.8km az=292.0*

ISC 24 17:19:57.6±1.3,34°27N±0°.04×24°29E±0°.04,h26km±14km, n38,σ0§76/55,Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.59**	**344**	P	**Pb**	**17 20 09.2**	**-0.2**
GVD	**Gavdhos**	**0.59**	**344**	P	**Pb**	**17 20 09.2**	**-0.2**
GVD				S	**Sn**	**17 20 18.8**	**-0.3**
GVD	**Gavdhos**	**0.59**	**344**	P	**Pb**	**17 20 09.6**	**+0.2**
GVD				S	**Sn**	**17 20 18.8**	**-0.3**
GVD	comp=E,5934µm,0.5s			AML	AML	17 20 22.1	
GVD	comp=N,5733µm,0.3s			AML	AML	17 20 25.8	
SIVA	**Sivas**	**0.86**	**30**	P	**Pn**	**17 20 13.6**	**-0.4**
SIVA				S	**Sb**	**17 20 24.3**	**-0.7**
SIVA	**Sivas**	**0.86**	**30**	P	**Pn**	**17 20 13.8**	**-0.2**
SIVA				S	**Sn**	**17 20 24.9**	**-0.8**
SIVA	**Sivas**	**0.86**	**30**	P	**Pn**	**17 20 13.8**	**-0.2**
SIVA				S	**Sn**	**17 20 24.9**	**-0.8**
SIVA	comp=E,7167µm,0.5s			AML	AML	17 20 35.6	
SIVA	comp=N,6333µm,0.7s			AML	AML	17 20 36.2	
IDI	**Anoyia**	**1.13**	**26**	P	**Pb**	**17 20 18.4**	**-0.1**
IDI				S	**Sb**	**17 20 32.7**	**-0.1**
IDI	**Anoyia**	**1.13**	**26**	P	**Pb**	**17 20 18.4**	**-0.1**
IDI				S	**Sb**	**17 20 32.7**	**-0.1**
IDI	**Anoyia**	**1.13**	**26**	P	**Pb**	**17 20 18.4**	**-0.1**
IDI	comp=E,981µm,0.7s			AML	AML	17 20 40.2	
IDI	comp=N,784µm,0.6s			AML	AML	17 20 42.7	
VAM	**Vamos**	**1.13**	**356**	P	**Pn**	**17 20 18.0**	**+0.2**
VAM				S	**Sb**	**17 20 33.2**	**+0.3**
VAM	**Vamos**	**1.13**	**356**	P	**Pb**	**17 20 18.7**	**+0.1**
VAM				S	**Sb**	**17 20 33.2**	**+0.3**
IMMV	**Iera Moni Meta**	**1.21**	**348**	P	**Pb**	**17 20 19.9**	**0.0**
IMMV				S	**Sb**	**17 20 35.5**	**+0.3**
IMMV	**Iera Moni Meta**	**1.21**	**348**	P	**Pb**	**17 20 19.9**	**0.0**
IMMV				S	**Sb**	**17 20 35.5**	**+0.3**
IMMV	**Iera Moni Meta**	**1.21**	**348**	P	**Pb**	**17 20 19.7**	**-0.2**
IMMV	comp=E,1992µm,0.6s			AML	AML	17 20 45.3	
IMMV	comp=N,1414µm,1.0s			AML	AML	17 20 49.8	
LAST	**Lasithi**	**1.32**	**48**	P	**Pb**	**17 20 21.7**	**-0.1**
LAST				S	**Sb**	**17 20 38.7**	**+0.3**
LAST	**Lasithi**	**1.32**	**48**	P	**Pb**	**17 20 21.4**	**-0.4**
LAST				S	**Sb**	**17 20 38.7**	**+0.3**
LAST	**Lasithi**	**1.32**	**48**	P	**Pb**	**17 20 21.4**	**-0.4**
ANKY	**Antikythira Is**	**1.79**	**333**	P	**Pb**	**17 20 30.1**	**+0.4**
ANKY	**Antikythira Is**	**1.79**	**333**	P	**Pb**	**17 20 30.1**	**+0.4**
ZKR	**Zakros**	**1.80**	**62**	P	**Pb**	**17 20 29.9**	**0.0**
ZKR	**Zakros**	**1.80**	**62**	P	**Pb**	**17 20 29.9**	**0.0**
THR5	**Thira Island,**	**2.31**	**22**	P	**Pn**	**17 20 34.7**	**+0.7**
THR5	**Thira Island,**	**2.31**	**22**	P	**Pn**	**17 20 34.7**	**+0.7**
VLI	**Veliai**	**2.68**	**336**	P	**Pn**	**17 20 36.8**	**-2.2**
VLI	**Veliai**	**2.68**	**336**	P	**Pn**	**17 20 36.9**	**-2.2**
KARP	**Karpathos**	**2.68**	**61**	P	**Pn**	**17 20 41.1**	**+2.0**
KARP	**Karpathos**	**2.68**	**61**	P	**Pn**	**17 20 40.7**	**+1.6**
KARP	**Karpathos**	**2.68**	**61**	P	**Pn**	**17 20 40.7**	**+1.6**
SLUM	**Salum** baz=167	**2.88**	**164**	P	**Pn**	**17 20 42.6**	**+0.8**
SLUM	comp=N,210µm,0.6s,logA/T=5.5,baz=167			AMP		17 21 00.0	
SLUM	baz=167			S	**Sn**	**17 21 16.2**	**+0.6**
SLUM	**Salum**	**2.88**	**164**	P	**Pn**	**17 20 42.6**	**+0.8**
SLUM				S	**Sn**	**17 21 16.2**	**+0.6**
SWA2	baz=170	**5.11**	**168**	P	**Pn**	**17 21 13.1**	**+0.6**
SWA2	comp=N,330µm,0.4s,logA/T=5.9,baz=170			AMP		17 22 00.0	
SWA2	baz=170			S	**Sn**	**17 22 10.6**	**-0.1**
SWA2		**5.11**	**168**	P	**Pn**	**17 21 13.1**	**+0.6**
SWA2				S	**Sn**	**17 22 10.6**	**-0.1**
GLL	**Jalalah** baz=126	**7.85**	**125**	P	**Pn**	**17 21 49.7**	**-0.5**
GLL	**Jalalah**	**7.85**	**125**	P	**Pn**	**17 21 49.7**	**-0.5**
NBNS	**Bani Suef** baz=133	**8.22**	**131**	P	**Pn**	**17 21 54.9**	**-0.3**
NBNS	**Bani Suef**	**8.22**	**131**	P	**Pn**	**17 21 54.9**	**-0.3**
HNKL	**Nakhl** baz=117	**9.29**	**115**	P	**Pn**	**17 22 08.8**	**-1.1**
HNKL	**Nakhl**	**9.29**	**115**	P	**Pn**	**17 22 08.8**	**-1.1**

*NIED **24** 17:29:00,39°.20N×142°.40E,h74km,Mw3.6 Best double couple: M₀2.59000×10¹⁴ NP1:φs348.00000°,δ21.00000°, λ154.00000°. NP2:φs103.00000°,δ81.00000°,λ71.00000°.*

JMA 24 17:29:51.7±0.1,39°16N×142°39E,h32km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.57**	**262**	P	**Pb**	17 30 03.0	-0.3
OFUJ				S	**Sb**	17 30 10.8	-0.4
MIYJ	**Miyakonagasawa**	**0.61**	**313**	P	**Pb**	17 30 03.6	-0.4
MIYJ				S	**Sb**	17 30 11.7	-0.7
JTH	**Tanohata**	**0.88**	**333**	P	**Pn**	17 30 07.5	-0.3
JOM	**Ohasama**	**0.91**	**291**	P	**Pn**	17 30 08.5	+0.3
JOM				S	**Sb**	17 30 20.5	-0.2
JMK	**Ichinoseki**	**0.93**	**258**	P	**Pn**	17 30 08.6	0.0
JMK				S	**Sn**	17 30 20.5	-0.4
JIO	**Ouri**	**1.08**	**229**	P	**Pn**	17 30 09.9	-0.6
JIO				S	**Sn**	17 30 22.7	-1.6
JKZ	**Kuzumaki**	**1.16**	**315**	P	**Pb**	17 30 12.6	-0.7
JKZ				*e*S	**Sn**	17 30 27.1	+0.5
JRG	**Rokugo**	**1.38**	**280**	P	**Pn**	17 30 15.8	+1.0
JRG				*e*S	**Sb**	17 30 33.6	-0.7
JANG	**Nango**	**1.39**	**331**	P	**Pn**	17 30 15.6	+0.8
JANG				*e*S	**Sn**	17 30 32.4	+0.3

*IDC **24** 17:37:02.8±1.8,38°.57N×145°.07E,h0km,mb3.5/5, mb1 3.6/7,mb1mx3.4/41,mbtmp3.5/7,ML3.3/2,MS2.7/2, Ms1 2.7/2,ms1mx2.1/39,Error ellipse: s-maj=53.1km s-min=22.7km az=77.0*

*ISCJB **24** 17:37:06.0±0.8,38°.79N±0°.04×144°.80E±0°.06,h43km, mb3.5/5,MS2.5/2,Error ellipse: s-maj=7.2km s-min=6.0km az=26.3*

*JMA **24** 17:37:07.5±0.2,38°.67N×144°.60E,h36km,M3.4*

ISC 24 17:37:08.0±1.2,38°73N±0°.06×144°80E±0°.08,h43km,n23, σ1§74/30,mb3.5/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**2.46**	**291**	P	**Pn**	**17 37 44.9**	**-0.8**
MIYJ				*e*S	**Sn**	**17 38 12.3**	**-2.2**
OFUJ	**Ofunato**	**2.46**	**279**	P	**Pn**	**17 37 44.9**	**-0.8**
OFUJ				*e*S	**Sn**	**17 38 12.6**	**-2.0**
JTH	**Tanohata**	**2.58**	**299**	P	**Pn**	**17 37 46.9**	**-0.3**
JTH				*e*S	**Sn**	**17 38 16.6**	**-0.7**
JMK	**Ichinoseki**	**2.80**	**276**	P	**Pn**	**17 37 49.7**	**-0.6**
JOM	**Ohasama**	**2.83**	**286**	P	**Pn**	**17 37 50.4**	**-0.2**
JOM				*e*S	**Sn**	**17 38 22.2**	**-1.2**
JANG	**Nango**	**3.02**	**304**	P	**Pn**	**17 37 52.6**	**-0.7**
JYK	**Kaneyama**	**3.47**	**275**	P	**Pn**	**17 37 59.8**	**+0.3**
JYK				*e*S	**Sn**	**17 38 38.6**	**-0.7**
JFT	**Otama**	**3.72**	**252**	P	**Pn**	**17 38 02.5**	**-0.4**
JFT				*e*S	**Sn**	**17 38 41.8**	**-3.7**
JOT	**Ohata**	**3.91**	**314**	P	**Pn**	**17 38 06.1**	**+0.6**
JOT				*e*S	**Sn**	**17 38 50.2**	**0.0**
JCH	**Churui**	**4.03**	**345**	*e*S	**Sn**	**17 38 51.1**	**-2.1**
NEM2	**Nemuro 2**	**4.69**	**8**	P	**Pn**	**17 38 14.2**	**-2.0**
NEM2				*e*S	**Sn**	**17 39 04.7**	**-4.6**
JOSM	**Okushiri--Mats**	**5.26**	**311**	P	**Pn**	**17 38 25.0**	**+0.9**
JTKR	**Abashiri--Toko**	**5.28**	**353**	P	**Pn**	**17 38 24.0**	**-0.3**
JTKR				*e*S	**Sn**	**17 39 21.0**	**-2.9**
JRY	**Ryogami san**	**5.42**	**242**	P	**Pn**	**17 38 24.3**	**-2.0**
ASAJ	**Asahikawa** 0.6nm,0.3s,baz=180,slow=16,SNR=10	**5.63**	**344**	Pn	**Pn**	**17 38 29.9**	**+0.8**
ASAJ	baz=180,slow=15			Sn	**Sn**	**17 39 30.9**	**-1.7**
MJAR	**Matsushiro Arr** 0.9nm,0.3s,baz=59,slow=11,SNR=17	**5.66**	**249**	Pn	**Pn**	**17 38 29.2**	**-0.5**
MA2	**Magadan** comp=Z,16nm,18.4s,baz=194,slow=38	**21.21**	**8**	LR	LR	17 50 44.8	
GUMO	**Guam** comp=Z,17nm,18.9s,baz=68,slow=32	**25.04**	**180**	LR	LR	17 50 18.7	
ZALV	**Zalesovo Beam** 0.3nm,0.4s,baz=90,slow=10,SNR=2.8	**42.79**	**311**	P	**P**	**17 45 02.3**	**+1.2**
MKAR	**Makanchi Array** 0.2nm,0.6s,baz=77,slow=9.3,SNR=2.5	**45.51**	**301**	P	P	17 45 27.4	+4.3
WRA	**Warramunga Arr** 0.8nm,0.9s,baz=15,slow=7.3,SNR=4.5	**59.18**	**191**	P	**P**	**17 47 04.2**	**-0.4**
ASAR	**Alice Springs** 0.3nm,0.8s,baz=9.4,slow=7.3,SNR=6.2	**62.90**	**191**	P	**P**	**17 47 30.3**	**+0.5**
FINES	**FINESS Array B** 1.0nm,0.7s,baz=46,slow=6.6,SNR=3.3	**68.54**	**333**	P	**P**	**17 48 08.3**	**+2.7**

*IDC **24** 17:41:25.3±4.1,27°.18N×141°.46E,h67km±36km,mb3.6/9, mb1 3.9/10,mb1mx3.5/41,mbtmp3.9/10,ML3.3/1,MS3.0/2, Ms1 3.0/2,ms1mx2.5/50,Error ellipse: s-maj=40.8km s-min=14.9km az=96.0*

*ISCJB **24** 17:41:27.2±0.7,27°.25N±0°.07×141°.2E±0°.2,h100km, mb3.8/9,Error ellipse: s-maj=30.8km s-min=9.6km az=173.6*

ISC 24 17:41:29.0±0.8,27°27N±0°.09×141°3E±0°.2,h100km,n14, σ0§95/15,mb3.8/9,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr** 0.2nm,0.3s,baz=154,slow=12,SNR=4.7	**9.60**	**345**	P	**Pn**	**17 43 42.6**	**-1.7**
MJAR	0.2nm,0.3s,baz=55,slow=10,SNR=3.6			S	**Sn**	**17 45 30.5**	**+0.2**
KSRS	**Korea Array** comp=Z,51nm,18.4s,baz=168,slow=33	**15.17**	**315**	LR	LR	17 49 57.6	
KLR	**Kul'dur** comp=Z,37nm,18.3s,baz=119,slow=33	**23.13**	**344**	LR	LR	17 54 18.3	
WRA	**Warramunga Arr** 2.5nm,0.5s,baz=12,slow=8.7,SNR=44	**47.42**	**189**	P	**P**	**17 49 52.5**	**-1.0**
WRA	0.4nm,0.8s,baz=11,slow=4.4,SNR=2.7			PcP	**PcP**	**17 51 23.0**	**+0.5**
FITZ	**Fitzroy Crossi** 1.7nm,0.9s,baz=32,slow=9.7,SNR=3.2	**47.59**	**200**	P	**P**	**17 49 54.8**	**0.0**
MKAR	**Makanchi Array** 0.2nm,0.4s,baz=95,slow=1.7,SNR=3.9	**49.74**	**309**	PcP	**PcP**	**17 51 31.9**	**+1.1**
ASAR	**Alice Springs** 0.2nm,0.4s,baz=7.9,slow=5.5,SNR=12	**51.14**	**189**	P	**P**	**17 50 20.4**	**-1.4**
ASAR	0.3nm,0.9s,baz=350,slow=4.7,SNR=2.5			PcP	**PcP**	**17 51 36.4**	**+0.3**
ILAR	**Eielson Array** 1.1nm,0.7s,baz=257,slow=6.2,SNR

ASAL	**Salagasta**	**3.26**	**69**	*e*P	**Pb**	**17 44 40.9**	**-1.6**
ASAL				⇓*e*S	**Sg**	**17 45 32.5**	**+2.9**
RTLS	**Leoncito**	**3.33**	**53**	*e*P	**Pn**	**17 44 38.9**	**+2.2**
RTCV	**Cerro Valdivia**	**3.82**	**60**	*e*P	**Pn**	**17 44 45.4**	**+2.1**
RTCV				⇓*e*S	**Sg**	**17 45 45.8**	**-1.8**
SJA	**San Juan**	**4.00**	**56**	*e*S	**Sg**	**17 45 51.3**	**-1.8**
RTLL	**Cerro Villicun**	**4.17**	**54**	*e*P	**Pn**	**17 44 49.7**	**+1.6**
RTLL				*e*S	**Sb**	**17 45 52.8**	**+4.5**
CANA	**Caviahue**	**4.20**	**165**	*e*P	**Pn**	**17 44 50.1**	**+1.5**
ACCO	**Cerro Coronel**	**4.32**	**42**	*e*P	**Pn**	**17 44 52.7**	**+2.4**
ACCO				IAML		17 46 10.4	
	comp=Z,553nm,0.4s						
AMOG	**MOGNA**	**4.41**	**50**	*e*P	**Pn**	**17 44 52.6**	**+1.3**
AROD	**Rodeo**	**4.43**	**35**	*e*P	**Pn**	**17 44 54.0**	**+2.1**
ACDV	**Cuesta del Vie**	**4.61**	**39**	*e*P	**Pn**	**17 44 56.1**	**+1.9**
ACAN	**Cantantal**	**4.67**	**72**	*e*P	**Pn**	**17 44 57.2**	**+2.2**
LCO	**Las Campanas**	**5.03**	**18**	*e*Pn	**Pn**	**17 44 58.9**	**-1.2**
AVFE	**Valle Fertil**	**5.27**	**55**	*e*P	**Pn**	**17 45 04.5**	**+1.2**
AVFE				IAML		17 46 28.4	
	comp=Z,117nm,0.7s						
AGUA	**GUANDACOL**	**5.48**	**39**	*e*P	**Pn**	**17 45 07.9**	**+1.8**
ACHE	**Chepes**	**5.56**	**63**	*e*P	**Pn**	**17 45 02.9**	**-4.3**
MRA	**San Martin**	**5.81**	**78**	IAML		17 46 58.1	
	comp=Z,276nm,0.7s						
VCA	**Vinchina**	**6.24**	**37**	*e*P	**Pn**	**17 45 17.0**	**+0.5**
PLCA	**Paso Flores**	**7.05**	**168**	Pn	**Pn**	**17 45 27.6**	**0.0**
	comp=Z,1.8nm,0.3s,baz=360,slow=11,SNR=46						
PLCA				Lg	Lg	17 47 24.8	
	comp=Z,0.5nm,0.3s,baz=59,slow=10,SNR=2.0						
PLCA				LR	LR	17 48 17.2	
	comp=Z,531nm,20.4s,baz=12,slow=39						
PLCA	**Paso Flores**	**7.05**	**168**	*e*Pn	**Pn**	**17 45 28.6**	**+0.9**
TCA	**Tanti**	**7.07**	**72**	*e*P	**Pn**	**17 45 27.8**	**-0.1**
TCA				IAML		17 47 37.3	
	comp=Z,91nm,0.6s						
CYA	**Choya**	**7.82**	**48**	*e*P	**Pn**	**17 45 35.6**	**-2.6**
CYA				IAML		17 47 24.9	
	comp=Z,58nm,0.7s						
AHML	**Horco Molle**	**9.32**	**43**	IAML		17 48 08.0	
	comp=Z,30nm,0.6s						
TRQA	**Tornquist**	**9.47**	**119**	*e*Pn	**Pn**	**17 46 00.4**	**-0.4**
FSA	**Cafayete**	**9.51**	**38**	IAML		17 48 39.9	
	comp=Z,18nm,0.7s						
LVC	**Limon Verde**	**11.60**	**16**	Pn	Pn	17 46 24.6	-5.7
	comp=Z,9.3nm,0.3s,baz=108,slow=18,SNR=6.0						
LVC	**Limon Verde**	**11.60**	**16**	Pn	**Pn**	**17 46 28.1**	**-2.1**
PB01	**IPOC Station P**	**13.00**	**12**	*e*Pn	**Pn**	**17 46 48.1**	**-1.1**
CPUP	**Villa Florida**	**15.05**	**64**	Pn	**Pn**	**17 47 15.7**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=90,slow=1.0,SNR=1.8						
CPUP				Sn	**Sn**	**17 50 04.0**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=332,slow=8.1,SNR=2.0						
CPUP	**Villa Florida**	**15.05**	**64**	*e*Pn	**Pn**	**17 47 16.3**	**-0.8**
CPUP				Sn	**Sn**	**17 50 04.0**	**+0.4**
LPAZ	**La Paz**	**17.89**	**14**	P	**P**	**17 47 54.6**	**+0.1**
	comp=Z,0.3nm,0.3s,baz=188,slow=7.9,SNR=29						
LPAZ	**La Paz**	**17.89**	**14**	*e*P	**P**	**17 47 54.4**	**-0.1**
	comp=Z,13nm,0.8s						
SIV	**San Ignacio**	**20.51**	**33**	P	**P**	**17 48 21.6**	**-1.0**
	comp=Z,8.4nm,0.8s,baz=231,slow=12,SNR=22						
SIV				LR	LR	17 57 50.5	
	comp=Z,512nm,18.7s,baz=234,slow=41						
USHA	**Ushuaia**	**21.19**	**174**	P	**P**	**17 48 34.0**	**+4.4**
	comp=Z,29nm,0.9s,baz=333,slow=9.0,SNR=3.0						
NNA	**Nana**	**22.11**	**348**	LR	LR	17 55 22.5	
	comp=Z,150nm,20.2s,baz=184,slow=32						
SPB	**Sao Paulo**	**24.13**	**72**	*e*P	**P**	**17 48 59.7**	**-0.6**
	comp=Z,108nm,1.8s						
SAML	**Samuel**	**26.19**	**21**	*e*P	**P**	**17 49 17.5**	**-1.5**
	comp=Z,7.4nm,0.9s						
ATAH	**Atahualpa**	**27.13**	**347**	LR	LR	17 59 06.8	
	comp=Z,119nm,18.6s,baz=185,slow=34						
SNAA	**Sanae**	**51.87**	**158**	P	**P**	**17 52 52.5**	**+0.2**
	comp=Z,4.7nm,0.7s,baz=282,slow=6.1,SNR=11						
SNAA	**Sanae**	**51.87**	**158**	*e*P	**P**	**17 52 51.8**	**-0.5**
	comp=Z,10.0nm,1.1s						
SYO	**Syowa Base**	**66.15**	**159**	⇓*e*P	**P**	**17 54 26.9**	**-4.3**
TBI	**Tubuai**	**67.03**	**257**	*e*S	**S**	**18 03 33.9**	**+2.8**
	comp=Z,42nm,23.5s						
TBI	**Tubuai**	**67.03**	**257**	*e*LR	LR	18 15 04.0	
	comp=Z,86nm,26.8s						
TXAR	**Lajitas Array**	**69.42**	**331**	LR	LR	18 20 59.8	
	comp=Z,67nm,18.7s,baz=0.0,slow=32						
CPCT	**Cooper Cave**	**69.84**	**350**	*e*P	**P**	**17 54 55.2**	**+0.5**
	comp=Z,3.0nm,0.8s						
PPT2	**Papeete2**	**69.93**	**262**	*e*S	**S**	**18 04 06.3**	**+0.5**
	comp=Z,38nm,22.0s						
PPT2	**Papeete2**	**69.93**	**262**	*e*LR	LR	18 16 17.2	
	comp=Z,90nm,25.8s						
WVT	**Waverly**	**71.07**	**347**	*e*P	**P**	**17 55 01.9**	**-0.3**
	comp=Z,14nm,0.8s						
MNTX	**Cornudas Mount**	**72.20**	**331**	*e*P	**P**	**17 55 07.7**	**-1.5**
	comp=Z,1.9nm,0.8s						
WMOK	**Wichita Mounta**	**72.54**	**337**	*e*P	**P**	**17 55 10.9**	**-0.2**
	comp=Z,13nm,1.8s						
MAW	**Mawson**	**73.44**	**164**	P	**P**	**17 55 15.7**	**-0.4**
	comp=Z,2.8nm,0.9s,baz=229,slow=8.1,SNR=4.7						
MAW				LR	LR	18 29 37.5	
	comp=Z,93nm,18.3s,baz=239,slow=38						
DBIC	**Dimbokro**	**75.44**	**72**	P	**P**	**17 55 28.6**	**0.0**
	comp=Z,6.4nm,0.7s,baz=202,slow=5.3,SNR=5.8						
DBIC				LR	LR	18 27 20.0	
	comp=Z,50nm,18.1s,baz=174,slow=35						
T25A	**Trinidad**	**76.63**	**334**	*e*P	**P**	**17 55 35.6**	**+0.5**
	comp=Z,14nm,1.4s						
X16A	**Lo Mia Camp, P**	**77.11**	**328**	*e*P	**P**	**17 55 38.7**	**+0.9**
SADO	**Sadowa**	**78.46**	**355**	LR	LR	18 30 55.3	
	comp=Z,21nm,20.4s,baz=240,slow=36						
U15A	**North Rim**	**79.18**	**328**	*e*P	**P**	**17 55 52.1**	**+2.8**
SMCO	**Snowmass**	**79.38**	**333**	*e*P	**P**	**17 55 52.1**	**+1.5**
	comp=Z,7.4nm,1.3s						
ECSD	**EROS Data Cent**	**80.28**	**342**	*e*P	**P**	**17 55 54.7**	**-0.2**
	comp=Z,7.8nm,1.2s						
BOSA	**Boshof**	**80.44**	**118**	P	**P**	**17 55 56.4**	**-0.1**
	comp=Z,3.5nm,1.0s,baz=270,slow=6.1,SNR=3.2						
BOSA				LR	LR	18 28 13.2	
	comp=Z,45nm,18.6s,baz=291,slow=33						
SHPR	**Sheep Range**	**80.53**	**326**	*e*P	**P**	**17 55 57.6**	**+1.0**
	comp=Z,4.7nm,1.2s						
CCUT	**Cedar City**	**80.58**	**328**	*e*P	**P**	**17 55 59.1**	**+2.2**
	comp=Z,4.0nm,1.1s						
PMLM	**Mount Lospe**	**81.91**	**322**	*e*P	**P**	**17 56 08.2**	**+4.5**
R11A	**Troy Canyon, C**	**82.23**	**327**	*e*P	**P**	**17 56 07.8**	**+2.2**
	comp=Z,4.1nm,1.3s						
DUG	**Dugway, Tooele**	**82.56**	**330**	*e*P	**P**	**17 56 08.0**	**+0.8**
	comp=Z,3.2nm,1.1s						
HWUT	**Hardware Ranch**	**83.24**	**332**	*e*P	**P**	**17 56 10.6**	**-0.1**
	comp=Z,3.7nm,0.9s						
PDAR	**Pinedale Array**	**83.46**	**333**	P	**P**	**17 56 12.0**	**+0.1**
	comp=Z,0.5nm,0.7s,baz=145,slow=5.4,SNR=4.4						
PDAR				LR	LR	18 29 58.4	
	comp=Z,64nm,18.0s,baz=110,slow=33						
TORD	**Torodi Ar. Bea**	**84.47**	**70**	P	**P**	**17 56 17.0**	**-0.4**
	comp=Z,3.6nm,0.8s,baz=221,slow=3.1,SNR=19						
TORD				LR	LR	18 34 10.1	
	comp=Z,33nm,18.2s,baz=245,slow=36						
NEW	**Newport**	**90.96**	**332**	LR	LR	18 34 55.6	
	comp=Z,28nm,18.3s,baz=146,slow=34						
MDT	**Midelt**	**91.97**	**51**	LR	LR	18 37 28.6	
	comp=Z,80nm,20.3s,slow=35						
ASAR	**Alice Springs**	**117.57**	**207**	PKP	**PKPdf**	**18 02 29.3**	**-1.5**
	comp=Z,1.0nm,1.3s,baz=106,slow=1.2,SNR=2.9						
WRA	**Warramunga Arr**	**120.75**	**210**	PKP	**PKPdf**	**18 02 35.9**	**-1.0**
	comp=Z,0.2nm,0.5s,baz=162,slow=1.6,SNR=7.2						
BRTR	**Keskin Array B**	**122.04**	**61**	PKP	**PKPdf**	**18 02 39.1**	**+0.2**
	comp=Z,0.8nm,0.8s,baz=170,slow=2.1,SNR=4.4						
GEYT	**Alibeck**	**140.10**	**69**	PKP	**PKPdf**	**18 03 12.5**	**-0.3**
	comp=Z,1.0nm,0.7s,baz=29,slow=3.3,SNR=3.5						
KSH	**Kashi**	**154.12**	**68**	*e*PKPbc	**PKPdf**	**18 03 33.9**	**-2.2**
KSH				*ep*PKP	PKPbc	18 03 43.4	-0.8
KSH				*es*PKP		18 03 47.4	
KSH				*e*PP	**PP**	**18 07 34.0**	**+0.8**
KSH				AMB	AMB		
	comp=Z,83nm,5.6s						
ZALV	**Zalesovo Beam**	**154.26**	**32**	PKPbc	**PKPbc**	**18 03 44.1**	**+0.3**
	comp=Z,3.3nm,0.7s,baz=285,slow=3.5,SNR=13						
MKAR	**Makanchi Array**	**156.90**	**48**	PKPab	**PKPab**	**18 04 08.2**	**-1.3**
	comp=Z,1.2nm,0.6s,baz=302,slow=4.2,SNR=11						
SONM	**Songino Array**	**165.98**	**3**	PKPab	**PKPab**	**18 04 50.4**	**+1.4**
	comp=Z,0.1nm,0.4s,baz=342,slow=3.3,SNR=3.9						

WEL 24 17:49:24.6±0.5, 39°39S×174°47E, h188km±4km, ML3.7/28, 6C-8D, Error ellipse: s-maj=2.9km s-min=1.9km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LREZ	**Lake Rotokare**	**0.09**	**217**	PN	Pn	17 49 49.2	0.0
LREZ				SN	Sn	17 50 08.0	-0.3
VRZ	**Vera Road**	**0.35**	**40**	PN	Pn	17 49 49.1	-0.7
VRZ				SN	Sn	17 50 07.7	-1.3
PKE	**Pukeiti**	**0.42**	**297**	PN	Pn	17 49 49.8	-0.2
WAZ	**Wanganui**	**0.54**	**133**	PN	Pn	17 49 50.7	+0.3
TWVZ	**Taurewa**	**0.82**	**67**	PN	Pn	17 49 51.4	-0.6
TRVZ	**Turoa**	**0.84**	**84**	PN	Pn	17 49 52.4	+0.2
FWVZ	**Far West T-bar**	**0.85**	**81**	PN	Pn	17 49 52.0	-0.3
WHVZ	**Whangaehu Hut**	**0.87**	**83**	PN	Pn	17 49 52.7	+0.2
WTVZ	**West Tongariro**	**0.91**	**73**	⇑PN	Pn	17 49 52.4	-0.1
HIZ	**Hauiti**	**0.93**	**19**	⇓PN	Pn	17 49 51.8	-0.8
TUVZ	**Tukino**	**0.93**	**83**	PN	Pn	17 49 53.0	+0.3
OTVZ	**Oturere**	**0.95**	**77**	PN	Pn	17 49 53.2	+0.3
KRVZ	**Karewarewa**	**0.96**	**72**	PN	Pn	17 49 52.6	-0.2
MOVZ	**Moawhango**	**0.99**	**91**	⇓PN	Pn	17 49 52.8	-0.3
OHWZ	**Ohakea**	**1.04**	**142**	PN	Pn	17 49 54.0	+0.7
BHHZ	**Black Hill Sta**	**1.24**	**95**	⇓PN	Pn	17 49 54.4	-0.5
BHHZ				AML	AML	17 50 19.1	
TSZ	**Takapari Road**	**1.33**	**121**	PN	Pn	17 49 55.7	+0.1
TSZ				AML	AML	17 50 19.4	
TSZ				AML	AML	17 50 19.9	
POWZ	**Post Office Ro**	**1.41**	**135**	PN	Pn	17 49 56.2	-0.2
POWZ				AML	AML	17 50 19.8	
POWZ				AML	AML	17 50 23.8	
PNHZ	**Pukenui**	**1.43**	**112**	PN	Pn	17 49 56.5	0.0
PNHZ				AML	AML	17 50 20.9	
PNHZ				AML	AML	17 50 21.9	
KRHZ	**Kereru**	**1.49**	**100**	PN	Pn	17 49 57.1	0.0
KRHZ				SN	Sn	17 50 20.6	-1.7
KRHZ				AML	AML	17 50 23.1	
KIW	**Kapiti Island**	**1.51**	**167**	PN	Pn	17 49 56.8	-0.4
KWHZ	**Kaweka Forest**	**1.51**	**92**	⇓PN	Pn	17 49 57.6	+0.3
KWHZ				SN	Sn	17 50 21.3	-1.5
KWHZ				AML	AML	17 50 22.0	
OGWZ	**Otaki Gorge**	**1.52**	**160**	PN	Pn	17 49 57.2	-0.1
OGWZ				AML	AML	17 50 21.3	
OGWZ				AML	AML	17 50 22.0	
MRZ	**Mangatainoka R**	**1.53**	**146**	⇑PN	Pn	17 49 57.1	-0.3
MRZ				AML	AML	17 50 22.2	
MRZ				AML	AML	17 50 22.4	
BKZ	**Black Stump Fm**	**1.59**	**82**	⇓PN	Pn	17 49 57.5	-0.5
BKZ				AML	AML	17 50 21.2	
BKZ				AML	AML	17 50 22.5	
DVHZ	**Dannevirke**	**1.59**	**125**	PN	Pn	17 49 58.0	0.0
DVHZ				AML	AML	17 50 23.5	
DVHZ				AML	AML	17 50 24.0	
MRHZ	**Matea Rd**	**1.61**	**70**	⇓PN	Pn	17 49 57.4	-0.9
MRHZ				AML	AML	17 50 21.8	
MRHZ				AML	AML	17 50 21.8	
PRWZ	**Pori Road**	**1.64**	**136**	PN	Pn	17 49 58.6	+0.2
PRWZ				SN	Sn	17 50 23.2	-1.6
PRWZ				AML	AML	17 50 24.7	
WPHZ	**Waipukurau**	**1.66**	**115**	PN	Pn	17 49 58.8	+0.1
WPHZ				SN	Sn	17 50 23.6	-1.6
WPHZ				AML	AML	17 50 28.2	
HOWZ	**Holdsworth Sta**	**1.71**	**152**	PN	Pn	17 49 58.7	-0.4
HOWZ				AML	AML	17 50 23.4	
HOWZ				AML	AML	17 50 25.0	
MCHZ	**McNeill Hill**	**1.73**	**92**	PN	Pn	17 49 59.9	+0.6
MCHZ				AML	AML	17 50 29.0	
MCHZ				AML	AML	17 51 05.7	
TIWZ	**Tintock**	**1.76**	**142**	PN	Pn	17 49 59.4	-0.3
TIWZ				AML	AML	17 50 24.9	
TIWZ				AML	AML	17 50 25.4	
CAW	**Cannon Point**	**1.77**	**165**	PN	Pn	17 49 59.3	-0.4
CAW				AML	AML	17 50 26.7	
TCW	**Tory Channel**	**1.82**	**185**	⇓PN	Pn	17 50 00.0	-0.2
TCW				AML	AML	17 50 28.1	
TCW				AML	AML	17 50 28.4	
NMHZ	**Naumai**	**1.84**	**82**	PN	Pn	17 50 01.1	+0.5
NMHZ				AML	AML	17 50 29.6	
NMHZ				AML	AML	17 50 39.7	
ANWZ	**Angora Road**	**1.88**	**125**	PN	Pn	17 50 01.2	+0.4
ANWZ				SN	Sn	17 50 27.0	-2.0
ANWZ				AML	AML	17 50 28.3	
KAHZ	**Kahuranaki**	**1.90**	**103**	PN	Pn	17 50 01.4	+0.3
KAHZ				AML	AML	17 50 31.6	
KAHZ				AML	AML	17 51 07.9	
MTW	**Mount Morrison**	**1.93**	**156**	PN	Pn	17 50 00.7	-0.7
MTW				AML	AML	17 50 27.5	
MTW				AML	AML	17 50 28.9	
PXZ	**Pawanui**	**1.95**	**110**	⇓PN	Pn	17 50 01.6	0.0
PXZ				AML	AML	17 50 29.5	
PXZ				AML	AML	17 50 39.4	
ARHZ	**Aropaoanui**	**1.96**	**87**	PN	Pn	17 50 02.0	+0.2
ARHZ				AML	AML	17 50 29.4	
ARHZ				AML	AML	17 50 31.0	
NNZ	**Nelson**	**2.01**	**204**	⇑PN	Pn	17 50 01.1	-1.0
NNZ				SN	Sn	17 50 28.4	-3.1
MUGZ	**Murupara**	**2.01**	**64**	PN	Pn	17 50 01.1	-1.2
QRZ	**Quartz Range**	**2.07**	**225**	⇑PN	Pn	17 50 01.2	-1.6
TUWZ	**Tuamarina**	**2.08**	**191**	PN	Pn	17 50 02.0	-0.8
MSWZ	**Moikau Station**	**2.11**	**164**	PN	Pn	17 50 02.5	-0.7
MSWZ				AML	AML	17 50 08.0	
MSWZ				SN	Sn	17 50 29.8	-3.7
PAWZ	**Paruwai Farm**	**2.12**	**160**	PN	Pn	17 50 02.6	-0.9
PAWZ				SN	Sn	17 50 30.3	-3.5
PAWZ				AML	AML	17 50 30.7	
TRWZ	**Traveller**	**2.21**	**156**	PN	Pn	17 50 03.5	-0.8
PLWZ	**Palliser**	**2.26**	**165**	PN	Pn	17 50 03.9	-1.0
SNGZ	**Shannon Statio**	**2.31**	**76**	PN	Pn	17 50 05.0	-0.6
URZ	**Urewera**	**2.35**	**62**	PN	Pn	17 50 04.6	-1.3
BSWZ	**Blackbirch Sta**	**2.37**	**191**	PN	Pn	17 50 05.5	-0.6
RAGZ	**Rawiri**	**2.46**	**70**	PN	Pn	17 50 06.4	-1.0
KNZ	**Kokohu**	**2.52**	**83**	PN	Pn	17 50 07.2	-0.6
MWZ	**Matawai**	**2.61**	**67**	⇑PN	Pn	17 50 07.8	-1.2
MWZ				AML	AML	17 50 48.9	
RIGZ	**Rimuhau**	**2.65**	**76**	PN	Pn	17 50 08.8	-0.6
MHGZ	**Mahia Peninsul**	**2.68**	**86**	PN	Pn	17 50 09.4	-0.3
TKGZ	**Te Karaka**	**2.80**	**71**	PN	Pn	17 50 10.4	-0.8
RUGZ	**Raukumara Rang**	**2.89**	**61**	PN	Pn	17 50 10.2	-2.1
TWGZ	**Tauwhareparae**	**3.00**	**67**	PN	Pn	17 50 12.6	-1.0
CNGZ	**Carnagh Statio**	**3.05**	**74**	PN	Pn	17 50 13.9	-0.3
HAZ	**Te Kaha**	**3.07**	**59**	PN	Pn	17 50 12.3	-2.0
KHZ	**Kahutara**	**3.10**	**193**	PN	Pn	17 50 13.5	-1.2
PKGZ	**Pakihiroa**	**3.20**	**63**	PN	Pn	17 50 14.5	-1.5
PUZ	**Puketiti**	**3.24**	**67**	PN	Pn	17 50 14.8	-1.7
PUZ				AML	AML	17 52 46.0	
WMGZ	**Waiomatatini S**	**3.47**	**64**	PN	Pn	17 50 17.5	-1.7
LTZ	**Lake Taylor**	**3.77**	**205**	⇑PN	Pn	17 50 21.1	-1.9
INZ	**Inchbonnie**	**4.04**	**214**	PN	Pn	17 50 25.4	-0.9
OXZ	**Oxford**	**4.34**	**204**	PN	Pn	17 50 27.0	-3.1
MQZ	**McQueen's Vall**	**4.52**	**197**	PN	Pn	17 50 29.0	-3.4

IDC 24 17:50:06.7±1.3, 30°20N×108°34E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/38, mbtmp3.4/4, ML3.2/1, MS3.2/2, Ms1 3.2/2, ms1mx2.5/47, Error ellipse: s-maj=99.9km s-min=23.8km az=60.0, Sichuan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SONM	**Songino Array**	**17.67**	**356**	P	P	17 54 16.2	+0.8
	0.1nm,0.3s,baz=168,slow=11,SNR=3.7						
MKAR	**Makanchi Array**	**26.09**	**317**	P	P	17 55 41.4	-0.8
	0.6nm,0.8s,baz=117,slow=11,SNR=5.1						
YAK	**Yakutsk**	**34.76**	**18**	LR	LR	18 12 36.1	
	comp=Z,27nm,20.5s,baz=282,slow=39						
WRA	**Warramunga Arr**	**55.78**	**150**	P	P	17 59 45.8	0.0
	0.3nm,0.5s,baz=339,slow=8.2,SNR=11						
ASAR	**Alice Springs**	**58.92**	**152**	P	P	18 00 07.8	-0.1
	0.3nm,0.4s,baz=333,slow=6.8,SNR=18						
VAE	**Valguarnera**	**75.16**	**305**	LR	LR	18 42 09.2	
	comp=Z,21nm,18.9s,baz=340,slow=42						

*ISCJB **24** 17:52:08.6±0.7, 33°.79N±0°.03×35°.75E±0°.06, h7km±8km, Error ellipse: s-maj=8.7km s-min=5.8km az=5.2*
*GRAL **24** 17:52:09.0±0.3, 33°.78N×35°.77E, h3km±7km, MD2.7*
*CSEM **24** 17:52:09.0, 33°.78N×35°.77E, h2km, ML2.7*
*NSSC **24** 17:52:09.0±1.1, 33°.84N×35°.74E, h14km±6km, ML1.2*

ISC 24 17:52:08.6±1.2, 33°79N±0°03×35°79E±0°04, h2km±13km, n12, σ0s46/20, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BHL	**Bhannes**	**0.16**	**317**	*e*P	**Pg**	**17 52 11.9**	**+0.1**
BHL				*e*S	**Sg**	**17 52 14.0**	**0.0**
BHL	**Bhannes**	**0.16**	**317**	*e*P	**Pg**	**17 52 11.9**	**+0.1**
BHL				*e*S	**Sg**	**17 52 14.0**	**0.0**
DQRL	**Deir Qamar**	**0.20**	**246**	*e*P	**Pg**	**17 52 12.4**	**-0.1**
DQRL	**Deir Qamar**	**0.20**	**246**	*e*P	**Pg**	**17 52 12.4**	**-0.1**
RCY	**Rachaya**	**0.29**	**172**	*e*P	**Pg**	**17 52 14.3**	**0.0**
RCY				*e*S	**Sg**	**17 52 18.1**	**0.0**
RCY	**Rachaya**	**0.29**	**172**	*e*P	**Pg**	**17 52 14.3**	**0.0**
RCY				*e*S	**Sg**	**17 52 18.1**	**0.0**
HWQ	**Hawqa**	**0.51**	**15**	*e*P	**Pg**	**17 52 18.1**	**-0.3**
HWQ	**Hawqa**	**0.51**	**15**	*e*P	**Pg**	**17 52 18.1**	**-0.3**
MARH	**Ras Al Marh**	**0.62**	**67**	*e*P	**Pg**	**17 52 21.6**	**+1.0**
MARH				*e*S	**Sb**	**17 52 31.5**	**-0.3**
MARH				AML	AML	17 52 35.5	
	comp=N,32nm,0.4s						
MARH				AML	AML	17 52 40.1	
	comp=E,21nm,0.4s						
ROOS	**tl_alroos**	**1.30**	**73**	*e*P	**Pg**	**17 52 33.9**	**+0.2**
ROOS				*e*S	**Sg**	**17 52 49.4**	**-1.2**
ROOS				AML	AML	17 52 59.2	
	comp=N,7.7nm,0.3s						
ROOS				AML	AML	17 53 10.4	
	comp=E,6.5nm,0.5s						
SALA	**Sala**	**1.33**	**143**	*e*P	**Pg**	**17 52 33.8**	**-0.4**
SALA				*e*S	**Sb**	**17 52 52.2**	**+0.2**
SALA				AML	AML	17 52 57.3	
	comp=N,5.5nm,0.4s						
SALA				AML	AML	17 53 03.0	
	comp=E,0.5nm,0.4s						
ZALF	**Zalf**	**1.56**	**123**	*e*P	**Pn**	**17 52 37.7**	**+0.4**
ZALF				*e*S	**Sn**	**17 52 57.7**	**-0.3**
ZALF				AML	AML	17 53 02.3	
	comp=E,3.8nm,0.3s						
ZALF				AML	AML	17 53 07.7	
	comp=N,5.0nm,0.5s						

*IDC **24** 18:01:54.9±1.3, 29°.59S×175°.96W, h0km, mb3.8/3, mb1 4.1/4, mb1mx3.7/35, mbtmp4.0/4, ML3.3/1, MS3.2/1, Ms1 3.2/1, ms1mx2.6/27, Error ellipse: s-maj=39.2km s-min=24.3km az=160.0*
*ISCJB **24** 18:01:55.4±1.9, 29°.61S±0°.10×175°.8W±0°.2, h28km, mb3.8/3, MS3.0/1, Error ellipse: s-maj=20.1km s-min=12.7km az=159.7*

ISC 24 18:01:58.7±1.4, 29°5S±0°.1×175°9W±0°.1, h28km, n10, σ0s95/11, mb3.8/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.78**	**279**	Pn	**Pn**	**18 02 27.7**	**+0.1**
	175nm,0.3s,baz=90,slow=20,SNR=3.1						
RAO				Sn	**Sn**	**18 02 49.7**	**+0.3**
	162nm,0.3s,baz=90,slow=20,SNR=3.0						
URZ	**Urewera**	**10.46**	**212**	Pn	**Pn**	**18 04 25.4**	**-1.3**
	0.3nm,0.3s,baz=317,slow=19,SNR=3.9						
URZ				Sn	**Sn**	**18 06 24.6**	**+1.7**
	0.8nm,0.3s,baz=57,slow=23,SNR=6.0						
PPT	**Papeete**	**26.84**	**70**	LR	LR	18 18 10.9	
	comp=Z,42nm,18.2s,baz=180,slow=36						
STKA	**Stephens Creek**	**36.45**	**255**	P	**P**	**18 09 01.1**	**-0.1**
	1.5nm,1.0s,baz=102,slow=12,SNR=5.5						
ASAR	**Alice Springs**	**44.99**	**265**	P	**P**	**18 10 11.4**	**-0.4**
	0.7nm,0.5s,baz=99,slow=6.3,SNR=19						
WRA	**Warramunga Arr**	**45.90**	**270**	P	**P**	**18 10 18.2**	**-0.9**
	1.1nm,0.6s,baz=108,slow=7.5,SNR=9.9						
FINES	**FINESS Array B**	**144.93**	**342**	PKP	**PKPbc**	**18 21 32.0**	**+0.3**
	2.3nm,0.9s,baz=134,slow=8.2,SNR=3.8						
NOA	**NORSAR Array B**	**148.14**	**353**	PKPbc	**PKPbc**	**18 21 41.5**	**+0.3**
	0.4nm,0.6s,baz=14,slow=4.4,SNR=3.8						
HFS	**Hagfors**	**148.72**	**351**	PKPbc	**PKPbc**	**18 21 43.4**	**+0.7**
	2.8nm,0.8s,ba

VLZ	Valdez	3.14	58	P		Pn	18 15 35.0	0.0	
SCM	Sheep Creek Mo	3.15	43	P		Pn	18 15 36.1	+0.9	
EYAK	Cordova Ski Ar	3.20	70	P		Pn	18 15 36.5	+0.7	
PPLA	Purkeypile	3.32	357	*e*Pn		Pn	18 15 38.6	+1.1	
DIV	Divide	3.38	60	*e*Pn		Pn	18 15 36.8	-1.6	
KLU	Klutina	3.49	54	P		Pn	18 15 40.7	+0.9	
HUR	Hurricane	3.56	16	P		Pn	18 15 42.2	+1.5	
BMRM	Bremner River	3.85	66	*e*Pn		Pn	18 15 44.5	-0.4	
TT01	Tatalina	3.89	330	P		Pn	18 15 45.4	+0.2	
TTA	Tatalina	3.91	331	P		Pn	18 15 45.5	0.0	
TRF	Thorofare Moun	3.94	10	P		Pn	18 15 46.5	+0.4	
KTH	Kantishna Hill	4.00	6	P		Pn	18 15 47.5	+0.8	
RND	Reindeer	4.08	19	P		Pn	18 15 48.9	+1.0	
DHY	Denali Highway	4.13	39	P		Pn	18 15 49.5	+1.3	
MCK	McKinley	4.37	17	P		Pn	18 15 53.5	+1.6	
CRQM	Cirque	4.50	71	P		Pn	18 15 55.5	+1.8	
BPAW	Bear Paw Mtn.	4.54	5	P		Pn	18 15 54.5	+0.4	
PAX	Paxson	4.57	39	P		Pn	18 15 55.1	+0.5	
KIAG	Kiagna River	4.90	70	P		Pn	18 15 59.5	+0.2	
PTPK	Patty Peak	4.91	67	P		Pn	18 15 59.5	+0.1	
BAGL	Bagley Icefiel	4.97	75	P		Pn	18 16 01.5	+1.6	
MESA	MESA	5.01	79	P		Pn	18 16 01.9	+1.1	
GRNC	Granite Creek	5.16	73	P		Pn	18 16 03.3	+0.4	
WRH	Wood River Hil	5.20	18	P		Pn	18 16 03.5	+0.4	
BARN	Barnard Glacie	5.26	69	P		Pn	18 16 04.8	+0.6	
CTGM	Chitina Glacie	5.40	71	P		Pn	18 16 06.8	+0.7	
CCB	Clear Creek Bu	5.41	19	P		Pn	18 16 06.5	+0.5	
MLY	Manley	5.48	5	P		Pn	18 16 07.2	+0.3	
DOT	Dot Lake	5.50	39	P		Pn	18 16 08.1	+0.8	
LOGN	Logan Glacier	5.54	73	P		Pn	18 16 08.2	+0.3	
COLA	College	5.61	18	P		Pn	18 16 08.9	+0.2	
MDM	Murphy Dome	5.64	16	P		Pn	18 16 09.7	+0.6	
ILAR	Eielson Array	5.69	22	P		Pn	18 16 10.1	+0.3	
	5.4nm,0.3s,baz=205,slow=14,SNR=257								
ILAR				S		Sn	18 17 10.3	-3.2	
	6.7nm,0.3s,baz=212,slow=22,SNR=12								
ILB	Eielson Array	5.69	22	P		Pn	18 16 09.9	+0.1	
PCA	Pinnacle	5.86	80	P		Pn	18 16 13.3	+1.1	
BCA3	Beaver Creek A	5.96	50	P		Pn	18 16 14.3	+0.8	
IM3	Indian Mountai	6.47	353	P		Pn	18 16 20.1	-0.4	
DHAK	Deception Hill	6.99	88	P		Pn	18 16 28.5	+0.9	
COLD	Coldfoot	7.70	5	P		Pn	18 16 37.1	-0.1	
PLBC	Pleasant Camp	7.87	84	P		Pn	18 16 40.1	+0.5	
BM3	Burnt Mountain	8.48	19	P		Pn	18 16 47.6	-0.4	
DLBC	Dease Lake	11.29	86	P		Pn	18 17 28.3	+1.9	
	0.8nm,0.3s,baz=295,slow=7.9,SNR=9.9								
DLBC				S		Sn	18 19 27.4	-3.3	
	0.2nm,0.3s,baz=229,slow=20,SNR=4.4								
INK	Inuvik	11.82	35	P		Pn	18 17 35.0	+1.6	
	0.2nm,0.3s,baz=254,slow=4.3,SNR=5.0								
SEY	Seymchan	26.30	301	P		P	18 20 16.1	-0.8	
	0.8nm,0.5s,baz=90,slow=4.0,SNR=3.0								
PETK	Petropavlovsk-	28.10	279	P		P	18 20 33.0	-0.1	
	1.4nm,0.7s,baz=70,slow=12,SNR=4.8								
ARCES	ARCESS Array B	51.15	1	P		P	18 23 42.8	-0.7	
	1.2nm,0.7s,baz=352,slow=5.5,SNR=2.6								
ARCES				pP		pP	18 23 59.7	-0.8	
	1.6nm,0.8s,baz=2.9,slow=7.2,SNR=1.8								
KSRS	Korea Array	53.84	284	P		P	18 24 03.8	-0.1	
	0.4nm,0.6s,baz=34,slow=7.0,SNR=3.2								
KSAR	Wonju Array Be	53.87	284	P		P	18 24 03.8	-0.3	
SONM	Songino Array	55.51	307	P		P	18 24 15.5	-0.4	
	0.2nm,0.5s,baz=46,slow=8.3,SNR=3.1								
SONM				pP		pP	18 24 32.6	-0.5	
	0.3nm,0.5s,baz=40,slow=5.6,SNR=3.6								
SONM				PcP		PcP	18 25 15.8	+0.7	
	0.5nm,0.5s,baz=45,slow=4.0,SNR=3.7								
ZALV	Zalesovo Beam	58.05	324	P		P	18 24 33.2	-0.3	
	0.7nm,0.6s,baz=31,slow=8.0,SNR=2.4								
FINES	FINESS Array B	59.28	1	P		P	18 24 42.3	+0.3	
	0.9nm,0.6s,baz=359,slow=9.5,SNR=3.4								
FINES				pP		pP	18 24 58.9	-0.5	
	2.3nm,0.8s,baz=10,slow=8.5,SNR=2.6								
HFS	Hagfors	60.07	8	P		P	18 24 46.8	-0.7	
	2.4nm,1.0s,baz=323,slow=2.2,SNR=4.3								
MKAR	Makanchi Array	65.11	322	P		P	18 25 20.7	-0.7	
	0.3nm,0.6s,baz=25,slow=6.0,SNR=4.1								
GERES	GERESS Array B	71.27	10	P		P	18 26 03.4	+3.5	
	0.1nm,0.3s,baz=4.4,slow=5.1,SNR=2.2								
GERES				pP		pP	18 26 18.2	+0.5	
	0.3nm,0.5s,baz=348,slow=4.5,SNR=3.5								
BOSA	Boshof	148.96	5	PKPbc		PKPbc	18 34 27.7	-0.2	
	9.8nm,1.1s,baz=334,slow=3.8,SNR=5.0								
MAW	Mawson	162.84	228	PKPab		PKPab	18 35 30.0	-0.3	
	0.7nm,0.3s,baz=45,slow=8.6,SNR=7.2								

*THE **24** 18:31:30.1,37.99N×22.75E,h13km±1km, ML1.9/6, Error ellipse: s-maj=1.4km s-min=0.5km az=350.0*
*CSEM **24** 18:31:30.2±0.1,37.98N×22.74E,h8km, ML1.9, Error ellipse: s-maj=2.3km s-min=1.9km az=175.0*
ATH 24 18:31:30.2,37.98N×22.75E,h12km±2km, ML1.9/16, Error ellipse: s-maj=2.2km s-min=0.6km az=6.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THAL	Thalero	0.09	311	P	Pg	18 31 33.0	+0.1
THAL				S	Sg	18 31 35.0	+0.2
THAL	Thalero	0.09	311	P	Pg	18 31 33.1	+0.2
THAL				S	Sg	18 31 35.3	+0.5
THAL	Thalero	0.09	311	P	Pg	18 31 33.1	+0.3
THAL				S	Sg	18 31 35.3	+0.5
THAL				AML	AML	18 31 35.4	
	comp=N,6298μm,0.3s						
THAL				AML	AML	18 31 36.5	
	comp=E,4463μm,0.2s						
LTK	Loutraki	0.18	76	P	Pg	18 31 34.0	-0.2
LTK				S	Sg	18 31 37.0	0.0
LTK	Loutraki	0.18	76	P	Pg	18 31 34.0	-0.2
LTK				S	Sg	18 31 37.0	0.0
LTK	Loutraki	0.18	76	P	Pg	18 31 34.0	-0.2
LTK				S	Sg	18 31 36.5	-0.5
LTK				AML	AML	18 31 37.4	
	comp=N,826μm,0.2s						
LTK				AML	AML	18 31 39.5	
	comp=E,664μm,0.2s						
PROD	Prodromos	0.30	23	P	Pg	18 31 36.8	+0.4
PROD				S	Sg	18 31 40.8	+0.2
PROD	Prodromos	0.30	23	P	Pg	18 31 36.8	+0.4
PROD				S	Sg	18 31 40.8	+0.3
PROD				AML	AML	18 31 41.8	
	comp=E,1088μm,0.3s						
PROD				AML	AML	18 31 42.5	
	comp=N,1394μm,0.2s						
DSF	Desfina	0.47	338	P	Pg	18 31 39.0	-0.3
DSF				S	Sg	18 31 46.0	+0.4
DSF	Desfina	0.47	338	P	Pg	18 31 39.0	-0.3
DSF				S	Sg	18 31 46.0	+0.4
DSF	Desfina	0.47	338	P	Pg	18 31 39.0	-0.3
DSF				S	Sg	18 31 46.1	+0.6
DSF				AML	AML	18 31 46.8	
	comp=E,280μm,0.1s						
DSF				AML	AML	18 31 46.9	
	comp=N,382μm,0.2s						
VIL2	Platees	0.47	60	P	Pg	18 31 39.8	+0.3
VIL2				S	Sb	18 31 46.9	-0.5
KLV	Kalavryta, Ach	0.48	278	P	Pg	18 31 39.3	-0.2
KLV				S	Sg	18 31 46.0	+0.1
KLV	Kalavryta, Ach	0.48	278	P	Pg	18 31 39.3	-0.2
KLV				S	Sg	18 31 46.0	+0.1
KLV	Kalavryta, Ach	0.48	278	P	Pg	18 31 39.2	-0.3
KLV				S	Sg	18 31 45.2	-0.6
KLV				AML	AML	18 31 47.2	
	comp=E,101μm,0.2s						
KLV				AML	AML	18 31 47.4	
	comp=N,152μm,0.2s						
VILL	Villia	0.48	67	P	Pg	18 31 39.6	-0.1
VILL				S	Sg	18 31 46.8	+0.7
VILL	Villia	0.48	67	P	Pg	18 31 39.6	-0.1
VILL				S	Sg	18 31 46.8	+0.7
TRIP	Tripoli	0.59	220	P	Pb	18 31 42.2	-0.2
TRIP				S	Sg	18 31 48.9	-0.5
TRIP	Tripoli	0.59	220	P	Pb	18 31 42.2	-0.2
TRIP				S	Sg	18 31 48.9	-0.5
TRIP				AML	AML	18 31 50.1	
	comp=E,201μm,0.3s						
TRIP				AML	AML	18 31 52.5	
	comp=N,126μm,0.5s						
DID	Didima	0.61	140	P	Pg	18 31 41.9	-0.2
DID				S	Sb	18 31 51.1	-0.3
DID	Didima	0.61	140	P	Pg	18 31 41.9	-0.2
DID				S	Sb	18 31 51.1	-0.3
DID	Didima	0.61	140	P	Pg	18 31 41.8	-0.2
DID				S	Sb	18 31 51.6	+0.2
DID				AML	AML	18 31 52.3	
	comp=N,234μm,0.3s						
DID				AML	AML	18 31 53.3	
	comp=E,182μm,0.2s						
KALE	Kalithea	0.63	311	P	Pg	18 31 42.7	+0.2
KALE				S	Sg	18 31 50.6	-0.2
KALE	Kalithea	0.63	311	P	Pg	18 31 42.6	+0.2
KALE				S	Sg	18 31 50.6	-0.3
KALE				AML	AML	18 31 52.8	
	comp=E,110μm,0.2s						
KALE				AML	AML	18 31 53.0	
	comp=N,115μm,0.2s						
TRIZ	Trizonia	0.66	306	P	Pg	18 31 41.7	-1.2
LAKA	Lakka	0.66	293	P	Pg	18 31 42.6	-0.4
LAKA				S	Sg	18 31 51.5	-0.2
LAKA	Lakka	0.66	293	P	Pg	18 31 42.6	-0.4
LAKA				S	Sg	18 31 51.5	-0.2
VLX	Vlachokerasia	0.67	206	P	Pb	18 31 43.7	-0.2
VLX	Vlachokerasia	0.67	206	P	Pb	18 31 43.7	-0.2
VLX				S	Sg	18 31 51.5	-0.7
VLX	Vlachokerasia	0.67	206	P	Pb	18 31 44.1	+0.2
VLX				S	Sg	18 31 51.5	-0.6
VLX				AML	AML	18 31 54.8	
	comp=E,522μm,0.4s						
VLX				AML	AML	18 31 54.8	
	comp=N,392μm,0.4s						
SERG	Sergoula	0.70	309	P	Pg	18 31 42.5	-1.2
LKR	Lokris	0.70	16	P	Pg	18 31 43.2	-0.5
LKR	Lokris	0.70	16	P	Pg	18 31 43.2	-0.5
LKR				S	Sb	18 31 53.6	-0.3
LKR	Lokris	0.70	16	P	Pn	18 31 45.2	-0.7
LKR				S	Sb	18 31 53.6	-0.3
LKR				AML	AML	18 31 56.2	
	comp=E,544μm,0.2s						
LKR				AML	AML	18 31 57.0	
	comp=N,431μm,0.2s						
ATAL	Atalanti	0.74	17	P	Pg	18 31 43.9	-0.7
ATAL				S	Sg	18 31 54.2	-0.2
ATAL	Atalanti	0.74	17	P	Pg	18 31 43.9	-0.7
ATAL				S	Sg	18 31 54.2	-0.1
ATAL				AML	AML	18 31 57.6	
	comp=N,142μm,0.3s						
ATAL				AML	AML	18 31 57.9	
	comp=E,202μm,0.3s						
ATHU	Athens Univers	0.82	91	P	Pg	18 31 45.8	-0.2
ATHU	Athens Univers	0.82	91	P	Pg	18 31 45.8	-0.2
DRO	Drossia	0.82	268	P	Pb	18 31 46.7	+0.3
DRO				S	Sb	18 31 57.1	-0.3
DRO	Drossia	0.82	268	P	Pb	18 31 46.7	+0.3
DRO				S	Sb	18 31 57.1	-0.2
DRO				AML	AML	18 32 01.6	
	comp=E,180μm,0.3s						
DRO				AML	AML	18 32 02.9	
	comp=N,161μm,0.4s						
VLY	Voula,Athens	0.84	98	P	Pg	18 31 45.4	-0.9
VLY	Voula,Athens	0.84	98	P	Pb	18 31 47.1	+0.5
VLY				S	Sb	18 31 57.6	-0.3
VLY	Voula,Athens	0.84	98	P	Pb	18 31 47.1	+0.4
VLY				S	Sg	18 31 57.6	+0.3
VLY				AML	AML	18 31 58.5	
	comp=E,235μm,0.2s						
VLY				AML	AML	18 32 00.7	
	comp=N,105μm,0.5s						
PTL	Penteli	0.89	85	P	Pg	18 31 47.1	-0.2
PTL				S	Sg	18 31 57.2	-1.6
PTL	Penteli	0.89	85	P	Pg	18 31 47.1	-0.2
PTL				S	Sg	18 31 57.2	-1.6
PTL				AML	AML	18 32 00.4	
	comp=N,103μm,0.3s						
PTL				AML	AML	18 32 00.8	
	comp=E,148μm,0.5s						
ANX	Ano Chora	0.89	314	P	Pb	18 31 47.9	+0.2
AMT	Artemida-Makis	0.94	242	P	Pg	18 31 48.2	0.0
AMT	Artemida-Makis	0.94	242	P	Pg	18 31 48.2	0.0
EREA	Eretria	1.03	64	P	Pn	18 31 51.4	+0.9
EREA				S	Sb	18 32 03.2	-0.3
EREA	Eretria	1.03	64	P	Pn	18 31 51.4	+0.9
EREA				S	Sb	18 32 03.2	-0.3
EREA				AML	AML	18 32 06.2	
	comp=E,124μm,0.2s						
EREA				AML	AML	18 32 06.3	
	comp=N,74μm,0.2s						
AGG	Agios Georgios	1.09	343	P	Pn	18 31 51.9	+0.6
AGG	Agios Georgios	1.09	343	P	Pn	18 31 51.9	+0.6
AGG				AML	AML	18 32 00.8	
	comp=E,560μm,0.1s						
AGG				AML	AML	18 32 00.8	
	comp=N,709μm,0.2s						
VLI	Veliai	1.27	173	P	Pn	18 31 52.8	-0.9
VLI	Veliai	1.27	173	P	Pn	18 31 52.8	-0.9
PYL	PYLOS	1.35	217	P	Pb	18 31 55.1	-0.2
PYL	PYLOS	1.35	217	P	Pb	18 31 55.1	-0.2
AOS	Alonnisos	1.48	36	P	Pb	18 31 58.0	+0.3
AOS	Alonnisos	1.48	36	P	Pb	18 31 58.0	+0.4

*NIED **24** 18:51:00, 37.70N×141.60E, h50km, Mw6.3 Best double couple: M₀2.96000×10¹⁸ NP1:φs176.00000°, δ24.00000°, λ61.00000°. NP2:φs27.00000°, δ69.00000°, λ102.00000°.*
*BJI **24** 18:51:20.6, 37.70N×141.60E, h30km, mb6.3/84, mB6.1/69, Ms6.2/98, Ms7.6.1/91*
*MOS **24** 18:51:23.4±0.9, 37.80N×141.48E, h38km, mb6.6/63, MS5.8/48, Error ellipse: s-maj=5.6km s-min=3.6km az=98.9*
*GCMT **24** 18:51:24.5±0.0, 37.70N×141.66E, h48km, MW6.3/137, Moment Tensor Solution. s137,c335; s136,c517; Duration: 3s5 Moment tensor: Scale 10¹⁸Nm; Mrr2.67±.02; Mθθ-0.41±.01; Mφφ-2.26±.01; Mrθ0.95±.01; Mθφ-0.88±.01; Mφr2.38±.02; Best double couple: M₀3.68000×10¹⁸ NP1:φs22.00000°, δ67.00000°, λ90.00000°. NP2:φs202.00000°, δ23.00000°, λ90.00000°. Principal axes: T 3.7100, Plg68.0000°, Azm292.0000°; N -0.0570, Plg0.0000°, Azm202.0000°; P -3.6500, Plg22.0000°, Azm112.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*IDC **24** 18:51:24.1±3.2, 37.73N×141.59E, h33km±24km, mb5.8/49, mb1 5.8/52, mb1mx5.8/53, mbtmp6.0/52, ML4.7/3, MS5.9/50, Ms1 5.9/50, ms1mx5.9/56 Error ellipse: s-maj=1.0km s-min=7.5km az=77.0*
*ISCJB **24** 18:51:25.6±0.2, 37.71N±0.01×141.45E±0.01, h57km±1km, mb6.2/395, MS6.0/257, Error ellipse: s-maj=2.4km s-min=1.6km az=151.4*
*JMA **24** 18:51:25.3, 37.71N×141.63E, h46km±2km, M6.3 Broadband fault plane solution: P waves. NP1: φs9.00000°, δ62.00000°, λ89.00000°. NP2:φs192.00000°, δ28.00000°, λ92.00000°. Principal axes: T Plg73.0000°, Azm276.0000°; N Plg1.0000°, Azm10.0000°; P Plg17.0000°, Azm100.0000°;*
*NEIC **24** 18:51:25.0±0.0, 37.56N×141.92E, h35km, Moment Tensor Solution. s68 Moment tensor: Scale 10¹⁸Nm; Mrr2.11; Mθθ-0.53; Mφφ-1.58; Mrθ1.30; Mθφ-0.62; Mφr2.97; Best double couple: M₀3.80000×10¹⁸ NP1:φs24.00000°, δ74.00000°, λ89.00000°. NP2:φs205.00000°, δ16.00000°, λ92.00000°. Principal axes: T 3.9300, Plg60.0000°, Azm293.0000°; N -0.2500, Plg0.0000°, Azm23.0000°; P -3.6800, Plg29.0000°, Azm114.0000°;*
*NEIC **24** 18:51:25.1±0.1, 37.73N×141.39E, h40km, mb6.3/158, ME6.3, MS5.9/141, MW6.3, MW6.3, MW6.2 Error ellipse: s-maj=3.1km s-min=2.2km az=134.0, Moment Tensor Solution. s10 Moment tensor: Scale 10¹⁸Nm; Mrr1.54; Mθθ-0.02; Mφφ-1.52; Mrθ0.80; Mθφ-0.58; Mφr1.49; Best double couple: M₀2.40000×10¹⁸ NP1:φs191.00000°, δ23.00000°, λ76.00000°. NP2:φs26.00000°, δ68.00000°, λ96.00000°. Principal axes: T 2.2700, Plg66.0000°, Azm306.0000°; N 0.1500, Plg5.0000°, Azm204.0000°; P -2.4300, Plg23.0000°, Azm111.0000°; Broadband fault plane solution: P waves. NP1:φs205.00000°, δ15.00000°, λ90.00000°. NP2:φs25.00000°, δ75.00000°, λ90.00000°. Principal axes: T Plg60.0000°, Azm295.0000°; N Plg0.0000°, Azm0.0000°; P Plg30.0000°, Azm115.0000°;*
Two events about 2 seconds apart. Depth from synthetics of broadband displacement seismograms based on first event. Energy computed from BB mechanism.
NEIC Felt [III] at Misawa and [II] at Tokyo, Utsunomiya and Yokosuka. Felt in much of eastern Honshu. Recorded [5L JMA] in Fukushima and Miyagi.
*NEIC **24** 18:51:39.5±0.0, 37.53N×141.86E, h47km, Moment Tensor Solution. s83 Moment tensor: Scale 10¹⁸Nm; Mrr2.58; Mθθ-0.54; Mφφ-2.05; Mrθ0.88; Mθφ-0.65; Mφr2.43; Best double couple: M₀3.50000×10¹⁸ NP1:φs201.00000°, δ22.00000°, λ91.00000°. NP2:φs20.00000°, δ68.00000°, λ90.00000°. Principal axes: T 3.7000, Plg67.0000°, Azm290.0000°; N -0.2900, Plg0.0000°, Azm20.0000°; P -3.4000, Plg23.0000°, Azm110.0000°;*

ISC 24 18:51:24.9±0.3, 37.74N±0.02×141.56E±0.02, h41km±1km, h41km:pP-P, n2011, σ1946/2215, mb6.3/417, MS6.0/269, 285C-57D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	Marumori	0.62	282	⇓P	Pn	18 51 38.7	+1.4
JMM				S	Sn	18 51 48.1	+2.0
JFK	Kawauchi	0.66	236	⇓P	Pn	18 51 38.7	+0.8
JFK				S	Sn	18 51 47.8	+0.7
JIO	Ouri	0.73	347	⇓P	Pn	18 51 40.0	+1.2
JIO				S	Sn	18 51 50.1	+1.3
ONAJ	Iwakimizuishiy	0.88	224	⇓P	Pn	18 51 41.4	+0.5
JOU	Okura	0.94	312	⇓P	Pn	18 51 43.1	+1.4
JOU				S	Sn	18 51 56.0	+2.0
JFT	Otama	1.00	258	⇓P	Pn	18 51 44.3	+1.9
JFT				S	Sn	18 51 57.6	+2.3
JMK	Ichinoseki	1.24	348	⇓P	Pn	18 51 47.2	+1.4
JMK				S	Sn	18 52 02.9	+1.6
JYS	Shirataka	1.27	293	⇓P	Pn	18 51 47.8	+1.5
OFUJ	Ofunato	1.34	4	⇓P	Pn	18 51 48.0	+0.8
JYK	Kaneyama	1.51	322	⇓P	Pn	18 51 51.2	+1.7
JFY	Yanaizu	1.51	258	⇓P	Pn	18 51 51.1	+1.6
JFY				S	Sn	18 52 08.8	+0.8
JYA	Atsumi	1.69	301	⇓P	Pn	18 51 53.6	+1.7
JOM	Ohasama	1.74	353	⇓P	Pn	18 51 54.1	+1.4
JRG	Rokugo	1.81	337	⇓P	Pn	18 51 55.6	+2.1
MIYJ	Miyakonagasawa	1.84	6	⇓P	Pn	18 51 54.7	+0.6
JYW	Yuwa	2.09	330	⇓P	Pn	18 51 59.7	+2.3
JTB	Tobi-shima	2.14	313	⇓P	Pn	18 51 59.6	+1.5
JKZ	Kuzumaki	2.25	355	⇓P	Pn	18 52 01.1	+1.4
JAH	Hinai	2.55	344	⇓P	Pn	18 52 06.2	+2.5
JOG2	Oga 2	2.58	328	⇓P	Pn	18 52 05.8	+1.7
I30JP	ISUMI INFRASON	2.63	203	Pn	Pn	18 52 07.9	+3.1
	baz=37,slow=20,SNR=8.4						
I30JP				*i*		19 02 40.0	
	baz=10,slow=322,SNR=1.0						
MJAR	Matsushiro Arr	2.93	247	Pn	Pn	18 52 10.7	+1.6
	204nm,0.3s,baz=73,slow=13,SNR=5502						
MJAR				Sn	Sn	18 52 43.9	+0.9
	424nm,0.3s,baz=21,slow=29,SNR=7.7						
MJAR				LR	LR	18 53 38.8	
	comp=Z,466μm,21.2s,baz=70,slow=46						
MJAR				P3KPbc		19 30 54.6	
	0.1nm,0.3s,baz=191,slow=1.3,SNR=4.5						
MJAR				P3KP		19 31 27.2	
	0.1nm,0.3s,baz=242,slow=1.8,SNR=4.3						
MAJO	Matsushiro	2.93	247	*e*P	Pn	18 52 11.5	+2.5
MAJO				*e*		18 52 42.5	
MAJO	Matsushiro	2.93	247	*e*Pn	Pn	18 52 11.5	+2.5
MAJO				*e*Sn	Sn	18 52 42.5	-0.6
MAT	Matsushiro	2.93	247	P	Pn	18 52 11.5	+2.5
MAT				eS	Sn	18 52 45.1	+2.1
MJB9	Matsu-Tunnel	2.93	247	*e*Pn	Pn	18 52 11.6	+2.6
JTM	Tenmabayashi	3.07	353	⇓P	Pn	18 52 12.9	+2.1
JIW	Iwasaki	3.09	338	⇓P	Pn	18 52 13.5	+2.3
JSI2	Shiura 2	3.43	345	⇓P	Pn	18 52 18.3	+2.5
JOT	Ohata	3.66	354	⇑P	Pn	18 52 20.8	+1.8
INU	Inuyama	4.37	238	*e*Pn	Pn	18 52 31.9	+3.1
ERM	Erimo	4.44	16	*e*P	Pn	18 52 29.7	0.0
ERM				*e*		18 53 19.8	
ERM	Erimo	4.44	16	*e*Pn	Pn	18 52 29.7	0.0
ERM				*e*Sn	Sn	18 53 19.8	-0.4
JHJ2	Mitsune	4.83	198	*e*Pn	Pn	18 52 35.6	+0.5
JHJ2				*e*Sn	Sn	18 53 27.4	-2.4
JHJ	Hachijo jima 2	4.83	198	Pn	Pn	18 52 35.6	+0.5
	752nm,0.3s,baz=85,slow=20,SNR=87						
JHJ				Sn	Sn	18 53 27.2	-2.7
	2μm,0.3s,baz=107,slow=19,SNR=10						
JHJ				LR	LR	18 54 15.0	
	comp=Z,54μm,18.6s,baz=22,slow=35						
JWT	Wachi	5.53	246	⇓P	Pn	18 52 48.0	+3.3
JKS	Kasai	6.08	245	⇓P	Pn	18 52 55.0	+2.8
ASAJ	Asahikawa	6.42	7	Pn	Pn	18 52 57.1	+0.2
	baz=228,slow=7.1						
ASAJ				Sn	Sn	18 54 08.1	-0.7
	baz=222,slow=16						
ASAJ	Asahikawa	6.42	7	*e*Pn	Pn	18 52 57.0	+0.2
ASAJ				*e*Sn	Sn	18 54 05.8	-3.0
JHS	Saijyo	7.34	251	⇑P	Pn	18 53 13.3	+3.7
KUR	Kuril'sk	8.85	30	*de*P	Pn	18 53 30.0	-0.2
KUR				*i* S	Sn	18 55 03.7	-4.9
KUR				pmax	pmax		
	comp=Z,3μm,3.4s						
KUR				pmax	pmax		
	comp=E,178nm,0.8s						
KUR				pmax	pmax		
	comp=Z,497nm,0.8s						
KUR				pmax	pmax		
	comp=N,342nm,0.7s						
KUR				smax	smax		
	comp=N,3μm,0.7s						
KUR				smax	smax		
	comp=E,2μm,0.8s						
JKI	Kunimi	9.10	246	P	Pn	18 53 38.1	+4.4
VLA	Vladivostok	9.12	309	*c* iP	Pn	18 53 36.1	+2.2
JTY	Toyota	9.18	251	P	Pn	18 53 38.6	+3.8
YSS	Yuzh-Sakhalins	9.25	5	⇑*e*P	Pn	18 53 35.5	-0.1
YSS				*e*S	Sn	18 55 16.5	-1.8
YSS				pmax	pmax		
	comp=Z,660nm,0.8s						
YSS				pmax	pmax		
	comp=N,600nm,1.4s						
YSS				MLR	MLR		
	comp=Z,32μm,18.0s						
YSS				MLR	MLR		
	comp=N,27μm,16.0s						
YSS	Yuzh-Sakhalins	9.25	5	*e*Pn	Pn	18 53 35.3	-0.4
YSS				*e*Sn	Sn	18 55 17.1	-1.2
JUS	Usuki	9.26	243	P	Pn	18 53 38.6	+2.7
MSHR	Mys Shultsa	9.31	305

NGSJ	**Nagasakinomoza**	**10.89**	**246**		P	**Pn**	**18 54 00.3**	**+2.2**
MDJ	**Mudanjiang**	**11.33**	**311**		P	**Pn**	**18 54 06.4**	**+2.3**
MDJ					S	**Sn**	**18 56 10.3**	**+1.0**
MDJ					PcP	**PcP**	**18 59 54.8**	**-1.2**
MDJ					ScP	**ScP**	**19 03 26.4**	**+1.1**
MDJ					PcS	**PcS**	**19 03 31.0**	**+1.2**
MDJ					ScS	**ScS**	**19 07 00.4**	**-0.2**
MDJ					pmax	pmax		
	comp=N,390nm,1.5s							
MDJ					pmax	pmax		
	comp=N,4μm,7.6s							
MDJ					LR	LR		
	comp=N,47μm,18.9s							
MDJ					LR	LR		
	comp=N,67μm,17.0s							
MDJ					LR	LR		
	comp=N,119μm,21.2s							
UGL	**Uglegorsk**	**11.34**	**2**	*e*P	**Pn**	**18 54 04.0**	**-0.2**	
UGL					pmax	pmax		
	comp=Z,448nm,1.0s							
UGL					pmax	pmax		
	comp=Z,2μm,4.0s							
UGL					MLR	MLR		
	comp=N,26μm,16.0s							
UGL					MLR	MLR		
	comp=E,48μm,16.0s							
UGL					MLR	MLR		
	comp=Z,27μm,16.0s							
HABR	**Khabarovsk**	**11.73**	**338**	*c i*P	**Pn**	**18 54 07.4**	**-2.1**	
HABR				*e*S	**Sn**	**18 56 17.7**	**-1.3**	
HABR					pmax	pmax		
	comp=E,91nm,1.8s							
HABR					pmax	pmax		
	comp=N,119nm,1.8s							
HABR					pmax	pmax		
	comp=Z,195nm,1.8s							
HABR					MLR	MLR		
	comp=Z,19μm,12.0s							
JYAK	**Yakushimahirau**	**11.83**	**234**		P	**Pn**	**18 54 14.1**	**+3.1**
INCN	**Inchon**	**11.84**	**273**		P	**Pn**	**18 54 15.9**	**+4.6**
	SNR=110							
INCN	**Inchon**	**11.84**	**273**	*e*Pn		**Pn**	**18 54 15.4**	**+4.2**
INCN				*e*Sn		**Sn**	**18 56 20.9**	**-1.1**
JKC	**Kuchinoerabu**	**11.88**	**236**		P	**Pn**	**18 54 14.2**	**+2.4**
TYV	**Tymovskoe**	**13.14**	**3**	*e*P		**Pn**	**18 54 27.8**	**-1.0**
TYV					pmax	pmax		
	comp=N,2μm,6.0s							
TYV					pmax	pmax		
	comp=N,872nm,1.2s							
TYV					MLR	MLR		
	comp=N,53μm,22.0s							
KLR	**Kul'dur**	**13.50**	**331**	Pn		**Pn**	**18 54 33.1**	**-0.6**
	comp=N,3.3nm,0.3s,baz=136,slow=13,SNR=65							
KLR					LR	LR	18 59 53.2	
	comp=N,82μm,18.8s,baz=144,slow=38							
KLR	**Kul'dur**	**13.50**	**331**	⇑*i*P		**Pn**	**18 54 33.7**	**0.0**
CN2	**Changchun**	**13.62**	**301**	⇑*i*P		**Pn**	**18 54 36.1**	**+0.7**
CN2				*es*P		P	18 54 48.3	+4.8
CN2				*e*S		**Sn**	**18 57 07.0**	**+1.7**
CN2					pmax	pmax		
	comp=N,300nm,1.0s							
CN2					pmax	pmax		
	comp=N,17μm,8.0s							
CN2					LR	LR		
	comp=N,34μm,16.0s							
CN2					LR	LR		
	comp=N,56μm,16.0s							
CN2					LR	LR		
	comp=N,58μm,18.0s							
JAMN	**Amaminishikomi**	**14.05**	**231**		P	**Pn**	**18 54 41.4**	**+0.1**
SNY	**Shenyang**	**14.41**	**292**	⇑*i*P		**Pn**	**18 54 47.0**	**+0.8**
SNY					S	**Sn**	**18 57 27.9**	**+3.3**
SNY					pmax	pmax		
	comp=N,180nm,1.2s							
SNY					pmax	pmax		
	comp=N,17μm,11.9s							
SNY					LR	LR		
	comp=N,25μm,15.5s							
SNY					LR	LR		
	comp=N,127μm,15.9s							
SNY					LR	LR		
	comp=N,177μm,18.7s							
JTK	**Tokunoshima**	**14.51**	**231**		P	**Pn**	**18 54 46.8**	**-0.8**
NKL	**Nikolayevsk**	**15.42**	**358**	*i* P		**Pn**	**18 54 55.7**	**-3.7**
NKL					pmax	pmax		
	comp=E,80nm,1.1s							
NKL					pmax	pmax		
	comp=Z,150nm,1.1s							
NKL					MLR	MLR		
	comp=E,27μm,19.0s							
NKL					MLR	MLR		
	comp=N,16μm,16.0s							
NKL					MLR	MLR		
	comp=Z,25μm,16.0s							
JOW	**Kunigami**	**15.62**	**230**	*e*Pn		**Pn**	**18 55 00.3**	**-1.9**
	comp=Z,639nm,0.9s							
DL2	**Dalian**	**15.69**	**280**	⇑*i*P		**Pn**	**18 55 04.1**	**+1.1**
DL2					pmax	pmax		
	comp=Z,3μm,0.8s							
DL2					pmax	pmax		
	comp=Z,29μm,10.9s							
DL2					LR	LR		
	comp=Z,61μm,20.6s							
DL2					LR	LR		
	comp=Z,81μm,21.8s							
OKH	**Okha**	**15.84**	**3**	*e*P		**Pn**	**18 55 02.0**	**-2.8**
OKH				*e*S		**Sn**	**18 57 58.0**	**-1.1**
OKH					pmax	pmax		
	comp=Z,4μm,10.0s							
OKH					smax	smax		
	comp=E,9μm,18.0s							
OKH					MLR	MLR		
	comp=Z,28μm,20.0s							
SKR	**Severo-Kuril's**	**16.58**	**34**	*e*P		**P**	**18 55 17.2**	**+1.0**
SKR				*e*S		**Sn**	**18 58 14.9**	**-2.2**
SKR					pmax	pmax		
	comp=Z,1μm,0.9s							
SKR					pmax	pmax		
	comp=Z,5μm,4.2s							
SKR					MLR	MLR		
	comp=Z,15μm,16.0s							
SKR					MLR	MLR		
	comp=Z,14μm,15.0s							
SSE	**Sheshan**	**18.05**	**255**		P	**Pn**	**18 55 31.0**	**-1.6**
SSE					S	**Sn**	**18 58 53.4**	**+0.4**
SSE					pmax	pmax		
	comp=Z,7μm,9.9s							
SSE					LR	LR		
	comp=Z,52μm,20.5s							
SSE					LR	LR		
	comp=Z,25μm,20.5s							
SSE					LR	LR		
	comp=Z,58μm,22.1s							
PEA0	**Petropavlovsk-**	**19.02**	**31**	*e*P		**P**	**18 55 42.5**	**-0.7**
PEA0B	**Petropavlovsk-**	**19.02**	**31**	*e*P		**P**	**18 55 42.8**	**-0.3**
	comp=Z,657nm,1.1s							
PETK	**Petropavlovsk-**	**19.02**	**31**	P		**P**	**18 55 42.6**	**-0.6**
	comp=Z,2.0nm,0.3s,baz=209,slow=6.6,SNR=48							
PETK					LR	LR	19 03 00.5	
	comp=Z,16μm,20.5s,baz=220,slow=37							
PETK					PKiKP	**PKiKP**	**19 07 55.2**	**-1.5**
	comp=Z,0.1nm,0.3s,baz=108,slow=5.3,SNR=6.9							
PETK					P3KP		19 30 47.9	
	comp=Z,0.3nm,0.3s,baz=97,slow=8.4,SNR=4.5							
PET	**Petropavlovsk**	**19.36**	**32**	*α i*P		**Pn**	**18 55 47.9**	**-0.2**
PET				*e*S		**S**	**18 59 20.3**	**-3.1**
PET					pmax	pmax		
	comp=Z,2μm,6.7s							
PET					pmax	pmax		
	comp=Z,4μm,16.9s							
PET					pmax	pmax		
	comp=Z,455nm,1.1s							
PET					MLR	MLR		
	comp=Z,29μm,20.0s							
PET					MLR	MLR		
	comp=Z,25μm,19.0s							
PET	**Petropavlovsk**	**19.36**	**32**	*e*P		**Pn**	**18 55 47.7**	**-0.4**
	comp=Z,1μm,1.5s							
NJ2	**Nanjing**	**19.45**	**260**	*e*P		**P**	**18 55 46.6**	**-1.4**
NJ2					pP	**pP**	**18 55 57.3**	**-0.8**
NJ2					sP	**sP**	**18 56 01.9**	**-1.4**
NJ2					S	**S**	**18 59 21.5**	**-4.2**
NJ2					pmax	pmax		
	comp=Z,330nm,1.0s							
NJ2					pmax	pmax		
	comp=Z,6μm,10.6s							
NJ2					LR	LR		
	comp=Z,40μm,21.7s							
NJ2					LR	LR		
	comp=Z,32μm,23.8s							
NJ2					LR	LR		
	comp=Z,63μm,25.5s							
TIA	**Tai'an**	**19.57**	**273**	⇑P		**P**	**18 55 47.8**	**-1.5**
TIA					PP	**PnPn**	**18 56 08.8**	**+3.8**
TIA					pmax	pmax		
	comp=Z,700nm,1.0s							
TIA					pmax	pmax		
	comp=Z,5μm,3.6s							
TIA					LR	LR		
	comp=Z,33μm,19.0s							
TIA					LR	LR		
	comp=Z,38μm,16.0s							
TIA					LR	LR		
	comp=Z,55μm,17.0s							
BJI	**Beijing**	**19.88**	**285**		P	**P**	**18 55 51.4**	**-1.2**
BJI					S	**S**	**18 59 33.3**	**-0.7**
BJI					pmax	pmax		
	comp=Z,430nm,0.6s							
BJI					LR	LR		
	comp=Z,25μm,17.8s							
BJI					LR	LR		
	comp=Z,27μm,24.0s							
BJI					LR	LR		
	comp=Z,57μm,33.2s							
BJT	**Baijiatuan**	**19.88**	**284**	*e*P		**P**	**18 55 51.2**	**-1.4**
BJT					pmax	pmax		
	comp=Z,991nm,0.7s							
BJT	**Baijiatuan**	**19.88**	**284**	*e*P		**P**	**18 55 51.2**	**-1.4**
	comp=Z,991nm,0.7s							
YOJ	**Yonaguni jima**	**20.62**	**235**	*e*P		**P**	**18 55 58.0**	**-2.8**
YOJ					pmax	pmax		
	comp=Z,270nm,0.6s							
TATO	**Taipei**	**21.29**	**239**		P	**P**	**18 56 05.2**	**-2.8**
	SNR=11							
TATO	**Taipei**	**21.29**	**239**		PFAKE		18 56 20.0	+12
TATO					LR	LR		
	comp=Z,23μm,21.0s							
YHNB	**Yeheng**	**21.57**	**239**		PFAKE		18 56 20.0	+8.9
YHNB					LR	LR		
	comp=Z,20μm,20.0s							
CLNS	**Chul'man**	**22.09**	**335**	*c i*P		**P**	**18 56 15.2**	**-1.1**
CLNS					*e**PP	**pP**	**18 56 23.8**	**-2.8**
CLNS					*e*		18 56 31.7	
CLNS					*e*S	**S**	**19 00 12.2**	**-5.1**
CLNS					*e*SS	**SnSn**	**19 00 57.2**	**+12**
CLNS					pmax	pmax		
	comp=Z,392nm,1.2s							
CLNS					pmax	pmax		
	comp=N,361nm,1.4s							
CLNS					smax	smax		
	comp=E,113nm,1.3s							
CLNS					smax	smax		
	comp=N,209nm,1.0s							
CLNS					MLR	MLR		
	comp=Z,50μm,21.0s							
CLNS					MLR	MLR		
	comp=N,34μm,21.0s							
CLNS					MLR	MLR		
	comp=E,22μm,20.0s							
SSLB	**Suanglung**	**22.45**	**238**	*e*PcP		**PcP**	**19 00 13.6**	**-0.2**
SSLB				*e*S		**S**	**19 00 26.2**	**+1.9**
MA2	**Magadan**	**22.64**	**12**	P		**P**	**18 56 22.1**	**-0.1**
	comp=E,480nm,0.8s,baz=201,slow=9.0,SNR=141							
MA2					LR	LR	19 04 59.1	
	comp=E,18μm,21.8s,baz=198,slow=36							
MA2	**Magadan**	**22.64**	**12**	*e*P		**P**	**18 56 21.9**	**-0.3**
	comp=E,3μm,0.9s							
TPUB	**Ta-pu**	**23.00**	**237**	*e*PcP		**PcP**	**19 00 14.0**	**-1.0**
TPUB				*e*S		**S**	**19 00 35.2**	**+1.4**
TIY	**Taiyuan**	**23.00**	**279**	*e*P		**P**	**18 56 22.3**	**-3.9**
TIY					PP	**PnPn**	**18 56 55.5**	**+3.6**
TIY					S	**S**	**19 00 24.3**	**-9.5**
TIY					pmax	pmax		
	comp=E,300nm,0.6s							
TIY					LR	LR		
	comp=E,15μm,14.6s							
TIY					LR	LR		
	comp=E,32μm,15.8s							
TIY					LR	LR		
	comp=E,52μm,17.8s							
TWG	**Pinlang**	**23.04**	**236**	*e*PcP		**PcP**	**19 00 14.5**	**-0.5**
QZH	**Quanzhou**	**23.33**	**243**	⇑*i*P		**P**	**18 56 25.8**	**-3.6**
QZH					S	**S**	**19 00 30.0**	**-9.1**
QZH					pmax	pmax		
	comp=E,440nm,0.9s							
QZH					pmax	pmax		
	comp=E,7μm,8.3s							
QZH					LR	LR		
	comp=E,35μm,20.6s							
QZH					LR	LR		
	comp=E,68μm,18.9s							
QZH					LR	LR		
	comp=E,82μm,18.2s							
HHC	**Hu-ho-hao-te**	**23.37**	**287**	⇑P		**P**	**18 56 26.9**	**-2.9**
HHC					S	**S**	**19 00 37.8**	**-2.1**
HHC					sS	sS	19 00 50.1	-8.3
HHC					SS	**SnSn**	**19 01 22.3**	**+5.2**
HHC					pmax	pmax		
	comp=E,270nm,1.5s							
HHC					pmax	pmax		
	comp=E,1μm,4.6s							
HHC					LR	LR		
	comp=E,24μm,14.8s							
HHC					LR	LR		
	comp=E,30μm,18.5s							
HHC					LR	LR		
	comp=E,35μm,21.0s							
WHN	**Wuhan**	**23.58**	**260**	⇑P		**P**	**18 56 29.1**	**-2.7**
WHN					S	**S**	**19 00 36.9**	**-6.3**
WHN					LR	LR		
	comp=E,34μm,14.3s							
WHN					LR	LR		
	comp=E,100μm,15.8s							
WHN					LR	LR		
	comp=E,113μm,15.6s							
GUMO	**Guam**	**24.23**	**172**		P	**P**	**18 56 39.0**	**+1.1**
	comp=E,144nm,1.0s,baz=43,slow=1.4,SNR=4.4							
GUMO					LR	LR	19 06 21.2	
	comp=E,13μm,21.4s,baz=25,slow=37							
GUMO	**Guam**	**24.23**	**172**	*e*P		**P**	**18 56 37.9**	**-0.1**
	comp=E,1μm,1.3s							
CIT	**Chita**	**24.25**	**315**	*e*P		**P**	**18 56 34.7**	**-3.3**
CIT				*e*			18 56 48.6	
CIT				*e*			18 57 14.4	
CIT					pmax	pmax		
	comp=Z,3μm,1.2s							
BTO	**Baotou**	**24.55**	**287**	*e*P		**P**	**18 56 39.4**	**-1.4**
YAK	**Yakutsk**	**25.41**	**347**	P		**P**	**18 56 47.7**	**-0.5**
	comp=Z,1μm,0.7s,baz=159,slow=1.7,SNR=759							
YAK					LR	LR	19 07 18.3	
	comp=Z,44μm,18.2s,baz=169,slow=38							
YAK	**Yakutsk**	**25.41**	**347**	*c i*P		**P**	**18 56 47.8**	**-0.5**
YAK				*e**PP		**sP**	**18 57 02.6**	**-1.7**
YAK				*e*			19 00 18.8	
YAK				*e*S		**S**	**19 01 08.9**	**-3.0**
YAK				*e**SS		**sS**	**19 01 29.1**	**-1.4**
YAK				*e*SS		**SnSn**	**19 02 05.6**	**-0.9**
YAK					pmax	pmax		
	comp=Z,2μm,0.9s							
YAK					pmax	pmax		
	comp=N,794nm,1.1s							
YAK					pmax	pmax		
	comp=E,274nm,0.9s							
YAK					smax	smax		
	comp=E,931nm,1.5s							
YAK					smax	smax		
	comp=N,2μm,2.2s							
YAK					MLR	MLR		
	comp=E,30μm,16.0s							
YAK					MLR	MLR		
	comp=Z,36μm,16.0s							
YAK					MLR	MLR		
	comp=E,8μm,16.0s							
YAK	**Yakutsk**	**25.41**	**347**	*e*P		**P**	**18 56 47.6**	**-0.5**
	comp=E,2μm,0.8s							
SEY	**Seymchan**	**26.08**	**11**	P		**P**	**18 56 55.3**	**+1.0**
	comp=E,638nm,1.0s,baz=202,slow=6.7,SNR=277							
SEY					LR	LR	19 07 32.6	
	comp=E,11μm,19.9s,baz=174,slow=37							
SEY	**Seymchan**	**26.08**	**11**	*c*eP		**P**	**18 56 55.4**	**+1.1**
XAN	**Xi'an**	**26.62**	**272**	P		**P**	**18 56 58.3**	**-1.3**
XAN					pP	pP	18 57 08.1	-2.6
XAN					sP	sP	18 57 13.0	-2.7
XAN					S	**S**	**19 01 28.6**	**-3.2**
XAN					SS	**SnSn**	**19 02 47.3**	**+11**
XAN					pmax	pmax		
	comp=E,940nm,0.7s							
XAN					pmax	pmax		
	comp=E,6μm,8.8s							
XAN					LR	LR		
	comp=E,20μm,20.4s							
XAN					LR	LR		
	comp=E,19μm,20.4s							
XAN					LR	LR		
	comp=E,36μm,19.4s							
PIP	**Pasuquin**	**26.64**	**229**	⇓*e*P		**P**	**18 56 58.2**	**-1.6**
BOD	**Bodaibo**	**27.00**	**327**	⇓*i*P		**P**	**18 57 02.2**	**-0.5**
BOD					pmax	pmax		
	comp=Z,813nm,1.0s							
SMY	**Shemya**	**27.09**	**46**	*e*P		**P**	**18 57 07.5**	**+4.0**
SMY					pmax	pmax		
	comp=Z,900nm,1.2s							
SMY	**Shemya**	**27.09**	**46**	*e*P		**P**	**18 57 05.1**	**+1.6**
	comp=Z,896nm,1.2s							
SONA1	**Songino Array**	**27.49**	**303**	*e*P		**P**	**18 57 07.0**	**-0.3**
SONM	**Songino Array**	**27.49**	**303**	P		**P**	**18 57 06.7**	**-0.7**
	comp=Z,229nm,0.8s,baz=98,slow=8.4,SNR=229							
SONM					PcP	**PcP**	**19 00 25.0**	**+0.2**
	comp=Z,24nm,0.9s,baz=103,slow=4.6,SNR=4.0							
SONM					LR	LR	19 08 23.6	
	comp=Z,26μm,19.5s,baz=114,slow=37							
SONM					P3KPbc		19 29 38.6	
	comp=Z,0.4nm,0.8s,baz=251,slow=4.4,SNR=2.5							
ENH	**Enshi**	**27.52**	**264**		PFAKE		18 57 20.0	+12
ENH					LR	LR		
	comp=Z,32μm,21.0s							
HKC	**Hong Kong Obse**	**28.13**	**245**	⇑P		**P**	**18 57 14.0**	**+0.9**
GZH	**Guangzhou**	**28.24**	**247**	P		**P**	**18 57 09.8**	**-4.3**
GZH					S	**S**	**19 01 49.5**	**-7.8**
GZH					pmax	pmax		
	comp=Z,11μm,9.6s							
H11N2	**WAKE ISLAND Hy**	**28.42**	**122**		T	T	19 27 31.8	
	baz=315,slow=75,SNR=4222							
H11N1	**WAKE ISLAND Hy**	**28.43**	**122**		T	T	19 27 36.2	
	baz=315,slow=75,SNR=4232							
H11N3	**WAKE ISLAND Hy**	**28.43**	**122**		T	T	19 27 37.0	
	baz=315,slow=75,SNR=4563							
WAKE	**Wake Island**	**28.57**	**123**		PFAKE		18 57 30.0	+13
WAKE					LR	LR		
	comp=Z,42μm,22.0s							
MCO	**Taipa Grande**	**28.69**	**245**		P	**P**	**18 57 19.0**	**+0.9**
H11S1	**WAKE ISLAND Hy**	**29.15**	**124**		T	T	19 27 52.3	
	baz=316,slow=76,SNR=642							
H11S3	**WAKE ISLAND Hy**	**29.15**	**124**		T	T	19 27 52.2	
	baz=316,slow=76,SNR=774							
H11S2	**WAKE ISLAND Hy**	**29.17**	**124**		T	T	19 27 53.5	
	baz=316,slow=76,SNR=707							
GQP	**Guinayangan**	**29.20**	**221**	⇓*e*P		**P**	**18 57 22.1**	**-0.5**
LQP	**Lukban**	**29.50**	**222**	⇓*e*P		**P**	**18 57 25.2**	**-0.4**
IRK	**Irkutsk**	**29.72**	**311**	*e*P		**P**	**18 57 26.1**	**-0.9**
IRK					pmax	pmax		
	comp=Z,282nm,1.2s							
TGY	**Tagaytay City**	**29.83**	**223**	P		**P**	**18 57 28.2**	**-0.2**
	comp=Z,2μm,1.1s,baz=13,slow=1.3,SNR=29							
ZAK	**Zakamensk**	**29.93**	**307**	*e*P		**P**	**18 57 28.2**	**-0.8**
ZAK					pmax	pmax		
	comp=Z,256nm,1.1s							
LZH	**Lanzhou**	**30.07**	**279**	⇑P		**P**	**18 57 29.8**	**-0.7**
LZH					pP	pP	18 57 37.1	-4.6
LZH					sP	sP	18 57 42.5	-4.1
LZH					PP	**PnPn**	**18 58 30.3**	**+1.9**
LZH					S	**S**	**19 02 24.0**	**-2.2**
LZH					sS	sS	19 02 37.0	-7.9
LZH					SS	**SnSn**	**19 04 04.0**	**+3.1**
LZH					pmax	pmax		
	comp=Z,670nm,1.0s							
LZH					pmax	pmax		
	comp=Z,4μm,7.5s							
LZH					LR	LR		
	comp=Z,15μm,14.5s							
LZH					LR	LR		
	comp=Z,38μm,16.0s							
LZH					LR	LR		
	comp=Z,55μm,18.5s							
PLP	**Palo**	**30.36**	**214**	⇓*e*P		**P**	**18 57 32.7**	**-0.2**
RCP	**Roxas**	**31.05**	**218**	⇓*e*P		**P**	**18 57 39.0**	**0.0**
GYA	**Guiyang**	**31.46**	**259**	⇑*i*P		**P**	**18 57 41.9**	**-0.8**
GYA					pP	pP	18 57 55.4	+1.4
GYA					PP	**PnPn**	**18 58 49.0**	**+2.4**
GYA					PcP	**PcP**	**19 00 37.6**	**+2.4**
GYA					sS	S	19 03 05.8	+18
GYA					ScP	**ScP**	**19 04 16.0**	**+1.0**
GYA					SS	**SnSn**	**19 04 37.8**	**+2.9**
GYA					ScS	**ScS**	**19 08 13.3**	**+0.3**
GYA					pmax	pmax		
	comp=Z,2μm,0.9s							
GYA					pmax	pmax		
	comp=Z,3μm,13.1s							
GYA					LR	LR		
	comp=Z,19μm,19.3s							
GYA					LR	LR		
	comp=Z,29μm,20.2s							
GYA					LR	LR		
	comp=Z,43μm,20.8s							
LLP	**Lapu-Lapu**	**31.56**	**215**	⇑*e*P		**P**	**18 57 42.7**	**-0.8**
MOY	**Mondy**	**31.58**	**309**	*e*P		**P**	**18 57 43.1**	**-0.4**
MOY					pmax	pmax		
	comp=Z,246nm,1.2s							
CD2	**Chengdu**	**31.80**	**269**	⇑*i*P		**P**	**18 57 44.8**	**-0.8**
CD2					pP	pP	18 57 54.8	-2.0
CD2					sP	sP	18 57 59.3	-2.4
CD2					S	**S**	**19 02 52.8**	**-0.3**
CD2					sS	sS	19 03 10.0	-1.8
CD2					pmax	pmax		
	comp=Z,560nm,0.6s							
CD2					pmax	pmax		
	comp=Z,5μm,10.5s							
CD2					LR	LR		
	comp=Z,34μm,17.4s							
CD2					LR	LR		
	comp=Z,33μm,20.9s							
CD2					LR	LR		
	comp=Z,38μm,19.9s							
GTA	**Gaotai**	**32.47**	**286**	⇑P		**P**	**18 57 50.8**	**-0.7**
GTA					pP	pP	18 58 01.3	-1.5
GTA					sP	sP	18 58 05.6	-2.1
GTA					PP	**PnPn**	**18 58 58.8**	**-0.7**
GTA					PcP	**PcP**	**19 00 38.1**	**+0.3**
GTA					S	**S**	**19 03 00.5**	**-3.1**
GTA					sS	sS	19 03 15.5	-6.9
GTA					ScP	**ScP**	**19 04 16.9**	**-1.4**
GTA					PcS	**PcS**	**19 04 22.4**	**-0.6**
GTA					SS	**SnSn**	**19 04 56.3**	**-2.9**
GTA					pmax	pmax		
	comp=Z,73nm,0.9s							
GTA					pmax	pmax		
	comp=Z,3μm,8.3s							
GTA					LR	LR		
	comp=Z,18μm,20.9s							
GTA					LR	LR		
	comp=Z,31μm,20.4s							
GTA					LR	LR		
	comp=Z,48μm,22.8s							
SNPH	**Sibulan**	**32.75**	**215**	⇓*e*P		**P**	**18 57 54.2**	**+0.2**
CGP	**Cagayan de Oro**	**32.91**	**212**	⇓*e*P		**P**	**18 57 53.7**	**-1.6**
BILL	**Bilibino**	**33.32**	**17**	*c i*P		**P**	**18 57 58.1**	**-0.3**
BILL				*i* *P		**sP**	**18 58 14.2**	**-0.4**
BILL				*i* S		**S**	**19 03 13.1**	**-2.8**
BILL					SS	**SnSn**	**19 05 21.0**	**+2.2**
BILL					pmax	pmax		
	comp=Z,299nm,1.3s							
BILL					pmax	pmax		
	comp=Z,173nm,1.1s							
BILL					MLR	MLR		
	comp=Z,16μm,22.0s							
BILL	**Bilibino**	**33.32**	**17**	PFAKE			18 58 10.0	+12
BILL					LR	LR		
	comp=Z,7μm,20.0s							
QIZ	**Qiongzhong**	**33.33**	**245**	P		**P**	**18 58 00.3**	**+1.3**
QIZ					sP	**sP**	**18 58 14.3**	**-0.9**
QIZ					S	**S**	**19 03 18.3**	**+1.3**
QIZ					pmax	pmax		
	comp=Z,180nm,1.2s							
QIZ					pmax	pmax		
	comp=Z,3μm,13.1s							
QIZ					LR	LR		
	comp=Z,24μm,17.9s							

QIZ LR LR
comp=Z,26µm,19.2s
QIZ Qiongzhong 33.33 245 PFAKE 18 58 10.0 +11
QIZ LR LR
comp=Z,26µm,20.0s
DCPH Dipolog City 33.37 214⇑ *e*P **P 18 58 00.5 +1.2**
KCP Kidapawan 34.05 210⇓ *e*P **P 18 58 05.8 +0.4**
CTBH Cotabato--PC H 34.20 212⇑ *i*P **P 18 58 07.0 +0.5**
PATS Pohnpei 34.32 149 *e*P **P 18 58 08.9 +1.3**
comp=Z,893nm,1.3s
TIXI Tiksi 34.60 353 P **P 18 58 09.1 -0.4**
comp=Z,122nm,0.6s,baz=145,slow=6.9,SNR=73
TIXI LR LR 19 13 33.6
comp=Z,20µm,18.8s,baz=150,slow=38
TIXI Tiksi 34.60 353 *ce*P **P 18 58 09.2 -0.3**
TIXI pmax pmax
comp=Z,136nm,0.8s
TIXI MLR MLR
comp=Z,18µm,17.0s
TIXI Tiksi 34.60 353 *e*P **P 18 58 07.8 -1.7**
comp=Z,178nm,0.7s
KMI Kunming 35.19 260 P **P 18 58 14.9 -0.4**
KMI pP pP 18 58 27.9 +1.2
KMI sP sP 18 58 32.3 +0.7
KMI PP **PP 18 59 36.3 +0.7**
KMI S **S 19 03 39.4 -6.6**
KMI sS sS 19 03 58.0 -6.9
KMI pmax pmax
comp=Z,1µm,0.9s
KMI pmax pmax
comp=Z,2µm,5.8s
KMI LR LR
comp=Z,24µm,21.3s
KMI LR LR
comp=Z,21µm,26.3s
KMI LR LR
comp=Z,44µm,28.7s
MIDW Midway 35.50 93 PFAKE 18 58 30.0 +12
MIDW LR LR
comp=Z,35µm,21.0s
NIKH Nikolski High 37.23 50 *e*P **P 18 58 32.7 +0.5**
comp=Z,509nm,1.0s
GAMB Gambell 38.05 32 *e*P **P 18 58 37.2 -1.8**
comp=Z,192nm,1.6s
MYLDM Lahad Datu 38.63 219 *e*P **P 18 58 46.2 +1.8**
comp=Z,533nm,0.8s
NONG Nongkai 38.85 250 P **P 18 58 46.3 +0.1**
comp=Z,382nm,1.0s,comp=Z,11µm
SDKM Sandakan 38.90 221 ⇓P **P 18 58 47.3 +0.5**
SKNT Sakolnakorn 38.91 248 P **P 18 58 46.6 -0.2**
comp=Z,397nm,1.1s,comp=Z,7µm
UBPT Khong Chiam 38.93 245 P **P 18 58 47.1 +0.2**
comp=Z,322nm,0.9s,comp=Z,6µm
KKM Kota Kinabalu 39.08 222 ⇓P **P 18 58 49.2 +1.0**
KKM Kota Kinabalu 39.08 222 *e*P **P 18 58 47.6 -0.7**
comp=Z,245nm,1.0s
KKM LR LR
comp=Z,14µm,21.0s
TSM Tawau 39.71 219 ⇓P **P 18 58 54.0 +0.6**
JAY Jayapura 40.06 181 P **P 18 58 56.2 -0.1**
comp=Z,2.5nm,0.8s,baz=271,slow=20,SNR=11
JAY LR LR 19 13 14.9
comp=Z,301nm,21.1s,baz=358,slow=33
JAY Jayapura 40.06 181 P **P 18 58 57.1 +0.8**
comp=Z,143nm,1.6s,comp=Z,2µm
GENI Genyem 40.15 182 P **P 18 58 58.1 +1.1**
comp=Z,554nm,2.0s,comp=Z,10µm
LBMI Labuha 40.34 202 P **P 18 58 58.1 -0.5**
comp=Z,478nm,1.0s,comp=Z,8µm
KMSI Cibinong 40.39 208 P **P 18 58 58.1 -0.8**
comp=Z,2µm,0.9s,comp=Z,22µmcomp=Z,12µm
WMQ Urumqi 40.63 296⇑ *i*P **P 18 59 02.0 +1.1**
WMQ sP sP 18 59 15.9 -1.3
WMQ PP **PP 19 00 32.1 -2.7**
WMQ ScP **ScP 19 04 50.8 +2.5**
WMQ S **S 19 05 10.3 +2.5**
WMQ pmax pmax
comp=Z,610nm,0.8s
WMQ pmax pmax
comp=Z,1µm,5.6s
WMQ LR LR
comp=Z,13µm,15.7s
WMQ LR LR
comp=Z,22µm,19.0s
WMQ LR LR
comp=Z,39µm,27.3s
GTOI Gorontalo 40.69 209 P **P 18 58 59.8 -1.7**
comp=Z,450nm,0.9s,comp=Z,6µm
CMAI Chiengmai2 40.86 256 P **P 18 59 03.3 +0.2**
comp=Z,3µm,1.1s,comp=Z,76µm
UTTA Uttaradit 40.99 252 P **P 18 59 03.7 -0.3**
comp=Z,65nm,0.9s,comp=Z,482nm
LAMP Lampang 41.23 254 P **P 18 59 05.9 -0.1**
comp=Z,64nm,0.9s,comp=Z,528nm
MRSI Marisa 41.26 211 P **P 18 59 05.5 -0.6**
comp=Z,446nm,1.1s,comp=Z,11µm
FAKI Fak Fak 41.37 194 P **P 18 59 07.3 +0.3**
comp=Z,343nm,0.8s,comp=Z,8µm
FAKI Fak Fak 41.37 194 *e*P **P 18 59 06.0 -1.0**
comp=Z,660nm,1.3s
ZAA0 Zalesovo Array 41.53 312 *e*P **P 18 59 07.5 -0.6**
ZALV Zalesovo Beam 41.53 312 P **P 18 59 07.9 -0.1**
comp=Z,394nm,0.7s,baz=91,slow=7.4,SNR=1498
ZALV LR LR 19 17 10.5
comp=Z,39µm,18.2s,baz=93,slow=37
ZALV PKPPKP P'P'df 19 31 12.5 -11
comp=Z,1.5nm,0.9s,baz=319,slow=4.3,SNR=3.8
CMMT Chiang Mai 41.58 255 P **P 18 59 08.4 -0.5**
comp=Z,234nm,1.0s,comp=Z,3µm
CHTO Chiang Mai 41.58 255 P **P 18 59 08.5 -0.4**
comp=Z,753nm,1.0s,comp=Z,14µm
CHTO Chiang Mai 41.58 255 *e*P **P 18 59 08.8 -0.1**
CHTO pmax pmax
comp=Z,160nm,0.8s
CHTO MLR MLR
comp=Z,14µm,20.0s
CHTO Chiang Mai 41.58 255 P **P 18 59 09.0 +0.1**
SNR=54
CHTO Chiang Mai 41.58 255 *e*P **P 18 59 08.8 -0.1**
comp=Z,160nm,0.8s
CHTO LR LR
comp=Z,14µm,20.0s
CM31 Chiang Mai Arr 41.79 255 *e*P **P 18 59 10.9 +0.3**
CMAR Chiang Mai Arr 41.79 255 P **P 18 59 10.7 +0.1**
comp=Z,65nm,0.7s,baz=44,slow=7.8,SNR=182
CMAR PcP **PcP 19 01 06.7 +0.4**
comp=Z,35nm,0.9s,baz=28,slow=2.5,SNR=6.0
CMAR LR LR 19 17 37.2
comp=Z,16µm,20.8s,baz=57,slow=38
CMAR PKPPKP **P'P'df 19 31 20.4 +2.4**
comp=Z,1.3nm,0.9s,baz=275,slow=4.3,SNR=4.1
CM01 Chiang Mai Arr 41.80 255 *e*P **P 18 59 09.8 -0.8**
ZSN Zaisan 42.01 302 *i*P **P 18 59 12.6 +0.5**
comp=Z,11µm,1.2s
SANI Sanana 42.14 204 P **P 18 59 12.7 -0.6**
comp=Z,624nm,0.8s,comp=Z,8µm
SDPT Sand Point 42.23 46 *e*P **P 18 59 12.9 -0.7**
comp=Z,206nm,0.9s
LSA Lhasa 42.27 275 P **P 18 59 16.0 +1.1**
LSA S **S 19 05 32.9 -0.2**
LSA pmax pmax
comp=Z,180nm,0.6s
LSA pmax pmax
comp=Z,2µm,6.0s
LSA LR LR
comp=Z,7µm,21.9s
LSA LR LR
comp=Z,9µm,29.2s
LSA LR LR
comp=Z,25µm,26.7s
LSA Lhasa 42.27 275 PFAKE 18 59 20.0 +5.1
LSA LR LR
comp=Z,22µm,22.0s
LUWI Luwuk 42.32 209 P **P 18 59 14.0 -0.8**
comp=Z,354nm,1.1s,comp=Z,6µm
LUWI Luwuk 42.32 209 *e*P **P 18 59 11.1 -3.8**
comp=Z,427nm,0.9s
NVS Novosibirsk 42.44 313⇑ *i*P **P 18 59 16.0 +0.6**
NVS *e*PPP PPP 19 01 22.5
NVS *e*S **S 19 05 31.7 -2.4**
NVS pmax pmax
comp=Z,560nm,1.0s
NVS pmax pmax
comp=N,64nm,0.8s
NVS pmax pmax
comp=E,439nm,1.1s
NVS smax smax
comp=N,261nm,2.2s
MSAI Masohi 42.53 199 P **P 18 59 16.7 +0.2**
comp=N,248nm,1.4s,comp=N,3µmcomp=N,5µm
NRIK Noril'sk 42.68 335 P **P 18 59 16.7 -0.5**
comp=N,121nm,0.5s,baz=109,slow=9.0,SNR=124
NRIK LR LR 19 18 19.6
comp=N,32µm,19.7s,baz=108,slow=38
CHBT CHBT 42.88 245 P **P 18 59 19.8 +0.4**
comp=N,459nm,1.0s,comp=N,6µm
NLAI Namlea 42.92 201 P **P 18 59 21.0 +1.3**
comp=N,487nm,1.3s,comp=N,5µm
BTM Bintulu 43.15 224 ⇓P **P 18 59 21.7 +0.1**
UMPA Umpang Tak 43.21 252 P **P 18 59 23.5 +1.3**
comp=N,108nm,0.9s,comp=N,1µm
PCI Palu 43.38 213 P **P 18 59 23.0 -0.4**
comp=N,502nm,0.9s,comp=N,7µm
CHGN Chignik 43.38 45 *e*P **P 18 59 23.2 +0.2**
BNDI Bandanaira 43.42 197 P **P 18 59 24.3 +0.6**
comp=N,2µm,1.1s,comp=N,27µm
SHL Shillong 43.53 269 *e*P **P 18 59 24.4 -0.5**
SHL IAmb IAmb 18 59 26.5
comp=Z,241nm,0.5s
SHL *e*S **S 19 05 52.0 +0.8**
PATY Pattaya 43.82 247 P **P 18 59 27.8 +0.8**
comp=Z,58nm,0.8s,comp=Z,746nm
MK01 Makanchi Array 43.84 301 *e*P **P 18 59 25.4 -1.6**
MK31 Makanchi Array 43.85 302 *i*P **P 18 59 27.0 0.0**
MK31 pmax pmax
comp=Z,570nm,0.9s
MK31 Makanchi Array 43.85 302 *e*P **P 18 59 27.3 +0.3**
MKAR Makanchi Array 43.85 302 P **P 18 59 27.3 +0.3**
comp=Z,447nm,0.8s,baz=87,slow=9.1,SNR=1208
MKAR LR LR 19 18 13.8
comp=Z,13µm,21.5s,baz=82,slow=37
MKAR PKPPKP P'P'df 19 31 10.7 -9.3
comp=Z,1.1nm,1.0s,baz=209,slow=2.2,SNR=4.7
MKAR P4KPbc 19 37 21.8
comp=Z,1.0nm,0.9s,baz=72,slow=4.0,SNR=4.6
MAKZ Makanchi 44.05 302 *e*P **P 18 59 29.0 +0.4**
MAKZ Makanchi 44.05 302 *e*P **P 18 59 29.1 +0.4**
comp=Z,662nm,1.0s
SBUM Sibu 44.25 225 ⇓P **P 18 59 30.9 +0.5**
SBUM Sibu 44.25 225 *e*P **P 18 59 29.9 -0.5**
comp=Z,132nm,1.0s
SEM Semipalatinsk 44.61 307 *i*P **P 18 59 31.4 -1.5**
comp=Z,5µm,1.3s
SEM *i*S **S 19 06 05.0 -0.9**
SEM LR LR 19 17 18.9
comp=Z,6µm,16.4s
PHET Kaeng Krachan 44.73 248 P **P 18 59 35.0 +0.7**
comp=Z,141nm,0.9s,comp=Z,1µm
TT01 Tatalina 44.77 35 *e*P **P 18 59 35.0 +0.9**
TTA Tatalina 44.78 35 *e*P **P 18 59 35.5 +1.3**
TTA pmax pmax
comp=Z,228nm,1.7s
TTA Tatalina 44.78 35 *e*P **P 18 59 35.5 +1.3**
comp=Z,228nm,1.7s
SVW2 Sparrevohn 44.89 38 *e*P **P 18 59 36.9 +1.8**
comp=Z,185nm,1.0s
KDI Kendari 45.06 207 P **P 18 59 37.9 +1.0**
comp=Z,185nm,1.5s,comp=Z,3µm
TTSI Tana Toraja 45.31 211 P **P 18 59 38.5 -0.4**
comp=Z,79nm,0.8s,comp=Z,2µm
KURK Kurchatov 45.59 308 P **P 18 59 41.3 +0.6**
KURK Kurchatov 45.59 308 P **P 18 59 41.3 +0.6**
KURK *e* 19 28 25.9
KURK P'P' 19 31 10.1
KURK *e* 19 37 29.6
KURBB Kurchatov Arra 45.66 307 P **P 18 59 41.3 0.0**
comp=Z,722nm,0.6s,baz=81,slow=7.8,SNR=1661
KURBB P3KPbc 19 28 25.9
comp=Z,0.1nm,0.6s,baz=215,slow=2.9,SNR=2.9
KURBB PKPPKP P'P'df 19 31 10.1 -7.9
comp=Z,1.7nm,1.0s,baz=274,slow=2.3,SNR=5.4
KURBB P4KPbc 19 37 29.6
comp=Z,0.4nm,0.8s,baz=82,slow=3.3,SNR=4.2
MTKI Muara Teweh, K 45.70 219 P **P 18 59 42.6 +0.6**
comp=Z,660nm,0.9s,comp=Z,9µm
OHAK Old Harbor 46.16 43 *e*P **P 18 59 44.6 -0.5**
comp=Z,228nm,1.0s
OHAK *e*PP **PP 19 01 34.4 +0.8**
SPSI Sidrap Palu 46.17 211 P **P 18 59 44.7 -0.9**
comp=Z,248nm,1.1s,comp=Z,3µm
TARA Tarawa 46.28 134 *e*P **P 18 59 45.2 -1.4**
comp=Z,1µm,1.8s
TARA *e*PP **PP 19 01 37.6 +1.7**
TARA LR LR
comp=Z,3µm,21.0s
SHLS Shalkode 46.32 297 *i*P **P 18 59 44.8 -2.1**
comp=Z,4µm,0.9s
SHLS LR LR 19 19 24.8
comp=Z,5µm,14.2s
KDAK Kodiak Island 46.50 42 *ce*P **P 18 59 48.1 +0.4**
KDAK Kodiak Island 46.50 42 *e*P **P 18 59 48.2 +0.4**
comp=Z,431nm,1.0s
KDAK *e*PcP **PcP 19 01 23.4 +1.8**
KDAK *e*PP **PP 19 01 37.7 +0.5**
KDAK LR LR
comp=Z,9µm,21.0s
PPLA Purkeypile 46.52 35 *e*P **P 18 59 49.2 +1.1**
comp=Z,824nm,1.5s
PPLA *e*PcP **PcP 19 01 22.8 +0.9**
CAST Castle Rocks 46.58 35 *e*P **P 18 59 50.2 +1.8**
comp=Z,146nm,1.0s
STKI Sintang 46.63 224 P **P 18 59 49.8 +0.5**
comp=Z,356nm,1.0s,comp=Z,14µm
TDK Taldyqorghan 46.88 300 *i*P **P 18 59 48.9 -2.1**
comp=Z,3µm,1.2s
TDK *e*S **S 19 06 37.7 -1.1**
TDK LR LR 19 18 58.0
comp=Z,6µm,18.2s
BPAW Bear Paw Mtn. 47.07 34 *e*P **P 18 59 53.6 +1.4**
comp=Z,111nm,1.1s
KPKS Kokpek 47.08 298 *i*P **P 18 59 49.9 -2.8**
comp=Z,5µm,1.2s
KPKS *e*S **S 19 06 39.8 -2.1**
KPKS LR LR 19 19 51.6
comp=Z,8µm,16.1s
CNPM China Poot 47.08 40 *e*P **P 18 59 52.8 +0.5**
comp=Z,192nm,1.1s
KTH Kantishna Hill 47.10 34 *e*P **P 18 59 54.0 +1.5**
comp=Z,329nm,1.1s
KAPI Kappang 47.13 210 *e*P **P 18 59 53.5 +0.4**
comp=Z,1µm,1.4s
KAPI LR LR
comp=Z,6µm,21.0s
PMG Port Moresby 47.19 172 P **P 18 59 53.5 -0.1**
comp=Z,37nm,0.8s,baz=6.3,slow=2.5,SNR=9.4
PMG LR LR 19 19 14.0
comp=Z,8µm,21.7s,baz=330,slow=35
PMG Port Moresby 47.19 172 *ce*P **P 18 59 55.2 +1.6**
PMG pmax pmax
comp=Z,262nm,1.2s
PMG Port Moresby 47.19 172 *e*P **P 18 59 53.5 -0.1**
comp=Z,264nm,1.3s
PMG *e*PcP **PcP 19 01 25.1 +0.5**
PMG *e*PP **PP 19 01 46.0 +1.0**
MLY Manley 47.19 32 *e*P **P 18 59 54.7 +1.6**
comp=Z,703nm,1.9s
GUN Gumba 47.20 275 *e*P **P 18 59 54.6 +0.4**
comp=Z,3µm,0.9s
SURA Surathani 47.25 244 P **P 18 59 55.0 +0.9**
comp=Z,216nm,1.0s,comp=Z,14µm
ZHN Zhinishke 47.34 297 *i*P **P 18 59 52.8 -1.9**
comp=Z,2µm,1.1s
ZHN *e*S **S 19 06 44.3 -1.3**
ZHN LR LR 19 19 11.9
comp=Z,5µm,16.2s
TRF Thorofare Moun 47.38 35 *e*P **P 18 59 55.3 +0.4**
comp=Z,128nm,1.0s
SATY Satty 47.39 297 *i*P **P 18 59 53.3 -1.8**
comp=Z,4µm,1.0s
SATY LR LR 19 19 42.4
comp=Z,8µm,15.3s
COLD Coldfoot 47.48 29 *e*P **P 18 59 56.4 +1.1**
comp=Z,117nm,1.0s
KTGM Kuala Trenggan 47.57 237 ⇓P **P 18 59 57.9 +1.2**
JOHN Johnston Islan 47.65 102 PFAKE 19 00 10.0 +13
JOHN LR LR
comp=Z,2µm,20.0s
RC01 Rabbit Creek A 47.73 38 *e*P **P 18 59 58.0 +0.7**
comp=Z,293nm,1.2s
KKN Kakani 47.73 275 *e*P **P 18 59 58.4 +0.3**
comp=Z,2µm,0.8s
KKN Kakani 47.73 275 *e*P **P 18 59 58.5 +0.3**
PKIN Phulchoki 47.74 275 *e*P **P 18 59 58.2 0.0**
BSSI Bau Bau, Buton 47.87 209 P **P 19 00 02.9 +4.0**
comp=Z,185nm,1.0s,comp=Z,6µm
BBKI Banjar Baru 47.91 217 P **P 18 59 58.9 -0.3**
comp=Z,987nm,0.9s,comp=Z,10µm
SEW Seward 47.94 39 *e*P **P 18 59 57.7 -1.2**
comp=Z,283nm,1.1s
SEW *e*PcP **PcP 19 01 27.5 +0.8**
SEW *e*PP **PP 19 01 51.1 +0.2**
SKLT Songkhla 47.95 241 P **P 19 00 00.3 +0.7**
comp=Z,200nm,1.2s,comp=Z,4µm
DMN Daman 47.95 275 *e*P **P 19 00 00.2 +0.3**
MCK McKinley 47.98 34 *e*P **P 18 59 59.7 +0.4**
MCK pmax pmax
comp=Z,135nm,1.0s
MCK McKinley 47.98 34 *e*P **P 18 59 59.7 +0.4**
comp=Z,135nm,1.0s
SURT Suratani 47.99 245 P **P 19 00 00.7 +0.8**
comp=Z,111nm,1.2s,comp=Z,2µm
PMR Palmer 47.99 37 *e*P **P 18 59 59.3 0.0**
PMR pmax pmax
comp=Z,211nm,1.2s
PMR Palmer 47.99 37 *e*P **P 18 59 59.3 0.0**
comp=Z,211nm,1.2s
RND Reindeer 48.03 35 *e*P **P 19 00 00.2 +0.5**
RND pmax pmax
comp=Z,871nm,1.8s
RND Reindeer 48.03 35 *e*P **P 19 00 00.2 +0.5**
comp=Z,870nm,1.8s
TRTT Trang 48.13 243 P **P 19 00 01.7 +0.7**
comp=Z,184nm,1.2s,comp=Z,4µm
GKN Gorkha 48.14 276 *e*P **P 19 00 01.6 +0.4**
KRAB Krabi 48.21 243 P **P 19 00 02.2 +0.6**
comp=Z,562nm,0.7s,comp=Z,4µm
MDM Murphy Dome 48.26 32 *e*P **P 19 00 02.9 +1.5**
comp=Z,371nm,1.1s
MDOK Medeo 48.31 298 *i*P **P 19 00 00.2 -2.1**
comp=Z,4µm,1.0s
MDOK *e*S **S 19 06 58.4 -1.1**
MDOK LR LR 19 18 24.5
comp=Z,18µm,19.9s
WRH Wood River Hil 48.33 33 *e*P **P 19 00 02.4 +0.5**
comp=Z,110nm,1.0s
AAA Alma-Ata 48.35 298 *e*P **P 19 00 04.1 +1.6**
AAA *e*S **S 19 06 55.7 -4.2**
AAA pmax pmax
comp=Z,6µm,9.5s
AAA smax smax
comp=E,8µm,15.1s
AAA Alma-Ata 48.35 298 *e*P **P 19 00 01.2 -1.3**
comp=E,3µm,0.6s
AAA *e*S **S 19 06 59.6 -0.3**
AAA LR LR 19 19 35.2
comp=E,15µm,19.9s
SML Sawmill 48.36 37 *e*P **P 19 00 02.8 +0.6**
SML pmax pmax
comp=Z,186nm,0.8s
SML Sawmill 48.36 37 *e*P **P 19 00 02.8 +0.6**
comp=Z,186nm,0.8s
COLA College 48.42 33 *e*P **P 19 00 03.6 +1.0**
COLA *e* 19 01 28.4
COLA pmax pmax
comp=Z,597nm,1.8s
COLA MLR MLR
comp=Z,6µm,19.0s
COLA College 48.42 33 *e*P **P 19 00 03.6 +1.0**
comp=Z,597nm,1.8s
COLA *e*PcP **PcP 19 01 28.4 +0.1**
COLA LR LR
comp=Z,6µm,19.0s
CCB Clear Creek Bu 48.45 33 *e*P **P 19 00 03.4 +0.6**
comp=Z,136nm,1.3s
KUU Kurty 48.60 299 *i*P **P 19 00 02.7 -1.6**
comp=Z,6µm,1.2s
KUU *e*S **S 19 07 02.4 -0.9**
KUU LR LR 19 20 56.3
comp=Z,5µm,14.6s
DHY Denali Highway 48.72 35 *e*P **P 19 00 05.4 +0.3**
comp=Z,114nm,0.9s
SCM Sheep Creek Mo 48.83 37 *e*P **P 19 00 07.0 +1.1**
SCM pmax pmax
comp=Z,631nm,1.6s
SCM Sheep Creek Mo 48.83 37 *e*P **P 19 00 07.0 +1.1**
comp=Z,631nm,1.6s
ILAR Eielson Array 48.84 33 P **P 19 00 06.2 +0.4**
comp=Z,114nm,1.0s,baz=267,slow=5.7,SNR=471
ILAR LR LR 19 21 51.9
comp=Z,6µm,21.4s,baz=274,slow=37
ILAR PKPPKP **P'P'df 19 31 10.7 -3.7**
comp=Z,0.3nm,0.8s,baz=166,slow=0.4,SNR=4.4
ILAR P4KPbc 19 37 41.7
comp=Z,0.4nm,0.9s,baz=322,slow=7.3,SNR=4.7
ILB Eielson Array 48.84 33 *e*P **P 19 00 06.2 +0.4**
IL1 Eielson Array 48.84 33 *e*P **P 19 00 05.8 0.0**
PBKI Pangkalan Bun 48.85 221 P **P 19 00 06.5 0.0**
comp=Z,644nm,0.9s,comp=Z,5µm
PKDT Phuket 49.05 244 P **P 19 00 09.0 +0.9**
comp=Z,541nm,1.0s,comp=Z,7µm
KOLN Koldanda 49.07 276 *e*P **P 19 00 09.0 +0.6**
comp=Z,938nm,0.6s
BOK Bokaro 49.15 270 *e*P **P 19 00 09.3 +0.5**
KULM Kulim 49.27 239 ⇓P **P 19 00 10.7 +0.9**
KULM Kulim 49.27 239 *e*P **P 19 00 09.9 +0.1**
comp=Z,172nm,1.1s
KULM *e*PcP **PcP 19 01 32.6 +0.3**
KULM LR LR
comp=Z,18µm,20.0s
BMNS Besmoynak 49.29 298 *i*P **P 19 00 08.1 -1.8**
comp=Z,24µm,0.9s
BMNS *e*S **S 19 07 12.2 -1.1**
BMNS LR LR 19 20 33.6
comp=Z,14µm,17.0s
FID Port Fidalgo 49.34 38 *e*P **P 19 00 10.6 +0.8**
comp=Z,373nm,1.4s
PYUN Piuthan 49.40 277 *e*P **P 19 00 11.6 +0.7**
comp=Z,2µm,1.0s
FYU Fort Yukon 49.44 30 *e*P **P 19 00 12.7 +2.3**
comp=Z,735nm,1.5s
BRZS Berezniki 49.47 308 *i*P **P 19 00 08.9 -2.0**
BRZS *i*S **S 19 07 14.4 -0.9**
BRZS LR LR 19 21 38.1
KLU Klutina 49.53 37 *e*P **P 19 00 12.6 +1.3**
comp=Z,159nm,0.9s
DGPR DIGLIPUR 49.58 254 *e*P **P 19 00 12.8 +0.7**
PAX Paxson 49.59 35 *e*P **P 19 00 12.3 +0.6**
PAX *e* 19 01 33.8
PAX pmax pmax
comp=Z,125nm,1.2s
PAX Paxson 49.59 35 *e*P **P 19 00 12.3 +0.6**
comp=Z,125nm,1.2s
PAX *e*PcP **PcP 19 01 33.8 +1.0**
IPM Ipoh 49.61 238 ⇓P **P 19 00 12.5 +0.1**
IPM Ipoh 49.61 238 *e*P **P 19 00 12.1 -0.2**
comp=Z,182nm,0.7s
IPM *e*PcP **PcP 19 01 34.0 +0.5**
DIV Divide 49.64 37 *e*P **P 19 00 12.8 +0.7**
comp=Z,485nm,1.2s
EYAK Cordova Ski Ar 49.73 38 *e*P **P 19 00 13.9 +1.2**
comp=Z,272nm,1.0s
MYKOM Kota Tinggi 49.77 233 *e*P **P 19 00 14.1 +0.5**
comp=Z,96nm,0.9s
BTLS Baital 49.85 301 *i*P **P 19 00 12.3 -1.5**
comp=Z,2µm,1.1s
BTLS *i*S **S 19 07 19.9 -0.7**
BTLS LR LR 19 20 50.5
comp=Z,6µm,16.9s
VOSK Vostochnaya 49.90 311 *e*P **P 19 00 13.9 -0.2**
VOSK Vostochnaya 49.90 311 *e*P **P 19 00 14.0 -0.2**
comp=Z,536nm,1.1s
SOEI Soe 49.94 203 P **P 19 00 14.8 -0.1**
comp=Z,907nm,1.1s,comp=Z,12µm
SOEI Soe 49.94 203 *e*P **P 19 00 14.0 -0.9**
comp=Z,2µm,1.0s
HNR Honiara 49.98 156 P **P 19 00 17.9 +2.8**
comp=Z,127nm,1.0s,baz=301,slow=5.9,SNR=4.5
HNR LR LR 19 20 38.5
comp=Z,22µm,20.0s,baz=322,slow=35
HNR Honiara 49.98 156 *e*P P 19 00 20.0 +4.9
HNR Honiara 49.98 156 P **P 19 00 18.2 +3.2**
HNR pmax pmax
comp=Z,476nm,1.1s
HNR Honiara 49.98 156 P **P 19 00 18.2 +3.2**
comp=Z,476nm,1.1s
TPRI Tanjung Pinang 50.02 232 P **P 19 00 16.1 +0.6**
comp=Z,313nm,0.9s,comp=Z,4µm
OTUK Ortayu 50.11 305 P **P 19 00 15.0 -0.8**
OTUK pmax pmax
comp=Z,764nm,1.2s

FRU Bishkek 50.11 298 ⇑*i*P P 19 00 11.0 -4.9
FRU *i* 19 00 31.0
FRU *e* 19 02 16.0
FRU *e*S **S** **19 07 24.0 -0.5**
FRU *e*SS **SS** **19 11 00.0 +2.3**
FRU pmax pmax
comp=Z,720nm,1.8s
FRU MLR MLR
comp=E,28μm,18.0s
DOT Dot Lake 50.16 34 *e*P **P** **19 00 16.0 +0.1**
comp=E,308nm,1.2s
BVA0 Borovoye Array 50.19 312 *i*P **P** **19 00 16.0 -0.3**
BVA0 pmax pmax
comp=Z,309nm,1.4s
BVAR Borovoye Array 50.19 312 P **P** **19 00 16.4 +0.1**
comp=Z,116nm,0.5s,baz=77,slow=6.4,SNR=443
BVAR PcP **PcP** **19 01 35.3 +0.2**
comp=Z,115nm,0.8s,baz=103,slow=3.3,SNR=4.3
BVAR LR LR 19 22 39.5
comp=Z,29μm,18.7s,baz=80,slow=37
BVAR PKPPKP **P'P'df** **19 31 06.2 -5.9**
comp=Z,1.2nm,0.9s,baz=183,slow=5.8,SNR=3.9
BVAR P4KPbc 19 37 47.8
comp=Z,1.8nm,0.8s,baz=86,slow=4.6,SNR=10
KSH Kashi 50.23 294 ⇑*i*P **P** **19 00 21.3 +4.3**
KSH *e*pP sP 19 00 31.3 -2.2
KSH *e*sP pP 19 00 35.8 +7.1
KSH *e*PcP **PcP** **19 01 39.6 +4.0**
KSH PcS **PcS** **19 05 35.5 +2.7**
KSH S **S** **19 07 30.8 +4.4**
KSH ScS **ScS** **19 10 06.5 +1.7**
KSH pmax pmax
comp=Z,250nm,0.8s
KSH LR LR
comp=Z,30μm,16.0s
KSH LR LR
comp=Z,27μm,16.7s
KSH LR LR
comp=Z,39μm,16.1s
BMRM Bremner River 50.23 38 *e*P **P** **19 00 18.0 +1.5**
comp=Z,318nm,1.0s
BRVK Borovoye 50.24 312 *ce*P **P** **19 00 16.7 0.0**
BRVK pmax pmax
comp=Z,615nm,1.0s
BRVK MLR MLR
comp=Z,68μm,18.0s
BRVK Borovoye 50.24 312 *e*P **P** **19 00 16.8 0.0**
comp=Z,258nm,0.9s
BRVK *e*PcP **PcP** **19 01 34.9 -0.4**
BRVK *e*PP **PP** **19 02 13.4 +1.4**
BRVK LR LR
comp=Z,17μm,19.0s
AAK Ala-Archa 50.26 298 P **P** **19 00 17.6 +0.3**
comp=Z,248nm,0.7s,baz=96,slow=5.2,SNR=198
AAK LR LR 19 23 07.0
comp=Z,39μm,18.9s,baz=56,slow=38
AAK Ala-Archa 50.26 298 *c*/*i*P **P** **19 00 17.5 +0.3**
AAK pmax pmax
comp=Z,622nm,0.9s
AAK MLR MLR
comp=Z,81μm,19.0s
AAK Ala-Archa 50.26 298 P **P** **19 00 17.7 +0.5**
SNR=159
AAK Ala-Archa 50.26 298 *e*P **P** **19 00 17.7 +0.5**
comp=Z,262nm,0.8s
MENT Mentasta 50.39 35 *e*P **P** **19 00 19.2 +1.5**
comp=Z,201nm,0.9s
BATI Baumata 50.55 203 P **P** **19 00 23.5 +4.1**
comp=Z,157nm,1.1s,comp=Z,2μm
PBA Port Blair 50.67 252 *e*P P 19 00 22.2 +1.8
PTH Pithoragarh 50.92 280 *e*P **P** **19 00 21.3 -1.1**
CRQM Cirque 50.97 38 *e*P **P** **19 00 23.4 +1.1**
comp=Z,494nm,1.2s
BWNR Bhubaneshwar 51.03 266 *e*P **P** **19 00 23.5 +0.4**
MTN Manton Dam 51.26 193 *e*P **P** **19 00 24.0 -0.7**
comp=Z,642nm,1.2s
EGAK Eagle 51.28 32 *e*P **P** **19 00 24.8 +0.4**
comp=Z,178nm,1.2s
EGAK LR LR
comp=Z,5μm,20.0s
PLAI Plampang 51.39 211 P **P** **19 00 24.3 -1.4**
comp=Z,398nm,0.8s,comp=Z,4μm
COEN Coen 51.44 178 *e*P **P** **19 00 26.2 +0.1**
comp=Z,422nm,1.1s
PPBI Pangkal Pinang 51.48 228 P **P** **19 00 27.0 +0.5**
comp=Z,216nm,1.0s,comp=Z,3μm
TWSI Taliwang, Sumb 51.67 212 P **P** **19 00 26.8 -1.0**
comp=Z,433nm,0.9s,comp=Z,4μm
MNAS Manas 51.70 298 P **P** **19 00 28.1 +0.1**
MNAS pmax pmax
comp=Z,532nm,0.7s
LHMI Lhok Sumawe 51.89 243 P **P** **19 00 33.0 +3.5**
ABJI Asem Bagus 51.99 215 P **P** **19 00 30.4 +0.2**
comp=Z,359nm,0.8s,comp=Z,6μm
DAWY Dawson 52.15 33 *e*P **P** **19 00 32.0 +1.1**
comp=Z,250nm,1.7s
BLJI Banyuglugur 52.24 216 P **P** **19 00 32.1 0.0**
comp=Z,254nm,0.9s,comp=Z,4μm
PSI Prapat 52.26 239 *e*P **P** **19 00 32.1 -0.3**
PSI pmax pmax
comp=Z,214nm,1.0s
PSI Prapat 52.26 239 *e*P **P** **19 00 32.1 -0.3**
comp=Z,214nm,1.0s
DDI Dehra Dun 52.27 282 *ex* **P** **19 00 31.4 -0.9**
DDI *eP* **P** **19 00 32.5 +0.2**
TBJI Tambak Boyo 52.27 218 P **P** **19 00 32.5 +0.2**
comp=Z,517nm,0.9s,comp=Z,8μm
DNP Denpasar 52.34 214 P **P** **19 00 33.0 +0.3**
comp=Z,821nm,0.9s,comp=Z,16μm
UWJI Ujung Watu 52.38 220 P **P** **19 00 33.5 +0.4**
comp=Z,354nm,1.1s,comp=Z,7μm
IGBI Denpasar 52.49 214 P **P** **19 00 34.1 +0.2**
comp=Z,354nm,0.9s,comp=Z,4μm
PCA Pinnacle 52.50 38 *e*P **P** **19 00 35.2 +1.6**
comp=Z,155nm,0.9s
KCSI Kotacane, Aceh 52.52 240 P **P** **19 00 34.3 +0.1**
comp=Z,167nm,0.8s,comp=Z,4μm
JMBI JAMBI 52.56 231 P **P** **19 00 34.4 -0.1**
comp=Z,854nm,0.9s
SDNR Sundarnagar 52.59 284 *e*P **P** **19 00 35.0 +0.4**
SDNR *ex* x 19 02 33.0
SMLA Simla 52.60 283 *e*P **P** **19 00 34.5 -0.1**
JAGI Jajag, Banyuwa 52.62 215 P **P** **19 00 34.2 -0.7**
comp=Z,365nm,1.0s,comp=Z,4μm
JAGI Jajag, Banyuwa 52.62 215 *e*P **P** **19 00 32.4 -2.5**
comp=Z,337nm,1.0s
BKNI Bangkinang 52.69 235 P **P** **19 00 35.7 +0.2**
comp=Z,1μm,1.0s,comp=Z,9μmcomp=Z,20μm
BKNI Bangkinang 52.69 235 *e*P **P** **19 00 35.6 +0.2**
comp=Z,888nm,0.9s
GMJI Gumukmas 52.78 216 P **P** **19 00 35.3 -0.7**
comp=Z,194nm,0.9s,comp=Z,4μm
KK31 Karatay Array 52.87 300 *i*P **P** **19 00 36.0 -0.6**
KK31 pmax pmax
comp=Z,220nm,0.9s
PMBI Palembang 52.90 229 P **P** **19 00 38.6 +1.6**
comp=Z,672nm,0.9s,comp=Z,9μm
NGJI Ngawi 52.94 219 P **P** **19 00 37.5 +0.3**
comp=Z,388nm,1.0s
MLSI Meulaboh, Aceh 52.95 242 P **P** **19 00 37.4 +0.1**
comp=Z,443nm,1.2s,comp=Z,6μm
TPTI 53.12 241 P **P** **19 00 37.1 -1.5**
comp=Z,56nm,1.0s,comp=Z,1μm
THN Thein Dam 53.15 285 *e*P **P** **19 00 36.8 -1.9**
THN *ex* x 19 08 10.2
THN *ex* x 19 09 30.8
PONG Pong 53.18 285 *e*P **P** **19 00 38.0 -0.9**
PONG *ex* x 19 00 54.0
MNSI Mandailing Nat 53.30 237 P **P** **19 00 39.1 -0.8**
comp=Z,148nm,0.8s,comp=Z,4μm
PWJI Pagerwojo 53.34 218 P **P** **19 00 38.7 -1.4**
comp=Z,1μm,0.8s,comp=Z,8μm
CHLP Challavanipeta 53.38 266 *e*P **P** **19 00 39.8 -0.8**
CHLP IAmb IAmb 19 00 42.4
comp=Z,440nm,0.9s
CHLP *e*S **S** **19 08 09.7 -0.2**
CHLP IVMs_BB IVMs_BB 19 21 45.5
comp=Z,5μm,31.2s
SDSI Sungai Dareh 53.40 233 P **P** **19 00 40.9 +0.2**
comp=Z,530nm,1.0s,comp=Z,58μm
IUG Iuzhnay 53.54 299 *i*P **P** **19 00 40.0 -1.6**
comp=Z,5μm,1.1s
IUG *e*S **S** **19 08 10.8 -1.0**
IUG LR LR 19 23 56.4
comp=Z,10μm,17.9s
BRLS Borolday 53.55 300 *i*P **P** **19 00 39.6 -2.0**
comp=Z,322nm,1.0s
BRLS *i*S **S** **19 08 10.9 -0.9**
BRLS LR LR 19 23 35.6
comp=Z,4μm,16.1s
WOJI Wonogiri, Jawa 53.61 219 P **P** **19 00 42.6 +0.5**
comp=Z,234nm,1.4s,comp=Z,4μm
NDI New Delhi 53.66 280 *e*P P 19 00 35.0 -7.5
NDI *e*S **S** **19 08 10.0 -3.4**
HYT Haines Junctio 53.66 37 *e*P **P** **19 00 44.4 +2.2**
comp=Z,657nm,1.3s
INK Inuvik 53.71 27 P **P** **19 00 43.1 +0.9**
comp=Z,146nm,0.8s,baz=286,slow=7.3,SNR=225
INK LR LR 19 25 49.0
comp=Z,5μm,20.2s,baz=272,slow=38
INK Inuvik 53.71 27 *e*P **P** **19 00 43.4 +1.2**
INK pmax pmax
comp=Z,228nm,1.0s
INK Inuvik 53.71 27 *e*P **P** **19 00 43.4 +1.2**
comp=Z,228nm,1.0s
DHAK Deception Hill 53.74 39 *e*P **P** **19 00 45.0 +2.4**
comp=Z,296nm,1.2s
CHM Chimkent 53.77 299 *e*P **P** **19 00 44.1 +1.0**
CHM *e*S **S** **19 08 15.5 +0.8**
CHM LR LR 19 23 55.1
comp=Z,2μm,16.0s
PCJI Pacitan 53.79 218 P **P** **19 00 43.4 -0.1**
comp=Z,328nm,1.5s,comp=Z,5μm
UGM Wanagama 53.88 219 P **P** **19 00 44.0 -0.1**
comp=Z,1μm,1.1s,comp=Z,14μmcomp=Z,14μm
UGM Wanagama 53.88 219 *e*P **P** **19 00 43.4 -0.8**
comp=Z,1μm,0.9s
OPA Opana 54.00 89 *e*P **P** **19 00 46.4 +1.4**
OPA pmax pmax
comp=Z,837nm,1.2s
OPA Opana 54.00 89 *e*P **P** **19 00 46.4 +1.4**
comp=Z,836nm,1.2s
PDSI Padang 54.00 234 P **P** **19 00 44.4 -0.7**
comp=Z,100nm,0.9s,comp=Z,3μm
KIP Kipapa 54.13 89 P **P** **19 00 46.3 +0.3**
KIP pmax pmax
comp=Z,3μm,1.3s
KIP MLR MLR
comp=Z,8μm,20.0s
KIP Kipapa 54.13 89 P **P** **19 00 46.3 +0.3**
comp=Z,3μm,1.3s
KIP LR LR
comp=Z,8μm,20.0s
GSI Gunungsitoli 54.26 239 P **P** **19 00 46.9 -0.1**
comp=Z,809nm,0.8s,comp=Z,13μm
GSI Gunungsitoli 54.26 239 *e*P **P** **19 00 47.0 -0.1**
comp=Z,972nm,1.0s
KLSI 54.34 227 P **P** **19 00 47.6 +0.1**
comp=Z,375nm,1.6s,comp=Z,6μm
LHSI Lahat 54.36 229 P **P** **19 00 47.9 +0.2**
comp=Z,732nm,1.4s,comp=Z,10μm
VIS Vishakhapatnam 54.39 265 *e*P **P** **19 00 48.8 +0.9**
BLSI Bandar Lampung 54.59 226 P **P** **19 00 49.3 0.0**
comp=Z,567nm,0.8s,comp=Z,6μm
SVE Sverdlovsk 54.70 318 *d*/*i*P **P** **19 00 50.2 +0.6**
SVE *e* 19 01 50.7
SVE *e* 19 02 48.5
SVE *e*PPP PPP 19 04 03.2
SVE *e*S **S** **19 08 25.8 -0.9**
SVE *e* 19 10 29.2
SVE *e*SSS SSS 19 14 05.8
SVE pmax pmax
comp=Z,1μm,1.2s
SVE pmax pmax
comp=Z,3μm,18.4s
SVE MLR MLR
comp=E,35μm,17.0s
SVE MLR MLR
comp=Z,40μm,17.0s
SBJI Serang 54.70 225 P **P** **19 00 50.3 +0.2**
comp=Z,195nm,0.9s,comp=Z,4μm
DBJI Dramaga 54.72 224 P **P** **19 00 50.5 +0.2**
comp=Z,193nm,1.1s,comp=Z,5μm
KSI Kapahiang 54.79 230 P **P** **19 00 50.9 0.0**
comp=Z,322nm,1.0s,comp=Z,5μm
CISI Cisompet, Garu 54.97 222 P **P** **19 00 52.5 +0.3**
comp=Z,266nm,0.9s,comp=Z,3μm
CISI Cisompet, Garu 54.97 222 *e*P **P** **19 00 49.0 -3.2**
comp=Z,172nm,0.6s
CISI *e*PcP **PcP** **19 01 54.4 +0.8**
LWLI Liwa 55.00 228 P **P** **19 00 52.2 -0.2**
comp=Z,431nm,0.8s,comp=Z,4μm
SKAG Skagway 55.07 38 *e*P **P** **19 00 53.3 +1.0**
comp=Z,209nm,1.1s
KASI Kota Agung 55.15 227 P **P** **19 00 51.5 -1.9**
comp=Z,240nm,1.0s,comp=Z,3μm
CGJI Cibinong 55.35 225 P **P** **19 00 51.8 -3.0**
comp=Z,146nm,0.9s,comp=Z,2μm
PPSI Pulau Pagai 55.71 233 P **P** **19 00 57.6 +0.2**
comp=Z,632nm,1.3s,comp=Z,7μm
SOKR Solikamsk 55.84 322 *c*/*i*P **P** **19 00 55.8 -1.9**
SOKR S **S** **19 08 46.6 +4.8**
SOKR pmax pmax
comp=Z,392nm,1.1s
SOKR MLR MLR
comp=Z,16μm,20.0s
HLK Haleakala 55.88 89 *e*P **P** **19 00 58.2 -0.8**
comp=Z,469nm,1.3s
ARU Arti 55.91 318 P **P** **19 00 58.5 +0.2**
comp=Z,389nm,0.6s,baz=77,slow=4.3,SNR=722
ARU LR LR 19 27 18.4
comp=Z,37μm,18.1s,baz=69,slow=38
ARU PKP2bc 19 31 10.1
comp=Z,0.7nm,0.4s,baz=161,slow=4.3,SNR=4.6
ARU P4KPbc 19 38 11.8
comp=Z,2.4nm,0.7s,baz=142,slow=2.9,SNR=8.0
ARU Arti 55.91 318 *c*/*i*P **P** **19 00 58.5 +0.2**
ARU 19 01 54.3
ARU 19 03 01.7
ARU S **S** **19 08 45.8 +2.9**
ARU 19 10 45.7
ARU SSS SSS 19 14 36.6
ARU pmax pmax
comp=Z,964nm,1.0s
ARU pmax pmax
comp=Z,2μm,12.9s
ARU MLR MLR
comp=Z,38μm,18.0s
ARU Arti 55.91 318 *e*P **P** **19 00 58.6 +0.2**
comp=Z,1μm,1.1s
ARU ⇑*e* 19 31 10.1
ARU *e* 19 38 11.8
NGP Nagpur 55.93 272 *e*P **P** **19 00 58.4 -0.6**
PVM Polavaram 56.00 266 *e*P **P** **19 00 58.2 -1.4**
PVM IAmb IAmb 19 01 01.0
comp=Z,282nm,0.8s
PVM *e*S **S** **19 08 43.9 -1.2**
PVM IVMs_BB IVMs_BB 19 22 46.5
comp=Z,4μm,26.9s
BHPL Bhopal 56.13 275 *e*P **P** **19 00 59.6 -0.9**
HPAH Hawaii Prepara 56.71 89 *e*P **P** **19 01 06.5 +1.9**
comp=Z,612nm,1.7s
RPR Rampur 56.96 269 *e*P **P** **19 01 05.3 -1.1**
RPR IAmb IAmb 19 01 07.4
comp=Z,533nm,0.7s
RPR *e*S **S** **19 08 56.9 -0.9**
RPR IVMs_BB IVMs_BB 19 27 00.2
comp=Z,3μm,18.7s
POHA Pohakuloa 56.98 90 *e*P **P** **19 01 07.0 +0.2**
comp=Z,516nm,1.1s
POHA LR LR
comp=Z,10μm,22.0s
MLOA Mauna Loa Obse 57.07 90 *e*P **P** **19 01 09.4 +1.8**
KBL Kabul 57.27 291 *e*P **P** **19 01 08.4 -0.3**
KBL pmax pmax
comp=Z,633nm,1.0s
KBL Kabul 57.27 291 *e*P **P** **19 01 08.4 -0.3**
comp=Z,633nm,1.0s
CRAG Craig 57.46 42 *e*P **P** **19 01 10.2 +0.9**
comp=Z,334nm,1.3s
CRAG *e*PP **PP** **19 03 17.2 +0.4**
FITZ Fitzroy Crossi 57.53 198 LR LR 19 26 14.8
comp=Z,1μm,20.6s,baz=19,slow=36
FITZ PKP2bc 19 31 07.4
comp=Z,5.2nm,1.0s,baz=215,slow=2.6,SNR=3.9
FITZ Fitzroy Crossi 57.53 198 *e*P **P** **19 01 10.8 +0.6**
comp=Z,800nm,1.6s
FITZ ⇑*e* 19 31 07.4
WRAK Wrangell Islan 57.54 41 *e*P **P** **19 01 10.9 +1.0**
comp=Z,374nm,1.4s
WRAK *e*PcP **PcP** **19 02 02.5 -0.4**
AB31 Akbulak array 57.58 310 *i*P **P** **19 01 10.1 -0.2**
AB31 pmax pmax
comp=Z,152nm,0.6s
ABKAR Akbulak array 57.58 310 *e*P **P** **19 01 10.2 -0.1**
SRSP Sriramsagar 57.68 270 *e*P **P** **19 01 09.7 -1.7**
SRSP IAmb IAmb 19 01 12.3
comp=Z,888nm,1.0s
SRSP *e*S **S** **19 09 05.8 -1.5**
SRSP IVMs_BB IVMs_BB 19 28 34.0
comp=Z,4μm,18.0s
CTA Charters Tower 57.69 175 P **P** **19 01 10.9 -0.4**
comp=Z,28nm,0.8s,baz=356,slow=8.0,SNR=24
CTA LR LR 19 23 50.4
comp=Z,2μm,21.9s,baz=347,slow=34
CTAO Charters Tower 57.69 175 *e*P **P** **19 01 11.1 -0.2**
CTAO pmax pmax
comp=Z,835nm,1.8s
CTAO MLR MLR
comp=Z,7μm,22.0s
CTAO Charters Tower 57.69 175 *e*P **P** **19 01 11.1 -0.2**
comp=Z,835nm,1.8s
CTAO LR LR
comp=Z,7μm,22.0s
WRAB Tennant Creek 57.76 188 *ce*P **P** **19 01 11.2 -0.6**
WRAB pmax pmax
comp=Z,786nm,1.0s
WRAB Tennant Creek 57.76 188 *e*P **P** **19 01 11.3 -0.5**
comp=Z,268nm,0.9s
WRAB LR LR
comp=Z,7μm,21.0s
WB2 Warramunga Arr 57.77 188 *e*P **P** **19 01 10.3 -1.6**
WRA Warramunga Arr 57.77 188 P **P** **19 01 11.0 -0.9**
comp=Z,227nm,0.8s,baz=6.1,slow=7.3,SNR=428
WRA S **S** **19 09 04.4 -3.8**
comp=Z,4.3nm,1.2s,baz=12,slow=4.4,SNR=9.2
WRA LR LR 19 25 29.0
comp=Z,6μm,20.8s,baz=0.0,slow=35
WRA PKPPKP **P'P'df** **19 30 54.1 +4.2**
comp=Z,5.4nm,1.0s,baz=170,slow=1.9,SNR=5.2
WRA P4KPbc 19 38 21.4
comp=Z,1.4nm,0.9s,baz=9.8,slow=4.6,SNR=7.5
WRA Warramunga Arr 57.77 188 *i*P **P** **19 01 09.0 -2.9**
WRA pmax pmax
comp=Z,227nm,0.8s
FUNA Funafuti 57.91 135 *e*P **P** **19 01 14.8 +1.8**
comp=Z,782nm,1.8s
FUNA LR LR
comp=Z,15μm,22.0s
DLBC Dease Lake 58.00 38 P **P** **19 01 14.8 +1.5**
comp=Z,64nm,0.8s,baz=292,slow=7.2,SNR=77
DLBC Dease Lake 58.00 38 *e*P **P** **19 01 15.4 +2.2**
comp=Z,439nm,1.4s
ADKI Addanki 58.10 266 *e*P **P** **19 01 14.1 -0.4**
ADKI IAmb IAmb 19 01 15.6
comp=Z,200nm,0.9s
ADKI *e*S **S** **19 09 10.9 -1.9**
ADKI IVMs_BB IVMs_BB 19 23 58.0
comp=Z,5μm,28.9s
NJS Nagarjunasagar 58.23 267 *e*P **P** **19 01 14.1 -1.2**
NJS IAmb IAmb 19 01 16.3
comp=Z,276nm,1.0s
NJS *e*S **S** **19 09 13.4 -1.1**
NJS IVMs_BB IVMs_BB 19 28 14.4
comp=Z,4μm,20.1s
AKTO Aktyubinsk 58.29 312 LR LR 19 27 37.7
comp=Z,21μm,18.9s,baz=67,slow=37
AKTO PKP2bc 19 31 04.5
comp=Z,0.7nm,0.6s,baz=184,slow=3.0,SNR=4.8
AKTO P4KPbc 19 38 23.3
comp=Z,4.6nm,0.8s,baz=70,slow=3.1,SNR=9.7
AKTO Aktyubinsk 58.29 312 P **P** **19 01 14.8 -0.5**
AKTO pmax pmax
comp=Z,426nm,1.1s
HYB Hyderabad 58.34 268 ⇑*i*P **P** **19 01 16.0 -0.1**
comp=Z,430nm,1.0s
HYB *e*pP **pP** **19 01 26.0 -2.1**
HYB *e*sP **sP** **19 01 31.5 -1.3**
HYB *e*PcP **PcP** **19 02 06.0 -0.8**
HYB *e*PP **PP** **19 03 28.0 +2.5**
HYB *e*S **S** **19 09 16.0 0.0**
HYB LR LR
comp=Z,11nm,20.0s
HYB Hyderabad 58.34 268 *e*P **P** **19 01 16.0 -0.1**
HYBB Hyderabad (bro 58.34 268 *e*P **P** **19 01 15.0 -1.2**
HYBB IAmb IAmb 19 01 16.9
comp=Z,539nm,0.9s
HYBB *e*S **S** **19 09 14.2 -1.8**
HYBB IVMs_BB IVMs_BB 19 25 58.6
comp=Z,3μm,31.2s
DIB Dawson Inlet, 58.64 45 *e*P **P** **19 01 19.1 +1.5**
comp=Z,350nm,1.2s
SRLM Srisailam 58.81 267 *e*P **P** **19 01 18.1 -1.3**
SRLM IAmb IAmb 19 01 20.2
comp=Z,299nm,1.0s
SRLM *e*S **S** **19 09 22.2 +0.1**
SRLM IVMs_BB IVMs_BB 19 28 31.3
comp=Z,4μm,18.9s
RCLA Racherla 59.12 266 *e*P **P** **19 01 20.3 -1.3**
RCLA IAmb IAmb 19 01 22.7
comp=Z,368nm,0.9s
RCLA *e*S **S** **19 09 25.1 -1.0**
RCLA IVMs_BB IVMs_BB 19 24 59.0
comp=Z,4μm,23.3s
HOPEN Hopen 59.38 346 ⇑*i*P **P** **19 01 23.3 +0.9**
HOPEN IVmB_BB 19 01 23.8
comp=Z,7μm,1.3s
HOPEN *e*sP **sP** **19 01 39.7 +0.5**
HOPEN *e*S **S** **19 09 26.9 -0.9**
HOPEN IVMs_BB IVMs_BB 19 30 15.8
comp=Z,5μm,15.2s
MDRS Chennai 59.48 263 *e*P **P** **19 01 24.5 +0.5**
MDRS *ex* x 19 28 55.8
SKHT Srikalahasti 59.52 264 *e*P **P** **19 01 23.3 -0.9**
SKHT IAmb IAmb 19 01 25.9
comp=Z,373nm,0.8s
SKHT *e*S **S** **19 09 30.6 -0.5**
SKHT IVMs_BB IVMs_BB 19 27 11.0
comp=Z,3μm,21.2s
KLRI Killari 59.53 270 *e*P **P** **19 01 22.2 -2.2**
KLRI IAmb IAmb 19 01 24.8
comp=Z,811nm,0.7s
KLRI *e*S **S** **19 09 30.1 -1.4**
KLRI IVMs_BB IVMs_BB 19 29 25.2
comp=Z,5μm,23.0s
SPA0 Spitsbergen Ar 59.85 349 ⇑*i*P **P** **19 01 25.8 0.0**
SPA0 IVmB_BB 19 01 26.8
comp=Z,3μm,2.4s
SPA0 *e*pP **pP** **19 01 37.6 -0.1**
SPA0 *e*S **S** **19 09 33.5 -0.5**
SPA0 IVMs_BB IVMs_BB 19 28 37.0
comp=Z,4μm,21.9s
SPA0 Spitsbergen Ar 59.85 349 *e*P **P** **19 01 26.6 +0.8**
SPITS Spitsbergen Ar 59.85 349 LR LR 19 29 09.0
comp=Z,13μm,20.5s,baz=40,slow=38
KBS Kingsbay 59.98 350 *e*P **P** **19 01 27.4 +0.8**
KBS pmax pmax
comp=Z,332nm,0.9s
KBS MLR MLR
comp=Z,5μm,21.0s
KBS Kingsbay 59.98 350 *e*P **P** **19 01 27.4 +0.8**
comp=Z,332nm,0.9s
KBS LR LR
comp=Z,5μm,21.0s
URV Uravakonda 60.76 267 *e*P **P** **19 01 31.5 -1.3**
URV IAmb IAmb 19 01 33.1
comp=Z,231nm,1.0s
URV *e*S **S** **19 09 45.7 -1.4**
URV IVMs_BB IVMs_BB 19 29 29.4
comp=Z,3μm,21.6s
HSPB Hornsund (broa 60.78 348 ⇑*i*P **P** **19 01 32.9 +0.9**
HSPB IVmB_BB 19 01 33.5
comp=Z,7μm,1.5s
HSPB *e*S **S** **19 09 44.2 -1.6**
HSPB IVMs_BB IVMs_BB 19 29 50.3
comp=Z,4μm,20.3s
POO Poona 61.46 272 *e*P **P** **19 01 37.3 -0.3**
POO IAmb IAmb 19 01 56.1
comp=Z,413nm,1.3s
POO *i*P **PP** **19 03 51.0 -2.1**
BBB Bella Bella 61.48 44 *e*P **P** **19 01 38.4 +1.3**
AS01 Alice Springs 61.49 188 *e*P **P** **19 01 35.7 -1.8**
AS31 Alice Springs 61.50 188 *e*P **P** **19 01 37.4 -0.2**
comp=Z,38nm,0.8s
ASAR Alice Springs 61.50 188 P **P** **19 01 37.3 -0.2**
comp=Z,103nm,0.7s,baz=11,slow=5.6,SNR=751
ASAR LR LR 19 27 44.9
comp=Z,8μm,21.3s,baz=359,slow=36

ASAR PKPPKP **P'P'df** **19 30 51.5 +7.3**
comp=Z,3.0nm,0.9s,baz=170,slow=1.4,SNR=6.4
ASAR P4KPbc 19 38 36.5
comp=Z,1.2nm,0.8s,baz=359,slow=4.0,SNR=12
BJO Bjornoya 61.77 345⇑*iP* **P** **19 01 39.1 +0.3**
BJO IVmB_BB 19 01 39.5
comp=Z,3µm,2.8s
BJO *e*S **S** **19 09 57.4 -1.0**
BJO IVMs_BB IVMs_BB 19 32 04.4
comp=Z,7µm,16.3s
RES Resolute Bay 61.89 15 *e*P **P** **19 01 38.7 -0.8**
RES Resolute Bay 61.89 15 *e*P **P** **19 01 38.7 -0.8**
BOM Bombay 62.08 273 *i*P P 19 01 48.4 +6.8
BOM AMb AMB 19 02 02.7
comp=Z,472nm,13.5s
BOM *e*S **S** **19 10 07.8 +4.0**
MBWA Marble Bar 62.08 203 P **P** **19 01 41.5 0.0**
SNR=38
MBWA Marble Bar 62.08 203 *e*P **P** **19 01 41.4 0.0**
comp=Z,360nm,0.8s
MBWA LR LR
comp=Z,3µm,21.0s
BHJ Bhuj 62.24 279 *e*P **P** **19 01 42.9 +0.2**
BHJ IAmb IAmb 19 01 44.4
comp=Z,519nm,1.2s
PALK Pallekele 62.63 257*c e*P **P** **19 01 46.0 +0.5**
PALK Pallekele 62.63 257 *e*P **P** **19 01 45.7 +0.2**
comp=Z,280nm,1.3s
YKA Yellowknife Ar 63.14 30 P **P** **19 01 48.4 +0.3**
comp=Z,66nm,0.8s,baz=297,slow=6.6,SNR=112
YKA LR LR 19 29 19.9
comp=Z,444nm,21.9s,baz=0.0,slow=36
YKA PKPPKP **P'P'df** **19 30 48.7 -4.0**
comp=Z,2.9nm,0.9s,baz=120,slow=2.8,SNR=7.1
HAMF Hammerfest 63.19 341⇑*iP* **P** **19 01 48.2 0.0**
HAMF IVmB_BB 19 01 48.7
comp=Z,3µm,3.9s
HAMF *e*sP **sP** **19 02 05.1 0.0**
HAMF *e*S **S** **19 10 13.3 -3.0**
HAMF IVMs_BB IVMs_BB 19 34 47.5
comp=Z,5µm,18.2s
KLMR Klimovskoe 63.22 328*c iP* **P** **19 01 48.6 0.0**
KLMR *e* 19 04 06.9
KLMR *e*S **S** **19 10 16.4 -0.6**
KLMR pmax pmax
comp=Z,389nm,0.8s
ARA0 ARCESS Array S 63.38 339 *e*P **P** **19 01 49.1 -0.5**
ARCES ARCESS Array B 63.38 339 P **P** **19 01 49.8 +0.3**
comp=Z,213nm,0.9s,baz=57,slow=8.8,SNR=275
ARCES PP **PP** **19 04 09.4 +0.7**
comp=Z,73nm,1.0s,baz=42,slow=7.3,SNR=4.2
ARCES PKP2bc 19 30 54.9
comp=Z,5.3nm,0.9s,baz=188,slow=2.5,SNR=5.3
ARCES LR LR 19 34 23.5
comp=Z,11µm,18.1s,baz=45,slow=41
ARE0 ARCESS Array S 63.38 339⇑*iP* **P** **19 01 49.8 +0.2**
ARE0 IVmB_BB 19 01 50.5
comp=Z,3µm,1.4s
ARE0 *e*sP **sP** **19 02 06.8 +0.4**
ARE0 *e*S **S** **19 10 17.3 -1.5**
ARE0 IVMs_BB IVMs_BB 19 30 20.4
comp=Z,7µm,25.3s
ARE0 ARCESS Array S 63.38 339 *e*P **P** **19 01 49.9 +0.2**
ASHT Ashkhabad 63.41 299 P **P** **19 01 50.4 +0.1**
ASHT pmax pmax
comp=Z,377nm,0.7s
EIDS Eidsvold 63.41 170 *e*P **P** **19 01 50.9 +0.7**
comp=Z,522nm,1.5s
GEYT Alibeck 63.60 299 P **P** **19 01 52.0 +0.4**
comp=Z,362nm,1.0s,baz=33,slow=3.5,SNR=470
GEYT PKP2ab 19 30 58.9
comp=Z,1.8nm,0.9s,baz=252,slow=9.0,SNR=5.2
GEYT LR LR 19 31 20.4
comp=Z,9µm,20.0s,baz=55,slow=38
DZM Mont Dzumac 63.94 154 P **P** **19 01 54.8 +1.0**
comp=Z,58nm,1.1s,baz=99,slow=15,SNR=6.4
DZM LR LR 19 27 21.6
comp=Z,27µm,20.9s,baz=325,slow=34
DZM Mont Dzumac 63.94 154 *e*P P 19 01 59.5 +5.7
comp=Z,1µm,1.5s
DZM *e*S **S** **19 10 30.6 +3.8**
comp=Z,10µm,28.7s
DZM Mont Dzumac 63.94 154 *e*LR LR 19 21 00.3
comp=Z,43µm,21.5s
TRD Trivandrum 64.79 261 *e*P **P** **19 01 59.3 -0.3**
MSVF Nonsavu 64.98 141 *e*P **P** **19 02 02.5 +1.8**
MSVF pmax pmax
comp=Z,58nm,1.0s
MSVF Nonsavu 64.98 141 *e*P **P** **19 02 01.6 +0.9**
MSVF LR LR
comp=Z,19µm,22.0s
COCO West Island 64.98 229 *i*P **P** **19 02 01.8 +1.1**
COCO West Island 64.98 229 P **P** **19 02 00.0 -0.7**
comp=Z,428nm,1.1s
COCO LR LR
comp=Z,5µm,21.0s
DAG Danmarks Havn 65.08 355⇑*iP* **P** **19 02 00.7 +0.1**
comp=Z,321nm,1.0s
DAG *i*S **S** **19 10 34.9 -4.7**
DAG *i* 19 30 44.6
TRO Tromso 65.08 341⇑*iP* **P** **19 02 01.1 +0.4**
TRO IVmB_BB 19 02 01.8
comp=Z,3µm,1.1s
TRO *e*PP **PP** **19 04 22.6 -1.0**
TRO *e*S **S** **19 10 38.2 -1.6**
TRO IVMs_BB IVMs_BB 19 35 28.2
comp=Z,6µm,16.7s
LLLB Lillooet 65.67 44 *e*P **P** **19 02 06.0 +1.2**
PGC Sidney 65.77 46 *e*P **P** **19 02 06.7 +1.3**
NLWA Neilton Lookou 66.15 48 *e*P **P** **19 02 09.9 +1.9**
NLWA LR LR
comp=Z,7µm,22.0s
A04D Lummi Island 66.16 46 P **P** **19 02 09.5 +1.6**
baz=301,SNR=6.7
CMW Cultus Mountai 66.64 46 P **P** **19 02 12.7 +1.5**
B05A Bryant 66.74 46 P **P** **19 02 13.1 +1.4**
baz=301,SNR=27
MOS Moscow 66.75 323*c iP* **P** **19 02 12.3 +0.7**
MOS *e* 19 02 30.8
MOS *e* 19 02 42.8
MOS *e* 19 04 38.2
MOS *i*S **S** **19 10 59.6 -0.9**
MOS *e* 19 12 01.6
MOS *e*SS **SS** **19 15 24.0 +6.1**
MOS pmax pmax
comp=Z,2µm,1.8s
MOS pmax pmax
comp=N,700nm,1.6s
MOS pmax pmax
comp=E,600nm,1.7s
MOS pmax pmax
comp=Z,1µm,1.4s
MOS pmax pmax
comp=N,459nm,1.1s
MOS pmax pmax
comp=E,340nm,1.2s
MOS smax smax
comp=N,2µm,4.3s
MOS MLR MLR
comp=E,10µm,18.0s
MOS MLR MLR
comp=Z,13µm,18.0s
E03A Lebam 66.76 48 *e*P **P** **19 02 13.8 +1.9**
JCW Jim Creek 66.87 46 *e*P **P** **19 02 14.1 +1.5**
B06A Marblemount 66.96 46 *e*P **P** **19 02 14.2 +1.1**
F03A Seaside 67.08 49 *e*P **P** **19 02 16.2 +2.2**
VRH Novokhopyorsk 67.14 318 *e*P **P** **19 02 13.8 -0.3**
VRH *e*S **S** **19 10 59.3 -6.0**
VRH pmax pmax
comp=Z,990nm,0.6s
VRH pmax pmax
comp=Z,380nm,0.6s
VRH smax smax
comp=N,970nm,4.1s
VRH MLR MLR
comp=Z,690nm,16.0s
STEI Steigen 67.24 341⇑*iP* **P** **19 02 14.5 0.0**
KULLO Kullorsuaq 67.27 5⇑*iP* **P** **19 02 14.5 -0.1**
comp=Z,173nm,0.9s
comp=Z,6µm,18.0s
F04D Rainier, OR 67.33 49 P **P** **19 02 16.6 +1.1**
baz=301
D05A Enumclaw 67.36 47 *e*P **P** **19 02 17.7 +2.0**
AFI Afiamalu 67.50 130 P **P** **19 02 15.7 -1.2**
comp=Z,30nm,0.9s,baz=225,slow=2.9,SNR=2.2
AFI Afiamalu 67.50 130 P **P** **19 02 15.7 -1.2**
AFI MLR MLR
comp=Z,11µm,22.0s
AFI Afiamalu 67.50 130 P **P** **19 02 15.7 -1.2**
AFI LR LR
comp=Z,11µm,22.0s
LOF Lofoten 67.53 341⇑*iP* **P** **19 02 15.8 -0.5**
LOF IVmB_BB 19 02 22.6
comp=Z,3µm,3.3s
LOF *e*S **S** **19 11 08.3 -1.2**
LOF IVMs_BB IVMs_BB 19 35 23.6
comp=Z,4µm,22.1s
PNT Penticton 67.59 44 *e*P **P** **19 02 18.0 +0.9**
PNT Penticton 67.59 44 *e*P **P** **19 02 18.0 +0.9**
OBN Obninsk 67.60 323*c iP* **P** **19 02 16.8 -0.2**
OBN *e* 19 02 27.6
OBN *e**PP **sP** **19 02 34.2 +0.3**
OBN *e* 19 02 45.6
OBN *e*PPP PPP 19 06 28.6
OBN *i*S **S** **19 11 08.5 -2.2**
OBN *e*PS **PnS** **19 11 35.9 -1.2**
OBN *e* 19 12 11.1
OBN pmax pmax
comp=Z,704nm,1.0s
OBN pmax pmax
comp=Z,2µm,1.6s
OBN Obninsk 67.60 323 *e*P **P** **19 02 17.1 +0.1**
OBN LR LR
comp=Z,13µm,19.0s
C06D Leavenworth 67.60 46 P **P** **19 02 18.8 +1.5**
baz=302
OBSR Observation Ro 67.61 47 P **P** **19 02 19.3 +1.7**
G03D McMinnville, O 67.63 50 P **P** **19 02 18.8 +1.4**
baz=302
WRW Wenatchee Ridg 67.65 46 P **P** **19 02 18.9 +1.2**
TDL Tradedollar La 67.66 48 *e*P **P** **19 02 19.4 +1.7**
LON Longmire 67.69 48 *e*P **P** **19 02 19.0 +1.1**
LON Longmire 67.69 48 *e*P **P** **19 02 19.0 +1.1**
F04A Amboy 67.76 49 *e*P **P** **19 02 19.7 +1.5**
COR Corvallis 67.93 50 *e*P **P** **19 02 21.6 +2.3**
COR Corvallis 67.93 50 *e*P **P** **19 02 21.6 +2.3**
TWW Teanaway 68.03 47 P **P** **19 02 21.7 +1.7**
VORR Voronezh 68.20 319⇑*iP* **P** **19 02 19.0 -1.9**
VORR pmax pmax
comp=Z,1µm,1.0s
FINES FINESS Array B 68.25 332 P **P** **19 02 20.8 -0.1**
comp=Z,631nm,0.8s,baz=56,slow=7.4,SNR=1305
FINES PKP2ab 19 30 49.2
comp=Z,5.8nm,1.1s,baz=203,slow=8.3,SNR=5.0
FINES LR LR 19 34 29.2
comp=Z,12µm,18.4s,baz=50,slow=38
FINES FINESS Array B 68.25 332 *i*P **P** **19 02 21.0 0.0**
FINES pmax pmax
comp=Z,633nm,0.8s
B08A Colville Reser 68.26 45 *e*P **P** **19 02 22.4 +1.0**
WTV Waterville 68.26 46 P **P** **19 02 22.3 +0.9**
I03D Drain, OR 68.37 51 P **P** **19 02 23.6 +1.5**
baz=302,SNR=29
ARMA Armidale 68.46 171 *e*P **P** **19 02 23.5 +0.8**
VSR Storozhevoye 68.48 319 *e*P **P** **19 02 22.3 -0.3**
VSR *e*S **S** **19 11 20.2 -1.1**
VSR *e*SS **SS** **19 15 52.3 +7.5**
VSR pmax pmax
comp=Z,760nm,0.7s
VSR pmax pmax
comp=Z,150nm,0.6s
VSR smax smax
comp=N,1µm,8.4s
VSR MLR MLR
comp=Z,32µm,16.0s
VFP Flag Point 68.65 49 P **P** **19 02 25.4 +1.3**
EDM Edmonton 68.72 39 *e*P **P** **19 02 24.8 +0.6**
EDM Edmonton 68.72 39 *e*P **P** **19 02 24.8 +0.6**
G05D Wamic, OR 68.78 49 P **P** **19 02 26.2 +1.5**
baz=303,SNR=14
KONS Konsvik 68.86 340⇑*iP* **P** **19 02 24.4 -0.3**
KONS IVmB_BB 19 02 25.0
comp=Z,2µm,3.5s
IRO Indian Ridge 68.88 50 *e*P **P** **19 02 26.9 +1.4**
I04A Tendick Farm, 68.90 51 P **P** **19 02 26.8 +1.3**
baz=302,SNR=54
E07A Sunnyside 68.93 47 *e*P **P** **19 02 27.5 +1.9**
L02D Cave Junction, 69.03 53 P **P** **19 02 28.1 +1.9**
baz=302,SNR=15
GROC Groznyy 69.05 309 *e*P **P** **19 02 26.0 -0.3**
GROC pmax pmax
comp=Z,404nm,1.2s
CROR Criterion Ridg 69.12 49 P **P** **19 02 28.1 +1.2**
C09A Chrisman Ranch 69.16 45 *e*P **P** **19 02 28.0 +1.1**
KRMB Red Mountain 69.18 53 *e*P **P** **19 02 29.5 +2.2**
G06A Carlson Farm, 69.19 48 *e*P **P** **19 02 28.4 +1.2**
HUMO Hull Mountain 69.20 52 *e*P **P** **19 02 28.9 +1.6**
D08A Wollman Farm, 69.20 46 *e*P **P** **19 02 28.1 +0.9**
HAWA Hanford 69.21 47 *e*P **P** **19 02 28.5 +1.2**
HAWA LR LR
comp=Z,5µm,21.0s
I05D Terrebonne, OR 69.26 50 P **P** **19 02 28.9 +1.2**
baz=303,SNR=10
STKA Stephens Creek 69.26 180 P **P** **19 02 27.5 0.0**
comp=Z,50nm,0.9s,baz=344,slow=7.7,SNR=50
STKA PKPPKP **P'P'df** **19 30 37.4 +6.1**
comp=Z,8.4nm,1.0s,baz=154,slow=3.6,SNR=8.9
STKA LR LR 19 31 35.6
comp=Z,6µm,21.6s,baz=5.7,slow=35
VTHM Trough 69.27 49 P **P** **19 02 29.1 +1.3**
FORT Forrest 69.32 192 *e*P **P** **19 02 28.1 +0.2**
J04D Umpqua Nationa 69.38 51 P **P** **19 02 30.3 +1.7**
baz=303,SNR=44
JMIC Jan Mayen 69.47 350⇑*iP* **P** **19 02 29.4 +1.0**
JMIC IVmB_BB 19 02 47.5
comp=Z,3µm,2.4s
JMIC *e*S **S** **19 11 35.7 +3.2**
JMIC IVMs_BB IVMs_BB 19 36 11.3
comp=Z,2µm,15.6s
JCC Jacoby Creek, 69.48 54 *e*P **P** **19 02 31.3 +2.4**
NEW Newport 69.54 44 LR LR 19 29 20.8
comp=Z,4µm,20.7s,baz=300,slow=33
NEW Newport 69.54 44 P **P** **19 02 30.1 +0.8**
baz=304,SNR=80
NEW Newport 69.54 44 *e*P **P** **19 02 30.3 +0.9**
NEW Newport 69.54 44 *e*P **P** **19 02 30.3 +0.9**
KHMM Horse Mountain 69.64 54 *e*P **P** **19 02 32.6 +2.4**
GOF Gofitskoye 69.71 312⇑*e*P **P** **19 02 30.7 +0.3**
GOF *e*S S 19 11 55.1 +19
GOF pmax pmax
comp=Z,1µm,0.9s
GOF smax smax
comp=E,145nm,1.6s
GOF smax smax
comp=N,66nm,1.3s
BUOR Burton Butte 69.82 52 *e*P **P** **19 02 33.0 +1.7**
YBH Yreka Blue Hor 69.82 53 *e*P **P** **19 02 33.0 +1.8**
YBH Yreka Blue Hor 69.82 53 *e*P **P** **19 02 33.0 +1.8**
J05D Fort Rock, OR 69.89 50 P **P** **19 02 32.5 +0.8**
baz=303,SNR=72
VSU Vasula 69.91 329*c iP* **P** **19 02 31.5 +0.2**
VSU pmax pmax
comp=Z,2µm,1.0s
VSU MLR MLR
comp=Z,29µm,18.0s
M02C Callahan 69.92 53 P **P** **19 02 32.6 +0.8**
baz=303,SNR=30
K04D Chiloquin, OR 69.93 51 P **P** **19 02 33.6 +1.6**
baz=303
E09A Wood Farm, Sta 69.94 46 *e*P **P** **19 02 32.8 +1.0**
SUMG Summit 69.98 0⇑*iP* **P** **19 02 33.0 +0.9**
comp=Z,325nm,1.0s
SUMG *i* 19 30 29.3
comp=Z,15µm,24.0s
SUMG Summit 69.98 0 *e*P **P** **19 02 32.7 +0.6**
SUMG Summit 69.98 0 *e*P **P** **19 02 32.7 +0.6**
KMRM Mail Ridge 70.00 54 *e*P **P** **19 02 32.9 +0.5**
G08A Pilot Rock 70.15 48 *e*P **P** **19 02 34.2 +0.9**
N02D Trinity Center 70.24 53 P **P** **19 02 34.7 +0.9**
baz=303,SNR=29
NCK Nalchik 70.24 310*c iP* **P** **19 02 33.6 -0.1**
NCK pmax pmax
comp=Z,418nm,1.1s
NCK MLR MLR
comp=Z,16µm,18.0s
GUDG Gudauri 70.27 309 P **P** **19 02 34.5 +0.4**
DUS Dusheti 70.33 308 P **P** **19 02 37.0 +2.7**
DUS Dusheti 70.33 308 P **P** **19 02 37.0 +2.7**
M04C Macdoel 70.34 52 P **P** **19 02 36.0 +1.5**
baz=303,SNR=44
K05A Summer Lake 70.41 51 *e*P **P** **19 02 36.9 +1.9**
ZEI Tsey 70.44 309 *e*P P 19 02 29.2 -6.0
ZEI pmax pmax
comp=Z,530nm,0.7s
SEAG Tbilisi Sea 70.45 308 P **P** **19 02 35.5 +0.5**
KBZ Khabaz 70.53 311 P **P** **19 02 35.7 +0.3**
comp=Z,427nm,0.9s,baz=63,slow=4.9,SNR=356
KBZ PKP2ab 19 30 30.4
comp=Z,1.8nm,0.6s,baz=219,slow=4.5,SNR=5.8
KBZ LR LR 19 38 29.0
comp=Z,12µm,18.2s,baz=46,slow=40
KIV Kislovodsk 70.53 311 P **P** **19 02 36.3 +0.7**
KIV Kislovodsk 70.53 311 *e*P **P** **19 02 36.0 +0.4**
KIV *e* 19 05 12.5
KIV *e*S **S** **19 11 46.7 +0.7**
KIV *e*SS **SS** **19 16 24.5 +7.5**
KIV pmax pmax
comp=Z,2µm,1.1s
KIV pmax pmax
comp=Z,481nm,4.7s
KIV MLR MLR
comp=Z,12µm,18.0s
KIV Kislovodsk 70.53 311 P **P** **19 02 36.3 +0.7**
SNR=415
KIV Kislovodsk 70.53 311 *e*P **P** **19 02 36.2 +0.7**
KIV LR LR
comp=Z,11µm,19.0s
WDC Whiskeytown Da 70.56 53 *e*P **P** **19 02 36.9 +1.3**
WDC Whiskeytown Da 70.56 53 *e*P **P** **19 02 36.9 +1.3**
F10A Beach Ranch, E 70.77 46 *e*P **P** **19 02 37.8 +0.8**
WSAR Wadi Sarin 70.80 285 P **P** **19 02 37.8 +0.4**
comp=Z,174nm,1.0s,baz=90,slow=4.6,SNR=60
ONI Oni 70.83 309 P **P** **19 02 38.1 +0.7**
ONI Oni 70.83 309 P **P** **19 02 38.1 +0.7**
WALA Waterton Lakes 70.84 42 *e*P **P** **19 02 38.5 +1.1**
BIDO Bidbid 71.03 285 P **P** **19 02 39.0 +0.2**
SNR=46
BSMT Bassoo Peak 71.07 44 *e*P **P** **19 02 40.1 +1.2**
HOPS Hopland Field 71.08 55 *e*P **P** **19 02 39.9 +1.0**
BANOM Banah 71.09 288 P **P** **19 02 39.6 +0.4**
BANOM Banah 71.09 288 P **P** **19 02 39.6 +0.4**
SNR=25
BANOM S **S** **19 11 53.5 +0.6**
O03D Paynes Creek 71.18 53 P **P** **19 02 40.2 +0.7**
baz=304,SNR=43
BLMT Blacktail Moun 71.20 43 *e*P **P** **19 02 41.0 +1.2**
MOD Modoc Plateau 71.23 51 *e*P **P** **19 02 41.0 +1.1**
SMDO Samad 71.34 285 P **P** **19 02 40.9 +0.1**
SNR=49
BMO Blue Mountains 71.37 47 *e*P **P** **19 02 41.7 +1.0**
BMO LR LR
comp=Z,4µm,21.0s
GNI Garni 71.38 307 P **P** **19 02 41.5 +0.6**
comp=Z,200nm,1.0s,baz=356,slow=2.6
GNI Garni 71.38 307 P **P** **19 02 42.2 +1.3**
GNI Garni 71.38 307*ce*P **P** **19 02 41.8 +1.0**
GNI pmax pmax
comp=Z,2µm,1.7s
GNI MLR MLR
comp=Z,36µm,19.0s
GNI Garni 71.38 307 P **P** **19 02 41.8 +1.0**
SNR=69
GNI Garni 71.38 307 *e*P **P** **19 02 41.9 +1.0**
GNI LR LR
comp=Z,19µm,21.0s
JTMT Jette 71.40 44 *e*P **P** **19 02 42.1 +1.2**
SCO Scoresbysund 71.42 354⇑*iP* **P** **19 02 41.3 +1.0**
comp=Z,166nm,0.9s
comp=Z,7µm,25.0s
AKH Akhalkalaki 71.46 308⇑*iP* **P** **19 02 42.5 +1.1**
AKH Akhalkalaki 71.46 308 P **P** **19 02 42.3 +0.9**
BGD Bogdanovka 71.48 308 P **P** **19 02 42.6 +1.1**
YBMT Yellow Bay 71.48 43 *e*P **P** **19 02 42.5 +1.2**
CHVG Ch'k'valeri 71.59 310 P **P** **19 02 42.5 +0.6**
HOQ Hoqain 71.62 286 P **P** **19 02 42.5 +0.1**
SNR=65
GARM Arbuckle 71.64 55 *e*P **P** **19 02 44.5 +2.3**
MCCM Marconi Confer 71.68 56 *e*P **P** **19 02 43.5 +1.1**
JMDO Jabal Madar 71.68 284 P **P** **19 02 42.8 0.0**
SNR=59
SWMT Swartz Lake 71.70 44 *e*P **P** **19 02 43.5 +1.0**
UOSS Minazif 71.70 288 *e*P **P** **19 02 42.2 -0.6**
ORV Oroville 71.79 54 *e*P **P** **19 02 43.7 +0.6**
ORV Oroville 71.79 54 *e*P **P** **19 02 43.7 +0.6**
HATD Hatta, Dubai 71.83 288 P **P** **19 02 43.8 +0.2**
HATD Hatta, Dubai 71.83 288 P **P** **19 02 43.9 +0.3**
SNR=55
IZAR Zarasai 71.88 327 *e*P **P** **19 02 44.0 +0.7**
IZAR IAmb IAmb 19 02 44.5
comp=Z,170nm,0.6s
IDID Didziasalis 71.95 327 *e*P **P** **19 02 44.5 +0.7**
IDID IAmb IAmb 19 02 45.8
comp=Z,268nm,0.9s
WVOR Wild Horse Val 71.95 50 *e*P **P** **19 02 45.5 +1.3**
WVOR Wild Horse Val 71.95 50 *e*P **P** **19 02 45.5 +1.3**
ASHO Ashiyiah 71.96 287 P **P** **19 02 44.8 +0.4**
ASHO Ashiyiah 71.96 287 P **P** **19 02 44.6 +0.2**
SNR=59
ASHO S **S** **19 12 02.1 -0.8**
MICGM Minsk 71.98 326⇑*iP* **P** **19 02 44.0 0.0**
MICGM PM 19 02 45.0
comp=Z,1.1nm,1.0s
MICGM PM 19 02 45.0
comp=N,1.0nm,1.0s
MICGM PM 19 02 46.0
comp=E,0.3nm,1.0s
MICGM *e*PcP **PcP** **19 03 03.0 +0.6**
MICGM *e*PP **PP** **19 05 20.0 -3.6**
MICGM *e*PPP PPP 19 07 08.0
MICGM *e*PsP 19 09 04.0
MICGM *e*S **S** **19 12 02.0 -0.1**
MICGM *e*PS **PnS** **19 12 32.0 -3.6**
MICGM *e*ScS **ScS** **19 12 48.0 +1.6**
MICGM *e*SS **SS** **19 16 36.0 -2.3**
MICGM *e*SSS SSS 19 19 38.0
MICGM *e*LQ LQ 19 26 14.0
MICGM *e*LR LR 19 29 08.0
MICGM LRM MLR 19 36 48.0
comp=Z,23nm,16.0s
MICGM LRM MLR 19 36 48.0
comp=Z,13nm,16.0s
MICGM LRM MLR 19 36 52.0
comp=N,23nm,16.0s
MICGM LRM MLR 19 36 56.0
comp=N,7.7nm,16.0s
MICGM LRM MLR 19 37 22.0
comp=E,27nm,16.0s
MICGM LRM MLR 19 37 44.0
comp=E,6.3nm,16.0s
MNK Minsk 71.98 326⇑*iP* **P** **19 02 44.0 0.0**
MNK *e* 19 03 03.0
MNK *e* 19 05 20.0
MNK *e*PPP PPP 19 07 08.0
MNK *e*S **S** **19 12 02.0 -0.1**
MNK *e* 19 12 48.0
MNK *e*SS **SS** **19 16 36.0 -2.3**
MNK pmax pmax
comp=N,970nm,1.0s
MNK pmax pmax
comp=Z,2µm,1.0s
MNK pmax pmax
comp=E,290nm,1.0s
MNK MLR MLR
comp=Z,13µm,18.0s
MNK MLR MLR
comp=Z,23µm,18.0s
MNK MLR MLR
comp=N,23µm,18.0s
MNK MLR MLR
comp=N,8µm,18.0s
MNK MLR MLR
comp=E,26µm,16.0s
MNK MLR MLR
comp=E,6µm,16.0s
ISAL Salakas 72.05 327 *e*P **P** **19 02 45.1 +0.8**
ISAL IAmb IAmb 19 02 45.7
comp=Z,273nm,0.7s
NAZ Nazwa, Dubai 72.09 288 P **P** **19 02 44.9 -0.2**
NAZ Nazwa, Dubai 72.09 288 P **P** **19 02 45.1 -0.1**
SNR=37
NAZ S **S** **19 12 08.0 +3.7**
MSO Missoula 72.13 44 P **P** **19 02 45.8 +0.6**
baz=306,SNR=39
MSO Missoula 72.13 44 *e*P **P** **19 02 45.8 +0.6**
SLMT Seeley Lake 72.13 44 *e*P **P** **19 02 46.0 +0.7**

NACGM	**Naroch**	72.20	327	*e*P		**P**		**19 02 44.0**	**-1.3**
NACGM				*e*P		**P**		**19 02 44.0**	**-1.3**
NACGM				PM				19 02 47.0	
	comp=Z,0.9nm,1.0s								
NACGM				*e*PP		PP		19 05 02.0	-23
NACGM				*e*PPP		PPP		19 07 06.0	
NACGM				*e*S		**S**		**19 12 02.0**	**-2.6**
NACGM				*e*SS		SS		19 16 28.0	-14
NACGM				*e*SSS		SSS		19 20 10.0	
NACGM				*e*LQ		LQ		19 27 10.0	
NACGM				*e*LR		LR		19 32 02.0	
NACGM				LRM		MLR		19 37 14.0	
	comp=Z,40nm,18.0s								
FAQ	**Al Faqa, Dubai**	**72.28**	**288**	P		**P**		**19 02 46.1**	**-0.2**
FAQ	**Al Faqa, Dubai**	**72.28**	**288**	P		**P**		**19 02 46.1**	**-0.2**
	SNR=34								
ARQ	**Araqi**	**72.36**	**286**	P		**P**		**19 02 47.0**	**+0.2**
	SNR=72								
CHMT	**Chamberlain Mo**	**72.46**	**44**	*e*P		**P**		**19 02 47.6**	**+0.3**
AFDM	**Forest Hills D**	**72.47**	**54**	*e*P		**P**		**19 02 48.1**	**+0.9**
SOC	**Sochi**	**72.51**	**312***c*	*i*P		**P**		**19 02 47.5**	**+0.1**
SOC				*e**PP		**pP**		**19 03 00.5**	**+0.9**
SOC				*e*				19 05 24.8	
SOC				*e*PPP		PPP		19 07 12.3	
SOC				*e*S		**S**		**19 12 11.1**	**+2.5**
SOC				pmax		pmax			
	comp=Z,389nm,0.8s								
SOC				MLR		MLR			
	comp=Z,9µm,18.0s								
ILULI	**Ilulissat**	**72.95**	**5**⇑	*i*P		**P**		**19 02 49.7**	**+0.2**
	comp=Z,6µm,20.0s								
CAN	**Canberra**	**73.02**	**174**	*e*P		**P**		**19 02 50.7**	**+0.4**
CAN				MLR		MLR			
	comp=Z,6µm,21.0s								
CAN	**Canberra**	**73.02**	**174**	*e*P		**P**		**19 02 50.7**	**+0.4**
CAN				LR		LR			
	comp=Z,6µm,21.0s								
PAHR	**Pah Rah Range**	**73.05**	**53**	*e*P		**P**		**19 02 51.9**	**+1.0**
FFC	**Flin Flon**	**73.05**	**33**	*e*P		**P**		**19 02 50.8**	**+0.4**
FFC				MLR		MLR			
	comp=Z,5µm,22.0s								
FFC	**Flin Flon**	**73.05**	**33**	*e*P		**P**		**19 02 50.8**	**+0.4**
FFC				LR		LR			
	comp=Z,5µm,22.0s								
MFID	**Camas Ranch**	**73.07**	**48**	*e*P		**P**		**19 02 52.0**	**+1.1**
ANN	**Anapa**	**73.13**	**314***c*	*i*P		**P**		**19 02 50.7**	**-0.3**
ANN				*i* *PP		**pP**		**19 02 59.8**	**-3.4**
ANN				*i*				19 05 34.3	
ANN				*e*PPP		PPP		19 07 18.7	
ANN				*e*S		**S**		**19 12 12.9**	**-2.6**
ANN				*e*				19 12 52.1	
ANN				*e*SS		**SS**		**19 16 56.8**	**+0.4**
ANN				pmax		pmax			
	comp=N,209nm,1.5s								
ANN				pmax		pmax			
	comp=Z,940nm,1.5s								
ANN				pmax		pmax			
	comp=E,211nm,1.5s								
ANN				MLR		MLR			
	comp=Z,9µm,19.0s								
PNTR	**Pine Nut**	**73.27**	**53**	*e*P		**P**		**19 02 53.6**	**+1.4**
FCC	**Fort Churchill**	**73.32**	**27**	*e*P		**P**		**19 02 52.0**	**+0.2**
FCC	**Fort Churchill**	**73.32**	**27**	*e*P		**P**		**19 02 52.0**	**+0.2**
HRY	**Holter Researc**	**73.36**	**43**	*e*P		**P**		**19 02 53.6**	**+1.1**
CMB	**Columbia Colle**	**73.37**	**55**	*e*P		**P**		**19 02 53.6**	**+1.0**
CMB	**Columbia Colle**	**73.37**	**55**	*e*P		**P**		**19 02 53.6**	**+1.0**
SAO	**San Andreas Ge**	**73.40**	**56**	*e*P		**P**		**19 02 53.6**	**+0.8**
SAO	**San Andreas Ge**	**73.40**	**56**	*e*P		**P**		**19 02 53.6**	**+0.8**
DOMB	**Dombas**	**73.43**	**339**	*i*P		**P**		**19 02 52.9**	**+0.3**
DOMB				IVmB_BB				19 02 53.2	
	comp=Z,5µm,0.9s								
DOMB				*e*S		**S**		**19 12 13.6**	**-5.0**
DOMB				IVMs_BB		IVMs_BB		19 38 08.4	
	comp=Z,10µm,17.1s								
YERR	**Yerington**	**73.55**	**53**	*e*P		**P**		**19 02 55.2**	**+1.3**
LRM	**Limekiln Ridge**	**73.56**	**44**	*e*P		**P**		**19 02 54.9**	**+1.0**
NB2	**NORSAR Subarra**	**73.58**	**337**	P		**P**		**19 02 53.4**	**0.0**
	comp=Z,659nm,0.9s,baz=38,slow=5.9								
NB2	**NORSAR Subarra**	**73.58**	**337**	P		**P**		**19 02 53.4**	**0.0**
	baz=38,slow=5.9								
NOA	**NORSAR Array B**	**73.58**	**337**	P		**P**		**19 02 53.5**	**+0.1**
	comp=Z,444nm,0.9s,baz=38,slow=5.8,SNR=729								
NOA				LR		LR		19 37 52.5	
	comp=Z,19µm,21.5s,baz=35,slow=38								
EGMT	**Eagleton**	**73.67**	**42**	P		**P**		**19 02 55.0**	**+0.7**
	baz=309,SNR=103								
EGMT	**Eagleton**	**73.67**	**42**	*e*P		**P**		**19 02 55.1**	**+0.9**
EGMT				LR		LR			
	comp=Z,4µm,21.0s								
WAKR	**Walker**	**73.71**	**54**	*e*P		**P**		**19 02 56.2**	**+1.4**
NC602	**NORSAR Array S**	**73.72**	**337**⇑	*i*P		**P**		**19 02 54.0**	**-0.1**
NC602				IVmB_BB				19 02 54.5	
	comp=Z,3µm,1.4s								
NC602				*e*sP		**sP**		**19 03 11.1**	**0.0**
NC602				*e*S		**SKiKP**		**19 12 19.3**	**-0.7**
NC602				IVMs_BB		IVMs_BB		19 38 34.8	
	comp=Z,9µm,16.0s								
DLMT	**Dillon**	**73.76**	**45**	*e*P		**P**		**19 02 55.7**	**+0.8**
HLID	**Hailey**	**73.81**	**47**	P		**P**		**19 02 56.0**	**+0.7**
	baz=307,SNR=93								
HLID	**Hailey**	**73.81**	**47**	*e*P		**P**		**19 02 56.6**	**+1.3**
HLID				LR		LR			
	comp=Z,5µm,22.0s								
AKASG	**Malin Array Be**	**73.81**	**322**	P		**P**		**19 02 54.8**	**-0.2**
	comp=Z,345nm,0.6s,baz=46,slow=6.2,SNR=1268								
AKASG				PKPPKP		**P'P'df**		**19 30 30.3**	**-3.8**
	comp=Z,0.1nm,0.3s,baz=255,slow=3.7,SNR=4.8								
AKASG				LR		LR		19 38 49.6	
	comp=Z,19µm,18.1s,baz=45,slow=38								
AKASG	**Malin Array Be**	**73.81**	**322**	*i* P		**P**		**19 02 54.7**	**-0.2**
AKASG				pmax		pmax			
	comp=Z,353nm,0.6s								
AKBB	**Malin Array Si**	**73.81**	**322**	*e*P		**P**		**19 02 54.8**	**-0.1**
AKBB	**Malin Array Si**	**73.81**	**322**	*e*P		**P**		**19 02 54.8**	**-0.1**
KIEV	**Kiev**	**73.82**	**322***c*	*i*P		**P**		**19 02 54.6**	**-0.4**
KIEV				pmax		pmax			
	comp=Z,630nm,0.9s								
KIEV				MLR		MLR			
	comp=Z,22µm,17.0s								
KIEV	**Kiev**	**73.82**	**322**	*e*P		**P**		**19 02 54.0**	**-0.9**
KIEV				LR		LR			
	comp=Z,13µm,19.0s								
LCCM	**Lewis and Clar**	**73.87**	**44**	*e*P		**P**		**19 02 56.6**	**+1.1**
NWAO	**Narrogin (SRO)**	**73.87**	**201**	*e*P		**P**		**19 02 55.2**	**-0.1**
NWAO				MLR		MLR			
	comp=Z,3µm,22.0s								
NWAO	**Narrogin (SRO)**	**73.87**	**201**	P		**P**		**19 02 55.7**	**+0.4**
	SNR=11								
NWAO	**Narrogin (SRO)**	**73.87**	**201**	*e*P		**P**		**19 02 55.2**	**-0.1**
NWAO				LR		LR			
	comp=Z,3µm,22.0s								
AKN	**Aaknes**	**73.90**	**340**⇑	*i*P		**P**		**19 02 56.0**	**+0.7**
AKN				IVmB_BB				19 02 57.1	
	comp=Z,3µm,4.9s								
AKN				*e*S		**S**		**19 12 26.5**	**+2.7**
AKN				IVMs_BB		IVMs_BB		19 38 46.8	
	comp=Z,4µm,20.1s								
MCMT	**McKenzie Canyo**	**73.94**	**45**	*e*P		**P**		**19 02 56.4**	**+0.2**
BMN	**Battle Mountai**	**73.98**	**51**	*e*P		**P**		**19 02 57.8**	**+1.5**
BMN	**Battle Mountai**	**73.98**	**51**	*e*P		**P**		**19 02 57.8**	**+1.5**
BOZ	**Bozeman (W)**	**74.12**	**44**	P		**P**		**19 02 58.4**	**+1.4**
	baz=308,SNR=86								
BOZ	**Bozeman (W)**	**74.12**	**44**	*e*P		**P**		**19 02 58.3**	**+1.2**
BOZ				MLR		MLR			
	comp=Z,3µm,21.0s								
BOZ	**Bozeman (W)**	**74.12**	**44**	*e*P		**P**		**19 02 58.2**	**+1.2**
BOZ				LR		LR			
	comp=Z,3µm,21.0s								
PMPB	**Monarch Peak**	**74.14**	**56**	*e*P		**P**		**19 02 58.4**	**+1.2**
BGMT	**Barton Gulch**	**74.15**	**45**	*e*P		**P**		**19 02 58.4**	**+1.1**
TVH3	**East Aurora ar**	**74.19**	**54**	*e*P		**P**		**19 02 59.0**	**+1.4**
TVH2	**Borealis Mine**	**74.22**	**54**	*e*P		**P**		**19 02 59.2**	**+1.4**
SUW	**Suwalki**	**74.36**	**327**	*i* P		**P**		**19 02 57.9**	**-0.1**
SUW				*e*S		**S**		**19 12 27.1**	**-2.0**
SUW				LMZ		LR		19 38 43.4	
	comp=Z,21µm,19.0s								
BZMT	**Bozeman Pass**	**74.58**	**44**	*e*P		**P**		**19 03 01.1**	**+1.3**
OSL	**Oslo**	**74.60**	**337**⇑	*i*P		**P**		**19 02 59.5**	**+0.2**
OSL				IVmB_BB				19 02 59.8	
	comp=Z,6µm,1.0s								
OSL				IVMs_BB		IVMs_BB		19 38 50.8	
	comp=Z,7µm,19.9s								
MLAC	**Mammoth, Mammo**	**74.60**	**54**	P		**P**		**19 03 01.6**	**+1.6**
	baz=306,SNR=13								

TPMT	**Tepee Creek**	**74.67**	**45**	*e*P		**P**		**19 03 01.9**	**+1.5**
QLMT	**Earthquake Lak**	**74.74**	**45**	*e*P		**P**		**19 03 02.0**	**+1.3**
PAGB	**Antelope Grade**	**74.78**	**57**	*e*P		**P**		**19 03 02.3**	**+1.4**
SIM	**Simferopol'**	**74.91**	**315***c*	*e*P		**P**		**19 03 01.8**	**+0.4**
SIM				*e*				19 05 47.0	
SIM				*e*S		**S**		**19 12 34.0**	**-1.6**
SIM				pmax		pmax			
	comp=Z,521nm,0.9s								
SIM				MLR		MLR			
	comp=Z,12µm,16.0s								
FOO	**Floro**	**74.91**	**340**⇑	*i*P		**P**		**19 03 01.5**	**+0.4**
FOO				IVmB_BB				19 03 02.1	
	comp=Z,4µm,3.9s								
FOO				*e*S		**S**		**19 12 35.9**	**+0.9**
FOO				IVMs_BB		IVMs_BB		19 40 52.0	
	comp=Z,4µm,14.5s								
YHB	**Horse Butte**	**74.92**	**45**	*e*P		**P**		**19 03 03.1**	**+1.4**
YMC	**Maple Creek**	**75.02**	**45**	*e*P		**P**		**19 03 03.9**	**+1.5**
YHH	**Holmes Hill**	**75.09**	**45**	*e*P		**P**		**19 03 04.2**	**+1.3**
YMR	**Madison River**	**75.10**	**45**	*e*P		**P**		**19 03 04.5**	**+1.7**
RCTC	**Rector, Farmer**	**75.11**	**56**	P		**P**		**19 03 04.1**	**+1.4**
	baz=306								
GCMT	**Greycliff**	**75.11**	**43**	*e*P		**P**		**19 03 04.0**	**+1.2**
KONO	**Kongsberg**	**75.17**	**337***c*	*i*P		**P**		**19 03 02.7**	**+0.1**
KONO				pmax		pmax			
	comp=Z,1µm,0.9s								
KONO				MLR		MLR			
	comp=Z,100µm,18.0s								
KONO	**Kongsberg**	**75.17**	**337**	*e*P		**P**		**19 03 02.9**	**+0.2**
KONO				LR		LR			
	comp=Z,18µm,19.0s								
SFJD	**Kangerlussuaq**	**75.17**	**5**⇑	*i*P		**P**		**19 03 02.8**	**+0.3**
	comp=Z,6µm,24.0s								
SFJD	**Kangerlussuaq**	**75.17**	**5**	*e*P		**P**		**19 03 02.8**	**+0.3**
SFJD				MLR		MLR			
	comp=Z,5µm,22.0s								
SFJD	**Kangerlussuaq**	**75.17**	**5**	*e*P		**P**		**19 03 02.8**	**+0.3**
SFJD				LR		LR			
	comp=Z,5µm,22.0s								
KLNR	**Kaliningrad**	**75.18**	**329***c*	*i*P		**P**		**19 03 02.5**	**-0.2**
KLNR				pmax		pmax			
	comp=Z,707nm,1.0s								
KLNR				MLR		MLR			
	comp=Z,14µm,17.0s								
SMMC	**Simmler**	**75.19**	**57**	P		**P**		**19 03 04.7**	**+1.4**
	baz=306,SNR=16								
MCID	**Moose Creek**	**75.27**	**45**	*e*P		**P**		**19 03 06.0**	**+2.2**
YFT	**Old Faithful**	**75.31**	**45**	*e*P		**P**		**19 03 06.9**	**+2.9**
TIN	**Tinemaha, Big**	**75.33**	**54**	P		**P**		**19 03 05.6**	**+1.4**
	baz=306,SNR=8.6								
CRGC	**Crocker Grade**	**75.42**	**57**	*e*P		**P**		**19 03 01.4**	**-3.3**
YPP	**Pitchstone Pla**	**75.44**	**45**	*e*P		**P**		**19 03 07.2**	**+2.4**
SUE	**Sulen**	**75.44**	**340**⇑	*i*P		**P**		**19 03 04.7**	**+0.6**
SUE				IVmB_BB				19 03 05.2	
	comp=Z,4µm,3.5s								
SUE				*e*S		**S**		**19 12 40.8**	**-0.1**
SUE				IVMs_BB		IVMs_BB		19 40 30.6	
	comp=Z,4µm,15.2s								
YLT	**Little Thumb C**	**75.45**	**45**	*e*P		**P**		**19 03 08.2**	**+3.3**
LKWY	**Lake**	**75.48**	**45**	*e*P		**P**		**19 03 08.3**	**+3.3**
LKWY				MLR		MLR			
	comp=Z,5µm,20.0s								
LKWY	**Lake**	**75.48**	**45**	*e*P		**P**		**19 03 08.3**	**+3.3**
LKWY				LR		LR			
	comp=Z,5µm,20.0s								
H17A	**Grant Village**	**75.49**	**45**	*e*P		**P**		**19 03 08.0**	**+2.9**
	comp=Z,815nm,1.1s								
VES	**Vestal, Richgr**	**75.49**	**56**	P		**P**		**19 03 05.6**	**+0.7**
	baz=306,SNR=63								
PKM	**Mcpherson Peak**	**75.56**	**57**	P		**P**		**19 03 05.7**	**+0.1**
	baz=306,SNR=32								
IMW	**Indian Meadow**	**75.59**	**45**	*e*P		**P**		**19 03 07.6**	**+1.8**
FLWY	**Flagg Ranch**	**75.61**	**45**	*e*P		**P**		**19 03 07.9**	**+2.2**
YTP	**The Promontory**	**75.65**	**45**	*e*P		**P**		**19 03 08.2**	**+2.1**
RLMT	**Red Lodge**	**75.75**	**44**	P		**P**		**19 03 07.7**	**+1.2**
	baz=310,SNR=38								
RLMT	**Red Lodge**	**75.75**	**44**	*e*P		**P**		**19 03 07.8**	**+1.3**
RLMT				LR		LR			
	comp=Z,3µm,21.0s								
CWC	**Cottonwood Cre**	**75.79**	**55**	P		**P**		**19 03 07.7**	**+0.8**
	baz=307								
ASK	**Askoy**	**75.79**	**339**⇑	*i*P		**P**		**19 03 07.0**	**+0.8**
ASK				IVmB_BB				19 03 07.3	
	comp=Z,3µm,0.8s								
MOOW	**Moose Ponds**	**75.80**	**45**	*e*P		**P**		**19 03 08.3**	**+1.5**
BER	**Bergen**	**75.84**	**339**⇑	*i*P		**P**		**19 03 07.2**	**+0.8**
BER				IVmB_BB				19 03 07.6	
	comp=Z,4µm,0.8s								
BER				*e*S		**S**		**19 12 46.0**	**+0.8**
BER				IVMs_BB		IVMs_BB		19 39 45.3	
	comp=Z,7µm,16.0s								
TPAW	**Teton Pass**	**75.84**	**46**	*e*P		**P**		**19 03 08.5**	**+1.4**
HVU	**Hansel Valley**	**75.85**	**48**	*e*P		**P**		**19 03 08.5**	**+1.4**
HVU	**Hansel Valley**	**75.85**	**48**	*e*P		**P**		**19 03 08.5**	**+1.4**
ODD1	**Odda**	**75.86**	**338**⇑	*i*P		**P**		**19 03 07.3**	**+0.7**
ODD1				IVmB_BB				19 03 07.7	
	comp=Z,5µm,2.9s								
ODD1				*e*S		**S**		**19 12 44.1**	**-1.6**
ODD1				IVMs_BB		IVMs_BB		19 39 11.8	
	comp=Z,12µm,22.4s								
SBC	**Santa Barbara**	**75.89**	**57**	P		**P**		**19 03 09.0**	**+1.7**
	baz=306,SNR=7.3								
GRAC	**Grapevine Rang**	**75.92**	**54**	P		**P**		**19 03 08.6**	**+1.2**
	baz=307,SNR=41								
SORM	**Soroca**	**75.92**	**321**⇑	*i*P		**P**		**19 03 07.1**	**0.0**
SORM	**Soroca**	**75.92**	**321**⇑	P		**P**		**19 03 07.1**	**0.0**
LOHW	**Long Hollow**	**75.96**	**45**	*e*P		**P**		**19 03 09.4**	**+1.6**
SNOW	**Snow King Moun**	**75.97**	**46**	*e*P		**P**		**19 03 09.5**	**+1.7**
REDW	**Red Top Meadow**	**75.98**	**46**	*e*P		**P**		**19 03 09.3**	**+1.4**
ISA	**Isabella, Lake**	**75.99**	**56**	P		**P**		**19 03 07.9**	**+0.1**
	baz=307,SNR=12								
ISA	**Isabella, Lake**	**75.99**	**56**	*e*P		**P**		**19 03 08.0**	**+0.1**
ISA	**Isabella, Lake**	**75.99**	**56**	*e*P		**P**		**19 03 08.0**	**+0.1**
SHAO	**Shalim**	**76.06**	**282**	P		**P**		**19 03 08.3**	**-0.1**
	SNR=5.2								
ARVC	**Arvin**	**76.08**	**56**	P		**P**		**19 03 08.4**	**+0.1**
	baz=307,SNR=24								
MTUT	**Morton Thiokol**	**76.08**	**48**	*e*P		**P**		**19 03 09.9**	**+1.6**
DAC	**Darwin (Calif)**	**76.20**	**55**	*e*P		**P**		**19 03 09.7**	**+0.5**
DAC				pmax		pmax			
	comp=Z,230nm,1.1s								
DAC	**Darwin (Calif)**	**76.20**	**55**	*e*P		**P**		**19 03 09.7**	**+0.5**
	comp=Z,230nm,1.1s								
SCZ2	**Santa Cruz Isl**	**76.21**	**58**	P		**P**		**19 03 10.1**	**+1.0**
	baz=306								
AHID	**Auburn Hatcher**	**76.21**	**46**	*e*P		**P**		**19 03 10.2**	**+1.1**
AHID				LR		LR			
	comp=Z,5µm,22.0s								
DGMT	**Dagmar**	**76.22**	**39**	P		**P**		**19 03 09.4**	**+0.5**
	baz=312,SNR=26								
DGMT	**Dagmar**	**76.22**	**39**	*e*P		**P**		**19 03 09.0**	**+0.1**
DGMT				LR		LR			
	comp=Z,5µm,21.0s								
BGU	**Big Grassy Mou**	**76.22**	**49**	*e*P		**P**		**19 03 10.5**	**+1.2**
R11A	**Troy Canyon, C**	**76.24**	**52**	P		**P**		**19 03 10.1**	**+0.8**
	baz=308,SNR=133								
R11A	**Troy Canyon, C**	**76.24**	**52**	*e*P		**P**		**19 03 10.4**	**+1.0**
BLS5	**Blasjo**	**76.31**	**338**⇑	*i*P		**P**		**19 03 09.8**	**+0.7**
BLS5				IVmB_BB				19 03 10.3	
	comp=Z,3µm,1.1s								
BLS5				*e*sP		**sP**		**19 03 26.4**	**+0.2**
BLS5				IVMs_BB		IVMs_BB		19 39 24.9	
	comp=Z,12µm,20.7s								
SPUT	**South Promonto**	**76.33**	**48**	*e*P		**P**		**19 03 11.3**	**+1.5**
LAO	**LASA Array**	**76.36**	**41**	P		**P**		**19 03 10.8**	**+1.1**
	baz=311,SNR=52								
LAO	**LASA Array**	**76.36**	**41**	*e*P		**P**		**19 03 10.9**	**+1.1**
LAO				LR		LR			
	comp=Z,5µm,20.0s								
MPMC	**Manual Prospec**	**76.40**	**55**	P		**P**		**19 03 11.2**	**+0.9**
	baz=307,SNR=50								
HDU	**Hyde Park**	**76.43**	**47**	*e*P		**P**		**19 03 11.9**	**+1.5**
KIS	**Kishinev**	**76.43**	**320**⇑	*i*P		**P**		**19 03 09.0**	**-1.1**
	comp=Z,1µm,1.0s								
KIS	**Kishinev**	**76.43**	**320**	*e*PcP		**PcP**		**19 03 20.0**	**-1.7**
KIS	**Kishinev**	**76.43**	**320**	*e*PP		PP		19 05 20.0	-42
KIS	**Kishinev**	**76.43**	**320**	*i* PS				19 13 40.0	
KIS				*e*SS		SS		19 18 00.0	+14
KIS				*e*SSS		SSS		19 22 40.0	
KIS				*e*LQ		LQ		19 28 30.0	
	comp=Z,13µm,22.0s								
KIS				LRM		MLR		19 39 47.0	
	comp=Z,37µm,16.0s								
KIS	**Kishinev**	**76.43**	**320**⇑	*i*P		**P**		**19 03 10.2**	**+0.1**
KIS	**Kishinev**	**76.43**	**320**α	*i*P		**P**		**19 03 09.0**	**-1.1**

KIS				*e*				19 03 20.0		
KIS				*e*S		**S**		**19 12 46.0**	**-6.3**	
KIS				*i*				19 13 08.0		
KIS				*i* PS		**PnS**		**19 13 40.0**	**+6.3**	
KIS				pmax		pmax				
	comp=E,500nm,1.0s									
KIS				pmax		pmax				
	comp=Z,1µm,1.0s									
KIS				pmax		pmax				
	comp=N,600nm,4.0s									
KIS				pmax		pmax				
	comp=E,600nm,4.0s									
KIS				pmax		pmax				
	comp=Z,2µm,4.0s									
KIS				pmax		pmax				
	comp=Z,6µm,6.0s									
KIS				MLR		MLR				
	comp=E,21µm,16.0s									
KIS				MLR		MLR				
	comp=Z,34µm,16.0s									
KIS				MLR		MLR				
	comp=N,20µm,17.0s									
KIS				MLR		MLR				
	comp=Z,37µm,16.0s									
OSI	**Osito Audit: C**	**76.45**	**57**	P		**P**		**19 03 11.5**	**+1.0**	
	baz=307,SNR=14									
OSI	**Osito Audit: C**	**76.45**	**57**	*e*P		**P**		**19 03 12.1**	**+1.6**	
BLG	**Laguna Peak, P**	**76.52**	**57**	P		**P**		**19 03 11.5**	**+0.7**	
	baz=307,SNR=8.9									
GZU	**Grizzly Peak**	**76.54**	**48**	*e*P		**P**		**19 03 12.2**	**+1.0**	
FURC	**Furnace Creek,**	**76.56**	**54**	P		**P**		**19 03 12.0**	**+1.1**	
	baz=307,SNR=64									
SNUT	**Stansbury Nort**	**76.56**	**49**	*e*P		**P**		**19 03 12.6**	**+1.5**	
HOMB	**Homborsund**	**76.62**	**337**⇑	*i*P		**P**		**19 03 11.0**	**+0.1**	
HOMB				IVmB_BB				19 03 11.6		
	comp=Z,3µm,1.3s									
HOMB				*e*sP		**sP**		**19 03 28.0**	**+0.1**	
HOMB				*e*S		**S**		**19 12 52.5**	**-1.4**	
HOMB				IVMs_BB		IVMs_BB		19 40 01.1		
	comp=Z,10µm,18.6s									
LRMC	**Laurel Mtn Rad**	**76.62**	**56**	P		**P**		**19 03 12.2**	**+0.6**	
	baz=307,SNR=32									
BMUT	**Black Mountain**	**76.64**	**47**	*e*P		**P**		**19 03 13.2**	**+1.5**	
TPNV	**Topopah Spring**	**76.66**	**54**	P		**P**		**19 03 12.7**	**+0.9**	
	baz=307,SNR=148									
TPNV	**Topopah Spring**	**76.66**	**54**	*e*P		**P**		**19 03 12.8**	**+1.0**	
TPNV	**Topopah Spring**	**76.66**	**54**	*e*P		**P**		**19 03 12.8**	**+1.0**	
HWUT	**Hardware Ranch**	**76.67**	**48**	*e*P		**P**		**19 03 13.1**	**+1.3**	
HWUT				LR		LR				
	comp=Z,3µm,20.0s									
RAO	**Raoul Island**	**76.68**	**144**	LR		LR		19 30 07.9		
	comp=Z,8µm,21.5s,baz=352,slow=30									
RAO	**Raoul Island**	**76.68**	**144**	PFAKE				19 03 20.0	+8.5	
RAO				LR		LR				
	comp=Z,1179µm,20.0s									
SNCC	**San Nicolas Is**	**76.72**	**58**	P		**P**		**19 03 12.1**	**+0.2**	
	baz=307,SNR=8.8									
SNCC	**San Nicolas Is**	**76.72**	**58**	*e*P		**P**		**19 03 13.2**	**+1.2**	
RSUT	**Red Spur Mount**	**76.73**	**47**	*e*P		**P**		**19 03 13.8**	**+1.5**	
FSU	**Fish Springs**	**76.75**	**50**	*e*P		**P**		**19 03 13.6**	**+1.3**	
EDW2	**Edwards Air Fo**	**76.77**	**56**	P		**P**		**19 03 13.3**	**+1.0**	
	baz=307,SNR=66									
MCU	**Monte Cristo P**	**76.79**	**48**	*e*P		**P**		**19 03 13.8**	**+1.2**	
DUG	**Dugway, Tooele**	**76.81**	**49**	P		**P**		**19 03 13.0**	**+0.4**	
	baz=308,SNR=88									
DUG	**Dugway, Tooele**	**76.81**	**49**	*e*P		**P**		**19 03 13.9**	**+1.4**	
DUG				MLR		MLR				
	comp=Z,3µm,20.0s									
DUG	**Dugway, Tooele**	**76.81**	**49**	*e*P		**P**		**19 03 13.9**	**+1.4**	
DUG				LR		LR				
	comp=Z,3µm,20.0s									
KMY	**Karmoy**	**76.83**	**339**⇑	*i*P		**P**		**19 03 12.8**	**+0.7**	
KMY				IVmB_BB				19 03 13.3		
	comp=Z,2µm,0.8s									
KMY				*e*S		**S**		**19 12 51.4**	**-4.9**	
BSD	**Bornholm Skovb**	**76.88**	**332**⇑	*i*P		**P**		**19 03 12.4**	**0.0**	
	comp=E,678nm,1.0s								

JLU Jordanelle 77.36 48 eP P 19 03 17.0 +1.3
CIS Catalina Islan 77.38 58 P P 19 03 15.3 -0.4
baz=307
BFSC Mount Baldy Ra 77.38 57 P P 19 03 16.1 +0.3
baz=307,SNR=32
YEL1 Yell 77.38 342⇑ eP P 19 03 15.2 +0.1
RRX Edison Barstow 77.43 56 P P 19 03 16.8 +0.9
baz=307
HTU Hoyt Peak 77.45 48 eP P 19 03 17.6 +1.3
RBK Rabkut 77.46 282 P P 19 03 15.5 -0.9
SNR=9.0
PRAR RASCA 77.50 321⇑ iP P 19 03 16.3 +0.2
SCI2 San Clemente I 77.54 58 P P 19 03 17.0 +0.4
baz=307,SNR=6.0
KSRV Kasrt alli 77.55 306 eP P 19 03 17.3 +0.7
IMU Iron Mountain 77.57 51 eP P 19 03 18.4 +1.5
DAU Daniels Canyon 77.60 48 eP P 19 03 18.6 +1.4
DAU Daniels Canyon 77.60 48 eP P 19 03 18.6 +1.4
KWP Kalwaria Pacla 77.62 324 iP P 19 03 17.7 +1.0
KWP eS S 19 13 04.6 -0.7
KWP LMZ LR 19 35 39.3
comp=Z,10µm,26.8s
SHPR Sheep Range 77.63 53 eP P 19 03 18.5 +1.3
TLCR 77.63 318⇑ iP P 19 03 17.2 +0.4
TLCR 77.63 318 ⇑P P 19 03 17.2 +0.4
LLD Lille Linde 77.70 333 iP P 19 03 17.4 +0.4
comp=Z,400nm,0.8s
LRW Lerwick 77.77 342⇑ eP P 19 03 17.6 +0.3
LRW AMS AMS 19 41 11.3
comp=Z,7µm,23.0s
TUQ Turquoise Moun 77.79 55 P P 19 03 18.6 +0.5
baz=308,SNR=25
LEVU Levan 77.84 49 eP P 19 03 19.8 +1.4
BBRC Big Bear Solar 77.85 56 P P 19 03 19.3 +0.8
baz=308
MUD Monsted U'grnd 77.86 335⇑ iP P 19 03 18.4 +0.5
comp=Z,369nm,1.0s
comp=Z,23µm,20.0s
TESR Tescani 77.87 320⇑ iP P 19 03 18.6 +0.5
SAN1 Sandwick 77.88 342⇑ eP P 19 03 18.1 +0.1
HEC Hector,Ludlow 77.89 55 P P 19 03 19.3 +0.7
baz=308,SNR=45
RGN Rugen 77.91 332 eP P 19 03 19.1 +1.0
DWU Dry Willow Pea 77.99 51 eP P 19 03 20.6 +1.3
CFR Carcaliu 78.00 318⇑ iP P 19 03 19.0 +0.2
CFR Carcaliu 78.00 318 ⇑P P 19 03 19.0 +0.2
WCU Willow Creek 78.01 50 eP P 19 03 21.0 +1.5
D26A Manning 78.06 39 P P 19 03 20.0 +0.7
baz=313,SNR=28
MURC Murrieta 78.07 57 P P 19 03 20.1 +0.5
baz=308,SNR=8.6
CCUT Cedar City 78.11 52 eP P 19 03 21.3 +1.3
SGU Sterling 78.14 49 eP P 19 03 21.9 +1.7
ODBI Odobesti 78.17 319⇑ iP P 19 03 21.9 +2.1
MSU Marysvale 78.24 50 eP P 19 03 22.3 +1.7
MSU Marysvale 78.24 50 eP P 19 03 22.3 +1.7
SZCU Shurtz Canyon 78.25 51 eP P 19 03 21.9 +1.1
VRI Vrincioaia 78.26 320⇑ iP P 19 03 21.1 +0.7
VRI Vrincioaia 78.26 320 ⇑P P 19 03 21.2 +0.8
PLOR Plostina 78.31 320⇓ iP P 19 03 21.2 +0.5
PLOR Plostina 78.31 320 ⇓P P 19 03 21.2 +0.5
DGAR Diego Garcia 78.33 251 eP P 19 03 20.5 -0.6
DGAR MLR MLR
comp=Z,7µm,21.0s
DGAR Diego Garcia 78.33 251 eP P 19 03 20.5 -0.6
DGAR LR LR
comp=Z,7µm,21.0s
TMUT Trail Mountain 78.33 49 eP P 19 03 22.4 +1.2
GMRC Granite Mounta 78.36 55 P P 19 03 21.9 +0.7
baz=308,SNR=41
BHU Blowhard Mount 78.40 51 eP P 19 03 23.2 +1.4
HARR Harsova 78.43 318⇑ iP P 19 03 21.7 +0.4
HARR Harsova 78.43 318 ⇑P P 19 03 21.7 +0.4
TLB Topalu 78.44 318⇑ iP P 19 03 21.9 +0.6
TLB Topalu 78.44 318 ⇑P P 19 03 21.9 +0.6
STHS Stebnicka Huta 78.45 325 eP P 19 03 22.3 +1.0
STHS esP sP 19 03 37.7 -0.7
EFOR EFORIE 78.47 317⇑ iP P 19 03 22.2 +0.7
GRER 78.47 319 ⇑P P 19 03 23.6 +2.1
BR131 Keskin Array S 78.47 312 eP P 19 03 22.0 +0.2
BRTR Keskin Array B 78.47 312 P P 19 03 21.9 +0.2
comp=Z,234nm,1.1s,baz=93,slow=4.2,SNR=312
BRTR PKKPbc PKKPbc 19 22 17.4 +0.5
comp=Z,1.4nm,0.9s,baz=197,slow=2.4,SNR=5.4
BRTR PKPPKP P'P'df 19 30 26.4 +0.7
comp=Z,0.3nm,0.6s,baz=204,slow=3.2,SNR=2.5
BRTR LR LR 19 42 48.6
comp=Z,5µm,18.4s,baz=52,slow=39
BRTR Keskin Array B 78.47 312 P P 19 03 22.0 +0.2
OJC Ojcow 78.52 326 iP P 19 03 22.4 +0.8
OJC eS S 19 13 13.0 -1.8
OJC LMZ LR 19 41 31.7
comp=Z,20µm,17.9s
LCMT Little Creek M 78.52 52 eP P 19 03 23.6 +1.4
UZH Uzhgorod 78.52 324 eP P 19 03 21.1 -0.6
UZH e 19 03 28.1
UZH e 19 03 37.7
UZH e 19 06 18.7
UZH eS S 19 13 10.7 -4.2
UZH e 19 13 42.3
UZH e 19 18 17.3
UZH MLR MLR
comp=N,32µm,17.0s
UZH MLR MLR
comp=E,33µm,17.0s
UZH MLR MLR
comp=Z,6µm,17.0s
MTPU Mount Pierson 78.53 51 eP P 19 03 24.3 +1.8
LDFC Landfair 78.53 55 eP P 19 03 23.0 +0.8
PFO Pinyon Flats O 78.55 56 LR LR 19 31 21.1
comp=Z,10µm,21.7s,baz=304,slow=30
PFO Pinyon Flats O 78.55 56 P P 19 03 22.9 +0.6
baz=308,SNR=30
PFO Pinyon Flats O 78.55 56 eP P 19 03 22.8 +0.5
PFO Pinyon Flats O 78.55 56 eP P 19 03 22.8 +0.5
TPFO Pinon Flats 78.56 56 P P 19 03 22.8 +0.4
baz=308,SNR=40
109C Camp Elliot, M 78.56 57 P P 19 03 23.0 +0.7
baz=308,SNR=10.0
BELC Belle Mtn. Jos 78.62 56 P P 19 03 23.2 +0.4
baz=308,SNR=26
ARCR ARCALIA 78.62 322⇑ iP P 19 03 23.9 +1.6
BMR Baia Mare 78.63 323⇑ iP P 19 03 23.4 +1.1
BMR Baia Mare 78.63 323 ⇑P P 19 03 23.4 +1.1
MANR Mangalia 78.67 317⇑ iP P 19 03 23.3 +0.7
CRVS Cervenica-Dubn 78.72 324 eP P 19 03 23.5 +0.7
CRVS eS S 19 13 14.5 -2.6
TRPA Tarpa 78.76 323⇑ eP P 19 03 24.1 +1.1
PGOR Pogoanele 78.78 319⇑ iP P 19 03 24.6 +1.4
KNB Kanab 78.78 52 eP P 19 03 25.2 +1.6
KNB Kanab 78.78 52 eP P 19 03 25.2 +1.6
AMRR Amara 78.80 318⇑ iP P 19 03 24.2 +0.9
AMRR Amara 78.80 318 ⇑P P 19 03 24.2 +0.9
PKCU Pink Cliffs 78.83 51 eP P 19 03 26.3 +2.3
ULM Lac du Bonnet 78.85 33 P P 19 03 23.1 -0.4
comp=Z,91nm,0.9s,baz=315,slow=6.3,SNR=59
ULM LR LR 19 39 19.1
comp=Z,3µm,21.4s,baz=330,slow=36
SRU San Rafael Swe 78.86 49 eP P 19 03 25.1 +1.1
SRU San Rafael Swe 78.86 49 eP P 19 03 25.1 +1.1
K22A Casper 78.86 44 P P 19 03 24.4 +0.4
baz=312,SNR=32
K22A Casper 78.86 44 eP P 19 03 24.5 +0.6
ISR Istrita 78.87 319⇑ iP P 19 03 25.0 +1.2
ISR Istrita 78.87 319 ⇑P P 19 03 25.0 +1.2
MDND Maddock 78.88 37 P P 19 03 24.2 +0.5
baz=315,SNR=23
MDND Maddock 78.88 37 eP P 19 03 24.5 +0.8
NIE Niedzica 78.88 325 iP P 19 03 24.8 +1.1
NIE eS S 19 13 18.7 -0.1
NIE LMZ LR 19 41 27.9
comp=Z,10µm,17.6s
DOPR Dopca 78.88 320⇑ iP P 19 03 25.1 +1.3
MLR Muntele Rosu 78.92 320⇑ iP P 19 03 24.7 +0.5
MLR Muntele Rosu 78.92 320 ⇑P P 19 03 24.7 +0.5
MLR Muntele Rosu 78.92 320 eP P 19 03 24.4 +0.2
EKU East Kanab 78.95 52 eP P 19 03 26.1 +1.5
MMU Miners Mountai 78.98 50 eP P 19 03 26.3 +1.5
BAR Barrett 78.98 57 eP P 19 03 24.9 +0.4
MONP2 Monument Peak 79.02 57 P P 19 03 25.6 +0.6
baz=308,SNR=35
NEE2 Needles Airpor 79.04 55 P P 19 03 25.4 +0.6
baz=309

IRM Iron Mountain 79.08 55 P P 19 03 26.0 +0.9
baz=308,SNR=60
H25A Fruitdale 79.12 41 P P 19 03 25.9 +0.7
baz=313,SNR=25
SECR 79.17 319⇑ iP P 19 03 27.0 +1.6
BC3 Big Chuckawall 79.19 56 P P 19 03 26.4 +0.6
baz=308,SNR=29
A31A Linda, St. Vin 79.22 35 P P 19 03 25.8 +0.3
baz=317,SNR=8.9
RSSD Black Hills 79.22 42 P P 19 03 26.3 +0.3
baz=313
RSSD Black Hills 79.22 42 eP P 19 03 26.2 +0.3
RSSD Black Hills 79.22 42 eP P 19 03 26.2 +0.3
CJR Cluj-Napoca 79.25 322⇑ iP P 19 03 27.1 +1.3
CJR Cluj-Napoca 79.25 322 ⇑P P 19 03 27.1 +1.3
SULR 79.32 319⇑ iP P 19 03 26.8 +0.7
IKP In-Ko-Pah, Jac 79.37 57 P P 19 03 27.7 +0.9
baz=308,SNR=42
B31A Greenbush Farm 79.38 36 P P 19 03 26.6 +0.2
baz=316,SNR=31
SWSC Sam W. Stewart 79.40 57 P P 19 03 27.4 +0.7
baz=308,SNR=16
VOIR 79.42 320⇑ iP P 19 03 27.4 +0.6
VOIR 79.42 320 ⇑P P 19 03 27.4 +0.6
LANS Liptovska Anna 79.44 326 eP P 19 03 28.2 +1.4
LANS ePP PP 19 06 28.6 +1.9
KECS Kecovo 79.47 325 eP P 19 03 27.2 +0.3
KECS ePP PP 19 06 26.2 -0.7
OKC Ostrava-Krasne 79.52 327⇑ iP P 19 03 27.6 +0.4
OKC ePCP PcP 19 03 33.8 -1.3
OKC ePP PP 19 06 33.3 +6.0
OKC eS S 19 13 24.9 -0.6
OKC AMS AMS 19 41 50.0
comp=Z,19µm,17.4s
O20A White River Ci 79.54 47 P P 19 03 28.4 +0.6
baz=311,SNR=70
O20A White River Ci 79.54 47 eP P 19 03 28.3 +0.6
A32A Rocking H Ranc 79.55 35 P P 19 03 27.4 +0.1
baz=317,SNR=28
MTUR Matau 79.56 320⇑ iP P 19 03 27.5 -0.1
MTUR Matau 79.56 320 ⇑P P 19 03 27.5 -0.1
KSP Ksiaz 79.56 328 iP P 19 03 28.1 +0.7
KSP eS S 19 13 21.2 -4.7
KSP LMZ LR 19 41 30.8
comp=Z,15µm,20.1s
DRGR 79.63 322⇑ iP P 19 03 28.5 +0.6
DRGR 79.63 322 ⇑P P 19 03 28.5 +0.6
PDMCI Parker Dam,Lak 79.64 55 P P 19 03 28.9 +0.8
baz=309,SNR=26
ARR Arges 79.67 320⇑ iP P 19 03 29.6 +1.4
ROOS tl_alroos 79.70 305 eP P 19 03 29.8 +1.3
PRD Provadia 79.72 317 iP P 19 03 29.3 +1.0
Y12C Blythe 79.74 55 P P 19 03 29.5 +0.8
baz=309,SNR=32
C31A Landman Farms, 79.80 36 P P 19 03 28.7 0.0
baz=316,SNR=45
MORC Moravsky Berou 79.83 327⇑ iP P 19 03 29.7 +0.8
MORC Moravsky Berou 79.83 327 ⇑P P 19 03 29.7 +0.8
MORC Moravsky Berou 79.83 327 eP P 19 03 29.6 +0.7
BIGH Upper Bighouse 79.88 342⇑ eP P 19 03 29.6 +0.7
BIGH AMS AMS 19 41 49.0
comp=Z,11µm,18.1s
B32A Ashes, Strandq 79.91 35 P P 19 03 29.3 0.0
baz=317,SNR=44
MLA1 Latheron 79.92 342⇑ iP P 19 03 29.7 +0.6
DPC Dobruska-Polom 79.92 328⇑ iP P 19 03 30.3 +0.9
DPC eS S 19 13 29.9 0.0
DPC AMS AMS 19 42 30.0
comp=Z,16µm,19.0s
UPC Upice 79.93 328⇑ iP P 19 03 30.1 +0.7
UPC eS S 19 13 29.4 -0.5
UPC AMS AMS 19 42 30.0
comp=Z,18µm,19.9s
KRLC Kraliky 79.94 327⇑ iP P 19 03 30.1 +0.6
GLA Glamis 79.97 56 P P 19 03 31.0 +1.0
baz=309,SNR=30
GLA Glamis 79.97 56 eP P 19 03 31.1 +1.1
GLA Glamis 79.97 56 eP P 19 03 31.1 +1.1
A33A Warroad 80.03 34 P P 19 03 30.0 0.0
baz=318,SNR=67
LOT Lotru 80.05 321⇑ iP P 19 03 30.7 +0.4
HUMR Humele 80.08 320⇑ iP P 19 03 29.9 -0.4
PV09 Paradox Valley 80.09 49 eP P 19 03 32.1 +1.2
PSZ Piszkesteto 80.15 324⇑ iP P 19 03 31.5 +0.8
PSZ Piszkesteto 80.15 324 ⇑P P 19 03 31.5 +0.8
PSZ Piszkesteto 80.15 324 eP P 19 03 31.0 +0.3
PSZ LR LR
comp=Z,9µm,20.0s
PSZ Piszkesteto 80.15 324⇑ eP P 19 03 31.6 +0.8
KDHN Kadinhani 80.15 311 iP P 19 03 30.7 -0.2
DEV Deva 80.18 322⇑ iP P 19 03 31.6 +0.8
DEV Deva 80.18 322 ⇑P P 19 03 31.6 +0.8
F29A Eureka 80.19 39 P P 19 03 31.5 +0.6
baz=315,SNR=22
VYHS Vyhne 80.21 325 eP P 19 03 31.9 +0.9
VYHS epP pP 19 03 42.5 -0.8
VYHS esP sP 19 03 49.3 +1.3
VYHS ePP PP 19 06 33.8 +0.8
VYHS eS S 19 13 31.7 -1.2
VYHS eL L 19 42 25.8
PV10 Paradox Valley 80.22 49 eP P 19 03 32.9 +1.4
FKH Fakeheh 80.22 306 eP P 19 03 32.1 +0.6
ISK Istanbul-Kandi 80.24 315 P P 19 03 31.5 +0.3
ESKT Eskisehir 80.24 313 iP P 19 03 31.8 +0.4
AGMN Agassiz Nation 80.29 35 P P 19 03 31.1 -0.3
baz=318,SNR=58
AGMN Agassiz Nation 80.29 35 eP P 19 03 31.0 -0.3
AGMN LR LR
comp=Z,8µm,22.0s
PV04 Paradox Valley 80.29 49 eP P 19 03 32.8 +1.0
RSC Scourie 80.31 343⇑ iP P 19 03 31.9 +0.7
MARH Ras Al Marh 80.32 306 eP P 19 03 33.3 +1.1
C32A Crookston 80.33 35 P P 19 03 31.8 +0.2
baz=317,SNR=12
D31A Mcclaflin, Tow 80.34 37 P P 19 03 32.2 +0.6
baz=316,SNR=18
N23A Red Feather La 80.36 45 P P 19 03 33.2 +0.9
baz=312,SNR=65
PHWY Pilot Hill 80.36 45 eP P 19 03 32.8 +0.6
PV05 Paradox Valley 80.38 49 eP P 19 03 33.6 +1.3
B33A Robert and Kas 80.43 35 P P 19 03 31.9 -0.2
baz=318,SNR=8.6
TAU Tasmania Unive 80.44 176 PFAKE 19 03 40.0 +8.1
TAU LR LR
comp=Z,6µm,21.0s
TAU Tasmania Unive 80.44 176 eP P 19 03 32.6 +0.7
ZALF Zalf 80.45 304 eP P 19 03 33.1 +0.5
SZH Strazhica 80.46 318 iP P 19 03 32.7 +0.3
RAR Rarotonga 80.48 126 P P 19 03 33.6 +1.0
comp=Z,19nm,0.9s,baz=246,slow=4.6,SNR=5.2
RAR LR LR 19 32 21.9
comp=Z,15µm,21.0s,baz=312,slow=30
RAR Rarotonga 80.48 126 eP P 19 03 35.9 +3.3
RAR Rarotonga 80.48 126 eP P 19 03 35.9 +3.3
KMER Konya-Meram 80.49 311 iP P 19 03 32.8 0.0
HWQ Hawqa 80.50 306 eP P 19 03 31.7 -1.2
SIRR Siria 80.51 322⇑ iP P 19 03 33.3 +0.7
PVCC Panska Ves 80.52 329⇑ iP P 19 03 33.3 +0.8
PVCC eS S 19 13 36.3 +0.3
PVCC AMS AMS 19 41 50.0
comp=Z,14µm,18.9s
MCD Coleburn Disti 80.53 342⇑ iP P 19 03 32.7 +0.2
CLL Collm 80.54 330⇑ iP P 19 03 32.7 +0.1
comp=Z,560nm,1.0s
CLL ePmax 19 03 34.0
CLL i 19 03 36.0
CLL e 19 03 46.0
CLL e 19 05 48.0
CLL ePP PP 19 06 36.0 +0.3
CLL eS S 19 13 38.0 +1.8
CLL ePS PnS 19 14 23.0 -2.4
CLL eSS SS 19 18 42.0 -5.8
CLL ⇓iPKKPbc PKKPbc 19 22 12.7 +0.3
comp=Z,7.0nm,0.9s
CLL eSSSS 19 25 12.0
CLL Lmax 19 41 00.0
CLL Lm MLR 19 42 00.0
comp=N,10µm,20.2s
CLL Lm MLR 19 42 00.0
comp=E,7µm,21.6s
CLL Lm MLR 19 42 00.0
comp=Z,16µm,18.7s
F30A Leola 80.58 38 P P 19 03 33.5 +0.4

baz=316,SNR=12
VRAC Vranov 80.59 327⇑ iP P 19 03 34.0 +1.0
VRAC Vranov 80.59 327 ⇑P P 19 03 34.0 +1.0
D32A Dogwood Acres, 80.61 36 P P 19 03 33.2 +0.1
baz=317,SNR=31
E31A Nome 80.62 37 P P 19 03 33.5 +0.4
baz=316,SNR=61
WUAZ Wupatki 80.64 52 P P 19 03 34.6 +0.9
baz=310,SNR=62
WUAZ Wupatki 80.64 52 eP P 19 03 35.0 +1.4
WUAZ LR LR
comp=Z,7µm,22.0s
PV01 Paradox Valley 80.66 49 eP P 19 03 34.7 +0.9
B34A Aery, Baudette 80.69 34 P P 19 03 33.3 -0.2
baz=318,SNR=43
MME1 Meikle Cairn 80.70 341⇑ iP P 19 03 33.3 0.0
BOLV Bolvadin 80.71 312 iP P 19 03 34.3 +0.3
C33A Trail 80.73 35 P P 19 03 33.7 0.0
baz=318,SNR=26
QASN Qassioun 80.76 305 eP P 19 03 35.3 +1.0
TOTH TOTAH 80.77 305 eP P 19 03 35.9 +1.6
PVL Pavlikeni 80.81 318 iP P 19 03 35.1 +0.9
SMOL Smolenice 80.82 326 eP P 19 03 35.7 +1.5
BUD Budapest 80.87 325⇑ eP P 19 03 35.2 +0.7
ERMK Ermenek 80.89 309 iP P 19 03 34.6 -0.5
SRE Strehaia 80.89 321⇑ iP P 19 03 35.8 +1.1
SRE Strehaia 80.89 321 ⇑P P 19 03 35.8 +1.1
GOPC GO Pecny, Ondr 80.90 328⇑ iP P 19 03 35.3 +0.7
GOPC ePCP PcP 19 03 41.3 +0.2
GOPC eS S 19 13 39.4 -0.6
GOPC AMS AMS 19 42 20.0
comp=Z,15µm,18.2s
RRR Rubha Reidh 80.90 343⇑ iP P 19 03 35.0 +0.6
SMCO Snowmass 80.91 47 eP P 19 03 36.4 +1.0
BHL Bhannes 80.93 306 eP P 19 03 34.8 -0.4
DRUM Mains of Drumt 80.93 341⇑ eP P 19 03 34.9 +0.3
DRUM AMB AMB 19 03 36.1
comp=Z,162nm,1.1s
DRUM AMS AMS 19 42 29.0
comp=Z,7µm,20.4s
MDO Dochfour 80.93 342⇑ iP P 19 03 34.8 +0.1
PRU Pruhonice 80.94 329⇑ iP P 19 03 35.3 +0.5
PRU ePCP PcP 19 03 41.1 -0.1
PRU ePP PP 19 06 36.7 -2.3
PRU eS S 19 13 40.9 +0.5
PRU AMS AMS 19 42 40.0
comp=Z,15µm,17.1s
F31A Hecla 80.94 38 P P 19 03 35.3 +0.4
baz=316,SNR=25
E32A Braaten, Kindr 80.98 37 P P 19 03 35.2 +0.1
baz=317,SNR=5.5
SALA Sala 80.98 304 eP P 19 03 36.4 +0.8
EDRB Edirne 81.00 317 P P 19 03 35.8 +0.6
BZS Buzias 81.00 322⇑ iP P 19 03 35.4 +0.2
BZS Buzias 81.00 322 ⇑P P 19 03 35.4 +0.2
RRH Rhenigidale 81.04 343⇑ iP P 19 03 35.9 +0.7
BRBR Barbar 81.05 305 eP P 19 03 37.9 +2.0
RCY Rachaya 81.07 305 eP P 19 03 36.5 +0.5
TREC Trest 81.08 328⇑ iP P 19 03 36.1 +0.5
TREC eS S 19 13 41.3 -0.6
TREC AMS AMS 19 43 00.0
comp=Z,13µm,17.6s
KAC Achnashellach 81.10 343⇑ iP P 19 03 36.3 +0.8
DQRL Deir Qamar 81.11 306 eP P 19 03 36.5 +0.4
TIM Timisoara 81.11 322⇓ iP P 19 03 37.1 +1.4
TIM Timisoara 81.11 322 ⇓P P 19 03 37.1 +1.4
D33A AnnSam, Waubun 81.15 36 P P 19 03 36.1 +0.1
baz=318,SNR=10
B35A Bob, Littlefor 81.20 34 P P 19 03 36.2 0.0
baz=319,SNR=62
C34A RKJ Ranch, Bem 81.20 35 P P 19 03 36.4 +0.1
baz=318
ASF Jabal al Asfar 81.21 304 P P 19 03 37.2 +0.5
comp=Z,91nm,0.9s,baz=356,slow=2.8,SNR=119
ASF PP PP 19 06 42.9 +1.0
comp=Z,26nm,1.1s,baz=41,slow=5.9,SNR=3.9
PHNC Paralimni 81.25 308 P P 19 03 36.3 -0.4
ISCO Idaho Springs 81.28 46 P P 19 03 38.1 +0.9
baz=312,SNR=45
ISCO Idaho Springs 81.28 46 eP P 19 03 38.3 +1.1
ISCO MLR MLR
comp=Z,6µm,22.0s
ISCO Idaho Springs 81.28 46 eP P 19 03 38.3 +1.1
ISCO LR LR
comp=Z,6µm,22.0s
MVCO Mesa Verde 81.31 49 P P 19 03 38.2 +0.9
baz=311,SNR=69
MVCO Mesa Verde 81.31 49 eP P 19 03 38.4 +1.1
MVCO LR LR
comp=Z,3µm,20.0s
CSKK Cs ‡kako 81.31 325⇑ eP P 19 03 37.3 +0.5
GDZ Gediz 81.32 313 iP P 19 03 37.2 0.0
KPL Plockton 81.33 343⇑ eP P 19 03 37.6 +0.9
KPL AMB AMB 19 03 38.3
comp=Z,580nm,1.0s
KPL AMS AMS 19 36 51.8
comp=Z,5µm,24.0s
EDU Dundee 81.39 341⇑ iP P 19 03 37.4 +0.3
BANR Banloc 81.40 322⇑ iP P 19 03 38.3 +1.0
G31A Conde 81.42 38 P P 19 03 37.9 +0.4
baz=316,SNR=14
F32A Veblen 81.48 37 P P 19 03 37.9 +0.2
baz=317,SNR=25
DIM Dimitrovgrad 81.51 317 iP P 19 03 38.8 +0.8
GAZI Gazipasa 81.52 309 iP P 19 03 37.0 -1.2
MPEP Malo Peshtene 81.54 319 iP P 19 03 38.9 +0.8
E33A Westby DABS, E 81.55 36 P P 19 03 38.5 +0.4
baz=318,SNR=39
MDVR Moldovita 81.55 321⇑ iP P 19 03 38.4 +0.2
C35A Jirik Farms, M 81.58 34 P P 19 03 38.1 -0.1
baz=319,SNR=45
NKC Novy Kostel 81.60 330⇑ iP P 19 03 38.6 +0.2
NKC ePCP PcP 19 03 45.0 +0.8
NKC eS S 19 13 46.5 -0.8
NKC ex x 19 14 15.7
NKC AMS AMS 19 42 40.0
comp=Z,13µm,18.6s
SUSD Miller 81.62 39 P P 19 03 38.8 +0.3
baz=316,SNR=8.5
MMAI Mount Meron Ar 81.65 305 P P 19 03 39.6 +0.6
comp=Z,208nm,0.9s,baz=40,slow=6.6,SNR=171
MAMC Mammari 81.66 308 P P 19 03 38.7 -0.2
CSS Mathiatis 81.72 308 P P 19 03 39.3 0.0
CSS Mathiatis 81.72 308 P P 19 03 39.2 0.0
CSS Mathiatis 81.72 308 eP P 19 03 39.0 -0.2
CSS LR LR
comp=Z,1µm,22.0s
G32A Webster 81.75 38 P P 19 03 39.7 +0.5
baz=317,SNR=96
DEMI Demirci 81.80 314 iP P 19 03 39.6 0.0
H31A Wolsey 81.83 39 P P 19 03 39.6 -0.1
baz=316
ESY Stoneypath 81.84 341⇑ eP P 19 03 39.7 +0.3
KDZ Kurdzhali 81.85 317 iP P 19 03 40.9 +1.1
PGB Panagyurishte 81.89 318 iP P 19 03 40.7 +0.7
F33A 5 Mile Ranch, 81.90 37 P P 19 03 40.0 +0.1
baz=318,SNR=86
PLD Plovdiv 81.92 318 iP P 19 03 40.6 +0.5
W18A Petrified Fore 81.92 52 P P 19 03 41.3 +0.8
baz=311
W18A Petrified Fore 81.92 52 eP P 19 03 41.3 +0.8
comp=Z,214nm,1.2s
E34A Wadena 81.93 36 P P 19 03 39.8 -0.4
baz=318
S22A 4UR Ranch, Cre 81.95 48 P P 19 03 41.8 +1.0
baz=312,SNR=73
CONA Conrad Observa 81.95 327 iP P 19 03 41.2 +0.9
comp=Z,319nm,1.0s,SNR=155
214A Organ Pipe Nat 81.98 56 P P 19 03 41.4 +0.7
baz=310,SNR=24
214A Organ Pipe Nat 81.98 56 eP P 19 03 41.4 +0.7
comp=Z,953nm,1.3s
EDI Edinburgh 81.99 341⇑ eP P 19 03 40.1 -0.1
EDI AMS AMS 19 36 35.5
comp=Z,7µm,28.9s
KHC Kasperske Hory 82.00 328⇑ iP P 19 03 41.0 +0.5
KHC ePCP PcP 19 03 47.0 +1.0
KHC ex x 19 05 14.5
KHC eS S 19 13 51.2 -0.3
KHC AMS AMS 19 44 20.0
comp=Z,16µm,17.7s
KHC Kasperske Hory 82.00 328 eP P 19 03 40.7 +0.2
KHC Kasperske Hory 82.00 328 eP P 19 03 40.7 +0.2
D35A Remer 82.01 35 P P 19 03 40.1 -0.5

baz=319,SNR=41
ALN Alexandroupoli 82.03 316 P P 19 03 40.8 +0.1
C36A Pine Crest Far 82.04 34 P P 19 03 40.3 -0.4
baz=320,SNR=73
EAB Aberfoyle 82.05 342⇑ *i*P P 19 03 41.1 +0.6
ALFC Alefka 82.05 309 P P 19 03 40.2 -0.8
ENEZ Enez 82.08 316 P P 19 03 41.2 +0.2
Q24A Divide 82.11 46 P P 19 03 42.0 +0.4
baz=313,SNR=22
I31A Royce, Wessing 82.12 39 P P 19 03 41.8 +0.6
baz=316
SZAC Souni 82.14 308 P P 19 03 41.4 -0.1
J30A Dallas 82.14 40 P P 19 03 41.6 +0.3
baz=316,SNR=22
GERES GERESS Array B 82.17 328 P P 19 03 41.5 +0.1
comp=Z,143nm,0.9s,baz=36,slow=5.0,SNR=863
GERES PP **PP 19 06 52.4 +3.0**
GERES PKKPbc **PKKPbc 19 22 09.2 +0.3**
comp=Z,4.3nm,0.8s,baz=222,slow=1.8,SNR=25
GERES PKPPKP **P'P'df 19 30 12.4 -6.8**
comp=Z,0.3nm,0.6s,baz=193,slow=5.5,SNR=4.0
GERES LR LR 19 43 48.0
comp=Z,13μm,18.0s,baz=36,slow=38
KULA Kula-Manisa 82.18 313 P P 19 03 41.6 -0.1
RZN Rozhen 82.20 318 *i*P P 19 03 42.6 +0.7
KORT Korkueli 82.20 311 *i*P P 19 03 41.6 -0.3
E35A Pequot Lakes 82.25 35 P P 19 03 42.0 +0.2
baz=319,SNR=14
MANT Manisa 82.26 313 *i*P P 19 03 40.9 -1.3
AKMC Akamas 82.30 309 P P 19 03 41.8 -0.5
G33A Ortonville 82.30 37 P P 19 03 42.5 +0.4
baz=318,SNR=32
H32A Carlson Farm, 82.32 38 P P 19 03 42.3 +0.1
baz=317,SNR=28
WTSB Winterswijk 82.33 334 *e*P P 19 03 42.1 0.0
comp=Z,289nm,0.8s
WTSB *e*pP **sP 19 04 00.6 +1.5**
D36A Goodland 82.34 34 P P 19 03 41.9 -0.4
baz=319,SNR=17
C37A Embarrass 82.35 33 P P 19 03 42.5 +0.2
baz=320,SNR=63
VTS Vitosha 82.36 319 P P 19 03 43.5 +0.8
VTS Vitosha 82.36 319⇑ *i*P P 19 03 43.5 +0.8
VTS Vitosha 82.36 319 ⇑P P 19 03 43.5 +0.8
VTS Vitosha 82.36 319 *i*P P 19 03 43.4 +0.8
VTS Vitosha 82.36 319 *e*P P 19 03 43.4 +0.7
PPCY Paphos 82.38 308 P P 19 03 42.4 -0.3
F34A Alexandria 82.42 36 P P 19 03 42.7 0.0
baz=318,SNR=39
PGBU Glenifferbraes 82.42 341⇑ *e*P P 19 03 43.1 +0.6
PGBU AMB AMB 19 03 43.9
comp=Z,398nm,1.1s
PGBU AMS AMS 19 43 37.1
comp=Z,7μm,22.4s
URZ Urewera 82.42 152 P P 19 03 41.3 -1.2
comp=Z,22nm,0.8s,baz=320,slow=3.6,SNR=4.8
EYMN Ely 82.48 33 P P 19 03 43.0 0.0
baz=320,SNR=51
EYMN Ely 82.48 33 *e*P P 19 03 42.9 -0.1
EYMN LR LR
comp=Z,5μm,21.0s
OGNE Ogallala 82.48 43 P P 19 03 43.7 +0.5
baz=314,SNR=14
OGNE Ogallala 82.48 43 *e*P P 19 03 43.8 +0.5
OGNE LR LR
comp=Z,4μm,22.0s
GOLH Golhisar 82.52 312 *i* P P 19 03 43.3 -0.2
GRFO Grafenberg 82.52 330 *e*P P 19 03 44.0 +0.8
GRFO Grafenberg 82.52 330 *e*P P 19 03 44.0 +0.8
H33A Prehn Over Nor 82.53 38 P P 19 03 43.7 +0.4
baz=317,SNR=58
K30A Basset 82.55 41 P P 19 03 43.9 +0.4
baz=316,SNR=44
J31A Geddes 82.55 40 P P 19 03 43.8 +0.4
baz=316,SNR=19
SMTH Samothraki Isl 82.61 316 P P 19 03 43.5 -0.3
ARSA Arzberg 82.62 326 *i* P P 19 03 44.0 +0.3
comp=Z,185nm,1.1s,SNR=106
G34A Benson 82.65 37 P P 19 03 44.2 +0.3
baz=318,SNR=71
BEHE Becsehely 82.65 325⇑ *e*P P 19 03 44.1 +0.2
I32A Karley and Nic 82.66 39 P P 19 03 44.3 +0.3
baz=317,SNR=17
D37A Cotton 82.68 34 P P 19 03 43.6 -0.5
baz=320,SNR=25
F35A Swanville 82.69 36 P P 19 03 44.1 0.0
baz=319,SNR=25
MOA Molln 82.70 327 *i* P P 19 03 44.7 +0.5
comp=Z,229nm,1.1s,SNR=71
SDCO Great Sand Dun 82.73 47 P P 19 03 45.3 +0.4
baz=313,SNR=62
SDCO Great Sand Dun 82.73 47 *e*P P 19 03 46.0 +1.1
SDCO LR LR
comp=Z,4μm,22.0s
BHH Howats Hill 82.73 340⇑ *i*P P 19 03 44.8 +0.7
C38A Sawbill Land. 82.75 33 P P 19 03 44.5 0.0
baz=321,SNR=68
KAVA Kavala 82.79 317 P P 19 03 45.1 +0.4
MMB Musomiste 82.80 318 *i* P P 19 03 45.4 +0.6
E36A McGregor 82.80 35 P P 19 03 44.6 0.0
baz=319,SNR=60
NVR Nevrokopi 82.89 318 P P 19 03 45.5 +0.2
DIVS Divibare 82.90 322 P P 19 03 45.4 +0.1
J32A Parkston 82.94 39 P P 19 03 45.4 -0.1
baz=317,SNR=17
I33A Coleman 82.97 38 P P 19 03 46.0 +0.4
baz=317,SNR=16
H34A Spellman Lake, 83.01 37 P P 19 03 45.9 +0.2
baz=318,SNR=29
K31A O'Neill 83.02 40 P P 19 03 46.4 +0.4
baz=316,SNR=21
PRK Paraskevi 83.05 315 P P 19 03 46.1 +0.1
TUC Tucson 83.07 54 P P 19 03 47.1 +0.6
baz=311
TUC Tucson 83.07 54 *e*P P 19 03 47.3 +0.8
TUC MLR MLR
comp=Z,7μm,21.0s
TUC Tucson 83.07 54 *e*P P 19 03 47.3 +0.8
TUC LR LR
comp=Z,7μm,21.0s
GMK Mull of Kintyr 83.12 342⇑ *e*P P 19 03 46.6 +0.5
E37A Wrenshall 83.14 34 P P 19 03 46.1 -0.3
baz=320
KESW Keswick, Cumbr 83.15 340⇑ *e*P P 19 03 46.9 +0.5
KESW AMB AMB 19 03 47.7
comp=Z,309nm,0.9s
KESW AMS AMS 19 44 08.0
comp=Z,12μm,19.9s
AKAS Kas 83.16 311 *i* P P 19 03 45.2 -1.7
C39A Grand Marais 83.16 32 P P 19 03 45.9 -0.6
baz=321,SNR=19
F36A Milaca 83.17 35 P P 19 03 45.9 -0.7
baz=319,SNR=22
LIA Limnos Island 83.20 316 P P 19 03 46.7 -0.1
SRS Serrai 83.20 318 P P 19 03 46.7 -0.2
FETY Fethiye 83.20 312 P P 19 03 46.6 -0.4
G35A Watkins 83.21 36 P P 19 03 47.4 +0.6
baz=319,SNR=15
KSL Kastellorizon 83.23 311 P P 19 03 46.4 -0.7
PERS Pernice 83.27 326 *i* P P 19 03 47.4 +0.2
PERS *e*S **S 19 14 00.2 -4.4**
SOKA Soboth 83.27 326 *i* P P 19 03 47.2 0.0
comp=Z,415nm,0.9s,SNR=199
ECSD EROS Data Cent 83.29 38 P P 19 03 47.6 +0.3
baz=318,SNR=54
ECSD EROS Data Cent 83.29 38 *e*P P 19 03 47.5 +0.2
ECSD LR LR
comp=Z,5μm,22.0s
SIGR SIGRI 83.30 315 P P 19 03 47.2 -0.2
L31A Butterfield Fa 83.30 41 P P 19 03 47.9 +0.5
baz=316,SNR=21
GAL1 Galloway 83.33 341⇑ *e*P P 19 03 47.5 +0.4
GAL1 AMB AMB 19 03 48.3
comp=Z,126nm,0.8s
GAL1 AMS AMS 19 44 36.0
comp=Z,4μm,19.7s
TURN Turunc 83.33 312 *i* P P 19 03 49.2 +1.7
YER Yerkesik 83.34 312 P P 19 03 48.3 +0.6
LMK Market Rasen 83.37 338 AMS AMS 19 42 49.8
comp=Z,18μm,23.8s
K32A Verdigre 83.40 40 P P 19 03 47.8 0.0
baz=317,SNR=9.2
J33A Davis 83.42 39 P P 19 03 48.3 +0.4
baz=317,SNR=14
I34A Hadley 83.43 38 P P 19 03 48.6 +0.5
baz=318,SNR=7.7
H35A Sunnyside Ranc 83.44 37 P P 19 03 48.5 +0.5
baz=318,SNR=175
URLA Izmir 83.47 314 *i* P P 19 03 48.2 -0.2
DOBS Dobrina 83.48 326 *e*P P 19 03 48.0 -0.2
KSCO Kaye Shedlock' 83.50 45 P P 19 03 49.1 +0.5
baz=314,SNR=8.6
KSCO Kaye Shedlock' 83.50 45 *e*P P 19 03 49.1 +0.5
comp=Z,634nm,1.4s
DGB ˙zmir 83.52 314 *i* P P 19 03 48.2 -0.3
KNT Kendrikon 83.54 318 P P 19 03 48.6 0.0
SOH Sokhos 83.54 318 P P 19 03 48.4 -0.2
G36A St. Michael 83.54 36 P P 19 03 48.7 +0.1
baz=319,SNR=16
OUR Ouranopolis 83.55 317 P P 19 03 48.5 -0.1
GCAM G?zelcaml? 83.56 313 *i* P P 19 03 49.2 +0.5
SISC Sisak 83.59 325 P P 19 03 49.4 +0.7
VAY Valandovo 83.60 318 P P 19 03 49.4 +0.5
VAY Valandovo 83.60 318⇑ *i*P P 19 03 49.3 +0.5
OBKA Obir 83.62 326 *i* P P 19 03 49.0 0.0
comp=Z,122nm,0.8s,SNR=30
HGN Heimansgroeve 83.63 333 *e*P P 19 03 48.8 0.0
comp=Z,262nm,0.9s
HGN *e*pP **sP 19 04 04.7 -1.2**
HGN *e*sP pP 19 04 18.9 +18
HGN Heimansgroeve 83.63 333 *e*S S 19 14 34.6 +27
BEBN Eben Emael 83.69 334 P P 19 03 49.1 0.0
comp=Z,127nm,1.2s
KBA Koelnbreinsper 83.70 327 *i* P P 19 03 49.6 +0.1
comp=Z,266nm,0.8s,SNR=55
SKO Skopje 83.72 320 P P 19 03 50.4 +0.9
SKO Skopje 83.72 320⇑ *i*P P 19 03 50.3 +0.8
WACR West Acre 83.72 337⇑ *e*P P 19 03 49.3 +0.1
WACR AMB AMB 19 03 50.1
comp=Z,486nm,0.9s
WACR AMS AMS 19 41 18.6
comp=Z,14μm,25.8s
MEM Membach 83.73 333 P P 19 03 49.2 -0.1
comp=Z,170nm,1.1s
PLE Pljevlja 83.76 322⇑ *i*P P 19 03 50.0 +0.2
CHOS Chios island 83.76 314 P P 19 03 50.0 +0.1
T25A Trinidad 83.78 47 P P 19 03 51.0 +0.9
baz=313,SNR=84
SMG Samos 83.78 314 P P 19 03 49.5 -0.4
PLG Polygyros 83.81 317 P P 19 03 50.0 0.0
IDGL Inch Island, C 83.83 343⇑ *e*P P 19 03 50.4 +0.7
IDGL AMB AMB 19 03 51.1
comp=Z,375nm,1.3s
M31A Lambtecht Ranc 83.83 41 P P 19 03 50.4 +0.3
baz=316
HORT Hortiatis 83.83 318 P P 19 03 49.7 -0.5
IVA Berane 83.84 321⇑ *i*P P 19 03 50.9 +0.7
L32A Elgin 83.85 40 P P 19 03 50.5 +0.3
baz=317,SNR=16
BDRM Kayabasi 83.88 313 *i* P P 19 03 50.7 +0.3
THE Thessaloniki 83.88 318 P P 19 03 49.7 -0.6
OZLJ Ozalj 83.89 325 P P 19 03 50.1 -0.1
MYKA Terra Mystica 83.92 327 *i* P P 19 03 50.1 -0.4
comp=Z,140nm,0.7s,SNR=65
K33A Hardington 83.93 39 P P 19 03 50.8 +0.3
baz=317,SNR=10
J34A George 83.94 38 P P 19 03 50.8 +0.1
baz=318,SNR=14
GRG Griva 83.95 318 P P 19 03 50.5 -0.2
H36A Jessenland, He 83.95 36 P P 19 03 51.5 +0.8
baz=319,SNR=61
BODT Bodrm 83.95 313 P P 19 03 50.8 0.0
WIM Isle of Man 83.96 341⇑ *e*P P 19 03 50.9 +0.4
LJU Ljubljana 83.98 326 *i* P P 19 03 50.4 -0.4
LJU *e*PP **PP 19 07 11.4 +7.3**
LJU *e* 19 08 60.0
LJU *e*S **S 19 14 06.7 -5.0**
LJU *e* 19 19 59.4
SPMN Marine on St. 83.98 35 P P 19 03 50.9 +0.1
baz=320,SNR=19
SPMN Marine on St. 83.98 35 *e*P P 19 03 50.6 -0.2
comp=Z,273nm,1.3s
LAZ Ladron 83.99 51 *e*P P 19 03 52.5 +1.2
I35A Creekview Farm 83.99 37 P P 19 03 50.8 -0.1
baz=318,SNR=17
PAIG Paliouri 84.00 317 P P 19 03 50.5 -0.4
PVY Plav 84.02 321⇑ *i*P P 19 03 51.4 +0.2
ANMO Albuquerque 84.04 50 P P 19 03 52.0 +0.5
baz=312
ANMO Albuquerque 84.04 50 *ce*P P 19 03 52.4 +0.9
ANMO pmax pmax
comp=Z,107nm,1.2s
ANMO MLR MLR
comp=Z,4μm,20.0s
ANMO Albuquerque 84.04 50 *e*P P 19 03 52.5 +1.0
ANMO LR LR
comp=Z,4μm,20.0s
STU Stuttgart 84.05 331 *e*P P 19 03 51.2 +0.2
STU pmax pmax
comp=Z,498nm,1.0s
STU Stuttgart 84.05 331 *e*P P 19 03 51.2 +0.2
comp=Z,498nm,1.0s
ARG Arkhangelos 84.05 312 P P 19 03 51.7 +0.4
BOJS Bojanci 84.08 325 *i* P P 19 03 51.1 -0.1
BOJS *e*S **S 19 14 07.7 -4.9**
UPM Unac-Piva 84.09 322⇑ *i*P P 19 03 51.3 -0.3
EIL Elat 84.09 303 P P 19 03 51.8 +0.2
comp=Z,301nm,1.1s,baz=21,slow=3.4,SNR=167
EIL PP **PP 19 07 06.8 +1.3**
comp=Z,31nm,1.0s,baz=58,slow=9.5,SNR=4.7
L33A Hoskins 84.11 40 P P 19 03 51.4 -0.1
baz=317
BCLA Clavier 84.14 334 P P 19 03 51.0 -0.4
comp=Z,170nm,1.3s
UCC Uccle 84.15 334 P P 19 03 51.3 -0.2
comp=Z,92nm,1.6s
GMM Mts of Mourne 84.21 342⇑ *i*P P 19 03 52.0 +0.3
BGNE Belgrade 84.21 41 P P 19 03 52.3 +0.2
baz=317,SNR=14
BGNE Belgrade 84.21 41 *e*P P 19 03 51.7 -0.3
comp=Z,942nm,1.2s
N31A Bailey Ranch, 84.22 42 P P 19 03 52.3 +0.2
baz=316,SNR=9.2
STNC Stoke 84.23 339⇑ *e*P P 19 03 52.3 +0.4
STNC AMS AMS 19 44 36.1
comp=Z,12μm,21.4s
WATA Walderalm 84.24 328 *i* P P 19 03 52.2 0.0
comp=Z,101nm,0.9s,SNR=31
J35A Milford 84.25 38 P P 19 03 52.3 +0.1
baz=318
WTTA Wattenberg 84.27 328 *i* PcP P 19 03 52.6 +0.2
comp=Z,130nm,1.0s,SNR=39
CWF Charnwood Fore 84.28 338⇑ *e*P P 19 03 52.1 0.0
CWF AMB AMB 19 03 53.5
comp=Z,200nm,1.0s
CWF AMS AMS 19 43 40.4
comp=Z,17μm,23.8s
SNZO South Karori 84.31 156 PFAKE 19 04 00.0 +7.9
SNZO LR LR
comp=Z,14μm,22.0s
ABTA Abfaltersbach 84.31 328 *i* P P 19 03 51.7 -0.8
comp=Z,215nm,1.2s,SNR=58
K34A Le Mars 84.32 39 P P 19 03 52.6 +0.1
baz=318,SNR=13
I36A Fitzsimmons Fa 84.33 37 P P 19 03 52.9 +0.3
baz=319,SNR=19
NKY Niksic 84.33 321⇑ *i*P P 19 03 52.5 -0.2
Y22D IRIS PASSCAL I 84.35 51 P P 19 03 54.3 +1.3
baz=312
NIS1 Nisyros Isl. 84.35 313 P P 19 03 52.2 -0.6
LPM Los Pinos Moun 84.36 51 *e*P P 19 03 54.1 +0.9
NKME Niksic 84.39 321⇑ *i*P P 19 03 52.7 -0.2
LANF Langenberg 84.42 331⇑ *e*P P 19 03 53.2 +0.3
SNF Seneffe 84.42 334 P P 19 03 52.9 +0.1
H37A Dierke Farm, C 84.42 36 P P 19 03 53.2 +0.2
baz=320,SNR=23
AOS Alonnisos 84.42 316 P P 19 03 52.9 -0.2
MOTA Moosalm 84.43 329 *i* P P 19 03 53.2 0.0
comp=Z,450nm,1.3s,SNR=156
RETA Reutte 84.46 329 *i* PcP P 19 03 53.6 +0.4
comp=Z,276nm,0.8s,SNR=141
WLF Walferdange 84.46 333 P P 19 03 53.4 +0.3
comp=Z,203nm,1.8s
WLF Walferdange 84.46 333 *e*P P 19 03 52.8 -0.3
WLF pmax pmax
comp=Z,797nm,1.8s
WLF MLR MLR
comp=Z,11μm,20.0s
WLF Walferdange 84.46 333 *e*P P 19 03 52.8 -0.3
comp=Z,797nm,1.8s
WLF LR LR
comp=Z,11μm,20.0s
BNM Barren Site 84.47 51 *e*P P 19 03 54.8 +1.0
PDG Podgorica 84.49 321 P P 19 03 53.3 -0.1
PDG Podgorica 84.49 321⇑ *i*P P 19 03 53.6 +0.2
TTG Podgorica 84.49 321⇑ *i*P P 19 03 53.5 +0.2
BRY Bratogost 84.49 322⇑ *i*P P 19 03 53.1 -0.5
O31A Woolen Ranch, 84.50 42 P P 19 03 53.1 -0.5
baz=316,SNR=7.3
LIT Litokhoron 84.51 318 P P 19 03 53.1 -0.5
WPM1 Penmaenmawr 84.56 340⇑ *i*P P 19 03 53.9 +0.4
CEME Cevo 84.57 321⇑ *i*P P 19 03 53.6 -0.3
TRI Trieste 84.58 326 *e*P P 19 03 51.7 -2.1
TRI pmax pmax
comp=Z,252nm,1.1s
TRI Trieste 84.58 326 *e*P P 19 03 51.7 -2.1
comp=Z,252nm,1.1s
M33A Taylor Creek F 84.58 40 P P 19 03 53.9 0.0
baz=317,SNR=9.3
WPS Cemaes, Angles 84.59 340⇑ *e*P P 19 03 53.7 0.0
WPS AMB AMB 19 03 54.6
comp=Z,168nm,2.3s
WPS AMS AMS 19 44 18.0
comp=Z,10μm,21.9s
UDBI Udbina 84.59 324 P P 19 03 53.3 -0.6
N32A Stulken Farm, 84.60 41 P P 19 03 53.5 -0.6
baz=317
FNA Florina 84.61 319 P P 19 03 53.6 -0.5
I37A Lemond, Waseca 84.63 36 P P 19 03 54.7 +0.6
baz=320,SNR=60
SCHQ Schefferville 84.63 16 P P 19 03 54.0 +0.1
comp=Z,114nm,0.7s,baz=351,slow=5.2,SNR=86
SCHQ PKKPbc **PKKPbc 19 22 02.8 -0.6**
comp=Z,6.4nm,1.0s,baz=93,slow=4.8,SNR=3.9
SCHQ LR LR 19 43 38.7
comp=Z,6μm,21.3s,baz=344,slow=37
SKIA Skiathos 84.65 316 P P 19 03 53.4 -0.9
DOU Dourbes 84.66 334 P P 19 03 54.0 -0.1
comp=Z,112nm,1.4s
XOR Xorichti 84.66 317 P P 19 03 53.5 -0.9
OHR Ohrid 84.67 319⇑ *i*P P 19 03 54.4 -0.1
NEO Neokhori 84.69 317 P P 19 03 53.6 -0.9
FOEL Foel Wylfa 84.69 339⇑ *e*P P 19 03 54.8 +0.6
FOEL AMB AMB 19 03 55.6
comp=Z,459nm,1.1s
FOEL AMS AMS 19 44 51.2
comp=Z,9μm,21.4s
J36A Seneca 1, Swea 84.70 37 P P 19 03 54.5 +0.1
baz=319,SNR=30
DRME Dracevica, Mon 84.70 321⇑ *i*P P 19 03 54.8 +0.3
VAH Vaihoa 84.70 114 *e*P P 19 03 56.7 +2.0
comp=Z,262nm,1.4s
L34A Svendsen Farm, 84.71 39 P P 19 03 54.6 +0.1
baz=318,SNR=16
K35A Storm Lake 84.72 38 P P 19 03 54.6 0.0
baz=318,SNR=20
YLL Llanberis 84.73 340⇑ *e*P P 19 03 54.8 +0.4
BFO Black Forest 84.75 331 *i* P P 19 03 54.4 -0.2
BFO Black Forest 84.75 331 *e*P P 19 03 54.6 0.0
comp=Z,509nm,0.9s
BFO LR LR
comp=Z,12μm,20.0s
KZN Kozani 84.75 318 P P 19 03 54.1 -0.7
BUM Brajici-Budva 84.76 321⇑ *i*P P 19 03 54.8 -0.1
FYTO Fytoko, Volos 84.77 317 P P 19 03 54.4 -0.4
121A Cookes Peak, D 84.84 53 P P 19 03 56.7 +1.1
baz=312,SNR=59
121A Cookes Peak, D 84.84 53 *e*P P 19 03 56.6 +1.1
comp=Z,425nm,1.3s
ULC Ulcinj 84.84 321⇑ *i*P P 19 03 55.0 -0.2
FETA Feichten 84.84 329 *i* PcP P 19 03 55.4 +0.1
comp=Z,217nm,0.8s,SNR=137
PPT Papeete 84.85 117 P P 19 03 57.0 +1.6
comp=Z,30nm,0.9s,baz=286,slow=5.5,SNR=2.9
PPT LR LR 19 36 52.7
comp=Z,12μm,20.0s,baz=293,slow=32
HCY Herceg Novi 84.85 321⇑ *i*P P 19 03 54.7 -0.5
LLW Llanuwychllyn 84.86 340⇑ *e*P P 19 03 55.4 +0.4
LLW AMB AMB 19 03 56.2
comp=Z,2μm,1.3s
LLW AMS AMS 19 39 23.2
comp=Z,121μm,28.0s
PPT2 Papeete2 84.86 117 *e*P P 19 03 58.0 +2.4
comp=Z,182nm,1.3s
PPT2 Papeete2 84.86 117 *e*S S 19 14 19.5 -1.6
comp=Z,7μm,27.0s
PPT2 *e*SS **SS 19 19 53.0 -1.7**
comp=Z,4μm,25.5s
PPT2 Papeete2 84.86 117 *e*LR LR 19 30 37.8
comp=Z,44μm,29.5s,baz=319
PPT2 Papeete2 84.86 117 *e*T T 20 37 14.2
comp=Z,22nm,0.3s
PAE Paea 84.91 117 *e*P P 19 03 57.8 +2.1
comp=Z,41nm,1.3s
PAE Paea 84.91 117 *e*T T 20 37 16.5
comp=Z,4.2nm,0.3s
ELSH Elham, Standar 84.92 336⇑ *e*P P 19 03 55.3 0.0
ELSH AMB AMB 19 03 56.7
comp=Z,694nm,0.9s
ELSH AMS AMS 19 45 48.9
comp=Z,19μm,19.1s
EREA Eretria 84.93 316 P P 19 03 54.7 -1.0
HLM1 Long Mynd 84.93 339⇑ *e*P P 19 03 55.6 +0.2
HLM1 AMB AMB 19 03 56.6
comp=Z,160nm,1.4s
HLM1 AMS AMS 19 44 57.2
comp=Z,11μm,21.7s
COWI Conover 84.93 33 *e*P P 19 03 55.6 0.0
COWI LR LR
comp=Z,4μm,22.0s
M34A Aspy Farms, Fr 84.95 40 P P 19 03 55.6 -0.1
baz=318
NVLJ Novalja 84.97 325 P P 19 03 54.7 -1.0
APE Apeiranthos 84.98 314 P P 19 03 54.5 -1.5
APE Apeiranthos 84.98 314⇓ *i*P P 19 03 55.3 -0.7
APE Apeiranthos 84.98 314 *c i*P P 19 03 54.3 -1.7
APE pmax pmax
comp=Z,63nm,0.5s
APE MLR MLR
comp=Z,4μm,24.0s
DAVA Damuels 84.98 329 *i* PcP P 19 03 56.1 +0.1
comp=Z,592nm,1.1s,SNR=195
O32A Brockman Farm, 84.98 42 P P 19 03 55.3 -0.6
baz=317
TIR Tirane 84.98 320⇑ *i*P P 19 03 56.1 +0.2
TIR Tirane 84.98 320 ⇑P P 19 03 56.1 +0.2
TIR Tirane 84.98 320 *e*P P 19 03 55.9 0.0
comp=Z,497nm,0.9s
TIR LR LR
comp=Z,37μm,19.0s
SMIA Simia 85.00 316 P P 19 03 55.5 -0.6
TIAR Tiarei 85.00 117 *e*P P 19 03 58.4 +2.2
comp=Z,79nm,1.3s
TIAR Tiarei 85.00 117 *e*T T 20 37 25.0
comp=Z,21nm,0.4s
L35A Bielow Farm, R 85.02 39 P P 19 03 55.7 -0.4
baz=318,SNR=16
SKP1 Kophill 85.03 338⇑ *i*P P 19 03 55.2 -0.7
N33A J Bar K, Exete 85.06 41 P P 19 03 55.9 -0.5
baz=317
KARP Karpathos 85.08 312 P P 19 03 56.7 +0.1
J37A Redenius Farm, 85.09 37 P P 19 03 56.5 +0.1
baz=319,SNR=55
I38A Scanlan Farm, 85.11 36 P P 19 03 56.4 -0.1
baz=320,SNR=48
SSW Stow on the Wo 85.12 338⇑ *i*P P 19 03 56.8 +0.4
K36A Gilmore City 85.16 38 P P 19 03 57.0 +0.2
baz=319
DSB Dublin 85.22 341 *e*P P 19 03 57.2 +0.4
comp=Z,206nm,0.8s
KPRO Kipourio 85.22 318 P P 19 03 56.3 -0.9
TVO Taravao 85.22 117 *e*P P 19 03 59.7 +2.4
comp=Z,69nm,1.2s
PTL Penteli 85.23 315 P P 19 03 55.8 -1.4
ATAL Atalanti 85.23 316 P P 19 03 56.3 -0.9
CBKS Cedar Bluff 85.24 43 P P 19 03 57.3 0.0
baz=316,SNR=9.1
CBKS Cedar Bluff 85.24 43 *e*P P 19 03 57.1 -0.2
CBKS MLR MLR
comp=Z,2μm,20.0s
CBKS Cedar Bluff 85.24 43 *e*P P 19 03 57.1 -0.2
CBKS LR LR
comp=Z,2μm,20.0s
P32A Huiting Farm, 85.27 42 P P 19 03 57.4 0.0
baz=317,SNR=15
LKR Lokris 85.28 316 P P 19 03 56.2 -1.2

ECH	Echery	85.29	331⇑	*e*P		P		19 03 57.4	+0.1	
ATHU	Athens Univers	85.33	315	P		P		19 03 56.2	-1.5	
AGG	Agios Georgios	85.37	317	P		P		19 03 56.4	-1.5	
RPZ	Rata Peaks	85.38	159	P		P		19 03 57.5	+0.1	
	comp=Z,32nm,0.9s,baz=288,slow=4.4,SNR=2.8									
STRD	Stroud	85.38	338⇑	*e*P		P		19 03 57.6	-0.1	
STRD				AMB	AMB		19 03 58.8			
	comp=Z,925nm,1.0s									
STRD				AMS	AMS		19 43 37.5			
	comp=Z,15µm,23.2s									
VLY	Voula,Athens	85.41	315	P		P		19 03 56.3	-1.8	
HMNX	Herstmonceux	85.42	337⇑	*e*P		P		19 03 58.7	+0.8	
HMNX				AMB	AMB		19 03 59.4			
	comp=Z,1µm,0.8s									
HMNX				AMS	AMS		19 46 15.7			
	comp=Z,16µm,18.1s									
M35A	Neola	85.42	39	P		P		19 03 58.3	+0.2	
	baz=318,SNR=25									
MCH1	Michaelchurch	85.43	339⇑	*e*P		P		19 03 58.1	+0.2	
MCH1				AMB	AMB		19 03 59.0			
	comp=Z,372nm,1.0s									
MCH1				AMS	AMS		19 42 46.7			
	comp=Z,11µm,24.3s									
VILL	Villia	85.45	316	P		P		19 03 56.5	-1.9	
K37A	Belmond	85.46	37	P		P		19 03 58.5	+0.2	
	baz=319,SNR=89									
L36A	Harm Buss Farm	85.46	38	P		P		19 03 58.4	+0.1	
	baz=319,SNR=20									
O33A	Hebron	85.48	41	P		P		19 03 57.7	-0.7	
	baz=317									
N34A	Lincoln	85.48	40	P		P		19 03 58.0	-0.4	
	baz=318,SNR=21									
SANT	Santorini	85.50	313	*e*P		P		19 03 56.7	-1.9	
	comp=Z,516nm,1.2s									
SANT				LR		LR				
	comp=Z,4µm,22.0s									
SWN1	Swindon	85.51	338⇑	*e*P		P		19 03 58.8	+0.5	
SWN1				AMB	AMB		19 03 59.6			
	comp=Z,815nm,1.1s									
SWN1				AMS	AMS		19 44 06.2			
	comp=Z,18µm,22.7s									
WOL	Wolverton	85.51	338⇑	*e*P		P		19 03 58.4	0.0	
WOL				AMB	AMB		19 03 59.1			
	comp=Z,473nm,1.1s									
WOL				AMS	AMS		19 43 54.2			
	comp=Z,16µm,24.5s									
MONM	Monmouth	85.51	339⇑	*e*P		P		19 03 58.5	+0.2	
MONM				AMB	AMB		19 03 59.4			
	comp=Z,484nm,1.0s									
MONM				AMS	AMS		19 41 45.3			
	comp=Z,12µm,26.3s									
THR3	Thira Island,	85.51	313	P		P		19 03 58.3	-0.3	
THR5	Thira Island,	85.54	313	P		P		19 03 57.5	-1.2	
THR6	Thira Island,	85.55	313	P		P		19 03 57.1	-1.7	
J38A	Wedel Dairy, R	85.59	36	P		P		19 03 58.9	0.0	
	baz=320,SNR=37									
OLDB	Oldbury-Upon-S	85.60	339⇑	*e*P		P		19 03 58.7	0.0	
OLDB				AMS	AMS		19 41 34.7			
	comp=Z,14µm,26.1s									
MOF	Molkenrain	85.60	331⇑	*e*P		P		19 03 58.8	-0.2	
LPW	Lampeter	85.62	340⇑	*e*P		P		19 03 59.1	+0.3	
LPW				AMB	AMB		19 04 00.0			
	comp=Z,400nm,1.0s									
LPW				AMS	AMS		19 45 30.9			
	comp=Z,11µm,20.5s									
HGH	Gray Hill	85.69	339⇑	*e*P		P		19 03 59.3	+0.1	
JAN	Janina	85.70	318	P		P		19 03 59.4	-0.2	
THEF	They Montfort	85.72	332⇑	*e*P		P		19 03 59.5	0.0	
BATH	Bath	85.72	338⇑	*e*P		P		19 03 59.4	0.0	
BATH				AMB	AMB		19 04 00.3			
	comp=Z,323nm,1.2s									
BATH				AMS	AMS		19 44 00.1			
	comp=Z,16µm,23.4s									
LTK	Loutraki	85.74	316	P		P		19 03 57.2	-2.6	
Q32A	Meitler Ranch,	85.75	43	P		P		19 03 59.6	-0.2	
	baz=317,SNR=12									
TUE	Stuetta	85.85	329	*e*P		P		19 03 59.6	-0.8	
	comp=Z,199nm,1.0s									
TUE				LR		LR				
	comp=Z,18µm,19.0s									
O34A	Beatrice	85.86	41	P		P		19 03 59.8	-0.5	
	baz=318,SNR=22									
M36A	Felix, Anita	85.88	39	P		P		19 04 01.0	+0.6	
	baz=319,SNR=5.5									
P33A	Williams Farm,	85.89	42	P		P		19 04 00.3	-0.2	
	baz=317,SNR=27									
L37A	Phoenix Point,	85.89	38	P		P		19 04 00.8	+0.3	
	baz=319,SNR=7.1									
N35A	Tabor	85.90	40	P		P		19 04 00.9	+0.4	
	baz=318,SNR=36									
THAL	Thalero	85.90	316	P		P		19 03 58.6	-1.9	
ANX	Ano Chora	85.91	317	P		P		19 03 59.6	-1.1	
KALE	Kalithea	85.93	317	P		P		19 04 00.4	-0.4	
J39A	Decorah	85.94	36	P		P		19 04 00.5	-0.2	
	baz=321,SNR=57									
DSL	Palaion Diasel	85.96	318	P		P		19 04 00.2	-0.6	
SERG	Sergoula	85.96	317	P		P		19 03 59.5	-1.4	
DID	Didima	85.96	315	P		P		19 03 58.1	-2.8	
K38A	Parkersburg	85.97	37	P		P		19 04 01.0	+0.2	
	baz=320,SNR=9.3									
SGD	Sagiada	86.06	319	P		P		19 04 00.7	-0.6	
IGT	Igoumenitsa	86.07	318	P		P		19 04 00.7	-0.6	
R32A	Long Quarter,	86.08	43	P		P		19 04 01.4	0.0	
	baz=317,SNR=8.3									
PVO	Paravola	86.10	317	P		P		19 04 00.9	-0.6	
MEH	Mehetia	86.12	116	*e*P		P		19 04 04.3	+2.5	
	comp=Z,63nm,1.3s									
MEH	Mehetia	86.12	116	*e*T		T		20 38 50.3		
	comp=Z,133nm,0.3s									
LAKA	Lakka	86.13	317	P		P		19 04 00.8	-0.9	
Q33A	Connelly Farm,	86.13	42	P		P		19 04 01.7	0.0	
	baz=317,SNR=40									
KLV	Kalavryta, Ach	86.18	316	P		P		19 04 00.5	-1.5	
NPS	Neapolis	86.19	312	P		P		19 04 00.7	-1.3	
O35A	Humboldt	86.20	40	P		P		19 04 01.8	-0.2	
	baz=318,SNR=20									
KEK	Kerkira	86.22	319	P		P		19 04 01.6	-0.5	
TAOE	Nuku Hiva Isla	86.23	104	*e*S		S		19 14 32.4	-2.5	
	comp=Z,11µm,24.4s									
TAOE	Nuku Hiva Isla	86.23	104	*e*LR		LR		19 31 10.7		
	comp=Z,37µm,26.1s,baz=315									
TAOE	Nuku Hiva Isla	86.23	104	*e*T		T		20 39 30.3		
	comp=Z,187nm,0.3s									
L38A	Oak Wood Farm,	86.26	37	P		P		19 04 02.3	+0.1	
	baz=320,SNR=22									
P34A	Walnut Farm, R	86.26	41	P		P		19 04 01.8	-0.5	
	baz=318,SNR=44									
N36A	Muff Farm, Cla	86.28	39	P		P		19 04 02.8	+0.5	
	baz=319,SNR=17									
M37A	Trindle Farm,	86.29	38	P		P		19 04 02.7	+0.4	
	baz=319,SNR=25									
PDO	Prodromos	86.30	317	P		P		19 04 01.9	-0.6	
SCIA	State Center	86.32	38	PFAKE				19 04 10.0	+7.5	
SCIA				LR		LR				
	comp=Z,6µm,22.0s									
J40A	Soldiers Grove	86.34	35	P		P		19 04 02.5	-0.1	
	baz=321,SNR=35									
K39A	Oelwein	86.34	36	P		P		19 04 02.1	-0.5	
	baz=321,SNR=69									
LAST	Lasithi	86.34	312	P		P		19 04 02.7	-0.2	
LKD2	Lefkada island	86.44	318	P		P		19 04 02.2	-1.0	
S32A	Newby Ranch, P	86.48	44	P		P		19 04 03.8	+0.4	
	baz=316									
DRO	Drossia	86.48	317	P		P		19 04 02.8	-0.6	
AXS	Araxos	86.49	317	P		P		19 04 02.4	-1.0	
VLX	Vlachokerasia	86.53	316	P		P		19 04 02.2	-1.6	
R33A	Olander Ranch,	86.55	43	P		P		19 04 03.9	+0.1	
	baz=317,SNR=11									
IDI	Anoyia	86.59	313	P		P		19 04 02.6	-1.5	
	comp=Z,208nm,0.8s,baz=20,slow=8.2,SNR=51									
IDI	Anoyia	86.59	313	P		P		19 04 02.4	-1.7	
IDI	Anoyia	86.59	313	*e*P		P		19 04 02.4	-1.7	
	comp=Z,253nm,0.8s									
Q34A	Chapman	86.66	42	P		P		19 04 04.2	-0.1	
	baz=318,SNR=22									
J41A	Loganville	86.69	35	P		P		19 04 04.4	0.0	
	baz=322,SNR=49									
VLI	Veliai	86.69	315	P		P		19 04 02.0	-2.5	
K40A	Colesburg	86.69	36	P		P		19 04 04.5	+0.2	
	baz=321,SNR=30									
P35A	Duane Minner,	86.69	41	P		P		19 04 04.4	0.0	
	baz=318,SNR=18									
M38A	Pleasantville	86.70	38	P		P		19 04 04.8	+0.4	
	baz=320,SNR=40									
N37A	Lee Faris, Mou	86.70	39	P		P		19 04 04.8	+0.4	
	baz=319,SNR=9.3									
KSU1	Kansas State U	86.70	41	P		P		19 04 04.6	+0.1	
	baz=318,SNR=26									
KSU1	Kansas State U	86.70	41	*e*P		P		19 04 04.2	-0.3	
	comp=Z,317nm,1.0s									
KSU1				LR		LR				
	comp=Z,5µm,22.0s									
L39A	Vinton	86.73	37	P		P		19 04 04.8	+0.2	
	baz=320,SNR=70									
HTL	Hartland	86.74	339⇑	*e*P		P		19 04 04.8	+0.4	
HTL				AMB	AMB		19 04 05.6			
	comp=Z,106nm,1.1s									
HTL				AMS	AMS		19 46 25.6			
	comp=Z,6µm,20.4s									
DAMY	Dhamar	86.75	286	*e*P		P		19 04 05.7	+0.3	
	comp=Z,296nm,1.3s									
DAMY				*e*PP		PP		19 07 28.3	+0.4	
AMT	Artemida-Makis	86.79	316	P		P		19 04 03.2	-1.7	
O36A	Bolckow	86.79	40	P		P		19 04 05.1	+0.2	
	baz=319,SNR=21									
SIVA	Sivas	86.83	313	P		P		19 04 04.7	-0.4	
T32A	Huddler Ranch,	86.86	44	P		P		19 04 05.8	+0.5	
	baz=316,SNR=31									
KFL	Anninata	86.87	317	P		P		19 04 04.4	-0.9	
MNTX	Cornudas Mount	86.90	52	P		P		19 04 06.1	+0.5	
	baz=313,SNR=44									
MNTX	Cornudas Mount	86.90	52	*e*P		P		19 04 05.8	+0.2	
	comp=Z,152nm,1.3s									
MNTX				*e*PcP		PcP		19 04 08.8	+1.0	
MNTX				*e*PP		PP		19 07 30.4	+2.1	
MNTX				LR		LR				
	comp=Z,3µm,21.0s									
VAM	Vamos	86.91	313	P		P		19 04 04.8	-0.7	
VLS	Valsamata	86.92	317	P		P		19 04 03.5	-2.1	
MSTX	Muleshoe	86.93	49	P		P		19 04 06.1	+0.3	
	baz=314,SNR=28									
AMTX	Amarillo	86.93	47	P		P		19 04 06.4	+0.6	
	baz=315									
AMTX	Amarillo	86.93	47	*e*P		P		19 04 06.0	+0.3	
	comp=Z,239nm,0.9s									
JFWS	Jewell Farm	86.94	35	*e*P		P		19 04 05.3	-0.2	
JFWS				pmax		pmax				
	comp=Z,116nm,0.9s									
JFWS				MLR		MLR				
	comp=Z,8µm,21.0s									
JFWS	Jewell Farm	86.94	35	*e*P		P		19 04 05.3	-0.2	
	comp=Z,116nm,0.9s									
JFWS				LR		LR				
	comp=Z,8µm,21.0s									
R34A	Isabella, Hill	86.95	42	P		P		19 04 05.9	+0.1	
	baz=317,SNR=11									
IMMV	Iera Moni Meta	87.00	314	P		P		19 04 05.3	-0.7	
OG01	Vacheresse	87.03	331⇑	*e*P		P		19 04 05.7	-0.3	
P36A	Good Intent, A	87.05	40	P		P		19 04 06.3	+0.2	
	baz=319,SNR=50									
S33A	Kaszmaul Farm,	87.06	43	P		P		19 04 06.6	+0.3	
	baz=317,SNR=9.8									
DYA	Yadsworthy	87.09	339⇑	*e*P		P		19 04 05.9	-0.2	
DYA				AMB	AMB		19 04 06.8			
	comp=Z,264nm,1.5s									
DYA				AMS	AMS		19 45 39.3			
	comp=Z,11µm,22.5s									
M39A	Webster	87.15	37	P		P		19 04 06.8	+0.3	
	baz=320,SNR=55									
L40A	Anamosa	87.15	36	P		P		19 04 06.6	0.0	
	baz=321,SNR=50									
K41A	Shullsburg	87.15	36	P		P		19 04 06.6	+0.1	
	baz=322,SNR=41									
N38A	Joes South For	87.15	38	P		P		19 04 06.8	+0.2	
	baz=320,SNR=21									
ZKS	Zakynthos	87.17	317	P		P		19 04 05.1	-1.7	
O37A	Wolven Farm, M	87.17	39	P		P		19 04 07.3	+0.6	
	baz=319,SNR=27									
Q35A	Mercer Eighty,	87.18	41	P		P		19 04 07.0	+0.2	
	baz=318,SNR=48									
T33A	Patterson Ranc	87.30	44	P		P		19 04 07.7	+0.2	
	baz=317,SNR=12									
VAL	Valentia	87.36	343⇓	*i*P		P		19 04 06.1	-1.2	
VAL	Valentia	87.36	343⇓	*i*S		S		19 14 45.7	+1.2	
AQU	L'Aquila	87.36	324	*e*P		P		19 04 07.7	0.0	
AQU				pmax		pmax				
	comp=Z,293nm,0.9s									
AQU				MLR		MLR				
	comp=Z,9µm,20.0s									
AQU	L'Aquila	87.36	324	*e*P		P		19 04 07.7	0.0	
	comp=Z,293nm,0.9s									
AQU				*e*PcP		PcP		19 04 11.2	+1.5	
AQU				LR		LR				
	comp=Z,9µm,20.0s									
U32A	Winter Ranch,	87.39	45	P		P		19 04 08.3	+0.4	
	baz=316,SNR=9.4									
Q36A	Arnold C. Orve	87.41	41	P		P		19 04 07.6	-0.3	
	baz=318,SNR=11									
N39A	Derby Farms, D	87.45	38	P		P		19 04 08.5	+0.4	
	baz=320,SNR=51									
S34A	Willow Spring	87.47	43	P		P		19 04 08.5	+0.3	
	baz=318,SNR=24									
L41A	Preston	87.48	36	P		P		19 04 08.3	+0.1	
	baz=322,SNR=32									
R35A	Emporia Munici	87.49	42	P		P		19 04 09.2	+0.9	
	baz=318,SNR=29									
P37A	Lathrop	87.51	40	P		P		19 04 08.5	+0.2	
	baz=319,SNR=39									
O38A	Galt	87.55	39	P		P		19 04 09.0	+0.4	
	baz=320,SNR=21									
RSL	Roselend	87.58	330⇑	*e*P		P		19 04 08.3	-0.5	
JQE	Queens East	87.62	337⇑	*i*P		P		19 04 08.9	+0.2	
JDG	Jersey Dam (Ga	87.63	337⇑	*e*P		P		19 04 08.7	0.0	
JRS	Jersey	87.64	337⇑	*e*P		P		19 04 08.9	+0.2	
JSA	Saint Aubin	87.67	337⇑	*e*P		P		19 04 08.9	0.0	
JSA				AMB	AMB		19 04 09.8			
	comp=Z,430nm,0.9s									
JSA				AMS	AMS		19 45 36.3			
	comp=Z,16µm,22.8s									
CCA1	Carnmenellis	87.68	339⇑	*e*P		P		19 04 08.8	-0.1	
CCA1				AMB	AMB		19 04 09.8			
	comp=Z,192nm,1.3s									
CCA1				AMS	AMS		19 46 52.0			
	comp=Z,9µm,19.7s									
V32A	Arapaho	87.84	45	P		P		19 04 10.9	+0.9	
	baz=316,SNR=22									
U33A	Lingo Farm, Me	87.85	44	P		P		19 04 10.6	+0.6	
	baz=317,SNR=13									
R36A	Gordon, Harris	87.86	41	P		P		19 04 10.4	+0.3	
	baz=318,SNR=22									
P38A	Dawn	87.89	39	P		P		19 04 10.6	+0.4	
	baz=320,SNR=42									
O39A	Kirksville	87.90	38	P		P		19 04 10.7	+0.5	
	baz=320,SNR=27									
S35A	Otter Creek Ra	87.90	42	P		P		19 04 10.8	+0.5	
	baz=318,SNR=51									
T34A	McClaskey Farm	87.92	43	P		P		19 04 10.8	+0.4	
	baz=318,SNR=11									
Q37A	Longview Farm,	87.99	40	P		P		19 04 10.3	-0.3	
	baz=319									
CUC	Castrocucco	88.03	321	*e*P		P		19 04 09.2	-1.7	
	comp=Z,71nm,1.0s									
CUC				LR		LR				
	comp=Z,12µm,20.0s									
BNI	Bardonecchia	88.09	330	PFAKE				19 04 20.0	+8.8	
BNI				LR		LR				
	comp=Z,17µm,19.0s									
W32A	Sentinel	88.16	46	P		P		19 04 12.2	+0.7	
	baz=316,SNR=16									
U34A	Anderson Ranch	88.16	44	P		P		19 04 12.4	+0.9	
	baz=317,SNR=30									
U34A	Anderson Ranch	88.16	44	*e*P		P		19 04 11.8	+0.2	
	comp=Z,544nm,1.4s									
TIP	Timpagrande	88.18	320	P		P		19 04 11.6	0.0	
TIP	Timpagrande	88.18	320	*e*P		P		19 04 10.6	-1.1	
	comp=Z,210nm,1.1s									
TIP				LR		LR				
	comp=Z,19µm,20.0s									
GDM	Grand'Maison	88.18	330⇑	*e*P		P		19 04 11.5	-0.2	
V33A	Lossen Ranch,	88.20	45	P		P		19 04 12.5	+0.8	
	baz=317,SNR=13									
R37A	Teagarden Farm	88.22	41	P		P		19 04 11.4	-0.3	
	baz=319,SNR=18									
S36A	Lake Cedric, C	88.26	42	P		P		19 04 11.9	-0.1	
	baz=318,SNR=12									
GRN	Grenoble	88.30	330⇑	*e*P		P		19 04 12.3	+0.2	
O40A	La Belle	88.33	38	P		P		19 04 12.8	+0.5	
	baz=321,SNR=73									
Q38A	Cooks Store, C	88.35	40	P		P		19 04 12.7	+0.4	
	baz=320,SNR=27									
T35A	Sooner Cattle	88.37	43	P		P		19 04 13.2	+0.7	
	baz=318,SNR=14									
P39B	Salisbury	88.39	39	P		P		19 04 12.7	+0.2	
	baz=320,SNR=34									
PLDF	La Plantade	88.49	332⇑	*e*P		P		19 04 14.3	+1.3	
W33A	Caddo, Fort Co	88.58	45	P		P		19 04 14.7	+1.1	
	baz=317,SNR=8.8									
T36A	Boggs Farm, Ca	88.60	42	P		P		19 04 14.3	+0.7	
	baz=318,SNR=26									
AGO	Saint Agoulin	88.60	332⇑	*e*P		P		19 04 14.7	+1.2	
V34A	Guthrie	88.61	44	P		P		19 04 14.4	+0.7	
	baz=317,SNR=22									
V34A	Guthrie	88.61	44	*e*P		P		19 04 14.1	+0.4	
	comp=Z,425nm,1.3s									
Q39A	Willow Grove F	88.61	39	P		P		19 04 13.8	+0.1	
	baz=320,SNR=84									
S37A	Fort Scott	88.63	41	P		P		19 04 14.0	+0.2	
	baz=319,SNR=40									
X32A	Elmer	88.64	46	P		P		19 04 14.2	+0.3	
	baz=316,SNR=25									
U35A	Pawnee	88.65	43	P		P		19 04 14.4	+0.6	
	baz=318,SNR=31									
WMOK	Wichita Mounta	88.70	46	P		P		19 04 14.7	+0.6	
	baz=317,SNR=31									
WMOK	Wichita Mounta	88.70	46	*e*P		P		19 04 14.4	+0.2	
WMOK				pmax		pmax				
	comp=Z,244nm,1.4s									
WMOK				MLR		MLR				
	comp=Z,3µm,21.0s									
WMOK	Wichita Mounta	88.70	46	*e*P		P		19 04 14.3	+0.2	
	comp=Z,244nm,1.4s									
WMOK				LR		LR				
	comp=Z,3µm,21.0s									
P40A	Paris	88.70	39	P		P		19 04 14.5	+0.5	
	baz=320,SNR=65									
SSB	Saint Sauveur	88.73	331⇑	*e*P		P		19 04 14.0	-0.1	
SSB	Saint Sauveur	88.73	331	*e*P		P		19 04 13.0	-1.1	
SSB				pmax		pmax				
	comp=Z,83nm,1.0s									
SSB				MLR		MLR				
	comp=Z,12µm,21.0s									
SSB	Saint Sauveur	88.73	331	*e*P		P		19 04 13.0	-1.1	
	comp=Z,83nm,1.0s									
SSB				LR		LR				
	comp=Z,12µm,21.0s									
TBI	Tubuai	88.79	121	*e*P		P		19 04 17.0	+2.5	
	comp=Z,388nm,1.3s									
TBI	Tubuai	88.79	121	*e*S		S		19 14 57.9	-0.9	
	comp=Z,7µm,27.0s									
TBI				*e*SS		SS		19 20 49.9	-2.1	
	comp=Z,2µm,30.0s									
TBI	Tubuai	88.79	121	*e*LR		LR		19 32 19.5		
	comp=Z,29µm,31.5s,baz=313									
TBI	Tubuai	88.79	121	*e*T		T		20 41 56.7		
	comp=Z,301nm,0.3s									
R38A	Fenwick Farm,	88.79	40	P		P		19 04 14.0	-0.5	
	baz=319,SNR=21									
O41A	Passleys Farm,	88.82	37	P		P		19 04 15.3	+0.7	
	baz=321,SNR=19									
PYM	Petit Puy Mans	88.91	332⇑	*e*P		P		19 04 16.4	+1.4	
W34A	Bridge Creek,	88.91	45	P		P		19 04 16.0	+0.9	
	baz=317,SNR=10									
W34A	Bridge Creek,	88.91	45	*e*P		P		19 04 15.5	+0.4	
	comp=Z,384nm,1.4s									
X33A	Lawton	89.00	46	P		P		19 04 16.0	+0.5	
	baz=317,SNR=11									
OG26	St.-Nazaire-De	89.02	330⇑	*e*P		P		19 04 15.2	-0.3	
V35A	Meyer Ranch, C	89.04	44	P		P		19 04 16.4	+0.7	
	baz=318,SNR=10									
T37A	Cheneyville 18	89.06	42	P		P		19 04 16.1	+0.3	
	baz=319,SNR=24									
P41A	Barry, Barry	89.08	38	P		P		19 04 16.4	+0.6	
	baz=321,SNR=70									
Q40A	Laux Farm, Aux	89.10	39	P		P		19 04 16.3	+0.4	
	baz=320,SNR=29									
R39A	Chumby, Stover	89.14	40	P		P		19 04 16.2	+0.1	
	baz=320,SNR=28									
O42A	Bath	89.14	37	P		P		19 04 16.4	+0.3	
	baz=322,SNR=6.0									
U36A	Oologah	89.17	43	P		P		19 04 16.8	+0.5	
	baz=318,SNR=13									
S38A	Stockton	89.21	41	P		P		19 04 15.8	-0.7	
	baz=319,SNR=21									
HDIL	Hopedale	89.23	36	P		P		19 04 16.5	0.0	
	baz=322,SNR=28									
HDIL	Hopedale	89.23	36	*e*P		P		19 04 16.4	0.0	
	comp=Z,454nm,1.3s									
HDIL				LR		LR				
	comp=Z,5µm,22.0s									
LBL	Lubilhac	89.26	332	*e*P		P		19 04 18.0	+1.4	
CEL	Celeste	89.31	320	*e*P		P		19 04 15.3	-1.7	
	comp=Z,456nm,0.9s									
CEL				LR		LR				
	comp=Z,19µm,19.0s									
Y33A	Hilltop Ranch,	89.32	46	P		P		19 04 17.4	+0.4	
	baz=317,SNR=20									
X34A	Smith Ranch, M	89.34	45	P		P		19 04 17.9	+0.7	
	baz=317,SNR=9.3									
FRNF	Fournols	89.38	332⇑	*e*P		P		19 04 17.6	+0.5	
T38A	Diamond	89.46	41	P		P		19 04 17.7	+0.1	
	baz=319,SNR=36									
S39A	Bolivar	89.47	40	P		P		19 04 17.6	-0.1	
	baz=320,SNR=37									
W35A	Tecumseh	89.47	44	P		P		19 04 18.3	+0.6	
	baz=318,SNR=20									
P42A	Winchester	89.49	37	P		P		19 04 18.1	+0.4	
	baz=322,SNR=45									
U37

comp=Z,110nm,0.9s
AAM MLR MLR
comp=Z,4µm,22.0s
AAM Ann Arbor 90.32 32 *e*P **P 19 04 21.0 -0.5**
comp=Z,110nm,0.9s
AAM LR LR
comp=Z,4µm,22.0s
S41A Jillco Farms, 90.35 40 P **P 19 04 21.5 -0.2**
baz=321,SNR=12
U39A Green Forest 90.38 41 P **P 19 04 21.9 -0.1**
baz=320,SNR=46
SFIN Lafayette 90.39 35 P **P 19 04 22.3 +0.5**
baz=324,SNR=23
SFIN Lafayette 90.39 35 *e*P **P 19 04 20.5 -1.4**
comp=Z,544nm,1.5s
LMQ La Malbaie 90.44 21 *e*P **P 19 04 21.2 -0.8**
Z35A Perchaven, San 90.59 46 P **P 19 04 23.4 +0.4**
baz=318,SNR=35
233A Rising Star 90.60 48 P **P 19 04 23.7 +0.6**
baz=317,SNR=68
Q44A Meyer Farm, Va 90.67 37 P **P 19 04 23.7 +0.5**
baz=322,SNR=11
134A White-Moore Ra 90.67 47 P **P 19 04 24.0 +0.6**
baz=317,SNR=22
V39A Pettigrew 90.70 42 P **P 19 04 23.6 +0.1**
baz=320,SNR=22
X37A Clayton 90.71 44 P **P 19 04 24.0 +0.5**
baz=319,SNR=10.0
Y36A Durant 90.72 45 P **P 19 04 24.0 +0.5**
baz=318,SNR=26
U40A Yellville 90.73 41 P **P 19 04 23.6 0.0**
baz=320,SNR=59
T41A Mountain View 90.76 40 P **P 19 04 23.7 0.0**
baz=321,SNR=20
W38A Poteau 90.82 43 P **P 19 04 24.5 +0.5**
baz=319,SNR=13
X38A Whitesboro 90.95 43 P **P 19 04 25.3 +0.6**
baz=319,SNR=19
Y37A Hugo 91.03 44 P **P 19 04 25.4 +0.5**
baz=318
333A Richland Sprin 91.05 48 P **P 19 04 25.8 +0.7**
baz=317,SNR=104
234A Clairette 91.05 47 P **P 19 04 26.0 +0.8**
baz=317,SNR=57
135A Vickery Place, 91.07 46 P **P 19 04 26.0 +0.8**
baz=317,SNR=16
Z36A Blue Ridge 91.10 45 P **P 19 04 25.7 +0.3**
baz=318,SNR=23
W39A Magazine 91.12 42 P **P 19 04 25.3 -0.1**
baz=320,SNR=8.6
R44A Waltonville 91.15 38 P **P 19 04 26.0 +0.5**
baz=322,SNR=9.4
V40A Witts Springs 91.16 41 P **P 19 04 25.5 -0.1**
baz=320,SNR=10
JCT Junction City 91.17 49 P **P 19 04 26.0 +0.2**
baz=316,SNR=19
JCT Junction City 91.17 49 *e*P **P 19 04 25.3 -0.5**
JCT pmax pmax
comp=Z,116nm,1.0s
JCT MLR MLR
comp=Z,4µm,21.0s
JCT Junction City 91.17 49 *e*P **P 19 04 25.3 -0.5**
comp=Z,116nm,1.0s
JCT LR LR
comp=Z,4µm,21.0s
CLTB Caltabellotta 91.18 321 PFAKE 19 04 40.0 +14
CLTB LR LR
comp=Z,12µm,21.0s
S43A Fulton Ridge, 91.20 39 P **P 19 04 25.8 +0.1**
baz=322
U41A Viola 91.22 40 P **P 19 04 25.9 0.0**
baz=321,SNR=15
433A Art 91.40 49 P **P 19 04 26.9 +0.1**
baz=316,SNR=40
X39A Fountain Ranch 91.46 43 P **P 19 04 27.3 +0.3**
baz=319,SNR=16
WHTX Lake Whitney, 91.46 47 P **P 19 04 27.6 +0.5**
baz=317,SNR=37
WHTX Lake Whitney, 91.46 47 *e*P **P 19 04 27.3 +0.3**
comp=Z,474nm,1.3s
T43A Greenville 91.47 39 P **P 19 04 27.1 +0.1**
baz=322
VSL Villasalto 91.48 325 P **P 19 04 26.2 -0.8**
comp=Z,31nm,0.9s
VSL LR LR
comp=Z,9µm,19.0s
334A Lometa 91.48 48 P **P 19 04 27.3 +0.2**
baz=317,SNR=88
W40A Ferguson Farm, 91.50 42 P **P 19 04 27.4 +0.2**
baz=320,SNR=19
S44A Carbondale 91.50 38 P **P 19 04 27.6 +0.5**
baz=322,SNR=17
V41A Mountainview 91.53 41 P **P 19 04 27.2 -0.1**
baz=320,SNR=25
Y38A Idabel 91.56 44 P **P 19 04 27.0 -0.4**
baz=319,SNR=11
U42A Revenden 91.56 40 P **P 19 04 27.0 -0.4**
baz=321,SNR=9.0
Z37A Pogue Cattle C 91.61 45 P **P 19 04 28.4 +0.7**
baz=318,SNR=6.7
136A Ennis 91.63 46 P **P 19 04 28.3 +0.5**
baz=318,SNR=6.5
H06N1 SOCORRO T-PHAS 91.68 65 T T 20 46 29.8
SNR=56
MIAR Mount Ida 91.72 43 P **P 19 04 28.5 +0.3**
baz=320,SNR=36
MIAR Mount Ida 91.72 43 *e*P **P 19 04 28.3 +0.1**
MIAR pmax pmax
comp=Z,301nm,1.3s
MIAR MLR MLR
comp=Z,4µm,22.0s
MIAR Mount Ida 91.72 43 *e*P **P 19 04 28.3 +0.1**
comp=Z,301nm,1.3s
MIAR LR LR
comp=Z,4µm,22.0s
LONY Lake Ozonia 91.75 25 *e*P **P 19 04 26.5 -1.7**
comp=Z,57nm,1.0s
LONY LR LR
comp=Z,4µm,21.0s
H06E1 SOCORRO T-PHAS 91.78 65 T T 20 46 37.6
SNR=50
FILF Fillols 91.79 331⇑ *e*P **P 19 04 28.7 +0.2**
T44A Benton 91.82 39 P **P 19 04 28.7 +0.1**
baz=322
434A Burnet 91.84 48 P **P 19 04 28.6 -0.3**
baz=317,SNR=39
S45A Carrier Mills 91.84 38 P **P 19 04 29.2 +0.5**
baz=323,SNR=8.2
WDD Wied Dalam 91.87 320 PFAKE 19 04 40.0 +11
WDD LR LR
comp=Z,11µm,19.0s
Y39A Lockesburg 91.90 43 P **P 19 04 29.3 +0.3**
baz=319,SNR=33
V42A Cord 91.91 40 P **P 19 04 28.6 -0.4**
baz=321,SNR=11
533A Kerrville 91.92 49 P **P 19 04 29.8 +0.6**
baz=316,SNR=6.0
Z38A Mt. Pleasant 91.93 44 P **P 19 04 29.4 +0.3**
baz=319
W41A Tony Mavity, V 91.95 41 P **P 19 04 28.9 -0.3**
baz=320
W41B Gary Mavity, V 91.95 41 P **P 19 04 28.9 -0.3**
baz=320,SNR=18
U43A Rector 91.97 40 P **P 19 04 29.3 0.0**
baz=322
137A Heron Place, G 91.98 45 P **P 19 04 29.0 -0.4**
baz=318
335A Moody 91.99 47 P **P 19 04 30.2 +0.7**
baz=317,SNR=7.2
VALF Valcebollere 92.14 331⇑ *e*P **P 19 04 30.6 +0.4**
X40A Basin Creek Fa 92.16 42 P **P 19 04 30.7 +0.5**
baz=320,SNR=19
336A Riesel 92.25 47 P **P 19 04 31.3 +0.6**
baz=318,SNR=18
435B Jarrell 92.27 48 P **P 19 04 31.5 +0.7**
baz=317,SNR=9.7
633A Saathoff Ranch 92.28 50 P **P 19 04 31.6 +0.8**
baz=316,SNR=11
Y40A Okolona 92.28 43 P **P 19 04 31.4 +0.6**
baz=320,SNR=8.8
534A Blanco 92.29 49 P **P 19 04 31.2 +0.3**
baz=317,SNR=52
138A Matatall Enter 92.31 45 P **P 19 04 31.6 +0.7**
baz=319
ACSO Alum Creek Sta 92.32 33 *e*P **P 19 04 30.9 0.0**
comp=Z,99nm,0.9s
ACSO LR LR
comp=Z,4µm,22.0s

X41A Kaden, Bauxite 92.33 42 P **P 19 04 31.7 +0.7**
baz=320,SNR=5.7
V43A Jonesboro 92.36 40 P **P 19 04 31.2 +0.1**
baz=321
Z39A Irene McRaven, 92.38 44 P **P 19 04 31.8 +0.6**
baz=319
237A Washetta, Mont 92.39 46 P **P 19 04 31.5 +0.2**
baz=318
RESF Ens 92.41 333⇑ *e*P **P 19 04 32.5 +1.1**
REYF Montagne du Re 92.45 333⇑ *e*P **P 19 04 31.2 -0.3**
VIEF Viey 92.46 333⇑ *e*P **P 19 04 32.4 +0.8**
WCI Wyandotte Cave 92.48 36 *e*P **P 19 04 30.0 -1.7**
WCI pmax pmax
comp=Z,689nm,1.4s
WCI Wyandotte Cave 92.48 36 *e*P **P 19 04 30.0 -1.7**
comp=Z,689nm,1.4s
M54A Oil Creek Stat 92.60 30 P **P 19 04 32.6 +0.4**
baz=329,SNR=23
832A Faith Ranch, C 92.63 51 P **P 19 04 33.1 +0.6**
baz=316,SNR=10.0
139A Bunkhouse Ranc 92.68 44 P **P 19 04 32.8 +0.2**
baz=319
436A Wall Ranch, Ga 92.74 47 P **P 19 04 33.7 +0.7**
baz=318,SNR=19
733A Divot King Ran 92.74 50 P **P 19 04 33.8 +0.8**
baz=316,SNR=11
Y41A Eaglette Beard 92.74 42 P **P 19 04 33.3 +0.4**
baz=320,SNR=12
238A Jacksonville 92.78 45 P **P 19 04 33.1 -0.1**
baz=319
Z40A Long Farm, Mag 92.79 43 P **P 19 04 34.0 +0.8**
baz=320,SNR=11
PKME Peaks-Kenny Pk 92.82 21 *e*P **P 19 04 32.9 -0.1**
comp=Z,124nm,1.0s
PKME LR LR
comp=Z,4µm,20.0s
535A Dale 92.82 48 P **P 19 04 34.0 +0.6**
baz=317,SNR=5.0
634A China Grove, S 92.83 49 P **P 19 04 34.5 +1.1**
baz=317
337A Centerville 92.86 46 P **P 19 04 34.4 +0.9**
baz=318
N54A Moraine State 92.94 30 P **P 19 04 34.3 +0.5**
baz=328,SNR=20
833A Chaparral WMA, 92.96 51 P **P 19 04 35.0 +1.0**
baz=316,SNR=12
437A Phantom Ranch, 93.07 47 P **P 19 04 35.6 +1.1**
baz=318
536A Bastrop 93.09 48 P **P 19 04 35.6 +1.0**
baz=318
734A La Parita Cree 93.09 50 P **P 19 04 35.8 +1.2**
baz=317,SNR=8.2
Z41A Richland Creek 93.12 43 P **P 19 04 35.7 +1.1**
baz=320
239A Gary 93.14 45 P **P 19 04 35.7 +1.0**
baz=319
338A Crockett 93.16 46 P **P 19 04 35.9 +1.0**
baz=319
140A Cam and Jess, 93.16 44 P **P 19 04 35.2 +0.3**
baz=320
X43A Marvell 93.17 41 P **P 19 04 35.5 +0.7**
baz=321
635A Leesville 93.17 49 P **P 19 04 35.6 +0.6**
baz=317,SNR=10.0
V45A Humboldt 93.19 39 P **P 19 04 34.8 -0.1**
baz=322
Y42A Garnett, Star 93.22 42 P **P 19 04 36.1 +1.0**
baz=321
NATX Nacogdoches 93.22 45 P **P 19 04 36.3 +1.1**
baz=319
NATX Nacogdoches 93.22 45 *e*P **P 19 04 35.6 +0.4**
comp=Z,116nm,1.1s
NATX LR LR
comp=Z,8µm,22.0s
W44A Shelby Farms P 93.23 40 P **P 19 04 35.3 +0.2**
baz=322
BINY Binghamton 93.39 27 *e*P **P 19 04 35.1 -0.7**
comp=Z,35nm,0.9s
BINY LR LR
comp=Z,3µm,19.0s
438A Sam Houston St 93.51 46 P **P 19 04 37.7 +1.2**
baz=318,SNR=9.3
240A Hunter Patters 93.52 44 P **P 19 04 37.0 +0.5**
baz=319
537A Green Hill Far 93.52 47 P **P 19 04 37.8 +1.2**
baz=318,SNR=12
636A Smothers Creek 93.53 48 P **P 19 04 38.1 +1.4**
baz=318,SNR=11
W45A Hickory Valley 93.53 39 P **P 19 04 37.2 +0.7**
baz=322,SNR=6.3
735A Kenedy 93.54 49 P **P 19 04 36.3 -0.3**
baz=317
933A Laredo 93.54 51 P **P 19 04 37.0 +0.2**
baz=316,SNR=34
141A Papa Simpson, 93.56 43 P **P 19 04 37.7 +1.0**
baz=320
X44A Crenshaw 93.56 40 P **P 19 04 37.6 +0.9**
baz=322
Z42A Norrel Spur, H 93.56 42 P **P 19 04 37.4 +0.8**
baz=320,SNR=8.0
339A Huntington 93.60 45 P **P 19 04 36.2 -0.7**
baz=319
Y43A Makayla and Ka 93.61 41 P **P 19 04 36.4 -0.5**
baz=321
834A Tilden 93.62 50 P **P 19 04 37.0 -0.1**
baz=317,SNR=7.8
439A Center Grove, 93.89 46 P **P 19 04 37.4 -0.8**
baz=319
538A Harpers Horsep 93.90 47 P **P 19 04 37.5 -0.8**
baz=318
736A Circle Diamond 93.91 49 P **P 19 04 38.1 -0.2**
baz=318,SNR=13
340A Bronson 93.91 45 P **P 19 04 37.8 -0.5**
baz=319
835A Beeville 93.94 50 P **P 19 04 38.1 -0.4**
baz=317,SNR=6.5
Y44A Strider, Charl 93.95 41 P **P 19 04 37.8 -0.6**
baz=322
637A Eagle Lake 93.99 48 P **P 19 04 38.3 -0.5**
baz=318,SNR=8.7
Z43A Armstrong Fami 93.99 42 P **P 19 04 37.7 -1.0**
baz=321
241A Mo Tay, Goldon 93.99 44 P **P 19 04 38.1 -0.5**
baz=320
X45A UM Field Stati 94.01 40 P **P 19 04 37.7 -1.1**
baz=322
934A Benavides 94.02 50 P **P 19 04 40.3 +1.4**
baz=317,SNR=12
SSPA Standing Stone 94.04 29 *e*P **P 19 04 37.7 -1.1**
comp=Z,66nm,0.8s
O56A Blue Knob Stat 94.09 30 P **P 19 04 39.2 +0.1**
baz=329,SNR=18
142A Monroe 94.12 43 P **P 19 04 39.9 +0.6**
baz=320
143A Socs Landing, 94.29 42 P **P 19 04 40.6 +0.6**
baz=321
034A Hebbronville 94.30 51 P **P 19 04 42.0 +1.8**
baz=317,SNR=58
Z44A Pea Ridge, Bel 94.36 41 P **P 19 04 40.7 +0.3**
baz=321
Y45A Yeager Farm, C 94.37 41 P **P 19 04 40.8 +0.4**
baz=322,SNR=9.2
341A Kurthwood 94.38 44 P **P 19 04 41.0 +0.5**
baz=320
440A Kirbyville 94.38 45 P **P 19 04 40.4 -0.1**
baz=319
242A Grayson 94.38 43 P **P 19 04 40.5 0.0**
baz=320
737A Port Lavaca 94.42 48 P **P 19 04 42.8 +2.1**
baz=318
539A Cross D Ranch, 94.42 46 P **P 19 04 41.9 +1.2**
baz=319
KVTX Kingsville 94.44 50 PFAKE 19 04 50.0 +9.2
KVTX LR LR
comp=Z,3µm,20.0s
638A Rosharon 94.52 47 P **P 19 04 42.8 +1.7**
baz=318
KEST Kesra 94.53 323 P **P 19 04 40.5 -0.7**
comp=Z,69nm,1.0s,baz=305,slow=3.9,SNR=38
KEST PP **PP 19 08 31.9 +3.4**
comp=Z,35nm,1.1s,baz=53,slow=5.6,SNR=4.6
KEST LR LR 19 52 31.7
comp=Z,13µm,19.3s,baz=340,slow=39
N59A State Game Lan 94.59 27 P **P 19 04 41.4 0.0**
baz=331,SNR=11
HRV Adam Dziewonsk 94.63 24 *e*P **P 19 04 38.5 -2.9**
HRV pmax pmax
comp=Z,80nm,1.1s

HRV Adam Dziewonsk 94.63 24 *e*P **P 19 04 38.5 -2.9**
comp=Z,80nm,1.1s
Z45A Winona 94.68 41 P **P 19 04 42.3 +0.5**
baz=322
Y46A Houston 94.70 40 P **P 19 04 41.8 -0.1**
baz=322,SNR=5.7
CMAH Djebel Manchou 94.71 325 P **P 19 04 40.6 -1.4**
035A Encino 94.75 51 P **P 19 04 43.8 +1.6**
baz=317,SNR=7.4
540A Vidor 94.77 46 P **P 19 04 43.0 +0.8**
baz=319
441A DeRidder 94.81 45 P **P 19 04 43.2 +0.7**
baz=320
342A Flagon Creek P 94.81 44 P **P 19 04 42.9 +0.5**
baz=320
CAEH `Ain El Ouahch 94.84 325 P **P 19 04 41.2 -1.3**
144A Alexander Plac 94.87 42 P **P 19 04 43.1 +0.4**
baz=321
243A Waterproof 94.89 43 P **P 19 04 43.2 +0.5**
baz=321
ABSA Djebel Ababsia 94.97 324 P **P 19 04 41.6 -1.7**
035Z Hargill 95.12 51 P **P 19 04 45.3 +1.4**
baz=317,SNR=9.1
TZTN Tazewell 95.12 35 *e*P **P 19 04 43.7 -0.1**
comp=Z,91nm,1.4s
145A Houston Renfro 95.15 42 P **P 19 04 44.6 +0.6**
baz=322
244A Avery, Jackson 95.19 42 P **P 19 04 44.6 +0.4**
baz=321,SNR=5.3
Y47A UCPARC, Winfie 95.20 39 P **P 19 04 43.6 -0.6**
baz=323
Z46A Louisville 95.20 41 P **P 19 04 44.8 +0.6**
baz=322
CKFL Kef-Lekhel 95.21 325 P **P 19 04 43.0 -1.4**
CASM Ain Smara 95.44 325 P **P 19 04 44.5 -0.8**
DFRA Djebel Bou Aff 95.47 326 P **P 19 04 45.1 -0.5**
146A Union 95.58 41 P **P 19 04 46.6 +0.6**
baz=322
245A Little AP, Sta 95.62 42 P **P 19 04 46.3 +0.2**
baz=322
344A Westbrook Farm 95.62 43 P **P 19 04 46.6 +0.5**
baz=321
Z47A Carrollton 95.65 40 P **P 19 04 45.9 -0.4**
baz=323
PBRG Braganca 95.71 337 *e*P **P 19 04 46.1 -0.4**
comp=Z,70nm,0.9s
PBRG Braganca 95.71 337 *e*PP PP 19 08 39.6 +2.3
PBRG *e*SKS S 19 15 48.3 -13
Z48A Northport 95.77 39 P **P 19 04 46.1 -0.7**
baz=323
BLA Blacksburg 95.94 32 *e*P **P 19 04 44.9 -2.7**
BLA pmax pmax
comp=Z,56nm,1.0s
BLA MLR MLR
comp=Z,6µm,22.0s
BLA Blacksburg 95.94 32 *e*P **P 19 04 44.9 -2.7**
comp=Z,56nm,1.0s
BLA LR LR
comp=Z,6µm,22.0s
147A Livingston 95.96 40 P **P 19 04 47.8 +0.2**
baz=323
SET Setif 95.97 326 P **P 19 04 50.0 +2.2**
PGAV Gavieira, Arco 96.03 338 *e*P **P 19 04 47.7 -0.3**
comp=Z,48nm,1.3s
PGAV Gavieira, Arco 96.03 338 *e*PP PP 19 08 42.4 +2.6
PGAV *e*SKS S 19 15 49.5 -14
PGAV Gavieira, Arco 96.03 338 *e*LR LR 19 37 16.9
comp=Z,8µm,22.0s
CKHR Kef el Ahmar 96.08 326 P **P 19 04 47.9 -0.4**
PCAB Cabril 96.19 338 *e*PP PP 19 08 44.6 +3.6
247A Quitman 96.27 41 P **P 19 04 49.5 +0.4**
baz=322
LRAL Lakeview Retre 96.32 39 *e*P **P 19 04 48.7 -0.6**
comp=Z,16nm,1.1s
CBN Corbin Frederi 96.34 30 PFAKE 19 05 00.0 +11
CBN LR LR
comp=Z,3µm,21.0s
MVO Moncorvo 96.38 337 *e*P **P 19 04 49.1 -0.5**
comp=Z,58nm,1.1s
MVO Moncorvo 96.38 337 *e*PP PP 19 08 44.9 +2.4
MVO *e*SKS **SKSac 19 15 31.7 +8.6**
MVO *e*SS SS 19 23 11.9 +34
MVO Moncorvo 96.38 337 *e*LR LR 19 39 27.0
comp=Z,14µm,22.0s
POLO Lamas de Olo 96.43 337 *e*P **P 19 04 49.6 -0.2**
comp=Z,37nm,1.0s
POLO Lamas de Olo 96.43 337 *e*PP PP 19 08 45.3 +2.4
POLO *e*SKS S 19 15 52.7 -14
PVRL Vila Real 96.50 337 *e*P **P 19 04 50.0 0.0**
comp=Z,53nm,1.1s
PVRL Vila Real 96.50 337 *e*PP PP 19 08 46.1 +2.8
248A Dixon Mills 96.69 40 P **P 19 04 51.0 0.0**
baz=323
ESDC Sonseca Array 96.71 334 P **P 19 04 50.3 -0.7**
comp=Z,25nm,0.8s,baz=20,slow=4.3,SNR=119
ESDC PP **PP 19 08 42.0 -3.0**
comp=Z,7.1nm,0.8s,baz=18,slow=7.1,SNR=4.7
ESDC LR LR 19 53 09.3
comp=Z,15µm,21.0s,baz=30,slow=38
347A Saraland 96.82 41 P **P 19 04 52.1 +0.4**
baz=322
PAB San Pablo 96.96 334 *e*P **P 19 04 49.8 -2.4**
PAB pmax pmax
comp=Z,37nm,1.0s
PAB MLR MLR
comp=Z,16µm,20.0s
PAB San Pablo 96.96 334 *e*P **P 19 04 49.8 -2.4**
comp=Z,38nm,1.0s
PAB LR LR
comp=Z,16µm,20.0s
PVIS Viseu 97.06 337 *e*P **P 19 04 52.4 -0.2**
PVIS Viseu 97.06 337 *e*PP PP 19 08 50.1 +2.4
MTE Manteigas 97.24 337 *e*P **P 19 04 53.2 -0.2**
comp=Z,55nm,1.5s
MTE Manteigas 97.24 337 *e*PP PP 19 08 51.6 +2.5
MTE *e*SKS **SKSac 19 15 33.4 +5.9**
MTE *e*SS SS 19 23 20.0 +30
MTE Manteigas 97.24 337 *e*LR LR 19 39 45.9
comp=Z,11µm,22.0s
MTE Manteigas 97.24 337 *e*P **P 19 04 51.1 -2.3**
comp=Z,28nm,0.9s
MTE LR LR
comp=Z,11µm,21.0s
KMSC Kings Mountain 97.28 34 P **P 19 04 53.1 -0.6**
baz=327,SNR=13
KMSC Kings Mountain 97.28 34 *e*P **P 19 04 53.0 -0.6**
comp=Z,37nm,1.0s
GOGA Godfrey 97.74 37 *e*P **P 19 04 55.2 -0.5**
GOGA pmax pmax
comp=Z,69nm,1.5s
GOGA MLR MLR
comp=Z,4µm,22.0s
GOGA Godfrey 97.74 37 *e*P **P 19 04 55.2 -0.5**
comp=Z,69nm,1.5s
GOGA LR LR
comp=Z,4µm,22.0s
BRAL Brewton 97.78 40 PFAKE 19 05 10.0 +14
BRAL LR LR
comp=Z,3µm,21.0s
PCAS Casmilo, Conde 97.85 337 *e*PP PP 19 08 56.6 +2.9
PCAS *e*SKS S 19 15 59.8 -19
PMRV Marv??o 98.08 336 *e*P **P 19 04 56.6 -0.6**
PMRV Marv??o 98.08 336 *e*PP PP 19 08 57.8 +2.3
PMRV *e*SKS **SKSac 19 15 37.8 +6.1**
PMRV *e*SS SS 19 23 35.2 +33
PMRV Marv??o 98.08 336 *e*LR LR 19 38 43.3
comp=Z,13µm,22.0s
PTOM Tomar 98.22 337 *e*PP PP 19 08 59.1 +2.6
PESTR Estremoz 98.65 336 *e*P **P 19 04 59.0 -0.7**
PESTR Estremoz 98.65 336 *e*PP PP 19 09 01.7 +1.8
PESTR *e*SKS S 19 16 03.6 -22
PESTR *e*SS SS 19 23 38.7 +29
PMTG Montargil 98.67 337 *e*PP PP 19 09 02.4 +2.5
PMTG *e*SKS S 19 16 06.3 -20
CNNC Cliffs of the 98.69 32 PFAKE 19 05 10.0 +10
CNNC LR LR
comp=Z,4µm,20.0s
RKT Rikitea 98.91 112 *e*SKSac **SKSac 19 15 36.5 +0.6**
comp=Z,4µm,30.2s
RKT *e*SP **SP 19 17 54.9 +0.5**
comp=Z,5µm,31.2s
RKT *e*SS **SS 19 23 16.9 +0.3**
comp=Z,5µm,30.5s
RKT Rikitea 98.91 112 *e*LR LR 19 37 02.4
comp=Z,29µm,27.8s,baz=306
RKT Rikitea 98.91 112 *e*T T 20 54 58.2

comp=Z,2.2nm,0.3s
EVO Evora 99.09 336 eP Pdif 19 05 01.5 -0.2
EVO Evora 99.09 336 ePP PP 19 09 05.1 +1.9
PBAR Barrancos 99.10 335 eP Pdif 19 05 01.3 -0.4
PBAR Barrancos 99.10 335 ePP PP 19 09 04.8 +1.5
PBAR eSKS S 19 16 07.5 -22
PMAFR Mafra 99.10 337 eSKS S 19 16 07.1 -23
PMST Lisbon--Monsan 99.27 337 ePP PP 19 09 06.2 +1.7
LIS Lisbon 99.28 337 eP Pdif 19 05 02.8 +0.3
LIS ePP PP 19 09 05.9 +1.3
LIS AMS AMS 19 52 37.1
comp=N,10μm,23.4s
LIS Lisbon 99.28 337 eP Pdif 19 05 02.8 +0.3
LIS e 19 09 05.9
TIGA Tifton 99.30 38 P Pdif 19 05 02.5 -0.3
baz=326
RER Riviere de l'E 99.48 251 PFAKE 19 05 10.0 +6.3
RER LR LR
comp=Z,6μm,20.0s
PBEJ Beja 99.50 336 eP Pdif 19 05 03.2 -0.3
PBEJ Beja 99.50 336 ePP PP 19 09 08.3 +1.9
NHSC New Hope 99.51 35 PFAKE 19 05 10.0 +6.4
NHSC LR LR
comp=Z,6μm,22.0s
PNCL Nicolau / Gran 99.64 336 eP Pdif 19 05 03.6 -0.5
PNCL Nicolau / Gran 99.64 336 ePP PP 19 09 09.5 +2.2
PNCL eSKS S 19 16 08.1 -26
MESJ Messejana 99.79 336 eP Pdif 19 05 05.1 +0.3
MESJ ePP PP 19 09 10.0 +1.5
MESJ eS SKSac 19 15 40.5 +0.3
MESJ eSS SS 19 23 29.9 +3.9
MESJ AMS AMS 19 52 47.1
comp=Z,12μm,26.6s
MESJ Messejana 99.79 336 eP Pdif 19 05 04.8 0.0
MESJ Messejana 99.79 336 ePP PP 19 09 10.5 +2.0
MESJ Messejana 99.79 336 eP Pdif 19 05 05.1 +0.3
MESJ e 19 09 10.0
MESJ eS SKSac 19 15 40.6 +0.3
MESJ eSS SS 19 23 29.9 +3.9
PCVE Castro Verde 99.92 336 eP Pdif 19 05 05.2 -0.2
PCVE Castro Verde 99.92 336 ePP PP 19 09 11.3 +1.8
PCVE eSKS S 19 16 11.9 -25
PCVE eSS SS 19 23 57.8 +30
PVAQ Vaqueiros 100.02 336 eP Pdif 19 05 05.4 -0.5
PVAQ Vaqueiros 100.02 336 ePP PP 19 09 12.1 +1.8
PVAQ eSKS 19 16 11.7
PVAQ Vaqueiros 100.02 336 eLR LR 19 39 35.3
comp=Z,16μm,22.0s
PTEO Sao Teotonio 100.22 336 ePP PP 19 09 15.9 +4.1
PBDV Barranco-do-Ve 100.24 336 ePP PP 19 09 13.7 +1.7
PBDV eSKS 19 16 13.6
MORF Marmelete 100.41 336 eP Pdif 19 05 07.9 +0.2
MORF ePP PP 19 09 14.4 +1.1
MORF eS SKSac 19 15 44.0 +0.5
MORF eSS SS 19 23 38.6 +3.8
MORF AMS AMS 19 51 40.4
comp=Z,10μm,24.2s
MORF Marmelete 100.41 336 eP Pdif 19 05 07.3 -0.4
MORF Marmelete 100.41 336 eP Pdif 19 05 07.9 +0.2
MORF e 19 09 14.5
MORF eS SKSac 19 15 44.0 +0.5
MORF eSS SS 19 23 38.6 +3.8
PFVI Vila Bisbo 100.63 336 eP Pdif 19 05 11.8 +3.2
PFVI Vila Bisbo 100.63 336 eSKS SKSac 19 16 10.6 +26
PFVI eSS SS 19 24 09.4 +32
KMBO Kilima Mbogo 101.99 278 P Pdif 19 05 14.4 -0.9
comp=Z,8.5nm,0.9s,baz=32,slow=7.0,SNR=19
KMBO PP PP 19 09 24.9 -2.0
comp=Z,14nm,0.9s,baz=44,slow=13,SNR=4.7
KMBO Kilima Mbogo 101.99 278 ePdif Pdif 19 05 14.3 -0.9
comp=Z,11nm,1.0s
KMBO PP PP 19 09 24.9 -2.0
KMBO LR LR
comp=Z,4μm,20.0s
PTCN Pitcairn Islan 103.66 111 PFAKE 19 05 30.0 +7.9
PTCN LR LR
comp=Z,9μm,22.0s
CMLA Cha da Macela 103.93 349 PFAKE 19 05 30.0 +6.8
CMLA LR LR
comp=Z,3μm,21.0s
ABPO Ambohimpanom 104.72 257 PFAKE 19 05 40.0 +13
ABPO LR LR
comp=Z,2μm,20.0s
BBSR BB Station 106.07 23 PFAKE 19 10 00.0
BBSR LR LR
comp=Z,2μm,21.0s
MBAR Mbarara 106.75 283 PFAKE 19 10 00.0
MBAR LR LR
comp=Z,675nm,21.0s
TAM Tamanrasset 106.97 318 PFAKE 19 10 00.0
TAM LR LR
comp=Z,6μm,20.0s
PMOZ Porto Moniz, M 107.06 341 eLR LR 19 42 52.0
comp=Z,6μm,20.0s
GTBY Guantanamo Bay 113.06 38 PFAKE 19 10 10.0
GTBY LR LR
comp=Z,2μm,20.0s
MTDJ Mount Denham 113.29 41 PFAKE 19 10 10.0
MTDJ LR LR
comp=Z,2μm,21.0s
GRTK Grand Turk 113.52 33 PFAKE 19 10 10.0
GRTK LR LR
comp=Z,3μm,20.0s
VNDA Vanda 115.67 175 Pdiff Pdif 19 06 13.1 -1.2
comp=Z,0.4nm,0.8s,baz=39,slow=7.7,SNR=3.6
VNDA PKP PKPdf 19 10 00.9 -0.4
comp=Z,6.4nm,0.8s,baz=313,slow=3.8,SNR=32
VNDA PKKPab PKKPbc 19 20 35.7 0.0
comp=Z,5.0nm,1.1s,baz=172,slow=3.9,SNR=5.4
SDDR Presa de Saban 115.67 35 PFAKE 19 10 10.0 +6.8
SDDR LR LR
comp=Z,6μm,20.0s
SBA Scott Base 116.34 174 ePKIKP PKPdf 19 10 02.9 +0.3
SBA MLR MLR
comp=Z,2μm,21.0s
SBA Scott Base 116.34 174 ePKPdf PKPdf 19 10 02.9 +0.3
SBA LR LR
comp=Z,2μm,21.0s
TORD Torodi Ar. Bea 116.91 315 Pdiff Pdif 19 06 22.7 +1.3
comp=Z,0.8nm,0.8s,baz=57,slow=3.2,SNR=4.3
TORD PKP PKPdf 19 10 04.2 -1.4
comp=Z,10nm,0.9s,baz=36,slow=1.3,SNR=29
TORD PP PP 19 11 15.5 +1.5
comp=Z,51nm,1.0s,baz=35,slow=5.7,SNR=8.2
TORD PKKPab PKKPab 19 20 34.7 -2.6
comp=Z,4.4nm,0.8s,baz=231,slow=4.1,SNR=7.4
LSZ Lusaka 117.59 272 PKP PKPdf 19 10 06.7 -0.2
comp=Z,18nm,0.7s,baz=32,slow=2.5,SNR=36
LSZ Lusaka 117.59 272 ePKIKP PKPdf 19 10 06.8 -0.2
LSZ MLR MLR
comp=Z,4μm,21.0s
LSZ Lusaka 117.59 272 ePKPdf PKPdf 19 10 06.8 -0.2
LSZ LR LR
comp=Z,4μm,21.0s
SJG San Juan 118.63 30 PFAKE 19 10 20.0 +11
SJG LR LR
comp=Z,3μm,22.0s
PAYG Puerto Ayora 119.79 65 PFAKE 19 10 20.0 +8.8
PAYG LR LR
comp=Z,7μm,22.0s
MATP Matopo 120.18 267 i P PKPdf 19 10 11.5 -0.3
MATP i 19 10 11.7
baz=49,slow=1.5
MATP Matopo 120.18 267 PKP PKPdf 19 10 10.9 -0.9
comp=Z,41nm,0.8s,baz=41,slow=1.1,SNR=81
MATP PP PP 19 11 36.0 -1.8
comp=Z,20nm,0.9s,baz=56,slow=5.9,SNR=4.9
MAW Mawson 120.22 206 PKP PKPdf 19 10 10.1 -0.2
comp=Z,23nm,0.8s,baz=336,slow=2.0,SNR=44
MAW PKKPbc PKKPbc 19 20 18.6 -0.4
comp=Z,7.1nm,0.8s,baz=257,slow=7.4,SNR=13
MAW SKKPbc SKKPbc 19 24 04.2 -2.1
comp=Z,3.8nm,1.1s,baz=229,slow=6.9,SNR=3.5
RPN Rapa Nui 120.51 102 PFAKE 19 10 20.0 +7.9
RPN LR LR
comp=Z,4μm,22.0s
ANWB Willy Bob 120.67 26 PFAKE 19 10 20.0 +7.2
ANWB LR LR
comp=Z,3μm,20.0s
FDF Fort de France 123.61 27 PFAKE 19 10 30.0 +11
FDF LR LR
comp=Z,3μm,22.0s
OCAC Ocana 123.85 43 eP PKPdf 19 10 18.2 -1.0
CBRI Barrientos, No 124.56 43 eP PKPdf 19 10 19.9 -0.7
BRRC Barranca, Sant 124.57 44 eP PKPdf 19 10 19.9 -0.5
SDV Santo Domingo 124.71 40 eP PKPdf 19 10 19.3 -1.6
SDV Santo Domingo 124.71 40 ePKPdf PKPdf 19 10 20.5 -0.4
SDV LR LR
comp=Z,3μm,20.0s
NORC Norcasia 125.18 46 eP PKPdf 19 10 19.9 -1.7
BARC Barichara 125.29 44 eP PKPdf 19 10 22.1 +0.1
BBGH Gun Hill 125.64 26 PFAKE 19 10 30.0 +7.6
BBGH LR LR
comp=Z,3μm,20.0s
SACV Santiago Islan 125.75 342 PFAKE 19 10 30.0 +7.4
SACV LR LR
comp=Z,2μm,22.0s
TUMC Tumaco 125.82 53 eP PKPdf 19 10 25.0 +2.2
GRGR Grenville 125.82 28 PFAKE 19 10 30.0 +7.3
GRGR LR LR
comp=Z,3μm,21.0s
DBIC Dimbokro 125.85 317 PKP PKPdf 19 10 21.9 -0.9
comp=Z,50nm,1.0s,baz=11,slow=2.6,SNR=32
DBIC PP PP 19 12 15.2 +0.3
comp=Z,51nm,1.0s,baz=27,slow=7.5,SNR=6.6
RUSC La Rusia 125.92 44 eP PKPdf 19 10 22.1 -1.4
TIC Toumodi 125.96 317 ePKIKP PKPdf 19 10 22.0 -1.1
KIC Kosan Boka 126.05 317 ePKIKP PKPdf 19 10 22.2 -1.0
comp=Z,102nm,1.0s
ROSC El Rosal 126.09 46 PKP PKPdf 19 10 23.6 -0.1
comp=Z,52nm,1.0s,baz=257,slow=1.0,SNR=19
ROSC El Rosal 126.09 46⇑ePKPdf 19 10 23.3 -0.5
LIC Lamto 126.32 317 ePKIKP PKPdf 19 10 22.6 -1.1
comp=Z,157nm,1.0s
CHIC Chingaza 126.59 46 eP PKPdf 19 10 23.9 -0.9
BOSA Boshof 126.82 260 PKP PKPdf 19 10 23.8 -0.6
comp=Z,45nm,0.8s,baz=78,slow=1.6,SNR=40
VILC Villavicencio, 127.04 46 eP PKPdf 19 10 23.9 -1.4
CMBC Cumbal 127.06 53 eP PKPdf 19 10 25.6 -0.2
OTAV Otavalo 127.21 54 ePKPdf PKPdf 19 10 26.0 0.0
OTAV LR LR
comp=Z,3μm,22.0s
QSPA South Pole Qui 127.48 180 PFAKE 19 10 30.0 +5.7
QSPA LR LR
comp=Z,3μm,21.0s
SJAC San Juan de Ar 127.57 47 eP PKPdf 19 10 24.4 -1.8
TSUM Tsumeb 128.17 275 ePKPdf PKPdf 19 10 27.2 0.0
TSUM LR LR
comp=Z,5μm,20.0s
SYO Syowa Base 128.89 207⇓eP PKPdf 19 10 24.6 -2.2
SUR Sutherland 131.90 258 PFAKE 19 10 40.0 +6.0
SUR LR LR
comp=Z,7μm,21.0s
NNA Nana 137.20 63 i PKIKP PKPdf 19 10 44.9 +0.7
NNA Nana 137.20 63 ePKPdf PKPdf 19 10 44.0 -0.2
NNA LR LR
comp=Z,2μm,20.0s
NVL N'lazarevskaya 137.99 202 ePKHKP PKPpre 19 10 34.7
NVL eSS SS 19 31 34.7 -5.3
PTGA Pitinga 138.17 33 PKhKP PKPpre 19 10 34.1
comp=Z,2.7nm,0.7s,baz=17,slow=1.2,SNR=7.4
PTGA PKP PKPdf 19 10 45.2 -0.8
comp=Z,19nm,0.8s,baz=330,slow=2.7,SNR=14
PTGA PP PP 19 13 35.4 +1.5
comp=Z,15nm,1.0s,baz=348,slow=12,SNR=4.3
SNAA Sanae 141.46 197 PKP PKPpre 19 10 43.5
SNAA Sanae 141.46 197 PP PP 19 13 52.6 -1.4
comp=Z,11nm,0.9s,baz=204,slow=10.0,SNR=3.3
ASCN Ascension 143.18 318 PFAKE 19 11 10.0 +15
ASCN LR LR
comp=Z,3μm,21.0s
VNA1 Neumayer--Stat 143.43 196 PKP PKPab 19 10 50.3 +0.3
SAML Samuel 143.66 44 ePKPpre PKPpre 19 10 52.6
SAML LR LR
comp=Z,3μm,22.0s
SHEL Horse Pasture 143.93 298 PFAKE 19 11 10.0 +14
SHEL LR LR
comp=Z,2μm,21.0s
LPAZ La Paz 146.23 59 eP PKPbc 19 11 02.0 -0.1
LPAZ La Paz 146.23 59 PKPbc PKPbc 19 11 01.6 -0.5
comp=Z,226nm,1.0s,baz=331,slow=3.1,SNR=256
PB12 IPOC Station P 146.28 64⇑iP PKPbc 19 11 01.0 -0.5
PB13 IPOC Station P 146.68 63⇑iP PKPbc 19 11 03.1 -0.3
MNMC Minye Minye 147.14 64⇑iP PKPdf 19 11 02.7 +0.7
PB11 IPOC Station P 147.50 65⇑iP PKPdf 19 11 02.9 +0.4
PB08 IPOC Station P 148.11 65⇑iP PKPdf 19 11 04.7 +0.9
RCBR Riachuelo 148.15 355 PKPbc PKPbc 19 11 06.4 -0.5
comp=Z,215nm,0.9s,baz=18,slow=2.0,SNR=26
RCBR Riachuelo 148.15 355 ePKPdf PKPdf 19 11 04.1 +0.5
RCBR LR LR
comp=Z,3μm,21.0s
PB01 IPOC Station P 148.43 67⇑iP PKPdf 19 11 02.5 -1.4
PB07 IPOC Station P 148.56 68⇑iP PKPdf 19 11 04.9 +0.7
PB04 IPOC Station P 148.73 70 iP PKPbc 19 11 06.8 -1.5
PMSA Palmer Station 148.99 159 PKPbc PKPbc 19 11 07.1 -0.2
comp=Z,24nm,0.8s,baz=226,slow=3.8,SNR=7.2
PMSA Palmer Station 148.99 159 ePKPbc PKPbc 19 11 07.6 +0.3
PMSA LR LR
comp=Z,4μm,22.0s
PB10 IPOC Station P 149.11 72⇑iP PKPbc 19 11 08.6 -0.4
PB06 IPOC Station P 149.38 70⇑iP PKPdf 19 11 05.0 -0.4
LVC Limon Verde 149.81 69 PKP PKPdf 19 11 06.1 -0.3
comp=Z,37nm,0.9s,baz=280,slow=5.1,SNR=9.6
LVC PKPbc PKPbc 19 11 11.2 0.0
comp=Z,451nm,1.0s,baz=294,slow=2.6,SNR=50
LVC Limon Verde 149.81 69⇑iP PKPdf 19 11 03.0 -3.5
LVC Limon Verde 149.81 69 ePKPdf PKPdf 19 11 06.9 +0.5
LVC LR LR
comp=Z,6μm,21.0s
PB14 IPOC Station P 149.85 74⇓iP PKPdf 19 11 08.4 +2.1
SIV San Ignacio 150.53 49 PKP PKPdf 19 11 06.7 -0.6
comp=Z,27nm,1.0s,baz=274,slow=1.1,SNR=26
SIV PKPbc PKPbc 19 11 12.1 -0.6
comp=Z,112nm,0.9s,baz=325,slow=2.3,SNR=56
LCO Las Campanas 151.80 82 eP PKPbc 19 11 15.2 -0.4
LCO Las Campanas 151.80 82 ⇓iP PKPbc 19 11 14.1 -1.5
LCO Las Campanas 151.80 82 ePKPbc PKPbc 19 11 15.9 +0.3
LCO LR LR
comp=Z,5μm,22.0s
HJA Humahuaca 152.74 66 eP PKPbc 19 11 17.3 -0.7
ROC1 El Roble 153.09 90 eP PKPbc 19 11 18.0 -0.4
AROD Rodeo 153.26 83 eP PKPdf 19 11 12.5 +1.1
USHA Ushuaia 153.43 140 PKP PKPdf 19 11 10.0 -0.4
comp=Z,45nm,0.8s,baz=202,slow=1.5,SNR=5.7
USHA PKPbc PKiKP 19 11 18.3 +0.2
comp=Z,280nm,0.9s,baz=204,slow=0.9,SNR=18
VCA Vinchina 153.62 79 eP PKPdf 19 11 11.8 +0.1
AGUA GUANDACOL 153.74 81 eP PKPdf 19 11 12.0 +0.2
ACCO Cerro Coronel 153.75 83 eP PKPdf 19 11 12.6 +0.5
FSA Cafayete 154.00 72 eP PKPdf 19 11 12.8 +0.4
RTLS Leoncito 154.04 86 eP PKPdf 19 11 12.7 +0.3
AUSP Uspallata 154.12 87 eP PKPdf 19 11 12.8 +0.3
CANA Caviahue 154.30 100 eP PKPdf 19 11 12.7 +0.3
AMOG MOGNA 154.35 84 eP PKPdf 19 11 13.0 +0.4
RTLL Cerro Villicun 154.51 84 eP PKPdf 19 11 12.6 -0.2
RTCV Cerro Valdivia 154.66 86 eP PKPdf 19 11 13.3 +0.4
ASAL Salagasta 154.69 87 eP PKPdf 19 11 13.0 0.0
ARCO CERRO ARCO 154.70 88 eP PKPdf 19 11 12.2 -0.9
AHML Horco Molle 154.85 72 eP PKPdf 19 11 13.1 -0.3
AAGR Agrelo 154.86 89 eP PKPdf 19 11 13.0 -0.3
PLCA Paso Flores 155.02 107 PKP PKPdf 19 11 13.6 +0.4
comp=Z,6.9nm,0.8s,baz=247,slow=4.4,SNR=9.3
PLCA PKPbc PKPbc 19 11 21.9
comp=Z,21nm,0.8s,baz=284,slow=3.1,SNR=15
PLCA PKPab PKPab 19 11 37.2 -0.6
comp=Z,60nm,1.1s,baz=330,slow=1.7,SNR=6.9
AVFE Valle Fertil 155.05 82 eP PKPdf 19 11 13.4 -0.1
CYA Choya 155.34 76 eP PKPdf 19 11 13.8 -0.2
EFI East Falkland 160.37 141 PFAKE 19 11 30.0 +11
EFI LR LR
comp=Z,10μm,22.0s
CPUP Villa Florida 160.40 60 PKP PKPdf 19 11 19.6 -0.6
comp=Z,8.2nm,0.9s,baz=31,slow=1.4,SNR=11
CPUP PKPab PKPab 19 12 00.5 -0.7
comp=Z,19nm,1.1s,baz=326,slow=4.1,SNR=4.9
CPUP PP PP 19 15 47.1 +3.5
comp=Z,6.5nm,1.1s,baz=346,slow=7.6,SNR=3.3
TRQA Tornquist 161.43 98 PFAKE 19 11 30.0 +9.0
TRQA LR LR
comp=Z,5μm,20.0s
HOPE Hope Point 163.40 184 PFAKE 19 11 30.0 +7.7
HOPE LR LR
comp=Z,3μm,20.0s
SPB Sao Paulo 163.93 31 PFAKE 19 11 30.0 +6.2
SPB LR LR
comp=Z,3μm,20.0s

*IDC **24** 18:57:15.8±1.1,29.°62S×175.°93W,h0km,mb4.4/4, mb1 4.6/6,mb1mx4.1/37,mbtmp4.5/6,ML3.9/2,MS4.6/1, Ms1 4.7/1,ms1mx3.7/32,Error ellipse: s-maj=31.7km s-min=25.7km az=168.0*
*NEIC **24** 18:57:16.6±0.8,29.°58S×175.°96W,h10km,mb4.5/1,Error ellipse: s-maj=18.3km s-min=13.9km az=112.0*
*ISCJB **24** 18:57:17.4±1.2,29.°68S±0.°08×175.°9W±0.°1, h28km, mb4.3/5,MS4.6/1,Error ellipse: s-maj=14.6km s-min=10.5km az=165.4*
ISC 24 18:57:19.6±1.0,29.°6S±0.°1×176.°0W±0.°1,h28km,n15, σ1s08/15,mb4.4/5,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	1.71	280	Pn	Pn	18 57 48.0	+0.5
	671nm,0.3s,baz=83,slow=5.2,SNR=17						
RAO				Sn	Sn	18 58 09.0	+0.6
	319nm,0.3s,baz=95,slow=21,SNR=3.7						
URZ	Urewera	10.40	212	Pn	Pn	18 59 45.7	-1.2
	0.6nm,0.3s,baz=9.6,slow=19,SNR=6.0						
URZ				Sn	Sn	19 01 43.6	+1.1
	2.6nm,0.3s,baz=46,slow=19,SNR=7.0						
KHZ	Kahutara	15.36	211	ePn	Pn	19 00 53.2	-1.2
RPZ	Rata Peaks	17.51	213	P	Pn	19 01 19.8	-1.9
	0.8nm,0.3s,baz=0.0,slow=4.0,SNR=4.0						
CTAO	Charters Tower	35.41	277	P	P	19 04 07.2	-6.2
ASAR	Alice Springs	44.90	265	P	P	19 05 32.3	+0.2
	1.7nm,0.6s,baz=108,slow=8.0,SNR=3.9						
WRAB	Tennant Creek	45.81	270	eP	P	19 05 38.6	-0.7
	4.1nm,0.8s						
WRA	Warramunga Arr	45.82	270	P	P	19 05 39.5	+0.1
	3.6nm,0.7s,baz=109,slow=7.9,SNR=3.8						
VNDA	Vanda	49.12	186	LR	LR	19 20 58.4	
	comp=Z,664nm,20.6s,baz=139,slow=29						
PLCA	Paso Flores	81.80	132	P	P	19 09 37.9	+1.7
	3.2nm,0.9s,baz=261,slow=6.7,SNR=4.1						
PETK	Petropavlovsk-	85.45	344	P	P	19 09 54.1	-0.2
	3.4nm,0.8s,baz=123,slow=5.3,SNR=6.9						
FINES	FINESS Array B	144.92	342	PKPbc	PKPab	19 16 51.1	-1.5
	3.1nm,0.7s,baz=64,slow=2.2,SNR=4.9						
NB2	NORSAR Subarra1	148.15	353	PKP	PKPbc	19 17 02.2	0.0
	comp=Z,1.9nm,0.7s,baz=12,slow=3.0						
NOA	NORSAR Array B	148.15	353	PKPbc	PKPbc	19 17 01.9	-0.3
	comp=Z,2.3nm,0.7s,baz=14,slow=4.5,SNR=5.5						
AKASG	Malin Array Be	151.64	325	PKPbc	PKPbc	19 17 11.3	+0.3
	comp=Z,0.3nm,0.3s,baz=48,slow=2.7,SNR=5.4						

*IDC **24** 19:05:27.8±0.4,45.°75N×90.°18E,h0km,mb4.5/40, mb1 4.6/45,mb1mx4.6/58,mbtmp4.5/45,ML4.2/5,Error ellipse: s-maj=11.3km s-min=8.3km az=13.0*
*ISCJB **24** 19:05:28.4±0.2,45.°82N±0.°02×90.°12E±0.°03,h10km, mb4.6/82,MS5.1/4,Error ellipse: s-maj=3.5km s-min=2.4km az=29.1*
*BJI **24** 19:05:28.1,46.°01N×90.°36E,h8km,mb4.7/46,mB5.4/12, ML5.3/10,Ms5.2/26,Ms7 5.0/26*
*NEIC **24** 19:05:29.8±0.2,45.°74N×90.°20E,h10km,mb4.9/28,Error ellipse: s-maj=6.6km s-min=4.6km az=205.0*
*OBM **24** 19:05:30.0±0.2,45.°97N×90.°32E,h2km,Ml5.0/1,Error ellipse: s-maj=3.3km s-min=2.1km az=54.0*
*MOS **24** 19:05:30.0±1.8,45.°75N×90.°12E,h23km,mb4.9/22,Error ellipse: s-maj=6.9km s-min=5.6km az=123.9*
*NNC **24** 19:05:35.0±2.5,45.°78N×90.°05E,h81km±53km,mb5.0, mpv5.2,Error ellipse: s-maj=20.1km s-min=17.5km az=147.0*
*ASRS **24** 19:05:35.6±1.7,46.°08N×90.°22E,h15km,Ms4.8/3*
ISC 24 19:05:30.2±0.3,45.°70N±0.°03×90.°15E±0.°03,h10km,n235, σ2s00/258,mb4.7/82,MS4.9/4,15C-9D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HBD	Hovd	2.42	25	ePg	Pn	19 06 10.4	+0.3
HBD				eSg	Sn	19 06 39.2	-0.5
WMQ	Urumqi	2.57	224	Pg	Pb	19 06 16.8	+0.5
WMQ				smax	smax		
	comp=N,12μm,0.7s						
WMQ				smax	smax		
	comp=E,16μm,0.8s						
BYO	Bayan-Olgiy	3.14	358	ePn	Pb	19 06 23.9	-2.5
BYO	Bayan-Olgiy	3.14	358	ePg	Pb	19 06 26.5	+0.1
BYO				eSg	Sb	19 07 05.4	+0.6
	14μm,0.9s						
ULG	Ulaangom	4.34	17	ePn	Pn	19 06 35.7	-0.6
ULG	Ulaangom	4.34	17	ePg	Pb	19 06 46.1	-0.6
ULG				eSg	Sb	19 07 39.1	+0.1
	6μm,0.8s						
MK01	Makanchi Array	5.55	284	ePn	Pn	19 06 56.4	+3.6
MK31	Makanchi Array	5.56	284	⇑Pn	Pn	19 06 53.3	+0.4
	36nm,0.5s,baz=98,slow=15,SNR=13						
MK31				Pg	Pg	19 07 13.9	-2.6
	180nm,0.5s,baz=86,slow=19,SNR=12						
MK31				⇑Sn	Sn	19 07 57.1	+0.3
	131nm,0.4s,baz=92,slow=24,SNR=4.2						
MK31				⇑Lg	Lg	19 08 27.1	
	676nm,0.6s,baz=106,slow=24,SNR=4.8						
MK31	Makanchi Array	5.56	284	P	Pn	19 06 53.3	+0.4
MK31				pmax	pmax		
	comp=Z,36nm,0.5s						
MK31	Makanchi Array	5.56	284	ePn	Pn	19 06 53.1	+0.2
MKAR	Makanchi Array	5.56	284	Pn	Pn	19 06 52.3	-0.6
	comp=Z,8.5nm,0.3s,baz=96,slow=14,SNR=45						
MKAR				Sn	Sn	19 07 56.8	0.0
	comp=Z,75nm,0.3s,baz=89,slow=25,SNR=6.0						
MKAR				Lg	Lg	19 08 20.9	
	comp=Z,163nm,0.3s,baz=103,slow=26,SNR=6.7						
MKAR	Makanchi Array	5.56	284	ePn	Pn	19 06 52.8	-0.1
MKAR				Sn	Sn	19 07 56.8	0.0
MAKZ	Makanchi	5.77	284	eP	Pn	19 06 55.8	-0.1
MAKZ	Makanchi	5.77	284	ePn	Pn	19 06 55.8	-0.1
TSC	Tosontsengel	6.26	59	ePn	Pn	19 07 00.7	-2.0
TSC				eSg	Sb	19 08 33.7	-0.6
UKR	Ust'-Kan	6.34	328	ePn	Pn	19 07 03.6	-0.2
UKR				eSn	Sn	19 08 13.8	-2.5
UKR				eSg	Sb	19 08 44.1	+7.5
UKR	Ust'-Kan	6.34	328	eP	Pn	19 07 03.6	-0.2
UKR				e		19 08 13.8	
CERR	Cheremushki	7.21	6	ePg	Pg	19 07 42.6	-5.4
CERR				eSg	Sb	19 09 06.7	+5.5
TASR	Tashtagol	7.22	349	ePg	Pb	19 07 39.0	+3.5
TASR				eSg	Sg	19 09 10.8	-11
TTS	Tsetserleg	7.96	74	ePn	Pn	19 07 24.6	-1.5
TTS				eSg	Sg	19 09 33.5	-12
ELT	Eltsovka	7.98	343	ePn	Pn	19 07 26.9	+0.8
ELT				eSn	Sn	19 08 53.8	-2.5
ELT				eSg	Sb	19 09 32.4	+8.9
ELT	Eltsovka	7.98	343	eP	Pn	19 07 26.9	+0.8
ELT				e		19 08 53.8	
PDGK	Podgornoye	7.98	256	⇓Pn	Pn	19 07 27.3	+1.1
	comp=Z,233nm,0.5s						
PDGK				⇑Sn	Sn	19 08 55.4	-1.0
	comp=Z,486nm,0.6s						
PDGK	Podgornoye	7.98	256	P	Pn	19 07 27.2	+1.1
PDGK						19 08 55.3	
PDGK				pmax	pmax		
	comp=Z,233nm,0.5s						
PDGK				smax	smax		
	comp=N,486nm,0.6s						
HTG	Hatgal	8.16	52	ePn	Pn	19 07 33.2	+4.4
HTG				eSg	Sg	19 09 40.4	-12
ZAA0	Zalesovo Array	8.94	339	ePn	Pn	19 07 37.9	-1.3
ZALV	Zalesovo Beam	8.94	339	Pn	Pn	19 07 37.7	-1.5
	comp=N,22nm,0.3s,baz=158,slow=14,SNR=90						
ZALV				Sn	Sn	19 09 17.4	-2.6
	comp=N,9.6nm,0.3s,baz=160,slow=28,SNR=5.4						
ZALV				Lg	Lg	19 10 02.4	
	comp=N,12nm,0.3s,baz=164,slow=30,SNR=8.5						
KURK	Kurchatov	9.18	307	P	Pn	19 07 39.2	-3.4
KURK	Kurchatov	9.18	307	Pn	Pn	19 07 39.2	-3.4
KURBB	Kurchatov Arra	9.19	307	Pn	Pn	19 07 39.2	-3.4
	comp=N,2.8nm,0.3s,baz=116,slow=8.5,SNR=37						
KURBB				Lg	Lg	19 10 11.6	
	comp=N,5.6nm,0.3s,baz=109,slow=34,SNR=5.9						
KURBB	Kurchatov Arra	9.19	307	⇑Pn	Pn	19 07 41.1	-1.6
	comp=N,31nm,0.5s						
KURBB				⇓Lg	Lg	19 10 24.0	
	comp=N,1μm,0.9s						
GTA	Gaotai	9.51	128	eP	Pn	19 07 45.0	-2.2
GTA				pP		19 07 49.3	
GTA				sP		19 07 51.8	
GTA				pmax	pmax		
	comp=N,10.0nm,1.1s						
BLGM	Bulgan	9.57	67	ePn	Pn	19 07 48.9	+0.7

BLGM	**Bulgan**	**9.57**	**67**	*e*Pg		Pn	19 08 20.3	+32	
BLGM				*e*Sg		Sn	19 10 24.6	+49	
AAA	**Alma-Ata**	**9.74**	**260**	*e*P		**Pn**	**19 07 52.2**	**+1.8**	
KNDC	**Almaty**	**9.75**	**260**	⇑Pn		**Pn**	**19 07 51.8**	**+1.3**	
	comp=N,245nm,0.7s								
KNDC				⇓Sn		**Sn**	**19 09 37.5**	**-2.4**	
	comp=N,281nm,0.8s								
NVS	**Novosibirsk**	**10.15**	**337**	*e*Pn		**Pn**	**19 07 55.8**	**-0.1**	
NVS				*e*Pg			19 08 35.0		
NVS				*e*Sn		**Sn**	**19 09 43.8**	**-5.9**	
NVS				*e*Sg			19 10 44.3		
NVS	**Novosibirsk**	**10.15**	**337**	*e*P		**Pn**	**19 07 55.8**	**-0.1**	
NVS				*e*			19 09 43.8		
DZBM		**10.40**	**96**	*e*Pn		Pn	19 07 57.6	-2.0	
DZBM		**10.40**	**96**	*e*Pg		Pn	19 08 37.6	+38	
DZBM				*e*Sg		Sn	19 10 50.1	+54	
TKM2	**Tokmak 2**	**10.79**	**260**	⇑Pn		**Pn**	**19 08 07.0**	**+2.1**	
	comp=N,43nm,0.5s								
TKM2				⇑Sn		**Sn**	**19 10 06.2**	**+0.4**	
	comp=N,162nm,0.8s								
TKM2	**Tokmak 2**	**10.79**	**260**	P		**Pn**	**19 08 07.0**	**+2.1**	
TKM2							19 10 02.6		
TKM2				pmax		pmax			
	comp=Z,43nm,0.5s								
TKM2				smax		smax			
	comp=N,162nm,0.8s								
SONB4	**Songino Array**	**11.30**	**74**	*e*Sg			19 11 18.9		
	comp=N,1μm,1.4s								
SONB5	**Songino Array**	**11.31**	**74**	*e*Sg			19 11 19.7		
	comp=N,1μm,1.3s								
SONA0	**Songino Array**	**11.32**	**74**	*e*Sg			19 11 18.2		
	comp=N,834nm,1.3s								
SONB3	**Songino Array**	**11.34**	**74**	*e*Sg			19 11 19.1		
SONB2	**Songino Ar. Si**	**11.34**	**74**	*e*Sg			19 11 18.7		
SONM	**Songino Array**	**11.35**	**73**	Pn		**Pn**	**19 08 10.9**	**-1.5**	
	comp=N,0.4nm,0.3s,baz=262,slow=13,SNR=8.1								
SONM				Pg			19 08 55.1		
	comp=N,3.0nm,0.3s,baz=259,slow=16,SNR=14								
SONM				Lg		Lg	19 11 21.4		
	comp=N,4.8nm,0.3s,baz=259,slow=29,SNR=9.1								
SONM	**Songino Array**	**11.35**	**73**	*e*P		**Pn**	**19 08 11.1**	**-1.3**	
FRU	**Bishkek**	**11.50**	**261**	*e*P		Pn	19 08 20.0	+5.6	
UB5M		**11.58**	**74**	*e*Sg			19 11 25.5		
	comp=N,922nm,1.2s								
ALFM		**11.59**	**73**	*e*Sg			19 11 27.2		
	comp=N,844nm,1.0s								
AAK	**Ala-Archa**	**11.65**	**260**	Pn		**Pn**	**19 08 15.0**	**-1.6**	
	comp=N,0.6nm,0.3s,baz=80,slow=17,SNR=2.1								
AAK				Sn		**Sn**	**19 10 22.7**	**-4.1**	
	comp=N,5.0nm,0.3s,baz=252,slow=19,SNR=2.5								
AAK	**Ala-Archa**	**11.65**	**260**	⇑Pn		**Pn**	**19 08 19.2**	**+2.6**	
	comp=N,40nm,0.6s								
AAK				⇓Sn		**Sn**	**19 10 24.2**	**-2.6**	
	comp=N,43nm,0.8s								
AAK	**Ala-Archa**	**11.65**	**260**	*e*P		**Pn**	**19 08 18.6**	**+2.0**	
AAK	**Ala-Archa**	**11.65**	**260**	*e*Pn		**Pn**	**19 08 18.1**	**+1.5**	
AAK				*e*Sn		**Sn**	**19 10 27.0**	**+0.3**	
SEMM		**11.70**	**75**	*e*Sg		Sn	19 11 26.4	+59	
ARTM		**11.92**	**74**	*e*Sg			19 11 35.1		
	comp=N,922nm,1.1s								
UGDM		**11.99**	**75**	*e*Sg			19 11 40.3		
KSH	**Kashi**	**12.13**	**244**	*e*P		Pn	19 08 31.8	+8.7	
KSH				*e*PP		PnPn	19 08 42.0	+11	
KSH				S		Sn	19 10 55.0	+17	
KSH				SS		SnSn	19 11 07.9	+18	
KSH				pmax		pmax			
	comp=N,31nm,0.9s								
KSH				LR		LR			
	comp=N,2μm,12.3s								
KSH				LR		LR			
	comp=N,2μm,11.2s								
KSH				LR		LR			
	comp=N,5μm,17.4s								
OTUK	**Ortayu**	**12.43**	**288**	⇑Pn		**Pn**	**19 08 28.4**	**+1.4**	
	comp=N,20nm,0.4s								
OTUK				⇓Sn		**Sn**	**19 10 44.1**	**-1.3**	
	comp=N,94nm,0.8s								
OTUK	**Ortayu**	**12.43**	**288**	P		**Pn**	**19 08 25.2**	**-1.8**	
OTUK							19 10 41.7		
OTUK				pmax		pmax			
	comp=Z,20nm,0.4s								
OTUK				smax		smax			
	comp=N,94nm,0.8s								
MNAS	**Manas**	**13.08**	**262**	⇓Pn		**Pn**	**19 08 39.5**	**+3.3**	
	comp=N,70nm,0.9s								
MNAS	**Manas**	**13.08**	**262**	P		**Pn**	**19 08 39.4**	**+3.3**	
MNAS				pmax		pmax			
	comp=Z,70nm,0.9s								
LZH	**Lanzhou**	**14.11**	**128**	*e*P		**Pn**	**19 08 51.0**	**+0.8**	
LZH				pP		P	19 08 54.9	-3.0	
LZH				sP			19 08 56.3		
LZH				pmax		pmax			
	comp=Z,81nm,1.2s								
LZH				pmax		pmax			
	comp=Z,310nm,4.5s								
LZH				LR		LR			
	comp=Z,4μm,11.2s								
LZH				LR		LR			
	comp=Z,10μm,12.4s								
LZH				LR		LR			
	comp=Z,7μm,15.1s								
KK31	**Karatay Array**	**14.27**	**267**	⇓Pn		**Pn**	**19 08 51.8**	**-0.5**	
	comp=Z,18nm,0.6s,baz=64,slow=12,SNR=115								
KK31				⇓Lg		Lg	19 13 07.6		
	comp=Z,61nm,0.8s,baz=63,slow=26,SNR=4.0								
KK31	**Karatay Array**	**14.27**	**267**	*i* P		**Pn**	**19 08 51.8**	**-0.5**	
KK31				pmax		pmax			
	comp=Z,18nm,0.6s								
KK31				pmax		pmax			
	comp=N,61nm,0.9s								
KKAR	**Karatay Array**	**14.27**	**267**	*e*P		**Pn**	**19 08 52.8**	**+0.5**	
KKAR				pmax		pmax			
	comp=Z,48nm,0.8s								
KKAR	**Karatay Array**	**14.27**	**267**	*e*Pn		**Pn**	**19 08 52.8**	**+0.5**	
	comp=Z,48nm,0.8s								
VOSK	**Vostochnaya**	**14.34**	**306**	*e*P		**Pn**	**19 08 49.0**	**-4.0**	
VOSK	**Vostochnaya**	**14.34**	**306**	*e*Pn		**Pn**	**19 08 49.0**	**-4.0**	
BVA0	**Borovoye Array**	**14.78**	**307**	⇑Pn		**Pn**	**19 08 56.9**	**-2.3**	
	comp=Z,20nm,0.7s,baz=97,slow=13,SNR=85								
BVA0				⇓Sn		**Sn**	**19 11 42.0**	**-0.8**	
	comp=Z,22nm,0.7s,baz=258,slow=40,SNR=4.1								
BVA0	**Borovoye Array**	**14.78**	**307**	*e*P		**Pn**	**19 08 56.8**	**-2.3**	
BVA0							19 11 41.9		
BVA0				pmax		pmax			
	comp=Z,20nm,0.7s								
BVA0				smax		smax			
	comp=N,22nm,0.7s								
BVAR	**Borovoye Array**	**14.78**	**307**	Pn		**Pn**	**19 08 55.2**	**-3.9**	
	comp=N,4.0nm,0.3s,baz=113,slow=11,SNR=37								
BVAR				Sn		Sn	19 11 32.1	-11	
	comp=N,1.5nm,0.3s,baz=104,slow=24,SNR=2.7								
BVAR				Lg		Lg	19 13 16.0		
	comp=N,0.8nm,0.3s,baz=116,slow=26,SNR=3.2								
BRVK	**Borovoye**	**14.85**	**307**	*e*P		**Pn**	**19 08 58.5**	**-1.6**	
BRVK	**Borovoye**	**14.85**	**307**	*e*Pn		**Pn**	**19 08 57.8**	**-2.3**	
LSA	**Lhasa**	**16.00**	**177**	*e*P		**Pn**	**19 09 15.7**	**0.0**	
LSA				pmax		pmax			
	comp=Z,19nm,0.9s								
LSA	**Lhasa**	**16.00**	**177**	*e*P		**Pn**	**19 09 15.7**	**0.0**	
	comp=Z,18nm,0.9s								
HHC	**Hu-ho-hao-te**	**16.32**	**100**	*e*P		**P**	**19 09 20.8**	**-1.6**	
HHC				S		**S**	**19 12 25.8**	**-7.4**	
HHC				pmax		pmax			
	comp=Z,14nm,1.3s								
HHC				LR		LR			
	comp=Z,7μm,12.3s								
HHC				LR		LR			
	comp=Z,6μm,14.8s								
HHC				LR		LR			
	comp=Z,7μm,12.3s								
GUN	**Gumba**	**18.08**	**192**	*e*P		**P**	**19 09 43.4**	**+1.2**	
	comp=Z,120nm,0.5s								
CD2	**Chengdu**	**18.19**	**140**	*e*P		**P**	**19 09 45.0**	**+2.0**	
CD2				pP		sP	19 09 48.0	+0.9	
CD2				sP		pP	19 09 49.4	+3.6	
CD2				S		**S**	**19 13 10.3**	**-0.9**	
CD2				pmax		pmax			
	comp=Z,80nm,0.5s								
CD2				pmax		pmax			
	comp=Z,660nm,5.8s								
GKN	**Gorkha**	**18.20**	**196**	*e*P		**P**	**19 09 45.0**	**+1.7**	
	comp=Z,49nm,0.4s								
KKN	**Kakani**	**18.29**	**194**	*e*P		**P**	**19 09 46.5**	**+2.1**	
	comp=Z,134nm,0.5s								
CEP	**Cherat**	**18.32**	**236**	P		**P**	**19 09 44.7**	**+0.2**	
TIY	**Taiyuan**	**18.42**	**108**	*e*P		**P**	**19 09 45.9**	**+0.4**	
PYUN	**Piuthan**	**18.46**	**200**	*e*P		**Pn**	**19 09 48.9**	**+2.6**	
	comp=Z,144nm,0.8s								
XAN	**Xi'an**	**18.48**	**123**	P		**Pn**	**19 09 49.4**	**+3.1**	
XAN				pP		sP	19 09 55.6	+5.3	
XAN				pmax		pmax			
	comp=Z,17nm,1.0s								
PKIN	**Phulchoki**	**18.48**	**193**	*e*P		**Pn**	**19 09 48.4**	**+1.8**	
	comp=Z,70nm,0.6s								
DMN	**Daman**	**18.50**	**194**	*e*P		**Pn**	**19 09 48.7**	**+1.9**	
	comp=Z,41nm,0.4s								
KOLN	**Koldanda**	**18.64**	**198**	*e*P		**Pn**	**19 09 51.6**	**+3.1**	
	comp=Z,44nm,0.8s								
THW	**Thamme Wali**	**19.16**	**234**	P		**P**	**19 09 54.2**	**+0.5**	
KBL	**Kabul**	**19.55**	**243**	*e*P		**Pn**	**19 09 59.5**	**0.0**	
KBL				pmax		pmax			
	comp=Z,129nm,0.8s								
KBL	**Kabul**	**19.55**	**243**	*e*P		**Pn**	**19 09 59.5**	**0.0**	
	comp=Z,129nm,0.8s								
BJI	**Beijing**	**19.86**	**97**	P		**P**	**19 10 00.8**	**-0.4**	
BJI				S		**S**	**19 13 42.5**	**-2.1**	
BJI				pmax		pmax			
	comp=Z,10.0nm,1.0s								
BJI				LR		LR			
	comp=Z,5μm,15.5s								
BJI				LR		LR			
	comp=Z,1μm,15.5s								
BJI				LR		LR			
	comp=Z,3μm,19.9s								
BJT	**Baijiatuao**	**19.86**	**97**	*e*P		**P**	**19 10 00.3**	**-0.9**	
BJT	**Baijiatuao**	**19.86**	**97**	*e*P		**P**	**19 10 00.3**	**-0.9**	
HIA	**Hailar**	**20.25**	**69**	*e*P		**P**	**19 10 05.4**	**-0.1**	
HIA				pmax		pmax			
	comp=Z,30nm,0.8s								
HIA	**Hailar**	**20.25**	**69**	*e*P		**P**	**19 10 05.4**	**-0.1**	
	comp=Z,30nm,0.8s								
AB31	**Akbulak array**	**20.65**	**291**	*e*P		Pn	19 10 11.9	-0.2	
AB31				pmax		pmax			
	comp=Z,6.0nm,0.5s								
ABKAR	**Akbulak array**	**20.65**	**291**	*e*P		**P**	**19 10 09.4**	**-0.4**	
	comp=Z,12nm,0.6s								
ENH	**Enshi**	**21.59**	**129**	*e*P		**P**	**19 10 18.5**	**-1.5**	
	comp=Z,76nm,1.1s								
AKTO	**Aktyubinsk**	**21.88**	**294**	P		**P**	**19 10 24.5**	**+1.5**	
	comp=Z,3.0nm,0.4s,baz=95,slow=11,SNR=18								
AKTO				Lg		Lg	19 17 02.9		
	comp=Z,15nm,0.9s,baz=182,slow=18,SNR=3.7								
ARU	**Arti**	**22.36**	**310**	P		**P**	**19 10 28.1**	**0.0**	
	comp=Z,31nm,0.6s,baz=101,slow=8.4,SNR=20								
ARU				S		**S**	**19 14 37.2**	**+3.6**	
	comp=Z,2.6nm,0.4s,baz=246,slow=20,SNR=3.1								
ARU	**Arti**	**22.36**	**310**	*c i*P		**P**	**19 10 28.9**	**+0.8**	
ARU							19 10 50.4		
ARU				SS		Sn	19 15 04.9	+19	
ARU				pmax		pmax			
	comp=Z,46nm,0.8s								
TIA	**Tai'an**	**22.38**	**106**	*e*P		**P**	**19 10 27.9**	**-0.6**	
TIA				pmax		pmax			
	comp=Z,30nm,1.4s								
KMI	**Kunming**	**22.90**	**149**	P		**P**	**19 10 36.3**	**+2.0**	
KMI				pP		sP	19 10 41.1	+2.6	
KMI				sP		pP	19 10 43.9	+6.7	
KMI				PP		**PnPn**	**19 11 04.8**	**+6.1**	
KMI				pmax		pmax			
	comp=Z,27nm,1.1s								
KMI				LR		LR			
	comp=Z,24μm,21.3s								
KMI				LR		LR			
	comp=Z,21μm,26.3s								
KMI				LR		LR			
	comp=Z,44μm,28.7s								
GYA	**Guiyang**	**23.30**	**140**	⇑*i*P		**P**	**19 10 39.3**	**+1.0**	
GYA				PP		**PnPn**	**19 11 08.4**	**+4.3**	
GYA				S		**S**	**19 14 46.0**	**-4.9**	
GYA				SS		**SnSn**	**19 15 33.3**	**+8.2**	
GYA				pmax		pmax			
	comp=Z,70nm,0.7s								
GYA				LR		LR			
	comp=Z,2μm,15.7s								
GYA				LR		LR			
	comp=Z,2μm,16.2s								
GYA				LR		LR			
	comp=Z,2μm,15.9s								
NRIK	**Noril'sk**	**23.74**	**358**	P		**P**	**19 10 41.3**	**-0.8**	
	comp=Z,30nm,0.9s,baz=128,slow=6.9,SNR=6.4								
NRIK				Lg		Lg	19 17 54.9		
	comp=Z,3.4nm,0.7s,baz=264,slow=17,SNR=3.8								
WHN	**Wuhan**	**24.19**	**120**	⇑P		**P**	**19 10 46.4**	**-0.3**	
SNY	**Shenyang**	**24.35**	**87**	⇑P		**P**	**19 10 51.5**	**+3.4**	
SNY				pmax		pmax			
	comp=Z,23nm,0.7s								
GEYT	**Alibeck**	**24.98**	**263**	P		**P**	**19 10 53.0**	**-0.8**	
	comp=Z,4.5nm,1.0s,baz=59,slow=8.6,SNR=3.4								
CN2	**Changchun**	**25.02**	**82**	*e*P		**P**	**19 10 54.0**	**-0.2**	
NJ2	**Nanjing**	**26.02**	**112**	*e*P		**P**	**19 11 04.9**	**+1.7**	
NJ2				S		**S**	**19 15 37.1**	**+3.2**	
NJ2				pmax		pmax			
	comp=Z,14nm,0.7s								
NJ2				LR		LR			
	comp=Z,2μm,13.6s								
NJ2				LR		LR			
	comp=Z,3μm,14.1s								
NJ2				LR		LR			
	comp=Z,3μm,22.8s								
CMAI	**Chiengmai2**	**26.73**	**161**	P		**P**	**19 11 12.5**	**+2.5**	
	comp=Z,400nm,1.3s,comp=Z,61μm								
MDJ	**Mudanjiang**	**27.65**	**78**	P		**P**	**19 11 17.8**	**-0.1**	
MDJ				pmax		pmax			
	comp=Z,2μm,9.1s								
CHTO	**Chiang Mai**	**27.79**	**162**	P		**P**	**19 11 21.3**	**+2.0**	
	comp=Z,130nm,1.7s,comp=Z,15μm								
CHTO	**Chiang Mai**	**27.79**	**162**	*e*P		**P**	**19 11 17.9**	**-1.4**	
CHTO				pmax		pmax			
	comp=Z,15nm,1.2s								
CHTO	**Chiang Mai**	**27.79**	**162**	*e*P		**P**	**19 11 17.9**	**-1.4**	
	comp=Z,15nm,1.2s								
CMMT	**Chiang Mai**	**27.79**	**162**	P		**P**	**19 11 21.3**	**+2.0**	
	comp=Z,14nm,1.2s,comp=Z,4μm								
YAK	**Yakutsk**	**27.88**	**40**	P		**P**	**19 11 18.5**	**-1.2**	
	comp=Z,18nm,0.5s,baz=242,slow=0.7,SNR=11								
YAK				Lg		Lg	19 20 01.4		
	comp=Z,2.0nm,0.5s,baz=322,slow=19,SNR=3.5								
YAK	**Yakutsk**	**27.88**	**40**	*e*P		**P**	**19 11 20.7**	**+1.0**	
YAK				pmax		pmax			
	comp=Z,22nm,0.9s								
YAK				pmax		pmax			
	comp=N,4.0nm,0.9s								
YAK				pmax		pmax			
	comp=E,15nm,1.4s								
YAK	**Yakutsk**	**27.88**	**40**	*e*P		**P**	**19 11 16.5**	**-3.2**	
	comp=E,27nm,0.7s								
KLR	**Kul'dur**	**28.09**	**68**	P		**P**	**19 11 19.5**	**-2.2**	
	comp=E,3.0nm,0.5s,baz=242,slow=5.6,SNR=5.2								
KLR				PcP		**PcP**	**19 14 37.1**	**+1.3**	
	comp=E,3.9nm,0.8s,baz=306,slow=1.9,SNR=4.6								
KLR				Lg		Lg	19 20 08.1		
	comp=E,1.1nm,0.6s,baz=17,slow=20,SNR=3.9								
CM31	**Chiang Mai Arr**	**28.14**	**162**	*e*P		**P**	**19 11 22.8**	**+0.4**	
CMAR	**Chiang Mai Arr**	**28.14**	**162**	P		**P**	**19 11 22.8**	**+0.3**	
	comp=E,5.7nm,0.9s,baz=341,slow=9.5,SNR=17								
CMAR	**Chiang Mai Arr**	**28.14**	**162**	*e*P		**P**	**19 11 24.3**	**+1.9**	
CMAR				pmax		pmax			
	comp=Z,6.0nm,0.9s								
CM01	**Chiang Mai Arr**	**28.17**	**162**	*e*P		**P**	**19 11 23.9**	**+1.2**	
MHMT	**Maesarieng**	**28.20**	**164**	P		P	19 11 30.6	+7.6	
	comp=Z,35nm,0.9s								
LAMP	**Lampang**	**28.23**	**161**	P		**P**	**19 11 25.1**	**+1.9**	
	comp=Z,6.0nm,0.9s								
KSAR	**Wonju Array Be**	**29.20**	**93**	P		**P**	**19 11 30.7**	**-1.0**	
KSAR	**Wonju Array Be**	**29.20**	**93**	P		**P**	**19 11 30.7**	**-1.0**	
UTTA	**Uttaradit**	**29.20**	**159**	P		**P**	**19 11 34.3**	**+2.5**	
	comp=Z,4.0nm,1.1s								
KSRS	**Korea Array**	**29.22**	**93**	P		**P**	**19 11 30.7**	**-1.2**	
	comp=Z,1.5nm,1.1s,baz=287,slow=8.8,SNR=3.1								
HYB	**Hyderabad**	**29.82**	**203**	*i* P		**P**	**19 11 37.0**	**-0.4**	
HABR	**Khabarovsk**	**30.37**	**68**	*e*P		**P**	**19 11 41.4**	**-0.6**	
HABR				*e**PP		**pP**	**19 11 43.8**	**-1.2**	
HABR				*e*			19 12 39.6		
HABR				*e*			19 14 40.1		
HABR				*e*S		**S**	**19 16 43.5**	**+1.3**	
HABR				*e*			19 22 18.7		
HABR				pmax		pmax			
	comp=E,12nm,1.3s								
HABR				pmax		pmax			
	comp=Z,5.0nm,1.3s								
HABR				pmax		pmax			
	comp=N,2.0nm,0.6s								
HABR				MLR		MLR			
	comp=Z,2μm,12.0s								
QIZ	**Qiongzhong**	**31.20**	**142**	P		**P**	**19 11 49.5**	**-0.1**	
QIZ				S		**S**	**19 16 56.3**	**+0.6**	
TIXI	**Tiksi**	**31.81**	**22**	P		**P**	**19 11 55.4**	**+1.0**	
	comp=Z,12nm,0.7s,baz=191,slow=5.2,SNR=4.0								
TIXI	**Tiksi**	**31.81**	**22**	*e*P		**P**	**19 11 54.6**	**+0.2**	
TIXI				pmax		pmax			
	comp=Z,12nm,0.9s								
KLMR	**Klimovskoe**	**32.89**	**316**	*e*P		**P**	**19 12 01.5**	**-2.5**	
KLMR				pmax		pmax			
	comp=Z,37nm,0.9s								
SSLB	**Suanglung**	**33.12**	**121**	*e*P		**P**	**19 12 04.9**	**-1.5**	
	comp=Z,17nm,1.1s								
KVAR	**Kislovodsk Arr**	**33.31**	**284**	P		**P**	**19 12 08.1**	**0.0**	
	comp=Z,2.1nm,0.4s,baz=336,slow=20,SNR=2.8								
GNI	**Garni**	**33.35**	**277**	P		**P**	**19 12 10.3**	**+1.8**	
	comp=Z,3.9nm,0.5s,baz=39,slow=7.5,SNR=2.7								
JNU	**Nakatsue**	**33.53**	**98**	P		**P**	**19 12 08.7**	**-1.3**	
	comp=Z,3.7nm,1.0s,baz=283,slow=7.0,SNR=2.5								
JNU				PcP		**PcP**	**19 14 50.9**	**+0.3**	
	comp=Z,8.7nm,0.9s,baz=2.0,slow=3.1,SNR=6.4								
TWG	**Pinlang**	**33.93**	**122**	*e*P		**P**	**19 12 13.7**	**+0.2**	
	comp=Z,53nm,0.7s								
WSAR	**Wadi Sarin**	**33.96**	**239**	P		**P**	**19 12 13.3**	**-0.5**	
	comp=Z,2.7nm,0.8s,baz=60,slow=11,SNR=2.4								
WSAR				PcP		**PcP**	**19 14 52.0**	**+0.1**	
	comp=Z,3.3nm,0.6s,baz=137,slow=2.7,SNR=2.4								
OBN	**Obninsk**	**34.62**	**306**	P		**P**	**19 12 17.6**	**-1.5**	
	comp=Z,7.6nm,0.5s,baz=102,slow=13,SNR=3.5								
OBN	**Obninsk**	**34.62**	**306**	*e*P		**P**	**19 12 19.6**	**+0.5**	
OBN				pmax		pmax			
	comp=Z,10.0nm,0.9s								
ASAJ	**Asahikawa**	**36.63**	**73**	P		**P**	**19 12 38.4**	**+1.8**	
	comp=Z,4.8nm,0.7s,baz=298,slow=11,SNR=5.0								
ASAJ	**Asahikawa**	**36.63**	**73**	P		**P**	**19 12 38.4**	**+1.8**	
ASAJ				pmax		pmax			
	comp=Z,4.0nm,0.6s								
MJAR	**Matsushiro Arr**	**36.86**	**87**	P		**P**	**19 12 39.1**	**+0.5**	
	comp=Z,1.0nm,0.8s,baz=318,slow=7.7,SNR=4.0								
MJA0	**Matsu Arr-Jizo**	**36.89**	**87**	*e*P		**P**	**19 12 42.6**	**+3.7**	
SEY	**Seymchan**	**38.40**	**41**	P		**P**	**19 12 50.8**	**-0.5**	
	comp=Z,4.9nm,0.8s,baz=268,slow=7.2,SNR=6.6								
PALK	**Pallekele**	**39.15**	**195**	P		**P**	**19 12 57.3**	**-0.7**	
	comp=Z,13nm,0.8s,baz=302,slow=3.1,SNR=5.9								
ARA0	**ARCESS Array S**	**39.34**	**330**	*e*P		**P**	**19 13 00.4**	**+1.3**	
ARCES	**ARCESS Array B**	**39.34**	**330**	P		**P**	**19 12 58.1**	**-1.0**	
	comp=Z,18nm,0.7s,baz=77,slow=7.9,SNR=24								
ARCES	**ARCESS Array B**	**39.34**	**330**	*e*P		**P**	**19 12 56.8**	**-2.3**	
ARE0	**ARCESS Array S**	**39.34**	**330**	*e*P		**P**	**19 13 00.3**	**+1.2**	
	comp=Z,20nm,0.8s								
FINES	**FINESS Array B**	**39.39**	**317**	P		**P**	**19 12 58.0**	**-1.6**	
	comp=Z,6.8nm,0.6s,baz=86,slow=7.5,SNR=18								
FINES	**FINESS Array B**	**39.39**	**317**	*e*P		**P**	**19 13 01.6**	**+2.1**	
FINES				pmax		pmax			
	comp=Z,8.0nm,0.6s								
AKASG	**Malin Array Be**	**39.90**	**300**	P		**P**	**19 13 02.4**	**-1.6**	
	comp=Z,1.0nm,0.5s,baz=54,slow=9.3,SNR=3.3								
AKASG	**Malin Array Be**	**39.90**	**300**	*e*P		P	19 13 09.9	+5.9	
AKASG				pmax		pmax			
	comp=Z,3.0nm,0.5s								
BR131	**Keskin Array S**	**41.20**	**282**	*e*P		**P**	**19 13 13.7**	**-1.4**	
BRTR	**Keskin Array B**	**41.20**	**282**	P		**P**	**19 13 14.7**	**-0.4**	
	comp=Z,2.1nm,0.5s,baz=63,slow=6.2,SNR=10.0								
BRTR	**Keskin Array B**	**41.20**	**282**	*e*P		**P**	**19 13 18.5**	**+3.4**	
BRTR				pmax		pmax			
	comp=Z,2.0nm,0.5s								
BR231	**Keskin MP Arra**	**41.74**	**283**	*e*P		**P**	**19 13 16.0**	**-3.5**	
SPITS	**Spitsbergen Ar**	**42.40**	**343**	P		**P**	**19 13 25.9**	**+1.6**	
	comp=Z,12nm,0.9s,baz=104,slow=12,SNR=3.7								
SPITS				PcP		**PcP**	**19 15 16.7**	**-0.4**	
	comp=Z,8.2nm,0.6s,baz=154,slow=5.2,SNR=10								
ASF	**Jabal al Asfar**	**42.81**	**271**	P		**P**	**19 13 29.1**	**+0.9**	
	comp=Z,6.6nm,0.7s,baz=9.0,slow=10,SNR=6.3								
PEA0	**Petropavlovsk-**	**43.07**	**55**	*e*P		**P**	**19 13 29.4**	**-0.6**	
PETK	**Petropavlovsk-**	**43.07**	**55**	P		**P**	**19 13 29.6**	**-0.4**	
	comp=Z,4.1nm,0.8s,baz=298,slow=3.2,SNR=6.0								
MMAI	**Mount Meron Ar**	**43.39**	**273**	P		**P**	**19 13 33.4**	**+0.5**	
	comp=Z,2.0nm,0.7s,baz=44,slow=8.6,SNR=3.5								
BILL	**Bilibino**	**43.60**	**32**	*e*P		**P**	**19 13 34.8**	**+0.8**	
BILL				pmax		pmax			
	comp=Z,4.0nm,0.7s								
GSI	**Gunungsitoli**	**44.70**	**169**	*e*P		**P**	**19 13 43.2**	**-0.2**	
	comp=Z,18nm,0.6s								
STHS	**Stebnicka Huta**	**45.

WRA	**Warramunga Arr**	**76.66**	**138**	P		**P**	**19 17 19.9**	**-1.3**	
	comp=Z,12nm,0.9s,baz=339,slow=5.7,SNR=32								
WRA	**Warramunga Arr**	**76.66**	**138**	*e*P		**P**	**19 17 19.9**	**-1.3**	
WRA				pmax	pmax				
	comp=Z,13nm,0.9s								
WB2	**Warramunga Arr**	**76.66**	**138**	*e*P		**P**	**19 17 20.4**	**-0.8**	
SCHQ	**Schefferville**	**77.95**	**347**	P		**P**	**19 17 27.6**	**-0.5**	
	comp=Z,2.9nm,0.5s,baz=39,slow=12,SNR=4.5								
CMLA	**Cha da Macela**	**78.79**	**313**	*e*LR		LR	19 41 41.6		
PSET	**Sete Cidades**	**78.84**	**313**	*e*LR		LR	19 41 31.7		
	comp=Z,2μm,20.7s								
PSMN	**Pico do Norte,**	**79.13**	**312**	*e*LR		LR	19 41 21.9		
	comp=Z,1μm,19.1s								
ROSA	**Rosais**	**79.41**	**316**	*e*LR		LR	19 42 11.0		
	comp=Z,2μm,19.1s								
FFC	**Flin Flon**	**79.42**	**7**	*e*P		**P**	**19 17 37.1**	**+1.0**	
FFC				pmax	pmax				
	comp=Z,17nm,0.9s								
FFC	**Flin Flon**	**79.42**	**7**	*e*P		**P**	**19 17 37.1**	**+1.0**	
	comp=Z,18nm,0.9s								
EDM	**Edmonton**	**79.42**	**14**	*e*P		**P**	**19 17 38.1**	**+1.9**	
EDM				pmax	pmax				
	comp=Z,14nm,1.0s								
EDM	**Edmonton**	**79.42**	**14**	*e*P		**P**	**19 17 38.1**	**+1.9**	
	comp=Z,14nm,1.0s								
TOA0	**Torodi Ar. Sit**	**79.65**	**278**	*e*P		**P**	**19 17 37.0**	**-1.1**	
TORD	**Torodi Ar. Bea**	**79.65**	**278**	P		**P**	**19 17 36.9**	**-1.2**	
	comp=Z,3.0nm,0.9s,baz=61,slow=5.0,SNR=3.8								
AS31	**Alice Springs**	**79.67**	**140**	*e*P		**P**	**19 17 36.9**	**-1.0**	
	comp=Z,5.7nm,0.6s								
ASAR	**Alice Springs**	**79.67**	**140**	P		**P**	**19 17 36.9**	**-1.0**	
	comp=Z,16nm,0.6s,baz=328,slow=4.8,SNR=47								
AS01	**Alice Springs**	**79.69**	**140**	*e*P		**P**	**19 17 36.7**	**-1.2**	
H07S1	**FLORES T-PHASE**	**80.32**	**318**	*e*LR		LR	19 41 21.9		
B08A	**Colville Reser**	**82.84**	**19**	*e*P		**P**	**19 17 54.4**	**-0.1**	
	comp=Z,9.0nm,1.3s								
CTA	**Charters Tower**	**82.89**	**128**	P		**P**	**19 17 53.5**	**-1.5**	
	comp=Z,7.6nm,1.0s,baz=303,slow=9.3,SNR=2.7								
FORT	**Forrest**	**83.54**	**148**	*e*P		**P**	**19 17 57.3**	**-0.7**	
	comp=Z,288nm,0.8s								
ULM	**Lac du Bonnet**	**84.29**	**4**	P		**P**	**19 18 02.3**	**+0.5**	
	comp=Z,2.3nm,0.7s,baz=23,slow=5.3,SNR=2.9								
BSMT	**Bassoo Peak**	**84.30**	**17**	*e*P		**P**	**19 18 00.8**	**-1.5**	
JTMT	**Jette**	**84.50**	**16**	*e*P		**P**	**19 18 02.3**	**-0.9**	
BOZ	**Bozeman (W)**	**87.02**	**15**	*e*P		**P**	**19 18 17.4**	**+1.6**	
BOZ				pmax	pmax				
	comp=Z,3.0nm,0.9s								
BOZ	**Bozeman (W)**	**87.02**	**15**	*e*P		**P**	**19 18 17.4**	**+1.6**	
	comp=Z,3.0nm,0.9s								
WVOR	**Wild Horse Val**	**88.57**	**21**	*e*P		**P**	**19 18 23.3**	**0.0**	
WVOR				pmax	pmax				
	comp=Z,4.0nm,0.9s								
WVOR	**Wild Horse Val**	**88.57**	**21**	*e*P		**P**	**19 18 23.2**	**0.0**	
	comp=Z,3.8nm,0.9s								
DBIC	**Dimbokro**	**88.76**	**278**	P		**P**	**19 18 23.2**	**-1.1**	
	comp=Z,5.4nm,1.0s,baz=90,slow=6.1,SNR=2.4								
RSSD	**Black Hills**	**89.68**	**10**	*e*P		**P**	**19 18 27.9**	**-0.6**	
RSSD				pmax	pmax				
	comp=Z,41nm,1.5s								
RSSD	**Black Hills**	**89.68**	**10**	*e*P		**P**	**19 18 27.9**	**-0.6**	
	comp=Z,42nm,1.5s								
PDAR	**Pinedale Array**	**90.18**	**14**	P		**P**	**19 18 30.5**	**-0.4**	
	comp=Z,0.3nm,0.3s,baz=354,slow=2.7,SNR=3.0								
STKA	**Stephens Creek**	**90.19**	**138**	P		**P**	**19 18 28.9**	**-1.6**	
	comp=Z,7.2nm,0.8s,baz=355,slow=7.7,SNR=5.9								
STKA	**Stephens Creek**	**90.19**	**138**	*e*P		**P**	**19 18 29.3**	**-1.2**	
STKA				pmax	pmax				
	comp=Z,2.0nm,0.9s								
STKA	**Stephens Creek**	**90.19**	**138**	*e*P		**P**	**19 18 29.3**	**-1.2**	
	comp=Z,1.6nm,0.9s								
HWUT	**Hardware Ranch**	**90.94**	**16**	*e*P		**P**	**19 18 36.5**	**+2.2**	
	comp=Z,6.9nm,0.8s								
LPAZ	**La Paz**	**145.49**	**321**	PKPbc		**PKPdf**	**19 25 06.2**	**-3.3**	
	comp=Z,6.0nm,0.8s,baz=234,slow=0.8,SNR=12								
CPUP	**Villa Florida**	**147.67**	**296**	PKPbc		**PKPdf**	**19 25 12.4**	**+0.4**	
	comp=Z,9.3nm,0.6s,baz=45,slow=2.2,SNR=22								
LVC	**Limon Verde**	**151.34**	**316**	PKPbc		**PKPbc**	**19 25 21.9**	**-2.6**	
	comp=Z,35nm,0.6s,baz=20,slow=1.6,SNR=4.1								

*IDC **24** 19:11:40.3±1.0,37°.88N×143°.52E, h0km, mb3.8/6, mb1 3.9/11, mb1mx3.7/55, mbtmp3.8/11, ML3.6/3, Error ellipse: s-maj=25.7km s-min=17.6km az=106.0*
*ISCJB **24** 19:11:41.4±0.7,38°.01N±0°.04×143°.36E±0°.06, h19km, mb3.8/6, Error ellipse: s-maj=7.1km s-min=6.5km az=5.5*
*JMA **24** 19:11:42.4±0.2,38°.05N×143°.30E, h28km, M4.1*
ISC 24 19:11:43.2±1.0,37°.97N±0°.05×143°.36E±0°.08, h19km, n29, σ2s 00/33, mb3.9/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JIO	**Ouri**	**1.66**	**288**	P		**Pn**	**19 12 09.5**	**-1.8**
JIO				S		**Sn**	**19 12 29.1**	**-2.9**
OFUJ	**Ofunato**	**1.73**	**310**	P		**Pn**	**19 12 10.3**	**-2.0**
OFUJ				S		**Sn**	**19 12 30.6**	**-3.3**
JMK	**Ichinoseki**	**1.95**	**301**	P		**Pn**	**19 12 13.5**	**-1.7**
JMK				S		**Sn**	**19 12 36.5**	**-2.7**
JMM	**Marumori**	**2.04**	**268**	P		**Pn**	**19 12 14.9**	**-1.5**
JFK	**Kawauchi**	**2.06**	**254**	P		**Pn**	**19 12 15.3**	**-1.6**
JOU	**Okura**	**2.17**	**281**	P		**Pn**	**19 12 17.4**	**-0.8**
JOM	**Ohasama**	**2.21**	**314**	P		**Pn**	**19 12 17.5**	**-1.4**
JOM				*e*S		**Sn**	**19 12 43.3**	**-2.4**
JFT	**Otama**	**2.44**	**260**	P		**Pn**	**19 12 21.6**	**-0.4**
JYK	**Kaneyama**	**2.54**	**293**	P		**Pn**	**19 12 22.4**	**-1.0**
JRG	**Rokugo**	**2.57**	**305**	P		**Pn**	**19 12 23.0**	**-0.8**
JYS	**Shirataka**	**2.61**	**277**	P		**Pn**	**19 12 23.8**	**-0.6**
JANG	**Nango**	**2.80**	**330**	P		**Pn**	**19 12 26.9**	**-0.1**
JAW	**Awa`shima**	**3.28**	**280**	P		**Pn**	**19 12 33.2**	**-0.3**
JAG	**Ashikaga**	**3.48**	**245**	P		**Pn**	**19 12 35.4**	**-0.9**
MJAR	**Matsushiro Arr**	**4.35**	**252**	Pn		**Pn**	**19 12 48.3**	**0.0**
	2.9nm,0.3s,baz=71,slow=11,SNR=51							
MJAR				Sn		**Sn**	**19 13 39.9**	**+1.4**
	1.1nm,0.3s,baz=54,slow=21,SNR=4.3							
MAT	**Matsushiro**	**4.35**	**253**	P		**Pn**	**19 12 49.2**	**+0.9**
MAT				S		**Sn**	**19 13 41.1**	**+2.6**
JHJ	**Hachijo jima 2**	**5.65**	**212**	Pn		**Pn**	**19 13 04.9**	**-1.2**
	14nm,0.3s,baz=60,slow=20,SNR=5.6							
JHJ				Sn		**Sn**	**19 14 04.1**	**-6.4**
	22nm,0.3s,baz=72,slow=19,SNR=5.8							
ASAJ	**Asahikawa**	**6.17**	**355**	Pn		**Pn**	**19 13 12.2**	**-1.0**
	baz=270,slow=20							
USRK	**Ussuriysk Ar.**	**10.60**	**310**	Pn		**Pn**	**19 14 16.4**	**+2.5**
	0.1nm,0.3s,baz=138,slow=14,SNR=2.5							
KSRS	**Korea Array**	**12.24**	**272**	Pn		**Pn**	**19 14 38.3**	**+1.8**
	0.1nm,0.3s,baz=84,slow=14,SNR=8.5							
SEY	**Seymchan**	**25.60**	**10**	P		**P**	**19 17 11.9**	**+1.1**
	1.9nm,0.8s,baz=201,slow=14,SNR=3.1							
H11N2	**WAKE ISLAND Hy**	**27.35**	**125**	T		T	19 46 19.3	
	baz=317,slow=75,SNR=8.7							
H11N1	**WAKE ISLAND Hy**	**27.36**	**125**	T		T	19 46 16.6	
	baz=317,slow=75,SNR=6.6							
H11N3	**WAKE ISLAND Hy**	**27.37**	**125**	T		T	19 46 21.9	
	baz=317,slow=75,SNR=9.1							
SONM	**Songino Array**	**28.58**	**302**	P		**P**	**19 17 39.8**	**+1.7**
	2.0nm,0.8s,baz=94,slow=10.0,SNR=3.6							
CMAR	**Chiang Mai Arr**	**43.23**	**256**	P		**P**	**19 19 43.8**	**+0.4**
	0.8nm,0.9s,baz=43,slow=7.1,SNR=6.9							
ILAR	**Eielson Array**	**47.87**	**33**	P		**P**	**19 20 19.4**	**-0.1**
	1.1nm,0.8s,baz=280,slow=6.8,SNR=5.4							
WRA	**Warramunga Arr**	**58.22**	**190**	P		**P**	**19 21 35.4**	**-0.8**
	0.9nm,0.8s,baz=8.0,slow=7.1,SNR=4.6							
ASAR	**Alice Springs**	**61.95**	**190**	P		**P**	**19 22 02.1**	**+0.4**
	0.6nm,0.8s,baz=12,slow=4.7,SNR=3.8							

*BJI **24** 19:13:45.9, 46°.02N×90°.63E, h9km, ML3.6/6*
*IDC **24** 19:13:45.9±1.8,45°.62N×90°.03E, h0km, mb3.7/1, mb1 3.8/3, mb1mx3.3/58, mbtmp3.7/3, ML2.8/2, Error ellipse: s-maj=50.2km s-min=19.4km az=24.0*
*OBM **24** 19:13:48.3±0.2, 46°.04N×90°.16E, h2km, Ml3.6/1, Error ellipse: s-maj=2.5km s-min=1.3km az=15.0*
ISC 24 19:13:46.4±1.9,46°.1N±0°.1×90°.4E±0°.1, h10km, n5, σ0s 68/5, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HBD	**Hovd**	**2.27**	**24**	*e*Pg		Pb	19 14 28.8	+0.5
HBD				*e*Sg		Sg	19 14 57.9	-2.2
WMQ	**Urumqi**	**2.96**	**221**	*e*Pg		**Pb**	**19 14 39.0**	**-0.3**
WMQ				Sn		**Sb**	**19 15 16.0**	**+0.4**
WMQ				smax	smax			
	comp=N,210nm,0.7s							
WMQ				smax	smax			
	comp=E,260nm,0.8s							

BYO	**Bayan-Olgiy**	**3.02**	**356**	*e*Pn		Pb	19 14 41.0	-0.2	
BYO				*e*Sg		Sg	19 15 23.7	-0.6	
	150nm,0.4s								
ULG	**Ulaangom**	**4.19**	**16**	*e*Pn		Pn	19 14 53.9	+2.7	
ULG				*e*Sg		Sg	19 15 57.4	-4.3	
MK01	**Makanchi Array**	**5.58**	**281**	*e*Sg		Sg	19 16 40.3	-6.1	
MKAR	**Makanchi Array**	**5.63**	**280**	Pn		**Pn**	**19 15 10.6**	**+0.5**	
	0.2nm,0.3s,baz=93,slow=17,SNR=9.2								
MKAR				Sn		**Sn**	**19 16 14.2**	**-0.6**	
	3.0nm,0.3s,baz=92,slow=24,SNR=5.2								
MKAR				Lg		Lg	19 16 39.9		
	4.3nm,0.3s,baz=102,slow=28,SNR=5.6								
TSC	**Tosontsengel**	**6.11**	**60**	*e*Pn		Pb	19 15 29.0	-4.7	
TSC				*e*Sg		Sb	19 16 52.9	+6.0	
TTS	**Tsetserleg**	**7.82**	**75**	*e*Sg		Sg	19 17 52.2	-6.0	
HTG	**Hatgal**	**8.00**	**52**	*e*Sg		Sg	19 17 56.9	-6.9	
ZALV	**Zalesovo Beam**	**8.63**	**338**	Pn		Pn	19 15 57.6	+6.4	
	0.6nm,0.3s,baz=156,slow=13,SNR=5.5								
ZALV				Lg		Lg	19 18 22.0		
	0.4nm,0.3s,baz=170,slow=25,SNR=3.3								
BLGM	**Bulgan**	**9.43**	**68**	*e*Sg		Sn	19 18 44.7	+55	
SONM	**Songino Array**	**11.09**	**75**	Lg		Lg	19 19 37.1		
	0.3nm,0.3s,baz=276,slow=30,SNR=4.3								
SONB4	**Songino Array**	**11.17**	**74**	*e*Sg			19 19 39.0		
SONB5	**Songino Array**	**11.18**	**74**	*e*Sg			19 19 38.8		
	23nm,0.9s								
SONA2	**Songino Array**	**11.20**	**74**	*e*Sg			19 19 39.6		
	34nm,1.3s								
SONA1	**Songino Array**	**11.20**	**74**	*e*Sg			19 19 39.8		
SONA4	**Songino Array**	**11.20**	**74**	*e*Sg			19 19 39.7		
	21nm,1.0s								
SONB1	**Songino Array**	**11.20**	**74**	*e*Sg			19 19 40.2		
SONA3	**Songino Array**	**11.20**	**74**	*e*Sg			19 19 39.8		
	59nm,1.6s								
SONB3	**Songino Array**	**11.20**	**74**	*e*Sg			19 19 39.8		
	24nm,1.1s								
SONB2	**Songino Ar. Si**	**11.21**	**74**	*e*Sg			19 19 40.0		
	34nm,1.3s								
UB5M		**11.45**	**75**	*e*Sg			19 19 48.4		
ALFM		**11.46**	**74**	*e*Sg			19 19 47.5		
	14nm,0.8s								
ASAR	**Alice Springs**	**79.87**	**140**	P		**P**	**19 25 55.0**	**-0.1**	
	0.4nm,0.7s,baz=328,slow=4.8,SNR=5.2								

*IDC **24** 19:16:19.0±0.9,36°.11N×141°.28E, h0km, mb4.1/14, mb1 4.1/17, mb1mx3.9/60, mbtmp4.0/17, ML3.8/2, Error ellipse: s-maj=24.7km s-min=16.2km az=88.0*
*ISCJB **24** 19:16:20.1±1.0,36°.10N±0°.04×141°.34E±0°.06, h21km±6km, mb4.0/16, Error ellipse: s-maj=7.8km s-min=6.1km az=4.3*
*JMA **24** 19:16:21.4±0.1,36°.07N×141°.21E, h37km±2km, M4.0*
JMA Felt II J1.
*NEIC **24** 19:16:24.4±0.5,36°.13N×141°.19E, h35km, mb4.0/2, Error ellipse: s-maj=10.8km s-min=9.3km az=100.0*
NEIC Recorded [2 JMA] in Chiba and Ibaraki.
ISC 24 19:16:20.9±1.5,36°.13N±0°.04×141°.26E±0°.06, h12km±9km, n39, σ0s 86/38, mb4.0/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CHOJ	**Chosi**	**0.54**	**218**	P		**Pg**	**19 16 31.5**	**+0.1**
CHOJ				S		**Sg**	**19 16 38.8**	**+0.3**
JHO	**Hitachi**	**0.74**	**311**	P		**Pg**	**19 16 35.5**	**+0.2**
JHO				S		**Sb**	**19 16 46.2**	**+0.3**
JYT	**Yasato**	**0.87**	**277**	P		**Pb**	**19 16 36.8**	**-1.2**
JYT				S		**Sb**	**19 16 48.7**	**-0.9**
ONAJ	**Iwakimizuishiy**	**1.04**	**339**	P		**Pn**	**19 16 40.0**	**-1.0**
JFK	**Kawauchi**	**1.28**	**346**	P		**Pn**	**19 16 43.4**	**-1.3**
JAG	**Ashikaga**	**1.49**	**282**	P		**Pn**	**19 16 45.9**	**-1.7**
MJAR	**Matsushiro Arr**	**2.50**	**280**	Pn		**Pn**	**19 17 00.5**	**-1.0**
	18nm,0.3s,baz=116,slow=7.6,SNR=131								
MJAR				Sn		**Sn**	**19 17 33.3**	**+1.3**
	18nm,0.3s,baz=99,slow=28,SNR=6.3								
MAJO	**Matsushiro**	**2.50**	**280**	*e*Pn		**Pn**	**19 17 01.1**	**-0.4**
MAJO				*e*Sn		**Sn**	**19 17 31.5**	**-0.6**
MAT	**Matsushiro**	**2.50**	**280**	P		**Pn**	**19 17 01.4**	**-0.1**
MAT				S		**Sn**	**19 17 32.2**	**+0.2**
JHJ	**Hachijo jima 2**	**3.24**	**203**	Pn		**Pn**	**19 17 11.6**	**-0.1**
	30nm,0.3s,baz=72,slow=20,SNR=7.4								
JHJ				Sn		**Sn**	**19 17 49.1**	**-1.0**
	61nm,0.3s,baz=52,slow=19,SNR=7.4								
ASAJ	**Asahikawa**	**8.05**	**7**	Pn		**Pn**	**19 18 16.9**	**-0.8**
	baz=213,slow=9.8								
ASAJ	**Asahikawa**	**8.05**	**7**	*e*Pn		**Pn**	**19 18 17.2**	**-0.4**
USRK	**Ussuriysk Ar.**	**10.73**	**322**	Pn		**Pn**	**19 18 57.5**	**+3.1**
	0.4nm,0.3s,baz=137,slow=16,SNR=4.6								
KSRS	**Korea Array**	**10.78**	**281**	Pn		Pn	19 19 00.9	+5.8	
	0.1nm,0.3s,baz=90,slow=14,SNR=6.8								
KSAR	**Wonju Array Be**	**10.81**	**281**	Pn		Pn	19 19 00.9	+5.3	
SEY	**Seymchan**	**27.70**	**11**	P		**P**	**19 22 08.6**	**-0.2**	
	2.6nm,1.8s,baz=201,slow=12,SNR=2.1								
H11N2	**WAKE ISLAND Hy**	**27.80**	**119**	T		T	19 51 10.3		
	baz=311,slow=75,SNR=63								
H11N1	**WAKE ISLAND Hy**	**27.81**	**119**	T		T	19 51 09.5		
	baz=311,slow=75,SNR=62								
H11N3	**WAKE ISLAND Hy**	**27.82**	**119**	T		T	19 51 10.3		
	baz=311,slow=75,SNR=56								
SONM	**Songino Array**	**28.20**	**305**	P		**P**	**19 22 12.9**	**-0.6**	
	1.4nm,0.8s,baz=106,slow=9.3,SNR=4.2								
H11S1	**WAKE ISLAND Hy**	**28.48**	**121**	T		T	19 52 03.8		
	baz=313,slow=76,SNR=72								
H11S3	**WAKE ISLAND Hy**	**28.48**	**121**	T		T	19 52 06.3		
	baz=313,slow=76,SNR=91								
H11S2	**WAKE ISLAND Hy**	**28.50**	**121**	T		T	19 52 04.4		
	baz=313,slow=76,SNR=69								
ZALV	**Zalesovo Beam**	**42.44**	**313**	P		**P**	**19 24 15.6**	**+0.2**	
	2.1nm,0.5s,baz=98,slow=7.0,SNR=10								
MKAR	**Makanchi Array**	**44.53**	**303**	P		**P**	**19 24 32.8**	**+0.5**	
	1.4nm,0.8s,baz=87,slow=11,SNR=7.0								
KURK	**Kurchatov**	**46.40**	**309**	P		**P**	**19 24 47.5**	**+0.3**	
KURBB	**Kurchatov Arra**	**46.47**	**309**	P		**P**	**19 24 47.5**	**-0.2**	
	2.6nm,0.4s,baz=82,slow=7.6,SNR=7.7								
ILAR	**Eielson Array**	**50.33**	**32**	P		**P**	**19 25 17.4**	**+0.2**	
	1.0nm,0.8s,baz=261,slow=6.4,SNR=7.9								
BVAR	**Borovoye Array**	**51.10**	**313**	P		**P**	**19 25 23.0**	**-0.2**	
	1.0nm,0.6s,baz=107,slow=7.9,SNR=5.5								
WRAB	**Tennant Creek**	**56.14**	**188**	*e*P		**P**	**19 26 00.1**	**-0.3**	
	0.5nm,0.6s								
WRA	**Warramunga Arr**	**56.15**	**188**	P		**P**	**19 25 59.5**	**-1.0**	
	0.6nm,0.3s,baz=6.2,slow=7.4,SNR=14								
ARU	**Arti**	**56.96**	**319**	P		**P**	**19 26 06.1**	**+0.2**	
	3.7nm,0.6s,baz=25,slow=3.3,SNR=10.0								
ABKAR	**Akbulak array**	**58.43**	**311**	*e*P		**P**	**19 26 16.4**	**0.0**	
	1.6nm,0.6s								
ASAR	**Alice Springs**	**59.88**	**188**	P		**P**	**19 26 26.9**	**+0.3**	
	0.6nm,0.7s,baz=18,slow=8.0,SNR=6.5								
FINES	**FINESS Array B**	**59.56**	**332**	P		**P**	**19 27 29.4**	**0.0**	
	2.4nm,0.9s,baz=50,slow=13,SNR=5.7								
AKASG	**Malin Array Be**	**74.94**	**322**	P		**P**	**19 28 01.6**	**-0.1**	
	0.7nm,0.3s,baz=47,slow=6.2,SNR=6.6								
NB2	**NORSAR Subarra**	**74.97**	**337**	P		**P**	**19 28 02.1**	**+0.3**	
	comp=Z,0.8nm,0.5s,baz=41,slow=5.9								
NOA	**NORSAR Array B**	**74.97**	**337**	P		**P**	**19 28 02.1**	**+0.3**	
	comp=Z,1.7nm,0.7s,baz=39,slow=5.8,SNR=5.3								
GERES	**GERESS Array B**	**83.42**	**328**	P		**P**	**19 28 48.6**	**+0.3**	
	comp=Z,0.2nm,0.3s,baz=46,slow=5.8,SNR=4.2								

IDC 24 19:19:24.2±8.5,5°.77S×150°.69E, h85km±57km, mb3.3/3, mb1 3.5/4, mb1mx3.1/43, mbtmp3.6/4, ML1.7/1, Error ellipse: s-maj=97.3km s-min=64.1km az=114.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PMG	**Port Moresby**	**5.03**	**224**	P		Pn	19 20 36.8	-0.4
	2.0nm,0.3s,baz=39,slow=12,SNR=8.2							
PMG				S		Sn	19 21 33.1	-1.0
	0.3nm,0.3s,baz=353,slow=18,SNR=2.9							
WRA	**Warramunga Arr**	**21.24**	**227**	P		P	19 24 03.6	0.0
	1.2nm,0.5s,baz=53,slow=11,SNR=13							
ASAR	**Alice Springs**	**24.04**	**221**	P		P	19 24 31.6	+0.1
	0.4nm,0.6s,baz=56,slow=8.7,SNR=13							
FITZ	**Fitzroy Crossi**	**27.35**	**241**	P		P	19 25 01.9	+0.3
	1.0nm,0.7s,baz=41,slow=11,SNR=2.5							
TORD	**Torodi Ar. Bea**	**148.57**	**286**	PKPbc		PKPbc	19 39 01.7	-0.8
	0.6nm,1.0s,baz=90,slow=2.1,SNR=3.9							

MEX 24 19:41:51.0±0.3,14°.31N×92°.88W, h15km, MD4.2, Near coast of Chiapas

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

CCIG	**Comitan**	**2.09**	**20**	*e*P		Pn	19 42 22.5	-3.1	
CCIG				*i* S		Sn	19 42 47.5	-4.0	

*ISCJB **24** 19:45:58.7±0.9,36°.79N±0°.04×140°.81E±0°.08, h16km±6km, mb3.3/3, Error ellipse: s-maj=11.5km s-min=5.5km az=20.7*
*IDC **24** 19:45:58.2±2.0,36°.76N×140°.75E, h0km, mb3.3/3, mb1 3.5/4, mb1mx3.2/38, mbtmp3.3/4, ML3.3/1, Error ellipse: s-maj=41.6km s-min=23.7km az=50.0*
*JMA **24** 19:46:00.0,36°.84N×140°.63E, h8km, M3.4 Broadband fault plane solution: P waves. NP1:φs214.00000°, δ60.00000°, λ-85.00000°. NP2:φs23.00000°, δ30.00000°, λ-99.00000°. Principal axes: T Plg15.0000°, Azm300.0000°; N Plg5.0000°, Azm31.0000°; P Plg74.0000°, Azm138.0000°;*
JMA Felt I J1.
ISC 24 19:45:60.0±1.1,36°.83N±0°.03×140°.67E±0°.06, h10km±8km, n17, σ0s 65/17, mb3.3/3, 3C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JHO	**Hitachi**	**0.23**	**200**	⇑P		**Pg**	**19 46 04.8**	**0.0**
JHO				S		**Sg**	**19 46 08.2**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.29**	**21**	P		**Pg**	**19 46 05.9**	**0.0**
ONAJ				*e*S		**Sg**	**19 46 10.3**	**+0.5**
JFK	**Kawauchi**	**0.56**	**17**	P		**Pg**	**19 46 10.6**	**-0.3**
JSB	**Shiboa**	**0.62**	**283**	⇑P		**Pg**	**19 46 11.9**	**0.0**
JYT	**Yasato**	**0.71**	**213**	⇓P		**Pg**	**19 46 13.4**	**-0.3**
JYT				S		**Sg**	**19 46 22.8**	**-0.2**
JFT	**Otama**	**0.74**	**339**	⇑P		**Pg**	**19 46 13.7**	**-0.5**
JFT				S		**Sg**	**19 46 23.5**	**-0.3**
MJAR	**Matsushiro Arr**	**2.00**	**262**	Pn		**Pn**	**19 46 33.9**	**+0.2**
	11nm,0.3s,baz=84,slow=16,SNR=137							
MJAR				Sn		**Sn**	**19 47 00.1**	**+1.2**
	16nm,0.3s,baz=78,slow=24,SNR=13							
MAT	**Matsushiro**	**2.00**	**262**	P		**Pn**	**19 46 34.3**	**+0.5**
MAT				S		**Sb**	**19 47 00.4**	**-1.0**
SONM	**Songino Array**	**27.41**	**304**	P		**P**	**19 51 46.7**	**+1.0**
	0.2nm,0.5s,baz=98,slow=11,SNR=2.5							
H11N2	**WAKE ISLAND Hy**	**28.56**	**119**	T		T	20 21 40.6	
	baz=312,slow=75,SNR=45							
H11N1	**WAKE ISLAND Hy**	**28.57**	**119**	T		T	20 21 40.8	
	baz=312,slow=75,SNR=51							
H11N3	**WAKE ISLAND Hy**	**28.58**	**119**	T		T	20 21 41.7	
	baz=312,slow=75,SNR=38							
H11S1	**WAKE ISLAND Hy**	**29.26**	**122**	T		T	20 22 34.2	
	baz=314,slow=76,SNR=67							
H11S3	**WAKE ISLAND Hy**	**29.26**	**122**	T		T	20 22 34.6	
	baz=314,slow=76,SNR=48							
H11S2	**WAKE ISLAND Hy**	**29.27**	**122**	T		T	20 22 34.8	
	baz=314,slow=76,SNR=34							
WRA	**Warramunga Arr**	**56.78**	**187**	P		**P**	**19 55 43.4**	**-0.8**
	0.3nm,0.5s,baz=3.2,slow=7.4,SNR=8.6							
ASAR	**Alice Springs**	**60.51**	**187**	P		**P**	**19 56 09.7**	**-0.6**
	0.2nm,0.8s,baz=13,slow=8.9,SNR=2.6							

IDC 24 20:12:48.1±7.9,5°.99S×150°.68E, h116km±51km, mb3.4/3, mb1 3.5/4, mb1mx3.1/32, mbtmp3.8/4, MS3.3/1, Ms1 3.3/1, ms1mx2.9/18, Error ellipse: s-maj=100.4km s-min=61.3km az=114.0, New Britain region

| Code | Station

IDC 24 20:16:23.2±3.1, 29.73S×176.29W, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.5/25, mbtmp3.7/4, ML2.9/1, Error ellipse: s-maj=78.3km s-min=43.4km az=126.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**10.12**	**211**	Pn	Pn	20 18 48.2	-1.5
	0.1nm,0.3s,baz=92,slow=18,SNR=2.0						
URZ				Sn	Sn	20 20 37.8	-6.1
	0.3nm,0.3s,baz=112,slow=19,SNR=4.0						
STKA	**Stephens Creek**	**36.07**	**256**	P	P	20 23 27.9	+1.2
	0.6nm,0.6s,baz=90,slow=10,SNR=3.2						
ASAR	**Alice Springs**	**44.63**	**265**	P	P	20 24 37.6	-0.1
	0.2nm,0.4s,baz=107,slow=7.9,SNR=6.3						
WRA	**Warramunga Arr**	**45.56**	**271**	P	P	20 24 44.4	-0.8
	0.7nm,0.6s,baz=109,slow=7.7,SNR=12						
FINES	**FINESS Array B**	**145.00**	**341**	PKPbc	PKPbc	20 36 00.4	-0.6
	1.3nm,0.9s,baz=96,slow=4.2,SNR=2.9						

JMA 24 20:29:33.2, 36.71N×138.76E, h4km±3km, M1.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGK	**Kuni**	**0.18**	**213**	P	Pg	20 29 36.8	+0.1
JGK				S	Sg	20 29 39.4	+0.4
JKT	**Katashina**	**0.40**	**82**	P	Pg	20 29 41.0	+0.1
JKT				S	Sg	20 29 46.5	+0.4
MAT	**Matsushiro**	**0.47**	**250**	P	Pg	20 29 42.0	-0.3
MAT				S	Sg	20 29 48.0	-0.5
MAT	**Matsushiro**	**0.47**	**250**	P	Pg	20 29 42.1	-0.2
JHK	**Hiroka**	**0.57**	**21**	P	Pg	20 29 44.1	-0.2
JNG	**Nsakai**	**0.61**	**241**	P	Pg	20 29 44.7	-0.2
JNG				eS	Sg	20 29 52.3	-0.6
JAG	**Ashikaga**	**0.63**	**117**	P	Pg	20 29 45.2	0.0
JRY	**Ryogami san**	**0.70**	**171**	P	Pg	20 29 46.0	-0.7
JRY				S	Sg	20 29 55.1	-0.6

*ISCJB **24** 20:40:19.7±0.5, 10.63N±0.03×62.11W±0.03, h59km±6km, Error ellipse: s-maj=6.0km s-min=4.3km az=145.9*
*FUNV **24** 20:40:21.2, 10.60N×62.01W, h44km, MW2.6*
*TRN **24** 20:40:21.3, 10.64N×62.06W, h48km, MD3.4*

ISC 24 20:40:20.0±1.2, 10.58N±0.04×62.10W±0.03, h57km±8km, n22, σ1ŝ18/37, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	**Guiria**	**0.14**	**300**	*e*P	**Pn**	**20 40 28.9**	**0.0**
GUIV				eS	Sn	20 40 34.5	-0.8
TCE	**Chacachacare**	**0.36**	**70**	*e*P	**Pn**	**20 40 31.4**	**+1.0**
TCE				eS	Sn	20 40 37.4	-0.5
TPP	**Pointe-a-Pierr**	**0.69**	**112**	*e*P	**Pn**	20 40 34.5	+0.5
TPP				eS	Sn	20 40 44.0	-0.1
TRN	**Trinidad (W)**	**0.69**	**84**	*e*P	**Pn**	**20 40 34.4**	**+0.5**
TRN				eS	Sn	20 40 43.5	-0.6
TBH	**Brigand Hill**	**1.02**	**95**	*e*P	**Pn**	**20 40 39.9**	**+1.7**
TBH				eS	Sn	20 40 52.3	+0.7
CRUV	**Carupano**	**1.12**	**275**	*e*P	**Pn**	**20 40 40.4**	**+0.8**
CRUV				eS	Sn	20 40 55.2	+1.0
BOT	**Bacolet**	**1.48**	**66**	*e*P	**Pn**	**20 40 45.9**	**+1.5**
BOT				eS	Sn	20 41 03.1	+0.4
GRGR	**Grenville**	**1.61**	**16**	*e*P	**Pn**	**20 40 45.6**	**-0.5**
GRGR				eS	Sn	20 41 04.8	-1.1
GRGR	**Grenville**	**1.61**	**16**	*e*P	**Pn**	**20 40 46.1**	**-0.1**
GRGR				eS	Sn	20 41 04.6	-1.2
GRW	**Mount Saint Ca**	**1.63**	**15**	*e*P	**Pn**	**20 40 46.0**	**-0.6**
GRW				eS	Sn	20 41 05.7	-0.8
TOSP	**Speyside**	**1.69**	**65**	*e*P	**Pn**	**20 40 47.8**	**+0.5**
TOSP				eS	Sn	20 41 07.0	-0.9
GRSS	**Sisters**	**1.78**	**15**	*e*P	**Pn**	**20 40 49.6**	**+1.1**
ORIV	**Oritupano**	**1.98**	**221**	*e*P	**Pn**	**20 40 52.9**	**+1.8**
RIOV	**Rio Grande**	**2.51**	**174**	*e*P	**Pn**	**20 40 59.5**	**+1.1**
FCV	**Fort Charlotte**	**2.70**	**18**	*e*S	**Sn**	**20 41 31.0**	**-1.5**
SVB	**Belmont**	**2.81**	**17**	*e*P	**Pn**	**20 41 03.1**	**+0.6**
SVB				eS	Sn	20 41 34.5	-0.6
SVV	**Soufriere Volc**	**2.86**	**17**	*e*S	**Sn**	**20 41 35.7**	**-0.8**
MCLT	**Moule a Chique**	**3.31**	**20**	*e*P	**Pn**	**20 41 11.4**	**+1.9**
MCLT				eS	Sn	20 41 46.6	-1.0
CUPV	**Cœpira**	**3.67**	**262**	*e*P	**Pn**	**20 41 15.3**	**+0.9**
CUPV				eS	Sn	20 41 56.3	-0.1
BIRV	**Birongo**	**4.10**	**269**	*e*P	**Pn**	**20 41 20.7**	**+0.4**
LUEV	**Luepa**	**4.74**	**172**	*e*P	**Pn**	**20 41 28.8**	**-0.4**
LUEV				eS	Sn	20 42 19.1	-3.9
BAUV	**El Baul**	**6.08**	**255**	*e*P	**Pn**	**20 41 47.7**	**+0.4**

*ISCJB **24** 20:58:45.7±0.8, 28.00N±0.05×60.17E±0.09, h10km, mb3.5/3, Error ellipse: s-maj=12.3km s-min=5.4km az=27.7*
*IDC **24** 20:58:46.4±1.7, 28.09N×59.76E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/34, mbtmp3.6/4, ML3.4/1, Error ellipse: s-maj=46.1km s-min=26.9km az=123.0*
*CSEM **24** 20:58:47.7±0.6, 28.04N×60.10E, h10km, ML3.3, Error ellipse: s-maj=17.7km s-min=9.6km az=109.0*
*DSN **24** 20:58:56.4±2.2, 27.44N×59.74E, h20km, ML3.5/6, Error ellipse: s-maj=53.4km s-min=18.8km az=135.0*
*TEH **24** 20:59:03.5, 28.03N×58.78E, h6km, ML3.2*

ISC 24 20:58:47.2±1.0, 28.02N±0.05×60.01E±0.06, h10km, n34, σ1ŝ85/34, mb3.7/3, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZHSF	**Zahedan**	**1.72**	**23**	*e*Pg	**Pn**	**20 59 18.9**	**+1.5**
ZHSF				eSg	Sb	20 59 41.4	+0.6
CHBR	**Chabahar**	**2.45**	**170**	*e*P	**Pn**	20 59 29.7	+2.5
CHMN	**Cheshme madani**	**2.84**	**311**	*e*Pn	**Pn**	20 59 35.4	+2.5
CHMN	**Cheshme madani**	**2.84**	**311**	*e*Pn	**Pn**	20 59 35.4	+2.5
NIAN	**Nian**	**2.85**	**262**	*e*Pn	**Pn**	20 59 35.2	+2.5
NIAN	**Nian**	**2.85**	**262**	*e*Pn	**Pn**	20 59 35.2	+2.5
IBND	**Bandar-abas**	**3.13**	**260**	*e*Pn	**Pn**	**20 59 38.1**	**+1.6**
IBND				*e*AMB	AMB	21 00 42.1	
	comp=Z,2μm,0.3s						
IBND	**Bandar-abas**	**3.13**	**260**	*e*Pn	**Pn**	**20 59 38.1**	**+1.6**
NGRK	**Negar Kerman**	**3.30**	**300**	*e*Pn	**Pn**	20 59 42.6	+3.3
NGRK	**Negar Kerman**	**3.30**	**300**	*e*Pn	**Pn**	20 59 42.6	+3.3
KRBR	**Kerman**	**3.46**	**305**	*e*Pn	**Pn**	20 59 42.1	+0.8
TVBK	**TV Kerman**	**3.46**	**305**	*e*Pn	**Pb**	20 59 47.5	-1.2
BNDS	**Bandar-Abbas**	**3.46**	**261**	*e*Pn	**Pn**	20 59 42.4	+1.1
KHGB	**Koh Gabri**	**3.88**	**308**	*e*Pn	**Pb**	20 59 53.2	-2.7
BANOM	**Banah**	**3.92**	**239**	P	**Pn**	20 59 48.9	+1.5
BANOM	**Banah**	**3.92**	**239**	P	**Pn**	20 59 48.9	+1.5
UOSS	**Minazif**	**4.58**	**229**	P	**Pn**	20 59 55.8	-0.8
IDAH	**Dahanechah**	**4.71**	**359**	*e*Pn	**Pg**	**21 00 15.5**	**-1.8**
IDAH				*e*AMB	AMB	21 01 07.6	
	comp=E,588nm,0.0s						
HATD	**Hatta, Dubai**	**4.71**	**228**	P	**Pn**	20 59 57.9	-0.4
HATD	**Hatta, Dubai**	**4.71**	**228**	P	**Pn**	20 59 57.9	-0.4
ASHO	**Ashiyiah**	**4.86**	**228**	P	**Pn**	21 00 02.1	+1.7
ASHO	**Ashiyiah**	**4.86**	**228**	P	**Pn**	21 00 02.1	+1.7
WSAR	**Wadi Sarin**	**4.92**	**195**	Pn	**Pn**	**21 00 02.4**	**+1.2**
	comp=E,1.6nm,0.3s,baz=46,slow=7.8,SNR=30						
FAQ	**Al Faqa, Dubai**	**5.13**	**232**	P	**Pn**	21 00 06.3	+2.2
FAQ	**Al Faqa, Dubai**	**5.13**	**232**	P	**Pn**	21 00 06.3	+2.2
IBAF	**Bafgh**	**5.25**	**314**	*e*Pn	Pn	21 00 11.5	+5.6
IBAF				*e*Sg	**Sb**	**21 01 24.2**	**+1.8**
IBAF				*e*AMB	AMB	21 01 40.1	
	comp=Z,256nm,0.3s						
IBAF	**Bafgh**	**5.25**	**314**	*e*Pn	Pn	21 00 11.5	+5.6
IMEH	**Mehriz**	**5.77**	**307**	*e*Pn	**Pb**	**21 00 28.1**	**0.0**
IMEH				*e*AMB	AMB	21 01 51.2	
	comp=N,192nm,0.4s						
TABS	**Tabas**	**6.14**	**337**	*e*P	**Pn**	**21 00 19.1**	**+1.1**
ISRV	**Sarvestan**	**6.21**	**284**	*e*Pn	**Pn**	**21 00 20.2**	**+1.0**
ISRV				*e*AMB	AMB	21 01 44.1	
	comp=Z,143nm,0.3s						
ISRV	**Sarvestan**	**6.21**	**284**	*e*Pn	**Pn**	**21 00 20.2**	**+1.0**
MKAR	**Makanchi Array**	**25.63**	**37**	P	**P**	**21 04 18.0**	**+1.2**
	comp=Z,0.3nm,0.7s,baz=241,slow=11,SNR=3.3						
FINES	**FINESS Array B**	**40.34**	**336**	P	**P**	**21 06 24.5**	**-0.1**
	comp=Z,1.9nm,0.9s,baz=125,slow=12,SNR=6.2						
TORD	**Torodi Ar. Bea**	**56.09**	**267**	P	**P**	**21 08 25.7**	**-1.2**
	comp=Z,0.4nm,0.5s,baz=57,slow=7.2,SNR=9.5						

*KRSC **24** 21:09:55.2±2.2, 55.01N×165.62E, h45km±17km, ML4.3, FELT [IV] at Nikolskoe.*
*IDC **24** 21:09:55.9±0.7, 55.00N×165.68E, h0km, mb3.5/9, mb1 3.9/10, mb1mx3.6/45, mbtmp3.6/10, ML3.4/1, Error ellipse: s-maj=33.9km s-min=15.3km az=158.0*
*ISCJB **24** 21:09:57.7±0.7, 54.97N±0.03×165.51E±0.05, h26km±6km, mb3.5/10, Error ellipse: s-maj=5.4km s-min=4.5km az=146.5*
*MOS **24** 21:09:58.8±0.9, 55.09N×165.58E, h47km, mb4.4/4, Error ellipse: s-maj=7.6km s-min=6.6km az=170.0*

ISC 24 21:09:58.7±1.0, 55.04N±0.04×165.62E±0.05, h19km±3km, n91, σ1ŝ94/131, mb3.5/10, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**0.26**	**52**	PN	**Pg**	**21 10 04.3**	**-0.3**
BKI	**Bering**	**0.26**	**52**	*e*P	**Pg**	21 10 04.3	-0.3
BKI				*e*S	Sb	21 10 09.0	+0.5
KBG	**Krutoberegovo**	**2.05**	**308**	PN	**Pn**	**21 10 28.3**	**-3.8**
KBG				S	Sn	21 10 51.3	-5.8
KBG	**Krutoberegovo**	**2.05**	**308**	*e*P	**Pn**	**21 10 28.3**	**-3.8**
KBG				*e*S	Sn	21 10 51.3	-5.8
MKZ	**Mys Kozlova**	**2.30**	**259**	PN	**Pn**	**21 10 34.0**	**-1.6**
MKZ				S	Sn	21 11 00.4	-2.9
MKZ	**Mys Kozlova**	**2.30**	**259**	*i* P	**Pn**	**21 10 34.0**	**-1.6**
MKZ				*e*S	Sn	21 11 00.4	-2.9
SMKR	**Semkarok**	**2.80**	**305**	PN	**Pn**	**21 10 41.0**	**-1.6**
SMKR				S	Sn	21 11 14.6	-1.2
SMKR	**Semkarok**	**2.80**	**305**	*e*P	**Pn**	**21 10 41.0**	**-1.6**
SMKR				*e*S	Sn	21 11 14.6	-1.2
ZLN	**Zelenaya**	**2.90**	**292**	PN	**Pn**	**21 10 44.4**	**+0.4**
ZLN				S	Sn	21 11 18.1	-0.3
ZLN	**Zelenaya**	**2.90**	**292**	*e*P	**Pn**	**21 10 44.4**	**+0.4**
ZLN				*e*S	Sn	21 11 18.1	-0.3
BDR	**Baidarnaya**	**2.92**	**303**	PN	**Pn**	**21 10 43.2**	**-1.0**
BDR				S	Sn	21 11 16.5	-2.2
BDR	**Baidarnaya**	**2.92**	**303**	*e*P	**Pn**	**21 10 43.2**	**-1.0**
BDR				*e*S	Sn	21 11 16.5	-2.2
CIRR	**Tsirk**	**2.96**	**293**	PN	**Pn**	**21 10 44.8**	**0.0**
CIRR				S	Sn	21 11 18.3	-1.6
CIRR	**Tsirk**	**2.96**	**293**	*e*P	**Pn**	**21 10 44.8**	**0.0**
CIRR				*e*S	Sn	21 11 18.3	-1.6
SRKR	**Sorokina**	**2.98**	**305**	PN	**Pn**	**21 10 43.9**	**-1.1**
SRKR				S	Sn	21 11 19.5	-0.7
SRKR	**Sorokina**	**2.98**	**305**	*e*P	**Pn**	**21 10 43.9**	**-1.1**
SRKR				*e*S	Sn	21 11 19.5	-0.7
LGNR	**Loginova**	**2.98**	**292**	PN	**Pn**	**21 10 45.6**	**+0.3**
LGNR				S	Sn	21 11 19.9	-0.7
LGNR	**Loginova**	**2.98**	**292**	*e*P	**Pn**	**21 10 45.6**	**+0.3**
LGNR				*e*S	Sn	21 11 19.9	-0.7
TUMD	**Tumrok D**	**3.00**	**275**	*e*P	**Pn**	**21 10 45.3**	**+0.1**
TUMD				*e*S	Sn	21 11 19.6	-1.0
BZMR	**Bezymyannaya**	**3.05**	**289**	PN	**Pn**	**21 10 45.7**	**-0.3**
BZMR	**Bezymyannaya**	**3.05**	**289**	*e*P	**Pn**	**21 10 45.7**	**-0.3**
KZV	**Kizimen**	**3.06**	**273**	PN	**Pn**	**21 10 46.1**	**-0.1**
KZV	**Kizimen**	**3.06**	**273**	*e*P	**Pn**	**21 10 46.1**	**-0.1**
KLY	**Klyuchi**	**3.08**	**296**	PN	**Pn**	**21 10 44.5**	**-1.8**
KLY				S	Sn	21 11 19.5	-3.1
KLY	**Klyuchi**	**3.08**	**296**	*e*P	**Pn**	**21 10 44.5**	**-1.8**
KLY				*e*S	Sn	21 11 19.5	-3.1
KRSR	**Krestovskiy**	**3.10**	**294**	PN	**Pn**	**21 10 46.1**	**-0.5**
KRSR				S	Sn	21 11 21.2	-1.9
KRSR	**Krestovskiy**	**3.10**	**294**	*e*P	**Pn**	**21 10 46.1**	**-0.5**
KRSR				*e*S	Sn	21 11 21.2	-1.9
KIRR	**Kirishev**	**3.14**	**289**	PN	**Pn**	**21 10 47.3**	**+0.1**
KIRR				S	Sn	21 11 23.9	-0.2
KIRR	**Kirishev**	**3.14**	**289**	*e*P	**Pn**	**21 10 47.3**	**+0.1**
KIRR				*e*S	Sn	21 11 23.9	-0.2
TUMR	**Tumrok**	**3.15**	**277**	PN	**Pn**	**21 10 45.3**	**-2.0**
TUMR				S	Sn	21 11 19.6	-4.8
KMNR	**Kamenistaya**	**3.15**	**285**	PN	**Pn**	**21 10 48.2**	**+0.9**
KMNR				S	Sn	21 11 24.9	+0.5
KMNR	**Kamenistaya**	**3.15**	**285**	*i* P	**Pn**	**21 10 48.2**	**+0.9**
KMNR				*e*S	Sn	21 11 24.9	+0.5
KPT	**Kopyto**	**3.20**	**289**	PN	**Pn**	**21 10 48.4**	**+0.3**
KPT				S	Sn	21 11 26.5	+0.8
KPT	**Kopyto**	**3.20**	**289**	*e*P	**Pn**	**21 10 48.4**	**+0.3**
KPT				*e*S	Sn	21 11 26.5	+0.8
KOZ	**Kozyrevsk**	**3.42**	**290**	PN	**Pn**	**21 10 51.0**	**+0.1**
KOZ				S	Sn	21 11 32.3	+1.4
KOZ	**Kozyrevsk**	**3.42**	**290**	*e*P	**Pn**	**21 10 51.0**	**+0.1**
KOZ				*e*S	Sn	21 11 32.3	+1.4
SPN	**Mys Shipunski**	**3.83**	**242**	PN	**Pn**	**21 10 55.0**	**-1.6**
SPN	**Mys Shipunski**	**3.83**	**242**	*e*P	**Pn**	**21 10 55.0**	**-1.6**
SPN				*e*S	Sn	21 11 35.8	-5.2
ESO	**Esso**	**4.03**	**285**	PN	**Pn**	**21 10 59.4**	**0.0**
ESO	**Esso**	**4.03**	**285**	*e*P	**Pn**	**21 10 59.4**	**0.0**
NLC	**Nalytchevo**	**4.14**	**246**	PN	**Pn**	**21 11 00.7**	**-0.1**
NLC	**Nalytchevo**	**4.14**	**246**	*e*P	**Pn**	**21 11 00.7**	**-0.1**
NLC				*e*S	Sn	21 11 44.1	-4.6
SDLR	**Sedlovina**	**4.33**	**249**	PN	**Pn**	**21 11 03.4**	**-0.2**
SDLR	**Sedlovina**	**4.33**	**249**	*i* P	**Pn**	**21 11 03.4**	**-0.2**
SDLR				*e*S	Sn	21 11 50.2	-3.5
SMAR	**Somma**	**4.39**	**249**	PN	**Pn**	**21 11 05.3**	**+0.9**
SMAR				S	Sn	21 11 52.5	-2.6
SMAR	**Somma**	**4.39**	**249**	*e*P	**Pn**	**21 11 05.3**	**+0.9**
SMAR				*e*S	Sn	21 11 52.5	-2.6
KRER	**Koryakskii**	**4.40**	**249**	PN	**Pn**	**21 11 04.5**	**-0.1**
KRER	**Koryakskii**	**4.40**	**249**	*i* P	**Pn**	**21 11 04.5**	**-0.1**
KRER				*e*S	Sn	21 11 52.7	-2.6
UGLR	**Uglovaya**	**4.40**	**248**	PN	**Pn**	**21 11 04.5**	**0.0**
UGLR	**Uglovaya**	**4.40**	**248**	*i* P	**Pn**	**21 11 04.5**	**0.0**
UGLR				*e*S	Sn	21 11 52.6	-2.6
AVH	**Avacha**	**4.42**	**249**	PN	**Pn**	**21 11 04.9**	**+0.1**
AVH	**Avacha**	**4.42**	**249**	*i* P	**Pn**	**21 11 04.9**	**+0.1**
AVH				*e*S	Sn	21 11 52.6	-3.1
KRX	**Arik**	**4.43**	**250**	PN	**Pn**	**21 11 04.9**	**0.0**
KRX	**Arik**	**4.43**	**250**	*e*P	**Pn**	**21 11 04.9**	**0.0**
KRX				*e*S	Sn	21 11 52.7	-3.2
OSSR	**Ossora**	**4.44**	**343**	PN	**Pn**	**21 11 04.0**	**-0.9**
OSSR	**Ossora**	**4.44**	**343**	*e*P	**Pn**	**21 11 04.0**	**-0.9**
OSSR				*e*S	Sn	21 11 51.6	-4.4
KOK	**Koryaka**	**4.46**	**250**	PN	**Pn**	**21 11 05.7**	**+0.3**
KOK	**Koryaka**	**4.46**	**250**	*e*P	**Pn**	**21 11 05.7**	**+0.3**
KOK				*e*S	Sn	21 11 53.7	-3.1
DALK	**Dalny**	**4.52**	**246**	PN	**Pn**	**21 11 05.2**	**-0.8**
DALK	**Dalny**	**4.52**	**246**	*e*P	**Pn**	**21 11 05.2**	**-0.8**
DALK				*e*S	Sn	21 11 53.3	-4.7
PET	**Petropavlovsk**	**4.58**	**247**	*e*PN	**Pn**	**21 11 06.6**	**-0.2**
PET				pmax	pmax		
	comp=Z,30nm,0.3s						
PET	**Petropavlovsk**	**4.58**	**247**	*e*S	**Sn**	**21 11 55.4**	**-4.0**
GNL	**Ganaly**	**4.69**	**256**	PN	**Pn**	**21 11 08.8**	**+0.3**
GNL	**Ganaly**	**4.69**	**256**	*i* P	**Pn**	**21 11 08.8**	**+0.3**
KRMR	**Karymshinskiy**	**4.95**	**246**	PN	**Pn**	**21 11 12.0**	**+0.1**
KRMR	**Karymshinskiy**	**4.95**	**246**	*e*P	**Pn**	**21 11 12.0**	**+0.1**
KRMR				*e*S	Sn	21 12 05.5	-3.1
RUS	**Russkaya**	**4.96**	**241**	PN	**Pn**	**21 11 12.0**	**-0.1**
RUS	**Russkaya**	**4.96**	**241**	*i* P	**Pn**	**21 11 12.0**	**-0.1**
RUS				*e*S	Sn	21 12 04.4	-4.5
PETK	**Petropavlovsk-**	**5.05**	**251**	Pn	**Pn**	**21 11 13.2**	**-0.2**
	comp=Z,6.9nm,0.3s,baz=77,slow=18,SNR=121						
PETK				Sn	**Sn**	**21 12 09.2**	**-1.9**
	comp=Z,4.1nm,0.3s,baz=89,slow=28,SNR=5.1						
ASAK	**Asacha**	**5.30**	**243**	PN	**Pn**	**21 11 17.6**	**+0.7**
ASAK	**Asacha**	**5.30**	**243**	*i* P	**Pn**	**21 11 17.6**	**+0.7**
ASAK				*e*S	Sn	21 12 14.2	-3.2
TILK	**Tilichiki**	**5.42**	**3**	PN	**Pn**	**21 11 17.1**	**-1.3**
TILK	**Tilichiki**	**5.42**	**3**	*e*P	**Pn**	**21 11 17.1**	**-1.3**
SKR	**Severo-Kuril's**	**7.22**	**237**	*e*PN	Pn	21 11 34.4	-8.7
SKR				MLR	MLR		
	comp=Z,600nm,13.0s						
SKR				MLR	MLR		
	comp=Z,300nm,13.0s						
ILAR	**Eielson Array**	**25.11**	**48**	P	**P**	**21 15 21.6**	**-0.3**
	comp=Z,1.4nm,0.8s,baz=253,slow=9.4,SNR=19						
MJAR	**Matsushiro Arr**	**26.33**	**237**	P	**P**	**21 15 37.7**	**+4.5**
	comp=Z,0.4nm,0.3s,baz=18,slow=10,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**35.27**	**178**	T	T	21 54 23.7	
	baz=359,slow=76,SNR=1225						
H11N3	**WAKE ISLAND Hy**	**35.28**	**178**	T	T	21 54 24.7	
	baz=359,slow=76,SNR=1083						
H11N1	**WAKE ISLAND Hy**	**35.28**	**178**	T	T	21 54 25.1	
	baz=359,slow=76,SNR=1018						
H11S1	**WAKE ISLAND Hy**	**36.48**	**178**	T	T	21 55 47.8	
	baz=358,slow=74						
H11S3	**WAKE ISLAND Hy**	**36.49**	**178**	T	T	21 55 54.5	
	baz=358,slow=74						
H11S2	**WAKE ISLAND Hy**	**36.50**	**178**	T	T	21 55 54.0	
	baz=358						
SONM	**Songino Array**	**36.61**	**284**	P	**P**	**21 17 03.6**	**+0.1**
	comp=Z,0.3nm,0.6s,baz=50,slow=9.5,SNR=2.6						
YKA	**Yellowknife Ar**	**39.49**	**46**	P	**P**	**21 17 27.2**	**-0.3**
	comp=Z,0.9nm,0.4s,baz=293,slow=7.0,SNR=3.4						
MKAR	**Makanchi Array**	**50.20**	**297**	P	**P**	**21 18 52.5**	**-0.4**
	comp=Z,0.1nm,0.3s,baz=57,slow=8.8,SNR=2.3						
PDAR	**Pinedale Array**	**53.74**	**65**	P	**P**	**21 19 20.1**	**+0.5**
	comp=Z,1.1nm,0.8s,baz=316,slow=3.8,SNR=8.9						
CMAR	**Chiang Mai Arr**	**61.73**	**262**	P	**P**	**21 20 17.8**	**+2.1**
	comp=Z,0.1nm,0.3s,baz=33,slow=8.9,SNR=3.1						
TXAR	**Lajitas Array**	**66.90**	**72**	P	**P**	**21 20 50.0**	**+0.4**
	comp=Z,0.7nm,0.5s,baz=300,slow=4.7,SNR=16						
WRA	**Warramunga Arr**	**79.31**	**210**	P	**P**	**21 22 02.3**	**-0.4**
	comp=Z,0.2nm,0.6s,baz=27,slow=5.8,SNR=3.2						
ASAR	**Alice Springs**	**82.97**	**209**	P	**P**	**21 22 21.8**	**-0.4**
	comp=Z,0.3nm,0.8s,baz=21,slow=5.4,SNR=2.9						
LPAZ	**La Paz**	**123.70**	**69**	PKP	**PKPdf**	**21 28 55.9**	**+0.2**
	comp=Z,2.6nm,0.5s,baz=324,slow=5.2,SNR=8.4						

IDC 24 21:12:08.7±2.0, 24.04S×179.87W, h488km±20km, mb3.1/5, mb1 3.5/7, mb1mx3.1/31, mbtmp4.1/7, Error ellipse: s-maj=36.7km s-min=17.7km az=159.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**12.65**	**39**	P	P	21 14 53.7	-0.8
	0.8nm,0.3s,baz=251,slow=18,SNR=2.4						
AFI				S	S	21 17 02.3	-8.8
	1.2nm,0.3s,baz=155,slow=19,SNR=5.9						
URZ	**Urewera**	**14.40**	**190**	P	P	21 15 12.7	+0.1
	0.8nm,0.3s,baz=26,slow=15,SNR=3.4						
URZ				S	S	21 17 41.9	-2.5
	0.9nm,0.3s,baz=66,slow=23,SNR=8.5						
ASAR	**Alice Springs**	**42.13**	**261**	P	P	21 19 17.9	+0.2
	0.3nm,0.3s,baz=98,slow=6.8,SNR=8.8						
ASAR				ScP	ScP	21 24 03.8	-1.1
	0.5nm,0.7s,baz=103,slow=3.9,SNR=6.6						
WRA	**Warramunga Arr**	**42.52**	**266**	P	P	21 19 20.3	-0.4
	0.9nm,0.3s,baz=97,slow=8.4,SNR=55						
WRA				ScP	ScP	21 24 06.7	+0.3
	0.5nm,0.8s,baz=94,slow=3.9,SNR=3.9						
FITZ	**Fitzroy Crossi**	**50.94**	**266**	P	P	21 20 25.0	+0.4
	2.2nm,0.9s,baz=117,slow=6.8,SNR=6.1						
TXAR	**Lajitas Array**	**90.40**	**58**	P	P	21 24 18.1	+0.3
	0.7nm,0.7s,baz=216,slow=5.6,SNR=12						
PDAR	**Pinedale Array**	**92.71**	**44**	P	P	21 24 28.8	+0.5
	0.3nm,0.7s,baz=224,slow=2.5,SNR=2.7						
BRTR	**Keskin Array B**	**147.76**	**307**	PKPbc	PKPbc	21 30 56.9	-1.5
	0.2nm,0.5s,baz=119,slow=4.2,SNR=2.9						
TORD	**Torodi Ar. Bea**	**169.06**	**188**	PKPab	PKPab	21 32 33.9	-0.8
	0.6nm,0.9s,baz=199,slow=3.1,SNR=4.4						

*IDC **24** 21:20:18.2±1.2, 7.26S×106.96E, h0km, mb3.9/9, mb1 4.0/9, mb1mx3.7/43, mbtmp3.9/9, MS4.2/1, Ms1 4.2/1, ms1mx3.3/39, Error ellipse: s-maj=59.8km s-min=16.3km az=48.0*
*NEIC **24** 21:20:23.3±0.8, 7.51S×106.71E, h45km±9km, mb4.4/5, Error ellipse: s-maj=13.5km s-min=7.6km az=216.0*
*DJA **24** 21:20:24.7±0.3, 8.6S±3×10^-7E-1, h10km, M4.5/13, mb4.8/1, MLv4.3/13*
*ISCJB **24** 21:20:25.1±0.4, 7.85S±0.05×106.85E±0.04, h64km±6km, mb4.0/12, Error ellipse: s-maj=8.2km s-min=5.6km az=33.0*

ISC 24 21:20:25.2±0.9, 7.78S±0.05×106.87E±0.04, h64km±8km, n47, σ2ŝ31/49, mb4.0/12, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNJI	**Cibinong**	**0.53**	**29**	P	**Pn**	**21 20 37.3**	**-0.6**
SKJI	**Sukabumi**	**0.83**

HNR	**Honiara**	**2.24**	**134**	*e*P	Pg	21 21 50.0	+10
HNR				*e*S	Sn	21 22 05.0	+1.1
ASAR	**Alice Springs**	**28.18**	**233**	P	P	21 26 51.9	+0.1
	0.1nm,0.4s,baz=60,slow=9.7,SNR=3.4						
USRK	**Ussuriysk Ar.**	**57.04**	**338**	P	P	21 30 45.4	+0.4
	1.2nm,0.8s,baz=149,slow=6.1,SNR=5.0						
SONM	**Songino Array**	**71.87**	**326**	P	P	21 32 22.4	+0.1
	1.0nm,0.9s,baz=119,slow=6.8,SNR=6.0						
MKAR	**Makanchi Array**	**86.24**	**318**	P	P	21 33 40.3	-0.7
	0.3nm,0.8s,baz=101,slow=5.0,SNR=3.5						

*ISCJB **24** 21:22:19.2±0.9, 10°.90N±0°.04×72°.36W±0°.06, h5km±7km, Error ellipse: s-maj=10.3km s-min=4.6km az=31.5*
*FUNV **24** 21:22:19.7, 10°.88N×72°.41W, h1km, MW2.6*
*RSNC **24** 21:22:20.5±0.4, 11°.38N×72°.82W, h58km±45km, ML3.2*

ISC 24 21:22:17.3±1.7, 10°.98N±0°.05×72°.40W±0°.05, h3km±12km, n18, σ1§28/27, 1D, Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	**0.48**	**181**	⇓*i*P	**Pg**	**21 22 27.0**	**+0.6**
VIRV				*e*S	**Sg**	**21 22 32.7**	**+0.1**
URIC	**Uribia, Colomb**	**0.82**	**29**	*e*P	**Pn**	**21 22 36.3**	**+0.5**
URIC				*e*S	**Sn**	**21 22 48.5**	**+0.1**
URIC				*i*		21 22 49.5	
	comp=Z,424nm,0.1s						
DABV	**Dabajuro**	**1.73**	**92**	*e*P	**Pg**	**21 22 51.1**	**+0.6**
DABV				*e*S	**Sb**	**21 23 13.2**	**+1.2**
QARV	**Quebrada Arrib**	**2.00**	**112**	*e*P	**Pb**	**21 22 54.3**	**0.0**
QARV				*e*S	**Sb**	**21 23 18.8**	**-0.9**
VIGV	**El Vigia**	**2.36**	**154**	*e*P	**Pn**	**21 22 57.1**	**+0.1**
VIGV				*e*S	**Sn**	**21 23 26.3**	**-0.3**
MONV	**Montecano**	**2.57**	**68**	*e*P	**Pb**	**21 23 02.7**	**-1.4**
MONV				*e*S	**Sb**	**21 23 34.3**	**-1.8**
CURV	**Curarigua**	**2.58**	**112**	*e*P	**Pn**	**21 23 00.7**	**+0.6**
OCAC	**Ocana**	**2.87**	**199**	*e*P	**Pb**	**21 23 07.6**	**-1.7**
OCAC				*e*S	**Sb**	**21 23 43.8**	**-1.2**
OCAC				*i*		21 23 52.0	
	comp=Z,91nm,0.4s						
SOCV	**Socops**	**3.08**	**150**	*e*P	**Pn**	**21 23 06.9**	**-0.1**
CAPV	**Capacho**	**3.10**	**178**	*e*P	**Pn**	**21 23 07.8**	**+0.5**
SANV	**Sanarito**	**3.18**	**117**	*e*P	**Pn**	**21 23 09.7**	**+1.4**
GRMC	**Gramalote, San**	**3.27**	**187**	*e*P	**Pn**	**21 23 11.5**	**+1.9**
GRMC				*i*		21 23 50.6	
	comp=Z,54nm,0.3s						
CBRI	**Barrientos, No**	**3.27**	**187**	*e*P	**Pb**	**21 23 13.6**	**-2.5**
CBRI				*e*S	**Sb**	**21 23 55.9**	**-0.5**
CBRI				*i*		21 24 10.9	
	comp=Z,50nm,0.5s						
TEPV	**Terepaima**	**3.31**	**107**	*e*P	**Pn**	**21 23 11.4**	**+1.3**
MAPV	**Macapo**	**4.04**	**106**	*e*P	**Pn**	**21 23 21.5**	**+1.3**
TURV	**Turiamo**	**4.51**	**96**	*e*P	**Pn**	**21 23 27.4**	**+0.8**
BAUV	**El Baul**	**4.75**	**115**	*e*P	**Pn**	**21 23 29.9**	**+0.1**
NORC	**Norcasia**	**5.91**	**205**	*e*P	**Pn**	**21 23 48.5**	**+2.6**
NORC				*e*S	**Sn**	**21 24 55.4**	**+1.1**

IDC 24 21:26:28.5±2.2, 17°.73S×178°.14W, h516km±29km, mb3.2/4, mb1 3.4/5, mb1mx2.9/38, mbtmp4.1/5, Error ellipse: s-maj=100.2km s-min=19.2km az=153.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.21**	**59**	P	P	21 28 17.4	-0.1
	2.6nm,0.3s,baz=230,slow=19,SNR=5.4						
AFI				S	S	21 29 47.3	+0.6
	1.0nm,0.3s,baz=233,slow=20,SNR=2.6						
STKA	**Stephens Creek**	**38.94**	**241**	P	P	21 33 10.0	+0.2
	1.8nm,0.5s,baz=96,slow=14,SNR=6.2						
WRA	**Warramunga Arr**	**44.91**	**259**	P	P	21 33 57.0	-0.3
	1.0nm,0.5s,baz=97,slow=7.1,SNR=30						
ASAR	**Alice Springs**	**45.08**	**254**	P	P	21 33 58.4	-0.1
	5.7nm,0.6s,baz=88,slow=8.6,SNR=100						
ASAR				S	S	21 39 56.5	-3.5
	0.1nm,0.3s,baz=100,slow=11,SNR=5.1						
TXAR	**Lajitas Array**	**85.69**	**58**	P	P	21 38 13.1	0.0
	0.1nm,0.6s,baz=220,slow=6.7,SNR=5.5						
MMAI	**Mount Meron Ar**	**146.26**	**303**	PKPbc	PKPbc	21 45 10.8	-0.9
	0.4nm,0.5s,baz=100,slow=3.2,SNR=3.1						

MEX 24 21:28:22.0±0.6, 13°.72N×92°.11W, h270km±13km, MD3.9, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.55**	**359**	*e*P	Pn	21 29 10.6	-0.8
CCIG				*i* S	S	21 29 47.5	-3.2

*ISCJB **24** 21:29:28.3±0.2, 27°.09N±0°.04×127°.43E±0°.04, h101km±3km, mb3.9/18, Error ellipse: s-maj=8.9km s-min=3.1km az=136.9*
*JMA **24** 21:29:30.1±0.2, 27°.10N×127°.46E, h92km±3km, M4.0*
JMA Felt I J1.
*IDC **24** 21:29:30.6±1.0, 27°.10N×127°.34E, h105km±8km, mb3.7/17, mb1 3.8/19, mb1mx3.6/48, mbtmp4.0/19, Error ellipse: s-maj=20.1km s-min=11.8km az=64.0*

ISC 24 21:29:29.9±0.6, 27°.06N±0°.05×127°.47E±0°.04, h103km±5km, n45, σ1§44/70, mb3.9/18, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIH	**Iheya**	**0.45**	**93**	P	**Pn**	**21 29 45.1**	**-0.5**
JIH				S	**Sn**	**21 29 55.7**	**-1.6**
JAGN	**Aguni-jima**	**0.51**	**203**	P	**Pn**	**21 29 45.5**	**-0.6**
JAGN				S	**Sn**	**21 29 57.0**	**-1.1**
JNTH	**Nagotoyohara**	**0.73**	**138**	P	**Pn**	**21 29 47.7**	**-0.1**
JNTH				S	**Sn**	**21 29 59.9**	**-1.4**
JOW	**Kunigami**	**0.75**	**108**	P	**Pn**	**21 29 47.6**	**-0.4**
JOW				S	**Sn**	**21 30 00.2**	**-1.5**
JJT2	**Tamagusuku 2**	**0.95**	**165**	P	**Pn**	**21 29 50.5**	**+0.5**
JJT2				S	**Sn**	**21 30 05.4**	**+0.3**
JKE	**Kume jima 2**	**0.95**	**220**	P	**Pn**	**21 29 49.7**	**-0.3**
JKE				S	**Sn**	**21 30 04.1**	**-1.1**
JOKE	**Okinoerabujima**	**1.02**	**73**	P	**Pn**	**21 29 50.2**	**-0.6**
JOKE				S	**Sn**	**21 30 04.5**	**-2.0**
JTK	**Tokunoshima**	**1.50**	**61**	P	**Pn**	**21 29 55.8**	**-0.5**
JTK				S	**Sn**	**21 30 14.3**	**-2.0**
JAMN	**Amaminishikomi**	**1.92**	**52**	P	**Pn**	**21 30 00.7**	**-0.8**
JAMN				S	**Sn**	**21 30 23.2**	**-2.4**
JAM	**Amami Oshima**	**2.32**	**54**	P	**Pn**	**21 30 06.3**	**-0.4**
JAM				S	**Sn**	**21 30 33.3**	**-1.6**
JZK	**Kikaishima**	**2.55**	**60**	P	**Pn**	**21 30 09.7**	**0.0**
JZK				S	**Sn**	**21 30 39.9**	**-0.3**
JTAJ	**Takarajima**	**2.58**	**36**	P	**Pn**	**21 30 10.2**	**0.0**
JTAJ				S	**Sn**	**21 30 38.2**	**-2.9**
JIKM	**Ikemajima**	**2.92**	**224**	P	**Pn**	**21 30 14.8**	**+0.1**
JIKM				S	**Sn**	**21 30 48.7**	**-0.4**
JOGS	**Gusukube**	**2.95**	**219**	P	**Pn**	**21 30 15.4**	**+0.3**
JOGS				S	**Sn**	**21 30 50.1**	**+0.3**
JMJ	**Miyako jima 2**	**2.98**	**222**	P	**Pn**	**21 30 16.0**	**+0.6**
JIRB	**Irabujima**	**3.04**	**223**	P	**Pn**	**21 30 15.9**	**-0.3**
JTJ	**Tarama**	**3.47**	**227**	P	**Pn**	**21 30 21.2**	**-0.8**
JTJ				S	**Sn**	**21 31 00.8**	**-1.4**
JMZ	**Minamidaito 2**	**3.58**	**109**	P	**Pn**	**21 30 21.4**	**-2.1**
JMZ				S	**Sn**	**21 30 59.3**	**-5.7**
JISG	**Ishigakijimahi**	**3.77**	**230**	P	**Pn**	**21 30 25.0**	**-1.0**
JISG				S	**Sn**	**21 31 07.9**	**-1.5**
JIJ	**Ishigaki jima**	**4.03**	**229**	P	**Pn**	**21 30 27.9**	**-1.6**
JIJ				S	**Sn**	**21 31 11.6**	**-4.1**
JKRS	**Kuro-shima**	**4.20**	**229**	P	**Pn**	**21 30 30.5**	**-1.4**
JKRS				S	**Sn**	**21 31 18.0**	**-1.9**
IRIF	**Iriomote-Funau**	**4.33**	**232**	P	**Pn**	**21 30 32.2**	**-1.4**
HATJ	**Hateruma jima**	**4.46**	**229**	P	**Pn**	**21 30 33.8**	**-1.6**
YOJ	**Yonaguni jima**	**4.78**	**238**	P	**Pn**	**21 30 39.0**	**-0.7**
JYNG	**Yonagunijimaku**	**4.84**	**238**	P	**Pn**	**21 30 39.7**	**-0.7**
JNU	**Nakatsue**	**6.72**	**25**	P	**Pn**	**21 31 06.9**	**+0.9**
	1.4nm,0.3s,baz=204,slow=14,SNR=12						
JNU				S	**Sn**	**21 32 23.2**	**+2.1**
	0.5nm,0.3s,baz=158,slow=16,SNR=1.8						
KSRS	**Korea Array**	**10.37**	**2**	P	**Pn**	**21 31 57.0**	**+1.5**
	0.1nm,0.3s,baz=180,slow=13,SNR=6.6						
GUMO	**Guam**	**21.08**	**126**	P	**P**	**21 34 09.0**	**+2.9**
	50nm,0.9s,baz=21,slow=21,SNR=3.6						
SONM	**Songino Array**	**26.49**	**327**	P	**P**	**21 34 58.0**	**+0.4**
	1.5nm,0.4s,baz=138,slow=10,SNR=19						
SONM				pP	**pP**	**21 35 20.5**	**+0.2**
	2.1nm,1.2s,baz=143,slow=10,SNR=3.3						
SONM				PcP	**PcP**	**21 38 21.6**	**+1.6**
	0.3nm,0.6s,baz=159,slow=4.3,SNR=3.1						
MKAR	**Makanchi Array**	**40.48**	**311**	P	**P**	**21 36 57.9**	**-0.6**
	1.2nm,0.6s,baz=86,slow=9.9,SNR=12						
MKAR				pP	**pP**	**21 37 21.9**	**-0.3**
	0.5nm,0.5s,baz=90,slow=9.1,SNR=2.2						
MKAR				PcP	**PcP**	**21 38 59.5**	**+0.2**
	0.6nm,0.7s,baz=99,slow=4.5,SNR=3.5						
ZALV	**Zalesovo Beam**	**41.17**	**323**	P	**P**	**21 37 03.2**	**-0.8**
	0.7nm,0.4s,baz=119,slow=9.4,SNR=4.7						
KURBB	**Kurchatov Arra**	**43.78**	**316**	P	**P**	**21 37 24.1**	**-1.1**
	0.7nm,0.5s,baz=104,slow=9.0,SNR=12						
KURBB				pP	**pP**	**21 37 48.8**	**-0.4**
	0.5nm,0.5s,baz=104,slow=9.2,SNR=3.9						
WRA	**Warramunga Arr**	**47.20**	**171**	P	**P**	**21 37 52.8**	**+0.4**
	5.0nm,0.7s,baz=353,slow=8.4,SNR=48						
ASAR	**Alice Springs**	**50.81**	**172**	P	**P**	**21 38 20.6**	**+0.6**
	2.4nm,0.8s,baz=358,slow=9.1,SNR=26						
GEYT	**Alibeck**	**58.29**	**300**	P	**P**	**21 39 13.6**	**-0.4**
	1.2nm,0.6s,baz=61,slow=7.2,SNR=3.6						
STKA	**Stephens Creek**	**60.14**	**166**	P	**P**	**21 39 26.9**	**+0.2**
	1.3nm,0.6s,baz=3.5,slow=7.9,SNR=3.5						
ILAR	**Eielson Array**	**64.03**	**28**	P	**P**	**21 39 52.0**	**-0.3**
	0.6nm,0.7s,baz=261,slow=5.4,SNR=10.0						
FINES	**FINESS Array B**	**71.81**	**330**	P	**P**	**21 40 40.4**	**-0.6**
	0.9nm,0.5s,baz=87,slow=4.0,SNR=8.1						
AKASG	**Malin Array Be**	**74.46**	**319**	P	**P**	**21 40 56.2**	**-0.7**
	0.4nm,0.3s,baz=58,slow=6.7,SNR=2.9						
BRTR	**Keskin Array B**	**75.99**	**308**	P	**P**	**21 41 06.2**	**+0.1**
	1.0nm,0.5s,baz=123,slow=4.2,SNR=7.4						
HFS	**Hagfors**	**77.77**	**332**	P	**P**	**21 41 14.9**	**-0.5**
	0.5nm,0.3s,baz=77,slow=4.6,SNR=5.1						
YKA	**Yellowknife Ar**	**78.06**	**25**	P	**P**	**21 41 17.4**	**+0.4**
	0.9nm,0.5s,baz=304,slow=5.7,SNR=3.9						
NOA	**NORSAR Array B**	**78.27**	**334**	P	**P**	**21 41 17.7**	**-0.6**
	0.4nm,0.4s,baz=54,slow=6.0,SNR=2.8						
GERES	**GERESS Array B**	**84.13**	**323**	P	**P**	**21 41 50.5**	**+0.9**
	0.2nm,0.4s,baz=64,slow=2.3,SNR=4.2						
PDAR	**Pinedale Array**	**92.94**	**38**	P	**P**	**21 42 32.7**	**+0.8**
	0.3nm,0.4s,baz=313,slow=6.0,SNR=3.3						

*ISCJB **24** 21:38:23.0±0.3, 39°.27N±0°.02×27°.76E±0°.03, h0km, Error ellipse: s-maj=3.4km s-min=3.1km az=172.0*
*CSEM **24** 21:38:23.2±0.2, 39°.28N×27°.75E, h1km, MD2.9, Error ellipse: s-maj=4.0km s-min=3.3km az=64.0, Suspected Mining explosion.*
*ISK **24** 21:38:23.1, 39°.28N×27°.72E, h8km, MD2.9*
*DDA **24** 21:38:23.6, 39°.27N×27°.79E, h7km, Md2.7, Suspected Mining explosion.*

ISC 24 21:38:22.6±0.8, 39°.29N±0°.02×27°.78E±0°.02, h0km, n48, σ0§48/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.35**	**12**	*e*PG	**Pb**	**21 38 31.1**	**-0.6**
BALB				*e*SG	**Sb**	**21 38 37.5**	**-0.4**
BALB	**Balikesir**	**0.35**	**12**	*e*Pg	**Pb**	**21 38 31.1**	**-0.6**
BALB				*e*Sg	**Sb**	**21 38 37.5**	**-0.4**
AKS	**Akhisar**	**0.41**	**177**	*e*PG	**Pg**	**21 38 31.3**	**+0.8**
AKS				*e*SG	**Sb**	**21 38 38.3**	**-1.4**
AKS	**Akhisar**	**0.41**	**177**	*e*Pg	**Pg**	**21 38 31.3**	**+0.8**
AKS				*e*Sg	**Sb**	**21 38 38.3**	**-1.4**
BALY	**Balya**	**0.46**	**344**	*i* P	**Pb**	**21 38 32.9**	**-0.7**
BALY	**Balya**	**0.46**	**344**	P	**Pb**	**21 38 32.9**	**-0.7**
DST	**Dursunbey**	**0.72**	**64**	*e*PG	**Pb**	**21 38 38.1**	**+0.1**
DST	**Dursunbey**	**0.72**	**64**	*e*Pg	**Pb**	**21 38 38.1**	**+0.1**
DKL	**Dikili**	**0.72**	**252**	*e*PG	**Pg**	**21 38 36.5**	**+0.2**
DKL	**Dikili**	**0.72**	**252**	*e*Pg	**Pg**	**21 38 36.5**	**+0.2**
GONE	**Gonen-Balikesi**	**0.76**	**354**	*e*PG	**Pb**	**21 38 39.1**	**+0.5**
GONE	**Gonen-Balikesi**	**0.76**	**354**	*e*Pg	**Pb**	**21 38 39.1**	**+0.5**
DEMI	**Demirci**	**0.77**	**109**	*i* P	**Pb**	**21 38 49.4**	**-0.4**
DEMI				*i* S	**Sb**	**21 38 49.4**	**-0.4**
DEMI	**Demirci**	**0.77**	**109**	P	**Pb**	**21 38 38.4**	**-0.4**
DEMI				S	**Sb**	**21 38 49.4**	**-0.4**
AYVA	**Ayvalik**	**0.85**	**271**	*i* P	**Pb**	**21 38 40.0**	**-0.2**
AYVA				*i* S	**Sb**	**21 38 52.7**	**+0.6**
AYVA	**Ayvalik**	**0.85**	**271**	P	**Pb**	**21 38 40.0**	**-0.2**
AYVA				S	**Sb**	**21 38 52.7**	**+0.6**
IZM	**Izmir**	**0.98**	**205**	*e*PG	**Pg**	**21 38 41.3**	**-0.1**
IZM	**Izmir**	**0.98**	**205**	*e*Pg	**Pg**	**21 38 41.3**	**-0.1**
MANT	**Manisa**	**1.00**	**143**	*i* P	**Pg**	**21 38 41.8**	**0.0**
MANT				*i* S	**Sg**	**21 38 55.0**	**+0.2**
MANT	**Manisa**	**1.00**	**143**	P	**Pg**	**21 38 41.8**	**0.0**
MANT				S	**Sg**	**21 38 55.0**	**+0.2**
KULA	**Kula-Manisa**	**1.04**	**138**	*e*PG	**Pb**	**21 38 43.5**	**+0.1**
KULA	**Kula-Manisa**	**1.04**	**138**	*e*Pg	**Pb**	**21 38 43.5**	**+0.1**
EDC	**Edincik**	**1.05**	**3**	*e*PG	**Pb**	**21 38 43.6**	**0.0**
EDC	**Edincik**	**1.05**	**3**	*e*Pg	**Pb**	**21 38 43.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.07**	**24**	*e*PN	**Pb**	**21 38 44.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.07**	**24**	*e*Pn	**Pb**	**21 38 44.0**	**+0.1**
KRBG	**Karabiga-Canak**	**1.16**	**341**	*e*PN	**Pb**	**21 38 45.6**	**+0.1**
KRBG	**Karabiga-Canak**	**1.16**	**341**	*e*Pn	**Pb**	**21 38 45.6**	**+0.1**
MRMT	**Marmara Adasi**	**1.31**	**354**	*e*PN	**Pn**	**21 38 48.4**	**+0.2**
MRMT	**Marmara Adasi**	**1.31**	**354**	*e*Pn	**Pn**	**21 38 48.4**	**+0.2**
GDZ	**Gediz**	**1.33**	**98**	*i* P	**Pn**	**21 38 49.6**	**+1.0**
GDZ				*i* S	**Sn**	**21 39 07.0**	**-0.1**
GDZ	**Gediz**	**1.33**	**98**	P	**Pn**	**21 38 49.6**	**+1.0**
GDZ				S	**Sn**	**21 39 07.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.35**	**176**	*e*PN	**Pg**	**21 38 48.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.35**	**176**	*e*Pn	**Pg**	**21 38 48.4**	**0.0**
DGB	**˙zmir**	**1.43**	**210**	*i* P	**Pg**	**21 38 50.0**	**+0.1**
DGB				*i* S	**Sg**	**21 39 07.6**	**-0.8**
IGD	**Bursa**	**1.46**	**48**	*i* P	**Pn**	**21 38 49.7**	**-0.4**
IGD				*i* S	**Sn**	**21 39 11.1**	**+1.1**
RKY	**Sarkoy-Tekirda**	**1.47**	**342**	*e*PN	**Pn**	**21 38 50.3**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.47**	**342**	*e*Pn	**Pn**	**21 38 50.3**	**0.0**
GELI	**Tayfur-Gelibol**	**1.49**	**318**	*e*PN	**Pn**	**21 38 50.5**	**-0.1**
GELI	**Tayfur-Gelibol**	**1.49**	**318**	*e*Pn	**Pn**	**21 38 50.5**	**-0.1**
SIGR	**SIGRI**	**1.50**	**267**	*e*PN	**Pn**	**21 38 50.9**	**+0.2**
SIGR	**SIGRI**	**1.50**	**267**	*e*Pn	**Pn**	**21 38 50.9**	**+0.2**
IZI	**Iznik**	**1.67**	**51**	*e*PN	**Pg**	**21 38 54.4**	**-0.1**
IZI	**Iznik**	**1.67**	**51**	*e*Pn	**Pg**	**21 38 54.4**	**-0.1**
ERIK	**Erikli-Kesan**	**1.69**	**325**	*e*PN	**Pn**	**21 38 53.4**	**+0.1**
ERIK	**Erikli-Kesan**	**1.69**	**325**	*e*Pn	**Pn**	**21 38 53.4**	**+0.1**
CAVI	**Cavuskoy**	**1.83**	**60**	*e*PN	**Pb**	**21 38 56.6**	**-0.2**
CAVI	**Cavuskoy**	**1.83**	**60**	*e*Pn	**Pb**	**21 38 56.7**	**-0.2**

*IDC **24** 21:41:41.1±3.4, 39°.10N×20°.15E, h0km, mb3.6/4, mb1 3.4/6, mb1mx3.2/54, mbtmp3.4/6, ML2.5/1, Error ellipse: s-maj=60.7km s-min=28.7km az=66.0*
*ISCJB **24** 21:41:42.8±0.7, 39°.02N±0°.03×19°.98E±0°.05, h18km±5km, mb3.5/4, Error ellipse: s-maj=6.9km s-min=4.0km az=155.8*
*ATH **24** 21:41:43.7, 39°.00N×20°.14E, h16km±1km, ML2.8/5, Error ellipse: s-maj=1.7km s-min=0.8km az=54.0*
*CSEM **24** 21:41:43.7±0.4, 39°.01N×20°.14E, h2km, ML3.0, Error ellipse: s-maj=9.7km s-min=4.5km az=75.0*
*THE **24** 21:41:44.0, 39°.01N×20°.18E, h3km, ML3.0/7, Error ellipse: s-maj=0.9km s-min=0.3km az=254.0*

ISC 24 21:41:43.5±1.1, 39°.01N±0°.02×20°.12E±0°.03, h19km±3km, n92, σ1§13/122, mb3.5/4, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKD2	**Lefkada island**	**0.47**	**118**	P	**Pg**	**21 41 52.3**	**-0.8**
LKD2				S	**Sg**	**21 41 58.6**	**-1.0**
LKD2	**Lefkada island**	**0.47**	**118**	P	**Pg**	**21 41 52.1**	**-1.0**
LKD2				S	**Sg**	**21 41 58.6**	**-1.0**
LKD2	**Lefkada island**	**0.47**	**118**	P	**Pg**	**21 41 52.1**	**-1.0**
LKD2				S	**Sg**	**21 41 59.0**	**-0.6**
IGT	**Igoumenitsa**	**0.55**	**17**	P	**Pg**	**21 41 53.9**	**-0.6**
IGT				S	**Sb**	**21 42 02.0**	**+0.2**
IGT	**Igoumenitsa**	**0.55**	**17**	P	**Pg**	**21 41 53.9**	**-0.6**
IGT				S	**Sb**	**21 42 02.0**	**+0.2**
IGT	**Igoumenitsa**	**0.55**	**17**	P	**Pg**	**21 41 53.7**	**-0.8**
IGT				S	**Sb**	**21 42 01.8**	**-0.1**
IGT				AML	AML	21 42 03.2	
	comp=E,2995μm,0.2s						
IGT				AML	AML	21 42 03.5	
	comp=N,2621μm,0.2s						
SGD	**Sagiada**	**0.61**	**8**	P	**Pg**	**21 41 55.3**	**-0.3**
SGD				S	**Sb**	**21 42 04.4**	**+0.8**
SGD	**Sagiada**	**0.61**	**8**	P	**Pg**	**21 41 55.3**	**-0.3**
SGD				S	**Sb**	**21 42 04.4**	**+0.8**
SGD	**Sagiada**	**0.61**	**8**	P	**Pg**	**21 41 55.4**	**-0.2**
SGD				S	**Sn**	**21 42 05.5**	**-0.9**
KEK	**Kerkira**	**0.75**	**340**	P	**Pb**	**21 41 58.5**	**+0.7**
KEK				S	**Sg**	**21 42 09.6**	**+1.4**
KEK	**Kerkira**	**0.75**	**340**	P	**Pb**	**21 41 58.5**	**+0.7**
KEK				S	**Sg**	**21 42 09.3**	**+1.1**
DSL	**Palaion Diasel**	**0.77**	**80**	P	**Pn**	**21 42 02.8**	**+3.5**
DSL	**Palaion Diasel**	**0.77**	**80**	P	**Pb**	**21 41 57.3**	**-0.9**
DSL				S	**Sn**	**21 42 10.3**	**0.0**
DSL	**Palaion Diasel**	**0.77**	**80**	P	**Pb**	**21 41 57.4**	**-0.9**
DSL				S	**Sn**	**21 42 10.3**	**0.0**
DSL				AML	AML	21 42 15.2	
	comp=E,3288μm,0.6s						
DSL				AML	AML	21 42 16.1	
	comp=N,3350μm,0.6s						
JAN	**Janina**	**0.86**	**41**	P	**Pb**	**21 41 59.3**	**-0.5**
JAN				S	**Sg**	**21 42 11.4**	**-0.3**
JAN	**Janina**	**0.86**	**41**	P	**Pb**	**21 41 59.3**	**-0.5**
JAN				S	**Sn**	**21 42 11.6**	**-1.0**
JAN	**Janina**	**0.86**	**41**	S	**Sn**	**21 42 11.6**	**-1.0**
JAN				AML	AML	21 42 13.2	
	comp=E,1335μm,0.3s						
VLS	**Valsamata**	**0.91**	**156**	P	**Pb**	**21 42 00.2**	**-0.3**
VLS	**Valsamata**	**0.91**	**156**	P	**Pb**	**21 41 59.5**	**-1.0**
VLS				S	**Sb**	**21 42 13.0**	**+0.8**
PDO	**Prodromos**	**0.92**	**116**	P	**Pb**	**21 42 00.7**	**-0.1**
PDO	**Prodromos**	**0.92**	**116**	P	**Pb**	**21 42 00.7**	**-0.1**
PDO	**Prodromos**	**0.92**	**116**	P	**Pg**	**21 42 02.3**	**+0.8**
KFL	**Anninata**	**1.04**	**150**	P	**Pb**	**21 42 03.1**	**+0.3**
KFL	**Anninata**	**1.04**	**150**	P	**Pb**	**21 42 03.1**	**+0.3**
KFL	**Anninata**	**1.04**	**150**	P	**Pn**	**21 42 05.2**	**+2.2**
PVO	**Paravola**	**1.16**	**109**	P	**Pn**	**21 42 05.2**	**+0.5**
PVO				S	**Sg**	**21 42 21.5**	**+0.2**
PVO	**Paravola**	**1.16**	**109**	P	**Pn**	**21 42 05.2**	**+0.5**
PVO				S	**Sg**	**21 42 21.5**	**+0.2**
PVO	**Paravola**	**1.16**	**109**	P	**Pn**	**21 42 04.8**	**+0.1**
AXS	**Araxos**	**1.27**	**129**	P	**Pn**	**21 42 06.6**	**+0.5**
AXS	**Araxos**	**1.27**	**129**	P	**Pn**	**21 42 06.6**	**+0.5**
EVR	**Evrytania**	**1.32**	**93**	P	**Pn**	**21 42 07.9**	**+1.0**
EVR				S	**Sg**	**21 42 26.3**	**+0.1**
EVR	**Evrytania**	**1.32**	**93**	P	**Pn**	**21 42 07.9**	**+1.0**
EVR				S	**Sg**	**21 42 26.3**	**+0.1**
EVR	**Evrytania**	**1.32**	**93**	P	**Pn**	**21 42 07.6**	**+0.7**
EVR				S	**Sg**	**21 42 27.1**	**+0.9**
EVR				AML	AML	21 42 35.0	
	comp=N,513μm,0.8s						
KPRO	**Kipourio**	**1.35**	**45**	P	**Pb**	**21 42 08.2**	**+0.1**
KPRO	**Kipourio**	**1.35**	**45**	P	**Pb**	**21 42 08.2**	**+0.1**
KPRO	**Kipourio**	**1.35**	**45**	P	**Pn**	**21 42 07.4**	**+0.1**
ZKS	**Zakynthos**	**1.41**	**158**	P	**Pn**	**21 42 10.6**	**+2.5**
ZKS	**Zakynthos**	**1.41**	**158**	P	**Pn**	**21 42 10.6**	**+2.5**
RLS	**Riolos of Patr**	**1.42**	**132**	P	**Pg**	**21 42 11.8**	**+1.0**
PENT	**Pentalofos**	**1.42**	**33**	P	**Pg**	**21 42 11.0**	**0.0**
PENT				S	**Sg**	**21 42 32.0**	**+2.5**
PENT	**Pentalofos**	**1.42**	**33**	P	**Pg**	**21 42 11.0**	**0.0**
PENT				S	**Sg**	**21 42 32.0**	**+2.5**
PENT				AML	AML	21 42 35.6	
	comp=E,402μm,0.4s						
PENT				AML	AML	21 42 37.8	
	comp=N,578μm,0.5s						
ANX	**Ano Chora**	**1.47**	**106**	P	**Pn**	**21 42 09.9**	**+1.0**
ANX				S	**Sg**	**21 42 30.0**	**-0.9**
ANX	**Ano Chora**	**1.47**	**106**	P	**Pn**	**21 42 09.9**	**+1.0**
ANX				S	**Sg**	**21 42 30.0**	**-0.9**
THL	**Klokotos Trika**	**1.57**	**69**	P	**Pb**	**21 42 12.7**	**+0.9**
THL	**Klokotos Trika**	**1.57**	**69**	P	**Pb**	**21 42 12.7**	**+0.9**
SERG	**Sergoula**	**1.62**	**111**	P	**Pg**	**21 42 15.0**	**+0.2**
DRO	**Drossia**	**1.63**	**130**	P	**Pb**	**21 42 13.9**	**+

CM31	Chiang Mai Arr	39.23	286	*e*P		P		22 15 17.4	+0.9
CMAR	Chiang Mai Arr	39.23	286	P		P		22 15 17.4	+0.9
	2.2nm,0.8s,baz=93,slow=6.6,SNR=16								
FORT	Forrest	42.88	194	*e*P		P		22 15 47.2	+0.8
PEA0B	Petropavlovsk-	44.58	16	*e*P		P		22 15 59.2	-0.5
	16nm,1.3s								
SONA0	Songino Array	45.66	330	*e*P		P		22 16 09.1	+0.5
	2.7nm,1.2s								
SONM	Songino Array	45.66	330	P		P		22 16 09.1	+0.5
	0.6nm,0.5s,baz=148,slow=8.7,SNR=4.0								
SEY	Seymchan	52.68	8	P		P		22 17 03.5	+1.6
	2.4nm,0.2s,baz=221,slow=7.7,SNR=5.6								
OUZ	Omahuta	56.56	146	*e*P		P		22 17 28.9	-1.6
	219nm,1.8s								
MK01	Makanchi Array	59.31	318	*e*P		P		22 17 50.5	+0.8
MK31	Makanchi Array	59.33	318	*e*P		P		22 17 49.7	-0.1
MK32	Makanchi Array	59.33	318	*e*P		P		22 17 50.7	+0.9
MKAR	Makanchi Array	59.33	318	P		P		22 17 50.7	+0.9
	2.6nm,0.8s,baz=98,slow=8.9,SNR=18								
MKAR	Makanchi Array	59.33	318	*e*P		P		22 17 51.1	+1.3
	17nm,0.9s								
MAKZ	Makanchi	59.54	318	*e*P		P		22 17 51.6	+0.3
	3.6nm,0.9s								
ZAA0	Zalesovo Array	60.36	327	*e*P		P		22 17 56.6	-0.1
ZALV	Zalesovo Beam	60.36	327	P		P		22 17 56.7	0.0
	1.2nm,0.6s,baz=117,slow=5.8,SNR=5.5								
ZAA1	Zalesovo Array	60.36	327	*e*P		P		22 17 56.7	0.0
UNV	Unalaska Valle	60.64	34	*e*P		P		22 17 58.8	+0.2
	35nm,1.0s								
BRVK	Borovoye	68.38	323	*e*P		P		22 18 50.0	+0.8
BPAW	Bear Paw Mtn.	71.47	26	*e*P		P		22 19 09.8	+1.8
	25nm,1.9s								
MLY	Manley	71.79	25	*e*P		P		22 19 12.1	+2.1
	13nm,1.6s								
COLD	Coldfoot	72.51	23	*e*P		P		22 19 12.7	-1.5
	18nm,1.9s								
WRH	Wood River Hil	72.78	26	*e*P		P		22 19 15.3	-0.5
	28nm,2.0s								
MDM	Murphy Dome	72.81	25	*e*P		P		22 19 16.6	+0.5
	8.7nm,1.5s								
FID	Port Fidalgo	72.92	30	*e*P		P		22 19 16.9	+0.1
	73nm,1.4s								
ILAR	Eielson Array	73.35	26	P		P		22 19 19.4	+0.2
	0.7nm,0.6s,baz=243,slow=5.7,SNR=12								
ILB	Eielson Array	73.35	26	*e*P		P		22 19 19.4	+0.2
IL1	Eielson Array	73.35	26	*e*P		P		22 19 19.3	+0.1
DOT	Dot Lake	74.41	27	*e*P		P		22 19 23.1	-2.4
	24nm,1.1s								
ABKAR	Akbulak array	74.47	318	*e*P		P		22 19 25.3	-0.8
ARU	Arti	75.50	326	*e*P		P		22 19 31.8	0.0
	3.0nm,0.5s								
GRTM	Round Top Moun	89.61	50	*e*P		P		22 20 46.6	+0.8
NMTM	Middletown	89.81	51	*e*P		P		22 20 46.6	-0.1
FIA0	FINESS Array S	90.88	334	*e*P		P		22 20 49.9	-1.2
FINES	FINESS Array B	90.88	334	P		P		22 20 49.9	-1.1
	2.1nm,0.9s,baz=45,slow=4.1,SNR=5.5								

IDC 24 22:31:16.3±11.0, 23.72S×66.10W, h184km±85km, mb3.0/1, mb1 3.0/2, mb1mx2.9/20, mbtmp3.4/2, Error ellipse: s-maj=132.7km s-min=80.4km az=46.0, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LPAZ	La Paz	7.64	345	P		Pn	22 33 05.5	0.0
	0.3nm,0.3s,baz=170,slow=8.4,SNR=21							
LPAZ				S		Sn	22 34 32.5	+0.6
	0.1nm,0.3s,baz=299,slow=19,SNR=3.6							
TORD	Torodi Ar. Bea	75.70	69	P		P	22 42 42.0	+0.1
	0.1nm,0.4s,baz=254,slow=5.9,SNR=5.4							
MKAR	Makanchi Array	145.79	40	PKPbc		PKPdf	22 50 32.9	0.0
	0.3nm,0.6s,baz=278,slow=3.3,SNR=3.3							

*IDC **24** 22:38:55.9±0.8, 7.29S×156.06E, h30km±4km, mb4.4/16, mb1 4.4/17, mb1mx4.4/27, mbtmp4.5/17, ML4.6/1, MS3.7/8, Ms1 3.7/8, ms1mx3.4/23, Error ellipse: s-maj=22.0km s-min=14.0km az=94.0*

*ISCJB **24** 22:38:57.0±1.1, 7.28S±0.05×156.04E±0.04, h52km±10km, mb4.7/51, MS3.8/7, Error ellipse: s-maj=7.9km s-min=7.2km az=178.6*

*NEIC **24** 22:38:59.2±1.0, 7.29S×156.05E, h61km±9km, mb4.8/28, Error ellipse: s-maj=7.5km s-min=6.8km az=88.0*

*BJI **24** 22:39:01.8, 6.70S×156.20E, h76km, mb4.7/36, mB4.9/19, Ms4.9/9, Ms7 4.7/9*

ISC 24 22:38:57.1±0.5, 7.20S±0.06×156.07E±0.05, h40km±4km, h40km:pP-P, n126, σ1s77/138, mb4.8/50, MS3.8/7, 1D, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HNR	Honiara	4.43	120	Pn		Pn	22 40 02.2	+0.3
	31nm,0.3s,baz=262,slow=4.2,SNR=6.4							
HNR				Sn		Sn	22 40 56.3	+4.0
	25nm,0.3s,baz=39,slow=3.4,SNR=3.5							
HNR				LR		LR	22 41 45.2	
	comp=Z,1μm,18.6s,baz=294,slow=39							
HNR	Honiara	4.43	120	*e*P		Pn	22 40 03.0	+1.1
HNR				*e*S		Sn	22 41 03.0	+11
HNR	Honiara	4.43	120	*e*Pn		Pn	22 40 01.9	0.0
HNR				*e*Sn		Sn	22 40 52.8	+0.5
RABL	Rabaul	4.90	307	*e*Pn		Pn	22 40 04.6	-3.8
PMG	Port Moresby	9.09	255	Pn		Pn	22 41 09.6	+3.8
	8.1nm,0.3s,baz=46,slow=7.8,SNR=9.5							
PMG				Sn		Sn	22 42 49.8	+2.9
	3.5nm,0.3s,baz=25,slow=19,SNR=2.3							
PMG				LR		LR	22 44 31.1	
	comp=Z,539nm,19.6s,baz=47,slow=37							
PMG	Port Moresby	9.09	255	*e*Pn		Pn	22 41 09.3	+3.5
PATS	Pohnpei	14.12	9	*e*Pn		Pn	22 42 16.2	+1.5
CTA	Charters Tower	15.96	216	Pn		P	22 42 40.8	-1.2
	0.7nm,0.3s,baz=46,slow=15,SNR=4.3							
JAY	Jayapura	16.00	286	Pn		P	22 42 42.4	0.0
	0.1nm,0.3s,baz=90,slow=20,SNR=2.8							
DZM	Mont Dzumac	17.86	147	P		P	22 43 04.0	+1.0
	0.4nm,0.3s,baz=353,slow=8.1,SNR=2.7							
DZM	Mont Dzumac	17.86	147	*e*Pn		P	22 43 04.0	+1.0
	81nm,1.8s							
KWAJ	Kwajalein Atol	19.62	36	*e*P		P	22 43 17.3	-5.0
	462nm,1.5s							
MSVF	Nonsavu	23.85	118	*e*P		P	22 44 07.4	+0.4
	13nm,0.9s							
FAKI	Fak Fak	24.10	279	*e*P		P	22 44 07.8	-1.4
	36nm,1.2s							
WB2	Warramunga Arr	24.58	237	*e*P		P	22 44 12.6	-1.0
WR1	Warramunga Arr	24.59	237	*e*P		P	22 44 13.1	-0.6
	19nm,1.0s							
WR1				*e*ScP		ScP	22 51 26.9	0.0
WRA	Warramunga Arr	24.59	237	P		P	22 44 13.1	-0.6
	4.8nm,0.5s,baz=62,slow=10,SNR=40							
WRA				ScP		ScP	22 51 26.9	0.0
	0.8nm,1.0s,baz=79,slow=1.8,SNR=3.7							
MTN	Manton Dam	25.18	255	*e*P		P	22 44 15.0	-4.0
	58nm,1.3s							
AS01	Alice Springs	26.81	230	*e*P		P	22 44 33.8	0.0
AS31	Alice Springs	26.85	230	*e*P		P	22 44 32.6	-1.5
	3.0nm,1.2s							
AS31				*e*pP		sP	22 44 52.2	+2.1
AS31				*e*PcP		PcP	22 47 55.8	-0.4
AS31				*e*ScP		ScP	22 51 34.1	+0.8
ASAR	Alice Springs	26.85	230	P		P	22 44 32.6	-1.6
	0.8nm,0.5s,baz=62,slow=9.3,SNR=9.1							
ASAR				PcP		PcP	22 47 55.8	-0.4
	1.1nm,0.7s,baz=84,slow=3.8,SNR=4.6							
ASAR				ScP		ScP	22 51 34.1	+0.8
	0.5nm,0.7s,baz=79,slow=4.8,SNR=3.3							
ASAR				LR		LR	22 54 55.7	
	comp=Z,166nm,19.3s,baz=81,slow=36							
H11S3	WAKE ISLAND Hy 27.59	22		T		T	23 13 00.3	
	baz=202,slow=76,SNR=99							
H11S2	WAKE ISLAND Hy 27.60	22		T		T	23 13 08.2	
	baz=202,slow=76,SNR=90							
H11S1	WAKE ISLAND Hy 27.61	22		T		T	23 13 01.6	
	baz=202,slow=76,SNR=65							
STKA	Stephens Creek	28.02	207	P		P	22 44 44.8	+0.3
	0.9nm,0.6s,baz=46,slow=15,SNR=3.5							
STKA				LR		LR	22 55 45.4	
	comp=Z,222nm,19.0s,baz=21,slow=36							
STKA	Stephens Creek	28.02	207	*e*P		P	22 44 44.8	+0.3
	1.6nm,1.0s							
BBOO	Buckleboo	31.54	213	*e*P		P	22 45 12.2	-3.5
	45nm,1.8s							
FITZ	Fitzroy Crossi	31.55	247	*e*P		P	22 45 14.8	-1.2
	7.4nm,0.8s							

LUWI	Luwuk	33.75	279	*e*P		P		22 45 33.5	-1.8
	29nm,1.0s								
FORT	Forrest	35.19	225	*e*P		P		22 45 45.7	-1.7
	151nm,0.7s								
CBIJ	Chichi jima	36.65	339	*e*P		P		22 46 00.5	+0.5
	19nm,0.7s								
MBWA	Marble Bar	37.75	245	*e*P		P		22 46 07.6	-1.8
	39nm,1.6s								
BFZ	Birch Farm	37.90	155	*e*P		P		22 46 09.6	-0.8
	258nm,1.6s								
KKM	Kota Kinabalu	41.88	287	*e*P		P		22 46 41.2	-2.8
	35nm,1.2s								
NACB	Ninganchiao	45.86	314	*e*P		P		22 47 16.5	+0.8
	12nm,0.9s								
TPUB	Ta-pu	46.03	312	*e*P		P		22 47 16.9	-0.2
	7.2nm,0.6s								
SSLB	Suanglung	46.09	313	*e*P		P		22 47 17.9	+0.3
	5.8nm,0.9s								
MJAR	Matsushiro Arr	46.62	340	P		P		22 47 21.4	-0.1
	3.6nm,0.8s,baz=170,slow=8.0,SNR=15								
MJAR				pP		pP		22 47 31.1	-1.9
	3.3nm,0.6s,baz=168,slow=8.6,SNR=7.8								
MJAR				PcP		PcP		22 48 55.0	0.0
	0.7nm,0.6s,baz=141,slow=4.0,SNR=4.5								
MAJO	Matsushiro	46.63	340	*e*P		P		22 47 20.0	-1.5
	8.2nm,0.7s								
MJB9	Mau-Tunnel	46.63	340	*e*P		P		22 47 20.2	-1.4
	2.1nm,0.6s								
JNU	Nakatsue	46.70	331	*e*P		P		22 47 23.5	+1.3
	14nm,0.6s								
CISI	Cisompet, Garu	47.84	266	*e*P		P		22 47 32.9	+1.4
	35nm,0.8s								
KSRS	Korea Array	51.62	331	P		P		22 48 00.9	+1.3
	6.1nm,0.8s,baz=150,slow=8.3,SNR=18								
KS15	Wonju Array Si	51.63	331	*e*P		P		22 48 03.8	+4.0
KSAR	Wonju Array Be	51.63	331	P		P		22 48 00.9	+1.2
KS01	Wonju Array Si	51.65	331	*e*P		P		22 48 00.6	+0.7
USRK	Ussuriysk Ar.	55.59	339	P		P		22 48 28.9	+0.2
	3.2nm,0.7s,baz=142,slow=7.1,SNR=7.4								
ENH	Enshi	58.16	312	*e*P		P		22 48 47.6	+0.3
	8.3nm,0.6s								
GYA	Guiyang	58.42	307	*e*P		P		22 48 52.9	+3.6
GYA				pP		sP		22 49 13.8	+8.1
GYA				PP		PP		22 51 05.0	+6.0
GYA				ScP		ScP		22 53 34.3	-2.8
GYA				S		S		22 56 49.4	-0.5
GYA				pmax		pmax			
	comp=Z,10.0nm,1.0s								
PEA0	Petropavlovsk-	60.09	1	*e*P		P		22 49 03.9	+3.8
PETK	Petropavlovsk-	60.09	1	P		P		22 49 01.6	+1.5
	5.9nm,0.7s,baz=160,slow=6.6,SNR=9.5								
PEA1	Petropavlovsk-	60.09	1	*e*P		P		22 49 01.6	+1.4
XAN	Xi'an	60.59	316	P		P		22 49 04.0	0.0
XAN				pP		sP		22 49 23.1	+2.6
XAN				pmax		pmax			
	comp=Z,5.0nm,0.9s								
KMI	Kunming	61.01	304	P		P		22 49 08.3	+1.1
KMI				pmax		pmax			
	comp=Z,9.0nm,1.0s								
CM31	Chiang Mai Arr	61.83	295	*e*P		P		22 49 13.7	+1.0
CMAR	Chiang Mai Arr	61.83	295	P		P		22 49 13.7	+1.0
	3.0nm,0.5s,baz=109,slow=5.1,SNR=18								
CMAR				pP		pP		22 49 22.3	-2.2
	8.5nm,0.8s,baz=112,slow=4.5,SNR=13								
CHTO	Chiang Mai	61.95	296	*e*P		P		22 49 14.2	+0.8
	8.6nm,1.0s								
CD2	Chengdu	62.76	310	*e*P		P		22 49 19.8	+1.2
HHC	Hu-ho-hao-te	62.89	323	*e*P		P		22 49 23.8	+4.4
HHC				pP		sP		22 49 44.4	+8.5
HHC				PP		PP		22 51 44.1	+5.9
HHC				S		S		22 57 49.4	+3.0
HHC				pmax		pmax			
	comp=Z,7.0nm,1.4s								
HHC				pmax		pmax			
	comp=Z,46nm,4.9s								
HHC				LR		LR			
	comp=N,110nm,16.0s								
HHC				LR		LR			
	comp=E,160nm,16.0s								
HHC				LR		LR			
	comp=Z,66nm,16.0s								
LZH	Lanzhou	65.21	315	*e*P		P		22 49 38.8	+4.0
LZH				pP		sP		22 49 56.4	+5.0
LZH				sP		PcP		22 50 05.8	-1.3
LZH				pmax		pmax			
	comp=Z,12nm,1.0s								
GTA	Gaotai	69.62	317	*e*P		P		22 50 03.6	+1.0
GTA				pP		PcP		22 50 22.8	-2.6
GTA				sP		sP		22 50 31.8	+13
GTA				pmax		pmax			
	comp=Z,5.0nm,1.0s								
SONA0	Songino Array	70.08	327	*e*P		P		22 50 06.9	+1.6
	16nm,1.0s								
SONM	Songino Array	70.08	327	P		P		22 50 06.9	+1.6
	12nm,0.7s,baz=142,slow=6.2,SNR=63								
SONM				LR		LR		23 20 11.3	
	comp=Z,33nm,21.6s,baz=170,slow=35								
SONA1	Songino Array	70.09	327	*e*P		P		22 50 06.6	+1.3
VNDA	Vanda	70.35	179	P		P		22 50 05.9	-0.4
	1.9nm,0.9s,baz=334,slow=7.7,SNR=9.6								
VNDA	Vanda	70.35	179	*e*P		P		22 50 06.5	+0.2
	2.6nm,0.9s								
LSA	Lhasa	72.27	304	*e*P		P		22 50 20.7	+1.4
	5.2nm,0.8s								
PKIN	Phulchoki	76.46	301	*e*P		P		22 50 44.0	+0.5
	5.7nm,0.5s								
KKN	Kakani	76.61	301	*e*P		P		22 50 44.5	+0.2
	8.1nm,0.5s								
DMN	Daman	76.71	300	*e*P		P		22 50 45.2	+0.3
GKN	Gorkha	77.22	301	*e*P		P		22 50 47.9	+0.3
	35nm,1.0s								
KOLN	Koldanda	78.05	300	*e*P		P		22 50 52.1	-0.2
	5.3nm,0.4s								
PYUN	Piuthan	78.65	300	*e*P		P		22 50 55.1	-0.6
WMQ	Urumqi	79.70	317	*e*P		P		22 51 01.9	+1.0
WMQ				pmax		pmax			
	comp=Z,10.0nm,1.0s								
WMQ				pmax		pmax			
	comp=Z,93nm,4.3s								
QSPA	South Pole Qui	82.78	180	*e*P		P		22 51 16.9	0.0
ILAR	Eielson Array	83.17	21	P		P		22 51 18.2	-0.5
	0.7nm,0.6s,baz=241,slow=5.8,SNR=13								
ILAR				LR		LR		23 23 01.6	
	comp=Z,47nm,21.9s,baz=288,slow=32								
ILB	Eielson Array	83.17	21	*e*P		P		22 51 18.2	-0.5
MK01	Makanchi Array	84.25	318	*e*P		P		22 51 25.1	+0.4
MK31	Makanchi Array	84.26	318	*e*P		P		22 51 25.5	+0.8
MK32	Makanchi Array	84.26	318	*e*P		P		22 51 25.5	+0.8
MKAR	Makanchi Array	84.26	318	P		P		22 51 25.5	+0.8
	23nm,0.7s,baz=101,slow=6.0,SNR=164								
MKAR				pP		pP		22 51 35.3	-1.7
	23nm,0.6s,baz=103,slow=5.9,SNR=32								
MKAR	Makanchi Array	84.26	318	*e*P		P		22 51 25.5	+0.8
	212nm,0.8s								
MKAR				pP		pP		22 51 35.3	-1.7
MAKZ	Makanchi	84.47	318	*e*P		P		22 51 26.5	+0.7
	30nm,0.8s								
MAW	Mawson	84.62	203	P		P		22 51 25.8	-0.3
	6.7nm,0.9s,baz=100,slow=6.6,SNR=18								
MAW	Mawson	84.62	203	*e*P		P		22 51 26.0	-0.1
	2.2nm,1.0s								
ZAA0	Zalesovo Array	84.94	326	*e*P		P		22 51 27.6	-0.3
ZALV	Zalesovo Beam	84.94	326	P		P		22 51 27.7	-0.2
	9.2nm,0.4s,baz=114,slow=5.4,SNR=59								
ZALV				pP		pP		22 51 37.7	-2.6
	9.7nm,0.5s,baz=113,slow=5.6,SNR=17								
ZAA1	Zalesovo Array	84.95	326	*e*P		P		22 51 27.7	-0.2
KSH	Kashi	86.95	310	*e*P		P		22 51 40.8	+2.4
KSH				*es*P		sP		22 52 09.8	+14
KSH				SKS		SKSac		23 01 58.8	-3.9
KSH				S		SKKSac		23 02 12.3	+0.9
KSH				pmax		pmax			
	comp=Z,8.0nm,1.1s								
KSH				LR		LR			
	comp=N,74nm,6.7s								
KSH				LR		LR			
	comp=E,73nm,5.5s								
KSH				LR		LR			
	comp=Z,120nm,7.3s								
DLBC	Dease Lake	87.77	30	LR		LR		23 24 34.5	
	comp=Z,37nm,19.2s,baz=272,slow=31								
INK	Inuvik	89.53	21	LR		LR		23 28 48.4	
	comp=Z,30nm,19.5s,baz=266,slow=33								
DAC	Darwin (Calif)	91.27	54	*e*P		P		22 52 00.0	+1.1
	3.6nm,0.9s								
SYO	Syowa Base	92.48	199	*e*P		P		22 52 00.8	-2.8

BVAR	Borovoye Array	93.10	323	P		P		22 52 06.2	-0.5
	5.1nm,0.5s,baz=108,slow=5.6,SNR=38								
BRVK	Borovoye	93.17	323	*e*P		P		22 52 06.6	-0.5
PD31	Pinedale Array	98.04	48	*e*P		P		22 52 30.2	+0.4
PDAR	Pinedale Array	98.04	48	P		P		22 52 30.2	+0.4
	0.5nm,0.7s,baz=270,slow=3.0,SNR=4.0								
ABKAR	Akbulak array	99.41	319	*e*P		Pdif		22 52 34.3	-1.1
	12nm,0.7s								
FIA0	FINESS Array S	114.56	336	*e*PKiKP		PKiKP		22 57 32.3	-0.3
FINES	FINESS Array B	114.56	336	PKP		PKPdf		22 57 32.3	-0.3
	1.5nm,0.9s,baz=107,slow=3.8,SNR=5.5								
AKASG	Malin Array Be	118.32	325	PKP		PKPdf		22 57 39.5	-0.7
	0.5nm,0.4s,baz=44,slow=2.5,SNR=5.8								
AKBB	Malin Array Si	118.32	325	*e*PKPdf		PKPdf		22 57 39.5	-0.7
BR101	Keskin Array S	119.31	312	*e*PKPdf		PKPdf		22 57 41.7	-1.0
BRTR	Keskin Array B	119.31	312	PKP		PKPdf		22 57 41.7	-1.0
	0.4nm,0.5s,baz=90,slow=1.2,SNR=3.7								
KHC	Kasperske Hory	127.65	330	*e*PKPdf		PKPdf		22 57 58.5	+0.3
KHC	Kasperske Hory	127.65	330	*e*PKPdf		PKPdf		22 57 59.4	+1.2
GERES	GERESS Array B	127.77	329	PKP		PKPdf		22 57 58.8	+0.2
	1.3nm,0.7s,baz=75,slow=1.5,SNR=13								
GEA0	GERESS Array S	127.78	329	*e*PKPdf		PKPdf		22 57 59.0	+0.4
LPAZ	La Paz	130.42	118	PKP		PKPdf		22 58 05.1	-0.1
	2.2nm,0.9s,baz=339,slow=3.2,SNR=8.1								
LPAZ	La Paz	130.42	118	*e*PKPdf		PKPdf		22 58 06.0	+0.8
ESDC	Sonseca Array	143.03	334	PKhKP		PKPpre		22 58 24.2	
	0.5nm,0.7s,baz=42,slow=3.1,SNR=6.5								
PVRL	Vila Real	143.12	339	*e*PKPdf		PKPbc		22 58 25.1	+1.0
PTOM	Tomar	144.84	339	*e*PKPdf		PKPdf		22 58 30.3	+0.1
PESTR	Estremoz	145.19	337	*e*PKPdf		PKPdf		22 58 31.1	+0.3
PESTR	Estremoz	145.19	337	*e*PKPab		PKPdf		22 58 41.0	+10
PMTG	Montargil	145.25	338	*e*PKPdf		PKPdf		22 58 31.5	+0.6
PMTG	Montargil	145.25	338	*e*PKPab		PKPdf		22 58 40.9	+10
PBAR	Barrancos	145.58	336	*e*PKPdf		PKPab		22 58 32.7	+0.8
PNCL	Nicolau / Gran	146.21	338	*e*PKPdf		PKPab		22 58 34.7	+0.4
PNCL	Nicolau / Gran	146.21	338	*e*PKPab		PKPab		22 58 44.0	+10
PCVE	Castro Verde	146.44	337	*e*PKPdf		PKPab		22 58 35.1	-0.1
PTEO	Sao Teotonio	146.78	338	*e*PKPab		PKPab		22 58 53.7	+17
TAM	Tamanrasset	147.70	302	*e*PKPbc		PKPbc		22 58 39.3	+0.8
TORD	Torodi Ar. Bea	154.11	285	PKP		PKPdf		22 58 44.5	-1.0
	0.6nm,0.7s,baz=51,slow=1.9,SNR=3.9								
TORD				PKPbc		PKPbc		22 58 53.0	-0.7
	1.7nm,0.7s,baz=83,slow=2.7,SNR=3.9								
TOA1	Torodi Ar. Sit	154.11	285	*e*PKPdf		PKPdf		22 58 44.5	-1.0
TOA1				*e*PKPbc		PKPbc		22 58 53.0	-0.7
DBIC	Dimbokro	161.06	270	PKPab		PKPab		22 59 36.0	-1.4
	6.0nm,1.0s,baz=80,slow=6.8,SNR=3.5								

*UPP **24** 23:18:13.7, 67.82N×20.20E, h0km, ML1.4, Mining explosion.*

*CSEM **24** 23:18:13.8±0.3, 67.78N×20.17E, h2km, ML1.4, Error ellipse: s-maj=8.0km s-min=6.7km az=85.0, Mining explosion.*

HEL 24 23:18:14.4±0.1, 67.82N×20.18E, h0km, ML1.5, ML1.4(UPP), Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KUA	Kurravaara	0.15	23	*i* P		Pg	23 18 16.7	-0.6
KUA				*i* S		Sg	23 18 18.8	-0.5
KUA	Kurravaara	0.15	23	P		Pg	23 18 16.7	-0.6
KUA				S		Sg	23 18 18.8	-0.5
NIKU	Nikkaluokta	0.44	277	*i* P		Pg	23 18 22.2	-0.5
NIKU	Nikkaluokta	0.44	277	P		Pg	23 18 22.2	-0.5
DUNU	Dundret	0.71	168	*i* P		Pg	23 18 27.1	-1.0
DUNU	Dundret	0.71	168	P		Pg	23 18 27.0	-1.0
LANU	Lannavaara	0.72	70	*i* P		Pg	23 18 27.1	-1.1
LANU	Lannavaara	0.72	70	P		Pg	23 18 27.1	-1.1
MASU	Masugnsbyn	0.79	116	*i* P		Pg	23 18 28.4	-1.0
MASU	Masugnsbyn	0.79	116	P		Pg	23 18 28.4	-1.0
KIF	Kilpisjarvi	1.22	11	*e*P		Pg	23 18 37.9	+0.2
KIF				*e*S		Sn	23 18 55.2	-0.6
KIF	Kilpisjarvi	1.22	11	S		Sb	23 18 55.1	+0.6
KIF	Kilpisjarvi	1.22	11	P		Pg	23 18 37.8	+0.1
PAJU	Pajala	1.39	124	*e*P		Pg	23 18 39.0	-1.9
PAJU	Pajala	1.39	124	P		Pg	23 18 39.0	-1.9
HEF	Hetta	1.44	64	*e*P		Pn	23 18 39.9	-1.7
HEF				*e*S		Sb	23 19 00.9	+0.2

UPC				Sg	**Sg**	**23 35 58.3**	**-1.4**
DPC	**Dobruska-Polom**	**1.26 172**		*e*PG	**Pg**	**23 35 48.0**	**-0.8**
DPC				*e*SG	**Sg**	**23 36 02.6**	**-2.5**
	comp=Z,10nm,0.2s						
DPC	**Dobruska-Polom**	**1.26 172**		Pg	**Pg**	**23 35 48.0**	**-0.8**
DPC				Sg	**Sg**	**23 36 02.6**	**-2.5**
	10nm,0.2s						
PVCC	**Panska Ves**	**1.42 222**		*e*PG	**Pn**	**23 35 51.9**	**0.0**
PVCC				*e*SG	**Sb**	**23 36 10.7**	**-0.1**
PVCC	**Panska Ves**	**1.42 222**		Pg	**Pn**	**23 35 51.9**	**0.0**
PVCC				Sg	**Sb**	**23 36 10.7**	**-0.1**
KRLC	**Kraliky**	**1.59 163**		*e*SG	**Sn**	**23 36 14.3**	**-1.1**
KRLC	**Kraliky**	**1.59 163**		Sg	**Sn**	**23 36 14.3**	**-1.1**
GOPC	**GO Pecny, Ondr**	**1.87 206**		*e*SG	**Sn**	**23 36 22.7**	**+0.4**
	comp=Z,7.3nm,0.2s						
GOPC	**GO Pecny, Ondr**	**1.87 206**		Sg	**Sn**	**23 36 22.7**	**+0.4**
	7.3nm,0.2s						
PRU	**Pruhonice**	**1.87 212**		*e*PN	**Pn**	**23 35 58.2**	**+0.1**
PRU				*e*PG	**Pb**	**23 35 59.3**	**-0.6**
PRU				*e*SG	**Sb**	**23 36 23.5**	**-0.3**
	comp=Z,9.1nm,0.2s						
PRU	**Pruhonice**	**1.87 212**		Pn	**Pn**	**23 35 58.2**	**+0.1**
CLL	**Collm**	**1.93 263**		*e*Pn	**Pn**	**23 35 59.0**	**+0.1**
CLL				*e*Pg	**Pg**	**23 36 02.0**	**+0.2**
CLL				*e*		23 36 06.0	
CLL				*e*Sg	**Sg**	**23 36 28.0**	**+1.1**
	comp=Z,8.0nm,0.6s						
OKC	**Ostrava-Krasne**	**2.20 142**		*e*SG	**Sb**	**23 36 32.5**	**-0.8**
	comp=Z,12nm,0.6s						
OKC	**Ostrava-Krasne**	**2.20 142**		Sg	**Sb**	**23 36 32.5**	**-0.8**
	comp=Z,12nm,0.6s						
NKC	**Novy Kostel**	**2.66 241**		*e*PN	**Pn**	**23 36 09.5**	**+0.6**
NKC				*e*PG	**Pg**	**23 36 16.1**	**+0.3**
NKC	**Novy Kostel**	**2.66 241**		Pn	**Pn**	**23 36 09.5**	**+0.6**
OJC	**Ojcow**	**2.74 119**		*e*Pg	**Pg**	**23 36 17.0**	**-0.2**
OJC				*e*Sg	**Sg**	**23 36 51.9**	**-0.7**
OJC	**Ojcow**	**2.74 119**		*e*Pg	**Pg**	**23 36 17.0**	**-0.2**
OJC				*e*Sg	**Sg**	**23 36 51.9**	**-0.7**
OJC	**Ojcow**	**2.74 119**		*e*Pg	**Pg**	**23 36 17.0**	**-0.2**
OJC				*e*Sg	**Sg**	**23 36 51.9**	**-0.8**
KHC	**Kasperske Hory**	**2.93 214**		*e*PN	**Pn**	**23 36 12.7**	**0.0**
KHC				*e*PG	**Pb**	**23 36 18.7**	**+0.8**
KHC				*e*SN	**Sn**	**23 36 47.5**	**-1.1**
KHC				*e*SG	**Sb**	**23 36 56.5**	**+2.2**
	comp=Z,3.1nm,0.5s						
KHC	**Kasperske Hory**	**2.93 214**		Pn	**Pn**	**23 36 12.7**	**0.0**
LANS	**Liptovska Anna**	**3.28 137**		*e*Pg	**Pg**	**23 36 28.3**	**+0.7**
LANS				*e*Sg	**Sb**	**23 37 06.7**	**+2.5**
LANS	**Liptovska Anna**	**3.28 137**		*e*PG	**Pg**	**23 36 28.3**	**+0.7**
LANS				*e*SG	**Sb**	**23 37 06.7**	**+2.5**
BSD	**Bornholm Skovb**	**3.59 349**		*i* P	**Pn**	**23 36 23.3**	**+0.6**
BSD				*i* S	**Sn**	**23 37 02.6**	**-2.2**
BSD	**Bornholm Skovb**	**3.59 349**		*i* Pn	**Pn**	**23 36 22.3**	**+0.6**
BSD				*i* S	**Sn**	**23 37 02.6**	**-2.2**
CONA	**Conrad Observa**	**3.67 182**		*i* Pn	**Pn**	**23 36 24.1**	**+1.2**
	comp=Z,0.2nm,0.1s						
CONA				Sg	**Sg**	**23 37 23.3**	**+0.7**
	comp=Z,2.9nm,0.4s						
CONA	**Conrad Observa**	**3.67 182**		Pn	**Pn**	**23 36 24.1**	**+1.2**
	comp=Z,0.2nm,0.1s						
CONA				Sg	**Sg**	**23 37 23.3**	**+0.7**
	comp=Z,2.9nm,0.4s						
MOA	**Molln**	**3.92 198**		*e*Pn	**Pn**	**23 36 26.7**	**+0.4**
	comp=Z,0.4nm,0.1s						
MOA				Sg	**Sg**	**23 37 30.0**	**-0.8**
	comp=Z,1.8nm,0.3s						
MOA	**Molln**	**3.92 198**		Pn	**Pn**	**23 36 26.7**	**+0.4**
	comp=Z,0.4nm,0.1s						
MOA				Sg	**Sg**	**23 37 30.0**	**-0.8**
	comp=Z,1.8nm,0.3s						
STHS	**Stebnicka Huta**	**3.96 121**		*e*PG	**Pg**	**23 36 40.6**	**-0.1**
STHS				*e*Sg	**Sg**	**23 37 33.1**	**+1.1**
STHS	**Stebnicka Huta**	**3.96 121**		*e*PG	**Pg**	**23 36 40.6**	**-0.1**
STHS				*e*SG	**Sg**	**23 37 33.1**	**+1.1**
STHS				*e*LG	Lg	23 37 42.6	
ARSA	**Arzberg**	**4.36 185**		Sg	**Sg**	**23 37 45.7**	**+0.9**
	comp=Z,1.7nm,0.3s						
ARSA	**Arzberg**	**4.36 185**		Sg	**Sg**	**23 37 45.7**	**+0.9**
	comp=Z,1.7nm,0.3s						

NIED ***25*** *00:02:00,40.70N×141.90E,h89km,Mw3.7 Best double couple: M₀4.24000×10¹⁴ NP1:φ₈82.00000°,δ18.00000°, λ150.00000°. NP2:φ₈201.00000°,δ81.00000°,λ74.00000°.*

ICSJB ***25*** *00:02:35.1±0.6,40.68N±0.04×141.88E±0.08,h80km±4km, mb3.7/6,Error ellipse: s-maj=10.2km s-min=5.8km az=22.8*

JMA ***25*** *00:02:35.7±0.1,40.67N×141.94E,h71km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φ₈20.00000°,δ89.00000°,λ-80.00000°. NP2:φ₈116.00000°, δ10.00000°,λ-174.00000°. Principal axes: T Plg43.0000°, Azm101.0000°; N Plg10.0000°, Azm200.0000°; P Plg45.0000°, Azm300.0000°;*

JMA Felt II J1.

IDC ***25*** *00:02:36.6±7.9,40.74N×142.08E,h87km±41km,mb3.6/6, mb1 3.6/7,mb1mx3.3/35,mbtmp3.9/7 Error ellipse: s-maj=84.4km s-min=28.0km az=136.0*

ISC 25 00:02:35.7±1.0,40.67N±0.04×141.91E±0.06,h72km±8km, n25,σ0.87/27,mb4.0/6,7C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
JANG	**Nango**	**0.42**	**226**	⇑P	**Pn**	**00 02 48.1**		**+0.1**
JANG				S	**Sn**	**00 02 57.0**		**0.0**
JTM	**Tenmabayashi**	**0.65**	**281**	⇑P	**Pn**	**00 02 50.0**		**-0.2**
JTM				S	**Sn**	**00 03 00.6**		**-0.3**
JOT	**Ohata**	**0.97**	**318**	⇑P	**Pn**	**00 02 53.8**		**0.0**
JAH	**Hinai**	**1.08**	**244**	⇑P	**Pn**	**00 02 55.8**		**+0.5**
JAH				S	**Sn**	**00 03 10.9**		**+1.0**
JOM	**Ohasama**	**1.28**	**202**	⇑P	**Pn**	**00 02 58.2**		**+0.3**
JOM				S	**Sn**	**00 03 14.7**		**+0.2**
JKB	**Kayabe**	**1.39**	**332**	P	**Pn**	**00 02 59.5**		**+0.3**
JKB				*e*S	**Sn**	**00 03 16.8**		**-0.1**
JSR	**Shiriuchi**	**1.42**	**308**	⇑P	**Pn**	**00 02 59.8**		**+0.2**
JSR				S	**Sn**	**00 03 18.2**		**+0.6**
JIW	**Iwasaki**	**1.45**	**268**	P	**Pn**	**00 03 00.4**		**+0.4**
JRG	**Rokugo**	**1.60**	**218**	⇑P	**Pn**	**00 03 03.0**		**+0.9**
JEM	**Erimo**	**1.64**	**34**	P	**Pn**	**00 03 03.4**		**+0.8**
JEM				*e*S	**Sn**	**00 03 24.0**		**+1.1**
JNBK	**Urakawa-nobuka**	**1.73**	**21**	⇓P	**Pn**	**00 03 05.4**		**+1.6**
ASAJ	**Asahikawa**	**3.48**	**8**	P	**Pn**	**00 03 26.9**		**-0.6**
	baz=90,slow=16							
ASAJ				S	**Sn**	**00 04 07.3**		**-0.2**
	baz=194,slow=0.4							
USRK	**Ussuriysk Ar.**	**8.14**	**299**	P	**Pn**	**00 04 33.9**		**+2.9**
	0.6nm,0.3s,baz=120,slow=15,SNR=7.9							
SONM	**Songino Array**	**26.25**	**298**	P	**P**	**00 08 03.8**		**-0.3**
	0.3nm,0.3s,baz=116,slow=10,SNR=2.2							
H11N2	**WAKE ISLAND Hy**	**29.85**	**127**	T	T	00 40 19.4		
	baz=320,slow=75,SNR=27							
H11N1	**WAKE ISLAND Hy**	**29.86**	**127**	T	T	00 40 20.3		
	baz=320,slow=75,SNR=55							
H11N3	**WAKE ISLAND Hy**	**29.87**	**127**	T	T	00 40 20.6		
	baz=320,slow=75,SNR=46							
H11S1	**WAKE ISLAND Hy**	**30.67**	**129**	T	T	00 41 18.8		
	baz=318,slow=74							
H11S3	**WAKE ISLAND Hy**	**30.67**	**129**	T	T	00 41 17.8		
	baz=318							
H11S2	**WAKE ISLAND Hy**	**30.69**	**129**	T	T	00 41 07.9		
	baz=318,slow=74							
ZALV	**Zalesovo Beam**	**39.84**	**309**	P	**P**	**00 10 01.1**		**-0.6**
	1.0nm,0.5s,baz=90,slow=7.8,SNR=6.0							
MKAR	**Makanchi Array**	**42.61**	**299**	P	**P**	**00 10 24.4**		**-0.2**
	6.2nm,1.1s,baz=86,slow=9.5,SNR=18							
FINES	**FINESS Array B**	**65.79**	**332**	P	**P**	**00 13 12.3**		**-0.4**
	3.0nm,1.0s,baz=43,slow=8.6,SNR=7.3							
AKASG	**Malin Array Be**	**71.67**	**322**	P	**P**	**00 13 48.8**		**-0.7**
	0.6nm,0.3s,baz=44,slow=6.4,SNR=4.7							
BRTR	**Keskin Array B**	**76.74**	**311**	P	**P**	**00 14 19.3**		**-0.1**
	0.4nm,0.8s,baz=76,slow=4.7,SNR=1.9							

JMA 25 00:05:45.9±0.1,38.34N×142.13E,h34km±1km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
JIO	**Ouri**	**0.62**	**281**	P	Pn	00 05 58.2		-0.1
JIO				S	Sn	00 06 06.4		-0.7
OFUJ	**Ofunato**	**0.82**	**334**	P	Pn	00 06 01.1		0.0
OFUJ				*e*S	Sn	00 06 11.7		-0.3
JMK	**Ichinoseki**	**0.94**	**311**	P	Pn	00 06 03.0		+0.3
JMK				*e*S	Sn	00 06 14.7		-0.2
JOU	**Okura**	**1.15**	**272**	P	Pn	00 06 06.2		+0.6
JOU				S	Sn	00 06 21.1		+0.9
JMM	**Marumori**	**1.16**	**246**	P	Pn	00 06 05.8		+0.1
JMM				S	Sn	00 06 19.6		-0.7
JOM	**Ohasama**	**1.31**	**330**	P	Pn	00 06 08.5		+0.8
JFK	**Kawauchi**	**1.39**	**226**	P	Pn	00 06 08.0		-0.9
JYK	**Kaneyama**	**1.50**	**293**	P	Pn	00 06 11.4		+1.0
JRG	**Rokugo**	**1.57**	**313**	P	Pn	00 06 12.6		+1.2
JYS	**Shirataka**	**1.63**	**266**	P	Pn	00 06 13.2		+1.0
JYS				*e*S	Sn	00 06 33.5		+1.5
JFT	**Otama**	**1.64**	**240**	S	Sn	00 06 32.9		+0.7

CASC 25 00:18:06.8±2.1,9.41N×84.60W,h2km±7km,MD3.8,3D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
QCR	**Quepos**	**0.43**	**87**	⇓*i*P	Pb	00 18 16.2		-1.0
QCR				*e*S	Sb	00 18 24.5		+0.5
CGA2	**Cerro Gallo 2**	**0.62**	**12**	⇓*i*P	Pg	00 18 19.4		+0.7
CGA2				*e*S	Sg	00 18 24.3		-2.5
JCR	**Jicaral**	**0.67**	**311**	⇓*e*P	Pg	00 18 20.0		+0.3
JCR				*e*S	Sb	00 18 30.8		-0.3
BUS	**Buena Vista**	**0.84**	**80**	*e*P	Pb	00 18 23.9		-0.6
BUS				*e*S	Sb	00 18 36.1		-0.3
BRU2	**Volcan**	**1.98**	**108**	*e*P	Pn	00 18 40.9		-0.7
BRU2				*e*S	Sb	00 19 08.7		-0.3
TBS2		**2.01**	**107**	*e*P	Pn	00 18 41.4		-0.6
TBS2				*e*S	Sb	00 19 09.2		-0.7

IDC ***25*** *00:42:26.3±0.9,39.70N×51.77E,h0km,mb3.8/12, mb1 3.9/22,mb1mx3.8/53,mbtmp3.8/22,ML3.5/8,MS2.9/5, Ms1 2.9/5,ms1mx2.6/55,Error ellipse: s-maj=16.0km s-min=8.1km az=172.0*

MOS ***25*** *00:42:27.6±1.3,39.90N×51.92E,h14km,mb4.2/6,Error ellipse: s-maj=6.5km s-min=5.8km az=133.2*

NEIC ***25*** *00:42:27.7±0.6,39.73N×51.93E,h10km,mb4.2/2,Error ellipse: s-maj=12.4km s-min=5.6km az=161.0*

ISCJB ***25*** *00:42:29.7±0.5,39.74N±0.04×51.98E±0.03,h43km±6km, mb3.7/17,Error ellipse: s-maj=6.1km s-min=3.4km az=170.3*

AZER ***25*** *00:42:29.9±2.5,39.52N×51.92E,h60km,Error ellipse: s-maj=3.6km s-min=2.3km az=230.0*

CSEM ***25*** *00:42:30.6±0.2,39.72N×52.02E,h30km,mb4.0/6,Error ellipse: s-maj=8.8km s-min=3.5km az=170.0*

NNC ***25*** *00:42:32.2±4.1,39.97N×51.98E,h31km±41km,mb3.8, Error ellipse: s-maj=30.3km s-min=16.2km az=88.0*

ISC 25 00:42:29.8±1.3,39.68N±0.04×51.97E±0.04,h28km±10km, n201,σ1.89/271,mb3.9/17,53C-42D,Caspian Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
GALA	**Gala**	**1.57**	**298**	⇓P	**Pb**	**00 42 58.1**		**-0.1**
GALA				⇓S	**Sb**	**00 43 19.4**		**+1.6**
GALA	**Gala**	**1.57**	**298**	P	**Pb**	**00 42 58.1**		**-0.1**
NDR	**Nardaran**	**1.77**	**301**	⇓P	**Pb**	**00 43 01.2**		**-0.4**
	SNR=9.0							
NDR				⇓S	**Sb**	**00 43 25.8**		**+2.5**
NDR	**Nardaran**	**1.77**	**301**	P	**Pb**	**00 43 01.2**		**-0.4**
	SNR=9.0							
GOBA	**Gobu**	**1.86**	**294**	⇑P	**Pb**	**00 43 02.4**		**-0.8**
	SNR=2.8							
GOBA				⇓S	**Sb**	**00 43 30.0**		**+3.9**
GOBA	**Gobu**	**1.86**	**294**	P	**Pb**	**00 43 02.4**		**-0.8**
	SNR=2.8							
ALIB	**Äli-Bayra**	**2.30**	**278**	⇓P	**Pn**	**00 43 08.1**		**+2.3**
	SNR=8.3							
ALIB				⇑S	**Sn**	**00 43 32.9**		**-0.3**
ALIB	**Äli-Bayra**	**2.30**	**278**	P	**Pn**	**00 43 08.1**		**+2.3**
	SNR=8.3							
ALIB				S	**Sn**	**00 43 32.9**		**-0.3**
GBS	**Qobustan**	**2.48**	**291**	⇓P	**Pn**	**00 43 11.1**		**+2.8**
	SNR=94							
GBS				⇓S	**Sn**	**00 43 41.2**		**+3.5**
GBS	**Qobustan**	**2.48**	**291**	P	**Pn**	**00 43 11.1**		**+2.8**
	SNR=94							
GBS				S	**Sn**	**00 43 41.2**		**+3.5**
ATGJ	**Altiaghaj**	**2.60**	**298**	⇑P	**Pn**	**00 43 12.3**		**+2.1**
ATGJ				⇓S	**Sn**	**00 43 42.7**		**+1.8**
ATGJ	**Altiaghaj**	**2.60**	**298**	P	**Pn**	**00 43 12.3**		**+2.1**
ATGJ				S	**Sn**	**00 43 42.7**		**+1.8**
LKRN	**Lenkeran, Azer**	**2.66**	**250**	P	**Pn**	**00 43 11.1**		**+0.3**
	SNR=28							
LKRN				⇓S	**Sn**	**00 43 40.9**		**-1.3**
LKRN	**Lenkeran, Azer**	**2.66**	**250**	P	**Pn**	**00 43 11.1**		**+0.3**
	SNR=28							
ASTR	**Astara**	**2.71**	**247**	⇑P	**Pn**	**00 43 11.6**		**+0.1**
	SNR=33							
ASTR				⇑S	**Sn**	**00 43 41.9**		**-1.5**
ASTR	**Astara**	**2.71**	**247**	P	**Pn**	**00 43 11.6**		**+0.1**
	SNR=33							
SIZA	**Siyzn**	**2.73**	**302**	⇓P	**Pn**	**00 43 14.1**		**+2.3**
	SNR=27							
SIZA				⇑S	**Sn**	**00 43 47.2**		**+3.2**
SIZA	**Siyzn**	**2.73**	**302**	P	**Pn**	**00 43 14.1**		**+2.3**
	SNR=27							
SAAT	**Saatly**	**2.74**	**275**	⇓P	**Pn**	**00 43 14.0**		**+2.1**
	SNR=2.8							
SAAT				⇑S	**Sb**	**00 43 48.4**		**-2.8**
SAAT	**Saatly**	**2.74**	**275**	P	**Pn**	**00 43 14.0**		**+2.1**
	SNR=2.8							
GLBA	**Clilabad**	**2.80**	**262**	⇑P	**Pn**	**00 43 13.4**		**+0.6**
	SNR=7.7							
GLBA				⇑S	**Sn**	**00 43 44.5**		**-1.2**
GLBA	**Clilabad**	**2.80**	**262**	P	**Pn**	**00 43 13.4**		**+0.6**
	SNR=7.7							
PQL	**Pirkuli**	**2.81**	**294**	⇓P	**Pn**	**00 43 14.7**		**+1.6**
	SNR=16							
PQL				⇑S	**Sn**	**00 43 47.5**		**+1.4**
PQL	**Pirkuli**	**2.81**	**294**	P	**Pn**	**00 43 14.7**		**+1.6**
	SNR=16							
PQL				S	**Sn**	**00 43 47.5**		**+1.4**
KDMR	**Kurdemir**	**2.99**	**285**	⇑P	**Pn**	**00 43 16.4**		**+1.1**
	SNR=8.3							
KDMR				⇓S	**Sn**	**00 43 51.4**		**+1.2**
KDMR	**Kurdemir**	**2.99**	**285**	P	**Pn**	**00 43 16.4**		**+1.1**
	SNR=8.3							
KDMR				S	**Sn**	**00 43 51.4**		**+1.2**
LRK	**Lerik**	**3.01**	**251**	⇑P	**Pn**	**00 43 15.4**		**-0.3**
	SNR=42							
LRK				⇑S	**Sn**	**00 43 48.2**		**-2.7**
LRK	**Lerik**	**3.01**	**251**	P	**Pn**	**00 43 15.4**		**-0.3**
	SNR=42							
IML	**Ismayilli**	**3.11**	**292**	P	**Pn**	**00 43 18.1**		**+1.1**
	SNR=4.4							
IML				⇓S	**Sn**	**00 43 54.5**		**+1.3**
IML	**Ismayilli**	**3.11**	**292**	P	**Pn**	**00 43 18.1**		**+1.1**
	SNR=4.4							
IML				S	**Sn**	**00 43 54.5**		**+1.3**
QUBA	**Quba, Azerbaij**	**3.14**	**303**	⇑P	**Pn**	**00 43 19.4**		**+2.0**
	SNR=41							
QUBA				⇓S	**Sn**	**00 43 56.1**		**+2.2**
QUBA	**Quba, Azerbaij**	**3.14**	**303**	P	**Pn**	**00 43 19.4**		**+2.0**
	SNR=41							
QUBA				S	**Sn**	**00 43 56.1**		**+2.2**
XNQ	**Khinaliq**	**3.28**	**298**	⇑P	**Pn**	**00 43 20.7**		**+1.1**
	SNR=28							
XNQ				⇑S	**Sn**	**00 43 57.4**		**-0.4**
XNQ	**Khinaliq**	**3.28**	**298**	P	**Pn**	**00 43 20.7**		**+1.1**
	SNR=28							
XNQ				S	**Sn**	**00 43 57.4**		**-0.4**
ZRD	**Zardab**	**3.35**	**282**	⇓P	**Pn**	**00 43 21.4**		**+1.1**
	SNR=30							
ZRD				⇓S	**Sn**	**00 43 59.4**		**+0.4**
ZRD	**Zardab**	**3.35**	**282**	P	**Pn**	**00 43 21.4**		**+1.1**
	SNR=30							
ZRD				S	**Sn**	**00 43 59.4**		**+0.4**
QSAR	**Qusar**	**3.37**	**304**	⇓P	**Pn**	**00 43 22.2**		**+1.7**
	SNR=86							
QSAR				⇓S	**Sn**	**00 44 01.1**		**+1.5**
QBL	**Gabala**	**3.41**	**293**	P	**Pn**	**00 43 21.7**		**+0.6**
	SNR=6.2							
QBL				⇓S	**Sn**	**00 44 00.2**		**-0.4**
QBL	**Gabala**	**3.41**	**293**	P	**Pn**	**00 43 21.7**		**+0.6**
	SNR=6.2							
QBL				S	**Sn**	**00 44 00.2**		**-0.4**
BRDA	**Brd**	**3.73**	**281**	⇓P	**Pn**	**00 43 26.7**		**+1.3**
	SNR=6.8							
BRDA				⇓S	**Sn**	**00 44 09.5**		**+1.1**
BRDA	**Brd**	**3.73**	**281**	P	**Pn**	**00 43 26.7**		**+1.3**
	SNR=6.8							
BRDA				S	**Sn**	**00 44 09.5**		**+1.1**
MNGR	**Mingechevir, A**	**3.90**	**288**	⇑P	**Pn**	**00 43 28.8**		**+1.0**
	SNR=3.3							
MNGR				⇓S	**Sn**	**00 44 13.3**		**+0.7**
MNGR	**Mingechevir, A**	**3.90**	**288**	P	**Pn**	**00 43 28.8**		**+1.0**
	SNR=3.3							
MNGR				S	**Sn**	**00 44 13.3**		**+0.7**
SEKA	**Sheki**	**3.95**	**294**	⇑P	**Pn**	**00 43 29.6**		**+1.0**
	SNR=34							
SEKA				⇓S	**Sn**	**00 44 14.1**		**+0.1**
SEKA	**Sheki**	**3.95**	**294**	P	**Pn**	**00 43 29.6**		**+1.0**
	SNR=34							
SEKA				S	**Sn**	**00 44 14.1**		**+0.1**
GANJ	**Ganja**	**4.43**	**284**	⇑P	**Pn**	**00 43 34.8**		**-0.4**
	SNR=19							
GANJ				⇑S	**Sn**	**00 44 23.7**		**-2.2**
GANJ	**Ganja**	**4.43**	**284**	P	**Pn**	**00 43 34.8**		**-0.4**
	SNR=19							
ZKTA	**Zakatala**	**4.51**	**297**	⇑P	**Pn**	**00 43 37.4**		**+1.1**
	SNR=14							
ZKTA				⇓S	**Sn**	**00 44 29.1**		**+1.2**
GNBR	**Gunib**	**4.66**	**307**	*e*PN	**Pn**	**00 43 39.9**		**+1.6**
GNBR	**Gunib**	**4.66**	**307**	*e*Pn	**Pn**	**00 43 39.9**		**+1.6**
GDB	**GEDABAY**	**4.87**	**284**	⇑P	**Pn**	**00 43 41.1**		**-0.3**
	SNR=147							
GDB				⇓S	**Sn**	**00 44 34.4**		**-2.6**
GDB	**GEDABAY**	**4.87**	**284**	P	**Pn**	**00 43 41.1**		**-0.3**
	SNR=147							
NAX	**Nakhchivan**	**5.04**	**266**	⇑P	**Pn**	**00 43 44.5**		**+0.9**
	SNR=8.9							
NAX				⇑S	**Sn**	**00 44 40.3**		**-0.6**
NAX	**Nakhchivan**	**5.04**	**266**	P	**Pn**	**00 43 44.5**		**+0.9**
	SNR=8.9							
NAX				S	**Sn**	**00 44 40.3**		**-0.6**
GEYT	**Alibeck**	**5.11**	**108**	Pn	**Pn**	**00 43 47.1**		**+2.6**
	2.3nm,0.3s,baz=283,slow=14,SNR=18							
GEYT				Sn	**Sn**	**00 44 35.5**		**-7.1**
	2.9nm,0.3s,baz=316,slow=16,SNR=3.0							
QZX	**Qazax, Azerbai**	**5.23**	**287**	⇓P	**Pn**	**00 43 46.3**		**+0.2**
	SNR=49							
QZX				⇑S	**Sn**	**00 44 43.7**		**-1.7**
QZX	**Qazax, Azerbai**	**5.23**	**287**	P	**Pn**	**00 43 46.3**		**+0.2**
	SNR=49							
GNI	**Garni**	**5.58**	**277**	Pn	**Pn**	**00 43 51.7**		**+0.7**
	1.4nm,0.3s,baz=161,slow=2.4,SNR=15							
GNI				Sn	**Sn**	**00 44 56.6**		**+2.3**
	1.0nm,0.3s,baz=139,slow=19,SNR=1.7							
GNI	**Garni**	**5.58**	**277**	*c* P	**Pn**	**00 43 52.5**		**+1.4**
GNI	**Garni**	**5.58**	**277**	*i* P	**Pn**	**00 43 52.5**		**+1.4**
GNI				Sn	**Sn**	**00 44 56.6**		**+2.3**
TBLG	**Delisi**	**5.87**	**293**	P	**Pn**	**00 43 54.9**		**0.0**
TBLG				S	**Sn**	**00 44 57.9**		**-3.3**
TBLG	**Delisi**	**5.87**	**293**	P	**Pn**	**00 43 54.9**		**0.0**
TBLG				S	**Sn**	**00 44 57.7**		**-3.5**
TBLG	**Delisi**	**5.87**	**293**	P	**Pn**	**00 43 54.9**		**0.0**
TBLG				S	**Sn**	**00 44 57.7**		**-3.5**
DUS	**Dusheti**	**6.01**	**296**	P	**Pn**	**00 44 00.3**		**+3.4**
DUS				S	**Sn**	**00 45 04.6**		**-0.3**
DUS	**Dusheti**	**6.01**	**296**	P	**Pn**	**00 44 00.3**		**+3.4**
DUS				S	**Sn**	**00 45 04.6**		**-0.3**
DUS	**Dusheti**	**6.01**	**296**	P	**Pn**	**00 44 00.3**		**+3.4**
DUS				S	**Sn**	**00 45 04.6**		**-0.3**
GUDG	**Gudauri**	**6.31**	**299**	P	**Pn**	**00 44 01.5**		**+0.3**
GUDG				S	**Sn**	**00 45 08.8**		**-3.6**
BGD	**Bogdanovka**	**6.58**	**287**	P	**Pn**	**00 44 06.3**		**+1.4**
ONI	**Oni**	**7.06**	**297**	P	**Pn**	**00 44 12.8**		**+1.5**
ONI	**Oni**	**7.06**	**297**	P	**Pn**	**00 44 12.8**		**+1.5**
ONI	**Oni**	**7.06**	**297**	P	**Pn**	**00 44 12.8**		**+1.5**
NCK	**Nalchik**	**7.34**	**304**	*e*P	**Pn**	**00 44 12.7**		**-2.5**
NCK	**Nalchik**	**7.34**	**304**	*e*P	**Pn**	**00 44 12.7**		**-2.5**
KBZ	**Khabaz**	**7.90**	**304**	Pn	**Pn**	**00 44 21.7**		**-1.0**
	0.5nm,0.3s,baz=117,slow=11,SNR=5.5							
KBZ				Sn	**Sn**	**00 45 45.0**		**-6.2**
	0.9nm,0.3s,baz=113,slow=13,SNR=2.8							
KVAR	**Kislovodsk Arr**	**8.14**	**305**	Pn	**Pn**	**00 44 26.1**		**-0.1**
	baz=93,slow=8.7,SNR=11							
KVAR				Sn	**Sn**	**00 45 54.1**		**-3.1**
	baz=174,slow=20,SNR=10							
KIV	**Kislovodsk**	**8.14**	**305**	*e*P	**Pn**	**00 44 24.4**		**-1.8**
KIV				*e*S	**Sn**	**00 45 54.1**		**-3.2**
KIV				pmax	pmax			
	comp=Z,5.0nm,1.1s							
KIV				MLR	MLR			
	comp=Z,6.0nm,7.0s							
**K

ARU					S	Sn	00 49 27.2	-14	
	comp=Z,0.0nm,0.3s,baz=127,slow=20,SNR=1.7								
ARU					LR	LR	00 54 45.3		
	comp=Z,55nm,20.4s,baz=198,slow=43								
ARU	**Arti**	**17.32**	**12**	*c iP*		**Pn**	**00 46 27.2**	**-2.1**	
ARU					S	**Sn**	**00 49 38.2**	**-2.8**	
ARU					pmax	pmax			
	comp=Z,19nm,1.2s								
ARU	**Arti**	**17.32**	**12**	*i* P		**Pn**	**00 46 27.2**	**-2.1**	
	comp=Z,19nm,1.2s								
ARU					S	**Sn**	**00 49 38.2**	**-2.8**	
SVE	**Sverdlovsk**	**18.08**	**15**	⇓*eP*		**Pn**	**00 46 37.2**	**-1.5**	
SVE					pmax	pmax			
	comp=Z,16nm,1.5s								
SVE	**Sverdlovsk**	**18.08**	**15**	*eP*		**Pn**	**00 46 37.2**	**-1.5**	
	comp=Z,16nm,1.5s								
MILM	**Milestii Mici**	**18.30**	**301**	⇓*iP*		**P**	**00 46 39.5**	**-2.0**	
BRVK	**Borovoye**	**18.33**	**37**	⇓P		**P**	**00 46 41.2**	**-0.5**	
BRVK	**Borovoye**	**18.33**	**37**	*eP*		**P**	**00 46 40.5**	**-1.2**	
BRVK					pmax	pmax			
	comp=Z,15nm,0.9s								
BRVK	**Borovoye**	**18.33**	**37**	*e*Pn		**P**	**00 46 40.7**	**-1.0**	
	comp=Z,26nm,0.8s								
BRVK	**Borovoye**	**18.33**	**37**	P		**P**	**00 46 41.2**	**-0.5**	
BRVK					Sn	**Sn**	**00 50 05.3**	**-0.3**	
BRVK	**Borovoye**	**18.33**	**37**	*e*Pn		**P**	**00 46 40.7**	**-1.0**	
	comp=Z,26nm,0.8s								
BRVK					Sn	**Sn**	**00 50 05.3**	**-0.3**	
BVA0	**Borovoye Array**	**18.36**	**37**	P		**P**	**00 46 41.1**	**-1.0**	
	comp=Z,0.3nm,0.8s,baz=243,slow=14,SNR=29								
BVA0					S	**Sn**	**00 50 00.6**	**-5.7**	
	comp=Z,0.2nm,0.7s,baz=238,slow=25,SNR=3.5								
BVA0	**Borovoye Array**	**18.36**	**37**	P		**P**	**00 46 41.1**	**-1.0**	
BVA0	**Borovoye Array**	**18.36**	**37**	P		**P**	**00 46 41.1**	**-1.0**	
	comp=Z,0.3nm,0.8s,SNR=29								
BVAR	**Borovoye Array**	**18.36**	**37**	P		**P**	**00 46 41.1**	**-0.9**	
	comp=Z,0.3nm,0.3s,baz=230,slow=13,SNR=19								
BVAR					S	Sn	00 49 53.4	-13	
	comp=Z,0.1nm,0.3s,baz=225,slow=14,SNR=2.2								
CFR	**Carcaliu**	**18.41**	**295**	⇑*iP*		**P**	**00 46 37.6**	**-5.0**	
VOSK	**Vostochnaya**	**18.45**	**39**	⇓P		**P**	**00 46 42.7**	**-0.4**	
VOSK	**Vostochnaya**	**18.45**	**39**	P		**P**	**00 46 42.7**	**-0.4**	
VOSK	**Vostochnaya**	**18.45**	**39**	P		**P**	**00 46 42.7**	**-0.4**	
OBN	**Obninsk**	**18.57**	**331**	LR		LR	00 54 38.4		
	comp=Z,38nm,19.4s,baz=90,slow=40								
OBN	**Obninsk**	**18.57**	**331**	*i* P		**P**	**00 46 43.7**	**-0.5**	
OBN					pmax	pmax			
	comp=Z,4.0nm,1.1s								
OBN					MLR	MLR			
	comp=Z,31nm,23.0s								
OBN	**Obninsk**	**18.57**	**331**	*i* P		**P**	**00 46 43.7**	**-0.5**	
	comp=Z,31nm,23.0s								
SORM	**Soroca**	**18.95**	**304**	⇑*iP*		**P**	**00 46 46.8**	**-1.7**	
SORM	**Soroca**	**18.95**	**304**	⇑P		**P**	**00 46 46.8**	**-1.7**	
SORM	**Soroca**	**18.95**	**304**	P		**P**	**00 46 46.8**	**-1.7**	
AKASG	**Malin Array Be**	**19.37**	**312**	P		**P**	**00 46 51.7**	**-1.5**	
	comp=Z,2.7nm,0.3s,baz=118,slow=11,SNR=12								
AKASG	**Malin Array Be**	**19.37**	**312**	*eP*		**P**	**00 46 53.9**	**+0.7**	
AKASG					pmax	pmax			
	comp=Z,3.0nm,0.3s								
AKASG	**Malin Array Be**	**19.37**	**312**	*eP*		**P**	**00 46 53.9**	**+0.7**	
	comp=Z,3.0nm,0.3s								
KIEV	**Kiev**	**19.38**	**312**	*eP*		**P**	**00 46 52.0**	**-1.2**	
KIEV					pmax	pmax			
	comp=Z,11nm,1.0s								
KIEV	**Kiev**	**19.38**	**312**	*eP*		**P**	**00 46 52.0**	**-1.2**	
	comp=Z,11nm,1.0s								
KIEV	**Kiev**	**19.38**	**312**	*eP*		**P**	**00 46 51.7**	**-1.5**	
	comp=Z,7.3nm,0.7s								
VRI	**Vrincioaia**	**19.49**	**297**	⇓*iP*		**P**	**00 46 54.1**	**-0.5**	
VRI	**Vrincioaia**	**19.49**	**297**	⇓P		**P**	**00 46 54.1**	**-0.5**	
VRI	**Vrincioaia**	**19.49**	**297**	⇓*iP*		**P**	**00 46 54.1**	**-0.5**	
ISR	**Istrita**	**19.51**	**294**	⇑*iP*		**Pn**	**00 46 56.8**	**+0.6**	
ISR	**Istrita**	**19.51**	**294**	⇑P		**Pn**	**00 46 56.8**	**+0.6**	
ISR	**Istrita**	**19.51**	**294**	⇑*iP*		**Pn**	**00 46 56.8**	**+0.6**	
PLOR	**Plostina**	**19.55**	**297**	⇑*iP*		**Pn**	**00 46 57.1**	**+0.6**	
PLOR	**Plostina**	**19.55**	**297**	⇑P		**Pn**	**00 46 57.1**	**+0.6**	
PLOR	**Plostina**	**19.55**	**297**	⇑*iP*		**Pn**	**00 46 57.1**	**+0.6**	
MLR	**Muntele Rosu**	**19.98**	**295**	P		**P**	**00 47 01.1**	**+1.1**	
	baz=172,slow=15								
MLR					LR	LR	00 55 41.5		
	comp=Z,5.5nm,19.2s,baz=40,slow=40								
MLR	**Muntele Rosu**	**19.98**	**295**	⇑*iP*		**Pn**	**00 47 02.5**	**+0.7**	
MLR	**Muntele Rosu**	**19.98**	**295**	⇑P		**Pn**	**00 47 02.6**	**+0.7**	
DOPR	**Dopca**	**20.43**	**297**	⇑*iP*		**P**	**00 47 05.2**	**+0.4**	
DOPR	**Dopca**	**20.43**	**297**	⇑*iP*		**P**	**00 47 05.2**	**+0.4**	
VOIR		**20.60**	**295**	⇑*iP*		**P**	**00 47 07.4**	**+0.8**	
VOIR		**20.60**	**295**	⇑P		**P**	**00 47 07.5**	**+0.8**	
VOIR		**20.60**	**295**	P		**P**	**00 47 07.5**	**+0.8**	
APE	**Apeiranthos**	**20.87**	**271**	*eP*		**P**	**00 47 09.3**	**-0.3**	
APE					pmax	pmax			
	comp=Z,8.0nm,1.0s								
APE	**Apeiranthos**	**20.87**	**271**	*eP*		**P**	**00 47 09.3**	**-0.3**	
	comp=Z,8.0nm,1.0s								
ARR	**Arges**	**20.88**	**295**	⇑*iP*		**P**	**00 47 10.4**	**+0.7**	
ARR	**Arges**	**20.88**	**295**	⇑*iP*		**P**	**00 47 10.4**	**+0.7**	
KURBB	**Kurchatov Arra**	**21.57**	**51**	P		**P**	**00 47 18.5**	**+1.5**	
	comp=Z,1.8nm,0.7s,baz=252,slow=10,SNR=13								
KURBB	**Kurchatov Arra**	**21.57**	**51**	⇓P		**P**	**00 47 17.6**	**+0.6**	
	comp=Z,5.4nm,1.0s								
KURBB	**Kurchatov Arra**	**21.57**	**51**	P		**P**	**00 47 17.6**	**+0.6**	
	comp=Z,5.4nm,1.0s								
KURK	**Kurchatov**	**21.66**	**51**	⇑P		**P**	**00 47 18.3**	**+0.4**	
	comp=Z,7.4nm,1.1s								
KURK	**Kurchatov**	**21.66**	**51**	*d iP*		**P**	**00 47 19.7**	**+1.8**	
KURK					pmax	pmax			
	comp=Z,5.0nm,0.7s								
KURK	**Kurchatov**	**21.66**	**51**	P		**P**	**00 47 18.5**	**+0.6**	
KURK	**Kurchatov**	**21.66**	**51**	P		**P**	**00 47 18.5**	**+0.6**	
IDI	**Anoyia**	**21.90**	**267**	P		**P**	**00 47 19.1**	**-1.6**	
	comp=Z,2.7nm,0.3s,baz=58,slow=13,SNR=5.7								
THE	**Thessaloniki**	**22.15**	**282**	P		**P**	**00 47 26.6**	**+3.3**	
THE	**Thessaloniki**	**22.15**	**282**	P		**P**	**00 47 26.6**	**+3.3**	
KLMR	**Klimovskoe**	**22.57**	**344**	*eP*		**P**	**00 47 27.9**	**+0.4**	
KLMR					*e*S	**S**	**00 51 31.0**	**-2.0**	
KLMR					pmax	pmax			
	comp=Z,13nm,0.9s								
KLMR	**Klimovskoe**	**22.57**	**344**	*eP*		**P**	**00 47 27.9**	**+0.4**	
	comp=Z,13nm,0.9s								
KLMR					*e*S	**S**	**00 51 31.0**	**-2.0**	
BZS	**Buzias**	**23.02**	**295**	⇓*iP*		**P**	**00 47 33.1**	**+0.7**	
BZS	**Buzias**	**23.02**	**295**	⇓P		**P**	**00 47 33.1**	**+0.7**	
BZS	**Buzias**	**23.02**	**295**	⇓*iP*		**P**	**00 47 33.1**	**+0.7**	
SIRR	**Siria**	**23.04**	**297**	⇑*iP*		**P**	**00 47 33.4**	**+0.7**	
SIRR	**Siria**	**23.04**	**297**	⇑*iP*		**P**	**00 47 33.4**	**+0.7**	
MK31	**Makanchi Array**	**23.11**	**62**	⇑P		**P**	**00 47 33.1**	**-0.2**	
	comp=Z,2.4nm,0.7s								
MK31	**Makanchi Array**	**23.11**	**62**	P		**P**	**00 47 33.1**	**-0.2**	
MK31	**Makanchi Array**	**23.11**	**62**	P		**P**	**00 47 33.1**	**-0.2**	
	comp=Z,2.4nm,0.7s								
MKAR	**Makanchi Array**	**23.11**	**62**	P		**P**	**00 47 34.1**	**+0.8**	
	comp=Z,4.1nm,1.0s,baz=258,slow=9.6,SNR=11								
MKAR	**Makanchi Array**	**23.11**	**62**	*eP*		**P**	**00 47 35.0**	**+1.7**	
MKAR					pmax	pmax			
	comp=Z,2.0nm,0.7s								
STHS	**Stebnicka Huta**	**23.82**	**304**	*eP*		**P**	**00 47 42.6**	**+2.3**	
VYHS	**Vyhne**	**25.22**	**301**	*eP*		**P**	**00 47 54.8**	**+1.8**	
	comp=Z,0.4nm,0.8s								
VYHS	**Vyhne**	**25.22**	**301**	*eP*		**P**	**00 47 54.8**	**+1.8**	
ZALV	**Zalesovo Beam**	**26.34**	**46**	P		**P**	**00 48 03.5**	**+0.4**	
	comp=Z,2.2nm,0.6s,baz=263,slow=11,SNR=11								
FINES	**FINESS Array B**	**26.96**	**332**	P		**P**	**00 48 08.8**	**+0.2**	
	comp=Z,0.8nm,0.4s,baz=133,slow=9.3,SNR=9.1								
GERES	**GERESS Array B**	**28.64**	**301**	P		**P**	**00 48 24.0**	**+0.1**	
	comp=Z,0.1nm,0.3s,baz=106,slow=10,SNR=2.4								
GERES	**GERESS Array B**	**28.64**	**301**	P		**P**	**00 48 24.0**	**+0.1**	
GERES	**GERESS Array B**	**28.64**	**301**	P		**P**	**00 48 24.0**	**+0.1**	
NOA	**NORSAR Array B**	**32.85**	**324**	P		**P**	**00 49 02.1**	**+1.3**	
	comp=Z,1.4nm,0.9s,baz=117,slow=15,SNR=2.7								
SONM	**Songino Array**	**39.43**	**60**	P		**P**	**00 49 59.2**	**+1.9**	
	comp=Z,0.2nm,0.4s,baz=258,slow=7.2,SNR=2.3								
ESDC	**Sonseca Array**	**42.44**	**289**	P		**P**	**00 50 22.6**	**+0.4**	
	comp=Z,0.8nm,0.7s,baz=71,slow=8.2,SNR=5.1								
TORD	**Torodi Ar. Bea**	**51.38**	**254**	P		**P**	**00 51 31.4**	**-0.8**	
	comp=Z,0.5nm,1.0s,baz=40,slow=7.5,SNR=2.9								
KLR	**Kul'dur**	**55.25**	**52**	P		**P**	**00 52 01.9**	**+1.6**	
	comp=Z,1.1nm,0.9s,baz=290,slow=12,SNR=2.9								
KLR	**Kul'dur**	**55.25**	**52**	*eP*		**P**	**00 52 01.2**	**+1.0**	
KLR	**Kul'dur**	**55.25**	**52**	*eP*		**P**	**00 52 01.2**	**+1.0**	
KSAR	**Wonju Array Be**	**57.69**	**66**	P		**P**	**00 52 19.1**	**+1.3**	
KSAR	**Wonju Array Be**	**57.69**	**66**	P		**P**	**00 52 19.1**	**+1.3**	
KSAR	**Wonju Array Be**	**57.69**	**66**	P		**P**	**00 52 19.1**	**+1.3**	
KSRS	**Korea Array**	**57.71**	**66**	P		**P**	**00 52 19.1**	**+1.2**	
	comp=Z,0.8nm,0.4s,baz=297,slow=8.3,SNR=6.4								
BILL	**Bilibino**	**61.98**	**23**	*eP*		**P**	**00 52 49.7**	**+2.9**	
BILL					*e*		00 53 30.2		
BILL					*e*		00 55 06.2		
BILL					pmax	pmax			
	comp=Z,2.0nm,0.9s								
BILL	**Bilibino**	**61.98**	**23**	*e*P		**P**	**00 52 49.7**	**+2.9**	
	comp=Z,2.0nm,0.9s								
BILL	**Bilibino**	**61.98**	**23**	*e*PcP		**PcP**	**00 53 30.2**	**+3.1**	

NIED ***25*** *00:43:00, 37.˚10N×144.˚30E, h56km, Mw3.9 Best double couple: M0 7.51000×10^14 NP1:φs87.00000°, δ39.00000°, λ62.00000°. NP2:φs301.00000°, δ56.00000°, λ111.00000°.*

IDC ***25*** *00:43:00.7±1.0, 36.˚91N×144.˚68E, h0km, mb3.7/7, mb1 3.9/9, mb1mx3.6/59, mbtmp3.7/9, ML3.5/2, MS2.7/3, Ms1 2.7/3, ms1mx2.5/48, Error ellipse: s-maj=26.5km s-min=22.3km az=107.0*

ISCJB ***25*** *00:43:03.7±0.7, 37.˚00N±0.˚05×144.˚36E±0.˚05, h26km, mb3.7/7, Error ellipse: s-maj=7.1km s-min=6.0km az=0.4*

JMA ***25*** *00:43:05.6±0.3, 37.˚11N×144.˚30E, h40km, M3.9*

ISC 25 00:43:04.7±0.9, 36.˚99N±0.˚06×144.˚44E±0.˚08, h26km, n28, σ1 68/31, mb3.7/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.85**	**302**	P		**Pn**	**00 43 48.1**	**-0.4**
JIO				*e*S		**Sn**	**00 44 19.6**	**-2.4**
JFK	**Kawauchi**	**2.87**	**279**	P		**Pn**	**00 43 48.7**	**-0.1**
JFK				*e*S		**Sn**	**00 44 20.8**	**-1.7**
ONAJ	**Iwakimizuishiy**	**2.92**	**273**	P		**Pn**	**00 43 49.6**	**+0.2**
ONAJ				S		**Sn**	**00 44 22.2**	**-1.4**
OFUJ	**Ofunato**	**3.02**	**314**	P		**Pn**	**00 43 49.9**	**-0.9**
OFUJ				*e*S		**Sn**	**00 44 22.6**	**-3.6**
JOU	**Okura**	**3.29**	**296**	P		**Pn**	**00 43 54.8**	**+0.2**
JOU				S		**Sn**	**00 44 32.4**	**-0.5**
JFT	**Otama**	**3.32**	**280**	S		**Sn**	**00 44 32.4**	**-1.1**
BSO1	**Boso 1**	**3.66**	**231**	P		**Pn**	**00 43 59.2**	**+0.2**
BSO1				*e*S		**Sn**	**00 44 42.1**	**+1.1**
JYK	**Kaneyama**	**3.76**	**302**	P		**Pn**	**00 44 01.3**	**+0.4**
JRG	**Rokugo**	**3.84**	**310**	P		**Pn**	**00 44 03.2**	**+1.1**
JRG				S		**Sn**	**00 44 45.9**	**-0.5**
JRY	**Ryogami san**	**4.57**	**259**	P		**Pn**	**00 44 12.1**	**0.0**
JRY				*e*S		**Sn**	**00 45 02.4**	**-1.9**
MJAR	**Matsushiro Arr**	**5.02**	**267**	Pn		**Pn**	**00 44 19.5**	**+1.1**
	3.3nm,0.3s,baz=79,slow=11,SNR=20							
MJAR					Sn	**Sn**	**00 45 16.3**	**+0.7**
	1.0nm,0.3s,baz=311,slow=31,SNR=5.0							
MJAR					LR	LR	00 46 24.0	
	comp=Z,63nm,19.1s,baz=65,slow=39							
MAT	**Matsushiro**	**5.03**	**267**	P		**Pn**	**00 44 19.9**	**+1.5**
MAT				S		**Sn**	**00 45 14.3**	**-1.3**
JHJ	**Hachijo jima 2**	**5.43**	**226**	Sn		**Sn**	**00 45 20.5**	**-5.2**
	17nm,0.3s,baz=66,slow=20,SNR=3.9							
KSRS	**Korea Array**	**13.18**	**277**	Pn		**Pn**	**00 46 12.6**	**+2.6**
	0.1nm,0.3s,baz=94,slow=15,SNR=5.1							
KSRS					LR	LR	00 50 52.3	
	comp=Z,49nm,20.9s,baz=47,slow=35							
KLR	**Kul'dur**	**15.32**	**327**	LR		LR	00 51 43.1	
	comp=Z,26nm,20.2s,baz=154,slow=34							
H11N2	**WAKE ISLAND Hy**	**26.09**	**125**	T		T	01 15 24.4	
	baz=317,slow=74,SNR=94							
H11N1	**WAKE ISLAND Hy**	**26.10**	**125**	T		T	01 15 28.6	
	baz=317,slow=74,SNR=44							
H11N3	**WAKE ISLAND Hy**	**26.11**	**125**	T		T	01 15 26.4	
	baz=317,slow=74,SNR=76							
SEY	**Seymchan**	**26.43**	**8**	P		**P**	**00 48 39.5**	**+0.6**
	1.7nm,0.7s,baz=175,slow=11,SNR=3.6							
H11S1	**WAKE ISLAND Hy**	**26.85**	**127**	T		T	01 16 26.1	
	baz=319,slow=76,SNR=22							
H11S3	**WAKE ISLAND Hy**	**26.85**	**127**	T		T	01 16 23.5	
	baz=319,slow=76,SNR=16							
H11S2	**WAKE ISLAND Hy**	**26.87**	**127**	T		T	01 16 24.5	
	baz=319,slow=76,SNR=19							
MKAR	**Makanchi Array**	**46.19**	**303**	P		**P**	**00 51 29.0**	**+1.8**
	0.6nm,0.8s,baz=76,slow=12,SNR=2.6							
KURBB	**Kurchatov Arra**	**47.93**	**308**	P		**P**	**00 51 41.5**	**+0.9**
	0.7nm,0.5s,baz=81,slow=7.9,SNR=5.2							
ILAR	**Eielson Array**	**48.23**	**32**	P		**P**	**00 51 41.3**	**-1.5**
	0.5nm,0.7s,baz=271,slow=5.1,SNR=4.1							
WRA	**Warramunga Arr**	**57.42**	**191**	P		**P**	**00 52 50.5**	**-0.6**
	0.5nm,0.4s,baz=11,slow=7.3,SNR=5.9							
ASAR	**Alice Springs**	**61.15**	**191**	P		**P**	**00 53 16.6**	**-0.2**
	0.5nm,0.7s,baz=17,slow=6.8,SNR=5.5							
TXAR	**Lajitas Array**	**88.20**	**54**	P		**P**	**00 55 54.6**	**+0.8**
	0.2nm,0.6s,baz=330,slow=5.2,SNR=4.6							

KRSC 25 00:44:47.7±1.3, 49.˚35N×156.˚58E, h15km±18km, ML4.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.37**	**348**	*eP*		Pn	00 45 11.5	-0.8
SKR				*e*S		Sn	00 45 29.1	-1.1
ASAK	**Asacha**	**3.15**	**15**	*eP*		Pb	00 45 40.2	-3.3
RUS	**Russkaya**	**3.33**	**21**	*eP*		Pn	00 45 42.0	+2.9
RUS				*e*S		Sn	00 46 22.1	+3.8
DALK	**Dalny**	**3.94**	**19**	S		Sn	00 46 38.3	+5.0
UGLR	**Uglovaya**	**4.12**	**19**	*eP*		Pn	00 45 53.7	+3.6
AVH	**Avacha**	**4.15**	**18**	*eP*		Pn	00 45 54.6	+4.0
KRER	**Koryakskii**	**4.19**	**18**	*eP*		Pn	00 45 55.8	+4.6
SDLR	**Sedlovina**	**4.20**	**19**	*eP*		Pn	00 45 54.9	+3.7
SPN	**Mys Shipunski**	**4.33**	**29**	*eP*		Pn	00 45 58.0	+5.0
SPN				*e*S		Sn	00 46 48.3	+5.1
GNL	**Ganaly**	**4.44**	**11**	*eP*		Pn	00 45 58.5	+4.0
MKZ	**Mys Kozlova**	**6.11**	**29**	*eP*		Pn	00 46 20.6	+3.3

IDC ***25*** *00:50:45.8±0.3, 3.˚13S×150.˚49E, h0km, mb5.3/32, mb1 5.3/35, mb1mx5.3/36, mbtmp5.3/35, ML4.7/3, MS6.0/36, Ms1 6.0/36, ms1mx5.9/42, Error ellipse: s-maj=15.1km s-min=9.4km az=74.0*

NEIC ***25*** *00:50:47.6±0.1, 3.˚18S×150.˚61E, h10km, mb5.9/117, ME7.0, MS6.3/121, MW6.3, MW6.4, MW6.2, Error ellipse: s-maj=4.2km s-min=3.7km az=114.0, Moment Tensor Solution. s50 Moment tensor: Scale 10^18Nm; M0 0.07; Mθθ 2.32; Mϕϕ -2.39; Mθϕ 0.28; Mϕr 0.30; Mrr -0.27; Best double couple: M0 2.40000×10^18 NP1:φs311.00000°, δ90.00000°, λ-9.00000°. NP2:φs41.00000°, δ81.00000°, λ-180.00000°. Principal axes: T 2.3600, Plg6.0000°, Azm357.0000°; N 0.0800, Plg81.0000°, Azm131.0000°; P -2.4400, Plg7.0000°, Azm266.0000°; Broadband fault plane solution: P waves. NP1:φs130.00000°, δ88.00000°, λ5.00000°. NP2:φs40.00000°, δ85.00000°, λ178.00000°. Principal axes: T Plg5.0000°, Azm355.0000°; N Plg0.0000°, Azm0.0000°; P Plg2.0000°, Azm265.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

GCMT ***25*** *00:50:47.6±0.1, 3.˚13S×150.˚61E, h15km, MW6.3/142, Moment Tensor Solution. s139, c319; s142, c576; Duration: 35 Moment tensor: Scale 10^18Nm; Mrr 0.29±.02; Mθθ 3.91±.02; Mϕϕ -3.62±.02; Mθϕ -0.10±.06; Mrθ 0.73±.02; Mrϕ 0.40±.06; Best double couple: M0 3.85900×10^18 NP1:φs40.00000°, δ87.00000°, λ-174.00000°. NP2:φs309.00000°, δ84.00000°, λ-3.00000°. Principal axes: T 3.9840, Plg2.0000°, Azm174.0000°; N -0.2500, Plg83.0000°, Azm68.0000°; P -3.7330, Plg6.0000°, Azm265.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISCJB ***25*** *00:50:48.9±0.1, 3.˚20S±0.˚02×150.˚63E±0.˚02, h30km, mb5.7/228, MS6.2/194 Error ellipse: s-maj=2.8km s-min=2.5km az=172.4*

DJA ***25*** *00:50:49.3±0.2, 3.˚5S×3.˚×15.˚1E±.˚, h10km, M6.3/63, mb5.8/63, mB6.6/63, MLv6.4/1, Mw(mB)6.3/63, Mwp6.2/18*

BJI ***25*** *00:50:49.5, 3.˚10S×150.˚75E, h30km, mb5.6/61, mB6.3/83, Ms6.3/95, Ms7 6.2/86*

MOS ***25*** *00:50:50.4±1.4, 3.˚11S×150.˚57E, h39km, mb5.9/46, MS6.3/34, Error ellipse: s-maj=7.3km s-min=5.0km az=97.6*

NEIC ***25*** *00:50:50.0±0.0, 3.˚21S×150.˚57E, h19km, Moment Tensor Solution. s39 Moment tensor: Scale 10^18Nm; Mrr 0.03; Mθθ 2.97; Mϕϕ -3.00; Mrθ 1.53; Mθϕ 0.31; Mϕr 0.76; Best double couple: M0 3.50000×10^18 NP1:φs41.00000°, δ83.00000°, λ153.00000°. NP2:φs134.00000°, δ63.00000°, λ8.00000°. Principal axes: T 3.6700, Plg23.0000°, Azm354.0000°; N -0.4900, Plg62.0000°, Azm207.0000°; P -3.1800, Plg13.0000°, Azm90.0000°;*

NEIC ***25*** *00:51:08.2±0.0, 2.˚78S×150.˚41E, h29km, Moment Tensor Solution. s61 Moment tensor: Scale 10^18Nm; Mrr 0.20; Mθθ 3.99; Mϕϕ -3.78; Mrθ -1.78; Mθϕ 0.80; Mϕr -3.86; Best double couple: M0 5.80000×10^18 NP1:φs305.00000°, δ44.00000°, λ-4.00000°. NP2:φs38.00000°, δ87.00000°, λ-134.00000°. Principal axes: T 5.2400, Plg28.0000°, Azm162.0000°; N 1.0100, Plg44.0000°, Azm41.0000°; P -6.2500, Plg33.0000°, Azm272.0000°;*

ISC 25 00:50:50.6±0.3, 3.˚19S±0.˚03×150.˚75E±0.˚03, h30km±1km, h29km: pP-P, n1144, σ2 29/1147, mb5.8/243, MS6.3/202, 31C-15D, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**1.72**	**125**	*e*Pn		**Pn**	**00 51 16.9**	**-1.7**
MANU	**Manus Island**	**3.57**	**289**	*e*Pn		**Pn**	**00 51 40.5**	**-3.5**
PMG	**Port Moresby**	**7.13**	**210**	Pn		**Pn**	**00 52 33.8**	**+0.8**
	5.7nm,0.3s,baz=24,slow=7.1,SNR=52							
PMG					LR	LR	00 54 32.7	
	comp=Z,30μm,19.6s,baz=35,slow=32							
PMG	**Port Moresby**	**7.13**	**210**	*ce*P		**Pn**	**00 52 33.5**	**+0.5**
PMG					pmax	pmax		
	comp=Z,2μm,1.0s							
PMG	**Port Moresby**	**7.13**	**210**	Pn		**Pn**	**00 52 32.8**	**-0.2**
JAY	**Jayapura**	**10.06**	**274**	Pn		**Pn**	**00 53 12.2**	**-1.0**
	comp=Z,0.0nm,0.3s,baz=88,slow=23,SNR=32							
JAY					LR	LR	00 56 33.9	
	comp=Z,13μm,18.9s,baz=7.0,slow=36							
JAY	**Jayapura**	**10.06**	**274**	P		**Pn**	**00 53 13.4**	**+0.2**
	comp=Z,236nm,1.2s,comp=Z,15μm							
GENI	**Genyem**	**10.59**	**273**	P		**Pn**	**00 53 20.3**	**-0.1**
	comp=Z,783nm,1.9s,comp=Z,60μmcomp=Z,205μm							
HNR	**Honiara**	**11.04**	**125**	Pn		**Pn**	**00 53 28.7**	**+2.1**
	comp=Z,9.8nm,0.3s,baz=195,slow=16,SNR=6.5							
HNR					LR	LR	00 57 09.9	
	comp=Z,49μm,18.5s,baz=276,slow=34							
HNR	**Honiara**	**11.04**	**125**	*eP*		**Pn**	**00 53 28.0**	**+1.4**
HNR				*e*S		**Sn**	**00 55 21.0**	**-8.1**
HNR	**Honiara**	**11.04**	**125**	*eP*		**Pn**	**00 53 27.0**	**+0.4**
HNR	**Honiara**	**11.04**	**125**	*ePn*		**Pn**	**00 53 27.0**	**+0.4**
PATS	**Pohnpei**	**12.50**	**37**	*ePn*		**Pn**	**00 53 44.8**	**-1.7**
COEN	**Coen**	**13.06**	**215**	P		**Pn**	**00 53 55.4**	**+1.2**
	baz=13,SNR=12							
COEN	**Coen**	**13.06**	**215**	*ePn*		**Pn**	**00 53 53.5**	**-0.7**
MTSU	**Mount Surprise**	**16.14**	**203**	P		**Pn**	**00 54 36.6**	**+1.2**
	baz=16,SNR=30							
CTA	**Charters Tower**	**17.36**	**194**	P		**Pn**	**00 54 51.4**	**+0.5**
	comp=Z,1.2nm,0.3s,baz=18,slow=14,SNR=29							
CTA					LR	LR	01 01 11.5	
	comp=Z,86μm,19.2s,baz=14,slow=36							
CTAO	**Charters Tower**	**17.36**	**194**	*eP*		**P**	**00 54 51.5**	**-0.5**
CTAO					pmax	pmax		
	comp=Z,3μm,1.9s							
CTAO	**Charters Tower**	**17.36**	**194**	*ePn*		**P**	**00 54 51.5**	**-0.5**
	comp=Z,3μm,1.9s							
GUMO	**Guam**	**17.66**	**341**	P		**Pn**	**00 54 52.5**	**-2.1**
	comp=Z,3.3nm,0.3s,baz=154,slow=3.6,SNR=6.8							
GUMO					LR	LR	01 00 09.6	
	comp=Z,42μm,20.5s,baz=156,slow=32							
GUMO	**Guam**	**17.66**	**341**	*eP*		**Pn**	**00 54 52.8**	**-1.8**
GUMO					pmax	pmax

BATI Baumata 27.78 254 P **P** **00 56 38.9 +1.7**
comp=Z,304nm,1.6s,comp=Z,5μm
LUWI Luwuk 28.04 274 P **P** **00 56 37.9 -1.7**
comp=Z,910nm,1.2s,comp=Z,13μmcomp=Z,26μm
LUWI Luwuk 28.04 274 *eP* **P** **00 56 38.6 -0.9**
comp=Z,1μm,1.1s
KDI Kendari 28.09 268 P P 00 56 45.4 +5.4
CTBH Cotabato--PC H 28.41 291⇑*iP* **P** **00 56 42.9 +0.2**
CMSA Cobar Meteorol 28.60 189 P **P** **00 56 43.2 -1.1**
baz=29,SNR=26
FITZ Fitzroy Crossi 28.72 237 P **P** **00 56 43.3 -2.2**
comp=Z,84nm,1.0s,baz=63,slow=7.1,SNR=53
FITZ LR LR 01 09 01.3
comp=Z,88μm,18.3s,baz=62,slow=38
FITZ Fitzroy Crossi 28.72 237 P **P** **00 56 43.3 -2.2**
baz=28,SNR=85
FITZ Fitzroy Crossi 28.72 237 *eP* **P** **00 56 43.4 -2.2**
comp=Z,2μm,1.8s
FUNA Funafuti 28.77 102 PFAKE 00 57 00.0 +14
FUNA LR LR
comp=Z,40μm,19.0s
MMRI Maumere 28.86 258 *eP* **P** **00 56 45.2 -1.6**
comp=Z,430nm,1.3s
MRSI Marisa 29.03 277 P **P** **00 56 46.7 -1.6**
LHI Lord Howe Isla 29.25 165 *eP* **P** **00 56 49.6 -0.5**
comp=Z,488nm,1.5s
STKA Stephens Creek 29.81 196 P **P** **00 56 53.0 -2.0**
comp=Z,37nm,1.1s,baz=21,slow=12,SNR=35
STKA LR LR 01 09 24.9
comp=Z,79μm,19.2s,baz=11,slow=38
STKA Stephens Creek 29.81 196 P **P** **00 56 54.0 -1.0**
baz=30,SNR=31
STKA Stephens Creek 29.81 196 *eP* **P** **00 56 53.8 -1.2**
STKA pmax pmax
comp=Z,80nm,1.7s
STKA Stephens Creek 29.81 196 *eP* **P** **00 56 53.8 -1.2**
comp=Z,80nm,1.7s
MSVF Nonsavu 30.41 120 *eP* **P** **00 57 00.7 0.0**
MSVF pmax pmax
comp=Z,170nm,1.3s
MSVF Nonsavu 30.41 120 *eP* **P** **00 57 00.5 -0.1**
comp=Z,250nm,1.7s
MSVF LR LR
comp=Z,69μm,22.0s
WRKA Warakurna 30.65 223 P **P** **00 57 00.2 -2.4**
baz=30,SNR=64
BASI Baing, Sumba 30.75 255 P **P** **00 57 04.5 +0.9**
comp=Z,966nm,1.4s,comp=Z,20μm
TTSI Tana Toraja 30.89 269 P **P** **00 57 05.3 +0.5**
comp=Z,112nm,1.1s,comp=Z,6μmcomp=Z,25μm
SPSI Sidrap Palu 30.93 268 P **P** **00 57 04.4 -0.8**
comp=Z,173nm,1.4s,comp=Z,4μm
KAPI Kappang 30.97 266 *eP* **P** **00 57 05.5 -0.1**
comp=Z,157nm,1.4s
KAPI LR LR
comp=Z,16μm,20.0s
PCI Palu 30.98 274 P **P** **00 57 07.7 +2.1**
comp=Z,568nm,1.0s,comp=Z,11μmcomp=Z,25μm
YNG Young 31.03 184 P **P** **00 57 05.7 -0.1**
baz=31,SNR=23
CNB Canberra Magne 31.99 182 P **P** **00 57 14.4 +0.1**
baz=32,SNR=13
CAN Canberra 32.01 183 *eP* **P** **00 57 13.7 -0.8**
CAN pmax pmax
comp=Z,332nm,1.8s
CAN MLR MLR
comp=Z,66μm,21.0s
CAN Canberra 32.01 183 *eP* **P** **00 57 13.7 -0.8**
comp=Z,332nm,1.8s
CAN LR LR
comp=Z,66μm,21.0s
HTT Hallett 32.05 199 P **P** **00 57 14.6 -0.3**
baz=32,SNR=5.3
BBOO Buckleboo 32.53 203 P **P** **00 57 19.2 +0.2**
baz=32,SNR=10
BBOO Buckleboo 32.53 203 *eP* **P** **00 57 17.7 -1.3**
comp=Z,393nm,1.9s
PLAI Plampang 33.26 259 P **P** **00 57 21.7 -3.9**
MYLDM Lahad Datu 33.28 284 *eP* **P** **00 57 26.1 +0.3**
comp=Z,591nm,1.6s
TSM Tawau 33.69 283⇓P **P** **00 57 28.3 -1.1**
TWSI Taliwang, Sumb 34.12 259 P **P** **00 57 30.3 -2.8**
ARPS Mount Arapiles 34.41 193 P **P** **00 57 34.5 -0.8**
baz=34,SNR=10
TOO Toolangi 34.55 187 P **P** **00 57 36.3 -0.3**
baz=35,SNR=15
SDKM Sandakan 34.65 285⇑P **P** **00 57 37.1 -0.7**
FORT Forrest 34.82 216 P **P** **00 57 37.1 -1.9**
baz=35,SNR=22
FORT Forrest 34.82 216 *eP* **P** **00 57 37.0 -1.9**
comp=Z,1μm,1.0s
MBWA Marble Bar 35.06 237 P **P** **00 57 40.9 -0.3**
SNR=27
MBWA Marble Bar 35.06 237 *eP* **P** **00 57 40.4 -0.8**
MBWA comp=Z,616nm,1.8s
LR LR
comp=Z,37μm,20.0s
SRBI Singaraja 35.69 261 P **P** **00 57 46.7 0.0**
comp=Z,131nm,1.4s,comp=Z,4μm
KKM Kota Kinabalu 35.69 285⇓P **P** **00 57 44.4 -2.4**
KKM Kota Kinabalu 35.69 285 *eP* **P** **00 57 44.0 -2.8**
comp=Z,107nm,0.9s
KKM LR LR
comp=Z,20μm,20.0s
DNP Denpasar 35.75 260 P P 00 57 54.7 +7.5
IGBI Denpasar 35.83 259 P **P** **00 57 48.4 +0.5**
comp=Z,236nm,0.8s,comp=Z,5μm
BBKI Banjar Baru 35.85 269 P **P** **00 57 49.0 +0.9**
comp=Z,366nm,1.6s,comp=Z,13μm
MTKI Muara Teweh, K 35.90 273 P **P** **00 57 49.3 +0.8**
comp=Z,130nm,0.7s,comp=Z,8μm
JAGI Jajag, Banyuwa 36.77 260 P **P** **00 57 53.5 -2.5**
comp=Z,133nm,1.6s,comp=Z,4μm
JAGI Jajag, Banyuwa 36.77 260 *eP* **P** **00 57 52.4 -3.6**
comp=Z,745nm,2.0s
JOW Kunigami 36.91 325 *eP* **P** **00 57 55.5 -1.4**
comp=Z,259nm,1.6s
BLJI Banyuglugur 37.25 261 P P 00 58 06.2 +6.2
GMJI Gumukmas 37.45 261 P P 00 58 11.2 +10
JHJ2 Mitsune 37.56 345 *eP* **P** **00 58 01.1 -1.2**
comp=Z,291nm,1.0s
JHJ Hachijo jima 2 37.58 345 LR LR 01 10 49.6
comp=Z,30μm,21.9s,baz=172,slow=32
BTM Bintulu 38.18 279⇓P **P** **00 58 07.4 -0.5**
OUZ Omahuta 38.27 149 *eP* **P** **00 58 09.7 +1.4**
comp=Z,261nm,1.4s
AFI Afiamalu 38.49 108 P **P** **00 58 12.2 +1.7**
AFI comp=Z,15nm,0.7s,baz=0.0,slow=0.0
LR LR 01 12 37.7
comp=Z,29μm,18.2s,slow=34
AFI Afiamalu 38.49 108 P **P** **00 58 12.1 +1.5**
AFI pmax pmax
comp=Z,17nm,0.8s
AFI Afiamalu 38.49 108 P **P** **00 58 12.1 +1.5**
comp=Z,17nm,0.8s
YOJ Yonaguni jima 38.51 317 *eP* **P** **00 58 10.7 +0.2**
YOJ pmax pmax
comp=Z,207nm,1.1s
YOJ Yonaguni jima 38.51 317 *eP* **P** **00 58 10.7 +0.2**
comp=Z,207nm,1.1s
SBUM Sibu 38.92 278 *eP* **P** **00 58 12.1 -2.1**
comp=Z,475nm,1.6s
YULB Yu-li 39.02 314 *eP* **P** **00 58 13.6 -1.2**
comp=Z,140nm,1.2s
PBKI Pangkalan Bun 39.03 270 P **P** **00 58 16.8 +1.7**
comp=Z,281nm,1.2s,comp=Z,8μm
PWJI Pagerwojo 39.04 261 P **P** **00 58 13.9 -1.2**
comp=Z,111nm,1.2s,comp=Z,3μm
KMBL Kambalda 39.05 221 P **P** **00 58 14.6 -0.4**
baz=39,SNR=19
MOO Moorlands 39.21 184 P **P** **00 58 16.6 +0.5**
baz=39,SNR=8.3
NACB Ninganchiao 39.30 315 *eP* **P** **00 58 17.1 -0.1**
comp=Z,153nm,1.1s
NGJI Ngawi 39.33 262 P P 00 58 29.7 +12
STKI Sintang 39.39 274 P **P** **00 58 18.4 +0.3**
comp=Z,120nm,1.2s,comp=Z,16μmcomp=Z,13μm
TPUB Ta-pu 39.44 313 *eP* **P** **00 58 16.2 -2.1**
comp=Z,41nm,0.7s
RAO Raoul Island 39.45 134 PFAKE 00 58 30.0 +12
RAO LR LR
comp=Z,24μm,19.0s
SSLB Suanglung 39.51 314 *eP* **P** **00 58 18.4 -0.6**
comp=Z,210nm,1.9s
TAU Tasmania Unive 39.67 184 *eP* **P** **00 58 20.1 +0.2**
TAU pmax pmax
comp=Z,198nm,1.6s
TAU MLR MLR
comp=Z,117μm,22.0s
TAU Tasmania Unive 39.67 184 *eP* **P** **00 58 20.1 +0.2**
comp=Z,198nm,1.6s
TAU LR LR
comp=Z,117μm,22.0s
PCJI Pacitan 39.68 261 P **P** **00 58 20.0 -0.4**
comp=Z,293nm,1.4s,comp=Z,8μm
YHNB Yeheng 39.77 316 *eP* **P** **00 58 20.6 -0.5**
comp=Z,278nm,1.2s
YHNB LR LR
comp=Z,23μm,20.0s
TATO Taipei 39.89 316 P **P** **00 58 22.8 +0.8**
SNR=8.8
TATO Taipei 39.89 316 P **P** **00 58 22.8 +0.8**
SNR=8.8
TATO Taipei 39.89 316 *eP* **P** **00 58 21.1 -0.9**
comp=Z,131nm,0.8s
TATO LR LR
comp=Z,36μm,21.0s
WOJI Wonogiri, Jawa 39.90 262 P **P** **00 58 22.9 +0.6**
comp=Z,215nm,1.8s,comp=Z,7μm
UGM Wanagama 40.30 262 *eP* **P** **00 58 25.1 -0.6**
comp=Z,1μm,1.9s
GIRL Giralia 40.32 238 P **P** **00 58 24.6 -1.0**
baz=40,SNR=4.4
INU Inuyama 40.45 343 *eP* **P** **00 58 23.9 -2.5**
comp=Z,287nm,1.7s
JNU Nakatsue 40.72 334 P **P** **00 58 27.1 -1.7**
comp=Z,90nm,0.9s,baz=120,slow=4.3,SNR=31
JNU Nakatsue 40.72 334 *eP* **P** **00 58 27.6 -1.2**
comp=Z,205nm,0.9s
MJAR Matsushiro Arr 41.23 345 P **P** **00 58 29.0 -3.9**
comp=Z,37nm,1.1s,baz=166,slow=8.9,SNR=25
MJAR PcP **PcP** **01 00 35.1 +3.5**
comp=Z,5.6nm,0.9s,baz=161,slow=3.1,SNR=4.1
MJAR LR LR 01 14 25.6
comp=Z,25μm,20.0s,baz=170,slow=35
MAJO Matsushiro 41.23 345 *eP* **P** **00 58 30.4 -2.5**
MAJO pmax pmax
comp=Z,498nm,1.0s
MAJO MLR MLR
comp=Z,175μm,18.0s
MAJO Matsushiro 41.23 345 *eP* **P** **00 58 29.5 -3.4**
comp=Z,65nm,0.9s
MAJO LR LR
comp=Z,31μm,19.0s
MAT Matsushiro 41.23 345 P **P** **00 58 29.0 -3.9**
MAT S **S** **01 04 42.2 -2.7**
MJB9 Matsu-Tunnel 41.23 345 *eP* **P** **00 58 29.5 -3.4**
comp=Z,17nm,0.9s
MORW Morawa 41.82 228 P **P** **00 58 37.1 -0.8**
baz=42,SNR=9.8
QZH Quanzhou 41.91 314⇓*iP* **P** **00 58 39.0 +0.3**
QZH S **S** **01 04 53.0 -2.4**
QZH pmax pmax
comp=Z,250nm,1.0s
QZH pmax pmax
comp=Z,4μm,4.0s
QZH LR LR
comp=Z,15μm,13.3s
QZH LR LR
comp=Z,26μm,14.4s
QZH LR LR
comp=Z,38μm,17.9s
KLBR Kellerberrin 41.98 224 P **P** **00 58 36.8 -2.4**
baz=42,SNR=9.4
BLDU Ballidu 42.16 226 P **P** **00 58 40.5 -0.2**
baz=42,SNR=13
URZ Urewera 42.40 149 P **P** **00 58 43.4 +0.9**
comp=Z,95nm,1.2s,baz=17,slow=4.5,SNR=5.3
URZ Urewera 42.40 149 *eP* **P** **00 58 41.1 -1.4**
comp=Z,224nm,1.5s
CISI Cisompet, Garu 42.95 262 P **P** **00 58 46.3 -1.1**
comp=Z,533nm,1.2s,comp=Z,12μmcomp=Z,16μm
CISI Cisompet, Garu 42.95 262 *eP* **P** **00 58 45.1 -2.3**
comp=Z,1μm,1.5s
NWAO Narrogin (SRO) 43.11 223 LR LR 01 17 08.9
comp=Z,22μm,20.7s,baz=284,slow=37
NWAO Narrogin (SRO) 43.11 223 P **P** **00 58 48.1 -0.3**
baz=43,SNR=4.4
NWAO P **P** **00 58 48.1 -0.3**
baz=43,SNR=4.4
NWAO Narrogin (SRO) 43.11 223 *eP* **P** **00 58 47.9 -0.5**
NWAO pmax pmax
comp=Z,349nm,1.9s
NWAO Narrogin (SRO) 43.11 223 P **P** **00 58 48.6 +0.2**
SNR=5.2
NWAO Narrogin (SRO) 43.11 223 P **P** **00 58 48.6 +0.2**
SNR=5.2
NWAO Narrogin (SRO) 43.11 223 *eP* **P** **00 58 47.9 -0.5**
comp=Z,349nm,1.9s
THZ Tophouse 43.24 156 *eP* **P** **00 58 48.3 -1.0**
comp=Z,213nm,1.5s
FOZ Fox Glacier 43.59 160 *eP* **P** **00 58 51.0 -1.1**
comp=Z,225nm,1.3s
SNZO South Karori 43.63 154 PFAKE 00 59 00.0 +7.6
SNZO LR LR
comp=Z,55μm,21.0s
MIDW Midway 43.76 42 PFAKE 00 59 10.0 +16
MIDW LR LR
comp=Z,12μm,20.0s
HKC Hong Kong Obse 43.81 307⇑P **P** **00 58 57.0 +2.9**
LTZ Lake Taylor 43.84 157 *eP* **P** **00 58 53.5 -0.7**
comp=Z,462nm,1.5s
JOHN Johnston Islan 43.94 62 PFAKE 00 59 10.0 +15
JOHN LR LR
comp=Z,2μm,21.0s
DBJI Dramaga 43.96 264 P P 00 59 02.5 +7.0
RPZ Rata Peaks 44.18 159 P **P** **00 58 58.6 +1.7**
comp=Z,128nm,1.0s,baz=333,slow=5.3,SNR=10
RPZ Rata Peaks 44.18 159 *eP* **P** **00 58 57.3 +0.4**
comp=Z,338nm,1.2s
MCO Taipa Grande 44.21 306 P **P** **00 59 00.0 +2.7**
OXZ Oxford 44.21 158 *eP* **P** **00 58 56.4 -0.6**
comp=Z,186nm,1.3s
SSE Sheshan 44.23 323⇓P **P** **00 58 58.6 +1.3**
SSE pP **sP** **00 59 08.4 -1.4**
SSE S **S** **01 05 27.6 -1.5**
SSE sS **sS** **01 05 45.5 +1.7**
SSE ScS **ScS** **01 08 55.3 +1.3**
SSE pmax pmax
comp=Z,44nm,1.3s
SSE pmax pmax
comp=Z,870nm,4.1s
SSE LR LR
comp=Z,18μm,20.7s
SSE LR LR
comp=Z,25μm,20.7s
SSE LR LR
comp=Z,26μm,18.9s
LBZ Lake Benmore 44.47 160 *eP* **P** **00 58 57.5 -1.6**
comp=Z,224nm,1.4s
WKZ Wanaka 44.47 161 *eP* **P** **00 58 58.4 -0.8**
comp=Z,414nm,1.6s
DCZ Deep Cove 44.49 164 *eP* **P** **00 58 59.1 -0.1**
comp=Z,155nm,1.3s
PPBI Pangkal Pinang 44.58 270 P **P** **00 59 02.1 +1.7**
comp=Z,103nm,1.6s,comp=Z,7μm
MLZ Mavora Lakes 44.68 163 *eP* **P** **00 58 59.5 -1.3**
comp=Z,265nm,1.3s
GZH Guangzhou 44.87 308 P **P** **00 59 03.3 +0.8**
GZH PP **PP** **01 00 50.5 +2.8**
GZH S **S** **01 05 45.6 +7.0**
GZH pmax pmax
comp=Z,4μm,5.4s
WHZ Wether Hill Ro 45.11 163 *eP* **P** **00 59 03.7 -0.5**
comp=Z,86nm,1.2s
XMIS Christmas Isla 45.32 258 *eP* **P** **00 59 05.0 -1.4**
comp=Z,574nm,1.7s
ERM Erimo 45.52 352*d iP* **P** **00 59 06.4 -1.0**
ERM pmax pmax
comp=Z,388nm,3.7s
ERM MLR MLR
comp=Z,19μm,18.0s
ERM Erimo 45.52 352 *eP* **P** **00 59 07.2 -0.2**
comp=Z,162nm,1.5s
ERM LR LR
comp=Z,31μm,22.0s
KSRS Korea Array 45.66 334 P **P** **00 59 07.3 -1.3**
comp=Z,24nm,0.7s,baz=154,slow=8.3,SNR=18
KSRS LR LR 01 19 02.4
comp=Z,10μm,18.2s,baz=158,slow=37
KS15 Wonju Array Si 45.67 334 *eP* **P** **00 59 08.3 -0.4**
KSAR Wonju Array Be 45.67 334 P **P** **00 59 07.4 -1.3**
KSAR Wonju Array Be 45.67 334 P **P** **00 59 07.3 -1.3**
KS01 Wonju Array Si 45.70 334 *eP* **P** **00 59 07.2 -1.7**

QIZ Qiongzhong 45.90 300 P **P** **00 59 11.6 +0.8**
QIZ sP **sP** **00 59 23.9 +0.6**
QIZ PP **PP** **01 00 55.8 -3.0**
QIZ S **S** **01 05 54.3 +0.6**
QIZ pmax pmax
comp=Z,39nm,1.2s
QIZ pmax pmax
comp=Z,2μm,8.1s
QIZ LR LR
comp=Z,9μm,17.9s
QIZ LR LR
comp=Z,18μm,19.3s
KLSI 45.93 267 P **P** **00 59 11.3 +0.1**
comp=Z,72nm,1.7s,comp=Z,4μm
KASI Kota Agung 46.17 265 P **P** **00 59 11.9 -1.2**
comp=Z,229nm,1.2s,comp=Z,5μm
INCN Inchon 46.26 333 P **P** **00 59 12.5 -0.8**
SNR=40
INCN Inchon 46.26 333 P **P** **00 59 12.5 -0.8**
SNR=40
INCN P **P** **00 59 12.5 -0.8**
SNR=40
INCN Inchon 46.26 333 *eP* **P** **00 59 12.9 -0.4**
comp=Z,793nm,1.6s
INCN LR LR
comp=Z,13μm,22.0s
NJ2 Nanjing 46.32 322 *eP* **P** **00 59 15.8 +1.9**
NJ2 pP **pP** **00 59 20.3 -2.6**
NJ2 S **S** **01 06 02.8 +3.4**
NJ2 pmax pmax
comp=Z,170nm,1.5s
NJ2 pmax pmax
comp=Z,4μm,4.6s
NJ2 LR LR
comp=Z,30μm,19.5s
NJ2 LR LR
comp=Z,14μm,10.8s
NJ2 LR LR
comp=Z,35μm,18.4s
TPRI Tanjung Pinang 46.39 274 P **P** **00 59 19.3 +4.5**
LWLI Liwa 46.60 266 P **P** **00 59 17.8 +1.2**
comp=Z,210nm,1.1s
JMBI JAMBI 47.09 271 P P 00 59 26.6 +6.3
LHSI Lahat 47.14 268 P **P** **00 59 20.3 -0.4**
comp=Z,164nm,1.1s,comp=Z,6μm
MYKOM Kota Tinggi 47.15 275⇓P **P** **00 59 20.2 -0.6**
MYKOM Kota Tinggi 47.15 275 *eP* **P** **00 59 21.7 +0.9**
YUK Yuzh-Kuril'sk 47.22 355 *eP* **P** **00 59 20.2 -0.5**
ASAJ Asahikawa 47.66 352 P **P** **00 59 23.5 -0.7**
baz=211,slow=12,SNR=27
ASAJ Asahikawa 47.66 352 *eP* **P** **00 59 23.3 -0.9**
comp=Z,710nm,1.8s
KGM Kluang 47.70 276⇑P **P** **00 59 24.4 -0.6**
KSI Kapahiang 48.07 268 P P 00 59 37.7 +10
KUR Kuril'sk 48.28 357*c iP* P 00 59 23.8 -5.1
KUR *i* S **S** **01 06 26.1 -0.7**
KUR *e*SS SS 01 09 42.1 -15
KUR pmax pmax
comp=Z,2μm,5.1s
WHN Wuhan 48.29 317 P **P** **00 59 30.1 +0.8**
WHN S **S** **01 06 28.9 +1.4**
WHN pmax pmax
comp=Z,5μm,3.9s
WHN LR LR
comp=Z,28μm,16.2s
WHN LR LR
comp=Z,26μm,13.2s
WHN LR LR
comp=Z,67μm,22.3s
UBPT Khong Chiam 48.43 294 P **P** **00 59 31.5 +0.9**
comp=Z,414nm,1.1s,comp=Z,4μm
MSHR Mys Shultsa 48.89 341*ceP* **P** **00 59 33.4 -0.3**
VLA Vladivostok 49.15 342*c iP* **P** **00 59 35.3 -0.3**
VLA pmax pmax
comp=Z,370nm,1.5s
SDSI Sungai Dareh 49.34 272 P **P** **00 59 38.1 +0.4**
comp=Z,117nm,1.5s,comp=Z,47μm
FRIM Kepong 49.52 277⇑P **P** **00 59 38.4 -0.7**
BKNI Bangkinang 49.81 273 P **P** **00 59 42.6 +1.3**
comp=Z,161nm,0.9s,comp=Z,8μm
BKNI Bangkinang 49.81 273 *eP* **P** **00 59 40.0 -1.3**
comp=Z,188nm,1.0s
USRK Ussuriysk Ar. 50.09 342 P **P** **00 59 41.6 -1.2**
comp=Z,30nm,0.8s,baz=168,slow=8.1,SNR=39
USRK LR LR 01 20 19.6
comp=Z,15μm,18.3s,baz=149,slow=36
TIA Tai'an 50.22 324⇓P **P** **00 59 42.6 -1.4**
TIA S **S** **01 06 50.5 -4.0**
TIA pmax pmax
comp=Z,70nm,1.0s
TIA pmax pmax
comp=Z,3μm,4.0s
TIA LR LR
comp=Z,16μm,18.1s
TIA LR LR
comp=Z,10μm,17.1s
TIA LR LR
comp=Z,27μm,19.4s
IPM Ipoh 50.27 278⇑P **P** **00 59 43.5 -1.3**
IPM Ipoh 50.27 278 *eP* **P** **00 59 43.5 -1.3**
comp=Z,245nm,1.8s
PDSI Padang 50.31 271 P **P** **00 59 44.8 -0.3**
comp=Z,34nm,1.4s,comp=Z,15μm
SKNT Sakolnakorn 50.33 295 P **P** **00 59 45.1 0.0**
comp=Z,150nm,1.1s,comp=Z,7μm
YSS Yuzh-Sakhalins 50.43 353⇑*eP* **P** **00 59 45.1 -0.2**
YSS *e* 00 59 56.0
YSS *e* 01 01 36.5
YSS *e*S **S** **01 06 59.0 +2.1**
YSS pmax pmax
comp=Z,80nm,1.1s
YSS pmax pmax
comp=Z,3μm,4.0s
YSS MLR MLR
comp=Z,9μm,16.0s
YSS MLR MLR
comp=N,8μm,20.0s
YSS MLR MLR
comp=E,8μm,17.0s
YSS Yuzh-Sakhalins 50.43 353 *eP* **P** **00 59 44.3 -1.1**
comp=E,105nm,1.1s
YSS LR LR
comp=Z,11μm,22.0s
CHBT CHBT 50.63 289 P **P** **00 59 48.6 +1.2**
comp=Z,532nm,1.1s,comp=Z,6μm
KULM Kulim 50.75 279⇑P **P** **00 59 47.2 -1.2**
KULM Kulim 50.75 279 *eP* **P** **00 59 47.0 -1.4**
comp=Z,69nm,1.1s
KULM LR LR
comp=Z,13μm,19.0s
SKLT Songkhla 51.08 282 P **P** **00 59 51.9 +1.0**
comp=Z,152nm,1.0s,comp=Z,5μm
SNY Shenyang 51.16 334⇓P **P** **00 59 51.6 +0.6**
SNY S **S** **01 07 10.0 +2.8**
SNY pmax pmax
comp=Z,3μm,4.8s
SNY LR LR
comp=Z,13μm,26.5s
SNY LR LR
comp=Z,12μm,27.0s
SNY LR LR
comp=Z,38μm,29.2s
MDJ Mudanjiang 51.22 341 P **P** **00 59 50.3 -1.1**
MDJ pP pP 00 59 59.3 -1.1
MDJ sP sP 01 00 03.3 -0.6
MDJ PcP **PcP** **01 01 06.8 +0.4**
MDJ PP **PP** **01 01 44.9 -3.6**
MDJ S **S** **01 07 04.5 -3.5**
MDJ SS **SS** **01 10 41.8 -2.1**
MDJ pmax pmax
comp=Z,2μm,4.5s
MDJ LR LR
comp=Z,21μm,34.2s
MDJ LR LR
comp=Z,13μm,30.8s
MDJ LR LR
comp=Z,32μm,29.0s
MDJ Mudanjiang 51.22 341 *eP* **P** **00 59 50.2 -1.1**
comp=Z,38nm,0.8s
RAR Rarotonga 51.30 115 P **P** **00 59 55.0 +2.7**
comp=Z,49nm,1.0s,baz=272,slow=2.0,SNR=9.4
RAR Rarotonga 51.30 115 *eP* **P** **00 59 54.1 +1.7**
RAR pmax pmax
comp=Z,184nm,1.4s
RAR MLR MLR
comp=Z,9μm,20.0s

RAR **Rarotonga** 51.30 115 *e*P **P** 00 59 54.1 +1.7
comp=Z,184nm,1.4s
RAR LR LR
comp=Z,9μm,20.0s
NONG **Nongkai** 51.44 296 P **P** 00 59 53.4 -0.1
comp=Z,88nm,0.9s,comp=Z,12μm
ENH **Enshi** 51.57 313 PFAKE 01 00 10.0 +16
ENH LR LR
comp=Z,17μm,19.0s
GYA **Guiyang** 51.80 307⇑ *i*P **P** 00 59 56.8 +0.6
GYA pP sP 01 00 08.4 -0.4
GYA PP **PP** **01 01 57.5 +3.2**
GYA ScP **ScP** **01 05 03.0 -1.1**
GYA S **S** **01 07 20.1 +3.2**
GYA sS sS 01 07 33.8 +2.0
GYA SS **SS** **01 10 51.4 -2.6**
GYA pmax pmax
comp=Z,40nm,1.2s
GYA LR LR
comp=Z,10μm,15.5s
GYA LR LR
comp=Z,14μm,17.2s
GYA LR LR
comp=Z,17μm,19.2s
CN2 **Changchun** 52.02 337 *e*P **P** 00 59 55.6 -1.7
CN2 *e*pP pP 01 00 02.4 -4.0
CN2 *e*sP sP 01 00 07.4 -2.5
CN2 *e*S **S** **01 07 17.3 -1.7**
CN2 pmax pmax
comp=Z,30nm,1.0s
CN2 pmax pmax
comp=Z,3μm,5.0s
CN2 LR LR
comp=Z,14μm,19.0s
CN2 LR LR
comp=Z,10μm,19.0s
CN2 LR LR
comp=Z,14μm,21.0s
PATY **Pattaya** 52.05 289 P **P** **01 00 01.3 +3.2**
comp=Z,15nm,1.0s
TRTT **Trang** 52.10 282 P **P** 00 59 59.5 +1.0
comp=Z,274nm,2.5s,comp=Z,4μm
PSI **Prapat** 52.15 276 *e*P **P** 00 59 57.1 -1.9
PSI pmax pmax
comp=Z,169nm,1.5s
PSI **Prapat** 52.15 276 *e*P **P** 00 59 57.1 -1.9
comp=Z,168nm,1.5s
PBKT **Sadao Pong** 52.95 293 P **P** **01 00 05.0 +0.3**
comp=Z,103nm,1.3s,comp=Z,4μm
SURT **Suratani** 53.18 284 P **P** **01 00 07.9 +1.4**
comp=Z,77nm,2.4s,comp=Z,1μm
HABR **Khabarovsk** 53.25 347 *c e*P **P** **01 00 03.7 -2.6**
HABR *e**PP **pP** **01 00 13.6 -1.8**
HABR *e**SP **sP** **01 00 17.5 -1.4**
HABR *e* 01 01 11.3
HABR *e* 01 02 03.9
HABR *e*PPP PPP 01 03 09.9
HABR *e*S **S** **01 07 32.8 -2.8**
HABR *e* 01 07 49.7
HABR *e* 01 09 50.2
HABR *e*SS **SS** **01 11 13.9 -1.9**
HABR *e*SSS SSS 01 13 05.7
HABR pmax pmax
comp=E,42nm,2.0s
HABR pmax pmax
comp=N,176nm,2.0s
HABR pmax pmax
comp=Z,500nm,2.0s
HABR MLR MLR
comp=Z,11μm,17.0s
GSI **Gunungsitoli** 53.34 274 *e*P **P** **01 00 04.3 -3.4**
comp=Z,1μm,1.8s
BJT **Baijiatuau** 53.43 327 *e*P **P** **01 00 07.5 -0.3**
BJT pmax pmax
comp=Z,60nm,0.8s
BJT MLR MLR
comp=Z,8μm,21.0s
BJT **Baijiatuau** 53.43 327 *e*P **P** **01 00 07.5 -0.3**
comp=Z,60nm,0.8s
BJT LR LR
comp=Z,8μm,21.0s
PKDT **Phuket** 53.44 282 P **P** **01 00 08.9 +0.5**
comp=Z,121nm,1.6s
BJI **Beijing** 53.44 327 P **P** **01 00 08.9 +1.0**
BJI pP **pP** **01 00 17.8 +0.8**
BJI sP **sP** **01 00 21.6 +1.1**
BJI S **S** **01 07 40.3 +1.8**
BJI sS **sS** **01 07 57.8 +4.4**
BJI pmax pmax
comp=Z,150nm,2.1s
BJI pmax pmax
comp=Z,4μm,4.5s
BJI LR LR
comp=Z,20μm,21.3s
BJI LR LR
comp=Z,17μm,19.5s
BJI LR LR
comp=Z,35μm,30.4s
UTTA **Uttaradit** 53.67 295 P **P** **01 00 10.5 +0.5**
comp=Z,24nm,1.0s,comp=Z,203nm
TIY **Taiyuan** 54.02 323 *e*P **P** **01 00 13.3 +1.0**
TIY PP **PP** **01 02 17.5 +3.5**
TIY S **S** **01 07 49.6 +3.0**
TIY pmax pmax
comp=Z,73nm,1.2s
TIY pmax pmax
comp=Z,2μm,5.5s
TIY LR LR
comp=Z,15μm,15.7s
TIY LR LR
comp=Z,7μm,17.2s
TIY LR LR
comp=Z,22μm,19.2s
SRDT **SRDT** 54.05 290 P **P** **01 00 13.6 +0.8**
comp=Z,448nm,1.0s,comp=Z,13μm
XAN **Xi'an** 54.06 317 P **P** **01 00 12.6 0.0**
XAN pP pP 01 00 22.6 +0.9
XAN S **S** **01 07 39.8 -7.5**
XAN pmax pmax
comp=Z,88nm,1.1s
XAN pmax pmax
comp=Z,8μm,4.6s
XAN LR LR
comp=Z,15μm,20.1s
XAN LR LR
comp=Z,32μm,20.1s
XAN LR LR
comp=Z,13μm,21.0s
COCO **West Island** 54.09 257 *i* P **P** **01 00 17.4 +4.3**
COCO **West Island** 54.09 257 PFAKE 01 00 20.0 +6.9
COCO LR LR
comp=Z,11μm,21.0s
TYV **Tymovskoe** 54.29 354 *e*P P 01 00 08.0 -5.9
TYV *e*S **S** **01 07 42.0 -7.7**
TYV pmax pmax
comp=E,62nm,1.0s
TYV pmax pmax
comp=Z,141nm,1.0s
TYV pmax pmax
comp=N,2μm,4.0s
TYV smax smax
comp=N,18μm,20.0s
KMI **Kunming** 54.40 304 P **P** **01 00 17.3 +1.8**
KMI pP sP 01 00 28.3 +0.2
KMI S **S** **01 07 51.9 -0.6**
KMI sS sS 01 08 10.1 +2.6
KMI SS **SS** **01 11 34.8 -0.5**
KMI pmax pmax
comp=N,100nm,1.3s
KMI pmax pmax
comp=N,3μm,5.8s
KMI LR LR
comp=N,5μm,14.6s
KMI LR LR
comp=N,5μm,20.4s
KMI LR LR
comp=N,9μm,18.5s
LAMP **Lampang** 54.75 295 P **P** **01 00 19.2 +1.3**
comp=N,30nm,1.0s,comp=N,249nm
KLR **Kul'dur** 54.75 345 LR LR 01 20 39.8
comp=N,20μm,21.6s,baz=166,slow=33
KLR **Kul'dur** 54.75 345 *c i*P **P** **01 00 15.7 -1.6**
UMPA **Umpang Tak** 54.78 292 P **P** **01 00 19.7 +1.5**
comp=N,21nm,1.2s,comp=N,1μm
CM01 **Chiang Mai Arr** 55.33 295 *e*P **P** **01 00 21.4 -0.7**
CM31 **Chiang Mai Arr** 55.35 295 *e*P **P** **01 00 23.8 +1.6**

CMAR **Chiang Mai Arr** 55.35 295 P **P** **01 00 22.4 +0.1**
comp=N,87nm,1.1s,baz=116,slow=5.2,SNR=78
CMAR LR LR 01 24 25.1
comp=N,5μm,18.4s,baz=104,slow=37
CMAR **Chiang Mai Arr** 55.35 295 *i* P **P** **01 00 22.3 +0.1**
CMAR pmax pmax
comp=Z,93nm,1.1s
CMMT **Chiang Mai** 55.45 295 P **P** **01 00 23.8 +0.8**
comp=Z,99nm,2.1s,comp=Z,4μm
CHTO **Chiang Mai** 55.46 295 P **P** **01 00 23.8 +0.7**
comp=Z,786nm,0.7s,comp=Z,19μm
CHTO **Chiang Mai** 55.46 295 *e*P **P** **01 00 23.2 +0.2**
CHTO pmax pmax
comp=Z,165nm,1.4s
CHTO MLR MLR
comp=Z,9μm,19.0s
CHTO **Chiang Mai** 55.46 295 P **P** **01 00 23.7 +0.7**
SNR=41
CHTO **Chiang Mai** 55.46 295 P **P** **01 00 23.7 +0.7**
SNR=41
CHTO P **P** **01 00 23.7 +0.7**
SNR=41
CHTO **Chiang Mai** 55.46 295 *e*P **P** **01 00 23.2 +0.2**
comp=Z,165nm,1.4s
CHTO LR LR
comp=Z,9μm,19.0s
CMAI **Chiengmai2** 55.71 297 P **P** **01 00 27.2 +2.2**
comp=Z,2μm,0.8s,comp=Z,51μm
KIP **Kipapa** 55.77 61⇓ *e*P **P** **01 00 27.6 +2.4**
KIP pmax pmax
comp=Z,1μm,1.7s
KIP MLR MLR
comp=Z,63μm,16.0s
KIP **Kipapa** 55.77 61 PFAKE 01 00 40.0 +15
KIP LR LR
comp=Z,32μm,21.0s
CD2 **Chengdu** 56.15 311 P **P** **01 00 27.0 -0.8**
CD2 pP pP 01 00 37.3 +0.4
CD2 sP sP 01 00 41.6 +1.2
CD2 PP **PP** **01 02 32.4 -0.8**
CD2 S **S** **01 08 14.8 -0.6**
CD2 sS sS 01 08 32.3 +1.9
CD2 SS **SS** **01 12 03.0 +0.7**
CD2 pmax pmax
comp=Z,270nm,0.7s
CD2 pmax pmax
comp=Z,4μm,4.1s
CD2 LR LR
comp=Z,23μm,19.4s
CD2 LR LR
comp=Z,21μm,20.4s
CD2 LR LR
comp=Z,21μm,20.9s
PEA0 **Petropavlovsk-** 56.40 5 *e*P **P** **01 00 27.9 -1.2**
PEA0B **Petropavlovsk-** 56.40 5 *e*P **P** **01 00 28.5 -0.6**
comp=Z,205nm,1.1s
PETK **Petropavlovsk-** 56.40 5 P **P** **01 00 28.4 -0.7**
comp=Z,34nm,0.6s,baz=166,slow=5.4,SNR=34
PETK LR LR 01 20 12.7
comp=Z,22μm,21.2s,baz=189,slow=31
PET **Petropavlovsk** 56.40 6 *c e*P **P** **01 00 27.5 -1.6**
PET *e*S **S** **01 08 10.3 -7.5**
PET *e*SS **SS** **01 11 55.9 -9.5**
PET pmax pmax
comp=Z,3μm,11.7s
PET pmax pmax
comp=Z,2μm,12.6s
PET pmax pmax
comp=Z,93nm,0.9s
PET smax smax
comp=N,6μm,14.6s
PET **Petropavlovsk** 56.40 6 *e*P **P** **01 00 28.1 -1.0**
comp=N,52nm,0.7s
PET LR LR
comp=Z,14μm,20.0s
HHC **Hu-ho-hao-te** 56.56 325 *e*P **P** **01 00 30.8 +0.1**
HHC S **S** **01 08 24.3 +3.6**
HHC pmax pmax
comp=Z,46nm,1.2s
HHC pmax pmax
comp=Z,2μm,5.6s
HHC LR LR
comp=Z,13μm,17.9s
HHC LR LR
comp=Z,17μm,18.0s
HHC LR LR
comp=Z,20μm,18.5s
NKL **Nikolayevsk** 56.77 353 *i* P **P** **01 00 30.0 -1.7**
NKL *e*S **S** **01 08 20.0 -2.7**
NKL pmax pmax
comp=Z,210nm,1.3s
NKL pmax pmax
comp=N,1μm,4.0s
NKL pmax pmax
comp=Z,3μm,5.0s
NKL smax smax
comp=E,4μm,8.0s
NKL smax smax
comp=N,6μm,10.0s
NKL MLR MLR
comp=N,7μm,20.0s
NKL MLR MLR
comp=Z,8μm,17.0s
BTO **Baotou** 57.30 324 *e*P **P** **01 00 34.5 -1.4**
POHA **Pohakuloa** 57.45 64 P **P** **01 00 38.4 +0.9**
comp=Z,507nm,0.5s
LZH **Lanzhou** 58.66 316 *e*P **P** **01 00 47.1 +1.5**
LZH pP sP 01 00 59.1 +0.8
LZH sP pP 01 01 05.4 +11
LZH PP **PP** **01 02 58.0 +2.4**
LZH S **S** **01 08 52.0 +3.5**
LZH SS **SS** **01 12 41.3 -0.6**
LZH pmax pmax
comp=Z,280nm,1.1s
LZH pmax pmax
comp=Z,3μm,4.0s
LZH LR LR
comp=Z,12μm,16.3s
LZH LR LR
comp=Z,14μm,17.4s
LZH LR LR
comp=Z,26μm,18.2s
HIA **Hailar** 58.75 337 *e*P **P** **01 00 45.3 -0.5**
HIA pmax pmax
comp=Z,107nm,1.0s
HIA **Hailar** 58.75 337 *e*P **P** **01 00 45.3 -0.5**
comp=Z,107nm,1.0s
SMY **Shemya** 59.09 16 *e*P **P** **01 00 48.0 0.0**
SMY pmax pmax
comp=Z,282nm,1.0s
SMY **Shemya** 59.09 16 *e*P **P** **01 00 48.0 0.0**
comp=Z,282nm,1.0s
PBA **Port Blair** 59.53 285 *e*P P 01 00 50.4 -1.4
PBA IAmb IAmb 01 00 53.7
comp=Z,594nm,2.2s
DGPR **DIGLIPUR** 59.64 287 *e*P **P** **01 00 48.7 -3.8**
DGPR IAmb IAmb 01 00 56.9
comp=Z,60nm,1.1s
PPT **Papeete** 60.16 108 P **P** **01 00 59.2 +3.1**
comp=Z,41nm,1.0s,baz=118,slow=1.7,SNR=4.7
PPT LR LR 01 24 51.2
comp=Z,5μm,18.1s,baz=273,slow=34
PPT2 **Papeete2** 60.16 108 *e*P **P** **01 00 59.3 +3.1**
comp=Z,78nm,1.3s
PPT2 *e*S **S** **01 09 09.0 +0.7**
comp=Z,13μm,26.0s
PPT2 *e*LQ LQ 01 16 08.6
comp=Z,41μm,31.8s
PPT2 *e*LR LR 01 18 42.7
comp=Z,44μm,32.8s
PAE **Paea** 60.17 108 *e*P **P** **01 00 59.0 +2.9**
comp=Z,19nm,1.3s
TIAR **Tiarei** 60.38 108 *e*P **P** **01 01 00.8 +3.2**
comp=Z,65nm,1.2s
TVO **Taravao** 60.49 109 *e*P **P** **01 01 01.6 +3.2**
comp=Z,81nm,1.5s
TBI **Tubuai** 61.08 115 *e*P **P** **01 01 05.0 +2.8**
comp=Z,254nm,1.4s
TBI *e*S **S** **01 09 20.8 +1.1**
comp=Z,12μm,30.0s
TBI *e*SS **SS** **01 13 22.8 +2.9**
comp=Z,3μm,32.0s
TBI *e*LQ LQ 01 16 39.2
comp=Z,74μm,30.2s
TBI *e*LR LR 01 19 13.5
comp=Z,28μm,30.8s
MEH **Mehetia** 61.62 109 *e*P **P** **01 01 08.9 +2.8**
comp=Z,38nm,1.2s
VAH **Vaihoa** 61.80 105 *e*P **P** **01 01 09.5 +2.3**
comp=Z,136nm,1.2s
MA2 **Magadan** 62.58 0 P **P** **01 01 10.5 -1.1**
comp=Z,35nm,0.8s,baz=154,slow=6.1,SNR=13
MA2 LR LR 01 24 24.6
comp=Z,26μm,21.8s,baz=189,slow=32
MA2 **Magadan** 62.58 0 *e*P **P** **01 01 10.5 -1.1**
MA2 pmax pmax
comp=Z,486nm,1.3s
MA2 **Magadan** 62.58 0 *e*P **P** **01 01 10.4 -1.1**
comp=Z,486nm,1.3s
GTA **Gaotai** 63.10 318 *e*P **P** **01 01 15.3 -0.4**
GTA pP pP 01 01 25.6 +0.7
GTA sP sP 01 01 29.4 +1.0
GTA S **S** **01 09 44.8 -0.2**
GTA sS sS 01 10 02.3 +2.2
GTA SS **SS** **01 13 55.8 +4.5**
GTA pmax pmax
comp=Z,2μm,6.9s
GTA LR LR
comp=Z,13μm,21.9s
GTA LR LR
comp=Z,9μm,22.8s
GTA LR LR
comp=Z,14μm,22.8s
CIT **Chita** 63.39 335 *e*P P 01 01 00.2 -17
CIT *e* 01 01 48.2
CIT *e*S **S** **01 09 55.1 +7.2**
CIT pmax pmax
comp=Z,547nm,2.9s
CLNS **Chul'man** 63.41 344 *e*P **P** **01 01 16.8 -0.5**
CLNS *e**PP **pP** **01 01 23.3 -3.2**
CLNS *e* 01 01 52.4
CLNS *e*PPP PPP 01 05 04.1
CLNS *e*S **S** **01 09 52.9 +4.9**
CLNS *e* 01 10 58.4
CLNS pmax pmax
comp=Z,11nm,1.2s
CLNS pmax pmax
comp=E,57nm,1.0s
CLNS pmax pmax
comp=N,26nm,1.1s
CLNS pmax pmax
comp=Z,12nm,1.3s
CLNS pmax pmax
comp=E,11nm,1.1s
CLNS pmax pmax
comp=N,13nm,0.9s
CLNS smax smax
comp=N,2μm,10.0s
CLNS smax smax
comp=E,3μm,11.1s
SHL **Shillong** 63.74 300 *e*P **P** **01 01 20.6 +0.4**
SHL IAmb IAmb 01 01 22.1
comp=Z,40nm,0.8s
SHL *ex* x 01 10 00.0
SONM **Songino Array** 63.89 328 P **P** **01 01 20.3 -0.4**
comp=Z,27nm,0.9s,baz=149,slow=6.6,SNR=39
SONM LR LR 01 28 55.5
comp=Z,25μm,20.7s,baz=126,slow=36
SONA1 **Songino Array** 63.89 328 *e*P **P** **01 01 20.0 -0.7**
LSA **Lhasa** 65.65 305 P **P** **01 01 34.1 +1.1**
LSA pP **pP** **01 01 42.0 -0.2**
LSA sP **sP** **01 01 47.8 +2.1**
LSA S S 01 10 06.0 -12
LSA pmax pmax
comp=Z,43nm,1.0s
LSA pmax pmax
comp=Z,2μm,5.6s
LSA LR LR
comp=Z,2μm,26.9s
LSA LR LR
comp=Z,3μm,13.5s
LSA LR LR
comp=Z,6μm,29.6s
SEY **Seymchan** 65.96 1 P **P** **01 01 32.5 -1.1**
comp=Z,13nm,0.8s,baz=201,slow=3.9,SNR=17
SEY LR LR 01 26 11.5
comp=Z,14μm,21.9s,baz=174,slow=32
SEY **Seymchan** 65.96 1 *c e*P **P** **01 01 33.2 -0.5**
YAK **Yakutsk** 67.02 349 P **P** **01 01 39.7 -0.7**
comp=Z,46nm,0.4s,baz=154,slow=3.0,SNR=13
YAK LR LR 01 28 40.7
comp=Z,13μm,21.8s,baz=158,slow=34
YAK **Yakutsk** 67.02 349 *d i*P **P** **01 01 41.4 +1.0**
YAK *e**PP **sP** **01 01 52.2 -1.0**
YAK *e* 01 02 13.4
YAK *e* 01 04 09.2
YAK *e*PPP PPP 01 05 42.3
YAK *e*S **S** **01 10 35.9 +4.0**
YAK *e**SS **sS** **01 10 48.9 +1.7**
YAK pmax pmax
comp=Z,117nm,1.6s
YAK pmax pmax
comp=N,31nm,1.1s
YAK pmax pmax
comp=E,43nm,1.6s
YAK pmax pmax
comp=Z,514nm,3.0s
YAK pmax pmax
comp=E,155nm,3.0s
YAK pmax pmax
comp=N,393nm,2.8s
YAK smax smax
comp=N,3μm,4.9s
YAK smax smax
comp=E,2μm,5.9s
YAK **Yakutsk** 67.02 349 *e*P **P** **01 01 40.1 -0.4**
comp=E,522nm,1.7s
UNV **Unalaska Valle** 67.05 26 *e*P **P** **01 01 41.5 +0.6**
comp=E,199nm,1.6s
ZAK **Zakamensk** 67.07 329 *e*P **P** **01 01 40.3 -0.9**
ZAK pmax pmax
comp=Z,66nm,1.6s
AKUT **Akutan** 67.56 26 *e*P **P** **01 01 44.9 +0.9**
comp=Z,134nm,1.0s
BOD **Bodaibo** 67.58 340 *e*P **P** **01 01 43.1 -1.0**
BOD pmax pmax
comp=Z,99nm,2.2s
IRK **Irkutsk** 67.72 331⇓ *i*P **P** **01 01 45.7 +0.5**
IRK *e*S **S** **01 10 44.2 +3.4**
IRK pmax pmax
comp=Z,425nm,3.0s
BOK **Bokaro** 68.52 297 *e*P **P** **01 01 50.8 0.0**
TAOE **Nuku Hiva Isla** 68.87 98 *e*S **S** **01 10 55.2 -0.9**
comp=Z,2μm,26.4s
TAOE *e*SS **SS** **01 15 21.0 -0.8**
comp=Z,6μm,30.1s
TAOE *e*LQ LQ 01 19 18.8
comp=Z,13μm,31.4s
TAOE *e*LR LR 01 22 44.0
comp=Z,45μm,24.7s
MOY **Mondy** 69.00 329 *e*P **P** **01 01 52.9 -0.4**
MOY pmax pmax
comp=Z,554nm,3.9s
CHLP **Challavanipeta** 69.06 291 *e*P **P** **01 01 54.8 +0.6**
CHLP IAmb IAmb 01 02 01.5
comp=Z,256nm,1.5s
CHLP *e*S **S** **01 10 59.7 +1.8**
GUN **Gumba** 69.55 301 *e*P **P** **01 01 58.0 +0.5**
comp=Z,1μm,1.6s
VIS **Vishakhapatnam** 69.60 290 *e*P **P** **01 01 53.8 -3.7**
VIS IAmb IAmb 01 01 59.6
comp=Z,147nm,1.7s
KKN **Kakani** 70.03 301 *e*P **P** **01 02 00.6 +0.3**
comp=Z,462nm,1.7s
DMN **Daman** 70.13 301 *e*P **P** **01 02 01.3 +0.3**
comp=Z,449nm,1.4s
GKN **Gorkha** 70.63 301 *e*P **P** **01 02 04.2 +0.3**
comp=Z,940nm,1.8s
PALK **Pallekele** 70.67 279 *i* P **P** **01 02 06.5 +2.2**
PALK **Pallekele** 70.67 279 *e*P **P** **01 02 03.0 -1.3**
comp=Z,90nm,1.3s
PVM **Polavaram** 71.12 289 *e*P **P** **01 02 07.3 +0.5**
PVM IAmb IAmb 01 02 13.3
comp=Z,130nm,1.5s
PVM *e*S **S** **01 11 21.9 -0.1**
KOLN **Koldanda** 71.47 301 *e*P **P** **01 02 09.3 +0.3**
comp=Z,177nm,1.3s
MDRS **Chennai** 71.81 285 *e*P **P** **01 02 10.3 -0.7**
MDRS *ex* x 01 41 59.8
BILL **Bilibino** 71.90 6 *c i*P **P** **01 02 11.2 +0.6**
BILL *e* 01 02 29.1
BILL *e* 01 04 53.4
BILL *e*PPP PPP 01 06 37.2

BILL *i* S **S** **01 11 32.6 +3.3**
BILL *e*SS **SS** **01 16 07.2 +0.9**
BILL pmax pmax
comp=Z,55nm,1.1s
BILL MLR MLR
comp=Z,9μm,19.0s
PYUN Piuthan 72.07 301 *e*P **P** **01 02 12.7 0.0**
comp=Z,360nm,1.2s
GAMB Gambell 72.41 16 *e*P **P** **01 02 14.7 +1.0**
comp=Z,157nm,1.5s
SKHT Srikalahasti 72.42 285 *e*P **P** **01 02 13.5 -1.2**
SKHT IAmb IAmb 01 02 20.9
comp=Z,240nm,1.9s
SKHT *e*S **S** **01 11 37.7 +0.6**
SKHT IVMs_BB IVMs_BB 01 30 28.5
comp=Z,2μm,23.3s
ADKI Addanki 72.47 288 *e*P **P** **01 02 13.4 -1.6**
WMQ Urumqi 73.18 318 P **P** **01 02 19.8 +1.0**
WMQ pP PcP 01 02 34.8 -0.5
WMQ S **S** **01 11 46.5 +1.4**
WMQ SS **SS** **01 16 22.1 -4.9**
WMQ pmax pmax
comp=Z,53nm,1.8s
WMQ pmax pmax
comp=Z,350nm,3.9s
WMQ LR LR
comp=Z,9μm,20.8s
WMQ LR LR
comp=Z,8μm,19.0s
WMQ LR LR
comp=Z,13μm,27.6s
NJS Nagarjunasagar 73.20 288 *e*P **P** **01 02 19.3 0.0**
NJS IAmb IAmb 01 02 25.2
comp=Z,213nm,1.7s
NJS *e*S **S** **01 11 44.6 -1.4**
NJS IVMs_BB IVMs_BB 01 37 33.6
comp=Z,2μm,24.8s
RCLA Racherla 73.38 287 *e*P **P** **01 02 20.0 -0.4**
RCLA IAmb IAmb 01 02 25.9
comp=Z,190nm,2.1s
RCLA *e*S **S** **01 11 46.8 -1.2**
RCLA IVMs_BB IVMs_BB 01 37 23.5
comp=Z,3μm,25.2s
SRLM Srisailam 73.53 288 *e*P **P** **01 02 20.6 -0.7**
SRLM IAmb IAmb 01 02 27.1
comp=Z,322nm,2.0s
SRLM *e*S **SKiKP** **01 11 50.9 +0.7**
SRLM IVMs_BB IVMs_BB 01 37 35.9
comp=Z,2μm,25.8s
RPR Rampur 73.57 291 *e*P **P** **01 02 20.6 -0.9**
RPR IAmb IAmb 01 02 27.5
comp=Z,290nm,1.8s
RPR *e*S **SKiKP** **01 11 50.2 +0.1**
HYB Hyderabad 74.04 289⇑ *i*P **P** **01 02 24.0 -0.3**
HYB *e*S **S** **01 11 54.0 -1.6**
HYB Hyderabad 74.04 289 *e*P **P** **01 02 23.7 -0.6**
HYB IAmb IAmb 01 02 27.3
comp=Z,62nm,1.4s
HYBB Hyderabad (bro 74.04 289 *e*P **P** **01 02 23.1 -1.2**
HYBB IAmb IAmb 01 02 30.8
comp=Z,103nm,1.4s
HYBB *e*S **S** **01 11 55.2 -0.4**
RKT Rikitea 74.29 113 *e*S **S** **01 11 58.4 +0.3**
comp=Z,6μm,29.5s
RKT *e*SS **SS** **01 16 45.3 +0.8**
comp=Z,4μm,29.8s
RKT *e*LQ LQ 01 22 09.0
comp=Z,27μm,34.8s
RKT *e*LR LR 01 25 22.5
comp=Z,23μm,27.5s
SRSP Sriramsagar 74.47 291 *e*P **P** **01 02 26.2 -0.6**
SRSP IAmb IAmb 01 02 31.2
comp=Z,51nm,0.9s
SRSP *e*S **S** **01 12 00.6 +0.3**
SRSP IVMs_BB IVMs_BB 01 39 06.6
comp=Z,2μm,24.7s
TRD Trivandrum 74.48 280 *e*P **P** **01 02 26.8 -0.1**
VNDA Vanda 74.51 178 P **P** **01 02 25.4 -0.5**
comp=Z,21nm,1.1s,baz=337,slow=6.8,SNR=47
VNDA LR LR 01 33 56.4
comp=Z,10μm,18.1s,baz=10.0,slow=35
VNDA Vanda 74.51 178 *e*P **P** **01 02 25.1 -0.8**
VNDA Vanda 74.51 178 *e*P **P** **01 02 25.1 -0.8**
MIR Mirnyy 74.69 201⇓ *i*P **P** **01 02 28.0 +0.9**
MIR *i*S **S** **01 12 02.0 +1.0**
MIR pmax pmax
comp=Z,16nm,2.0s
MIR pmax pmax
comp=Z,2μm,8.0s
MIR smax smax
comp=N,6μm,10.0s
URV Uravakonda 74.93 286 *e*P **P** **01 02 27.7 -1.8**
URV IAmb IAmb 01 02 35.5
comp=Z,137nm,1.8s
URV *e*S **S** **01 12 04.9 -0.7**
URV IVMs_BB IVMs_BB 01 31 52.5
comp=Z,2μm,31.1s
OHAK Old Harbor 75.07 28 *e*P **P** **01 02 30.4 +1.1**
SBA Scott Base 75.09 177 *e*P **P** **01 02 29.0 -0.2**
SBA MLR MLR
comp=Z,8μm,22.0s
SBA Scott Base 75.09 177 *e*P **P** **01 02 29.0 -0.2**
SBA LR LR
comp=Z,8μm,22.0s
KDAK Kodiak Island 75.68 28*ce*P **P** **01 02 37.2 +4.3**
KDAK Kodiak Island 75.68 28 *e*P **P** **01 02 33.1 +0.2**
comp=Z,198nm,1.3s
KDAK LR LR
comp=Z,6μm,21.0s
KLRI Killari 75.98 289 *e*P **P** **01 02 35.3 -0.2**
KLRI IAmb IAmb 01 02 41.0
comp=Z,244nm,1.9s
KLRI *e*S **S** **01 12 17.5 +0.3**
BHPL Bhopal 76.01 295 *e*P **P** **01 02 34.6 -1.0**
BHPL IAmb IAmb 01 02 38.7
comp=Z,231nm,1.9s
TIXI Tiksi 76.05 353 LR LR 01 33 04.0
comp=Z,7μm,21.4s,baz=164,slow=33
TIXI Tiksi 76.05 353 *e*P **P** **01 02 34.9 +0.2**
TIXI pmax pmax
comp=Z,31nm,1.0s
TIXI Tiksi 76.05 353 *e*P **P** **01 02 35.2 +0.5**
comp=Z,38nm,1.0s
SVW2 Sparrevohn 76.17 24 *e*P **P** **01 02 35.8 +0.1**
ZSN Zaisan 76.34 320 *i*P **P** **01 02 35.8 -1.1**
comp=Z,197nm,1.3s
ZSN *e*S **S** **01 12 19.3 -0.7**
ZSN LRM MLR 01 39 41.2
comp=Z,2μm,14.3s
DDI Dehra Dun 76.76 302 *e*P **P** **01 02 39.9 +0.1**
TT01 Tatalina 77.02 22 *e*P **P** **01 02 40.4 -0.1**
TTA Tatalina 77.04 22 *e*P **P** **01 02 40.5 -0.2**
TTA Tatalina 77.04 22 *e*P **P** **01 02 40.5 -0.2**
NDI New Delhi 77.16 300 *e*P P 01 02 35.5 -6.5
NDI *e*S **S** **01 12 24.0 -5.7**
SMLA Simla 77.67 303 *e*P **P** **01 02 43.9 -0.8**
SMLA IAmb IAmb 01 02 52.1
comp=Z,654nm,2.2s
MK01 Makanchi Array 77.77 319 *e*P **P** **01 02 44.0 -1.0**
MK31 Makanchi Array 77.78 319 *e*P **P** **01 02 45.9 +0.8**
MK31 pmax pmax
comp=Z,56nm,1.0s
MK31 Makanchi Array 77.78 319 *e*P **P** **01 02 46.6 +1.5**
MKAR Makanchi Array 77.78 319 P **P** **01 02 44.4 -0.6**
comp=Z,40nm,0.9s,baz=96,slow=6.8,SNR=30
MKAR LR LR 01 36 01.9
comp=Z,10μm,21.8s,baz=104,slow=35
MKAR Makanchi Array 77.78 319*ce*P **P** **01 02 46.5 +1.5**
MKAR pmax pmax
comp=Z,40nm,0.9s
MKAR Makanchi Array 77.78 319 *e*P **P** **01 02 46.6 +1.5**
MAKZ Makanchi 77.99 319 *i*P **P** **01 02 46.1 -0.1**
MAKZ pmax pmax
comp=Z,62nm,0.9s
MAKZ Makanchi 77.99 319 *e*P **P** **01 02 46.2 -0.1**
DGAR Diego Garcia 78.00 263 *e*P **P** **01 02 49.1 +2.2**
DGAR Diego Garcia 78.00 263 PFAKE 01 03 00.0 +13
DGAR LR LR
comp=Z,5μm,20.0s
SEW Seward 78.24 26 *e*P **P** **01 02 47.7 +0.5**
SUA Susitna One 78.35 25 *e*P **P** **01 02 46.9 -1.1**
SHLS Shalkode 78.36 315 *i*P **P** **01 02 45.8 -2.9**
comp=Z,140nm,1.0s
SHLS *e*S **S** **01 12 37.8 -4.8**
PPLA Purkeypile 78.49 23 *e*P **P** **01 02 48.9 +0.1**

RC01 Rabbit Creek A 78.59 25 *e*P **P** **01 02 51.0 +1.8**
POO Poona 78.63 290 *e*P **P** **01 02 48.9 -1.5**
POO IAmb IAmb 01 02 56.8
comp=Z,529nm,2.4s
PDGK Podgornoye 78.69 315 *i*P **P** **01 02 49.9 -0.2**
PDGK pmax pmax
comp=Z,58nm,0.9s
ZALV Zalesovo Beam 78.69 327 P **P** **01 02 48.0 -1.9**
comp=Z,25nm,0.8s,baz=110,slow=5.1,SNR=40
ZALV PP **PP** **01 05 44.0 -4.2**
comp=Z,13nm,1.2s,baz=80,slow=5.8,SNR=2.8
ZALV LR LR 01 36 51.9
comp=Z,13μm,21.3s,baz=113,slow=35
CAST Castle Rocks 78.80 23 *e*P **P** **01 02 49.3 -1.0**
PTCN Pitcairn Islan 78.83 115 PFAKE 01 03 00.0 +8.7
PTCN LR LR
comp=Z,7μm,19.0s
PMR Palmer 79.08 25 *e*P **P** **01 02 50.0 -1.9**
PMR Palmer 79.08 25 *e*P **P** **01 02 50.0 -1.9**
THN Thein Dam 79.14 304 *e*P **P** **01 02 51.6 -1.2**
KPKS Kokpek 79.29 315 *i*P **P** **01 02 50.6 -3.0**
comp=Z,192nm,1.1s
KPKS *e*S **S** **01 12 47.8 -4.4**
KPKS LRM MLR 01 39 56.5
comp=Z,2μm,15.0s
KTH Kantishna Hill 79.32 23 *e*P **P** **01 02 52.0 -1.3**
TRF Thorofare Moun 79.52 23 *e*P **P** **01 02 53.3 -1.1**
SML Sawmill 79.52 25 *e*P **P** **01 02 54.2 -0.2**
SML pmax pmax
comp=Z,41nm,1.0s
SML Sawmill 79.52 25 *e*P **P** **01 02 54.2 -0.2**
comp=Z,41nm,1.0s
BPAW Bear Paw Mtn. 79.57 22 *e*P **P** **01 02 53.3 -1.3**
BOM Bombay 79.65 290 *e*P P 01 03 02.5 +6.6
BOM AMb AMB 01 03 12.3
comp=Z,242nm,6.5s
BOM *e*S **S** **01 13 04.9 +8.3**
FID Port Fidalgo 79.85 26 *e*P **P** **01 02 57.1 +1.0**
NVS Novosibirsk 79.88 327 *e*P **P** **01 02 55.7 -0.6**
NVS *e*S **S** **01 12 55.1 -2.6**
NVS pmax pmax
comp=N,54nm,1.7s
NVS pmax pmax
comp=E,86nm,1.7s
NVS pmax pmax
comp=Z,166nm,1.7s
NVS smax smax
comp=E,92nm,2.5s
RND Reindeer 80.06 23 *e*P **P** **01 02 56.0 -1.3**
RND Reindeer 80.06 23 *e*P **P** **01 02 56.0 -1.3**
EYAK Cordova Ski Ar 80.09 27 *e*P **P** **01 02 59.7 +2.4**
MLY Manley 80.14 22 *e*P **P** **01 02 56.6 -1.0**
SEM Semipalatinsk 80.17 322 *i*P **P** **01 02 55.4 -2.7**
comp=E,77nm,0.9s
SEM *e*S **S** **01 12 56.8 -4.2**
SEM LRM MLR 01 40 21.3
comp=E,3μm,16.8s
MCK McKinley 80.18 23 *e*P **P** **01 02 56.5 -1.4**
MCK McKinley 80.18 23 *e*P **P** **01 02 56.5 -1.4**
DIV Divide 80.32 26 *e*P **P** **01 02 58.5 -0.3**
KSH Kashi 80.34 311 *e*P **P** **01 03 02.0 +2.6**
KSH *e*pP sP 01 03 12.6 +0.3
KSH *e*sP pP 01 03 16.3 +7.4
KSH *e*PP **PP** **01 06 07.3 +4.7**
KSH S **S** **01 13 04.8 +1.2**
KSH SKS **SKSac** **01 13 12.8 -2.8**
KSH SS **SS** **01 18 20.6 +5.0**
KSH pmax pmax
comp=E,3μm,4.8s
KSH LR LR
comp=E,3μm,14.3s
KSH LR LR
comp=E,5μm,14.0s
KSH LR LR
comp=E,9μm,22.2s
MDOK Medeo 80.37 315 *i*P **P** **01 02 56.6 -2.9**
comp=E,140nm,0.9s
MDOK *e*S **S** **01 12 58.8 -5.0**
MDOK LRM MLR 01 41 22.9
comp=E,2μm,20.4s
KLU Klutina 80.41 26 *e*P **P** **01 02 59.4 +0.2**
AAA Alma-Ata 80.47 315 *e*P **P** **01 03 00.2 +0.3**
AAA pmax pmax
comp=Z,3μm,7.0s
DHY Denali Highway 80.50 24 *e*P **P** **01 02 59.5 -0.3**
BMRM Bremner River 80.78 27 *e*P **P** **01 03 02.9 +1.8**
WRH Wood River Hil 80.86 23 *e*P **P** **01 02 59.9 -1.5**
MDM Murphy Dome 81.03 22 *e*P **P** **01 03 01.2 -1.2**
COLA College 81.14 22 *e*P **P** **01 03 01.8 -1.1**
COLA pmax pmax
comp=Z,117nm,1.0s
COLA MLR MLR
comp=Z,13μm,20.0s
COLA College 81.14 22 *e*P **P** **01 03 01.8 -1.1**
comp=Z,117nm,1.0s
COLA LR LR
comp=Z,13μm,20.0s
PAX Paxson 81.23 24 *e*P **P** **01 03 03.2 -0.4**
PAX Paxson 81.23 24 *e*P **P** **01 03 03.2 -0.4**
KURK Kurchatov 81.25 322 P **P** **01 03 02.6 -1.2**
KURK Kurchatov 81.25 322 P **P** **01 03 02.5 -1.2**
KURBB Kurchatov Arra 81.28 322 P **P** **01 03 02.5 -1.4**
comp=Z,34nm,1.0s,baz=109,slow=4.4,SNR=50
BMNS Besmoynak 81.34 314 *i*P **P** **01 03 01.8 -2.9**
comp=Z,168nm,1.1s
BMNS *e*S **S** **01 13 09.0 -4.9**
BMNS LRM MLR 01 40 49.4
comp=Z,3μm,21.2s
CRQM Cirque 81.35 27 *e*P **P** **01 03 06.9 +2.5**
TKM2 Tokmak 2 81.35 314 *i*P **P** **01 03 04.4 -0.4**
TKM2 pmax pmax
comp=Z,24nm,1.0s
PAF Port-aux-Franc 81.42 221 PFAKE 01 03 20.0 +15
PAF LR LR
comp=Z,20μm,19.0s
COLD Coldfoot 81.43 20 *e*P **P** **01 03 04.8 +0.4**
ILAR Eielson Array 81.46 23 P **P** **01 03 02.5 -2.1**
comp=Z,38nm,0.9s,baz=253,slow=5.2,SNR=57
ILAR PKKP **PKKPdf** **01 21 23.8 -7.7**
comp=Z,0.4nm,0.9s,baz=203,slow=1.6,SNR=4.0
ILAR PKKPbc **PKKPbc** **01 21 39.7 -1.9**
comp=Z,0.3nm,0.8s,baz=31,slow=2.1,SNR=3.7
ILAR LR LR 01 35 16.4
comp=Z,11μm,20.9s,baz=256,slow=33
ILB Eielson Array 81.46 23 *e*P **P** **01 03 02.5 -2.1**
FRU Bishkek 82.04 314 *e*P **P** **01 03 10.0 +1.8**
FRU *e* 01 06 20.0
FRU *e*S **S** **01 13 25.0 +4.1**
FRU pmax pmax
comp=Z,220nm,2.0s
AAK Ala-Archa 82.09 314 P **P** **01 03 08.7 +0.1**
comp=Z,6.6nm,0.7s,baz=97,slow=8.7,SNR=12
AAK Ala-Archa 82.09 314 *i*P **P** **01 03 07.8 -0.8**
AAK pmax pmax
comp=Z,96nm,1.6s
AAK MLR MLR
comp=Z,19μm,21.0s
AAK Ala-Archa SNR=26 **82.09 314** P **P** **01 03 11.0 +2.4**
AAK Ala-Archa SNR=26 **82.09 314** P **P** **01 03 11.0 +2.4**
AAK P **P** **01 03 11.0 +2.4**
SNR=26
AAK Ala-Archa 82.09 314 *e*P **P** **01 03 10.0 +1.4**
AAK LR LR
comp=Z,8μm,21.0s
DOT Dot Lake 82.09 24 *e*P **P** **01 03 07.2 -0.8**
FYU Fort Yukon 82.86 21 *e*P **P** **01 03 13.8 +1.9**
BTLS Baital 82.89 316 *i*P **P** **01 03 10.4 -2.2**
comp=Z,54nm,1.3s
BTLS *i*S **S** **01 13 25.7 -3.8**
BTLS LRM MLR 01 40 10.3
comp=Z,2μm,20.8s
BHJ Bhuj 83.09 294 *e*P **P** **01 03 14.4 +0.4**
BHJ IAmb IAmb 01 03 16.0
comp=Z,114nm,1.3s
NRIK Noril'sk 83.80 341 P **P** **01 03 15.7 -1.0**
comp=Z,118nm,1.0s,baz=115,slow=5.7,SNR=25
NRIK LR LR 01 40 36.9
comp=Z,10μm,20.2s,baz=122,slow=36
DAWY Dawson 84.17 25 *e*P **P** **01 03 19.0 +0.2**
comp=Z,343nm,2.0s
H02N1 VAN INLET T-PH 84.62 36 T T 02 36 30.3
SNR=142
SKAG Skagway 84.62 30 *e*P **P** **01 03 22.6 +1.6**

comp=Z,233nm,1.8s
H02S1 DAWSON INLET T 84.65 36 T T 02 36 32.3
BRZS Berezniki 84.78 321 *i*P **P** **01 03 19.5 -2.6**
BRZS *e*S S 01 13 39.2 -9.1
BRZS LRM MLR 01 42 24.1
comp=Z,163nm,16.7s
CRAG Craig 84.78 34 *e*P **P** **01 03 23.2 +1.3**
comp=Z,165nm,1.5s
KBL Kabul 84.97 305 *e*P **P** **01 03 23.6 -0.1**
KBL Kabul 84.97 305 *e*P **P** **01 03 23.6 -0.1**
KK31 Karatay Array 85.05 314*ce*P **P** **01 03 23.3 -0.4**
KK31 pmax pmax
comp=Z,110nm,1.0s
KKAR Karatay Array 85.05 314 *e*P **P** **01 03 23.6 -0.1**
KKAR Karatay Array 85.05 314 *e*P **P** **01 03 23.6 -0.1**
IUG Iuzhnay 85.25 313 *i*P **P** **01 03 21.9 -2.9**
comp=Z,305nm,1.0s
IUG *e*S S 01 13 42.3 -11
IUG LRM MLR 01 42 41.1
comp=Z,3μm,21.5s
WRAK Wrangell Islan 85.42 33 *e*P **P** **01 03 27.3 +2.2**
comp=Z,276nm,1.6s
WRAK LR LR
comp=Z,11μm,21.0s
BRLS Borolday 85.60 313 *i*P **P** **01 03 23.8 -2.7**
BRLS *e*S S 01 13 44.6 -12
BRLS LRM MLR 01 42 51.0
comp=Z,408nm,19.0s
MAW Mawson 86.26 203 P **P** **01 03 28.2 -0.9**
comp=Z,9.1nm,0.8s,baz=100,slow=7.8,SNR=6.5
MAW LR LR 01 39 02.9
comp=Z,21μm,21.9s,baz=87,slow=34
MAW Mawson 86.26 203 P **P** **01 03 30.1 +1.0**
baz=86,SNR=20
MAW Mawson 86.26 203 *e*P **P** **01 03 30.5 +1.4**
MAW Mawson 86.26 203 *e*P **P** **01 03 30.5 +1.4**
BVA0 Borovoye Array 86.74 323 *i*P **P** **01 03 30.2 -1.6**
BVA0 pmax pmax
comp=Z,69nm,0.9s
BVAR Borovoye Array 86.74 323 P **P** **01 03 30.3 -1.5**
comp=Z,28nm,0.7s,baz=100,slow=6.2,SNR=76
BVAR PP **PP** **01 06 53.0 -1.4**
comp=Z,3.0nm,0.8s,baz=81,slow=8.9,SNR=4.0
QSPA South Pole Qui 86.76 180 *e*P **P** **01 03 30.7 -1.1**
comp=Z,2μm,1.9s
BRVK Borovoye 86.81 323*ce*P **P** **01 03 30.8 -1.3**
BRVK pmax pmax
comp=Z,14nm,0.8s
BRVK MLR MLR
comp=Z,42μm,19.0s
BRVK Borovoye 86.81 323 *e*P **P** **01 03 30.8 -1.3**
BRVK LR LR
comp=Z,11μm,19.0s
DLBC Dease Lake 87.06 31 *e*P **P** **01 03 33.9 +0.5**
comp=Z,89nm,1.2s
INK Inuvik 87.70 21 P **P** **01 03 34.5 -1.6**
comp=Z,16nm,1.0s,baz=251,slow=2.0,SNR=6.4
INK LR LR 01 38 36.9
comp=Z,6μm,21.8s,baz=242,slow=33
INK Inuvik 87.70 21 *e*P **P** **01 03 35.3 -0.7**
comp=Z,74nm,1.1s
L02D Cave Junction, baz=265 **88.89 48** P **P** **01 03 43.3 +1.0**
NLWA Neilton Lookou 89.19 43 *e*P **P** **01 03 44.1 +0.4**
comp=Z,51nm,1.3s
NLWA LR LR
comp=Z,7μm,19.0s
I03D Drain, OR baz=265 **89.21 46** P **P** **01 03 44.2 +0.5**
M02C Callahan baz=265,SNR=8.3 **89.38 49** P **P** **01 03 45.2 +0.5**
HUMO Hull Mountain 89.40 47 *e*P **P** **01 03 46.0 +1.2**
G03D McMinnville, O baz=265 **89.41 45** P **P** **01 03 45.4 +0.7**
N02D Trinity Center baz=265,SNR=8.8 **89.46 49** P **P** **01 03 45.5 +0.4**
WDC Whiskeytown Da 89.55 50 *e*P **P** **01 03 46.6 +1.2**
WDC Whiskeytown Da 89.55 50 *e*P **P** **01 03 46.6 +1.2**
PGC Sidney comp=Z,68nm,1.5s **89.59 41** *e*P **P** **01 03 46.7 +1.3**
F04D Rainier, OR baz=265 **89.66 44** P **P** **01 03 46.5 +0.6**
LHEM Herd Peak 89.87 48 P **P** **01 03 49.1 +1.8**
I04A Tendick Farm, baz=266 **89.90 46** P **P** **01 03 47.5 +0.5**
J04D Umpqua Nationa baz=266 **90.07 47** P **P** **01 03 48.0 -0.1**
A04D Lummi Island baz=265 **90.09 41** P **P** **01 03 48.3 +0.6**
O03D Paynes Creek baz=266,SNR=18 **90.09 50** P **P** **01 03 48.2 +0.1**
FL2 Flat Top 2 90.13 44 P **P** **01 03 50.7 +2.5**
M04C Macdoel baz=266,SNR=6.9 **90.17 48** P **P** **01 03 48.0 -0.4**
TDL Tradedollar La 90.23 44 P **P** **01 03 51.1 +2.5**
K04D Chiloquin, OR baz=266 **90.29 48** P **P** **01 03 49.1 +0.1**
B05A Bryant baz=266 **90.46 42** P **P** **01 03 50.0 +0.5**
HTW Haystack Looko 90.64 42 P P 01 03 55.6 +5.1
I05D Terrebonne, OR baz=266 **90.71 46** P **P** **01 03 50.4 -0.5**
J05D Fort Rock, OR baz=266 **90.72 47** P **P** **01 03 50.9 -0.1**
G05D Wamic, OR baz=266 **90.78 45** P **P** **01 03 51.3 +0.1**
K05A Summer Lake 90.93 47 *e*P **P** **01 03 53.2 +1.1**
CROR Criterion Ridg 91.00 45 P **P** **01 03 54.5 +2.3**
PAGB Antelope Grade 91.03 54 *e*P **P** **01 03 54.6 +2.1**
CMB Columbia Colle 91.05 52 *e*P **P** **01 03 53.4 +0.9**
CMB pmax pmax
comp=Z,207nm,1.6s
CMB Columbia Colle 91.05 52 *e*P **P** **01 03 53.4 +0.9**
comp=Z,207nm,1.6s
SMMC Simmler baz=267 **91.21 55** P **P** **01 03 52.9 -0.5**
C06D Leavenworth baz=267 **91.24 42** P **P** **01 03 53.3 +0.1**
MOD Modoc Plateau 91.32 48 *e*P **P** **01 03 54.7 +0.8**
PKM Mcpherson Peak 91.34 55 P **P** **01 03 53.8 -0.3**
baz=267
SBC Santa Barbara baz=267 **91.40 56** P **P** **01 03 53.6 -0.6**
SCZ2 Santa Cruz Isl baz=267 **91.44 56** P **P** **01 03 54.7 +0.2**
SNCC San Nicolas Is baz=267 **91.50 57** P **P** **01 03 54.7 0.0**
PNTR Pine Nut 91.72 51 *e*P **P** **01 03 57.9 +2.1**
RCTC Rector, Farmer baz=268 **91.87 54** P **P** **01 03 54.6 -1.8**
PAHR Pah Rah Range 91.91 51 *e*P **P** **01 03 57.0 +0.4**
BLG Laguna Peak, P baz=268 **91.92 56** P **P** **01 03 55.6 -1.0**
VES Vestal, Richgr baz=268 **91.98 54** P **P** **01 03 55.5 -1.3**
YERR Yerington 91.99 51 *e*P **P** **01 03 59.6 +2.5**
HAWA Hanford comp=Z,12nm,0.8s **92.09 44** *e*P **P** **01 03 58.7 +1.6**
OSI Osito Audit: C baz=268 **92.22 56** P **P** **01 03 57.6 -0.5**
MLAC Mammoth, Mammo baz=268 **92.25 53** P **P** **01 03 58.0 -0.4**
TVH3 East Aurora ar 92.29 52 *e*P **P** **01 04 00.5 +1.9**
B08A Colville Reser 92.30 42 *e*P **P** **01 03 58.1 0.0**
SCI2 San Clemente I baz=268 **92.30 57** P **P** **01 03 57.8 -0.6**
CIS Catalina Islan baz=268 **92.43 57** P **P** **01 04 00.2 +1.2**
G08A Pilot Rock 92.45 45 *e*P **P** **01 04 00.8 +1.8**
ISA Isabella, Lake baz=268 **92.47 55** P **P** **01 03 59.4 +0.2**
FMP Fort Macarthur baz=268 **92.54 57** P **P** **01 04 00.2 +0.8**
WVOR Wild Horse Val 92.58 48 *e*P **P** **01 04 01.6 +1.9**
WVOR Wild Horse Val 92.58 48 *e*P **P** **01 04 01.6 +1.9**
PASC Pasadena Art C comp=Z,18nm,1.0s **92.65 56** *e*P **P** **01 04 00.7 +0.7**
SVE Sverdlovsk 92.71 327 *e*P **P** **01 03 58.3 -1.4**
SVE *e*S **SKSac** **01 14 29.4 -1.9**
SVE *e*SS **SS** **01 21 15.3 -0.2**
SVE pmax pmax
comp=Z,49nm,2.3s
TIN Tinemaha, Big baz=268 **92.71 53** P **P** **01 04 01.0 +0.6**
MWC Mount Wilson 92.76 56 *e*P **P** **01 04 03.1 +2.4**
MWC Mount Wilson 92.76 56 *e*P **P** **01 04 03.1 +2.4**

CWC	**Cottonwood Cre**	**92.81**	**54**	P		**P**	**01 04 01.3**	**+0.3**
	baz=268								
EDW2	**Edwards Air Fo**	**92.83**	**55**	P		**P**	**01 04 01.6**	**+0.7**
	baz=268,SNR=8.4								
AB31	**Akbulak array**	**92.92**	**319**	*c*	*e*P	**P**	**01 03 59.0**	**-1.9**
AB31					pmax	pmax			
	comp=Z,14nm,0.8s								
ABKAR	**Akbulak array**	**92.92**	**319**		*e*P	**P**	**01 03 58.8**	**-2.1**
	comp=Z,13nm,0.8s								
BFSC	**Mount Baldy Ra**	**93.09**	**56**	P		**P**	**01 04 02.0**	**-0.2**
	baz=268								
LRMC	**Laurel Mtn Rad**	**93.11**	**55**	P		**P**	**01 04 02.1**	**-0.1**
	baz=268								
DAC	**Darwin (Calif)**	**93.20**	**54**		*e*P	**P**	**01 04 00.2**	**-2.6**
DAC					pmax	pmax			
	comp=Z,71nm,1.4s								
DAC	**Darwin (Calif)**	**93.20**	**54**		*e*P	**P**	**01 04 00.2**	**-2.6**
	comp=Z,71nm,1.4s								
MPMC	**Manual Prospec**	**93.28**	**54**	P		**P**	**01 04 02.9**	**-0.3**
	baz=268,SNR=19								
GRAC	**Grapevine Rang**	**93.40**	**53**	P		**P**	**01 04 03.9**	**+0.5**
	baz=269								
MURC	**Murrieta**	**93.46**	**57**	P		**P**	**01 04 04.2**	**+0.4**
	baz=269								
109C	**Camp Elliot, M**	**93.51**	**57**	P		**P**	**01 04 04.4**	**+0.4**
	baz=269								
RER	**Riviere de l'E**	**93.53**	**249**		PFAKE		01 04 20.0	+16
RER					LR	LR			
	comp=Z,15µm,22.0s								
BMN	**Battle Mountai**	**93.59**	**50**		*e*P	**P**	**01 04 06.1**	**+1.7**
BMN					pmax	pmax			
	comp=Z,50nm,1.5s								
BMN	**Battle Mountai**	**93.59**	**50**		*e*P	**P**	**01 04 06.1**	**+1.7**
	comp=Z,50nm,1.5s								
BMO	**Blue Mountains**	**93.61**	**45**		*e*P	**P**	**01 04 04.1**	**-0.2**
BMO					MLR	MLR			
	comp=Z,13µm,22.0s								
BMO	**Blue Mountains**	**93.61**	**45**		*e*P	**P**	**01 04 04.1**	**-0.2**
BMO					LR	LR			
	comp=Z,13µm,22.0s								
RRX	**Edison Barstow**	**93.65**	**55**	P		**P**	**01 04 04.9**	**+0.2**
	baz=269								
BIDO	**Bidbid**	**93.67**	**293**	P		**P**	**01 04 06.3**	**+1.4**
	SNR=12								
BIDO	**Bidbid**	**93.67**	**293**	P		**P**	**01 04 06.3**	**+1.4**
	SNR=12								
BIDO					P	**P**	**01 04 06.3**	**+1.4**
	SNR=12								
F10A	**Beach Ranch, E**	**93.68**	**44**		*e*P	**P**	**01 04 06.1**	**+1.5**
BBRC	**Big Bear Solar**	**93.70**	**56**	P		**P**	**01 04 04.8**	**-0.3**
	baz=269								
NEW	**Newport**	**93.78**	**42**	P		**P**	**01 04 04.8**	**-0.1**
	baz=270,SNR=16								
NEW	**Newport**	**93.78**	**42**		*e*P	**P**	**01 04 07.1**	**+2.2**
NEW	**Newport**	**93.78**	**42**		*e*P	**P**	**01 04 07.1**	**+2.2**
FURC	**Furnace Creek,**	**93.80**	**54**	P		**P**	**01 04 04.9**	**-0.2**
	baz=269,SNR=12								
GSC	**Goldstone, Bar**	**93.82**	**55**	P		**P**	**01 04 05.8**	**+0.4**
	baz=269,SNR=8.7								
ARU	**Arti**	**93.85**	**326**	P		**P**	**01 04 02.4**	**-2.6**
	comp=Z,4.6nm,0.6s,baz=108,slow=1.5,SNR=11								
ARU	**Arti**	**93.85**	**326**	P		**P**	**01 04 04.3**	**-0.7**
ARU							01 07 50.8		
ARU				S		**SKSac**	**01 14 36.2**	**-1.4**
ARU				SP		**SP**	**01 16 33.3**	**+7.1**
ARU					pmax	pmax			
	comp=Z,220nm,6.6s								
ARU					smax	smax			
	comp=N,2µm,19.8s								
ARU					MLR	MLR			
	comp=Z,26µm,24.0s								
ARU	**Arti**	**93.85**	**326**		*e*P	**P**	**01 04 04.4**	**-0.6**
	comp=Z,64nm,1.7s								
ARU					LR	LR			
	comp=Z,19µm,20.0s								
GEYT	**Alibeck**	**94.02**	**308**	P		**P**	**01 04 05.5**	**-0.8**
	comp=Z,1.7nm,0.4s,baz=336,slow=3.3,SNR=11								
GEYT					PP	**PP**	**01 07 48.1**	**-4.6**
	comp=Z,4.9nm,1.0s,baz=134,slow=10,SNR=2.6								
GEYT					LR	LR	01 47 13.2		
	comp=Z,6µm,21.8s,baz=105,slow=36								
PFO	**Pinyon Flats O**	**94.07**	**57**	P		**P**	**01 04 06.6**	**-0.1**
	baz=269,SNR=14								
PFO	**Pinyon Flats O**	**94.07**	**57**		*e*P	**P**	**01 04 08.3**	**+1.6**
PFO					MLR	MLR			
	comp=Z,11µm,20.0s								
PFO	**Pinyon Flats O**	**94.07**	**57**		*e*P	**P**	**01 04 08.3**	**+1.6**
PFO					LR	LR			
	comp=Z,11µm,20.0s								
TPFO	**Pinon Flats**	**94.07**	**57**	P		**P**	**01 04 07.0**	**+0.3**
	baz=269,SNR=11								
MONP2	**Monument Peak**	**94.09**	**57**	P		**P**	**01 04 06.9**	**-0.1**
	baz=269,SNR=24								
AKTO	**Aktyubinsk**	**94.19**	**320**	P		**P**	**01 04 04.6**	**-2.1**
	comp=Z,14nm,1.0s,baz=85,slow=5.3,SNR=14								
AKTO	**Aktyubinsk**	**94.19**	**320**	*i*	P	**P**	**01 04 04.2**	**-2.5**
AKTO					pmax	pmax			
	comp=Z,16nm,0.9s								
HEC	**Hector,Ludlow**	**94.19**	**55**	P		**P**	**01 04 07.3**	**+0.1**
	baz=269								
SHOC	**Shoshone, Teco**	**94.26**	**54**	P		**P**	**01 04 07.4**	**0.0**
	baz=269								
TPNV	**Topopah Spring**	**94.30**	**53**	P		**P**	**01 04 06.9**	**-0.9**
	baz=269,SNR=18								
TPNV	**Topopah Spring**	**94.30**	**53**		*e*P	**P**	**01 04 09.4**	**+1.6**
TPNV	**Topopah Spring**	**94.30**	**53**		*e*P	**P**	**01 04 09.4**	**+1.6**
IKP	**In-Ko-Pah, Jac**	**94.35**	**58**	P		**P**	**01 04 06.6**	**-1.3**
	baz=269								
HOQ	**Hoqain**	**94.42**	**293**	P		**P**	**01 04 07.9**	**-0.5**
	SNR=7.2								
HOQ	**Hoqain**	**94.42**	**293**	P		**P**	**01 04 07.9**	**-0.5**
	SNR=7.2								
BELC	**Belle Mtn. Jos**	**94.46**	**56**	P		**P**	**01 04 07.6**	**-0.9**
	baz=269								
TUQ	**Turquoise Moun**	**94.54**	**55**	P		**P**	**01 04 07.5**	**-1.4**
	baz=269,SNR=12								
SWSC	**Sam W. Stewart**	**94.61**	**57**	P		**P**	**01 04 08.5**	**-0.5**
	baz=269								
MFID	**Camas Ranch**	**94.66**	**47**		*e*P	**P**	**01 04 11.1**	**+1.9**
SOKR	**Solikamsk**	**94.74**	**329**	*c*	*i*P	**P**	**01 04 08.8**	**-0.2**
SOKR							01 07 52.3		
SOKR				S		**SKSac**	**01 14 45.6**	**+3.4**
SOKR				SS		**SS**	**01 21 47.2**	**+2.9**
SOKR					pmax	pmax			
	comp=Z,14nm,1.3s								
GMRC	**Granite Mounta**	**94.75**	**56**	P		**P**	**01 04 09.9**	**+0.1**
	baz=270,SNR=15								
R11A	**Troy Canyon, C**	**94.83**	**52**	P		**P**	**01 04 09.5**	**-0.7**
	baz=270,SNR=12								
R11A	**Troy Canyon, C**	**94.83**	**52**		*e*P	**P**	**01 04 11.4**	**+1.2**
	comp=Z,64nm,1.8s								
BC3	**Big Chuckawall**	**94.91**	**57**	P		**P**	**01 04 10.3**	**-0.2**
	baz=270								
YKA	**Yellowknife Ar**	**94.96**	**28**	P		**P**	**01 04 09.1**	**-0.8**
	comp=Z,19nm,0.9s,baz=271,slow=4.5,SNR=20								
YKA					LR	LR	01 43 35.2		
	comp=Z,1µm,20.7s,baz=0.0,slow=33								
IRM	**Iron Mountain**	**95.17**	**56**	P		**P**	**01 04 11.6**	**0.0**
	baz=270,SNR=10								
BSMT	**Bassoo Peak**	**95.34**	**42**		*e*P	**P**	**01 04 13.4**	**+1.0**
GLA	**Glamis**	**95.43**	**57**	P		**P**	**01 04 13.0**	**+0.1**
	baz=270,SNR=7.4								
ASHO	**Ashiyiah**	**95.58**	**294**	P		**P**	**01 04 14.6**	**+0.8**
	SNR=5.2								
ASHO	**Ashiyiah**	**95.58**	**294**	P		**P**	**01 04 14.6**	**+0.8**
	SNR=5.2								
NEE2	**Needles Airpor**	**95.61**	**56**	P		**P**	**01 04 13.6**	**0.0**
	baz=270								
Y12C	**Blythe**	**95.69**	**57**	P		**P**	**01 04 12.7**	**-1.3**
	baz=270								
HLID	**Hailey**	**95.69**	**47**	P		**P**	**01 04 13.7**	**-0.3**
	baz=271,SNR=8.0								
HLID	**Hailey**	**95.69**	**47**		*e*P	**P**	**01 04 16.5**	**+2.5**
	comp=Z,26nm,1.4s								
WALA	**Waterton Lakes**	**95.89**	**41**		*e*P	**P**	**01 04 16.7**	**+2.0**
	comp=Z,90nm,1.4s								
MSO	**Missoula**	**95.95**	**43**	P		**P**	**01 04 14.8**	**-0.2**
	baz=272								
PDMCI	**Parker Dam,Lak**	**96.00**	**56**	P		**P**	**01 04 15.1**	**-0.2**
	baz=270								
EDM	**Edmonton**	**96.08**	**37**		*e*P	**P**	**01 04 16.5**	**+1.2**
EDM					pmax	pmax			
	comp=Z,124nm,1.5s								
EDM	**Edmonton**	**96.08**	**37**		*e*P	**P**	**01 04 16.5**	**+1.2**
	comp=Z,124nm,1.5s								
DLMT	**Dillon**	**96.93**	**45**		*e*P	**P**	**01 04 20.5**	**+0.9**
	comp=Z,12nm,1.3s								
DUG	**Dugway, Tooele**	**96.96**	**50**	P		**P**	**01 04 19.4**	**-0.4**
	baz=272								
DUG	**Dugway, Tooele**	**96.96**	**50**		*e*P	**P**	**01 04 20.9**	**+1.1**
DUG					pmax	pmax			
	comp=Z,7.0nm,1.3s								
DUG					MLR	MLR			
	comp=Z,7µm,19.0s								
DUG	**Dugway, Tooele**	**96.96**	**50**		*e*P	**P**	**01 04 20.9**	**+1.1**
	comp=Z,6.6nm,1.3s								
DUG					LR	LR			
	comp=Z,7µm,19.0s								
214A	**Organ Pipe Nat**	**97.14**	**58**	P		**P**	**01 04 20.0**	**-0.7**
	baz=271								
214A	**Organ Pipe Nat**	**97.14**	**58**		*e*P	Pdif	01 04 22.2	+1.4
	comp=Z,410nm,2.1s								
RPN	**Rapa Nui**	**97.36**	**118**		PFAKE		01 04 30.0	+8.2
RPN					LR	LR			
	comp=Z,2µm,21.0s								
BOZ	**Bozeman (W)**	**97.60**	**45**	P		**P**	**01 04 21.2**	**-1.3**
	baz=273								
BOZ	**Bozeman (W)**	**97.60**	**45**		*e*P	Pdif	01 04 23.8	+1.2
BOZ					pmax	pmax			
	comp=Z,63nm,2.1s								
BOZ					MLR	MLR			
	comp=Z,11µm,19.0s								
BOZ	**Bozeman (W)**	**97.60**	**45**		*e*P	Pdif	01 04 23.8	+1.2
	comp=Z,63nm,2.1s								
BOZ					LR	LR			
	comp=Z,11µm,19.0s								
HWUT	**Hardware Ranch**	**97.85**	**49**		*e*P	Pdif	01 04 24.2	+0.3
	comp=Z,5.9nm,1.0s								
HWUT					LR	LR			
	comp=Z,11µm,19.0s								
AHID	**Auburn Hatcher**	**98.14**	**47**		PFAKE		01 04 40.0	+15
AHID					LR	LR			
	comp=Z,7µm,20.0s								
WUAZ	**Wupatki**	**98.25**	**55**		Pdiff	**P**	**01 04 24.6**	**-1.1**
	baz=272								
WUAZ	**Wupatki**	**98.25**	**55**		*e*P	Pdif	01 04 27.4	+1.7
	comp=Z,87nm,1.8s								
REDW	**Red Top Meadow**	**98.29**	**47**		*e*P	Pdif	01 04 26.9	+1.1
	comp=Z,46nm,2.3s								
FLWY	**Flagg Ranch**	**98.35**	**46**		*e*P	Pdif	01 04 26.4	+0.2
	comp=Z,2.0nm,0.6s								
H17A	**Grant Village**	**98.42**	**46**		Pdiff	**P**	**01 04 25.3**	**-1.1**
	baz=274								
EGMT	**Eagleton**	**98.71**	**42**		Pdiff	**P**	**01 04 26.8**	**-0.6**
	baz=275								
EGMT	**Eagleton**	**98.71**	**42**		PFAKE		01 04 40.0	+13
EGMT					LR	LR			
	comp=Z,7µm,19.0s								
H06N1	**SOCORRO T-PHAS**	**98.84**	**72**		T	T	02 54 37.0		
TUC	**Tucson**	**98.85**	**58**		Pdiff	**P**	**01 04 26.8**	**-1.6**
	baz=272								
TUC	**Tucson**	**98.85**	**58**		PFAKE		01 04 40.0	+12
TUC					LR	LR			
	comp=Z,13µm,20.0s								
H06S1	**SOCORRO T**	**98.86**	**72**		T	T	02 54 53.9		
H06E1	**SOCORRO T-PHAS**	**98.89**	**72**		T	T	02 54 42.6		
BW06	**Boulder Array**	**99.27**	**47**		Pdiff	**Pdif**	**01 04 28.8**	**-1.5**
	baz=274								
BW06	**Boulder Array**	**99.27**	**47**		PFAKE		01 04 40.0	+10
BW06					LR	LR			
	comp=Z,11µm,22.0s								
PDAR	**Pinedale Array**	**99.27**	**47**		P	**Pdif**	**01 04 29.2**	**-1.1**
	comp=Z,3.4nm,1.0s,baz=242,slow=3.2,SNR=17								
PDAR					PP	**PP**	**01 08 32.8**	**-0.5**
	comp=Z,0.8nm,0.8s,baz=249,slow=4.7,SNR=3.6								
PDAR					LR	LR	01 44 52.8		
	comp=Z,6µm,19.6s,baz=276,slow=33								
RLMT	**Red Lodge**	**99.30**	**45**		Pdiff	**Pdif**	**01 04 28.9**	**-1.4**
	baz=275								
LPIG	**La Paz**	**99.45**	**66**		LR	LR	01 40 33.6		
	comp=Z,18µm,21.5s,baz=250,slow=30								
W18A	**Petrified Fore**	**99.61**	**55**		Pdiff	**Pdif**	**01 04 29.7**	**-2.2**
	baz=273								
O20A	**White River Ci**	**100.46**	**50**		Pdiff	**Pdif**	**01 04 34.1**	**-1.5**
	baz=275								
O20A	**White River Ci**	**100.46**	**50**		*e*Pdif	**Pdif**	**01 04 36.2**	**+0.6**
	comp=Z,40nm,1.9s								
MVCO	**Mesa Verde**	**100.48**	**53**		Pdiff	**Pdif**	**01 04 34.7**	**-1.1**
	baz=274								
HOPEN	**Hopen**	**100.99**	**349**		*e*P	**Pdif**	**01 04 36.6**	**-0.2**
HOPEN					*e*PP	**PP**	**01 08 43.0**	**-2.0**
HOPEN					*e*SS	SS	01 23 12.6	+1.2
HOPEN					IVMs_BB	IVMs_BB	01 43 58.9		
	comp=Z,5µm,26.6s								
LAO	**LASA Array**	**101.24**	**43**		Pdiff	**Pdif**	**01 04 37.6**	**-1.1**
	baz=276								
LAO	**LASA Array**	**101.24**	**43**		*e*Pdif	**Pdif**	**01 04 41.3**	**+2.6**
	comp=Z,36nm,1.3s								
121A	**Cookes Peak, D**	**101.37**	**58**		Pdiff	**Pdif**	**01 04 38.6**	**-1.1**
	baz=274								
NVL	**N'lazarevskaya**	**101.38**	**193**		*e*P	**Pdif**	**01 04 35.0**	**-3.7**
NVL					*e*		01 08 46.9		
NVL					*e*S	**SKSac**	**01 15 12.6**	**-3.0**
NVL					*e*SP	**SP**	**01 17 45.8**	**-1.1**
NVL					*e*PS	**PS**	**01 17 50.0**	**-1.4**
NVL					*e*SS	**SS**	**01 23 16.2**	**-0.3**
NVL					smax	smax			
	comp=N,585nm,9.9s								
NVL					MLR	MLR			
	comp=Z,33µm,24.0s								
SPA0	**Spitsbergen Ar**	**101.43**	**351**		*e*P	**Pdif**	**01 04 42.9**	**+4.1**
SPA0					IVMs_BB	IVMs_BB	01 47 12.6		
	comp=Z,4µm,22.2s								
KBS	**Kingsbay**	**101.51**	**353**		PFAKE		01 04 50.0	+11
KBS					LR	LR			
	comp=Z,8µm,22.0s								
K22A	**Casper**	**101.51**	**47**		Pdiff	**Pdif**	**01 04 38.8**	**-1.3**
	baz=276								
K22A	**Casper**	**101.51**	**47**		*e*Pdif	**Pdif**	**01 04 41.2**	**+1.1**
	comp=Z,37nm,1.6s								
SMCO	**Snowmass**	**101.52**	**51**		*e*Pdif	**Pdif**	**01 04 42.6**	**+2.1**
	comp=Z,13nm,1.3s								
ABPO	**Ambohimpanom**	**101.72**	**250**		PFAKE		01 04 50.0	+8.5
ABPO					LR	LR			
	comp=Z,5µm,20.0s								
S22A	**4UR Ranch, Cre**	**101.77**	**52**		Pdiff	**Pdif**	**01 04 39.6**	**-1.9**
	baz=275								
Y22D	**IRIS PASSCAL I**	**101.99**	**56**		Pdiff	**Pdif**	**01 04 40.7**	**-1.7**
	baz=274								
N23A	**Red Feather La**	**102.14**	**49**		Pdiff	**Pdif**	**01 04 41.5**	**-1.6**
	baz=276								
ANMO	**Albuquerque**	**102.30**	**55**		Pdiff	**Pdif**	**01 04 42.0**	**-1.9**
	baz=275								
ANMO	**Albuquerque**	**102.30**	**55**		*e*P	**Pdif**	**01 04 43.0**	**-0.9**
ANMO					pmax	pmax			
	comp=Z,2.0nm,0.9s								
ANMO					MLR	MLR			
	comp=Z,5µm,20.0s								
ANMO	**Albuquerque**	**102.30**	**55**		*e*Pdif	**Pdif**	**01 04 45.6**	**+1.7**
	comp=Z,16nm,1.7s								
ANMO					LR	LR			
	comp=Z,7µm,20.0s								
DGMT	**Dagmar**	**102.35**	**41**		Pdiff	**Pdif**	**01 04 42.1**	**-1.4**
	baz=279								
DGMT	**Dagmar**	**102.35**	**41**		PFAKE		01 05 00.0	+16
DGMT					LR	LR			
	comp=Z,6µm,19.0s								
HSPB	**Hornsund (broa**	**102.37**	**351**		*e*Pdif	**Pdif**	**01 04 41.4**	**-1.6**
HSPB					*e*PP	**PP**	**01 08 55.5**	**+0.2**
HSPB					*e*SKSac	**SKSac**	**01 15 23.8**	**+3.7**
HSPB					*e*SS	**SS**	**01 23 32.4**	**+2.0**
HSPB					IVMs_BB	IVMs_BB	01 48 28.6		
	comp=Z,3µm,24.7s								
ISCO	**Idaho Springs**	**102.51**	**50**		Pdiff	**Pdif**	**01 04 42.5**	**-2.3**
	baz=276								
FFC	**Flin Flon**	**102.53**	**35**		PFAKE		01 05 00.0	+16
FFC					LR	LR			
	comp=Z,11µm,20.0s								
SDCO	**Great Sand Dun**	**102.81**	**52**		Pdiff	**Pdif**	**01 04 43.7**	**-2.4**
	baz=276								
SDCO	**Great Sand Dun**	**102.81**	**52**		PFAKE		01 05 00.0	+14
SDCO					LR	LR			
	comp=Z,15µm,19.0s								
Q24A	**Divide**	**102.96**	**51**		Pdiff	**Pdif**	**01 04 44.7**	**-2.1**
	baz=277								
KLMR	**Klimovskoe**	**103.02**	**332**		*e*P	**Pdif**	**01 04 45.2**	**-0.9**
KLMR					*e*		01 08 59.1		
KLMR					pmax	pmax			
	comp=Z,8.0nm,1.1s								
C25A	**Freed Ranch, W**	**103.09**	**42**		Pdiff	**Pdif**	**01 04 45.3**	**-1.6**
	baz=280								
RSSD	**Black Hills**	**103.12**	**46**		Pdiff	**Pdif**	**01 04 45.4**	**-1.9**
	baz=278								
RSSD	**Black Hills**	**103.12**	**46**		*e*P	**Pdif**	**01 04 50.2**	**+2.9**
RSSD					pmax	pmax			
	comp=Z,4.0nm,0.9s								
RSSD	**Black Hills**	**103.12**	**46**		*e*Pdif	**Pdif**	**01 04 50.2**	**+2.9**
	comp=Z,3.8nm,0.9s								
SNAA	**Sanae**	**103.33**	**188**		PKiKP	**PKiKP**	**01 09 00.1**	**-6.3**
H25A	**Fruitdale**	**103.36**	**45**		Pdiff	**Pdif**	**01 04 46.9**	**-1.2**
	baz=279								
BJO	**Bjornoya**	**103.38**	**348**		*e*PP	PP	01 09 08.4	+5.5
BJO					*e*SS	SS	01 23 47.0	+2.8
BJO					IVMs_BB	IVMs_BB	01 48 47.4		
	comp=Z,4µm,25.9s								
MNTX	**Cornudas Mount**	**103.47**	**58**		Pdiff	**Pdif**	**01 04 47.2**	**-1.7**
	baz=275								
MNTX	**Cornudas Mount**	**103.47**	**58**		PFAKE		01 05 00.0	+11
MNTX					LR	LR			
	comp=Z,7µm,20.0s								
A26A	**Wade Farm, Ken**	**103.68**	**40**		Pdiff	**Pdif**	**01 04 46.7**	**-2.7**
	baz=281								
T25A	**Trinidad**	**103.74**	**53**		Pdiff	**Pdif**	**01 04 47.7**	**-2.5**
	baz=277								
D26A	**Manning**	**103.76**	**42**		Pdiff	**Pdif**	**01 04 48.0**	**-1.9**
	baz=280								
TBLG	**Delisi**	**104.06**	**312**		P	**Pdif**	**01 04 51.8**	**+0.5**
TBLG	**Delisi**	**104.06**	**312**		P	**Pdif**	**01 04 51.8**	**+0.5**
GUDG	**Gudauri**	**104.14**	**313**		P	**Pdif**	**01 04 54.4**	**+2.5**
GNI	**Garni**	**104.28**	**311**		PFAKE		01 05 00.0	+7.5
GNI					LR	LR			
	comp=Z,5µm,20.0s								
HAMF	**Hammerfest**	**104.64**	**344**		*e*PP	PP	01 09 11.6	-0.7
HAMF					*e*SKSac	**SKSac**	**01 15 32.2**	**+1.3**
HAMF					IVMsBB		01 50 15.2		
	comp=Z,2µm,20.8s								
HAMF					IVMs_BB	IVMs_BB	02 01 44.1		
	comp=Z,2µm,17.0s								
ARCES	**ARCESS Array B**	**104.74**	**343**		Pdiff	**Pdif**	**01 04 53.7**	**0.0**
	comp=Z,2.9nm,0.9s,baz=98,slow=6.2,SNR=4.5								
ARE0	**ARCESS Array S**	**104.74**	**343**		*e*	**Pdif**	**01 05 00.4**	**+6.7**
ARE0					*e*PP	**PP**	**01 09 12.5**	**-0.6**
ARE0					*e*SKSac	**SKSac**	**01 15 30.7**	**-0.7**
ARE0					*e*SS	**SS**	**01 24 02.9**	**-0.3**
ARE0					IVMs_BB	IVMs_BB	01 53 42.4		
	comp=Z,4µm,20.4s								
ONI	**Oni**	**104.87**	**313**		P	**Pdif**	**01 04 54.7**	**-0.2**
ONI	**Oni**	**104.87**	**313**		P	**Pdif**	**01 04 54.7**	**-0.2**
KSCO	**Kaye Shedlock'**	**104.90**	**51**		Pdiff	**Pdif**	**01 04 53.1**	**-2.1**
	baz=278								
VNA1	**Neumayer--Stat**	**104.99**	**187**		PKiKP	PKiKP	01 08 60.0	-9.3
AKH	**Akhalkalaki**	**105.03**	**312**	*i*	P	**PP**	**01 09 24.0**	**+7.5**
AKH	**Akhalkalaki**	**105.03**	**312**		P	**Pdif**	**01 04 57.2**	**+1.4**
AKH	**Akhalkalaki**	**105.03**	**312**		P	**Pdif**	**01 04 57.2**	**+1.4**
OGNE	**Ogallala**	**105.06**	**49**		PKiKP	**PKiKP**	**01 09 08.7**	**-1.8**
	baz=279								
KBZ	**Khabaz**	**105.07**	**314**		Pdiff	**Pdif**	**01 04 55.5**	**-0.1**
	comp=Z,1.8nm,0.7s,baz=101,slow=5.2,SNR=3.1								
KBZ					PP	**PP**	**01 09 19.6**	**+3.2**
	comp=Z,3.6nm,0.8s,baz=86,slow=8.4,SNR=7.1								
TXAR	**Lajitas Array**	**105.14**	**61**		Pdiff	**Pdif**	**01 04 57.9**	**+1.4**
	comp=Z,0.1nm,0.4s,baz=240,slow=1.8,SNR=2.4								
TXAR					PKiKP	**PKiKP**	**01 09 11.2**	**+0.3**
	comp=Z,0.9nm,1.1s,baz=238,slow=1.7,SNR=3.5								
TXAR					PKKPbc	**PKKPbc**	**01 20 41.1**	**+3.1**
	comp=Z,0.4nm,0.8s,baz=117,slow=5.2,SNR=5.1								
TXAR					PKKPab	**PKKPab**	**01 20 55.4**	**+0.2**
	comp=Z,0.9nm,0.9s,baz=104,slow=3.0,SNR=6.7								
KVAR	**Kislovodsk Arr**	**105.17**	**315**		Pdiff	**Pdif**	**01 04 54.4**	**-1.9**
	comp=Z,1.7nm,0.7s,baz=249,slow=8.6,SNR=1.8								
KIV	**Kislovodsk**	**105.18**	**315**		*e*P	**Pdif**	**01 04 54.6**	**-1.7**
KIV					*e*SS	SS	01 24 09.5	-1.5
KIV					*e*SSS	SSS	01 28 07.8		
KIV					pmax	pmax			
	comp=Z,7.0nm,1.0s								
KIV					MLR	MLR			
	comp=Z,9µm,21.0s								
MSTX	**Muleshoe**	**105.43**	**56**		PKiKP	**PKiKP**	**01 09 09.1**	**-2.3**
	baz=277								
MDND	**Maddock**	**105.48**	**41**		PKiKP	**PKiKP**	**01 09 09.8**	**-1.2**
	baz=283								
MOS	**Moscow**	**105.51**	**327**	*i*	P	**Pdif**	**01 05 00.8**	**+3.5**
MOS					*e*		01 09 20.2		
MOS					*e*S	**Sdif**	**01 16 49.6**	**-1.8**
MOS					*e*PS	**PS**	**01 18 32.8**	**-2.8**
MOS					*e*SS	**SS**	**01 24 10.8**	**-3.6**
MOS					MLR	MLR			
	comp=Z,21µm,20.0s								
F29A	**Eureka**	**105.76**	**43**		PKiKP	**PKiKP**	**01 09 10.5**	**-1.0**
	baz=282								
AMTX	**Amarillo**	**106.21**	**55**		Pdiff	**PKiKP**	**01 09 10.4**	**-2.4**
	baz=278								
DAG	**Danmarks Havn**	**106.25**	**357**	*i*	P	**PP**	**01 09 27.7**	**+3.6**
OBN	**Obninsk**	**106.28**	**327**		Pdiff	**Pdif**	**01 05

SOC MLR MLR
comp=Z,10µm,22.0s
N31A Bailey Ranch, 107.39 48 PKiKP **PKiKP 01 09 13.5 -1.2**
baz=281
E32A Braaten, Kindr 107.45 42 PKiKP **PKiKP 01 09 14.3 -0.3**
baz=284
G32A Webster 107.48 43 PKiKP **PKiKP 01 09 13.5 -1.3**
baz=284
C32A Crookston 107.50 41 PKiKP **PKiKP 01 09 13.9 -0.7**
baz=285
PMSA Palmer Station 107.54 165 PFAKE 01 09 30.0
PMSA LR LR
comp=Z,5µm,20.0s
F32A Veblen 107.59 43 PKiKP **PKiKP 01 09 13.8 -1.1**
baz=284
J32A Parkston 107.67 45 PKiKP **PKiKP 01 09 13.8 -1.3**
baz=283
H32A Carlson Farm, 107.70 44 PKiKP **PKiKP 01 09 14.6 -0.6**
baz=284
K32A Verdigre 107.73 46 PKiKP **PKiKP 01 09 14.4 -0.9**
baz=282
I32A Karley and Nic 107.79 45 PKiKP **PKiKP 01 09 14.3 -1.1**
baz=283
AGMN Agassiz Nation 107.81 40 PKiKP **PKiKP 01 09 14.5 -0.7**
baz=286
AGMN Agassiz Nation 107.81 40 PFAKE 01 09 30.0
AGMN LR LR
comp=Z,9µm,20.0s
L32A Elgin 107.84 47 PKiKP **PKiKP 01 09 14.6 -0.9**
baz=282
BGNE Belgrade 107.86 48 PKiKP **PKiKP 01 09 15.3 -0.2**
baz=282
P32A Huiting Farm, 107.88 49 PKiKP **PKiKP 01 09 16.1 +0.4**
baz=281
N32A Stulken Farm, 107.89 48 PKiKP **PKiKP 01 09 16.3 +0.7**
baz=282
A33A Warroad 107.93 39 PKiKP **PKiKP 01 09 16.2 +0.7**
baz=286
S32A Newby Ranch, P 107.97 51 PKiKP **PKiKP 01 09 15.3 -0.6**
baz=280
B33A Robert and Kas 107.99 40 PKiKP **PKiKP 01 09 16.3 +0.7**
baz=286
O32A Brockman Farm, 108.00 49 PKiKP **PKiKP 01 09 16.7 +0.8**
baz=282
C33A Trail 108.01 41 PKiKP **PKiKP 01 09 15.7 +0.1**
baz=286
R32A Long Quarter, 108.02 51 PKiKP **PKiKP 01 09 15.6 -0.3**
baz=281
Q32A Meitler Ranch, 108.03 50 PKiKP **PKiKP 01 09 15.8 -0.2**
baz=281
T32A Huddler Ranch, 108.07 52 PKiKP **PKiKP 01 09 16.0 -0.1**
baz=280
D33A AnnSam, Waubun 108.13 41 PKiKP **PKiKP 01 09 14.9 -1.0**
baz=286
H33A Prehn Over Nor 108.14 44 PKiKP **PKiKP 01 09 12.4 -3.6**
baz=284
U32A Winter Ranch, 108.15 53 PKiKP **PKiKP 01 09 13.9 -2.3**
baz=280
W32A Sentinel 108.16 54 PKiKP **PKiKP 01 09 14.4 -1.9**
baz=279
F33A 5 Mile Ranch, 108.16 43 PKiKP **PKiKP 01 09 11.9 -4.0**
baz=285
E33A Westby DABS, E 108.19 42 PKiKP **PKiKP 01 09 14.5 -1.5**
baz=285
X32A Elmer 108.23 55 PKiKP **PKiKP 01 09 15.2 -1.3**
baz=279
I33A Coleman 108.25 45 PKiKP **PKiKP 01 09 15.0 -1.3**
baz=284
ECSD EROS Data Cent 108.46 45 PKiKP **PKiKP 01 09 13.7 -2.9**
baz=284
ECSD EROS Data Cent 108.46 45 *e*PKP **PKiKP 01 09 17.1 +0.5**
832A Faith Ranch, C 108.46 61 PKiKP **PKiKP 01 09 13.8 -3.2**
baz=277
Q33A Connelly Farm, 108.58 50 PKiKP **PKiKP 01 09 14.3 -2.7**
baz=281
WMOK Wichita Mounta 108.59 54 PKiKP **PKiKP 01 09 15.2 -1.9**
baz=279
R33A Olander Ranch, 108.60 51 PKiKP **PKiKP 01 09 15.7 -1.3**
baz=281
P33A Williams Farm, 108.60 49 PKiKP **PKiKP 01 09 14.8 -2.2**
baz=282
T33A Patterson Ranc 108.62 52 PKiKP **PKiKP 01 09 14.9 -2.2**
baz=280
S33A Kaszmaul Farm, 108.72 51 PKiKP **PKiKP 01 09 14.3 -2.9**
baz=281
E34A Wadena 108.74 42 PKiKP **PKiKP 01 09 15.8 -1.2**
baz=286
FINES FINESS Array B 108.75 335 PKiKP **PKiKP 01 09 15.6 -1.0**
comp=Z,1.8nm,0.9s,baz=71,slow=6.0,SNR=2.5
G34A Benson 108.76 43 PKiKP **PKiKP 01 09 15.6 -1.5**
baz=285
W33A Caddo, Fort Co 108.78 54 PKiKP **PKiKP 01 09 15.7 -1.8**
baz=280
133A Hamilton Ranch 108.81 57 PKiKP **PKiKP 01 09 17.1 -0.5**
baz=279
H34A Spellman Lake, 108.81 44 PKiKP **PKiKP 01 09 15.8 -1.4**
baz=285
Z33A Whitaker Ranch 108.83 56 PKiKP **PKiKP 01 09 17.2 -0.4**
baz=279
Y33A Hilltop Ranch, 108.84 55 PKiKP **PKiKP 01 09 18.8 +1.2**
baz=279
X33A Lawton 108.85 55 PKiKP **PKiKP 01 09 17.3 -0.3**
baz=280
233A Rising Star 108.91 57 PKiKP **PKiKP 01 09 16.2 -1.6**
baz=278
I34A Hadley 108.91 44 PKiKP **PKiKP 01 09 15.4 -2.1**
baz=284
433A Art 108.92 59 PKiKP **PKiKP 01 09 17.9 0.0**
baz=278
333A Richland Sprin 108.94 58 PKiKP **PKiKP 01 09 17.9 0.0**
baz=278
833A Chaparral WMA, 108.97 61 PKiKP **PKiKP 01 09 17.1 -0.8**
baz=277
733A Divot King Ran 109.01 61 PKiKP **PKiKP 01 09 15.6 -2.4**
baz=277
LOF Lofoten 109.01 344 *e*P **Pdif 01 05 17.9 +5.3**
LOF *e* 01 09 29.0
LOF *e*SS SS 01 25 00.8 -0.2
LOF IVMs_BB IVMs_BB 01 50 54.8
comp=Z,4µm,21.9s
533A Kerrville 109.06 59 PKiKP **PKiKP 01 09 14.9 -3.2**
baz=278
933A Laredo 109.15 62 PKiKP **PKiKP 01 09 14.3 -4.0**
baz=277
R34A Isabella, Hill 109.17 51 PKiKP **PKiKP 01 09 12.7 -5.4**
baz=282
Q34A Chapman 109.28 50 PKiKP **PKiKP 01 09 17.6 -0.7**
baz=282
D35A Remer 109.32 41 PKiKP **PKiKP 01 09 17.6 -0.5**
baz=287
KSU1 Kansas State U 109.50 50 PKiKP **PKiKP 01 09 18.0 -0.7**
baz=282
134A White-Moore Ra 109.51 57 PKiKP **PKiKP 01 09 15.0 -3.9**
baz=279
534A Blanco 109.55 59 PKiKP **PKiKP 01 09 16.1 -3.0**
baz=278
234A Clairette 109.55 57 PKiKP **PKiKP 01 09 16.1 -2.9**
baz=279
Y34A Reagan Ranch, 109.56 55 PKiKP **PKiKP 01 09 16.6 -2.3**
baz=280
334A Lometa 109.57 58 PKiKP **PKiKP 01 09 18.3 -0.8**
baz=278
434A Burnet 109.62 59 PKiKP **PKiKP 01 09 19.2 0.0**
baz=278
934A Benavides 109.82 62 PKiKP **PKiKP 01 09 19.6 0.0**
baz=277
V35A Meyer Ranch, C 109.98 53 PKiKP **PKiKP 01 09 15.0 -4.7**
baz=281
S35A Otter Creek Ra 110.02 51 PKiKP **PKiKP 01 09 16.7 -3.0**
baz=282
035Z Hargill 110.36 63 PKiKP **PKiKP 01 09 22.1 +1.5**
baz=277
KVTX Kingsville 110.38 62 PFAKE 01 09 30.0
KVTX LR LR
comp=Z,8µm,21.0s
SUMG Summit 110.47 3 *i*P **PP 01 09 54.4 -0.9**
comp=Z,14µm,23.0s
X36A Centrahoma 110.60 54 PKiKP **PKiKP 01 09 19.5 -1.3**
baz=281
V36A Jenks 110.69 53 PKiKP **PKiKP 01 09 19.6 -1.4**
baz=282
J37A Redenius Farm, 110.72 45 PKiKP **PKiKP 01 09 18.8 -2.1**
baz=286
U36A Oologah 110.74 52 PKiKP **PKiKP 01 09 20.4 -0.6**
baz=282
Z36A Blue Ridge 110.76 56 PKiKP **PKiKP 01 09 19.7 -1.5**
baz=280
Y36A Durant 110.77 55 PKiKP **PKiKP 01 09 21.3 +0.1**
baz=281
TUL1 Leonard 110.79 53 PKiKP **PKiKP 01 09 18.9 -2.2**
baz=282
636A Smothers Creek 110.85 60 PKiKP **PKiKP 01 09 22.3 +0.8**
baz=278
M37A Trindle Farm, 110.86 47 PKiKP **PKiKP 01 09 22.3 +1.1**
baz=285
436A Wall Ranch, Ga 110.88 58 PKiKP **PKiKP 01 09 23.1 +1.6**
baz=279
SIM Simferopol' 110.91 317 *i*P **Pdif 01 05 24.1 +2.5**
SIM *i* 01 09 19.0
SIM *e* 01 10 02.0
SIM 01 16 00.0
SIM *e*SS SS 01 25 34.0 +6.0
SIM pmax pmax
comp=Z,420nm,11.0s
JMIC Jan Mayen 110.99 353 *e*PP PP 01 10 01.2 +2.6
JMIC *e*SS SS 01 25 33.7 +6.3
JMIC IVMs_BB IVMs_BB 01 46 30.1
comp=Z,2µm,37.6s
P37A Lathrop 111.09 49 PKiKP **PKiKP 01 09 17.0 -4.7**
baz=284
S37A Fort Scott 111.15 51 PKiKP **PKiKP 01 09 20.4 -1.4**
baz=283
U37A Salina 111.22 52 PKiKP **PKiKP 01 09 22.2 +0.2**
baz=282
Y37A Hugo 111.30 55 PKiKP **PKiKP 01 09 19.9 -2.3**
baz=281
V37A Hulbert 111.31 53 PKiKP **PKiKP 01 09 19.1 -3.0**
baz=282
X37A Clayton 111.39 54 PKiKP **PKiKP 01 09 20.5 -1.8**
baz=282
K38A Parkersburg 111.45 45 PKiKP **PKiKP 01 09 18.6 -3.7**
baz=286
637A Eagle Lake 111.48 60 PKiKP **PKiKP 01 09 21.1 -1.6**
baz=279
M38A Pleasantville 111.48 47 PKiKP **PKiKP 01 09 20.2 -2.1**
baz=286
NACGM Naroch 111.55 329 *e*PKP PKiKP 01 09 30.0 +8.0
NACGM *e*PP **PP 01 10 00.0 -3.2**
NACGM *e*PPP PPP 01 11 40.0
NACGM *e*SKS SKSdf 01 16 15.0 -17
NACGM *e*SKKS SKKSac 01 16 48.0 -16
NACGM *e*SKKKS 01 17 44.0
NACGM *e*PS PS 01 19 10.0 -26
NACGM *e*SS **SS 01 25 30.0 -5.8**
NACGM *e*SSS SSS 01 29 48.0
NACGM *e*LQ LQ 01 44 35.0
NACGM LRM MLR 01 53 18.0
comp=Z,23nm,25.0s
NACGM LRM1 01 57 24.0
comp=Z,26nm,20.0s
C39A Grand Marais 111.61 39 PKiKP **PKiKP 01 09 23.6 +1.2**
baz=290
T38A Diamond 111.73 51 PKiKP **PKiKP 01 09 23.1 +0.2**
baz=283
U38A Gravette 111.79 52 PKiKP **PKiKP 01 09 22.4 -0.7**
baz=283
S38A Stockton 111.89 51 PKiKP **PKiKP 01 09 19.4 -3.8**
baz=284
V38A Canehill 111.90 53 PKiKP **PKiKP 01 09 23.4 +0.1**
baz=283
AKO Adana 111.91 309 *i*P **PP 01 10 05.6 -0.9**
J39A Decorah 112.00 44 PKiKP **PKiKP 01 09 19.6 -3.7**
baz=287
AKASG Malin Array Be 112.01 324 PKiKP **PKiKP 01 09 23.3 +0.3**
comp=Z,0.9nm,0.7s,baz=50,slow=2.9,SNR=4.6
AKASG PP **PP 01 10 04.3 -2.3**
comp=Z,0.3nm,0.4s,baz=61,slow=3.0,SNR=4.3
AKASG Malin Array Be 112.01 324*c* *i*PKIKP **PKiKP 01 09 26.7 +3.7**
AKASG pmax pmax
comp=Z,1.0nm,0.7s
KIEV Kiev 112.02 324 PFAKE 01 09 30.0
KIEV LR LR
comp=Z,11µm,22.0s
P39B Salisbury 112.31 48 PKiKP **PKiKP 01 09 25.0 +1.0**
baz=285
S39A Bolivar 112.33 50 PKiKP **PKiKP 01 09 21.8 -2.3**
baz=284
R39A Chumby, Stover 112.40 50 PKiKP **PKiKP 01 09 19.6 -4.6**
baz=284
V39A Pettigrew 112.51 52 PKiKP **PKiKP 01 09 23.7 -0.9**
baz=283
DED Mersin 112.53 309 *i*P PP 01 10 03.0 -7.9
SCO Scoresbysund 112.64 357 *i*P **PP 01 10 11.9 +1.6**
comp=Z,9µm,20.0s
BRTR Keskin Array B 112.72 312 Pdiff **Pdif 01 05 31.4 +1.4**
comp=Z,1.0nm,0.9s,baz=76,slow=5.2,SNR=4.9
BRTR PKiKP **PKiKP 01 09 25.6 +0.6**
comp=Z,0.6nm,0.9s,baz=46,slow=4.2,SNR=3.4
BRTR PP **PP 01 10 14.1 +1.8**
comp=Z,4.6nm,1.0s,baz=99,slow=7.6,SNR=8.2
L40A Anamosa 112.72 45 PKiKP **PKiKP 01 09 23.5 -1.1**
baz=287
COWI Conover 112.84 41 PFAKE 01 09 40.0
COWI LR LR
comp=Z,9µm,19.0s
MIAR Mount Ida 112.84 54 PKiKP **PKiKP 01 09 23.8 -1.3**
baz=283
AKSY AKSARAY - Alti 112.91 311 *i*P PP 01 10 04.3 -9.3
KERG Konya-Eregli 112.94 309 *i*P **PP 01 10 10.8 -3.2**
Q40A Laux Farm, Aux 112.95 49 PKiKP **PKiKP 01 09 25.4 +0.2**
baz=285
R40A Maddies Statio 112.99 50 PKiKP **PKiKP 01 09 26.3 +1.0**
baz=285
U40A Yellville 113.01 52 PKiKP **PKiKP 01 09 24.1 -1.3**
baz=284
BBAL Bala 113.15 312 *i*P PP 01 10 00.4 -15
KIZK Mersin 113.15 308 *i*P **PP 01 10 10.8 -4.6**
V40A Witts Springs 113.17 52 PKiKP **PKiKP 01 09 25.9 +0.1**
baz=284
Y40A Okona 113.20 54 PKiKP **PKiKP 01 09 26.7 +0.9**
baz=283
L41A Preston 113.23 45 PKiKP **PKiKP 01 09 25.5 -0.1**
baz=288
KMBO Kilima Mbogo 113.39 267 PP PP 01 10 16.5 -1.7
comp=Z,1.9nm,1.1s,baz=106,slow=6.9,SNR=4.5
KKUL Konya-Kulu 113.40 311 *i*P **PP 01 10 14.7 -2.5**
P41A Barry, Barry 113.52 48 PKiKP **PKiKP 01 09 26.5 +0.2**
baz=286
KIS Kishinev 113.69 321 *e*PKP PP 01 10 02.0 -17
KIS LRM MLR 01 59 28.0
comp=Z,8µm,20.0s
V41A Mountainview 113.70 52 PKiKP **PKiKP 01 09 28.5 +1.7**
baz=284
U41A Viola 113.75 52 PKiKP **PKiKP 01 09 23.8 -3.1**
baz=284
ERMK Ermenek 114.07 309 *i*P **PP 01 10 25.2 +3.0**
P42A Winchester 114.08 48 PKiKP PKPdf 01 09 26.8 -0.6
baz=287
CSS Mathiatis 114.16 307 PFAKE 01 09 40.0 +12
CSS LR LR
comp=Z,1µm,21.0s
KDHN Kadinhani 114.18 311 *i*P PKPdf 01 09 25.4 -2.3
SAHE Sakarya_HENDEK 114.43 314 *i*P **PP 01 10 22.5 -1.8**
Y42A Garnett, Star 114.45 54 PKiKP PKPdf 01 09 25.1 -3.1
baz=283
HDIL Hopedale 114.56 47 PKiKP PKPdf 01 09 24.6 -3.7
baz=288
SFJD Kangerlussuaq 114.60 9 PFAKE 01 09 40.0 +12
SFJD LR LR
comp=Z,8µm,22.0s
GAZI Gazipasa 114.64 309 *i*P **PP 01 10 29.0 +3.0**
DOMB Dombas 114.71 341 *e*PP **PP 01 10 27.6 +2.3**
DOMB *e*SS SS 01 26 18.2 +1.2
DOMB IVMs_BB IVMs_BB 01 59 13.5
comp=Z,5µm,21.9s
NOA NORSAR Array B 114.71 340 PKP PKPdf 01 09 29.1 +1.1
comp=Z,0.8nm,0.8s,baz=22,slow=4.8,SNR=3.6
NC602 NORSAR Array S 114.81 339 *e*PP **PP 01 10 27.0 +1.0**
NC602 IVMs_BB IVMs_BB 01 56 00.9
comp=Z,5µm,23.3s
BOLV Bolvadin 115.00 311 *i*P **PP 01 10 29.9 +1.4**
X43A Marvell 115.02 53 PKiKP **PKiKP 01 09 28.6 -0.7**
baz=284
BORA Eskisehir 115.02 313 *i*P PP 01 10 18.6 -10
S44A Carbondale 115.44 50 PKiKP **PKiKP 01 09 25.4 -4.6**
baz=287
OSL Oslo 115.66 339 IVMs_BB IVMs_BB 01 56 38.1
comp=Z,3µm,24.3s
344A Westbrook Farm 115.85 57 PKiKP **PKiKP 01 09 31.8 +0.8**
baz=283
KORT Korkueli 115.95 310 *i*P **PP 01 10 37.2 +1.9**
KWP Kalwaria Pacla 116.24 325 *e*P **Pdif 01 05 49.8 +4.5**
KWP *e*PP **PP 01 10 38.6 +2.1**
KWP *e*SS SS 01 26 46.3 +8.3
KWP LMZ LR 01 55 37.9
comp=Z,20µm,27.9s
KONO Kongsberg 116.27 339 PFAKE 01 09 40.0 +9.1
KONO LR LR
comp=Z,9µm,19.0s
FOO Floro 116.29 343 *e*PP PP 01 10 38.0 +1.7
FOO *e*SS SS 01 26 38.5 +0.9
FOO IVMs_BB IVMs_BB 01 52 57.3
comp=Z,4µm,26.1s
245A Little AP, Sta 116.41 56 PKiKP **PKPdf 01 09 27.3 -4.8**
baz=284
GOLH Golhisar 116.49 310 *i*P **PP 01 10 38.0 -1.0**
DEMI Demirci 116.56 312 *i*P **PP 01 10 32.9 -6.5**
AKAS Kas 116.75 309 *i*P PP 01 10 29.0 -12
Y46A Houston 116.80 54 PKiKP **PKPdf 01 09 30.4 -2.3**
baz=285
SUE Sulen 116.80 342 *e*PP PP 01 10 42.3 +2.4
SUE IVMs_BB IVMs_BB 01 56 17.3
comp=Z,3µm,26.9s
MANT Manisa 116.86 312 *i*P **PP 01 10 43.2 +1.6**
Z46A Louisville 116.91 54 PKiKP **PKiKP 01 09 33.0 0.0**
baz=285
346A Big Creek Wild 116.92 56 PKiKP **PKPdf 01 09 31.5 -1.6**
baz=284
UZH Uzhgorod 116.96 324 *e*PKIKP **PKPdf 01 09 32.2 -0.4**
UZH *e* 01 09 44.2
UZH *e* 01 09 49.0
UZH *e* 01 10 40.8
UZH *e* 01 27 03.8
UZH MLR MLR
comp=N,5µm,19.0s
UZH MLR MLR
comp=E,2µm,19.0s
UZH MLR MLR
comp=Z,300nm,19.0s
ARR Arges 117.01 320↑ *i*P **PKPdf 01 09 38.4 +5.5**
ODD1 Odda 117.09 341 IVMs_BB IVMs_BB 02 03 08.5
comp=Z,5µm,22.4s
BER Bergen 117.15 342 *e*PP PP 01 10 40.3 -2.0
BER *e*SP SP 01 20 20.4 -1.6
BER IVMs_BB IVMs_BB 01 56 57.8
comp=Z,4µm,28.8s
STHS Stebnicka Huta 117.18 326 *e*PKP **PKPdf 01 09 37.4 +4.4**
BSD Bornholm Skovb 117.18 333 *i*P **PP 01 10 45.0 +2.2**
comp=Z,11µm,19.0s
GKP Gorka Klasztor 117.20 331 *e*PKPdf **PKPdf 01 09 37.9 +5.0**
GKP *e*PP **PP 01 10 49.9 +6.9**
GKP *e*SS SS 01 26 56.8 +6.8
GKP LMZ LR 01 55 38.3
comp=Z,15µm,26.7s
CRVS Cervenica-Dubn 117.31 325 *e*PKP **PKPdf 01 09 35.5 +2.2**
TURN Turunc 117.33 310 *i*P **PP 01 10 48.7 +4.0**
WCI Wyandotte Cave 117.50 48 *e*PKIKP **PKPdf 01 09 36.1 +2.1**
WCI Wyandotte Cave 117.50 48 *e*PKPdf **PKPdf 01 09 36.1 +2.1**
BLS5 Blasjo 117.52 340 IVMs_BB IVMs_BB 02 01 48.1
comp=Z,4µm,19.8s
OJC Ojcow 117.57 327 *e*PKPdf **PKPdf 01 09 32.9 -0.9**
OJC *e*PP **PP 01 10 51.7 +5.9**
OJC *e*SS SS 01 26 49.3 -5.8
OJC LMZ LR 01 58 51.2
comp=Z,14µm,23.6s
147A Livingston 117.59 55 PKiKP **PKiKP 01 09 35.9 +1.6**
baz=285
HOMB Homborsund 117.66 339 *e*PP PP 01 10 49.2 +3.3
HOMB IVMs_BB IVMs_BB 01 57 49.8
comp=Z,3µm,14.4s
NIE Niedzica 117.71 326 *e*PKPdf **PKPdf 01 09 38.7 +4.6**
NIE *e*PP **PP 01 10 45.5 -1.3**
NIE LMZ LR 01 58 12.4
comp=Z,11µm,25.2s
COP Copenhagen 117.90 335 *i*P **PP 01 10 48.9 +1.2**
comp=Z,7µm,22.0s
AAM Ann Arbor 117.92 43 PFAKE 01 09 50.0 +15
AAM LR LR
comp=Z,10µm,19.0s
AYVA Ayvalik 117.95 313 *i*P PP 01 10 32.9 -16
SNART Snartemo 118.07 339 IVMs_BB IVMs_BB 02 06 18.3
comp=Z,3µm,14.6s
KECS Kecovo 118.08 325 *e*PKP **PKPdf 01 09 34.5 -0.3**
GCAM G?zelcaml? 118.10 311 *i*P **PP 01 10 52.8 +2.8**
STAV Stavanger 118.14 340 *e*PP PP 01 10 48.5 -0.8
STAV IVMs_BB IVMs_BB 01 58 06.0
comp=Z,4µm,21.6s
DGB ¯zmir 118.25 312 *i*P **PP 01 10 53.5 +2.6**
BORG Borgarnes 118.31 356 PFAKE 01 09 50.0 +15
BORG LR LR
comp=Z,6µm,21.0s
LANS Liptovska Anna 118.31 326 *e*PKP **PKPdf 01 09 40.2 +4.9**
LRAL Lakeview Retre 118.52 54 *e*PKPdf **PKPdf 01 09 34.1 -1.9**
OKC Ostrava-Krasne 118.67 327 *e*PKP **PKPdf 01 09 40.4 +4.5**
OKC *e*PP **PP 01 10 53.4 0.0**
OKC AMS AMS 02 02 00.0
comp=Z,10µm,21.6s
OKC Ostrava-Krasne 118.67 327 *e*PKIKP **PKPdf 01 09 40.4 +4.5**
OKC *e* 01 10 53.4
OKC MLR MLR
comp=Z,10µm,21.6s
MUD Monsted U'grnd 118.70 337 *i*P **PP 01 10 59.0 +5.8**
comp=Z,8µm,19.0s
PSZ Piszkesteto 118.70 325 PFAKE 01 09 50.0 +14
PSZ LR LR
comp=Z,9µm,22.0s
BZS Buzias 118.80 322↑ *i*P **PKPdf 01 09 37.5 +1.3**
PAYG Puerto Ayora 118.87 93 PFAKE 01 09 50.0 +13
PAYG LR LR
comp=Z,14µm,20.0s
BOSA Boshof 118.91 235 PKP **PKPdf 01 09 37.9 +0.8**
comp=Z,4.5nm,1.0s,baz=180,slow=9.1,SNR=2.6
BRAL Brewton 118.98 56 PFAKE 01 09 50.0 +13
BRAL LR LR
comp=Z,8µm,19.0s
VYHS Vyhne 119.01 326 *e*PKP **PKPdf 01 09 39.5 +2.9**
MORC Moravsky Berou 119.03 327↑ *i*P **PKPdf 01 09 41.1 +4.5**
KSP Ksiaz 119.09 329 *e*PKPdf **PKPdf 01 09 40.8 +4.2**
KSP *e*PP **PP 01 10 58.1 +1.9**
KSP *e*SS SS 01 27 10.6 -4.1
KSP LMZ LR 01 59 14.2
comp=Z,16µm,23.4s
ACSO Alum Creek Sta 119.19 45 *e*PKPdf **PKPdf 01 09 38.4 +1.3**
ACSO LR LR
comp=Z,8µm,20.0s
KRLC Kraliky 119.27 328 *e*PKP **PKPdf 01 09 41.4 +4.3**
KRLC *ex* x 01 09 50.1
KRLC *e*PKKP **PKKPab 01 19 53.7 +1.4**
KRLC Kraliky 119.27 328 *e*PKIKP **PKPdf 01 09 41.4 +4.3**
KRLC *e* 01 09 50.1
DPC Dobruska-Polom 119.36 328 *e*PKP **PKPdf 01 09 41.6 +4.4**
DPC *e*PP **PP 01 19 53.9 -4.2**
DPC *e*PKKP **PKKPbc 01 19 50.1 -1.2**
DPC *e*SP SP 01 20 40.4 -2.2
DPC *e*SS **SS 01 27 23.0 +4.7**
DPC AMS AMS 01 59 00.0
comp=Z,11µm,22.1s
DPC Dobruska-Polom 119.36 328 *e*PKIKP **PKPdf 01 09 41.6 +4.4**
DPC *e* 01 10 53.9
DPC *e*SP SP 01 20 40.4 -2.2
DPC MLR MLR
comp=Z,11µm,22.1s
UPC Upice 119.43 329 *e*PKP **PKPdf 01 09 41.5 +4.2**
UPC *e*PP **PP 01 10 53.5 -5.1**
UPC *e*SP SP 01 20 41.5 -1.7
UPC *e*SS **SKKSdf 01 27 31.3 -1.3**
UPC AMS AMS 01 59 20.0
comp=Z,16µm,21.5s
UPC Upice 119.43 329 *e*PKIKP **PKPdf 01 09 41.5 +4.2**
UPC *e*SP SP 01 20 41.5 -1.7
UPC *e*SS **SKKSdf 01 27 31.3 -1.3**
UPC MLR MLR
comp=Z,16µm,21.5s
VRAC Vranov 119.81 327↑ *i*P **PKPdf 01 09 41.8 +3.7**
MBAR Mbarara 119.92 267 PFAKE 01 09 50.0 +10
MBAR LR LR
comp=Z,765nm,21.0s
EFI East Falkland 120.10 160 PFAKE 01 09 50.0 +11
EFI LR LR
comp=Z,4µm,19.0s
PVCC Panska Ves 120.16 329 *e*PKP **PKPdf 01 09 43.2 +4.5**
PVCC *e*SP SP 01 20 47.0 -2.7
PVCC *e*SS **SKKSdf 01 27 34.0 +2.8**
PVCC AMS AMS 02 00 30.0
comp=Z,13µm,21.3s
PVCC Panska Ves 120.16 329 *e*PKIKP **PKPdf 01 09 43.2 +4.5**
PVCC *e*SP SP 01 20 47.0 -2.7
PVCC MLR MLR

comp=Z,13µm,21.3s
SCHQ Schefferville 120.19 24 PKP **PKPdf 01 09 40.9 +2.2**
comp=Z,4.6nm,0.8s,baz=359,slow=1.9,SNR=4.0
SCHQ PP **PP 01 11 04.7 +1.2**
comp=Z,1.4nm,0.5s,baz=311,slow=3.8,SNR=4.7
BRG Berggiesshubel 120.27 330 *e*PKP **PKPdf 01 09 42.4 +3.5**
comp=Z,10nm,1.2s
BRG PP **PP 01 11 09.0 +4.8**
BRG SDIFF 01 18 57.0
BRG PS **PS 01 20 48.0 -7.3**
BRG PKKS 01 23 03.0
BRG SS **SKKSdf 01 27 37.0 +6.0**
comp=N,14µm,27.3s
comp=E,7µm,23.7s
comp=Z,15µm,25.6s
BRG Berggiesshubel 120.27 330 *e*PKIKP **PKPdf 01 09 42.4 +3.5**
BRG 01 11 09.0
BRG PS **PS 01 20 48.0 -7.3**
BRG pmax pmax
comp=Z,10.0nm,1.2s
BRG MLR MLR
comp=N,14µm,27.3s
BRG MLR MLR
comp=E,7µm,23.7s
BRG MLR MLR
comp=Z,15µm,25.6s
LSZ Lusaka 120.28 250 *e*PKIKP **PKPdf 01 09 41.4 +1.3**
LSZ MLR MLR
comp=Z,10µm,22.0s
LSZ Lusaka 120.28 250 *e*PKPdf **PKPdf 01 09 41.4 +1.3**
LSZ LR LR
comp=Z,10µm,22.0s
TREC Trest 120.41 328 *e*PKP **PKPdf 01 09 43.3 +4.0**
TREC *e*SS SS 01 27 42.2 +10
TREC AMS AMS 02 03 00.0
comp=Z,13µm,20.9s
TREC Trest 120.41 328 *e*PKIKP **PKPdf 01 09 43.3 +4.0**
TREC *e*SS SS 01 27 42.2 +10
TREC MLR MLR
comp=Z,13µm,20.9s
GOPC GO Pecny, Ondr 120.41 329 *e*PKP **PKPdf 01 09 43.6 +4.3**
GOPC *e*PP **PP 01 10 59.4 -5.9**
GOPC *e*SP SP 01 20 49.9 -2.2
GOPC AMS AMS 02 00 40.0
comp=Z,13µm,20.6s
GOPC GO Pecny, Ondr 120.41 329 *e*PKIKP **PKPdf 01 09 43.6 +4.3**
GOPC *e*SP SP 01 20 49.9 -2.2
GOPC MLR MLR
comp=Z,13µm,20.6s
CLL Collm 120.46 331 *e*PKPdf **PKPdf 01 09 41.0 +1.7**
comp=Z,5.0nm,1.0s
CLL *e* 01 09 48.0
CLL *e*PP **PP 01 11 05.0 -0.6**
comp=Z,197nm,2.7s
CLL *e*PPP PPP 01 13 39.0
CLL *e*SKKSac SKKSac 01 18 00.0 -3.8
CLL *e*Sdif **Sdif 01 18 51.0 -5.4**
CLL *e*SP **SP 01 20 50.0 -2.3**
CLL *e*PPS PPS 01 22 36.0
CLL *e* 01 23 39.0
CLL *e*SS **SS 01 27 32.0 -0.2**
CLL *e*SSS SSS 01 31 50.0
CLL *e*SSSS 01 35 42.0
CLL LmV 02 04 00.0
comp=Z,10µm,21.7s
CLL Collm 120.46 331 *e*(PP) **PKKPab 01 19 44.0 -3.0**
PRU Pruhonice 120.50 329 *e*PKP **PKPdf 01 09 42.1 +2.7**
PRU *ex* x 01 09 50.4
PRU *e*PP **PP 01 11 00.1 -5.8**
PRU *e*SP SP 01 20 50.4 -2.4
PRU *e*SS **SS 01 27 42.8 +10**
PRU AMS AMS 02 00 40.0
comp=Z,13µm,21.4s
PRU Pruhonice 120.50 329 *e*PKIKP **PKPdf 01 09 42.1 +2.7**
PRU *e* 01 09 50.4
PRU *e*SP SP 01 20 50.4 -2.4
PRU *e*SP **SP 01 20 51.6 -1.2**
PRU *e*SS **SS 01 27 42.8 +10**
PRU MLR MLR
comp=Z,13µm,21.4s
SUR Sutherland 120.86 229 PFAKE 01 09 50.0 +9.1
SUR LR LR
comp=Z,10µm,20.0s
M54A Oil Creek Stat 120.95 42 PKiKP **PKiKP 01 09 42.3 +1.6**
baz=296
N54A Moraine State 120.97 43 PKiKP **PKiKP 01 09 40.7 0.0**
baz=296
CONA Conrad Observa 120.99 326 *i* sPKPdf **PKPdf 01 09 44.5 +4.0**
comp=Z,2.6nm,0.6s
GOGA Godfrey 121.24 53 *e*PKIKP **PKPdf 01 09 43.6 +2.3**
GOGA MLR MLR
comp=Z,8µm,21.0s
GOGA Godfrey 121.24 53 *e*PKPdf **PKPdf 01 09 43.6 +2.3**
GOGA LR LR
comp=Z,8µm,21.0s
NKC Novy Kostel 121.41 330 *e*PKP **PKPdf 01 09 44.7 +3.5**
NKC *e*PP **PP 01 11 12.6 +0.5**
NKC *e*SS SS 01 27 50.0 +5.5
NKC AMS AMS 01 59 10.0
comp=Z,13µm,23.2s
NKC Novy Kostel 121.41 330 *e*PKIKP **PKPdf 01 09 44.7 +3.5**
NKC *e* 01 11 12.6
NKC MLR MLR
comp=Z,13µm,23.2s
KHC Kasperske Hory 121.51 328 *e*PKP **PKPdf 01 09 45.6 +4.2**
KHC *ex* x 01 09 56.5
KHC *ex* x 01 10 21.0
KHC *e*PP **PP 01 11 18.5 +5.6**
KHC *e*SS SS 01 27 52.3 +6.3
KHC AMS AMS 02 01 20.0
comp=Z,20µm,21.5s
KHC Kasperske Hory 121.51 328 *e*PKIKP **PKPdf 01 09 45.6 +4.2**
KHC *e* 01 09 56.5
KHC *e* 01 11 18.0
KHC MLR MLR
comp=Z,20µm,21.5s
KHC Kasperske Hory 121.51 328 *e*PKPdf **PKPdf 01 09 42.4 +1.0**
ARSA Arzberg 121.56 326 *i* sPKPdf **PKPdf 01 09 45.0 +3.5**
comp=Z,9.4nm,1.7s
GERES GERESS Array B 121.62 328 PKP **PKPdf 01 09 40.7 -1.0**
comp=Z,3.6nm,0.8s,baz=78,slow=2.3,SNR=19
TIGA Tifton 121.75 55 PKiKP **PKPdf 01 09 42.3 -0.1**
baz=288
TIGA Tifton 121.75 55 *e*PKPdf **PKPdf 01 09 43.1 +0.8**
TIR Tirane 121.90 318 PFAKE 01 09 50.0 +7.7
TIR LR LR
comp=Z,8µm,22.0s
MOA Molln 121.91 327 *i* pPKPdf **PKPdf 01 09 44.8 +2.6**
comp=Z,8.3nm,1.5s
SOKA Soboth 122.16 325 *i* PKiKP **PKPdf 01 09 42.2 -0.6**
comp=Z,7.0nm,1.0s
BLA Blacksburg 122.21 47 *e*PKIKP **PKPdf 01 09 44.5 +1.4**
BLA MLR MLR
comp=Z,11µm,19.0s
BLA Blacksburg 122.21 47 *e*PKPdf **PKPdf 01 09 44.5 +1.4**
BLA LR LR
comp=Z,11µm,19.0s
O56A Blue Knob Stat 122.25 43 PKiKP **PKiKP 01 09 44.7 +1.5**
baz=297
PLCA Paso Flores 122.28 144 PKP **PKPdf 01 09 44.6 +1.3**
comp=Z,3.2nm,1.0s,baz=326,slow=15,SNR=3.1
KMSC Kings Mountain 122.31 50 PKiKP **PKPdf 01 09 43.3 0.0**
baz=291
KMSC Kings Mountain 122.31 50 *e*PKPdf **PKPdf 01 09 44.1 +0.8**
HOPE Hope Point 122.41 175 PFAKE 01 09 50.0 +7.1
HOPE LR LR
comp=Z,8µm,20.0s
OBKA Obir 122.53 325 *i* pPKPdf **PKPdf 01 09 44.7 +1.2**
comp=Z,13nm,1.6s
SSPA Standing Stone 122.55 43 *e*PKPdf **PKPdf 01 09 44.4 +0.8**
LONY Lake Ozonia 122.68 37 *e*PKPdf **PKPdf 01 09 45.4 +1.7**
LONY LR LR
comp=Z,12µm,21.0s
BOJS Bojanci 122.69 324 *e*PP PP 01 11 23.8 +2.8
LJU Ljubljana 122.81 325 *e*PKPdf **PKPdf 01 09 46.9 +3.0**
LJU *e* 01 11 14.4
LJU *e*PP **PP 01 11 27.1 +5.3**
LJU *e* 01 21 20.9
LJU *e* 01 22 42.5
LJU *e* 01 27 36.4
LJU *e*SS SS 01 28 12.9 +10
KBA Koelnbreinsper 122.87 327 *i* pPKPdf **PKPdf 01 09 45.3 +1.0**
comp=Z,6.9nm,0.9s
BINY Binghamton 123.06 40 *e*PKPdf **PKPdf 01 09 47.0 +2.4**
BINY LR LR
comp=Z,16µm,20.0s
CADS Cadrg 123.15 326 *e*PKPdf **PKPdf 01 09 46.9 +2.2**
CADS *e*PP **PP 01 11 29.1 +5.0**
ABTA Abfaltersbach 123.53 327 *i* pPKPdf **PKPdf 01 09 48.2 +2.7**
comp=Z,8.1nm,0.9s
WATA Walderalm 123.67 328 *i* sPKPdf **PKPdf 01 09 49.7 +3.9**
comp=Z,5.5nm,0.8s
WTTA Wattenberg 123.69 328 *i* sPKiKP **PKPdf 01 09 50.0 +4.2**
comp=Z,21nm,0.9s
N59A State Game Lan 123.83 41 PKiKP **PKPdf 01 09 46.2 +0.1**
baz=300
MOTA Moosalm 123.92 328 *i* sPKPdf **PKPdf 01 09 49.9 +3.7**
comp=Z,12nm,0.9s
ESK Eskdalemuir 123.93 342 PFAKE 01 10 00.0 +14
ESK LR LR
comp=Z,6µm,21.0s
NHSC New Hope 123.93 52 PFAKE 01 10 00.0 +14
NHSC LR LR
comp=Z,9µm,20.0s
CBN Corbin Frederi 123.99 45 PFAKE 01 10 00.0 +14
CBN LR LR
comp=Z,11µm,20.0s
RETA Reutte 124.01 328 *i* sPKPdf **PKPdf 01 09 50.3 +4.0**
comp=Z,13nm,1.5s
FETA Feichten 124.32 328 *i* pPKPdf **PKPdf 01 09 49.6 +2.5**
comp=Z,9.3nm,0.9s
DAVA Damuels 124.60 329 *i* sPKiKP **PKPdf 01 09 51.8 +4.3**
comp=Z,11nm,1.0s
BFO Black Forest 124.70 330 PFAKE 01 10 00.0 +12
BFO LR LR
comp=Z,8µm,20.0s
WLF Walferdange 124.81 333 PFAKE 01 10 00.0 +12
WLF LR LR
comp=Z,15µm,20.0s
CNNC Cliffs of the 124.88 48 PFAKE 01 10 00.0 +12
CNNC LR LR
comp=Z,11µm,20.0s
TIP Timpagrande 125.02 317 PFAKE 01 10 00.0 +12
TIP LR LR
comp=Z,7µm,22.0s
CUC Castrocucco 125.25 318 PFAKE 01 10 00.0 +11
CUC LR LR
comp=Z,4µm,20.0s
PKME Peaks-Kenny Pk 125.38 34 PFAKE 01 10 00.0 +11
PKME LR LR
comp=Z,11µm,20.0s
TUE Stuetta 125.40 328 *e*PKPdf **PKPdf 01 09 49.4 +0.2**
TUE LR LR
comp=Z,13µm,21.0s
AQU L'Aquila 125.56 322 PFAKE 01 10 00.0 +11
AQU LR LR
comp=Z,11µm,22.0s
CEL Celeste 126.05 316 PFAKE 01 10 00.0 +10
CEL LR LR
comp=Z,5µm,22.0s
BNI Bardonecchia 127.74 328 PFAKE 01 10 10.0 +16
BNI LR LR
comp=Z,13µm,20.0s
WDD Wied Dalam 128.18 314 PFAKE 01 10 10.0 +15
WDD LR LR
comp=Z,3µm,22.0s
CLTB Caltabellotta 128.23 317 PFAKE 01 10 10.0 +15
CLTB LR LR
comp=Z,3µm,20.0s
SSB Saint Sauveur 128.69 330 PFAKE 01 10 10.0 +15
SSB LR LR
comp=Z,13µm,22.0s
TSUM Tsumeb 128.87 242 *e*PKPdf **PKPdf 01 09 58.4 +1.9**
TSUM LR LR
comp=Z,10µm,22.0s
LCO Las Campanas 128.96 132 *e*PKPdf **PKPdf 01 09 58.5 +1.9**
LCO LR LR
comp=Z,7µm,21.0s
TRQA Tornquist 128.98 147 PFAKE 01 10 10.0 +14
TRQA LR LR
comp=Z,6µm,20.0s
VSL Villasalto 129.69 321 PFAKE 01 10 10.0 +13
VSL LR LR
comp=Z,5µm,22.0s
NNA Nana 130.35 109 PFAKE 01 10 10.0 +11
NNA LR LR
comp=Z,3µm,20.0s
MTDJ Mount Denham 130.44 69 PFAKE 01 10 10.0 +11
MTDJ LR LR
comp=Z,7µm,19.0s
OTAV Otavalo 130.74 92 *e*P **PKPdf 01 10 01.0 +0.4**
OTAV Otavalo 130.74 92 *e*PKPdf **PKPdf 01 10 02.3 +1.7**
OTAV LR LR
comp=Z,15µm,19.0s
KEST Kesra 131.84 317 PP PP 01 12 19.5 -2.3
comp=Z,3.5nm,1.0s,baz=356,slow=15,SNR=2.3
GTBY Guantanamo Bay 132.29 66 PFAKE 01 10 10.0 +7.3
GTBY LR LR
comp=Z,6µm,20.0s
LVC Limon Verde 133.56 126 PFAKE 01 10 20.0 +14
LVC LR LR
comp=Z,6µm,21.0s
HELC Santa Helena 133.79 85 *e*P **PKPdf 01 10 05.5 -0.7**
PRAC Prado 134.44 88 *e*P **PKPdf 01 10 06.1 -1.0**
NORC Norcasia 134.46 85 *e*P **PKPdf 01 10 07.2 +0.1**
ROSC El Rosal 135.01 86 PKP **PKPdf 01 10 09.8 +1.2**
comp=Z,4.0nm,0.5s,baz=155,slow=2.9,SNR=9.3
GRTK Grand Turk 135.43 62 PFAKE 01 10 20.0 +11
GRTK LR LR
comp=Z,9µm,21.0s
CHIC Chingaza 135.60 87 *e*P **PKPdf 01 10 06.1 -3.6**
BBSR BB Station 135.87 45 PFAKE 01 10 20.0 +11
BBSR LR LR
comp=Z,7µm,20.0s
OCAC Ocana 135.88 82 *e*P **PKPdf 01 10 04.4 -5.4**
SDDR Presa de Saban 136.02 66 PFAKE 01 10 20.0 +10
SDDR LR LR
comp=Z,10µm,20.0s
RUSC La Rusia 136.23 85 *e*P **PKPdf 01 10 10.1 -0.9**
CBRI Barrientos, No 136.43 82 *e*P **PKPdf 01 10 07.8 -3.1**
TRIS Tristan da Cun 136.96 200 PFAKE 01 10 20.0 +9.0
TRIS LR LR
comp=Z,9µm,19.0s
LPAZ La Paz 136.97 118 PKhKP PKPpre 01 10 05.6
comp=Z,1.0nm,0.6s,baz=234,slow=7.4,SNR=8.2
LPAZ PKP **PKiKP 01 10 13.8 -0.4**
comp=Z,4.9nm,0.8s,baz=245,slow=3.6,SNR=15
ESDC Sonseca Array 137.05 331 PKP **PKPdf 01 10 11.5 +0.3**
comp=Z,0.4nm,0.7s,baz=20,slow=4.1,SNR=3.8
ESDC PP **PP 01 12 51.6 -2.6**
comp=Z,1.3nm,0.9s,baz=42,slow=6.8,SNR=4.4
PGAV Gavieira, Arco 137.06 337 *e*PKPdf **PKPdf 01 10 15.9 +4.7**
PGAV Gavieira, Arco 137.06 337 *e*PP PP 01 12 59.9 +5.7
PGAV Gavieira, Arco 137.06 337 *e*SS SS 01 31 10.6 +13
PGAV Gavieira, Arco 137.06 337 *e*LR LR 01 56 36.8
comp=Z,6µm,20.0s
PCAB Cabril 137.19 337 *e*PKPdf **PKPdf 01 10 15.3 +3.9**
PCAB Cabril 137.19 337 *e*PP PP 01 12 59.4 +4.5
MVO Moncorvo 137.24 335 *e*PKPdf **PKPdf 01 10 18.1 +6.6**
MVO Moncorvo 137.24 335 *e*PP PP 01 13 01.4 +6.1
MVO Moncorvo 137.24 335 *e*LR LR 01 56 39.1
comp=Z,5µm,22.0s
PAB San Pablo 137.34 331 PFAKE 01 10 20.0 +8.2
PAB LR LR
comp=Z,7µm,21.0s
POLO Lamas de Olo 137.38 336 *e*PKPdf **PKPdf 01 10 15.5 +3.7**
POLO Lamas de Olo 137.38 336 *e*PP PP 01 13 01.0 +4.8
PVRL Vila Real 137.43 336 *e*PKPdf **PKPdf 01 10 06.8 -5.1**
PVRL Vila Real 137.43 336 *e*PP PP 01 13 03.1 +6.7
PVIS Viseu 137.97 336 *e*PKPdf **PKPdf 01 10 15.9 +3.0**
PVIS Viseu 137.97 336 *e*PP PP 01 13 03.3 +3.5
MTE Manteigas 138.09 335 *e*PKPdf **PKPdf 01 10 18.5 +5.4**
MTE Manteigas 138.09 335 *e*PP PP 01 13 06.5 +5.9
MTE Manteigas 138.09 335 *e*SS SS 01 31 22.3 +13
MTE Manteigas 138.09 335 *e*LR LR 01 56 47.0
comp=Z,8µm,20.0s
MTE Manteigas 138.09 335 PFAKE 01 10 20.0 +6.9
MTE LR LR
comp=Z,10µm,22.0s
SDV Santo Domingo 138.48 80 PFAKE 01 10 30.0 +15
SDV LR LR
comp=Z,10µm,22.0s
PCAS Casmilo, Conde 138.78 336 *e*PKPdf **PKPdf 01 10 16.2 +1.9**
PCAS Casmilo, Conde 138.78 336 *e*PP PP 01 13 09.9 +5.2
PMRV Marv??o 138.83 334 *e*PKPdf **PKPdf 01 10 18.3 +3.9**
PMRV Marv??o 138.83 334 *e*PP PP 01 13 10.0 +4.9
PMRV Marv??o 138.83 334 *e*LR LR 01 57 26.8
comp=Z,7µm,22.0s
PTOM Tomar 139.10 335 *e*PKPdf **PKPdf 01 10 22.3 +7.4**
PESTR Estremoz 139.38 334 *e*PKPdf **PKPdf 01 10 19.9 +4.4**
PESTR Estremoz 139.38 334 *e*PP PP 01 13 13.4 +4.9
PMTG Montargil 139.49 335 *e*PP PP 01 13 14.2 +5.1
PBAR Barrancos 139.69 333 *e*PKPdf **PKPdf 01 10 18.1 +2.1**
PBAR Barrancos 139.69 333 *e*PP PP 01 13 13.0 +2.5
EVO Evora 139.84 334 *e*PKPdf **PKPdf 01 10 19.2 +2.9**
EVO Evora 139.84 334 *e*PP PP 01 13 13.8 +2.5
CPUP Villa Florida 140.01 139 PKP **PKPdf 01 10 16.7 -0.2**
comp=Z,2.7nm,0.9s,baz=267,slow=6.0,SNR=5.6
CPUP PP **PP 01 13 11.1 -1.9**
comp=Z,7.9nm,1.3s,baz=225,slow=8.6,SNR=3.1
PMAFR Mafra 140.03 336 *e*PP PP 01 13 17.1 +4.6
PMST Lisbon--Monsan 140.17 335 *e*PKPdf **PKPdf 01 10 21.5 +4.6**
PMST Lisbon--Monsan 140.17 335 *e*PP PP 01 13 20.5 +7.2
LIS Lisbon 140.17 335 *e*P **PKPdf 01 10 15.8 -1.1**
LIS AMS AMS 02 21 02.2
comp=E,7µm,15.9s
PBEJ Beja 140.19 333 *e*PKPdf **PKPdf 01 10 22.6 +5.6**
PBEJ Beja 140.19 333 *e*PP PP 01 13 19.7 +6.2
PNCL Nicolau / Gran 140.41 334 *e*PKPdf **PKPdf 01 10 21.8 +4.5**
PNCL Nicolau / Gran 140.41 334 *e*PP PP 01 13 20.1 +5.3
MESJ Messejana 140.50 333 *e*P **PKPdf 01 10 16.6 -1.0**
MESJ AMS AMS 02 13 59.9
comp=E,6µm,18.0s
MESJ Messejana 140.50 333 *e*PKPdf **PKPdf 01 10 21.9 +4.4**
MESJ Messejana 140.50 333 *e*PP PP 01 13 20.0 +4.6
PCVE Castro Verde 140.59 333 *e*PKPdf **PKPdf 01 10 22.8 +5.1**
PCVE Castro Verde 140.59 333 *e*PP PP 01 13 21.6 +5.6
PVAQ Vaqueiros 140.63 333 *e*PKPdf **PKPdf 01 10 23.5 +5.7**
PVAQ Vaqueiros 140.63 333 *e*PP PP 01 13 21.0 +4.7
PVAQ Vaqueiros 140.63 333 *e*SS SS 01 31 51.0 +12
PVAQ Vaqueiros 140.63 333 *e*LR LR 01 58 45.5
comp=E,5µm,20.0s
PBDV Barranco-do-Ve 140.86 333 *e*PKPdf **PKPdf 01 10 23.4 +5.2**
PBDV Barranco-do-Ve 140.86 333 *e*PP PP 01 13 22.0 +4.3
SJG San Juan 140.94 65 *e*PKIKP **PKPdf 01 10 22.7 +3.9**
SJG MLR MLR
comp=Z,9µm,21.0s
SJG San Juan 140.94 65 *e*PKPdf **PKPdf 01 10 22.7 +3.9**
SJG LR LR
comp=Z,9µm,21.0s
PTEO Sao Teotonio 140.97 334 *e*PP PP 01 13 23.1 +4.8
TAM Tamanrasset 141.10 303 PFAKE 01 10 30.0 +11
TAM LR LR
comp=Z,4µm,21.0s
MORF Marmelete 141.13 333 *e*P **PKPdf 01 10 17.5 -1.3**
MORF AMS AMS 02 35 14.7
comp=Z,5µm,11.9s
MORF Marmelete 141.13 333 *e*PKPdf **PKPdf 01 10 23.6 +4.9**
MORF Marmelete 141.13 333 *e*PP PP 01 13 24.7 +5.3
PFVI Vila Ibo 141.36 333 *e*PP PP 01 13 26.2 +5.6
H07S1 FLORES T-PHASB 143.94 3 *e*PKP PKPbc 01 10 21.8 +0.4
SAML Samuel 144.09 110 *e*PKPdf **PKPdf 01 10 24.0 -0.5**
SAML LR LR
comp=Z,8µm,20.0s
PGRA Graciosa 144.31 358 *e*PKP PKPbc 01 10 23.0 +0.5
ROSA Rosais 144.63 359 *e*PKP **PKPab 01 10 22.4 -0.9**
ADH Angra Heroismo 144.65 357 *e*PKP **PKPab 01 10 22.4 -1.0**
PMAN Manadas 144.71 358 *e*PKP PKPbc 01 10 23.7 -0.1
PCED Cedros 144.72 359 *e*PKP **PKPab 01 10 23.2 -0.5**
PICO Pico 144.85 359 *e*PKP **PKPab 01 10 24.2 -0.1**
PCAN Candelaria 144.89 359 *e*PKP **PKPab 01 10 23.6 -0.7**
PSET Sete Cidades 145.38 355 *e*PKP **PKPbc 01 10 25.0 -1.0**
GRON Grota Negra 145.42 355 *e*PKP **PKPbc 01 10 25.2 -1.0**
CMLA Cha da Macela 145.42 355 *i* PKIKP **PKPab 01 10 31.9 +5.6**
CMLA Cha da Macela 145.42 355 *e*PKP **PKPbc 01 10 25.2 -0.9**
CMLA Cha da Macela 145.42 355 *e*PKPbc **PKPab 01 10 26.7 +0.4**
CMLA LR LR
comp=Z,4µm,19.0s
PDA Ponta Delgada 145.45 355 *e*PKP **PKPbc 01 10 25.6 -0.6**
PSMN Pico do Norte, 146.13 354 *e*PKP **PKPdf 01 10 25.8 -1.7**
PSMA Santa Maria 146.15 354 *e*PKP **PKPdf 01 10 25.9 -1.6**
FDF Fort de France 146.52 68 *e*PKP2 **PKPab 01 10 32.4 +1.3**
FDF MLR MLR
comp=Z,6µm,20.0s
FDF Fort de France 146.52 68 *e*PKPab **PKPab 01 10 32.4 +1.3**
FDF LR LR
comp=Z,6µm,20.0s
TORD Torodi Ar. Bea 147.86 290 PKPbc **PKPbc 01 10 32.5 -1.3**
comp=Z,30nm,1.0s,baz=65,slow=1.3,SNR=48
PMPS Porto Santo 147.92 339 *e*PKPab **PKPab 01 10 36.6 +0.6**
PMAR Madeira 148.43 340 *e*PKPab **PKPab 01 10 37.1 -1.2**
PMOZ Porto Moniz, M 148.43 340 *e*PKPab **PKPab 01 10 37.1 -1.1**
PMOZ Porto Moniz, M 148.43 340 *e*LR LR 02 03 34.8
comp=Z,3µm,22.0s
BBGH Gun Hill 148.45 70 PFAKE 01 10 40.0 +1.3
BBGH LR LR
comp=Z,10µm,20.0s
FUL Funchal 148.49 340 *e*PKPab **PKPab 01 10 37.7 -0.6**
SHEL Horse Pasture 149.96 230 *i* PKP2 **PKPab 01 10 43.3 -1.5**
SHEL Horse Pasture 149.96 230 PFAKE 01 10 50.0 +5.2
SHEL LR LR
comp=Z,3µm,20.0s
KIC Kosan Boka 155.38 278 *e*P **PKPdf 01 10 45.1 +2.8**
comp=Z,230nm,1.5s
DBIC Dimbokro 155.46 279 PKP **PKPdf 01 10 41.6 -0.8**
comp=Z,10nm,1.2s,baz=192,slow=9.3,SNR=4.5
DBIC PKPab **PKPab 01 11 07.3 -0.8**
comp=Z,25nm,1.0s,baz=127,slow=4.2,SNR=7.2
TIC Toumodi 155.62 279 *e*P **PKPdf 01 10 46.8 +4.1**
LIC Lamto 155.68 278 *e*P **PKPdf 01 10 46.9 +4.2**
comp=Z,146nm,1.6s
ASCN Ascension 161.49 233 PFAKE 01 11 00.0 +10
ASCN LR LR
comp=Z,6µm,21.0s
SACV Santiago Islan 167.04 335 PFAKE 01 11 10.0 +15
SACV LR LR
comp=Z,3µm,19.0s
RCBR Riachuelo 168.84 143 PFAKE 01 11 10.0 +14
RCBR LR LR
comp=Z,11µm,20.0s

NEIC ***25*** *00:54:08.0±0.8,29°.02S×175°.42W,h10km,mb4.7/10, Error ellipse: s-maj=22.5km s-min=14.8km az=148.0*
IDC ***25*** *00:54:09.4±2.8,27°.83S×175°.96W,h0km,mb4.1/2, mb1 4.5/3,mb1mx3.9/33,mbtmp4.3/3,ML4.9/1,Error ellipse: s-maj=106.9km s-min=34.5km az=140.0*
ISCJB ***25*** *00:54:10.8±0.8,28°.8S±0°.1×175°.50W±0°.10,h33km, mb4.6/12,Error ellipse: s-maj=21.8km s-min=9.5km az=157.2*

ISC 25 00:54:12.1±0.9,28°.8S±0°.2×175°.5W±0°.1,h35km,n19, σ1s04/19,mb4.7/11,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
RAO	**Raoul Island**	**2.21**	**258**	Pn	**Pn**	**00 54 47.9**	**+1.6**
	324nm,0.3s,baz=48,slow=14,SNR=7.6						
RAO				Sn	**Sn**	**00 55 12.3**	**0.0**
	355nm,0.3s,baz=120,slow=20,SNR=3.0						
AFI	**Afiamalu**	**15.20**	**14**	*e*Pn	**P**	**00 57 47.9**	**-1.1**
	3.5nm,0.5s						
FUNA	**Funafuti**	**20.79**	**345**	*e*P	**P**	**00 58 51.8**	**+1.5**
	23nm,0.4s						
HNR	**Honiara**	**30.07**	**305**	*e*P	**P**	**01 00 18.2**	**-0.1**
	61nm,0.7s						
ASAR	**Alice Springs**	**45.45**	**264**	P	**P**	**01 02 28.4**	**+0.5**
	1.4nm,0.5s,baz=98,slow=6.8,SNR=0.7						
WRA	**Warramunga Arr**	**46.30**	**269**	P	**P**	**01 02 32.5**	**-2.2**
	1.2nm,0.4s,baz=112,slow=6.4,SNR=9.4						
MIDW	**Midway**	**56.72**	**358**	*e*P	**P**	**01 03 53.3**	**+1.0**
	44nm,0.9s						
KKM	**Kota Kinabalu**	**74.21**	**286**	P	**P**	**01 05 44.8**	**-1.1**
	4.6nm,0.5s						
MAJO	**Matsushiro**	**78.24**	**323**	P	**P**	**01 06 07.7**	**-0.5**
	7.4nm,0.6s						
COCO	**West Island**	**82.25**	**260**	*e*P	**P**	**01 06 29.6**	**-0.7**
	77nm,0.6s						
TRQA	**Tornquist**	**88.95**	**134**	*e*P	**P**	**01 07 04.2**	**+0.8**
	0.2nm,0.5s						
HWUT	**Hardware Ranch**	**91.56**	**42**	*e*P	**P**	**01 07 15.7**	**+0.3**
	0.4nm,0.5s						
NEW	**Newport**	**92.79**	**35**	*e*P	**P**	**01 07 21.6**	**+0.9**
	0.6nm,0.6s						
BJT	**Baijiatuan**	**93.36**	**314**	*e*P	**P**	**01 07 23.4**	**-0.1**
	1.7nm,0.4s						
RSSD	**Black Hills**	**97.53**	**44**	P	Pdif	01 07 43.3	+0.5
	0.6nm,0.7s						
FINES	**FINESS Array B**	**144.35**	**342**	PKP	**PKPdf**	**01 13 43.4**	**-0.4**
	1.2nm,0.9s,baz=19,slow=5.9,SNR=5.2						
NOA	**NORSAR Array B**	**147.45**	**354**	PKPbc	**PKPbc**	**01 13 51.5**	**-0.2**
	1.5nm,0.8s,baz=36,slow=6.0,SNR=3.7						
AKASG	**Malin Array Be**	**151.29**	**326**	PKPbc	**PKPbc**	**01 14 00.6**	**-1.0**
	0.3nm,0.3s,baz=45,slow=3.4,SNR=4.5						

BRTR	**Keskin Array B**	**153.71**	**302**	PKPab	**PKPab**	**01**	**14**	**20.8 +0.3**
	1.0nm,0.9s,baz=122,slow=1.6,SNR=4.0							

*IDC **25** 00:56:53.2±2.8, 4.°28S×151.°97E, h0km, mb4.2/3, mb1 4.5/3, mb1mx3.8/37, mbtmp4.2/3, Error ellipse: s-maj=152.7km s-min=32.5km az=124.0*

NEIC 25 00:56:57.2±0.9, 3.°29S×150.°62E, h10km, mb4.4/5, Error ellipse: s-maj=29.8km s-min=14.1km az=125.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**6.98**	**209**	Pn	Pn	00 58 45.7	+6.0
WRAB	**Tennant Creek**	**22.93**	**223**	P	P	01 02 01.7	0.0
	3.4nm,0.6s						
WRA	**Warramunga Arr**	**22.95**	**223**	P	P	01 02 01.8	-0.1
	3.9nm,0.8s,baz=51,slow=9.5,SNR=2.9						
KKM	**Kota Kinabalu**	**35.59**	**285**	P	P	01 03 54.4	-1.0
	3.6nm,0.5s						
NACB	**Ninganchiao**	**39.28**	**316**	P	P	01 04 27.2	+0.8
	9.6nm,1.0s						
PETK	**Petropavlovsk-**	**56.51**	**5**	P	P	01 06 43.3	+3.8
	4.0nm,1.0s,baz=190,slow=7.5,SNR=3.6						
MCK	**McKinley**	**80.32**	**23**	*e*P	P	01 09 08.3	-0.1
	6.3nm,1.1s						
COLA	**College**	**81.28**	**22**	*e*P	P	01 09 12.8	-0.5
	1.8nm,0.8s						
ILAR	**Eielson Array**	**81.60**	**23**	P	P	01 09 14.8	-0.3
	2.1nm,1.0s,baz=249,slow=5.2,SNR=4.5						
TORD	**Torodi Ar. Bea**	**147.77**	**290**	PKPbc	PKPab	01 16 44.8	-1.0
	3.0nm,1.2s,baz=64,slow=3.4,SNR=3.1						

*IDC **25** 00:58:07.8±0.9, 3.°38S×150.°97E, h0km, mb4.1/10, mb1 4.2/10, mb1mx4.0/35, mbtmp4.1/10, Error ellipse: s-maj=31.5km s-min=19.0km az=84.0*
*NEIC **25** 00:58:09.5±0.6, 3.°31S×151.°03E, h10km, mb4.3/3, Error ellipse: s-maj=20.1km s-min=12.1km az=97.0*
*ISCJB **25** 00:58:11.3±0.6, 3.°33S±0.°08×151.°0E±0.°1, h33km, mb4.0/13, Error ellipse: s-maj=19.0km s-min=11.7km az=5.1*

ISC 25 00:58:13.2±0.8, 3.°3S±0.°1×151.°0E±0.°2, h35km, n18, σ1°13/15, mb4.1/13, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.17**	**212**	Pn	**Pn**	**00 59 57.3**	**+1.6**
	0.7nm,0.3s,baz=358,slow=18,SNR=2.0						
WRA	**Warramunga Arr**	**23.20**	**223**	P	**P**	**01 03 15.0**	**-2.2**
	5.0nm,1.0s,baz=49,slow=9.3,SNR=2.8						
DZM	**Mont Dzumac**	**23.90**	**143**	P	**P**	**01 03 23.8**	**-0.2**
	10.0nm,0.7s,baz=339,slow=9.2,SNR=5.5						
ASAR	**Alice Springs**	**26.14**	**218**	P	**P**	**01 03 42.8**	**-1.5**
	2.0nm,0.9s,baz=55,slow=8.1,SNR=1.5						
H11S3	**WAKE ISLAND Hy**	**26.60**	**35**	T	T	01 31 09.9	
	baz=208						
H11S2	**WAKE ISLAND Hy**	**26.61**	**35**	T	T	01 31 10.3	
	baz=208						
H11S1	**WAKE ISLAND Hy**	**26.62**	**35**	T	T	01 31 10.8	
	baz=208						
YHNB	**Yeheng**	**40.05**	**316**	*e*P	**P**	**01 05 45.5**	**+0.1**
	5.0nm,0.7s						
JNU	**Nakatsue**	**40.95**	**334**	P	**P**	**01 05 53.8**	**+1.1**
	3.9nm,0.9s,baz=204,slow=5.2,SNR=2.9						
CMAR	**Chiang Mai Arr**	**55.66**	**295**	P	**P**	**01 07 46.5**	**+0.1**
	1.6nm,0.8s,baz=106,slow=6.7,SNR=5.6						
CHTO	**Chiang Mai**	**55.76**	**295**	*e*P	**P**	**01 07 47.1**	**0.0**
	1.2nm,0.4s						
PETK	**Petropavlovsk-**	**56.50**	**5**	P	**P**	**01 07 51.1**	**-0.5**
	2.2nm,0.9s,baz=141,slow=7.1,SNR=2.7						
SONM	**Songino Array**	**64.14**	**328**	P	**P**	**01 08 44.8**	**+0.5**
	0.6nm,0.6s,baz=142,slow=7.3,SNR=2.4						
VNDA	**Vanda**	**74.37**	**178**	P	**P**	**01 09 47.2**	**+0.3**
	0.9nm,0.8s,baz=333,slow=7.4,SNR=5.7						
ZALV	**Zalesovo Beam**	**78.95**	**327**	P	**P**	**01 10 11.9**	**-1.3**
	0.6nm,0.4s,baz=104,slow=6.1,SNR=3.6						
COLA	**College**	**81.14**	**22**	*e*P	**P**	**01 10 25.2**	**+0.5**
	1.4nm,0.4s						
ILAR	**Eielson Array**	**81.46**	**23**	P	**P**	**01 10 27.2**	**+0.7**
	1.5nm,0.8s,baz=270,slow=4.0,SNR=2.6						
TORD	**Torodi Ar. Bea**	**148.16**	**290**	PKPbc	**PKPbc**	**01 17 55.5**	**-1.0**
	0.9nm,0.7s,baz=100,slow=3.4,SNR=2.5						

*IDC **25** 00:59:10.2±0.8, 3.°28S×150.°82E, h0km, mb4.2/17, mb1 4.4/18, mb1mx4.3/35, mbtmp4.2/18, ML4.0/1, Error ellipse: s-maj=26.0km s-min=13.9km az=97.0*
*NEIC **25** 00:59:16.0±0.4, 3.°27S×150.°08E, h10km, mb5.1/26, Error ellipse: s-maj=13.7km s-min=9.4km az=113.0*
*ISCJB **25** 00:59:17.1±0.3, 3.°48S±0.°06×150.°38E±0.°07, h27km, mb4.7/51, MS5.2/3, Error ellipse: s-maj=11.1km s-min=8.0km az=31.8*
*BJI **25** 00:59:20.9, 3.°00S×150.°50E, h32km, mb4.8/29, mB5.5/12, Ms5.5/8, Ms7 5.5/10*

ISC 25 00:59:18.3±0.5, 3.°35S±0.°07×150.°47E±0.°08, h27km, n78, σ2°39/78, mb4.9/50, MS5.1/3, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RABL	**Rabaul**	**1.89**	**116**	*e*Pn	**Pb**	**00 59 52.9**	**+0.7**
PMG	**Port Moresby**	**6.86**	**208**	Pn	**Pn**	**01 00 59.5**	**+2.3**
	3.3nm,0.3s,baz=10,slow=11,SNR=3.5						
PMG	**Port Moresby**	**6.86**	**208**	*e*Pn	**Pn**	**01 00 57.0**	**-0.2**
CTA	**Charters Tower**	**17.14**	**194**	P	**Pn**	**01 03 15.0**	**-1.1**
	0.3nm,0.3s,baz=25,slow=9.8,SNR=2.8						
WRA	**Warramunga Arr**	**22.80**	**222**	P	**P**	**01 04 16.4**	**-2.7**
	7.5nm,0.8s,baz=48,slow=9.9,SNR=4.3						
DZM	**Mont Dzumac**	**24.23**	**142**	P	P	01 04 26.1	-7.1
	25nm,0.8s,baz=355,slow=8.9,SNR=7.5						
ASAR	**Alice Springs**	**25.78**	**217**	P	**P**	**01 04 46.9**	**-0.3**
	3.2nm,0.7s,baz=53,slow=8.4,SNR=2.9						
H11S3	**WAKE ISLAND Hy**	**26.95**	**36**	T	T	01 32 11.6	
	baz=217,slow=74,SNR=22						
H11S2	**WAKE ISLAND Hy**	**26.96**	**36**	T	T	01 32 11.9	
	baz=217,slow=74,SNR=35						
H11S1	**WAKE ISLAND Hy**	**26.97**	**36**	T	T	01 32 12.8	
	baz=217,slow=74,SNR=30						
H11N1	**WAKE ISLAND Hy**	**28.03**	**35**	T	T	01 33 34.2	
	baz=218,slow=76,SNR=11						
H11N3	**WAKE ISLAND Hy**	**28.04**	**35**	T	T	01 33 40.2	
	baz=218,slow=76,SNR=8.5						
H11N2	**WAKE ISLAND Hy**	**28.05**	**35**	T	T	01 33 36.6	
	baz=218,slow=76,SNR=13						
FITZ	**Fitzroy Crossi**	**28.40**	**237**	P	**P**	**01 05 08.0**	**-2.8**
	5.1nm,0.9s,baz=57,slow=17,SNR=2.5						
STKA	**Stephens Creek**	**29.58**	**195**	P	**P**	**01 05 19.1**	**-2.0**
	2.6nm,0.8s,baz=39,slow=14,SNR=2.4						
YULB	**Yu-li**	**38.92**	**315**	*e*P	**P**	**01 06 42.0**	**-0.1**
	8.5nm,0.9s						
JNU	**Nakatsue**	**40.73**	**334**	P	**P**	**01 06 52.7**	**-4.3**
	6.5nm,0.7s,baz=130,slow=8.0,SNR=4.6						
KSRS	**Korea Array**	**45.68**	**335**	P	**P**	**01 07 34.4**	**-2.5**
	0.8nm,0.6s,baz=152,slow=7.8,SNR=3.2						
KSAR	**Wonju Array Be**	**45.69**	**335**	P	**P**	**01 07 34.4**	**-2.5**
KS01	**Wonju Array Si**	**45.71**	**335**	*e*P	**P**	**01 07 38.1**	**+1.0**
USRK	**Ussuriysk Ar.**	**50.15**	**343**	P	**P**	**01 08 07.8**	**-3.6**
	2.7nm,0.8s,baz=169,slow=1.5,SNR=3.0						
GYA	**Guiyang**	**51.67**	**308**	P	**P**	**01 08 26.4**	**+3.1**
GYA				pP	sP	01 08 36.4	+1.6
GYA				PP	**PP**	**01 10 25.0**	**+3.9**
GYA				ScP	**ScP**	**01 13 32.6**	**+0.7**
GYA				S	**S**	**01 15 43.0**	**-0.4**
GYA				sS	sS	01 16 00.9	+3.9
GYA				SS	**SS**	**01 19 18.3**	**-1.8**
GYA	comp=Z,20nm,1.2s			pmax	pmax		
GYA	comp=Z,120nm,8.0s			pmax	pmax		
GYA	comp=N,500nm,17.5s			LR	LR		
GYA	comp=E,490nm,17.2s			LR	LR		
CN2	**Changchun**	**52.04**	**337**	*e*P	P	01 08 31.8	+6.2
BJI	**Beijing**	**53.41**	**327**	P	**P**	**01 08 37.8**	**+2.0**
BJI				S	**S**	**01 16 02.3**	**-4.2**
BJI	comp=Z,11nm,1.8s			pmax	pmax		
KMI	**Kunming**	**54.25**	**304**	P	**P**	**01 08 45.6**	**+3.1**
KMI	comp=Z,21nm,0.5s			pmax	pmax		
KLR	**Kul'dur**	**54.83**	**345**	P	**P**	**01 08 42.5**	**-3.4**
	1.3nm,0.7s,baz=128,slow=2.8,SNR=3.2						
CM01	**Chiang Mai Arr**	**55.13**	**295**	*e*P	**P**	**01 08 50.3**	**+1.5**
CMAR	**Chiang Mai Arr**	**55.15**	**295**	P	**P**	**01 08 48.4**	**-0.5**
	2.5nm,0.7s,baz=120,slow=5.3,SNR=7.4						
CD2	**Chengdu**	**56.03**	**311**	P	**P**	**01 08 56.0**	**+0.9**
CD2				pP	sP	01 09 05.8	-0.9
CD2				sP	pP	01 09 10.0	+6.6
CD2				S	**S**	**01 16 42.3**	**+0.1**
CD2				sS	sS	01 16 58.9	+3.0
CD2				SS	**SS**	**01 20 29.8**	**+1.0**
CD2	comp=Z,20nm,0.5s			pmax	pmax		
CD2	comp=Z,160nm,5.0s			pmax	pmax		
CD2	comp=Z,8μm,18.9s			LR	LR		
HHC	**Hu-ho-hao-te**	**56.52**	**325**	*e*P	**P**	**01 09 01.5**	**+3.0**
HHC				pmax	pmax		
	comp=Z,13nm,1.1s						
PEA0	**Petropavlovsk-**	**56.58**	**5**	*e*P	**P**	**01 08 58.8**	**+0.3**
PETK	**Petropavlovsk-**	**56.58**	**5**	P	P	01 08 52.6	-5.8
	1.9nm,0.7s,baz=152,slow=9.6,SNR=2.9						
LZH	**Lanzhou**	**58.57**	**316**	*e*P	**P**	**01 09 16.8**	**+3.7**
LZH				pP	sP	01 09 27.9	+3.2
LZH				sP	pP	01 09 34.3	+13
LZH	comp=Z,22nm,1.0s			pmax	pmax		
SONM	**Songino Array**	**63.87**	**329**	P	**P**	**01 09 45.2**	**-3.5**
	1.9nm,0.7s,baz=134,slow=5.0,SNR=5.7						
SONM				PKKP	PKKPdf	01 30 14.4	-12
	0.4nm,0.3s,baz=298,slow=3.1,SNR=3.4						
WMQ	**Urumqi**	**73.10**	**318**	*e*P	**P**	**01 10 49.4**	**+2.9**
WMQ				pmax	pmax		
WMQ	comp=Z,16nm,0.8s			pmax	pmax		
WMQ	comp=Z,98nm,5.9s			LR	LR		
WMQ	comp=N,1μm,19.9s			LR	LR		
WMQ	comp=E,860nm,20.3s			LR	LR		
	comp=Z,930nm,24.2s						
TTA	**Tatalina**	**77.29**	**22**	*e*P	**P**	**01 11 11.6**	**+1.5**
	19nm,1.4s						
CNPM	**China Poot**	**77.44**	**26**	*e*P	**P**	**01 11 11.4**	**+0.4**
	95nm,1.4s						
MKAR	**Makanchi Array**	**77.71**	**319**	P	**P**	**01 11 10.0**	**-2.8**
	0.7nm,0.7s,baz=95,slow=12,SNR=2.8						
ZAA0	**Zalesovo Array**	**78.66**	**327**	*e*P	**P**	**01 11 16.1**	**-1.8**
ZALV	**Zalesovo Beam**	**78.66**	**327**	P	**P**	**01 11 13.9**	**-3.9**
	1.8nm,0.7s,baz=104,slow=6.1,SNR=4.7						
PPLA	**Purkeypile**	**78.74**	**23**	*e*P	**P**	**01 11 19.2**	**+0.9**
	56nm,1.6s						
CAST	**Castle Rocks**	**79.06**	**23**	*e*P	**P**	**01 11 20.8**	**+0.9**
	12nm,1.0s						
SML	**Sawmill**	**79.78**	**25**	*e*P	**P**	**01 11 25.2**	**+1.3**
	30nm,1.2s						
BPAW	**Bear Paw Mtn.**	**79.82**	**22**	*e*P	**P**	**01 11 24.6**	**+0.6**
	44nm,1.9s						
KSH	**Kashi**	**80.23**	**311**	*e*P	**P**	**01 11 31.0**	**+4.1**
KSH				*e*pP	sP	01 11 40.8	+2.1
KSH				*e*sP	pP	01 11 44.8	+9.2
KSH				*e*PP	**PP**	**01 14 34.8**	**+5.1**
KSH				S	**S**	**01 21 31.6**	**+0.9**
KSH	comp=Z,430nm,4.4s			pmax	pmax		
RND	**Reindeer**	**80.31**	**23**	*e*P	**P**	**01 11 26.4**	**-0.4**
	17nm,0.8s						
MLY	**Manley**	**80.38**	**22**	*e*P	**P**	**01 11 27.9**	**+0.8**
	16nm,1.2s						
MCK	**McKinley**	**80.44**	**23**	*e*P	**P**	**01 11 27.7**	**+0.4**
	26nm,1.0s						
KLU	**Klutina**	**80.68**	**26**	*e*P	**P**	**01 11 29.0**	**+0.2**
	26nm,1.0s						
DHY	**Denali Highway**	**80.76**	**24**	*e*P	**P**	**01 11 30.4**	**+1.2**
	12nm,1.0s						
WRH	**Wood River Hil**	**81.11**	**23**	*e*P	**P**	**01 11 31.2**	**+0.3**
	26nm,1.3s						
MDM	**Murphy Dome**	**81.28**	**22**	*e*P	**P**	**01 11 34.1**	**+2.2**
	21nm,1.5s						
CCB	**Clear Creek Bu**	**81.30**	**23**	*e*P	**P**	**01 11 31.5**	**-0.4**
	18nm,1.2s						
COLA	**College**	**81.39**	**22**	*e*P	**P**	**01 11 32.6**	**+0.3**
	7.0nm,0.9s						
COLD	**Coldfoot**	**81.67**	**20**	*e*P	**P**	**01 11 35.3**	**+1.4**
	9.7nm,1.1s						
IL1	**Eielson Array**	**81.71**	**23**	*e*P	**P**	**01 11 33.4**	**-0.7**
ILAR	**Eielson Array**	**81.71**	**23**	P	**P**	**01 11 30.1**	**-4.0**
	2.5nm,0.8s,baz=244,slow=4.9,SNR=4.3						
ILB	**Eielson Array**	**81.71**	**23**	*e*P	**P**	**01 11 33.8**	**-0.3**
DOT	**Dot Lake**	**82.35**	**24**	*e*P	**P**	**01 11 38.6**	**+1.1**
	43nm,1.2s						
NRIK	**Norilʹsk**	**83.85**	**341**	P	**P**	**01 11 41.1**	**-4.0**
	1.5nm,0.5s,baz=108,slow=9.6,SNR=2.0						
EGAK	**Eagle**	**83.96**	**24**	*e*P	**P**	**01 11 47.8**	**+2.0**
	10nm,1.0s						
HYT	**Haines Junctio**	**84.24**	**28**	*e*P	**P**	**01 11 50.5**	**+3.0**
	15nm,1.1s						
KKAR	**Karatay Array**	**84.95**	**314**	*e*P	**P**	**01 11 51.8**	**+0.6**
DLBC	**Dease Lake**	**87.34**	**31**	*e*P	**P**	**01 12 04.6**	**+1.8**
	32nm,1.5s						
ORV	**Oroville**	**90.59**	**51**	*e*P	**P**	**01 12 20.7**	**+2.3**
	14nm,1.5s						
MOD	**Modoc Plateau**	**91.64**	**48**	*e*P	**P**	**01 12 25.3**	**+1.8**
	8.0nm,0.9s						
ABKAR	**Akbulak array**	**92.85**	**319**	*e*P	**P**	**01 12 29.6**	**+0.9**
BMO	**Blue Mountains**	**93.92**	**45**	*e*P	**P**	**01 12 34.6**	**+0.7**
	22nm,1.8s						
F10A	**Beach Ranch, E**	**93.99**	**44**	*e*P	**P**	**01 12 36.3**	**+2.1**
	5.2nm,0.8s						
YKA	**Yellowknife Ar**	**95.23**	**28**	P	**P**	**01 12 36.1**	**-3.2**
	1.1nm,0.7s,baz=348,slow=9.0,SNR=3.0						
BSMT	**Bassoo Peak**	**95.65**	**42**	*e*P	**P**	**01 12 44.0**	**+2.1**
WALA	**Waterton Lakes**	**96.20**	**41**	*e*P	**P**	**01 12 47.7**	**+3.5**
	30nm,1.6s						
PDAR	**Pinedale Array**	**99.59**	**47**	P	**Pdif**	**01 12 59.7**	**-0.1**
	0.9nm,0.8s,baz=218,slow=1.9,SNR=4.9						
LANS	**Liptovska Anna**	**118.28**	**326**	*e*PKP	**PKPdf**	**01 18 09.3**	**+6.0**
VYHS	**Vyhne**	**118.97**	**325**	*e*PKP	**PKPdf**	**01 18 09.0**	**+4.3**
GERES	**GERESS Array B**	**121.60**	**328**	PKP	**PKPdf**	**01 18 10.8**	**+1.0**
	0.6nm,0.6s,baz=67,slow=3.3,SNR=4.5						
TORD	**Torodi Ar. Bea**	**147.64**	**289**	PKPbc	**PKPdf**	**01 18 57.6**	**-1.0**
	1.9nm,0.9s,baz=42,slow=2.3,SNR=2.4						
PTGA	**Pitinga**	**149.31**	**97**	*e*PKPbc	**PKPab**	**01 19 08.7**	**-1.8**

*IDC **25** 01:10:13.2±1.9, 7.°79S×119.°01E, h0km, mb4.1/3, mb1 4.3/5, mb1mx3.6/47, mbtmp4.1/5, ML3.7/2, Error ellipse: s-maj=184.7km s-min=23.7km az=55.0*
*DJA **25** 01:10:17.6±2.5, 8.°5S×120.°1E, h19km±33km, M4.2/3, MLv4.2/3*

ISC 25 01:10:18.5±1.2, 8.°1S±0.°1×118.°93E±0.°06, h34km, n9, σ1°77/13, mb4.2/3, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLAI	**Plampang**	**1.38**	**236**	P	**Pb**	**01 10 42.9**	**-0.9**
PLAI				S	**Sb**	**01 11 02.5**	**+1.3**
WSI	**Waingapu**	**2.10**	**140**	P	**Pn**	**01 10 53.8**	**+2.5**
WSI				S	**Sb**	**01 11 21.5**	**-0.3**
TWSI	**Taliwang, Sumb**	**2.14**	**251**	P	**Pn**	**01 10 53.0**	**+1.1**
IGBI	**Denpasar**	**3.82**	**258**	P	**Pb**	**01 11 24.5**	**-0.8**
FITZ	**Fitzroy Crossi**	**11.94**	**148**	Pn	**Pn**	**01 13 07.1**	**+0.7**
	0.1nm,0.3s,baz=351,slow=13,SNR=4.1						
FITZ				Sn	**Sn**	**01 15 14.6**	**-3.9**
	0.9nm,0.3s,baz=189,slow=20,SNR=7.3						
WRA	**Warramunga Arr**	**19.04**	**130**	P	**P**	**01 14 37.9**	**0.0**
	0.5nm,0.3s,baz=306,slow=13,SNR=29						
WRA				S	Sn	01 17 57.8	-14
	0.1nm,0.3s,baz=311,slow=25,SNR=3.4						
ASAR	**Alice Springs**	**21.15**	**139**	P	**P**	**01 15 01.8**	**+1.0**
	8.9nm,0.6s,baz=314,slow=8.8,SNR=28						
ASAR				S	**S**	**01 18 53.4**	**-1.1**
	0.8nm,0.8s,baz=323,slow=24,SNR=4.5						
STKA	**Stephens Creek**	**31.73**	**141**	P	**P**	**01 16 40.4**	**+1.0**
	2.7nm,0.7s,baz=317,slow=10,SNR=7.2						
MKAR	**Makanchi Array**	**63.58**	**333**	P	**P**	**01 20 44.5**	**-1.4**
	0.7nm,0.7s,baz=136,slow=6.7,SNR=4.9						

*IDC **25** 01:13:27.7±1.4, 37.°65N×142.°37E, h0km, mb3.7/3, mb1 3.9/4, mb1mx3.5/46, mbtmp3.5/4, ML3.1/1, Error ellipse: s-maj=48.7km s-min=26.1km az=140.0*
*ISCJB **25** 01:13:30.0±1.2, 37.°68N±0.°04×142.°07E±0.°07, h23km±7km, mb3.7/3, Error ellipse: s-maj=9.2km s-min=6.0km az=16.3*
*JMA **25** 01:13:30.8±0.1, 37.°69N×142.°04E, h32km±3km, M3.6*

ISC 25 01:13:29.9±3.4, 37.°70N±0.°05×142.°05E±0.°07, h17km±22km, n24, σ0°94/29, mb4.0/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.94**	**324**	P	**Pb**	**01 13 47.9**	**+0.1**
JIO				*e*S	**Sb**	**01 13 59.5**	**-0.4**
JFK	**Kawauchi**	**0.99**	**251**	P	**Pb**	**01 13 48.6**	**-0.1**
JFK				*e*S	**Sb**	**01 14 01.2**	**-0.2**
JMM	**Marumori**	**1.01**	**280**	P	**Pb**	**01 13 48.9**	**-0.1**
JMM				*e*S	**Sb**	**01 14 01.4**	**-0.6**
ONAJ	**Iwakimizuishiy**	**1.16**	**240**	P	**Pn**	**01 13 50.8**	**-0.7**
ONAJ				*e*S	**Sb**	**01 14 05.2**	**-1.1**
JOU	**Okura**	**1.28**	**302**	P	**Pn**	**01 13 53.5**	**+0.4**
JOU				*e*S	**Sn**	**01 14 09.5**	**-0.4**
JFT	**Otama**	**1.37**	**263**	P	**Pb**	**01 13 55.1**	**-0.1**
JFT				*e*S	**Sn**	**01 14 12.2**	**+0.1**
JMK	**Ichinoseki**	**1.41**	**333**	P	**Pn**	**01 13 55.2**	**+0.3**
JMK				*e*S	**Sn**	**01 14 12.4**	**-0.8**
JYS	**Shirataka**	**1.65**	**289**	P	**Pb**	**01 13 59.5**	**-0.5**
JYS				*e*S	**Sn**	**01 14 20.1**	**+1.0**
JYK	**Kaneyama**	**1.80**	**313**	P	**Pn**	**01 14 01.0**	**+0.7**
JOM	**Ohasama**	**1.87**	**342**	P	**Pn**	**01 14 01.4**	**+0.2**
JOM				*e*S	**Sn**	**01 14 23.9**	**-0.6**
JFY	**Yanaizu**	**1.88**	**262**	P	**Pb**	**01 14 02.7**	**-1.2**
JRG	**Rokugo**	**2.03**	**327**	P	**Pn**	**01 14 04.5**	**+1.1**
JYA	**Atsumi**	**2.05**	**297**	P	**Pn**	**01 14 04.6**	**+1.0**
MJAR	**Matsushiro Arr**	**3.28**	**251**	Pn	**Pn**	**01 14 23.2**	**+2.7**
	1.9nm,0.3s,baz=58,slow=16,SNR=6.3						
MJAR				Sn	**Sb**	**01 15 06.7**	**-0.6**
	1.7nm,0.3s,baz=98,slow=14,SNR=4.5						
MAT	**Matsushiro**	**3.28**	**251**	P	**Pn**	**01 14 22.0**	**+1.4**
MAT				S	**Sn**	**01 14 58.5**	**-0.7**
H11N2	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	01 48 42.5	
	baz=315,slow=75,SNR=47						
H11N1	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	01 48 45.2	
	baz=315,slow=75,SNR=43						
H11N3	**WAKE ISLAND Hy**	**28.08**	**123**	T	T	01 48 43.3	
	baz=315,slow=75,SNR=38						
H11S1	**WAKE ISLAND Hy**	**28.81**	**125**	T	T	01 49 40.9	
	baz=317,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**28.81**	**125**	T	T	01 49 43.0	
	baz=317,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.82**	**125**	T	T	01 49 49.8	
	baz=317,slow=76,SNR=20						
WRA	**Warramunga Arr**	**57.79**	**189**	P	**P**	**01 23 19.5**	**-0.8**
	1.1nm,0.7s,baz=3.6,slow=7.2,SNR=6.6						
ASAR	**Alice Springs**	**61.51**	**188**	P	**P**	**01 23 47.5**	**+1.5**
	0.6nm,0.5s,baz=12,slow=5.4,SNR=6.3						
PDAR	**Pinedale Array**	**76.84**	**46**	P	**P**	**01 25 20.9**	**-0.3**
	0.1nm,0.3s,baz=298,slow=1.9,SNR=2.5						

IDC 25 01:15:52.1±4.3, 3.°68S×149.°97E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.5/33, mbtmp3.7/3, Error ellipse: s-maj=146.5km s-min=54.4km az=114.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.22**	**222**	P	P	01 20 50.2	-0.3
	1.2nm,0.8s,baz=46,slow=10.0,SNR=3.3						
ASAR	**Alice Springs**	**25.21**	**217**	P	P	01 21 20.1	+0.4
	1.1nm,0.8s,baz=56,slow=8.0,SNR=4.5						
FITZ	**Fitzroy Crossi**	**27.80**	**237**	P	P	01 21 43.1	-0.1
	1.5nm,0.6s,baz=76,slow=11,SNR=1.8						
TORD	**Torodi Ar. Bea**	**147.28**	**289**	PKPbc	PKPbc	01 35 37.8	-0.9
	0.5nm,0.9s,baz=41,slow=3.7,SNR=2.3						

*ISCJB **25** 01:20:03.7±0.5, 39.°13N±0.°03×28.°99E±0.°02, h1km±5km, Error ellipse: s-maj=4.4km s-min=3.0km az=6.0*
*ISK **25** 01:20:03.8, 39.°14N×28.°99E, h5km, MD3.0*
*DDA **25** 01:20:03.3, 39.°11N×29.°02E, h17km, Md2.9*
*CSEM **25** 01:20:04.2±0.1, 39.°12N×29.°00E, h5km, MD2.9*

ISC 25 01:20:03.9±1.0, 39.°12N±0.°02×29.°01E±0.°02, h8km±8km, n69, σ0°73/93, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.24**	**251**	*i* P	**Pg**	**01 20 09.3**	**+0.5**
DEMI				*i* S	**Sg**	**01 20 12.8**	**+0.7**
DEMI	**Demirci**	**0.24**	**251**	P	**Pg**	**01 20 09.3**	**+0.5**
DEMI				S	**Sg**	**01 20 12.8**	**+0.7**
GEDZ	**Gediz**	**0.32**	**104**	*e*PG	**Pb**	**01 20 11.4**	**-0.6**
GEDZ				*e*SG	**Sb**	**01 20 16.2**	**-1.2**
GEDZ	**Gediz**	**0.32**	**104**	*e*Pg	**Pb**	**01 20 11.4**	**-0.6**
GEDZ				*e*Sg	**Sb**	**01 20 16.2**	**-1.2**
GDZ	**Gediz**	**0.37**	**95**	*i* P	**Pg**	**01 20 11.3**	**+0.1**
GDZ				*i* S	**Sg**	**01 20 16.3**	**+0.3**
GDZ	**Gediz**	**0.37**	**95**	P	**Pg**	**01 20 11.3**	**+0.1**
GDZ				S	**Sg**	**01 20 16.3**	**+0.3**
DST	**Dursunbey**	**0.57**	**328**	*e*PG	**Pg**	**01 20 15.1**	**+0.2**
DST				*e*SG	**Sg**	**01 20 22.0**	**-0.4**
DST	**Dursunbey**	**0.57**	**328**	*e*Pg	**Pg**	**01 20 15.1**	**+0.2**
DST				*e*Sg	**Sg**	**01 20 22.0**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**204**

MRMT				*e*Sn		**Sn**	**01 21 00.2**	**+0.9**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	*e*PN		**Pn**	**01 20 37.0**	**+1.0**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	*e*Pn		**Pn**	**01 20 37.0**	**+1.0**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN		**Pn**	**01 20 38.9**	**+1.1**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn		**Pn**	**01 20 38.9**	**+1.1**
YER	**Yerkesik**	**2.07**	**196**	*e*PN		**Pn**	**01 20 40.1**	**+1.1**
YER	**Yerkesik**	**2.07**	**196**	*e*Pn		**Pn**	**01 20 40.1**	**+1.1**
BTAS	**Taskesti**	**2.11**	**46**	*i* P		**Pg**	**01 20 43.8**	**-0.5**
KIZT	**Kizilcal**	**2.25**	**95**	*e*PN		**Pn**	**01 20 43.1**	**+1.6**
KIZT	**Kizilcal**	**2.25**	**95**	*e*Pn		**Pn**	**01 20 43.1**	**+1.6**

IDC 25 01:20:18.1±2.3, 3.57S×150.93E, h0km, mb3.5/3, mb1 3.8/3, mb1mx3.5/32, mbtmp3.5/3, Error ellipse: s-maj=172.3km s-min=29.2km az=124.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.95**	**224**	P	P	01 25 22.7	-1.5
	1.8nm,1.0s,baz=46,slow=11,SNR=6.7						
ASAR	**Alice Springs**	**25.88**	**218**	P	P	01 25 53.0	+1.2
	0.5nm,0.9s,baz=59,slow=8.5,SNR=2.7						
ILAR	**Eielson Array**	**81.74**	**23**	P	P	01 32 38.0	-0.4
	0.6nm,0.9s,baz=250,slow=5.4,SNR=5.5						
TORD	**Torodi Ar. Bea**	**148.15**	**289**	PKPbc	PKPbc	01 40 07.3	+0.3
	0.3nm,0.8s,baz=100,slow=3.4,SNR=1.8						

*IDC **25** 01:32:32.2±1.6, 3.65S×151.39E, h0km, mb3.9/9, mb1 4.1/9, mb1mx3.9/30, mbtmp3.9/9, Error ellipse: s-maj=56.9km s-min=20.2km az=118.0*
*ISCJB **25** 01:32:35.5±1.5, 3.6S±0.2×151.3E±0.3, h33km, mb3.8/9, Error ellipse: s-maj=48.2km s-min=16.0km az=25.9*

ISC 25 01:32:37.6±1.7, 3.7S±0.2×151.4E±0.3, h35km, n16, σ1s05/10, mb3.8/9, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.19**	**224**	P	**P**	**01 37 39.9**	**-1.6**
	2.9nm,0.8s,baz=48,slow=9.7,SNR=16						
ASAR	**Alice Springs**	**26.08**	**219**	P	**P**	**01 38 08.2**	**0.0**
	0.9nm,0.8s,baz=47,slow=9.5,SNR=8.5						
H11S3	**WAKE ISLAND Hy**	**26.69**	**34**	T	T	02 05 35.5	
	baz=217,slow=74,SNR=9.0						
H11S2	**WAKE ISLAND Hy**	**26.70**	**34**	T	T	02 05 36.2	
	baz=217,slow=74,SNR=6.0						
H11S1	**WAKE ISLAND Hy**	**26.71**	**34**	T	T	02 05 32.0	
	baz=217,slow=74,SNR=4.6						
H11N1	**WAKE ISLAND Hy**	**27.79**	**33**	T	T	02 07 04.2	
	baz=226						
H11N3	**WAKE ISLAND Hy**	**27.80**	**33**	T	T	02 07 02.7	
	baz=226						
H11N2	**WAKE ISLAND Hy**	**27.81**	**33**	T	T	02 06 58.3	
	baz=226						
FITZ	**Fitzroy Crossi**	**29.00**	**238**	P	**P**	**01 38 35.0**	**+0.7**
	4.2nm,0.9s,baz=72,slow=7.3,SNR=5.2						
CMAR	**Chiang Mai Arr**	**56.11**	**295**	P	**P**	**01 42 14.5**	**+0.5**
	0.7nm,0.3s,baz=129,slow=5.1,SNR=4.1						
PETK	**Petropavlovsk-**	**56.81**	**5**	P	**P**	**01 42 19.4**	**+1.1**
	1.5nm,0.6s,baz=152,slow=6.5,SNR=3.8						
SONM	**Songino Array**	**64.61**	**328**	P	**P**	**01 43 10.1**	**-1.7**
	0.5nm,0.5s,baz=146,slow=8.8,SNR=2.7						
MKAR	**Makanchi Array**	**78.54**	**319**	P	**P**	**01 44 35.8**	**+0.3**
	1.0nm,0.9s,baz=111,slow=7.9,SNR=4.0						
ZALV	**Zalesovo Beam**	**79.43**	**327**	P	**P**	**01 44 39.8**	**-0.3**
	0.6nm,0.5s,baz=145,slow=3.5,SNR=2.4						
ILAR	**Eielson Array**	**81.65**	**22**	P	**P**	**01 44 51.6**	**-0.3**
	0.8nm,0.9s,baz=247,slow=5.5,SNR=8.1						
TORD	**Torodi Ar. Bea**	**148.60**	**289**	PKPbc	**PKPbc**	**01 52 22.4**	**+0.3**
	1.7nm,1.2s,baz=116,slow=3.4,SNR=4.2						

MEX 25 01:37:40.6±0.5, 14.14N×92.48W, h14km±887km, MD4.1, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.16**	**9**	*e*P	Pn	01 38 13.8	-2.5
CCIG				*e*S	Sn	01 38 39.2	-3.8

*IDC **25** 01:44:13.5±0.8, 3.37S×150.90E, h0km, mb4.2/15, mb1 4.4/16, mb1mx4.3/31, mbtmp4.2/16, ML3.6/1, Error ellipse: s-maj=25.5km s-min=15.3km az=91.0*
*NEIC **25** 01:44:15.1±0.5, 3.35S×150.98E, h10km, mb4.7/7, Error ellipse: s-maj=13.5km s-min=8.9km az=98.0*
*ISCJB **25** 01:44:17.1±0.5, 3.37S±0.06×150.82E±0.09, h33km, mb4.3/21, Error ellipse: s-maj=13.8km s-min=7.6km az=12.9*

ISC 25 01:44:18.8±0.7, 3.38S±0.07×151.0E±0.1, h35km, n36, σ1s14/30, mb4.4/20, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.07**	**212**	Pn	**Pn**	**01 46 02.0**	**+2.0**
	1.4nm,0.3s,baz=2.6,slow=0.1,SNR=6.8						
PMG	**Port Moresby**	**7.07**	**212**	*e*S	**Sn**	**01 47 16.7**	**-2.4**
JAY	**Jayapura**	**10.27**	**275**	Pn	**Pn**	**01 46 46.0**	**+2.2**
	0.0nm,0.3s,baz=90,slow=23,SNR=5.6						
CTA	**Charters Tower**	**17.23**	**195**	P	**Pn**	**01 48 17.1**	**+0.2**
	0.1nm,0.3s,baz=14,slow=14,SNR=5.3						
CTAO	**Charters Tower**	**17.23**	**195**	*e*Pn	**P**	**01 48 18.3**	**+0.2**
	159nm,1.2s						
WRAB	**Tennant Creek**	**23.09**	**223**	*e*P	**P**	**01 49 20.0**	**-1.7**
	13nm,0.9s						
WRA	**Warramunga Arr**	**23.10**	**223**	P	**P**	**01 49 20.3**	**-1.6**
	18nm,1.2s,baz=48,slow=10.0,SNR=28						
DZM	**Mont Dzumac**	**23.91**	**142**	P	**P**	**01 49 30.0**	**+0.3**
	16nm,0.9s,baz=270,slow=12,SNR=6.9						
ASAR	**Alice Springs**	**26.04**	**218**	P	**P**	**01 49 48.5**	**-0.5**
	2.0nm,0.8s,baz=52,slow=8.1,SNR=11						
H11S3	**WAKE ISLAND Hy**	**26.70**	**35**	T	T	02 17 16.0	
	baz=217,slow=74,SNR=57						
H11S2	**WAKE ISLAND Hy**	**26.70**	**35**	T	T	02 17 16.7	
	baz=217,slow=74,SNR=38						
H11S1	**WAKE ISLAND Hy**	**26.72**	**35**	T	T	02 17 17.7	
	baz=217,slow=74,SNR=43						
H11N1	**WAKE ISLAND Hy**	**27.79**	**34**	T	T	02 18 41.7	
	baz=218,slow=76,SNR=34						
H11N3	**WAKE ISLAND Hy**	**27.80**	**34**	T	T	02 18 44.2	
	baz=218,slow=76,SNR=35						
H11N2	**WAKE ISLAND Hy**	**27.80**	**34**	T	T	02 18 39.5	
	baz=218,slow=76,SNR=95						
FITZ	**Fitzroy Crossi**	**28.79**	**238**	P	**P**	**01 50 12.0**	**-1.7**
	5.8nm,0.9s,baz=55,slow=9.4,SNR=8.6						
FITZ	**Fitzroy Crossi**	**28.79**	**238**	*e*P	**P**	**01 50 12.3**	**-1.3**
	12nm,1.1s						
TWG	**Pinlang**	**39.10**	**313**	*e*P	**P**	**01 51 40.6**	**-2.4**
	104nm,0.6s						
TPUB	**Ta-pu**	**39.71**	**313**	*e*P	**P**	**01 51 47.9**	**-0.2**
	4.5nm,0.6s						
JNU	**Nakatsue**	**40.97**	**334**	P	**P**	**01 51 58.0**	**-0.4**
	12nm,1.1s,baz=81,slow=10,SNR=5.0						
KSRS	**Korea Array**	**45.92**	**334**	P	**P**	**01 52 37.8**	**-0.3**
	1.3nm,0.9s,baz=149,slow=9.4,SNR=4.8						
KSAR	**Wonju Array Be**	**45.92**	**334**	P	**P**	**01 52 37.8**	**-0.4**
USRK	**Ussuriysk Ar.**	**50.33**	**342**	P	**P**	**01 53 12.1**	**-0.1**
	2.3nm,0.7s,baz=145,slow=7.0,SNR=7.0						
CMAR	**Chiang Mai Arr**	**55.61**	**295**	P	**P**	**01 53 51.6**	**0.0**
	1.9nm,0.3s,baz=114,slow=5.9,SNR=11						
SONM	**Songino Array**	**64.15**	**328**	P	**P**	**01 54 49.8**	**-0.1**
	1.1nm,0.8s,baz=142,slow=7.4,SNR=6.8						
VNDA	**Vanda**	**74.31**	**178**	P	**P**	**01 55 52.8**	**+0.5**
	0.9nm,0.8s,baz=345,slow=7.8,SNR=5.0						
MKAR	**Makanchi Array**	**78.05**	**319**	P	**P**	**01 56 14.4**	**+0.4**
	2.0nm,0.9s,baz=120,slow=7.2,SNR=5.9						
ZALV	**Zalesovo Beam**	**78.96**	**327**	P	**P**	**01 56 18.2**	**-0.6**
	0.9nm,0.5s,baz=90,slow=5.8,SNR=3.9						
MCK	**McKinley**	**80.28**	**23**	*e*P	**P**	**01 56 25.7**	**-0.2**
	14nm,1.0s						
COLA	**College**	**81.23**	**22**	*e*P	**P**	**01 56 32.0**	**+1.1**
	7.0nm,1.1s						
KURK	**Kurchatov**	**81.52**	**322**	P	**P**	**01 56 33.1**	**+0.4**
KURBB	**Kurchatov Arra**	**81.55**	**322**	P	**P**	**01 56 33.1**	**+0.2**
	1.5nm,1.0s,baz=106,slow=4.4,SNR=7.9						
ILAR	**Eielson Array**	**81.55**	**23**	P	**P**	**01 56 31.8**	**-0.8**
	1.8nm,0.9s,baz=258,slow=4.5,SNR=10						
KKAR	**Karatay Array**	**85.32**	**314**	*e*P	**P**	**01 56 53.2**	**+0.7**
	5.9nm,1.0s						
PDAR	**Pinedale Array**	**99.26**	**47**	P	**Pdif**	**01 57 58.0**	**+0.4**
	0.5nm,0.9s,baz=159,slow=2.8,SNR=2.4						
TORD	**Torodi Ar. Bea**	**148.10**	**290**	PKPbc	**PKPbc**	**02 04 01.5**	**-0.5**
	1.7nm,0.9s,baz=62,slow=3.6,SNR=6.6						

MEX 25 01:46:52.7±0.3, 14.97N×93.03W, h64km±24km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.57**	**33**	*e*P	Pn	01 47 17.4	-1.2
CCIG				*e*S	Sn	01 47 36.1	-2.0

IDC 25 01:58:57.2±2.2, 29.58S×176.22W, h0km, mb4.2/3, mb1 4.4/4, mb1mx3.9/32, mbtmp4.2/4, ML4.0/1, Error ellipse: s-maj=56.0km s-min=39.3km az=158.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.52**	**282**	Pn	Pn	01 59 25.4	-0.3
	123nm,0.3s,baz=73,slow=19,SNR=1.8						
RAO				Sn	Sn	01 59 51.6	+5.4
	692nm,0.3s,baz=194,slow=23,SNR=6.0						
URZ	**Urewera**	**10.28**	**211**	Pn	Pn	02 01 21.9	-4.0
	0.2nm,0.3s,baz=27,slow=6.8,SNR=1.9						
URZ				Sn	Sn	02 03 25.3	+3.5
	2.5nm,0.3s,baz=275,slow=23,SNR=12						
RPZ	**Rata Peaks**	**17.39**	**212**	P	Pn	02 02 59.7	-1.5
	0.5nm,0.3s,baz=25,slow=19,SNR=1.3						
RPZ				S	Sn	02 06 02.4	-13
	0.3nm,0.3s,baz=72,slow=16,SNR=1.8						
STKA	**Stephens Creek**	**36.18**	**255**	P	P	02 06 01.4	-0.2
	1.3nm,0.4s,baz=108,slow=14,SNR=2.5						
ASAR	**Alice Springs**	**44.71**	**265**	P	P	02 07 12.8	+0.4
	1.6nm,0.6s,baz=105,slow=7.0,SNR=22						
WRA	**Warramunga Arr**	**45.63**	**270**	P	P	02 07 19.4	-0.3
	2.8nm,0.5s,baz=109,slow=7.7,SNR=13						
KBZ	**Khabaz**	**145.92**	**305**	PKPbc	PKPdf	02 18 37.6	-0.3
	0.7nm,0.3s,baz=62,slow=2.9,SNR=1.6						
NB2	**NORSAR Subarra**	**148.15**	**353**	PKP	PKPbc	02 18 43.7	-0.7
	comp=Z,0.7nm,0.5s,baz=16,slow=2.9						
NOA	**NORSAR Array B**	**148.15**	**353**	PKPbc	PKPbc	02 18 43.9	-0.5
	comp=Z,1.5nm,0.8s,baz=13,slow=4.4,SNR=3.8						

*IDC **25** 02:07:11.1±0.7, 36.65N×141.76E, h0km, mb3.9/13, mb1 4.1/14, mb1mx3.9/44, mbtmp4.0/14, ML3.9/1, Error ellipse: s-maj=24.2km s-min=15.8km az=84.0*
*ISCJB **25** 02:07:14.0±0.8, 36.64N±0.04×141.91E±0.06, h34km±7km, mb3.9/16, Error ellipse: s-maj=7.9km s-min=5.7km az=25.3*
*JMA **25** 02:07:14.7±0.2, 36.66N×141.79E, h48km±4km, M4.3*
JMA Felt I J1.
*NEIC **25** 02:07:16.6±1.3, 36.66N×141.87E, h39km±11km, mb4.2/2, Error ellipse: s-maj=13.2km s-min=9.6km az=116.0*
NEIC Recorded [1 JMA] in Fukushima.

ISC 25 02:07:15.4±2.5, 36.65N±0.04×141.83E±0.06, h30km±17km, n44, σ1s60/51, mb4.0/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.94**	**299**	P	**Pn**	**02 07 31.0**	**-1.7**
ONAJ				*e*S	**Sb**	**02 07 44.1**	**-1.4**
JHO	**Hitachi**	**1.02**	**268**	P	**Pn**	**02 07 32.0**	**-1.6**
JHO				*e*S	**Sn**	**02 07 45.1**	**-1.8**
JFK	**Kawauchi**	**1.05**	**313**	P	**Pn**	**02 07 32.5**	**-1.6**
JMM	**Marumori**	**1.47**	**326**	P	**Pn**	**02 07 38.8**	**-1.1**
JFT	**Otama**	**1.48**	**306**	P	**Pn**	**02 07 40.0**	**0.0**
JIO	**Ouri**	**1.84**	**348**	P	**Pn**	**02 07 44.1**	**-0.9**
JIO				*e*S	**Sn**	**02 08 05.2**	**-2.1**
JFY	**Yanaizu**	**1.86**	**295**	P	**Pn**	**02 07 45.5**	**+0.2**
JFY				*e*S	**Sn**	**02 08 08.1**	**+0.3**
JAG	**Ashikaga**	**1.93**	**264**	P	**Pn**	**02 07 45.7**	**-0.5**
JAG				*e*S	**Sn**	**02 08 08.4**	**-1.0**
JOU	**Okura**	**1.95**	**332**	P	**Pn**	**02 07 46.9**	**+0.4**
JOU				*e*S	**Sn**	**02 08 09.9**	**-0.1**
JKT	**Katashina**	**2.08**	**274**	P	**Pn**	**02 07 48.4**	**+0.1**
JKT				*e*S	**Sn**	**02 08 13.2**	**-0.1**
BSO1	**Boso 1**	**2.11**	**199**	P	**Pn**	**02 07 48.1**	**-0.1**
JNS	**Sasagawa**	**2.32**	**301**	P	**Pn**	**02 07 52.5**	**+0.9**
MJAR	**Matsushiro Arr**	**2.92**	**269**	Pn	**Pn**	**02 08 00.7**	**+0.9**
	16nm,0.3s,baz=97,slow=9.6,SNR=120						
MJAR				Sn	**Sn**	**02 08 35.0**	**+1.2**
	12nm,0.3s,baz=98,slow=18,SNR=12						
MAJO	**Matsushiro**	**2.92**	**269**	*e*Pn	**Pn**	**02 08 00.7**	**+0.8**
MAJO				*e*S	**Sn**	**02 08 27.8**	**-6.1**
MAT	**Matsushiro**	**2.92**	**269**	P	**Pn**	**02 08 01.1**	**+1.3**
MAT				S	**Sn**	**02 08 35.2**	**+1.3**
JHJ	**Hachijo jima 2**	**3.90**	**206**	Pn	**Pn**	**02 08 12.6**	**-0.7**
	25nm,0.3s,baz=74,slow=18,SNR=4.6						
JHJ				Sn	**Sn**	**02 08 55.3**	**-2.8**
	52nm,0.3s,baz=248,slow=23,SNR=8.5						
ERM	**Erimo**	**5.46**	**10**	*e*Pn	**Pn**	**02 08 34.0**	**-0.7**
ERM				*e*S	**Sn**	**02 09 35.4**	**-1.0**
USRK	**Ussuriysk Ar.**	**10.63**	**318**	Pn	**Pn**	**02 09 49.6**	**+4.0**
	0.2nm,0.3s,baz=131,slow=13,SNR=9.5						
KSRS	**Korea Array**	**11.15**	**278**	Pn	**Pn**	**02 09 56.1**	**+3.5**
	0.1nm,0.3s,baz=88,slow=14,SNR=3.3						
KSAR	**Wonju Array Be**	**11.18**	**278**	Pn	**Pn**	**02 09 56.1**	**+3.0**
H11N2	**WAKE ISLAND Hy**	**27.66**	**121**	T	T	02 42 26.8	
	baz=313,slow=75,SNR=24						
H11N1	**WAKE ISLAND Hy**	**27.67**	**121**	T	T	02 42 23.9	
	baz=313,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**27.68**	**121**	T	T	02 42 30.1	
	baz=313,slow=75,SNR=21						
SONM	**Songino Array**	**28.28**	**304**	P	**P**	**02 13 04.5**	**-1.7**
	1.0nm,0.6s,baz=104,slow=8.5,SNR=5.6						
H11S1	**WAKE ISLAND Hy**	**28.37**	**123**	T	T	02 43 21.2	
	baz=317,slow=74						
H11S3	**WAKE ISLAND Hy**	**28.37**	**123**	T	T	02 43 24.5	
	baz=317,slow=74						
H11S2	**WAKE ISLAND Hy**	**28.39**	**123**	T	T	02 43 26.6	
	baz=317						
CMAR	**Chiang Mai Arr**	**41.73**	**256**	P	**P**	**02 15 02.7**	**+0.8**
	0.8nm,0.3s,baz=44,slow=9.2,SNR=3.0						
ZALV	**Zalesovo Beam**	**42.42**	**313**	P	**P**	**02 15 07.7**	**+0.5**
	1.5nm,0.6s,baz=100,slow=5.6,SNR=6.5						
ZALV				PcP	**PcP**	**02 16 58.7**	**-1.0**
	0.8nm,0.6s,baz=51,slow=4.6,SNR=3.6						
MKAR	**Makanchi Array**	**44.61**	**303**	P	**P**	**02 15 24.6**	**-0.3**
	0.9nm,0.6s,baz=89,slow=9.4,SNR=6.1						
KURK	**Kurchatov**	**46.43**	**308**	P	**P**	**02 15 39.5**	**+0.3**
KURBB	**Kurchatov Arra**	**46.50**	**308**	P	**P**	**02 15 39.5**	**-0.3**
	2.0nm,0.7s,baz=79,slow=7.5,SNR=14						
ILAR	**Eielson Array**	**49.64**	**32**	P	**P**	**02 16 04.3**	**+0.5**
	0.3nm,0.8s,baz=269,slow=6.8,SNR=5.3						
FITZ	**Fitzroy Crossi**	**56.56**	**199**	P	**P**	**02 16 55.4**	**+0.1**
	1.9nm,0.5s,baz=25,slow=5.7,SNR=9.6						
WRAB	**Tennant Creek**	**56.72**	**188**	*e*P	**P**	**02 16 55.7**	**-0.6**
	3.6nm,0.9s						
WRA	**Warramunga Arr**	**56.73**	**188**	P	**P**	**02 16 55.8**	**-0.6**
	2.1nm,0.9s,baz=6.9,slow=7.6,SNR=15						
ABKAR	**Akbulak array**	**58.44**	**310**	*e*P	**P**	**02 17 07.9**	**-0.3**
	0.4nm,0.3s						
ASAR	**Alice Springs**	**60.45**	**188**	P	**P**	**02 17 22.3**	**-0.1**
	1.3nm,0.7s,baz=13,slow=6.2,SNR=9.6						
FINES	**FINESS Array B**	**69.31**	**332**	P	**P**	**02 18 19.9**	**+0.4**
	1.9nm,0.8s,baz=25,slow=4.6,SNR=3.7						
NOA	**NORSAR Array B**	**74.67**	**337**	P	**P**	**02 18 52.2**	**+0.4**
	1.0nm,0.7s,baz=43,slow=5.5,SNR=3.8						
AKASG	**Malin Array Be**	**74.81**	**323**	P	**P**	**02 18 52.4**	**-0.2**
	1.0nm,0.4s,baz=47,slow=6.1,SNR=7.4						
GERES	**GERESS Array B**	**83.21**	**328**	P	**P**	**02 19 38.3**	**-0.5**
	0.3nm,0.5s,baz=34,slow=7.1,SNR=3.8						
TXAR	**Lajitas Array**	**90.09**	**53**	P	**P**	**02 20 14.1**	**+1.2**
	0.2nm,0.6s,baz=305,slow=3.2,SNR=3.6						
LPAZ	**La Paz**	**146.59**	**61**	PKPbc	**PKPbc**	**02 26 55.8**	**+0.6**
	1.4nm,0.6s,baz=280,slow=6.1,SNR=16						

IDC 25 02:08:56.2±5.3, 3.95S×150.45E, h119km±51km, mb3.5/4, mb1 3.7/5, mb1mx3.3/27, mbtmp3.9/5, Error ellipse: s-maj=105.5km s-min=31.4km az=130.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**6.33**	**211**	P	Pn	02 10 27.7	+0.6
	2.4nm,0.3s,baz=21,slow=9.4,SNR=7.4						
WRA	**Warramunga Arr**	**22.34**	**223**	P	P	02 13 43.8	-0.7
	2.3nm,0.7s,baz=50,slow=10.0,SNR=20						
ASAR	**Alice Springs**	**25.29**	**218**	P	P	02 14 12.6	+0.8
	1.0nm,0.7s,baz=50,slow=7.8,SNR=6.6						
FITZ	**Fitzroy Crossi**	**28.06**	**238**	P	P	02 14 36.4	-0.3
	4.0nm,1.1s,baz=53,slow=10,SNR=2.7						
ILAR	**Eielson Array**	**82.27**	**23**	P	P	02 21 04.0	-0.1
	0.6nm,0.9s,baz=235,slow=6.4,SNR=4.4						

*ISCJB **25** 02:18:35.4±0.8, 7.5S±0.1×117.35E±0.08, h306km, mb3.2/3, Error ellipse: s-maj=16.1km s-min=10.4km az=18.2*
*IDC **25** 02:18:39.1±14.0, 7.31S×117.63E, h329km±165km, mb2.8/4, mb1 2.9/5, mb1mx2.8/30, mbtmp3.5/5, Error ellipse: s-maj=136.3km s-min=39.3km az=55.0*
*DJA **25** 02:18:40.0±1.2, 8.5S±167×11.7E±1, h294km±30km, M3.2/4, MLv3.2/4*

ISC 25 02:18:36.5±1.0, 7.4S±0.1×117.30E±0.10, h306km, n9, σ2s53/13, mb3.2/3, Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TWSI	**Taliwang, Sumb**	**1.38**	**198**	P	**Pn**	**02 19 19.2**	**-0.3**
TWSI				S	**Sn**	**02 19 49.2**	**-3.9**
PLAI	**Plampang**	**1.48**	**162**	P	**Pn**	**02 19 19.1**	**-1.1**
PLAI				S	**Sn**	**02 19 51.1**	**-3.8**
JAGI	**Jajag, Banyuwa**	**3.29**	**251**	P	**Pn**	**02 19 36.0**	**+0.4**
JAGI				S	**Sn**	**02 20 21.2**	**-1.7**
GMJI	**Gumukmas**	**3.92**	**257**	P	**Pn**	**02 19 43.3**	**+1.1**
FITZ	**Fitzroy Crossi**	**13.37**	**143**	P	**P**	**02 21 35.4**	**0.0**
	0.1nm,0.3s,baz=346,slow=12,SNR=1.5						
FITZ				S	**S**	**02 24 08.2**	**+5.1**
	0.1nm,0.3s,baz=108,slow=19,SNR=1.6						
WRA	**Warramunga Arr**	**20.69**	**129**	P	**P**	**02 22 53.1**	**-0.9**
	0.8nm,0.7s,baz=310,slow=9.3,SNR=8.0						
ASAR	**Alice Springs**	**22.69**	**137**	P	**P**	**02 23 12.2**	**-0.2**
	0.3nm,0.3s,baz=306,slow=8.4,SNR=7.5						
SONM	**Songino Array**	**55.85**	**351**	P	**P**	**02 27 42.4**	**-0.4**
	0.6nm,0.7s,baz=180,slow=7.2,SNR=3.0						
MKAR	**Makanchi Array**	**62.29**	**334**	P	**P**	**02 28 27.9**	**+1.2**
	0.3nm,0.3s,baz=134,slow=6.2,SNR=2.5						

*ISCJB **25** 02:44:51.7±0.5, 45.65N±0.02×18.22E±0.02, h2km±3km, Error ellipse: s-maj=3.5km s-min=2.3km az=35.7*
*CSEM **25** 02:44:52.8±0.1, 45.66N×18.20E, h5km, ML2.9/4, Error ellipse: s-maj=3.2km s-min=2.3km az=44.0*
*BEO **25** 02:44:53.5±0.6, 45.65N×18.23E, h5km±2km, M2.8/1*
*PRU **25** 02:44:54.7, 45.77N×18.10E, h0km*

ISC 25 02:44:52.2±1.1, 45.67N±0.02×18.24E±0.02, h4km±10km, n85, σ1s27/139, 9C-13D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DOB	**Doboj**	**0.94**	**186**	*i*Pg	**Pg**	**02 45 09.5**	**-0.8**
DOB				*e*Sg	**Sg**	**02 45 22.5**	**0.0**
BLJ	**Bijeljina**	**1.15**	**140**	*e*Pg	**Pg**	**02 45 14.1**	**-0.1**
BLJ				*e*Sg	**Sg**	**02 45 29.3**	**+0.2**
MRAK	**Mrakovica**	**1.15**	**236**	*i*Pg	**Pg**	**02 45 13.6**	**-0.6**
MRAK				*e*Sg	**Sb**	**02 45 29.7**	**-0.2**
BLY	**Banja Luka**	**1.18**	**219**	*e*Pg	**Pg**	**02 45 14.6**	**-0.3**
BLY				*e*Sg	**Sg**	**02 45 28.7**	**-1.6**
BLY	**Banja Luka**	**1.18**	**219**	*e*Pg	**Pg**	**02 45 14.6**	**-0.3**
BLY				*e*Sg	**Sg**	**02 45 30.2**	**-0.1**
FRGS	**Fruska Gora**	**1.22**	**114**	*e*Pg	**Pn**	**02 45 16.3**	**+0.2**
FRGS				*e*Sg	**Sn**	**02 45 33.7**	**+0.7**
FGSL	**Fruska Gora**	**1.22**	**114**	*e*Pg	**Pn**	**02 45 16.3**	**+0.2**
FGSL				*e*Sg	**Sn**	**02 45 33.7**	**+0.7**
BEHE	**Becsehely**	**1.29**	**309**	*e*Pg	**Pn**	**02 45 17.7**	**-0.4**
BEHE				*e*Sg	**Sn**	**02 45 36.0**	**+1.2**
BEHE				*e*Sn	**Sn**	**02 45 40.4**	**+5.6**
BEHE	**Becsehely**	**1.29**	**309**	*i*ePn	**Pg**	**02 45 16.7**	**-0.3**
BEHE				*ex*	x	02 45 18.1	
BEHE				*e*Sn	**Sn**	**02 45 40.4**	**+5.6**
SISC	**Sisak**	**1.32**	**262**	*e*Pn	**Pb**	**02 45 17.5**	**-0.1**
SISC				Sn	**Sn**	**02 45 35.4**	**-0.1**
SISC	**Sisak**	**1.32**	**262**	*e*Pn	**Pb**	**02 45 17.4**	**-0.1**
SISC				Sn	**Sn**	**02 45 35.3**	**-0.1**
ZAG	**Zagreb**	**1.58**	**276**	*e*Pn	**Pg**	**02 45 22.6**	**+0.1**
ZAG				*e*Sn	**Sg**	**02 45 43.0**	**0.0**
CSKK	**Cs˘‡kako**	**1.69**	**1**	*i*ePn	**Pn**	**02 45 23.1**	**+0.6**
CSKK				*e*Sn	**Sg**	**02 45 46.9**	**+0.3**
CSKK	**Cs˘‡kako**	**1.69**	**1**	*i*ePn	**Pn**

TREB	**Trebinje**	**2.95**	**178**	*e*Pn		**Pn**	**02 45 41.4 +1.5**
TREB				*e*Sn		**Sn**	**02 46 16.0 +0.3**
BOVS	**Bovan**	**3.21**	**128**	*e*Pn		**Pn**	**02 45 44.1 +0.8**
SELS	**Selova**	**3.21**	**139**	*e*Pn		**Pn**	**02 45 43.8 +0.5**
DRGR		**3.30**	**69**	⇓*i*P		**Pn**	**02 45 45.6 +0.9**
DRGR		**3.30**	**69**	⇓*i*P		**Pn**	**02 45 45.6 +0.9**
PDG	**Podgorica**	**3.32**	**167**	⇓*i*P		**Pn**	**02 45 44.8 -0.1**
PDG	**Podgorica**	**3.32**	**167**	S		**Sn**	**02 46 27.2 +2.5**
PDG	**Podgorica**	**3.32**	**167**	*e*Pn		**Pn**	**02 45 45.5 +0.6**
PDG				*e*Sn		**Sn**	**02 46 26.1 +1.4**
PDG	**Podgorica**	**3.32**	**167**	⇓*i*P		**Pn**	**02 45 44.8 -0.1**
PDG	**Podgorica**	**3.32**	**167**	*e*Pn		**Pn**	**02 45 45.5 +0.6**
ZAGS	**Zajecar**	**3.40**	**122**	*e*Pn		**Pn**	**02 45 46.2 +0.2**
ZAGS				*e*Sn		**Sn**	**02 46 26.6 -0.1**
MOA	**Molln**	**3.49**	**310**	*i* Pn		**Pn**	**02 45 48.0 +0.7**
	1.0nm,0.2s						
MOA				*i* Sn		**Sn**	**02 46 30.3 +1.3**
	7.4nm,0.2s						
MOA	**Molln**	**3.49**	**310**	Pn		**Pn**	**02 45 48.0 +0.7**
MOA				Sn		**Sn**	**02 46 30.3 +1.3**
	7.4nm,0.2s						
VRAC	**Vranov**	**3.81**	**344**	*e*Pn		**Pn**	**02 45 51.5 -0.1**
TRPA	**Tarpa**	**3.84**	**49**	*e*PKPPKPd		**Pg**	**02 46 08.3 +2.5**
BARS	**Barje**	**3.84**	**137**	*e*Pn		**Pn**	**02 45 53.0 +0.9**
BARS				*e*Sn		**Sn**	**02 46 35.9 -1.7**
BARS	**Barje**	**3.84**	**137**	*e*Pn		**Pn**	**02 45 53.0 +0.9**
BARS				*e*Sn		**Sn**	**02 46 35.9 -1.7**
ZAPS	**Zavoj**	**3.96**	**126**	*e*Pn		**Pn**	**02 45 54.8 +1.1**
ZAPS				*e*Sn		**Sn**	**02 46 40.6 +0.1**
MORC	**Moravsky Berou**	**4.13**	**354**	⇑*i*P		Pn	02 45 50.4 -5.7
KRLC	**Kraliky**	**4.51**	**348**	*e*PN		**Pn**	**02 46 02.9 +1.6**
KRLC				*e*SN		**Sn**	**02 46 53.1 -1.2**
KRLC	**Kraliky**	**4.51**	**348**	Pn		**Pn**	**02 46 02.9 +1.6**
KRLC				Sn		**Sn**	**02 46 53.1 -1.2**
KHC	**Kasperske Hory**	**4.69**	**319**	*e*PN		**Pn**	**02 46 05.0 +1.3**
KHC				*e*SN		**Sn**	**02 46 56.8 -1.7**
KHC	**Kasperske Hory**	**4.69**	**319**	Pn		**Pn**	**02 46 05.0 +1.3**
KHC				*e*Sn		**Sn**	**02 46 56.8 -1.7**
MTUR	**Matau**	**4.83**	**93**	⇑*i*P		Pg	02 46 31.5 +6.8
DPC	**Dobruska-Polom**	**4.86**	**345**	*e*SN		**Sn**	**02 47 00.7 -1.9**
DPC	**Dobruska-Polom**	**4.86**	**345**	Sn		**Sn**	**02 47 00.7 -1.9**
PRU	**Pruhonice**	**4.98**	**331**	*e*SN		**Sn**	**02 47 04.7 -1.0**
PRU	**Pruhonice**	**4.98**	**331**	Sn		**Sn**	**02 47 04.7 -1.0**
BRG	**Berggiesshubel**	**5.94**	**333**	SG		**Sb**	**02 47 42.9 -4.8**
	1.4nm,0.5s						

*ISCJB **25** 02:49:16.2±0.7, 43°.30N±0°.09×147°.18E±0°.07, h24km, mb3.7/11, Error ellipse: s-maj=13.0km s-min=7.6km az=2.2*
*JMA **25** 02:49:20.1±0.3, 43°.30N×146°.97E, h42km±5km, M3.9*
*IDC **25** 02:49:23.7±3.3, 43°.24N×146°.96E, h74km±29km, mb3.5/11, mb1 3.7/13, mb1mx3.4/49, mbtmp3.8/13, Error ellipse: s-maj=24.4km s-min=19.6km az=86.0*

ISC 25 02:49:18.3±0.8, 43°.3N±0°.1×147°.02E±0°.08, h24km, n27, σ1§25/23, mb3.8/11, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
NEM2	**Nemuro 2**	**0.93**	**273**	P		**Pn**	**02**	**49**	**36.5**	**+0.6**
NEM2				*e*S		**Sn**	**02**	**49**	**48.3**	**-0.1**
JRA	**Rausu**	**1.51**	**295**	P		**Pb**	**02**	**49**	**45.0**	**-0.6**
JRA				*e*S		**Sn**	**02**	**50**	**03.2**	**+0.5**
JNK	**Nakash**	**1.69**	**280**	P		**Pn**	**02**	**49**	**47.2**	**+0.8**
JAK	**Akkeshi**	**1.73**	**260**	P		**Pn**	**02**	**49**	**47.8**	**+0.9**
JOB	**Onbets**	**2.37**	**261**	P		**Pn**	**02**	**49**	**57.3**	**+1.7**
JAR	**Ashorobuto**	**2.37**	**270**	P		**Pn**	**02**	**49**	**57.4**	**+1.7**
ASAJ	**Asahikawa**	**3.30**	**285**	P		**Pb**	**02**	**50**	**13.4**	**-2.7**
	baz=114,slow=10									
MJAR	**Matsushiro Arr**	**9.57**	**228**	P		**Pn**	**02**	**51**	**36.4**	**+1.8**
	0.6nm,0.3s,baz=28,slow=13,SNR=2.8									
KLR	**Kul'dur**	**12.09**	**305**	P		**Pn**	**02**	**52**	**10.4**	**+1.4**
	0.1nm,0.3s,baz=120,slow=16,SNR=2.1									
SONM	**Songino Array**	**28.55**	**293**	P		**P**	**02**	**55**	**13.0**	**+0.8**
	0.4nm,0.6s,baz=64,slow=3.4,SNR=3.1									
H11N2	**WAKE ISLAND Hy**	**28.84**	**138**	T		T	03	26	02.6	
	baz=329,slow=75,SNR=217									
H11N1	**WAKE ISLAND Hy**	**28.86**	**138**	T		T	03	26	03.5	
	baz=329,slow=75,SNR=132									
H11N3	**WAKE ISLAND Hy**	**28.86**	**138**	T		T	03	26	03.9	
	baz=329,slow=75,SNR=113									
H11S1	**WAKE ISLAND Hy**	**29.80**	**140**	T		T	03	27	12.9	
	baz=330,slow=76,SNR=562									
H11S3	**WAKE ISLAND Hy**	**29.81**	**140**	T		T	03	26	58.6	
	baz=330,slow=76,SNR=341									
H11S2	**WAKE ISLAND Hy**	**29.82**	**140**	T		T	03	27	15.1	
	baz=330,slow=76,SNR=249									
ILAR	**Eielson Array**	**41.89**	**36**	P		**P**	**02**	**57**	**07.2**	**+0.9**
	0.2nm,0.6s,baz=260,slow=5.4,SNR=3.3									
MKAR	**Makanchi Array**	**44.70**	**298**	P		**P**	**02**	**57**	**28.4**	**-0.8**
	0.4nm,0.5s,baz=80,slow=10,SNR=3.7									
KURBB	**Kurchatov Arra**	**45.77**	**304**	P		**P**	**02**	**57**	**37.4**	**-0.2**
	0.4nm,0.4s,baz=82,slow=7.6,SNR=3.5									
WRA	**Warramunga Arr**	**64.02**	**193**	P		**P**	**02**	**59**	**49.4**	**-0.6**
	0.8nm,0.8s,baz=9.5,slow=6.6,SNR=5.3									
FINES	**FINESS Array B**	**65.21**	**333**	P		**P**	**02**	**59**	**55.7**	**-1.5**
	2.3nm,0.6s,baz=34,slow=6.4,SNR=11									
ASAR	**Alice Springs**	**67.74**	**193**	P		**P**	**03**	**00**	**11.7**	**-2.1**
	0.3nm,0.4s,baz=19,slow=8.0,SNR=4.2									
NB2	**NORSAR Subarra**	**69.96**	**339**	P		**P**	**03**	**00**	**26.8**	**-0.5**
	comp=Z,1.2nm,0.7s,baz=36,slow=6.2									
NOA	**NORSAR Array B**	**69.96**	**339**	P		**P**	**03**	**00**	**26.8**	**-0.5**
	comp=Z,1.8nm,0.7s,baz=36,slow=6.1,SNR=6.5									
AKASG	**Malin Array Be**	**71.86**	**324**	P		**P**	**03**	**00**	**38.7**	**-0.3**
	comp=Z,0.8nm,0.5s,baz=40,slow=5.8,SNR=4.0									
MMAI	**Mount Meron Ar**	**81.67**	**308**	P		**P**	**03**	**01**	**35.5**	**+0.8**
	comp=Z,0.7nm,0.4s,baz=55,slow=5.5,SNR=3.1									
TXAR	**Lajitas Array**	**82.97**	**56**	P		**P**	**03**	**01**	**41.6**	**0.0**
	comp=Z,0.4nm,0.6s,baz=308,slow=4.2,SNR=6.9									

*ISCJB **25** 02:49:34.5±0.5, 20°.57S±0°.03×69°.3W±0°.1, h113km±5km, mb3.7/4, Error ellipse: s-maj=16.2km s-min=5.3km az=0.5*
*IDC **25** 02:49:34.3±2.4, 20°.42S×69°.16W, h92km±24km, mb3.5/4, mb1 3.6/6, mb1mx3.4/22, mbtmp3.9/6, Error ellipse: s-maj=35.1km s-min=20.0km az=104.0*
*GUC **25** 02:49:35.8±0.8, 20°.57S×69°.24W, h93km±4km, ML3.7*

ISC 25 02:49:35.1±0.8, 20°.56S±0°.04×69°.23W±0°.09, h101km±7km, n18, σ1§46/27, mb3.7/4, 3C, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
PB08	**IPOC Station P**	**0.42**	**10**	⇑*i*P		**Pn**	**02**	**49**	**51.4**	**+0.4**
PB08				*i* S		**Sn**	**02**	**50**	**03.0**	**+0.3**
PB08				IAML			02	50	04.8	
	comp=E,3μm,0.2s									
PB01	**IPOC Station P**	**0.54**	**207**	*i* P		**Pn**	**02**	**49**	**51.6**	**+0.3**
PB01				*i* S		**Sn**	**02**	**50**	**03.3**	**-0.2**
HMBC	**Humberstone**	**0.68**	**295**	*i* P		**Pn**	**02**	**49**	**53.0**	**+0.5**
HMBC				*i* S		**Sn**	**02**	**50**	**05.6**	**0.0**
HMBC				IAML			02	50	09.4	
	comp=E,5μm,0.5s									
PB09	**IPOC Station P**	**1.23**	**180**	⇑*i*P		**Pn**	**02**	**49**	**58.8**	**+0.4**
PB09				*i* S		**Sn**	**02**	**50**	**16.8**	**+0.9**
PB07	**IPOC Station P**	**1.31**	**208**	⇑*i*P		**Pn**	**02**	**49**	**59.9**	**+0.6**
PB07				*i* S		**Sn**	**02**	**50**	**18.2**	**+0.7**
PB07				IAML			02	50	21.4	
	comp=E,2μm,0.3s									
MNMC	**Minye Minye**	**1.46**	**346**	*i* P		**Pn**	**02**	**50**	**02.2**	**+1.0**
MNMC				*i* S		**Sn**	**02**	**50**	**22.2**	**+1.2**
PB04	**IPOC Station P**	**1.96**	**206**	*i* P		**Pn**	**02**	**50**	**08.4**	**+1.1**
LVC	**Limon Verde**	**2.06**	**172**	P		**Pn**	**02**	**50**	**10.4**	**+1.6**
	comp=E,718nm,0.3s,baz=6.0,slow=9.8,SNR=243									
LVC				S		**Sn**	**02**	**50**	**36.6**	**+2.1**
	comp=E,2μm,0.3s,baz=154,slow=19,SNR=57									
LVC	**Limon Verde**	**2.06**	**172**	*i* S		**Sn**	**02**	**50**	**36.3**	**+1.8**
PB06	**IPOC Station P**	**2.16**	**188**	*i* P		**Pn**	**02**	**50**	**10.7**	**+0.8**
PB06				*i* S		**Sn**	**02**	**50**	**36.0**	**-0.5**
PB13	**IPOC Station P**	**2.23**	**353**	*i* P		**Pn**	**02**	**50**	**13.1**	**+1.8**
PB13				*i* S		**Sn**	**02**	**50**	**41.9**	**+3.1**
LPAZ	**La Paz**	**4.38**	**14**	P		**Pn**	**02**	**50**	**42.7**	**+2.7**
	comp=E,0.8nm,0.3s,baz=186,slow=8.4,SNR=32									
SIV	**San Ignacio**	**8.98**	**61**	P		**Pn**	**02**	**51**	**40.1**	**-2.0**
	comp=E,1.6nm,0.3s,baz=262,slow=11,SNR=17									
PTGA	**Pitinga**	**21.69**	**26**	P		**P**	**02**	**54**	**15.6**	**-2.4**
	comp=E,1.0nm,0.3s,baz=210,slow=16,SNR=4.1									
TXAR	**Lajitas Array**	**59.69**	**325**	P		**P**	**02**	**59**	**28.5**	**-0.8**
	comp=E,0.2nm,0.6s,baz=146,slow=9.8,SNR=2.0									
DBIC	**Dimbokro**	**68.76**	**74**	P		**P**	**03**	**00**	**28.5**	**-0.3**
	comp=E,1.9nm,0.7s,baz=249,slow=3.5,SNR=4.1									
TORD	**Torodi Ar. Bea**	**77.33**	**71**	P		**P**	**03**	**01**	**18.5**	**-0.7**
	comp=E,0.6nm,0.4s,baz=254,slow=6.1,SNR=34									
MKAR	**Makanchi Array**	**145.05**	**35**	PKP		**PKPdf**	**03**	**09**	**01.6**	**+0.9**
	comp=E,0.9nm,1.0s,baz=314,slow=4.2,SNR=3.2									

*ISCJB **25** 03:18:05.2±0.6, 19°.25S±0°.03×70°.14W±0°.08, h66km±5km, mb3.6/3, Error ellipse: s-maj=12.7km s-min=5.4km az=178.1*
*GUC **25** 03:18:05.5±1.0, 19°.28S×70°.11W, h56km±5km, ML3.9*
*IDC **25** 03:18:10.2±3.4, 19°.36S×69°.83W, h101km±28km, mb3.5/3, mb1 3.7/5, mb1mx3.5/18, mbtmp3.8/5, Error ellipse: s-maj=48.0km s-min=25.7km az=96.0*

ISC 25 03:18:05.7±0.9, 19°.24S±0°.04×70°.11W±0°.08, h57km±8km, n22, σ0§78/22, mb3.7/3, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
PSGC	**Pisagua**	**0.35**	**181**	*i* P		**Pn**	**03**	**18**	**15.8**	**-0.3**
PSGC				*i* S		**Sn**	**03**	**18**	**23.2**	**-0.4**
MNMC	**Minye Minye**	**0.50**	**77**	*i* P		**Pn**	**03**	**18**	**17.7**	**-0.1**
MNMC				*i* S		**Sn**	**03**	**18**	**26.9**	**+0.4**
PB12	**IPOC Station P**	**0.66**	**342**	*i* P		**Pn**	**03**	**18**	**19.8**	**+0.4**
PB12				*i* S		**Sn**	**03**	**18**	**30.4**	**+1.1**
HMBC	**Humberstone**	**1.05**	**168**	*i* P		**Pn**	**03**	**18**	**24.2**	**-0.3**
HMBC				IAML			03	18	42.1	
	comp=E,5μm,0.3s									
PB13	**IPOC Station P**	**1.07**	**33**	*i* P		**Pn**	**03**	**18**	**25.6**	**+0.5**
PB13				*i* S		**Sn**	**03**	**18**	**40.2**	**+0.7**
PB08	**IPOC Station P**	**1.27**	**135**	*i* P		**Pn**	**03**	**18**	**27.9**	**+0.3**
PB08				IAML			03	18	48.1	
	comp=E,4μm,0.2s									
PB01	**IPOC Station P**	**1.89**	**162**	*i* P		**Pn**	**03**	**18**	**35.9**	**+0.3**
PB01				*i* S		**Sn**	**03**	**18**	**59.0**	**+0.6**
PB07	**IPOC Station P**	**2.48**	**175**	*i* P		**Pn**	**03**	**18**	**44.3**	**+0.5**
PB07				*i* S		**Sn**	**03**	**19**	**13.9**	**+0.9**
PB07				IAML			03	19	26.9	
	comp=E,1μm,0.3s									
PB09	**IPOC Station P**	**2.67**	**162**	*i* P		**Pn**	**03**	**18**	**47.3**	**+0.9**
PB09				*i* S		**Sn**	**03**	**19**	**18.8**	**+1.2**
LPAZ	**La Paz**	**3.49**	**33**	P		Pn	03	19	02.8	+4.7
	comp=E,5.0nm,0.3s,baz=209,slow=2.7,SNR=201									
LVC	**Limon Verde**	**3.53**	**162**	*i* S		**Sn**	**03**	**19**	**40.4**	**+1.3**
CPUP	**Villa Florida**	**13.73**	**123**	P		**Pn**	**03**	**21**	**17.7**	**+0.1**
	comp=E,0.1nm,0.3s,baz=303,slow=13,SNR=2.2									
PLCA	**Paso Flores**	**21.42**	**181**	P		**P**	**03**	**22**	**48.5**	**-0.4**
	comp=E,3.0nm,0.8s,baz=21,slow=14,SNR=5.0									
TORD	**Torodi Ar. Bea**	**77.69**	**71**	P		**P**	**03**	**29**	**55.1**	**-1.7**
	comp=E,0.4nm,0.5s,baz=239,slow=6.3,SNR=8.6									
YKA	**Yellowknife Ar**	**88.70**	**341**	P		**P**	**03**	**30**	**52.6**	**+0.3**
	comp=E,0.6nm,0.6s,baz=128,slow=4.0,SNR=3.5									
H11S2	**WAKE ISLAND Hy**	**26.44**	**279**	T		T	05	56	11.7	
	baz=96									
H11S1	**WAKE ISLAND Hy**	**26.45**	**279**	T		T	05	56	12.3	
	baz=96									
H11S3	**WAKE ISLAND Hy**	**26.46**	**279**	T		T	05	56	13.1	
	baz=96									
H11N3	**WAKE ISLAND Hy**	**26.47**	**281**	T		T	05	56	12.6	
	baz=96									
H11N2	**WAKE ISLAND Hy**	**26.48**	**281**	T		T	05	56	13.8	
	baz=96									
H11N1	**WAKE ISLAND Hy**	**26.48**	**281**	T		T	05	56	13.8	
	baz=96									
WRA	**Warramunga Arr**	**134.27**	**213**	PKP		**PKPdf**	**03**	**37**	**18.0**	**+0.1**
	comp=E,0.3nm,0.6s,baz=142,slow=1.7,SNR=2.0									

*IDC **25** 03:26:20.3±1.2, 13°.06N×145°.70E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.6/33, mbtmp3.6/5, Error ellipse: s-maj=29.5km s-min=23.7km az=77.0*
*ISCJB **25** 03:26:24.7±0.9, 13°.1N±0°.1×145°.6E±0°.1, h43km, mb3.5/5, Error ellipse: s-maj=22.5km s-min=11.4km az=139.1*

ISC 25 03:26:26.5±1.1, 13°.1N±0°.1×145°.5E±0°.2, h43km, n9, σ0§67/7, mb3.6/5, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
GUMO	**Guam**	**0.80**	**309**	Pn		**Pn**	**03**	**26**	**41.1**	**-0.2**
	154nm,0.3s,baz=153,slow=13,SNR=23									
GUMO				Sn		**Sn**	**03**	**26**	**51.9**	**-0.3**
	225nm,0.3s,baz=345,slow=20,SNR=7.9									
H11N1	**WAKE ISLAND Hy**	**21.53**	**69**	T		T	03	53	31.1	
	baz=262									
H11N2	**WAKE ISLAND Hy**	**21.54**	**69**	T		T	03	53	55.1	
	baz=262									
H11N3	**WAKE ISLAND Hy**	**21.55**	**69**	T		T	03	53	35.8	
	baz=262									
WRA	**Warramunga Arr**	**34.62**	**199**	P		**P**	**03**	**33**	**12.1**	**+0.3**
	0.4nm,0.6s,baz=21,slow=9.6,SNR=2.9									
ASAR	**Alice Springs**	**38.25**	**197**	P		**P**	**03**	**33**	**42.1**	**-0.6**
	0.2nm,0.6s,baz=14,slow=12,SNR=1.9									
MKAR	**Makanchi Array**	**62.28**	**316**	P		**P**	**03**	**36**	**45.4**	**+1.0**
	0.4nm,0.5s,baz=91,slow=9.0,SNR=4.8									
ILAR	**Eielson Array**	**68.75**	**25**	P		**P**	**03**	**37**	**25.6**	**-0.2**
	0.3nm,0.4s,baz=247,slow=6.2,SNR=7.7									
YKA	**Yellowknife Ar**	**83.02**	**27**	P		**P**	**03**	**38**	**46.9**	**-0.2**
	0.6nm,0.7s,baz=288,slow=4.7,SNR=2.9									

JMA 25 03:32:08.6±0.2, 36°.47N×144°.13E, h81km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
ONAJ	**Iwakimizuishiy**	**2.75**	**284**	P		Pn	03	32	51.8	+1.2
ONAJ				*e*S		Sn	03	33	23.5	+0.6
CHOJ	**Chosi**	**2.76**	**255**	P		Pn	03	32	51.5	+0.8
JFK	**Kawauchi**	**2.76**	**290**	P		Pn	03	32	51.6	+0.9
JHO	**Hitachi**	**2.87**	**274**	P		Pn	03	32	52.9	+0.7
BSO1	**Boso 1**	**3.14**	**236**	*e*S		Sn	03	33	33.6	+2.0
JMK	**Ichinoseki**	**3.39**	**318**	*e*S		Sn	03	33	39.8	+1.6
JRY	**Ryogami san**	**4.25**	**265**	P		Pn	03	33	12.1	+1.2
JRY				*e*S		Sn	03	34	01.0	+1.6
JOD2	**Odawara 2**	**4.27**	**255**	P		Pn	03	33	12.4	+1.2
JOD2				*e*S		Sn	03	34	01.4	+1.6
MAT	**Matsushiro**	**4.77**	**273**	P		Pn	03	33	20.4	+2.4
MAT				S		Sn	03	34	17.7	+5.6
JOT	**Ohata**	**5.46**	**335**	P		Pn	03	33	28.5	+1.1
JOT				*e*S		Sn	03	34	31.2	+2.4
JOSM	**Okushiri--Mats**	**6.67**	**329**	P		Pn	03	33	45.8	+2.0
JHS	**Saijyo**	**9.07**	**264**	P		Pn	03	34	18.8	+2.0

*IDC **25** 03:36:58.5±1.8, 4°.97S×151°.62E, h0km, mb3.9/7, mb1 4.0/8, mb1mx3.8/33, mbtmp3.9/8, ML2.0/1, Error ellipse: s-maj=68.6km s-min=19.2km az=120.0*
*ISCJB **25** 03:37:13.6±1.7, 5°.1S±0°.2×151°.3E±0°.4, h129km, mb3.6/7, Error ellipse: s-maj=59.5km s-min=11.3km az=32.0*

ISC 25 03:37:14.4±2.0, 5°.2S±0°.3×151°.4E±0°.4, h129km, n9, σ0§99/9, mb3.7/7, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
PMG	**Port Moresby**	**5.94**	**225**	Pn		Pn	03	38	32.4	-7.7
	2.3nm,0.3s,baz=304,slow=11,SNR=2.2									
PMG				Sn		**Sn**	**03**	**39**	**46.3**	**-0.8**
	2.2nm,0.3s,baz=0.0,slow=20,SNR=1.7									
WRA	**Warramunga Arr**	**22.16**	**227**	P		**P**	**03**	**41**	**59.5**	**-0.5**
	1.0nm,0.2s,baz=50,slow=10,SNR=15									
ASAR	**Alice Springs**	**24.94**	**221**	P		**P**	**03**	**42**	**27.4**	**+1.6**
	1.0nm,0.4s,baz=56,slow=8.7,SNR=14									
FITZ	**Fitzroy Crossi**	**28.26**	**241**	P		**P**	**03**	**42**	**55.7**	**0.0**
	1.2nm,0.3s,baz=57,slow=6.0,SNR=26									
SONM	**Songino Array**	**65.94**	**329**	P		**P**	**03**	**47**	**47.4**	**+0.6**
	0.8nm,0.7s,baz=114,slow=3.0,SNR=4.8									
MKAR	**Makanchi Array**	**79.72**	**319**	P		**P**	**03**	**49**	**08.5**	**+0.5**
	0.5nm,0.7s,baz=108,slow=8.4,SNR=3.4									
ZALV	**Zalesovo Beam**	**80.72**	**327**	P		**P**	**03**	**49**	**12.0**	**-1.2**
	0.6nm,0.4s,baz=131,slow=6.5,SNR=2.2									
ILAR	**Eielson Array**	**83.05**	**22**	P		**P**	**03**	**49**	**24.5**	**-0.6**
	0.4nm,0.5s,baz=248,slow=4.9,SNR=8.9									
TORD	**Torodi Ar. Bea**	**149.11**	**287**	PKPbc		**PKPbc**	**03**	**56**	**48.7**	**+0.1**
	1.9nm,0.7s,baz=84,slow=2.6,SNR=21									

*GUC **25** 03:44:30.1±0.4, 37°.47S×74°.62W, h23km±5km, ML4.4*
*ISCJB **25** 03:44:32.8±0.5, 37°.69S±0°.04×73°.71W±0°.09, h10km, mb4.2/13, Error ellipse: s-maj=10.4km s-min=5.0km az=8.9*
*IDC **25** 03:44:32.9±1.3, 37°.58S×73°.67W, h0km, mb3.7/5, mb1 4.1/8, mb1mx4.0/30, mbtmp3.9/8, ML4.1/3, MS3.7/2, Ms1 3.7/2, ms1mx3.3/28, Error ellipse: s-maj=38.7km s-min=22.1km az=72.0*
*NEIC **25** 03:44:36.6±2.7, 37°.64S×73°.59W, h23km±19km, mb4.7/9, ML4.4(GUC), Error ellipse: s-maj=15.7km s-min=6.4km az=88.0*

ISC 25 03:44:33.6±0.6, 37°.71S±0°.04×73°.81W±0°.08, h10km, n34, σ2§24/45, mb4.4/13, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
CCSP	**San Pedro de C**	**1.03**	**33**	*i* P		**Pg**	**03**	**44**	**53.0**	**-0.4**
CCSP				*i* S		**Sn**	**03**	**45**	**10.1**	**+1.5**
CCSP				IAML			03	45	15.3	
	comp=N,11μm,0.3s									
CCHI	**Chillan**	**1.77**	**52**	*i* P		**Pn**	**03**	**45**	**05.9**	**+1.6**
CCHI				*i* S		**Sg**	**03**	**45**	**33.2**	**+2.6**
CCHI				IAML			03	45	44.8	
	comp=E,5μm,0.4s									
COCH	**Cobquecura**	**1.78**	**28**	*i* P		**Pn**	**03**	**45**	**02.7**	**-1.7**
COCH				*i* S		**Sn**	**03**	**45**	**27.2**	**+0.1**
COCH				IAML			03	45	37.1	
	comp=E,3μm,0.3s									
PLCA	**Paso Flores**	**3.94**	**141**	Pn		**Pn**	**03**	**45**	**35.6**	**+1.4**
	comp=E,1.9nm,0.3s,baz=346,slow=10,SNR=42									
PLCA				Sn		**Sn**	**03**	**46**	**24.1**	**+3.6**
	comp=E,8.1nm,0.3s,baz=325,slow=16,SNR=3.1									
PLCA				LR		LR	03	47	24.3	
	comp=E,896nm,18.2s,baz=252,slow=43									
PLCA	**Paso Flores**	**3.94**	**141**	Pn		**Pn**	**03**	**45**	**35.6**	**+1.4**
PLCA				*e*Sn		**Sn**	**03**	**46**	**14.0**	**-6.5**
ROC1	**El Roble**	**5.25**	**27**	*e*Pn		**Pn**	**03**	**45**	**52.4**	**0.0**
ROC1				*e*Sn		**Sn**	**03**	**46**	**53.9**	**+0.8**
ROCH	**El Roble**	**5.25**	**27**	*i* P		**Pn**	**03**	**45**	**51.7**	**-0.7**
ROCH				*i* S		**Sn**	**03**	**46**	**50.8**	**-2.4**
LCO	**Las Campanas**	**9.06**	**18**	*e*Pn		**Pn**	**03**	**46**	**43.7**	**-1.0**
LCO				*e*Sn		**Sn**	**03**	**48**	**20.6**	**-6.3**
TRQA	**Tornquist**	**9.36**	**96**	*e*Pn		**Pn**	**03**	**46**	**49.0**	**+0.4**
CHRN	**Cochrane**	**9.57**	**175**	*e*Pn		**Pn**	**03**	**46**	**52.6**	**+1.2**
LVC	**Limon Verde**	**15.63**	**17**	Pn		**Pn**	**03**	**48**	**15.4**	**+1.0**
	comp=E,6.9nm,0.3s,baz=219,slow=6.5,SNR=2.1									
LVC				Sn		**Sn**	**03**	**51**	**05.9**	**-1.9**
	comp=E,2.4nm,0.3s,baz=207,slow=14,SNR=1.6									
USHA	**Ushuaia**	**17.51**	**170**	P		**Pn**	**03**	**48**	**38.5**	**+0.8**
	comp=E,5.0nm,0.3s,baz=322,slow=13,SNR=2.9									
EFI	**East Falkland**	**17.84**	**147**	*e*Pn		**Pn**	**03**	**48**	**42.1**	**+0.3**
	comp=E,119nm,1.5s									
CPUP	**Villa Florida**	**17.97**	**56**	P		**Pn**	**03**	**48**	**40.4**	**-3.2**
	comp=E,0.1nm,0.3s,baz=219,slow=14,SNR=2.7							

ASAR Alice Springs 50.50 252 P P 03 59 37.4 -0.6
0.5nm,0.4s,baz=87,slow=7.6,SNR=8.3
BRTR Keskin Array B 146.53 321 PKPbc PKPab 04 10 22.8 +0.3
0.6nm,0.8s,baz=38,slow=3.6,SNR=3.7

IDC 25 04:12:18.2±1.6, 3°.53S×151°.55E, h0km, mb3.2/3, mb1 3.8/4, mb1mx3.5/26, mbtmp3.5/4, ML3.9/1, Error ellipse: s-maj=105.1km s-min=25.4km az=120.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**17.25**	**197**	P	Pn	04 16 20.6	-0.1
	0.3nm,0.3s,baz=34,slow=3.6,SNR=8.0						
WRA	**Warramunga Arr**	**23.41**	**224**	P	P	04 17 28.7	-0.5
	0.7nm,0.7s,baz=49,slow=9.3,SNR=5.2						
ASAR	**Alice Springs**	**26.30**	**219**	P	P	04 17 56.3	+0.5
	0.5nm,0.8s,baz=59,slow=7.8,SNR=3.7						
ILAR	**Eielson Array**	**81.46**	**22**	P	P	04 24 37.1	+0.1
	0.2nm,0.9s,baz=244,slow=5.7,SNR=2.9						
TORD	**Torodi Ar. Bea**	**148.72**	**290**	PKPbc	PKPbc	04 32 07.8	-0.8
	0.5nm,1.0s,baz=64,slow=3.4,SNR=2.8						

*ISCJB **25** 04:15:55.6±1.0, 32°.16N±0°.05×115°.20W±0°.09, h22km±10km, Error ellipse: s-maj=13.5km s-min=6.0km az=151.2*
*ECX **25** 04:15:56.6±0.6, 32°.15N×115°.21W, h8km, MD2.1, ML2.3*
*MEX **25** 04:15:56.8±0.6, 32°.21N×115°.05W, h28km±27km, MD3.9*
ISC 25 04:15:55.0±1.5, 32°.16N±0°.06×115°.15W±0°.10, h28km±13km, n10, σ0°39/15, 1C-2D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.28**	**333**	*e*P	**Pb**	**04 16 01.9**	**-0.2**
CPBX				⇑*e*		04 16 09.2	
CPBX				IAML		04 16 09.2	
	comp=E,1μm,0.1s						
CPBX				⇓*e*		04 16 10.5	
CPBX				IAML		04 16 10.5	
	comp=N,875nm,0.1s						
ECBX	**El Chinero**	**0.69**	**173**	*e*P	**Pn**	**04 16 08.4**	**-0.5**
ECBX				*e*S	**Sb**	**04 16 18.4**	**+0.7**
WESC	**Westside Schoo**	**0.77**	**321**	*e*P	**Pb**	**04 16 10.0**	**+0.2**
IKP	**In-Ko-Pah, Jac**	**0.94**	**301**	*e*P	**Pb**	**04 16 12.3**	**-0.5**
SPIG	**San Pedro Mart**	**1.15**	**194**	*e*P	**Pb**	**04 16 16.3**	**-0.1**
SPIG				*e*S	**Sn**	**04 16 30.8**	**+0.4**
SPIG	**San Pedro Mart**	**1.15**	**194**	*e*P	**Pb**	**04 16 16.1**	**-0.3**
CBX	**Cerro Bola**	**1.29**	**277**	*e*P	**Pb**	**04 16 18.4**	**-0.3**
CBX				*e*S	**Sn**	**04 16 34.1**	**+0.5**
CBX	**Cerro Bola**	**1.29**	**277**	*e*P	**Pb**	**04 16 18.4**	**-0.3**
CBX				*e*S	**Sb**	**04 16 35.0**	**+0.1**
CBX				IAML		04 16 35.9	
	comp=N,99nm,0.4s						
CBX				⇓*e*		04 16 35.9	
TJIG	**Tijuana**	**1.32**	**282**	*e*P	**Pn**	**04 16 17.6**	**+0.1**
TJIG				*e*S	**Sn**	**04 16 34.2**	**0.0**
BAR	**Barrett**	**1.38**	**292**	*e*P	**Pb**	**04 16 19.9**	**-0.3**

IDC 25 04:25:08.9±526.0, 37°.30N×13°.53E, h0km, Error ellipse: s-maj=167.6km s-min=76.3km az=76.0, Sicily

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I48TN	**KESRA INFRASON**	**3.70**	**248**	*i*		04 50 00.0	
	baz=64,slow=328,SNR=2.1						
I26DE	**FREYUNG INFRAS**	**11.55**	**1**	*i*		05 32 50.0	
	baz=180,slow=327,SNR=1.2						
I42PT	**GRACIOSA ISLAN**	**32.50**	**286**	*i*		07 59 10.0	
	baz=81,slow=309,SNR=0.7						

*IDC **25** 04:34:51.6±1.7, 3°.53S×151°.08E, h0km, mb4.0/8, mb1 4.3/8, mb1mx4.0/28, mbtmp4.1/8, MS3.7/10, Ms1 3.7/10, ms1mx3.4/26, Error ellipse: s-maj=55.7km s-min=21.4km az=115.0*
*ISCJB **25** 04:34:56.7±1.3, 3°.3S±0°.1×150°.7E±0°.3, h33km, mb3.9/8, MS3.8/9, Error ellipse: s-maj=39.3km s-min=12.7km az=12.8*
ISC 25 04:34:58.1±1.4, 3°.3S±0°.1×150°.9E±0°.3, h35km, n17, σ1°35/11, mb4.0/8, MS3.7/9, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.08**	**212**	Pn	**Pn**	**04 36 41.2**	**+1.9**
	2.5nm,0.3s,baz=32,slow=9.0,SNR=2.2						
JAY	**Jayapura**	**10.22**	**274**	LR	LR	04 40 41.8	
	comp=Z,52nm,18.8s,baz=56,slow=34						
CTA	**Charters Tower**	**17.25**	**195**	Pn	**P**	**04 38 58.2**	**+0.6**
	0.1nm,0.3s,baz=20,slow=14,SNR=4.4						
WRA	**Warramunga Arr**	**23.10**	**223**	P	**P**	**04 39 59.1**	**-2.0**
	8.0nm,1.0s,baz=49,slow=9.6,SNR=20						
WRA				LR	LR	04 49 53.7	
	comp=Z,268nm,18.0s,baz=60,slow=39						
ASAR	**Alice Springs**	**26.04**	**218**	P	**P**	**04 40 26.8**	**-1.5**
	2.1nm,0.9s,baz=50,slow=6.4,SNR=12						
ASAR				LR	LR	04 49 59.3	
	comp=Z,145nm,19.5s,baz=44,slow=35						
FITZ	**Fitzroy Crossi**	**28.77**	**238**	P	**P**	**04 40 51.1**	**-1.6**
	4.6nm,1.0s,baz=46,slow=11,SNR=5.4						
KSRS	**Korea Array**	**45.87**	**334**	LR	LR	05 02 52.2	
	comp=Z,68nm,18.3s,baz=154,slow=36						
USRK	**Ussuriysk Ar.**	**50.28**	**342**	LR	LR	05 04 36.5	
	comp=Z,42nm,18.1s,baz=159,slow=35						
CMAR	**Chiang Mai Arr**	**55.55**	**295**	P	**P**	**04 44 31.2**	**+0.8**
	1.1nm,0.3s,baz=107,slow=4.9,SNR=4.5						
PETK	**Petropavlovsk-**	**56.54**	**5**	LR	LR	05 03 58.2	
	comp=Z,100nm,20.3s,baz=189,slow=31						
SONM	**Songino Array**	**64.10**	**328**	P	**P**	**04 45 29.7**	**+0.8**
	0.3nm,0.5s,baz=146,slow=6.6,SNR=4.0						
SONM				LR	LR	05 13 02.3	
	comp=Z,51nm,21.2s,baz=133,slow=36						
MKAR	**Makanchi Array**	**78.00**	**319**	P	**P**	**04 46 53.2**	**+0.1**
	1.6nm,1.0s,baz=113,slow=5.7,SNR=5.2						
ZALV	**Zalesovo Beam**	**78.90**	**327**	P	**P**	**04 46 58.0**	**+0.2**
	1.1nm,0.7s,baz=125,slow=7.2,SNR=3.7						
ILAR	**Eielson Array**	**81.54**	**23**	P	**P**	**04 47 11.2**	**-0.6**
	0.9nm,0.9s,baz=246,slow=5.0,SNR=9.3						
ILAR				LR	LR	05 22 54.6	
	comp=Z,57nm,18.5s,baz=264,slow=35						
NRIK	**Noril'sk**	**83.99**	**341**	LR	LR	05 25 57.9	
	comp=Z,44nm,18.2s,baz=35,slow=36						
MAW	**Mawson**	**86.18**	**203**	LR	LR	05 22 54.1	
	comp=Z,84nm,21.5s,baz=62,slow=34						
TORD	**Torodi Ar. Bea**	**148.05**	**290**	PKPbc	**PKPbc**	**04 54 40.9**	**-0.2**
	1.2nm,0.9s,baz=80,slow=2.2,SNR=6.7						

*IDC **25** 04:52:13.2±2.6, 38°.07N×144°.27E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/35, mbtmp3.4/4, ML3.2/1, Error ellipse: s-maj=70.4km s-min=30.6km az=65.0*
*ISCJB **25** 04:52:16.7±1.0, 38°.07N±0°.06×143°.97E±0°.08, h33km, mb3.5/3, Error ellipse: s-maj=9.2km s-min=7.9km az=152.4*
*JMA **25** 04:52:17.3±0.2, 38°.16N×143°.86E, h24km, M3.5*
ISC 25 04:52:17.9±1.3, 38°.11N±0°.06×144°.05E±0°.09, h35km, n16, σ1°50/23, mb3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.10**	**298**	P	**Pn**	**04 52 49.9**	**-0.6**
OFUJ				S	**Sn**	**04 53 14.4**	**-1.1**
JIO	**Ouri**	**2.15**	**280**	P	**Pn**	**04 52 50.5**	**-0.7**
JIO				S	**Sn**	**04 53 14.1**	**-2.6**
MIYJ	**Miyakonagasawa**	**2.28**	**311**	P	**Pn**	**04 52 52.0**	**-0.9**
MIYJ				S	**Sn**	**04 53 19.0**	**-0.8**
JMK	**Ichinoseki**	**2.37**	**292**	P	**Pn**	**04 52 54.0**	**-0.3**
JMK				*e*S	**Sn**	**04 53 21.1**	**-1.0**
JOM	**Ohasama**	**2.55**	**303**	P	**Pn**	**04 52 56.9**	**+0.2**
JOM				*e*S	**Sn**	**04 53 26.8**	**+0.3**
JANG	**Nango**	**3.00**	**320**	P	**Pn**	**04 53 02.7**	**-0.2**
JFT	**Otama**	**3.00**	**260**	P	**Pn**	**04 53 03.0**	**+0.1**
JFT				S	**Sn**	**04 53 36.5**	**-1.1**
JYK	**Kaneyama**	**3.00**	**287**	P	**Pn**	**04 53 03.3**	**+0.3**
BSO1	**Boso 1**	**4.25**	**217**	P	**Pn**	**04 53 17.8**	**-1.7**
JKB	**Kayabe**	**4.43**	**329**	*e*S	**Sn**	**04 54 10.5**	**-2.3**
JCH	**Churui**	**4.53**	**354**	P	**Pn**	**04 53 23.6**	**-0.3**
JCH				S	**Sn**	**04 54 12.7**	**-2.7**
JRY	**Ryogami san**	**4.62**	**245**	*e*S	**Sn**	**04 54 14.7**	**-2.8**
MJAR	**Matsushiro Arr**	**4.91**	**253**	Pn	**Pn**	**04 53 30.8**	**+1.6**
	0.9nm,0.3s,baz=86,slow=15,SNR=4.4						
MKAR	**Makanchi Array**	**45.33**	**302**	P	**P**	**05 00 34.1**	**+1.8**
	0.2nm,0.6s,baz=79,slow=9.8,SNR=4.5						
KURBB	**Kurchatov Arra**	**47.00**	**308**	P	**P**	**05 00 47.1**	**+1.7**
	0.2nm,0.5s,baz=82,slow=8.5,SNR=3.2						
WRA	**Warramunga Arr**	**58.46**	**191**	P	**P**	**05 02 10.8**	**+0.5**
	0.9nm,0.6s,baz=10,slow=7.1,SNR=10						

MEX 25 04:54:13.4±0.3, 13°.95N×91°.88W, h15km, MD3.8, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.33**	**354**	*i* P	Pn	04 54 48.5	-2.9
CCIG				*e*S	Sn	04 55 15.8	-4.0

*NNC **25** 05:10:47.5±7.1, 53°.78N×86°.88E, h0km, mb3.5, mpv3.2, Error ellipse: s-maj=77.9km s-min=60.3km az=176.0*
IDC 25 05:10:47.6±2.5, 54°.11N×86°.40E, h0km, mb1 3.2/2, mb1mx3.0/41, mbtmp3.2/2, ML2.8/2, 4C-2D, Error ellipse: s-maj=19.7km s-min=12.6km az=57.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**0.95**	**261**	*i*		05 17 08.7	
	baz=80,slow=311,SNR=3.3						
ZALV	**Zalesovo Beam**	**0.95**	**261**	Pg	Pg	05 11 04.7	-1.0
	1.3nm,0.3s,baz=78,slow=16,SNR=12						
ZALV				Lg	Lg	05 11 19.3	
	3.3nm,0.3s,baz=78,slow=29,SNR=17						
KURK	**Kurchatov**	**5.85**	**238**	⇑Pn	Pn	05 12 16.1	+0.6
	1.5nm,0.7s						
KURK				⇑Lg	Lg	05 13 55.2	
	4.7nm,1.1s						
KURBB	**Kurchatov Arra**	**5.95**	**237**	Pn	Pn	05 12 17.8	+0.9
	0.2nm,0.3s,baz=54,slow=14,SNR=17						
KURBB				Lg	Lg	05 13 56.8	
	0.0nm,0.3s,baz=57,slow=32,SNR=4.4						
KURBB	**Kurchatov Arra**	**5.95**	**237**	⇓Pn	Pn	05 12 17.4	+0.5
	3.2nm,0.6s						
KURBB				⇑Lg	Lg	05 13 58.3	
	7.1nm,0.8s						
MK31	**Makanchi Array**	**7.78**	**201**	⇓Pn	Pn	05 12 40.5	-1.5
	0.2nm,0.3s,baz=27,slow=15,SNR=5.9						
MK31				⇑Lg	Lg	05 14 48.3	
	1.5nm,0.9s,baz=35,slow=28						
MKAR	**Makanchi Array**	**7.78**	**201**	Pn	Pn	05 12 42.9	+0.9
	0.2nm,0.3s,baz=20,slow=13,SNR=7.4						
MKAR				Lg	Lg	05 14 53.9	
	0.1nm,0.3s,baz=11,slow=31,SNR=4.7						

*ISK **25** 05:22:59.9, 39°.13N×29°.02E, h5km, MD2.8*
*DDA **25** 05:22:59.9, 39°.09N×29°.03E, h7km, Md2.7*
*ISCJB **25** 05:23:00.1±0.5, 39°.13N±0°.03×29°.01E±0°.03, h2km±6km, Error ellipse: s-maj=5.9km s-min=3.8km az=167.9*
*CSEM **25** 05:23:00.4±0.1, 39°.12N×29°.02E, h5km, MD2.7, Error ellipse: s-maj=2.3km s-min=1.9km az=168.0*
ISC 25 05:23:00.4±1.0, 39°.13N±0°.02×29°.01E±0°.02, h9km±9km, n47, σ0°30/58, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.24**	**249**	*i* P	**Pg**	**05 23 05.3**	**0.0**
DEMI				*i* S	**Sg**	**05 23 08.9**	**+0.3**
DEMI	**Demirci**	**0.24**	**249**	P	**Pg**	**05 23 05.3**	**0.0**
DEMI				S	**Sg**	**05 23 08.9**	**+0.3**
GEDZ	**Gediz**	**0.33**	**105**	*e*PG	**Pg**	**05 23 06.8**	**0.0**
GEDZ				*e*SG	**Sg**	**05 23 11.5**	**+0.4**
GEDZ	**Gediz**	**0.33**	**105**	*e*Pg	**Pg**	**05 23 06.8**	**0.0**
GEDZ				*e*Sg	**Sg**	**05 23 11.5**	**+0.4**
GDZ	**Gediz**	**0.37**	**96**	*i* P	**Pg**	**05 23 07.2**	**-0.5**
GDZ				*i* S	**Sg**	**05 23 12.6**	**0.0**
GDZ	**Gediz**	**0.37**	**96**	P	**Pg**	**05 23 07.2**	**-0.5**
GDZ				S	**Sg**	**05 23 12.6**	**0.0**
TVSB	**Tavsanli**	**0.48**	**48**	*e*PG	**Pg**	**05 23 09.8**	**+0.1**
TVSB				*e*SG	**Sg**	**05 23 15.6**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**48**	*e*Pg	**Pg**	**05 23 09.8**	**+0.1**
TVSB				*e*Sg	**Sg**	**05 23 15.6**	**-0.4**
DST	**Dursunbey**	**0.56**	**328**	*e*PG	**Pg**	**05 23 11.0**	**-0.3**
DST	**Dursunbey**	**0.56**	**328**	*e*Pg	**Pg**	**05 23 11.0**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**204**	*e*PG	**Pg**	**05 23 12.9**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**204**	*e*Pg	**Pg**	**05 23 12.9**	**-0.4**
KHL	**Karahalli**	**0.90**	**153**	*e*PG	**Pg**	**05 23 17.2**	**-0.4**
KHL	**Karahalli**	**0.90**	**153**	*e*Pg	**Pg**	**05 23 17.2**	**-0.4**
AKS	**Akhisar**	**0.96**	**255**	*e*PG	**Pb**	**05 23 19.4**	**+0.1**
AKS	**Akhisar**	**0.96**	**255**	*e*Pg	**Pb**	**05 23 19.4**	**+0.1**
BALB	**Balikesir**	**1.01**	**301**	*e*PG	**Pn**	**05 23 20.7**	**-0.1**
BALB	**Balikesir**	**1.01**	**301**	*e*Pg	**Pn**	**05 23 20.7**	**-0.1**
IGD	**Bursa**	**1.14**	**7**	*i* P	**Pg**	**05 23 22.1**	**-0.3**
IGD				*i* S	**Sg**	**05 23 37.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pn**	**05 23 24.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pn**	**05 23 24.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*PN	**Pn**	**05 23 24.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*Pn	**Pn**	**05 23 24.2**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	**Pn**	**05 23 24.2**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	**Pn**	**05 23 24.2**	**+0.1**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pg**	**05 23 24.2**	**-0.3**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pg**	**05 23 24.2**	**-0.3**
SHUT	**Suhut-Afyon**	**1.34**	**115**	*e*PN	**Pb**	**05 23 26.0**	**+0.3**
SHUT	**Suhut-Afyon**	**1.34**	**115**	*e*Pn	**Pb**	**05 23 26.0**	**+0.3**
BORA	**Eskisehir**	**1.35**	**56**	*i* P	**Pn**	**05 23 25.3**	**-0.2**
BORA				*i* S	**Sn**	**05 23 44.1**	**+0.5**
BORA	**Eskisehir**	**1.35**	**56**	P	**Pn**	**05 23 25.3**	**-0.2**
BORA				S	**Sn**	**05 23 44.1**	**+0.5**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*PN	**Pb**	**05 23 26.4**	**+0.2**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*Pn	**Pb**	**05 23 26.4**	**+0.2**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*PN	**Pg**	**05 23 27.2**	**-0.4**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*Pn	**Pg**	**05 23 27.2**	**-0.4**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pb**	**05 23 27.2**	**-0.2**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pb**	**05 23 27.2**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*PN	**Pb**	**05 23 27.8**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*Pn	**Pb**	**05 23 27.8**	**-0.2**
ESKT	**Eskisehir**	**1.48**	**74**	*e*PN	**Pg**	**05 23 28.4**	**-0.4**
ESKT	**Eskisehir**	**1.48**	**74**	*e*Pn	**Pg**	**05 23 28.4**	**-0.4**
EDC	**Edincik**	**1.50**	**324**	*e*PN	**Pg**	**05 23 29.0**	**-0.2**
EDC	**Edincik**	**1.50**	**324**	*e*Pn	**Pg**	**05 23 29.0**	**-0.2**
IZM	**Izmir**	**1.55**	**242**	*e*PN	**Pb**	**05 23 28.8**	**-0.4**
IZM	**Izmir**	**1.55**	**242**	*e*Pn	**Pb**	**05 23 28.8**	**-0.4**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**05 23 31.1**	**+0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**05 23 31.2**	**+0.2**

*IDC **25** 05:30:21.2±0.4, 21°.33S×174°.47W, h0km, mb4.8/26, mb1 4.9/27, mb1mx4.9/34, mbtmp4.8/27, ML4.5/1, MS4.7/17, Ms1 4.7/17, ms1mx4.6/24, Error ellipse: s-maj=15.3km s-min=13.4km az=137.0*
*ISCJB **25** 05:30:24.0±0.1, 21°.32S±0°.04×174°.36W±0°.03, h25km, mb5.2/243, MS4.9/44, Error ellipse: s-maj=5.6km s-min=3.1km az=152.7*
*BJI **25** 05:30:25.2, 21°.23S×174°.34W, h30km, mb5.2/44, mB5.6/41, Ms5.2/42, Ms7 4.8/40*
*MOS **25** 05:30:25.5±0.8, 21°.29S×174°.42W, h33km, mb5.4/56, MS5.0/14, Error ellipse: s-maj=10.3km s-min=7.5km az=64.1*
*NEIC **25** 05:30:27.1±0.9, 21°.29S×174°.45W, h37km±8km, mb5.3/199, Error ellipse: s-maj=5.7km s-min=3.4km az=141.0*
*GCMT **25** 05:30:27.1±0.2, 21°.60S×173°.80W, h21km, MW5.2/98, Moment Tensor Solution. s69,c101; s98,c149; Duration: 1s0 Moment tensor: Scale 10^16 Nm; Mrr 5.90±.23; Mθθ-0.88±.14; Mφφ-5.02±.15; Mrθ 3.04±.28; Mθφ-1.65±.09; Mφr 4.41±.24; Best double couple: M0 7.85100×10^16 NP1:φs 29.00000°, δ67.00000°, λ98.00000°. NP2:φs 191.00000°, δ25.00000°, λ73.00000°. Principal axes: T 8.0890, Plg68.0000°, Azm313.0000°; N -0.4740, Plg7.0000°, Azm206.0000°; P -7.6130, Plg21.0000°, Azm114.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 25 05:30:24.9±0.2, 21°.28S±0°.05×174°.17W±0°.04, h25km, n744, σ1°77/785, mb5.3/240, MS5.0/45, 35C-4D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.67**	**18**	Pn	**Pn**	**05 32 11.9**	**-3.3**
	43nm,0.3s,baz=211,slow=5.9,SNR=42						
AFI				Sn	**Sn**	**05 33 35.2**	**-6.2**
	30nm,0.3s,baz=190,slow=22,SNR=6.2						
AFI	**Afiamalu**	**7.67**	**18**	*e*P	**Pn**	**05 32 12.2**	**-3.0**
AFI	**Afiamalu**	**7.67**	**18**	*e*Pn	**Pn**	**05 32 12.2**	**-3.0**
AFI				*e*Sn	**Sn**	**05 33 34.2**	**-7.2**
MSVF	**Nonsavu**	**8.14**	**294**	*c i*P	**Pn**	**05 32 26.1**	**+4.5**
MSVF	**Nonsavu**	**8.14**	**294**	*e*Pn	**Pn**	**05 32 24.9**	**+3.3**
MSVF				*e*Sn	**Sn**	**05 33 50.9**	**-1.9**
RAR	**Rarotonga**	**13.43**	**92**	Pn	Pn	05 33 26.9	-7.0
	43nm,0.3s,baz=260,slow=9.4,SNR=102						
RAR				LR	LR	05 39 36.3	
	comp=Z,3μm,18.3s,baz=246,slow=40						
DZM	**Mont Dzumac**	**18.04**	**264**	P	**P**	**05 34 34.5**	**+0.1**
	0.8nm,0.3s,baz=79,slow=17,SNR=12						
DZM				LR	LR	05 40 31.6	
	comp=Z,4μm,19.8s,baz=96,slow=34						
DZM	**Mont Dzumac**	**18.04**	**264**	*e*P	**P**	**05 34 34.6**	**+0.2**
	190nm,1.2s						
DZM				*e*LR	LR	05 38 45.6	
	4μm,21.4s						
DZM	**Mont Dzumac**	**18.04**	**264**	*e*Pn	**Pn**	**05 34 33.4**	**-0.7**
	64nm,0.9s						
DZM				*e*Sn	**Sn**	**05 37 46.0**	**-8.6**
URZ	**Urewera**	**18.52**	**202**	P	**P**	**05 34 37.5**	**-2.0**
	1.4nm,0.3s,baz=5.0,slow=6.3,SNR=7.8						
URZ				S	Sn	05 37 48.6	-18
	0.6nm,0.3s,baz=198,slow=20,SNR=5.2						
URZ	**Urewera**	**18.52**	**202**	*e*P	**P**	**05 34 38.5**	**-1.0**
	79nm,1.2s						
URZ				*e*Sn	Sn	05 37 48.6	-18
BKZ	**Black Stump Fm**	**19.55**	**202**	*e*P	**Pn**	**05 34 51.7**	**-0.5**
	49nm,1.0s						
TBI	**Tubuai**	**22.95**	**100**	*e*P	**P**	**05 35 24.1**	**-3.4**
	350nm,1.3s						
TBI				*e*S	**S**	**05 39 27.0**	**-9.3**
	1μm,23.6s						
TBI				*e*LR	LR	05 40 56.2	
	3μm,26.8s,baz=276						
THZ	**Tophouse**	**23.15**	**205**	*e*P	**P**	**05 35 29.9**	**+0.4**
	58nm,1.1s						
PAE	**Paea**	**23.45**	**85**	*e*P	**P**	**05 35 29.8**	**-2.8**
	24nm,1.1s						
PAE	**Paea**	**23.45**	**85**	*e*T	T	05 59 47.8	
	2.8nm,0.3s						
PPT2	**Papeete2**	**23.47**	**85**	*e*P	**P**	**05 35 30.2**	**-2.7**
	122nm,1.4s						
PPT2				*e*S	**S**	**05 39 37.2**	**-8.0**
	2μm,26.8s						
PPT2				*e*LR	LR	05 41 10.5	
	3μm,23.8s,baz=254						
PPT2	**Papeete2**	**23.47**	**85**	*e*T	T	05 59 49.0	
	2.1nm,0.3s						
PPT	**Papeete**	**23.48**	**85**	P	**P**	**05 35 34.9**	**+2.0**
	72nm,1.1s,baz=303,slow=7.4,SNR=4.8						
PPT				LR	LR	05 43 31.3	
	comp=Z,2μm,18.1s,baz=256,slow=33						
TIAR	**Tiarei**	**23.70**	**85**	*e*P	**P**	**05 35 32.2**	**-2.8**
	37nm,0.9s						
TVO	**Taravao**	**23.73**	**86**	*e*P	**P**	**05 35 32.5**	**-2.9**
	39nm,1.1s						
TVO	**Taravao**	**23.73**	**86**	*e*T	T	06 00 09.4	
	1.6nm,0.4s						
LTZ	**Lake Taylor**	**24.27**	**205**	*e*P	**P**	**05 35 41.1**	**+1.0**
	50nm,0.7s						
MEH	**Mehetia**	**24.82**	**87**	*e*T	T	06 01 30.4	
	14nm,0.3s						
OXZ	**Oxford**	**24.82**	**204**	*e*P	**P**	**05 35 45.8**	**+0.7**
	76nm,0.8s						
RPZ	**Rata Peaks**	**25.53**	**205**	P	**P**	**05 35 50.3**	**-1.3**
	37nm,0.9s,baz=37,slow=2.5,SNR=5.2						
FOZ	**Fox Glacier**	**25.90**	**207**	*e*P	**P**	**05 35 55.7**	**+0.9**
	216nm,1.0s						
HNR	**Honiara**	**27.54**	**291**	LR	LR	05 45 32.9	
	comp=Z,998nm,20.1s,baz=128,slow=33						
MLZ	**Mavora Lakes**	**28.09**	**207**	*e*P	**P**	**05 36 16.9**	**+2.3**
	125nm,1.4s						
WHZ	**Wether Hill Ro**	**28.59**	**207**	*e*P	**P**	**05 36 20.9**	**+1.9**
	73nm,1.0s						
ARMA	**Armidale**	**32.00**	**246**	P	**P**	**05 36 47.5**	**-2.0**
	baz=32,SNR=4.4						
ARMA	**Armidale**	**32.00**	**246**	*e*P	**P**	**05 36 48.4**	**-1.1**
	26nm,1.0s						
EIDS	**Eidsvold**	**32.11**	**256**	*e*P	**P**	**05 36 46.8**	**-3.6**
	64nm,2.0s						
MGCD	**Mangrove Creek**	**32.93**	**241**	P	**P**	**05 36 58.2**	**+0.7**
	baz=33						
RMQ	**Roma**	**34.21**	**254**	P	**P**	**05 37 08.6**	**-0.1**
	baz=34,SNR=8.3						
CNB	**Canberra Magne**	**34.81**	**238**	P	**P**	**05 37 12.8**	**-1.2**
	baz=35,SNR=5.0						
TAOE	**Nuku Hiva Isla**	**35.01**	**75**	*e*LR	LR	05 46 38.9	
	1μm,22.0s						
CAN	**Canberra**	**35.10**	**238**	P	**P**	**05 37 17.2**	**+0.8**
	baz=35						
YNG	**Young**	**35.37**	**240**	P	**P**	**05 37 17.8**	**-0.8**
	baz=35						
RKT	**Rikitea**	**36.27**	**100**	*e*S	**S**	**05 43 00.7**	**-5.0**
	194nm,28.2s						
RKT				*e*LR	LR	05 47 03.7	
	2μm,27.0s,baz=267						
RKT	**Rikitea**	**36.27**	**100

FITZ	**Fitzroy Crossi**	56.47	262		P		**P**	05 40 03.3	-1.9
	baz=56,SNR=8.7								
FITZ	**Fitzroy Crossi**	56.47	262	*e*	P		**P**	05 40 02.4	-2.8
	comp=Z,26nm,1.2s								
SBA	**Scott Base**	57.37	185	*e*	P		**P**	05 40 12.1	+1.5
SBA					pmax		pmax		
	comp=Z,33nm,1.1s								
SBA	**Scott Base**	57.37	185	*e*	P		**P**	05 40 12.1	+1.5
	comp=Z,33nm,1.1s								
VNDA	**Vanda**	57.49	186		P		**P**	05 40 11.1	-0.4
	comp=Z,11nm,1.0s,baz=11,slow=8.6,SNR=34								
VNDA	**Vanda**	57.49	186	*e*	P		**P**	05 40 12.4	+0.9
VNDA					pmax		pmax		
	comp=Z,17nm,1.0s								
VNDA	**Vanda**	57.49	186	*e*	P		**P**	05 40 12.4	+0.9
	comp=Z,17nm,1.0s								
KMBL	**Kambalda**	57.50	246		P		**P**	05 40 10.8	-1.6
	baz=58								
SOEI	**Soe**	60.10	271	*e*	P		**P**	05 40 28.1	-2.6
	comp=Z,92nm,1.2s								
KLBR	**Kellerberrin**	60.97	245		P		**P**	05 40 34.7	-1.6
	baz=61,SNR=14								
MEEK	**Meekatharra**	61.04	251		P		**P**	05 40 36.8	-0.2
	baz=61,SNR=3.4								
MBWA	**Marble Bar**	61.17	257	*e*	P		**P**	05 40 36.1	-1.8
	comp=Z,92nm,1.6s								
BLDU	**Balldu**	62.01	246		P		**P**	05 40 42.1	-1.2
	baz=62,SNR=7.1								
MORW	**Morawa**	62.84	247		P		**P**	05 40 47.8	-1.2
	baz=63								
QSPA	**South Pole Qui**	68.80	180	*e*	P		**P**	05 41 27.8	+0.9
MYLDM	**Lahad Datu**	70.99	284	*e*	P		**P**	05 41 38.3	-2.7
	comp=Z,68nm,1.4s								
MIR	**Mirnyy**	71.80	205	*e*	P		**P**	05 41 45.0	0.0
MIR					pmax		pmax		
	comp=Z,4.0nm,1.2s								
MJAR	**Matsushiro Arr**	73.00	322		P		**P**	05 41 51.8	-0.7
	comp=Z,13nm,0.8s,baz=161,slow=5.9,SNR=28								
MJAR					LR		LR	06 13 45.6	
	comp=Z,250nm,18.3s,baz=125,slow=36								
MAJO	**Matsushiro**	73.00	322	*d i*	P		**P**	05 41 52.3	-0.3
MAJO					pmax		pmax		
	comp=Z,188nm,1.0s								
MAJO	**Matsushiro**	73.00	322	*e*	P		**P**	05 41 53.1	+0.5
	comp=Z,24nm,0.9s								
MAT	**Matsushiro**	73.00	322		P		**P**	05 41 51.9	-0.7
MAT					S		**S**	05 51 14.2	-3.9
MJB9	**Matsu-Tunnel**	73.00	322	*e*	P		**P**	05 41 53.1	+0.5
	comp=Z,6.3nm,0.9s								
SNCC	**San Nicolas Is**	75.20	45		P		**P**	05 42 06.9	+1.4
	baz=232								
JNU	**Nakatsue**	75.33	315		P		**P**	05 42 05.6	-0.7
	comp=Z,6.4nm,0.9s,baz=131,slow=9.3,SNR=5.9								
JNU	**Nakatsue**	75.33	315	*e*	P		**P**	05 42 06.7	+0.4
	comp=Z,18nm,1.1s								
PKM	**Mcpherson Peak**	76.03	44		P		**P**	05 42 11.1	+0.6
	baz=231								
ASAJ	**Asahikawa**	76.16	329		P		**P**	05 42 10.4	-0.3
	comp=Z,7.5nm,0.6s,baz=230,slow=8.0,SNR=5.8								
ASAJ	**Asahikawa**	76.16	329	*e*	P		**P**	05 42 11.9	+1.2
	comp=Z,38nm,1.4s								
SMMC	**Simmler**	76.18	43		P		**P**	05 42 12.6	+1.5
	baz=231								
SAO	**San Andreas Ge**	76.19	41	*e*	P		**P**	05 42 13.0	+1.9
SAO					pmax		pmax		
	comp=Z,42nm,1.2s								
SAO	**San Andreas Ge**	76.19	41	*e*	P		**P**	05 42 13.0	+1.9
	comp=Z,42nm,1.2s								
PMPB	**Monarch Peak**	76.24	42	*e*	P		**P**	05 42 13.8	+2.3
	comp=Z,32nm,1.1s								
PAGB	**Antelope Grade**	76.28	43	*e*	P		**P**	05 42 14.2	+2.6
	comp=Z,38nm,1.3s								
HOPS	**Hopland Field**	76.68	39	*e*	P		**P**	05 42 15.8	+2.0
	comp=Z,48nm,1.2s								
MWC	**Mount Wilson**	76.77	45	*e*	P		**P**	05 42 15.2	+0.6
MWC					pmax		pmax		
	comp=Z,15nm,0.9s								
MWC	**Mount Wilson**	76.77	45	*e*	P		**P**	05 42 15.2	+0.6
	comp=Z,15nm,0.9s								
YULB	**Yu-li**	76.93	302	*e*	P		**P**	05 42 14.1	-1.5
	comp=Z,8.8nm,0.9s								
MURC	**Murrieta**	76.97	46		P		**P**	05 42 15.8	+0.2
	baz=233								
BFSC	**Mount Baldy Ra**	77.04	45		P		**P**	05 42 16.5	+0.4
	baz=233								
MONP2	**Monument Peak**	77.07	47		P		**P**	05 42 16.9	+0.5
	baz=234								
VES	**Vestal, Richgr**	77.09	43		P		**P**	05 42 17.9	+1.8
	baz=232								
KMRM	**Mail Ridge**	77.14	37	*e*	P		**P**	05 42 19.0	+2.5
	comp=Z,56nm,0.9s								
IKP	**In-Ko-Pah, Jac**	77.14	47		P		**P**	05 42 18.3	+1.6
	baz=234								
EDW2	**Edwards Air Fo**	77.21	44		P		**P**	05 42 17.6	+0.6
	baz=233,SNR=13								
RCTC	**Rector, Farmer**	77.28	43		P		**P**	05 42 18.0	+0.8
	baz=232								
ISA	**Isabella, Lake**	77.37	44		P		**P**	05 42 19.4	+1.5
	baz=232								
ISA	**Isabella, Lake**	77.37	44	*e*	P		**P**	05 42 19.7	+1.8
ISA					pmax		pmax		
	comp=Z,44nm,1.4s								
ISA	**Isabella, Lake**	77.37	44	*e*	P		**P**	05 42 19.7	+1.8
	comp=Z,44nm,1.4s								
TPUB	**Ta-pu**	77.42	301	*e*	P		**P**	05 42 16.3	-2.0
	comp=Z,23nm,0.8s								
PFO	**Pinyon Flats O**	77.47	46		P		**P**	05 42 19.7	+1.1
	comp=Z,2.5nm,0.8s,baz=268,slow=4.1,SNR=6.1								
PFO	**Pinyon Flats O**	77.47	46		P		**P**	05 42 20.3	+1.7
	baz=234								
PFO	**Pinyon Flats O**	77.47	46	*e*	P		**P**	05 42 20.1	+1.6
PFO					pmax		pmax		
	comp=Z,41nm,1.9s								
PFO	**Pinyon Flats O**	77.47	46	*e*	P		**P**	05 42 20.1	+1.6
	comp=Z,41nm,1.9s								
TPFO	**Pinon Flats**	77.47	46		P		**P**	05 42 19.9	+1.4
	baz=234								
SWSC	**Sam W. Stewart**	77.53	47		P		**P**	05 42 20.2	+1.5
	baz=234								
KHMM	**Horse Mountain**	77.57	37	*e*	P		**P**	05 42 21.4	+2.4
	comp=Z,22nm,0.9s								
CMB	**Columbia Colle**	77.66	41	*e*	P		**P**	05 42 20.9	+1.5
CMB					pmax		pmax		
	comp=Z,22nm,1.0s								
CMB	**Columbia Colle**	77.66	41	*e*	P		**P**	05 42 20.9	+1.5
	comp=Z,22nm,1.0s								
PET	**Petropavlovsk**	77.66	344	*e*	P		**P**	05 42 18.8	-0.1
PET				*e*	S		**S**	05 52 09.4	+0.4
PET					pmax		pmax		
	comp=Z,200nm,15.1s								
PET					MLR		MLR		
	comp=Z,600nm,17.0s								
PET					MLR		MLR		
	comp=Z,600nm,18.0s								
LRMC	**Laurel Mtn Rad**	77.77	44		P		**P**	05 42 21.1	+0.9
	baz=233								
AFDM	**Forest Hills D**	77.89	40	*e*	P		**P**	05 42 22.2	+1.6
	comp=Z,22nm,1.0s								
ORV	**Oroville**	77.97	39	*e*	P		**P**	05 42 22.8	+1.8
ORV					pmax		pmax		
	comp=Z,23nm,1.2s								
ORV	**Oroville**	77.97	39	*e*	P		**P**	05 42 22.8	+1.8
	comp=Z,23nm,1.2s								
PEA0	**Petropavlovsk-**	77.99	343	*e*	P		**P**	05 42 21.3	+0.5
PEA0B	**Petropavlovsk-**	77.99	343	*e*	P		**P**	05 42 21.6	+0.8
	comp=Z,71nm,1.3s								
PETK	**Petropavlovsk-**	77.99	343		P		**P**	05 42 20.8	-0.1
	comp=Z,12nm,0.7s,baz=122,slow=8.2,SNR=23								
PETK					LR		LR	06 15 02.2	
	comp=Z,162nm,18.9s,baz=162,slow=34								
PEA1	**Petropavlovsk-**	78.00	343	*e*	P		**P**	05 42 20.8	-0.1
BELC	**Belle Mtn. Jos**	78.01	46		P		**P**	05 42 22.6	+1.1
	baz=234,SNR=6.6								
WDC	**Whiskeytown Da**	78.04	38	*e*	P		**P**	05 42 23.3	+1.9
WDC					pmax		pmax		
	comp=Z,24nm,1.0s								
WDC	**Whiskeytown Da**	78.04	38	*e*	P		**P**	05 42 23.3	+1.9
	comp=Z,24nm,1.0s								
CWC	**Cottonwood Cre**	78.10	43		P		**P**	05 42 23.3	+1.2
	baz=232								
BC3	**Big Chuckawall**	78.17	47		P		**P**	05 42 23.8	+1.3
	baz=235								
N02D	**Trinity Center**	78.21	37		P		**P**	05 42 24.2	+1.8
	baz=228,SNR=10								
YSS	**Yuzh-Sakhalins**	78.23	331	*ce*	P		**P**	05 42 22.8	+0.5
YSS				*e*				05 52 22.0	
YSS					pmax		pmax		
	comp=Z,500nm,5.0s								
YSS	**Yuzh-Sakhalins**	78.23	331	*e*	P		**P**	05 42 24.3	+2.1
	comp=Z,68nm,1.3s								
GSC	**Goldstone, Bar**	78.24	45		P		**P**	05 42 24.3	+1.6
	baz=233								
GSC	**Goldstone, Bar**	78.24	45	*e*	P		**P**	05 42 24.3	+1.6
GSC					pmax		pmax		
	comp=Z,25nm,1.5s								
GSC	**Goldstone, Bar**	78.24	45	*e*	P		**P**	05 42 24.3	+1.6
	comp=Z,25nm,1.5s								
MPMC	**Manual Prospec**	78.25	44		P		**P**	05 42 23.7	+0.8
	baz=233,SNR=13								
GLA	**Glamis**	78.25	48		P		**P**	05 42 24.2	+1.4
	baz=235								
GLA	**Glamis**	78.25	48	*e*	P		**P**	05 42 23.9	+1.1
GLA					pmax		pmax		
	comp=Z,68nm,2.0s								
GLA	**Glamis**	78.25	48	*e*	P		**P**	05 42 23.9	+1.1
	comp=Z,68nm,2.0s								
HEC	**Hector,Ludlow**	78.27	45		P		**P**	05 42 24.2	+1.3
	baz=234								
O03D	**Paynes Creek**	78.28	38		P		**P**	05 42 23.6	+0.7
	baz=229,SNR=17								
DAC	**Darwin (Calif)**	78.31	44	*e*	P		**P**	05 42 24.9	+1.6
DAC					pmax		pmax		
	comp=Z,27nm,1.6s								
DAC	**Darwin (Calif)**	78.31	44	*e*	P		**P**	05 42 24.9	+1.6
	comp=Z,27nm,1.6s								
M02C	**Callahan**	78.41	37		P		**P**	05 42 24.0	+0.5
	baz=228,SNR=14								
L02D	**Cave Junction,**	78.51	36		P		**P**	05 42 25.3	+1.4
	baz=227								
WAKR	**Walker**	78.53	41	*e*	P		**P**	05 42 26.3	+1.9
	comp=Z,65nm,1.3s								
IRM	**Iron Mountain**	78.67	46		P		**P**	05 42 26.6	+1.6
	baz=235								
GMRC	**Grant Mounta**	78.69	46		P		**P**	05 42 26.0	+0.7
	baz=234								
YBH	**Yreka Blue Hor**	78.71	37	*e*	P		**P**	05 42 26.7	+1.5
YBH					pmax		pmax		
	comp=Z,28nm,0.9s								
YBH	**Yreka Blue Hor**	78.71	37	*e*	P		**P**	05 42 26.7	+1.5
	comp=Z,28nm,0.9s								
PNTR	**Pine Nut**	78.80	40	*e*	P		**P**	05 42 27.9	+1.9
	comp=Z,63nm,1.2s								
TVH3	**East Aurora ar**	78.81	41	*e*	P		**P**	05 42 27.8	+1.8
	comp=Z,20nm,1.1s								
HSIG		78.82	53	*e*	P		**P**	05 42 26.8	+0.8
	comp=Z,14nm,1.2s								
113A	**Mohawk Valley,**	78.83	48	*e*	P		**P**	05 42 27.6	+1.7
	comp=Z,13nm,1.3s								
Y12C	**Blythe**	78.86	47		P		**P**	05 42 26.8	+0.7
	baz=235								
Y12C	**Blythe**	78.86	47	*e*	P		**P**	05 42 27.9	+1.8
	comp=Z,24nm,1.5s								
TVH2	**Bonalis Mine**	78.87	41	*e*	P		**P**	05 42 27.9	+1.6
	comp=Z,30nm,1.3s								
GRAC	**Grapevine Rang**	78.89	43		P		**P**	05 42 28.0	+1.7
	baz=233,SNR=5.7								
FURC	**Furnace Creek,**	78.89	44		P		**P**	05 42 27.3	+1.1
	baz=233								
TUQ	**Turquoise Moun**	78.90	45		P		**P**	05 42 27.6	+1.2
	baz=234								
TVH1	**TV Hill, Hawth**	78.91	41	*e*	P		**P**	05 42 28.4	+1.7
	comp=Z,31nm,1.2s								
YERR	**Yerington**	78.95	41	*e*	P		**P**	05 42 28.4	+1.7
	comp=Z,42nm,1.2s								
LTIM	**Timbered Crate**	79.03	38		P		**P**	05 42 28.9	+1.9
214A	**Organ Pipe Nat**	79.05	49		P		**P**	05 42 28.7	+1.4
	baz=236								
214A	**Organ Pipe Nat**	79.05	49	*e*	P		**P**	05 42 28.6	+1.4
	comp=Z,47nm,1.1s								
HUMO	**Hull Mountain**	79.16	36	*e*	P		**P**	05 42 29.9	+2.3
	comp=Z,27nm,1.1s								
LDFC	**Landfair**	79.23	46	*e*	P		**P**	05 42 30.1	+1.8
	comp=Z,117nm,1.9s								
M04C	**Macdoel**	79.23	37		P		**P**	05 42 29.0	+0.9
	baz=229,SNR=9.4								
PAHR	**Pah Rah Range**	79.32	40	*e*	P		**P**	05 42 30.4	+1.7
	comp=Z,34nm,1.4s								
PDMCI	**Parker Dam,Lak**	79.44	47		P		**P**	05 42 30.2	+1.0
	baz=235								
TPNV	**Topopah Spring**	79.58	44		P		**P**	05 42 31.2	+1.1
	baz=234,SNR=15								
TPNV	**Topopah Spring**	79.58	44	*e*	P		**P**	05 42 31.7	+1.5
TPNV					pmax		pmax		
	comp=Z,15nm,1.0s								
TPNV	**Topopah Spring**	79.58	44	*e*	P		**P**	05 42 31.7	+1.5
	comp=Z,15nm,1.0s								
I03D	**Drain, OR**	79.69	35		P		**P**	05 42 31.6	+1.3
	baz=227								
K04D	**Chiloquin, OR**	79.84	36		P		**P**	05 42 32.4	+1.0
	baz=229								
QZH	**Quanzhou**	79.84	302	*i*	P		**P**	05 42 30.9	-0.7
QZH					PP		**PP**	05 45 29.3	-4.2
QZH					S		**S**	05 52 30.5	-3.1
QZH					pmax		pmax		
	comp=Z,540nm,5.0s								
QZH					LR		LR		
	comp=Z,620nm,16.7s								
QZH					LR		LR		
	comp=Z,450nm,15.6s								
QZH					LR		LR		
	comp=Z,760nm,17.2s								
KSRS	**Korea Array**	79.87	317		P		**P**	05 42 31.8	+0.3
	comp=Z,7.7nm,0.8s,baz=134,slow=5.9,SNR=30								
KSRS					LR		LR	06 12 19.9	
	comp=Z,147nm,20.4s,baz=110,slow=32								
KS15	**Wonju Array Si**	79.89	317	*e*	P		**P**	05 42 31.8	+0.2
KSAR	**Wonju Array Be**	79.89	317		P		**P**	05 42 31.8	+0.2
KSAR	**Wonju Array Be**	79.89	317		P		**P**	05 42 31.8	+0.2
KS01	**Wonju Array Si**	79.90	317	*e*	P		**P**	05 42 31.3	-0.3
Y14A	**Wickenburg**	80.01	48	*e*	P		**P**	05 42 34.1	+1.7
	comp=Z,52nm,1.3s								
SHPR	**Shep Range**	80.02	45	*e*	P		**P**	05 42 34.6	+2.0
	comp=Z,21nm,1.2s								
J04D	**Umpqua Nationa**	80.05	36		P		**P**	05 42 33.7	+1.1
	baz=228,SNR=8.9								
W13A	**Hualapai Mount**	80.06	46	*e*	P		**P**	05 42 34.7	+1.8
	comp=Z,16nm,1.4s								
MOD	**Modoc Plateau**	80.18	38	*e*	P		**P**	05 42 34.4	+1.1
	comp=Z,20nm,0.8s								
I04A	**Tendick Farm,**	80.25	35		P		**P**	05 42 34.3	+0.8
	baz=228								
K05A	**Summer Lake**	80.38	37	*e*	P		**P**	05 42 36.4	+2.0
	comp=Z,46nm,0.9s								
J05D	**Fort Rock, OR**	80.56	36		P		**P**	05 42 36.6	+1.4
	baz=229,SNR=37								
TUC	**Tucson**	80.68	50		P		**P**	05 42 37.4	+1.3
	baz=238								
TUC	**Tucson**	80.68	50	*e*	P		**P**	05 42 38.0	+1.9
TUC					pmax		pmax		
	comp=Z,11nm,1.1s								
TUC	**Tucson**	80.68	50	*e*	P		**P**	05 42 38.0	+1.9
	comp=Z,11nm,1.1s								
G03D	**McMinnville, O**	80.76	34		P		**P**	05 42 37.5	+1.4
	baz=227								
KDAK	**Kodiak Island**	80.80	12	*ce*	P		**P**	05 42 37.4	+1.5
KDAK	**Kodiak Island**	80.80	12	*e*	P		**P**	05 42 37.1	+1.2
	comp=Z,140nm,1.6s								
R11A	**Troy Canyon, C**	80.83	43		P		**P**	05 42 37.7	+0.8
	baz=234,SNR=6.6								
R11A	**Troy Canyon, C**	80.83	43	*e*	P		**P**	05 42 38.2	+1.3
	comp=Z,23nm,1.7s								
BMN	**Battle Mountai**	81.07	40	*e*	P		**P**	05 42 39.8	+1.7
BMN					pmax		pmax		
	comp=Z,26nm,1.4s								
BMN	**Battle Mountai**	81.07	40	*e*	P		**P**	05 42 39.8	+1.7
	comp=Z,26nm,1.4s								
MSHR	**Mys Shultsa**	81.07	322	*ce*	P		**P**	05 42 40.6	+2.8
I05D	**Terrebonne, OR**	81.19	35		P		**P**	05 42 39.9	+1.3
	baz=229,SNR=11								
TYV	**Tymovskoe**	81.26	334	*e*	P		**P**	05 42 35.0	-3.6
TYV				*e*				05 52 52.0	
TYV					pmax		pmax		
	comp=Z,26nm,1.0s								
TYV					MLR		MLR		
	comp=E,1μm,16.0s								
X16A	**Lo Mia Camp, P**	81.36	48	*e*	P		**P**	05 42 41.8	+2.0
	comp=E,16nm,1.3s								
WVOR	**Wild Horse Val**	81.48	38	*e*	P		**P**	05 42 41.8	+1.7
WVOR					pmax		pmax		
	comp=Z,20nm,1.1s								
WVOR	**Wild Horse Val**	81.48	38	*e*	P		**P**	05 42 41.8	+1.7
	comp=Z,20nm,1.1s								
E03A	**Lebam**	81.52	33	*e*	P		**P**	05 42 42.2	+2.2
	comp=Z,34nm,1.0s								
LCMT	**Little Creek M**	81.57	45	*e*	P		**P**	05 42 42.6	+1.7
	comp=Z,23nm,1.5s								
USRK	**Ussuriysk Ar.**	81.65	324		P		**P**	05 42 40.7	-0.2
	comp=Z,2.2nm,0.6s,baz=113,slow=4.4,SNR=17								
USRK					LR		LR	06 16 11.2	
	comp=Z,640nm,19.2s,baz=125,slow=34								
F04A	**Amboy**	81.69	34	*e*	P		**P**	05 42 42.7	+1.7
	comp=Z,36nm,1.0s								
CCUT	**Cedar City**	81.80	45	*e*	P		**P**	05 42 44.1	+2.0
	comp=Z,58nm,2.0s								
G05D	**Wamic, OR**	81.80	35		P		**P**	05 42 43.1	+1.4
	baz=229								
CROR	**Criterion Ridg**	81.81	35		P		**P**	05 42 43.2	+1.4
KNB	**Kanab**	81.86	45	*e*	P		**P**	05 42 44.4	+2.0
KNB					pmax		pmax		
	comp=Z,55nm,1.6s								
KNB	**Kanab**	81.86	45	*e*	P		**P**	05 42 44.4	+2.0
	comp=Z,55nm,1.6s								
U15A	**North Rim**	81.88	46	*e*	P		**P**	05 42 44.8	+2.2
	comp=Z,50nm,1.5s								
NLWA	**Neilton Lookou**	81.95	32	*e*	P		**P**	05 42 44.4	+2.0
	comp=Z,29nm,1.1s								
WUAZ	**Wupatki**	82.00	47	*e*	P		**P**	05 42 45.3	+2.1
	comp=Z,17nm,1.3s								
SZCU	**Shurtz Canyon**	82.01	45	*e*	P		**P**	05 42 45.4	+2.2
	comp=Z,63nm,1.7s								
MAW	**Mawson**	82.02	199		P		**P**	05 42 42.8	+0.3
	comp=Z,7.2nm,0.6s,baz=124,slow=7.3,SNR=3.7								
MAW					LR		LR	06 17 39.8	
	comp=Z,806nm,19.0s,baz=78,slow=35								
MAW	**Mawson**	82.02	199	*e*	P		**P**	05 42 42.7	+0.2
MAW					pmax		pmax		
	comp=Z,8.0nm,1.1s								
MAW	**Mawson**	82.02	199	*e*	P		**P**	05 42 42.7	+0.2
	comp=Z,7.7nm,1.1s								
TDL	**Tradedollar La**	82.07	33	*e*	P		**P**	05 42 44.7	+1.5
G06A	**Carlson Farm,**	82.16	35	*e*	P		**P**	05 42 45.1	+1.5
	comp=Z,30nm,1.1s								
VTHM	**Trough**	82.17	35		P		**P**	05 42 45.3	+1.7
PKCU	**Pink Cliffs**	82.43	45	*e*	P		**P**	05 42 47.1	+1.5
	comp=Z,147nm,1.9s								
X18A	**Snowflake**	82.45	49	*e*	P		**P**	05 42 47.3	+1.7
	comp=Z,25nm,1.7s								
LON	**Longmire**	82.55	33	*e*	P		**P**	05 42 46.9	+1.3
LON					pmax		pmax		
	comp=Z,17nm,1.0s								
LON	**Longmire**	82.55	33	*e*	P		**P**	05 42 46.9	+1.3
	comp=Z,17nm,1.0s								
CNPM	**China Poot**	82.68	12	*e*	P		**P**	05 42 47.2	+1.2
	comp=Z,33nm,1.0s								
D05A	**Enumclaw**	82.75	33	*e*	P		**P**	05 42 48.9	+2.3
	comp=Z,148nm,1.2s								
MTPU	**Mount Pierson**	82.85	45	*e*	P		**P**	05 42 50.4	+2.6
	comp=Z,118nm,2.0s								
TRW	**Toppenish Ridg**	82.90	34		P		**P**	05 42 49.2	+1.8
W18A	**Petrified Fore**	82.92	48		P		**P**	05 42 48.9	+0.9
	baz=238								
HABR	**Khabarovsk**	82.92	329	*ce*	P		**P**	05 42 47.3	-0.1
HABR				*e*	*SP		**sP**	05 43 01.7	+3.3
HABR				*e*				05 45 57.8	
HABR				*e*	S		**S**	05 53 04.6	+0.1
HABR				*e*	SS		**SS**	05 58 29.4	+0.7
HABR				*e*	SSS		SSS	06 01 58.5	
HABR					pmax		pmax		
	comp=N,18nm,2.3s								
HABR					pmax		pmax		
	comp=Z,111nm,2.3s								
HABR					pmax		pmax		
	comp=E,25nm,2.2s								
HABR					MLR		MLR		
	comp=Z,401nm,19.0s								
121A	**Cookes Peak, D**	82.96	51		P		**P**	05 42 48.9	+0.6
	baz=240								
121A	**Cookes Peak, D**	82.96	51	*e*	P		**P**	05 42 49.9	+1.7
	comp=Z,18nm,1.4s								
PGC	**Sidney**	83.02	31	*e*	P		**P**	05 42 49.5	+1.6
	comp=Z,38nm,1.0s								
G08A	**Pilot Rock**	83.10	36	*e*	P		**P**	05 42 49.6	+1.0
	comp=Z,33nm,1.0s								
MSU	**Marysvale**	83.11	44	*e*	P		**P**	05 42 50.9	+1.9
MSU	**Marysvale**	83.11	44	*e*	P		**P**	05 42 50.9	+1.9
NJ2	**Nanjing**	83.15	308	*e*	P		**P**	05 42 49.3	+0.3
NJ2					pP		**pP**	05 42 57.3	+0.2
NJ2					S		**S**	05 53 12.8	+5.2
NJ2					pmax		pmax		
	comp=Z,23nm,1.1s								
NJ2					LR		LR		
	comp=Z,730nm,23.9s								
NJ2					LR		LR		
	comp=Z,920nm,20.6s								
NJ2					LR		LR		
	comp=Z,600nm,19.8s								
MYKOM	**Kota Tinggi**	83.17	275	*e*	P		**P**	05 42 49.4	-0.1
	comp=Z,74nm,1.4s								
MDJ	**Mudanjiang**	83.24	323		P		**P**	05 42 50.9	+1.7
MDJ					pP		sP	05 42 59.9	-0.3
MDJ					sP		pP	05 43 03.6	+6.3

QIZ LR LR
comp=Z,150nm,16.6s
QIZ LR LR
comp=Z,220nm,13.3s
QIZ LR LR
comp=Z,240nm,16.6s
F10A Beach Ranch, E 84.48 36 *e*P **P 05 42 56.6 +1.0**
comp=Z,37nm,1.0s
LTX Lajitas 84.49 56 *e*P **P 05 42 57.6 +1.5**
LTX Lajitas 84.49 56 *e*P **P 05 42 57.6 +1.5**
TX31 Lajitas Ar. Si 84.49 56 *e*P **P 05 42 57.4 +1.4**
TXAR Lajitas Array 84.49 56 P **P 05 42 57.6 +1.5**
comp=Z,3.5nm,1.0s,baz=212,slow=6.8,SNR=18
TXAR LR LR 06 14 10.7
comp=Z,410nm,19.8s,baz=0.0,slow=31
SPUT South Promonto 84.51 42 *e*P **P 05 42 57.3 +1.3**
comp=Z,21nm,1.3s
SRU San Rafael Swe 84.52 44 *e*P **P 05 42 57.7 +1.6**
SRU pmax pmax
comp=Z,41nm,1.4s
SRU San Rafael Swe 84.52 44 *e*P **P 05 42 57.7 +1.6**
comp=Z,41nm,1.4s
SUA Susitna One 84.58 11 *e*P **P 05 42 56.6 +0.9**
comp=Z,47nm,1.1s
HVU Hansel Valley 84.58 41 *e*P **P 05 42 57.7 +1.4**
HVU pmax pmax
comp=Z,13nm,1.0s
HVU Hansel Valley 84.58 41 *e*P **P 05 42 57.7 +1.4**
comp=Z,13nm,1.0s
P17A Butcher Ranch, 84.58 44 *e*P **P 05 42 58.1 +1.8**
comp=Z,39nm,1.4s
CTU Camp Tracy 84.60 43 *e*P **P 05 42 58.2 +1.8**
comp=Z,58nm,1.3s
BNM Barren Site 84.61 50 *e*P **P 05 42 58.6 +1.9**
HLID Hailey 84.62 39 P **P 05 42 57.8 +1.3**
baz=234
HLID Hailey 84.62 39 *e*P **P 05 42 58.1 +1.6**
comp=Z,17nm,1.1s
LPM Los Pinos Moun 84.69 50 *e*P **P 05 42 59.0 +1.9**
JLU Jordanelle 84.74 43 *e*P **P 05 42 58.8 +1.5**
comp=Z,22nm,1.5s
MVCO Mesa Verde 84.86 47 P **P 05 42 58.4 +0.4**
baz=239
MVCO Mesa Verde 84.86 47 *e*P **P 05 42 59.4 +1.5**
comp=Z,20nm,1.5s
B08A Colville Reser 84.87 33 *e*P **P 05 42 58.3 +0.9**
comp=Z,22nm,1.1s
PV05 Paradox Valley 84.91 46 *e*P **P 05 43 00.2 +2.1**
PMR Palmer 84.99 12 *e*P **P 05 42 57.5 -0.1**
PMR pmax pmax
comp=Z,73nm,1.6s
PMR Palmer 84.99 12 *e*P **P 05 42 57.5 -0.1**
comp=Z,73nm,1.6s
WRAK Wrangell Islan 85.05 22 *e*P **P 05 43 00.0 +2.0**
comp=Z,24nm,1.1s
KLR Kul'dur 85.05 328 *e*P **P 05 42 59.2 +1.0**
TCUT Toone Canyon 85.06 42 *e*P **P 05 43 00.4 +1.6**
comp=Z,53nm,1.2s
C09A Chrisman Ranch 85.06 34 *e*P **P 05 42 60.0 +1.6**
comp=Z,37nm,1.3s
LLLB Lillooet 85.10 30 *e*P **P 05 43 00.2 +1.7**
comp=Z,27nm,1.1s
PV10 Paradox Valley 85.11 46 *e*P **P 05 42 59.8 +0.6**
PV09 Paradox Valley 85.11 46 *e*P **P 05 43 00.1 +0.9**
TT01 Tatalina 85.12 8 *e*P **P 05 42 59.5 +1.2**
CN2 Changchun 85.13 321 *e*P **P 05 42 59.6 +0.8**
CN2 *ep*P sP 05 43 10.1 +0.3
CN2 *e*S **S 05 53 26.0 -0.9**
CN2 pmax pmax
comp=Z,30nm,1.5s
CN2 LR LR
comp=Z,200nm,17.0s
CN2 LR LR
comp=Z,300nm,17.0s
CN2 LR LR
comp=Z,300nm,18.0s
ANMO Albuquerque 85.13 50 P **P 05 43 00.3 +1.0**
baz=240
ANMO Albuquerque 85.13 50*c*e**P P 05 43 00.8 +1.5**
ANMO pmax pmax
comp=Z,20nm,1.0s
ANMO Albuquerque 85.13 50 *e*P **P 05 43 00.8 +1.5**
comp=Z,21nm,1.1s
TTA Tatalina 85.14 8 *e*P **P 05 42 59.5 +1.0**
TTA pmax pmax
comp=Z,33nm,1.0s
TTA Tatalina 85.14 8 *e*P **P 05 42 59.5 +1.0**
comp=Z,33nm,1.0s
HWUT Hardware Ranch 85.23 42 *e*P **P 05 43 00.6 +1.0**
comp=Z,40nm,1.9s
DIV Divide 85.25 13 *e*P **P 05 43 00.5 +1.4**
comp=Z,51nm,1.1s
PV01 Paradox Valley 85.30 46 *e*P **P 05 43 01.2 +1.1**
SML Sawmill 85.34 12 *e*P **P 05 43 01.0 +1.5**
SML pmax pmax
comp=Z,51nm,1.3s
SML Sawmill 85.34 12 *e*P **P 05 43 01.0 +1.5**
comp=Z,51nm,1.3s
BMRM Bremner River 85.37 14 *e*P **P 05 43 00.6 +1.0**
comp=Z,56nm,1.1s
CRQM Cirque 85.52 15 *e*P **P 05 43 02.6 +2.0**
comp=Z,40nm,1.0s
MA2 Magadan 85.53 343 P **P 05 43 00.7 +0.3**
comp=Z,6.6nm,0.5s,baz=183,slow=1.7,SNR=3.8
SCM Sheep Creek Mo 85.56 12 *e*P **P 05 43 02.2 +1.6**
SCM pmax pmax
comp=Z,38nm,0.9s
SCM Sheep Creek Mo 85.56 12 *e*P **P 05 43 02.2 +1.6**
comp=Z,38nm,0.9s
WHN Wuhan 85.80 305 P **P 05 43 02.9 +0.5**
WHN S **S 05 53 33.1 -1.0**
WHN pmax pmax
comp=Z,170nm,1.6s
WHN LR LR
comp=Z,700nm,18.7s
WHN LR LR
comp=Z,680nm,17.6s
WHN LR LR
comp=Z,830nm,18.0s
BALM Baldy 85.95 15 *e*P **P 05 43 04.6 +2.0**
BALM pmax pmax
comp=Z,27nm,1.0s
BALM Baldy 85.95 15 *e*P **P 05 43 04.6 +2.0**
comp=Z,27nm,1.0s
NEW Newport 85.95 34 P **P 05 43 04.2 +1.3**
baz=232
NEW Newport 85.95 34 *e*P **P 05 43 04.4 +1.6**
NEW pmax pmax
comp=Z,18nm,1.4s
NEW Newport 85.95 34 *e*P **P 05 43 04.4 +1.6**
comp=Z,18nm,1.4s
PLCA Paso Flores 86.13 132 P **P 05 43 05.1 +1.0**
comp=Z,6.2nm,1.0s,baz=236,slow=7.3,SNR=4.0
PLCA LR LR 06 15 10.3
comp=Z,486nm,18.6s,baz=302,slow=31
PLCA Paso Flores 86.13 132 *e*P **P 05 43 05.1 +1.0**
PLCA pmax pmax
comp=Z,69nm,1.8s
PLCA Paso Flores 86.13 132 *e*P **P 05 43 05.1 +1.0**
comp=Z,69nm,1.8s
CAST Castle Rocks 86.18 10 *e*P **P 05 43 02.6 -1.0**
comp=Z,31nm,1.0s
MCMT McKenzie Canyo 86.27 39 *e*P **P 05 43 06.1 +1.3**
S22A 4UR Ranch, Cre 86.28 47 P **P 05 43 05.9 +0.8**
baz=240
S22A 4UR Ranch, Cre 86.28 47 *e*P **P 05 43 06.5 +1.5**
comp=Z,12nm,1.3s
TIA Tai'an 86.46 311 *e*P **P 05 43 05.4 -0.2**
TIA pmax pmax
comp=Z,20nm,0.8s
KTH Kantishna Hill 86.49 10 *e*P **P 05 43 05.3 +0.1**
comp=Z,18nm,0.9s
TRF Thorofare Moun 86.50 11 *e*P **P 05 43 05.2 -0.1**
comp=Z,50nm,0.8s
O20A White River Ci 86.56 45 P **P 05 43 06.6 +0.4**
baz=239
REDW Red Top Meadow 86.64 41 *e*P **P 05 43 06.5 -0.1**
comp=Z,8.8nm,1.2s
TPAW Teton Pass 86.65 41 *e*P **P 05 43 07.0 +0.3**
comp=Z,16nm,1.6s
DHY Denali Highway 86.69 12 *e*P **P 05 43 07.2 +0.9**
comp=Z,82nm,1.8s
RND Reindeer 86.71 11 *e*P **P 05 43 06.5 +0.2**
RND pmax pmax
comp=Z,110nm,1.2s
RND Reindeer 86.71 11 *e*P **P 05 43 06.5 +0.2**
comp=Z,110nm,1.2s
DLMT Dillon 86.72 38 *e*P **P 05 43 08.0 +1.1**
comp=Z,17nm,1.4s
SNOW Snow King Moun 86.75 41 *e*P **P 05 43 08.8 +1.6**
comp=Z,12nm,1.1s
UBPT Khong Chiam 86.77 288 P **P 05 43 08.8 +1.3**
comp=Z,18nm,1.4s
IPM Ipoh 86.78 276 *e*P **P 05 43 07.2 -0.4**
comp=Z,64nm,1.3s
MSO Missoula 86.81 37 P **P 05 43 08.0 +0.8**
baz=234
MSO Missoula 86.81 37 *e*P **P 05 43 09.6 +2.4**
comp=Z,9.2nm,1.3s
IMW Indian Meadow 86.88 40 *e*P **P 05 43 09.1 +1.2**
comp=Z,9.2nm,1.3s
SMCO Snowmass 86.91 46 *e*P **P 05 43 09.0 +0.8**
comp=Z,13nm,1.4s
832A Faith Ranch, C 86.91 58 P **P 05 43 08.3 +0.3**
baz=244
MOOW Moose Ponds 86.92 40 *e*P **P 05 43 08.9 +1.0**
comp=Z,20nm,1.8s
LOHW Long Hollow 86.93 41 *e*P **P 05 43 08.8 +0.8**
comp=Z,2.6nm,0.8s
BSMT Bassoo Peak 86.95 35 *e*P **P 05 43 09.1 +1.1**
PAX Paxson 86.97 13 *e*P **P 05 43 08.5 +0.9**
PAX pmax pmax
comp=Z,16nm,1.1s
PAX Paxson 86.97 13 *e*P **P 05 43 08.5 +0.9**
comp=Z,16nm,1.1s
BPAW Bear Paw Mtn. 86.99 10 *e*P **P 05 43 07.8 +0.2**
comp=Z,16nm,1.1s
MCK McKinley 87.00 11 *e*P **P**
MCK pmax pmax
comp=Z,71nm,1.0s
MCK McKinley 87.00 11 *e*P **P 05 43 08.4 +0.8**
comp=Z,71nm,1.0s
HYT Haines Junctio 87.01 17 *e*P **P 05 43 10.4 +2.5**
comp=Z,24nm,1.1s
LRM Limekiln Ridge 87.07 38 *e*P **P 05 43 09.8 +1.2**
SNAA Sanae 87.11 177 P **P 05 43 08.0 -0.3**
SNAA Sanae 87.11 177 *e*P **P 05 43 07.5 -0.8**
SNAA Sanae 87.11 177 *e*P **P 05 43 08.3 0.0**
comp=Z,21nm,1.1s
BW06 Boulder Array 87.11 42 P **P 05 43 09.4 +0.5**
baz=238
BW06 Boulder Array 87.11 42 *e*P **P 05 43 09.4 +0.5**
PD31 Pinedale Array 87.11 42 *e*P **P 05 43 09.7 +0.7**
PDAR Pinedale Array 87.11 42 P **P 05 43 09.8 +0.9**
comp=Z,1.9nm,0.7s,baz=225,slow=3.7,SNR=17
PDAR LR LR 06 20 05.2
comp=Z,360nm,18.2s,baz=253,slow=34
933A Laredo 87.17 59 P **P 05 43 09.3 +0.1**
baz=244
SDCO Great Sand Dun 87.19 48 P **P 05 43 09.9 +0.4**
baz=240
SDCO Great Sand Dun 87.19 48 *e*P **P 05 43 10.8 +1.4**
comp=Z,11nm,1.9s
CHMT Chamberlain Mo 87.24 37 *e*P **P 05 43 10.1 +0.6**
MENT Mentasta 87.31 13 *e*P **P 05 43 10.9 +1.8**
comp=Z,23nm,1.0s
BWN Browne 87.31 11 *e*P **P 05 43 10.6 +1.5**
comp=Z,150nm,1.4s
MSTX Muleshoe 87.33 52 P **P 05 43 10.4 +0.4**
baz=242
MSTX Muleshoe 87.33 52 *e*P **P 05 43 11.0 +1.0**
comp=Z,33nm,1.4s
833A Chaparral WMA, 87.39 58 P **P 05 43 10.1 -0.2**
baz=244
DLBC Dease Lake 87.41 22 *e*P **P 05 43 11.7 +1.9**
comp=Z,22nm,1.1s
034A Hebbronville 87.41 60 P **P 05 43 11.2 +0.8**
baz=245
BOZ Bozeman (W) 87.44 39 P **P 05 43 11.1 +0.8**
baz=236
BOZ Bozeman (W) 87.44 39 *e*P **P 05 43 11.6 +1.3**
BOZ pmax pmax
comp=Z,10.0nm,1.3s
BOZ Bozeman (W) 87.44 39 *e*P **P 05 43 11.6 +1.3**
comp=Z,9.8nm,1.3s
VNA1 Neumayer--Stat 87.79 175 P **P 05 43 11.5 +0.1**
WRH Wood River Hil 87.83 11 *e*P **P 05 43 11.3 -0.2**
comp=Z,94nm,1.2s
DOT Dot Lake 87.87 13 *e*P **P 05 43 12.8 +1.0**
comp=Z,72nm,1.0s
MLY Manley 87.90 10 *e*P **P 05 43 12.4 +0.4**
comp=Z,32nm,1.3s
834A Tilden 87.97 59 P **P 05 43 13.8 +0.8**
baz=245
SEY Seymchan 87.98 345 P **P 05 43 12.3 +0.1**
comp=Z,14nm,0.8s,baz=140,slow=7.0,SNR=26
SEY Seymchan 87.98 345 *e*P **P 05 43 13.1 +0.8**
Q24A Divide 88.03 47 *e*P **P 05 43 14.6 +1.1**
comp=Z,4.0nm,0.6s
CCB Clear Creek Bu 88.04 11 *e*P **P 05 43 13.1 +0.6**
comp=Z,96nm,1.5s
WALA Waterton Lakes 88.13 35 *e*P **P 05 43 14.8 +1.3**
comp=Z,16nm,1.0s
SKLT Songkhla 88.13 278 P **P** 05 43 20.9 +6.7
COLA College 88.24 11 *e*P **P 05 43 14.7 +1.2**
COLA pmax pmax
comp=Z,75nm,1.4s
COLA College 88.24 11 *e*P **P 05 43 14.7 +1.2**
comp=Z,75nm,1.4s
MDM Murphy Dome 88.25 11 *e*P **P 05 43 14.1 +0.5**
comp=Z,78nm,1.5s
IL1 Eielson Array 88.32 11 *e*P **P 05 43 13.7 -0.2**
ILAR Eielson Array 88.32 11 P **P 05 43 14.3 +0.4**
comp=Z,11nm,1.0s,baz=212,slow=5.5,SNR=44
ILB Eielson Array 88.32 11 *e*P **P 05 43 14.2 +0.4**
533A Kerrville 88.42 57 P **P 05 43 15.6 +0.4**
baz=244
N23A Red Feather La 88.45 45 P **P 05 43 15.9 +0.4**
baz=240
AMTX Amarillo 88.55 52 P **P 05 43 16.1 +0.3**
baz=243
AMTX Amarillo 88.55 52 *e*P **P 05 43 16.0 +0.2**
comp=Z,26nm,1.6s
CHBT CHBT 88.63 284 P **P 05 43 20.3 +3.8**
comp=Z,39nm,1.2s,comp=Z,4μm
433A Art 88.67 56 P **P 05 43 16.2 -0.2**
baz=244
SKNT Sakolnakorn 88.74 289 P **P 05 43 18.0 +1.0**
comp=Z,63nm,1.6s
GSI Gunungsitoli 88.84 272 *e*P **P 05 43 19.2 +1.7**
comp=Z,91nm,1.0s
534A Blanco 88.84 57 P **P 05 43 17.6 +0.4**
baz=245
K22A Casper 88.96 43 P **P 05 43 18.7 +1.1**
baz=240
K22A Casper 88.96 43 *e*P **P 05 43 18.8 +1.1**
comp=Z,6.3nm,1.0s
BJT Baijiatuan 88.97 314 *e*P **P 05 43 19.1 +1.6**
BJT pmax pmax
comp=Z,35nm,1.4s
BJT Baijiatuan 88.97 314 *e*P **P 05 43 19.1 +1.6**
comp=Z,35nm,1.4s
BJI Beijing 88.98 314 P **P 05 43 18.6 +1.1**
BJI S **S 05 53 55.4 -8.8**
BJI sS **sS 05 54 20.6 +2.8**
BJI pmax pmax
comp=Z,23nm,2.2s
BJI pmax pmax
comp=Z,520nm,4.5s
BJI LR LR
comp=Z,190nm,20.4s
BJI LR LR
comp=Z,80nm,19.6s
BJI LR LR
comp=Z,140nm,22.7s
333A Richland Sprin 89.00 56 P **P 05 43 18.2 +0.3**
baz=244
ABTX Abilene, Hawle 89.06 54 P **P 05 43 18.9 +0.7**
baz=244
ABTX Abilene, Hawle 89.06 54 *e*P **P 05 43 19.4 +1.3**
comp=Z,44nm,1.8s
635A Leesville 89.12 58 P **P 05 43 19.5 +1.0**
baz=245
DAWY Dawson 89.26 15 *e*P **P 05 43 20.0 +1.7**
comp=Z,31nm,1.1s
434A Burnet 89.34 57 P **P 05 43 20.5 +1.0**
baz=245
ENH Enshi 89.45 303 *e*P **P 05 43 21.5 +1.4**
comp=Z,85nm,1.3s
EGAK Eagle 89.47 14 *e*P **P 05 43 20.7 +1.4**
comp=Z,24nm,1.2s
535A Dale 89.55 58 P **P 05 43 21.2 +0.7**
baz=245
334A Lometa 89.58 56 P **P 05 43 21.4 +0.8**
baz=245
133A Hamilton Ranch 89.61 55 P **P 05 43 21.8 +1.1**
baz=244
636A Smothers Creek 89.73 58 P **P 05 43 22.6 +1.3**
baz=245
SURA Surathani 89.77 280 P P 05 43 31.0 +9.1
KRAB Krabi 89.83 279 P **P 05 43 24.5 +2.4**
comp=Z,55nm,0.7s,comp=Z,2μm
EGMT Eagleton 89.83 37 *e*P **P 05 43 24.9 +3.4**
comp=Z,23nm,1.6s
NONG Nongkai 89.89 289 P **P 05 43 23.6 +1.3**
comp=Z,56nm,1.4s
234A Clairette 89.94 56 P **P 05 43 22.9 +0.6**
baz=245
Z33A Whitaker Ranch 90.01 54 P **P 05 43 23.9 +1.4**
baz=244
COLD Coldfoot 90.03 9 *e*P **P 05 43 23.3 +1.5**
comp=Z,11nm,1.1s
X32A Elmer 90.11 53 P **P 05 43 24.7 +1.6**
baz=244
GYA Guiyang 90.15 298 P **P 05 43 24.3 +0.8**
GYA pP sP 05 43 35.8 +1.2
GYA PP **PP 05 47 00.4 +2.9**
GYA SKS **SKSac 05 53 51.0 -2.4**
GYA S **S 05 54 13.6 -2.5**
GYA SS **SS 06 00 15.5 -0.4**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,5.8s
GYA LR LR
comp=Z,480nm,19.5s
GYA LR LR
comp=Z,460nm,20.2s
GYA LR LR
comp=Z,420nm,19.8s
BILL Bilibino 90.21 353 *e*P **P 05 43 22.9 +0.2**
BILL *e* 05 46 57.7
BILL pmax pmax
comp=Z,6.0nm,1.1s
134A White-Moore Ra 90.23 55 P **P 05 43 24.3 +0.7**
baz=245
FYU Fort Yukon 90.24 11 *e*P **P 05 43 24.4 +1.6**
comp=Z,32nm,1.5s
W32A Sentinel 90.45 52 P **P 05 43 25.3 +0.8**
baz=244
WHTX Lake Whitney, 90.46 56 P **P 05 43 25.2 +0.5**
baz=245
TIY Taiyuan 90.48 311 *e*P **P 05 43 26.0 +1.3**
TIY pmax pmax
comp=Z,240nm,3.5s
TIY LR LR
comp=Z,220nm,14.6s
TIY LR LR
comp=Z,220nm,14.5s
TIY LR LR
comp=Z,330nm,19.9s
336A Riesel 90.69 57 P **P 05 43 26.7 +0.9**
baz=246
EDM Edmonton 90.85 32 *e*P **P 05 43 27.5 +1.5**
EDM pmax pmax
comp=Z,58nm,1.5s
EDM Edmonton 90.85 32 *e*P **P 05 43 27.5 +1.5**
comp=Z,58nm,1.5s
V32A Arapaho 90.85 52 P **P 05 43 27.6 +1.1**
baz=244
LCO Las Campanas 90.93 122 *e*P **P 05 43 29.2 +1.8**
comp=Z,71nm,1.7s
W33A Caddo, Fort Co 91.03 53 P **P 05 43 28.3 +1.0**
baz=245
Y34A Reagan Ranch, 91.06 54 P **P 05 43 28.3 +0.9**
baz=245
U32A Winter Ranch, 91.17 51 P **P 05 43 28.8 +0.9**
baz=244
Z35A Perchaven, San 91.18 55 P **P 05 43 29.1 +1.1**
baz=245
LAO LASA Array 91.18 40 P **P 05 43 28.9 +1.1**
baz=240
LAO LASA Array 91.18 40 *e*P **P 05 43 29.5 +1.7**
comp=Z,27nm,1.3s
RSSD Black Hills 91.26 43 P **P 05 43 29.3 +0.9**
baz=241
RSSD Black Hills 91.26 43 *e*P **P 05 43 29.7 +1.3**
RSSD pmax pmax
comp=Z,21nm,1.6s
RSSD Black Hills 91.26 43 *e*P **P 05 43 29.7 +1.3**
comp=Z,21nm,1.6s
X34A Smith Ranch, M 91.27 53 P **P 05 43 29.2 +0.7**
baz=245
136A Ennis 91.38 56 P **P 05 43 29.5 +0.6**
baz=246
V33A Lossen Ranch, 91.45 52 P **P 05 43 30.1 +0.9**
baz=245
XAN Xi'an 91.46 306 P **P 05 43 29.8 +0.4**
XAN pP pP 05 43 36.3 -1.3
XAN pmax pmax
comp=Z,30nm,1.7s
237A Washetta, Mont 91.74 56 P **P 05 43 31.6 +0.9**
baz=246
H25A Fruitdale 91.78 42 P **P 05 43 31.5 +0.9**
baz=242
Z36A Blue Ridge 91.78 55 P **P 05 43 31.7 +1.0**
baz=246
S32A Newby Ranch, P 91.78 50 P **P 05 43 31.5 +0.8**
baz=244
X35A Drake 91.83 54 P **P 05 43 31.7 +0.7**
baz=246
UTTA Uttaradit 92.06 288 P **P 05 43 34.4 +2.0**
comp=Z,5.0nm,1.1s,comp=Z,56nm
SRDT SRDT 92.12 284 P P 05 43 40.5 +7.8
Y36A Durant 92.15 54 P **P 05 43 33.2 +0.7**
baz=246
W35A Tecumseh 92.22 53 P **P 05 43 33.6 +0.9**
baz=246
R32A Long Quarter, 92.25 50 P **P 05 43 33.7 +0.8**
baz=245
U34A Anderson Ranch 92.26 52 P **P 05 43 33.6 +0.6**
baz=245
X36A Centrahoma 92.37 54 P **P 05 43 34.3 +0.8**
baz=246
HHC Hu-ho-hao-te 92.47 313 *e*P **P 05 43 35.3 +1.3**
HHC S **S 05 54 31.5 -5.0**
HHC pmax pmax
comp=Z,16nm,0.8s
HHC pmax pmax
comp=Z,170nm,7.6s
HHC LR LR
comp=Z,120nm,14.8s
HHC LR LR
comp=Z,340nm,19.1s
HHC LR LR
comp=Z,240nm,19.7s
Q32A Meitler Ranch, 92.60 49 P **P 05 43 35.3 +0.8**
baz=245
Y37A Hugo 92.68 55 P **P 05 43 35.6 +0.7**
baz=246
W36A Wetumka 92.70 53 P **P 05 43 36.0 +1.0**
baz=246
R33A Olander Ranch, 92.72 50 P **P 05 43 36.2 +1.2**
baz=245
T34A McClaskey Farm 92.76 51 P **P 05 43 36.4 +1.1**
baz=246
239A Gary 92.79 57 P **P 05 43 36.5 +1.0**
baz=247
SUKH Sukhothai 92.79 288 P **P 05 43 37.5 +1.7**
comp=Z,6.6nm,0.8s,comp=Z,66nm
U35A Pawnee 92.83 52 P **P 05 43 36.6 +1.0**
baz=246
P32A Huiting Farm, 92.84 48 P **P 05 43 36.5 +0.9**
baz=245
KMI Kunming 92.90 296 P **P 05 43 37.6 +1.2**
KMI pP sP 05 43 48.4 +0.9
KMI sP pP 05 43 52.3 +7.7
KMI S **S 05 54 41.4 +0.2**
KMI sS sS 05 55 00.0 +5.2
KMI pmax pmax
comp=Z,20nm,1.1s
KMI pmax pmax
comp=Z,210nm,6.6s
KMI LR LR
comp=Z,330nm,17.4s
KMI LR LR
comp=Z,440nm,19.8s
KMI LR LR
comp=Z,560nm,21.3s
UMPA Umpang Tak 93.02 286 P P 05 43 43.9 +7.0
comp=Z,5.7nm,1.2s,comp=Z,1μm

Q33A	**Connelly Farm,**	**93.12**	**49**	P		**P**	**05 43 37.9**	**+1.0**
	baz=245								
LAMP	**Lampang**	**93.16**	**289**	P		**P**	**05 43 39.2**	**+1.7**
	comp=Z,11nm,0.8s,comp=Z,96nm								
V36A	**Jenks**	**93.17**	**53**	P		**P**	**05 43 38.3**	**+1.1**
	baz=246								
T35A	**Sooner Cattle**	**93.21**	**52**	P		**P**	**05 43 38.4**	**+1.1**
	baz=246								
DGMT	**Dagmar**	**93.25**	**39**	P		**P**	**05 43 38.8**	**+1.5**
	baz=242								
DGMT	**Dagmar**	**93.25**	**39**	*e*P		**P**	**05 43 38.7**	**+1.5**
	comp=Z,35nm,1.0s								
W37B	**Quinton**	**93.29**	**54**	P		**P**	**05 43 38.8**	**+1.1**
	baz=246								
TUL1	**Leonard**	**93.33**	**53**	P		**P**	**05 43 38.5**	**+0.6**
	baz=246								
O32A	**Brockman Farm,**	**93.34**	**48**	P		**P**	**05 43 38.9**	**+1.1**
	baz=245								
Y38A	**Idabel**	**93.34**	**55**	P		**P**	**05 43 38.3**	**+0.3**
	baz=247								
K30A	**Basset**	**93.47**	**45**	P		**P**	**05 43 39.4**	**+1.0**
	baz=244								
X38A	**Whitesboro**	**93.56**	**54**	P		**P**	**05 43 39.7**	**+0.7**
	baz=247								
S35A	**Otter Creek Ra**	**93.66**	**51**	P		**P**	**05 43 39.9**	**+0.5**
	baz=246								
Q34A	**Chapman**	**93.72**	**50**	P		**P**	**05 43 40.2**	**+0.5**
	baz=246								
CM01	**Chiang Mai Arr**	**93.72**	**288**	*e*P		**P**	**05 43 40.6**	**+0.5**
T36A	**Boggs Farm, Ca**	**93.73**	**52**	P		**P**	**05 43 40.5**	**+0.7**
	baz=246								
O33A	**Hebron**	**93.75**	**48**	P		**P**	**05 43 40.9**	**+1.2**
	baz=246								
CM31	**Chiang Mai Arr**	**93.75**	**288**	*e*P		**P**	**05 43 40.6**	**+0.4**
CMAR	**Chiang Mai Arr**	**93.75**	**288**	P		**P**	**05 43 40.9**	**+0.7**
	comp=Z,7.0nm,0.8s,baz=123,slow=2.8,SNR=34								
CMAR				LR		LR	06 25 12.0		
	comp=Z,135nm,18.8s,baz=130,slow=35								
CMAR	**Chiang Mai Arr**	**93.75**	**288**	P		**P**	**05 43 41.0**	**+0.7**
V37A	**Hulbert**	**93.81**	**53**	P		**P**	**05 43 40.9**	**+0.8**
	baz=247								
J30A	**Dallas**	**93.83**	**45**	P		**P**	**05 43 41.1**	**+1.0**
	baz=244								
Y39A	**Lockesburg**	**93.83**	**55**	P		**P**	**05 43 41.2**	**+0.9**
	baz=247								
CMMT	**Chiang Mai**	**93.87**	**289**	P		**P**	**05 43 42.2**	**+1.4**
	comp=Z,19nm,1.0s,comp=Z,441nm								
CHTO	**Chiang Mai**	**93.88**	**289**	P		**P**	**05 43 42.2**	**+1.4**
	comp=Z,77nm,1.9s,comp=Z,1μm								
CHTO	**Chiang Mai**	**93.88**	**289**	*e*P		**P**	**05 43 41.2**	**+0.4**
CHTO				pmax		pmax			
	comp=Z,15nm,0.9s								
CHTO	**Chiang Mai**	**93.88**	**289**	*e*P		**P**	**05 43 41.2**	**+0.4**
	comp=Z,15nm,0.9s								
W38A	**Poteau**	**93.95**	**54**	P		**P**	**05 43 41.7**	**+0.9**
	baz=247								
K31A	**O'Neill**	**94.02**	**46**	P		**P**	**05 43 42.2**	**+1.2**
	baz=245								
KSU1	**Kansas State U**	**94.03**	**50**	P		**P**	**05 43 42.0**	**+0.9**
	baz=246								
U37A	**Salina**	**94.03**	**53**	P		**P**	**05 43 42.1**	**+1.0**
	baz=247								
INK	**Inuvik**	**94.12**	**14**	*e*P		**P**	**05 43 41.5**	**+0.8**
INK				pmax		pmax			
	comp=Z,46nm,1.8s								
INK	**Inuvik**	**94.12**	**14**	*e*P		**P**	**05 43 41.5**	**+0.8**
	comp=Z,46nm,1.8s								
CMAI	**Chiengmai2**	**94.19**	**290**	P		**P**	**05 43 44.0**	**+1.6**
YAK	**Yakutsk**	**94.20**	**337**	*e*P		**P**	**05 43 43.1**	**+1.9**
CD2	**Chengdu**	**94.23**	**301**	*e*P		**P**	**05 43 41.8**	**-0.4**
CD2				pP		sP	05 43 52.3	-1.0
CD2				sP		pP	05 43 56.3	+5.9
CD2				SKS		**SKSac**	**05 54 13.9**	**-2.1**
CD2				S		**S**	**05 54 50.5**	**-1.9**
CD2				sS		sS	05 55 08.3	+2.3
CD2				SS		**SS**	**06 01 13.0**	**-1.2**
CD2				pmax		pmax			
	comp=Z,10.0nm,0.5s								
CD2				pmax		pmax			
	comp=Z,160nm,5.2s								
A26A	**Wade Farm, Ken**	**94.72**	**39**	P		**P**	**05 43 45.8**	**+1.8**
	baz=243								
S37A	**Fort Scott**	**94.78**	**51**	P		**P**	**05 43 45.2**	**+0.7**
	baz=247								
T38A	**Diamond**	**94.89**	**52**	P		**P**	**05 43 46.1**	**+1.0**
	baz=247								
LVC	**Limon Verde**	**95.10**	**116**	*e*P		**P**	**05 43 48.3**	**+1.4**
	comp=Z,19nm,1.3s								
P36A	**Good Intent, A**	**95.23**	**50**	P		**P**	**05 43 47.4**	**+0.9**
	baz=247								
U39A	**Green Forest**	**95.24**	**53**	P		**P**	**05 43 47.4**	**+0.7**
	baz=248								
J33A	**Davis**	**95.50**	**46**	P		**P**	**05 43 48.1**	**+0.4**
	baz=246								
R38A	**Fenwick Farm,**	**95.61**	**51**	P		**P**	**05 43 49.0**	**+0.7**
	baz=248								
H32A	**Carlson Farm,**	**95.67**	**44**	P		**P**	**05 43 49.3**	**+0.8**
	baz=246								
PB11	**IPOC Station P**	**95.68**	**114**	*e*P		**P**	**05 43 51.1**	**+1.8**
	comp=Z,13nm,0.9s								
F31A	**Hecla**	**95.71**	**43**	P		**P**	**05 43 49.2**	**+0.6**
	baz=246								
YKA	**Yellowknife Ar**	**95.75**	**24**	P		**P**	**05 43 49.2**	**+0.9**
	comp=Z,1.8nm,0.9s,baz=233,slow=4.6,SNR=6.8								
YKA				LR		LR	06 20 17.8		
	comp=Z,24nm,21.5s,baz=180,slow=31								
YKB5	**Yellowknife Ar**	**95.75**	**24**	*e*P		**P**	**05 43 51.1**	**+2.8**
P37A	**Lathrop**	**95.83**	**50**	P		**P**	**05 43 49.7**	**+0.5**
	baz=247								
ECSD	**EROS Data Cent**	**95.90**	**45**	P		**P**	**05 43 50.4**	**+0.9**
	baz=246								
ECSD	**EROS Data Cent**	**95.90**	**45**	*e*P		**P**	**05 43 50.5**	**+0.9**
	comp=Z,25nm,1.4s								
LZH	**Lanzhou**	**96.10**	**306**	*e*P		**P**	**05 43 53.8**	**+3.0**
LZH				pP		sP	05 44 04.5	+2.6
LZH				sP		pP	05 44 09.3	+10
LZH				pmax		pmax			
	comp=Z,22nm,1.0s								
LZH				pmax		pmax			
	comp=Z,89nm,4.8s								
LZH				LR		LR			
	comp=Z,270nm,16.9s								
LZH				LR		LR			
	comp=Z,580nm,15.3s								
LZH				LR		LR			
	comp=Z,200nm,15.6s								
H33A	**Prehn Over Nor**	**96.20**	**44**	P		**P**	**05 43 51.4**	**+0.5**
	baz=246								
E31A	**Nome**	**96.23**	**42**	P		**P**	**05 43 51.4**	**+0.5**
	baz=246								
R39A	**Chumby, Stover**	**96.29**	**51**	P		**P**	**05 43 52.3**	**+0.9**
	baz=248								
G33A	**Ortonville**	**96.60**	**44**	P		**P**	**05 43 53.0**	**+0.3**
	baz=247								
C31A	**Landman Farms,**	**96.83**	**41**	P		**P**	**05 43 54.1**	**+0.5**
	baz=246								
F33A	**5 Mile Ranch,**	**96.95**	**44**	P		**P**	**05 43 54.8**	**+0.6**
	baz=247								
I37A	**Lemond, Waseca**	**98.16**	**46**	Pdiff		Pdif	05 44 01.2	+1.5
	baz=248								
L39A	**Vinton**	**98.43**	**48**	Pdiff		Pdif	05 44 02.8	+1.8
	baz=249								
LPAZ	**La Paz**	**98.45**	**111**	P		Pdif	05 44 04.3	+1.8
	comp=Z,1.1nm,0.8s,baz=233,slow=5.1,SNR=4.3								
LPAZ				LR		LR	06 21 35.7		
	comp=Z,584nm,18.2s,baz=257,slow=31								
LPAZ	**La Paz**	**98.45**	**111**	*e*P		Pdif	05 44 02.8	+0.3
LPAZ				pmax		pmax			
	comp=Z,12nm,1.6s								
LPAZ	**La Paz**	**98.45**	**111**	*e*P		Pdif	05 44 02.8	+0.3
	comp=Z,12nm,1.6s								
SONA0	**Songino Array**	**98.70**	**318**	*e*P		Pdif	05 44 02.2	0.0
	comp=Z,5.4nm,1.4s								
SONA1	**Songino Array**	**98.70**	**318**	*e*P		**P**	**05 44 01.9**	**-0.4**
SONM	**Songino Array**	**98.70**	**318**	P		Pdif	05 44 02.2	0.0
	comp=Z,0.3nm,0.4s,baz=116,slow=3.4,SNR=4.9								
P42A	**Winchester**	**98.71**	**51**	Pdiff		Pdif	05 44 03.9	+1.6
	baz=250								
F36A	**Milaca**	**98.75**	**44**	Pdiff		Pdif	05 44 03.7	+1.4
	baz=249								
I38A	**Scanlan Farm,**	**98.88**	**46**	Pdiff		Pdif	05 44 04.5	+1.5
	baz=249								
ULM	**Lac du Bonnet**	**98.92**	**40**	LR		LR	06 24 19.8		
	comp=Z,768nm,19.4s,baz=269,slow=33								
C35A	**Jirik Farms, M**	**99.13**	**42**	Pdiff		**Pdif**	**05 44 06.5**	**+2.6**
	baz=249								
D37A	**Cotton**	**99.92**	**43**	Pdiff		**Pdif**	**05 44 09.3**	**+1.8**
	baz=250								
GTA	**Gaotai**	**100.25**	**308**	*e*P		**Pdif**	**05 44 11.0**	**+1.7**
GTA				pP		sP	05 44 21.8	+1.3
GTA				sP		pP	05 44 25.6	+8.0
GTA				PP		**PP**	**05 48 19.3**	**+3.5**
GTA				SKS			05 54 45.5		
GTA				S		**Sdif**	**05 55 37.8**	**-5.8**
GTA				sS		sS	05 55 58.8	+1.5
GTA				SS		**SS**	**06 02 39.6**	**+0.7**
GTA				pmax		pmax			
	comp=Z,2.0nm,1.3s								
GTA				pmax		pmax			
	comp=Z,90nm,7.4s								
GTA				LR		LR			
	comp=Z,310nm,18.1s								
GTA				LR		LR			
	comp=Z,470nm,18.5s								
GTA				LR		LR			
	comp=Z,260nm,17.1s								
EYMN	**Ely**	**100.78**	**43**	Pdiff		**Pdif**	**05 44 13.4**	**+2.0**
	baz=250								
O56A	**Blue Knob Stat**	**107.58**	**53**	Pdiff		**PKiKP**	**05 48 50.2**	**+0.3**
	baz=257								
WMQ	**Urumqi**	**110.15**	**310**	*e*PKP		**PKiKP**	**05 48 53.4**	**-1.2**
WMQ				LR		LR			
	comp=Z,280nm,23.6s								
MK32	**Makanchi Array**	**114.34**	**313**	*e*PKiKP		PKPdf	05 49 02.1	-0.3
MKAR	**Makanchi Array**	**114.34**	**313**	PKP		PKPdf	05 49 02.1	-0.3
	comp=Z,0.6nm,0.7s,baz=101,slow=1.8,SNR=4.2								
KURK	**Kurchatov**	**116.99**	**317***c*	*i* PKIKP		**PKPdf**	**05 49 07.9**	**+0.6**
KURK				pmax		pmax			
	comp=Z,35nm,2.5s								
KSH	**Kashi**	**118.27**	**304**	*e*PKP		**PKPdf**	**05 49 11.8**	**+1.4**
KSH				*es*PKP			05 49 26.3		
KSH				*e*PP		**PP**	**05 50 34.3**	**+7.7**
KSH				PKS		**PKSdf**	**05 52 46.9**	**-0.2**
KSH				SKS		**SKSdf**	**05 56 18.9**	**-2.2**
KSH				SKKS		**SKKSac**	**05 57 22.8**	**-2.6**
KSH				SS		**SS**	**06 06 45.4**	**+3.9**
KSH				LR		LR			
	comp=Z,150nm,6.0s								
KSH				LR		LR			
	comp=Z,240nm,13.4s								
KSH				LR		LR			
	comp=Z,230nm,17.1s								
AAK	**Ala-Archa**	**119.59**	**308**	*e*PKIKP		**PKPdf**	**05 49 12.1**	**-0.8**
VOSK	**Vostochnaya**	**121.65**	**320**	*e*PKIKP		**PKPdf**	**05 49 16.2**	**-0.1**
VOSK	**Vostochnaya**	**121.65**	**320**	*e*PKPdf		**PKPdf**	**05 49 16.2**	**-0.1**
BRVK	**Borovoye**	**122.03**	**320***c*	*i* PKIKP		**PKPdf**	**05 49 16.6**	**-0.4**
BRVK				pmax		pmax			
	comp=Z,23nm,1.2s								
BRVK	**Borovoye**	**122.03**	**320**	*e*PKPdf		**PKPdf**	**05 49 17.4**	**+0.4**
KKAR	**Karatay Array**	**122.53**	**308**	*e*PKIKP		**PKPdf**	**05 49 18.4**	**+0.1**
KKAR	**Karatay Array**	**122.53**	**308**	*e*PKPdf		**PKPdf**	**05 49 18.4**	**+0.1**
SPITS	**Spitsbergen Ar**	**122.82**	**357**	PKP		**PKPdf**	**05 49 18.2**	**+0.3**
	comp=Z,8.4nm,0.9s,baz=86,slow=7.4,SNR=4.0								
SUMG	**Summit**	**123.03**	**15**	*i* P		**PKPdf**	**05 49 18.9**	**+0.1**
SUMG	**Summit**	**123.03**	**15**	*e*PKIKP		**PKPdf**	**05 49 19.0**	**+0.1**
SUMG	**Summit**	**123.03**	**15**	*e*PKPdf		**PKPdf**	**05 49 19.0**	**+0.1**
BOSA	**Boshof**	**126.97**	**201**	PKP		**PKPdf**	**05 49 28.3**	**+0.8**
	comp=Z,5.7nm,1.0s,baz=175,slow=3.6,SNR=4.0								
SOKR	**Solikamsk**	**127.54**	**330**⇑	*i* PKIKP		**PKPdf**	**05 49 25.8**	**-1.5**
SOKR				pmax		pmax			
	comp=Z,11nm,1.0s								
ARU	**Arti**	**127.86**	**326**	PKP		**PKPdf**	**05 49 28.4**	**+0.4**
	comp=Z,2.6nm,0.5s,baz=83,slow=2.8,SNR=9.9								
ARU	**Arti**	**127.86**	**326**	*i* PKIKP		**PKPdf**	**05 49 28.3**	**+0.3**
ARU							05 51 29.1		
ARU							05 56 36.5		
ARU				SP		SP	06 01 34.4	+1.5
ARU	**Arti**	**127.86**	**326**	*e*PKPdf		**PKPdf**	**05 49 28.6**	**+0.6**
AKTO	**Aktyubinsk**	**130.01**	**319**	PKP		**PKPdf**	**05 49 33.0**	**+0.6**
	comp=Z,0.8nm,0.4s,baz=31,slow=1.8,SNR=4.9								
ARCES	**ARCESS Array B**	**130.28**	**351**	PKP		**PKPdf**	**05 49 32.6**	**+0.3**
	comp=Z,4.1nm,0.9s,baz=288,slow=1.2,SNR=5.1								
GEYT	**Alibeck**	**132.22**	**302**	PKP		**PKPdf**	**05 49 37.7**	**+0.8**
	comp=Z,2.5nm,0.4s,baz=45,slow=3.1,SNR=3.7								
KLMR	**Klimovskoe**	**133.98**	**338**	*e*PKIKP		**PKPdf**	**05 49 38.2**	**-1.3**
KLMR				pmax		pmax			
	comp=Z,7.0nm,1.0s								
FIA0	**FINESS Array S**	**137.46**	**346**	*e*PKIKP		**PKPdf**	**05 49 46.4**	**+0.4**
FIA0	**FINESS Array S**	**137.46**	**346**	*e*PKPdf		**PKPdf**	**05 49 46.4**	**+0.4**
FINES	**FINESS Array B**	**137.46**	**346**	PKP		**PKPdf**	**05 49 46.4**	**+0.4**
	comp=Z,1.8nm,0.7s,baz=50,slow=2.2,SNR=4.1								
OBN	**Obninsk**	**139.10**	**333**	*e*PKIKP		**PKPdf**	**05 49 50.8**	**+1.7**
OBN				*e*			05 52 38.2		
OBN				pmax		pmax			
	comp=Z,23nm,1.4s								
NB2	**NORSAR Subarra1**	**140.09**	**356**	PKP		**PKPdf**	**05 49 43.6**	**-7.3**
	comp=Z,3.0nm,1.0s,baz=17,slow=2.6								
NB200	**NORSAR Array S**	**140.09**	**356**	*e*PKPdf		**PKPdf**	**05 49 52.0**	**+1.1**
NOA	**NORSAR Array B**	**140.09**	**356**	PKP		**PKPdf**	**05 49 52.0**	**+1.1**
	comp=Z,1.6nm,0.8s,baz=14,slow=3.9,SNR=3.5								
NOA	**NORSAR Array B**	**140.09**	**356**	PKIKP		**PKPdf**	**05 49 52.0**	**+1.1**
VSR	**Storozhevoye**	**140.40**	**327**	*e*PKIKP		**PKPdf**	**05 49 50.9**	**-0.8**
VSR				pmax		pmax			
	comp=Z,7.0nm,1.0s								
HFS	**Hagfors**	**140.78**	**354**	PKhKP		PKPpre	05 49 47.2		
	comp=Z,2.5nm,0.7s,baz=338,slow=6.9,SNR=4.3								
HFS				PKP		**PKPdf**	**05 49 51.5**	**-0.6**
	comp=Z,3.6nm,0.8s,baz=90,slow=3.0,SNR=5.3								
KIV	**Kislovodsk**	**142.04**	**315**	*i* PKIKP		**PKPdf**	**05 49 56.6**	**+1.6**
KIV				pmax		pmax			
	comp=Z,6.0nm,1.0s								
KMBO	**Kilima Mbogo**	**142.06**	**238**	PKP		**PKPdf**	**05 49 56.0**	**-0.2**
	comp=Z,2.5nm,0.9s,baz=357,slow=4.9,SNR=4.1								
KMBO	**Kilima Mbogo**	**142.06**	**238**	*e*PKIKP		**PKPdf**	**05 49 56.0**	**-0.2**
ONI	**Oni**	**142.07**	**313**	P		**Pdif**	**05 47 28.4**	**+13**
SOC	**Sochi**	**144.14**	**316**	*e*PKIKP		**PKPdf**	**05 49 58.2**	**-0.4**
SOC				*i*			05 50 02.5		
SOC				*e*			05 53 12.1		
SOC				*e*PPP		PPP	05 56 25.6		
SUW	**Suwalki**	**144.75**	**342**	*e*PKP		**PKPdf**	**05 49 59.4**	**+0.2**
MUD	**Monsted U'grnd**	**144.78**	**357**	*i* P		**PKPdf**	**05 49 58.9**	**-0.3**
	comp=Z,137nm,1.3s								
ANN	**Anapa**	**144.97**	**319**	*e*PKIKP		**PKPab**	**05 49 59.1**	**-0.1**
ANN				*i*			05 50 03.8		
ANN				*e*			05 57 10.3		
ANN				pmax		pmax			
	comp=Z,71nm,1.4s								
ANN				pmax		pmax			
	comp=Z,120nm,1.4s								
EKA	**Eskdalemuir Ar**	**145.33**	**9**	PKPbc		**PKPdf**	**05 50 00.5**	**+0.2**
	comp=Z,3.9nm,0.6s,baz=346,slow=2.9,SNR=20								
AKASG	**Malin Array Be**	**145.36**	**334**	PKPbc		**PKPbc**	**05 49 59.6**	**-0.7**
	comp=Z,12nm,0.8s,baz=38,slow=3.7,SNR=71								
AKBB	**Malin Array Si**	**145.36**	**334**	*e*PKP2		**PKPbc**	**05 49 59.6**	**-0.7**
AKBB	**Malin Array Si**	**145.36**	**334**	*e*PKPbc		**PKPbc**	**05 49 59.6**	**-0.7**
KIEV	**Kiev**	**145.37**	**334**	*i* PKP2		**PKPbc**	**05 49 59.2**	**-1.1**
KIEV	**Kiev**	**145.37**	**334**	*e*PKPbc		**PKPbc**	**05 49 59.9**	**-0.4**
AK11	**Malin Array Si**	**145.40**	**334**	*e*PKPbc		**PKPbc**	**05 49 59.7**	**-0.7**
BSD	**Bornholm Skovb**	**145.53**	**351**⇑	*i* P		**PKPdf**	**05 50 00.1**	**-0.5**
	comp=Z,113nm,1.2s								
ELZG	**Elazig**	**146.75**	**308**	*i* P		**PKPab**	**05 50 07.2**	**+0.8**
KEMA	**Kemaliye**	**146.81**	**310**	*i* P		**PKPab**	**05 50 06.8**	**+0.2**
SIM	**Simferopol'**	**146.84**	**322**	*e*PKP2		**PKPab**	**05 50 05.8**	**-0.5**
SIM				pmax		pmax			
	comp=Z,15nm,0.9s								
SIM				MLR		MLR			
	comp=Z,230nm,19.4s								
GKP	**Gorka Klasztor**	**146.88**	**347**	*e*PKP		**PKPbc**	**05 50 05.2**	**+0.3**
BEL	**Belsk**	**147.35**	**343**	*e*PKP		**PKPab**	**05 50 09.1**	**+1.0**
SORM	**Soroca**	**147.67**	**331**⇑	*i* P		**PKPbc**	**05 50 07.9**	**+0.7**
LVV	**L'vov**	**148.07**	**338**	*e*PKP2		**PKPbc**	**05 50 08.3**	**+0.1**
CWF	**Charnwood Fore**	**148.11**	**8**	*e*PKPbc		**PKPbc**	**05 50 08.7**	**+0.4**
CWF				*e*PKPab		**PKPab**	**05 50 12.3**	**+1.2**
KIS	**Kishinev**	**148.28**	**329**	*e*PKP		**PKPbc**	**05 50 08.0**	**-0.9**
KIS	**Kishinev**	**148.28**	**329**	*e*PP		PP	05 53 36.0	-1.1
KIS	**Kishinev**	**148.28**	**329**	*e*PPP		PPP	05 56 48.0		
KIS				*e*L		L	06 48 12.0		
KIS				LRM		MLR	06 58 20.0		
	comp=Z,300nm,20.0s								
KIS	**Kishinev**	**148.28**	**329**	*e*PKP2		**PKPbc**	**05 50 08.0**	**-0.9**
KIS				*e*			05 53 36.0		
KIS				MLR		MLR			
	comp=Z,300nm,20.0s								
KIS				MLR		MLR			
	comp=Z,300nm,20.0s								
BOYT	**Boyabat**	**148.30**	**316**	*i* P		**PKPab**	**05 50 11.0**	**-1.3**
CUSAR	**Sarkisla-SIVAS**	**148.34**	**312**	*i* P		**PKPbc**	**05 50 10.4**	**+0.9**
KWP	**Kalwaria Pacla**	**148.69**	**339**	*e*PKP		**PKPbc**	**05 50 10.3**	**+0.5**
CTAK	**Corum_Osmancik**	**148.76**	**315**	*i* P		**PKPbc**	**05 50 11.3**	**+0.7**
COAL	**Corum-Alaca**	**148.82**	**314**	*i* P		**PKPbc**	**05 50 12.1**	**+1.5**
OJC	**Ojcow**	**149.08**	**342**	*e*PKPc		**PKPbc**	**05 50 10.8**	**-0.1**
OJC	**Ojcow**	**149.08**	**342**	*e*PKP2		**PKPbc**	**05 50 10.7**	**-0.1**
OJC	**Ojcow**	**149.08**	**342**	*e*PKPbc		**PKPbc**	**05 50 10.7**	**-0.1**
OJC				*e*PKPab		**PKPab**	**05 50 16.1**	**+1.0**
STHS	**Stebnicka Huta**	**149.36**	**340**	*e*PKP		**PKPbc**	**05 50 12.8**	**+1.2**
STHS				*e*			05 50 17.0		
KSP	**Ksiaz**	**149.37**	**347**	*e*PKPc		**PKPbc**	**05 50 12.0**	**+0.4**
CLL	**Collm**	**149.50**	**351**	*i* PKPbc		**PKPbc**	**05 50 11.7**	**-0.1**
	comp=Z,42nm,1.3s								
CLL				*i* PKPab		**PKPab**	**05 50 16.6**	**-0.1**
	comp=Z,45nm,1.1s								
CLL				*i*			05 50 23.0		
CLL				*i*			05 50 26.3		
CLL				*e*PP		**PP**	**05 53 48.0**	**+4.3**
CLL				*e*PSKS			06 04 00.0		
CLL				*e*SSS		SSS	06 18 43.0		
CLL				LmH			06 59 00.0		
	comp=Z,200nm,20.2s								
CLL				LmV			07 08 00.0		
	comp=Z,200nm,18.7s								
CLL	**Collm**	**149.50**	**351**	*e*PKP2		**PKPbc**	**05 50 12.0**	**+0.2**
CLL	**Collm**	**149.50**	**351**	*e*PKPbc		**PKPbc**	**05 50 12.0**	**+0.2**
CLL				*e*PKPab		**PKPab**	**05 50 17.6**	**+0.9**
CDAG	**Cicekdag**	**149.53**	**313**	*i* P		**PKPbc**	**05 50 13.4**	**+1.0**
NIE	**Niedzica**	**149.65**	**341**	*e*PKPc		**PKPbc**	**05 50 12.9**	**+0.6**
UZH	**Uzhgorod**	**149.69**	**338**	*e*PKP2		**PKPbc**	**05 50 12.2**	**-0.1**
CRVS	**Cervenica-Dubn**	**149.74**	**339**	*e*PKP		**PKPbc**	**05 50 14.1**	**+1.6**
CRVS				*e*			05 50 18.3		
UPC	**Upice**	**149.74**	**347**⇑	*e*PKP		**PKPbc**	**05 50 14.1**	**+1.6**
UPC				AMS		AMS	07 03 00.0		
	comp=Z,400nm,17.0s								
UPC	**Upice**	**149.74**	**347**	*e*PKP2		**PKPbc**	**05 50 14.1**	**+1.6**
UPC				MLR		MLR			
	comp=Z,400nm,17.0s								
BRG	**Berggiesshubel**	**149.78**	**350**	*e*PKP		**PKPdf**	**05 50 08.4**	**+0.7**
	comp=Z,11nm,1.4s								
BRG				*i*			05 50 14.1		
	comp=Z,97nm,1.6s								
BRG				SS		SS	06 13 11.0	+12	
	comp=N,179nm,17.8s								
	comp=E,144nm,19.3s								
	comp=Z,263nm,20.5s								
DPC	**Dobruska-Polom**	**149.82**	**347**⇑	*e*PKP		**PKPbc**	**05 50 14.3**	**+1.6**
DPC				*e*PKPAB		**PKPab**	**05 50 17.3**	**-0.8**
DPC				AMS		AMS	07 04 30.0		
	comp=Z,300nm,20.6s								
DPC	**Dobruska-Polom**	**149.82**	**347**	*e*PKP2		**PKPbc**	**05 50 14.3**	**+1.6**
DPC				MLR		MLR			
	comp=Z,300nm,20.6s								
OKC	**Ostrava-Krasne**	**149.87**	**344**	*e*PKPAB		**PKPab**	**05 50 17.2**	**-1.1**
OKC				AMS		AMS	07 03 50.0		
	comp=Z,300nm,16.5s								
OKC	**Ostrava-Krasne**	**149.87**	**344**	*e*PKP2		**PKPab**	**05 50 17.2**	**-1.1**
OKC				MLR		MLR			
	comp=Z,300nm,16.5s								
BR101	**Keskin Array S**	**149.98**	**314**	*e*PKPbc		**PKPbc**	**05 50 13.4**	**-0.2**
BR131	**Keskin Array S**	**149.98**	**314**	*e*PKPbc		**PKPbc**	**05 50 12.2**	**-1.4**
BRTR	**Keskin Array B**	**149.98**	**314**	PKPbc		**PKPbc**	**05 50 13.4**	**-0.2**
	comp=Z,5.5nm,0.7s,baz=124,slow=3.4,SNR=25								
BRTR	**Keskin Array B**	**149.98**	**314***c*	*i* PKP2		**PKPbc**	**05 50 14.1**	**+0.5**
BRTR				pmax		pmax			
	comp=Z,6.0nm,0.7s								
KRLC	**Kraliky**	**149.98**	**346**⇑	*e*PKP		**PKPbc**	**05 50 14.5**	**+1.4**
KRLC	**Kraliky**	**149.98**	**346**	*e*PKP2		**PKPbc**	**05 50 14.5**	**+1.4**
PVCC	**Panska Ves**	**150.00**	**349**⇑	*e*PKP		**PKPbc**	**05 50 14.6**	**+1.5**
PVCC				*e*PKPAB		**PKPab**	**05 50 17.4**	**-1.4**
PVCC	

EIL	**Elat**	**152.47**	**294**	PKPbc	**PKPbc**	**05 50 18.5**	**-1.0**
	comp=Z,8.4nm,1.0s,baz=206,slow=3.8,SNR=6.9						
MOA	**Molln**	**152.63**	**348**	*i* PKiKP	**PKiKP**	**05 50 20.1**	**+0.5**
	comp=Z,15nm,1.4s						
ARSA	**Arzberg**	**152.92**	**345**	*i* pPKPdf	**PKiKP**	**05 50 23.4**	**+3.3**
BFO	**Black Forest**	**152.93**	**356**	*c i*PKIKP	**PKPbc**	**05 50 21.6**	**+1.6**
BFO	**Black Forest**	**152.93**	**356**	*e*PKPbc	**PKPbc**	**05 50 21.0**	**+1.1**
MDVR	**Moldovita**	**153.14**	**334**	ǁ *i*P	**PKPbc**	**05 50 18.1**	**-2.5**
KBA	**Koelnbreinsper**	**153.54**	**348**	*i* PKiKP	**PKiKP**	**05 50 21.8**	**+0.2**
	comp=Z,11nm,1.0s						
RETA	**Reutte**	**153.55**	**352**	*i* PKiKP	**PKiKP**	**05 50 23.1**	**+1.6**
	comp=Z,19nm,1.5s						
SOKA	**Soboth**	**153.57**	**346**	*i* PKPdf	**PKPdf**	**05 50 13.8**	**+0.1**
	comp=Z,8.0nm,1.2s						
WATA	**Walderalm**	**153.59**	**351**	*i* pPKPdf	**PKiKP**	**05 50 23.8**	**+2.2**
	comp=Z,9.7nm,0.9s						
MOTA	**Moosalm**	**153.64**	**352**	*i* pPKPdf	**PKiKP**	**05 50 23.7**	**+1.9**
	comp=Z,9.3nm,0.9s						
WTTA	**Wattenberg**	**153.65**	**351**	*i* PKPbc	**PKPbc**	**05 50 21.4**	**-0.3**
	comp=Z,11nm,1.0s						
DAVA	**Damuels**	**153.84**	**354**	*i* PKiKP	**PKiKP**	**05 50 23.5**	**+1.3**
	comp=Z,24nm,1.5s						
OBKA	**Obir**	**153.84**	**346**	*i* PKPdf	**PKPdf**	**05 50 13.5**	**-0.6**
	comp=Z,18nm,2.0s						
MYKA	**Terra Mystica**	**153.92**	**348**	*i* pPKPdf	**PKiKP**	**05 50 25.8**	**+3.5**
	comp=Z,11nm,1.2s						
FETA	**Feichten**	**154.01**	**352**	*i* PKPbc	**PKPbc**	**05 50 21.4**	**-1.1**
	comp=Z,17nm,1.2s						
ABTA	**Abfaltersbach**	**154.01**	**349**	*i* PKPdf	**PKPdf**	**05 50 14.7**	**+0.3**
	comp=Z,9.0nm,1.3s						
DAVOX	**Davos/Dischmat**	**154.34**	**354**	PKPbc	**PKPbc**	**05 50 22.9**	**-0.4**
	comp=Z,1.8nm,0.5s,baz=68,slow=3.0,SNR=3.3						
DAVOX				PKPab	**PKPab**	**05 50 36.3**	**-1.0**
	comp=Z,4.2nm,0.8s,baz=263,slow=10,SNR=3.7						
SENIN	**Lac Senin/Sane**	**154.94**	**358**	*e*PKPdf	**PKPdf**	**05 50 17.1**	**+1.2**
SENIN				*e*PKPbc	**PKiKP**	**05 50 25.2**	**+0.6**
SENIN				*e*PKPab	**PKPab**	**05 50 41.6**	**+1.7**
ES19	**SONSECA Array**	**159.84**	**22**	*e*PKPdf	**PKPdf**	**05 50 23.2**	**+1.2**
ESDC	**Sonseca Array**	**159.84**	**22**	PKP	**PKPdf**	**05 50 22.7**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=312,slow=2.3,SNR=6.6						
ESDC				PKPab	**PKPab**	**05 51 02.1**	**+1.1**
	comp=Z,0.5nm,0.4s,baz=316,slow=4.6,SNR=4.9						
LIC	**Lamto**	**161.71**	**143**	*e*P	**PKPdf**	**05 50 24.2**	**-0.5**
	comp=Z,60nm,1.4s						
KIC	**Kosan Boka**	**161.99**	**144**	*e*P	**PKPdf**	**05 50 25.3**	**+0.3**
	comp=Z,118nm,1.6s						
TIC	**Toumodi**	**162.06**	**143**	*e*P	**PKPdf**	**05 50 23.6**	**-1.5**
DBIC	**Dimbokro**	**162.18**	**143**	PKP	**PKPdf**	**05 50 24.9**	**-0.3**
	comp=Z,7.1nm,1.0s,baz=145,slow=3.3,SNR=3.8						
DBIC				PKPab	**PKPab**	**05 51 11.7**	**-0.1**
	comp=Z,12nm,1.2s,baz=138,slow=6.3,SNR=3.7						
DBIC	**Dimbokro**	**162.18**	**143**	*e*PKPdf	**PKPdf**	**05 50 23.2**	**-2.0**
TOA0	**Torodi Ar. Sit**	**171.01**	**153**	*e*PKPdf	**PKPdf**	**05 50 30.5**	**-1.4**
TOA0				*e*PKPdf	PKPdf	05 50 31.6	-0.4
TOA0				*e*PKPab	**PKPab**	**05 51 50.5**	**-0.1**
TORD	**Torodi Ar. Bea**	**171.01**	**153**	PKP	**PKPdf**	**05 50 31.2**	**-0.7**
	comp=Z,4.4nm,1.1s,baz=248,slow=0.3,SNR=12						
TORD				PKPab	**PKPab**	**05 51 50.8**	**+0.2**
	comp=Z,3.1nm,1.1s,baz=209,slow=2.9,SNR=5.0						
TOA1	**Torodi Ar. Sit**	**171.01**	**153**	*e*PKPdf	**PKPdf**	**05 50 31.2**	**-0.7**
TOA1				*e*PKPab	**PKPab**	**05 51 50.8**	**+0.2**
TAM	**Tamanrasset**	**178.46**	**11**	*e*PKIKP	**PKPdf**	**05 50 35.8**	**+1.6**
TAM	**Tamanrasset**	**178.46**	**11**	*e*PKPdf	**PKPdf**	**05 50 35.8**	**+1.6**

*ISCJB **25** 05:54:13.4±1.1,37.24N±0.04×20.04E±0.06,h17km±6km, Error ellipse: s-maj=8.8km s-min=5.1km az=146.0*
*CSEM **25** 05:54:13.1±0.5,37.24N×20.09E,h5km, ML2.9, Error ellipse: s-maj=9.6km s-min=5.3km az=57.0*
*ATH **25** 05:54:14.1,37.30N×20.12E,h25km±1km, ML2.9/32, Error ellipse: s-maj=2.8km s-min=1.4km az=244.0*
*THE **25** 05:54:14.1,37.29N×20.09E,h2km±3km, ML3.2/3, Error ellipse: s-maj=3.4km s-min=1.3km az=217.0*

ISC 25 05:54:13.8±2.0,37.29N±0.05×20.13E±0.07,h6km±10km, n104,σ0.95/130,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
ZKS	**Zakynthos**	**0.66**	**52**	P		**Pg**	**05 54 26.4**	**-0.1**
ZKS				S		**Sb**	**05 54 37.7**	**+0.5**
ZKS	**Zakynthos**	**0.66**	**52**	P		**Pg**	**05 54 26.4**	**-0.1**
ZKS				S		**Sb**	**05 54 37.7**	**+0.5**
ZKS	**Zakynthos**	**0.66**	**52**	P		**Pg**	**05 54 25.4**	**-1.1**
ZKS				AML		AML	05 54 39.7	
	comp=N,17698μm,0.6s							
ZKS				AML		AML	05 54 41.5	
	comp=E,11084μm,0.5s							
VLS	**Valsamata**	**0.96**	**22**	P		**Pg**	**05 54 32.1**	**-0.1**
VLS				S		**Sb**	**05 54 45.9**	**+0.2**
VLS	**Valsamata**	**0.96**	**22**	P		**Pg**	**05 54 32.1**	**-0.1**
VLS				S		**Sb**	**05 54 45.9**	**+0.2**
KFL	**Anninata**	**0.97**	**33**	P		**Pg**	**05 54 32.3**	**-0.1**
KFL				S		**Sb**	**05 54 46.5**	**+0.4**
KFL	**Anninata**	**0.97**	**33**	P		**Pb**	**05 54 33.2**	**+0.2**
KFL				S		**Sb**	**05 54 46.2**	**+0.1**
KFL	**Anninata**	**0.97**	**33**	P		**Pb**	**05 54 33.1**	**+0.2**
KFL				S		**Sb**	**05 54 46.2**	**+0.1**
VTN	**Vitineika**	**1.05**	**53**	P		**Pn**	**05 54 35.5**	**+0.5**
VTN	**Vitineika**	**1.05**	**53**	P		**Pn**	**05 54 35.5**	**+0.5**
AMT	**Artemida-Makis**	**1.28**	**79**	P		**Pn**	**05 54 38.3**	**0.0**
AMT	**Artemida-Makis**	**1.28**	**79**	P		**Pn**	**05 54 38.3**	**0.0**
AMT	**Artemida-Makis**	**1.28**	**79**	P		**Pg**	**05 54 40.0**	**+1.7**
AMT				AML		AML	05 55 06.3	
	comp=N,1223μm,0.6s							
AMT				AML		AML	05 55 07.9	
	comp=E,1200μm,0.4s							
RLS	**Riolos of Patr**	**1.31**	**54**	P		**Pn**	**05 54 38.6**	**0.0**
RLS	**Riolos of Patr**	**1.31**	**54**	AML		AML	05 55 03.4	
	comp=E,502μm,0.3s							
RLS				AML		AML	05 55 12.9	
	comp=N,553μm,0.5s							
AXS	**Araxos**	**1.34**	**47**	P		**Pn**	**05 54 38.6**	**-0.4**
AXS				S		**Sb**	**05 54 56.4**	**-0.3**
AXS	**Araxos**	**1.34**	**47**	P		**Pn**	**05 54 38.6**	**-0.4**
AXS				S		**Sb**	**05 54 56.4**	**-0.3**
PYL	**PYLOS**	**1.35**	**107**	P		**Pn**	**05 54 38.7**	**-0.5**
PYL	**PYLOS**	**1.35**	**107**	P		**Pn**	**05 54 38.7**	**-0.5**
PYL				S		**Sb**	**05 54 55.8**	**-1.2**
PYL	**PYLOS**	**1.35**	**107**	P		**Pn**	**05 54 37.8**	**-1.4**
PYL				S		**Sb**	**05 54 55.8**	**-1.2**
PYL				AML		AML	05 54 57.3	
	comp=N,701μm,0.5s							
PYL				AML		AML	05 55 06.9	
	comp=E,537μm,0.5s							
DRO	**Drossia**	**1.42**	**62**	P		**Pn**	**05 54 40.0**	**-0.1**
DRO	**Drossia**	**1.42**	**62**	P		**Pn**	**05 54 40.1**	**-0.1**
DRO	**Drossia**	**1.42**	**62**	P		**Pn**	**05 54 40.1**	**-0.1**
DRO				AML		AML	05 55 08.9	
	comp=E,1265μm,0.6s							
DRO				AML		AML	05 55 14.7	
	comp=N,1028μm,0.5s							
ITM	**Ithomi**	**1.44**	**94**	P		**Pn**	**05 54 40.3**	**-0.2**
ITM	**Ithomi**	**1.44**	**94**	P		**Pn**	**05 54 40.3**	**-0.2**
ITM				S		**Sg**	**05 55 00.4**	**+0.3**
ITM	**Ithomi**	**1.44**	**94**	P		**Pn**	**05 54 40.2**	**-0.2**
ITM				S		**Sg**	**05 55 00.4**	**+0.3**
ITM				AML		AML	05 55 11.1	
	comp=N,475μm,0.7s							
ITM				AML		AML	05 55 13.9	
	comp=E,540μm,0.6s							
PDO	**Prodromos**	**1.55**	**32**	P		**Pn**	**05 54 42.4**	**+0.5**
PDO	**Prodromos**	**1.55**	**32**	P		**Pn**	**05 54 42.4**	**+0.5**
PDO	**Prodromos**	**1.55**	**32**	P		**Pb**	**05 54 43.1**	**+0.2**
PDO				AML		AML	05 55 13.1	
	comp=N,1206μm,0.5s							
PDO				AML		AML	05 55 19.8	
	comp=E,973μm,0.7s							
LKD2	**Lefkada island**	**1.55**	**15**	P		**Pn**	**05 54 41.9**	**-0.1**
LKD2				S		**Sb**	**05 55 03.0**	**+0.1**
LKD2	**Lefkada island**	**1.55**	**15**	P		**Pn**	**05 54 42.4**	**+0.4**
LKD2				S		**Sb**	**05 55 03.0**	**+0.1**
LKD2	**Lefkada island**	**1.55**	**15**	P		**Pn**	**05 54 42.4**	**+0.4**
LKD2				AML		AML	05 55 15.6	
	comp=N,742μm,0.6s							
LKD2				AML		AML	05 55 24.6	
	comp=E,578μm,0.6s							
PVO	**Paravola**	**1.72**	**39**	P		**Pb**	**05 54 45.2**	**-0.7**
PVO	**Paravola**	**1.72**	**39**	P		**Pb**	**05 54 45.2**	**-0.7**
PVO	**Paravola**	**1.72**	**39**	P		**Pb**	**05 54 46.6**	**+0.8**
TRIP	**Tripoli**	**1.72**	**82**	P		**Pn**	**05 54 44.3**	**-0.1**
TRIP	**Tripoli**	**1.72**	**82**	P		**Pn**	**05 54 44.3**	**-0.1**
TRIP				AML		AML	05 55 23.0	
	comp=N,300μm,1.0s							
TRIP				AML		AML	05 55 29.6	
	comp=E,252μm,0.6s							
LAKA	**Lakka**	**1.75**	**57**	P		**Pn**	**05 54 45.4**	**+0.7**
LAKA	**Lakka**	**1.75**	**57**	P		**Pn**	**05 54 45.4**	**+0.7**
LAKA	**Lakka**	**1.75**	**57**	P		**Pb**	**05 54 46.3**	**0.0**
LAKA				AML		AML	05 54 55.2	
	comp=E,266μm,0.5s							
LAKA				AML		AML	05 55 02.8	
	comp=N,216μm,0.5s							
KLV	**Kalavryta, Ach**	**1.77**	**64**	P		**Pn**	**05 54 45.1**	**0.0**
KLV	**Kalavryta, Ach**	**1.77**	**64**	P		**Pn**	**05 54 45.5**	**+0.4**
KLV	**Kalavryta, Ach**	**1.77**	**64**	P		**Pn**	**05 54 45.5**	**+0.4**
KLV				AML		AML	05 55 02.6	
	comp=N,177μm,0.4s							
KLV				AML		AML	05 55 28.5	
	comp=E,250μm,0.8s							
VLX	**Vlachokerasia**	**1.80**	**87**	P		**Pn**	**05 54 45.5**	**+0.1**
VLX	**Vlachokerasia**	**1.80**	**87**	P		**Pn**	**05 54 45.5**	**+0.1**
VLX	**Vlachokerasia**	**1.80**	**87**	P		**Pn**	**05 54 45.0**	**-0.4**
VLX				AML		AML	05 55 28.4	
	comp=N,387μm,0.6s							
VLX				AML		AML	05 55 35.7	
	comp=E,423μm,0.8s							
TRIZ	**Trizonia**	**1.88**	**55**	P		**Pb**	**05 54 48.1**	**-0.4**
SERG	**Sergoula**	**1.89**	**53**	P		**Pn**	**05 54 47.5**	**+0.8**
SERG	**Sergoula**	**1.89**	**53**	P		**Pn**	**05 54 47.5**	**+0.8**
ANX	**Ano Chora**	**1.92**	**47**	P		**Pn**	**05 54 48.0**	**+0.8**
ANX	**Ano Chora**	**1.92**	**47**	P		**Pn**	**05 54 48.0**	**+0.8**
ANX	**Ano Chora**	**1.92**	**47**	AML		AML	05 55 23.2	
	comp=E,523μm,0.6s							
ANX				AML		AML	05 55 23.7	
	comp=N,1412μm,0.6s							
KALE	**Kalithea**	**1.93**	**55**	P		**Pn**	**05 54 48.1**	**+0.8**
KALE	**Kalithea**	**1.93**	**55**	P		**Pn**	**05 54 48.1**	**+0.8**
KALE	**Kalithea**	**1.93**	**55**	P		**Pb**	**05 54 48.9**	**-0.6**
KALE				AML		AML	05 55 28.0	
	comp=N,486μm,0.6s							
KALE				AML		AML	05 55 30.0	
	comp=E,484μm,0.7s							
DSL	**Palaion Diasel**	**1.99**	**22**	P		**Pn**	**05 54 48.2**	**+0.2**
DSL	**Palaion Diasel**	**1.99**	**22**	P		**Pn**	**05 54 48.3**	**+0.2**
DSL	**Palaion Diasel**	**1.99**	**22**	P		**Pn**	**05 54 48.3**	**+0.2**
DSL				AML		AML	05 55 36.6	
	comp=N,629μm,0.6s							
DSL				AML		AML	05 55 36.9	
	comp=E,436μm,1.1s							
EVR	**Evrytania**	**2.10**	**39**	P		**Pn**	**05 54 50.5**	**+1.0**
EVR	**Evrytania**	**2.10**	**39**	P		**Pn**	**05 54 50.5**	**+1.0**
EVR				S		**Sb**	**05 55 18.7**	**+0.1**
EVR	**Evrytania**	**2.10**	**39**	P		**Pb**	**05 54 52.2**	**-0.1**
EVR				AML		AML	05 55 31.4	
	comp=N,258μm,0.9s							
DSF	**Desfina**	**2.20**	**59**	P		**Pn**	**05 54 52.0**	**+1.0**
DSF				S		**Sn**	**05 55 19.9**	**+1.3**
DSF	**Desfina**	**2.20**	**59**	P		**Pn**	**05 54 52.0**	**+1.0**
DSF				S		**Sn**	**05 55 19.9**	**+1.3**
DSF				AML		AML	05 55 30.0	
	comp=N,156μm,0.7s							
DSF				AML		AML	05 55 37.2	
	comp=E,225μm,0.5s							
VLI	**Velíai**	**2.32**	**103**	P		**Pb**	**05 54 55.5**	**-0.5**
VLI				AML		AML	05 55 24.2	
	comp=N,163μm,0.7s							
VLI				AML		AML	05 55 41.5	
	comp=E,178μm,1.3s							
LTK	**Loutraki**	**2.37**	**71**	P		**Pn**	**05 54 52.8**	**-0.4**
LTK	**Loutraki**	**2.37**	**71**	P		**Pn**	**05 54 52.8**	**-0.4**
LTK				AML		AML	05 55 26.3	
	comp=E,202μm,0.5s							
LTK				AML		AML	05 55 28.1	
	comp=N,208μm,0.7s							
PROD	**Prodromos**	**2.40**	**65**	P		**Pn**	**05 54 53.3**	**-0.3**
PROD	**Prodromos**	**2.40**	**65**	P		**Pn**	**05 54 53.4**	**-0.3**
PROD				AML		AML	05 55 08.7	
	comp=N,187μm,0.2s							
PROD				AML		AML	05 55 09.7	
	comp=E,163μm,0.3s							
KEK	**Kerkira**	**2.43**	**354**	P		**Pn**	**05 54 53.3**	**-0.8**
AGG	**Agios Georgios**	**2.45**	**44**	P		**Pn**	**05 54 54.7**	**+0.4**
AGG	**Agios Georgios**	**2.45**	**44**	P		**Pn**	**05 54 54.7**	**+0.4**
AGG	**Agios Georgios**	**2.45**	**44**	P		**Pn**	**05 54 55.4**	**+1.1**
AGG				AML		AML	05 55 31.1	
	comp=N,370μm,0.3s							
AGG				AML		AML	05 55 38.0	
	comp=E,381μm,0.8s							
DID	**Didima**	**2.48**	**84**	P		**Pn**	**05 54 53.9**	**-0.9**
DID				S		**Sn**	**05 55 26.7**	**+1.2**
DID	**Didima**	**2.48**	**84**	P		**Pn**	**05 54 53.9**	**-0.9**
DID				S		**Sn**	**05 55 26.7**	**+1.2**
DID				AML		AML	05 55 47.8	
	comp=E,190μm,0.5s							
DID				AML		AML	05 55 48.0	
	comp=N,227μm,1.0s							
KYTH	**Kithira**	**2.56**	**113**	P		**Pn**	**05 54 57.9**	**+2.1**
KYTH				S		**Sn**	**05 55 26.9**	**-0.4**
KYTH	**Kithira**	**2.56**	**113**	P		**Pn**	**05 54 57.9**	**+2.1**
VIL2	**Platees**	**2.65**	**69**	P		**Pn**	**05 54 56.0**	**-1.2**
VIL2				AML		AML	05 55 43.9	
	comp=N,233μm,0.8s							
VIL2				AML		AML	05 55 48.3	
	comp=E,143μm,0.9s							
VILL	**Villia**	**2.67**	**70**	P		**Pn**	**05 54 56.0**	**-1.4**
THL	**Klokotos Trika**	**2.71**	**33**	P		**Pn**	**05 54 58.5**	**+0.6**
THL	**Klokotos Trika**	**2.71**	**33**	P		**Pn**	**05 54 58.5**	**+0.6**
THL				S		**Sn**	**05 55 30.1**	**-0.9**
KPRO	**Kipourio**	**2.83**	**20**	P		**Pn**	**05 55 00.5**	**+0.9**
KPRO	**Kipourio**	**2.83**	**20**	P		**Pn**	**05 55 00.5**	**+0.9**
KPRO	**Kipourio**	**2.83**	**20**	P		**Pn**	**05 55 02.1**	**+2.5**
KPRO				AML		AML	05 55 39.2	
	comp=N,124μm,0.5s							
KPRO				AML		AML	05 55 39.5	
	comp=E,144μm,0.4s							
PENT	**Pentalofos**	**3.00**	**15**	P		**Pn**	**05 55 04.5**	**+2.5**
PENT	**Pentalofos**	**3.00**	**15**	P		**Pn**	**05 55 04.5**	**+2.5**
FYTO	**Fytoko, Volos**	**3.06**	**45**	P		**Pn**	**05 55 01.6**	**-1.1**
FYTO	**Fytoko, Volos**	**3.06**	**45**	P		**Pn**	**05 55 01.6**	**-1.1**
FYTO				S		**Sn**	**05 55 37.2**	**-2.4**
FYTO				AML		AML	05 55 58.1	
	comp=E,79μm,0.9s							
FYTO				AML		AML	05 56 03.5	
	comp=N,62μm,0.7s							
XOR	**Xorichti**	**3.18**	**48**	P		**Pn**	**05 55 03.2**	**-1.1**
XOR	**Xorichti**	**3.18**	**48**	P		**Pn**	**05 55 03.2**	**-1.1**
XOR				AML		AML	05 55 38.8	
	comp=N,94μm,0.8s							
XOR				AML		AML	05 55 41.9	
	comp=E,67μm,0.9s							
EREA	**Eretria**	**3.21**	**68**	P		**Pn**	**05 55 03.5**	**-1.3**
EREA				S		**Sn**	**05 55 44.8**	**+1.3**
EREA	**Eretria**	**3.21**	**68**	P		**Pn**	**05 55 03.5**	**-1.3**
EREA				AML		AML	05 55 43.1	
	comp=E,139μm,0.7s							
EREA				S		**Sn**	**05 55 44.8**	**+1.3**
EREA				AML		AML	05 55 46.1	
	comp=N,98μm,0.3s							
KZN	**Kozani**	**3.27**	**23**	P		**Pn**	**05 55 06.8**	**+1.1**
LIT	**Litokhoron**	**3.36**	**33**	P		**Pn**	**05 55 05.8**	**-1.0**
LIT	**Litokhoron**	**3.36**	**33**	P		**Pn**	**05 55 05.8**	**-1.0**
LIT				AML		AML	05 55 47.4	
	comp=N,105μm,0.3s							
LIT				AML		AML	05 55 52.4	
	comp=E,86μm,0.3s							
MHLO	**Agia Marina, M**	**3.47**	**99**	P		**Pn**	**05 55 06.6**	**-1.8**
MHLO				S		**Sn**	**05 55 50.5**	**+0.7**
MHLO	**Agia Marina, M**	**3.47**	**99**	P		**Pn**	**05 55 06.6**	**-1.8**
MHLO				AML		AML	05 55 50.5	
	comp=N,351μm,1.0s							
MHLO				S		**Sn**	**05 55 50.5**	**+0.7**
MHLO				AML		AML	05 55 59.7	
	comp=E,269μm,0.5s							
FNA	**Florina**	**3.62**	**15**	P		**Pn**	**05 55 11.0**	**+0.5**
FNA	**Florina**	**3.62**	**15**	P		**Pn**	**05 55 11.0**	**+0.5**
FNA	**Florina**	**3.62**	**15**	P		**Pn**	**05 55 10.8**	**+0.3**
FNA				S		**Sn**	**05 55 51.6**	**-1.9**
FNA				AML		AML	05 55 56.9	
	comp=E,138μm,0.4s							
FNA				AML		AML	05 55 58.1	
	comp=N,93μm,0.4s							
HORT	**Hortiatis**	**4.03**	**34**	P		**Pn**	**05 55 16.0**	**-0.1**
HORT	**Hortiatis**	**4.03**	**34**	P		**Pn**	**05 55 16.0**	**-0.1**
HORT				AML		AML	05 56 05.3	
	comp=N,30μm,0.2s							
HORT				AML		AML	05 56 05.9	
	comp=E,37μm,0.3s							
KNT	**Kendrikon**	**4.42**	**28**	P		**Pn**	**05 55 20.6**	**-0.8**
KNT	**Kendrikon**	**4.42**	**28**	P		**Pn**	**05 55 20.6**	**-0.8**
KNT				AML		AML	05 56 11.3	
	comp=N,44μm,0.5s							
KNT				AML		AML	05 56 13.3	
	comp=E,26μm,0.3s							
NVLJ	**Novalja**	**8.28**	**333**	*e*Pn		**Pn**	**05 56 10.8**	**-3.5**

*IDC **25** 06:13:11.2±2.1,22.23S×170.24E,h0km,mb4.2/10, mb1 4.4/11,mb1mx4.3/23,mbtmp4.3/11,ML4.2/1,MS3.5/3, Ms1 3.5/3,ms1mx3.2/29, Error ellipse: s-maj=60.9km s-min=24.2km az=149.0*
*NEIC **25** 06:13:12.9±0.6,22.13S×170.20E,h10km,mb4.5/8, Error ellipse: s-maj=22.9km s-min=9.1km az=160.0*
*ISCJB **25** 06:13:13.0±0.7,22.2S±0.1×170.24E±0.09,h25km, mb4.4/16,MS3.6/1, Error ellipse: s-maj=21.6km s-min=9.3km az=158.3*

ISC 25 06:13:15.3±0.7,22.1S±0.2×170.12E±0.08,h25km,n31, σ1.935/31,mb4.4/16,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
DZM	**Mont Dzumac**	**3.41**	**270**	P		**Pn**	**06 14 07.2**	**+0.2**
	21nm,0.3s,baz=127,slow=14,SNR=380							
DZM				Sn		**Sn**	**06 14 44.2**	**-2.4**
	49nm,0.3s,baz=66,slow=16,SNR=7.2							
DZM				LR		LR	06 14 49.1	
	comp=Z,353nm,20.7s,baz=193,slow=28							
DZM	**Mont Dzumac**	**3.41**	**270**	*e*Pn		**Pn**	**06 14 05.7**	**-1.3**
DZM				*e*Sn		**Sn**	**06 14 44.3**	**-2.4**
MSVF	**Nonsavu**	**8.63**	**61**	*e*Pn		**Pn**	**06 15 16.4**	**-2.3**
	112nm,1.4s							
HNR	**Honiara**	**15.93**	**321**	LR		LR	06 22 33.1	
	comp=Z,196nm,18.0s,baz=236,slow=35							
EIDS	**Eidsvold**	**17.73**	**256**	*e*Pn		**Pn**	**06 17 18.4**	**-2.2**
	6.8nm,0.8s							
EIDS				*e*Sn		**S**	**06 20 43.8**	**-0.5**
AFI	**Afiamalu**	**19.03**	**68**	*e*P		**P**	**06 17 34.5**	**-1.1**
	18nm,0.7s							
RPZ	**Rata Peaks**	**21.58**	**178**	LR		LR	06 25 09.3	
	comp=Z,260nm,20.4s,baz=342,slow=34							
CTA	**Charters Tower**	**22.35**	**271**	P		**P**	**06 18 13.3**	**+1.7**
	3.9nm,0.6s,baz=97,slow=16,SNR=3.8							
CTAO	**Charters Tower**	**22.35**	**271**	*e*P		**P**	**06 18 13.6**	**+2.0**
	22nm,0.5s							
BBOO	**Buckleboo**	**31.93**	**243**	*e*P		**P**	**06 19 40.5**	**+1.4**
	4.5nm,0.8s							
ASAR	**Alice Springs**	**33.35**	**260**	P		**P**	**06 19 51.7**	**0.0**
	2.2nm,0.8s,baz=89,slow=8.7,SNR=14							
WRAB	**Tennant Creek**	**33.41**	**267**	*e*P		**P**	**06 19 52.3**	**0.0**
	2.0nm,0.4s							
WRA	**Warramunga Arr**	**33.42**	**267**	P		**P**	**06 19 52.0**	**-0.3**
	2.6nm,0.5s,baz=100,slow=8.2,SNR=14							
FORT	**Forrest**	**38.46**	**248**	*e*P		**P**	**06 20 38.3**	**+2.9**
	24nm,0.5s							
FITZ	**Fitzroy Crossi**	**41.85**	**267**	P		P	06 21 08.7	+5.1
	7.0nm,0.8s,baz=115,slow=9.8,SNR=6.6							
FITZ	**Fitzroy Crossi**	**41.85**	**267**	*e*P		**P**	**06 21 02.7**	**-0.9**
	5.4nm,0.6s							
MBWA	**Marble Bar**	**46.68**	**261**	*e*P		**P**	**06 21 41.5**	**-0.8**
	20nm,0.7s							
MJAR	**Matsushiro Arr**	**65.65**	**332**	P		**P**	**06 23 58.1**	**+0.7**
	1.6nm,0.6s,baz=167,slow=5.7,SNR=6.6							
QSPA	**South Pole Qui**	**67.98**	**180**	*e*P		**P**	**06 24 11.9**	**-0.2**
	3.0nm,0.8s							
KSRS	**Korea Array**	**71.31**	**326**	P		**P**	**06 24 33.6**	**+0.9**
	2.3nm,0.8s,baz=135,slow=6.0,SNR=7.6							
KSAR	**Wonju Array Be**	**71.33**	**326**	P		**P**	**06 24 33.6**	**+0.8**
USRK	**Ussuriysk Ar.**	**74.64**	**333**	P		**P**	**06 24 53.3**	**+1.0**
	1.8nm,0.8s,baz=167,slow=9.0,SNR=5.1							
PETK	**Petropavlovsk-**	**75.66**	**352**	P		**P**	**06 24 58.9**	**+0.9**
	2.1nm,0.6s,baz=132,slow=8.2,SNR=3.5							
CMAR	**Chiang Mai Arr**	**80.42**	**294**	P		**P**	**06 25 26.3**	**+1.1**
	0.9nm,0.4s,baz=139,slow=3.9,SNR=5.4							
SONM	**Songino Array**	**89.98**	**323**	P		**P**	**06 26 13.7**	**+1.1**
	2.6nm,0.9s,baz=139,slow=4.6,SNR=13							
ILAR	**Eielson Array**	**92.70**	**17**	P		**P**	**06 26 24.1**	**-0.6**
	0.5n

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
SPIG	San Pedro Mart	1.22	186	eP	Pg	06 14 10.1	-0.3
SPIG				iS	Sg	06 14 26.5	+0.1
SPX	San Pedro Mart	1.22	186	eP	Pg	06 14 08.9	-1.6
SPX				eS	Sg	06 14 25.4	-0.9
ECNX	Esteban Cantu	1.24	241	eP	Pg	06 14 10.3	-0.5
BC3	Big Chuckawall	1.40	356	P	Pn	06 14 10.3	-2.1
	baz=175,SNR=38						
109C	Camp Elliot, M	1.63	293	P	Pn	06 14 14.6	-0.8
	baz=111						
109C				Sb	Sn	06 14 37.8	+1.4
	baz=111						
Y12C	Blythe	1.63	24	Sb	Sn	06 14 36.6	+0.1
	baz=204						
TPFO	Pinon Flats	1.65	325	P	Pn	06 14 14.1	-1.8
	baz=144,SNR=14						
PFO	Pinyon Flats O	1.65	325	P	Pn	06 14 14.2	-1.7
	baz=144,SNR=13						
PFO				S	Sn	06 14 34.3	-2.8
	baz=144						
PFO	Pinyon Flats O	1.65	325	ePn	Pn	06 14 14.1	-1.8
PFO				eSn	Sn	06 14 38.8	+1.7
IRM	Iron Mountain	1.90	4	Pb	Pn	06 14 19.9	+0.7
	baz=184						
MURC	Murrieta	2.06	311	Pb	Pn	06 14 23.9	+2.4
	baz=129						
MURC				Sb	Sb	06 14 51.3	+1.2
	baz=129						
214A	Organ Pipe Nat	2.15	97	P	Pn	06 14 20.7	-2.0
	baz=279,SNR=28						
214A				Sb	Sb	06 14 53.7	+1.1
	baz=279						
214A	Organ Pipe Nat	2.15	97	ePn	Pn	06 14 21.2	-1.5
214A				eSn	Sn	06 14 50.2	+0.9
GMRC	Granite Mounta	2.54	354	Pb	Pb	06 14 32.7	+0.2
	baz=173						
BFSC	Mount Baldy Ra	2.78	316	Sb	Sb	06 15 12.1	+1.4
	baz=134						
CIS	Catalina Islan	2.84	294	Sb	Sb	06 15 13.4	+1.0
	baz=112						
FMP	Fort Macarthur	2.89	301	Sb	Sb	06 15 14.0	+0.3
	baz=119						
EDW2	Edwards Air Fo	3.44	320	Sb	Sb	06 15 31.8	+2.3
	baz=138						
TUC	Tucson	3.84	88	ePn	Pn	06 14 47.6	+1.6
TUC				eSn	Sn	06 15 31.9	+0.8
121A	Cookes Peak, D	6.38	86	ePn	Pn	06 15 21.9	+0.9
121A				eSn	Sn	06 16 31.6	-2.2

*IDC **25** 06:26:28.3±0.7, 3°.33S×150°.94E, h0km, mb4.1/20, mb1 4.2/22, mb1mx4.2/35, mbtmp4.1/22, ML3.5/2, MS4.1/17, Ms1 4.1/17, ms1mx3.9/29, Error ellipse: s-maj=22.1km s-min=13.7km az=95.0*

*NEIC **25** 06:26:31.1±0.3, 3°.34S×150°.80E, h10km, mb5.0/40, Error ellipse: s-maj=11.1km s-min=6.0km az=107.0*

NEIC Felt at Kavieng.

*ISCJB **25** 06:26:33.9±0.3, 3°.43S±0°.04×150°.61E±0°.06, h33km, mb4.6/69, MS4.2/21, Error ellipse: s-maj=9.1km s-min=6.2km az=14.8*

*BJI **25** 06:26:44.2, 2°.53S×150°.25E, h59km, mb4.7/34, mB5.0/25, Ms4.6/18, Ms7 4.3/20*

*GCMT **25** 06:26:45.2±0.2, 3°.18S×150°.78E, h22km±1km, MW5.0/94, Moment Tensor Solution. s26,c29; s94,c132; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.03±.18; $M_{\theta\theta}$3.38±.14; $M_{\phi\phi}$-3.35±.14; $M_{r\theta}$0.44±.22; $M_{\theta\phi}$2.44±.12; $M_{\phi r}$-0.98±.26; Best double couple: $M_0$4.28900×10^{16} NP1:ϕ_s296.00000°,δ81.00000°,λ-11.00000°. NP2: ϕ_s28.00000°,δ79.00000°,λ-171.00000°. Principal axes: T 4.1750, Plg2.0000°, Azm342.0000°; N 0.2260, Plg76.0000°, Azm79.0000°; P -4.4020, Plg14.0000°, Azm252.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 25 06:26:35.2±0.5**, 3°.40S**±0°.06**×150°.81E**±0°.09**, h35km, n110, σ2s.10**/80**, mb4.8**/68**, MS4.2**/22**, New Ireland region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MANU	Manus Island	3.70	291	ePn	Pn	06 27 29.0	-0.9
PMG	Port Moresby	6.98	211	Pn	Pn	06 28 18.2	+3.1
	1.2nm,0.3s,baz=350,slow=6.2,SNR=9.0						
PMG				LR	LR	06 30 54.2	
	comp=Z,926nm,19.0s,baz=32,slow=37						
PMG	Port Moresby	6.98	211	ePn	Pn	06 28 15.0	-0.1
JAY	Jayapura	10.13	275	Pn	Pn	06 28 58.4	0.0
	0.2nm,0.3s,baz=277,slow=22,SNR=4.0						
HNR	Honiara	10.87	124	LR	LR	06 32 35.8	
	comp=Z,228nm,18.7s,baz=292,slow=34						
CTA	Charters Tower	17.17	195	P	Pn	06 30 31.9	-0.7
	0.2nm,0.3s,baz=28,slow=13,SNR=3.4						
CTA				LR	LR	06 36 42.1	
	comp=Z,656nm,21.8s,baz=12,slow=36						
MTN	Manton Dam	21.60	243	eP	P	06 31 21.4	-0.9
	69nm,1.5s						
EIDS	Eidsvold	21.84	179	eP	P	06 31 24.4	-0.4
	47nm,1.6s						
WRAB	Tennant Creek	22.98	223	eP	P	06 31 35.3	-1.7
	25nm,0.9s						
WB2	Warramunga Arr	22.98	223	eP	P	06 31 36.9	-0.1
	25nm,1.0s						
WR1	Warramunga Arr	22.99	223	eP	P	06 31 36.0	-1.1
	28nm,1.0s						
WRA	Warramunga Arr	22.99	223	P	P	06 31 36.0	-1.2
	11nm,0.9s,baz=49,slow=9.7,SNR=24						
WRA				LR	LR	06 42 18.9	
	comp=Z,262nm,18.6s,baz=65,slow=41						
DZM	Mont Dzumac	23.97	142	P	P	06 31 44.7	-2.0
	6.2nm,0.8s,baz=330,slow=15,SNR=3.8						
DZM				LR	LR	06 39 13.9	
	comp=Z,884nm,20.4s,baz=303,slow=32						
DZM	Mont Dzumac	23.97	142	eLR	LR	06 38 00.1	
	1μm,24.1s						
AS01	Alice Springs	25.91	217	eP	P	06 32 04.8	+0.6
AS31	Alice Springs	25.94	218	eP	P	06 32 04.3	-0.2
	2.4nm,0.8s						
ASAR	Alice Springs	25.94	218	P	P	06 32 03.9	-0.6
	1.1nm,0.6s,baz=52,slow=7.6,SNR=15						
ASAR				LR	LR	06 44 03.2	
	comp=Z,390nm,18.5s,baz=37,slow=40						
H11S3	WAKE ISLAND Hy	26.79	35	T	T	06 59 34.3	
	baz=218,slow=76,SNR=128						
H11S2	WAKE ISLAND Hy	26.80	35	T	T	06 59 33.6	
	baz=218,slow=76,SNR=39						
H11S1	WAKE ISLAND Hy	26.81	35	T	T	06 59 45.5	
	baz=218,slow=76,SNR=35						
H11N1	WAKE ISLAND Hy	27.88	34	T	T	07 00 54.9	
	baz=218,slow=76,SNR=25						
H11N3	WAKE ISLAND Hy	27.89	34	T	T	07 00 58.0	
	baz=218,slow=76,SNR=34						
H11N2	WAKE ISLAND Hy	27.90	34	T	T	07 00 49.2	
	baz=218,slow=76,SNR=61						
FITZ	Fitzroy Crossi	28.66	238	P	P	06 32 27.6	-1.4
	5.4nm,0.8s,baz=74,slow=8.9,SNR=6.7						
FITZ				LR	LR	06 44 45.8	
	comp=Z,677nm,18.5s,baz=61,slow=38						
FITZ	Fitzroy Crossi	28.66	238	eP	P	06 32 27.3	-1.6
	10nm,1.0s						
STKA	Stephens Creek	29.62	196	P	P	06 32 35.9	-1.5
	2.1nm,0.8s,baz=352,slow=8.3,SNR=4.6						
STKA	Stephens Creek	29.62	196	eP	P	06 32 37.3	-0.1
	2.2nm,1.4s						
JNU	Nakatsue	40.93	334	P	P	06 34 12.4	-2.1
	8.0nm,0.9s,baz=105,slow=4.3,SNR=4.6						
JNU	Nakatsue	40.93	334	eP	P	06 34 11.7	-2.8
	16nm,1.1s						
MJAR	Matsushiro Arr	41.44	345	P	P	06 34 14.0	-4.6
	1.0nm,0.6s,baz=160,slow=9.0,SNR=4.8						
NWAO	Narrogin (SRO)	43.00	223	LR	LR	06 51 43.2	
	comp=Z,315nm,19.5s,baz=294,slow=35						
KSRS	Korea Array	45.88	334	P	P	06 34 52.2	-2.1
	1.0nm,0.5s,baz=145,slow=8.9,SNR=4.6						
KS15	Wonju Array Si	45.88	334	eP	P	06 34 54.1	-0.2
QIZ	Qiongzhong	46.05	301	P	P	06 34 55.0	-1.0
QIZ				S	S	06 41 37.5	-1.9
QIZ				LR	LR		
	comp=N,150nm,16.3s						
QIZ				LR	LR		
	comp=Z,170nm,19.5s						
ASAJ	Asahikawa	47.87	352	eP	P	06 35 13.0	+3.3
	41nm,1.6s						
USRK	Ussuriysk Ar.	50.31	342	P	P	06 35 26.0	-2.4
	1.4nm,0.6s,baz=186,slow=8.6,SNR=5.3						
GYA	Guiyang	51.98	308	P	P	06 35 44.0	+2.6
GYA				pP	sP	06 35 58.5	+2.4
GYA				PP	PP	06 37 44.3	+4.5
GYA				ScP	ScP	06 40 47.8	-0.3
GYA				S	S	06 42 58.5	-4.2
GYA				sS	sS	06 43 25.0	+5.0
GYA				pmax	pmax		
	comp=Z,20nm,1.2s						
GYA				pmax	pmax		
	comp=Z,120nm,8.5s						
GYA				LR	LR		
	comp=N,500nm,17.5s						
GYA				LR	LR		
	comp=E,490nm,17.2s						
GYA				LR	LR		
	comp=Z,420nm,19.2s						
CN2	Changchun	52.23	337	eP	P	06 35 48.0	+5.2
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
BJI	Beijing	53.64	327	P	P	06 35 56.8	+3.5
BJI				sP	sP	06 36 16.5	+8.5
BJI				pmax	pmax		
	comp=Z,5.0nm,1.3s						
BJI				LR	LR		
	comp=N,250nm,15.6s						
BJI				LR	LR		
	comp=E,190nm,14.8s						
BJI				LR	LR		
	comp=Z,220nm,22.3s						
KMI	Kunming	54.56	304	P	P	06 36 03.3	+2.7
KMI				pmax	pmax		
	comp=Z,15nm,0.5s						
CM01	Chiang Mai Arr	55.47	295	eP	P	06 36 07.4	+0.4
CMAR	Chiang Mai Arr	55.49	295	P	P	06 36 07.0	-0.2
	1.6nm,0.6s,baz=113,slow=5.3,SNR=10						
CD2	Chengdu	56.33	311	eP	P	06 36 13.5	+0.5
CD2				pP	sP	06 36 29.0	+1.3
CD2				sP	pP	06 36 36.0	+12
CD2				PcS	PcS	06 41 11.8	+1.0
CD2				S	S	06 43 57.5	-3.7
CD2				sS	sS	06 44 24.5	+5.8
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.2s						
PEA0	Petropavlovsk-	56.60	5	eP	P	06 36 18.7	+4.3
PETK	Petropavlovsk-	56.60	5	P	P	06 36 12.6	-1.8
	1.7nm,0.5s,baz=161,slow=6.0,SNR=3.9						
PETK				LR	LR	06 55 46.7	
	comp=Z,150nm,22.0s,baz=187,slow=31						
HHC	Hu-ho-hao-te	56.77	325	eP	P	06 36 19.3	+3.3
HHC				S	S	06 44 04.3	-2.5
HHC				pmax	pmax		
	comp=Z,15nm,0.8s						
HHC				pmax	pmax		
	comp=Z,110nm,7.4s						
HHC				LR	LR		
	comp=N,180nm,14.8s						
HHC				LR	LR		
	comp=E,230nm,14.8s						
HHC				LR	LR		
	comp=Z,220nm,14.8s						
LZH	Lanzhou	58.85	316	eP	P	06 36 35.8	+5.0
LZH				pP	sP	06 36 49.0	+3.4
LZH				sP	pP	06 36 57.3	+16
LZH				pmax	pmax		
	comp=Z,15nm,1.0s						
PPT	Papeete	60.04	108	LR	LR	06 57 16.7	
	comp=Z,74nm,21.6s,baz=306,slow=31						
PPT2	Papeete2	60.04	108	eLR	LR	06 54 45.7	
	297nm,31.5s						
TBI	Tubuai	60.94	115	eLQ	LQ	06 52 40.8	
	622nm,29.8s						
TBI				eLR	LR	06 55 16.8	
	206nm,32.5s						
GTA	Gaotai	63.29	318	eP	P	06 37 07.8	+7.0
GTA				pP	sP	06 37 23.0	+7.3
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,250nm,5.9s						
GTA				LR	LR		
	comp=N,140nm,17.1s						
GTA				LR	LR		
	comp=E,220nm,17.6s						
GTA				LR	LR		
	comp=Z,160nm,19.5s						
SONA0	Songino Array	64.10	328	eP	P	06 37 05.2	-0.8
	3.1nm,1.0s						
SONM	Songino Array	64.10	328	P	P	06 37 05.2	-0.8
	0.7nm,0.6s,baz=149,slow=6.5,SNR=5.2						
SONA1	Songino Array	64.10	328	eP	P	06 37 05.6	-0.4
TAOE	Nuku Hiva Isla	68.78	98	eLR	LR	06 58 54.2	
	396nm,23.4s						
WMQ	Urumqi	73.38	318	eP	P	06 38 06.8	+3.0
WMQ				pP	PcP	06 38 23.5	+3.5
WMQ				pmax	pmax		
	comp=Z,10.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,75nm,4.5s						
WMQ				LR	LR		
	comp=Z,270nm,22.6s						
RKT	Rikitea	74.16	113	eLR	LR	07 01 26.4	
	231nm,27.5s						
VNDA	Vanda	74.30	178	P	P	06 38 07.6	-0.9
	1.6nm,1.1s,baz=316,slow=7.1,SNR=4.3						
VNDA				LR	LR	07 07 48.0	
	comp=Z,78nm,18.8s,baz=16,slow=33						
SVW2	Sparrevohn	76.33	24	eP	P	06 38 25.1	+4.6
	20nm,1.4s						
TTA	Tatalina	77.21	22	eP	P	06 38 28.1	+2.6
	8.6nm,1.1s						
MK01	Makanchi Array	77.96	319	eP	P	06 38 29.2	-0.7
MK31	Makanchi Array	77.98	319	eP	P	06 38 29.4	-0.6
MK32	Makanchi Array	77.98	319	eP	P	06 38 29.1	-0.9
MKAR	Makanchi Array	77.98	319	P	P	06 38 29.1	-0.9
	0.8nm,0.7s,baz=95,slow=8.8,SNR=6.9						
MKAR				LR	LR	07 11 38.4	
	comp=Z,125nm,21.7s,baz=88,slow=35						
MKAR	Makanchi Array	77.98	319	eP	P	06 38 29.9	-0.2
	32nm,1.2s						
MAKZ	Makanchi	78.19	319	eP	P	06 38 30.6	-0.6
	8.6nm,1.3s						
RC01	Rabbit Creek A	78.75	25	eP	P	06 38 39.2	+5.2
	33nm,1.4s						
ZAA0	Zalesovo Array	78.90	327	eP	P	06 38 32.7	-2.2
ZALV	Zalesovo Beam	78.90	327	P	P	06 38 33.3	-1.6
	0.8nm,0.5s,baz=123,slow=5.5,SNR=3.9						
ZALV				LR	LR	07 12 48.9	
	comp=Z,119nm,21.4s,baz=70,slow=35						
ZAA1	Zalesovo Array	78.90	327	eP	P	06 38 33.3	-1.6
PMR	Palmer	79.25	25	eP	P	06 38 41.0	+4.4
	17nm,1.3s						
KTH	Kantishna Hill	79.49	23	eP	P	06 38 37.7	-0.3
	19nm,1.2s						
SML	Sawmill	79.69	25	eP	P	06 38 37.0	-2.2
	52nm,1.4s						
SML				e		06 38 43.9	
BPAW	Bear Paw Mtn.	79.74	22	eP	P	06 38 39.1	-0.2
	16nm,1.3s						
RND	Reindeer	80.23	23	eP	P	06 38 47.1	+5.0
	12nm,0.9s						
KSH	Kashi	80.53	311	eP	P	06 38 48.5	+4.2
KSH				epP	sP	06 39 05.5	+6.2
KSH				ePP	PP	06 41 54.3	+6.3
KSH				S	S	06 48 48.3	-0.5
KSH				SKS	SKSac	06 48 56.0	-4.1
KSH				pmax	pmax		
	comp=Z,35nm,2.4s						
KSH				LR	LR		
	comp=N,140nm,9.2s						
KSH				LR	LR		
	comp=E,170nm,11.1s						
KSH				LR	LR		
	comp=Z,110nm,6.5s						
MDM	Murphy Dome	81.20	22	eP	P	06 38 51.4	+4.2
	20nm,1.6s						
COLA	College	81.31	22	eP	P	06 38 52.6	+4.9
	12nm,0.9s						
KURK	Kurchatov	81.45	322	eP	P	06 38 47.1	-1.6
KURBB	Kurchatov Arra	81.48	322	P	P	06 38 47.1	-1.8
	0.8nm,0.8s,baz=105,slow=4.7,SNR=6.5						
COLD	Coldfoot	81.61	20	eP	P	06 38 47.7	-1.6
	10nm,1.2s						
COLD				e		06 38 53.9	
ILAR	Eielson Array	81.62	23	P	P	06 38 46.5	-2.9
	0.8nm,0.8s,baz=247,slow=5.1,SNR=10						
ILAR				LR	LR	07 13 34.2	
	comp=Z,90nm,18.8s,baz=276,slow=35						
ILB	Eielson Array	81.62	23	eP	P	06 38 53.6	+4.3
DOT	Dot Lake	82.26	24	eP	P	06 38 58.2	+5.4
	38nm,1.1s						
EGAK	Eagle	83.87	24	eP	P	06 39 00.8	-0.2
	6.0nm,0.9s						
EGAK				e		06 39 06.4	
NRIK	Noril'sk	84.01	341	P	P	06 39 00.2	-1.5
	2.4nm,0.6s,baz=125,slow=6.5,SNR=3.2						
NRIK				LR	LR	07 16 20.9	
	comp=Z,93nm,20.0s,baz=125,slow=36						
HYT	Haines Junctio	84.12	28	eP	P	06 39 09.2	+6.7
	12nm,1.1s						
DAWY	Dawson	84.34	24	eP	P	06 39 09.2	+5.7
	12nm,1.4s						
KKAR	Karatay Array	85.23	314	eP	P	06 39 08.5	0.0
	93nm,1.4s						
WRAK	Wrangell Islan	85.57	33	eP	P	06 39 10.6	+0.9
	16nm,1.0s						
WRAK				e		06 39 16.0	
MAW	Mawson	86.09	203	LR	LR	07 14 50.7	
	comp=Z,195nm,21.7s,baz=62,slow=34						
QSPA	South Pole Qui	86.55	180	eP	P	06 39 20.9	+6.2
BVAR	Borovoye Array	86.94	323	P	P	06 39 14.9	-1.7
	1.6nm,0.6s,baz=100,slow=6.0,SNR=7.6						
DLBC	Dease Lake	87.21	31	eP	P	06 39 23.2	+5.3
	16nm,1.3s						
INK	Inuvik	87.87	21	eP	P	06 39 20.5	-0.2
	9.9nm,1.1s						
KHMM	Horse Mountain	88.76	49	eP	P	06 39 33.0	+7.2
	19nm,1.3s						
YBH	Yreka Blue Hor	89.61	48	eP	P	06 39 35.7	+6.0
	26nm,1.8s						
WDC	Whiskeytown Da	89.64	49	eP	P	06 39 36.7	+7.0
	3.8nm,0.9s						
MOD	Modoc Plateau	91.42	48	eP	P	06 39 43.9	+5.7
	27nm,1.9s						
BMO	Blue Mountains	93.71	45	eP	P	06 39 54.4	+5.7
	12nm,1.8s						
F10A	Beach Ranch, E	93.79	44	eP	P	06 39 54.1	+5.2
	19nm,1.9s						
NEW	Newport	93.89	42	eP	P	06 39 55.2	+5.9
	6.9nm,1.4s						
YKA	Yellowknife Ar	95.12	28	P	P	06 39 52.6	-1.9
	0.2nm,0.6s,baz=271,slow=4.4,SNR=2.8						
YKA				LR	LR	07 19 09.6	
	comp=Z,6.4nm,20.4s,baz=0.0,slow=33						
YKB5	Yellowknife Ar	95.12	28	eP	P	06 39 57.5	+3.0
LDFC	Landfair	95.27	55	eP	P	06 39 57.7	+1.6
	5.3nm,0.9s						
WALA	Waterton Lakes	96.01	41	eP	P	06 40 03.8	+4.6
	11nm,1.4s						
EDM	Edmonton	96.21	37	eP	P	06 40 05.9	+6.1
	21nm,1.8s						
PDAR	Pinedale Array	99.37	47	P	Pdif	06 40 14.1	-0.5
	0.5nm,0.8s,baz=232,slow=1.0,SNR=2.4						
PDAR				LR	LR	07 17 48.3	
	comp=Z,92nm,21.6s,baz=280,slow=31						
TORD	Torodi Ar. Bea	147.98	289	PKPbc	PKPdf	06 46 16.3	+1.3
	1.7nm,0.8s,baz=81,slow=3.6,SNR=6.4						
TOA1	Torodi Ar. Sit	147.98	289	ePKPdf	PKPdf	06 46 16.3	+1.3

*IDC **25** 06:47:10.2±2.4, 53°.55N×86°.90E, h0km, mb1 2.9/2, mb1mx2.8/46, mbtmp2.9/2, ML2.5/2, Error ellipse: s-maj=22.5km s-min=12.7km az=76.0*

*NNC **25** 06:47:12.7±2.9, 53°.51N×86°.53E, h0km, mb3.1, mpv2.8, Error ellipse: s-maj=31.9km s-min=24.8km az=174.0*

ISC 25 06:47:13.7±5.0**, 53°.7N**±0°.2**×86°.8E**±0°.3**, h35km, n7, σ0s.82**/7**, 4C-2D, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.19	283	i		06 55 40.0	
	baz=108,slow=326,SNR=13						
ZALV	Zalesovo Beam	1.19	283	Pg	Pn	06 47 33.8	-0.1
	1.3nm,0.3s,baz=110,slow=17,SNR=9.9						
ZALV				Lg	Lg	06 47 52.1	
	2.8nm,0.3s,baz=108,slow=28,SNR=24						
KURK	Kurchatov	5.84	243	⇑Pn	Pn	06 48 37.6	0.0
	0.8nm,0.9s						
KURK				⇓Lg	Lg	06 50 12.4	
	4.8nm,0.9s						
KURBB	Kurchatov Arra	5.94	242	Pn	Pn	06 48 40.4	+1.4
	0.1nm,0.3s,baz=58,slow=14,SNR=3.7						
KURBB				Lg	Lg	06 50 17.6	
	0.1nm,0.3s,baz=60,slow=33,SNR=4.2						
KURBB	Kurchatov Arra	5.94	242	⇑Pn	Pn	06 48 38.2	-0.8
	1.9nm,1.4s						
KURBB				⇑Lg	Lg	06 50 14.0	
	2.2nm,0.7s						
MK31	Makanchi Array	7.48	204	⇑Pn	Pn	06 49 00.3	0.0
	0.2nm,0.4s,baz=29,slow=13,SNR=7.2						
MK31				⇓Lg	Lg	06 51 01.5	
	0.9nm,0.6s						
MKAR	Makanchi Array	7.48	204	Pn	Pn	06 49 00.5	+0.2
	0.2nm,0.3s,baz=25,slow=12,SNR=8.5						
MKAR				Sn	Sn	06 50 23.6	-0.3
	0.1nm,0.3s,baz=24,slow=22,SNR=3.0						
MKAR				Lg	Lg	06 51 05.7	
	0.1nm,0.3s,baz=27,slow=32,SNR=6.5						

IDC 25 06:57:17.5±3.1**, 53°.38N×87°.42E, h0km, mb1 2.6**/2**, mb1mx2.6**/47**, mbtmp2.6**/2**, ML2.3**/2**, Error ellipse: s-maj=28.1km s-min=15.7km az=63.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.65	291	i		07 07 48.9	
	baz=108,slow=320,SNR=27						
ZALV	Zalesovo Beam	1.65	291	Pg	Pn	06 57 47.0	-0.7
	0.7nm,0.3s,baz=111,slow=13,SNR=9.3						
ZALV				Lg	Lg	06 58 10.0	
	0.5nm,0.3s,baz=110,slow=39,SNR=4.1						
KURBB	Kurchatov Arra	6.14	247	Pn	Pn	06 58 50.0	+0.6
	0.0nm,0.3s,baz=61,slow=14,SNR=3.2						
KURBB				Lg	Lg	07 00 31.3	
	0.0nm,0.3s,baz=64,slow=32,SNR=6.7						
MKAR	Makanchi Array	7.37	209	Pn	Pn	06 59 07.7	+1.4
	0.1nm,0.3s,baz=25,slow=12,SNR=4.6						
MKAR				Lg	Lg	07 01 11.0	
	0.0nm,0.3s,baz=29,slow=28,SNR=5.2						

*IDC **25** 07:00:56.8±7.5, 21°.38S×178°.99W, h558km±79km, mb3.1/8, mb1 3.3/8, mb1mx3.1/32, mbtmp4.1/8, Error ellipse: s-maj=43.5km s-min=27.7km az=56.0*

*ISCJB **25** 07:00:59.4±1.3, 21°.5S±0°.2×179°.1W±0°.2, h602km, mb3.7/8, Error ellipse: s-maj=32.0km s-min=26.2km az=150.1*

ISC 25 07:01:00.8±1.2**, 21°.5S**±0°.2**×179°.1W**±0°.2**, h602km, n11, σ0s.76**/11**, mb3.8**/8**, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CTA	Charters Tower	32.35	266	P	P	07 06 42.1	-0.5
	2.6nm,0.5s,baz=90,slow=7.1,SNR=3.7						
STKA	Stephens Creek	36.42	245	P	P	07 07 16.0	-0.3
	1.0nm,0.5s,baz=87,slow=13,SNR=5.0						
ASAR	Alice Springs	43.27	258	P	P	07 08 10.8	-0.2
	3.6nm,0.5s,baz=95,slow=7.7,SNR=42						
ASAR				PcP	PcP	07 09 46.3	+0.1
	0.6nm,0.5s,baz=115,slow=3.6,SNR=6.5						
WRA	Warramunga Arr	43.43	263	P	P	07 08 11.6	-0.7
	1.7nm,0.3s,baz=96,slow=7.7,SNR=138						
FITZ	Fitzroy Crossi	51.86	263	P	P	07 09 15.1	+0.1
	1.0nm,0.3s,baz=98,slow=6.3,SNR=12						
VNDA	Vanda	56.85	185	P	P	07 09 49.0	+0.1
	0.3nm,0.4s,baz=12,slow=5.7,SNR=6.2						
CMAR	Chiang Mai Arr	89.45	290	P	P	07 12 57.0	+1.8
	0.5nm,0.3s,baz=136,slow=2.7,SNR=6.5						
ILAR	Eielson Array	89.50	13	P	P	07 12 53.7	-0.7
	0.3nm,0.8s,baz=216,slow=4.5,SNR=3.7						
AKASG	Malin Array Be	143.33	330	PKP	PKPab	07 19 25.1	-0.8
	0.6nm,0.4s,baz=42,slow=4.1,SNR=9.7						
BRTR	Keskin Array B	146.69	311	PKPbc	PKPbc	07 19 36.2	-0.3
	1.1nm,0.6s,baz=138,slow=2.8,SNR=5.1						
GERES	GERESS Array B	150.83	342	PKPbc	PKPbc	07 19 46.2	-0.1
	0.5nm,0.5s,baz=11,slow=2.0,SNR=4.5						

*ISCJB **25** 07:15:21.8±0.7, 6°.80N±0°.04×73°.07W±0°.05, h159km±6km, Error ellipse: s-maj=10.3km s-min=4.3km az=35.7*

*FUNV **25** 07:15:22.4, 6°.74N×73°.17W, h159km, MW2.5*

*RSNC **25** 07:15:24.1±0.7, 6°.75N×73°.12W, h149km±4km, ML2.6*

ISC 25 07:15:21.6±1.4, 6.79N±0.05×73.08W±0.06, h164km±8km, n20, σ1°17/37, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.22**	**209**	*i* P	**Pn**	**07 15 43.8**	**-0.1**
BARC				*e*S	**Sn**	**07 15 59.0**	**-2.0**
BARC				*i*		07 16 00.7	
	comp=Z,161nm,0.4s						
BTLC	**Betulia, Santa**	**0.23**	**305**	*e*P	**Pn**	**07 15 44.5**	**+0.5**
BTLC				*e*S	**Sn**	**07 16 00.1**	**-0.9**
GIRC	**Giron, Santand**	**0.32**	**338**	*e*P	**Pn**	**07 15 44.3**	**+0.2**
GIRC				*e*S	**Sn**	**07 15 59.9**	**-1.4**
BRRC	**Barranca, Sant**	**0.71**	**297**	*i* P	**Pn**	**07 15 45.7**	**+0.1**
BRRC				*i*		07 15 46.0	
	comp=Z,209nm,0.2s						
BRRC				*e*S	**Sn**	**07 16 03.3**	**-0.8**
RUSC	**La Rusia**	**0.89**	**181**	*e*P	**Pn**	**07 15 47.7**	**+0.3**
RUSC				*e*S	**Sn**	**07 16 06.4**	**-0.9**
RUSC				*i*		07 16 07.7	
	comp=Z,28nm,0.4s						
CBRI	**Barrientos, No**	**0.97**	**17**	*i* P	**Pn**	**07 15 48.4**	**+0.7**
CBRI				*e*S	**Sn**	**07 16 07.6**	**-0.2**
GRMC	**Gramalote, San**	**0.97**	**16**	*i* P	**Pn**	**07 15 50.6**	**+2.9**
GRMC				*e*S	**Sn**	**07 16 10.9**	**+3.2**
GRMC				*i*		07 16 11.8	
	comp=Z,36nm,0.3s						
CAPV	**Capacho**	**1.31**	**35**	*e*P	**Pn**	**07 15 50.7**	**0.0**
CAPV				*e*S	**Sn**	**07 16 13.1**	**0.0**
OCAC	**Ocana**	**1.47**	**350**	*e*P	**Pn**	**07 15 52.8**	**+0.7**
OCAC				*e*S	**Sn**	**07 16 15.8**	**+0.2**
OCAC				*i*		07 16 20.8	
	comp=Z,41nm,0.3s						
NORC	**Norcasia**	**2.16**	**236**	*e*P	**Pn**	**07 15 59.7**	**+0.2**
NORC				*e*S	**Sn**	**07 16 27.8**	**-0.9**
CHIC	**Chingaza**	**2.24**	**197**	*e*P	**Pn**	**07 16 01.8**	**+1.0**
CHIC				*e*S	**Sn**	**07 16 31.0**	**0.0**
CHIC				*i*		07 16 40.7	
	comp=Z,15nm,0.5s						
ROSC	**El Rosal**	**2.29**	**213**	*e*P	**Pn**	**07 16 02.1**	**+0.7**
ROSC				*e*S	**Sn**	**07 16 31.1**	**-1.0**
ROSC				*i*		07 16 41.9	
	comp=Z,30nm,0.5s						
HELC	**Santa Helena**	**2.51**	**257**	*e*P	**Pn**	**07 16 04.9**	**+1.0**
HELC				*e*S	**Sn**	**07 16 36.5**	**-0.1**
VIGV	**El Vigia**	**2.65**	**40**	*e*P	**Pn**	**07 16 06.2**	**+0.9**
VIGV				*e*S	**Sn**	**07 16 38.2**	**-1.0**
SOCV	**Socops**	**2.66**	**56**	*e*P	**Pn**	**07 16 06.2**	**+0.8**
SOCV				*e*S	**Sn**	**07 16 38.0**	**-1.3**
PRAC	**Prado**	**3.54**	**211**	*e*P	**Pn**	**07 16 17.3**	**+0.9**
PRAC				*e*S	**Sn**	**07 16 58.9**	**-0.2**
VIRV	**Villa del Rosa**	**3.75**	**10**	*e*P	**Pn**	**07 16 18.7**	**-0.3**
VIRV				*e*S	**Sn**	**07 17 01.3**	**-2.6**
CURV	**Curarigua**	**4.45**	**44**	*e*P	**Pn**	**07 16 28.3**	**+0.2**
BAUV	**El Baul**	**5.43**	**66**	*e*P	**Pn**	**07 16 41.5**	**+0.6**
MONV	**Montecano**	**5.98**	**31**	*e*P	**Pn**	**07 16 48.7**	**+0.5**

ISCJB 25 07:36:03.5±0.8, 37.31N±0.04×28.27E±0.06, h0km, Error ellipse: s-maj=7.4km s-min=4.5km az=140.4
DDA 25 07:36:04.4, 37.27N×28.26E, h7km, Md2.6, Suspected Mining explosion.
ISK 25 07:36:04.1, 37.20N×28.17E, h5km, MD2.6
CSEM 25 07:36:04.4±0.5, 37.25N×28.19E, h2km, MD2.6, Error ellipse: s-maj=15.7km s-min=8.2km az=40.0, Suspected Mining explosion.

ISC 25 07:36:03.0±0.9, 37.31N±0.03×28.34E±0.04, h0km, n13, σ0°82/21, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.18**	**196**	*e*PG	**Pg**	**07 36 06.0**	**-0.4**
YER				*e*SG	**Sg**	**07 36 09.4**	**+0.6**
YER	**Yerkesik**	**0.18**	**196**	*e*Pg	**Pg**	**07 36 06.0**	**-0.4**
YER				*e*Sg	**Sg**	**07 36 09.4**	**+0.6**
TURN	**Turunc**	**0.48**	**154**	*i* P	**Pg**	**07 36 10.4**	**-1.8**
TURN				*i* S	**Sb**	**07 36 21.8**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**331**	*e*PG	**Pb**	**07 36 19.2**	**+0.5**
AYDB				*e*SG	**Sn**	**07 36 32.6**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**331**	*e*Pg	**Pb**	**07 36 19.2**	**+0.5**
BODT	**Bodrum**	**0.86**	**254**	*e*PG	**Pg**	**07 36 18.4**	**-1.1**
BODT				*e*SG	**Sg**	**07 36 29.9**	**-0.7**
BODT	**Bodrum**	**0.86**	**254**	*e*Pg	**Pg**	**07 36 18.4**	**-1.1**
BODT				*e*Sg	**Sg**	**07 36 29.9**	**-0.7**
FETY	**Fethiye**	**0.90**	**138**	*e*PG	**Pn**	**07 36 23.4**	**+0.5**
FETY	**Fethiye**	**0.90**	**138**	*e*Pg	**Pn**	**07 36 23.4**	**+0.5**
GCAM	**G?zelcaml?**	**0.96**	**294**	*i* P	**Pg**	**07 36 20.6**	**-0.9**
GCAM				*i* S	**Sb**	**07 36 36.4**	**+0.5**
GCAM	**G?zelcaml?**	**0.96**	**294**	P	**Pg**	**07 36 20.6**	**-0.9**
GCAM				S	**Sb**	**07 36 36.4**	**+0.5**
MANT	**Manisa**	**1.19**	**8**	*i* P	**Pg**	**07 36 25.1**	**-0.8**
MANT	**Manisa**	**1.19**	**8**	P	**Pg**	**07 36 25.0**	**-0.8**

MEX 25 07:39:56.4±0.7, 13.81N×92.75W, h14km±999km, MD4.0, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.53**	**14**	*e*P	Pn	07 40 35.0	-2.3
CCIG				*i* S	Sn	07 41 03.7	-4.2

IDC 25 08:30:30.7±2.2, 5.39S×130.33E, h0km, mb3.4/1, mb1 4.2/4, mb1mx3.7/30, mbtmp4.0/4, ML4.0/3, Error ellipse: s-maj=81.3km s-min=29.2km az=76.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.44**	**200**	Pn	Pn	08 33 43.3	+0.4
	0.6nm,0.3s,baz=28,slow=12,SNR=13						
FITZ				Sn	Sn	08 35 55.4	-18
	0.6nm,0.3s,baz=81,slow=14,SNR=5.3						
WRA	**Warramunga Arr**	**14.98**	**165**	Pn	Pn	08 34 05.0	+1.1
	0.3nm,0.3s,baz=345,slow=10,SNR=28						
WRA				Sn	Sn	08 36 39.4	-11
	0.8nm,0.3s,baz=337,slow=22,SNR=8.5						
ASAR	**Alice Springs**	**18.49**	**170**	P	P	08 34 47.5	-1.1
	1.2nm,0.3s,baz=348,slow=11,SNR=94						
ASAR				S	Sn	08 37 58.9	-17
	0.2nm,0.3s,baz=348,slow=19,SNR=13						
MKAR	**Makanchi Array**	**67.08**	**326**	P	P	08 41 26.1	+0.1
	0.3nm,0.6s,baz=126,slow=6.2,SNR=4.1						

IDC 25 08:43:55.0±5.8, 3.42S×150.10E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.3/36, mbtmp3.3/3, Error ellipse: s-maj=182.3km s-min=33.6km az=102.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.50**	**222**	P	P	08 48 56.1	-0.2
	0.9nm,0.9s,baz=46,slow=11,SNR=4.3						
ASAR	**Alice Springs**	**25.50**	**216**	P	P	08 49 25.6	+0.2
	0.2nm,0.5s,baz=56,slow=7.9,SNR=4.4						
MKAR	**Makanchi Array**	**77.52**	**319**	P	P	08 55 52.8	0.0
	0.2nm,0.4s,baz=124,slow=7.2,SNR=2.5						

IDC 25 08:48:18.2±1.2, 21.32S×174.71W, h0km, mb4.2/11, mb1 4.4/12, mb1mx4.2/34, mbtmp4.2/12, ML4.0/1, MS3.9/14, Ms1 3.9/14, ms1mx3.7/33, Error ellipse: s-maj=40.9km s-min=23.6km az=140.0
ISCJB 25 08:48:20.1±0.4, 21.52S±0.08×174.50W±0.06, h30km, mb4.7/38, MS3.9/14, Error ellipse: s-maj=11.9km s-min=7.5km az=173.7
NEIC 25 08:48:20.6±0.5, 21.93S×174.34W, h35km, mb4.9/24, Error ellipse: s-maj=19.8km s-min=10.6km az=151.0

ISC 25 08:48:21.7±0.6, 21.55S±0.1×174.34W±0.08, h30km, n80, σ1°65/69, mb4.7/38, MS3.9/14, 1C, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.91**	**18**	Pn	Pn	08 50 08.5	-6.4
	6.5nm,0.3s,baz=128,slow=4.4,SNR=10						
AFI				Sn	Sn	08 51 27.2	-16
	3.1nm,0.3s,baz=143,slow=14,SNR=2.9						
MSVF	**Nonsavu**	**8.08**	**296**	*e*Pn	**Pn**	**08 50 18.8**	**+1.7**
MSVF				*e*Sn	**Sn**	**08 51 48.3**	**+0.7**
RAO	**Raoul Island**	**8.39**	**202**	*e*Pn	Pn	08 50 12.6	-8.7
RAR	**Rarotonga**	**13.58**	**92**	LR	LR	08 57 13.0	
	comp=Z,473nm,18.4s,baz=262,slow=38						
DZM	**Mont Dzumac**	**17.86**	**265**	P	**P**	**08 52 31.8**	**+3.2**
	0.3nm,0.3s,baz=72,slow=19,SNR=8.1						
DZM	**Mont Dzumac**	**17.86**	**265**	*e*P	**P**	**08 52 31.8**	**+3.2**
	54nm,1.1s						
DZM				*e*LQ	LQ	08 56 15.1	
	2µm,25.4s						
DZM				*e*LR	LR	08 56 57.1	
	333nm,29.3s						
DZM	**Mont Dzumac**	**17.86**	**265**	*e*Pn	**Pn**	**08 52 27.7**	**-0.4**
	36nm,1.1s						
URZ	**Urewera**	**18.28**	**202**	P	**Pn**	**08 52 33.6**	**+0.6**
	0.5nm,0.3s,baz=34,slow=6.8,SNR=5.2						
TBI	**Tubuai**	**23.07**	**99**	*e*LQ	LQ	08 57 27.8	
	605nm,29.0s						
TBI				*e*LR	LR	08 58 27.7	
	536nm,32.0s						
PPT2	**Papeete2**	**23.65**	**85**	*e*LQ	LQ	08 57 49.9	
	698nm,26.0s						
PPT2				*e*LR	LR	08 58 41.9	
	576nm,28.8s						
PPT	**Papeete**	**23.65**	**85**	LR	LR	09 01 26.2	
	comp=Z,340nm,18.0s,baz=259,slow=33						
RPZ	**Rata Peaks**	**25.28**	**205**	LR	LR	09 02 44.4	
	comp=Z,396nm,18.4s,baz=22,slow=34						
HNR	**Honiara**	**27.47**	**292**	LR	LR	09 03 30.5	
	comp=Z,95nm,19.3s,baz=142,slow=34						
TAOE	**Nuku Hiva Isla**	**35.21**	**74**	*e*LR	LR	09 03 47.6	
	447nm,26.5s						
RKT	**Rikitea**	**36.39**	**100**	*e*LR	LR	09 04 37.0	
	363nm,31.8s						
AS01	**Alice Springs**	**47.59**	**257**	*e*P	**P**	**08 56 52.8**	**-2.3**
AS31	**Alice Springs**	**47.63**	**257**	*e*P	**P**	**08 56 53.5**	**-1.9**
	1.9nm,0.9s						
ASAR	**Alice Springs**	**47.63**	**257**	P	**P**	**08 56 53.5**	**-1.9**
	5.7nm,0.8s,baz=93,slow=8.1,SNR=48						
ASAR				LR	LR	09 17 24.8	
	comp=Z,257nm,18.0s,baz=96,slow=37						
WB2	**Warramunga Arr**	**47.84**	**262**	*e*P	**P**	**08 56 55.0**	**-2.1**
WRAB	**Tennant Creek**	**47.84**	**262**	*e*P	**P**	**08 56 55.5**	**-1.6**
	12nm,1.1s						
WR1	**Warramunga Arr**	**47.85**	**262**	*e*P	**P**	**08 56 55.0**	**-2.2**
	9.8nm,1.1s						
WRA	**Warramunga Arr**	**47.85**	**262**	P	**P**	**08 56 55.0**	**-2.2**
	3.9nm,0.8s,baz=96,slow=8.4,SNR=26						
VNDA	**Vanda**	**57.27**	**186**	LR	LR	09 22 18.2	
	comp=Z,57nm,18.0s,baz=19,slow=36						
MJAR	**Matsushiro Arr**	**73.06**	**322**	P	**P**	**08 59 47.9**	**-1.0**
	1.9nm,0.8s,baz=157,slow=5.6,SNR=7.9						
MJAR				LR	LR	09 32 08.9	
	comp=Z,36nm,18.3s,baz=155,slow=36						
CMB	**Columbia Colle**	**77.91**	**41**	*e*P	**P**	**09 00 16.5**	**-0.4**
	3.3nm,1.0s						
PETK	**Petropavlovsk-**	**78.14**	**343**	P	**P**	**09 00 17.5**	**-0.2**
	1.6nm,0.6s,baz=108,slow=7.0,SNR=3.7						
PETK				LR	LR	09 30 09.7	
	comp=Z,51nm,20.5s,baz=144,slow=32						
PEA1	**Petropavlovsk-**	**78.14**	**343**	*e*P	**P**	**09 00 17.5**	**-0.2**
PNTR	**Pine Nut**	**79.06**	**40**	*e*P	**P**	**09 00 22.5**	**-0.9**
	7.4nm,1.0s						
TVH2	**Borealis Mine**	**79.12**	**41**	*e*P	**P**	**09 00 23.4**	**-0.4**
	2.9nm,1.0s						
KSRS	**Korea Array**	**79.91**	**317**	P	**P**	**09 00 27.8**	**+0.1**
	2.5nm,0.9s,baz=139,slow=6.3,SNR=9.5						
KS15	**Wonju Array Si**	**79.92**	**317**	*e*P	**P**	**09 00 25.6**	**-2.2**
KS01	**Wonju Array Si**	**79.94**	**317**	*e*P	**P**	**09 00 28.5**	**+0.5**
USRK	**Ussuriysk Ar.**	**81.72**	**324**	P	**P**	**09 00 36.8**	**-0.5**
	1.3nm,0.8s,baz=132,slow=5.7,SNR=6.9						
U15A	**North Rim**	**82.13**	**46**	*e*P	**P**	**09 00 40.6**	**+0.5**
	9.9nm,1.7s						
MTPU	**Mount Pierson**	**83.10**	**45**	*e*P	**P**	**09 00 47.3**	**+2.1**
	21nm,1.8s						
G08A	**Pilot Rock**	**83.36**	**36**	*e*P	**P**	**09 00 46.8**	**+0.8**
	4.7nm,1.0s						
F10A	**Beach Ranch, E**	**84.73**	**36**	*e*P	**P**	**09 00 53.3**	**+0.4**
	6.7nm,0.9s						
LTX	**Lajitas**	**84.74**	**56**	*e*P	**P**	**09 00 55.4**	**+2.0**
TXAR	**Lajitas Array**	**84.74**	**56**	P	**P**	**09 00 55.4**	**+2.0**
	0.4nm,1.1s,baz=223,slow=3.7,SNR=2.8						
TXAR				LR	LR	09 32 15.5	
	comp=Z,60nm,19.6s,baz=0.0,slow=31						
HLID	**Hailey**	**84.88**	**39**	*e*P	**P**	**09 00 56.9**	**+3.1**
	3.0nm,1.0s						
KLR	**Kul'dur**	**85.14**	**328**	LR	LR	09 33 42.4	
	comp=Z,41nm,19.9s,baz=176,slow=32						
CN2	**Changchun**	**85.18**	**321**	*e*P	**P**	**09 00 55.8**	**+0.7**
CN2				*ep*P	*sP*	09 01 27.8	+20
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
TCUT	**Toone Canyon**	**85.31**	**42**	*e*P	P	09 00 50.6	-5.5
	comp=Z,18nm,1.3s						
TTA	**Tatalina**	**85.36**	**8**	*e*P	**P**	**09 00 59.3**	**+3.7**
	comp=Z,14nm,1.4s						
ANMO	**Albuquerque**	**85.38**	**50**	*e*P	**P**	**09 00 56.3**	**-0.3**
	comp=Z,2.6nm,0.9s						
PLCA	**Paso Flores**	**86.11**	**132**	LR	LR	09 33 06.1	
	comp=Z,97nm,18.5s,baz=316,slow=31						
PLCA	**Paso Flores**	**86.11**	**132**	*e*P	**P**	**09 01 01.6**	**+1.5**
	comp=Z,59nm,2.0s						
TRF	**Thorofare Moun**	**86.73**	**11**	*e*P	**P**	**09 01 02.3**	**-0.2**
	comp=Z,14nm,1.0s						
DHY	**Denali Highway**	**86.92**	**12**	*e*P	**P**	**09 01 05.9**	**+2.5**
	comp=Z,10nm,1.0s						
RND	**Reindeer**	**86.94**	**11**	*e*P	**P**	**09 01 02.3**	**-1.1**
	comp=Z,36nm,1.6s						
BW06	**Boulder Array**	**87.37**	**42**	*e*P	**P**	**09 01 06.9**	**+0.7**
PD31	**Pinedale Array**	**87.37**	**42**	*e*P	**P**	**09 01 07.2**	**+1.0**
PDAR	**Pinedale Array**	**87.37**	**42**	P	**P**	**09 01 08.0**	**+1.8**
	comp=Z,0.3nm,0.7s,baz=212,slow=5.0,SNR=2.3						
PDAR				LR	LR	09 38 35.3	
	comp=Z,72nm,18.1s,baz=256,slow=34						
WRH	**Wood River Hil**	**88.06**	**11**	*e*P	**P**	**09 01 06.7**	**-1.9**
	comp=Z,28nm,1.6s						
MLY	**Manley**	**88.13**	**10**	*e*P	**P**	**09 01 07.0**	**-2.1**
	comp=Z,19nm,2.0s						
SEY	**Seymchan**	**88.14**	**345**	P	**P**	**09 01 08.7**	**-0.4**
	comp=Z,4.3nm,1.0s,baz=98,slow=7.1,SNR=5.4						
CCB	**Clear Creek Bu**	**88.27**	**11**	*e*P	**P**	**09 01 09.7**	**+0.1**
	comp=Z,12nm,1.5s						
MDM	**Murphy Dome**	**88.48**	**11**	*e*P	**P**	**09 01 09.9**	**-0.8**
	comp=Z,22nm,1.7s						
IL1	**Eielson Array**	**88.55**	**11**	*e*P	**P**	**09 01 09.5**	**-1.5**
ILAR	**Eielson Array**	**88.55**	**11**	P	**P**	**09 01 11.0**	**0.0**
	comp=Z,0.9nm,1.0s,baz=209,slow=5.8,SNR=6.6						
ILB	**Eielson Array**	**88.55**	**11**	*e*P	**P**	**09 01 09.2**	**-1.8**
BJI	**Beijing**	**89.00**	**314**	P	**P**	**09 01 14.5**	**+0.8**
BJI	**Beijing**	**89.00**	**314**	S	S	09 11 48.3	-12
BJI				pmax	pmax		
	comp=Z,7.0nm,1.6s						
BJI				pmax	pmax		
	comp=Z,140nm,4.7s						
BJI				LR	LR		
	comp=Z,35nm,31.9s						
DAWY	**Dawson**	**89.50**	**15**	*e*P	**P**	**09 01 15.3**	**-0.2**
	comp=Z,22nm,1.9s						
GYA	**Guiyang**	**90.11**	**298**	*e*P	**P**	**09 01 18.3**	**-1.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
HHC	**Hu-ho-hao-te**	**92.50**	**313**	*e*P	**P**	**09 01 31.3**	**+1.2**
KMI	**Kunming**	**92.84**	**296**	P	**P**	**09 01 33.8**	**+1.6**
KMI				pmax	pmax		
	comp=Z,16nm,0.6s						
CMAR	**Chiang Mai Arr**	**93.66**	**288**	P	**P**	**09 01 37.1**	**+1.2**
	comp=Z,1.9nm,0.4s,baz=103,slow=2.3,SNR=10						
CMAR				LR	LR	09 43 07.9	
	comp=Z,17nm,18.8s,baz=155,slow=35						
LPAZ	**La Paz**	**98.53**	**111**	LR	LR	09 39 48.6	
	comp=Z,96nm,18.0s,baz=201,slow=31						
KSH	**Kashi**	**118.25**	**304**	*e*PKP	**PKPdf**	**09 07 04.8**	**-1.6**
KSH				*es*PKP		09 07 42.8	
KSH				*ePP*	**PP**	**09 08 19.0**	**-3.6**
KSH				SKKS		09 15 00.0	
KSH				AMB	AMB		
	comp=Z,24nm,3.0s						
AKASG	**Malin Array Be**	**145.47**	**333**	PKPbc	**PKPdf**	**09 07 56.4**	**-0.2**
	comp=Z,1.2nm,0.5s,baz=37,slow=4.2,SNR=14						
AKBB	**Malin Array Si**	**145.47**	**333**	*e*PKPdf	**PKPdf**	**09 07 55.9**	**-0.8**
KIEV	**Kiev**	**145.48**	**333**	*e*PKPdf	**PKPdf**	**09 07 55.8**	**-0.8**
AK11	**Malin Array Si**	**145.51**	**333**	*e*PKPdf	**PKPdf**	**09 07 55.2**	**-1.5**
BRG	**Berggiesshubel**	**149.95**	**349**	*e*PKP	**PKPbc**	**09 08 07.5**	**-1.4**
	comp=Z,16nm,1.8s						
BR101	**Keskin Array S**	**150.00**	**314**	*e*PKPbc	**PKPbc**	**09 08 09.2**	**-0.5**
BRTR	**Keskin Array B**	**150.00**	**314**	PKPbc	**PKPbc**	**09 08 09.2**	**-0.5**
	comp=Z,1.0nm,0.7s,baz=103,slow=2.7,SNR=5.8						
BR231	**Keskin MP Arra**	**150.52**	**315**	*e*PKPdf	**PKPdf**	**09 08 02.7**	**-2.8**
BR231				*e*PKPbc	**PKPbc**	**09 08 09.3**	**-1.5**
BR231				*e*PKPab	**PKPab**	**09 08 14.8**	**-2.7**
KHC	**Kasperske Hory**	**151.69**	**349**	*e*PKP	**PKPbc**	**09 08 13.0**	**-0.2**
KHC				*e*PKPAB	**PKPab**	**09 08 23.5**	**+1.6**
GERES	**GERESS Array B**	**151.94**	**349**	PKPbc	**PKPbc**	**09 08 15.9**	**+2.0**
	comp=Z,0.7nm,0.7s,baz=329,slow=1.1,SNR=5.2						

IDC 25 09:01:40.1±1.6, 0.32N×122.07E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.4/43, mbtmp3.6/3, MS3.4/2, Ms1 3.4/2, ms1mx2.7/37, Error ellipse: s-maj=221.7km s-min=25.2km az=61.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	**13.74**	**355**	LR	LR	09 09 35.4	
	comp=Z,139nm,20.0s,baz=188,slow=35						
WRA	**Warramunga Arr**	**23.45**	**150**	P	P	09 06 51.3	-0.1
	1.3nm,0.5s,baz=326,slow=10,SNR=30						
ASAR	**Alice Springs**	**26.47**	**155**	P	P	09 07 19.2	0.0
	0.4nm,0.5s,baz=330,slow=9.9,SNR=10.0						
MKAR	**Makanchi Array**	**57.86**	**329**	P	P	09 11 33.8	+0.1
	0.5nm,0.4s,baz=122,slow=8.8,SNR=5.5						
WSAR	**Wadi Sarin**	**65.57**	**295**	LR	LR	09 43 52.6	
	comp=Z,33nm,18.0s,slow=39						

NIED 25 09:03:00, 36.80N×141.00E, h62km, Mw3.6 Best double couple: M0 2.85000×10^14 NP1:φs140.00000°, δ12.00000°, λ14.00000°. NP2:φs36.00000°, δ87.00000°, λ102.00000°.
IDC 25 09:03:02.8±1.2, 36.76N×141.15E, h0km, mb3.6/4, mb1 3.7/7, mb1mx3.5/47, mbtmp3.5/7, ML2.8/3, MS2.7/2, Ms1 2.7/2, ms1mx2.4/41, Error ellipse: s-maj=26.3km s-min=21.5km az=67.0
JMA 25 09:03:08.9±0.1, 36.79N×141.00E, h49km±1km, M3.6
JMA Felt I J1.

ISC 25 09:03:03.6±2.3, 36.74N±0.04×141.19E±0.07, h5km±14km, n24, σ1°40/26, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.47**	**319**	P	**Pn**	**09 03 18.3**	**+1.2**
ONAJ				S	**Sb**	**09 03 24.7**	**+2.9**
JHO	**Hitachi**	**0.51**	**255**	P	**Pn**	**09 03 18.8**	**+1.2**
JHO				S	**Sn**	**09 03 25.6**	**-1.1**
JFK	**Kawauchi**	**0.67**	**338**	P	**Pn**	**09 03 20.7**	**+0.9**
JFK				S	**Sn**	**09 03 28.9**	**-1.8**
JYT	**Yasato**	**0.95**	**238**	P	**Pn**	**09 03 24.6**	**+1.0**
JYT				S	**Sb**	**09 03 35.5**	**+0.1**
JFT	**Otama**	**1.03**	**319**	P	**Pn**	**09 03 25.8**	**+1.1**
JFT				S	**Sb**	**09 03 37.6**	**-0.1**
JMM	**Marumori**	**1.16**	**344**	P	**Pn**	**09 03 27.5**	**+1.0**
JMM				S	**Sb**	**09 03 40.8**	**-0.8**
JFY	**Yanaizu**	**1.36**	**300**	P	**Pg**	**09 03 29.4**	**-0.3**
JAG	**Ashikaga**	**1.43**	**258**	P	**Pb**	**09 03 30.6**	**-0.1**
JKT	**Katashina**	**1.56**	**271**	P	**Pb**	**09 03 32.7**	**-0.2**
MJAR	**Matsushiro Arr**	**2.40**	**266**	Pn	**Pn**	**09 03 44.7**	**+1.1**
	7.8nm,0.3s,baz=88,slow=15,SNR=62						
MJAR				Sn	**Sn**	**09 04 13.9**	**+0.5**
	6.4nm,0.3s,baz=92,slow=9.2,SNR=7.6						
MJAR				LR	LR	09 04 57.0	
	comp=Z,50nm,20.5s,baz=105,slow=49						
MAT	**Matsushiro**	**2.41**	**266**	P	**Pn**	**09 03 45.0**	**+1.4**
MAT				S	**Sn**	**09 04 10.6**	**-2.8**
JHJ	**Hachijo jima 2**	**3.80**	**198**	Pn	**Pn**	**09 04 01.7**	**-1.0**
	5.3nm,0.3s,baz=270,slow=20,SNR=1.8						
JHJ				Sn	**Sn**	**09 04 49.9**	**+2.2**
	14nm,0.3s,baz=72,slow=20,SNR=3.3						
USRK	**Ussuriysk Ar.**	**10.22**	**320**	Pn	**Pn**	**09 05 30.7**	**-0.2**
	0.1nm,0.3s,baz=137,slow=15,SNR=1.9						
GUMO	**Guam**	**23.29**	**171**	LR	LR	09 18 26.2	
	comp=Z,72nm,19.6s,baz=135,slow=40						
SONM	**Songino Array**	**27.80**	**304**	P	**P**	**09 08 51.6**	**-2.0**
	0.4nm,0.4s,baz=102,slow=11,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.16**	**120**	T	T	09 39 00.6	
	baz=313,slow=75,NR=26						
H11N1	**WAKE ISLAND Hy**	**28.17**	**120**	T	T	09 39 01.2	
	baz=313,slow=75,SNR=34						
H11N3	**WAKE ISLAND Hy**	**28.18**	**120**	T	T	09 39 02.0	
	baz=313,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**28.86**	**122**	T	T	09 39 51.7	
	baz=314,slow=75,SNR=52						
H11S3	**WAKE ISLAND Hy**	**28.87**	**122**	T	T	09 39 50.3	
	baz=314,slow=75,SNR=37						
H11S2	**WAKE ISLAND Hy**	**28.87**	**122**	T	T	09 39 53.1	
	baz=314,slow=75,SNR=23						
WRA	**Warramunga Arr**	**56.75**	**188**	P	**P**	**09 12 48.0**	**-0.5**
	0.8nm,0.5s,baz=4.0,slow=7.2,SNR=23						
ASAR	**Alice Springs**	**60.48**	**188**	P	**P**	**09 13 14.7**	**+0.3**
	0.2nm,0.6s,baz=19,slow=12,SNR=4.1						
TXAR	**Lajitas Array**	**90.44**	**52**	P	**P**	**09 16 07.6**	**+1.0**
	0.1nm,0.7s,baz=298,slow=1.9,SNR=2.9						

*NIED 25 09:12:00, 38.80N×142.10E, h44km, Mw3.8 Best double couple: M0 5.10000×10^14 NP1:φs172.00000°, δ19.00000°, λ60.00000

ILAR	**Eielson Array**	**47.69**	**33**	P		**P**	**09 20 46.5**	**-0.4**
	0.2nm,0.7s,baz=269,slow=7.7,SNR=3.9							
BVAR	**Borovoye Array**	**49.78**	**311**	P		**P**	**09 21 02.4**	**-0.6**
	1.8nm,0.4s,baz=76,slow=9.1,SNR=7.9							
WRA	**Warramunga Arr**	**58.91**	**189**	P		**P**	**09 22 09.0**	**-0.7**
	0.2nm,0.5s,baz=5.4,slow=7.1,SNR=3.4							
ASAR	**Alice Springs**	**62.64**	**188**	P		**P**	**09 22 34.4**	**-0.6**
	0.2nm,0.8s,baz=2.9,slow=5.6,SNR=3.8							
FINES	**FINESS Array B**	**67.48**	**332**	P		**P**	**09 23 05.1**	**-0.9**
	2.5nm,1.0s,baz=14,slow=6.2,SNR=2.8							

NNC ***25*** *09:26:53.5±2.2,53.58N×87.83E,h0km,mb3.6,mpv3.2, Error ellipse: s-maj=17.7km s-min=14.4km az=10.0*

IDC 25 09:26:49.3±2.9,53.79N×88.17E,h0km,mb1 3.5/2, mb1mx3.2/55,mbtmp3.5/2,ML3.1/2,7C-4D,Error ellipse: s-maj=23.7km s-min=16.2km az=54.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.99**	**276**	*i*		09 39 29.8	
	baz=93,slow=323,SNR=3.7						
ZALV	**Zalesovo Beam**	**1.99**	**276**	Pg	Pn	09 27 24.5	+0.3
	4.4nm,0.3s,baz=94,slow=12,SNR=76						
ZALV				Lg	Lg	09 27 52.1	
	16nm,0.3s,baz=95,slow=28,SNR=26						
KURK	**Kurchatov**	**6.62**	**246**	⇑Pn	Pn	09 28 28.0	+0.3
	1.5nm,0.6s						
KURK				⇑Sn	Sn	09 29 42.7	-1.1
	0.8nm,0.4s						
KURK				⇓Lg	Lg	09 30 16.6	
	4.6nm,1.1s						
KURBB	**Kurchatov Arra**	**6.72**	**246**	Pn	Pn	09 28 29.8	+0.7
	0.3nm,0.3s,baz=62,slow=14,SNR=29						
KURBB				Sn	Sn	09 29 45.6	-0.7
	0.1nm,0.3s,baz=139,slow=25,SNR=6.8						
KURBB				Lg	Lg	09 30 23.4	
	0.1nm,0.3s,baz=60,slow=31,SNR=8.4						
KURBB	**Kurchatov Arra**	**6.72**	**246**	⇑Pn	Pn	09 28 29.2	+0.1
	3.5nm,0.3s						
KURBB				⇓Sn	Sn	09 29 44.7	-1.6
	6.3nm,0.5s						
KURBB				⇓Lg	Lg	09 30 21.9	
	6.4nm,0.7s						
MK31	**Makanchi Array**	**7.95**	**211**	Pn	Pn	09 28 47.0	+1.0
	0.3nm,0.5s,baz=28,slow=13,SNR=7.7						
MK31				⇑Sn	Sn	09 30 15.3	-1.4
	0.9nm,0.4s,baz=34,slow=26,SNR=5.2						
MK31				⇑Lg	Lg	09 30 58.3	
	0.4nm,0.5s						
MKAR	**Makanchi Array**	**7.95**	**211**	Pn	Pn	09 28 47.0	+1.0
	0.3nm,0.3s,baz=33,slow=14,SNR=9.4						
MKAR				Sn	Sn	09 30 16.8	+0.2
	0.4nm,0.3s,baz=32,slow=27,SNR=7.3						
MKAR				Lg	Lg	09 30 59.0	
	0.2nm,0.3s,baz=32,slow=32,SNR=5.3						
MAKZ	**Makanchi**	**8.03**	**212**	⇑Pn	Pn	09 28 48.2	+1.0
	0.2nm,0.3s						
MAKZ				⇑Sn	Sn	09 30 15.7	-3.0
MAKZ				⇓Lg	Lg	09 31 01.2	
	1.4nm,0.7s						

ISCJB ***25*** *09:38:00.5±0.9,13.0N±0.1×145.7E±0.1,h43km,mb3.6/6, MS2.6/1,Error ellipse: s-maj=21.7km s-min=11.4km az=135.8*

IDC ***25*** *09:38:02.6±2.9,13.08N×145.55E,h44km±26km,mb3.4/6, mb1 3.6/6,mb1mx3.3/48,mbtmp3.7/6,MS2.7/1,Ms1 2.7/1, ms1mx2.4/24,Error ellipse: s-maj=37.4km s-min=18.6km az=91.0*

ISC 25 09:38:02.4±1.1,13.1N±0.1×145.6E±0.2,h43km,n8, σ0.46/8,mb3.6/6,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.88**	**307**	P	**Pn**	**09 38 18.2**	**-0.1**
	89nm,0.3s,baz=132,slow=12,SNR=30						
GUMO				S	**Sn**	**09 38 30.2**	**+0.3**
	149nm,0.3s,baz=180,slow=20,SNR=17						
GUMO				LR	LR	09 38 49.8	
	comp=Z,637nm,20.9s,baz=52,slow=56						
MJAR	**Matsushiro Arr**	**24.30**	**345**	LR	LR	09 52 30.9	
	comp=Z,19nm,19.9s,baz=60,slow=36						
WRA	**Warramunga Arr**	**34.61**	**199**	P	**P**	**09 44 47.2**	**-0.4**
	0.5nm,0.6s,baz=22,slow=9.7,SNR=7.6						
ASAR	**Alice Springs**	**38.25**	**197**	P	**P**	**09 45 19.1**	**+0.6**
	0.4nm,0.7s,baz=24,slow=8.8,SNR=9.5						
KURBB	**Kurchatov Arra**	**65.48**	**320**	P	**P**	**09 48 41.1**	**0.0**
	1.3nm,0.7s,baz=100,slow=6.2,SNR=5.9						
ILAR	**Eielson Array**	**68.75**	**25**	P	**P**	**09 49 01.7**	**+0.1**
	0.2nm,0.4s,baz=256,slow=4.9,SNR=3.9						
BVAR	**Borovoye Array**	**70.77**	**322**	P	**P**	**09 49 13.6**	**-0.7**
	0.6nm,0.3s,baz=92,slow=7.4,SNR=3.6						
YKA	**Yellowknife Ar**	**83.01**	**27**	P	**P**	**09 50 23.0**	**+0.1**
	0.3nm,0.5s,baz=287,slow=5.2,SNR=2.6						

IDC ***25*** *09:45:38.2±2.4,53.50N×87.70E,h0km,mb1 3.6/3, mb1mx3.2/40,mbtmp3.6/3,ML3.4/3,Error ellipse: s-maj=21.0km s-min=12.5km az=62.0*

NNC ***25*** *09:45:42.0±2.0,53.42N×87.25E,h0km,mb3.8,mpv3.4, Error ellipse: s-maj=15.3km s-min=12.5km az=19.0*

ISC 25 09:45:41.7±3.6,53.7N±0.1×87.6E±0.2,h35km,n9, σ0.56/15,9C-2D,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.68**	**281**	*i*		09 57 09.5	
	baz=100,slow=320,SNR=25						
ZALV	**Zalesovo Beam**	**1.68**	**281**	Pg	**Pn**	**09 46 08.4**	**-0.1**
	13nm,0.3s,baz=102,slow=17,SNR=72						
ZALV				Lg	Lg	09 46 34.4	
	11nm,0.3s,baz=106,slow=30,SNR=11						
KURK	**Kurchatov**	**6.26**	**246**	⇑Pn	**Pn**	**09 47 11.8**	**+0.4**
	1.0nm,0.5s						
KURK				⇑Sn	**Sn**	**09 48 20.6**	**-1.0**
	1.6nm,0.7s						
KURK				⇑Lg	Lg	09 48 52.6	
	5.5nm,0.7s						
KURBB	**Kurchatov Arra**	**6.36**	**245**	Pn	**Pn**	**09 47 13.4**	**+0.7**
	0.6nm,0.3s,baz=64,slow=14,SNR=42						
KURBB				Sn	**Sn**	**09 48 24.4**	**+0.3**
	baz=312,slow=52,SNR=2.4						
KURBB				Lg	Lg	09 49 00.1	
	0.1nm,0.3s,baz=63,slow=32,SNR=7.5						
KURBB	**Kurchatov Arra**	**6.36**	**245**	⇑Pn	**Pn**	**09 47 13.1**	**+0.3**
	5.0nm,0.4s						
KURBB				⇑Sn	**Sn**	**09 48 24.6**	**+0.5**
	2.0nm,0.4s						
KURBB				⇑Lg	Lg	09 48 57.8	
	7.2nm,0.6s						
MK31	**Makanchi Array**	**7.66**	**208**	Pn	**Pn**	**09 47 31.0**	**+0.2**
	0.9nm,0.3s,baz=29,slow=13,SNR=22						
MK31				⇑Sn	**Sn**	**09 48 56.3**	**0.0**
	0.1nm,0.2s,baz=342,slow=14,SNR=4.8						
MK31				⇓Lg	Lg	09 49 34.2	
	0.5nm,0.2s,baz=30,slow=31,SNR=5.2						
MKAR	**Makanchi Array**	**7.66**	**208**	Pn	**Pn**	**09 47 30.8**	**0.0**
	0.7nm,0.3s,baz=29,slow=13,SNR=32						
MKAR				Sn	**Sn**	**09 48 55.8**	**-0.6**
	0.3nm,0.3s,baz=30,slow=27,SNR=5.6						
MKAR				Lg	Lg	09 49 35.3	
	0.4nm,0.3s,baz=30,slow=32,SNR=6.3						
MAKZ	**Makanchi**	**7.74**	**210**	⇓Pn	**Pn**	**09 47 31.1**	**-0.7**
	0.5nm,0.3s						
MAKZ				⇑Sn	**Sn**	**09 48 58.6**	**+0.4**
	0.8nm,0.7s						
MAKZ				⇑Lg	Lg	09 49 36.6	
	1.4nm,0.8s						
BVAR	**Borovoye Array**	**10.32**	**273**	Pn	**Pn**	**09 48 07.6**	**+0.5**
	0.4nm,0.3s,baz=69,slow=14,SNR=4.1						
BVAR				Sn	**Sn**	**09 50 00.8**	**-0.6**
	0.3nm,0.3s,baz=76,slow=24,SNR=4.6						

NIED ***25*** *09:59:00,36.70N×143.90E,h8km,Mw3.6 Best double couple: M₀3.19000×10¹⁴ NP1:φs47.00000°,δ29.00000°, λ-85.00000°. NP2:φs221.00000°,δ61.00000°, λ-93.00000°.*

IDC ***25*** *09:59:25.8±1.0,36.56N×144.19E,h0km,mb3.4/7, mb1 3.7/12,mb1mx3.5/45,mbtmp3.6/12,ML3.5/5,MS2.1/1, Ms1 2.1/1,ms1mx1.9/24,Error ellipse: s-maj=24.1km s-min=19.4km az=84.0*

ISCJB ***25*** *09:59:29.6±0.7,36.68N±0.04×143.88E±0.06,h33km, mb3.5/7,Error ellipse: s-maj=6.8km s-min=5.6km az=31.7*

JMA ***25*** *09:59:30.7±0.3,36.71N×143.85E,h56km,M3.9*

ISC 25 09:59:30.8±0.9,36.69N±0.06×144.00E±0.08,h35km,n32, σ2.29/35,mb3.4/7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.59**	**286**	P	**Pn**	**10 00 09.7**	**-0.6**
JFK				S	**Sn**	**10 00 38.6**	**-2.0**
CHOJ	**Chosi**	**2.73**	**250**	P	**Pn**	**10 00 11.6**	**-0.5**
JFT	**Otama**	**3.04**	**287**	*eS*	**Sn**	**10 00 50.7**	**-1.0**
JMK	**Ichinoseki**	**3.15**	**317**	P	**Pn**	**10 00 17.8**	**-0.2**
JMK				*eS*	**Sn**	**10 00 52.1**	**-2.3**
BSO1	**Boso 1**	**3.19**	**231**	P	**Pn**	**10 00 17.7**	**-0.3**
BSO1				*eS*	**Sn**	**10 00 54.1**	**-0.4**
JOM	**Ohasama**	**3.51**	**323**	P	**Pn**	**10 00 22.3**	**-0.5**
JOM				S	**Sn**	**10 01 00.4**	**-2.7**
JYK	**Kaneyama**	**3.64**	**309**	P	**Pn**	**10 00 24.7**	**0.0**
JAG	**Ashikaga**	**3.67**	**267**	P	**Pn**	**10 00 25.1**	**0.0**
JAG				S	**Sn**	**10 01 04.9**	**-2.2**
JRY	**Ryogami san**	**4.17**	**262**	P	**Pn**	**10 00 31.7**	**-0.3**
JRY				S	**Sn**	**10 01 16.7**	**-2.8**
JOD2	**Odawara 2**	**4.23**	**252**	*eS*	**Sn**	**10 01 18.2**	**-2.8**
MJAR	**Matsushiro Arr**	**4.66**	**270**	Pn	**Pn**	**10 00 39.4**	**+0.7**
	2.3nm,0.3s,baz=81,slow=11,SNR=16						
MJAR				LR	LR	10 03 28.4	
	comp=Z,20nm,18.3s,baz=95,slow=51						
MAT	**Matsushiro**	**4.66**	**270**	P	**Pn**	**10 00 39.8**	**+1.1**
MAT				S	**Sn**	**10 01 26.2**	**-5.4**
JHJ	**Hachijo jima 2**	**4.97**	**225**	Pn	**Pn**	**10 00 41.8**	**-1.1**
	5.7nm,0.3s,baz=0.3,slow=22,SNR=7.9						
JHJ				Sn	**Sn**	**10 01 33.8**	**-5.4**
	16nm,0.3s,baz=65,slow=19,SNR=3.5						
JOT	**Ohata**	**5.22**	**335**	P	**Pn**	**10 00 46.7**	**+0.4**
JKB	**Kayabe**	**5.68**	**337**	P	**Pn**	**10 00 52.6**	**0.0**
JCH	**Churui**	**5.94**	**355**	S	**Sn**	**10 01 56.4**	**-6.6**
ASAJ	**Asahikawa**	**7.50**	**352**	Pn	**Pn**	**10 01 16.5**	**-1.1**
	1.5nm,0.3s,baz=226,slow=16,SNR=9.5						
ASAJ				Sn	**Sn**	**10 02 39.2**	**-2.1**
	0.4nm,0.3s,baz=223,slow=19,SNR=3.0						
USRK	**Ussuriysk Ar.**	**11.82**	**313**	Pn	**Pn**	**10 02 18.4**	**+1.5**
	0.5nm,0.3s,baz=114,slow=12,SNR=7.1						
KLR	**Kul'dur**	**15.38**	**328**	Pn	**Pn**	**10 03 07.4**	**+2.2**
	0.1nm,0.3s,baz=165,slow=7.8,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**26.21**	**124**	T	T	10 32 10.8	
	baz=315,slow=75,SNR=8.0						
H11N1	**WAKE ISLAND Hy**	**26.22**	**124**	T	T	10 32 07.8	
	baz=315,slow=75,SNR=3.5						
H11N3	**WAKE ISLAND Hy**	**26.23**	**124**	T	T	10 32 21.8	
	baz=315,slow=75,SNR=3.4						
H11S1	**WAKE ISLAND Hy**	**26.95**	**126**	T	T	10 33 05.9	
	baz=317,slow=76,SNR=5.0						
H11S3	**WAKE ISLAND Hy**	**26.96**	**126**	T	T	10 33 07.1	
	baz=317,slow=76,SNR=4.9						
H11S2	**WAKE ISLAND Hy**	**26.97**	**126**	T	T	10 33 07.8	
	baz=317,slow=76,SNR=4.8						
SONM	**Songino Array**	**29.70**	**304**	P	**P**	**10 05 35.4**	**+1.9**
	0.3nm,0.5s,baz=92,slow=8.7,SNR=2.5						
MKAR	**Makanchi Array**	**46.05**	**303**	P	**P**	**10 07 52.9**	**+1.8**
	0.2nm,0.5s,baz=84,slow=8.8,SNR=2.7						
KURBB	**Kurchatov Arra**	**47.84**	**309**	P	**P**	**10 08 06.4**	**+1.5**
	0.7nm,1.0s,baz=78,slow=8.7,SNR=4.2						
ILAR	**Eielson Array**	**48.68**	**32**	P	**P**	**10 08 11.3**	**+0.1**
	0.4nm,0.8s,baz=256,slow=6.5,SNR=5.4						
WRA	**Warramunga Arr**	**57.06**	**191**	P	**P**	**10 09 12.9**	**-0.6**
	0.4nm,0.5s,baz=11,slow=7.2,SNR=8.6						
ASAR	**Alice Springs**	**60.78**	**191**	P	**P**	**10 09 38.4**	**-0.9**
	0.2nm,0.6s,baz=7.1,slow=6.8,SNR=4.3						
TXAR	**Lajitas Array**	**88.67**	**54**	P	**P**	**10 12 21.7**	**+0.9**
	0.1nm,0.5s,baz=328,slow=3.2,SNR=3.0						

NIED ***25*** *10:04:00,39.70N×142.00E,h71km,Mw3.6 Best double couple: M₀2.67000×10¹⁴ NP1:φs171.00000°,δ59.00000°, λ21.00000°. NP2:φs70.00000°,δ72.00000°,λ148.00000°.*

ISCJB ***25*** *10:04:37.4±0.7,39.71N±0.03×142.09E±0.09,h65km±4km, mb3.4/6,Error ellipse: s-maj=11.4km s-min=5.8km az=179.2*

JMA ***25*** *10:04:38.8,39.72N×142.05E,h56km,M3.7*

JMA Felt I J1.

IDC ***25*** *10:04:40.3±3.4,39.65N×142.05E,h80km±32km,mb3.2/6, mb1 3.3/8,mb1mx3.2/42,mbtmp3.5/8,Error ellipse: s-maj=30.4km s-min=18.2km az=95.0*

ISC 25 10:04:38.2±1.0,39.72N±0.04×142.11E±0.09,h58km±7km, n25,σ0.57/30,mb3.5/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.27**	**239**	P	**Pn**	**10 04 48.0**	**+0.2**
MIYJ				S	**Sn**	**10 04 54.6**	**-0.2**
JTH	**Tanohata**	**0.29**	**319**	P	**Pn**	**10 04 48.3**	**+0.2**
JTH				S	**Sn**	**10 04 55.0**	**-0.2**
JKZ	**Kuzumaki**	**0.66**	**294**	P	**Pn**	**10 04 52.1**	**+0.2**
JKZ				S	**Sn**	**10 05 01.5**	**-0.4**
JOM	**Ohasama**	**0.68**	**249**	P	**Pn**	**10 04 52.1**	**0.0**
JOM				S	**Sn**	**10 05 01.7**	**-0.5**
OFUJ	**Ofunato**	**0.72**	**209**	P	**Pn**	**10 04 52.9**	**+0.3**
OFUJ				S	**Sn**	**10 05 03.0**	**-0.1**
JANG	**Nango**	**0.80**	**325**	P	**Pn**	**10 04 53.6**	**0.0**
JANG				S	**Sn**	**10 05 04.4**	**-0.5**
JMK	**Ichinoseki**	**1.03**	**223**	P	**Pn**	**10 04 56.8**	**+0.3**
JMK				S	**Sn**	**10 05 10.0**	**-0.1**
JRG	**Rokugo**	**1.19**	**255**	P	**Pn**	**10 04 58.6**	**0.0**
JRG				S	**Sn**	**10 05 13.9**	**+0.1**
JAH	**Hinai**	**1.23**	**293**	P	**Pn**	**10 04 59.2**	**0.0**
JAH				S	**Sn**	**10 05 14.8**	**-0.1**
JTM	**Tenmabayashi**	**1.34**	**324**	P	**Pn**	**10 05 00.7**	**+0.1**
JTM				S	**Sn**	**10 05 17.3**	**-0.1**
JIO	**Ouri**	**1.39**	**206**	P	**Pn**	**10 05 01.6**	**+0.2**
JIO				S	**Sn**	**10 05 18.7**	**0.0**
MJAR	**Matsushiro Arr**	**4.42**	**225**	P	**Pn**	**10 05 44.3**	**+1.6**
	1.0nm,0.3s,baz=34,slow=14,SNR=10						
USRK	**Ussuriysk Ar.**	**8.77**	**304**	P	**Pn**	**10 06 43.3**	**+1.1**
	0.2nm,0.3s,baz=109,slow=14,SNR=8.8						
SEY	**Seymchan**	**24.06**	**12**	P	**P**	**10 09 48.4**	**+0.8**
	1.0nm,0.9s,baz=171,slow=5.4,SNR=5.8						
H11N2	**WAKE ISLAND Hy**	**29.16**	**126**	T	T	10 41 09.1	
	baz=318,slow=75,SNR=118						
H11N1	**WAKE ISLAND Hy**	**29.17**	**126**	T	T	10 41 16.6	
	baz=318,slow=75,SNR=119						
H11N3	**WAKE ISLAND Hy**	**29.18**	**126**	T	T	10 41 19.6	
	baz=318,slow=75,SNR=80						
H11S1	**WAKE ISLAND Hy**	**29.96**	**128**	T	T	10 42 15.6	
	baz=319,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**29.96**	**128**	T	T	10 42 16.9	
	baz=319,slow=76,SNR=22						
H11S2	**WAKE ISLAND Hy**	**29.98**	**128**	T	T	10 42 16.5	
	baz=319,slow=76,SNR=15						
MKAR	**Makanchi Array**	**43.21**	**300**	P	**P**	**10 12 33.5**	**+0.1**
	0.2nm,0.5s,baz=89,slow=12,SNR=2.2						
KURBB	**Kurchatov Arra**	**44.83**	**306**	P	**P**	**10 12 45.8**	**-0.4**
	0.6nm,0.5s,baz=80,slow=8.5,SNR=3.1						
ILAR	**Eielson Array**	**46.95**	**34**	P	**P**	**10 13 03.2**	**+0.5**
	0.4nm,0.7s,baz=266,slow=6.3,SNR=7.4						
WRA	**Warramunga Arr**	**59.79**	**188**	P	**P**	**10 14 36.8**	**-0.5**
	0.4nm,1.0s,baz=5.0,slow=7.2,SNR=3.6						
ASAR	**Alice Springs**	**63.52**	**188**	P	**P**	**10 15 00.8**	**-1.5**
	0.1nm,0.3s,baz=1.6,slow=6.3,SNR=4.4						

IDC ***25*** *10:07:21.5±3.0,53.76N×88.19E,h0km,mb1 3.3/2, mb1mx3.1/41,mbtmp3.3/2,ML3.1/2,Error ellipse: s-maj=24.6km s-min=16.5km az=56.0*

NNC ***25*** *10:07:26.4±2.0,53.67N×87.62E,h0km,mb3.5,mpv3.1, Error ellipse: s-maj=14.6km s-min=12.7km az=29.0*

ISC 25 10:07:27.2±4.0,53.8N±0.1×88.0E±0.2,h35km,n8, σ1.06/13,5C-6D,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.89**	**276**	*i*		10 19 58.4	
	baz=94,slow=320,SNR=28						
ZALV	**Zalesovo Beam**	**1.89**	**276**	Pg	**Pn**	**10 07 57.4**	**+0.4**
	5.7nm,0.3s,baz=91,slow=12,SNR=41						
ZALV				Lg	Lg	10 08 24.9	
	12nm,0.3s,baz=98,slow=27,SNR=20						
KURK	**Kurchatov**	**6.53**	**246**	⇑Pn	**Pn**	**10 09 00.4**	**-0.3**
	3.3nm,1.0s						
KURK				⇓Sn	**Sn**	**10 10 12.6**	**-1.4**
	1.9nm,1.0s						
KURK				⇑Lg	Lg	10 10 46.2	
	6.8nm,1.2s						
KURBB	**Kurchatov Arra**	**6.63**	**245**	Pn	**Pn**	**10 09 02.2**	**+0.1**
	0.4nm,0.3s,baz=62,slow=14,SNR=23						
KURBB				Sn	**Sn**	**10 10 16.6**	**+0.2**
	0.0nm,0.3s,baz=59,slow=21,SNR=3.1						
KURBB				Lg	Lg	10 10 56.3	
	0.1nm,0.3s,baz=60,slow=30,SNR=7.7						
KURBB	**Kurchatov Arra**	**6.63**	**245**	⇑Pn	**Pn**	**10 09 01.8**	**-0.3**
	1.7nm,0.3s						
KURBB				⇓Sn	**Sn**	**10 10 16.5**	**+0.1**
	5.1nm,0.6s						
KURBB				⇓Lg	Lg	10 10 51.0	
	4.0nm,0.7s						
MK31	**Makanchi Array**	**7.91**	**210**	Pn	**Pn**	**10 09 20.3**	**+0.7**
	0.1nm,0.2s,baz=30,slow=14,SNR=7.7						
MK31				⇑Sn	**Sn**	**10 10 49.3**	**+1.5**
	0.5nm,0.5s,baz=32,slow=24,SNR=2.8						
MK31				⇓Lg	Lg	10 11 30.1	
	1.0nm,0.7s						
MKAR	**Makanchi Array**	**7.91**	**210**	Pn	**Pn**	**10 09 18.5**	**-1.1**
	0.2nm,0.3s,baz=30,slow=15,SNR=6.7						
MKAR				Sn	**Sn**	**10 10 49.3**	**+1.5**
	0.2nm,0.3s,baz=31,slow=25,SNR=4.6						
MKAR				Lg	Lg	10 11 31.1	
	baz=32,slow=26,SNR=5.1						
MAKZ	**Makanchi**	**7.99**	**211**	⇓Pn	**Pn**	**10 09 19.1**	**-1.6**
	0.3nm,0.5s						
MAKZ				⇑Sn	**Sn**	**10 10 50.0**	**+0.2**
	0.5nm,0.5s						
MAKZ				⇓Lg	Lg	10 11 32.1	
	1.8nm,0.8s						

NIED ***25*** *10:08:00,38.50N×141.80E,h53km,Mw3.7 Best double couple: M₀4.37000×10¹⁴ NP1:φs214.00000°,δ23.00000°, λ102.00000°. NP2:φs22.00000°,δ67.00000°,λ85.00000°.*

ISCJB ***25*** *10:08:13.5±0.9,38.52N±0.04×141.9E±0.1,h58km±6km, mb3.6/7,Error ellipse: s-maj=15.2km s-min=6.0km az=18.3*

JMA ***25*** *10:08:15.1±0.1,38.54N×141.83E,h49km±1km,M3.6*

JMA Felt II J1.

IDC ***25*** *10:08:15.7±2.5,38.54N×141.99E,h64km±22km,mb3.3/7, mb1 3.4/10,mb1mx3.3/43,mbtmp3.5/10,MS2.6/1, Ms1 2.6/1,ms1mx2.1/18,Error ellipse: s-maj=26.3km s-min=14.7km az=97.0*

ISC 25 10:08:14.2±1.4,38.50N±0.06×141.9E±0.1,h48km±11km, n29,σ0.94/29,mb3.7/7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.43**	**264**	P	**Pn**	**10 08 25.0**	**+0.5**
JIO				S	**Sn**	**10 08 31.7**	**-0.2**
OFUJ	**Ofunato**	**0.60**	**343**	P	**Pn**	**10 08 27.0**	**+0.4**
OFUJ				S	**Sn**	**10 08 35.2**	**-0.4**
JMK	**Ichinoseki**	**0.70**	**310**	P	**Pn**	**10 08 28.1**	**+0.3**
JMK				S	**Sn**	**10 08 37.3**	**-0.3**
JOU	**Okura**	**0.98**	**262**	P	**Pn**	**10 08 31.8**	**+0.2**
JOU				S	**Sn**	**10 08 44.3**	**-0.1**
JMM	**Marumori**	**1.08**	**234**	P	**Pn**	**10 08 33.1**	**+0.2**
JMM				S	**Sn**	**10 08 46.4**	**-0.3**
JOM	**Ohasama**	**1.08**	**334**	P	**Pn**	**10 08 33.3**	**+0.4**
JOM				S	**Sn**	**10 08 47.1**	**+0.3**
JYK	**Kaneyama**	**1.27**	**289**	P	**Pn**	**10 08 35.9**	**+0.3**
JRG	**Rokugo**	**1.33**	**313**	P	**Pn**	**10 08 36.5**	**+0.2**
JFK	**Kawauchi**	**1.39**	**216**	P	**Pn**	**10 08 37.8**	**+0.6**
JYS	**Shirataka**	**1.47**	**260**	P	**Pn**	**10 08 38.8**	**+0.6**
MAT	**Matsushiro**	**3.53**	**237**	P	**Pn**	**10 09 08.9**	**+2.4**
MAT				S	Sn	10 09 55.1	+8.2
MJAR	**Matsushiro Arr**	**3.53**	**237**	P	**Pn**	**10 09 08.8**	**+2.4**
	2.3nm,0.3s,baz=40,slow=12,SNR=18						
ASAJ	**Asahikawa**	**5.63**	**5**	P	**Pn**	**10 09 36.0**	**+0.7**
	0.6nm,0.3s,baz=252,slow=6.4,SNR=4.5						
ASAJ				S	**Sn**	**10 10 40.8**	**+2.1**
	0.8nm,0.3s,baz=45,slow=13,SNR=2.7						
USRK	**Ussuriysk Ar.**	**9.38**	**311**	P	**Pn**	**10 10 26.9**	**+0.4**
	0.1nm,0.3s,baz=108,slow=14,SNR=2.7						
KLR	**Kul'dur**	**12.97**	**329**	LR	LR	10 15 46.4	
	comp=Z,28nm,19.0s,baz=121,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.60**	**124**	T	T	10 44 31.2	
	baz=317,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	10 44 28.0	
	baz=317,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy**	**28.62**	**124**	T	T	10 44 43.0	
	baz=317,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**29.37**	**126**	T	T	10 45 18.2	
	baz=318,slow=76,SNR=17						
H11S3	**WAKE ISLAND Hy**	**29.37**	**126**	T	T	10 45 18.4	
	baz=318,slow=76,SNR=24						
H11S2	**WAKE ISLAND Hy**	**29.38**	**126**	T	T	10 45 36.2	
	baz=318,slow=76,SNR=16						
ZALV	**Zalesovo Beam**	**41.23**	**311**	P	**P**	**10 15 54.3**	**+0.2**
	0.8nm,0.5s,baz=95,slow=6.1,SNR=3.4						
MKAR	**Makanchi Array**	**43.68**	**301**	P	**P**	**10 16 14.4**	**+0.2**
	0.6nm,0.7s,baz=83,slow=12,SNR=5.6						
KURBB	**Kurchatov Arra**	**45.42**	**307**	P	**P**	**10 16 27.8**	**-0.1**
	baz=82,slow=8.1						
ILAR	**Eielson Array**	**48.05**	**33**	P	**P**	**10 16 47.0**	**-1.4**
	0.3nm,0.9s,baz=279,slow=7.4,SNR=4.2						
**BVAR

	0.6nm,0.8s,baz=66,slow=9.1,SNR=5.2								
ILAR	**Eielson Array**	**47.39**	**33**	P		**P**	**10 19 40.7**	**-0.6**
	0.5nm,0.8s,baz=272,slow=6.0,SNR=5.7								
WRA	**Warramunga Arr**	**59.19**	**189**	P		**P**	**10 21 07.1**	**-1.4**
	0.3nm,0.4s,baz=6.5,slow=6.9,SNR=8.8								
ASAR	**Alice Springs**	**62.91**	**189**	P		**P**	**10 21 32.4**	**-1.4**
	0.2nm,0.9s,baz=13,slow=4.9,SNR=4.2								

DDA ***25*** *10:21:32.3, 39°.48N×36°.68E, h5km, Md3.0*
ISK ***25*** *10:21:32.1, 39°.51N×36°.85E, h28km, MD2.7*
ISCJB ***25*** *10:21:33.3±0.5, 39°.46N±0°.03×36°.67E±0°.03, h4km±4km, Error ellipse: s-maj=4.4km s-min=3.7km az=174.6*
CSEM ***25*** *10:21:33.5±0.3, 39°.47N×36°.71E, h2km, MD3.0, Error ellipse: s-maj=6.1km s-min=5.3km az=10.0*

ISC 25 10:21:33.1±0.8, 39°.45N±0°.02×36°.70E±0°.02, h15km±6km, n33, σ1$47/58, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
CUALT	**Altinyayla-SIV**	**0.18**	**167**	*i* P		**Pg**	**10 21 37.6**	**0.0**
CUALT				*i* S		**Sg**	**10 21 41.3**	**+0.7**
CUALT	**Altinyayla-SIV**	**0.18**	**167**	P		**Pg**	**10 21 37.6**	**0.0**
CUALT				S		**Sg**	**10 21 41.3**	**+0.7**
CUSAR	**Sarkisla-SIVAS**	**0.36**	**265**	*i* P		**Pg**	**10 21 40.1**	**-0.4**
CUSAR				*i* S		**Sb**	**10 21 46.2**	**-0.6**
CUSAR	**Sarkisla-SIVAS**	**0.36**	**265**	P		**Pg**	**10 21 40.1**	**-0.4**
CUSAR				S		**Sb**	**10 21 46.2**	**-0.6**
SVSK	**Karacayir**	**0.52**	**26**	*e*PG		**Pg**	**10 21 42.0**	**-1.4**
SVSK				*e*SG		**Sg**	**10 21 49.4**	**-1.0**
CUKAN	**kangal_SIVAS**	**0.61**	**103**	*i* P		**Pb**	**10 21 45.1**	**-0.4**
CUKAN				*i* S		**Sb**	**10 21 55.5**	**+1.6**
CUKAN	**kangal_SIVAS**	**0.61**	**103**	P		**Pb**	**10 21 45.1**	**-0.4**
TOKT	**Tokat**	**0.88**	**352**	*e*PG		**Pg**	**10 21 48.0**	**-2.2**
TOKA	**Tokat**	**0.89**	**349**	*i* P		**Pg**	**10 21 48.8**	**-1.6**
TOKA				*i* S		**Sb**	**10 22 02.5**	**+0.5**
TOKA	**Tokat**	**0.89**	**349**	P		**Pg**	**10 21 48.8**	**-1.6**
TOKA				S		**Sb**	**10 22 02.5**	**+0.5**
BNN	**Bunyan**	**0.90**	**228**	*e*PG		**Pn**	**10 21 51.5**	**+0.1**
BNN	**Bunyan**	**0.90**	**228**	*e*Pg		**Pn**	**10 21 51.5**	**+0.1**
CUZAR	**Zara_SIVAS**	**0.93**	**62**	*i* P		**Pb**	**10 21 51.0**	**-0.1**
CUZAR				*i* S		**Sn**	**10 22 06.0**	**+1.0**
CUZAR	**Zara_SIVAS**	**0.93**	**62**	P		**Pb**	**10 21 51.0**	**-0.1**
SARI	**SarD1z-Kayseri**	**1.06**	**192**	*e*PN		**Pg**	**10 21 52.8**	**-1.0**
SARI				*e*SN		**Sg**	**10 22 07.9**	**+0.2**
DARE	**Darende-Malaty**	**1.07**	**145**	*e*PG		**Pg**	**10 21 51.9**	**-1.9**
DARE				*e*SG		**Sg**	**10 22 05.4**	**-2.3**
DARE	**Darende-Malaty**	**1.07**	**145**	*e*Pg		**Pg**	**10 21 51.9**	**-1.9**
DARE				*e*Sg		**Sg**	**10 22 05.4**	**-2.3**
YOZ	**Yozgat**	**1.09**	**280**	*e*PN		**Pg**	**10 21 53.0**	**-1.2**
YOZ				*e*SN		**Sb**	**10 22 08.8**	**+1.0**
ERBA	**Erbaa**	**1.23**	**2**	*i* P		**Pn**	**10 21 56.5**	**+0.6**
ERBA				*i* S		**Sn**	**10 22 14.1**	**+1.8**
ERBA	**Erbaa**	**1.23**	**2**	P		**Pn**	**10 21 56.5**	**+0.6**
ERBA				S		**Sn**	**10 22 14.1**	**+1.8**
SUSE	**Susehri**	**1.38**	**56**	*i* P		**Pg**	**10 21 59.5**	**-0.3**
SUSE				*i* S		**Sn**	**10 22 18.8**	**+2.7**
SUSE	**Susehri**	**1.38**	**56**	P		**Pg**	**10 21 59.5**	**-0.3**
SUSE				S		**Sn**	**10 22 18.8**	**+2.7**
KEMA	**Kemaliye**	**1.40**	**97**	*i* P		**Pg**	**10 21 59.7**	**-0.4**
KEMA				*i* S		**Sn**	**10 22 19.4**	**+3.0**
KEMA	**Kemaliye**	**1.40**	**97**	P		**Pg**	**10 21 59.7**	**-0.4**
KEMA				S		**Sn**	**10 22 19.4**	**+3.0**
ILIC	**ilic-Erzincan**	**1.44**	**89**	*e*PN		**Pn**	**10 21 54.9**	**-4.0**
COAL	**Corum-Alaca**	**1.55**	**302**	*i* P		**Pn**	**10 22 00.6**	**+0.3**
COAL				*i* S		**Sg**	**10 22 24.0**	**+0.9**
COAL	**Corum-Alaca**	**1.55**	**302**	P		**Pn**	**10 22 00.6**	**+0.3**
COAL				S		**Sg**	**10 22 24.0**	**+0.9**
CDAG	**Cicekdag**	**1.81**	**276**	*i* P		**Pb**	**10 22 06.5**	**+0.4**
CDAG				*i* S		**Sg**	**10 22 31.4**	**-0.1**
CDAG	**Cicekdag**	**1.81**	**276**	P		**Pb**	**10 22 06.5**	**+0.4**
CDAG				S		**Sg**	**10 22 31.4**	**-0.1**
CTAK	**Corum_Osmancik**	**1.89**	**310**	*i* P		**Pg**	**10 22 08.2**	**-1.3**
CTAK				*i* S		**Sn**	**10 22 25.5**	**-3.3**
CTAK	**Corum_Osmancik**	**1.89**	**310**	P		**Pg**	**10 22 08.2**	**-1.3**
ELZG	**Elazig**	**2.02**	**117**	*i* P		**Pg**	**10 22 11.1**	**-0.8**
ELZG				*i* S		**Sg**	**10 22 39.6**	**+1.6**
ELZG	**Elazig**	**2.02**	**117**	P		**Pg**	**10 22 11.1**	**-0.8**

MEX 25 10:21:48.7±0.8, 14°.12N×92°.48W, h8km±999km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
CCIG	**Comitan**	**2.17**	**9**	*e*P		Pn	10 22 22.8	-2.6
CCIG				*i* S		Sn	10 22 48.8	-3.9

ISCJB ***25*** *10:23:11.1±0.4, 32°.31N±0°.02×115°.29W±0°.03, h22km±4km, Error ellipse: s-maj=4.1km s-min=3.3km az=164.5*
NEIC ***25*** *10:23:12.4, 32°.30N×115°.30W, h5km, ML3.4(ECX), ML3.3(PAS), After ECX.*
ECX ***25*** *10:23:12.4±0.5, 32°.30N×115°.30W, h5km, MD3.2, ML3.4*
MEX ***25*** *10:23:13.3±0.8, 32°.33N×115°.23W, h12km±84km, MD4.1*

ISC 25 10:23:10.8±0.9, 32°.29N±0°.02×115°.32W±0°.03, h16km±6km, n41, σ0$98/60, 5C-1D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
CPBX	**Cerro Prieto**	**0.13**	**5**	*e*P		**Pg**	**10 23 14.5**	**-0.1**
CPBX				*e*S		**Sg**	**10 23 16.9**	**-0.2**
CPBX				IAML			10 23 29.6	
	comp=N,45μm,0.4s							
CPBX				⇑*e*			10 23 31.1	
CPBX	**Cerro Prieto**	**0.13**	**5**	*e*P		**Pg**	**10 23 14.5**	**-0.1**
CPBX				*i* S		**Sg**	**10 23 17.1**	**0.0**
SGL	**Mount Signal**	**0.50**	**316**	⇑*i* P		**Pg**	**10 23 21.1**	**+0.3**
DREC	**Desert Rsrch C**	**0.53**	**348**	*e*P		**Pg**	**10 23 22.2**	**+1.0**
ERPC	**Ernies Place**	**0.54**	**327**	*e*P		**Pg**	**10 23 22.3**	**+0.8**
WESC	**Westside Schoo**	**0.58**	**323**	*e*P		**Pg**	**10 23 23.0**	**+0.6**
YUH	**Yuha Desert**	**0.62**	**305**	⇑*i* P		**Pg**	**10 23 23.1**	**0.0**
RMX	**La Rumorosa**	**0.72**	**296**	⇑*e*P		**Pg**	**10 23 24.3**	**-0.6**
RMX				*e*S		**Sg**	**10 23 34.4**	**0.0**
IKP	**In-Ko-Pah, Jac**	**0.76**	**298**	P		**Pg**	**10 23 25.7**	**0.0**
	baz=117,SNR=304							
IKP				S		**Sg**	**10 23 35.3**	**-0.5**
	baz=117							
IKP	**In-Ko-Pah, Jac**	**0.76**	**298**	⇑*e*P		**Pg**	**10 23 25.6**	**0.0**
SWSC	**Sam W. Stewart**	**0.77**	**328**	P		**Pb**	**10 23 25.4**	**-0.4**
	baz=147,SNR=38							
SWSC				S		**Sg**	**10 23 35.7**	**-0.4**
	baz=147							
ECBX	**El Chinero**	**0.84**	**164**	*e*P		**Pb**	**10 23 27.2**	**+0.1**
ECBX				*e*S		**Sb**	**10 23 38.8**	**+0.6**
GLA	**Glamis**	**0.86**	**28**	P		**Pb**	**10 23 27.0**	**-0.5**
	baz=208,SNR=259							
GLA				S		**Sb**	**10 23 38.3**	**-0.5**
	baz=208							
MONP2	**Monument Peak**	**1.11**	**303**	P		**Pb**	**10 23 31.3**	**-0.5**
	baz=122,SNR=292							
MONP2				S		**Sb**	**10 23 46.0**	**0.0**
	baz=122							
ZAX	**El Zacaton**	**1.12**	**227**	*e*P		**Pn**	**10 23 31.9**	**0.0**
CBX	**Cerro Bola**	**1.14**	**272**	*e*P		**Pn**	**10 23 32.8**	**+0.6**
CBX				*i* S		**Sb**	**10 23 47.2**	**+0.4**
CBX	**Cerro Bola**	**1.14**	**272**	*e*P		**Pn**	**10 23 32.6**	**+0.4**
CBX				IAML			10 23 52.2	
	comp=N,940nm,0.4s							
CBX				⇓*e*			10 23 52.2	
CBX	**Cerro Bola**	**1.14**	**272**	*e*P		**Pn**	**10 23 32.8**	**+0.6**
CBX				*i* S		**Sb**	**10 23 47.2**	**+0.4**
TJIG	**Tijuana**	**1.16**	**278**	*e*P		**Pn**	**10 23 32.7**	**+0.4**
TJIG				*i* S		**Sb**	**10 23 47.4**	**+0.2**
TJIG	**Tijuana**	**1.16**	**278**	*e*P		**Pn**	**10 23 32.5**	**+0.2**
BAR	**Barrett**	**1.21**	**289**	*e*P		**Pn**	**10 23 33.5**	**+0.4**
SPIG	**San Pedro Mart**	**1.25**	**186**	*e*P		**Pn**	**10 23 34.5**	**+0.7**
SPIG				*i* S		**Sb**	**10 23 49.4**	**-0.6**
SPIG	**San Pedro Mart**	**1.25**	**186**	*e*P		**Pn**	**10 23 34.5**	**+0.7**
SPIG				*i* S		**Sb**	**10 23 49.2**	**-0.9**
SPX	**San Pedro Mart**	**1.25**	**186**	*e*P		**Pn**	**10 23 33.6**	**-0.3**
SPX				*e*S		**Sb**	**10 23 49.1**	**-1.0**
ECNX	**Esteban Cantu**	**1.26**	**240**	*e*P		**Pn**	**10 23 34.4**	**+0.6**
PBX	**Punta Banda**	**1.31**	**246**	*e*P		**Pn**	**10 23 35.4**	**+0.8**
BC3	**Big Chuckawall**	**1.37**	**355**	P		**Pn**	**10 23 34.4**	**-1.0**
	baz=174,SNR=71							
BC3				S		**Sn**	**10 23 50.7**	**-2.5**
	baz=174							
SDRC	**San Diego Road**	**1.44**	**288**	*e*P		**Pn**	**10 23 37.1**	**+0.9**
109C	**Camp Elliot, M**	**1.62**	**292**	Pb		**Pn**	**10 23 40.3**	**+1.5**
	baz=111							
109C				Sb		**Sn**	**10 24 01.2**	**+1.8**
	baz=111							
TPFO	**Pinon Flats**	**1.62**	**324**	P		**Pn**	**10 23 38.0**	**-0.9**
	baz=143,SNR=33							
TPFO				S		**Sn**	**10 23 57.5**	**-2.1**
	baz=143							
PFO	**Pinyon Flats O**	**1.63**	**324**	P		**Pn**	**10 23 38.1**	**-0.9**
	baz=143,SNR=23							
PFO				S		**Sn**	**10 23 58.1**	**-1.6**
	baz=143							
IRM	**Iron Mountain**	**1.87**	**4**	Pb		**Pn**	**10 23 43.4**	**+1.3**
	baz=184							
MURC	**Murrieta**	**2.05**	**310**	P		**Pn**	**10 23 44.2**	**-0.4**
	baz=129,SNR=21							
MURC				Sb		**Sb**	**10 24 14.5**	**+1.6**
	baz=129							
214A	**Organ Pipe Nat**	**2.15**	**98**	P		**Pn**	**10 23 45.6**	**-0.4**
	baz=280,SNR=28							
PDMCI	**Parker Dam,Lak**	**2.24**	**26**	Sb		**Sb**	**10 24 18.1**	**-0.2**
	baz=206							
BBRC	**Big Bear Solar**	**2.38**	**326**	Sb		**Sb**	**10 24 22.2**	**-0.6**
	baz=145							
GMRC	**Granite Mounta**	**2.50**	**354**	Sb		**Sb**	**10 24 26.0**	**-0.1**
	baz=173							
BFSC	**Mount Baldy Ra**	**2.76**	**315**	Sb		**Sb**	**10 24 34.7**	**+1.2**
	baz=134							
CIS	**Catalina Islan**	**2.83**	**294**	Sb		**Sb**	**10 24 37.2**	**+1.7**
	baz=112							
WUAZ	**Wupatki**	**4.59**	**44**	*e*Pn		**Pn**	**10 24 22.5**	**+2.7**
W18A	**Petrified Fore**	**5.44**	**57**	*e*Pn		**Pn**	**10 24 33.8**	**+2.5**
	comp=N,5.1nm,0.6s							

ISCJB ***25*** *10:23:42.4±0.4, 23°.81N±0°.02×122°.19E±0°.02, h15km±5km, Error ellipse: s-maj=4.4km s-min=2.4km az=148.5*
JMA ***25*** *10:23:42.9±0.1, 23°.84N×122°.12E, h28km±4km, M2.2*
TAP ***25*** *10:23:43.7, 23°.87N×122°.15E, h32km±1km, ML2.8, D*

ISC 25 10:23:43.6±1.0, 23°.85N±0°.03×122°.12E±0°.03, h32km±11km, n36, σ0$57/72, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
TWD	**Chiawan**	**0.53**	**296**	*e*P		**Pb**	**10 23 54.3**	**-0.3**
	baz=283							
TWD				*e*S		**Sb**	**10 24 02.3**	**+0.2**
	baz=283							
ESL	**Shilin**	**0.63**	**267**	*e*P		**Pb**	**10 23 55.7**	**-0.5**
	baz=258							
ESL				*e*S		**Sb**	**10 24 04.8**	**0.0**
	baz=258							
ENA	**Nanau**	**0.67**	**329**	P		**Pb**	**10 23 56.6**	**-0.3**
	baz=313							
ENA				*e*S		**Sn**	**10 24 06.2**	**-0.1**
	baz=313							
TWC	**Suao**	**0.79**	**342**	*e*P		**Pb**	**10 23 58.9**	**-0.1**
	baz=350							
TWC				*e*S		**Sn**	**10 24 09.6**	**+0.2**
	baz=350							
EHY	**Hungye**	**0.81**	**245**	*e*P		**Pn**	**10 23 58.4**	**-0.3**
	baz=259							
EHY				*e*S		**Sb**	**10 24 09.5**	**-0.2**
	baz=259							
WHF	**Hehuan Shan**	**0.83**	**291**	P		**Pn**	**10 23 59.3**	**-0.2**
	baz=279							
WHF				*e*S		**Sb**	**10 24 10.7**	**-0.2**
	baz=279							
NNS	**Nan Shan**	**0.90**	**311**	*e*P		**Pn**	**10 24 00.3**	**+0.2**
	baz=308							
NNS				*e*S		**Sb**	**10 24 12.3**	**-0.2**
	baz=308							
TWF1	**Yuli**	**0.90**	**237**	*e*P		**Pn**	**10 24 00.4**	**+0.4**
	baz=251							
TWF1				*e*S		**Sb**	**10 24 12.8**	**+0.4**
	baz=251							
WDT	**Danda**	**0.91**	**264**	*e*P		**Pn**	**10 24 00.5**	**+0.1**
	baz=263							
WDT				*e*S		**Sn**	**10 24 12.5**	**0.0**
	baz=263							
ENTT	**Nioudou**	**0.93**	**328**	*e*P		**Pb**	**10 24 00.8**	**-0.5**
	baz=325							
ENTT				*e*S		**Sb**	**10 24 13.3**	**-0.1**
	baz=325							
TWE	**Neicheng**	**0.96**	**335**	*e*P		**Pn**	**10 24 00.8**	**0.0**
	baz=333							
TWE				*e*S		**Sb**	**10 24 13.9**	**-0.1**
	baz=333							
JYNG	**Yonaguni jima**	**0.96**	**52**	P		**Pn**	**10 24 00.8**	**-0.1**
JYNG				S		**Sn**	**10 24 12.8**	**-0.7**
CHKT	**Chengkung**	**1.02**	**223**	*e*P		**Pb**	**10 24 03.1**	**+0.5**
	baz=214							
CHKT				*e*S		**Sn**	**10 24 13.9**	**-0.9**
	baz=214							
YOJ	**Yonaguni jima**	**1.02**	**53**	P		**Pn**	**10 24 01.7**	**+0.1**
YOJ				S		**Sn**	**10 24 14.2**	**-0.7**
NSK	**Sanguang**	**1.07**	**320**	*e*P		**Pn**	**10 24 03.0**	**+0.5**
	baz=305							
NSK				*e*S		**Sn**	**10 24 16.1**	**-0.2**
	baz=305							
SMLT	**Sun Moon Lake**	**1.11**	**272**	*e*P		**Pb**	**10 24 03.8**	**-0.5**
	baz=271							
SMLT				*e*S		**Sb**	**10 24 19.3**	**+0.7**
	baz=271							
YUS	**Yu-Shan**	**1.13**	**252**	*e*P		**Pb**	**10 24 04.3**	**-0.5**
	baz=251							
YUS				*e*S		**Sn**	**10 24 18.3**	**+0.1**
	baz=251							
TYC	**Yuchr**	**1.15**	**273**	*e*P		**Pb**	**10 24 04.4**	**-0.6**
	baz=272							
TYC				*e*S		**Sb**	**10 24 20.0**	**+0.3**
	baz=272							
ELDTW	**Lidau**	**1.21**	**237**	*e*P		**Pn**	**10 24 04.4**	**+0.1**
	baz=237							
ELDTW				*e*S		**Sn**	**10 24 19.6**	**-0.1**
	baz=237							
ALS	**Alishan**	**1.25**	**255**	*e*P		**Pb**	**10 24 06.4**	**-0.4**
	baz=254							
ALS				*e*S		**Sb**	**10 24 22.2**	**-0.4**
	baz=254							
NWF	**Wu-fen Shan**	**1.25**	**346**	*e*P		**Pb**	**10 24 07.0**	**+0.3**
	baz=359							
NWF				*e*S		**Sb**	**10 24 23.5**	**+1.0**
	baz=359							
NSTT	**Nanjuang**	**1.28**	**308**	*e*P		**Pb**	**10 24 06.9**	**-0.2**
	baz=306							
NSTT				*e*S		**Sb**	**10 24 23.1**	**-0.2**
	baz=306							
TWQ1	**Liyutan**	**1.32**	**292**	*e*P		**Pb**	**10 24 07.8**	**-0.1**
	baz=291							
TWQ1				*e*S		**Sb**	**10 24 25.8**	**+1.4**
	baz=291							
CHN5	**Tsauling**	**1.34**	**259**	*e*P		**Pb**	**10 24 08.1**	**-0.1**
	baz=250							
CHN5				*e*S		**Sb**	**10 24 25.4**	**+0.3**
	baz=250							
TWG	**Pinlang**	**1.40**	**223**	*e*P		**Pn**	**10 24 08.0**	**+1.1**
	baz=234							
TWG				*e*S		**Sn**	**10 24 23.9**	**-0.5**
	baz=234							
STYT	**Tauyuan**	**1.42**	**242**	*e*P		**Pn**	**10 24 06.0**	**-1.3**
	baz=232							
STYT				*e*S		**Sb**	**10 24 27.1**	**-0.2**
	baz=232							
CHN4	**Tsaushan**	**1.48**	**251**	*e*P		**Pb**	**10 24 09.4**	**-1.1**
	baz=250							
CHN4				*e*S		**Sb**	**10 24 30.9**	**+1.9**
	baz=250							
WTP	**Ta-pu**	**1.50**	**247**	*e*P		**Pb**	**10 24 10.2**	**-0.8**
	baz=246							
WTP				*e*S		**Sb**	**10 24 30.0**	**+0.4**
	baz=246							
IRIF	**Iriomote-Funau**	**1.55**	**72**	P		**Pn**	**10 24 09.0**	**0.0**
IRIF				S		**Sn**	**10 24 28.3**	**+0.3**
HATJ	**Hateruma jima**	**1.56**	**82**	P		**Pn**	**10 24 09.1**	**0.0**
HATJ				*e*S		**Sn**	**10 24 27.7**	**-0.5**
CHN1	**Nanshi**	**1.60**	**246**	*e*P		**Pb**	**10 24 12.5**	**0.0**
	baz=245							
CHN1				*e*S		**Sb**	**10 24 32.8**	**+0.4**
	baz=245							
TWK	**Hsinying**	**1.60**	**249**	*e*P		**Pn**	**10 24 10.8**	**+1.1**
	baz=248							
TWK				*e*S		**Sb**	**10 24 33.2**	**+0.7**
	baz=248							
JKRS	**Kuro-shima**	**1.77**	**77**	P		**Pn**	**10 24 12.3**	**+0.3**
JKRS				*e*S		**Sn**	**10 24 33.9**	**+0.4**
JIJ	**Ishigaki jima**	**1.92**	**74**	P		**Pn**	**10 24 13.6**	**-0.5**
JIJ				S		**Sn**	**10 24 36.0**	**-1.1**
JISG	**Ishigakijimahi**	**2.13**	**69**	P		**Pn**	**10 24 17.0**	**0.0**
JISG				*e*S		**Sn**	**10 24 42.0**	**-0.4**
JTJ	**Tarama**	**2.49**	**71**	P		**Pn**	**10 24 22.8**	**+1.0**
JTJ				*e*S		**Sn**	**10 24 51.2**	**+0.1**

MEX 25 10:34:05.8±0.4, 16°.81N×96°.42W, h64km±6km, MD4.0, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
OXBJ	**Oaxaca**	**0.39**	**312**	*e*P		Pn	10 34 15.8	-1.5
OXBJ				*e*S		Sn	10 34 23.9	-1.8
VHO	**Vista Hermosa**	**0.40**	**312**	*i* P		Pn	10 34 16.0	-1.4
VHO				*e*S		Sn	10 34 23.8	-1.9
HUIG	**Huatulco**	**1.07**	**164**	*e*P		Pn	10 34 24.3	-0.7
HUIG				*e*S		Sn	10 34 37.3	-1.9
PNIG	**Pinotepa**	**1.69**	**256**	*e*P		Pn	10 34 31.7	-1.4
PNIG				*i* S		Sn	10 34 51.9	-1.9
TLIG	**Tlapa**	**2.19**	**290**	*i* P		Pn	10 34 39.2	-0.8
TLIG				*i* S		Sn	10 35 05.0	-1.0
YAIG	**Yautepec**	**3.25**	**309**	*i* P		Pn	10 34 52.8	-1.7
YAIG				*e*S		Sn	10 35 30.9	-1.1

IDC ***25*** *10:42:45.9±0.9, 18°.95N×66°.57W, h0km, mb3.7/7, mb1 3.9/7, mb1mx3.7/40, mbtmp3.7/7, MS3.1/3, Ms1 3.1/3, ms1mx2.7/39, Error ellipse: s-maj=33.9km s-min=18.2km az=68.0*
NEIC ***25*** *10:42:51.7, 19°.09N×66°.52W, h10km, MD3.8(RSPR), After RSPR.*
RSPR ***25*** *10:42:51.7, 19°.09N×66°.52W, h10km±2km, MD3.8/13*

ISC 25 10:42:50.5±1.5, 19°.04N±0°.05×66°.52W±0°.03, h31km±11km, n55, σ1$45/65, mb3.8/8, 13C-16D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
AOPR	**Arecibo Observ**	**0.73**	**198**	⇓*e*P		**Pn**	**10 43 05.5**	**+0.8**
AOPR	**Arecibo Observ**	**0.73**	**198**	⇓*e*P		**Pn**	**10 43 05.5**	**+0.8**
AOPR				*e*S		**Sn**	**10 43 16.1**	**+1.3**
AGPR	**Aguadilla, PR**	**0.80**	**225**	⇓*e*P		**Pb**	**10 43 05.7**	**-0.3**
AGPR	**Aguadilla, PR**	**0.80**	**225**	⇓*e*P		**Pb**	**10 43 05.7**	**-0.3**
AGPR				*e*S		**Sn**	**10 43 17.2**	**+0.6**
CELP	**Cerrillos**	**0.96**	**183**	⇓*e*P		**Pn**	**10 43 08.8**	**+0.9**
CELP	**Cerrillos**	**0.96**	**183**	⇓*e*P		**Pn**	**10 43 08.8**	**+0.9**
SJG	**San Juan**	**0.99**	**159**	⇓*e*P		**Pb**	**10 43 09.0**	**-0.1**
SJG	**San Juan**	**0.99**	**159**	⇓*e*P		**Pb**	**10 43 09.1**	**-0.1**
SJG	**San Juan**	**0.99**	**159**	⇓*e*P		**Pb**	**10 43 09.0**	**-0.1**
SJG				*e*S		**Sn**	**10 43 22.9**	**+1.7**
CBYP	**Canovanas**	**0.99**	**141**	⇓*e*P		**Pb**	**10 43 08.8**	**-0.4**
CBYP	**Canovanas**	**0.99**	**141**	⇓*e*P		**Pb**	**10 43 08.8**	**-0.4**
CBYP				*e*S		**Sn**	**10 43 22.3**	**+1.0**
OBIP	**Obispado Ponce**	**1.00**	**185**	⇓*e*P		**Pb**	**10 43 09.3**	**0.0**
OBIP	**Obispado Ponce**	**1.00**	**185**	⇓*e*P		**Pb**	**10 43 09.3**	**0.0**
OBIP				*e*S		**Sn**	**10 43 23.1**	**+1.7**
MPR	**Mayaguez**	**1.02**	**216**	⇓*e*P		**Pb**	**10 43 09.4**	**-0.1**
MPR				*e*S		**Sn**	**10 43 23.5**	**+1.7**
MPR	**Mayaguez**	**1.02**	**216**	⇓*e*P		**Pb**	**10 43 09.4**	**-0.1**
LSP	**Las Mesas**	**1.02**	**212**	⇓*e*P		**Pb**	**10 43 09.5**	**-0.2**
LSP	**Las Mesas**	**1.02**	**212**	⇓*e*P		**Pb**	**10 43 09.5**	**-0.2**
LSP				*e*S		**Sn**	**10 43 23.7**	**+1.8**
HUMP	**Col San Antoni**	**1.10**	**145**	⇓*e*P		**Pb**	**10 43 10.5**	**-0.4**
HUMP	**Col San Antoni**	**1.10**	**145**	⇓*e*P		**Pb**	**10 43 10.5**	**-0.4**
HUMP				*e*S		**Sn**	**10 43 24.8**	**+0.9**
IDE	**Isla Desecheo**	**1.12**	**234**	⇓*e*P		**Pn**	**10 43 10.5**	**+0.5**
IDE	**Isla Desecheo**	**1.12**	**234**	⇓*e*P		**Pn**	**10 43 10.5**	**+0.5**
IDE				*e*S		**Sn**	**10 43 25.5**	**+1.1**
ICMP	**Isla Caja de M**	**1.15**	**180**	⇓*e*P		**Pb**	**10 43 11.9**	**0.0**
ICMP	**Isla Caja de M**	**1.15**	**180**	⇓*e*P		**Pb**	**10 43 11.9**	**0.0**
ICMP				*e*S		**Sb**	**10 43 27.0**	**+0.6**
STVI	**Saint Thomas**	**1.64**	**115**	⇓*e*P		**Pn**	**10 43 17.6**	**+0.4**
STVI	**Saint Thomas**	**1.64**	**115**	⇓*e*P		**Pn**	**10 43 17.6**	**+0.4**
STVI				*e*S		**Sn**	**10 43 37.9**	**+0.8**
IMPR	**Mona Island, P**	**1.65**	**235**	⇑*e*P		**Pn**	**10 43 18.6**	**+1.3**
ABVI	**Anegada Island**	**2.09**	**98**	⇑*e*P		**Pn**	**10 43 24.5**	**+1.1**
ABVI				*e*S		**Sn**	**10 43 49.6**	**+1.2**
ABV	**Anegada**	**2.09**	**98**	⇑*e*P		**Pn**	**10 43 24.5**	**+1.1**
ABV	**Anegada**	**2.09**	**98**	*e*S		**Sn**	**10 43 49.6**	**+1.2**
DR12	**Loma Pena Alta**	**2.72**	**265**	⇓*e*P		**Pn**	**10 43 33.0**	**+0.8**
DR12	**Loma Pena Alta**	**2.72**	**265**	⇓*e*P		**Pn**	**10 43 33.0**	**+0.8**
SDDR	**Presa de Saban**	**4.51**	**270**	*e*Pn		**Pn**	**10 43 58.7**	**+2.0**
SDV	**Santo Domingo**	**10.86**	**202**	*e*Pn		**Pn**	**10 45 27.4**	**

TOKA				S	**Sg**	**10 46 29.0**	**0.0**
BYBT	**Boyabat**	**1.00**	**339**	*e*PG	**Pg**	**10 46 16.9**	**-0.2**
BYBT	**Boyabat**	**1.00**	**339**	*e*Pg	**Pg**	**10 46 16.9**	**-0.2**
TOKT	**Tokat**	**1.02**	**102**	*e*PG	**Pb**	**10 46 17.7**	**-0.2**
TOKT	**Tokat**	**1.02**	**102**	*e*Pg	**Pb**	**10 46 17.7**	**-0.2**
TOS	**Tosya**	**1.05**	**299**	*e*PG	**Pb**	**10 46 18.2**	**-0.3**
TOS	**Tosya**	**1.05**	**299**	*e*Pg	**Pb**	**10 46 18.2**	**-0.3**
SAMS	**Samsun-Alacam**	**1.09**	**41**	*i* P	**Pb**	**10 46 19.1**	**0.0**
SAMS				*i* S	**Sn**	**10 46 34.9**	**-0.1**
SAMS	**Samsun-Alacam**	**1.09**	**41**	P	**Pb**	**10 46 19.1**	**0.0**
SAMS				S	**Sn**	**10 46 34.9**	**-0.1**
CDAG	**Cicekdag**	**1.13**	**217**	*i* P	**Pg**	**10 46 18.9**	**-0.6**
CDAG				*i* S	**Sg**	**10 46 34.2**	**+0.1**
CDAG	**Cicekdag**	**1.13**	**217**	P	**Pg**	**10 46 18.9**	**-0.6**
CDAG				S	**Sg**	**10 46 34.2**	**+0.1**
ERBA	**Erbaa**	**1.16**	**82**	*i* P	**Pg**	**10 46 18.8**	**-1.3**
ERBA				*i* S	**Sg**	**10 46 34.9**	**-0.3**
ERBA	**Erbaa**	**1.16**	**82**	P	**Pg**	**10 46 18.8**	**-1.3**
ERBA				S	**Sg**	**10 46 34.9**	**-0.3**
CANT	**Cankiri**	**1.24**	**274**	*e*PN	**Pn**	**10 46 21.7**	**0.0**
CANT				*e*SN	**Sn**	**10 46 38.8**	**+0.2**
ILGA	**Ilgaz**	**1.27**	**295**	*i* P	**Pn**	**10 46 22.3**	**0.0**
ILGA				*i* S	**Sb**	**10 46 39.3**	**+0.4**
ILGA	**Ilgaz**	**1.27**	**295**	P	**Pn**	**10 46 22.3**	**0.0**
ILGA				S	**Sb**	**10 46 39.3**	**+0.4**
CUSAR	**Sarkisla-SIVAS**	**1.35**	**145**	*i* P	**Pn**	**10 46 22.9**	**-0.5**
CUSAR				*i* S	**Sn**	**10 46 41.8**	**+0.1**
CUSAR	**Sarkisla-SIVAS**	**1.35**	**145**	P	**Pn**	**10 46 22.9**	**-0.5**
CUSAR				S	**Sn**	**10 46 41.8**	**+0.1**
KAST	**KASTAMONU**	**1.38**	**314**	*i* P	**Pg**	**10 46 24.7**	**+0.4**
KAST				*i* S	**Sg**	**10 46 42.1**	**-0.1**
KAST	**KASTAMONU**	**1.38**	**314**	P	**Pg**	**10 46 24.7**	**+0.4**
KAST				S	**Sg**	**10 46 42.1**	**-0.1**
ELDT	**Eldivan**	**1.38**	**269**	*i* P	**Pn**	**10 46 23.9**	**+0.1**
ELDT				*i* S	**Sn**	**10 46 42.6**	**+0.2**
ELDT	**Eldivan**	**1.38**	**269**	P	**Pn**	**10 46 23.9**	**+0.1**
ELDT				S	**Sn**	**10 46 42.7**	**+0.2**
SVSK	**Karacayir**	**1.48**	**114**	*e*PN	**Pb**	**10 46 25.7**	**0.0**
SVSK				*e*SN	**Sg**	**10 46 45.9**	**+0.5**
SVSK	**Karacayir**	**1.48**	**114**	*e*Pn	**Pb**	**10 46 25.7**	**0.0**
SVSK				*e*Sn	**Sg**	**10 46 45.9**	**+0.5**
SNOP	**Sinop**	**1.48**	**359**	*e*PN	**Pb**	**10 46 25.6**	**-0.2**
SNOP	**Sinop**	**1.48**	**359**	*e*Pn	**Pb**	**10 46 25.6**	**-0.2**
SCER	**sogukcermik**	**1.59**	**114**	*i* P	**Pb**	**10 46 27.6**	**-0.2**
SCER				*i* S	**Sg**	**10 46 48.8**	**-0.3**
SCER	**sogukcermik**	**1.59**	**114**	P	**Pb**	**10 46 27.6**	**-0.2**
SCER				S	**Sg**	**10 46 48.8**	**-0.3**
KAMT	**Kaman**	**1.65**	**226**	*e*PN	**Pn**	**10 46 27.6**	**+0.2**
KAMT	**Kaman**	**1.65**	**226**	*e*Pn	**Pn**	**10 46 27.6**	**+0.2**
BZK	**Bozkurt**	**1.70**	**327**	*e*PN	**Pn**	**10 46 28.5**	**+0.5**
BZK	**Bozkurt**	**1.70**	**327**	*e*Pn	**Pn**	**10 46 28.5**	**+0.5**
CUALT	**Altinyayla-SIV**	**1.72**	**137**	*i* P	**Pb**	**10 46 29.6**	**-0.2**
CUALT				*i* S	**Sg**	**10 46 52.8**	**-0.2**
CUALT	**Altinyayla-SIV**	**1.72**	**137**	P	**Pb**	**10 46 29.6**	**-0.2**
CUALT				S	**Sg**	**10 46 52.8**	**-0.2**
BNN	**Bunyan**	**1.74**	**164**	*e*PN	**Pn**	**10 46 29.2**	**+0.5**
BNN	**Bunyan**	**1.74**	**164**	*e*Pn	**Pn**	**10 46 29.2**	**+0.5**
AVNS	**Nevsehir-Avano**	**1.75**	**190**	*i* P	**Pg**	**10 46 32.2**	**+0.8**
AVNS				*i* S	**Sb**	**10 46 52.8**	**+0.1**
AVNS	**Nevsehir-Avano**	**1.75**	**190**	P	**Pg**	**10 46 32.2**	**+0.8**
AVNS				S	**Sb**	**10 46 52.8**	**+0.1**
BBAL	**Bala**	**1.90**	**239**	*i* P	**Pb**	**10 46 32.1**	**-0.9**
BBAL				*i* S	**Sg**	**10 46 58.2**	**-0.8**
BBAL	**Bala**	**1.90**	**239**	P	**Pb**	**10 46 32.1**	**-0.9**
BBAL				S	**Sg**	**10 46 58.2**	**-0.8**
AFSR	**Af˘ar-Bala (A**	**1.99**	**238**	*e*PN	**Pn**	**10 46 32.9**	**+0.9**
AFSR	**Af˘ar-Bala (A**	**1.99**	**238**	*e*Pn	**Pn**	**10 46 32.9**	**+0.9**
LOD	**Lodumlu**	**2.00**	**252**	*e*PN	**Pn**	**10 46 33.0**	**+0.8**
LOD	**Lodumlu**	**2.00**	**252**	*e*Pn	**Pn**	**10 46 33.0**	**+0.8**
CUZAR	**Zara_SIVAS**	**2.04**	**108**	*i* P	**Pn**	**10 46 33.7**	**+0.9**
CUZAR	**Zara_SIVAS**	**2.04**	**108**	P	**Pn**	**10 46 33.7**	**+0.9**
SERE	**Sereflikochisa**	**2.05**	**220**	*e*PN	**Pn**	**10 46 33.5**	**+0.7**
SERE	**Sereflikochisa**	**2.05**	**220**	*e*Pn	**Pn**	**10 46 33.5**	**+0.7**
SAFT	**Safranbolu**	**2.06**	**291**	*e*PN	**Pn**	**10 46 33.7**	**+0.8**
SAFT	**Safranbolu**	**2.06**	**291**	*e*Pn	**Pn**	**10 46 33.7**	**+0.8**
CUKAN	**kangal_SIVAS**	**2.10**	**125**	*i* P	**Pb**	**10 46 35.6**	**-0.8**
CUKAN				*i* S	**Sg**	**10 47 04.0**	**-1.3**
CUKAN	**kangal_SIVAS**	**2.10**	**125**	P	**Pb**	**10 46 35.6**	**-0.8**
AKSY	**AKSARAY - Alti**	**2.20**	**212**	*i* P	**Pn**	**10 46 36.2**	**+1.2**
AKSY				*i* S	**Sg**	**10 47 07.4**	**-1.2**
AKSY	**AKSARAY - Alti**	**2.20**	**212**	P	**Pn**	**10 46 36.2**	**+1.2**
KKUL	**Konya-Kulu**	**2.25**	**233**	*i* P	**Pn**	**10 46 36.9**	**+1.3**
KKUL				*i* S	**Sg**	**10 47 09.7**	**-0.4**
KKUL	**Konya-Kulu**	**2.25**	**233**	P	**Pn**	**10 46 36.9**	**+1.3**
SUSE	**Susehri**	**2.29**	**97**	*i* P	**Pn**	**10 46 37.2**	**+1.0**
SUSE	**Susehri**	**2.29**	**97**	P	**Pn**	**10 46 37.2**	**+1.0**
SARI	**SarD1z-Kayseri**	**2.31**	**156**	*e*PN	**Pn**	**10 46 37.5**	**+0.9**
GRSN	**GIRESUNGRSN**	**2.33**	**79**	*i* P	**Pn**	**10 46 37.7**	**+1.0**
GRSN				*i* S	**Sg**	**10 47 11.3**	**-1.4**
GRSN	**GIRESUNGRSN**	**2.33**	**79**	P	**Pn**	**10 46 37.7**	**+1.0**
BCAM	**Yenicaga**	**2.43**	**278**	*i* P	**Pn**	**10 46 39.6**	**+1.5**
BCAM	**Yenicaga**	**2.43**	**278**	P	**Pn**	**10 46 39.6**	**+1.5**
NIG	**Nigde**	**2.47**	**192**	*e*PN	**Pn**	**10 46 39.4**	**+0.6**
NIG	**Nigde**	**2.47**	**192**	*e*Pn	**Pn**	**10 46 39.4**	**+0.6**
BTIN	**Bart¨–n**	**2.52**	**297**	*i* P	**Pn**	**10 46 40.4**	**+1.2**
BTIN	**Bart¨–n**	**2.52**	**297**	P	**Pn**	**10 46 40.4**	**+1.2**
CHBY	**Cihanbeyli**	**2.67**	**224**	*e*PN	**Pn**	**10 46 41.5**	**+0.2**
CHBY	**Cihanbeyli**	**2.67**	**224**	*e*Pn	**Pn**	**10 46 41.5**	**+0.2**
SULT	**Sultanhani-AKS**	**2.69**	**210**	*e*PN	**Pn**	**10 46 42.8**	**+1.2**
SULT	**Sultanhani-AKS**	**2.69**	**210**	*e*Pn	**Pn**	**10 46 42.8**	**+1.2**
KEMA	**Kemaliye**	**2.80**	**116**	*i* P	**Pn**	**10 46 43.0**	**-0.2**
KEMA	**Kemaliye**	**2.80**	**116**	P	**Pn**	**10 46 43.0**	**-0.2**
SVRH	**Sivrihisar-ESK**	**3.06**	**257**	*e*PN	**Pn**	**10 46 47.6**	**+0.9**
SVRH	**Sivrihisar-ESK**	**3.06**	**250**	*e*Pn	**Pn**	**10 46 47.6**	**+0.9**
KIZT	**Kizilcal**	**3.07**	**239**	*e*PN	**Pn**	**10 46 47.8**	**+0.8**
KIZT	**Kizilcal**	**3.07**	**239**	*e*Pn	**Pn**	**10 46 47.8**	**+0.8**
MDUB	**Mudurnu**	**3.08**	**270**	*e*PN	**Pn**	**10 46 48.7**	**+1.6**
MDUB	**Mudurnu**	**3.08**	**270**	*e*Pn	**Pn**	**10 46 48.7**	**+1.6**
KELT	**Kelkit**	**3.09**	**96**	*i* P	**Pn**	**10 46 48.0**	**+0.7**
KELT	**Kelkit**	**3.09**	**96**	P	**Pn**	**10 46 48.0**	**+0.7**
KDHN	**Kadinhani**	**3.14**	**231**	*i* P	**Pn**	**10 46 49.3**	**+1.4**
KDHN	**Kadinhani**	**3.14**	**231**	P	**Pn**	**10 46 49.3**	**+1.4**
LADK	**Ladik-KONYA**	**3.23**	**225**	*e*PN	**Pn**	**10 46 50.5**	**+1.4**
LADK	**Ladik-KONYA**	**3.23**	**225**	*e*Pn	**Pn**	**10 46 50.5**	**+1.4**
KERG	**Konya-Eregli**	**3.23**	**196**	*i* P	**Pb**	**10 46 55.7**	**0.0**
GULE	**Gulek**	**3.27**	**187**	*i* P	**Pg**	**10 46 58.8**	**-1.7**
GULE				*i* S	**Sb**	**10 47 39.1**	**+2.9**
BORA	**Eskisehir**	**3.72**	**261**	*i* P	**Pn**	**10 46 55.5**	**-0.4**
BORA	**Eskisehir**	**3.72**	**261**	P	**Pn**	**10 46 55.5**	**-0.4**

MEX 25 10:47:00.0±0.5, 16°01N×96°98W, h10km±6km, MD4.0, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PANG	**Puerto Angel**	**0.59**	**125**	*e*P	Pg	**10 47 10.2**	**-1.3**
PANG				*i* S	Sg	**10 47 18.8**	**-0.6**
HUIG	**Huatulco**	**0.87**	**106**	*e*P	Pg	**10 47 14.0**	**-2.8**
HUIG				*e*S	Sg	**10 47 25.1**	**-3.0**
OXBJ	**Oaxaca**	**1.08**	**13**	*e*P	Pg	**10 47 17.9**	**-2.9**
OXBJ				*e*S	Sg	**10 47 31.3**	**-3.5**
VHO	**Vista Hermosa**	**1.08**	**12**	*e*P	Pg	**10 47 17.9**	**-2.9**
VHO				*e*S	Sg	**10 47 31.3**	**-3.6**
PNIG	**Pinotepa**	**1.17**	**289**	*e*P	Pb	**10 47 18.9**	**-3.5**
PNIG				*e*S	Sb	**10 47 33.1**	**-4.5**
TPIG	**Tehuac#an**	**2.42**	**351**	*i* P	Pn	**10 47 36.8**	**-3.0**
TPIG				*i* S	Sn	**10 48 04.9**	**-4.7**

*IDC **25** 10:47:58.8±1.0, 38°99N×142°85E, h0km, mb3.4/6, mb1 3.6/9, mb1mx3.5/38, mbtmp3.5/9, ML3.2/3, Error ellipse: s-maj=31.9km s-min=16.7km az=100.0*
*JMA **25** 10:48:00.3±0.1, 38°99N×142°81E, h20km±2km, M3.4*
ISC 25 10:47:59.0±2.1, 38°95N±0°04×142°78E±0°07, h4km±11km, n23, σ1s37/32, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.88**	**279**	P	**Pb**	**10 48 17.1**	**+0.4**
OFUJ				S	**Sb**	**10 48 28.8**	**0.0**
MIYJ	**Miyakonagasawa**	**0.98**	**310**	P	**Pg**	**10 48 17.7**	**0.0**
MIYJ				*e*S	**Sg**	**10 48 30.6**	**+0.3**
JMK	**Ichinoseki**	**1.22**	**271**	P	**Pb**	**10 48 22.5**	**0.0**
JMK				S	**Sb**	**10 48 38.4**	**-0.2**
JTH	**Tanohata**	**1.22**	**325**	P	**Pg**	**10 48 21.9**	**-0.4**
JIO	**Ouri**	**1.23**	**247**	P	**Pg**	**10 48 22.2**	**-0.2**
JIO				S	**Sg**	**10 48 38.1**	**-0.2**
JOM	**Ohasama**	**1.27**	**295**	P	**Pg**	**10 48 23.1**	**-0.2**
JOM				S	**Sg**	**10 48 39.4**	**-0.4**
JANG	**Nango**	**1.73**	**326**	P	**Pn**	**10 48 29.9**	**+0.1**
JANG				S	**Sn**	**10 48 51.7**	**-0.6**
JOU	**Okura**	**1.76**	**251**	P	**Pb**	**10 48 31.0**	**-0.8**
JOU				S	**Sb**	**10 48 53.5**	**-0.7**
JYK	**Kaneyama**	**1.89**	**270**	P	**Pn**	**10 48 32.8**	**+0.8**
JYK				*e*S	**Sb**	**10 48 57.9**	**-0.1**
JMM	**Marumori**	**1.90**	**236**	P	**Pn**	**10 48 32.7**	**+0.6**
JMM				*e*S	**Sn**	**10 48 56.9**	**+0.4**
MJAR	**Matsushiro Arr**	**4.35**	**238**	Pn	**Pn**	**10 49 08.4**	**+2.5**
	3.2nm,0.3s,baz=49,slow=10,SNR=17						
MAT	**Matsushiro**	**4.35**	**238**	P	**Pn**	**10 49 09.8**	**+4.0**
MAT				S	**Sb**	**10 50 05.7**	**-3.1**
ASAJ	**Asahikawa**	**5.17**	**359**	Pn	**Pn**	**10 49 17.2**	**+0.2**
	0.3nm,0.3s,baz=103,slow=18,SNR=3.9						
ASAJ				Sn	**Sn**	**10 50 15.5**	**-1.5**
	0.6nm,0.3s,baz=190,slow=11,SNR=2.9						
JHJ	**Hachijo jima 2**	**6.30**	**204**	Pn	**Pn**	**10 49 32.8**	**+0.1**
	4.7nm,0.3s,baz=94,slow=15,SNR=3.7						
JHJ				Sn	**Sn**	**10 50 41.8**	**-3.3**
	9.8nm,0.3s,baz=246,slow=20,SNR=3.0						
SEY	**Seymchan**	**24.71**	**11**	P	**P**	**10 53 19.9**	**-1.0**
	2.4nm,1.0s,baz=7.7,slow=13,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**28.29**	**126**	T	T	11 23 27.1	
	baz=318,slow=75,SNR=27						
H11N1	**WAKE ISLAND Hy**	**28.30**	**126**	T	T	11 23 28.9	
	baz=318,slow=75,SNR=10						
H11N3	**WAKE ISLAND Hy**	**28.31**	**126**	T	T	11 23 29.6	
	baz=318,slow=75,SNR=31						
MKAR	**Makanchi Array**	**44.05**	**301**	P	**P**	**10 56 07.8**	**+0.1**
	0.2nm,0.5s,baz=88,slow=7.4,SNR=2.8						
ILAR	**Eielson Array**	**47.30**	**33**	P	**P**	**10 56 34.0**	**+0.8**
	0.6nm,0.8s,baz=266,slow=6.6,SNR=7.5						
BVAR	**Borovoye Array**	**50.10**	**311**	P	**P**	**10 56 55.8**	**+0.9**
	0.3nm,0.5s,baz=48,slow=7.6,SNR=2.7						
WRA	**Warramunga Arr**	**59.11**	**189**	P	**P**	**10 58 00.3**	**-0.3**
	0.4nm,0.7s,baz=7.1,slow=6.9,SNR=6.8						
ASAR	**Alice Springs**	**62.84**	**189**	P	**P**	**10 58 27.1**	**+1.2**
	0.2nm,0.8s,baz=14,slow=6.5,SNR=2.9						

*CSEM **25** 11:01:16.2, 38°33N×21°77E, h9km, ML1.0/5*
ATH 25 11:01:16.2, 38°33N×21°77E, h9km±3km, ML1.0/4, Error ellipse: s-maj=3.4km s-min=0.7km az=131.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
UPR	**University Cam**	**0.04**	**161**	P	Pg	**11 01 17.8**	**-0.2**
UPR				S	Sg	**11 01 18.1**	**-1.2**
UPR	**University Cam**	**0.04**	**161**	P	Pg	**11 01 17.0**	**-1.0**
UPR				S	Sg	**11 01 19.2**	**-0.1**
UPR	**University Cam**	**0.04**	**161**	P	Pg	**11 01 17.8**	**-0.3**
UPR				S	Sg	**11 01 18.1**	**-1.2**
LAKA	**Lakka**	**0.19**	**117**	P	Pg	**11 01 20.0**	**-0.1**
LAKA				S	Sg	**11 01 23.2**	**+0.4**
LAKA	**Lakka**	**0.19**	**117**	P	Pg	**11 01 20.0**	**-0.1**
LAKA				S	Sg	**11 01 23.0**	**+0.3**
LAKA	**Lakka**	**0.19**	**117**	P	Pg	**11 01 20.0**	**-0.1**
LAKA				S	Sg	**11 01 23.2**	**+0.5**
LAKA				AML	AML	**11 01 23.4**	
	comp=E,90μm,0.2s						
LAKA				AML	AML	**11 01 24.4**	
	comp=N,65μm,0.3s						
SERG	**Sergoula**	**0.24**	**69**	P	Pg	**11 01 21.7**	**+0.6**
SERG				S	Sg	**11 01 25.9**	**+1.4**
TRIZ	**Trizonia**	**0.24**	**81**	P	Pg	**11 01 20.2**	**-0.9**
TRIZ				S	Sg	**11 01 25.3**	**+0.9**
KALE	**Kalithea**	**0.30**	**77**	P	Pg	**11 01 21.3**	**-0.9**
KALE				S	Sb	**11 01 27.8**	**-1.1**
KALE	**Kalithea**	**0.30**	**77**	P	Pg	**11 01 21.3**	**-0.9**
KALE				S	Sb	**11 01 27.8**	**-1.0**
AXS	**Araxos**	**0.33**	**247**	P	Pg	**11 01 22.8**	**0.0**
AXS				S	Sg	**11 01 28.1**	**+0.8**
AXS	**Araxos**	**0.33**	**247**	P	Pg	**11 01 23.1**	**+0.3**
AXS	**Araxos**	**0.33**	**247**	P	Pg	**11 01 22.8**	**0.0**
AXS				S	Sg	**11 01 28.1**	**+0.8**
PVO	**Paravola**	**0.35**	**327**	P	Pg	**11 01 22.7**	**-0.4**
PVO				S	Sb	**11 01 29.0**	**-1.2**
PVO	**Paravola**	**0.35**	**327**	P	Pg	**11 01 22.9**	**-0.2**
PVO				S	Sg	**11 01 27.9**	**+0.2**
PVO	**Paravola**	**0.35**	**327**	P	Pg	**11 01 22.7**	**-0.4**
PVO				S	Sb	**11 01 29.0**	**-1.1**
PVO				AML	AML	**11 01 29.6**	
	comp=E,201μm,0.2s						
PVO				AML	AML	**11 01 30.7**	
	comp=N,109μm,0.3s						
RLS	**Riolos of Patr**	**0.36**	**222**	P	Pg	**11 01 23.0**	**-0.2**
RLS				S	Sg	**11 01 29.1**	**+1.1**
DRO	**Drossia**	**0.38**	**187**	P	Pg	**11 01 23.3**	**-0.3**
DRO				S	Sb	**11 01 30.2**	**-0.8**
DRO	**Drossia**	**0.38**	**187**	P	Pg	**11 01 22.8**	**-0.8**
DRO				S	Sg	**11 01 29.4**	**+0.9**
DRO				AML	AML	**11 01 29.9**	
	comp=N,100μm,0.6s						
DRO				AML	AML	**11 01 30.4**	
	comp=E,95μm,0.2s						
DRO	**Drossia**	**0.38**	**187**	P	Pg	**11 01 23.3**	**-0.3**
DRO				AML	AML	**11 01 29.9**	
	comp=N,100μm,0.6s						
DRO				S	Sb	**11 01 30.2**	**-0.8**
DRO				AML	AML	**11 01 32.1**	
	comp=E,101μm,0.2s						
KLV	**Kalavryta, Ach**	**0.41**	**133**	P	Pg	**11 01 23.6**	**-0.7**
KLV				S	Sg	**11 01 30.5**	**+0.8**
KLV	**Kalavryta, Ach**	**0.41**	**133**	P	Pg	**11 01 24.0**	**-0.3**
KLV	**Kalavryta, Ach**	**0.41**	**133**	P	Pg	**11 01 23.6**	**-0.7**
KLV				S	Sg	**11 01 30.5**	**+0.7**
PDO	**Prodromos**	**0.53**	**301**	P	Pg	**11 01 26.0**	**-0.6**
PDO				S	Sg	**11 01 34.2**	**+0.6**
PDO	**Prodromos**	**0.53**	**301**	P	Pg	**11 01 25.6**	**-0.9**
PDO				S	Sg	**11 01 33.9**	**+0.3**
PDO	**Prodromos**	**0.53**	**301**	P	Pg	**11 01 26.0**	**-0.6**
PDO				S	Sg	**11 01 34.2**	**+0.6**
PDO				AML	AML	**11 01 37.4**	
	comp=N,58μm,0.4s						
PDO				AML	AML	**11 01 38.3**	
	comp=E,61μm,0.2s						

MEX 25 11:01:31.6±0.4, 16°06N×97°17W, h12km±7km, MD4.0, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.97**	**290**	*e*P	Pg	**11 01 47.4**	**-3.0**
PNIG				*e*S	Sg	**11 02 00.2**	**-2.9**
HUIG	**Huatulco**	**1.06**	**106**	*e*P	Pb	**11 01 48.8**	**-3.2**
HUIG				*e*S	Sb	**11 02 01.8**	**-4.2**
VHO	**Vista Hermosa**	**1.09**	**23**	*e*P	Pb	**11 01 49.2**	**-3.4**
VHO				*e*S	Sg	**11 02 03.0**	**-3.9**
TLIG	**Tlapa**	**2.00**	**318**	*e*P	Pn	**11 02 01.3**	**-4.1**
TLIG				*i* S	Sn	**11 02 25.6**	**-5.0**

*NIED **25** 11:03:00, 35°20N×141°20E, h23km, Mw4.5 Best double couple: M0 6.32000×10^15 NP1:φs331.00000°, δ36.00000°, λ172.00000°. NP2:φs67.00000°, δ85.00000°, λ55.00000°.*
*IDC **25** 11:03:18.3±0.6, 35°21N×141°16E, h0km, mb4.3/25, mb1 4.4/29, mb1mx4.2/53, mbtmp4.3/29, ML3.3/4, MS4.5/1, Ms1 4.5/1, ms1mx2.9/30, Error ellipse: s-maj=16.5km s-min=11.4km az=102.0*
*BJI **25** 11:03:20.3, 35°10N×141°00E, h28km, mb4.5/12, mB4.7/6, Ms4.6/2, Ms7 4.4/2*
*ISCJB **25** 11:03:21.7±0.7, 35°20N±0°03×141°12E±0°05, h32km±4km, mb4.5/42, MS4.6/1, Error ellipse: s-maj=6.4km s-min=5.2km az=173.7*
*JMA **25** 11:03:21.0±0.1, 35°24N×141°21E, h37km±2km, M4.5*
JMA Felt I J1.
*NEIC **25** 11:03:24.1±0.3, 35°21N×141°03E, h35km, mb5.0/18, Error ellipse: s-maj=6.9km s-min=5.9km az=150.0*
NEIC Felt at Tokyo. Recorded [1 JMA] in Chiba and Ibaraki.
ISC 25 11:03:22.4±1.2, 35°24N±0°04×141°12E±0°05, h24km±8km, n93, σ1s33/99, mb4.6/42, 3C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.51**	**335**	⇑P	**Pb**	**11 03 32.2**	**-0.5**
CHOJ				S	**Sb**	**11 03 40.0**	**+0.2**
BSO1	**Boso 1**	**0.60**	**192**	⇓P	**Pb**	**11 03 33.0**	**-1.0**
BSO3	**Boso 3**	**0.67**	**229**	⇓P	**Pb**	**11 03 34.8**	**-0.5**
KTR	**Katsuura**	**0.67**	**262**	P	**Pb**	**11 03 34.8**	**-0.6**
KTR				S	**Sb**	**11 03 45.1**	**+0.8**
BSO4	**Boso 4**	**0.69**	**249**	⇑P	**Pb**	**11 03 35.7**	**-0.1**
BSO4				*e*X		11 03 46.7	
JCN	**Nagara**	**0.77**	**283**	⇑P	**Pb**	**11 03 37.4**	**+0.2**
JCN				*e*S	**Sb**	**11 03 48.0**	**+0.7**
JYT	**Yasato**	**1.24**	**323**	P	**Pn**	**11 03 43.0**	**-1.3**
JYT				*e*S	**Sn**	**11 03 59.5**	**-0.7**
JHJ2	**Mitsune**	**2.39**	**207**	*e*Pn	**Pn**	**11 03 57.8**	**-2.2**
JHJ	**Hachijo jima 2**	**2.39**	**208**	Pn	**Pn**	**11 03 57.6**	**-2.5**
	59nm,0.3s,baz=72,slow=23,SNR=14						
JHJ				Sn	**Sn**	**11 04 29.8**	**+1.2**
	201nm,0.3s,baz=78,slow=22,SNR=6.9						
MJAR	**Matsushiro Arr**	**2.70**	**300**	Pn	**Pn**	**11 04 03.6**	**-0.8**
	34nm,0.3s,baz=108,slow=14,SNR=140						
MAJO	**Matsushiro**	**2.70**	**300**	*e*Pn	**Pn**	**11 04 05.0**	**+0.6**
MAT	**Matsushiro**	**2.70**	**300**	P	**Pn**	**11 04 04.9**	**+0.5**
MAT				S	**Sn**	**11 04 37.2**	**+0.9**
MJB9	**Matsu-Tunnel**	**2.70**	**300**	*e*Pn	**Pn**	**11 04 05.3**	**+0.8**
INU	**Inuyama**	**3.36**	**273**	*e*Pn	**Pn**	**11 04 14.4**	**+0.9**
ERM	**Erimo**	**6.95**	**13**	*e*Pn	**Pn**	**11 05 01.0**	**-1.6**
JNU	**Nakatsue**	**8.75**	**259**	Pn	**Pn**	**11 05 27.1**	**-0.4**
	0.1nm,0.3s,baz=118,slow=17,SNR=2.3						
JNU	**Nakatsue**	**8.75**	**259**	*e*Pn	**Pn**	**11 05 26.5**	**-1.0**
ASAJ	**Asahikawa**	**8.94**	**7**	Pn	**Pn**	**11 05 27.1**	**-2.8**
	baz=90,slow=16						
KS15	**Wonju Array Si**	**10.90**	**285**	*e*Pn	**Pn**	**11 05 58.2**	**+1.3**
USRK	**Ussuriysk Ar.**	**11.37**	**325**	Pn	**Pn**	**11 06 02.7**	**-0.6**
	0.3nm,0.3s,baz=141,slow=16,SNR=6.9						
YSS	**Yuzh-Sakhalins**	**11.77**	**5**	*e*Pn	**Pn**	**11 06 07.5**	**-1.1**
KLR	**Kul'dur**	**15.59**	**337**	Pn	**Pn**	**11 06 56.9**	**-3.6**
	0.3nm,0.3s,baz=149,slow=7.7,SNR=6.9						
BJT	**Baijiatuao**	**20.31**	**291**	*e*P	**P**	**11 07 55.4**	**-1.2**
	14nm,0.6s						
PEA0	**Petropavlovsk-**	**21.36**	**28**	*e*P	**P**	**11 08 09.0**	**+1.1**
PETK	**Petropavlovsk-**	**21.36**	**28**	P	**P**	**11 08 06.7**	**-1.1**
	4.3nm,1.1s,baz=233,slow=30,SNR=3.1						
MA2	**Magadan**	**25.15**	**12**	P	**P**	**11 08 44.6**	**-0.9**
	8.3nm,0.8s,baz=190,slow=8.8,SNR=5.3						
H11N2	**WAKE ISLAND Hy**	**27.48**	**117**	T	T	11 38 01.4	
	baz=310						
H11N1	**WAKE ISLAND Hy**	**27.49**	**117**	T	T	11 38 07.2	
	baz=310						
H11N3	**WAKE ISLAND Hy**	**27.50**	**117**	T	T	11 38 07.4	
	baz=310						
YAK	**Yakutsk**	**27.77**	**348**	P	**P**	**11 09 09.0**	**0.0**
	23nm,0.5s,baz=296,slow=1.8,SNR=5.0						
YAK	**Yakutsk**	**27.77**	**348**	*e*P	**P**	**11 09 09.0**	**0.0**
	105nm,0.8s						
H11S1	**WAKE ISLAND Hy**	**28.13**	**120**	T	T	11 38 55.7	
	baz=312						
H11S3	**WAKE ISLAND Hy**	**28.13**	**120**	T	T	11 38 55.5	
	baz=312						
H11S2	**WAKE ISLAND Hy**	**28.15**	**120**	T	T	11 38 47.0	
	baz=312						
SEY	**Seymchan**	**28.59**	**11**	P	**P**	**11 09 16.5**	**+0.1**
	1.2nm,0.6s,baz=197,slow=9.8,SNR=6.0						
SONA1	**Songino Array**	**28.63**	**307**	*e*P	**P**	**11 09 16.8**	**

KHC	Kasperske Hory	83.94	328	eP	P	11 15 51.0	+0.6
GERES	GERESS Array B	84.11	328	P	P	11 15 50.8	-0.6
	comp=Z,1.1nm,0.8s,baz=28,slow=6.0,SNR=4.5						
TUC	Tucson	84.82	54	eP	P	11 15 57.4	+2.2
	comp=Z,5.5nm,1.3s						
ANMO	Albuquerque	85.92	50	eP	P	11 16 03.3	+2.5
	comp=Z,9.0nm,1.1s						
TX31	Lajitas Ar. Si	91.40	52	eP	P	11 16 27.6	+0.8
TXAR	Lajitas Array	91.40	52	P	P	11 16 27.6	+0.7
	comp=Z,0.5nm,0.7s,baz=306,slow=2.5,SNR=7.5						

NIED ***25*** *11:04:00,38.˚50N×142.˚10E,h50km,Mw5.0 Best double couple: M0 4.18000×10^16 NP1:φs337.00000°,δ49.00000°, λ-26.00000°. NP2:φs85.00000°,δ71.00000°, λ-136.00000°.*

BJI ***25*** *11:04:42.9,38.˚47N×142.˚19E,h42km,mb5.0/70,mB5.0/47, Ms4.5/70,Ms7 4.3/65*

MOS ***25*** *11:04:46.5±0.9,38.˚81N×141.˚87E,h47km,mb5.3/70, MS4.6/15,Error ellipse: s-maj=6.5km s-min=4.1km az=98.2*

NEIC ***25*** *11:04:46.0±0.1,38.˚57N×141.˚88E,h35km,mb4.9/163, Error ellipse: s-maj=3.7km s-min=2.6km az=164.0*

NEIC Felt at Sendai. Recorded [3 JMA] in Iwate and Miyagi.

JMA ***25*** *11:04:46.3±0.1,38.˚56N×142.˚08E,h45km±1km,M5.2 Broadband fault plane solution: P waves. NP1: φs74.00000°,δ84.00000°,λ-107.00000°. NP2: φs326.00000°,δ18.00000°,λ-19.00000°. Principal axes: T Plg37.0000°, Azm179.0000°; N Plg17.0000°, Azm76.0000°; P Plg48.0000°, Azm326.0000°;*

JMA Felt III J1.

ISCJB ***25*** *11:04:46.8±0.3,38.˚64N±0.˚02×141.˚96E±0.˚02,h55km±2km, mb4.9/249,MS4.5/33 Error ellipse: s-maj=3.8km s-min=2.6km az=158.3*

GCMT ***25*** *11:04:46.0±0.2,38.˚61N×142.˚03E,h50km±1km,MW5.1/93, Moment Tensor Solution. s55,c77; s93,c153; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-2.22±.17; Mθθ2.90±.11; Mϕϕ-0.67±.12; Mrθ-2.78±.11; Mrϕ-2.44±.09; Mθϕ-1.40±.10; Best double couple: M0 4.74700×10^16 NP1:φs82.00000°,δ71.00000°,λ-129.00000°. NP2: φs331.00000°,δ43.00000°,λ-28.00000°. Principal axes: T 4.7070, Plg17.0000°, Azm200.0000°; N 0.0850, Plg37.0000°, Azm97.0000°; P -4.7860, Plg48.0000°, Azm310.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

IDC ***25*** *11:04:47.3±1.5,38.˚58N×142.˚03E,h53km±12km,mb4.5/35, mb1 4.6/42,mb1mx4.5/60,mbtmp4.8/42,MS4.1/6, Ms1 4.1/6,ms1mx3.6/26 Error ellipse: s-maj=12.5km s-min=9.4km az=118.0*

ISC 25 11:04:47.2±0.3, 38.˚65N±0.˚03×142.˚02E±0.˚03, h46km±2km, h45km:pP-P,n762,σ1s24/855, mb4.9/252, MS4.5/36, 23C-42D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.51**	**328**	⇑P	**Pn**	**11 04 58.8**	**+0.6**
OFUJ				S	**Sn**	**11 05 07.5**	**+1.4**
JIO	**Ouri**	**0.56**	**249**	⇑P	**Pn**	**11 04 58.3**	**-0.6**
JIO				S	**Sn**	**11 05 06.4**	**-0.8**
JMK	**Ichinoseki**	**0.69**	**296**	⇓P	**Pn**	**11 05 01.0**	**+0.4**
JMK				S	**Sn**	**11 05 11.3**	**+1.0**
MIYJ	**Miyakonagasawa**	**0.94**	**351**	⇑P	**Pn**	**11 05 04.4**	**+0.5**
MIYJ				S	**Sn**	**11 05 17.0**	**+0.8**
JOM	**Ohasama**	**0.99**	**326**	⇑P	**Pn**	**11 05 05.7**	**+1.0**
JOM				S	**Sn**	**11 05 19.9**	**+2.3**
JOU	**Okura**	**1.10**	**255**	P	**Pn**	**11 05 06.0**	**-0.1**
JOU				S	**Sn**	**11 05 20.3**	**+0.1**
JMM	**Marumori**	**1.24**	**231**	⇑P	**Pn**	**11 05 06.7**	**-1.4**
JMM				S	**Sn**	**11 05 22.0**	**-1.6**
JRG	**Rokugo**	**1.31**	**305**	P	**Pn**	**11 05 10.2**	**+1.2**
JYK	**Kaneyama**	**1.32**	**282**	⇓P	**Pn**	**11 05 09.8**	**+0.6**
JYK				eS	**Sn**	**11 05 27.4**	**+1.8**
JFK	**Kawauchi**	**1.57**	**215**	P	**Pn**	**11 05 10.8**	**-1.8**
JFK				eS	**Sn**	**11 05 29.4**	**-2.3**
JYS	**Shirataka**	**1.59**	**255**	P	**Pn**	**11 05 13.1**	**+0.3**
JYS				S	**Sn**	**11 05 32.9**	**+0.7**
ERM	**Erimo**	**3.47**	**14**	*d* iP	**Pn**	**11 05 38.4**	**-0.2**
ERM				pmax	pmax		
	comp=Z,88nm,0.5s						
MAJO	**Matsushiro**	**3.69**	**236**	*c*eP	**Pn**	**11 05 42.4**	**+0.8**
MAT	**Matsushiro**	**3.69**	**236**	P	**Pn**	**11 05 42.4**	**+0.8**
MAT				S	**Sn**	**11 06 30.1**	**+6.3**
MJAR	**Matsushiro Arr**	**3.69**	**236**	P	**Pn**	**11 05 42.5**	**+0.9**
	comp=Z,100nm,0.3s,baz=40,slow=13,SNR=22						
MJAR				LR	LR	11 07 26.6	
	comp=Z,4μm,18.8s,baz=70,slow=44						
ASAJ	**Asahikawa**	**5.48**	**4**	P	**Pn**	**11 06 07.3**	**+1.2**
	baz=173,slow=8.1						
ASAJ				S	**Sn**	**11 07 11.6**	**+3.8**
	baz=90,slow=20						
JHJ	**Hachijo jima 2**	**5.81**	**199**	P	**Pn**	**11 06 08.5**	**-2.3**
	comp=Z,159nm,0.3s,baz=292,slow=22,SNR=10.0						
JHJ				S	**Sn**	**11 07 12.1**	**-4.1**
	comp=Z,228nm,0.3s,baz=72,slow=19,SNR=4.9						
JHJ				LR	LR	11 08 48.8	
	comp=Z,2μm,21.4s,baz=26,slow=42						
YUK	**Yuzh-Kuril'sk**	**6.11**	**27**	*i* P	**Pn**	**11 06 13.2**	**-1.6**
KUR	**Kuril'sk**	**7.89**	**32**	eP	**Pn**	**11 06 38.3**	**-0.9**
KUR				*i* S	**Sn**	**11 08 03.1**	**-3.9**
KUR				pmax	pmax		
	comp=N,48nm,0.6s						
KUR				pmax	pmax		
	comp=E,71nm,0.6s						
KUR				pmax	pmax		
	comp=Z,148nm,0.6s						
KUR				smax	smax		
	comp=N,506nm,0.6s						
KUR				smax	smax		
	comp=E,188nm,0.4s						
KUR				smax	smax		
	comp=N,2μm,3.1s						
YSS	**Yuzh-Sakhalins**	**8.31**	**4**	⇑eP	**Pn**	**11 06 45.7**	**+0.7**
YSS				eS	**Sn**	**11 08 18.0**	**+0.5**
YSS				pmax	pmax		
	comp=Z,60nm,0.8s						
YSS				MLR	MLR		
	comp=Z,1μm,12.0s						
YSS				MLR	MLR		
	comp=N,1μm,10.0s						
YSS				MLR	MLR		
	comp=E,900nm,15.0s						
YSS	**Yuzh-Sakhalins**	**8.31**	**4**	*e*Pn	**Pn**	**11 06 46.6**	**+1.6**
VLA	**Vladivostok**	**8.87**	**303**	*d* iP	**Pn**	**11 06 55.7**	**+3.0**
MSHR	**Mys Shultsa**	**9.14**	**299**	⇓eP	**Pn**	**11 06 57.6**	**+1.3**
USRK	**Ussuriysk Ar.**	**9.35**	**310**	P	**Pn**	**11 07 01.1**	**+2.0**
	comp=E,5.2nm,0.3s,baz=118,slow=15,SNR=75						
JNU	**Nakatsue**	**10.58**	**242**	P	**Pn**	**11 07 16.8**	**+0.6**
	comp=E,1.8nm,0.3s,baz=63,slow=8.2,SNR=17						
JNU	**Nakatsue**	**10.58**	**242**	*e*Pn	**Pn**	**11 07 17.9**	**+1.7**
HABR	**Khabarovsk**	**11.03**	**335**	*de*P	**Pn**	**11 07 20.0**	**-2.2**
HABR				eS	**Sn**	**11 09 23.6**	**-0.5**
HABR				pmax	pmax		
	comp=Z,40nm,1.4s						
HABR				pmax	pmax		
	comp=N,23nm,1.4s						
HABR				pmax	pmax		
	comp=E,23nm,1.4s						
HABR				MLR	MLR		
	comp=Z,717nm,12.0s						
MDJ	**Mudanjiang**	**11.04**	**307**	P	**Pn**	**11 07 24.8**	**+2.5**
MDJ				S	**Sn**	**11 09 28.8**	**+4.5**
MDJ				pmax	pmax		
	comp=Z,130nm,1.3s						
MDJ				pmax	pmax		
	comp=Z,480nm,6.2s						
MDJ				LR	LR		
	comp=Z,1μm,17.4s						
MDJ				LR	LR		
	comp=Z,1μm,17.7s						
MDJ				LR	LR		
	comp=Z,2μm,20.9s						
MDJ	**Mudanjiang**	**11.04**	**307**	*e*Pn	**Pn**	**11 07 24.4**	**+2.1**
	comp=Z,151nm,1.0s						
KS01	**Wonju Array Si**	**11.20**	**268**	ePn	**Pn**	**11 07 28.7**	**+4.2**
KS15	**Wonju Array Si**	**11.21**	**268**	ePn	**Pn**	**11 07 28.9**	**+4.3**
INCN	**Inchon**	**12.18**	**269**	ePn	**Pn**	**11 07 42.3**	**+4.3**
TYV	**Tymovskoe**	**12.22**	**2**	eP	**Pn**	**11 07 39.5**	**+1.1**
TYV				pmax	pmax		
	comp=Z,24nm,0.8s						
KLR	**Kul'dur**	**12.89**	**328**	P	**Pn**	**11 07 47.6**	**+0.1**
	comp=Z,0.5nm,0.3s,baz=128,slow=14,SNR=8.9						
KLR	**Kul'dur**	**12.89**	**328**	*i* P	**Pn**	**11 07 47.5**	**-0.1**
CN2	**Changchun**	**13.48**	**298**	eP	**Pn**	**11 07 56.5**	**+0.8**
CN2				epP	P	11 08 04.8	+1.0
CN2				eS	**Sn**	**11 10 24.8**	**+0.8**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,300nm,8.0s						
CN2				LR	LR		
	comp=Z,800nm,15.0s						
CN2				LR	LR		
	comp=Z,1μm,15.0s						
CN2				LR	LR		
	comp=Z,1μm,15.0s						
SNY	**Shenyang**	**14.44**	**289**	⇓P	**Pn**	**11 08 08.5**	**-0.1**
SNY				S	**Sn**	**11 10 47.5**	**+0.3**
SNY				pmax	pmax		
	comp=Z,6.0nm,0.5s						
SNY				LR	LR		
	comp=Z,420nm,11.4s						
SNY				LR	LR		
	comp=Z,1μm,18.8s						
SNY				LR	LR		
	comp=Z,2μm,24.0s						
NKL	**Nikolayevsk**	**14.53**	**357**	*e*P	Pn	11 08 04.0	-5.7
NKL				eS	**Sn**	**11 10 48.0**	**-1.3**
NKL				pmax	pmax		
	comp=Z,30nm,1.0s						
NKL				smax	smax		
	comp=E,500nm,11.0s						
NKL				MLR	MLR		
	comp=N,600nm,16.0s						
NKL				MLR	MLR		
	comp=E,800nm,16.0s						
NKL				MLR	MLR		
	comp=Z,1μm,16.0s						
SKR	**Severo-Kuril's**	**15.63**	**35**	*e*P	Pn	11 08 15.9	-8.2
SKR				pmax	pmax		
	comp=Z,85nm,0.7s						
SKR				pmax	pmax		
	comp=Z,400nm,8.5s						
SKR				pmax	pmax		
	comp=Z,200nm,4.9s						
SKR				MLR	MLR		
	comp=Z,500nm,19.0s						
PEA0	**Petropavlovsk-**	**18.06**	**32**	*e*P	**Pn**	**11 08 58.9**	**+4.4**
PEA0B	**Petropavlovsk-**	**18.06**	**32**	*e*P	**Pn**	**11 08 59.0**	**+4.6**
	comp=Z,50nm,1.0s						
PETK	**Petropavlovsk-**	**18.06**	**32**	P	**Pn**	**11 08 55.5**	**+1.0**
	comp=Z,0.5nm,0.3s,baz=195,slow=10,SNR=5.8						
PET	**Petropavlovsk**	**18.40**	**33**	*e*P	**Pn**	**11 09 00.1**	**+1.5**
PET				eS	**Sn**	**11 12 22.8**	**-0.2**
PET				pmax	pmax		
	comp=Z,64nm,1.3s						
PET				MLR	MLR		
	comp=Z,400nm,13.0s						
PET				MLR	MLR		
	comp=Z,400nm,14.0s						
PET	**Petropavlovsk**	**18.40**	**33**	*e*P	**Pn**	**11 09 00.4**	**+1.9**
	comp=Z,115nm,1.4s						
HIA	**Hailar**	**19.16**	**311**	*e*P	**P**	**11 09 06.5**	**-0.1**
HIA				pmax	pmax		
	comp=Z,31nm,0.7s						
HIA	**Hailar**	**19.16**	**311**	*e*P	**P**	**11 09 06.5**	**-0.1**
	comp=Z,31nm,0.7s						
TIA	**Tai'an**	**19.90**	**271**	⇑P	**P**	**11 09 13.3**	**-1.5**
TIA				pmax	pmax		
	comp=Z,30nm,0.9s						
TIA				LR	LR		
	comp=Z,770nm,15.9s						
TIA				LR	LR		
	comp=Z,890nm,17.8s						
TIA				LR	LR		
	comp=Z,1μm,15.9s						
NJ2	**Nanjing**	**19.98**	**258**	*e*P	**P**	**11 09 13.8**	**-1.8**
NJ2				sP	**sP**	**11 09 32.5**	**+0.3**
NJ2				pmax	pmax		
	comp=Z,42nm,0.7s						
NJ2				LR	LR		
	comp=Z,570nm,14.6s						
NJ2				LR	LR		
	comp=Z,740nm,15.2s						
NJ2				LR	LR		
	comp=Z,860nm,16.8s						
BJI	**Beijing**	**20.02**	**282**	P	**P**	**11 09 14.0**	**-2.0**
BJI				pP	**pP**	**11 09 24.8**	**-2.0**
BJI				sP	**sP**	**11 09 31.0**	**-1.5**
BJI				S	**S**	**11 12 56.5**	**-1.9**
BJI				sS	**sS**	**11 13 13.8**	**-2.0**
BJI				pmax	pmax		
	comp=Z,64nm,1.1s						
BJI				LR	LR		
	comp=Z,520nm,12.8s						
BJI				LR	LR		
	comp=Z,610nm,16.6s						
BJI				LR	LR		
	comp=Z,740nm,28.4s						
BJT	**Baijiatuan**	**20.02**	**282**	*e*P	**P**	**11 09 14.4**	**-1.6**
BJT				pmax	pmax		
	comp=Z,40nm,0.6s						
BJT	**Baijiatuan**	**20.02**	**282**	*e*P	**P**	**11 09 14.4**	**-1.6**
	comp=Z,40nm,0.6s						
CLNS	**Chul'man**	**21.42**	**334**	*e*P	**P**	**11 09 28.8**	**-2.2**
CLNS				*e*		11 09 46.2	
CLNS				eS	**S**	**11 13 24.0**	**-2.1**
CLNS				*e*		11 13 30.6	
CLNS				pmax	pmax		
	comp=Z,30nm,1.0s						
CLNS				pmax	pmax		
	comp=N,17nm,1.1s						
CLNS				pmax	pmax		
	comp=E,15nm,0.8s						
CLNS				pmax	pmax		
	comp=N,62nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,39nm,1.1s						
CLNS				pmax	pmax		
	comp=E,18nm,0.8s						
CLNS				smax	smax		
	comp=E,11nm,0.8s						
CLNS				smax	smax		
	comp=N,23nm,1.2s						
CLNS				MLR	MLR		
	comp=Z,290nm,14.0s						
CLNS				MLR	MLR		
	comp=N,577nm,15.0s						
CLNS				MLR	MLR		
	comp=E,772nm,16.0s						
MA2	**Magadan**	**21.67**	**12**	P	**P**	**11 09 33.6**	**-0.1**
	comp=E,51nm,0.8s,baz=191,slow=7.1,SNR=13						
MA2	**Magadan**	**21.67**	**12**	P	**P**	**11 09 33.6**	**-0.1**
MA2				*e*P	**P**	**11 09 34.2**	**+0.5**
YHNB	**Yeheng**	**22.36**	**237**	*e*P	**P**	**11 09 43.0**	**+1.6**
	comp=E,26nm,0.8s						
YULB	**Yu-li**	**23.30**	**235**	*e*P	**P**	**11 09 52.8**	**+1.7**
	comp=E,17nm,0.8s						
HHC	**Hu-ho-hao-te**	**23.46**	**285**	*e*P	**P**	**11 09 51.8**	**-0.8**
HHC				S	**S**	**11 13 56.0**	**-6.8**
HHC				pmax	pmax		
	comp=E,43nm,1.1s						
HHC				pmax	pmax		
	comp=E,120nm,4.0s						
HHC				LR	LR		
	comp=E,410nm,13.6s						
HHC				LR	LR		
	comp=E,1μm,16.1s						
HHC				LR	LR		
	comp=E,1μm,15.6s						
TPUB	**Ta-pu**	**23.80**	**236**	*e*P	**P**	**11 09 53.8**	**-2.0**
	comp=E,38nm,0.9s						
TWG	**Pinlang**	**23.85**	**235**	*e*P	**P**	**11 09 57.5**	**+1.2**
	comp=E,191nm,0.8s						
CIT	**Chita**	**23.88**	**313**	*e*P	**P**	**11 09 57.0**	**+0.7**
CIT				*e*		11 10 15.6	
CIT				*e*		11 10 30.2	
CIT				pmax	pmax		
	comp=Z,303nm,1.4s						
WHN	**Wuhan**	**24.10**	**259**	P	**P**	**11 09 57.5**	**-1.0**
WHN				S	S	11 14 01.5	-11
WHN				LR	LR		
	comp=Z,3μm,21.4s						
WHN				LR	LR		
	comp=Z,2μm,20.4s						
WHN				LR	LR		
	comp=Z,2μm,19.2s						
YAK	**Yakutsk**	**24.61**	**346**	P	**P**	**11 10 01.6**	**-1.2**
	comp=Z,34nm,0.3s,baz=102,slow=0.4,SNR=15						
YAK	**Yakutsk**	**24.61**	**346**	*c i*P	**P**	**11 10 02.8**	**0.0**
YAK				*e**PP	**sP**	**11 10 24.3**	**+4.1**
YAK				*e*		11 10 53.2	
YAK				*e*S	**S**	**11 14 17.8**	**-2.7**
YAK				*e**SS	**sS**	**11 14 34.0**	**-6.6**
YAK				*e*SS	**SnSn**	**11 15 08.9**	**-0.1**
YAK				pmax	pmax		
	comp=Z,118nm,1.1s						
YAK				pmax	pmax		
	comp=N,70nm,1.2s						
YAK				pmax	pmax		
	comp=E,19nm,0.9s						
YAK				pmax	pmax		
	comp=Z,95nm,1.5s						
YAK				pmax	pmax		
	comp=E,70nm,1.1s						
YAK				pmax	pmax		
	comp=N,115nm,1.6s						
YAK				smax	smax		
	comp=N,426nm,2.9s						
YAK				smax	smax		
	comp=E,260nm,1.9s						
YAK				MLR	MLR		
	comp=Z,892nm,18.0s						
YAK				MLR	MLR		
	comp=N,728nm,16.0s						
YAK				MLR	MLR		
	comp=E,262nm,17.0s						
YAK	**Yakutsk**	**24.61**	**346**	*e*P	**P**	**11 10 01.9**	**-0.9**
	comp=E,105nm,0.8s						
BTO	**Baotou**	**24.65**	**285**	*e*P	**P**	**11 10 01.3**	**-2.3**
GUMO	**Guam**	**25.09**	**173**	LR	LR	11 20 04.5	
	comp=E,388nm,21.5s,baz=9.5,slow=37						
GUMO	**Guam**	**25.09**	**173**	*e*P	**P**	**11 10 13.8**	**+6.3**
GUMO				pmax	pmax		
	comp=Z,371nm,1.3s						
GUMO	**Guam**	**25.09**	**173**	*e*P	**P**	**11 10 13.8**	**+6.3**
	comp=Z,371nm,1.3s						
SEY	**Seymchan**	**25.11**	**11**	P	**P**	**11 10 08.2**	**+0.8**
	comp=Z,64nm,0.9s,baz=197,slow=6.9,SNR=35						
SEY	**Seymchan**	**25.11**	**11**	*d* iP	**P**	**11 10 08.7**	**+1.3**
BOD	**Bodaibo**	**26.44**	**326**	*e*P	**P**	**11 10 18.7**	**-0.7**
BOD				pmax	pmax		
	comp=Z,42nm,1.6s						
XAN	**Xi'an**	**26.96**	**270**	P	**P**	**11 10 23.8**	**-0.7**
XAN				pP	pP	11 10 34.8	-1.7
XAN				S	**S**	**11 14 56.3**	**-2.3**
XAN				pmax	pmax		
	comp=Z,21nm,0.8s						
XAN				LR	LR		
	comp=Z,680nm,18.2s						
XAN				LR	LR		
	comp=Z,220nm,17.5s						
XAN				LR	LR		
	comp=Z,570nm,16.8s						
SONA1	**Songino Array**	**27.31**	**301**	*e*P	**P**	**11 10 27.6**	**0.0**
SONM	**Songino Array**	**27.32**	**301**	P	**P**	**11 10 27.9**	**+0.3**
	comp=Z,16nm,1.0s,baz=100,slow=9.4,SNR=21						
SONM				PcP	**PcP**	**11 13 44.3**	**-1.7**
	comp=Z,1.2nm,0.5s,baz=114,slow=1.9,SNR=4.0						
SONM				ScP	**ScP**	**11 17 21.9**	**-0.7**
	comp=Z,2.4nm,0.9s,baz=108,slow=4.8,SNR=4.3						
ENH	**Enshi**	**27.98**	**263**	*e*P	**P**	**11 10 32.5**	**-1.0**
	comp=Z,187nm,0.9s						
H11N2	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	11 41 05.7	
	baz=316,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.62**	**124**	T	T	11 40 55.8	
	baz=316,slow=75						
H11N3	**WAKE ISLAND Hy**	**28.63**	**124**	T	T	11 41 03.6	
	baz=316,slow=75						
GZH	**Guangzhou**	**28.94**	**246**	P	**P**	**11 10 41.0**	**-1.1**
GZH				S	S	11 15 19.5	-10
GZH				pmax	pmax		
	comp=Z,20nm,0.9s						
H11S1	**WAKE ISLAND Hy**	**29.38**	**126**	T	T	11 41 52.1	
	baz=318,slow=76						
H11S3	**WAKE ISLAND Hy**	**29.39**	**126**	T	T	11 41 50.9	
	baz=318,slow=76						
IRK	**Irkutsk**	**29.39**	**310**	*e*P	**P**	**11 10 45.1**	**-0.8**
IRK				pmax	pmax		
	comp=Z,88nm,2.1s						
H11S2	**WAKE ISLAND Hy**	**29.40**	**126**	T	T	11 41 57.9	
	baz=318,slow=76						
ZAK	**Zakamensk**	**29.67**	**306**	*e*P	**P**	**11 10 48.4**	**-0.1**
ZAK				pmax	pmax		
	comp=Z,42nm,1.1s						
LZH	**Lanzhou**	**30.30**	**277**	*e*P	**P**	**11 10 55.3**	**+1.0**
LZH				pP	pP	11 11 04.8	-1.6
LZH				sP	sP	11 11 09.8	-2.0
LZH				PP	**PnPn**	**11 11 55.5**	**+2.0**
LZH				S	**S**	**11 15 50.0**	**-1.3**
LZH				sS	sS	11 16 09.0	-2.5
LZH				SS	**ScP**	**11 17 32.0**	**-0.3**
LZH				pmax	pmax		
	comp=Z,63nm,1.0s						
LZH				pmax	pmax		
	comp=Z,170nm,4.6s						
LZH				LR	LR		
	comp=Z,560nm,15.2s						
LZH				LR	LR		
	comp=Z,500nm,13.6s						
LZH				LR	LR		
	comp=Z,980nm,17.3s						
MOY	**Mondy**	**31.29**	**308**	*e*P	**P**	**11 11 02.8**	**+0.1**
MOY				pmax	pmax		
	comp=Z,20nm,1.1s						
GYA	**Guiyang**	**31.99**	**258**	⇑*i*P	**P**	**11 11 08.0**	**-1.2**
GYA				pP	pP	11 11 21.3	0.0
GYA				PP	**PnPn**	**11 12 16.0**	**+0.5**
GYA				PcP	**PcP**	**11 14 00.8**	**+2.5**
GYA				S	**S**	**11 16 17.5**	**-0.2**
GYA				sS	sS	11 16 36.0	-2.0
GYA				ScP	**ScP**	**11 17 39.8**	**+1.8**
GYA				SS	**SnSn**	**11 18 09.0**	**-0.8**
GYA				pmax	pmax		
	comp=Z,60nm,0.7s						
GYA				pmax	pmax		
	comp=Z,130nm,5.0s						
GYA				LR	LR		
	comp=Z,560nm,16.5s						
GYA				LR	LR		
	comp=Z,520nm,17.0s						
GYA				LR	LR		
	comp=Z,550nm,17.2s						
CD2	**Chengdu**	**32.18**	**268**	*e*P	**P**	**11 11 10.0**	**-0.7**
CD2				pP	pP	11 11 21.5	-1.3
CD2				sP	sP	11 11 26.8	-1.5
CD2				S	**S**	**11 16 20.0**	**-0.5**
CD2				sS	sS	11 16 39.5	-1.3
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.2s						
CD2				LR	LR		
	comp=Z,620nm,14.4s						
CD2				LR	LR		
	comp=Z,640nm,17.4s						
CD2				LR	LR		
	comp=Z,690nm,19.9s						
BILL	**Bilibino**	**32.34**	**17**	*de*P	**P**	**11 11 11.5**	**-0.2**
BILL				*e*		11 12 18.3	
BILL				pmax	pmax		
	comp=Z,19nm,1.0s						
BILL				MLR	MLR		
	comp=Z,344nm,18.0s						
BILL	**Bilibino**	**32.34**	**17**	*e*P	**P**	**11 11 11.8**	**+0.2**
	comp=Z,16nm,1.0s						
GTA	**Gaotai**	**32.58**	**285**	*e*P	**P**	**11 11 14.3**	**+0.1**
GTA				pP	pP	11 11 25.0	-1.3
GTA				sP	sP	11 11 29.0	-2.8
GTA				PP	**PnPn**	**11 12 22.0**	**-0.8**
GTA				PcP	**PcP**	**11 14 00.5**	**+0.7**
GTA				S	**S**	**11 16 26.3**	**-0.4**
GTA				sS	sS	11 16 42.0	-5.0
GTA				ScP	**ScP**	**11 17 39.0**	**-0.8**
GTA				PcS	**PcS**	**11 17 45.3**	**+0.3**
GTA				SS	**SnSn**	**11 18 25.8**	**+2.1**
GTA				ScS	**ScS**	**11 21 38.3**	**-1.2**
GTA				pmax	pmax		
	comp=Z,9.0nm,1.2s						
GTA				pmax	pmax		
	comp=Z,160nm,5.0s						

GTA LR LR
comp=Z,520nm,24.2s
GTA LR LR
comp=Z,900nm,17.6s
GTA LR LR
comp=Z,1µm,19.0s
TIXI Tiksi 33.74 353 P **P** **11 11 22.0 -1.8**
comp=Z,14nm,0.8s,baz=118,slow=5.5,SNR=3.6
TIXI Tiksi 33.74 353 *ce*P **P** **11 11 23.5 -0.3**
TIXI pmax pmax
comp=Z,15nm,0.9s
QIZ Qiongzhong 34.05 244 P **P** **11 11 26.8 -0.2**
QIZ S **S** **11 16 49.0 -0.5**
QIZ LR LR
comp=Z,390nm,22.1s
QIZ LR LR
comp=Z,340nm,20.8s
QIZ LR LR
comp=Z,270nm,16.9s
KMI Kunming 35.70 260 P **P** **11 11 40.0 -1.5**
KMI pP pP 11 11 51.0 -2.7
KMI sP sP 11 11 57.3 -1.8
KMI S **S** **11 17 08.3 -7.0**
KMI SS **SnSn** **11 19 36.3 -3.6**
KMI pmax pmax
comp=Z,23nm,1.2s
KMI pmax pmax
comp=Z,85nm,3.1s
KMI LR LR
comp=Z,290nm,22.1s
KMI LR LR
comp=Z,290nm,17.9s
KMI LR LR
comp=Z,450nm,18.1s
NONG Nongkai 39.50 250 P **P** **11 12 16.5 +3.1**
comp=Z,20nm,1.0s,comp=Z,6µm
MYLDM Lahad Datu 39.57 219 *e*P **P** **11 12 17.1 +3.1**
comp=Z,46nm,1.0s
SKNT Sakolnakorn 39.59 248 P P 11 12 23.8 +10
comp=Z,15nm,0.9s
UBPT Khong Chiam 39.65 244 P P 11 12 20.3 +5.6
comp=Z,21nm,1.0s
WMQ Urumqi 40.56 295 P **P** **11 12 23.0 +0.9**
WMQ pP pP 11 12 33.5 -0.9
WMQ sP sP 11 12 40.8 +1.0
WMQ S **S** **11 18 30.0 +1.9**
WMQ pmax pmax
comp=Z,110nm,1.1s
WMQ pmax pmax
comp=Z,440nm,3.7s
WMQ LR LR
comp=Z,500nm,14.2s
WMQ LR LR
comp=Z,450nm,12.6s
WMQ LR LR
comp=Z,960nm,24.0s
ZAA0 Zalesovo Array 41.20 311 *e*P **P** **11 12 26.7 -0.4**
ZAA0 *e*P **P** **11 12 27.2 +0.2**
ZALV Zalesovo Beam 41.20 311 P **P** **11 12 27.0 0.0**
comp=Z,20nm,0.6s,baz=92,slow=7.3,SNR=22
ZALV PcP **PcP** **11 14 24.9 -0.4**
comp=Z,4.1nm,0.3s,baz=106,slow=2.7,SNR=6.1
CMAI Chiengmai2 41.42 256 P **P** **11 12 33.0 +3.5**
comp=Z,255nm,0.7s
UTTA Uttaradit 41.61 252 P **P** **11 12 34.4 +3.5**
comp=Z,5.3nm,0.7s,comp=Z,46nm
LAMP Lampang 41.83 254 P **P** **11 12 36.8 +4.2**
comp=Z,9.1nm,0.7s
NRIK Noril'sk 42.01 334 P **P** **11 12 32.6 -0.9**
comp=Z,7.7nm,0.4s,baz=117,slow=7.0,SNR=11
NVS Novosibirsk 42.08 312 *e*P **P** **11 12 34.4 +0.1**
NVS *e*S **S** **11 18 50.6 +0.3**
NVS pmax pmax
comp=N,11nm,1.6s
NVS pmax pmax
comp=E,36nm,1.6s
NVS pmax pmax
comp=Z,51nm,1.6s
NVS smax smax
comp=E,12nm,1.3s
CMMT Chiang Mai 42.16 254 P **P** **11 12 39.0 +3.6**
comp=E,33nm,0.6s,comp=E,300nm
CHTO Chiang Mai 42.17 254 P **P** **11 12 39.1 +3.7**
comp=E,147nm,0.6s,comp=E,1µm
CHTO Chiang Mai 42.17 254 *e*P **P** **11 12 37.9 +2.5**
CHTO pmax pmax
comp=Z,24nm,0.6s
CHTO Chiang Mai 42.17 254 *e*P **P** **11 12 37.9 +2.5**
comp=Z,24nm,0.6s
CMAR Chiang Mai Arr 42.38 254 P **P** **11 12 36.9 -0.3**
comp=Z,2.6nm,0.6s,baz=41,slow=8.7,SNR=6.2
CMAR LR LR 11 30 47.1
comp=Z,171nm,19.1s,baz=52,slow=37
CM01 Chiang Mai Arr 42.39 254 *e*P **P** **11 12 40.1 +2.8**
SUKH Sukhothai 42.47 252 P **P** **11 12 41.7 +3.9**
comp=Z,4.9nm,0.9s
LSA Lhasa 42.56 274 *e*P **P** **11 12 39.2 +0.2**
LSA pmax pmax
comp=Z,15nm,0.6s
LSA Lhasa 42.56 274 *e*P **P** **11 12 39.2 +0.2**
comp=Z,15nm,0.6s
MK01 Makanchi Array 43.68 301 *e*P **P** **11 12 47.3 -0.1**
MK31 Makanchi Array 43.68 301 *i* P **P** **11 12 47.2 -0.2**
MK31 pmax pmax
comp=Z,17nm,0.7s
MK31 Makanchi Array 43.68 301 *e*P **P** **11 12 47.5 +0.1**
MKAR Makanchi Array 43.68 301 P **P** **11 12 47.3 -0.1**
comp=Z,9.0nm,0.5s,baz=83,slow=9.4,SNR=14
MKAR ScP **ScP** **11 18 20.5 -1.1**
comp=Z,1.5nm,1.0s,baz=69,slow=5.5,SNR=3.8
MKAR Makanchi Array 43.68 301 *e*P **P** **11 12 47.5 +0.1**
UMPA Umpang Tak 43.84 252 P P 11 12 53.8 +4.8
comp=Z,7.3nm,0.7s
MAKZ Makanchi 43.89 301 *e*P **P** **11 12 49.1 0.0**
MAKZ pmax pmax
comp=Z,24nm,0.8s
MAKZ Makanchi 43.89 301 *e*P **P** **11 12 49.1 0.0**
comp=Z,24nm,0.8s
SVW2 Sparrevohn 43.95 38 *e*P **P** **11 12 51.2 +1.9**
comp=Z,18nm,0.9s
KURK Kurchatov 45.33 307 *d i*P **P** **11 13 00.0 -0.4**
KURK Kurchatov 45.33 307 P **P** **11 13 00.9 +0.5**
KURBB Kurchatov Arra 45.40 307 P **P** **11 13 00.9 -0.1**
comp=Z,24nm,0.4s,baz=302,slow=11,SNR=73
PPLA Purkeypile 45.58 36 *e*P **P** **11 13 04.3 +1.9**
PPLA *ep*P **pP** **11 13 15.5 +0.6**
KDAK Kodiak Island 45.59 43 *i* P **P** **11 13 02.5 +0.2**
CAST Castle Rocks 45.62 35 *e*P **P** **11 13 04.4 +1.8**
comp=Z,12nm,0.9s
BPAW Bear Paw Mtn. 46.12 34 *e*P **P** **11 13 08.2 +1.6**
comp=Z,15nm,1.2s
KTH Kantishna Hill 46.15 35 *e*P **P** **11 13 08.0 +1.1**
comp=Z,26nm,1.0s
MLY Manley 46.23 33 *e*P **P** **11 13 09.1 +1.7**
comp=Z,14nm,0.9s
SUA Susitna One 46.28 38 *e*P **P** **11 13 09.8 +1.8**
comp=Z,21nm,1.1s
TRF Thorofare Moun 46.43 35 *e*P **P** **11 13 10.5 +1.3**
TRF *ep*P **sP** **11 13 24.9 -2.1**
PDGK Podgornoye 46.45 297 P **P** **11 13 09.0 -0.6**
PDGK pmax pmax
comp=Z,33nm,1.0s
COLD Coldfoot 46.51 30 *e*P **P** **11 13 10.9 +1.4**
comp=Z,8.2nm,0.8s
RC01 Rabbit Creek A 46.79 38 *e*P **P** **11 13 12.7 +0.9**
comp=Z,19nm,1.0s
MCK McKinley 47.03 35 *e*P **P** **11 13 14.5 +0.8**
MCK *e**PP **pP** **11 13 28.9 +2.6**
MCK McKinley 47.03 35 *e*P **P** **11 13 14.5 +0.8**
MCK *ep*P **pP** **11 13 28.9 +2.6**
PMR Palmer 47.05 38 *e*P **P** **11 13 14.5 +0.7**
PMR pmax pmax
comp=Z,15nm,0.9s
PMR Palmer 47.05 38 *e*P **P** **11 13 14.5 +0.7**
comp=Z,15nm,0.9s
RND Reindeer 47.08 35 *e*P **P** **11 13 14.5 +0.4**
RND pmax pmax
comp=Z,27nm,1.2s
RND Reindeer 47.08 35 *e*P **P** **11 13 14.5 +0.4**
comp=Z,27nm,1.2s
MDM Murphy Dome 47.30 33 *e*P **P** **11 13 17.3 +1.5**
comp=Z,24nm,1.0s
JIRN Jiri 47.36 274 *e*P **P** **11 13 17.0 -0.2**
WRH Wood River Hil 47.37 34 *e*P **P** **11 13 17.2 +0.9**
comp=Z,14nm,1.0s
RAMN Ramite 47.38 273 *e*P **P** **11 13 16.8 -0.4**
comp=Z,61nm,0.5s
SML Sawmill 47.41 37 *e*P **P** **11 13 17.3 +0.6**
SML pmax pmax
comp=Z,5.0nm,0.8s
SML Sawmill 47.41 37 *e*P **P** **11 13 17.3 +0.6**
comp=Z,5.0nm,0.8s
GUN Gumba 47.49 275 *e*P **P** **11 13 18.0 -0.1**
comp=Z,91nm,0.5s
CCB Clear Creek Bu 47.49 33 *e*P **P** **11 13 18.5 +1.3**
comp=Z,21nm,1.5s
DHY Denali Highway 47.77 35 *e*P **P** **11 13 20.2 +0.6**
comp=Z,10nm,0.7s
HDA Harding Lake 47.87 34 *e*P **P** **11 13 20.5 +0.4**
comp=Z,15nm,1.0s
ILAR Eielson Array 47.88 33 P **P** **11 13 20.3 0.0**
comp=Z,4.5nm,0.6s,baz=263,slow=5.3,SNR=20
ILB Eielson Array 47.88 33 *e*P **P** **11 13 20.7 +0.5**
IL1 Eielson Array 47.88 33 *e*P **P** **11 13 19.9 -0.3**
KKN Kakani 48.01 275 *e*P **P** **11 13 21.7 -0.3**
comp=Z,61nm,0.5s
PKIN Phulchoki 48.02 274 *e*P **P** **11 13 22.3 +0.1**
comp=Z,45nm,0.5s
KAPI Kappang 48.10 210 *e*P **P** **11 13 22.3 -0.1**
comp=Z,62nm,1.1s
DMN Daman 48.23 275 *e*P **P** **11 13 23.4 -0.4**
comp=Z,18nm,0.4s
GKN Gorkha 48.41 275 *e*P **P** **11 13 24.6 -0.4**
comp=Z,37nm,0.5s
FYU Fort Yukon 48.47 31 *e*P **P** **11 13 27.0 +2.2**
comp=Z,92nm,1.6s
DOT Dot Lake 49.20 35 *e*P **P** **11 13 30.8 +0.4**
comp=Z,68nm,1.5s
TKM2 Tokmak 2 49.30 297 P **P** **11 13 31.7 0.0**
TKM2 pmax pmax
comp=Z,46nm,1.2s
KOLN Koldanda 49.33 276 *e*P **P** **11 13 31.7 -0.4**
comp=Z,34nm,0.5s
MENT Mentasta 49.44 35 *e*P **P** **11 13 33.9 +1.6**
comp=Z,20nm,1.0s
PYUN Piuthan 49.65 276 *e*P **P** **11 13 34.5 -0.1**
BVAR Borovoye Array 49.85 311 P **P** **11 13 35.4 -0.1**
comp=Z,9.8nm,0.6s,baz=76,slow=8.1,SNR=15
BVAR PcP **PcP** **11 14 55.5 +0.1**
comp=Z,7.5nm,0.5s,baz=92,slow=3.7,SNR=6.1
OTUK Ortayu 49.88 305 P **P** **11 13 34.1 -1.7**
OTUK pmax pmax
comp=Z,41nm,1.3s
BRVK Borovoye 49.90 311 *d i*P **P** **11 13 35.7 -0.2**
BRVK pmax pmax
comp=Z,46nm,0.8s
BRVK Borovoye 49.90 311 *e*P **P** **11 13 36.0 +0.1**
comp=Z,22nm,1.0s
AAK Ala-Archa 50.15 297 *d i*P **P** **11 13 38.0 -0.2**
AAK pmax pmax
comp=Z,15nm,0.9s
AAK Ala-Archa 50.15 297 *e*P **P** **11 13 38.4 +0.3**
comp=Z,7.7nm,0.6s
KSH Kashi 50.20 293 P **P** **11 13 42.0 +3.5**
KSH *ep*P sP 11 13 54.5 -1.9
KSH *es*P pP 11 13 59.5 +8.4
KSH *e*PP **PP** **11 15 38.8 +5.0**
KSH *e*ScP **ScP** **11 18 51.0 +1.8**
KSH S **S** **11 20 50.3 +3.0**
KSH ScS **ScS** **11 23 25.8 0.0**
KSH pmax pmax
comp=Z,11nm,1.0s
KSH LR LR
comp=Z,370nm,11.5s
KSH LR LR
comp=Z,160nm,7.0s
KSH LR LR
comp=Z,270nm,10.1s
SOEI Soe 50.92 203 P **P** **11 13 44.2 +0.1**
comp=Z,98nm,1.1s
DAWY Dawson 51.19 34 *e*P **P** **11 13 46.8 +1.3**
comp=Z,2.0nm,0.6s
MNAS Manas 51.59 298 P **P** **11 13 49.1 +0.2**
MNAS pmax pmax
comp=Z,22nm,0.8s
COEN Coen 52.34 179 *e*P **P** **11 13 54.1 -0.4**
comp=Z,46nm,1.4s
HYT Haines Junctio 52.72 37 *e*P **P** **11 13 59.8 +2.8**
comp=Z,27nm,0.9s
INK Inuvik 52.73 28 P **P** **11 13 56.7 -0.1**
comp=Z,6.3nm,0.8s,baz=292,slow=6.4,SNR=7.3
INK Inuvik 52.73 28 *e*P **P** **11 13 57.6 +0.8**
INK pmax pmax
comp=Z,12nm,0.8s
INK Inuvik 52.73 28 *e*P **P** **11 13 57.6 +0.8**
comp=Z,12nm,0.8s
KKAR Karatay Array 52.74 299 *e*P **P** **11 13 57.3 0.0**
KKAR Karatay Array 52.74 299 *e*P **P** **11 13 57.3 0.0**
SVE Sverdlovsk 54.26 318 *ce*P **P** **11 14 08.3 +0.1**
SVE pmax pmax
comp=Z,71nm,1.1s
SVE MLR MLR
comp=Z,703nm,16.0s
SOKR Solikamsk 55.34 322 *c i*P **P** **11 14 14.6 -1.3**
SOKR S S 11 22 06.0 +10
SOKR pmax pmax
comp=Z,28nm,1.4s
SOKR MLR MLR
comp=Z,243nm,17.0s
ARU Arti 55.47 318 P **P** **11 14 16.9 -0.1**
comp=Z,9.5nm,0.5s,baz=73,slow=4.5,SNR=22
ARU Arti 55.47 318 *d i*P **P** **11 14 16.7 -0.3**
ARU 11 15 17.3
ARU 11 16 21.6
ARU S **S** **11 22 00.9 +2.5**
ARU SS **SS** **11 25 37.0 -6.1**
ARU pmax pmax
comp=Z,74nm,1.2s
ARU MLR MLR
comp=Z,723nm,18.0s
ARU Arti 55.47 318 *e*P **P** **11 14 16.9 -0.1**
comp=Z,72nm,1.2s
DLBC Dease Lake 57.06 39 P **P** **11 14 29.2 +0.8**
comp=Z,4.7nm,0.9s,baz=297,slow=9.1,SNR=7.5
DLBC Dease Lake 57.06 39 *e*P **P** **11 14 30.4 +2.1**
comp=Z,33nm,1.6s
AB31 Akbulak array 57.27 310 P **P** **11 14 29.2 -0.7**
AB31 pmax pmax
comp=Z,15nm,0.8s
ABKAR Akbulak array 57.27 310 *e*P **P** **11 14 29.4 -0.5**
KBL Kabul 57.29 290 *e*P **P** **11 14 30.1 -0.4**
KBL pmax pmax
comp=Z,20nm,1.0s
KBL Kabul 57.29 290 *e*P **P** **11 14 30.1 -0.4**
comp=Z,20nm,1.0s
AKTO Aktyubinsk 57.96 311 P **P** **11 14 33.9 -0.8**
comp=Z,5.7nm,0.5s,baz=61,slow=11,SNR=14
WRAB Tennant Creek 58.72 188 *d i*P **P** **11 14 38.7 -1.6**
WRAB pmax pmax
comp=Z,23nm,0.7s
WRAB Tennant Creek 58.72 188 *e*P **P** **11 14 38.6 -1.6**
comp=Z,27nm,0.9s
WB2 Warramunga Arr 58.73 188 *e*P **P** **11 14 37.4 -2.9**
WB2 *e*P **P** **11 14 38.4 -1.9**
WRA Warramunga Arr 58.73 188 P **P** **11 14 38.5 -1.8**
comp=Z,11nm,0.8s,baz=6.6,slow=6.8,SNR=14
WRA LR LR 11 36 59.7
comp=Z,111nm,19.9s,baz=225,slow=33
HYB Hyderabad 58.73 268 *i* P **P** **11 14 40.0 -0.6**
SPITS Spitsbergen Ar 59.03 349 P **P** **11 14 40.8 -1.0**
comp=Z,4.4nm,0.8s,baz=90,slow=8.3,SNR=4.9
KBS Kingsbay 59.15 350 *e*P **P** **11 14 43.6 +1.0**
KBS pmax pmax
comp=Z,25nm,1.0s
KBS Kingsbay 59.15 350 *e*P **P** **11 14 43.6 +1.0**
comp=Z,25nm,1.0s
RES Resolute Bay 60.92 15 P **P** **11 14 54.6 0.0**
comp=Z,3.5nm,0.5s,baz=2.4,slow=2.9,SNR=7.5
YKA Yellowknife Ar 62.17 31 P **P** **11 15 03.3 0.0**
comp=Z,4.8nm,1.0s,baz=298,slow=6.5,SNR=12
AS01 Alice Springs 62.45 188 *e*P **P** **11 15 03.9 -1.7**
AS31 Alice Springs 62.45 188 *e*P **P** **11 15 04.7 -1.0**
comp=Z,3.7nm,0.8s
ASAR Alice Springs 62.45 188 P **P** **11 15 04.4 -1.3**
comp=Z,3.4nm,0.8s,baz=8.0,slow=5.9,SNR=9.3
ASAR LR LR 11 41 59.5
comp=Z,195nm,21.4s,baz=13,slow=36
KLMR Klimovskoe 62.65 327 *e*P **P** **11 15 04.5 -2.0**
KLMR *e* 11 17 22.1
KLMR pmax pmax
comp=Z,35nm,1.4s
ARCES ARCESS Array B 62.65 339 P **P** **11 15 05.3 -1.2**
comp=Z,7.2nm,0.8s,baz=44,slow=11,SNR=6.4
GEYT Alibeck 63.48 299 P **P** **11 15 12.3 -0.2**
comp=Z,9.2nm,0.8s,baz=29,slow=3.4,SNR=9.5
DAG Danmarks Havn 64.20 355 *i* P **P** **11 15 16.2 -0.4**
comp=Z,21nm,1.0s
EIDS Eidsvold 64.25 171 P **P** **11 15 17.8 +0.4**
comp=Z,31nm,1.1s
A04D Lummi Island 65.27 47 P **P** **11 15 23.8 -0.1**
baz=301
NLWA Neilton Lookou 65.28 48 *e*P **P** **11 15 25.1 +0.9**
comp=Z,18nm,0.9s
B05A Bryant 65.85 47 P **P** **11 15 27.6 -0.1**
baz=302
MOS Moscow 66.24 323 *e*P **P** **11 15 27.7 -2.4**
MOS *e*S **S** **11 24 14.3 -1.3**
MOS pmax pmax
comp=Z,96nm,1.5s
MOS MLR MLR
comp=Z,600nm,16.0s
VRH Novokhopyorsk 66.70 318 *e*P **P** **11 15 31.7 -1.4**
VRH pmax pmax
comp=Z,20nm,0.5s
G03D McMinnville, O 66.77 50 P **P** **11 15 34.0 +0.3**
baz=302
F04A Amboy 66.89 49 *e*P **P** **11 15 35.6 +1.2**
comp=Z,12nm,0.8s
OBN Obninsk 67.09 323 *de*P **P** **11 15 34.9 -0.6**
OBN *e* 11 15 59.0
OBN *e* 11 18 01.6
OBN pmax pmax
comp=Z,81nm,1.7s
OBN MLR MLR
comp=Z,386nm,16.0s
B08A Colville Reser 67.36 46 *e*P **P** **11 15 38.0 +0.6**
comp=Z,14nm,1.3s
I03D Drain, OR 67.52 51 P **P** **11 15 38.4 0.0**
baz=302
FINES FINESS Array B 67.61 332 P **P** **11 15 38.5 -0.2**
comp=Z,18nm,0.8s,baz=63,slow=8.8,SNR=22
EDM Edmonton 67.79 39 *e*P **P** **11 15 40.1 +0.1**
EDM pmax pmax
comp=Z,15nm,1.1s
EDM Edmonton 67.79 39 *e*P **P** **11 15 40.1 +0.1**
comp=Z,15nm,1.1s
G05D Wamic, OR 67.91 49 P **P** **11 15 40.9 -0.1**
baz=303
VSR Storozhevoye 68.03 319 *e*P **P** **11 15 40.7 -0.8**
VSR pmax pmax
comp=Z,10.0nm,0.5s
I04A Tendick Farm, 68.04 51 P **P** **11 15 42.0 +0.1**
baz=303,SNR=7.1
L02D Cave Junction, 68.19 53 P **P** **11 15 42.6 -0.2**
baz=303
C09A Chrisman Ranch 68.26 46 *e*P **P** **11 15 43.8 +0.7**
comp=Z,18nm,1.2s
D08A Wollman Farm, 68.31 47 *e*P **P** **11 15 44.2 +0.8**
D08A *ep*P **sP** **11 16 00.4 -1.3**
I05D Terrebonne, OR 68.39 50 P **P** **11 15 44.0 0.0**
baz=303
J04D Umpqua Nationa 68.53 51 P **P** **11 15 44.5 -0.6**
baz=303
NEW Newport 68.64 45 P **P** **11 15 44.7 -0.8**
comp=Z,6.8nm,1.0s,baz=325,slow=2.7,SNR=7.9
NEW Newport 68.64 45 P **P** **11 15 45.2 -0.3**
baz=304
NEW Newport 68.64 45 *e*P **P** **11 15 46.3 +0.8**
NEW pmax pmax
comp=Z,8.0nm,0.9s
NEW Newport 68.64 45 *e*P **P** **11 15 46.2 +0.8**
comp=Z,7.7nm,0.9s
YBH Yreka Blue Hor 68.98 53 *e*P **P** **11 15 49.3 +1.5**
YBH pmax pmax
comp=Z,12nm,1.0s
YBH Yreka Blue Hor 68.98 53 *e*P **P** **11 15 49.3 +1.5**
comp=Z,12nm,1.0s
J05D Fort Rock, OR 69.04 51 P **P** **11 15 48.3 +0.1**
baz=304,SNR=10.0
SUMG Summit 69.07 0 ⇓ *i*P **P** **11 15 48.7 +0.5**
comp=Z,27nm,0.9s
SUMG Summit 69.07 0 *e*P **P** **11 15 48.6 +0.4**
SUMG pmax pmax
comp=Z,40nm,1.1s
SUMG Summit 69.07 0 *e*P **P** **11 15 48.6 +0.4**
comp=Z,40nm,1.1s
M02C Callahan 69.08 53 P **P** **11 15 48.8 +0.4**
baz=304,SNR=5.4
VSU Vasula 69.30 329 *d i*P **P** **11 15 49.0 -0.3**
VSU pmax pmax
comp=Z,160nm,1.7s
N02D Trinity Center 69.41 54 P **P** **11 15 50.8 +0.4**
baz=304,SNR=6.2
M04C Macdoel 69.50 53 P **P** **11 15 51.3 +0.3**
baz=304,SNR=10.0
K05A Summer Lake 69.56 51 *e*P **P** **11 15 53.1 +1.7**
comp=Z,27nm,1.1s
WDC Whiskeytown Da 69.73 54 *e*P **P** **11 15 53.6 +1.3**
WDC pmax pmax
comp=Z,5.0nm,0.9s
WDC Whiskeytown Da 69.73 54 *e*P **P** **11 15 53.6 +1.3**
comp=Z,5.4nm,0.9s
WALA Waterton Lakes 69.92 43 *e*P **P** **11 15 54.1 +0.6**
comp=Z,8.3nm,1.0s
WALA *ep*P **pP** **11 16 08.4 +1.7**
ZEI Tsey 70.14 309 *e*P **P** **11 15 52.0 -3.1**
ZEI pmax pmax
comp=Z,33nm,0.5s
STKA Stephens Creek 70.17 180 P **P** **11 15 54.0 -0.8**
comp=Z,2.2nm,0.8s,baz=353,slow=12,SNR=2.9
KIV Kislovodsk 70.21 311 *e*P **P** **11 15 55.5 +0.2**
KIV *e* 11 16 14.4
KIV *e*S **S** **11 25 05.1 +1.6**
KIV pmax pmax
comp=Z,75nm,0.9s
KIV pmax pmax
comp=Z,24nm,3.3s
KIV MLR MLR
comp=Z,184nm,18.0s
KIV Kislovodsk 70.21 311 *e*P **P** **11 15 55.8 +0.5**
comp=Z,98nm,1.1s
KBZ Khabaz 70.21 310 P **P** **11 15 55.5 +0.4**
comp=Z,23nm,1.0s,baz=55,slow=5.4,SNR=21
O03D Paynes Creek 70.35 54 P **P** **11 15 56.6 +0.3**
baz=304
MOD Modoc Plateau 70.38 52 *e*P **P** **11 15 57.2 +0.7**
comp=Z,6.0nm,1.0s
BMO Blue Mountains 70.49 48 *e*P **P** **11 15 57.9 +0.9**
BMO pmax pmax
comp=Z,8.0nm,1.2s
BMO Blue Mountains 70.49 48 *e*P **P** **11 15 57.9 +0.9**
comp=Z,8.3nm,1.2s
JTMT Jette 70.50 44 *e*P **P** **11 15 58.2 +1.1**
ONI Oni 70.53 309 P **P** **11 15 57.8 +0.5**
ONI Oni 70.53 309 P **P** **11 15 57.8 +0.5**
SWMT Swartz Lake 70.79 44 *e*P **P** **11 15 59.7 +0.9**
ORV Oroville 70.96 54 *e*P **P** **11 16 00.2 +0.3**
ORV pmax pmax
comp=Z,9.0nm,1.3s
ORV Oroville 70.96 54 *e*P **P** **11 16 00.2 +0.3**
comp=Z,9.0nm,1.3s
WVOR Wild Horse Val 71.09 51 *e*P **P** **11 16 01.8 +1.0**
WVOR pmax pmax
comp=Z,13nm,1.3s
WVOR Wild Horse Val 71.09 51 *e*P **P** **11 16 01.8 +1.0**
comp=Z,13nm,1.3s
GNI Garni 71.12 307 *d i*P **P** **11 16 01.6 +0.6**
GNI pmax pmax
comp=Z,97nm,1.7s
AKH Akhalkalaki 71.18 308 ⇑ *i*P **P** **11 16 02.2 +0.8**
SLMT Seeley Lake 71.23 44 *e*P **P** **11 16 02.1 +0.6**
MSO Missoula 71.23 45 P **P** **11 16 01.2 -0.3**
baz=307
MSO Missoula 71.23 45 *e*P **P** **11 16 02.0 +0.5**
comp=Z,6.3nm,1.0s
MICGM Minsk 71.42 326 *e* P **P** **11 16 01.0 -1.3**
MNK Minsk 71.42 326 *e*P **P** **11 16 01.0 -1.3**
AFDM Forest Hills D 71.65 55 *e*P **P** **11 16 05.3 +1.3**
comp=Z,4.7nm,1.1s
UOSS Minazif 71.77 288 *e*P **P** **11 16 05.1 +0.1**
comp=Z,38nm,1.4s
FFC Flin Flon 72.09 33 *e*P **P** **11 16 06.4 0.0**
FFC pmax pmax
comp=Z,16nm,1.1s
FFC Flin Flon 72.09 33 *e*P **P** **11 16 06.4 0.0**
comp=Z,16nm,1.1s
SOC Sochi 72.17 312 *e*P **P** **11 16 05.6 -1.5**
SOC pmax pmax
comp=Z,10.0nm,0.6s

SOC MLR MLR
comp=Z,240nm,19.0s
MFID Camas Ranch 72.19 48 *eP* P 11 16 08.0 +0.6
comp=Z,12nm,1.3s
PAHR Pah Rah Range 72.21 53 *eP* P 11 16 08.4 +0.8
comp=Z,12nm,1.1s
FCC Fort Churchill 72.34 27 *eP* P 11 16 07.4 -0.4
FCC pmax pmax
comp=Z,27nm,1.2s
FCC Fort Churchill 72.34 27 *eP* P 11 16 07.4 -0.4
comp=Z,27nm,1.2s
PNTR Pine Nut 72.44 54 *eP* P 11 16 10.7 +1.7
comp=Z,8.6nm,1.1s
HRY Holter Researc 72.45 44 *eP* P 11 16 09.9 +1.0
CMB Columbia Colle 72.55 55 *eP* P 11 16 10.3 +0.8
CMB pmax pmax
comp=Z,12nm,1.4s
CMB Columbia Colle 72.55 55 *eP* P 11 16 10.3 +0.8
comp=Z,12nm,1.4s
LRM Limekiln Ridge 72.66 45 *eP* P 11 16 11.2 +0.9
NC405 NORSAR Array S 72.67 337 *eP* P 11 16 09.9 +0.1
NC303 NORSAR Array S 72.69 337 *eP* P 11 16 09.8 0.0
YERR Yerington 72.72 54 *eP* P 11 16 11.8 +1.1
comp=Z,17nm,1.2s
EGMT Eagleton 72.75 42 P P 11 16 10.2 -0.3
baz=309
EGMT Eagleton 72.75 42 *eP* P 11 16 10.9 +0.4
comp=Z,21nm,1.1s
ANN Anapa 72.75 314 *eP* P 11 16 10.0 -0.5
ANN *eS* **SKiKP** 11 25 38.4 -1.7
ANN pmax pmax
comp=Z,43nm,1.3s
ANN MLR MLR
comp=N,294nm,20.0s
ANN MLR MLR
comp=Z,255nm,20.0s
NC204 NORSAR Array S 72.83 338 *eP* P 11 16 11.3 +0.5
NB201 NORSAR Array S 72.85 337 *eP* P 11 16 10.8 0.0
DLMT Dillon 72.86 45 *eP* P 11 16 12.3 +1.0
comp=Z,15nm,1.1s
NB2 NORSAR Subarra 72.88 337 P P 11 16 10.5 -0.5
comp=Z,28nm,0.9s,baz=38,slow=6.2
NB2 NORSAR Subarra 72.88 337 P P 11 16 10.5 -0.5
baz=38,slow=6.2
NOA NORSAR Array B 72.88 337 P P 11 16 10.7 -0.3
comp=Z,19nm,1.0s,baz=43,slow=5.5,SNR=16
WAKR Walker 72.88 54 *eP* P 11 16 13.0 +1.4
comp=Z,4.7nm,1.0s
HLID Hailey 72.93 48 P P 11 16 11.6 -0.2
baz=307
HLID Hailey 72.93 48 *eP* P 11 16 12.9 +1.1
comp=Z,4.3nm,1.0s
NBO02 NORSAR Array S 72.98 337 *eP* P 11 16 11.4 -0.1
NBO00 NORSAR Array S 73.02 337 *eP* P 11 16 12.0 +0.2
BMN Battle Mountai 73.13 52 *eP* P 11 16 14.3 +1.3
BMN pmax pmax
comp=Z,15nm,1.4s
BMN Battle Mountai 73.13 52 *eP* P 11 16 14.3 +1.3
comp=Z,15nm,1.4s
NAO01 NORSAR Array S 73.13 337 *eP* P 11 16 12.4 0.0
BOZ Bozeman (W) 73.22 45 P P 11 16 13.6 +0.1
baz=306
BOZ Bozeman (W) 73.22 45 *eP* P 11 16 14.3 +0.8
BOZ pmax pmax
comp=Z,11nm,1.1s
BOZ Bozeman (W) 73.22 45 *eP* P 11 16 14.2 +0.8
comp=Z,11nm,1.1s
AKASG Malin Array Be 73.31 322 P P 11 16 13.2 -0.5
comp=Z,10nm,0.6s,baz=45,slow=6.9,SNR=27
AKBB Malin Array Si 73.31 322 *eP* P 11 16 13.1 -0.6
AKBB Malin Array Si 73.31 322 *eP* P 11 16 13.1 -0.6
KIEV Kiev 73.32 322 *d iP* P 11 16 13.0 -0.7
KIEV pmax pmax
comp=Z,28nm,1.0s
KIEV Kiev 73.32 322 *eP* P 11 16 13.1 -0.7
comp=Z,37nm,1.1s
AK11 Malin Array Si 73.35 322 *eP* P 11 16 13.6 -0.3
TVH3 East Aurora ar 73.36 54 *eP* P 11 16 15.8 +1.3
comp=Z,8.6nm,1.1s
TVH2 Borealis Mine 73.39 54 *eP* P 11 16 15.8 +1.1
comp=Z,6.4nm,1.2s
MLAC Mammoth, Mammo 73.78 55 P P 11 16 17.1 +0.1
baz=306
SUW Suwalki 73.78 327 *eP* P 11 16 16.3 -0.1
YHB Horse Butte 74.02 45 *eP* P 11 16 19.9 +1.7
comp=Z,11nm,1.1s
GCMT Greycliff 74.20 44 *eP* P 11 16 20.4 +1.2
SIM Simferopol' 74.51 315 *eP* P 11 16 21.6 +0.8
SIM *eS* S 11 25 52.0 -0.4
SIM pmax pmax
comp=Z,18nm,1.0s
SIM MLR MLR
comp=Z,360nm,20.2s
KLNR Kaliningrad 74.58 329⇑ *eP* P 11 16 20.7 -0.3
KLNR pmax pmax
comp=Z,36nm,0.8s
H17A Grant Village 74.59 45 *eP* P 11 16 24.4 +2.8
comp=Z,15nm,0.9s
VES Vestal, Richgr 74.68 56 P P 11 16 21.9 0.0
baz=307
IMW Indian Meadow 74.70 46 *eP* P 11 16 24.0 +1.7
comp=Z,10nm,1.0s
FLWY Flagg Ranch 74.72 46 *eP* P 11 16 24.4 +2.1
comp=Z,19nm,1.4s
PKM Mcpherson Peak 74.77 57 P P 11 16 22.8 +0.1
baz=307
RLMT Red Lodge 74.85 44 P P 11 16 23.3 +0.2
baz=310
RLMT Red Lodge 74.85 44 *eP* P 11 16 24.2 +1.2
comp=Z,15nm,1.4s
MOOW Moose Ponds 74.90 46 *eP* P 11 16 24.9 +1.6
comp=Z,10nm,1.1s
MOOW *epP* **pP** 11 16 36.5 -0.2
TPAW Teton Pass 74.95 46 *eP* P 11 16 25.0 +1.2
comp=Z,17nm,1.3s
CWC Cottonwood Cre 74.97 55 P P 11 16 23.9 +0.1
baz=307
HVU Hansel Valley 74.97 48 *eP* P 11 16 25.0 +1.3
HVU *e*PP* **pP** 11 16 36.4 -0.7
HVU pmax pmax
comp=Z,8.0nm,0.9s
HVU Hansel Valley 74.97 48 *eP* P 11 16 25.0 +1.3
comp=Z,7.8nm,0.9s
HVU *epP* **pP** 11 16 36.4 -0.7
LOHW Long Hollow 75.07 46 *eP* P 11 16 25.8 +1.4
comp=Z,8.2nm,1.4s
SNOW Snow King Moun 75.08 46 *eP* P 11 16 26.0 +1.5
comp=Z,9.9nm,1.0s
SNOW *epP* **pP** 11 16 39.6 +1.9
REDW Red Top Meadow 75.09 46 *eP* P 11 16 25.4 +1.0
comp=Z,13nm,1.3s
GRAC Grapevine Rang 75.10 55 P P 11 16 25.1 +0.7
baz=307
ARVC Arvin 75.27 57 P P 11 16 25.5 +0.1
baz=307
DGMT Dagmar 75.28 39 P P 11 16 25.4 +0.2
baz=312
AHID Auburn Hatcher 75.32 47 *eP* P 11 16 26.5 +0.7
comp=Z,4.8nm,0.8s
BGU Big Grassy Mou 75.36 49 *eP* P 11 16 27.7 +1.7
comp=Z,3.2nm,0.8s
R11A Troy Canyon, C 75.39 53 P P 11 16 26.3 0.0
baz=308
R11A Troy Canyon, C 75.39 53 *eP* P 11 16 26.9 +0.6
comp=Z,11nm,1.2s
LAO LASA Array 75.44 41 P P 11 16 26.4 +0.1
baz=311
LAO LASA Array 75.44 41 *eP* P 11 16 27.0 +0.8
comp=Z,20nm,0.9s
MPMC Manual Prospec 75.58 55 P P 11 16 27.7 +0.3
baz=308
FURC Furnace Creek, 75.74 55 P P 11 16 28.6 +0.6
baz=308
HWUT Hardware Ranch 75.79 48 *eP* P 11 16 29.6 +1.2
comp=Z,17nm,1.1s
LRMC Laurel Mtn Rad 75.81 56 P P 11 16 29.2 +0.6
baz=308
TPNV Topopah Spring 75.83 54 P P 11 16 29.4 +0.6
baz=308
TPNV Topopah Spring 75.83 54 *eP* P 11 16 29.6 +0.8
TPNV pmax pmax
comp=Z,14nm,1.2s
TPNV Topopah Spring 75.83 54 *eP* P 11 16 29.6 +0.8
comp=Z,14nm,1.2s
DUG Dugway, Tooele 75.94 50 P P 11 16 30.1 +0.8
baz=309
DUG Dugway, Tooele 75.94 50 *eP* P 11 16 30.3 +1.0
DUG pmax pmax
comp=Z,15nm,1.2s
DUG Dugway, Tooele 75.94 50 *eP* P 11 16 30.3 +1.0
comp=Z,15nm,1.2s
EDW2 Edwards Air Fo 75.97 57 P P 11 16 29.6 +0.1
baz=308
A26A Wade Farm, Ken 76.04 38 P P 11 16 29.6 0.0
baz=314
BW06 Boulder Array 76.20 46 P P 11 16 30.9 +0.1
baz=310
BW06 Boulder Array 76.20 46 *eP* P 11 16 30.8 +0.1
BW06 *eP* P 11 16 30.9 +0.1
PD31 Pinedale Array 76.20 46 *eP* P 11 16 31.0 +0.1
PDAR Pinedale Array 76.20 46 P P 11 16 30.9 +0.1
comp=Z,4.0nm,0.7s,baz=316,slow=0.4,SNR=21
BSD Bornholm Skovb 76.25 332 *i P* P 11 16 30.4 -0.1
comp=Z,22nm,0.8s
CTU Camp Tracy 76.26 49 *eP* P 11 16 32.7 +1.6
comp=Z,27nm,1.1s
BEL Belsk 76.35 327 *eP* P 11 16 32.2 +1.0
LVV L'vov 76.35 324 *eP* P 11 16 39.9 +8.6
GSC Goldstone, Bar 76.49 56 P P 11 16 32.7 +0.3
baz=308
GSC Goldstone, Bar 76.49 56 *eP* P 11 16 33.2 +0.8
GSC pmax pmax
comp=Z,6.0nm,1.2s
GSC Goldstone, Bar 76.49 56 *eP* P 11 16 33.2 +0.8
comp=Z,5.6nm,1.2s
JLU Jonanelle 76.49 49 *eP* P 11 16 33.7 +1.2
comp=Z,12nm,1.2s
BFSC Mount Baldy Ra 76.58 57 P P 11 16 33.4 +0.4
baz=308
HTU Hoyt Peak 76.58 48 *eP* P 11 16 34.5 +1.4
COP Copenhagen 76.69 333 *i P* P 11 16 33.4 +0.4
comp=Z,51nm,1.0s
SHPR Sheep Range 76.80 54 *eP* P 11 16 35.9 +1.6
comp=Z,12nm,1.2s
SHPR *ePcP* **pP** 11 16 50.3 +2.7
TUQ Turquoise Moun 76.97 55 P P 11 16 35.6 +0.4
baz=308
HEC Hector,Ludlow 77.08 56 P P 11 16 36.1 +0.3
baz=308
KWP Kalwaria Pacla 77.09 324 *eP* P 11 16 36.0 +0.5
D26A Manning 77.13 39 P P 11 16 35.7 -0.1
baz=314
CCUT Cedar City 77.27 52 *eP* P 11 16 38.1 +1.2
comp=Z,8.6nm,1.2s
MURC Murrieta 77.27 57 P P 11 16 36.7 -0.1
baz=308
BUR08 Bucovina Ar. S 77.33 322 *eP* P 11 16 37.1 +0.2
BURAR Bucovina Array 77.34 322 *i P* P 11 16 37.2 +0.2
MSU Marysvale 77.38 51 *eP* P 11 16 38.6 +1.0
MSU Marysvale 77.38 51 *eP* P 11 16 38.6 +1.0
TESR Tescani 77.40 320 *i P* P 11 16 37.3 +0.1
TMUT Trail Mountain 77.47 50 *eP* P 11 16 39.3 +1.1
comp=Z,7.1nm,0.9s
GMRC Granite Mounta 77.54 55 P P 11 16 38.8 +0.3
baz=309
CFR Carcaliu 77.55 319⇑ *i P* P 11 16 37.8 -0.3
P17A Butcher Ranch, 77.63 49 *eP* P 11 16 40.1 +1.2
comp=Z,18nm,1.1s
MTPU Mount Pierson 77.68 51 *eP* P 11 16 41.0 +1.6
comp=Z,9.1nm,1.1s
LCMT Little Creek M 77.68 52 *eP* P 11 16 40.5 +1.3
comp=Z,8.6nm,1.1s
PFO Pinyon Flats O 77.75 57 P P 11 16 39.6 0.0
baz=308
TPFO Pinon Flats 77.76 57 P P 11 16 39.9 +0.2
baz=308
VRI Vrincioaia 77.80 320 *i P* P 11 16 41.1 +1.6
BELC Belle Mtn. Jos 77.81 56 P P 11 16 39.9 0.0
baz=308
PLOR Plostina 77.85 320⇑ *iP* P 11 16 40.7 +0.9
ULM Lac du Bonnet 77.89 34 P P 11 16 38.9 -1.0
comp=Z,7.5nm,0.9s,baz=291,slow=3.1,SNR=7.5
ULM Lac du Bonnet 77.89 34 *eP* P 11 16 39.4 -0.6
comp=Z,17nm,1.3s
STHS Stebnicka Huta 77.91 325 *eP* P 11 16 41.2 +1.1
MDND Maddock 77.93 37 P P 11 16 40.3 0.0
baz=315
MDND Maddock 77.93 37 *eP* P 11 16 40.9 +0.7
comp=Z,36nm,1.1s
KNB Kanab 77.94 52 *eP* P 11 16 42.2 +1.5
KNB *e*PP* **pP** 11 16 53.6 -0.4
KNB pmax pmax
comp=Z,15nm,1.2s
KNB Kanab 77.94 52 *eP* P 11 16 42.2 +1.5
comp=Z,15nm,1.2s
KNB *epP* **pP** 11 16 53.6 -0.4
OJC Ojcow 77.96 326 *eP* P 11 16 40.6 +0.3
OJC Ojcow 77.96 326 *eP* P 11 16 40.4 +0.1
OJC pmax pmax
comp=Z,40nm,1.0s
OJC Ojcow 77.96 326 *eP* P 11 16 40.4 +0.1
comp=Z,40nm,1.0s
K22A Casper 77.96 45 P P 11 16 40.7 0.0
baz=312
K22A Casper 77.96 45 *eP* P 11 16 41.2 +0.6
comp=Z,30nm,1.6s
SRU San Rafael Swe 77.99 49 *eP* P 11 16 41.9 +0.9
SRU pmax pmax
comp=Z,10.0nm,0.8s
SRU San Rafael Swe 77.99 49 *eP* P 11 16 41.9 +0.9
comp=Z,10nm,0.8s
UZH Uzhgorod 78.00 324 *eP* P 11 16 40.2 -0.3
UZH *e* 11 16 53.4
TLB Topalu 78.00 318 *i P* P 11 16 40.7 +0.1
BR131 Keskin Array S 78.14 312 *eP* P 11 16 41.8 +0.2
BRTR Keskin Array B 78.14 312 P P 11 16 41.5 -0.1
comp=Z,3.6nm,0.6s,baz=102,slow=3.3,SNR=15
CRVS Cervenica-Dubn 78.19 325 *eP* P 11 16 42.2 +0.6
CRVS *epP* **PcP** 11 16 52.4 +1.4
H25A Fruitdale 78.19 42 P P 11 16 41.4 -0.4
baz=313
MONP2 Monument Peak 78.22 57 P P 11 16 42.1 -0.2
baz=308
IRM Iron Mountain 78.27 56 P P 11 16 42.3 0.0
baz=309
RSSD Black Hills 78.31 42 P P 11 16 42.4 -0.2
baz=313
RSSD Black Hills 78.31 42 *eP* P 11 16 42.5 -0.2
RSSD pmax pmax
comp=Z,10.0nm,1.0s
RSSD Black Hills 78.31 42 *eP* P 11 16 42.5 -0.2
comp=Z,10.0nm,1.0s
NIE Niedzica 78.33 325 *eP* P 11 16 43.1 +0.7
BC3 Big Chuckawall 78.38 56 P P 11 16 43.0 -0.1
baz=309
B31A Greenbush Farm 78.43 36 P P 11 16 42.6 -0.3
baz=316
MLR Muntele Rosu 78.46 320 *i P* P 11 16 44.4 +1.1
MLR Muntele Rosu 78.46 320 *eP* P 11 16 43.7 +0.4
MLR pmax pmax
comp=Z,33nm,1.4s
MLR Muntele Rosu 78.46 320 *eP* P 11 16 43.7 +0.4
comp=Z,33nm,1.4s
W13A Hualapai Mount 78.48 54 *eP* P 11 16 44.2 +0.5
comp=Z,3.3nm,1.0s
BR231 Keskin MP Arra 78.56 312 *eP* P 11 16 42.2 -1.7
IKP In-Ko-Pah, Jac 78.58 57 P P 11 16 44.4 +0.3
baz=309
SWSC Sam W. Stewart 78.60 57 P P 11 16 44.1 0.0
baz=309
A32A Rocking H Ranc 78.60 35 P P 11 16 43.3 -0.6
baz=317
U15A North Rim 78.64 52 *eP* P 11 16 45.7 +1.0
comp=Z,17nm,1.4s
O20A White River Ci 78.66 47 P P 11 16 44.2 -0.4
baz=311
O20A White River Ci 78.66 47 *eP* P 11 16 45.1 +0.4
comp=Z,9.1nm,1.0s
PDMCI Parker Dam,Lak 78.82 55 P P 11 16 45.1 -0.2
baz=309
C31A Landman Farms, 78.85 36 P P 11 16 45.1 -0.2
baz=317
LANS Liptovska Anna 78.90 326 *eP* P 11 16 46.2 +0.7
Y12C Blythe 78.92 56 P P 11 16 46.0 +0.1
baz=309
Y12C Blythe 78.92 56 *eP* P 11 16 46.8 +0.9
comp=Z,8.3nm,1.0s
KECS Kecovo 78.93 325 *eP* P 11 16 45.7 0.0
KECS *ePP* **PP** 11 19 44.3 +0.1
VOIR 78.95 320 *i P* P 11 16 47.0 +1.1
OKC Ostrava-Krasne 78.96 327 *eP* P 11 16 46.6 +0.8
OKC AMS AMS 11 54 20.0
OKC Ostrava-Krasne 78.96 327 *eP* P 11 16 46.6 +0.8
OKC MLR MLR
comp=N,300nm,19.6s
B32A Ashes, Strandq 78.96 35 P P 11 16 45.4 -0.4
baz=317
KSP Ksiaz 78.98 328 *eP* P 11 16 46.3 +0.4
A33A Warroad 79.08 34 P P 11 16 46.1 -0.3
baz=318
GLA Glamis 79.17 56 P P 11 16 47.4 +0.1
baz=309
ARR Arges 79.20 320⇑ *iP* P 11 16 48.9 +1.6
F29A Eureka 79.26 39 P P 11 16 46.9 -0.6
baz=316
MORC Moravsky Berou 79.26 327⇓ *iP* P 11 16 48.0 +0.5
MORC Moravsky Berou 79.26 327 *eP* P 11 16 48.0 +0.5
MORC pmax pmax
comp=Z,112nm,1.1s
MORC Moravsky Berou 79.26 327 *eP* P 11 16 48.0 +0.5
comp=Z,112nm,1.1s
AGMN Agassiz Nation 79.34 35 P P 11 16 47.6 -0.3
baz=318
AGMN Agassiz Nation 79.34 35 *eP* P 11 16 47.1 -0.8
comp=Z,12nm,1.3s
DPC Dobruska-Polom 79.34 328⇓ *iP* P 11 16 48.6 +0.7
DPC AMS AMS 11 55 30.0
comp=Z,300nm,16.3s
DPC Dobruska-Polom 79.34 328⇓ *iP* P 11 16 48.6 +0.7
DPC MLR MLR
comp=Z,300nm,16.3s
UPC Upice 79.35 328⇓ *eP* P 11 16 48.2 +0.3
UPC AMS AMS 11 53 40.0
comp=Z,300nm,18.0s
UPC Upice 79.35 328 *eP* P 11 16 48.2 +0.3
UPC MLR MLR
comp=Z,300nm,18.0s
PV10 Paradox Valley 79.35 49 *eP* P 11 16 49.8 +1.3
KRLC Kraliky 79.36 328⇓ *eP* P 11 16 48.5 +0.5
KRLC Kraliky 79.36 328 *eP* P 11 16 48.5 +0.5
D31A Mcclaflin, Tow 79.40 37 P P 11 16 47.9 -0.3
baz=317
PV04 Paradox Valley 79.42 49 *eP* P 11 16 49.2 +0.4
N23A Red Feather La 79.46 46 P P 11 16 48.8 -0.3
baz=313
N23A Red Feather La 79.46 46 *eP* P 11 16 50.2 +1.1
comp=Z,16nm,1.1s
N23A *epP* **pP** 11 17 02.8 +0.3
PV05 Paradox Valley 79.51 49 *eP* P 11 16 50.6 +1.3
PV05 *epP* **pP** 11 17 02.0 -0.8
LOT Lotru 79.57 321⇓ *iP* P 11 16 49.9 +0.5
PSZ Piszkesteto 79.62 325⇑ *iP* P 11 16 49.9 +0.4
PSZ Piszkesteto 79.62 325 *eP* P 11 16 50.0 +0.4
PSZ pmax pmax
comp=Z,41nm,1.2s
PSZ Piszkesteto 79.62 325 *eP* P 11 16 50.0 +0.4
comp=Z,41nm,1.2s
PSZ Piszkesteto 79.62 325⇓ *eP* P 11 16 50.0 +0.4
VYHS Vyhne 79.66 326 *eP* P 11 16 50.1 +0.4
E31A Nome 79.67 37 P P 11 16 49.6 -0.2
baz=317
C33A Trail 79.78 35 P P 11 16 49.6 -0.7
baz=318
Y14A Wickenburg 79.78 55 *eP* P 11 16 51.4 +0.8
comp=Z,32nm,1.0s
PV01 Paradox Valley 79.79 49 *eP* P 11 16 51.8 +0.9
WUAZ Wupatki 79.80 53 P P 11 16 51.3 +0.4
baz=310
WUAZ Wupatki 79.80 53 *eP* P 11 16 52.0 +1.1
comp=Z,11nm,1.1s
BRG Berggiesshubel 79.90 330 *i P* P 11 16 50.8 -0.1
comp=Z,21nm,1.1s
BRG Berggiesshubel 79.90 330 *i P* P 11 16 50.8 -0.1
BRG pmax pmax
comp=Z,21nm,1.1s
PVCC Panska Ves 79.92 329⇓ *eP* P 11 16 51.6 +0.6
PVCC Panska Ves 79.92 329 *eP* P 11 16 51.6 +0.6
CLL Collm 79.93 330 *i P* P 11 16 50.7 -0.3
comp=Z,39nm,1.1s
CLL *e* 11 17 02.0
CLL *ePP* **PP** 11 19 49.0 -3.3
CLL *eS* S 11 27 00.0 +9.0
CLL *eSS* SS 11 32 30.0 +30
CLL Collm 79.93 330 *eP* P 11 16 50.2 -0.8
CLL pmax pmax
comp=Z,41nm,1.1s
CLL Collm 79.93 330 *eP* P 11 16 50.2 -0.8
comp=Z,41nm,1.1s
F31A Hecla 80.00 38 P P 11 16 51.1 -0.5
baz=316
VRAC Vranov 80.02 327⇑ *iP* P 11 16 52.6 +1.0
SMCO Snowmass 80.03 47 *eP* P 11 16 52.9 +0.6
comp=Z,14nm,1.4s
113A Mohawk Valley, 80.03 56 *eP* P 11 16 52.5 +0.6
comp=Z,6.0nm,1.0s
113A *epP* **sP** 11 17 09.2 -1.3
D33A AnnSam, Waubun 80.20 36 P P 11 16 51.7 -0.9
baz=318
B35A Bob, Littlefor 80.24 34 P P 11 16 52.3 -0.5
baz=319
GOPC GO Pecny, Ondr 80.31 329⇓ *eP* P 11 16 53.8 +0.6
GOPC AMS AMS 11 55 10.0
comp=Z,300nm,18.3s
GOPC GO Pecny, Ondr 80.31 329 *eP* P 11 16 53.8 +0.6
GOPC MLR MLR
comp=Z,300nm,18.3s
PRU Pruhonice 80.35 329⇓ *eP* P 11 16 53.7 +0.4
PRU *eSP* **pP** 11 17 09.5 +2.7
PRU AMS AMS 11 54 50.0
comp=Z,400nm,20.2s
PRU Pruhonice 80.35 329 *eP* P 11 16 53.7 +0.4
PRU *e* 11 17 09.5
PRU MLR MLR
comp=Z,400nm,20.2s
ISCO Idaho Springs 80.39 46 P P 11 16 54.5 +0.3
baz=313
ISCO Idaho Springs 80.39 46 *eP* P 11 16 55.2 +1.1
ISCO pmax pmax
comp=Z,6.0nm,1.0s
ISCO Idaho Springs 80.39 46 *eP* P 11 16 55.2 +1.1
comp=Z,5.6nm,1.0s
MVCO Mesa Verde 80.44 50 P P 11 16 54.2 -0.2
baz=312
MVCO Mesa Verde 80.44 50 *eP* P 11 16 55.3 +0.9
comp=Z,14nm,1.2s
X16A Lo Mia Camp, P 80.46 53 *eP* P 11 16 55.8 +1.3
comp=Z,7.1nm,1.0s
G31A Conde 80.48 38 P P 11 16 54.0 -0.2
baz=317
TREC Trest 80.50 328⇓ *eP* P 11 16 54.8 +0.6
TREC AMS AMS 11 53 50.0
comp=Z,300nm,16.9s
TREC Trest 80.50 328 *eP* P 11 16 54.8 +0.6
TREC MLR MLR
comp=Z,300nm,16.9s
BZS Buzias 80.50 322⇓ *iP* P 11 16 54.0 -0.2
E33A Westby DABS, E 80.60 36 P P 11 16 54.5 -0.3
baz=318
C35A Jirik Farms, M 80.63 35 P P 11 16 53.7 -1.2
baz=319
G32A Webster 80.81 38 P P 11 16 55.7 -0.3
baz=317
H31A Wolsey 80.89 39 P P 11 16 56.2 -0.2
baz=316
F33A 5 Mile Ranch, 80.95 37 P P 11 16 56.5 -0.2
baz=318
NKC Novy Kostel 81.00 330⇓ *eP* P 11 16 56.9 +0.1
NKC AMS AMS 11 55 50.0
comp=Z,400nm,15.7s
NKC Novy Kostel 81.00 330 *eP* P 11 16 56.9 +0.1
NKC MLR MLR
comp=Z,400nm,15.7s
D35A Remer 81.06 35 P P 11 16 56.3 -0.9
baz=319
MDVR Moldovita 81.06 322⇑ *iP* P 11 16 57.3 0.0
W18A Petrified Fore 81.07 52 P P 11 16 58.4 +0.6
baz=311
S22A 4UR Ranch, Cre 81.07 48 P P 11 16 58.2 +0.3
baz=312
S22A 4UR Ranch, Cre 81.07 48 *eP* P 11 16 59.2 +1.4
comp=Z,9.9nm,1.2s
C36A Pine Crest Far 81.08 34 P P 11 16 56.8 -0.6
baz=320
214A Organ Pipe Nat 81.17 56 P P 11 16 58.7 +0.5
baz=310
J30A Dallas 81.22 40 P P 11 16 57.9 -0.3
baz=316
Q24A Divide 81.22 47 P P 11 16 58.5 -0.1
baz=313

X18A	Snowflake	81.32	53	*e*P		P	11 17 00.1	+1.0	
	comp=Z,5.2nm,1.1s								
G33A	Ortonville	81.36	38	P		P	11 16 58.6	-0.2	
	baz=318								
CONA	Conrad Observa	81.39	327	*i* P		P	11 16 59.7	+0.7	
	comp=Z,27nm,1.3s								
CONA				*i* P		P	11 16 59.8	+0.7	
	SNR=14								
C37A	Embarrass	81.39	34	P		P	11 16 58.2	-0.8	
	baz=320								
KHC	Kasperske Hory	81.41	329	‖ *i* P		P	11 16 59.2	+0.1	
KHC				*es*P		sP	11 17 17.3	-0.4	
KHC				AMS		AMS	11 55 20.0		
	comp=Z,500nm,18.5s								
KHC	Kasperske Hory	81.41	329	‖ *i* P		P	11 16 59.2	+0.1	
KHC				*e*			11 17 17.3		
KHC				MLR		MLR			
	comp=Z,500nm,18.5s								
KHC	Kasperske Hory	81.41	329	*e*P		P	11 16 58.9	-0.2	
	comp=Z,14nm,1.2s								
EYMN	Ely	81.52	33	P		P	11 16 59.0	-0.6	
	baz=321								
EYMN	Ely	81.52	33	*e*P		P	11 16 59.0	-0.6	
	comp=Z,16nm,1.4s								
GEC2	GERESS Array S	81.59	328	*e*P		P	11 17 00.3	+0.2	
GEC2				pmax		pmax			
	comp=Z,15nm,1.1s								
GEC2	GERESS Array S	81.59	328	*e*P		P	11 17 00.3	+0.2	
	comp=Z,15nm,1.1s								
GERES	GERESS Array B	81.59	328	P		P	11 16 59.5	-0.6	
	comp=Z,8.1nm,1.0s,baz=46,slow=5.8,SNR=21								
GEA0	GERESS Array S	81.59	328	*e*P		P	11 16 59.9	-0.3	
H33A	Prehn Over Nor	81.59	38	P		P	11 16 59.9	-0.2	
	baz=318								
J31A	Geddes	81.62	40	P		P	11 16 59.9	-0.4	
	baz=316								
K30A	Basset	81.62	41	P		P	11 16 59.9	-0.4	
	baz=316								
D37A	Cotton	81.72	34	P		P	11 17 00.6	-0.1	
	baz=320								
C38A	Sawbill Land.	81.79	33	P		P	11 17 00.6	-0.5	
	baz=321								
E36A	McGregor	81.84	35	P		P	11 17 01.0	-0.4	
	baz=320								
SDCO	Great Sand Dun	81.85	48	P		P	11 17 02.1	+0.2	
	baz=313								
SDCO	Great Sand Dun	81.85	48	*e*P		P	11 17 02.9	+0.9	
	comp=Z,4.9nm,1.1s								
GRFO	Grafenberg	81.91	330	*e*P		P	11 17 02.2	+0.6	
GRFO				pmax		pmax			
	comp=Z,28nm,1.1s								
GRFO	Grafenberg	81.91	330	*e*P		P	11 17 02.2	+0.6	
	comp=Z,28nm,1.1s								
I33A	Coleman	82.03	39	P		P	11 17 02.4	-0.1	
	baz=318								
ARSA	Arzberg	82.06	326	*i* P		P	11 17 03.0	+0.5	
	comp=Z,17nm,1.4s								
H34A	Spellman Lake,	82.07	38	P		P	11 17 02.3	-0.3	
	baz=318								
K31A	O'Neill	82.10	41	P		P	11 17 02.7	-0.1	
	baz=316								
MOA	Molln	82.13	327	*i* P		P	11 17 03.6	+0.7	
	SNR=6.6								
MOA				*i* P		P	11 17 03.9	+1.0	
	comp=Z,18nm,1.3s								
C39A	Grand Marais	82.20	32	P		P	11 17 02.5	-0.7	
	baz=322								
F36A	Milaca	82.22	36	P		P	11 17 02.7	-0.7	
	baz=320								
TUC	Tucson	82.25	55	P		P	11 17 04.3	+0.5	
	baz=311								
TUC	Tucson	82.25	55	*e*P		P	11 17 04.4	+0.5	
TUC				pmax		pmax			
	comp=Z,6.0nm,1.3s								
TUC	Tucson	82.25	55	*e*P		P	11 17 04.4	+0.5	
	comp=Z,5.5nm,1.3s								
ECSD	EROS Data Cent	82.35	39	P		P	11 17 03.6	-0.5	
	baz=318								
ECSD	EROS Data Cent	82.35	39	*e*P		P	11 17 04.1	0.0	
	comp=Z,10nm,1.0s								
ECSD				*e*pP		pP	11 17 19.2	+1.6	
L31A	Butterfield Fa	82.38	41	P		P	11 17 04.0	-0.3	
	baz=316								
J33A	Davis	82.49	39	P		P	11 17 04.2	-0.6	
	baz=318								
H35A	Sunnyside Ranc	82.49	37	P		P	11 17 04.7	-0.1	
	baz=319								
PERS	Pernice	82.71	326	*e*P		P	11 17 06.0	0.0	
SOKA	Soboth	82.72	326	*i* P		P	11 17 06.1	0.0	
	comp=Z,39nm,1.1s								
SOKA				*i* P		P	11 17 06.2	+0.2	
	SNR=13								
T25A	Trinidad	82.89	48	P		P	11 17 06.8	-0.5	
	baz=314								
T25A	Trinidad	82.89	48	*e*P		P	11 17 08.1	+0.8	
T25A				*e*pP		pP	11 17 21.5	+0.7	
GOLS	Golise	82.97	326	*e*P		P	11 17 06.9	-0.4	
H36A	Jessenland, He	83.01	37	P		P	11 17 07.2	-0.2	
	baz=319								
SPMN	Marine on St.	83.03	36	P		P	11 17 07.4	-0.2	
	baz=320								
I35A	Creekview Farm	83.05	38	P		P	11 17 07.3	-0.4	
	baz=319								
OBKA	Obir	83.06	326	*i* P		P	11 17 07.8	0.0	
	comp=Z,6.0nm,0.8s								
MEM	Membach	83.08	334	P		P	11 17 07.8	+0.1	
	comp=Z,13nm,1.4s								
KBA	Koelnbreinsper	83.12	327	*i* P		P	11 17 08.4	+0.2	
	comp=Z,29nm,1.4s								
KBA				*i* P		P	11 17 08.5	+0.2	
	SNR=7.7								
LAZ	Ladron	83.14	51	*e*P		P	11 17 09.8	+1.2	
LEGS	Legarje	83.16	326	*e*P		P	11 17 07.8	-0.4	
ANMO	Albuquerque	83.19	50	P		P	11 17 09.5	+0.7	
	baz=313								
ANMO	Albuquerque	83.19	50	*d i* P		P	11 17 09.3	+0.5	
ANMO				pmax		pmax			
	comp=Z,14nm,1.7s								
ANMO	Albuquerque	83.19	50	*e*P		P	11 17 09.9	+1.1	
	comp=Z,9.0nm,1.1s								
N31A	Bailey Ranch,	83.30	42	P		P	11 17 08.3	-0.8	
	baz=317								
MYKA	Terra Mystica	83.35	327	*i* P		P	11 17 08.7	-0.6	
	comp=Z,7.8nm,0.6s								
K34A	Le Mars	83.38	39	P		P	11 17 09.4	-0.1	
	baz=318								
H37A	Dierke Farm, C	83.47	36	P		P	11 17 09.4	-0.5	
	baz=320								
BCLA	Clavier	83.48	334	P		P	11 17 09.8	0.0	
	comp=Z,12nm,1.5s								
BNM	Barren Site	83.62	51	*e*P		P	11 17 12.2	+1.1	
SCHQ	Schefferville	83.65	16	P		P	11 17 09.6	-1.1	
	comp=Z,8.6nm,0.9s,baz=325,slow=5.9,SNR=3.9								
WATA	Walderalm	83.65	329	*i* PcP		P	11 17 12.0	+1.1	
	comp=Z,3.1nm,0.5s								
I37A	Lemond, Waseca	83.68	37	P		P	11 17 11.0	0.0	
	baz=320								
WTTA	Wattenberg	83.69	329	*i* P		P	11 17 10.5	-0.7	
	comp=Z,12nm,1.2s								
ABTA	Abfaltersbach	83.73	328	*i* P		P	11 17 10.6	-0.7	
	comp=Z,14nm,1.1s								
J36A	Seneca 1, Swea	83.76	38	P		P	11 17 11.1	-0.2	
	baz=319								
L34A	Svendsen Farm,	83.78	40	P		P	11 17 10.9	-0.6	
	baz=318								
K35A	Storm Lake	83.78	39	P		P	11 17 10.7	-0.8	
	baz=319								
LANF	Langenberg	83.78	332	‖ *e*P		P	11 17 10.4	-1.0	
319A	Douglas	83.83	55	*e*P		P	11 17 12.9	+0.8	
	comp=Z,12nm,1.0s								
MOTA	Moosalm	83.84	329	*i* P		P	11 17 12.0	+0.1	
	SNR=6.4								
MOTA				*i* P		P	11 17 12.4	+0.5	
	comp=Z,25nm,1.1s								
RETA	Reutte	83.86	329	*i* P		P	11 17 12.0	+0.1	
	comp=Z,44nm,1.2s								
RETA				*i* P		P	11 17 12.1	+0.2	
	SNR=16								
121A	Cookes Peak, D	84.00	53	P		P	11 17 13.1	+0.1	
	baz=312								
121A	Cookes Peak, D	84.00	53	*e*P		P	11 17 13.8	+0.8	
	comp=Z,8.8nm,1.0s								
DOU	Dourbes	84.00	334	P		P	11 17 12.4	0.0	
BFO	Black Forest	84.12	331	*e*P		P	11 17 13.3	+0.2	
BFO				pmax		pmax			
	comp=Z,42nm,1.2s								
BFO	Black Forest	84.12	331	*e*P		P	11 17 13.3	+0.2	
	comp=Z,42nm,1.2s								
J37A	Redenius Farm,	84.15	37	P		P	11 17 12.8	-0.5	
	baz=320								
I38A	Scanlan Farm,	84.16	36	P		P	11 17 12.7	-0.7	
	baz=320								
K36A	Gilmore City	84.22	38	P		P	11 17 13.5	-0.3	
	baz=319								
FETA	Feichten	84.25	329	*i* P		P	11 17 13.6	-0.4	
	comp=Z,20nm,1.0s								
FETA				*i* P		P	11 17 13.9	-0.1	
	SNR=7.6								
CBKS	Cedar Bluff	84.33	44	P		P	11 17 13.6	-0.8	
	baz=316								
P32A	Huiting Farm,	84.35	43	P		P	11 17 13.5	-1.0	
	baz=317								
DAVA	Damueis	84.38	330	*i* P		P	11 17 14.5	-0.1	
	comp=Z,36nm,1.1s								
DAVA				*i* PcP		P	11 17 15.0	+0.4	
	SNR=8.5								
K37A	Belmond	84.52	38	P		P	11 17 14.6	-0.6	
	baz=320								
L36A	Harm Buss Farm	84.52	39	P		P	11 17 14.9	-0.4	
	baz=319								
J38A	Wedel Dairy, R	84.65	37	P		P	11 17 15.3	-0.5	
	baz=320								
ECH	Echery	84.66	332	‖ *e*P		P	11 17 14.5	-1.4	
FUORN	Ofenpass-Fuorn	84.76	329	*e*P		P	11 17 17.2	+0.5	
	comp=Z,61nm,1.3s								
Q32A	Meitler Ranch,	84.83	43	P		P	11 17 16.5	-0.4	
	baz=317								
O34A	Beatrice	84.94	41	P		P	11 17 16.5	-0.9	
	baz=318								
L37A	Phoenix Point,	84.95	38	P		P	11 17 16.9	-0.5	
	baz=320								
P33A	Williams Farm,	84.97	42	P		P	11 17 16.8	-0.8	
	baz=317								
N35A	Tabor	84.97	40	P		P	11 17 17.0	-0.6	
	baz=318								
MOF	Molkenrain	84.97	331	*e*P		P	11 17 17.5	0.0	
J39A	Decorah	84.99	36	P		P	11 17 16.7	-0.9	
	baz=321								
THEF	They Montfort	85.08	332	*e*P		P	11 17 17.2	-0.8	
R32A	Long Quarter,	85.17	43	P		P	11 17 18.0	-0.6	
	baz=317								
Q33A	Connelly Farm,	85.22	43	P		P	11 17 18.2	-0.6	
	baz=317								
TUE	Stuetta	85.25	329	*e*P		P	11 17 19.3	+0.2	
	comp=Z,16nm,1.0s								
O35A	Humboldt	85.28	41	P		P	11 17 18.3	-0.8	
	baz=318								
L38A	Oak Wood Farm,	85.32	38	P		P	11 17 19.1	-0.1	
	baz=320								
P34A	Walnut Farm, R	85.34	42	P		P	11 17 18.6	-0.8	
	baz=318								
N36A	Muff Farm, Cla	85.35	40	P		P	11 17 19.3	-0.1	
	baz=319								
M37A	Trindle Farm,	85.35	39	P		P	11 17 19.1	-0.4	
	baz=320								
J40A	Soldiers Grove	85.39	36	P		P	11 17 19.1	-0.5	
	baz=321								
K39A	Oelwein	85.39	37	P		P	11 17 19.0	-0.6	
	baz=321								
J41A	Loganville	85.74	35	P		P	11 17 20.7	-0.7	
	baz=322								
K40A	Colesburg	85.75	36	P		P	11 17 20.7	-0.7	
	baz=321								
M38A	Pleasantville	85.76	38	P		P	11 17 21.2	-0.2	
	baz=320								
N37A	Lee Faris, Mou	85.76	39	P		P	11 17 21.6	+0.1	
	baz=319								
P35A	Duane Minner,	85.77	41	P		P	11 17 20.6	-1.0	
	baz=318								
KSU1	Kansas State U	85.78	42	P		P	11 17 21.0	-0.6	
	baz=318								
L39A	Vinton	85.79	37	P		P	11 17 21.2	-0.4	
	baz=321								
AMTX	Amarillo	86.05	48	P		P	11 17 23.3	+0.1	
	baz=315								
AMTX	Amarillo	86.05	48	*e*P		P	11 17 23.9	+0.8	
	comp=Z,16nm,1.3s								
MSTX	Muleshoe	86.06	49	P		P	11 17 23.2	0.0	
	baz=315								
MNTX	Cornudas Mount	86.06	52	P		P	11 17 23.1	-0.1	
	baz=314								
MNTX	Cornudas Mount	86.06	52	*e*P		P	11 17 23.5	+0.4	
	comp=Z,7.2nm,1.4s								
MNTX				*e*pP		pP	11 17 34.3	-2.4	
P36A	Good Intent, A	86.12	41	P		P	11 17 23.1	-0.2	
	baz=319								
SENIN	Lac Senin/Sane	86.14	330	*e*P		P	11 17 23.5	-0.1	
	comp=Z,11nm,1.1s								
K41A	Shullsburg	86.20	36	P		P	11 17 23.1	-0.5	
	baz=322								
L40A	Anamosa	86.20	37	P		P	11 17 23.1	-0.5	
	baz=321								
M39A	Webster	86.20	38	P		P	11 17 23.4	-0.3	
	baz=321								
N38A	Joes South For	86.22	39	P		P	11 17 23.5	-0.3	
	baz=320								
O37A	Wolven Farm, M	86.24	40	P		P	11 17 23.8	-0.1	
	baz=320								
Q35A	Mercer Eighty,	86.26	42	P		P	11 17 23.9	-0.1	
	baz=318								
Q36A	Arnold C. Orve	86.48	41	P		P	11 17 24.6	-0.5	
	baz=319								
L41A	Preston	86.53	36	P		P	11 17 24.7	-0.5	
	baz=322								
S34A	Willow Spring	86.55	43	P		P	11 17 24.8	-0.6	
	baz=318								
R35A	Emporia Munici	86.58	42	P		P	11 17 25.7	+0.1	
	baz=318								
P37A	Lathrop	86.58	40	P		P	11 17 25.3	-0.2	
	baz=319								
VLDQ	Val d'Or	86.75	25	*e*P		P	11 17 25.2	-1.0	
	comp=Z,28nm,1.4s								
R36A	Gordon, Harris	86.94	42	P		P	11 17 26.8	-0.5	
	baz=319								
S35A	Otter Creek Ra	86.99	43	P		P	11 17 27.5	-0.1	
	baz=316								
T34A	Mckey Farm	87.01	44	P		P	11 17 27.3	-0.4	
	baz=318								
U34A	Anderson Ranch	87.26	44	P		P	11 17 28.8	-0.1	
	baz=318								
W32A	Sentinel	87.27	46	P		P	11 17 29.3	+0.3	
	baz=317								
R37A	Teagarden Farm	87.30	41	P		P	11 17 28.3	-0.7	
	baz=319								
V33A	Lossen Ranch,	87.30	45	P		P	11 17 29.0	-0.1	
	baz=317								
O40A	La Belle	87.40	38	P		P	11 17 29.2	-0.2	
	baz=321								
Q38A	Cooks Store, C	87.42	40	P		P	11 17 29.0	-0.6	
	baz=320								
P39B	Salisbury	87.45	39	P		P	11 17 29.7	-0.1	
	baz=320								
T35A	Sooner Cattle	87.46	43	P		P	11 17 29.8	-0.1	
	baz=318								
Q39A	Willow Grove F	87.68	40	P		P	11 17 30.8	-0.1	
	baz=320								
W33A	Caddo, Fort Co	87.68	46	P		P	11 17 31.2	+0.2	
	baz=317								
T36A	Boggs Farm, Ca	87.69	43	P		P	11 17 30.7	-0.2	
	baz=319								
V34A	Guthrie	87.71	45	P		P	11 17 30.6	-0.5	
	baz=318								
S37A	Fort Scott	87.71	42	P		P	11 17 30.7	-0.3	
	baz=319								
U35A	Pawnee	87.74	44	P		P	11 17 31.0	-0.3	
	baz=318								
X32A	Elmer	87.75	47	P		P	11 17 31.1	-0.3	
	baz=317								
P40A	Paris	87.77	39	P		P	11 17 31.2	0.0	
	baz=321								
WMOK	Wichita Mounta	87.81	46	P		P	11 17 31.2	-0.4	
	baz=317								
WMOK	Wichita Mounta	87.81	46	*e*P		P	11 17 31.8	+0.2	
WMOK				pmax		pmax			
	comp=Z,7.0nm,1.1s								
WMOK	Wichita Mounta	87.81	46	*e*P		P	11 17 31.8	+0.2	
	comp=Z,6.7nm,1.1s								
PLDF	La Plantade	87.85	332	*e*P		P	11 17 33.3	+1.6	
R38A	Fenwick Farm,	87.87	41	P		P	11 17 30.9	-0.9	
	baz=320								
O41A	Passleys Farm,	87.88	38	P		P	11 17 31.3	-0.5	
	baz=322								
P41A	Barry, Barry	88.14	38	P		P	11 17 32.8	-0.3	
	baz=321								
T37A	Cheneyville 18	88.15	42	P		P	11 17 32.5	-0.6	
	baz=319								
Q40A	Laux Farm, Aux	88.17	39	P		P	11 17 32.6	-0.6	
	baz=321								
R39A	Chumby, Stover	88.21	40	P		P	11 17 32.9	-0.5	
	baz=320								
S38A	Stockton	88.29	41	P		P	11 17 32.9	-0.9	
	baz=320								
Y33A	Hilltop Ranch,	88.43	46	P		P	11 17 34.5	-0.1	
	baz=317								
X34A	Smith Ranch, M	88.44	46	P		P	11 17 34.4	-0.1	
	baz=318								
T38A	Diamond	88.54	42	P		P	11 17 34.9	-0.1	
	baz=320								
S39A	Bolivar	88.54	41	P		P	11 17 34.6	-0.4	
	baz=320								
P42A	Winchester	88.55	38	P		P	11 17 34.8	-0.2	
	baz=322								
W35A	Tecumseh	88.57	45	P		P	11 17 35.1	-0.1	
	baz=318								
V36A	Jenks	88.60	44	P		P	11 17 34.9	-0.4	
	baz=319								
R40A	Maddies Statio	88.61	40	P		P	11 17 34.6	-0.7	
	baz=321								
TX31	Lajitas Ar. Si	88.76	53	*e*P		P	11 17 36.1	-0.2	
TX31				*e*P		P	11 17 36.6	+0.3	
TXAR	Lajitas Array	88.76	53	P		P	11 17 36.2	0.0	
	comp=Z,1.8nm,0.8s,baz=298,slow=3.5,SNR=11								
ABTX	Abilene, Hawle	88.85	48	P		P	11 17 36.7	+0.2	
	baz=317								
ABTX	Abilene, Hawle	88.85	48	*e*P		P	11 17 37.6	+1.1	
	comp=Z,5.7nm,0.9s								
W36A	Wetumka	88.93	44	P		P	11 17 37.1	+0.3	
	baz=318								
U38A	Gravette	88.94	42	P		P	11 17 37.0	+0.1	
	baz=319								
Y34A	Reagan Ranch,	88.96	46	P		P	11 17 36.4	-0.6	
	baz=318								
V37A	Hulbert	88.96	43	P		P	11 17 36.3	-0.6	
	baz=319								
Q42A	Golden Eagle	88.99	38	P		P	11 17 37.1	+0.1	
	baz=322								
T39A	Clever	89.02	41	P		P	11 17 36.6	-0.6	
	baz=320								
S40A	Lebanon	89.03	40	P		P	11 17 36.6	-0.7	
	baz=320								
X35A	Drake	89.07	45	P		P	11 17 37.2	-0.3	
	baz=318								
X36A	Centrahoma	89.28	45	P		P	11 17 38.3	-0.2	
	baz=318								
Z34A	Collier Ranch,	89.30	46	P		P	11 17 38.2	-0.4	
	baz=318								
W37B	Quinton	89.36	44	P		P	11 17 38.7	-0.2	
	baz=319								
TRQ	Mont Tremblant	89.36	24	*e*P		P	11 17 38.8	0.0	
V38A	Canehill	89.37	43	P		P	11 17 38.5	-0.4	
	baz=319								
Q43A	New Douglas	89.37	38	P		P	11 17 38.4	-0.4	
	baz=322								
SFIN	Lafayette	89.43	35	P		P	11 17 38.4	-0.7	
	baz=324								
U39A	Green Forest	89.46	42	P		P	11 17 38.7	-0.7	
	baz=320								
Z35A	Perchaven, San	89.70	46	P		P	11 17 40.1	-0.4	
	baz=318								
233A	Rising Star	89.72	48	P		P	11 17 40.5	-0.2	
	baz=317								
Q44A	Meyer Farm, Va	89.72	37	P		P	11 17 40.0	-0.4	
	baz=323								
U40A	Yellville	89.80	41	P		P	11 17 40.4	-0.6	
	baz=320								
Y36A	Durant	89.82	45	P		P	11 17 41.1	0.0	
	baz=318								
T41A	Mountain View	89.83	40	P		P	11 17 40.5	-0.6	
	baz=321								
W38A	Poteau	89.91	43	P		P	11 17 41.4	0.0	
	baz=319								
X38A	Whitesboro	90.04	44	P		P	11 17 41.6	-0.5	
	baz=319								
234A	Clairette	90.17	47	P		P	11 17 42.6	-0.1	
	baz=317								
333A	Richland Sprin	90.17	48	P		P	11 17 43.0	+0.2	
	baz=317								
W39A	Magazine	90.20	43	P		P	11 17 42.7	-0.1	
	baz=320								
Z36A	Blue Ridge	90.21	46	P		P	11 17 43.0	+0.2	
	baz=318								
R44A	Waltonville	90.21	38	P		P	11 17 42.6	-0.2	
	baz=323								
S43A	Fulton Ridge,	90.26	39	P		P	11 17 42.6	-0.5	
	baz=322								
JCT	Junction City	90.30	50	P		P	11 17 43.0	-0.4	
	baz=316								
JCT	Junction City	90.30	50	*e*P		P	11 17 43.2	-0.2	
JCT				pmax		pmax			
	comp=Z,6.0nm,0.8s								
JCT	Junction City	90.30	50	*e*P		P	11 17 43.2	-0.2	
	comp=Z,5.8nm,0.8s								
433A	Art	90.53	49	P		P	11 17 44.2	-0.2	
	baz=317								
X39A	Fountain Ranch	90.55	43	P		P	11 17 44.2	-0.3	
	baz=320								
S44A	Carbondale	90.56	38	P		P	11 17 44.5	+0.1	
	baz=322								
SIUC	Southern Illin	90.57	38	*e*P		P	11 17 44.9	+0.5	
	comp=Z,12nm,0.6s								
WHTX	Lake Whitney,	90.57	47	P		P	11 17 44.5	-0.1	
	baz=318								
W40A	Ferguson Farm,	90.58	42	P		P	11 17 44.4	-0.1	
	baz=320								
V41A	Mountainview	90.60	41	P		P	11 17 43.9	-0.8	
	baz=321								
334A	Lometa	90.61	48	P		P	11 17 44.8	0.0	
	baz=317								
U42A	Revenden	90.63	40	P		P	11 17 44.0	-0.8	
	baz=321								
PBMO	Poplar Bluff	90.71	40	*e*P		P	11 17 45.4	+0.3	
	comp=Z,13nm,1.1s								
Z37A	Pogue Cattle C	90.71	45	P		P	11 17 45.0	-0.2	
	baz=319								
MIAR	Mount Ida	90.81	43	P		P	11 17 45.3	-0.3	
	baz=320								
MIAR	Mount Ida	90.81	43	*e*P		P	11 17 46.0	+0.4	
MIAR				pmax		pmax			
	comp=Z,19nm,1.5s								
MIAR	Mount Ida	90.81	43	*e*P		P	11 17 46.0	+0.4	
	comp=Z,19nm,1.5s								
X201	Greenbrier Sit	90.88	42	*e*P		P	11 17 46.4	+0.5	
	comp=Z,8.4nm,1.0s								
WHAR	Wooly Hollow	90.92	42	*e*P		P	11 17 46.1	0.0	
	comp=Z,13nm,1.1s								
434A	Burnet	90.97	48	P		P	11 17 45.9	-0.5	
	baz=317								
Z38A	Mt. Pleasant	91.03	45	P		P	11 17 46.1	-0.6	
	baz=319								
W41B	Gary Mavity, V	91.03	42	P		P	11 17 46.4	-0.3	
	baz=321								
X40A	Basin Creek Fa	91.25	42	P		P	11 17 47.2	-0.4	
	baz=320								
633A	Saathoff Ranch	91.42	50	P		P	11 17 48.5	-0.1	
	baz=317								
534A	Blanco	91.42	49	P		P	11 17 48.3	-0.3	
	baz=317								
TORD	Torodi Ar. Bea	116.51	316	PKP		PKPdf	11 23 25.2	-1.3	
	comp=Z,0.2nm,0.4s,baz=11,slow=2.0,SNR=3.0

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IKL	**Isikli**	**0.44**	**197**	*e*PG	**Pb**	**11 08 40.5**	**-0.4**
IKL	**Isikli**	**0.44**	**197**	*e*Pg	**Pb**	**11 08 40.5**	**-0.4**
AKKU	**Akkuyu-Mersin**	**0.56**	**205**	*e*PG	**Pb**	**11 08 42.9**	**+0.1**
AKKU				*e*SG	**Sb**	**11 08 51.7**	**+0.8**
AKKU	**Akkuyu-Mersin**	**0.56**	**205**	*e*Pg	**Pb**	**11 08 42.9**	**+0.1**
AKKU				*e*Sg	**Sb**	**11 08 51.7**	**+0.8**
MERS	**Mersin**	**0.58**	**69**	*e*PG	**Pg**	**11 08 42.3**	**+0.1**
MERS				*e*SG	**Sb**	**11 08 51.8**	**+0.1**
MERS	**Mersin**	**0.58**	**69**	*e*Pg	**Pg**	**11 08 42.3**	**+0.1**
MERS				*e*Sg	**Sb**	**11 08 51.8**	**+0.1**
KERG	**Konya-Eregli**	**0.78**	**17**	*i* P	**Pb**	**11 08 46.6**	**-0.2**
KERG				*i* S	**Sb**	**11 08 57.8**	**+0.3**
KERG	**Konya-Eregli**	**0.78**	**17**	P	**Pb**	**11 08 46.6**	**-0.2**
KERG				S	**Sb**	**11 08 57.8**	**+0.3**
DED	**Mersin**	**0.82**	**68**	*i* P	**Pg**	**11 08 46.1**	**-0.7**
DED				*i* S	**Sb**	**11 08 58.8**	**+0.3**
GULE	**Gulek**	**0.97**	**50**	*i* P	**Pg**	**11 08 48.6**	**-1.0**
GULE				*i* S	**Sb**	**11 09 03.6**	**+0.6**
GULE	**Gulek**	**0.97**	**50**	P	**Pg**	**11 08 48.6**	**-1.0**
GULE				S	**Sb**	**11 09 03.6**	**+0.6**
KARA	**Karaisali**	**1.14**	**58**	*e*PN	**Pb**	**11 08 52.6**	**-0.2**
KARA	**Karaisali**	**1.14**	**58**	*e*Pn	**Pb**	**11 08 52.6**	**-0.2**
KRTS	**Karatas**	**1.23**	**94**	*e*PN	**Pn**	**11 08 56.0**	**+1.7**
KRTS	**Karatas**	**1.23**	**94**	*e*Pn	**Pn**	**11 08 56.0**	**+1.7**
YURE	**YUREGIR**	**1.44**	**83**	*i* P	**Pg**	**11 08 58.5**	**-0.1**
YURE	**YUREGIR**	**1.44**	**83**	P	**Pg**	**11 08 58.5**	**-0.1**
AKO	**Adana**	**1.51**	**58**	*i* P	**Pb**	**11 08 58.6**	**-0.5**
AKO				*i* S	**Sg**	**11 09 20.4**	**+1.0**
SULT	**Sultanhani-AKS**	**1.56**	**350**	*e*PN	**Pg**	**11 09 00.5**	**-0.3**
SULT	**Sultanhani-AKS**	**1.56**	**350**	*e*Pn	**Pg**	**11 09 00.5**	**-0.3**
KOZT	**Kozan**	**1.78**	**62**	*e*PN	**Pb**	**11 09 04.0**	**+0.2**
KOZT	**Kozan**	**1.78**	**62**	*e*Pn	**Pb**	**11 09 04.0**	**+0.2**
TAHT	**Tahtakopru-Hat**	**1.91**	**98**	*e*PN	**Pb**	**11 09 05.8**	**-0.1**
TAHT	**Tahtakopru-Hat**	**1.91**	**98**	*e*Pn	**Pb**	**11 09 05.8**	**-0.1**
YAYL	**Yayladag**	**1.93**	**108**	*i* P	**Pn**	**11 09 02.0**	**-2.0**
YAYL				*i* S	**Sn**	**11 09 28.2**	**-0.2**
YAYL	**Yayladag**	**1.93**	**108**	P	**Pn**	**11 09 02.0**	**-2.0**
YAYL				S	**Sn**	**11 09 28.2**	**-0.2**

*NIED **25** 11:10:00,38.60N×142.10E,h47km,Mw4.4 Best double couple: M₀4.73000×10¹⁵ NP1:φs337.00000°,δ55.00000°, λ-36.00000°. NP2:φs90.00000°,δ61.00000°, λ-139.00000°.*

*BJI **25** 11:10:43.9,38.05N×142.43E,h54km,mb4.9/15,mB4.7/6, Ms4.6/2,Ms7 4.5/2*

*ISCJB **25** 11:10:47.3±0.5,38.56N±0.03×142.06E±0.05,h53km±4km, mb4.5/47,Error ellipse: s-maj=7.4km s-min=4.7km az=21.9*

*JMA **25** 11:10:47.6±0.1,38.56N×142.08E,h45km±1km,M4.4*

JMA Felt II J1.

*NEIC **25** 11:10:47.3±0.3,38.60N×142.12E,h35km,mb4.8/22,Error ellipse: s-maj=8.3km s-min=5.1km az=130.0*

NEIC Recorded [2 JMA] in Iwate and Miyagi.

*IDC **25** 11:10:49.6±1.9,38.53N×141.98E,h62km±16km,mb4.1/26, mb1 4.2/32,mb1mx4.1/57,mbtmp4.4/32,Error ellipse: s-maj=14.6km s-min=11.3km az=112.0*

ISC 25 11:10:47.9±1.1,38.56N±0.04×142.18E±0.06,h44km±9km, n116,σ1§42/127,mb4.5/47,1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.66**	**323**	P	**Pn**	**11 11 00.1**	**-0.8**
OFUJ				S	**Sn**	**11 11 08.8**	**-1.4**
JIO	**Ouri**	**0.66**	**261**	P	**Pn**	**11 10 59.6**	**-1.3**
JIO				S	**Sn**	**11 11 07.8**	**-2.4**
JMK	**Ichinoseki**	**0.85**	**298**	P	**Pn**	**11 11 02.4**	**-1.1**
JMK				S	**Sn**	**11 11 12.9**	**-1.9**
JOM	**Ohasama**	**1.15**	**323**	P	**Pn**	**11 11 07.2**	**-0.3**
JOM				S	**Sn**	**11 11 21.1**	**-1.0**
JOU	**Okura**	**1.21**	**261**	P	**Pn**	**11 11 07.3**	**-1.0**
JOU				S	**Sn**	**11 11 21.8**	**-1.7**
JMM	**Marumori**	**1.29**	**238**	P	**Pn**	**11 11 08.1**	**-1.4**
JRG	**Rokugo**	**1.47**	**305**	P	**Pn**	**11 11 11.4**	**-0.5**
JYK	**Kaneyama**	**1.47**	**285**	P	**Pn**	**11 11 11.1**	**-0.8**
JYK				*e*S	**Sn**	**11 11 28.7**	**-1.3**
JFK	**Kawauchi**	**1.57**	**221**	P	**Pn**	**11 11 12.1**	**-1.3**
JFK				*e*S	**Sn**	**11 11 30.5**	**-2.1**
JYS	**Shirataka**	**1.69**	**259**	P	**Pn**	**11 11 14.3**	**-0.7**
JYS				*e*S	**Sn**	**11 11 34.1**	**-1.4**
ERM	**Erimo**	**3.54**	**12**	*e*Pn	**Pn**	**11 11 40.1**	**-0.1**
MAJO	**Matsushiro**	**3.74**	**239**	*e*Pn	**Pn**	**11 11 44.0**	**+0.9**
MAT	**Matsushiro**	**3.74**	**239**	P	**Pn**	**11 11 44.0**	**+0.8**
MAT				S	**Sn**	**11 12 31.1**	**+5.1**
MJAR	**Matsushiro Arr** 28nm,0.3s,baz=35,slow=14,SNR=132	**3.74**	**239**	P	**Pn**	**11 11 44.0**	**+0.8**
MJB9	**Matsu-Tunnel**	**3.74**	**239**	*e*Pn	**Pn**	**11 11 44.1**	**+0.9**
INU	**Inuyama**	**5.23**	**234**	*e*Pn	**Pn**	**11 12 04.8**	**+1.2**
ASAJ	**Asahikawa** baz=252,slow=6.4	**5.56**	**3**	P	**Pn**	**11 12 09.0**	**+0.8**
ASAJ	**Asahikawa**	**5.56**	**3**	*e*Pn	**Pn**	**11 12 09.2**	**+1.1**
JHJ2	**Mitsune**	**5.76**	**200**	*e*Pn	**Pn**	**11 12 10.2**	**-0.7**
JHJ	**Hachijo jima 2** 52nm,0.3s,baz=320,slow=22,SNR=22	**5.76**	**200**	P	**Pn**	**11 12 10.0**	**-0.9**
JHJ				S	**Sn**	**11 13 13.0**	**-2.7**
	71nm,0.3s,baz=267,slow=23,SNR=8.0						
YSS	**Yuzh-Sakhalins**	**8.40**	**3**	*e*Pn	**Pn**	**11 12 48.3**	**+1.2**
USRK	**Ussuriysk Ar.** 1.7nm,0.3s,baz=120,slow=14,SNR=46	**9.51**	**310**	P	**Pn**	**11 13 01.9**	**-0.2**
JNU	**Nakatsue** 1.2nm,0.3s,baz=38,slow=4.0,SNR=11	**10.65**	**243**	P	**Pn**	**11 13 19.2**	**+1.3**
JNU	**Nakatsue**	**10.65**	**243**	*e*Pn	**Pn**	**11 13 19.6**	**+1.6**
MDJ	**Mudanjiang**	**11.20**	**307**	P	**Pn**	**11 13 28.8**	**+3.5**
MDJ	comp=Z,21nm,0.9s			pmax	pmax		
MDJ	**Mudanjiang**	**11.20**	**307**	*e*Pn	**Pn**	**11 13 29.2**	**+3.9**
KS15	**Wonju Array Si**	**11.34**	**269**	*e*Pn	**Pn**	**11 13 29.7**	**+2.5**
KLR	**Kul'dur** 0.3nm,0.3s,baz=137,slow=12,SNR=4.2	**13.04**	**328**	P	**Pn**	**11 13 49.6**	**-0.8**
PETK	**Petropavlovsk-** 0.1nm,0.3s,baz=176,slow=11,SNR=4.2	**18.07**	**31**	P	**Pn**	**11 14 52.6**	**-2.9**
HIA	**Hailar** 9.3nm,0.7s	**19.32**	**311**	*e*P	**Pn**	**11 15 11.8**	**+1.2**
MA2	**Magadan** 8.5nm,0.8s,baz=188,slow=12,SNR=4.3	**21.74**	**12**	P	**P**	**11 15 37.0**	**+1.7**
YAK	**Yakutsk** 28nm,0.5s,baz=239,slow=1.4,SNR=5.3	**24.73**	**346**	P	**P**	**11 16 04.4**	**-0.4**
YAK	**Yakutsk** 31nm,0.6s	**24.73**	**346**	*e*P	**P**	**11 16 04.4**	**-0.4**
SEY	**Seymchan** 9.8nm,0.8s,baz=200,slow=7.5,SNR=12	**25.18**	**11**	P	**P**	**11 16 10.2**	**+1.2**
SONM	**Songino Array** 2.0nm,0.7s,baz=115,slow=10,SNR=4.7	**27.48**	**301**	P	**P**	**11 16 28.3**	**-1.7**
ENH	**Enshi** 27nm,0.6s	**28.10**	**263**	*e*P	**P**	**11 16 35.0**	**-0.5**
H11N2	**WAKE ISLAND Hy** baz=316,slow=75,SNR=9.7	**28.45**	**124**	T	T	11 47 03.9	
H11N1	**WAKE ISLAND Hy** baz=316,slow=75,SNR=21	**28.46**	**124**	T	T	11 46 59.7	
H11N3	**WAKE ISLAND Hy** baz=316,slow=75,SNR=10	**28.47**	**124**	T	T	11 47 00.0	
H11S1	**WAKE ISLAND Hy** baz=318,slow=76,SNR=10.0	**29.22**	**126**	T	T	11 47 54.7	
H11S3	**WAKE ISLAND Hy** baz=318,slow=76,SNR=13	**29.22**	**126**	T	T	11 48 02.6	
H11S2	**WAKE ISLAND Hy** baz=318,slow=76,SNR=13	**29.24**	**126**	T	T	11 48 02.1	
ZAA0	**Zalesovo Array**	**41.36**	**311**	*e*P	**P**	**11 18 28.4**	**-1.0**
ZAA0				*e*P	**P**	**11 18 28.6**	**-0.8**
ZALV	**Zalesovo Beam** 12nm,0.5s,baz=86,slow=7.4,SNR=26	**41.36**	**311**	P	**P**	**11 18 28.2**	**-1.1**
ZALV	3.8nm,0.5s,baz=81,slow=2.6,SNR=5.2			PcP	**PcP**	**11 20 25.9**	**-1.0**
NRIK	**Noril'sk** 3.6nm,0.5s,baz=94,slow=5.9,SNR=3.3	**42.15**	**334**	P	**P**	**11 18 34.8**	**-0.8**
CMAR	**Chiang Mai Arr** 0.6nm,0.3s,baz=41,slow=6.4,SNR=4.4	**42.48**	**254**	P	**P**	**11 18 37.8**	**-1.2**
MK01	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**11 18 48.6**	**-1.0**
MK31	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**11 18 48.9**	**-0.8**
MKAR	**Makanchi Array** 6.1nm,0.7s,baz=86,slow=9.5,SNR=21	**43.84**	**301**	P	**P**	**11 18 48.7**	**-1.0**
MKAR	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**11 18 48.9**	**-0.8**
MAKZ	**Makanchi** 7.1nm,0.8s	**44.05**	**301**	*e*P	**P**	**11 18 50.5**	**-0.8**
SML	**Sawmill**	**47.41**	**37**	P	**P**	**11 19 18.5**	**+0.9**
RAMN	**Ramite** 36nm,0.7s	**47.51**	**273**	*e*P	**P**	**11 19 18.2**	**-1.0**
GUN	**Gumba**	**47.62**	**275**	*e*P	**P**	**11 19 20.0**	**-0.1**
HDA	**Harding Lake** 62nm,1.9s	**47.88**	**34**	*e*P	**P**	**11 19 21.7**	**+0.5**
ILAR	**Eielson Array** 1.1nm,0.6s,baz=265,slow=6.2,SNR=16	**47.89**	**33**	P	**P**	**11 19 21.8**	**+0.5**
ILB	**Eielson Array**	**47.89**	**33**	*e*P	**P**	**11 19 21.9**	**+0.7**
KKN	**Kakani** 21nm,0.6s	**48.15**	**275**	*e*P	**P**	**11 19 23.2**	**-0.8**
PKIN	**Phulchoki** 18nm,0.6s	**48.16**	**275**	*e*P	**P**	**11 19 23.5**	**-0.7**
GKN	**Gorkha** 13nm,0.5s	**48.55**	**275**	*e*P	**P**	**11 19 26.0**	**-1.1**
KOLN	**Koldanda** 12nm,0.5s	**49.47**	**276**	*e*P	**P**	**11 19 33.2**	**-1.0**
PYUN	**Piuthan** 17nm,0.5s	**49.79**	**277**	*e*P	**P**	**11 19 35.7**	**-0.9**
BRVK	**Borovoye** 7.6nm,1.1s	**50.06**	**312**	*e*P	**P**	**11 19 37.5**	**-0.6**
KSH	**Kashi**	**50.35**	**293**	*e*P	**P**	**11 19 43.5**	**+2.9**
KSH				*e*PcP	**PcP**	**11 21 01.0**	**+2.3**
KSH				*e*PP	**PP**	**11 21 41.5**	**+5.3**
KSH				PcS	**PcS**	**11 24 57.3**	**+1.3**
KSH	comp=N,160nm,7.3s			LR	LR		
KSH	comp=E,150nm,12.4s			LR	LR		
KSH	comp=Z,210nm,6.6s			LR	LR		
INK	**Inuvik** 1.8nm,0.9s,baz=330,slow=8.1,SNR=2.9	**52.76**	**28**	P	**P**	**11 19 59.0**	**+1.0**
KKAR	**Karatay Array**	**52.90**	**299**	*e*P	**P**	**11 19 58.6**	**-0.9**
PSI	**Prapat** 21nm,0.7s	**53.10**	**239**	*e*P	**P**	**11 20 04.2**	**+2.9**
ARU	**Arti** 14nm,1.2s	**55.63**	**318**	*e*P	**P**	**11 20 18.2**	**-0.8**
ABKAR	**Akbulak array**	**57.43**	**310**	*e*P	**P**	**11 20 30.9**	**-1.1**
WRA	**Warramunga Arr** 2.2nm,0.5s,baz=6.9,slow=7.0,SNR=20	**58.65**	**189**	P	**P**	**11 20 39.7**	**-1.0**
RES	**Resolute Bay** 2.5nm,0.4s,baz=22,slow=5.4,SNR=3.8	**60.98**	**15**	P	**P**	**11 20 55.8**	**-0.2**
YKA	**Yellowknife Ar** 0.7nm,0.6s,baz=296,slow=5.8,SNR=4.0	**62.19**	**31**	P	**P**	**11 21 04.7**	**+0.2**
AS01	**Alice Springs**	**62.37**	**189**	*e*P	**P**	**11 21 05.6**	**-0.4**
AS31	**Alice Springs** 2.3nm,0.8s	**62.38**	**189**	*e*P	**P**	**11 21 07.5**	**+1.4**
ASAR	**Alice Springs** 1.0nm,0.6s,baz=357,slow=5.1,SNR=9.7	**62.38**	**189**	P	**P**	**11 21 05.6**	**-0.5**
ARCES	**ARCESS Array B** 3.1nm,0.8s,baz=57,slow=8.8,SNR=4.1	**62.79**	**339**	P	**P**	**11 21 07.2**	**-1.1**
GEYT	**Ailbeck** 1.8nm,0.4s,baz=31,slow=4.0,SNR=3.7	**63.63**	**299**	P	**P**	**11 21 13.7**	**-0.9**
FINES	**FINESS Array B** 9.4nm,0.7s,baz=55,slow=7.2,SNR=22	**67.75**	**332**	P	**P**	**11 21 39.7**	**-0.9**
NEW	**Newport** 1.3nm,0.7s,baz=300,slow=8.5,SNR=3.7	**68.62**	**45**	P	**P**	**11 21 47.4**	**+1.0**
SUMG	**Summit** 6.5nm,0.9s	**69.17**	**0**	*e*P	**P**	**11 21 50.1**	**+0.3**
K05A	**Summer Lake** 9.1nm,1.2s	**69.52**	**51**	*e*P	**P**	**11 21 54.0**	**+1.8**
KIV	**Kislovodsk** 28nm,1.1s	**70.37**	**311**	*e*P	**P**	**11 21 58.1**	**+0.8**
KBZ	**Khabaz** 7.8nm,0.9s,baz=198,slow=0.8,SNR=9.2	**70.37**	**311**	P	**P**	**11 21 56.5**	**-0.6**
NB201	**NORSAR Array S**	**72.99**	**337**	*e*P	**P**	**11 22 12.3**	**-0.3**
NB2	**NORSAR Subarra** comp=Z,22nm,1.4s,baz=39,slow=6.2	**73.02**	**337**	P	**P**	**11 22 12.1**	**-0.7**
NOA	**NORSAR Array B** comp=Z,5.5nm,0.8s,baz=39,slow=5.9,SNR=15	**73.02**	**337**	P	**P**	**11 22 12.2**	**-0.6**
BOZ	**Bozman (W)** comp=Z,2.5nm,1.0s	**73.20**	**45**	*e*P	**P**	**11 22 15.2**	**+0.8**
AKASG	**Malin Array Be** comp=Z,6.7nm,0.6s,baz=45,slow=6.2,SNR=28	**73.47**	**322**	P	**P**	**11 22 14.6**	**-1.0**
AKBB	**Malin Array Si** comp=Z,8.9nm,0.8s	**73.47**	**322**	*e*P	**P**	**11 22 14.8**	**-0.7**
KIEV	**Kiev** comp=Z,8.7nm,0.8s	**73.48**	**322**	*e*P	**P**	**11 22 14.6**	**-1.0**
SAIU	**Southern Antel**	**75.87**	**49**	*e*P	**P**	**11 22 31.8**	**+1.9**
BW06	**Boulder Array**	**76.17**	**46**	*e*P	**P**	**11 22 32.1**	**+0.4**
BW06				*e*P	**P**	**11 22 32.5**	**+0.8**
PD31	**Pinedale Array**	**76.17**	**46**	*e*P	**P**	**11 22 32.5**	**+0.8**
PDAR	**Pinedale Array** comp=Z,1.7nm,0.7s,baz=273,slow=1.3,SNR=16	**76.17**	**46**	P	**P**	**11 22 32.2**	**+0.6**
BUR08	**Bucovina Ar. S**	**77.48**	**322**	*e*P	**P**	**11 22 38.5**	**-0.3**
ULM	**Lac du Bonnet** comp=Z,2.8nm,0.9s,baz=358,slow=5.1,SNR=3.5	**77.90**	**34**	P	**P**	**11 22 40.8**	**-0.1**
SRU	**San Rafael Swe** comp=Z,4.1nm,0.9s	**77.96**	**49**	*e*P	**P**	**11 22 43.0**	**+1.3**
BRTR	**Keskin Array B** comp=Z,1.7nm,0.6s,baz=96,slow=3.6,SNR=8.3	**78.30**	**312**	P	**P**	**11 22 42.4**	**-1.1**
BR231	**Keskin MP Arra**	**78.72**	**312**	*e*P	**P**	**11 22 43.1**	**-2.7**
PV10	**Paradox Valley**	**79.32**	**49**	P	**P**	**11 22 51.3**	**+2.0**
MORC	**Moravsky Berou** comp=Z,15nm,0.8s	**79.41**	**327**	*e*P	**P**	**11 22 49.5**	**+0.2**
BRG	**Berggiesshubel** comp=Z,6.4nm,1.2s	**80.05**	**330**	*e*P	**P**	**11 22 52.5**	**-0.2**
CLL	**Collm** comp=Z,12nm,1.0s	**80.08**	**330**	||*i* P	**P**	**11 22 52.1**	**-0.7**
CLL	comp=Z,7.0nm,0.5s			*i*		11 22 54.6	
CLL	**Collm** comp=Z,8.4nm,0.6s	**80.08**	**330**	*e*P	**P**	**11 22 52.4**	**-0.4**
X16A	**Lo Mia Camp, P** comp=Z,1.6nm,0.8s	**80.42**	**54**	*e*P	**P**	**11 22 55.7**	**+0.5**
KHC	**Kasperske Hory**	**81.56**	**329**	*e*P	**P**	**11 23 00.0**	**-0.9**
KHC	**Kasperske Hory** comp=Z,2.6nm,0.9s	**81.56**	**329**	*e*P	**P**	**11 23 00.7**	**-0.2**
GERES	**GERESS Array B** comp=Z,2.1nm,0.7s,baz=34,slow=5.2,SNR=6.5	**81.74**	**328**	P	**P**	**11 23 00.8**	**-1.0**
GEA0	**GERESS Array S**	**81.74**	**328**	*e*P	**P**	**11 23 01.1**	**-0.7**
BFO	**Black Forest** comp=Z,18nm,1.5s	**84.27**	**331**	*e*P	**P**	**11 23 14.7**	**-0.2**
FUORN	**Ofenpass-Fuorn** comp=Z,12nm,0.8s	**84.91**	**329**	*e*P	**P**	**11 23 18.4**	**0.0**
TX31	**Lajitas Ar. Si**	**88.72**	**53**	*e*P	**P**	**11 23 37.5**	**+0.4**
TX31				*e*P	**P**	**11 23 37.8**	**+0.7**
TXAR	**Lajitas Array** comp=Z,0.8nm,0.6s,baz=291,slow=3.2,SNR=11	**88.72**	**53**	P	**P**	**11 23 37.4**	**+0.3**
LPAZ	**La Paz** comp=Z,2.3nm,0.4s,baz=358,slow=2.5,SNR=12	**145.39**	**59**	PKPbc	**PKPbc**	**11 30 21.5**	**-0.6**
SIV	**San Ignacio** comp=Z,1.6nm,0.4s,baz=274,slow=6.1,SNR=6.2	**149.63**	**49**	PKPbc	**PKPbc**	**11 30 33.0**	**-0.2**
PLCA	**Paso Flores** comp=Z,2.3nm,0.9s,baz=2.6,slow=8.6,SNR=3.1	**154.78**	**105**	PKPbc	**PKPbc**	**11 30 42.1**	**-2.0**

IDC 25 11:13:24.4±2.1,3.87S×151.63E,h0km,mb3.8/4, mb1 4.1/4,mb1mx3.6/37,mbtmp3.9/4,Error ellipse: s-maj=122.3km s-min=28.3km az=128.0,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr** 3.7nm,0.8s,baz=48,slow=9.8,SNR=6.6	**23.22**	**225**	P	P	11 18 32.2	-1.2
ASAR	**Alice Springs** 1.3nm,1.1s,baz=60,slow=8.2,SNR=4.2	**26.08**	**219**	P	P	11 19 00.1	+0.1
FITZ	**Fitzroy Crossi** 3.2nm,0.9s,baz=63,slow=11,SNR=3.6	**29.10**	**239**	P	P	11 19 28.0	+0.9
ILAR	**Eielson Array** 0.6nm,0.9s,baz=252,slow=4.8,SNR=4.5	**81.75**	**22**	P	P	11 25 44.6	-0.2

*ISCJB **25** 11:15:11.8±0.8,39.10N±0.05×27.59E±0.04,h0km,Error ellipse: s-maj=8.0km s-min=4.1km az=172.7*

*CSEM **25** 11:15:11.8±0.3,39.13N×27.60E,h1km,MD2.8,Error ellipse: s-maj=8.0km s-min=4.3km az=171.0,Suspected Mining explosion.*

*ISK **25** 11:15:11.6,39.14N×27.67E,h8km,MD2.8*

*DDA **25** 11:15:12.0,39.08N×27.59E,h7km,Md2.7,Suspected Mining explosion.*

ISC 25 11:15:11.4±1.0,39.15N±0.05×27.60E±0.03,h0km,n22, σ0§46/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKS	**Akhisar**	**0.32**	**148**	*e*PG	**Pg**	**11 15 17.5**	**+0.1**
AKS	**Akhisar**	**0.32**	**148**	*e*Pg	**Pg**	**11 15 17.5**	**+0.1**
IZM	**Izmir**	**0.80**	**200**	*e*PG	**Pb**	**11 15 27.9**	**-0.2**
IZM	**Izmir**	**0.80**	**200**	*e*Pg	**Pb**	**11 15 27.9**	**-0.2**
DEMI	**Demirci**	**0.88**	**97**	*i* P	**Pb**	**11 15 29.4**	**0.0**
DEMI				*i* S	**Sb**	**11 15 41.4**	**-0.3**
DEMI	**Demirci**	**0.88**	**97**	P	**Pb**	**11 15 29.5**	**0.0**
DEMI				S	**Sb**	**11 15 41.4**	**-0.3**
MANT	**Manisa**	**1.00**	**131**	*i* P	**Pg**	**11 15 30.6**	**+0.2**
MANT				*i* S	**Sb**	**11 15 44.6**	**-0.8**
MANT	**Manisa**	**1.00**	**131**	P	**Pg**	**11 15 30.6**	**+0.2**
MANT				S	**Sb**	**11 15 44.6**	**-0.8**
KULA	**Kula-Manisa**	**1.04**	**127**	*e*PG	**Pg**	**11 15 31.1**	**-0.3**
KULA				*e*SG	**Sg**	**11 15 45.3**	**+0.5**
KULA	**Kula-Manisa**	**1.04**	**127**	*e*Pg	**Pg**	**11 15 31.1**	**-0.3**
KULA				*e*Sg	**Sg**	**11 15 45.3**	**+0.5**
URLA	**Izmir**	**1.11**	**225**	*i* P	**Pb**	**11 15 33.4**	**-0.1**
URLA				*i* S	**Sg**	**11 15 47.0**	**-0.1**
URLA	**Izmir**	**1.11**	**225**	P	**Pb**	**11 15 33.4**	**-0.1**
URLA				S	**Sg**	**11 15 47.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**169**	*e*PN	**Pg**	**11 15 34.7**	**-0.1**
AYDB				*e*SN	**Sb**	**11 15 52.0**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**169**	*e*Pn	**Pg**	**11 15 34.7**	**-0.1**
AYDB				*e*Sn	**Sb**	**11 15 52.0**	**+0.2**
SIGR	**SIGRI**	**1.36**	**273**	*e*PN	**Pb**	**11 15 37.9**	**+0.2**
SIGR	**SIGRI**	**1.36**	**273**	*e*Pn	**Pb**	**11 15 37.9**	**+0.2**
CHOS	**Chios island**	**1.43**	**238**	*e*PN	**Pb**	**11 15 39.0**	**+0.1**
CHOS	**Chios island**	**1.43**	**238**	*e*Pn	**Pb**	**11 15 39.0**	**+0.1**
GDZ	**Gediz**	**1.46**	**92**	*i* P	**Pg**	**11 15 39.3**	**-0.1**
GDZ				*i* S	**Sn**	**11 16 00.4**	**+1.3**
GDZ	**Gediz**	**1.46**	**92**	P	**Pg**	**11 15 39.3**	**-0.1**
GDZ				S	**Sn**	**11 16 00.4**	**+1.3**
TVSB	**Tavsanli**	**1.48**	**78**	*e*PN	**Pn**	**11 15 38.6**	**-0.7**
TVSB	**Tavsanli**	**1.48**	**78**	*e*Pn	**Pn**	**11 15 38.6**	**-0.7**

*IDC **25** 11:15:08.2±0.4,37.71S×73.63W,h0km,mb4.9/18, mb1 5.0/20,mb1mx4.9/30,mbtmp4.9/20,ML5.1/3,MS4.9/12, Ms1 4.9/12,ms1mx4.7/21,Error ellipse: s-maj=17.6km s-min=9.5km az=94.0*

*ISCJB **25** 11:15:10.7±0.1,37.68S±0.02×73.60W±0.04,h23km, mb5.3/59,MS4.7/11,Error ellipse: s-maj=4.7km s-min=3.3km az=5.8*

*GUC **25** 11:15:11.6±0.6,37.71S×73.73W,h33km±3km,ML5.6*

*NEIC **25** 11:15:11.0,37.71S×73.73W,h33km,mb5.5/50,MW5.2, ML5.6(GUC),Moment Tensor Solution. s35 Moment tensor: Scale 10¹⁶Nm; Mrr5.73; Mθθ-0.46; Mφφ-5.27; Mrθ-1.24; Mφφ2.74; Mφr-6.96; Best double couple: M₀9.40000×10¹⁶ NP1:φs180.00000°,δ71.00000°, λ109.00000°. NP2:φs314.00000°,δ27.00000°,λ48.00000°. Principal axes: T 9.6300, Plg60.0000°, Azm117.0000°; N -0.5500, Plg18.0000°, Azm354.0000°; P -9.0800, Plg24.0000°, Azm256.0000°; After GUC.*

NEIC Felt [IV] at Angol, Arauco, Concepcion, Hualpen, Lebu, Penco, Puren, San Pedro de la Paz, Talcahuano, Tirua and Tome; [III] at Cabrero, Cauquenes, Chillan, El Carmen, La Laja, Los Angeles, San Rosendo and Santa Barbara; [II] at Puerto Saavedra.

*GCMT **25** 11:15:11.0±0.2,37.90S×74.03W,h20km±1km,MW5.4/95, Moment Tensor Solution. s67,c86; s95,c140; Duration: 1s2 Moment tensor: Scale 10¹⁷Nm; Mrr0.79±.04; Mθθ-0.08±.02; Mφφ-0.70±.02; Mrθ0.05±.03; Mφφ-0.01±.01; Mφr-1.28±.08; Best double couple: M₀1.48200×10¹⁷ NP1:φs178.00000°,δ75.00000°,λ89.00000°. NP2: φs3.00000°,δ15.00000°,λ95.00000°. Principal axes: T 1.5220, Plg60.0000°, Azm86.0000°; N -0.0800, Plg1.0000°, Azm179.0000°; P -1.4430, Plg30.0000°, Azm269.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*BJI **25** 11:15:13.8,37.70S×73.50W,h27km,mB5.3/21,Ms5.5/13, Ms7 5.2/13*

*MOS **25** 11:15:13.3±1.1,37.65S×73.46W,h35km,mb5.5/23,Error ellipse: s-maj=17.3km s-min=7.0km az=103.3*

ISC 25 11:15:12.3±0.2,37.71S±0.03×73.60W±0.05,h23km,n930, σ1§28/966,mb5.5/59,MS5.0/12,7C-12D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCSP	**San Pedro de C**	**0.94**	**24**	*i* P	**Pb**	**11 15 29.0**	**-1.0**
CCSP				*i* S	**Sb**	**11 15 41.6**	**-0.4**
CCSP	comp=N,266μm,0.5s			IAML		11 15 50.6	
PSCH	**Puerto Saavedr**	**1.10**	**172**	*i* P	**Pn**	**11 15 30.3**	**-2.0**
PSCH				*i* S	**Sb**	**11 15 44.8**	**-1.7**
CCHI	**Chillan**	**1.64**	**48**	*i* P	**Pn**	**11 15 40.3**	**+0.7**
CCHI				*i* S	**Sb**	**11 16 01.5**	**-0.5**
CCHI	comp=E,142μm,1.1s			IAML		11 16 14.8	
COCH	**Cobquecura**	**1.70**	**23**	*i* P	**Pn**	**11 15 40.4**	**-0.1**
COCH				*i* S	**Sn**	**11 16 02.1**	**+0.5**
COCH	comp=E,74μm,0.6s			IAML		11 16 16.0	
CANA	**Caviahue**	**2.02**	**96**	*i* P	**Pb**	**11 15 48.0**	**-0.3**
CANA				*i* S	Sb	11 16 25.3	+12
CANA	comp=Z,16μm,0.7s			IAML		11 16 28.1	
CHPI	**Pichilemu**	**3.55**	**22**	*i* P	**Pn**	**11 16 06.0**	**0.0**
CHPI				*i* S	**Sn**	**11 16 47.2**	**0.0**
PLCA	**Paso Flores**	**3.84**	**143**	*i* P	**Pn**	**11 16 10.8**	**+0.

comp=Z,59nm,1.4s
HOPE **Hope Point** 30.20 135 *e*P P 11 21 21.7 +1.1
comp=Z,211nm,1.4s
ATAH **Atahualpa** 30.74 351 P P 11 21 26.8 +0.5
comp=Z,16nm,1.0s,baz=194,slow=9.9,SNR=8.9
ATAH LR LR 11 32 10.0
comp=Z,691nm,18.3s,baz=172,slow=33
OTAV **Otavalo** 38.02 352 *e*P P 11 22 27.6 -1.7
OTAV **Otavalo** 38.02 352 *e*P P 11 22 30.9 +1.6
comp=Z,116nm,1.2s
CMBC **Cumbal** 38.65 353 *e*P P 11 22 35.4 +0.8
PTGA **Pitinga** 38.88 22 P P 11 22 35.4 -0.6
comp=Z,15nm,0.7s,baz=204,slow=9.0,SNR=32
PTGA **Pitinga** 38.88 22 *e*P P 11 22 35.2 -0.8
comp=Z,62nm,1.4s
FLOC **Florencia** 39.14 357 *e*P P 11 22 39.1 +0.9
GRGC **Isla de Gorgon** 40.73 353 *e*P P 11 22 52.7 +1.3
SJAC **San Juan de Ar** 40.77 359 *e*P P 11 22 48.9 -3.0
PRAC **Prado** 41.23 358 *e*P P 11 22 56.4 +0.8
PRAC **Prado** 41.23 358 *e*P P 11 22 56.6 +1.1
comp=Z,165nm,1.3s
CHIC **Chingaza** 42.12 360 *e*P P 11 23 02.9 -0.3
ROSC **El Rosal** 42.33 359 P P 11 23 05.6 +0.7
comp=Z,13nm,0.7s,baz=119,slow=18,SNR=5.9
ROSC **El Rosal** 42.33 359 *e*P P 11 23 05.4 +0.4
ROSC **El Rosal** 42.33 359 *e*P P 11 23 07.8 +2.8
comp=Z,27nm,0.9s
NORC **Norcasia** 43.06 358 *e*P P 11 23 11.6 +1.1
RUSC **La Rusia** 43.38 1 *e*P P 11 23 12.0 -1.6
RUSC **La Rusia** 43.38 1 *e*P P 11 23 13.6 +0.1
comp=Z,40nm,1.0s
HELC **Santa Helena** 43.71 357 *e*P P 11 23 16.1 0.0
HELC **Santa Helena** 43.71 357 *e*P P 11 23 16.3 +0.3
comp=Z,213nm,1.0s
BARC **Barichara** 44.07 1 *e*P P 11 23 16.5 -2.3
DBBC **Dabeiba** 44.56 356 *e*P P 11 23 23.8 +1.3
BRRC **Barranca, Sant** 44.58 360 *e*P P 11 23 25.5 +2.9
CBRI **Barrientos, No** 45.19 1 *e*P P 11 23 33.6 +5.9
SDV **Santo Domingo** 46.43 4 *e*P P 11 23 36.2 -1.3
SDV **Santo Domingo** 46.43 4 *e*P P 11 23 36.7 -0.8
comp=Z,54nm,0.8s
RCBR **Riachuelo** 46.70 57 P P 11 23 39.6 +0.1
comp=Z,47nm,0.9s,baz=217,slow=10,SNR=9.7
RCBR **Riachuelo** 46.70 57 *e*P P 11 23 40.9 +1.3
comp=Z,123nm,1.3s
VNA1 **Neumayer--Stat** 46.80 155 P P 11 23 40.4 +0.9
SNAA **Sanae** 48.66 157 P P 11 23 54.3 +0.2
SNAA **Sanae** 48.66 157 P P 11 23 54.4 +0.2
comp=Z,50nm,0.8s,baz=276,slow=6.9,SNR=118
SNAA **Sanae** 48.66 157 *e*P P 11 23 54.7 +0.5
comp=Z,161nm,1.2s
GRGR **Grenville** 50.83 15 *e*P P 11 24 11.1 0.0
comp=Z,420nm,0.8s
QSPA **South Pole Qui** 52.54 180 *e*P P 11 24 23.9 +0.4
NVL **N'lazarevskaya** 53.45 156 *e*P P 11 24 30.2 +0.3
NVL *e**PP pP 11 24 37.3 +0.2
NVL *e*S S 11 32 03.7 +3.0
NVL MLR MLR
comp=Z,2µm,24.0s
RKT **Rikitea** 54.02 267 *e*S S 11 32 07.4 -2.2
comp=Z,599nm,25.2s
RKT **Rikitea** 54.02 267 *e*T T 12 22 32.6
comp=Z,3.3nm,0.2s
CELP **Cerrillos** 55.88 8 *e*P P 11 24 47.2 -0.9
SJG **San Juan** 55.96 9 *e*P P 11 24 47.5 -1.2
SJG pmax pmax
comp=Z,46nm,1.0s
SJG **San Juan** 55.96 9 *e*P P 11 24 47.5 -1.2
comp=Z,46nm,1.0s
SDDR **Presa de Saban** 56.43 3 *e*P P 11 24 53.1 +1.1
comp=Z,62nm,1.4s
GTBY **Guantanamo Bay** 57.34 358 *e*P P 11 24 58.4 -0.1
comp=Z,111nm,1.0s
CMIG **Matias Romero** 58.07 336 P P 11 25 03.4 -0.3
comp=Z,2.1nm,1.0s,baz=332,slow=4.9,SNR=2.2
SBA **Scott Base** 59.19 192 *e*P P 11 25 12.2 +1.4
SBA pmax pmax
comp=Z,23nm,1.1s
SBA **Scott Base** 59.19 192 *e*P P 11 25 12.2 +1.4
comp=Z,23nm,1.1s
TLIG **Tlapa** 59.79 332 *e*P P 11 25 19.1 +3.3
comp=Z,32nm,1.1s
VNDA **Vanda** 60.22 192 P P 11 25 18.6 +0.7
comp=Z,6.4nm,0.9s,baz=142,slow=4.3,SNR=22
VNDA **Vanda** 60.22 192 *e*P P 11 25 19.3 +1.4
VNDA pmax pmax
comp=Z,21nm,1.2s
VNDA **Vanda** 60.22 192 *e*P P 11 25 19.3 +1.4
comp=Z,21nm,1.2s
SYO **Syowa Base** 62.90 158⇑ *i*pP pP 11 25 40.6 -2.7
TBI **Tubuai** 65.29 259 *e*S S 11 34 32.5 -2.5
comp=Z,1µm,27.8s
TBI **Tubuai** 65.29 259 *e*LR LR 11 45 32.5
comp=Z,2µm,25.5s,baz=123
TBI **Tubuai** 65.29 259 *e*T T 12 36 37.0
comp=Z,4.3nm,0.3s
TAOE **Nuku Hiva Isla** 66.11 277 *e*LR LR 11 45 58.9
comp=Z,1µm,25.4s
MEH **Mehetia** 67.17 265 *e*T T 12 38 58.2
comp=Z,28nm,0.3s
035A **Encino** 68.30 337 P P 11 26 11.9 +0.6
baz=160,SNR=8.3
TIAR **Tiarei** 68.36 264 *e*T T 12 40 19.9
comp=Z,6.5nm,0.2s
PAE **Paea** 68.48 264 *e*T T 12 40 33.6
comp=Z,2.5nm,0.3s
PPT2 **Papeete2** 68.52 264 *e*S S 11 35 11.0 -3.3
comp=Z,1µm,27.5s
PPT2 **Papeete2** 68.52 264 *e*LR LR 11 47 00.2
comp=Z,1µm,25.5s,baz=110
PPT2 **Papeete2** 68.52 264 *e*T T 12 40 20.0
comp=Z,2.9nm,0.3s
PPT **Papeete** 68.53 264 LR LR 11 49 08.4
comp=Z,834nm,18.2s,baz=76,slow=30
034A **Hebbronville** 68.60 336 P P 11 26 13.3 0.0
baz=159,SNR=9.9
934A **Benavides** 69.05 336 P P 11 26 16.6 +0.6
baz=159,SNR=8.1
933A **Laredo** 69.30 336 P P 11 26 17.9 +0.3
baz=159,SNR=12
TIGA **Tifton** 69.42 351 P P 11 26 18.3 0.0
baz=172
835A **Beeville** 69.47 337 P P 11 26 19.3 +0.7
baz=160,SNR=5.9
834A **Tilden** 69.54 337 P P 11 26 18.6 -0.5
baz=159,SNR=9.4
447A **Lucedale** 69.59 346 P P 11 26 19.8 +0.5
baz=168
BRAL **Brewton** 69.66 348 P P 11 26 21.4 +1.6
comp=Z,102nm,1.1s
446A **Poplarville** 69.72 346 P P 11 26 20.6 +0.5
baz=167
542A **Morse** 69.77 343 P P 11 26 20.9 +0.5
baz=164
445A **Amite** 69.86 345 P P 11 26 21.1 +0.1
baz=166
736A **Circle Diamond** 69.87 338 P P 11 26 21.9 +0.9
baz=160,SNR=10
MAW **Mawson** 69.99 164 P P 11 26 21.3 -0.1
comp=Z,8.6nm,0.8s,baz=227,slow=7.4,SNR=14
MAW LR LR 11 58 41.5
comp=Z,1µm,18.5s,baz=232,slow=37
735A **Kenedy** 69.99 337 P P 11 26 22.5 +0.6
baz=160,SNR=6.1
833A **Chaparral WMA,** 70.00 336 P P 11 26 22.0 +0.1
baz=159,SNR=10
348A **Jackson** 70.05 347 P P 11 26 22.6 +0.5
baz=168
637A **Eagle Lake** 70.11 339 P P 11 26 22.8 +0.3
baz=161
832A **Faith Ranch, C** 70.15 335 P P 11 26 22.5 -0.3
baz=158,SNR=9.2
347A **Saraland** 70.16 346 P P 11 26 22.4 -0.4
baz=168,SNR=8.7
734A **La Parita Cree** 70.22 337 P P 11 26 21.6 -1.6
baz=159,SNR=5.7
346A **Big Creek Wild** 70.32 346 P P 11 26 24.0 +0.3
baz=167
733A **Divot King Ran** 70.33 336 P P 11 26 24.0 +0.1
baz=159,SNR=8.0
345A **Thompson Farm,** 70.36 345 P P 11 26 24.1 +0.1
baz=166
636A **Smothers Creek** 70.36 338 P P 11 26 23.4 -0.6
baz=161,SNR=7.6
635A **Leesville** 70.48 338 P P 11 26 24.6 -0.3
baz=160
441A **DeRidder** 70.52 342 P P 11 26 25.3 +0.2
baz=164
538A **Harpers Horsep** 70.61 340 P P 11 26 26.1 +0.6
baz=162
344A **Westbrook Farm** 70.64 345 P P 11 26 26.2 +0.5
baz=166
634A **China Grove, S** 70.65 337 P P 11 26 26.2 +0.3
baz=160
248A **Dixon Mills** 70.69 347 P P 11 26 25.8 -0.2
baz=168,SNR=8.5
537A **Green Hill Far** 70.71 339 P P 11 26 26.3 +0.2
baz=161,SNR=6.3
440A **Kirbyville** 70.71 341 P P 11 26 26.9 +0.7
baz=163
NHSC **New Hope** 70.72 354 P P 11 26 28.2 +2.0
comp=Z,202nm,1.2s
247A **Quitman** 70.80 347 P P 11 26 26.6 -0.1
baz=168,SNR=9.0
246A **Jackson Lee, B** 70.86 346 P P 11 26 27.6 +0.5
baz=167
536A **Bastrop** 70.92 339 P P 11 26 27.9 +0.4
baz=161
342A **Flagon Creek P** 70.92 343 P P 11 26 28.2 +0.7
baz=165
439A **Center Grove,** 70.96 341 P P 11 26 27.5 -0.2
baz=163
633A **Saathoff Ranch** 70.98 337 P P 11 26 27.5 -0.4
baz=159,SNR=13
HPIG 71.00 330 *e*P P 11 26 28.6 +0.3
535A **Dale** 71.02 338 P P 11 26 28.2 +0.1
baz=160
245A **Little AP, Sta** 71.03 345 P P 11 26 28.4 +0.3
baz=167
341A **Kurthwood** 71.08 342 P P 11 26 28.2 -0.2
baz=164
438A **Sam Houston St** 71.11 340 P P 11 26 28.0 -0.6
baz=162
244A **Avery, Jackson** 71.20 345 P P 11 26 28.8 -0.4
baz=166,SNR=7.4
243A **Waterproof** 71.22 344 P P 11 26 29.2 0.0
baz=165
534A **Blanco** 71.29 337 P P 11 26 29.5 -0.3
baz=160,SNR=8.0
340A **Bronson** 71.33 342 P P 11 26 29.8 -0.2
baz=163
VBMS **Vicksburg** 71.34 345 P P 11 26 29.6 -0.3
baz=166
147A **Livingston** 71.34 347 P P 11 26 29.4 -0.6
baz=168,SNR=7.9
GOGA **Godfrey** 71.35 351 *e*P P 11 26 29.6 -0.4
GOGA pmax pmax
comp=Z,54nm,1.1s
GOGA **Godfrey** 71.35 351 *e*P P 11 26 29.6 -0.4
comp=Z,54nm,1.1s
437A **Phantom Ranch,** 71.36 340 P P 11 26 29.6 -0.6
baz=162
339A **Huntington** 71.42 341 P P 11 26 29.8 -0.7
baz=163,SNR=5.3
146A **Union** 71.45 346 P P 11 26 30.8 +0.1
baz=167
LRAL **Lakeview Retre** 71.48 348 *e*P P 11 26 30.8 -0.1
comp=Z,64nm,1.0s
436A **Wall Ranch, Ga** 71.49 339 P P 11 26 30.7 -0.2
baz=161
533A **Keville** 71.51 337 P P 11 26 30.8 -0.3
baz=159,SNR=11
242A **Grayson** 71.54 343 P P 11 26 30.9 -0.2
baz=165
145A **Houston Renfro** 71.59 346 P P 11 26 31.4 -0.1
baz=167,SNR=6.6
338A **Crockett** 71.64 341 P P 11 26 31.8 -0.1
baz=162
241A **Mo Tay, Goldon** 71.68 343 P P 11 26 33.1 +1.1
baz=164
144A **Alexander Plac** 71.72 345 P P 11 26 32.0 -0.2
baz=166
435B **Jarrell** 71.73 338 P P 11 26 33.3 +0.9
baz=160
Z47A **Carrollton** 71.82 347 P P 11 26 33.5 +0.7
baz=168
NATX **Nacogdoches** 71.85 341 P P 11 26 32.9 -0.2
baz=163,SNR=6.0
NATX **Nacogdoches** 71.85 341 *e*P P 11 26 34.2 +1.1
comp=Z,86nm,0.8s
240A **Hunter Patters** 71.89 342 P P 11 26 33.3 0.0
baz=164
Z48A **Northport** 71.91 348 P P 11 26 33.0 -0.3
baz=169
142A **Monroe** 71.96 344 P P 11 26 33.8 +0.1
baz=165
434A **Burnet** 71.96 338 P P 11 26 33.8 0.0
baz=160,SNR=10
Z46A **Louisville** 71.97 347 P P 11 26 33.8 0.0
baz=167
JSC **Jenkinsville** 71.98 353 *e*P P 11 26 34.0 +0.2
JSC **Jenkinsville** 71.98 353 *e*P P 11 26 34.0 +0.2
143A **Socs Landing,** 71.99 344 P P 11 26 33.6 -0.2
baz=165,SNR=7.2
239A **Gary** 72.05 341 P P 11 26 33.7 -0.5
baz=163
336A **Riesel** 72.09 339 P P 11 26 34.3 -0.2
baz=161,SNR=11
JCT **Junction City** 72.13 336 P P 11 26 34.2 -0.6
baz=159,SNR=12
JCT **Junction City** 72.13 336 *e*P P 11 26 35.0 +0.2
JCT **Junction City** 72.13 336 *e*P P 11 26 35.0 +0.2
335A **Moody** 72.16 339 P P 11 26 33.9 -1.0
baz=160,SNR=7.6
433A **Art** 72.16 337 P P 11 26 33.9 -1.0
baz=159,SNR=12
238A **Jacksonville** 72.20 341 P P 11 26 35.3 +0.1
baz=162
141A **Papa Simpson,** 72.23 343 P P 11 26 35.4 +0.1
baz=164
Z45A **Winona** 72.29 346 P P 11 26 35.5 -0.1
baz=167
Z44A **Pea Ridge, Bel** 72.34 345 P P 11 26 35.1 -0.8
baz=166,SNR=7.8
237A **Washetta, Mont** 72.38 340 P P 11 26 36.4 +0.2
baz=162
TX31 **Lajitas Ar. Si** 72.39 333 *e*P P 11 26 35.9 -0.6
TX31 *e*P P 11 26 36.9 +0.4
TXAR **Lajitas Array** 72.39 333 P P 11 26 36.9 +0.3
comp=Z,2.7nm,0.7s,baz=152,slow=8.2,SNR=37
140A **Cam and Jess,** 72.42 342 P P 11 26 35.0 -1.5
baz=164
334A **Lometa** 72.44 338 P P 11 26 35.4 -1.3
baz=160,SNR=18
Z43A **Armstrong Fami** 72.45 345 P P 11 26 36.2 -0.3
baz=166
Y47A **UCPARC, Winfie** 72.47 348 P P 11 26 36.2 -0.6
baz=168
236A **Katherine and** 72.58 340 P P 11 26 36.1 -1.3
baz=161
Y46A **Houston** 72.63 347 P P 11 26 36.6 -1.1
baz=168,SNR=7.6
333A **Richland Sprin** 72.66 337 P P 11 26 37.4 -0.5
baz=159,SNR=10
Z42A **Norrel Spur, H** 72.66 344 P P 11 26 37.7 -0.1
baz=165
139A **Bunkhouse Ranc** 72.66 342 P P 11 26 37.2 -0.6
baz=163
Y45A **Yeager Farm, C** 72.74 346 P P 11 26 38.0 -0.3
baz=167,SNR=10
138A **Matatall Enter** 72.82 341 P P 11 26 38.7 -0.2
baz=162,SNR=5.4
WHTX **Lake Whitney,** 72.83 339 P P 11 26 38.6 -0.3
baz=161,SNR=9.6
WHTX **Lake Whitney,** 72.83 339 *e*P P 11 26 39.0 +0.1
Z41A **Richland Creek** 72.83 343 P P 11 26 38.7 -0.2
baz=164
KMSC **Kings Mountain** 72.84 353 P P 11 26 38.0 -0.9
baz=174,SNR=11
KMSC **Kings Mountain** 72.84 353 *e*P P 11 26 38.5 -0.4
137A **Heron Place, G** 72.93 341 P P 11 26 39.8 +0.3
baz=162,SNR=7.5
Y44A **Strider, Charl** 72.96 346 P P 11 26 39.6 -0.1
baz=166
Z40A **Long Farm, Mag** 72.97 343 P P 11 26 38.5 -1.2
baz=164
136A **Ennis** 73.03 340 P P 11 26 40.4 +0.3
baz=161
234A **Clairette** 73.04 338 P P 11 26 40.3 +0.1
baz=160,SNR=23
Y43A **Makayla and Ka** 73.06 345 P P 11 26 40.5 +0.3
baz=166
Z39A **Irene McRaven,** 73.15 342 P P 11 26 40.7 0.0
baz=163
Y42A **Garnett, Star** 73.17 344 P P 11 26 40.9 0.0
baz=165
X45A **UM Field Stati** 73.25 346 P P 11 26 40.5 -0.8
baz=167,SNR=8.7
233A **Rising Star** 73.28 338 P P 11 26 41.1 -0.5
baz=160,SNR=9.9
WLAR **White Oak Lake** 73.32 343 *e*P P 11 26 42.5 +0.8
OXF **Oxford** 73.34 346 *e*P P 11 26 45.2 +3.3
OXF pmax pmax
comp=Z,105nm,1.2s
OXF **Oxford** 73.34 346 *e*P P 11 26 45.2 +3.3
comp=Z,105nm,1.2s
135A **Vickery Place,** 73.35 339 P P 11 26 41.7 -0.3
baz=161
Z38A **Mt. Pleasant** 73.35 341 P P 11 26 41.8 -0.2
baz=163
Y41A **Eaglette Beard** 73.39 344 P P 11 26 41.9 -0.2
baz=164,SNR=5.4
SWET **Sewanee** 73.45 349 *e*P P 11 26 42.3 -0.3
Z37A **Pogue Cattle C** 73.47 341 P P 11 26 42.5 -0.2
baz=162
X44A **Crenshaw** 73.47 346 P P 11 26 42.3 -0.3
baz=166
CPCT **Cooper Cave** 73.49 351 *e*P P 11 26 42.2 -0.5
TKL **Tuckaleechee C** 73.61 351 *e*P P 11 26 42.8 -0.6
TKL **Tuckaleechee C** 73.61 351 *e*P P 11 26 42.8 -0.6
X43A **Marvell** 73.63 345 P P 11 26 43.9 +0.3
baz=166
Z36A **Blue Ridge** 73.75 340 P P 11 26 43.7 -0.7
baz=162,SNR=8.5
Y39A **Lockesburg** 73.79 342 P P 11 26 44.4 -0.1
baz=163
133A **Hamilton Ranch** 73.83 338 P P 11 26 44.9 0.0
baz=160,SNR=24
W45A **Hickory Valley** 73.93 347 P P 11 26 44.7 -0.6
baz=167
Y38A **Idabel** 73.94 342 P P 11 26 45.0 -0.4
baz=163,SNR=6.2
X41A **Kaden, Bauxite** 73.96 344 P P 11 26 45.1 -0.3
baz=165
X40A **Basin Creek Fa** 74.02 344 P P 11 26 45.6 -0.2
baz=164
Z35A **Perchaven, San** 74.03 340 P P 11 26 45.8 -0.2
baz=161,SNR=8.3
ABTX **Abilene, Hawle** 74.07 337 P P 11 26 45.8 -0.4
baz=159
ABTX **Abilene, Hawle** 74.07 337 *e*P P 11 26 46.3 0.0
SUR **Sutherland** 74.16 119 LR LR 11 56 36.2
comp=Z,46nm,18.9s,baz=240,slow=34
SUR **Sutherland** 74.16 119 *e*P P 11 26 48.5 +1.2
Y37A **Hugo** 74.21 341 P P 11 26 47.5 +0.5
baz=162,SNR=5.5
MIAR **Mount Ida** 74.25 343 P P 11 26 47.6 +0.4
baz=164,SNR=12
MIAR **Mount Ida** 74.25 343 *e*P P 11 26 51.5 +4.3
MIAR **Mount Ida** 74.25 343 *e*P P 11 26 51.5 +4.3
Z34A **Collier Ranch,** 74.25 339 P P 11 26 47.0 -0.3
baz=160
Y36A **Durant** 74.31 341 P P 11 26 48.5 +1.0
baz=162,SNR=7.8
X39A **Fountain Ranch** 74.34 343 P P 11 26 47.7 0.0
baz=163,SNR=10
Z33A **Whitaker Ranch** 74.42 338 P P 11 26 48.0 -0.2
baz=160,SNR=11
TZTN **Tazewell** 74.45 352 *e*P P 11 26 47.8 -0.6
V45A **Humboldt** 74.45 347 P P 11 26 47.9 -0.4
baz=168
Y35A **Marietta** 74.51 340 P P 11 26 48.6 -0.2
baz=161
W41B **Gary Mavity, V** 74.55 344 P P 11 26 48.4 -0.6
baz=165,SNR=8.4
WVT **Waverly** 74.64 348 *e*P P 11 26 48.3 -1.1
WVT **Waverly** 74.64 348 *e*P P 11 26 48.3 -1.1
X301 **Greenbrier Sit** 74.65 344 *e*P P 11 26 49.4 -0.1
X38A **Whitesboro** 74.67 342 P P 11 26 49.7 +0.1
baz=163,SNR=14
WHAR **Wooly Hollow** 74.67 344 *e*P P 11 26 49.4 -0.3
X201 **Greenbrier Sit** 74.69 344 *e*P P 11 26 49.6 -0.1
V44A **Blytheville** 74.71 346 P P 11 26 50.3 +0.4
baz=167
X37A **Clayton** 74.72 342 P P 11 26 50.4 +0.5
baz=162,SNR=5.7
W40A **Ferguson Farm,** 74.75 344 P P 11 26 50.4 +0.3
baz=164
Y34A **Reagan Ranch,** 74.76 339 P P 11 26 50.1 -0.1
baz=160,SNR=9.2
BLA **Blacksburg** 74.81 354 *e*P P 11 26 50.4 -0.1
BLA **Blacksburg** 74.81 354 *e*P P 11 26 50.4 -0.1
VWCC **Virginia Weste** 74.81 355 *e*P P 11 26 50.3 -0.2
W39A **Magazine** 74.92 343 P P 11 26 51.2 +0.1
baz=164,SNR=6.3
X36A **Centrahoma** 74.96 341 P P 11 26 51.7 +0.3
baz=162,SNR=9.9
X35A **Drake** 74.96 340 P P 11 26 50.8 -0.5
baz=161,SNR=6.8
W38A **Poteau** 74.97 342 P P 11 26 50.8 -0.6
baz=163,SNR=6.6
V42A **Cord** 74.98 345 P P 11 26 51.1 -0.3
baz=166,SNR=9.3
Y33A **Hilltop Ranch,** 75.06 339 P P 11 26 51.6 -0.3
baz=160,SNR=7.8
V41A **Mountainview** 75.12 344 P P 11 26 52.0 -0.2
baz=165,SNR=6.9
MNTX **Cornudas Mount** 75.16 332 P P 11 26 51.8 -0.7
baz=155
MNTX **Cornudas Mount** 75.16 332 *e*P P 11 26 51.7 -0.9
W37B **Quinton** 75.26 342 P P 11 26 52.6 -0.5
baz=162,SNR=12
V40A **Witts Springs** 75.28 344 P P 11 26 53.3 +0.1
baz=164,SNR=10
X34A **Smith Ranch, M** 75.39 340 P P 11 26 53.6 -0.2
baz=160,SNR=12
W36A **Wetumka** 75.46 341 P P 11 26 53.1 -1.1
baz=162,SNR=6.2
U42A **Revenden** 75.48 345 P P 11 26 53.3 -0.9
baz=166,SNR=10
PARMO **Parma** 75.50 347 *e*P P 11 26 54.8 +0.4
V39A **Pettigrew** 75.50 343 P P 11 26 53.4 -1.1
baz=164
X33A **Lawton** 75.52 339 P P 11 26 53.0 -1.6
baz=160,SNR=6.4
U41A **Viola** 75.61 345 P P 11 26 54.3 -0.7
baz=165
X32A **Elmer** 75.63 338 P P 11 26 54.4 -0.8
baz=159,SNR=8.8
W35A **Tecumseh** 75.65 340 P P 11 26 54.1 -1.2
baz=161,SNR=9.8
V38A **Canehill** 75.70 343 P P 11 26 54.7 -0.9
baz=163,SNR=10.0
PBMO **Poplar Bluff** 75.73 346 *e*P P 11 26 55.2 -0.6
WMOK **Wichita Mounta** 75.78 339 P P 11 26 54.5 -1.6
baz=160,SNR=7.4
WMOK **Wichita Mounta** 75.78 339 *e*P P 11 26 55.6 -0.5
WMOK **Wichita Mounta** 75.78 339 *e*P P 11 26 55.6 -0.5
U40A **Yellville** 75.82 344 P P 11 26 55.3 -1.0
baz=164,SNR=14
V37A **Hulbert** 75.90 342 P P 11 26 56.1 -0.6
baz=163,SNR=12
W34A **Bridge Creek,** 75.97 340 P P 11 26 56.6 -0.6
baz=161,SNR=6.4
W34A **Bridge Creek,** 75.97 340 *e*P P 11 26 57.6 +0.4
U39A **Green Forest** 75.98 344 P P 11 26 56.8 -0.4
baz=164,SNR=20
HHAR **Hobbs** 75.99 343 *e*P P 11 26 56.8 -0.5
V36A **Jenks** 76.00 341 P P 11 26 57.0 -0.3
baz=162,SNR=12
W33A **Caddo, Fort Co** 76.08 339 P P 11 26 57.3 -0.4
baz=160,SNR=13
TUL1 **Leonard** 76.08 342 P P 11 26 56.9 -0.9
baz=162,SNR=11
TUL1 **Leonard** 76.08 342 *e*P P 11 26 57.5 -0.2
V35A **Meyer Ranch, C** 76.21 341 P P 11 26 57.4 -1.1
baz=161,SNR=11
U38A **Gravette** 76.25 343 P P 11 26 57.9 -0.8
baz=163,SNR=7.4
T41A **Mountain View** 76.25 345 P P 11 26 57.9 -0.8
baz=165,SNR=9.4
W32A **Sentinel** 76.28 339 P P 11 26 58.2 -0.7
baz=160,SNR=18
S45A **Carrier Mills** 76.28 348 P P 11 26 57.5 -1.3
baz=168
MSTX **Muleshoe** 76.30 335 P P 11 26 57.8 -1.4
baz=157
MSTX **Muleshoe** 76.30 335 *e*P P 11 26 59.2 0.0
U37A **Salina** 76.39 342 P P 11 26 58.9 -0.6
baz=163
S44A **Carbondale** 76.41 347 P P 11 26 58.6 -0.9
baz=167,SNR=8.4

USIN University of 76.41 349 eP P 11 26 59.0 -0.5
SIUC Southern Illin 76.42 347 eP P 11 26 59.1 -0.5
S43A Fulton Ridge, 76.44 347 P P 11 26 58.9 -0.8
baz=167,SNR=11
V34A Guthrie 76.46 340 P P 11 26 59.1 -0.8
baz=161,SNR=8.6
V34A Guthrie 76.46 340 eP P 11 26 59.6 -0.3
T40A Mansfield 76.51 345 P P 11 26 59.1 -1.1
baz=165,SNR=8.6
U36A Oologah 76.53 342 P P 11 26 59.9 -0.4
baz=162
T39A Clever 76.58 344 P P 11 27 00.1 -0.5
baz=164,SNR=6.3
V33A Lossen Ranch, 76.66 340 P P 11 27 00.6 -0.4
baz=160,SNR=10
U35A Pawnee 76.76 341 P P 11 27 01.2 -0.4
baz=162,SNR=13
S41A Jillco Farms, 76.78 345 P P 11 27 01.2 -0.5
baz=166,SNR=12
V32A Arapaho 76.78 339 P P 11 27 01.9 +0.2
baz=160,SNR=7.0
AMTX Amarillo 76.79 337 P P 11 27 01.1 -0.8
baz=158
AMTX Amarillo 76.79 337 eP P 11 27 01.1 -0.8
T38A Diamond 76.80 343 P P 11 27 01.2 -0.6
baz=163,SNR=9.8
SDMD Soldier's Deli 76.80 357 eP P 11 27 02.4 +0.6
121A Cookes Peak, D 76.81 331 P P 11 27 01.2 -1.0
baz=153
121A Cookes Peak, D 76.81 331 eP P 11 27 02.8 +0.7
comp=Z,43nm,1.4s
R44A Waltonville 76.92 348 P P 11 27 02.3 -0.2
baz=168,SNR=6.4
S40A Lebanon 76.94 345 P P 11 27 01.9 -0.7
baz=165,SNR=13
T37A Cheneyville 18 77.03 343 P P 11 27 02.3 -0.7
baz=163,SNR=11
U34A Anderson Ranch 77.03 340 P P 11 27 01.8 -1.3
baz=161,SNR=8.1
U34A Anderson Ranch 77.03 340 eP P 11 27 03.0 -0.1
comp=Z,100nm,1.2s
LIC Lamto 77.14 72 eP P 11 27 03.6 -0.7
comp=Z,340nm,1.2s
U33A Lingo Farm, Me 77.18 340 P P 11 27 03.9 -0.1
baz=160,SNR=6.5
T36A Boggs Farm, Ca 77.20 342 P P 11 27 03.2 -0.9
baz=162,SNR=8.8
S39A Bolivar 77.21 344 P P 11 27 03.5 -0.6
baz=164,SNR=17
T35A Sooner Cattle 77.22 341 P P 11 27 03.5 -0.6
baz=162,SNR=10
OLIL Olney 77.23 348 eP P 11 27 03.3 -0.9
S38A Stockton 77.28 344 P P 11 27 04.0 -0.5
baz=164,SNR=11
PSUB Penn St. - Bra 77.28 359 eP P 11 27 05.0 +0.7
MVL Millersville 77.37 358 eP P 11 27 06.0 +1.1
U32A Winter Ranch, 77.38 339 P P 11 27 04.3 -0.8
baz=160,SNR=5.4
TIC Toumodi 77.42 71 eP P 11 27 05.5 -0.4
BLO Bloomington 77.42 350 eP P 11 27 09.1 +3.9
BLO Bloomington 77.42 350 eP P 11 27 09.1 +3.9
KIC Kosan Boka 77.45 72 eP P 11 27 05.2 -0.8
comp=Z,208nm,1.0s
T34A McClaskey Farm 77.49 341 P P 11 27 05.2 -0.5
baz=161,SNR=7.9
Q44A Meyer Farm, Va 77.55 348 P P 11 27 04.8 -1.1
baz=168
R40A Maddies Statio 77.56 345 P P 11 27 05.2 -0.8
baz=165,SNR=11
DBIC Dimbokro 77.56 71 P P 11 27 07.3 +0.7
comp=Z,59nm,0.9s
DBIC LR LR 11 58 53.4
comp=Z,720nm,18.5s,baz=234,slow=34
DBIC Dimbokro 77.56 71 eP P 11 27 07.5 +0.9
DBIC Dimbokro 77.56 71 eP P 11 27 07.5 +0.9
S37A Fort Scott 77.61 343 P P 11 27 05.2 -1.1
baz=163,SNR=7.9
Q43A New Douglas 77.70 347 P P 11 27 05.9 -0.9
baz=167,SNR=7.4
O56A Blue Knob Stat 77.73 356 P P 11 27 06.7 -0.3
baz=176
R39A Chumby, Stover 77.74 344 P P 11 27 06.6 -0.5
baz=164,SNR=19
S36A Lake Cedric, C 77.76 342 P P 11 27 06.5 -0.6
baz=162,SNR=9.3
R38A Fenwick Farm, 77.81 344 P P 11 27 07.0 -0.5
baz=164,SNR=7.8
BNM Barren Site 77.81 332 eP P 11 27 09.0 +1.1
TUC Tucson 77.82 328 P P 11 27 06.6 -1.1
baz=151
TUC Tucson 77.82 328 eP P 11 27 08.8 +1.1
TUC Tucson 77.82 328 eP P 11 27 08.8 +1.1
Q42A Golden Eagle 77.82 347 P P 11 27 06.8 -0.7
baz=166,SNR=20
T33A Patterson Ranc 77.83 340 P P 11 27 07.4 -0.2
baz=160,SNR=9.9
S35A Otter Creek Ra 77.90 342 P P 11 27 06.4 -1.5
baz=162,SNR=7.7
LPM Los Pinos Moun 77.96 333 eP P 11 27 10.0 +1.4
ACSO Alum Creek Sta 78.04 353 eP P 11 27 07.9 -0.7
SSPA Standing Stone 78.07 357 eP P 11 27 08.6 -0.1
T32A Huddler Ranch, 78.11 340 P P 11 27 08.4 -0.7
baz=160,SNR=7.2
S34A Willow Spring 78.11 341 P P 11 27 08.5 -0.6
baz=161
R37A Teagarden Farm 78.14 343 P P 11 27 09.8 +0.5
baz=163
Q40A Laux Farm, Aux 78.20 345 P P 11 27 08.8 -0.8
baz=165,SNR=9.9
LAZ Ladron 78.23 332 eP P 11 27 11.2 +1.1
S33A Kaszmaul Farm, 78.25 340 P P 11 27 09.0 -0.9
baz=161,SNR=9.2
N59A State Game Lan 78.27 358 P P 11 27 10.0 +0.1
baz=178
R36A Gordon, Harris 78.31 343 P P 11 27 09.4 -0.7
baz=163
214A Organ Pipe Nat 78.37 327 P P 11 27 11.1 +0.4
baz=149,SNR=11
214A Organ Pipe Nat 78.37 327 eP P 11 27 11.6 +0.9
comp=Z,251nm,1.2s
ODNJ Ogdensburg 78.42 359 eP P 11 27 11.8 +1.1
Q39A Willow Grove F 78.43 345 P P 11 27 10.2 -0.7
baz=165,SNR=9.7
P42A Winchester 78.44 347 P P 11 27 10.1 -0.8
baz=167,SNR=10
ANMO Albuquerque 78.46 333 P P 11 27 11.4 +0.1
baz=154
ANMO Albuquerque 78.46 333 diP P 11 27 12.2 +0.8
ANMO pmax pmax
comp=Z,9.0nm,1.0s
ANMO Albuquerque 78.46 333 eP P 11 27 11.9 +0.5
R35A Emporia Munici 78.47 342 P P 11 27 10.5 -0.6
baz=162
Q38A Cooks Store, C 78.49 344 P P 11 27 10.2 -0.9
baz=164,SNR=7.7
N54A Moraine State 78.51 355 P P 11 27 10.4 -0.9
baz=175
Q37A Longview Farm, 78.59 344 P P 11 27 10.8 -1.0
baz=163
S32A Newby Ranch, P 78.60 340 P P 11 27 11.5 -0.3
baz=160,SNR=6.4
P41A Barry, Barry 78.66 346 P P 11 27 11.5 -0.5
baz=166,SNR=6.7
SFIN Lafayette 78.69 350 P P 11 27 10.5 -1.8
baz=169
SFIN Lafayette 78.69 350 eP P 11 27 13.5 +1.2
P40A Paris 78.71 346 P P 11 27 11.8 -0.6
baz=165,SNR=17
R34A Isabella, Hill 78.72 341 P P 11 27 12.1 -0.4
baz=161,SNR=8.4
P39B Salisbury 78.81 345 P P 11 27 12.5 -0.4
baz=165,SNR=9.5
Q36A Arnold C. Orve 78.90 343 P P 11 27 13.5 0.0
baz=163
R33A Olander Ranch, 78.91 341 P P 11 27 12.9 -0.7
baz=161,SNR=8.7
Q35A Mercer Eighty, 78.94 342 P P 11 27 12.8 -0.9
baz=162
O42A Bath 78.99 347 P P 11 27 13.1 -0.8
baz=167,SNR=7.2
M54A Oil Creek Stat 79.03 355 P P 11 27 13.6 -0.5
baz=175
O41A Passleys Farm, 79.06 347 P P 11 27 13.2 -1.0
baz=166,SNR=9.8
P38A Dawn 79.11 344 P P 11 27 13.8 -0.7
baz=164,SNR=10
HDIL Hopedale 79.20 348 P P 11 27 14.3 -0.8
baz=168,SNR=9.2
HDIL Hopedale 79.20 348 eP P 11 27 14.6 -0.4
ALLY Alegheny Colle 79.21 355 eP P 11 27 14.1 -0.9
R32A Long Quarter, 79.21 340 P P 11 27 15.1 -0.1
baz=160,SNR=14
Q34A Chapman 79.22 342 P P 11 27 15.1 -0.1
baz=162,SNR=13
O40A La Belle 79.25 346 P P 11 27 14.7 -0.6
baz=166,SNR=9.1
P37A Lathrop 79.25 344 P P 11 27 14.6 -0.7
baz=164,SNR=5.6
BRYW Bryant College 79.27 2 eP P 11 27 16.4 +1.0
KSU1 Kansas State U 79.31 342 P P 11 27 14.7 -1.0
baz=162
KSU1 Kansas State U 79.31 342 eP P 11 27 15.9 +0.2
TSUM Tsumeb 79.42 106 eP P 11 27 17.9 +0.8
BOSA Boshof 79.46 118 P P 11 27 16.9 -0.3
comp=Z,27nm,0.9s,baz=213,slow=4.1,SNR=21
BOSA LR LR 11 58 25.6
comp=Z,467nm,19.0s,baz=250,slow=33
BOSA Boshof 79.46 118 eP P 11 27 17.7 +0.5
BOSA Boshof 79.46 118 eP P 11 27 17.6 +0.5
P36A Good Intent, A 79.47 343 P P 11 27 15.6 -1.0
baz=163,SNR=8.5
O39A Kirksville 79.51 345 P P 11 27 16.2 -0.6
baz=165,SNR=8.9
Q33A Connelly Farm, 79.52 341 P P 11 27 16.8 0.0
baz=161,SNR=9.3
BINY Binghamton 79.56 358 eP P 11 27 17.8 +0.8
O38A Galt 79.57 345 P P 11 27 16.4 -0.7
baz=164
P35A Duane Minner, 79.58 343 P P 11 27 16.6 -0.5
baz=162,SNR=8.0
QUA2 Belchertown 79.62 1 eP P 11 27 18.0 +0.8
Q32A Meitler Ranch, 79.71 340 P P 11 27 17.7 -0.2
baz=160,SNR=9.9
T25A Trinidad 79.74 335 P P 11 27 18.7 +0.3
baz=156,SNR=12
T25A Trinidad 79.74 335 eP P 11 27 19.1 +0.8
WES Weston 79.74 2 eP P 11 27 19.4 +1.5
WES Weston 79.74 2 eP P 11 27 19.4 +1.5
O37A Wolven Farm, M 79.76 344 P P 11 27 17.4 -0.7
baz=164,SNR=7.3
P34A Walnut Farm, R 79.79 342 P P 11 27 18.1 -0.1
baz=162,SNR=8.8
W18A Petrified Fore 79.85 331 P P 11 27 18.3 -0.6
baz=152
W18A Petrified Fore 79.85 331 eP P 11 27 19.9 +1.0
comp=Z,65nm,1.1s
CBKS Cedar Bluff 79.86 340 P P 11 27 18.9 +0.1
baz=159,SNR=14
CBKS Cedar Bluff 79.86 340 eP P 11 27 19.2 +0.4
CBKS Cedar Bluff 79.86 340 eP P 11 27 19.2 +0.4
P33A Williams Farm, 79.90 341 P P 11 27 18.1 -0.8
baz=161,SNR=6.6
O36A Bolckow 79.91 344 P P 11 27 18.2 -0.7
baz=163,SNR=5.0
TRY Troy 80.06 360 eP P 11 27 20.6 +0.9
N39A Derby Farms, D 80.10 346 P P 11 27 19.2 -0.7
baz=165,SNR=11
MMNY Mt. Morris Dam 80.16 357 eP P 11 27 20.8 +0.6
AAM Ann Arbor 80.16 352 eP P 11 27 20.1 -0.1
AAM pmax pmax
comp=Z,30nm,0.3s
AAM Ann Arbor 80.16 352 eP P 11 27 20.1 -0.1
comp=Z,30nm,0.3s
N38A Joes South For 80.17 345 P P 11 27 19.6 -0.7
baz=164,SNR=6.3
GLA Glamis 80.19 326 P P 11 27 19.0 -1.7
baz=148,SNR=6.6
O35A Humboldt 80.25 343 P P 11 27 20.0 -0.7
baz=162,SNR=6.2
P32A Huiting Farm, 80.31 341 P P 11 27 20.8 -0.3
baz=160,SNR=9.0
N37A Lee Faris, Mou 80.34 344 P P 11 27 20.7 -0.5
baz=164,SNR=5.4
O34A Beatrice 80.36 342 P P 11 27 21.0 -0.4
baz=162,SNR=18
IKP In-Ko-Pah, Jac 80.44 325 P P 11 27 22.8 +0.7
baz=147,SNR=8.9
O33A Heron 80.48 342 P P 11 27 21.1 -0.9
baz=161,SNR=6.5
SWSC Sam W. Stewart 80.54 325 P P 11 27 22.5 0.0
baz=148,SNR=6.1
N36A Muff Farm, Cla 80.56 344 P P 11 27 21.9 -0.5
baz=163,SNR=7.3
M39A Webster 80.62 346 P P 11 27 22.4 -0.3
baz=165,SNR=9.7
SDCO Great Sand Dun 80.65 335 P P 11 27 24.3 +1.0
baz=155,SNR=20
SDCO Great Sand Dun 80.65 335 eP P 11 27 23.9 +0.6
Y12C Blythe 80.65 326 P P 11 27 23.7 +0.6
baz=148,SNR=19
Y12C Blythe 80.65 326 eP P 11 27 24.5 +1.5
ACCN Adirondack Com 80.71 360 eP P 11 27 23.2 +0.1
BAR Barrett 80.72 324 eP P 11 27 24.7 +1.2
N35A Tabor 80.76 343 P P 11 27 22.8 -0.6
baz=163,SNR=5.6
M38A Pleasantville 80.76 345 P P 11 27 23.2 -0.2
baz=164,SNR=8.3
MONP2 Monument Peak 80.78 325 P P 11 27 25.4 +1.3
baz=147,SNR=9.8
FFD Franklin Falls 80.82 1 eP P 11 27 25.1 +1.5
O32A Brockman Farm, 80.83 341 P P 11 27 24.1 +0.2
baz=161
WUAZ Wupatki 80.84 330 P P 11 27 25.6 +1.3
baz=151,SNR=18
WUAZ Wupatki 80.84 330 eP P 11 27 25.5 +1.3
KSCO Kaye Shedlock' 80.88 337 P P 11 27 25.2 +0.9
baz=157,SNR=8.4
KSCO Kaye Shedlock' 80.88 337 eP P 11 27 25.3 +0.9
L41A Preston 80.89 347 P P 11 27 23.8 -0.3
baz=167,SNR=9.2
M37A Trindle Farm, 80.92 345 P P 11 27 24.1 -0.2
baz=164,SNR=8.0
N34A Lincoln 80.93 343 P P 11 27 24.4 0.0
baz=162,SNR=7.6
PDMCI Parker Dam,Lak 80.95 327 P P 11 27 25.1 +0.4
baz=149,SNR=6.7
BC3 Big Chuckawall 80.98 326 P P 11 27 24.3 -0.7
baz=148,SNR=11
O31A Woolen Ranch, 81.00 340 P P 11 27 25.2 +0.4
baz=160,SNR=6.3
L40A Anamosa 81.00 347 P P 11 27 24.4 -0.3
baz=166,SNR=8.5
HNH Hanover 81.04 1 eP P 11 27 26.0 +1.1
S22A 4UR Ranch, Cre 81.11 334 P P 11 27 26.6 +0.8
baz=154,SNR=13
S22A 4UR Ranch, Cre 81.11 334 eP P 11 27 26.4 +0.6
M36A Felix, Anita 81.13 344 P P 11 27 25.0 -0.5
baz=163,SNR=6.6
L39A Vinton 81.21 346 P P 11 27 24.6 -1.2
baz=166,SNR=7.6
MVCO Mesa Verde 81.22 332 P P 11 27 26.5 +0.1
baz=153,SNR=9.9
MVCO Mesa Verde 81.22 332 eP P 11 27 27.2 +0.9
SCIA State Center 81.23 345 eP P 11 27 25.9 -0.1
comp=Z,78nm,1.2s
IRM Iron Mountain 81.27 326 P P 11 27 27.1 +0.7
baz=148
NCB Newcomb 81.30 360 eP P 11 27 26.5 +0.2
N32A Stulken Farm, 81.31 341 P P 11 27 26.4 -0.1
baz=161
MDV Middlebury 81.33 0 eP P 11 27 26.8 +0.4
M35A Neola 81.34 343 P P 11 27 25.7 -0.9
baz=163
K41A Shullsburg 81.37 348 P P 11 27 26.0 -0.7
baz=167
TPFO Pinon Flats 81.39 325 P P 11 27 28.7 +1.5
baz=SNR=15
PFO Pinyon Flats O 81.40 325 P P 11 27 28.5 +1.3
baz=147,SNR=16
PFO Pinyon Flats O 81.40 325 eP P 11 27 28.8 +1.6
PFO Pinyon Flats O 81.40 325 eP P 11 27 28.8 +1.6
L38A Oak Wood Farm, 81.41 346 P P 11 27 26.3 -0.6
baz=165,SNR=6.1
BELC Belle Mtn. Jos 81.52 325 P P 11 27 29.0 +1.2
baz=148,SNR=10
N31A Bailey Ranch, 81.53 341 P P 11 27 28.0 +0.4
baz=160
L37A Phoenix Point, 81.55 345 P P 11 27 27.2 -0.5
baz=164,SNR=6.4
LBNH Lisbon 81.58 1 eP P 11 27 28.6 +0.8
LBNH Lisbon 81.58 1 eP P 11 27 28.6 +0.8
M34A Aspy Farms, Fr 81.58 343 P P 11 27 27.8 0.0
baz=162,SNR=5.6
K40A Colesburg 81.61 347 P P 11 27 27.2 -0.7
baz=166,SNR=6.6
Q24A Divide 81.64 336 P P 11 27 29.4 +0.8
baz=155,SNR=11
Q24A Divide 81.64 336 eP P 11 27 28.6 0.0
JFWS Jewell Farm 81.66 348 eP P 11 27 27.8 -0.4
JFWS Jewell Farm 81.66 348 eP P 11 27 27.8 -0.4
L36A Harm Buss Farm 81.72 344 P P 11 27 28.1 -0.5
baz=163,SNR=7.7
MURC Murrieta 81.73 324 P P 11 27 29.4 +0.5
baz=147,SNR=8.3
K39A Oelwein 81.75 346 P P 11 27 28.1 -0.6
baz=166,SNR=9.5
M33A Taylor Creek F 81.80 342 P P 11 27 28.4 -0.5
baz=162
SCI2 San Clemente I 81.85 323 P P 11 27 28.8 -0.6
baz=146
K38A Parkersburg 81.86 346 P P 11 27 28.7 -0.6
baz=165
BGNE Belgrade 81.88 342 P P 11 27 28.7 -0.7
baz=161
BGNE Belgrade 81.88 342 eP P 11 27 29.6 +0.2
comp=Z,42nm,0.8s
LBTB Lobatse 81.89 115 eP P 11 27 30.7 +0.5
LBTB Lobatse 81.89 115 eP P 11 27 30.6 +0.5
L35A Bielow Farm, R 81.93 344 P P 11 27 29.0 -0.6
baz=163,SNR=12
LONY Lake Ozonia 81.95 359 eP P 11 27 30.1 +0.3
WVL Waterville 81.97 3 eP P 11 27 30.7 +1.0
L34A Svendsen Farm, 81.98 343 P P 11 27 29.3 -0.6
baz=162
GMRC Granite Mounta 82.02 326 P P 11 27 31.6 +1.1
baz=148,SNR=10
M31A Lambtecht Ranc 82.03 341 P P 11 27 30.2 0.0
baz=160
LDFC Landfair 82.03 327 eP P 11 27 32.3 +1.8
J41A Loganville 82.06 348 P P 11 27 29.5 -0.8
baz=167,SNR=6.9
PV01 Paradox Valley 82.07 333 eP P 11 27 31.6 +0.9
K37A Belmond 82.15 345 P P 11 27 29.8 -1.0
baz=164,SNR=7.2
BBRC Big Bear Solar 82.15 325 P P 11 27 32.2 +0.9
baz=147
FRNY Flat Rock 82.16 0 eP P 11 27 30.9 +0.1
K36A Gilmore City 82.19 345 P P 11 27 30.3 -0.7
baz=164,SNR=7.7
PV05 Paradox Valley 82.21 332 eP P 11 27 32.2 +0.7
J40A Soldiers Grove 82.21 347 P P 11 27 30.2 -1.0
baz=166,SNR=8.0
EMMW East Machias 82.23 4 eP P 11 27 31.9 +0.8
SADO Sadowa 82.25 356 eP P 11 27 31.0 -0.3
J39A Decorah 82.33 347 P P 11 27 30.9 -0.8
baz=166,SNR=8.3
HEC Hector,Ludlow 82.36 326 P P 11 27 32.8 +0.6
baz=147,SNR=9.4
L33A Hoskins 82.38 342 P P 11 27 31.7 -0.3
baz=161
L32A Elgin 82.40 342 P P 11 27 32.1 -0.1
baz=161
PV04 Paradox Valley 82.42 333 eP P 11 27 33.1 +0.5
PLVO Plevna 82.43 358 eP P 11 27 32.5 +0.3
K35A Storm Lake 82.44 344 P P 11 27 31.9 -0.4
baz=163
SMCO Snowmass 82.44 334 eP P 11 27 34.0 +1.1
J38A Wedel Dairy, R 82.45 346 P P 11 27 31.3 -1.1
baz=165,SNR=7.3
PV10 Paradox Valley 82.45 333 eP P 11 27 33.3 +0.4
BFSC Mount Baldy Ra 82.47 324 P P 11 27 33.5 +0.6
baz=146,SNR=15
OGNE Ogallala 82.49 339 P P 11 27 33.1 +0.4
baz=158,SNR=5.9
OGNE Ogallala 82.49 339 eP P 11 27 32.8 +0.1
comp=Z,24nm,0.9s
ISCO Idaho Springs 82.54 336 P P 11 27 33.5 +0.2
baz=155,SNR=10
ISCO Idaho Springs 82.54 336 eP P 11 27 34.0 +0.7
ISCO Idaho Springs 82.54 336 eP P 11 27 34.0 +0.7
PV09 Paradox Valley 82.60 333 eP P 11 27 35.0 +1.3
MWC Mount Wilson 82.64 324 eP P 11 27 35.1 +1.3
MWC Mount Wilson 82.64 324 eP P 11 27 35.1 +1.3
EKU East Kanab 82.64 330 eP P 11 27 34.8 +1.1
J37A Redenius Farm, 82.65 345 P P 11 27 32.8 -0.6
baz=164,SNR=9.3
PASC Pasadena Art C 82.66 324 eP P 11 27 34.6 +0.9
comp=Z,34nm,1.2s
GGN Saint George 82.67 5 eP P 11 27 34.5 +1.1
PKME Peaks-Kenny Pk 82.68 3 eP P 11 27 33.8 +0.4
TUQ Turquoise Moun 82.69 326 P P 11 27 35.1 +1.2
baz=148,SNR=8.9
KNB Kanab 82.72 329 eP P 11 27 35.5 +1.3
KNB Kanab 82.72 329 eP P 11 27 35.5 +1.3
K33A Hardington 82.73 343 P P 11 27 34.0 +0.2
baz=162
L31A Butterfield Fa 82.77 341 P P 11 27 34.1 0.0
baz=160,SNR=9.4
J36A Seneca 1, Swea 82.83 345 P P 11 27 34.0 -0.4
baz=164,SNR=9.2
PKCU Pink Cliffs 82.89 330 eP P 11 27 37.3 +2.1
LCMT Little Creek M 82.89 329 eP P 11 27 36.0 +1.0
GSC Goldstone, Bar 82.97 326 P P 11 27 36.3 +1.0
baz=147,SNR=8.4
GSC Goldstone, Bar 82.97 326 eP P 11 27 36.7 +1.3
GSC Goldstone, Bar 82.97 326 eP P 11 27 36.7 +1.3
K32A Verdigre 83.01 342 P P 11 27 35.4 +0.1
baz=161
BLG Laguna Peak, P 83.02 323 P P 11 27 35.1 -0.5
baz=146
J35A Milford 83.05 344 P P 11 27 35.4 0.0
baz=163
I38A Scanlan Farm, 83.12 347 P P 11 27 35.5 -0.4
baz=165,SNR=15
J34A George 83.14 344 P P 11 27 35.9 0.0
baz=162,SNR=6.8
EDW2 Edwards Air Fo 83.16 325 P P 11 27 36.9 +0.6
baz=146,SNR=8.4
K31A O'Neill 83.17 342 P P 11 27 36.7 +0.5
baz=160,SNR=9.8
SHOC Shoshone, Teco 83.23 326 P P 11 27 37.3 +0.7
baz=147
SHPR Sheep Range 83.26 327 eP P 11 27 38.3 +1.3
OSI Osito Audit: C 83.27 324 P P 11 27 36.8 -0.2
baz=146
I37A Lemond, Waseca 83.30 346 P P 11 27 36.2 -0.5
baz=164,SNR=9.3
SZCU Shurtz Canyon 83.33 329 eP P 11 27 38.8 +1.4
MTPU Mount Pierson 83.35 330 eP P 11 27 38.5 +0.9
J33A Davis 83.40 343 P P 11 27 36.7 -0.5
baz=162,SNR=7.3
CCUT Cedar City 83.40 329 eP P 11 27 39.4 +1.7
I36A Fitzsimmons Fa 83.43 345 P P 11 27 37.3 -0.1
baz=164
K30A Basset 83.44 341 P P 11 27 38.2 +0.6
baz=160,SNR=8.9
I35A Creekview Farm 83.47 345 P P 11 27 37.0 -0.6
baz=163,SNR=6.6
LRMC Laurel Mtn Rad 83.51 325 P P 11 27 38.9 +0.6
baz=146,SNR=7.2
LMN Caledonia Moun 83.56 6 eP P 11 27 38.3 +0.3
TRQ Mont Tremblant 83.56 359 eP P 11 27 38.0 0.0
N23A Red Feather La 83.64 336 P P 11 27 39.2 +0.2
baz=155,SNR=9.7
N23A Red Feather La 83.64 336 eP P 11 27 39.6 +0.7
SRU San Rafael Swe 83.65 332 eP P 11 27 39.4 +0.5
SRU San Rafael Swe 83.65 332 eP P 11 27 39.4 +0.5
J32A Parkston 83.65 342 P P 11 27 38.5 0.0
baz=161
ECSD EROS Data Cent 83.71 343 P P 11 27 38.4 -0.4
baz=162,SNR=39
ECSD EROS Data Cent 83.71 343 eP P 11 27 38.5 -0.4
O20A White River Ci 83.73 334 P P 11 27 39.5 +0.2
baz=153,SNR=7.8
O20A White River Ci 83.73 334 eP P 11 27 39.9 +0.6
ARVC Arvin 83.75 324 P P 11 27 40.4 +1.2
baz=146
H37A Dierke Farm, C 83.75 346 P P 11 27 38.7 -0.4
baz=165,SNR=6.8
MSU Marysvale 83.76 331 eP P 11 27 40.6 +1.1
MSU Marysvale 83.76 331 eP P 11 27 40.6 +1.1
J31A Geddes 83.80 342 P P 11 27 39.4 +0.1
baz=160,SNR=7.3
I34A Hadley 83.83 344 P P 11 27 39.4 0.0
baz=163
PHWY Pilot Hill 83.85 336 eP P 11 27 39.8 -0.2
MPMC Manual Prospec 83.90 326 P P 11 27 41.1 +0.8
baz=147,SNR=7.1
H36A Jessenland, He 83.94 346 P P 11 27 40.4 +0.4
baz=164,SNR=5.8

FURC	Furnace Creek, baz=147,SNR=8.9	84.97	326	P		P		11 27 41.6	+1.3
PKM	Mcpherson Peak baz=145,SNR=13	84.01	323	P		P		11 27 42.1	+1.3
J30A	Dallas baz=160,SNR=7.6	84.02	341	P		P		11 27 40.2	-0.2
ISA	Isabella, Lake baz=146,SNR=7.9	84.02	325	P		P		11 27 42.6	+1.8
ISA	Isabella, Lake	84.02	325	*e*P		P		11 27 42.3	+1.6
ISA	Isabella, Lake	84.02	325	*e*P		P		11 27 42.3	+1.6
P17A	Butcher Ranch,	84.05	332	*e*P		P		11 27 41.5	+0.6
I33A	Coleman baz=162,SNR=6.1	84.05	343	P		P		11 27 40.4	-0.2
TMUT	Trail Mountain	84.07	332	*e*P		P		11 27 42.0	+0.8
TPNV	Topopah Spring baz=148,SNR=42	84.10	327	P		P		11 27 42.4	+1.1
TPNV	Topopah Spring	84.10	327	*e*P		P		11 27 42.7	+1.4
TPNV	Topopah Spring	84.10	327	*e*P		P		11 27 42.7	+1.4
DAC	Darwin (Calif)	84.13	326	*e*P		P		11 27 42.4	+1.0
DAC	comp=Z,51nm,1.2s			pmax		pmax			
DAC	Darwin (Calif) comp=Z,51nm,1.2s	84.13	326	*e*P		P		11 27 42.4	+1.0
I32A	Karley and Nic baz=161	84.18	343	P		P		11 27 41.1	-0.2
H35A	Sunnyside Ranc baz=163,SNR=15	84.24	345	P		P		11 27 40.8	-0.8
SPMN	Marine on St. baz=165,SNR=7.1	84.35	346	P		P		11 27 41.5	-0.6
SPMN	Marine on St.	84.35	346	*e*P		P		11 27 41.0	-1.0
H34A	Spellman Lake, baz=163,SNR=10	84.41	344	P		P		11 27 42.1	-0.3
I31A	Royce, Wessing baz=160	84.44	342	P		P		11 27 42.4	-0.2
SMMC	Simmler baz=145,SNR=6.5	84.44	323	P		P		11 27 44.7	+1.8
VES	Vestal, Richgr baz=146,SNR=12	84.45	324	P		P		11 27 44.4	+1.6
CWC	Cottonwood Cre baz=146	84.49	325	P		P		11 27 44.2	+1.0
G36A	St. Michael baz=164,SNR=8.2	84.54	346	P		P		11 27 42.9	-0.1
COWI	Conover	84.59	349	*e*P		P		11 27 43.0	-0.3
H32A	Carlson Farm, baz=161,SNR=8.7	84.63	343	P		P		11 27 43.1	-0.5
GRAC	Grapevine Rang baz=147,SNR=9.4	84.63	326	P		P		11 27 44.9	+1.1
H33A	Prehn Over Nor baz=162,SNR=7.3	84.64	344	P		P		11 27 43.3	-0.3
G35A	Watkins baz=164,SNR=6.9	84.67	345	P		P		11 27 43.4	-0.3
H31A	Wolsey baz=161,SNR=6.9	84.85	342	P		P		11 27 44.1	-0.6
PAGB	Antelope Grade	84.90	324	*e*P		P		11 27 47.2	+2.1
RCTC	Rector, Farmer baz=146,SNR=6.3	84.90	325	P		P		11 27 46.0	+0.9
LMQ	La Malbaie	84.93	2	*e*P		P		11 27 44.8	-0.1
SUSD	Miller baz=160	84.93	342	P		P		11 27 44.7	-0.3
G34A	Benson baz=163,SNR=6.0	84.93	345	P		P		11 27 44.6	-0.4
R11A	Troy Canyon, C baz=148,SNR=24	85.00	328	P		P		11 27 46.5	+0.8
R11A	Troy Canyon, C	85.00	328	*e*P		P		11 27 46.7	+0.9
G33A	Ortonville baz=162,SNR=6.1	85.06	344	P		P		11 27 45.1	-0.5
TIN	Tinemaha, Big baz=146	85.06	326	P		P		11 27 46.9	+0.9
F36A	Milaca baz=164,SNR=12	85.10	346	P		P		11 27 45.0	-0.9
K22A	Casper baz=155,SNR=7.1	85.41	336	P		P		11 27 48.1	+0.4
K22A	Casper	85.41	336	*e*P		P		11 27 48.1	+0.4
DUG	Dugway, Tooele baz=150,SNR=69	85.46	331	P		P		11 27 48.6	+0.6
DUG	Dugway, Tooele	85.46	331	*e*P		P		11 27 48.9	+0.9
DUG	Dugway, Tooele	85.46	331	*e*P		P		11 27 48.9	+0.9
G31A	Conde baz=161	85.49	343	P		P		11 27 47.4	-0.4
CTU	Camp Tracy	85.49	332	*e*P		P		11 27 48.9	+0.7
E37A	Wrenshall baz=165	85.58	347	P		P		11 27 47.8	-0.4
F33A	5 Mile Ranch, baz=162,SNR=8.6	85.64	344	P		P		11 27 47.9	-0.7
E36A	McGregor baz=165,SNR=9.3	85.68	347	P		P		11 27 48.6	-0.1
TCUT	Toone Canyon	85.73	332	*e*P		P		11 27 50.1	+0.7
MLAC	Mammoth, Mammo baz=146,SNR=9.3	85.81	326	P		P		11 27 51.6	+1.7
F32A	Veblen baz=162	85.85	344	P		P		11 27 49.7	+0.1
E35A	Pequot Lakes baz=164	85.94	346	P		P		11 27 50.1	+0.1
RSSD	Black Hills baz=156	85.99	339	P		P		11 27 50.6	-0.1
RSSD	Black Hills	85.99	339	*e*P		P		11 27 50.5	-0.1
RSSD	Black Hills	85.99	339	*e*P		P		11 27 50.5	-0.1
E34A	Wadena baz=163	86.05	345	P		P		11 27 50.9	+0.3
F31A	Hecla baz=161,SNR=6.0	86.10	343	P		P		11 27 50.7	-0.1
D37A	Cotton baz=165,SNR=6.0	86.15	347	P		P		11 27 50.5	-0.5
BGU	Big Grassy Mou	86.17	331	*e*P		P		11 27 51.8	+0.3
E33A	Westby DABS, E baz=162,SNR=5.6	86.21	345	P		P		11 27 51.4	+0.1
HWUT	Hardware Ranch	86.22	332	*e*P		P		11 27 51.8	0.0
F30A	Leola baz=160	86.26	342	P		P		11 27 51.6	0.0
SPUT	South Promonto	86.28	332	*e*P		P		11 27 52.9	+0.8
D36A	Goodland baz=165	86.30	347	P		P		11 27 52.5	+0.7
H25A	Fruitdale baz=157,SNR=7.6	86.32	339	P		P		11 27 52.3	+0.3
D35A	Remer baz=164,SNR=12	86.38	346	P		P		11 27 51.6	-0.5
TVH2	Borealis Mine	86.39	326	*e*P		P		11 27 54.1	+1.3
C39A	Grand Marais baz=167,SNR=9.2	86.42	349	P		P		11 27 51.8	-0.5
F29A	Eureka baz=160,SNR=7.7	86.45	342	P		P		11 27 51.9	-0.6
C38A	Sawbill Land, baz=166,SNR=9.8	86.50	348	P		P		11 27 52.1	-0.7
BW06	Boulder Array baz=152,SNR=70	86.52	334	P		P		11 27 53.1	-0.2
BW06	Boulder Array	86.52	334	*e*P		P		11 27 52.4	-0.8
BW06				*e*P		P		11 27 53.0	-0.3
PD31	Pinedale Array	86.52	334	*e*P		P		11 27 53.0	-0.3
PDAR	Pinedale Array comp=Z,5.1nm,0.9s,baz=145,slow=5.4,SNR=35	86.52	334	P		P		11 27 53.0	-0.3
E32A	Braaten, Kindr baz=162	86.53	344	P		P		11 27 52.7	-0.2
TORD	Torodi Ar. Bea comp=Z,12nm,0.8s,baz=233,slow=4.1,SNR=47	86.64	71	P		P		11 27 54.1	-0.1
TORD				LR		LR		12 06 40.6	
	comp=Z,484nm,18.1s,baz=200,slow=36								
C37A	Embarrass baz=166,SNR=6.6	86.66	348	P		P		11 27 52.9	-0.7
E31A	Nome baz=161,SNR=7.6	86.67	343	P		P		11 27 53.3	-0.3
EYMN	Ely baz=166,SNR=9.6	86.76	348	P		P		11 27 53.4	-0.7
EYMN	Ely	86.76	348	*e*P		P		11 27 53.5	-0.5
D33A	AnnSam, Waubun baz=163	86.79	345	P		P		11 27 53.6	-0.6
WAKR	Walker	86.80	326	*e*P		P		11 27 56.8	+2.1
C36A	Pine Crest Far baz=165,SNR=13	86.81	347	P		P		11 27 53.7	-0.5
HVU	Hansel Valley	86.81	332	*e*P		P		11 27 54.8	+0.1
HVU	Hansel Valley	86.81	332	*e*P		P		11 27 54.8	+0.1
CMB	Columbia Colle	86.84	325	*e*P		P		11 27 56.0	+1.3
CMB	Columbia Colle	86.84	325	*e*P		P		11 27 56.0	+1.3
C35A	Jirik Farms, M baz=164,SNR=9.8	86.96	346	P		P		11 27 54.8	-0.2
D32A	Dogwood Acres, baz=162,SNR=7.6	87.03	344	P		P		11 27 54.9	-0.4
AHID	Auburn Hatcher	87.06	333	*e*P		P		11 27 55.9	0.0
D31A	Mcclaflin, Tow baz=161,SNR=14	87.10	344	P		P		11 27 55.9	+0.2
YERR	Yerington	87.10	326	*e*P		P		11 27 57.9	+1.7
PNTR	Pine Nut	87.35	326	*e*P		P		11 27 59.2	+1.8
C33A	Trail baz=163	87.36	345	P		P		11 27 56.2	-0.7
BMN	Battle Mountai	87.43	328	*e*P		P		11 27 57.5	-0.2
BMN	comp=Z,11nm,0.9s				pmax	pmax			
BMN	Battle Mountai comp=Z,12nm,0.9s	87.43	328	*e*P		P		11 27 57.5	-0.2
REDW	Red Top Meadow	87.50	334	*e*P		P		11 27 58.1	+0.2
B35A	Bob, Littlefor baz=164,SNR=8.4	87.55	347	P		P		11 27 57.4	-0.4
SNOW	Snow King Moun	87.55	334	*e*P		P		11 27 58.4	+0.2
C32A	Crookston baz=162	87.58	345	P		P		11 27 57.6	-0.3
LOHW	Long Hollow	87.63	334	*e*P		P		11 27 58.8	+0.1
TPAW	Teton Pass	87.64	334	*e*P		P		11 27 58.4	-0.3
PAHR	Pah Rah Range	87.76	326	*e*P		P		11 28 00.8	+1.5
MOOW	Moose Ponds	87.80	334	*e*P		P		11 27 59.3	-0.1
C31A	Landman Farms, baz=161,SNR=10	87.81	344	P		P		11 27 58.7	-0.4
B33A	Robert and Kas baz=163,SNR=7.8	87.81	346	P		P		11 27 58.6	-0.5
B34A	Aery, Baudette baz=164,SNR=6.1	87.84	346	P		P		11 27 58.5	-0.7
AFDM	Forest Hills D	87.85	325	*e*P		P		11 28 00.4	+0.8
AGMN	Agassiz Nation baz=163,SNR=41	87.89	345	P		P		11 27 59.0	-0.5
AGMN	Agassiz Nation	87.89	345	*e*P		P		11 27 59.3	-0.2
IMW	Indian Meadow	87.99	334	*e*P		P		11 28 00.8	+0.3
FLWY	Flagg Ranch	88.07	334	*e*P		P		11 28 00.7	0.0
B32A	Ashes, Strandq baz=162,SNR=8.4	88.12	345	P		P		11 27 60.0	-0.6
D26A	Manning baz=158,SNR=13	88.22	341	P		P		11 28 01.0	-0.1
MDND	Maddock baz=160,SNR=6.6	88.28	343	P		P		11 28 01.1	-0.3
MDND	Maddock	88.28	343	*e*P		P		11 28 01.4	+0.1
H17A	Grant Village baz=152	88.31	334	P		P		11 28 01.9	0.0
H17A	Grant Village comp=Z,7.1nm,0.8s	88.31	334	*e*P		P		11 28 04.4	+2.5
B31A	Grenbush Farm baz=161,SNR=7.7	88.39	344	P		P		11 28 01.4	-0.3
A33A	Warroad baz=163,SNR=9.3	88.41	346	P		P		11 28 01.8	-0.1
RLMT	Red Lodge baz=153,SNR=18	88.51	336	P		P		11 28 03.0	+0.2
RLMT	Red Lodge	88.51	336	*e*P		P		11 28 02.9	+0.1
ORV	Oroville	88.58	325	*e*P		P		11 28 04.3	+1.3
ORV	Oroville	88.58	325	*e*P		P		11 28 04.3	+1.3
A32A	Rocking H Ranc baz=162	88.61	345	P		P		11 28 02.5	-0.3
YMR	Madison River	88.68	334	*e*P		P		11 28 05.0	+1.4
YHH	Holmes Hill	88.75	334	*e*P		P		11 28 05.6	+1.6
A31A	Linda, St. Vin baz=162	88.77	345	P		P		11 28 03.2	-0.3
HLID	Hailey baz=149,SNR=59	88.96	332	P		P		11 28 05.3	+0.4
HLID	Hailey	88.96	332	*e*P		P		11 28 05.9	+1.0
LAO	LASA Array baz=155	88.97	338	P		P		11 28 05.2	+0.6
LAO	LASA Array comp=Z,21nm,1.4s	88.97	338	*e*P		P		11 28 08.2	+3.5
QLMT	Earthquake Lak	88.98	334	*e*P		P		11 28 06.5	+1.5
C25A	Freed Ranch, W baz=157	89.07	340	P		P		11 28 05.4	+0.3
O03D	Paynes Creek baz=144	89.32	325	P		P		11 28 07.1	+0.6
MFID	Camas Ranch	89.38	331	*e*P		P		11 28 07.4	+0.6
MCMT	McKenzie Canyo	89.48	333	*e*P		P		11 28 07.9	+0.6
WVOR	Wild Horse Val	89.69	328	*e*P		P		11 28 08.5	+0.3
WVOR	Wild Horse Val	89.69	328	*e*P		P		11 28 08.5	+0.3
ULM	Lac du Bonnet comp=Z,5.4nm,0.7s,baz=181,slow=5.7,SNR=7.9	89.76	346	P		P		11 28 07.3	-0.9
BOZ	Bozeman (W) baz=151,SNR=6.2	89.76	334	P		P		11 28 08.2	-0.4
BOZ	Bozeman (W)	89.76	334	*e*P		P		11 28 08.5	0.0
BOZ	Bozeman (W)	89.76	334	*e*P		P		11 28 08.5	0.0
A26A	Wade Farm, Ken baz=158	89.85	342	P		P		11 28 08.9	+0.2
DLMT	Dillon	89.85	334	*e*P		P		11 28 09.6	+0.7
MOD	Modoc Plateau	89.96	327	*e*P		P		11 28 10.9	+1.3
DGMT	Dagmar baz=156	90.02	340	P		P		11 28 09.7	+0.1
DGMT	Dagmar comp=Z,69nm,1.3s	90.02	340	*e*P		P		11 28 09.6	+0.1
KMRM	Mail Ridge	90.13	324	*e*P		P		11 28 13.0	+2.7
LRM	Limekiln Ridge	90.20	334	*e*P		P		11 28 11.2	+0.5
N02D	Trinity Center baz=143	90.27	325	P		P		11 28 11.4	+0.5
M04C	Macdoel baz=144	90.53	326	P		P		11 28 13.5	+1.3
M02C	Callahan baz=143	90.67	325	P		P		11 28 14.2	+1.4
YBH	Yreka Blue Hor	90.88	326	*e*P		P		11 28 14.3	+0.5
YBH	Yreka Blue Hor	90.88	326	*e*P		P		11 28 14.3	+0.5
K05A	Summer Lake	90.88	327	*e*P		P		11 28 15.4	+1.6
BMO	Blue Mountains	91.16	331	*e*P		P		11 28 15.4	+0.3
EGMT	Eagleton baz=152,SNR=5.0	91.23	337	P		P		11 28 14.2	-1.1
EGMT	Eagleton comp=Z,14nm,1.2s	91.23	337	*e*P		P		11 28 15.2	-0.1
J05D	Fort Rock, OR baz=144	91.48	327	P		P		11 28 16.8	+0.2
MSO	Missoula baz=149,SNR=8.1	91.59	334	P		P		11 28 16.1	-0.8
MSO	Missoula	91.59	334	*e*P		P		11 28 21.0	+4.0
L02D	Cave Junction, baz=143	91.62	325	P		P		11 28 16.9	-0.2
SLMT	Seeley Lake	91.79	334	*e*P		P		11 28 18.7	+0.7
F10A	Beach Ranch, E	92.07	331	*e*P		P		11 28 19.2	0.0
G08A	Pilot Rock	92.18	330	*e*P		P		11 28 20.4	+0.6
SWMT	Swartz Lake	92.19	334	*e*P		P		11 28 20.2	+0.5
BLMT	Blacktail Moun	92.75	334	*e*P		P		11 28 23.1	+0.7
BSMT	Bassoo Peak	92.76	334	*e*P		P		11 28 23.0	+0.5
HAWA	Hanford comp=Z,28nm,1.2s	93.31	330	*e*P		P		11 28 25.7	+0.9
WALA	Waterton Lakes comp=Z,28nm,1.0s	93.49	335	*e*P		P		11 28 25.5	-0.3
D08A	Wollman Farm,	93.62	331	*e*P		P		11 28 26.6	+0.4
NEW	Newport comp=Z,2.6nm,0.9s,baz=240,slow=7.6,SNR=3.3	93.95	333	P		P		11 28 27.1	-0.7
NEW	Newport baz=147	93.95	333	P		P		11 28 27.5	-0.3
C09A	Chrisman Ranch	93.99	332	*e*P		P		11 28 28.6	+0.7
LON	Longmire	94.52	329	*e*P		P		11 28 31.6	+1.2
LON	Longmire	94.52	329	*e*P		P		11 28 31.6	+1.2
TAM	Tamanrasset	95.53	66	*e*P		P		11 28 36.1	+0.3
TAM	comp=Z,13nm,1.0s			pmax		pmax			
TAM	Tamanrasset comp=Z,12nm,1.0s	95.53	66	*e*P		P		11 28 36.1	+0.3
EDM	Edmonton	96.89	337	*e*P		P		11 28 39.2	-1.9
EDM	comp=Z,6.0nm,1.1s			pmax		pmax			
EDM	Edmonton comp=Z,5.7nm,1.1s	96.89	337	*e*P		P		11 28 39.2	-1.9
ESDC	Sonseca Array comp=Z,0.2nm,0.3s,baz=254,slow=4.5,SNR=4.2	100.03	47	P		Pdif		11 28 55.6	+0.1
DAVA	Damuels comp=Z,5.2nm,1.1s	112.63	47	*i* PKiKP		PKiKP		11 33 45.9	-0.6
FETA	Feichten comp=Z,6.6nm,1.0s	112.99	48	*i* PKiKP		PKiKP		11 33 48.4	+1.2
RETA	Reutte comp=Z,5.8nm,1.0s	113.25	47	*i* pPKiKP		pPKiKP		11 33 54.2	-1.1
MOTA	Moosalm comp=Z,3.8nm,0.7s	113.37	48	*i* PKiKP		PKiKP		11 33 48.2	+0.3
WTTA	Wattenberg comp=Z,3.3nm,0.7s	113.64	48	*i* pPKPdf		PKiKP		11 33 54.6	+6.1
ASAR	Alice Springs comp=Z,0.5nm,0.9s,baz=138,slow=2.6,SNR=5.7	113.70	208	PKiKP		PKiKP		11 33 47.8	-1.5
ASAR				PKKPbc		PKKPbc		11 44 31.4	+0.1
	comp=Z,0.9nm,0.8s,baz=340,slow=3.3,SNR=8.8								
ABTA	Abfaltersbach comp=Z,6.8nm,1.0s	113.90	49	*i* pPKPdf		PKiKP		11 33 54.4	+5.5
MYKA	Terra Mystica comp=Z,3.8nm,0.7s	114.52	49	*i* pPKPdf		PKPdf		11 33 56.6	+6.6
OBKA	Obir comp=Z,2.8nm,0.7s	115.01	50	*i* pPKPdf		PKPdf		11 33 58.0	+7.1
SOKA	Soboth comp=Z,10.0nm,1.3s	115.38	50	*i* PKiKP		PKPdf		11 33 51.4	-0.3
MOA	Molln comp=Z,2.4nm,0.6s	115.48	48	*i* PKiKP		PKiKP		11 33 51.9	+0.2
GERES	GERESS Array B comp=Z,4.3nm,0.9s,baz=222,slow=1.6,SNR=12	115.63	47	PKP		PKPdf		11 33 49.8	-2.3
KHC	Kasperske Hory	115.69	47	*e*PKP		PKPdf		11 33 51.6	-0.5
KHC				*ep*PKP		PKiKP		11 33 58.5	+6.4
KHC	Kasperske Hory	115.69	47	*e*PKiKP		PKPdf		11 33 51.6	-0.5
KHC				*e*				11 33 58.5	
ARSA	Arzberg comp=Z,7.3nm,1.2s	115.95	49	*i* PKiKP		PKPdf		11 33 52.5	-0.2
CLL	Collm comp=Z,5.0nm,0.9s	116.40	44	*i* PKiKP		PKPdf		11 33 53.3	0.0
CLL				*e*PP		PP		11 35 03.0	+2.4
CLL				*e*PS		PKKPdf		11 44 52.0	+3.0
CLL	comp=N,100nm,18.7s			Lm		MLR		12 21 00.0	
CLL	comp=E,600nm,20.8s			Lm		MLR		12 21 00.0	
CLL	comp=Z,700nm,20.8s			Lm		MLR		12 21 00.0	
CONA	Conrad Observa comp=Z,4.9nm,0.9s	116.47	49	*i* PKiKP		PKiKP		11 33 54.7	+0.9
BRG	Berggiesshubel	116.72	45	*e*PKiKP		PKPdf		11 33 54.1	+0.1
BRG	comp=Z,4.0nm,1.0s			pmax		pmax			
BRG	Berggiesshubel comp=Z,4.3nm,1.0s	116.72	45	*e*PDIFF		PKPdf		11 33 54.1	+0.1
BRG				SKS				11 44 55.0	
BRG				SDIFF				11 46 26.0	
ILAR	Eielson Array comp=Z,0.6nm,0.8s,baz=179,slow=1.2,SNR=7.0	116.91	333	PKP		PKPdf		11 33 52.2	-1.8
ILAR				PP		PP		11 35 08.3	+4.5
	comp=Z,1.7nm,1.2s,baz=166,slow=3.7,SNR=3.6								
ILAR				PKKPbc		PKKPbc		11 44 20.4	-0.5
	comp=Z,0.5nm,0.7s,baz=278,slow=4.4,SNR=6.1								
WRA	Warramunga Arr comp=Z,1.9nm,1.1s,baz=156,slow=1.8,SNR=8.7	116.92	210	PKP		PKPdf		11 33 54.0	-1.5
COLA	College	117.31	332	*e*PKiKP		PKPdf		11 33 55.1	+0.4
DPC	Dobruska-Polom	117.83	46	*e*PKP		PKPdf		11 33 56.5	+0.3
DPC				*ep*PKP		pPKPdf		11 34 03.2	-0.8
DPC	Dobruska-Polom	117.83	46	*e*PKiKP		PKPdf		11 33 56.5	+0.3
DPC				*e*				11 34 03.2	
VYHS	Vyhne	118.50	49	*e*PKP		PKPdf		11 33 57.5	0.0
OKC	Ostrava-Krasne	118.67	48	*e*PKP		PKPdf		11 33 58.0	+0.2
OKC	Ostrava-Krasne	118.67	48	*e*PKiKP		PKPdf		11 33 58.0	+0.2
MDVR	Moldovita	118.67	54	*i*P		PKPdf		11 33 57.7	-0.3
BZS	Buzias	118.97	53	*i*P		PKPdf		11 33 57.9	-0.6
LANS	Liptovska Anna	119.16	49	*e*PKP		PKPdf		11 34 00.2	+1.4
KECS	Kecovo	119.49	50	*e*PKP		PKPdf		11 33 59.3	-0.1
NIE	Niedzica	119.76	49	*e*PKP		PKPdf		11 34 00.8	+0.8
NB2	NORSAR Subarra comp=Z,2.9nm,0.9s,baz=248,slow=1.9	119.81	34	PKPdf		PKPdf		11 33 59.1	-0.6
NOA	NORSAR Array B comp=Z,2.0nm,1.0s,baz=147,slow=19,SNR=3.4	119.81	34	PKP		PKPdf		11 33 59.5	-0.2
ARR	Arges	120.80	54	*i*P		PKPdf		11 34 02.0	-0.1
MLR	Muntele Rosu	121.69	55	*i*P		PKPdf		11 34 03.6	-0.3
KLNR	Kaliningrad	121.73	43	*i*PKiKP		PKPdf		11 34 03.3	-0.2
BURAR	Bucovina Array	122.05	52	*i*P		PKPdf		11 34 04.9	+0.4
PLOR	Plostina	122.29	54	*i*P		PKPdf		11 34 04.0	-0.9
VRI	Vrincioaia	122.34	54	*i*P		PKPdf		11 34 04.1	-0.9
TESR	Tescani	122.54	54	*i*P		PKPdf		11 34 04.9	-0.5
CFR	Carcaliu	123.00	56	*i*P		PKPdf		11 34 06.0	-0.2
SUW	Suwalki	123.15	44	*e*PKP		PKPdf		11 34 06.0	-0.2
KIS	Kishinev	124.11	54	*e*L		L		11 44 24.0	
KIS				LRM		MLR		11 52 14.0	
BRTR	comp=Z,500nm,16.0s Keskin Array B comp=Z,6.8nm,0.8s,baz=191,slow=3.6,SNR=27	124.68	64	PKP		PKPdf		11 34 09.3	-0.5
KIEV	Kiev	125.58	50	*i* PKiKP		PKPdf		11 34 10.0	-1.0
AKASG	Malin Array Be comp=Z,5.7nm,0.8s,baz=266,slow=2.4,SNR=12	125.59	50	PKP		PKPdf		11 34 09.6	-1.4
AKASG				PP		PP		11 35 59.9	-3.4
VSU	comp=Z,0.2nm,0.2s,baz=254,slow=6.5,SNR=6.3 Vasula	126.36	40	*c i* PKiKP		PKPdf		11 34 12.2	0.0
VSU	comp=Z,45nm,1.2s			pmax		pmax			
FINES	FINESS Array B comp=Z,5.0nm,0.9s,baz=203,slow=8.3,SNR=6.6	126.74	36	PKP		PKPdf		11 34 12.1	-0.8
ARCES	ARCESS Array B comp=Z,4.5nm,0.9s,baz=118,slow=1.8,SNR=5.4	127.90	26	PKP		PKPdf		11 34 14.4	-0.5
ANN	Anapa comp=Z,33nm,0.8s	129.07	59	*i* PKiKP		PKPdf		11 34 23.7	+5.8
ANN				pmax		pmax			
SOC	Sochi	130.28	61	*e*PKiKP		PKPdf		11 34 20.2	0.0
SOC				*e*				11 36 41.2	
SOC				*e*PPP		PPP		11 39 23.1	
SOC				*e*PS		PS		11 46 34.0	-12
SOC	comp=Z,17nm,0.8s			pmax		pmax			
OBN	Obninsk	130.96	46	*i* PKiKP		PKPdf		11 34 22.2	+1.1
OBN				*e*				11 36 36.9	
OBN	comp=Z,7.0nm,0.5s			pmax		pmax			
VSR	Storozhevoye comp=Z,10.0nm,1.2s	131.80	51	*e*PKiKP		PKPdf		11 34 22.3	-0.5
VSR				pmax		pmax			
KIV	Kislovodsk comp=Z,34nm,1.1s	132.45	61	*e*PKiKP		PKPdf		11 34 24.6	+0.1
KIV				pmax		pmax			
GNI	Garni	132.82	67	*de*PKiKP		PKPdf		11 34 26.2	+0.8
NCK	Nalchik	132.96	62	*i* PKiKP		PKPdf		11 34 27.9	+2.6
ZEI	Tsey	132.98	63	*i* PKiKP		PKPdf		11 34 31.2	+5.5
KLMR	Klimovskoe	133.12	38	*e*PKiKP		PKPdf		11 34 24.4	-0.6
KLMR				*e*				11 36 49.1	
KLMR	comp=Z,17nm,1.0s			pmax		pmax			
VRH	Novokhopyorsk comp=Z,10.0nm,0.4s	133.38	51	*e*PKiKP		PKPdf		11 34 25.4	-0.4
VRH				pmax		pmax			
BILL	Bilibino	135.57	332	*e*PKiKP		PKPdf		11 34 31.3	+1.9
BILL				*e*				11 37 06.6	
BILL	comp=Z,8.0nm,1.2s			pmax		pmax			
PET	Petropavlovsk	141.14	310	*e*PKiKP		PKPdf		11 34 40.6	+0.5
PETK	Petropavlovsk- comp=Z,5.2nm,0.8s,baz=86,slow=6.7,SNR=8.9	141.71	311	PKP		PKPdf		11 34 39.6	-1.5
SOKR	Solikamsk	141.79	39	*d i* PKiKP		PKPdf		11 34 41.7	+0.7
SOKR	comp=Z,24nm,1.2s			pmax		pmax			
GEYT	Alibeck comp=Z,8.0nm,0.7s,baz=266,slow=4.5,SNR=11	142.20	74	PKhKP		PKPpre		11 34 38.1	
SEY	Seymchan	142.54	327	*i* PKiKP		PKPdf		11 34 44.0	+1.7
SKR	Severo-Kuril's	142.77	307	*e*PKiKP		PKPdf		11 34 45.0	+2.0
ARU	Arti comp=Z,9.3nm,0.6s,baz=281,slow=3.1,SNR=17	143.34	44	PKhKP		PKPpre		11 34 40.3	
ARU	Arti	143.34	44	*i*

BVAR					PKPab	**PKPab**	**11 35 09.8**	**+0.4**
	comp=Z,27nm,0.7s,baz=280,slow=3.4,SNR=19								
TYV	**Tymovskoe**	**151.22**	**309**	*e*PKIKP	**PKPdf**		**11 34 57.2**	**0.0**
TYV				pmax	pmax				
	comp=Z,40nm,1.0s								
YAK	**Yakutsk**	**151.72**	**337**	*e*PKIKP	**PKPbc**		**11 35 03.8**	**-0.1**
YAK				pmax	pmax				
	comp=E,14nm,1.0s								
YAK				pmax	pmax				
	comp=N,15nm,1.3s								
YAK				pmax	pmax				
	comp=Z,122nm,1.1s								
YAK				pmax	pmax				
	comp=Z,9.0nm,0.6s								
YAK				pmax	pmax				
	comp=N,2.0nm,0.6s								
YAK				pmax	pmax				
	comp=E,8.0nm,1.2s								
YSS	**Yuzh-Sakhalins**	**151.80**	**301**	*e*PKIKP	**PKPbc**		**11 35 04.0**	**-0.6**
YSS				*e*			11 35 11.0		
KK31	**Karatay Array**	**152.28**	**67**	PKIKP	**PKPbc**		**11 35 05.2**	**-0.7**
KK31				pmax	pmax				
	comp=Z,6.0nm,0.7s								
CHLP	**Challavanipeta**	**152.65**	**128**	*e*PKPbc	**PKPdf**		**11 35 03.6**	**+3.3**
OTUK	**Ortayu**	**153.15**	**56**	PKIKP	**PKPbc**		**11 35 07.0**	**-0.6**
OTUK				pmax	pmax				
	comp=Z,14nm,0.9s								
MNAS	**Manas**	**153.74**	**69**	PKIKP	**PKPbc**		**11 35 07.2**	**-2.1**
MNAS				pmax	pmax				
	comp=Z,10.0nm,0.9s								
MJAR	**Matsushiro Arr**	**154.67**	**277**	PKP	**PKPdf**		**11 35 00.7**	**-2.0**
	comp=Z,1.6nm,0.9s,baz=222,slow=1.7,SNR=4.9								
AAK	**Ala-Archa**	**155.21**	**68**	PKP	**PKPdf**		**11 35 02.6**	**-0.9**
	comp=Z,1.8nm,0.3s,baz=179,slow=3.7,SNR=7.2								
AAK				PKPab	**PKPab**		**11 35 27.3**	**-1.3**
	comp=Z,16nm,0.5s,baz=249,slow=1.9,SNR=8.9								
AAK				PP	**PP**		**11 39 09.8**	**+4.4**
	comp=Z,2.3nm,0.5s,baz=263,slow=2.6,SNR=5.5								
FRU	**Bishkek**	**155.30**	**68**	*e*PKIKP	**PKPdf**		**11 34 59.0**	**-4.4**
FRU				*e*			11 39 04.0		
TKM2	**Tokmak 2**	**156.02**	**68**	PKIKP	**PKPdf**		**11 35 03.6**	**-1.0**
TKM2				pmax	pmax				
	comp=Z,15nm,1.0s								
KSH	**Kashi**	**156.20**	**76**	*e*PKP	**PKPdf**		**11 35 03.8**	**-1.0**
KSH				*ep*PKP	pPKPdf		11 35 14.0	+1.4	
KSH				*es*PKP			11 35 18.0		
KSH				PKS	**PKSdf**		**11 38 36.0**	**-2.9**
KSH				*e*PP	**PP**		**11 39 13.5**	**+2.5**
KSH				SKS	**SKSdf**		**11 42 04.3**	**-5.4**
KSH				SKKS	**SKKSac**		**11 45 56.3**	**-2.4**
KSH				SS	**SS**		**11 58 58.5**	**-1.3**
KSH				AMB	AMB				
	comp=Z,180nm,5.8s								
KSH				LR	LR				
	comp=Z,57nm,6.6s								
KSH				LR	LR				
	comp=Z,150nm,6.5s								
KSH				LR	LR				
	comp=Z,110nm,7.9s								
KURBB	**Kurchatov Arra**	**156.36**	**48**	PKPab	**PKPab**		**11 35 31.9**	**-1.0**
	comp=Z,8.3nm,0.9s,baz=283,slow=4.6,SNR=12								
KURBB				PP	**PP**		**11 39 14.0**	**+2.9**
	comp=Z,4.0nm,1.0s,baz=282,slow=5.6,SNR=7.1								
KURK	**Kurchatov**	**156.38**	**48**	PKP2	**PKPab**		**11 35 31.9**	**-1.1**
KURK							11 39 14.0		
KURK	**Kurchatov**	**156.38**	**48**	PKPab	**PKPab**		**11 35 31.9**	**-1.1**
KURK				PP	**PP**		**11 39 14.0**	**+2.9**
NVS	**Novosibirsk**	**156.72**	**35**	*e*PKIKP	**PKPdf**		**11 35 04.6**	**-0.2**
NVS				*e*			11 35 32.2		
NVS				pmax	pmax				
	comp=Z,23nm,1.2s								
NVS				pmax	pmax				
	comp=E,9.0nm,1.3s								
ZALV	**Zalesovo Beam**	**158.00**	**35**	PKP	**PKPdf**		**11 35 05.4**	**-1.1**
	comp=E,6.6nm,1.0s,baz=299,slow=3.1,SNR=13								
ZALV				PKPab	**PKPab**		**11 35 38.2**	**-1.7**
	comp=E,17nm,0.9s,baz=295,slow=5.5,SNR=8.4								
PYUN	**Piuthan**	**158.18**	**109**	*e*P	**PKPab**		**11 35 41.2**	**-0.5**
KOLN	**Koldanda**	**158.46**	**111**	*e*P	**PKPab**		**11 35 41.9**	**-1.0**
KOLN	**Koldanda**	**158.46**	**111**	*e*P	**PKPab**		**11 35 42.0**	**-1.0**
BOD	**Bodaibo**	**159.26**	**348**	*e*PKP2	**PKPab**		**11 35 46.7**	**+1.5**
BOD				pmax	pmax				
	comp=Z,39nm,1.1s								
GKN	**Gorkha**	**159.35**	**112**	*e*P	**PKPab**		**11 35 46.0**	**-0.8**
DMN	**Daman**	**159.48**	**113**	*e*P	**PKPab**		**11 35 46.7**	**-0.7**
	comp=Z,81nm,1.1s								
USRK	**Ussuriysk Ar.**	**159.66**	**297**	PKP	**PKPdf**		**11 35 07.7**	**-1.1**
	comp=Z,2.0nm,0.6s,baz=134,slow=44,SNR=2.8								
USRK				PKPab	**PKPab**		**11 35 46.9**	**-0.5**
	comp=Z,1.0nm,0.5s,baz=72,slow=2.0,SNR=2.2								
PKIN	**Phulchoki**	**159.67**	**114**	*e*P	**PKPab**		**11 35 47.2**	**-1.1**
	comp=Z,33nm,0.7s								
KKN	**Kakani**	**159.71**	**113**	*e*P	**PKPab**		**11 35 47.7**	**-0.7**
CMAR	**Chiang Mai Arr**	**159.74**	**159**	PKP	**PKPdf**		**11 35 09.6**	**-0.1**
	comp=Z,0.6nm,0.3s,baz=263,slow=2.0,SNR=7.6								
CMAR				PKPab	**PKPab**		**11 35 46.3**	**-1.9**
	comp=Z,6.0nm,1.1s,baz=219,slow=4.4,SNR=6.7								
MKAR	**Makanchi Array**	**160.04**	**55**	PKP	**PKPdf**		**11 35 08.4**	**-0.7**
	comp=Z,3.7nm,1.0s,baz=323,slow=1.8,SNR=17								
MKAR				PKPab	**PKPab**		**11 35 47.9**	**-1.2**
	comp=Z,12nm,0.9s,baz=288,slow=4.1,SNR=14								
MKAR				PP	**PP**		**11 39 30.9**	**-0.5**
	comp=Z,3.6nm,1.0s,baz=294,slow=6.0,SNR=4.8								
RAMN	**Ramite**	**160.16**	**117**	*e*P	**PKPab**		**11 35 49.6**	**-0.8**
JIRN	**Jiri**	**160.29**	**115**	*e*P	**PKPab**		**11 35 50.0**	**-1.1**
QIZ	**Qiongzhong**	**161.15**	**190**	PKP	**PKPdf**		**11 35 09.3**	**-1.9**
QIZ				PP	**PP**		**11 39 37.8**	**+1.5**
QIZ				SS	SS		11 59 55.0	+5.7	
MDJ	**Mudanjiang**	**161.26**	**299**	P	**PKPab**		**11 35 59.0**	**+4.6**
MDJ				pmax	pmax				
	comp=Z,14nm,1.8s								
MDJ				pmax	pmax				
	comp=Z,62nm,4.9s								
CN2	**Changchun**	**164.35**	**299**	*e*PKP	**PKPdf**		**11 35 18.0**	**+4.5**
CN2				*ep*PKP	pPKPdf		11 35 28.8	+7.5	
CN2				PP	PP		11 40 02.5	+8.0	
WMQ	**Urumqi**	**164.58**	**61**	*e*PKP	**PKPdf**		**11 35 14.0**	**+0.1**
WMQ				LR	LR				
	comp=Z,410nm,19.6s								
WMQ				LR	LR				
	comp=Z,420nm,18.2s								
WMQ				LR	LR				
	comp=Z,460nm,19.7s								
ZAK	**Zakamensk**	**167.13**	**9**	*e*PKP2	**PKPab**		**11 36 19.8**	**-0.2**
ZAK				*e*			11 40 09.1		
ZAK				pmax	pmax				
	comp=Z,8.0nm,1.4s								
ZAK				pmax	pmax				
	comp=Z,5.0nm,2.0s								
GYA	**Guiyang**	**168.78**	**181**	PKP	**PKPdf**		**11 35 17.0**	**-0.7**
GYA				PKPab	**PKPab**		**11 36 29.5**	**+1.6**
GYA				PKS	**PKSdf**		**11 38 48.5**	**-1.9**
GYA				PP	**PP**		**11 40 19.3**	**+3.1**
GYA				AMB	AMB				
	comp=Z,130nm,8.2s								
SONM	**Songino Array**	**169.88**	**0**	PKP	**PKPdf**		**11 35 15.8**	**-1.9**
	comp=Z,1.1nm,0.6s,baz=219,slow=1.9,SNR=4.5								
SONM				PKPab	**PKPab**		**11 36 32.1**	**-0.2**
	comp=Z,4.4nm,1.0s,baz=339,slow=3.7,SNR=9.3								
SONM				PP	**PP**		**11 40 20.5**	**-1.3**
	comp=Z,1.0nm,0.6s,baz=347,slow=6.1,SNR=3.6								
CD2	**Chengdu**	**172.88**	**161**	PKP	**PKPdf**		**11 35 19.5**	**-0.1**
CD2				pPKP	pPKPdf		11 35 28.3	+0.9	
CD2				sPKP			11 35 31.5		
CD2				PP	**PP**		**11 40 37.8**	**+1.1**
CD2				SKS	**SKSdf**		**11 42 20.8**	**-0.7**
CD2				SKKS	**SKKSac**		**11 47 22.0**	**-0.6**
CD2				SS	**SS**		**12 01 50.3**	**+2.3**
CD2				AMB	AMB				
	comp=Z,220nm,6.0s								
GTA	**Gaotai**	**174.56**	**70**	*e*PKP	**PKPdf**		**11 35 20.0**	**-0.1**
GTA				pPKP	pPKPdf		11 35 26.0	-1.9	
GTA				sPKP			11 35 29.5		
GTA				PKPab	**PKPab**		**11 36 54.0**	**+0.4**
GTA				PP	**PP**		**11 40 47.0**	**+0.6**
GTA				SKS	**SKSdf**		**11 42 17.5**	**-4.2**
GTA				SKKS	**SKKSac**		**11 47 30.0**	**-1.0**
GTA				SS	**SS**		**12 02 00.3**	**-6.7**
GTA				AMB	AMB				
	comp=Z,260nm,8.6s								
GTA				LR	LR				
	comp=Z,340nm,17.1s								
GTA				LR	LR				
	comp=Z,350nm,16.6s								
GTA				LR	LR				
	comp=Z,500nm,19.0s								
HHC	**Hu-ho-hao-te**	**174.91**	**310**	*e*PKP	**PKPdf**		**11 35 19.0**	**-1.1**
XAN	**Xi'an**	**175.81**	**210**	PKP	**PKPdf**		**11 35 26.5**	**+6.0**
XAN				pPKP	pPKPdf		11 35 31.8	+3.5	
LZH	**Lanzhou**	**177.39**	**127**	PKP	**PKPdf**		**11 35 20.3**	**-0.6**
LZH				pPKP	pPKPdf		11 35 28.5	-0.2	
LZH				sPKP			11 35 31.5		
LZH				PP	**PP**		**11 41 02.3**	**+2.8**
LZH				SKKS			11 47 45.3		
LZH				SS	**SS**		**12 02 30.0**	**-3.2**
LZH				AMB	AMB				
	comp=Z,260nm,4.2s								
LZH				LR	LR				
	comp=Z,540nm,15.5s								
LZH				LR	LR				
	comp=Z,480nm,13.2s								
LZH				LR	LR				
	comp=Z,640nm,13.4s								

DJA 25 11:16:49.0±0.3, 3°S±4°×13°0E±°, h10km, M3.6/6, MLv3.6/6, Seram

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MSAI	**Masohi**	**1.01**	**233**	P		Pg	11 17 06.8	-1.6
MSAI				S		Sn	11 17 22.9	-0.6
BNDI	**Bandanaira**	**1.79**	**174**	P		Pb	11 17 21.3	-0.6
SWI	**Sorong**	**2.40**	**40**	P		Pn	11 17 29.0	+0.6
SWI				S		Sn	11 17 59.2	+1.3
FAKI	**Fak Fak**	**2.52**	**94**	P		Pn	11 17 28.7	-1.4
NLAI	**Namlea**	**2.67**	**259**	P		Pn	11 17 30.8	-1.4
LBMI	**Labuha**	**3.05**	**313**	P		Pn	11 17 37.6	+0.3

PGC 25 11:30:15.0±3.8, 59°27N×139°52W, h1km, ML2.3/4, 2km Wsw of Yakutat, Ak Southeastern Alaska, Southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PCA	**Pinnacle**	**0.91**	**336**	P		Pg	11 30 31.2	-1.2
PCA				S		Sg	11 30 44.1	0.0
PLBC	**Pleasant Camp**	**1.63**	**82**	Pn		Pn	11 30 42.5	-2.2
PLBC				Sg		Sn	11 31 04.9	-1.4
HYT	**Haines Junctio**	**1.86**	**32**	Pn		Pn	11 30 47.2	-0.9
HYT				Sg		Sb	11 31 13.3	-0.3
CTGM	**Chitina Glacie**	**1.93**	**333**	Pn		Pn	11 30 46.8	-2.2
CTGM				Sn		Sn	11 31 12.4	-1.6
BALM	**Baldy**	**2.27**	**323**	Pn		Pn	11 30 51.3	-2.3
YUK3	**Moose Creek**	**2.56**	**350**	Sg		Sb	11 31 33.8	+0.1
YUK2	**White River**	**2.61**	**346**	Pg		Pn	11 30 59.8	+1.5
YUK2				Sg		Sb	11 31 35.1	+0.1
DAWY	**Dawson**	**4.81**	**1**	Pn		Pn	11 31 27.8	-0.7
DAWY				Sn		Sn	11 32 22.6	-2.3

NIED ***25*** *11:35:00, 26˚.80N×128˚.40E, h35km, Mw4.1 Best double couple: M₀1.41000×10¹⁵ NP1:φ₀224.00000°, δ27.00000°, λ89.00000°. NP2:φ₀45.00000°, δ63.00000°, λ90.00000°.*
ISCJB ***25*** *11:35:43.7±0.5, 26˚.76N±0˚.05×128˚.42E±0˚.06, h45km±4km, mb4.1/12, Error ellipse: s-maj=10.6km s-min=4.2km az=42.4*
JMA ***25*** *11:35:44.6±0.1, 26˚.79N×128˚.43E, h31km±1km, M3.9*
JMA Felt II J1.
IDC ***25*** *11:35:54.7±3.7, 27˚.42N×128˚.14E, h94km±35km, mb3.7/11, mb1 3.7/13, mb1mx3.5/55, mbtmp4.0/13, Error ellipse: s-maj=29.7km s-min=16.1km az=59.0*

ISC 25 11:35:43.2±0.9, 26°73N±0˚.04×128°49E±0˚.05, h32km±6km, n34, σ1°52/43, mb4.1/12, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JOW	**Kunigami**	**0.22**	**298**	P		**Pb**	**11 35 50.3**	**+0.3**
JOW				S		**Sb**	**11 35 54.0**	**-0.6**
JNTH	**Nagotoyohara**	**0.47**	**243**	P		**Pb**	**11 35 54.0**	**+0.7**
JNTH				S		**Sb**	**11 36 00.4**	**+0.1**
JIH	**Iheya**	**0.56**	**303**	P		**Pb**	**11 35 54.4**	**-0.3**
JIH				*e*S		**Sb**	**11 36 01.6**	**-1.0**
JOKE	**Okinoerabujima**	**0.63**	**6**	P		**Pb**	**11 35 56.0**	**0.0**
JOKE				*e*S		**Sb**	**11 36 03.5**	**-1.2**
JJT2	**Tamagusuku 2**	**0.89**	**229**	P		**Pb**	**11 36 01.7**	**+1.5**
JAGN	**Aguni-jima**	**1.13**	**263**	P		**Pn**	**11 36 03.7**	**+1.0**
JAGN				S		**Sb**	**11 36 18.3**	**-0.2**
JTK	**Tokunoshima**	**1.13**	**21**	P		**Pn**	**11 36 03.7**	**+0.9**
JTK				*e*S		**Sb**	**11 36 19.0**	**+0.4**
JKE	**Kume jima 2**	**1.58**	**256**	P		**Pn**	**11 36 09.9**	**+0.9**
JAMN	**Amaminishikomi**	**1.62**	**22**	P		**Pn**	**11 36 11.7**	**+1.5**
JAM	**Amami Oshima**	**1.94**	**30**	P		**Pn**	**11 36 15.5**	**+1.5**
JAM				*e*S		**Sn**	**11 36 38.6**	**+1.3**
JZK	**Kikaishima**	**2.05**	**39**	P		**Pn**	**11 36 18.3**	**+2.8**
JTAJ	**Takarajima**	**2.49**	**14**	P		**Pn**	**11 36 22.5**	**+0.9**
JTAJ				S		**Sn**	**11 36 52.9**	**+2.0**
JMZ	**Minamidaito 2**	**2.61**	**110**	P		**Pn**	**11 36 23.7**	**+0.5**
JMZ				S		**Sn**	**11 36 52.3**	**-1.5**
JNN	**Nakanoshima**	**3.33**	**21**	P		**Pn**	**11 36 35.7**	**+2.6**
JNN				S		**Sn**	**11 37 12.9**	**+1.4**
JOGS	**Gusukube**	**3.40**	**235**	P		**Pn**	**11 36 35.8**	**+1.7**
JIKM	**Ikemajima**	**3.43**	**239**	P		**Pn**	**11 36 38.0**	**+3.5**
JIRB	**Irabujima**	**3.54**	**238**	P		**Pn**	**11 36 36.8**	**+0.8**
JTJ	**Tarama**	**4.00**	**239**	P		**Pn**	**11 36 42.7**	**+0.4**
JISG	**Ishigakijimahi**	**4.33**	**241**	P		**Pn**	**11 36 46.8**	**-0.1**
JTN	**Tanegashima 3**	**4.48**	**29**	P		**Pn**	**11 36 50.7**	**+1.8**
JNU	**Nakatsue**	**6.70**	**17**	P		**Pn**	**11 37 22.1**	**+2.7**
	1.2nm,0.3s,baz=237,slow=4.4,SNR=13							
JNU				S		**Sn**	**11 38 31.9**	**-2.7**
	baz=213,slow=17,SNR=1.4							
MJAR	**Matsushiro Arr**	**12.80**	**38**	P		**P**	**11 38 50.5**	**-3.1**
	baz=223,slow=8.3,SNR=2.9							
SONM	**Songino Array**	**27.26**	**326**	P		**P**	**11 41 25.4**	**+0.8**
	0.8nm,0.6s,baz=132,slow=10,SNR=2.7							
MKAR	**Makanchi Array**	**41.38**	**311**	P		**P**	**11 43 25.9**	**-0.5**
	1.2nm,0.6s,baz=94,slow=9.0,SNR=9.5							
ZALV	**Zalesovo Beam**	**41.99**	**322**	P		**P**	**11 43 29.1**	**-2.1**
	1.2nm,0.5s,baz=110,slow=9.0,SNR=4.3							
KURBB	**Kurchatov Arra**	**44.65**	**316**	P		**P**	**11 43 51.9**	**-0.9**
	1.0nm,0.3s,baz=102,slow=9.2,SNR=7.6							
WRA	**Warramunga Arr**	**46.74**	**172**	P		P	11 44 19.8	+10
	0.8nm,0.6s,baz=354,slow=8.6,SNR=8.2							
HNR	**Honiara**	**47.16**	**135**	P		P	11 44 24.0	+11
	50nm,0.6s,baz=199,slow=2.8,SNR=4.2							
BVAR	**Borovoye Array**	**50.06**	**318**	P		**P**	**11 44 34.6**	**-0.2**
	1.6nm,0.5s,baz=75,slow=7.8,SNR=10.0							
SPITS	**Spitsbergen Ar**	**68.39**	**348**	P		**P**	**11 46 41.8**	**+0.6**
	3.6nm,0.8s,baz=108,slow=8.0,SNR=6.2							
FINES	**FINESS Array B**	**72.54**	**331**	P		**P**	**11 47 06.6**	**-0.2**
	1.6nm,0.4s,baz=67,slow=5.5,SNR=18							
AKASG	**Malin Array Be**	**75.30**	**320**	P		**P**	**11 47 22.8**	**-0.3**
	1.2nm,0.5s,baz=58,slow=5.7,SNR=2.1							
BRTR	**Keskin Array B**	**76.91**	**308**	P		**P**	**11 47 32.6**	**-0.1**
	0.7nm,0.4s,baz=44,slow=3.8,SNR=3.6							
YKA	**Yellowknife Ar**	**77.97**	**25**	P		**P**	**11 47 39.2**	**+1.2**
	0.6nm,0.6s,baz=301,slow=5.6,SNR=5.1							

ISCJB ***25*** *11:46:01.2±1.4, 39˚.26N±0˚.06×37˚.7E±0˚.1, h7km, Error ellipse: s-maj=13.1km s-min=7.8km az=9.9*
ISK ***25*** *11:46:03.5, 39˚.34N×37˚.56E, h26km, MD2.6*
CSEM ***25*** *11:46:06.1±1.1, 39˚.56N×37˚.50E, h20km, MD2.6, Error ellipse: s-maj=33.4km s-min=21.4km az=120.0*
DDA ***25*** *11:46:17.9, 39˚.64N×36˚.55E, h7km, Md2.6*

ISC 25 11:46:02.2±1.6, 39°38N±0˚.06×37°49E±0˚.07, h7km, n12, σ1°24/15, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SCER	**sogukcermik**	**0.56**	**330**	*i* P		Pn	11 46 27.3	+11
SCER				*i* S		Sn	11 46 36.7	+10
SVSK	**Karacayir**	**0.66**	**325**	*e*PG		**Pn**	**11 46 18.6**	**+0.7**
SVSK				*e*SG		**Sn**	**11 46 29.4**	**+0.9**
SVSK	**Karacayir**	**0.66**	**325**	*e*Pg		**Pn**	**11 46 18.6**	**+0.7**
SVSK				*e*Sg		**Sn**	**11 46 29.4**	**+0.9**
CUSAR	**Sarkisla-SIVAS**	**0.97**	**273**	*i* P		**Pn**	**11 46 24.1**	**+1.8**
CUSAR				*i* S		**Sg**	**11 46 30.2**	**-3.1**
CUSAR	**Sarkisla-SIVAS**	**0.97**	**273**	P		**Pn**	**11 46 24.1**	**+1.8**
TOKT	**Tokat**	**1.19**	**323**	*e*PN		**Pn**	**11 46 25.5**	**+0.2**
TOKT	**Tokat**	**1.19**	**323**	*e*Pn		**Pn**	**11 46 25.5**	**+0.2**
SARI	**SarD1z-Kayseri**	**1.28**	**221**	*e*Pn		**Pn**	**11 46 26.7**	**0.0**
SARI				*e*SN		**Sg**	**11 46 43.0**	**-0.4**
YOZ	**Yozgat**	**1.70**	**279**	*e*PN		**Pn**	**11 46 32.5**	**+0.1**
YOZ	**Yozgat**	**1.70**	**279**	*e*Pn		**Pn**	**11 46 32.5**	**+0.1**
ESPY	**Espiye-Giresun**	**1.80**	**31**	*e*PN		**Pn**	**11 46 33.8**	**+0.1**
ESPY	**Espiye-Giresun**	**1.80**	**31**	*e*Pn		**Pn**	**11 46 33.8**	**+0.1**

ISCJB ***25*** *11:46:59.1±1.1, 37˚.36N±0˚.06×142˚.7E±0˚.1, h21km, mb3.7/3, Error ellipse: s-maj=12.9km s-min=8.0km az=171.0*
JMA ***25*** *11:46:59.1±0.5, 37˚.46N×142˚.53E, h5km±4km, M3.7*
IDC ***25*** *11:47:01.8±2.0, 36˚.86N×142˚.79E, h0km, mb3.6/3, mb1 3.8/5, mb1mx3.5/46, mbtmp3.6/5, ML3.3/2, Error ellipse: s-maj=38.6km s-min=26.7km az=56.0*

ISC 25 11:46:59.7±1.4, 37°45N±0˚.06×142°50E±0˚.09, h21km, n20, σ1°44/18, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JFK	**Kawauchi**	**1.30**	**267**	P		**Pb**	**11 47 23.8**	**+0.4**
JFK				*e*S		**Sb**	**11 47 41.5**	**+1.8**
JIO	**Ouri**	**1.36**	**318**	P		**Pb**	**11 47 24.2**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.40**	**256**	P		**Pb**	**11 47 25.5**	**+0.3**
JMM	**Marumori**	**1.42**	**288**	P		**Pb**	**11 47 25.4**	**-0.1**
JOU	**Okura**	**1.72**	**303**	P		**Pb**	**11 47 30.5**	**-0.1**
JMK	**Ichinoseki**	**1.81**	**327**	P		**Pb**	**11 47 31.3**	**-0.8**
JYS	**Shirataka**	**2.08**	**293**	P		**Pb**	**11 47 36.1**	**-0.6**
JOM	**Ohasama**	**2.23**	**335**	P		**Pb**	**11 47 38.0**	**-1.4**
JOM				*e*S		**Sb**	**11 48 06.0**	**-0.6**
MJAR	**Matsushiro Arr**	**3.55**	**257**	Pn		**Pb**	**11 47 58.8**	**-3.1**
	1.3nm,0.3s,baz=84,slow=16,SNR=9.9							
MJAR				Sn		**Sb**	**11 48 44.1**	**-0.4**
	1.1nm,0.3s,baz=196,slow=31,SNR=3.7							
MAT	**Matsushiro**	**3.55**	**257**	P		**Pb**	**11 47 59.4**	**-2.5**
MAT				S		**Sb**	**11 48 45.2**	**+0.6**
JHJ	**Hachijo jima 2**	**4.86**	**208**	Pn		**Pn**	**11 48 11.6**	**+0.1**
	6.7nm,0.3s,baz=241,slow=19,SNR=2.4							
JHJ				Sn		**Sn**	**11 49 05.5**	**-1.6**
	7.0nm,0.3s,baz=51,slow=14,SNR=2.6							
H11N2	**WAKE ISLAND Hy**	**27.63**	**123**	T		T	12 21 38.9	
	baz=315,slow=75,SNR=8.0							
H11N1	**WAKE ISLAND Hy**	**27.64**	**123**	T		T	12 21 36.6	
	baz=315,slow=75,SNR=9.0							
H11N3	**WAKE ISLAND Hy**	**27.65**	**123**	T		T	12 21 39.1	
	baz=315,slow=75,SNR=17							
H11S1	**WAKE ISLAND Hy**	**28.37**	**125**	T		T	12 22 33.9	
	baz=317,slow=76,SNR=15							
H11S3	**WAKE ISLAND Hy**	**28.37**	**125**	T		T	12 22 36.5	
	baz=317,slow=76,SNR=19							
H11S2	**WAKE ISLAND Hy**	**28.39**	**125**	T		T	12 22 37.0	
	baz=317,slow=76,SNR=17							
MKAR	**Makanchi Array**	**44.64**	**302**	P		P	11 55 20.2	+10
	0.3nm,0.6s,baz=82,slow=10,SNR=2.3							
WRA	**Warramunga Arr**	**57.60**	**189**	P		**P**	**11 56 49.2**	**+1.1**
	1.3nm,0.7s,baz=8.1,slow=7.3,SNR=13							
ASAR	**Alice Springs**	**61.32**	**189**	P		**P**	**11 57 15.7**	**+1.9**
	0.5nm,0.7s,baz=14,slow=8.8,SNR=10							

NIED ***25*** *11:54:00, 35˚.20N×141˚.20E, h23km, Mw5.5 Best double couple: M₀2.15000×10¹⁷ NP1:φ₀305.00000°, δ31.00000°, λ161.00000°. NP2:φ₀52.00000°, δ80.00000°, λ61.00000°.*
BJI ***25*** *11:54:46.4, 35˚.31N×141˚.12E, h19km, mb5.0/76, mB5.3/55, Ms5.7/86, Ms7 5.6/79*
IDC ***25*** *11:54:46.8±0.4, 35˚.28N×141˚.08E, h0km, mb5.0/35, mb1 5.1/40, mb1mx5.0/49, mbtmp5.0/40, ML4.5/4, MS5.2/42, Ms1 5.2/42, ms1mx5.1/59, Error ellipse: s-maj=12.9km s-min=8.7km az=89.0*
JMA ***25*** *11:54:48.9±0.1, 35˚.24N×141˚.23E, h37km±2km, M5.7*
JMA Felt III J1.
MOS ***25*** *11:54:49.9±0.9, 35˚.29N×140˚.95E, h28km, mb5.4/93, MS5.5/27, Error ellipse: s-maj=6.8km s-min=4.2km az=104.6*
ISCJB ***25*** *11:54:50.6±0.4, 35˚.26N±0˚.02×140˚.99E±0˚.02, h32km±2km, mb5.2/328, MS5.4/75, Error ellipse: s-maj=3.1km s-min=2.4km az=157.8*
NEIC ***25*** *11:54:54.1±0.5, 35˚.27N×140˚.93E, h46km±4km, mb5.2/233, Error ellipse: s-maj=3.4km s-min=2.5km az=139.0*
NEIC Felt [IV] at Tokyo. Also felt at Chiba, Hino, Mitaka, Narita, Sayama, Wako and Yokohama. Recorded [3 JMA] in Chiba, Ibaraki and Saitama.
GCMT ***25*** *11:54:54.1±0.1, 35˚.18N×140˚.97E, h15km, MW5.6/117, Moment Tensor Solution. s93,c160; s117,c211; Duration: 1s4 Moment tensor: Scale 10¹⁷Nm; Mrr0.84±.02; Mθθ-1.12±.02; Mφφ0.27±.02; Mrθ2.73±.06; Mθφ0.11±.01; Mrφ1.06±.07; Best double couple: M₀

	comp=Z,80nm,0.6s								
YSS					MLR	MLR			
	comp=Z,18μm,15.0s								
YSS					MLR	MLR			
	comp=N,15μm,16.0s								
YSS	**Yuzh-Sakhalins**	**11.73**	**6**	*e*Pn	**Pn**		**11 57 34.6**	**-1.9**	
INCN	**Inchon**	**11.86**	**285**	*e*Pn	**Pn**		**11 57 42.1**	**+3.8**	
MDJ	**Mudanjiang**	**12.82**	**320**	P	**Pn**		**11 57 51.8**	**+0.3**	
MDJ				S	**Sn**		**12 00 16.3**	**+3.0**	
MDJ				PcP	**PcP**		**12 03 25.8**	**-0.3**	
MDJ				ScP	**ScP**		**12 07 00.0**	**+2.4**	
MDJ				PcS	**PcS**		**12 07 02.3**	**+2.0**	
MDJ				pmax	pmax				
	comp=N,16nm,0.9s								
MDJ				pmax	pmax				
	comp=N,3μm,10.6s								
MDJ				LR	LR				
	comp=N,8μm,15.1s								
MDJ				LR	LR				
	comp=N,8μm,15.1s								
MDJ				LR	LR				
	comp=N,16μm,16.3s								
MDJ	**Mudanjiang**	**12.82**	**320**	*e*Pn	**Pn**		**11 57 53.0**	**+1.5**	
	comp=N,207nm,1.4s								
UGL	**Uglegorsk**	**13.80**	**3**	*e*P	**Pn**		**11 58 00.5**	**-4.3**	
UGL				*e*S	**Sn**		**12 00 38.0**	**+0.8**	
UGL				pmax	pmax				
	comp=Z,2μm,8.0s								
UGL				pmax	pmax				
	comp=N,1μm,10.0s								
UGL				pmax	pmax				
	comp=E,500nm,10.0s								
UGL				smax	smax				
	comp=E,2μm,12.0s								
UGL				smax	smax				
	comp=N,1μm,10.0s								
UGL				MLR	MLR				
	comp=Z,20μm,16.0s								
UGL				MLR	MLR				
	comp=N,20μm,17.0s								
UGL				MLR	MLR				
	comp=E,23μm,15.0s								
JOW	**Kunigami**	**13.83**	**236**	*e*Pn	**Pn**		**11 58 07.4**	**+2.0**	
HABR	**Khabarovsk**	**13.92**	**343**	*e*P	**Pn**		**11 58 03.5**	**-2.9**	
HABR				*e*S	**Sn**		**12 00 35.7**	**-4.3**	
HABR				pmax	pmax				
	comp=E,28nm,1.3s								
HABR				pmax	pmax				
	comp=N,22nm,1.3s								
HABR				pmax	pmax				
	comp=Z,49nm,1.3s								
HABR				MLR	MLR				
	comp=Z,10μm,12.0s								
CN2	**Changchun**	**14.75**	**310**	*e*P	**Pn**		**11 58 16.3**	**-1.4**	
CN2				*e*pP	P		11 58 21.0	-2.6	
CN2				*e*S	**Sn**		**12 01 00.0**	**-0.3**	
CN2				pmax	pmax				
	comp=Z,10.0nm,1.1s								
CN2				pmax	pmax				
	comp=Z,3μm,9.0s								
CN2				LR	LR				
	comp=Z,12μm,13.0s								
CN2				LR	LR				
	comp=Z,12μm,13.0s								
CN2				LR	LR				
	comp=Z,13μm,15.0s								
SNY	**Shenyang**	**15.17**	**301**	⇑P	**Pn**		**11 58 23.3**	**-0.1**	
SNY				S	**Sn**		**12 01 16.3**	**+5.8**	
SNY				pmax	pmax				
	comp=Z,89nm,1.1s								
SNY				LR	LR				
	comp=Z,14μm,14.7s								
SNY				LR	LR				
	comp=Z,14μm,17.9s								
SNY				LR	LR				
	comp=Z,24μm,18.0s								
KLR	**Kul'dur**	**15.54**	**337**	Pn	**Pn**		**11 58 26.0**	**-2.2**	
	comp=Z,0.9nm,0.3s,baz=139,slow=11,SNR=19								
KLR				LR	LR		12 04 29.6		
	comp=Z,16μm,19.3s,baz=138,slow=38								
KLR	**Kul'dur**	**15.54**	**337**	*c iP*	**Pn**		**11 58 25.9**	**-2.2**	
TYV	**Tymovskoe**	**15.61**	**4**	*e*P	**Pn**		**11 58 24.5**	**-4.6**	
TYV				*e*S	**S**		**12 01 31.0**	**-5.2**	
TYV				pmax	pmax				
	comp=N,1μm,4.0s								
TYV				pmax	pmax				
	comp=Z,240nm,0.8s								
TYV				smax	smax				
	comp=N,2μm,7.0s								
TYV				MLR	MLR				
	comp=N,17μm,19.0s								
SSE	**Sheshan**	**17.17**	**262**	⇑P	**Pn**		**11 58 47.8**	**-1.3**	
SSE				S	**Sn**		**12 02 00.8**	**+1.5**	
SSE				sS	**S**		**12 02 08.0**	**-0.2**	
SSE				pmax	pmax				
	comp=N,30nm,0.8s								
SSE				pmax	pmax				
	comp=N,220nm,6.7s								
SSE				LR	LR				
	comp=N,14μm,23.1s								
SSE				LR	LR				
	comp=N,4μm,23.1s								
SSE				LR	LR				
	comp=N,10μm,16.3s								
NKL	**Nikolayevsk**	**17.87**	**359**	*e*P	**Pn**		**11 58 54.0**	**-3.5**	
NKL				*e*S	**Sn**		**12 02 15.0**	**-0.8**	
NKL				pmax	pmax				
	comp=N,52nm,1.0s								
NKL				pmax	pmax				
	comp=Z,86nm,1.0s								
NKL				pmax	pmax				
	comp=N,1μm,12.0s								
NKL				pmax	pmax				
	comp=E,700nm,12.0s								
NKL				pmax	pmax				
	comp=Z,2μm,12.0s								
NKL				smax	smax				
	comp=E,1μm,9.0s								
NKL				MLR	MLR				
	comp=N,14μm,18.0s								
NKL				MLR	MLR				
	comp=E,8μm,18.0s								
NKL				MLR	MLR				
	comp=Z,23μm,18.0s								
NJ2	**Nanjing**	**18.78**	**266**	*e*P	**P**		**11 59 08.5**	**+0.2**	
NJ2				sP	**pP**		**11 59 15.8**	**+0.9**	
NJ2				S	**Sn**		**12 02 34.0**	**-4.3**	
NJ2				pmax	pmax				
	comp=Z,18nm,0.6s								
NJ2				pmax	pmax				
	comp=Z,330nm,4.1s								
NJ2				LR	LR				
	comp=Z,9μm,14.1s								
NJ2				LR	LR				
	comp=Z,10μm,14.6s								
NJ2				LR	LR				
	comp=Z,11μm,14.1s								
SKR	**Severo-Kuril's**	**18.86**	**31**	*e*P	**Pn**		**11 59 09.5**	**-0.1**	
SKR				*e*S	**Sn**		**12 02 38.1**	**-1.7**	
SKR				pmax	pmax				
	comp=Z,149nm,1.2s								
SKR				pmax	pmax				
	comp=Z,2μm,8.5s								
SKR				MLR	MLR				
	comp=Z,4μm,17.0s								
SKR				MLR	MLR				
	comp=Z,4μm,19.0s								
TIA	**Tai'an**	**19.47**	**280**	*e*P	**P**		**11 59 14.3**	**-1.5**	
TIA				pmax	pmax				
	comp=Z,20nm,1.0s								
TIA				LR	LR				
	comp=Z,12μm,12.2s								
TIA				LR	LR				
	comp=Z,20μm,13.5s								
TIA				LR	LR				
	comp=Z,23μm,14.8s								
YHNB	**Yeheng**	**20.05**	**244**	*e*P	**P**		**11 59 22.1**	**-0.2**	
	comp=Z,54nm,1.2s								
BJI	**Beijing**	**20.26**	**291**	P	**P**		**11 59 21.5**	**-2.9**	
BJI				S	Sn		12 03 14.5	+0.6	
BJI				pmax	pmax				
	comp=Z,39nm,1.0s								
BJI				pmax	pmax				
	comp=Z,1μm,6.9s								
BJI				LR	LR				
	comp=Z,4μm,18.0s								
BJI				LR	LR				
	comp=Z,7μm,19.3s								
BJI				LR	LR				
	comp=Z,8μm,24.2s								
BJT	**Baijiatuau**	**20.27**	**291**	*e*P	**P**		**11 59 21.8**	**-2.7**	
BJT				pmax	pmax				
	comp=Z,119nm,0.7s								
BJT	**Baijiatuau**	**20.27**	**291**	*e*P	**P**		**11 59 21.8**	**-2.7**	
	comp=Z,119nm,0.7s								
YULB	**Yu-li**	**20.89**	**241**	*e*P	**P**		**11 59 30.7**	**-0.6**	
	comp=Z,29nm,1.0s								
SSLB	**Suanglung**	**20.89**	**242**	*e*P	**P**		**11 59 31.9**	**+0.5**	
	comp=Z,62nm,1.2s								
HIA	**Hailar**	**20.99**	**318**	*e*P	**P**		**11 59 28.3**	**-4.0**	
HIA				pmax	pmax				
	comp=Z,45nm,0.9s								
HIA	**Hailar**	**20.99**	**318**	*e*P	**P**		**11 59 28.3**	**-4.0**	
	comp=Z,45nm,0.9s								
PEA0	**Petropavlovsk-**	**21.34**	**28**	*e*P	**P**		**11 59 36.2**	**+0.3**	
PEA0B	**Petropavlovsk-**	**21.34**	**28**	*e*P	**P**		**11 59 37.0**	**+1.1**	
	comp=Z,120nm,1.0s								
PETK	**Petropavlovsk-**	**21.34**	**28**	P	**P**		**11 59 35.1**	**-0.9**	
	comp=Z,24nm,1.0s,baz=219,slow=3.8,SNR=21								
PETK				LR	LR		12 08 25.9		
	comp=Z,3μm,19.6s,baz=216,slow=38								
TWG	**Pinlang**	**21.41**	**240**	*e*P	**P**		**11 59 37.8**	**+0.9**	
	comp=Z,588nm,1.7s								
TPUB	**Ta-pu**	**21.42**	**242**	*e*P	**P**		**11 59 36.4**	**-0.7**	
	comp=Z,91nm,1.4s								
PET	**Petropavlovsk**	**21.66**	**30**	*c e*P	**P**		**11 59 39.6**	**+0.3**	
PET				*e*S	**S**		**12 03 30.8**	**-6.9**	
PET				pmax	pmax				
	comp=Z,3μm,7.6s								
PET				pmax	pmax				
	comp=Z,94nm,1.3s								
PET				pmax	pmax				
	comp=Z,2μm,12.4s								
PET				MLR	MLR				
	comp=Z,5μm,19.0s								
PET				MLR	MLR				
	comp=Z,5μm,20.0s								
PET	**Petropavlovsk**	**21.66**	**30**	*e*P	**P**		**11 59 40.0**	**+0.7**	
	comp=Z,421nm,1.8s								
GUMO	**Guam**	**21.87**	**170**	P	**P**		**11 59 42.3**	**+0.4**	
	comp=Z,231nm,1.0s,baz=327,slow=3.9,SNR=10								
GUMO	**Guam**	**21.87**	**170**	*e*P	**P**		**11 59 42.8**	**+1.0**	
	comp=Z,2μm,1.6s								
QZH	**Quanzhou**	**21.98**	**248**	P	**P**		**11 59 40.8**	**-2.2**	
QZH				S	S		12 03 33.5	-11	
QZH				LR	LR				
	comp=Z,8μm,12.7s								
QZH				LR	LR				
	comp=Z,4μm,10.5s								
QZH				LR	LR				
	comp=Z,8μm,14.6s								
WHN	**Wuhan**	**22.91**	**266**	P	**P**		**11 59 50.5**	**-2.4**	
WHN				S	**S**		**12 03 56.3**	**-5.1**	
WHN				LR	LR				
	comp=Z,22μm,12.6s								
WHN				LR	LR				
	comp=Z,25μm,13.0s								
WHN				LR	LR				
	comp=Z,36μm,13.2s								
TIY	**Taiyuan**	**23.13**	**284**	*e*P	**P**		**11 59 55.0**	**-0.2**	
TIY				S	**S**		**12 03 56.0**	**-9.2**	
TIY				pmax	pmax				
	comp=Z,40nm,1.0s								
TIY				pmax	pmax				
	comp=Z,420nm,7.2s								
TIY				LR	LR				
	comp=Z,3μm,13.8s								
TIY				LR	LR				
	comp=Z,12μm,13.8s								
TIY				LR	LR				
	comp=Z,20μm,15.6s								
HHC	**Hu-ho-hao-te**	**23.84**	**292**	*e*P	**P**		**11 59 58.0**	**-4.1**	
HHC				S	**S**		**12 04 07.3**	**-9.4**	
HHC				sS	sS		12 04 20.3	-8.2	
HHC				pmax	pmax				
	comp=Z,29nm,0.8s								
HHC				pmax	pmax				
	comp=Z,710nm,11.6s								
HHC				LR	LR				
	comp=Z,5μm,15.3s								
HHC				LR	LR				
	comp=Z,6μm,16.9s								
HHC				LR	LR				
	comp=Z,7μm,16.8s								
CLNS	**Chul'man**	**24.19**	**338**	*e*P	**P**		**12 00 02.7**	**-2.5**	
CLNS				*e**PP	**pP**		**12 00 11.2**	**-1.2**	
CLNS				*e*			12 03 44.7		
CLNS				*e*S	**S**		**12 04 18.5**	**-3.4**	
CLNS				*e*SS	**SnSn**		**12 05 08.1**	**+3.6**	
CLNS				*e*			12 11 12.1		
CLNS				pmax	pmax				
	comp=Z,73nm,1.1s								
CLNS				pmax	pmax				
	comp=N,65nm,1.3s								
CLNS				pmax	pmax				
	comp=E,34nm,1.0s								
CLNS				pmax	pmax				
	comp=N,49nm,0.8s								
CLNS				pmax	pmax				
	comp=Z,130nm,1.2s								
CLNS				pmax	pmax				
	comp=E,63nm,0.9s								
CLNS				smax	smax				
	comp=N,3μm,12.9s								
CLNS				smax	smax				
	comp=E,1μm,13.2s								
CLNS				MLR	MLR				
	comp=Z,5μm,16.0s								
CLNS				MLR	MLR				
	comp=N,7μm,15.0s								
CLNS				MLR	MLR				
	comp=E,9μm,15.0s								
BTO	**Baotou**	**24.99**	**292**	*e*P	**P**		**12 00 09.5**	**-3.2**	
MA2	**Magadan**	**25.12**	**12**	P	**P**		**12 00 13.8**	**+0.3**	
	comp=E,81nm,0.8s,baz=194,slow=9.3,SNR=22								
MA2				LR	LR		12 10 17.0		
	comp=E,4μm,20.4s,baz=196,slow=37								
CIT	**Chita**	**25.79**	**319**	*e*P	**P**		**12 00 18.1**	**-1.7**	
CIT				*e*			12 00 29.5		
CIT				pmax	pmax				
	comp=Z,125nm,1.8s								
XAN	**Xi'an**	**26.43**	**277**	P	**P**		**12 00 23.5**	**-2.2**	
XAN				pP	pP		12 00 29.3	-3.6	
XAN				S	**S**		**12 04 49.5**	**-8.5**	
XAN				pmax	pmax				
	comp=Z,40nm,1.2s								
XAN				LR	LR				
	comp=Z,11μm,17.3s								
XAN				LR	LR				
	comp=Z,13μm,14.7s								
XAN				LR	LR				
	comp=Z,17μm,16.7s								
ENH	**Enshi**	**26.97**	**268**	*e*P	**P**		**12 00 28.7**	**-2.0**	
	comp=Z,95nm,0.8s								
GZH	**Guangzhou**	**27.00**	**251**	P	**P**		**12 00 25.8**	**-5.1**	
GZH				PP	**PnPn**		**12 01 11.5**	**-2.2**	
GZH				S	**S**		**12 05 03.0**	**-4.1**	
GZH				SS	**SnSn**		**12 06 16.3**	**+2.5**	
GZH				pmax	pmax				
	comp=Z,410nm,6.4s								
H11N2	**WAKE ISLAND Hy**	**27.53**	**117**	T	T		12 29 37.3		
	baz=310,slow=75,SNR=777								
H11N1	**WAKE ISLAND Hy**	**27.53**	**117**	T	T		12 29 33.4		
	baz=310,slow=75,SNR=914								
H11N3	**WAKE ISLAND Hy**	**27.54**	**117**	T	T		12 29 34.1		
	baz=310,slow=75,SNR=764								
YAK	**Yakutsk**	**27.72**	**348**	P	**P**		**12 00 37.0**	**+0.1**	
	comp=Z,215nm,0.7s,baz=124,slow=0.3,SNR=28								
YAK				LR	LR		12 11 47.1		
	comp=Z,11μm,20.0s,baz=148,slow=37								
YAK	**Yakutsk**	**27.72**	**348**	*c iP*	**P**		**12 00 36.5**	**-0.5**	
YAK				*e**PP	**sP**		**12 00 46.0**	**-1.2**	
YAK				*e*			12 01 25.0		
YAK				*e*			12 03 52.4		
YAK				*e*S	**S**		**12 05 19.9**	**+2.2**	
YAK				*e**SS	**sS**		**12 05 30.6**	**+1.0**	
YAK				pmax	pmax				
	comp=Z,256nm,1.2s								
YAK				pmax	pmax				
	comp=E,45nm,1.7s								
YAK				pmax	pmax				
	comp=N,208nm,1.7s								
YAK				pmax	pmax				
	comp=Z,88nm,1.1s								
YAK				pmax	pmax				
	comp=N,165nm,1.3s								
YAK				pmax	pmax				
	comp=E,121nm,1.5s								
YAK				smax	smax				
	comp=N,394nm,2.7s								
YAK				smax	smax				
	comp=E,376nm,2.8s								
YAK				MLR	MLR				
	comp=Z,11μm,21.0s								
YAK				MLR	MLR				
	comp=N,6μm,18.0s								
YAK				MLR	MLR				
	comp=E,5μm,22.0s								
YAK	**Yakutsk**	**27.72**	**348**	*e*P	**P**		**12 00 36.6**	**-0.3**	
	comp=E,208nm,0.7s								
TGY	**Tagaytay City**	**27.82**	**226**	LR	LR		12 12 50.0		
	comp=E,2μm,18.0s,baz=28,slow=39								
H11S1	**WAKE ISLAND Hy**	**28.18**	**120**	T	T		12 30 17.0		
	baz=312,slow=75,SNR=3634								
H11S3	**WAKE ISLAND Hy**	**28.18**	**120**	T	T		12 30 05.0		
	baz=312,slow=75,SNR=3440								
H11S2	**WAKE ISLAND Hy**	**28.19**	**120**	T	T		12 30 18.2		
	baz=312,slow=75,SNR=3660								
SEY	**Seymchan**	**28.56**	**11**	P	**P**		**12 00 44.6**	**+0.2**	
	comp=E,15nm,1.0s,baz=200,slow=6.5,SNR=26								
SEY	**Seymchan**	**28.56**	**11**	*c iP*	**P**		**12 00 45.2**	**+0.8**	
SONA1	**Songino Array**	**28.58**	**307**	*e*P	**P**		**12 00 44.0**	**-0.9**	
SONM	**Songino Array**	**28.58**	**307**	P	**P**		**12 00 44.5**	**-0.5**	
	comp=E,21nm,0.9s,baz=102,slow=8.2,SNR=26								
SONM				LR	LR		12 12 40.2		
	comp=E,10μm,19.0s,baz=108,slow=38								
BOD	**Bodaibo**	**28.89**	**330**	*e*P	**P**		**12 00 47.2**	**-0.2**	
BOD				pmax	pmax				
	comp=Z,88nm,0.9s								
LZH	**Lanzhou**	**30.15**	**283**	⇓P	**P**		**12 00 58.3**	**-0.7**	
LZH				pP	pP		12 01 04.0	-2.3	
LZH				sP	sP		12 01 05.8	-3.5	
LZH				PP	**PnPn**		**12 01 57.5**	**+0.9**	
LZH				S	**S**		**12 05 52.0**	**-4.7**	
LZH				sS	sS		12 06 03.3	-5.4	
LZH				SS	**SnSn**		**12 07 33.0**	**+2.6**	
LZH				pmax	pmax				
	comp=Z,100nm,1.3s								
LZH				pmax	pmax				
	comp=Z,330nm,4.5s								
LZH				LR	LR				
	comp=Z,5μm,12.3s								
LZH				LR	LR				
	comp=Z,14μm,16.3s								
LZH				LR	LR				
	comp=Z,13μm,17.4s								
GYA	**Guiyang**	**30.71**	**263**	⇑*iP*	**P**		**12 01 02.0**	**-2.0**	
GYA				pP	pP		12 01 11.0	-0.3	
GYA				PP	**PnPn**		**12 02 06.5**	**+2.5**	
GYA				PcP	**PcP**		**12 04 03.8**	**+2.3**	
GYA				S	S		12 05 56.5	-9.1	
GYA				ScP	**ScP**		**12 07 44.5**	**+1.9**	
GYA				SS	**SnSn**		**12 07 47.3**	**+3.1**	
GYA				pmax	pmax				
	comp=Z,50nm,1.1s								
GYA				pmax	pmax				
	comp=Z,100nm,7.5s								
GYA				LR	LR				
	comp=Z,7μm,15.2s								
GYA				LR	LR				
	comp=Z,8μm,16.6s								
GYA				LR	LR				
	comp=Z,8μm,17.4s								
IRK	**Irkutsk**	**31.11**	**315**	*e*P	**P**		**12 01 06.9**	**-0.2**	
IRK				*e*			12 01 22.6		
IRK				pmax	pmax				
	comp=Z,69nm,3.0s								
ZAK	**Zakamensk**	**31.18**	**311**	*e*P	**P**		**12 01 07.0**	**-0.9**	
ZAK				pmax	pmax				
	comp=Z,20nm,1.5s								
CD2	**Chengdu**	**31.45**	**273**	P	**P**		**12 01 09.3**	**-1.2**	
CD2				pP	pP		12 01 15.0	-2.7	
CD2				sP	sP		12 01 17.5	-3.2	
CD2				S	**S**		**12 06 16.3**	**-0.8**	
CD2				sS	sS		12 06 26.3	-2.7	
CD2				pmax	pmax				
	comp=Z,60nm,0.8s								
CD2				pmax	pmax				
	comp=Z,420nm,8.9s								
CD2				LR	LR				
	comp=Z,17μm,14.9s								
CD2				LR	LR				
	comp=Z,17μm,16.9s								
CD2				LR	LR				
	comp=Z,23μm,16.3s								
QIZ	**Qiongzhong**	**32.00**	**248**	P	**P**		**12 01 16.8**	**+1.5**	
QIZ				S	**S**		**12 06 26.3**	**+0.7**	
QIZ				LR	LR				
	comp=Z,3μm,17.8s								
QIZ				LR	LR				
	comp=Z,2μm,19.9s								
QIZ				LR	LR				
	comp=Z,3μm,14.6s								
GTA	**Gaotai**	**32.87**	**290**	⇑P	**P**		**12 01 22.0**	**-0.9**	
GTA				pP	pP		12 01 27.0	-3.1	
GTA				sP	sP		12 01 30.3	-2.8	
GTA				PP	**PnPn**		**12 02 32.3**	**+0.5**	
GTA				PcP	**PcP**		**12 04 07.0**	**-0.2**	
GTA				S	**S**		**12 06 38.5**	**-0.6**	
GTA				sS	sS		12 06 49.0	-2.1	
GTA				SS	**SnSn**		**12 08 38.8**	**+2.4**	
GTA				pmax	pmax				
	comp=Z,10.0nm,0.9s								
GTA				pmax	pmax				
	comp=Z,310nm,6.9s								
GTA				LR	LR				
	comp=Z,6μm,14.7s								
GTA				LR	LR				
	comp=Z,5μm,17.6s								
GTA				LR	LR				
	comp=Z,6μm,19.0s								
MOY	**Mondy**	**32.90**	**312**	*e*P	**P**		**12 01 24.5**	**+1.5**	
KMI	**Kunming**	**34.47**	**264**	P	**P**		**12 01 40.3**	**+3.2**	
KMI				pP	pP		12 01 45.8	+1.4	
KMI				sP	sP		12 01 48.3	+0.9	
KMI				PP	**PP**		**12 02 56.5**	**+1.2**	
KMI				S	**S**		**12 07 02.0**	**-2.4**	
KMI				pmax	pmax				
	comp=Z,18nm,0.6s								
KMI				LR	LR				
	comp=Z,5μm,15.1s								
KMI				LR	LR				
	comp=Z,3μm,18.7s								
KMI				LR	LR				
	comp=Z,3μm,21.3s								
BILL	**Bilibino**	**35.78**	**16**	*c iP*	**P**		**12 01 47.0**	**-0.6**	
BILL				*e*			12 03 07.2		
BILL				pmax	pmax				
	comp=Z,43nm,1.7s								
BILL				MLR	MLR				
	comp=Z,3μm,16.0s								
MYLDM	**Lahad Datu**	**36.50**	**220**	*e*P	**P**		**12 01 57.0**	**+2.8**	
	comp=Z,92nm,1.4s								
TIXI	**Tiksi**	**36.99**	**354**	P	**P**		**12 01 57.3**	**-0.6**	
	comp=Z,37nm,0.8s,baz=157,slow=5.9,SNR=11								
TIXI				LR	LR		12 18 12.8		
	comp=Z,8μm,19.1s,baz=164,slow=38								
TIXI	**Tiksi**	**36.99**	**354**	*c iP*	**P**		**12 01 57.5**	**-0.4**	
TIXI				pmax	pmax				
	comp=Z,38nm,0.8s								
TIXI				MLR	MLR				
	comp=Z,8μm,18.0s								
TIXI	**Tiksi**	**36.99**	**354**	*e*P	**P**		**12 01 57.8**	**-0.1**	
	comp=Z,42nm,0.9s								
SWI	**Sorong**	**37.12**	**196**	P	**P**		**12 01 59.5**	**0.0**	
	comp=Z,52nm,0.8s,comp=Z,1μm								
UBPT	**Khong Chiam**	**37.59**	**247**	P	**P**		**12 02 04.3**	**+0.8**	
	comp=Z,31nm,1.0s								
JAY	**Jayapura**	**37.60**	**181**	P	**P**		**12 02 03.7**	**0.0**	
	comp=Z,1.6nm,0.8s,baz=266,slow=23,SNR=5.4								
JAY				LR	LR		12 15 16.6		
	comp=Z,111nm,20.8s,baz=354,slow=33								
JAY	**Jayapura**	**37.60**	**181**	P	**P**		**12 02 03.2**	**-0.5**	
	comp=Z,25nm,0.9s,comp=Z,370nm								
GENI	**Genyem**	**37.69**	**182**	P	**P**		**12 02 04.3**	**0.0**	
SKNT	**Sakolnakorn**	**37.70**	**251**	P	**P**		**12 02 04.7**	**+0.2**	
	comp=Z,33nm,1.6s								
NONG	**Nongkai**	**37.72**	**253**	P	**P**		**12 02 04.4**	**-0.3**	
	comp=Z,72nm,0.8s								

GTOI Gorontalo 38.37 210 P **P** **12 02 10.5 +0.4**
comp=Z,27nm,1.0s

FAKI Fak Fak 38.90 194 P **P** **12 02 15.8 +1.3**
comp=Z,108nm,1.5s

FAKI Fak Fak 38.90 194 *eP* **P** **12 02 15.8 +1.3**
comp=Z,89nm,0.7s

MRSI Marisa 38.96 211 P **P** **12 02 16.6 +1.5**
comp=Z,53nm,1.0s

NIKH Nikolski High 39.14 47 *eP* **P** **12 02 17.8 +1.5**
comp=Z,54nm,0.8s

SANI Sanana 39.74 204 P **P** **12 02 19.4 -2.2**
comp=Z,56nm,0.7s,comp=Z,648nm

UTTA Uttaradit 39.94 255 P **P** **12 02 23.8 +0.6**
comp=Z,11nm,0.9s,comp=Z,81nm

CMAI Chiengmai2 39.96 259 P **P** **12 02 26.2 +2.6**
comp=Z,110nm,1.1s,comp=Z,5µm

LAMP Lampang 40.24 257 P **P** **12 02 26.7 +0.9**
comp=Z,10nm,0.8s

PBKT Sadao Pong 40.27 253 P **P** **12 02 26.2 +0.2**
comp=Z,51nm,1.1s,comp=Z,5µm

CMMT Chiang Mai 40.63 257 P **P** **12 02 28.8 -0.2**
comp=Z,20nm,0.9s

CHTO Chiang Mai 40.63 257 P **P** **12 02 29.4 +0.4**
comp=Z,54nm,0.9s

CHTO Chiang Mai 40.63 257 *eP* **P** **12 02 27.8 -1.2**
CHTO pmax pmax
comp=Z,15nm,0.9s

CHTO Chiang Mai 40.63 257 *eP* **P** **12 02 27.8 -1.2**
comp=Z,15nm,0.9s

CMAR Chiang Mai Arr 40.82 257 P **P** **12 02 29.9 -0.8**
comp=Z,5.9nm,0.8s,baz=46,slow=7.3,SNR=16
CMAR LR LR 12 18 06.3
comp=Z,757nm,21.1s,baz=38,slow=34

CM01 Chiang Mai Arr 40.83 257 *eP* **P** **12 02 29.3 -1.4**

WMQ Urumqi 41.42 299⇑ *i* P **P** **12 02 35.5 +0.2**
WMQ pP pP 12 02 43.0 +0.3
WMQ PP **PnPn** **12 04 17.0 +1.2**
WMQ PcP **PcP** **12 04 28.5 -4.5**
WMQ S S **12 08 50.0 +1.1**
WMQ sS sS 12 08 58.3 -2.8
WMQ pmax pmax
comp=Z,130nm,1.1s
WMQ pmax pmax
comp=Z,900nm,4.4s
WMQ LR LR
comp=Z,5µm,17.2s
WMQ LR LR
comp=Z,4µm,17.2s
WMQ LR LR
comp=Z,3µm,19.0s

CHBT CHBT 41.53 247 P P 12 02 44.2 +7.8
comp=Z,63nm,0.8s,comp=Z,2µm

LSA Lhasa 42.13 277 P **P** **12 02 43.0 +1.2**
LSA pmax pmax
comp=Z,16nm,1.4s

LSA Lhasa 42.13 277 *eP* **P** **12 02 42.4 +0.6**
LSA pmax pmax
comp=Z,36nm,1.0s

LSA Lhasa 42.13 277 *eP* **P** **12 02 42.4 +0.6**
comp=Z,36nm,1.0s

UMPA Umpang Tak 42.14 254 P P 12 02 47.0 +5.6
comp=Z,10nm,0.9s,comp=Z,767nm

SBUM Sibu 42.25 226⇑P **P** **12 02 42.8 +0.5**

SBUM Sibu 42.25 226 *eP* **P** **12 02 42.7 +0.5**
comp=Z,16nm,0.9s

ZAA0 Zalesovo Array 42.92 314 *eP* **P** **12 02 46.8 -0.5**
ZAA0 *eP* **pP** **12 02 47.0 -7.7**

ZALV Zalesovo Beam 42.92 314 P **P** **12 02 46.8 -0.5**
comp=Z,45nm,0.7s,baz=98,slow=7.2,SNR=67
ZALV LR LR 12 21 31.4
comp=Z,3µm,18.2s,baz=74,slow=37

SRDT SRDT 43.02 252 P **P** **12 02 50.0 +1.5**
comp=Z,81nm,2.0s,comp=Z,3µm

SHL Shillong 43.15 271 *eP* **P** **12 02 49.0 -0.8**
SHL *ex* x 12 09 12.0

NVS Novosibirsk 43.87 315 *eP* **P** **12 02 55.2 +0.2**
NVS *eS* **S** **12 09 30.1 +5.5**
NVS pmax pmax
comp=Z,100nm,1.0s
NVS pmax pmax
comp=N,21nm,1.2s
NVS pmax pmax
comp=E,116nm,1.8s
NVS smax smax
comp=E,63nm,2.5s

STKI Sintang 44.61 225 P **P** **12 03 03.1 +1.8**

NRIK Noril'sk 44.75 336 P **P** **12 03 01.7 -0.1**
comp=E,30nm,1.0s,baz=107,slow=9.2,SNR=18
NRIK LR LR 12 22 54.8
comp=E,6µm,18.2s,baz=106,slow=38

PMG Port Moresby 44.81 171 P **P** **12 03 02.2 -0.7**
comp=E,24nm,1.0s,baz=12,slow=18,SNR=3.3
PMG LR LR 12 21 47.0
comp=E,444nm,18.6s,baz=7.5,slow=36

PMG Port Moresby 44.81 171 *ceP* **P** **12 03 03.3 +0.4**
PMG pmax pmax
comp=Z,116nm,1.0s

PMG Port Moresby 44.81 171 *eP* **P** **12 03 03.7 +0.8**
comp=Z,81nm,1.3s

MK01 Makanchi Array 44.84 304 *eP* **P** **12 03 02.8 -0.1**

MK31 Makanchi Array 44.84 304 *i* P **P** **12 03 02.3 -0.6**
MK31 pmax pmax
comp=Z,50nm,0.9s

MK31 Makanchi Array 44.84 304 *eP* **P** **12 03 02.7 -0.2**

MKAR Makanchi Array 44.84 304 P **P** **12 03 02.7 -0.3**
comp=Z,34nm,0.8s,baz=87,slow=9.8,SNR=112
MKAR LR LR 12 22 34.4
comp=Z,7µm,19.3s,baz=88,slow=37

MAKZ Makanchi 45.06 304 *eP* **P** **12 03 04.5 -0.1**
MAKZ pmax pmax
comp=Z,54nm,0.9s

MAKZ Makanchi 45.06 304 *eP* **P** **12 03 04.5 -0.1**
comp=Z,54nm,0.9s

KURK Kurchatov 46.82 309 *c i* P **P** **12 03 17.7 -0.7**

KURK Kurchatov 46.82 309 P **P** **12 03 18.3 -0.1**

KURBB Kurchatov Arra 46.89 309 P **P** **12 03 18.3 -0.6**
comp=Z,51nm,0.6s,baz=85,slow=7.9,SNR=275

RAMN Ramite 46.89 276 *eP* **P** **12 03 18.5 -1.1**
comp=Z,106nm,0.7s

JIRN Jiri 46.94 277 *eP* **P** **12 03 20.9 +0.8**
comp=Z,194nm,0.9s

TT01 Tatalina 47.01 34 *eP* **P** **12 03 20.6 +0.9**

SVW2 Sparrevohn 47.08 36 *eP* **P** **12 03 22.2 +1.9**
comp=Z,27nm,1.0s

GUN Gumba 47.09 277 *eP* **P** **12 03 22.3 +1.0**
comp=Z,38nm,0.5s

PDGK Podgornoye 47.38 299 P **P** **12 03 22.2 -0.9**
PDGK pmax pmax
comp=Z,115nm,0.9s

PKIN Phulchoki 47.61 277 *eP* **P** **12 03 25.3 0.0**
comp=Z,44nm,0.7s

KKN Kakani 47.62 277 *eP* **P** **12 03 25.5 +0.2**
comp=Z,25nm,0.6s

DMN Daman 47.84 277 *eP* **P** **12 03 26.3 -0.7**
comp=Z,89nm,1.3s

HNR Honiara 47.91 155 LR LR 12 25 24.3
comp=Z,2µm,18.2s,baz=318,slow=38

IPM Ipoh 48.02 240⇑P **P** **12 03 28.6 +0.4**

IPM Ipoh 48.02 240 *eP* **P** **12 03 27.9 -0.2**
comp=Z,36nm,1.1s

GKN Gorkha 48.06 278 *eP* **P** **12 03 29.3 +0.7**
comp=Z,96nm,0.8s

KGM Kluang 48.21 235⇑P **P** **12 03 30.8 +1.2**

OHAK Old Harbor 48.23 42 *eP* **P** **12 03 31.2 +2.0**
comp=Z,56nm,1.4s

FRIM Kepong 48.48 238⇓P **P** **12 03 32.4 +0.7**

KDAK Kodiak Island 48.58 41 *i* P **P** **12 03 33.0 +1.1**

KDAK Kodiak Island 48.58 41 *eP* **P** **12 03 32.7 +0.8**
comp=Z,38nm,0.9s

PPLA Purkeypile 48.76 34 *eP* **P** **12 03 35.9 +2.4**
comp=Z,60nm,1.3s

CAST Castle Rocks 48.82 33 *eP* **P** **12 03 35.5 +1.7**
comp=Z,19nm,1.1s

KOLN Koldanda 48.99 278 *eP* **P** **12 03 35.2 -0.6**
comp=Z,51nm,1.0s

COEN Coen 49.01 177 *eP* **P** **12 03 35.4 -0.3**
comp=Z,90nm,1.1s

CNPM China Poot 49.22 39 *eP* **P** **12 03 38.8 +1.9**
comp=Z,106nm,1.9s

BPAW Bear Paw Mtn. 49.34 32 *eP* **P** **12 03 39.1 +1.4**
comp=Z,16nm,0.9s

KTH Kantishna Hill 49.35 33 *eP* **P** **12 03 39.3 +1.4**
comp=Z,49nm,1.2s

PYUN Piuthan 49.35 279 *eP* **P** **12 03 38.2 -0.4**
comp=Z,92nm,0.6s

SUA Susitna One 49.42 36 *eP* **P** **12 03 39.1 +0.6**
comp=Z,23nm,0.9s

MLY Manley 49.48 31 *eP* **P** **12 03 40.1 +1.3**
comp=Z,27nm,1.0s

PPBI Pangkal Pinang 49.57 229 P **P** **12 03 40.5 +0.5**

TRF Thorofare Moun 49.63 33 *eP* **P** **12 03 43.5 +3.4**
comp=Z,17nm,1.0s

COLD Coldfoot 49.81 28 *eP* **P** **12 03 43.3 +2.0**
comp=Z,13nm,1.1s

RC01 Rabbit Creek A 49.91 36 *eP* **P** **12 03 43.0 +0.9**
comp=Z,33nm,1.0s

SEW Seward 50.10 38 *eP* **P** **12 03 45.0 +1.6**
comp=Z,99nm,1.4s

PMR Palmer 50.19 36 *eP* **P** **12 03 44.3 +0.1**
PMR pmax pmax
comp=Z,36nm,1.2s

PMR Palmer 50.19 36 *eP* **P** **12 03 44.3 +0.1**
comp=Z,36nm,1.2s

MCK McKinley 50.24 33 *eP* **P** **12 03 45.9 +1.3**
MCK pmax pmax
comp=Z,92nm,1.7s

MCK McKinley 50.24 33 *eP* **P** **12 03 45.9 +1.3**
comp=Z,92nm,1.7s

RND Reindeer 50.28 33 *eP* **P** **12 03 45.4 +0.5**
RND pmax pmax
comp=Z,37nm,1.1s

RND Reindeer 50.28 33 *eP* **P** **12 03 45.4 +0.5**
comp=Z,37nm,1.1s

MDM Murphy Dome 50.54 31 *eP* **P** **12 03 47.8 +0.9**
comp=Z,59nm,1.1s

SML Sawmill 50.56 35 *eP* **P** **12 03 48.5 +1.4**
SML pmax pmax
comp=Z,28nm,0.8s

SML Sawmill 50.56 35 *eP* **P** **12 03 48.5 +1.4**
comp=Z,28nm,0.8s

WRH Wood River Hil 50.60 32 *eP* **P** **12 03 47.9 +0.7**
comp=Z,16nm,1.0s

PSI Prapat 50.68 240 P **P** **12 03 48.9 +0.1**
comp=Z,8.0nm,0.8s,baz=267,slow=6.8,SNR=3.6
PSI LR LR 12 25 43.6
comp=Z,678nm,21.5s,baz=30,slow=37

PSI Prapat 50.68 240 *eP* **P** **12 03 48.8 +0.1**
PSI pmax pmax
comp=Z,58nm,1.3s

PSI Prapat 50.68 240 *eP* **P** **12 03 48.8 +0.1**
comp=Z,58nm,1.3s

COLA College 50.70 31 *eP* **P** **12 03 50.9 +2.9**
COLA pmax pmax
comp=Z,33nm,1.2s

COLA College 50.70 31 *eP* **P** **12 03 50.9 +2.9**
comp=Z,33nm,1.2s

CCB Clear Creek Bu 50.72 32 *eP* **P** **12 03 49.0 +0.8**
comp=Z,18nm,1.2s

KSH Kashi 50.90 295 *eP* **P** **12 03 53.5 +3.5**
KSH *epP* sP 12 04 00.0 -0.5
KSH *esP* pP 12 04 02.8 +5.2
KSH PcS **PcS** **12 09 06.0 +2.0**
KSH S **S** **12 11 08.3 +3.1**
KSH pmax pmax
comp=Z,15nm,0.6s
KSH LR LR
comp=Z,2µm,14.4s
KSH LR LR
comp=Z,3µm,14.4s
KSH LR LR
comp=Z,4µm,16.0s

DHY Denali Highway 50.95 34 *eP* **P** **12 03 50.8 +0.7**
comp=Z,16nm,1.0s
DHY *eS* **S** **12 11 04.7 -0.7**

FRU Bishkek 50.97 300 *eP* **P** **12 03 49.0 -1.4**
FRU *e* 12 11 08.0
FRU *e* 12 11 22.0
FRU pmax pmax
comp=Z,100nm,1.4s
FRU pmax pmax
comp=E,6µm,18.0s

SCM Sheep Creek Mo 51.04 35 *eP* **P** **12 03 52.2 +1.5**
SCM pmax pmax
comp=Z,53nm,1.2s

SCM Sheep Creek Mo 51.04 35 *eP* **P** **12 03 52.2 +1.5**
comp=Z,53nm,1.2s

HDA Harding Lake 51.10 32 *eP* **P** **12 03 51.3 +0.3**
comp=Z,25nm,0.9s

AAK Ala-Archa 51.10 300 P **P** **12 03 51.1 -0.5**
comp=Z,36nm,0.8s,baz=118,slow=6.8,SNR=17

AAK Ala-Archa 51.10 300 *c i* P **P** **12 03 51.3 -0.3**
AAK pmax pmax
comp=Z,42nm,0.9s

ILAR Eielson Array 51.12 32 P **P** **12 03 51.0 -0.2**
comp=Z,7.3nm,0.8s,baz=269,slow=5.9,SNR=55

ILAR Eielson Array 51.12 32 P **P** **12 03 51.0 -0.2**

ILB Eielson Array 51.12 32 *eP* **P** **12 03 51.4 +0.3**

IL1 Eielson Array 51.12 32 *eP* **P** **12 03 51.3 +0.1**

OTUK Ortayu 51.25 307 P **P** **12 03 51.7 -0.8**
OTUK pmax pmax
comp=Z,58nm,0.8s

BVAR Borovoye Array 51.57 313 P **P** **12 03 53.9 -0.8**
comp=Z,9.1nm,0.5s,baz=79,slow=7.7,SNR=41

BRVK Borovoye 51.62 313 *c i* P **P** **12 03 54.6 -0.5**
BRVK pmax pmax
comp=Z,116nm,1.2s

BRVK Borovoye 51.62 313 *eP* **P** **12 03 55.0 -0.1**
comp=Z,48nm,1.0s

MNSI Madaling Nat 51.65 238 P P 12 04 00.9 +5.2
comp=Z,18nm,0.6s

KLU Klutina 51.73 36 *eP* **P** **12 03 57.6 +1.7**
comp=Z,42nm,1.2s

FYU Fort Yukon 51.76 29 *eP* **P** **12 03 58.0 +2.1**
comp=Z,112nm,1.4s

PAX Paxson 51.83 34 *eP* **P** **12 03 57.5 +0.9**
PAX pmax pmax
comp=Z,12nm,1.0s

PAX Paxson 51.83 34 *eP* **P** **12 03 57.5 +0.9**
comp=Z,12nm,1.0s

DIV Divide 51.83 36 *eP* **P** **12 03 58.0 +1.4**
comp=Z,128nm,1.7s

DOT Dot Lake 52.41 33 *eP* **P** **12 04 01.3 +0.4**
comp=Z,102nm,1.5s

KLSI 52.41 228 P **P** **12 04 00.4 -1.0**
comp=Z,101nm,0.9s,comp=Z,929nm

BMRM Bremner River 52.42 36 *eP* **P** **12 04 02.8 +1.8**
comp=Z,39nm,0.9s

RAGM Raggd Mountai 52.45 37 *eP* **P** **12 04 02.2 +1.0**
comp=Z,41nm,1.0s

KLI Kotabumi 52.47 228 P **P** **12 04 01.7 -0.1**
comp=Z,192nm,1.0s,comp=Z,4µm

LHSI Lahat 52.49 230 P **P** **12 04 01.5 -0.5**
comp=Z,158nm,1.2s

MNAS Manas 52.56 300 P **P** **12 04 01.9 -0.6**
MNAS pmax pmax
comp=Z,38nm,0.9s

MENT Mentasta 52.63 34 *eP* **P** **12 04 04.2 +1.7**
comp=Z,23nm,1.0s

BLSI Bandar Lampung 52.63 227 P **P** **12 04 03.7 +0.6**
comp=Z,154nm,0.7s

GSI Gunungsitoli 52.69 240 P **P** **12 04 04.3 +0.8**
comp=Z,112nm,1.0s

GSI Gunungsitoli 52.69 240 *eP* **P** **12 04 03.9 +0.4**
comp=Z,96nm,1.0s

SDNR Sundarnagar 52.84 285 *eP* **P** **12 04 04.0 -0.5**

LWLI Liwa 53.08 229 P **P** **12 04 05.6 -0.9**

CRQM Cirque 53.15 36 *eP* **P** **12 04 08.8 +2.2**
comp=Z,33nm,1.0s

KASI Kota Agung 53.21 228 P **P** **12 04 07.8 +0.5**
comp=Z,61nm,1.1s

BHK Bhakra 53.31 285 *eP* **P** **12 04 05.8 -2.2**

THN Thein Dam 53.47 287 *eP* **P** **12 04 09.0 -0.1**

KKR Kurukshetra 53.56 284 *eP* **P** **12 04 09.6 -0.2**

EGAK Eagle 53.56 31 *eP* **P** **12 04 09.7 +0.4**
comp=Z,18nm,1.0s

KK31 Karatay Array 53.79 301 P **P** **12 04 11.1 -0.2**
KK31 pmax pmax
comp=Z,45nm,1.0s

KKAR Karatay Array 53.79 301 *eP* **P** **12 04 11.6 +0.3**

KKAR Karatay Array 53.79 301 *eP* **P** **12 04 11.6 +0.3**

BHGR Bahadurgarh 53.98 282 *eP* **P** **12 04 13.2 +0.3**

DAWY Dawson 54.42 32 *eP* **P** **12 04 16.7 +1.1**
comp=Z,42nm,1.7s

KUDL Kundal 54.57 282 *eP* **P** **12 04 16.8 -0.4**
KUDL IAmb IAmb 12 04 17.8
comp=Z,45nm,1.4s

FITZ Fitzroy Crossi 55.08 198 P **P** **12 04 20.5 -0.3**
comp=Z,48nm,0.7s,baz=32,slow=7.9,SNR=15

FITZ Fitzroy Crossi 55.08 198 *eP* **P** **12 04 20.2 -0.6**
comp=Z,59nm,0.8s

KHET Khetri 55.15 282 *eP* **P** **12 04 20.6 -0.8**

CTA Charters Tower 55.28 174 P **P** **12 04 21.9 -0.4**
comp=Z,4.9nm,0.7s,baz=344,slow=8.9,SNR=6.1

WRAB Tennant Creek 55.28 188 *c i* P **P** **12 04 21.2 -1.1**

WRA Warramunga Arr 55.29 188 P **P** **12 04 20.5 -1.8**
comp=Z,110nm,0.8s,baz=5.7,slow=7.6,SNR=52
WRA LR LR 12 28 38.9
comp=Z,745nm,19.2s,baz=10.0,slow=37

QIS Mount Isa 55.55 182 P **P** **12 04 23.1 -1.1**
baz=25,SNR=30

HYT Haines Junctio 55.86 36 *eP* **P** **12 04 28.4 +2.3**
comp=Z,49nm,1.3s

INK Inuvik 56.06 27 P **P** **12 04 25.9 -1.4**
comp=Z,6.0nm,1.0s,baz=282,slow=11,SNR=6.4

INK Inuvik 56.06 27 *eP* **P** **12 04 28.3 +1.0**
INK pmax pmax
comp=Z,30nm,1.3s

INK Inuvik 56.06 27 *eP* **P** **12 04 28.3 +1.0**
comp=Z,30nm,1.3s

SVE Sverdlovsk 56.29 319⇓ *eP* **P** **12 04 29.3 +0.2**
SVE pmax pmax
comp=Z,102nm,1.4s
SVE MLR MLR
comp=Z,5µm,16.0s

ARU Arti 57.50 319 *c i* P **P** **12 04 37.3 -0.4**
ARU 12 05 28.3
ARU 12 06 47.3
ARU PPP PPP 12 08 06.4
ARU S **S** **12 12 33.7 +0.2**
ARU 12 14 18.4
ARU SS **SS** **12 16 16.7 -6.3**
ARU pmax pmax
comp=Z,83nm,1.2s
ARU MLR MLR
comp=Z,4µm,16.0s

ARU Arti 57.50 319 *eP* **P** **12 04 37.5 -0.2**
comp=Z,72nm,0.9s

SOKR Solikamsk 57.56 323 *c i* P **P** **12 04 35.9 -2.1**
SOKR S **S** **12 12 32.0 -2.1**
SOKR SS **SS** **12 16 23.9 +0.3**
SOKR SSS SSS 12 18 37.8
SOKR pmax pmax
comp=Z,48nm,1.4s
SOKR MLR MLR
comp=Z,4µm,20.0s

KBL Kabul 57.81 292 *eP* **P** **12 04 40.1 -0.4**
KBL pmax pmax
comp=Z,57nm,1.3s

KBL Kabul 57.81 292 *eP* **P** **12 04 40.1 -0.4**
comp=Z,57nm,1.3s

HYB Hyderabad 57.91 269 *i* P **P** **12 04 40.0 -1.2**
HYB *eS* **S** **12 12 38.0 -1.9**

AB31 Akbulak array 58.88 311 P **P** **12 04 45.2 -2.2**
AB31 pmax pmax
comp=Z,11nm,0.6s

ABKAR Akbulak array 58.88 311 *eP* **P** **12 04 47.0 -0.4**

ASAR Alice Springs 59.02 188 P **P** **12 04 48.3 -0.4**
comp=Z,26nm,0.7s,baz=14,slow=11,SNR=20
ASAR LR LR 12 30 54.6
comp=Z,523nm,19.1s,baz=14,slow=37

JASL Jaisalmer 59.56 283 *eP* **P** **12 04 52.6 +0.1**

DLBC Dease Lake 60.17 37 *eP* **P** **12 04 58.4 +2.1**
comp=Z,24nm,1.3s

EIDS Eidsvold 61.06 170 *eP* **P** **12 05 02.1 -0.4**
comp=Z,38nm,1.3s

DZM Mont Dzumac 61.90 153 P **P** **12 05 08.5 +0.1**
comp=Z,33nm,1.2s,baz=3.3,slow=8.0,SNR=4.4

DZM Mont Dzumac 61.90 153 *eP* **P** **12 05 08.9 +0.5**
comp=Z,97nm,1.4s
DZM *eS* **S** **12 13 28.9 -2.1**
comp=Z,3µm,27.9s
DZM *e*LR LR 12 23 27.4
comp=Z,2µm,20.7s

DZM Mont Dzumac 61.90 153 *eP* **P** **12 05 08.8 +0.3**
comp=Z,49nm,1.1s

SPA0 Spitsbergen Ar 62.19 349 *eP* **P** **12 05 12.0 +2.3**

KBS Kingsbay 62.33 350 *eP* **P** **12 05 11.6 +1.0**
KBS pmax pmax
comp=Z,33nm,0.8s

KBS Kingsbay 62.33 350 *eP* **P** **12 05 11.6 +1.0**
comp=Z,33nm,0.8s

MSVF Nonsavu 63.32 140⇑ *eP* **P** **12 05 19.5 +1.5**
MSVF pmax pmax
comp=Z,46nm,1.5s

MSVF Nonsavu 63.32 140 *eP* **P** **12 05 19.1 +1.2**
comp=Z,88nm,1.6s

LVZ Lovozero 63.60 336⇑ *eP* **P** **12 05 19.5 +0.3**
LVZ pmax pmax
comp=Z,52nm,1.2s

RES Resolute Bay 64.36 14 *eP* **P** **12 05 25.0 +1.0**
RES pmax pmax
comp=Z,43nm,0.9s

RES Resolute Bay 64.36 14 *eP* **P** **12 05 25.0 +1.0**
comp=Z,43nm,0.9s

GEYT Alibeck 64.46 300 P **P** **12 05 25.2 -0.2**
comp=Z,11nm,0.7s,baz=58,slow=3.7,SNR=21
GEYT LR LR 12 35 43.8
comp=Z,4µm,18.2s,baz=5.0,slow=38

KLMR Klimovskoe 65.10 328 *eP* **P** **12 05 27.5 -1.5**
KLMR pmax pmax
comp=Z,34nm,1.0s

YKW3 Yellowknife Ar 65.42 30 *eP* **P** **12 05 31.3 +0.3**
comp=Z,11nm,1.0s

YKA Yellowknife Ar 65.45 30 P **P** **12 05 31.5 +0.2**
comp=Z,3.8nm,0.9s,baz=297,slow=6.3,SNR=15

ARA0 ARCESS Array S 65.54 340 *eP* **P** **12 05 33.0 +1.1**

ARCES ARCESS Array B 65.54 340 P **P** **12 05 32.1 +0.3**
comp=Z,13nm,0.8s,baz=70,slow=8.1,SNR=11
ARCES LR LR 12 37 39.2
comp=Z,4µm,19.1s,baz=40,slow=39

ARMA Armidale 66.10 170 *eP* **P** **12 05 37.0 +1.1**
comp=Z,19nm,1.0s

AFI Afiamalu 66.23 129 LR LR 12 29 12.8
comp=Z,1µm,21.2s,baz=332,slow=31

STKA Stephens Creek 66.81 180 LR LR 12 33 53.1
comp=Z,2µm,21.7s,baz=359,slow=35

DAG Dannmarks Havn 67.49 355 *i* P **P** **12 05 44.3 +0.2**
comp=Z,26nm,1.1s
comp=Z,960nm,16.0s

LLLB Lillooet 67.70 43 *eP* **P** **12 05 46.9 +0.9**
comp=Z,11nm,0.9s

BBOO Buckleboo 67.90 185 *eP* **P** **12 05 47.9 +0.7**
comp=Z,93nm,1.8s

NLWA Neilton Lookou 68.09 47 *eP* **P** **12 05 50.4 +1.9**
comp=Z,51nm,1.3s

MOS Moscow 68.50 324 *eP* **P** **12 05 50.5 -0.3**
MOS *e* 12 06 04.3
MOS *e* 12 06 12.6
MOS *e* 12 08 22.1
MOS *eS* **S** **12 14 51.4 +0.3**
MOS pmax pmax
comp=Z,42nm,1.1s
MOS MLR MLR
comp=E,3µm,16.0s
MOS MLR MLR
comp=Z,5µm,16.0s

VRH Novokhopyorsk 68.70 318 *eP* **P** **12 05 52.9 +0.8**
VRH pmax pmax
comp=Z,20nm,0.6s

B05A Bryant 68.72 45 P **P** **12 05 52.9 +0.6**
baz=300,SNR=6.7

JCW Jim Creek 68.85 45 P **P** **12 05 54.4 +1.2**

OBN Obninsk 69.34 324 LR LR 12 37 00.7
comp=Z,3µm,21.8s,baz=55,slow=36

OBN Obninsk 69.34 324 *ceP* **P** **12 05 55.6 -0.4**
OBN pmax pmax
comp=Z,59nm,1.7s
OBN MLR MLR
comp=Z,4µm,15.0s

G03D McMinnville, O 69.52 49 P **P** **12 05 58.4 +1.1**
baz=300

TDL Tradedollar La 69.59 47 P **P** **12 05 57.9 0.0**

LON Longmire 69.64 47 *eP* **P** **12 05 59.2 +1.0**
LON pmax pmax
comp=Z,6.0nm,0.9s

LON Longmire 69.64 47 *eP* **P** **12 05 59.1 +1.0**
comp=Z,5.5nm,0.9s

VSR Storozhevoye 70.08 319 *eP* **P** **12 05 59.8 -0.8**
VSR pmax pmax
comp=Z,30nm,1.2s
VSR MLR MLR
comp=Z,3µm,15.0s

I03D Drain, OR 70.22 50 P **P** **12 06 02.3 +0.6**
baz=300

FINES FINESS Array B 70.24 332 P **P** **12 06 01.4 -0.1**
comp=Z,26nm,0.8s,baz=46,slow=8.2,SNR=28
FINES LR LR 12 41 25.0
comp=Z,3µm,18.8s,baz=24,slow=40

B08A Colville Reser 70.27 44 *eP* **P** **12 06 02.8 +0.9**

	comp=Z,18nm,1.1s								
CAN	**Canberra**	**70.63**	**173**	*e*P		**P**	**12 06 03.9**	**-0.2**
CAN	comp=Z,41nm,1.3s			pmax		pmax			
CAN	**Canberra**	**70.63**	**173**	*e*P		**P**	**12 06 03.9**	**-0.2**
	comp=Z,41nm,1.3s								
G05D	**Wamic, OR**	**70.70**	**48**	P		**P**	**12 06 05.3**	**+0.7**
	baz=301								
IRO	**Indian Ridge**	**70.75**	**49**	P		**P**	**12 06 06.3**	**+1.2**
I04A	**Tendick Farm,**	**70.76**	**50**	P		**P**	**12 06 05.9**	**+0.9**
	baz=301								
L02D	**Cave Junction,**	**70.84**	**52**	P		**P**	**12 06 05.9**	**+0.4**
	baz=301								
EDM	**Edmonton**	**70.88**	**38**	*e*P		**P**	**12 06 06.0**	**+0.4**
EDM	comp=Z,28nm,1.3s			pmax		pmax			
EDM	**Edmonton**	**70.88**	**38**	*e*P		**P**	**12 06 06.0**	**+0.4**
	comp=Z,28nm,1.3s								
HUMO	**Hull Mountain**	**71.02**	**51**	*e*P		**P**	**12 06 08.5**	**+1.8**
	comp=Z,14nm,1.3s								
GOF	**Gofitskoye**	**71.07**	**312**⇑	*e*P		**P**	**12 06 06.2**	**-0.6**
GOF	comp=Z,51nm,1.0s			pmax		pmax			
WSAR	**Wadi Sarin**	**71.07**	**285**	LR		LR	12 41 59.3		
	comp=Z,1µm,18.8s,slow=40								
KTRM	**Thompson Ridge**	**71.11**	**52**	P		**P**	**12 06 09.0**	**+1.7**
G06A	**Carlson Farm,**	**71.11**	**48**	*e*P		**P**	**12 06 08.4**	**+1.2**
	comp=Z,65nm,1.8s								
I05D	**Terrebonne, OR**	**71.15**	**49**	P		**P**	**12 06 07.9**	**+0.5**
	baz=301								
C09A	**Chrisman Ranch**	**71.16**	**44**	*e*P		**P**	**12 06 08.4**	**+1.0**
	comp=Z,21nm,1.1s								
HAWA	**Hanford**	**71.17**	**46**	*e*P		**P**	**12 06 09.2**	**+1.8**
	comp=Z,16nm,1.2s								
D08A	**Wollman Farm,**	**71.18**	**45**	*e*P		**P**	**12 06 08.5**	**+1.0**
	comp=Z,13nm,0.8s								
VTHM	**Trough**	**71.19**	**48**	P		**P**	**12 06 08.5**	**+0.9**
J04D	**Umpqua Nationa**	**71.23**	**50**	P		**P**	**12 06 08.4**	**+0.3**
	baz=301,SNR=7.1								
KHMM	**Horse Mountain**	**71.41**	**53**	*e*P		**P**	**12 06 11.1**	**+2.0**
	comp=Z,35nm,1.3s								
NWAO	**Narrogin (SRO)**	**71.45**	**201**	P		**P**	**12 06 09.9**	**+0.8**
	comp=Z,21nm,0.7s,baz=256,slow=8.2,SNR=4.9								
DGRG	**David-gareji**	**71.46**	**308**	P		**P**	**12 06 08.9**	**-0.4**
DGRG	**David-gareji**	**71.46**	**308**	P		**P**	**12 06 08.9**	**-0.4**
GUDG	**Gudauri**	**71.51**	**309**	P		**P**	**12 06 09.6**	**-0.3**
BANOM	**Banah**	**71.52**	**289**	P		**P**	**12 06 09.8**	**-0.2**
NCK	**Nalchik**	**71.53**	**310**⇑	*e*P		**P**	**12 06 10.0**	**+0.3**
NCK	comp=Z,24nm,1.2s			pmax		pmax			
DUS	**Dusheti**	**71.56**	**309**	P		**P**	**12 06 14.7**	**+4.7**
DUS	**Dusheti**	**71.56**	**309**	P		**P**	**12 06 14.7**	**+4.7**
NEW	**Newport**	**71.57**	**44**	P		**P**	**12 06 10.1**	**+0.2**
	baz=303								
NEW	**Newport**	**71.57**	**44**	*e*P		**P**	**12 06 10.7**	**+0.8**
NEW	comp=Z,15nm,1.1s			pmax		pmax			
NEW	**Newport**	**71.57**	**44**	*e*P		**P**	**12 06 10.7**	**+0.8**
	comp=Z,15nm,1.1s								
YBH	**Yreka Blue Hor**	**71.63**	**52**	*e*P		**P**	**12 06 11.7**	**+1.3**
YBH	comp=Z,24nm,1.2s			pmax		pmax			
YBH	**Yreka Blue Hor**	**71.63**	**52**	*e*P		**P**	**12 06 11.7**	**+1.3**
	comp=Z,24nm,1.2s								
BUOR	**Burton Butte**	**71.64**	**51**	P		**P**	**12 06 11.8**	**+1.2**
ZEI	**Tsey**	**71.71**	**310**	*e*P		**P**	**12 06 09.1**	**-1.9**
ZEI	comp=Z,151nm,1.5s			pmax		pmax			
M02C	**Callahan**	**71.71**	**52**	P		**P**	**12 06 11.6**	**+0.7**
	baz=301,SNR=8.4								
TBLG	**Delisi**	**71.72**	**308**	P		**P**	**12 06 07.4**	**-3.5**
TBLG	**Delisi**	**71.72**	**308**	P		**P**	**12 06 07.4**	**-3.5**
J05D	**Fort Rock, OR**	**71.76**	**50**	P		**P**	**12 06 11.7**	**+0.5**
	baz=302,SNR=20								
VSU	**Vasula**	**71.83**	**330**	*ce*P		**P**	**12 06 11.2**	**+0.1**
VSU	comp=Z,200nm,1.7s			pmax		pmax			
KBZ	**Khabaz**	**71.84**	**311**	P		**P**	**12 06 11.8**	**+0.3**
	comp=Z,24nm,1.0s,baz=47,slow=5.4,SNR=25								
KBZ				LR		LR	12 41 31.9		
	comp=Z,2µm,20.0s,baz=32,slow=39								
KVAR	**Kislovodsk Arr**	**71.85**	**311**	LR		LR	12 42 24.6		
	comp=Z,3µm,18.6s,baz=40,slow=40								
KIV	**Kislovodsk**	**71.86**	**311**	*i* P		**P**	**12 06 12.1**	**+0.4**
	SNR=7.2								
KIV	**Kislovodsk**	**71.86**	**311**	*e*P		**P**	**12 06 11.7**	**0.0**
KIV				*e*S		**S**	**12 15 29.7**	**-1.3**
KIV				*e*SS		**SS**	**12 20 07.2**	**+0.5**
KIV	comp=Z,88nm,1.0s			pmax		pmax			
KIV	comp=Z,114nm,4.3s			pmax		pmax			
KIV	**Kislovodsk**	**71.86**	**311**	*e*P		**P**	**12 06 12.4**	**+0.7**
	comp=Z,68nm,0.9s								
E09A	**Wood Farm, Sta**	**71.92**	**46**	*e*P		**P**	**12 06 13.2**	**+1.2**
	comp=Z,30nm,1.3s								
N02D	**Trinity Center**	**72.02**	**52**	P		**P**	**12 06 12.9**	**+0.1**
	baz=301,SNR=9.4								
G08A	**Pilot Rock**	**72.09**	**47**	*e*P		**P**	**12 06 14.2**	**+1.1**
	comp=Z,14nm,1.4s								
ONI	**Oni**	**72.09**	**310**	P		**P**	**12 06 13.5**	**+0.4**
ONI	**Oni**	**72.09**	**310**	P		**P**	**12 06 13.5**	**+0.4**
UOSS	**Minazif**	**72.10**	**288**	*e*P		**P**	**12 06 13.6**	**+0.3**
	comp=Z,33nm,1.1s								
M04C	**Macdoel**	**72.16**	**51**	P		**P**	**12 06 14.0**	**+0.4**
	baz=302,SNR=16								
K05A	**Summer Lake**	**72.26**	**50**	*e*P		**P**	**12 06 16.1**	**+1.8**
	comp=Z,32nm,1.0s								
WDC	**Whiskeytown Da**	**72.33**	**53**	*e*P		**P**	**12 06 15.8**	**+1.3**
WDC	comp=Z,11nm,1.0s			pmax		pmax			
WDC	**Whiskeytown Da**	**72.33**	**53**	*e*P		**P**	**12 06 15.8**	**+1.3**
	comp=Z,11nm,1.0s								
ASHO	**Ashiyiah**	**72.35**	**288**	*i* P		**P**	**12 06 15.5**	**+0.6**
	SNR=6.0								
LASM	**Arnica Sink**	**72.42**	**51**	P		**P**	**12 06 16.6**	**+1.3**
SUMG	**Summit**	**72.43**	**360**⇑	*i* P		**P**	**12 06 16.0**	**+1.0**
SUMG	comp=Z,28nm,0.9s			*i*			12 06 26.4		
SUMG	comp=Z,4µm,20.0s **Summit**	**72.43**	**360**	*e*P		**P**	**12 06 16.0**	**+1.0**
SUMG	comp=Z,59nm,1.0s			pmax		pmax			
SUMG	**Summit**	**72.43**	**360**	*e*P		**P**	**12 06 16.0**	**+1.0**
	comp=Z,60nm,1.0s								
GNI	**Garni**	**72.54**	**307**	LR		LR	12 40 58.0		
	comp=Z,3µm,18.5s,baz=52,slow=38								
GNI	**Garni**	**72.54**	**307**	*i* P		**P**	**12 06 16.9**	**+0.9**
	SNR=8.8								
GNI	**Garni**	**72.54**	**307**	*c i*P		**P**	**12 06 16.7**	**+0.7**
GNI	comp=Z,142nm,1.2s			pmax		pmax			
GNI	**Garni**	**72.54**	**307**	*e*P		**P**	**12 06 17.4**	**+1.4**
	comp=Z,59nm,1.0s								
AKH	**Akhalkalaki**	**72.69**	**309**⇑	*i*P		**P**	**12 06 18.5**	**+1.6**
AKH	**Akhalkalaki**	**72.69**	**309**	P		**P**	**12 06 17.4**	**+0.6**
AKH	**Akhalkalaki**	**72.69**	**309**	P		**P**	**12 06 17.4**	**+0.6**
BGD	**Bogdanovka**	**72.70**	**308**	P		**P**	**12 06 17.1**	**+0.1**
LTIM	**Timbered Crate**	**72.70**	**52**	P		**P**	**12 06 18.3**	**+1.4**
F10A	**Beach Ranch, E**	**72.75**	**46**	*e*P		**P**	**12 06 18.6**	**+1.6**
	comp=Z,13nm,1.1s								
CHVG	**Ch'k'valeri**	**72.88**	**310**	P		**P**	**12 06 17.2**	**-0.6**
WALA	**Waterton Lakes**	**72.91**	**42**	*e*P		**P**	**12 06 18.8**	**+0.8**
	comp=Z,22nm,1.3s								
O03D	**Paynes Creek**	**72.96**	**53**	P		**P**	**12 06 18.6**	**+0.2**
	baz=302,SNR=6.6								
MOD	**Modoc Plateau**	**73.07**	**50**	*e*P		**P**	**12 06 20.2**	**+1.2**
	comp=Z,18nm,1.1s								
BSMT	**Bassoo Peak**	**73.11**	**43**	*e*P		**P**	**12 06 21.1**	**+1.9**
BLMT	**Blacktail Moun**	**73.25**	**43**	*e*P		**P**	**12 06 21.6**	**+1.4**
BMO	**Blue Mountains**	**73.31**	**47**	*e*P		**P**	**12 06 21.1**	**+0.7**
BMO	comp=Z,13nm,1.0s			pmax		pmax			
BMO	**Blue Mountains**	**73.31**	**47**	*e*P		**P**	**12 06 21.1**	**+0.7**
	comp=Z,13nm,1.0s								
JTMT	**Jette**	**73.45**	**43**	*e*P		**P**	**12 06 22.1**	**+0.9**
YBMT	**Yellow Bay**	**73.53**	**43**	*e*P		**P**	**12 06 23.4**	**+1.8**
ORV	**Oroville**	**73.55**	**53**	*e*P		**P**	**12 06 22.1**	**+0.3**
ORV	comp=Z,15nm,1.0s			pmax		pmax			
ORV	**Oroville**	**73.55**	**53**	*e*P		**P**	**12 06 22.1**	**+0.3**
	comp=Z,15nm,1.0s								
SWMT	**Swartz Lake**	**73.74**	**43**	*e*P		**P**	**12 06 23.7**	**+0.9**
IZAR	**Zarasai**	**73.74**	**328**	*e*P		**P**	**12 06 22.8**	**+0.2**
IZAR	comp=Z,16nm,0.8s			IAmb		IAmb	12 06 35.2		
MICGM	**Minsk**	**73.80**	**326**	*e*		**P**	**12 06 22.0**	**-0.9**
MICGM				*e*LR		LR	12 34 04.0		
MICGM	comp=Z,4.2nm,15.0s			LRM		MLR	12 42 20.0		
MICGM	comp=E,2.5nm,14.0s			LRM		MLR	12 42 22.0		
MNK	**Minsk**	**73.80**	**326**	*e*P		**P**	**12 06 22.0**	**-0.9**
MNK	comp=Z,4µm,15.0s			MLR		MLR			
MNK	comp=E,2µm,14.0s			MLR		MLR			
IDID	**Didziasalis**	**73.80**	**327**	*e*P		**P**	**12 06 23.1**	**+0.2**
IDID	comp=Z,15nm,0.8s			IAmb		IAmb	12 06 36.4		
SCO	**Scoresbysund**	**73.82**	**354**	*i* P		**P**	**12 06 24.2**	**+1.4**
	comp=Z,22nm,1.1s								
	comp=Z,1µm,17.0s								
WVOR	**Wild Horse Val**	**73.83**	**49**	*e*P		**P**	**12 06 24.8**	**+1.3**
WVOR	comp=Z,16nm,1.0s			pmax		pmax			
WVOR	**Wild Horse Val**	**73.83**	**49**	*e*P		**P**	**12 06 24.8**	**+1.3**
	comp=Z,16nm,1.0s								
SOC	**Sochi**	**73.87**	**312**	*e*P		**P**	**12 06 22.8**	**-0.7**
SOC				*e**PP		**pP**	**12 06 31.8**	**+0.4**
SOC				*e*			12 09 05.4		
SOC				*e*PPP		PPP	12 10 52.5		
SOC				*e*S		**SKiKP**	**12 15 49.3**	**-1.5**
SOC	comp=Z,15nm,0.5s			pmax		pmax			
SOC	comp=Z,2µm,20.0s			MLR		MLR			
ISAL	**Salakas**	**73.91**	**328**	*e*P		**P**	**12 06 23.8**	**+0.2**
ISAL	comp=Z,35nm,1.2s			IAmb		IAmb	12 06 26.6		
NACGM	**Naroch**	**74.04**	**327**	*e*		**P**	**12 06 23.0**	**-1.3**
NACGM				*e*LR		LR	12 36 28.0		
NACGM	comp=Z,6.8nm,16.0s			LRM		MLR	12 43 05.0		
MSO	**Missoula**	**74.16**	**44**	P		**P**	**12 06 25.6**	**+0.3**
	baz=305								
MSO	**Missoula**	**74.16**	**44**	*e*P		**P**	**12 06 26.0**	**+0.6**
	comp=Z,28nm,1.5s								
SLMT	**Seeley Lake**	**74.17**	**43**	*e*P		**P**	**12 06 26.1**	**+0.6**
AFDM	**Forest Hills D**	**74.22**	**53**	*e*P		**P**	**12 06 26.2**	**+0.4**
	comp=Z,17nm,1.4s								
CHMT	**Chamberlain Mo**	**74.50**	**43**	*e*P		**P**	**12 06 27.8**	**+0.3**
ANN	**Anapa**	**74.56**	**314**	*e*P		**P**	**12 06 26.8**	**-0.7**
ANN				*e*			12 06 35.5		
ANN				*e*			12 09 16.2		
ANN				*e*S		**S**	**12 15 58.2**	**-3.1**
ANN	comp=Z,30nm,1.0s			pmax		pmax			
ANN	comp=N,474nm,17.0s			MLR		MLR			
PAHR	**Pah Rah Range**	**74.84**	**52**	*e*P		**P**	**12 06 30.5**	**+1.0**
	comp=N,11nm,0.9s								
MFID	**Camas Ranch**	**75.00**	**47**	*e*P		**P**	**12 06 31.1**	**+0.9**
	comp=N,14nm,0.9s								
PNTR	**Pine Nut**	**75.04**	**53**	*e*P		**P**	**12 06 32.8**	**+2.0**
	comp=N,86nm,2.0s								
CMB	**Columbia Colle**	**75.10**	**54**	*e*P		**P**	**12 06 31.8**	**+0.9**
CMB	comp=Z,32nm,1.4s			pmax		pmax			
CMB	**Columbia Colle**	**75.10**	**54**	*e*P		**P**	**12 06 31.8**	**+0.9**
	comp=Z,32nm,1.4s								
FFC	**Flin Flon**	**75.32**	**32**	*e*P		**P**	**12 06 32.1**	**+0.3**
FFC	comp=Z,22nm,1.0s			pmax		pmax			
FFC	**Flin Flon**	**75.32**	**32**	*e*P		**P**	**12 06 32.1**	**+0.3**
	comp=Z,22nm,1.0s								
YERR	**Yerington**	**75.33**	**53**	*e*P		**P**	**12 06 33.7**	**+1.3**
	comp=Z,26nm,1.2s								
HRY	**Hot Researc**	**75.41**	**43**	*e*P		**P**	**12 06 33.6**	**+1.0**
WAKR	**Walker**	**75.47**	**53**	*e*P		**P**	**12 06 34.7**	**+1.5**
	comp=Z,14nm,1.1s								
NC405	**NORSAR Array S**	**75.48**	**337**	*e*P		**P**	**12 06 32.9**	**+0.3**
NC303	**NORSAR Array S**	**75.51**	**337**	*e*P		**P**	**12 06 32.9**	**+0.2**
AKASG	**Malin Array Be**	**75.52**	**322**	P		**P**	**12 06 32.3**	**-0.7**
	comp=Z,7.6nm,0.6s,baz=47,slow=6.6,SNR=32								
AKASG				LR		LR	12 42 45.8		
	comp=Z,6µm,18.5s,baz=50,slow=38								
KIEV	**Kiev**	**75.53**	**322**	*de*P		**P**	**12 06 32.5**	**-0.5**
KIEV	comp=Z,25nm,1.1s			pmax		pmax			
KIEV	**Kiev**	**75.53**	**322**	*e*P		**P**	**12 06 31.6**	**-1.4**
	comp=Z,27nm,0.7s								
HFS	**Hagfors**	**75.57**	**336**	LR		LR	12 42 24.4		
	comp=Z,4µm,19.7s,slow=38								
LRM	**Limekiln Ridge**	**75.58**	**44**	*e*P		**P**	**12 06 34.5**	**+0.7**
NC204	**NORSAR Array S**	**75.66**	**338**	*e*P		**P**	**12 06 34.3**	**+0.6**
NB201	**NORSAR Array S**	**75.66**	**337**	*e*P		**P**	**12 06 33.5**	**-0.2**
FCC	**Fort Churchill**	**75.68**	**26**	*e*P		**P**	**12 06 34.4**	**+0.7**
FCC	comp=Z,28nm,1.0s			pmax		pmax			
FCC	**Fort Churchill**	**75.68**	**26**	*e*P		**P**	**12 06 34.4**	**+0.7**
	comp=Z,28nm,1.0s								
NB2	**NORSAR Subarra**	**75.70**	**337**	P		**P**	**12 06 33.6**	**-0.2**
	comp=Z,26nm,0.8s,baz=41,slow=5.9								
NB2	**NORSAR Subarra**	**75.70**	**337**	P		**P**	**12 06 33.6**	**-0.2**
	baz=41,slow=5.9								
NOA	**NORSAR Array B**	**75.70**	**337**	P		**P**	**12 06 33.6**	**-0.2**
	comp=Z,16nm,0.7s,baz=40,slow=5.8,SNR=44								
NOA				PP		**PP**	**12 09 24.0**	**+1.0**
	comp=Z,7.9nm,0.9s,baz=41,slow=8.6,SNR=5.8								
NOA				LR		LR	12 43 01.9		
	comp=Z,4µm,19.5s,baz=5.0,slow=38								
HLID	**Hailey**	**75.76**	**47**	P		**P**	**12 06 35.0**	**+0.3**
	baz=305								
HLID	**Hailey**	**75.76**	**47**	*e*P		**P**	**12 06 35.6**	**+0.8**
	comp=Z,6.8nm,1.0s								
EGMT	**Eagleton**	**75.76**	**41**	P		**P**	**12 06 34.3**	**-0.2**
	baz=307								
EGMT	**Eagleton**	**75.76**	**41**	*e*P		**P**	**12 06 35.2**	**+0.7**
	comp=Z,30nm,0.8s								
DLMT	**Dillon**	**75.77**	**44**	*e*P		**P**	**12 06 35.8**	**+1.1**
	comp=Z,29nm,1.1s								
NBO02	**NORSAR Array S**	**75.80**	**337**	*e*P		**P**	**12 06 34.2**	**-0.2**
BMN	**Battle Mountai**	**75.82**	**50**	*e*P		**P**	**12 06 36.4**	**+1.3**
BMN	comp=Z,25nm,1.2s			pmax		pmax			
BMN	**Battle Mountai**	**75.82**	**50**	*e*P		**P**	**12 06 36.4**	**+1.3**
	comp=Z,25nm,1.2s								
NC602	**NORSAR Array S**	**75.83**	**337**	*e*P		**P**	**12 06 35.3**	**+0.7**
NBO00	**NORSAR Array S**	**75.84**	**337**	*e*P		**P**	**12 06 35.3**	**+0.7**
LCCM	**Lewis and Clar**	**75.90**	**44**	P		**P**	**12 06 36.2**	**+0.8**
MCMT	**McKenzie Canyo**	**75.94**	**45**	*e*P		**P**	**12 06 37.1**	**+1.3**
NAO01	**NORSAR Array S**	**75.95**	**337**	*e*P		**P**	**12 06 35.7**	**+0.4**
TVH3	**East Aurora ar**	**75.96**	**53**	*e*P		**P**	**12 06 37.5**	**+1.5**
	comp=Z,16nm,1.1s								
TVH2	**Borealis Mine**	**75.98**	**53**	*e*P		**P**	**12 06 37.6**	**+1.5**
	comp=Z,8.6nm,1.0s								
BOZ	**Bozeman (W)**	**76.15**	**44**	P		**P**	**12 06 37.3**	**+0.4**
	baz=307								
BOZ	**Bozeman (W)**	**76.15**	**44**	*e*P		**P**	**12 06 37.6**	**+0.7**
BOZ	comp=Z,12nm,0.9s			pmax		pmax			
BOZ	**Bozeman (W)**	**76.15**	**44**	*e*P		**P**	**12 06 37.6**	**+0.7**
	comp=Z,12nm,0.9s								
MLAC	**Mammoth, Mammo**	**76.35**	**54**	P		**P**	**12 06 38.2**	**-0.1**
	baz=304								
SIM	**Simferopol'**	**76.39**	**316**	*e*P		**P**	**12 06 38.7**	**+0.6**
SIM				*e*			12 06 51.0		
SIM				*e*S		**S**	**12 16 20.0**	**-1.7**
SIM	comp=Z,15nm,0.8s			pmax		pmax			
SIM	comp=Z,2µm,16.8s			MLR		MLR			
PAGB	**Antelope Grade**	**76.46**	**56**	*e*P		**P**	**12 06 40.7**	**+2.1**
	comp=Z,60nm,1.5s								
QLMT	**Earthquake Lak**	**76.75**	**44**	*e*P		**P**	**12 06 41.8**	**+1.4**
YHB	**Horse Butte**	**76.93**	**44**	*e*P		**P**	**12 06 43.0**	**+1.5**
	comp=Z,16nm,0.9s								
GCMT	**Greycliff**	**77.16**	**43**	*e*P		**P**	**12 06 44.6**	**+2.0**
VES	**Vestal, Richgr**	**77.19**	**55**	P		**P**	**12 06 43.3**	**+0.6**
	baz=304								
PKM	**Mcpherson Peak**	**77.23**	**56**	P		**P**	**12 06 43.8**	**+0.6**
	baz=304								
KONO	**Kongsberg**	**77.28**	**337**	*de*P		**P**	**12 06 44.2**	**+1.4**
KONO	comp=Z,104nm,1.0s			pmax		pmax			
YPP	**Pitchstone Pla**	**77.45**	**44**	*e*P		**P**	**12 06 48.1**	**+3.7**
	comp=Z,18nm,1.3s								
H17A	**Grant Village**	**77.50**	**44**	P		**P**	**12 06 45.8**	**+1.2**
	baz=308								
H17A	**Grant Village**	**77.50**	**44**	*e*P		**P**	**12 06 47.6**	**+2.9**
	comp=Z,25nm,0.9s								
CWC	**Cottonwood Cre**	**77.52**	**54**	P		**P**	**12 06 46.0**	**+1.2**
	baz=305								
SORM	**Soroca**	**77.58**	**321**⇓	*i*P		**P**	**12 06 44.3**	**-0.3**
IMW	**Indian Meadow**	**77.59**	**45**	*e*P		**P**	**12 06 46.0**	**+0.8**
	comp=Z,18nm,1.0s								
FLWY	**Flagg Ranch**	**77.62**	**44**	*e*P		**P**	**12 06 47.5**	**+2.2**
	comp=Z,33nm,1.3s								
GRAC	**Grapevine Rang**	**77.67**	**53**	P		**P**	**12 06 45.8**	**+0.3**
	baz=305								
ISA	**Isabella, Lake**	**77.70**	**55**	P		**P**	**12 06 46.0**	**+0.4**
	baz=305								
ISA	**Isabella, Lake**	**77.70**	**55**	*e*P		**P**	**12 06 45.9**	**+0.2**
ISA	comp=Z,11nm,1.2s			pmax		pmax			
ISA	**Isabella, Lake**	**77.70**	**55**	*e*P		**P**	**12 06 45.9**	**+0.2**
	comp=Z,11nm,1.2s								
ARVC	**Arvin**	**77.76**	**56**	P		**P**	**12 06 46.2**	**+0.2**
	baz=305								
HVU	**Hansel Valley**	**77.78**	**47**	*e*P		**P**	**12 06 47.6**	**+1.5**
HVU	comp=Z,14nm,0.8s			pmax		pmax			
HVU	**Hansel Valley**	**77.78**	**47**	*e*P		**P**	**12 06 47.6**	**+1.5**
	comp=Z,14nm,0.8s								
MOOW	**Moose Ponds**	**77.80**	**45**	*e*P		**P**	**12 06 47.8**	**+1.5**
	comp=Z,10nm,0.9s								
RLMT	**Red Lodge**	**77.80**	**43**	P		**P**	**12 06 46.2**	**0.0**
	baz=308								
RLMT	**Red Lodge**	**77.80**	**43**	*e*P		**P**	**12 06 47.7**	**+1.4**
	comp=Z,24nm,1.4s								
TPAW	**Teton Pass**	**77.83**	**45**	*e*P		**P**	**12 06 48.2**	**+1.6**
	comp=Z,11nm,0.8s								
LOHW	**Long Hollow**	**77.96**	**45**	*e*P		**P**	**12 06 48.8**	**+1.6**
	comp=Z,12nm,1.4s								
SNOW	**Snow King Moun**	**77.96**	**45**	*e*P		**P**	**12 06 48.6**	**+1.3**
	comp=Z,11nm,1.0s								
REDW	**Red Top Meadow**	**77.97**	**45**	*e*P		**P**	**12 06 48.6**	**+1.3**
	comp=Z,18nm,1.1s								
R11A	**Troy Canyon, C**	**78.05**	**51**	P		**P**	**12 06 47.9**	**+0.2**
	baz=306								
R11A	**Troy Canyon, C**	**78.05**	**51**	*e*P		**P**	**12 06 48.5**	**+0.7**
	comp=Z,9.1nm,0.9s								
KIS	**Kishinev**	**78.05**	**320**	*e*P		**P**	**12 06 46.0**	**-1.3**
KIS	**Kishinev**	**78.05**	**320**	*e*PP		PP	12 09 46.0	+2.9
KIS	**Kishinev**	**78.05**	**320**	*e*PPP		PPP	12 11 34.0		
KIS	**Kishinev**	**78.05**	**320**	*e*PsP			12 12 28.0		
KIS				*e*S		S	12 16 30.0	-10	
KIS	**Kishinev**	**78.05**	**320**	*e*PS			12 17 06.0		
KIS				*e*SS		SS	12 21 30.0	-10	
KIS				*e*SSS		SSS	12 26 00.0		
KIS				*e*LQ		LQ	12 35 10.0		
KIS	comp=Z,2µm,19.0s			LRM		MLR	12 44 10.0		
KIS	comp=Z,8µm,16.0s			MLR		MLR			
KIS	**Kishinev**	**78.05**	**320**	*e*P		**P**	**12 06 46.0**	**-1.3**
KIS				*e*			12 06 50.0		
KIS				*e*			12 09 46.0		
KIS				*e*PPP		PPP	12 11 34.0		
KIS				*e*S		S	12 16 30.0	-10	
KIS				*e*PS		PnS	12 17 06.0	-16	
KIS	comp=N,5µm,16.0s			MLR		MLR			
KIS	comp=E,3µm,16.0s			MLR		MLR			
KIS	comp=Z,9µm,16.0s			MLR		MLR			
KIS	comp=Z,8µm,16.0s			MLR		MLR			
MPMC	**Manual Prospec**	**78.13**	**54**	P		**P**	**12 06 48.4**	**+0.2**
	baz=305								
BGU	**Big Grassy Mou**	**78.14**	**48**	*e*P		**P**	**12 06 49.5**	**+1.3**
	comp=Z,9.5nm,1.0s								
BLG	**Lagua Peak, P**	**78.18**	**57**	P		**P**	**12 06 48.5**	**+0.2**
	baz=305								
FURC	**Furnace Creek,**	**78.31**	**54**	P		**P**	**12 06 49.4**	**+0.5**
	baz=305								
LRMC	**Laurel Mtn Rad**	**78.33**	**55**	P		**P**	**12 06 49.7**	**+0.4**
	baz=305								
DGMT	**Dagmar**	**78.37**	**38**	P		**P**	**12 06 48.8**	**-0.3**
	baz=311								
DGMT	**Dagmar**	**78.37**	**38**	*e*P		**P**	**12 06 49.9**	**+0.8**
	comp=Z,32nm,1.1s								
TPNV	**Topopah Spring**	**78.43**	**53**	P		**P**	**12 06 50.3**	**+0.5**
	baz=306								
TPNV	**Topopah Spring**	**78.43**	**53**	*e*P		**P**	**12 06 50.5**	**+0.6**
TPNV	comp=Z,30nm,1.3s			pmax		pmax			
TPNV	**Topopah Spring**	**78.43**	**53**	*e*P		**P**	**12 06 50.5**	**+0.6**
	comp=Z,30nm,1.3s								
EDW2	**Edwards Air Fo**	**78.46**	**55**	P		**P**	**12 06 50.6**	**+0.6**
	baz=305								
LAO	**LASA Array**	**78.47**	**40**	P		**P**	**12 06 50.1**	**+0.4**
	baz=310								
LAO	**LASA Array**	**78.47**	**40**	*e*P		**P**	**12 06 50.2**	**+0.4**
	comp=Z,37nm,1.3s								
HWUT	**Hardware Ranch**	**78.61**	**47**	*e*P		**P**	**12 06 52.1**	**+1.3**
	comp=Z,23nm,1.1s								
LVV	**L'vov**	**78.64**	**324**	*e*P		**P**	**12 06 51.6**	**+1.1**
**DU

comp=Z,2.9nm,0.8s,baz=81,slow=7.6,SNR=3.9
BRTR LR LR 12 47 56.0
comp=Z,910nm,19.8s,baz=28,slow=40
BRTR Keskin Array B 79.81 312 *ce*P **P 12 06 57.7 +0.4**
BRTR pmax pmax
comp=Z,10.0nm,1.0s
VRI Vrincioaia 79.89 320 ⇑ *i*P **P 12 06 58.8 +1.3**
CCUT Cedar City 79.94 51 *e*P **P 12 06 59.3 +1.1**
comp=Z,12nm,1.0s
TLB Topalu 80.01 318 ⇑ *i*P **P 12 06 58.2 +0.1**
GMRC Granite Mounta 80.08 54 P **P 12 06 59.4 +0.5**
baz=306
SZCU Shurtz Canyon 80.09 51 *e*P **P 12 07 00.9 +1.9**
comp=Z,24nm,1.4s
MSU Marysvale 80.11 50 *e*P **P 12 07 00.4 +1.3**
MSU Marysvale 80.11 50 *e*P **P 12 07 00.4 +1.3**
109C Camp Elliot, M 80.22 57 P **P 12 07 00.0 +0.6**
baz=306
D26A Manning 80.22 38 P **P 12 06 59.4 +0.1**
baz=312
TMUT Trail Mountain 80.23 49 *e*P **P 12 07 01.9 +2.1**
comp=Z,12nm,1.1s
PFO Pinyon Flats O 80.23 56 P **P 12 07 00.1 +0.4**
baz=306
PFO Pinyon Flats O 80.23 56 *e*P **P 12 07 00.6 +0.9**
PFO pmax pmax
comp=Z,67nm,1.4s
PFO Pinyon Flats O 80.23 56 *e*P **P 12 07 00.6 +0.9**
comp=Z,67nm,1.4s
STHS Stebnicka Huta 80.24 325 *e*P **P 12 07 00.3 +1.0**
TPFO Pinon Flats 80.24 56 P **P 12 07 00.0 +0.3**
baz=306
BR231 Keskin MP Arra 80.27 312 *e*P **P 12 06 58.1 -1.6**
LDFC Landfair 80.28 54 *e*P **P 12 07 00.8 +1.0**
comp=Z,73nm,1.5s
UZH Uzhgorod 80.28 324 *e*P **P 12 06 59.6 +0.1**
UZH *e* 12 07 08.4
UZH *e* 12 07 15.8
UZH *e* 12 10 10.4
UZH *e* 12 11 57.8
UZH *e*S **S 12 16 59.8 -3.5**
UZH *e* 12 17 57.0
UZH *e* 12 22 08.2
UZH MLR MLR
comp=N,2µm,16.0s
UZH MLR MLR
comp=E,1µm,16.0s
BELC Belle Mtn. Jos 80.32 55 P **P 12 07 00.5 +0.4**
baz=306
LCMT Little Creek M 80.34 51 *e*P **P 12 07 01.4 +1.2**
comp=E,40nm,1.4s
OJC Ojcow 80.34 326 *e*P **P 12 07 00.1 +0.2**
OJC Ojcow 80.34 326 *e*P **P 12 07 00.4 +0.6**
OJC pmax pmax
comp=Z,51nm,0.8s
OJC Ojcow 80.34 326 *e*P **P 12 07 00.3 +0.6**
comp=Z,51nm,0.8s
MTPU Mount Pierson 80.39 50 *e*P **P 12 07 02.6 +1.8**
comp=Z,28nm,1.4s
P17A Butcher Ranch, 80.41 48 *e*P **P 12 07 01.9 +1.3**
comp=Z,24nm,1.1s
URZ Urewera 80.43 152 LR LR 12 44 59.8
comp=Z,502nm,18.0s,baz=333,slow=38
CRVS Cervenica-Dubn 80.49 324 *e*P **P 12 07 00.9 +0.3**
CRVS *e*PP **PP 12 10 05.9 +2.5**
CRVS *e*S **S 12 17 05.0 -0.6**
DOPR Dopca 80.53 320 ⇓ *i*P **P 12 07 03.0 +2.1**
MLR Muntele Rosu 80.55 320 ⇓ *i*P **P 12 07 03.0 +1.8**
MLR Muntele Rosu 80.55 320 *e*P **P 12 07 02.1 +0.9**
MLR pmax pmax
comp=Z,42nm,1.4s
MLR Muntele Rosu 80.55 320 *e*P **P 12 07 02.1 +0.9**
comp=Z,42nm,1.4s
BAR Barrett 80.63 57 *e*P **P 12 07 02.6 +0.9**
comp=Z,25nm,1.0s
NIE Niedzica 80.68 325 *e*P **P 12 07 02.2 +0.6**
MONP2 Monument Peak 80.68 56 P **P 12 07 02.4 +0.2**
baz=306
SRU San Rafael Swe 80.76 48 *e*P **P 12 07 03.6 +1.1**
SRU pmax pmax
comp=Z,17nm,0.8s
SRU San Rafael Swe 80.76 48 *e*P **P 12 07 03.6 +1.1**
comp=Z,17nm,0.8s
IRM Iron Mountain 80.80 55 P **P 12 07 02.9 +0.3**
baz=307
MMU Miners Mountai 80.85 50 *e*P **P 12 07 04.3 +1.2**
BC3 Big Chuckawall 80.89 55 P **P 12 07 03.2 +0.1**
baz=306
K22A Casper 80.89 44 P **P 12 07 03.2 +0.1**
baz=310
K22A Casper 80.89 44 *e*P **P 12 07 04.3 +1.2**
comp=Z,14nm,1.0s
IKP In-Ko-Pah, Jac 81.03 56 P **P 12 07 04.3 +0.4**
baz=306
VOIR 81.06 320 ⇑ *i*P **P 12 07 05.0 +1.2**
MDND Maddock 81.07 36 P **P 12 07 03.7 -0.1**
baz=314
MDND Maddock 81.07 36 *e*P **P 12 07 05.0 +1.2**
comp=Z,42nm,1.0s
W13A Hualapai Mount 81.07 53 *e*P **P 12 07 05.2 +1.0**
comp=Z,21nm,1.4s
SWSC Sam W. Stewart 81.07 56 P **P 12 07 04.5 +0.5**
baz=306
ULM Lac du Bonnet 81.11 33 P **P 12 07 02.7 -1.2**
comp=Z,5.9nm,0.8s,baz=332,slow=5.4,SNR=7.1
ULM LR LR 12 45 11.7
comp=Z,475nm,20.3s,baz=323,slow=37
ULM Lac du Bonnet 81.11 33 *e*P **P 12 07 03.4 -0.5**
ULM pmax pmax
comp=Z,16nm,1.0s
ULM Lac du Bonnet 81.11 33 *e*P **P 12 07 03.4 -0.5**
comp=Z,16nm,1.0s
H25A Fruitdale 81.21 41 P **P 12 07 04.6 0.0**
baz=312
KECS Kecovo 81.25 325 *e*P **P 12 07 05.2 +0.5**
KECS *e*PP **PP 12 10 11.3 +1.7**
LANS Liptovska Anna 81.25 326 *e*P **P 12 07 06.4 +1.7**
LANS *e*PP **PP 12 10 12.6 +2.9**
U15A North Rim 81.30 51 *e*P **P 12 07 06.7 +1.2**
comp=Z,15nm,0.8s
RSSD Black Hills 81.31 41 P **P 12 07 05.4 0.0**
baz=312
RSSD Black Hills 81.31 41 *e*P **P 12 07 05.6 +0.2**
RSSD pmax pmax
comp=Z,6.0nm,0.8s
RSSD Black Hills 81.31 41 *e*P **P 12 07 05.6 +0.2**
comp=Z,5.9nm,0.8s
ARR Arges 81.32 320 ⇓ *i*P **P 12 07 06.5 +1.3**
OKC Ostrava-Krasne 81.36 327 *e*P **P 12 07 06.0 +0.8**
OKC *e*PP **PP 12 10 17.5 +7.0**
OKC *e*SKS **S 12 17 18.0 +3.4**
OKC AMS AMS 12 47 00.0
comp=Z,5µm,15.9s
OKC Ostrava-Krasne 81.36 327 *e*P **P 12 07 06.0 +0.8**
OKC *e* 12 10 17.5
OKC *e*S **S 12 17 18.0 +3.4**
OKC MLR MLR
comp=Z,5µm,15.9s
PDMCI Parker Dam,Lak 81.38 54 P **P 12 07 06.4 +0.8**
baz=307
KSP Ksiaz 81.45 328 *e*P **P 12 07 05.9 +0.2**
Y12C Blythe 81.45 55 P **P 12 07 06.2 +0.2**
baz=307
Y12C Blythe 81.45 55 *e*P **P 12 07 07.3 +1.3**
comp=Z,40nm,1.2s
O20A White River Ci 81.50 46 P **P 12 07 06.4 0.0**
baz=310
O20A White River Ci 81.50 46 *e*P **P 12 07 07.2 +0.7**
comp=Z,13nm,0.8s
B31A Greenbush Farm 81.60 35 P **P 12 07 06.7 +0.2**
baz=315
GLA Glamis 81.67 55 P **P 12 07 07.5 +0.3**
baz=307
GLA Glamis 81.67 55 *e*P **P 12 07 08.4 +1.2**
GLA pmax pmax
comp=Z,36nm,0.9s
GLA Glamis 81.67 55 *e*P **P 12 07 08.4 +1.2**
comp=Z,36nm,0.9s
MORC Moravsky Berou 81.68 327 ⇓ *i*P **P 12 07 07.6 +0.6**
MORC Moravsky Berou 81.68 327 *e*P **P 12 07 07.6 +0.6**
MORC pmax pmax
comp=Z,75nm,1.0s
MORC Moravsky Berou 81.68 327 *e*P **P 12 07 07.6 +0.6**
comp=Z,75nm,1.0s
A32A Rocking H Ranc 81.79 34 P **P 12 07 07.2 -0.3**
baz=316

DPC Dobruska-Polom 81.80 328 *e*P **P 12 07 08.1 +0.5**
DPC *e*PCP **pP 12 07 15.3 -0.2**
DPC *e*PP **PP 12 10 20.4 +6.3**
DPC *e*SKS **S 12 17 19.8 +0.6**
DPC AMS AMS 12 47 40.0
comp=Z,3µm,14.6s
DPC Dobruska-Polom 81.80 328 *e*P **P 12 07 08.1 +0.5**
DPC *e* 12 07 15.3
DPC *e* 12 10 20.4
DPC *e*S **S 12 17 19.8 +0.6**
DPC MLR MLR
comp=Z,3µm,14.6s
KRLC Kraliky 81.80 327 *e*P **P 12 07 07.1 -0.5**
KRLC Kraliky 81.80 327 *e*P **P 12 07 07.1 -0.5**
UPC Upice 81.82 328 *e*P **P 12 07 08.3 +0.7**
UPC *e*PP PP 12 10 23.0 +8.8
UPC *e*SKS **S 12 17 20.7 +1.4**
UPC AMS AMS 12 47 40.0
comp=Z,4µm,14.7s
UPC Upice 81.82 328 *e*P **P 12 07 08.3 +0.7**
UPC *e* 12 10 23.0
UPC *e*S **S 12 17 20.7 +1.4**
UPC MLR MLR
comp=Z,4µm,14.7s
PSZ Piszkesteto 81.93 324 ⇓ *i*P **P 12 07 09.4 +1.0**
PSZ Piszkesteto 81.93 324 *e*P **P 12 07 09.1 +0.7**
PSZ pmax pmax
comp=Z,29nm,1.0s
PSZ Piszkesteto 81.93 324 *e*P **P 12 07 09.1 +0.7**
comp=Z,29nm,1.0s
PSZ Piszkesteto 81.93 324 ⇑ *e*P **P 12 07 08.1 -0.3**
PV09 Paradox Valley 82.00 48 *e*P **P 12 07 11.4 +2.2**
C31A Landman Farms, 82.01 36 P **P 12 07 08.1 -0.6**
baz=315
VYHS Vyhne 82.01 325 *e*P **P 12 07 09.1 +0.4**
VYHS *e*PP **PP 12 10 16.9 +1.0**
VYHS *e*S **S 12 17 20.0 -1.4**
VYHS *e*L L 12 47 18.5
PV10 Paradox Valley 82.13 48 *e*P **P 12 07 11.3 +1.5**
B32A Ashes, Strandq 82.14 35 P **P 12 07 09.3 -0.1**
baz=316
PV04 Paradox Valley 82.20 48 *e*P **P 12 07 11.4 +1.3**
ASF Jabal al Asfar 82.26 304 LR LR 12 48 55.9
comp=Z,878nm,19.0s,slow=40
A33A Warroad 82.28 34 P **P 12 07 10.4 +0.3**
baz=317
PV05 Paradox Valley 82.28 49 *e*P **P 12 07 11.6 +1.0**
Y14A Wickenburg 82.35 54 *e*P **P 12 07 11.2 +0.3**
comp=Z,69nm,1.1s
N23A Red Feather La 82.36 45 P **P 12 07 11.6 +0.6**
baz=311
N23A Red Feather La 82.36 45 *e*P **P 12 07 12.3 +1.3**
comp=Z,28nm,1.1s
PHWY Pilot Hill 82.37 44 *e*P **P 12 07 12.7 +1.6**
comp=Z,9.5nm,1.0s
PVCC Panska Ves 82.42 329 *e*P **P 12 07 11.6 +0.8**
PVCC AMS AMS 12 50 40.0
comp=Z,3µm,16.0s
PVCC Panska Ves 82.42 329 *e*P **P 12 07 11.6 +0.8**
PVCC MLR MLR
comp=Z,3µm,16.0s
BRG Berggiesshubel 82.42 329 *e*P **P 12 07 10.5 -0.3**
comp=Z,13nm,1.1s
BRG *i* 12 07 19.1
comp=Z,22nm,1.1s
BRG PP PP 12 10 11.0 -8.2
BRG S S 12 17 16.0 -9.5
comp=N,492nm,21.3s
comp=E,411nm,15.3s
comp=Z,749nm,15.9s
BRG Berggiesshubel 82.42 329 *e*P **P 12 07 10.5 -0.3**
BRG *i* 12 07 19.1
BRG S S 12 17 16.0 -9.5
BRG pmax pmax
comp=Z,13nm,1.1s
BRG MLR MLR
comp=N,492nm,21.3s
BRG MLR MLR
comp=E,411nm,15.3s
BRG MLR MLR
comp=Z,749nm,15.9s
VRAC Vranov 82.44 327 ⇓ *i*P **P 12 07 11.8 +0.8**
WUAZ Wupatki 82.45 52 P **P 12 07 11.7 +0.3**
baz=308
WUAZ Wupatki 82.45 52 *e*P **P 12 07 12.9 +1.4**
comp=Z,21nm,1.1s
CLL Collm 82.48 330 *i* P **P 12 07 10.8 -0.3**
comp=Z,31nm,0.9s
CLL *i* 12 07 18.5
CLL *i* 12 07 25.3
CLL *e*PP **PP 12 10 18.0 -1.6**
CLL Collm 82.48 330 *e*P **P 12 07 10.9 -0.2**
CLL pmax pmax
comp=Z,23nm,0.8s
CLL Collm 82.48 330 *e*P **P 12 07 10.8 -0.2**
comp=Z,23nm,0.8s
AGMN Agassiz Nation 82.52 34 P **P 12 07 11.0 -0.3**
baz=316
AGMN Agassiz Nation 82.52 34 *e*P **P 12 07 11.1 -0.3**
comp=Z,16nm,1.0s
D31A Mcclaflin, Tow 82.54 36 P **P 12 07 11.0 -0.5**
baz=315
113A Mohawk Valley, 82.55 55 *e*P **P 12 07 12.8 +1.0**
comp=Z,25nm,1.2s
PV01 Paradox Valley 82.57 48 *e*P **P 12 07 13.2 +1.1**
B33A Robert and Kas 82.67 34 P **P 12 07 12.7 +0.5**
baz=317
F30A Leola 82.75 38 P **P 12 07 12.3 -0.4**
baz=314
MMAI Mount Meron Ar 82.76 305 LR LR 12 47 58.1
comp=Z,2µm,18.8s,baz=55,slow=39
GOPC GO Pecny, Ondr 82.78 328 *e*P **P 12 07 13.0 +0.3**
GOPC *e*PP **PP 12 10 21.0 -1.2**
GOPC *e*SKS **S 12 17 29.3 0.0**
GOPC AMS AMS 12 48 30.0
comp=Z,4µm,14.6s
GOPC GO Pecny, Ondr 82.78 328 *e*P **P 12 07 13.0 +0.3**
GOPC *e* 12 10 21.0
GOPC *e*S **S 12 17 29.3 0.0**
GOPC MLR MLR
comp=Z,4µm,14.6s
E31A Nome 82.81 37 P **P 12 07 12.8 -0.1**
baz=315
PRU Pruhonice 82.83 328 *e*P **P 12 07 13.5 +0.5**
PRU *ex* x 12 07 20.7
PRU *e*PP **PP 12 10 20.6 -2.0**
PRU *e*SKS **S 12 17 27.7 -2.0**
PRU AMS AMS 12 49 40.0
comp=Z,3µm,16.5s
PRU Pruhonice 82.83 328 *e*P **P 12 07 13.5 +0.5**
PRU *e* 12 07 20.7
PRU *e* 12 10 20.6
PRU *e*S **S 12 17 27.7 -2.0**
PRU MLR MLR
comp=Z,3µm,16.5s
SMCO Snowmass 82.86 47 *e*P **P 12 07 15.1 +1.2**
comp=Z,10nm,0.8s
B34A Aery, Baudette 82.94 34 P **P 12 07 13.6 0.0**
baz=317
C33A Trail 82.95 35 P **P 12 07 13.3 -0.4**
baz=316
X16A Lo Mia Camp, P 83.08 53 *e*P **P 12 07 15.9 +1.1**
comp=Z,26nm,1.2s
F31A Hecla 83.12 37 P **P 12 07 13.9 -0.6**
baz=315
MVCO Mesa Verde 83.20 49 P **P 12 07 15.8 +0.4**
baz=310
MVCO Mesa Verde 83.20 49 *e*P **P 12 07 16.6 +1.2**
comp=Z,22nm,1.2s
RPZ Rata Peaks 83.23 159 LR LR 12 41 10.9
comp=Z,401nm,19.4s,baz=332,slow=34
MDVR Moldovita 83.23 321 ⇑ *i*P **P 12 07 15.7 +0.5**
ISCO Idaho Springs 83.26 45 P **P 12 07 16.0 +0.2**
baz=311
ISCO Idaho Springs 83.26 45 *e*P **P 12 07 17.0 +1.2**
ISCO pmax pmax
comp=Z,27nm,1.7s
ISCO Idaho Springs 83.26 45 *e*P **P 12 07 17.0 +1.2**
comp=Z,27nm,1.7s
B35A Bob, Littlefor 83.45 33 P **P 12 07 15.9 -0.2**
baz=318
NKC Novy Kostel 83.53 330 *e*P **P 12 07 17.0 +0.4**
NKC *ex* x 12 07 25.9
NKC AMS AMS 12 51 40.0
comp=Z,4µm,17.3s

NKC Novy Kostel 83.53 330 *e*P **P 12 07 17.0 +0.4**
NKC *e* 12 07 25.9
NKC MLR MLR
comp=Z,4µm,17.3s
214A Organ Pipe Nat 83.68 55 P **P 12 07 18.5 +0.7**
baz=308
214A Organ Pipe Nat 83.68 55 *e*P **P 12 07 18.6 +0.9**
comp=Z,112nm,1.1s
W18A Petrified Fore 83.74 51 P **P 12 07 18.8 +0.6**
baz=309
W18A Petrified Fore 83.74 51 *e*P **P 12 07 20.3 +2.1**
comp=Z,17nm,1.1s
E33A Westby DABS, E 83.75 36 P **P 12 07 17.4 -0.4**
baz=316
CONA Conrad Observa 83.79 326 *i* P **P 12 07 18.6 +0.5**
comp=Z,38nm,1.6s,SNR=14
C35A Jirik Farms, M 83.83 34 P **P 12 07 18.4 +0.2**
baz=318
S22A 4UR Ranch, Cre 83.87 48 P **P 12 07 19.6 +0.7**
baz=310
S22A 4UR Ranch, Cre 83.87 48 *e*P **P 12 07 20.2 +1.3**
comp=Z,37nm,1.4s
KHC Kasperske Hory 83.89 328 *e*P **P 12 07 18.5 0.0**
KHC *ex* x 12 07 25.8
KHC *e*PP PP 12 10 39.5 +8.2
KHC *e*SKS **S 12 17 36.6 -4.0**
KHC AMS AMS 12 48 50.0
comp=Z,4µm,15.3s
KHC Kasperske Hory 83.89 328 *e*P **P 12 07 18.5 0.0**
KHC *e* 12 07 25.8
KHC *e* 12 10 39.5
KHC *e*S **S 12 17 36.6 -4.0**
KHC MLR MLR
comp=Z,4µm,15.3s
KHC Kasperske Hory 83.89 328 *e*P **P 12 07 18.9 +0.4**
comp=Z,8.1nm,0.9s
G32A Webster 83.92 37 P **P 12 07 18.6 -0.1**
baz=316
X18A Snowflake 83.97 52 *e*P **P 12 07 20.8 +1.4**
comp=Z,41nm,1.6s
GEC2 GERESS Array S 84.06 328 *e*P **P 12 07 19.1 -0.3**
GEC2 pmax pmax
comp=Z,11nm,0.9s
GEC2 GERESS Array S 84.06 328 *e*P **P 12 07 19.1 -0.3**
comp=Z,11nm,0.9s
GERES GERESS Array B 84.06 328 P **P 12 07 18.5 -0.9**
comp=Z,6.0nm,0.9s,baz=41,slow=4.3,SNR=20
GERES PP **PP 12 10 33.9 +1.2**
comp=Z,1.5nm,0.8s,baz=29,slow=6.1,SNR=5.2
GERES LR LR 12 48 57.5
comp=Z,2µm,18.2s,baz=21,slow=39
GEA0 GERESS Array S 84.06 328 *e*P **P 12 07 18.4 -1.0**
Q24A Divide 84.08 46 P **P 12 07 19.7 -0.3**
baz=311
Q24A Divide 84.08 46 *e*P **P 12 07 21.7 +1.7**
comp=Z,12nm,0.9s
PPT Papeete 84.09 116 LR LR 12 37 24.8
comp=Z,919nm,21.2s,baz=299,slow=30
F33A 5 Mile Ranch, 84.09 36 P **P 12 07 19.5 0.0**
baz=316
PPT2 Papeete2 84.11 116 *e*S **S 12 17 37.6 -5.9**
comp=Z,794nm,28.2s
PPT2 Papeete2 84.11 116 *e*LQ LQ 12 29 31.4
comp=Z,1µm,28.2s
PPT2 *e*LR LR 12 33 56.9
comp=Z,2µm,22.0s,baz=309
PPT2 Papeete2 84.11 116 *e*T T 13 39 50.1
comp=Z,9.4nm,0.3s
E34A Wadena 84.14 35 P **P 12 07 19.9 +0.1**
baz=317
D35A Remer 84.25 34 P **P 12 07 20.2 -0.1**
baz=318
TIAR Tiarei 84.25 116 *e*T T 13 40 00.6
comp=Z,4.0nm,0.2s
J30A Dallas 84.27 40 P **P 12 07 20.2 -0.3**
baz=314
C36A Pine Crest Far 84.30 33 P **P 12 07 20.1 -0.4**
baz=318
ARSA Arzberg 84.45 326 *i* P **P 12 07 21.6 +0.3**
comp=Z,17nm,1.6s,SNR=6.4
GRFO Grafenberg 84.45 330 *e*P **P 12 07 22.1 +0.8**
GRFO pmax pmax
comp=Z,146nm,1.7s
GRFO Grafenberg 84.45 330 *e*P **P 12 07 22.1 +0.8**
comp=Z,146nm,1.7s
E35A Pequot Lakes 84.47 35 P **P 12 07 21.2 -0.3**
baz=318
H32A Carlson Farm, 84.49 38 P **P 12 07 21.2 -0.4**
baz=316
OGNE Ogallala 84.54 43 P **P 12 07 21.7 -0.3**
baz=313
OGNE Ogallala 84.54 43 *e*P **P 12 07 23.1 +1.1**
comp=Z,28nm,1.0s
MOA Molln 84.56 327 *i* P **P 12 07 22.1 +0.2**
comp=Z,29nm,1.8s,SNR=6.0
D36A Goodland 84.58 34 P **P 12 07 21.5 -0.5**
baz=318
C37A Embarrass 84.61 33 P **P 12 07 22.1 0.0**
baz=319
F34A Alexandria 84.62 36 P **P 12 07 22.0 -0.3**
baz=317
K30A Basset 84.66 40 P **P 12 07 22.5 0.0**
baz=314
SDCO Great Sand Dun 84.67 47 P **P 12 07 23.3 +0.3**
baz=311
SDCO Great Sand Dun 84.67 47 *e*P **P 12 07 24.0 +1.0**
comp=Z,18nm,1.1s
J31A Geddes 84.68 39 P **P 12 07 22.6 0.0**
baz=315
H33A Prehn Over Nor 84.71 37 P **P 12 07 22.5 -0.2**
baz=316
ESK Eskdalemuir 84.72 340 *e*P **P 12 07 23.6 +1.1**
ESK pmax pmax
comp=Z,45nm,1.4s
ESK Eskdalemuir 84.72 340 *e*P **P 12 07 23.6 +1.1**
comp=Z,45nm,1.4s
EYMN Ely 84.75 32 P **P 12 07 22.5 -0.3**
baz=320
EYMN Ely 84.75 32 *e*P **P 12 07 22.3 -0.5**
comp=Z,27nm,1.2s
TUC Tucson 84.82 54 P **P 12 07 23.7 +0.2**
baz=309
TUC Tucson 84.82 54 *e*P **P 12 07 24.6 +1.1**
TUC pmax pmax
comp=Z,13nm,1.0s
TUC Tucson 84.82 54 *e*P **P 12 07 24.6 +1.1**
comp=Z,13nm,1.0s
G34A Benson 84.84 36 P **P 12 07 23.0 -0.4**
baz=317
F35A Swanville 84.91 35 P **P 12 07 23.1 -0.5**
baz=318
D37A Cotton 84.93 33 P **P 12 07 23.4 -0.4**
baz=319
C38A Sawbill Land. 85.02 32 P **P 12 07 23.7 -0.5**
baz=320
E36A McGregor 85.03 34 P **P 12 07 24.1 -0.1**
baz=318
J32A Parkston 85.09 39 P **P 12 07 24.7 +0.1**
baz=316
PERS Pernice 85.09 326 *i* P **P 12 07 24.4 -0.2**
SOKA Soboth 85.10 326 *i* P **P 12 07 24.5 -0.2**
comp=Z,41nm,1.2s,SNR=15
K31A O'Neill 85.15 40 P **P 12 07 24.5 -0.4**
baz=315
H34A Spellman Lake, 85.19 37 P **P 12 07 24.6 -0.5**
baz=317
F36A Milaca 85.40 35 P **P 12 07 25.5 -0.6**
baz=318
MEH Mehetia 85.40 116 *e*T T 13 41 26.2
comp=Z,32nm,0.2s
L31A Butterfield Fa 85.42 40 P **P 12 07 26.5 +0.2**
baz=315
G35A Watkins 85.42 36 P **P 12 07 25.9 -0.3**
baz=318
C39A Grand Marais 85.44 32 P **P 12 07 25.8 -0.5**
baz=320
OBKA Obir 85.44 326 *i* PcP **P 12 07 28.9 +2.4**
comp=Z,18nm,0.9s
ECSD EROS Data Cent 85.45 38 P **P 12 07 26.3 -0.1**
baz=316
ECSD EROS Data Cent 85.45 38 *e*P **P 12 07 26.6 +0.1**
comp=Z,16nm,1.0s
LEGS Legarje 85.51 325 *i* P **P 12 07 26.1 -0.5**
KBA Koelnbreinsper 85.56 327 *i* PcP **P 12 07 27.6 +0.5**
comp=Z,7.2nm,0.6s
H35A Sunnyside Ranc 85.63 36 P **P 12 07 27.7 +0.4**
baz=317

BEBN **Eben Emael** 85.72 333 P P 12 07 28.9 +1.4
T25A **Trinidad** 85.72 47 P P 12 07 28.3 +0.2
baz=312
T25A **Trinidad** 85.72 47 *e*P P 12 07 29.2 +1.1
comp=Z,40nm,1.2s
MEM **Membach** 85.75 333 P P 12 07 27.9 +0.1
comp=Z,16nm,1.3s
MYKA **Terra Mystica** 85.76 327 *e*P P 12 07 27.2 -0.8
comp=Z,7.4nm,0.7s
LAZ **Ladron** 85.84 50 *e*P P 12 07 30.1 +1.3
BOJS **Bojanci** 85.87 325 *i* P P 12 07 27.4 -1.1
ANMO **Albuquerque** 85.92 50 P P 12 07 29.5 +0.3
baz=311
ANMO **Albuquerque** 85.92 50 *ce*P P 12 07 29.8 +0.7
ANMO pmax pmax
comp=Z,9.0nm,1.0s
ANMO **Albuquerque** 85.92 50 *e*P P 12 07 30.3 +1.2
comp=Z,24nm,1.4s
M31A **Lambtecht Ranc** 85.93 41 P P 12 07 29.3 +0.5
baz=315
L32A **Elgin** 85.97 40 P P 12 07 28.6 -0.5
baz=316
TAOE **Nuku Hiva Isla** 86.01 104 *e*LR LR 12 34 37.1
comp=Z,1μm,24.0s
K33A **Hardington** 86.07 39 P P 12 07 29.1 -0.4
baz=316
PDG **Podgorica** 86.16 321 ⇑ *i* P P 12 07 30.1 +0.2
WTTA **Wattenberg** 86.16 328 *i* PcP P 12 07 34.4 +4.3
comp=Z,4.8nm,0.8s
BCLA **Clavier** 86.17 333 P P 12 07 29.8 0.0
comp=Z,23nm,2.0s
I35A **Creekview Farm** 86.18 37 P P 12 07 29.4 -0.6
baz=317
ABTA **Abfaltersbach** 86.18 327 *i* P P 12 07 29.8 -0.3
comp=Z,9.1nm,1.0s
SPMN **Marine on St.** 86.21 35 P P 12 07 30.1 0.0
baz=319
SPMN **Marine on St.** 86.21 35 *e*P P 12 07 30.3 +0.2
comp=Z,30nm,1.3s
LPM **Los Pinos Moun** 86.22 50 *e*P P 12 07 31.8 +1.1
L33A **Hoskins** 86.24 39 P P 12 07 30.5 +0.1
baz=316
BGNE **Belgrade** 86.32 40 P P 12 07 30.4 -0.4
baz=315
BNM **Barren Site** 86.33 50 *e*P P 12 07 32.3 +1.0
RETA **Reutte** 86.36 329 *i* PcP P 12 07 31.4 +0.4
comp=Z,21nm,1.1s,SNR=7.5
LANF **Langenberg** 86.39 331 *e*P P 12 07 30.8 -0.2
319A **Douglas** 86.40 54 *e*P P 12 07 33.1 +1.6
comp=Z,17nm,1.0s
CWF **Charnwood Fore** 86.42 338 *e*P P 12 07 31.4 +0.4
comp=Z,65nm,1.5s
J35A **Milford** 86.42 37 P P 12 07 30.7 -0.5
baz=317
SNF **Seneffe** 86.46 334 P P 12 07 32.5 +1.2
121A **Cookes Peak, D** 86.64 52 P P 12 07 33.0 +0.3
baz=310
121A **Cookes Peak, D** 86.64 52 *e*P P 12 07 34.1 +1.4
comp=Z,21nm,1.2s
H37A **Dierke Farm, C** 86.64 35 P P 12 07 32.4 +0.1
baz=319
DOU **Dourbes** 86.69 334 P P 12 07 33.4 +1.1
comp=Z,13nm,1.7s
BFO **Black Forest** 86.70 331 *i* P P 12 07 32.5 0.0
BFO **Black Forest** 86.70 331 *e*P P 12 07 32.2 -0.3
comp=Z,36nm,1.2s
M33A **Taylor Creek F** 86.71 40 P P 12 07 32.2 -0.5
baz=316
FETA **Feichten** 86.74 329 *i* P P 12 07 32.2 -0.7
comp=Z,9.3nm,1.2s
I37A **Lemond, Waseca** 86.83 36 P P 12 07 32.6 -0.7
baz=318
L34A **Svendsen Farm,** 86.85 39 P P 12 07 32.6 -0.8
baz=316
J36A **Seneca 1, Swea** 86.88 37 P P 12 07 32.8 -0.6
baz=318
DAVA **Damuels** 86.89 329 *i* PcP P 12 07 33.5 -0.1
comp=Z,20nm,1.0s,SNR=6.8
SCHQ **Schefferville** 87.09 16 P P 12 07 35.5 +1.3
comp=Z,11nm,0.8s,baz=11,slow=6.9,SNR=7.1
SCHQ LR LR 12 50 57.1
comp=Z,707nm,18.9s,baz=344,slow=39
SCHQ **Schefferville** 87.09 16 *e*P P 12 07 34.5 +0.3
comp=Z,20nm,0.9s
L35A **Bielow Farm, R** 87.17 38 P P 12 07 34.3 -0.6
baz=317
COWI **Conover** 87.20 32 *e*P P 12 07 35.0 0.0
comp=Z,20nm,1.1s
FUORN **Ofenpass-Fuorn** 87.25 329 *e*P P 12 07 35.8 +0.3
comp=Z,44nm,1.2s
ECH **Echery** 87.26 331 *e*P P 12 07 34.6 -0.6
J37A **Redenius Farm,** 87.28 37 P P 12 07 35.1 -0.3
baz=318
CBKS **Cedar Bluff** 87.28 43 P P 12 07 34.8 -0.8
baz=315
CBKS **Cedar Bluff** 87.28 43 *e*P P 12 07 36.0 +0.4
CBKS pmax pmax
comp=Z,43nm,1.1s
CBKS **Cedar Bluff** 87.28 43 *e*P P 12 07 36.0 +0.4
comp=Z,43nm,1.1s
I38A **Scanlan Farm,** 87.32 35 P P 12 07 35.2 -0.4
baz=319
K36A **Gilmore City** 87.33 38 P P 12 07 35.7 0.0
baz=318
P32A **Huiting Farm,** 87.34 42 P P 12 07 35.2 -0.6
baz=315
M35A **Neola** 87.56 39 P P 12 07 36.2 -0.6
baz=317
O33A **Hebron** 87.57 41 P P 12 07 36.5 -0.4
baz=316
N34A **Lincoln** 87.60 40 P P 12 07 35.9 -1.1
baz=316
K37A **Belmond** 87.64 37 P P 12 07 36.9 -0.3
baz=318
TUE **Stuetta** 87.76 329 *e*P P 12 07 37.8 -0.2
comp=Z,59nm,1.8s
J38A **Wedel Dairy, R** 87.80 36 P P 12 07 37.2 -0.7
baz=319
Q32A **Meitler Ranch,** 87.81 42 P P 12 07 37.4 -0.6
baz=315
TBI **Tubuai** 87.86 121 *e*S S 12 18 15.2 -4.6
comp=Z,825nm,29.8s
TBI **Tubuai** 87.86 121 *e*LQ LQ 12 31 16.2
comp=Z,1μm,32.2s
TBI *e*LR LR 12 35 32.2
comp=Z,3μm,21.5s,baz=310
TBI **Tubuai** 87.86 121 *e*T T 13 44 33.8
comp=Z,13nm,0.3s
P33A **Williams Farm,** 87.97 42 P P 12 07 37.9 -0.9
baz=316
O34A **Beatrice** 87.97 40 P P 12 07 37.8 -1.0
baz=316
M36A **Felix, Anita** 88.03 39 P P 12 07 38.8 -0.3
baz=318
N35A **Tabor** 88.03 39 P P 12 07 39.5 +0.5
baz=317
L37A **Phoenix Point,** 88.06 37 P P 12 07 39.1 0.0
baz=318
J39A **Decorah** 88.15 36 P P 12 07 39.5 0.0
baz=320
Q33A **Connelly Farm,** 88.21 42 P P 12 07 39.5 -0.4
baz=316
O35A **Humboldt** 88.32 40 P P 12 07 40.2 -0.3
baz=317
P34A **Walnut Farm, R** 88.36 41 P P 12 07 40.2 -0.4
baz=316
N36A **Muff Farm, Cla** 88.42 39 P P 12 07 41.1 +0.2
baz=317
L38A **Oak Wood Farm,** 88.44 37 P P 12 07 41.1 +0.1
baz=319
M37A **Trindle Farm,** 88.44 38 P P 12 07 41.0 0.0
baz=318
SCIA **State Center** 88.49 37 *e*P P 12 07 42.8 +1.5
comp=Z,59nm,1.1s
S32A **Newby Ranch, P** 88.51 43 P P 12 07 40.7 -0.8
baz=315
K39A **Oelwein** 88.54 36 P P 12 07 40.8 -0.7
baz=319
J40A **Soldiers Grove** 88.56 35 P P 12 07 41.1 -0.4
baz=320
R33A **Olander Ranch,** 88.61 42 P P 12 07 41.5 -0.4
baz=316
MNTX **Cornudas Mount** 88.72 51 P P 12 07 42.7 +0.2
baz=312
MNTX **Cornudas Mount** 88.72 51 *e*P P 12 07 43.7 +1.2
comp=Z,8.4nm,1.4s
Q34A **Chapman** 88.75 41 P P 12 07 42.3 -0.1
baz=316

KSU1 **Kansas State U** 88.80 41 P P 12 07 42.6 -0.1
baz=316
KSU1 **Kansas State U** 88.80 41 *e*P P 12 07 43.0 +0.3
comp=Z,26nm,0.9s
P35A **Duane Minner,** 88.80 41 P P 12 07 42.8 +0.1
baz=317
MSTX **Muleshoe** 88.84 48 P P 12 07 42.8 -0.3
baz=313
N37A **Lee Faris, Mou** 88.84 39 P P 12 07 43.2 +0.3
baz=318
M38A **Pleasantville** 88.87 38 P P 12 07 42.8 -0.2
baz=319
AMTX **Amarillo** 88.88 47 P P 12 07 43.6 +0.3
baz=314
AMTX **Amarillo** 88.88 47 *e*P P 12 07 44.3 +1.0
comp=Z,24nm,1.0s
T32A **Huddler Ranch,** 88.89 44 P P 12 07 43.3 +0.1
baz=315
K40A **Colesburg** 88.90 36 P P 12 07 43.1 0.0
baz=320
J41A **Loganville** 88.92 35 P P 12 07 42.8 -0.4
baz=321
L39A **Vinton** 88.93 37 P P 12 07 43.0 -0.3
baz=319
R34A **Isabella, Hill** 89.02 42 P P 12 07 43.5 -0.3
baz=316
S33A **Kaszmaul Farm,** 89.11 43 P P 12 07 44.2 0.0
baz=316
P36A **Good Intent, A** 89.17 40 P P 12 07 44.2 -0.3
baz=317
Q35A **Mercer Eighty,** 89.28 41 P P 12 07 45.0 0.0
baz=317
N38A **Joes South For** 89.31 38 P P 12 07 45.2 +0.1
baz=319
O37A **Wolven Farm, M** 89.31 39 P P 12 07 45.0 -0.2
baz=318
M39A **Webster** 89.33 37 P P 12 07 44.7 -0.4
baz=319
L40A **Anamosa** 89.35 36 P P 12 07 44.9 -0.3
baz=320
K41A **Shullsburg** 89.37 35 P P 12 07 44.9 -0.4
baz=320
S34A **Willow Spring** 89.53 42 P P 12 07 45.9 -0.3
baz=316
R35A **Emporia Munici** 89.58 41 P P 12 07 46.2 -0.2
baz=317
N39A **Derby Farms, D** 89.62 38 P P 12 07 46.1 -0.4
baz=319
P37A **Lathrop** 89.64 40 P P 12 07 46.0 -0.7
baz=318
L41A **Preston** 89.69 36 P P 12 07 46.3 -0.5
baz=320
O38A **Galt** 89.69 39 P P 12 07 47.0 +0.1
baz=318
V32A **Arapaho** 89.84 45 P P 12 07 47.3 -0.4
baz=315
U33A **Lingo Farm, Me** 89.87 44 P P 12 07 47.7 -0.1
baz=316
R36A **Gordon, Harris** 89.95 41 P P 12 07 47.9 -0.3
baz=317
T34A **McClaskey Farm** 89.97 43 P P 12 07 48.1 -0.2
baz=316
S35A **Otter Creek Ra** 89.98 42 P P 12 07 48.5 +0.2
baz=317
P38A **Dawn** 90.03 39 P P 12 07 48.4 0.0
baz=318
VLDQ **Val d'Or** 90.12 25 *e*P P 12 07 48.1 -0.6
comp=Z,62nm,1.5s
W32A **Sentinel** 90.15 45 P P 12 07 49.4 +0.2
baz=315
U34A **Anderson Ranch** 90.20 44 P P 12 07 49.7 +0.3
baz=316
U34A **Anderson Ranch** 90.20 44 *e*P P 12 07 50.2 +0.8
comp=Z,27nm,0.8s
V33A **Lossen Ranch,** 90.21 44 P P 12 07 49.4 0.0
baz=316
R37A **Teagarden Farm** 90.32 41 P P 12 07 49.3 -0.5
baz=318
S36A **Lake Cedric, C** 90.34 42 P P 12 07 49.7 -0.3
baz=317
T35A **Sooner Cattle** 90.42 43 P P 12 07 50.3 0.0
baz=316
Q38A **Cooks Store, C** 90.48 40 P P 12 07 50.0 -0.5
baz=318
O40A **La Belle** 90.50 38 P P 12 07 50.2 -0.4
baz=319
P39B **Salisbury** 90.53 39 P P 12 07 50.8 0.0
baz=319
W33A **Caddo, Fort Co** 90.58 45 P P 12 07 51.4 +0.2
baz=315
X32A **Elmer** 90.62 46 P P 12 07 51.6 +0.2
baz=315
V34A **Guthrie** 90.64 44 P P 12 07 51.4 0.0
baz=316
V34A **Guthrie** 90.64 44 *e*P P 12 07 52.3 +0.9
comp=Z,48nm,1.3s
T36A **Boggs Farm, Ca** 90.67 42 P P 12 07 51.5 0.0
baz=317
WMOK **Wichita Mounta** 90.69 45 P P 12 07 51.4 -0.3
baz=315
WMOK **Wichita Mounta** 90.69 45 *e*P P 12 07 52.2 +0.5
WMOK pmax pmax
comp=Z,15nm,1.1s
WMOK **Wichita Mounta** 90.69 45 *e*P P 12 07 52.2 +0.5
comp=Z,15nm,1.1s
SSB **Saint Sauveur** 90.69 331 *e*P P 12 07 51.6 +0.1
SSB pmax pmax
comp=Z,8.0nm,0.9s
SSB **Saint Sauveur** 90.69 331 *e*P P 12 07 51.5 +0.1
comp=Z,8.3nm,0.9s
U35A **Pawnee** 90.70 43 P P 12 07 51.5 -0.2
baz=316
S37A **Fort Scott** 90.73 41 P P 12 07 51.5 -0.3
baz=318
Q39A **Willow Grove F** 90.75 39 P P 12 07 51.9 +0.1
baz=319
P40A **Paris** 90.86 38 P P 12 07 52.4 +0.1
baz=319
R38A **Fenwick Farm,** 90.91 40 P P 12 07 52.2 -0.4
baz=318
W34A **Bridge Creek,** 90.92 44 P P 12 07 52.8 +0.1
baz=316
W34A **Bridge Creek,** 90.92 44 *e*P P 12 07 54.3 +1.6
comp=Z,30nm,1.0s
X33A **Lawton** 90.99 45 P P 12 07 52.8 -0.3
baz=315
O41A **Passleys Farm,** 91.00 37 P P 12 07 52.4 -0.6
baz=320
V35A **Meyer Ranch, C** 91.07 44 P P 12 07 53.0 -0.4
baz=316
T37A **Cheneyville 18** 91.15 42 P P 12 07 53.4 -0.3
baz=318
U36A **Oologah** 91.23 42 P P 12 07 53.7 -0.4
baz=317
P41A **Barry, Barry** 91.25 38 P P 12 07 53.8 -0.3
baz=320
Q40A **Laux Farm, Aux** 91.25 39 P P 12 07 53.9 -0.3
baz=319
R39A **Chumby, Stover** 91.27 40 P P 12 07 54.1 -0.2
baz=319
Y33A **Hilltop Ranch,** 91.30 46 P P 12 07 54.2 -0.3
baz=315
S38A **Stockton** 91.32 41 P P 12 07 53.9 -0.6
baz=318
X34A **Smith Ranch, M** 91.34 45 P P 12 07 54.9 +0.2
baz=316
TX31 **Lajitas Ar. Si** 91.40 52 *e*P P 12 07 54.8 -0.4
TX31 *e*P P 12 07 55.8 +0.7
TXAR **Lajitas Array** 91.40 52 P P 12 07 55.4 +0.2
comp=Z,3.8nm,0.7s,baz=298,slow=2.7,SNR=29
TXAR PKKPbc **PKKPbc** 12 25 16.1 +1.0
comp=Z,0.3nm,0.6s,baz=141,slow=6.9,SNR=4.0
HDIL **Hopedale** 91.44 36 P P 12 07 55.1 +0.2
baz=321
W35A **Tecumseh** 91.49 44 P P 12 07 55.3 0.0
baz=316
T38A **Diamond** 91.55 41 P P 12 07 55.3 -0.3
baz=318
TUL1 **Leonard** 91.55 43 P P 12 07 55.5 -0.2
baz=317
TUL1 **Leonard** 91.55 43 *e*P P 12 07 56.3 +0.7
comp=Z,20nm,0.9s
V36A **Jenks** 91.56 43 P P 12 07 55.5 -0.2
baz=317
U37A **Salina** 91.56 42 P P 12 07 55.4 -0.3
baz=317
S39A **Bolivar** 91.58 40 P P 12 07 55.3 -0.4
baz=318

ABTX **Abilene, Hawle** 91.66 47 P P 12 07 56.3 +0.1
baz=315
ABTX **Abilene, Hawle** 91.66 47 *e*P P 12 07 57.7 +1.5
comp=Z,33nm,1.2s
HPIG 91.67 55 *e*P P 12 07 58.1 +1.5
comp=Z,9.1nm,1.0s
P42A **Winchester** 91.67 37 P P 12 07 55.8 -0.3
baz=320
R40A **Maddies Statio** 91.68 39 P P 12 07 56.0 -0.2
baz=319
Z33A **Whitaker Ranch** 91.72 46 P P 12 07 56.6 +0.1
baz=315
Y34A **Reagan Ranch,** 91.84 45 P P 12 07 56.8 -0.1
baz=316
W36A **Wetumka** 91.87 44 P P 12 07 56.9 -0.2
baz=317
V37A **Hulbert** 91.93 42 P P 12 07 57.5 +0.1
baz=317
U38A **Gravette** 91.94 42 P P 12 07 57.2 -0.2
baz=318
X35A **Drake** 91.98 45 P P 12 07 57.1 -0.5
baz=316
T39A **Clever** 92.05 41 P P 12 07 57.5 -0.5
baz=318
S40A **Lebanon** 92.08 40 P P 12 07 57.6 -0.5
baz=319
133A **Hamilton Ranch** 92.11 47 P P 12 07 58.4 +0.1
baz=315
Z34A **Collier Ranch,** 92.16 46 P P 12 07 58.2 -0.3
baz=316
X36A **Centrahoma** 92.21 44 P P 12 07 58.5 -0.2
baz=317
Y35A **Marietta** 92.29 45 P P 12 07 58.7 -0.4
baz=316
HHAR **Hobbs** 92.30 42 *e*P P 12 07 59.2 +0.1
comp=Z,16nm,1.0s
W37B **Quinton** 92.31 43 P P 12 07 58.9 -0.3
baz=317
V38A **Canehill** 92.35 42 P P 12 07 59.1 -0.2
baz=318
T40A **Mansfield** 92.41 40 P P 12 07 59.0 -0.6
baz=319
U39A **Green Forest** 92.47 41 P P 12 07 59.4 -0.5
baz=318
S41A **Jillco Farms,** 92.48 39 P P 12 07 59.7 -0.2
baz=320
233A **Rising Star** 92.53 47 P P 12 08 00.6 +0.3
baz=315
Z35A **Perchaven, San** 92.58 46 P P 12 08 00.4 0.0
baz=316
SFIN **Lafayette** 92.61 35 P P 12 08 00.3 -0.1
baz=323
134A **White-Moore Ra** 92.63 47 P P 12 08 00.4 -0.3
baz=316
Y36A **Durant** 92.73 45 P P 12 08 00.8 -0.3
baz=317
X37A **Clayton** 92.75 44 P P 12 08 01.0 -0.2
baz=317
V39A **Pettigrew** 92.79 42 P P 12 08 01.1 -0.3
baz=318
U40A **Yellville** 92.83 41 P P 12 08 01.2 -0.4
baz=319
Q44A **Meyer Farm, Va** 92.85 37 P P 12 08 00.8 -0.7
baz=321
LMQ **La Malbaie** 92.87 21 *e*P P 12 08 01.8 +0.3
W38A **Poteau** 92.87 43 P P 12 08 01.1 -0.7
baz=318
T41A **Mountain View** 92.89 40 P P 12 08 01.3 -0.5
baz=319
333A **Richland Sprin** 92.97 48 P P 12 08 02.0 -0.3
baz=315
X38A **Whitesboro** 93.00 43 P P 12 08 02.0 -0.3
baz=318
234A **Clairette** 93.00 47 P P 12 08 02.4 0.0
baz=316
JCT **Junction City** 93.06 49 P P 12 08 02.7 0.0
baz=314
JCT **Junction City** 93.06 49 *e*P P 12 08 02.7 0.0
JCT pmax pmax
comp=Z,7.0nm,0.8s
JCT **Junction City** 93.06 49 *e*P P 12 08 02.7 0.0
comp=Z,7.3nm,0.8s
Z36A **Blue Ridge** 93.10 45 P P 12 08 02.5 -0.3
baz=316
W39A **Magazine** 93.19 42 P P 12 08 03.4 +0.2
baz=318
V40A **Witts Springs** 93.26 41 P P 12 08 03.0 -0.5
baz=319
433A **Art** 93.31 48 P P 12 08 04.2 +0.3
baz=315
R44A **Waltonville** 93.33 37 P P 12 08 04.0 +0.3
baz=321
U41A **Viola** 93.33 40 P P 12 08 04.2 +0.4
baz=319
S43A **Fulton Ridge,** 93.35 38 P P 12 08 03.9 0.0
baz=320
334A **Lometa** 93.42 48 P P 12 08 04.0 -0.3
baz=315
WHTX **Lake Whitney,** 93.42 47 P P 12 08 04.1 -0.2
baz=316
WHTX **Lake Whitney,** 93.42 47 *e*P P 12 08 05.1 +0.8
comp=Z,32nm,1.2s
X39A **Fountain Ranch** 93.51 43 P P 12 08 04.2 -0.5
baz=318
W40A **Ferguson Farm,** 93.58 42 P P 12 08 04.3 -0.7
baz=319
V41A **Mountainview** 93.63 41 P P 12 08 04.9 -0.4
baz=319
S44A **Carbondale** 93.67 38 P P 12 08 04.9 -0.5
baz=321
U42A **Revenden** 93.69 40 P P 12 08 04.5 -1.0
baz=320
434A **Burnet** 93.76 48 P P 12 08 06.5 +0.6
baz=315
PBMO **Poplar Bluff** 93.78 39 *e*P P 12 08 06.7 +0.8
comp=Z,11nm,1.0s
MIAR **Mount Ida** 93.78 42 P P 12 08 06.0 0.0
baz=318
MIAR **Mount Ida** 93.78 42 *e*P P 12 08 06.4 +0.4
MIAR pmax pmax
comp=Z,16nm,1.0s
MIAR **Mount Ida** 93.78 42 *e*P P 12 08 06.4 +0.4
comp=Z,16nm,1.0s
533A **Kerrville** 93.82 49 P P 12 08 06.2 -0.1
baz=315
X201 **Greenbrier Sit** 93.89 41 *e*P P 12 08 07.1 +0.7
comp=Z,19nm,1.2s
X301 **Greenbrier Sit** 93.91 41 *e*P P 12 08 06.6 +0.1
comp=Z,13nm,1.1s
WHAR **Wooly Hollow** 93.93 41 *e*P P 12 08 06.8 +0.2
comp=Z,21nm,1.1s
Y39A **Lockesburg** 93.94 43 P P 12 08 06.4 -0.3
baz=318
V42A **Cord** 94.02 40 P P 12 08 07.3 +0.3
baz=320
W41B **Gary Mavity, V** 94.04 41 P P 12 08 07.4 +0.3
baz=319
633A **Saathoff Ranch** 94.16 49 P P 12 08 07.7 0.0
baz=315
534A **Blanco** 94.19 49 P P 12 08 07.7 -0.2
baz=315
336A **Riesel** 94.21 47 P P 12 08 09.0 +1.1
baz=316
X40A **Basin Creek Fa** 94.23 42 P P 12 08 08.8 +0.8
baz=319
ACSO **Alum Creek Sta** 94.59 32 *e*P P 12 08 11.5 +2.0
comp=Z,10nm,0.8s
KEST **Kesra** 96.25 322 LR LR 12 57 09.7
comp=Z,2μm,18.3s,baz=338,slow=39
RKT **Rikitea** 98.33 112 *e*SS SS 12 26 35.2 -2.8
comp=Z,217nm,34.2s
RKT **Rikitea** 98.33 112 *e*LR LR 12 40 20.9
comp=Z,2μm,23.2s,baz=303
ESDC **Sonseca Array** 98.74 333 LR LR 12 58 02.4
comp=Z,1μm,19.7s,baz=25,slow=38
TORD **Torodi Ar. Bea** 118.37 314 PKP **PKPdf** 12 13 37.6 +0.8
comp=Z,1.3nm,0.7s,baz=7.5,slow=2.5,SNR=5.8
TORD PP **PP** 12 14 54.1 +1.9
comp=Z,2.6nm,0.9s,baz=19,slow=6.8,SNR=4.6
QSPA **South Pole Qui** 125.03 180 *e*PKPdf **PKPdf** 12 13 48.0 0.0
SDV **Santo Domingo** 126.83 40 *e*PKPdf **PKPdf** 12 13 53.0 -0.3
NVL **N'lazarevskaya** 135.57 202 *e*PKIKP PKPpre 12 14 00.4
SAML **Samuel** 145.66 46 *e*PKPdf **PKPdf** 12 14 27.2 -0.5
LPAZ **La Paz** 147.78 62 PKPbc **PKPbc** 12 14 34.8 0.0
comp=Z,5.9nm,0.7s,baz=267,slow=1.4,SNR=23
LPAZ **La Paz** 147.78 62 *e*PKPdf **PKPbc** 12 14 34.2 -0.6
LVC **Limon Verde** 150.99 72 *e*PKPbc **PKPbc** 12 14 43.2 +0.9

*IDC **25** 11:59:01.5±0.6, 7.°93S×117.°59E, h0km, mb4.5/13, mb1 4.6/14,mb1mx4.3/47, mbtmp4.5/14, ML3.9/1, Error ellipse: s-maj=34.6km s-min=13.5km az=60.0*
*NEIC **25** 11:59:03.1±0.3, 7.°95S×117.°60E, h10km, mb4.5/1, Error ellipse: s-maj=7.4km s-min=4.8km az=49.0*
*ISCJB **25** 11:59:04.7±0.3, 7.°96S±0.°04×117.°68E±0.°04, h33km, mb4.6/14, Error ellipse: s-maj=5.8km s-min=4.8km az=26.0*
*DJA **25** 11:59:04.5±0.3, 8.°S±4.′×11.°8E±.°, h10km, M5.0/12, mB5.2/2, mb5.3/3, MLv4.8/12, Mw(mB)4.6/2*

ISC 25 11:59:06.7±0.5, **7.°98S**±0.°05×**117.°64E**±0.°05, **h35**km, **n53,** σ0**95**/54, **mb4.5**/14, **Bali Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLAI	**Plampang**	**0.85**	**171**	P	**Pn**	**11 59 21.9**	**-0.3**
TWSI	**Taliwang, Sumb**	**1.06**	**225**	P	**Pn**	**11 59 24.2**	**-0.9**
DNP	**Denpasar**	**2.51**	**254**	P	**Pn**	**11 59 48.0**	**+3.1**
IGBI	**Denpasar**	**2.61**	**251**	P	**Pn**	**11 59 46.0**	**-0.4**
WSI	**Waingapu**	**3.11**	**123**	P	**Pn**	**11 59 54.0**	**+0.7**
BSSI	**Bau Bau, Buton**	**3.36**	**57**	P	**Pn**	**11 59 56.4**	**-0.4**
ABJI	**Asem Bagus**	**3.38**	**273**	P	**Pn**	**11 59 57.5**	**+0.5**
JAGI	**Jajag, Banyuwa**	**3.49**	**262**	P	**Pn**	**11 59 57.9**	**-0.6**
JAGI	**Jajag, Banyuwa**	**3.49**	**262**	*e*Pn	**Pn**	**11 59 57.4**	**-1.2**
KAPI	**Kappang**	**3.62**	**36**	*e*Pn	**Pn**	**11 59 59.3**	**-0.9**
BLJI	**Banyuglugur**	**4.02**	**273**	P	**Pn**	**12 00 05.6**	**-0.2**
GMJI	**Gumukmas**	**4.17**	**266**	P	**Pn**	**12 00 10.3**	**+2.5**
MMRI	**Maumere**	**4.59**	**98**	*e*Pn	**Pn**	**12 00 13.5**	**-0.1**
GRJI	**Gresik**	**5.23**	**281**	P	**Pn**	**12 00 23.3**	**+0.9**
TTSI	**Tana Toraja**	**5.36**	**24**	P	**Pn**	**12 00 24.4**	**+0.2**
SOEI	**Soe**	**6.78**	**106**	*e*Pn	**Pn**	**12 00 43.9**	**+0.1**
	90nm,0.8s						
FITZ	**Fitzroy Crossi**	**12.72**	**143**	Pn	**Pn**	**12 02 04.2**	**-1.0**
	0.5nm,0.3s,baz=324,slow=8.9,SNR=14						
FITZ	**Fitzroy Crossi**	**12.72**	**143**	P	**Pn**	**12 02 03.9**	**-1.2**
	baz=13,SNR=22						
MBWA	**Marble Bar**	**13.26**	**171**	*e*Pn	**Pn**	**12 02 11.7**	**-0.8**
	42nm,0.5s						
MTN	**Manton Dam**	**14.12**	**111**	P	**Pn**	**12 02 22.6**	**-1.7**
	baz=14,SNR=12						
GIRL	**Giralia**	**14.94**	**192**	P	**Pn**	**12 02 33.7**	**-1.7**
	baz=15,SNR=9.0						
MEEK	**Meekatharra**	**18.58**	**177**	P	**Pn**	**12 03 21.4**	**+0.1**
	baz=19,SNR=21						
WRKA	**Warakurna**	**19.78**	**150**	P	**Pn**	**12 03 35.4**	**-0.3**
	baz=20,SNR=89						
WRA	**Warramunga Arr**	**20.07**	**128**	P	**P**	**12 03 36.8**	**-0.5**
	6.2nm,0.8s,baz=301,slow=12,SNR=50						
WRAB	**Tennant Creek**	**20.07**	**128**	*e*P	**P**	**12 03 37.5**	**+0.2**
	94nm,0.8s						
MORW	**Morawa**	**21.03**	**184**	P	**P**	**12 03 48.2**	**+0.7**
	baz=21,SNR=4.1						
ASAR	**Alice Springs**	**22.05**	**137**	P	**P**	**12 03 59.1**	**+0.5**
	10nm,0.6s,baz=307,slow=8.6,SNR=183						
TPTI		**23.27**	**298**	P	**P**	**12 04 12.8**	**+1.4**
KLBR	**Kellerberrin**	**23.49**	**180**	P	**P**	**12 04 13.3**	**-0.1**
	baz=24,SNR=5.3						
KMBL	**Kambalda**	**23.60**	**171**	P	**P**	**12 04 14.0**	**-0.5**
	baz=24,SNR=11						
FORT	**Forrest**	**24.68**	**158**	P	**P**	**12 04 24.7**	**+0.2**
	baz=25,SNR=8.3						
FORT	**Forrest**	**24.68**	**158**	*e*P	**P**	**12 04 25.4**	**+0.9**
	226nm,0.8s						
NWAO	**Narrogin (SRO)**	**24.83**	**181**	P	**P**	**12 04 25.0**	**-0.7**
	baz=25,SNR=6.4						
NWAO				P	**P**	**12 04 25.0**	**-0.7**
	baz=25,SNR=6.4						
COEN	**Coen**	**25.75**	**106**	P	**P**	**12 04 34.0**	**-0.3**
	baz=26,SNR=6.4						
BBOO	**Buckleboo**	**30.03**	**148**	P	**P**	**12 05 13.2**	**+0.7**
	baz=30,SNR=6.1						
BBOO	**Buckleboo**	**30.03**	**148**	*e*P	**P**	**12 05 13.2**	**+0.7**
	5.2nm,0.6s						
HTT	**Hallett**	**32.07**	**145**	P	**P**	**12 05 31.3**	**+0.9**
	baz=32,SNR=15						
CMAR	**Chiang Mai Arr**	**32.10**	**325**	P	**P**	**12 05 31.1**	**+0.3**
	1.7nm,0.5s,baz=148,slow=6.4,SNR=5.5						
STKA	**Stephens Creek**	**32.59**	**140**	P	**P**	**12 05 35.4**	**+0.4**
	4.5nm,0.6s,baz=315,slow=9.4,SNR=23						
STKA	**Stephens Creek**	**32.59**	**140**	P	**P**	**12 05 35.9**	**+0.9**
	baz=33,SNR=16						
ARPS	**Mount Arapiles**	**36.13**	**146**	P	**P**	**12 06 07.3**	**+1.7**
	baz=36,SNR=4.8						
USRK	**Ussuriysk Ar.**	**53.53**	**13**	P	**P**	**12 08 23.6**	**-0.3**
	2.7nm,0.5s,baz=185,slow=6.2,SNR=5.6						
SONM	**Songino Array**	**56.46**	**351**	P	**P**	**12 08 45.2**	**0.0**
	5.5nm,0.6s,baz=170,slow=8.4,SNR=11						
MKAR	**Makanchi Array**	**62.95**	**333**	P	**P**	**12 09 30.0**	**+0.3**
	10nm,0.6s,baz=154,slow=6.9,SNR=29						
KURBB	**Kurchatov Arra**	**67.47**	**334**	P	**P**	**12 09 59.0**	**+0.2**
	4.1nm,0.7s,baz=147,slow=5.9,SNR=5.0						
KURK	**Kurchatov**	**67.50**	**334**	P	**P**	**12 09 59.0**	**0.0**
ZALV	**Zalesovo Beam**	**67.62**	**340**	P	**P**	**12 09 58.6**	**-1.2**
	7.3nm,0.6s,baz=142,slow=4.6,SNR=10.0						
PETK	**Petropavlovsk-**	**69.70**	**24**	P	**P**	**12 10 13.2**	**+0.4**
	4.0nm,0.7s,baz=228,slow=5.8,SNR=3.9						
BVAR	**Borovoye Array**	**72.77**	**332**	P	**P**	**12 10 31.4**	**0.0**
	4.8nm,0.8s,baz=129,slow=8.2,SNR=10.0						
VNDA	**Vanda**	**73.20**	**171**	P	**P**	**12 10 35.0**	**+1.5**
	0.9nm,0.6s,baz=309,slow=9.7,SNR=6.3						
AKTO	**Aktyubinsk**	**77.63**	**326**	P	**P**	**12 10 58.2**	**-1.2**
KMBO	**Kilima Mbogo**	**80.33**	**270**	P	**P**	**12 11 14.8**	**-0.5**
	0.7nm,0.3s,baz=60,slow=8.5,SNR=3.8						
CPUP	**Villa Florida**	**145.55**	**188**	PKPbc	**PKPab**	**12 18 42.2**	**-0.1**
	3.1nm,0.5s,baz=123,slow=2.9,SNR=9.2						

*ISCJB **25** 12:00:22.0±0.6, 38.°33N±0.°02×24.°54E±0.°03, h6km±4km, Error ellipse: s-maj=3.6km s-min=3.3km az=138.9*
*ATH **25** 12:00:22.0, 38.°33N×24.°53E, h25km±1km, ML2.7/15, Error ellipse: s-maj=1.1km s-min=0.9km az=274.0*
*CSEM **25** 12:00:22.2±0.1, 38.°34N×24.°55E, h10km, ML2.7, Error ellipse: s-maj=2.7km s-min=2.4km az=130.0*
*THE **25** 12:00:22.9, 38.°36N×24.°52E, h11km±1km, ML2.7/7, Error ellipse: s-maj=1.5km s-min=0.7km az=264.0*

ISC 25 12:00:22.2±1.0, **38.°34N**±0.°02×**24.°54E**±0.°02, **h13**km±8km, **n60,** σ0**43**/103, **Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EREA	**Eretria**	**0.48**	**280**	P	**Pb**	**12 00 32.1**	**-0.5**
EREA				S	**Sb**	**12 00 39.7**	**+0.1**
EREA	**Eretria**	**0.48**	**280**	P	**Pb**	**12 00 32.1**	**-0.5**
EREA				S	**Sb**	**12 00 39.2**	**-0.4**
EREA	**Eretria**	**0.48**	**280**	P	**Pg**	**12 00 31.9**	**+0.3**
EREA				S	**Sb**	**12 00 39.2**	**-0.4**
EREA				AML	AML	12 00 42.2	
	comp=E,1360μm,0.3s						
EREA				AML	AML	12 00 44.9	
	comp=N,1377μm,0.2s						
SKY	**Skiros Island**	**0.54**	**1**	P	**Pg**	**12 00 32.7**	**0.0**
SKY				S	**Sg**	**12 00 40.2**	**+0.3**
SKY	**Skiros Island**	**0.54**	**1**	P	**Pg**	**12 00 32.7**	**0.0**
SKY				S	**Sg**	**12 00 40.2**	**+0.3**
SKY				AML	AML	12 00 45.2	
	comp=N,2235μm,0.2s						
SKY				AML	AML	12 00 45.6	
	comp=E,2737μm,0.2s						
PTL	**Penteli**	**0.60**	**242**	P	**Pg**	**12 00 34.1**	**+0.2**
PTL				S	**Sg**	**12 00 42.3**	**+0.4**
PTL	**Penteli**	**0.60**	**242**	P	**Pg**	**12 00 34.1**	**+0.2**
PTL				S	**Sg**	**12 00 42.3**	**+0.4**
PTL	**Penteli**	**0.60**	**242**	P	**Pg**	**12 00 34.1**	**+0.2**
PTL				S	**Sg**	**12 00 41.6**	**-0.2**
PTL				AML	AML	12 00 45.0	
	comp=E,1113μm,0.4s						
PTL				AML	AML	12 00 46.5	
	comp=N,1114μm,0.4s						
ATHU	**Athens Univers**	**0.70**	**238**	P	**Pg**	**12 00 35.9**	**+0.2**
ATHU	**Athens Univers**	**0.70**	**238**	P	**Pg**	**12 00 35.4**	**-0.3**
ATHU				S	**Sg**	**12 00 44.8**	**-0.1**
ATHU	**Athens Univers**	**0.70**	**238**	P	**Pg**	**12 00 35.4**	**-0.3**
ATHU				S	**Sg**	**12 00 44.8**	**-0.1**
ATHU				AML	AML	12 00 48.7	
	comp=N,508μm,0.3s						
ATHU				AML	AML	12 00 49.1	
	comp=E,362μm,0.3s						
ATH	**Athens Observa**	**0.74**	**241**	P	**Pb**	**12 00 37.2**	**+0.3**
ATH				S	**Sg**	**12 00 46.5**	**+0.3**
VLY	**Voula,Athens**	**0.76**	**231**	P	**Pb**	**12 00 37.9**	**+0.6**
VLY				S	**Sg**	**12 00 45.9**	**-0.9**
VLY	**Voula,Athens**	**0.76**	**231**	P	**Pb**	**12 00 37.9**	**+0.6**
VLY				S	**Sg**	**12 00 45.9**	**-0.9**
VLY				AML	AML	12 00 47.0	
	comp=N,2872μm,0.3s						
VLY				AML	AML	12 00 51.0	
	comp=E,2024μm,0.3s						
AOS	**Alonnisos**	**0.98**	**329**	P	**Pb**	**12 00 40.9**	**0.0**
AOS				S	**Sb**	**12 00 54.2**	**+0.4**
AOS	**Alonnisos**	**0.98**	**329**	P	**Pb**	**12 00 41.0**	**0.0**
AOS				S	**Sb**	**12 00 53.8**	**0.0**
AOS	**Alonnisos**	**0.98**	**329**	P	**Pg**	**12 00 41.0**	**0.0**
AOS				S	**Sb**	**12 00 53.9**	**0.0**
AOS				AML	AML	12 00 56.2	
	comp=N,786μm,0.4s						
AOS				AML	AML	12 00 57.8	
	comp=E,610μm,0.3s						
VILL	**Villia**	**0.98**	**260**	P	**Pg**	**12 00 41.0**	**0.0**
VILL	**Villia**	**0.98**	**260**	P	**Pb**	**12 00 41.3**	**+0.3**
VILL				S	**Sb**	**12 00 54.2**	**+0.3**
VIL2	**Platees**	**1.00**	**263**	P	**Pb**	**12 00 41.3**	**-0.2**
VIL2				S	**Sb**	**12 00 54.2**	**-0.5**
VIL2				AML	AML	12 00 59.4	
	comp=E,940μm,0.8s						
VIL2				AML	AML	12 01 00.1	
	comp=N,1394μm,0.6s						
SERI	**Serifos**	**1.18**	**182**	P	**Pb**	**12 00 44.0**	**-0.4**
SERI				S	**Sb**	**12 00 59.0**	**-0.5**
SERI	**Serifos**	**1.18**	**182**	P	**Pb**	**12 00 44.0**	**-0.4**
SERI				S	**Sb**	**12 00 59.0**	**-0.5**
SKIA	**Skiathos**	**1.18**	**315**	P	**Pb**	**12 00 43.9**	**-0.5**
SKIA				S	**Sg**	**12 00 59.9**	**-0.2**
SKIA	**Skiathos**	**1.18**	**315**	P	**Pg**	**12 00 44.8**	**0.0**
SKIA				S	**Sn**	**12 01 00.8**	**+0.4**
SKIA	**Skiathos**	**1.18**	**315**	P	**Pg**	**12 00 44.8**	**0.0**
SKIA				S	**Sn**	**12 01 00.8**	**+0.4**
SKIA				AML	AML	12 01 02.6	
	comp=N,661μm,0.3s						
SKIA				AML	AML	12 01 03.5	
	comp=E,723μm,0.3s						
CHOS	**Chios island**	**1.20**	**87**	P	**Pn**	**12 00 44.7**	**0.0**
CHOS				S	**Sn**	**12 01 01.1**	**+0.2**
CHOS	**Chios island**	**1.20**	**87**	P	**Pg**	**12 00 45.4**	**+0.2**
CHOS				S	**Sn**	**12 01 01.1**	**+0.2**
CHOS	**Chios island**	**1.20**	**87**	P	**Pg**	**12 00 45.4**	**+0.2**
CHOS				S	**Sn**	**12 01 02.5**	**+1.6**
CHOS				AML	AML	12 01 07.3	
	comp=E,728μm,0.5s						
CHOS				AML	AML	12 01 10.0	
	comp=N,305μm,0.4s						
ATAL	**Atalanti**	**1.24**	**287**	P	**Pn**	**12 00 44.7**	**-0.6**
ATAL				S	**Sb**	**12 01 01.6**	**+0.2**
ATAL	**Atalanti**	**1.24**	**287**	P	**Pn**	**12 00 45.0**	**-0.3**
ATAL				S	**Sb**	**12 01 01.6**	**+0.2**
ATAL	**Atalanti**	**1.24**	**287**	P	**Pn**	**12 00 45.0**	**-0.3**
LKR	**Lokris**	**1.25**	**285**	P	**Pn**	**12 00 45.1**	**-0.2**
LKR	**Lokris**	**1.25**	**285**	P	**Pn**	**12 00 45.1**	**-0.2**
LTK	**Loutraki**	**1.27**	**256**	P	**Pg**	**12 00 47.0**	**+0.3**
LTK				S	**Sn**	**12 01 02.7**	**0.0**
LTK	**Loutraki**	**1.27**	**256**	P	**Pg**	**12 00 47.0**	**+0.3**
LTK				S	**Sn**	**12 01 02.7**	**0.0**
LTK				AML	AML	12 01 07.0	
	comp=E,1433μm,0.4s						
LTK				AML	AML	12 01 09.1	
	comp=N,974μm,0.3s						
PROD	**Prodromos**	**1.29**	**267**	P	**Pg**	**12 00 47.5**	**+0.5**
PROD				S	**Sb**	**12 01 02.8**	**0.0**
PROD	**Prodromos**	**1.29**	**267**	P	**Pg**	**12 00 47.5**	**+0.5**
PROD				S	**Sb**	**12 01 02.8**	**0.0**
PROD				AML	AML	12 01 07.0	
	comp=N,562μm,0.4s						
PROD				AML	AML	12 01 09.3	
	comp=E,628μm,0.3s						
DID	**Didima**	**1.32**	**231**	P	**Pn**	**12 00 46.6**	**+0.2**
DID				S	**Sg**	**12 01 05.0**	**+0.3**
DID	**Didima**	**1.32**	**231**	P	**Pg**	**12 00 47.3**	**-0.2**
DID				S	**Sg**	**12 01 05.6**	**+0.9**
DID	**Didima**	**1.32**	**231**	P	**Pg**	**12 00 47.3**	**-0.2**
DID				S	**Sg**	**12 01 05.6**	**+0.9**
DID				AML	AML	12 01 08.1	
	comp=N,460μm,0.4s						
DID				AML	AML	12 01 08.4	
	comp=E,376μm,0.6s						
SIGR	**SIGRI**	**1.35**	**49**	P	**Pn**	**12 00 46.7**	**-0.1**
SIGR				S	**Sg**	**12 01 06.0**	**+0.3**
SIGR	**SIGRI**	**1.35**	**49**	P	**Pn**	**12 00 46.7**	**-0.1**
SIGR				S	**Sg**	**12 01 06.0**	**+0.3**
NEO	**Neokhori**	**1.41**	**314**	P	**Pn**	**12 00 47.4**	**-0.2**
NEO				S	**Sb**	**12 01 06.5**	**+0.2**
NEO	**Neokhori**	**1.41**	**314**	P	**Pn**	**12 00 47.4**	**-0.2**
NEO				S	**Sb**	**12 01 06.5**	**+0.2**
NEO				AML	AML	12 01 09.3	
	comp=E,325μm,0.3s						
NEO				AML	AML	12 01 12.7	
	comp=N,381μm,0.4s						
XOR	**Xorichti**	**1.47**	**315**	P	**Pn**	**12 00 48.6**	**+0.2**
XOR				S	**Sg**	**12 01 09.2**	**-0.3**
XOR	**Xorichti**	**1.47**	**315**	P	**Pn**	**12 00 48.6**	**+0.2**
XOR				S	**Sg**	**12 01 09.2**	**-0.3**
XOR				AML	AML	12 01 12.6	
	comp=E,144μm,0.3s						
XOR				AML	AML	12 01 15.3	
	comp=N,239μm,0.5s						
APE	**Apeiranthos**	**1.49**	**148**	P	**Pn**	**12 00 48.6**	**-0.2**
APE				S	**Sn**	**12 01 07.5**	**-0.6**
APE	**Apeiranthos**	**1.49**	**148**	P	**Pn**	**12 00 48.6**	**-0.2**
APE				S	**Sn**	**12 01 07.5**	**-0.6**
APE				AML	AML	12 01 12.2	
	comp=N,348μm,0.3s						
APE				AML	AML	12 01 13.9	
	comp=E,262μm,0.4s						
DSF	**Desfina**	**1.58**	**273**	P	**Pn**	**12 00 50.2**	**+0.2**
DSF	**Desfina**	**1.58**	**273**	P	**Pn**	**12 00 50.2**	**+0.2**
MHLO	**Agia Marina, M**	**1.65**	**184**	P	**Pb**	**12 00 52.3**	**-0.1**
MHLO	**Agia Marina, M**	**1.65**	**184**	P	**Pb**	**12 00 52.3**	**-0.1**
PAIG	**Paliouri**	**1.72**	**338**	P	**Pn**	**12 00 51.0**	**-0.9**
PAIG	**Paliouri**	**1.72**	**338**	P	**Pn**	**12 00 51.0**	**-0.9**
KLV	**Kalavryta, Ach**	**1.90**	**262**	P	**Pn**	**12 00 55.2**	**+0.8**
KLV	**Kalavryta, Ach**	**1.90**	**262**	P	**Pn**	**12 00 55.2**	**+0.8**
LAKA	**Lakka**	**2.01**	**268**	P	**Pb**	**12 00 57.8**	**-0.9**
LAKA	**Lakka**	**2.01**	**268**	P	**Pb**	**12 00 57.9**	**-0.9**
VLI	**Veliai**	**2.06**	**219**	P	**Pn**	**12 00 56.7**	**+0.2**
VLI	**Veliai**	**2.06**	**219**	P	**Pn**	**12 00 56.6**	**+0.2**

*NIED **25** 12:04:00, 35.°20N×141.°30E, h17km, Mw4.7 Best double couple: M0 1.26000×10^16 NP1:φ=268.00000°, δ13.00000°, λ126.00000°. NP2:φ=51.00000°, δ80.00000°, λ82.00000°.*
*JMA **25** 12:04:35.2±0.1, 35.°25N×141.°21E, h32km±3km, M4.5*
JMA Felt I J1.
*MOS **25** 12:04:36.6±1.4, 35.°20N×141.°01E, h33km, mb4.7/19, Error ellipse: s-maj=11.6km s-min=6.3km az=114.4*
*BJI **25** 12:04:38.2, 34.°63N×140.°41E, h31km, mb4.6/14, mB5.1/5, Ms5.4/2, Ms7 5.3/2*
*ISCJB **25** 12:04:38.8±0.3, 35.°21N±0.°04×140.°91E±0.°04, h48km, mb4.3/49, MS4.5/1, Error ellipse: s-maj=5.6km s-min=5.1km az=152.6*
*NEIC **25** 12:04:39.7±1.0, 35.°24N×140.°99E, h39km±8km, mb4.5/17, Error ellipse: s-maj=9.0km s-min=7.3km az=127.0*
NEIC Recorded [1 JMA] in Chiba and Saitama.
*IDC **25** 12:04:40.2±2.1, 35.°19N×140.°92E, h51km±19km, mb3.9/25, mb1 4.1/29, mb1mx4.0/52, mbtmp4.2/29, ML3.6/3, MS4.4/3, Ms1 4.4/3, ms1mx3.8/57, Error ellipse: s-maj=16.3km s-min=11.9km az=89.0*

ISC 25 12:04:39.7±0.5, **35.°24N**±0.°05×**141.°08E**±0.°06, **h48**km, **n128,** σ2**03**/130, **mb4.3**/49, **3C-8D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.49**	**338**	P	Pn	12 04 46.0	-4.8
CHOJ				S	**Sn**	**12 04 53.8**	**-4.9**
BSO1	**Boso 1**	**0.59**	**188**	P	**Pn**	**12 04 47.2**	**-4.3**
KTR	**Katsuura**	**0.64**	**262**	P	**Pn**	**12 04 49.4**	**-3.1**
KTR				S	**Sn**	**12 04 58.9**	**-2.9**
BSO3	**Boso 3**	**0.65**	**227**	P	**Pn**	**12 04 49.0**	**-3.4**
JYT	**Yasato**	**1.22**	**324**	P	**Pn**	**12 04 57.1**	**-3.3**
JHJ2	**Mitsune**	**2.37**	**207**	*e*Pn	**Pn**	**12 05 15.5**	**-0.6**
JHJ	**Hachijo jima 2**	**2.38**	**207**	P	**Pn**	**12 05 15.4**	**-0.8**
	69nm,0.3s,baz=227,slow=17,SNR=11						
JHJ				S	**Sn**	**12 05 38.9**	**-5.2**
	111nm,0.3s,baz=270,slow=20,SNR=6.2						

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJA0	**Matsu Arr-Jizo**	**2.64**	**300**	*e*P	**Pn**	**12 05 20.0**	**+0.1**
MJA0				pmax	pmax		
	comp=Z,10.0nm,0.3s						
MJAR	**Matsushiro Arr**	**2.67**	**300**	P	**Pn**	**12 05 20.0**	**-0.2**
	comp=Z,9.6nm,0.3s,baz=99,slow=13,SNR=30						
MJAR				LR	LR	12 06 23.6	
	comp=Z,5μm,18.9s,baz=125,slow=40						
MAJO	**Matsushiro**	**2.67**	**300**	*e*P	**Pn**	**12 05 20.4**	**+0.1**
MAJO				pmax	pmax		
	comp=Z,167nm,1.0s						
MAJO	**Matsushiro**	**2.67**	**300**	*e*Pn	**Pn**	**12 05 20.8**	**+0.5**
MAT	**Matsushiro**	**2.67**	**300**	P	**Pn**	**12 05 19.6**	**-0.7**
MAT				S	**Sn**	**12 05 53.7**	**+2.3**
MJB9	**Matsu-Tunnel**	**2.67**	**300**	*e*Pn	**Pn**	**12 05 21.0**	**+0.7**
INU	**Inuyama**	**3.33**	**273**	*e*Pn	**Pn**	**12 05 28.8**	**-0.4**
ERM	**Erimo**	**6.95**	**13**	*e*P	**Pn**	**12 06 16.5**	**-2.4**
ERM				pmax	pmax		
	comp=Z,33nm,0.7s						
ERM	**Erimo**	**6.95**	**13**	*e*Pn	**Pn**	**12 06 15.6**	**-3.4**
JNU	**Nakatsue**	**8.72**	**259**	P	Pn	12 06 48.7	+5.5
	comp=Z,0.5nm,0.3s,baz=80,slow=2.3,SNR=4.8						
ASAJ	**Asahikawa**	**8.94**	**7**	P	Pn	12 06 42.1	-4.0
	comp=Z,2.5nm,0.3s,baz=211,slow=13,SNR=18						
ASAJ				S	**Sn**	**12 08 19.4**	**-6.0**
	comp=Z,0.7nm,0.3s,baz=285,slow=20,SNR=2.2						
ASAJ	**Asahikawa**	**8.94**	**7**	*e*Pn	**Pn**	**12 06 43.1**	**-3.1**
ASAJ				S	**Sn**	**12 08 19.4**	**-6.0**
MSHR	**Mys Shultsa**	**10.65**	**316**	*e*P	**Pn**	**12 07 09.4**	**-0.1**
KS15	**Wonju Array Si**	**10.87**	**285**	*e*Pn	**Pn**	**12 07 14.5**	**+1.9**
USRK	**Ussuriysk Ar.**	**11.35**	**325**	P	**Pn**	**12 07 18.2**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=137,slow=11,SNR=5.6						
USRK				LR	LR	12 11 26.1	
	comp=Z,1μm,19.0s,baz=111,slow=36						
YSS	**Yuzh-Sakhalins**	**11.77**	**6**	*e*P	**Pn**	**12 07 21.0**	**-3.8**
YSS				pmax	pmax		
	comp=Z,30nm,0.7s						
YSS	**Yuzh-Sakhalins**	**11.77**	**6**	*e*Pn	**Pn**	**12 07 21.4**	**-3.4**
CN2	**Changchun**	**14.77**	**310**	*e*P	**P**	**12 08 08.0**	**-2.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KLR	**Kul'dur**	**15.57**	**337**	P	**Pn**	**12 08 16.2**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=138,slow=14,SNR=3.1						
KLR	**Kul'dur**	**15.57**	**337**	*e*P	**Pn**	**12 08 14.4**	**-1.5**
TYV	**Tymovskoe**	**15.65**	**4**	*e*P	**Pn**	**12 08 11.0**	**-5.9**
TYV				pmax	pmax		
	comp=Z,20nm,0.8s						
PEA0	**Petropavlovsk-**	**21.38**	**28**	*e*P	**P**	**12 09 24.4**	**+1.5**
PETK	**Petropavlovsk-**	**21.38**	**28**	P	**P**	**12 09 24.0**	**+1.0**
	comp=Z,3.8nm,1.0s,baz=208,slow=9.2,SNR=4.2						
MA2	**Magadan**	**25.16**	**12**	P	**P**	**12 10 01.2**	**+1.1**
	comp=Z,23nm,0.8s,baz=190,slow=11,SNR=11						
ENH	**Enshi**	**26.96**	**268**	*e*P	**P**	**12 10 17.9**	**+1.1**
	comp=Z,15nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**27.51**	**117**	T	T	12 39 15.2	
	baz=310,slow=75,SNR=65						
H11N1	**WAKE ISLAND Hy**	**27.52**	**117**	T	T	12 39 17.9	
	baz=310,slow=75,SNR=85						
H11N3	**WAKE ISLAND Hy**	**27.53**	**117**	T	T	12 39 16.3	
	baz=310,slow=75,SNR=74						
YAK	**Yakutsk**	**27.76**	**348**	P	**P**	**12 10 24.8**	**+1.3**
	comp=Z,16nm,0.5s,baz=172,slow=7.3,SNR=9.2						
YAK				LR	LR	12 21 45.6	
	comp=Z,1μm,18.8s,baz=120,slow=37						
YAK	**Yakutsk**	**27.76**	**348**	*e*P	**P**	**12 10 25.3**	**+1.7**
YAK				pmax	pmax		
	comp=Z,40nm,1.0s						
YAK	**Yakutsk**	**27.76**	**348**	*e*P	**P**	**12 10 24.9**	**+1.3**
	comp=Z,49nm,1.0s						
H11S1	**WAKE ISLAND Hy**	**28.16**	**120**	T	T	12 40 09.8	
	baz=312,slow=75,SNR=92						
H11S3	**WAKE ISLAND Hy**	**28.16**	**120**	T	T	12 40 04.7	
	baz=312,slow=75,SNR=97						
H11S2	**WAKE ISLAND Hy**	**28.18**	**120**	T	T	12 40 05.7	
	baz=312,slow=75,SNR=64						
SEY	**Seymchan**	**28.59**	**11**	*e*P	**P**	**12 10 32.0**	**+1.0**
SONM	**Songino Array**	**28.60**	**307**	P	**P**	**12 10 30.1**	**-1.4**
	comp=Z,1.5nm,0.7s,baz=108,slow=9.3,SNR=3.0						
BILL	**Bilibino**	**35.82**	**16**	*e*P	**P**	**12 11 33.4**	**-0.7**
BILL				pmax	pmax		
	comp=Z,4.0nm,1.1s						
CMAR	**Chiang Mai Arr**	**40.81**	**257**	P	**P**	**12 12 16.5**	**-0.2**
	comp=Z,0.8nm,0.5s,baz=44,slow=8.0,SNR=4.1						
ZAA0	**Zalesovo Array**	**42.94**	**314**	*e*P	**P**	**12 12 33.0**	**-0.6**
ZAA0				*e*P	**P**	**12 12 33.7**	**+0.1**
ZALV	**Zalesovo Beam**	**42.94**	**314**	P	**P**	**12 12 33.2**	**-0.4**
	comp=Z,3.0nm,0.6s,baz=97,slow=6.9,SNR=8.3					

	comp=Z,2.5nm,0.6s,baz=63,slow=9.0,SNR=7.3								
KLMR	**Klimovskoe**		**65.13**	**328**	*e*P		**P**	**12 15 14.1**	**-1.1**
KLMR					pmax	pmax			
	comp=Z,8.0nm,1.4s								
YKA	**Yellowknife Ar**		**65.49**	**30**	P		**P**	**12 15 18.1**	**+0.6**
	comp=Z,1.1nm,0.8s,baz=293,slow=6.4,SNR=4.7								
STKA	**Stephens Creek**		**66.77**	**180**	P		**P**	**12 15 26.2**	**+0.2**
	comp=Z,1.3nm,0.8s,baz=314,slow=11,SNR=3.4								
OBN	**Obninsk**		**69.37**	**324**	*e*P		**P**	**12 15 41.3**	**-0.8**
OBN					pmax	pmax			
	comp=Z,4.0nm,1.0s								
FINES	**FINESS Array B**		**70.27**	**332**	P		**P**	**12 15 47.5**	**-0.1**
	comp=Z,2.9nm,0.7s,baz=46,slow=5.5,SNR=5.4								
FINES	**FINESS Array B**		**70.27**	**332**	*e*P		**P**	**12 15 49.2**	**+1.6**
FINES					pmax	pmax			
	comp=Z,3.0nm,0.7s								
KVAR	**Kislovodsk Arr**		**71.87**	**311**	P		**P**	**12 15 58.5**	**+0.7**
	comp=Z,4.5nm,0.4s,baz=235,slow=5.8,SNR=6.1								
KIV	**Kislovodsk**		**71.88**	**311**	*e*P		**P**	**12 15 59.3**	**+1.5**
KIV					pmax	pmax			
	comp=Z,17nm,1.1s								
AKASG	**Malin Array Be**		**75.55**	**322**	P		**P**	**12 16 18.6**	**-0.5**
	comp=Z,0.9nm,0.5s,baz=45,slow=6.7,SNR=5.4								
KIEV	**Kiev**		**75.56**	**322**⇑	*e*P		**P**	**12 16 19.4**	**+0.3**
KIEV					pmax	pmax			
	comp=Z,3.0nm,1.0s								
LRM	**Limekiln Ridge**		**75.62**	**44**	*e*P		**P**	**12 16 22.7**	**+2.9**
NB2	**NORSAR Subarra**		**75.73**	**337**	P		**P**	**12 16 20.4**	**+0.4**
	comp=Z,9.1nm,1.1s,baz=43,slow=5.9								
NOA	**NORSAR Array B**		**75.73**	**337**	*e*P		**P**	**12 16 19.9**	**-0.1**
	comp=Z,2.4nm,0.8s,baz=42,slow=5.4,SNR=8.6								
NOA	**NORSAR Array B**		**75.73**	**337**	*e*P		**P**	**12 16 20.2**	**+0.2**
NOA					pmax	pmax			
	comp=Z,2.0nm,0.8s								
YMV	**Mammoth Vault**		**77.12**	**44**	*e*P		**P**	**12 16 30.2**	**+1.9**
R11A	**Troy Canyon, C**		**78.08**	**51**	*e*P		**P**	**12 16 36.0**	**+2.2**
	comp=Z,8.9nm,1.8s								
TPNV	**Topopah Spring**		**78.46**	**53**	*e*P		**P**	**12 16 38.9**	**+3.0**
TPNV					pmax	pmax			
	comp=Z,12nm,1.8s								
TPNV	**Topopah Spring**		**78.46**	**53**	*e*P		**P**	**12 16 38.9**	**+3.0**
	comp=Z,12nm,1.8s								
BW06	**Boulder Array**		**79.11**	**45**	*e*P		**P**	**12 16 40.7**	**+1.2**
PDAR	**Pinedale Array**		**79.11**	**45**	P		**P**	**12 16 40.1**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=256,slow=2.6,SNR=8.7								
BRTR	**Keskin Array B**		**79.84**	**312**	P		**P**	**12 16 41.8**	**-1.5**
	comp=Z,0.3nm,0.4s,baz=87,slow=3.4,SNR=3.3								
BR231	**Keskin MP Arra**		**80.29**	**312**	*e*P		**P**	**12 16 48.2**	**+2.5**
LCMT	**Little Creek M**		**80.37**	**51**	*e*P		**P**	**12 16 49.2**	**+3.0**
	comp=Z,3.8nm,1.2s								
MTPU	**Mount Pierson**		**80.42**	**50**	*e*P		**P**	**12 16 49.9**	**+3.1**
	comp=Z,14nm,2.0s								
SRU	**San Rafael Swe**		**80.79**	**48**	*e*P		**P**	**12 16 51.5**	**+3.0**
SRU					pmax	pmax			
	comp=Z,3.0nm,0.9s								
SRU	**San Rafael Swe**		**80.79**	**48**	*e*P		**P**	**12 16 51.5**	**+3.0**
	comp=Z,3.3nm,0.9s								
PV10	**Paradox Valley**		**82.16**	**48**	*e*P		**P**	**12 16 59.3**	**+3.4**
PV05	**Paradox Valley**		**82.31**	**49**	*e*P		**P**	**12 16 59.2**	**+2.5**
CLL	**Collm**		**82.51**	**330**	*e*P		**P**	**12 16 58.0**	**+0.9**
CLL					*i*			12 17 04.5	
	comp=Z,9.0nm,1.2s								
113A	**Mohawk Valley,**		**82.58**	**55**	*e*P		**P**	**12 16 59.8**	**+2.0**
	comp=Z,39nm,0.8s								
SMCO	**Snowmass**		**82.89**	**47**	*e*P		P	12 17 05.3	+5.5
	comp=Z,5.9nm,1.4s								
X16A	**Lo Mia Camp, P**		**83.11**	**53**	*e*P		**P**	**12 17 03.2**	**+2.4**
	comp=Z,7.4nm,1.6s								
KHC	**Kasperske Hory**		**83.92**	**328**	*e*P		**P**	**12 17 04.0**	**-0.5**
KHC	**Kasperske Hory**		**83.92**	**328**	*e*P		**P**	**12 17 04.8**	**+0.3**
KHC					pmax	pmax			
	comp=Z,2.0nm,1.0s								
KHC	**Kasperske Hory**		**83.92**	**328**	*e*P		**P**	**12 17 04.8**	**+0.3**
	comp=Z,1.9nm,1.0s								
GERES	**GERESS Array B**		**84.09**	**328**	P		**P**	**12 17 06.4**	**+1.0**
	comp=Z,0.4nm,0.4s,baz=74,slow=5.7,SNR=4.6								
GEA0	**GERESS Array S**		**84.09**	**328**	*e*P		**P**	**12 17 06.0**	**+0.5**
SDCO	**Great Sand Dun**		**84.70**	**47**	*e*P		**P**	**12 17 11.4**	**+2.5**
	comp=Z,4.8nm,1.4s								
TXAR	**Lajitas Array**		**91.43**	**52**	P		**P**	**12 17 43.7**	**+2.6**
	comp=Z,0.4nm,0.6s,baz=304,slow=2.8,SNR=6.6								
LPAZ	**La Paz**		**147.80**	**62**	PKPbc		**PKPbc**	**12 24 21.1**	**+0.5**
	comp=Z,1.8nm,0.8s,baz=357,slow=3.8,SNR=4.9								

*IDC **25** 12:06:30.2±1.2,35°.10N×141°.37E, h0km, mb3.7/6, mb1 3.9/9, mb1mx3.6/55, mbtmp3.8/9, ML4.0/1, Error ellipse: s-maj=29.9km s-min=19.8km az=85.0*
*ISCJB **25** 12:06:32.9±0.8, 35°.19N±0°.05×141°.25E±0°.09, h33km, mb3.7/6, Error ellipse: s-maj=10.5km s-min=7.1km az=11.2*
*JMA **25** 12:06:34.7±0.2, 35°.29N×141°.12E, h37km±3km, M3.1*

ISC 25 12:06:35.0±1.0, 35°.27N±0°.05×141°.0E±0°.1, h33km, n12, σ1§18/14, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.46**	**341**	P	**Pn**	**12 06 44.7**	**-0.6**
CHOJ				*e*S	**Sn**	**12 06 51.7**	**-0.6**
KTR	**Katsuura**	**0.61**	**258**	P	**Pb**	**12 06 47.7**	**+0.4**
KTR				*e*S	**Sn**	**12 06 57.1**	**+1.1**
BSO4	**Boso 4**	**0.64**	**244**	P	**Pb**	**12 06 48.3**	**+0.5**
JHJ	**Hachijo jima 2**	**2.39**	**206**	Pn	**Pn**	**12 07 11.2**	**-0.6**
	baz=31,slow=6.7,SNR=2.0						
JHJ				Sn	**Sn**	**12 07 38.1**	**-1.8**
	36nm,0.3s,baz=90,slow=20,SNR=3.2						
MJAR	**Matsushiro Arr**	**2.63**	**300**	Pn	**Pb**	**12 07 19.6**	**-1.8**
	baz=100,slow=14,SNR=4.3						
ASAJ	**Asahikawa**	**8.91**	**7**	Pn	**Pn**	**12 08 42.2**	**+0.8**
	1.8nm,0.3s,baz=227,slow=13,SNR=3.7						
SONM	**Songino Array**	**28.56**	**307**	P	P	12 12 32.1	+4.3
	1.1nm,0.6s,baz=97,slow=12,SNR=3.2						
ZALV	**Zalesovo Beam**	**42.90**	**314**	P	**P**	**12 14 31.4**	**+1.2**
	0.9nm,0.5s,baz=100,slow=8.3,SNR=3.6						
MKAR	**Makanchi Array**	**44.82**	**304**	P	**P**	**12 14 46.9**	**+1.1**
	0.4nm,0.5s,baz=82,slow=11,SNR=3.4						
ILAR	**Eielson Array**	**51.15**	**32**	P	**P**	**12 15 35.1**	**+0.7**
	0.4nm,0.8s,baz=263,slow=7.7,SNR=2.6						
WRA	**Warramunga Arr**	**55.25**	**188**	P	**P**	**12 16 04.6**	**-0.7**
	1.3nm,0.7s,baz=4.9,slow=7.6,SNR=5.1						
ASAR	**Alice Springs**	**59.01**	**188**	P	**P**	**12 16 30.1**	**-1.5**
	0.3nm,0.7s,baz=0.6,slow=6.2,SNR=2.3						

IDC 25 12:16:20.8±3.5, 21°.47N×145°.15E, h0km, mb3.7/5, mb1 3.8/5, mb1mx3.5/51, mbtmp3.7/5, Error ellipse: s-maj=144.0km s-min=22.7km az=80.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**42.49**	**195**	P	P	12 24 18.4	+0.4
	0.7nm,0.5s,baz=7.0,slow=8.6,SNR=15						
ASAR	**Alice Springs**	**46.17**	**194**	P	P	12 24 46.8	-0.7
	0.5nm,0.7s,baz=16,slow=6.4,SNR=16						
MKAR	**Makanchi Array**	**56.20**	**313**	P	P	12 26 02.5	-0.2
	0.3nm,0.6s,baz=99,slow=7.8,SNR=3.4						
KURBB	**Kurchatov Arra**	**58.94**	**317**	P	P	12 26 22.6	+0.8
	0.4nm,0.3s,baz=96,slow=6.2,SNR=3.7						
FINES	**FINESS Array B**	**84.17**	**335**	P	P	12 28 52.8	-0.9
	0.8nm,0.7s,baz=71,slow=6.0,SNR=3.7						

*ISCJB **25** 12:18:31.8±0.6, 32°.18N±0°.03×115°.25W±0°.06, h20km±9km, Error ellipse: s-maj=8.2km s-min=4.3km az=162.5*
*MEX **25** 12:18:33.7±0.6, 32°.21N×115°.15W, h13km±81km, MD3.9*
*NEIC **25** 12:18:33.1, 32°.18N×115°.26W, h7km, ML3.1(ECX), ML2.7(PAS), After ECX.*
*ECX **25** 12:18:33.1±0.5, 32°.18N×115°.26W, h7km, MD2.9, ML3.1*

ISC 25 12:18:30.9±1.1, 32°.15N±0°.04×115°.25W±0°.04, h15km±10km, n22, σ0§49/33, 3C-1D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.28**	**350**	*e*P	**Pb**	**12 18 37.5**	**-0.1**
CPBX				*e*S	**Sg**	**12 18 41.4**	**+0.6**
CPBX				IAML		12 18 43.4	
	comp=N,11μm,0.1s						
CPBX	**Cerro Prieto**	**0.28**	**350**	*e*P	**Pb**	**12 18 37.4**	**-0.1**
CPBX				*i* S	**Sg**	**12 18 40.7**	**-0.1**
EMSC	**East Mesa**	**0.63**	**21**⇓	*i*P	**Pb**	**12 18 43.7**	**+0.1**
SGL	**Mount Signal**	**0.64**	**321**⇑	*i*P	**Pb**	**12 18 44.0**	**+0.2**
ECBX	**El Chinero**	**0.69**	**166**	*e*P	**Pn**	**12 18 45.6**	**-0.5**
ECBX				*e*S	**Sn**	**12 18 56.1**	**-0.4**
COA	**Coachella**	**0.72**	**8**	*e*P	**Pg**	**12 18 44.8**	**-0.2**
WESC	**Westside Schoo**	**0.73**	**326**	*e*P	**Pb**	**12 18 45.8**	**+0.4**
YUH	**Yuha Desert**	**0.76**	**311**⇑	*i*P	**Pg**	**12 18 45.7**	**0.0**
RMX	**La Rumorosa**	**0.84**	**303**	*e*P	**Pg**	**12 18 46.9**	**-0.3**
RMX				*e*S	**Sg**	**12 18 58.0**	**-0.2**
IKP	**In-Ko-Pah, Jac**	**0.88**	**305**	*e*P	**Pb**	**12 18 48.3**	**+0.3**
ZAX	**El Zacaton**	**1.07**	**234**	*e*P	**Pn**	**12 18 52.0**	**+0.6**
SPIG	**San Pedro Mart**	**1.11**	**190**	*e*P	**Pn**	**12 18 53.2**	**+1.0**
SPIG				*e*S	**Sb**	**12 19 06.6**	**+0.2**
SPIG	**San Pedro Mart**	**1.11**	**190**	*e*P	**Pn**	**12 18 53.0**	**+0.9**
SPIG	**San Pedro Mart**	**1.11**	**190**	*e*P	**Pn**	**12 18 53.2**	**+1.0**
SPIG				*e*S	**Sb**	**12 19 06.6**	**+0.2**
SPX	**San Pedro Mart**	**1.11**	**189**	*e*P	**Pn**	**12 18 52.0**	**-0.2**
SPX				*e*S	**Sn**	**12 19 07.0**	**-0.5**
CBX	**Cerro Bola**	**1.21**	**278**	*e*P	**Pb**	**12 18 53.7**	**+0.2**
CBX				*e*S	**Sg**	**12 19 09.1**	**-0.9**
CBX	**Cerro Bola**	**1.21**	**278**	*e*P	**Pb**	**12 18 53.7**	**+0.2**
CBX				*e*S	**Sg**	**12 19 09.9**	**-0.1**
CBX				⇑*e*		12 19 11.4	
CBX				IAML		12 19 11.4	
	comp=N,268nm,0.4s						
CBX	**Cerro Bola**	**1.21**	**278**	*e*P	**Pb**	**12 18 53.7**	**+0.2**
CBX				*e*S	**Sg**	**12 19 09.1**	**-0.9**
TJIG	**Tijuana**	**1.24**	**284**	*e*P	**Pn**	**12 18 53.9**	**+0.2**
TJIG				*i* S	**Sb**	**12 19 09.9**	**+0.1**
TJIG	**Tijuana**	**1.24**	**284**	*e*P	**Pn**	**12 18 53.8**	**+0.2**
ECNX	**Esteban Cantu**	**1.25**	**247**	*e*P	**Pg**	**12 18 54.8**	**-0.2**
BAR	**Barrett**	**1.32**	**294**	*e*P	**Pn**	**12 18 55.0**	**+0.3**

*ISCJB **25** 12:23:28.4±0.7, 35°.21N±0°.04×141°.24E±0°.08, h35km, mb3.7/7, Error ellipse: s-maj=9.1km s-min=6.1km az=175.3*
*JMA **25** 12:23:28.6±0.1, 35°.24N×141°.18E, h31km±2km, M3.3*
*IDC **25** 12:23:32.1±2.8, 35°.15N×141°.05E, h48km±25km, mb3.5/7, mb1 3.6/9, mb1mx3.3/62, mbtmp3.7/9, ML3.4/2, Error ellipse: s-maj=34.2km s-min=14.4km az=84.0*

ISC 25 12:23:30.2±1.0, 35°.23N±0°.05×141°.20E±0°.09, h35km, n23, σ1§48/21, mb3.8/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.55**	**330**	P	**Pn**	**12 23 39.3**	**-2.2**
CHOJ				S	**Sn**	**12 23 46.9**	**-2.5**
BSO1	**Boso 1**	**0.60**	**197**	P	**Pn**	**12 23 40.4**	**-1.4**
BSO3	**Boso 3**	**0.71**	**233**	P	**Pn**	**12 23 42.2**	**-1.2**
KTR	**Katsuura**	**0.72**	**264**	P	**Pn**	**12 23 42.2**	**-1.7**
KTR				*e*S	**Sn**	**12 23 51.9**	**-1.9**
BSO4	**Boso 4**	**0.74**	**251**	P	**Pn**	**12 23 42.8**	**-1.3**
JCN	**Nagara**	**0.83**	**283**	P	**Pn**	**12 23 44.6**	**-0.8**
JHO	**Hitachi**	**1.47**	**340**	P	**Pn**	**12 23 53.2**	**-1.0**
JHJ	**Hachijo jima 2**	**2.41**	**209**	P	**Pn**	**12 24 08.3**	**+1.2**
	36nm,0.3s,baz=80,slow=23,SNR=6.7						
JHJ				S	**Sn**	**12 24 34.3**	**-1.1**
	43nm,0.3s,baz=270,slow=23,SNR=4.8						
MJAR	**Matsushiro Arr**	**2.75**	**299**	P	**Pn**	**12 24 12.6**	**+0.7**
	4.0nm,0.3s,baz=99,slow=12,SNR=15						
MAT	**Matsushiro**	**2.76**	**299**	P	**Pn**	**12 24 13.9**	**+2.0**
MAT				S	**Sn**	**12 24 46.6**	**+2.6**
H11N2	**WAKE ISLAND Hy**	**27.43**	**118**	T	T	12 58 07.2	
	baz=310,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy**	**27.43**	**118**	T	T	12 58 07.8	
	baz=310,slow=75,SNR=30						
H11N3	**WAKE ISLAND Hy**	**27.44**	**118**	T	T	12 58 08.3	
	baz=310,slow=75,SNR=21						
H11S3	**WAKE ISLAND Hy**	**28.07**	**120**	T	T	12 58 59.6	
	baz=312,slow=75,SNR=9.4						
H11S1	**WAKE ISLAND Hy**	**28.07**	**120**	T	T	12 59 04.0	
	baz=312,slow=75,SNR=5.6						
H11S2	**WAKE ISLAND Hy**	**28.09**	**120**	T	T	12 59 01.3	
	baz=312,slow=75,SNR=42						
ZALV	**Zalesovo Beam**	**43.02**	**314**	P	**P**	**12 31 26.4**	**+0.4**
	1.1nm,0.5s,baz=86,slow=7.2,SNR=3.5						
MKAR	**Makanchi Array**	**44.95**	**304**	P	**P**	**12 31 41.5**	**-0.2**
	0.5nm,0.5s,baz=86,slow=9.0,SNR=5.1						
KURBB	**Kurchatov Arra**	**46.99**	**309**	P	**P**	**12 31 57.7**	**0.0**
	1.3nm,0.5s,baz=84,slow=7.8,SNR=6.4						
ILAR	**Eielson Array**	**51.12**	**32**	P	**P**	**12 32 30.1**	**+1.0**
	0.2nm,0.8s,baz=267,slow=6.4,SNR=3.8						
WRA	**Warramunga Arr**	**55.25**	**188**	P	**P**	**12 32 59.6**	**-0.3**
	1.6nm,0.7s,baz=5.2,slow=7.5,SNR=22						
ASAR	**Alice Springs**	**58.98**	**188**	P	**P**	**12 33 26.2**	**0.0**
	0.4nm,0.8s,baz=0.4,slow=5.3,SNR=6.1						
AKASG	**Malin Array Be**	**75.61**	**322**	P	**P**	**12 35 11.8**	**+0.5**
	0.7nm,0.4s,baz=48,slow=6.1,SNR=4.6						

*ISCJB **25** 12:24:57.6±0.6, 35°.17N±0°.04×141°.22E±0°.07, h35km, mb3.9/10, MS4.0/1, Error ellipse: s-maj=8.3km s-min=5.9km az=175.8*
*JMA **25** 12:24:57.4±0.1, 35°.23N×141°.20E, h34km±2km, M3.7*
*IDC **25** 12:25:00.1±2.9, 35°.12N×141°.17E, h40km±25km, mb3.7/10, mb1 3.8/13, mb1mx3.6/65, mbtmp3.9/13, ML3.2/3, MS4.1/1, Ms1 4.1/1, ms1mx3.1/50, Error ellipse: s-maj=27.4km s-min=12.0km az=86.0*

ISC 25 12:24:59.3±0.8, 35°.19N±0°.05×141°.20E±0°.08, h35km, n22, σ1§45/24, mb3.9/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.57**	**199**	P	**Pn**	**12 25 09.3**	**-1.1**
CHOJ	**Chosi**	**0.58**	**331**	P	**Pn**	**12 25 08.4**	**-2.7**
CHOJ				S	**Sn**	**12 25 16.5**	**-2.9**
BSO3	**Boso 3**	**0.69**	**236**	P	**Pn**	**12 25 10.9**	**-1.4**
KTR	**Katsuura**	**0.73**	**267**	P	**Pn**	**12 25 11.2**	**-1.8**
KTR				S	**Sn**	**12 25 21.4**	**-1.5**
BSO4	**Boso 4**	**0.73**	**254**	P	**Pn**	**12 25 11.8**	**-1.3**
JCN	**Nagara**	**0.85**	**286**	P	**Pn**	**12 25 13.4**	**-1.3**
JYT	**Yasato**	**1.32**	**322**	P	**Pn**	**12 25 19.4**	**-1.8**
JHJ	**Hachijo jima 2**	**2.38**	**210**	P	**Pn**	**12 25 33.9**	**-1.9**
	56nm,0.3s,baz=313,slow=23,SNR=4.0						
JHJ				S	**Sn**	**12 26 03.0**	**-0.7**
	95nm,0.3s,baz=80,slow=21,SNR=4.2						
MJAR	**Matsushiro Arr**	**2.78**	**300**	P	**Pn**	**12 25 42.0**	**+0.7**
	9.4nm,0.3s,baz=99,slow=12,SNR=17						
MAT	**Matsushiro**	**2.78**	**300**	P	**Pn**	**12 25 42.8**	**+1.5**
MAT				S	**Sn**	**12 26 14.1**	**+0.4**
USRK	**Ussuriysk Ar.**	**11.45**	**325**	P	Pn	12 27 43.1	+2.9
	0.2nm,0.3s,baz=137,slow=16,SNR=6.0						
YAK	**Yakutsk**	**27.83**	**348**	LR	LR	12 42 11.5	
	comp=Z,409nm,20.5s,baz=298,slow=37						
SONM	**Songino Array**	**28.71**	**307**	P	**P**	**12 30 55.2**	**+2.0**
	0.8nm,0.5s,baz=99,slow=9.2,SNR=4.0						
ZALV	**Zalesovo Beam**	**43.05**	**314**	P	**P**	**12 32 55.1**	**-0.3**
	1.5nm,0.3s,baz=87,slow=5.8,SNR=6.4						
MKAR	**Makanchi Array**	**44.97**	**304**	P	**P**	**12 33 10.5**	**-0.4**
	1.0nm,0.6s,baz=89,slow=9.4,SNR=11						
KURBB	**Kurchatov Arra**	**47.02**	**309**	P	**P**	**12 33 26.5**	**-0.4**
	4.9nm,0.7s,baz=85,slow=8.0,SNR=17						
ILAR	**Eielson Array**	**51.15**	**32**	P	**P**	**12 33 58.5**	**+0.1**
	0.2nm,0.7s,baz=273,slow=6.3,SNR=4.3						
BVAR	**Borovoye Array**	**51.70**	**313**	P	**P**	**12 34 03.3**	**+0.6**
	0.4nm,0.3s,baz=92,slow=7.2,SNR=3.9						
WRA	**Warramunga Arr**	**55.22**	**188**	P	**P**	**12 34 28.5**	**-0.3**
	2.6nm,0.5s,baz=2.3,slow=7.2,SNR=30						
ASAR	**Alice Springs**	**58.94**	**188**	P	**P**	**12 34 54.9**	**-0.2**
	0.8nm,0.8s,baz=6.3,slow=7.0,SNR=10						
NOA	**NORSAR Array B**	**75.82**	**337**	P	**P**	**12 36 42.3**	**+0.8**
	0.6nm,0.6s,baz=26,slow=7.5,SNR=2.6						
PDAR	**Pinedale Array**	**79.08**	**45**	P	**P**	**12 37 01.1**	**+0.8**
	0.4nm,0.6s,baz=285,slow=4.6,SNR=5.0						

*BNS **25** 12:31:15.0±0.4, 44°.52N×7°.42E, h10km, ML4.3*
*ISCJB **25** 12:31:17.8±0.2, 45°.051N±0°.008×7°.39E±0°.01, h3km±1km, mb4.4/59, MS4.3/6, Error ellipse: s-maj=1.5km s-min=1.3km az=28.9*
*MOS **25** 12:31:18.7±1.1, 45°.04N×7°.40E, h10km, mb4.8/18, Error ellipse: s-maj=4.7km s-min=3.4km az=87.2*
*IDC **25** 12:31:18.8±0.7, 45°.06N×7°.37E, h0km, mb4.0/14, mb1 4.1/23, mb1mx4.0/59, mbtmp4.0/23, ML4.7/7, MS3.7/4, Ms1 3.7/4, ms1mx3.4/55, Error ellipse: s-maj=15.2km s-min=11.5km az=129.0*
*CSEM **25** 12:31:19.9±0.1, 45°.00N×7°.40E, h8km, mb4.7/15, ML4.7/41, Mw4.4, Error ellipse: s-maj=1.6km s-min=1.5km az=132.0*
*ZUR **25** 12:31:20.2, 45°.00N×7°.47E, h10km±1km, ML4.5/27*
*CRAAG **25** 12:31:20.0, 44°.98N×7°.28E, Ml4.8*
*NEIC **25** 12:31:20.0, 44°.98N×7°.28E, h25km, mb4.7/31, MW4.4, ML4.7(LDG), ML4.3(ROM), ML4.5(ZUR), Moment Tensor Solution. s35 Moment tensor: Scale 10^{15}Nm; M_{rr}-2.41; $M_{\theta\theta}$1.94; $M_{\phi\phi}$0.47; $M_{r\theta}$-3.49; $M_{r\phi}$-0.17; $M_{\theta\phi}$-2.91; Best double couple: M_o5.10000×10^{15} NP1:ϕ_1=276.00000°, δ15.00000°, λ-51.00000° NP2:ϕ_2-56.00000°, δ79.00000°, λ-99.00000°. Principal axes: T 4.3900, Plg33.0000°, Azm154.0000°; N 1.1400, Plg9.0000°, Azm58.0000°; P -5.5300, Plg55.0000°, Azm314.0000°; After ROM.*
NEIC Felt [VI] at Coazze, [V] in the Condove area and at Giaveno and [IV] in much of Torino. Felt widely in Piemonte and Valle d'Aosta and in parts of Liguria and Lombardy. Also felt in southeastern France and southern Switzerland.
*GEN **25** 12:31:20.9, 45°.01N×7°.29E, h20km, ML4.4*
*ROM **25** 12:31:20.4±0.1, 45°.02N×7°.37E, h11km, Ml4.3/27, Error ellipse: s-maj=2.3km s-min=1.4km az=97.0*
*LDG **25** 12:31:20.7±0.1, 45°.00N×7°.48E, h8km, Md4.4/12, Ml4.7/63, Error ellipse: s-maj=2.0km s-min=1.7km az=29.0*
*STR **25** 12:31:20.7±0.1, 44°.94N×7°.54E, h10km, Ml4.8, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*VIE **25** 12:31:21.3±0.9, 45°.04N×7°.32E, h19km±25km, mb3.7/16, ML4.2/14, Ms4.0/4, Error ellipse: s-maj=26.1km s-min=6.1km az=54.0*
*BJI **25** 12:31:22.0, 45°.20N×7°.50E, h6km, mb4.8/14, mB5.1/8, Ms4.9/7, Ms7 4.7/8*
*BGR **25** 12:31:22.9±0.4, 45°.06N×7°.30E, h10km, ML5.0/21, Error ellipse: s-maj=10.0km s-min=6.7km az=90.0*
*PRU **25** 12:31:22.7, 44°.94N×7°.36E, h39km, Mi4.7*
*SFS **25** 12:31:22.0, 45°.01N×7°.34E, h0km, ML4.8*

ISC 25 12:31:21.6±0.8, 45°.00N±0°.01×7°.37E±0°.01, h9km±5km, n839, σ2§65/1062, mb4.6/59, MS4.5/6, 61C-15D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RSP	**Reno Superiore**	**0.17**	**335**⇑	*i*P	**Pg**	**12 31 25.2**	**0.0**
RSP				*e*		12 31 27.8	
RSP	**Reno Superiore**	**0.17**	**335**⇑	*i*Pg	**Pg**	**12 31 25.2**	**0.0**
	1083μm,0.8s						
RSP				*e*Sg	**Sg**	**12 31 27.8**	**+0.1**
	1083μm,0.8s						
RSP	**Reno Superiore**	**0.17**	**335**	P	**Pg**	**12 31 25.2**	**0.0**
RSP				*e*S	**Sg**	**12 31 27.8**	**+0.1**
RSP	**Reno Superiore**	**0.17**	**335**⇑	*i*Pg	**Pg**	**12 31 25.2**	**0.0**
RSP				*e*Sg	**Sg**	**12 31 27.8**	**+0.1**
BHB	**Bricherasio**	**0.17**	**205**	Pg	**Pg**	**12 31 25.6**	**+0.4**
	42μm,0.2s						
BHB	**Bricherasio**	**0.17**	**205**	Pg	**Pg**	**12 31 25.6**	**+0.4**
	42μm,0.2s						
BHB				S	**Sg**	**12 31 28.6**	**+1.0**
OG22	**Abries**	**0.34**	**240**	Pg	**Pg**	**12 31 29.2**	**+0.7**
OG22	**Abries**	**0.34**	**240**	Pg	**Pg**	**12 31 29.2**	**+0.7**
RRL	**Rocca Remolon**	**0.41**	**260**	Pg	**Pg**	**12 31 29.2**	**-0.6**
	25μm,0.7s						
RRL	**Rocca Remolon**	**0.41**	**260**	Pg	**Pg**	**12 31 29.2**	**-0.6**
	25μm,0.7s						
RRL				S	**Sg**	**12 31 34.5**	**-0.7**
LSD	**Lago del Serru**	**0.49**	**341**	Pg	**Pg**	**12 31 30.2**	**-1.0**
LSD				Sg	**Sg**	**12 31 36.6**	**-1.1**
	24μm,0.3s						
LSD	**Lago del Serru**	**0.49**	**341**⇑	*i*P	**Pg**	**12 31 30.2**	**-1.0**
LSD				*e*		12 31 36.7	
LSD	**Lago del Serru**	**0.49**	**341**⇑	*i*Pg	**Pg**	**12 31 30.2**	**-1.0**
	137μm,0.2s						
LSD				*e*Sg	**Sg**	**12 31 36.7**	**-1.0**
	137μm,0.2s						
LSD	**Lago del Serru**	**0.49**	**341**	P	**Pg**	**12 31 30.2**	**-1.0**
LSD				S	**Sg**	**12 31 36.1**	**-1.6**
LSD				Sg	**Sg**	**12 31 36.6**	**-1.1**
	24μm,0.3s						
LSD	**Lago del Serru**	**0.49**	**341**⇑	*i*Pg	**Pg**	**12 31 30.2**	**-1.0**
LSD				*e*Sg	**Sg**	**12 31 36.7**	**-1.0**
DOI	**San Damiano**	**0.50**	**190**⇑	*i*P	**Pg**	**12

ORIF	**Oris-en-Rattie**	**1.06**	**266**	*e*Pn	**Pg**	**12 31 40.4**	**-1.5**
ORIF	**Oris-en-Rattie**	**1.06**	**266**	*e*Pg	**Pg**	**12 31 41.6**	**-0.3**
	SNR=1.0						
ORIF				*e*Sg	**Sb**	**12 31 56.5**	**+0.3**
	8µm,0.3s,SNR=1.0						
ORIF	**Oris-en-Rattie**	**1.06**	**266**	*e*P	**Pg**	**12 31 40.4**	**-1.5**
ORIF				*e*		12 31 56.5	
ORIF	**Oris-en-Rattie**	**1.06**	**266**	*e*Pn	**Pg**	**12 31 40.4**	**-1.5**
ORIF	**Oris-en-Rattie**	**1.06**	**266**	*e*Pg	**Pg**	**12 31 41.6**	**-0.3**
ORIF				*e*Sg	**Sb**	**12 31 56.5**	**+0.3**
	4µm,0.3s,SNR=1.0						
ORIF	**Oris-en-Rattie**	**1.06**	**266**	*e*Pn	**Pg**	**12 31 40.4**	**-1.5**
ORIF				*e*Pg	**Pg**	**12 31 41.6**	**-0.3**
ORIF				*e*Sg	**Sb**	**12 31 56.5**	**+0.3**
	20µm,0.9s						
EMV	**Vieux Emosson**	**1.12**	**343**	⇑*i*Pg	**Pg**	**12 31 41.4**	**-1.7**
EMV	**Vieux Emosson**	**1.12**	**343**	⇑*i*Pn	**Pn**	**12 31 41.4**	**-1.7**
EMV	**Vieux Emosson**	**1.12**	**343**	⇑*i*Pg	**Pg**	**12 31 41.4**	**-1.7**
	20µm,0.9s						
EMV	**Vieux Emosson**	**1.12**	**343**	Pg	**Pg**	**12 31 41.3**	**-1.8**
EMV	**Vieux Emosson**	**1.12**	**343**	⇑*i*Pg	**Pg**	**12 31 41.4**	**-1.7**
SBF	**Sospel**	**1.13**	**177**	*e*Pn	**Pb**	**12 31 40.4**	**-3.1**
SBF				*e*Sg	**Sg**	**12 31 57.0**	**-1.1**
	7µm,0.3s						
SBF	**Sospel**	**1.13**	**177**	*e*P	**Pb**	**12 31 40.4**	**-3.1**
SBF				*e*		12 31 57.0	
SBF	**Sospel**	**1.13**	**177**	*e*Pn	**Pb**	**12 31 40.4**	**-3.1**
SBF				*e*Sg	**Sg**	**12 31 57.0**	**-1.1**
	4µm,0.3s						
SBF	**Sospel**	**1.13**	**177**	*e*Pn	**Pb**	**12 31 40.4**	**-3.1**
SBF				*e*Sg	**Sg**	**12 31 57.0**	**-1.1**
MMK	**Mattmark**	**1.14**	**22**	Pg	**Pg**	**12 31 40.4**	**-3.1**
MMK	**Mattmark**	**1.14**	**22**	⇑*i*P	**Pg**	**12 31 40.2**	**-3.3**
MMK	**Mattmark**	**1.14**	**22**	⇑*i*Pg	**Pg**	**12 31 40.2**	**-3.3**
	14µm,0.6s						
MMK	**Mattmark**	**1.14**	**22**	⇑*i*Pg	**Pg**	**12 31 40.2**	**-3.3**
	14µm,0.6s						
MMK	**Mattmark**	**1.14**	**22**	⇑*i*Pg	**Pg**	**12 31 40.2**	**-3.3**
IMI	**Imperia**	**1.15**	**161**	Pg	**Pb**	**12 31 41.6**	**-2.2**
	5µm,0.4s						
IMI	**Imperia**	**1.15**	**161**	P	**Pb**	**12 31 41.5**	**-2.2**
IMI				S	**Sg**	**12 31 56.1**	**-2.5**
GRN	**Grenoble**	**1.17**	**283**	Pn	**Pb**	**12 31 43.1**	**-1.1**
GRN	**Grenoble**	**1.17**	**283**	Pn	**Pb**	**12 31 43.1**	**-1.1**
NEGI	**Seborga**	**1.17**	**168**	Pg	**Pb**	**12 31 41.7**	**-2.4**
	4µm,0.3s						
NEGI	**Seborga**	**1.17**	**168**	Pg	**Pb**	**12 31 41.7**	**-2.4**
	4µm,0.3s						
NEGI				S	**Sb**	**12 31 55.5**	**-4.0**
SALAN	**Lac Salanfe**	**1.18**	**347**	⇑*i*Pg	**Pb**	**12 31 42.3**	**-2.1**
	4µm,0.8s						
SALAN	**Lac Salanfe**	**1.18**	**347**	⇑*i*Pg	**Pb**	**12 31 42.3**	**-2.1**
SALAN	**Lac Salanfe**	**1.18**	**347**	⇑*i*Pg	**Pb**	**12 31 42.3**	**-2.1**
REVF	**Revere**	**1.26**	**180**	Pg	**Pn**	**12 31 42.7**	**-2.7**
REVF				Sg	**Sb**	**12 32 00.0**	**-1.8**
REVF	**Revere**	**1.26**	**180**	Pg	**Pn**	**12 31 42.7**	**-2.7**
REVF				Sg	**Sb**	**12 32 00.0**	**-1.8**
GRYON	**Gryon**	**1.27**	**352**	⇑*i*Pn	**Pn**	**12 31 42.5**	**-3.2**
	4µm,0.7s						
GRYON	**Gryon**	**1.27**	**352**	*i* Pn	**Pn**	**12 31 42.5**	**-3.2**
GRYON	**Gryon**	**1.27**	**352**	*i* Pn	**Pn**	**12 31 42.5**	**-3.2**
SENIN	**Lac Senin/Sane**	**1.37**	**358**	⇑*i*Pn	**Pn**	**12 31 42.8**	**-4.4**
	22µm,0.8s						
SENIN	**Lac Senin/Sane**	**1.37**	**358**	⇑*i*P	**Pn**	**12 31 42.8**	**-4.4**
	22µm,0.8s						
SENIN	**Lac Senin/Sane**	**1.37**	**358**	*e*Pg	**Pn**	**12 31 46.4**	**-0.8**
SENIN	**Lac Senin/Sane**	**1.37**	**358**	*e*Pg	**Pn**	**12 31 46.4**	**-0.8**
AIGLE	**Aigle**	**1.38**	**348**	⇑*i*Pn	**Pn**	**12 31 43.5**	**-3.6**
	51µm,0.9s						
AIGLE	**Aigle**	**1.38**	**348**	*i* Pn	**Pn**	**12 31 43.5**	**-3.6**
AIGLE	**Aigle**	**1.38**	**348**	*i* Pn	**Pn**	**12 31 43.5**	**-3.6**
LKBD2	**Leukerbad 2**	**1.39**	**8**	*e*Pn	**Pn**	**12 31 43.9**	**-3.6**
LKBD2	**Leukerbad 2**	**1.39**	**8**	*e*P	**Pn**	**12 31 43.9**	**-3.6**
LKBD	**Leukerbad**	**1.40**	**7**	*e*Pn	**Pn**	**12 31 45.4**	**-2.2**
	6µm,0.5s						
LKBD	**Leukerbad**	**1.40**	**7**	*e*Pn	**Pn**	**12 31 45.4**	**-2.2**
LKBD	**Leukerbad**	**1.40**	**7**	*e*Pn	**Pn**	**12 31 45.4**	**-2.2**
OG01	**Vacheresse**	**1.42**	**341**	Pn	**Pn**	**12 31 47.0**	**-0.7**
OG01				Sg	**Sg**	**12 32 09.5**	**+2.3**
OG01	**Vacheresse**	**1.42**	**341**	Pn	**Pn**	**12 31 47.0**	**-0.7**
OG01				Sg	**Sg**	**12 32 09.5**	**+2.3**
BOB	**Bobbio (Coli)**	**1.50**	**98**	*e*P	**Pn**	**12 31 45.8**	**-3.0**
BOB	**Bobbio (Coli)**	**1.50**	**98**	*e*Pn	**Pn**	**12 31 45.8**	**-3.0**
	11µm,0.7s						
BOB	**Bobbio (Coli)**	**1.50**	**98**	*e*P	**Pn**	**12 31 45.8**	**-3.0**
	11µm,0.7s						
BOB	**Bobbio (Coli)**	**1.50**	**98**	*e*Pn	**Pn**	**12 31 45.8**	**-3.0**
MUGIO	**Muggio**	**1.50**	**51**	Pg	**Pn**	**12 31 46.4**	**-2.4**
MUGIO	**Muggio**	**1.50**	**51**	*e*Pn	**Pn**	**12 31 45.8**	**-3.0**
	14µm,0.7s						
MUGIO	**Muggio**	**1.50**	**51**	*e*P	**Pn**	**12 31 45.8**	**-3.0**
	14µm,0.7s						
MUGIO	**Muggio**	**1.50**	**51**	Pg	**Pn**	**12 31 46.4**	**-2.4**
MUGIO	**Muggio**	**1.50**	**51**	*e*Pn	**Pn**	**12 31 45.8**	**-3.0**
FRF	**La Foret Royal**	**1.52**	**200**	*e*Pn	**Pn**	**12 31 48.0**	**-1.1**
FRF	**La Foret Royal**	**1.52**	**200**	*e*Pg	**Pb**	**12 31 49.9**	**-0.2**
	SNR=1.0						
FRF				*e*Sn	**Sn**	**12 32 06.4**	**-2.7**
	2µm,0.2s,SNR=1.0						
FRF				*e*Sg	**Sg**	**12 32 10.5**	**-0.1**
	4µm,0.3s						
FRF	**La Foret Royal**	**1.52**	**200**	*e*P	**Pn**	**12 31 48.0**	**-1.1**
FRF				*e*		12 32 06.4	
FRF	**La Foret Royal**	**1.52**	**200**	*e*Pn	**Pn**	**12 31 48.0**	**-1.1**
FRF	**La Foret Royal**	**1.52**	**200**	*e*Pg	**Pb**	**12 31 49.9**	**-0.2**
FRF				*e*Sn	**Sn**	**12 32 06.4**	**-2.7**
FRF				*e*Sg	**Sg**	**12 32 10.5**	**-0.1**
	874nm,0.2s,SNR=1.0						
FRF				*e*Sg	**Sg**	**12 32 10.5**	**-0.1**
	2µm,0.3s						
FRF	**La Foret Royal**	**1.52**	**200**	*e*Pn	**Pn**	**12 31 48.0**	**-1.1**
FRF				*e*Pg	**Pb**	**12 31 49.9**	**-0.2**
FRF				*e*Sn	**Sn**	**12 32 06.4**	**-2.7**
FRF				*e*Sg	**Sg**	**12 32 10.5**	**-0.1**
OG26	**St.-Nazaire-De**	**1.53**	**255**	Pn	**Pn**	**12 31 48.7**	**-0.5**
OG26	**St.-Nazaire-De**	**1.53**	**255**	Pn	**Pn**	**12 31 48.7**	**-0.5**
SC2M	**Scurtabo**	**1.66**	**110**	Pg	**Pn**	**12 31 51.0**	**0.0**
	5µm,0.6s						
SC2M	**Scurtabo**	**1.66**	**110**	P	**Pn**	**12 31 50.0**	**-1.0**
SC2M	**Scurtabo**	**1.66**	**110**	Pg	**Pn**	**12 31 51.0**	**0.0**
	5µm,0.6s						
WIMIS	**Wimmis**	**1.68**	**6**	⇑*i*P	Pn	12 31 46.0	-5.3
	21µm,1.0s						
WIMIS	**Wimmis**	**1.68**	**6**	⇑*i*P	Pn	12 31 46.0	-5.3
WIMIS	**Wimmis**	**1.68**	**6**	⇑*i*P	Pn	12 31 46.0	-5.3
MSSA	**Maissana**	**1.68**	**113**	Pg	**Pn**	**12 31 49.7**	**-1.6**
	2µm,0.8s						
MSSA	**Maissana**	**1.68**	**113**	Pg	**Pn**	**12 31 49.7**	**-1.6**
	2µm,0.8s						
CTL8	**Castelleone**	**1.72**	**80**	Pg	**Pn**	**12 31 51.8**	**0.0**
	12µm,2.2s						
CTL8	**Castelleone**	**1.72**	**80**	Pg	**Pn**	**12 31 51.8**	**0.0**
	12µm,2.2s						
GIMEL	**St. Georges /**	**1.72**	**334**	⇓*i*Pn	Pn	12 31 46.1	-5.8
	11µm,0.4s						
GIMEL	**St. Georges /**	**1.72**	**334**	*i* Pn	Pn	12 31 46.1	-5.8
GIMEL	**St. Georges /**	**1.72**	**334**	*i* Pn	Pn	12 31 46.1	-5.8
LMR	**La Mourre**	**1.77**	**201**	*e*Pn	**Pn**	**12 31 51.5**	**-1.0**
LMR	**La Mourre**	**1.77**	**201**	*e*P	**Pn**	**12 31 52.5**	**0.0**
	SNR=1.0						
LMR				*e*Sn	**Sn**	**12 32 12.2**	**-3.0**
	2µm,0.2s,SNR=1.0						
LMR				*e*Sg	**Sg**	**12 32 17.7**	**-0.8**
	3µm,0.3s						
LMR	**La Mourre**	**1.77**	**201**	*e*P	**Pn**	**12 31 51.5**	**-1.0**
LMR				*e*		12 32 12.2	
LMR	**La Mourre**	**1.77**	**201**	*e*Pn	**Pn**	**12 31 51.5**	**-1.0**
LMR	**La Mourre**	**1.77**	**201**	*e*P	**Pn**	**12 31 52.5**	**0.0**
LMR				*e*Sn	**Sn**	**12 32 12.2**	**-3.0**
	963nm,0.2s,SNR=1.0						
LMR				*e*Sg	**Sg**	**12 32 17.7**	**-0.8**
	2µm,0.3s						
LMR	**La Mourre**	**1.77**	**201**	*e*Pn	**Pn**	**12 31 51.5**	**-1.0**
LMR				*e*P	**Pn**	**12 31 52.5**	**0.0**
LMR				*e*Sn	**Sn**	**12 32 12.2**	**-3.0**
LMR				*e*Sg	**Sg**	**12 32 17.7**	**-0.8**
TORNY	**Torny/Romont**	**1.80**	**351**	*e*Pn	Pn	12 31 46.3	-6.7
	24µm,0.8s						
TORNY	**Torny/Romont**	**1.80**	**351**	*e*Pn	Pn	12 31 46.3	-6.7
TORNY	**Torny/Romont**	**1.80**	**351**	*e*Pn	Pn	12 31 46.3	-6.7
MDI	**Monti di Nese**	**1.83**	**64**	Pg	**Pn**	**12 31 50.3**	**-3.1**
	2µm,0.6s						
MDI	**Monti di Nese**	**1.83**	**64**	Pg	**Pn**	**12 31 50.3**	**-3.1**
	2µm,0.6s						
HASLI	**Hasliberg/Brie**	**1.84**	**17**	*e*Pn	Pn	12 31 46.9	-6.7
	14µm,0.8s						
HASLI	**Hasliberg/Brie**	**1.84**	**17**	*e*Pn	Pn	12 31 46.9	-6.7
HASLI	**Hasliberg/Brie**	**1.84**	**17**	*e*Pn	Pn	12 31 46.9	-6.7
CABF	**La Chapelle**	**1.85**	**332**	*e*Pg	**Pb**	**12 31 54.7**	**-0.9**
	SNR=1.0						
CABF				*e*Sg	**Sb**	**12 32 19.6**	**+0.7**
	2µm,0.3s,SNR=1.0						
CABF	**La Chapelle**	**1.85**	**332**	*e*P	**Pb**	**12 31 54.7**	**-0.9**
CABF				*e*		12 32 19.6	
CABF	**La Chapelle**	**1.85**	**332**	*e*Pg	**Pb**	**12 31 54.7**	**-0.9**
CABF				*e*Sg	**Sb**	**12 32 19.6**	**+0.7**
CABF	**La Chapelle**	**1.85**	**332**	*e*Pg	**Pb**	**12 31 54.7**	**-0.9**
CABF				*e*Sg	**Sb**	**12 32 19.6**	**+0.7**
CODM	**Codolo**	**1.87**	**108**	P	**Pn**	**12 31 53.0**	**-0.9**
LEPF	**PUYLOUBIER**	**1.90**	**220**	Pn	**Pn**	**12 31 52.8**	**-1.4**
LEPF				Sg	**Sg**	**12 32 23.5**	**+1.0**
LEPF	**PUYLOUBIER**	**1.90**	**220**	Pn	**Pn**	**12 31 52.8**	**-1.4**
LEPF				Sg	**Sg**	**12 32 23.5**	**+1.0**
VIVF	**Saint-Julien-I**	**1.92**	**267**	*e*Pn	**Pn**	**12 31 53.2**	**-1.3**
	SNR=1.0						
VIVF				*e*Sn	**Sn**	**12 32 16.3**	**-2.5**
	SNR=1.0						
VIVF				*e*Sg	**Sg**	**12 32 23.4**	**+0.2**
	2µm,0.3s,SNR=1.0						
VIVF	**Saint-Julien-I**	**1.92**	**267**	*e*P	**Pn**	**12 31 53.2**	**-1.3**
VIVF				*e*		12 32 16.3	
VIVF	**Saint-Julien-I**	**1.92**	**267**	*e*Pn	**Pn**	**12 31 53.2**	**-1.3**
VIVF				*e*Sn	**Sn**	**12 32 16.3**	**-2.5**
VIVF				*e*Sg	**Sg**	**12 32 23.4**	**+0.2**
	832nm,0.3s,SNR=1.0						
VIVF	**Saint-Julien-I**	**1.92**	**267**	*e*Pn	**Pn**	**12 31 53.2**	**-1.3**
VIVF				*e*Sn	**Sn**	**12 32 16.3**	**-2.5**
VIVF				*e*Sg	**Sg**	**12 32 23.4**	**+0.2**
GRAM	**Graiana**	**1.99**	**104**	P	**Pn**	**12 31 55.8**	**+0.2**
BNALP	**Bannalp**	**2.02**	**21**	*e*Pn	Pn	12 31 47.6	-8.4
	10µm,0.7s						
BNALP	**Bannalp**	**2.02**	**21**	*e*P	Pn	12 31 47.6	-8.4
	10µm,0.7s						
BNALP	**Bannalp**	**2.02**	**21**	*e*Pn	Pn	12 31 47.6	-8.4
SSB	**Saint Sauveur**	**2.02**	**279**	Pn	**Pn**	**12 31 54.6**	**-1.3**
SSB	**Saint Sauveur**	**2.02**	**279**	*e*P	**Pn**	**12 31 54.6**	**-1.3**
SSB	**Saint Sauveur**	**2.02**	**279**	Pn	**Pn**	**12 31 54.6**	**-1.3**
SSB	**Saint Sauveur**	**2.02**	**279**	*e*Pn	**Pn**	**12 31 54.6**	**-1.3**
TUE	**Stuetta**	**2.03**	**43**	Pg	**Pn**	**12 31 54.1**	**-2.1**
	1µm,0.5s						
TUE	**Stuetta**	**2.03**	**43**	*e*Pn	Pn	12 31 47.5	-8.7
	5µm,0.3s						
TUE	**Stuetta**	**2.03**	**43**	*e*P	Pn	12 31 47.5	-8.7
	5µm,0.3s						
TUE	**Stuetta**	**2.03**	**43**	Pg	**Pn**	**12 31 54.1**	**-2.1**
	1µm,0.5s						
TUE	**Stuetta**	**2.03**	**43**	*e*Pn	Pn	12 31 47.5	-8.7
BRANT	**Les Verrieres**	**2.04**	**343**	⇓*i*Pn	Pn	12 31 49.7	-6.6
BRANT	**Les Verrieres**	**2.04**	**343**	*i* Pn	Pn	12 31 49.7	-6.6
BRANT	**Les Verrieres**	**2.04**	**343**	*i* Pn	Pn	12 31 49.7	-6.6
VDL	**Val di Lei**	**2.08**	**44**	*e*P	Pn	12 31 48.0	-9.0
VDL	**Val di Lei**	**2.08**	**44**	*e*P	Pn	12 31 48.0	-9.0
	5µm,0.9s						
VDL	**Val di Lei**	**2.08**	**44**	*e*P	Pn	12 31 48.0	-9.0
PRMA	**PARMA**	**2.11**	**95**	Pg	**Pn**	**12 31 57.8**	**+0.7**
	18µm,1.8s						
PRMA	**PARMA**	**2.11**	**95**	Pg	**Pn**	**12 31 57.8**	**+0.7**
	18µm,1.8s						
SARO	**Sassorosso**	**2.32**	**109**	P	**Pn**	**12 31 58.7**	**-1.4**
BERNI	**Berninapass**	**2.34**	**52**	*e*P	Pn	12 31 50.7	-10
	4µm,0.7s						
BERNI	**Berninapass**	**2.34**	**52**	*e*P	Pn	12 31 50.7	-10
	4µm,0.7s						
BERNI	**Berninapass**	**2.34**	**52**	*e*P	Pn	12 31 50.7	-10
BALST	**Balsthal**	**2.35**	**5**	⇓*i*Pn	Pn	12 31 51.3	-9.3
	12µm,0.8s						
BALST	**Balsthal**	**2.35**	**5**	*e*Pn	**Pn**	**12 31 59.4**	**-1.2**
BALST				*e*Pg	**Pg**	**12 32 05.7**	**-1.0**
BALST				*e*Sg	**Sb**	**12 32 35.3**	**+1.8**
	9µm,1.2s						
BALST	**Balsthal**	**2.35**	**5**	Pn	**Pn**	**12 31 59.4**	**-1.2**
BALST	**Balsthal**	**2.35**	**5**	*i* Pn	Pn	12 31 51.3	-9.3
NOVE	**Novellara**	**2.39**	**94**	Pg	**Pn**	**12 32 00.5**	**-0.5**
	7µm,1.0s						
NOVE	**Novellara**	**2.39**	**94**	Pg	**Pn**	**12 32 00.5**	**-0.5**
	7µm,1.0s						
BOURR	**Bourrignon**	**2.40**	**358**	⇓*i*Pn	Pn	12 31 52.3	-8.9
	17µm,0.7s						
BOURR	**Bourrignon**	**2.40**	**358**	*i* Pn	Pn	12 31 52.3	-8.9
BOURR	**Bourrignon**	**2.40**	**358**	*i* Pn	Pn	12 31 52.3	-8.9
MAGA	**Magasa**	**2.43**	**70**	Pg	**Pn**	**12 31 59.4**	**-2.2**
	5µm,0.5s						
MAGA	**Magasa**	**2.43**	**70**	Pg	**Pn**	**12 31 59.4**	**-2.2**
	5µm,0.5s						
MABI	**Malga Bissina**	**2.45**	**63**	Pg	**Pn**	**12 31 59.5**	**-2.6**
	1µm,0.4s						
MABI	**Malga Bissina**	**2.45**	**63**	Pg	**Pn**	**12 31 59.5**	**-2.6**
	1µm,0.4s						
MAIM	**Mastiano**	**2.49**	**115**	Pg	**Pn**	**12 32 00.8**	**-1.5**
MAIM	**Mastiano**	**2.49**	**115**	P	**Pn**	**12 32 00.3**	**-2.0**
MAIM	**Mastiano**	**2.49**	**115**	Pg	**Pn**	**12 32 00.8**	**-1.5**
PLONS	**Plons/SG**	**2.49**	**34**	*e*Pn	Pn	12 31 53.4	-9.0
	3µm,0.7s						
PLONS	**Plons/SG**	**2.49**	**34**	*e*Pn	**Pn**	**12 32 01.4**	**-1.0**
PLONS				*e*Sg	**Sb**	**12 32 37.8**	**+0.4**
PLONS	**Plons/SG**	**2.49**	**34**	*e*P	Pn	12 31 53.4	-9.0
	3µm,0.7s						
PLONS	**Plons/SG**	**2.49**	**34**	Pn	**Pn**	**12 32 01.4**	**-1.0**
PLONS				Sg	**Sb**	**12 32 37.8**	**+0.4**
PLONS	**Plons/SG**	**2.49**	**34**	*e*Pn	Pn	12 31 53.4	-9.0
DAVOX	**Davos/Dischmat**	**2.50**	**44**	Pn	**Pn**	**12 32 00.7**	**-2.0**
	33nm,0.3s,baz=255,slow=7.7,SNR=73						
DAVOX				Sn	**Sn**	**12 32 34.3**	**+0.8**
	77nm,0.3s,baz=327,slow=23,SNR=9.2						
DAVOX				Lg	Lg	12 32 42.3	
	118nm,0.3s,baz=163,slow=23,SNR=9.3						
DAVOX				LR	LR	12 32 43.3	
	comp=Z,220nm,20.8s,baz=240,slow=34						
BRMO	**Bormio**	**2.58**	**54**	Pg	**Pn**	**12 32 02.2**	**-1.5**
	1µm,1.2s						
BRMO	**Bormio**	**2.58**	**54**	Pg	**Pn**	**12 32 02.2**	**-1.5**
	1µm,1.2s						
SULZ	**Cheisacher**	**2.58**	**11**	⇑*i*Pn	Pn	12 31 54.7	-9.0
SULZ	**Cheisacher**	**2.58**	**11**	*e*Pn	**Pn**	**12 32 02.6**	**-1.1**
SULZ				*e*Sg	**Sb**	**12 32 40.5**	**+0.4**
SULZ	**Cheisacher**	**2.58**	**11**	⇑*i*P	Pn	12 31 54.7	-9.0
SULZ	**Cheisacher**	**2.58**	**11**	Pn	**Pn**	**12 32 02.6**	**-1.1**
SULZ				Sg	**Sb**	**12 32 40.5**	**+0.4**
SULZ	**Cheisacher**	**2.58**	**11**	*i* Pn	Pn	12 31 54.7	-9.0
FUORN	**Ofenpass-Fuorn**	**2.60**	**50**	*e*Pn	Pn	12 31 53.9	-10
	2µm,0.7s						
FUORN	**Ofenpass-Fuorn**	**2.60**	**50**	*e*P	Pn	12 31 53.9	-10
	2µm,0.7s						
FUORN	**Ofenpass-Fuorn**	**2.60**	**50**	*e*Pn	**Pn**	**12 32 03.2**	**-0.9**
FUORN	**Ofenpass-Fuorn**	**2.60**	**50**	*e*Pn	Pn	12 31 53.9	-10
FUORN				*e*Pn	Pb	12 32 03.2	-5.4
POPM	**Popiglio**	**2.61**	**110**	P	**Pn**	**12 32 03.1**	**-0.9**
POPM				S	**Sn**	**12 32 33.5**	**-2.3**
COLF	**Collangettes**	**2.64**	**283**	Pn	**Pn**	**12 32 03.9**	**-0.6**
COLF	**Collangettes**	**2.64**	**283**	Pn	**Pn**	**12 32 03.9**	**-0.6**
PZZT	**Monte Pizzetto**	**2.65**	**108**	Pg	**Pn**	**12 32 04.5**	**-0.1**
	1µm,0.8s						
PZZT	**Monte Pizzetto**	**2.65**	**108**	Pg	**Pn**	**12 32 04.5**	**-0.1**
	1µm,0.8s						
WILA	**Wila**	**2.65**	**23**	*e*Pn	**Pn**	**12 32 04.4**	**-0.2**
WILA				*e*Sg	**Sb**	**12 32 43.9**	**+2.0**
WILA	**Wila**	**2.65**	**23**	Pn	**Pn**	**12 32 04.4**	**-0.2**
WILA				Sg	**Sb**	**12 32 43.9**	**+2.0**
ZCCA	**Zocca**	**2.66**	**103**	Pg	**Pn**	**12 32 05.1**	**+0.4**
	10µm,2.4s						
ZCCA	**Zocca**	**2.66**	**103**	Pg	**Pn**	**12 32 05.1**	**+0.4**
	10µm,2.4s						
ACHB	**Acheberg**	**2.67**	**13**	*e*Pn	Pn	12 31 55.1	-10
	1µm,0.9s						
ACHB	**Acheberg**	**2.67**	**13**	*e*P	Pn	12 31 55.1	-10
	1µm,0.9s						
LASF	**Ste Croix**	**2.67**	**251**	*e*Pn	**Pn**	**12 32 02.9**	**-2.0**
	SNR=1.0						
LASF				*e*Sn	**Sn**	**12 32 34.5**	**-2.9**
	638nm,0.4s,SNR=1.0						
LASF				*e*Sg	**Sg**	**12 32 47.6**	**+0.2**
	401nm,0.3s						
LASF	**Ste Croix**	**2.67**	**251**	*e*Pn	**Pn**	**12 32 02.9**	**-2.0**
LASF				*e*Sn	**Sn**	**12 32 34.5**	**-2.9**
LASF				*e*Sg	**Sg**	**12 32 47.6**	**+0.2**
	200nm,0.3s						
LASF	**Ste Croix**	**2.67**	**251**	*e*Pn	**Pn**	**12 32 02.9**	**-2.0**
LASF				*e*Sn	**Sn**	**12 32 34.5**	**-2.9**
LASF				*e*Sg	**Sg**	**12 32 47.6**	**+0.2**
PGF	**Pioggiola**	**2.72**	**154**	*e*Pn	**Pn**	**12 32 02.6**	**-3.0**
PGF				*e*Sn	**Sn**	**12 32 33.5**	**-5.2**
	380nm,0.4s						
PGF	**Pioggiola**	**2.72**	**154**	*e*P	**Pn**	**12 32 02.6**	**-3.0**
PGF				*e*		12 32 33.5	
PGF	**Pioggiola**	**2.72**	**154**	*e*Pn	**Pn**	**12 32 02.6**	**-3.0**
PGF				*e*Sn	**Sn**	**12 32 33.5**	**-5.2**
PGF	**Pioggiola**	**2.72**	**154**	*e*Pn	**Pn**	**12 32 02.6**	**-3.0**
PGF				*e*Sn	**Sn**	**12 32 33.5**	**-5.2**
LIENZ	**Kamor/St.Gall**	**2.73**	**32**	*e*Pn	Pn	12 31 58.7	-7.2
	1µm,0.8s						
LIENZ	**Kamor/St.Gall**	**2.73**	**32**	*e*P	Pn	12 31 58.7	-7.2
	1µm,0.8s						
LIENZ	**Kamor/St.Gall**	**2.73**	**32**	*e*Pn	Pn	12 31 58.7	-7.2
MOSI	**Grossmontoni**	**2.75**	**53**	Pg	**Pn**	**12 32 05.5**	**-0.7**
	3µm,0.6s						
MOSI	**Grossmontoni**	**2.75**	**53**	*e*Pn	Pn	12 31 55.2	-11
	3µm,0.7s						
MOSI	**Grossmontoni**	**2.75**	**53**	*e*P	Pn	12 31 55.2	-11
	3µm,0.7s						
MOSI	**Grossmontoni**	**2.75**	**53**	Pg	**Pn**	**12 32 05.5**	**-0.7**
	3µm,0.6s						
MOSI	**Grossmontoni**	**2.75**	**53**	*e*Pn	Pn	12 31 55.2	-11
WEIN	**Weingarten**	**2.77**	**23**	*e*Pn	Pn	12 31 59.5	-6.8
	597nm,0.8s						
WEIN	**Weingarten**	**2.77**	**23**	*e*P	Pn	12 31 59.5	-6.8
	597nm,0.8s						
WEIN	**Weingarten**	**2.77**	**23**	*e*Pn	Pn	12 31 59.5	-6.8
PLDF	**La Plantade**	**2.81**	**292**	Pn	**Pn**	**12 32 06.1**	**-0.7**
PLDF	**La Plantade**	**2.81**	**292**	Pn	**Pn**	**12 32 06.1**	**-0.7**
HINF	**Hinteralfeld**	**2.84**	**353**	*e*Pn	**Pn**	**12 32 05.5**	**-1.8**
	SNR=1.0						
HINF				*e*Sn	**Sn**	**12 32 37.1**	**-4.6**
	1µm,0.5s,SNR=1.0						
HINF				*e*Sg	**Sb**	**12 32 49.2**	**+1.6**
	533nm,0.3s						
HINF	**Hinteralfeld**	**2.84**	**353**	*e*P	**Pn**	**12 32 05.5**	**-1.8**
HINF				*e*		12 32 37.1	
HINF	**Hinteralfeld**	**2.84**	**353**	*e*Pn	**Pn**	**12 32 05.5**	**-1.8**
HINF				*e*Sn	**Sn**	**12 32 37.1**	**-4.6**
HINF				*e*Sg	**Sb**	**12 32 49.2**	**+1.6**
	267nm,0.3s						
HINF	**Hinteralfeld**	**2.84**	**353**	*e*Pn	**Pn**	**12 32 05.5**	**-1.8**
HINF				*e*Sn	**Sn**	**12 32 37.1**	**-4.6**
HINF				*e*Sg	**Sb**	**12 32 49.2**	**+1.6**
PTF	**

AVF	**Avril sur Loir**	**3.33**	**304**	*e*Pn	**Pn**	**12 32 12.6**	**-1.3**
AVF				*e*Sg	**Sg**	**12 33 05.8**	**-2.6**
LOR	**Lormes**	**3.33**	**314**	*e*Pn	**Pn**	**12 32 12.8**	**-1.2**
	baz=136,SNR=1.0						
LOR				*e*Sn	**Sn**	**12 32 49.3**	**-4.4**
	412nm,0.3s,SNR=1.0						
LOR				*e*Sg	**Sg**	**12 33 05.8**	**-2.8**
	673nm,0.3s						
LOR	**Lormes**	**3.33**	**314**	*e*P	**Pn**	**12 32 12.8**	**-1.2**
LOR				*e*		12 32 49.3	
LOR	**Lormes**	**3.33**	**314**	*e*Pn	**Pn**	**12 32 12.8**	**-1.2**
LOR				*e*Sn	**Sn**	**12 32 49.3**	**-4.4**
LOR				*e*Sg	**Sg**	**12 33 05.8**	**-2.8**
	337nm,0.3s						
LOR	**Lormes**	**3.33**	**314**	*e*Pn	**Pn**	**12 32 12.8**	**-1.2**
LOR				*e*Sn	**Sn**	**12 32 49.3**	**-4.4**
LOR				*e*Sg	**Sg**	**12 33 05.8**	**-2.8**
THEF	**They Montfort**	**3.37**	**344**	Pn	**Pn**	**12 32 13.0**	**-1.5**
THEF	**They Montfort**	**3.37**	**344**	Pn	**Pn**	**12 32 13.0**	**-1.5**
SSF	**Saint Saulge**	**3.39**	**309**	*e*Pn	**Pn**	**12 32 13.5**	**-1.2**
	SNR=1.0						
SSF				*e*Sn	**Sn**	**12 32 49.7**	**-5.4**
	329nm,0.3s,SNR=1.0						
SSF				*e*Sg	**Sg**	**12 33 08.8**	**-1.6**
	610nm,0.3s						
SSF	**Saint Saulge**	**3.39**	**309**	*e*P	**Pn**	**12 32 13.5**	**-1.2**
SSF				*e*		12 32 49.7	
SSF	**Saint Saulge**	**3.39**	**309**	*e*Pn	**Pn**	**12 32 13.5**	**-1.2**
SSF				*e*Sn	**Sn**	**12 32 49.7**	**-5.4**
SSF				*e*Sg	**Sg**	**12 33 08.8**	**-1.6**
	305nm,0.3s						
SSF	**Saint Saulge**	**3.39**	**309**	*e*Pn	**Pn**	**12 32 13.5**	**-1.2**
SSF				*e*Sn	**Sn**	**12 32 49.7**	**-5.4**
SSF				*e*Sg	**Sg**	**12 33 08.8**	**-1.6**
BFO	**Black Forest**	**3.40**	**11**	*e*P	**Pn**	**12 32 12.9**	**-2.0**
BFO	**Black Forest**	**3.40**	**11**	*e*Pn	**Pn**	**12 32 12.6**	**-2.3**
BFO				*e*Sn	**Sn**	**12 32 57.1**	**+1.7**
BFO				*e*Sg	**Sb**	**12 33 05.8**	**+2.2**
BFO	**Black Forest**	**3.40**	**11**	Pn	**Pn**	**12 32 12.6**	**-2.3**
BFO	**Black Forest**	**3.40**	**11**	*e*P	**Pn**	**12 32 12.9**	**-2.0**
BFO				Sn	**Sn**	**12 32 57.1**	**+1.7**
BFO				Sg	**Sb**	**12 33 05.8**	**+2.2**
BFO	**Black Forest**	**3.40**	**11**	*e*Pn	**Pn**	**12 32 12.7**	**-2.3**
FRNF	**Fournols**	**3.42**	**278**	Pn	**Pn**	**12 32 13.9**	**-1.3**
FRNF	**Fournols**	**3.42**	**278**	Pn	**Pn**	**12 32 13.9**	**-1.3**
CDF	**Champ du Feu**	**3.42**	**359**	*e*Pn	**Pn**	**12 32 13.3**	**-1.9**
	SNR=1.0						
CDF				*e*Sn	**Sn**	**12 32 50.7**	**-5.2**
	243nm,0.3s,SNR=1.0						
CDF				*e*Sg	**Sb**	**12 33 07.7**	**+3.6**
	2µm,0.8s						
CDF	**Champ du Feu**	**3.42**	**359**	*e*P	**Pn**	**12 32 13.3**	**-1.9**
CDF				*e*		12 32 50.7	
CDF	**Champ du Feu**	**3.42**	**359**	*e*Pn	**Pn**	**12 32 13.3**	**-1.9**
CDF				*e*Sn	**Sn**	**12 32 50.7**	**-5.2**
CDF				*e*Sg	**Sb**	**12 33 07.7**	**+3.6**
	785nm,0.8s						
CDF	**Champ du Feu**	**3.42**	**359**	*e*Pn	**Pn**	**12 32 13.3**	**-1.9**
CDF				*e*Sn	**Sn**	**12 32 50.7**	**-5.2**
CDF				*e*Sg	**Sb**	**12 33 07.7**	**+3.6**
RETA	**Reutte**	**3.43**	**42**	*i* Pn	**Pn**	**12 32 14.0**	**-1.4**
	7.3nm,0.1s,SNR=16						
RETA				*i* Sn	**Sn**	**12 32 53.8**	**-2.4**
	36nm,0.2s						
RETA	**Reutte**	**3.43**	**42**	Pn	**Pn**	**12 32 14.0**	**-1.4**
	7.3nm,0.1s,SNR=16						
RETA				Sn	**Sn**	**12 32 53.8**	**-2.4**
	36nm,0.2s						
MOTA	**Moosalm**	**3.50**	**47**	*i* Pn	**Pn**	**12 32 15.0**	**-1.5**
	18nm,0.2s,SNR=34						
MOTA				*i* Sn	**Sn**	**12 32 57.3**	**-0.8**
	130nm,0.4s						
MOTA	**Moosalm**	**3.50**	**47**	Pn	**Pn**	**12 32 15.0**	**-1.5**
	18nm,0.2s,SNR=34						
MOTA				Sn	**Sn**	**12 32 57.3**	**-0.8**
	130nm,0.4s						
VERF	**Verneugheol**	**3.52**	**284**	Pn	**Pn**	**12 32 15.3**	**-1.3**
VERF	**Verneugheol**	**3.52**	**284**	Pn	**Pn**	**12 32 15.3**	**-1.3**
BGF	**Bois d'Agland**	**3.53**	**298**	*e*Pn	**Pn**	**12 32 15.7**	**-0.9**
	SNR=1.0						
BGF	**Bois d'Agland**	**3.53**	**298**	*e*P	**Pn**	**12 32 15.7**	**-0.9**
BGF	**Bois d'Agland**	**3.53**	**298**	*e*Pn	**Pn**	**12 32 15.7**	**-0.9**
BGF	**Bois d'Agland**	**3.53**	**298**	*e*Pn	**Pn**	**12 32 15.7**	**-0.9**
SFTF	**Sexfontaines**	**3.59**	**334**	*e*Pn	**Pn**	**12 32 15.6**	**-1.9**
	baz=145						
SFTF				*e*Sn	**Sn**	**12 32 54.7**	**-5.3**
SFTF				*e*Sg	**Sg**	**12 33 13.9**	**-2.9**
	3µm,0.8s						
SFTF	**Sexfontaines**	**3.59**	**334**	*e*Pn	**Pn**	**12 32 15.6**	**-1.9**
SFTF				*e*Sn	**Sn**	**12 32 54.7**	**-5.3**
SFTF				*e*Sg	**Sg**	**12 33 13.9**	**-2.9**
	2µm,0.8s						
SFTF	**Sexfontaines**	**3.59**	**334**	*e*Pn	**Pn**	**12 32 15.6**	**-1.9**
SFTF				*e*Sn	**Sn**	**12 32 54.7**	**-5.3**
SFTF				*e*Sg	**Sg**	**12 33 13.9**	**-2.9**
PAGF	**Fort de Pagny**	**3.73**	**343**	*e*Pn	**Pn**	**12 32 18.2**	**-1.3**
PAGF				*e*Sn	**Sn**	**12 32 58.2**	**-5.4**
PAGF				*e*Sg	**Sg**	**12 33 17.7**	**-3.8**
	2µm,1.1s						
PAGF	**Fort de Pagny**	**3.73**	**343**	*e*Pn	**Pn**	**12 32 18.2**	**-1.3**
PAGF				*e*Sn	**Sn**	**12 32 58.2**	**-5.4**
PAGF				*e*Sg	**Sg**	**12 33 17.7**	**-3.8**
	788nm,1.1s						
PAGF	**Fort de Pagny**	**3.73**	**343**	*e*Pn	**Pn**	**12 32 18.2**	**-1.3**
PAGF				*e*Sn	**Sn**	**12 32 58.2**	**-5.4**
PAGF				*e*Sg	**Sg**	**12 33 17.7**	**-3.8**
WTTA	**Wattenberg**	**3.74**	**51**	*i* Pn	**Pn**	**12 32 18.5**	**-1.2**
	39nm,0.2s,SNR=27						
WTTA				*i* Sn	**Sn**	**12 33 03.1**	**-0.8**
	128nm,0.4s						
WTTA	**Wattenberg**	**3.74**	**51**	*e*PN	**Pn**	**12 32 19.1**	**-0.6**
WTTA	**Wattenberg**	**3.74**	**51**	*e*Pn	**Pn**	**12 32 19.5**	**-0.1**
WTTA	**Wattenberg**	**3.74**	**51**	Pn	**Pn**	**12 32 18.5**	**-1.2**
	39nm,0.2s,SNR=27						
WTTA				Sn	**Sn**	**12 33 03.1**	**-0.8**
	128nm,0.4s						
WATA	**Walderalm**	**3.75**	**50**	*i* Pn	**Pn**	**12 32 19.0**	**-0.8**
	9.8nm,0.1s,SNR=21						
WATA				*i* Sn	**Sn**	**12 33 02.9**	**-1.2**
	69nm,0.2s						
WATA	**Walderalm**	**3.75**	**50**	Pn	**Pn**	**12 32 19.0**	**-0.8**
	9.8nm,0.1s,SNR=21						
WATA				Sn	**Sn**	**12 33 02.9**	**-1.2**
	69nm,0.2s						
PARC	**Parchiule**	**3.75**	**109**	Pg	**Pn**	**12 32 19.5**	**-0.2**
	411nm,1.1s						
PARC	**Parchiule**	**3.75**	**109**	Pg	**Pn**	**12 32 19.5**	**-0.2**
	411nm,1.1s						
CAF	**Calviac**	**3.76**	**271**	*e*Pn	**Pn**	**12 32 19.7**	**-0.2**
	SNR=1.0						
CAF				*e*Sg	**Sg**	**12 33 20.7**	**-1.7**
	375nm,0.5s,SNR=1.0						
CAF	**Calviac**	**3.76**	**271**	*e*P	**Pn**	**12 32 19.7**	**-0.2**
CAF	**Calviac**	**3.76**	**271**	*e*Pn	**Pn**	**12 32 19.7**	**-0.2**
CAF				*e*Sg	**Sg**	**12 33 20.7**	**-1.7**
CAF	**Calviac**	**3.76**	**271**	*e*Pn	**Pn**	**12 32 19.7**	**-0.2**
CAF				*e*Sg	**Sg**	**12 33 20.7**	**-1.7**
RISI	**Rein**	**3.82**	**58**	Pg	**Pn**	**12 32 19.5**	**-1.4**
	971nm,0.6s						
RISI	**Rein**	**3.82**	**58**	Pg	**Pn**	**12 32 19.5**	**-1.4**
	971nm,0.6s						
TCF	**Toulx Ste Croi**	**3.84**	**291**	*e*Pn	**Pn**	**12 32 20.1**	**-0.9**
	SNR=1.0						
TCF				*e*Sn	**Sn**	**12 33 02.2**	**-4.0**
	271nm,0.3s,SNR=1.0						
TCF				*e*Sg	**Sg**	**12 33 23.3**	**-1.6**
	2µm,0.8s						
TCF	**Toulx Ste Croi**	**3.84**	**291**	*e*P	**Pn**	**12 32 20.1**	**-0.9**
TCF				*e*		12 33 02.2	
TCF	**Toulx Ste Croi**	**3.84**	**291**	*e*Pn	**Pn**	**12 32 20.1**	**-0.9**
TCF				*e*Sn	**Sn**	**12 33 02.2**	**-4.0**
TCF				*e*Sg	**Sg**	**12 33 23.3**	**-1.6**
	856nm,0.8s						
TCF	**Toulx Ste Croi**	**3.84**	**291**	*e*Pn	**Pn**	**12 32 20.1**	**-0.9**
TCF				*e*Sn	**Sn**	**12 33 02.2**	**-4.0**
TCF				*e*Sg	**Sg**	**12 33 23.3**	**-1.6**
MEZF	**Maizieres J'vi**	**3.85**	**336**	*e*Pn	**Pn**	**12 32 19.8**	**-1.3**
	baz=156,SNR=1.0						
MEZF				*e*Sn	**Sn**	**12 33 01.0**	**-5.4**
	894nm,0.5s,SNR=1.0						
MEZF				*e*Sg	**Sg**	**12 33 21.6**	**-3.6**
	826nm,0.5s						
MEZF	**Maizieres J'vi**	**3.85**	**336**	*e*Pn	**Pn**	**12 32 19.8**	**-1.3**
MEZF				*e*Sn	**Sn**	**12 33 01.0**	**-5.4**
MEZF				*e*Sg	**Sg**	**12 33 21.6**	**-3.6**
	413nm,0.5s						
MEZF	**Maizieres J'vi**	**3.85**	**336**	*e*Pn	**Pn**	**12 32 19.8**	**-1.3**
MEZF				*e*Sn	**Sn**	**12 33 01.0**	**-5.4**
MEZF				*e*Sg	**Sg**	**12 33 21.6**	**-3.6**
STU	**Stuttgart**	**3.98**	**18**	*e*P	**Pn**	**12 32 20.4**	**-2.4**
STU	**Stuttgart**	**3.98**	**18**	*e*Pn	**Pn**	**12 32 20.5**	**-2.4**
STU				*e*Pg	**Pg**	**12 32 38.1**	**+0.3**
STU	**Stuttgart**	**3.98**	**18**	Pn	**Pn**	**12 32 20.5**	**-2.4**
STU	**Stuttgart**	**3.98**	**18**	*e*Pn	**Pn**	**12 32 20.4**	**-2.4**
PIEI	**Pieia**	**3.99**	**110**	Pg	**Pn**	**12 32 21.7**	**-1.3**
	147nm,0.8s						
PIEI	**Pieia**	**3.99**	**110**	Pg	**Pn**	**12 32 21.7**	**-1.3**
	147nm,0.8s						
HYF	**Humbligny**	**4.00**	**306**	*e*Pn	**Pn**	**12 32 22.2**	**-0.9**
HYF	**Humbligny**	**4.00**	**306**	*e*Pn	**Pn**	**12 32 22.2**	**-0.9**
HYF	**Humbligny**	**4.00**	**306**	*e*Pn	**Pn**	**12 32 22.2**	**-0.9**
LANF	**Langenberg**	**4.00**	**4**	Pn	**Pn**	**12 32 20.8**	**-2.3**
LANF	**Langenberg**	**4.00**	**4**	Pn	**Pn**	**12 32 20.8**	**-2.3**
ABTA	**Abfaltersbach**	**4.00**	**62**	*i* Pn	**Pn**	**12 32 21.1**	**-2.1**
	72nm,0.2s,SNR=32						
ABTA				*i* Sn	**Sn**	**12 33 07.7**	**-2.6**
	98nm,0.4s						
ABTA	**Abfaltersbach**	**4.00**	**62**	Pn	**Pn**	**12 32 21.1**	**-2.1**
	72nm,0.2s,SNR=32						
ABTA				Sn	**Sn**	**12 33 07.7**	**-2.6**
	98nm,0.4s						
LRDF	**Laroque-de-Fa**	**4.05**	**241**	Pn	**Pn**	**12 32 22.1**	**-1.7**
LRDF	**Laroque-de-Fa**	**4.05**	**241**	Pn	**Pn**	**12 32 22.1**	**-1.7**
MTLF	**Montolieu**	**4.06**	**248**	*e*Pn	**Pn**	**12 32 22.2**	**-1.7**
	SNR=1.0						
MTLF				*e*Sn	**Sn**	**12 33 07.2**	**-4.3**
	84nm,0.3s,SNR=1.0						
MTLF				*e*Sg	**Sg**	**12 33 30.9**	**-0.9**
	106nm,0.3s						
MTLF	**Montolieu**	**4.06**	**248**	*e*P	**Pn**	**12 32 22.2**	**-1.7**
MTLF				*e*		12 33 07.2	
MTLF	**Montolieu**	**4.06**	**248**	*e*Pn	**Pn**	**12 32 22.2**	**-1.7**
MTLF				*e*Sn	**Sn**	**12 33 07.2**	**-4.3**
MTLF				*e*Sg	**Sg**	**12 33 30.9**	**-0.9**
	53nm,0.3s						
MTLF	**Montolieu**	**4.06**	**248**	*e*Pn	**Pn**	**12 32 22.2**	**-1.7**
MTLF				*e*Sn	**Sn**	**12 33 07.2**	**-4.3**
MTLF				*e*Sg	**Sg**	**12 33 30.9**	**-0.9**
RJF	**Les Rejaudoux**	**4.15**	**276**	*e*Pn	**Pn**	**12 32 24.7**	**-0.5**
	SNR=1.0						
RJF				*e*Sn	**Sn**	**12 33 09.7**	**-4.1**
RJF				*e*Sg	**Sg**	**12 33 33.3**	**-1.5**
	610nm,0.5s						
RJF	**Les Rejaudoux**	**4.15**	**276**	*e*P	**Pn**	**12 32 24.7**	**-0.5**
RJF				*e*		12 33 09.7	
RJF	**Les Rejaudoux**	**4.15**	**276**	*e*Pn	**Pn**	**12 32 24.7**	**-0.5**
RJF				*e*Sn	**Sn**	**12 33 09.7**	**-4.1**
RJF				*e*Sg	**Sg**	**12 33 33.3**	**-1.5**
	305nm,0.5s						
RJF	**Les Rejaudoux**	**4.15**	**276**	*e*Pn	**Pn**	**12 32 24.7**	**-0.5**
RJF				*e*Sn	**Sn**	**12 33 09.7**	**-4.1**
RJF				*e*Sg	**Sg**	**12 33 33.3**	**-1.5**
FILF	**Fillols**	**4.25**	**237**	Pn	**Pn**	**12 32 25.7**	**-0.9**
FILF	**Fillols**	**4.25**	**237**	Pn	**Pn**	**12 32 25.7**	**-0.9**
KTD	**Kalmit**	**4.35**	**6**	Pn	**Pn**	**12 32 25.9**	**-2.1**
TRI	**Trieste**	**4.57**	**79**	*e*P	**Pn**	**12 32 28.1**	**-2.8**
TRI	**Trieste**	**4.57**	**79**	*e*Pn	**Pn**	**12 32 28.1**	**-2.8**
TRI	**Trieste**	**4.57**	**79**	*e*Pn	**Pn**	**12 32 28.1**	**-2.8**
RJOB	**Jochberg**	**4.65**	**52**	*e*Pn	**Pn**	**12 32 31.4**	**-0.8**
RJOB	**Jochberg**	**4.65**	**52**	Pn	**Pn**	**12 32 31.4**	**-0.8**
KBA	**Koelnbreinsper**	**4.66**	**61**	*i* Pn	**Pn**	**12 32 31.7**	**-0.6**
	27nm,0.3s,SNR=35						
KBA				*i* Sn	**Sn**	**12 33 24.8**	**-1.8**
	80nm,0.4s						
KBA	**Koelnbreinsper**	**4.66**	**61**	*e*Pn	**Pn**	**12 32 32.4**	**+0.1**
KBA	**Koelnbreinsper**	**4.66**	**61**	Pn	**Pn**	**12 32 31.7**	**-0.6**
	27nm,0.3s,SNR=35						
KBA				Sn	**Sn**	**12 33 24.8**	**-1.8**
	80nm,0.4s						
VALF	**Valcebollere**	**4.66**	**238**	Pn	**Pn**	**12 32 31.0**	**-1.4**
VALF	**Valcebollere**	**4.66**	**238**	Pn	**Pn**	**12 32 31.0**	**-1.4**
MYKA	**Terra Mystica**	**4.68**	**67**	*i* Pn	**Pn**	**12 32 31.2**	**-1.4**
	13nm,0.3s,SNR=14						
MYKA				*i* Sn	**Sn**	**12 33 26.7**	**-0.4**
	27nm,0.3s						
MYKA	**Terra Mystica**	**4.68**	**67**	Pn	**Pn**	**12 32 31.2**	**-1.4**
	13nm,0.3s,SNR=14						
MYKA				Sn	**Sn**	**12 33 26.7**	**-0.4**
	27nm,0.3s						
LFF	**La Frestale**	**4.70**	**272**	*e*Pn	**Pn**	**12 32 32.2**	**-0.6**
LFF				*e*Sn	**Sn**	**12 33 23.7**	**-3.7**
LFF				*e*Sg	**Sg**	**12 33 49.8**	**-2.7**
	218nm,0.4s,SNR=1.0						
LFF	**La Frestale**	**4.70**	**272**	*e*P	**Pn**	**12 32 32.2**	**-0.6**
LFF				*e*		12 33 23.7	
LFF	**La Frestale**	**4.70**	**272**	*e*Pn	**Pn**	**12 32 32.2**	**-0.6**
LFF				*e*Sn	**Sn**	**12 33 23.7**	**-3.7**
LFF				*e*Sg	**Sg**	**12 33 49.8**	**-2.7**
	109nm,0.4s,SNR=1.0						
LFF	**La Frestale**	**4.70**	**272**	*e*Pn	**Pn**	**12 32 32.2**	**-0.6**
LFF				*e*Sn	**Sn**	**12 33 23.7**	**-3.7**
LFF				*e*Sg	**Sg**	**12 33 49.8**	**-2.7**
RUP	**Ruppelstein**	**4.71**	**358**	Pn	**Pn**	**12 32 31.4**	**-1.6**
TOD	**Tromm**	**4.71**	**11**	Pn	**Pn**	**12 32 30.4**	**-2.6**
SKDS	**Skadanscina**	**4.73**	**81**	*i* Pn	**Pn**	**12 32 29.6**	**-3.5**
SKDS				*e*Sn	**Sn**	**12 33 20.6**	**-7.5**
	comp=Z,232nm,0.6s						
SKDS	**Skadanscina**	**4.73**	**81**	Pn	**Pn**	**12 32 29.6**	**-3.5**
SKDS				*e*Sn	**Sn**	**12 33 20.6**	**-7.5**
	comp=Z,232nm,0.6s						
WLF	**Walferdange**	**4.74**	**350**	P	**Pn**	**12 32 32.7**	**-0.6**
WLF	**Walferdange**	**4.74**	**350**	*e*P	**Pn**	**12 32 33.9**	**+0.6**
WLF	**Walferdange**	**4.74**	**350**	*e*Pn	**Pn**	**12 32 32.4**	**-0.9**
WLF				*e*Sg	**Sg**	**12 33 49.9**	**-3.9**
WLF	**Walferdange**	**4.74**	**350**	Pn	**Pn**	**12 32 32.4**	**-0.9**
WLF				Sg	**Sg**	**12 33 49.9**	**-3.9**
WLF	**Walferdange**	**4.74**	**350**	*e*Pn	**Pn**	**12 32 33.9**	**+0.6**
ABH	**Alteburg**	**4.89**	**1**	Pn	**Pn**	**12 32 34.1**	**-1.3**
CEY	**Cerknica**	**5.03**	**79**	*e*Pn	**Pn**	**12 32 34.4**	**-2.9**
AQU	**L'Aquila**	**5.11**	**119**	*e*P	Pn	12 32 43.5	+5.0
AQU	**L'Aquila**	**5.11**	**119**	*e*Pn	Pn	12 32 43.5	+5.0
AQU	**L'Aquila**	**5.11**	**119**	*e*Pn	Pn	12 32 43.5	+5.0
LJU	**Ljubljana**	**5.14**	**76**	*e*Pn	**Pn**	**12 32 35.3**	**-3.5**
LJU				*i* Sn	**Sn**	**12 33 32.1**	**-6.1**
	comp=Z,488nm,1.3s						
LJU	**Ljubljana**	**5.14**	**76**	*e*Pn	**Pn**	**12 32 37.1**	**-1.7**
LJU				*i* Sn	**Sn**	**12 33 32.2**	**-6.1**
	comp=Z,488nm,1.3s						
BGG	**Burgeitz**	**5.21**	**360**	*e*Pn	**Pn**	**12 32 38.3**	**-1.5**
BGG				*e*Sn	**Sn**	**12 33 41.8**	**+1.8**
	comp=Z,150nm,0.7s						
BGG	**Burgeitz**	**5.21**	**360**	Pn	**Pn**	**12 32 38.3**	**-1.5**
BGG				Sn	**Sn**	**12 33 41.8**	**+1.8**
	comp=Z,150nm,0.7s						
OBKA	**Obir**	**5.25**	**71**	Pn	**Pn**	**12 32 38.8**	**-1.6**
	comp=Z,8.1nm,0.2s						
OBKA				*i* Sn	**Sn**	**12 33 41.9**	**+0.8**
	comp=Z,78nm,0.4s						
OBKA	**Obir**	**5.25**	**71**	*e*Pn	**Pn**	**12 32 38.9**	**-1.5**
OBKA	**Obir**	**5.25**	**71**	Pn	**Pn**	**12 32 38.9**	**-1.5**
OBKA				Sn	**Sn**	**12 33 41.9**	**+0.8**
	comp=Z,78nm,0.4s						
TNS	**Taunus Mts**	**5.28**	**8**	*e*Pn	**Pn**	**12 32 38.6**	**-2.1**
TNS	**Taunus Mts**	**5.28**	**8**	Pn	**Pn**	**12 32 38.7**	**-2.1**
HILG	**Hillesheim**	**5.32**	**355**	*e*Pn	**Pn**	**12 32 40.3**	**-1.0**
HILG	**Hillesheim**	**5.32**	**355**	Pn	**Pn**	**12 32 40.3**	**-1.0**
NVLJ	**Novalja**	**5.36**	**92**	*e*Pn	**Pn**	**12 32 39.2**	**-2.6**
NVLJ				Sn	**Sn**	**12 33 36.9**	**-6.7**
GRFO	**Grafenberg**	**5.38**	**28**	*e*P	**Pn**	**12 32 43.3**	**+1.2**
GRFO	**Grafenberg**	**5.38**	**28**	*e*Pn	**Pn**	**12 32 43.2**	**+1.2**
GRFO				Sg	**Sg**	**12 34 14.7**	**+0.5**
GRFO	**Grafenberg**	**5.38**	**28**	*e*Pn	**Pn**	**12 32 43.2**	**+1.2**
GRA1	**Grafenberg Arr**	**5.38**	**28**	Sg	**Sg**	**12 34 14.2**	**0.0**
GRF	**Grafenberg Arr**	**5.38**	**28**	*e*Sg	**Sg**	**12 34 14.2**	**0.0**
GIVF	**Givet**	**5.39**	**342**	*e*Pn	**Pn**	**12 32 40.6**	**-1.6**
	SNR=1.0						
GIVF				*e*Sn	**Sn**	**12 33 38.1**	**-6.3**
	comp=Z,400nm,0.8s						
GIVF				*e*Sg	**Sg**	**12 34 10.2**	**-4.4**
	comp=Z,2µm,1.1s						
GIVF	**Givet**	**5.39**	**342**	*e*P	**Pn**	**12 32 40.6**	**-1.6**
GIVF				*e*		12 33 38.1	
GIVF	**Givet**	**5.39**	**342**	*e*Pn	**Pn**	**12 32 40.6**	**-1.6**
GIVF				*e*Sn	**Sn**	**12 33 38.1**	**-6.3**
GIVF				*e*Sg	**Sg**	**12 34 10.2**	**-4.4**
	comp=Z,958nm,1.1s						
GIVF	**Givet**	**5.39**	**342**	*e*Pn	**Pn**	**12 32 40.6**	**-1.6**
GIVF				*e*Sn	**Sn**	**12 33 38.1**	**-6.3**
GIVF				*e*Sg	**Sg**	**12 34 10.2**	**-4.4**
	comp=Z,2µm,1.1s						
EPF	**Esparros**	**5.43**	**251**	*e*Pn	**Pn**	**12 32 40.7**	**-2.2**
	SNR=1.0						
EPF				*e*Sn	**Sn**	**12 33 40.2**	**-5.4**
	comp=Z,117nm,0.5s						
EPF				*e*Sg	**Sg**	**12 34 14.0**	**-2.0**
	comp=Z,102nm,0.5s						
EPF	**Esparros**	**5.43**	**251**	*e*P	**Pn**	**12 32 40.7**	**-2.2**
EPF				*e*		12 33 40.2	
EPF	**Esparros**	**5.43**	**251**	*e*Pn	**Pn**	**12 32 40.7**	**-2.2**
EPF				*e*Sn	**Sn**	**12 33 40.2**	**-5.4**
EPF				*e*Sg	**Sg**	**12 34 14.0**	**-2.0**
	comp=Z,51nm,0.5s						
EPF	**Esparros**	**5.43**	**251**	*e*Pn	**Pn**	**12 32 40.7**	**-2.2**
EPF				*e*Sn	**Sn**	**12 33 40.2**	**-5.4**
EPF				*e*Sg	**Sg**	**12 34 14.0**	**-2.0**
DOU	**Dourbes**	**5.44**	**341**	P	**Pn**	**12 32 41.8**	**-1.1**
DOU	**Dourbes**	**5.44**	**341**	P	**Pn**	**12 32 41.7**	**-1.1**
MFF	**Saint Martin d**	**5.49**	**290**	*e*Pn	**Pn**	**12 32 42.9**	**-0.7**
	SNR=1.0						
MFF				*e*Sn	**Sn**	**12 33 42.5**	**-4.4**
	comp=Z,40nm,0.2s						
MFF				*e*Sg	**Sg**	**12 34 14.1**	**-3.8**
	comp=Z,494nm,0.7s						
MFF	**Saint Martin d**	**5.49**	**290**	*e*P	**Pn**	**12 32 42.9**	**-0.7**
MFF				*e*		12 33 42.5	
MFF	**Saint Martin d**	**5.49**	**290**	*e*Pn	**Pn**	**12 32 42.9**	**-0.7**
MFF				*e*Sn	**Sn**	**12 33 42.5**	**-4.4**
MFF				*e*Sg	**Sg**	**12 34 14.1**	**-3.8**
	comp=Z,247nm,0.7s						
MFF	**Saint Martin d**	**5.49**	**290**	*e*Pn	**Pn**	**12 32 42.9**	**-0.7**
MFF				*e*Sn	**Sn**	**12 33 42.5**	**-4.4**
MFF				*e*Sg	**Sg**	**12 34 14.1**	**-3.8**
BAIF	**Baives**	**5.50**	**338**	*e*Pn	**Pn**	**12 32 42.0**	**-1.7**
	SNR=1.0						
BAIF				*e*Sn	**Sn**	**12 33 39.2**	**-7.8**
	comp=Z,468nm,1.1s						
BAIF				*e*Sg	**Sg**	**12 34 12.4**	**-5.6**
	comp=Z,1µm,1.1s						
BAIF	**Baives**	**5.50**	**338**	*e*P	**Pn**	**12 32 42.0**	**-1.7**
BAIF				*e*		12 33 39.2	
BAIF	**Baives**	**5.50**	**338**	*e*Pn	**Pn**	**12 32 42.0**	**-1.7**
BAIF				*e*Sn	**Sn**	**12 33 39.2**	**-7.8**
BAIF				*e*Sg	**Sg**	**12 34 12.4**	**-5.6**
	comp=Z,627nm,1.1s						
BAIF	**Baives**	**5.50**	**338**	*e*Pn	**Pn**	**12 32 42.0**	**-1.7**
BAIF				*e*Sn	**Sn**	**12 33 39.2**	**-7.8**
BAIF				*e*Sg	**Sg**	**12 34 12.4**	**-5.6**
RESF	**Ens**	**5.53**	**249**	Pn	**Pn**	**12 32 42.1**	**-2.1**
RESF	**Ens**	**5.53**	**249**	Pn	**Pn**	**12 32 42.1**	**-2.1**
AHRW	**Bad Neuenahr-A**	**5.55**	**358**	*e*Pn	**Pn**	**12 32 43.1**	**-1.3**
AHRW				*e*Sg	**Sg**	**12 34 17.5**	**-2.3**
MOA	**Molln**	**5.56**	**57**	*e*Pn	**Pn**	**12 32 42.6**	**-2.0**
	comp=Z,2.3nm,0.1s,SNR=20						
MOA				*i* Sn	**Sn**	**12 33 46.8**	**-1.8**
	comp=Z,27nm,0.2s						
MOA	**Molln**	**5.56**	**57**	*e*Pn	**Pn**	**12 32 44.0**	**-0.6**
MOA	**Molln**	**5.56**	**57**	Pn	**Pn**	**12 32 42.6**	**-2.0**
	comp=Z,2.3nm,0.1

ORDF	**Ordiarp**	**6.24**	**256**	Pn		**Pn**		**12 32 52.4**	**-1.4**
NKC	**Novy Kostel**	**6.26**	**31**	*e*PN		**Pn**		**12 32 52.9**	**-1.3**
NKC				*e*SG		**Sg**		**12 34 42.9**	**+0.3**
	comp=Z,254nm,0.9s								
NKC	**Novy Kostel**	**6.26**	**31**	*e*P		**Pn**		**12 32 52.9**	**-1.3**
NKC	**Novy Kostel**	**6.26**	**31**	Pn		**Pn**		**12 32 52.9**	**-1.3**
NKC				Sg		**Sg**		**12 34 42.9**	**+0.3**
	comp=Z,254nm,0.9s								
LDF	**La Druitiere**	**6.27**	**308**	*e*Pn		**Pn**		**12 32 53.1**	**-1.2**
	SNR=1.0								
LDF				*e*Sn		**Sn**		**12 34 00.3**	**-5.8**
	comp=Z,131nm,0.5s,SNR=1.0								
LDF				*e*Sg		**Sg**		**12 34 38.4**	**-4.5**
	comp=Z,567nm,1.0s								
LDF	**La Druitiere**	**6.27**	**308**	*e*P		**Pn**		**12 32 53.1**	**-1.2**
LDF				*e*				12 34 00.3	
LDF	**La Druitiere**	**6.27**	**308**	*e*Pn		**Pn**		**12 32 53.1**	**-1.2**
LDF				*e*Sn		**Sn**		**12 34 00.3**	**-5.8**
LDF				*e*Sg		**Sg**		**12 34 38.4**	**-4.5**
	comp=Z,284nm,1.0s								
LDF	**La Druitiere**	**6.27**	**308**	*e*Pn		**Pn**		**12 32 53.1**	**-1.2**
LDF				*e*Sn		**Sn**		**12 34 00.3**	**-5.8**
LDF				*e*Sg		**Sg**		**12 34 38.4**	**-4.5**
LARF	**Larrau**	**6.33**	**255**	Pn		**Pn**		**12 32 53.5**	**-1.7**
LARF	**Larrau**	**6.33**	**255**	Pn		**Pn**		**12 32 53.5**	**-1.7**
MOX	**Moxa**	**6.33**	**25**	*e*Sg		**Sg**		**12 34 45.7**	**+0.9**
MOX	**Moxa**	**6.33**	**25**	Sg		**Sg**		**12 34 45.7**	**+0.9**
OSSF	**Osses**	**6.45**	**257**	Pn		**Pn**		**12 32 54.5**	**-2.2**
OSSF	**Osses**	**6.45**	**257**	Pn		**Pn**		**12 32 54.5**	**-2.2**
BUG	**Bochum--Univer**	**6.45**	**359**	*e*Pn		**Pn**		**12 32 55.7**	**-1.0**
BUG				*e*Sn		**Sn**		**12 34 07.2**	**-3.2**
SJPF	**Ste Jean**	**6.47**	**256**	*e*Pn		**Pn**		**12 32 54.9**	**-2.2**
	SNR=1.0								
SJPF				*e*Sn		**Sn**		**12 34 04.8**	**-6.2**
	comp=Z,102nm,0.8s								
SJPF				*e*Sg		**Sg**		**12 34 45.2**	**-4.0**
	comp=Z,328nm,1.1s								
SJPF	**Ste Jean**	**6.47**	**256**	*e*P		**Pn**		**12 32 54.9**	**-2.2**
SJPF				*e*				12 34 04.8	
SJPF	**Ste Jean**	**6.47**	**256**	*e*Pn		**Pn**		**12 32 54.9**	**-2.2**
SJPF				*e*Sn		**Sn**		**12 34 04.8**	**-6.2**
SJPF				*e*Sg		**Sg**		**12 34 45.2**	**-4.0**
	comp=Z,164nm,1.1s								
SJPF	**Ste Jean**	**6.47**	**256**	*e*Pn		**Pn**		**12 32 54.9**	**-2.2**
SJPF				*e*Sn		**Sn**		**12 34 04.8**	**-6.2**
SJPF				*e*Sg		**Sg**		**12 34 45.2**	**-4.0**
CONA	**Conrad Observa**	**6.56**	**60**	*i* Pn		**Pn**		**12 32 56.5**	**-1.9**
	comp=Z,2.4nm,0.1s								
CONA				*e*Sn		**Sn**		**12 34 09.0**	**-4.4**
	comp=Z,11nm,0.2s								
CONA	**Conrad Observa**	**6.56**	**60**	Pn		**Pn**		**12 32 56.5**	**-1.9**
	comp=Z,2.4nm,0.1s								
FLN	**La Foliniere**	**6.56**	**308**	*e*Pn		**Pn**		**12 32 57.2**	**-1.1**
	baz=132,SNR=1.0								
FLN				*e*Sn		**Sn**		**12 34 06.8**	**-6.5**
	comp=Z,109nm,0.4s								
FLN				*e*Sg		**Sg**		**12 34 48.0**	**-4.3**
	comp=Z,324nm,0.8s								
FLN	**La Foliniere**	**6.56**	**308**	*e*P		**Pn**		**12 32 57.2**	**-1.1**
FLN				*e*				12 34 06.8	
FLN	**La Foliniere**	**6.56**	**308**	*e*Pn		**Pn**		**12 32 57.2**	**-1.1**
FLN				*e*Sn		**Sn**		**12 34 06.8**	**-6.5**
FLN				*e*Sg		**Sg**		**12 34 48.0**	**-4.3**
	comp=Z,162nm,0.8s								
FLN	**La Foliniere**	**6.56**	**308**	*e*Pn		**Pn**		**12 32 57.2**	**-1.1**
FLN				*e*Sn		**Sn**		**12 34 06.8**	**-6.5**
FLN				*e*Sg		**Sg**		**12 34 48.0**	**-4.3**
GRR	**Gorron**	**6.59**	**304**	*e*Pn		**Pn**		**12 32 57.4**	**-1.3**
	SNR=1.0								
GRR				*e*Sn		**Sn**		**12 34 07.9**	**-6.1**
	comp=Z,119nm,0.4s								
GRR				*e*Sg		**Sg**		**12 34 46.5**	**-6.7**
	comp=Z,439nm,0.9s								
GRR	**Gorron**	**6.59**	**304**	*e*P		**Pn**		**12 32 57.4**	**-1.3**
GRR				*e*				12 34 07.9	
GRR	**Gorron**	**6.59**	**304**	*e*Pn		**Pn**		**12 32 57.4**	**-1.3**
GRR				*e*Sn		**Sn**		**12 34 07.9**	**-6.1**
GRR				*e*Sg		**Sg**		**12 34 46.5**	**-6.7**
	comp=Z,220nm,0.9s								
GRR	**Gorron**	**6.59**	**304**	*e*Pn		**Pn**		**12 32 57.4**	**-1.3**
GRR				*e*Sn		**Sn**		**12 34 07.9**	**-6.1**
GRR				*e*Sg		**Sg**		**12 34 46.5**	**-6.7**
BEHE	**Becsehely**	**6.75**	**74**	*e*Pn		**Pn**		**12 32 57.7**	**-3.2**
BEHE	**Becsehely**	**6.75**	**74**	*e*SKKPbc		**Pn**		**12 32 58.6**	**-2.3**
GTTG	**Gvttingen**	**6.78**	**14**	*e*Sg		**Sg**		**12 34 56.7**	**-2.4**
GTTG	**Gvttingen**	**6.78**	**14**	Sg		**Sg**		**12 34 56.7**	**-2.4**
PRU	**Pruhonice**	**6.97**	**42**	*e*PN		**Pn**		**12 33 01.7**	**-2.2**
PRU				*e*SN		**Sn**		**12 34 17.3**	**-5.9**
PRU				*e*SG		**Sg**		**12 35 04.5**	**-0.7**
	comp=Z,112nm,0.9s								
PRU				AMS		AMS		12 37 10.0	
	comp=Z,700nm,5.6s								
PRU	**Pruhonice**	**6.97**	**42**	*e*P		**Pn**		**12 33 01.7**	**-2.2**
PRU				*e*				12 34 17.3	
PRU				smax		smax			
	comp=N,112nm,0.9s								
PRU				MLR		MLR			
	comp=Z,700nm,5.6s								
PRU	**Pruhonice**	**6.97**	**42**	Pn		**Pn**		**12 33 01.7**	**-2.2**
PRU				Sn		**Sn**		**12 34 17.3**	**-5.9**
PRU				Sg		**Sg**		**12 35 04.5**	**-0.7**
	comp=Z,112nm,0.9s								
BLY	**Banja Luka**	**6.98**	**89**⇑	*i* Pn		**Pn**		**12 33 01.6**	**-2.5**
WTSB	**Winterswijk**	**6.99**	**357**	*e*Pn		**Pn**		**12 33 03.2**	**-0.9**
	comp=Z,34nm,0.5s								
WTSB				*e*Pb		Pb		12 33 10.2	-13
WTSB				*e*Pg		Pg		12 33 17.9	-17
TREC	**Trest**	**7.01**	**49**	*e*PN		**Pn**		**12 33 02.0**	**-2.5**
TREC	**Trest**	**7.01**	**49**	*e*P		**Pn**		**12 33 02.0**	**-2.5**
TREC	**Trest**	**7.01**	**49**	Pn		**Pn**		**12 33 02.0**	**-2.5**
GOPC	**GO Pecny, Ondr**	**7.04**	**43**	*e*PN		**Pn**		**12 33 02.0**	**-2.8**
GOPC				*e*SN		**Sn**		**12 34 19.6**	**-5.3**
GOPC				AMS		AMS		12 36 40.0	
	comp=Z,800nm,12.4s								
GOPC	**GO Pecny, Ondr**	**7.04**	**43**	*e*P		**Pn**		**12 33 02.0**	**-2.8**
GOPC				*e*				12 34 19.6	
GOPC				MLR		MLR			
	comp=Z,800nm,12.4s								
GOPC	**GO Pecny, Ondr**	**7.04**	**43**	Pn		**Pn**		**12 33 02.0**	**-2.8**
GOPC				Sn		**Sn**		**12 34 19.6**	**-5.3**
CLZ	**Clausthal**	**7.14**	**15**	*e*Pg		**Pg**		**12 33 38.5**	**+0.3**
CLZ				*e*Sg		**Sg**		**12 35 07.1**	**-3.4**
CLZ	**Clausthal**	**7.14**	**15**	Pg		**Pg**		**12 33 38.5**	**+0.3**
CLZ				Sg		**Sg**		**12 35 07.1**	**-3.4**
BRG	**Berggiesshubel**	**7.35**	**35**	PN		**Pn**		**12 33 09.8**	**+0.7**
BRG				PG		**Pg**		**12 33 43.1**	**+0.8**
BRG				SN		**Sb**		**12 34 53.1**	**-4.0**
BRG				SG		**Sg**		**12 35 22.0**	**+4.5**
	comp=Z,152nm,1.1s								
BRG	**Berggiesshubel**	**7.35**	**35**	P		**Pn**		**12 33 09.8**	**+0.7**
BRG	**Berggiesshubel**	**7.35**	**35**	P		**Pn**		**12 33 09.8**	**+0.7**
BRG				Sg		**Sg**		**12 35 16.8**	**-0.7**
CLL	**Collm**	**7.35**	**29**	*e*Pn		**Pn**		**12 33 08.0**	**-1.1**
CLL				*e*				12 33 13.0	
CLL				*e*Pg		**Pg**		**12 33 45.0**	**+2.7**
CLL				*e*Sn		Sn		12 34 14.0	-19
CLL				*e*Sg		**Sg**		**12 35 20.0**	**+2.5**
	comp=Z,266nm,1.1s								
CLL				*e*Lmax				12 35 34.0	
ASSE	**Asse, Remlinge**	**7.47**	**16**	*e*Sg		**Sg**		**12 35 17.2**	**-4.0**
ASSE	**Asse, Remlinge**	**7.47**	**16**	Sg		**Sg**		**12 35 17.2**	**-4.0**
SGMF	**Saint Gilles**	**7.57**	**299**	*e*Pn		**Pn**		**12 33 10.6**	**-1.5**
	SNR=1.0								
SGMF				*e*Sn		**Sn**		**12 34 30.8**	**-7.2**
	comp=Z,81nm,0.4s								
SGMF				*e*Sg		**Sg**		**12 35 18.9**	**-5.5**
	comp=Z,282nm,1.0s								
SGMF	**Saint Gilles**	**7.57**	**299**	*e*P		**Pn**		**12 33 10.6**	**-1.5**
SGMF				*e*				12 34 30.8	
SGMF	**Saint Gilles**	**7.57**	**299**	*e*Pn		**Pn**		**12 33 10.6**	**-1.5**
SGMF				*e*Sn		**Sn**		**12 34 30.8**	**-7.2**
SGMF				*e*Sg		**Sg**		**12 35 18.9**	**-5.5**
	comp=Z,141nm,1.0s								
SGMF	**Saint Gilles**	**7.57**	**299**	*e*Pn		**Pn**		**12 33 10.6**	**-1.5**
SGMF				*e*Sn		**Sn**		**12 34 30.8**	**-7.2**
SGMF				*e*Sg		**Sg**		**12 35 18.9**	**-5.5**
VRAC	**Vranov**	**7.63**	**52**	Pn		**Pn**		**12 33 09.9**	**-3.0**
	comp=Z,1.7nm,0.3s,baz=260,slow=14,SNR=7.6								
VRAC				Sn		**Sn**		**12 34 32.4**	**-7.0**
	comp=Z,1.5nm,0.3s,baz=298,slow=18,SNR=4.4								
VRAC				Lg		Lg		12 35 24.6	
	comp=Z,2.5nm,0.3s,baz=157,slow=18,SNR=3.6								
VRAC	**Vranov**	**7.63**	**52**⇑	*i* P		**Pn**		**12 33 10.5**	**-2.4**
VRAC	**Vranov**	**7.63**	**52**⇑	*i* P		**Pn**		**12 33 10.5**	**-2.4**
VRAC				Sn		**Sn**		**12 34 32.4**	**-7.0**
QUIF	**Quistinic**	**7.84**	**296**	*e*Pn		**Pn**		**12 33 14.3**	**-1.5**
	SNR=1.0								
QUIF				*e*Sn		**Sn**		**12 34 37.2**	**-7.4**
	comp=Z,57nm,0.4s								
QUIF				*e*Sg		**Sg**		**12 35 27.8**	**-5.2**
	comp=Z,156nm,0.6s								
QUIF	**Quistinic**	**7.84**	**296**	*e*P		**Pn**		**12 33 14.3**	**-1.5**
QUIF				*e*				12 34 37.2	
QUIF	**Quistinic**	**7.84**	**296**	*e*Pn		**Pn**		**12 33 14.3**	**-1.5**
QUIF				*e*Sn		**Sn**		**12 34 37.2**	**-7.4**
QUIF				*e*Sg		**Sg**		**12 35 27.8**	**-5.2**
	comp=Z,78nm,0.6s								
QUIF	**Quistinic**	**7.84**	**296**	*e*Pn		**Pn**		**12 33 14.3**	**-1.5**
QUIF				*e*Sn		**Sn**		**12 34 37.2**	**-7.4**
QUIF				*e*Sg		**Sg**		**12 35 27.8**	**-5.2**
CSKK	**Cs^ţkako**	**7.92**	**69**	*e*Pn		**Pn**		**12 33 16.1**	**-0.9**
CUC	**Castrocucco**	**8.00**	**126**	*e*Pn		**Pn**		**12 33 20.1**	**+2.1**
CUC	**Castrocucco**	**8.00**	**126**	*e*Pn		**Pn**		**12 33 20.1**	**+2.1**
UPC	**Upice**	**8.02**	**43**	AMS		AMS		12 37 20.0	
	comp=Z,700nm,9.1s								
ROSF	**Rostrenen**	**8.04**	**298**	*e*Pn		**Pn**		**12 33 16.9**	**-1.7**
	SNR=1.0								
ROSF				*e*Sn		**Sn**		**12 34 45.3**	**-4.4**
	comp=Z,45nm,0.3s								
ROSF				*e*Sg		**Sg**		**12 35 33.1**	**-6.5**
	comp=Z,217nm,0.7s								
ROSF	**Rostrenen**	**8.04**	**298**	*e*P		**Pn**		**12 33 16.9**	**-1.7**
ROSF				*e*				12 34 45.3	
ROSF	**Rostrenen**	**8.04**	**298**	*e*Pn		**Pn**		**12 33 16.9**	**-1.7**
ROSF				*e*Sn		**Sn**		**12 34 45.3**	**-4.4**
ROSF				*e*Sg		**Sg**		**12 35 33.1**	**-6.5**
	comp=Z,108nm,0.7s								
ROSF	**Rostrenen**	**8.04**	**298**	*e*Pn		**Pn**		**12 33 16.9**	**-1.7**
ROSF				*e*Sn		**Sn**		**12 34 45.3**	**-4.4**
ROSF				*e*Sg		**Sg**		**12 35 33.1**	**-6.5**
DPC	**Dobruska-Polom**	**8.07**	**45**	*e*SN		**Sn**		**12 34 43.9**	**-6.6**
DPC	**Dobruska-Polom**	**8.07**	**45**	Sn		**Sn**		**12 34 43.9**	**-6.6**
KRLC	**Kraliky**	**8.15**	**48**	*e*PN		**Pn**		**12 33 17.3**	**-2.8**
KRLC	**Kraliky**	**8.15**	**48**	*e*P		**Pn**		**12 33 17.3**	**-2.8**
KRLC	**Kraliky**	**8.15**	**48**	Pn		**Pn**		**12 33 17.3**	**-2.8**
CAEH	**'Ain El Ouahch**	**8.22**	**183**	P		**Pn**		**12 33 20.9**	**-0.2**
CAEH	**'Ain El Ouahch**	**8.22**	**183**	P		**Pn**		**12 33 20.9**	**-0.2**
TREB	**Trebinje**	**8.26**	**102**	*e*Pn		**Pn**		**12 33 18.8**	**-2.8**
BRY	**Bratogost**	**8.33**	**101**	*e*Pn		**Pn**		**12 33 20.0**	**-2.7**
CMAH	**Djebel Manchou**	**8.36**	**180**	P		**Pn**		**12 33 20.7**	**-2.4**
CMAH	**Djebel Manchou**	**8.36**	**180**	P		**Pn**		**12 33 20.7**	**-2.4**
KSP	**Ksiaz**	**8.37**	**43**	*e*Pn		Pn		12 33 33.5	+10
KSP	**Ksiaz**	**8.37**	**43**	*e*Pn		Pn		12 33 33.5	+10
MORC	**Moravsky Berou**	**8.40**	**52**	*i* P		**Pn**		**12 33 19.9**	**-3.6**
MORC	**Moravsky Berou**	**8.40**	**52**	*e*P		**Pn**		**12 33 20.1**	**-3.4**
MORC	**Moravsky Berou**	**8.40**	**52**	*e*Pn		**Pn**		**12 33 20.1**	**-3.4**
MORC	**Moravsky Berou**	**8.40**	**52**	*e*Pn		**Pn**		**12 33 20.1**	**-3.4**
HCY	**Herceg Novi**	**8.45**	**104**	*e*Pn		**Pn**		**12 33 22.4**	**-1.9**
UPM	**Unac-Piva**	**8.50**	**98**	*e*Pn		**Pn**		**12 33 23.0**	**-2.0**
DFRA	**Djebel Bou Aff**	**8.52**	**188**	P		**Pn**		**12 33 25.6**	**+0.3**
DFRA	**Djebel Bou Aff**	**8.52**	**188**	P		**Pn**		**12 33 25.6**	**+0.3**
CLTB	**Caltabellotta**	**8.62**	**147**	*e*Pn		**Pn**		**12 33 28.2**	**+1.6**
	comp=Z,17nm,0.6s								
CLTB	**Caltabellotta**	**8.62**	**147**	*e*Pn		**Pn**		**12 33 28.2**	**+1.6**
	comp=Z,17nm,0.6s								
VYHS	**Vyhne**	**8.62**	**62**	*e*PN		**Pn**		**12 33 22.6**	**-3.9**
VYHS				*e*SN		Sn		12 34 50.9	-13
VYHS				*e*SG		**Sg**		**12 36 00.4**	**+2.4**
VYHS				*e*LG		Lg		12 36 53.5	
TEKS	**Tekeris**	**8.67**	**89**⇑	*i* Pn		**Pn**		**12 33 24.7**	**-2.5**
BBLS	**Lazići**	**8.69**	**93**	*e*Pn		**Pn**		**12 33 25.1**	**-2.5**
PDG	**Podgorica**	**8.99**	**102**⇑	*i* P		Pn		12 33 36.9	+5.4
PDG	**Podgorica**	**8.99**	**102**	S		Sn		12 35 25.4	+13
PDG	**Podgorica**	**8.99**	**102**⇑	*i* P		Pn		12 33 36.9	+5.4
DRME	**Dracevica, Mon**	**9.03**	**104**	*e*Pn		**Pn**		**12 33 29.8**	**-2.3**
DIVS	**Divibare**	**9.06**	**91**	*e*Pn		**Pn**		**12 33 29.9**	**-2.8**
TIP	**Timpagrande**	**9.08**	**127**	*e*Pn		Pn		12 33 38.0	+5.0
TIP	**Timpagrande**	**9.08**	**127**	*e*Pn		Pn		12 33 38.0	+5.0
PSZ	**Piszkesteto**	**9.13**	**67**	*i* P		**Pn**		**12 33 32.8**	**-0.8**
PSZ	**Piszkesteto**	**9.13**	**67**	*e*P		**Pn**		**12 33 32.6**	**-1.0**
PSZ	**Piszkesteto**	**9.13**	**67**	*e*Pn		**Pn**		**12 33 32.6**	**-1.0**
PSZ	**Piszkesteto**	**9.13**	**67**	*e*Pn		**Pn**		**12 33 32.6**	**-1.0**
PSZ	**Piszkesteto**	**9.13**	**67**	*e*Pn		**Pn**		**12 33 31.6**	**-2.0**
LANS	**Liptovska Anna**	**9.24**	**59**	*e*PN		**Pn**		**12 33 32.0**	**-3.1**
LANS	**Liptovska Anna**	**9.24**	**59**	*e*SG		Sg		12 36 20.2	
IVAS	**Ivanjica**	**9.28**	**94**	*e*Pn		**Pn**		**12 33 32.6**	**-3.1**
TRUS	**Trudelj**	**9.34**	**90**	*i* Pn		**Pn**		**12 33 34.6**	**-1.8**
DYA	**Yadsworthy**	**9.35**	**310**	*e*Pn		**Pn**		**12 33 34.7**	**-1.9**
DYA	**Yadsworthy**	**9.35**	**310**	*e*Pn		**Pn**		**12 33 34.7**	**-1.9**
KEST	**Kesra**	**9.38**	**170**	Pn		**Pn**		**12 33 38.0**	**+1.0**
	comp=Z,5.2nm,0.3s,baz=299,slow=6.0,SNR=31								
KEST				Sn		**Sn**		**12 35 19.7**	**-2.9**
	comp=Z,0.2nm,0.3s,baz=230,slow=18,SNR=1.7								
KEST				LR		LR		12 36 46.5	
	comp=Z,891nm,19.6s,baz=347,slow=35								
KEST	**Kesra**	**9.38**	**170**	*e*Pn		**Pn**		**12 33 41.0**	**+4.0**
KEST				Sn		**Sn**		**12 35 19.7**	**-2.9**
KEST	**Kesra**	**9.38**	**170**	*e*Pn		**Pn**		**12 33 41.0**	**+4.0**
KEST				Sn		**Sn**		**12 35 19.7**	**-2.9**
GRUS	**Gruza**	**9.62**	**92**	*e*Pn		**Pn**		**12 33 37.0**	**-3.2**
CWF	**Charnwood Fore**	**9.62**	**327**	*e*Pn		**Pn**		**12 33 39.6**	**-0.6**
CWF	**Charnwood Fore**	**9.62**	**327**	*e*Pn		**Pn**		**12 33 39.6**	**-0.6**
KECS	**Kecovo**	**9.66**	**64**	*e*PN		**Pn**		**12 33 37.7**	**-3.1**
KECS				*e*SN		Sn		12 35 14.6	-15
KECS				*e*SG				12 36 32.4	
ES19	**SONSECA Array**	**9.87**	**242**	*e*Pn		Pn		12 33 48.6	+4.8
ES19	**SONSECA Array**	**9.87**	**242**	*e*Pn		Pn		12 33 48.6	+4.8
OJC	**Ojcow**	**9.89**	**54**	*e*Pn		Pn		12 33 48.7	+4.9
OJC	**Ojcow**	**9.89**	**54**	*e*Pn		Pn		12 33 48.7	+4.8
ESDC	**Sonseca Array**	**9.93**	**242**	Pn		**Pn**		**12 33 43.4**	**-1.2**
	comp=Z,3.7nm,0.3s,baz=53,slow=14,SNR=27								
ESDC				Lg		Lg		12 36 39.4	
	baz=53,slow=30,SNR=2.8								
ESLA	**Sonseca Array**	**9.93**	**242**	*e*Pn		**Pn**		**12 33 46.5**	**+2.0**
ESLA	**Sonseca Array**	**9.93**	**242**	*e*Pn		**Pn**		**12 33 46.5**	**+2.0**
SELS	**Selova**	**10.05**	**95**⇑	*i* Pn		**Pn**		**12 33 43.2**	**-3.0**
BZS	**Buzias**	**10.06**	**81**⇑	*i* P		**Pn**		**12 33 47.8**	**+1.5**
BZS	**Buzias**	**10.06**	**81**⇑	*i* P		**Pn**		**12 33 47.8**	**+1.5**
MDVR	**Moldovita**	**10.19**	**86**⇑	*i* P		**Pn**		**12 33 50.3**	**+2.2**
MDVR	**Moldovita**	**10.19**	**86**⇑	*i* P		**Pn**		**12 33 50.3**	**+2.2**
PAB	**San Pablo**	**10.24**	**242**	*e*P		**Pn**		**12 33 47.7**	**-1.2**
PAB	**San Pablo**	**10.24**	**242**	*e*Pn		**Pn**		**12 33 47.7**	**-1.2**
PAB	**San Pablo**	**10.24**	**242**	*e*Pn		**Pn**		**12 33 47.7**	**-1.2**
CRVS	**Cervenica-Dubn**	**10.40**	**63**	*e*PN		**Pn**		**12 33 50.6**	**-0.3**
CRVS	**Cervenica-Dubn**	**10.40**	**63**	*e*SG		Sg		12 36 55.0	
STHS	**Stebnicka Huta**	**10.43**	**60**	*e*PN		**Pn**		**12 33 51.4**	**+0.1**
LLW	**Llanuwchllyn**	**10.69**	**321**	*e*P		**Pn**		**12 33 51.1**	**-3.7**
LLW	**Llanuwchllyn**	**10.69**	**321**	*e*P		**Pn**		**12 33 51.1**	**-3.7**
ZAGS	**Zajecar**	**10.71**	**91**	*e*Pn		**Pn**		**12 33 53.4**	**-1.7**
PBRG	**Braganca**	**10.75**	**258**	*e*P		**Pn**		**12 33 54.9**	**-0.9**
	comp=Z,54nm,0.7s								
PBRG	**Braganca**	**10.75**	**258**	*e*P		**Pn**		**12 33 54.9**	**-0.9**
	comp=Z,54nm,0.7s								
UZH	**Uzhgorod**	**10.86**	**65**	*e*P		Pn		12 34 02.0	+4.9
UZH	**Uzhgorod**	**10.86**	**65**	*e*P		Pn		12 34 02.0	+4.9
MVO	**Moncorvo**	**11.20**	**255**	*e*P		**Pn**		**12 34 01.5**	**-0.5**
	comp=Z,39nm,2.1s								
MVO				*e*S		Sn		12 37 04.2	+57
MVO	**Moncorvo**	**11.20**	**255**	*e*LR		LR		12 48 47.7	
	comp=Z,2µm,20.0s								
MVO	**Moncorvo**	**11.20**	**255**	*e*P		**Pn**		**12 34 01.5**	**-0.5**
	comp=Z,39nm,2.1s								
PVRL	**Vila Real**	**11.63**	**257**	*e*P		**Pn**		**12 34 07.8**	**0.0**
	comp=Z,30nm,1.8s								
PVRL	**Vila Real**	**11.63**	**257**	*e*P		**Pn**		**12 34 07.8**	**0.0**
	comp=Z,30nm,1.8s								
POLO	**Lamas de Olo**	**11.64**	**257**	*e*P		**Pn**		**12 34 07.0**	**-1.0**
	comp=Z,23nm,1.8s								
POLO				*e*S				12 37 47.6	
POLO	**Lamas de Olo**	**11.64**	**257**	*e*P		**Pn**		**12 34 07.0**	**-1.0**
	comp=Z,23nm,1.8s								
PCAB	**Cabril**	**11.68**	**259**	*e*P		**Pn**		**12 34 05.8**	**-2.6**
	comp=Z,26nm,1.8s								
PCAB	**Cabril**	**11.68**	**259**	*e*P		**Pn**		**12 34 05.8**	**-2.6**
	comp=Z,26nm,1.8s								
PGAV	**Gavieira, Arco**	**11.76**	**261**	*e*P		**Pn**		**12 34 09.1**	**-0.5**
	comp=Z,35nm,1.7s								
PGAV				*e*S				12 37 50.1	
PGAV				*e*LR		LR		12 46 04.1	
	comp=Z,1µm,20.0s								
PGAV	**Gavieira, Arco**	**11.76**	**261**	*e*P		**Pn**		**12 34 09.1**	**-0.5**
	comp=Z,35nm,1.7s								
DSB	**Dublin**	**12.20**	**317**	*e*Pn		**Pn**		**12 34 13.1**	**-2.3**
DSB	**Dublin**	**12.20**	**317**	*e*Pn		**Pn**		**12 34 13.1**	**-2.3**
PMRV	**Marv??o**	**12.27**	**248**	*e*P		**Pn**		**12 34 15.4**	**-1.1**
	comp=Z,21nm,1.8s								
PMRV				*e*S				12 37 37.4	
PMRV	**Marv??o**	**12.27**	**248**	*e*LR		LR		12 50 27.1	
	comp=Z,2µm,18.0s								
PMRV	**Marv??o**	**12.27**	**248**	*e*P		**Pn**		**12 34 15.4**	**-1.1**
	comp=Z,21nm,1.8s								
EKA	**Eskdalemuir Ar**	**12.34**	**331**	Pn		**Pn**		**12 34 14.7**	**-2.7**
	baz=139,slow=15,SNR=33								
EKA				Sn		Sn		12 36 25.4	-10
	baz=144,slow=24,SNR=4.1								
EKA				Lg		Lg		12 37 49.2	
	baz=137,slow=29,SNR=2.0								
ESK	**Eskdalemuir**	**12.34**	**331**	*e*P		**Pn**		**12 34 15.0**	**-2.4**
ESK				pmax		pmax			
	comp=Z,57nm,0.6s								
ESK	**Eskdalemuir**	**12.34**	**331**	*e*Pn		**Pn**		**12 34 15.0**	**-2.4**
	comp=Z,57nm,0.6s								
ESK	**Eskdalemuir**	**12.34**	**331**	*e*Pn		**Pn**		**12 34 15.0**	**-2.4**
	comp=Z,57nm,0.6s								
BURAR	**Bucovina Array**	**12.62**	**72**⇓	*i* P		**Pn**		**12 34 22.1**	**+0.7**
BURAR	**Bucovina Array**	**12.62**	**72**⇓	*i* P		**Pn**		**12 34 22.1**	**+0.7**
KLNR	**Kaliningrad**	**12.68**	**36**	*e*P		**Pn**		**12 34 22.5**	**+0.5**
KLNR	**Kaliningrad**	**12.68**	**36**	*e*P		**Pn**		**12 34 22.5**	**+0.5**
PBAR	**Barrancos**	**12.75**	**243**	*e*P		**Pn**		**12 34 23.2**	**+0.2**
	comp=Z,33nm,1.8s								
PBAR	**Barrancos**	**12.75**	**243**	*e*P		**Pn**		**12 34 23.2**	**+0.2**

	comp=Z,6.0nm,1.0s							
BILL	**Bilibino**	**66.18**	**9**	*c i*	P	P	12 42 14.0	+5.0
BILL					pmax	pmax		
	comp=Z,10.0nm,1.0s							
BILL					MLR	MLR		
	comp=Z,172nm,16.0s							
FYU	**Fort Yukon**	**66.80**	**348**	*eP*		**P**	**12 42 16.9**	**+3.9**
	comp=Z,32nm,1.7s							
IL1	**Eielson Array**	**68.73**	**348**	*eP*		**P**	**12 42 28.4**	**+3.2**
ILAR	**Eielson Array**	**68.73**	**348**	P		**P**	**12 42 22.9**	**-2.3**
	comp=Z,0.3nm,0.7s,baz=11,slow=6.5,SNR=3.7							
COLA	**College**	**68.77**	**349**	*i* P		**P**	**12 42 29.4**	**+4.0**
COLA					pmax	pmax		
	comp=Z,7.0nm,1.9s							
ECSD	**EROS Data Cent**	**68.83**	**311**	*eP*		**P**	**12 42 24.7**	**-1.6**
	comp=Z,5.0nm,0.9s							
ECSD	**EROS Data Cent**	**68.83**	**311**	*eP*		**P**	**12 42 24.7**	**-1.6**
	comp=Z,5.0nm,0.9s							
ECSD				*e*			12 42 30.3	
SDDR	**Presa de Saban**	**68.90**	**276**	*eP*		**P**	**12 42 31.3**	**+4.2**
	comp=Z,21nm,0.9s							
SDDR	**Presa de Saban**	**68.90**	**276**	*eP*		**P**	**12 42 31.3**	**+4.2**
	comp=Z,21nm,0.9s							
HDA	**Harding Lake**	**69.08**	**348**	*eP*		**P**	**12 42 31.4**	**+3.9**
	comp=Z,5.2nm,1.0s							
LZH	**Lanzhou**	**69.61**	**59**	*eP*		**P**	**12 42 36.0**	**+4.6**
LZH				pP		sP	12 42 39.0	+3.8
LZH				sP		pP	12 42 40.8	+6.6
LZH				pmax		pmax		
	comp=Z,14nm,1.0s							
PBMO	**Poplar Bluff**	**69.95**	**302**	*eP*		**P**	**12 42 36.4**	**+3.1**
	comp=Z,8.4nm,0.8s							
DHY	**Denali Highway**	**70.41**	**348**	*eP*		P	12 42 40.7	+4.8
	comp=Z,7.1nm,0.6s							
HHC	**Hu-ho-hao-te**	**70.91**	**51**	*eP*		**P**	**12 42 41.0**	**+1.8**
HHC				pmax		pmax		
	comp=Z,8.0nm,0.9s							
HHC				pmax		pmax		
	comp=Z,280nm,7.0s							
SCM	**Sheep Creek Mo**	**71.58**	**348**	*eP*		**P**	**12 42 47.1**	**+4.2**
SCM				pmax		pmax		
	comp=Z,20nm,1.2s							
SCM	**Sheep Creek Mo**	**71.58**	**348**	*eP*		**P**	**12 42 47.1**	**+4.2**
	comp=Z,20nm,1.2s							
KSU1	**Kansas State U**	**71.98**	**307**	*eP*		**P**	**12 42 49.9**	**+4.3**
	comp=Z,20nm,0.6s							
WHAR	**Wooly Hollow**	**72.06**	**302**	*eP*		**P**	**12 42 50.3**	**+4.2**
	comp=Z,8.3nm,0.7s							
X201	**Greenbrier Sit**	**72.11**	**302**	*eP*		**P**	**12 42 50.1**	**+3.7**
	comp=Z,37nm,1.7s							
X301	**Greenbrier Sit**	**72.17**	**302**	*eP*		**P**	**12 42 50.5**	**+3.8**
	comp=Z,22nm,1.4s							
HHAR	**Hobbs**	**72.38**	**304**	*eP*		**P**	**12 42 52.2**	**+4.2**
	comp=Z,11nm,0.7s							
RSSD	**Black Hills**	**72.40**	**315**	*eP*		**P**	**12 42 52.3**	**+4.0**
RSSD				pmax		pmax		
	comp=Z,3.0nm,0.8s							
RSSD	**Black Hills**	**72.40**	**315**	*eP*		**P**	**12 42 52.3**	**+4.0**
	comp=Z,2.6nm,0.8s							
CD2	**Chengdu**	**73.00**	**63**	*eP*		**P**	**12 42 53.0**	**+1.1**
MIAR	**Mount Ida**	**73.34**	**302**	*eP*		**P**	**12 42 52.7**	**-1.1**
MIAR				*e*			12 42 58.1	
MIAR				pmax		pmax		
	comp=Z,16nm,1.3s							
MIAR	**Mount Ida**	**73.34**	**302**	*eP*		**P**	**12 42 52.7**	**-1.1**
	comp=Z,16nm,1.3s							
MIAR	**Mount Ida**	**73.34**	**302**	*eP*		**P**	**12 42 52.7**	**-1.1**
	comp=Z,16nm,1.3s							
MIAR				*e*			12 42 58.0	
CBKS	**Cedar Bluff**	**73.93**	**309**	P		**P**	**12 42 54.3**	**-2.9**
CBKS				*e*			12 43 01.1	
CBKS				pmax		pmax		
	comp=Z,16nm,0.8s							
CBKS	**Cedar Bluff**	**73.93**	**309**	P		**P**	**12 42 54.3**	**-2.9**
	comp=Z,16nm,0.8s							
CBKS	**Cedar Bluff**	**73.93**	**309**	P		**P**	**12 42 54.3**	**-2.9**
	comp=Z,16nm,0.8s							
CBKS				*e*			12 43 01.1	
BJI	**Beijing**	**73.98**	**49**	P		**P**	**12 42 59.8**	**+2.4**
BJI				pmax		pmax		
	comp=Z,7.0nm,0.7s							
BJI				LR		LR		
	comp=Z,390nm,20.1s							
SDV	**Santo Domingo**	**75.29**	**268**	*eP*		**P**	**12 43 04.3**	**-1.3**
	comp=Z,17nm,0.9s							
SDV	**Santo Domingo**	**75.29**	**268**	*eP*		**P**	**12 43 04.3**	**-1.3**
	comp=Z,17nm,0.9s							
SDV				*e*			12 43 09.9	
MOOW	**Moose Ponds**	**75.92**	**319**	*eP*		**P**	**12 43 09.8**	**+1.0**
	comp=Z,3.8nm,1.0s							
MOOW	**Moose Ponds**	**75.92**	**319**	*eP*		**P**	**12 43 09.8**	**+1.0**
	comp=Z,3.8nm,1.0s							
BW06	**Boulder Array**	**76.10**	**317**	*eP*		**P**	**12 43 12.9**	**+3.0**
PDAR	**Pinedale Array**	**76.10**	**317**	P		**P**	**12 43 08.0**	**-2.0**
	comp=Z,0.5nm,0.7s,baz=55,slow=6.9,SNR=2.7							
KMI	**Kunming**	**76.27**	**68**	P		**P**	**12 43 13.5**	**+2.4**
KMI				pmax		pmax		
	comp=Z,10.0nm,0.5s							
WMOK	**Wichita Mounta**	**76.28**	**305**	*eP*		**P**	**12 43 09.5**	**-1.3**
WMOK				pmax		pmax		
	comp=Z,8.0nm,0.8s							
WMOK	**Wichita Mounta**	**76.28**	**305**	*eP*		**P**	**12 43 09.5**	**-1.3**
	comp=Z,8.1nm,0.8s							
WMOK	**Wichita Mounta**	**76.28**	**305**	*eP*		**P**	**12 43 09.5**	**-1.3**
	comp=Z,8.2nm,0.8s							
ISCO	**Idaho Springs**	**76.36**	**313**	*eP*		**P**	**12 43 12.7**	**+1.2**
ISCO				pmax		pmax		
	comp=Z,4.0nm,0.9s							
ISCO	**Idaho Springs**	**76.36**	**313**	*eP*		**P**	**12 43 12.6**	**+1.1**
	comp=Z,3.9nm,0.9s							
ISCO	**Idaho Springs**	**76.36**	**313**	*eP*		**P**	**12 43 12.7**	**+1.1**
	comp=Z,3.9nm,0.9s							
Q24A	**Divide**	**76.73**	**312**	*eP*		**P**	**12 43 18.2**	**+4.6**
	comp=Z,4.1nm,0.7s							
O20A	**White River Ci**	**77.45**	**315**	P		**P**	**12 43 16.6**	**-0.9**
	comp=Z,6.9nm,0.8s							
O20A	**White River Ci**	**77.45**	**315**	P		**P**	**12 43 16.6**	**-0.9**
	comp=Z,6.9nm,0.8s							
T25A	**Trinidad**	**77.69**	**311**	*eP*		P	12 43 23.9	+4.9
	comp=Z,6.7nm,1.1s							
GYA	**Guiyang**	**77.91**	**65**	*eP*		**P**	**12 43 23.0**	**+2.8**
GYA				pmax		pmax		
	comp=Z,10.0nm,0.8s							
HWUT	**Hardware Ranch**	**77.95**	**318**	*eP*		**P**	**12 43 18.3**	**-2.0**
	comp=Z,4.4nm,0.9s							
HWUT	**Hardware Ranch**	**77.95**	**318**	*eP*		**P**	**12 43 18.3**	**-2.0**
	comp=Z,4.4nm,0.9s							
HWUT				*e*			12 43 24.5	
CMAR	**Chiang Mai Arr**	**78.28**	**76**	P		**P**	**12 43 21.6**	**-0.6**
	comp=Z,0.4nm,0.3s,baz=316,slow=6.3,SNR=3.5							
BGU	**Big Grassy Mou**	**79.17**	**318**	*eP*		**P**	**12 43 31.1**	**+4.1**
	comp=Z,3.1nm,1.2s							
SRU	**San Rafael Swe**	**79.37**	**316**	*eP*		**P**	**12 43 31.6**	**+3.5**
SRU				pmax		pmax		
	comp=Z,6.0nm,1.1s							
SRU	**San Rafael Swe**	**79.37**	**316**	*eP*		**P**	**12 43 31.6**	**+3.5**
	comp=Z,6.0nm,1.1s							
ANMO	**Albuquerque**	**80.42**	**310**	*ceP*		P	12 43 39.2	+5.3
ANMO				pmax		pmax		
	comp=Z,7.0nm,2.5s							
U15A	**North Rim**	**82.33**	**315**	*eP*		**P**	**12 43 48.6**	**+4.4**
	comp=Z,3.6nm,0.9s							
TX31	**Lajitas Ar. Si**	**83.04**	**305**	*eP*		**P**	**12 43 49.1**	**+1.4**
TXAR	**Lajitas Array**	**83.04**	**305**	P		**P**	**12 43 47.2**	**-0.5**
	comp=Z,0.4nm,0.7s,baz=65,slow=3.9,SNR=7.5							
X16A	**Lo Mia Camp, P**	**83.46**	**313**	*eP*		P	12 43 55.4	+5.4
	comp=Z,3.3nm,1.0s							
YERR	**Yerington**	**83.58**	**321**	*eP*		P	12 43 55.9	+5.4
	comp=Z,3.9nm,1.0s							
LDFC	**Landfair**	**84.80**	**316**	*eP*		P	12 44 02.6	+6.0
VNDA	**Vanda**	**145.80**	**170**	PKPbc		**PKPdf**	**12 50 58.0**	**-1.1**
	comp=Z,0.5nm,0.8s,baz=288,slow=3.7,SNR=4.3							

*NNC **25** 12:35:48.5±0.5, 44.75N×78.86E, h0km, mb3.7, mpv3.3, Error ellipse: s-maj=5.2km s-min=3.8km az=88.0*
*SOME **25** 12:35:50.3, 44.78N×78.97E, h30km, MS2.5*
ISC 25 12:35:49.6±1.2, 44.72N±0.03×78.91E±0.03, h4km±11km, n35, σ1§22/68, 18C-10D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPS	**Kapalarasan**	**0.65**	**29**	*eP*	**Pg**	**12 36 01.0**	**-1.0**
	111nm,0.2s						
KAPS				*eS*	**Sg**	**12 36 08.6**	**-1.8**
	1μm,0.2s						
MNBS	**Baschi**	**0.74**	**210**	*eP*	**Pg**	**12 36 04.8**	**+1.0**
	283nm,0.3s						
MNBS				*eS*	**Sg**	**12 36 14.9**	**+1.6**
	562nm,0.2s						
DJR	**Jarkent**	**0.74**	**121**	*eP*	**Pg**	**12 36 03.8**	**0.0**
	153nm,0.2s						
DJR				*eS*	**Sg**	**12 36 13.3**	**0.0**
	684nm,0.3s						
ARXS	**Arharly**	**0.93**	**237**	*eP*	**Pg**	**12 36 06.7**	**-0.6**
	130nm,0.1s						
ARXS				*eS*	**Sg**	**12 36 18.4**	**-0.9**
	806nm,0.3s						
KPKS	**Kokpek**	**1.26**	**187**	*eP*	**Pn**	**12 36 13.3**	**-0.9**
	603nm,0.2s						
KPKS				*eS*	**Sb**	**12 36 29.7**	**-1.1**
	1μm,0.2s						
KURS	**Kuram**	**1.34**	**204**	*eP*	**Pn**	**12 36 15.2**	**0.0**
	20nm,0.1s						
KURS				*eS*	**Sb**	**12 36 32.9**	**0.0**
	256nm,0.2s						
PDGK	**Podgornoye**	**1.45**	**163**	⇑P	**Pn**	**12 36 16.3**	**-0.4**
	23nm,0.3s						
PDGK				⇑S	**Sb**	**12 36 36.4**	**+0.3**
	62nm,0.5s						
ZHN	**Zhinishke**	**1.59**	**193**	*eP*	**Pn**	**12 36 18.7**	**+0.1**
	135nm,0.2s						
ZHN				*eS*	**Sn**	**12 36 39.4**	**-0.4**
	2μm,0.2s						
CHKK	**Chushkaly**	**1.61**	**239**	*eP*	**Pn**	**12 36 19.0**	**+0.1**
	94nm,0.2s						
CHKK				*eS*	**Sn**	**12 36 39.4**	**-0.8**
	1μm,0.3s						
KTMS	**Ketmen**	**1.64**	**140**	*eP*	**Pn**	**12 36 19.9**	**+0.5**
	69nm,0.2s						
KTMS				*eS*	**Sb**	**12 36 41.6**	**-0.2**
	384nm,0.3s						
SATY	**Saty**	**1.70**	**193**	*eP*	**Pb**	**12 36 21.1**	**-0.4**
	379nm,0.1s						
SATY				*eS*	**Sb**	**12 36 43.5**	**+0.2**
	2μm,0.2s						
SHLS	**Shalkode**	**1.71**	**155**	*eP*	**Pn**	**12 36 21.2**	**+0.8**
	62nm,0.1s						
SHLS				*eS*	**Sb**	**12 36 43.2**	**-0.6**
	341nm,0.3s						
KTBS	**Karatobe**	**1.89**	**239**	*eP*	**Pn**	**12 36 22.8**	**0.0**
	72nm,0.3s						
KTBS				*eS*	**Sn**	**12 36 45.8**	**-1.3**
	108nm,0.3s						
KOTS	**Kotyrbulak**	**1.97**	**222**	*eP*	**Pn**	**12 36 24.8**	**+0.8**
	92nm,0.3s						
KOTS				*eS*	**Sn**	**12 36 49.2**	**0.0**
	358nm,0.4s						
KUU	**Kurty**	**2.02**	**247**	*eP*	**Pn**	**12 36 24.4**	**-0.2**
	256nm,0.2s						
KUU				*eS*	**Sn**	**12 36 49.9**	**-0.4**
	392nm,0.3s						
AAA	**Alma-Ata**	**2.03**	**225**	*eP*	**Pb**	**12 36 27.0**	**0.0**
	150nm,0.2s						
AAA				*eS*	**Sb**	**12 36 54.4**	**+1.7**
	428nm,0.2s						
KNDC	**Almaty**	**2.06**	**224**	⇓Pn	**Pn**	**12 36 25.8**	**+0.8**
	41nm,0.5s						
KNDC				⇓Lg	Lg	12 36 54.1	
	160nm,0.3s						
MDOK	**Medeo**	**2.06**	**221**	*eP*	**Pn**	**12 36 26.1**	**+1.0**
	46nm,0.2s						
MDOK				*eS*	**Sn**	**12 36 52.0**	**+0.7**
	446nm,0.5s						
TNSS	**Tian-Shan**	**2.20**	**221**	*eP*	**Pn**	**12 36 28.5**	**+1.2**
	45nm,0.2s						
TNSS				*eS*	**Sn**	**12 36 56.6**	**+1.4**
	339nm,0.2s						
IZV	**Izvestkoviy**	**2.37**	**225**	*eP*	**Pb**	**12 36 32.1**	**-0.8**
	3.7nm,0.2s						
IZV				*eS*	**Sb**	**12 37 01.8**	**-0.7**
	191nm,0.5s						
MTBS	**Maitube**	**2.40**	**229**	*eP*	**Pb**	**12 36 32.3**	**-1.0**
	35nm,0.2s						
MTBS				*eS*	**Sb**	**12 37 02.3**	**-1.0**
	812nm,0.3s						
DGS	**Degeres**	**2.70**	**238**	*eP*	**Pb**	**12 36 36.8**	**-1.9**
	28nm,0.2s						
DGS				*eS*	**Sb**	**12 37 10.9**	**-1.3**
	286nm,0.5s						
KST	**Kastek**	**2.71**	**233**	*eP*	**Pb**	**12 36 38.0**	**-0.8**
	5.1nm,0.2s						
KST				*eS*	**Sb**	**12 37 11.9**	**-0.5**
	95nm,0.6s						
BMNS	**Besmoynak**	**2.84**	**237**	*eP*	**Pb**	**12 36 39.1**	**-1.9**
	59nm,0.2s						
BMNS				*eS*	**Sb**	**12 37 15.1**	**-1.2**
	267nm,0.2s						
MAKZ	**Makanchi**	**3.00**	**45**	⇑Pn	**Pn**	**12 36 37.3**	**-0.6**
	1.9nm,0.6s						
MAKZ				⇑Pg	**Pb**	**12 36 44.2**	**+0.7**
	4.9nm,0.4s						
MAKZ				⇓Lg	Lg	12 37 18.9	
	26nm,0.5s						
TKM2	**Tokmak 2**	**3.00**	**234**	⇓Pn	**Pn**	**12 36 37.3**	**-0.8**
	1.8nm,0.5s						
TKM2				⇑Pg	**Pb**	**12 36 43.9**	**+0.2**
	8.1nm,0.4s						
TKM2				⇓Lg	Lg	12 37 19.6	
	28nm,0.3s						
MK31	**Makanchi Array**	**3.15**	**48**	⇓Pn	**Pn**	**12 36 39.6**	**-0.4**
	2.3nm,0.4s,baz=210,slow=7.7,SNR=100						
MK31				Pg	**Pb**	**12 36 46.9**	**+0.8**
	5.3nm,0.3s,baz=220,slow=15,SNR=29						
MK31				⇓Lg	Lg	12 37 24.8	
	17nm,0.3s,baz=222,slow=27,SNR=5.3						
BTLS	**Baital**	**3.47**	**277**	*eP*	**Pb**	**12 36 51.1**	**-0.6**
	24nm,0.4s						
BTLS				*eS*	**Sb**	**12 37 35.3**	**+1.1**
	41nm,0.5s						
AAK	**Ala-Archa**	**3.82**	**239**	⇓Pn	**Pn**	**12 36 48.6**	**-0.7**
	2.1nm,0.4s						
AAK				⇑Pg	**Pb**	**12 36 57.8**	**+0.2**
	11nm,0.6s						
AAK				⇑Lg	Lg	12 37 44.8	
	79nm,0.6s						
MRKS	**Merke**	**4.57**	**246**	*eP*	**Pb**	**12 37 10.4**	**0.0**
	7.3nm,0.3s						
MRKS				*eS*	**Sb**	**12 38 07.6**	**+1.8**
	23nm,0.3s						
MNAS	**Manas**	**5.16**	**247**	⇑Pg	**Pb**	**12 37 20.1**	**-0.4**
	2.5nm,0.6s						
MNAS				⇑Lg	Lg	12 38 26.1	
	16nm,0.6s						
OTUK	**Ortayu**	**5.75**	**310**	⇑Pn	**Pn**	**12 37 14.9**	**-0.8**
	0.4nm,0.3s						
OTUK				⇑Pg	**Pb**	**12 37 33.1**	**+2.8**
	1.2nm,0.5s						
OTUK				⇑Lg	Lg	12 38 45.1	
	9.2nm,0.5s						
KURBB	**Kurchatov Arra**	**5.91**	**358**	⇑Pn	**Pn**	**12 37 16.6**	**-1.3**
KURBB				⇑Pg	**Pb**	**12 37 35.0**	**+1.8**
	4.2nm,0.6s						
KURBB				⇑Lg	Lg	12 38 55.9	
	56nm,0.7s						
KURK	**Kurchatov**	**6.00**	**358**	⇓Pn	**Pn**	**12 37 18.1**	**-1.0**
KURK				⇑Pg	**Pb**	**12 37 39.1**	**+4.3**
	8.5nm,0.8s						
KURK				⇑Lg	Lg	12 38 57.5	
	16nm,0.6s						
KK31	**Karatay Array**	**6.28**	**258**	⇑Pn	**Pn**	**12 37 21.3**	**-1.7**
	1.0nm,0.3s,baz=75,slow=13,SNR=20						
KK31				⇓Pg	**Pb**	**12 37 43.1**	**+3.6**
	1.1nm,0.4s,baz=72,slow=16,SNR=4.9						
KK31				Lg	Lg	12 39 02.6	
	6.4nm,0.5s,baz=74,slow=28,SNR=14						

WEL 25 12:43:19.5±0.6, 37.43S×176.37E, h212km±6km, ML3.5/15, 1C, Error ellipse: s-maj=7.9km s-min=7.0km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**1.02**	**145**	PN	Pn	12 43 51.0	+0.3
URZ				SN	S	12 44 14.5	-0.4
MUGZ	**Murupara**	**1.09**	**163**	PN	Pn	12 43 51.6	+0.4
RUGZ	**Raukumara Rang**	**1.17**	**118**	PN	Pn	12 43 51.1	-0.7
MWZ	**Matawai**	**1.29**	**135**	PN	Pn	12 43 52.7	0.0
SNGZ	**Shannon Statio**	**1.55**	**151**	PN	Pn	12 43 54.8	0.0
SNGZ				SN	S	12 44 21.5	-0.6
SNGZ				AML	AML	12 44 24.3	
WMGZ	**Waiomatatini S**	**1.67**	**104**	PN	Pn	12 43 55.9	+0.1
WMGZ				SN	S	12 44 23.8	0.0
NMHZ	**Naumai**	**1.70**	**168**	PN	Pn	12 43 56.6	+0.4
BKZ	**Black Stump Fm**	**1.74**	**177**	PN	Pn	12 43 56.0	-0.5
CNGZ	**Carnagh Statio**	**1.79**	**126**	PN	Pn	12 43 57.1	+0.1
ARHZ	**Aropaoanui**	**1.90**	**165**	PN	Pn	12 43 57.7	-0.2
ARHZ				AML	AML	12 44 29.8	
WNVZ	**Wahianoa**	**1.99**	**197**	PN	Pn	12 43 58.7	-0.3
BHHZ	**Black Hill Sta**	**2.07**	**187**	PN	Pn	12 43 58.9	-0.8
KRHZ	**Kereru**	**2.21**	**180**	PN	Pn	12 44 00.1	-1.0
TSZ	**Takapari Road**	**2.65**	**187**	PN	Pn	12 44 03.9	-1.8
OHWZ	**Ohakea**	**2.89**	**196**	PN	Pn	12 44 07.3	-1.2
POWZ	**Post Office Ro**	**3.00**	**189**	PN	Pn	12 44 07.7	-2.0
MRZ	**Mangatainoka R**	**3.29**	**191**	⇑PN	Pn	12 44 10.1	-3.0
OGWZ	**Otaki Gorge**	**3.51**	**195**	PN	Pn	12 44 12.8	-2.9
OGWZ				AML	AML	12 44 58.1	
HOWZ	**Holdsworth Sta**	**3.53**	**191**	PN	Pn	12 44 12.6	-3.4
KIW	**Kapiti Island**	**3.61**	**198**	PN	Pn	12 44 13.8	-3.1
CAW	**Cannon Point**	**3.81**	**195**	PN	Pn	12 44 16.0	-3.4
TCW	**Tory Channel**	**4.11**	**203**	PN	Pn	12 44 19.7	-3.4
TUWZ	**Tuamarina**	**4.42**	**204**	PN	Pn	12 44 23.1	-3.7
NNZ	**Nelson**	**4.44**	**211**	PN	Pn	12 44 23.5	-3.5
QRZ	**Quartz Range**	**4.52**	**220**	PN	Pn	12 44 24.0	-4.2
THZ	**Tophouse**	**5.09**	**211**	PN	Pn	12 44 31.7	-3.6

*IDC **25** 12:44:44.1±0.9, 2.55S×139.98E, h0km, mb3.9/6, mb1 4.1/7, mb1mx3.8/38, mbtmp4.0/7, ML4.2/1, Error ellipse: s-maj=21.2km s-min=8.8km az=176.0*
*ISCJB **25** 12:44:45.8±0.7, 2.63S±0.07×140.03E±0.09, h25km, mb3.9/6, Error ellipse: s-maj=13.8km s-min=9.3km az=29.6*
*NEIC **25** 12:44:47.6±1.9, 2.55S×140.16E, h29km±16km, mb4.1/3, Error ellipse: s-maj=20.0km s-min=10.4km az=98.0*
ISC 25 12:44:47.1±0.8, 2.70S±0.10×140.0E±0.1, h25km, n18, σ2§24/16, mb4.0/6, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**0.69**	**74**	Pg	**Pb**	**12 44 58.7**	**-1.8**
	67nm,0.3s,baz=257,slow=21,SNR=1526						
JAY				Lg	Lg	12 45 07.5	
	92nm,0.3s,baz=92,slow=23,SNR=44						
JAY				LR	LR	12 45 33.5	
	comp=Z,36nm,18.0s,baz=208,slow=69						
WRAB	**Tennant Creek**	**18.00**	**198**	*e*Pn	**P**	**12 48 58.7**	**+2.6**
	9.6nm,0.7s						
WRA	**Warramunga Arr**	**18.02**	**198**	P	**P**	**12 48 58.2**	**+1.9**
	0.8nm,0.3s,baz=22,slow=13,SNR=30						
WRA				S	**Sn**	**12 52 14.4**	**-1.9**
	0.1nm,0.3s,baz=14,slow=22,SNR=3.8						
FITZ	**Fitzroy Crossi**	**20.82**	**222**	P	**P**	**12 49 28.4**	**+1.4**
	3.6nm,1.0s,baz=56,slow=13,SNR=3.9						
FITZ				S	**S**	**12 53 14.2**	**-4.1**
	1.3nm,0.8s,baz=184,slow=19,SNR=2.0						
FITZ	**Fitzroy Crossi**	**20.82**	**222**	*eP*	**P**	**12 49 28.3**	**+1.4**
	5.7nm,1.2s						
FITZ				P	**P**	**12 49 28.4**	**+1.4**
FITZ				S	**S**	**12 53 14.2**	**-4.1**
ASAR	**Alice Springs**	**21.67**	**195**	P	**P**	**12 49 38.3**	**+2.3**
	3.2nm,0.6s,baz=27,slow=9.3,SNR=46						
EIDS	**Eidsvold**	**24.92**	**156**	P	**P**	**12 50 08.9**	**+0.6**
	6.1nm,0.8s						
STKA	**Stephens Creek**	**29.06**	**177**	P	**P**	**12 50 47.1**	**+1.7**
	0.8nm,0.4s,baz=11,slow=5.2,SNR=3.7						
H11S3	**WAKE ISLAND Hy**	**33.64**	**50**	T	T	13 26 33.3	
	baz=231,slow=75,SNR=18						
H11S2	**WAKE ISLAND Hy**	**33.66**	**50**	T	T	13 26 34.2	
	baz=231,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy**	**33.66**	**50**	T	T	13 26 36.0	
	baz=231,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy**	**34.52**	**49**	T	T	13 27 37.4	
	baz=233,slow=75,SNR=22						
H11N2	**WAKE ISLAND Hy**	**34.54**	**49**	T	T	13 27 38.6	
	baz=233,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**34.54**	**49**	T	T	13 27 38.8	
	baz=233,slow=75,SNR=15						
CMAR	**Chiang Mai Arr**	**45.59**	**299**	P	**P**	**12 53 05.5**	**-0.1**
	0.5nm,0.4s,baz=119,slow=7.3,SNR=3.2						
MKAR	**Makanchi Array**	**70.60**	**322**	P	**P**	**12 56 00.5**	**+0.1**
	1.2nm,0.7s,baz=112,slow=7.8,SNR=9.1						
BVAR	**Borovoye Array**	**80.07**	**325**	P	**P**	**12 56 55.0**	**+0.4**
	0.8nm,0.5s,baz=107,slow=7.5,SNR=4.3						
DBIC	**Dimbokro**	**144.80**	**278**	PKP	**PKPdf**	**13 04 21.9**	**-1.1**
	6.6nm,1.1s,baz=70,slow=3.7,SNR=5.6						

*IDC **25** 12:46:25.7±1.7, 35.31N×141.37E, h0km, mb3.7/5, mb1 3.6/8, mb1mx3.4/51, mbtmp3.6/8, ML3.2/3, Error ellipse: s-maj=47.6km s-min=19.4km az=75.0*
*ISCJB **25** 12:46:28.3±1.2, 35.26N±0.04×141.28E±0.10, h28km±6km, mb3.7/5, Error ellipse: s-maj=13.4km s-min=6.4km az=178.8*
*JMA **25** 12:46:29.4±0.1, 35.27N×141.18E, h31km±2km, M3.1*
ISC 25 12:46:29.6±1.7, 35.28N±0.04×141.19E±0.09, h24km±13km, n23, σ0§93/22, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.50**	**327**	P	**Pb**	**12 46 39.8**	**0.0**
CHOJ				S	**Sb**	**12 46 47.3**	**+0.6**
BSO1	**Boso 1**	**0.65**	**196**	P	**Pb**	**12 46 41.5**	**-0.5**
KTR	**Katsuura**	**0.73**	**260**	P	**Pn**	**12 46 43.1**	**-1.3**
KTR				S	**Sb**	**12 46 52.7**	**-0.5**
BSO3	**Boso 3**	**0.74**	**230**	P	**Pn**	**12 46 43.2**	**-1.1**
BSO4	**Boso 4**	**0.76**	**248**	P	**Pn**	**12 46 43.7**	**-1.0**
JCN	**Nagara**	**0.82**	**280**	P	**Pb**	**12 46 45.2**	**0.0**
JYT	**Yasato**	**1.25**	**320**	P	**Pn**	**12 46 50.9

FAKI	Fak Fak	3.42	70	ePn	Pn	13 09 43.0	+0.4
SANI	Sanana	3.64	304	P	Pn	13 09 43.3	-2.2
LBMI	Labuha	3.74	336	P	Pn	13 09 46.2	-0.6
SIJI	Sorong	3.89	35	P	Pn	13 09 48.0	-0.8
	22nm,0.3s,baz=91,slow=23,SNR=3.9						
SIJI				S	Sn	13 10 27.5	-7.1
	9.7nm,0.3s,baz=90,slow=20,SNR=5.0						
SWI	Sorong	3.90	35	P	Pn	13 09 48.0	-0.8
SAUI	Saumlaki	4.49	150	ePn	Pn	13 09 58.9	+2.3
MTN	Manton Dam	8.96	167	ePn	Pn	13 10 55.9	-0.2
FITZ	Fitzroy Crossi	14.33	193	P	Pn	13 12 04.9	-1.0
	0.6nm,0.3s,baz=26,slow=10.0,SNR=31						
WRAB	Tennant Creek	16.59	162	eP	P	13 12 33.0	-0.8
	20nm,0.9s						
WRA	Warramunga Arr	16.60	162	P	P	13 12 32.2	-1.6
	6.3nm,0.3s,baz=337,slow=12,SNR=144						
WRA				S	S	13 15 31.3	-7.3
	0.3nm,0.3s,baz=335,slow=20,SNR=2.8						
WB2	Warramunga Arr	16.60	162	eP	P	13 12 33.5	-0.4
COEN	Coen	17.06	126	eP	Pn	13 12 40.9	+1.2
	15nm,0.8s						
SBUM	Sibu	18.00	291	eP	Pn	13 12 50.6	-0.2
	7.3nm,0.6s						
MBWA	Marble Bar	19.23	207	eP	P	13 13 02.2	-0.4
	14nm,0.6s						
AS31	Alice Springs	20.04	167	eP	P	13 13 12.7	+1.3
	38nm,0.5s						
ASAR	Alice Springs	20.04	167	P	P	13 13 12.6	+1.2
	65nm,0.6s,baz=348,slow=12,SNR=1513						
ASAR				S	S	13 16 45.3	-3.1
	5.1nm,0.7s,baz=347,slow=24,SNR=16						
ASAR				ScP	ScP	13 20 43.1	-0.4
	0.6nm,0.6s,baz=357,slow=2.4,SNR=4.6						
AS01	Alice Springs	20.05	167	eP	P	13 13 12.2	+0.8
CTA	Charters Tower	23.13	135	P	P	13 13 44.5	+1.6
	3.6nm,0.8s,baz=309,slow=13,SNR=3.5						
IPM	Ipoh	29.24	287	eP	P	13 14 38.1	+0.1
	14nm,0.7s						
NONG	Nongkai	33.70	312	P	P	13 15 17.9	+1.0
	44nm,1.1s,6μm						
UTTA	Uttaradit	35.49	308	P	P	13 15 33.9	+1.6
	3.0nm,0.8s						
SUKH	Sukhothai	36.06	307	P	P	13 15 39.0	+1.8
	4.1nm,0.7s						
CM01	Chiang Mai Arr	37.12	308	eP	P	13 15 47.2	+1.0
CMAR	Chiang Mai Arr	37.15	308	P	P	13 15 46.2	-0.3
	3.0nm,0.6s,baz=136,slow=7.5,SNR=18						
CMMT	Chiang Mai	37.34	309	P	P	13 15 49.4	+1.3
	12nm,1.2s						
CHTO	Chiang Mai	37.35	308	P	P	13 15 49.5	+1.4
	56nm,1.2s						
CHTO	Chiang Mai	37.35	308	eP	P	13 15 49.0	+0.9
	7.7nm,0.8s						
CMAI	Chiengmai2	37.91	310	P	P	13 15 55.9	+2.9
	57nm,0.9s,5μm						
KMI	Kunming	38.66	320	P	P	13 16 01.8	+2.5
KMI				pmax	pmax		
	comp=Z,13nm,0.5s						
MJAR	Matsushiro Arr	41.31	11	P	P	13 16 20.0	-0.8
	comp=Z,0.9nm,0.7s,baz=192,slow=8.1,SNR=4.3						
BJI	Beijing	45.46	346	P	P	13 16 56.5	+2.6
BJI				pmax	pmax		
	comp=Z,4.0nm,0.7s						
USRK	Ussuriysk Ar.	48.13	3	P	P	13 17 15.8	+1.2
	comp=Z,1.7nm,0.5s,baz=193,slow=6.3,SNR=4.5						
RAMN	Ramite	51.29	309	eP	P	13 17 39.3	+0.2
	comp=Z,32nm,0.5s						
GUN	Gumba	52.33	310	eP	P	13 17 45.5	-1.4
	comp=Z,54nm,0.7s						
PKIN	Phulchoki	52.53	309	eP	P	13 17 47.7	-0.6
	comp=Z,3.5nm,0.4s						
DMN	Daman	52.77	309	eP	P	13 17 49.5	-0.6
	comp=Z,10nm,0.5s						
GKN	Gorkha	53.32	310	eP	P	13 17 53.0	-1.0
	comp=Z,17nm,0.6s						
KOLN	Koldanda	54.01	309	eP	P	13 17 59.2	+0.1
	comp=Z,24nm,0.5s						
PYUN	Piuthan	54.64	309	eP	P	13 18 03.9	+0.3
	comp=Z,37nm,0.8s						
SONM	Songino Array	55.38	342	P	P	13 18 10.3	+1.8
	comp=Z,0.7nm,0.3s,baz=175,slow=8.7,SNR=3.5						
WMQ	Urumqi	60.43	327	eP	P	13 18 43.5	-0.2
WMQ				pmax	pmax		
	comp=Z,13nm,0.5s						
KSH	Kashi	65.23	317	eP	P	13 19 16.5	+0.9
KSH				epP	pP	13 19 54.0	+2.5
KSH				ePP	PP	13 21 43.3	+2.2
KSH				S	S	13 27 43.8	-3.4
KSH				pmax	pmax		
	comp=Z,19nm,3.3s						
MK01	Makanchi Array	65.25	327	eP	P	13 19 15.7	+0.2
MK31	Makanchi Array	65.27	327	eP	P	13 19 15.9	+0.3
MKAR	Makanchi Array	65.27	327	P	P	13 19 16.1	+0.5
	comp=Z,2.7nm,0.4s,baz=114,slow=7.8,SNR=34						
MKAR	Makanchi Array	65.27	327	eP	P	13 19 15.9	+0.3
MAKZ	Makanchi	65.45	326	eP	P	13 19 16.9	+0.2
	comp=Z,3.7nm,0.5s						
ZAA0	Zalesovo Array	68.55	334	eP	P	13 19 36.0	-0.1
ZALV	Zalesovo Beam	68.55	334	P	P	13 19 36.3	+0.2
	comp=Z,1.8nm,0.6s,baz=118,slow=6.4,SNR=8.3						
BRVK	Borovoye	75.16	328	eP	P	13 20 16.0	+0.4
	comp=Z,5.0nm,1.0s						
ABKAR	Akbulak array	79.63	322	eP	P	13 20 40.9	+0.4
	comp=Z,2.6nm,0.5s						
ILAR	Eielson Array	91.13	25	P	P	13 21 36.9	-0.4
	comp=Z,0.3nm,0.5s,baz=232,slow=5.9,SNR=6.3						
TORD	Torodi Ar. Bea	127.25	283	PKP	PKPdf	13 27 37.5	-0.1
	comp=Z,0.5nm,0.5s,baz=1.5,slow=1.5,SNR=4.6						

JMA 25 13:11:24.2±0.3,37°.66N×142°.51E,h12km±3km,M3.9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JIO	Ouri	1.21	311	P		Pn	13 11 46.4	-0.6
JFK	Kawauchi	1.33	258	P		Pn	13 11 48.3	-0.4
JMM	Marumori	1.38	279	P		Pn	13 11 48.9	-0.3
JOU	Okura	1.62	296	P		Pn	13 11 53.2	+0.6
JMK	Ichinoseki	1.64	322	P		Pn	13 11 53.0	+0.1
JFT	Otama	1.73	266	P		Pn	13 11 55.0	+0.9
JYS	Shiratake	2.01	287	P		Pb	13 11 59.6	-1.1
JOM	Ohasama	2.05	333	P		Pb	13 11 59.9	-1.4
JYK	Kaneyama	2.11	307	P		Pn	13 12 00.5	+1.2
JFY	Yanaizu	2.24	264	P		Pn	13 12 02.9	+1.7
JNS	Sasagawa	2.54	275	P		Pb	13 12 07.6	-2.0
JAW	Awa shima	2.69	288	P		Pn	13 12 09.8	+2.5
JAG	Ashikaga	2.74	244	P		Pn	13 12 08.9	+0.9
JANG	Nango	2.82	344	P		Pn	13 12 11.3	+2.2
MAT	Matsushiro	3.62	253	P		Pn	13 12 23.4	+3.3
MAT				S		Sb	13 13 12.4	+0.5

*ISCJB **25** 13:11:40.3±0.8,61°.55N±0°.04×64°.9W±0°.1,h10km,mb3.4/5, MS3.9/1,Error ellipse: s-maj=10.1km s-min=5.7km az=177.7*

*IDC **25** 13:11:42.8±1.2,61°.64N×64°.35W,h0km,mb3.5/6, mb1 3.9/8,mb1mx3.6/39,mbtmp3.7/8,ML3.2/2,MS4.0/1, Ms1 4.0/1,ms1mx2.9/40,Error ellipse: s-maj=22.5km s-min=7.5km az=72.0*

*OTT **25** 13:11:47.1±0.8,61°.57N×64°.92W,h18km,MN4.2/9,30km northeast from Resolution Island, Nu*

*NEIC **25** 13:11:47.0,61°.57N×64°.92W,h18km,MN4.2(OTT),After OTT.*

ISC 25 13:11:42.2±0.8,61°.62N±0°.04×64°.73W±0°.07,h10km,n26, σ3§58/35,mb3.6/5,Hudson Strait region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FRB	Frobisher Bay	2.77	322	Pn		Pb	13 12 30.6	-1.0
	4.6nm,0.3s,baz=140,slow=12,SNR=31							
FRB				Pg		Pg	13 12 36.7	+1.5
	29nm,0.3s,baz=128,slow=15,SNR=57							
FRB				Sn		Sb	13 13 04.8	-0.7
	29nm,0.3s,baz=179,slow=4.7,SNR=8.8							
FRB				Lg		Lg	13 13 11.2	
	281nm,0.3s,baz=58,slow=19,SNR=62							
FRB	Frobisher Bay	2.77	322	PN		Pb	13 12 30.9	-0.8
FRB				LG		Lg	13 13 11.6	
FRB				Trac			13 13 13.3	
	comp=Z,534nm,0.2s							
KUQ	Kuujjuuaa	3.98	209	PN		Pn	13 12 46.5	+3.3
KUQ				LG		Lg	13 13 47.8	
KUQ				Trac			13 13 50.1	
	comp=Z,411nm,0.4s							

SCHQ	Schefferville	6.90	190	Pn		Pn	13 13 24.1	+0.8
	3.9nm,0.3s,baz=26,slow=10.0,SNR=17							
SCHQ				Sn		Sn	13 14 39.8	-1.9
	7.4nm,0.3s,baz=147,slow=17,SNR=9.4							
SCHQ				Lg		Lg	13 15 13.7	
	20nm,0.3s,baz=264,slow=18,SNR=11							
SCHQ	Schefferville	6.90	190	PN		Pn	13 13 25.4	+2.2
SCHQ				SN		Sn	13 14 39.9	-1.9
SCHQ				LG		Lg	13 15 16.8	
SCHQ				Trac			13 15 21.5	
	comp=Z,144nm,0.6s							
INUQ	Inukjuak	7.42	251	PN		Pn	13 13 33.5	+3.1
INUQ				SN		Sn	13 14 54.0	-0.3
INUQ				LG		Lg	13 15 34.2	
INUQ				Trac			13 15 38.9	
	comp=Z,130nm,0.5s							
SFJD	Kangerlussuaq	8.15	43	SN		Sn	13 15 07.2	-5.1
CLRN	Clyde River	9.03	352	SN		Sn	13 15 32.3	-1.6
CLRN				LG		Lg	13 16 21.9	
SNKN	Sanikiluaq	9.03	242	SN		Sn	13 15 33.8	-0.1
LG4Q	La Grande 4	9.45	216	PN		Pn	13 13 58.5	+0.4
LG4Q				SN		Sn	13 15 36.8	-7.5
LG4Q				LG		Lg	13 16 36.0	
LG4Q				Trac			13 16 38.2	
	comp=Z,71nm,0.5s							
ILON	Igloolik, Nuna	10.48	325	PN		Pn	13 14 14.0	+1.8
ILON				SN		Sn	13 16 04.1	-5.5
ILON				LG		Lg	13 17 07.5	
ILON				Trac			13 17 15.7	
	comp=Z,107nm,0.6s							
LAIN	Lailor River,	10.81	322	PN		Pn	13 14 17.4	+0.7
LAIN				SN		Sn	13 16 12.2	-5.4
LAIN				LG		Lg	13 17 18.8	
LAIN				Trac			13 17 23.4	
	comp=Z,245nm,0.8s							
GIFN	Gifford Fjord,	10.85	328	PN		Pn	13 14 18.3	+1.1
GIFN				SN		Sn	13 16 13.4	-5.1
GIFN				LG		Lg	13 17 19.3	
GIFN				Trac			13 17 22.6	
	comp=Z,116nm,0.7s							
MNQ	Manicouagan	11.34	193	PN		Pn	13 14 24.0	0.0
MNQ				SN		Sn	13 16 25.0	-5.7
SMQ	Clarke City	11.48	186	PN		Pn	13 14 25.6	-0.4
SMQ				SN		Sn	13 16 27.3	-6.8
SMQ				LG		Lg	13 17 34.9	
SMQ				Trac			13 17 40.0	
	comp=Z,41nm,0.5s							
WAGN	Wager Bay	11.70	302	PN		Pn	13 14 29.6	+0.8
WAGN				SN		Sn	13 16 31.2	-8.1
WAGN				LG		Lg	13 17 43.9	
FCC	Fort Churchill	14.81	272	ePn		Pn	13 15 11.9	+0.6
PKME	Peaks-Kenny Pk	16.60	191	ePn		Pn	13 15 33.4	-1.3
RES	Resolute Bay	16.93	333	Pn		Pn	13 15 36.7	-2.0
	0.6nm,0.3s,baz=136,slow=9.5,SNR=5.6							
ULM	Lac du Bonnet	20.60	251	P		Pn	13 16 24.2	+0.9
	2.7nm,0.4s,baz=48,slow=10,SNR=6.3							
YKA	Yellowknife Ar	22.93	294	P		P	13 16 48.9	+3.0
	1.1nm,0.6s,baz=62,slow=12,SNR=5.6							
TKL	Tuckaleechee C	28.64	214	LR		LR	13 29 03.5	
	comp=Z,286nm,19.8s,baz=26,slow=36							
PDAR	Pinedale Array	32.45	255	P		P	13 18 16.9	+4.3
	0.6nm,0.4s,baz=39,slow=9.6,SNR=6.6							
ILAR	Eielson Array	34.75	312	P		P	13 18 36.2	+4.2
	0.7nm,0.8s,baz=59,slow=8.6,SNR=7.0							
TXAR	Lajitas Array	41.18	236	P		P	13 19 32.0	+5.3
	0.1nm,0.6s,baz=51,slow=6.2,SNR=3.0							
MKAR	Makanchi Array	68.72	24	P		P	13 22 46.7	+1.1
	0.3nm,0.5s,baz=351,slow=4.5,SNR=3.5							

*NIED **25** 13:22:00,38°.30N×143°.50E,h17km,Mw3.9 Best double couple: M0 7.43000×10^14 NP1:φs 6.00000°,δ59.00000°, λ153.00000°. NP2:φs 111.00000°,δ67.00000°,λ34.00000°.*

*ISCJB **25** 13:22:32.9±0.8,38°.26N±0°.04×143°.56E±0°.06,h15km, mb3.6/5,MS3.7/2,Error ellipse: s-maj=7.1km s-min=5.8km az=25.1*

*IDC **25** 13:22:32.0±1.1,37°.97N×143°.96E,h0km,mb3.6/5, mb1 3.8/7,mb1mx3.6/48,mbtmp3.7/7,ML3.7/2,MS3.6/2, Ms1 3.7/2,ms1mx3.0/35,Error ellipse: s-maj=35.7km s-min=19.9km az=109.0*

*JMA **25** 13:22:34.7±0.2,38°.34N×143°.50E,h22km,M3.7*

ISC 25 13:22:33.9±1.1,38°.27N±0°.05×143°.52E±0°.07,h15km,n21, σ1§49/29,mb3.6/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OFUJ	Ofunato	1.66	300	P		Pn	13 23 02.5	0.0
OFUJ				eS		Sn	13 23 22.8	-0.8
JIO	Ouri	1.72	277	P		Pn	13 23 03.6	+0.3
JIO				S		Sn	13 23 24.0	-1.0
MIYJ	Miyakonagasawa	1.86	315	P		Pn	13 23 04.9	-0.4
MIYJ				eS		Sn	13 23 27.4	-1.2
JMK	Ichinoseki	1.93	291	P		Pn	13 23 06.5	+0.3
JOM	Ohasama	2.12	305	P		Pn	13 23 09.2	+0.4
JOM				eS		Sn	13 23 34.8	0.0
JYK	Kaneyama	2.56	286	P		Pn	13 23 16.2	+1.3
JYK				eS		Sb	13 23 47.5	-3.4
JANG	Nango	2.62	324	P		Pn	13 23 15.5	-0.2
JFT	Otama	2.63	254	P		Pn	13 23 17.1	+1.2
JFT				S		Sn	13 23 48.1	+0.6
JNS	Sasagawa	3.35	264	P		Pn	13 23 27.4	+1.6
JAW	Awa shima	3.37	274	P		Pn	13 23 27.6	+1.7
JOT	Ohata	3.65	329	P		Pn	13 23 31.3	+1.5
JOT				eS		Sn	13 24 12.6	+0.1
JAG	Ashikaga	3.73	242	P		Pn	13 23 31.1	+0.1
JAG				S		Sn	13 24 13.7	-0.9
MJAR	Matsushiro Arr	4.57	249	Pn		Pn	13 23 43.7	+1.2
	2.1nm,0.3s,baz=78,slow=14,SNR=22							
MJAR				Sn		Sn	13 24 38.6	+3.2
	1.0nm,0.3s,baz=85,slow=16,SNR=3.6							
MAT	Matsushiro	4.57	249	P		Pn	13 23 44.7	+2.1
MAT				S		Sn	13 24 37.2	+1.8
JHJ	Hachijo jima 2	5.97	212	Pn		Pn	13 23 59.5	-2.3
	10.0nm,0.3s,baz=53,slow=20,SNR=6.1							
JHJ				Sn		Sn	13 25 02.1	-7.8
	23nm,0.3s,baz=36,slow=19,SNR=5.0							
SEY	Seymchan	25.28	9	P		P	13 28 01.0	+1.7
	1.1nm,0.7s,baz=191,slow=16,SNR=4.4							
MKAR	Makanchi Array	44.89	301	P		P	13 30 52.9	+5.1
	0.3nm,0.5s,baz=81,slow=9.3,SNR=4.2							
ILAR	Eielson Array	47.55	33	P		P	13 31 09.2	+0.8
	0.5nm,0.8s,baz=273,slow=5.2,SNR=5.9							
ILAR				LR		LR	13 54 00.6	
	comp=Z,56nm,19.6s,baz=67,slow=40							
WRA	Warramunga Arr	58.54	190	P		P	13 32 28.9	-1.0
	1.3nm,0.6s,baz=9.0,slow=7.1,SNR=14							
ASAR	Alice Springs	62.27	190	P		P	13 32 54.5	-0.8
	0.2nm,0.5s,baz=5.2,slow=7.0,SNR=7.6							
RAR	Rarotonga	79.55	128	LR		LR	14 07 19.4	
	comp=Z,46nm,19.6s,baz=7.5,slow=34							

MAN 25 13:23:39,6°.92N×125°.20E,h16km,mb4.2,ML3.0,MS2.8, 3C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KCP	Kidapawan	0.14	310	⇓iP		Pb	13 23 44.4	+1.0
KCP				iS		Sb	13 23 47.2	+0.9
DMPH	Davao City--Mi	0.35	61	⇑eP		Pb	13 23 47.4	+0.6
DMPH				eS		Sb	13 23 54.1	+2.0
CTBH	Cotabato--PC H	0.99	288	⇑iP		Pn	13 23 59.4	+1.0
CTBH				iS		Sn	13 24 13.1	+1.1
CGP	Cagayan de Oro	1.61	342	⇑eP		Pb	13 24 07.8	-0.5
CGP				eS		Sb	13 24 28.2	-0.3

JMA 25 13:23:44.1,38°.63N×141°.93E,h46km±1km,M3.5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JIO	Ouri	0.49	249	P		Pn	13 23 54.8	-0.1
JIO				S		Sn	13 24 02.2	-0.5
OFUJ	Ofunato	0.49	336	P		Pn	13 23 55.0	-0.1
OFUJ				S		Sn	13 24 02.7	-0.1
JMK	Ichinoseki	0.64	300	P		Pn	13 23 57.0	+0.1
JMK				S		Sn	13 24 06.1	0.0
JOM	Ohasama	0.98	330	P		Pn	13 24 01.5	+0.1
JOM				S		Sn	13 24 14.4	+0.2
JOU	Okura	1.03	256	P		Pn	13 24 02.2	+0.1
JOU				S		Sn	13 24 15.4	0.0
JMM	Marumori	1.18	230	P		Pn	13 24 03.9	-0.2
JMM				S		Sn	13 24 18.2	-0.8
JYK	Kaneyama	1.26	284	P		Pn	13 24 05.4	+0.1
JRG	Rokugo	1.27	308	P		Pn	13 24 05.7	+0.3
JYS	Shiratake	1.52	255	P		Pn	13 24 09.3	+0.5

*NIED **25** 13:31:00,35°.20N×141°.20E,h17km,Mw3.9 Best double couple: M0 8.59000×10^14 NP1:φs 320.00000°,δ32.00000°, λ147.00000°. NP2:φs 79.00000°,δ73.00000°,λ62.00000°.*

*IDC **25** 13:31:50.2±0.9,35°.16N×141°.21E,h0km,mb3.8/8, mb1 4.0/10,mb1mx3.7/43,mbtmp3.8/10,ML3.3/2,MS3.1/2, Ms1 3.1/2,ms1mx2.8/35,Error ellipse: s-maj=26.6km s-min=17.8km az=83.0*

*NEIC **25** 13:31:51.4±0.6,35°.16N×141°.31E,h10km,mb4.2/2,Error ellipse: s-maj=13.2km s-min=8.9km az=96.0*

*ISCJB **25** 13:31:52.3±1.0,35°.15N±0°.04×141°.27E±0°.08,h29km±6km, mb3.9/10,Error ellipse: s-maj=10.4km s-min=6.7km az=176.0*

*JMA **25** 13:31:53.0±0.1,35°.22N×141°.23E,h36km±2km,M3.6*

ISC 25 13:31:52.0±3.7,35°.15N±0°.05×141°.22E±0°.07,h14km±23km, n34,σ1§23/32,mb4.0/10,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BSO1	Boso 1	0.54	202	P		Pn	13 32 04.8	+0.1
CHOJ	Chosi	0.62	332	P		Pb	13 32 04.5	-0.2
CHOJ				S		Sb	13 32 12.9	-0.3
BSO3	Boso 3	0.68	239	P		Pn	13 32 06.6	-0.4
BSO4	Boso 4	0.74	258	P		Pn	13 32 07.6	-0.4
KTR	Katsuura	0.74	270	P		Pb	13 32 07.1	+0.4
KTR				S		Sb	13 32 17.3	+0.6
JCN	Nagara	0.88	288	P		Pn	13 32 09.7	-0.2
JYT	Yasato	1.36	322	P		Pn	13 32 15.6	-0.9
JIM2	Oshima 3	1.54	254	P		Pn	13 32 17.5	-1.5
JHO	Hitachi	1.55	340	P		Pn	13 32 18.3	-0.8
JHJ2	Mitsune	2.35	210	ePn		Pn	13 32 29.1	-1.0
JHJ	Hachijo jima 2	2.35	211	Pn		Pn	13 32 29.4	-0.8
	18nm,0.3s,baz=66,slow=20,SNR=11							
JHJ				Sn		Sn	13 32 55.1	-3.8
	27nm,0.3s,baz=66,slow=20,SNR=4.4							
JHJ				LR		LR	13 33 36.7	
	comp=Z,287nm,19.3s,baz=299,slow=45							
MJAR	Matsushiro Arr	2.81	300	Pn		Pn	13 32 37.4	+0.9
	4.9nm,0.3s,baz=204,slow=6.8,SNR=52							
MJAR				Sn		Sb	13 33 14.7	-1.7
	2.9nm,0.3s,baz=133,slow=13,SNR=6.8							
MAJO	Matsushiro	2.81	300	ePn		Pn	13 32 38.5	+2.0
MAT	Matsushiro	2.81	300	P		Pn	13 32 38.7	+2.1
MAT				S		Sn	13 33 10.4	+0.1
ERM	Erimo	7.01	12	ePn		Pn	13 33 34.2	0.0
ASAJ	Asahikawa	9.01	6	ePn		Pn	13 33 59.1	-2.5
	13nm,1.5s							
USRK	Ussuriysk Ar.	11.49	325	LR		LR	13 38 07.4	
	comp=Z,108nm,18.9s,baz=241,slow=33							
H11N2	WAKE ISLAND Hy 27.37	117		T		T	14 06 37.8	
	baz=310,slow=75,SNR=59							
H11N1	WAKE ISLAND Hy 27.38	117		T		T	14 06 34.6	
	baz=310,slow=75,SNR=87							
H11N3	WAKE ISLAND Hy 27.39	117		T		T	14 06 33.9	
	baz=310,slow=75,SNR=63							
H11S1	WAKE ISLAND Hy 28.02	120		T		T	14 07 20.9	
	baz=312,slow=75,SNR=150							
H11S3	WAKE ISLAND Hy 28.02	120		T		T	14 07 22.7	
	baz=312,slow=75,SNR=136							
H11S2	WAKE ISLAND Hy 28.03	120		T		T	14 07 21.3	
	baz=312,slow=75,SNR=97							
ZALV	Zalesovo Beam	43.08	314	P		P	13 39 51.3	-0.1
	2.0nm,0.6s,baz=94,slow=6.6,SNR=6.8							
MKAR	Makanchi Array	45.01	304	P		P	13 40 07.5	+0.6
	0.6nm,0.5s,baz=85,slow=11,SNR=7.4							
KURK	Kurchatov	46.99	309	P		P	13 40 22.9	+0.5
KURBB	Kurchatov Arra	47.05	309	P		P	13 40 22.9	0.0
	2.1nm,0.6s,baz=86,slow=8.0,SNR=28							
ILAR	Eielson Array	51.17	32	P		P	13 40 54.9	+0.7
	0.3nm,0.7s,baz=256,slow=6.1,SNR=4.5							
WRAB	Tennant Creek	55.17	188	eP		P	13 41 24.1	0.0
	2.9nm,0.8s							
WRA	Warramunga Arr	55.18	188	P		P	13 41 24.2	-0.1
	2.4nm,0.6s,baz=5.4,slow=7.6,SNR=41							
ASAR	Alice Springs	58.91	188	P		P	13 41 51.8	+1.2
	0.8nm,0.8s,baz=13,slow=13,SNR=11							
ABKAR	Akbulak array	59.04	311	eP		P	13 41 51.8	+0.4
	0.7nm,0.5s							
NOA	NORSAR Array B	75.86	337	P		P	13 43 37.3	-0.2
	0.8nm,0.8s,baz=41,slow=5.8,SNR=2.5							
PDAR	Pinedale Array	79.10	45	P		P	13 43 57.0	+0.8
	0.5nm,0.7s,baz=333,slow=1.2,SNR=4.3							

*NIED **25** 13:34:00,35°.30N×141°.20E,h26km,Mw4.1 Best double couple: M0 1.67000×10^15 NP1:φs 181.00000°,δ37.00000°, λ37.00000°. NP2:φs 60.00000°,δ69.00000°,λ121.00000°.*

*JMA **25** 13:34:25.4±0.1,35°.28N×141°.17E,h35km±2km,M3.5*

*ISCJB **25** 13:34:26.1±0.6,35°.25N±0°.04×141°.15E±0°.07,h35km, mb3.9/10,Error ellipse: s-maj=7.6km s-min=6.4km az=177.8*

*IDC **25** 13:34:29.9±2.6,35°.24N×140°.99E,h52km±25km,mb3.7/10, mb1 3.8/13,mb1mx3.6/44,mbtmp3.9/13,ML3.0/3,MS3.1/1, Ms1 3.1/1,ms1mx2.7/36,Error ellipse: s-maj=25.0km s-min=15.4km az=90.0*

ISC 25 13:34:27.6±0.8,35°.24N±0°.04×141°.14E±0°.08,h35km,n27, σ1§62/25,mb3.9/10,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CHOJ	Chosi	0.52	334	P		Pn	13 34 35.7	-2.8
CHOJ				S		Sn	13 34 43.2	-

Error ellipse: s-maj=3.1km s-min=2.0km az=39.1
*JMA **25** 13:48:43.0±0.2,24°.01N×121°.66E,h0km,M2.0*
*TAP **25** 13:48:44.2,24°.03N×121°.63E,h11km,ML3.4,B*
ISC 25 13:48:44.3±0.8,24°.03N±0°.02×121°.65E±0°.02,h12km±5km, n58,σ0s.77/95,7C-6D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HWA	**Hwalien**	**0.06**	**221**	*i* P	**Pg**	**13 48 46.9**	**+0.1**
	baz=192						
HWA				*i* S	**Sg**	**13 48 48.8**	**+0.3**
	baz=192						
TWD	**Chiawan**	**0.07**	**317⇑**	*i*P	**Pg**	**13 48 46.7**	**-0.2**
	baz=338						
TWD				*i* S	**Sg**	**13 48 48.3**	**-0.5**
	baz=338						
ESF	**Shoufeng Towns**	**0.20**	**221**	*e*P	**Pg**	**13 48 49.3**	**+0.6**
	baz=216						
ESL	**Shilin**	**0.29**	**223⇓**	*i*P	**Pg**	**13 48 50.0**	**-0.3**
	baz=224						
ESL				*e*S	**Sg**	**13 48 53.5**	**-0.7**
	baz=224						
TEGC	**Jichi Village**	**0.33**	**198**	*e*P	**Pb**	**13 48 52.6**	**+0.5**
	baz=193						
WHF	**Hehuan Shan**	**0.37**	**289⇓**	*i*P	**Pg**	**13 48 51.7**	**-0.2**
	baz=290						
WHF				S	**Sg**	**13 48 56.7**	**-0.3**
	baz=290						
ENA	**Nanau**	**0.41**	**12⇑**	*i*P	**Pb**	**13 48 52.6**	**-0.8**
	baz=15						
ENA				*i* S	**Sg**	**13 48 58.4**	**+0.4**
	baz=15						
NNS	**Nan Shan**	**0.48**	**328**	P	**Pb**	**13 48 54.1**	**-0.7**
	baz=331						
NNS				*e*S	**Sg**	**13 49 00.2**	**-0.2**
	baz=331						
TWT	**Tachien**	**0.49**	**298**	P	**Pb**	**13 48 54.3**	**-0.6**
	baz=297						
TWT				S	**Sb**	**13 49 01.3**	**-0.8**
	baz=297						
EHY	**Hungye**	**0.60**	**210**	P	**Pg**	**13 48 55.6**	**-0.3**
	baz=216						
EHY				*e*S	**Sg**	**13 49 03.7**	**-0.2**
	baz=216						
TWC	**Suao**	**0.61**	**17**	P	**Pb**	**13 48 56.3**	**-0.6**
	baz=12						
TWC				S	**Sb**	**13 49 04.8**	**-0.5**
	baz=12						
ENTT	**Nioudou**	**0.62**	**353⇑**	*i*P	**Pb**	**13 48 56.7**	**-0.3**
	baz=355						
ENTT				S	**Sb**	**13 49 05.0**	**-0.6**
	baz=355						
TWE	**Neicheng**	**0.69**	**1⇑**	*i*P	**Pb**	**13 48 58.1**	**-0.2**
	baz=4.0						
TWE				S	**Sg**	**13 49 07.0**	**+0.1**
	baz=4.0						
NSK	**Sanguang**	**0.70**	**338⇑**	*i*P	**Pb**	**13 48 58.2**	**-0.3**
	baz=339						
NSK				S	**Sb**	**13 49 07.4**	**-0.7**
	baz=339						
SMLT	**Sun Moon Lake**	**0.70**	**258⇓**	*i*P	**Pb**	**13 48 57.9**	**-0.5**
	baz=258						
SMLT				*i* S	**Sg**	**13 49 07.1**	**-0.1**
	baz=258						
TYC	**Yuchr**	**0.74**	**261⇓**	*i*P	**Pb**	**13 48 58.5**	**-0.5**
	baz=261						
TYC				S	**Sg**	**13 49 07.4**	**-0.8**
	baz=261						
TWF1	**Yuli**	**0.74**	**206**	*e*P	**Pg**	**13 48 57.7**	**-1.1**
	baz=217						
YUS	**Yu-Shan**	**0.83**	**230**	P	**Pb**	**13 49 00.7**	**-0.3**
	baz=230						
YUS				*e*S	**Sb**	**13 49 11.4**	**-0.9**
	baz=230						
NSTT	**Nanjuang**	**0.84**	**316**	*e*P	**Pb**	**13 49 01.4**	**+0.5**
	baz=316						
NSTT				*e*S	**Sb**	**13 49 11.8**	**-0.4**
	baz=316						
EGS		**0.85**	**17**	*e*P	**Pn**	**13 49 02.8**	**+0.7**
	baz=26						
TWQ1	**Liyutan**	**0.86**	**292**	*e*P	**Pn**	**13 49 02.0**	**-0.2**
	baz=304						
TWQ1				*e*S	**Sn**	**13 49 14.3**	**-0.5**
	baz=304						
WNT	**Mingjian**	**0.90**	**261**	P	**Pn**	**13 49 02.7**	**0.0**
	baz=261						
WNT				*e*S	**Sn**	**13 49 15.3**	**-0.3**
	baz=261						
TCU	**Taichung**	**0.90**	**278⇓**	*i*P	**Pn**	**13 49 02.8**	**+0.1**
	baz=275						
TCU				*e*S	**Sn**	**13 49 15.8**	**+0.2**
	baz=275						
NSY	**Sanyi**	**0.90**	**296**	*e*P	**Pn**	**13 49 02.6**	**-0.2**
	baz=296						
ALS	**Alishan**	**0.93**	**237**	*e*P	**Pb**	**13 49 02.2**	**-0.2**
	baz=225						
ALS				*e*S	**Sg**	**13 49 13.9**	**-0.5**
	baz=225						
TWA	**Mucha**	**0.95**	**356**	*e*P	**Pg**	**13 49 02.0**	**-0.7**
	baz=348						
TWA				*e*S	**Sb**	**13 49 15.7**	**+0.4**
	baz=348						
CHKT	**Chengkung**	**0.96**	**196**	*e*P	**Pg**	**13 49 01.9**	**-0.9**
	baz=195						
CHN5	**Tsauling**	**0.99**	**245⇓**	*i*P	**Pn**	**13 49 04.3**	**+0.3**
	baz=246						
CHN5				S	**Sn**	**13 49 17.8**	**-0.1**
	baz=246						
TAP1	**Taipei**	**1.01**	**353**	*e*P	**Pb**	**13 49 04.2**	**+0.4**
	baz=353						
ELDTW	**Lidau**	**1.02**	**215**	*e*P	**Pg**	**13 49 03.1**	**-0.8**
	baz=203						
NCU	**National Centr**	**1.03**	**336**	*e*P	**Pn**	**13 49 04.4**	**-0.1**
	baz=346						
NCU				*e*S	**Sn**	**13 49 20.5**	**+1.6**
	baz=346						
NWF	**Wu-ten Shan**	**1.05**	**6**	*e*P	**Pb**	**13 49 04.3**	**-0.1**
	baz=6.0						
WGK	**Gukeng**	**1.05**	**251**	*e*P	**Pn**	**13 49 05.2**	**+0.4**
	baz=251						
TWS1	**Kuangyinshan**	**1.09**	**349**	*e*P	**Pn**	**13 49 05.9**	**+0.6**
	baz=349						
TWS1				*e*S	**Sn**	**13 49 22.0**	**+1.7**
	baz=349						
CHN4	**Tsaushan**	**1.18**	**236**	⇑P	**Pn**	**13 49 07.6**	**+1.0**
	baz=228						
CHN4				S	**Sn**	**13 49 23.9**	**+1.4**
	baz=228						
CHN2	**Minshiung**	**1.18**	**246**	*e*P	**Pn**	**13 49 07.5**	**+0.9**
	baz=246						
STYT	**Tauyuan**	**1.19**	**224**	*e*P	**Pn**	**13 49 06.8**	**+0.1**
	baz=224						
STYT				*e*S	**Sb**	**13 49 22.2**	**+0.1**
	baz=224						
WTP	**Ta-pu**	**1.23**	**231**	⇑P	**Pn**	**13 49 07.9**	**+0.6**
	baz=232						
WTP				*e*S	**Sn**	**13 49 24.4**	**+0.6**
	baz=232						
CHY	**Chiayi**	**1.24**	**245**	*e*P	**Pn**	**13 49 08.7**	**+1.3**
	baz=260						
CHY				*e*S	**Sn**	**13 49 25.4**	**+1.4**
	baz=260						
TWY	**Chenhua**	**1.25**	**358**	*e*P	**Pn**	**13 49 08.6**	**+1.2**
	baz=345						
JYNG	**Yonagunijimaku**	**1.25**	**70**	P	**Pg**	**13 49 07.4**	**-1.0**
JYNG				*e*S	**Sb**	**13 49 24.4**	**+0.4**
WTCT	**Ta-ch'eng**	**1.26**	**263**	*e*P	**Pn**	**13 49 08.4**	**+0.7**
	baz=264						
WTCT				*e*S	**Sn**	**13 49 26.3**	**+1.7**
	baz=264						
TWK	**Hsinying**	**1.31**	**235**	*e*P	**Pg**	**13 49 09.5**	**+0.1**
	baz=237						
TWK				*e*S	**Sn**	**13 49 27.5**	**+1.7**
	baz=237						
TWG	**Pinlang**	**1.31**	**204**	*e*P	**Pg**	**13 49 08.7**	**-0.8**
	baz=204						
YOJ	**Yonaguni jima**	**1.31**	**70**	P	**Pn**	**13 49 08.1**	**-0.3**
YOJ				*e*S	**Sn**	**13 49 26.8**	**+0.9**
YOJ	**Yonaguni jima**	**1.31**	**70**	*e*P	**Pn**	**13 49 08.4**	**0.0**
	baz=72						
CHN1	**Nanshi**	**1.33**	**231**	*e*P	**Pg**	**13 49 09.7**	**-0.1**
	baz=222						
CHN1				*e*S	**Sn**	**13 49 27.9**	**+1.7**
	baz=222						
SGST	**Jiashian**	**1.36**	**226**	*e*P	**Pg**	**13 49 09.9**	**-0.5**
	baz=226						
WSF	**Szhu**	**1.36**	**254**	*e*P	**Pg**	**13 49 10.6**	**+0.1**
	baz=255						
WSF				*e*S	**Sn**	**13 49 29.2**	**+2.2**
	baz=255						
CHN8	**Yiju**	**1.48**	**243**	*e*P	**Pn**	**13 49 09.8**	**-0.9**
	baz=243						
TWM1	**Shoushan**	**1.65**	**224**	*e*P	**Pg**	**13 49 15.5**	**-0.4**
	baz=224						
EAST	**Anshuo**	**1.79**	**204**	*e*P	**Pb**	**13 49 16.9**	**-0.2**
	baz=192						
SCZT	**Fangliau**	**1.90**	**210**	*e*P	**Pb**	**13 49 18.5**	**-0.3**
	baz=201						
IRIF	**Iriomote-Funau**	**1.92**	**80**	P	**Pn**	**13 49 17.6**	**+0.8**
IRIF				*e*S	**Sn**	**13 49 41.9**	**+1.0**
HATJ	**Hateruma jima**	**1.97**	**89**	*e*S	**Sn**	**13 49 43.4**	**+1.4**
PNG	**Penghu**	**1.97**	**257**	*e*P	**Pn**	**13 49 17.8**	**+0.4**
	baz=255						
WDGT	**Dungji**	**1.98**	**248**	*e*P	**Pb**	**13 49 18.9**	**-1.3**
	baz=235						
WDGT				*e*S	**Sn**	**13 49 43.5**	**+1.3**
	baz=235						
JISG	**Ishigakijimahi**	**2.49**	**76**	P	**Pn**	**13 49 24.4**	**-0.2**
JISG				*e*S	**Sn**	**13 49 54.4**	**-0.5**

*CSEM **25** 14:29:08.7±0.3,38°.53N×39°.91E,h10km,MD2.7,Error ellipse: s-maj=8.5km s-min=3.8km az=41.0*
*ISK **25** 14:29:08.6,38°.50N×39.87E,h6km,MD2.7*
*ISCJB **25** 14:29:09.1±1.2,38°.51N±0°.06×39°.88E±0°.08,h5km±11km, Error ellipse: s-maj=12.1km s-min=8.1km az=135.2*
*DDA **25** 14:29:11.7,38°.28N×39°.72E,h7km,Ml2.6*
ISC 25 14:29:08.7±1.4,38°.53N±0°.06×39°.90E±0°.05,h11km±11km, n11,σ0s.28/20,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SVRC	**Sivrice-ELAZID**	**0.49**	**252**	*e*PG	**Pg**	**14 29 18.3**	**0.0**
SVRC				*e*SG	**Sg**	**14 29 24.6**	**-0.2**
SVRC	**Sivrice-ELAZID**	**0.49**	**252**	*e*Pg	**Pg**	**14 29 18.3**	**0.0**
SVRC				*e*Sg	**Sg**	**14 29 24.6**	**-0.2**
PTK	**Pertek**	**0.54**	**312**	*e*PG	**Pg**	**14 29 19.2**	**0.0**
PTK				*e*SG	**Sb**	**14 29 27.6**	**-0.4**
PTK	**Pertek**	**0.54**	**312**	*e*Pg	**Pg**	**14 29 19.2**	**0.0**
PTK				*e*Sg	**Sb**	**14 29 27.6**	**-0.4**
DIYA	**Diyarbakir**	**0.63**	**164**	*i* P	**Pb**	**14 29 21.4**	**-0.3**
DIYA	**Diyarbakir**	**0.63**	**164**	P	**Pb**	**14 29 21.4**	**-0.3**
ELZG	**Elazig**	**0.72**	**268**	*i* P	**Pb**	**14 29 23.7**	**+0.4**
ELZG				*i* S	**Sb**	**14 29 33.0**	**-0.2**
ELZG	**Elazig**	**0.72**	**268**	P	**Pb**	**14 29 23.7**	**+0.4**
ELZG				S	**Sb**	**14 29 33.0**	**-0.2**
MAZI	**Mazidag**	**1.16**	**158**	*e*PN	**Pb**	**14 29 30.9**	**+0.2**
MAZI				*e*SN	**Sn**	**14 29 46.8**	**+0.1**
MAZI	**Mazidag**	**1.16**	**158**	*e*Pn	**Pb**	**14 29 30.9**	**+0.2**
MAZI				*e*Sn	**Sn**	**14 29 46.8**	**+0.1**
MARD	**Mardin**	**1.40**	**150**	*i* P	**Pg**	**14 29 35.8**	**+0.2**
MARD				*i* S	**Sg**	**14 29 53.9**	**+0.2**

*DDA **25** 14:31:36.4,39°.95N×29°.96E,h7km,Ml2.6*
*ISK **25** 14:31:36.6,39°.88N×30°.02E,h7km,ML2.5*
*ISCJB **25** 14:31:37.3±0.5,39°.91N±0°.03×29°.97E±0°.04,h2km±5km, Error ellipse: s-maj=5.1km s-min=4.2km az=141.7*
*CSEM **25** 14:31:37.2±0.2,39°.88N×30°.01E,h12km,ML2.5,Error ellipse: s-maj=4.2km s-min=3.4km az=88.0*
ISC 25 14:31:36.9±1.1,39°.89N±0°.02×30°.00E±0°.03,h8km±9km, n33,σ1s9.10/50,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CAVI	**Cavuskoy**	**0.33**	**339**	*e*PG	**Pg**	**14 31 43.7**	**+0.2**
CAVI				*e*SG	**Sg**	**14 31 49.2**	**+1.2**
CAVI	**Cavuskoy**	**0.33**	**339**	*e*Pg	**Pg**	**14 31 43.7**	**+0.2**
CAVI				*e*Sg	**Sg**	**14 31 49.2**	**+1.2**
BORA	**Eskisehir**	**0.35**	**91**	*i* P	**Pb**	**14 31 44.3**	**-1.1**
BORA				*i* S	**Sb**	**14 31 50.3**	**-0.9**
BORA	**Eskisehir**	**0.35**	**91**	P	**Pb**	**14 31 44.3**	**-1.1**
BORA				S	**Sb**	**14 31 50.3**	**-0.9**
ADVT	**Abdulvahap**	**0.58**	**340**	*e*PG	**Pg**	**14 31 48.6**	**+0.5**
ADVT	**Abdulvahap**	**0.58**	**340**	*e*Pg	**Pg**	**14 31 48.6**	**+0.5**
IZI	**Iznik**	**0.60**	**318**	*e*PG	**Pb**	**14 31 49.1**	**-0.6**
IZI	**Iznik**	**0.60**	**318**	*e*Pg	**Pb**	**14 31 49.1**	**-0.6**
TVSB	**Tavsanli**	**0.60**	**223**	*e*PG	**Pg**	**14 31 48.9**	**+0.4**
TVSB				*e*SG	**Sb**	**14 31 57.6**	**-0.8**
TVSB	**Tavsanli**	**0.60**	**223**	*e*Pg	**Pg**	**14 31 48.9**	**+0.4**
TVSB				*e*Sg	**Sb**	**14 31 57.6**	**-0.8**
GULT	**Gulveren**	**0.67**	**36**	*e*PG	**Pb**	**14 31 50.3**	**-0.7**
GULT	**Gulveren**	**0.67**	**36**	*e*Pg	**Pb**	**14 31 50.3**	**-0.7**
IGD	**Bursa**	**0.71**	**302**	*i* P	**Pg**	**14 31 48.8**	**-1.9**
IGD				*i* S	**Sg**	**14 31 59.2**	**-0.7**
GDZ	**Gediz**	**0.89**	**207**	*i* P	**Pb**	**14 31 54.5**	**-0.2**
GDZ				*i* S	**Sn**	**14 32 08.7**	**-0.3**
GDZ	**Gediz**	**0.89**	**207**	P	**Pb**	**14 31 54.5**	**-0.2**
GDZ				S	**Sn**	**14 32 08.7**	**-0.3**
HRT	**Hereke**	**0.96**	**345**	*e*PG	**Pb**	**14 31 55.8**	**-0.1**
HRT	**Hereke**	**0.96**	**345**	*e*Pg	**Pb**	**14 31 55.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**0.98**	**300**	*e*PG	**Pb**	**14 31 56.2**	**+0.1**
MDNY				*e*SG	**Sn**	**14 32 10.5**	**-0.4**
MDNY	**Mudanya-Bursa**	**0.98**	**300**	*e*Pg	**Pb**	**14 31 56.2**	**+0.1**
MDNY				*e*Sg	**Sn**	**14 32 10.5**	**-0.4**
ARMT	**Armutlu**	**1.10**	**308**	*e*PN	**Pb**	**14 31 58.1**	**-0.1**
ARMT				*e*SN	**Sn**	**14 32 14.6**	**+0.6**
ARMT	**Armutlu**	**1.10**	**308**	*e*Pn	**Pb**	**14 31 58.1**	**-0.1**
ARMT				*e*Sn	**Sn**	**14 32 14.6**	**+0.6**
SBT5	**Esenkoy-Cinarc**	**1.13**	**311**	*e*PN	**Pn**	**14 31 59.2**	**+0.3**
SBT5	**Esenkoy-Cinarc**	**1.13**	**311**	*e*Pn	**Pn**	**14 31 59.2**	**+0.3**
SILT	**Sile**	**1.29**	**348**	*e*PN	**Pg**	**14 32 01.8**	**+0.1**
SILT	**Sile**	**1.29**	**348**	*e*Pn	**Pg**	**14 32 01.8**	**+0.1**
DEMI	**Demirci**	**1.30**	**230**	*i* P	**Pn**	**14 31 60.0**	**-1.4**
DEMI				*i* S	**Sn**	**14 32 21.6**	**+2.6**
DEMI	**Demirci**	**1.30**	**230**	P	**Pn**	**14 32 00.0**	**-1.4**
DEMI				S	**Sn**	**14 32 21.6**	**+2.6**
KCTX	**Karacabey (Bur**	**1.31**	**287**	*e*PN	**Pg**	**14 32 02.5**	**+0.4**
KCTX	**Karacabey (Bur**	**1.31**	**287**	*e*Pn	**Pg**	**14 32 02.5**	**+0.4**
BOLV	**Bolvadin**	**1.38**	**147**	*i* P	**Pb**	**14 32 02.5**	**-0.6**
BOLV				*i* S	**Sn**	**14 32 24.4**	**+3.2**
BOLV	**Bolvadin**	**1.38**	**147**	P	**Pb**	**14 32 02.5**	**-0.6**
BOLV				S	**Sn**	**14 32 24.4**	**+3.2**
KLYT	**Kilyos**	**1.54**	**332**	*e*PN	**Pb**	**14 32 05.4**	**-0.3**
KLYT	**Kilyos**	**1.54**	**332**	*e*Pn	**Pb**	**14 32 05.4**	**-0.3**

MEX 25 14:36:07.1±0.3,32°.41N×115°.15W,h12km±1km,MD3.7, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CBX	**Cerro Bola**	**1.29**	**266**	*e*P	Pn	14 36 27.4	-3.7
CBX				*e*S	Sb	14 36 42.4	-5.5
TJIG	**Tijuana**	**1.29**	**272**	*e*P	Pn	14 36 27.4	-3.6
TJIG				*e*S	Sb	14 36 42.9	-5.1
SPIG	**San Pedro Mart**	**1.39**	**191**	*e*P	Pn	14 36 29.6	-2.9
SPIG				*i* S	Sb	14 36 46.0	-4.9

*DDA **25** 14:43:48.6,39°.59N×28°.56E,h7km,Ml2.7*
*ISCJB **25** 14:43:49.6±0.5,39°.56N±0°.02×28°.67E±0°.04,h6km±5km, Error ellipse: s-maj=5.8km s-min=3.8km az=5.8*
*ISK **25** 14:43:49.5,39°.57N×28°.67E,h6km,MD2.6*
*CSEM **25** 14:43:50.1±0.2,39°.55N×28°.69E,h10km,ML2.7,Error ellipse: s-maj=4.6km s-min=3.6km az=88.0*
ISC 25 14:43:49.5±1.2,39°.57N±0°.02×28°.70E±0°.03,h3km±11km, n32,σ0s.96/49,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.53**	**179**	*i* P	**Pn**	**14 44 07.5**	**+3.5**
DEMI				*i* S	**Sn**	**14 44 14.5**	**+1.0**
TVSB	**Tavsanli**	**0.60**	**101**	*e*PG	**Pg**	**14 44 01.5**	**+0.5**
TVSB				*e*SG	**Sb**	**14 44 11.2**	**-0.4**
TVSB	**Tavsanli**	**0.60**	**101**	*e*Pg	**Pg**	**14 44 01.5**	**+0.5**
TVSB				*e*Sg	**Sb**	**14 44 11.2**	**-0.4**
BALB	**Balikesir**	**0.64**	**276**	*e*PG	**Pg**	**14 44 01.8**	**+0.1**
BALB	**Balikesir**	**0.64**	**276**	*e*Pg	**Pg**	**14 44 01.8**	**+0.1**
GDZ	**Gediz**	**0.77**	**128**	*i* P	**Pn**	**14 44 06.5**	**-0.9**
GDZ				*i* S	**Sn**	**14 44 22.1**	**+2.5**
GDZ	**Gediz**	**0.77**	**128**	P	**Pn**	**14 44 06.5**	**-0.9**
IGD	**Bursa**	**0.79**	**29**	*i* P	**Pg**	**14 44 02.6**	**-2.0**
IGD				*i* S	**Sb**	**14 44 17.9**	**+1.0**
IZI	**Iznik**	**0.97**	**38**	*e*PG	**Pg**	**14 44 08.2**	**+0.2**
IZI	**Iznik**	**0.97**	**38**	*e*Pg	**Pg**	**14 44 08.3**	**+0.2**
AKS	**Akhisar**	**0.98**	**225**	*e*PG	**Pb**	**14 44 08.6**	**-0.4**
AKS	**Akhisar**	**0.98**	**225**	*e*Pg	**Pb**	**14 44 08.6**	**-0.4**
ARMT	**Armutlu**	**1.00**	**7**	*e*PG	**Pg**	**14 44 09.0**	**+0.3**
ARMT				*e*SG	**Sn**	**14 44 23.7**	**-1.3**
ARMT	**Armutlu**	**1.00**	**7**	*e*Pg	**Pg**	**14 44 09.0**	**+0.3**
ARMT				*e*Sg	**Sn**	**14 44 23.7**	**-1.3**
KULA	**Kula-Manisa**	**1.06**	**182**	*e*PG	**Pb**	**14 44 10.1**	**-0.3**
KULA				*e*SG	**Sn**	**14 44 25.4**	**-1.1**
KULA	**Kula-Manisa**	**1.06**	**182**	*e*Pg	**Pb**	**14 44 10.1**	**-0.3**
KULA				*e*Sg	**Sn**	**14 44 25.4**	**-1.1**
SBT5	**Esenkoy-Cinarc**	**1.07**	**7**	*e*PG	**Pb**	**14 44 10.6**	**+0.1**
SBT5				*e*SG	**Sn**	**14 44 25.9**	**-0.6**
SBT5	**Esenkoy-Cinarc**	**1.07**	**7**	*e*Pg	**Pb**	**14 44 10.6**	**+0.1**
SBT5				*e*Sg	**Sn**	**14 44 25.9**	**-0.6**
CAVI	**Cavuskoy**	**1.08**	**54**	*e*PN	**Pn**	**14 44 11.7**	**+0.2**
CAVI				*e*SN	**Sn**	**14 44 26.9**	**0.0**
CAVI	**Cavuskoy**	**1.08**	**54**	*e*Pn	**Pn**	**14 44 11.7**	**+0.2**
CAVI				*e*Sn	**Sn**	**14 44 27.0**	**0.0**
MANT	**Manisa**	**1.08**	**186**	*i* P	**Pg**	**14 44 09.0**	**-1.3**
MANT				*i* S	**Sg**	**14 44 24.1**	**-0.2**
MANT	**Manisa**	**1.08**	**186**	P	**Pg**	**14 44 09.0**	**-1.3**
MANT				S	**Sg**	**14 44 24.1**	**-0.2**
MRMT	**Marmara Adasi**	**1.33**	**321**	*e*PN	**Pg**	**14 44 15.3**	**+0.2**
MRMT	**Marmara Adasi**	**1.33**	**321**	*e*Pn	**Pg**	**14 44 15.3**	**+0.2**
SBT3	**Marmara-Eregli**	**1.43**	**337**	*e*PN	**Pg**	**14 44 16.5**	**-0.2**
SBT3				*e*SN	**Sg**	**14 44 36.0**	**+0.8**
SBT3	**Marmara-Eregli**	**1.43**	**337**	*e*Pn	**Pg**	**14 44 16.5**	**-0.2**
SBT3				*e*Sn	**Sg**	**14 44 36.0**	**+0.8**
SBT4	**Kumbag-Tekirda**	**1.54**	**325**	*e*PN	**Pb**	**14 44 17.9**	**-0.6**
SBT4	**Kumbag-Tekirda**	**1.54**	**325**	*e*Pn	**Pb**	**14 44 17.9**	**-0.6**
RKY	**Sarkoy-Tekirda**	**1.61**	**314**	*e*PN	**Pn**	**14 44 18.7**	**-0.2**
RKY	**Sarkoy-Tekirda**	**1.61**	**314**	*e*Pn	**Pn**	**14 44 18.7**	**-0.2**
ALN	**Alexandroupoli**	**2.43**	**304**	*e*PN	**Pn**	**14 44 30.7**	**+0.7**
ALN	**Alexandroupoli**	**2.43**	**304**	*e*Pn	**Pn**	**14 44 30.7**	**+0.7**

*ISCJB **25** 14:56:20.1±0.3,44°.47N±0°.02×6°.88E±0°.02,h10km±3km, Error ellipse: s-maj=3.1km s-min=2.4km az=145.1*
*CSEM **25** 14:56:20.6±0.1,44°.48N×6°.92E,h12km,ML2.4/14,Error ellipse: s-maj=1.6km s-min=1.2km az=53.0*
*GEN **25** 14:56:21.2,44°.47N×6°.94E,h4km,ML1.9*
*LDG **25** 14:56:21.3±0.1,44°.48N×6°.94E,h2km,Md2.4/2,Ml2.5/11, Error ellipse: s-maj=2.4km s-min=1.3km az=71.0*
*ROM **25** 14:56:21.3±0.2,44°.49N×6°.98E,h11km±1km,Ml1.9/6, Error ellipse: s-maj=3.1km s-min=1.5km az=65.0*
ISC 25 14:56:20.9±0.8,44°.48N±0°.02×6°.93E±0°.02,h16km±6km, n57,σ0s.56/98,France

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PZZ	**Stroppo**	**0.14**	**80**	Pg	**Pg**	**14 56 24.4**	**-0.5**
PZZ				Sg	**Sg**	**14 56 26.7**	**-0.8**
	920nm,0.5s						
DOI	**San Damiano**	**0.23**	**85**	Pg	**Pg**	**14 56 25.9**	**-0.3**
DOI				Sg	**Sg**	**14 56 29.3**	**-0.4**
DOI	**San Damiano**	**0.23**	**85**	Pg	**Pg**	**14 56 25.9**	**-0.3**
DOI				Sg	**Sg**	**14 56 29.3**	**-0.4**
MBDF	**Montbardon**	**0.27**	**336**	*e*Pg	**Pg**	**14 56 26.6**	**-0.2**
	SNR=1.0						
MBDF				*e*Sg	**Sg**	**14 56 31.3**	**+0.4**
	169nm,0.2s						
MBDF	**Montbardon**	**0.27**	**336**	*e*Pg	**Pg**	**14 56 26.6**	**-0.2**
	SNR=1.0						
MBDF				*e*Sg	**Sg**	**14 56 31.3**	**+0.4**
	84nm,0.2s						
BHB	**Bricherasio**	**0.43**	**34**	Pg	**Pg**	**14 56 29.7**	**+0.1**
BHB				Sg	**Sg**	**14 56 35.2**	**-0.3**
	67nm,0.2s						
BHB	**Bricherasio**	**0.43**	**34**	P	**Pg**	**14 56 29.6**	**0.0**
BHB				S	**Sg**	**14 56 35.3**	**-0.3**
ENR	**Entracque**	**0.44**	**126**	Pg	**Pg**	**14 56 29.3**	**-0.4**
ENR				Sg	**Sg**	**14 56 35.7**	**0.0**
	106nm,0.5s						
ENR	**Entracque**	**0.44**	**126**	Pg	**Pg**	**14 56 29.3**	**-0.4**
ENR				S	**Sg**	**14 56 35.3**	**-0.4**
ENR				Sg	**Sg**	**14 56 35.7**	**0.0**
	106nm,0.5s						
RRL	**Rocca Remolon**	**0.45**	**348**	Pg	**Pg**	**14 56 30.0**	**0.0**
RRL				Sg	**Sb**	**14 56 37.3**	**+0.1**
	55nm,0.3s						
RRL	**Rocca Remolon**	**0.45**	**348**	P	**Pg**	**14 56 30.0**	**0.0**
RRL				S	**Sb**	**14 56 37.3**	**+0.1**
RSP	**Reno Superiore**	**0.71**	**20**	Pg	**Pg**	**14 56 35.0**	**+0.1**
RSP				Sg	**Sg**	**14 56 44.3**	**+0.1**
	50nm,0.8s						
RSP	**Reno Superiore**	**0.71**	**20**	P	**Pg**	**14 56 34.9**	**+0.1**
RSP				S	**Sg**	**14 56 44.2**	**+0.1**
SBF	**Sospel**	**0.72**	**149**	*e*Pg	**Pg**	**14 56 34.9**	**-0.1**
	SNR=1.0						
SBF				*e*Sg	**Sg**	**14 56 44.4**	**-0.1**
	41nm,0.2s,SNR=1.0						
SBF	**Sospel**	**0.72**	**149**	*e*Pg	**Pg**	**14 56 34.9**	**-0.1**
	SNR=1.0						
SBF				*e*Sg	**Sg**	**14 56 44.4**	**-0.1**
	20nm,0.2s,SNR=1.0						
NEGI	**Seborga**	**0.85**	**138**	Pg	**Pg**	**14 56 37.2**	**-0.2**
NEGI	**Seborga**	**0.85**	**138**	P	**Pg**	**14 56 37.2**	**-0.2**
NEGI				S	**Sg**	**14 56 48.2**	**-0.3**
ORIF	**Oris-en-Rattie**	**0.86**	**301**	*e*Pg	**Pg**	**14 56 37.3**	**-0.4**
	SNR=1.0

VIVF	**Saint-Julien-I**	**1.65**	**284**	*e*Pn	**Pn**	**14 56 50.2 +0.9**
	SNR=1.0					
VIVF	**Saint-Julien-I**	**1.65**	**284**	*e*Pg	**Pb**	**14 56 52.2 +1.2**
	SNR=1.0					
VIVF				*e*Sn	**Sn**	**14 57 10.2 -0.1**
	SNR=1.0					
VIVF				*e*Sg	**Sg**	**14 57 13.7 -0.4**
	2.5nm,0.3s,SNR=1.0					
CABF	**La Chapelle**	**2.21**	**345**	*e*Pg	**Pg**	**14 57 02.5 -0.8**
	SNR=1.0					
CABF				*e*Sg	**Sg**	**14 57 30.9 -1.0**
	0.9nm,0.3s					
CABF	**La Chapelle**	**2.21**	**345**	*e*Pg	**Pg**	**14 57 02.5 -0.8**
	SNR=1.0					
CABF				*e*Sg	**Sg**	**14 57 30.9 -1.0**
	0.4nm,0.3s					
LASF	**Ste Croix**	**2.24**	**261**	*e*Pn	**Pn**	**14 56 57.9 +0.5**
LASF	**Ste Croix**	**2.24**	**261**	*e*Pg	**Pg**	**14 57 03.3 -0.6**
LASF				*e*Sn	**Sn**	**14 57 24.1 -0.7**
	1.4nm,0.2s,SNR=1.0					
LASF	**Ste Croix**	**2.24**	**261**	*e*Pn	**Pn**	**14 56 57.9 +0.5**
LASF	**Ste Croix**	**2.24**	**261**	*e*Pg	**Pg**	**14 57 03.3 -0.6**
LASF				*e*Sn	**Sn**	**14 57 24.1 -0.7**
	0.7nm,0.2s,SNR=1.0					
PGF	**Pioggiola**	**2.45**	**141**	*e*Pn	**Pn**	**14 57 00.5 +0.1**
	SNR=1.0					
PGF				*e*Sn	**Sn**	**14 57 30.1 0.0**
	4.5nm,0.2s,SNR=1.0					
PGF	**Pioggiola**	**2.45**	**141**	*e*Pn	**Pn**	**14 57 00.5 +0.1**
	SNR=1.0					
PGF				*e*Sn	**Sn**	**14 57 30.1 0.0**
	2.2nm,0.2s,SNR=1.0					
SMF	**Signal de Mont**	**3.06**	**316**	*e*Sg	**Sg**	**14 57 57.7 -1.5**
	2.4nm,0.3s					
SMF	**Signal de Mont**	**3.06**	**316**	*e*Sg	**Sg**	**14 57 57.7 -1.5**
	1.2nm,0.3s					
CAF	**Calviac**	**3.50**	**279**	*e*Pn	**Pn**	**14 57 14.5 -0.2**
CAF	**Calviac**	**3.50**	**279**	*e*Pn	**Pn**	**14 57 14.5 -0.2**
GRR	**Gorron**	**6.65**	**309**	*e*Pn	**Pn**	**14 57 57.3 -0.6**
	SNR=1.0					
GRR	**Gorron**	**6.65**	**309**	*e*Pn	**Pn**	**14 57 57.3 -0.6**
	SNR=1.0					

IDC 25 15:24:14.9±2.2, 6°02′S×129°77′E, h0km, mb3.9/1, mb1 3.7/3, mb1mx3.3/35, mbtmp3.5/3, ML3.5/2, Error ellipse: s-maj=141.8km s-min=30.2km az=69.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**14.53**	**163**	Pn	Pn	15 27 41.6	-0.5
	0.2nm,0.3s,baz=346,slow=13,SNR=19						
WRA				Sn	Sn	15 30 10.6	-13
	0.5nm,0.3s,baz=0.5,slow=23,SNR=9.7						
ASAR	**Alice Springs**	**17.99**	**168**	P	Pn	15 28 26.9	+0.3
	0.1nm,0.3s,baz=345,slow=9.9,SNR=17						
ASAR				S	Sn	15 31 33.7	-14
	0.1nm,0.3s,baz=348,slow=24,SNR=5.1						
MKAR	**Makanchi Array**	**67.29**	**327**	P	P	15 35 11.6	0.0
	0.8nm,0.6s,baz=113,slow=7.8,SNR=10						

*IDC **25** 15:33:30.5±1.1, 29°.88N×102°.98E, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.5/51, mbtmp3.8/5, ML3.8/1, Error ellipse: s-maj=78.6km s-min=19.4km az=59.0*
*ISCJB **25** 15:33:33.5±0.6, 29°.84N±0°.06×102°.91E±0°.08, h33km, mb3.9/6, Error ellipse: s-maj=10.4km s-min=7.2km az=153.2*
*NEIC **25** 15:33:35.6±0.7, 29°.89N×102°.97E, h35km, mb4.2/2, Error ellipse: s-maj=18.5km s-min=10.5km az=48.0*
*BJI **25** 15:33:35.4, 30°.00N×103°.14E, h20km, ML3.5/18, Ms7 3.0/1*

ISC 25 15:33:36.2±0.8, 29°.94N±0°.06×103°.02E±0°.09, h35km, n13, σ1s18/14, mb3.9/6, 1D, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CD2	**Chengdu**	**1.16**	**33**	*i*Pg	**Pn**	**15 33 57.3**	**+1.3**
CD2				Sg	**Sn**	**15 34 11.8**	**+1.2**
CD2				smax	smax		
	comp=N,6μm,0.5s						
CD2				smax	smax		
	comp=E,5μm,0.5s						
GYA	**Guiyang**	**4.73**	**136**	Pg	Pn	15 34 56.3	+11
GYA				Sn	**Sn**	**15 35 39.3**	**+0.4**
GYA				Sg		15 35 55.0	
GYA				smax	smax		
	comp=N,80nm,0.8s						
GYA				smax	smax		
	comp=E,70nm,0.8s						
KMI	**Kunming**	**4.81**	**183**	Pn	**Pn**	**15 34 48.0**	**+1.6**
KMI				smax	smax		
	comp=N,47nm,0.5s						
KMI				smax	smax		
	comp=E,64nm,0.6s						
ENH	**Enshi**	**5.61**	**85**	*e*Pn	**Pn**	**15 34 57.1**	**-0.1**
	42nm,0.3s						
SONM	**Songino Array**	**18.06**	**7**	P	**Pn**	**15 37 44.8**	**+0.5**
	0.3nm,0.3s,baz=185,slow=11,SNR=6.1						
WMQ	**Urumqi**	**18.46**	**323**	*e*P	**P**	**15 37 48.8**	**-0.1**
MKAR	**Makanchi Array**	**23.28**	**322**	P	**P**	**15 38 40.9**	**+0.2**
	1.3nm,0.7s,baz=125,slow=11,SNR=14						
KURBB	**Kurchatov Arra**	**27.63**	**325**	P	**P**	**15 39 18.5**	**-1.8**
	0.4nm,0.5s,baz=135,slow=8.7,SNR=5.2						
KURK	**Kurchatov**	**27.65**	**326**	P	**P**	**15 39 18.5**	**-1.9**
ABKAR	**Akbulak array**	**37.76**	**313**	*e*P	**P**	**15 40 48.8**	**0.0**
	0.6nm,0.4s						
WRAB	**Tennant Creek**	**58.04**	**145**	*e*P	**P**	**15 43 25.0**	**-1.0**
	3.4nm,0.5s						
WRA	**Warramunga Arr**	**58.05**	**145**	P	**P**	**15 43 25.2**	**-0.8**
	2.2nm,0.6s,baz=337,slow=7.7,SNR=78						
ASAR	**Alice Springs**	**61.00**	**147**	P	**P**	**15 43 45.8**	**-0.5**
	0.7nm,0.5s,baz=335,slow=6.7,SNR=42						

*ISCJB **25** 15:56:58.4±1.1, 35°.22N±0°.04×141°.20E±0°.09, h32km±6km, mb3.7/4, MS2.9/1, Error ellipse: s-maj=13.0km s-min=7.3km az=171.3*
*JMA **25** 15:56:58.6±0.1, 35°.26N×141°.19E, h35km±2km, M3.4*
*IDC **25** 15:57:04.3±5.0, 35°.06N×140°.80E, h56km±36km, mb3.4/4, mb1 3.5/6, mb1mx3.2/39, mbtmp3.6/6, ML3.1/2, MS2.8/3, Ms1 2.8/3, ms1mx2.4/34, Error ellipse: s-maj=55.2km s-min=8.6km az=74.0*

ISC 25 15:56:59.2±1.6, 35°.24N±0°.04×141°.15E±0°.08, h25km±11km, n23, σ1s10/20, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.52**	**333**	P	**Pb**	**15 57 09.3**	**-0.5**
CHOJ				*e*S	**Sb**	**15 57 16.6**	**-0.3**
BSO1	**Boso 1**	**0.60**	**194**	P	**Pb**	**15 57 10.8**	**+0.1**
BSO3	**Boso 3**	**0.68**	**231**	P	**Pb**	**15 57 12.4**	**+0.2**
KTR	**Katsuura**	**0.69**	**263**	P	**Pb**	**15 57 12.4**	**-0.1**
KTR				*e*S	**Sb**	**15 57 22.2**	**+0.6**
BSO4	**Boso 4**	**0.71**	**250**	P	**Pb**	**15 57 13.3**	**+0.5**
JCN	**Nagara**	**0.80**	**283**	P	**Pn**	**15 57 14.6**	**-0.2**
JYT	**Yasato**	**1.26**	**322**	P	**Pn**	**15 57 20.4**	**-0.8**
JIM2	**Oshima 3**	**1.50**	**250**	P	**Pn**	**15 57 22.9**	**-1.7**
JHJ	**Hachijo jima 2**	**2.40**	**209**	P	**Pn**	**15 57 38.2**	**+1.3**
	13nm,0.3s,baz=18,slow=20,SNR=4.9						
JHJ				S	**Sn**	**15 58 02.5**	**-2.9**
	36nm,0.3s,baz=75,slow=23,SNR=6.9						
MJAR	**Matsushiro Arr**	**2.72**	**299**	P	**Pn**	**15 57 41.6**	**+0.3**
	3.3nm,0.3s,baz=127,slow=11,SNR=26						
MJAR				S	**Sn**	**15 58 14.0**	**+0.6**
	2.8nm,0.3s,baz=142,slow=14,SNR=5.9						
MJAR				LR	LR	15 58 46.4	
	comp=Z,94nm,20.6s,baz=110,slow=40						
MAT	**Matsushiro**	**2.72**	**299**	P	**Pn**	**15 57 43.4**	**+2.1**
MAT				S	**Sb**	**15 58 19.8**	**-0.3**
KLR	**Kul'dur**	**15.60**	**337**	LR	LR	16 06 36.7	
	comp=Z,48nm,18.5s,baz=131,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.46**	**117**	T	T	16 31 39.6	
	baz=310,slow=75,SNR=80						
H11N1	**WAKE ISLAND Hy**	**27.47**	**117**	T	T	16 31 39.6	
	baz=310,slow=75,SNR=66						
H11N3	**WAKE ISLAND Hy**	**27.48**	**117**	T	T	16 31 41.3	
	baz=310,slow=75,SNR=74						
H11S1	**WAKE ISLAND Hy**	**28.11**	**120**	T	T	16 32 25.4	
	baz=312,slow=76,SNR=217						
H11S3	**WAKE ISLAND Hy**	**28.11**	**120**	T	T	16 32 22.1	
	baz=312,slow=76,SNR=174						
H11S2	**WAKE ISLAND Hy**	**28.12**	**120**	T	T	16 32 23.4	
	baz=312,slow=76,SNR=153						
SONM	**Songino Array**	**28.65**	**307**	LR	LR	16 15 58.7	
	comp=Z,27nm,18.7s,baz=241,slow=40						
ZALV	**Zalesovo Beam**	**42.98**	**314**	P	**P**	**16 04 56.5**	**+0.4**
	0.8nm,0.5s,baz=108,slow=7.7,SNR=3.7						
MKAR	**Makanchi Array**	**44.91**	**304**	P	**P**	**16 05 12.2**	**+0.4**
	0.3nm,0.6s,baz=83,slow=9.6,SNR=4.9						
WRA	**Warramunga Arr**	**55.25**	**188**	P	**P**	**16 06 30.4**	**0.0**
	1.1nm,0.5s,baz=5.1,slow=7.6,SNR=19						
ASAR	**Alice Springs**	**58.98**	**188**	P	**P**	**16 06 56.9**	**+0.2**
	0.3nm,0.5s,baz=13,slow=8.7,SNR=6.3						

IDC 25 15:57:05.3±2.9, 6°.58S×128°.75E, h0km, mb3.4/1, mb1 3.7/3, mb1mx3.4/32, mbtmp3.5/3, ML3.7/2, Error ellipse: s-maj=284.3km s-min=32.0km az=67.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**14.35**	**158**	Pn	Pn	16 00 29.3	-0.5
	0.4nm,0.3s,baz=334,slow=14,SNR=27						
WRA				Sn	Sn	16 02 56.9	-13
	0.3nm,0.3s,baz=351,slow=20,SNR=6.2						
ASAR	**Alice Springs**	**17.69**	**164**	P	Pn	16 01 13.8	+0.5
	0.2nm,0.3s,baz=348,slow=14,SNR=19						
ASAR				S	Sn	16 04 22.6	-8.7
	0.1nm,0.3s,baz=352,slow=25,SNR=4.7						
MKAR	**Makanchi Array**	**67.20**	**327**	P	P	16 08 01.4	0.0
	0.2nm,0.5s,baz=110,slow=7.9,SNR=4.0						

*NIED **25** 15:57:00.38°.40N×142°.10E, h56km, Mw3.5 Best double couple: M₀2.29000×10¹⁴ NP1:φs100.00000°, δ46.00000°, λ-19.00000°. NP2:φs203.00000°, δ76.00000°, λ-135.00000°.*

JMA 25 15:57:16.9±0.1, 38°.41N×142°.09E, h34km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.58**	**275**	P	Pn	15 57 28.6	-0.1
JIO				S	Sn	15 57 36.4	-0.7
OFUJ	**Ofunato**	**0.75**	**334**	P	Pn	15 57 30.9	-0.1
OFUJ				S	Sn	15 57 40.8	-0.4
JMK	**Ichinoseki**	**0.87**	**309**	P	Pn	15 57 33.0	+0.3
JMK				S	Sn	15 57 44.1	-0.1
JOU	**Okura**	**1.12**	**268**	P	Pn	15 57 36.8	+0.6
JOU				*e*S	Sb	15 57 51.4	-0.7
JMM	**Marumori**	**1.16**	**242**	P	Pn	15 57 36.3	-0.4
JMM				S	Sn	15 57 50.9	-0.4
JOM	**Ohasama**	**1.23**	**330**	P	Pn	15 57 38.6	+0.9
JOM				S	Sb	15 57 54.3	-0.9
JFK	**Kawauchi**	**1.42**	**223**	P	Pn	15 57 40.0	-0.3
JFK				S	Sn	15 57 56.1	-1.7
JYK	**Kaneyama**	**1.45**	**291**	P	Pn	15 57 41.6	+0.9
JYK				*e*S	Sn	15 57 59.4	+0.9
JRG	**Rokugo**	**1.50**	**311**	P	Pb	15 57 42.9	-1.3
JRG				S	Sb	15 58 03.0	0.0
JYS	**Shirataka**	**1.60**	**264**	P	Pn	15 57 43.6	+0.8

MEX 25 16:00:17.7±0.4, 14°.79N×93°.09W, h35km±77km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.75**	**32**	*e*P	Pn	16 00 44.4	-1.4
CCIG				*i* S	Sn	16 01 04.5	-2.5

*CSEM **25** 16:06:34.5, 39°.39N×29°.82W, h10km, ML2.5*

PDA 25 16:06:34.5±0.4, 39°.39N×29°.82W, h10km, MD3.6, ML2.5, Error ellipse: s-maj=9.1km s-min=3.4km az=45.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCED	**Cedros**	**1.16**	**131**	*e*P	Pb	16 06 52.0	-4.6
PCED				*e*S	Sb	16 07 05.2	-6.5
PCED				A	A	16 07 07.5	
	24nm,0.2s						
PCED	**Cedros**	**1.16**	**131**	*e*P	Pb	16 06 52.0	-4.6
PCED				*e*S	Sb	16 07 05.2	-6.5
CALA	**Caldeira**	**1.19**	**132**	*e*S	Sb	16 07 06.1	-6.6
CALA	**Caldeira**	**1.19**	**132**	*e*S	Sb	16 07 06.1	-6.6
PCAN	**Candelaria**	**1.40**	**131**	*e*P	Pn	16 06 55.3	-4.8
PCAN				*e*S	Sb	16 07 11.1	-7.4
PCAN				A	A	16 07 14.5	
	65nm,0.2s						
PCAN	**Candelaria**	**1.40**	**131**	*e*P	Pn	16 06 55.3	-4.8
PCAN				*e*S	Sb	16 07 11.1	-7.4
ROSA	**Rosais**	**1.40**	**118**	*e*S	Sn	16 07 11.0	-7.7
ROSA				A	A	16 07 12.4	
	11nm,0.2s						
ROSA	**Rosais**	**1.40**	**118**	*e*S	Sn	16 07 11.0	-7.7
PICO	**Pico**	**1.41**	**129**	*e*P	Pn	16 06 55.7	-4.5
PICO				*e*S	Sn	16 07 11.5	-7.4
PICO				A	A	16 07 13.7	
	100nm,0.3s						
PICO	**Pico**	**1.41**	**129**	*e*P	Pn	16 06 55.7	-4.5
PICO				*e*S	Sn	16 07 11.5	-7.4

*ISCJB **25** 16:09:32.3±1.1, 35°.28N±0°.06×141°.3E±0°.1, h35km, mb3.7/4, Error ellipse: s-maj=16.3km s-min=6.3km az=158.0*
*JMA **25** 16:09:33.0±0.1, 35°.28N×141°.15E, h32km±2km, M3.2*
*IDC **25** 16:09:39.2±1.1, 34°.25N×138°.27E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/43, mbtmp3.6/4, ML2.8/1, MS3.1/1, Ms1 3.1/1, ms1mx2.3/49, Error ellipse: s-maj=37.9km s-min=17.1km az=57.0*

ISC 25 16:09:33.7±1.4, 35°.24N±0°.05×141°.3E±0°.1, h35km, n15, σ1s96/19, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.56**	**325**	P	**Pn**	**16 09 43.1**	**-2.1**
CHOJ				S	**Sn**	**16 09 50.1**	**-3.2**
BSO1	**Boso 1**	**0.63**	**201**	P	**Pn**	**16 09 45.3**	**-0.3**
BSO1				*e*X		16 09 54.9	
BSO3	**Boso 3**	**0.75**	**235**	P	**Pn**	**16 09 46.6**	**-1.0**
BSO3				X		16 09 58.4	
KTR	**Katsuura**	**0.78**	**263**	P	**Pn**	**16 09 46.4**	**-1.7**
BSO4	**Boso 4**	**0.79**	**252**	P	**Pn**	**16 09 47.0**	**-1.3**
JCN	**Nagara**	**0.88**	**282**	P	**Pn**	**16 09 48.5**	**-1.0**
JYT	**Yasato**	**1.31**	**319**	P	**Pn**	**16 09 54.2**	**-1.2**
JYT				*e*S	**Sn**	**16 10 09.9**	**-1.8**
JHJ	**Hachijo jima 2**	**2.44**	**210**	Pn	**Pn**	**16 10 10.9**	**-0.2**
	10nm,0.3s,baz=252,slow=20,SNR=4.2						
JHJ				Sn	**Sn**	**16 10 35.8**	**-3.9**
	25nm,0.3s,baz=127,slow=20,SNR=4.6						
MJAR	**Matsushiro Arr**	**2.79**	**299**	Pn	**Pn**	**16 10 16.6**	**+0.7**
	2.6nm,0.3s,baz=304,slow=5.2,SNR=20						
MJAR				Sn	**Sn**	**16 10 52.0**	**+3.7**
	2.1nm,0.3s,baz=154,slow=12,SNR=8.4						
MAT	**Matsushiro**	**2.80**	**299**	P	**Pn**	**16 10 17.0**	**+1.1**
MAT				S	**Sn**	**16 10 48.4**	**0.0**
USRK	**Ussuriysk Ar.**	**11.44**	**324**	LR	LR	16 16 42.6	
	comp=Z,87nm,19.3s,baz=49,slow=38						
MKAR	**Makanchi Array**	**44.98**	**304**	P	**P**	**16 17 46.0**	**+0.5**
	0.4nm,0.6s,baz=81,slow=10,SNR=4.8						
KURBB	**Kurchatov Arra**	**47.02**	**309**	P	**P**	**16 18 01.8**	**+0.5**
	0.5nm,0.5s,baz=85,slow=8.2,SNR=7.2						
WRA	**Warramunga Arr**	**55.27**	**188**	P	**P**	**16 19 04.3**	**+0.8**
	1.3nm,0.5s,baz=2.0,slow=7.6,SNR=16						
ASAR	**Alice Springs**	**59.00**	**188**	P	**P**	**16 19 31.8**	**+1.9**
	0.3nm,0.8s,baz=17,slow=9.8,SNR=4.8						

IDC 25 16:30:32.6±10.0, 1°.34N×125°.11E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/36, mbtmp3.4/3, Error ellipse: s-maj=188.3km s-min=154.6km az=64.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.00**	**157**	P	P	16 35 39.2	-0.1
	0.6nm,0.4s,baz=335,slow=11,SNR=11						
ASAR	**Alice Springs**	**26.29**	**162**	P	P	16 36 10.6	+0.5
	0.1nm,0.3s,baz=344,slow=7.6,SNR=8.0						
STKA	**Stephens Creek**	**36.55**	**156**	P	P	16 37 39.6	-0.6
	1.4nm,1.0s,baz=335,slow=7.8,SNR=3.8						

IDC 25 16:31:10.9±5.6, 19°.12S×177°.87W, h600km±60km, mb2.9/7, mb1 3.2/7, mb1mx2.9/27, mbtmp3.9/7, Error ellipse: s-maj=62.5km s-min=23.5km az=145.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**44.93**	**261**	P	P	16 38 33.6	-0.4
	0.5nm,0.3s,baz=97,slow=7.7,SNR=21						
WRA				PcP	PcP	16 40 02.3	0.0
	0.5nm,0.5s,baz=97,slow=3.7,SNR=6.4						
ASAR	**Alice Springs**	**44.97**	**255**	P	P	16 38 34.1	-0.2
	0.8nm,0.5s,baz=86,slow=7.9,SNR=39						
ASAR				PcP	PcP	16 40 02.5	+0.1
	0.5nm,0.5s,baz=106,slow=3.9,SNR=8.9						
FITZ	**Fitzroy Crossi**	**53.34**	**261**	P	P	16 39 36.0	+0.2
	0.7nm,0.5s,baz=157,slow=5.6,SNR=6.5						
PETK	**Petropavlovsk-**	**74.98**	**345**	P	P	16 41 52.2	+0.6
	1.6nm,0.7s,baz=130,slow=6.3,SNR=3.7						
TXAR	**Lajitas Array**	**86.21**	**57**	P	P	16 42 50.7	+0.5
	0.5nm,0.7s,baz=210,slow=6.2,SNR=6.4						
ILAR	**Eielson Array**	**86.95**	**13**	P	P	16 42 52.2	-0.5
	0.3nm,0.4s,baz=230,slow=5.4,SNR=9.8						
PDAR	**Pinedale Array**	**87.88**	**43**	P	P	16 42 57.8	-0.2
	0.3nm,0.5s,baz=224,slow=6.0,SNR=3.2						
MKAR	**Makanchi Array**	**110.34**	**314**	PKiKP	PKiKP	16 48 35.8	+0.1
	0.1nm,0.5s,baz=235,slow=2.6,SNR=4.1						
BVAR	**Borovoye Array**	**118.10**	**321**	PKP	PKPdf	16 48 49.1	-1.3
	0.7nm,0.3s,baz=146,slow=3.5,SNR=5.2						
ARCES	**ARCESS Array B**	**127.59**	**350**	PKP	PKPdf	16 49 07.1	-1.0
	4.0nm,1.0s,baz=337,slow=2.8,SNR=3.7						
BRTR	**Keskin Array B**	**145.99**	**314**	PKPbc	PKPbc	16 49 44.6	-0.3
	0.9nm,0.6s,baz=143,slow=4.6,SNR=3.9						
KHC	**Kasperske Hory**	**148.67**	**345**	*e*P	PKPbc	16 49 51.5	+0.1
GERES	**GERESS Array B**	**148.91**	**345**	PKPbc	PKPbc	16 49 51.5	-0.5
	1.1nm,0.6s,baz=48,slow=2.0,SNR=10						

*TAP **25** 16:44:53.6, 24°.51N×122°.94E, h74km, ML3.3, D*
*JMA **25** 16:44:53.8±0.2, 24°.60N×122°.63E, h116km±2km, M2.4*
*ISCJB **25** 16:44:54.3±0.6, 24°.64N±0°.04×122°.68E±0°.02, h109km±5km, Error ellipse: s-maj=6.9km s-min=2.7km az=169.8*

ISC 25 16:44:54.8±1.5, 24°.63N±0°.06×122°.67E±0°.03, h107km±10km, n39, σ0s99/75, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.30**	**125**	P	**Pn**	**16 45 10.5**	**+0.2**
JYNG				S	**Sn**	**16 45 23.0**	**+1.1**
YOJ	**Yonaguni jima**	**0.35**	**118**	P	**Pn**	**16 45 10.7**	**+0.2**
YOJ				S	**Sn**	**16 45 23.6**	**+1.4**
TWB1	**Santiao Chiao**	**0.73**	**302**	*e*P	**Pn**	**16 45 12.3**	**-0.9**
	baz=300						
TWB1				*e*S	**Sn**	**16 45 25.2**	**-1.7**
	baz=300						
TWC	**Suao**	**0.75**	**269**	*e*P	**Pn**	**16 45 11.8**	**-1.5**
	baz=275						
TWC				*e*S	**Sn**	**16 45 26.2**	**-1.1**
	baz=275						
ENA	**Nanau**	**0.87**	**257**	*e*P	**Pn**	**16 45 14.6**	**+0.1**
	baz=265						
ENA				*e*S	**Sn**	**16 45 29.6**	**+0.3**
	baz=265						
TWE	**Neicheng**	**0.92**	**276**	*e*P	**Pn**	**16 45 13.3**	**-1.7**
	baz=280						
TWE				*e*S	**Sn**	**16 45 29.5**	**-0.6**
	baz=280						
NWF	**Wu-fen Shan**	**0.92**	**299**	*e*P	**Pn**	**16 45 15.0**	**-0.1**
	baz=298						
NWF				*e*S	**Sn**	**16 45 32.3**	**+1.9**
	baz=298						
ENTT	**Nioudou**	**1.01**	**271**	*e*P	**Pn**	**16 45 16.3**	**+0.4**
	baz=275						
ENTT				*e*S	**Sn**	**16 45 32.3**	**+0.5**
	baz=275						
IRIF	**Iriomote-Funau**	**1.01**	**106**	P	**Pn**	**16 45 15.9**	**0.0**
IRIF				*e*S	**Sn**	**16 45 32.6**	**+0.9**
TWD	**Chiawan**	**1.12**	**241**	*e*P	**Pn**	**16 45 16.4**	**-0.7**
	baz=250						
TWD				*e*S	**Sn**	**16 45 33.2**	**-0.7**
	baz=250						
HATJ	**Hateruma jima**	**1.18**	**118**	P	**Pn**	**16 45 18.4**	**+0.7**
HATJ				*e*S	**Sn**	**16 45 36.7**	**+1.6**
NNS	**Nan Shan**	**1.20**	**261**	*e*P	**Pn**	**16 45 17.7**	**-0.4**
	baz=267						
NNS				*e*S	**Sn**	**16 45 35.8**	**+0.1**
	baz=267						
NSK	**Sanguang**	**1.20**	**273**	*e*P	**Pn**	**16 45 18.0**	**0.0**
	baz=276						
NSK				*e*S	**Sn**	**16 45 35.0**	**-0.5**
	baz=276						
JKRS	**Kuro-shima**	**1.28**	**107**	P	**Pn**	**16 45 19.4**	**+0.5**
JKRS				S	**Sn**	**16 45 38.3**	**+1.2**
JIJ	**Ishigaki jima**	**1.36**	**101**	P	**Pn**	**16 45 19.8**	**-0.1**
JIJ				S	**Sn**	**16 45 38.4**	**-0.5**
WHF	**Hehuan Shan**	**1.37**	**250**	*e*P	**Pn**	**16 45 20.3**	**-0.1**
	baz=256						
WHF				*e*S	**Sn**	**16 45 39.5**	**-0.2**
	baz=256						
ESL	**Shilin**	**1.39**	**235**	*e*P	**Pn**	**16 45 19.7**	**-0.5**
	baz=243						
ESL				*e*S	**Sn**	**16 45 38.7**	**-0.7**
	baz=243						
TWT	**Tachien**	**1.41**	**255**	P	**Pn**	**16 45 21.4**	**+0.7**
	baz=260						
TWT				*e*S	**Sn**	**16 45 41.0**	**+0.8**
	baz=260						
JISG	**Ishigakijimahi**	**1.49**	**91**	P	**Pn**	**16 45 21.2**	**-0.2**
JISG				S	**Sn**	**16 45 40.9**	**-0.6**
NSTT	**Nanjuang**	**1.52**	**271**	*e*P	**Pn**	**16 45 22.3**	**+0.5**
	baz=273						
NSTT				*e*S	**Sn**	**16 45 41.7**	**-0.5**
	baz=273						
EHY	**Hungye**	**1.66**	**228**	*e*P	**Pn**	**16 45 22.9**	**-0.6**
	baz=235						
EHY				*e*S	**Sn**	**16 45 43.9**	**-1.4**
	baz=235						
SMLT	**Sun Moon Lake**	**1.78**	**246**	*e*P	**Pn**	**16 45 26.2**	**+1.2**
	baz=251						
SMLT				*e*S	**Sn**	**16 45 49.0**	**+1.0**
	baz=251						
TWF1	**Yuli**	**1.79**	**225**	*e*P	**Pn**	**16 45 24.7**	**-0.3**
	baz=232						
TWF1				*e*S	**Sn**	**16 45 46.7**	**-1.3

baz=225
WTP Ta-pu 2.33 234 *e*P **Pn 16 45 32.3 +0.3**
baz=239
WTP *e*S **Sn 16 46 01.8 +1.3**
baz=239
JIKM Ikemajima 2.36 82 *e*S **Sn 16 46 00.5 -0.6**
CHN1 Nanshi 2.43 234 *e*P **Pn 16 45 34.2 +0.9**
baz=239
CHN1 *e*S **Sn 16 46 03.8 +1.0**
baz=239
JOGS Gusukube 2.49 86 S **Sn 16 46 03.8 -0.3**
LAY Lan-yu 2.77 202 *e*P **Pn 16 45 36.5 -1.3**
baz=207
LAY *e*S **Sn 16 46 08.6 -2.2**
baz=207

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*SJA **25** 16:45:37.5±0.8,27˚.49S×63˚.15W,h660km±10km,ML4.7*
*ISCJB **25** 16:45:45.3±0.3,27˚.35S±0˚.03×62˚.95W±0˚.04,h607km±2km, mb4.3/76,Error ellipse: s-maj=5.8km s-min=4.5km az=142.9*
*NEIC **25** 16:45:46.2±0.2,27˚.39S×63˚.02W,mb4.3/52,Error ellipse: s-maj=6.6km s-min=4.7km az=60.0*
*IDC **25** 16:45:46.3±0.5,27˚.29S×62˚.96W,h604km±5km,mb3.9/20, mb1 4.0/23,mb1mx3.8/43,mbtmp4.8/23,Error ellipse: s-maj=12.9km s-min=8.7km az=79.0*
ISC 25 16:45:45.9±0.4,**27˚.34S**±0˚.05×**63˚.01W**±0˚.06,**h601**km±4km, **h602**km:**pP-P,n393,**σ0**84**/439,**mb4.3**/76,**2C-12D, Santiago del Estero Province**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AHML	**Horco Molle**	**2.14**	**285**	*e*P	**P**	**16 47 01.1**	**+0.1**
AHML				*e*S	**S**	**16 48 02.1**	**+0.1**
CYA	**Choya**	**2.70**	**245**	*e*P	**P**	**16 47 02.8**	**-0.7**
CYA				IAML		16 47 04.8	
	comp=Z,236nm,0.4s						
FSA	**Cafayete**	**2.92**	**294**	*e*P	**P**	**16 47 05.0**	**0.0**
SLA	**San Lorenzo**	**3.44**	**319**	*e*P	**P**	**16 47 08.8**	**+0.7**
AZAP	**Zapla**	**3.62**	**329**	*e*P	**P**	**16 47 09.9**	**+0.6**
AZAP				IAML		16 47 33.8	
	comp=Z,91nm,0.4s						
ASTB	**Santa Barbara**	**3.62**	**339**	*e*P	**P**	**16 47 10.8**	**+1.5**
HJA	**Humahuaca**	**4.65**	**332**	*e*P	**P**	**16 47 18.5**	**+1.7**
VCA	**Vinchina**	**4.79**	**252**	*e*P	**P**	**16 47 17.7**	**+0.3**
VCA				*e*S	**S**	**16 48 30.9**	**-1.3**
AVFE	**Valle Fertil**	**5.10**	**229**	*e*P	**P**	**16 47 19.5**	**-0.2**
CPUP	**Villa Florida**	**5.18**	**80**	P	**P**	**16 47 21.1**	**+0.8**
	comp=Z,266nm,0.3s,baz=248,slow=8.7,SNR=364						
CPUP				S	**S**	**16 48 33.4**	**-4.0**
	baz=274,slow=18,SNR=1.2						
RTLL	**Cerro Villicun**	**6.20**	**229**	⇓*e*P	**P**	**16 47 28.9**	**+0.1**
LCO	**Las Campanas**	**6.99**	**254**	*e*P	**P**	**16 47 35.8**	**-0.3**
RTLS	**Leoncito**	**7.05**	**229**	*e*P	**P**	**16 47 37.4**	**+0.8**
LVC	**Limon Verde**	**7.13**	**310**	P	**P**	**16 47 38.2**	**+0.6**
	comp=Z,3μm,0.3s,baz=116,slow=6.4,SNR=441						
LVC				S	**S**	**16 49 06.7**	**-2.3**
	comp=Z,3μm,0.3s,baz=234,slow=19,SNR=30						
LVC	**Limon Verde**	**7.13**	**310**	*e*P	**P**	**16 47 37.7**	**0.0**
LVC				S	**S**	**16 49 06.7**	**-2.3**
TLL	**Tololo Astrono**	**7.39**	**246**	⇓*i*P	**P**	**16 47 39.5**	**-0.3**
TLL				*i* S	**S**	**16 49 11.8**	**-1.3**
PB06	**IPOC Station P**	**7.53**	**306**	⇓*i*P	**P**	**16 47 41.4**	**+0.3**
PB06				*i* S	**S**	**16 49 13.6**	**-1.7**
ANCH	**Antofagasta**	**7.61**	**297**	⇑*i*P	**P**	**16 47 41.9**	**+0.3**
ANCH				*e*S	**S**	**16 49 16.5**	**+0.1**
PB10	**IPOC Station P**	**7.81**	**298**	⇓*i*P	**P**	**16 47 43.8**	**+0.3**
PB10				*i* S	**S**	**16 49 18.8**	**-1.0**
PB10	**IPOC Station P**	**7.81**	**298**	*e*P	**P**	**16 47 43.7**	**+0.3**
PB09	**IPOC Station P**	**7.91**	**313**	⇓*i*P	**P**	**16 47 45.3**	**+0.6**
PB09				*i* S	**S**	**16 49 19.5**	**-2.5**
PB04	**IPOC Station P**	**8.18**	**306**	⇓*i*P	**P**	**16 47 47.3**	**+0.1**
PB04				*i* S	**S**	**16 49 25.2**	**-1.3**
PB07	**IPOC Station P**	**8.39**	**310**	⇓*i*P	**P**	**16 47 49.4**	**+0.1**
PB07				*i* S	**S**	**16 49 28.1**	**-2.2**
PB01	**IPOC Station P**	**8.62**	**315**	⇓*i*P	**P**	**16 47 51.3**	**-0.1**
PB01				*i* S	**S**	**16 49 32.3**	**-1.8**
PB01	**IPOC Station P**	**8.62**	**315**	*e*P	**P**	**16 47 51.1**	**-0.2**
ROC1	**El Roble**	**8.91**	**229**	*e*P	**P**	**16 47 53.1**	**-1.1**
PB08	**IPOC Station P**	**9.11**	**321**	⇓*i*P	**P**	**16 47 57.1**	**+0.6**
HMBC	**Humberstone**	**9.44**	**317**	⇓*i*P	**P**	**16 47 59.2**	**-0.1**
HMBC				*i* S	**S**	**16 49 47.0**	**-1.7**
PB11	**IPOC Station P**	**9.70**	**320**	⇓*i*P	**P**	**16 48 01.9**	**-0.1**
PB11				*i* S	**S**	**16 49 51.9**	**-1.7**
PB11	**IPOC Station P**	**9.70**	**320**	*e*P	**P**	**16 48 01.6**	**-0.3**
PSGC	**Pisagua**	**10.10**	**318**	⇓*i*P	**P**	**16 48 05.7**	**-0.2**
PSGC				*i* S	**S**	**16 49 59.4**	**-1.3**
TRQA	**Tornquist**	**10.72**	**176**	*e*P	**P**	**16 48 10.0**	**-1.7**
SIV	**San Ignacio**	**11.44**	**9**	P	**P**	**16 48 19.2**	**-0.1**
	comp=Z,1.3nm,0.3s,baz=202,slow=9.5,SNR=11						
SIV				S	**S**	**16 50 22.1**	**-3.0**
	baz=217,slow=15,SNR=1.8						
LPAZ	**La Paz**	**11.98**	**336**	P	**P**	**16 48 25.2**	**-0.1**
	comp=Z,2.9nm,0.3s,baz=132,slow=4.9,SNR=24						
LPAZ				S	**S**	**16 50 33.1**	**-2.9**
	comp=Z,0.6nm,0.3s,baz=306,slow=14,SNR=11						
LPAZ	**La Paz**	**11.98**	**336**	*e*P	**P**	**16 48 24.8**	**-0.5**
LPAZ				S	**S**	**16 50 33.1**	**-2.9**
SPB	**Sao Paulo**	**14.56**	**79**	*e*P	**P**	**16 48 50.1**	**+0.1**
PLCA	**Paso Flores**	**14.73**	**203**	P	**P**	**16 48 50.0**	**-1.4**
	comp=Z,4.4nm,0.3s,baz=46,slow=10,SNR=76						
PLCA				S	**S**	**16 51 21.1**	**-1.9**
	comp=Z,0.1nm,0.3s,baz=219,slow=18,SNR=2.6						
PLCA				PcP	**PcP**	**16 53 18.6**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=0.0,slow=2.0,SNR=3.2						
PLCA	**Paso Flores**	**14.73**	**203**	*e*P	**P**	**16 48 49.6**	**-1.9**
PLCA				S	**S**	**16 51 21.1**	**-1.9**
PLCA				PcP	**PcP**	**16 53 18.6**	**+0.3**
NNA	**Nana**	**20.04**	**317**	P	**P**	**16 49 40.6**	**+0.4**
	comp=Z,15nm,0.7s,baz=162,slow=7.8,SNR=5.8						
PTGA	**Pitinga**	**26.62**	**7**	P	**P**	**16 50 38.6**	**+0.1**
	comp=Z,17nm,0.4s,baz=198,slow=14,SNR=60						
PTGA				PcP	**PcP**	**16 53 42.0**	**+0.3**
	comp=Z,2.7nm,0.7s,baz=193,slow=3.4,SNR=3.2						
PTGA				S	**S**	**16 54 31.0**	**-1.7**
	comp=Z,6.0nm,0.9s,baz=14,slow=16,SNR=4.7						
PTGA	**Pitinga**	**26.62**	**7**	*e*P	**P**	**16 50 38.2**	**-0.2**
	comp=Z,17nm,0.6s						
PTGA				PcP	**PcP**	**16 53 42.0**	**+0.3**
PTGA				S	**S**	**16 54 31.0**	**-1.7**
USHA	**Ushuaia**	**27.75**	**187**	P	**P**	**16 50 47.1**	**-0.6**
	comp=Z,23nm,0.5s,baz=354,slow=7.2,SNR=8.9						
RCBR	**Riachuelo**	**33.51**	**55**	P	**P**	**16 51 36.4**	**-1.1**
	comp=Z,15nm,1.0s,baz=216,slow=9.1,SNR=4.2						
RUSC	**La Rusia**	**34.45**	**342**	*e*P	**P**	**16 51 44.9**	**-0.9**
	comp=Z,3.0nm,0.6s						
SDV	**Santo Domingo**	**36.76**	**347**	P	**P**	**16 52 03.0**	**-1.6**
	comp=Z,6.4nm,0.3s,baz=149,slow=4.7,SNR=7.1						
PCRV	**Puerto La Cruz**	**37.33**	**357**	P	**P**	**16 52 07.9**	**-1.1**
	comp=Z,9.7nm,0.7s,baz=323,slow=0.7,SNR=5.2						
SNAA	**Sanae**	**55.01**	**160**	*e*P	**P**	**16 54 21.4**	**-0.2**
	comp=Z,16nm,1.1s						
SNAA				*e*pP	**pP**	**16 56 14.2**	**-0.3**
JSC	**Jenkinsville**	**63.68**	**343**	*e*P	**P**	**16 55 20.8**	**+1.2**
	comp=Z,77nm,1.9s						
LRAL	**Lakeview Retre**	**64.23**	**338**	*e*P	**P**	**16 55 22.7**	**-0.3**
	comp=Z,7.2nm,0.8s						
245A	**Little AP, Sta**	**64.36**	**335**	P	**P**	**16 55 24.4**	**+0.5**
	baz=154						
KMSC	**Kings Mountain**	**64.52**	**343**	P	**P**	**16 55 25.4**	**+0.5**
	baz=162						
KMSC	**Kings Mountain**	**64.52**	**343**	*e*P	**P**	**16 55 25.3**	**+0.5**
	comp=Z,18nm,0.9s						
Z48A	**Northport**	**64.73**	**337**	P	**P**	**16 55 26.0**	**-0.2**
	baz=156						
Z47A	**Carrollton**	**64.75**	**337**	P	**P**	**16 55 26.1**	**-0.2**
	baz=156						
Z46A	**Louisville**	**65.05**	**336**	P	**P**	**16 55 28.2**	**+0.1**
	baz=155						
LIC	**Lamto**	**65.19**	**68**	*e*P	**P**	**16 55 29.2**	**-0.3**
	comp=Z,58nm,0.7s						
Y47A	**UCPARC, Winfie**	**65.31**	**337**	P	**P**	**16 55 29.7**	**-0.1**
	baz=156						
TIC	**Toumodi**	**65.43**	**68**	*e*P	**P**	**16 55 30.7**	**-0.3**
833A	**Chaparral WMA,**	**65.44**	**325**	P	**P**	**16 55 31.4**	**+0.7**
	baz=145						
KIC	**Kosan Boka**	**65.50**	**68**	*e*P	**P**	**16 55 31.3**	**-0.2**
	comp=Z,63nm,0.6s						
DBIC	**Dimbokro**	**65.58**	**68**	P	**P**	**16 55 31.7**	**-0.2**
	comp=Z,23nm,0.4s,baz=213,slow=6.9,SNR=71						
DBIC	**Dimbokro**	**65.58**	**68**	*e*P	**P**	**16 55 32.0**	**+0.1**
	comp=Z,33nm,0.8s						
Y46A	**Houston**	**65.64**	**337**	P	**P**	**16 55 31.1**	**-0.8**
	baz=155						
TKL	**Tuckaleechee C**	**65.66**	**342**	P	**P**	**16 55 31.2**	**-0.7**
	comp=Z,6.4nm,0.7s,baz=171,slow=7.8,SNR=6.6						
CPCT	**Cooper Cave**	**65.68**	**341**	*e*P	**P**	**16 55 32.3**	**+0.2**
	comp=Z,7.4nm,0.7s						
832A	**Faith Ranch, C**	**65.70**	**324**	P	**P**	**16 55 33.6**	**+1.2**
	baz=144						
Y45A	**Yeager Farm, C**	**65.87**	**336**	P	**P**	**16 55 33.6**	**+0.3**
	baz=154						
SWET	**Sewanee**	**65.89**	**340**	*e*P	**P**	**16 55 33.3**	**-0.1**
	comp=Z,4.0nm,0.7s						
141A	**Papa Simpson,**	**66.05**	**333**	P	**P**	**16 55 35.4**	**+0.9**
	baz=151						
NATX	**Nacogdoches**	**66.06**	**331**	P	**P**	**16 55 35.3**	**+0.7**
	baz=149						
633A	**Saathoff Ranch**	**66.25**	**326**	P	**P**	**16 55 36.3**	**+0.5**
	baz=145						
533A	**Kerrville**	**66.68**	**326**	P	**P**	**16 55 39.1**	**+0.7**
	baz=145						
336A	**Riesel**	**66.72**	**329**	P	**P**	**16 55 39.4**	**+0.8**
	baz=148						
Z40A	**Long Farm, Mag**	**66.82**	**333**	P	**P**	**16 55 40.1**	**+1.0**
	baz=151						
335A	**Moody**	**66.91**	**328**	P	**P**	**16 55 40.8**	**+1.0**
	baz=147						
434A	**Burnet**	**66.92**	**327**	P	**P**	**16 55 40.3**	**+0.4**
	baz=146						
X43A	**Marvell**	**66.95**	**335**	P	**P**	**16 55 41.3**	**+1.4**
	baz=153						
137A	**Heron Place, G**	**67.26**	**330**	P	**P**	**16 55 42.6**	**+0.8**
	baz=149						
433A	**Art**	**67.27**	**327**	P	**P**	**16 55 42.6**	**+0.6**
	baz=146,SNR=18						
WVT	**Waverly**	**67.33**	**338**	*e*P	**P**	**16 55 41.7**	**-0.5**
	comp=Z,13nm,0.8s						
334A	**Lometa**	**67.33**	**328**	P	**P**	**16 55 42.9**	**+0.5**
	baz=146,SNR=7.7						
V45A	**Humboldt**	**67.36**	**337**	P	**P**	**16 55 42.3**	**-0.1**
	baz=155						
JCT	**Junction City**	**67.39**	**326**	P	**P**	**16 55 43.3**	**+0.5**
	baz=145						
Y40A	**Okolona**	**67.43**	**333**	P	**P**	**16 55 43.5**	**+0.6**
	baz=151						
333A	**Richland Sprin**	**67.68**	**327**	P	**P**	**16 55 44.9**	**+0.4**
	baz=146,SNR=6.5						
Y39A	**Lockesburg**	**67.70**	**332**	P	**P**	**16 55 45.0**	**+0.5**
	baz=150						
UALR	**University of**	**67.73**	**334**	*e*P	**P**	**16 55 44.8**	**+0.1**
	comp=Z,11nm,0.8s						
234A	**Clairette**	**67.84**	**328**	P	**P**	**16 55 45.9**	**+0.4**
	baz=147						
MIAR	**Mount Ida**	**68.02**	**333**	P	**P**	**16 55 46.5**	**+0.1**
	baz=151						
MIAR	**Mount Ida**	**68.02**	**333**	*e*P	**P**	**16 55 46.8**	**+0.3**
	comp=Z,18nm,1.5s						
W41A	**Tony Mavity, V**	**68.04**	**334**	P	**P**	**16 55 46.9**	**+0.3**
	baz=152						
W41B	**Gary Mavity, V**	**68.04**	**334**	P	**P**	**16 55 46.5**	**0.0**
	baz=152						
WHAR	**Wooly Hollow**	**68.16**	**334**	*e*P	**P**	**16 55 47.2**	**-0.1**
	comp=Z,6.6nm,1.0s						
X39A	**Fountain Ranch**	**68.20**	**333**	P	**P**	**16 55 48.4**	**+0.9**
	baz=150,SNR=6.9						
233A	**Rising Star**	**68.22**	**328**	P	**P**	**16 55 48.2**	**+0.5**
	baz=146						
V42A	**Cord**	**68.28**	**335**	P	**P**	**16 55 47.9**	**-0.1**
	baz=153						
134A	**White-Moore Ra**	**68.29**	**329**	P	**P**	**16 55 48.6**	**+0.4**
	baz=147						
W40A	**Ferguson Farm,**	**68.38**	**334**	P	**P**	**16 55 49.2**	**+0.6**
	baz=152						
TXAR	**Lajitas Array**	**68.50**	**322**	P	**P**	**16 55 50.0**	**+0.4**
	comp=Z,0.8nm,0.5s,baz=147,slow=8.0,SNR=9.4						
TX31	**Lajitas Ar. Si**	**68.50**	**322**	*e*P	**P**	**16 55 50.1**	**+0.5**
Z35A	**Perchaven, San**	**68.55**	**330**	P	**P**	**16 55 50.2**	**+0.6**
	baz=148						
V41A	**Mountainview**	**68.55**	**335**	P	**P**	**16 55 49.5**	**-0.2**
	baz=152,SNR=22						
X38A	**Whitesboro**	**68.64**	**332**	P	**P**	**16 55 51.1**	**+0.9**
	baz=150						
W39A	**Magazine**	**68.67**	**333**	P	**P**	**16 55 51.2**	**+0.9**
	baz=151,SNR=5.9						
133A	**Hamilton Ranch**	**68.71**	**328**	P	**P**	**16 55 51.2**	**+0.5**
	baz=146						
U42A	**Revenden**	**68.71**	**336**	P	**P**	**16 55 50.5**	**-0.1**
	baz=153,SNR=9.9						
X37A	**Clayton**	**68.79**	**332**	P	**P**	**16 55 51.7**	**+0.5**
	baz=149						
PBMO	**Poplar Bluff**	**68.80**	**337**	*e*P	**P**	**16 55 50.8**	**-0.3**
	comp=Z,14nm,0.8s						
O56A	**Blue Knob Stat**	**68.81**	**347**	P	**P**	**16 55 52.2**	**+1.1**
	baz=165						
V40A	**Witts Springs**	**68.82**	**334**	P	**P**	**16 55 51.4**	**+0.1**
	baz=152,SNR=7.2						
W38A	**Poteau**	**68.85**	**333**	P	**P**	**16 55 52.3**	**+0.9**
	baz=150						
Z34A	**Collier Ranch,**	**68.88**	**329**	P	**P**	**16 55 52.4**	**+0.7**
	baz=147						
N59A	**State Game Lan**	**68.94**	**350**	P	**P**	**16 55 52.4**	**+0.5**
	baz=168						
U41A	**Viola**	**68.95**	**335**	P	**P**	**16 55 51.8**	**-0.3**
	baz=153,SNR=8.6						
S45A	**Carrier Mills**	**68.99**	**338**	P	**P**	**16 55 51.6**	**-0.6**
	baz=156						
ABTX	**Abilene, Hawle**	**69.07**	**327**	P	**P**	**16 55 53.1**	**+0.2**
	baz=146						
SYO	**Syowa Base**	**69.13**	**158**	⇑*i*P	**P**	**16 55 51.8**	**-0.8**
V39A	**Pettigrew**	**69.17**	**334**	P	**P**	**16 55 53.9**	**+0.5**
	baz=151,SNR=9.6						
X36A	**Centrahoma**	**69.20**	**331**	P	**P**	**16 55 53.6**	**0.0**
	baz=149						
Z33A	**Whitaker Ranch**	**69.20**	**328**	P	**P**	**16 55 54.3**	**+0.7**
	baz=146						
S44A	**Carbondale**	**69.22**	**338**	P	**P**	**16 55 52.9**	**-0.7**
	baz=155						
W37B	**Quinton**	**69.29**	**332**	P	**P**	**16 55 54.5**	**+0.5**
	baz=150						
Y34A	**Reagan Ranch,**	**69.30**	**330**	P	**P**	**16 55 54.2**	**0.0**
	baz=147						
U40A	**Yellville**	**69.32**	**335**	P	**P**	**16 55 54.4**	**+0.1**
	baz=152						
X35A	**Drake**	**69.32**	**330**	P	**P**	**16 55 54.4**	**+0.1**
	baz=148						
S43A	**Fulton Ridge,**	**69.39**	**337**	P	**P**	**16 55 54.5**	**-0.1**
	baz=154						
V38A	**Canehill**	**69.50**	**333**	P	**P**	**16 55 55.6**	**+0.3**
	baz=150,SNR=8.1						
T41A	**Mountain View**	**69.52**	**336**	P	**P**	**16 55 55.3**	**-0.1**
	baz=153,SNR=9.1						
U39A	**Green Forest**	**69.58**	**334**	P	**P**	**16 55 55.9**	**+0.1**
	baz=151,SNR=7.9						
W36A	**Wetumka**	**69.63**	**331**	P	**P**	**16 55 56.2**	**+0.1**
	baz=149						
R44A	**Waltonville**	**69.67**	**338**	P	**P**	**16 55 55.9**	**-0.4**
	baz=156						
HHAR	**Hobbs**	**69.67**	**334**	*e*P	**P**	**16 55 56.2**	**-0.1**
	comp=Z,6.3nm,0.8s						
N54A	**Moraine State**	**69.76**	**346**	P	**P**	**16 55 57.5**	**+0.8**
	baz=164						
V37A	**Hulbert**	**69.81**	**333**	P	**P**	**16 55 57.5**	**+0.4**
	baz=150,SNR=5.0						
X34A	**Smith Ranch, M**	**69.87**	**330**	P	**P**	**16 55 58.8**	**+1.2**
	baz=147						
T40A	**Mansfield**	**69.89**	**335**	P	**P**	**16 55 57.7**	**+0.1**
	baz=152						
W35A	**Tecumseh**	**69.92**	**331**	P	**P**	**16 55 58.0**	**+0.2**
	baz=148						
U38A	**Gravette**	**69.99**	**333**	P	**P**	**16 55 58.5**	**+0.3**
	baz=151						
S41A	**Jillco Farms,**	**69.99**	**336**	P	**P**	**16 55 58.1**	**-0.1**
	baz=153,SNR=18						
V36A	**Jenks**	**70.06**	**332**	P	**P**	**16 55 59.0**	**+0.4**
	baz=149						
TUL1	**Leonard**	**70.10**	**332**	P	**P**	**16 55 59.1**	**+0.3**
	baz=149						
T39A	**Clever**	**70.10**	**335**	P	**P**	**16 55 59.2**	**+0.4**
	baz=152						
M54A	**Oil Creek Stat**	**70.22**	**347**	P	**P**	**16 55 60.0**	**+0.5**
	baz=164						
Q44A	**Meyer Farm, Va**	**70.24**	**339**	P	**P**	**16 56 00.6**	**+0.9**
	baz=156						
U37A	**Salina**	**70.25**	**333**	P	**P**	**16 56 00.2**	**+0.5**
	baz=150,SNR=5.8						
S40A	**Lebanon**	**70.28**	**335**	P	**P**	**16 56 00.1**	**+0.2**
	baz=152,SNR=7.2						
W34A	**Bridge Creek,**	**70.38**	**330**	P	**P**	**16 56 01.4**	**+0.8**
	baz=148						
X32A	**Elmer**	**70.38**	**329**	P	**P**	**16 56 01.3**	**+0.7**
	baz=146						
WMOK	**Wichita Mounta**	**70.41**	**329**	P	**P**	**16 56 01.4**	**+0.6**
	baz=147						
V35A	**Meyer Ranch, C**	**70.42**	**331**	P	**P**	**16 56 01.1**	**+0.3**
	baz=148						
T38A	**Diamond**	**70.47**	**334**	P	**P**	**16 56 01.1**	**+0.1**
	baz=151,SNR=6.7						
Q43A	**New Douglas**	**70.50**	**338**	P	**P**	**16 56 00.4**	**-0.7**
	baz=155						
W33A	**Caddo, Fort Co**	**70.62**	**330**	P	**P**	**16 56 03.2**	**+1.2**
	baz=147,SNR=6.8						
S39A	**Bolivar**	**70.67**	**335**	P	**P**	**16 56 02.3**	**+0.1**
	baz=152,SNR=6.9						
Q42A	**Golden Eagle**	**70.75**	**338**	P	**P**	**16 56 02.3**	**-0.3**
	baz=154						
V34A	**Guthrie**	**70.77**	**331**	P	**P**	**16 56 03.2**	**+0.4**
	baz=148						
T37A	**Cheneyville 18**	**70.79**	**333**	P	**P**	**16 56 03.1**	**+0.2**
	baz=150,SNR=7.6						
R40A	**Maddies Statio**	**70.81**	**336**	P	**P**	**16 56 02.9**	**0.0**
	baz=153						
S38A	**Stockton**	**70.84**	**334**	P	**P**	**16 56 03.2**	**0.0**
	baz=151,SNR=7.9						
U35A	**Pawnee**	**70.89**	**332**	P	**P**	**16 56 04.0**	**+0.4**
	baz=149						
W32A	**Sentinel**	**70.94**	**329**	P	**P**	**16 56 04.4**	**+0.5**
	baz=146						
SFIN	**Lafayette**	**71.00**	**341**	P	**P**	**16 56 03.5**	**-0.6**
	baz=158						
SFIN	**Lafayette**	**71.00**	**341**	*e*P	**P**	**16 56 03.0**	**-1.0**
SFIN				*e*pP	**pP**	**16 58 07.6**	**+1.6**
R39A	**Chumby, Stover**	**71.11**	**335**	P	**P**	**16 56 04.9**	**+0.1**
	baz=152						
T36A	**Boggs Farm, Ca**	**71.12**	**333**	P	**P**	**16 56 04.9**	**+0.1**
	baz=150						
HNH	**Hanover**	**71.21**	**353**	*e*P	**P**	**16 56 06.6**	**+1.4**
	comp=Z,18nm,0.9s						
MNTX	**Cornudas Mount**	**71.26**	**323**	P	**P**	**16 56 05.8**	**0.0**
	baz=141						
MNTX	**Cornudas Mount**	**71.26**	**323**	*e*P	**P**	**16 56 05.4**	**-0.4**
	comp=Z,1.5nm,0.6s						
T35A	**Sooner Cattle**	**71.26**	**332**	P	**P**	**16 56 06.2**	**+0.5**
	baz=149						
U34A	**Anderson Ranch**	**71.29**	**331**	P	**P**	**16 56 06.1**	**+0.3**
	baz=148						
P42A	**Winchester**	**71.30**	**338**	P	**P**	**16 56 05.1**	**-0.7**
	baz=155						
S37A	**Fort Scott**	**71.31**	**334**	P	**P**	**16 56 05.9**	**0.0**
	baz=150						
R38A	**Fenwick Farm,**	**71.32**	**335**	P	**P**	**16 56 05.9**	**-0.1**
	baz=151,SNR=7.3						
Q40A	**Laux Farm, Aux**	**71.36**	**336**	P	**P**	**16 56 06.0**	**-0.2**
	baz=153						
S36A	**Lake Cedric, C**	**71.58**	**333**	P	**P**	**16 56 07.7**	**+0.2**
	baz=150						
P41A	**Barry, Barry**	**71.62**	**338**	P	**P**	**16 56 07.5**	**-0.2**
	baz=154						
MSTX	**Muleshoe**	**71.69**	**326**	P	**P**	**16 56 08.8**	**+0.4**
	baz=143						
MSTX	**Muleshoe**	**71.69**	**326**	*e*P	**P**	**16 56 08.6**	**+0.3**
	comp=Z,13nm,0.8s						
Q39A	**Willow Grove F**	**71.73**	**336**	P	**P**	**16 56 08.2**	**-0.2**
	baz=152,SNR=7.4						
O42A	**Bath**	**71.76**	**338**	P	**P**	**16 56 08.4**	**-0.1**
	baz=155						
R37A	**Teagarden Farm**	**71.79**	**334**	P	**P**	**16 56 08.6**	**-0.1**
	baz=151						
P40A	**Paris**	**71.83**	**337**	P	**P**	**16 56 08.6**	**-0.3**
	baz=153						
HDIL	**Hopedale**	**71.83**	**339**	P	**P**	**16 56 08.6**	**-0.3**
	baz=156						
S35A	**Otter Creek Ra**	**71.84**	**333**	P	**P**	**16 56 09.2**	**+0.2**
	baz=149						
AMTX	**Amarillo**	**71.89**	**327**	P	**P**	**16 56 09.7**	**+0.2**
	baz=144						
AMTX	**Amarillo**	**71.89**	**327**	*e*P	**P**	**16 56 09.3**	**-0.1**
	comp=Z,6.1nm,0.8s						
Q38A	**Cooks Store, C**	**71.89**	**335**	P	**P**	**16 56 09.1**	**-0.2**
	baz=152						
O41A	**Passleys Farm,**	**71.95**	**338**	P	**P**	**16 56 09.5**	**0.0**
	baz=154						
VNDA	**Vanda**	**72.01**	**189**	P	**P**	**16 56 10.8**	**+1.3**
	comp=Z,1.9nm,0.8s,baz=141,slow=5.6,SNR=12						
VNDA	**Vanda**	**72.01**	**189**	*e*P	**P**	**16 56 10.7**	**+1.2**
	comp=Z,5.0nm,1.5s						
P39B	**Salisbury**	**72.04**	**336**	P	**P**	**16 56 09.9**	**-0.2**
	baz=152,SNR=6.5						
R36A	**Gordon, Harris**	**72.06**	**334**	P	**P**	**16 56 10.7**	**+0.4**
	baz=150						
T33A	**Patterson Ranc**	**72.14**	**331**	P	**P**	**16 56 11.5**	**+0.8**
	baz=148						
S34A	**Willow Spring**	**72.18**	**332**	P	**P**	**16 56 11.5**	**+0.5**
	baz=149						
O40A	**La Belle**	**72.30**	**337**	P	**P**	**16 56 11.1**	**-0.4**
	baz=153						
P38A	**Dawn**	**72.45**	**336**	P	**P**	**16 56 12.2**	**-0.2**
	baz=152						
PKME	**Peaks-Kenny Pk**	**72.48**	**355**	*e*P	**P**	**16 56 13.7**	**+1.2**
	comp=Z,14nm,0.7s						
T32A	**Huddler Ranch,**	**72.51**	**331**	P	**P**	**16 56 13.8**	**+0.9**
	baz=147						
R34A	**Isabella, Hill**	**72.75**	**332**	P	**P**	**16 56 15.0**	**+0.8**
	baz=148						
LMN	**Caledonia Moun**	**72.86**	**359**	*e*P	**P**	**16 56 15.8**	**+1.1**
	comp=Z,16nm,1.0s						
R33A	**Olander Ranch,**	**73.06**	**332**	P	**P**	**16 56 16.4

	baz=148							
T25A	**Trinidad**	**75.02**	**327**	P		**P**	**16 56 28.5**	**+1.2**
	baz=143							
T25A	**Trinidad**	**75.02**	**327**	*e*P		**P**	**16 56 27.6**	**+0.3**
	comp=Z,7.7nm,0.9s							
J39A	**Decorah**	**75.11**	**339**	P		**P**	**16 56 27.1**	**-0.3**
	baz=154							
J38A	**Wedel Dairy, R**	**75.35**	**338**	P		**P**	**16 56 28.4**	**-0.3**
	baz=153							
K36A	**Gilmore City**	**75.42**	**337**	P		**P**	**16 56 29.5**	**+0.3**
	baz=152							
L34A	**Svendsen Farm,**	**75.54**	**335**	P		**P**	**16 56 29.6**	**-0.2**
	baz=150							
I38A	**Scanlan Farm,**	**75.95**	**339**	P		**P**	**16 56 31.7**	**-0.3**
	baz=153							
J36A	**Seneca 1, Swea**	**75.99**	**337**	P		**P**	**16 56 32.3**	**+0.1**
	baz=152							
SDCO	**Great Sand Dun**	**76.03**	**327**	P		**P**	**16 56 34.0**	**+1.0**
	baz=142							
SDCO	**Great Sand Dun**	**76.03**	**327**	*e*P		**P**	**16 56 33.8**	**+0.8**
	comp=Z,6.4nm,1.3s							
M31A	**Lambtecht Ranc**	**76.03**	**333**	P		**P**	**16 56 33.7**	**+1.1**
	baz=148							
BOSA	**Boshof**	**76.04**	**115**	P		**P**	**16 56 33.1**	**-0.1**
	comp=Z,22nm,0.5s,baz=256,slow=3.6,SNR=62							
BOSA	**Boshof**	**76.04**	**115**	*e*P		**P**	**16 56 32.9**	**-0.3**
	comp=Z,21nm,0.6s							
L33A	**Hoskins**	**76.05**	**334**	P		**P**	**16 56 34.0**	**+1.3**
	baz=149							
I37A	**Lemond, Waseca**	**76.28**	**338**	P		**P**	**16 56 34.0**	**+0.2**
	baz=152							
X16A	**Lo Mia Camp, P**	**76.65**	**321**	*e*P		**P**	**16 56 37.7**	**+1.3**
	comp=Z,5.4nm,1.1s							
S22A	**4UR Ranch, Cre**	**76.69**	**326**	P		**P**	**16 56 37.6**	**+1.0**
	baz=141							
S22A	**4UR Ranch, Cre**	**76.69**	**326**	*e*P		**P**	**16 56 37.6**	**+1.0**
	comp=Z,2.3nm,0.8s							
Q24A	**Divide**	**76.81**	**328**	P		**P**	**16 56 38.3**	**+1.0**
	baz=142							
K31A	**O'Neill**	**77.02**	**334**	P		**P**	**16 56 38.4**	**+0.5**
	baz=148							
MVCO	**Mesa Verde**	**77.13**	**324**	P		**P**	**16 56 39.9**	**+1.0**
	baz=140							
ECSD	**EROS Data Cent**	**77.16**	**336**	P		**P**	**16 56 38.4**	**-0.2**
	baz=150							
ECSD	**EROS Data Cent**	**77.16**	**336**	*e*P		**P**	**16 56 38.4**	**-0.2**
	comp=Z,8.5nm,0.8s							
MAW	**Mawson**	**77.16**	**161**	P		**P**	**16 56 38.8**	**+0.5**
	comp=Z,8.6nm,0.6s,baz=208,slow=6.2,SNR=28							
MAW	**Mawson**	**77.16**	**161**	*e*P		**P**	**16 56 38.6**	**+0.2**
	comp=Z,2.1nm,0.8s							
MAW				*e*pP		**pP**	**16 58 43.7**	**+0.8**
H35A	**Sunnyside Ranc**	**77.36**	**337**	P		**P**	**16 56 39.6**	**-0.1**
	baz=151							
WUAZ	**Wupatki**	**77.41**	**321**	P		**P**	**16 56 42.0**	**+1.5**
	baz=137							
GLA	**Glamis**	**77.65**	**317**	P		**P**	**16 56 43.2**	**+1.6**
	baz=134							
H34A	**Spellman Lake,**	**77.66**	**337**	P		**P**	**16 56 41.5**	**+0.2**
	baz=151							
ISCO	**Idaho Springs**	**77.69**	**328**	P		**P**	**16 56 42.9**	**+0.9**
	baz=142							
ISCO	**Idaho Springs**	**77.69**	**328**	*e*P		**P**	**16 56 43.0**	**+0.9**
	comp=Z,3.7nm,0.8s							
LBTB	**Lobatse**	**77.78**	**112**	*e*P		**P**	**16 56 42.5**	**-0.2**
	comp=Z,25nm,0.8s							
F36A	**Milaca**	**77.95**	**339**	P		**P**	**16 56 42.7**	**-0.2**
	baz=153							
BC3	**Big Chuckawall**	**78.45**	**318**	P		**P**	**16 56 47.0**	**+1.0**
	baz=134							
E36A	**McGregor**	**78.45**	**339**	P		**P**	**16 56 45.8**	**+0.3**
	baz=153							
W13A	**Hualapai Mount**	**78.54**	**320**	*e*P		**P**	**16 56 47.5**	**+0.9**
	comp=Z,2.2nm,0.8s							
U15A	**North Rim**	**78.59**	**321**	*e*P		**P**	**16 56 48.4**	**+1.6**
	comp=Z,4.8nm,0.8s							
IRM	**Iron Mountain**	**78.61**	**318**	P		**P**	**16 56 48.1**	**+1.4**
	baz=134							
C39A	**Grand Marais**	**78.69**	**342**	P		**P**	**16 56 47.0**	**+0.3**
	baz=156							
D37A	**Cotton**	**78.77**	**340**	P		**P**	**16 56 47.7**	**+0.6**
	baz=154							
C38A	**Sawbill Land.**	**78.93**	**341**	P		**P**	**16 56 47.9**	**-0.1**
	baz=155							
D36A	**Goodland**	**79.01**	**340**	P		**P**	**16 56 49.0**	**+0.6**
	baz=153							
BELC	**Belle Mtn. Jos**	**79.01**	**317**	P		**P**	**16 56 50.5**	**+1.6**
	baz=134							
PFO	**Pinyon Flats O**	**79.03**	**317**	P		**P**	**16 56 50.4**	**+1.3**
	baz=134							
EYMN	**Ely**	**79.20**	**341**	P		**P**	**16 56 49.3**	**-0.1**
	baz=154							
D35A	**Remer**	**79.20**	**339**	P		**P**	**16 56 50.0**	**+0.6**
	baz=152							
C37A	**Embarrass**	**79.20**	**340**	P		**P**	**16 56 50.1**	**+0.6**
	baz=154							
KNB	**Kanab**	**79.31**	**322**	*e*P		**P**	**16 56 52.0**	**+1.5**
	comp=Z,11nm,0.8s							
KNB				*e*pP		**pP**	**16 58 59.0**	**+2.9**
GMRC	**Granite Mounta**	**79.35**	**318**	P		**P**	**16 56 51.9**	**+1.2**
	baz=134							
C36A	**Pine Crest Far**	**79.43**	**340**	P		**P**	**16 56 51.3**	**+0.7**
	baz=153							
MURC	**Murrieta**	**79.47**	**316**	P		**P**	**16 56 52.3**	**+1.0**
	baz=133							
LCMT	**Little Creek M**	**79.54**	**321**	*e*P		**P**	**16 56 52.8**	**+1.1**
	comp=Z,2.6nm,1.0s							
SRU	**San Rafael Swe**	**79.61**	**324**	*e*P		**P**	**16 56 53.0**	**+1.0**
	comp=Z,6.0nm,0.9s							
MTPU	**Mount Pierson**	**79.70**	**323**	*e*P		**P**	**16 56 53.5**	**+0.8**
	comp=Z,3.7nm,0.8s							
C35A	**Jirik Farms, M**	**79.73**	**339**	P		**P**	**16 56 52.5**	**+0.3**
	baz=152							
HEC	**Hector,Ludlow**	**79.78**	**318**	P		**P**	**16 56 54.2**	**+1.3**
	baz=134							
CCUT	**Cedar City**	**79.99**	**322**	*e*P		**P**	**16 56 56.0**	**+1.8**
	comp=Z,6.3nm,0.8s							
MSU	**Marysvale**	**80.04**	**323**	*e*P		**P**	**16 56 55.6**	**+1.2**
E31A	**Nome**	**80.04**	**336**	P		**P**	**16 56 54.1**	**+0.2**
	baz=149							
B35A	**Bob, Littlefor**	**80.23**	**340**	P		**P**	**16 56 55.2**	**+0.4**
	baz=153							
C33A	**Trail**	**80.36**	**338**	P		**P**	**16 56 55.8**	**+0.3**
	baz=151							
D31A	**Mcclaflin, Tow**	**80.41**	**337**	P		**P**	**16 56 56.3**	**+0.6**
	baz=149							
B33A	**Robert and Kas**	**80.75**	**339**	P		**P**	**16 56 57.9**	**+0.5**
	baz=151							
AGMN	**Agassiz Nation**	**80.86**	**338**	P		**P**	**16 56 58.5**	**+0.5**
	baz=151							
AGMN	**Agassiz Nation**	**80.86**	**338**	*e*P		**P**	**16 56 58.7**	**+0.6**
	comp=Z,8.6nm,0.8s							
LRMC	**Laurel Mtn Rad**	**81.03**	**318**	P		**P**	**16 56 59.5**	**0.0**
	baz=133							
C31A	**Landman Farms,**	**81.05**	**337**	P		**P**	**16 56 59.3**	**+0.3**
	baz=149							
B32A	**Ashes, Strandq**	**81.16**	**338**	P		**P**	**16 56 59.9**	**+0.3**
	baz=150							
TPNV	**Topopah Spring**	**81.20**	**320**	P		**P**	**16 57 01.3**	**+1.0**
	baz=134							
A33A	**Warroad**	**81.26**	**339**	P		**P**	**16 57 00.7**	**+0.6**
	baz=151							
DUG	**Dugway, Tooele**	**81.60**	**324**	P		**P**	**16 57 03.0**	**+0.8**
	baz=137							
MDT	**Midelt**	**81.60**	**46**	P		**P**	**16 57 03.2**	**+0.8**
	comp=Z,5.3nm,0.7s,baz=235,slow=4.3,SNR=11							
MDND	**Maddock**	**81.76**	**336**	P		**P**	**16 57 03.5**	**+0.9**
	baz=148							
MDND	**Maddock**	**81.76**	**336**	*e*P		**P**	**16 57 03.4**	**+0.7**
	comp=Z,36nm,0.9s							
R11A	**Troy Canyon, C**	**81.79**	**321**	P		**P**	**16 57 04.6**	**+1.3**
	baz=135							
R11A	**Troy Canyon, C**	**81.79**	**321**	*e*P		**P**	**16 57 04.1**	**+0.8**
	comp=Z,2.6nm,1.0s							
PDAR	**Pinedale Array**	**81.87**	**327**	P		**P**	**16 57 04.2**	**+0.6**
	comp=Z,1.5nm,0.6s,baz=126,slow=6.1,SNR=2.7							
SCHQ	**Schefferville**	**81.90**	**358**	P		**P**	**16 57 03.1**	**-0.2**
	comp=Z,3.8nm,0.5s,baz=166,slow=8.3,SNR=4.9							
SCHQ	**Schefferville**	**81.90**	**358**	*e*P		**P**	**16 57 03.0**	**-0.2**
	comp=Z,46nm,1.8s							
HWUT	**Hardware Ranch**	**81.99**	**325**	*e*P		**P**	**16 57 03.7**	**-0.6**
	comp=Z,4.4nm,0.6s							
D26A	**Manning**	**82.14**	**334**	P		**P**	**16 57 05.0**	**+0.4**
	baz=145							
PBDV	**Barranco-do-Ve**	**82.47**	**41**	*e*P		**P**	**16 57 07.4**	**+0.9**
	comp=Z,30nm,1.6s							
PBDV	**Barranco-do-Ve**	**82.47**	**41**	*e*P		**P**	**16 57 07.5**	**+0.9**
	comp=Z,30nm,1.6s							
ULM	**Lac du Bonnet**	**82.57**	**339**	P		**P**	**16 57 06.4**	**-0.3**
	comp=Z,6.4nm,0.9s,baz=162,slow=6.1,SNR=6.2							
ULM	**Lac du Bonnet**	**82.57**	**339**	*e*P		**P**	**16 57 06.6**	**-0.1**
	comp=Z,14nm,1.3s							
MESJ	**Messejana**	**82.71**	**41**	*e*P		**P**	**16 57 08.2**	**+0.5**
	comp=Z,26nm,1.7s							
MESJ	**Messejana**	**82.71**	**41**	*e*P		**P**	**16 57 08.2**	**+0.5**
	comp=Z,26nm,1.7s							
MESJ				A		A	16 57 11.5	
	comp=Z,26nm,1.7s							
TAM	**Tamanrasset**	**82.86**	**60**	*e*P		**P**	**16 57 09.2**	**+0.2**
	comp=Z,8.3nm,0.8s							
PBEJ	**Beja**	**83.04**	**41**	*e*P		**P**	**16 57 10.2**	**+0.9**
	comp=Z,8.7nm,2.2s							
PBEJ	**Beja**	**83.04**	**41**	*e*P		**P**	**16 57 10.3**	**+0.9**
	comp=Z,8.7nm,2.2s							
RLMT	**Red Lodge**	**83.52**	**329**	P		**P**	**16 57 12.4**	**+0.6**
	baz=140							
PMTG	**Montargil**	**83.54**	**40**	*e*P		**P**	**16 57 12.6**	**+0.8**
	comp=Z,20nm,0.8s							
PMTG	**Montargil**	**83.54**	**40**	*e*P		**P**	**16 57 12.7**	**+0.9**
	comp=Z,20nm,0.8s							
PBAR	**Barrancos**	**83.62**	**41**	*e*P		**P**	**16 57 12.6**	**+0.4**
	comp=Z,40nm,1.6s							
PBAR	**Barrancos**	**83.62**	**41**	*e*P		**P**	**16 57 12.7**	**+0.5**
	comp=Z,40nm,1.6s							
PESTR	**Estremoz**	**83.77**	**40**	*e*P		**P**	**16 57 13.6**	**+0.7**
	comp=Z,16nm,1.7s							
PESTR	**Estremoz**	**83.77**	**40**	*e*P		**P**	**16 57 13.6**	**+0.7**
	comp=Z,16nm,1.7s							
PTOM	**Tomar**	**83.81**	**39**	*e*P		**P**	**16 57 13.6**	**+0.5**
LSZ	**Lusaka**	**84.17**	**104**	*e*P		**P**	**16 57 16.9**	**+1.3**
	comp=Z,21nm,0.9s							
PMRV	**Marv??o**	**84.26**	**40**	*e*P		**P**	**16 57 15.4**	**0.0**
	comp=Z,12nm,2.0s							
PCBR	**Castelo Branco**	**84.49**	**40**	*e*P		**P**	**16 57 16.5**	**+0.1**
	comp=Z,9.3nm,1.3s							
PCBR	**Castelo Branco**	**84.49**	**40**	*e*P		**P**	**16 57 16.6**	**+0.1**
	comp=Z,9.3nm,1.3s							
PNTR	**Pine Nut**	**84.59**	**319**	*e*P		**P**	**16 57 19.1**	**+1.8**
	comp=Z,7.8nm,0.8s							
HLID	**Hailey**	**84.86**	**325**	P		**P**	**16 57 19.8**	**+1.4**
	baz=136							
HLID	**Hailey**	**84.86**	**325**	*e*P		**P**	**16 57 19.6**	**+1.3**
	comp=Z,7.3nm,0.8s							
MCMT	**McKenzie Canyo**	**84.99**	**327**	*e*P		**P**	**16 57 20.3**	**+1.2**
PVRL	**Vila Real**	**85.33**	**38**	*e*P		**P**	**16 57 21.3**	**+0.8**
	comp=Z,22nm,3.1s							
POLO	**Lamas de Olo**	**85.35**	**38**	*e*P		**P**	**16 57 21.4**	**+0.7**
	comp=Z,9.8nm,1.4s							
POLO	**Lamas de Olo**	**85.35**	**38**	*e*P		**P**	**16 57 21.7**	**+1.0**
	comp=Z,9.8nm,1.4s							
LRM	**Limekiln Ridge**	**85.53**	**328**	*e*P		**P**	**16 57 23.1**	**+1.4**
PBRG	**Braganca**	**86.22**	**39**	*e*P		**P**	**16 57 25.5**	**+0.7**
	comp=Z,9.1nm,1.6s							
ESDC	**Sonseca Array**	**86.41**	**42**	P		**P**	**16 57 25.0**	**-0.7**
	comp=Z,1.7nm,0.5s,baz=242,slow=4.7,SNR=11							
ES19	**SONSECA Array**	**86.47**	**42**	*e*P		**P**	**16 57 25.8**	**-0.2**
O03D	**Paynes Creek**	**86.66**	**319**	P		**P**	**16 57 27.8**	**+0.9**
	baz=130							
MSO	**Missoula**	**86.97**	**328**	P		**P**	**16 57 28.7**	**+0.5**
	baz=136							
N02D	**Trinity Center**	**87.62**	**319**	P		**P**	**16 57 32.2**	**+0.9**
	baz=130							
M04C	**Macdoel**	**87.65**	**320**	P		**P**	**16 57 32.7**	**+1.2**
	baz=130							
K05A	**Summer Lake**	**87.73**	**321**	*e*P		**P**	**16 57 33.0**	**+1.1**
	comp=Z,21nm,1.5s							
M02C	**Callahan**	**87.98**	**319**	P		**P**	**16 57 33.9**	**+0.8**
	baz=130							
J05D	**Fort Rock, OR**	**88.28**	**322**	P		**P**	**16 57 35.0**	**+0.5**
	baz=131							
WALA	**Waterton Lakes**	**88.57**	**329**	*e*P		**P**	**16 57 36.1**	**+0.5**
	comp=Z,20nm,1.8s							
L02D	**Cave Junction,**	**88.90**	**320**	P		**P**	**16 57 37.8**	**+0.6**
	baz=129							
G03D	**McMinnville, O**	**90.64**	**322**	P		**P**	**16 57 45.9**	**+0.8**
	baz=130							
B05A	**Bryant**	**91.98**	**325**	P		**P**	**16 57 50.7**	**-0.5**
	baz=130							
YKA	**Yellowknife Ar**	**98.52**	**338**	P		**P**	**16 58 20.6**	**+0.2**
	comp=Z,1.1nm,0.6s,baz=127,slow=4.7,SNR=7.8							
DAVOX	**Davos/Dischmat**	**98.75**	**42**	P		**P**	**16 58 22.2**	**+0.1**
	comp=Z,1.8nm,0.6s,baz=117,slow=6.3,SNR=3.9							
AS01	**Alice Springs**	**126.71**	**199**	*e*PKPdf		**PKPdf**	**17 03 41.9**	**-0.8**
AS31	**Alice Springs**	**126.72**	**199**	*e*PKPdf		**PKPdf**	**17 03 41.9**	**-0.8**
ASAR	**Alice Springs**	**126.72**	**199**	PKP		**PKPdf**	**17 03 42.1**	**-0.6**
	comp=Z,3.6nm,0.6s,baz=145,slow=1.8,SNR=53							
ASAR				pPKP		**pPKPdf**	**17 05 60.0**	**-1.4**
	comp=Z,0.7nm,0.8s,baz=142,slow=1.5,SNR=4.8							
ARU	**Arti**	**129.69**	**38**	PKP		**PKPdf**	**17 03 48.0**	**+0.9**
	comp=Z,3.0nm,0.4s,baz=325,slow=1.0,SNR=6.2							
ARU	**Arti**	**129.69**	**38**	*e*PKPdf		**PKPdf**	**17 03 47.7**	**+0.5**
WB2	**Warramunga Arr**	**130.07**	**202**	*e*PKPdf		**PKPdf**	**17 03 48.2**	**-1.0**
WRA	**Warramunga Arr**	**130.08**	**202**	PKP		**PKPdf**	**17 03 48.8**	**-0.4**
	comp=Z,2.4nm,0.6s,baz=171,slow=1.7,SNR=23							
WRA				pPKP		**pPKPdf**	**17 06 07.8**	**0.0**
	comp=Z,1.5nm,0.9s,baz=169,slow=1.0,SNR=5.1							
WRA				SKPbc		**SKPbc**	**17 06 15.4**	**-1.4**
	comp=Z,4.7nm,0.9s,baz=161,slow=3.7,SNR=14							
AKTO	**Aktyubinsk**	**130.13**	**46**	PKP		**PKPdf**	**17 03 48.3**	**+0.1**
	comp=Z,1.9nm,0.8s,baz=320,slow=1.1,SNR=6.4							
AKTO				pPKP		**pPKPdf**	**17 06 08.0**	**+1.0**
	comp=Z,0.6nm,0.5s,baz=234,slow=17,SNR=1.9							
ABKAR	**Akbulak array**	**131.47**	**47**	*e*PKPdf		**PKPdf**	**17 03 51.1**	**+0.3**
FITZ	**Fitzroy Crossi**	**134.05**	**191**	PKP		**PKPdf**	**17 03 56.0**	**-0.7**
	comp=Z,2.1nm,0.6s,baz=352,slow=1.5,SNR=7.5							
FITZ				SKPbc		**SKPbc**	**17 06 29.9**	**-0.6**
	comp=Z,2.7nm,1.0s,baz=198,slow=3.2,SNR=3.6							
BVAR	**Borovoye Array**	**137.16**	**40**	PKP		**PKPdf**	**17 04 02.3**	**+1.0**
	comp=Z,2.5nm,0.6s,baz=264,slow=3.0,SNR=10.0							
SEY	**Seymchan**	**137.56**	**337**	PKP		**PKPdf**	**17 04 02.8**	**+1.1**
	comp=Z,5.2nm,0.9s,baz=68,slow=3.9,SNR=12							
SEY				pPKP		**pPKPdf**	**17 06 21.1**	**+0.5**
	comp=Z,1.9nm,0.9s,baz=129,slow=4.9,SNR=3.5							
AAK	**Ala-Archa**	**142.41**	**55**	*e*PKPdf		**PKPdf**	**17 04 09.4**	**-1.9**
ZAA0	**Zalesovo Array**	**144.45**	**33**	*e*PKPdf		PKPbc	17 04 14.6	+0.2
ZALV	**Zalesovo Beam**	**144.45**	**33**	PKP		**PKPab**	**17 04 15.1**	**0.0**
	comp=Z,19nm,0.5s,baz=296,slow=3.8,SNR=120							
ZALV				pPKP		**pPKPdf**	**17 06 33.4**	**+0.1**
	comp=Z,0.8nm,0.4s,baz=295,slow=4.6,SNR=1.7							
ZALV				SKPbc		**SKPbc**	**17 06 57.2**	**-0.2**
	comp=Z,0.7nm,0.5s,baz=287,slow=2.8,SNR=3.7							
MAKZ	**Makanchi**	**146.36**	**45**	*e*PKPdf		**PKPdf**	**17 04 18.2**	**+0.4**
MAKZ				*e*PKPbc		**PKPbc**	**17 04 20.4**	**+0.1**
MK31	**Makanchi Array**	**146.56**	**45**	*e*PKPdf		**PKPdf**	**17 04 18.7**	**+0.5**
MK31				*e*PKPbc		**PKPbc**	**17 04 21.1**	**+0.2**
MKAR	**Makanchi Array**	**146.56**	**45**	PKPbc		**PKPdf**	**17 04 19.2**	**+1.0**
	comp=Z,18nm,0.6s,baz=277,slow=4.3,SNR=108							
MKAR				pPKPbc	pPKPbc		17 06 36.5	-0.8
	comp=Z,2.0nm,0.8s,baz=266,slow=5.8,SNR=5.1							
MKAR	**Makanchi Array**	**146.56**	**45**	*e*PKPdf		**PKPdf**	**17 04 18.6**	**+0.5**
MKAR				*e*PKPbc		**PKPbc**	**17 04 21.1**	**+0.2**
MKAR				pPKPbc	pPKPbc		17 06 36.5	-0.8
KAPI	**Kappang**	**147.72**	**185**	*e*PKPbc		**PKPbc**	**17 04 24.0**	**-0.8**
GSI	**Gununungsitoli**	**148.17**	**141**	*e*PKPbc		**PKPbc**	**17 04 26.6**	**+0.8**
PYUN	**Piuthan**	**149.95**	**81**	*e*P		**PKPdf**	**17 04 25.1**	**+0.7**
	comp=Z,76nm,0.7s							
PSI	**Prapat**	**150.10**	**142**	PKPbc		**PKPbc**	**17 04 29.9**	**-0.8**
	comp=Z,7.9nm,0.6s,baz=222,slow=7.6,SNR=5.6							
KOLN	**Koldanda**	**150.45**	**81**	*e*P		**PKPdf**	**17 04 25.1**	**-0.1**
GKN	**Gorkha**	**151.39**	**81**	*e*P		**PKPdf**	**17 04 26.7**	**+0.1**
DMN	**Daman**	**151.75**	**82**	*e*P		**PKPdf**	**17 04 27.3**	**+0.1**
YSS	**Yuzh-Sakhalins**	**151.84**	**321**	*e*PKPbc		**PKPbc**	**17 04 33.5**	**+0.1**
KKN	**Kakani**	**151.93**	**82**	*e*P		**PKPdf**	**17 04 27.7**	**+0.3**
PKIN	**Phulchoki**	**152.00**	**82**	*e*P		**PKPdf**	**17 04 27.6**	**0.0**
IPM	**Ipoh**	**152.63**	**143**	*e*PKPbc		**PKPbc**	**17 04 35.7**	**-0.6**
RAMN	**Ramite**	**152.99**	**84**	*e*P		**PKPdf**	**17 04 29.6**	**+0.6**
LSA	**Lhasa**	**157.19**	**78**	*e*PKPab		**PKPab**	**17 05 10.3**	**+0.5**
SONA	**Songino Array**	**157.92**	**19**	*e*PKPdf		**PKPdf**	**17 04 35.1**	**+0.3**
SONA1				*e*PKPab		**PKPab**	**17 05 12.2**	**+0.3**
SONM	**Songino Array**	**157.93**	**19**	PKP		**PKPdf**	**17 04 35.5**	**+0.7**
	comp=Z,1.4nm,0.7s,baz=214,slow=0.5,SNR=8.1							
SONM				PKPab		**PKPab**	**17 05 11.5**	**-0.4**
	comp=Z,0.8nm,0.5s,baz=316,slow=2.6,SNR=5.5							
CMAR	**Chiang Mai Arr**	**161.19**	**114**	PKP		**PKPdf**	**17 04 39.6**	**+0.5**
	comp=Z,0.3nm,0.4s,baz=246,slow=3.8,SNR=4.4							
CMAR				PKPab		**PKPab**	**17 05 24.7**	**-2.3**
	comp=Z,0.6nm,0.5s,baz=231,slow=2.9,SNR=3.8							

*IDC **25** 16:48:53.4±1.4, 35.82N×141.16E, h0km, mb3.7/5, mb1 3.7/8, mb1mx3.5/69, mbtmp3.6/8, ML3.1/3, MS2.2/1, Ms1 2.2/1, ms1mx2.0/38, Error ellipse: s-maj=34.6km s-min=17.2km az=74.0*

*ISCJB **25** 16:48:55.8±0.8, 35.87N±0.04×141.29E±0.09, h31km, mb3.6/5, Error ellipse: s-maj=10.2km s-min=6.3km az=3.6*
*JMA **25** 16:48:59.1±0.1, 35.84N×140.94E, h36km±1km, M2.9*
ISC 25 16:48:57.5±1.3, 35°86N±0.05×141°2E±0.1, h31km, n20,
σ1°02/17, mb3.7/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.33**	**243**	P	**Pb**	**16 49 05.5**	**0.0**
CHOJ				*e*S	**Sb**	**16 49 10.0**	**-1.0**
JYT	**Yasato**	**0.91**	**294**	P	**Pn**	**16 49 12.3**	**-1.9**
JHO	**Hitachi**	**0.92**	**325**	P	**Pb**	**16 49 14.4**	**-0.6**
BSO4	**Boso 4**	**1.13**	**220**	P	**Pn**	**16 49 17.9**	**+0.8**
BSO2	**Boso 2**	**1.17**	**199**	*e*S	**Sn**	**16 49 33.3**	**+1.1**
BSO3	**Boso 3**	**1.20**	**209**	P	**Pn**	**16 49 19.1**	**+1.1**
MJAR	**Matsushiro Arr**	**2.53**	**287**	Pn	**Pn**	**16 49 36.2**	**-0.4**
	4.3nm,0.3s,baz=92,slow=8.4,SNR=32						
MJAR				Sn	**Sn**	**16 50 07.0**	**+0.6**
	2.7nm,0.3s,baz=118,slow=13,SNR=9.2						
MJAR				LR	LR	16 50 37.1	
	comp=Z,52nm,21.5s,baz=75,slow=42						
JHJ	**Hachijo jima 2**	**2.98**	**204**	Pn	**Pn**	**16 49 42.2**	**-0.5**
	6.1nm,0.3s,baz=154,slow=24,SNR=6.9						
JHJ				Sn	**Sn**	**16 50 15.9**	**-1.4**
	21nm,0.3s,baz=92,slow=22,SNR=7.7						
ASAJ	**Asahikawa**	**8.32**	**7**	Pn	**Pn**	**16 50 57.1**	**+1.2**
	0.3nm,0.3s,baz=221,slow=18,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**27.70**	**119**	T	T	17 23 48.1	
	baz=311						
H11N1	**WAKE ISLAND Hy**	**27.70**	**119**	T	T	17 23 48.7	
	baz=311						
H11N3	**WAKE ISLAND Hy**	**27.72**	**119**	T	T	17 23 48.5	
	baz=311						
H11S1	**WAKE ISLAND Hy**	**28.37**	**121**	T	T	17 24 39.3	
	baz=312,slow=75,SNR=20						
H11S3	**WAKE ISLAND Hy**	**28.37**	**121**	T	T	17 24 37.6	
	baz=312,slow=75,SNR=20						
H11S2	**WAKE ISLAND Hy**	**28.38**	**121**	T	T	17 24 39.9	
	baz=312,slow=75,SNR=16						
ZALV	**Zalesovo Beam**	**42.60**	**313**	P	**P**	**16 56 49.4**	**-1.1**
	0.7nm,0.4s,baz=76,slow=6.5,SNR=2.1						
MKAR	**Makanchi Array**	**44.62**	**303**	P	**P**	**16 57 07.0**	**+0.1**
	0.7nm,0.6s,baz=89,slow=9.0,SNR=9.8						
BVAR	**Borovoye Array**	**51.26**	**313**	P	**P**	**16 57 59.2**	**+1.0**
	0.4nm,0.5s,baz=69,slow=7.9,SNR=2.4						
WRA	**Warramunga Arr**	**55.88**	**188**	P	**P**	**16 58 32.3**	**0.0**
	0.6nm,0.6s,baz=4.1,slow=7.4,SNR=11						
ASAR	**Alice Springs**	**59.60**	**188**	P	**P**	**16 58 58.9**	**+0.4**
	0.3nm,0.7s,baz=19,slow=8.8,SNR=9.1						

*ISCJB **25** 16:52:06.9±0.3, 60.86N±0.02×150.68W±0.05, h68km±5km, mb3.2/2, Error ellipse: s-maj=4.4km s-min=3.3km az=140.2*
*NEIC **25** 16:52:08.5, 60.86N×150.74W, h55km, ML3.3(AEIC), After AEIC.*
NEIC Felt at Anchorage and Cooper Landing.
*IDC **25** 16:52:13.8±7.8, 61.30N×150.68W, h116km±108km, mb3.0/2, mb1 3.4/4, mb1mx3.0/65, mbtmp3.4/4, ML3.1/2, Error ellipse: s-maj=112.5km s-min=65.0km az=132.0*
ISC 25 16:52:08.4±0.9, 60°86N±0.03×150°71W±0.03, h60km±7km, n79, σ0°96/84, Kenai Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VOGL	**Vogel Lake**	**0.20**	**44**	P	**Pn**	**16 52 18.0**	**+0.3**
NKA	**Nikishka**	**0.28**	**247**	P	**Pn**	**16 52 18.8**	**+0.5**
FIB	**Fire Island**	**0.41**	**39**	P	**Pn**	**16 52 19.4**	**+0.1**
SLKM	**Skilak Lake**	**0.42**	**145**	P	**Pn**	**16 52 19.0**	**-0.6**
RC01	**Rabbit Creek A**	**0.53**	**63**	*e*Pg	**Pn**	**16 52 20.1**	**-0.6**
SUA	**Susitna One**	**0.61**	**358**	P

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.28**	**29**	*e*P	Pn	16 53 30.7	-1.7
CCIG				*e*S	Sn	16 53 48.4	-1.6

IDC 25 16:53:58.3±2.3, 15°.15S×173°.55W, h0km, mb3.8/3, mb1 4.0/4, mb1mx3.6/40, mbtmp3.9/4, ML4.0/1, MS2.1/1, Ms1 2.1/1, ms1mx2.1/36, Error ellipse: s-maj=186.4km s-min=25.6km az=150.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.12**	**54**	Pn	Pn	16 54 35.1	+0.1
	47nm,0.3s,baz=240,slow=8.1,SNR=146						
AFI				Sn	Sn	16 54 55.7	-6.5
	174nm,0.3s,baz=43,slow=20,SNR=30						
AFI				LR	LR	16 55 06.5	
	comp=Z,47nm,21.3s,baz=110,slow=32						
STKA	**Stephens Creek**	**44.03**	**240**	P	P	17 02 07.5	-0.5
	1.0nm,0.8s,baz=100,slow=12,SNR=3.9						
WRA	**Warramunga Arr**	**49.76**	**257**	P	P	17 02 52.9	-0.1
	0.7nm,0.7s,baz=90,slow=6.7,SNR=15						
ASAR	**Alice Springs**	**50.05**	**252**	P	P	17 02 55.2	+0.1
	1.4nm,0.5s,baz=90,slow=7.3,SNR=34						

IDC 25 16:57:54.9±9.4, 1.79N×126°.20E, h0km, mb3.7/3, mb1 3.8/4, mb1mx3.4/53, mbtmp3.6/4, ML3.6/1, MS4.2/1, Ms1 4.2/1, ms1mx3.1/32, Error ellipse: s-maj=148.3km s-min=108.1km az=143.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.77**	**182**	P	Pn	17 02 28.0	-0.2
	0.1nm,0.3s,baz=5.4,slow=12,SNR=6.1						
WRA	**Warramunga Arr**	**23.02**	**160**	P	P	17 03 02.2	+0.4
	1.1nm,0.4s,baz=338,slow=11,SNR=41						
ASAR	**Alice Springs**	**26.39**	**164**	P	P	17 03 31.5	-1.8
	0.3nm,0.3s,baz=346,slow=10,SNR=14						
STKA	**Stephens Creek**	**36.53**	**158**	P	P	17 05 03.5	+1.1
	0.8nm,0.6s,baz=349,slow=10,SNR=4.1						
KLR	**Kul'dur**	**47.50**	**5**	LR	LR	17 24 35.6	
	comp=Z,263nm,21.5s,slow=34						

MEX 25 17:05:27.5±0.3, 18°.21N×100°.60W, h45km±4km, MD3.7, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARIG	**Puente Sto Nin**	**0.25**	**75**	*e*P	Pn	17 05 34.1	-1.7
ARIG				*i* S	Sn	17 05 39.9	-1.8
MEIG	**Mezcala**	**0.98**	**107**	*i* P	Pn	17 05 43.2	-1.7
MEIG				*e*S	Sn	17 05 55.5	-2.2
ZIIG	**Zihuatanejo**	**1.02**	**234**	*e*P	Pn	17 05 43.9	-1.5
ZIIG				*e*S	Sn	17 05 56.8	-1.7
PLIG	**Platanillo**	**1.06**	**80**	*e*P	Pn	17 05 44.6	-1.4
PLIG				*e*S	Sn	17 05 58.2	-1.5
YAIG	**Yautepec**	**1.59**	**66**	*i* P	Pn	17 05 52.9	-0.6
YAIG				*i* S	Sn	17 06 11.0	-1.9
TLIG	**Tlapa**	**2.04**	**108**	*i* P	Pn	17 05 58.4	-1.2
TLIG				*i* S	Sn	17 06 22.1	-1.9

*ISCJB **25** 17:14:37.2±1.2, 53°.19N±0°.06×164°.49W±0°.06, h0km±8km, mb3.7/9, Error ellipse: s-maj=9.7km s-min=5.3km az=13.8*
*IDC **25** 17:14:38.8±1.6, 53°.22N×164°.51W, h0km, mb3.6/7, mb1 3.9/8, mb1mx3.6/51, mbtmp3.6/8, ML3.4/1, Error ellipse: s-maj=36.9km s-min=24.4km az=6.0*
*NEIC **25** 17:14:40.0, 53°.14N×164°.49W, h28km, mb4.1/2, ML3.6(AEIC), After AEIC.*

ISC 25 17:14:40.9±2.7, 53°.26N±0°.08×164°.53W±0°.04, h16km±16km, n40, σ1s18/40, mb3.7/9, Unimak Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKSA	**Akutan Strait**	**1.12**	**322**	*e*Pg	**Pn**	**17 15 00.9**	**-0.9**
AKUT	**Akutan**	**1.15**	**320**	*e*Pg	**Pn**	**17 15 01.2**	**-1.0**
AKUT				*e*Sn	**Sb**	**17 15 16.2**	**-0.7**
AKMO	**Akutan Morgan**	**1.21**	**314**	*e*Pn	**Pn**	**17 15 02.5**	**-0.7**
AKMO				*e*Sn	**Sb**	**17 15 19.4**	**+0.5**
WESE	**West Dahl East**	**1.22**	**358**	*e*Pn	**Pn**	**17 15 02.5**	**-0.8**
WESP	**Westdahl Peak**	**1.24**	**355**	P	**Pn**	**17 15 03.3**	**-0.3**
AKRB	**Akutan Reef Bi**	**1.26**	**314**	P	**Pn**	**17 15 03.2**	**-0.7**
AKRB				S	**Sn**	**17 15 21.1**	**+0.5**
AKGG	**Akutan Green G**	**1.28**	**318**	P	**Pn**	**17 15 03.8**	**-0.3**
AKGG				S	**Sg**	**17 15 22.6**	**+0.3**
WESN	**West Dahl Nort**	**1.31**	**359**	*e*Pn	**Pb**	**17 15 05.4**	**+0.3**
UNV	**Unalaska Valle**	**1.31**	**297**	*e*Pn	**Pn**	**17 15 03.0**	**-1.5**
UNV				*e*Sg	**Sn**	**17 15 20.6**	**-1.2**
MTBL	**Makushin Table**	**1.46**	**300**	*e*Pn	**Pn**	**17 15 05.8**	**-0.9**
MGOD	**Makushin Gods**	**1.50**	**292**	*e*Pn	**Pn**	**17 15 06.0**	**-1.2**
SSLW	**Shishaldin Wes**	**1.53**	**9**	P	**Pn**	**17 15 08.4**	**+0.8**
MCIR	**Makushin Cirqu**	**1.57**	**297**	P	**Pn**	**17 15 07.5**	**-0.6**
SSLN	**Shishaldin Nor**	**1.59**	**11**	P	**Pn**	**17 15 08.4**	**+0.1**
OKTU	**Okmok Mt. Tuli**	**2.11**	**275**	P	**Pn**	**17 15 15.4**	**-0.2**
OKER	**Okmok East Rim**	**2.12**	**277**	P	**Pn**	**17 15 15.7**	**-0.1**
DT1	**Dutton Round H**	**2.27**	**35**	*e*Pn	**Pn**	**17 15 17.5**	**-0.3**
DTNA	**Dutton South F**	**2.32**	**34**	*e*Pn	**Pn**	**17 15 18.3**	**-0.1**
NIKH	**Nikolski High**	**2.62**	**265**	*e*Pn	**Pn**	**17 15 20.8**	**-1.8**
SDPT	**Sand Point**	**3.17**	**47**	*e*Pn	**Pn**	**17 15 29.7**	**-0.2**
SDPT				*e*Sn	**Sn**	**17 16 03.6**	**-3.7**
CHGN	**Chignik**	**4.67**	**47**	*e*Pn	**Pn**	**17 15 50.1**	**-0.5**
OHAK	**Old Harbor**	**7.55**	**54**	*e*Pn	**Pn**	**17 16 27.6**	**-2.6**
KDAK	**Kodiak Island**	**8.15**	**51**	*e*Pn	**Pn**	**17 16 37.2**	**-1.2**
KLU	**Klutina**	**12.95**	**43**	*e*Pn	**Pn**	**17 17 41.5**	**-2.6**
ILAR	**Eielson Array**	**14.61**	**31**	Pn	**Pn**	**17 18 06.0**	**-0.7**
	0.1nm,0.3s,baz=225,slow=10,SNR=3.5						
INK	**Inuvik**	**21.00**	**32**	P	**P**	**17 19 24.3**	**+1.1**
	1.5nm,0.5s,baz=264,slow=10,SNR=3.1						
PETK	**Petropavlovsk-**	**22.47**	**285**	P	**P**	**17 19 39.6**	**+0.5**
	1.2nm,0.5s,baz=88,slow=14,SNR=3.3						
YKA	**Yellowknife Ar**	**27.43**	**50**	P	**P**	**17 20 25.8**	**+0.3**
	0.5nm,0.6s,baz=270,slow=8.3,SNR=3.6						
R11A	**Troy Canyon, C**	**36.47**	**94**	*e*P	**P**	**17 21 46.1**	**+1.0**
	2.6nm,1.1s						
TPNV	**Topopah Spring**	**36.99**	**96**	*e*P	**P**	**17 21 50.8**	**+1.2**
	3.0nm,0.8s						
PDAR	**Pinedale Array**	**37.37**	**84**	P	**P**	**17 21 53.2**	**+0.4**
	0.2nm,0.7s,baz=356,slow=7.2,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**40.07**	**224**	T	T	18 05 33.7	
	baz=26,slow=76,SNR=10						
H11N3	**WAKE ISLAND Hy**	**40.07**	**224**	T	T	18 05 35.8	
	baz=26,slow=76,SNR=9.4						
H11N1	**WAKE ISLAND Hy**	**40.09**	**224**	T	T	18 05 28.7	
	baz=26,slow=76,SNR=11						
H11S1	**WAKE ISLAND Hy**	**41.24**	**224**	T	T	18 07 08.1	
	baz=25,slow=76,SNR=22						
H11S2	**WAKE ISLAND Hy**	**41.26**	**224**	T	T	18 07 03.2	
	baz=25,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**41.26**	**224**	T	T	18 06 58.9	
	baz=25,slow=76,SNR=9.2						
TXAR	**Lajitas Array**	**49.83**	**94**	P	**P**	**17 23 33.2**	**+0.1**
	0.8nm,0.6s,baz=309,slow=5.7,SNR=9.5						
FINES	**FINESS Array B**	**65.33**	**354**	P	**P**	**17 25 21.8**	**+0.2**
	1.4nm,0.9s,baz=359,slow=5.8,SNR=2.8						
AKASG	**Malin Array Be**	**75.77**	**351**	P	**P**	**17 26 26.4**	**+1.0**
	0.2nm,0.3s,baz=6.0,slow=4.3,SNR=2.6						

*BJI **25** 17:15:37.4, 14°.72N×120°.24E, h37km, mb5.4/68, mB5.7/68, Ms5.7/92, Ms7 5.6/85*
*BKK **25** 17:15:39.8±0.3, 15°.N±3°×12°.0E±°, h10km, M6.0/58, mb5.9/58, mB6.3/52, Mw(mB)6.0/52, Mwp6.1/11*
*GCMT **25** 17:15:40.8±0.1, 15°.11N×119°.82E, h46km, MW5.9/133, Moment Tension Solution. s133,c268; s128,c395; Duration: 2s3 Moment tensor: Scale 10^18Nm; Mrr0.88±.01; Mθθ0.11±.01; Mϕϕ-0.99±.01; Mrθ-0.28±.01; Mθϕ-0.08±.01; Mϕr-0.18±.01; Best double couple: M0 1.00100×10^18 NP1:ϕs200.00000°, δ53.00000°, λ111.00000°. NP2:ϕs348.00000°, δ42.00000°, λ65.00000°. Principal axes: T 0.9820, Plg72.0000°, Azm166.0000°; N 0.0360, Plg16.0000°, Azm7.0000°; P -1.0190, Plg6.0000°, Azm275.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **25** 17:15:40.8±0.1, 14°.95N×120°.04E, h35km, mb5.9/174, ME6.0, MS5.4/298, MW5.9, MW5.8 Error ellipse: s-maj=3.7km s-min=2.9km az=83.0, Moment Tensor Solution. s35 Moment tensor: Scale 10^17Nm; Mrr5.19; Mθθ0.16; Mϕϕ-5.35; Mrθ-0.72; Mθϕ-0.15; Mϕr0.90; Best double couple: M0 5.40000×10^17 NP1:ϕs190.00000°, δ41.00000°, λ102.00000°. NP2:ϕs354.00000°, δ50.00000°, λ80.00000°. Principal axes: T 5.3700, Plg81.0000°, Azm211.0000°; N 0.0600, Plg8.0000°, Azm0.0000°; P -5.4300, Plg5.0000°, Azm91.0000°; Broadband fault plane solution: P waves. NP1:ϕs10.00000°, δ45.00000°, λ90.00000°. NP2:ϕs190.00000°, δ45.00000°, λ90.00000°. Principal axes: T Plg90.0000°, Azm0.0000°; N Plg0.0000°, Azm0.0000°; P Plg0.0000°, Azm100.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt [V PIVS] at Iba, San Felipe and Santa Cruz; [IV PIVS] at Alabang, Bacoor, Clark Field, Manila, Obando and Quezon City; [III PIVS] at Cabanatuan City, Dagupan City, Guiguinto, Makati, Mandaluyong, Marikina, Pasig, Pateros, Tagaytay and Taguig. Felt [V] at Santa Rita and Subic; [IV] at Angeles, Cavite, Olongapo, San Fernando, Tarlac and Taytay; [III] at Antipolo, Baguio and Malolos; [II] at Abucay. Felt in much of central Luzon.
*NEIC **25** 17:15:41.0±0.0, 15°.07N×119°.91E, h40km, Moment Tensor Solution. s69 Moment tensor: Scale 10^17Nm; Mrr8.28; Mθθ-0.72; Mϕϕ-7.56; Mrθ-0.07; Mθϕ-0.17; Mϕr2.48; Best double couple: M0 8.30000×10^17 NP1:ϕs1.00000°, δ54.00000°, λ89.00000°. NP2:ϕs182.00000°, δ36.00000°, λ91.00000°. Principal axes: T 8.6600, Plg81.0000°, Azm266.0000°; N -0.7200, Plg0.0000°, Azm1.0000°; P -7.9400, Plg8.0000°, Azm91.0000°;*
*ISCJB **25** 17:15:42.6±0.3, 14°.96N±0°.02×120°.11E±0°.02, h65km±2km, mb5.8/283 Error ellipse: s-maj=2.9km s-min=2.7km az=16.6*
*MAN **25** 17:15:42, 15°.07N×119°.86E, h37km, mb6.2, ML5.3, MS5.9*
MAN INTENSITY V - IBA SAN FELIPE AND STA CRUZ ZAMBALES; INTENSITY IV - CLARK PAMPANGA; OBANDO BULACAN; QUEZON CITY; MANILA; ALABANG MUNTINLUPA; BACOOR CAVITE; INTENSITY III - MAKATI PASI; PASIG; TAGUIG; MANDALUYONG.
*MOS **25** 17:15:42.2±1.1, 15°.06N×120°.06E, h58km, mb6.1/89, MS5.6/88, Error ellipse: s-maj=6.2km s-min=3.8km az=111.6*
*KLM **25** 17:15:44.9, 14°.75N×120°.13E, h61km, mb5.7, MS7.0*
*IDC **25** 17:15:45.7±0.9, 15°.05N×120°.13E, h74km±8km, mb5.1/42, mb1 5.2/42, mb1mx5.2/43, mbtmp5.4/42, MS5.4/37, Ms1 5.4/37, ms1mx5.3/42, Error ellipse: s-maj=10.5km s-min=7.8km az=79.0*

ISC 25 17:15:42.8±0.2, 14°.98N±0°.02×120°.02E±0°.03, h52km±1km, h52km:pP-P, n1502, σ1s74/1483, mb5.9/333, MS5.5/463, 130C-27D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCPH	**Palayan**	**1.19**	**61**	⇓*e*P	**Pn**	**17 16 03.8**	**+0.6**
PCPH				*e*S	**Sn**	**17 16 19.3**	**+1.0**
TGY	**Tagaytay City**	**1.24**	**134**	P	**Pn**	**17 16 06.5**	**+2.5**
	13μm,0.3s,baz=302,slow=3.7,SNR=228						
TGY				S	**Sn**	**17 16 24.2**	**+4.6**
	17μm,0.3s,baz=165,slow=20,SNR=8.7						
TGY				LR	LR	17 16 51.9	
	comp=Z,166μm,19.0s,baz=272,slow=54						
TGY	**Tagaytay City**	**1.24**	**134**	⇑*e*P	**Pn**	**17 16 06.4**	**+2.5**
LQP	**Lukban**	**1.70**	**120**	⇓*i*P	**Pn**	**17 16 12.5**	**+2.2**
CVP	**Callao Caves**	**3.21**	**32**	*i* P	**Pn**	**17 16 33.4**	**+2.5**
PIP	**Pasuquin**	**3.38**	**10**	⇓*i*P	**Pn**	**17 16 34.6**	**+1.5**
PIP				*e*S	Sn	17 17 27.9	+16
KALP	**Kalibo**	**3.98**	**145**	*e*P	**Pn**	**17 16 44.3**	**+3.0**
RCP	**Roxas**	**4.31**	**142**	⇑*e*P	**Pn**	**17 16 50.1**	**+4.2**
MMPH	**Masbate**	**4.36**	**126**	*i* P	**Pn**	**17 16 49.6**	**+3.0**
MMPH				*i* S	**Sn**	**17 17 32.6**	**-3.5**
JAP	**San Jose, Anti**	**4.60**	**156**	⇑*e*P	**Pn**	**17 16 54.0**	**+4.0**
LLP	**Lapu-Lapu**	**6.02**	**140**	⇑*e*P	**Pn**	**17 17 14.0**	**+4.6**
LLP				*e*S	**Sn**	**17 18 16.0**	**-1.0**
PLP	**Palo**	**6.14**	**128**	⇑*e*P	**Pn**	**17 17 14.9**	**+3.9**
SNPH	**Sibulan**	**6.42**	**150**	⇓*e*P	**Pn**	**17 17 19.6**	**+4.7**
TWG	**Pinlang**	**7.87**	**7**	*e*Pn	**Pn**	**17 17 35.8**	**+1.2**
CGP	**Cagayan de Oro**	**7.93**	**144**	⇓*e*P	Pn	17 17 42.6	+7.0
TPUB	**Ta-pu**	**8.30**	**4**	*e*Pn	**Pn**	**17 17 43.0**	**+2.4**
YULB	**Yu-li**	**8.46**	**8**	*e*Pn	**Pn**	**17 17 45.1**	**+2.4**
KDM	**Kudat**	**8.60**	**202**	⇓P	**Pn**	**17 17 45.5**	**+0.7**
CTBH	**Cotabato--PC H**	**8.75**	**151**	⇑*i*P	Pn	17 17 51.7	+4.9
SSLB	**Suanglung**	**8.81**	**6**	*e*Pn	**Pn**	**17 17 50.5**	**+2.9**
BIPH	**Bislig**	**9.17**	**137**	⇓*e*P	Pn	17 17 57.7	+5.2
NACB	**Ninganchiao**	**9.27**	**9**	*e*Pn	**Pn**	**17 17 55.1**	**+1.3**
MCO	**Taipa Grande**	**9.38**	**320**	P	**Pn**	**17 17 55.0**	**-0.4**
DMPH	**Davao City--Mi**	**9.51**	**145**	⇑*e*P	Pn	17 18 12.2	+15
KKM	**Kota Kinabalu**	**9.63**	**203**	⇑P	**Pn**	**17 17 59.5**	**+0.5**
KKM	**Kota Kinabalu**	**9.63**	**203**	*e*Pn	**Pn**	**17 17 59.2**	**+0.2**
YHNB	**Yeheng**	**9.73**	**7**	*e*Pn	**Pn**	**17 18 02.8**	**+2.6**
YOJ	**Yonaguni jima**	**9.85**	**16**	*e*P	**Pn**	**17 18 03.8**	**+2.1**
YOJ	**Yonaguni jima**	**9.85**	**16**	*e*Pn	**Pn**	**17 18 03.8**	**+2.1**
MYLDM	**Lahad Datu**	**9.85**	**189**	*e*Pn	**Pn**	**17 18 05.3**	**+3.4**
QZH	**Quanzhou**	**10.01**	**353**	⇓*i*P	**Pn**	**17 18 07.0**	**+3.1**
QZH				S	**Sn**	**17 19 53.3**	**-1.5**
QZH				pmax	pmax		
	comp=Z,410nm,0.7s						
QZH				LR	LR		
	comp=Z,62μm,23.7s						
TATO	**Taipei**	**10.04**	**8**	*e*Pn	**Pn**	**17 18 07.0**	**+2.6**
GZH	**Guangzhou**	**10.24**	**323**	P	**Pn**	**17 18 09.3**	**+2.1**
GZH				S	Sn	17 20 10.5	+10
GZH				pmax	pmax		
	comp=Z,3μm,8.4s						
QIZ	**Qiongzhong**	**10.54**	**294**	P	**Pn**	**17 18 09.0**	**-2.3**
QIZ				pmax	pmax		
	comp=Z,370nm,1.0s						
QIZ				pmax	pmax		
	comp=Z,4μm,6.5s						
QIZ				LR	LR		
	comp=N,24μm,13.9s						
QIZ				LR	LR		
	comp=E,35μm,17.8s						
QIZ				LR	LR		
	comp=Z,56μm,17.4s						
QIZ	**Qiongzhong**	**10.54**	**294**	*e*Pn	**Pn**	**17 18 08.8**	**-2.4**
TSM	**Tawau**	**10.82**	**191**	⇑P	**Pn**	**17 18 15.3**	**0.0**
BTM	**Bintulu**	**13.56**	**211**	⇓P	**Pn**	**17 18 53.1**	**+0.6**
UBPT	**Khong Chiam**	**14.06**	**273**	P	**Pn**	**17 19 00.4**	**+1.1**
	661nm,1.9s,11μm						
JOW	**Kunigami**	**14.08**	**32**	*e*Pn	**Pn**	**17 19 01.3**	**+1.7**
GTOI	**Gorontalo**	**14.55**	**168**	P	**Pn**	**17 19 05.9**	**0.0**
SBUM	**Sibu**	**14.64**	**212**	*e*Pn	**P**	**17 19 10.5**	**-1.6**
SKNT	**Sakolnakorn**	**15.55**	**279**	P	**Pn**	**17 19 20.3**	**+1.4**
	769nm,1.0s,19μm						
PCI	**Palu**	**15.78**	**181**	P	**P**	**17 19 24.8**	**0.0**
SSE	**Sheshan**	**16.08**	**4**	⇓P	**P**	**17 19 27.3**	**-0.7**
SSE				pP	**pP**	**17 19 35.5**	**-4.2**
SSE				S	**Sn**	**17 22 25.0**	**+2.2**
SSE				sS	**S**	**17 22 36.5**	**+2.5**
SSE				pmax	pmax		
	comp=Z,92nm,1.0s						
SSE				pmax	pmax		
	comp=Z,1μm,8.0s						
SSE				LR	LR		
	comp=N,11μm,20.7s						
SSE				LR	LR		
	comp=E,3μm,20.7s						
SSE				LR	LR		
	comp=Z,15μm,20.0s						
WHN	**Wuhan**	**16.35**	**342**	P	**P**	**17 19 30.8**	**-0.2**
WHN				S	**S**	**17 22 41.3**	**+1.9**
WHN				LR	LR		
	comp=N,53μm,17.6s						
WHN				LR	LR		
	comp=E,14μm,11.2s						
WHN				LR	LR		
	comp=Z,52μm,16.5s						
NONG	**Nongkai**	**16.47**	**283**	P	**P**	**17 19 32.5**	**0.0**
	848nm,1.4s,11μm						
GYA	**Guiyang**	**16.91**	**315**	⇓*i*P	**P**	**17 19 37.5**	**0.0**
GYA				pP	pP	17 19 45.0	-4.1
GYA				S	**S**	**17 22 49.0**	**-2.3**
GYA				SS	**SnSn**	**17 23 05.5**	**+8.2**
GYA				pmax	pmax		
	comp=Z,280nm,1.0s						
GYA				pmax	pmax		
	comp=Z,3μm,7.2s						
GYA				LR	LR		
	comp=N,20μm,14.7s						
GYA				LR	LR		
	comp=E,19μm,15.6s						
GYA				LR	LR		
	comp=Z,28μm,17.2s						
NJ2	**Nanjing**	**17.03**	**357**	*e*P	**P**	**17 19 39.5**	**+1.0**
NJ2				pP	**pP**	**17 19 50.3**	**+0.1**
NJ2				sP	**sP**	**17 19 56.0**	**-0.9**
NJ2				S	**Sn**	**17 22 49.5**	**+3.6**
NJ2				pmax	pmax		
	comp=Z,4μm,4.6s						
NJ2				LR	LR		
	comp=N,14μm,19.0s						
NJ2				LR	LR		
	comp=E,11μm,17.4s						
NJ2				LR	LR		
	comp=Z,19μm,20.1s						
CHBT	**CHBT**	**17.32**	**265**	P	**P**	**17 19 44.0**	**+2.1**
	648nm,1.6s,11μm						
CHAI	**Chaiyaphum**	**17.41**	**275**	P	**P**	**17 19 44.1**	**+1.2**
	112nm,1.2s,1μm						
SRAK	**Srakaew**	**17.44**	**269**	P	**Pn**	**17 19 38.6**	**-3.9**
	2μm,1.3s,20μm						
ENH	**Enshi**	**18.05**	**329**	*e*Pn	**Pn**	**17 19 51.2**	**+1.3**
	410nm,1.1s						
LOEI	**Loei**	**18.19**	**281**	P	**P**	**17 19 48.9**	**-2.5**
	335nm,1.5s,7μm						
PBKT	**Sadao Pong**	**18.41**	**277**	P	**Pn**	**17 19 56.0**	**+1.6**
	520nm,1.4s,7μm						
UTTA	**Uttaradit**	**18.88**	**281**	P	**Pn**	**17 20 01.2**	**+1.1**
	69nm,1.1s,660nm						
KMI	**Kunming**	**19.10**	**305**	P	**Pn**	**17 20 05.0**	**+2.1**
KMI				pP	pP	17 20 12.5	-0.9
KMI				sP	sP	17 20 16.8	-3.2
KMI				S	**S**	**17 23 35.0**	**-0.8**
KMI				sS	sS	17 23 51.0	-3.7
KMI				pmax	pmax		
	comp=Z,130nm,1.8s						
KMI				pmax	pmax		
	comp=Z,5μm,6.6s						
KMI				LR	LR		
	comp=N,16μm,16.5s						
KMI				LR	LR		
	comp=E,18μm,16.8s						
KMI				LR	LR		
	comp=Z,24μm,15.9s						
SWI	**Sorong**	**19.27**	**144**	P	**Pn**	**17 20 05.2**	**+0.5**
SUKH	**Sukhothai**	**19.74**	**280**	P	**Pn**	**17 20 11.2**	**+0.9**
	105nm,1.2s,994nm						
LAMP	**Lampang**	**19.84**	**283**	P	**Pn**	**17 20 12.2**	**+0.7**
	114nm,1.1s,1μm						
KAPI	**Kappang**	**19.86**	**181**	*e*P	**Pn**	**17 20 11.9**	**+0.1**
	922nm,1.2s						
PHET	**Kaeng Krachan**	**19.90**	**267**	P	**Pn**	**17 20 13.8**	**+1.6**
	117nm,1.0s,1μm						
SRDT	**SRDT**	**20.23**	**271**	P	Pn	17 20 16.6	+0.5
	1μm,2.3s,21μm						
UMPA	**Umpang Tak**	**20.42**	**276**	P	Pn	17 20 19.2	+0.8
	347nm,1.2s,3μm						
CM01	**Chiang Mai Arr**	**20.46**	**283**	*e*P	Pn	17 20 19.5	+0.6
CM31	**Chiang Mai Arr**	**20.48**	**283**	*e*P	Pn	17 20 19.8	+0.7
CM31				*e*PcP	**PcP**	**17 24 28.5**	**+1.6**
CM31				*e*		17 32 15.6	
CMAR	**Chiang Mai Arr**	**20.48**	**283**	P	Pn	17 20 19.1	0.0
	190nm,1.0s,baz=93,slow=9.5,SNR=248						
CMAR				PcP	**PcP**	**17 24 28.5**	**+1.6**
	12nm,0.7s,baz=97,slow=0.6,SNR=12						
CMAR				LR	LR	17 28 11.5	
	comp=Z,20μm,19.9s,baz=109,slow=36						
CMAR				PKiKP	**PKiKP**	**17 32 15.6**	**+0.2**
	4.8nm,0.7s,baz=272,slow=1.6,SNR=23						
CMAR	**Chiang Mai Arr**	**20.48**	**283**	*e*P	Pn	17 20 19.1	0.0
CMAR				pmax	pmax		
	comp=Z,203nm,1.0s						
CMMT	**Chiang Mai**	**20.52**	**284**	P	Pn	17 20 18.7	-0.9
	comp=Z,435nm,1.3s,comp=Z,5μm						
CHTO	**Chiang Mai**	**20.52**	**284**	P	Pn	17 20 18.8	-0.8
	comp=Z,999nm,1.6s,comp=Z,22μm						
CHTO	**Chiang Mai**	**20.52**	**284**	*e*P	Pn	17 20 19.2	-0.4
CHTO				pmax	pmax		
	comp=Z,765nm,1.4s						
CHTO				MLR	MLR		
	comp=Z,23μm,21.0s						
CHTO	**Chiang Mai**	**20.52**	**284**	P	Pn	17 20 19.4	-0.2
	SNR=105						
CHTO	**Chiang Mai**	**20.52**	**284**	*e*P	Pn	17 20 19.2	-0.4
	comp=Z,766nm,1.4s						
CHTO				LR	LR		
	comp=Z,23μm,21.0s						
SKLT	**Songkhla**	**20.55**	**250**	P	Pn	17 20 19.8	-0.1
	comp=Z,1μm,1.2s						
JNU	**Nakatsue**	**20.58**	**27**	P	**P**	**17 20 17.2**	**-0.2**
	comp=Z,67nm,1.0s,baz=177,slow=5.5,SNR=20						
JNU				LR	LR	17 28 45.4	
	comp=Z,34nm,19.6s,baz=202,slow=38						
JNU	**Nakatsue**	**20.58**	**27**	*e*P	**P**	**17 20 18.7**	**+1.3**
	comp=Z,368nm,1.1s						
CMAI	**Chiengmai2**	**20.60**	**287**	P	Pn	17 20 20.4	-0.3
	comp=Z,7μm,1.2s						
MYKOM	**Kota Tinggi**	**20.65**	**232**	*e*P	Pn	17 20 21.0	-0.1
	comp=Z,916nm,1.1s						
MYKOM				LR	LR		
	comp=Z,21μm,19.0s						
SURA	**Surathani**	**20.75**	**256**	P	Pn	17 20 22.9	+0.6
	comp=Z,881nm,1.1s						
TRTT	**Trang**	**21.14**	**253**	P	**P**	**17 20 26.6**	**+2.9**
	comp=Z,1μm,1.1s,comp=Z,12μm						
TIA	**Tai'an**	**21.30**	**354**	⇑P	**P**	**17 20 26.0**	**+0.8**
TIA				sP	**pP**	**17 20 35.8**	**-1.4**
TIA				S	**S**	**17 24 19.8**	**+0.7**
TIA				pmax	pmax		
	comp=Z,120nm,1.2s						
TIA				pmax	pmax		
	comp=Z,2μm,4.1s						
TIA				LR	LR		
	comp=Z,9μm,14.8s						
TIA				LR	LR		
	comp=Z,5μm,11.5s						
TIA				LR	LR		
	comp=Z,11μm,17.0s						
KULM	**Kulim**	**21.34**	**245**	*e*P	**P**	**17 20 28.3**	**+2.5**
	comp=Z,1μm,1.3s						
MHMT	**Maesarieng**	**21.41**	**282**	P	**P**	**17 20 29.0**	**+2.5**
	comp=Z,183n

KS15 **Wonju Array Si** 23.44 16 *e*P **P** 17 20 47.5 0.0
comp=Z,5μm,20.0s
KS15 *e*PcP **PcP** 17 24 33.2 +0.8
KS15 *e* 17 32 16.1
KS15 *e* 17 54 12.7
KSRS Korea Array 23.46 16 P **P** 17 20 47.1 -0.6
comp=Z,39nm,1.0s,baz=197,slow=11,SNR=81
KSRS PcP **PcP** 17 24 33.2 +0.8
comp=Z,10nm,0.8s,baz=213,slow=2.2,SNR=10
KSRS LR LR 17 30 06.7
comp=Z,6μm,21.8s,baz=198,slow=37
KSRS PKiKP **PKiKP** 17 32 16.1 -0.1
comp=Z,3.3nm,0.8s,baz=220,slow=1.8,SNR=11
KSRS P3KPbc 17 54 12.7
comp=Z,1.7nm,0.7s,baz=3.6,slow=4.4,SNR=6.5
KS01 Wonju Array Si 23.47 16 *e*P **P** 17 20 47.6 -0.2
MMRI Maumere 23.56 175 *e*P **P** 17 20 48.9 0.0
comp=Z,1μm,1.0s
TIY Taiyuan 23.62 345 *e*P **P** 17 20 49.5 +0.2
TIY PP **PnPn** 17 21 25.3 +6.7
TIY S **S** 17 24 57.0 -3.2
TIY SS **SnSn** 17 25 50.0 +8.4
TIY pmax pmax
comp=Z,97nm,0.9s
TIY pmax pmax
comp=Z,2μm,6.7s
TIY LR LR
comp=Z,10μm,13.2s
TIY LR LR
comp=Z,2μm,12.7s
TIY LR LR
comp=Z,10μm,15.4s
BKNI Bangkinang 23.75 234 *e*P **P** 17 20 51.2 +0.6
comp=Z,2μm,1.0s
BKNI LR LR
comp=Z,21μm,20.0s
JAGI Jajag, Banyuwa 24.01 194 *e*P **P** 17 20 53.8 +0.9
comp=Z,761nm,1.0s
JAGI LR LR
comp=Z,6μm,20.0s
PSI Prapat 24.07 242 P **P** 17 20 54.5 +0.8
comp=Z,90nm,1.0s,baz=48,slow=9.5,SNR=26
PSI LR LR 17 29 36.4
comp=Z,11μm,21.1s,baz=49,slow=34
PSI Prapat 24.07 242 *e*P **P** 17 20 54.3 +0.6
PSI pmax pmax
comp=Z,900nm,1.1s
PSI Prapat 24.07 242 *e*P **P** 17 20 54.3 +0.6
comp=Z,900nm,1.1s
GUMO Guam 24.11 90 P **P** 17 20 53.5 -0.5
comp=Z,170nm,1.0s,baz=180,slow=9.2,SNR=7.7
GUMO LR LR 17 30 15.4
comp=Z,9μm,19.2s,baz=274,slow=36
GUMO Guam 24.11 90 *e*P **P** 17 20 53.5 -0.5
GUMO *e*P **P** 17 20 54.6 +0.7
UGM Wanagama 24.61 203 *e*P **P** 17 20 59.9 +1.4
comp=Z,2μm,1.5s
UGM LR LR
comp=Z,10μm,19.0s
LHMI Lhok Sumawe 24.67 249 *e*P **P** 17 20 59.6 +0.6
comp=Z,961nm,1.1s
SOEI Soe 24.93 170 *e*P **P** 17 21 00.3 -1.1
comp=Z,1μm,1.0s
BJT Baijiatuau 25.18 353 *e*P **P** 17 21 03.0 -0.3
BJT pmax pmax
comp=Z,914nm,1.4s
BJT Baijiatuau 25.18 353 *e*P **P** 17 21 03.0 -0.3
comp=Z,914nm,1.4s
BJI Beijing 25.20 353 P **P** 17 21 03.5 0.0
BJI pP **pP** 17 21 13.8 -2.9
BJI sP **sP** 17 21 17.5 -5.4
BJI S **S** 17 25 24.5 -0.6
BJI sS **sS** 17 25 42.5 -5.0
BJI pmax pmax
comp=Z,83nm,1.7s
BJI pmax pmax
comp=Z,2μm,7.3s
BJI LR LR
comp=Z,7μm,19.2s
BJI LR LR
comp=Z,5μm,15.6s
BJI LR LR
comp=Z,9μm,22.4s
INU Inuyama 25.38 34 *e*P **P** 17 21 04.4 -0.9
comp=Z,350nm,1.2s
CISI Cisompet, Garu 25.45 209 *e*P **P** 17 21 06.3 +0.2
comp=Z,1μm,1.0s
CISI *e*PcP **PcP** 17 24 37.5 +0.2
CISI LR LR
comp=Z,13μm,19.0s
JHJ Hachijo jima 2 25.45 41 P **P** 17 21 04.4 -1.5
comp=Z,121nm,0.8s,baz=240,slow=16,SNR=3.2
JHJ LR LR 17 29 43.1
comp=Z,7μm,21.3s,baz=258,slow=33
JHJ2 Mitsune 25.47 41 *e*P **P** 17 21 04.3 -1.7
comp=Z,1μm,1.3s
JHJ2 LR LR
comp=Z,10μm,22.0s
LZH Lanzhou 25.52 328 ⇑P **P** 17 21 08.0 +1.3
LZH pP pP 17 21 14.8 -5.1
LZH sP sP 17 21 18.5 -7.7
LZH PP **PnPn** 17 21 47.3 +2.8
LZH S **S** 17 25 34.5 +3.7
LZH sS sS 17 25 50.0 -3.2
LZH SS **SnSn** 17 26 37.0 +8.9
LZH pmax pmax
comp=Z,260nm,1.2s
LZH pmax pmax
comp=Z,1μm,7.4s
LZH LR LR
comp=Z,14μm,12.4s
LZH LR LR
comp=Z,14μm,14.0s
LZH LR LR
comp=Z,24μm,17.3s
MNAI Manna 25.60 223 *e*P **P** 17 21 07.1 -0.3
comp=Z,2μm,1.3s
MNAI LR LR
comp=Z,12μm,22.0s
GSI Gunungsitoli 26.00 241 *e*P **P** 17 21 10.4 -0.7
comp=Z,599nm,1.0s
GSI *e*PcP **PcP** 17 24 40.6 +2.1
DGPR DIGLIPUR 26.33 270 *e*P **P** 17 21 13.2 -0.9
PBA Port Blair 26.74 266 *e*P P 17 21 17.7 -0.1
CMBY CAMPBELL BAY 26.79 256 *e*P **P** 17 21 18.2 0.0
HHC Hu-ho-hao-te 26.81 346 *e*P **P** 17 21 19.0 +0.7
HHC S **S** 17 25 49.8 -1.1
HHC sS sS 17 26 09.5 -3.9
HHC pmax pmax
comp=Z,51nm,1.3s
HHC pmax pmax
comp=Z,1μm,6.7s
HHC LR LR
comp=Z,9μm,19.7s
HHC LR LR
comp=Z,5μm,18.5s
HHC LR LR
comp=Z,10μm,18.4s
JAY Jayapura 26.86 129 P **P** 17 21 17.6 -1.3
comp=Z,3.7nm,0.8s,baz=88,slow=23,SNR=11
JAY Jayapura 26.86 129 P **P** 17 21 17.6 -1.3
JAY pmax pmax
comp=Z,2.0nm,0.8s
MAJO Matsushiro 26.91 34⇑ *e*P **P** 17 21 19.5 +0.4
MAJO pmax pmax
comp=Z,93nm,0.7s
MAJO MLR MLR
comp=Z,34μm,19.0s
MAJO Matsushiro 26.91 34 *e*P **P** 17 21 17.5 -1.7
comp=Z,87nm,1.0s
MAJO LR LR
comp=Z,6μm,19.0s
MAT Matsushiro 26.91 34 P **P** 17 21 16.4 -2.7
MJAR Matsushiro Arr 26.91 34 P **P** 17 21 17.4 -1.7
comp=Z,14nm,1.0s,baz=208,slow=7.5,SNR=18
MJAR PcP **PcP** 17 24 40.8 +0.6
comp=Z,10.0nm,1.0s,baz=206,slow=1.9,SNR=5.2
MJAR LR LR 17 33 60.0
comp=Z,3μm,18.4s,baz=230,slow=41
MJB9 Matsu-Tunnel 26.91 34 *e*P **P** 17 21 17.6 -1.5
comp=Z,24nm,1.1s
MJB9 LR LR
comp=Z,2μm,20.0s
SNY Shenyang 26.93 6 ⇑P **P** 17 21 18.3 -0.9
SNY pP **pP** 17 21 32.0 -0.4
SNY sP **sP** 17 21 37.5 -1.2
SNY S **S** 17 25 51.3 -1.2
SNY SS **SnSn** 17 27 13.3 +11
SNY pmax pmax
comp=Z,69nm,1.1s
SNY pmax pmax
comp=Z,1μm,4.5s
SNY LR LR
comp=Z,3μm,20.6s
SNY LR LR
comp=Z,4μm,20.0s
SNY LR LR
comp=Z,9μm,31.4s
BTO Baotou 26.98 343 *e*P **P** 17 21 17.5 -2.3
SHL Shillong 28.36 296 *e*P **P** 17 21 32.3 -0.1
SHL IAmb IAmb 17 21 40.5
comp=Z,119nm,0.7s
SHL *e*S **S** 17 26 18.0 +2.1
XMIS Christmas Isla 29.03 210 *e*P **P** 17 21 34.9 -3.3
comp=Z,212nm,1.0s
XMIS LR LR
comp=Z,5μm,22.0s
CN2 Changchun 29.10 8 *e*P **P** 17 21 37.0 -1.5
CN2 *e*pP pP 17 21 46.8 -5.0
CN2 *e*sP sP 17 21 50.8 -7.3
CN2 PcP **PcP** 17 24 46.8 +1.4
CN2 *e*S **S** 17 26 27.0 +0.4
CN2 pmax pmax
comp=Z,900nm,8.0s
CN2 LR LR
comp=Z,6μm,19.0s
CN2 LR LR
comp=Z,5μm,19.0s
CN2 LR LR
comp=Z,6μm,23.0s
MSHR Mys Shultsa 29.13 17⇑ *e*P **P** 17 21 39.0 +0.2
MTN Manton Dam 29.75 158 *e*P **P** 17 21 42.5 -2.0
comp=Z,142nm,1.4s
VLA Vladivostok 29.84 18*c i*P **P** 17 21 45.4 +0.4
VLA pmax pmax
comp=Z,22nm,1.1s
VLA MLR MLR
comp=Z,3μm,20.0s
GTA Gaotai 30.11 328 ⇑P **P** 17 21 48.5 +0.7
GTA pP pP 17 21 58.5 -2.6
GTA sP sP 17 22 03.0 -4.3
GTA PcP **PcP** 17 24 49.3 +1.0
GTA S **S** 17 26 43.0 0.0
GTA sS sS 17 26 58.8 -6.8
GTA pmax pmax
comp=Z,32nm,1.3s
GTA pmax pmax
comp=Z,610nm,6.7s
GTA LR LR
comp=Z,12μm,19.0s
GTA LR LR
comp=Z,15μm,20.9s
GTA LR LR
comp=Z,23μm,20.4s
LSA Lhasa 30.35 304 P **P** 17 21 51.5 +1.1
LSA pP **pP** 17 22 03.0 -0.7
LSA LR LR
comp=Z,3μm,19.6s
LSA LR LR
comp=Z,6μm,16.3s
LSA LR LR
comp=Z,17μm,26.1s
LSA Lhasa 30.35 304 *e*P **P** 17 21 51.7 +1.3
LSA pmax pmax
comp=Z,338nm,1.4s
LSA MLR MLR
comp=Z,18μm,20.0s
LSA Lhasa 30.35 304 *e*P **P** 17 21 51.6 +1.3
comp=Z,338nm,1.4s
LSA LR LR
comp=Z,18μm,20.0s
MDJ Mudanjiang 30.64 13 P **P** 17 21 52.0 -0.1
MDJ pP pP 17 22 00.8 -4.7
MDJ PcP **PcP** 17 24 49.8 +0.4
MDJ S **S** 17 26 49.3 -1.5
MDJ ScP **ScP** 17 28 28.8 +1.0
MDJ PcS **PcS** 17 28 34.0 +0.9
MDJ LR LR
comp=Z,6μm,25.1s
MDJ LR LR
comp=Z,2μm,19.3s
MDJ LR LR
comp=Z,7μm,25.8s
MDJ Mudanjiang 30.64 13 *e*P **P** 17 21 52.7 +0.5
comp=Z,106nm,1.1s
MDJ LR LR
comp=Z,8μm,20.0s
USRK Ussuriysk Ar. 30.86 17 P **P** 17 21 54.1 +0.1
comp=Z,20nm,0.9s,baz=206,slow=8.6,SNR=43
USRK PcP **PcP** 17 24 49.6 -0.3
comp=Z,8.4nm,0.7s,baz=211,slow=2.6,SNR=5.4
USRK LR LR 17 35 34.6
comp=Z,3μm,20.1s,baz=189,slow=39
MANU Manus Island 31.91 120 PFAKE 17 22 20.0 +16
MANU LR LR
comp=Z,10μm,21.0s
BWNR Bhubaneshwar 32.99 284 *e*P **P** 17 22 14.3 +1.2
BWNR IAmb IAmb 17 22 32.6
comp=Z,981nm,1.8s
RAMN Ramite 33.30 296 *e*P **P** 17 22 16.7 +0.6
comp=Z,366nm,1.2s
BOK Bokaro 33.30 291 *e*P **P** 17 22 16.3 +0.5
BOK IAmb IAmb 17 22 25.1
comp=Z,128nm,1.4s
FITZ Fitzroy Crossi 33.33 170 *e*P **P** 17 22 14.9 -1.1
comp=Z,140nm,1.3s
ERM Erimo 33.53 32*c e*P **P** 17 22 18.5 +1.0
ERM pmax pmax
comp=Z,51nm,1.2s
ERM MLR MLR
comp=Z,6μm,20.0s
ERM Erimo 33.53 32 *e*P **P** 17 22 17.7 +0.1
comp=Z,65nm,1.0s
ERM LR LR
comp=Z,6μm,20.0s
JIRN Jiri 33.83 297 *e*P **P** 17 22 21.4 +0.6
comp=Z,3μm,1.0s
GUN Gumba 34.16 298 *e*P **P** 17 22 24.3 +0.7
comp=Z,771nm,1.1s
HIA Hailar 34.20 360 *e*P **P** 17 22 22.6 -0.7
HIA pmax pmax
comp=Z,43nm,1.0s
HIA MLR MLR
comp=Z,10μm,20.0s
HIA Hailar 34.20 360 *e*P **P** 17 22 22.6 -0.7
comp=Z,43nm,1.0s
HIA LR LR
comp=Z,10μm,20.0s
PKIN Phulchoki 34.49 297 *e*P **P** 17 22 27.0 +0.6
comp=Z,388nm,1.4s
CHLP Challavanipeta 34.58 281 *e*P **P** 17 22 28.0 +1.1
CHLP IAmb IAmb 17 22 36.9
comp=Z,298nm,1.7s
CHLP *e*S **S** 17 27 55.0 +2.3
CHLP IVMs_BB IVMs_BB 17 38 28.4
comp=Z,2μm,19.4s
KKN Kakani 34.65 297 *e*P **P** 17 22 27.6 -0.1
comp=Z,393nm,1.2s
SONA0 Songino Array 34.66 344 *e*P **P** 17 22 27.5 +0.1
comp=Z,52nm,0.9s
SONM Songino Array 34.66 344 P **P** 17 22 27.5 +0.1
comp=Z,18nm,0.8s,baz=163,slow=9.4,SNR=74
SONM LR LR 17 37 30.2
comp=Z,10μm,19.3s,baz=164,slow=38
SONA1 Songino Array 34.66 344 *e*P **P** 17 22 27.5 0.0
DMN Daman 34.75 297 *e*P **P** 17 22 28.7 +0.1
comp=Z,568nm,1.4s
ASAJ Asahikawa 34.82 29 *e*P **P** 17 22 28.7 0.0
comp=Z,207nm,1.0s
ASAJ LR LR
comp=Z,7μm,20.0s
GKN Gorkha 35.25 297 *e*P **P** 17 22 32.6 -0.2
comp=Z,407nm,1.2s
VIS Vishakhapatnam 35.28 280 *e*P **P** 17 22 32.9 -0.1
COCO West Island 35.44 222 *i* P **P** 17 22 36.2 +1.9
COCO West Island 35.44 222 *e*P **P** 17 22 35.4 +1.1
comp=Z,2μm,1.3s
COCO LR LR
comp=Z,4μm,20.0s
KLR Kul'dur 35.48 13 P **P** 17 22 34.3 0.0
comp=Z,67nm,0.9s,baz=219,slow=7.6,SNR=200
KLR Kul'dur 35.48 13*c i*P **P** 17 22 34.4 +0.1
HABR Khabarovsk 35.62 17*c i*P **P** 17 22 33.8 -1.7
HABR *e**PP **pP** 17 22 48.8 -0.2
HABR *e**SP **sP** 17 22 55.9 +0.7
HABR *e* 17 23 54.7
HABR *e* 17 25 00.9
HABR *e*S **S** 17 28 06.4 -1.6
HABR *e**SS **sS** 17 28 32.3 +1.5
HABR *e*SS **SnSn** 17 30 33.5 +0.4
HABR *e* 17 32 46.6
HABR pmax pmax
comp=E,30nm,2.5s
HABR pmax pmax
comp=N,22nm,2.0s
HABR pmax pmax
comp=Z,53nm,2.0s
HABR MLR MLR
comp=Z,3μm,20.0s
MBWA Marble Bar 35.91 180 P **P** 17 22 37.8 -0.4
SNR=20
MBWA P **P** 17 22 37.8 -0.4
SNR=20
MBWA Marble Bar 35.91 180 P **P** 17 22 37.8 -0.4
SNR=20
MBWA Marble Bar 35.91 180 *e*P **P** 17 22 37.5 -0.7
comp=Z,308nm,1.1s
KOLN Koldanda 36.09 297 *e*P **P** 17 22 40.0 -0.1
comp=Z,116nm,0.9s
PMG Port Moresby 36.20 130*c i*P **P** 17 22 39.7 -1.1
PMG pmax pmax
comp=Z,853nm,1.7s
PMG Port Moresby 36.20 130 *e*P **P** 17 22 40.1 -0.7
comp=Z,351nm,1.1s
YUK Yuzh-Kuril'sk 36.36 32 *e*P **P** 17 22 42.8 +0.9
PYUN Piuthan 36.69 297 *e*P **P** 17 22 45.4 +0.2
comp=Z,376nm,0.9s
COEN Coen 36.76 140 *e*P **P** 17 22 44.1 -1.5
comp=Z,178nm,1.0s
COEN LR LR
comp=Z,4μm,20.0s
PVM Polavaram 36.92 279 *e*P **P** 17 22 47.8 +0.8
PVM IAmb IAmb 17 22 57.0
comp=Z,148nm,1.3s
PVM *e*S **S** 17 28 30.9 +2.3
PVM IVMs_BB IVMs_BB 17 40 27.3
comp=Z,2μm,16.6s
YSS Yuzh-Sakhalins 37.09 26α *i*P **P** 17 22 48.2 +0.2
YSS *e**SP **pP** 17 23 01.9 +0.3
YSS *e* 17 24 15.3
YSS *e*S **S** 17 28 31.5 +1.1
YSS *e*SS SS 17 31 31.0 +17
YSS pmax pmax
comp=Z,900nm,5.0s
YSS pmax pmax
comp=Z,70nm,0.9s
YSS MLR MLR
comp=N,4μm,21.0s
YSS MLR MLR
comp=Z,6μm,21.0s
YSS MLR MLR
comp=E,4μm,20.0s
YSS Yuzh-Sakhalins 37.09 26 *e*P **P** 17 22 48.2 +0.2
comp=E,226nm,1.2s
YSS LR LR
comp=Z,4μm,22.0s
RABL Rabaul 37.10 118 *e*P **P** 17 22 48.5 -0.1
comp=Z,1μm,1.4s
RABL LR LR
comp=Z,12μm,22.0s
WB0 Warramunga Arr 37.31 157 PFAKE 17 23 00.0 +10
WB0 LR LR
comp=Z,4μm,21.0s
WB8 Warramunga Arr 37.35 157 PFAKE 17 23 00.0 +9.5
WB8 LR LR
comp=Z,2μm,21.0s
WB6 Warramunga Arr 37.38 157 PFAKE 17 23 00.0 +9.2
WB6 LR LR
comp=Z,2μm,20.0s
WB5 Warramunga Arr 37.40 157 PFAKE 17 23 00.0 +9.0
WB5 LR LR
comp=Z,3μm,22.0s
WB4 Warramunga Arr 37.42 157 PFAKE 17 23 00.0 +8.9
WB4 LR LR
comp=Z,3μm,20.0s
WC1 Warramunga Arr 37.43 157 PFAKE 17 23 00.0 +8.8
WC1 LR LR
comp=Z,2μm,22.0s
WB3 Warramunga Arr 37.44 157 PFAKE 17 23 00.0 +8.7
WB3 LR LR
comp=Z,3μm,21.0s
WC2 Warramunga Arr 37.44 157 PFAKE 17 23 00.0 +8.7
WC2 LR LR
comp=Z,3μm,20.0s
WRAB Tennant Creek 37.44 157*c i*P **P** 17 22 49.4 -1.9
WRAB pmax pmax
comp=Z,709nm,1.0s
WRAB MLR MLR
comp=Z,8μm,20.0s
WRAB Tennant Creek 37.44 157 *e*P **P** 17 22 49.4 -1.9
comp=Z,215nm,0.8s
WRAB LR LR
comp=Z,3μm,22.0s
WR1 Warramunga Arr 37.45 158 *e*P **P** 17 22 49.3 -2.1
comp=Z,249nm,0.8s
WR1 *e* 17 55 25.5
WRA Warramunga Arr 37.45 158 P **P** 17 22 49.3 -2.1
comp=Z,245nm,0.9s,baz=331,slow=9.9,SNR=283
WRA LR LR 17 42 35.5
comp=Z,1μm,19.4s,baz=335,slow=43
WRA PKPPKP P'P'df 17 55 25.5 -11
comp=Z,1.5nm,1.1s,baz=162,slow=0.5,SNR=3.6
WRA PKP2ab 17 57 16.9
comp=Z,1.7nm,1.0s,baz=150,slow=4.0,SNR=4.8
WRA Warramunga Arr 37.45 158 *i* P **P** 17 22 47.7 -3.7
WRA pmax pmax
comp=Z,245nm,0.9s
WB2 Warramunga Arr 37.45 157 *e*P **P** 17 22 48.5 -2.9
WB2 *e*P **P** 17 22 49.4 -2.0
WB2 LR LR
comp=Z,3μm,21.0s
WR2 Warramunga Arr 37.46 157 PFAKE 17 23 00.0 +8.5
WR2 LR LR
comp=Z,3μm,22.0s
WC4 Warramunga Arr 37.47 158 PFAKE 17 23 00.0 +8.5
WC4 LR LR
comp=Z,3μm,22.0s
WR3 Warramunga Arr 37.47 157 PFAKE 17 23 00.0 +8.4
WR3 LR LR
comp=Z,2μm,20.0s
WR4 Warramunga Arr 37.48 157 PFAKE 17 23 00.0 +8.4
WR4 LR LR
comp=Z,3μm,22.0s
WR5 Warramunga Arr 37.49 157 PFAKE 17 23 00.0 +8.3
WR5 LR LR
comp=Z,3μm,22.0s
WR6 Warramunga Arr 37.50 157 PFAKE 17 23 00.0 +8.2
WR6 LR LR
comp=Z,3μm,22.0s
WR7 Warramunga Arr 37.51 157 PFAKE 17 23 00.0 +8.1
WR7 LR LR
comp=Z,2μm,20.0s
WR8 Warramunga Arr 37.52 157 PFAKE 17 23 00.0 +8.0
WR8 LR LR
comp=Z,3μm,21.0s
WR9 Warramunga Arr 37.53 157 PFAKE 17 23 00.0 +8.0
WR9 LR LR
comp=Z,2μm,19.0s
WR0 Warramunga Arr 37.54 157 PFAKE 17 23 00.0 +7.9
WR0 LR LR
comp=Z,2μm,19.0s
ZAK Zakamensk 37.83 343 *e*P **P** 17 22 54.1 -0.3
ZAK pmax pmax
comp=Z,71nm,1.4s
KUR Kuril'sk 38.23 32 *i* P **P** 17 22 58.9 +1.2
KUR *e*PPP PPP 17 24 47.7
KUR *i* S **S** 17 28 47.4 -0.3
KUR pmax pmax
comp=Z,1μm,5.8s
KUR MLR MLR
comp=N,1μm,18.0s
KUR MLR MLR
comp=E,2μm,18.0s
KUR MLR MLR
comp=Z,2μm,18.0s
PATS Pohnpei 38.41 98 *e*P **P** 17 23 00.6 +1.0
comp=Z,980nm,1.3s
ADKI Addanki 38.58 277 *e*P **P** 17 23 02.1 +1.1

ADKI IAmb IAmb 17 23 19.6
comp=Z,263nm,1.2s
ADKI *e*S **S** **17 28 54.7 +0.9**
ADKI IVMs_BB IVMs_BB 17 37 29.0
comp=Z,2µm,16.9s
MDRS Chennai 38.60 272 *e*P **P** **17 23 02.2 +1.0**
TLY Talaya 38.90 344 P **P** **17 23 03.6 +0.3**
comp=Z,11nm,0.5s,baz=172,slow=8.3,SNR=20
TLY Talaya 38.90 344 *c i*P **P** **17 23 03.7 +0.4**
TLY *e*S **S** **17 28 57.3 -0.5**
TLY pmax pmax
comp=Z,83nm,1.7s
TLY MLR MLR
comp=Z,6µm,20.0s
TLY Talaya 38.90 344 *e*P **P** **17 23 03.6 +0.3**
TLY *e*P **P** **17 23 04.0 +0.7**
TLY LR LR
comp=Z,6µm,19.0s
SKHT Srikalahasti 39.04 273 *e*P **P** **17 23 06.0 +1.1**
SKHT IAmb IAmb 17 23 15.7
comp=Z,1µm,2.0s
SKHT *e*S **S** **17 29 03.1 +2.5**
SKHT IVMs_BB IVMs_BB 17 39 08.5
comp=Z,2µm,18.3s
RPR Rampur 39.10 282 *e*P **P** **17 23 06.4 +1.0**
RPR IAmb IAmb 17 23 15.6
comp=Z,519nm,1.8s
RPR *e*S **S** **17 29 03.3 +1.8**
RPR IVMs_BB IVMs_BB 17 35 32.4
comp=Z,2µm,20.4s
NJS Nagarjunasagar 39.17 278 *e*P **P** **17 23 06.5 +0.5**
NJS IAmb IAmb 17 23 16.4
comp=Z,823nm,1.9s
NJS *e*S **S** **17 29 04.0 +1.3**
NJS IVMs_BB IVMs_BB 17 38 00.1
comp=Z,2µm,23.0s
IRK Irkutsk 39.24 345 *e*P **P** **17 23 05.0 -1.1**
IRK *e*S **S** **17 28 59.7 -3.2**
IRK pmax pmax
comp=Z,240nm,1.4s
PALK Pallekele 39.28 263 P **P** **17 23 08.1 +1.1**
comp=Z,24nm,0.8s,baz=117,slow=5.0,SNR=8.7
PALK Pallekele 39.28 263 P **P** **17 23 08.4 +1.4**
PALK Pallekele 39.28 263 *i* P **P** **17 23 09.5 +2.5**
PALK Pallekele 39.28 263 *e*P **P** **17 23 08.7 +1.7**
comp=Z,254nm,1.4s
NGP Nagpur 39.35 285 *e*P **P** **17 23 07.8 +0.3**
NGP IAmb IAmb 17 23 17.9
comp=Z,182nm,1.2s
RCLA Racherla 39.59 276 *e*P **P** **17 23 10.0 +0.5**
RCLA IAmb IAmb 17 23 19.8
comp=Z,784nm,1.9s
RCLA *e*S **S** **17 29 10.6 +1.6**
RCLA IVMs_BB IVMs_BB 17 32 44.9
comp=Z,2µm,17.5s
SRLM Srisailam 39.60 277 *e*P **P** **17 23 09.4 -0.2**
SRLM IAmb IAmb 17 23 19.7
comp=Z,579nm,2.0s
SRLM *e*S **S** **17 29 11.7 +2.5**
SRLM IVMs_BB IVMs_BB 17 37 46.5
comp=Z,2µm,19.9s
MOY Mondy 39.65 341 *e*P **P** **17 23 10.2 +0.5**
MOY pmax pmax
comp=Z,179nm,3.0s
WMQ Urumqi 39.80 323 P **P** **17 23 12.5 +1.6**
WMQ PP **PnPn** **17 24 53.5 +6.8**
WMQ PcP **PcP** **17 25 20.8 +4.5**
WMQ S **S** **17 29 13.3 +1.7**
WMQ SS **SS** **17 32 06.5 -2.7**
WMQ pmax pmax
comp=Z,100nm,1.2s
WMQ pmax pmax
comp=Z,1µm,6.8s
WMQ LR LR
comp=Z,22µm,16.8s
WMQ LR LR
comp=Z,16µm,16.3s
WMQ LR LR
comp=Z,22µm,20.3s
HYB Hyderabad 39.84 279 *i* P **P** **17 23 13.0 +1.4**
HYB *e*pP **pP** **17 23 21.0 -4.3**
HYB *e*sP **sP** **17 23 26.5 -4.9**
HYB *e*PP **PnPn** **17 24 50.0 +2.4**
HYB *e*PcP **PcP** **17 25 18.0 +1.1**
HYB *e*S **S** **17 29 14.0 +1.1**
HYB Hyderabad 39.84 279 *e*P **P** **17 23 11.4 -0.2**
HYBB Hyderabad (bro 39.85 279 *e*P **P** **17 23 12.1 +0.5**
HYBB IAmb IAmb 17 23 21.3
comp=Z,151nm,1.1s
HYBB *e*S **S** **17 29 13.1 +0.2**
HYBB IVMs_BB IVMs_BB 17 43 12.6
comp=Z,2µm,14.7s
SRSP Sriramsagar 40.00 282 *e*P **P** **17 23 12.6 -0.2**
SRSP IAmb IAmb 17 23 23.0
comp=Z,409nm,1.7s
SRSP *e*S **S** **17 29 14.9 -0.1**
TYV Tymovskoe 40.19 22 *e*P **P** **17 23 15.0 +1.1**
TYV *e*S **S** **17 29 16.0 -1.0**
TYV pmax pmax
comp=Z,20nm,0.8s
TYV pmax pmax
comp=N,1µm,4.0s
TYV smax smax
comp=N,2µm,10.0s
TYV MLR MLR
comp=N,3µm,22.0s
AS31 Alice Springs 40.73 160 *e*P **P** **17 23 17.5 -1.3**
comp=N,37nm,0.6s
ASAR Alice Springs 40.73 160 P **P** **17 23 17.6 -1.2**
comp=N,93nm,0.8s,baz=338,slow=6.6,SNR=821
ASAR LR LR 17 42 43.1
comp=N,1µm,21.0s,baz=327,slow=40
ASAR PKPPKP P'P'df 17 55 21.9 -11
comp=N,1.1nm,1.0s,baz=131,slow=2.4,SNR=4.1
ASAR PKP2ab 17 56 58.2
comp=N,0.6nm,1.0s,baz=166,slow=4.3,SNR=2.8
AS01 Alice Springs 40.75 160 *e*P **P** **17 23 17.6 -1.3**
BHPL Bhopal 40.96 288 *e*P **P** **17 23 22.2 +1.4**
BHPL IAmb IAmb 17 23 31.1
comp=Z,658nm,2.3s
URV Uravakonda 41.27 276 *e*P **P** **17 23 23.5 +0.1**
URV IAmb IAmb 17 23 33.7
comp=Z,486nm,1.7s
URV *e*S **S** **17 29 35.8 +1.8**
URV IVMs_BB IVMs_BB 17 33 20.7
comp=Z,2µm,19.1s
DDI Dehra Dun 41.38 299 *e*P **P** **17 23 23.4 -0.8**
DDI IAmb IAmb 17 23 34.0
comp=Z,515nm,1.8s
NKL Nikolayevsk 41.44 19 *i* P **P** **17 23 23.0 -1.2**
NKL *e* 17 23 38.0
NKL *e*S **S** **17 29 34.0 -1.5**
NKL *e* 17 32 36.0
NKL pmax pmax
comp=N,26nm,1.0s
NKL pmax pmax
comp=Z,80nm,1.0s
NKL pmax pmax
comp=N,500nm,12.0s
NKL pmax pmax
comp=Z,1µm,12.0s
NKL smax smax
comp=N,2µm,14.0s
NKL smax smax
comp=E,2µm,14.0s
NKL MLR MLR
comp=N,4µm,20.0s
NKL MLR MLR
comp=Z,4µm,20.0s
KLRI Killari 41.68 280 *e*P **P** **17 23 27.1 +0.3**
KLRI IAmb IAmb 17 23 36.8
comp=Z,1µm,1.8s
KLRI *e*S **S** **17 29 42.4 +2.3**
KLRI IVMs_BB IVMs_BB 17 35 32.4
comp=Z,2µm,17.6s
CLNS Chul'man 41.94 4 *e*P **P** **17 23 27.1 -1.3**
CLNS *e**PP **sP** **17 23 46.6 -1.6**
CLNS *e* 17 25 07.2
CLNS *e* 17 25 20.0
CLNS *e*PPP PPP 17 25 35.6
CLNS *e*S **S** **17 29 40.4 -2.7**
CLNS pmax pmax
comp=Z,43nm,1.0s
CLNS pmax pmax
comp=N,56nm,1.0s
CLNS pmax pmax
comp=E,19nm,1.0s
CLNS pmax pmax
comp=Z,40nm,1.2s
CLNS pmax pmax
comp=N,37nm,1.1s
CLNS pmax pmax
comp=E,38nm,1.0s
CLNS smax smax
comp=N,930nm,10.7s
CLNS smax smax
comp=E,668nm,12.4s
CLNS MLR MLR
comp=Z,2µm,15.0s
CLNS MLR MLR
comp=N,3µm,14.0s
CLNS MLR MLR
comp=E,3µm,18.0s
SMLA Simla 42.30 300 *e*P **P** **17 23 31.9 +0.3**
SDNR Sundarnagar 42.54 300 *e*P **P** **17 23 34.6 +1.0**
TRD Trivandrum 42.59 266 *e*P **P** **17 23 36.9 +2.7**
BHK Bhakra 42.99 300 *e*P **P** **17 23 35.0 -2.2**
BOD Bodaibo 43.00 355 *e*P **P** **17 23 37.0 +0.1**
BOD pmax pmax
comp=Z,95nm,1.6s
CTA Charters Tower 43.35 143 LR LR 17 44 24.4
comp=Z,2µm,19.0s,baz=342,slow=40
CTAO Charters Tower 43.35 143 *e*P **P** **17 23 40.2 0.0**
CTAO pmax pmax
comp=Z,690nm,1.6s
CTAO MLR MLR
comp=Z,3µm,19.0s
CTAO Charters Tower 43.35 143 *e*P **P** **17 23 40.2 0.0**
comp=Z,690nm,1.6s
CTAO LR LR
comp=Z,3µm,19.0s
ZSN Zaisan 43.54 325 *i* P **P** **17 23 40.8 -0.7**
comp=Z,465nm,1.5s
ZSN *e*S **S** **17 30 08.5 +1.7**
ZSN LR LR 17 41 10.8
comp=Z,2µm,12.0s
THN Thein Dam 43.79 301 *e*P **P** **17 23 42.4 -1.2**
POO Poona 44.27 281 *e*P **P** **17 23 46.7 -1.0**
POO *e*S **S** **17 30 20.0 +1.9**
SHLS Shalkode 44.58 317 *i* P **P** **17 23 48.4 -1.5**
SHLS *e*S **S** **17 30 19.3 -2.9**
SHLS LR LR 17 42 56.8
comp=Z,1µm,14.6s
MK01 Makanchi Array 44.60 323 *e*P **P** **17 23 50.7 +0.7**
MK31 Makanchi Array 44.62 323 *ce*P **P** **17 23 50.9 +0.8**
MK31 pmax pmax
comp=Z,101nm,1.0s
MK31 Makanchi Array 44.62 323 *e*P **P** **17 23 51.0 +0.9**
MK32 Makanchi Array 44.62 323 *e*P **P** **17 23 50.9 +0.7**
MKAR Makanchi Array 44.62 323 P **P** **17 23 50.9 +0.8**
comp=Z,24nm,0.8s,baz=123,slow=8.8,SNR=161
MKAR Makanchi Array 44.62 323 *e*P **P** **17 23 50.9 +0.8**
comp=Z,508nm,0.9s
PDGK Podgornoye 44.63 318 *i* P **P** **17 23 51.3 +0.9**
PDGK pmax pmax
comp=Z,295nm,1.1s
MAKZ Makanchi 44.81 323 *i* P **P** **17 23 52.0 +0.4**
MAKZ pmax pmax
comp=Z,153nm,1.3s
MAKZ Makanchi 44.81 323 *e*P **P** **17 23 52.4 +0.8**
comp=Z,134nm,1.3s
MAKZ LR LR
comp=Z,9µm,18.0s
KPKS Kokpek 45.22 317 *e*P **P** **17 23 53.9 -1.2**
comp=Z,1µm,1.6s
KPKS *e*S **S** **17 30 30.9 -0.6**
KPKS LR LR 17 42 56.6
comp=Z,4µm,14.8s
SATY Saty 45.23 317 *i* P **P** **17 23 53.9 -1.3**
comp=Z,515nm,0.6s
SATY *e*S **S** **17 30 30.7 -0.9**
SATY LR LR 17 43 07.0
comp=Z,3µm,13.8s
BOM Bombay 45.23 282 *e*P **P** **17 23 53.4 -1.9**
ZHN Zhinishke 45.26 317 *i* P **P** **17 23 54.3 -1.1**
comp=Z,368nm,1.7s
ZHN LR LR 17 43 04.0
comp=Z,2µm,13.2s
KSH Kashi 45.57 311 P **P** **17 24 00.5 +2.6**
KSH *e*pP pP 17 24 11.0 -0.8
KSH *e*sP sP 17 24 14.5 -3.3
KSH *e*PcP **PcP** **17 25 39.0 +3.2**
KSH *e*ScP **ScP** **17 29 28.3 +3.9**
KSH PcS **PcS** **17 29 32.0 +2.0**
KSH S **S** **17 30 40.0 +3.4**
KSH pmax pmax
comp=Z,54nm,1.1s
KSH LR LR
comp=Z,6µm,16.4s
KSH LR LR
comp=Z,6µm,14.2s
KSH LR LR
comp=Z,11µm,16.6s
SKR Severo-Kuril's 45.98 31 *e*P **P** **17 23 58.4 -2.3**
SKR *e* 17 24 09.2
SKR *e*PPP PPP 17 24 18.0
SKR pmax pmax
comp=Z,900nm,3.2s
SKR pmax pmax
comp=Z,123nm,0.8s
SKR pmax pmax
comp=Z,1µm,5.9s
SKR MLR MLR
comp=Z,2µm,17.0s
SKR MLR MLR
comp=Z,2µm,19.0s
TDK Taldygorghan 46.09 319 *e*P **P** **17 24 00.8 -1.0**
comp=Z,1µm,1.4s
TDK *e*S **S** **17 30 43.1 -0.6**
TDK *i* SS **SS** **17 34 09.4 +0.1**
TDK LR LR 17 43 31.2
comp=Z,2µm,15.5s
FORT Forrest 46.14 170 *e*P **P** **17 24 00.6 -1.6**
comp=Z,3µm,0.8s
MDOK Medeo 46.18 316 *i* P **P** **17 24 01.2 -1.4**
comp=Z,394nm,0.9s
MDOK *e*S **S** **17 30 44.1 -1.3**
MDOK *e*SS **SS** **17 34 11.7 +0.6**
MDOK LR LR 17 43 20.2
comp=Z,2µm,16.7s
AAA Alma-Ata 46.28 316 *e*P **P** **17 24 02.5 -0.9**
comp=Z,706nm,1.5s
AAA *e*S **S** **17 30 46.3 -0.4**
AAA *e*SS **SS** **17 34 14.3 +1.6**
AAA LR LR 17 43 37.1
comp=Z,2µm,16.7s
HNR Honiara 46.41 119 *e*P **P** **17 24 04.0 -0.6**
HNR Honiara 46.41 119 *e*P **P** **17 24 04.1 -0.6**
HNR pmax pmax
comp=Z,179nm,0.9s
HNR MLR MLR
comp=Z,11µm,22.0s
HNR Honiara 46.41 119 *e*P **P** **17 24 04.1 -0.6**
comp=Z,179nm,0.9s
HNR LR LR
comp=Z,11µm,22.0s
KWAJ Kwajalein Atol 46.90 92 PFAKE 17 24 20.0 +11
KWAJ LR LR
comp=Z,5µm,21.0s
KUU Kurty 46.94 317 *i* P **P** **17 24 07.3 -1.2**
comp=Z,3µm,1.6s
KUU *e*S **S** **17 30 55.1 -0.9**
KUU LR LR 17 44 01.2
comp=Z,3µm,15.4s
TKM2 Tokmak 2 47.06 315 *i* P **P** **17 24 10.9 +1.3**
TKM2 pmax pmax
comp=Z,72nm,1.3s
BMNS Besmoynak 47.08 316 *i* P **P** **17 24 08.6 -1.2**
comp=Z,1µm,1.6s
BMNS *e*S **S** **17 30 57.7 -0.6**
BMNS LR LR 17 44 36.5
comp=Z,1µm,14.0s
ZAA0 Zalesovo Array 47.63 333 *e*P **P** **17 24 13.4 -0.2**
ZALV Zalesovo Beam 47.63 333 P **P** **17 24 13.1 -0.5**
comp=Z,16nm,0.5s,baz=126,slow=6.6,SNR=118
ZALV PP **PP** **17 25 59.4 -6.1**
comp=Z,12nm,0.6s,baz=113,slow=3.7,SNR=4.0
ZALV LR LR 17 45 16.1
comp=Z,7µm,19.4s,baz=134,slow=37
ZALV PKPPKP **P'P'df** **17 55 28.6 -0.8**
comp=Z,0.4nm,0.5s,baz=232,slow=1.6,SNR=3.0
ZAA1 Zalesovo Array 47.63 333 *e*P **P** **17 24 13.1 -0.5**
ZAA1 *e* 17 55 28.6
FRU Bishkek 47.69 315 *e*P **P** **17 24 15.0 +0.6**
FRU *e*S **S** **17 31 10.0 +3.2**
FRU pmax pmax
comp=Z,770nm,2.0s
FRU pmax pmax
comp=E,9µm,20.0s
AAK Ala-Archa 47.71 315 P **P** **17 24 15.8 +1.1**
comp=E,14nm,0.7s,baz=104,slow=7.1,SNR=53
AAK Ala-Archa 47.71 315 *c i*P **P** **17 24 16.0 +1.4**
AAK pmax pmax
comp=Z,277nm,2.0s
AAK MLR MLR
comp=Z,42µm,22.0s
AAK Ala-Archa 47.71 315 P **P** **17 24 16.2 +1.6**
SNR=84
AAK Ala-Archa 47.71 315 *e*P **P** **17 24 15.8 +1.1**
AAK *e*P **P** **17 24 16.2 +1.6**
AAK LR LR
comp=Z,18µm,22.0s
NWAO Narrogin (SRO) 47.71 183 P **P** **17 24 14.1 -0.4**
comp=Z,148nm,0.8s,baz=232,slow=9.3,SNR=45
NWAO Narrogin (SRO) 47.71 183 *e*P **P** **17 24 14.0 -0.4**
NWAO pmax pmax
comp=Z,148nm,0.8s
NWAO MLR MLR
comp=Z,3µm,21.0s
NWAO Narrogin (SRO) 47.71 183 P **P** **17 24 14.2 -0.2**
SNR=6.0
NWAO P **P** **17 24 14.2 -0.2**
SNR=6.0
NWAO Narrogin (SRO) 47.71 183 P **P** **17 24 14.2 -0.2**
SNR=6.0
NWAO Narrogin (SRO) 47.71 183 *e*P **P** **17 24 14.0 -0.4**
comp=Z,148nm,0.8s
NWAO LR LR
comp=Z,3µm,21.0s
SEM Semipalatinsk 47.73 326 *i* P **P** **17 24 13.5 -1.2**
comp=Z,307nm,1.3s
SEM *i* PP **PP** **17 26 05.3 -1.4**
SEM *e*S **S** **17 31 06.5 -0.9**
SEM *e*SS **SS** **17 34 36.4 +0.2**
SEM LR LR 17 44 21.5
comp=Z,2µm,15.0s
BHJ Bhuj 48.10 288 *e*P **P** **17 24 18.0 +0.2**
BHJ IAmb IAmb 17 24 29.2
comp=Z,505nm,1.5s
PEA0 Petropavlovsk- 48.24 30 *e*P **P** **17 24 18.4 +0.1**
PEA0B Petropavlovsk- 48.24 30 *e*P **P** **17 24 18.4 +0.1**
comp=Z,315nm,1.0s
PEA0B LR LR
comp=Z,5µm,22.0s
PETK Petropavlovsk- 48.24 30 P **P** **17 24 18.0 -0.3**
comp=Z,38nm,0.8s,baz=209,slow=3.1,SNR=49
PETK PKiKP **PKiKP** **17 32 35.6 +0.5**
comp=Z,2.7nm,0.8s,baz=126,slow=6.0,SNR=4.1
PETK LR LR 17 43 38.6
comp=Z,4µm,21.8s,baz=233,slow=35
PETK Petropavlovsk- 48.24 30 P **P** **17 24 18.0 -0.3**
PETK pmax pmax
comp=Z,39nm,0.8s
PEA1 Petropavlovsk- 48.24 30 *e*P **P** **17 24 18.0 -0.4**
PEA1 *e* 17 32 35.6
PET Petropavlovsk 48.64 30 *c i*P **P** **17 24 21.2 -0.2**
PET *e* 17 26 15.5
PET *e*S **S** **17 31 18.2 -1.5**
PET pmax pmax
comp=Z,900nm,7.3s
PET pmax pmax
comp=Z,1µm,18.8s
PET pmax pmax
comp=Z,700nm,17.9s
PET MLR MLR
comp=Z,3µm,20.0s
PET MLR MLR
comp=Z,2µm,21.0s
PET Petropavlovsk 48.64 30 *e*P **P** **17 24 21.2 -0.2**
comp=Z,434nm,1.6s
PET LR LR
comp=Z,3µm,21.0s
KURBB Kurchatov Arra 48.77 326 P **P** **17 24 23.1 +0.6**
comp=Z,80nm,0.9s,baz=123,slow=7.8,SNR=219
KURK Kurchatov 48.77 326 *e*P **P** **17 24 23.1 +0.6**
KURK Kurchatov 48.77 326 *e*P **P** **17 24 23.1 +0.6**
BTLS Baital 48.91 317 *i* P **P** **17 24 22.6 -1.0**
comp=Z,339nm,1.0s
BTLS *i* S **S** **17 31 23.5 -0.2**
BTLS *i* SS **SS** **17 34 56.6 +1.6**
BTLS LR LR 17 45 19.1
comp=Z,2µm,16.9s
NVS Novosibirsk 48.91 333 ⇓ *i*P **P** **17 24 23.8 +0.3**
NVS *e*S **S** **17 31 20.1 -3.4**
NVS pmax pmax
comp=Z,197nm,1.6s
NVS pmax pmax
comp=N,103nm,1.7s
NVS pmax pmax
comp=E,108nm,1.3s
NVS smax smax
comp=E,86nm,2.8s
MNAS Manas 49.03 314 *i* P **P** **17 24 26.8 +2.0**
MNAS pmax pmax
comp=Z,412nm,1.3s
KBL Kabul 49.67 303 *e*P **P** **17 24 30.8 +0.9**
KBL pmax pmax
comp=Z,266nm,1.1s
KBL Kabul 49.67 303 *e*P **P** **17 24 30.8 +0.9**
comp=Z,266nm,1.1s
H01W3 Cape Leeuwin H 49.90 186 P **P** **17 24 32.4 +1.5**
baz=23,slow=7.8,SNR=5.7
H01W1 Cape Leeuwin H 49.91 186 P **P** **17 24 32.0 +1.0**
baz=23,slow=7.8,SNR=5.3
H01W2 Cape Leeuwin H 49.91 186 P **P** **17 24 32.4 +1.4**
baz=23,slow=7.8,SNR=3.9
MA2 Magadan 49.92 20 P **P** **17 24 30.5 -0.6**
comp=Z,49nm,0.8s,baz=206,slow=5.7,SNR=26
BBOO Buckleboo 49.93 162 *e*P **P** **17 24 29.7 -1.8**
comp=Z,203nm,1.1s
EIDS Eidsvold 50.24 143 *e*P **P** **17 24 32.6 -1.4**
comp=Z,102nm,1.2s
EIDS LR LR
comp=Z,3µm,21.0s
KK31 Karatay Array 50.62 314 *ce*P **P** **17 24 37.3 +0.6**
KK31 pmax pmax
comp=Z,250nm,1.1s
KKAR Karatay Array 50.62 314 *e*P **P** **17 24 37.5 +0.8**
KKAR pmax pmax
comp=Z,1µm,0.9s
KKAR MLR MLR
comp=Z,2µm,19.0s
KKAR Karatay Array 50.62 314 *e*P **P** **17 24 37.5 +0.8**
comp=Z,1µm,0.9s
KKAR LR LR
comp=Z,2µm,19.0s
IUG Iuzhnay 50.67 313 *i* P **P** **17 24 36.2 -1.1**
comp=Z,2µm,0.9s
IUG *e*S **S** **17 31 48.0 -0.7**
IUG LR LR 17 46 44.1
comp=Z,2µm,16.2s
STKA Stephens Creek 50.97 156 P **P** **17 24 38.3 -1.1**
comp=Z,37nm,0.8s,baz=334,slow=7.4,SNR=82
STKA LR LR 17 49 25.8
comp=Z,2µm,20.3s,baz=337,slow=40
STKA Stephens Creek 50.97 156 *e*P **P** **17 24 37.9 -1.5**
STKA pmax pmax
comp=Z,19nm,1.1s
STKA Stephens Creek 50.97 156 *e*P **P** **17 24 37.9 -1.5**
comp=Z,18nm,1.1s
OTUK Ortayu 51.25 321 P **P** **17 24 42.1 +0.7**
OTUK pmax pmax
comp=Z,338nm,1.2s
BRZS Berezniki 51.77 323 *i* P **P** **17 24 44.2 -0.9**
comp=Z,174nm,1.1s
BRZS *e*S **S** **17 32 02.9 -0.5**
BRZS LR LR 17 46 48.8
DGAR Diego Garcia 52.14 248 *de*P **P** **17 24 48.7 +0.3**
DGAR Diego Garcia 52.14 248 *e*P **P** **17 24 45.1 -3.3**
comp=Z,1µm,1.8s
DGAR LR LR
comp=Z,4µm,20.0s
SEY Seymchan 53.00 18 P **P** **17 24 54.6 +0.6**
comp=Z,29nm,0.7s,baz=215,slow=4.9,SNR=110
SEY PKP2bc 17 55 29.6
comp=Z,2.4nm,1.1s,baz=215,slow=4.6,SNR=3.7
SEY Seymchan 53.00 18 *c i*P **P** **17 24 54.8 +0.8**

BVAR Borovoye Array 54.35 326 P P 17 25 04.6 +0.5
comp=Z,30nm,0.8s,baz=125,slow=9.1,SNR=146
BVAR LR LR 17 49 42.2
comp=Z,5μm,19.9s,baz=115,slow=38
BVAR Borovoye Array 54.35 326 P P 17 25 04.6 +0.5
BVAR pmax pmax
comp=Z,28nm,0.8s
BVAR MLR MLR
comp=Z,5μm,19.9s
BRVK Borovoye 54.43 326 *c iP* **P 17 25 05.4 +0.8**
BRVK pmax pmax
comp=Z,885nm,2.5s
BRVK MLR MLR
comp=Z,18μm,18.0s
BRVK Borovoye 54.43 326 *eP* **P 17 25 05.5 +0.8**
BRVK LR LR
comp=Z,8μm,19.0s
ARMA Armidale 54.43 146 *eP* **P 17 25 04.9 -0.2**
comp=Z,183nm,1.5s
SMY Shemya 56.72 36 PFAKE 17 25 30.0 +8.9
SMY LR LR
comp=Z,1μm,20.0s
TIXI Tiksi 56.90 3 P P 17 25 21.0 -1.1
comp=Z,30nm,0.7s,baz=144,slow=4.4,SNR=20
TIXI Tiksi 56.90 3 *c iP* **P 17 25 20.8 -1.3**
TIXI pmax pmax
comp=Z,208nm,2.5s
TIXI MLR MLR
comp=Z,4μm,18.0s
TIXI Tiksi 56.90 3 *eP* **P 17 25 21.0 -1.1**
TIXI *eP* **P 17 25 21.2 -0.8**
TIXI LR LR
comp=Z,5μm,18.0s
CAN Canberra 57.07 152 *eP* **P 17 25 23.1 -0.8**
CAN pmax pmax
comp=Z,262nm,1.6s
CAN MLR MLR
comp=Z,2μm,22.0s
CAN Canberra 57.07 152 *eP* **P 17 25 23.1 -0.8**
comp=Z,262nm,1.6s
CAN LR LR
comp=Z,2μm,22.0s
NRIK Noril'sk 58.03 347 P P 17 25 30.3 +0.2
comp=Z,197nm,0.8s,baz=135,slow=6.9,SNR=140
NRIK LR LR 17 52 19.8
comp=Z,8μm,18.2s,baz=154,slow=38
DZM Mont Dzumac 58.53 128 *eP* **P 17 25 33.0 -1.4**
comp=Z,198nm,1.3s
DZM *eS* **S 17 33 37.0 +2.3**
comp=Z,6μm,29.5s
DZM *e*LR LR 17 42 44.9
comp=Z,6μm,27.1s
DZM Mont Dzumac 58.53 128 *eP* **P 17 25 32.4 -2.0**
comp=Z,176nm,1.5s
ASHT Ashkhabad 58.65 305 P P 17 25 36.8 +1.8
GEYT Alibeck 58.86 305 P P 17 25 37.9 +1.4
comp=Z,64nm,0.8s,baz=95,slow=4.6,SNR=162
GEYT LR LR 17 55 49.0
comp=Z,2μm,18.8s,baz=120,slow=41
AB31 Akbulak array 59.35 319 *ceP* **P 17 25 39.9 +0.3**
AB31 pmax pmax
comp=Z,161nm,1.1s
ABKAR Akbulak array 59.35 319 *eP* **P 17 25 40.2 +0.7**
comp=Z,2μm,1.3s
ABKAR LR LR
comp=Z,4μm,18.0s
HOQ Hoqain 59.42 289 P P 17 25 40.5 0.0
SNR=13
HOQ Hoqain 59.42 289 P P 17 25 40.5 0.0
SNR=13
BANOM Banah 60.20 291 P P 17 25 46.8 +0.9
HATD Hatta, Dubai 60.42 290 P P 17 25 47.5 +0.1
ASHO Ashiyiah 60.49 290 P P 17 25 47.9 0.0
BILL Bilibino 60.70 18 *c iP* **P 17 25 47.9 -0.6**
BILL *e* 17 26 30.0
BILL *e* 17 28 02.0
BILL *eS* **S 17 34 03.2 +2.0**
BILL *e*SS **SS 17 38 06.7 +6.5**
BILL pmax pmax
comp=Z,22nm,0.8s
BILL MLR MLR
comp=Z,3μm,20.0s
BILL Bilibino 60.70 18 *eP* **P 17 25 48.4 -0.1**
comp=Z,78nm,0.8s
BILL LR LR
comp=Z,3μm,20.0s
NAZ Nazwa, Dubai 60.83 290 P P 17 25 50.1 -0.1
FAQ Al Faqa, Dubai 60.91 290 *i* P **P 17 25 50.5 -0.2**
SNR=8.8
SVE Sverdlovsk 60.98 327 *d iP* **P 17 25 51.2 +0.6**
SVE *e* 17 26 40.3
SVE *e* 17 28 06.0
SVE *eS* **S 17 34 04.1 -1.0**
SVE *e* 17 35 26.8
SVE *e*SSS SSS 17 40 41.8
SVE pmax pmax
comp=Z,273nm,0.9s
SVE MLR MLR
comp=Z,6μm,19.0s
SVE MLR MLR
comp=N,2μm,19.0s
SVE MLR MLR
comp=E,5μm,21.0s
ARU Arti 61.96 326 *eP* **P 17 25 57.2 -0.1**
ARU pmax pmax
comp=Z,400nm,1.4s
ARU MLR MLR
comp=Z,7μm,19.0s
ARU Arti 61.96 326 *eP* **P 17 25 57.2 -0.1**
comp=Z,400nm,1.4s
ARU LR LR
comp=Z,7μm,19.0s
TAU Tasmania Unive 62.82 158 *eP* **P 17 26 02.7 -0.3**
TAU pmax pmax
comp=Z,166nm,1.3s
TAU Tasmania Unive 62.82 158 *eP* **P 17 26 02.7 -0.3**
comp=Z,166nm,1.3s
FUNA Funafuti 63.13 108 PFAKE 17 26 20.0 +14
FUNA LR LR
comp=Z,10μm,18.0s
SOKR Solikamsk 63.74 330 *c iP* **P 17 26 07.3 -1.6**
SOKR S **S 17 34 37.2 -2.3**
SOKR pmax pmax
comp=Z,132nm,1.1s
SOKR MLR MLR
comp=Z,10μm,21.0s
MSVF Nonsavu 65.80 118 *eP* **P 17 26 23.5 +0.4**
MSVF pmax pmax
comp=Z,28nm,1.0s
MSVF Nonsavu 65.80 118 *eP* **P 17 26 24.0 +0.8**
comp=Z,204nm,1.8s
SPIA Saint Paul Isl 66.56 34 *eP* **P 17 26 28.0 +0.6**
comp=Z,720nm,1.9s
NIKH Nikolski High 66.82 38 *eP* **P 17 26 27.8 -1.3**
comp=Z,194nm,1.0s
NIKH LR LR
comp=Z,2μm,22.0s
GAMB Gambell 67.11 27 *eP* **P 17 26 29.9 -0.8**
comp=Z,60nm,1.0s
UNV Unalaska Valle 68.30 38 PFAKE 17 26 50.0 +12
UNV LR LR
comp=Z,1μm,20.0s
GROC Groznyy 68.45 311 *eP* **P 17 26 39.9 +0.4**
GROC pmax pmax
comp=Z,139nm,1.2s
TBLG Delisi 69.26 309 P P 17 26 45.6 +0.9
TBLG Delisi 69.26 309 P P 17 26 45.6 +0.9
GNI Garni 69.32 308 LR LR 18 02 00.5
comp=Z,2μm,19.7s,baz=93,slow=40
GNI Garni 69.32 308 *i* P **P 17 26 46.8 +1.7**
SNR=23
GNI Garni 69.32 308 *c iP* **P 17 26 46.9 +1.7**
GNI pmax pmax
comp=Z,745nm,1.7s
GNI MLR MLR
comp=Z,5μm,19.0s
GNI Garni 69.32 308 P P 17 26 47.0 +1.7
SNR=59
GNI Garni 69.32 308 *eP* **P 17 26 46.9 +1.7**
comp=Z,629nm,1.4s
GUDG Gudauri 69.44 310 P P 17 26 47.2 +1.2
ZEI Tsey 69.85 310 *eP* **P 17 26 46.5 -2.0**
ZEI *eS* **S 17 35 57.7 +3.2**
ZEI pmax pmax
comp=Z,480nm,1.1s
ZEI pmax pmax
comp=E,492nm,0.9s
ZEI pmax pmax
comp=N,440nm,1.1s
NCK Nalchik 70.05 311⇓ *eP* **P 17 26 50.3 +0.8**
NCK pmax pmax
comp=Z,36nm,1.0s
NCK MLR MLR
comp=Z,3μm,17.0s
BGD Bogdanovka 70.14 309 P P 17 26 51.9 +1.6
ONI Oni 70.19 310 P P 17 26 52.1 +1.7
ONI Oni 70.19 310 P P 17 26 52.1 +1.7
GOF Gofitskoye 70.40 313⇑ *eP* **P 17 26 50.3 -1.2**
GOF pmax pmax
comp=Z,83nm,1.1s
KBZ Khabaz 70.55 311 P P 17 26 53.2 +0.8
comp=Z,49nm,0.9s,baz=98,slow=4.4,SNR=79
KBZ LR LR 18 02 08.3
comp=Z,4μm,18.1s,baz=72,slow=39
KVAR Kislovodsk Arr 70.69 312 LR LR 18 02 01.1
comp=Z,5μm,18.0s,slow=39
KIV Kislovodsk 70.69 312 *i* P **P 17 26 54.3 +0.9**
SNR=42
KIV Kislovodsk 70.69 312 *eP* **P 17 26 54.3 +0.9**
KIV *eS* **S 17 36 08.4 +4.3**
KIV *e*SS **SS 17 40 43.1 +6.6**
KIV pmax pmax
comp=Z,170nm,1.0s
KIV pmax pmax
comp=Z,299nm,3.7s
KIV MLR MLR
comp=Z,4μm,18.0s
KIV Kislovodsk 70.69 312 P P 17 26 54.4 +0.9
SNR=57
KIV P P 17 26 54.4 +0.9
SNR=57
KIV Kislovodsk 70.69 312 P P 17 26 54.4 +0.9
SNR=57
KIV Kislovodsk 70.69 312 *eP* **P 17 26 54.2 +0.8**
comp=Z,252nm,0.9s
MRIV Mauritius Mete 70.73 242 *eP* **P 17 26 54.5 +0.5**
VRH Novokhopyorsk 71.16 319 *eP* **P 17 26 55.8 -0.2**
VRH pmax pmax
comp=Z,90nm,0.6s
CHVG Ch'k'valeri 71.19 310 P P 17 26 57.4 +1.0
KLMR Klimovskoe 72.42 330 *eP* **P 17 27 02.0 -1.4**
KLMR *e* 17 27 19.6
KLMR pmax pmax
comp=Z,148nm,0.9s
RER Riviere de l'E 72.58 242 *eP* **P 17 27 06.4 +1.3**
comp=Z,185nm,1.0s
VORR Voronezh 72.72 320⇓ *iP* **P 17 27 05.0 -0.4**
VORR pmax pmax
comp=Z,500nm,1.8s
DAMY Dhamar 72.76 281 *eP* **P 17 27 08.7 +2.0**
comp=Z,283nm,1.4s
VSR Storozhevoye 72.77 319 *eP* **P 17 27 05.2 -0.5**
VSR *eS* **S 17 36 23.7 -3.7**
VSR pmax pmax
comp=Z,110nm,0.9s
VSR smax smax
comp=E,990nm,4.7s
VSR MLR MLR
comp=Z,2μm,17.0s
SOC Sochi 72.86 311 *c iP* **P 17 27 06.1 -0.3**
SOC *e**PP **pP 17 27 21.7 +0.6**
SOC *e**SP **sP 17 27 28.3 +1.3**
SOC *e* 17 29 47.5
SOC pmax pmax
comp=Z,95nm,0.9s
SOC MLR MLR
comp=Z,3μm,21.0s
MOS Moscow 73.50 324 *eP* **P 17 27 08.6 -1.2**
MOS *e* 17 27 19.5
MOS *e* 17 27 24.9
MOS *eS* **S 17 36 32.4 -3.1**
MOS *i* 17 37 12.0
MOS pmax pmax
comp=Z,231nm,1.3s
MOS pmax pmax
comp=Z,1μm,2.5s
MOS smax smax
comp=N,1μm,3.9s
MOS MLR MLR
comp=E,7μm,19.0s
MOS MLR MLR
comp=Z,8μm,19.0s
HIZ Hauiti 73.89 138 *eP* **P 17 27 13.7 +1.3**
comp=Z,179nm,1.1s
TTA Tatalina 74.05 28 *eP* **P 17 27 13.5 +0.4**
TTA Tatalina 74.05 28 *eP* **P 17 27 13.5 +0.4**
OBN Obninsk 74.13 324 LR LR 18 01 35.4
comp=Z,8μm,19.4s,baz=92,slow=37
OBN Obninsk 74.13 324 *c iP* **P 17 27 13.0 -0.5**
OBN *e* 17 27 29.9
OBN *e* 17 29 57.5
OBN *eS* **S 17 36 45.3 +2.7**
OBN pmax pmax
comp=Z,267nm,1.7s
OBN MLR MLR
comp=Z,8μm,19.0s
OBN Obninsk 74.13 324 *eP* **P 17 27 13.4 -0.2**
comp=Z,527nm,1.4s
OBN LR LR
comp=Z,8μm,20.0s
SVW2 Sparrevohn 74.32 30 *eP* **P 17 27 15.2 +0.6**
comp=Z,54nm,1.0s
SVW2 LR LR
comp=Z,1μm,21.0s
ANN Anapa 74.39 313 *c iP* **P 17 27 14.9 -0.4**
ANN *e**PP **pP 17 27 32.2 +2.1**
ANN *e* 17 30 05.1
ANN *eS* **S 17 36 44.5 -1.5**
ANN *e**SS **SKSac 17 37 15.8 -3.2**
ANN *e*SS **SS 17 41 30.1 -2.6**
ANN pmax pmax
comp=N,50nm,1.6s
ANN pmax pmax
comp=E,40nm,1.6s
ANN pmax pmax
comp=Z,188nm,1.6s
ANN MLR MLR
comp=E,3μm,21.0s
ANN MLR MLR
comp=N,4μm,21.0s
ANN MLR MLR
comp=Z,4μm,21.0s
LVZ Lovozero 74.50 337⇓ *eP* **P 17 27 15.9 +0.3**
LVZ pmax pmax
comp=Z,138nm,2.5s
LVZ MLR MLR
comp=Z,8μm,19.0s
LVZ Lovozero 74.50 337 *eP* **P 17 27 15.8 +0.3**
comp=Z,136nm,1.0s
LVZ LR LR
comp=Z,8μm,20.0s
THZ Tophouse 74.58 142 *eP* **P 17 27 14.7 -1.7**
comp=Z,64nm,1.1s
LBZ Lake Benmore 74.64 145 *eP* **P 17 27 16.2 -0.4**
comp=Z,198nm,1.3s
RPZ Rata Peaks 74.70 144 *eP* **P 17 27 16.1 -0.9**
comp=Z,95nm,1.1s
LTZ Lake Taylor 74.82 143 *eP* **P 17 27 17.1 -0.7**
comp=Z,75nm,1.2s
CUKAN kangal_SIVAS 74.98 307 *i* P **P 17 27 20.7 +1.6**
APA Apatity 74.99 337⇑ *iP* **P 17 27 17.6 -0.7**
APA *i* 17 27 28.0
APA *i* S **S 17 36 48.0 -3.9**
APA *i* SSS SSS 17 45 03.0
APA pmax pmax
comp=Z,8.0nm,0.8s
APA MLR MLR
comp=Z,13μm,17.0s
GZT Gaziantep 75.15 305 *i* P **P 17 27 21.8 +1.7**
SCER sogukcermik 75.17 308 *i* P **P 17 27 21.8 +1.7**
URZ Urewera 75.22 137 *eP* **P 17 27 19.8 -0.3**
comp=Z,66nm,1.2s
BKZ Black Stump Fm 75.32 138 *eP* **P 17 27 20.4 -0.3**
comp=Z,94nm,0.9s
BKZ LR LR
comp=Z,3μm,21.0s
SNZO South Karori 75.40 141 PFAKE 17 27 30.0 +8.9
SNZO LR LR
comp=Z,3μm,22.0s
CUALT Altinyayla-SIV 75.53 307 *i* P **P 17 27 23.9 +1.7**
KUZU Kuzuini 75.62 305 *i* P **P 17 27 24.2 +1.5**
HCB Kahramanmara˙ 75.67 305 *i* P **P 17 27 24.3 +1.4**
OHAK Old Harbor 75.77 34 *eP* **P 17 27 22.7 -0.3**
comp=Z,101nm,1.0s
OHAK LR LR
comp=Z,2μm,22.0s
PPLA Purkeypile 75.80 28 *eP* **P 17 27 23.7 +0.4**
comp=Z,382nm,1.6s
PPLA LR LR
comp=Z,2μm,22.0s
CAST Castle Rocks 75.80 28 *eP* **P 17 27 23.7 +0.6**
comp=Z,172nm,0.9s
CAST LR LR
comp=Z,2μm,21.0s
CUSAR Sarkisla-SIVAS 75.90 307 *i* P **P 17 27 25.9 +1.6**
ANDN Andirin 76.08 306 *i* P **P 17 27 26.9 +1.6**
KDAK Kodiak Island 76.09 33 *i* P **P 17 27 24.7 -0.1**
KDAK Kodiak Island 76.09 33 *eP* **P 17 27 24.5 -0.3**
comp=Z,91nm,0.9s
BPAW Bear Paw Mtn. 76.22 27 *eP* **P 17 27 25.9 +0.4**
comp=Z,373nm,1.4s
COLD Coldfoot 76.23 24 *eP* **P 17 27 26.1 +0.6**
comp=Z,50nm,1.0s
COLD LR LR
comp=Z,1μm,20.0s
MLY Manley 76.23 26 *eP* **P 17 27 26.2 +0.6**
comp=Z,134nm,1.2s
MLY LR LR
comp=Z,1μm,20.0s
KTH Kantishna Hill 76.30 27 *eP* **P 17 27 26.1 +0.1**
comp=Z,129nm,1.2s
ASF Jabal al Asfar 76.46 300 LR LR 18 06 44.8
comp=Z,967nm,18.2s,slow=40
YAYL Yayladag 76.50 304 *i* P **P 17 27 27.2 -0.6**
FKH Fakeheh 76.53 302 *eP* **P 17 27 29.8 +1.8**
CNPM China Poot 76.60 32 *eP* **P 17 27 27.3 -0.4**
comp=Z,58nm,0.9s
TRF Thorofare Moun 76.60 28 *eP* **P 17 27 28.0 +0.1**
comp=Z,302nm,1.4s
TRF LR LR
comp=Z,2μm,22.0s
SUA Susitna One 76.62 30 *eP* **P 17 27 27.3 -0.6**
comp=Z,152nm,1.0s
HOPEN Hopen 76.71 346 *eP* **P 17 27 29.4 +1.4**
HOPEN IAmb IAmb 17 27 41.5
comp=Z,104nm,1.3s
HOPEN IVMs_BB IVMs_BB 18 07 40.1
comp=Z,2μm,15.3s
SIM Simferopol' 76.71 313 *c iP* **P 17 27 29.3 +0.7**
SIM *e* 17 27 37.0
SIM *e**PP **sP 17 27 48.0 -1.3**
SIM *e* 17 30 21.0
SIM *eS* **S 17 37 11.0 -0.7**
SIM *e*PS PnS 17 37 38.0 -18
SIM *e*SS **SS 17 42 11.0 +3.0**
SIM pmax pmax
comp=Z,189nm,0.9s
SIM pmax pmax
comp=Z,160nm,18.6s
SIM MLR MLR
comp=Z,6μm,20.2s
BRLK Bradley Lake 76.75 31 *eP* **P 17 27 27.5 -1.1**
comp=Z,90nm,1.0s
YURE YUREGIR 76.76 305 *i* P **P 17 27 30.8 +1.7**
YAHY KAYSERI_Yahyal 76.78 306 *i* P **P 17 27 30.6 +1.4**
AKO Adana 76.81 306 *i* P **P 17 27 30.8 +1.4**
BWN Browne 76.87 27 *eP* **P 17 27 29.9 +0.8**
comp=Z,131nm,0.9s
BWN LR LR
comp=Z,2μm,20.0s
HWQ Hawqa 76.91 302 *eP* **P 17 27 31.3 +1.2**
RCY Rachaya 77.12 301 *eP* **P 17 27 33.1 +1.7**
RC01 Rabbit Creek A 77.14 30 *eP* **P 17 27 30.5 -0.3**
comp=Z,123nm,1.3s
RC01 LR LR
comp=Z,2μm,22.0s
MCK McKinley 77.16 27 *eP* **P 17 27 30.6 -0.2**
MCK pmax pmax
comp=Z,213nm,1.0s
MCK MLR MLR
comp=Z,2μm,22.0s
MCK McKinley 77.16 27 *eP* **P 17 27 30.6 -0.2**
comp=Z,213nm,1.0s
MCK LR LR
comp=Z,2μm,22.0s
BHL Bhannes 77.20 302 *eP* **P 17 27 32.9 +1.1**
RND Reindeer 77.24 27 *eP* **P 17 27 30.7 -0.6**
RND pmax pmax
comp=Z,500nm,1.6s
RND MLR MLR
comp=Z,2μm,22.0s
RND Reindeer 77.24 27 *eP* **P 17 27 30.7 -0.6**
comp=Z,500nm,1.6s
RND LR LR
comp=Z,2μm,22.0s
MDM Murphy Dome 77.30 26 *eP* **P 17 27 31.5 -0.1**
comp=Z,178nm,1.3s
MDM LR LR
comp=Z,1μm,22.0s
CDAG Cicekdag 77.31 308 *i* P **P 17 27 32.9 +0.7**
DQRL Deir Qamar 77.31 302 *eP* **P 17 27 34.0 +1.7**
PMR Palmer 77.37 29 *eP* **P 17 27 31.3 -0.6**
PMR pmax pmax
comp=Z,101nm,1.0s
PMR MLR MLR
comp=Z,1μm,22.0s
PMR Palmer 77.37 29 *eP* **P 17 27 31.2 -0.6**
comp=Z,101nm,1.0s
PMR LR LR
comp=Z,1μm,22.0s
DED Mersin 77.40 305 *i* P **P 17 27 33.4 +0.8**
SEW Seward 77.42 31 *eP* **P 17 27 31.7 -0.6**
comp=Z,155nm,1.2s
WRH Wood River Hil 77.43 26 *eP* **P 17 27 32.0 -0.2**
comp=Z,141nm,1.4s
WRH LR LR
comp=Z,1μm,21.0s
COLA College 77.47 26 *eP* **P 17 27 32.4 -0.1**
COLA pmax pmax
comp=Z,103nm,1.1s
COLA MLR MLR
comp=Z,1μm,22.0s
COLA College 77.47 26 *eP* **P 17 27 32.4 -0.1**
comp=Z,103nm,1.1s
COLA LR LR
comp=Z,1μm,22.0s
CCB Clear Creek Bu 77.52 26 *eP* **P 17 27 31.9 -0.9**
comp=Z,97nm,1.3s
CCB LR LR
comp=Z,1μm,22.0s
MMAI Mount Meron Ar 77.56 301 LR LR 18 07 15.0
comp=Z,2μm,20.4s,baz=70,slow=40
ARA0 ARCESS Array S 77.66 339 *eP* **P 17 27 33.7 +0.2**
ARCES ARCESS Array B 77.66 339 P **P 17 27 33.5 0.0**
comp=Z,40nm,0.6s,baz=78,slow=6.3,SNR=89
ARCES LR LR 18 05 44.5
comp=Z,6μm,19.3s,baz=94,slow=39
ARE0 ARCESS Array S 77.66 339 *eP* **P 17 27 33.8 +0.2**
comp=Z,130nm,1.1s
ARE0 LR LR
comp=Z,6μm,19.0s
SML Sawmill 77.71 29 *eP* **P 17 27 33.9 -0.1**
SML pmax pmax
comp=Z,327nm,1.2s
SML MLR MLR
comp=Z,800nm,21.0s
SML Sawmill 77.71 29 *eP* **P 17 27 33.9 -0.1**
comp=Z,327nm,1.2s
SML LR LR
comp=Z,800nm,21.0s
BR101 Keskin Array S 77.85 308 *eP* **P 17 27 35.2 -0.1**
BR131 Keskin Array S 77.85 308 *eP* **P 17 27 35.5 +0.2**
BRTR Keskin Array B 77.85 308 P **P 17 27 35.2 -0.1**
comp=Z,24nm,0.8s,baz=119,slow=4.9,SNR=76
BRTR PP **PP 17 30 24.9 -6.4**
comp=Z,9.0nm,1.1s,baz=116,slow=8.4,SNR=4.3
BRTR LR LR 18 06 40.8
comp=Z,1μm,20.8s,baz=131,slow=39
BRTR Keskin Array B 77.85 308 *ceP* **P 17 27 35.4 +0.1**
BRTR pmax pmax
comp=Z,24nm,0.8s
KERG Konya-Eregli 77.85 306 *i* P **P 17 27 36.1 +0.7**
ILAR Eielson Array 77.89 26 P **P 17 27 33.5 -1.4**
comp=Z,11nm,0.9s,baz=283,slow=3.8,SNR=58
ILAR PKKPbc **PKKPbc 17 46 35.4 -2.4**
comp=Z,2.8nm,0.8s,baz=137,slow=1.9,SNR=22
ILAR PKPPKP P'P'df 17 54 25.9 -15
comp=Z,0.4nm,0.7s,baz=348,slow=0.0,SNR=4.3
ILAR LR LR 18 04 06.3

comp=Z,506nm,19.5s,baz=297,slow=37
ILB Eielson Array 77.89 26 *e*P **P 17 27 33.8 -1.0**
ILB *e*PKKPbc **PKKPbc 17 46 35.9 -1.8**
HDA Harding Lake 77.93 26 *e*P **P 17 27 34.2 -0.9**
comp=Z,118nm,1.3s
AKSY AKSARAY - Alti 77.93 307 *i* P **P 17 27 36.6 +0.9**
DHY Denali Highway 77.95 28 *e*P **P 17 27 34.8 -0.6**
comp=Z,74nm,1.1s
DHY LR LR
comp=Z,2µm,22.0s
KIZK Mersin 78.00 305 *i* P **P 17 27 36.6 +0.6**
HAMF Hammerfest 78.08 340 *e*P **P 17 27 35.9 +0.1**
HAMF IAmb IAmb 17 27 55.5
comp=Z,162nm,1.0s
HAMF *e*S **S 17 37 25.5 -0.1**
HAMF IVMsBB 18 05 54.4
comp=Z,2µm,17.4s
SCM Sheep Creek Mo 78.18 29 *e*P **P 17 27 36.6 0.0**
SCM pmax pmax
comp=Z,288nm,1.0s
SCM MLR MLR
comp=Z,1µm,22.0s
SCM Sheep Creek Mo 78.18 29 *e*P **P 17 27 36.6 0.0**
comp=Z,288nm,1.0s
SCM LR LR
comp=Z,1µm,22.0s
SPA0 Spitsbergen Ar 78.21 348 *e*P **P 17 27 36.8 +0.4**
SPA0 IAmb IAmb 17 27 54.8
comp=Z,522nm,1.2s
SPA0 *e*S **S 17 37 27.4 +0.4**
SPA0 IVMs_BB IVMs_BB 18 07 30.9
comp=Z,2µm,16.5s
SPA0 Spitsbergen Ar 78.21 348 *e*P **P 17 27 37.0 +0.6**
SPITS Spitsbergen Ar 78.21 348 P **P 17 27 36.5 +0.1**
comp=Z,80nm,0.8s,baz=86,slow=5.9,SNR=77
FYU Fort Yukon 78.26 24 *e*P **P 17 27 37.9 +1.0**
comp=Z,226nm,1.6s
ANTO Ankara 78.47 308 PFAKE 17 27 50.0 +11
ANTO LR LR
comp=Z,2µm,21.0s
BR231 Keskin MP Arra 78.48 308 *e*P **P 17 27 36.3 -2.5**
KKUL Konya-Kulu 78.49 308 *i* P **P 17 27 39.9 +1.0**
EIL Elat 78.54 298 LR LR 18 07 06.5
comp=Z,2µm,20.5s,baz=74,slow=39
BJO Bjornoya 78.55 344 *e*P **P 17 27 39.3 +1.0**
HSPB Hornsund (broa 78.73 347⇑ *i*P **P 17 27 39.6 +0.3**
HSPB IAmb IAmb 17 27 59.2
comp=Z,117nm,1.0s
HSPB *e*S **S 17 37 33.1 +0.8**
HSPB IVMs_BB IVMs_BB 18 06 22.4
comp=Z,2µm,19.7s
FID Port Fidalgo 78.77 30 *e*P **P 17 27 39.6 -0.1**
comp=Z,187nm,1.2s
KBS Kingsbay 78.81 349 *e*P **P 17 27 39.8 +0.1**
KBS IAmb IAmb 17 28 01.6
comp=Z,48nm,0.8s
KBS *e*S **S 17 37 35.2 +1.9**
KBS IVMs_BB IVMs_BB 18 05 58.4
comp=Z,2µm,16.5s
KBS Kingsbay 78.81 349 *e*P **P 17 27 39.6 -0.1**
KBS pmax pmax
comp=Z,48nm,0.8s
KBS MLR MLR
comp=Z,6µm,20.0s
KBS Kingsbay 78.81 349 *e*P **P 17 27 39.6 -0.1**
comp=Z,48nm,0.8s
KBS LR LR
comp=Z,6µm,20.0s
PAX Paxson 78.83 28 *e*P **P 17 27 40.4 +0.2**
PAX *e*S **S 17 37 38.5 +4.4**
PAX pmax pmax
comp=Z,164nm,1.2s
PAX MLR MLR
comp=Z,2µm,22.0s
PAX Paxson 78.83 28 *e*P **P 17 27 40.4 +0.2**
comp=Z,164nm,1.2s
PAX *e*S **S 17 37 38.5 +4.4**
PAX LR LR
comp=Z,2µm,22.0s
FIA0 FINESS Array S 78.86 331 *e*P **P 17 27 40.2 0.0**
FIA0 FINESS Array S 78.86 331 *e*P **P 17 27 40.2 0.0**
FINES FINESS Array B 78.86 331 P **P 17 27 40.2 0.0**
comp=Z,59nm,0.6s,baz=58,slow=5.6,SNR=239
FINES LR LR 18 05 40.0
comp=Z,5µm,20.0s,baz=87,slow=38
KLU Klutina 78.90 29 *e*P **P 17 27 40.7 +0.1**
comp=Z,68nm,0.9s
CSS Mathiatis 78.91 303 P **P 17 27 42.0 +0.9**
CSS Mathiatis 78.91 303 P **P 17 27 41.2 +0.1**
CSS Mathiatis 78.91 303 *e*P **P 17 27 42.1 +1.0**
comp=Z,68nm,0.9s
CSS LR LR
comp=Z,1µm,19.0s
ERMK Ermenek 78.94 305 *i* P **P 17 27 42.4 +0.9**
DIV Divide 79.04 30 *e*P **P 17 27 41.8 +0.4**
comp=Z,152nm,1.2s
AKASG Malin Array Be 79.07 320 P **P 17 27 41.1 -0.5**
comp=Z,63nm,0.9s,baz=64,slow=5.9,SNR=145
AKBB Malin Array Si 79.07 320 *e*P **P 17 27 41.1 -0.5**
AKBB pmax pmax
comp=Z,150nm,1.2s
AKBB MLR MLR
comp=Z,4µm,20.0s
AKBB Malin Array Si 79.07 320 *e*P **P 17 27 41.1 -0.5**
comp=Z,150nm,1.2s
AKBB LR LR
comp=Z,4µm,20.0s
KIEV Kiev 79.08 320*c i*P **P 17 27 40.8 -0.8**
KIEV pmax pmax
comp=Z,74nm,1.0s
KIEV MLR MLR
comp=Z,4µm,17.0s
KIEV Kiev 79.08 320 *e*P **P 17 27 41.2 -0.4**
comp=Z,148nm,1.2s
KIEV LR LR
comp=Z,4µm,19.0s
VSU Vasula 79.09 328*c i*P **P 17 27 41.5 0.0**
VSU pmax pmax
comp=Z,841nm,1.0s
VSU MLR MLR
comp=Z,22µm,20.0s
AK11 Malin Array Si 79.11 320 *e*P **P 17 27 41.2 -0.6**
EYAK Cordova Ski Ar 79.16 30 *e*P **P 17 27 42.5 +0.6**
comp=Z,216nm,1.3s
EYAK LR LR
comp=Z,1µm,22.0s
MICGM Minsk 79.19 324⇑ *i*P **P 17 27 41.0 -1.2**
MICGM ⇑ *i*P **P 17 27 41.0 -1.2**
MICGM PM 17 27 42.0
comp=Z,0.5nm,1.4s
MICGM *e*pP **pP 17 27 56.0 -1.1**
MICGM *e*PP PP 17 30 28.0 -14
MICGM *e*PPP PPP 17 32 14.0
MICGM *e*S **S 17 37 34.0 -4.0**
MICGM *e*sS **sS 17 38 02.0 -1.1**
MICGM *e*PS **PnS 17 38 16.0 -11**
MICGM *e*SS **SS 17 42 42.0 -2.7**
MICGM *e*SSS SSS 17 45 08.0
MICGM *e*LR LR 17 59 04.0
MICGM LRM MLR 18 04 26.0
comp=Z,18nm,18.0s
MICGM LRM MLR 18 04 30.0
comp=E,6.2nm,14.0s
MNK Minsk 79.19 324*c i*P **P 17 27 41.0 -1.2**
MNK *e**PP **pP 17 27 56.0 -1.1**
MNK *e*S **S 17 37 34.0 -4.0**
MNK *e**SS **sS 17 38 02.0 -1.1**
MNK *e*PS **PnS 17 38 16.0 -11**
MNK *e*SS **SS 17 42 42.0 -2.7**
MNK pmax pmax
comp=Z,450nm,1.4s
MNK pmax pmax
comp=E,6µm,14.0s
ABPO Ambohimpanom 79.21 247 *e*P **P 17 27 43.7 +0.6**
ABPO pmax pmax
comp=Z,55nm,0.9s
ABPO Ambohimpanom 79.21 247 *e*P **P 17 27 43.7 +0.6**
comp=Z,55nm,0.9s
SZAC Souni 79.31 303 P **P 17 27 43.9 +0.6**
DOT Dot Lake 79.32 27 *e*P **P 17 27 42.4 -0.4**
comp=Z,204nm,1.0s
DOT LR LR
comp=Z,3µm,21.0s
ALFC Alefka 79.47 304 P **P 17 27 44.6 +0.4**
GAZI Gazipasa 79.49 305 *i* P **P 17 27 44.6 +0.3**

MENT Mentasta 79.62 28 *e*P **P 17 27 44.9 +0.5**
comp=Z,182nm,1.4s
MENT LR LR
comp=Z,2µm,22.0s
BMRM Bremner River 79.63 30 *e*P **P 17 27 44.7 +0.2**
comp=Z,115nm,1.1s
BMRM LR LR
comp=Z,2µm,22.0s
IDID Didziasalis 79.69 325 IAmb IAmb 17 27 45.9
comp=Z,71nm,0.9s
AKMC Akamas 79.71 304 P **P 17 27 45.5 +0.1**
RAGM Ragged Mountai 79.71 30 *e*P **P 17 27 46.0 +1.0**
comp=Z,127nm,1.1s
PPCY Paphos 79.72 303 P **P 17 27 45.8 +0.3**
NACGM Naroch 79.74 324 *e*P **P 17 27 44.0 -1.1**
NACGM PM 17 27 46.0
comp=Z,0.6nm,1.0s
NACGM *e*PP PP 17 31 04.0 +18
NACGM *e*S **S 17 37 38.0 -5.8**
NACGM *e*PS **PnS 17 38 26.0 -7.5**
NACGM *e*SS SS 17 43 32.0 +39
NACGM *e*SSS SSS 17 47 08.0
NACGM *e*LQ LQ 17 57 12.0
NACGM LRM MLR 18 04 56.0
comp=Z,13nm,18.0s
HPAH Hawaii Prepara 79.75 72 PFAKE 17 28 00.0 +14
HPAH LR LR
comp=Z,2µm,20.0s
IZAR Zarasai 79.87 325 *e*P **P 17 27 46.1 +0.3**
IZAR IAmb IAmb 17 27 47.0
comp=Z,46nm,0.8s
TRO Tromso 79.89 340⇑ *i*P **P 17 27 45.5 -0.2**
TRO IAmb IAmb 17 28 06.2
comp=Z,230nm,1.3s
TRO *e*S **S 17 37 40.5 -4.4**
TRO IVMs_BB IVMs_BB 18 07 01.6
comp=Z,2µm,21.1s
ISAL Salakas 79.98 325 *e*P **P 17 27 46.8 +0.4**
ISAL IAmb IAmb 17 27 47.5
comp=Z,36nm,0.8s
KIS Kishinev 80.02 316 *i* P **P 17 27 45.0 -1.8**
comp=Z,400nm,2.0s
KIS Kishinev 80.02 316 *e*PP PP 17 30 58.0 +9.0
KIS Kishinev 80.02 316*a i*P **P 17 27 45.0 -1.8**
KIS *i* 17 27 55.0
KIS *i* 17 28 03.0
KIS *e* 17 30 58.0
KIS *e*S **S 17 37 43.0 -4.1**
KIS *e* 17 37 55.0
KIS *e*PS **PnS 17 38 28.0 -9.3**
KIS pmax pmax
comp=Z,380nm,2.0s
KIS pmax pmax
comp=Z,900nm,8.0s
SORM Soroca 80.11 317⇑ *i*P **P 17 27 47.1 -0.2**
EGAK Eagle 80.30 25 *e*P **P 17 27 47.5 -0.5**
comp=Z,60nm,0.8s
EGAK LR LR
comp=Z,1µm,22.0s
CRQM Cirque 80.37 30 *e*P **P 17 27 46.7 -2.0**
comp=Z,148nm,1.0s
CRQM *e*S **S 17 37 55.0 +4.3**
TLCR 80.38 314⇓ *i*P **P 17 27 49.3 +0.5**
ISP Isparta 80.59 307 P **P 17 27 48.6 -1.7**
ISP Isparta 80.59 307⇑ *i*P **P 17 27 50.0 -0.3**
ISP Isparta 80.59 307*c i*P **P 17 27 49.4 -0.9**
ISP pmax pmax
comp=Z,111nm,1.0s
ISP Isparta 80.59 307 *e*P **P 17 27 48.6 -1.7**
ISP *e*P **P 17 27 50.0 -0.3**
ISP LR LR
comp=Z,4µm,19.0s
BALM Baldy 80.69 29 *e*P **P 17 27 51.1 +0.8**
BALM *e*S **S 17 37 55.0 +1.2**
BALM pmax pmax
comp=Z,152nm,1.3s
BALM MLR MLR
comp=Z,1µm,22.0s
BALM Baldy 80.69 29 *e*P **P 17 27 51.1 +0.8**
comp=Z,152nm,1.3s
BALM *e*S **S 17 37 55.0 +1.2**
BALM LR LR
comp=Z,1µm,22.0s
IAS Iasi 80.82 316⇓ *i*P **P 17 27 51.3 +0.2**
CFR Carcaliu 80.85 314⇑ *i*P **P 17 27 51.6 +0.3**
TLB Topalu 81.04 314⇑ *i*P **P 17 27 52.6 +0.3**
ISK Istanbul-Kandi 81.04 310 P **P 17 27 51.1 -1.3**
HARR Harsova 81.09 314⇓ *i*P **P 17 27 53.2 +0.6**
DAWY Dawson 81.22 26 *e*P **P 17 27 53.5 +0.4**
comp=Z,172nm,1.5s
DAWY LR LR
comp=Z,1µm,22.0s
ODBI Odobesti 81.47 315⇑ *i*P **P 17 27 56.0 +1.4**
TESR Tescani 81.58 316⇓ *i*P **P 17 27 55.4 +0.2**
VRI Vrincioaia 81.67 315⇑ *i*P **P 17 27 56.8 +1.1**
PRAR RASCA 81.67 317⇑ *i*P **P 17 27 55.8 +0.1**
KSL Kastellorizon 81.67 305 P **P 17 27 54.0 -1.9**
KSL Kastellorizon 81.67 305 *e*P **P 17 27 54.0 -1.9**
STEI Steigen 81.69 338 *e*P **P 17 27 55.1 -0.2**
STEI IAmb IAmb 17 28 14.5
comp=Z,147nm,0.9s
PLOR Plostina 81.72 315⇓ *i*P **P 17 27 57.1 +1.1**
PRD Provadia 81.79 312 *i* P **P 17 27 57.3 +1.0**
KULA Kula-Manisa 81.88 308 P **P 17 27 55.5 -1.6**
PCA Pinnacle 81.92 30 *e*P **P 17 27 57.8 +1.0**
comp=Z,231nm,1.1s
FETY Fethiye 81.96 306 P **P 17 27 56.9 -0.5**
FETY Fethiye 81.96 306 *e*P **P 17 27 56.9 -0.5**
ISR Istrita 81.96 314⇑ *i*P **P 17 27 58.7 +1.4**
SUW Suwalki 81.99 324 *i* P **P 17 27 57.0 -0.2**
SUW *e*S **S 17 38 04.5 -2.8**
INK Inuvik 82.15 21 P **P 17 27 57.5 -0.1**
comp=Z,35nm,0.8s,baz=291,slow=6.2,SNR=52
INK Inuvik 82.15 21 *e*P **P 17 27 57.6 -0.1**
INK pmax pmax
comp=Z,214nm,1.6s
INK MLR MLR
comp=Z,1µm,21.0s
INK Inuvik 82.15 21 *e*P **P 17 27 57.6 -0.1**
comp=Z,214nm,1.6s
INK LR LR
comp=Z,1µm,21.0s
LOF Lofoten 82.22 339 *e*P **P 17 27 57.7 -0.3**
LOF IAmb IAmb 17 28 21.9
comp=Z,110nm,1.0s
LOF *e*S **S 17 38 03.5 -5.6**
LOF IVMs_BB IVMs_BB 18 08 24.6
comp=Z,2µm,16.4s
SULR 82.26 314⇑ *i*P **P 17 28 00.3 +1.5**
XMAS Kiritimati 82.26 90 PFAKE 17 28 10.0 +11
XMAS LR LR
comp=Z,3µm,21.0s
BURAR Bucovina Array 82.28 317⇑ *i*P **P 17 27 59.8 +0.8**
BUR08 Bucovina Ar. S 82.28 317 *e*P **P 17 27 59.6 +0.6**
MLR Muntele Rosu 82.29 315⇑ *i*P **P 17 27 59.7 +0.6**
MLR Muntele Rosu 82.29 315 *e*P **P 17 27 59.6 +0.5**
MLR pmax pmax
comp=Z,124nm,0.7s
MLR MLR MLR
comp=Z,5µm,20.0s
MLR Muntele Rosu 82.29 315 *e*P **P 17 27 59.6 +0.5**
comp=Z,124nm,0.7s
MLR LR LR
comp=Z,5µm,20.0s
SECR 82.31 314⇑ *i*P **P 17 27 59.9 +0.8**
LVV L'vov 82.51 319 *e*P **P 17 27 59.1 -0.9**
LVV *e*PPP PPP 17 33 01.1
LVV *e*S **S 17 38 10.2 -2.6**
LVV *e*SS **SS 17 43 29.2 -5.3**
LVV *e*SSS SSS 17 47 00.3
LVV MLR MLR
comp=N,2µm,16.0s
LVV MLR MLR
comp=E,2µm,16.0s
LVV MLR MLR
comp=Z,2µm,16.0s
DOPR Dopca 82.56 315⇑ *i*P **P 17 28 01.2 +0.8**
EDRB Edirne 82.57 311 P **P 17 28 00.1 -0.4**
ARG Arkhangelos 82.81 305 P **P 17 28 01.3 -0.5**
SZH Strazhica 82.82 313 *i* P **P 17 28 02.5 +0.8**
VOIR 82.91 315⇑ *i*P **P 17 28 02.5 +0.2**
KONS Konsvik 82.96 337⇑ *i*P **P 17 28 01.0 -0.9**
KONS IAmb IAmb 17 28 19.2
comp=Z,512nm,1.8s

ARCR ARCALIA 82.98 317⇓ *i*P **P 17 28 03.8 +1.3**
HYT Haines Junctio 83.02 29 *e*P **P 17 28 03.8 +1.3**
comp=Z,58nm,1.0s
HYT LR LR
comp=Z,2µm,22.0s
HUMR Humele 83.18 314⇑ *i*P **P 17 28 03.9 +0.3**
DHAK Deception Hill 83.21 31 *e*P **P 17 28 04.5 +1.0**
comp=Z,95nm,1.0s
DHAK LR LR
comp=Z,1µm,21.0s
ARR Arges 83.21 315⇑ *i*P **P 17 28 04.4 +0.6**
BODT Bodrum 83.25 306 P **P 17 28 03.6 -0.5**
BODT Bodrum 83.25 306 *e*P **P 17 28 03.6 -0.5**
ENEZ Enez 83.26 310 P **P 17 28 03.8 -0.3**
ALN Alexandroupoli 83.30 310 P **P 17 28 02.8 -1.5**
ALN Alexandroupoli 83.30 310 P **P 17 28 02.8 -1.5**
ALN Alexandroupoli 83.30 310 P **P 17 28 02.8 -1.5**
KMBO Kilima Mbogo 83.31 267 P **P 17 28 07.1 +2.0**
comp=Z,41nm,0.8s,baz=54,slow=7.2,SNR=103
KMBO LR LR 18 03 23.9
comp=Z,3µm,19.4s,baz=76,slow=34
KMBO Kilima Mbogo 83.31 267 *e*P **P 17 28 07.1 +2.0**
KMBO pmax pmax
comp=Z,201nm,1.4s
KMBO Kilima Mbogo 83.31 267 P **P 17 28 07.1 +2.0**
SNR=42
KMBO Kilima Mbogo 83.31 267 *e*P **P 17 28 07.1 +2.0**
comp=Z,201nm,1.4s
KWP Kalwaria Pacla 83.39 320 *i* P **P 17 28 05.4 +0.8**
KWP *e*S **S 17 38 21.2 -0.6**
DIM Dimitrovgrad 83.39 312 *i* P **P 17 28 05.7 +1.0**
SMG Samos 83.47 307 P **P 17 28 04.1 -1.1**
KLNR Kaliningrad 83.51 325*c i*P **P 17 28 04.6 -0.4**
KLNR pmax pmax
comp=Z,154nm,1.2s
KLNR MLR MLR
comp=Z,7µm,18.0s
CJR Cluj-Napoca 83.57 317⇑ *i*P **P 17 28 07.1 +1.5**
KDZ Kurdzhali 83.58 311 *i* P **P 17 28 06.4 +0.7**
GADA Gvkgeada 83.58 310 P **P 17 28 04.9 -0.8**
GADA Gvkgeada 83.58 310 *e*P **P 17 28 04.9 -0.8**
KARP Karpathos 83.73 305 P **P 17 28 06.0 -0.6**
KARP Karpathos 83.73 305 *e*P **P 17 28 07.3 +0.6**
comp=Z,299nm,1.2s
KARP LR LR
comp=Z,3µm,21.0s
MIR Mirnyy 83.73 191 *i* P **P 17 28 05.5 -0.2**
MIR pmax pmax
comp=Z,10.0nm,1.5s
LOT Lotru 83.78 315⇓ *i*P **P 17 28 07.4 +0.6**
SMTH Samothraki Isl 83.78 310 P **P 17 28 05.0 -1.8**
SMTH Samothraki Isl 83.78 310 *e*P **P 17 28 05.0 -1.8**
SIGR SIGRI 83.85 309 P **P 17 28 05.5 -1.6**
SIGR SIGRI 83.85 309 *e*P **P 17 28 05.5 -1.6**
CHOS Chios island 83.90 308 P **P 17 28 06.5 -1.0**
UZH Uzhgorod 83.92 319 *e*P **P 17 28 05.6 -1.7**
UZH *e* 17 28 19.8
UZH *i* S **S 17 38 24.0 -3.1**
UZH *e* 17 39 13.6
UZH MLR MLR
comp=N,6µm,15.0s
UZH MLR MLR
comp=E,8µm,15.0s
UZH MLR MLR
comp=Z,2µm,15.0s
BEL Belsk 83.96 322 *i* P **P 17 28 08.0 +0.6**
BEL *e*S **S 17 38 28.5 +1.1**
RZN Rozhen 84.08 311 *i* P **P 17 28 08.8 +0.3**
DRGR 84.14 317⇑ *i*P **P 17 28 09.2 +0.6**
LIA Limnos Island 84.18 310 P **P 17 28 06.5 -2.3**
PGB Panagyurishte 84.25 312 *i* P **P 17 28 09.8 +0.6**
DEV Deva 84.25 316⇑ *i*P **P 17 28 10.2 +1.1**
MPEP Malo Peshtene 84.34 313 *i* P **P 17 28 10.7 +1.1**
STHS Stebnicka Huta 84.37 320 *e*P **P 17 28 10.5 +0.9**
STHS *e*pP **pP 17 28 26.7 +2.1**
STHS *e*sP **sP 17 28 36.3 +5.9**
STHS *e*PP **PP 17 31 23.5 -1.2**
CRVS Cervenica-Dubn 84.37 319 *e*P **P 17 28 10.5 +0.9**
CRVS *e*pP **pP 17 28 25.6 +0.9**
CRVS *e*PP **PP 17 31 25.9 +1.1**
CRVS *e*S **S 17 38 29.5 -2.2**
SRE Strehaia 84.37 315⇑ *i*P **P 17 28 10.8 +1.1**
KAVA Kavala 84.40 311 P **P 17 28 08.3 -1.6**
KAVA Kavala 84.40 311 *e*P **P 17 28 08.3 -1.6**
SKAG Skagway 84.49 30 *e*P **P 17 28 11.2 +1.3**
comp=Z,131nm,1.0s
SKAG LR LR
comp=Z,2µm,22.0s
APE Apeiranthos 84.63 307 P **P 17 28 09.0 -2.2**
APE Apeiranthos 84.63 307⇑ *i*P **P 17 28 10.1 -1.1**
APE Apeiranthos 84.63 307*ce*P **P 17 28 10.1 -1.1**
APE pmax pmax
comp=Z,42nm,1.0s
APE Apeiranthos 84.63 307 *e*P **P 17 28 09.0 -2.2**
NVR Nevrokopi 84.78 311 P **P 17 28 10.5 -1.4**
NVR Nevrokopi 84.78 311 P **P 17 28 10.5 -1.4**
MMB Musomiste 84.82 312 *i* P **P 17 28 11.9 -0.1**
SANT Santorini 84.86 306 *e*P **P 17 28 11.6 -0.8**
comp=Z,605nm,1.2s
SANT LR LR
comp=Z,10µm,20.0s
CMBO Columbo, Santo 84.88 306 P **P 17 28 10.4 -2.0**
NIE Niedzica 84.96 320 *i* P **P 17 28 13.8 +1.2**
NIE *e*S **S 17 38 35.0 -2.6**
SIRR Siria 84.98 316⇑ *i*P **P 17 28 13.4 +0.6**
NPS Neapolis 85.02 305 P **P 17 28 12.4 -0.8**
OJC Ojcow 85.03 321 *i* P **P 17 28 13.5 +0.6**
OJC *e*S **S 17 38 37.2 -0.9**
OJC Ojcow 85.03 321 *e*P **P 17 28 13.5 +0.6**
OJC pmax pmax
comp=Z,186nm,0.8s
OJC Ojcow 85.03 321 *e*P **P 17 28 13.5 +0.6**
comp=Z,186nm,0.8s
SRS Serrai 85.04 311 P **P 17 28 10.3 -2.8**
SRS Serrai 85.04 311 *e*P **P 17 28 10.3 -2.8**
SRS Serrai 85.04 311 *e*P **P 17 28 10.3 -2.8**
HFS Hagfors 85.05 331 LR LR 18 09 48.7
comp=Z,6µm,19.5s,baz=126,slow=38
KECS Kecovo 85.11 319 *e*P **P 17 28 13.7 +0.4**
KECS *e*pP **pP 17 28 31.0 +2.6**
KECS *e*PP **PP 17 31 32.9 +2.1**
KECS *e*S **S 17 38 37.4 -1.6**
LAST Lasithi 85.15 305 P **P 17 28 12.5 -1.4**
BZS Buzias 85.19 316⇑ *i*P **P 17 28 13.9 +0.1**
KKB Krupnik 85.21 312 *i* P **P 17 28 13.9 -0.1**
DAG Danmarks Havn 85.25 351⇑ *i*P **P 17 28 12.4 -1.1**
comp=Z,49nm,1.0s
comp=Z,3µm,22.0s
PAIG Paliouri 85.29 310 P **P 17 28 12.2 -2.2**
PAIG Paliouri 85.29 310 *e*P **P 17 28 12.2 -2.2**
PAIG Paliouri 85.29 310 P **P 17 28 12.2 -2.2**
PAIG Paliouri 85.29 310 *e*P **P 17 28 12.2 -2.2**
AOS Alonnisos 85.34 309 P **P 17 28 12.9 -1.8**
AOS Alonnisos 85.34 309 *e*P **P 17 28 12.9 -1.8**
PLG Polygyros 85.35 310 P **P 17 28 12.0 -2.7**
PLG Polygyros 85.35 310 P **P 17 28 12.0 -2.7**
PLG Polygyros 85.35 310 P **P 17 28 12.0 -2.7**
MDVR Moldovita 85.36 315⇑ *i*P **P 17 28 15.1 +0.4**
KNT Kendrikon 85.53 311 P **P 17 28 13.9 -1.7**
KNT Kendrikon 85.53 311 P **P 17 28 13.9 -1.7**
KNT Kendrikon 85.53 311 P **P 17 28 13.9 -1.7**
HORT Hortiatis 85.54 311 P **P 17 28 14.1 -1.6**
HORT Hortiatis 85.54 311 P **P 17 28 14.1 -1.6**
LANS Liptovska Anna 85.56 320 *e*P **P 17 28 16.9 +1.3**
LANS *e*pP **pP 17 28 29.4 -1.3**
LANS *e*sP **sP 17 28 36.0 -0.5**
LANS *e*PP **PP 17 31 35.6 +1.2**
NC405 NORSAR Array S 85.58 332 *e*P **P 17 28 15.2 -0.2**
IDI Anoyia 85.59 305 P **P 17 28 14.9 -1.2**
IDI Anoyia 85.59 305 *e*P **P 17 28 16.1 0.0**
comp=Z,113nm,1.1s
IDI LR LR
comp=Z,4µm,20.0s
GKP Gorka Klasztor 85.59 324 *i* P **P 17 28 15.8 +0.2**
THE Thessaloniki 85.63 311 P **P 17 28 13.6 -2.4**
THE Thessaloniki 85.63 311 *e*P **P 17 28 13.6 -2.4**
THE Thessaloniki 85.63 311 *e*P **P 17 28 13.6 -2.4**
PSZ Piszkesteto 85.66 318⇑ *i*P **P 17 28 16.7 +0.5**
PSZ Piszkesteto 85.66 318 *e*P **P 17 28 16.4 +0.3**
PSZ pmax pmax
comp=Z,320nm,1.4s
PSZ MLR MLR
comp=Z,4µm,20.0s

PSZ **Piszkesteto** 85.66 318 *e*P **P** 17 28 16.4 +0.3
comp=Z,320nm,1.4s
PSZ LR LR
comp=Z,4μm,20.0s
PSZ Piszkesteto 85.66 318⇑ *e*P **P** 17 28 16.6 +0.4
NC303 NORSAR Array S 85.69 333 *e*P **P** 17 28 15.6 -0.3
VAY Valandovo 85.73 312 P **P** 17 28 15.1 -1.4
VAY Valandovo 85.73 312⇑ *i*P **P** 17 28 15.9 -0.6
VAY Valandovo 85.73 312 *e*P **P** 17 28 15.1 -1.4
VAY Valandovo 85.73 312 *e*P **P** 17 28 15.1 -1.4
ATHU Athens Univers 85.74 308 P **P** 17 28 14.3 -2.4
ATHU Athens Univers 85.74 308 *e*P **P** 17 28 14.3 -2.4
NB201 NORSAR Array S 85.79 332 *e*P **P** 17 28 15.9 -0.6
NC602 NORSAR Array S 85.81 332 *e*P **P** 17 28 15.7 -0.8
NC602 IAmb IAmb 17 28 33.6
comp=Z,354nm,1.4s
NC602 *e*SKSac **SKSac** 17 38 36.4 -1.3
NC602 IVMs_BB IVMs_BB 18 12 14.5
comp=Z,3μm,13.9s
NC602 NORSAR Array S 85.81 332 *e*P **P** 17 28 15.8 -0.7
XOR Xorichti 85.81 309 P **P** 17 28 13.2 -3.8
XOR Xorichti 85.81 309 P **P** 17 28 13.2 -3.8
NB2 NORSAR Subarra 85.83 332 P **P** 17 28 16.1 -0.6
comp=Z,154nm,0.8s,baz=68,slow=5.1
NB2 NORSAR Subarra 85.83 332 P **P** 17 28 16.1 -0.7
baz=68,slow=5.1
NB200 NORSAR Array S 85.83 332 *e*P **P** 17 28 16.0 -0.7
NOA NORSAR Array B 85.83 332 P **P** 17 28 16.0 -0.7
comp=Z,146nm,0.8s,baz=67,slow=4.9,SNR=441
NOA LR LR 18 09 17.0
comp=Z,3μm,18.8s,baz=70,slow=37
NOA NORSAR Array B 85.83 332 P **P** 17 28 16.0 -0.7
NOA pmax pmax
comp=Z,145nm,0.8s
NOA MLR MLR
comp=Z,3μm,18.8s
NC204 NORSAR Array S 85.94 333 *e*P **P** 17 28 17.4 +0.2
GRG Griva 85.95 311 P **P** 17 28 16.2 -1.5
GRG Griva 85.95 311 *e*P **P** 17 28 16.2 -1.5
GRG Griva 85.95 311 *e*P **P** 17 28 16.2 -1.5
NBO02 NORSAR Array S 85.99 333 *e*P **P** 17 28 16.8 -0.6
NBO00 NORSAR Array S 86.03 333 *e*P **P** 17 28 17.2 -0.4
NAO01 NORSAR Array S 86.06 332 *e*P **P** 17 28 17.2 -0.6
VAM Vamos 86.10 305 P **P** 17 28 17.6 -0.9
LIT Litokhoron 86.12 310 P **P** 17 28 15.9 -2.7
LIT Litokhoron 86.12 310 *e*P **P** 17 28 15.9 -2.7
LIT Litokhoron 86.12 310 P **P** 17 28 15.9 -2.7
LIT Litokhoron 86.12 310 *e*P **P** 17 28 15.9 -2.7
VYHS Vyhne 86.16 319 *e*P **P** 17 28 19.0 +0.5
VYHS *e*pP **pP** 17 28 31.6 -2.0
VYHS Vyhne 86.16 319 *e*S **S** 17 38 44.5 -4.8
VYHS *e*L L 18 09 12.0
OKC Ostrava-Krasne 86.16 321⇑ *i*P **P** 17 28 19.3 +0.8
OKC *e*pP **pP** 17 28 31.2 -2.4
OKC *e*SKS **SKSac** 17 38 41.8 +1.5
OKC Ostrava-Krasne 86.16 321⇑ *i*P **P** 17 28 19.3 +0.8
OKC *e* 17 28 31.2
OKC *e* 17 38 41.8
BSD Bornholm Skovb 86.25 326⇑ *i*P **P** 17 28 18.4 -0.4
comp=Z,111nm,1.2s
comp=Z,6μm,14.0s
IMMV Iera Moni Meta 86.26 306 P **P** 17 28 18.1 -1.2
IMMV Iera Moni Meta 86.26 306 P **P** 17 28 18.1 -1.2
BUD Budapest 86.35 318⇑ *e*P **P** 17 28 19.9 +0.4
DOMB Dombas 86.35 334⇑ *i*P **P** 17 28 18.5 -0.8
DOMB IAmb IAmb 17 28 41.0
comp=Z,189nm,0.9s
DOMB *e*S S 17 38 40.1 -11
DOMB IVMs_BB IVMs_BB 18 09 34.1
comp=Z,4μm,20.7s
SKO Skopje 86.36 312 P **P** 17 28 18.1 -1.6
SKO Skopje 86.36 312⇑ *i*P **P** 17 28 19.3 -0.3
SKO Skopje 86.36 312 *e*P **P** 17 28 18.1 -1.6
SKO Skopje 86.36 312 *e*P **P** 17 28 18.1 -1.6
OSL Oslo 86.50 332 *e*P **P** 17 28 19.2 -0.7
OSL IAmb IAmb 17 28 37.1
comp=Z,306nm,1.1s
OSL IVMs_BB IVMs_BB 18 12 27.6
comp=Z,2μm,17.0s
AGG Agios Georgios 86.55 309 PFAKE 17 28 30.0 +9.3
AGG LR LR
comp=Z,19μm,21.0s
MORC Moravsky Berou 86.55 321⇑ *i*P **P** 17 28 21.3 +0.8
MORC Moravsky Berou 86.55 321 *e*P **P** 17 28 21.1 +0.6
MORC pmax pmax
comp=Z,1μm,1.6s
MORC MLR MLR
comp=Z,13μm,18.0s
MORC Moravsky Berou 86.55 321 *e*P **P** 17 28 21.1 +0.6
comp=Z,1μm,1.6s
MORC LR LR
comp=Z,13μm,18.0s
KZN Kozani 86.59 311 P **P** 17 28 18.9 -2.0
KZN Kozani 86.59 311 P **P** 17 28 18.9 -2.0
THL Klokotos Trika 86.63 310 P **P** 17 28 17.3 -3.7
DIVS Divibare 86.74 315 P **P** 17 28 20.8 -0.8
MOL Molde 86.76 335 *e*P **P** 17 28 21.0 -0.2
MOL IAmb IAmb 17 28 38.4
comp=Z,204nm,1.1s
MOL *e*SKSac **SKSac** 17 38 43.6 +0.2
MOL IVMs_BB IVMs_BB 18 10 09.0
comp=Z,3μm,13.6s
CSKK Cs˘tkako 86.88 318⇓ *e*P **P** 17 28 22.8 +0.7
KRLC Kraliky 86.92 321⇑ *i*P **P** 17 28 22.8 +0.5
KRLC *e*pP **pP** 17 28 34.9 -2.5
KRLC Kraliky 86.92 321⇑ *i*P **P** 17 28 22.8 +0.5
KRLC *e* 17 28 34.9
KSP Ksiaz 86.95 322 *i* P **P** 17 28 23.1 +0.8
KSP *e*S **SKSac** 17 38 39.6 -5.6
CRAG Craig 87.05 33 *e*P **P** 17 28 23.9 +1.2
comp=Z,97nm,1.3s
OHR Ohrid 87.07 312 *i* P **P** 17 28 22.0 -1.2
WRAK Wrangell Islan 87.08 32 *e*P **P** 17 28 23.4 +0.5
comp=Z,57nm,1.0s
WRAK LR LR
comp=Z,800nm,22.0s
DPC Dobruska-Polom 87.10 321⇑ *i*P **P** 17 28 24.1 +0.9
DPC *e*pP **pP** 17 28 35.8 -2.5
DPC *e*SKS **SKSac** 17 38 47.1 +0.9
DPC AMS AMS 18 09 30.0
comp=Z,5μm,19.2s
DPC Dobruska-Polom 87.10 321⇑ *i*P **P** 17 28 24.1 +0.9
DPC *e* 17 28 35.8
DPC *e* 17 38 47.1
DPC MLR MLR
comp=Z,5μm,19.2s
KONO Kongsberg 87.14 332 *e*P **P** 17 28 22.6 -0.5
KONO IAmb IAmb 17 28 41.5
comp=Z,206nm,1.3s
KONO *e*SKSac **SKSac** 17 38 44.6 -1.4
KONO IVMs_BB IVMs_BB 18 13 30.4
comp=Z,1μm,14.6s
KONO Kongsberg 87.14 332 *c i*P **P** 17 28 21.8 -1.2
KONO pmax pmax
comp=Z,1μm,2.5s
KONO MLR MLR
comp=Z,13μm,19.0s
KONO Kongsberg 87.14 332 *e*P **P** 17 28 22.6 -0.5
comp=Z,210nm,1.4s
KONO LR LR
comp=Z,4μm,19.0s
AKN Aaknes 87.17 334 *e*P **P** 17 28 23.3 +0.2
AKN IAmb IAmb 17 28 42.9
comp=Z,274nm,0.8s
AKN IVMs_BB IVMs_BB 18 10 20.6
comp=Z,5μm,19.4s
IVA Berane 87.18 314⇑ *i*P **P** 17 28 23.5 -0.3
PVY Plav 87.22 313⇑ *i*P **P** 17 28 23.5 -0.5
UPC Upice 87.23 322⇑ *i*P **P** 17 28 24.3 +0.6
UPC *e*SKS **SKSac** 17 38 47.6 +0.6
UPC *ex* x 17 39 55.6
UPC AMS AMS 18 09 10.0
comp=Z,6μm,18.5s
UPC Upice 87.23 322⇑ *i*P **P** 17 28 24.3 +0.6
UPC *e* 17 38 47.6
UPC *e* 17 39 55.6
UPC MLR MLR
comp=Z,6μm,18.5s
VRAC Vranov 87.29 320⇑ *i*P **P** 17 28 25.1 +1.0
RGN Rugen 87.31 326 PFAKE 17 28 40.0 +16
RGN LR LR
comp=Z,7μm,20.0s
COP Copenhagen 87.35 327⇑ *i*P **P** 17 28 23.5 -0.6
comp=Z,5μm,16.0s

PLE Pljevlja 87.39 314⇑ *i*P **P** 17 28 24.8 0.0
JMIC Jan Mayen 87.40 345 *e*P **P** 17 28 25.4 +1.3
JMIC IAmb IAmb 17 29 06.3
comp=Z,67nm,1.3s
JMIC *e*SKSac **SKSac** 17 38 45.3 -1.9
JMIC IVMs_BB IVMs_BB 18 10 35.1
comp=Z,1μm,20.0s
DLBC Dease Lake 87.42 30 P **P** 17 28 25.8 +1.2
comp=Z,15nm,0.9s,baz=303,slow=4.4,SNR=19
DLBC Dease Lake 87.42 30 *e*P **P** 17 28 25.8 +1.2
comp=Z,216nm,1.8s
DLBC LR LR
comp=Z,2μm,22.0s
JAN Janina 87.46 310 P **P** 17 28 22.8 -2.3
PDO Prodromos 87.53 309 P **P** 17 28 23.5 -1.9
TIR Tirane 87.67 312 *i*P **P** 17 28 25.5 -0.5
TIR Tirane 87.67 312 PFAKE 17 28 40.0 +14
TIR LR LR
comp=Z,3μm,19.0s
PDG Podgorica 87.77 313 P **P** 17 28 24.7 -1.7
PDG Podgorica 87.77 313⇑ *i*P **P** 17 28 26.0 -0.4
TTG Podgorica 87.77 313⇑ *i*P **P** 17 28 26.1 -0.4
UPM Unac-Piva 87.77 314⇑ *i*P **P** 17 28 25.3 -1.4
NKY Niksic 87.83 314⇑ *i*P **P** 17 28 26.4 -0.5
NKME Niksic 87.87 314⇑ *i*P **P** 17 28 26.4 -0.6
RES Resolute Bay 87.88 9 *e*P **P** 17 28 26.4 +0.1
RES pmax pmax
comp=Z,126nm,1.2s
RES MLR MLR
comp=Z,1μm,20.0s
RES Resolute Bay 87.88 9 *e*P **P** 17 28 26.4 +0.1
comp=Z,126nm,1.2s
RES LR LR
comp=Z,1μm,20.0s
DRME Dracevica, Mon 87.89 313⇑ *i*P **P** 17 28 26.9 -0.2
CEME Cevo 87.97 313⇑ *i*P **P** 17 28 26.8 -0.7
TREC Trest 87.98 321⇑ *i*P **P** 17 28 28.0 +0.7
TREC AMS AMS 18 09 40.0
comp=Z,4μm,16.6s
TREC Trest 87.98 321⇑ *i*P **P** 17 28 28.0 +0.7
TREC MLR MLR
comp=Z,4μm,16.6s
PVCC Panska Ves 88.09 322⇑ *i*P **P** 17 28 28.6 +0.8
PVCC *e*SKS **SKSac** 17 38 52.2 +0.1
PVCC *e*SP **SPn** 17 40 06.5 -1.8
PVCC AMS AMS 18 09 50.0
comp=Z,6μm,21.6s
PVCC Panska Ves 88.09 322⇑ *i*P **P** 17 28 28.6 +0.8
PVCC *e* 17 38 52.2
PVCC *e* 17 40 06.5
PVCC MLR MLR
comp=Z,6μm,21.6s
BRY Bratogost 88.12 314⇑ *i*P **P** 17 28 27.9 -0.4
BEHE Becsehely 88.14 318⇑ *i*P **P** 17 28 28.6 +0.5
GOPC GO Pecny, Ondr 88.18 321⇑ *e*P **P** 17 28 28.8 +0.5
GOPC *e*pP **pP** 17 28 40.8 -2.7
GOPC *e*SKS **SKSac** 17 38 51.8 -0.9
GOPC *ex* x 17 40 08.1
GOPC AMS AMS 18 10 00.0
comp=Z,5μm,20.9s
GOPC GO Pecny, Ondr 88.18 321 *e*P **P** 17 28 28.8 +0.5
GOPC *e* 17 28 40.8
GOPC *e* 17 38 51.8
GOPC *e* 17 40 08.2
GOPC MLR MLR
comp=Z,5μm,20.9s
CONA Conrad Observa 88.22 319 *i* PcP **P** 17 28 28.8 +0.1
comp=Z,41nm,1.4s,SNR=25
HOMB Homborsund 88.24 331 *e*P **P** 17 28 26.8 -1.5
HOMB IVMs_BB IVMs_BB 18 12 59.8
comp=Z,2μm,10.0s
DIB Dawson Inlet, 88.26 35 *e*P **P** 17 28 29.3 +0.8
comp=Z,58nm,1.2s
PRU Pruhonice 88.30 322⇑ *i*P **P** 17 28 29.4 +0.6
PRU *e*SKS **SKSac** 17 38 53.0 -0.4
PRU *ex* x 17 40 08.9
PRU AMS AMS 18 10 00.0
comp=Z,5μm,19.4s
PRU Pruhonice 88.30 322⇑ *i*P **P** 17 28 29.4 +0.6
PRU *e* 17 38 53.0
PRU *e* 17 40 08.9
PRU MLR MLR
comp=Z,5μm,19.4s
BRG Berggiesshubel 88.33 322 *e*P **P** 17 28 29.1 +0.2
comp=Z,75nm,1.0s
BRG *i* pP **pP** 17 28 46.7 +2.6
comp=Z,147nm,1.3s
BRG *i* sP **sP** 17 28 51.4 +1.5
comp=Z,111nm,1.1s
BRG PP **PP** 17 31 56.0 -0.6
BRG S **S** 17 39 05.0 -5.1
BRG PS **PnS** 17 40 08.0 -10
BRG SS **SS** 17 40 52.2 -7.8
BRG Berggiesshubel 88.33 322 *e*P **P** 17 28 29.1 +0.2
BRG *i* *PP **pP** 17 28 46.7 +2.6
BRG *i* *SP **sP** 17 28 51.4 +1.5
BRG 17 31 56.0
BRG S **S** 17 39 05.0 -5.1
BRG PS **PnS** 17 40 08.0 -10
BRG pmax pmax
comp=Z,75nm,1.0s
ODD1 Odda 88.37 332 *e*P **P** 17 28 28.9 -0.1
ODD1 IAmb IAmb 17 28 48.4
comp=Z,63nm,1.0s
ODD1 IVMs_BB IVMs_BB 18 15 37.7
comp=Z,4μm,48.8s
KOGS Kog 88.48 318 *e*P **P** 17 28 29.8 0.0
KOGS *e*SKSac **SKSac** 17 38 49.7 -4.9
KOGS *e*S **S** 17 39 11.0 -0.7
SUE Sulen 88.64 334 *e*P **P** 17 28 30.5 +0.4
SUE IAmb IAmb 17 28 50.4
comp=Z,113nm,1.1s
SUE *e*SKSac **SKSac** 17 38 53.0 -1.9
SUE IVMs_BB IVMs_BB 18 10 53.4
comp=Z,4μm,17.7s
BLS5 Blasjo 88.67 332 *e*P **P** 17 28 30.6 +0.2
BLS5 IAmb IAmb 17 28 53.3
comp=Z,121nm,1.0s
BLS5 *e*SKSac **SKSac** 17 38 53.7 -1.6
BLS5 IVMs_BB IVMs_BB 18 14 26.4
comp=Z,2μm,15.6s
ARSA Arzberg 88.67 319 *i* PcP **P** 17 28 30.8 +0.1
comp=Z,26nm,1.4s,SNR=18
MUD Monsted U'grnd 88.70 329⇑ *i*P **P** 17 28 30.4 -0.1
comp=Z,42nm,0.8s
comp=Z,6μm,14.0s
BER Bergen 88.72 333 *e*P **P** 17 28 30.6 +0.1
BER IAmb IAmb 17 29 02.8
comp=Z,126nm,1.2s
BER *e*SKSac **SKSac** 17 38 53.2 -2.2
BER IVMs_BB IVMs_BB 18 10 44.8
comp=Z,2μm,16.8s
CLL Collm 88.72 323⇑ *i*P **P** 17 28 30.7 -0.1
comp=Z,60nm,1.0s
CLL *i* pP **pP** 17 28 45.9 0.0
CLL *e*sP **sP** 17 28 53.0 +1.3
CLL *e*PP **PP** 17 32 00.0 +0.3
CLL *e*sPP 17 32 21.0
CLL *e*SKSac **SKSac** 17 38 55.0 -0.8
CLL *e*S **S** 17 39 12.0 -1.7
CLL *e*SP **SPn** 17 40 14.0 -1.7
CLL *e*SS **SS** 17 45 00.0 -5.4
CLL *e*sSS 17 45 36.0
CLL *e*SSSS 17 52 00.0
CLL *e* 17 53 06.0
CLL LmV 18 10 00.0
comp=Z,4μm,21.3s
CLL Collm 88.72 323 *e*P **P** 17 28 30.7 -0.1
CLL pmax pmax
comp=Z,55nm,1.0s
CLL MLR MLR
comp=Z,4μm,19.0s
CLL Collm 88.72 323 *e*P **P** 17 28 30.6 -0.1
comp=Z,55nm,1.0s
CLL LR LR
comp=Z,4μm,19.0s
ASK Askoy 88.73 333 *e*P **P** 17 28 29.6 -1.0
SNART Snartemo 88.82 331 *e*P **P** 17 28 30.9 -0.2
SNART IAmb IAmb 17 28 55.1
comp=Z,35nm,0.9s
PERS Pernice 89.15 318 *i* P **P** 17 28 32.7 -0.3
SOKA Soboth 89.19 318 *i* PcP **P** 17 28 33.1 -0.1
comp=Z,16nm,0.8s,SNR=12
KHC Kasperske Hory 89.20 321⇑ *i*P **P** 17 28 33.4 +0.2

KHC *e*pP **pP** 17 28 45.2 -3.1
KHC *e*PP **PP** 17 32 07.3 +3.6
KHC *e*SKS **SKSac** 17 38 59.2 +0.3
KHC *e*S **S** 17 39 19.2 +0.7
KHC *e*SP **SPn** 17 40 17.3 -4.3
KHC AMS AMS 18 10 30.0
comp=Z,6μm,21.8s
KHC Kasperske Hory 89.20 321⇑ *i*P **P** 17 28 33.4 +0.2
KHC *e* 17 28 45.2
KHC *e* 17 32 07.3
KHC *e* 17 38 59.2
KHC *e* 17 39 19.2
KHC *e* 17 40 17.3
KHC MLR MLR
comp=Z,6μm,21.8s
KHC Kasperske Hory 89.20 321 *e*P **P** 17 28 33.5 +0.4
comp=Z,22nm,1.2s
KHC LR LR
comp=Z,2μm,20.0s
GEC2 GERESS Array S 89.23 321 *e*P **P** 17 28 33.6 +0.2
GEC2 pmax pmax
comp=Z,78nm,1.1s
GEC2 MLR MLR
comp=Z,3μm,18.0s
GEC2 GERESS Array S 89.23 321 *e*P **P** 17 28 33.6 +0.2
comp=Z,78nm,1.1s
GEC2 LR LR
comp=Z,3μm,18.0s
GERES GERESS Array B 89.23 321 P **P** 17 28 33.5 +0.2
comp=Z,18nm,0.8s,baz=67,slow=4.5,SNR=162
GERES LR LR 18 11 21.3
comp=Z,3μm,18.7s,baz=82,slow=37
GEA0 GERESS Array S 89.24 321 *e*P **P** 17 28 33.6 +0.2
STAV Stavanger 89.24 332 *e*P **P** 17 28 32.2 -0.8
STAV IAmb IAmb 17 28 49.9
comp=Z,69nm,1.1s
STAV *e*SKSac **SKSac** 17 38 56.8 -1.8
STAV IVMs_BB IVMs_BB 18 14 18.8
comp=Z,2μm,13.0s
MOA Molln 89.25 320 *i* PcP **PcP** 17 28 34.1 -0.7
comp=Z,50nm,0.8s,SNR=23
KMY Karmoy 89.32 332 *e*P **P** 17 28 33.8 +0.4
KMY IAmb IAmb 17 28 51.1
comp=Z,110nm,1.0s
KMY *e*SKSac **SKSac** 17 38 57.7 -1.3
KMY IVMs_BB IVMs_BB 18 14 33.9
comp=Z,941nm,14.6s
NKC Novy Kostel 89.46 322⇑ *e*P **P** 17 28 34.7 +0.4
NKC *e*SKS **SKSac** 17 38 59.7 -0.6
NKC *ex* x 17 40 18.8
NKC AMS AMS 18 10 30.0
comp=Z,6μm,21.2s
NKC Novy Kostel 89.46 322 *e*P **P** 17 28 34.7 +0.4
NKC *e* 17 38 59.7
NKC *e* 17 40 20.7
NKC MLR MLR
comp=Z,6μm,21.2s
MBAR Mbarara 89.46 269 *e*P **P** 17 28 35.3 +0.1
MBAR pmax pmax
comp=Z,47nm,1.0s
MBAR Mbarara 89.46 269 *e*P **P** 17 28 35.3 +0.1
comp=Z,47nm,1.0s
BOJS Bojanci 89.47 317 *i* P **P** 17 28 34.6 +0.2
OBKA Obir 89.56 318 *i* PcP **P** 17 28 34.9 -0.1
comp=Z,19nm,0.9s,SNR=6.5
LJU Ljubljana 89.75 318 *i* P **P** 17 28 35.7 -0.1
LJU *e*PP **PP** 17 32 10.7 +2.6
LJU *e*SKSac **SKSac** 17 38 59.2 -2.9
LJU *e*S **S** 17 39 22.7 -0.9
LJU *e* 17 40 26.0
MYKA Terra Mystica 90.10 319 *i* PcP **P** 17 28 37.2 -0.3
comp=Z,24nm,2.2s
KBA Koelnbreinsper 90.12 319 *i* PcP **P** 17 28 37.2 -0.5
comp=Z,29nm,1.1s,SNR=14
CADS Cadrg 90.19 318 *e*P **P** 17 28 36.6 -1.2
TRI Trieste 90.36 318 PFAKE 17 28 50.0 +11
TRI LR LR
comp=Z,3μm,19.0s
GRFO Grafenberg 90.40 322 *e*P **P** 17 28 39.5 +0.8
GRFO pmax pmax
comp=Z,56nm,0.9s
GRFO MLR MLR
comp=Z,5μm,20.0s
GRFO Grafenberg 90.40 322 *e*P **P** 17 28 39.5 +0.8
comp=Z,56nm,0.9s
GRFO LR LR
comp=Z,5μm,20.0s
TIP Timpagrande 90.62 311 *e*P **P** 17 28 40.5 +0.5
comp=Z,108nm,1.2s
TIP LR LR
comp=Z,4μm,20.0s
ABTA Abfaltersbach 90.77 319 *i* P **P** 17 28 39.8 -0.8
comp=Z,36nm,1.4s,SNR=16
SCO Scoresbysund 90.80 348 *i* P **P** 17 28 40.4 +0.3
comp=Z,18nm,1.1s
comp=Z,2μm,22.0s
CUC Castrocucco 91.02 312 *e*P **P** 17 28 41.2 -0.6
comp=Z,51nm,1.2s
CUC LR LR
comp=Z,2μm,20.0s
BBB Bella Bella 91.10 35 P **P** 17 28 41.5 -0.3
comp=Z,2.8nm,0.7s,baz=304,slow=5.5,SNR=3.7
WTTA Wattenberg 91.12 320 *i* PcP **P** 17 28 42.3 -0.1
comp=Z,52nm,0.8s,SNR=19
WATA Walderalm 91.13 320 *i* PcP **P** 17 28 42.0 -0.3
comp=Z,53nm,1.1s,SNR=7.0
MOTA Moosalm 91.42 320 *i* PcP **P** 17 28 43.3 -0.4
comp=Z,52nm,0.9s,SNR=34
SUMG Summit 91.49 354⇑ *i*P **P** 17 28 43.7 0.0
comp=Z,2μm,17.0s
SUMG Summit 91.49 354 *e*P **P** 17 28 43.8 0.0
SUMG pmax pmax
comp=Z,56nm,1.1s
SUMG MLR MLR
comp=Z,2μm,20.0s
SUMG Summit 91.49 354 *e*P **P** 17 28 43.8 +0.1
comp=Z,56nm,1.1s
SUMG LR LR
comp=Z,2μm,20.0s
CEL Celeste 91.57 310 *e*P **P** 17 28 44.6 +0.2
comp=Z,277nm,1.3s
CEL LR LR
comp=Z,2μm,20.0s
RETA Reutte 91.58 320 *i* PcP **P** 17 28 44.2 -0.1
comp=Z,21nm,1.0s,SNR=9.1
FETA Feichten 91.79 320 *i* PcP **P** 17 28 45.4 0.0
comp=Z,65nm,1.0s,SNR=38
YKW3 Yellowknife Ar 91.81 22 *e*P **P** 17 28 45.1 +0.2
comp=Z,94nm,1.4s
YKW3 LR LR
comp=Z,900nm,20.0s
YKA Yellowknife Ar 91.85 22 P **P** 17 28 45.3 +0.2
comp=Z,18nm,0.7s,baz=309,slow=4.3,SNR=97
YKA PKiKP **PKiKP** 17 33 36.1 +0.6
comp=Z,1.8nm,0.6s,baz=324,slow=1.6,SNR=6.8
YKA PKKPbc **PKKPdf** 17 46 02.1 +1.2
comp=Z,5.5nm,0.7s,baz=130,slow=2.6,SNR=26
YKA PKPPKP P'P'df 17 54 03.0 -12
comp=Z,0.4nm,0.6s,baz=156,slow=3.1,SNR=3.0
YKA LR LR 18 14 31.3
comp=Z,46nm,19.9s,baz=0.0,slow=38
YKA Yellowknife Ar 91.85 22 P **P** 17 28 45.3 +0.2
YKA pmax pmax
comp=Z,18nm,0.7s
YKB5 Yellowknife Ar 91.85 22 *e*P **P** 17 28 45.4 +0.3
YKB5 *e*PKiKP **PKiKP** 17 33 36.1 +0.6
YKB5 *e*PKKPdf **PKKPdf** 17 46 01.6 +0.6
AQU L'Aquila 91.86 315 *e*P **P** 17 28 45.5 -0.2
AQU L'Aquila 91.86 315 *e*P **P** 17 28 45.5 -0.2
STU Stuttgart 91.99 322 *e*P **P** 17 28 46.5 +0.4
STU pmax pmax
comp=Z,101nm,1.0s
STU MLR MLR
comp=Z,5μm,19.0s
STU Stuttgart 91.99 322 *e*P **P** 17 28 46.5 +0.4
comp=Z,101nm,1.0s
STU LR LR
comp=Z,5μm,19.0s
MAW Mawson 92.08 199 P **P** 17 28 46.7 +0.9
comp=Z,35nm,1.0s,baz=48,slow=6.1,SNR=70
MAW PKKP **PKKPbc** 17 46 04.0 -1.1
comp=Z,1.0nm,0.8s,baz=246,slow=6.1,SNR=4.1
MAW LR LR 18 08 13.8
comp=Z,456nm,19.3s,baz=50,slow=34
DAVA Damuels 92.20 320 *i* PcP **P** 17 28 47.4 +0.1
comp=Z,39nm,1.1s,SNR=14

FUORN Ofenpass-Fuorn 92.24 320 eP P 17 28 48.0 +0.4
comp=Z,183nm,0.9s
FUORN LR LR
comp=Z,3μm,21.0s
BFO Black Forest 92.70 322 i P P 17 28 49.6 +0.2
BFO Black Forest 92.70 322 eP P 17 28 49.3 -0.2
comp=Z,84nm,1.1s
BFO LR LR
comp=Z,5μm,19.0s
LANF Langenberg 92.73 322⇑ eP P 17 28 49.9 +0.4
TUE Stuetta 92.88 320 eP P 17 28 50.3 -0.2
comp=Z,110nm,1.1s
TUE LR LR
comp=Z,3μm,20.0s
MEM Membach 93.02 324 P P 17 28 50.7 -0.1
comp=Z,45nm,1.8s
BEBN Eben Emael 93.12 325 P P 17 28 51.3 +0.1
comp=Z,21nm,2.9s
WLF Walferdange 93.38 323 P P 17 28 53.8 +1.4
comp=Z,104nm,1.7s
WLF Walferdange 93.38 323 eP P 17 28 53.7 +1.2
WLF pmax pmax
comp=Z,144nm,1.1s
WLF MLR MLR
comp=Z,5μm,20.0s
WLF Walferdange 93.38 323 eP P 17 28 53.7 +1.2
comp=Z,144nm,1.1s
WLF LR LR
comp=Z,5μm,20.0s
WDD Wied Dalam 93.45 308 PFAKE 17 29 00.0 +6.9
WDD LR LR
comp=Z,2μm,20.0s
ECH Echery 93.45 322⇑ eP P 17 28 52.8 -0.1
BCLA Clavier 93.51 324 P P 17 28 53.1 0.0
comp=Z,52nm,2.6s
MOF Molkenrain 93.63 322⇑ eP P 17 28 53.7 -0.1
SNF Seneffe 94.03 325 P P 17 28 55.6 +0.2
DOU Dourbes 94.06 324 P P 17 28 55.5 0.0
comp=Z,34nm,1.3s
THEF They Montfort 94.14 322 eP P 17 28 55.9 -0.1
SENIN Lac Senin/Sane 94.20 320 eP P 17 28 56.5 -0.1
comp=Z,302nm,1.9s
SENIN LR LR
comp=Z,5μm,19.0s
OG01 Vacheresse 94.60 320 eP P 17 28 58.1 -0.2
PPT Papeete 94.79 107 LR LR 18 03 17.0
comp=Z,1μm,22.0s,baz=264,slow=30
PPT2 Papeete2 94.79 107 ePP PP 17 32 50.5 +1.5
comp=Z,306nm,28.8s
PPT2 eS S **17 40 06.2 -3.6**
comp=Z,1μm,28.2s
PPT2 Papeete2 94.79 107 eLR LR 17 59 38.9
comp=Z,6μm,27.0s,baz=285
RSL Roselend 94.92 320 eP P 17 28 59.7 -0.2
BNI Bardonecchia 95.18 319 PFAKE 17 29 10.0 +9.0
BNI LR LR
comp=Z,4μm,20.0s
EKA Eskdalemuir Ar 95.25 331 LR LR 18 15 11.9
comp=Z,2μm,19.0s,baz=350,slow=37
BORG Borgarnes 95.27 344 PFAKE 17 29 10.0 +9.2
BORG LR LR
comp=Z,3μm,20.0s
ESK Eskdalemuir 95.28 331 eP P 17 29 00.5 -0.5
ESK pmax pmax
comp=Z,59nm,1.1s
ESK MLR MLR
comp=Z,3μm,19.0s
ESK Eskdalemuir 95.28 331 eP P 17 29 00.5 -0.5
comp=Z,59nm,1.1s
ESK LR LR
comp=Z,3μm,19.0s
LLLB Lillooet 95.28 34 eP P 17 29 02.5 +1.3
comp=Z,24nm,0.9s
PGC Sidney 95.39 37 PFAKE 17 29 10.0 +8.3
PGC LR LR
comp=Z,800nm,22.0s
VNDA Vanda 95.39 172 P P 17 29 01.4 +0.5
comp=Z,5.5nm,0.9s,baz=304,slow=5.5,SNR=28
VNDA PKKPbc **PKKPbc 17 45 54.8 -1.8**
comp=Z,1.8nm,0.8s,baz=164,slow=3.1,SNR=9.1
VNDA LR LR 18 12 52.6
comp=Z,1μm,20.5s,baz=338,slow=36
VNDA Vanda 95.39 172 eP P 17 29 02.1 +1.1
comp=Z,32nm,1.3s
VNDA ePKKPbc **PKKPbc 17 45 54.8 -1.8**
LSZ Lusaka 95.57 256 eP P 17 29 03.7 +0.4
LSZ pmax pmax
comp=Z,24nm,0.9s
LSZ MLR MLR
comp=Z,3μm,19.0s
LSZ Lusaka 95.57 256 P P 17 29 04.0 +0.7
SNR=5.3
LSZ Lusaka 95.57 256 eP P 17 29 03.7 +0.4
comp=Z,24nm,0.9s
LSZ LR LR
comp=Z,3μm,19.0s
VSL Villasalto 95.80 313 eP P 17 29 03.1 -0.7
comp=Z,232nm,2.0s
VSL LR LR
comp=Z,2μm,22.0s
CWF Charnwood Fore 95.83 329 eP P 17 29 01.6 -2.0
comp=Z,34nm,1.2s
CWF LR LR
comp=Z,5μm,18.0s
TBI Tubuai 96.27 112 ePP PP 17 32 57.4 -2.8
comp=Z,334nm,27.2s
TBI eSKSac **SKSac 17 39 33.9 -4.9**
comp=Z,536nm,26.5s
TBI Tubuai 96.27 112 ePS PS 17 41 46.7 -1.9
comp=Z,2μm,25.8s
TBI Tubuai 96.27 112 eLR LR 18 00 26.1
comp=Z,6μm,28.8s,baz=292
SBA Scott Base 96.35 171 PFAKE 17 29 20.0 +15
SBA LR LR
comp=Z,1μm,20.0s
E03A Lebam 96.37 38 PFAKE 17 29 20.0 +14
E03A LR LR
comp=Z,900nm,20.0s
SSB Saint Sauveur 96.41 320 eP P 17 29 06.1 -0.4
SSB Saint Sauveur 96.41 320 eP P 17 29 06.3 -0.2
SSB pmax pmax
comp=Z,36nm,1.0s
SSB MLR MLR
comp=Z,2μm,20.0s
SSB Saint Sauveur 96.41 320 eP P 17 29 06.3 -0.2
comp=Z,36nm,1.0s
SSB LR LR
comp=Z,2μm,20.0s
TUM Tumwater 96.53 38 PFAKE 17 29 20.0 +13
TUM LR LR
comp=Z,1μm,18.0s
B06A Marblemount 96.59 36 PFAKE 17 29 20.0 +13
B06A LR LR
comp=Z,800nm,21.0s
PLDF La Plantade 96.64 321 eP P 17 29 07.7 +0.1
F03A Seaside 96.67 39 PFAKE 17 29 20.0 +12
F03A LR LR
comp=Z,1μm,20.0s
AGO Saint Agoulin 96.90 321 eP P 17 29 09.1 +0.4
D05A Enumclaw 96.98 37 PFAKE 17 29 20.0 +11
D05A LR LR
comp=Z,700nm,20.0s
LBL Lubilhac 97.23 321 eP Pdif 17 29 10.7 +0.4
F04A Amboy 97.36 39 PFAKE 17 29 20.0 +9.2
F04A LR LR
comp=Z,800nm,20.0s
KEST Kesra 97.37 310 P Pdif 17 29 11.8 +0.6
comp=Z,5.5nm,0.9s,baz=63,slow=6.8,SNR=3.3
KEST LR LR **18 19 58.3**
comp=Z,1μm,19.2s,baz=356,slow=40
KEST Kesra 97.37 310 eP Pdif 17 29 11.8 +0.7
comp=Z,50nm,1.4s
COR Corvallis 97.49 40 PFAKE 17 29 20.0 +8.6
COR LR LR
comp=Z,1μm,20.0s
LTY Liberty 97.71 37 PFAKE 17 29 20.0 +7.6
LTY LR LR
comp=Z,1μm,20.0s
B08A Colville Reser 97.89 35 eP Pdif 17 29 13.3 +0.2
comp=Z,20nm,1.0s
SFJD Kangerlussuaq 97.97 356 PFAKE 17 29 20.0 +7.0
SFJD LR LR
comp=Z,2μm,19.0s
DSB Dublin 98.01 331 PFAKE 17 29 20.0 +6.5
DSB LR LR
comp=Z,4μm,18.0s
EDM Edmonton 98.14 29 PFAKE 17 29 30.0 +16
EDM LR LR
comp=Z,1μm,20.0s
DYA Yadsworthy 98.50 328 PFAKE 17 29 30.0 +14
DYA LR LR
comp=Z,4μm,19.0s
KRMB Red Mountain 98.59 43 PFAKE 17 29 30.0 +13
KRMB LR LR
comp=Z,2μm,21.0s
HUMO Hull Mountain 98.68 42 eP Pdif 17 29 17.1 +0.4
comp=Z,14nm,1.3s
HUMO LR LR
comp=Z,2μm,22.0s
G06A Carlson Farm, 98.79 39 PFAKE 17 29 30.0 +13
G06A LR LR
comp=Z,800nm,19.0s
D08A Wollman Farm, 98.83 36 eP Pdif 17 29 18.7 +1.4
comp=Z,10nm,1.1s
HAWA Hanford 98.83 37 PFAKE 17 29 30.0 +13
HAWA LR LR
comp=Z,900nm,20.0s
JCC Jacoby Creek, 98.84 44 PFAKE 17 29 30.0 +13
JCC LR LR
comp=Z,1μm,20.0s
KHMM Horse Mountain 99.01 44 PFAKE 17 29 30.0 +12
KHMM LR LR
comp=Z,1μm,21.0s
KMRM Mail Ridge 99.34 44 PFAKE 17 29 30.0 +10
KMRM LR LR
comp=Z,3μm,22.0s
E09A Wood Farm, Sta 99.57 37 PFAKE 17 29 30.0 +9.4
E09A LR LR
comp=Z,1μm,22.0s
G08A Pilot Rock 99.77 38 PFAKE 17 29 30.0 +8.3
G08A LR LR
comp=Z,700nm,22.0s
K05A Summer Lake 99.94 41 ePdif Pdif 17 29 23.0 +0.4
comp=Z,22nm,1.0s
K05A LR LR
comp=Z,2μm,22.0s
WDC Whiskeytown Da 99.95 43 PFAKE 17 29 30.0 +7.6
WDC LR LR
comp=Z,1μm,21.0s
HOPS Hopland Field 100.36 45 PFAKE 17 29 40.0 +16
HOPS LR LR
comp=Z,1μm,21.0s
F10A Beach Ranch, E 100.40 37 PFAKE 17 29 40.0 +16
F10A LR LR
comp=Z,900nm,21.0s
WALA Waterton Lakes 100.42 33 ePdif Pdif 17 29 24.6 +0.1
WALA LR LR
comp=Z,900nm,20.0s
SYO Syowa Base 100.47 201‖ ePdiff Pdif 17 29 23.0 -0.9
GDXM Geysers 100.64 45 PFAKE 17 29 40.0 +14
GDXM LR LR
comp=Z,1μm,20.0s
VAL Valentia 100.66 331 eP Pdif 17 29 25.7 +0.4
VAL ePP **PP 17 33 35.1 +2.8**
MOD Modoc Plateau 100.74 41 PFAKE 17 29 40.0 +14
MOD LR LR
comp=Z,1μm,21.0s
MCCM Marconi Confer 100.90 46 PFAKE 17 29 40.0 +13
MCCM LR LR
comp=Z,1μm,19.0s
BMO Blue Mountains 100.99 38 PFAKE 17 29 40.0 +13
BMO LR LR
comp=Z,700nm,21.0s
BOSA Boshof 101.13 243 P Pdif 17 29 28.2 +0.2
comp=Z,4.1nm,0.8s,baz=72,slow=4.2,SNR=3.0
ORV Oroville 101.15 44 PFAKE 17 29 40.0 +12
ORV LR LR
comp=Z,1μm,22.0s
FCC Fort Churchill 101.41 17 PFAKE 17 29 40.0 +12
FCC LR LR
comp=Z,1μm,20.0s
WVOR Wild Horse Val 101.51 40 PFAKE 17 29 40.0 +11
WVOR LR LR
comp=Z,2μm,22.0s
TAOE Nuku Hiva Isla 101.67 96 eLR LR 18 02 40.5
comp=Z,2μm,25.4s
MSO Missoula 101.75 35 PFAKE 17 29 40.0 +10
MSO LR LR
comp=Z,2μm,22.0s
AFDM Forest Hills D 101.81 44 PFAKE 17 29 40.0 +9.2
AFDM LR LR
comp=Z,1μm,22.0s
FFC Flin Flon 101.97 23 eP Pdif 17 29 30.9 -0.2
FFC MLR MLR
comp=Z,800nm,20.0s
FFC Flin Flon 101.97 23 ePdif Pdif 17 29 30.9 -0.2
FFC LR LR
comp=Z,800nm,20.0s
PAHR Pah Rah Range 102.47 43 PFAKE 17 29 50.0 +16
PAHR LR LR
comp=Z,1μm,20.0s
SAO San Andreas Ge 102.57 46 PFAKE 17 29 50.0 +16
SAO LR LR
comp=Z,2μm,22.0s
PNTR Pine Nut 102.65 43 PFAKE 17 29 50.0 +15
PNTR LR LR
comp=Z,1μm,20.0s
CMB Columbia Colle 102.67 45 PFAKE 17 29 50.0 +15
CMB LR LR
comp=Z,1μm,20.0s
MFID Camas Ranch 102.68 38 PFAKE 17 29 50.0 +15
MFID LR LR
comp=Z,800nm,20.0s
YERR Yerington 102.95 43 PFAKE 17 29 50.0 +14
YERR LR LR
comp=Z,1μm,20.0s
WAKR Walker 103.07 44 PFAKE 17 29 50.0 +13
WAKR LR LR
comp=Z,2μm,22.0s
EGMT Eagleton 103.22 32 PFAKE 17 29 50.0 +13
EGMT LR LR
comp=Z,800nm,20.0s
PMPB Monarch Peak 103.29 47 PFAKE 17 29 50.0 +13
PMPB LR LR
comp=Z,800nm,20.0s
DLMT Dillon 103.39 35 PFAKE 17 29 50.0 +12
DLMT LR LR
comp=Z,700nm,21.0s
HLID Hailey 103.43 37 PFAKE 17 29 50.0 +12
HLID LR LR
comp=Z,1μm,21.0s
BMN Battle Mountai 103.49 41 PFAKE 17 29 50.0 +12
BMN LR LR
comp=Z,1μm,19.0s
TVH1 TV Hill, Hawth 103.54 44 PFAKE 17 29 50.0 +11
TVH1 LR LR
comp=Z,1μm,22.0s
TVH2 Borealis Mine 103.59 44 PFAKE 17 29 50.0 +11
TVH2 LR LR
comp=Z,200nm,21.0s
BOZ Bozeman (W) 103.74 34 PFAKE 17 29 50.0 +11
BOZ LR LR
comp=Z,1μm,21.0s
ESDC Sonseca Array 104.69 319 Pdiff Pdif 17 29 48.3 +4.7
comp=Z,0.5nm,0.6s,baz=50,slow=4.0,SNR=3.3
ESDC PP **PP 17 34 01.1 -2.0**
comp=Z,1.5nm,0.7s,baz=51,slow=7.4,SNR=3.6
ESLA Sonseca Array 104.69 319 PFAKE 17 30 00.0 +16
ESLA LR LR
comp=Z,2μm,20.0s
YHH Holmes Hill 104.71 35 PFAKE 17 30 00.0 +16
YHH LR LR
comp=Z,900nm,20.0s
YMR Madison River 104.72 35 PFAKE 17 30 00.0 +16
YMR LR LR
comp=Z,1μm,19.0s
QSPA South Pole Qui 104.82 180 PFAKE 17 29 50.0 +6.5
QSPA LR LR
comp=Z,2μm,20.0s
YNR Norris Junctio 104.85 35 PFAKE 17 30 00.0 +16
YNR LR LR
comp=Z,800nm,20.0s
YFT Old Faithful 104.93 35 PFAKE 17 30 00.0 +15
YFT LR LR
comp=Z,3μm,19.0s
PAB San Pablo 105.01 319 PFAKE 17 34 10.0
PAB LR LR
comp=Z,2μm,20.0s
YPP Pitchstone Pla 105.06 35 PFAKE 17 34 10.0
YPP LR LR
comp=Z,1μm,22.0s
H17A Grant Village 105.11 35 PFAKE 17 34 10.0
H17A LR LR
comp=Z,1μm,20.0s
PBRG Braganca 105.18 322 ePdif Pdif 17 29 51.5 +5.8
PBRG Braganca 105.18 322 ePP PP 17 34 07.2 +0.6
ISA Isabella, Lake 105.20 46 PFAKE 17 34 10.0
ISA LR LR
comp=Z,1μm,22.0s
IMW Indian Meadow 105.22 36 PFAKE 17 34 10.0
IMW LR LR
comp=Z,1μm,21.0s
FLWY Flagg Ranch 105.24 35 PFAKE 17 34 10.0
FLWY LR LR
comp=Z,1μm,22.0s
RLMT Red Lodge 105.36 34 PFAKE 17 34 10.0
RLMT LR LR
comp=Z,1μm,22.0s
MOOW Moose Ponds 105.43 36 PFAKE 17 34 10.0
MOOW LR LR
comp=Z,1μm,20.0s
HVU Hansel Valley 105.46 38 PFAKE 17 34 10.0
HVU LR LR
comp=Z,600nm,20.0s
TPAW Teton Pass 105.47 36 PFAKE 17 34 10.0
TPAW LR LR
comp=Z,799nm,20.0s
OSI Osito Audit: C 105.56 47 PFAKE 17 34 10.0
OSI LR LR
comp=Z,1μm,20.0s
LOHW Long Hollow 105.59 36 PFAKE 17 34 10.0
LOHW LR LR
comp=Z,900nm,20.0s
SNOW Snow King Moun 105.60 36 PFAKE 17 34 10.0
SNOW LR LR
comp=Z,1μm,19.0s
DGMT Dagmar 105.62 29 PFAKE 17 34 10.0
DGMT LR LR
comp=Z,1μm,22.0s
R11A Troy Canyon, C 105.70 42 PFAKE 17 34 10.0
R11A LR LR
comp=Z,1μm,20.0s
TAM Tamanrasset 105.72 299 PFAKE 17 34 10.0
TAM LR LR
comp=Z,1μm,20.0s
MVO Moncorvo 105.74 321 ePdif Pdif 17 29 53.9 +5.6
MVO Moncorvo 105.74 321 ePP PP 17 34 11.7 +1.0
MVO Moncorvo 105.74 321 eSS SS 17 48 41.7 -24
MVO Moncorvo 105.74 321 eLR LR 18 07 55.8
comp=Z,2μm,18.0s
BGU Big Grassy Mou 105.82 39 PFAKE 17 34 10.0
BGU LR LR
comp=Z,800nm,19.0s
LAO LASA Array 105.89 31 PFAKE 17 34 10.0
LAO LR LR
comp=Z,800nm,21.0s
SPUT South Promonto 105.94 38 PFAKE 17 34 10.0
SPUT LR LR
comp=Z,1μm,21.0s
PGAV Gavieira, Arco 106.00 322 ePdif Pdif 17 29 55.0 +5.6
PGAV Gavieira, Arco 106.00 322 ePP PP 17 34 14.9 +2.3
PGAV Gavieira, Arco 106.00 322 eLR LR 18 07 57.9
comp=Z,2μm,22.0s
TPNV Topopah Spring 106.03 44 PFAKE 17 34 10.0
TPNV LR LR
comp=Z,1μm,22.0s
POLO Lamas de Olo 106.07 322 ePdif Pdif 17 29 56.2 +6.4
POLO Lamas de Olo 106.07 322 ePP PP 17 34 14.6 +1.4
PVRL Vila Real 106.09 322 ePP PP 17 34 18.6 +5.4
PASC Pasadena Art C 106.17 47 PFAKE 17 34 10.0
PASC LR LR
comp=Z,1μm,21.0s
MWC Mount Wilson 106.24 47 PFAKE 17 34 10.0
MWC LR LR
comp=Z,1μm,21.0s
HWUT Hardware Ranch 106.28 38 PFAKE 17 34 10.0
HWUT LR LR
comp=Z,800nm,20.0s
TSUM Tsumeb 106.30 254 PFAKE 17 34 10.0
TSUM LR LR
comp=Z,2μm,20.0s
DUG Dugway, Tooele 106.39 40 PFAKE 17 34 10.0
DUG LR LR
comp=Z,2μm,22.0s
PVIS Viseu 106.53 321 ePP PP 17 34 17.3 +0.8
GSC Goldstone, Bar 106.55 46 PFAKE 17 34 10.0
GSC LR LR
comp=Z,700nm,21.0s
TCUT Toone Canyon 106.68 38 PFAKE 17 34 10.0
TCUT LR LR
comp=Z,2μm,21.0s
PSUT Pine Spring 106.71 41 PFAKE 17 34 10.0
PSUT LR LR
comp=Z,1μm,22.0s
BW06 Boulder Array 106.72 36 PFAKE 17 34 10.0
BW06 LR LR
comp=Z,900nm,20.0s
PD31 Pinedale Array 106.72 36 ePKiKP PKiKP 17 34 03.3 +0.4
PD31 ePKKPbc **PKKPbc 17 45 21.8 -1.1**
PD31 ePKKPdf **PKKPdf 17 45 36.1 +1.8**
PDAR Pinedale Array 106.72 36 PKiKP PKiKP 17 34 04.0 +1.0
comp=Z,1.6nm,0.7s,baz=75,slow=1.0,SNR=5.6
PDAR PKKPbc **PKKPbc 17 45 21.8 -1.1**
comp=Z,0.7nm,0.6s,baz=126,slow=4.2,SNR=7.9
PDAR PKKP **PKKPdf 17 45 35.2 +0.9**
comp=Z,2.6nm,0.8s,baz=149,slow=5.8,SNR=3.6
PCBR Castelo Branco 106.81 320 ePP PP 17 34 21.0 +2.5
JLU Jordanelle 106.97 39 PFAKE 17 34 20.0
JLU LR LR
comp=Z,1μm,22.0s
NLU North Lily Min 106.98 39 PFAKE 17 34 20.0
NLU LR LR
comp=Z,1μm,21.0s
PMRV Marv??o 107.00 320 eSS SS 17 49 24.2 +1.6
PMRV Marv??o 107.00 320 eLR LR 18 08 03.9
comp=Z,2μm,20.0s
PCAS Casmilo, Conde 107.30 321 ePdif Pdif 17 30 01.5 +6.3
PCAS Casmilo, Conde 107.30 321 ePP PP 17 34 22.4 +0.3
PCAS Casmilo, Conde 107.30 321 eSS SS 17 49 23.4 -3.2
PESTR Estremoz 107.46 320 ePdif Pdif 17 30 01.4 +5.5
PESTR Estremoz 107.46 320 ePP PP 17 34 23.7 +0.4
PESTR Estremoz 107.46 320 eSS SS 17 49 35.1 +6.3
PBAR Barrancos 107.52 319 ePP PP 17 34 25.3 +1.5
PBAR Barrancos 107.52 319 eSS SS 17 49 25.6 -4.1
TCRU Three Creeks R 107.56 41 PFAKE 17 34 20.0
TCRU LR LR
comp=Z,1μm,22.0s
CCUT Cedar City 107.59 42 PFAKE 17 34 20.0
CCUT LR LR
comp=Z,1μm,22.0s
PFO Pinyon Flats O 107.69 47 PFAKE 17 34 20.0
PFO LR LR
comp=Z,1μm,21.0s
PMTG Montargil 107.73 320 ePdif Pdif 17 30 02.7 +5.6
PMTG Montargil 107.73 320 ePP PP 17 34 25.9 +0.6
SZCU Shurtz Canyon 107.75 42 PFAKE 17 34 20.0
SZCU LR LR
comp=Z,1μm,20.0s
ULM Lac du Bonnet 107.80 23 PKiKP PKiKP 17 34 04.5 +0.1
comp=Z,5.8nm,0.8s,baz=326,slow=2.8,SNR=6.6
ULM PKKPbc **PKKPbc 17 45 16.9 -2.5**
comp=Z,6.0nm,0.8s,baz=176,slow=1.4,SNR=8.1
ULM PKKP **PKKPdf 17 45 30.7 -1.3**
comp=Z,11nm,0.8s,baz=123,slow=4.0,SNR=9.9
ULM Lac du Bonnet 107.80 23 PFAKE 17 34 20.0
ULM LR LR
comp=Z,1μm,22.0s
LDFC Landfair 107.83 45 PFAKE 17 34 20.0
LDFC LR LR
comp=Z,1μm,22.0s
TMUT Trail Mountain 107.91 39 PFAKE 17 34 20.0
TMUT LR LR
comp=Z,1μm,20.0s
EVO Evora 107.92 320 ePP PP 17 34 23.5 -3.2
LCMT Little Creek M 107.98 42 PFAKE 17 34 20.0
LCMT LR LR
comp=Z,1μm,20.0s
BAR Barrett 108.03 48 PFAKE 17 34 20.0
BAR LR LR
comp=Z,900nm,20.0s
MTPU Mount Pierson 108.06 41 PFAKE 17 34 20.0
MTPU LR LR
comp=Z,1μm,21.0s
P17A Butcher Ranch, 108.09 39 PFAKE 17 34 20.0
P17A LR LR
comp=Z,1μm,22.0s
MDND Maddock 108.16 27 PFAKE 17 34 20.0

MDND LR LR
comp=Z,1µm,22.0s
KNB Kanab 108.25 42 PFAKE 17 34 20.0
KNB LR LR
comp=Z,1µm,22.0s
P18A Preston Nutter 108.30 39 PFAKE 17 34 20.0
P18A LR LR
comp=Z,2µm,22.0s
PVAQ Vaqueiros 108.41 318 *e*Pdif **Pdif 17 30 00.8 +0.7**
PVAQ Vaqueiros 108.41 318 *e*PP PP 17 34 31.8 +1.5
PVAQ Vaqueiros 108.41 318 *e*LR LR 18 08 36.6
comp=Z,1µm,18.0s
SRU San Rafael Swe 108.45 39 PFAKE 17 34 20.0
SRU LR LR
comp=Z,1µm,21.0s
PMAFR Mafra 108.45 321 *e*PP PP 17 34 32.8 +2.2
PMAFR Mafra 108.45 321 *e*SS SS 17 49 56.4 +14
MESJ Messejana 108.47 319 *e*P **Pdif 17 30 00.2 -0.1**
MESJ *e*PP **PP 17 34 31.2 +0.5**
MESJ AMS AMS 18 24 29.4
comp=Z,2µm,22.9s
MESJ Messejana 108.47 319 *e*Pdif **Pdif 17 30 07.6 +7.3**
PCVE Castro Verde 108.48 319 *e*Pdif **Pdif 17 30 05.1 +4.7**
PCVE Castro Verde 108.48 319 *e*PP PP 17 34 32.2 +1.4
PCVE Castro Verde 108.48 319 *e*SS SS 17 49 59.0 +16
K22A Casper 108.48 34 PFAKE 17 34 20.0
K22A LR LR
comp=Z,901nm,21.0s
PNCL Nicolau / Gran 108.50 319 *e*Pdif **Pdif 17 30 07.0 +6.5**
PNCL Nicolau / Gran 108.50 319 *e*PP PP 17 34 32.8 +1.9
PNCL Nicolau / Gran 108.50 319 *e*SS SS 17 49 54.5 +12
LIS Lisbon 108.52 320 *e*PP PP 17 34 31.5 +0.5
LIS AMS AMS 18 27 09.3
comp=E,3µm,22.7s
PBDV Barranco-do-Ve 108.64 318 *e*Pdif **Pdif 17 30 08.8 +7.6**
PBDV Barranco-do-Ve 108.64 318 *e*PP PP 17 34 33.8 +1.8
RSSD Black Hills 108.78 32 PFAKE 17 34 20.0
RSSD LR LR
comp=Z,600nm,22.0s
U15A North Rim 108.94 42 PFAKE 17 34 20.0
U15A LR LR
comp=Z,1µm,22.0s
PTEO Sao Teotonio 108.96 319 *e*PP PP 17 34 43.4 +9.1
Y12C Blythe 108.97 46 PFAKE 17 34 20.0
Y12C LR LR
comp=Z,1µm,21.0s
C31A Landman Farms, 109.00 26 P **PKiKP 17 34 06.4 -0.3**
baz=321
B32A Ashes, Strandq 109.02 25 P **PKiKP 17 34 06.5 -0.3**
baz=322
A33A Warroad 109.04 24 P **PKiKP 17 34 07.0 +0.2**
baz=324
MORF Marmelete 109.06 319 *e*P **Pdif 17 30 02.8 -0.3**
MORF *e*PP **PP 17 34 35.5 +0.5**
MORF AMS AMS 18 23 28.9
comp=N,2µm,22.4s
MORF Marmelete 109.06 319 *e*PP PP 17 34 39.0 +3.9
GLA Glamis 109.14 47 PFAKE 17 34 20.0
GLA LR LR
comp=Z,800nm,21.0s
O20A White River Ci 109.17 37 P **PKiKP 17 34 08.2 +0.6**
baz=310
O20A White River Ci 109.17 37 PFAKE 17 34 20.0
O20A LR LR
comp=Z,1µm,21.0s
PFVI Vila Bisbo 109.28 319 *e*Pdif **Pdif 17 30 10.1 +6.1**
PFVI Vila Bisbo 109.28 319 *e*PP PP 17 34 41.5 +4.9
PFVI Vila Bisbo 109.28 319 PFAKE 17 34 20.0
PFVI LR LR
comp=Z,3µm,18.0s
RKT Rikitea 109.31 110 *e*PP PP 17 34 36.1 -1.9
comp=Z,348nm,30.0s
RKT *e*SKSac **SKSac 17 40 34.9 -5.2**
comp=Z,432nm,33.0s
RKT *e*SP **SP 17 43 56.6 -3.0**
comp=Z,427nm,32.9s
RKT Rikitea 109.31 110 *e*LR LR 18 06 18.4
comp=Z,3µm,23.8s,baz=290
AGMN Agassiz Nation 109.37 25 PFAKE 17 34 20.0
AGMN LR LR
comp=Z,2µm,20.0s
E31A Nome 109.89 27 P **PKiKP 17 34 08.6 +0.2**
baz=321
Y14A Wickenburg 109.91 45 PFAKE 17 34 20.0
Y14A LR LR
comp=Z,4µm,20.0s
N23A Red Feather La 109.98 35 PFAKE 17 34 20.0
N23A LR LR
comp=Z,1µm,22.0s
WUAZ Wupatki 110.08 43 PFAKE 17 34 20.0
WUAZ LR LR
comp=Z,800nm,22.0s
SCHQ Schefferville 110.22 4 PKiKP **PKiKP 17 34 08.7 -0.1**
comp=Z,1.7nm,0.3s,baz=24,slow=2.6,SNR=4.5
SCHQ Schefferville 110.22 4 *e*PKiKP **PKiKP 17 34 08.7 -0.1**
SCHQ LR LR
comp=Z,1µm,20.0s
SMCO Snowmass 110.53 37 PFAKE 17 34 20.0
SMCO LR LR
comp=Z,1µm,22.0s
MVCO Mesa Verde 110.88 40 PFAKE 17 34 20.0
MVCO LR LR
comp=Z,900nm,21.0s
ISCO Idaho Springs 110.91 36 PFAKE 17 34 20.0
ISCO LR LR
comp=Z,1µm,21.0s
EYMN Ely 111.33 22 PFAKE 17 34 20.0
EYMN LR LR
comp=Z,1µm,22.0s
W18A Petrified Fore 111.39 42 PFAKE 17 34 20.0
W18A LR LR
comp=Z,900nm,22.0s
I31A Royce, Wessing 111.55 29 P **PKiKP 17 34 11.6 -0.1**
baz=320
S22A 4UR Ranch, Cre 111.55 38 PFAKE 17 34 20.0
S22A LR LR
comp=Z,2µm,20.0s
J30A Dallas 111.62 30 P **PKiKP 17 34 12.1 +0.2**
baz=319
Q24A Divide 111.74 37 PFAKE 17 34 20.0
Q24A LR LR
comp=Z,1µm,22.0s
E36A McGregor 111.85 24 P **PKiKP 17 34 12.2 0.0**
baz=325
K30A Basset 112.05 31 P **PKiKP 17 34 13.2 +0.5**
baz=318
OGNE Ogallala 112.08 33 PFAKE 17 34 20.0
OGNE LR LR
comp=Z,900nm,22.0s
F36A Milaca 112.28 25 P **PKiKP 17 34 13.1 0.0**
baz=325
SDCO Great Sand Dun 112.35 38 P **PKiKP 17 34 14.0 +0.2**
baz=312
SDCO Great Sand Dun 112.35 38 PFAKE 17 34 30.0
SDCO LR LR
comp=Z,2µm,21.0s
TUC Tucson 112.37 45 PFAKE 17 34 30.0
TUC LR LR
comp=Z,1µm,21.0s
ECSD EROS Data Cent 112.66 28 P **PKiKP 17 34 14.0 +0.2**
baz=321
ECSD EROS Data Cent 112.66 28 PFAKE 17 34 30.0
ECSD LR LR
comp=Z,1µm,22.0s
H35A Sunnyside Ranc 112.68 26 P **PKiKP 17 34 14.1 +0.2**
baz=323
I34A Hadley 112.76 27 P **PKiKP 17 34 14.5 +0.5**
baz=322
K32A Verdigre 112.86 30 P **PKiKP 17 34 14.5 +0.2**
baz=320
TOA1 Torodi Ar. Sit 112.87 291 *e*PKiKP **PKiKP 17 34 14.2 -0.7**
TOA1 *e*PP **PP 17 35 04.8 +1.4**
TOA1 *e*PKKPbc **PKKPab 17 45 09.0 -2.0**
TORD Torodi Ar. Bea 112.87 291 PKiKP **PKiKP 17 34 14.2 -0.7**
comp=Z,6.6nm,0.8s,baz=51,slow=1.6,SNR=22
TORD PP **PP 17 35 04.8 +1.4**
comp=Z,3.5nm,0.9s,baz=67,slow=5.9,SNR=4.6
TORD PKKPbc **PKKPab 17 45 09.0 -2.0**
comp=Z,1.9nm,0.9s,baz=268,slow=2.0,SNR=5.1
SPMN Marine on St. 113.09 25 PFAKE 17 34 30.0
SPMN LR LR
comp=Z,1µm,21.0s
KSCO Kaye Shedlock' 113.13 35 PFAKE 17 34 30.0
KSCO LR LR
comp=Z,1µm,21.0s

H36A Jessenland, He 113.16 26 P **PKiKP 17 34 15.1 +0.4**
baz=324
J34A George 113.31 28 P **PKiKP 17 34 14.9 -0.2**
baz=322
T25A Trinidad 113.40 38 PFAKE 17 34 30.0
T25A LR LR
comp=Z,2µm,21.0s
ANMO Albuquerque 113.59 41 PFAKE 17 34 30.0
ANMO LR LR
comp=Z,2µm,22.0s
BGNE Belgrade 113.72 31 P **PKiKP 17 34 15.9 -0.1**
baz=319
BGNE Belgrade 113.72 31 PFAKE 17 34 30.0
BGNE LR LR
comp=Z,1µm,22.0s
I37A Lemond, Waseca 113.84 26 P **PKiKP 17 34 16.4 +0.3**
baz=324
Y22D IRIS PASSCAL I 113.86 42 PFAKE 17 34 30.0
Y22D LR LR
comp=Z,800nm,20.0s
319A Douglas 113.95 45 PFAKE 17 34 30.0
319A LR LR
comp=Z,800nm,20.0s
J36A Seneca 1, Swea 113.99 27 P **PKiKP 17 34 16.4 +0.1**
baz=323
K35A Storm Lake 114.08 28 P PKPdf 17 34 16.3 -0.3
baz=322
SRIG Santa Rosalia 114.14 50 PFAKE 17 34 30.0 +13
SRIG LR LR
comp=Z,1µm,21.0s
L34A Svendsen Farm, 114.14 29 P PKPdf 17 34 16.8 +0.1
baz=321
HSIG 114.15 48 PFAKE 17 34 30.0 +13
HSIG LR LR
comp=Z,900nm,20.0s
SNAA Sanae 114.18 197 P PKPdf 17 34 14.7 -1.1
SNAA Sanae 114.18 197 PKKPbc PKKPbc 17 44 55.3 -3.9
comp=Z,3.0nm,0.9s,baz=244,slow=3.4,SNR=10
SNAA Sanae 114.18 197 PFAKE 17 34 30.0 +14
SNAA LR LR
comp=Z,2µm,21.0s
I38A Scanlan Farm, 114.26 25 P PKPdf 17 34 16.8 0.0
baz=326
L35A Bielow Farm, R 114.42 28 P PKPdf 17 34 17.2 0.0
baz=322
K36A Gilmore City 114.49 27 P PKPdf 17 34 17.4 0.0
baz=323
K37A Belmond 114.75 27 P PKPdf 17 34 17.4 -0.4
baz=324
L36A Harris Buss Farm 114.83 28 P PKPdf 17 34 17.7 -0.3
baz=323
P32A Huiting Farm, 114.84 32 P PKPdf 17 34 18.0 -0.2
baz=318
CBKS Cedar Bluff 114.84 33 P PKPdf 17 34 18.3 +0.1
baz=317
CBKS Cedar Bluff 114.84 33 PFAKE 17 34 30.0 +12
CBKS LR LR
comp=Z,1µm,22.0s
O33A Hebron 115.01 31 P **PKPdf 17 34 18.2 -0.2**
baz=320
J39A Decorah 115.10 25 P **PKPdf 17 34 18.0 -0.5**
baz=326
VLDQ Val d'Or 115.29 13 PFAKE 17 34 30.0 +11
VLDQ LR LR
comp=Z,1µm,19.0s
SCIA State Center 115.63 27 PFAKE 17 34 30.0 +10
SCIA LR LR
comp=Z,1µm,21.0s
M37A Trindle Farm, 115.66 28 P **PKPdf 17 34 19.6 0.0**
baz=323
R32A Long Quarter, 115.67 33 P **PKPdf 17 34 19.5 -0.3**
baz=318
N36A Muff Farm, Cla 115.71 29 P **PKPdf 17 34 19.6 -0.2**
baz=322
P34A Walnut Farm, R 115.79 31 P **PKPdf 17 34 19.7 -0.3**
baz=320
K40A Colesburg 115.86 25 P **PKPdf 17 34 19.5 -0.5**
baz=326
L39A Vinton 115.97 26 P **PKPdf 17 34 19.6 -0.6**
baz=325
DRLN Deer Lake 116.02 358 PFAKE 17 34 30.0 +10
DRLN LR LR
comp=Z,2µm,21.0s
JFWS Jewell Farm 116.04 24 *e*PKIKP **PKPdf 17 34 20.0 -0.3**
JFWS MLR MLR
comp=Z,900nm,21.0s
JFWS Jewell Farm 116.04 24 *e*PKPdf **PKPdf 17 34 20.0 -0.3**
JFWS LR LR
comp=Z,900nm,21.0s
N37A Lee Faris, Mou 116.10 28 P **PKPdf 17 34 20.3 -0.2**
baz=323
R33A Olander Ranch, 116.14 33 P **PKPdf 17 34 20.7 0.0**
baz=319
Q34A Chapman 116.21 32 P **PKPdf 17 34 20.7 -0.1**
baz=320
VNA1 Neumayer--Stat 116.21 197 P **PKPdf 17 34 20.4 +0.7**
KSU1 Kansas State U 116.24 31 PFAKE 17 34 30.0 +9.2
KSU1 LR LR
comp=Z,1µm,22.0s
O36A Bolckow 116.24 29 P **PKPdf 17 34 20.5 -0.3**
baz=322
K41A Shullsburg 116.27 25 P **PKPdf 17 34 20.2 -0.5**
baz=327
MNTX Cornudas Mount 116.36 43 *e*PKPdf **PKPdf 17 34 22.3 +1.1**
MNTX LR LR
comp=Z,800nm,20.0s
GLMI Grayling 116.41 19 PFAKE 17 34 30.0 +9.0
GLMI LR LR
comp=Z,1µm,21.0s
M39A Webster 116.43 27 P **PKPdf 17 34 20.7 -0.4**
baz=325
MSTX Muleshoe 116.52 39 *e*PKPdf **PKPdf 17 34 22.3 +0.7**
MSTX LR LR
comp=Z,2µm,22.0s
R34A Isabella, Hill 116.53 32 P **PKPdf 17 34 21.3 -0.1**
baz=319
P36A Good Intent, A 116.53 30 P **PKPdf 17 34 21.4 +0.1**
baz=322
AMTX Amarillo 116.55 38 PFAKE 17 34 30.0 +8.3
AMTX LR LR
comp=Z,900nm,21.0s
O37A Wolven Farm, M 116.60 29 P **PKPdf 17 34 21.2 -0.2**
baz=323
Q35A Mercer Eighty, 116.71 31 P **PKPdf 17 34 21.6 -0.1**
baz=320
N39A Derby Farms, D 116.77 27 P **PKPdf 17 34 21.4 -0.4**
baz=324
P37A Lathrop 116.96 29 P **PKPdf 17 34 21.7 -0.5**
baz=322
LMQ La Malbaie 117.07 8 *e*PKPdf **PKPdf 17 34 21.4 -0.8**
LMQ LR LR
comp=Z,1µm,21.0s
O39A Kirksville 117.26 28 P **PKPdf 17 34 22.1 -0.7**
baz=324
PMOZ Porto Moniz, M 117.31 320 *e*LR LR 18 14 23.1
comp=Z,935nm,18.0s
P38A Dawn 117.32 29 P **PKPdf 17 34 22.5 -0.3**
baz=323
R36A Gordon, Harris 117.39 31 P **PKPdf 17 34 22.3 -0.8**
baz=321
S35A Otter Creek Ra 117.47 32 P **PKPdf 17 34 22.9 -0.3**
baz=320
T34A McClaskey Farm 117.52 33 P **PKPdf 17 34 23.1 -0.3**
baz=319
O40A La Belle 117.67 27 P **PKPdf 17 34 23.4 -0.1**
baz=325
R37A Teagarden Farm 117.73 31 P **PKPdf 17 34 22.9 -0.8**
baz=322
U34A Anderson Ranch 117.77 34 P **PKPdf 17 34 23.7 -0.1**
baz=318
U34A Anderson Ranch 117.77 34 *e*PKPdf **PKPdf 17 34 24.0 +0.1**
U34A LR LR
comp=Z,1µm,21.0s
P39B Salisbury 117.78 28 P **PKPdf 17 34 23.2 -0.5**
baz=324
W32A Sentinel 117.79 36 P **PKPdf 17 34 24.4 +0.4**
baz=316
Q38A Cooks Store, C 117.81 29 P **PKPdf 17 34 23.2 -0.6**
baz=323
S36A Lake Cedric, C 117.81 31 P **PKPdf 17 34 23.6 -0.3**
baz=321
SLBS Sierra La Lagu 117.86 53 PFAKE 17 34 40.0 +16
SLBS LR LR
comp=Z,1µm,20.0s
T35A Sooner Cattle 117.95 33 P **PKPdf 17 34 24.1 -0.1**
baz=319
SADO Sadowa 118.03 15 PFAKE 17 34 40.0 +16

SADO LR LR
comp=Z,1µm,21.0s
Q39A Willow Grove F 118.04 29 P **PKPdf 17 34 23.9 -0.3**
baz=323
P40A Paris 118.07 28 P **PKPdf 17 34 23.8 -0.5**
baz=324
O41A Passleys Farm, 118.11 27 P **PKPdf 17 34 23.6 -0.8**
baz=326
S37A Fort Scott 118.16 31 P **PKPdf 17 34 24.1 -0.4**
baz=321
T36A Boggs Farm, Ca 118.17 32 P **PKPdf 17 34 24.6 0.0**
baz=320
W33A Caddo, Fort Co 118.21 35 P **PKPdf 17 34 25.5 +0.8**
baz=317
V34A Guthrie 118.23 34 P **PKPdf 17 34 25.7 +0.9**
baz=318
V34A Guthrie 118.23 34 *e*PKPdf **PKPdf 17 34 25.3 +0.5**
V34A LR LR
comp=Z,1µm,21.0s
R38A Fenwick Farm, 118.28 30 P **PKPdf 17 34 23.8 -0.9**
baz=322
PLVO Plevna 118.28 14 PFAKE 17 34 40.0 +15
PLVO LR LR
comp=Z,1µm,19.0s
WMOK Wichita Mounta 118.33 36 P **PKPdf 17 34 25.0 0.0**
baz=317
WMOK Wichita Mounta 118.33 36 *e*PKIKP **PKPdf 17 34 24.6 -0.4**
WMOK MLR MLR
comp=Z,1µm,21.0s
WMOK Wichita Mounta 118.33 36 *e*PKPdf **PKPdf 17 34 24.6 -0.4**
WMOK LR LR
comp=Z,1µm,21.0s
P41A Barry, Barry 118.39 27 P **PKPdf 17 34 24.4 -0.5**
baz=326
HDIL Hopedale 118.41 25 *e*PKPdf **PKPdf 17 34 25.4 +0.5**
HDIL LR LR
comp=Z,1µm,22.0s
Q40A Laux Farm, Aux 118.49 28 P **PKPdf 17 34 24.8 -0.4**
baz=324
W34A Bridge Creek, 118.53 35 PFAKE 17 34 40.0 +15
W34A LR LR
comp=Z,1µm,20.0s
R39A Chumby, Stover 118.59 29 P **PKPdf 17 34 24.8 -0.5**
baz=323
T37A Cheneyville 18 118.61 31 P **PKPdf 17 34 25.2 -0.2**
baz=321
S38A Stockton 118.72 30 P **PKPdf 17 34 24.9 -0.7**
baz=322
U36A Oologah 118.76 33 P **PKPdf 17 34 25.9 +0.2**
baz=320
P42A Winchester 118.78 26 P **PKPdf 17 34 25.3 -0.4**
baz=326
Y33A Hilltop Ranch, 118.95 36 P **PKPdf 17 34 26.2 0.0**
baz=316
S39A Bolivar 118.95 30 P **PKPdf 17 34 25.7 -0.4**
baz=323
X34A Smith Ranch, M 118.97 35 P **PKPdf 17 34 26.7 +0.5**
baz=317
AAM Ann Arbor 118.97 20 PFAKE 17 34 40.0 +14
AAM LR LR
comp=Z,2µm,20.0s
R40A Maddies Statio 118.97 29 P **PKPdf 17 34 25.8 -0.3**
baz=324
T38A Diamond 119.00 31 P **PKPdf 17 34 25.7 -0.5**
baz=322
TX31 Lajitas Ar. Si 119.01 44 *e*PKPdf **PKPdf 17 34 26.9 +0.3**
TX31 *e*PKPdf **PKiKP 17 34 27.1 +0.5**
LTX Lajitas 119.02 44 *e*PKIKP **PKPdf 17 34 27.1 +0.5**
LTX Lajitas 119.02 44 *e*PKPdf **PKPdf 17 34 27.1 +0.5**
TXAR Lajitas Array 119.02 44 PKP **PKPdf 17 34 27.1 +0.5**
comp=Z,5.4nm,0.7s,baz=273,slow=1.3,SNR=32
TXAR PKKPbc **PKKPbc 17 44 38.2 -2.9**
comp=Z,0.5nm,0.8s,baz=126,slow=1.7,SNR=3.5
U37A Salina 119.07 32 P **PKPdf 17 34 26.2 -0.1**
baz=321
W35A Tecumseh 119.09 34 P **PKPdf 17 34 26.4 0.0**
baz=318
TUL1 Leonard 119.09 33 P **PKPdf 17 34 26.2 -0.2**
baz=320
TUL1 Leonard 119.09 33 *e*PKPdf **PKPdf 17 34 26.9 +0.5**
TUL1 LR LR
comp=Z,1µm,22.0s
V36A Jenks 119.11 33 P **PKPdf 17 34 26.5 +0.1**
baz=320
HPIG 119.14 47 *e*PKPdf **PKPdf 17 34 27.6 +0.6**
HPIG LR LR
comp=Z,900nm,21.0s
FRNY Flat Rock 119.20 11 PFAKE 17 34 40.0 +14
FRNY LR LR
comp=Z,1µm,20.0s
LONY Lake Ozonia 119.22 12 *e*PKPdf **PKPdf 17 34 26.4 0.0**
Q42A Golden Eagle 119.25 27 P **PKPdf 17 34 26.4 -0.2**
baz=326
LMN Caledonia Moun 119.30 4 *e*PKPdf **PKPdf 17 34 26.0 -0.5**
LMN LR LR
comp=Z,2µm,20.0s
ABTX Abilene, Hawle 119.34 38 P **PKPdf 17 34 27.2 +0.2**
baz=315
ABTX Abilene, Hawle 119.34 38 *e*PKPdf **PKPdf 17 34 27.8 +0.8**
ABTX LR LR
comp=Z,2µm,21.0s
Z33A Whitaker Ranch 119.39 37 P **PKPdf 17 34 27.4 +0.4**
baz=316
U38A Gravette 119.41 32 P **PKPdf 17 34 26.5 -0.5**
baz=321
S40A Lebanon 119.42 29 P **PKPdf 17 34 26.4 -0.6**
baz=323
SFIN Lafayette 119.43 24 P **PKPdf 17 34 26.6 -0.3**
baz=330
SFIN Lafayette 119.43 24 *e*PKPdf **PKPdf 17 34 26.9 0.0**
SFIN LR LR
comp=Z,1µm,21.0s
PKME Peaks-Kenny Pk 119.45 8 *e*PKPdf **PKPdf 17 34 27.1 +0.3**
V37A Hulbert 119.45 32 P **PKPdf 17 34 26.8 -0.3**
baz=320
T39A Clever 119.46 30 P **PKPdf 17 34 26.8 -0.3**
baz=322
Y34A Reagan Ranch, 119.48 36 P **PKPdf 17 34 27.2 0.0**
baz=317
Q43A New Douglas 119.59 26 P **PKPdf 17 34 27.1 -0.2**
baz=327
X35A Drake 119.59 35 P **PKPdf 17 34 27.1 -0.3**
baz=318
HHAR Hobbs 119.76 31 *e*PKPdf **PKPdf 17 34 27.4 -0.3**
T40A Mansfield 119.77 30 P **PKPdf 17 34 27.1 -0.6**
baz=323
133A Hamilton Ranch 119.78 38 P **PKPdf 17 34 27.9 +0.1**
baz=316
S41A Jillco Farms, 119.78 29 P **PKPdf 17 34 27.4 -0.3**
baz=324
X36A Centrahoma 119.81 34 P **PKPdf 17 34 28.0 +0.2**
baz=319
V38A Canehill 119.85 32 P **PKPdf 17 34 27.4 -0.5**
baz=321
GGN Saint George 119.87 6 *e*PKPdf **PKPdf 17 34 27.1 -0.5**
GGN LR LR
comp=Z,1µm,20.0s
W37B Quinton 119.87 33 P **PKPdf 17 34 27.8 -0.1**
baz=320
Q44A Meyer Farm, Va 119.91 26 P **PKPdf 17 34 27.5 -0.4**
baz=327
U39A Green Forest 119.91 31 P **PKPdf 17 34 27.3 -0.7**
baz=322
Y35A Marietta 119.92 35 P **PKPdf 17 34 27.8 -0.2**
baz=318
LBNH Lisbon 120.07 10 *e*PKIKP **PKPdf 17 34 28.6 +0.6**
LBNH Lisbon 120.07 10 *e*PKPdf **PKPdf 17 34 28.6 +0.6**
S42A Caledonia 120.07 28 P **PKPdf 17 34 27.9 -0.4**
baz=325
MDV Middlebury 120.08 11 *e*PKPdf **PKPdf 17 34 28.4 +0.4**
WVL Waterville 120.09 8 *e*PKPdf **PKPdf 17 34 27.7 -0.4**
WVL LR LR
comp=Z,900nm,19.0s
EMMW East Machias 120.21 6 *e*PKPdf **PKPdf 17 34 27.8 -0.4**
233A Rising Star 120.21 38 P **PKPdf 17 34 28.8 +0.1**
baz=315
T41A Mountain View 120.22 29 P **PKPdf 17 34 28.2 -0.4**
baz=324
Z35A Perchaven, San 120.22 36 P **PKPdf 17 34 28.5 -0.1**
baz=317
U40A Yellville 120.24 30 P **PKPdf 17 34 28.1 -0.5**
baz=323
V39A Pettigrew 120.25 31 P **PKPdf 17 34 28.0 -0.7**
baz=322
MMNY Mt. Morris Dam 120.26 15 *e*PKPdf **PKPdf 17 34 28.1 -0.3**
134A White-Moore Ra 120.30 37 P **PKPdf 17 34 29.2 +0.4**
baz=316

X37A	Clayton	120.32	34	P	PKPdf	17 34 28.7	-0.1	
	baz=320							
Y36A	Durant	120.34	35	P	PKPdf	17 34 28.9	+0.1	
	baz=318							
W38A	Poteau	120.40	33	P	PKPdf	17 34 28.9	0.0	
	baz=321							
R44A	Waltonville	120.43	26	P	PKPdf	17 34 28.8	-0.1	
	baz=327							
OLIL	Olney	120.44	25	ePKPdf	PKPdf	17 34 28.9	0.0	
OLIL				LR	LR			
	comp=Z,1µm,22.0s							
HNH	Hanover	120.53	10	ePKPdf	PKPdf	17 34 29.2	+0.3	
HNH				LR	LR			
	comp=Z,2µm,22.0s							
X38A	Whitesboro	120.55	33	P	PKPdf	17 34 29.6	+0.4	
	baz=320							
S43A	Fulton Ridge,	120.56	28	P	PKPdf	17 34 28.6	-0.6	
	baz=326							
Y37A	Hugo	120.65	34	P	PKPdf	17 34 29.4	-0.1	
	baz=319							
333A	Richland Sprin	120.65	39	P	PKPdf	17 34 29.4	-0.2	
	baz=315							
ALLY	Alegheny Colle	120.66	17	PFAKE		17 34 40.0	+11	
ALLY				LR	LR			
	comp=Z,2µm,18.0s							
234A	Clairette	120.68	38	P	PKPdf	17 34 29.8	+0.2	
	baz=316							
W39A	Magazine	120.69	32	P	PKPdf	17 34 29.3	-0.2	
	baz=321							
V40A	Witts Springs	120.69	31	P	PKPdf	17 34 28.9	-0.6	
	baz=322							
BLO	Bloomington	120.70	24	ePKIKP	PKPdf	17 34 29.4	0.0	
BLO				MLR	MLR			
	comp=Z,1µm,20.0s							
BLO	Bloomington	120.70	24	ePKPdf	PKPdf	17 34 29.4	0.0	
BLO				LR	LR			
	comp=Z,1µm,20.0s							
135A	Vickery Place,	120.70	37	P	PKPdf	17 34 30.2	+0.6	
	baz=317							
U41A	Viola	120.70	30	P	PKPdf	17 34 29.2	-0.3	
	baz=324							
Z36A	Blue Ridge	120.73	35	P	PKPdf	17 34 29.9	+0.3	
	baz=318							
JCT	Junction City	120.74	40	P	PKPdf	17 34 29.9	+0.1	
	baz=314							
JCT	Junction City	120.74	40	ePKIKP	PKPdf	17 34 30.5	+0.7	
JCT				MLR	MLR			
	comp=Z,900nm,22.0s							
JCT	Junction City	120.74	40	ePKPdf	PKPdf	17 34 30.5	+0.7	
JCT				LR	LR			
	comp=Z,900nm,22.0s							
SIUC	Southern Illin	120.82	27	ePKPdf	PKPdf	17 34 29.7	0.0	
SIUC				LR	LR			
	comp=Z,1µm,21.0s							
S44A	Carbondale	120.82	27	P	PKPdf	17 34 29.6	-0.1	
	baz=327							
FFD	Franklin Falls	120.86	10	PFAKE		17 34 40.0	+10	
FFD				LR	LR			
	comp=Z,2µm,22.0s							
T43A	Greenville	120.87	28	P	PKPdf	17 34 29.3	-0.5	
	baz=325							
M54A	Oil Creek Stat	120.92	17	P	PKPdf	17 34 29.5	-0.3	
	baz=338							
433A	Art	120.99	39	P	PKPdf	17 34 30.1	-0.1	
	baz=315							
U42A	Revenden	121.02	29	P	PKPdf	17 34 29.7	-0.4	
	baz=324							
V41A	Mountainview	121.04	30	P	PKPdf	17 34 29.5	-0.6	
	baz=323							
X39A	Fountain Ranch	121.05	33	P	PKPdf	17 34 30.5	+0.3	
	baz=321							
PBMO	Poplar Bluff	121.05	28	ePKPdf	PKPdf	17 34 30.0	-0.1	
PBMO				LR	LR			
	comp=Z,700nm,20.0s							
W40A	Ferguson Farm,	121.05	31	P	PKPdf	17 34 29.9	-0.2	
	baz=322							
ACSO	Alum Creek Sta	121.05	20	ePKPdf	PKPdf	17 34 30.2	+0.1	
ACSO				LR	LR			
	comp=Z,2µm,22.0s							
WHTX	Lake Whitney,	121.08	37	P	PKPdf	17 34 30.5	+0.2	
	baz=317							
WHTX	Lake Whitney,	121.08	37	ePKPdf	PKPdf	17 34 30.8	+0.4	
WHTX				LR	LR			
	comp=Z,1µm,22.0s							
334A	Lometa	121.10	38	P	PKPdf	17 34 30.3	-0.1	
	baz=316							
S45A	Carrier Mills	121.13	26	P	PKPdf	17 34 30.2	0.0	
	baz=327							
Y38A	Idabel	121.17	34	P	PKPdf	17 34 30.1	-0.3	
	baz=320							
TRY	Troy	121.21	12	PFAKE		17 34 40.0	+10	
TRY				LR	LR			
	comp=Z,2µm,21.0s							
BINY	Binghamton	121.23	14	ePKPdf	PKPdf	17 34 30.8	+0.4	
136A	Ennis	121.27	36	P	PKPdf	17 34 30.8	+0.2	
	baz=318							
USIN	University of	121.27	25	PFAKE		17 34 40.0	+9.5	
USIN				LR	LR			
	comp=Z,1µm,20.0s							
DBIC	Dimbokro	121.29	288	PKP	PKPdf	17 34 31.2	0.0	
	comp=Z,17nm,0.7s,baz=55,slow=2.7,SNR=24							
DBIC	Dimbokro	121.29	288	ePKPdf	PKPdf	17 34 31.3	+0.2	
KIC	Kosan Boka	121.30	287	ePKIKP	PKPdf	17 34 30.9	-0.3	
	comp=Z,39nm,0.6s							
MIAR	Mount Ida	121.30	32	P	PKPdf	17 34 30.6	-0.1	
	baz=321							
MIAR	Mount Ida	121.30	32	ePKIKP	PKPdf	17 34 31.3	+0.6	
MIAR				MLR	MLR			
	comp=Z,1µm,22.0s							
MIAR	Mount Ida	121.30	32	ePKPdf	PKPdf	17 34 31.3	+0.6	
MIAR				LR	LR			
	comp=Z,1µm,22.0s							
X201	Greenbrier Sit	121.33	31	ePKPdf	PKPdf	17 34 30.3	-0.4	
N54A	Moraine State	121.33	18	P	PKPdf	17 34 30.4	-0.2	
	baz=337							
X301	Greenbrier Sit	121.35	31	ePKPdf	PKPdf	17 34 30.7	0.0	
WHAR	Wooly Hollow	121.36	31	ePKPdf	PKPdf	17 34 30.7	-0.1	
V42A	Cord	121.39	30	P	PKPdf	17 34 30.3	-0.5	
	baz=324							
434A	Burnet	121.45	39	P	PKPdf	17 34 30.8	-0.3	
	baz=316							
TIC	Toumodi	121.45	288	ePKIKP	PKPdf	17 34 30.9	-0.6	
W41B	Gary Mavity, V	121.48	31	P	PKPdf	17 34 30.3	-0.7	
	baz=323							
Y39A	Lockesburg	121.50	33	P	PKPdf	17 34 30.9	-0.1	
	baz=321							
533A	Kerrville	121.50	40	P	PKPdf	17 34 31.4	+0.1	
	baz=314							
WCI	Wyandotte Cave	121.60	24	ePKIKP	PKPdf	17 34 31.5	+0.3	
WCI				MLR	MLR			
	comp=Z,1µm,20.0s							
WCI	Wyandotte Cave	121.60	24	ePKPdf	PKPdf	17 34 31.5	+0.3	
WCI				LR	LR			
	comp=Z,1µm,20.0s							
137A	Heron Place, G	121.61	35	P	PKPdf	17 34 32.2	+0.9	
	baz=318							
LIC	Lamto	121.61	287	ePKIKP	PKPdf	17 34 31.2	-0.6	
	comp=Z,58nm,0.6s							
335A	Moody	121.61	38	P	PKPdf	17 34 31.5	+0.1	
	baz=316							
PVMO	Portageville	121.68	28	PFAKE		17 34 40.0	+8.7	
PVMO				LR	LR			
	comp=Z,1µm,22.0s							
UALR	University of	121.75	31	ePKPdf	PKPdf	17 34 31.6	+0.1	
UALR				LR	LR			
	comp=Z,2µm,22.0s							
HRV	Adam Dziewonsk	121.82	10	ePKIKP	PKPdf	17 34 31.6	+0.2	
HRV				MLR	MLR			
	comp=Z,1µm,20.0s							
HRV	Adam Dziewonsk	121.82	10	ePKPdf	PKPdf	17 34 31.6	+0.2	
HRV				LR	LR			
	comp=Z,1µm,20.0s							
633A	Saathoff Ranch	121.84	40	P	PKPdf	17 34 32.2	+0.3	
	baz=314							
534A	Blanco	121.88	39	P	PKPdf	17 34 31.7	-0.3	
	baz=315							
435B	Jarrell	121.88	38	P	PKPdf	17 34 32.2	+0.3	
	baz=316							
336A	Riesel	121.88	37	P	PKPdf	17 34 31.9	+0.1	
	baz=317							
KSPA	Keystone Colle	121.89	14	PFAKE		17 34 40.0	+8.4	
KSPA				LR	LR			
	comp=Z,1µm,20.0s							
QUA2	Belchertown	121.90	11	PFAKE		17 34 40.0	+8.4	
QUA2				LR	LR			
	comp=Z,2µm,20.0s							
138A	Matatall Enter	121.94	35	P	PKPdf	17 34 32.7	+0.8	
	baz=319							
WES	Weston	121.98	10	ePKIKP	PKPdf	17 34 32.0	+0.3	
WES				MLR	MLR			
	comp=Z,2µm,21.0s							
WES	Weston	121.98	10	ePKPdf	PKPdf	17 34 32.0	+0.3	
WES				LR	LR			
	comp=Z,2µm,21.0s							
237A	Washetta, Mont	122.03	36	P	PKPdf	17 34 32.8	+0.6	
	baz=318							
BCX	Boston College	122.05	10	ePKPpre	PKPpre	17 34 20.5		
BCX				ePKPdf	PKiKP	17 34 32.7	+0.7	
832A	Faith Ranch, C	122.13	42	P	PKPdf	17 34 32.9	+0.5	
	baz=313							
SSPA	Standing Stone	122.22	16	ePKPdf	PKPdf	17 34 32.5	+0.2	
SSPA				LR	LR			
	comp=Z,1µm,20.0s							
HALT	Halls	122.26	28	PFAKE		17 34 40.0	+7.5	
HALT				LR	LR			
	comp=Z,1072µm,20.0s							
436A	Wall Ranch, Ga	122.36	38	P	PKPdf	17 34 33.3	+0.5	
	baz=317							
O56A	Blue Knob Stat	122.38	17	P	PKPdf	17 34 32.6	-0.1	
	baz=339							
Z40A	Long Farm, Mag	122.39	33	P	PKPdf	17 34 33.0	+0.2	
	baz=321							
BRYW	Bryant College	122.39	10	ePKPdf	PKPdf	17 34 32.8	+0.2	
BRYW				LR	LR			
	comp=Z,2µm,20.0s							
833A	Chaparral WMA,	122.48	42	P	PKPdf	17 34 33.8	+0.7	
	baz=323							
337A	Centerville	122.49	37	P	PKPdf	17 34 34.1	+1.0	
	baz=318							
N59A	State Game Lan	122.49	14	P	PKPdf	17 34 32.8	0.0	
	baz=342							
MCWV	Mont Chateau	122.58	18	ePKPdf	PKPdf	17 34 33.5	+0.5	
ODNJ	Ogdensburg	122.60	13	ePKPdf	PKPdf	17 34 33.4	+0.4	
ODNJ				LR	LR			
	comp=Z,1µm,19.0s							
WVT	Waverly	122.75	27	ePKIKP	PKPdf	17 34 33.5	+0.1	
WVT				MLR	MLR			
	comp=Z,1µm,21.0s							
WVT	Waverly	122.75	27	ePKPdf	PKPdf	17 34 33.5	+0.1	
WVT				LR	LR			
	comp=Z,1µm,21.0s							
635A	Leesville	122.76	39	P	PKPdf	17 34 34.5	+0.9	
	baz=315							
239A	Gary	122.76	35	P	PKPdf	17 34 34.0	+0.4	
	baz=320							
Y42A	Garnett, Star	122.77	31	P	PKPdf	17 34 33.8	+0.3	
	baz=323							
338A	Crockett	122.79	36	P	PKPdf	17 34 34.1	+0.5	
	baz=318							
PAL	Palisades	122.82	13	ePKIKP	PKPdf	17 34 33.7	+0.3	
PAL				MLR	MLR			
	comp=Z,2µm,19.0s							
PAL	Palisades	122.82	13	ePKPdf	PKPdf	17 34 33.7	+0.3	
PAL				LR	LR			
	comp=Z,2µm,19.0s							
NATX	Nacogdoches	122.85	35	PFAKE		17 34 50.0	+16	
NATX				LR	LR			
	comp=Z,900nm,22.0s							
W45A	Hickory Valley	122.96	28	P	PKPdf	17 34 33.6	-0.2	
	baz=326							
933A	Laredo	123.04	42	P	PKPdf	17 34 35.3	+1.1	
	baz=313							
X44A	Crenshaw	123.04	30	P	PKPdf	17 34 34.1	+0.1	
	baz=325							
636A	Smothers Creek	123.13	39	P	PKPdf	17 34 35.7	+1.4	
	baz=316							
Y43A	Makayla and Ka	123.14	31	P	PKPdf	17 34 34.6	+0.5	
	baz=324							
438A	Sam Houston St	123.14	37	P	PKPdf	17 34 35.4	+1.1	
	baz=318							
537A	Green Hill Far	123.14	38	P	PKPdf	17 34 35.7	+1.4	
	baz=317							
834A	Tilden	123.16	41	P	PKPdf	17 34 35.8	+1.5	
	baz=314							
141A	Papa Simpson,	123.16	33	P	PKPdf	17 34 34.7	+0.4	
	baz=321							
MVL	Millersville	123.22	15	ePKPdf	PKPdf	17 34 34.8	+0.6	
OXF	Oxford	123.38	29	ePKIKP	PKPdf	17 34 34.8	+0.2	
OXF	Oxford	123.38	29	ePKPdf	PKPdf	17 34 34.8	+0.2	
Y44A	Strider, Charl	123.45	30	P	PKPdf	17 34 34.8	0.0	
	baz=324							
X45A	UM Field Stati	123.46	29	P	PKPdf	17 34 34.6	-0.2	
	baz=325							
736A	Circle Diamond	123.50	39	P	PKPdf	17 34 36.6	+1.6	
	baz=316							
PSUB	Penn St. - Bra	123.51	14	ePKPdf	PKPdf	17 34 34.5	-0.3	
PSUB				LR	LR			
	comp=Z,1µm,21.0s							
934A	Benavides	123.54	42	P	PKPdf	17 34 36.9	+1.7	
	baz=314							
340A	Bronson	123.54	35	P	PKPdf	17 34 35.6	+0.6	
	baz=320							
637A	Eagle Lake	123.60	38	P	PKPdf	17 34 36.5	+1.3	
	baz=317							
SDMD	Soldier's Deli	123.65	16	ePKPdf	PKPdf	17 34 35.8	+0.8	
034A	Hebbronville	123.80	42	P	PKPdf	17 34 37.2	+1.6	
	baz=313							
Y45A	Yeager Farm, C	123.85	30	P	PKPdf	17 34 35.6	0.0	
	baz=325							
Z44A	Pea Ridge, Bel	123.89	31	P	PKPdf	17 34 36.0	+0.4	
	baz=324							
ZAIG	Zacatecas	123.91	49	ePKPdf	PKPdf	17 34 37.5	+1.1	
ZAIG				LR	LR			
	comp=Z,1µm,22.0s							
440A	Kirbyville	124.01	35	P	PKPdf	17 34 37.0	+1.1	
	baz=319							
737A	Port Lavaca	124.02	39	P	PKPdf	17 34 37.6	+1.6	
	baz=316							
TZTN	Tazewell	124.13	23	ePKPdf	PKPdf	17 34 36.1	0.0	
TZTN				LR	LR			
	comp=Z,900nm,19.0s							
Y46A	Houston	124.16	29	P	PKPdf	17 34 36.0	-0.2	
	baz=326							
Z45A	Winona	124.18	30	P	PKPdf	17 34 36.5	+0.3	
	baz=325							
035A	Encino	124.26	42	P	PKPdf	17 34 38.1	+1.6	
	baz=314							
SWET	Sewanee	124.34	26	ePKPdf	PKPdf	17 34 35.8	-0.8	
Y47A	UCPARC, Winfie	124.61	28	P	PKPdf	17 34 36.5	-0.5	
	baz=327							
035Z	Hargill	124.61	42	P	PKPdf	17 34 38.6	+1.4	
	baz=314							
BLA	Blacksburg	124.63	20	ePKIKP	PKPdf	17 34 37.3	+0.2	
BLA				MLR	MLR			
	comp=Z,1µm,21.0s							
BLA	Blacksburg	124.63	20	ePKPdf	PKPdf	17 34 37.3	+0.2	
BLA				LR	LR			
	comp=Z,1µm,21.0s							
CBN	Corbin Frederi	124.64	17	PFAKE		17 34 50.0	+13	
CBN				LR	LR			
	comp=Z,1µm,19.0s							
145A	Houston Renfro	124.69	31	P	PKPdf	17 34 37.5	+0.3	
	baz=324							
Z46A	Louisville	124.69	30	P	PKPdf	17 34 37.7	+0.5	
	baz=325							
VBMS	Vicksburg	124.70	32	PFAKE		17 34 50.0	+13	
VBMS				LR	LR			
	comp=Z,900nm,19.0s							
CPCT	Cooper Cave	124.71	24	ePKPdf	PKPdf	17 34 37.6	+0.4	
CPCT				LR	LR			
	comp=Z,1µm,22.0s							
VWCC	Virginia Weste	124.75	19	ePKPdf	PKPdf	17 34 37.7	+0.4	
244A	Avery, Jackson	124.76	32	P	PKPdf	17 34 37.6	+0.2	
	baz=323							
TKL	Tuckaleechee C	124.83	24	ePKIKP	PKPdf	17 34 37.7	+0.3	
TKL				MLR	MLR			
	comp=Z,1µm,22.0s							
TKL	Tuckaleechee C	124.83	24	ePKPdf	PKPdf	17 34 37.7	+0.3	
TKL				LR	LR			
	comp=Z,1µm,22.0s							
Z47A	Carrollton	125.09	29	P	PKPdf	17 34 37.8	-0.2	
	baz=326							
245A	Little AP, Sta	125.16	31	P	PKPdf	17 34 38.6	+0.4	
	baz=324							
Z48A	Northport	125.18	28	P	PKPdf	17 34 37.7	-0.4	
	baz=327							
URVA	University of	125.18	17	ePKPdf	PKPdf	17 34 38.3	+0.3	
344A	Westbrook Farm	125.20	32	P	PKPdf	17 34 38.9	+0.7	
	baz=323							
147A	Livingston	125.43	29	P	PKPdf	17 34 38.3	-0.3	
	baz=326							
LRAL	Lakeview Retre	125.72	28	ePKPdf	PKPdf	17 34 39.6	+0.4	
LRAL				LR	LR			
	comp=Z,1µm,19.0s							
247A	Quitman	125.78	30	P	PKPdf	17 34 40.0	+0.7	
	baz=325							
248A	Dixon Mills	126.16	29	P	PKPdf	17 34 40.4	+0.3	
	baz=326							
KMSC	Kings Mountain	126.19	22	P	PKPdf	17 34 40.2	+0.2	
	baz=334							
KMSC	Kings Mountain	126.19	22	ePKPdf	PKPdf	17 34 40.1	+0.1	
KMSC				LR	LR			
	comp=Z,2µm,21.0s							
347A	Saraland	126.35	31	P	PKPdf	17 34 41.1	+0.7	
	baz=325							
348A	Jackson	126.65	30	P	PKPdf	17 34 41.9	+0.9	
	baz=326							
MOIG	Morelia	126.81	51	PFAKE		17 34 50.0	+8.1	
MOIG				LR	LR			
	comp=Z,2µm,20.0s							
GOGA	Godfrey	126.92	25	ePKIKP	PKPdf	17 34 42.3	+0.8	
GOGA				MLR	MLR			
	comp=Z,1µm,22.0s							
GOGA	Godfrey	126.92	25	ePKPdf	PKPdf	17 34 42.3	+0.8	
GOGA				LR	LR			
	comp=Z,1µm,22.0s							
JSC	Jenkinsville	126.99	22	ePKIKP	PKPdf	17 34 42.7	+1.1	
JSC	Jenkinsville	126.99	22	ePKPdf	PKPdf	17 34 42.7	+1.1	
CNNC	Cliffs of the	127.25	18	PFAKE		17 34 50.0	+8.0	
CNNC				LR	LR			
	comp=Z,2µm,21.0s							
BRAL	Brewton	127.26	29	ePKPdf	PKPdf	17 34 43.7	+1.5	
BRAL				LR	LR			
	comp=Z,1µm,21.0s							
NHSC	New Hope	128.44	22	PFAKE		17 35 00.0	+16	
NHSC				LR	LR			
	comp=Z,1µm,22.0s							
UNM	Universidad Na	128.52	50	PFAKE		17 35 00.0	+15	
UNM				LR	LR			
	comp=Z,2µm,19.0s							
TIGA	Tifton	128.58	26	P	PKPdf	17 34 45.3	+0.6	
	baz=330							
TIGA	Tifton	128.58	26	ePKPdf	PKPdf	17 34 45.4	+0.6	
TIGA				LR	LR			
	comp=Z,1µm,21.0s							
TLIG	Tlapa	130.06	51	ePKPdf	PKPdf	17 34 48.0	0.0	
TLIG				LR	LR			
	comp=Z,1µm,21.0s							
DWPF	Disney Wildern	132.39	26	PFAKE		17 35 00.0	+8.0	
DWPF				LR	LR			
	comp=Z,1µm,20.0s							
ASCN	Ascension	134.81	274	PFAKE		17 35 10.0	+13	
ASCN				LR	LR			
	comp=Z,1µm,20.0s							
CCIG	Comitan	135.58	47	PFAKE		17 35 10.0	+12	
CCIG				LR	LR			
	comp=Z,1µm,22.0s							
USHA	Ushuaia	139.69	172	PKP	PKPdf	17 35 04.1	-0.6	
	comp=Z,49nm,0.7s,baz=122,slow=1.5							
GRTK	Grand Turk	142.12	17	PFAKE		17 35 20.0	+10	
GRTK				LR	LR			
	comp=Z,1µm,22.0s							
GTBY	Guantanamo Bay	142.26	24	PFAKE		17 35 20.0	+10	
GTBY				LR	LR			
	comp=Z,1µm,20.0s							
MTDJ	Mount Denham	142.74	28	PFAKE		17 35 20.0	+8.6	
MTDJ				LR	LR			
	comp=Z,800nm,20.0s							
SDDR	Presa de Saban	144.46	19	ePKPdf	PKPbc	17 35 12.8	-0.1	
SDDR				LR	LR			
	comp=Z,2µm,22.0s							
BANI	BANI	145.30	17	ePKPbc	PKPdf	17 35 16.5	+0.6	
SDD	Santo Domingo	145.36	17	ePKPbc	PKPbc	17 35 15.4	-0.2	
HDC	Heredia	145.53	45	PFAKE		17 35 30.0	+13	
HDC				LR	LR			
	comp=Z,800nm,21.0s							
IDE	Isla Desecheo	146.03	13	ePKPdf	PKPbc	17 35 17.5	-0.3	
ABVI	Anegada Island	146.23	7	ePKPdf	PKPab	17 35 19.0	-0.1	
MPR	Mayaguez	146.27	12	ePKPdf	PKPbc	17 35 18.2	-0.3	
MPR				LR	LR			
	comp=Z,30µm,22.0s							
CBYP	Canovanas	146.46	10	ePKPdf	PKPdf	17 35 18.0	+0.2	
CELP	Cerrillos	146.52	11	ePKPdf	PKPdf	17 35 18.4	+0.5	
STVI	Saint Thomas	146.52	9	ePKPdf	PKPdf	17 35 18.2	+0.4	
SJG	San Juan	146.56	11	ePKP2	PKPdf	17 35 18.6	+0.7	
SJG				MLR	MLR			
	comp=Z,800nm,21.0s							
SJG	San Juan	146.56	11	ePKPdf	PKPdf	17 35 18.6	+0.7	
SJG				LR	LR			
	comp=Z,800nm,21.0s							
HUMP	Col San Antoni	146.59	10	ePKPdf	PKPdf	17 35 18.6	+0.7	
HUMP				LR	LR			
	comp=Z,900nm,22.0s							
SMRT	St. Maarten	147.04	5	ePKPdf	PKPdf	17 35 19.5	+0.8	
SMRT				LR	LR			
	comp=Z,1µm,20.0s							
SABA	Saba	147.45	6	PFAKE		17 35 30.0	+6.2	
SABA				LR	LR			
	comp=Z,1µm,21.0s							
ANWB	Willy Bob	147.51	3	PFAKE		17 35 30.0	+5.9	
ANWB				LR	LR			
	comp=Z,1µm,21.0s							
SEUS	St. Eustatius	147.60	5	PFAKE		17 35 30.0	+5.6	
SEUS				LR	LR			
	comp=Z,500nm,20.0s							
GDHS	Morne Mazeau,	148.90	3	ePKPbc	PKPbc	17 35 26.0	+0.2	
GDHS				LR	LR			
	comp=Z,2µm,22.0s							
FDF	Fort de France	150.46	2	ePKIKP	PKPbc	17 35 30.0	+0.3	
FDF				MLR	MLR			
	comp=Z,1µm,22.0s							
FDF	Fort de France	150.46	2	ePKPbc	PKPbc	17 35 30.0	+0.3	
FDF				LR	LR			
	comp=Z,1µm,22.0s							
URIC	Uribia, Colomb	150.94	25	eP	PKPdf	17 35 21.3	-3.7	
MAPC	Malpelo	151.45	50	eP	PKPdf	17 35 27.9	+2.0	
SVB	Belmont	151.90	3	ePKPbc	PKPbc	17 35 31.7	-1.3	
SVB				LR	LR			
	comp=Z,800nm,21.0s							
BBGH	Gun Hill	152.06	359	PFAKE		17 35 40.0	-2.7	
BBGH				LR	LR			
	comp=Z,2µm,21.0s							
PLCA	Paso Flores	152.74	162	PKPbc	PKPbc	17 35 34.8	+0.5	
	comp=Z,24nm,0.8s,baz=211,slow=1.5,SNR=9.1							
PLCA	Paso Flores	152.74	162	ePKPbc	PKPbc	17 35 35.1	+0.8	
GRGR	Grenville	153.01	4	ePKPbc	PKPbc	17 35 35.3	-0.2	
GRGR				LR	LR			
	comp=Z,700nm,21.0s							
OCAC	Ocana	153.41	31	eP	PKPdf	17 35 30.4	+1.4	
HELC	Santa Helena	153.92	37	eP	PKPbc	17 35 34.5	-3.5	
HELC	Santa Helena	153.92	37	ePKPdf	PKPdf	17 35 29.1	-0.9	
HELC				LR	LR			
	comp=Z,2µm,22.0s							
SDV	Santo Domingo	154.04	25	PKP	PKPdf	17 35 30.9	+1.0	
	comp=Z,55nm,0.9s,baz=322,slow=1.9							
SDV				PKPbc	PKiKP	17 35 38.4	+0.3	
	baz=324,slow=3.1							
SDV	Santo Domingo	154.04	25	eP	PKPdf	17 35 31.6	+1.7	
SDV	Santo Domingo	154.04	25	ePKPdf	PKPdf	17 35 31.1	+1.2	
SDV				LR	LR			
	comp=Z,1µm,22.0s							
CBRI	Barrientos, No	154.12	30	eP	PKPdf	17 35 31.2	+1.2	
BRRC	Barranca, Sant	154.18	33	eP	PKPdf	17 35 32.9	+3.0	
RCBR	Riachuelo	154.66	289	PKPab	PKPab	17 35 53.7	-0.3	
	comp=Z,12n

FLOC	**Florencia**	**157.39**	**45**	*e*P	**PKPdf**	**17 35 35.3**	**+1.1**
ATAH	**Atahualpa**	**160.33**	**69**	PKP	**PKPdf**	**17 35 40.5**	**+2.4**
	comp=Z,16nm,1.0s,baz=333,slow=1.9,SNR=15						
SPB	**Sao Paulo**	**165.39**	**232**	*e*PKPdf	**PKPdf**	**17 35 43.0**	**+0.8**
PTGA	**Pitinga**	**165.84**	**360**	PKP	**PKPdf**	**17 35 43.5**	**+0.5**
	comp=Z,23nm,0.8s,baz=12,slow=1.8,SNR=49						
PTGA				PKPab	**PKPab**	**17 36 42.6**	**+0.3**
	comp=Z,7.0nm,0.7s,baz=10.0,slow=5.4,SNR=5.6						
CPUP	**Villa Florida**	**168.44**	**192**	PKP	**PKPdf**	**17 35 44.9**	**+0.4**
	comp=Z,6.2nm,0.8s,baz=17,slow=1.9,SNR=8.0						
CPUP				PKPab	**PKPab**	**17 36 54.1**	**+0.7**
	comp=Z,43nm,0.9s,baz=169,slow=4.5,SNR=27						
LVC	**Limon Verde**	**168.64**	**133**	PKP	**PKPdf**	**17 35 46.3**	**+1.1**
	comp=Z,10nm,0.8s,baz=89,slow=2.0,SNR=7.0						
PB01	**IPOC Station P**	**169.13**	**125**	*e*PKPdf	**PKPdf**	**17 35 46.1**	**+0.9**
LPAZ	**La Paz**	**172.04**	**100**	PKP	**PKPdf**	**17 35 48.8**	**+1.3**
	comp=Z,14nm,0.8s,baz=25,slow=2.2,SNR=54						
SAML	**Samuel**	**173.24**	**28**	*e*PKPdf	**PKPdf**	**17 35 47.8**	**+0.4**
SIV	**San Ignacio**	**178.54**	**134**	PKP	**PKPdf**	**17 35 49.0**	**+0.5**
	comp=Z,24nm,0.9s,baz=118,slow=1.9,SNR=40						
SIV				PKPab		17 37 42.7	
	comp=Z,4.2nm,0.8s,baz=168,slow=1.7,SNR=3.5						
SIV				PP	**PP**	**17 41 34.2**	**+2.5**
	comp=Z,5.2nm,1.0s,baz=217,slow=5.1,SNR=4.4						

*CSEM **25** 17:27:38.2±0.1, 37.98N×22.76E, h5km, ML2.5, Error ellipse: s-maj=2.2km s-min=1.8km az=179.0*

ATH 25 17:27:38.2, 37.98N×22.76E, h13km±2km, ML2.5/20, Error ellipse: s-maj=2.3km s-min=0.5km az=69.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THAL	**Thalero**	**0.09**	**309**	P	Pg	17 27 41.7	+0.6
THAL	**Thalero**	**0.09**	**309**	P	Pg	17 27 41.7	+0.5
LOUT	**Loutraki**	**0.17**	**86**	P	Pg	17 27 41.3	-1.0
LOUT	**Loutraki**	**0.17**	**86**	P	Pg	17 27 41.3	-0.9
LTK	**Loutraki**	**0.17**	**75**	P	Pg	17 27 41.8	-0.5
LTK				S	Sg	17 27 44.0	-1.1
LTK	**Loutraki**	**0.17**	**75**	P	Pg	17 27 41.8	-0.5
LTK				S	Sg	17 27 44.0	-1.0
LTK				AML	AML	17 27 45.8	
	comp=E,4679μm,0.5s						
LTK				AML	AML	17 27 49.0	
	comp=N,2551μm,0.3s						
PROD	**Prodromos**	**0.30**	**22**	P	Pg	17 27 44.0	-0.5
PROD				S	Sb	17 27 50.2	-0.2
PROD	**Prodromos**	**0.30**	**22**	P	Pg	17 27 44.0	-0.5
PROD				S	Sb	17 27 50.2	-0.2
VIL2	**Platees**	**0.47**	**60**	P	Pb	17 27 48.0	-0.3
DSF	**Desfina**	**0.47**	**338**	P	Pg	17 27 46.8	-0.7
DSF				S	Sg	17 27 54.2	+0.4
DSF	**Desfina**	**0.47**	**338**	P	Pg	17 27 46.8	-0.7
DSF				S	Sg	17 27 54.2	+0.4
DSF				AML	AML	17 27 56.5	
	comp=E,2199μm,0.1s						
DSF				AML	AML	17 27 57.9	
	comp=N,2492μm,0.1s						
VILL	**Villia**	**0.48**	**67**	P	Pg	17 27 48.0	+0.3
KLV	**Kalavryta, Ach**	**0.48**	**278**	P	Pg	17 27 47.0	-0.7
KLV				S	Sg	17 27 54.2	0.0
KLV	**Kalavryta, Ach**	**0.48**	**278**	P	Pg	17 27 47.0	-0.8
KLV				S	Sg	17 27 54.2	0.0
KLV				AML	AML	17 27 55.6	
	comp=N,1311μm,0.3s						
KLV				AML	AML	17 27 56.0	
	comp=E,684μm,0.2s						
DID	**Didima**	**0.61**	**141**	P	Pg	17 27 49.7	-0.4
DID	**Didima**	**0.61**	**141**	P	Pg	17 27 49.7	-0.4
KALE	**Kalithea**	**0.64**	**311**	P	Pg	17 27 50.4	-0.3
KALE				S	Sg	17 27 59.3	+0.2
KALE	**Kalithea**	**0.64**	**311**	P	Pg	17 27 50.4	-0.3
KALE				S	Sg	17 27 59.3	+0.2
KALE				AML	AML	17 28 00.7	
	comp=E,1153μm,0.2s						
KALE				AML	AML	17 28 01.8	
	comp=N,1309μm,0.3s						
TRIZ	**Trizonia**	**0.66**	**306**	P	Pg	17 27 51.2	+0.1
TRIZ				S	Sb	17 28 00.7	0.0
LAKA	**Lakka**	**0.67**	**293**	P	Pg	17 27 51.2	0.0
LAKA				S	Sg	17 27 59.9	-0.1
LAKA	**Lakka**	**0.67**	**293**	P	Pg	17 27 51.2	0.0
LAKA				S	Sg	17 27 59.9	-0.1
LAKA				AML	AML	17 28 01.0	
	comp=E,432μm,0.4s						
LAKA				AML	AML	17 28 01.2	
	comp=N,651μm,0.2s						
VLX	**Vlachokerasia**	**0.68**	**206**	P	Pg	17 27 51.1	-0.3
VLX				S	Sg	17 28 00.5	+0.2
VLX	**Vlachokerasia**	**0.68**	**206**	P	Pg	17 27 51.1	-0.2
VLX				S	Sg	17 28 00.5	+0.2
VLX				AML	AML	17 28 03.2	
	comp=N,1933μm,0.6s						
VLX				AML	AML	17 28 03.6	
	comp=E,2355μm,0.4s						
LKR	**Lokris**	**0.70**	**16**	P	Pb	17 27 52.1	-0.2
LKR				S	Sg	17 28 00.9	-0.1
LKR	**Lokris**	**0.70**	**16**	P	Pb	17 27 52.1	-0.2
LKR				S	Sg	17 28 00.9	-0.2
LKR				AML	AML	17 28 04.9	
	comp=N,2276μm,0.3s						
LKR				AML	AML	17 28 05.1	
	comp=E,4395μm,0.3s						
SERG	**Sergoula**	**0.70**	**309**	P	Pg	17 27 51.1	-0.8
SERG				S	Sg	17 28 01.5	+0.4
ATAL	**Atalanti**	**0.74**	**16**	P	Pg	17 27 51.8	-0.9
ATAL				S	Sb	17 28 03.7	+0.6
ATAL	**Atalanti**	**0.74**	**16**	P	Pg	17 27 51.8	-0.8
ATAL				S	Sb	17 28 03.7	+0.6
ATAL				AML	AML	17 28 05.9	
	comp=N,1388μm,0.8s						
ATAL				AML	AML	17 28 06.8	
	comp=E,1219μm,0.3s						
ATH	**Athens Observa**	**0.76**	**90**	P	Pg	17 27 52.9	0.0
ATHU	**Athens Univers**	**0.81**	**90**	P	Pg	17 27 53.9	-0.1
ATHU				S	Sg	17 28 04.3	-0.3
ATHU	**Athens Univers**	**0.81**	**90**	P	Pg	17 27 53.9	-0.1
ATHU				S	Sg	17 28 04.3	-0.3
ATHU				AML	AML	17 28 05.8	
	comp=N,350μm,0.3s						
ATHU				AML	AML	17 28 07.2	
	comp=E,189μm,0.6s						
DRO	**Drossia**	**0.83**	**269**	P	Pb	17 27 54.4	0.0
DRO				S	Sb	17 28 05.3	-0.2
DRO	**Drossia**	**0.83**	**269**	P	Pb	17 27 54.4	0.0
DRO				S	Sb	17 28 05.3	-0.2
DRO				AML	AML	17 28 10.1	
	comp=E,1125μm,0.2s						
DRO				AML	AML	17 28 11.2	
	comp=N,1382μm,0.5s						
VLY	**Voula,Athens**	**0.83**	**98**	P	Pb	17 27 55.0	+0.5
VLY	**Voula,Athens**	**0.83**	**98**	P	Pb	17 27 55.0	+0.5
ANX	**Ano Chora**	**0.90**	**313**	P	Pg	17 27 55.2	-0.4
ANX				S	Sb	17 28 07.9	+0.2
ANX	**Ano Chora**	**0.90**	**313**	S	Sb	17 28 07.9	+0.2
ANX				AML	AML	17 28 13.5	
	comp=N,1172μm,0.4s						
ANX				AML	AML	17 28 14.7	
	comp=E,997μm,0.4s						
AMT	**Artemida-Makis**	**0.94**	**242**	P	Pn	17 27 57.4	+0.3
AMT				S	Sb	17 28 09.1	+0.3
AMT	**Artemida-Makis**	**0.94**	**242**	P	Pn	17 27 57.4	+0.3
AMT				S	Sb	17 28 09.1	+0.3
AMT				AML	AML	17 28 14.1	
	comp=E,466μm,0.4s						
AMT				AML	AML	17 28 14.5	
	comp=N,693μm,0.5s						
RLS	**Riolos of Patr**	**1.02**	**275**	P	Pb	17 27 57.7	0.0
RLS				S	Sg	17 28 11.5	+0.3
RLS	**Riolos of Patr**	**1.02**	**275**	S	Sg	17 28 11.5	+0.3
RLS				AML	AML	17 28 13.5	
	comp=E,275μm,0.5s						
RLS				AML	AML	17 28 18.0	
	comp=N,440μm,0.5s						
EREA	**Eretria**	**1.03**	**64**	P	Pn	17 27 58.6	+0.3
EREA				S	Sn	17 28 13.0	+0.4
EREA	**Eretria**	**1.03**	**64**	P	Pn	17 27 58.6	+0.3
EREA				S	Sn	17 28 13.0	+0.4
EREA				AML	AML	17 28 15.1	
	comp=E,521μm,0.3s						
EREA				AML	AML	17 28 15.1	
	comp=N,395μm,0.3s						
ITM	**Ithomi**	**1.03**	**220**	P	Pb	17 27 57.6	-0.4
ITM				S	Sn	17 28 12.8	+0.1
ITM	**Ithomi**	**1.03**	**220**	P	Pb	17 27 57.6	-0.4
ITM				S	Sn	17 28 12.8	+0.1
ITM				AML	AML	17 28 14.7	
	comp=N,353μm,0.3s						
ITM				AML	AML	17 28 14.8	
	comp=E,486μm,0.4s						
AGG	**Agios Georgios**	**1.09**	**342**	P	Pb	17 27 58.7	-0.3
AGG				S	Sg	17 28 13.8	+0.2
AGG	**Agios Georgios**	**1.09**	**342**	P	Pb	17 27 58.7	-0.3
AGG				S	Sg	17 28 13.8	+0.2
AGG				AML	AML	17 28 18.7	
	comp=E,711μm,0.4s						
AGG				AML	AML	17 28 20.6	
	comp=N,586μm,0.4s						
AXS	**Araxos**	**1.11**	**282**	P	Pb	17 27 58.8	-0.4
AXS				S	Sn	17 28 15.5	+0.9
AXS	**Araxos**	**1.11**	**282**	P	Pb	17 27 58.9	-0.4
AXS				S	Sn	17 28 15.5	+0.9
PVO	**Paravola**	**1.16**	**304**	P	Pb	17 28 00.0	-0.1
PVO				S	Sn	17 28 16.8	+1.0
PVO	**Paravola**	**1.16**	**304**	P	Pb	17 28 00.0	-0.1
PVO				S	Sn	17 28 16.8	+1.0
PVO				AML	AML	17 28 21.6	
	comp=E,372μm,0.3s						
PVO				AML	AML	17 28 22.2	
	comp=N,181μm,0.3s						
EVR	**Evrytania**	**1.20**	**322**	P	Pn	17 28 00.6	-0.1
EVR				S	Sn	17 28 17.8	+0.9
EVR	**Evrytania**	**1.20**	**322**	P	Pn	17 28 00.6	-0.2
EVR				S	Sn	17 28 17.8	+0.9
EVR				AML	AML	17 28 22.6	
	comp=N,282μm,0.5s						
VLI	**Veliai**	**1.27**	**173**	P	Pn	17 28 01.3	-0.3
VLI	**Veliai**	**1.27**	**173**	P	Pn	17 28 01.3	-0.3
SKIA	**Skiathos**	**1.31**	**25**	P	Pn	17 28 02.1	-0.1
SKIA				S	Sg	17 28 21.5	+1.0
SKIA	**Skiathos**	**1.31**	**25**	P	Pn	17 28 02.1	-0.1
SKIA				S	Sg	17 28 21.5	+1.0
SKIA				AML	AML	17 28 23.3	
	comp=E,439μm,0.5s						
SKIA				AML	AML	17 28 23.4	
	comp=N,514μm,0.6s						
PYL	**PYLOS**	**1.35**	**217**	P	Pg	17 28 04.1	0.0
PYL	**PYLOS**	**1.35**	**217**	P	Pg	17 28 04.1	-0.1
PDO	**Prodromos**	**1.38**	**297**	P	Pb	17 28 04.1	+0.2
PDO				S	Sg	17 28 22.5	-0.3
PDO	**Prodromos**	**1.38**	**297**	P	Pb	17 28 04.1	+0.1
PDO				S	Sg	17 28 22.5	-0.3
PDO				AML	AML	17 28 31.6	
	comp=N,605μm,0.3s						
PDO				AML	AML	17 28 32.9	
	comp=E,346μm,0.5s						
KFL	**Anninata**	**1.56**	**275**	P	Pb	17 28 07.4	+0.5
KFL	**Anninata**	**1.56**	**275**	P	Pb	17 28 07.4	+0.5
THL	**Klokotos Trika**	**1.69**	**340**	P	Pb	17 28 08.7	-0.4

*JMA **25** 17:28:57.5±0.2, 24.59N×122.63E, h119km±2km, M2.0*
*ISCJB **25** 17:28:58.9±0.7, 24.67N±0.05×122.66E±0.02, h103km±6km, Error ellipse: s-maj=8.6km s-min=3.3km az=173.1*
*TAP **25** 17:28:59.0, 24.70N×122.65E, h104km, ML3.0, D*

ISC 25 17:28:59.0±1.8, 24.68N±0.07×122.66E±0.03, h106km±11km, n31, σ0.76/59, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.34**	**131**	P	**Pn**	**17 29 14.6**	**+0.1**
JYNG				S	**Sn**	**17 29 27.0**	**+1.0**
YOJ	**Yonaguni jima**	**0.38**	**124**	P	**Pn**	**17 29 14.8**	**+0.1**
YOJ				*e*S	**Sn**	**17 29 27.9**	**+1.5**
TWC	**Suao**	**0.74**	**265**	P	**Pn**	**17 29 17.1**	**-0.2**
	baz=262						
TWC				*i* S	**Sn**	**17 29 30.8**	**-0.3**
	baz=262						
ENA	**Nanau**	**0.87**	**254**	*i* P	**Pn**	**17 29 18.8**	**+0.2**
	baz=251						
ENA				*i* S	**Sn**	**17 29 33.2**	**-0.1**
	baz=251						
NWF	**Wu-fen Shan**	**0.89**	**296**	*e*P	**Pn**	**17 29 18.9**	**+0.1**
	baz=294						
NWF				*e*S	**Sn**	**17 29 34.4**	**+0.7**
	baz=294						
TWE	**Neicheng**	**0.91**	**273**	P	**Pn**	**17 29 18.9**	**+0.1**
	baz=270						
TWE				*e*S	**Sn**	**17 29 31.3**	**-2.6**
	baz=270						
ENTT	**Nioudou**	**1.00**	**268**	P	**Pn**	**17 29 20.2**	**+0.4**
	baz=266						
ENTT				*e*S	**Sn**	**17 29 35.5**	**-0.1**
	baz=266						
IRIF	**Iriomote-Funau**	**1.03**	**109**	P	**Pn**	**17 29 20.0**	**-0.2**
IRIF				*e*S	**Sn**	**17 29 36.9**	**+0.8**
TWD	**Chiawan**	**1.14**	**239**	*e*P	**Pn**	**17 29 21.3**	**0.0**
	baz=236						
TWD				*e*S	**Sn**	**17 29 38.0**	**-0.2**
	baz=236						
NSK	**Sanguang**	**1.19**	**270**	P	**Pn**	**17 29 22.0**	**+0.1**
	baz=268						
NSK				*e*S	**Sn**	**17 29 38.8**	**-0.5**
	baz=268						
NNS	**Nan Shan**	**1.20**	**259**	P	**Pn**	**17 29 22.2**	**0.0**
	baz=257						
NNS				*e*S	**Sn**	**17 29 39.5**	**-0.1**
	baz=257						
HATJ	**Hateruma jima**	**1.21**	**120**	P	**Pn**	**17 29 20.9**	**-1.3**
JKRS	**Kuro-shima**	**1.30**	**109**	P	**Pn**	**17 29 23.6**	**+0.4**
JKRS				S	**Sn**	**17 29 42.3**	**+0.7**
WHF	**Hehuan Shan**	**1.38**	**248**	*e*P	**Pn**	**17 29 24.5**	**-0.1**
	baz=246						
WHF				*e*S	**Sn**	**17 29 43.1**	**-0.8**
	baz=246						
JIJ	**Ishigaki jima**	**1.39**	**103**	P	**Pn**	**17 29 24.0**	**-0.2**
JIJ				S	**Sn**	**17 29 42.7**	**-0.6**
ESL	**Shilin**	**1.41**	**233**	*e*P	**Pn**	**17 29 23.8**	**-0.7**
	baz=231						
TWT	**Tachien**	**1.42**	**253**	P	**Pn**	**17 29 25.4**	**+0.7**
	baz=251						
TWT				S	**Sn**	**17 29 44.1**	**-0.2**
	baz=251						
JISG	**Ishigakijimahi**	**1.50**	**93**	P	**Pn**	**17 29 25.4**	**-0.2**
JISG				S	**Sn**	**17 29 45.2**	**-0.6**
NSTT	**Nanjuang**	**1.51**	**269**	*e*P	**Pn**	**17 29 25.4**	**-0.3**
	baz=267						
NSTT				*e*S	**Sn**	**17 29 45.6**	**-0.4**
	baz=267						
EHY	**Hungye**	**1.69**	**227**	*e*P	**Pn**	**17 29 27.5**	**-0.5**
	baz=225						
EHY				*e*S	**Sn**	**17 29 48.7**	**-1.2**
	baz=225						
SMLT	**Sun Moon Lake**	**1.79**	**244**	*e*P	**Pn**	**17 29 29.8**	**+0.5**
	baz=242						
SMLT				*e*S	**Sn**	**17 29 52.2**	**-0.1**
	baz=242						
TWF1	**Yuli**	**1.82**	**224**	*e*P	**Pn**	**17 29 28.9**	**-0.6**
	baz=222						
TWF1				*e*S	**Sn**	**17 29 51.9**	**-0.8**
	baz=222						
TYC	**Yuchr**	**1.82**	**245**	*e*P	**Pn**	**17 29 30.2**	**+0.8**
	baz=243						
TYC				*e*S	**Sn**	**17 29 52.6**	**-0.1**
	baz=243						
JTJ	**Tarama**	**1.86**	**91**	*e*S	**Sn**	**17 29 53.1**	**-0.5**
YUS	**Yu-Shan**	**1.96**	**233**	*e*P	**Pn**	**17 29 31.8**	**0.0**
	baz=231						
YUS				*e*S	**Sn**	**17 29 56.1**	**-0.6**
	baz=231						
CHKT	**Chengkung**	**1.97**	**217**	*e*P	**Pn**	**17 29 32.1**	**+0.7**
	baz=216						
CHKT				*e*S	**Sn**	**17 29 54.4**	**-1.7**
	baz=216						
ALS	**Alishan**	**2.06**	**236**	P	**Pn**	**17 29 33.6**	**+0.8**
	baz=234						
ALS				*e*S	**Sn**	**17 29 58.5**	**-0.1**
	baz=234						
CHN5	**Tsauling**	**2.11**	**240**	*e*P	**Pn**	**17 29 33.8**	**+0.6**
	baz=238						
CHN5				*e*S	**Sn**	**17 29 59.3**	**-0.2**
	baz=238						
CHN4	**Tsaushan**	**2.31**	**236**	*e*P	**Pn**	**17 29 37.2**	**+1.4**
	baz=234						
CHN4				*e*S	**Sn**	**17 30 04.2**	**+0.2**
	baz=234						
WTP	**Ta-pu**	**2.35**	**233**	*e*P	**Pn**	**17 29 37.7**	**+1.3**
	baz=231						
WTP				*e*S	**Sn**	**17 30 05.0**	**-0.1**
	baz=231						
CHN1	**Nanshi**	**2.45**	**233**	*e*P	**Pn**	**17 29 39.1**	**+1.4**
	baz=232						
CHN1				*e*S	**Sn**	**17 30 08.6**	**+1.2**
	baz=232						

*IDC **25** 17:29:14.2±1.0, 2.80N×127.20E, h0km, mb3.7/8, mb1 3.8/8, mb1mx3.6/30, mbtmp3.7/8, MS4.2/1, Ms1 4.2/1, ms1mx3.6/39, Error ellipse: s-maj=81.3km s-min=16.3km az=73.0*
*NEIC **25** 17:29:16.1±11.0, 2.81N×127.33E, h14km±71km, mb4.1/5, Error ellipse: s-maj=36.2km s-min=7.4km az=64.0*
*ISCJB **25** 17:29:18.0±0.6, 2.81N±0.08×127.2E±0.2, h44km, mb3.8/10, MS4.2/1, Error ellipse: s-maj=23.1km s-min=8.9km az=158.2*

ISC 25 17:29:19.8±0.9, 2.8N±0.1×127.2E±0.2, h44km, n18, σ0.83/17, mb3.8/10, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MYLDM	**Lahad Datu**	**9.00**	**286**	*e*Pn	**Pn**	**17 31 27.7**	**+0.4**
FITZ	**Fitzroy Crossi**	**20.81**	**184**	P	**P**	**17 33 56.7**	**-0.9**
	1.3nm,0.7s,baz=10,slow=11,SNR=4.3						
FITZ	**Fitzroy Crossi**	**20.81**	**184**	*e*P	**P**	**17 33 56.7**	**-0.9**
	25nm,1.8s						
WRAB	**Tennant Creek**	**23.64**	**163**	*e*P	**P**	**17 34 27.6**	**+0.3**
	5.7nm,1.0s						
WR1	**Warramunga Arr**	**23.64**	**163**	*e*P	**P**	**17 34 27.3**	**0.0**
	26nm,1.6s						
WRA	**Warramunga Arr**	**23.64**	**163**	P	**P**	**17 34 27.3**	**0.0**
	1.9nm,0.7s,baz=334,slow=11,SNR=13						
AS31	**Alice Springs**	**27.09**	**166**	*e*P	**P**	**17 34 57.9**	**-0.7**
	1.1nm,1.1s						
ASAR	**Alice Springs**	**27.09**	**166**	P	**P**	**17 34 59.4**	**+0.8**
	0.5nm,0.8s,baz=349,slow=8.5,SNR=6.9						
KSAR	**Wonju Array Be**	**34.50**	**1**	P	**P**	**17 36 03.1**	**-0.7**
KSRS	**Korea Array**	**34.51**	**1**	P	**P**	**17 36 03.1**	**-0.8**
	0.9nm,0.9s,baz=175,slow=9.2,SNR=3.1						
STKA	**Stephens Creek**	**37.08**	**159**	P	**P**	**17 36 26.6**	**+0.6**
	1.3nm,0.5s,baz=329,slow=11,SNR=4.5						
STKA	**Stephens Creek**	**37.08**	**159**	*e*P	**P**	**17 36 26.6**	**+0.6**
	4.1nm,1.8s						
KLR	**Kul'dur**	**46.44**	**4**	LR	LR	17 56 42.3	
	comp=Z,271nm,21.1s,slow=36						
MK32	**Makanchi Array**	**58.60**	**325**	*e*P	**P**	**17 39 12.2**	**-0.1**
MKAR	**Makanchi Array**	**58.60**	**325**	P	**P**	**17 39 12.2**	**-0.1**
	0.5nm,0.5s,baz=114,slow=7.8,SNR=4.8						
ZALV	**Zalesovo Beam**	**61.64**	**333**	P	**P**	**17 39 34.5**	**+1.5**
	0.3nm,0.3s,baz=157,slow=8.9,SNR=2.2						
ZAA1	**Zalesovo Array**	**61.64**	**333**	*e*P	**P**	**17 39 34.5**	**+1.5**
BVAR	**Borovoye Array**	**68.37**	**327**	P	**P**	**17 40 17.2**	**+0.5**
	0.4nm,0.5s,baz=116,slow=6.6,SNR=2.8						

*DDA **25** 17:32:23.2, 37.54N×35.64E, h7km, Md2.2*
*ISCJB **25** 17:32:24.9±0.6, 37.55N±0.03×35.52E±0.04, h5km±8km, Error ellipse: s-maj=5.3km s-min=5.1km az=3.5*
*CSEM **25** 17:32:24.3±0.4, 37.57N×35.55E, h10km, MD2.6, Error ellipse: s-maj=8.6km s-min=7.4km az=20.0*
*ISK **25** 17:32:24.9, 37.50N×35.48E, h7km, MD2.6*

ISC 25 17:32:24.5±0.9, 37.56N±0.03×35.54E±0.02, h9km±9km, n18, σ1.9/11/29, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKO	**Adana**	**0.12**	**219**	*i* P	**Pg**	**17 32 27.0**	**-0.3**
AKO				*i* S	**Sg**	**17 32 29.3**	**0.0**
KOZT	**Kozan**	**0.24**	**108**	*e*PG	**Pg**	**17 32 30.9**	**+1.5**
KOZT	**Kozan**	**0.24**	**108**	*e*Pg	**Pg**	**17 32 30.9**	**+1.5**
KARA	**Karaisali**	**0.49**	**233**	*e*PG	**Pg**	**17 32 33.3**	**-0.7**
KARA				*e*SG	**Sg**	**17 32 40.3**	**-0.1**
KARA	**Karaisali**	**0.49**	**233**	*e*Pg	**Pg**	**17 32 33.3**	**-0.7**
KARA				*e*Sg	**Sg**	**17 32 40.3**	**-0.1**
YAHY	**KAYSERI_Yahyal**	**0.56**	**345**	*i* P	**Pg**	**17 32 34.4**	**-1.0**
YAHY				*i* S	**Sb**	**17 32 44.1**	**-0.6**
YAHY	**KAYSERI_Yahyal**	**0.56**	**345**	P	**Pg**	**17 32 34.4**	**-1.0**
YAHY				S	**Sb**	**17 32 44.1**	**-0.6**
CEYT	**Ceyhan**	**0.57**	**163**	*e*PG	**Pg**	**17 32 35.0**	**-0.6**
CEYT				*e*SG	**Sb**	**17 32 44.0**	**-0.9**
CEYT	**Ceyhan**	**0.57**	**163**	*e*Pg	**Pg**	**17 32 35.0**	**-0.6**
CEYT				*e*Sg	**Sb**	**17 32 44.0**	**-0.9**
ANDN	**Andirin**	**0.64**	**88**	*i* P	**Pb**	**17 32 37.9**	**0.0**
ANDN				*i* S	**Sg**	**17 32 42.6**	**-2.7**
ANDN	**Andirin**	**0.64**	**88**	P	**Pb**	**17 32 37.9**	**0.0**
ANDN				S	**Sg**	**17 32 42.6**	**-2.7**
GULE	**Gulek**	**0.67**	**246**	*i* S	**Sb**	**17 32 47.1**	**-0.7**
GULE	**Gulek**	**0.67**	**246**	S	**Sb**	**17 32 47.1**	**-0.7**
NIG	**Nigde**	**0.92**	**307**	*e*PG	**Pb**	**17 32 43.4**	**+0.5**
NIG				*e*SG	**Sb**	**17 32 55.4**	**+0.1**
NIG	**Nigde**	**0.92**	**307**	*e*Pg	**Pb**	**17 32 43.4**	**+0.5**
NIG				*e*Sg	**Sb**	**17 32 55.4**	**+0.1**
SARI	**SarD1z-Kayseri**	**1.10**	**39**	*e*PN	**Pn**	**17 32 48.2**	**+2.0**
KERG	**Konya-Eregli**	**1.14**	**263**	*i* S	**Sg**	**17 33 00.7**	**-0.4**
KERG	**Konya-Eregli**	**1.14**	**263**	S	**Sg**	**17 33 00.7**	**-0.4**

*ISCJB **25** 17:57:20.7±0.2, 40.82N±0.01×27.72E±0.01, h12km±1km, mb4.8/140, MS4.5/18, Error ellipse: s-maj=1.8km s-min=1.5km az=171.4*
*ATH **25** 17:57:20.2, 40.78N×27.70E, h24km±2km, ML4.9/13, Error ellipse: s-maj=4.2km s-min=1.7km az=60.0*
*GCMT **25** 17:57:20.6±0.3, 40.80N×27.72E, h12km, MW5.1/95, Moment Tensor Solution. s17,c24; s95,c154; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.38±.15; $M_{\theta\theta}$2.52±.14; $M_{\phi\phi}$-1.14±.14; $M_{r\theta}$-3.17±.39; $M_{r\phi}$-3.85±.10; $M_{\theta\phi}$-0.18±.39; Best double couple: M_o5.36400×10^{16} NP1:ϕ_s83.00000°, δ82.00000°, λ-140.00000°. NP2: ϕ_s346.00000°, δ50.00000°, λ-11.00000°. Principal axes: T 5.9150, Plg20.0000°, Azm208.0000°; N -1.1010, Plg49.0000°, Azm93.0000°; P -4.8130, Plg33.0000°, Azm312.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISK **25** 17:57:20.8, 40.81N×27.74E, h17km, ML5.2*
*MOS **25** 17:57:20.4±1.3, 40.85N×27.73E, h10km, mb5.1/40, MS4.5/16, Error ellipse: s-maj=4.2km s-min=3.3km az=80.2*
*DDA **25** 17:57:20.6, 40.82N×27.75E, h7km, Ml5.1*
*NEIC **25** 17:57:20.6, 40.80N×27.75E, h16km, mb4.9/60, ML5.2(ISK), After ISK.*
*NEIC Felt [III] at Tek

CRLT	Corlu	0.30	358	ePg	Pg	17 57 28.4	-0.5
SART	Tekirdag	0.45	253	⇑iP	Pg	17 57 30.0	-1.5
SART				iS	Sg	17 57 36.8	-0.8
SART	Tekirdag	0.45	253	P	Pg	17 57 30.0	-1.5
SART				S	Sg	17 57 36.8	-0.8
RKY	Sarkoy-Tekirda	0.45	253	ePG	Pg	17 57 30.1	-1.5
RKY				eSG	Sg	17 57 37.1	-0.6
RKY	Sarkoy-Tekirda	0.45	253	ePg	Pg	17 57 30.1	-1.5
RKY				eSg	Sg	17 57 37.1	-0.6
EDC	Edincik	0.48	169	ePG	Pg	17 57 30.7	-1.4
EDC				eSG	Sg	17 57 37.9	-0.7
EDC	Edincik	0.48	169	ePg	Pg	17 57 30.7	-1.4
EDC				eSg	Sg	17 57 37.9	-0.7
SLVT	Silivri	0.54	41	P	Pg	17 57 29.6	-3.5
KRBG	Karabiga-Canak	0.55	219	ePG	Pg	17 57 31.7	-1.7
KRBG	Karabiga-Canak	0.55	219	ePg	Pg	17 57 31.7	-1.7
KNL	Bal~-kesir	0.58	197	⇑iP	Pg	17 57 31.5	-2.4
KNL				iS	Sg	17 57 40.1	-1.5
SBT2	Guzelce-Avcila	0.58	84	ePG	Pg	17 57 33.8	-0.2
SBT2	Guzelce-Avcila	0.58	84	ePg	Pg	17 57 33.8	-0.2
ELBA	Catalca	0.61	58	⇑iP	Pg	17 57 33.0	-1.5
ELBA				iS	Sg	17 57 41.8	-0.8
ELBA	Catalca	0.61	58	P	Pg	17 57 33.0	-1.5
ELBA				S	Sg	17 57 41.8	-0.8
CTKS	Kestanelik-??a	0.71	54	ePG	Pg	17 57 34.7	-1.6
CTKS	Kestanelik-??a	0.71	54	ePg	Pg	17 57 34.7	-1.6
KCTX	Karacabey (Bur	0.73	140	ePG	Pg	17 57 35.1	-1.6
KCTX	Karacabey (Bur	0.73	140	ePg	Pg	17 57 35.1	-1.6
CTYL	Yalikoy Yolu	0.77	32	ePG	Pg	17 57 35.9	-1.6
CTYL	Yalikoy Yolu	0.77	32	ePg	Pg	17 57 35.9	-1.6
GONE	Gonen-Balikesi	0.78	183	ePG	Pg	17 57 36.8	-0.9
GONE	Gonen-Balikesi	0.78	183	ePg	Pg	17 57 36.8	-0.9
KESN	Edirne-Kesan	0.81	270	⇑iP	Pg	17 57 36.4	-2.0
KESN				iS	Sg	17 57 48.3	-0.7
KESN	Edirne-Kesan	0.81	270	P	Pg	17 57 36.4	-2.0
KESN				S	Sg	17 57 48.3	-0.7
PHSR	Pinarhisar	0.82	348	ePG	Pg	17 57 37.2	-1.4
PHSR	Pinarhisar	0.82	348	ePg	Pg	17 57 37.2	-1.4
LPK	Lapseki	0.88	239	ePG	Pg	17 57 37.4	-2.2
LPK	Lapseki	0.88	239	ePg	Pg	17 57 37.4	-2.2
SBT5	Esenkoy-Cinarc	0.88	102	ePG	Pg	17 57 39.1	-0.5
SBT5	Esenkoy-Cinarc	0.88	102	ePg	Pg	17 57 39.1	-0.5
ARMT	Armutlu	0.89	107	ePG	Pg	17 57 39.3	-0.4
ARMT	Armutlu	0.89	107	ePg	Pg	17 57 39.3	-0.4
ERIK	Erikli-Kesan	0.95	261	ePG	Pg	17 57 38.9	-2.0
ERIK	Erikli-Kesan	0.95	261	ePg	Pg	17 57 38.9	-2.0
MDNY	Mudanya-Bursa	0.98	117	ePG	Pb	17 57 39.9	-1.6
MDNY	Mudanya-Bursa	0.98	117	ePg	Pb	17 57 39.9	-1.6
ISK	Istanbul-Kandi	1.02	76	ePG	Pb	17 57 40.1	-2.2
ISK	Istanbul-Kandi	1.02	76	P	Pb	17 57 40.3	-1.9
ISK				S	Sb	17 57 52.5	-3.1
ISK	Istanbul-Kandi	1.02	76	P	Pb	17 57 40.3	-1.9
ISK				S	Sb	17 57 52.5	-3.1
ISK	Istanbul-Kandi	1.02	76	P	Pb	17 57 40.3	-1.9
ISK				S	Sb	17 57 52.5	-3.1
ISK	Istanbul-Kandi	1.02	76	P	Pb	17 57 40.3	-1.9
ISK				S	Sb	17 57 52.5	-3.1
BUY	Buyukada	1.04	88	⇓iP	Pb	17 57 40.4	-2.1
BUY				iS	Sb	17 57 55.2	-0.9
BUY	Buyukada	1.04	88	P	Pb	17 57 40.4	-2.1
BUY				S	Sb	17 57 55.2	-0.9
GELI	Tayfur-Gelibol	1.06	247	ePG	Pb	17 57 40.7	-2.1
GELI	Tayfur-Gelibol	1.06	247	ePg	Pb	17 57 40.7	-2.1
KLYT	Kilyos	1.07	66	ePN	Pb	17 57 41.3	-1.7
KLYT	Kilyos	1.07	66	ePn	Pb	17 57 41.3	-1.7
BALY	Balya	1.09	185	⇑iP	Pb	17 57 41.3	-2.1
BALY				iS	Sn	17 57 58.8	+0.1
BALY	Balya	1.09	185	P	Pb	17 57 41.3	-2.1
BALY				S	Sn	17 57 58.8	+0.1
GEMT	Gemlik	1.16	109	ePN	Pb	17 57 42.4	-2.2
GEMT	Gemlik	1.16	109	ePn	Pb	17 57 42.4	-2.2
BALB	Balikesir	1.19	175	ePN	Pn	17 57 43.2	-1.8
BALB	Balikesir	1.19	175	ePn	Pn	17 57 43.2	-1.8
ENEZ	Enez	1.21	266	ePN	Pn	17 57 43.7	-1.7
ENEZ	Enez	1.21	266	P	Pn	17 57 43.7	-1.7
ENEZ				S	Sb	17 58 00.5	-0.6
ENEZ	Enez	1.21	266	P	Pn	17 57 43.7	-1.7
ENEZ				S	Sb	17 58 00.5	-0.6
IGD	Bursa	1.24	116	⇓iP	Pn	17 57 42.6	-3.1
IGD				iS	Sb	17 58 01.3	-0.6
ULDT	Uludag	1.26	122	iP	Sg	17 58 05.5	+2.2
EDRB	Edirne	1.27	324	ePN	Pn	17 57 44.3	-1.9
EDRB	Edirne	1.27	324	P	Pn	17 57 44.6	-1.6
EDRB				S	Sb	17 58 01.0	-1.8
EDRB	Edirne	1.27	324	ePn	Pn	17 57 44.3	-1.9
EDRB	Edirne	1.27	324	P	Pn	17 57 44.6	-1.6
EDRB				S	Sb	17 58 01.0	-1.8
EDRB	Edirne	1.27	324	P	Pn	17 57 44.6	-1.6
ALN	Alexandroupoli	1.29	274	ePN	Pn	17 57 44.5	-1.9
ALN	Alexandroupoli	1.29	274	P	Pn	17 57 44.7	-1.8
ALN				S	Sb	17 58 02.3	-1.1
ALN	Alexandroupoli	1.29	274	P	Pn	17 57 44.7	-1.8
ALN	Alexandroupoli	1.29	274	ePn	Pn	17 57 44.5	-1.9
ALN	Alexandroupoli	1.29	274	P	Pn	17 57 45.2	-1.2
ALN				S	Sb	17 58 02.3	-1.1
ALN	Alexandroupoli	1.29	274	P	Pn	17 57 44.7	-1.8
ALN	Alexandroupoli	1.29	274	P	Pn	17 57 45.2	-1.2
ALN				S	Sb	17 58 02.3	-1.1
ALN				AML	AML	17 58 05.6	
ALN				AML	AML	17 58 05.7	
IZI	Iznik	1.40	110	ePN	Pn	17 57 46.0	-2.1
IZI	Iznik	1.40	110	ePn	Pn	17 57 46.0	-2.1
HRT	Hereke	1.46	89	ePN	Pn	17 57 46.7	-2.1
HRT	Hereke	1.46	89	ePn	Pn	17 57 46.7	-2.1
SILT	Sile	1.47	76	ePN	Pn	17 57 47.7	-1.2
SILT	Sile	1.47	76	ePn	Pn	17 57 47.7	-1.2
EZN	Ezine	1.48	228	ePN	Pn	17 57 47.3	-1.7
EZN	Ezine	1.48	228	P	Pn	17 57 47.2	-1.7
EZN				S	Sn	17 58 07.2	-0.9
EZN	Ezine	1.48	228	P	Pn	17 57 47.2	-1.7
EZN	Ezine	1.48	228	ePn	Pn	17 57 47.3	-1.7
EZN				S	Sn	17 58 07.2	-0.9
EZN	Ezine	1.48	228	P	Pn	17 57 47.2	-1.7
GADA	Gvkgeada	1.54	246	ePN	Pn	17 57 48.3	-1.6
GADA	Gvkgeada	1.54	246	P	Pn	17 57 48.1	-1.8
GADA				S	Sn	17 58 08.1	-1.8
GADA	Gvkgeada	1.54	246	ePn	Pn	17 57 48.3	-1.6
GADA				S	Sn	17 58 08.1	-1.8
GADA	Gvkgeada	1.54	246	P	Pn	17 57 48.1	-1.8
ADVT	Abdulvahap	1.56	104	ePN	Pn	17 57 49.3	-0.9
ADVT	Abdulvahap	1.56	104	ePn	Pn	17 57 49.3	-0.9
BOZC	Bozcaada	1.62	233	⇑iP	Pn	17 57 49.1	-2.0
BOZC				iS	Sb	17 58 12.8	-0.2
CUND	Cunda Adasi-Ba	1.70	209	ePN	Pn	17 57 50.6	-1.5
CUND	Cunda Adasi-Ba	1.70	209	ePn	Pn	17 57 50.6	-1.5
AYVA	Ayvalik	1.72	209	⇑iP	Pn	17 57 50.6	-1.7
AYVA				iS	Sb	17 58 16.4	+0.8
AYVA	Ayvalik	1.72	209	P	Pn	17 57 50.6	-1.7
AYVA				S	Sb	17 58 16.4	+0.8
SMTH	Samothraki Isl	1.72	259	P	Pn	17 57 50.4	-2.0
SMTH	Samothraki Isl	1.72	259	P	Pn	17 57 50.6	-1.8
SMTH				S	Sn	17 58 12.3	-2.0
SMTH	Samothraki Isl	1.72	259	P	Pn	17 57 50.4	-2.0
SMTH	Samothraki Isl	1.72	259	P	Pn	17 57 50.6	-1.8
SMTH				S	Sn	17 58 12.3	-2.0
SMTH				AML	AML	17 58 19.3	
	comp=N,44057µm,0.8s						
SMTH				AML	AML	17 58 23.4	
	comp=E,39316µm,0.7s						
GPNR	Gulpinar-Canak	1.84	223	ePN	Pn	17 57 53.0	-1.0
GPNR	Gulpinar-Canak	1.84	223	ePn	Pn	17 57 53.0	-1.0
KAND	Kocaeli-Kandir	1.87	81	⇓iP	Pn	17 57 53.1	-1.3
KAND				iS	Sn	17 58 18.6	+0.7
KAND	Kocaeli-Kandir	1.87	81	P	Pn	17 57 53.1	-1.3
KAND				S	Sn	17 58 18.6	+0.7
DEMI	Demirci	1.93	157	⇑iP	Pn	17 57 54.0	-1.3
DEMI				iS	Sn	17 58 19.9	+0.4
DEMI	Demirci	1.93	157	P	Pn	17 57 54.0	-1.3
DEMI				S	Sn	17 58 19.9	+0.4
PRK	Paraskevi	1.94	216	P	Pn	17 57 53.7	-1.7
PRK	Paraskevi	1.94	216	P	Pn	17 57 53.7	-1.7
PRK	Paraskevi	1.94	216	P	Pn	17 57 53.7	-1.7
PRK				S	Sn	17 58 17.5	-2.2
PRK	Paraskevi	1.94	216	P	Pn	17 57 53.7	-1.7
PRK	Paraskevi	1.94	216	P	Pn	17 57 53.5	-1.9
PRK				S	Sn	17 58 17.5	-2.2
PRK				AML	AML	17 58 27.4	
	comp=E,81990µm,0.7s						
PRK				AML	AML	17 58 28.2	
	comp=N,86033µm,0.7s						
CAND	Candarli	2.00	202	ePN	Pn	17 57 54.8	-1.4
LIA	Limnos Island	2.17	246	P	Pn	17 57 56.5	-2.0
LIA	Limnos Island	2.17	246	P	Pn	17 57 56.8	-1.7
LIA	Limnos Island	2.17	246	P	Pn	17 57 56.5	-2.0
SIGR	SIGRI	2.17	223	P	Pn	17 57 57.1	-1.4
SIGR				S	Sn	17 58 25.1	-0.2
SIGR	SIGRI	2.17	223	P	Pn	17 57 57.1	-1.4
SIGR				S	Sn	17 58 23.2	-2.1
SIGR	SIGRI	2.17	223	P	Pn	17 57 57.1	-1.4
SIGR				S	Sn	17 58 25.1	-0.2
SIGR	SIGRI	2.17	223	P	Pn	17 57 57.2	-1.3
SIGR				S	Sn	17 58 23.2	-2.1
SIGR				AML	AML	17 58 36.3	
	comp=N,41817µm,0.7s						
SIGR				AML	AML	17 58 43.8	
	comp=E,27956µm,0.7s						
GDZ	Gediz	2.19	142	⇓iP	Pn	17 57 57.6	-1.3
GDZ				iS	Sg	17 58 31.3	-1.6
GDZ	Gediz	2.19	142	P	Pn	17 57 57.6	-1.3
FOCM	Fo~§a	2.25	201	ePN	Pn	17 57 58.3	-1.3
FOCM	Fo~§a	2.25	201	ePn	Pn	17 57 58.3	-1.3
BORA	Eskisehir	2.27	114	⇓iP	Pn	17 57 58.3	-1.7
BORA				iS	Sg	17 58 34.5	-1.2
BORA	Eskisehir	2.27	114	P	Pn	17 57 58.3	-1.7
KAVA	Kavala	2.46	275	P	Pn	17 58 01.6	-0.9
KAVA	Kavala	2.46	275	P	Pn	17 58 01.6	-0.9
KAVA				S	Sn	17 58 30.1	-2.3
KAVA	Kavala	2.46	275	P	Pn	17 58 01.6	-0.9
KAVA	Kavala	2.46	275	P	Pn	17 58 01.6	-0.9
CHOS	Chios island	2.76	209	P	Pn	17 58 04.8	-2.0
CHOS	Chios island	2.76	209	P	Pn	17 58 04.8	-2.0
CHOS				S	Sn	17 58 37.4	-2.7
CHOS	Chios island	2.76	209	P	Pn	17 58 04.8	-2.0
CHOS	Chios island	2.76	209	P	Pn	17 58 05.8	-0.9
CHOS				S	Sn	17 58 37.4	-2.7
CHOS				AML	AML	17 58 54.5	
	comp=E,25476µm,1.0s						
CHOS				AML	AML	17 58 56.8	
	comp=N,14197µm,0.6s						
OUR	Ouranopolis	2.91	262	P	Pn	17 58 06.8	-1.9
OUR	Ouranopolis	2.91	262	P	Pn	17 58 06.8	-1.9
OUR	Ouranopolis	2.91	262	P	Pn	17 58 06.8	-1.9
OUR	Ouranopolis	2.91	262	P	Pn	17 58 06.8	-1.9
OUR	Ouranopolis	2.91	262	P	Pn	17 58 06.3	-2.3
OUR				AML	AML	17 59 04.8	
	comp=N,16497µm,1.3s						
OUR				AML	AML	17 59 12.2	
	comp=E,19483µm,0.8s						
NVR	Nevrokopi	2.98	281	P	Pn	17 58 08.9	-0.9
NVR				S	Sn	17 58 45.2	-0.3
NVR	Nevrokopi	2.98	281	P	Pn	17 58 08.9	-0.9
NVR				S	Sn	17 58 45.2	-0.3
NVR	Nevrokopi	2.98	281	P	Pn	17 58 08.9	-0.9
NVR				S	Sn	17 58 45.2	-0.3
MANR	Mangalia	3.06	11	⇑iP	Pn	17 58 12.1	+1.4
MANR	Mangalia	3.06	11	⇑iP	Pn	17 58 12.1	+1.4
SKY	Skiros Island	3.14	233	P	Pn	17 58 08.8	-3.0
SKY	Skiros Island	3.14	233	P	Pn	17 58 08.8	-3.0
SKY				AML	AML	17 59 12.7	
	comp=E,7194µm,0.5s						
SKY				AML	AML	17 59 17.2	
	comp=N,9136µm,1.0s						
SRS	Serrai	3.16	277	P	Pn	17 58 11.2	-1.0
SRS	Serrai	3.16	277	P	Pn	17 58 11.2	-1.0
SRS	Serrai	3.16	277	P	Pn	17 58 11.2	-1.0
SRS	Serrai	3.16	277	P	Pn	17 58 11.2	-1.0
SRS	Serrai	3.16	277	P	Pn	17 58 10.7	-1.5
SRS				AML	AML	17 59 07.7	
	comp=N,22221µm,0.7s						
SRS				AML	AML	17 59 12.2	
	comp=E,16001µm,0.6s						
SMG	Samos	3.19	193	P	Pn	17 58 10.4	-2.2
SMG	Samos	3.19	193	P	Pn	17 58 10.4	-2.2
SMG	Samos	3.19	193	P	Pn	17 58 10.4	-2.2
SMG	Samos	3.19	193	P	Pn	17 58 10.2	-2.4
SMG				AML	AML	17 59 06.2	
	comp=E,10509µm,0.7s						
SMG				AML	AML	17 59 10.0	
	comp=N,18454µm,0.6s						
PAIG	Paliouri	3.23	255	P	Pn	17 58 11.1	-2.0
PAIG	Paliouri	3.23	255	P	Pn	17 58 11.1	-2.0
PAIG	Paliouri	3.23	255	P	Pn	17 58 11.3	-1.8
PAIG	Paliouri	3.23	255	P	Pn	17 58 11.1	-2.0
PAIG	Paliouri	3.23	255	P	Pn	17 58 11.3	-1.8
PLG	Polygyros	3.31	264	P	Pn	17 58 12.5	-1.7
PLG	Polygyros	3.31	264	P	Pn	17 58 12.5	-1.7
PLG	Polygyros	3.31	264	P	Pn	17 58 12.7	-1.5
PLG	Polygyros	3.31	264	P	Pn	17 58 12.5	-1.7
PLG	Polygyros	3.31	264	P	Pn	17 58 12.7	-1.5
PLG				AML	AML	17 59 07.7	
	comp=N,6291µm,0.7s						
PLG				AML	AML	17 59 13.5	
	comp=E,7450µm,0.8s						
EFOR	EFORIE	3.32	11	⇑iP	Pn	17 58 15.5	+1.2
EFOR	EFORIE	3.32	11	⇑iP	Pn	17 58 15.5	+1.2
SOH	Sokhos	3.33	271	P	Pn	17 58 13.3	-1.3
SOH	Sokhos	3.33	271	P	Pn	17 58 13.3	-1.3
SOH	Sokhos	3.33	271	P	Pn	17 58 13.3	-1.3
SOH	Sokhos	3.33	271	P	Pn	17 58 13.3	-1.3
SOH	Sokhos	3.33	271	P	Pn	17 58 12.5	-2.1
SOH				AML	AML	17 59 13.4	
	comp=N,15100µm,0.7s						
SOH				AML	AML	17 59 14.5	
	comp=E,14293µm,0.7s						
ZIMR		3.34	329	⇓iP	Pg	17 58 25.5	-1.1
AOS	Alonnisos	3.40	242	P	Pn	17 58 12.8	-2.6
AOS	Alonnisos	3.40	242	P	Pn	17 58 12.8	-2.6
AOS				AML	AML	17 59 16.9	
	comp=N,4355µm,0.8s						
AOS				AML	AML	17 59 22.8	
	comp=E,4451µm,1.1s						
CVDA	Cernavoda	3.51	3	⇓iP	Pn	17 58 17.5	+0.5
CVDA	Cernavoda	3.51	3	⇓iP	Pn	17 58 17.5	+0.5
HORT	Hortiatis	3.54	268	P	Pn	17 58 16.1	-1.4
HORT	Hortiatis	3.54	268	P	Pn	17 58 16.1	-1.4
HORT	Hortiatis	3.54	268	P	Pn	17 58 16.1	-1.4
HORT	Hortiatis	3.54	268	P	Pn	17 58 15.7	-1.7
THE	Thessaloniki	3.64	269	P	Pn	17 58 17.2	-1.5
THE	Thessaloniki	3.64	269	P	Pn	17 58 17.2	-1.5
SKIA	Skiathos	3.68	245	P	Pn	17 58 16.4	-2.9
SKIA	Skiathos	3.68	245	P	Pn	17 58 16.4	-2.9
SKIA				AML	AML	17 59 24.9	
	comp=N,5917µm,0.9s						
SKIA				AML	AML	17 59 26.4	
	comp=E,7493µm,0.9s						
KNT	Kendrikon	3.69	277	P	Pn	17 58 18.3	-1.1
KNT	Kendrikon	3.69	277	P	Pn	17 58 18.3	-1.1
KNT	Kendrikon	3.69	277	P	Pn	17 58 18.3	-1.1
KNT	Kendrikon	3.69	277	P	Pn	17 58 18.3	-1.1
KNT	Kendrikon	3.69	277	P	Pn	17 58 18.6	-0.8
ISP	Isparta	3.69	143	P	Pn	17 58 18.2	-1.3
ISP	Isparta	3.69	143	⇑iP	Pn	17 58 19.0	-0.5
ISP	Isparta	3.69	143	c iP	Pn	17 58 18.8	-0.7
ISP	Isparta	3.69	143	P	Pn	17 58 18.2	-1.3
ISP	Isparta	3.69	143	ePn	Pn	17 58 19.0	-0.5
ISP	Isparta	3.69	143	ePn	Pn	17 58 19.0	-0.5
BUC1	Bucharest	3.74	341	⇑iP	Pg	17 58 33.6	-0.7
TLB	Topalu	3.77	3	⇑iP	Pn	17 58 20.4	0.0
TLB	Topalu	3.77	3	⇑iP	Pn	17 58 20.4	0.0
BODT	Bodrum	3.77	185	P	Pn	17 58 18.8	-1.8
BODT	Bodrum	3.77	185	P	Pn	17 58 18.8	-1.8
BODT	Bodrum	3.77	185	P	Pn	17 58 18.8	-1.8
XOR	Xorichti	3.79	249	P	Pn	17 58 18.0	-2.8
XOR	Xorichti	3.79	249	P	Pn	17 58 18.0	-2.8
XOR	Xorichti	3.79	249	P	Pn	17 58 18.0	-2.8
NEO	Neokhori	3.79	248	P	Pn	17 58 19.2	-1.6
NEO	Neokhori	3.79	248	P	Pn	17 58 19.2	-1.6
NEO	Neokhori	3.79	248	P	Pn	17 58 19.2	-1.6
NEO	Neokhori	3.79	248	P	Pn	17 58 17.7	-3.1
AMRR	Amara	3.80	356	⇓iP	Pn	17 58 21.9	+1.0
AMRR	Amara	3.80	356	⇓iP	Pn	17 58 21.9	+1.0
HARR	Harsova	3.87	2	⇓iP	Pn	17 58 21.4	-0.4
HARR	Harsova	3.87	2	⇓iP	Pn	17 58 21.4	-0.4
VAY	Valandovo	3.94	279	iPn	Pn	17 58 22.3	-0.6
VAY				iSn	Sb	17 59 20.1	+0.4
VAY	Valandovo	3.94	279	iPn	Pn	17 58 22.7	-0.2
VAY				iSn	Sn	17 59 10.8	+1.6
VAY	Valandovo	3.94	279	iPn	Pn	17 58 22.7	-0.2
VAY				iSn	Sn	17 59 10.7	+1.5
FYTO	Fytoko, Volos	3.95	251	P	Pn	17 58 20.2	-2.8
FYTO	Fytoko, Volos	3.95	251	P	Pn	17 58 20.2	-2.8
BR231	Keskin MP Arra	3.97	103	ePg	Pb	17 58 30.3	-2.2
SMIA	Simia	4.00	242	P	Pn	17 58 23.0	-0.7
SMIA	Simia	4.00	242	P	Pn	17 58 22.5	-1.2
SMIA	Simia	4.00	242	P	Pn	17 58 22.5	-1.2
SULR		4.00	345	⇑iP	Pn	17 58 24.7	+1.0
SULR		4.00	345	⇑iP	Pn	17 58 24.7	+1.0
LIT	Litokhoron	4.08	261	P	Pn	17 58 24.1	-0.7
LIT	Litokhoron	4.08	261	P	Pn	17 58 24.1	-0.7
LIT	Litokhoron	4.08	261	P	Pn	17 58 24.1	-0.7
LIT	Litokhoron	4.08	261	P	Pn	17 58 24.1	-0.7
LIT	Litokhoron	4.08	261	P	Pn	17 58 22.2	-2.6
APE	Apeiranthos	4.13	205	P	Pn	17 58 24.3	-1.2
APE	Apeiranthos	4.13	205	⇑iP	Pn	17 58 22.9	-2.6
APE	Apeiranthos	4.13	205	c iP	Pn	17 58 22.9	-2.6
APE	Apeiranthos	4.13	205	P	Pn	17 58 24.3	-1.2
APE	Apeiranthos	4.13	205	P	Pn	17 58 24.3	-1.2
ATAL	Atalanti	4.22	241	P	Pn	17 58 25.2	-1.5
ATAL	Atalanti	4.22	241	P	Pn	17 58 25.2	-1.5
ATAL	Atalanti	4.22	241	P	Pn	17 58 25.2	-1.5
HUMR	Humele	4.23	332	⇓iP	Pn	17 58 26.4	-0.4
HUMR	Humele	4.23	332	⇓iP	Pn	17 58 26.4	-0.4
LKR	Lokris	4.26	241	P	Pn	17 58 25.6	-1.6
LKR	Lokris	4.26	241	P	Pn	17 58 25.6	-1.6
LKR	Lokris	4.26	241	P	Pn	17 58 25.6	-1.6
VLY	Voula,Athens	4.27	227	P	Pn	17 58 25.0	-2.4
VLY	Voula,Athens	4.27	227	P	Pn	17 58 25.0	-2.4
VLY	Voula,Athens	4.27	227	P	Pn	17 58 25.0	-2.4
KTI	Kastanea	4.31	266	P	Pn	17 58 26.4	-1.7
KTI	Kastanea	4.31	266	P	Pn	17 58 26.4	-1.7
FETY	Fethiye	4.31	166	P	Pn	17 58 27.2	-0.8
FETY	Fethiye	4.31	166	P	Pn	17 58 27.2	-0.8
FETY	Fethiye	4.31	166	P	Pn	17 58 27.2	-0.8
CFR	Carcaliu	4.36	4	⇓iP	Pn	17 58 27.8	-0.8
CFR	Carcaliu	4.36	4	⇓iP	Pn	17 58 27.8	-0.8
ISR	Istrita	4.38	349	⇑iP	Pn	17 58 30.7	+1.7
ISR	Istrita	4.38	349	⇑iP	Pn	17 58 30.7	+1.7
SECR		4.39	344	⇑iP	Pn	17 58 30.0	+1.0
SECR		4.39	344	⇑iP	Pn	17 58 30.0	+1.0
TLCR		4.43	10	⇓iP	Pn	17 58 29.3	-0.3
TLCR		4.43	10	⇓iP	Pn	17 58 29.3	-0.3
AGG	Agios Georgios	4.54	248	eP	Pn	17 58 29.1	-2.0
AGG	Agios Georgios	4.54	248	ePn	Pn	17 58 29.1	-2.0
AGG	Agios Georgios	4.54	248	ePn	Pn	17 58 29.1	-2.0
CRAR	CRAIOVA	4.55	322	⇑iP	Pn	17 58 30.6	-0.7
CRAR	CRAIOVA	4.55	322	⇑iP	Pn	17 58 30.6	-0.7
THL	Klokotos Trika	4.57	256	P	Pn	17 58 30.2	-1.3
THL	Klokotos Trika	4.57	256	P	Pn	17 58 30.2	-1.3
KZN	Kozani	4.58	265	P	Pn	17 58 30.6	-1.2
KZN	Kozani	4.58	265	P	Pn	17 58 30.6	-1.2
KZN	Kozani	4.58	265	P	Pn	17 58 30.6	-1.2
KZN	Kozani	4.58	265	P	Pn	17 58 30.6	-1.2
ARG	Arkhangelos	4.61	176	P	Pn	17 58 30.1	-2.0
ARG				S	Sn	17 59 23.2	-2.3
ARG	Arkhangelos	4.61	176	P	Pn	17 58 30.1	-2.0
ARG				S	Sn	17 59 23.2	-2.3
ARG	Arkhangelos	4.61	176	P	Pn	17 58 30.1	-2.0
ARG				S	Sn	17 59 23.2	-2.3
ARG	Arkhangelos	4.61	176	P	Pn	17 58 30.1	-2.0
ARG				S	Sn	17 59 23.2	-2.3
BR131	Keskin Array S	4.64	102	ePn	Pn	17 58 31.0	-1.6
BR131	Keskin Array S	4.64	102	ePn	Pn	17 58 31.0	-1.6
BRTR	Keskin Array B	4.64	102	Pn	Pn	17 58 31.0	-1.6
	comp=E,3.2nm,0.3s,baz=346,slow=21,SNR=80						
BRTR				Sn	Sn	17 59 23.4	-3.0
	comp=E,13nm,0.3s,baz=301,slow=20,SNR=5.6						
BRTR				Lg	Lg	17 59 57.2	
	comp=E,10nm,0.3s,baz=270,slow=21,SNR=4.4						
SANT	Santorini	4.79	203	ePn	Pn	17 58 34.0	-0.7
SANT	Santorini	4.79	203	ePn	Pn	17 58 34.0	-0.7
MTUR	Matau	4.82	337	⇑iP	Pn	17 58 35.5	+0.5
MTUR	Matau	4.82	337	⇑iP	Pn	17 58 35.5	+0.5
DID	Didima	4.82	228	P	Pn	17 58 33.2	-1.8
DID	Didima	4.82	228	P	Pn	17 58 33.2	-1.8
DID	Didima	4.82	228	P	Pn	17 58 33.2	-1.8
MLR	Muntele Rosu	4.85	345	Pn	Pn	17 58 36.4	+0.9
	comp=E,11nm,0.3s,baz=183,slow=4.2,SNR=352						
MLR				Lg	Lg	18 00 01.1	
	comp=E,11nm,0.3s,baz=88,slow=22,SNR=8.0						
MLR	Muntele Rosu	4.85	345	⇑iP	Pn	17 58 36.7	+1.2
MLR	Muntele Rosu	4.85	345	eP	Pn	17 58 36.9	+1.5
MLR	Muntele Rosu	4.85	345	⇑iP	Pn	17 58 36.7	+1.2
MLR				Lg	Lg	18 00 01.1	
MLR	Muntele Rosu	4.85	345	ePn	Pn	17 58 36.9	+1.5
MLR				Lg	Lg	18 00 01.1	
SKO	Skopje	4.88	286	iPn	Pn	17 58 35.6	-0.1
SKO				iSn	Sb	17 59 49.7	+3.1
SKO	Skopje	4.88	286	iPn	Pn	17 58 35.8	-0.1
SKO				iSn	Sn	17 59 33.2	+0.9
SKO	Skopje	4.88	286	iPn	Pn	17 58 35.7	-0.1
SKO				iSn	Sn	17 59 33.1	+0.9
KSL	Kastellorizon	4.88	162	P	Pn	17 58 35.5	-0.3
KSL	Kastellorizon	4.88	162	P	Pn	17 58 35.5	-0.3
ODBI	Odobesti	4.96	354	⇓iP	Pn	17 58 38.0	+1.1
ODBI	Odobesti	4.96	354	⇓iP	Pn	17 58 38.0	+1.1
KALE	Kalithea	4.97	243	P	Pn	17 58 36.5	-0.5
KALE	Kalithea	4.97	243	P	Pn	17 58 36.5	-0.5
KALE	Kalithea	4.97	243	P	Pn	17 58 36.5	-0.5
SERG	Sergoula	5.01	243	P	Pn	17 58 36.9	-0.7
SERG	Sergoula	5.01	243	P	Pn	17 58 36.9	-0.7
ANX	Ano Chora	5.01	246	P	Pn	17 58 37.0	-0.7
ANX	Ano Chora	5.01	246	P	Pn	17 58 37.0	-0.7
VOIR		5.01	338	⇓iP	Pn	17 58 37.8	+0.1
VOIR		5.01	338	⇓iP	Pn	17 58 37.8	+0.1
ZAGS	Zajecar	5.06	308	⇑iPn	Pn	17 58 36.7	-1.6
ARR	Arges	5.08	334	⇑iP	Pn	17 58 38.5	-0.1
ARR	Arges	5.08	334	⇑iP	Pn	17 58 38.5	-0.1
PLOR	Plostina	5.09	351	⇑iP	Pn	17 58 40.2	+1.5
PLOR	Plostina	5.09	351	⇑iP	Pn	17 58 40.2	+1.5
SRE	Strehaia	5.09	320	⇑iP	Pn	17 58 37.9	-0.7
SRE	Strehaia	5.09	320	⇑iP	Pn	17 58 37.9	-0.7
VRI	Vrincioaia	5.09	352	⇓iP	Pn	17 58 39.4	+0.7
VRI	Vrincioaia	5.09	352	⇓iP	Pn	17 58 39.4	+0.7
KLV	Kalavryta, Ach	5.15	239	P	Pn	17 58 38.7	-0.8
KLV	Kalavryta, Ach	5.15	239	P	Pn	17 58 38.7	-0.8
KLV	Kalavryta, Ach	5.15	239	P	Pn	17 58 38.7	-0.8
BOLS	Boljevac	5.24	307	⇓iPn	Pn	17 58 39.4	-1.3
OHR	Ohrid	5.27	275	iPn	Pn	17 58 41.6	+0.5
OHR				iSn	Sb	18 00 03.5	+5.7
OHR	Ohrid	5.27	275	iPn	Pn	17 58 41.7	+0.5
OHR				iSn	Sn	17 59 39.4	-2.5
OHR	Ohrid	5.27	275	iPn	Pn	17 58 41.7	+0.5
OHR				iSn	Sn	17 59 39.3	-2.5
KARP	Karpathos	5.29	185	ePn	Pn	17 58 40.4	-1.0
KARP	Karpathos	5.29	185	ePn	Pn	17 58 40.4	-1.0
DOPR	Dopca	5.42	342	⇓iP	Pn	17 58 44.0	+0.8
DOPR	Dopca	5.42	342	⇓iP	Pn	17 58 44.0	+0.8
LOT	Lotru	5.46	329	⇓iP	Pn	17 58 43.2	-0.7
LOT	Lotru	5.46	329	⇓iP	Pn	17 58 43.2	-0.7
LEOM	Leova	5.66	4	⇑iP	Pn	17 58 46.7	+0.3
LEOM	Leova	5.66	4	⇑iP	Pn	17 58 46.7	+0.3
SEV	Sevastopol'	5.73	48	eP	Pn	17 58 45.0	-2.4
SEV				eS	Sn	17 59 47.1	-6.0
SEV	Sevastopol'	5.73	48	eP	Pn	17 58 45.0	-2.4
SEV				eS	Sn	17 59 47.1	-6.0
TESR	Tescani	5.74	352	⇓iP	Pn	17 58 47.5	-0.1
TESR	Tescani	5.74	352	⇓iP	Pn	17 58 47.5	-0.1
LAST	Lasithi	5.93	198	ePn	Pn	17 58 51.9	+1.6
MDVR	Moldovita	5.94	314	⇑iP	Pn	17 58 49.5	-0.9
MDVR	Moldovita	5.94	314	⇑iP	Pn	17 58 49.5	-0.9
IDI	Anoyia	5.97	203	Pn	Pn	17 58 48.9	-1.9
	comp=E,2.3nm,0.3s,baz=30,slow=13,SNR=12						
IDI				LR	LR	18 01 34.4	
	comp=E,3µm,18.5s,baz=48,slow=42						
IDI	Anoyia	5.97	203	ePn	Pn	17 58 50.7	-0.1
IDI	Anoyia	5.97	203	ePn	Pn	17 58 50.7	-0.1
YAL	Yalta	5.97	50	⇑iP	Pn	17 58 50.0	-0.8
YAL				eS	Sn	17 59 55.4	-3.7
YAL	Yalta	5.97	50	iP	Pn	17 58 50.0	-0.8
YAL				eS	Sn	17 59 55.4	-3.7
TIR	Tirane	5.98	278	⇓iP	Pn	17 58 51.7	+0.8
TIR	Tirane	5.98	278	eP	Pn	17 58 52.1	+1.2
TIR	Tirane	5.98	278	⇓iP	Pn	17 58 51.7	+0.8
TIR	Tirane	5.98	278	ePn	Pn	17 58 52.1	+1.2
TIR	Tirane	5.98	278	ePn	Pn	17 58 52.1	+1.2
GRUS	Gruza	6.04	303	⇑iPn	Pn	17 58 50.6	-1.1
PVY	Plav	6.09	289	⇓iPn	Pn	17 58 52.4	-0.1
PVY				eSn	Sn	17 59 59.5	-2.7
DEV	Deva	6.17	327	⇓iP	Pn	17 58 53.3	-0.1
DEV	Deva	6.17	327	⇓iP	Pn	17 58 53.3	-0.1
BEY	Berane	6.21	292	⇓iPn	Pn	17 58 53.9	-0.3
BEY				eSn	Sn	18 00 02.8	-2.3

IVA	**Berane**	6.21	292	⇓	*i*Pn		**Pn**	17 58 53.9	-0.3
IVA					*e*Sn		**Sn**	18 00 02.8	-2.3
KIS	**Kishinev**	6.22	7		*e*P		**Pn**	17 58 54.0	-0.2
KIS					*i* S		**Sn**	18 00 06.0	+0.9
KIS					LRM		MLR	18 01 52.0	
	comp=E,5μm,6.0s								
KIS	**Kishinev**	6.22	7		*e*P		**Pn**	17 58 54.0	-0.2
KIS					*i* S		**Sn**	18 00 06.0	+0.9
KIS					MLR		MLR		
	comp=Z,4μm,8.0s								
KIS					MLR		MLR		
	comp=N,5μm,6.0s								
KIS					MLR		MLR		
	comp=E,5μm,10.0s								
KIS	**Kishinev**	6.22	7		*e*P		**Pn**	17 58 54.0	-0.2
ALU	**Alushta**	6.23	50		*e*P		**Pn**	17 58 53.5	-0.8
ALU					*e*S		**Sn**	18 00 02.2	-3.2
ALU	**Alushta**	6.23	50		*e*P		**Pn**	17 58 53.5	-0.8
SIM	**Simferopol'**	6.23	47	⇓	*i*P		**Pn**	17 58 53.3	-1.1
SIM					*e*S		**Sn**	18 00 00.3	-5.2
SIM	**Simferopol'**	6.23	47		*i* P		**Pn**	17 58 53.3	-1.1
IVAS	**Ivanjica**	6.28	298	⇑	*i*Pn		**Pn**	17 58 54.6	-0.4
IAS	**Iasi**	6.37	359	⇑	*i*P		**Pn**	17 58 57.7	+1.5
IAS	**Iasi**	6.37	359	⇑	*i*P		**Pn**	17 58 57.7	+1.5
TRUS	**Trudelj**	6.40	304	⇑	*i*Pn		**Pn**	17 58 55.3	-1.3
ULC	**Ulcinj**	6.50	283	⇓	*i*Pn		**Pn**	17 58 57.7	-0.3
ULC					*e*Sn		**Sn**	18 00 09.9	-2.1
ULC	**Ulcinj**	6.50	283	⇓	*i*Pn		**Pn**	17 58 57.7	-0.3
ULC					*e*Sn		**Sn**	18 00 09.9	-2.1
BZS	**Buzias**	6.56	319	⇑	*i*P		**Pn**	17 58 57.1	-1.7
BZS	**Buzias**	6.56	319	⇑	*i*P		**Pn**	17 58 57.1	-1.7
PDG	**Podgorica**	6.56	287	⇑	*i*P		**Pn**	17 58 59.1	+0.2
PDG	**Podgorica**	6.56	287	⇑	*i*P		**Pn**	17 58 59.1	+0.2
PDG					*e*Sn		**Sn**	18 00 11.1	-2.5
TTG	**Podgorica**	6.56	287		*e*Pn		**Pn**	17 58 59.1	+0.2
TTG					*e*Sn		**Sn**	18 00 11.1	-2.5
DRME	**Dracevica, Mon**	6.57	285	⇑	*i*Pn		**Pn**	17 58 58.4	-0.6
DRME					*e*Sn		**Sn**	18 00 11.4	-2.4
DRME	**Dracevica, Mon**	6.57	285	⇑	*i*Pn		**Pn**	17 58 58.4	-0.6
DRME					*e*Sn		**Sn**	18 00 11.4	-2.4
DIVS	**Divibare**	6.60	302		*e*Pn		**Pn**	17 58 57.7	-1.8
CJR	**Cluj-Napoca**	6.61	334	⇓	*i*P		**Pn**	17 59 00.4	+0.8
CJR	**Cluj-Napoca**	6.61	334	⇓	*i*P		**Pn**	17 59 00.4	+0.8
PRAR	**RASCA**	6.63	351	⇓	*i*P		**Pn**	17 59 00.3	+0.5
PRAR	**RASCA**	6.63	351	⇓	*i*P		**Pn**	17 59 00.3	+0.5
BANR	**Banloc**	6.64	315	⇓	*i*P		**Pn**	17 58 59.6	-0.4
BANR	**Banloc**	6.64	315	⇓	*i*P		**Pn**	17 58 59.6	-0.4
SUDU	**Sudak**	6.70	50	⇑	*i*P		**Pn**	17 58 59.7	-1.1
SUDU					*e*S		**Sn**	18 00 13.1	-3.9
SUDU	**Sudak**	6.70	50		*i* P		**Pn**	17 58 59.7	-1.1
PLE	**Pljevlja**	6.70	295		*e*Pn		**Pn**	17 59 00.2	-0.7
PLE					*e*Sn		**Sn**	18 00 13.9	-3.4
PLE	**Pljevlja**	6.70	295		*e*Pn		**Pn**	17 59 00.2	-0.7
PLE					*e*Sn		**Sn**	18 00 13.9	-3.4
ARCR	**ARCALIA**	6.72	340	⇑	*i*P		**Pn**	17 59 01.4	+0.3
ARCR	**ARCALIA**	6.72	340	⇑	*i*P		**Pn**	17 59 01.4	+0.3
BUM	**Brajici-Budva**	6.80	285	⇓	*i*Pn		**Pn**	17 59 02.5	+0.2
BUM					*e*Sn		**Sn**	18 00 17.2	-2.4
BUM	**Brajici-Budva**	6.80	285	⇓	*i*Pn		**Pn**	17 59 02.5	+0.2
BUM					*e*Sn		**Sn**	18 00 17.2	-2.4
AKMC	**Akamas**	6.83	147		P		**Pn**	17 59 02.9	+0.3
CEME	**Cevo**	6.83	287		*e*Pn		**Pn**	17 59 02.7	+0.1
CEME					*e*Sn		**Sn**	18 00 18.0	-2.3
CEME	**Cevo**	6.83	287		*e*Pn		**Pn**	17 59 02.7	+0.1
CEME					*e*Sn		**Sn**	18 00 18.0	-2.3
ALFC	**Alefka**	6.83	144		P		**Pn**	17 59 03.9	+1.2
NKY	**Niksic**	6.83	290	⇓	*i*Pn		**Pn**	17 59 02.2	-0.5
NKY					*e*Sn		**Sn**	18 00 17.5	-3.0
NKY	**Niksic**	6.83	290	⇓	*i*Pn		**Pn**	17 59 02.2	-0.5
NKY					*e*Sn		**Sn**	18 00 17.5	-3.0
NKME	**Niksic**	6.85	289	⇑	*i*Pn		**Pn**	17 59 03.0	+0.1
NKME					*e*Sn		**Sn**	18 00 18.4	-2.4
NKME	**Niksic**	6.85	289	⇑	*i*Pn		**Pn**	17 59 03.0	+0.1
NKME					*e*Sn		**Sn**	18 00 18.4	-2.4
BBLS	**Lazići**	6.89	299		*e*Pn		**Pn**	17 59 02.8	-0.6
PPCY	**Paphos**	6.96	147		P		Pn	17 59 10.0	+5.7
DRGR		6.99	330	⇑	*i*P		**Pn**	17 59 04.0	-0.8
DRGR		6.99	330	⇑	*i*P		**Pn**	17 59 04.0	-0.8
FEO	**Feodosiya**	7.00	51		*e*P		**Pn**	17 59 03.5	-1.4
FEO					*e*S		**Sn**	18 00 18.8	-5.6
FEO	**Feodosiya**	7.00	51		*e*P		**Pn**	17 59 03.5	-1.4
UPM	**Unac-Piva**	7.00	293	⇑	*i*Pn		**Pn**	17 59 04.7	-0.4
UPM					*e*Sn		**Sn**	18 00 21.3	-3.4
UPM	**Unac-Piva**	7.00	293	⇑	*i*Pn		**Pn**	17 59 04.7	-0.4
UPM					*e*Sn		**Sn**	18 00 21.3	-3.4
SIRR	**Siria**	7.01	323	⇑	*i*P		**Pn**	17 59 04.2	-0.8
SIRR	**Siria**	7.01	323	⇑	*i*P		**Pn**	17 59 04.2	-0.8
BURAR	**Bucovina Array**	7.03	346	⇑	*i*P		**Pn**	17 59 06.8	+1.4
BURAR	**Bucovina Array**	7.03	346	⇑	*i*P		**Pn**	17 59 06.8	+1.4
BUR08	**Bucovina Ar. S**	7.06	346		*e*Pn		**Pn**	17 59 06.1	+0.3
BUR08	**Bucovina Ar. S**	7.06	346		*e*Pn		**Pn**	17 59 06.1	+0.3
TEKS	**Tekeris**	7.11	304		*e*Pn		**Pn**	17 59 04.7	-1.7
HCY	**Herceg Novi**	7.12	286	⇓	*i*Pn		**Pn**	17 59 06.7	+0.2
HCY					*e*Sn		**Sn**	18 00 24.4	-2.9
HCY	**Herceg Novi**	7.12	286	⇓	*i*Pn		**Pn**	17 59 06.7	+0.2
HCY					*e*Sn		**Sn**	18 00 24.4	-2.9
BRY	**Bratogost**	7.18	290		*e*Pn		**Pn**	17 59 07.5	0.0
BRY					*e*Sn		**Sn**	18 00 26.1	-2.9
BRY	**Bratogost**	7.18	290		*e*Pn		**Pn**	17 59 07.5	0.0
BRY					*e*Sn		**Sn**	18 00 26.1	-2.9
FGSL	**Fruska Gora**	7.25	309	⇑	*i*Pn		**Pn**	17 59 06.6	-1.8
FRGS	**Fruska Gora**	7.25	309		*e*Pn		**Pn**	17 59 06.1	-2.3
TREB	**Trebinje**	7.28	288		*e*Pn		**Pn**	17 59 10.2	+1.5
SZAC	**Souni**	7.29	145		P		**Pn**	17 59 09.1	+0.1
SORM	**Soroca**	7.32	3	⇑	*i*P		**Pn**	17 59 07.8	-1.5
SORM	**Soroca**	7.32	3	⇑	*i*P		**Pn**	17 59 07.8	-1.5
CSS	**Mathiatis**	7.33	141		P		Pn	17 59 14.7	+5.3
CSS	**Mathiatis**	7.33	141		*e*Pn		**Pn**	17 59 09.4	0.0
CSS	**Mathiatis**	7.33	141		*e*Pn		**Pn**	17 59 09.4	0.0
KERU	**Kerch**	7.79	52		*e*P		**Pn**	17 59 16.7	+0.9
KERU	**Kerch**	7.79	52		*e*P		**Pn**	17 59 16.7	+0.9
ANN	**Anapa**	8.15	58		*e*P		**Pn**	17 59 21.3	+0.6
ANN					*e*S		**Sn**	18 00 54.4	+1.7
ANN					pmax		pmax		
	comp=Z,40nm,0.9s								
ANN					MLR		MLR		
	comp=Z,2μm,13.0s								
ANN					MLR		MLR		
	comp=N,2μm,13.0s								
ANN	**Anapa**	8.15	58		*e*P		**Pn**	17 59 21.3	+0.6
	comp=N,40nm,0.9s								
TIP	**Timpagrande**	8.59	263		*e*Pn		**Pn**	17 59 25.8	-1.0
TIP	**Timpagrande**	8.59	263		*e*Pn		**Pn**	17 59 25.8	-1.0
BLY	**Banja Luka**	8.70	300		*e*Pn		**Pn**	17 59 28.3	+0.1
UZH	**Uzhgorod**	8.71	335		*e*P		**Pn**	17 59 26.6	-1.8
UZH					*e*S		**Sn**	18 01 04.0	-2.5
UZH	**Uzhgorod**	8.71	335		*e*P		**Pn**	17 59 26.6	-1.8
PSZ	**Piszkesteto**	9.05	324	⇑	*i*P		**Pn**	17 59 33.8	+0.8
PSZ	**Piszkesteto**	9.05	324		*e*P		**Pn**	17 59 31.1	-2.0
PSZ	**Piszkesteto**	9.05	324		*e*Pn		**Pn**	17 59 31.0	-2.0
PSZ	**Piszkesteto**	9.05	324		*e*P		**Pn**	17 59 34.7	+1.7
PSZ	**Piszkesteto**	9.05	324		*e*Pn		**Pn**	17 59 31.1	-2.0
PSZ	**Piszkesteto**	9.05	324		*e*PKKPbc		**Pn**	17 59 34.7	+1.7
BUD	**Budapest**	9.14	320	⇓	*e*PKKPbc		**Pn**	17 59 37.0	+2.8
CUC	**Castrocucco**	9.14	269		*e*Pn		**Pn**	17 59 34.8	+0.5
CUC	**Castrocucco**	9.14	269		*e*Pn		**Pn**	17 59 34.8	+0.5
CRVS	**Cervenica-Dubn**	9.22	333		*e*Pn		**Pn**	17 59 32.9	-2.5
CRVS	**Cervenica-Dubn**	9.22	333		*e*PN		**Pn**	17 59 32.9	-2.5
KECS	**Kecovo**	9.24	328		*e*Pn		**Pn**	17 59 34.6	-1.0
KECS	**Kecovo**	9.24	328		*e*PN		**Pn**	17 59 34.6	-1.0
SOC	**Sochi**	9.30	69		*e*P		**Pn**	17 59 34.0	-2.4
SOC					*e*			18 01 20.7	
SOC					pmax		pmax		
	comp=Z,11nm,0.4s								
SOC					MLR		MLR		
	comp=Z,3μm,18.0s								
SOC	**Sochi**	9.30	69		*e*P		**Pn**	17 59 34.0	-2.4
	comp=Z,11nm,0.4s								
LVV	**L'vov**	9.37	345		*e*P		**Pn**	17 59 37.9	+0.6
LVV					MLR		MLR		
	comp=N,2μm,11.0s								
LVV					MLR		MLR		
	comp=E,2μm,11.0s								
LVV					MLR		MLR		
	comp=Z,3μm,11.0s								
LVV	**L'vov**	9.37	345		*e*P		**Pn**	17 59 37.9	+0.6
KWP	**Kalwaria Pacla**	9.49	340		*e*P		**Pn**	17 59 40.8	+1.7
KWP	**Kalwaria Pacla**	9.49	340		*e*P		**Pn**	17 59 40.8	+1.7
CEL	**Celeste**	9.51	258		*e*Pn		**Pn**	17 59 37.6	-1.7
CEL	**Celeste**	9.51	258		*e*Pn		**Pn**	17 59 37.6	-1.7
STHS	**Stebnicka Huta**	9.74	334		*e*Pn		**Pn**	17 59 40.6	-1.9
STHS	**Stebnicka Huta**	9.74	334		*e*PN		**Pn**	17 59 40.6	-1.9
BEHE	**Becsehely**	9.75	309		*e*Pn		**Pn**	17 59 39.7	-2.8
BEHE	**Becsehely**	9.75	309		*e*P		**Pn**	17 59 41.2	-1.3
BEHE	**Becsehely**	9.75	309		*e*PKKPdf		**Pn**	17 59 41.2	-1.3
AK11	**Malin Array Si**	9.90	5		*e*Pn		**Pn**	17 59 43.1	-1.6
AK11	**Malin Array Si**	9.90	5		*e*Pn		**Pn**	17 59 43.1	-1.6
MMAI	**Mount Meron Ar**	9.91	139		Pn		**Pn**	17 59 44.9	0.0
	comp=Z,3.0nm,0.3s,baz=320,slow=14,SNR=16								
KIEV	**Kiev**	9.92	5	⇓	*e*P		**Pn**	17 59 45.8	+0.9
KIEV	**Kiev**	9.92	5		*e*Pn		**Pn**	17 59 43.7	-1.2
KIEV	**Kiev**	9.92	5		*e*P		**Pn**	17 59 45.8	+0.9
KIEV	**Kiev**	9.92	5		*e*Pn		**Pn**	17 59 43.7	-1.2
AKASG	**Malin Array Be**	9.93	5		Pn		**Pn**	17 59 42.1	-2.9
	comp=Z,5.5nm,0.3s,baz=187,slow=12,SNR=15								
AKASG					Sn		**Sn**	18 01 28.9	-7.4
	comp=Z,3.6nm,0.3s,baz=178,slow=23,SNR=3.1								
AKASG					Lg		Lg	18 02 35.3	
	baz=185,slow=29,SNR=5.1								
AKBB	**Malin Array Si**	9.93	5		*e*P		**Pn**	17 59 44.5	-0.5
AKBB	**Malin Array Si**	9.93	5		*e*Pn		**Pn**	17 59 44.5	-0.5
AKBB	**Malin Array Si**	9.93	5		*e*Pn		**Pn**	17 59 44.5	-0.5
VYHS	**Vyhne**	9.95	323		*e*Pn		**Pn**	17 59 43.8	-1.5
VYHS	**Vyhne**	9.95	323		*e*PN		**Pn**	17 59 43.8	-1.5
NIE	**Niedzica**	10.07	331		*e*Pn		**Pn**	17 59 47.6	+0.6
NIE					*e*			17 59 55.4	
NIE	**Niedzica**	10.07	331		*e*Pn		**Pn**	17 59 47.6	+0.6
LANS	**Liptovska Anna**	10.18	328		*e*Pn		**Pn**	17 59 48.2	-0.3
LANS	**Liptovska Anna**	10.18	328		*e*PN		**Pn**	17 59 48.2	-0.3
NVLJ	**Novalja**	10.19	296		P		**Pn**	17 59 49.2	+0.7
NVLJ	**Novalja**	10.19	296		*i* P		**Pn**	17 59 49.2	+0.7
GOLS	**Golise**	10.23	304		*e*Pn		**Pn**	17 59 48.5	-0.6
GOLS					*e*Sn		**Sn**	18 01 51.0	+7.4
	comp=Z,4μm,7.5s								
GOLS	**Golise**	10.23	304		Pn		**Pn**	17 59 48.5	-0.6
CRES	**Cresnjev**	10.25	303		*e*Pn		**Pn**	17 59 49.7	+0.2
PERS	**Pernice**	10.82	307		*e*Pn		**Pn**	17 59 56.3	-1.0
PERS	**Pernice**	10.82	307		*e*Pn		**Pn**	17 59 56.3	-1.0
AQU	**L'Aquila**	10.86	283		*e*P		**Pn**	18 00 01.1	+3.3
AQU	**L'Aquila**	10.86	283		*e*P		**Pn**	18 00 01.1	+3.3
AQU	**L'Aquila**	10.86	283		*e*Pn		**Pn**	18 00 01.1	+3.3
VAE	**Valguarnera**	10.88	256		Pn		**Pn**	17 59 58.6	+0.5
	comp=Z,0.6nm,0.3s,baz=140,slow=4.7,SNR=4.2								
ARSA	**Arzberg**	10.89	310		*i* P		**Pn**	17 59 58.1	-0.1
	comp=Z,44nm,0.8s,SNR=13								
ARSA	**Arzberg**	10.89	310		P		**Pn**	17 59 58.1	-0.1
	comp=Z,44nm,0.8s,SNR=13								
SOKA	**Soboth**	10.89	307		*i* Pn		**Pn**	17 59 56.9	-1.4
	comp=Z,27nm,0.7s,SNR=15								
SOKA	**Soboth**	10.89	307		P		**Pn**	17 59 56.9	-1.4
	comp=Z,27nm,0.7s,SNR=15								
OJC	**Ojcow**	10.92	332		*e*Pn		**Pn**	17 59 59.2	+0.6
OJC					*e*			18 00 06.2	
OJC	**Ojcow**	10.92	332		*e*P		**Pn**	17 59 57.9	-0.7
OJC	**Ojcow**	10.92	332		*e*Pn		**Pn**	17 59 57.9	-0.7
OJC	**Ojcow**	10.92	332		*e*Pn		**Pn**	17 59 57.9	-0.7
CONA	**Conrad Observa**	11.07	314		*i* P		**Pn**	18 00 00.7	-0.1
	comp=Z,6.1nm,1.0s								
CONA	**Conrad Observa**	11.07	314		P		**Pn**	18 00 00.7	-0.1
	comp=Z,6.1nm,1.0s								
OBKA	**Obir**	11.12	305		*i* P		**Pn**	18 00 02.5	+1.1
	comp=Z,16nm,0.7s								
OBKA	**Obir**	11.12	305		P		**Pn**	18 00 02.5	+1.1
	comp=Z,16nm,0.7s								
OKC	**Ostrava-Krasne**	11.25	326		*e*P		**Pn**	18 00 06.0	+2.8
OKC					AMS		AMS	18 05 30.0	
	comp=Z,5μm,10.6s								
OKC	**Ostrava-Krasne**	11.25	326		*e*P		**Pn**	18 00 06.0	+2.8
OKC					MLR		MLR		
	comp=Z,5μm,10.6s								
OKC	**Ostrava-Krasne**	11.25	326		*e*P		**Pn**	18 00 06.0	+2.8
	comp=Z,5μm,10.6s								
ASF	**Jabal al Asfar**	11.34	137		Pn		**Pn**	18 00 07.4	+2.9
	comp=Z,0.2nm,0.3s,baz=248,slow=11,SNR=2.8								
MORC	**Moravsky Berou**	11.47	325	⇓	*i*P		**Pn**	18 00 07.1	+1.0
MORC	**Moravsky Berou**	11.47	325		*e*P		**Pn**	18 00 05.6	-0.6
MORC	**Moravsky Berou**	11.47	325		*e*Pn		**Pn**	18 00 05.6	-0.6
MORC	**Moravsky Berou**	11.47	325	⇓	*i*P		**Pn**	18 00 07.1	+1.0
MORC	**Moravsky Berou**	11.47	325		*e*Pn		**Pn**	18 00 05.6	-0.6
KIV	**Kislovodsk**	11.48	69		*i* P		**Pn**	18 00 09.0	+2.6
	SNR=7.9								
KIV	**Kislovodsk**	11.48	69		*e*P		**Pn**	18 00 08.3	+1.9
KIV					*e*S		**Sn**	18 02 16.9	+2.3
KIV					pmax		pmax		
	comp=Z,24nm,1.0s								
KIV	**Kislovodsk**	11.48	69		*e*Pn		**Pn**	18 00 04.5	-1.9
KIV	**Kislovodsk**	11.48	69		*e*P		**Pn**	18 00 08.3	+1.9
	comp=Z,24nm,1.0s								
KIV					*e*S		**Sn**	18 02 16.9	+2.3
KIV	**Kislovodsk**	11.48	69		*e*Pn		**Pn**	18 00 04.5	-1.9
KVAR	**Kislovodsk Arr**	11.49	69		Pn		**Pn**	18 00 03.8	-2.7
	baz=248,slow=11,SNR=3.5								
KVAR					Sn		**Sn**	18 02 09.2	-5.5
	baz=61,slow=19,SNR=3.2								
VRAC	**Vranov**	11.57	321		Pn		**Pn**	18 00 08.6	+1.0
	comp=Z,0.4nm,0.3s,baz=140,slow=11,SNR=5.3								
VRAC	**Vranov**	11.57	321	⇓	*i*P		**Pn**	18 00 08.2	+0.7
VRAC	**Vranov**	11.57	321	⇓	*i*P		**Pn**	18 00 08.2	+0.7
KBZ	**Khabaz**	11.59	71		Pn		**Pn**	18 00 10.8	+3.0
	comp=Z,0.3nm,0.3s,baz=266,slow=14,SNR=4.7								
KBZ					Sn		**Sn**	18 02 18.6	+1.5
	comp=Z,0.1nm,0.3s,baz=47,slow=19,SNR=2.2								
CLTB	**Caltabellotta**	11.73	259		*e*Pn		**Pn**	18 00 09.8	0.0
CLTB	**Caltabellotta**	11.73	259		*e*Pn		**Pn**	18 00 09.8	0.0
MYKA	**Terra Mystica**	11.73	304		*i* P		**Pn**	18 00 10.2	+0.4
	comp=Z,30nm,1.2s								
MYKA	**Terra Mystica**	11.73	304		P		**Pn**	18 00 10.2	+0.4
	comp=Z,30nm,1.2s								
MOA	**Molln**	11.93	311		*i* P		**Pn**	18 00 13.1	+0.7
	comp=Z,23nm,0.8s,SNR=6.2								
MOA	**Molln**	11.93	311		P		**Pn**	18 00 13.1	+0.7
	comp=Z,23nm,0.8s,SNR=6.2								
GOF	**Gofitskoye**	11.98	64	⇑	*e*P		**Pn**	18 00 15.9	+2.8
GOF					*e*S		Sn	18 02 38.3	+12
GOF					pmax		pmax		
	comp=N,151nm,0.9s								
GOF					pmax		pmax		
	comp=E,194nm,1.1s								
KRLC	**Kraliky**	12.02	324		*e*P		**Pn**	18 00 13.5	-0.2
KRLC	**Kraliky**	12.02	324		*e*P		**Pn**	18 00 13.5	-0.2
KRLC	**Kraliky**	12.02	324		P		**Pn**	18 00 13.5	-0.2
TREC	**Trest**	12.11	318		AMS		AMS	18 06 20.0	
	comp=E,4μm,9.6s								
KBA	**Koelnbreinsper**	12.11	306		*i* P		**Pn**	18 00 15.1	+0.1
	comp=E,14nm,0.7s								
KBA	**Koelnbreinsper**	12.11	306		P		**Pn**	18 00 15.1	+0.1
	comp=E,14nm,0.7s								
ZEI	**Tsey**	12.22	75		*e*P		Pn	18 00 21.9	+5.4
ZEI					pmax		pmax		
	comp=Z,24nm,0.3s								
ZEI	**Tsey**	12.22	75		*e*P		Pn	18 00 21.9	+5.4
	comp=Z,24nm,0.3s								
DPC	**Dobruska-Polom**	12.43	324		*e*P		**Pn**	18 00 21.3	+2.1
DPC					*ex*		x	18 00 28.3	
DPC					AMS		AMS	18 06 20.0	
	comp=Z,6μm,11.0s								
DPC	**Dobruska-Polom**	12.43	324		*e*P		**Pn**	18 00 21.3	+2.1
DPC					MLR		MLR		
	comp=Z,6μm,11.0s								
DPC	**Dobruska-Polom**	12.43	324		P		**Pn**	18 00 21.3	+2.1
ABTA	**Abfaltersbach**	12.49	303		*i* P		**Pn**	18 00 20.8	+0.6
	comp=Z,23nm,1.1s,SNR=6.2								
ABTA	**Abfaltersbach**	12.49	303		P		**Pn**	18 00 20.8	+0.6
	comp=Z,23nm,1.1s,SNR=6.2								
EIL	**Elat**	12.58	150		Pn		**Pn**	18 00 21.7	+0.3
	comp=Z,1.1nm,0.3s,baz=322,slow=11,SNR=8.9								
UPC	**Upice**	12.68	324		AMS		AMS	18 06 30.0	
	comp=Z,8μm,10.9s								
GEA0	**GERESS Array S**	12.77	314		*e*Pn		**Pn**	18 00 23.7	-0.3
GEA0	**GERESS Array S**	12.77	314		*e*Pn		**Pn**	18 00 23.7	-0.3
GEC2	**GERESS Array S**	12.78	314		*e*P		**Pn**	18 00 23.0	-1.1
GEC2	**GERESS Array S**	12.78	314		*e*Pn		**Pn**	18 00 23.0	-1.1
GEC2	**GERESS Array S**	12.78	314		*e*Pn		**Pn**	18 00 23.0	-1.1
GERES	**GERESS Array B**	12.78	314		Pn		**Pn**	18 00 23.3	-0.8
	comp=Z,0.5nm,0.3s,baz=116,slow=15,SNR=14								
KSP	**Ksiaz**	12.80	325		*e*P		**Pn**	18 00 25.8	+1.6
KSP	**Ksiaz**	12.80	325		*e*P		**Pn**	18 00 25.8	+1.6
GOPC	**GO Pecny, Ondr**	12.85	319		AMS		AMS	18 06 20.0	
	comp=Z,6μm,11.1s								
GNI	**Garni**	12.96	87		Pn		**P**	18 00 33.1	-4.2
	comp=Z,0.5nm,0.3s,baz=185,slow=2.6,SNR=9.3								
GNI	**Garni**	12.96	87		*i* P		P	18 00 31.8	-5.5
	SNR=14								
GNI	**Garni**	12.96	87	⇑	*e*P		**Pn**	18 00 31.1	+4.4
GNI	**Garni**	12.96	87		*e*Pn		**Pn**	18 00 25.2	-1.5
GNI	**Garni**	12.96	87		*e*P		**Pn**	18 00 31.1	+4.4
GNI	**Garni**	12.96	87		*e*Pn		**Pn**	18 00 25.2	-1.5
KHC	**Kasperske Hory**	13.01	314		*e*P		**Pn**	18 00 26.5	-0.7
KHC					*ex*		x	18 00 35.3	
KHC					AMS		AMS	18 06 50.0	
	comp=Z,4μm,9.1s								
KHC	**Kasperske Hory**	13.01	314		*e*P		**Pn**	18 00 26.5	-0.7
KHC					MLR		MLR		
	comp=Z,4μm,9.1s	

MOS pmax pmax
comp=Z,66nm,0.9s
MOS MLR MLR
comp=Z,1µm,11.0s
MOF Molkenrain 16.31 302 *e*P **Pn 18 01 09.6 -1.8**
GDM Grand'Maison 16.40 293‖ *e*P **P 18 01 16.6 +1.1**
GDM Grand'Maison 16.40 293‖ *e*P **P 18 01 16.6 +1.1**
ECH Echery 16.41 304 *e*P **P 18 01 15.6 +0.2**
ECH Echery 16.41 304 *e*P **P 18 01 15.6 +0.2**
GRN Grenoble 16.67 293‖ *e*P **P 18 01 17.3 -1.1**
GRN Grenoble 16.67 293‖ *e*P **P 18 01 17.3 -1.1**
ABH Alteburg 16.80 309 *e*P **P 18 01 20.8 +1.1**
RUP Ruppelstein 17.01 308 *e*P **Pn 18 01 19.8 -0.5**
THEF They Montfort 17.16 303 *e*P **Pn 18 01 22.7 +0.7**
THEF They Montfort 17.16 303 *e*P **Pn 18 01 22.7 +0.7**
SSB Saint Sauveur 17.52 292 *e*P **P 18 01 27.2 -0.5**
SSB pmax pmax
comp=Z,13nm,0.9s
SSB Saint Sauveur 17.52 292 *e*Pn **P 18 01 27.2 -0.5**
comp=Z,13nm,0.9s
SSB Saint Sauveur 17.52 292 *e*Pn **P 18 01 27.2 -0.5**
comp=Z,13nm,0.9s
WLF Walferdange 17.54 307 P **P 18 01 27.5 -0.4**
comp=Z,25nm,1.6s
WLF Walferdange 17.54 307 *e*P **Pn 18 01 26.4 -0.4**
WLF pmax pmax
comp=Z,32nm,1.2s
WLF Walferdange 17.54 307 *e*Pn **Pn 18 01 26.4 -0.4**
comp=Z,32nm,1.2s
WLF Walferdange 17.54 307 P **P 18 01 27.5 -0.4**
comp=Z,25nm,1.6s
WLF Walferdange 17.54 307 *e*Pn **Pn 18 01 26.4 -0.4**
comp=Z,32nm,1.2s
VSU Vasula 17.67 358‖ *e*P **Pn 18 01 25.9 -2.4**
MEM Membach 18.00 310 P **P 18 01 34.5 +1.5**
comp=Z,20nm,1.0s
MEM Membach 18.00 310 P **P 18 01 34.4 +1.5**
comp=Z,20nm,1.0s
PLDF La Plantade 18.24 294 *e*P **P 18 01 38.1 +2.3**
BCLA Clavier 18.34 309 P **P 18 01 38.0 +1.4**
BCLA Clavier 18.34 309 P **P 18 01 38.0 +1.4**
LBL Lubilhac 18.42 292 *e*P **Pn 18 01 38.8 +1.0**
LBL Lubilhac 18.42 292 *e*P **Pn 18 01 38.8 +1.0**
AGO Saint Agoulin 18.59 295 *e*P **Pn 18 01 39.8 0.0**
AGO Saint Agoulin 18.59 295 *e*P **Pn 18 01 39.8 0.0**
DOU Dourbes 18.64 308 P **Pn 18 01 40.2 0.0**
comp=Z,13nm,1.7s
DOU Dourbes 18.64 308 P **Pn 18 01 40.2 0.0**
comp=Z,13nm,1.7s
FILF Fillols 18.87 284 *e*P **Pn 18 01 45.0 +1.7**
FRNF Fournols 18.92 292 *e*P **Pn 18 01 47.9 +4.2**
SNF Seneffe 18.97 309 P **Pn 18 01 46.3 +2.0**
VERF Verneugheol 19.00 293‖ *e*P **Pn 18 01 44.8 0.0**
VERF Verneugheol 19.00 293‖ *e*P **Pn 18 01 44.8 0.0**
EMHD Djebel Mahouad 19.92 265 P **Pn 18 01 58.9 +3.0**
RESF Ens 20.49 285 *e*P Pn 18 02 02.3 -0.3
FINES FINESS Array B 20.67 358 P **P 18 01 60.0 -2.1**
comp=Z,1.8nm,0.5s,baz=166,slow=12,SNR=14
FINES S **S 18 05 47.5 -5.1**
comp=Z,5.8nm,0.9s,baz=160,slow=25,SNR=3.8
FINES FINESS Array B 20.67 358 P **P 18 02 00.0 -2.1**
VIEF Viey 20.72 285 *e*P **P 18 02 03.3 +0.4**
VIEF Viey 20.72 285 *e*P **P 18 02 03.3 +0.4**
REYF Montagne du Re 21.01 285 *e*P **P 18 02 06.8 +0.8**
REYF Montagne du Re 21.01 285 *e*P **P 18 02 06.8 +0.8**
HFS Hagfors 21.21 340 P **P 18 02 08.0 +0.1**
comp=Z,9.5nm,0.9s,baz=156,slow=11,SNR=13
HFS Hagfors 21.21 340 P **P 18 02 08.0 +0.1**
HFS Hagfors 21.21 340 P **P 18 02 08.0 +0.1**
ATE Arette 21.24 286 *e*P **P 18 02 08.8 +0.4**
ATE Arette 21.24 286 *e*P **P 18 02 08.8 +0.4**
KLMR Klimovskoe 21.32 16 *e*P **P 18 02 08.4 -0.7**
KLMR *e*S **S 18 06 05.4 0.0**
KLMR pmax pmax
comp=Z,64nm,1.1s
KLMR Klimovskoe 21.32 16 *e*P **P 18 02 08.4 -0.7**
comp=Z,64nm,1.1s
KLMR *e*S **S 18 06 05.4 0.0**
LARF Larrau 21.45 285 *e*P **P 18 02 11.5 +0.8**
LARF Larrau 21.45 285 *e*P **P 18 02 11.5 +0.8**
OSSF Osses 21.64 286 *e*P **P 18 02 12.5 -0.1**
OSSF Osses 21.64 286 *e*P **P 18 02 12.5 -0.1**
KONO Kongsberg 22.00 335‖ *e*P **P 18 02 17.9 +1.6**
KONO pmax pmax
comp=Z,43nm,0.6s
KONO Kongsberg 22.00 335 *e*P **P 18 02 17.9 +1.6**
comp=Z,43nm,0.6s
NC602 NORSAR Array S 22.29 339 *e*P **P 18 02 17.8 -1.7**
NC602 NORSAR Array S 22.29 339 *e*P **P 18 02 17.8 -1.7**
NC405 NORSAR Array S 22.56 340 *e*P **P 18 02 21.2 -1.2**
NC405 NORSAR Array S 22.56 340 *e*P **P 18 02 21.2 -1.2**
NAO01 NORSAR Array S 22.57 338 *e*P **P 18 02 21.2 -1.2**
NAO01 NORSAR Array S 22.57 338 *e*P **P 18 02 21.2 -1.2**
NB201 NORSAR Array S 22.62 339 *e*P **P 18 02 21.7 -1.3**
NB201 NORSAR Array S 22.62 339 *e*P **P 18 02 21.7 -1.3**
NB2 NORSAR Subarra 22.64 339 P **P 18 02 21.1 -2.1**
comp=Z,16nm,1.0s,baz=142,slow=10
NB2 NORSAR Subarra 22.64 339 P **P 18 02 21.1 -2.1**
comp=Z,16nm,1.0s,SNR=3.2
NOA NORSAR Array B 22.64 339 P **P 18 02 21.3 -1.9**
comp=Z,6.1nm,0.7s,baz=144,slow=10,SNR=15
NOA PcP **PcP 18 06 14.2 -1.4**
comp=Z,1.2nm,0.7s,baz=122,slow=3.2,SNR=3.5
NBO02 NORSAR Array S 22.74 339 *e*P **P 18 02 23.7 -0.6**
NBO02 NORSAR Array S 22.74 339 *e*P **P 18 02 23.7 -0.6**
NBO00 NORSAR Array S 22.75 338 *e*P **P 18 02 23.6 -0.8**
NBO00 NORSAR Array S 22.75 338 *e*P **P 18 02 23.6 -0.8**
NC303 NORSAR Array S 22.75 339 *e*P **P 18 02 26.1 +1.8**
NC303 NORSAR Array S 22.75 339 *e*P **P 18 02 26.1 +1.8**
NC204 NORSAR Array S 22.95 339 *e*P **P 18 02 26.2 -0.4**
NC204 NORSAR Array S 22.95 339 *e*P **P 18 02 26.2 -0.4**
CWF Charnwood Fore 23.02 311 *e*P **P 18 02 27.0 -0.2**
comp=Z,15nm,0.9s
CWF Charnwood Fore 23.02 311 *e*P **P 18 02 27.0 -0.2**
comp=Z,15nm,0.9s
AKTK Aktyubinsk 23.10 55 *i* P **P 18 02 27.5 -0.7**
comp=Z,28nm,0.8s
AKTO Aktyubinsk 23.10 55 P **P 18 02 27.2 -1.0**
comp=Z,4.2nm,0.8s,baz=260,slow=13,SNR=11
AKTO LR LR 18 13 10.9
comp=Z,504nm,20.7s,baz=207,slow=41
AKTO Aktyubinsk 23.10 55 *i* P **P 18 02 27.5 -0.7**
AKTO pmax pmax
comp=Z,28nm,0.8s
GEYT Alibeck 23.60 87 P **P 18 02 33.8 +0.5**
comp=Z,2.1nm,0.7s,baz=270,slow=8.6,SNR=4.9
ES19 SONSECA Array 24.11 278 *e*P **P 18 02 38.2 0.0**
ES19 SONSECA Array 24.11 278 *e*P **P 18 02 38.2 0.0**
AB31 Akbulak array 24.11 59 *i* P **P 18 02 36.8 -1.2**
AB31 pmax pmax
comp=Z,9.0nm,0.7s
AB31 Akbulak array 24.11 59 *i* P **P 18 02 36.8 -1.2**
comp=Z,9.0nm,0.7s
ABKAR Akbulak array 24.11 59 *e*P **P 18 02 37.6 -0.4**
ABKAR Akbulak array 24.11 59 *e*P **P 18 02 37.6 -0.4**
ESDC Sonseca Array 24.17 278 P **P 18 02 37.9 -0.8**
comp=Z,4.6nm,0.7s,baz=72,slow=9.9,SNR=31
ESLA Sonseca Array 24.17 278 *e*P **P 18 02 38.0 -0.7**
ESLA Sonseca Array 24.17 278 *e*P **P 18 02 38.0 -0.7**
ESLA *e*pP **pP 18 02 42.9 +0.6**
PAB San Pablo 24.48 278 *e*P **P 18 02 42.7 +1.1**
PAB pmax pmax
comp=Z,21nm,1.0s
PAB San Pablo 24.48 278 *e*P **P 18 02 42.7 +1.1**
comp=Z,21nm,1.0s
PAB San Pablo 24.48 278 *e*P **P 18 02 42.7 +1.1**
comp=Z,21nm,1.0s
EKA Eskdalemuir Ar 24.98 316 P **P 18 02 44.8 -1.0**
comp=Z,4.8nm,0.8s,baz=116,slow=10,SNR=3.6
ARU Arti 25.37 42 P **P 18 02 49.8 +0.5**
comp=Z,30nm,0.8s,baz=247,slow=6.5,SNR=46
ARU LR LR 18 13 56.8
comp=Z,2µm,20.6s,baz=217,slow=39
ARU Arti 25.37 42 *c i*P **P 18 02 48.9 -0.4**
ARU PPP PPP 18 03 33.0
ARU S **S 18 07 16.9 +1.6**
ARU SS **SnSn 18 08 09.2 +2.3**
ARU SSS SSS 18 08 27.0
ARU pmax pmax
comp=Z,75nm,1.2s
ARU MLR MLR
comp=Z,2µm,20.0s
ARU Arti 25.37 42 *i* P **P 18 02 48.9 -0.4**
comp=Z,75nm,1.2s
ARU *e*pP **sP 18 02 54.7 +0.1**
ARU S **S 18 07 16.9 +1.6**
ARU Arti 25.37 42 *e*P **P 18 02 49.9 +0.5**
ARU *e*pP **sP 18 02 54.7 +0.1**
PBRG Braganca 25.82 284 *e*P **P 18 02 54.0 +0.3**
comp=Z,23nm,2.0s
PBRG Braganca 25.82 284 *e*P **P 18 02 54.0 +0.3**
comp=Z,23nm,2.0s
TAM Tamanrasset 25.95 233 *e*P **P 18 02 56.9 +1.8**
TAM pmax pmax
comp=Z,7.0nm,1.0s
TAM Tamanrasset 25.95 233 *e*P **P 18 02 56.9 +1.8**
comp=Z,7.0nm,1.0s
TAM Tamanrasset 25.95 233 *e*P **P 18 02 56.9 +1.8**
comp=Z,7.4nm,1.0s
SOKR Solikamsk 26.08 34 *d i*P **P 18 02 55.3 -0.4**
SOKR pmax pmax
comp=Z,57nm,1.5s
SOKR MLR MLR
comp=Z,2µm,19.0s
MVO Moncorvo 26.15 282 *e*P **P 18 02 59.0 +2.3**
comp=Z,21nm,2.4s
MVO *e*pP sP 18 03 09.9 +8.0
SVE Sverdlovsk 26.58 42 *e*P **P 18 03 02.0 +1.7**
SVE pmax pmax
comp=Z,56nm,1.6s
SVE Sverdlovsk 26.58 42 *e*P **P 18 03 02.0 +1.7**
comp=Z,56nm,1.6s
PCBR Castelo Branco 26.77 280 *e*P **P 18 03 02.6 +0.5**
comp=Z,33nm,1.1s
PCBR *e*pP **sP 18 03 07.8 +0.4**
PCBR Castelo Branco 26.77 280 *e*P **P 18 03 02.6 +0.5**
comp=Z,33nm,1.1s
PCBR *e*pP **sP 18 03 07.8 +0.4**
PBAR Barrancos 26.87 276 *e*P **P 18 03 06.7 +3.6**
comp=Z,50nm,1.5s
PVIS Viseu 26.88 282 *e*P **P 18 03 05.1 +1.8**
comp=Z,29nm,1.5s
APA Apatity 26.98 5‖ *i*P **P 18 03 04.8 +1.0**
APA MLR MLR
comp=Z,2µm,14.0s
APA Apatity 26.98 5 *i* P **P 18 03 04.8 +1.0**
comp=Z,2µm,14.0s
MDT Midelt 27.00 263 P **P 18 03 04.0 -0.5**
comp=Z,6.3nm,0.9s,baz=63,slow=9.4,SNR=8.8
MDT Midelt 27.00 263 P **P 18 03 04.0 -0.5**
PESTR Estremoz 27.09 278 *e*P **P 18 03 08.3 +3.2**
PESTR *e*pP **sP 18 03 12.8 +2.4**
COI Coimbra 27.38 281 *e*P **P 18 03 08.5 +0.8**
comp=Z,58nm,0.9s
LVZ Lovozero 27.39 6‖ *e*P **P 18 03 10.0 +2.5**
LVZ pmax pmax
comp=Z,8.0nm,0.9s
LVZ Lovozero 27.39 6 *e*P **P 18 03 10.0 +2.5**
comp=Z,8.0nm,0.9s
EVO Evora 27.50 277 *e*P **P 18 03 14.2 +5.4**
comp=Z,13nm,2.1s
PMTG Montargil 27.52 278 *e*P **P 18 03 11.9 +3.0**
comp=Z,40nm,1.6s
PTOM Tomar 27.52 279 *e*P **P 18 03 09.3 +0.4**
comp=Z,64nm,1.5s
PTOM Tomar 27.52 279 *e*P **P 18 03 09.3 +0.4**
comp=Z,64nm,1.5s
PBEJ Beja 27.54 276 *e*P **P 18 03 13.9 +4.8**
comp=Z,23nm,1.4s
PVAQ Vaqueiros 27.61 275 *e*pP pP 18 03 17.0 +3.5
PBDV Barranco-do-Ve 27.82 274 *e*P **P 18 03 13.2 +1.5**
comp=Z,24nm,0.9s
PBDV *e*pP **sP 18 03 17.3 +0.3**
MESJ Messejana 27.86 276 *e*pP pP 18 03 18.9 +3.2
BANOM Banah 27.94 113 P **P 18 03 17.8 +5.0**
BANOM Banah 27.94 113 P **P 18 03 17.8 +5.0**
NAZ Nazwa, Dubai 28.10 116 P P 18 03 19.3 +5.0
NAZ Nazwa, Dubai 28.10 116 P P 18 03 19.3 +5.1
FAQ Al Faqa, Dubai 28.21 116 P **P 18 03 19.7 +4.4**
FAQ Al Faqa, Dubai 28.21 116 P **P 18 03 19.7 +4.4**
UOSS Minazif 28.50 115 P **P 18 03 21.9 +4.1**
ARCES ARCESS Array B 28.80 358 P **P 18 03 19.1 -0.9**
comp=Z,3.1nm,0.8s,baz=156,slow=6.9,SNR=6.3
BRVK Borovoye 31.05 52‖ *e*P **P 18 03 42.6 +2.5**
BRVK pmax pmax
comp=Z,45nm,1.0s
BRVK Borovoye 31.05 52 *e*P **P 18 03 42.6 +2.5**
comp=Z,45nm,1.0s
BVA0 Borovoye Array 31.11 52 P **P 18 03 40.7 0.0**
BVA0 pmax pmax
comp=Z,8.0nm,0.9s
BVA0 Borovoye Array 31.11 52 P **P 18 03 40.7 0.0**
comp=Z,8.0nm,0.9s
BVAR Borovoye Array 31.11 52 LR LR 18 19 35.7
comp=Z,523nm,19.1s,baz=262,slow=43
KK31 Karatay Array 31.63 71 *i* P **P 18 03 47.8 +2.4**
KK31 pmax pmax
comp=Z,11nm,0.8s
KK31 Karatay Array 31.63 71 *i* P **P 18 03 47.8 +2.4**
comp=Z,11nm,0.8s
KKAR Karatay Array 31.63 71 *e*P **P 18 03 46.9 +1.5**
KKAR Karatay Array 31.63 71 *e*P **P 18 03 46.9 +1.5**
KKAR Karatay Array 31.63 71 *e*P **P 18 03 46.9 +1.5**
OTUK Ortayu 32.26 62 P **P 18 03 51.2 +0.3**
OTUK pmax pmax
comp=Z,22nm,1.2s
OTUK Ortayu 32.26 62 P **P 18 03 51.2 +0.3**
comp=Z,22nm,1.2s
MNAS Manas 33.19 72 *i* P **P 18 04 00.0 +0.8**
MNAS pmax pmax
comp=Z,15nm,1.1s
MNAS Manas 33.19 72 *i* P **P 18 04 00.0 +0.8**
comp=Z,15nm,1.1s
AAK Ala-Archa 34.59 71 P **P 18 04 12.6 +1.2**
comp=Z,21nm,0.9s,baz=245,slow=7.5,SNR=18
AAK Ala-Archa 34.59 71 *i* P **P 18 04 13.5 +2.1**
AAK pmax pmax
comp=Z,13nm,0.8s
AAK Ala-Archa 34.59 71 *e*P **P 18 04 12.7 +1.3**
comp=Z,24nm,0.9s
AAK Ala-Archa 34.59 71 *e*P **P 18 04 12.7 +1.3**
comp=Z,24nm,0.9s
FRU Bishkek 34.63 71 *e*P **P 18 04 12.0 +0.4**
FRU Bishkek 34.63 71 *e*P **P 18 04 12.0 +0.4**
TKM2 Tokmak 2 35.32 70 *i* P **P 18 04 20.8 +3.1**
TKM2 pmax pmax
comp=Z,11nm,1.1s
TORD Torodi Ar. Bea 35.77 227 P **P 18 04 20.4 -1.2**
comp=Z,10nm,0.7s,baz=35,slow=9.2,SNR=74
KURBB Kurchatov Arra 36.13 57 P **P 18 04 25.0 +0.6**
comp=Z,9.5nm,0.8s,baz=282,slow=8.0,SNR=12
KURK Kurchatov 36.18 57 P **P 18 04 25.0 +0.2**
KURK Kurchatov 36.18 57 P **P 18 04 25.0 +0.2**
KURK Kurchatov 36.18 57 P **P 18 04 24.9 +0.2**
KSH Kashi 36.51 76 P **P 18 04 31.0 +3.1**
KSH *e*pP sP 18 04 37.3 +4.2
KSH *e*sP pP 18 04 40.3 +8.7
KSH S **S 18 10 13.8 +4.0**
KSH *e*ScP **ScP 18 10 38.0 +0.3**
KSH pmax pmax
comp=Z,11nm,1.1s
KSH LR LR
comp=Z,700nm,14.7s
KSH LR LR
comp=Z,400nm,14.7s
KSH LR LR
comp=Z,580nm,21.3s
PDGK Podgornoye 37.98 69 *i* P **P 18 04 40.6 +0.2**
PDGK pmax pmax
comp=Z,32nm,0.9s
PDGK Podgornoye 37.98 69 *i* P **P 18 04 40.6 +0.2**
comp=Z,32nm,0.9s
NVS Novosibirsk 38.74 50 *e*P **P 18 04 47.5 +1.1**
NVS *e* 18 06 21.2
NVS pmax pmax
comp=Z,31nm,0.8s
NVS pmax pmax
comp=N,7.0nm,1.2s
NVS pmax pmax
comp=E,14nm,0.8s
NVS Novosibirsk 38.74 50 *e*P **P 18 04 47.5 +1.1**
comp=E,7.0nm,1.2s
MAKZ Makanchi 38.92 63 *e*P **P 18 04 48.2 +0.1**
MAKZ *e*pP **sP 18 04 52.5 -0.9**
MAKZ Makanchi 38.92 63 *e*P **P 18 04 48.2 +0.1**
MAKZ *e*pP **sP 18 04 52.5 -0.9**
MAKZ Makanchi 38.92 63 *e*P **P 18 04 48.2 +0.1**
MAKZ *e*pP **sP 18 04 52.5 -0.9**
MK31 Makanchi Array 39.14 62 *i* P **P 18 04 49.5 -0.4**
MK31 pmax pmax
comp=Z,17nm,0.6s
MK31 Makanchi Array 39.14 62 *i* P **P 18 04 49.5 -0.4**
comp=Z,17nm,0.6s
MK31 *e*pP **sP 18 04 54.4 -0.8**
MK31 Makanchi Array 39.14 62 *e*P **P 18 04 50.1 +0.2**
MK31 *e*pP **sP 18 04 54.4 -0.8**
MKAR Makanchi Array 39.14 62 P **P 18 04 49.9 0.0**
comp=Z,5.4nm,0.5s,baz=272,slow=7.3,SNR=30
MKAR Makanchi Array 39.14 62 *e*P **P 18 04 50.1 +0.2**
MKAR *e**PP **pP 18 04 54.3 +0.6**
MKAR Makanchi Array 39.14 62 *e*P **P 18 04 50.1 +0.2**
MKAR *e*pP **pP 18 04 54.2 +0.6**
MKAR Makanchi Array 39.14 62 *e*P **P 18 04 50.1 +0.2**
MKAR *e*pP **pP 18 04 54.2 +0.6**
MK01 Makanchi Array 39.15 62 *e*P **P 18 04 50.0 0.0**
MK01 *e*pP **pP 18 04 54.3 +0.5**
MK01 Makanchi Array 39.15 62 *e*P **P 18 04 50.0 0.0**
MK01 *e*pP **pP 18 04 54.3 +0.5**
ZAA0 Zalesovo Array 39.73 51 *e*P **P 18 04 53.9 -0.7**
ZAA0 *e*pP **sP 18 04 59.7 -0.2**
ZAA0 Zalesovo Array 39.73 51 *e*P **P 18 04 53.9 -0.7**
ZAA0 *e*pP **sP 18 04 59.7 -0.2**
ZALV Zalesovo Beam 39.73 51 P **P 18 04 54.1 -0.5**
comp=Z,6.3nm,0.7s,baz=268,slow=9.2,SNR=27
ZALV LR LR 18 24 49.0
comp=Z,295nm,18.3s,baz=246,slow=41
MBAR Mbarara 41.32 175 *e*P **P 18 05 07.7 -0.7**
MBAR pmax pmax
comp=Z,7.0nm,0.9s
MBAR Mbarara 41.32 175 *e*P **P 18 05 07.7 -0.7**
comp=Z,6.6nm,0.9s
MBAR Mbarara 41.32 175 *e*P **P 18 05 07.7 -0.7**
comp=Z,6.6nm,0.9s
NRIK Noril'sk 41.90 27 LR LR 18 24 29.4
comp=Z,866nm,18.6s,baz=252,slow=39
KMBO Kilima Mbogo 42.64 166 P P 18 05 24.0 +4.7
comp=Z,1.5nm,0.7s,baz=4.1,slow=11,SNR=4.9
WMQ Urumqi 43.58 65 P **P 18 05 26.0 -0.4**
WMQ pP sP 18 05 32.5 +0.7
WMQ pmax pmax
comp=Z,30nm,1.0s
WMQ pmax pmax
comp=Z,210nm,4.0s
WMQ LR LR
comp=Z,430nm,22.4s
WMQ LR LR
comp=Z,490nm,20.3s
WMQ LR LR
comp=Z,600nm,19.7s
DBIC Dimbokro 44.75 229 P **P 18 05 34.8 -1.2**
comp=Z,10nm,0.7s,baz=15,slow=9.7,SNR=16
DBIC Dimbokro 44.75 229 *e*P **P 18 05 34.7 -1.3**
DBIC pmax pmax
comp=Z,23nm,1.2s
DBIC Dimbokro 44.75 229 *e*P **P 18 05 34.7 -1.3**
comp=Z,23nm,1.2s
DBIC Dimbokro 44.75 229 *e*P **P 18 05 34.6 -1.3**
comp=Z,23nm,1.2s
TIC Toumodi 44.87 230 *e*P **P 18 05 35.6 -1.3**
KIC Kosan Boka 44.94 229 *e*P **P 18 05 36.2 -1.3**
comp=Z,24nm,0.8s
LIC Lamto 45.21 229 *e*P **P 18 05 38.4 -1.3**
comp=Z,49nm,0.7s
PYUN Piuthan 46.58 88 *e*P P 18 05 55.5 +4.8
comp=Z,36nm,0.9s
KOLN Koldanda 47.21 88 *e*P P 18 06 00.3 +4.7
comp=Z,13nm,0.6s
GKN Gorkha 47.88 87 *e*P **P 18 06 05.1 +4.4**
comp=Z,33nm,1.0s
DMN Daman 48.44 87 *e*P P 18 06 09.8 +4.6
comp=Z,36nm,1.1s
KKN Kakani 48.48 87 *e*P **P 18 06 09.5 +4.1**
comp=Z,32nm,1.2s
PKIN Phulchoki 48.67 87 *e*P **P 18 06 11.1 +4.1**
comp=Z,16nm,0.9s
JIRN Jiri 49.23 86 *e*P **P 18 06 14.9 +3.5**
comp=Z,436nm,1.2s
MOY Mondy 49.78 51 *e*P **P 18 06 16.5 +1.6**
MOY pmax pmax
comp=Z,42nm,2.0s
MOY Mondy 49.78 51 *e*P **P 18 06 16.5 +1.6**
comp=Z,42nm,2.0s
RAMN Ramite 49.91 87 *e*P **P 18 06 20.5 +4.0**
comp=Z,18nm,0.8s
TLY Talaya 51.34 51 P **P 18 06 27.6 +1.0**
comp=Z,1.7nm,0.3s,baz=244,slow=8.4,SNR=6.6
TLY Talaya 51.34 51 *e*P **P 18 06 28.2 +1.6**
TLY pmax pmax
comp=Z,41nm,1.7s
TLY Talaya 51.34 51 *e*P **P 18 06 27.9 +1.3**
comp=Z,17nm,0.8s
TLY Talaya 51.34 51 *e*P **P 18 06 27.9 +1.3**
comp=Z,17nm,0.8s
IRK Irkutsk 51.52 50 *e*P **P 18 06 31.8 +3.9**
IRK *e* 18 07 46.6
IRK pmax pmax
comp=Z,60nm,2.4s
ZAK Zakamensk 51.56 52 *e*P **P 18 06 29.6 +1.2**
ZAK pmax pmax
comp=Z,17nm,1.8s
ZAK Zakamensk 51.56 52 *e*P **P 18 06 29.6 +1.2**
comp=Z,17nm,1.8s
LSA Lhasa 51.93 81 *e*P **P 18 06 30.8 -1.1**
LSA pmax pmax
comp=Z,50nm,1.5s
LSA Lhasa 51.93 81 *e*P **P 18 06 30.8 -1.1**
comp=Z,50nm,1.5s
LSA Lhasa 51.93 81 *e*P **P 18 06 30.8 -1.1**
comp=Z,50nm,1.5s
GTA Gaotai 53.64 66 *e*P **P 18 06 45.0 +1.0**
GTA pP sP 18 06 49.5 +0.1
GTA sP pP 18 06 52.8 +4.9
GTA pmax pmax
comp=Z,3.0nm,1.1s
SONA1 Songino Array 54.42 54 *e*P **P 18 06 50.1 +0.5**
SONA1 *e*pP **sP 18 06 55.3 +0.3**
SONA1 Songino Array 54.42 54 *e*P **P 18 06 50.1 +0.5**
SONA1 *e*pP **sP 18 06 55.3 +0.3**
SONM Songino Array 54.42 54 P **P 18 06 50.0 +0.4**
comp=Z,3.0nm,0.8s,baz=284,slow=7.5,SNR=11
SONM LR LR 18 33 53.1
comp=Z,540nm,19.0s,baz=292,slow=40
SONM Songino Array 54.42 54 P **P 18 06 50.0 +0.4**
SONM Songino Array 54.42 54 P **P 18 06 50.0 +0.4**
TIXI Tiksi 55.16 22‖ *e*P **P 18 06 55.1 +0.8**
TIXI pmax pmax
comp=Z,5.0nm,1.0s
TIXI Tiksi 55.16 22 *e*P **P 18 06 55.1 +0.8**
comp=Z,5.0nm,1.0s
LSZ Lusaka 55.81 179 *e*P **P 18 06 58.8 -1.0**
LSZ *e*PP **sP 18 07 05.4 +0.2**
LSZ Lusaka 55.81 179 *e*P **P 18 06 58.8 -1.0**
LSZ *e*pP **sP 18 07 05.4 +0.2**
LSZ Lusaka 55.81 179 *e*P **P 18 06 58.8 -1.0**
LSZ *e*pP **sP 18 07 05.4 +0.2**
CIT Chita 56.88 47 *e*P **P 18 07 07.4 +0.3**
CIT pmax pmax
comp=Z,50nm,1.3s
CIT Chita 56.88 47 *e*P **P 18 07 07.4 +0.3**
comp=Z,50nm,1.3s
LZH Lanzhou 58.02 68 *e*P P 18 07 21.3 +5.8
LZH pP sP 18 07 26.8 +5.9
LZH sP pP 18 07 30.0 +11
LZH pmax pmax
comp=Z,57nm,1.1s
TSUM Tsumeb 60.46 191 *e*P **P 18 07 31.9 -0.4**
comp=Z,21nm,1.1s
TSUM Tsumeb 60.46 191 *e*P **P 18 07 31.9 -0.4**
comp=Z,21nm,1.1s
CD2 Chengdu 60.62 73 *e*P **P 18 07 31.5 -1.9**
HHC Hu-ho-hao-te 60.90 60 *e*P P 18 07 41.0 +5.7
HHC pmax pmax
comp=Z,35nm,1.2s
HHC pmax pmax
comp=Z,360nm,8.6s
HIA Hailar 61.66 48 P **P 18 07 39.9 -0.3**
HIA pmax pmax
comp=Z,21nm,1.0s
HIA Hailar 61.66 48 P **P 18 07 39.8 -0.3**
comp=Z,21nm,1.0s
HIA Hailar 61.66 48 P **P 18 07 39.9 -0.3**
comp=Z,21nm,1.0s
XAN Xi'an 62.64 68 P **P 18 07 51.5 +4.5**
XAN pP sP 18 07 55.5 +3.1

XAN pmax pmax
comp=Z,4.0nm,1.4s
KMI Kunming 63.06 79 P **P 18 07 49.3 -0.8**
KMI pmax pmax
comp=Z,23nm,1.0s
CMAI Chiengmai2 63.28 86 P **P 18 07 55.9 +4.3**
comp=Z,248nm,1.2s,comp=Z,37µm
CHTO Chiang Mai 63.87 87 P **P 18 07 59.0 +3.7**
comp=Z,118nm,1.0s
CHTO Chiang Mai 63.87 87 *eP* **P 18 07 54.1 -1.2**
CHTO *e*PP **pP 18 07 59.3 +0.1**
CHTO Chiang Mai 63.87 87 *eP* **P 18 07 54.1 -1.2**
CHTO *ep*P **pP 18 07 59.3 +0.1**
CHTO Chiang Mai 63.87 87 *eP* **P 18 07 54.1 -1.2**
CHTO *ep*P **pP 18 07 59.3 +0.1**
CMMT Chiang Mai 63.87 87 P **P 18 07 58.9 +3.6**
comp=Z,26nm,1.0s
CM31 Chiang Mai Arr 64.08 87 *eP* **P 18 07 55.9 -0.8**
CM31 *ep*P **sP 18 08 01.2 -0.9**
CM31 Chiang Mai Arr 64.08 87 *eP* **P 18 07 55.9 -0.8**
CM31 *ep*P **sP 18 08 01.2 -0.9**
CMAR Chiang Mai Arr 64.08 87 P **P 18 07 55.3 -1.4**
comp=Z,1.4nm,0.7s,baz=301,slow=7.6,SNR=10
CMAR LR LR 18 42 10.1
comp=Z,134nm,19.4s,baz=105,slow=42
CM01 Chiang Mai Arr 64.11 88 *eP* **P 18 07 55.8 -1.1**
CM01 *ep*P **pP 18 08 01.1 +0.3**
CM01 Chiang Mai Arr 64.11 88 *eP* **P 18 07 55.8 -1.1**
CM01 *ep*P **pP 18 08 01.1 +0.3**
BJI Beijing 64.32 58 P P 18 08 03.3 +5.4
BJI pmax pmax
comp=Z,17nm,1.2s
LAMP Lampang 64.56 87 P P 18 08 04.4 +4.6
comp=Z,12nm,1.0s
ENH Enshi 65.10 71 *eP* **P 18 08 02.6 -0.6**
comp=Z,31nm,1.0s
ENH Enshi 65.10 71 *eP* **P 18 08 02.6 -0.6**
comp=Z,31nm,1.0s
SUKH Sukhothai 65.19 88 P **P 18 08 08.2 +4.3**
comp=Z,14nm,0.9s,comp=Z,112nm
GYA Guiyang 65.20 76 *eP* **P 18 08 04.0 -0.1**
GYA pmax pmax
comp=Z,10.0nm,1.0s
UMPA Umpang Tak 65.38 89 P P 18 08 11.0 +5.8
comp=Z,5.6nm,1.0s,comp=Z,81nm
UTTA Uttaradit 65.73 87 P **P 18 08 11.8 +4.4**
comp=Z,5.0nm,1.1s,comp=Z,46nm
LOEI Loei 66.41 87 P P 18 08 17.1 +5.3
comp=Z,12nm,1.0s
PBKT Sadao Pong 66.76 88 P **P 18 08 18.4 +4.4**
comp=Z,22nm,1.1s,comp=Z,1µm
BILL Bilibino 67.07 16 *eP* **P 18 08 15.3 +0.1**
BILL *e* 18 08 41.7
BILL *e* 18 10 46.0
BILL pmax pmax
comp=Z,7.0nm,1.3s
BILL MLR MLR
comp=Z,448nm,19.0s
BILL Bilibino 67.07 16 *eP* **P 18 08 15.3 +0.1**
comp=Z,7.0nm,1.3s
BILL Bilibino 67.07 16 *eP*cP **PcP 18 08 41.7 -1.7**
comp=Z,448nm,19.0s
NONG Nongkai 67.50 85 P **P 18 08 22.4 +3.7**
comp=Z,58nm,1.0s
SEY Seymchan 67.56 24 P **P 18 08 18.8 +0.5**
comp=Z,2.5nm,0.8s,baz=318,slow=8.1,SNR=9.4
SEY Seymchan 67.56 24‖ *eP* **P 18 08 20.2 +1.8**
CHAI Chaiyaphum 67.93 88 P P 18 08 26.1 +4.6
comp=Z,7.6nm,1.2s,comp=Z,91nm
CN2 Changchun 67.94 51 *eP* P 18 08 26.3 +5.2
CN2 pmax pmax
comp=Z,20nm,0.7s
KLR Kul'dur 68.20 43 P **P 18 08 22.8 +0.1**
comp=Z,9.5nm,0.9s,baz=311,slow=7.6,SNR=14
KLR Kul'dur 68.20 43‖ *eP* **P 18 08 22.0 -0.7**
KLR Kul'dur 68.20 43 *eP* **P 18 08 22.0 -0.7**
BOSA Boshof 69.12 182 P **P 18 08 27.2 -1.4**
comp=Z,2.5nm,0.8s,baz=342,slow=7.0,SNR=3.6
SRAK Srakaew 69.14 89 P P 18 08 36.3 +7.3
comp=Z,78nm,1.0s,comp=Z,673nm
MA2 Magadan 69.51 27 P **P 18 08 30.6 0.0**
MA2 pmax pmax
comp=Z,72nm,0.9s
MA2 Magadan 69.51 27 P **P 18 08 30.6 0.0**
comp=Z,72nm,0.9s
MA2 Magadan 69.51 27 P **P 18 08 30.6 0.0**
comp=Z,72nm,0.9s
FCC Fort Churchill 69.68 332 *eP* **P 18 08 31.6 -0.1**
FCC pmax pmax
comp=Z,9.0nm,0.8s
FCC Fort Churchill 69.68 332 *eP* **P 18 08 31.6 -0.1**
comp=Z,9.0nm,0.8s
FCC Fort Churchill 69.68 332 *eP* **P 18 08 31.6 -0.1**
comp=Z,9.0nm,0.8s
MDJ Mudanjiang 69.84 48 P P 18 08 38.3 +5.3
MDJ Mudanjiang 69.84 48 P **P 18 08 33.8 +0.8**
MDJ pmax pmax
comp=Z,4.0nm,1.0s
MDJ pmax pmax
comp=Z,270nm,11.3s
NJ2 Nanjing 70.64 64 *eP* P 18 08 43.0 +5.0
NJ2 pmax pmax
comp=Z,17nm,0.9s
UBPT Khong Chiam 70.96 86 P **P 18 08 44.0 +3.9**
comp=Z,26nm,1.0s
TRTT Trang 71.26 96 P **P 18 08 45.9 +3.9**
comp=Z,39nm,1.0s
USRK Ussuriysk Ar. 71.45 47 P **P 18 08 41.7 -1.0**
comp=Z,1.9nm,0.7s,baz=300,slow=6.3,SNR=4.9
USRK LR LR 18 44 29.5
comp=Z,295nm,20.0s,baz=305,slow=40
MSHR Mys Shultsa 72.00 49‖ *eP* **P 18 08 47.9 +1.8**
MSHR Mys Shultsa 72.00 49 *eP* **P 18 08 47.9 +1.8**
COLD Coldfoot 72.27 359 *eP* **P 18 08 47.3 0.0**
comp=Z,18nm,1.2s
COLD Coldfoot 72.27 359 *eP* **P 18 08 47.3 0.0**
comp=Z,18nm,1.2s
YKA Yellowknife Ar 72.67 343 P **P 18 08 49.5 -0.3**
comp=Z,2.0nm,1.1s,baz=23,slow=5.6,SNR=5.4
YKA LR LR 18 43 46.2
comp=Z,40nm,18.1s,baz=0.0,slow=38
YKB5 Yellowknife Ar 72.67 343 *eP* **P 18 08 50.1 +0.3**
YKB5 Yellowknife Ar 72.67 343 *eP* **P 18 08 50.1 +0.3**
KS01 Wonju Array Si 73.25 55 *eP* **P 18 08 53.3 -0.3**
KS01 Wonju Array Si 73.25 55 *eP* **P 18 08 53.3 -0.3**
KS01 *e*PcP **sP 18 08 58.5 -0.6**
KS15 Wonju Array Si 73.27 55 *eP* **P 18 08 52.7 -1.0**
KS15 Wonju Array Si 73.27 55 *eP* **P 18 08 52.7 -1.0**
KS15 *e*PcP **sP 18 08 58.6 -0.5**
KSAR Wonju Array Be 73.27 55 P **P 18 08 53.0 -0.7**
KSAR Wonju Array Be 73.27 55 P **P 18 08 53.0 -0.7**
KSAR Wonju Array Be 73.27 55 P **P 18 08 53.0 -0.7**
KSRS Korea Array 73.28 55 P **P 18 08 53.0 -0.8**
comp=Z,2.9nm,0.9s,baz=313,slow=4.6,SNR=26
KSRS LR LR 18 45 07.6
comp=Z,258nm,18.9s,baz=316,slow=39
KSRS Korea Array 73.28 55 P **P 18 08 53.0 -0.8**
KSRS pmax pmax
comp=Z,3.0nm,0.9s
KSRS MLR MLR
comp=Z,258nm,18.9s
KSRS Korea Array 73.28 55 P **P 18 08 53.0 -0.8**
comp=Z,258nm,18.9s
KULM Kulim 73.63 97 *eP* **P 18 08 54.4 -1.8**
comp=Z,18nm,1.0s
KULM Kulim 73.63 97 *eP* **P 18 08 54.4 -1.8**
comp=Z,18nm,1.0s
PSI Prapat 73.97 100 *eP* **P 18 08 56.0 -2.3**
PSI pmax pmax
comp=Z,57nm,0.7s
PSI Prapat 73.97 100 *eP* **P 18 08 56.0 -2.3**
comp=Z,57nm,0.7s
EGAK Eagle 74.38 355 *eP* **P 18 09 00.2 +0.5**
comp=Z,6.4nm,0.9s
EGAK Eagle 74.38 355 *eP* **P 18 09 00.2 +0.5**
comp=Z,6.5nm,0.9s
MLY Manley 74.48 359 *eP* **P 18 09 01.4 +1.0**
comp=Z,15nm,1.2s
MLY Manley 74.48 359 *eP* **P 18 09 01.4 +1.0**
comp=Z,15nm,1.2s
MDM Murphy Dome 74.51 358 *eP* **P 18 09 01.0 +0.4**
comp=Z,23nm,1.2s
MDM Murphy Dome 74.51 358 *eP* **P 18 09 01.0 +0.4**
comp=Z,23nm,1.2s
COLA College 74.58 358 *eP* **P 18 09 02.9 +2.0**
COLA pmax pmax
comp=Z,4.0nm,1.0s
COLA College 74.58 358 *eP* **P 18 09 02.9 +2.0**
comp=Z,4.0nm,1.0s
IL1 Eielson Array 74.66 358 *eP* **P 18 09 01.7 +0.3**
IL1 Eielson Array 74.66 358 *eP* **P 18 09 01.7 +0.3**
ILAR Eielson Array 74.66 358 P **P 18 09 01.4 +0.1**
comp=Z,0.6nm,0.6s,baz=4.5,slow=3.9,SNR=7.0
CCB Clear Creek Bu 74.81 358 *eP* **P 18 09 02.2 -0.1**
comp=Z,6.6nm,1.1s
CCB Clear Creek Bu 74.81 358 *eP* **P 18 09 02.2 -0.1**
comp=Z,6.6nm,1.1s
DAWY Dawson 74.96 354 *eP* **P 18 09 03.3 +0.1**
comp=Z,12nm,0.9s
DAWY Dawson 74.96 354 *eP* **P 18 09 03.3 +0.1**
comp=Z,12nm,0.9s
WRH Wood River Hil 74.99 358 *eP* **P 18 09 03.8 +0.5**
comp=Z,12nm,0.9s
WRH Wood River Hil 74.99 358 *eP* **P 18 09 03.8 +0.5**
comp=Z,12nm,0.9s
YSS Yuzh-Sakhalins 75.25 40 *eP* **P 18 09 04.4 -0.7**
YSS *e*PP **sP 18 09 10.8 +0.3**
YSS Yuzh-Sakhalins 75.25 40 *eP* **P 18 09 04.4 -0.7**
YSS *ep*P **sP 18 09 10.8 +0.3**
YSS Yuzh-Sakhalins 75.25 40 *eP* **P 18 09 04.4 -0.7**
YSS *ep*P **sP 18 09 10.8 +0.3**
BPAW Bear Paw Mtn. 75.41 359 *eP* **P 18 09 06.1 +0.3**
comp=Z,22nm,1.4s
BPAW Bear Paw Mtn. 75.41 359 *eP* **P 18 09 06.0 +0.3**
comp=Z,22nm,1.4s
FFC Flin Flon 75.58 333 *eP* **P 18 09 06.7 -0.1**
FFC pmax pmax
comp=Z,6.0nm,0.8s
FFC Flin Flon 75.58 333 *eP* **P 18 09 06.7 -0.1**
comp=Z,5.9nm,0.8s
FFC Flin Flon 75.58 333 *eP* **P 18 09 06.7 -0.1**
comp=Z,5.9nm,0.8s
DOT Dot Lake 75.67 356 *eP* **P 18 09 08.0 +0.7**
comp=Z,40nm,1.0s
DOT Dot Lake 75.67 356 *eP* **P 18 09 08.0 +0.7**
comp=Z,40nm,1.0s
MCK McKinley 75.75 358 *eP* **P 18 09 08.8 +1.0**
MCK pmax pmax
comp=Z,17nm,1.1s
MCK McKinley 75.75 358 *eP* **P 18 09 08.8 +1.0**
comp=Z,17nm,1.1s
MCK McKinley 75.75 358 *eP* **P 18 09 08.8 +1.0**
comp=Z,17nm,1.1s
KTH Kantishna Hill 75.96 359 P **P 18 09 05.9 -3.1**
comp=Z,13nm,1.3s
DHY Denali Highway 76.37 358 *eP* **P 18 09 10.9 -0.5**
comp=Z,37nm,1.5s
DHY Denali Highway 76.37 358 *eP* **P 18 09 10.9 -0.5**
comp=Z,37nm,1.5s
TTA Tatalina 76.55 2 *eP* **P 18 09 13.9 +1.6**
TTA pmax pmax
comp=Z,7.0nm,1.0s
TTA Tatalina 76.55 2 *eP* **P 18 09 13.9 +1.6**
comp=Z,7.1nm,1.0s
TTA Tatlina 76.55 2 *eP* **P 18 09 13.9 +1.6**
comp=Z,7.1nm,1.0s
PETK Petropavlovsk- 76.95 28 P **P 18 09 14.3 -0.4**
comp=Z,1.6nm,0.8s,baz=312,slow=8.7,SNR=3.6
PETK LR LR 18 46 40.8
comp=Z,570nm,20.1s,baz=328,slow=38
ASAJ Asahikawa 77.17 42 *eP* **P 18 09 15.0 -1.1**
comp=Z,8.9nm,0.9s
ASAJ Asahikawa 77.17 42 *eP* **P 18 09 15.0 -1.1**
comp=Z,9.0nm,0.9s
SCM Sheep Creek Mo 77.61 358 *eP* **P 18 09 20.3 +1.9**
SCM pmax pmax
comp=Z,50nm,1.1s
SCM Sheep Creek Mo 77.61 358 *eP* **P 18 09 20.3 +1.9**
comp=Z,50nm,1.1s
SCM Sheep Creek Mo 77.61 358 *eP* **P 18 09 20.3 +1.9**
comp=Z,50nm,1.1s
HYT Haines Junctio 77.99 353 *eP* **P 18 09 23.3 +2.8**
comp=Z,25nm,1.1s
SUA Susitna One 78.06 359 *eP* **P 18 09 22.4 +1.5**
SUA Susitna One 78.06 359 *eP* **P 18 09 22.4 +1.5**
SVW2 Sparrevohn 78.39 2 *eP* **P 18 09 24.3 +1.7**
comp=Z,9.3nm,1.1s
SVW2 Sparrevohn 78.39 2 *eP* **P 18 09 24.3 +1.7**
comp=Z,9.3nm,1.1s
RC01 Rabbit Creek A 78.42 359 *eP* **P 18 09 24.2 +1.5**
comp=Z,29nm,1.2s
RC01 Rabbit Creek A 78.42 359 *eP* **P 18 09 24.2 +1.5**
comp=Z,29nm,1.2s
DLBC Dease Lake 79.38 348 P **P 18 09 24.0 -4.1**
comp=Z,22nm,1.4s
MAJO Matsushiro 80.07 50 *eP* **P 18 09 29.2 -3.0**
MAJO pmax pmax
comp=Z,10.0nm,0.8s
MAJO Matsushiro 80.07 50 *eP* **P 18 09 29.2 -3.0**
comp=Z,10.0nm,0.8s
MAJO Matsushiro 80.07 50 *eP* **P 18 09 29.2 -3.0**
comp=Z,10.0nm,0.8s
MAT Matsushiro 80.07 50 P **P 18 09 36.5 +4.3**
MJAR Matsushiro Arr 80.07 50 P **P 18 09 32.8 +0.6**
comp=Z,13nm,1.0s,baz=316,slow=5.1,SNR=3.9
MJAR LR LR 18 48 57.8
comp=Z,162nm,18.6s,baz=320,slow=39
CPCT Cooper Cave 81.88 310 *eP* **P 18 09 42.4 +0.5**
comp=Z,5.6nm,1.0s
CPCT Cooper Cave 81.88 310 *eP* **P 18 09 42.4 +0.5**
comp=Z,5.6nm,1.0s
ECSD EROS Data Cent 82.06 323 P **P 18 09 41.6 -1.1**
comp=Z,4.5nm,0.8s
ECSD EROS Data Cent 82.06 323 P **P 18 09 41.6 -1.1**
comp=Z,4.5nm,0.8s
EGMT Eagleton 83.85 333 *eP* **P 18 09 52.8 +0.8**
EGMT *ep*P **sP 18 09 57.9 +0.3**
EGMT Eagleton 83.85 333 *eP* **P 18 09 52.8 +0.8**
EGMT *ep*P **sP 18 09 57.9 +0.3**
WALA Waterton Lakes 84.32 336 *eP* **P 18 09 55.2 +0.8**
WALA *ep*P **sP 18 10 00.2 +0.3**
WALA Waterton Lakes 84.32 336 *eP* **P 18 09 55.2 +0.8**
WALA *ep*P **sP 18 10 00.2 +0.3**
RSSD Black Hills 84.97 327 *eP* **P 18 09 56.6 -1.3**
RSSD pmax pmax
comp=Z,5.0nm,0.8s
RSSD Black Hills 84.97 327 *eP* **P 18 09 56.6 -1.3**
comp=Z,5.4nm,0.8s
RSSD Black Hills 84.97 327 *eP* **P 18 09 56.6 -1.3**
comp=Z,5.4nm,0.8s
LRAL Lakeview Retre 85.04 310 *eP* **P 18 09 59.9 +1.7**
comp=Z,11nm,0.7s
SWMT Swartz Lake 85.71 335 *eP* **P 18 10 02.5 +1.1**
SWMT *ep*P **sP 18 10 06.5 -0.4**
SWMT Swartz Lake 85.71 335 *eP* **P 18 10 02.5 +1.1**
SWMT *ep*P **sP 18 10 06.5 -0.4**
CHMT Chamberlain Mo 86.00 334 *eP* **P 18 10 04.5 +1.5**
CHMT Chamberlain Mo 86.00 334 *eP* **P 18 10 04.5 +1.5**
NEW Newport 86.00 337 *eP* **P 18 10 02.9 +0.1**
NEW pmax pmax
comp=Z,11nm,1.0s
NEW Newport 86.00 337 *eP* **P 18 10 02.8 +0.1**
comp=Z,11nm,1.0s
NEW Newport 86.00 337 *eP* **P 18 10 02.9 +0.1**
comp=Z,11nm,1.0s
RLMT Red Lodge 86.16 331 *eP* **P 18 10 04.0 +0.1**
comp=Z,7.3nm,0.8s
RLMT Red Lodge 86.16 331 *eP* **P 18 10 04.0 +0.1**
comp=Z,7.3nm,0.8s
BOZ Bozeman (W) 86.60 333 *eP* **P 18 10 07.5 +1.6**
BOZ *e*PP **sP 18 10 12.6 +1.2**
BOZ pmax pmax
comp=Z,16nm,1.6s
BOZ Bozeman (W) 86.60 333 *eP* **P 18 10 07.5 +1.6**
comp=Z,16nm,1.6s
BOZ *ep*P **sP 18 10 12.6 +1.2**
BOZ Bozeman (W) 86.60 333 *eP* **P 18 10 07.5 +1.6**
comp=Z,16nm,1.6s
BOZ *ep*P **sP 18 10 12.6 +1.2**
LRM Limekiln Ridge 86.69 333 *eP* **P 18 10 06.1 -0.3**
LRM *ep*P **sP 18 10 11.8 -0.2**
LRM Limekiln Ridge 86.69 333 *eP* **P 18 10 06.1 -0.3**
LRM *ep*P **sP 18 10 11.8 -0.2**
K22A Casper 87.20 328 *eP* **P 18 10 07.8 -1.1**
comp=Z,7.2nm,0.9s
K22A Casper 87.20 328 *eP* **P 18 10 07.8 -1.1**
comp=Z,7.2nm,0.9s
FLWY Flagg Ranch 87.58 331 P **P 18 10 13.0 +2.2**
comp=Z,48nm,1.7s
PHWY Pilot Hill 87.89 327 *eP* **P 18 10 11.3 -1.1**
comp=Z,5.6nm,0.8s
PHWY Pilot Hill 87.89 327 *eP* **P 18 10 11.3 -1.1**
comp=Z,5.6nm,0.8s
TPAW Teton Pass 88.18 331 P **P 18 10 12.1 -1.6**
comp=Z,3.5nm,0.7s
TPAW Teton Pass 88.18 331 P **P 18 10 12.2 -1.6**
comp=Z,3.5nm,0.7s
BW06 Boulder Array 88.29 330 *eP* **P 18 10 12.9 -1.3**
BW06 Boulder Array 88.29 330 *eP* **P 18 10 12.9 -1.3**
PDAR Pinedale Array 88.29 330 P **P 18 10 12.4 -1.8**
comp=Z,0.3nm,0.7s,baz=54,slow=4.6,SNR=3.4
PDAR LR LR 18 53 13.7
comp=Z,387nm,18.6s,baz=36,slow=38
BMO Blue Mountains 89.12 336 *eP* **P 18 10 16.0 -1.9**
comp=Z,2.7nm,0.8s
BMO Blue Mountains 89.12 336 *eP* **P 18 10 16.0 -1.9**
comp=Z,2.7nm,0.8s
HWUT Hardware Ranch 90.04 331 *eP* **P 18 10 23.3 +0.9**
comp=Z,6.1nm,0.9s
HWUT Hardware Ranch 90.04 331 *eP* **P 18 10 23.3 +0.9**
comp=Z,6.1nm,0.9s
WMOK Wichita Mounta 90.15 319 *eP* **P 18 10 24.8 +2.0**
WMOK pmax pmax
comp=Z,3.0nm,0.8s
WMOK Wichita Mounta 90.15 319 *eP* **P 18 10 24.8 +2.0**
comp=Z,3.0nm,0.8s
WMOK Wichita Mounta 90.15 319 *eP* **P 18 10 24.8 +2.0**
comp=Z,3.4nm,0.8s
DUG Dugway, Tooele 91.73 331 *eP* **P 18 10 31.2 +1.0**
DUG pmax pmax
comp=Z,4.0nm,0.7s
DUG Dugway, Tooele 91.73 331 *eP* **P 18 10 31.2 +1.0**
comp=Z,3.6nm,0.7s
DUG Dugway, Tooele 91.73 331 *eP* **P 18 10 31.2 +1.0**
comp=Z,3.6nm,0.7s
TX31 Lajitas Ar. Si 96.95 319 *eP* **P 18 10 53.2 -1.0**
TX31 Lajitas Ar. Si 96.95 319 *eP* **P 18 10 53.2 -1.0**
TXAR Lajitas Array 96.95 319 P **P 18 10 53.1 -1.1**
comp=Z,0.3nm,0.7s,baz=67,slow=5.0,SNR=3.8
WRA Warramunga Ar 115.13 95 PKP **PKPdf 18 16 03.6 -0.3**
comp=Z,0.5nm,1.0s,baz=320,slow=2.3,SNR=2.1
ASAR Alice Springs 116.97 99 PKP **PKPdf 18 16 07.9 +0.5**
comp=Z,0.6nm,0.8s,baz=328,slow=1.2,SNR=4.8

NIED ***25*** *18:05:00,27.˚80N×129.˚90E,h5km,Mw4.1 Best double couple: M₀1.59000×10¹⁵ NP1:φ₀349.00000°,δ78.00000°, λ168.00000°. NP2:φ₀82.00000°,δ79.00000°,λ12.00000°.*
IDC ***25*** *18:05:16.2±0.9,27.˚73N×129.˚67E,h0km,mb3.8/13, mb1 3.9/16,mb1mx3.8/54,mbtmp3.8/16,ML3.7/3,Error ellipse: s-maj=30.0km s-min=14.2km az=80.0*
ISCJB ***25*** *18:05:19.4±0.7,27.˚71N±0.˚04×129.˚90E±0.˚06,h41km±5km, mb3.8/14,Error ellipse: s-maj=9.5km s-min=3.8km az=33.3*
JMA ***25*** *18:05:19.4±0.2,27.˚79N×129.˚84E,h62km,M3.8*
JMA Felt I J1.
NEIC ***25*** *18:05:21.3±0.8,27.˚70N×129.˚68E,h35km±8km,mb4.0/1, Error ellipse: s-maj=11.3km s-min=6.4km az=119.0*

ISC 25 18:05:19.7±1.5,27.˚73N±0.˚05×129.˚80E±0.˚06,h25km±11km, n51,σ1°14/63,mb3.9/14,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JZK	**Kikaishima**	**0.60**	**15**	P	**Pb**	**18 05 31.9**	**+0.2**
JZK				S	**Sn**	**18 05 42.4**	**+0.7**
JAM	**Amami Oshima**	**0.70**	**346**	P	**Pb**	**18 05 33.5**	**+0.1**
JAM				*e*S	**Sn**	**18 05 43.5**	**-0.6**
JAMN	**Amaminishikomi**	**0.75**	**313**	P	**Pb**	**18 05 34.3**	**+0.1**
JAMN				*e*S	**Sn**	**18 05 46.3**	**+1.0**
JTK	**Tokunoshima**	**0.75**	**275**	P	**Pn**	**18 05 35.2**	**+0.4**
JTK				S	**Sn**	**18 05 47.9**	**+2.5**
JOKE	**Okinoerabujima**	**1.15**	**252**	P	**Pb**	**18 05 41.0**	**+0.1**
JTAJ	**Takarajima**	**1.51**	**340**	P	**Pn**	**18 05 44.7**	**-0.5**
JOW	**Kunigami**	**1.62**	**237**	P	**Pn**	**18 05 47.2**	**+0.5**
JOW				S	**Sb**	**18 06 09.1**	**0.0**
JOW	**Kunigami**	**1.62**	**237**	*e*Pn	**Pn**	**18 05 46.8**	**0.0**
JIH	**Iheya**	**1.77**	**247**	P	**Pn**	**18 05 49.5**	**+0.8**
JNTH	**Nagotoyohara**	**1.99**	**233**	P	**Pn**	**18 05 52.1**	**+0.4**
JNN	**Nakanoshima**	**2.11**	**2**	P	**Pn**	**18 05 53.2**	**-0.2**
JJT2	**Tamagusuku 2**	**2.42**	**230**	P	**Pn**	**18 05 58.2**	**+0.5**
JJT2				*e*S	**Sn**	**18 06 26.8**	**+0.3**
JAGN	**Aguni-jima**	**2.54**	**244**	P	**Pn**	**18 05 59.7**	**+0.3**
JAGN				*e*S	**Sn**	**18 06 31.2**	**+1.6**
JYAK	**Yakushimahirau**	**2.58**	**14**	P	**Pn**	**18 05 59.1**	**-0.7**
JYAK				S	**Sn**	**18 06 30.1**	**-0.3**
JKC	**Kuchinoerabu**	**2.75**	**7**	P	**Pn**	**18 06 01.7**	**-0.5**
JKC				*e*S	**Sn**	**18 06 34.6**	**+0.1**
JKE	**Kume jima 2**	**3.03**	**243**	P	**Pn**	**18 06 05.8**	**-0.2**
JKE				S	**Sn**	**18 06 42.7**	**+1.2**
JTN	**Tanegashima 3**	**3.09**	**19**	P	**Pn**	**18 06 06.1**	**-0.9**
JNU	**Nakatsue**	**5.46**	**10**	Pn	**Pn**	**18 06 40.4**	**+0.9**
	5.5nm,0.3s,baz=251,slow=2.4,SNR=69						
JNU				*e*S	**Sn**	**18 07 42.5**	**+1.0**
	baz=108,slow=20,SNR=2.3						
JNU	**Nakatsue**	**5.46**	**10**	Pn	**Pn**	**18 06 40.4**	**+0.9**
	3.5nm,0.6s						
JNU				*e*S	**Sn**	**18 07 42.5**	**+1.0**
YOJ	**Yonaguni jima**	**6.92**	**243**	Pn	**Pn**	**18 06 57.3**	**-2.2**
YHNB	**Yeheng**	**8.15**	**250**	*e*P	**Pn**	**18 07 17.3**	**+0.7**
	23nm,0.9s						
TPUB	**Ta-pu**	**9.38**	**244**	*e*P	**Pn**	**18 07 31.6**	**-1.7**
	14nm,0.4s						
KSAR	**Wonju Array Be**	**9.82**	**351**	Pn	**Pn**	**18 07 40.0**	**+0.7**
KSRS	**Korea Array**	**9.83**	**351**	Pn	**Pn**	**18 07 40.0**	**+0.7**
	0.1nm,0.3s,baz=169,slow=13,SNR=3.2						
MJAR	**Matsushiro Arr**	**11.31**	**37**	Pn	**Pn**	**18 08 01.2**	**+1.5**
	0.4nm,0.3s,baz=240,slow=14,SNR=4.1						
WHN	**Wuhan**	**13.79**	**285**	P	**Pn**	**18 08 33.0**	**-0.6**
ERM	**Erimo**	**17.95**	**34**	*e*P	**P**	**18 09 30.5**	**+2.6**
ENH	**Enshi**	**17.95**	**283**	*e*P	**Pn**	**18 09 22.6**	**-5.0**
SONM	**Songino Array**	**27.11**	**324**	P	**P**	**18 11 01.7**	**+1.0**
	0.3nm,0.5s,baz=126,slow=9.6,SNR=2.9						
CMAR	**Chiang Mai Arr**	**29.78**	**259**	P	**P**	**18 11 24.8**	**+0.2**
	0.4nm,0.5s,baz=56,slow=7.2,SNR=3.0						
RAMN	**Ramite**	**38.24**	**279**	*e*P	**P**	**18 12 38.4**	**+0.2**
GUN	**Gumba**	**38.69**	**281**	*e*P	**P**	**18 12 43.5**	**+1.5**
PKIN	**Phulchoki**	**39.17**	**280**	*e*P	**P**	**18 12 45.9**	**-0.1**
	17nm,0.6s						
PKIN	**Phulchoki**	**39.17**	**280**	*e*P	**P**	**18 12 46.6**	**+0.6**
KKN	**Kakani**	**39.23**	**281**	*e*P	**P**	**18 12 46.9**	**+0.5**
DMN	**Daman**	**39.41**	**281**	*e*P	**P**	**18 12 48.6**	**+0.6**
GKN	**Gorkha**	**39.75**	**281**	*e*P	**P**	**18 12 50.4**	**-0.3**
MKAR	**Makanchi Array**	**41.61**	**310**	P	**P**	**18 13 05.1**	**-0.5**
	0.2nm,0.5s,baz=96,slow=8.6,SNR=4.3						
ZALV	**Zalesovo Beam**	**41.93**	**321**	P	**P**	**18 13 07.1**	**-1.0**
	0.5nm,0.5s,baz=111,slow=7.9,SNR=4.0						
KURK	**Kurchatov**	**44.72**	**315**	P	**P**	**18 13 29.8**	**-0.9**
KURBB	**Kurchatov Arra**	**44.76**	**315**	P	**P**	**18 13 29.8**	**-1.2**
	0.5nm,0.3s,baz=101,slow=9.0,SNR=3.6						
FITZ	**Fitzroy Crossi**	**45.74**	**186**	P	**P**	**18 13 39.1**	**+0.1**
	4.5nm,1.2s,baz=0.0,slow=11,SNR=3.1						
WRAB	**Tennant Creek**	**47.58**	**174**	P	**P**	**18 13 52.0**	**-1.5**
	1.3nm,0.8s						
WRA	**Warramunga Arr**	**47.59**	**174**	P	**P**	**18 13 53.5**	**-0.1**
	1.0nm,0.7s,baz=354,slow=8.3,SNR=9.2						
BVAR	**Borovoye Array**	**50.11**	**317**	P	**P**	**18 14 11.8**	**-0.8**
	0.8nm,0.6s,baz=72,slow=9.5,SNR=4.7						
ASAR	**Alice Springs**	**51.25**	**175**	P	**P**	**18 14 22.2**	**+0.8**
	0.5nm,0.6s,baz=7.2,slow=12,SNR=16						
FINES	**FINESS Array B**	**72.25**	**331**	P	**P**	**18 16 42.2**	**-0.2**
	2.9nm,0.5s,baz=75,slow=8.3,SNR=18						
BRTR	**Keskin Array B**	**77.22**	**308**	P	**P**	**18 17 12.3**	**+0.3**
	0.6nm,0.7s,baz=88,slow=6.2,SNR=4.5						
NB2	**NORSAR Subarra**	**78.59**	**334**	P	**P**	**18 17 18.0**	**-1.0**
	comp=Z,0.9nm,0.6s,baz=51,slow=5.6						
NOA	**NORSAR Array B**	**78.59**	**334**	P	**P**	**18 17 18.4**	**-0.6**
	comp=Z,1.7nm,0.8s,baz=51,slow=5.6,SNR=6.3						
GERES	**GERESS Array B**	**84.84**	**323**	P	**P**	**18 17 52.9**	**+0.6**
	comp=Z,0.3nm,0.4s,baz=57,slow=4.9,SNR=4.5						

ISCJB ***25*** *18:12:22.8±0.8,14.˚86N±0.˚10×120.˚0E±0.˚1,h55km, mb3.9/4,Error ellipse: s-maj=16.0km s-min=14.0km az=162.5*
MAN ***25*** *18:12:22,14.˚98N×119.˚69E,h16km,mb4.9,ML3.8,MS3.9*
IDC ***25*** *18:12:27.7±1.7,14.˚92N×120.˚23E,h96km±16km,mb3.5/5, mb1 3.7/5,mb1mx3.1/56,mbtmp3.9/5,Error ellipse: s-maj=53.5km s-min=19.3km az=55.0*

ISC 25 18:12:24.3±1.0,14.˚95N±0.˚09×120.˚2E±0.˚1,h55km,n10, σ1°65/9,mb4.0/4,2D,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCPH	**Palayan**	**1.10**	**56**‖	*e*P	**Pn**	**18 12 44.3**	**+0.8**
TGY	**Tagaytay City**	**1.13**	**138**	P	Pn	18 12 48.5	+4.5

148nm,0.3s,baz=186,slow=20,SNR=6.5
TGY S Sn 18 13 08.3 +10
231nm,0.3s,baz=273,slow=18,SNR=5.7
TGY Tagaytay City 1.13 138 *eP* **Pn 18 12 46.1 +2.0**
PIP Pasuquin 3.39 8 *ǁiP* **Pn 18 13 16.5 +1.7**
CMAR Chiang Mai Arr 20.61 283 P **P 18 17 00.4 +1.2**
1.1nm,0.8s,baz=99,slow=8.4,SNR=6.9
WRA Warramunga Arr 37.37 158 P **P 18 19 30.5 -1.5**
1.7nm,0.6s,baz=336,slow=9.5,SNR=16
ASAR Alice Springs 40.66 160 P **P 18 19 58.6 -0.8**
0.7nm,0.6s,baz=335,slow=6.9,SNR=14
FINES FINESS Array B 78.94 331 P **P 18 24 21.1 -0.7**
0.9nm,0.5s,baz=64,slow=6.3,SNR=7.6
NB2 NORSAR Subarra 85.92 333 P **P 18 24 57.1 -1.2**
comp=Z,0.6nm,0.7s,baz=68,slow=5.1
NOA NORSAR Array B 85.92 333 P **P 18 24 56.7 -1.5**
comp=Z,1.2nm,0.8s,baz=67,slow=5.2,SNR=3.3

IDC 25 18:15:27.4±5.9, 31.05S×176.04W, h0km, mb3.5/2, mb1 3.7/2, mb1mx3.4/34, mbtmp3.5/2, Error ellipse: s-maj=255.0km s-min=52.8km az=156.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**44.76**	**267**	P	P	18 23 43.4	+0.5
	0.2nm,0.4s,baz=108,slow=7.4,SNR=9.5						
WRA	**Warramunga Arr**	**45.80**	**272**	P	P	18 23 50.1	-1.1
	0.3nm,0.3s,baz=113,slow=6.3,SNR=15						
FINES	**FINESS Array B**	**146.31**	**341**	PKPbc	PKPbc	18 35 08.8	-0.5
	1.8nm,0.7s,baz=64,slow=3.2,SNR=13						

*IDC **25** 18:25:10.0±0.3, 5.26S×76.71W, h107km±3km, mb4.8/23, mb1 4.9/29, mb1mx4.8/39, mbtmp5.1/29, Error ellipse: s-maj=10.4km s-min=6.9km az=111.0*
*ISCJB **25** 18:25:09.8±0.5, 5.22S±0.03×76.68W±0.03, h116km±4km, mb5.3/255, Error ellipse: s-maj=4.5km s-min=3.8km az=135.4*
*MOS **25** 18:25:10.2±0.9, 5.23S×76.74W, h116km, mb5.4/44, Error ellipse: s-maj=11.2km s-min=5.0km az=106.4*
*GCMT **25** 18:25:10.3±0.5, 5.51S×76.58W, h137km±6km, MW5.2/81, Moment Tensor Solution. s8,c10; s81,c108; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.94±.30; $M_{\theta\theta}$-2.63±.33; $M_{\phi\phi}$6.57±.41; $M_{r\theta}$-2.70±.18; $M_{r\phi}$-0.43±.29; $M_{\theta\phi}$2.86±.28; Best double couple: M_o6.90300×10^{16} NP1:ϕ_s149.00000°, δ67.00000°, λ-124.00000°. NP2: ϕ_s30.00000°, δ40.00000°, λ-36.00000°. Principal axes: T 7.4210, Plg16.0000°, Azm263.0000°; N -1.0360, Plg31.0000°, Azm163.0000°; P -6.3850, Plg54.0000°, Azm16.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **25** 18:25:10.3±0.1, 5.35S×76.61W, mb5.4/194 Error ellipse: s-maj=4.1km s-min=3.2km az=69.0*
NEIC Felt [III] at Moyobamba. Also felt at Tarapoto and Yurimaguas.
*BJI **25** 18:25:11.9, 5.30S×76.60W, h110km, mB5.2/23*
ISC 25 18:25:10.4±0.3, 5.38S±0.04×76.60W±0.06, h113km±2km, h112km; pP-P, n1047, σ1s22/1132, mb5.3/259, 6C-23D, Northern Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ATAH	**Atahualpa**	**2.49**	**225**	P	**Pn**	**18 25 51.5**	**+1.3**
	406nm,0.3s,baz=32,slow=8.8,SNR=2674						
ATAH				S	**Sn**	**18 26 20.6**	**-0.1**
	352nm,0.3s,baz=105,slow=21,SNR=32						
OTAV	**Otavalo**	**5.87**	**342**	*eP*	**Pn**	**18 26 36.5**	**+1.0**
OTAV	**Otavalo**	**5.87**	**342**	*ePn*	**Pn**	**18 26 36.0**	**+0.5**
CMBC	**Cumbal**	**6.39**	**349**	*eP*	**Pn**	**18 26 42.7**	**+0.1**
NNA	**Nana**	**6.57**	**182**	P	**Pn**	**18 26 46.2**	**+1.6**
	43nm,0.3s,baz=348,slow=9.5,SNR=53						
NNA				S	**Sn**	**18 27 55.1**	**-3.1**
	108nm,0.3s,baz=296,slow=22,SNR=6.8						
NNA	**Nana**	**6.57**	**182**	*i* P	**Pn**	**18 26 46.0**	**+1.4**
NNA	**Nana**	**6.57**	**182**	*ePn*	**Pn**	**18 26 45.3**	**+0.7**
NNA				S	**Sn**	**18 27 55.1**	**-3.1**
CRUC	**La Cruz**	**6.91**	**357**	*eP*	**Pn**	**18 26 50.6**	**+1.2**
FLOC	**Florencia**	**6.98**	**8**	*eP*	**Pn**	**18 26 48.8**	**-1.2**
POPC	**Popayan, Colom**	**7.86**	**359**	*eP*	**Pn**	**18 27 01.2**	**-1.1**
GRGC	**Isla de Gorgon**	**8.47**	**349**	*eP*	**Pn**	**18 27 06.9**	**-3.3**
GUVC	**San Jose del G**	**8.81**	**27**	*eP*	**Pn**	**18 27 14.3**	**-0.6**
SJAC	**San Juan de Ar**	**8.99**	**17**	*eP*	**Pn**	**18 27 14.3**	**-3.2**
PRAC	**Prado**	**9.19**	**11**	*eP*	**Pn**	**18 27 19.2**	**-0.9**
PRAC	**Prado**	**9.19**	**11**	*ePn*	**Pn**	**18 27 19.7**	**-0.4**
MALC	**Bahia Malaga**	**9.36**	**356**	*eP*	**Pn**	**18 27 21.2**	**-1.1**
ROSC	**El Rosal**	**10.40**		P	**Pn**	**18 27 39.1**	**+2.3**
	7.4nm,0.3s,baz=258,slow=15,SNR=11						
ROSC	**El Rosal**	**10.40**	**13**	*eP*	**Pn**	**18 27 36.9**	**+0.1**
ROSC	**El Rosal**	**10.40**	**13**	*ePn*	**Pn**	**18 27 36.9**	**+0.1**
MAPC	**Malpelo**	**10.57**	**332**	*eP*	**Pn**	**18 27 35.7**	**-3.1**
NORC	**Norcasia**	**11.00**	**9**	*eP*	**Pn**	**18 27 42.3**	**-2.4**
HELC	**Santa Helena**	**11.54**	**5**	*eP*	**Pn**	**18 27 52.3**	**+0.2**
HELC	**Santa Helena**	**11.54**	**5**	*ePn*	**Pn**	**18 27 50.5**	**-1.6**
RUSC	**La Rusia**	**11.73**	**17**	*eP*	**Pn**	**18 27 53.4**	**-1.4**
RUSC	**La Rusia**	**11.73**	**17**	*ePn*	**Pn**	**18 27 54.4**	**-0.3**
DBBC	**Dabeiba**	**12.32**	**2**	*eP*	**Pn**	**18 28 05.2**	**+3.1**
BARC	**Barichara**	**12.37**	**16**	*eP*	**Pn**	**18 28 02.4**	**-0.5**
BRRC	**Barranca, Sant**	**12.73**	**13**	*eP*	**Pn**	**18 28 04.9**	**-2.6**
PAMC	**Pamplona, Colo**	**13.22**	**17**	*eP*	**Pn**	**18 28 13.1**	**-1.2**
CBRI	**Barrientos, No**	**13.55**	**16**	*eP*	**Pn**	**18 28 14.8**	**-3.4**
LPAZ	**La Paz**	**13.66**	**143**	P	**Pn**	**18 28 18.5**	**-1.6**
	0.4nm,0.3s,baz=334,slow=13,SNR=20						
LPAZ	**La Paz**	**13.66**	**143**	*eP*	**Pn**	**18 28 17.7**	**-2.4**
LPAZ	**La Paz**	**13.66**	**143**	*ePn*	**Pn**	**18 28 17.7**	**-2.4**
SAML	**Samuel**	**13.78**	**106**	*ePn*	**Pn**	**18 28 17.2**	**-3.9**
	155nm,0.6s						
OCAC	**Ocana**	**13.92**	**14**	*eP*	**P**	**18 28 28.3**	**+0.9**
PAYG	**Puerto Ayora**	**14.44**	**288**	*ePn*	**Pn**	**18 28 27.6**	**-1.9**
SDV	**Santo Domingo**	**15.37**	**23**	P	**Pn**	**18 28 41.6**	**+0.2**
	20nm,0.3s,baz=196,slow=10,SNR=8.6						
SDV	**Santo Domingo**	**15.37**	**23**	*ePn*	**P**	**18 28 43.1**	**-0.5**
	118nm,0.8s						
PTGA	**Pitinga**	**17.24**	**75**	P	**P**	**18 29 01.4**	**-2.7**
	14nm,0.3s,baz=267,slow=16,SNR=44						
PTGA	**Pitinga**	**17.24**	**75**	*eP*	**P**	**18 29 00.7**	**-3.5**
	385nm,0.8s						
SIV	**San Ignacio**	**18.54**	**126**	P	**Pn**	**18 29 19.4**	**-0.5**
	2.5nm,0.3s,baz=317,slow=14,SNR=37						
LVC	**Limon Verde**	**18.68**	**157**	P	**Pn**	**18 29 23.0**	**+1.1**
	36nm,0.3s,baz=336,slow=9.2,SNR=8.3						
LVC	**Limon Verde**	**18.68**	**157**	*eP*	**Pn**	**18 29 22.7**	**+0.9**
	102nm,0.9s						
PCRV	**Puerto La Cruz**	**19.51**	**38**	P	**P**	**18 29 30.1**	**+1.1**
	8.4nm,0.3s,baz=196,slow=7.8,SNR=23						
GRGR	**Grenville**	**22.88**	**40**	*eP*	**P**	**18 30 03.1**	**-1.5**
	385nm,1.0s						
MTDJ	**Mount Denham**	**23.47**	**358**	*eP*	**P**	**18 30 11.3**	**+1.2**
	148nm,0.7s						
LCO	**Las Campanas**	**24.16**	**167**	*eP*	**P**	**18 30 18.9**	**+2.5**
	32nm,0.9s						
SDDR	**Presa de Saban**	**24.77**	**12**	*eP*	**P**	**18 30 22.4**	**+0.7**
	108nm,1.0s						
FDF	**Fort de France**	**25.18**	**37**	*eP*	**P**	**18 30 23.9**	**-1.7**
FDF				pmax	pmax		
	comp=Z,119nm,1.1s						
FDF	**Fort de France**	**25.18**	**37**	*eP*	**P**	**18 30 23.9**	**-1.7**
	comp=Z,119nm,1.1s						
GTBY	**Guantanamo Bay**	**25.19**	**3**	*eP*	**P**	**18 30 26.9**	**+1.4**
	comp=Z,237nm,0.9s						
MPR	**Mayaguez**	**25.23**	**22**	*eP*	**P**	**18 30 26.5**	**+0.6**
	comp=Z,3μm,0.7s						
MPR				*ep*P	**pP**	**18 30 50.1**	**-0.3**
IDE	**Isla Desecheo**	**25.27**	**21**	*eP*	**P**	**18 30 27.1**	**+0.8**
CELP	**Cerrillos**	**25.32**	**23**	*eP*	**P**	**18 30 26.7**	**-0.1**
AGP	**Aguadilla**	**25.41**	**21**	*eP*	**P**	**18 30 29.5**	**+1.9**
	comp=Z,246nm,1.0s						
SJG	**San Juan**	**25.52**	**24**	P	**P**	**18 30 28.3**	**-0.3**
	comp=Z,163nm,0.8s,baz=195,slow=5.2,SNR=41						
SJG				pP	**pP**	**18 30 52.2**	**-0.8**
	comp=Z,71nm,0.7s,baz=218,slow=5.1,SNR=4.6						
HUMP	**Col San Antoni**	**25.66**	**24**	*eP*	**P**	**18 30 29.3**	**-0.6**
	comp=Z,66nm,0.8s						
CBYP	**Canovanas**	**25.78**	**24**	*eP*	**P**	**18 30 29.8**	**-1.2**
	comp=Z,140nm,0.8s						
CBYP				*ep*P	**pP**	**18 30 54.5**	**-1.0**
STVI	**Saint Thomas**	**26.23**	**26**	*eP*	**P**	**18 30 33.6**	**-1.3**
	comp=Z,66nm,0.8s						
SMRT	**St. Maarten**	**26.84**	**30**	*eP*	**P**	**18 30 39.5**	**-0.9**
	comp=Z,92nm,0.9s						
CPUP	**Villa Florida**	**27.81**	**141**	P	**P**	**18 30 49.5**	**+0.4**
	comp=Z,15nm,0.9s,baz=333,slow=9.5,SNR=16						
CMIG	**Matias Romero**	**28.72**	**321**	P	**P**	**18 30 57.0**	**-0.2**
	comp=Z,8.5nm,0.7s,baz=108,slow=7.6,SNR=14						
CMIG				PcP	**PcP**	**18 34 04.7**	**-0.4**
	comp=Z,7.4nm,0.8s,baz=48,slow=1.2,SNR=5.0						
DWPF	**Disney Wildern**	**33.62**	**352**	*eP*	**P**	**18 31 39.6**	**-0.5**
	comp=Z,68nm,0.7s						
TRQA	**Tornquist**	**35.15**	**160**	*eP*	**P**	**18 31 53.6**	**+0.3**
	comp=Z,26nm,1.0s						
PLCA	**Paso Flores**	**35.62**	**172**	P	**P**	**18 31 58.4**	**+1.0**
	comp=Z,12nm,0.9s,baz=10.0,slow=9.5,SNR=16						
PLCA				PcP	**PcP**	**18 34 24.2**	**+0.5**
	comp=Z,9.2nm,0.7s,baz=7.7,slow=3.7,SNR=8.0						
PLCA	**Paso Flores**	**35.62**	**172**	*eP*	**P**	**18 31 58.5**	**+1.1**
PLCA						18 34 24.3	
PLCA				pmax	pmax		
	comp=Z,29nm,1.3s						
PLCA	**Paso Flores**	**35.62**	**172**	*eP*	**P**	**18 31 58.5**	**+1.1**
	comp=Z,29nm,1.3s						
PLCA				PcP	**PcP**	**18 34 24.2**	**+0.5**
TIGA	**Tifton**	**37.21**	**350**	P	**P**	**18 32 10.5**	**-0.3**
	baz=168						
546A	**Slidell**	**37.57**	**341**	P	**P**	**18 32 14.5**	**+0.5**
	baz=158						
545A	**Edgard**	**37.65**	**340**	P	**P**	**18 32 15.2**	**+0.6**
	baz=157						
448A	**Bay Minette**	**37.67**	**344**	P	**P**	**18 32 14.8**	**0.0**
	baz=162						
447A	**Lucedale**	**37.77**	**343**	P	**P**	**18 32 15.5**	**-0.1**
	baz=160						
ZAIG	**Zacatecas**	**37.77**	**319**	*eP*	**P**	**18 32 16.2**	**+0.1**
	comp=Z,9.1nm,0.9s						
035Z	**Hargill**	**37.87**	**328**	P	**P**	**18 32 17.3**	**+0.8**
	baz=144						
446A	**Poplarville**	**37.98**	**342**	P	**P**	**18 32 17.8**	**+0.5**
	baz=159						
348A	**Jayson**	**38.14**	**344**	P	**P**	**18 32 18.5**	**-0.2**
	baz=162						
445A	**Amite**	**38.23**	**341**	P	**P**	**18 32 20.1**	**+0.6**
	baz=158						
936A	**North Padre Is**	**38.26**	**329**	P	**P**	**18 32 19.4**	**-0.3**
	baz=146						
035A	**Encino**	**38.27**	**328**	P	**P**	**18 32 20.8**	**+0.9**
	baz=144,SNR=9.0						
347A	**Saraland**	**38.31**	**343**	P	**P**	**18 32 19.8**	**-0.2**
	baz=161						
NHSC	**New Hope**	**38.42**	**355**	*eP*	**P**	**18 32 21.5**	**+0.5**
	comp=Z,165nm,0.9s						
346A	**Big Creek Wild**	**38.56**	**342**	P	**P**	**18 32 22.1**	**-0.1**
	baz=159						
541A	**Lake Charles**	**38.66**	**337**	P	**P**	**18 32 22.3**	**-0.8**
	baz=153						
345A	**Thompson Farm,**	**38.67**	**341**	P	**P**	**18 32 23.1**	**0.0**
	baz=158,SNR=5.2						
034A	**Hebbronville**	**38.68**	**328**	P	**P**	**18 32 24.3**	**+1.0**
	baz=143,SNR=19						
248A	**Dixon Mills**	**38.74**	**345**	P	**P**	**18 32 23.2**	**-0.5**
	baz=162,SNR=5.1						
443A	**Delano Plantat**	**38.76**	**339**	P	**P**	**18 32 24.1**	**+0.2**
	baz=156						
247A	**Quitman**	**38.94**	**344**	P	**P**	**18 32 24.8**	**-0.6**
	baz=161						
737A	**Port Lavaca**	**38.95**	**332**	P	**P**	**18 32 25.8**	**+0.4**
	baz=148						
442A	**Mamou**	**38.95**	**338**	P	**P**	**18 32 26.0**	**+0.6**
	baz=154						
934A	**Benavides**	**39.03**	**328**	P	**P**	**18 32 27.4**	**+1.2**
	baz=144,SNR=22						
344A	**Westbrook Farm**	**39.03**	**341**	P	**P**	**18 32 26.1**	**-0.1**
	baz=157,SNR=7.1						
638A	**Rosharon**	**39.05**	**333**	P	**P**	**18 32 26.9**	**+0.6**
	baz=149						
GOGA	**Godfrey**	**39.12**	**351**	*eP*	**P**	**18 32 26.0**	**-0.9**
GOGA				pmax	pmax		
	comp=Z,81nm,1.4s						
GOGA	**Godfrey**	**39.12**	**351**	*eP*	**P**	**18 32 26.0**	**-0.9**
	comp=Z,81nm,1.4s						
835A	**Beeville**	**39.23**	**330**	P	**P**	**18 32 29.1**	**+1.3**
	baz=145						
441A	**DeRidder**	**39.27**	**337**	P	**P**	**18 32 28.6**	**+0.4**
	baz=153						
245A	**Little AP, Sta**	**39.30**	**342**	P	**P**	**18 32 27.9**	**-0.5**
	baz=159,SNR=7.4						
539A	**Cross D Ranch,**	**39.33**	**335**	P	**P**	**18 32 29.4**	**+0.7**
	baz=151						
736A	**Circle Diamond**	**39.41**	**331**	P	**P**	**18 32 30.4**	**+1.1**
	baz=147						
147A	**Livingston**	**39.43**	**344**	P	**P**	**18 32 28.2**	**-1.2**
	baz=162						
933A	**Laredo**	**39.44**	**327**	P	**P**	**18 32 30.1**	**+0.5**
	baz=143,SNR=13						
LRAL	**Lakeview Retre**	**39.45**	**346**	*eP*	**P**	**18 32 28.6**	**-1.1**
	comp=Z,11nm,0.8s						
637A	**Eagle Lake**	**39.47**	**332**	P	**P**	**18 32 30.9**	**+1.1**
	baz=148,SNR=11						
834A	**Tilden**	**39.47**	**329**	P	**P**	**18 32 30.5**	**+0.7**
	baz=144,SNR=8.7						
342A	**Flagon Creek P**	**39.51**	**339**	P	**P**	**18 32 30.2**	**+0.1**
	baz=155						
244A	**Avery, Jackson**	**39.55**	**341**	P	**P**	**18 32 29.9**	**-0.6**
	baz=158						
440A	**Kirbyville**	**39.57**	**336**	P	**P**	**18 32 30.6**	**-0.1**
	baz=152						
146A	**Union**	**39.61**	**343**	P	**P**	**18 32 30.1**	**-0.9**
	baz=160						
VBMS	**Vicksburg**	**39.66**	**341**	P	**P**	**18 32 30.9**	**-0.5**
	baz=158						
243A	**Waterproof**	**39.67**	**340**	P	**P**	**18 32 31.1**	**-0.3**
	baz=156						
735A	**Kenedy**	**39.68**	**330**	P	**P**	**18 32 32.4**	**+0.8**
	baz=146						
JSC	**Jenkinsville**	**39.69**	**354**	*eP*	**P**	**18 32 31.4**	**-0.2**
JSC				pmax	pmax		
	comp=Z,30nm,0.7s						
JSC	**Jenkinsville**	**39.69**	**354**	*eP*	**P**	**18 32 31.4**	**-0.2**
	comp=Z,30nm,0.7s						
538A	**Harpers Horsep**	**39.76**	**334**	P	**P**	**18 32 32.7**	**+0.5**
	baz=150						
341A	**Kurthwood**	**39.78**	**338**	P	**P**	**18 32 32.2**	**-0.2**
	baz=154,SNR=6.5						
145A	**Houston Renfro**	**39.84**	**342**	P	**P**	**18 32 32.3**	**-0.5**
	baz=159						
636A	**Smothers Creek**	**39.84**	**332**	P	**P**	**18 32 33.9**	**+1.0**
	baz=147,SNR=11						
Z47A	**Carrollton**	**39.88**	**345**	P	**P**	**18 32 32.1**	**-1.0**
	baz=162,SNR=12						
Z48A	**Northport**	**39.91**	**346**	P	**P**	**18 32 32.3**	**-1.1**
	baz=163,SNR=17						
439A	**Center Grove,**	**39.94**	**335**	P	**P**	**18 32 34.0**	**+0.3**
	baz=151						
537A	**Green Hill Far**	**40.00**	**333**	P	**P**	**18 32 34.7**	**+0.5**
	baz=149						
144A	**Alexander Plac**	**40.02**	**342**	P	**P**	**18 32 33.5**	**-0.8**
	baz=158						
734A	**La Parita Cree**	**40.05**	**329**	P	**P**	**18 32 35.0**	**+0.4**
	baz=145,SNR=6.0						
833A	**Chaparral WMA,**	**40.06**	**328**	P	**P**	**18 32 35.0**	**+0.3**
	baz=143,SNR=5.6						
242A	**Gryson**	**40.07**	**339**	P	**P**	**18 32 34.2**	**-0.5**
	baz=156						
Z46A	**Louisville**	**40.10**	**344**	P	**P**	**18 32 34.4**	**-0.6**
	baz=161,SNR=6.2						
635A	**Leesville**	**40.11**	**331**	P	**P**	**18 32 35.2**	**+0.1**
	baz=146						
340A	**Bronson**	**40.14**	**337**	P	**P**	**18 32 34.8**	**-0.5**
	baz=153						
438A	**Sam Houston St**	**40.20**	**334**	P	**P**	**18 32 36.1**	**+0.2**
	baz=150						
241A	**Mo Tay, Goldon**	**40.31**	**338**	P	**P**	**18 32 36.2**	**-0.5**
	baz=154						
339A	**Huntington**	**40.33**	**336**	P	**P**	**18 32 36.9**	**0.0**
	baz=152						
733A	**Divot King Ran**	**40.33**	**328**	P	**P**	**18 32 37.2**	**+0.3**
	baz=144						
536A	**Bastrop**	**40.34**	**332**	P	**P**	**18 32 37.2**	**+0.1**
	baz=148						
832A	**Faith Ranch, C**	**40.34**	**327**	P	**P**	**18 32 37.1**	**0.0**
	baz=142						
634A	**China Grove, S**	**40.38**	**330**	P	**P**	**18 32 37.8**	**+0.4**
	baz=145						
143A	**Socs Landing,**	**40.40**	**341**	P	**P**	**18 32 36.2**	**-1.2**
	baz=157						
142A	**Monroe**	**40.44**	**340**	P	**P**	**18 32 37.1**	**-0.7**
	baz=156						
Z45A	**Winona**	**40.48**	**343**	P	**P**	**18 32 37.2**	**-1.0**
	baz=160						
Y47A	**UCPARC, Winfie**	**40.49**	**346**	P	**P**	**18 32 37.2**	**-1.0**
	baz=163,SNR=13						
535A	**Dale**	**40.54**	**331**	P	**P**	**18 32 38.8**	**+0.1**
	baz=147,SNR=7.6						
KMSC	**Kings Mountain**	**40.55**	**354**	P	**P**	**18 32 38.6**	**-0.1**
	baz=173,SNR=22						
KMSC	**Kings Mountain**	**40.55**	**354**	*eP*	**P**	**18 32 38.4**	**-0.3**
	comp=Z,78nm,0.9s						
437A	**Phantom Ranch,**	**40.56**	**334**	P	**P**	**18 32 39.4**	**+0.6**
	baz=149						
Z44A	**Pea Ridge, Bel**	**40.62**	**342**	P	**P**	**18 32 38.4**	**-0.9**
	baz=159						
240A	**Hunter Patters**	**40.64**	**337**	P	**P**	**18 32 39.6**	**+0.1**
	baz=153						
338A	**Crockett**	**40.66**	**335**	P	**P**	**18 32 40.3**	**+0.7**
	baz=151						
Y46A	**Houston**	**40.73**	**344**	P	**P**	**18 32 39.0**	**-1.2**
	baz=161,SNR=12						
NATX	**Nacogdoches**	**40.74**	**336**	P	**P**	**18 32 40.4**	**0.0**
	baz=152						
NATX	**Nacogdoches**	**40.74**	**336**	*eP*	**P**	**18 32 40.5**	**+0.2**
	comp=Z,86nm,0.8s						
436A	**Wall Ranch, Ga**	**40.80**	**333**	P	**P**	**18 32 41.2**	**+0.3**
	baz=148,SNR=5.3						
Z43A	**Armstrong Fami**	**40.81**	**341**	P	**P**	**18 32 39.6**	**-1.3**
	baz=157						
141A	**Papa Simpson,**	**40.83**	**339**	P	**P**	**18 32 40.6**	**-0.4**
	baz=155						
633A	**Saathoff Ranch**	**40.86**	**329**	P	**P**	**18 32 41.6**	**+0.3**
	baz=144,SNR=18						
239A	**Gary**	**40.90**	**337**	P	**P**	**18 32 41.8**	**+0.3**
	baz=152,SNR=8.4						
Y45A	**Yeager Farm, C**	**40.91**	**343**	P	**P**	**18 32 41.0**	**-0.6**
	baz=160,SNR=15						
534A	**Blanco**	**40.98**	**330**	P	**P**	**18 32 42.4**	**+0.1**
	baz=146,SNR=30						
Z42A	**Norrel Spur, H**	**41.10**	**340**	P	**P**	**18 32 42.4**	**-0.8**
	baz=156						
140A	**Cam and Jess,**	**41.10**	**338**	P	**P**	**18 32 43.5**	**+0.2**
	baz=154						
238A	**Jacksonville**	**41.15**	**336**	P	**P**	**18 32 43.8**	**+0.2**
	baz=151						
435B	**Jarrell**	**41.18**	**332**	P	**P**	**18 32 44.4**	**+0.5**
	baz=147,SNR=8.6						
Y44A	**Strider, Charl**	**41.19**	**343**	P	**P**	**18 32 43.0**	**-0.9**
	baz=159						
CPCT	**Cooper Cave**	**41.29**	**350**	*eP*	**P**	**18 32 44.0**	**-0.8**
	comp=Z,26nm,0.8s						
533A	**Kerrville**	**41.29**	**330**	P	**P**	**18 32 45.0**	**+0.1**
	baz=145,SNR=9.6						
SWET	**Sewanee**	**41.32**	**348**	*eP*	**P**	**18 32 43.7**	**-1.3**
	comp=Z,12nm,0.9s						
336A	**Riesel**	**41.35**	**333**	P	**P**	**18 32 45.6**	**+0.3**
	baz=149,SNR=18						
Y43A	**Makayla and Ka**	**41.36**	**342**	P	**P**	**18 32 44.4**	**-0.9**
	baz=158						
TKL	**Tuckaleechee C**	**41.37**	**351**	P	**P**	**18 32 44.5**	**-0.9**
	comp=Z,23nm,0.8s,baz=171,slow=9.6,SNR=20						
TKL	**Tuckaleechee C**	**41.37**	**351**	*eP*	**P**	**18 32 44.2**	**-1.2**
TKL				pmax	pmax		
	comp=Z,93nm,1.5s						
TKL	**Tuckaleechee C**	**41.37**	**351**	*eP*	**P**	**18 32 44.2**	**-1.2**
	comp=Z,93nm,1.5s						
Z41A	**Richland Creek**	**41.38**	**339**	P	**P**	**18 32 45.0**	**-0.5**
	baz=155						
X45A	**UM Field Stati**	**41.39**	**344**	P	**P**	**18 32 43.8**	**-1.7**
	baz=161						
335A	**Moody**	**41.52**	**333**	P	**P**	**18 32 47.3**	**+0.5**
	baz=148,SNR=23						
434A	**Burnet**	**41.53**	**331**	P	**P**	**18 32 46.7**	**-0.1**
	baz=146,SNR=25						
Y42A	**Garnett, Star**	**41.56**	**341**	P	**P**	**18 32 46.2**	**-0.8**
	baz=157						
Z40A	**Long Farm, Mag**	**41.59**	**339**	P	**P**	**18 32 46.9**	**-0.4**
	baz=154						
CCAR	**Cane Creek**	**41.63**	**341**	*eP*	**P**	**18 32 46.8**	**-0.8**
	comp=Z,74nm,1.0s						
X44A	**Crenshaw**	**41.67**	**343**	P	**P**	**18 32 48.1**	**+0.2**
	baz=160						
138A	**Matatall Enter**	**41.71**	**336**	P	**P**	**18 32 48.8**	**+0.6**
	baz=152,SNR=14						
236A	**Katherine and**	**41.74**	**334**	P	**P**	**18 32 49.1**	**+0.7**
	baz=150						
Z39A	**Irene McRaven,**	**41.87**	**338**	P	**P**	**18 32 49.9**	**+0.4**
	baz=153						
433A	**Art**	**41.88**	**330**	P	**P**	**18 32 49.9**	**+0.2**
	baz=145,SNR=48						
WLAR	**White Oak Lake**	**41.88**	**339**	*eP*	**P**	**18 32 49.2**	**-0.3**
	comp=Z,74nm,1.0s						
Y41A	**Eaglette Beard**	**41.88**	**340**	P	**P**	**18 32 48.8**	**-0.8**
	baz=156						
X43A	**Marvell**	**41.91**	**342**	P	**P**	**18 32 48.7**	**-1.0**
	baz=158						
137A	**Heron Place, G**	**41.92**	**336**	P	**P**	**18 32 50.6**	**+0.6**
	baz=151,SNR=8.3						
334A	**Lometa**	**41.94**	**332**	P	**P**	**18 32 50.1**	**0.0**
	baz=147,SNR=37						
JCT	**Junction City**	**42.01**	**329**	P	**P**	**18 32 50.9**	**+0.2**
	baz=144,SNR=9.9						
JCT	**Junction City**	**42.01**	**329**	*eP*	**P**	**18 32 50.3**	**-0.4**
JCT				pmax	pmax		
	comp=Z,21nm,0.7s						
JCT	**Junction City**	**42.01**	**329**	*eP*	**P**	**18 32 50.3**	**-0.4**
	comp=Z,21nm,0.7s						
W45A	**Hickory Valley**	**42.02**	**345**	P	**P**	**18 32 48.9**	**-1.8**
	baz=161						
WHTX	**Lake Whitney,**	**42.14**	**333**	P	**P**	**18 32 52.1**	**+0.4**
	baz=148,SNR=14						
WHTX	**Lake Whitney,**	**42.14**	**333**	*eP*	**P**	**18 32 52.0**	**+0.3**

baz=157,SNR=26
X39A **Fountain Ranch** 42.98 339 P P 18 32 58.2 -0.2
baz=154,SNR=45
X301 **Greenbrier Sit** 43.05 341 eP P 18 32 57.6 -1.4
comp=Z,48nn,0.7s
WHAR **Wooly Hollow** 43.06 341 eP P 18 32 58.0 -1.1
comp=Z,43nn,0.8s
X201 **Greenbrier Sit** 43.09 341 eP P 18 32 58.2 -1.1
comp=Z,51nn,0.7s
Z35A **Perchaven, San** 43.19 334 P P 18 33 00.8 +0.6
baz=149,SNR=19
TXAR **Lajitas Array** 43.21 325 P P 18 33 00.4 -0.2
comp=Z,12nn,0.7s,baz=147,slow=9.2,SNR=137
TXAR PcP PcP 18 34 48.1 +0.1
comp=Z,6.7nn,0.9s,baz=140,slow=4.9,SNR=7.9
TX31 **Lajitas Ar. Si** 43.21 325 eP P 18 33 00.5 -0.1
W40A **Ferguson Farm,** 43.23 340 P P 18 32 60.0 -0.5
baz=156,SNR=10.0
V42A **Cord** 43.25 342 P P 18 32 58.7 -2.0
baz=158,SNR=25
Y36A **Durant** 43.27 336 P P 18 33 01.2 +0.3
baz=151,SNR=18
133A **Hamilton Ranch** 43.32 332 P P 18 33 01.6 +0.3
baz=147,SNR=12
X38A **Whitesboro** 43.38 338 P P 18 33 01.8 +0.1
baz=153,SNR=26
V41A **Mountainview** 43.47 342 P P 18 33 01.0 -1.4
baz=157,SNR=42
W39A **Magazine** 43.48 339 P P 18 33 02.1 -0.3
baz=155,SNR=18
Z34A **Collier Ranch,** 43.51 334 P P 18 33 03.5 +0.7
baz=148,SNR=7.5
Y35A **Marietta** 43.59 335 P P 18 33 04.2 +0.8
baz=150,SNR=47
W38A **Poteau** 43.63 339 P P 18 33 03.5 -0.1
baz=154,SNR=15
ABTX **Abilene, Hawle** 43.68 331 P P 18 33 04.4 +0.2
baz=146,SNR=14
ABTX **Abilene, Hawle** 43.68 331 eP P 18 33 04.7 +0.5
comp=Z,67nn,0.9s
ABTX epP pP 18 33 30.0 -0.1
V40A **Witts Springs** 43.70 341 P P 18 33 03.2 -1.2
baz=156,SNR=74
U42A **Revenden** 43.72 343 P P 18 33 02.5 -1.8
baz=159,SNR=23
Z33A **Whitaker Ranch** 43.82 333 P P 18 33 05.9 +0.6
baz=147,SNR=57
PBMO **Poplar Bluff** 43.88 344 eP P 18 33 04.0 -1.7
comp=Z,29nn,0.8s
X36A **Centrahoma** 43.88 336 P P 18 33 05.4 -0.3
baz=151,SNR=16
U41A **Viola** 43.91 342 P P 18 33 04.4 -1.6
baz=158,SNR=19
Y34A **Reagan Ranch,** 43.94 334 P P 18 33 06.4 +0.2
baz=149,SNR=31
X35A **Drake** 43.99 336 P P 18 33 06.5 -0.1
baz=150,SNR=11
V39A **Pettigrew** 44.01 340 P P 18 33 05.8 -1.0
baz=155,SNR=20
W37B **Quinton** 44.03 338 P P 18 33 06.7 -0.2
baz=153,SNR=12
U40A **Yellville** 44.22 341 P P 18 33 07.3 -1.1
baz=156,SNR=37
S45A **Carrier Mills** 44.26 346 P P 18 33 06.4 -2.3
baz=163,SNR=5.4
V38A **Canehill** 44.30 339 P P 18 33 07.9 -1.1
baz=154,SNR=38
WCI **Wyandotte Cave** 44.31 349 eP P 18 33 07.6 -1.5
WCI pmax pmax
comp=Z,38nn,1.1s
WCI **Wyandotte Cave** 44.31 349 eP P 18 33 07.6 -1.5
comp=Z,38nn,1.1s
W36A **Wetumka** 44.33 337 P P 18 33 08.8 -0.5
baz=152,SNR=12
Y33A **Hilltop Ranch,** 44.36 334 P P 18 33 10.0 +0.4
baz=148,SNR=21
S44A **Carbondale** 44.44 346 P P 18 33 08.6 -1.5
baz=162
U39A **Green Forest** 44.45 340 P P 18 33 08.8 -1.4
baz=156,SNR=22
SIUC **Southern Illin** 44.45 346 eP P 18 33 08.8 -1.4
comp=Z,57nn,0.7s
SIUC epP pP 18 33 37.3 +1.1
HHAR **Hobbs** 44.51 340 eP P 18 33 09.8 -1.0
comp=Z,50nn,1.0s
T41A **Mountain View** 44.51 343 P P 18 33 08.8 -1.9
baz=158,SNR=23
X34A **Smith Ranch, M** 44.52 335 P P 18 33 11.5 +0.6
baz=149,SNR=49
S43A **Fulton Ridge,** 44.53 345 P P 18 33 08.7 -2.2
baz=161,SNR=7.7
SDMD **Soldier's Deli** 44.56 360 eP P 18 33 11.7 +0.6
comp=Z,31nn,0.8s
V37A **Hulbert** 44.58 338 P P 18 33 10.6 -0.7
baz=153,SNR=31
W35A **Tecumseh** 44.60 336 P P 18 33 10.9 -0.6
baz=151,SNR=25
X33A **Lawton** 44.76 334 P P 18 33 12.8 +0.1
baz=148,SNR=11
V36A **Jenks** 44.79 338 P P 18 33 12.5 -0.5
baz=152,SNR=14
U38A **Gravette** 44.81 340 P P 18 33 11.8 -1.3
baz=154,SNR=16
T40A **Mansfield** 44.84 342 P P 18 33 11.8 -1.6
baz=157,SNR=25
TUL1 **Leonard** 44.84 338 P P 18 33 12.9 -0.5
baz=152,SNR=9.0
TUL1 **Leonard** 44.84 338 eP P 18 33 13.2 -0.2
comp=Z,37nn,0.7s
R44A **Waltonville** 44.92 346 P P 18 33 12.1 -1.8
baz=162
T39A **Clever** 45.00 341 P P 18 33 13.0 -1.6
baz=156,SNR=10
X32A **Elmer** 45.00 333 P P 18 33 15.1 +0.4
baz=147,SNR=38
S41A **Jillco Farms,** 45.01 343 P P 18 33 12.7 -2.0
baz=158,SNR=14
U37A **Salina** 45.04 339 P P 18 33 14.2 -0.6
baz=154,SNR=26
W34A **Bridge Creek,** 45.04 335 P P 18 33 14.7 -0.3
baz=150,SNR=7.5
W34A **Bridge Creek,** 45.04 335 eP P 18 33 15.3 +0.3
comp=Z,60nn,0.9s
WMOK **Wichita Mounta** 45.05 334 P P 18 33 14.7 -0.4
baz=148,SNR=87
WMOK **Wichita Mounta** 45.05 334 eP P 18 33 14.9 -0.2
WMOK pmax pmax
comp=Z,49nn,0.8s
WMOK **Wichita Mounta** 45.05 334 eP P 18 33 14.9 -0.2
comp=Z,49nn,0.8s
PSUB **Penn St. - Bra** 45.09 1 eP P 18 33 16.1 +0.8
comp=Z,25nn,0.7s
V35A **Meyer Ranch, C** 45.12 337 P P 18 33 15.1 -0.5
baz=151,SNR=16
MVL **Millersville** 45.15 0 eP P 18 33 16.7 +1.0
comp=Z,109nn,0.8s
OLIL **Olney** 45.16 347 eP P 18 33 13.8 -2.0
comp=Z,28nn,0.8s
S40A **Lebanon** 45.25 342 P P 18 33 14.9 -1.6
baz=158,SNR=29
U36A **Oologah** 45.25 338 P P 18 33 16.1 -0.5
baz=153,SNR=7.4
W33A **Caddo, Fort Co** 45.26 335 P P 18 33 17.3 +0.5
baz=149,SNR=34
BLO **Bloomington** 45.27 349 eP P 18 33 14.9 -1.7
BLO pmax pmax
comp=Z,35nn,0.6s
BLO **Bloomington** 45.27 349 eP P 18 33 14.9 -1.7
comp=Z,35nn,0.6s
T38A **Diamond** 45.31 340 P P 18 33 15.7 -1.4
baz=155,SNR=20
V34A **Guthrie** 45.45 336 P P 18 33 17.6 -0.6
baz=150,SNR=14
V34A **Guthrie** 45.45 336 eP P 18 33 16.8 -1.4
comp=Z,121nn,0.9s
V34A epP pP 18 33 43.8 -0.6
O56A **Blue Knob Stat** 45.45 358 P P 18 33 18.7 +0.5
baz=177,SNR=29
Q44A **Meyer Farm, Va** 45.53 346 P P 18 33 16.6 -2.2
baz=163,SNR=7.6
W32A **Sentinel** 45.58 334 P P 18 33 19.5 +0.2
baz=148,SNR=90
S39A **Bolivar** 45.59 341 P P 18 33 17.6 -1.6
baz=156,SNR=22
T37A **Cheneyville 18** 45.61 339 P P 18 33 18.4 -1.0
baz=154,SNR=42
U35A **Pawnee** 45.61 337 P P 18 33 19.2 -0.2
baz=151,SNR=20

S38A **Stockton** 45.72 341 P P 18 33 18.7 -1.6
baz=156,SNR=8.8
Q43A **New Douglas** 45.73 346 P P 18 33 18.5 -1.8
baz=162
V33A **Lossen Ranch,** 45.76 335 P P 18 33 20.3 -0.3
baz=149,SNR=11
ACSO **Alum Creek Sta** 45.76 353 eP P 18 33 19.5 -1.0
comp=Z,46nn,0.8s
SSPA **Standing Stone** 45.80 359 eP P 18 33 21.4 +0.6
comp=Z,75nn,0.8s
R40A **Maddies Statio** 45.82 343 P P 18 33 19.1 -1.9
baz=158,SNR=9.1
BRNJ **Basking Ridge** 45.87 2 eP P 18 33 22.4 +1.1
comp=Z,38nn,0.8s
T36A **Boggs Farm, Ca** 45.90 338 P P 18 33 21.2 -0.5
baz=153,SNR=29
MNTX **Cornudas Mount** 45.96 325 P P 18 33 21.8 -0.4
baz=138,SNR=65
MNTX **Cornudas Mount** 45.96 325 eP P 18 33 21.8 -0.4
comp=Z,31nn,0.8s
U34A **Anderson Ranch** 45.98 336 P P 18 33 22.2 -0.1
baz=150,SNR=34
U34A **Anderson Ranch** 45.98 336 eP P 18 33 22.3 -0.1
comp=Z,154nn,0.8s
U34A epP pP 18 33 47.7 -0.8
V32A **Arapaho** 45.99 334 P P 18 33 22.9 +0.5
baz=148,SNR=27
T35A **Sooner Cattle** 46.00 338 P P 18 33 22.1 -0.5
baz=152,SNR=12
R39A **Chumby, Stover** 46.07 342 P P 18 33 21.1 -1.9
baz=157,SNR=18
N59A **State Game Lan** 46.07 1 P P 18 33 23.9 +0.8
baz=181,SNR=35
S37A **Fort Scott** 46.15 340 P P 18 33 22.6 -1.1
baz=154,SNR=19
U33A **Lingo Farm, Me** 46.21 336 P P 18 33 23.7 -0.5
baz=150,SNR=6.3
N54A **Moraine State** 46.22 356 P P 18 33 23.9 -0.2
baz=175,SNR=13
PAL **Palisades** 46.22 3 eP P 18 33 24.8 +0.7
PAL pmax pmax
comp=Z,62nn,0.9s
PAL **Palisades** 46.22 3 eP P 18 33 24.8 +0.7
comp=Z,62nn,0.9s
R38A **Fenwick Farm,** 46.23 341 P P 18 33 22.7 -1.5
baz=156,SNR=16
ODNJ **Ogdensburg** 46.27 2 eP P 18 33 25.1 +0.6
ODNJ ePcP PcP 18 34 58.3 +0.1
MSTX **Muleshoe** 46.30 330 P P 18 33 24.8 -0.2
baz=143,SNR=38
MSTX **Muleshoe** 46.30 330 eP P 18 33 24.9 -0.2
comp=Z,84nn,1.1s
T34A **McClaskey Farm** 46.35 337 P P 18 33 25.3 0.0
baz=151,SNR=27
S36A **Lake Cedric, C** 46.38 339 P P 18 33 24.6 -0.9
baz=154,SNR=17
Q40A **Laux Farm, Aux** 46.41 343 P P 18 33 23.7 -1.9
baz=159,SNR=13
AMTX **Amarillo** 46.50 331 eP P 18 33 26.4 -0.1
comp=Z,48nn,0.8s
P42A **Winchester** 46.50 345 P P 18 33 24.3 -2.1
baz=161,SNR=9.5
U32A **Winter Ranch,** 46.53 335 P P 18 33 26.8 0.0
baz=149,SNR=20
SFIN **Lafayette** 46.54 349 P P 18 33 24.6 -2.1
baz=166
SFIN **Lafayette** 46.54 349 eP P 18 33 24.4 -2.3
comp=Z,21nn,0.6s
YLE **Yale** 46.59 4 eP P 18 33 27.5 +0.6
comp=Z,145nn,0.8s
S35A **Otter Creek Ra** 46.61 338 P P 18 33 26.8 -0.4
baz=153,SNR=18
R37A **Teagarden Farm** 46.65 340 P P 18 33 26.2 -1.3
baz=155,SNR=9.2
Q39A **Willow Grove F** 46.73 342 P P 18 33 26.4 -1.7
baz=157,SNR=24
M54A **Oil Creek Stat** 46.74 357 P P 18 33 27.8 -0.4
baz=176,SNR=20
P41A **Barry, Barry** 46.77 345 P P 18 33 26.4 -2.1
baz=160,SNR=9.6
T33A **Patterson Ranc** 46.82 336 P P 18 33 28.7 -0.3
baz=150,SNR=8.9
Q38A **Cooks Store, C** 46.84 342 P P 18 33 27.8 -1.2
baz=156,SNR=19
R36A **Gordon, Harris** 46.89 340 P P 18 33 28.3 -1.1
baz=154,SNR=10
P40A **Paris** 46.90 344 P P 18 33 27.3 -2.1
baz=159,SNR=5.3
S34A **Willow Spring** 46.92 338 P P 18 33 29.1 -0.6
baz=152,SNR=7.5
O42A **Bath** 47.01 346 P P 18 33 28.3 -2.0
baz=162
Q37A **Longview Farm,** 47.03 341 P P 18 33 29.0 -1.5
baz=155
P39B **Salisbury** 47.07 343 P P 18 33 28.9 -1.9
baz=158,SNR=15
R35A **Emporia Munici** 47.13 339 P P 18 33 31.0 -0.4
baz=153
O41A **Passleys Farm,** 47.14 345 P P 18 33 28.9 -2.4
baz=160,SNR=9.0
S33A **Kaszmaul Farm,** 47.17 337 P P 18 33 31.6 -0.1
baz=150,SNR=26
HDIL **Hopedale** 47.17 347 P P 18 33 29.4 -2.2
baz=163,SNR=7.0
T32A **Huddler Ranch,** 47.19 336 P P 18 33 31.9 +0.1
baz=149,SNR=9.3
BRYW **Bryant College** 47.29 5 eP P 18 33 33.0 +0.6
comp=Z,118nn,0.9s
BINY **Binghamton** 47.35 1 eP P 18 33 33.5 +0.6
comp=Z,213nn,0.6s
ERPA **Erie** 47.37 357 eP P 18 33 32.8 -0.3
comp=Z,126nn,1.3s
O40A **La Belle** 47.41 344 P P 18 33 31.2 -2.1
baz=159,SNR=11
P38A **Dawn** 47.43 342 P P 18 33 31.4 -2.1
baz=157,SNR=7.0
Q36A **Arnold C. Orve** 47.45 340 P P 18 33 32.4 -1.3
baz=154,SNR=7.1
R34A **Isabella, Hill** 47.50 338 P P 18 33 34.0 -0.2
baz=152,SNR=26
Q35A **Mercer Eighty,** 47.55 339 P P 18 33 33.8 -0.8
baz=153,SNR=28
QUA2 **Belchertown** 47.59 4 eP P 18 33 35.2 +0.5
comp=Z,75nn,0.9s
S32A **Newby Ranch, P** 47.63 336 P P 18 33 35.8 +0.6
baz=149,SNR=37
P37A **Lathrop** 47.65 341 P P 18 33 33.4 -1.8
baz=156,SNR=9.5
O39A **Kirksville** 47.72 343 P P 18 33 34.2 -1.6
baz=158
BCX **Boston College** 47.74 5 eP P 18 33 36.5 +0.6
comp=Z,64nn,0.8s
WES **Weston** 47.78 5 eP P 18 33 36.8 +0.7
WES pmax pmax
comp=Z,125nn,1.4s
WES **Weston** 47.78 5 eP P 18 33 36.8 +0.7
comp=Z,125nn,1.4s
R33A **Olander Ranch,** 47.78 337 P P 18 33 36.3 -0.1
baz=151,SNR=17
O38A **Galt** 47.87 343 P P 18 33 35.2 -1.7
baz=157,SNR=5.7
HRV **Adam Dziewonsk** 47.88 5 eP P 18 33 37.7 +0.8
HRV pmax pmax
comp=Z,62nn,0.8s
HRV **Adam Dziewonsk** 47.88 5 eP P 18 33 37.7 +0.8
comp=Z,62nn,0.8s
MMNY **Mt. Morris Dam** 47.90 359 eP P 18 33 37.3 +0.2
Q34A **Chapman** 47.93 339 P P 18 33 37.3 -0.2
baz=152,SNR=33
121A **Cookes Peak, D** 47.95 324 P P 18 33 38.9 +0.9
baz=136,SNR=20
121A **Cookes Peak, D** 47.95 324 eP P 18 33 38.6 +0.6
comp=Z,45nn,0.9s
TRY **Troy** 47.95 3 eP P 18 33 38.5 +0.9
comp=Z,132nn,1.0s
KSU1 **Kansas State U** 47.97 339 P P 18 33 36.9 -0.9
baz=153,SNR=12
KSU1 **Kansas State U** 47.97 339 eP P 18 33 37.2 -0.6
comp=Z,123nn,0.8s
O37A **Wolven Farm, M** 48.11 342 P P 18 33 37.2 -1.7
baz=156,SNR=8.2
BUF **Buffalo** 48.12 358 eP P 18 33 39.1 +0.3
P35A **Duane Minner,** 48.14 340 P P 18 33 37.9 -1.2
baz=154,SNR=14
R32A **Long Quarter,** 48.17 337 P P 18 33 39.6 +0.3
baz=150,SNR=34
N39A **Derby Farms, D** 48.28 344 P P 18 33 38.3 -1.9
baz=159,SNR=21

Q33A **Connelly Farm,** 48.33 338 P P 18 33 40.4 -0.2
baz=151,SNR=22
O36A **Bolckow** 48.34 341 P P 18 33 39.0 -1.5
baz=155
N38A **Joes South For** 48.41 343 P P 18 33 39.4 -1.7
baz=158,SNR=5.7
P34A **Walnut Farm, R** 48.44 339 P P 18 33 40.9 -0.5
baz=151,SNR=47
BNM **Barren Site** 48.48 326 eP P 18 33 42.4 +0.4
BNM ePcP PcP 18 35 07.0 +0.5
Q32A **Meitler Ranch,** 48.60 337 P P 18 33 42.4 -0.3
baz=150,SNR=18
LPM **Los Pinos Moun** 48.60 326 eP P 18 33 41.0 -1.9
ACCN **Adirondack Com** 48.61 3 eP P 18 33 43.3 +0.8
comp=Z,76nn,1.0s
EFI **East Falkland** 48.65 165 eP P 18 33 44.7 +1.9
P33A **Williams Farm,** 48.66 338 P P 18 33 42.8 -0.3
baz=152,SNR=8.7
N37A **Lee Faris, Mou** 48.67 342 P P 18 33 41.4 -1.7
baz=156,SNR=6.8
M39A **Webster** 48.76 344 P P 18 33 41.7 -2.0
baz=159,SNR=8.0
O35A **Humboldt** 48.77 340 P P 18 33 42.0 -1.9
baz=154,SNR=5.0
FFD **Franklin Falls** 48.83 5 eP P 18 33 45.2 +1.0
comp=Z,96nn,0.9s
L41A **Preston** 48.90 346 P P 18 33 42.5 -2.3
baz=162,SNR=8.3
CBKS **Cedar Bluff** 48.91 336 P P 18 33 45.3 +0.3
baz=149,SNR=19
CBKS **Cedar Bluff** 48.91 336 eP P 18 33 45.5 +0.4
CBKS pmax pmax
comp=Z,167nn,0.8s
CBKS **Cedar Bluff** 48.91 336 eP P 18 33 45.5 +0.4
comp=Z,166nn,0.8s
N36A **Muff Farm, Cla** 48.96 342 P P 18 33 44.0 -1.3
baz=156
O34A **Beatrice** 48.96 340 P P 18 33 44.3 -1.1
baz=153,SNR=11
ANMO **Albuquerque** 48.98 327 P P 18 33 46.3 +0.4
baz=139
ANMO **Albuquerque** 48.98 327 diP P 18 33 45.8 0.0
ANMO pmax pmax
comp=Z,83nn,0.9s
ANMO **Albuquerque** 48.98 327 eP P 18 33 46.1 +0.2
comp=Z,69nn,0.8s
M38A **Pleasantville** 48.98 343 P P 18 33 43.4 -2.1
baz=158,SNR=6.9
HNH **Hanover** 49.01 4 eP P 18 33 46.6 +1.0
comp=Z,116nn,0.9s
L40A **Anamosa** 49.06 346 P P 18 33 44.0 -2.0
baz=161,SNR=8.3
P32A **Huiting Farm,** 49.16 338 P P 18 33 46.7 -0.3
baz=151,SNR=6.5
NCB **Newcomb** 49.17 2 eP P 18 33 47.4 +0.5
comp=Z,0.5nn,0.6s
O33A **Hebron** 49.18 339 P P 18 33 46.5 -0.5
baz=152,SNR=33
M37A **Trindle Farm,** 49.22 343 P P 18 33 45.8 -1.5
baz=157
N35A **Tabor** 49.22 341 P P 18 33 45.8 -1.5
baz=155,SNR=9.4
MDV **Middlebury** 49.24 3 eP P 18 33 48.0 +0.6
L39A **Vinton** 49.31 345 P P 18 33 45.8 -2.2
baz=160,SNR=6.9
K41A **Shullsburg** 49.35 347 P P 18 33 46.0 -2.3
baz=162,SNR=5.3
SCIA **State Center** 49.44 344 eP P 18 33 47.5 -1.5
comp=Z,38nn,0.5s
N34A **Lincoln** 49.48 340 P P 18 33 47.9 -1.4
baz=154
M36A **Felix, Anita** 49.49 342 P P 18 33 47.7 -1.6
baz=156,SNR=7.8
LBNH **Lisbon** 49.57 4 eP P 18 33 50.9 +1.0
LBNH pmax pmax
comp=Z,92nn,0.9s
LBNH **Lisbon** 49.57 4 eP P 18 33 50.9 +1.0
comp=Z,92nn,0.9s
L38A **Oak Wood Farm,** 49.59 344 P P 18 33 48.1 -2.0
baz=158,SNR=14
O32A **Brockman Farm,** 49.60 338 P P 18 33 49.8 -0.5
baz=151,SNR=18
TUC **Tucson** 49.61 321 P P 18 33 51.0 +0.4
baz=133
TUC **Tucson** 49.61 321 eP P 18 33 50.8 +0.3
TUC pmax pmax
comp=Z,29nn,0.8s
TUC **Tucson** 49.61 321 eP P 18 33 50.8 +0.3
comp=Z,29nn,0.8s
T25A **Trinidad** 49.62 331 P P 18 33 51.4 +0.7
baz=142,SNR=60
T25A **Trinidad** 49.62 331 eP P 18 33 51.5 +0.8
comp=Z,102nn,1.0s
JFWS **Jewell Farm** 49.63 347 eP P 18 33 48.5 -1.9
JFWS pmax pmax
comp=Z,27nn,0.6s
JFWS **Jewell Farm** 49.63 347 eP P 18 33 48.5 -1.9
comp=Z,27nn,0.6s
K40A **Colesburg** 49.64 346 P P 18 33 48.1 -2.3
baz=161,SNR=6.3
USHA **Ushuaia** 49.75 174 P P 18 33 53.0 +1.9
comp=Z,52nn,0.8s,baz=356,slow=5.5,SNR=6.5
M35A **Neola** 49.78 341 P P 18 33 50.0 -1.5
baz=155,SNR=8.1
L37A **Phoenix Point,** 49.79 343 P P 18 33 49.8 -1.9
baz=158
LONY **Lake Ozonia** 49.80 2 eP P 18 33 51.9 +0.2
comp=Z,39nn,0.8s
K39A **Oelwein** 49.83 345 P P 18 33 49.4 -2.5
baz=160,SNR=6.5
O31A **Woolen Ranch,** 49.90 337 P P 18 33 52.0 -0.5
baz=150
SADO **Sadowa** 49.97 358 eP P 18 33 51.8 -1.1
comp=Z,30nn,0.9s
K38A **Parkersburg** 50.01 344 P P 18 33 51.2 -2.1
baz=159
J41A **Loganville** 50.01 347 P P 18 33 51.4 -1.8
baz=162
L36A **Harm Buss Farm** 50.04 342 P P 18 33 52.1 -1.4
baz=156,SNR=7.4
N32A **Stulken Farm,** 50.05 339 P P 18 33 53.1 -0.5
baz=151
FRNY **Flat Rock** 50.06 3 eP P 18 33 54.2 +0.6
comp=Z,104nn,0.8s
FRNY epP pP 18 34 19.9 -0.2
M34A **Aspy Farms, Fr** 50.10 340 P P 18 33 52.8 -1.2
baz=154,SNR=16
WVL **Waterville** 50.10 6 eP P 18 33 54.7 +0.8
comp=Z,108nn,1.3s
PLVO **Plevna** 50.19 360 eP P 18 33 54.4 -0.2
comp=Z,86nn,0.7s
J40A **Soldiers Grove** 50.20 347 P P 18 33 52.3 -2.4
baz=162,SNR=6.9
KSCO **Kaye Shedlock'** 50.30 334 P P 18 33 55.8 +0.1
baz=146,SNR=16
KSCO **Kaye Shedlock'** 50.30 334 eP P 18 33 56.1 +0.4
comp=Z,177nn,0.9s
L35A **Bielow Farm, R** 50.32 342 P P 18 33 54.0 -1.6
baz=155,SNR=18
N31A **Bailey Ranch,** 50.34 338 P P 18 33 55.4 -0.4
baz=151
K37A **Belmond** 50.35 344 P P 18 33 53.3 -2.5
baz=158,SNR=12
M33A **Taylor Creek F** 50.37 340 P P 18 33 54.8 -1.2
baz=153,SNR=16
J39A **Decorah** 50.38 346 P P 18 33 53.6 -2.4
baz=160,SNR=14
L34A **Svendsen Farm,** 50.45 341 P P 18 33 55.0 -1.6
baz=154,SNR=5.0
EMMW **East Machias** 50.53 8 eP P 18 33 57.8 +0.7
comp=Z,6nn,0.8s
BGNE **Belgrade** 50.56 339 P P 18 33 56.8 -0.7
baz=152,SNR=8.3
BGNE **Belgrade** 50.56 339 eP P 18 33 57.3 -0.2
comp=Z,220nn,1.0s
SDCO **Great Sand Dun** 50.63 330 P P 18 33 58.9 +0.5
baz=142,SNR=151
214A **Organ Pipe Nat** 50.66 320 P P 18 33 58.8 +0.4
baz=131,SNR=38
214A **Organ Pipe Nat** 50.66 320 eP P 18 33 58.8 +0.4
comp=Z,216nn,0.9s
K35A **Storm Lake** 50.77 342 P P 18 33 57.6 -1.5
baz=156,SNR=8.3
M31A **Lambtecht Ranc** 50.80 338 P P 18 33 59.0 -0.3
baz=151,SNR=7.2
J37A **Redenius Farm,** 50.83 344 P P 18 33 57.5 -1.9
baz=158
PKME **Peaks-Kenny Pk** 50.84 7 eP P 18 34 00.1 +0.7

comp=Z,52nm,0.6s
L33A **Hoskins** 50.93 340 P P 18 33 59.0 -1.2
baz=153,SNR=9.6
W18A **Petrified Fore** 50.93 325 P P 18 34 01.2 +0.6
baz=136,SNR=28
W18A **Petrified Fore** 50.93 325 eP P 18 34 00.5 -0.1
comp=Z,101nm,1.0s
K34A **Le Mars** 51.01 342 P P 18 33 59.2 -1.6
baz=155,SNR=5.7
GGN **Saint George** 51.02 9 eP P 18 34 01.6 +0.8
comp=Z,147nm,1.5s
L32A **Elgin** 51.03 340 P P 18 33 59.9 -1.2
baz=152,SNR=5.9
J36A **Seneca 1, Swea** 51.07 343 P P 18 33 59.4 -1.9
baz=157
I38A **Scanlan Farm,** 51.19 345 P P 18 34 00.2 -2.0
baz=160,SNR=15
K33A **Hardington** 51.23 341 P P 18 34 01.4 -1.1
baz=154,SNR=14
S22A **4UR Ranch, Cre** 51.30 329 P P 18 34 03.5 +0.1
baz=140,SNR=42
S22A **4UR Ranch, Cre** 51.30 329 eP P 18 34 03.6 +0.1
comp=Z,69nm,1.4s
J35A **Milford** 51.35 343 P P 18 34 01.6 -1.8
baz=156,SNR=5.0
TRQ **Mont Tremblant** 51.40 2 eP P 18 34 03.5 -0.3
Q24A **Divide** 51.42 332 P P 18 34 04.3 0.0
baz=143,SNR=22
Q24A **Divide** 51.42 332 eP P 18 34 04.5 +0.1
comp=Z,31nm,0.8s
I37A **Lemond, Waseca** 51.45 345 P P 18 34 01.9 -2.1
baz=158,SNR=7.3
L31A **Butterfield Fa** 51.48 339 P P 18 34 03.7 -0.7
baz=151,SNR=11
J34A **George** 51.51 342 P P 18 34 03.0 -1.5
baz=155,SNR=8.6
K32A **Verdigre** 51.60 340 P P 18 34 03.8 -1.4
baz=152,SNR=13
I36A **Fitzsimmons Fa** 51.62 344 P P 18 34 03.3 -2.0
baz=158
OGNE **Ogallala** 51.66 335 P P 18 34 05.9 +0.1
baz=147,SNR=14
OGNE **Ogallala** 51.66 335 eP P 18 34 05.8 0.0
comp=Z,129nm,0.8s
I35A **Creekview Farm** 51.74 343 P P 18 34 04.6 -1.6
baz=156
MVCO **Mesa Verde** 51.77 328 P P 18 34 06.5 -0.3
baz=138,SNR=7.5
113A **Mohawk Valley,** 51.80 320 eP P 18 34 07.5 +0.6
K31A **O'Neill** 51.84 339 P P 18 34 06.5 -0.5
baz=152,SNR=17
H37A **Dierke Farm, C** 51.85 345 P P 18 34 05.2 -1.8
baz=159
J33A **Davis** 51.86 341 P P 18 34 05.8 -1.3
baz=154,SNR=8.2
LMN **Caledonia Moun** 52.08 10 eP P 18 34 09.1 +0.4
comp=Z,129nm,1.2s
Y14A **Wickenburg** 52.08 321 eP P 18 34 09.2 +0.2
H36A **Jessenland, He** 52.11 344 P P 18 34 07.2 -1.8
baz=158,SNR=5.3
ECSD **EROS Data Cent** 52.12 342 P P 18 34 07.3 -1.8
baz=154,SNR=32
ECSD **EROS Data Cent** 52.12 342 eP P 18 34 07.5 -1.6
comp=Z,30nm,0.8s
I34A **Hadley** 52.16 342 P P 18 34 08.1 -1.3
baz=156
WUAZ **Wupatki** 52.16 324 P P 18 34 10.4 +0.6
baz=134,SNR=73
WUAZ **Wupatki** 52.16 324 eP P 18 34 10.3 +0.6
comp=Z,79nm,0.9s
J32A **Parkston** 52.19 340 P P 18 34 08.0 -1.6
baz=153,SNR=5.7
K30A **Basset** 52.19 339 P P 18 34 09.3 -0.3
baz=151,SNR=9.8
ISCO **Idaho Springs** 52.30 332 P P 18 34 10.8 0.0
baz=142,SNR=28
ISCO **Idaho Springs** 52.30 332 eP P 18 34 11.0 +0.2
ISCO pmax pmax
comp=Z,23nm,0.8s
ISCO **Idaho Springs** 52.30 332 eP P 18 34 11.0 +0.2
comp=Z,23nm,0.8s
SPMN **Marine on St.** 52.42 346 P P 18 34 09.5 -1.8
baz=160
SPMN **Marine on St.** 52.42 346 eP P 18 34 09.7 -1.6
comp=Z,44nm,1.0s
J31A **Geddes** 52.42 340 P P 18 34 09.9 -1.4
baz=152
COWI **Conover** 52.45 349 eP P 18 34 10.0 -1.4
comp=Z,15nm,0.8s
I33A **Coleman** 52.46 342 P P 18 34 10.3 -1.3
baz=154
H35A **Sunnyside Ranc** 52.47 344 P P 18 34 09.6 -2.0
baz=157,SNR=5.2
SMCO **Snowmass** 52.47 330 eP P 18 34 12.8 +0.5
comp=Z,26nm,1.1s
PV01 **Paradox Valley** 52.49 328 eP P 18 34 12.5 +0.3
I32A **Karley and Nic** 52.65 341 P P 18 34 11.6 -1.4
baz=154,SNR=9.3
G36A **St. Michael** 52.67 345 P P 18 34 11.3 -1.8
baz=158
H34A **Spellman Lake,** 52.71 343 P P 18 34 11.6 -1.8
baz=156,SNR=22
J30A **Dallas** 52.72 339 P P 18 34 12.7 -0.7
baz=151,SNR=16
PV05 **Paradox Valley** 52.73 328 eP P 18 34 13.8 -0.2
PV05 epP pP 18 34 41.5 +0.8
G35A **Watkins** 52.85 344 P P 18 34 12.5 -1.9
baz=158
PV04 **Paradox Valley** 52.86 328 eP P 18 34 14.7 -0.2
Y12C **Blythe** 52.92 320 P P 18 34 15.4 +0.3
baz=130,SNR=8.2
Y12C **Blythe** 52.92 320 eP P 18 34 15.6 +0.5
comp=Z,45nm,1.4s
PV10 **Paradox Valley** 52.92 328 eP P 18 34 15.1 -0.3
LMQ **La Malbaie** 52.99 5 eP P 18 34 15.9 +0.6
I31A **Royce, Wessing** 53.01 340 P P 18 34 14.4 -1.2
baz=152,SNR=5.9
H33A **Prehn Over Nor** 53.01 342 P P 18 34 14.2 -1.4
baz=155,SNR=14
PDMCI **Parker Dam,Lak** 53.03 321 P P 18 34 16.1 +0.1
baz=131,SNR=8.8
PV09 **Paradox Valley** 53.06 328 eP P 18 34 16.5 +0.1
H32A **Carlson Farm,** 53.07 341 P P 18 34 14.8 -1.3
baz=154,SNR=9.4
G34A **Benson** 53.20 343 P P 18 34 15.1 -1.9
baz=156
F36A **Milaca** 53.20 345 P P 18 34 14.9 -2.1
baz=159,SNR=19
IKP **In-Ko-Pah, Jac** 53.27 318 P P 18 34 18.3 +0.5
baz=128,SNR=10
VLDQ **Val d'Or** 53.27 359 eP P 18 34 16.7 -0.6
VLDQ epP pP 18 34 43.7 -0.5
N23A **Red Feather La** 53.33 332 P P 18 34 18.3 0.0
baz=143,SNR=17
N23A **Red Feather La** 53.33 332 eP P 18 34 17.8 -0.5
comp=Z,56nm,1.5s
H31A **Wolsey** 53.38 341 P P 18 34 17.2 -1.1
baz=153
G33A **Ortonville** 53.38 343 P P 18 34 16.7 -1.6
baz=155
W13A **Hualapai Mount** 53.39 322 eP P 18 34 19.6 +0.7
PHWY **Pilot Hill** 53.43 333 eP P 18 34 19.1 +0.1
comp=Z,28nm,0.9s
PHWY ePcP PcP 18 35 24.8 0.0
BC3 **Big Chuckawall** 53.46 319 P P 18 34 19.5 +0.3
baz=129,SNR=20
F35A **Swanville** 53.47 344 P P 18 34 17.1 -1.8
baz=158,SNR=8.5
SUSD **Miller** 53.51 340 P P 18 34 18.2 -1.1
baz=152,SNR=14
IRM **Iron Mountain** 53.58 320 P P 18 34 20.4 +0.4
baz=130,SNR=44
E37A **Wrenshall** 53.58 347 P P 18 34 18.4 -1.4
baz=160
F34A **Alexandria** 53.59 344 P P 18 34 18.1 -1.8
baz=157,SNR=8.9
MONP2 **Monument Peak** 53.62 318 P P 18 34 20.6 +0.1
baz=128,SNR=9.6
NEE2 **Needles Airpor** 53.63 321 P P 18 34 20.8 +0.4
baz=130
BAR **Barrett** 53.66 318 eP P 18 34 20.6 0.0
comp=Z,14nm,0.8s
E36A **McGregor** 53.74 346 P P 18 34 19.4 -1.5
baz=159,SNR=24
G32A **Webster** 53.76 342 P P 18 34 19.6 -1.5
baz=154
O20A **White River Ci** 53.83 330 P P 18 34 22.2 +0.2
baz=140,SNR=23

F33A **5 Mile Ranch,** 53.93 343 P P 18 34 20.5 -1.7
baz=156
G31A **Conde** 53.96 341 P P 18 34 21.0 -1.5
baz=153
BELC **Belle Mtn. Jos** 54.03 319 P P 18 34 23.7 +0.3
baz=129,SNR=22
KNB **Kanab** 54.05 324 eP P 18 34 24.3 +0.8
KNB pmax pmax
comp=Z,38nm,0.8s
KNB **Kanab** 54.05 324 eP P 18 34 24.3 +0.8
comp=Z,38nm,0.8s
PKCU **Pink Cliffs** 54.05 325 eP P 18 34 24.9 +1.2
comp=Z,34nm,1.1s
E35A **Pequot Lakes** 54.07 345 P P 18 34 21.9 -1.3
baz=158,SNR=7.5
109C **Camp Elliot, M** 54.08 318 P P 18 34 23.8 +0.2
baz=127
TPFO **Pinon Flats** 54.08 319 P P 18 34 24.0 +0.3
baz=128,SNR=17
PFO **Pinyon Flats O** 54.09 319 P P 18 34 24.2 +0.4
baz=128,SNR=15
PFO **Pinyon Flats O** 54.09 319 eP P 18 34 24.3 +0.4
PFO pmax pmax
comp=Z,23nm,0.9s
PFO **Pinyon Flats O** 54.09 319 eP P 18 34 24.3 +0.5
comp=Z,23nm,0.9s
LDFC **Landfair** 54.14 321 eP P 18 34 25.2 +1.0
comp=Z,53nm,1.0s
D37A **Cotton** 54.15 347 P P 18 34 22.4 -1.5
baz=160,SNR=13
E34A **Wadena** 54.23 344 P P 18 34 23.3 -1.1
baz=157
SRU **San Rafael Swe** 54.24 328 eP P 18 34 25.0 +0.1
SRU pmax pmax
comp=Z,32nm,0.9s
SRU **San Rafael Swe** 54.24 328 eP P 18 34 25.0 +0.1
comp=Z,32nm,0.9s
LCMT **Little Creek M** 54.29 324 eP P 18 34 25.8 +0.5
comp=Z,47nm,1.0s
C39A **Grand Marais** 54.29 349 P P 18 34 23.1 -1.8
baz=163,SNR=6.0
GMRC **Granite Mounta** 54.30 320 P P 18 34 26.0 +0.6
baz=130,SNR=28
D36A **Goodland** 54.34 346 P P 18 34 23.7 -1.5
baz=160,SNR=9.0
MTPU **Mont Pierson** 54.39 326 eP P 18 34 26.4 +0.2
comp=Z,10nm,0.8s
C38A **Sawbill Land.** 54.42 348 P P 18 34 23.8 -2.0
baz=162
E33A **Westby DABS, E** 54.45 344 P P 18 34 24.4 -1.7
baz=156
D35A **Remer** 54.47 345 P P 18 34 24.5 -1.6
baz=158,SNR=8.8
F31A **Hecla** 54.54 342 P P 18 34 25.5 -1.2
baz=153,SNR=14
MURC **Murrieta** 54.56 318 P P 18 34 27.6 +0.4
baz=127,SNR=6.6
SZCU **Shurtz Canyon** 54.60 325 eP P 18 34 28.0 +0.5
comp=Z,37nm,1.0s
C37A **Embarrass** 54.63 347 P P 18 34 25.9 -1.4
baz=161
EYMN **Ely** 54.69 348 P P 18 34 25.9 -1.9
baz=162,SNR=7.8
EYMN **Ely** 54.69 348 eP P 18 34 26.0 -1.8
comp=Z,28nm,0.9s
MSU **Marysvale** 54.72 326 eP P 18 34 28.6 +0.2
MSU **Marysvale** 54.72 326 eP P 18 34 28.6 +0.2
CCUT **Cedar City** 54.73 324 eP P 18 34 29.4 +0.9
comp=Z,32nm,0.9s
CCUT epP pP 18 34 56.6 +1.2
TMUT **Trail Mountain** 54.75 327 eP P 18 34 28.8 +0.1
comp=Z,19nm,0.8s
HEC **Hector,Ludlow** 54.76 320 P P 18 34 29.3 +0.6
baz=129,SNR=52
F30A **Leola** 54.77 341 P P 18 34 27.6 -0.8
baz=152,SNR=10
BBRC **Big Bear Solar** 54.79 319 P P 18 34 30.0 +1.0
baz=128
C36A **Pine Crest Far** 54.81 347 P P 18 34 27.4 -1.2
baz=160,SNR=18
E32A **Braaten, Kindr** 54.84 343 P P 18 34 27.5 -1.4
baz=155
TUQ **Turquoise Moun** 54.88 321 P P 18 34 29.8 +0.2
baz=130,SNR=14
K22A **Casper** 54.98 333 P P 18 34 30.2 0.0
baz=143,SNR=48
D33A **AnnSam, Waubun** 54.99 344 P P 18 34 28.7 -1.2
baz=156
C35A **Jirik Farms, M** 55.02 346 P P 18 34 28.6 -1.6
baz=159,SNR=8.6
F29A **Eureka** 55.03 340 P P 18 34 29.5 -0.8
baz=151,SNR=13
E31A **Nome** 55.05 342 P P 18 34 29.4 -1.0
baz=154,SNR=12
SHPR **Sheep Range** 55.10 322 eP P 18 34 31.7 +0.6
comp=Z,39nm,1.2s
SCI2 **San Clemente I** 55.11 317 P P 18 34 31.3 +0.3
baz=126
RSSD **Black Hills** 55.12 336 P P 18 34 31.6 +0.4
baz=146
RSSD **Black Hills** 55.12 336 eP P 18 34 31.4 +0.2
RSSD pmax pmax
comp=Z,64nm,0.8s
RSSD **Black Hills** 55.12 336 eP P 18 34 31.4 +0.2
comp=Z,64nm,0.8s
C34A **RKJ Ranch, Bem** 55.21 345 P P 18 34 30.0 -1.5
baz=158,SNR=7.0
RRX **Edison Barstow** 55.22 320 P P 18 34 32.7 +0.9
baz=128
BFSC **Mount Baldy Ra** 55.26 319 P P 18 34 32.5 +0.2
baz=127,SNR=12
CIS **Catalina Islan** 55.26 317 P P 18 34 32.6 +0.4
baz=126
D32A **Dogwood Acres,** 55.31 343 P P 18 34 31.0 -1.2
baz=155,SNR=6.5
GSC **Goldstone, Bar** 55.36 320 P P 18 34 33.5 +0.6
baz=129,SNR=18
GSC **Goldstone, Bar** 55.36 320 eP P 18 34 32.3 -0.6
GSC pmax pmax
comp=Z,49nm,1.1s
GSC **Goldstone, Bar** 55.36 320 eP P 18 34 32.3 -0.6
comp=Z,49nm,1.1s
H25A **Fruitdale** 55.36 337 P P 18 34 32.8 0.0
baz=147,SNR=19
FMP **Fort Macarthur** 55.37 318 P P 18 34 33.4 +0.6
baz=126
SHOC **Shoshone, Teco** 55.40 321 P P 18 34 33.7 +0.6
baz=130
D31A **Mcclaflin, Tow** 55.44 343 P P 18 34 32.2 -1.0
baz=154,SNR=17
MWC **Mount Wilson** 55.51 318 eP P 18 34 34.6 +0.4
MWC pmax pmax
comp=Z,31nm,0.8s
MWC **Mount Wilson** 55.51 318 eP P 18 34 34.6 +0.4
comp=Z,31nm,0.8s
C33A **Trail** 55.54 344 P P 18 34 32.4 -1.4
baz=157
PASC **Pasadena Art C** 55.57 318 eP P 18 34 34.8 +0.5
B35A **Bob, Littlefor** 55.58 346 P P 18 34 32.4 -1.8
baz=159,SNR=14
PSUT **Pine Spring** 55.68 325 eP P 18 34 36.6 +1.3
comp=Z,40nm,1.0s
C32A **Crookston** 55.80 344 P P 18 34 34.8 -0.9
baz=156,SNR=6.9
JLU **Jordanelle** 55.82 328 eP P 18 34 36.6 +0.3
comp=Z,32nm,0.8s
EDW2 **Edwards Air Fo** 55.87 319 P P 18 34 36.4 -0.1
baz=127,SNR=23
B34A **Aery, Baudette** 55.92 346 P P 18 34 35.1 -1.5
baz=158,SNR=13
B33A **Rhart and Kas** 55.96 345 P P 18 34 35.6 -1.3
baz=157,SNR=7.6
LRMC **Laurel Mtn Rad** 56.03 320 P P 18 34 38.0 +0.2
baz=128,SNR=12
CTU **Camp Tracy** 56.04 328 eP P 18 34 38.2 +0.4
comp=Z,47nm,1.0s
TPNV **Topopah Spring** 56.05 322 P P 18 34 38.5 +0.6
baz=130,SNR=34
TPNV **Topopah Spring** 56.05 322 eP P 18 34 38.6 +0.6
TPNV pmax pmax
comp=Z,27nm,1.0s
TPNV **Topopah Spring** 56.05 322 eP P 18 34 38.6 +0.6
comp=Z,27nm,1.0s
AGMN **Agassiz Nation** 56.06 345 P P 18 34 36.3 -1.2
baz=157,SNR=29
AGMN **Agassiz Nation** 56.06 345 eP P 18 34 36.5 -1.0
comp=Z,79nm,0.7s
BLG **Laguna Peak, P** 56.12 318 P P 18 34 38.6 +0.4
baz=126
C31A **Landman Farms,** 56.12 343 P P 18 34 37.1 -0.9
baz=154,SNR=43
FURC **Furnace Creek,** 56.12 321 P P 18 34 38.9 +0.7
baz=129
TCUT **Toone Canyon** 56.17 329 eP P 18 34 39.1 +0.2
comp=Z,77nm,0.7s
OSI **Osito Audit: C** 56.19 318 P P 18 34 39.3 +0.5
baz=127
DUG **Dugway, Tooele** 56.25 327 P P 18 34 39.8 +0.4
baz=135,SNR=54
DUG **Dugway, Tooele** 56.25 327 eP P 18 34 39.7 +0.4
DUG pmax pmax
comp=Z,44nm,0.9s
DUG **Dugway, Tooele** 56.25 327 eP P 18 34 39.7 +0.4
comp=Z,44nm,0.9s
MPMC **Manual Prospec** 56.26 320 P P 18 34 39.3 -0.1
baz=128,SNR=22
B32A **Ashes, Strandq** 56.33 344 P P 18 34 38.6 -0.8
baz=156
SCZ2 **Santa Cruz Isl** 56.43 317 P P 18 34 40.7 +0.1
baz=126
DAC **Darwin (Calif)** 56.46 321 eP P 18 34 40.6 -0.3
DAC **Darwin (Calif)** 56.46 321 eP P 18 34 40.6 -0.3
BW06 **Boulder Array** 56.48 331 P P 18 34 40.2 -0.8
baz=140,SNR=37
BW06 **Boulder Array** 56.48 331 eP P 18 34 39.4 -1.6
PD31 **Pinedale Array** 56.48 331 eP P 18 34 40.2 -0.7
PDAR **Pinedale Array** 56.48 331 P P 18 34 40.0 -0.9
comp=Z,9.6nm,0.7s,baz=131,slow=8.1,SNR=80
PDAR PcP PcP 18 35 35.4 -1.1
comp=Z,11nm,0.9s,baz=133,slow=5.0,SNR=6.3
A33A **Warroad** 56.52 345 P P 18 34 39.7 -1.1
baz=157,SNR=25
R11A **Troy Canyon, C** 56.56 324 P P 18 34 42.0 +0.4
baz=132,SNR=44
R11A **Troy Canyon, C** 56.56 324 eP P 18 34 42.0 +0.4
ARVC **Arvin** 56.56 319 P P 18 34 41.9 +0.5
baz=127
HWUT **Hardware Ranch** 56.61 329 eP P 18 34 41.6 -0.3
comp=Z,45nm,0.8s
ISA **Isabella, Lake** 56.65 319 P P 18 34 42.5 +0.5
baz=127,SNR=12
ISA **Isabella, Lake** 56.65 319 eP P 18 34 42.6 +0.5
ISA pmax pmax
comp=Z,27nm,1.1s
ISA **Isabella, Lake** 56.65 319 eP P 18 34 42.6 +0.5
comp=Z,27nm,1.1s
B31A **Greenbush Farm** 56.66 343 P P 18 34 40.7 -1.1
baz=155,SNR=5.1
MDND **Maddock** 56.73 342 P P 18 34 42.0 -0.3
baz=152,SNR=12
MDND **Maddock** 56.73 342 eP P 18 34 42.5 +0.2
MDND epP pP 18 35 12.1 +2.6
GRAC **Grapevine Rang** 56.77 321 P P 18 34 43.7 +0.8
baz=129
A32A **Rocking H Ranc** 56.79 344 P P 18 34 41.3 -1.4
baz=156,SNR=11
SPUT **South Promonto** 56.85 328 eP P 18 34 43.6 0.0
comp=Z,57nm,0.9s
CWC **Cottonwood Cre** 56.87 320 P P 18 34 44.1 +0.3
baz=128
BGU **Big Grassy Mou** 56.89 328 eP P 18 34 43.7 -0.1
comp=Z,30nm,0.9s
DRLN **Deer Lake** 56.90 15 eP P 18 34 43.5 +0.1
D26A **Manning** 56.97 339 P P 18 34 44.0 -0.1
baz=149
PKM **Mcpherson Peak** 57.07 318 P P 18 34 45.3 +0.1
baz=126,SNR=8.2
VES **Vestal, Richgr** 57.16 319 P P 18 34 45.7 +0.2
baz=127,SNR=7.7
AHID **Auburn Hatcher** 57.23 330 eP P 18 34 45.6 -0.6
comp=Z,33nm,0.8s
TIN **Tinemaha, Big** 57.35 321 P P 18 34 47.6 +0.6
baz=128
HVU **Hansel Valley** 57.36 328 eP P 18 34 47.1 0.0
HVU pmax pmax
comp=Z,41nm,1.2s
HVU **Hansel Valley** 57.36 328 eP P 18 34 47.0 0.0
comp=Z,41nm,1.2s
SMMC **Simmler** 57.44 318 P P 18 34 48.1 +0.5
baz=126,SNR=7.9
RCTC **Rector, Farmer** 57.54 320 P P 18 34 48.0 -0.2
baz=127
SNOW **Snow King Moun** 57.58 331 eP P 18 34 48.9 +0.2
comp=Z,24nm,0.8s
LOHW **Long Hollow** 57.62 331 eP P 18 34 48.5 -0.4
comp=Z,19nm,0.7s
TPAW **Teton Pass** 57.69 331 eP P 18 34 49.2 -0.3
comp=Z,22nm,0.8s
MOOW **Moose Ponds** 57.79 331 eP P 18 34 49.5 -0.6
comp=Z,9.2nm,0.7s
C25A **Freed Ranch, W** 57.84 339 P P 18 34 50.3 +0.1
baz=148
PAGB **Antelope Grade** 57.85 318 eP P 18 34 51.1 +0.6
comp=Z,28nm,1.2s
ULM **Lac du Bonnet** 57.86 346 P P 18 34 48.5 -1.6
comp=Z,59nm,0.7s,baz=158,slow=7.5,SNR=73
ULM pP pP 18 35 15.2 -2.2
comp=Z,46nm,0.9s,baz=160,slow=6.6,SNR=8.0
IMW **Indian Meadow** 57.99 331 eP P 18 34 51.4 -0.2
FLWY **Flagg Ranch** 58.02 332 eP P 18 34 52.0 +0.2
comp=Z,59nm,1.0s
MLAC **Mammoth, Mammo** 58.08 321 P P 18 34 52.6 +0.3
baz=128
LAO **LASA Array** 58.11 336 P P 18 34 51.5 -0.6
baz=145,SNR=7.1
LAO **LASA Array** 58.11 336 eP P 18 34 51.7 -0.4
comp=Z,33nm,1.0s
RLMT **Red Lodge** 58.15 333 P P 18 34 52.2 -0.4
baz=141,SNR=19
RLMT **Red Lodge** 58.15 333 eP P 18 34 52.2 -0.4
comp=Z,62nm,1.4s
H17A **Grant Village** 58.19 332 P P 18 34 53.8 +0.8
baz=139
YPP **Pitchstone Pla** 58.21 332 eP P 18 34 53.5 +0.4
comp=Z,22nm,1.2s
LKWY **Lake** 58.24 332 eP P 18 34 54.5 +1.2
LKWY pmax pmax
comp=Z,32nm,0.7s
LKWY **Lake** 58.24 332 eP P 18 34 54.5 +1.2
comp=Z,32nm,0.7s
MCID **Moose Creek** 58.33 331 eP P 18 34 54.1 +0.2
YFT **Old Faithful** 58.36 332 eP P 18 34 55.7 +1.6
comp=Z,23nm,1.0s
TVH3 **East Aurora ar** 58.52 322 eP P 18 34 56.2 +0.9
comp=Z,53nm,1.6s
TVH1 **TV Hill, Hawth** 58.55 322 eP P 18 34 56.4 +0.7
comp=Z,26nm,0.7s
YMR **Madison River** 58.58 332 eP P 18 34 56.8 +1.1
comp=Z,128nm,1.6s
YHH **Holmes Hill** 58.62 332 eP P 18 34 56.9 +0.9
comp=Z,24nm,0.7s
YHB **Horse Butte** 58.75 332 eP P 18 34 57.8 +1.0
comp=Z,78nm,0.7s
DGMT **Dagmar** 58.82 339 P P 18 34 57.2 +0.3
baz=147
GCMT **Greycliff** 58.85 334 eP P 18 34 57.4 0.0
BMN **Battle Mountai** 58.88 325 eP P 18 34 58.0 +0.2
BMN e*PP pP 18 35 27.9 +2.9
BMN **Battle Mountai** 58.88 325 eP P 18 34 58.0 +0.2
BMN epP pP 18 35 27.9 +2.9
QLMT **Earthquake Lak** 58.92 332 eP P 18 34 58.9 +0.9
WAKR **Walker** 58.99 322 eP P 18 34 59.3 +0.7
comp=Z,32nm,0.8s
YERR **Yerington** 59.17 322 eP P 18 34 00.1 +0.4
comp=Z,20nm,0.7s
CMB **Columbia Colle** 59.30 321 eP P 18 35 00.6 +0.1
CMB pmax pmax
comp=Z,12nm,0.8s
CMB **Columbia Colle** 59.30 321 eP P 18 35 00.6 +0.1
comp=Z,12nm,0.8s
PNTR **Pine Nut** 59.45 322 eP P 18 35 02.7 +0.9
comp=Z,29nm,0.9s
HLID **Hailey** 59.48 329 P P 18 35 01.8 +0.1
baz=135,SNR=53
HLID **Hailey** 59.48 329 eP P 18 35 01.9 +0.1
comp=Z,35nm,0.9s
MCMT **McKenzie Canyo** 59.60 331 eP P 18 35 03.1 +0.3
BOZ **Bozeman (W)** 59.63 332 P P 18 35 02.6 -0.2
baz=139,SNR=85
BOZ **Bozeman (W)** 59.63 332 eP P 18 35 02.2 -0.6
BOZ pmax pmax
comp=Z,64nm,1.0s
BOZ **Bozeman (W)** 59.63 332 eP P 18 35 02.2 -0.6
comp=Z,64nm,1.0s
PAHR **Pah Rah Range** 59.70 323 eP P 18 35 04.1 +0.7

DLMT **Dillon** 59.87 331 *e*P P 18 35 04.4 0.0
comp=Z,26nm,1.0s
MFID **Camas Ranch** 60.11 328 *e*P P 18 35 06.5 +0.4
comp=Z,126nm,0.9s
LRM **Limekiln Ridge** 60.14 332 *e*P P 18 35 06.2 -0.2
AFDM **Forest Hills D** 60.22 321 *e*P P 18 35 06.6 -0.1
HRY **Holter Researc** 60.52 333 *e*P P 18 35 08.8 0.0
SCHQ **Schefferville** 60.54 6 P P 18 35 08.4 -0.2
comp=Z,26nm,0.7s,baz=202,slow=6.4,SNR=26
SCHQ **Schefferville** 60.54 6 *e*P P 18 35 08.3 -0.4
EGMT **Eagleton** 60.62 335 P P 18 35 09.2 -0.2
baz=141,SNR=29
EGMT **Eagleton** 60.62 335 *e*P P 18 35 09.1 -0.3
ORV **Oroville** 60.91 321 *e*P P 18 35 11.9 +0.5
ORV **Oroville** 60.91 321 *e*P P 18 35 11.9 +0.5
WVOR **Wild Horse Val** 60.99 325 *e*P P 18 35 11.7 -0.4
WVOR **Wild Horse Val** 60.99 325 *e*P P 18 35 11.7 -0.4
GDXM **Geysers** 61.29 320 *e*P P 18 35 15.2 +1.1
CHMT **Chamberlain Mo** 61.32 332 *e*P P 18 35 14.0 -0.3
O03D **Paynes Creek** 61.53 322 P P 18 35 14.8 -0.9
baz=127,SNR=14
MSO **Missoula** 61.58 332 P P 18 35 16.1 +0.2
baz=137,SNR=39
MSO **Missoula** 61.58 332 *e*P P 18 35 16.2 +0.2
MOD **Modoc Plateau** 61.61 324 *e*P P 18 35 16.1 -0.2
SLMT **Seeley Lake** 61.68 332 *e*P P 18 35 16.4 -0.2
LTIM **Timbered Crate** 61.87 323 P P 18 35 18.0 0.0
BMO **Blue Mountains** 61.87 328 *e*P P 18 35 17.0 -0.9
SWMT **Swartz Lake** 62.11 332 *e*P P 18 35 19.4 0.0
WDC **Whiskeytown Da** 62.16 322 *e*P P 18 35 17.9 -1.9
WDC **Whiskeytown Da** 62.16 322 *e*P P 18 35 17.9 -1.9
YBMT **Yellow Bay** 62.37 333 *e*P P 18 35 21.7 +0.5
JTMT **Jette** 62.41 332 *e*P P 18 35 21.9 +0.4
M04C **Macdoel** 62.45 323 P P 18 35 21.5 -0.4
baz=127,SNR=17
K05A **Summer Lake** 62.47 325 *e*P P 18 35 22.5 +0.5
N02D **Trinity Center** 62.49 322 P P 18 35 20.7 -1.4
baz=126,SNR=8.2
F10A **Beach Ranch, E** 62.59 329 *e*P P 18 35 22.4 -0.3
BLMT **Blacktail Moun** 62.64 332 *e*P P 18 35 23.9 +0.7
KMRM **Mail Ridge** 62.67 321 *e*P P 18 35 24.3 +1.0
BSMT **Bassoo Peak** 62.72 332 P P 18 35 24.0 +0.4
M02C **Callahan** 62.82 322 P P 18 35 23.3 -1.0
baz=126,SNR=15
K04D **Chiloquin, OR** 62.91 324 P P 18 35 25.1 +0.2
baz=128
J05D **Fort Rock, OR** 63.01 325 P P 18 35 25.6 0.0
baz=128,SNR=6.9
G08A **Pilot Rock** 63.03 328 *e*P P 18 35 25.7 0.0
KHMM **Horse Mountain** 63.06 321 *e*P P 18 35 26.0 0.0
WALA **Waterton Lakes** 63.20 333 *e*P P 18 35 26.5 -0.2
JCC **Jacoby Creek,** 63.22 321 *e*P P 18 35 27.7 +0.9
E09A **Wood Farm, Sta** 63.43 329 *e*P P 18 35 28.2 +0.1
E09A *e*pP pP 18 35 57.9 +2.2
J04D **Umpqua Nationa** 63.49 324 P P 18 35 28.7 -0.1
baz=128,SNR=10
FFC **Flin Flon** 63.51 344 *e*P P 18 35 27.7 -0.8
FFC **Flin Flon** 63.51 344 *e*P P 18 35 27.7 -0.8
KRMB **Red Mountain** 63.54 322 *e*P P 18 35 29.6 +0.4
HUMO **Hull Mountain** 63.60 323 *e*P P 18 35 30.6 +1.2
I05D **Terrebonne, OR** 63.72 326 P P 18 35 30.5 +0.4
baz=129,SNR=10
L02D **Cave Junction,** 63.73 323 P P 18 35 30.1 0.0
baz=126,SNR=14
VTHM **Trough** 63.83 327 P P 18 35 31.6 +0.8
G06A **Carlson Farm,** 63.90 327 *e*P P 18 35 32.1 +0.8
CROR **Criterion Ridg** 63.93 326 P P 18 35 32.3 +0.8
I04A **Tendick Farm,** 64.00 325 P P 18 35 31.1 -0.9
baz=128,SNR=7.5
HAWA **Hanford** 64.06 328 *e*P P 18 35 32.4 +0.1
NEW **Newport** 64.12 331 P P 18 35 32.3 -0.3
baz=134,SNR=20
NEW **Newport** 64.12 331 *e*P P 18 35 32.5 -0.2
NEW *e**PP pP 18 36 01.1 +0.7
NEW **Newport** 64.12 331 *e*P P 18 35 32.5 -0.2
NEW *e*pP pP 18 36 01.1 +0.7
D08A **Wollman Farm,** 64.19 329 *e*P P 18 35 33.2 +0.1
G05D **Wamic, OR** 64.28 327 P P 18 35 34.5 +0.7
baz=129,SNR=9.3
C09A **Chrisman Ranch** 64.36 330 *e*P P 18 35 34.6 +0.4
VFP **Flag Point** 64.41 327 P P 18 35 35.2 +0.5
I03D **Drain, OR** 64.48 324 P P 18 35 35.0 0.0
baz=127
COR **Corvallis** 64.99 325 *e*P P 18 35 39.1 +0.8
COR **Corvallis** 64.99 325 *e*P P 18 35 39.1 +0.8
B08A **Colville Reser** 65.26 330 *e*P P 18 35 39.9 -0.2
ETW **Entiat** 65.27 329 P P 18 35 40.7 +0.4
G03D **McMinnville, O** 65.34 326 P P 18 35 42.2 +1.6
baz=127
FCC **Fort Churchill** 65.45 350 *e*P P 18 35 39.9 -1.1
FCC **Fort Churchill** 65.45 350 *e*P P 18 35 39.9 -1.1
LON **Longmire** 65.49 328 *e*P P 18 35 41.4 -0.2
LON *e**PP PcP 18 36 11.2 -1.3
LON *e*pP PcP 18 36 11.2 -1.3
NLW **Nelson Butte** 65.58 329 P P 18 35 42.4 +0.2
F04D **Rainier, OR** 65.73 326 P P 18 35 43.7 +0.6
baz=128
C06D **Leavenworth** 65.76 329 P P 18 35 43.3 +0.1
baz=130
D05A **Enumclaw** 65.86 328 P P 18 35 43.9 0.0
EDM **Edmonton** 66.09 337 *e*P P 18 35 44.4 -0.9
EDM **Edmonton** 66.09 337 *e*P P 18 35 44.4 -0.9
E03A **Lebam** 66.32 327 *e*P P 18 35 47.6 +0.8
JCW **Jim Creek** 66.47 329 P P 18 35 47.2 -0.6
B05A **Bryant** 66.60 329 P P 18 35 47.8 -0.8
baz=129,SNR=7.3
NLWA **Neilton Lookou** 67.00 327 *e*P P 18 35 52.0 +0.8
A04D **Lummi Island** 67.20 329 P P 18 35 52.5 +0.1
baz=129
PGC **Sidney** 67.55 328 *e*P P 18 35 54.5 0.0
comp=Z,32nm,0.9s
NRS **Narsarsuaq** 70.63 15 ⇓*i*P P 18 36 13.4 +0.1
comp=Z,75nm,0.9s
LIC **Lamto** 72.37 82 *e*P P 18 36 25.3 +0.5
comp=Z,80nm,1.1s
TIC **Toumodi** 72.44 81 *e*P P 18 36 25.8 +0.6
DBIC **Dimbokro** 72.60 81 P P 18 36 27.0 +0.9
comp=Z,37nm,0.8s,baz=246,slow=5.2,SNR=45
DBIC **Dimbokro** 72.60 81 *e*P P 18 36 27.1 +0.9
DBIC **Dimbokro** 72.60 81 *e*P P 18 36 27.1 +0.9
KIC **Kosan Boka** 72.67 82 *e*P P 18 36 27.3 +0.7
comp=Z,103nm,0.9s
YKA **Yellowknife Ar** 73.63 343 P P 18 36 30.3 -0.9
comp=Z,28nm,0.6s,baz=140,slow=6.2,SNR=169
YKA *e*P pP 18 36 57.2 -2.3
comp=Z,9.9nm,0.8s,baz=138,slow=5.9,SNR=2.1
SFJD **Kangerlussuaq** 74.56 10 *i*P P 18 36 35.5 -1.0
PFVI **Vila Bisbo** 75.82 50 *e*P P 18 36 46.0 +1.6
comp=Z,103nm,1.5s
PFVI *e*pP pP 18 37 17.8 +4.9
MORF **Marmelete** 76.00 50 *e*P P 18 36 46.6 +1.1
MORF AMb AMB 18 36 48.2
comp=Z,83nm,1.4s
MORF **Marmelete** 76.00 50 *e*P P 18 36 47.1 +1.6
comp=Z,86nm,1.6s
MORF *e*pP pP 18 37 18.4 +4.4
PTEO **Sao Teotonio** 76.02 49 *e*P P 18 36 44.3 -1.2
comp=Z,68nm,1.3s
PNCL **Nicolau / Gran** 76.35 49 *e*P P 18 36 48.2 +0.9
comp=Z,48nm,1.1s
WRAK **Wrangell Islan** 76.46 332 *e*P P 18 36 48.3 +0.7
MESJ **Messejana** 76.50 49 *e*P P 18 36 49.2 +1.0
MESJ AMb AMB 18 36 51.2
comp=Z,29nm,1.6s
MESJ **Messejana** 76.50 49 *e*P P 18 36 49.2 +1.0
comp=Z,29nm,1.7s
MESJ *e*pP pP 18 37 22.1 +5.3
DLBC **Dease Lake** 76.53 334 *e*P P 18 36 48.3 +0.3
comp=Z,53nm,0.9s
PBDV **Barranco-do-Ve** 76.53 50 *e*P P 18 36 50.0 +1.5
comp=Z,35nm,1.4s
PCVE **Castro Verde** 76.57 49 *e*P P 18 36 50.0 +1.4
comp=Z,49nm,0.9s
PCVE *e*pP pP 18 37 22.3 +5.1
PVAQ **Vaqueiros** 76.74 50 *e*P P 18 36 51.0 +1.4
comp=Z,28nm,1.4s
PVAQ *e*pP pP 18 37 23.7 +5.5
PBEJ **Beja** 76.82 49 *e*P P 18 36 51.1 +1.1
comp=Z,24nm,1.2s
EVO **Evora** 76.86 49 *e*P P 18 36 49.5 -0.8
comp=Z,27nm,1.5s
PMTG **Montargil** 76.87 48 *e*P P 18 36 51.2 +0.9
comp=Z,40nm,0.9s
PMTG *e*pP pP 18 37 22.0 +3.1
PTOM **Tomar** 76.91 47 *e*P P 18 36 51.1 +0.6
comp=Z,45nm,1.1s
PCAS **Casmilo, Conde** 76.98 47 *e*P P 18 36 51.7 +0.8
comp=Z,62nm,1.8s
PTO **Porto** 77.25 46 *e*P P 18 36 53.0 +0.7
PESTR **Estremoz** 77.28 48 *e*P P 18 36 53.2 +0.6
comp=Z,50nm,1.4s
PBAR **Barrancos** 77.48 49 *e*P P 18 36 54.5 +0.8
comp=Z,43nm,1.6s
PMRV **Marv??o** 77.60 48 *e*P P 18 36 54.0 -0.4
comp=Z,25nm,1.9s
PVIS **Viseu** 77.62 46 *e*P P 18 36 55.0 +0.5
comp=Z,46nm,1.1s
PVIS *e*pP pP 18 37 27.9 +4.7
PCBR **Castelo Branco** 77.66 47 *e*P P 18 36 55.0 +0.3
comp=Z,33nm,1.9s
PCBR *e*pP pP 18 37 25.2 +1.9
PGAV **Gavieira, Arco** 77.75 45 *e*P P 18 36 55.5 +0.2
comp=Z,29nm,1.5s
POLO **Lamas de Olo** 77.90 46 *e*P P 18 36 56.5 +0.4
comp=Z,26nm,1.1s
POLO *e*pP pP 18 37 29.1 +4.3
PVRL **Vila Real** 77.93 46 *e*P P 18 36 56.7 +0.5
comp=Z,45nm,1.5s
PVRL *e*pP pP 18 37 29.1 +4.2
MDT **Midelt** 77.94 55 P P 18 36 58.0 +1.5
comp=Z,10nm,0.8s,baz=264,slow=4.4,SNR=21
MVO **Moncorvo** 78.39 46 *e*P P 18 36 59.5 +0.7
comp=Z,73nm,1.2s
MVO *e*pP pP 18 37 31.6 +4.2
PBRG **Braganca** 78.79 46 *e*P P 18 37 01.4 +0.5
comp=Z,35nm,1.7s
PBRG *e*pP sP 18 37 35.9 -5.8
SNAA **Sanae** 79.84 162 *d*⇓P P 18 37 06.6 +0.5
SNAA *i* *PP pP 18 37 36.0 +1.1
SNAA **Sanae** 79.84 162 *e*P P 18 37 04.3 -1.9
comp=Z,2µm,0.9s
TORD **Torodi Ar. Bea** 79.88 76 P P 18 37 07.4 +0.1
comp=Z,22nm,0.7s,baz=295,slow=5.7,SNR=139
TORD pP pP 18 37 35.5 -0.7
comp=Z,10.0nm,0.7s,baz=283,slow=4.5,SNR=4.4
PAB **San Pablo** 79.89 48 *e*P P 18 37 07.4 +0.4
PAB pmax pmax
comp=Z,54nm,1.4s
PAB **San Pablo** 79.89 48 *e*P P 18 37 07.4 +0.4
comp=Z,54nm,1.4s
ESDC **Sonseca Array** 80.21 48 P P 18 37 09.1 +0.4
comp=Z,3.8nm,0.5s,baz=259,slow=6.1,SNR=39
ESDC pP pP 18 37 35.2 -2.3
comp=Z,0.8nm,0.6s,baz=254,slow=5.2,SNR=1.7
KULLO **Kullorsuaq** 80.70 5 *i*P P 18 37 09.1 -1.4
comp=Z,84nm,0.9s
SUMG **Summit** 81.54 11 ⇓*i*P P 18 37 16.0 +0.5
comp=Z,100nm,0.8s
SUMG **Summit** 81.54 11 *e*P P 18 37 15.6 +0.1
SUMG pmax pmax
comp=Z,150nm,0.9s
SUMG **Summit** 81.54 11 *e*P P 18 37 15.6 +0.1
comp=Z,150nm,0.9s
DAWY **Dawson** 83.30 337 *e*P P 18 37 23.8 -0.6
comp=Z,48nm,0.9s
INK **Inuvik** 83.36 342 *e*P P 18 37 24.2 -0.3
INK pmax pmax
comp=Z,77nm,0.9s
INK **Inuvik** 83.36 342 *e*P P 18 37 24.2 -0.3
comp=Z,78nm,0.9s
REYF **Montagne du Re** 83.65 46 *e*P P 18 37 27.8 +1.1
VIEF **Viey** 83.91 46 *e*P P 18 37 29.0 +1.0
SCO **Scoresbysund** 83.92 16 ⇓*i*P P 18 37 27.8 +0.5
comp=Z,40nm,0.9s
RESF **Ens** 84.12 46 *e*P P 18 37 30.3 +1.2
BMRM **Bremner River** 84.22 333 *e*P P 18 37 28.9 -0.2
comp=Z,62nm,1.1s
EGAK **Eagle** 84.31 337 *e*P P 18 37 28.9 -0.4
comp=Z,59nm,0.9s
NVL **N'lazarevskaya** 84.44 161 *e*P P 18 37 31.0 +1.0
QSPA **South Pole Qui** 84.71 180 *e*P P 18 37 32.5 +0.8
comp=Z,308nm,1.3s
DIV **Divide** 84.81 333 *e*P P 18 37 31.8 -0.3
comp=Z,27nm,0.8s
TAM **Tamanrasset** 84.84 67 *e*P P 18 37 34.5 +1.3
TAM pmax pmax
comp=Z,32nm,1.0s
TAM **Tamanrasset** 84.84 67 *e*P P 18 37 34.5 +1.3
comp=Z,32nm,1.0s
DOT **Dot Lake** 85.01 336 *e*P P 18 37 32.1 -0.9
comp=Z,119nm,0.8s
ESK **Eskdalemuir** 85.05 33 *e*P P 18 37 33.2 -0.2
ESK pmax pmax
comp=Z,19nm,0.9s
ESK **Eskdalemuir** 85.05 33 *e*P P 18 37 33.1 -0.2
comp=Z,20nm,0.9s
VALF **Valcebollere** 85.24 47 *e*P P 18 37 35.6 +0.8
PAX **Paxson** 85.34 335 *e*P P 18 37 34.1 -0.6
PAX pmax pmax
comp=Z,119nm,1.3s
PAX **Paxson** 85.34 335 *e*P P 18 37 34.1 -0.6
comp=Z,119nm,1.3s
FILF **Fillols** 85.67 47 *e*P P 18 37 37.0 +0.2
SEW **Seward** 86.18 331 *e*P P 18 37 37.9 -0.9
comp=Z,36nm,1.0s
SML **Sawmill** 86.20 333 *e*P P 18 37 38.0 -1.0
SML pmax pmax
comp=Z,23nm,1.0s
SML **Sawmill** 86.20 333 *e*P P 18 37 38.0 -1.0
comp=Z,23nm,1.0s
PMR **Palmer** 86.49 333 *e*P P 18 37 39.7 -0.6
PMR pmax pmax
comp=Z,36nm,1.3s
PMR **Palmer** 86.49 333 *e*P P 18 37 39.7 -0.6
comp=Z,36nm,1.3s
ILAR **Eielson Array** 86.57 336 P P 18 37 39.9 -0.8
comp=Z,22nm,0.9s,baz=130,slow=3.4,SNR=110
ILAR pP pP 18 38 07.5 -2.4
comp=Z,7.5nm,0.8s,baz=122,slow=3.4,SNR=2.1
ILAR PP PP 18 41 03.2 -0.8
comp=Z,3.5nm,0.9s,baz=107,slow=6.8,SNR=9.1
RC01 **Rabbit Creek A** 86.61 332 *e*P P 18 37 40.5 -0.5
comp=Z,51nm,1.0s
LBL **Lubilhan** 86.67 44 *e*P P 18 37 42.6 +0.9
AGO **Saint Agoulin** 86.75 43 *e*P P 18 37 41.6 -0.4
COLA **College** 86.99 336 *e*P P 18 37 42.3 -0.3
COLA pmax pmax
comp=Z,88nm,1.4s
COLA **College** 86.99 336 *e*P P 18 37 42.3 -0.3
comp=Z,88nm,1.4s
PLDF **La Plantade** 87.06 43 *e*P P 18 37 44.0 +0.4
MCK **McKinley** 87.07 335 *e*P P 18 37 42.8 -0.3
MCK pmax pmax
comp=Z,40nm,0.9s
MCK **McKinley** 87.07 335 *e*P P 18 37 42.8 -0.3
comp=Z,40nm,0.9s
KDAK **Kodiak Island** 87.10 329 *i*P P 18 37 42.9 -0.4
TRF **Thorofare Moun** 87.56 334 *e*P P 18 37 45.1 -0.6
comp=Z,48nm,0.8s
KTH **Kantishna Hill** 87.86 334 *e*P P 18 37 46.4 -0.6
comp=Z,98nm,0.9s
BPAW **Bear Paw Mtn.** 88.05 335 *e*P P 18 37 47.1 -0.6
comp=Z,31nm,0.9s
DAG **Danmarks Havn** 88.22 11 ⇓*i*P P 18 37 48.3 0.0
comp=Z,90nm,0.8s
DAG *i* 18 38 19.8
PPLA **Purkeypile** 88.23 334 *e*P P 18 37 48.4 -0.5
comp=Z,120nm,0.8s
SNF **Seneffe** 88.33 39 P P 18 37 49.7 +0.4
DOU **Dourbes** 88.46 40 P P 18 37 50.2 +0.2
COLD **Coldfoot** 88.64 338 *e*P P 18 37 50.9 +0.4
comp=Z,48nm,0.9s
BCLA **Clavier** 88.96 39 P P 18 37 52.1 -0.2
comp=Z,7.1nm,1.2s
THEF **They Montfort** 89.05 42 *e*P P 18 37 52.6 -0.2
OG01 **Vacheresse** 89.22 43 *e*P P 18 37 54.0 +0.2
WLF **Walferdange** 89.38 40 P P 18 37 55.3 +0.9
comp=Z,37nm,1.3s
WLF **Walferdange** 89.38 40 *e*P P 18 37 54.6 +0.3
WLF pmax pmax
comp=Z,46nm,1.0s
WLF **Walferdange** 89.38 40 *e*P P 18 37 54.6 +0.3
comp=Z,46nm,1.0s
HGN **Heimansgroeve** 89.41 39 *e*P P 18 37 54.7 +0.3
comp=Z,24nm,0.8s
MEM **Membach** 89.44 39 P P 18 37 55.1 +0.5
comp=Z,11nm,1.5s
MOF **Molkenrain** 89.75 42 *e*P P 18 37 55.4 -0.8
ECH **Echery** 89.82 42 *e*P P 18 37 56.3 -0.2
KEST **Kesra** 89.82 54 P P 18 37 57.3 +0.5
comp=Z,15nm,0.9s,baz=293,slow=8.1,SNR=7.1
WTSB **Winterswijk** 90.14 38 *e*P P 18 37 58.2 +0.5
comp=Z,43nm,0.8s
SBA **Scott Base** 90.21 191 *e*P P 18 37 58.5 +0.8
SBA pmax pmax
comp=Z,26nm,1.5s
SBA **Scott Base** 90.21 191 *e*P P 18 37 58.5 +0.8
comp=Z,26nm,1.5s
LANF **Langenberg** 90.35 41 *e*P P 18 37 58.9 0.0
BFO **Black Forest** 90.61 42 *i*P P 18 38 00.2 +0.1
BFO **Black Forest** 90.61 42 *e*P P 18 37 59.0 -1.1
comp=Z,12nm,1.1s
SDPT **Sand Point** 90.90 325 *e*P P 18 38 01.5 +0.2
comp=Z,30nm,0.7s
TUE **Stuetta** 91.07 44 *e*P P 18 38 02.6 0.0
comp=Z,13nm,0.9s
VNDA **Vanda** 91.29 191 P P 18 38 03.9 +1.2
comp=Z,5.9nm,0.8s,baz=121,slow=3.8,SNR=35
VNDA pP pP 18 38 31.6 -0.4
comp=Z,3.9nm,0.8s,baz=121,slow=2.7,SNR=5.6
DAVA **Damuels** 91.53 43 *i* PcP P 18 38 05.1 +0.5
comp=Z,27nm,1.5s,SNR=8.6
FETA **Feichten** 92.07 43 *i*P P 18 38 06.6 -0.6
comp=Z,17nm,1.0s
RETA **Reutte** 92.14 43 *i*P P 18 38 07.5 +0.2
comp=Z,8.1nm,1.0s
TSUM **Tsumeb** 92.19 109 P P 18 38 09.6 +1.3
comp=Z,5.5nm,0.6s,baz=276,slow=5.3,SNR=14
TSUM pP pP 18 38 37.6 0.0
comp=Z,11nm,1.1s,baz=277,slow=8.6,SNR=3.5
MOTA **Moosalm** 92.36 43 *i*P P 18 38 08.5 +0.1
comp=Z,5.9nm,0.6s,SNR=7.8
SQTA **Sankt Quirin** 92.42 43 *i* PcP P 18 38 09.0 +0.4
WATA **Walderalm** 92.68 43 *i* PcP P 18 38 10.6 +0.7
comp=Z,5.5nm,0.6s
WTTA **Wattenberg** 92.71 43 *i* PcP P 18 38 10.6 +0.5
comp=Z,16nm,1.3s
ABTA **Abfaltersbach** 93.27 44 *i* PcP P 18 38 12.9 +0.3
comp=Z,20nm,1.6s
NKC **Novy Kostel** 93.48 40 ⇓*e*P P 18 38 14.6 +1.2
NKC **Novy Kostel** 93.48 40 *e*P P 18 38 14.6 +1.2
NB2 **NORSAR Subarra** 93.60 29 P P 18 38 13.6 -0.1
comp=Z,20nm,1.7s,baz=267,slow=4.6
NB2 **NORSAR Subarra** 93.60 29 P P 18 38 13.6 -0.1
baz=267,slow=4.6
NOA **NORSAR Array B** 93.60 29 P P 18 38 13.9 +0.3
comp=Z,4.1nm,1.0s,baz=270,slow=4.5,SNR=6.5
NOA **NORSAR Array B** 93.60 29 P P 18 38 14.0 +0.3
COP **Copenhagen** 93.86 35 *i*P P 18 38 15.8 +0.9
KBA **Koelnbreinsper** 93.86 43 *i*P P 18 38 15.3 -0.1
comp=Z,8.2nm,1.1s
CLL **Collm** 93.91 39 ⇓*i*P P 18 38 15.8 +0.5
comp=Z,11nm,1.0s
CLL *e*pP pP 18 38 44.0 -0.6
CLL *i* 18 39 28.2
comp=Z,6.0nm,1.0s
SYO **Syowa Base** 94.10 161 ⇑*e*P P 18 38 15.0 -0.8
KHC **Kasperske Hory** 94.14 41 ⇓*i*P P 18 38 16.6 +0.1
KHC *e*pP pP 18 38 48.6 +2.7
KHC **Kasperske Hory** 94.14 41 ⇓*i*P P 18 38 16.6 +0.1
KHC *e**PP pP 18 38 48.6 +2.7
KHC **Kasperske Hory** 94.14 41 *e*P P 18 38 16.6 +0.1
comp=Z,2.1nm,1.0s
GERES **GERESS Array B** 94.21 41 P P 18 38 16.6 -0.2
comp=Z,2.5nm,0.8s,baz=251,slow=4.1,SNR=20
BRG **Berggiesshubel** 94.47 39 *e*P P 18 38 18.4 +0.5
comp=Z,14nm,1.0s
BRG *e*pP pP 18 38 49.6 +2.3
comp=Z,9.0nm,1.3s
BRG **Berggiesshubel** 94.47 39 *e*P P 18 38 18.4 +0.5
BRG *e**PP pP 18 38 49.6 +2.3
BRG pmax pmax
comp=Z,14nm,1.0s
MOA **Molln** 94.53 42 *i* PcP P 18 38 18.3 +0.1
comp=Z,9.7nm,1.1s
PRU **Pruhonice** 94.81 40 ⇓*e*P P 18 38 20.1 +0.6
PRU *e*pP pP 18 38 51.8 +3.0
PRU **Pruhonice** 94.81 40 *e*P P 18 38 20.1 +0.6
PRU *e**PP pP 18 38 51.8 +3.0
PVCC **Panska Ves** 94.86 40 ⇓*e*P P 18 38 20.4 +0.8
PVCC **Panska Ves** 94.86 40 *e*P P 18 38 20.4 +0.8
BSD **Bornholm Skovb** 95.24 35 *i*P P 18 38 21.8 +0.6
comp=Z,22nm,1.0s
ARSA **Arzberg** 95.35 43 *i*P P 18 38 20.7 -1.3
comp=Z,5.4nm,1.0s
CONA **Conrad Observa** 95.61 42 *i* PcP P 18 38 23.5 +0.3
comp=Z,9.3nm,0.8s,SNR=6.8
UPC **Upice** 95.78 40 ⇓*e*P P 18 38 24.9 +1.0
UPC *e*pP pP 18 38 56.6 +3.3
UPC **Upice** 95.78 40 *e*P P 18 38 24.9 +1.0
UPC *e**PP pP 18 38 56.6 +3.3
KSP **Ksiaz** 95.96 40 *e*PKP P 18 38 25.9 +1.2
DPC **Dobruska-Polom** 95.97 40 ⇓*i*P P 18 38 25.6 +0.8
DPC *e*pP pP 18 38 57.6 +3.4
DPC **Dobruska-Polom** 95.97 40 ⇓*i*P P 18 38 25.6 +0.8
DPC *e**PP pP 18 38 57.6 +3.4
KRLC **Kraliky** 96.26 40 ⇓*e*P P 18 38 27.1 +1.0
KRLC **Kraliky** 96.26 40 *e*P P 18 38 27.1 +1.0
VYHS **Vyhne** 97.60 42 *e*P Pdif 18 38 32.8 +0.6
VYHS *e*pP pP 18 39 04.6 +3.0
VYHS *es*P sP 18 39 15.8 +2.3
BOSA **Boshof** 97.79 120 P Pdif 18 38 35.2 +1.5
comp=Z,4.9nm,0.9s,baz=277,slow=8.1,SNR=3.7
LANS **Liptovska Anna** 98.01 41 *e*P Pdif 18 38 36.2 +2.1
NIE **Niedzica** 98.55 41 *e*PKP Pdif 18 38 38.2 +1.8
KECS **Kecovo** 98.70 42 *e*P Pdif 18 38 37.7 +0.6
STHS **Stebnicka Huta** 99.16 41 *e*P Pdif 18 38 41.1 +1.9
ARCES **ARCESS Array B** 99.24 20 P Pdif 18 38 38.2 -0.9
comp=Z,3.5nm,0.6s,baz=297,slow=4.0,SNR=8.2
CRVS **Cervenica-Dubn** 99.33 41 *e*P Pdif 18 38 42.1 +2.2
FINES **FINESS Array B** 100.76 29 P Pdif 18 38 45.5 -0.4
comp=Z,1.9nm,0.8s,baz=249,slow=5.8,SNR=6.1
VSU **Vasula** 101.53 31 ⇑*e*P Pdif 18 38 49.6 +0.2
MAW **Mawson** 101.77 165 P Pdif 18 38 51.5 +1.2
comp=Z,1.2nm,0.7s,baz=196,slow=7.4,SNR=4.9
KLMR **Klimovskoe** 107.20 27 *e*P Pdif 18 39 13.0 -1.6
KLMR pmax pmax
comp=Z,4.0nm,1.0s
KBZ **Khabaz** 114.81 44 PKP PKPdf 18 43 38.6 +0.6
comp=Z,6.7nm,0.8s,baz=158,slow=1.5,SNR=12
PETK **Petropavlovsk-** 115.12 327 PKP **PKPdf** 18 43 37.1 -1.2
comp=Z,1.7nm,0.8s,baz=68,slow=5.3,SNR=2.9
ARU **Arti** 118.01 26 *i* PKIKP **PKPdf** 18 43 43.6 -0.1
ARU 18 45 01.9
ARU 18 50 45.2
ARU SP SP 18 54 34.7 +2.2
ARU SS SS 19 01 01.7 -2.6
ARU **Arti** 118.01 26 *e*P **PKPdf** 18 43 43.7 -0.1
AB31 **Akbulak array** 122.95 32 *c* i PKIKP **PKPdf** 18 43 53.7 +0.2
AB31 pmax pmax
comp=Z,11nm,0.5s
ABKAR **Akbulak array** 122.95 32 *e*P **PKPdf** 18 43 54.0 +0.5
BRVK **Borovoye** 125.28 24 ⇓*i* PKIKP **PKPdf** 18 43 58.0 +0.1
BRVK pmax pmax
comp=Z,26nm,1.2s
BVA0 **Borovoye Array** 125.35 24 PKIKP **PKPdf** 18 43 57.7 -0.3
BVA0 pmax pmax
comp=Z,11nm,0.8s
YSS **Yuzh-Sakhalins** 126.52 327 *i* PKIKP **PKPdf** 18 43 59.9 -0.5
YSS pmax pmax
comp=Z,43nm,2.5s
YSS **Yuzh-Sakhalins** 126.52 327 *e*P **PKPdf** 18 43 59.6 -0.8
GEYT **Alibeck** 127.66 45 PKP **PKPdf** 18 44 03.0 +0.1
comp=Z,12nm,0.7s,baz=260,slow=3.3,SNR=36
GEYT pPKP **pPKPdf** 18 44 32.6 -1.0
comp=Z,3.2nm,0.8s,baz=256,slow=4.3,SNR=2.9
NVS **Novosibirsk** 128.07 15 *e*PKIKP **PKPdf** 18 44 02.9 -0.2
NVS *e* 18 44 36.5
NVS *e* 19 03 07.0
NVS pmax pmax
comp=Z,25nm,1.5s
NVS pmax pmax
comp=E,9.0nm,1.3s
STKA **Stephens Creek** 128.08 222 PKP **PKPdf** 18 44 03.6 -0.3
comp=E,10nm,0.8s,baz=20,slow=2.5,SNR=20
STKA pPKP **pPKPdf** 18 44 34.0 -0.5
comp=E,5.2nm,0.8s,baz=100,slow=3.8,SNR=5.3
ASAJ **Asahikawa** 128.34 325 *e*P **PKPdf** 18 44 03.1 -0.9
ZALV **Zalesovo Beam** 129.27 14 PKP **PKPdf** 18 44 05.0 -0.4
comp=E,37nm,0.9s,baz=304,slow=2.6,SNR=110
ZALV pPKP **pPKPdf** 18 44 33.8 -2.3
comp=E,6.4nm,0.8s,baz=329,slow=2.0,SNR=2.8
HABR **Khabarovsk** 129.31 333 *i* PKIKP **PKPdf** 18 44 05.2 -0.4
HABR *e* 18 44 35.0

HABR				*e*			18 46 13.6	
HABR				*e*PPP		PPP	18 49 00.8	
HABR				*e*PS		**PS**	**18 56 24.1**	**-2.3**
HABR				*e*			18 57 45.6	
HABR				*e*SS		SS	19 03 27.3	+0.4
HABR				*e*SSS		SSS	19 08 14.8	
HABR				pmax		pmax		
	comp=N,2.0nm,0.8s							
HABR				pmax		pmax		
	comp=E,3.0nm,0.8s							
HABR				pmax		pmax		
	comp=Z,7.0nm,0.8s							
HABR				MLR		MLR		
	comp=Z,69nm,21.0s							
OTUK	**Ortayu**	**129.74**	**27**	PKIKP		**PKPdf**	**18 44 06.9**	**+0.3**
OTUK				pmax		pmax		
	comp=Z,14nm,1.0s							
KLR	**Kul'dur**	**130.14**	**336**	*d i*PKIKP		**PKPdf**	**18 44 06.4**	**-0.8**
MOY	**Mondy**	**133.82**	**2**	*e*PKIKP		**PKPdf**	**18 44 15.6**	**+1.3**
USRK	**Ussuriysk Ar.**	**133.90**	**331**	PKP		**PKPdf**	**18 44 13.7**	**-0.8**
	comp=Z,3.3nm,0.6s,baz=73,slow=1.4,SNR=9.0							
USRK				pPKP		**pPKPdf**	**18 44 43.5**	**-1.6**
	comp=Z,1.3nm,0.6s,baz=337,slow=3.3,SNR=1.8							
MNAS	**Manas**	**134.00**	**32**	PKIKP		**PKPdf**	**18 44 15.5**	**+0.5**
MNAS				pmax		pmax		
	comp=Z,12nm,0.7s							
MDJ	**Mudanjiang**	**134.68**	**334**	PKP		**PKPdf**	**18 44 17.0**	**+1.0**
MK31	**Makanchi Array**	**134.90**	**20**	*c i*PKIKP		**PKPdf**	**18 44 16.2**	**-0.1**
MK31				pmax		pmax		
	comp=Z,12nm,0.9s							
MKAR	**Makanchi Array**	**134.90**	**20**	PKP		**PKPdf**	**18 44 15.9**	**-0.4**
	comp=Z,8.8nm,0.7s,baz=338,slow=2.1,SNR=50							
MKAR				pPKP		**pPKPdf**	**18 44 44.5**	**-2.5**
	comp=Z,3.0nm,0.7s,baz=306,slow=2.6,SNR=1.8							
MKAR	**Makanchi Array**	**134.90**	**20**	*c i*PKIKP		**PKPdf**	**18 44 16.2**	**-0.1**
MKAR				pmax		pmax		
	comp=Z,9.0nm,0.7s							
AAK	**Ala-Archa**	**134.91**	**30**	*d i*PKIKP		**PKPdf**	**18 44 17.7**	**+1.0**
AAK				pmax		pmax		
	comp=Z,14nm,0.8s							
AAK	**Ala-Archa**	**134.91**	**30**	*e*P		**PKPdf**	**18 44 18.2**	**+1.5**
ZAK	**Zakamensk**	**135.15**	**0**	*e*PKIKP		**PKPdf**	**18 44 16.2**	**-0.6**
ZAK				pmax		pmax		
	comp=Z,5.0nm,1.7s							
ZAK				pmax		pmax		
	comp=Z,3.0nm,1.6s							
TKM2	**Tokmak 2**	**135.25**	**29**	PKIKP		**PKPdf**	**18 44 17.9**	**+0.5**
TKM2				pmax		pmax		
	comp=Z,8.0nm,0.7s							
MSHR	**Mys Shultsa**	**135.52**	**331**	⇑ *i*PKIKP		**PKPdf**	**18 44 17.5**	**-0.1**
MJAR	**Matsushiro Arr**	**135.52**	**319**	PKP		**PKPdf**	**18 44 16.5**	**-1.3**
	comp=Z,6.1nm,0.8s,baz=80,slow=1.4,SNR=22							
MJAR				SKPbc		**SKPbc**	**18 47 37.1**	**-1.8**
	comp=Z,1.5nm,1.0s,baz=46,slow=1.2,SNR=4.0							
MAJO	**Matsushiro**	**135.52**	**319**	*de*PKIKP		**PKPdf**	**18 44 16.3**	**-1.5**
MAJO	**Matsushiro**	**135.52**	**319**	*e*P		**PKPdf**	**18 44 16.0**	**-1.8**
PDGK	**Podgornoye**	**136.71**	**26**	PKIKP		**PKPdf**	**18 44 20.2**	**+0.5**
PDGK				pmax		pmax		
	comp=Z,7.0nm,0.8s							
SONM	**Songino Array**	**137.62**	**357**	PKhKP		PKPpre	18 44 09.3	
	comp=Z,1.2nm,0.6s,baz=354,slow=2.9,SNR=7.8							
SONM				PKP		**PKPdf**	**18 44 21.2**	**-0.3**
	comp=Z,6.2nm,0.8s,baz=312,slow=1.3,SNR=21							
SONM				pPKP		pPKPdf	18 44 49.5	-2.6
	comp=Z,4.6nm,1.1s,baz=325,slow=1.4,SNR=2.0							
SONM	**Songino Array**	**137.62**	**357**	PKIKP		**PKPdf**	**18 44 21.2**	**-0.3**
SONM							18 44 49.5	
SONM				pmax		pmax		
	comp=Z,6.0nm,0.8s							
SONM				pmax		pmax		
	comp=Z,3.0nm,0.8s							
KSH	**Kashi**	**137.96**	**32**	*e*PKP		**PKPdf**	**18 44 23.8**	**+1.4**
KSH				*es*PKP			18 45 01.5	
KSH				*e*PP		**PP**	**18 47 15.5**	**+5.0**
KSH				SKS		**SKSdf**	**18 51 21.5**	**-1.6**
KSH				SKKS		**SKKSac**	**18 53 54.5**	**-0.6**
KSH				SS		**SS**	**19 05 13.5**	**+1.6**
KSH				AMB		AMB		
	comp=Z,41nm,5.0s							
KSH				LR		LR		
	comp=Z,97nm,5.3s							
KSH				LR		LR		
	comp=Z,110nm,5.9s							
KSH				LR		LR		
	comp=Z,110nm,6.9s							
ASAR	**Alice Springs**	**138.54**	**225**	PKhKP		PKPpre	18 44 11.9	
	comp=Z,1.9nm,0.8s,baz=134,slow=3.1,SNR=18							
ASAR				PKP		**PKPdf**	**18 44 22.6**	**-1.1**
	comp=Z,6.7nm,0.8s,baz=125,slow=2.2,SNR=32							
ASAR				pPKP		pPKPdf	18 44 53.5	-0.9
	comp=Z,3.7nm,0.9s,baz=135,slow=2.4,SNR=3.9							
ASAR				SKPbc		**SKPbc**	**18 47 45.6**	**-2.7**
	comp=Z,1.4nm,1.1s,baz=121,slow=3.6,SNR=4.1							
WMQ	**Urumqi**	**139.29**	**17**	PKP		**PKPdf**	**18 44 25.5**	**+0.9**
WRAB	**Tennant Creek**	**140.51**	**230**	⇓ *e*PKHKP		PKPpre	18 44 22.5	
WRAB	**Tennant Creek**	**140.51**	**230**	*e*P		PKPpre	18 44 19.8	
WRA	**Warramunga Arr**	**140.52**	**230**	PKhKP		PKPpre	18 44 20.3	
	comp=Z,6.1nm,0.8s,baz=118,slow=3.3,SNR=32							
WRA				PKP		**PKPdf**	**18 44 26.2**	**-1.2**
	comp=Z,11nm,0.9s,baz=125,slow=1.8,SNR=30							
WRA				pPKP		pPKPdf	18 44 55.1	-3.0
	comp=Z,3.8nm,0.8s,baz=121,slow=2.0,SNR=2.4							
KSRS	**Korea Array**	**141.01**	**328**	PKhKP		PKPpre	18 44 19.9	
	comp=Z,6.0nm,0.9s,baz=52,slow=3.2,SNR=16							
KSRS				PKP		**PKPdf**	**18 44 26.4**	**-1.4**
	comp=Z,14nm,0.8s,baz=26,slow=1.2,SNR=28							
KSRS				pPKP		pPKPdf	18 44 58.0	-0.5
	comp=Z,3.3nm,0.8s,baz=38,slow=2.1,SNR=2.5							
KSAR	**Wonju Array Be**	**141.04**	**328**	PKHKP		PKPpre	18 44 20.0	
KSAR							18 44 26.4	
KSAR							18 44 58.0	
KSAR	**Wonju Array Be**	**141.04**	**328**	PKPpre		PKPpre	18 44 19.9	
KSAR				PKP		**PKPdf**	**18 44 26.4**	**-1.4**
KSAR				pPKP		pPKPdf	18 44 58.0	-0.5
BJI	**Beijing**	**143.62**	**343**	PKP		**PKPdf**	**18 44 32.0**	**-0.3**
BJT	**Baijiatuan**	**143.64**	**343**	*e*PKIKP		**PKPdf**	**18 44 32.5**	**+0.1**
BJT	**Baijiatuan**	**143.64**	**343**	*e*P		**PKPdf**	**18 44 32.5**	**+0.1**
HHC	**Hu-ho-hao-te**	**143.93**	**349**	*e*PKP		PKPbc	18 44 31.5	+0.4
GTA	**Gaotai**	**145.96**	**5**	⇓ PKPbc		**PKPdf**	**18 44 36.8**	**+0.2**
GTA				pPKP		pPKPdf	18 45 09.8	+2.5
GTA				sPKP			18 45 24.5	
GTA				PP		**PP**	**18 48 03.8**	**+5.4**
GTA				SKS		**SKSdf**	**18 51 35.0**	**-0.7**
GTA				SKKS		**SKKSac**	**18 54 43.5**	**+2.3**
GTA				SS		**SS**	**19 06 48.5**	**+5.0**
GTA				AMB		AMB		
	comp=Z,110nm,7.4s							
GTA				LR		LR		
	comp=Z,110nm,20.4s							
GTA				LR		LR		
	comp=Z,130nm,21.4s							
GTA				LR		LR		
	comp=Z,84nm,20.4s							
FITZ	**Fitzroy Crossi**	**147.97**	**223**	PKPbc		**PKPbc**	**18 44 43.1**	**-0.5**
	comp=Z,35nm,0.7s,baz=176,slow=5.1,SNR=34							
FITZ				pPKPbc		**pPKPbc**	**18 45 12.0**	**-1.9**
	comp=Z,16nm,0.9s,baz=134,slow=1.0,SNR=2.6							
FITZ	**Fitzroy Crossi**	**147.97**	**223**	*e*P		**PKPdf**	**18 44 40.3**	**-0.1**
FITZ				PKPbc		**PKPbc**	**18 44 43.1**	**-0.5**
FITZ				pPKPbc		**pPKPbc**	**18 45 12.0**	**-1.9**
JOW	**Kunigami**	**148.09**	**315**	*e*PKPbc		**PKPbc**	**18 44 43.2**	**-0.5**
LZH	**Lanzhou**	**149.43**	**359**	*e*PKPbc		**PKPdf**	**18 44 44.0**	**+1.5**
NJ2	**Nanjing**	**149.77**	**333**	*e*PKPbc		**PKPbc**	**18 44 46.8**	**-0.9**
NJ2				pPKP		**pPKPdf**	**18 45 19.5**	**+5.9**
NJ2				AMB		AMB		
	comp=Z,480nm,11.2s							
FAKI	**Fak Fak**	**150.02**	**255**	*e*PKPbc		**PKPbc**	**18 44 49.0**	**0.0**
PYUN	**Piuthan**	**150.23**	**38**	*e*P		**PKPdf**	**18 44 44.3**	**+0.2**
KOLN	**Koldanda**	**150.84**	**38**	*e*P		**PKPdf**	**18 44 45.0**	**0.0**
XAN	**Xi'an**	**151.02**	**351**	PKPbc		**PKPbc**	**18 44 50.3**	**-0.4**
GKN	**Gorkha**	**151.29**	**36**	*e*P		**PKPdf**	**18 44 45.8**	**+0.2**
KKN	**Kakani**	**151.83**	**36**	*e*P		**PKPdf**	**18 44 46.7**	**+0.2**
DMN	**Daman**	**151.86**	**36**	*e*P		**PKPdf**	**18 44 46.6**	**0.0**
PKIN	**Phulchoki**	**152.06**	**36**	*e*P		**PKPdf**	**18 44 47.4**	**+0.5**
GUN	**Gumba**	**152.08**	**35**	*e*P		**PKPdf**	**18 44 46.9**	**-0.2**
JIRN	**Jiri**	**152.45**	**35**	*e*P		**PKPdf**	**18 44 47.3**	**-0.4**
HYB	**Hyderabad**	**152.91**	**62**	*i* PKP		**PKPdf**	**18 44 48.5**	**+0.4**
HYB				*e*			18 44 55.0	
HYB				*e*PKPAB		**PKPab**	**18 45 07.0**	**+0.1**
HYB				*e*			18 45 27.5	
WHN	**Wuhan**	**152.92**	**339**	PKPbc		**PKPbc**	**18 44 54.3**	**-0.8**
LSA	**Lhasa**	**153.18**	**24**	PKPbc		**PKPdf**	**18 44 49.8**	**+1.0**
LSA	**Lhasa**	**153.18**	**24**	*e*PKIKP		**PKPdf**	**18 44 49.7**	**+1.0**
LSA	**Lhasa**	**153.18**	**24**	*e*PKPdf		**PKPdf**	**18 44 49.7**	**+0.9**
LSA				*e*PKPbc		**PKiKP**	**18 44 56.8**	**+0.4**
RAMN	**Ramite**	**153.23**	**35**	*e*P		**PKPdf**	**18 44 48.7**	**+0.1**
ENH	**Enshi**	**154.58**	**348**	*e*P		**PKPdf**	**18 44 50.0**	**-0.2**
CD2	**Chengdu**	**154.60**	**359**	PKPbc		**PKPdf**	**18 44 48.0**	**-2.2**
CD2				pPKP		pPKPdf	18 45 19.5	-1.5
CD2				sPKP			18 45 31.5	
CD2				PP		**PP**	**18 48 47.5**	**-0.4**
CD2				SKS		**SKSdf**	**18 51 44.0**	**-2.9**
CD2				SKKS		**SKKSac**	**18 55 25.5**	**-3.3**
CD2				SS		**SS**	**19 08 19.5**	**+0.4**
CD2				AMB		AMB		
	comp=Z,160nm,5.6s							
SSLB	**Suanglung**	**155.08**	**319**	*e*PKPdf		**PKPdf**	**18 44 49.6**	**-1.4**
GYA	**Guiyang**	**158.80**	**352**	PKP		**PKPdf**	**18 44 54.0**	**-1.8**
GYA				pPKP		pPKPdf	18 45 26.0	-0.6
GYA				PKPab		**PKPab**	**18 45 33.3**	**+1.4**
GYA				PKS		**PKSdf**	**18 48 26.5**	**-3.2**
GYA				PP		**PP**	**18 49 14.5**	**+3.3**
GYA				AMB		AMB		
	comp=Z,130nm,7.8s							
CHTO	**Chiang Mai**	**165.96**	**18**	*e*PKIKP		**PKPdf**	**18 45 02.6**	**-0.4**
CHTO	**Chiang Mai**	**165.96**	**18**	*e*PKPdf		**PKPdf**	**18 45 02.6**	**-0.4**
CMAR	**Chiang Mai Arr**	**166.29**	**18**	PKP		**PKPdf**	**18 45 02.7**	**-0.6**
	comp=Z,3.9nm,0.9s,baz=303,slow=2.0,SNR=23							
CMAR				pPKP		**pPKPdf**	**18 45 32.4**	**-1.7**
	comp=Z,1.5nm,0.8s,baz=314,slow=2.1,SNR=3.0							
CMAR				PKPab		**PKPab**	**18 46 04.1**	**-0.6**
	comp=Z,7.7nm,0.7s,baz=330,slow=5.3,SNR=28							
CMAR				PP		**PP**	**18 49 52.9**	**+1.9**
	comp=Z,8.0nm,1.3s,baz=342,slow=5.7,SNR=8.2							

IDC 25 18:27:08.7±1.9, 6.00S×144.98E, h0km, mb3.8/4, mb1 3.9/6, mb1mx3.6/25, mbtmp3.7/6, ML3.0/1, Error ellipse: s-maj=50.0km s-min=22.4km az=68.0, New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**4.02**	**148**	Pn	Pn	18 28 12.1	+0.6
	1.3nm,0.3s,baz=356,slow=13,SNR=5.6						
PMG				Sn	Sn	18 29 00.0	+0.7
	2.9nm,0.3s,baz=115,slow=22,SNR=10						
WRA	**Warramunga Arr**	**17.30**	**216**	P	P	18 31 13.4	+0.1
	0.1nm,0.3s,baz=41,slow=11,SNR=8.7						
ASAR	**Alice Springs**	**20.55**	**210**	P	P	18 31 49.1	+0.1
	3.8nm,0.8s,baz=36,slow=11,SNR=26						
STKA	**Stephens Creek**	**25.94**	**187**	P	P	18 32 41.6	-1.2
	1.0nm,0.7s,baz=339,slow=6.3,SNR=3.1						
CMAR	**Chiang Mai Arr**	**51.49**	**299**	P	P	18 36 15.3	-1.1
	0.9nm,0.8s,baz=118,slow=6.5,SNR=5.7						
MKAR	**Makanchi Array**	**76.23**	**321**	P	P	18 39 00.3	+1.2
	1.0nm,1.0s,baz=105,slow=7.1,SNR=4.6						

*INMG **25** 18:40:13.5±1.1, 36.82N×11.06W, h31km, ML1.8, Error ellipse: s-maj=11.1km s-min=7.1km az=103.0*
*CSEM **25** 18:40:14.2±0.4, 36.92N×10.86W, h30km, ML1.8, Error ellipse: s-maj=11.3km s-min=6.2km az=151.0*
MDD 25 18:40:13.2±0.8, 36.81N×11.12W, h40km±19km, mb3.6/5, 1C, Error ellipse: s-maj=9.1km s-min=5.5km az=155.0, PRXIMO, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PFVI	**Vila Bisbo**	**1.86**	**79**	⇑ *e*Pn	Pn	18 40 40.6	-2.0
PFVI				*e*Sn	Sn	18 41 01.4	-3.5
PFVI				A	A	18 41 06.3	
	10nm,0.6s						
PFVI	**Vila Bisbo**	**1.86**	**79**	P	Pn	18 40 40.6	-2.0
	5.8nm,0.1s,SNR=7.9						
PFVI				S	Sn	18 41 01.6	-3.3
	8.2nm,0.1s,SNR=7.9						
PFVI	**Vila Bisbo**	**1.86**	**79**	P	Pn	18 40 40.6	-2.0
	5.8nm,0.1s,SNR=7.9						
PFVI				S	Sn	18 41 01.6	-3.3
	8.2nm,0.1s,SNR=7.9						
MORF	**Marmelete**	**2.03**	**75**	*e*Pn	Pn	18 40 43.1	-1.9
MORF				*e*Sn	Sn	18 41 06.5	-2.7
MORF				A	A	18 41 07.1	
	4.1nm,0.2s						
MORF	**Marmelete**	**2.03**	**75**	P	Pn	18 40 43.1	-1.9
MORF				S	Sn	18 41 06.5	-2.7
	4.1nm,0.2s						
MORF	**Marmelete**	**2.03**	**75**	P	Pn	18 40 43.1	-1.9
MORF				S	Sn	18 41 06.5	-2.7
	4.1nm,0.2s						
PTEO	**Sao Teotonio**	**2.05**	**68**	*e*Sn	Sn	18 41 06.0	-3.4
PTEO	**Sao Teotonio**	**2.05**	**68**	S	Sn	18 41 06.0	-3.4
PTEO	**Sao Teotonio**	**2.05**	**68**	S	Sn	18 41 06.0	-3.4
PNCL	**Nicolau / Gran**	**2.43**	**57**	*e*Pn	Pn	18 40 48.7	-1.8
PNCL				*e*Sn	Sn	18 41 15.7	-3.3
PNCL				A	A	18 41 17.6	
	2.1nm,0.2s						
PNCL	**Nicolau / Gran**	**2.43**	**57**	*e*Pn	Pn	18 40 48.7	-1.8
PNCL				*e*Sn	Sn	18 41 15.7	-3.3
	2.1nm,0.2s						
MESJ	**Messejana**	**2.53**	**65**	*e*Pn	Pn	18 40 50.1	-1.6
MESJ				*e*Sn	Sn	18 41 18.0	-3.3
MESJ				A	A	18 41 22.2	
	2.5nm,0.9s						
MESJ	**Messejana**	**2.53**	**65**	P	Pn	18 40 50.1	-1.6
MESJ				S	Sn	18 41 18.0	-3.3
	2.5nm,0.9s						
MESJ	**Messejana**	**2.53**	**65**	P	Pn	18 40 50.1	-1.6
MESJ				S	Sn	18 41 18.0	-3.3
	2.5nm,0.9s						
PBDV	**Barranco-do-Ve**	**2.58**	**79**	*e*Pn	Pn	18 40 51.1	-1.5
PBDV				*e*Sn	Sn	18 41 19.1	-3.7
PBDV				A	A	18 41 34.9	
	3.1nm,0.9s						
PBDV	**Barranco-do-Ve**	**2.58**	**79**	P	Pn	18 40 51.1	-1.5
PBDV				S	Sn	18 41 19.1	-3.7
	3.1nm,0.9s						
PBDV	**Barranco-do-Ve**	**2.58**	**79**	P	Pn	18 40 51.1	-1.5
PBDV				S	Sn	18 41 19.1	-3.7
	3.1nm,0.9s						
PCVE	**Castro Verde**	**2.59**	**71**	*e*Pn	Pn	18 40 52.0	-0.6
PCVE				*e*Sn	Sn	18 41 19.8	-3.0
PCVE				A	A	18 41 33.6	
	2.5nm,0.5s						
PCVE	**Castro Verde**	**2.59**	**71**	P	Pn	18 40 52.0	-0.6
PCVE				S	Sn	18 41 19.8	-3.0
	2.5nm,0.5s						
PCVE	**Castro Verde**	**2.59**	**71**	P	Pn	18 40 52.0	-0.6
PCVE				S	Sn	18 41 19.8	-3.0
	2.5nm,0.5s						
PVAQ	**Vaqueiros**	**2.78**	**77**	*e*Pn	Pn	18 40 53.8	-1.4
PVAQ				*e*Sn	Sn	18 41 23.7	-3.8
PVAQ				A	A	18 41 32.6	
	2.3nm,0.8s						
PVAQ	**Vaqueiros**	**2.78**	**77**	P	Pn	18 40 53.8	-1.4
PVAQ				S	Sn	18 41 23.7	-3.8
	2.3nm,0.8s						
PVAQ	**Vaqueiros**	**2.78**	**77**	P	Pn	18 40 53.8	-1.4
PVAQ				S	Sn	18 41 23.7	-3.8
	2.3nm,0.8s						
EGRO	**El Granado**	**2.99**	**75**	P	Pn	18 40 56.9	-1.2
	0.3nm,0.1s,SNR=7.9						
EGRO				S	Sn	18 41 28.8	-3.9
	0.7nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**2.99**	**75**	P	Pn	18 40 56.9	-1.2
	0.3nm,0.1s,SNR=7.9						
EGRO				S	Sn	18 41 28.8	-3.9
	0.7nm,0.1s,SNR=7.9						
EVO	**Evora**	**3.00**	**54**	*e*Sn	Sn	18 41 29.4	-3.6
EVO	**Evora**	**3.00**	**54**	S	Sn	18 41 29.4	-3.6
EVO	**Evora**	**3.00**	**54**	S	Sn	18 41 29.4	-3.6
PBAR	**Barrancos**	**3.52**	**66**	*e*Sn	Sn	18 41 41.2	-4.5
PBAR				A	A	18 41 44.2	
	2.2nm,0.7s						
PBAR	**Barrancos**	**3.52**	**66**	S	Sn	18 41 41.2	-4.5
	2.2nm,0.7s						
PBAR	**Barrancos**	**3.52**	**66**	S	Sn	18 41 41.2	-4.5
	2.2nm,0.7s						
EMIN	**Mina Concepcio**	**3.67**	**74**	P	Pn	18 41 05.5	-1.9
	0.3nm,0.1s,SNR=7.9						
EMIN				S	Sn	18 41 45.1	-4.4
	0.3nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.67**	**74**	P	Pn	18 41 05.5	-2.0
	0.3nm,0.1s,SNR=7.9						
EMIN				S	Sn	18 41 45.1	-4.4
	0.3nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**3.79**	**58**	S	Sn	18 41 47.7	-4.6
	1.7nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**3.79**	**58**	S	Sn	18 41 47.7	-4.6
	1.7nm,0.2s,SNR=7.9						
PMRV	**Marv??o**	**3.93**	**47**	*e*Sn	Sn	18 41 51.4	-4.5
PMRV	**Marv??o**	**3.93**	**47**	S	Sn	18 41 51.4	-4.5
PMRV	**Marv??o**	**3.93**	**47**	S	Sn	18 41 51.4	-4.5
ECAB	**El Cabril**	**4.71**	**73**	P	Pn	18 41 19.9	-1.8
	0.1nm,0.1s,SNR=7.9						
ECAB				S	Sn	18 42 10.6	-4.4
	0.4nm,0.2s,SNR=7.9						
ECAB	**El Cabril**	**4.71**	**73**	P	Pn	18 41 19.9	-1.8
	0.1nm,0.1s,SNR=7.9						
ECAB				S	Sn	18 42 10.6	-4.5
	0.4nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**5.37**	**73**	P	Pn	18 41 29.2	-1.6
	0.2nm,0.1s,SNR=7.9						
EADA				S	Sn	18 42 26.1	-5.4
	0.5nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**5.37**	**73**	P	Pn	18 41 29.2	-1.7
	0.2nm,0.1s,SNR=7.9						
EADA				S	Sn	18 42 26.1	-5.4
	0.5nm,0.2s,SNR=7.9						

*ISCJB **25** 18:41:03.6±0.4, 7.43S±0.07×117.36E±0.07, h306km, mb3.9/10, Error ellipse: s-maj=10.4km s-min=8.5km az=33.3*
*DJA **25** 18:41:06.8±1.0, 8.S±8×11.7E±, h287km±15km, M4.5/11, mb4.6/1, MLv4.5/11*
*IDC **25** 18:41:08.0±5.3, 7.62S×117.23E, h351km±60km, mb3.5/11, mb1 3.6/12, mb1mx3.3/41, mbtmp4.2/12, Error ellipse: s-maj=29.9km s-min=13.7km az=62.0*
ISC 25 18:41:04.7±0.7, 7.52S±0.08×117.28E±0.06, h306km, n23, σ1§24/24, mb3.9/10, Bali Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWSI	**Taliwang, Sumb**	**1.27**	**198**	P	**Pn**	**18 41 46.3**	**-0.8**
PLAI	**Plampang**	**1.39**	**159**	P	**Pn**	**18 41 46.5**	**-1.3**
DNP	**Denpasar**	**2.35**	**241**	P	**Pn**	**18 41 55.6**	**+0.7**
IGBI	**Denpasar**	**2.47**	**239**	P	**Pn**	**18 41 56.6**	**+0.6**
JAGI	**Jajag, Banyuwa**	**3.24**	**253**	P	**Pn**	**18 42 02.7**	**-0.6**
BSSI	**Bau Bau, Buton**	**3.47**	**67**	P	**Pn**	**18 42 07.4**	**+1.7**
BLJI	**Banyuglugur**	**3.66**	**266**	P	**Pn**	**18 42 09.2**	**+1.6**
WSI	**Waingapu**	**3.67**	**126**	P	**Pn**	**18 42 07.3**	**-0.4**
GMJI	**Gumukmas**	**3.87**	**259**	P	**Pn**	**18 42 11.4**	**+1.5**
MMRI	**Maumere**	**5.03**	**103**	P	**Pn**	**18 42 23.0**	**+0.1**
FITZ	**Fitzroy Crossi**	**13.30**	**143**	P	**P**	**18 44 03.1**	**+0.4**
	0.7nm,0.3s,baz=333,slow=8.2,SNR=24						
FITZ				S	**S**	**18 46 32.9**	**+3.2**
	0.5nm,0.3s,baz=194,slow=18,SNR=3.2						
WRA	**Warramunga Arr**	**20.64**	**128**	P	**P**	**18 45 20.8**	**-1.0**
	3.8nm,0.6s,baz=302,slow=13,SNR=20						
ASAR	**Alice Springs**	**22.63**	**137**	P	**P**	**18 45 39.8**	**-0.3**
	2.4nm,0.5s,baz=312,slow=8.7,SNR=35						
CMAR	**Chiang Mai Arr**	**31.52**	**325**	P	**P**	**18 46 59.8**	**+0.5**
	1.2nm,0.5s,baz=156,slow=6.9,SNR=7.1						
STKA	**Stephens Creek**	**33.17**	**140**	P	**P**	**18 47 13.4**	**+0.1**
	1.7nm,0.5s,baz=318,slow=10,SNR=9.4						
KSRS	**Korea Array**	**45.84**	**12**	P	**P**	**18 48 57.3**	**+0.4**
	2.8nm,1.0s,baz=195,slow=8.9,SNR=6.8						
MJAR	**Matsushiro Arr**	**48.03**	**23**	P	**P**	**18 49 12.9**	**-0.9**
	2.0nm,0.6s,baz=200,slow=8.1,SNR=11						
USRK	**Ussuriysk Ar.**	**53.17**	**13**	P	**P**	**18 49 52.0**	**+0.2**
	4.0nm,0.6s,baz=199,slow=7.1,SNR=9.0						
SONM	**Songino Array**	**55.95**	**351**	P	**P**	**18 50 11.6**	**-0.2**
	4.4nm,0.7s,baz=169,slow=8.3,SNR=21						
MKAR	**Makanchi Array**	**62.38**	**334**	P	**P**	**18 50 54.8**	**-0.8**
	1.0nm,0.3s,baz=144,slow=6.0,SNR=18						
ZALV	**Zalesovo Beam**	**67.07**	**340**	P	**P**	**18 51 23.9**	**-1.5**
	3.2nm,0.6s,baz=152,slow=5.2,SNR=12						
PETK	**Petropavlovsk-**	**69.43**	**25**	P	**P**	**18 51 40.2**	**+0.2**
	1.4nm,0.6s,baz=235,slow=5.1,SNR=3.4						
TORD	**Torodi Ar. Bea**	**116.52**	**281**	PKP	**PKPdf**	**18 59 11.2**	**-2.2**
	0.3nm,0.5s,baz=67,slow=2.9,SNR=2.8						

GUC 25 18:58:22.5±0.6, 20.56S×68.92W, h108km±3km, ML3.6, 6C-3D, Chile-Bolivia border region

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

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOI	**OKI**	**1.74**	**215**	P	**Pn**	**19 13 21.6**	**+1.9**
JKSM	**Kasumi**	**2.13**	**176**	P	**Pn**	**19 13 24.0**	**+1.9**
JKY	**Yasaka**	**2.14**	**167**	P	**Pn**	**19 13 24.5**	**+2.3**
JSZ	**Suzu**	**2.29**	**96**	P	**Pn**	**19 13 26.3**	**+3.2**
JWT	**Wachi**	**2.54**	**163**	P	**Pn**	**19 13 27.6**	**+2.5**
JWT				S	**S**	**19 14 15.0**	**+2.8**
JHS	**Saijyo**	**2.94**	**203**	P	**Pn**	**19 13 29.7**	**+1.4**
JSD	**Sado**	**2.99**	**83**	P	**Pn**	**19 13 31.2**	**+2.7**
JGT2	**ShimaneMisato**	**3.10**	**212**	P	**Pn**	**19 13 31.0**	**+1.4**
MAT	**Matsushiro**	**3.19**	**111**	P	**Pn**	**19 13 32.5**	**+2.2**
MJAR	**Matsushiro Arr** 1.3nm,0.3s,baz=289,slow=10,SNR=26	**3.19**	**111**	P	**Pn**	**19 13 33.1**	**+2.8**
JOG2	**Oga 2**	**4.68**	**60**	P	**Pn**	**19 13 48.1**	**+3.7**
KSRS	**Korea Array** 0.2nm,0.3s,baz=96,slow=11,SNR=4.6	**5.23**	**269**	P	**Pn**	**19 13 51.5**	**+1.3**
BSO4	**Boso 4**	**5.44**	**118**	P	**Pn**	**19 13 54.0**	**+1.5**
BSO4				*e*S	**S**	**19 15 01.3**	**-1.0**
USRK	**Ussuriysk Ar.** 0.3nm,0.3s,baz=159,slow=10,SNR=5.0	**6.75**	**344**	P	**P**	**19 14 08.5**	**+0.8**
JCH	**Churui**	**8.36**	**51**	P	**P**	**19 14 26.2**	**0.0**
JCH				*e*S	**S**	**19 15 57.7**	**-5.0**
ASAJ	**Asahikawa** 2.1nm,0.3s,baz=228,slow=12,SNR=26	**8.85**	**41**	P	**P**	**19 14 32.3**	**+0.6**
SONM	**Songino Array** 0.3nm,0.5s,baz=96,slow=10,SNR=1.9	**22.86**	**305**	P	**P**	**19 16 56.8**	**-1.2**
ZALV	**Zalesovo Beam** 0.2nm,0.3s,baz=90,slow=5.8,SNR=1.6	**37.37**	**312**	P	**P**	**19 19 05.4**	**+1.5**
MKAR	**Makanchi Array** 0.3nm,0.6s,baz=98,slow=10,SNR=2.9	**39.06**	**300**	P	**P**	**19 19 16.7**	**-1.2**
WRA	**Warramunga Arr** 0.3nm,0.3s,baz=356,slow=7.6,SNR=8.8	**57.35**	**180**	P	**P**	**19 21 34.1**	**-2.1**
ASAR	**Alice Springs** 0.2nm,0.5s,baz=356,slow=7.9,SNR=4.6	**61.06**	**181**	P	**P**	**19 21 59.8**	**-1.5**

*ATH **25** 19:20:59.9,41.27N×22.75E,h14km±4km,ML1.6/4,Error ellipse: s-maj=4.6km s-min=1.2km az=165.0*
*CSEM **25** 19:20:59.7±0.2,41.27N×22.73E,h10km,ML1.7,Error ellipse: s-maj=4.1km s-min=2.8km az=9.0*
THE 25 19:20:59.4,41.29N×22.74E,h11km±3km,ML1.7/4,2C,
Error ellipse: s-maj=3.4km s-min=0.8km az=328.0,
Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAY	**Valandovo**	**0.13**	**284**	P	Pg	19 21 02.6	0.0
VAY				S	Sg	19 21 04.8	-0.1
VAY	**Valandovo**	**0.13**	**284**	*i*Pg	Pg	19 21 02.7	+0.1
VAY				*i* Sg	Sg	19 21 04.9	0.0
VAY	206nm,0.3s			*e*Lg	Lg	19 21 05.1	
VAY	**Valandovo**	**0.13**	**284**	*i*Pg	Pg	19 21 02.8	+0.1
VAY				*i* Sg	Sg	19 21 05.0	+0.1
VAY	comp=N,206nm,0.3s			*e*Lg	Lg	19 21 05.1	
VAY	comp=E,54nm,0.3s			*e*Lg	Lg	19 21 05.2	
KNT	**Kendrikon**	**0.17**	**137**	P	Pg	19 21 03.7	+0.5
KNT				S	Sg	19 21 06.3	+0.4
KNT	**Kendrikon**	**0.17**	**137**	P	Pg	19 21 03.8	+0.6
KNT				S	Sg	19 21 06.6	+0.7
KNT	**Kendrikon**	**0.17**	**137**	P	Pg	19 21 03.9	+0.5
KNT	comp=E,1285μm,0.2s			AML	AML	19 21 06.5	
KNT				S	Sg	19 21 06.6	+0.7
KNT	comp=N,3125μm,0.2s			AML	AML	19 21 06.8	
GRG	**Griva**	**0.42**	**218**	P	Pg	19 21 07.8	+0.1
GRG				S	Sg	19 21 13.3	+0.1
GRG	**Griva**	**0.42**	**218**	P	Pg	19 21 07.5	-0.2
GRG				S	Sg	19 21 13.3	+0.1
GRG	**Griva**	**0.42**	**218**	P	Pg	19 21 07.5	-0.2
GRG				S	Sb	19 21 14.2	-1.0
GRG	comp=E,358μm,0.1s			AML	AML	19 21 14.7	
GRG	comp=N,285μm,0.1s			AML	AML	19 21 14.9	
SOH	**Sokhos**	**0.66**	**135**	P	Pg	19 21 12.2	+0.1
SOH				S	Sb	19 21 21.5	-0.5
SOH	**Sokhos**	**0.66**	**135**	P	Pg	19 21 12.2	+0.1
SOH				S	Sb	19 21 21.5	-0.5
SOH	**Sokhos**	**0.66**	**135**	P	Pg	19 21 11.7	-0.4
SOH				S	Sb	19 21 22.0	0.0
SOH	comp=E,100μm,0.1s			AML	AML	19 21 23.1	
SOH	comp=N,119μm,0.2s			AML	AML	19 21 23.8	
SRS	**Serrai**	**0.66**	**105**	P	Pg	19 21 12.3	0.0
SRS				S	Sg	19 21 20.9	-0.1
SRS	**Serrai**	**0.66**	**105**	P	Pg	19 21 12.3	0.0
SRS				S	Sg	19 21 20.9	-0.1
SRS	**Serrai**	**0.66**	**105**	P	Pg	19 21 12.3	+0.1
SRS				S	Sg	19 21 20.5	-0.5
SRS	comp=N,42μm,0.1s			AML	AML	19 21 24.3	
SRS	comp=E,43μm,0.2s			AML	AML	19 21 27.1	
THE	**Thessaloniki**	**0.68**	**165**	P	Pg	19 21 12.7	+0.2
THE	**Thessaloniki**	**0.68**	**165**	P	Pg	19 21 12.7	+0.2
HORT	**Hortiatis**	**0.74**	**158**	P	Pb	19 21 14.2	-0.1
HORT	**Hortiatis**	**0.74**	**158**	P	Pb	19 21 14.2	-0.1
NVR	**Nevrokopi**	**0.85**	**85**	P	Pn	19 21 17.2	-0.1
PLG	**Polygyros**	**1.06**	**149**	P	Pb	19 21 19.2	-0.5
PLG	**Polygyros**	**1.06**	**149**	P	Pb	19 21 19.2	-0.5

*DDA **25** 19:21:06.8,38.95N×35.65E,h7km,Ml2.2*
*ISK **25** 19:21:06.6,38.98N×35.78E,h7km,MD3.0*
*CSEM **25** 19:21:06.8±0.2,38.96N×35.69E,h2km,MD3.0,Error ellipse: s-maj=4.7km s-min=3.8km az=20.0*
ISC 25 19:21:06.8±0.9,38.95N±0.02×35.67E±0.02,h8km±8km,
n41,σ1§03/60,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNN	**Bunyan**	**0.17**	**126**	PG	**Pg**	**19 21 09.8**	**-0.6**
BNN				*e*SG	**Sg**	**19 21 13.2**	**+0.4**
BNN	**Bunyan**	**0.17**	**126**	*i* Pg	**Pg**	**19 21 09.8**	**-0.6**
BNN				*e*Sg	**Sg**	**19 21 13.2**	**+0.4**
AVNS	**Nevsehir-Avano**	**0.66**	**258**	*i* P	**Pg**	**19 21 19.3**	**-0.3**
AVNS				*i* S	**Sg**	**19 21 28.9**	**+0.7**
AVNS	**Nevsehir-Avano**	**0.66**	**258**	P	**Pg**	**19 21 19.3**	**-0.3**
AVNS				S	**Sg**	**19 21 28.9**	**+0.7**
YOZ	**Yozgat**	**0.74**	**338**	*e*PG	**Pg**	**19 21 21.4**	**+0.3**
YOZ	**Yozgat**	**0.74**	**338**	*e*Pg	**Pg**	**19 21 21.4**	**+0.3**
SARI	**SarD1z-Kayseri**	**0.80**	**133**	*e*PG	**Pg**	**19 21 21.5**	**-0.7**
SARI				*e*SG	**Sg**	**19 21 32.8**	**+0.2**
YAHY	**KAYSERI_Yahyal**	**0.89**	**196**	*i* P	**Pg**	**19 21 23.3**	**-0.6**
YAHY				*i* S	**Sg**	**19 21 34.7**	**-0.8**
YAHY	**KAYSERI_Yahyal**	**0.89**	**196**	P	**Pg**	**19 21 23.3**	**-0.6**
YAHY				S	**Sg**	**19 21 34.7**	**-0.8**
CUALT	**Altinyayla-SIV**	**0.90**	**69**	P	**Pb**	**19 21 24.5**	**-0.4**
CUALT				*i* S	**Sn**	**19 21 38.3**	**-1.0**
CUALT	**Altinyayla-SIV**	**0.90**	**69**	P	**Pb**	**19 21 24.5**	**-0.4**
CUALT				S	**Sn**	**19 21 38.3**	**-1.0**
NIG	**Nigde**	**1.18**	**225**	*e*PN	**Pn**	**19 21 31.3**	**+1.4**
NIG	**Nigde**	**1.18**	**225**	*e*Pn	**Pn**	**19 21 31.3**	**+1.4**
CDAG	**Cicekdag**	**1.21**	**304**	*i* P	**Pg**	**19 21 28.9**	**-1.2**
CDAG				*i* S	**Sn**	**19 21 47.2**	**+0.3**
CDAG	**Cicekdag**	**1.21**	**304**	P	**Pg**	**19 21 28.9**	**-1.2**
CDAG				S	**Sn**	**19 21 47.2**	**+0.3**
GULA	**Gulagac**	**1.28**	**242**	*e*PN	**Pg**	**19 21 32.5**	**+1.1**
GULA	**Gulagac**	**1.28**	**242**	*e*Pn	**Pg**	**19 21 32.5**	**+1.1**
COAL	**Corum-Alaca**	**1.41**	**338**	*i* P	**Pn**	**19 21 32.2**	**-0.7**
COAL				*i* S	**Sg**	**19 21 54.3**	**+2.2**
COAL	**Corum-Alaca**	**1.41**	**338**	P	**Pn**	**19 21 32.2**	**-0.7**
COAL				S	**Sg**	**19 21 54.3**	**+2.2**
SVSK	**Karacayir**	**1.41**	**46**	*e*PN	**Pn**	**19 21 32.1**	**-0.7**
SVSK	**Karacayir**	**1.41**	**46**	*e*Pn	**Pn**	**19 21 32.1**	**-0.7**
CUKAN	**kangal_SIVAS**	**1.44**	**75**	*i* P	**Pg**	**19 21 34.5**	**0.0**
CUKAN				*i* S	**Sg**	**19 21 54.5**	**+1.3**
CUKAN	**kangal_SIVAS**	**1.44**	**75**	P	**Pg**	**19 21 34.5**	**0.0**
CUKAN				S	**Sg**	**19 21 54.5**	**+1.3**
DARE	**Darende-Malaty**	**1.47**	**104**	*e*PN	**Pn**	**19 21 33.5**	**-0.2**
DARE	**Darende-Malaty**	**1.47**	**104**	*e*Pn	**Pn**	**19 21 33.5**	**-0.2**
ANDN	**Andirin**	**1.47**	**159**	*i* P	**Pg**	**19 21 35.6**	**+0.7**
ANDN				*i* S	**Sg**	**19 21 56.2**	**+2.2**
ANDN	**Andirin**	**1.47**	**159**	P	**Pg**	**19 21 35.6**	**+0.7**
ANDN				S	**Sg**	**19 21 56.2**	**+2.2**
CORM	**Corum**	**1.47**	**327**	*e*PN	**Pg**	**19 21 34.9**	**-0.1**
CORM	**Corum**	**1.47**	**327**	*e*Pn	**Pg**	**19 21 34.9**	**-0.1**
KOZT	**Kozan**	**1.47**	**175**	*e*PN	**Pb**	**19 21 34.5**	**0.0**
KOZT	**Kozan**	**1.47**	**175**	*e*Pn	**Pb**	**19 21 34.5**	**0.0**
AKSY	**AKSARAY - Alti**	**1.52**	**259**	*i* P	**Pn**	**19 21 31.6**	**-2.9**
AKSY				*i* S	**Sg**	**19 21 56.2**	**+0.4**
AKSY	**AKSARAY - Alti**	**1.52**	**259**	P	**Pn**	**19 21 31.6**	**-2.9**
AKSY				S	**Sg**	**19 21 56.2**	**+0.4**
KAMT	**Kaman**	**1.58**	**286**	*e*PN	**Pb**	**19 21 36.5**	**+0.2**
KAMT	**Kaman**	**1.58**	**286**	*e*Pn	**Pb**	**19 21 36.5**	**+0.2**
SERE	**Sereflikochisa**	**1.65**	**271**	PN	**Pb**	**19 21 37.9**	**+0.4**
SERE	**Sereflikochisa**	**1.65**	**271**	*i* Pn	**Pb**	**19 21 37.9**	**+0.4**
KMRS	**Kahramanmaras**	**1.74**	**146**	*e*PN	**Pn**	**19 21 37.6**	**+0.3**
KMRS	**Kahramanmaras**	**1.74**	**146**	*e*Pn	**Pn**	**19 21 37.6**	**+0.3**
KARA	**Karaisali**	**1.76**	**196**	*e*PN	**Pb**	**19 21 38.8**	**-0.5**
KARA	**Karaisali**	**1.76**	**196**	*e*Pn	**Pb**	**19 21 38.8**	**-0.5**

*THE **25** 19:21:37.6,40.88N×27.74E,h0km±2km,ML2.6/4,Error ellipse: s-maj=2.2km s-min=1.1km az=27.0*
*DDA **25** 19:21:37.8,40.80N×27.73E,h16km,Ml3.0*
*ISK **25** 19:21:38.1,40.81N×27.74E,h6km,ML2.7*
*CSEM **25** 19:21:38.4±0.1,40.83N×27.74E,h5km,ML2.7,Error ellipse: s-maj=2.7km s-min=1.8km az=168.0*
ISC 25 19:21:38.7±0.8,40.83N±0.02×27.74E±0.01,h14km±6km,
n107,σ0§97/150,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBT4	**Kumbag-Tekirda**	**0.16**	**268**	*e*PG	**Pg**	**19 21 42.0**	**-0.5**
SBT4	**Kumbag-Tekirda**	**0.16**	**268**	*e*Pg	**Pg**	**19 21 42.0**	**-0.5**
SBT3	**Marmara-Eregli**	**0.18**	**74**	*e*PG	**Pg**	**19 21 43.0**	**+0.1**
SBT3	**Marmara-Eregli**	**0.18**	**74**	*e*Pg	**Pg**	**19 21 43.0**	**+0.1**
TKR	**Tekirdag**	**0.22**	**315**	*e*PG	**Pg**	**19 21 43.4**	**-0.2**
TKR				*e*SG	**Sg**	**19 21 47.2**	**+0.2**
TKR	**Tekirdag**	**0.22**	**315**	*e*Pg	**Pg**	**19 21 43.4**	**-0.2**
TKR				*e*Sg	**Sg**	**19 21 47.2**	**+0.2**
MRMT	**Marmara Adasi**	**0.26**	**206**	*e*PG	**Pg**	**19 21 43.3**	**-0.9**
MRMT	**Marmara Adasi**	**0.26**	**206**	*e*Pg	**Pg**	**19 21 43.3**	**-0.9**
CRLT	**Corlu**	**0.30**	**359**	*e*PG	**Pb**	**19 21 45.3**	**-0.5**
CRLT	**Corlu**	**0.30**	**359**	*e*Pg	**Pb**	**19 21 45.3**	**-0.5**
SART	**Tekirdag**	**0.45**	**252**	*i* P	**Pg**	**19 21 47.0**	**-0.7**
SART				*i* S	**Sg**	**19 21 53.5**	**-0.3**
SART	**Tekirdag**	**0.45**	**252**	P	**Pg**	**19 21 47.0**	**-0.7**
SART				S	**Sg**	**19 21 53.5**	**-0.3**
RKY	**Sarkoy-Tekirda**	**0.45**	**251**	*e*PG	**Pg**	**19 21 47.2**	**-0.5**
RKY	**Sarkoy-Tekirda**	**0.45**	**251**	*e*Pg	**Pg**	**19 21 47.2**	**-0.5**
EDC	**Edincik**	**0.49**	**169**	*e*PG	**Pg**	**19 21 48.0**	**-0.5**
EDC	**Edincik**	**0.49**	**169**	*e*Pg	**Pg**	**19 21 48.0**	**-0.5**
SLVT	**Silivri**	**0.53**	**42**	P	**Pg**	**19 21 46.5**	**-2.7**
SLVT				S	**Sg**	**19 21 52.3**	**-4.0**
KRBG	**Karabiga-Canak**	**0.55**	**218**	*e*PG	**Pg**	**19 21 48.7**	**-0.9**
KRBG	**Karabiga-Canak**	**0.55**	**218**	*e*Pg	**Pg**	**19 21 48.7**	**-0.9**
KNL	**Bal¨-kesir**	**0.58**	**196**	*i* P	**Pg**	**19 21 48.2**	**-2.0**
KNL				*i* S	**Sg**	**19 21 56.7**	**-1.2**
SBT2	**Guzelce-Avcila**	**0.59**	**85**	*e*PG	**Pg**	**19 21 50.0**	**-0.2**
SBT2	**Guzelce-Avcila**	**0.59**	**85**	*e*Pg	**Pg**	**19 21 50.0**	**-0.2**
ELBA	**Catalca**	**0.61**	**59**	*i* P	**Pg**	**19 21 50.1**	**-0.6**
ELBA				*i* S	**Sg**	**19 21 57.9**	**-0.8**
ELBA	**Catalca**	**0.61**	**59**	P	**Pg**	**19 21 50.1**	**-0.6**
ELBA				S	**Sg**	**19 21 57.9**	**-0.8**
CTKS	**Kestanelik-??a**	**0.70**	**55**	*e*PG	**Pb**	**19 21 52.4**	**-0.3**
CTKS	**Kestanelik-??a**	**0.70**	**55**	*e*Pg	**Pb**	**19 21 52.4**	**-0.3**
KCTX	**Karacabey (Bur**	**0.73**	**140**	*e*PG	**Pg**	**19 21 52.1**	**-0.9**
KCTX				*e*SG	**Sg**	**19 22 02.0**	**-0.7**
KCTX	**Karacabey (Bur**	**0.73**	**140**	*e*Pg	**Pg**	**19 21 52.1**	**-0.9**
KCTX				*e*Sg	**Sg**	**19 22 02.0**	**-0.7**
CTYL	**Yalikoy Yolu**	**0.76**	**33**	*e*PG	**Pb**	**19 21 53.6**	**-0.1**
CTYL	**Yalikoy Yolu**	**0.76**	**33**	*e*Pg	**Pb**	**19 21 53.7**	**-0.1**
GONE	**Gonen-Balikesi**	**0.79**	**183**	*e*PG	**Pg**	**19 21 53.4**	**-0.6**
GONE	**Gonen-Balikesi**	**0.79**	**183**	*e*Pg	**Pg**	**19 21 53.4**	**-0.6**
KESN	**Edirne-Kesan**	**0.81**	**270**	*i* P	**Pg**	**19 21 53.7**	**-0.7**
KESN				*i* S	**Sg**	**19 22 04.9**	**-0.2**
KESN	**Edirne-Kesan**	**0.81**	**270**	P	**Pg**	**19 21 53.7**	**-0.7**
KESN				S	**Sg**	**19 22 04.9**	**-0.2**
PHSR	**Pinarhisar**	**0.81**	**348**	*e*PG	**Pb**	**19 21 54.7**	**+0.1**
PHSR				*e*SG	**Sb**	**19 22 06.9**	**+1.4**
PHSR	**Pinarhisar**	**0.81**	**348**	*e*Pg	**Pb**	**19 21 54.7**	**+0.1**
PHSR				*e*Sg	**Sb**	**19 22 06.9**	**+1.4**
LPK	**Lapseki**	**0.88**	**239**	*e*PG	**Pg**	**19 21 55.0**	**-0.7**
LPK	**Lapseki**	**0.88**	**239**	*e*Pg	**Pg**	**19 21 55.0**	**-0.7**
SBT5	**Esenkoy-Cinarc**	**0.89**	**103**	*e*PG	**Pg**	**19 21 55.4**	**-0.5**
SBT5	**Esenkoy-Cinarc**	**0.89**	**103**	*e*Pg	**Pg**	**19 21 55.4**	**-0.5**
ARMT	**Armutlu**	**0.89**	**107**	*e*PG	**Pb**	**19 21 56.2**	**+0.3**
ARMT				*e*SG	**Sb**	**19 22 08.5**	**+0.8**
ARMT	**Armutlu**	**0.89**	**107**	*e*Pg	**Pb**	**19 21 56.2**	**+0.3**
ARMT				*e*Sg	**Sb**	**19 22 08.5**	**+0.8**
ERIK	**Erikli-Kesan**	**0.95**	**261**	*e*PG	**Pg**	**19 21 56.4**	**-0.6**
ERIK				*e*SG	**Sb**	**19 22 10.2**	**+0.9**
ERIK	**Erikli-Kesan**	**0.95**	**261**	*e*Pg	**Pg**	**19 21 56.4**	**-0.6**
ERIK				*e*Sg	**Sb**	**19 22 10.2**	**+0.9**
MDNY	**Mudanya-Bursa**	**0.98**	**118**	*e*PG	**Pb**	**19 21 57.5**	**0.0**
MDNY	**Mudanya-Bursa**	**0.98**	**118**	*e*Pg	**Pb**	**19 21 57.5**	**0.0**
ISK	**Istanbul-Kandi**	**1.02**	**76**	*e*PG	**Pg**	**19 21 57.7**	**-0.8**
ISK	**Istanbul-Kandi**	**1.02**	**76**	P	**Pg**	**19 21 57.0**	**-1.5**
ISK				S	**Sg**	**19 22 11.4**	**-0.5**
ISK	**Istanbul-Kandi**	**1.02**	**76**	P	**Pg**	**19 21 57.0**	**-1.5**
ISK	**Istanbul-Kandi**	**1.02**	**76**	*e*Pg	**Pg**	**19 21 57.7**	**-0.8**
ISK				S	**Sg**	**19 22 11.4**	**-0.5**
BUY	**Buyukada**	**1.04**	**88**	*i* P	**Pg**	**19 21 57.9**	**-1.0**
BUY				*i* S	**Sb**	**19 22 12.6**	**+0.5**
BUY	**Buyukada**	**1.04**	**88**	P	**Pg**	**19 21 57.8**	**-1.0**
BUY				S	**Sb**	**19 22 12.6**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.06**	**246**	*e*PG	**Pg**	**19 21 57.8**	**-1.3**
GELI				*e*SG	**Sn**	**19 22 14.1**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.06**	**246**	*e*Pg	**Pg**	**19 21 57.8**	**-1.3**
GELI				*e*Sg	**Sn**	**19 22 14.1**	**+0.5**
KLYT	**Kilyos**	**1.07**	**66**	*e*PN	**Pg**	**19 21 58.8**	**-0.5**
KLYT	**Kilyos**	**1.07**	**66**	*e*Pn	**Pg**	**19 21 58.8**	**-0.5**
BALY	**Balya**	**1.09**	**185**	*i* P	**Pg**	**19 21 58.6**	**-1.2**
BALY				*i* S	**Sn**	**19 22 15.2**	**+0.6**
BALB	**Balikesir**	**1.20**	**175**	*e*PN	**Pn**	**19 22 01.4**	**+0.4**
BALB	**Balikesir**	**1.20**	**175**	*e*Pn	**Pn**	**19 22 01.4**	**+0.4**
ENEZ	**Enez**	**1.21**	**266**	*e*PN	**Pn**	**19 22 01.6**	**+0.4**
ENEZ				*e*SN	**Sn**	**19 22 18.2**	**+0.9**
ENEZ	**Enez**	**1.21**	**266**	P	**Pg**	**19 22 00.5**	**-1.5**
ENEZ				S	**Sb**	**19 22 17.5**	**+0.7**
ENEZ	**Enez**	**1.21**	**266**	P	**Pg**	**19 22 00.5**	**-1.5**
ENEZ	**Enez**	**1.21**	**266**	*e*Pn	**Pn**	**19 22 01.6**	**+0.4**
ENEZ				S	**Sb**	**19 22 17.5**	**+0.7**
ENEZ				*e*Sn	**Sn**	**19 22 18.2**	**+0.9**
IGD	**Bursa**	**1.25**	**117**	*i* P	**Pg**	**19 21 59.8**	**-2.9**
IGD				*i* S	**Sg**	**19 22 16.9**	**-2.1**
EDRB	**Edirne**	**1.26**	**324**	*e*PN	**Pg**	**19 22 03.2**	**+0.2**
EDRB	**Edirne**	**1.26**	**324**	P	**Pn**	**19 22 01.3**	**-0.6**
EDRB				S	**Sb**	**19 22 18.8**	**+0.5**
EDRB	**Edirne**	**1.26**	**324**	P	**Pn**	**19 22 01.3**	**-0.6**
EDRB	**Edirne**	**1.26**	**324**	*e*Pn	**Pg**	**19 22 03.2**	**+0.2**
EDRB				S	**Sb**	**19 22 18.8**	**+0.5**
ALN	**Alexandroupoli**	**1.29**	**273**	*e*PN	**Pg**	**19 22 02.7**	**-0.8**
ALN	**Alexandroupoli**	**1.29**	**273**	P	**Pn**	**19 22 01.7**	**-0.5**
ALN				S	**Sb**	**19 22 19.5**	**+0.4**
ALN	**Alexandroupoli**	**1.29**	**273**	P	**Pn**	**19 22 01.7**	**-0.5**
ALN	**Alexandroupoli**	**1.29**	**273**	*e*Pn	**Pg**	**19 22 02.7**	**-0.8**
ALN				S	**Sb**	**19 22 19.5**	**+0.4**
IZI	**Iznik**	**1.41**	**110**	*e*PN	**Pn**	**19 22 04.2**	**+0.2**
IZI	**Iznik**	**1.41**	**110**	*e*Pn	**Pn**	**19 22 04.2**	**+0.2**
HRT	**Hereke**	**1.46**	**90**	*e*PN	**Pb**	**19 22 05.5**	**-0.2**
HRT	**Hereke**	**1.46**	**90**	*e*Pn	**Pb**	**19 22 05.5**	**-0.2**
SILT	**Sile**	**1.47**	**77**	*e*PN	**Pg**	**19 22 06.3**	**-0.7**
SILT	**Sile**	**1.47**	**77**	*e*Pn	**Pg**	**19 22 06.3**	**-0.7**
EZN	**Ezine**	**1.48**	**228**	*e*PN	**Pn**	**19 22 05.3**	**+0.5**
EZN	**Ezine**	**1.48**	**228**	*e*Pn	**Pn**	**19 22 05.3**	**+0.5**
GADA	**Gvkgeada**	**1.54**	**246**	*e*PN	**Pb**	**19 22 06.6**	**-0.4**
GADA	**Gvkgeada**	**1.54**	**246**	P	**Pn**	**19 22 04.9**	**-0.9**
GADA				S	**Sb**	**19 22 26.7**	**+0.3**
GADA	**Gvkgeada**	**1.54**	**246**	P	**Pn**	**19 22 04.9**	**-0.9**
GADA	**Gvkgeada**	**1.54**	**246**	*e*Pn	**Pb**	**19 22 06.6**	**-0.4**
GADA				S	**Sb**	**19 22 26.7**	**+0.3**
ADVT	**Abdulvahap**	**1.57**	**104**	*e*PN	**Pb**	**19 22 07.4**	**-0.1**
ADVT	**Abdulvahap**	**1.57**	**104**	*e*Pn	**Pb**	**19 22 07.4**	**-0.1**
BOZC	**Bozcaada**	**1.63**	**233**	*i* P	**Pn**	**19 22 06.7**	**-0.2**
BOZC				*i* S	**Sg**	**19 22 30.0**	**-1.0**
SMTH	**Samothraki Isl**	**1.72**	**259**	P	**Pn**	**19 22 07.3**	**-0.9**
SMTH				S	**Sb**	**19 22 32.4**	**+0.8**
SMTH	**Samothraki Isl**	**1.72**	**259**	P	**Pn**	**19 22 07.3**	**-0.9**
SMTH				S	**Sb**	**19 22 32.4**	**+0.8**
DKL	**Dikili**	**1.87**	**200**	*e*PN	**Pn**	**19 22 11.5**	**+1.2**
DKL	**Dikili**	**1.87**	**200**	*e*Pn	**Pn**	**19 22 11.5**	**+1.2**
TVSB	**Tavsanli**	**1.91**	**136**	*e*PN	**Pn**	**19 22 11.9**	**+1.1**
TVSB	**Tavsanli**	**1.91**	**136**	*e*Pn	**Pn**	**19 22 12.0**	**+1.1**
PRK	**Paraskevi**	**1.95**	**216**	P	**Pn**	**19 22 11.3**	**0.0**
PRK				S	**Sb**	**19 22 38.8**	**+0.8**
PRK	**Paraskevi**	**1.95**	**216**	P	**Pn**	**19 22 11.3**	**0.0**
PRK				S	**Sb**	**19 22 38.8**	**+0.8**
GULT	**Gulveren**	**2.15**	**100**	*e*PN	**Pn**	**19 22 15.8**	**+1.7**
GULT	**Gulveren**	**2.15**	**100**	*e*Pn	**Pn**	**19 22 15.8**	**+1.7**
SIGR	**SIGRI**	**2.17**	**222**	*e*PN	**Pn**	**19 22 16.1**	**+1.7**
SIGR	**SIGRI**	**2.17**	**222**	P	**Pn**	**19 22 15.1**	**+0.7**
SIGR				S	**Sb**	**19 22 44.0**	**-0.5**
SIGR	**SIGRI**	**2.17**	**222**	P	**Pn**	**19 22 15.1**	**+0.7**
SIGR	**SIGRI**	**2.17**	**222**	*e*Pn	**Pn**	**19 22 16.1**	**+1.7**
SIGR				S	**Sb**	**19 22 44.0**	**-0.5**
KULA	**Kula-Manisa**	**2.42**	**163**	*e*PN	**Pn**	**19 22 19.2**	**+1.3**
KULA	**Kula-Manisa**	**2.42**	**163**	*e*Pn	**Pn**	**19 22 19.2**	**+1.3**
CHOS	**Chios island**	**2.77**	**209**	*e*PN	**Pn**	**19 22 24.6**	**+1.9**
CHOS	**Chios island**	**2.77**	**209**	*e*Pn	**Pn**	**19 22 24.6**	**+1.9**
AYDB	**Zeytinkoy-Aydi**	**2.88**	**178**	*e*PN	**Pn**	**19 22 26.3**	**+2.0**
AYDB	**Zeytinkoy-Aydi**	**2.88**	**178**	*e*Pn	**Pn**	**19 22 26.3**	**+2.0**

*IDC **25** 19:36:47.8±0.9,17.55S×173.25W,h0km,mb4.1/11, mb1 4.3/11,mb1mx4.0/35,mbtmp4.1/11,MS3.6/4, Ms1 3.6/4,ms1mx3.1/39,Error ellipse: s-maj=38.2km s-min=19.0km az=137.0*
*ISCJB **25** 19:36:50.3±0.7,17.6S±0.1×173.3W±0.2,h28km,mb4.1/12, MS3.8/2,Error ellipse: s-maj=23.7km s-min=15.1km az=39.1*
*NEIC **25** 19:36:53.0±0.5,17.61S×173.26W,h35km,mb4.7/1,Error ellipse: s-maj=18.8km s-min=11.5km az=128.0*
ISC 25 19:36:52.2±0.7,17.6S±0.1×173.3W±0.2,h28km,n42,
σ0§67/38,mb4.2/12,1C,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu** 17nm,0.3s,baz=124,slow=4.2,SNR=14	**3.92**	**21**	Pn	Pn	19 37 41.3	-9.4
AFI	34nm,0.3s,baz=18,slow=20,SNR=7.7			Sn	Sn	19 38 20.8	-15
AFI	comp=Z,337nm,18.5s,baz=138,slow=42			LR	LR	19 39 31.4	
MSVF	**Nonsavu**	**8.29**	**268**	*e*Pn	Pn	19 39 00.9	+10
RAR	**Rarotonga** 1.4nm,0.3s,baz=259,slow=10,SNR=4.0	**13.22**	**108**	Pn	Pn	19 39 47.4	-11
DZM	**Mont Dzumac** comp=Z,210nm,18.1s,baz=206,slow=35	**19.61**	**254**	LR	LR	19 48 08.5	
URZ	**Urewera** 8.0nm,0.5s,baz=277,

9.5nm,0.8s,baz=140,slow=6.7,SNR=13

PETK	**Petropavlovsk-**	**63.35 357**	P	**P**	**20 07 11.5**	**-0.1**
	3.8nm,0.9s,baz=131,slow=6.1,SNR=5.1					
VNDA	**Vanda**	**67.12 180**	P	**P**	**20 07 35.7**	**-0.1**
	0.4nm,0.8s,baz=354,slow=5.1,SNR=3.1					
CMAR	**Chiang Mai Arr**	**68.64 294**	P	**P**	**20 07 45.4**	**-1.0**
	0.3nm,0.4s,baz=101,slow=4.8,SNR=3.5					
SONM	**Songino Array**	**76.08 325**	P	**P**	**20 08 30.5**	**+0.2**
	6.0nm,0.7s,baz=141,slow=5.8,SNR=36					
ILAR	**Eielson Array**	**84.03 20**	P	**P**	**20 09 11.8**	**-0.7**
	0.6nm,0.6s,baz=250,slow=5.4,SNR=4.4					
MKAR	**Makanchi Array**	**90.65 317**	P	**P**	**20 09 44.6**	**-0.4**
	1.5nm,0.7s,baz=99,slow=6.0,SNR=12					
ZALV	**Zalesovo Beam**	**90.98 325**	P	**P**	**20 09 44.9**	**-1.5**
	1.4nm,0.7s,baz=96,slow=5.5,SNR=5.3					
ESDC	**Sonseca Array**	**148.32 339**	PKPbc	**PKPbc**	**20 16 29.0**	**0.0**
	0.3nm,0.5s,baz=31,slow=2.6,SNR=4.4					

ISCJB ***25*** *19:58:48.4±0.8,32.24N±0.04×115.24W±0.06,h20km±8km, Error ellipse: s-maj=9.0km s-min=5.6km az=147.5*
MEX ***25*** *19:58:50.4±0.5,32.27N×115.19W,h13km±116km, MD3.7*
ECX ***25*** *19:58:50.0±0.5,32.21N×115.29W,h6km, MD2.0,ML2.3*

ISC 25 19:58:48.1±1.0,32°22'N±0'.03×115°29'W±0'.05,h14km±9km, n12,σ0°37/19,1C-2D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.20**	**357**	*eP*		**Pb**	**19 58 53.8**	**+0.1**
CPBX				*eS*		**Sb**	**19 58 57.4**	**+0.1**
CPBX				IAML			19 59 00.8	
	comp=E,2μm,0.3s							
CPBX				⇓*e*			19 59 00.8	
CPBX				IAML			19 59 01.4	
	comp=N,2μm,0.2s							
CPBX				⇓*e*			19 59 01.4	
MBIG	**Mexicali**	**0.21**	**22**	*eP*		**Pg**	**19 58 53.0**	**+0.2**
MBIG				*i* S		**Sg**	**19 58 55.2**	**-0.7**
RMX	**La Rumorosa**	**0.77**	**300**	IAML			19 59 14.8	
	comp=E,98nm,0.2s							
RMX				*e*			19 59 14.8	
ECBX	**El Chinero**	**0.77**	**165**	*eP*		**Pg**	**19 59 03.1**	**+0.1**
ECBX				*eS*		**Sg**	**19 59 14.0**	**+0.8**
IKP	**In-Ko-Pah, Jac**	**0.82**	**302**	*eP*		**Pb**	**19 59 04.4**	**+0.3**
IKP				*eS*		**Sb**	**19 59 15.3**	**+0.3**
CBX	**Cerro Bola**	**1.17**	**275**	*eP*		**Pn**	**19 59 10.0**	**-0.2**
CBX				*eS*		**Sb**	**19 59 24.9**	**-0.3**
CBX	**Cerro Bola**	**1.17**	**275**	*eP*		**Pb**	**19 59 10.4**	**+0.3**
CBX				*eS*		**Sn**	**19 59 25.9**	**-0.1**
CBX				⇑*e*			19 59 27.2	
CBX				IAML			19 59 27.2	
	comp=E,80nm,0.6s							
SPIG	**San Pedro Mart**	**1.18**	**187**	*eP*		**Pn**	**19 59 10.3**	**-0.2**
SPIG				*eS*		**Sb**	**19 59 25.2**	**-0.4**
SPIG	**San Pedro Mart**	**1.18**	**187**	*eP*		**Pb**	**19 59 10.4**	**0.0**
TJIG	**Tijuana**	**1.19**	**281**	*eP*		**Pn**	**19 59 10.2**	**-0.2**
TJIG				*eS*		**Sb**	**19 59 25.5**	**-0.3**
BAR	**Barrett**	**1.26**	**292**	*eP*		**Pb**	**19 59 11.9**	**+0.3**
PBX	**Punta Banda**	**1.31**	**249**	*eS*		**Sg**	**19 59 30.2**	**-0.1**

ISCJB ***25*** *20:06:06.7±0.6,37.15N±0.04×28.13E±0.04,h5km±9km, Error ellipse: s-maj=7.6km s-min=4.4km az=28.7*
DDA ***25*** *20:06:07.1,37.18N×28.08E,h7km, Ml2.6*
ISK ***25*** *20:06:07.0,37.16N×28.11E,h5km, MD2.5*
CSEM ***25*** *20:06:07.6±0.2,37.16N×28.09E,h2km, MD2.5, Error ellipse: s-maj=5.2km s-min=3.5km az=30.0*

ISC 25 20:06:07.4±1.0,37°15'N±0'.04×28°09'E±0'.03,h10km±12km, n17,σ0°87/30,Turkey

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
MLSB	**Milas**	**0.29**	**300**	*eP*G		**Pg**	**20 06 13.4**	**+0.1**
MLSB				*eS*G		**Sg**	**20 06 17.6**	**+0.4**
MLSB	**Milas**	**0.29**	**300**	*eP*g		**Pg**	**20 06 13.4**	**+0.1**
MLSB				*eS*g		**Sg**	**20 06 17.6**	**+0.4**
TURN	**Turunc**	**0.49**	**124**	*i* P		**Pg**	**20 06 14.7**	**-2.2**
TURN				*i* S		**Sg**	**20 06 22.1**	**-1.4**
BDRM	**Kayabasi**	**0.52**	**261**	*i* P		**Pg**	**20 06 17.2**	**-0.4**
BDRM				*i* S		**Sg**	**20 06 25.3**	**+0.8**
BDRM	**Kayabasi**	**0.52**	**261**	P		**Pg**	**20 06 17.2**	**-0.4**
BDRM				S		**Sg**	**20 06 25.3**	**+0.8**
DALY	**Dalyan (Mu¨la**	**0.56**	**126**	*e*PG		**Pg**	**20 06 18.1**	**-0.1**
DALY	**Dalyan (Mu¨la**	**0.56**	**126**	*e*Pg		**Pg**	**20 06 18.1**	**-0.1**
BODT	**Bodrum**	**0.63**	**262**	*e*PG		**Pb**	**20 06 20.1**	**-0.4**
BODT				*e*SG		**Sb**	**20 06 29.4**	**0.0**
BODT	**Bodrum**	**0.63**	**262**	*e*Pg		**Pb**	**20 06 20.1**	**-0.4**
BODT				*e*Sg		**Sb**	**20 06 29.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.81**	**349**	*e*PG		**Pg**	**20 06 22.9**	**-0.2**
AYDB				*e*SG		**Sb**	**20 06 34.8**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.81**	**349**	*e*Pg		**Pg**	**20 06 22.9**	**-0.2**
AYDB				*e*Sg		**Sb**	**20 06 34.8**	**0.0**
GCAM	**G?zelcaml?**	**0.88**	**309**	*i* P		**Pg**	**20 06 23.7**	**-0.6**
GCAM				*i* S		**Sg**	**20 06 35.8**	**+0.1**
GCAM	**G?zelcaml?**	**0.88**	**309**	P		**Pg**	**20 06 23.7**	**-0.6**
GCAM				S		**Sg**	**20 06 35.8**	**+0.1**
NIS1	**Nisyros Isl.**	**0.91**	**234**	*e*PG		**Pb**	**20 06 25.2**	**-0.1**
NIS1	**Nisyros Isl.**	**0.91**	**234**	*e*Pg		**Pb**	**20 06 25.2**	**-0.1**
AKAS	**Kas**	**1.52**	**126**	*i* P		**Pb**	**20 06 36.0**	**+0.2**
AKAS				*i* S		**Sg**	**20 06 58.5**	**+2.2**
AKAS	**Kas**	**1.52**	**126**	P		**Pb**	**20 06 36.0**	**+0.2**
AKAS				S		**Sg**	**20 06 58.5**	**+2.2**

IDC ***25*** *20:11:20.2±0.8,23.67S×175.33W,h0km, mb4.2/12, mb1 4.2/12,mb1mx4.1/34,mbtmp4.2/12,MS3.3/2, Ms1 3.3/2,ms1mx2.8/25, Error ellipse: s-maj=29.0km s-min=23.9km az=125.0*
ISCJB ***25*** *20:11:23.7±0.7,23.8S±0.1×175.4W±0.1,h30km, mb4.2/16, Error ellipse: s-maj=18.5km s-min=17.3km az=146.4*
NEIC ***25*** *20:11:28.4±3.1,23.72S×175.37W,h59km±24km, mb4.6/3, Error ellipse: s-maj=24.5km s-min=18.2km az=120.0*

ISC 25 20:11:24.8±0.7,23°8S±0'.1×175°2W±0'.2,h30km,n26, σ1°13/25,mb4.3/16,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
MSVF	**Nonsavu**	**8.68**	**312**	*eP*		**Pn**	**20 13 30.0**	**+1.5**
	55nm,1.0s							
RAR	**Rarotonga**	**14.51**	**83**	Pn		Pn	20 14 39.9	-8.3
	2.1nm,0.3s,baz=260,slow=12,SNR=10							
RAR				Sn		Sn	20 17 05.1	-23
	1.1nm,0.3s,baz=95,slow=12,SNR=2.5							
RAR				LR		LR	20 19 19.2	
	comp=Z,123nm,19.2s,baz=308,slow=33							
DZM	**Mont Dzumac**	**16.97**	**272**	LR		LR	20 20 18.5	
	comp=Z,97nm,18.1s,baz=43,slow=32							
STKA	**Stephens Creek**	**36.84**	**248**	P		**P**	**20 18 47.3**	**-0.1**
	0.8nm,0.6s,baz=79,slow=11,SNR=3.1							
ASAR	**Alice Springs**	**46.36**	**259**	P		**P**	**20 19 48.0**	**-0.7**
	2.3nm,0.9s,baz=93,slow=7.9,SNR=17							
ASAR	**Alice Springs**	**46.36**	**259**	P		**P**	**20 19 48.0**	**-0.7**
WRAB	**Tennant Creek**	**46.77**	**264**	*eP*		**P**	**20 19 49.9**	**-1.9**
	2.2nm,0.9s							
WRA	**Warramunga Arr**	**46.77**	**264**	P		**P**	**20 19 49.8**	**-2.1**
	2.5nm,0.8s,baz=96,slow=8.3,SNR=30							
PMSA	**Palmer Station**	**77.30**	**156**	P		**P**	**20 23 17.9**	**+1.8**
	3.4nm,0.5s,baz=241,slow=15,SNR=4.3							
ASAJ	**Asahikawa**	**77.80**	**330**	P		**P**	**20 23 19.1**	**0.0**
	7.5nm,0.8s,baz=158,slow=5.4							
MAW	**Mawson**	**79.38**	**199**	P		**P**	**20 23 27.4**	**-0.2**
	0.8nm,0.5s,baz=144,slow=7.6,SNR=2.5							
PETK	**Petropavlovsk-**	**80.07**	**344**	P		**P**	**20 23 30.4**	**-1.0**
	3.4nm,0.8s,baz=131,slow=5.9,SNR=5.0							
KSRS	**Korea Array**	**81.01**	**318**	P		**P**	**20 23 36.9**	**+0.1**
	0.8nm,0.6s,baz=129,slow=6.5,SNR=4.0							
KSAR	**Wonju Array Be**	**81.02**	**318**	P		**P**	**20 23 36.9**	**0.0**
USRK	**Ussuriysk Ar.**	**83.08**	**325**	P		**P**	**20 23 47.8**	**+0.3**
	4.3nm,0.8s,baz=93,slow=3.4,SNR=10							
KLR	**Kul'dur**	**86.62**	**328**	P		**P**	**20 24 06.4**	**+1.2**
	1.9nm,1.0s,baz=158,slow=3.1,SNR=4.1							
TXAR	**Lajitas Array**	**86.68**	**56**	P		**P**	**20 24 06.4**	**+0.3**
	0.1nm,0.3s,baz=245,slow=5.9,SNR=2.8							
ENH	**Enshi**	**89.97**	**303**	*eP*		**P**	**20 24 21.9**	**+0.3**
	2.4nm,0.5s							
ILAR	**Eielson Array**	**90.92**	**12**	P		**P**	**20 24 24.1**	**-1.1**
	0.2nm,0.5s,baz=226,slow=6.1,SNR=3.9							
CMAR	**Chiang Mai Arr**	**93.60**	**288**	P		**P**	**20 24 40.4**	**+1.7**
	4.3nm,1.0s,baz=130,slow=3.1,SNR=19							
CHTO	**Chiang Mai**	**93.74**	**289**	*eP*		**P**	**20 24 40.4**	**+1.0**
	4.5nm,1.1s							

KURK	**Kurchatov**	**118.11**	**316**	PKP	**PKPdf**	**20 30 07.6**	**-1.0**
KURBB	**Kurchatov Arra**	**118.16**	**316**	PKP	**PKPdf**	**20 30 07.6**	**-1.1**
	0.6nm,1.0s,baz=98,slow=2.5,SNR=4.9						
AKASG	**Malin Array Be**	**147.08**	**331**	PKPbc	**PKPdf**	**20 31 03.2**	**+0.7**
	1.2nm,0.6s,baz=40,slow=4.2,SNR=5.7						
BRTR	**Keskin Array B**	**150.90**	**310**	PKPbc	**PKPbc**	**20 31 13.3**	**-1.6**
	1.9nm,1.0s,baz=66,slow=4.2,SNR=6.6						
BRTR				PKPab	**PKPab**	**20 31 22.2**	**0.0**
	0.9nm,0.8s,baz=29,slow=2.8,SNR=4.3						
GERES	**GERESS Array B**	**153.97**	**346**	PKPab	**PKPab**	**20 31 34.0**	**-0.7**
	0.5nm,0.9s,baz=25,slow=3.5,SNR=3.8						

MEX 25 20:24:00.3±0.5,15°55N×93°17W,h97km±43km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
CCIG	**Comitan**	**1.23**	**53**	*eP*		Pn	20 24 21.6	-1.7
CCIG				*eS*		Sn	20 24 39.2	-1.4

IDC ***25*** *20:25:17.2±1.6,36.84N×141.03E,h0km,mb3.6/2, mb1 3.8/2,mb1mx3.1/44,mbtmp3.6/2,ML2.2/1, Error ellipse: s-maj=35.2km s-min=28.9km az=82.0*
JMA ***25*** *20:25:23.7,37.00N×140.50E,h6km±1km,M2.3*

ISC 25 20:25:22.0±1.1,36°95N±0'.05×140°65E±0'.07,h29km±9km, n9,σ0°89/15,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**38**	P		**Pn**	**20 25 29.0**	**0.0**
ONAJ				S		**Sb**	**20 25 32.9**	**+0.7**
JHO	**Hitachi**	**0.34**	**191**	P		**Pn**	**20 25 31.3**	**+0.3**
JHO				S		**Sn**	**20 25 36.6**	**-0.4**
JFK	**Kawauchi**	**0.45**	**23**	P		**Pn**	**20 25 32.9**	**+0.3**
JFK				S		**Sn**	**20 25 39.5**	**-0.2**
JSB	**Shiboa**	**0.58**	**272**	P		**Pb**	**20 25 33.6**	**-0.1**
JFT	**Otama**	**0.62**	**336**	P		**Pb**	**20 25 34.2**	**-0.1**
JFT				S		**Sb**	**20 25 41.5**	**-1.3**
MJAR	**Matsushiro Arr**	**2.00**	**259**	Pn		**Pb**	**20 25 56.8**	**-0.9**
	0.7nm,0.3s,baz=80,slow=16,SNR=6.2							
MJAR				Sn		**Sb**	**20 26 23.6**	**+1.4**
	1.2nm,0.3s,baz=81,slow=17,SNR=8.0							
MAT	**Matsushiro**	**2.00**	**259**	P		**Pb**	**20 25 56.9**	**-0.8**
MAT				S		**Sb**	**20 26 22.7**	**+0.5**
WRA	**Warramunga Arr**	**56.90**	**187**	P		**P**	**20 35 03.2**	**-1.0**
	0.1nm,0.6s,baz=4.7,slow=7.4,SNR=3.7							
FINES	**FINESS Array B**	**68.60**	**332**	P		**P**	**20 36 23.1**	**+1.3**
	0.8nm,0.4s,baz=39,slow=7.1,SNR=15							

ISCJB ***25*** *20:25:45.8±1.4,42.80N±0.08×145.8E±0.1,h49km±9km, mb3.4/4,MS3.9/1, Error ellipse: s-maj=15.5km s-min=10.4km az=143.5*
JMA ***25*** *20:25:45.9±0.1,42.79N×145.79E,h45km±2km,M3.5*
IDC ***25*** *20:25:49.5±2.3,44.32N×145.31E,h0km,mb3.5/4, mb1 3.6/5,mb1mx3.4/42,mbtmp3.5/5,ML3.5/1,MS3.9/1, Ms1 3.9/1,ms1mx2.7/36, Error ellipse: s-maj=53.1km s-min=29.1km az=151.0*

ISC 25 20:25:46.6±1.6,42°8N±0'.1×145°8E±0'.2,h39km±7km, n14, σ0°51/18,mb3.4/4,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
NEM2	**Nemuro 2**	**0.56**	**355**	P		**Pn**	**20 25 57.9**	**-0.2**
NEM2				*eS*		**Sn**	**20 26 06.5**	**+0.3**
JAK	**Akkeshi**	**0.84**	**284**	P		**Pn**	**20 26 01.4**	**-0.4**
JAK				*eS*		**Sn**	**20 26 13.3**	**+0.4**
JNK	**Nakash**	**1.11**	**315**	P		**Pn**	**20 26 05.1**	**-0.5**
JNK				*eS*		**Sn**	**20 26 18.9**	**-0.8**
JRA	**Rausu**	**1.24**	**336**	P		**Pn**	**20 26 07.3**	**0.0**
JRA				*eS*		**Sn**	**20 26 22.8**	**+0.1**
JOB	**Onbets**	**1.45**	**275**	P		**Pn**	**20 26 10.0**	**-0.3**
JAR	**Ashorobuto**	**1.57**	**289**	P		**Pn**	**20 26 11.6**	**-0.3**
JAR				*eS*		**Sn**	**20 26 31.2**	**+0.2**
JTKR	**Abashiri--Toko**	**1.81**	**311**	P		**Pn**	**20 26 15.6**	**+0.5**
JTKR				*eS*		**Sn**	**20 26 38.0**	**+1.2**
JCH	**Churui**	**1.81**	**265**	P		**Pn**	**20 26 15.4**	**+0.2**
MJAR	**Matsushiro Arr**	**8.57**	**226**	Pn		Pn	20 28 07.2	+19
	0.4nm,0.3s,baz=47,slow=11,SNR=4.0							
SONM	**Songino Array**	**27.94**	**294**	P		**P**	**20 31 33.5**	**+0.3**
	0.6nm,0.5s,baz=83,slow=7.1,SNR=6.0							
ILAR	**Eielson Array**	**42.83**	**36**	P		**P**	**20 33 40.5**	**+0.2**
	0.5nm,0.6s,baz=275,slow=9.2,SNR=6.9							
MKAR	**Makanchi Array**	**44.16**	**298**	P		**P**	**20 33 50.8**	**-0.5**
	0.4nm,0.7s,baz=73,slow=9.8,SNR=2.8							
KURBB	**Kurchatov Arra**	**45.33**	**304**	P		**P**	**20 34 00.5**	**0.0**
	0.3nm,0.5s,baz=73,slow=8.9,SNR=2.7							
BVAR	**Borovoye Array**	**49.34**	**10**	LR		LR	20 57 14.1	
	comp=Z,133nm,21.8s,baz=84,slow=39							

NIED ***25*** *20:35:00,36.20N×141.10E,h17km,Mw4.1 Best double couple: M0 1.35000×10¹⁵ NP1:φ=230.0000°,δ43.00000°, λ-131.00000°. NP2:φ=99.00000°,δ59.00000°, λ-59.00000°.*
NEIC ***25*** *20:35:23.1±2.9,36.20N×141.01E,h12km±18km, mb4.5/6, Error ellipse: s-maj=9.0km s-min=5.6km az=131.0*
NEIC Recorded [3 JMA] in Ibaraki.
ISCJB ***25*** *20:35:24.2±0.7,36.24N±0.03×141.01E±0.05,h32km±4km, mb4.2/24, Error ellipse: s-maj=6.7km s-min=4.7km az=179.5*
JMA ***25*** *20:35:24.3,36.20N×141.02E,h36km±1km,M4.3*
JMA Felt III J1.
IDC ***25*** *20:35:25.7±2.6,36.20N×140.98E,h28km±18km, mb3.9/19, mb1 4.0/24,mb1mx3.9/55,mbtmp4.0/24,ML2.8/5, Error ellipse: s-maj=15.1km s-min=11.8km az=89.0*

ISC 25 20:35:25.0±1.4,36°25N±0'.04×141°01E±0'.06,h23km±10km, n57,σ1°04/62,mb4.1/24,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
JHO	**Hitachi**	**0.50**	**315**	P		**Pb**	**20 35 35.4**	**+0.2**
JHO				S		**Sb**	**20 35 43.0**	**+0.8**
CHOJ	**Chosi**	**0.56**	**193**	P		**Pn**	**20 35 35.0**	**-2.6**
CHOJ				*eS*		**Sb**	**20 35 42.8**	**-1.0**
JYT	**Yasato**	**0.66**	**268**	P		**Pn**	**20 35 37.5**	**-1.4**
JYT				S		**Sn**	**20 35 47.0**	**-1.5**
ONAJ	**Iwakimizuishiy**	**0.86**	**349**	P		**Pn**	**20 35 40.7**	**-1.1**
ONAJ				S		**Sn**	**20 35 51.3**	**-2.4**
I30JP	**ISUMI INFRASON**	**1.10**	**211**	Pg		**Pn**	**20 35 45.0**	**+0.1**
	baz=37,slow=16,SNR=1.0							
JFK	**Kawauchi**	**1.12**	**354**	P		**Pn**	**20 35 43.9**	**-1.3**
JFK				S		**Sn**	**20 35 57.4**	**-2.5**
MJAR	**Matsushiro Arr**	**2.28**	**278**	Pn		**Pn**	**20 36 01.2**	**+0.1**
	23nm,0.3s,baz=93,slow=9.7,SNR=97							
MJAR				Sn		**Sn**	**20 36 29.6**	**+1.1**
	31nm,0.3s,baz=74,slow=19,SNR=9.0							
MAJO	**Matsushiro**	**2.28**	**278**	*e*Pn		**Pn**	**20 36 01.2**	**0.0**
MAT	**Matsushiro**	**2.28**	**278**	P		**Pn**	**20 36 01.4**	**+0.2**
MAT				S		**Sn**	**20 36 27.0**	**-1.6**
JHJ	**Hachijo jima 2**	**3.29**	**198**	Pn		**Pn**	**20 36 14.7**	**-0.4**
	16nm,0.3s,baz=340,slow=22,SNR=15							
JHJ				Sn		**Sn**	**20 36 54.2**	**+0.8**
	119nm,0.3s,baz=223,slow=23,SNR=7.3							
ERM	**Erimo**	**5.99**	**16**	*e*Pn		**Pn**	**20 36 51.0**	**-1.1**
	14nm,0.4s							
ASAJ	**Asahikawa**	**7.95**	**8**	*e*Pn		**Pn**	**20 37 17.4**	**-1.6**
	4.1nm,0.5s							
JNU	**Nakatsue**	**8.91**	**252**	Pn		**Pn**	**20 37 32.4**	**+0.1**
	0.0nm,0.3s,baz=116,slow=16,SNR=2.8							
USRK	**Ussuriysk Ar.**	**10.51**	**322**	Pn		**Pn**	**20 37 55.5**	**+1.4**
	0.2nm,0.3s,baz=135,slow=14,SNR=2.5							
KSRS	**Korea Array**	**10.56**	**280**	Pn		**Pn**	**20 37 55.5**	**+0.8**
	0.0nm,0.3s,baz=82,slow=12,SNR=5.8							
KSAR	**Wonju Array Be**	**10.59**	**280**	Pn		**Pn**	**20 37 55.5**	**+0.3**
PETK	**Petropavlovsk-**	**20.52**	**30**	P		**P**	**20 40 02.8**	**+1.4**
	4.4nm,1.0s,baz=204,slow=6.5,SNR=4.4							
ENH	**Enshi**	**26.95**	**266**	*eP*		**P**	**20 41 04.0**	**-0.8**
	5.0nm,0.7s							
SEY	**Seymchan**	**27.62**	**11**	P		**P**	**20 41 09.5**	**-0.8**
	2.5nm,0.8s,baz=238,slow=14,SNR=2.3							
SONM	**Songino Array**	**27.96**	**305**	P		**P**	**20 41 13.3**	**-0.5**
	0.7nm,0.6s,baz=108,slow=9.3,SNR=4.5							
H11N2	**WAKE ISLAND Hy**	**28.04**	**119**	T		T	21 10 21.4	
	baz=311,slow=75,SNR=104							
H11N1	**WAKE ISLAND Hy**	**28.05**	**119**	T		T	21 10 30.3	
	baz=311,slow=75,SNR=108							
H11N3	**WAKE ISLAND Hy**	**28.06**	**119**	T		T	21 10 27.8	
	baz=311,slow=75,SNR=116							

TGY	**Tagaytay City**	**28.46**	**224**	P	**P**	**20 41 18.3**	**0.0**
	170nm,0.4s,baz=257,slow=8.1,SNR=2.1						
H11S1	**WAKE ISLAND Hy**	**28.72**	**121**	T	T	21 11 21.7	
	SNR=260						
H11S3	**WAKE ISLAND Hy**	**28.72**	**121**	T	T	21 11 19.9	
	baz=312,slow=74,SNR=187						
H11S2	**WAKE ISLAND Hy**	**28.74**	**121**	T	T	21 11 22.9	
	baz=257,slow=74,SNR=199						
ZALV	**Zalesovo Beam**	**42.20**	**313**	P	**P**	**20 43 16.1**	**+0.3**
	1.6nm,0.5s,baz=93,slow=8.9,SNR=11						
ZALV				PcP	**PcP**	**20 45 08.6**	**-1.0**
	0.8nm,0.6s,baz=116,slow=3.4,SNR=3.7						
MKAR	**Makanchi Array**	**44.26**	**303**	P	**P**	**20 43 33.4**	**+0.8**
	1.2nm,0.7s,baz=90,slow=10,SNR=9.5						
MKAR				PcP	**PP**	**20 45 15.5**	**-0.3**
	0.6nm,0.8s,baz=90,slow=2.9,SNR=2.3						
KURK	**Kurchatov**	**46.16**	**309**	PcP	**PcP**	**20 45 22.8**	**-0.4**
KURBB	**Kurchatov Arra**	**46.23**	**309**	PcP	**PcP**	**20 45 22.8**	**-0.7**
	0.3nm,0.5s,baz=78,slow=4.0,SNR=2.8						
PPLA	**Purkeypile**	**47.99**	**35**	*eP*	**P**	**20 44 03.3**	**+1.4**
ILAR	**Eielson Array**	**50.33**	**32**	P	**P**	**20 44 20.1**	**+0.6**
	4.6nm,0.8s,baz=269,slow=6.4,SNR=56						
ILAR				PcP	**PcP**	**20 45 39.9**	**+1.9**
	0.3nm,0.4s,baz=265,slow=4.5,SNR=2.7						
BVAR	**Borovoye Array**	**50.86**	**313**	P	**P**	**20 44 24.2**	**+0.5**
	0.4nm,0.4s,baz=80,slow=10,SNR=2.3						
FITZ	**Fitzroy Crossi**	**55.98**	**198**	*eP*	**P**	**20 44 59.5**	**-2.0**
WRAB	**Tennant Creek**	**56.23**	**188**	*eP*	**P**	**20 45 02.3**	**-1.1**
WRA	**Warramunga Arr**	**56.24**	**188**	P	**P**	**20 45 02.4**	**-1.0**
	2.0nm,0.5s,baz=5.0,slow=7.4,SNR=49						
ARU	**Arti**	**56.73**	**319**	P	**P**	**20 45 06.6**	**0.0**
	6.0nm,0.5s,baz=82,slow=6.6,SNR=11						
ARU	**Arti**	**56.73**	**319**	*eP*	**P**	**20 45 06.5**	**0.0**
	9.0nm,0.8s						
ABKAR	**Akbulak array**	**58.20**	**310**	*eP*	**P**	**20 45 16.4**	**-0.6**
	6.5nm,0.6s						
AKTO	**Aktyubinsk**	**58.95**	**312**	P	**P**	**20 45 22.4**	**+0.1**
	0.8nm,0.5s,baz=90,slow=6.1,SNR=3.2						
ASAR	**Alice Springs**	**59.97**	**188**	P	**P**	**20 45 28.9**	**-0.6**
	1.0nm,0.6s,baz=18,slow=6.2,SNR=16						
YKA	**Yellowknife Ar**	**64.64**	**30**	P	**P**	**20 46 01.1**	**+0.7**
	1.9nm,0.8s,baz=297,slow=6.6,SNR=7.3						
STKA	**Stephens Creek**	**67.78**	**179**	P	**P**	**20 46 20.1**	**-0.6**
	0.6nm,0.6s,baz=315,slow=14,SNR=2.0						
FINES	**FINESS Array B**	**69.35**	**332**	P	**P**	**20 46 29.7**	**-0.6**
	2.2nm,0.7s,baz=72,slow=6.2,SNR=6.5						
BMO	**Blue Mountains**	**72.70**	**47**	*eP*	**P**	**20 46 52.2**	**+1.1**
	1.7nm,0.9s						
AKASG	**Malin Array Be**	**74.71**	**322**	P	**P**	**20 47 02.4**	**-0.3**
	0.9nm,0.5s,baz=52,slow=7.7,SNR=4.1						
NB2	**NORSAR Subarra**	**74.78**	**337**	P	**P**	**20 47 02.7**	**-0.2**
	comp=Z,1.2nm,0.5s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.78**	**337**	P	**P**	**20 47 03.2**	**+0.3**
	comp=Z,1.5nm,0.8s,baz=42,slow=5.4,SNR=5.4						
EGMT	**Eagleton**	**75.07**	**41**	*eP*	**P**	**20 47 05.6**	**+0.7**
	comp=Z,3.8nm,0.8s						
DLMT	**Dillon**	**75.12**	**44**	*eP*	**P**	**20 47 06.6**	**+1.3**
	comp=Z,3.3nm,0.7s						
PDAR	**Pinedale Array**	**78.44**	**45**	P	**P**	**20 47 24.8**	**+0.5**
	comp=Z,1.3nm,0.6s,baz=249,slow=2.3,SNR=12						
CLL	**Collm**	**81.61**	**330**	*e*(P)	**P**	**20 47 41.0**	**+0.2**
CLL				*i*		20 47 49.9	
GERES	**GERESS Array B**	**83.20**	**328**	P	**P**	**20 47 49.4**	**+0.1**
	comp=Z,0.5nm,0.5s,baz=36,slow=7.1,SNR=5.7						
TXAR	**Lajitas Array**	**90.86**	**52**	P	**P**	**20 48 27.4**	**+0.4**
	0.2nm,0.8nm,0.8s

MDJ ScP **ScP** **20 51 52.5 -1.7**
MDJ PcS **PcS** **20 52 00.0 +1.1**
MDJ pmax pmax
comp=N,28nm,1.0s
MDJ pmax pmax
comp=N,88nm,8.1s
MDJ LR LR
comp=N,190nm,29.5s
MDJ LR LR
comp=N,280nm,30.6s
MDJ LR LR
comp=N,460nm,21.9s
MDJ Mudanjiang 10.98 307 *e*Pn Pn 20 42 33.5 +4.3
KSRS Korea Array 11.03 269 P **Pn** **20 42 33.1 +3.3**
comp=N,1.5nm,0.3s,baz=80,slow=14,SNR=38
KSRS LR LR 20 46 26.7
comp=N,366nm,20.6s,baz=84,slow=35
KS01 Wonju Array Si 11.04 269 *e*Pn **Pn** **20 42 33.8 +3.7**
KS15 Wonju Array Si 11.06 269 *e*Pn Pn 20 42 35.1 +4.8
KSAR Wonju Array Be 11.06 269 P **Pn** **20 42 33.1 +2.8**
KSAR Wonju Array Be 11.06 269 P **Pn** **20 42 33.1 +2.8**
TYV Tymovskoe 12.33 2 *e*P Pn 20 42 39.2 -8.4
TYV pmax pmax
comp=Z,22nm,1.0s
KLR Kul'dur 12.90 329 P **Pn** **20 42 56.4 +0.9**
comp=Z,0.4nm,0.3s,baz=155,slow=12,SNR=6.9
KLR LR LR 20 47 51.5
comp=Z,391nm,19.9s,baz=142,slow=37
KLR Kul'dur 12.90 329‖ *e*P **Pn** **20 42 55.8 +0.3**
CN2 Changchun 13.40 298 *e*P **P** **20 43 07.0 -3.8**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,200nm,17.0s
CN2 LR LR
comp=Z,200nm,17.0s
CN2 LR LR
comp=Z,300nm,21.0s
PEA0 Petropavlovsk- 18.23 32 *e*P **P** **20 44 02.2 -2.0**
PETK Petropavlovsk- 18.23 32 P **P** **20 43 59.5 -4.7**
comp=Z,0.2nm,0.3s,baz=218,slow=12,SNR=3.1
PETK LR LR 20 51 06.6
comp=Z,53nm,18.0s,baz=218,slow=37
PET Petropavlovsk 18.57 33 *e*P **Pn** **20 44 09.8 +1.3**
PET pmax pmax
comp=Z,16nm,1.3s
HIA Hailar 19.11 311 *e*P **P** **20 44 14.0 +0.1**
HIA pmax pmax
comp=Z,13nm,0.9s
HIA Hailar 19.11 311 *e*P **P** **20 44 14.0 +0.1**
comp=Z,13nm,0.9s
TIA Tai'an 19.75 271 ‖P **P** **20 44 20.3 -0.7**
TIA pmax pmax
comp=Z,30nm,1.0s
NJ2 Nanjing 19.81 258 *e*P **P** **20 44 21.0 -0.6**
NJ2 pmax pmax
comp=Z,34nm,0.8s
BJI Beijing 19.89 282 P **P** **20 44 20.3 -2.2**
BJI S **S** **20 47 59.8 -4.1**
BJI pmax pmax
comp=Z,30nm,0.7s
BJI pmax pmax
comp=Z,100nm,3.6s
BJI LR LR
comp=Z,170nm,15.1s
BJI LR LR
comp=Z,170nm,23.5s
BJI LR LR
comp=Z,250nm,30.2s
BJT Baijiatuau 19.90 282 *e*P **P** **20 44 21.2 -1.4**
BJT pmax pmax
comp=Z,23nm,0.6s
BJT Baijiatuau 19.90 282 *e*P **P** **20 44 21.2 -1.4**
comp=Z,23nm,0.6s
CLNS Chul'man 21.45 334 *e*P **P** **20 44 36.6 -2.6**
CLNS pmax pmax
comp=Z,9.0nm,0.8s
CLNS pmax pmax
comp=N,12nm,0.7s
CLNS pmax pmax
comp=E,12nm,0.9s
MA2 Magadan 21.81 12 P **P** **20 44 42.9 -0.1**
comp=E,23nm,0.6s,baz=200,slow=8.8,SNR=12
MA2 LR LR 20 53 51.7
comp=E,101nm,18.2s,baz=208,slow=38
YHNB Yeheng 22.17 237 *e*P **P** **20 44 44.8 -2.5**
comp=E,27nm,0.7s
NACB Ninganchiao 22.37 236 *e*P **P** **20 44 47.8 -1.5**
comp=E,19nm,0.8s
SSLB Suanglung 23.06 236 *e*P **P** **20 44 53.6 -2.9**
comp=E,21nm,0.9s
YULB Yu-li 23.12 235 *e*P **P** **20 44 54.0 -3.1**
comp=E,12nm,0.7s
HHC Hu-ho-hao-te 23.34 285 *e*P **P** **20 44 58.0 -1.3**
HHC S **S** **20 49 02.3 -6.7**
HHC pmax pmax
comp=E,16nm,0.9s
HHC pmax pmax
comp=E,110nm,4.8s
HHC LR LR
comp=E,110nm,16.0s
HHC LR LR
comp=E,270nm,13.8s
HHC LR LR
comp=E,240nm,12.3s
TPUB Ta-pu 23.61 236 *e*P **P** **20 45 02.0 0.0**
comp=E,32nm,0.7s
TWG Pinlang 23.67 235 *e*P **P** **20 45 00.8 -1.7**
comp=E,111nm,0.7s
WHN Wuhan 23.93 259 ‖P **S** **20 45 04.5 -0.3**
WHN S **S** **20 49 14.5 -3.9**
WHN pmax pmax
comp=E,72nm,0.8s
WHN LR LR
comp=E,280nm,7.3s
WHN LR LR
comp=E,330nm,13.6s
WHN LR LR
comp=E,560nm,25.4s
GUMO Guam 25.00 173 LR LR 20 54 52.6
comp=E,67nm,21.3s,baz=43,slow=36
SEY Seymchan 25.25 11 P **P** **20 45 18.1 +1.6**
comp=E,34nm,0.9s,baz=203,slow=6.6,SNR=51
SEY Seymchan 25.25 11‖ *e*P **P** **20 45 18.2 +1.7**
BOD Bodaibo 26.44 326 *e*P **P** **20 45 26.6 -0.8**
BOD pmax pmax
comp=E,36nm,0.7s
XAN Xi'an 26.81 271 P **P** **20 45 30.0 -1.0**
XAN pmax pmax
comp=Z,25nm,0.5s
SONA1 Songino Array 27.24 301 *e*P **P** **20 45 34.2 -0.6**
SONM Songino Array 27.24 301 P **P** **20 45 35.0 +0.1**
comp=Z,4.2nm,0.7s,baz=100,slow=9.1,SNR=21
SONM PcP **PcP** **20 48 53.9 +0.1**
comp=Z,1.7nm,0.6s,baz=124,slow=2.4,SNR=5.6
SONM LR LR 20 56 51.7
comp=Z,116nm,20.0s,baz=104,slow=37
ENH Enshi 27.82 263 *e*P **P** **20 45 39.0 -1.0**
comp=Z,96nm,0.8s
H11N2 WAKE ISLAND Hy 28.68 124 T T 21 16 02.4
baz=316,slow=75,SNR=2701
H11N1 WAKE ISLAND Hy 28.69 124 T T 21 16 05.3
baz=316,slow=75,SNR=3819
H11N3 WAKE ISLAND Hy 28.70 124 T T 21 16 06.0
baz=316,slow=75,SNR=2798
H11S1 WAKE ISLAND Hy 29.44 126 T T 21 17 00.1
baz=318,slow=76,SNR=42
H11S3 WAKE ISLAND Hy 29.44 126 T T 21 16 59.5
baz=318,slow=76,SNR=1450
H11S2 WAKE ISLAND Hy 29.46 126 T T 21 17 01.5
baz=318,slow=76,SNR=731
TLY Talaya 29.61 309 P **P** **20 45 55.9 +0.2**
comp=Z,6.6nm,0.8s,baz=99,slow=4.9,SNR=8.8
TLY PcP **PcP** **20 49 00.1 +0.7**
comp=Z,2.2nm,0.6s,baz=220,slow=3.1,SNR=4.1
TLY LR LR 20 58 30.0
comp=Z,187nm,19.5s,baz=138,slow=38
TLY Talaya 29.61 309 *e*P **P** **20 45 55.8 0.0**
TLY pmax pmax
comp=Z,10.0nm,0.9s
TLY MLR MLR
comp=Z,128nm,15.0s
TLY Talaya 29.61 309 *e*P **P** **20 45 56.0 +0.2**
comp=Z,8.6nm,0.9s
TLY PcP **PcP** **20 49 00.1 +0.7**

ZAK Zakamensk 29.61 306 *e*P **P** **20 45 55.4 -0.5**
ZAK pmax pmax
comp=Z,8.0nm,1.3s
LZH Lanzhou 30.17 277 *e*P **P** **20 46 00.3 -0.7**
LZH pP sP 20 46 16.5 -1.3
LZH sP pP 20 46 22.3 +10
LZH pmax pmax
comp=Z,31nm,1.0s
LZH pmax pmax
comp=Z,150nm,6.4s
LZH LR LR
comp=Z,120nm,10.7s
LZH LR LR
comp=Z,160nm,9.3s
LZH LR LR
comp=Z,260nm,16.9s
MOY Mondy 31.24 308 *e*P **P** **20 46 10.4 +0.2**
GYA Guiyang 31.82 258‖ *i*P **P** **20 46 14.3 -1.3**
GYA pP sP 20 46 33.3 +0.9
GYA PP **PP** **20 47 25.0 -2.9**
GYA PcP **PcP** **20 49 07.5 +1.7**
GYA S **S** **20 51 23.0 -0.2**
GYA sS sS 20 51 49.3 +6.6
GYA ScP **ScP** **20 52 44.0 -1.6**
GYA SS **SnSn** **20 53 15.5 +2.1**
GYA pmax pmax
comp=Z,50nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.2s
GYA LR LR
comp=Z,510nm,17.0s
GYA LR LR
comp=Z,480nm,16.6s
GYA LR LR
comp=Z,470nm,17.2s
CD2 Chengdu 32.02 268 *e*P **P** **20 46 16.5 -0.8**
CD2 pP sP 20 46 32.0 -2.1
CD2 sP pP 20 46 39.8 +11
CD2 S **S** **20 51 24.3 -1.8**
CD2 sS sS 20 51 51.5 +5.8
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.0s
GTA Gaotai 32.46 285 *e*P **P** **20 46 20.5 -0.6**
GTA pP pP 20 46 32.0 -0.8
GTA PcP **PcP** **20 49 08.3 +0.9**
GTA S **S** **20 51 34.0 +1.1**
GTA sS sS 20 51 57.0 +4.5
GTA ScP **ScP** **20 52 46.5 -1.1**
GTA pmax pmax
comp=Z,5.0nm,1.2s
GTA pmax pmax
comp=Z,41nm,5.7s
GTA LR LR
comp=Z,98nm,19.5s
GTA LR LR
comp=Z,240nm,20.4s
GTA LR LR
comp=Z,270nm,23.3s
BILL Bilibino 32.49 17‖ *e*P **P** **20 46 22.7 +1.9**
BILL *e**PP **sP** **20 46 37.4 -0.3**
BILL *e* 20 47 30.3
BILL pmax pmax
comp=Z,27nm,1.9s
BILL MLR MLR
comp=Z,153nm,22.0s
TIXI Tiksi 33.83 353 P **P** **20 46 31.9 -0.6**
comp=Z,5.4nm,0.6s,baz=133,slow=6.1,SNR=4.0
TIXI Tiksi 33.83 353‖ *e*P **P** **20 46 31.8 -0.7**
TIXI pmax pmax
comp=Z,6.0nm,0.7s
QIZ Qiongzhong 33.86 244 P **P** **20 46 34.0 +0.6**
QIZ S **S** **20 51 56.0 +1.2**
QIZ LR LR
comp=Z,85nm,16.3s
QIZ LR LR
comp=Z,100nm,24.5s
KMI Kunming 35.53 260 P **P** **20 46 48.3 +0.3**
KMI pmax pmax
comp=Z,11nm,1.0s
MYLDM Lahad Datu 39.39 218 *e*P **P** **20 47 23.0 +2.6**
comp=Z,21nm,1.0s
SKNT Sakolnakorn 39.41 248 P **P** **20 47 21.5 +0.9**
comp=Z,8.6nm,1.2s
WMQ Urumqi 40.47 295 P **P** **20 47 30.3 +1.1**
WMQ pP sP 20 47 46.5 +0.3
WMQ sP pP 20 47 51.5 +10
WMQ S **S** **20 53 37.5 +2.6**
WMQ pmax pmax
comp=Z,73nm,0.6s
WMQ pmax pmax
comp=Z,160nm,4.3s
WMQ LR LR
comp=Z,450nm,24.8s
WMQ LR LR
comp=Z,460nm,27.6s
WMQ LR LR
comp=Z,560nm,26.5s
LOEI Loei 41.06 251 P **P** **20 47 32.0 -2.3**
comp=Z,36nm,1.1s,comp=Z,7μm
ZAA0 Zalesovo Array 41.15 311 *e*P **P** **20 47 34.1 -0.5**
ZAA0 *e*PcP **PcP** **20 49 32.9 -0.3**
ZALV Zalesovo Beam 41.15 311 P **P** **20 47 34.8 +0.2**
comp=Z,16nm,0.5s,baz=90,slow=7.2,SNR=75
ZALV PcP **PcP** **20 49 32.9 -0.2**
comp=Z,5.9nm,0.4s,baz=99,slow=2.9,SNR=8.4
CMAI Chiengmai2 41.25 256 P **P** **20 47 37.2 +1.2**
comp=Z,740nm,0.9s,comp=Z,135μm
UTTA Uttaradit 41.44 252 P **P** **20 47 38.4 +1.1**
comp=Z,3.8nm,0.8s
CHAI Chaiyaphum 41.55 248 P **P** **20 47 38.3 0.0**
comp=Z,4.7nm,0.8s
LAMP Lampang 41.65 254 P P 20 47 48.4 +9.3
CMMT Chiang Mai 41.99 254 P **P** **20 47 45.5 +3.6**
comp=Z,18nm,0.7s,comp=Z,374nm
CHTO Chiang Mai 41.99 254 P **P** **20 47 45.3 +3.4**
comp=Z,81nm,0.7s
CHTO Chiang Mai 41.99 254 *e*P **P** **20 47 41.5 -0.4**
CHTO pmax pmax
comp=Z,13nm,0.6s
CHTO Chiang Mai 41.99 254 *e*P **P** **20 47 41.5 -0.4**
comp=Z,13nm,0.6s
NRIK Noril'sk 42.04 335 P **P** **20 47 41.5 -0.1**
comp=Z,7.0nm,0.6s,baz=104,slow=9.8,SNR=7.8
NRIK LR LR 21 06 16.3
comp=Z,224nm,19.4s,baz=94,slow=38
NVS Novosibirsk 42.05 313 *e*P **P** **20 47 42.2 +0.3**
NVS *e* 20 47 57.2
NVS *e* 20 49 35.2
NVS pmax pmax
comp=E,28nm,1.3s
NVS pmax pmax
comp=Z,37nm,1.3s
CMAR Chiang Mai Arr 42.21 254 P **P** **20 47 43.1 -0.5**
comp=Z,1.6nm,0.8s,baz=41,slow=7.0,SNR=9.8
CMAR PcP **PcP** **20 49 35.9 -1.3**
comp=Z,1.8nm,0.8s,baz=17,slow=2.1,SNR=6.8
CMAR LR LR 21 06 38.7
comp=Z,40nm,18.5s,baz=40,slow=38
CM01 Chiang Mai Arr 42.22 254 *e*P **P** **20 47 42.6 -1.2**
SUKH Sukhothai 42.29 252 P **P** **20 47 45.5 +1.2**
comp=Z,3.8nm,1.0s,comp=Z,51nm
LSA Lhasa 42.41 274 P **P** **20 47 46.5 +0.6**
LSA pmax pmax
comp=Z,9.0nm,0.8s
LSA Lhasa 42.41 274 *e*P **P** **20 47 46.4 +0.6**
LSA pmax pmax
comp=Z,10.0nm,0.8s
LSA Lhasa 42.41 274 *e*P **P** **20 47 46.4 +0.6**
comp=Z,9.7nm,0.8s
MK01 Makanchi Array 43.61 301 *e*P **P** **20 47 54.6 -0.1**
MK31 Makanchi Array 43.61 301 *e*P **P** **20 47 54.8 +0.1**
MK31 Makanchi Array 43.61 301 *e*P **P** **20 47 54.8 +0.1**
MKAR Makanchi Array 43.61 301 P **P** **20 47 54.8 0.0**
comp=Z,20nm,0.8s,baz=85,slow=9.6,SNR=102
MKAR PcP **PcP** **20 49 40.9 -0.6**
comp=Z,2.7nm,0.8s,baz=76,slow=3.7,SNR=2.3
MKAR LR LR 21 06 40.2
comp=Z,63nm,21.3s,baz=88,slow=37
UMPA Umpang Tak 43.66 252 P **P** **20 47 58.1 +2.6**
comp=Z,5.4nm,1.0s
MAKZ Makanchi 43.82 301 *e*P **P** **20 47 56.4 0.0**
MAKZ pmax pmax
comp=Z,19nm,0.8s
MAKZ Makanchi 43.82 301 *e*P **P** **20 47 56.4 0.0**

comp=Z,19nm,0.8s
PHET Kaeng Krachan 45.23 247 P **P** **20 48 09.0 +1.0**
comp=Z,14nm,0.9s,comp=Z,152nm
KURK Kurchatov 45.27 307 P **P** **20 48 08.3 +0.4**
KURK 20 49 46.9
KURK Kurchatov 45.27 307 P **P** **20 48 08.3 +0.4**
KURK PcP **PcP** **20 49 46.9 -0.2**
KURBB Kurchatov Arra 45.34 307 P **P** **20 48 08.3 -0.2**
comp=Z,71nm,0.7s,baz=81,slow=8.1,SNR=431
KURBB PcP **PcP** **20 49 46.9 -0.5**
comp=Z,4.5nm,0.7s,baz=81,slow=4.1,SNR=4.5
KTH Kantishna Hill 46.32 35 *e*P **P** **20 48 17.5 +1.4**
comp=Z,14nm,1.1s
MLY Manley 46.40 33 *e*P **P** **20 48 18.2 +1.5**
comp=Z,8.9nm,1.2s
RAMN Ramite 47.24 273 *e*P **P** **20 48 24.1 +0.1**
comp=Z,118nm,0.7s
RND Reindeer 47.25 35 *e*P **P** **20 48 24.1 +0.7**
RND *e**PP **pP** **20 48 36.6 +1.1**
RND Reindeer 47.25 35 *e*P **P** **20 48 24.1 +0.7**
RND *e*pP **pP** **20 48 36.6 +1.1**
GUN Gumba 47.35 274 *e*P **P** **20 48 25.2 +0.3**
comp=Z,121nm,0.8s
MDM Murphy Dome 47.47 33 *e*P **P** **20 48 26.4 +1.4**
comp=Z,9.6nm,1.1s
WRH Wood River Hil 47.55 34 *e*P **P** **20 48 25.5 0.0**
WRH *e*PcP **PcP** **20 49 55.3 +0.5**
SML Sawmill 47.59 37 *e*P **P** **20 48 26.9 +0.9**
SML pmax pmax
comp=Z,24nm,1.0s
SML Sawmill 47.59 37 *e*P **P** **20 48 26.9 +0.9**
comp=Z,24nm,1.0s
COLA College 47.63 33 *e*P **P** **20 48 27.7 +1.5**
COLA pmax pmax
comp=Z,2.0nm,0.8s
KKN Kakani 47.87 275 *e*P **P** **20 48 28.9 +0.1**
comp=Z,97nm,0.7s
PKIN Phulchoki 47.88 274 *e*P **P** **20 48 29.2 +0.2**
comp=Z,34nm,0.6s
HDA Harding Lake 48.04 34 *e*P **P** **20 48 29.8 +0.4**
HDA *e*PcP **PcP** **20 49 57.0 +0.3**
IL1 Eielson Array 48.05 33 *e*P **P** **20 48 29.6 +0.1**
ILAR Eielson Array 48.05 33 P **P** **20 48 30.1 +0.7**
comp=Z,2.9nm,0.7s,baz=268,slow=6.8,SNR=25
ILAR PcP **PcP** **20 49 56.2 -0.4**
comp=Z,1.7nm,0.8s,baz=278,slow=3.4,SNR=2.9
ILB Eielson Array 48.05 33 *e*P **P** **20 48 28.8 -0.7**
SCM Sheep Creek Mo 48.06 37 *e*P **P** **20 48 30.5 +0.8**
SCM pmax pmax
comp=Z,16nm,0.6s
SCM Sheep Creek Mo 48.06 37 *e*P **P** **20 48 30.5 +0.8**
comp=Z,16nm,0.6s
DMN Daman 48.09 275 *e*P **P** **20 48 30.6 0.0**
comp=Z,18nm,0.5s
GKN Gorkha 48.27 275 *e*P **P** **20 48 31.8 -0.1**
comp=Z,99nm,1.0s
SKLT Songkhla 48.52 241 P **P** **20 48 34.6 +0.9**
comp=Z,26nm,1.1s
KRAB Krabi 48.76 243 P **P** **20 48 36.1 +0.6**
comp=Z,76nm,0.7s,comp=Z,701nm
KLU Klutina 48.77 37 *e*P **P** **20 48 35.8 +0.7**
comp=Z,8.9nm,0.6s
DIV Divide 48.88 38 *e*P **P** **20 48 37.2 +1.2**
DIV *e*pP **sP** **20 48 50.3 -2.9**
KOLN Koldanda 49.19 276 *e*P **P** **20 48 39.1 +0.1**
comp=Z,38nm,0.8s
DOT Dot Lake 49.37 34 *e*P **P** **20 48 40.1 +0.4**
comp=Z,28nm,1.6s
PYUN Piuthan 49.51 276 *e*P **P** **20 48 41.5 +0.1**
comp=Z,129nm,0.9s
BVAR Borovoye Array 49.81 311 P **P** **20 48 43.0 -0.1**
comp=Z,11nm,0.7s,baz=70,slow=7.7,SNR=65
BVAR PcP **PcP** **20 50 03.3 0.0**
comp=Z,7.6nm,0.5s,baz=90,slow=2.9,SNR=7.1
BRVK Borovoye 49.86 312*c i*P **P** **20 48 43.4 -0.1**
BRVK pmax pmax
comp=Z,23nm,0.6s
BRVK Borovoye 49.86 312 *e*P **P** **20 48 43.6 +0.1**
comp=Z,15nm,1.0s
AAK Ala-Archa 50.07 297 P **P** **20 48 45.3 -0.2**
comp=Z,3.8nm,0.4s,baz=67,slow=4.7,SNR=5.4
AAK Ala-Archa 50.07 297‖ *e*P **P** **20 48 46.0 +0.5**
AAK pmax pmax
comp=Z,11nm,0.8s
AAK Ala-Archa 50.07 297 *e*P **P** **20 48 45.6 +0.1**
comp=Z,5.5nm,0.6s
KSH Kashi 50.10 293 *e*P **P** **20 48 49.0 +3.3**
KSH *e*pP sP 20 49 05.0 +2.1
KSH *e*ScP **ScP** **20 53 56.5 -0.4**
KSH PcS **PcS** **20 54 02.8 +0.9**
KSH S **S** **20 55 54.5 +0.4**
KSH pmax pmax
comp=Z,16nm,1.0s
KSH LR LR
comp=Z,99nm,6.8s
KSH LR LR
comp=Z,96nm,6.2s
KSH LR LR
comp=Z,110nm,8.5s
IPM Ipoh 50.21 238 *e*P **P** **20 48 46.4 -0.2**
comp=Z,28nm,0.7s
HNR Honiara 50.63 157 LR LR 21 09 27.5
comp=Z,88nm,19.0s,baz=5.5,slow=35
KKAR Karatay Array 52.66 299 *e*P **P** **20 49 04.8 +0.1**
KKAR Karatay Array 52.66 299 *e*P **P** **20 49 04.8 +0.1**
PSI Prapat 52.85 239 P **P** **20 49 06.6 +0.1**
comp=Z,14nm,0.7s,baz=19,slow=6.9,SNR=10
PSI Prapat 52.85 239 *e*P **P** **20 49 06.0 -0.5**
PSI pmax pmax
comp=Z,16nm,0.8s
PSI Prapat 52.85 239 *e*P **P** **20 49 06.0 -0.5**
comp=Z,16nm,0.8s
HYT Haines Junctio 52.90 37 *e*P **P** **20 49 09.2 +3.0**
HYT *e*pP **sP** **20 49 23.1 -0.5**
INK Inuvik 52.90 28 *e*P **P** **20 49 07.1 +1.1**
INK *e**PP **sP** **20 49 21.2 -2.1**
INK Inuvik 52.90 28 *e*P **P** **20 49 07.0 +1.1**
INK *e*pP **sP** **20 49 21.1 -2.1**
SVE Sverdlovsk 54.24 318*d i*P **P** **20 49 16.2 +0.3**
SVE pmax pmax
comp=Z,43nm,0.9s
SVE MLR MLR
comp=Z,355nm,23.0s
GSI Gunungsitoli 54.86 239 *e*P **P** **20 49 21.2 +0.2**
comp=Z,41nm,0.9s
SOKR Solikamsk 55.33 322*c i*P **P** **20 49 21.5 -2.3**
SOKR pmax pmax
comp=Z,25nm,1.5s
ARU Arti 55.45 318 P **P** **20 49 24.6 -0.1**
comp=Z,19nm,0.6s,baz=78,slow=4.0,SNR=35
ARU Arti 55.45 318 *i* P **P** **20 49 24.4 -0.3**
ARU pmax pmax
comp=Z,40nm,1.0s
ARU Arti 55.45 318 *e*P **P** **20 49 24.5 -0.3**
comp=Z,44nm,1.1s
KBL Kabul 57.19 290 *e*P **P** **20 49 37.0 -0.7**
KBL pmax pmax
comp=Z,16nm,1.0s
KBL Kabul 57.19 290 *e*P **P** **20 49 37.0 -0.7**
comp=Z,16nm,1.0s
ABKAR Akbulak array 57.22 310 *e*P **P** **20 49 37.1 -0.4**
DLBC Dease Lake 57.24 39 *e*P **P** **20 49 39.7 +2.2**
comp=Z,4.6nm,1.0s
AKTO Aktyubinsk 57.91 311 P **P** **20 49 41.9 -0.5**
comp=Z,13nm,0.8s,baz=69,slow=11,SNR=15
AKTO PcP **PcP** **20 50 34.1 -0.1**
comp=Z,7.4nm,0.7s,baz=105,slow=2.4,SNR=4.0
WRAB Tennant Creek 58.59 188‖ *e*P **P** **20 49 47.0 -0.3**
WRAB pmax pmax
comp=Z,22nm,1.2s
WRAB Tennant Creek 58.59 188 *e*P **P** **20 49 46.5 -0.7**
comp=Z,16nm,1.1s
WB2 Warramunga Arr 58.60 188 *e*P **P** **20 49 45.4 -1.9**
WRA Warramunga Arr 58.60 188 P **P** **20 49 46.6 -0.8**
comp=Z,11nm,0.8s,baz=6.3,slow=7.0,SNR=108
WRA Warramunga Arr 58.60 188 *i* P **P** **20 49 46.5 -0.8**
WRA pmax pmax
comp=Z,12nm,0.8s
RES Resolute Bay 61.06 15 *e*P **P** **20 50 03.7 +0.1**
RES pmax pmax
comp=Z,8.0nm,0.9s
RES Resolute Bay 61.06 15 *e*P **P** **20 50 03.7 +0.1**
comp=Z,8.4nm,0.9s
AS01 Alice Springs 62.32 188 *e*P **P** **20 50 12.2 -0.5**
AS31 Alice Springs 62.33 188 *e*P **P** **20 50 12.3 -0.5**
comp=Z,2.2nm,0.8s

ASAR Alice Springs 62.33 188 P P 20 50 12.3 -0.4
comp=Z,3.8nm,0.7s,baz=7.0,slow=5.1,SNR=41
ASAR PKP2bc 21 19 26.0
comp=Z,0.5nm,0.9s,baz=186,slow=2.6,SNR=5.7
YKA Yellowknife Ar 62.34 31 P P 20 50 12.7 +0.3
comp=Z,3.3nm,0.8s,baz=303,slow=6.9,SNR=12
YKB5 Yellowknife Ar 62.34 31 *eP* P 20 50 12.1 -0.3
KLMR Klimovskoe 62.66 327 *eP* P 20 50 12.8 -1.7
KLMR *e* 20 52 30.3
KLMR pmax pmax
comp=Z,7.0nm,0.9s
ARCES ARCESS Array B 62.70 339 P P 20 50 14.8 +0.1
comp=Z,2.6nm,0.6s,baz=35,slow=6.5,SNR=4.8
ARCES LR LR 21 22 37.4
comp=Z,32nm,18.4s,baz=48,slow=41
PALK Pallekele 63.02 257 P P 20 50 17.0 -0.7
comp=Z,8.0nm,0.9s,baz=308,slow=0.7,SNR=4.1
PALK Pallekele 63.02 257 P P 20 50 17.0 -0.7
GEYT Alibeck 63.40 298 P P 20 50 19.8 -0.1
comp=Z,5.3nm,0.6s,baz=73,slow=4.7,SNR=4.8
GEYT LR LR 21 19 58.5
comp=Z,68nm,19.5s,baz=195,slow=38
EIDS Eidsvold 64.17 171 *eP* P 20 50 23.4 -1.5
comp=Z,6.1nm,0.7s
DAG Danmarks Havn 64.30 355⇑ *iP* P 20 50 24.9 -0.2
comp=Z,8.9nm,0.7s
NLWA Neilton Lookou 65.46 48 *eP* P 20 50 35.5 +2.3
comp=Z,22nm,1.3s
VRH Novokhopyorsk 66.68 318 *eP* P 20 50 39.8 -1.1
VRH pmax pmax
comp=Z,20nm,0.6s
OBN Obninsk 67.08 323 P P 20 50 43.4 0.0
comp=Z,3.7nm,0.4s,baz=143,slow=7.9,SNR=4.9
OBN Obninsk 67.08 323*ceP* P 20 50 42.8 -0.6
OBN *e**PP **sP 20 50 58.0 -3.0**
OBN *e* 20 51 10.5
OBN *e* 20 53 07.3
OBN pmax pmax
comp=Z,18nm,1.7s
OBN MLR MLR
comp=Z,67nm,16.0s
FINES FINESS Array B 67.63 332 P P 20 50 46.7 -0.1
comp=Z,8.9nm,0.6s,baz=48,slow=8.5,SNR=31
FINES LR LR 21 22 21.3
comp=Z,65nm,19.3s,baz=58,slow=38
VSR Storozhevoye 68.01 319 *eP* P 20 50 48.2 -1.2
VSR pmax pmax
comp=Z,10.0nm,0.6s
NEW Newport 68.82 45 *eP* P 20 50 56.2 +1.6
NEW pmax pmax
comp=Z,4.0nm,0.7s
NEW Newport 68.82 45 *eP* P 20 50 56.2 +1.6
comp=Z,3.9nm,0.7s
SUMG Summit 69.18 0⇑ *iP* P 20 50 57.4 +0.6
comp=Z,18nm,0.8s
SUMG Summit 69.18 0 *eP* P 20 50 57.4 +0.6
SUMG pmax pmax
comp=Z,21nm,0.9s
SUMG Summit 69.18 0 *eP* P 20 50 57.4 +0.6
comp=Z,21nm,0.9s
VSU Vasula 69.32 329*ceP* P 20 50 57.1 -0.2
VSU pmax pmax
comp=Z,38nm,1.2s
GOF Gofitskoye 69.33 312⇑ *eP* P 20 50 57.7 0.0
GOF pmax pmax
comp=Z,33nm,0.9s
K05A Summer Lake 69.74 51 *eP* P 20 51 02.0 +1.5
comp=Z,11nm,1.0s
NCK Nalchik 69.88 310⇓ *eP* P 20 51 01.4 +0.2
NCK pmax pmax
comp=Z,7.0nm,1.0s
STKA Stephens Creek 70.06 180 P P 20 51 02.1 0.0
comp=Z,0.7nm,0.4s,baz=353,slow=7.1,SNR=7.0
WALA Waterton Lakes 70.10 43 *eP* P 20 51 03.7 +1.2
comp=Z,7.2nm,1.1s
KVAR Kislovodsk Arr 70.16 311 P P 20 51 03.3 +0.4
comp=Z,27nm,1.0s,baz=182,slow=6.5,SNR=18
KIV Kislovodsk 70.17 311 *eP* P 20 51 03.0 0.0
KIV pmax pmax
comp=Z,56nm,1.1s
KIV MLR MLR
comp=Z,36nm,17.0s
KIV Kislovodsk 70.17 311 *eP* P 20 51 03.2 +0.2
comp=Z,38nm,0.8s
KBZ Khabaz 70.17 310 P P 20 51 03.5 +0.7
comp=Z,16nm,0.9s,baz=57,slow=2.8,SNR=19
KBZ LR LR 21 23 58.3
comp=Z,58nm,21.3s,baz=44,slow=38
BMO Blue Mountains 70.67 48 *eP* P 20 51 07.4 +1.3
BMO pmax pmax
comp=Z,3.0nm,0.9s
BMO Blue Mountains 70.67 48 *eP* P 20 51 07.4 +1.3
comp=Z,3.0nm,0.9s
SWMT Swartz Lake 70.97 44 *eP* P 20 51 09.0 +1.1
GNI Garni 71.07 306 P P 20 51 08.5 -0.2
comp=Z,4.2nm,0.9s,baz=232,slow=15,SNR=2.9
GNI Garni 71.07 306⇓ *eP* P 20 51 10.6 +2.0
GNI pmax pmax
comp=Z,30nm,1.4s
SOC Sochi 72.13 312 *eP* P 20 51 12.9 -1.9
SOC *e* 20 53 50.3
SOC *eS* **S 21 00 33.0 -0.7**
SOC pmax pmax
comp=Z,20nm,0.8s
FFC Flin Flon 72.26 33 *eP* P 20 51 15.7 +0.4
FFC *e**PP **sP 20 51 32.3 -0.7**
FFC pmax pmax
comp=Z,7.0nm,0.8s
FFC Flin Flon 72.26 33 *eP* P 20 51 15.7 +0.4
comp=Z,6.6nm,0.8s
FFC *ep*P **sP 20 51 32.3 -0.7**
HRY Holter Researc 72.64 44 *eP* P 20 51 16.0 -1.8
NC405 NORSAR Array S 72.71 337 *eP* P 20 51 17.8 -0.1
NC303 NORSAR Array S 72.73 337 *eP* P 20 51 18.0 0.0
LRM Limekiln Ridge 72.84 45 *eP* P 20 51 18.1 -1.2
NC204 NORSAR Array S 72.87 338 *eP* P 20 51 18.6 -0.3
NB201 NORSAR Array S 72.89 337 *eP* P 20 51 19.2 +0.3
NB2 NORSAR Subarra 72.92 337 P P 20 51 19.0 -0.2
comp=Z,13nm,0.7s,baz=39,slow=6.2
NB2 NORSAR Subarra 72.92 337 P P 20 51 19.0 -0.2
baz=39,slow=6.2
NOA NORSAR Array B 72.92 337 P P 20 51 19.1 -0.2
comp=Z,15nm,0.8s,baz=39,slow=5.9,SNR=45
NOA LR LR 21 25 58.4
comp=Z,78nm,21.3s,baz=30,slow=38
EGMT Eagleton 72.93 42 *eP* P 20 51 20.6 +1.0
comp=Z,10nm,0.8s
NBO02 NORSAR Array S 73.02 337 *eP* P 20 51 19.7 0.0
DLMT Dillon 73.05 45 *eP* P 20 51 21.8 +1.4
comp=Z,5.5nm,1.0s
NBO00 NORSAR Array S 73.06 337 *eP* P 20 51 20.2 +0.2
NAO01 NORSAR Array S 73.17 337 *eP* P 20 51 20.4 -0.2
AKASG Malin Array Be 73.30 322 P P 20 51 21.1 -0.5
comp=Z,12nm,0.7s,baz=45,slow=6.3,SNR=35
AKASG LR LR 21 26 30.1
comp=Z,94nm,18.1s,baz=25,slow=38
AKBB Malin Array Si 73.30 322 *eP* P 20 51 21.1 -0.5
AKBB pmax pmax
comp=Z,16nm,0.8s
AKBB Malin Array Si 73.30 322 *eP* P 20 51 21.1 -0.5
comp=Z,16nm,0.8s
KIEV Kiev 73.32 322*ceP* P 20 51 21.0 -0.6
KIEV pmax pmax
comp=Z,15nm,0.9s
KIEV Kiev 73.32 322 *eP* P 20 51 21.0 -0.6
comp=Z,16nm,0.8s
AK11 Malin Array Si 73.35 322 *eP* P 20 51 21.1 -0.7
BOZ Bozeman (W) 73.40 45 *eP* P 20 51 23.6 +1.1
BOZ pmax pmax
comp=Z,6.0nm,1.0s
BOZ Bozeman (W) 73.40 45 *eP* P 20 51 23.6 +1.1
comp=Z,5.6nm,1.0s
SUW Suwalki 73.79 327 *eP* P 20 51 24.8 +0.4
GCMT Greycliff 74.38 44 *eP* P 20 51 29.7 +1.5
H17A Grant Village 74.77 45 *epP* pP 20 51 49.1 +5.7
SORM Soroca 75.43 321⇓ *iP* P 20 51 33.2 -0.8
R11A Troy Canyon, C 75.58 52 *eP* P 20 51 36.3 +1.0
comp=Z,2.7nm,0.9s
HWUT Hardware Ranch 75.97 48 *eP* P 20 51 36.3 -1.1
comp=Z,4.7nm,1.0s
TPNV Topopah Spring 76.02 54 *eP* P 20 51 38.1 +0.3
TPNV pmax pmax
comp=Z,3.0nm,0.9s
TPNV Topopah Spring 76.02 54 *eP* P 20 51 38.1 +0.3
comp=Z,3.0nm,0.9s
BSD Bornholm Skovb 76.27 332 *i* P P 20 51 37.4 -1.2
comp=Z,18nm,1.0s
LVV L'vov 76.35 324 *eP* P 20 51 38.3 -0.9
BEL Belsk 76.36 327 *eP* P 20 51 40.2 +1.0
BW06 Boulder Array 76.38 46 *eP* P 20 51 40.0 +0.2
PD31 Pinedale Array 76.38 46 *eP* P 20 51 40.3 +0.5
PDAR Pinedale Array 76.38 46 P P 20 51 40.5 +0.6
comp=Z,3.2nm,0.8s,baz=273,slow=2.6,SNR=21
COP Copenhagen 76.72 333 *i* P P 20 51 41.3 +0.1
comp=Z,17nm,0.6s
BUR08 Bucovina Ar. S 77.32 322 *eP* P 20 51 45.0 +0.2
BURAR Bucovina Array 77.33 322⇑ *iP* P 20 51 45.3 +0.4
P17A Butcher Ranch, 77.82 49 *eP* P 20 51 49.3 +1.4
comp=Z,6.3nm,0.8s
LCMT Little Creek M 77.86 52 *eP* P 20 51 49.4 +1.3
comp=Z,3.0nm,0.9s
MTPU Mount Pierson 77.86 51 *eP* P 20 51 49.0 +0.6
comp=Z,3.2nm,0.6s
STHS Stebnicka Huta 77.91 325 *eP* P 20 51 48.9 +0.9
STHS *epP* **pP 20 51 59.9 -1.0**
STHS *esP* **sP 20 52 07.9 +2.1**
OJC Ojcow 77.97 326 *eP* P 20 51 48.7 +0.4
OJC Ojcow 77.97 326 *eP* P 20 51 48.6 +0.4
OJC pmax pmax
comp=Z,26nm,1.1s
OJC Ojcow 77.97 326 *eP* P 20 51 48.6 +0.4
comp=Z,26nm,1.1s
TLB Topalu 77.98 318⇑ *iP* P 20 51 48.8 +0.4
ULM Lac du Bonnet 78.07 34 P P 20 51 48.6 -0.2
comp=Z,5.0nm,0.9s,baz=170,slow=4.7,SNR=4.4
BR131 Keskin Array S 78.09 312 *eP* P 20 51 49.3 -0.1
BRTR Keskin Array B 78.09 312 P P 20 51 49.2 -0.1
comp=Z,2.2nm,0.6s,baz=115,slow=3.3,SNR=14
BRTR LR LR 21 32 27.2
comp=Z,20nm,18.2s,baz=34,slow=40
BRTR Keskin Array B 78.09 312*ceP* P 20 51 49.2 -0.1
BRTR pmax pmax
comp=Z,3.0nm,0.6s
SRU San Rafael Swe 78.18 49 *eP* P 20 51 50.8 +0.9
SRU pmax pmax
comp=Z,7.0nm,0.7s
SRU San Rafael Swe 78.18 49 *eP* P 20 51 50.8 +0.9
comp=Z,6.5nm,0.7s
CRVS Cervenica-Dubn 78.19 324 *eP* P 20 51 50.2 +0.7
NIE Niedzica 78.33 325 *eP* P 20 51 51.5 +1.2
ISR Istrita 78.40 319⇑ *iP* P 20 51 51.5 +0.7
MLR Muntele Rosu 78.44 320 P P 20 51 51.6 +0.4
comp=Z,0.4nm,0.4s,baz=338,slow=14,SNR=4.6
MLR Muntele Rosu 78.44 320 *eP* P 20 51 51.1 -0.1
MLR *e**PP **sP 20 52 10.3 +1.4**
MLR Muntele Rosu 78.44 320 *eP* P 20 51 51.1 -0.1
MLR *epP* **sP 20 52 10.3 +1.4**
BR231 Keskin MP Arra 78.52 312 *eP* P 20 51 50.0 -1.7
LANS Liptovska Anna 78.90 326 *eP* P 20 51 54.6 +1.1
LANS *epP* **pP 20 52 06.2 -0.2**
KECS Kecovo 78.93 325 *eP* P 20 51 53.8 +0.2
KECS *epP* **sP 20 52 08.2 -3.2**
KECS *ePP* **PP 20 52 52.2 +0.1**
OKC Ostrava-Krasne 78.97 327⇑ *eP* P 20 51 54.4 +0.6
OKC Ostrava-Krasne 78.97 327 *eP* P 20 51 54.4 +0.6
KSP Ksiaz 78.99 328 *eP* P 20 51 54.4 +0.5
DRGR 79.12 322⇑ *iP* P 20 51 54.9 +0.1
MORC Moravsky Berou 79.27 327⇑ *iP* P 20 51 56.1 +0.5
MORC Moravsky Berou 79.27 327 *eP* P 20 51 56.0 +0.5
MORC pmax pmax
comp=Z,47nm,1.0s
MORC Moravsky Berou 79.27 327 *eP* P 20 51 56.0 +0.5
comp=Z,47nm,1.0s
DPC Dobruska-Polom 79.35 328⇑ *iP* P 20 51 56.6 +0.7
DPC Dobruska-Polom 79.35 328⇑ *iP* P 20 51 56.6 +0.7
UPC Upice 79.36 328⇑ *eP* P 20 51 56.5 +0.6
UPC Upice 79.36 328 *eP* P 20 51 56.5 +0.6
KRLC Kraliky 79.37 328⇑ *eP* P 20 51 56.5 +0.5
KRLC Kraliky 79.37 328 *eP* P 20 51 56.5 +0.5
PV10 Paradox Valley 79.54 49 *eP* P 20 51 59.1 +1.7
PSZ Piszkesteto 79.62 325⇑ *iP* P 20 51 58.2 +0.7
PSZ Piszkesteto 79.62 325 *eP* P 20 51 58.0 +0.5
PSZ pmax pmax
comp=Z,15nm,1.1s
PSZ Piszkesteto 79.62 325 *eP* P 20 51 58.0 +0.5
comp=Z,15nm,1.1s
PSZ Piszkesteto 79.62 325⇑ *eP* P 20 51 57.9 +0.5
VYHS Vyhne 79.67 325 *eP* P 20 51 57.9 +0.2
VYHS *epP* **pP 20 52 11.8 +1.3**
VYHS *esP* **sP 20 52 17.0 +1.6**
VYHS *ePP* **PP 20 54 58.1 -0.1**
PV05 Paradox Valley 79.70 49 *eP* P 20 51 59.8 +1.5
BRG Berggiesshubel 79.92 329 *eP* P 20 51 58.9 -0.1
comp=Z,7.8nm,0.8s
BRG *e* 20 59 11.2
comp=Z,2.6nm,1.1s
BRG *e* 21 07 49.6
comp=Z,6.6nm,1.2s
BRG Berggiesshubel 79.92 329 *eP* P 20 51 58.8 -0.1
BRG pmax pmax
comp=Z,8.0nm,0.9s
PVCC Panska Ves 79.94 329⇑ *eP* P 20 51 59.8 +0.8
PVCC AMS AMS 21 29 30.0
comp=Z,100nm,21.9s
PVCC Panska Ves 79.94 329 *eP* P 20 51 59.8 +0.8
PVCC MLR MLR
comp=Z,100nm,21.9s
CLL Collm 79.95 330⇑ *iP* P 20 51 58.9 -0.2
comp=Z,17nm,0.9s
CLL Collm 79.95 330 *eP* P 20 51 58.9 -0.2
CLL pmax pmax
comp=Z,15nm,0.8s
CLL Collm 79.95 330 *eP* P 20 51 58.9 -0.2
comp=Z,15nm,0.8s
Y14A Wickenburg 79.97 55 *eP* P 20 52 00.1 +0.5
comp=Z,9.3nm,0.8s
SIRR Siria 80.00 322⇑ *iP* P 20 51 56.5 -3.0
VRAC Vranov 80.03 327⇑ *iP* P 20 52 00.3 +0.7
GOPC GO Pecny, Ondr 80.32 328⇑ *eP* P 20 52 01.6 +0.4
GOPC GO Pecny, Ondr 80.32 328 *eP* P 20 52 01.6 +0.4
PRU Pruhonice 80.36 329⇑ *eP* P 20 52 01.7 +0.3
PRU Pruhonice 80.36 329 *eP* P 20 52 01.7 +0.3
BZS Buzias 80.50 322⇑ *iP* P 20 52 02.2 +0.1
ASF Jabal al Asfar 80.94 304 P P 20 52 04.2 -0.7
comp=Z,4.6nm,1.0s,baz=74,slow=3.8,SNR=5.4
NKC Novy Kostel 81.01 330⇑ *eP* P 20 52 05.3 +0.4
NKC Novy Kostel 81.01 330 *eP* P 20 52 05.3 +0.4
MMAI Mount Meron Ar 81.36 305 P P 20 52 07.4 +0.3
comp=Z,5.0nm,0.7s,baz=40,slow=6.6,SNR=11
CONA Conrad Observa 81.40 327 *i* P P 20 52 07.7 +0.7
comp=Z,9.3nm,0.9s,SNR=5.5
KHC Kasperske Hory 81.43 329⇑ *iP* P 20 52 07.5 +0.4
KHC *epP* **sP 20 52 25.0 +0.1**
KHC Kasperske Hory 81.43 329⇑ *iP* P 20 52 07.5 +0.4
KHC *e* 20 52 25.0
KHC Kasperske Hory 81.43 329 *eP* P 20 52 07.4 +0.4
comp=Z,3.9nm,0.8s
GEC2 GERESS Array S 81.60 328 *eP* P 20 52 08.0 -0.1
GEC2 pmax pmax
comp=Z,4.0nm,0.7s
GEC2 GERESS Array S 81.60 328 *eP* P 20 52 08.0 -0.1
comp=Z,4.1nm,0.7s
GERES GERESS Array B 81.60 328 P P 20 52 07.9 -0.2
comp=Z,5.1nm,0.8s,baz=38,slow=5.5,SNR=18
GERES LR LR 21 31 14.0
comp=Z,80nm,19.5s,baz=31,slow=38
GEA0 GERESS Array S 81.61 328 *eP* P 20 52 07.9 -0.2
GRFO Grafenberg 81.93 330 *eP* P 20 52 10.3 +0.6
GRFO pmax pmax
comp=Z,16nm,0.9s
GRFO Grafenberg 81.93 330 *eP* P 20 52 10.2 +0.6
comp=Z,16nm,0.9s
ARSA Arzberg 82.07 326 *i* P P 20 52 10.8 +0.3
comp=Z,5.6nm,1.1s
MOA Molln 82.14 327 *i* P P 20 52 11.0 +0.2
comp=Z,8.4nm,1.1s
ECSD EROS Data Cent 82.53 39 *eP* P 20 52 13.3 +0.3
comp=Z,3.6nm,0.8s
SOKA Soboth 82.72 326 *i* P P 20 52 14.0 0.0
comp=Z,22nm,1.1s,SNR=9.5
OBKA Obir 83.06 326 *i* P P 20 52 15.5 -0.3
comp=Z,6.0nm,0.7s
MEM Membach 83.11 333 P P 20 52 16.2 +0.4
comp=Z,9.2nm,1.2s
KBA Koelnbreinsper 83.14 327 *i* P P 20 52 16.2 0.0
comp=Z,10nm,0.9s,SNR=6.6
MYKA Terra Mystica 83.36 327 *i* P P 20 52 16.8 -0.5
comp=Z,7.2nm,0.5s
ANMO Albuquerque 83.37 50*d iP* P 20 52 19.4 +1.7
ANMO pmax pmax
comp=Z,2.0nm,1.1s
BCLA Clavier 83.51 334 P P 20 52 17.6 -0.3
WATA Walderalm 83.67 329 *i* P P 20 52 18.8 -0.1
comp=Z,3.0nm,0.6s
WTTA Wattenberg 83.70 328 *i* P P 20 52 19.0 -0.2
comp=Z,3.8nm,0.6s
ABTA Abfaltersbach 83.75 328 *i* P P 20 52 18.3 -1.0
comp=Z,8.9nm,1.2s
SNF Seneffe 83.79 334 P P 20 52 19.4 +0.1
SCHQ Schefferville 83.80 16 P P 20 52 20.3 +1.0
comp=Z,3.3nm,0.7s,baz=298,slow=3.2,SNR=3.5
EIL Elat 83.83 303 P P 20 52 19.6 -0.3
comp=Z,6.9nm,1.0s,baz=359,slow=4.4,SNR=5.1
WLF Walferdange 83.85 333 P P 20 52 20.0 +0.4
comp=Z,12nm,1.7s
MOTA Moosalm 83.85 329 *i* P P 20 52 19.8 -0.1
comp=Z,5.5nm,0.7s,SNR=9.1
RETA Reutte 83.88 329 *i* PcP P 20 52 20.2 +0.3
comp=Z,18nm,1.0s,SNR=8.2
PDG Podgorica 83.99 321⇑ *iP* P 20 52 20.2 -0.3
DOU Dourbes 84.03 334 P P 20 52 21.2 +0.7
comp=Z,4.0nm,1.5s
BFO Black Forest 84.15 331 *i* P P 20 52 21.4 +0.2
BFO Black Forest 84.15 331 *eP* P 20 52 21.2 0.0
comp=Z,17nm,0.9s
FETA Feichten 84.26 329 *i* PcP P 20 52 22.1 +0.1
comp=Z,10.0nm,0.8s,SNR=6.7
DAVA Damuels 84.39 329 *i* P P 20 52 22.5 -0.1
comp=Z,22nm,0.9s,SNR=8.7
DSB Dublin 84.52 341 *eP* P 20 52 22.7 -0.3
comp=Z,59nm,1.7s
FUORN Ofenpass-Fuorn 84.78 329 *eP* P 20 52 24.8 +0.1
comp=Z,25nm,0.8s
PPT Papeete 85.02 117 LR LR 21 23 48.5
comp=Z,31nm,20.4s,baz=2.0,slow=31
PPT2 Papeete2 85.04 117 *e*LR LR 21 19 25.0
comp=Z,129nm,25.5s
TUE Stuetta 85.27 329 *eP* P 20 52 27.2 +0.1
comp=Z,10nm,0.9s
SENIN Lac Senin/Sane 86.16 330 *eP* P 20 52 31.2 -0.4
comp=Z,8.8nm,0.8s
IDI Anoyia 86.20 313 P P 20 52 30.6 -1.2
comp=Z,7.3nm,0.6s,baz=7.5,slow=11,SNR=6.9
MEH Mehetia 86.29 116 *e*T T 22 28 02.8
comp=Z,82nm,0.3s
TX31 Lajitas Ar. Si 88.94 53 *eP* P 20 52 45.5 +0.3
TXAR Lajitas Array 88.94 53 P P 20 52 45.5 +0.4
comp=Z,1.7nm,0.7s,baz=295,slow=3.3,SNR=27
TBI Tubuai 89.02 121 *e*T T 22 31 22.8
comp=Z,74nm,0.3s
MIAR Mount Ida 90.99 43 *eP* P 20 52 55.2 +0.8
MIAR pmax pmax
comp=Z,4.0nm,0.8s
MIAR Mount Ida 90.99 43 *eP* P 20 52 55.2 +0.8
comp=Z,4.4nm,0.8s
KEST Kesra 94.02 323 P P 20 53 08.8 +0.3
comp=Z,3.9nm,1.0s,baz=304,slow=6.0,SNR=3.7
KEST LR LR 21 40 27.9
comp=Z,71nm,18.7s,baz=295,slow=39
ES19 SONSECA Array 96.03 334 *eP* P 20 53 17.3 -0.3
ESDC Sonseca Array 96.08 334 P P 20 53 17.5 -0.4
comp=Z,1.4nm,0.9s,baz=28,slow=5.1,SNR=6.8
ESDC LR LR 21 40 52.4
comp=Z,57nm,19.3s,baz=210,slow=38
VNDA Vanda 116.45 175 PKP PKPdf 20 58 31.9 -0.6
comp=Z,0.5nm,0.7s,baz=310,slow=5.2,SNR=3.7
TORD Torodi Ar. Bea 116.49 316 PKP PKPdf 20 58 33.3 -1.1
comp=Z,0.2nm,0.4s,baz=36,slow=1.8,SNR=8.0
MAW Mawson 121.04 206 PKP PKPdf 20 58 41.0 -0.4
comp=Z,0.4nm,0.3s,baz=108,slow=3.2,SNR=5.3
MAW Mawson 121.04 206 PKIKP PKPdf 20 58 41.0 -0.4
DBIC Dimbokro 125.40 318 PKP PKPdf 20 58 51.4 -0.2
comp=Z,6.0nm,1.2s,baz=52,slow=2.7,SNR=2.9
BOSA Boshof 127.16 261 PKP PKPdf 20 58 54.2 -0.4
comp=Z,1.8nm,0.7s,baz=16,slow=1.0,SNR=3.7
SNAA Sanae 142.28 197 PKP PKPdf 20 59 16.2 -5.2
VNA1 Neumayer--Stat 144.25 197 PKP PKPab 20 59 22.9 +0.1
LPAZ La Paz 145.63 58 PKPbc PKPdf 20 59 29.8 +0.2
comp=Z,7.1nm,0.8s,baz=329,slow=3.0,SNR=28
PLCA Paso Flores 155.05 105 PKPab PKPab 21 00 09.6 +2.1
comp=Z,2.0nm,0.8s,baz=266,slow=4.2,SNR=2.8
BDFB Brasilia 155.59 23 PKPab PKPab 21 00 11.5 +1.2
comp=Z,3µm,0.3s,baz=348,slow=0.2,SNR=3.0

*ATH **25** 20:43:50.2, 40°.87N±27°.85E, h19km±3km, ML3.5/2, Error ellipse: s-maj=6.6km s-min=2.5km az=250.0*
*DDA **25** 20:43:52.6, 40°.82N±27°.76E, h7km, Ml3.6*
*ISK **25** 20:43:52.3, 40°.82N±27°.73E, h7km, ML3.5*
*THE **25** 20:43:52.3, 40°.92N±27°.74E, h2km±1km, ML3.5/5, Error ellipse: s-maj=2.3km s-min=0.8km az=15.0*
*CSEM **25** 20:43:52.6±0.1, 40°.83N±27°.74E, h5km, ML3.5, Error ellipse: s-maj=2.1km s-min=1.6km az=167.0*
*ISCJB **25** 20:43:52.2±0.3, 40°.85N±0°.02±27°.74E±0°.02, h6km±2km, Error ellipse: s-maj=3.1km s-min=2.2km az=176.3*
*SOF **25** 20:43:56.5, 40°.80N±27°.01E, h2km, MD2.7*
ISC 25 20:43:53.0±0.9, 40°.81N±0°.02±27°.74E±0°.01, h12km±6km, n172, σ1°.914/210, 9C-15D, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SBT4	**Kumbag-Tekirda**	**0.15**	**276**	*e*PG	**Pg**	**20 43 56.2**	**-0.2**
SBT4	**Kumbag-Tekirda**	**0.15**	**276**	*e*Pg	**Pg**	**20 43 56.3**	**-0.2**
SBT3	**Marmara-Eregli**	**0.20**	**68**	*e*PG	**Pg**	**20 43 57.0**	**-0.1**
SBT3	**Marmara-Eregli**	**0.20**	**68**	*e*Pg	**Pg**	**20 43 57.0**	**-0.1**
TKR	**Tekirdag**	**0.23**	**319**	*e*PG	**Pg**	**20 43 57.6**	**-0.4**
TKR	**Tekirdag**	**0.23**	**319**	*e*Pg	**Pg**	**20 43 57.6**	**-0.4**
MRMT	**Marmara Adasi**	**0.23**	**207**	*e*PG	**Pg**	**20 43 57.8**	**-0.2**
MRMT	**Marmara Adasi**	**0.23**	**207**	*e*Pg	**Pg**	**20 43 57.8**	**-0.2**
CRLT	**Corlu**	**0.32**	**360**	*e*PG	**Pg**	**20 43 59.0**	**-0.5**
CRLT	**Corlu**	**0.32**	**360**	*e*Pg	**Pg**	**20 43 59.0**	**-0.5**
SART	**Tekirdag**	**0.44**	**254**	*i* P	**Pg**	**20 44 01.6**	**-0.1**
SART	**Tekirdag**	**0.44**	**254**	P	**Pg**	**20 44 01.6**	**-0.1**
RKY	**Sarkoy-Tekirda**	**0.44**	**254**	*e*PG	**Pg**	**20 44 01.6**	**-0.2**
RKY	**Sarkoy-Tekirda**	**0.44**	**254**	*e*Pg	**Pg**	**20 44 01.6**	**-0.2**
EDC	**Edincik**	**0.47**	**168**	*e*PG	**Pg**	**20 44 02.4**	**0.0**
EDC				*e*SG	**Sg**	**20 44 09.0**	**+0.3**
EDC	**Edincik**	**0.47**	**168**	*e*Pg	**Pg**	**20 44 02.4**	**0.0**
EDC				*e*Sg	**Sg**	**20 44 09.0**	**+0.3**
KRBG	**Karabiga-Canak**	**0.54**	**219**	*e*PG	**Pg**	**20 44 03.1**	**-0.3**
KRBG	**Karabiga-Canak**	**0.54**	**219**	*e*Pg	**Pg**	**20 44 03.1**	**-0.3**
SLVT	**Silivri**	**0.55**	**41**	P	**Pg**	**20 44 01.4**	**-2.3**
KNL	**Bal˘–kesir**	**0.56**	**197**	*i* P	**Pg**	**20 44 03.0**	**-1.0**
SBT2	**Guzelce-Avcila**	**0.59**	**83**	*e*PG	**Pb**	**20 44 04.8**	**-0.4**
SBT2	**Guzelce-Avcila**	**0.59**	**83**	*e*Pg	**Pb**	**20 44 04.8**	**-0.4**
ELBA	**Catalca**	**0.62**	**57**	*i* P	**Pg**	**20 44 04.6**	**-0.5**
ELBA	**Catalca**	**0.62**	**57**	P	**Pg**	**20 44 04.6**	**-0.5**
CTKS	**Kestanelik-??a**	**0.72**	**54**	*e*PG	**Pg**	**20 44 06.4**	**-0.6**
CTKS	**Kestanelik-??a**	**0.72**	**54**	*e*Pg	**Pg**	**20 44 06.4**	**-0.6**
KCTX	**Karacabey (Bur**	**0.72**	**139**	*e*PG	**Pg**	**20 44 06.7**	**-0.3**
KCTX	**Karacabey (Bur**	**0.72**	**139**	*e*Pg	**Pg**	**20 44 06.7**	**-0.3**
GONE	**Gonen-Balikesi**	**0.77**	**183**	*e*PG	**Pg**	**20 44 07.8**	**0.0**
GONE	**Gonen-Balikesi**	**0.77**	**183**	*e*Pg	**Pg**	**20 44 07.8**	**0.0**
CTYL	**Yalikoy Yolu**	**0.78**	**32**	*e*PG	**Pg**	**20 44 07.7**	**-0.4**
CTYL	**Yalikoy Yolu**	**0.78**	**32**	*e*Pg	**Pg**	**20 44 07.7**	**-0.4**
KESN	**Edirne-Kesan**	**0.80**	**271**	*i* P	**Pg**	**20 44 08.4**	**-0.2**
KESN				*i* S	**Sb**	**20 44 19.6**	**-0.4**
KESN	**Edirne-Kesan**	**0.80**	**271**	P	**Pg**	**20 44 08.4**	**-0.2**
KESN				S	**Sb**	**20 44 19.6**	**-0.4**
PHSR	**Pinarhisar**	**0.83**	**349**	*e*PG	**Pb**	**20 44 09.0**	**-0.4**
PHSR	**Pinarhisar**	**0.83**	**349**	*e*Pg	**Pb**	**20 44 09.0**	**-0.4**
LPK	**Lapseki**	**0.86**	**240**	*e*PG	**Pg**	**20 44 09.0**	**-0.7**
LPK	**Lapseki**	**0.86**	**240**	*e*Pg	**Pg**	**20 44 09.0**	**-0.7**
SBT5	**Esenkoy-Cinarc**	**0.89**	**101**	*e*PG	**Pg**	**20 44 09.9**	**-0.2**
SBT5	**Esenkoy-Cinarc**	**0.89**	**101**	*e*Pg	**Pg**	**20 44 09.9**	**-0.2**
ARMT	**Armutlu**	**0.89**	**106**	*e*PG	**Pg**	**20 44 09.7**	**-0.5**
ARMT				*e*SG	**Sn**	**20 44 23.6**	**-0.5**
ARMT	**Armutlu**	**0.89**	**106**	*e*Pg	**Pg**	**20 44 09.7**	**-0.5**
ARMT				*e*Sg	**Sn**	**20 44 23.6**	**-0.5**
ERIK	**Erikli-Kesan**	**0.94**	**262**	*e*PG	**Pg**	**20 44 10.8**	**-0.3**
ERIK	**Erikli-Kesan**	**0.94**	**262**	*e*Pg	**Pg**	**20 44 10.8**	**-0.3**
MDNY	**Mudanya-Bursa**	**0.98**	**117**	*e*PG	**Pg**	**20 44 11.3**	**-0.5**
MDNY	**Mudanya-Bursa**	**0.98**	**117**	*e*Pg	**Pg**	**20 44 11.4**	**-0.5**
ISK	**Istanbul-Kandi**	**1.03**	**75**	*e*PG	**Pg**	**20 44 12.0**	**-0.9**
ISK				*e*SG	**Sn**	**20 44 27.3**	**-0.4**
ISK	**Istanbul-Kandi**	**1.03**	**75**	P	**Pg**	**20 44 11.7**	**-1.2**
ISK				S	**Sg**	**20 44 25.8**	**-0.6**
ISK	**Istanbul-Kandi**	**1.03**	**75**	P	**Pg**	**20 44 11.7**	**-1.2**
ISK	**Istanbul-Kandi**	**1.03**	**75**	*e*Pg	**Pg**	**20 44 12.0**	**-0.9**
ISK				S	**Sg**	**20 44 25.8**	**-0.6**
ISK				*e*Sg	**Sn**	**20 44 27.3**	**-0.4**
GELI	**Tayfur-Gelibol**	**1.05**	**247**	*e*PG	**Pg**	**20 44 12.7**	**-0.4**
GELI	**Tayfur-Gelibol**	**1.05**	**247**	*e*Pg	**Pg**	**20 44 12.7**	**-0.4**

BUY	**Buyukada**	**1.05**	**87**	*i* P	**Pg**	20 44 12.4	-0.8		
BUY				*i* S	**Sb**	20 44 27.4	+0.7		
BUY	**Buyukada**	**1.05**	**87**	P	**Pg**	20 44 12.4	-0.8		
BUY				S	**Sb**	20 44 27.5	+0.7		
KLYT	**Kilyos**	**1.08**	**66**	*e*PN	**Pn**	20 44 13.7	-0.2		
KLYT	**Kilyos**	**1.08**	**66**	*e*Pn	**Pn**	20 44 13.7	-0.2		
GEMT	**Gemlik**	**1.17**	**108**	*e*PN	**Pb**	20 44 15.2	+0.1		
GEMT	**Gemlik**	**1.17**	**108**	*e*Pn	**Pb**	20 44 15.2	+0.1		
BALB	**Balikesir**	**1.18**	**175**	*e*PN	**Pg**	20 44 15.1	-0.5		
BALB	**Balikesir**	**1.18**	**175**	*e*Pn	**Pg**	20 44 15.1	-0.5		
ENEZ	**Enez**	**1.21**	**267**	*e*PN	**Pg**	20 44 15.7	-0.5		
ENEZ	**Enez**	**1.21**	**267**	P	**Pg**	20 44 15.3	-0.9		
ENEZ				S	**Sn**	20 44 32.2	+0.3		
ENEZ	**Enez**	**1.21**	**267**	P	**Pg**	20 44 15.3	-0.9		
ENEZ	**Enez**	**1.21**	**267**	*e*Pn	**Pg**	20 44 15.7	-0.5		
ENEZ				S	**Sn**	20 44 32.2	+0.3		
IGD	**Bursa**	**1.24**	**116**	*i* P	**Pn**	20 44 14.6	-1.6		
IGD				*i* S	**Sg**	20 44 31.9	-1.2		
ULDT	**Uludag**	**1.26**	**122**	*i* P	Pg	20 44 09.6	-7.6		
ULDT				*i* S	Sg	20 44 21.9	-12		
EDRB	**Edirne**	**1.27**	**324**	*e*PN	**Pn**	20 44 16.6	**0.0**		
EDRB	**Edirne**	**1.27**	**324**	*e*Pn	**Pn**	20 44 16.6	0.0		
ALN	**Alexandroupoli**	**1.28**	**274**	*e*PN	**Pb**	20 44 17.1	+0.1		
ALN				*e*SN	**Sn**	20 44 35.3	+1.4		
ALN	**Alexandroupoli**	**1.28**	**274**	P	**Pn**	20 44 16.2	-0.5		
ALN				S	**Sb**	20 44 33.9	+0.4		
ALN	**Alexandroupoli**	**1.28**	**274**	P	**Pn**	20 44 16.8	+0.1		
ALN	**Alexandroupoli**	**1.28**	**274**	*e*Pn	**Pb**	20 44 17.2	+0.1		
ALN				S	**Sb**	20 44 33.6	0.0		
ALN				*e*Sn	**Sn**	20 44 35.3	+1.4		
ALN	**Alexandroupoli**	**1.28**	**274**	P	**Pn**	20 44 16.8	+0.1		
ALN				S	**Sb**	20 44 33.6	**0.0**		
ALN				AML	AML	20 44 36.3			
	comp=N,2312μm,0.7s								
ALN				AML	AML	20 44 37.0			
	comp=E,3456μm,0.7s								
IZI	**Iznik**	**1.41**	**109**	*e*PN	**Pn**	20 44 18.3	-0.2		
IZI	**Iznik**	**1.41**	**109**	*e*Pn	**Pn**	20 44 18.3	-0.2		
EZN	**Ezine**	**1.46**	**228**	*e*PN	**Pn**	20 44 19.4	+0.2		
EZN	**Ezine**	**1.46**	**228**	*e*Pn	**Pn**	20 44 19.4	+0.2		
HRT	**Hereke**	**1.47**	**89**	*e*PN	**Pn**	20 44 18.9	-0.4		
HRT	**Hereke**	**1.47**	**89**	*e*Pn	**Pn**	20 44 18.9	-0.4		
SILT	**Sile**	**1.48**	**76**	*e*PN	**Pn**	20 44 19.5	+0.1		
SILT	**Sile**	**1.48**	**76**	*e*Pn	**Pn**	20 44 19.5	+0.1		
GADA	**Gvkgeada**	**1.53**	**247**	*e*PN	**Pn**	20 44 19.9	-0.2		
GADA	**Gvkgeada**	**1.53**	**247**	P	**Pn**	20 44 19.6	-0.5		
GADA				S	**Sg**	20 44 42.1	-0.2		
GADA	**Gvkgeada**	**1.53**	**247**	P	**Pn**	20 44 19.6	-0.5		
GADA	**Gvkgeada**	**1.53**	**247**	*e*Pn	**Pn**	20 44 19.9	-0.2		
GADA				S	**Sg**	20 44 42.1	-0.2		
ADVT	**Abdulvahap**	**1.57**	**103**	*e*PN	**Pn**	20 44 21.2	+0.6		
ADVT	**Abdulvahap**	**1.57**	**103**	*e*Pn	**Pn**	20 44 21.2	+0.6		
SMTH	**Samothraki Isl**	**1.71**	**259**	P	**Pn**	20 44 22.0	-0.6		
SMTH				S	**Sn**	20 44 45.3	+0.8		
SMTH	**Samothraki Isl**	**1.71**	**259**	P	**Pn**	20 44 22.0	-0.6		
SMTH				S	**Sn**	20 44 45.3	+0.8		
SMTH	**Samothraki Isl**	**1.71**	**259**	P	**Pn**	20 44 21.8	-0.8		
DKL	**Dikili**	**1.85**	**200**	*e*PN	**Pn**	20 44 25.5	+1.0		
DKL	**Dikili**	**1.85**	**200**	*e*Pn	**Pn**	20 44 25.5	+1.0		
TVSB	**Tavsanli**	**1.90**	**135**	*e*PN	**Pn**	20 44 26.0	+0.7		
TVSB	**Tavsanli**	**1.90**	**135**	*e*Pn	**Pn**	20 44 26.0	+0.7		
PRK	**Paraskevi**	**1.93**	**216**	P	**Pn**	20 44 26.4	+0.8		
PRK				S	**Sg**	20 44 53.9	-1.0		
PRK	**Paraskevi**	**1.93**	**216**	P	**Pn**	20 44 26.4	+0.8		
PRK				S	**Sb**	20 44 52.8	+0.8		
PRK	**Paraskevi**	**1.93**	**216**	P	**Pn**	20 44 26.9	+1.4		
PRK				S	**Sb**	20 44 52.8	+0.8		
PRK				AML	AML	20 44 58.2			
	comp=E,1481μm,0.7s								
PRK				AML	AML	20 44 58.8			
	comp=N,1542μm,0.7s								
KDZ	**Kurdzhali**	**1.94**	**296**	*i* P	**Pn**	20 44 25.9	+0.1		
SPNC	**Sapanca-Adapaz**	**1.96**	**93**	*e*PN	**Pn**	20 44 27.2	+1.2		
SPNC	**Sapanca-Adapaz**	**1.96**	**93**	*e*Pn	**Pn**	20 44 27.2	+1.2		
GULT	**Gulveren**	**2.15**	**99**	*e*PN	**Pn**	20 44 29.6	+0.9		
GULT	**Gulveren**	**2.15**	**99**	*e*Pn	**Pn**	20 44 29.6	+0.9		
LIA	**Limnos Island**	**2.15**	**246**	P	**Pn**	20 44 27.4	-1.3		
SIGR	**SIGRI**	**2.15**	**223**	*e*PN	**Pn**	20 44 29.8	+1.1		
SIGR	**SIGRI**	**2.15**	**223**	P	**Pn**	20 44 29.8	+1.1		
SIGR				S	**Sb**	20 44 58.5	-0.1		
SIGR	**SIGRI**	**2.15**	**223**	P	**Pn**	20 44 29.1	+0.4		
SIGR	**SIGRI**	**2.15**	**223**	*e*Pn	**Pn**	20 44 29.8	+1.1		
SIGR				S	**Sb**	20 44 58.5	-0.1		
SIGR	**SIGRI**	**2.15**	**223**	P	**Pn**	20 44 29.1	+0.4		
GEDZ	**Gediz**	**2.19**	**143**	*e*PN	**Pn**	20 44 30.4	+1.2		
GEDZ	**Gediz**	**2.19**	**143**	*e*Pn	**Pn**	20 44 30.4	+1.2		
KULA	**Kula-Manisa**	**2.40**	**162**	*e*PN	**Pn**	20 44 33.5	+1.3		
KULA	**Kula-Manisa**	**2.40**	**162**	P	**Pn**	20 44 32.6	+0.4		
KULA				S	**Sb**	20 44 05.4	-1.3		
KULA	**Kula-Manisa**	**2.40**	**162**	P	**Pn**	20 44 32.6	+0.4		
KULA	**Kula-Manisa**	**2.40**	**162**	*e*Pn	**Pn**	20 44 33.5	+1.3		
KULA				S	**Sb**	20 44 05.4	-1.3		
IZM	**Izmir**	**2.44**	**189**	*e*PN	**Pn**	20 44 33.5	+0.8		
IZM	**Izmir**	**2.44**	**189**	*e*Pn	**Pn**	20 44 33.5	+0.8		
KAVA	**Kavala**	**2.45**	**275**	P	**Pn**	20 44 32.3	-0.4		
KAVA				S	**Sn**	20 45 04.2	+1.6		
KAVA	**Kavala**	**2.45**	**275**	P	**Pn**	20 44 33.2	+0.4		
KAVA				S	**Sn**	20 45 04.2	+1.6		
KAVA	**Kavala**	**2.45**	**275**	P	**Pn**	20 44 33.1	+0.4		
CHOS	**Chios island**	**2.75**	**209**	*e*PN	**Pn**	20 44 38.4	+1.4		
CHOS	**Chios island**	**2.75**	**209**	P	**Pn**	20 44 37.3	+0.3		
CHOS				S	**Sn**	20 45 13.4	+3.3		
CHOS	**Chios island**	**2.75**	**209**	P	**Pn**	20 44 37.6	+0.7		
CHOS	**Chios island**	**2.75**	**209**	*e*Pn	**Pn**	20 44 38.4	+1.4		
CHOS				S	**Sn**	20 45 13.4	+3.3		
CHOS	**Chios island**	**2.75**	**209**	P	**Pn**	20 44 37.6	+0.7		
AYDB	**Zeytinkoy-Aydi**	**2.87**	**178**	*e*PN	**Pn**	20 44 39.7	+1.1		
AYDB	**Zeytinkoy-Aydi**	**2.87**	**178**	*e*Pn	**Pn**	20 44 39.7	+1.1		
OUR	**Ouranopolis**	**2.90**	**262**	P	**Pn**	20 44 38.9	0.0		
OUR	**Ouranopolis**	**2.90**	**262**	P	**Pn**	20 44 38.9	0.0		
MMB	**Musomiste**	**3.12**	**286**	*i* Pg	**Pb**	20 44 46.9	-1.5		
SRS	**Serrai**	**3.15**	**277**	P	**Pn**	20 44 42.5	+0.1		
SRS				S	**Sn**	20 45 21.3	+1.3		
SRS	**Serrai**	**3.15**	**277**	P	**Pn**	20 44 43.0	+0.6		
SRS				S	**Sn**	20 45 21.3	+1.3		
SRS	**Serrai**	**3.15**	**277**	P	**Pn**	20 44 43.0	+0.6		
SMG	**Samos**	**3.18**	**193**	P	**Pn**	20 44 44.6	+1.8		
SMG	**Samos**	**3.18**	**193**	P	**Pn**	20 44 44.6	+1.8		
SMG	**Samos**	**3.18**	**193**	P	**Pn**	20 44 41.5	-1.3		
KKB	**Krupnik**	**3.66**	**288**	*i* P	**Pg**	20 45 00.1	-3.0		
KNT	**Kendrikon**	**3.68**	**277**	P	**Pn**	20 44 50.8	+1.1		
KNT	**Kendrikon**	**3.68**	**277**	P	**Pn**	20 44 50.8	+1.1		
ISP	**Isparta**	**3.69**	**143**	⇑*i* P	**Pg**	20 45 03.5	-0.1		
ISP	**Isparta**	**3.69**	**143**	S	**Sg**	20 45 53.5	+2.2		
TLB	**Topalu**	**3.78**	**3**	⇑*i* P	**Pn**	20 44 51.0	0.0		
TLB	**Topalu**	**3.78**	**3**	S	**Sg**	20 45 51.3	-3.0		
TLB	**Topalu**	**3.78**	**3**	⇑*i* P	**Pn**	20 44 51.0	0.0		
HARR	**Harsova**	**3.88**	**2**	⇓*i* P	**Pg**	20 45 05.5	-1.8		
MPEP	**Malo Peshtene**	**3.91**	**312**	*i* P	**Pn**	20 44 53.7	+0.8		
VAY	**Valandovo**	**3.94**	**279**	*e*PN	**Pb**	20 44 58.1	-4.3		
VAY				*e*Sn	**Sn**	20 45 38.1	-1.3		
VAY	**Valandovo**	**3.94**	**279**	*e*Pn	**Pb**	20 44 58.0	-4.3		
VAY				*e*Sn	**Sn**	20 45 38.0	-1.3		
APE	**Apeiranthos**	**4.12**	**205**	⇓*i* P	**Pn**	20 44 56.1	+0.4		
APE	**Apeiranthos**	**4.12**	**205**	⇓*i* P	**Pn**	20 44 56.1	+0.4		
CFR	**Carcaliu**	**4.37**	**4**	⇓*i* P	**Pn**	20 44 58.8	-0.4		
CFR	**Carcaliu**	**4.37**	**4**	S	**Sb**	20 46 04.1	+1.7		
CFR	**Carcaliu**	**4.37**	**4**	⇓*i* P	**Pn**	20 44 58.8	-0.4		
MLR	**Muntele Rosu**	**4.86**	**345**	⇓*i* P	**Pn**	20 45 07.4	+1.4		
MLR	**Muntele Rosu**	**4.86**	**345**	S	**Sg**	20 46 32.2	+3.3		
MLR	**Muntele Rosu**	**4.86**	**345**	⇓*i* P	**Pn**	20 45 07.4	+1.4		
VOIR		**5.02**	**338**	⇓*i* P	**Pn**	20 45 08.9	+0.7		
VOIR		**5.02**	**338**	S	**Sg**	20 46 37.7	+3.5		
VOIR		**5.02**	**338**	⇓*i* P	**Pn**	20 45 08.9	+0.7		
PLOR	**Plostina**	**5.10**	**351**	⇓*i* P	**Pn**	20 45 10.8	+1.6		
PLOR	**Plostina**	**5.10**	**351**	⇓*i* P	**Pn**	20 45 10.8	+1.6		
VRI	**Vrincioaia**	**5.11**	**352**	⇑*i* P	**Pn**	20 45 10.8	+1.5		
VRI	**Vrincioaia**	**5.11**	**352**	S	**Sg**	20 46 41.8	+5.0		
VRI	**Vrincioaia**	**5.11**	**352**	⇑*i* P	**Pn**	20 45 10.8	+1.5		
TESR	**Tescani**	**5.75**	**352**	⇓*i* P	**Pn**	20 45 18.6	+0.5		
TESR	**Tescani**	**5.75**	**352**	⇓*i* P	**Pn**	20 45 18.6	+0.5		
MDVR	**Moldovita**	**5.95**	**314**	⇓*i* P	**Pn**	20 45 20.5	-0.4		
MDVR	**Moldovita**	**5.95**	**314**	S	**Sg**	20 47 06.2	+2.4		
MDVR	**Moldovita**	**5.95**	**314**	⇓*i* P	**Pn**	20 45 20.5	-0.4		
BURAR	**Bucovina Array**	**7.04**	**346**	⇑*i* P	**Pn**	20 45 37.7	+1.8		
BURAR	**Bucovina Array**	**7.04**	**346**	⇑*i* P	**Pn**	20 45 37.7	+1.8		
SORM	**Soroca**	**7.33**	**3**	⇑*i* P	**Pn**	20 45 38.8	-1.0		
SORM	**Soroca**	**7.33**	**3**	⇑*i* P	**Pn**	20 45 38.8	-1.0		

*ISCJB **25** 20:44:36.8±0.2,31°.95N±0°.02×55°.72E±0°.03, h10km, mb3.9/17, MS2.6/3, Error ellipse: s-maj=3.4km s-min=3.2km az=175.3*

*CSEM **25** 20:44:37.7±0.2, 32°.00N×55°.74E, h2km, ML4.2, Error ellipse: s-maj=4.9km s-min=4.2km az=178.0*

*THR **25** 20:44:37.2±0.7, 32°.03N×55°.77E, h14km±11km, ML4.0*

*TEH **25** 20:44:38.6, 31°.91N×55°.75E, h8km, ML4.2*

*IDC **25** 20:44:41.5±4.3, 31°.91N×55°.65E, h34km±35km, mb3.8/15, mb1 3.9/22, mb1mx3.7/49, mbtmp4.0/22, ML3.7/7, MS2.8/4, Ms1 2.8/4, ms1mx2.5/37, Error ellipse: s-maj=15.1km s-min=13.5km az=160.0*

*DSN **25** 20:44:44.0±0.1, 31°.63N×55°.46E, h15km, Error ellipse: s-maj=17.0km s-min=3.7km az=268.0*

ISC 25 20:44:38.2±0.5, 31°.95N±0°.04×55°.72E±0°.03, h10km, n89, σ1§08/92, mb4.1/17, MS2.8/3, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
IBAF	**Bafgh**	**0.38**	**200**	*e*Pg	**Pg**	**20 44 45.2**	**-0.6**
IBAF				*e*AMB	AMB	20 44 52.2	
	comp=Z,1304μm,0.1s						
IBAF	**Bafgh**	**0.38**	**200**	*e*Pg	**Pg**	**20 44 45.2**	**-0.6**
IMEH	**Mehriz**	**1.10**	**240**	*e*Pg	**Pg**	**20 44 58.5**	**-0.9**
IMEH				*e*Sg	**Sg**	**20 45 12.5**	**-1.2**
IMEH				*e*AMB	AMB	20 45 16.0	
	comp=Z,27μm,0.1s						
IMEH	**Mehriz**	**1.10**	**240**	*e*Pg	**Pg**	**20 44 58.5**	**-0.9**
ICHK	**Chekchek**	**1.16**	**285**	*e*Pg	**Pb**	**20 44 58.5**	**-1.9**
ICHK				*e*AMB	AMB	20 45 15.7	
	comp=Z,39μm,0.1s						
ICHK	**Chekchek**	**1.16**	**285**	*e*Pg	**Pb**	**20 44 58.5**	**-1.9**
ISAD	**Sadrabad**	**1.73**	**269**	*e*Sg	**Sb**	**20 45 33.4**	**+1.1**
ISAD				*e*Pn	**Pn**	**20 45 09.3**	**+0.6**
ISAD				*e*AMB	AMB	20 45 36.7	
	comp=Z,28μm,0.2s						
TABS	**Tabas**	**2.06**	**34**	*e*Pn	**Pn**	**20 45 12.1**	**-0.9**
TABS				AML	AML	20 45 44.7	
	comp=E,925nm,0.9s						
TABS				AML	AML	20 45 50.6	
	comp=N,895nm,0.6s						
TABS	**Tabas**	**2.06**	**34**	*e*Pn	**Pn**	**20 45 12.1**	**-0.9**
KRBR	**Kerman**	**2.15**	**155**	*e*Pn	**Pb**	**20 45 16.1**	**-1.4**
KRBR				*e*Sg	**Sg**	**20 45 46.8**	**-0.7**
KRBR				AML	AML	20 45 51.0	
	comp=E,2μm,0.4s						
KRBR				AML	AML	20 45 55.5	
	comp=N,2μm,0.8s						
KRBR	**Kerman**	**2.15**	**155**	*e*Pn	**Pb**	**20 45 16.1**	**-1.4**
KRBR				*e*Sg	**Sg**	**20 45 46.8**	**-0.7**
NASN	**Na'in**	**2.61**	**290**	*e*Pn	**Pn**	**20 45 21.4**	**+0.7**
NASN				AML	AML	20 46 05.5	
	comp=E,458nm,0.4s						
NASN				AML	AML	20 46 09.0	
	comp=N,461nm,0.6s						
NASN	**Na'in**	**2.61**	**290**	*e*Pn	**Pn**	**20 45 21.4**	**+0.7**
ITEG	**Tejag**	**2.73**	**69**	*e*Pn	**Pn**	**20 45 22.1**	**-0.1**
ITEG				*e*AMB	AMB	20 46 11.0	
	comp=Z,15μm,0.2s						
ITEG	**Tejag**	**2.73**	**69**	*e*Pn	**Pn**	**20 45 22.1**	**-0.1**
IKOO	**Kooshah**	**2.82**	**80**	*e*Pn	**Pn**	**20 45 23.7**	**+0.1**
IKOO				*e*AMB	AMB	20 46 16.9	
	comp=Z,25μm,0.2s						
IKOO	**Kooshah**	**2.82**	**80**	*e*Pn	**Pn**	**20 45 23.7**	**+0.1**
IRAM	**Ramesheh**	**2.85**	**268**	*e*Pn	**Pn**	**20 45 24.9**	**+1.0**
IRAM				*e*AMB	AMB	20 46 10.3	
	comp=Z,3μm,0.3s						
IRAM	**Ramesheh**	**2.85**	**268**	*e*Pn	**Pn**	**20 45 24.9**	**+1.0**
IZEF	**Zefreh**	**3.02**	**289**	*e*Pn	**Pn**	**20 45 27.2**	**+0.8**
IZEF				*e*AMB	AMB	20 46 23.9	
	comp=Z,4μm,0.2s						
IZEF	**Zefreh**	**3.02**	**289**	*e*Pn	**Pn**	**20 45 27.2**	**+0.8**
IGAR	**Gharneh**	**3.15**	**279**	*e*Pn	**Pn**	**20 45 28.9**	**+0.7**
IGAR				*e*AMB	AMB	20 46 24.2	
	comp=Z,3μm,0.2s						
IDAH	**Dahanechah**	**3.59**	**76**	*e*Pn	**Pn**	**20 45 34.9**	**+0.7**
IDAH				*e*AMB	AMB	20 46 38.0	
	comp=Z,5μm,0.3s						
IDAH	**Dahanechah**	**3.59**	**76**	*e*Pn	**Pn**	**20 45 34.9**	**+0.7**
IKLH	**Kolahrood**	**3.75**	**292**	*e*Pn	**Pn**	**20 45 37.9**	**+1.5**
IKLH				*e*AMB	AMB	20 46 43.9	
	comp=Z,3μm,0.4s						
IKLH	**Kolahrood**	**3.75**	**292**	*e*Pn	**Pn**	**20 45 37.9**	**+1.5**
IANJ	**Anjilo**	**3.82**	**337**	*e*Pn	**Pn**	**20 45 36.3**	**-1.0**
IANJ				*e*AMB	AMB	20 46 49.7	
	comp=Z,3μm,0.4s						
IANJ	**Anjilo**	**3.82**	**337**	*e*Pn	**Pn**	**20 45 36.3**	**-1.0**
SHRO	**Shahrood**	**4.04**	**3**	*e*Pn	**Pn**	**20 45 39.5**	**-0.7**
SHRO				AML	AML	20 46 46.6	
	comp=E,132nm,0.5s						
SHRO				AML	AML	20 46 53.0	
	comp=N,112nm,0.5s						
SHRO	**Shahrood**	**4.04**	**3**	*e*Pn	**Pn**	**20 45 39.5**	**-0.7**
SHRT	**Shahrakht**	**4.20**	**65**	*e*Pn	**Pn**	**20 45 42.5**	**+0.1**
SHRT	**Shahrakht**	**4.20**	**65**	*e*Pn	**Pn**	**20 45 42.5**	**+0.1**
GHIR	**Ghir-Karzin**	**4.36**	**214**	*e*Pn	**Pn**	**20 45 46.6**	**+2.0**
GHIR	**Ghir-Karzin**	**4.36**	**214**	*e*Pn	**Pn**	**20 45 46.6**	**+2.0**
IFIR	**Firoozkooh**	**4.43**	**327**	*e*Pn	**Pn**	**20 45 45.2**	**-0.6**
IFIR				*e*AMB	AMB	20 47 09.0	
	comp=Z,1μm,0.2s						
IFIR	**Firoozkooh**	**4.43**	**327**	*e*Pn	**Pn**	**20 45 45.2**	**-0.6**
GHVR	**GHOM**	**4.49**	**305**	*e*Pn	**Pn**	**20 45 47.2**	**+0.9**
GHVR	**GHOM**	**4.49**	**305**	*e*Pn	**Pn**	**20 45 47.2**	**+0.9**
BNDS	**Bandar-Abbas**	**4.55**	**175**	*e*Pn	**Pn**	**20 45 49.2**	**+1.9**
BNDS	**Bandar-Abbas**	**4.55**	**175**	*e*Pn	**Pn**	**20 45 49.2**	**+1.9**
IDMV	**Damavand**	**4.75**	**321**	*e*Pn	**Pn**	**20 45 50.7**	**+0.6**
IDMV				*e*AMB	AMB	20 47 21.8	
	comp=Z,2μm,0.4s						
IDMV	**Damavand**	**4.75**	**321**	*e*Pn	**Pn**	**20 45 50.7**	**+0.6**
DAMV	**Damavand**	**4.82**	**321**	*e*Pn	**Pn**	**20 45 51.2**	**+0.1**
DAMV	**Damavand**	**4.82**	**321**	*e*Pn	**Pn**	**20 45 51.2**	**+0.1**
ZHSF	**Zahedan**	**4.93**	**117**	*e*Pn	**Pn**	**20 45 53.2**	**+0.6**
ZHSF	**Zahedan**	**4.93**	**117**	*e*Pn	**Pn**	**20 45 53.2**	**+0.6**
IAFJ	**Afjeh**	**5.13**	**321**	*e*AMB	AMB	20 47 32.1	
	comp=Z,2μm,0.3s						
IAKL	**Akhelmad**	**5.28**	**28**	*e*AMB	AMB	20 46 01.5	
	comp=Z,1μm,0.2s						
ISFR	**Sfrayin**	**5.43**	**20**	*e*Pn	**Pn**	**20 45 59.5**	**+0.1**
ISFR				*e*AMB	AMB	20 46 00.2	
	comp=Z,1μm,0.2s						
ISFR	**Sfrayin**	**5.43**	**20**	*e*Pn	**Pn**	**20 45 59.5**	**+0.1**
ASAO	**Ashtian**	**5.43**	**300**	*e*Pn	**Pn**	**20 46 00.1**	**+0.6**
ASAO	**Ashtian**	**5.43**	**300**	*e*Pn	**Pn**	**20 46 00.1**	**+0.6**
IMHD	**Mahdasht**	**5.62**	**313**	*e*AMB	AMB	20 46 05.4	
	comp=Z,698nm,0.1s						
IEMG	**Emamgholi**	**5.96**	**23**	*e*AMB	AMB	20 46 12.5	
	comp=Z,814nm,0.3s						
IEMG				*e*Pn	**Pn**	**20 46 06.4**	**-0.4**
BANOM	**Banah**	**6.03**	**175**	*i* P	**Pn**	**20 46 09.2**	**+1.8**
	SNR=8.1						
GEYT	**Alibeck**	**6.28**	**18**	Pn	**Pn**	**20 46 11.1**	**+0.1**
	comp=Z,4.7nm,0.3s,baz=192,slow=14,SNR=147						
GEYT				Sn	**Sn**	**20 47 23.8**	**+1.0**
	baz=207,slow=29,SNR=1.6						
NAZ	**Nazwa, Dubai**	**6.94**	**180**	*i* P	**Pn**	**20 46 21.0**	**+1.0**
	SNR=14						
NAZ				S	**Sn**	**20 47 38.5**	**-0.5**
HATD	**Hatta, Dubai**	**7.11**	**177**	P	**Pn**	**20 46 23.4**	**+1.1**
HATD				S	**Sn**	**20 47 40.3**	**-2.9**
FAQ	**Al Faqa, Dubai**	**7.18**	**181**	*i* P	**Pn**	**20 46 24.7**	**+1.4**
	SNR=6.7						
ASHO	**Ashiyiah**	**7.25**	**178**	*i* P	**Pn**	**20 46 25.2**	**+0.9**
	SNR=14						
WSAR	**Wadi Sarin**	**9.05**	**163**	Pn	**Pn**	**20 46 50.0**	**+1.0**
	comp=Z,0.9nm,0.3s,baz=357,slow=11,SNR=8.8						
WSAR				Sn	**Sn**	**20 48 31.4**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=284,slow=17,SNR=1.7						
ASF	**Jabal al Asfar**	**15.97**	**276**	Pn	**Pn**	**20 48 21.9**	**-1.1**
	comp=Z,0.7nm,0.3s,baz=260,slow=3.9,SNR=6.4						
MMAI	**Mount Meron Ar**	**17.18**	**279**	P	**Pn**	**20 48 38.2**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=66,slow=15,SNR=3.0						
EIL	**Elat**	**17.99**	**268**	P	**Pn**	**20 48 47.6**	**-0.9**
	comp=Z,0.2nm,0.3s,baz=90,slow=11,SNR=2.3						
AKTO	**Aktyubinsk**	**18.55**	**5**	P	**P**	**20 48 54.5**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=170,slow=14,SNR=10.0						
AKTO				LR	LR	20 57 27.0	
	comp=Z,56nm,22.0s,baz=138,slow=41						
BRTR	**Keskin Array B**	**19.48**	**300**	P	**P**	**20 49 06.5**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=118,slow=13,SNR=4.1						
ATD	**Arta Tunnel**	**23.54**	**213**	P	**P**	**20 49 49.7**	**+0.9**
	comp=Z,14nm,1.0s,baz=305,slow=6.6,SNR=3.2						
ATD				LR	LR	21 00 07.6	
	comp=Z,31nm,20.3s,baz=2.5,slow=40						
BVAR	**Borovoye Array**	**23.59**	**22**	P	**P**	**20 49 49.9**	**+1.0**
	comp=Z,4.1nm,0.7s,baz=204,slow=3.3,SNR=5.0						
ARU	**Arti**	**24.55**	**4**	LR	LR	21 01 41.1	
	comp=Z,42nm,21.6s,baz=89,slow=41						
KURBB	**Kurchatov Arra**	**25.16**	**36**	P	**P**	**20 50 05.5**	**+2.0**
	comp=Z,2.2nm,0.9s,baz=231,slow=9.2,SNR=4.2						
MLR	**Muntele Rosu**	**26.71**	**309**	LR	LR	21 02 01.7	
	comp=Z,1.1nm,21.2s,baz=38,slow=39						
AKASG	**Malin Array Be**	**27.10**	**321**	P	**P**	**20 50 21.1**	**0.0**
	comp=Z,2.8nm,0.8s,baz=123,slow=8.9,SNR=8.8						
ZALV	**Zalesovo Beam**	**30.25**	**35**	P	**P**	**20 50 49.0**	**0.0**
	comp=Z,1.0nm,0.5s,baz=234,slow=8.2,SNR=2.8						
STHS	**Stebnicka Huta**	**31.08**	**314**	*e*P	**P**	**20 50 55.8**	**-0.7**
KECS	**Kecovo**	**31.23**	**312**	*e*P	**P**	**20 50 57.1**	**-0.7**
VYHS	**Vyhne**	**32.27**	**312**	*e*P	**P**	**20 51 06.1**	**-0.9**
GERES	**GERESS Array B**	**35.65**	**311**	P	**P**	**20 51 36.1**	**-0.4**
	comp=Z,2.2nm,0.8s,baz=107,slow=9.1,SNR=18						
KHC	**Kasperske Hory**	**35.80**	**311**	*e*P	**P**	**20 51 36.5**	**-1.1**
GTA	**Gaotai**	**36.29**	**66**	*e*P	**P**	**20 51 45.0**	**+3.0**
GTA				pP	sP	20 51 48.0	+1.6
GTA				sP	pP	20 51 51.0	+5.9
GTA				pmax	pmax		
	comp=Z,6.0nm,0.9s						
CLL	**Collm**	**36.68**	**315**	*e*P	**P**	**20 51 47.0**	**+2.0**
	comp=Z,5.0nm,1.1s						
NOA	**NORSAR Array B**	**40.97**	**329**	P	**P**	**20 52 21.2**	**+0.3**
	comp=Z,1.0nm,0

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.54**	**297**	P	**Pn**	**20 53 14.4**	**+0.4**
OFUJ				*eS*	**Sn**	**20 53 41.9**	**-1.8**
JIO	**Ouri**	**2.58**	**282**	P	**Pn**	**20 53 14.6**	**0.0**
JIO				*eS*	**Sn**	**20 53 41.9**	**-2.8**
MIYJ	**Miyakonagasawa**	**2.69**	**308**	P	**Pn**	**20 53 16.3**	**+0.2**
MIYJ				*eS*	**Sn**	**20 53 46.2**	**-1.3**
JMK	**Ichinoseki**	**2.81**	**292**	*eS*	**Sn**	**20 53 49.0**	**-1.4**
JOM	**Ohasama**	**2.98**	**302**	*eS*	**Sn**	**20 53 54.2**	**-0.4**
JFT	**Otama**	**3.38**	**264**	*eS*	**Sn**	**20 54 01.6**	**-2.8**
JANG	**Nango**	**3.39**	**317**	P	**Pn**	**20 53 27.3**	**+1.6**
JANG				*eS*	**Sn**	**20 54 04.3**	**-0.4**
JYK	**Kaneyama**	**3.44**	**288**	P	**Pn**	**20 53 27.6**	**+1.2**
JYK				*eS*	**Sn**	**20 54 04.4**	**-1.6**
JCH	**Churui**	**4.76**	**349**	P	**Pn**	**20 53 45.8**	**+1.3**
JCH				*eS*	**Sn**	**20 54 37.1**	**-1.2**
MJAR	**Matsushiro Arr**	**5.26**	**257**	Pn	Pn	20 53 38.0	-13
	8.3nm,0.3s,baz=92,slow=13,SNR=66						
NEM2	**Nemuro 2**	**5.49**	**9**	P	**Pn**	**20 53 53.9**	**-0.6**
NEM2				*eS*	**Sn**	**20 54 53.3**	**-3.1**
KURBB	**Kurchatov Arra**	**47.42**	**308**	P	**P**	**21 01 08.1**	**+2.0**
	0.4nm,0.7s,baz=83,slow=8.3,SNR=4.3						
WRA	**Warramunga Arr**	**58.37**	**191**	P	**P**	**21 02 27.6**	**+0.5**
	0.4nm,0.7s,baz=12,slow=7.5,SNR=5.0						
ASAR	**Alice Springs**	**62.09**	**191**	P	**P**	**21 02 51.8**	**-0.8**
	0.2nm,0.8s,baz=15,slow=7.7,SNR=3.1						

IDC 25 20:53:16.0±57.0, 20.43S×177.07W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/19, mbtmp3.7/3, Error ellipse: s-maj=1046.0km s-min=168.1km az=83.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.61**	**244**	P	P	21 00 40.7	-0.4
	0.6nm,0.4s,baz=68,slow=7.0,SNR=3.8						
ASAR	**Alice Springs**	**45.39**	**257**	P	P	21 01 36.2	-0.4
	1.0nm,0.8s,baz=102,slow=7.7,SNR=11						
WRA	**Warramunga Arr**	**45.48**	**262**	P	P	21 01 37.7	+0.3
	0.3nm,0.4s,baz=94,slow=8.1,SNR=30						

*CSEM **25** 21:16:31.6±0.3, 31.46N×56.84E, h2km, ML3.5, Error ellipse: s-maj=9.1km s-min=7.6km az=98.0*

TEH 25 21:16:29.0, 31.52N×56.83E, h6km, ML3.5, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IBAF	**Bafgh**	**1.08**	**274**	*e*Pg	Pb	21 16 50.4	+0.2
IBAF				*e*AMB	AMB	21 17 13.6	
	comp=Z,4μm,0.1s						
IBAF	**Bafgh**	**1.08**	**274**	*e*Pg	Pb	21 16 50.4	+0.2
KHGB	**Koh Gabri**	**1.18**	**195**	*e*Pg	Pn	21 16 52.3	+0.1
KHGB	**Koh Gabri**	**1.18**	**195**	*e*Pg	Pn	21 16 52.3	+0.1
TVBK	**TV Kerman**	**1.52**	**182**	*e*Pn	Pg	21 17 00.0	+1.7
TVBK	**TV Kerman**	**1.52**	**182**	*e*Pn	Pg	21 17 00.0	+1.7
KRBR	**Kerman**	**1.53**	**182**	*e*Pn	Pg	21 16 59.6	+1.3
KRBR				*e*Sg	Sg	21 17 20.4	+2.2
CHMN	**Cheshme madani**	**1.76**	**159**	*e*Pn	Pg	21 17 03.4	+0.7
CHMN	**Cheshme madani**	**1.76**	**159**	*e*Pn	Pg	21 17 03.4	+0.7
NGRK	**Negar Kerman**	**1.87**	**183**	*e*Pn	Pg	21 17 05.1	+0.3
NGRK	**Negar Kerman**	**1.87**	**183**	*e*Pn	Pg	21 17 05.1	+0.3
IMEH	**Mehriz**	**1.90**	**267**	*e*AMB	AMB	21 17 37.8	
	comp=Z,4μm,0.3s						
IMEH				*e*Pn	Pg	21 17 05.4	0.0
IKOO	**Kooshah**	**2.06**	**63**	*e*AMB	AMB	21 17 43.8	
	comp=Z,3μm,0.1s						
IKOO				*e*Pn	Pb	21 17 07.4	+0.4
ITEG	**Tejag**	**2.13**	**49**	*e*AMB	AMB	21 17 50.9	
	comp=Z,2μm,0.2s						
ITEG				*e*Pn	Pb	21 17 08.4	+0.2
TABS	**Tabas**	**2.14**	**6**	*e*Pn	Pg	21 17 09.3	-0.8
ICHK	**Chekchek**	**2.19**	**290**	*e*AMB	AMB	21 17 41.6	
	comp=Z,4μm,0.3s						
ICHK				*e*Pn	Pb	21 17 09.4	+0.3
ISAD	**Sadrabad**	**2.71**	**279**	*e*Pn	Pb	21 17 16.8	-1.2
ISAD				*e*AMB	AMB	21 17 59.9	
	comp=Z,1μm,0.3s						
ISAD	**Sadrabad**	**2.71**	**279**	*e*Pn	Pb	21 17 16.8	-1.2
IDAH	**Dahanechah**	**2.85**	**64**	*e*AMB	AMB	21 17 30.4	
	comp=Z,1μm,0.2s						
SHRT	**Shahrakht**	**3.61**	**53**	*e*Pn	Pn	21 17 28.2	+2.6
NASN	**Na'in**	**3.64**	**292**	*e*Pn	Pb	21 17 32.3	-1.7
SHRO	**Shahrood**	**4.51**	**352**	*e*Pn	Pn	21 17 42.7	+4.7

*NIED **25** 21:33:00.39N×142.80E, h5km, Mw4.8 Best double couple: M0 1.96000×10^16 NP1:φs278.00000°, δ43.00000°, λ-113.00000°. NP2:φs128.00000°, δ51.00000°, λ-70.00000°.*

*IDC **25** 21:33:12.5±0.4, 39.01N×142.67E, h0km, mb4.7/35, mb1 4.8/40, mb1mx4.8/47, mbtmp4.7/40, ML4.1/4, MS4.0/24, Ms1 4.0/24, ms1mx3.8/32, Error ellipse: s-maj=12.5km s-min=9.2km az=102.0*

*ISCJB **25** 21:33:12.3±0.8, 39.01N±0.02×142.68E±0.02, h7km±4km, mb5.0/270, MS4.3/48, Error ellipse: s-maj=3.4km s-min=2.1km az=160.5*

*BJI **25** 21:33:13.4, 39.01N×142.86E, h28km, mb4.8/70, mB5.0/44, Ms4.6/69, Ms7 4.3/63*

*JMA **25** 21:33:13.3±0.1, 39.03N×142.75E, h24km±1km, M4.9*
JMA Felt II J1.

*NEIC **25** 21:33:14.6±1.3, 39.02N×142.60E, h12km±8km, mb5.1/184, Error ellipse: s-maj=3.6km s-min=2.2km az=138.0*
NEIC Recorded [2 JMA] in Aomori, Iwate and Miyagi.

*GCMT **25** 21:33:14.6±0.2, 39.11N×142.54E, h12km, MW4.9/90, Moment Tensor Solution. s37,c51; s90,c146; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-2.45±.06; Mθθ1.97±.05; Mφφ0.47±.05; Mrθ0.16±.16; Mrφ-0.81±.04; Mθφ1.20±.23; Best double couple: M0 2.63600×10^16 NP1:φs134.00000°, δ53.00000°, λ-64.00000°. NP2: φs275.00000°, δ44.00000°, λ-120.00000°. Principal axes: T 2.3550, Plg5.0000°, Azm206.0000°; N 0.5600, Plg21.0000°, Azm298.0000°; P -2.9170, Plg69.0000°, Azm104.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*MOS **25** 21:33:16.3±0.9, 39.09N×142.63E, h33km, mb5.3/74, MS4.4/11 Error ellipse: s-maj=6.2km s-min=4.2km az=95.2*

ISC 25 21:33:14.9±0.6, 39.04N±0.03×142.69E±0.03, h14km±3km, n742, σ1s49/786, mb5.1/274, MS4.4/48, 17C-35D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.79**	**273**	P	**Pg**	**21 33 28.8**	**-1.5**
OFUJ				*eS*	**Sg**	**21 33 39.9**	**-0.8**
MIYJ	**Miyakonagasawa**	**0.86**	**309**	P	**Pg**	**21 33 29.8**	**-1.7**
MIYJ				S	**Sg**	**21 33 41.7**	**-1.1**
JTH	**Tanohata**	**1.10**	**325**	P	**Pb**	**21 33 33.3**	**-2.4**
JMK	**Ichinoseki**	**1.15**	**266**	P	**Pb**	**21 33 34.6**	**-1.9**
JMK				S	**Sb**	**21 33 49.7**	**-1.5**
JOM	**Ohasama**	**1.17**	**292**	P	**Pb**	**21 33 35.0**	**-1.8**
JOM				*eS*	**Sb**	**21 33 50.7**	**-1.1**
JIO	**Ouri**	**1.20**	**241**	P	**Pb**	**21 33 34.8**	**-2.5**
JIO				S	**Sb**	**21 33 50.3**	**-2.5**
JKZ	**Kuzumaki**	**1.41**	**312**	P	**Pn**	**21 33 38.8**	**-1.4**
JANG	**Nango**	**1.61**	**326**	P	**Pn**	**21 33 41.3**	**-1.6**
JANG				S	**Sn**	**21 34 02.2**	**-1.3**
JRG	**Rokugo**	**1.63**	**283**	P	**Pn**	**21 33 42.5**	**-0.7**
JOU	**Okura**	**1.72**	**248**	P	**Pn**	**21 33 43.1**	**-1.4**
JOU				S	**Sn**	**21 34 04.9**	**-1.4**
JYK	**Kaneyama**	**1.82**	**267**	P	**Pn**	**21 33 45.0**	**-0.8**
JYK				S	**Sn**	**21 34 08.6**	**-0.1**
ERM	**Erimo**	**2.99**	**7**	*d*iP	**Pn**	**21 34 00.9**	**-1.0**
ERM				pmax	pmax		
	comp=Z,104nm,0.8s						
ERM	**Erimo**	**2.99**	**7**	*e*Pn	**Pn**	**21 34 01.6**	**-0.3**
ERM				*e*Sn	**Sn**	**21 34 37.4**	**-0.2**
MAJO	**Matsushiro**	**4.34**	**236**	*c*iP	**Pn**	**21 34 20.9**	**+0.4**
MAJO	**Matsushiro**	**4.34**	**236**	*e*Pn	**Pn**	**21 34 21.1**	**+0.7**
MAJO				*e*Sn	**Sn**	**21 35 09.7**	**-1.1**
MAT	**Matsushiro**	**4.34**	**236**	P	**Pn**	**21 34 20.7**	**+0.2**
MAT				S	**Sn**	**21 35 13.4**	**+2.6**
MJAR	**Matsushiro Arr**	**4.34**	**236**	Pn	**Pn**	**21 34 19.2**	**-1.2**
	comp=Z,16nm,0.3s,baz=38,slow=11,SNR=154						
MJAR				Sn	**Sn**	**21 35 15.5**	**+4.7**
	comp=Z,4.9nm,0.3s,baz=40,slow=21,SNR=4.1						
MJAR				LR	LR	21 36 04.9	
	comp=Z,3μm,19.6s,baz=55,slow=40						
MJB9	**Matsu-Tunnel**	**4.34**	**236**	*e*Pn	**Pn**	**21 34 21.3**	**+0.8**
MJB9				*e*Sn	**Sn**	**21 35 10.2**	**-0.6**
ASAJ	**Asahikawa**	**5.07**	**359**	Pn	**Pn**	**21 34 31.0**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=210,slow=7.6,SNR=1.5						
ASAJ	**Asahikawa**	**5.07**	**359**	*e*Pn	**Pn**	**21 34 31.4**	**+0.9**
YUK	**Yuzh-Kuril'sk**	**5.53**	**25**	*e*P	**Pn**	**21 34 35.4**	**-1.3**
INU	**Inuyama**	**5.84**	**233**	*e*Pn	**Pn**	**21 34 41.9**	**+0.8**
JHJ2	**Mitsune**	**6.36**	**202**	*e*Pn	**Pn**	**21 34 46.0**	**-2.2**
JHJ2				*e*Sn	**Sn**	**21 35 59.2**	**-1.3**
JHJ	**Hachijo jima 2**	**6.36**	**203**	Pn	**Pn**	**21 34 46.5**	**-1.8**
	comp=Z,39nm,0.3s,baz=275,slow=23,SNR=15						
JHJ				Sn	**Sn**	**21 35 57.0**	**-3.6**
	comp=Z,81nm,0.3s,baz=53,slow=20,SNR=3.4						
KUR	**Kuril'sk**	**7.29**	**30**	*e*P	**Pn**	**21 35 01.0**	**+0.1**
KUR				*i* S	**Sn**	**21 36 18.1**	**-5.2**
KUR				pmax	pmax		
	comp=Z,580nm,4.6s						
KUR				pmax	pmax		
	comp=Z,75nm,0.6s						
KUR				pmax	pmax		
	comp=N,41nm,0.4s						
KUR				pmax	pmax		
	comp=E,20nm,0.4s						
KUR				smax	smax		
	comp=E,192nm,0.4s						
KUR				smax	smax		
	comp=N,103nm,0.3s						
KUR				smax	smax		
	comp=N,1μm,4.2s						
KUR				smax	smax		
	comp=E,345nm,2.7s						
KUR				MLR	MLR		
	comp=E,1μm,16.0s						
KUR				MLR	MLR		
	comp=Z,886nm,16.0s						
YSS	**Yuzh-Sakhalins**	**7.91**	**0**	*e*P	**Pn**	**21 35 11.3**	**+1.9**
YSS				*e*S	**Sn**	**21 36 35.2**	**-3.5**
YSS				pmax	pmax		
	comp=Z,70nm,0.9s						
YSS				MLR	MLR		
	comp=Z,1μm,17.0s						
YSS				MLR	MLR		
	comp=N,1μm,10.0s						
YSS				MLR	MLR		
	comp=E,2μm,13.0s						
YSS	**Yuzh-Sakhalins**	**7.91**	**0**	*e*Pn	**Pn**	**21 35 09.8**	**+0.4**
VLA	**Vladivostok**	**9.12**	**300**	*c*eP	**Pn**	**21 35 28.8**	**+2.8**
MSHR	**Mys Shultsa**	**9.43**	**296**	*i*eP	**Pn**	**21 35 32.9**	**+2.6**
USRK	**Ussuriysk Ar.**	**9.52**	**306**	Pn	**Pn**	**21 35 33.5**	**+2.0**
	comp=E,1.0nm,0.3s,baz=116,slow=13,SNR=51						
USRK				LR	LR	21 38 41.0	
	comp=E,242nm,21.0s,baz=114,slow=34						
HABR	**Khabarovsk**	**10.92**	**332**	P	**Pn**	**21 35 49.6**	**-1.0**
HABR				*e*S	**Sn**	**21 37 51.2**	**-1.3**
HABR				pmax	pmax		
	comp=Z,5.0nm,0.9s						
HABR				pmax	pmax		
	comp=Z,12nm,0.9s						
HABR				MLR	MLR		
	comp=Z,209nm,12.0s						
JNU	**Nakatsue**	**11.23**	**242**	Pn	**Pn**	**21 35 55.7**	**+0.7**
	comp=Z,1.2nm,0.3s,baz=61,slow=5.8,SNR=24						
JNU	**Nakatsue**	**11.23**	**242**	*e*Pn	**Pn**	**21 35 56.4**	**+1.4**
MDJ	**Mudanjiang**	**11.24**	**304**	P	**Pn**	**21 35 58.0**	**+2.9**
MDJ				S	**Sn**	**21 38 03.0**	**+2.5**
MDJ				PcP	**PcP**	**21 41 52.0**	**+2.0**
MDJ				ScP	**ScP**	**21 45 23.8**	**+1.6**
MDJ				PcS	**PcS**	**21 45 26.0**	**+2.2**
MDJ				pmax	pmax		
	comp=Z,8.0nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,150nm,5.5s						
MDJ				LR	LR		
	comp=Z,1μm,14.9s						
MDJ				LR	LR		
	comp=Z,610nm,16.3s						
MDJ				LR	LR		
	comp=Z,980nm,13.6s						
MDJ	**Mudanjiang**	**11.24**	**304**	*e*Pn	Pn	21 36 01.7	+6.6
KSRS	**Korea Array**	**11.72**	**267**	Pn	**Pn**	**21 36 04.9**	**+3.2**
	comp=Z,0.7nm,0.3s,baz=83,slow=14,SNR=30						
KS01	**Wonju Array Si**	**11.74**	**267**	*e*Pn	**Pn**	**21 36 04.3**	**+2.4**
KS15	**Wonju Array Si**	**11.75**	**267**	*e*Pn	**Pn**	**21 36 05.3**	**+3.2**
KSAR	**Wonju Array Be**	**11.75**	**267**	P	**Pn**	**21 36 04.9**	**+2.8**
KSAR	**Wonju Array Be**	**11.75**	**267**	Pn	**Pn**	**21 36 04.9**	**+2.8**
TYV	**Tymovskoe**	**11.82**	**360**	*e*P	**Pn**	**21 36 02.5**	**-0.5**
TYV				pmax	pmax		
	comp=E,15nm,0.8s						
TYV				pmax	pmax		
	comp=Z,26nm,0.8s						
TYV				MLR	MLR		
	comp=N,2μm,14.0s						
KLR	**Kul'dur**	**12.85**	**326**	Pn	**Pn**	**21 36 17.8**	**+0.7**
	comp=N,0.3nm,0.3s,baz=131,slow=13,SNR=14						
KLR	**Kul'dur**	**12.85**	**326**	*de*P	**Pn**	**21 36 17.9**	**+0.9**
CN2	**Changchun**	**13.78**	**296**	*e*P	**P**	**21 36 34.5**	**-3.8**
CN2				*es*P	sP	21 36 44.3	
CN2				*e*S	**Sn**	**21 39 07.5**	**+5.0**
CN2				pmax	pmax		
	comp=N,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=N,200nm,4.0s						
CN2				LR	LR		
	comp=N,800nm,12.0s						
CN2				LR	LR		
	comp=N,600nm,12.0s						
CN2				LR	LR		
	comp=N,500nm,12.0s						
NKL	**Nikolayevsk**	**14.18**	**355**	*e*P	**Pn**	**21 36 36.0**	**+0.9**
NKL				*e*S	**Sn**	**21 39 16.0**	**+3.9**
NKL				pmax	pmax		
	comp=N,300nm,6.0s						
NKL				pmax	pmax		
	comp=Z,350nm,6.0s						
NKL				pmax	pmax		
	comp=Z,34nm,1.0s						
NKL				smax	smax		
	comp=E,450nm,9.0s						
NKL				MLR	MLR		
	comp=N,1μm,15.0s						
NKL				MLR	MLR		
	comp=E,600nm,15.0s						
NKL				MLR	MLR		
	comp=Z,2μm,17.0s						
SNY	**Shenyang**	**14.82**	**287**	⇑P	**Pn**	**21 36 46.8**	**+2.9**
SNY				S	**Sn**	**21 39 32.5**	**+4.7**
SNY				pmax	pmax		
	comp=Z,12nm,1.3s						
SNY				LR	LR		
	comp=Z,600nm,13.3s						
SNY				LR	LR		
	comp=Z,610nm,14.5s						
SNY				LR	LR		
	comp=Z,780nm,14.1s						
PEA0	**Petropavlovsk-**	**17.45**	**31**	*e*Pn	**Pn**	**21 37 16.2**	**-1.6**
PEA0B	**Petropavlovsk-**	**17.45**	**31**	*e*Pn	**Pn**	**21 37 15.8**	**-2.0**
	comp=E,65nm,1.1s						
PETK	**Petropavlovsk-**	**17.45**	**31**	P	**Pn**	**21 37 15.9**	**-1.9**
	baz=198,slow=8.6,SNR=7.8						
PETK				PcP	**PcP**	**21 41 58.6**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=180,slow=1.4,SNR=3.6						
PETK				LR	LR	21 44 47.4	
	comp=Z,428nm,18.6s,baz=215,slow=40						
PEA1	**Petropavlovsk-**	**17.45**	**31**	*e*Pn	**Pn**	**21 37 15.9**	**-1.9**
PEA1				*e*PcP	**PcP**	**21 41 58.6**	**+0.4**
PET	**Petropavlovsk**	**17.78**	**33**	*e*P	**Pn**	**21 37 19.9**	**-2.0**
PET				pmax	pmax		
	comp=Z,97nm,1.4s						
PET	**Petropavlovsk**	**17.78**	**33**	*e*Pn	**Pn**	**21 37 19.9**	**-2.0**
	comp=Z,97nm,1.4s						
HIA	**Hailar**	**19.31**	**309**	*e*P	**P**	**21 37 36.4**	**-3.0**
HIA				pmax	pmax		
	comp=Z,31nm,1.0s						
HIA	**Hailar**	**19.31**	**309**	*e*P	**P**	**21 37 36.4**	**-3.0**
	comp=Z,31nm,1.0s						
TIA	**Tai'an**	**20.42**	**270**	*e*P	**P**	**21 37 50.3**	**-1.4**
TIA				pmax	pmax		
	comp=Z,20nm,0.9s						
TIA				LR	LR		
	comp=Z,420nm,11.8s						
TIA				LR	LR		
	comp=Z,770nm,12.2s						
TIA				LR	LR		
	comp=Z,960nm,12.8s						
BJI	**Beijing**	**20.45**	**281**	P	**P**	**21 37 49.8**	**-2.1**
BJI				S	**S**	**21 41 35.8**	**-4.6**
BJI				pmax	pmax		
	comp=Z,39nm,1.4s						
BJI				LR	LR		
	comp=Z,880nm,13.0s						
BJI				LR	LR		
	comp=Z,310nm,13.4s						
BJI				LR	LR		
	comp=Z,260nm,14.9s						
BJT	**Baijiatuau**	**20.46**	**281**	*e*P	Pn	21 37 53.7	-0.5
BJT				pmax	pmax		
	comp=Z,111nm,1.6s						
BJT	**Baijiatuau**	**20.46**	**281**	*e*P	Pn	21 37 53.7	-0.4
	comp=Z,111nm,1.6s						
NJ2	**Nanjing**	**20.57**	**258**	*e*P	Pn	21 37 55.5	-0.1
NJ2				pmax	pmax		
	comp=Z,32nm,0.9s						
MA2	**Magadan**	**21.19**	**11**	P	**P**	**21 37 59.7**	**0.0**
	comp=Z,103nm,0.9s,baz=190,slow=9.4,SNR=24						
CLNS	**Chul'man**	**21.31**	**332**	*e*P	**P**	**21 38 00.3**	**-0.8**
CLNS				*e*		21 38 15.8	
CLNS				*e*S	**S**	**21 41 51.1**	**-6.3**
CLNS				*e*		21 42 06.1	
CLNS				*e*SS	**SnSn**	**21 42 33.7**	**+14**
CLNS				pmax	pmax		
	comp=Z,32nm,0.9s						
CLNS				pmax	pmax		
	comp=E,15nm,1.0s						
CLNS				pmax	pmax		
	comp=N,39nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,19nm,0.8s						
CLNS				pmax	pmax		
	comp=E,26nm,1.0s						
CLNS				pmax	pmax		
	comp=N,39nm,0.9s						
CLNS				smax	smax		
	comp=E,47nm,10.5s						
CLNS				smax	smax		
	comp=N,196nm,9.6s						
CLNS				MLR	MLR		
	comp=Z,384nm,15.0s						
CLNS				MLR	MLR		
	comp=N,339nm,14.0s						
CLNS				MLR	MLR		
	comp=E,794nm,15.0s						
YOJ	**Yonaguni jima**	**22.10**	**235**	*e*P	**P**	**21 38 09.3**	**-0.4**
YOJ				pmax	pmax		
	comp=Z,115nm,1.2s						
YOJ	**Yonaguni jima**	**22.10**	**235**	*e*P	**P**	**21 38 09.3**	**-0.4**
	comp=Z,115nm,1.2s						
YHNB	**Yeheng**	**23.01**	**238**	*e*P	**P**	**21 38 17.0**	**-2.5**
	comp=Z,33nm,0.9s						
NACB	**Ninganchiao**	**23.21**	**237**	*e*P	**P**	**21 38 20.1**	**-1.4**
	comp=Z,34nm,0.8s						
HHC	**Hu-ho-hao-te**	**23.87**	**284**	*e*P	**P**	**21 38 28.5**	**+0.5**
HHC				S	**S**	**21 42 40.5**	**-3.2**
HHC				pmax	pmax		
	comp=Z,15nm,0.9s						
HHC				pmax	pmax		
	comp=Z,43nm,7.4s						
HHC				LR	LR		
	comp=Z,440nm,12.3s						
HHC				LR	LR		
	comp=Z,380nm,17.1s						
HHC				LR	LR		
	comp=Z,260nm,17.3s						
SSLB	**Suanglung**	**23.90**	**237**	*e*P	**P**	**21 38 25.5**	**-2.8**
	comp=Z,30nm,0.8s						
YULB	**Yu-li**	**23.95**	**236**	*e*P	**P**	**21 38 26.4**	**-2.4**
	comp=Z,27nm,1.0s						
CIT	**Chita**	**24.00**	**312**	*e*P	**P**	**21 38 29.3**	**+0.3**
CIT				*e*		21 38 34.8	
CIT				*e*		21 38 45.3	
CIT				*e*		21 39 06.7	
CIT				pmax	pmax		
	comp=Z,153nm,1.2s						
TPUB	**Ta-pu**	**24.45**	**237**	*e*P	**P**	**21 38 31.9**	**-1.5**
	comp=Z,48nm,0.9s						
TWG	**Pinlang**	**24.51**	**235**	*e*P	**P**	**21 38 32.4**	**-1.5**
	comp=Z,268nm,0.9s						
SEY	**Seymchan**	**24.63**	**11**	P	**P**	**21 38 35.2**	**+0.6**
	comp=Z,15nm,0.6s,baz=193,slow=7.9,SNR=51						
SEY	**Seymchan**	**24.63**	**11**	*de*P	**P**	**21 38 35.6**	**+0.9**
WHN	**Wuhan**	**24.69**	**259**	P	**P**	**21 38 35.5**	**0.0**
WHN				S	**S**	**21 42 46.8**	**-10**
WHN				LR	LR		
	comp=Z,3μm,15.4s						
WHN				LR	LR		
	comp=Z,2μm,15.9s						
WHN				LR	LR		
	comp=Z,2μm,14.9s						
QZH	**Quanzhou**	**24.71**	**242**	P	**P**	**21 38 41.0**	**+5.3**
QZH				S	**S**	**21 42 59.0**	**+1.9**
QZH				pmax	pmax		
	comp=Z,420nm,2.5s						
QZH				LR	LR		
	comp=N,1μm,14.3s						
QZH				LR	LR		
	comp=E,520nm,12.3s						
QZH				LR	LR		
	comp=Z,1μm,18.8s						
BTO	**Baotou**	**25.06**	**284**	*e*P	**P**	**21 38 36.5**	**-2.4**
GUMO	**Guam**	**25.43**	**175**	LR	LR	21 47 51.6	
	comp=Z,390nm,19.3s,baz=10.0,slow=35						
BOD	**Bodaibo**	**26.42**	**325**	*e*P	**P**	**21 38 45.8**	**-5.1**
BOD				pmax	pmax		
	comp=Z,26nm,1.3s						
XAN	**Xi'an**	**27.48**	**270**	P	**P**	**21 39 00.0**	**-0.8**
XAN				pP	pP	21 39 05.3	+0.3
XAN				pmax	pmax		
	comp=Z,12nm,0.6s						
SONA1	**Songino Array**	**27.56**	**301**	*e*P	**P**	**21 39 01.9**	**+0.4**
SONA0	**Songino Array**	**27.57**	**300**	*e*P	**P**	**21 39 01.4**	**-0.1**
	comp=Z,15nm,1.2s						
SONA0				*e*PcP	**PcP**	**21 42 19.2**	**+0.1**
SONM	**Songino Array**	**27.57**	**300**	P	**P**	**21 39 01.4**	**-0.1**
	comp=Z,5.4nm,0.9s,baz=100,slow=7.0,SNR=23						
SONM				PcP	**PcP**	**21 42 19.2**	**+0.1**
	comp=Z,1.5nm,0.8s,baz=80,slow=1.8,SNR=3.6						
SONM				LR	LR	21 51 14.7	
	comp=Z,168nm,19.4s,baz=88,slow=39						
H11N2	**WAKE ISLAND Hy**	**28.41**	**126**	T	T	22 08 48.7	
	baz=318,slow=75,SNR=2729						
H11N1	**WAKE ISLAND Hy**	**28.41**	**126**	T	T	22 08 49.5	
	baz=318,slow=75,SNR=3306						
H11N3	**WAKE ISLAND Hy**	**28.42**	**126**	T	T	22 08 50.8	
	baz=318,slow=75,SNR=3908						
ENH	**Enshi**	**28.55**	**262**	*e*P	**P**	**21 39 09.6**	**-0.7**
	comp=Z,76nm,0.9s						
H11S1	**WAKE ISLAND Hy**	**29.20**	**128**	T	T	22 09 48.3	
	baz=126,slow=74,SNR=235						
H11S3	**WAKE ISLAND Hy**	**29.20**	**128**	T	T	22 09 48.3	
	baz=320,slow=74,SNR=275						
H11S2	**WAKE ISLAND Hy**	**29.21**	**128**	T	T	22 09 48.8	
	SNR=186						
IRK	**Irkutsk**	**29.55**	**309**	*e*P	**P**	**21 39 17.9**	**-1.1**
IRK				pmax	pmax		
	comp=Z,55nm,2.2s						
TLY	**Talaya**	**29.83**	**308**	P	**P**	**21 39 21.4**	**-0.1**
	comp=Z,6.2nm,0.8s,baz=108,slow=8.3,SNR=11						
TLY				LR	LR	21 51 38.4	
	comp=Z,113nm,18.0s,baz=96,slow=37						
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LZH LR LR
comp=Z,640nm,14.3s
MOY Mondy 31.46 307 *eP* **P 21 39 36.0 0.0**
MOY pmax pmax
comp=Z,54nm,1.8s
BILL Bilibino 31.82 17⇑ *eP* **P 21 39 39.1 +0.3**
BILL *e* 21 39 52.7
BILL *e* 21 40 45.9
BILL pmax pmax
comp=Z,22nm,1.2s
BILL MLR MLR
comp=Z,350nm,20.0s
GYA Guiyang 32.58 258 P **P 21 39 49.0 +2.9**
GYA pP sP 21 39 56.5 +4.5
GYA PP **PP 21 40 58.0 -1.7**
GYA PcP **PcP 21 42 35.5 +3.2**
GYA S **S 21 45 02.3 +0.9**
GYA sS sS 21 45 15.5 +7.2
GYA ScP **ScP 21 46 16.0 +0.2**
GYA SS **SnSn 21 46 59.0 +3.4**
GYA pmax pmax
comp=Z,50nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.2s
GYA LR LR
comp=Z,510nm,17.2s
GYA LR LR
comp=Z,480nm,16.6s
GYA LR LR
comp=Z,470nm,17.4s
CD2 Chengdu 32.72 268 *eP* **P 21 39 47.3 +0.2**
CD2 pP sP 21 39 55.5 +2.5
CD2 sP pP 21 39 59.0 +7.7
CD2 S **S 21 45 02.8 -0.5**
CD2 sS sS 21 45 16.5 +6.3
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.4s
CD2 LR LR
comp=Z,1μm,14.1s
CD2 LR LR
comp=Z,630nm,12.5s
CD2 LR LR
comp=Z,610nm,11.9s
GTA Gaotai 32.98 284 *eP* **P 21 39 49.3 -0.2**
GTA pP sP 21 39 55.8 +0.4
GTA sP pP 21 39 58.8 +5.1
GTA PcP **PcP 21 42 34.0 +0.7**
GTA S **S 21 45 05.3 -2.2**
GTA sS sS 21 45 18.3 +3.9
GTA SS **SnSn 21 47 06.8 +1.7**
GTA pmax pmax
comp=Z,10.0nm,1.4s
GTA pmax pmax
comp=Z,150nm,7.4s
GTA LR LR
comp=Z,360nm,13.3s
GTA LR LR
comp=Z,270nm,15.7s
GTA LR LR
comp=Z,310nm,18.5s
TIXI Tiksi 33.43 352 P **P 21 39 51.4 -1.4**
comp=Z,4.1nm,0.7s,baz=150,slow=8.1,SNR=2.7
TIXI Tiksi 33.43 352⇑ *eP* **P 21 39 51.8 -1.0**
TIXI pmax pmax
comp=Z,9.0nm,1.4s
QIZ Qiongzhong 34.69 244 P **P 21 40 06.8 +2.5**
QIZ S **S 21 45 38.0 +4.1**
QIZ pmax pmax
comp=Z,7.0nm,1.1s
QIZ LR LR
comp=Z,490nm,13.7s
QIZ LR LR
comp=Z,360nm,13.7s
QIZ LR LR
comp=Z,380nm,14.8s
NIKH Nikolski High 35.72 51 *eP* **P 21 40 12.8 0.0**
comp=Z,125nm,1.8s
KMI Kunming 36.29 260 P **P 21 40 18.5 +0.2**
KMI pP sP 21 40 26.8 +2.6
KMI sP pP 21 40 30.0 +7.5
KMI S **S 21 45 57.8 -1.0**
KMI sS sS 21 46 12.3 +6.6
KMI SS **SnSn 21 48 23.0 -2.6**
KMI pmax pmax
comp=Z,84nm,1.1s
KMI LR LR
comp=Z,610nm,14.0s
KMI LR LR
comp=Z,310nm,14.5s
KMI LR LR
comp=Z,320nm,14.5s
NONG Nongkai 40.12 250 P **P 21 40 51.8 +1.4**
comp=Z,21nm,1.0s,comp=Z,9μm
SKNT Sakolnakorn 40.22 248 P **P 21 40 52.1 +0.9**
comp=Z,22nm,1.1s
WMQ Urumqi 40.87 295 P **P 21 40 57.3 +0.9**
WMQ pP sP 21 41 02.5 +0.2
WMQ sP pP 21 41 09.8 +9.2
WMQ PP **PP 21 42 32.5 +2.0**
WMQ S **S 21 47 08.0 +0.7**
WMQ SS **SS 21 50 08.8 +0.4**
WMQ pmax pmax
comp=Z,62nm,1.1s
WMQ pmax pmax
comp=Z,200nm,3.6s
WMQ LR LR
comp=Z,870nm,13.8s
WMQ LR LR
comp=Z,560nm,11.4s
WMQ LR LR
comp=Z,690nm,14.9s
ZAA1 Zalesovo Array 41.34 311 *eP* **P 21 40 59.4 -0.6**
ZAA1 *e*PcP **PcP 21 42 57.9 -0.3**
ZAA0 Zalesovo Array 41.34 311 *eP* **P 21 40 60.0 0.0**
ZALV Zalesovo Beam 41.34 311 P **P 21 40 59.4 -0.6**
comp=Z,7.8nm,0.6s,baz=92,slow=7.6,SNR=40
ZALV PcP **PcP 21 42 57.9 -0.3**
comp=Z,4.2nm,0.6s,baz=97,slow=3.4,SNR=3.6
ZALV LR LR 21 58 04.2
comp=Z,120nm,19.9s,baz=70,slow=36
JAY Jayapura 41.39 183 P **P 21 41 01.5 +0.6**
comp=Z,1.3nm,0.9s,baz=271,slow=22,SNR=5.4
LOEI Loei 41.86 251 P **P 21 41 02.3 -2.4**
comp=Z,67nm,1.2s,comp=Z,4μm
NRIK Noril'sk 41.88 334 P **P 21 41 04.0 -0.3**
comp=Z,4.0nm,0.4s,baz=106,slow=10.0,SNR=5.2
NRIK LR LR 21 59 18.3
comp=Z,655nm,18.9s,baz=105,slow=37
NRIK Noril'sk 41.88 334 P **P 21 41 04.0 -0.3**
NRIK pmax pmax
comp=Z,4.0nm,0.4s
NRIK MLR MLR
comp=Z,655nm,18.9s
CMAI Chiengmai2 42.03 256 P **P 21 41 07.1 +0.8**
comp=Z,544nm,0.8s,comp=Z,29μm
NVS Novosibirsk 42.21 312 *eP* **P 21 41 07.0 -0.1**
NVS pmax pmax
comp=Z,49nm,1.8s
NVS pmax pmax
comp=N,6.0nm,1.0s
NVS pmax pmax
comp=E,26nm,1.7s
UTTA Uttaradit 42.23 252 P P 21 41 13.8 +6.1
comp=E,5.5nm,1.0s,comp=E,46nm
GTOI Gorontalo 42.26 210 P P 21 41 14.9 +7.0
comp=E,20nm,0.8s
CHAI Chaiyaphum 42.36 249 P **P 21 41 09.5 +0.7**
comp=E,9.7nm,1.0s
LAMP Lampang 42.44 254 P **P 21 41 10.6 +1.2**
comp=E,6.2nm,1.0s
PBKT Sadao Pong 42.67 250 P **P 21 41 12.2 +0.9**
comp=E,21nm,1.1s,comp=E,1μm
CMMT Chiang Mai 42.77 255 P **P 21 41 12.6 +0.4**
comp=E,17nm,1.2s,comp=E,415nm
CHTO Chiang Mai 42.78 255 P **P 21 41 12.9 +0.7**
comp=E,61nm,0.9s
CHTO Chiang Mai 42.78 255 *eP* **P 21 41 12.4 +0.2**
CHTO pmax pmax
comp=Z,13nm,0.8s
CHTO Chiang Mai 42.78 255 *eP* **P 21 41 12.4 +0.2**
comp=Z,13nm,0.8s
MRSI Marisa 42.83 211 P **P 21 41 14.3 +1.8**
CM31 Chiang Mai Arr 42.99 254 *eP* P 21 41 19.1 +5.1
CMAR Chiang Mai Arr 42.99 254 P **P 21 41 14.3 +0.3**
comp=Z,2.3nm,0.9s,baz=48,slow=5.6,SNR=15
CMAR PcP **PcP 21 43 04.8 +0.6**
comp=Z,1.5nm,0.9s,baz=60,slow=1.9,SNR=3.6
CMAR ScP **ScP 21 46 56.1 +1.2**
comp=Z,0.5nm,0.8s,baz=44,slow=2.7,SNR=3.6
CMAR LR LR 22 00 21.8
comp=Z,141nm,18.8s,baz=58,slow=38
CM01 Chiang Mai Arr 43.00 254 *eP* **P 21 41 13.9 -0.1**
LSA Lhasa 43.05 274 P **P 21 41 15.3 +0.4**
LSA pmax pmax
comp=Z,11nm,1.7s
LSA Lhasa 43.05 274 *eP* **P 21 41 15.8 +0.9**
LSA pmax pmax
comp=Z,45nm,1.3s
LSA Lhasa 43.05 274 *eP* **P 21 41 15.8 +0.9**
comp=Z,44nm,1.3s
SUKH Sukhothai 43.08 253 P **P 21 41 19.2 +4.6**
comp=Z,5.5nm,1.1s,comp=Z,56nm
TT01 Tatalina 43.20 36 *eP* **P 21 41 15.9 +0.8**
TTA Tatalina 43.20 36 *eP* **P 21 41 15.3 +0.1**
TTA pmax pmax
comp=Z,26nm,1.4s
TTA Tatalina 43.20 36 *eP* **P 21 41 15.3 +0.1**
comp=Z,26nm,1.4s
SVW2 Sparrevohn 43.32 39 *eP* **P 21 41 17.6 +1.4**
comp=Z,33nm,1.1s
MK01 Makanchi Array 43.93 301 *eP* **P 21 41 20.9 -0.4**
MK31 Makanchi Array 43.93 301 *i* P **P 21 41 21.0 -0.3**
MK31 pmax pmax
comp=Z,20nm,0.8s
MK31 Makanchi Array 43.93 301 *eP* **P 21 41 21.1 -0.1**
MK32 Makanchi Array 43.93 301 *eP* **P 21 41 21.1 -0.2**
MKAR Makanchi Array 43.93 301 P **P 21 41 21.1 -0.2**
comp=Z,14nm,0.8s,baz=86,slow=8.6,SNR=80
MKAR LR LR 21 59 52.4
comp=Z,65nm,19.4s,baz=76,slow=36
MKAR Makanchi Array 43.93 301 *eP* **P 21 41 21.1 -0.2**
comp=Z,195nm,0.9s
MAKZ Makanchi 44.14 301 P **P 21 41 21.5 -1.4**
MAKZ pmax pmax
comp=Z,43nm,1.2s
MAKZ Makanchi 44.14 301 *eP* **P 21 41 22.9 0.0**
comp=Z,47nm,1.1s
UMPA Umpang Tak 44.46 252 P P 21 41 32.0 +6.2
comp=Z,10nm,1.1s,comp=Z,91nm
OHAK Old Harbor 44.61 44 *eP* **P 21 41 25.9 -0.5**
comp=Z,24nm,1.0s
RSO Redoubt South 44.71 39 *eP* **P 21 41 28.4 +0.9**
KDAK Kodiak Island 44.94 43 *i* P **P 21 41 29.0 -0.1**
KDAK Kodiak Island 44.94 43 *eP* **P 21 41 29.2 +0.1**
comp=Z,51nm,1.1s
PPLA Purkeypile 44.95 36 *eP* **P 21 41 30.9 +1.5**
comp=Z,78nm,1.6s
CAST Castle Rocks 45.01 35 *eP* **P 21 41 31.4 +1.8**
comp=Z,16nm,0.9s
SPU Mount Spurr 45.03 38 *eP* **P 21 41 30.9 +1.0**
SRDT SRDT 45.46 250 P P 21 41 40.1 +6.4
comp=Z,174nm,2.1s
BPAW Bear Paw Mtn. 45.50 34 *eP* **P 21 41 34.6 +1.1**
comp=Z,51nm,1.8s
KURK Kurchatov 45.51 307 *eP* **P 21 41 33.9 +0.2**
KURK Kurchatov 45.51 307 *eP* **P 21 41 33.9 +0.2**
KTH Kantishna Hill 45.53 35 *eP* **P 21 41 35.0 +1.2**
comp=Z,38nm,1.0s
KURBB Kurchatov Arra 45.59 307 P **P 21 41 33.9 -0.4**
comp=Z,42nm,0.7s,baz=80,slow=8.1,SNR=283
KURBB PcP **PcP 21 43 12.1 -0.4**
comp=Z,2.0nm,0.8s,baz=93,slow=4.6,SNR=2.2
MLY Manley 45.62 33 *eP* **P 21 41 35.8 +1.3**
comp=Z,32nm,1.2s
SUA Susitna One 45.66 38 *eP* **P 21 41 35.6 +0.7**
BRLK Bradley Lake 45.68 40 *eP* **P 21 41 34.9 -0.1**
comp=Z,39nm,0.8s
TRF Thorofare Moun 45.81 35 *eP* **P 21 41 37.1 +0.9**
comp=Z,14nm,0.9s
COLD Coldfoot 45.91 30 *eP* **P 21 41 37.7 +1.0**
comp=Z,9.2nm,1.1s
PHET Kaeng Krachan 46.05 248 P P 21 41 44.7 +6.4
comp=Z,12nm,0.9s,comp=Z,126nm
RC01 Rabbit Creek A 46.16 39 *eP* **P 21 41 39.0 +0.3**
comp=Z,26nm,0.9s
BWN Browne 46.17 34 *eP* **P 21 41 40.9 +2.2**
comp=Z,109nm,1.1s
SEW Seward 46.38 40 *eP* **P 21 41 40.5 +0.1**
comp=Z,17nm,0.9s
MCK McKinley 46.41 35 *eP* **P 21 41 41.4 +0.7**
MCK pmax pmax
comp=Z,23nm,1.0s
MCK McKinley 46.41 35 *eP* **P 21 41 41.4 +0.7**
comp=Z,23nm,1.0s
PMR Palmer 46.42 38 *eP* **P 21 41 40.5 -0.2**
PMR pmax pmax
comp=Z,37nm,1.2s
PMR Palmer 46.42 38 *eP* **P 21 41 40.5 -0.2**
comp=Z,37nm,1.2s
RND Reindeer 46.46 35 *eP* **P 21 41 41.6 +0.5**
RND pmax pmax
comp=Z,42nm,1.2s
RND Reindeer 46.46 35 *eP* **P 21 41 41.6 +0.5**
comp=Z,42nm,1.2s
MDM Murphy Dome 46.69 33 *eP* **P 21 41 43.9 +1.1**
comp=Z,54nm,1.2s
WRH Wood River Hil 46.76 34 *eP* **P 21 41 43.8 +0.4**
comp=Z,12nm,1.0s
SML Sawmill 46.78 37 *eP* **P 21 41 44.5 +0.8**
SML pmax pmax
comp=Z,26nm,1.0s
SML Sawmill 46.78 37 *eP* **P 21 41 44.5 +0.8**
comp=Z,26nm,1.0s
CCB Clear Creek Bu 46.88 34 *eP* **P 21 41 44.7 +0.4**
comp=Z,16nm,1.2s
DHY Denali Highway 47.14 36 *eP* **P 21 41 47.1 +0.5**
comp=Z,18nm,0.9s
SCM Sheep Creek Mo 47.26 37 *eP* **P 21 41 48.1 +0.7**
SCM pmax pmax
comp=Z,32nm,0.9s
SCM Sheep Creek Mo 47.26 37 *eP* **P 21 41 48.1 +0.7**
comp=Z,32nm,0.9s
IL1 Eielson Array 47.27 33 *eP* **P 21 41 47.1 -0.2**
ILAR Eielson Array 47.27 33 P **P 21 41 47.8 +0.4**
comp=Z,15nm,0.8s,baz=267,slow=6.2,SNR=128
ILAR LR LR 22 02 36.6
comp=Z,37nm,21.1s,baz=284,slow=37
ILB Eielson Array 47.27 33 *eP* **P 21 41 47.7 +0.4**
JIRN Jiri 47.86 274 *eP* **P 21 41 53.3 +0.4**
comp=Z,231nm,0.7s
FYU Fort Yukon 47.87 31 *eP* **P 21 41 54.3 +2.3**
comp=Z,111nm,1.6s
RAMN Ramite 47.88 273 *eP* **P 21 41 52.7 -0.2**
comp=Z,82nm,0.8s
KLU Klutina 47.96 38 *eP* **P 21 41 53.6 +0.8**
comp=Z,34nm,1.1s
GUN Gumba 47.98 275 *eP* **P 21 41 53.8 0.0**
comp=Z,104nm,0.9s
DIV Divide 48.07 38 *eP* **P 21 41 55.0 +1.2**
comp=Z,49nm,1.2s
STKI Sintang 48.18 224 P P 21 42 01.8 +6.8
KKN Kakani 48.50 275 *eP* **P 21 41 57.4 -0.3**
comp=Z,55nm,0.6s
PKIN Phulchoki 48.51 274 *eP* **P 21 41 57.2 -0.6**
comp=Z,30nm,0.9s
DOT Dot Lake 48.58 35 *eP* **P 21 41 57.6 0.0**
comp=Z,26nm,0.9s
BMRM Bremner River 48.66 38 *eP* **P 21 41 59.2 +1.0**
comp=Z,34nm,1.1s
DMN Daman 48.72 275 *eP* **P 21 41 59.3 -0.1**
comp=Z,146nm,1.4s
MENT Mentasta 48.82 36 *eP* **P 21 42 00.6 +1.2**
comp=Z,26nm,1.0s
GKN Gorkha 48.90 275 *eP* **P 21 42 00.3 -0.4**
comp=Z,180nm,1.4s
SKLT Songkhla 49.35 241 P P 21 42 10.8 +6.8
comp=Z,23nm,1.2s,comp=Z,848nm
CRQM Cirque 49.40 38 *eP* **P 21 42 05.5 +1.4**
comp=Z,38nm,0.9s
BBKI Banjar Baru 49.48 218 P P 21 42 08.5 +3.5
comp=Z,52nm,1.3s,comp=Z,1μm
KRAB Krabi 49.58 243 P P 21 42 11.7 +5.9
comp=Z,40nm,0.7s,comp=Z,914nm
TKM2 Tokmak 2 49.58 297 P **P 21 42 05.8 0.0**
TKM2 pmax pmax
comp=Z,66nm,1.3s
EGAK Eagle 49.71 33 *eP* **P 21 42 06.7 +0.5**
comp=Z,10nm,0.8s
BALM Baldy 49.74 38 *eP* **P 21 42 07.6 +1.1**
BALM pmax pmax
comp=Z,18nm,0.8s
BALM Baldy 49.74 38 *eP* **P 21 42 07.6 +1.1**
comp=Z,18nm,0.8s
KOLN Koldanda 49.81 276 *eP* **P 21 42 07.7 0.0**
comp=Z,63nm,0.9s
BVAR Borovoye Array 49.98 311 P **P 21 42 08.2 -0.2**
comp=Z,13nm,0.7s,baz=81,slow=9.2,SNR=69
BVAR PcP **PcP 21 43 28.4 +0.1**
comp=Z,4.2nm,0.6s,baz=57,slow=5.5,SNR=4.0
BRVK Borovoye 50.04 311 *d iP* **P 21 42 08.5 -0.3**
BRVK pmax pmax
comp=Z,57nm,1.0s
BRVK Borovoye 50.04 311 *eP* **P 21 42 08.8 -0.1**
comp=Z,19nm,0.9s
PYUN Piuthan 50.13 276 *eP* **P 21 42 10.0 -0.1**
comp=Z,202nm,0.9s
PKDT Phuket 50.41 244 P P 21 42 20.0 +7.9
comp=Z,54nm,1.1s
AAK Ala-Archa 50.44 297 *c iP* **P 21 42 12.4 +0.2**
AAK pmax pmax
comp=Z,16nm,1.0s
AAK Ala-Archa 50.44 297 *eP* **P 21 42 12.6 +0.3**
comp=Z,27nm,1.3s
KSH Kashi 50.53 293 *eP* **P 21 42 17.0 +4.1**
KSH *e*pP sP 21 42 24.3 +5.4
KSH *e*PP **PP 21 44 13.8 +5.3**
KSH *e*ScP **ScP 21 47 28.0 +1.7**
KSH S **S 21 49 28.8 +2.1**
KSH SS **SS 21 53 00.3 -0.1**
KSH pmax pmax
comp=Z,6.0nm,1.1s
KSH pmax pmax
comp=Z,140nm,4.9s
KSH LR LR
comp=Z,140nm,7.4s
KSH LR LR
comp=Z,350nm,14.2s
KSH LR LR
comp=Z,240nm,13.2s
DAWY Dawson 50.57 34 *eP* **P 21 42 13.7 +0.9**
comp=Z,30nm,1.9s
KULM Kulim 50.70 240 *eP* **P 21 42 14.7 +0.4**
comp=Z,55nm,1.6s
IPM Ipoh 51.05 238 *eP* **P 21 42 16.9 0.0**
comp=Z,38nm,1.2s
SOEI Soe 51.49 203 *eP* P 21 42 25.4 +5.2
comp=Z,80nm,1.1s
HYT Haines Junctio 52.09 38 *eP* **P 21 42 26.1 +1.8**
comp=Z,48nm,1.0s
INK Inuvik 52.15 28 P **P 21 42 25.2 +0.8**
comp=Z,9.0nm,0.5s,baz=282,slow=7.0,SNR=16
INK Inuvik 52.15 28 *eP* **P 21 42 25.2 +0.8**
INK pmax pmax
comp=Z,22nm,1.1s
INK Inuvik 52.15 28 *eP* **P 21 42 25.2 +0.8**
comp=Z,22nm,1.1s
COEN Coen 52.72 179 *eP* **P 21 42 29.6 +0.4**
comp=Z,33nm,0.9s
MTN Manton Dam 52.73 194 *eP* **P 21 42 29.2 -0.1**
comp=Z,50nm,1.1s
KK31 Karatay Array 53.01 299 P **P 21 42 30.3 -0.9**
KK31 pmax pmax
comp=Z,28nm,1.1s
KKAR Karatay Array 53.01 299 *eP* **P 21 42 30.9 -0.3**
KKAR Karatay Array 53.01 299 *eP* **P 21 42 30.9 -0.3**
comp=Z,216nm,1.1s
PSI Prapat 53.69 239 *eP* P 21 42 42.3 +5.7
PSI Prapat 53.69 239 *eP* P 21 42 42.3 +5.7
BKNI Bangkinang 54.16 235 P P 21 42 48.5 +8.5
comp=Z,74nm,1.0s
SVE Sverdlovsk 54.32 318 *c iP* **P 21 42 40.8 +0.2**
SVE pmax pmax
comp=Z,57nm,0.9s
SOKR Solikamsk 55.36 322⇑ *iP* **P 21 42 46.0 -2.0**
SOKR pmax pmax
comp=Z,22nm,1.5s
ARU Arti 55.53 318 *d iP* **P 21 42 49.0 -0.4**
ARU 21 43 46.3
ARU 21 44 50.6
ARU S **S 21 50 34.0 -0.1**
ARU SS **SS 21 54 18.0 -0.4**
ARU pmax pmax
comp=Z,71nm,1.7s
ARU MLR MLR
comp=Z,371nm,15.0s
ARU Arti 55.53 318 *eP* **P 21 42 49.2 -0.1**
comp=Z,41nm,1.0s
GSI Gunungsitoli 55.69 239 P **P 21 42 55.3 +4.3**
comp=Z,35nm,1.0s
GSI Gunungsitoli 55.69 239 *eP* **P 21 42 50.9 -0.2**
comp=Z,37nm,1.0s
KLSI 55.87 228 P P 21 43 00.7 +8.4
comp=Z,22nm,1.2s
LHSI Lahat 55.88 230 P P 21 42 58.9 +6.6
comp=Z,30nm,1.0s,comp=Z,2μm
DLBC Dease Lake 56.43 39 P **P 21 42 57.5 +1.7**
comp=Z,6.1nm,0.9s,baz=289,slow=9.2,SNR=9.3
DLBC Dease Lake 56.43 39 *eP* **P 21 42 58.0 +2.1**
comp=Z,14nm,1.1s
AB31 Akbulak array 57.43 310 P **P 21 43 02.4 -0.6**
AB31 pmax pmax
comp=Z,8.0nm,0.7s
ABKAR Akbulak array 57.43 310 *eP* **P 21 43 02.5 -0.5**
comp=Z,108nm,0.6s
KBL Kabul 57.65 290 *eP* **P 21 43 04.5 -0.5**
KBL pmax pmax
comp=Z,18nm,1.0s
KBL Kabul 57.65 290 *eP* **P 21 43 04.5 -0.5**
comp=Z,18nm,1.0s
KBS Kingsbay 58.85 350 *eP* **P 21 43 13.8 +1.3**
KBS pmax pmax
comp=Z,26nm,1.3s
KBS Kingsbay 58.85 350 *eP* **P 21 43 13.8 +1.3**
comp=Z,26nm,1.3s
CTA Charters Tower 58.91 176 P **P 21 43 12.7 -0.8**
comp=Z,4.6nm,0.7s,baz=305,slow=9.7,SNR=3.2
FITZ Fitzroy Crossi 59.04 199 P **P 21 43 14.2 -0.3**
comp=Z,9.2nm,0.9s,baz=14,slow=7.7,SNR=16
FITZ Fitzroy Crossi 59.04 199 *eP* **P 21 43 14.5 0.0**
comp=Z,31nm,1.3s
WRAB Tennant Creek 59.18 189 *d iP* **P 21 43 14.3 -1.1**
WRAB pmax pmax
comp=Z,95nm,0.8s
WRAB Tennant Creek 59.18 189 *eP* **P 21 43 14.4 -1.1**
comp=Z,48nm,0.9s
WB2 Warramunga Arr 59.19 189 *eP* **P 21 43 14.5 -1.0**
WR1 Warramunga Arr 59.19 189 *eP* **P 21 43 14.3 -1.2**
comp=Z,45nm,0.8s
WRA Warramunga Arr 59.19 189 P **P 21 43 14.3 -1.2**
comp=Z,34nm,0.8s,baz=6.7,slow=7.0,SNR=304
HYB Hyderabad 59.27 268 *i* P **P 21 43 16.0 -0.3**
HYB *e* 21 43 21.5
RES Resolute Bay 60.41 15 P **P 21 43 23.1 -0.1**
comp=Z,14nm,0.8s,baz=292,slow=5.6,SNR=10
RES Resolute Bay 60.41 15 *eP* **P 21 43 23.5 +0.2**
RES pmax pmax
comp=Z,24nm,1.1s
RES Resolute Bay 60.41 15 *eP* **P 21 43 23.5 +0.2**
comp=Z,24nm,1.1s
APA Apatity 61.27 336⇓ *iP* P 21 43 20.2 -9.0
APA MLR MLR
comp=Z,400nm,18.0s
YKA Yellowknife Ar 61.57 31 P **P 21 43 31.3 0.0**
comp=Z,6.8nm,0.9s,baz=297,slow=6.6,SNR=22
YKA PcP **PcP 21 44 13.8 +0.8**
comp=Z,2.0nm,0.9s,baz=305,slow=4.0,SNR=3.1
YKA LR LR 22 14 38.6
comp=Z,6.4nm,18.1s,baz=0.0,slow=40
YKB5 Yellowknife Ar 61.57 31 *eP* **P 21 43 31.3 0.0**
YKB5 *e*PcP **PcP 21 44 13.8 +0.8**
ARCES ARCESS Array B 62.47 339 P **P 21 43 37.5 +0.2**
comp=Z,1.9nm,0.6s,baz=58,slow=10,SNR=4.6
ARCES LR LR 22 15 14.2
comp=Z,264nm,19.0s,baz=42,slow=40
KLMR Klimovskoe 62.60 328 *eP* **P 21 43 35.8 -2.5**
KLMR pmax pmax
comp=Z,23nm,1.2s
AS01 Alice Springs 62.91 189 *eP* **P 21 43 39.9 -0.9**
AS31 Alice Springs 62.92 189 *eP* **P 21 43 40.0 -0.8**
comp=Z,4.7nm,0.9s
ASAR Alice Springs 62.92 189 P **P 21 43 40.0 -0.7**
comp=Z,12nm,0.8s,baz=9.7,slow=6.4,SNR=108
ASAR LR LR 22 09 23.3
comp=Z,188nm,21.9s,baz=358,slow=34
ASAR PKP2ab 22 12 54.5
comp=Z,0.7nm,0.9s,baz=155,slow=1.8,SNR=5.4
GEYT Alibeck 63.75 299 P **P 21 43 45.9 -0.5**
comp=Z,8.9nm,1.0s,baz=36,slow=2.8,SNR=19

GEYT LR LR 22 13 39.6
comp=Z,80nm,19.2s,baz=35,slow=38
DAG Danmarks Havn 63.86 355 *i* P P 21 43 46.0 -0.4
comp=Z,11nm,0.9s
LLLB Lillooet 64.12 45 *eP* P 21 43 49.4 +0.9
comp=Z,8.7nm,1.0s
EIDS Eidsvold 64.55 172 *eP* P 21 43 51.7 +0.2
comp=Z,11nm,0.8s
NLWA Neilton Lookou 64.63 49 *eP* P 21 43 53.7 +1.7
comp=Z,19nm,1.1s
B05A Bryant 65.20 47 P P 21 43 56.3 +0.7
baz=301
TDL Tradedollar La 66.14 49 *eP* P 21 44 02.9 +1.0
F04A Amboy 66.24 49 *eP* P 21 44 03.6 +1.3
comp=Z,21nm,0.9s
MOS Moscow 66.24 323 *eP* P 21 44 01.6 -0.5
MOS pmax pmax
comp=Z,59nm,1.2s
NLW Nelson Butte 66.30 47 P P 21 44 03.8 +0.9
B08A Colville Reser 66.71 46 *eP* P 21 44 05.8 +0.3
comp=Z,25nm,1.4s
I03D Drain, OR 66.87 52 P P 21 44 07.6 +1.2
baz=302
OBN Obninsk 67.09 323 *d i* P P 21 44 07.0 -0.6
OBN *e* 21 44 35.1
OBN *e* 21 46 35.0
OBN pmax pmax
comp=Z,43nm,1.7s
OBN MLR MLR
comp=Z,208nm,16.0s
OBN Obninsk 67.09 323 *eP* P 21 44 07.2 -0.4
comp=Z,18nm,0.7s
VFP Flag Point 67.13 50 P P 21 44 09.1 +0.8
G05D Wamic, OR 67.26 50 P P 21 44 09.5 +0.6
baz=303
I04A Tendick Farm, 67.39 51 P P 21 44 10.4 +0.6
baz=303
FINES FINESS Array B 67.51 332 P P 21 44 09.6 -0.6
comp=Z,6.9nm,0.6s,baz=31,slow=10,SNR=37
FINES LR LR 22 16 19.1
comp=Z,198nm,18.7s,baz=43,slow=38
L02D Cave Junction, 67.54 53 P P 21 44 11.6 +0.9
baz=303
C09A Chrisman Ranch 67.61 46 *eP* P 21 44 12.0 +0.9
comp=Z,31nm,1.1s
D08A Wollman Farm, 67.66 47 *eP* P 21 44 12.2 +0.8
comp=Z,14nm,0.9s
I05D Terrebonne, OR 67.74 50 P P 21 44 12.4 +0.4
baz=303
NEW Newport 68.00 45 P P 21 44 13.5 0.0
baz=304
VSR Storozhevoye 68.09 319 *eP* P 21 44 13.0 -1.0
VSR pmax pmax
comp=Z,10.0nm,1.0s
KHMM Horse Mountain 68.16 55 *eP* P 21 44 16.6 +1.8
comp=Z,9.2nm,0.9s
YBH Yreka Blue Hor 68.33 53 *eP* P 21 44 17.0 +1.2
YBH pmax pmax
comp=Z,15nm,1.1s
YBH Yreka Blue Hor 68.33 53 *eP* P 21 44 17.0 +1.2
comp=Z,15nm,1.1s
J05D Fort Rock, OR 68.39 51 P P 21 44 17.3 +1.1
baz=304
E09A Wood Farm, Sta 68.41 47 *eP* P 21 44 17.2 +1.1
comp=Z,26nm,1.1s
M02C Callahan 68.43 54 P P 21 44 17.8 +1.4
baz=304
G08A Pilot Rock 68.62 49 *eP* P 21 44 18.1 +0.4
comp=Z,5.2nm,1.1s
SUMG Summit 68.68 0 *i* P P 21 44 18.1 +0.3
comp=Z,20nm,0.9s
SUMG Summit 68.68 0 *eP* P 21 44 18.4 +0.6
SUMG pmax pmax
comp=Z,34nm,1.2s
SUMG Summit 68.68 0 *eP* P 21 44 18.4 +0.6
comp=Z,34nm,1.2s
N02D Trinity Center 68.75 54 P P 21 44 19.4 +1.0
baz=304
M04C Macdoel 68.85 53 P P 21 44 19.8 +0.7
baz=304
K05A Summer Lake 68.90 52 *eP* P 21 44 20.8 +1.3
comp=Z,40nm,1.2s
WDC Whiskeytown Da 69.07 54 *eP* P 21 44 21.4 +1.1
WDC pmax pmax
comp=Z,13nm,1.2s
WDC Whiskeytown Da 69.07 54 *eP* P 21 44 21.4 +1.1
comp=Z,13nm,1.2s
VSU Vasula 69.23 330⇑ *eP* P 21 44 20.9 -0.1
VSU pmax pmax
comp=Z,90nm,2.5s
F10A Beach Ranch, E 69.24 47 *eP* P 21 44 22.8 +1.4
comp=Z,13nm,0.9s
WALA Waterton Lakes 69.28 43 *eP* P 21 44 22.0 +0.4
comp=Z,25nm,1.4s
GOF Gofitskoye 69.51 312 ⇓ *iP* P 21 44 23.0 +0.1
GOF pmax pmax
comp=Z,34nm,0.9s
BSMT Bassoo Peak 69.52 45 *eP* P 21 44 24.1 +0.9
ARMA Armidale 69.61 172 *eP* P 21 44 25.2 +1.5
comp=Z,23nm,1.1s
BLMT Blacktail Moun 69.65 44 *eP* P 21 44 25.2 +1.1
O03D Paynes Creek 69.70 54 P P 21 44 24.2 -0.2
baz=304
MOD Modoc Plateau 69.73 52 *eP* P 21 44 25.6 +1.1
comp=Z,27nm,1.6s
BMO Blue Mountains 69.84 48 *eP* P 21 44 25.4 +0.3
BMO pmax pmax
comp=Z,7.0nm,0.9s
BMO Blue Mountains 69.84 48 *eP* P 21 44 25.4 +0.3
comp=Z,6.7nm,0.9s
JTMT Jette 69.85 44 *eP* P 21 44 26.2 +1.0
YBMT Yellow Bay 69.93 44 *eP* P 21 44 26.6 +0.9
GUDG Gudauri 70.14 309 P P 21 44 26.9 -0.3
SWMT Swartz Lake 70.15 45 *eP* P 21 44 27.5 +0.5
ZEI Tsey 70.30 309 *eP* P 21 44 26.5 -1.6
ZEI pmax pmax
comp=Z,34nm,0.7s
ORV Oroville 70.31 55 *eP* P 21 44 28.0 0.0
ORV pmax pmax
comp=Z,18nm,1.4s
ORV Oroville 70.31 55 *eP* P 21 44 28.0 0.0
comp=Z,18nm,1.4s
KIV Kislovodsk 70.35 311 *eP* P 21 44 28.4 +0.1
KIV pmax pmax
comp=Z,57nm,1.1s
KIV Kislovodsk 70.35 311 *eP* P 21 44 28.6 +0.3
comp=Z,52nm,1.0s
KBZ Khabaz 70.36 311 P P 21 44 28.9 +0.7
comp=Z,12nm,0.9s,baz=46,slow=4.4,SNR=15
TBLG Delisi 70.40 308 P P 21 44 28.7 +0.2
TBLG Delisi 70.40 308 P P 21 44 28.7 +0.2
WVOR Wild Horse Val 70.44 51 *eP* P 21 44 29.8 +0.9
WVOR pmax pmax
comp=Z,15nm,1.1s
WVOR Wild Horse Val 70.44 51 *eP* P 21 44 29.8 +0.9
comp=Z,14nm,1.1s
STKA Stephens Creek 70.57 181 P P 21 44 29.2 -0.2
comp=Z,7.0nm,0.8s,baz=353,slow=7.9,SNR=14
STKA LR LR 22 18 08.2
comp=Z,32nm,19.5s,baz=18,slow=38
STKA Stephens Creek 70.57 181 *eP* P 21 44 29.1 -0.2
comp=Z,2.0nm,0.9s
MSO Missoula 70.58 45 P P 21 44 29.6 0.0
baz=307
MSO Missoula 70.58 45 *eP* P 21 44 29.9 +0.2
comp=Z,8.0nm,1.0s
SLMT Seeley Lake 70.58 45 *eP* P 21 44 30.3 +0.5
ONI Oni 70.69 309 P P 21 44 30.7 +0.4
ONI Oni 70.69 309 P P 21 44 30.7 +0.4
AFDM Forest Hills D 70.99 55 *eP* P 21 44 32.7 +0.5
comp=Z,9.7nm,1.3s
GNI Garni 71.31 307 *deP* P 21 44 34.5 +0.2
GNI pmax pmax
comp=Z,65nm,1.7s
GNI Garni 71.31 307 *eP* P 21 44 35.9 +1.6
comp=Z,53nm,1.8s
AKH Akhalkalaki 71.35 308 P P 21 44 35.1 +0.6
AKH Akhalkalaki 71.35 308 P P 21 44 35.1 +0.6
BGD Bogdanovka 71.37 308 P P 21 44 35.4 +0.8
MICGM Minsk 71.39 326 *e* P 21 44 35.0 +0.7
MNK Minsk 71.39 326 *eP* P 21 44 35.0 +0.7
FFC Flin Flon 71.48 34 *eP* P 21 44 34.9 +0.1
FFC pmax pmax
comp=Z,25nm,1.0s
FFC Flin Flon 71.48 34 *eP* P 21 44 34.9 +0.1
comp=Z,25nm,1.0s

MFID Camas Ranch 71.54 49 *eP* P 21 44 36.1 +0.5
comp=Z,25nm,1.6s
PAHR Pah Rah Range 71.56 54 *eP* P 21 44 36.6 +0.8
comp=Z,16nm,1.1s
BBOO Buckleboo 71.75 186 *eP* P 21 44 36.5 0.0
comp=Z,22nm,1.0s
FCC Fort Churchill 71.76 27 *eP* P 21 44 36.3 -0.1
FCC pmax pmax
comp=Z,39nm,1.3s
FCC Fort Churchill 71.76 27 *eP* P 21 44 36.3 -0.1
comp=Z,39nm,1.3s
HRY Holter Researc 71.81 44 *eP* P 21 44 38.0 +0.9
CMB Columbia Colle 71.90 56 *eP* P 21 44 38.2 +0.5
CMB pmax pmax
comp=Z,18nm,1.4s
CMB Columbia Colle 71.90 56 *eP* P 21 44 38.2 +0.5
comp=Z,18nm,1.4s
LRM Limekiln Ridge 72.02 45 *eP* P 21 44 38.9 +0.4
YERR Yerington 72.07 54 *eP* P 21 44 39.9 +1.0
comp=Z,27nm,1.2s
EGMT Eagleton 72.11 42 P P 21 44 38.8 0.0
baz=309
EGMT Eagleton 72.11 42 *eP* P 21 44 39.1 +0.3
comp=Z,28nm,1.3s
DLMT Dillon 72.22 46 *eP* P 21 44 40.5 +0.8
comp=Z,15nm,1.0s
WAKR Walker 72.23 55 *eP* P 21 44 41.0 +1.1
comp=Z,8.2nm,1.1s
HLID Hailey 72.28 48 P P 21 44 40.6 +0.5
baz=307
HLID Hailey 72.28 48 *eP* P 21 44 41.0 +1.0
comp=Z,8.4nm,1.1s
NC405 NORSAR Array S 72.51 337 *eP* P 21 44 40.9 -0.1
NC303 NORSAR Array S 72.53 338 *eP* P 21 44 40.7 -0.3
BOZ Bozeman (W) 72.58 45 P P 21 44 42.3 +0.6
baz=308
BOZ Bozeman (W) 72.58 45 *eP* P 21 44 42.5 +0.7
BOZ pmax pmax
comp=Z,8.0nm,0.8s
BOZ Bozeman (W) 72.58 45 *eP* P 21 44 42.5 +0.7
comp=Z,8.5nm,0.8s
NC204 NORSAR Array S 72.67 338 *eP* P 21 44 41.2 -0.6
NB201 NORSAR Array S 72.69 338 *eP* P 21 44 41.8 -0.2
TVH3 East Aurora ar 72.71 55 *eP* P 21 44 44.5 +1.7
comp=Z,12nm,1.0s
NB2 NORSAR Subarra 72.72 338 P P 21 44 41.6 -0.6
comp=Z,4.6nm,0.5s,baz=36,slow=6.5
NB200 NORSAR Array S 72.72 338 *eP* P 21 44 41.8 -0.4
NOA NORSAR Array B 72.72 338 P P 21 44 41.8 -0.4
comp=Z,6.0nm,0.7s,baz=39,slow=5.9,SNR=22
NOA LR LR 22 19 29.3
comp=Z,257nm,21.9s,baz=10.0,slow=38
NBO02 NORSAR Array S 72.82 338 *eP* P 21 44 42.5 -0.3
NBO00 NORSAR Array S 72.86 338 *eP* P 21 44 42.6 -0.4
ANN Anapa 72.86 314 *eP* P 21 44 48.8 +5.6
ANN pmax pmax
comp=Z,19nm,1.1s
AKASG Malin Array Be 73.32 322 P P 21 44 45.3 -0.6
comp=Z,6.7nm,0.4s,baz=44,slow=6.8,SNR=28
AKASG LR LR 22 20 25.3
comp=Z,186nm,18.5s,baz=335,slow=39
AKBB Malin Array Si 73.32 322 *eP* P 21 44 45.3 -0.6
AKBB pmax pmax
comp=Z,40nm,1.4s
AKBB Malin Array Si 73.32 322 *eP* P 21 44 45.2 -0.6
comp=Z,40nm,1.4s
PAGB Antelope Grade 73.33 57 *eP* P 21 44 47.9 +1.6
comp=Z,27nm,1.3s
KIEV Kiev 73.33 322 *d iP* P 21 44 45.2 -0.7
KIEV pmax pmax
comp=Z,17nm,1.0s
KIEV Kiev 73.33 322 *eP* P 21 44 45.2 -0.7
comp=Z,47nm,1.5s
AK11 Malin Array Si 73.36 322 *eP* P 21 44 45.8 -0.3
YHB Horse Butte 73.37 46 *eP* P 21 44 47.9 +1.3
comp=Z,12nm,0.7s
GCMT Greycliff 73.56 44 *eP* P 21 44 48.2 +0.6
SUW Suwalki 73.74 328 *eP* P 21 44 48.1 -0.1
IMW Indian Meadow 74.05 46 *eP* P 21 44 52.3 +1.6
comp=Z,45nm,1.8s
RLMT Red Lodge 74.20 44 *eP* P 21 44 52.1 +0.7
comp=Z,44nm,1.9s
SIM Simferopol' 74.60 316 *eP* P 21 44 53.4 0.0
SIM *eS* S 21 54 26.0 -2.6
SIM pmax pmax
comp=Z,14nm,1.0s
R11A Troy Canyon, C 74.74 53 P P 21 44 55.1 +0.4
baz=308
R11A Troy Canyon, C 74.74 53 *eP* P 21 44 55.0 +0.4
comp=Z,13nm,1.2s
LAO LASA Array 74.80 42 P P 21 44 55.0 +0.3
baz=311
LAO LASA Array 74.80 42 *eP* P 21 44 55.7 +1.0
comp=Z,18nm,0.9s
MPMC Manual Prospec 74.93 56 P P 21 44 56.0 +0.2
baz=308
FURC Furnace Creek, 75.08 55 P P 21 44 57.1 +0.7
baz=308
TPNV Topopah Spring 75.18 54 P P 21 44 57.5 +0.3
baz=308
TPNV Topopah Spring 75.18 54 *eP* P 21 44 57.7 +0.5
TPNV pmax pmax
comp=Z,16nm,1.0s
TPNV Topopah Spring 75.18 54 *eP* P 21 44 57.6 +0.5
comp=Z,16nm,1.0s
DUG Dugway, Tooele 75.29 50 P P 21 44 58.2 +0.4
baz=309
DUG Dugway, Tooele 75.29 50 *eP* P 21 44 58.8 +1.1
DUG pmax pmax
comp=Z,17nm,1.2s
DUG Dugway, Tooele 75.29 50 *eP* P 21 44 58.8 +1.1
comp=Z,17nm,1.2s
EDW2 Edwards Air Fo 75.32 57 P P 21 44 58.0 +0.1
baz=308
NWAO Narrogin (SRO) 75.41 202 P P 21 44 57.6 -0.4
comp=Z,10nm,1.1s,baz=231,slow=10,SNR=2.3
SORM Soroca 75.47 321 ⇓ *iP* P 21 44 58.1 -0.3
BW06 Boulder Array 75.55 46 P P 21 44 59.0 -0.3
baz=310
BW06 Boulder Array 75.55 46 *eP* P 21 44 59.7 +0.4
PD31 Pinedale Array 75.55 46 *eP* P 21 44 59.6 +0.4
PDAR Pinedale Array 75.55 46 P P 21 44 59.2 -0.1
comp=Z,3.1nm,0.6s,baz=268,slow=2.5,SNR=15
GSC Goldstone, Bar 75.83 56 P P 21 45 00.7 -0.1
baz=308
GSC Goldstone, Bar 75.83 56 *eP* P 21 45 00.8 -0.1
GSC pmax pmax
comp=Z,10.0nm,1.3s
GSC Goldstone, Bar 75.83 56 *eP* P 21 45 00.8 -0.1
comp=Z,10nm,1.3s
SHPR Sheep Range 76.14 54 *eP* P 21 45 03.8 +1.1
comp=Z,14nm,1.1s
TUQ Turquoise Moun 76.32 55 P P 21 45 03.9 +0.2
baz=308
LVV L'vov 76.35 324 *eP* P 21 45 02.8 -0.6
HEC Hector,Ludlow 76.43 56 P P 21 45 04.3 0.0
baz=308
D26A Manning 76.50 40 P P 21 45 04.2 -0.2
baz=314
CCUT Cedar City 76.61 52 *eP* P 21 45 06.2 +0.8
comp=Z,14nm,1.1s
MSU Marysvale 76.73 51 *eP* P 21 45 07.2 +1.1
MSU Marysvale 76.73 51 *eP* P 21 45 07.2 +1.1
TMUT Trail Mountain 76.82 50 *eP* P 21 45 07.5 +0.9
comp=Z,10nm,1.0s
GMRC Granite Mounta 76.89 56 P P 21 45 06.8 -0.2
baz=309
P17A Butcher Ranch, 76.98 50 *eP* P 21 45 08.2 +0.8
comp=Z,29nm,1.1s
LCMT Little Creek M 77.03 53 *eP* P 21 45 08.9 +1.2
comp=Z,5nm,1.0s
MTPU Mount Pierson 77.03 51 *eP* P 21 45 09.2 +1.2
comp=Z,12nm,1.0s
KWP Kalwaria Pacla 77.08 325 *eP* P 21 45 08.6 +1.0
PFO Pinyon Flats O 77.10 57 P P 21 45 08.0 -0.1
baz=308
PFO Pinyon Flats O 77.10 57 *eP* P 21 45 08.4 +0.3
PFO Pinyon Flats O 77.10 57 *eP* P 21 45 08.4 +0.3
BELC Belle Mtn. Jos 77.16 57 P P 21 45 08.0 -0.4
baz=309
TLCR 77.25 318 ⇓ *iP* P 21 45 08.7 +0.1
ULM Lac du Bonnet 77.28 34 P P 21 45 08.3 -0.3
comp=Z,7.4nm,0.8s,baz=309,slow=6.0,SNR=9.1
ULM LR LR 22 19 20.7
comp=Z,49nm,21.9s,baz=318,slow=36
ULM Lac du Bonnet 77.28 34 *eP* P 21 45 08.0 -0.6

ULM pmax pmax
comp=Z,14nm,0.9s
ULM Lac du Bonnet 77.28 34 *eP* P 21 45 08.0 -0.6
comp=Z,14nm,0.9s
KNB Kanab 77.28 53 *eP* P 21 45 10.3 +1.1
KNB pmax pmax
comp=Z,19nm,1.1s
KNB Kanab 77.28 53 *eP* P 21 45 10.3 +1.1
comp=Z,19nm,1.1s
MDND Maddock 77.31 38 *eP* P 21 45 09.2 +0.4
comp=Z,55nm,1.1s
K22A Casper 77.32 45 P P 21 45 08.9 -0.3
baz=312
K22A Casper 77.32 45 *eP* P 21 45 09.5 +0.3
comp=Z,15nm,1.0s
BUR08 Bucovina Ar. S 77.34 322 *eP* P 21 45 09.2 +0.1
SRU San Rafael Swe 77.34 50 *eP* P 21 45 10.0 +0.6
SRU pmax pmax
comp=Z,21nm,1.0s
SRU San Rafael Swe 77.34 50 *eP* P 21 45 10.0 +0.6
comp=Z,21nm,1.0s
BURAR Bucovina Array 77.36 322 ⇑ *iP* P 21 45 09.7 +0.4
TESR Tescani 77.43 321 ⇓ *iP* P 21 45 09.8 +0.2
CFR Carcaliu 77.61 319 ⇓ *iP* P 21 45 10.6 +0.1
IRM Iron Mountain 77.61 56 P P 21 45 11.1 +0.2
baz=309
RSSD Black Hills 77.67 43 P P 21 45 10.8 -0.4
baz=313
RSSD Black Hills 77.67 43 *eP* P 21 45 11.4 +0.1
RSSD pmax pmax
comp=Z,8.0nm,0.8s
RSSD Black Hills 77.67 43 *eP* P 21 45 11.4 +0.1
comp=Z,8.4nm,0.8s
BC3 Big Chuckawall 77.73 57 P P 21 45 11.7 +0.1
baz=309
W13A Hualapai Mount 77.83 55 *eP* P 21 45 13.0 +0.7
comp=Z,5.3nm,1.0s
VRI Vrincioaia 77.84 320 ⇓ *iP* P 21 45 13.5 +1.6
STHS Stebnicka Huta 77.89 325 *eP* P 21 45 12.8 +0.7
STHS *esP* PcP 21 45 22.6 +0.6
PLOR Plostina 77.89 320 ⇓ *iP* P 21 45 11.8 -0.4
IKP In-Ko-Pah, Jac 77.92 58 P P 21 45 12.9 +0.2
baz=309
OJC Ojcow 77.93 327 *eP* P 21 45 12.6 +0.3
OJC Ojcow 77.93 327 *eP* P 21 45 12.4 +0.1
OJC pmax pmax
comp=Z,25nm,1.2s
OJC Ojcow 77.93 327 *eP* P 21 45 12.4 +0.1
comp=Z,25nm,1.2s
A32A Rocking H Ranc 77.98 35 P P 21 45 11.8 -0.7
baz=317
U15A North Rim 77.99 53 *eP* P 21 45 14.1 +0.8
comp=Z,22nm,1.3s
UZH Uzhgorod 77.99 324 *eP* P 21 45 11.7 -0.9
O20A White River Ci 78.01 48 *eP* P 21 45 13.7 +0.4
comp=Z,16nm,1.2s
TLB Topalu 78.06 318 ⇓ *iP* P 21 45 13.3 +0.2
CRVS Cervenica-Dubn 78.17 325 *eP* P 21 45 13.9 +0.2
CRVS *epP* sP 21 45 20.2 +0.4
CRVS *esP* PcP 21 45 25.0 +1.8
C31A Landman Farms, 78.22 37 P P 21 45 13.4 -0.5
baz=316
BR131 Keskin Array S 78.27 312 *eP* P 21 45 14.6 +0.1
BRTR Keskin Array B 78.27 312 P P 21 45 14.4 -0.1
comp=Z,2.0nm,0.7s,baz=94,slow=3.8,SNR=14
BRTR LR LR 22 24 03.3
comp=Z,41nm,19.1s,baz=6.0,slow=39
Y12C Blythe 78.27 56 *eP* P 21 45 15.3 +0.8
comp=Z,12nm,1.0s
NIE Niedzica 78.31 326 *eP* P 21 45 15.2 +0.7
B32A Ashes, Strandq 78.34 36 P P 21 45 13.9 -0.7
baz=317
DOPR Dopca 78.44 321 ⇓ *iP* P 21 45 17.1 +1.9
A33A Warroad 78.46 35 P P 21 45 14.3 -0.9
baz=318
ISR Istrita 78.46 320 ⇓ *iP* P 21 45 16.3 +0.9
MLR Muntele Rosu 78.50 320 ⇑ *iP* P 21 45 16.0 +0.3
MLR Muntele Rosu 78.50 320 *eP* P 21 45 15.6 -0.1
MLR pmax pmax
comp=Z,40nm,1.9s
MLR Muntele Rosu 78.50 320 *eP* P 21 45 15.6 -0.1
comp=Z,40nm,1.9s
PV09 Paradox Valley 78.56 50 *eP* P 21 45 17.4 +1.0
F29A Eureka 78.62 39 P P 21 45 15.9 -0.4
baz=315
BR231 Keskin MP Arra 78.69 312 *eP* P 21 45 15.1 -1.7
PV10 Paradox Valley 78.70 50 *eP* P 21 45 18.3 +1.2
AGMN Agassiz Nation 78.72 36 P P 21 45 15.8 -0.9
baz=318
AGMN Agassiz Nation 78.72 36 *eP* P 21 45 16.1 -0.6
comp=Z,17nm,1.3s
D31A Mcclaflin, Tow 78.77 37 P P 21 45 16.5 -0.5
baz=316
PHWY Pilot Hill 78.81 45 *eP* P 21 45 18.1 +0.4
comp=Z,18nm,1.5s
N23A Red Feather La 78.81 46 P P 21 45 18.1 +0.4
baz=312
N23A Red Feather La 78.81 46 *eP* P 21 45 18.4 +0.6
comp=Z,21nm,1.1s
PV05 Paradox Valley 78.86 50 *eP* P 21 45 18.4 +0.4
LANS Liptovska Anna 78.87 326 *eP* P 21 45 18.0 +0.4
KECS Kecovo 78.92 325 *eP* P 21 45 17.8 0.0
KECS *epP* PcP 21 45 25.2 -1.2
KECS *esP* sP 21 45 28.6 +4.7
KSP Ksiaz 78.92 329 *eP* P 21 45 18.2 +0.5
OKC Ostrava-Krasne 78.92 327 ⇓ *eP* P 21 45 18.3 +0.6
OKC AMS AMS 22 23 50.0
comp=Z,300nm,19.5s
OKC Ostrava-Krasne 78.92 327 *eP* P 21 45 18.3 +0.6
OKC MLR MLR
comp=Z,300nm,19.5s
VOIR 78.98 321 ⇓ *iP* P 21 45 18.6 +0.3
F30A Leola 79.02 39 P P 21 45 17.9 -0.5
baz=316
E31A Nome 79.05 38 P P 21 45 18.2 -0.3
baz=316
Y14A Wickenburg 79.13 55 *eP* P 21 45 20.0 +0.7
comp=Z,44nm,1.0s
DRGR 79.14 323 ⇓ *iP* P 21 45 19.4 +0.3
PV01 Paradox Valley 79.14 49 *eP* P 21 45 20.3 +0.8
WUAZ Wupatki 79.14 53 P P 21 45 20.2 +0.8
baz=310
WUAZ Wupatki 79.14 53 *eP* P 21 45 20.7 +1.2
comp=Z,15nm,1.0s
C33A Trail 79.16 36 P P 21 45 18.7 -0.4
baz=318
MORC Moravsky Berou 79.22 327 ⇓ *iP* P 21 45 20.0 +0.5
MORC Moravsky Berou 79.22 327 *eP* P 21 45 19.8 +0.3
MORC pmax pmax
comp=Z,28nm,0.9s
MORC Moravsky Berou 79.22 327 *eP* P 21 45 19.8 +0.3
comp=Z,28nm,0.9s
ARR Arges 79.23 321 ⇑ *iP* P 21 45 20.9 +1.2
DPC Dobruska-Polom 79.29 328 *eP* P 21 45 20.4 +0.6
DPC AMS AMS 22 27 00.0
comp=Z,200nm,20.2s
DPC Dobruska-Polom 79.29 328 *eP* P 21 45 20.4 +0.6
DPC MLR MLR
comp=Z,200nm,20.2s
UPC Upice 79.29 329 ⇓ *eP* P 21 45 20.1 +0.3
UPC AMS AMS 22 26 00.0
comp=Z,400nm,15.4s
UPC Upice 79.29 329 *eP* P 21 45 20.1 +0.3
UPC MLR MLR
comp=Z,400nm,15.4s
LOT Lotru 79.60 321 ⇑ *iP* P 21 45 21.9 +0.2
PSZ Piszkesteto 79.60 325 ⇑ *iP* P 21 45 22.2 +0.6
PSZ Piszkesteto 79.60 325 *eP* P 21 45 22.0 +0.4
PSZ pmax pmax
comp=Z,73nm,2.0s
PSZ Piszkesteto 79.60 325 *eP* P 21 45 22.0 +0.4
comp=Z,72nm,2.0s
B35A Bob, Littlefor 79.62 34 P P 21 45 21.1 -0.5
baz=319
VYHS Vyhne 79.64 326 *eP* P 21 45 22.0 +0.3
VYHS *esP* PcP 21 45 34.4 +4.8
ISCO Idaho Springs 79.74 47 P P 21 45 23.2 +0.4
baz=313
ISCO Idaho Springs 79.74 47 *eP* P 21 45 23.8 +1.0
ISCO pmax pmax
comp=Z,34nm,1.9s
ISCO Idaho Springs 79.74 47 *eP* P 21 45 23.8 +1.0
comp=Z,34nm,1.9s
MVCO Mesa Verde 79.79 50 P P 21 45 23.3 +0.3
baz=312

MVCO	Mesa Verde	79.79	50	*e*P		P	21 45 23.9	+0.8
	comp=Z,9.9nm,0.9s							
X16A	Lo Mia Camp, P	79.81	54	*e*P		P	21 45 23.5	+0.4
	comp=Z,12nm,1.1s							
BRG	Berggiesshubel	79.83	330	*e*P		P	21 45 11.5	-11
	comp=Z,6.0nm,0.9s							
	comp=N,172nm,16.2s							
	comp=E,325nm,17.6s							
	comp=Z,438nm,16.8s							
BRG	Berggiesshubel	79.83	330	*e*P		P	21 45 11.5	-11
BRG				pmax		pmax		
	comp=Z,6.0nm,0.9s							
BRG				MLR		MLR		
	comp=N,172nm,16.2s							
BRG				MLR		MLR		
	comp=E,325nm,17.6s							
BRG				MLR		MLR		
	comp=Z,438nm,16.8s							
CLL	Collm	79.85	331	⇓*i*P		P	21 45 22.4	-0.4
	comp=Z,11nm,0.9s							
CLL				*i*			21 45 28.6	
CLL				*e*			21 45 36.0	
CLL				*e*S		S	21 55 30.0	+4.6
CLL				*e*SS		SS	22 00 42.0	+8.6
CLL				LmH			22 19 00.0	
	comp=N,300nm,18.1s							
CLL				LmH			22 19 00.0	
	comp=E,300nm,19.1s							
CLL	Collm	79.85	331	*e*P		P	21 45 22.6	-0.2
CLL				pmax		pmax		
	comp=Z,23nm,1.4s							
CLL	Collm	79.85	331	*e*P		P	21 45 22.6	-0.2
	comp=Z,23nm,1.4s							
G31A	Conde	79.85	39	P		P	21 45 23.1	+0.1
	baz=316							
PVCC	Panska Ves	79.86	329	⇓*e*P		P	21 45 23.3	+0.5
PVCC				AMS		AMS	22 25 10.0	
	comp=Z,300nm,14.0s							
PVCC	Panska Ves	79.86	329	*e*P		P	21 45 23.3	+0.5
PVCC				MLR		MLR		
	comp=Z,300nm,14.0s							
E33A	Westby DABS, E	79.97	37	P		P	21 45 23.1	-0.4
	baz=318							
VRAC	Vranov	79.98	328	⇑*i*P		P	21 45 24.4	+0.8
C35A	Jirik Farms, M	80.01	35	P		P	21 45 23.1	-0.7
	baz=319							
SIRR	Siria	80.02	323	⇓*i*P		P	21 45 24.2	+0.4
SUSD	Miller	80.05	40	P		P	21 45 23.6	-0.4
	baz=316							
G32A	Webster	80.18	38	P		P	21 45 24.4	-0.4
	baz=317							
GOPC	GO Pecny, Ondr	80.25	329	*e*P		P	21 45 25.3	+0.3
GOPC				AMS		AMS	22 26 10.0	
	comp=Z,300nm,15.8s							
GOPC	GO Pecny, Ondr	80.25	329	*e*P		P	21 45 25.3	+0.3
GOPC				MLR		MLR		
	comp=Z,300nm,15.8s							
PRU	Pruhonice	80.29	329	⇓*e*P		P	21 45 25.1	-0.1
PRU				*e*pP		sP	21 45 31.6	+0.3
PRU				*ex*		x	21 45 37.2	
PRU				AMS		AMS	22 25 30.0	
	comp=Z,300nm,17.1s							
PRU	Pruhonice	80.29	329	*e*P		P	21 45 25.1	-0.1
PRU				*e*			21 45 31.6	
PRU				*e*			21 45 37.2	
PRU				MLR		MLR		
	comp=Z,300nm,17.1s							
S22A	4UR Ranch, Cre	80.42	49	P		P	21 45 26.7	+0.2
	baz=312							
S22A	4UR Ranch, Cre	80.42	49	*e*P		P	21 45 27.1	+0.6
	comp=Z,12nm,1.1s							
C36A	Pine Crest Far	80.47	34	P		P	21 45 25.5	-0.7
	baz=320							
BZS	Buzias	80.52	322	⇓*i*P		P	21 45 26.1	-0.4
214A	Organ Pipe Nat	80.52	57	P		P	21 45 27.1	+0.3
	baz=310							
X18A	Snowflake	80.67	53	*e*P		P	21 45 28.4	+0.6
	comp=Z,5.5nm,0.8s							
C37A	Embarrass	80.78	34	P		P	21 45 27.3	-0.6
	baz=320							
EYMN	Ely	80.91	34	P		P	21 45 27.8	-0.8
	baz=320							
NKC	Novy Kostel	80.92	330	⇓*e*P		P	21 45 28.8	+0.2
NKC	Novy Kostel	80.92	330	*e*P		P	21 45 28.8	+0.2
H33A	Prehn Over Nor	80.96	38	P		P	21 45 28.6	-0.3
	baz=317							
J31A	Geddes	80.99	40	P		P	21 45 28.7	-0.4
	baz=316							
MDVR	Moldovita	81.08	322	⇓*i*P		P	21 45 29.5	-0.1
C38A	Sawbill Land.	81.18	34	P		P	21 45 29.2	-0.9
	baz=320							
SDCO	Great Sand Dun	81.20	48	P		P	21 45 30.9	+0.2
	baz=313							
SDCO	Great Sand Dun	81.20	48	*e*P		P	21 45 31.2	+0.5
	comp=Z,7.1nm,1.1s							
E36A	McGregor	81.22	35	P		P	21 45 29.6	-0.7
	baz=319							
CONA	Conrad Observa	81.35	327	*i* pP		P	21 45 31.7	+0.6
	comp=Z,15nm,1.6s,SNR=8.8							
KHC	Kasperske Hory	81.35	329	⇓*i*P		P	21 45 31.1	+0.1
KHC				*ex*		x	21 45 42.6	
KHC				AMS		AMS	22 26 20.0	
	comp=Z,400nm,18.0s							
KHC	Kasperske Hory	81.35	329	⇓*i*P		P	21 45 31.1	+0.1
KHC				*e*			21 45 42.6	
KHC				MLR		MLR		
	comp=Z,400nm,18.0s							
KHC	Kasperske Hory	81.35	329	*e*P		P	21 45 30.4	-0.6
	comp=Z,10.0nm,1.5s							
I33A	Coleman	81.40	39	P		P	21 45 30.8	-0.5
	baz=317							
GEC2	GERESS Array S	81.53	329	*e*P		P	21 45 32.1	+0.1
GEC2				pmax		pmax		
	comp=Z,10.0nm,1.5s							
GEC2	GERESS Array S	81.53	329	*e*P		P	21 45 32.1	+0.1
	comp=Z,9.9nm,1.5s							
GERES	GERESS Array B	81.53	329	P		P	21 45 31.6	-0.3
	comp=Z,1.4nm,0.5s,baz=38,slow=6.3,SNR=18							
GERES				PP		PP	21 48 39.2	+1.7
	comp=Z,1.3nm,1.0s,baz=42,slow=11,SNR=3.9							
GERES				LR		LR	22 26 39.9	
	comp=Z,185nm,18.9s,baz=20,slow=39							
GEA0	GERESS Array S	81.53	329	*e*P		P	21 45 31.1	-0.8
TUC	Tucson	81.60	55	P		P	21 45 32.8	+0.2
	baz=311							
TUC	Tucson	81.60	55	*e*P		P	21 45 33.3	+0.6
TUC				pmax		pmax		
	comp=Z,9.0nm,1.1s							
TUC	Tucson	81.60	55	*e*P		P	21 45 33.3	+0.6
	comp=Z,9.1nm,1.1s							
ECSD	EROS Data Cent	81.72	39	P		P	21 45 32.4	-0.6
	baz=318							
ECSD	EROS Data Cent	81.72	39	*e*P		P	21 45 32.6	-0.4
	comp=Z,17nm,1.0s							
GRFO	Grafenberg	81.83	331	*e*P		P	21 45 33.4	0.0
GRFO				pmax		pmax		
	comp=Z,37nm,1.4s							
GRFO	Grafenberg	81.83	331	*e*P		P	21 45 33.4	0.0
	comp=Z,37nm,1.4s							
H35A	Sunnyside Ranc	81.87	37	P		P	21 45 33.7	0.0
	baz=319							
ARSA	Arzberg	82.02	327	*i* P		P	21 45 34.8	+0.3
	comp=Z,12nm,1.8s							
MOA	Molln	82.08	328	*i* pP		P	21 45 35.2	+0.4
	comp=Z,14nm,1.5s,SNR=5.3							
T25A	Trinidad	82.24	48	P		P	21 45 36.3	+0.2
	baz=314							
T25A	Trinidad	82.24	48	*e*P		P	21 45 36.5	+0.4
	comp=Z,17nm,1.0s							
H36A	Jessenland, He	82.38	37	P		P	21 45 36.4	0.0
	baz=319							
I35A	Creekview Farm	82.42	38	P		P	21 45 36.1	-0.6
	baz=319							
LAZ	Ladron	82.49	52	*e*P		P	21 45 38.5	+1.1
ANMO	Albuquerque	82.53	51	P		P	21 45 38.2	+0.6
	baz=313							
ANMO	Albuquerque	82.53	51	*d i*P		P	21 45 38.1	+0.5
ANMO				pmax		pmax		
	comp=Z,13nm,1.2s							
ANMO	Albuquerque	82.53	51	*e*P		P	21 45 38.3	+0.6
	comp=Z,12nm,1.1s							
BGNE	Belgrade	82.65	41	*e*P		P	21 45 37.6	-0.3
	comp=Z,58nm,1.0s							
SOKA	Soboth	82.68	327	*i* P		P	21 45 37.9	-0.1
	comp=Z,18nm,1.2s,SNR=12							
LPM	Los Pinos Moun	82.86	51	*e*P		P	21 45 40.1	+0.8
BNM	Barren Site	82.97	51	*e*P		P	21 45 40.5	+0.5
I37A	Lemond, Waseca	83.06	37	P		P	21 45 39.9	-0.1
	baz=320							
KBA	Koelnbreinsper	83.08	328	*i* pP		P	21 45 41.3	+1.1
	comp=Z,11nm,1.0s							
SCHQ	Schefferville	83.13	17	P		P	21 45 39.9	-0.3
	comp=Z,5.5nm,0.8s,baz=334,slow=4.7,SNR=5.8							
SCHQ				LR		LR	22 24 16.3	
	comp=Z,130nm,21.3s,baz=310,slow=37							
SCHQ	Schefferville	83.13	17	*e*P		P	21 45 40.1	-0.1
	comp=Z,26nm,1.3s							
319A	Douglas	83.17	55	*e*P		P	21 45 41.8	+0.8
	comp=Z,23nm,1.0s							
MYKA	Terra Mystica	83.31	327	*i* P		P	21 45 40.8	-0.5
	comp=Z,9.9nm,1.0s							
121A	Cookes Peak, D	83.35	53	P		P	21 45 42.3	+0.4
	baz=312							
J37A	Redenius Farm,	83.52	38	P		P	21 45 41.9	-0.5
	baz=320							
WTTA	Wattenberg	83.63	329	*i* pP		P	21 45 43.7	+0.7
	comp=Z,8.5nm,1.4s							
ABTA	Abfaltersbach	83.68	328	*i* P		P	21 45 42.6	-0.6
	comp=Z,8.4nm,1.5s							
MOTA	Moosalm	83.77	329	*i* P		P	21 45 43.5	-0.3
	comp=Z,16nm,1.1s,SNR=11							
RETA	Reutte	83.79	329	*i* P		P	21 45 44.0	+0.2
	comp=Z,24nm,1.2s,SNR=8.5							
K37A	Belmond	83.89	38	P		P	21 45 43.7	-0.5
	baz=320							
L36A	Harm Buss Farm	83.89	39	P		P	21 45 43.6	-0.7
	baz=319							
N34A	Lincoln	83.92	41	P		P	21 45 43.2	-1.2
	baz=318							
PDG	Podgorica	84.03	322	⇑*i*P		P	21 45 44.3	-0.6
BFO	Black Forest	84.04	331	*i* P		P	21 45 45.0	+0.1
BFO	Black Forest	84.04	331	*e*P		P	21 45 43.8	-1.1
	comp=Z,22nm,1.3s							
FETA	Feten	84.19	329	*i* P		P	21 45 45.9	0.0
	comp=Z,13nm,1.1s,SNR=5.7							
Q32A	Meitler Ranch,	84.19	43	P		P	21 45 44.9	-1.0
	baz=317							
DAVA	Damuels	84.30	330	*i* P		P	21 45 46.3	-0.1
	comp=Z,26nm,1.2s,SNR=8.6							
M36A	Felix, Anita	84.31	40	P		P	21 45 46.2	-0.2
	baz=319							
L37A	Phoenix Point,	84.32	39	P		P	21 45 45.8	-0.7
	baz=319							
J39A	Decorah	84.37	37	P		P	21 45 45.8	-0.9
	baz=321							
Q33A	Connelly Farm,	84.58	43	P		P	21 45 47.0	-0.8
	baz=317							
PPT	Papeete	84.65	118	LR		LR	22 15 51.4	
	comp=Z,57nm,21.0s,baz=346,slow=30							
PPT2	Papeete2	84.67	118	*e*LR		LR	22 12 08.7	
	comp=Z,89nm,23.5s							
L38A	Oak Wood Farm,	84.69	38	P		P	21 45 47.6	-0.7
	baz=320							
FUORN	Ofenpass-Fuorn	84.70	329	*e*P		P	21 45 48.7	+0.1
	comp=Z,43nm,1.3s							
P34A	Walnut Farm, R	84.70	42	P		P	21 45 47.3	-1.1
	baz=318							
N36A	Muff Farm, Cla	84.71	40	P		P	21 45 48.2	-0.2
	baz=319							
K39A	Oelwein	84.77	37	P		P	21 45 47.4	-1.3
	baz=321							
Q34A	Chapman	85.10	42	P		P	21 45 50.0	-0.5
	baz=318							
K40A	Colesburg	85.12	37	P		P	21 45 49.8	-0.7
	baz=321							
M38A	Pleasantville	85.13	39	P		P	21 45 50.4	-0.1
	baz=320							
N37A	Lee Faris, Mou	85.13	40	P		P	21 45 50.0	-0.5
	baz=319							
L39A	Vinton	85.16	38	P		P	21 45 50.0	-0.7
	baz=320							
TUE	Stuetta	85.18	330	*e*P		P	21 45 50.4	-0.6
	comp=Z,21nm,1.4s							
O36A	Bolckow	85.22	41	P		P	21 45 50.6	-0.4
	baz=319							
AMTX	Amarillo	85.40	48	P		P	21 45 52.3	+0.2
	baz=315							
AMTX	Amarillo	85.40	48	*e*P		P	21 45 52.5	+0.4
	comp=Z,18nm,0.9s							
MNTX	Cornudas Mount	85.41	52	P		P	21 45 52.1	0.0
	baz=314							
MNTX	Cornudas Mount	85.41	52	*e*P		P	21 45 52.2	0.0
	comp=Z,5.3nm,0.9s							
MSTX	Muleshoe	85.41	49	P		P	21 45 52.1	-0.1
	baz=315							
MSTX	Muleshoe	85.41	49	*e*P		P	21 45 52.3	+0.1
	comp=Z,15nm,1.0s							
P36A	Good Intent, A	85.48	41	P		P	21 45 51.6	-0.7
	baz=319							
L40A	Anamosa	85.58	37	P		P	21 45 52.1	-0.7
	baz=321							
K41A	Shullsburg	85.58	36	P		P	21 45 51.9	-0.8
	baz=322							
N38A	Joes South For	85.58	39	P		P	21 45 52.4	-0.4
	baz=320							
Q35A	Mercer Eighty,	85.62	42	P		P	21 45 52.5	-0.6
	baz=318							
N39A	Derby Farms, D	85.88	39	P		P	21 45 53.9	-0.4
	baz=320							
L41A	Preston	85.91	37	P		P	21 45 53.6	-0.8
	baz=322							
R35A	Emporia Munici	85.94	42	P		P	21 45 54.6	0.0
	baz=318							
P37A	Lathrop	85.94	41	P		P	21 45 54.0	-0.6
	baz=319							
SENIN	Lac Senin/Sane	86.06	331	*e*P		P	21 45 55.2	-0.1
	comp=Z,12nm,1.2s							
VLDQ	Val d'Or	86.18	26	*e*P		P	21 45 53.6	-2.0
	comp=Z,26nm,1.5s							
R36A	Gordon, Harris	86.30	42	P		P	21 45 55.9	-0.5
	baz=319							
V32A	Arapaho	86.30	46	P		P	21 45 56.8	+0.3
	baz=317							
P38A	Dawn	86.33	40	P		P	21 45 56.1	-0.4
	baz=320							
S35A	Otter Creek Ra	86.35	43	P		P	21 45 56.4	-0.2
	baz=318							
T34A	McClaskey Farm	86.37	44	P		P	21 45 56.8	0.0
	baz=318							
R37A	Teagarden Farm	86.66	42	P		P	21 45 57.6	-0.6
	baz=319							
S36A	Lake Cedric, C	86.70	43	P		P	21 45 57.9	-0.5
	baz=319							
O40A	La Belle	86.77	39	P		P	21 45 58.5	-0.1
	baz=321							
Q38A	Cooks Store, C	86.79	41	P		P	21 45 58.1	-0.7
	baz=320							
T35A	Sooner Cattle	86.81	44	P		P	21 45 58.7	-0.3
	baz=318							
P39B	Salisbury	86.82	40	P		P	21 45 58.5	-0.4
	baz=320							
Q39A	Willow Grove F	87.05	40	P		P	21 45 59.7	-0.3
	baz=320							
S37A	Fort Scott	87.07	42	P		P	21 45 59.6	-0.6
	baz=319							
X32A	Elmer	87.11	47	P		P	21 46 00.1	-0.3
	baz=317							
P40A	Paris	87.14	39	P		P	21 46 00.2	-0.3
	baz=321							
WMOK	Wichita Mounta	87.16	46	P		P	21 46 00.4	-0.3
	baz=317							
WMOK	Wichita Mounta	87.16	46	*e*P		P	21 46 00.9	+0.1
WMOK				pmax		pmax		
	comp=Z,10.0nm,1.1s							
WMOK	Wichita Mounta	87.16	46	*e*P		P	21 46 00.9	+0.1
	comp=Z,10nm,1.1s							
R38A	Fenwick Farm,	87.23	41	P		P	21 45 59.3	-1.6
	baz=320							
O41A	Passleys Farm,	87.25	38	P		P	21 46 00.5	-0.5
	baz=321							
P41A	Barry, Barry	87.51	39	P		P	21 46 02.0	-0.3
	baz=321							
Q40A	Laux Farm, Aux	87.53	40	P		P	21 46 02.1	-0.3
	baz=321							
R39A	Chumby, Stover	87.57	41	P		P	21 46 02.0	-0.7
	baz=320							
HDIL	Hopedale	87.66	37	P		P	21 46 02.4	-0.6
	baz=322							
T38A	Diamond	87.90	42	P		P	21 46 03.6	-0.6
	baz=319							
S39A	Bolivar	87.91	41	P		P	21 46 03.1	-1.2
	baz=320							
W35A	Tecumseh	87.92	45	P		P	21 46 04.7	+0.4
	baz=318							
R40A	Maddies Statio	87.98	40	P		P	21 46 03.9	-0.7
	baz=320							
LTX	Lajitas	88.11	53	*e*P		P	21 46 05.1	-0.4
LTX	Lajitas	88.11	53	*e*P		P	21 46 05.0	-0.4
TX31	Lajitas Ar. Si	88.11	53	*e*P		P	21 46 05.2	-0.2
TXAR	Lajitas Array	88.11	53	P		P	21 46 05.0	-0.4
	comp=Z,2.0nm,0.7s,baz=292,slow=3.6,SNR=32							
U38A	Gravette	88.30	43	P		P	21 46 04.9	-1.2
	baz=319							
Q42A	Golden Eagle	88.36	39	P		P	21 46 05.9	-0.4
	baz=322							
S40A	Lebanon	88.39	41	P		P	21 46 05.6	-1.0
	baz=320							
X35A	Drake	88.42	46	P		P	21 46 06.7	0.0
	baz=318							
X36A	Centrahoma	88.64	45	P		P	21 46 07.2	-0.6
	baz=318							
HHAR	Hobbs	88.66	42	*e*P		P	21 46 07.6	-0.2
	comp=Z,6.6nm,1.0s							
TBI	Tubuai	88.70	122	*e*T		T	23 24 06.5	
	comp=Z,24nm,0.3s							
W37B	Quinton	88.72	44	P		P	21 46 07.7	-0.4
	baz=319							
V38A	Canehill	88.72	43	P		P	21 46 07.6	-0.5
	baz=319							
S41A	Jillco Farms,	88.78	40	P		P	21 46 07.8	-0.6
	baz=321							
TRQ	Mont Tremblant	88.79	25	*e*P		P	21 46 08.2	-0.1
U39A	Green Forest	88.82	42	P		P	21 46 07.7	-0.9
	baz=320							
LMQ	La Malbaie	88.91	22	*e*P		P	21 46 08.5	-0.3
Z35A	Perchaven, San	89.05	46	P		P	21 46 09.1	-0.6
	baz=318							
233A	Rising Star	89.07	48	P		P	21 46 09.8	-0.1
	baz=317							
S42A	Caledonia	89.12	40	P		P	21 46 09.6	-0.4
	baz=321							
V39A	Pettigrew	89.15	43	P		P	21 46 09.5	-0.7
	baz=320							
U40A	Yellville	89.17	42	P		P	21 46 09.6	-0.6
	baz=320							
T41A	Mountain View	89.20	41	P		P	21 46 09.6	-0.7
	baz=321							
X38A	Whitesboro	89.40	44	P		P	21 46 11.1	-0.2
	baz=319							
234A	Clairette	89.52	48	P		P	21 46 11.7	-0.3
	baz=317							
333A	Richland Sprin	89.52	49	P		P	21 46 11.8	-0.2
	baz=317							
S43A	Fulton Ridge,	89.63	39	P		P	21 46 11.2	-1.2
	baz=322							
U41A	Viola	89.66	41	P		P	21 46 11.8	-0.7
	baz=321							
433A	Art	89.88	49	P		P	21 46 13.3	-0.4
	baz=317							
X39A	Fountain Ranch	89.90	44	P		P	21 46 13.4	-0.3
	baz=320							
WHTX	Lake Whitney,	89.92	47	P		P	21 46 13.6	-0.2
	baz=318							
SIUC	Southern Illin	89.94	39	*e*P		P	21 46 14.1	+0.4
	comp=Z,19nm,0.9s							
334A	Lometa	89.95	48	P		P	21 46 13.6	-0.4
	baz=317							
V41A	Mountainview	89.97	42	P		P	21 46 13.1	-0.8
	baz=321							
PBMO	Poplar Bluff	90.07	40	*e*P		P	21 46 14.6	+0.2
	comp=Z,16nm,1.0s							
MIAR	Mount Ida	90.17	43	P		P	21 46 14.8	-0.1
	baz=320							
MIAR	Mount Ida	90.17	43	*e*P		P	21 46 14.9	0.0
MIAR				pmax		pmax		
	comp=Z,9.0nm,0.9s							
MIAR	Mount Ida	90.17	43	*e*P		P	21 46 14.9	0.0
	comp=Z,9.4nm,0.9s							
X201	Greenbrier Sit	90.24	42	*e*P		P	21 46 15.0	-0.2
	comp=Z,9.9nm,0.9s							
X301	Greenbrier Sit	90.26	42	*e*P		P	21 46 15.0	-0.3
	comp=Z,16nm,1.3s							
WHAR	Wooly Hollow	90.28	42	*e*P		P	21 46 15.2	-0.2
	comp=Z,20nm,1.0s							
434A	Burnet	90.31	49	P		P	21 46 14.8	-0.9
	baz=317							
W41B	Gary Mavity, V	90.39	42	P		P	21 46 15.5	-0.4
	baz=321							
534A	Blanco	90.77	49	P		P	21 46 17.3	-0.5
	baz=317							
LMN	Caledonia Moun	91.96	19	*e*P		P	21 46 23.4	+0.4
	comp=Z,17nm,1.0s							
CPCT	Cooper Cave	94.00	37	*e*P		P	21 46 32.9	+0.3
	comp=Z,4.7nm,0.4s							
ES19	SONSECA Array	95.88	335	*e*P		P	21 46 40.9	-0.3
ESDC	Sonseca Array	95.92	335	P		P	21 46 40.9	-0.5
	comp=Z,0.3nm,0.5s,baz=22,slow=2.9,SNR=5.6							
ESDC				LR		LR	22 35 33.2	
	comp=Z,148nm,19.5s,baz=50,slow=39							
TOA1	Torodi Ar. Sit	116.59	317	*e*PKPdf		PKPdf	21 51 57.6	-1.5
TOA1				*e*PP		PP	21 53 06.2	+0.7
TOA1				*e*PKKPbc		PKKPbc	22 02 25.8	+0.7
TORD	Torodi Ar. Bea	116.59	317	PKP		PKPdf	21 51 57.6	-1.5
	comp=Z,0.4nm,0.6s,baz=30,slow=1.7,SNR=6.0							
TORD				PP		PP	21 53 06.2	+0.7
	comp=Z,1.5nm,0.9s,baz=23,slow=8.0,SNR=5.1							
TORD				PKKPbc		PKKPbc	22 02 25.8	+0.7
	comp=Z,0.4nm,0.7s,baz=236,slow=1.5,SNR=4.8							
VNDA	Vanda	116.89	175	PKP		PKPdf	21 51 56.6	-1.1
	comp=Z,0.5nm,0.8s,baz=309,slow=3.7,SNR=2.8							
MAW	Mawson	121.78	206	PKP		PKPdf	21 52 06.2	-1.1
	comp=Z,2.0nm,0.9s,baz=59,slow=4.7,SNR=4.6							
SDV	Santo Domingo	123.14	40	*e*PKPdf		PKPdf	21 52 11.7	-0.3
DBIC	Dimbokro	125.47	319	PKP		PKPdf	21 52 16.0	-0.2
	comp=Z,3.3nm,0.9s,baz=45,slow=2.9,SNR=3.6							
DBIC	Dimbokro	125.47	319	*e*PKIKP		PKPdf	21 52 16.0	-0.2
BOSA	Boshof	127.90	261	PKP		PKPdf	21 52 20.2	-0.2
	comp=Z,2.9nm,1.0s,baz=65,slow=7.9,SNR=2.1							
QSPA	South Pole Qui	128.78	180	*e*PKPdf		PKPdf	21 52 20.1	-0.7
PTGA	Pitinga	136.60	34	*e*PKPdf		PKPdf	21 52 37.6	+0.4
SAML	Samuel	142.11	45	*e*PKPdf		PKPdf	21 52 46.9	-0.3
SNAA	Sanae	142.96	197	PKP		PKPpre	21 52 42.2	
SNAA	Sanae	142.96	197	*e*PKHKP		PKPpre	21 52 42.2	
SNAA	Sanae	142.96	197	*e*PKPpre		PKPpre	21 52 42.2	
LPAZ	La Paz	144.80	59	PKP		PKPab	21 52 51.5	0.0
	comp=Z,7.2nm,0.9s,baz=15,slow=5.8,SNR=17							
VNA1	Neumayer--Stat	144.92	196	PKP		PKPab	21 52 49.3	-0.3
PB11	IPOC Station P	146.15	65	*e*PKPdf		PKPbc	21 52 55.2	0.0
PB01	IPOC Station P	147.11	66	*e*PKPdf		PKPbc	21 52 57.6	-0.3
LCO	Las Campanas	150.72	80	*e*PKPbc		PKPbc	21 53 07.0	-0.1
PLCA	Paso Flores	154.52	104	PKPbc		PKPbc	21 53 13.6	-1.5
	comp=Z,4.1nm,0.9s,baz=278,slow=4.0,SNR=4.0							
CPUP	Villa Florida	158.97	59	PKPab		PKPab	21 53 49.0	0.0
	comp=Z,0

NIED ***25*** *22:18:00,27˚.30N×129˚.80E,h8km,Mw3.8 Best double couple: M₀6.22000×10¹⁴ NP1:φs237.00000°,δ56.00000°, λ-18.00000°. NP2:φs337.00000°,δ75.00000°, λ-145.00000°.*

IDC ***25*** *22:18:39.3±0.9,27˚.25N×129˚.80E,h0km,mb3.8/12, mb1 3.9/14,mb1mx3.8/38,mbtmp3.8/14,ML3.4/2,Error ellipse: s-maj=46.9km s-min=15.5km az=76.0*

ISCJB ***25*** *22:18:40.2±1.5,27˚.29N±0˚.03×129˚.86E±0˚.03, h23km±11km,mb4.0/19,Error ellipse: s-maj=5.3km s-min=4.3km az=21.6*

NEIC ***25*** *22:18:41.4±3.3,27˚.25N×129˚.76E,h14km±20km,mb4.5/8, Error ellipse: s-maj=11.7km s-min=6.6km az=92.0*

JMA ***25*** *22:18:42.0±0.1,27˚.35N×129˚.81E,h63km,M3.7*

ISC 25 22:18:39.2±1.6,27˚.28N±0˚.04×129˚.88E±0˚.04,h6km±10km, n47,σ1§81/60,mb4.0/19,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.96**	**302**	P	**Pb**	**22 18 58.7**	**+0.3**
JTK				*e*S	**Sb**	**22 19 11.3**	**-0.1**
JZK	**Kikaishima**	**1.04**	**5**	P	**Pb**	**22 19 00.3**	**+0.7**
JZK				S	**Sg**	**22 19 14.4**	**+1.7**
JAMN	**Amaminishikomi**	**1.15**	**327**	P	**Pg**	**22 19 01.0**	**-0.2**
JAMN				S	**Sg**	**22 19 15.2**	**-0.9**
JAM	**Amami Oshima**	**1.16**	**348**	P	**Pg**	**22 19 01.4**	**0.0**
JAM				S	**Sg**	**22 19 15.3**	**-1.1**
JOKE	**Okinoerabujima**	**1.16**	**274**	P	**Pn**	**22 19 01.9**	**-0.2**
JOKE				S	**Sb**	**22 19 16.4**	**-0.7**
JOW	**Kunigami**	**1.49**	**253**	P	**Pb**	**22 19 06.9**	**-0.5**
JOW				S	**Sb**	**22 19 24.9**	**-1.8**
JOW	**Kunigami**	**1.49**	**253**	*e*Pn	**Pn**	**22 19 06.3**	**-0.4**
JOW				*e*Sn	**Sb**	**22 19 24.1**	**-2.6**
JIH	**Iheya**	**1.72**	**262**	P	**Pn**	**22 19 09.8**	**+0.1**
JIH				S	**Sn**	**22 19 30.2**	**-1.7**
JNTH	**Nagotoyohara**	**1.82**	**246**	P	**Pn**	**22 19 11.6**	**+0.5**
JNTH				*e*S	**Sn**	**22 19 32.8**	**-1.7**
JMZ	**Minamidaito 2**	**1.89**	**140**	P	**Pn**	**22 19 12.3**	**+0.3**
JMZ				S	**Sn**	**22 19 33.4**	**-2.7**
JTAJ	**Takarajima**	**1.96**	**343**	P	**Pn**	**22 19 12.2**	**-0.9**
JTAJ				S	**Sn**	**22 19 34.8**	**-3.2**
JJT2	**Tamagusuku 2**	**2.21**	**240**	*e*S	**Sn**	**22 19 43.4**	**-0.8**
JAGN	**Aguni-jima**	**2.45**	**254**	P	**Pn**	**22 19 20.0**	**+0.3**
JAGN				*e*S	**Sn**	**22 19 47.8**	**-2.2**
JNN	**Nakanoshima**	**2.56**	**0**	S	**Sn**	**22 19 49.5**	**-3.2**
JKE	**Kume jima 2**	**2.92**	**252**	P	**Pn**	**22 19 25.9**	**-0.3**
JNU	**Nakatsue**	**5.89**	**8**	Pn	**Pn**	**22 20 08.8**	**+1.6**
	1.2nm,0.3s,baz=278,slow=5.3,SNR=9.0						
JNU				Sn	**Sn**	**22 21 08.0**	**-7.0**
	0.1nm,0.3s,baz=246,slow=20,SNR=3.5						
SSLB	**Suanglung**	**8.77**	**249**	*e*Pn	**Pn**	**22 20 46.4**	**-0.3**
TWG	**Pinlang**	**9.13**	**243**	*e*Pn	**Pn**	**22 20 51.7**	**+0.1**
KSAR	**Wonju Array Be**	**10.28**	**351**	Pn	**Pn**	**22 21 09.3**	**+2.1**
KSRS	**Korea Array**	**10.28**	**351**	Pn	**Pn**	**22 21 09.3**	**+2.0**
	0.2nm,0.3s,baz=160,slow=12,SNR=3.3						
GUMO	**Guam**	**19.54**	**131**	*e*P	**P**	**22 23 01.8**	**-5.9**
	531nm,1.6s						
KLR	**Kul'dur**	**21.97**	**3**	P	**P**	**22 23 33.7**	**0.0**
	0.7nm,0.5s,baz=185,slow=12,SNR=3.4						
SONA0	**Songino Array**	**27.52**	**324**	*e*P	**P**	**22 24 27.6**	**+0.9**
	2.6nm,1.2s						
SONM	**Songino Array**	**27.52**	**324**	P	**P**	**22 24 27.6**	**+0.9**
	0.5nm,0.5s,baz=151,slow=9.5,SNR=4.2						
MK01	**Makanchi Array**	**41.94**	**311**	*e*P	**P**	**22 26 29.2**	**-1.6**
MK32	**Makanchi Array**	**41.95**	**311**	*e*P	**P**	**22 26 31.3**	**+0.4**
MKAR	**Makanchi Array**	**41.95**	**311**	P	**P**	**22 26 31.3**	**+0.4**
	0.6nm,0.7s,baz=98,slow=8.8,SNR=3.7						
MAKZ	**Makanchi**	**42.17**	**311**	*e*P	**P**	**22 26 30.9**	**-1.7**
	7.4nm,1.4s						
WRAB	**Tennant Creek**	**47.13**	**174**	*e*P	**P**	**22 27 12.6**	**+0.1**
	10nm,0.7s						
WR1	**Warramunga Arr**	**47.14**	**174**	*e*P	**P**	**22 27 12.9**	**+0.4**
	18nm,1.6s						
WRA	**Warramunga Arr**	**47.14**	**174**	P	**P**	**22 27 12.9**	**+0.4**
	1.3nm,0.8s,baz=353,slow=8.6,SNR=3.9						
AS31	**Alice Springs**	**50.79**	**175**	*e*P	**P**	**22 27 41.6**	**+1.0**
	2.5nm,1.6s						
ASAR	**Alice Springs**	**50.79**	**175**	P	**P**	**22 27 41.6**	**+1.0**
	1.3nm,0.7s,baz=6.7,slow=10,SNR=12						
GAMB	**Gambell**	**52.02**	**29**	*e*P	**P**	**22 27 48.8**	**-0.4**
	214nm,2.0s						
STKA	**Stephens Creek**	**59.88**	**168**	P	**P**	**22 28 46.7**	**+0.9**
	0.9nm,0.5s,baz=339,slow=14,SNR=3.2						
STKA	**Stephens Creek**	**59.88**	**168**	*e*P	**P**	**22 28 46.7**	**+0.9**
	4.8nm,1.9s						
KBZ	**Khabaz**	**69.63**	**309**	P	**P**	**22 29 49.2**	**-0.3**
	1.8nm,0.6s,baz=56,slow=16,SNR=2.8						
FIA0	**FINESS Array S**	**72.68**	**331**	*e*P	**P**	**22 30 09.1**	**+1.4**
FINES	**FINESS Array B**	**72.68**	**331**	P	**P**	**22 30 09.1**	**+1.4**
	1.4nm,0.6s,baz=73,slow=6.9,SNR=8.5						
AKASG	**Malin Array Be**	**75.69**	**320**	P	**P**	**22 30 27.3**	**+1.9**
	0.3nm,0.3s,baz=56,slow=6.8,SNR=3.0						
AKBB	**Malin Array Si**	**75.69**	**320**	*e*P	**P**	**22 30 27.3**	**+1.9**
	10nm,1.6s						
BR101	**Keskin Array S**	**77.55**	**308**	*e*P	**P**	**22 30 37.0**	**+0.6**
BRTR	**Keskin Array B**	**77.55**	**308**	P	**P**	**22 30 37.0**	**+0.6**
	0.6nm,0.7s,baz=76,slow=1.8,SNR=3.4						
BRTR	**Keskin Array B**	**77.55**	**308**	P	**P**	**22 30 37.0**	**+0.6**
NB200	**NORSAR Array S**	**79.02**	**334**	*e*P	**P**	**22 30 44.1**	**+0.1**
NOA	**NORSAR Array B**	**79.02**	**334**	P	**P**	**22 30 44.1**	**+0.1**
	0.5nm,0.6s,baz=53,slow=5.8,SNR=2.6						
GERES	**GERESS Array B**	**85.25**	**323**	P	**P**	**22 31 19.7**	**+2.8**
	0.6nm,0.6s,baz=35,slow=4.9,SNR=5.9						

IDC ***25*** *22:22:40.0±1.2,39˚.14N×72˚.49E,h0km,mb3.5/5, mb1 3.6/8,mb1mx3.4/43,mbtmp3.5/8,ML3.0/3,Error ellipse: s-maj=32.3km s-min=17.7km az=160.0*

SOME ***25*** *22:22:40.9,39˚.47N×72˚.30E,h10km*

KRNET ***25*** *22:22:41.1±0.1,39˚.39N×72˚.50E,h19km,mb3.3*

NNC ***25*** *22:22:50.7±3.1,40˚.16N×72˚.09E,h0km,mb3.9,mpv3.4, Error ellipse: s-maj=28.3km s-min=16.1km az=8.0*

ISC 25 22:22:41.1±1.4,39˚.51N±0˚.05×72˚.52E±0˚.04,h8km±9km, n29,σ1§92/44,mb3.6/5,11C-11D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRK	**Karamyk**	**0.56**	**267**	⇑*i*P	**Pb**	**22 22 52.4**	**-0.9**
	baz=280						
DRK				⇑*i*S	**Sg**	**22 22 59.9**	**+0.6**
	baz=280						
OHH	**Osh**	**1.03**	**11**	⇓*i*P	**Pn**	**22 23 03.3**	**+1.4**
	baz=11						
OHH				⇓*i*S	**Sn**	**22 23 19.5**	**+2.9**
	baz=11						
BTK	**Batken**	**1.42**	**293**	⇓*e*P	**Pb**	**22 23 07.6**	**-0.3**
	baz=298						
BTK				⇓*e*S	**Sg**	**22 23 28.4**	**+1.6**
	baz=298						
ARSB	**Arslanbob**	**1.84**	**11**	⇓*i*P	**Pg**	**22 23 17.3**	**+0.9**
	baz=10.0						
ARSB				⇓*i*S	**Sg**	**22 23 43.4**	**+3.0**
	baz=10.0						
ARK	**Arkit**	**2.32**	**350**	⇓*i*P	**Pb**	**22 23 23.6**	**+0.3**
	baz=351						
ARK				⇓*i*S	**Sg**	**22 23 54.7**	**-1.0**
	baz=351						
ARLS	**Aral**	**2.72**	**30**	⇑*e*P	**Pb**	**22 23 29.2**	**-0.8**
	baz=29						
ARLS				⇑*i*S	**Sb**	**22 24 04.2**	**+0.7**
	baz=29						
MNAS	**Manas**	**2.97**	**360**	⇑*i*P	**Pb**	**22 23 33.2**	**-1.1**
	baz=0.0						
MNAS				⇑*i*S	**Sb**	**22 24 10.9**	**0.0**
	baz=0.0						
IUG	**Iuzhnay**	**3.24**	**325**	*e*S	**Sb**	**22 24 20.1**	**+1.6**
	108nm,0.5s						
IUG	**Iuzhnay**	**3.24**	**325**	*e*P	**Pb**	**22 23 39.0**	**+0.1**
	35nm,0.4s						
MRKS	**Merke**	**3.27**	**9**	*e*P	**Pg**	**22 23 42.8**	**-1.0**
	36nm,0.3s						
MRKS				*e*S	**Sg**	**22 24 27.1**	**+0.9**
	120nm,0.4s						
AAK	**Ala-Archa**	**3.46**	**25**	⇑Pn	**Pb**	**22 23 41.7**	**-0.9**
	15nm,0.5s						
AAK				⇓Lg	Lg	22 24 26.8	
	33nm,0.5s						
KK31	**Karatay Array**	**3.90**	**338**	Pg	**Pb**	**22 23 46.0**	**-3.9**
	4.4nm,0.3s,baz=146,slow=11,SNR=68						
KK31				⇓Lg	Lg	22 24 33.6	
	23nm,0.5s,baz=145,slow=23,SNR=4.9						
TKM2	**Tokmak 2**	**4.12**	**33**	⇑Pn	**Pb**	**22 23 49.9**	**-4.0**
	2.7nm,0.7s						
TKM2				⇑Lg	Lg	22 24 53.5	
	13nm,0.6s						
BMNS	**Besmoynak**	**4.30**	**32**	*e*P	**Pg**	**22 24 01.8**	**-1.7**
	42nm,0.5s						
BMNS				*e*S	**Sg**	**22 24 60.0**	**+0.7**
	48nm,0.5s						
KST	**Kastek**	**4.38**	**35**	*e*P	**Pg**	**22 24 03.9**	**-1.0**
	3.8nm,0.5s						
KST				*e*S	**Sg**	**22 25 03.5**	**+1.8**
	23nm,0.8s						
DGS	**Degeres**	**4.46**	**32**	*e*P	**Pg**	**22 24 04.7**	**-1.8**
	16nm,0.7s						
DGS				*e*S	**Sg**	**22 25 05.4**	**+1.3**
	35nm,0.6s						
MTBS	**Maitube**	**4.66**	**38**	*e*P	**Pg**	**22 24 09.3**	**-1.0**
	4.6nm,0.2s						
MTBS				*e*S	**Sg**	**22 25 12.7**	**+2.0**
	11nm,0.5s						
IZV	**Izvestkoviy**	**4.68**	**40**	*e*P	**Pg**	**22 24 08.8**	**-1.9**
	17nm,0.5s						
IZV				*e*S	**Sg**	**22 25 11.6**	**+0.3**
	37nm,0.7s						
TNSS	**Tian-Shan**	**4.85**	**42**	*e*P	**Pg**	**22 24 12.6**	**-1.4**
	7.7nm,0.4s						
TNSS				*e*S	**Sg**	**22 25 18.9**	**+2.0**
	21nm,0.9s						
MKAR	**Makanchi Array**	**10.19**	**41**	Pn	Pn	22 25 13.0	+5.4
	0.1nm,0.3s,baz=229,slow=13,SNR=6.3						
GEYT	**Alibeck**	**11.37**	**267**	Pn	**Pn**	**22 25 24.3**	**+0.6**
	0.2nm,0.3s,baz=84,slow=15,SNR=2.6						
AB31	**Akbulak array**	**13.24**	**321**	Pn	**Pn**	**22 25 48.8**	**-0.5**
	0.8nm,0.4s,baz=133,slow=14,SNR=39						
AB31				⇑Sn	**Sn**	**22 28 11.1**	**-5.5**
	1.6nm,0.7s,baz=131,slow=25,SNR=5.5						
AKTO	**Aktyubinsk**	**14.96**	**322**	⇓Pn	**P**	**22 26 16.0**	**-2.3**
	8.7nm,1.1s						
AKTO				⇑Sn	**Sn**	**22 28 55.8**	**-2.6**
	2.1nm,1.4s						
ZALV	**Zalesovo Beam**	**16.68**	**26**	Pn	**P**	**22 26 38.1**	**+0.7**
	0.4nm,0.3s,baz=220,slow=10,SNR=10.0						
SONM	**Songino Array**	**25.71**	**60**	P	**P**	**22 28 14.0**	**+2.2**
	0.5nm,0.9s,baz=262,slow=10.0,SNR=2.3						
BRTR	**Keskin Array B**	**29.80**	**283**	P	**P**	**22 28 48.3**	**-0.2**
	0.3nm,0.6s,baz=63,slow=6.8,SNR=2.2						
FINES	**FINESS Array B**	**35.72**	**323**	P	**P**	**22 29 41.9**	**+2.2**
	1.2nm,0.8s,baz=101,slow=9.9,SNR=3.8						
TORD	**Torodi Ar. Bea**	**67.00**	**268**	P	**P**	**22 33 35.5**	**+0.9**
	0.4nm,0.7s,baz=48,slow=5.6,SNR=4.9						
WRA	**Warramunga Arr**	**82.60**	**123**	P	**P**	**22 35 03.8**	**-1.1**
	0.3nm,0.6s,baz=330,slow=5.2,SNR=3.1						

TAP 25 22:29:51.1,21˚.38N×119˚.72E,h53km±2km,ML3.6,D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HEN	**Hengchun**	**1.13**	**56**	P	Pn	22 30 11.3	+0.6
	baz=56						
HEN				S	Sn	22 30 26.2	+0.9
	baz=56						
TWP	**Hsiaoliuchiu**	**1.13**	**31**	*e*P	Pn	22 30 10.6	-0.1
	baz=31						
TWP				*e*S	Sn	22 30 26.3	+1.0
	baz=31						
TWK1	**Hengchun**	**1.16**	**60**	P	Pn	22 30 11.4	+0.4
	baz=60						
TWK1				S	Sn	22 30 26.3	+0.6
	baz=60						
TSEB	**Hengchuen, Pin**	**1.21**	**64**	*e*P	Pn	22 30 11.3	-0.4
	baz=63						
TSEB				*e*S	Sn	22 30 27.0	-0.1
	baz=63						
SCZT	**Fangliau**	**1.30**	**40**	P	Pn	22 30 13.4	+0.5
	baz=40						
SCZT				S	Sn	22 30 29.6	+0.4
	baz=40						
KAU	**Kaohsiung**	**1.30**	**24**	*e*P	Pn	22 30 12.8	-0.2
	baz=24						
KAU				*e*S	Sn	22 30 31.5	+2.1
	baz=24						
EAST	**Anshuo**	**1.45**	**46**	P	Pn	22 30 15.6	+0.6
	baz=46						
EAST				*e*S	Sn	22 30 33.1	+0.2
	baz=46						
TAW	**Tawu**	**1.46**	**48**	*e*P	Pn	22 30 15.8	+0.7
	baz=48						
TAW				*e*S	Sn	22 30 33.2	0.0
	baz=48						
ECL	**Taimali**	**1.67**	**43**	*e*P	Pn	22 30 18.2	+0.2
	baz=43						
ECL				*e*S	Sn	22 30 37.6	-0.6
	baz=43						
LAY	**Lan-yu**	**1.82**	**68**	*e*P	Pn	22 30 18.6	-1.5
	baz=68						
LAY				*e*S	Sn	22 30 40.8	-1.3
	baz=68						
SGST	**Jiashian**	**1.88**	**25**	*e*P	Pn	22 30 22.0	+1.2
	baz=25						
SGST				*e*S	Sn	22 30 43.3	-0.1
	baz=25						
TWG	**Pinlang**	**1.91**	**41**	*e*P	Pn	22 30 21.8	+0.6
	baz=41						
TWG				*e*S	Sn	22 30 44.5	+0.4
	baz=41						
CHN1	**Nanshi**	**1.95**	**22**	*e*P	Pn	22 30 22.8	+0.9
	baz=22						
CHN1				*e*S	Sn	22 30 45.6	+0.4
	baz=22						
TWK	**Hsinying**	**2.01**	**20**	*e*P	Pn	22 30 23.7	+0.9
	baz=20						
TWK				*e*S	Sn	22 30 47.2	+0.5
	baz=20						
STYT	**Tauyuan**	**2.02**	**28**	*e*P	Pn	22 30 23.0	+0.1
	baz=28						
STYT				*e*S	Sn	22 30 47.7	+0.7
	baz=28						
WTP	**Ta-pu**	**2.04**	**24**	*e*P	Pn	22 30 22.8	-0.3
	baz=24						
WTP				*e*S	Sn	22 30 46.3	-1.1
	baz=24						
CHN4	**Tsaushan**	**2.12**	**22**	*e*P	Pn	22 30 24.8	+0.6
	baz=22						
CHN4				*e*S	Sn	22 30 49.9	+0.5
	baz=22						
ELDTW	**Lidau**	**2.17**	**33**	*e*P	Pn	22 30 26.2	+1.3
	baz=33						
ELDTW				*e*S	Sn	22 30 50.9	+0.2
	baz=33						
CHKT	**Chengkung**	**2.29**	**41**	*e*P	Pn	22 30 25.9	-0.5
	baz=41						
CHKT				*e*S	Sn	22 30 54.5	+1.0
	baz=41						
ALS	**Alishan**	**2.35**	**25**	*e*P	Pn	22 30 28.7	+1.1
	baz=25						
ALS				*e*S	Sn	22 30 56.8	+1.4
	baz=25						
CHN5	**Tsauling**	**2.38**	**22**	*e*P	Pn	22 30 27.3	-0.5
	baz=21						
CHN5				*e*S	Sn	22 30 56.3	+0.5
	baz=21						
YUS	**Yu-Shan**	**2.39**	**28**	*e*P	Pn	22 30 29.8	+1.5
	baz=28						
YUS				*e*S	Sn	22 30 56.8	+0.1
	baz=28						
TWF1	**Yuli**	**2.45**	**36**	*e*P	Pn	22 30 30.3	+1.7
	baz=36						
TWF1				*e*S	Sn	22 30 58.3	+0.9
	baz=36						
SMLT	**Sun Moon Lake**	**2.72**	**23**	*e*P	Pn	22 30 34.0	+1.5
	baz=23						
SMLT				*e*S	Sn	22 31 05.0	+0.8
	baz=23						
TYC	**Yuchr**	**2.73**	**22**	*e*P	Pn	22 30 33.7	+1.3
	baz=22						
TYC				*e*S	Sn	22 31 05.5	+1.3
	baz=22						
WHF	**Hehuan Shan**	**3.10**	**27**	*e*P	Pn	22 30 39.7	+1.7
	baz=27						
WHF				*e*S	Sn	22 31 11.9	-2.2
	baz=27						
TWQ1	**Liyutan**	**3.11**	**18**	*e*S	Sn	22 31 14.4	+0.6
	baz=18						
TWT	**Tachien**	**3.16**	**25**	*e*P	Pn	22 30 40.6	+2.0
	baz=24						
TWT				*e*S	Sn	22 31 16.0	+0.8
	baz=24						
NNS	**Nan Shan**	**3.41**	**26**	*e*P	Pn	22 30 43.3	+1.4
	baz=26						
NNS				*e*S	Sn	22 31 21.7	+0.5
	baz=26						
NSTT	**Nanjuang**	**3.45**	**20**	*e*P	Pn	22 30 42.4	+0.1
	baz=20						
NSTT				*e*S	Sn	22 31 22.9	+0.9
	baz=20						
ENA	**Nanau**	**3.56**	**31**	*e*P	Pn	22 30 44.7	+0.8
	baz=31						
ENA				*e*S	Sn	22 31 24.0	-0.8
	baz=31						
NSK	**Sanguang**	**3.61**	**24**	*e*P	Pn	22 30 46.5	+1.8
	baz=24						
NSK				*e*S	Sn	22 31 24.7	-1.5
	baz=24						
ENTT	**Nioudou**	**3.67**	**27**	*e*P	Pn	22 30 47.0	+1.6
	baz=27						
ENTT				*e*S	Sn	22 31 27.9	+0.5
	baz=27						

MEX 25 22:40:21.8±0.9,15˚.44N×92˚.73W,h80km±38km,MD3.7, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.01**	**34**	*e*P	Pn	22 40 39.2	-2.0
CCIG				*i* S	Sn	22 40 53.4	-2.3

NIED ***25*** *22:58:00,42˚.10N×142˚.50E,h62km,Mw4.9 Best double couple: M₀2.28000×10¹⁶ NP1:φs214.00000°,δ26.00000°, λ97.00000°. NP2:φs26.00000°,δ64.00000°,λ86.00000°.*

BJI ***25*** *22:58:42.2,41˚.92N×142˚.66E,h67km,mb5.1/66,mB4.9/39, Ms4.1/50,Ms7 3.9/50*

MOS ***25*** *22:58:44.7±0.9,42˚.21N×142˚.39E,h60km,mb5.3/69,Error ellipse: s-maj=6.0km s-min=4.1km az=99.6*

ISCJB ***25*** *22:58:45.3±0.2,42˚.11N±0˚.02×142˚.42E±0˚.02,h69km±1km, mb4.9/258,Error ellipse: s-maj=3.4km s-min=2.0km az=154.4*

JMA ***25*** *22:58:45.5±0.1,42˚.04N×142˚.51E,h67km±2km,M4.8 Broadband fault plane solution: P waves. NP1: φs18.00000°,δ60.00000°,λ80.00000°. NP2:φs217.00000°, δ31.00000°,λ106.00000°. Principal axes: T Plg73.0000°, Azm264.0000°; N Plg8.0000°, Azm23.0000°; P Plg15.0000°, Azm115.0000°;*

JMA Felt III J1.

NEIC ***25*** *22:58:46.6±0.3,42˚.13N×142˚.37E,h65km±3km,mb4.9/161 Error ellipse: s-maj=3.7km s-min=2.4km az=145.0*

NEIC Felt [II] at Sapporo. Also felt at Misawa, Honshu. Recorded [3 JMA] in southern and southwestern Hokkaido. Also recorded [3 JMA] in Aomori, Honshu.

IDC ***25*** *22:58:46.0±1.0,42.07N×142.51E,h65km±8km,mb4.6/34, mb1 4.7/43,mb1mx4.7/51,mbtmp4.9/43,MS3.8/33, Ms1 3.8/33,ms1mx3.8/40,Error ellipse: s-maj=10.5km s-min=7.5km az=102.0*

ISC 25 22:58:45.8±0.3,42˚.10N±0˚.03×142˚.47E±0˚.03,h63km±2km, h63km:pP-P,n929,σ1§28/1030,mb5.0/268,88C-35D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNBK	**Urakawa-nobuka**	**0.28**	**49**	⇑P	**Pn**	**22 58 56.1**	**0.0**
JNBK				*e*S	**Sn**	**22 59 04.1**	**+0.6**
ERM	**Erimo**	**0.52**	**99**	*d* iPN	**Pn**	**22 58 58.5**	**+0.3**
ERM	**Erimo**	**0.52**	**99**	*e*Pn	**Pn**	**22 58 58.4**	**+0.2**
ERM				*e*Sn	**Sn**	**22 59 06.0**	**-1.2**
JEM	**Erimo**	**0.52**	**99**	⇑P	**Pn**	**22 58 58.2**	**0.0**
JEM				*e*S	**Sn**	**22 59 07.7**	**+0.5**
JBT2	**Biratori 2**	**0.69**	**354**	⇓P	**Pn**	**22 59 00.6**	**+0.5**
JBT2				*e*S	**Sn**	**22 59 11.7**	**+1.2**
JCH	**Churui**	**0.84**	**52**	⇑P	**Pn**	**22 59 02.2**	**+0.3**
JCH				*e*S	**Sn**	**22 59 14.6**	**+0.8**
JEW	**Eniwo**	**1.06**	**315**	⇓P	**Pn**	**22 59 05.6**	**+0.9**
JEW				*e*S	**Sn**	**22 59 20.6**	**+1.9**
JFR	**Furan**	**1.07**	**5**	⇓P	**Pn**	**22 59 05.3**	**+0.4**
JFR				*e*S	**Sn**	**22 59 20.3**	**+1.2**
JKB	**Kayabe**	**1.09**	**259**	⇓P	**Pn**	**22 59 05.2**	**+0.1**
JKB				*e*S	**Sn**	**22 59 19.7**	**+0.2**
JNB	**Noboribetsu**	**1.12**	**290**	⇓P	**Pn**	**22 59 05.4**	**-0.2**
JNB				*e*S	**Sn**	**22 59 20.7**	**+0.4**
JOT	**Ohata**	**1.28**	**237**	⇓P	**Pn**	**22 59 07.6**	**0.0**
JOT				*e*S	**Sn**	**22 59 23.6**	**-0.3**
JOB	**Onbets**	**1.29**	**51**	⇑P	**Pn**	**22 59 09.1**	**+1.3**
JOB				*e*S	**Sn**	**22 59 26.6**	**+2.4**
JAB	**Ashibetsu**	**1.42**	**353**	⇓P	**Pn**	**22 59 10.6**	**+1.1**
JAR	**Ashorobuto**	**1.54**	**38**	⇑P	**Pn**	**22 59 11.4**	**+0.4**
JAR				*e*S	**Sn**	**22 59 30.8**	**+0.8**
JYM2	**Yakumo 2**	**1.56**	**271**	⇓P	**Pn**	**22 59 11.5**	**+0.1**
JSR	**Shiriuchi**	**1.63**	**250**	⇓P	**Pn**	**22 59 12.2**	**-0.1**
JSR				*e*S	**Sn**	**22 59 32.8**	**+0.4**
JTM	**Tenmabayashi**	**1.68**	**219**	⇓P	**Pn**	**22 59 12.9**	**-0.1**
JTM				*e*S	**Sn**	**22 59 33.6**	**+0.1**
ASAJ	**Asahikawa**	**2.02**	**3**	P	**Pn**	**22 59 19.3**	**+1.7**
	baz=200,slow=9.9						
ASAJ				S	**Sn**	**22 59 44.1**	**+2.3**
	baz=270,slow=20						
ASAJ	**Asahikawa**	**2.02**	**3**	*e*Pn	**Pn**	**22 59 18.8**	**+1.3**
ASAJ				*e*Sn	**Sn**	**22 59 44.1**	**+2.3**
YUK	**Yuzh-Kuril'sk**	**3.15**	**51**	*c i*PN	**Pn**	**22 59 34.2**	**+1.2**
YUK				*i* S	**Sn**	**23 00 11.0**	**+1.7**
YUK				pmax	pmax		
	comp=E,319nm,0.4s						
YUK				pmax	pmax		
	comp=Z,2μm,0.4s						
YUK				pmax	pmax		
	comp=N,364nm,0.2s						
SHO	**Shikotan**	**3.66**	**60**	*e*PN	**Pn**	**22 59 39.5**	**-0.4**
SHO				*i* S	**Sn**	**23 00 19.3**	**-2.4**
SHO				pmax	pmax		
	comp=E,580nm,0.3s						
SHO				pmax	pmax		
	comp=Z,912nm,0.3s						
SHO				pmax	pmax		
	comp=N,279nm,0.4s						
YSS	**Yuzh-Sakhalins**	**4.86**	**2**	⇑*e*PN	**Pn**	**22 59 59.4**	**+3.0**
YSS				*e*S	**Sn**	**23 00 56.7**	**+5.5**
YSS				pmax	pmax		
	comp=Z,300nm,0.9s						
YSS				smax	smax		
	comp=N,190nm,0.9s						
YSS				MLR	MLR		
	comp=Z,700nm,8.0s						
YSS	**Yuzh-Sakhalins**	**4.86**	**2**	*e*Pn	**Pn**	**22 59 59.3**	**+3.0**
KUR	**Kuril'sk**	**5.02**	**50**	*c i*PN	**Pn**	**23 00 00.0**	**+1.6**
KUR				*i* S	**Sn**	**23 00

HABR pmax pmax
comp=E,35nm,0.9s
HABR pmax pmax
comp=Z,103nm,1.0s
HABR MLR MLR
comp=Z,505nm,15.0s
MSHR Mys Shultsa 8.39 277 *c iP* N **Pn 23 00 47.0 +2.3**
JHJ Hachijo jima 2 9.21 194 P **Pn 23 00 53.8 -2.1**
comp=Z,26nm,0.3s,baz=72,slow=19,SNR=10
JHJ S **Sn 23 02 29.5 -8.5**
comp=Z,80nm,0.3s,baz=73,slow=19,SNR=8.8
JHJ2 Mitsune 9.21 194 *e* P **Pn 23 00 53.3 -2.6**
JHJ2 *e* Sn Sn 23 02 28.3 -10
MDJ Mudanjiang 9.71 289 P **Pn 23 01 05.5 +2.8**
MDJ S **Sn 23 02 52.3 +2.2**
MDJ pmax pmax
comp=Z,45nm,1.1s
MDJ LR LR
comp=Z,280nm,23.9s
MDJ LR LR
comp=Z,450nm,30.0s
MDJ LR LR
comp=Z,800nm,31.1s
MDJ Mudanjiang 9.71 289 *e* Pn **Pn 23 01 02.0 -0.7**
KLR Kul'dur 10.34 317 P **Pn 23 01 13.4 +2.1**
comp=Z,1.0nm,0.3s,baz=122,slow=14,SNR=85
KLR LR 23 05 28.7
comp=Z,742nm,19.0s,baz=148,slow=39
KLR Kul'dur 10.34 317 *c iP* N **Pn 23 01 13.0 +1.7**
NKL Nikolayevsk 11.12 354 *e* PN **Pn 23 01 22.0 +0.1**
NKL *e* 23 03 26.0
NKL pmax pmax
comp=N,400nm,4.0s
NKL pmax pmax
comp=Z,400nm,4.0s
NKL pmax pmax
comp=N,43nm,1.0s
NKL pmax pmax
comp=Z,69nm,1.0s
NKL MLR MLR
comp=Z,500nm,18.0s
KSRS Korea Array 12.11 252 P **Pn 23 01 37.9 +2.4**
comp=Z,1.5nm,0.3s,baz=69,slow=13,SNR=49
KSRS S **Sn 23 03 55.1 +6.4**
comp=Z,2.3nm,0.3s,baz=69,slow=24,SNR=9.5
KSRS LR LR 23 05 49.0
comp=Z,625nm,20.6s,baz=66,slow=35
KSRS PcP **PcP 23 07 14.7 -0.5**
comp=Z,0.1nm,0.3s,baz=15,slow=1.9,SNR=4.3
KS01 Wonju Array Si 12.12 252 *e* Pn **Pn 23 01 36.9 +1.3**
KS01 *e* Sn **Sn 23 03 54.9 +5.9**
KS15 Wonju Array Si 12.14 252 *e* Pn **P 23 01 42.2 -4.1**
KS15 *e* Sn **Sn 23 03 55.1 +5.6**
KS15 *e* PcP **PcP 23 07 14.7 -0.5**
KSAR Wonju Array Be 12.14 252 PN **Pn 23 01 37.9 +2.0**
KSAR Wonju Array Be 12.14 252 P **Pn 23 01 37.9 +2.0**
CN2 Changchun 12.59 284 *e* P **Pn 23 01 43.5 +1.5**
CN2 *e* P P 23 01 52.5 +1.2
CN2 *e* S P 23 02 01.5
CN2 pmax pmax
comp=Z,20nm,0.9s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,500nm,16.0s
CN2 LR LR
comp=Z,500nm,16.0s
CN2 LR LR
comp=Z,600nm,19.0s
SKR Severo-Kuril's 12.73 43 *e* PN **Pn 23 01 42.5 -1.3**
SKR pmax pmax
comp=Z,38nm,0.4s
SKR pmax pmax
comp=Z,400nm,4.6s
SKR MLR MLR
comp=Z,200nm,14.0s
JNU Nakatsue 12.82 229 P **Pn 23 01 45.1 -0.1**
comp=Z,0.5nm,0.3s,baz=58,slow=5.9,SNR=8.1
JNU Nakatsue 12.82 229 *e* Pn **Pn 23 01 45.7 +0.4**
SNY Shenyang 14.06 275 ⇓P **Pn 23 02 03.5 +1.7**
SNY S **Sn 23 04 40.8 +4.6**
SNY pmax pmax
comp=Z,26nm,0.9s
SNY LR LR
comp=Z,390nm,17.8s
SNY LR LR
comp=Z,290nm,18.4s
SNY LR LR
comp=Z,790nm,27.9s
PEA0 Petropavlovsk- 15.03 38 *e* Pn **Pn 23 02 12.9 -1.3**
PEA0B Petropavlovsk- 15.03 38 *e* Pn **Pn 23 02 13.1 -1.2**
PETK Petropavlovsk- 15.03 38 P **Pn 23 02 12.9 -1.3**
comp=Z,1.8nm,0.3s,baz=224,slow=8.6,SNR=7.5
PETK LR LR 23 09 32.2
comp=Z,219nm,18.5s,baz=217,slow=43
PETK Petropavlovsk- 15.03 38 P **Pn 23 02 13.0 -1.3**
PEA1 Petropavlovsk- 15.03 38 *e* Pn **Pn 23 02 12.9 -1.4**
HIA Hailar 17.38 302 *e* P **Pn 23 02 42.4 -1.6**
HIA pmax pmax
comp=Z,47nm,1.0s
HIA Hailar 17.38 302 *e* Pn **Pn 23 02 42.4 -1.6**
comp=Z,46nm,1.0s
MA2 Magadan 18.24 14 P **P 23 02 52.8 -0.9**
comp=Z,1.1nm,0.3s,baz=234,slow=7.6,SNR=8.6
MA2 LR LR 23 10 56.2
comp=Z,102nm,19.6s,baz=192,slow=40
CLNS Chul'man 18.57 329 *e* P **P 23 02 56.5 -1.0**
CLNS pmax pmax
comp=Z,22nm,0.9s
CLNS pmax pmax
comp=N,45nm,0.9s
CLNS pmax pmax
comp=E,13nm,0.8s
CLNS MLR MLR
comp=Z,278nm,12.0s
CLNS MLR MLR
comp=N,349nm,13.0s
CLNS MLR MLR
comp=E,113nm,10.0s
JOW Kunigami 19.16 222 *e* P **P 23 03 00.2 -3.9**
comp=E,38nm,1.1s
BJI Beijing 19.91 273 P **P 23 03 10.0 -2.1**
BJI sP **sP 23 03 31.3 -2.2**
BJI S **S 23 06 52.0 -0.6**
BJI sS **sS 23 07 16.0 +1.5**
BJI pmax pmax
comp=E,97nm,0.9s
BJI LR LR
comp=E,240nm,12.2s
BJI LR LR
comp=E,430nm,13.5s
BJI LR LR
comp=E,620nm,30.0s
BJT Baijiatuau 19.92 273 *e* P **P 23 03 10.4 -1.8**
BJT pmax pmax
comp=Z,84nm,0.9s
BJT Baijiatuau 19.92 273 *e* P **P 23 03 10.4 -1.8**
comp=Z,84nm,0.9s
TIA Tai'an 20.48 262 ⇑P **P 23 03 16.0 -2.3**
TIA pmax pmax
comp=Z,150nm,0.8s
NJ2 Nanjing 21.28 250 *e* P **P 23 03 25.0 -2.0**
NJ2 pP **pP 23 03 41.0 +0.4**
NJ2 sP **sP 23 03 53.5 +5.0**
NJ2 pmax pmax
comp=Z,64nm,0.8s
NJ2 LR LR
comp=Z,2μm,18.4s
NJ2 LR LR
comp=Z,2μm,19.5s
NJ2 LR LR
comp=Z,1μm,19.5s
YAK Yakutsk 21.38 343 P **P 23 03 27.2 -0.5**
comp=Z,25nm,0.3s,baz=156,slow=3.3,SNR=12
YAK S **S 23 07 15.5 -5.8**
comp=Z,23nm,0.5s,baz=71,slow=5.0,SNR=5.1
YAK LR LR 23 12 19.3
comp=Z,91nm,21.1s,baz=154,slow=38
YAK Yakutsk 21.38 343 *e* P **P 23 03 27.4 -0.3**
YAK *e** PP **sP 23 03 45.8 -3.5**
YAK *e* S **S 23 07 15.2 -6.1**
YAK *e* 23 07 31.2
YAK *e* 23 14 42.4
YAK pmax pmax
comp=Z,48nm,0.7s
YAK pmax pmax
comp=E,7.0nm,0.8s
YAK pmax pmax
comp=N,13nm,1.2s
YAK smax smax
comp=E,180nm,2.2s
YAK smax smax
comp=N,229nm,2.1s
YAK Yakutsk 21.38 343 *e* P **P 23 03 27.1 -0.6**
comp=N,106nm,1.0s
SEY Seymchan 21.67 12 P **P 23 03 29.2 -1.7**
comp=N,9.5nm,0.3s,baz=206,slow=7.6,SNR=38
SEY S **S 23 07 21.7 -5.4**
comp=N,1.0nm,0.5s,baz=239,slow=17,SNR=5.8
SEY Seymchan 21.67 12 ⇓ *e* P **P 23 03 29.4 -1.5**
HHC Hu-ho-hao-te 23.13 277 *e* P **P 23 03 44.8 -1.8**
HHC S **S 23 07 46.0 -7.1**
HHC pmax pmax
comp=N,18nm,0.9s
HHC pmax pmax
comp=N,81nm,7.4s
HHC LR LR
comp=N,240nm,14.8s
HHC LR LR
comp=N,220nm,16.0s
HHC LR LR
comp=N,280nm,18.5s
YOJ Yonaguni jima 23.86 229 *e* P **P 23 03 50.5 -2.8**
YOJ pmax pmax
comp=Z,78nm,1.1s
YOJ Yonaguni jima 23.86 229 *e* P **P 23 03 50.5 -2.8**
comp=Z,78nm,1.1s
BOD Bodaibo 23.89 321 *e* P **P 23 03 48.7 -4.6**
BOD pmax pmax
comp=Z,18nm,0.6s
TATO Taipei 24.34 232 *e* P **P 23 03 57.8 +0.2**
comp=Z,57nm,0.8s
YHNB Yeheng 24.64 232 *e* P **P 23 03 59.1 -1.3**
comp=Z,41nm,0.7s
NACB Ninganchiao 24.89 231 *e* P **P 23 03 59.9 -2.8**
comp=Z,21nm,1.1s
WHN Wuhan 25.31 252 ⇓P **P 23 04 05.3 -1.1**
WHN S **S 23 08 26.5 -1.4**
WHN LR LR
comp=Z,620nm,14.4s
WHN LR LR
comp=Z,640nm,16.5s
WHN LR LR
comp=Z,860nm,22.3s
SSLB Suanglung 25.56 231 *e* P **P 23 04 08.7 -0.2**
comp=Z,7.6nm,0.8s
YULB Yu-li 25.67 230 *e* P **P 23 04 10.0 +0.2**
comp=Z,9.8nm,0.8s
SONA1 Songino Array 25.99 295 *e* P **P 23 04 11.9 -0.7**
SONA0 Songino Array 25.99 295 *e* P **P 23 04 12.8 +0.1**
comp=Z,23nm,0.8s
SONA0 *e* PcP **PcP 23 07 39.4 0.0**
SONA0 *e* ScP **ScP 23 11 13.9 +0.5**
SONM Songino Array 25.99 295 P **P 23 04 12.8 +0.1**
comp=Z,14nm,0.5s,baz=79,slow=9.1,SNR=83
SONM PcP **PcP 23 07 39.4 0.0**
comp=Z,1.0nm,0.4s,baz=116,slow=3.4,SNR=4.4
SONM ScP **ScP 23 11 13.9 +0.5**
comp=Z,1.4nm,0.8s,baz=145,slow=3.6,SNR=5.2
SONM LR LR 23 15 03.8
comp=Z,396nm,19.5s,baz=86,slow=38
TPUB Ta-pu 26.12 231 *e* P **P 23 04 14.6 +0.7**
comp=Z,58nm,1.5s
XAN Xi'an 27.47 264 P **P 23 04 24.0 -2.0**
XAN pmax pmax
comp=Z,9.0nm,0.8s
TLY Talaya 27.91 304 P **P 23 04 30.1 +0.4**
comp=Z,17nm,0.7s,baz=96,slow=20,SNR=22
TLY Talaya 27.91 304 *c iP* **P 23 04 29.9 +0.1**
TLY *e* S **S 23 09 13.5 +4.7**
TLY pmax pmax
comp=Z,41nm,1.1s
TLY MLR MLR
comp=Z,308nm,20.0s
ZAK Zakamensk 28.07 301 *e* P **P 23 04 30.7 -0.5**
ZAK pmax pmax
comp=Z,13nm,1.0s
GUMO Guam 28.48 175 P **P 23 04 33.5 -1.5**
comp=Z,26nm,0.3s,baz=309,slow=20,SNR=3.1
GUMO LR LR 23 15 05.9
comp=Z,179nm,20.4s,baz=340,slow=34
ENH Enshi 28.94 257 *e* P **P 23 04 37.8 -1.3**
comp=Z,41nm,0.7s
BILL Bilibino 28.96 18 ⇓ *e* P **P 23 04 39.0 +0.2**
BILL *e* 23 05 41.4
BILL pmax pmax
comp=Z,5.0nm,0.9s
BILL MLR MLR
comp=Z,381nm,20.0s
LZH Lanzhou 30.38 272 *e* P **P 23 04 52.5 +0.5**
LZH pP pP 23 05 06.5 -0.9
LZH sP sP 23 05 14.0 -0.8
LZH pmax pmax
comp=Z,80nm,1.5s
LZH pmax pmax
comp=Z,130nm,6.0s
LZH LR LR
comp=Z,350nm,14.1s
LZH LR LR
comp=Z,230nm,15.3s
LZH LR LR
comp=Z,260nm,13.1s
TIXI Tiksi 30.39 352 PcP **PcP 23 07 48.5 -1.0**
comp=Z,3.3nm,0.6s,baz=107,slow=11,SNR=2.2
TIXI Tiksi 30.39 352 *c* ⇓ *e* P **P 23 04 51.1 -0.3**
TIXI pmax pmax
comp=Z,3.0nm,0.4s
H11N2 WAKE ISLAND Hy 30.41 130 T T 23 36 29.2
baz=324,slow=75,SNR=410
H11N1 WAKE ISLAND Hy 30.42 130 T T 23 36 30.7
baz=324,slow=75,SNR=97
H11N3 WAKE ISLAND Hy 30.42 130 T T 23 36 29.0
baz=324,slow=75,SNR=414
H11S1 WAKE ISLAND Hy 31.27 131 T T 23 37 36.8
baz=322
H11S3 WAKE ISLAND Hy 31.27 131 T T 23 37 34.9
baz=322,slow=74,SNR=662
H11S2 WAKE ISLAND Hy 31.29 131 T T 23 37 38.5
baz=322,slow=74,SNR=526
GTA Gaotai 32.18 280 *e* P **P 23 05 07.3 -0.4**
GTA PcP **PcP 23 07 56.0 +0.8**
GTA S **S 23 10 13.8 -2.3**
GTA SS **SnSn 23 12 08.8 -3.3**
GTA pmax pmax
comp=Z,8.0nm,1.1s
GTA pmax pmax
comp=Z,89nm,5.7s
GTA LR LR
comp=Z,180nm,17.6s
GTA LR LR
comp=Z,180nm,20.4s
GTA LR LR
comp=Z,200nm,20.4s
CD2 Chengdu 32.80 263 *e* P **P 23 05 12.5 -0.6**
CD2 pP pP 23 05 28.5 -0.1
CD2 sP sP 23 05 36.5 +0.5
CD2 S **S 23 10 25.3 -0.5**
CD2 sS sS 23 10 53.0 +0.9
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.0s
CD2 LR LR
comp=Z,190nm,15.5s
CD2 LR LR
comp=Z,150nm,17.9s
CD2 LR LR
comp=Z,190nm,13.7s
GYA Guiyang 33.17 253 ⇑ *iP* **P 23 05 14.8 -1.6**
GYA pP pP 23 05 34.5 +2.6
GYA PP **PP 23 06 31.0 -1.4**
GYA PcP **PcP 23 08 00.5 +2.4**
GYA S **S 23 10 32.8 +1.2**
GYA ScP **ScP 23 11 38.0 +1.2**
GYA SS **SnSn 23 12 36.8 +0.5**
GYA pmax pmax
comp=Z,20nm,0.7s
GYA pmax pmax
comp=Z,130nm,5.5s
GYA LR LR
comp=Z,510nm,17.2s
GYA LR LR
comp=Z,480nm,16.6s
GYA LR LR
comp=Z,470nm,17.4s
QIZ Qiongzhong 35.96 240 P **P 23 05 42.0 +1.6**
QIZ S **S 23 11 15.5 +1.0**
QIZ pmax pmax
comp=Z,11nm,0.8s
QIZ LR LR
comp=Z,160nm,16.6s
QIZ LR LR
comp=Z,130nm,18.6s
QIZ Qiongzhong 35.96 240 *e* P **P 23 05 42.2 +1.8**
comp=Z,11nm,0.8s
KMI Kunming 36.79 255 P **P 23 05 49.5 +1.8**
KMI pmax pmax
comp=Z,25nm,0.9s
NRIK Noril'sk 39.08 333 P **P 23 06 05.1 -1.1**
comp=Z,7.2nm,0.4s,baz=155,slow=1.3,SNR=22
NRIK LR LR 23 23 34.2
comp=Z,315nm,19.7s,baz=124,slow=38
ZAA1 Zalesovo Array 39.27 308 *e* P **P 23 06 08.5 +0.4**
ZAA1 *e* PcP **PcP 23 08 16.0 +0.3**
ZAA1 *e* ScP **ScP 23 11 58.5 -0.1**
ZAA0 Zalesovo Array 39.27 308 *e* P **P 23 06 08.3 +0.2**
ZALV Zalesovo Beam 39.27 308 P **P 23 06 08.5 +0.4**
comp=Z,70nm,0.8s,baz=86,slow=7.2,SNR=247
ZALV PcP **PcP 23 08 16.0 +0.3**
comp=Z,13nm,0.8s,baz=83,slow=3.0,SNR=7.7
ZALV ScP **ScP 23 11 58.5 -0.1**
comp=Z,2.8nm,0.7s,baz=93,slow=3.3,SNR=8.0
ZALV LR LR 23 23 13.6
comp=Z,223nm,18.4s,baz=70,slow=37
WMQ Urumqi 39.50 292 P **P 23 06 11.0 +0.8**
WMQ pP sP 23 06 30.8 -2.5
WMQ sP pP 23 06 36.0 +10
WMQ PcP **PcP 23 08 14.5 -2.2**
WMQ S **S 23 12 12.5 +4.6**
WMQ SS **SS 23 15 04.0 -0.2**
WMQ pmax pmax
comp=Z,83nm,1.0s
WMQ pmax pmax
comp=Z,350nm,5.6s
WMQ LR LR
comp=Z,560nm,22.8s
WMQ LR LR
comp=Z,550nm,20.2s
WMQ LR LR
comp=Z,810nm,20.4s
NVS Novosibirsk 40.09 309 *e* P **P 23 06 15.3 +0.5**
NVS *e* 23 06 33.1
NVS *e* S **S 23 12 07.8 -8.4**
NVS pmax pmax
comp=Z,45nm,0.7s
NVS pmax pmax
comp=N,7.0nm,0.7s
NVS pmax pmax
comp=E,31nm,0.7s
NVS smax smax
comp=N,6.0nm,1.1s
TTA Tatalina 40.86 38 *e* P **P 23 06 20.8 -0.4**
TTA pmax pmax
comp=Z,6.0nm,1.0s
TTA Tatalina 40.86 38 *e* P **P 23 06 20.8 -0.4**
comp=Z,6.4nm,1.0s
NONG Nongkai 41.10 246 P **P 23 06 24.2 +0.6**
comp=Z,62nm,1.0s,comp=Z,3μm
SKNT Sakolnakorn 41.30 244 P **P 23 06 25.7 +0.5**
comp=Z,48nm,0.9s,comp=Z,11μm
UBPT Khong Chiam 41.53 241 P **P 23 06 27.9 +0.8**
comp=Z,27nm,1.1s,comp=Z,805nm
MK01 Makanchi Array 42.30 298 *e* P **P 23 06 33.0 -0.1**
MK31 Makanchi Array 42.30 298 *c e* P **P 23 06 33.2 0.0**
MK31 pmax pmax
comp=Z,48nm,0.7s
MK31 Makanchi Array 42.30 298 *e* P **P 23 06 33.1 0.0**
MK32 Makanchi Array 42.30 298 *e* P **P 23 06 33.2 0.0**
MK32 *e* PcP **PcP 23 08 25.8 0.0**
MK32 *e* ScP **ScP 23 12 11.3 +0.6**
MKAR Makanchi Array 42.30 298 P **P 23 06 33.2 0.0**
comp=Z,47nm,0.8s,baz=81,slow=9.2,SNR=217
MKAR PcP **PcP 23 08 25.8 0.0**
comp=Z,3.7nm,0.8s,baz=82,slow=3.1,SNR=4.5
MKAR ScP **ScP 23 12 11.3 +0.6**
comp=Z,1.4nm,1.0s,baz=76,slow=6.1,SNR=3.6
MKAR LR LR 23 25 16.6
comp=Z,97nm,18.4s,baz=101,slow=38
MKAR Makanchi Array 42.30 298 *e* P **P 23 06 33.1 0.0**
comp=Z,438nm,0.8s
MAKZ Makanchi 42.51 298 *e* P **P 23 06 34.9 +0.1**
MAKZ pmax pmax
comp=Z,68nm,0.9s
MAKZ Makanchi 42.51 298 *e* P **P 23 06 34.9 +0.1**
comp=Z,68nm,0.9s
PPLA Purkeypile 42.61 38 *e* P **P 23 06 36.5 +1.0**
comp=Z,13nm,1.0s
CAST Castle Rocks 42.64 37 *e* P **P 23 06 36.6 +1.0**
comp=Z,10.0nm,0.7s
CMAI Chiengmai2 42.70 252 P **P 23 06 37.8 +1.0**
comp=Z,258nm,1.1s
LSA Lhasa 42.78 270 P **P 23 06 39.0 +1.3**
LSA pmax pmax
comp=Z,28nm,0.8s
LSA Lhasa 42.78 270 *e* P **P 23 06 39.1 +1.3**
LSA pmax pmax
comp=Z,50nm,1.3s
LSA Lhasa 42.78 270 *e* P **P 23 06 39.1 +1.3**
comp=Z,50nm,1.3s
KDAK Kodiak Island 42.88 45 *i* P **P 23 06 37.3 -0.3**
BPAW Bear Paw Mtn. 43.10 36 *e* P **P 23 06 40.2 +0.8**
comp=Z,26nm,1.8s
UTTA Uttaradit 43.10 249 P **P 23 06 40.6 +0.7**
comp=Z,14nm,0.8s,comp=Z,102nm
KTH Kantishna Hill 43.16 37 *e* P **P 23 06 41.1 +1.2**
comp=Z,13nm,0.8s
MLY Manley 43.18 35 *e* P **P 23 06 41.3 +1.3**
comp=Z,8.7nm,1.3s
LAMP Lampang 43.22 250 P **P 23 06 41.9 +1.1**
comp=Z,18nm,0.7s,comp=Z,162nm
COLD Coldfoot 43.37 32 *e* P **P 23 06 42.8 +1.3**
comp=Z,6.3nm,1.1s
SUA Susitna One 43.39 40 *e* P **P 23 06 42.8 +1.0**
comp=Z,9.5nm,0.8s
CHAI Chaiyaphum 43.40 245 P **P 23 06 42.5 +0.2**
comp=Z,24nm,0.9s,comp=Z,320nm
CMMT Chiang Mai 43.51 251 P **P 23 06 43.7 +0.5**
comp=Z,58nm,0.8s,comp=Z,558nm
CHTO Chiang Mai 43.51 251 P **P 23 06 43.8 +0.6**
comp=Z,256nm,0.8s,comp=Z,2μm
CHTO Chiang Mai 43.51 251 *e* P **P 23 06 43.8 +0.6**
CHTO pmax pmax
comp=Z,39nm,0.7s
CHTO Chiang Mai 43.51 251 P **P 23 06 43.8 +0.6**
SNR=10
CHTO Chiang Mai 43.51 251 *e* P **P 23 06 43.8 +0.6**
comp=Z,39nm,0.7s
KURK Kurchatov 43.60 304 *e* P **P 23 06 44.2 +0.7**
KURK *e* 23 08 30.4
KURK Kurchatov 43.60 304 *e* P **P 23 06 44.2 +0.7**
KURK *e* PcP **PcP 23 08 30.4 +0.5**
PBKT Sadao Pong 43.62 247 P **P 23 06 44.6 +0.5**
comp=Z,30nm,0.9s
KURBB Kurchatov Arra 43.68 304 P **P 23 06 44.2 0.0**
comp=Z,89nm,0.8s,baz=77,slow=8.7,SNR=212
KURBB PcP **PcP 23 08 30.4 +0.2**
comp=Z,5.5nm,0.7s,baz=74,slow=3.3,SNR=4.2
CM31 Chiang Mai Arr 43.75 251 *e* P **P 23 06 46.4 +1.3**
CM31 *e* PP **PcP 23 08 31.9 +1.0**
CM31 *e* ScP **ScP 23 12 17.6 +0.6**
CMAR Chiang Mai Arr 43.75 251 P **P 23 06 45.8 +0.7**
comp=Z,6.4nm,0.7s,baz=42,slow=7.2,SNR=46
CMAR PcP **PcP 23 08 31.9 +1.0**
comp=Z,5.2nm,0.8s,baz=8.2,slow=2.2,SNR=8.6
CMAR ScP **ScP 23 12 17.6 +0.6**
comp=Z,0.5nm,0.3s,baz=14,slow=2.9,SNR=5.9
CMAR LR LR 23 26 26.4
comp=Z,160nm,18.5s,baz=71,slow=38
CM01 Chiang Mai Arr 43.76 251 *e* P **P 23 06 45.5 +0.3**
BWN Browne 43.76 36 *e* P **P 23 06 48.1 +3.4**
comp=Z,41nm,0.9s
SUKH Sukhothai 43.92 249 P **P 23 06 47.2 +0.7**
comp=Z,13nm,0.8s,comp=Z,106nm
RND **Reindeer 44.09 37** *e* P **P 23 06 47.4 0.0**
RND pmax pmax
comp=Z,11nm,1.0s
RND Reindeer 44.09 37 *e* P **P 23 06 47.4 0.0**
comp=Z,11nm,1.0s

MDM Murphy Dome 44.25 35 *e*P P 23 06 49.3 +0.7
comp=Z,7.4nm,0.9s
WRH Wood River Hil 44.34 35 *e*P P 23 06 50.3 +1.0
comp=Z,11nm,0.8s
COLA College 44.41 35 *i* P P 23 06 50.1 +0.3
COLA pmax pmax
comp=Z,7.0nm,0.9s
CCB Clear Creek Bu 44.45 35 *e*P P 23 06 50.4 +0.3
comp=Z,3.9nm,0.9s
SML Sawmill 44.50 39 *e*P P 23 06 51.4 +0.8
SML pmax pmax
comp=Z,29nm,1.0s
SML Sawmill 44.50 39 *e*P P 23 06 51.4 +0.8
comp=Z,29nm,1.0s
MHMT Maesarieng 44.65 252 P P 23 06 55.1 +2.8
comp=Z,28nm,0.8s
SRAK Srakaew 44.72 243 P P 23 06 50.6 -2.2
comp=Z,194nm,0.9s,comp=Z,1µm
DHY Denali Highway 44.79 37 *e*P P 23 06 53.0 -0.1
comp=Z,11nm,0.9s
IL1 Eielson Array 44.83 35 *e*P P 23 06 53.1 -0.1
ILAR Eielson Array 44.83 35 P P 23 06 53.1 -0.1
comp=Z,2.5nm,0.4s,baz=270,slow=6.8,SNR=31
ILAR LR LR 23 28 14.9
comp=Z,25nm,18.4s,baz=288,slow=39
ILB Eielson Array 44.83 35 *e*P P 23 06 53.4 +0.2
SCM Sheep Creek Mo 44.97 39 *e*P P 23 06 55.0 +0.6
SCM pmax pmax
comp=Z,21nm,1.1s
SCM Sheep Creek Mo 44.97 39 *e*P P 23 06 55.0 +0.6
comp=Z,21nm,1.1s
UMPA Umpang Tak 45.33 249 P P 23 07 00.1 +2.4
comp=Z,15nm,1.0s
MRSI Marisa 45.37 210 P P 23 06 58.9 +0.9
CHBT CHBT 45.44 242 P P 23 07 00.4 +1.8
comp=Z,60nm,0.9s,comp=Z,2µm
KLU Klutina 45.68 40 *e*P P 23 07 00.9 +0.9
comp=Z,19nm,1.0s
DIV Divide 45.81 40 *e*P P 23 07 02.3 +1.3
comp=Z,19nm,1.2s
DOT Dot Lake 46.20 36 *e*P P 23 07 03.8 -0.2
comp=Z,17nm,1.1s
SANI Sanana 46.41 203 P P 23 07 09.5 +3.4
CRQM Cirque 47.14 40 *e*P P 23 07 13.9 +2.2
comp=Z,59nm,1.5s
EGAK Eagle 47.26 35 *e*P P 23 07 12.5 +0.2
comp=Z,10nm,0.9s
JIRN Jiri 47.55 271 *e*P P 23 07 16.1 +0.6
comp=Z,269nm,0.3s
GUN Gumba 47.65 272 *e*P P 23 07 16.6 +0.4
comp=Z,237nm,0.5s
SBUM Sibu 47.88 223 *e*P P 23 07 18.4 +0.8
comp=Z,8.6nm,0.8s
BVA0 Borovoye Array 47.88 309 P P 23 07 16.8 -0.5
BVA0 pmax pmax
comp=Z,29nm,0.6s
BVAR Borovoye Array 47.88 309 P P 23 07 17.8 +0.6
comp=Z,27nm,0.4s,baz=75,slow=8.7,SNR=237
BVAR PcP PcP 23 08 45.7 +0.9
comp=Z,13nm,0.7s,baz=85,slow=1.6,SNR=7.6
BVAR ScP ScP 23 12 33.2 -0.5
comp=Z,0.5nm,0.7s,baz=63,slow=3.9,SNR=2.6
BVAR S S 23 14 10.0 +0.3
comp=Z,0.3nm,0.5s,baz=85,slow=18,SNR=2.7
BRVK Borovoye 47.94 309*c* *i*P P 23 07 18.0 +0.3
BRVK pmax pmax
comp=Z,122nm,1.0s
BRVK Borovoye 47.94 309 *e*P P 23 07 18.2 +0.6
comp=Z,44nm,1.0s
TKM2 Tokmak 2 48.09 295 *i* P P 23 07 19.5 +0.2
TKM2 pmax pmax
comp=Z,105nm,0.7s
KKN Kakani 48.16 272 *e*P P 23 07 20.2 +0.2
comp=Z,126nm,0.8s
PKIN Phulchoki 48.19 272 *e*P P 23 07 20.4 +0.1
comp=Z,47nm,0.7s
PKIN Phulchoki 48.19 272 *e*P P 23 07 20.7 +0.4
comp=Z,82nm,0.6s
DMN Daman 48.39 272 *e*P P 23 07 22.2 +0.4
comp=Z,76nm,0.6s
GKN Gorkha 48.52 273 *e*P P 23 07 22.8 +0.1
comp=Z,64nm,0.5s
AAK Ala-Archa 48.95 295 LR LR 23 29 50.7
comp=Z,137nm,19.6s,baz=66,slow=38
AAK Ala-Archa 48.95 295*c* *i*P P 23 07 25.9 +0.1
AAK pmax pmax
comp=Z,63nm,0.8s
AAK Ala-Archa 48.95 295 P P 23 07 26.0 +0.1
SNR=5.7
AAK Ala-Archa 48.95 295 *e*P P 23 07 26.1 +0.3
comp=Z,23nm,0.8s
KSH Kashi 49.24 291 *e*P P 23 07 32.0 +4.0
KSH *es*P sP 23 07 56.3 +4.9
KSH *e*PcP **PcP** **23 08 54.5 +4.3**
KSH PcS **PcS** **23 12 50.3 +3.5**
KSH S **S** **23 14 31.8 +2.5**
KSH pmax pmax
comp=Z,27nm,0.8s
KSH LR LR
comp=Z,120nm,6.9s
KSH LR LR
comp=Z,64nm,4.9s
KSH LR LR
comp=Z,210nm,14.1s
KOLN Koldanda 49.42 273 *e*P P 23 07 30.1 +0.5
comp=Z,48nm,0.3s
INK Inuvik 49.54 29 P P 23 07 29.8 +0.2
comp=Z,6.2nm,0.3s,baz=304,slow=11,SNR=49
INK Inuvik 49.54 29 *e*P P 23 07 29.9 +0.2
INK pmax pmax
comp=Z,12nm,1.0s
INK Inuvik 49.54 29 *e*P P 23 07 29.9 +0.2
comp=Z,12nm,1.0s
PYUN Piuthan 49.69 274 *e*P P 23 07 32.2 +0.5
comp=Z,157nm,0.8s
HYT Haines Junctio 49.80 39 *e*P P 23 07 34.2 +2.2
comp=Z,27nm,0.9s
SKLT Songkhla 50.73 239 P P 23 07 41.0 +1.6
comp=Z,58nm,0.9s
TRTT Trang 50.82 240 P P 23 07 41.4 +1.3
comp=Z,43nm,0.9s
KRAB Krabi 50.85 241 P P 23 07 41.7 +1.4
comp=Z,95nm,0.8s,comp=Z,711nm
KK31 Karatay Array 51.42 297*ce*P P 23 07 43.7 -0.6
KK31 pmax pmax
comp=Z,29nm,0.6s
KKAR Karatay Array 51.42 297 *e*P P 23 07 44.3 0.0
KKAR Karatay Array 51.42 297 *e*P P 23 07 44.3 0.0
comp=Z,339nm,0.7s
PKDT Phuket 51.66 242 P P 23 07 48.2 +1.8
comp=Z,86nm,0.9s
SVE Sverdlovsk 51.97 316*d* *i*P P 23 07 48.6 +0.4
SVE pmax pmax
comp=Z,99nm,0.9s
SVE MLR MLR
comp=Z,189nm,17.0s
KULM Kulim 52.16 237 *e*P P 23 07 50.5 +0.5
comp=Z,44nm,1.0s
IPM Ipoh 52.55 236 *e*P P 23 07 53.1 +0.2
comp=Z,25nm,1.2s
THN Thein Dam 52.78 283 *e*P P 23 07 52.8 -1.7
SOKR Solikamsk 52.87 320*c* *i*P P 23 07 52.8 -1.9
SOKR pmax pmax
comp=Z,65nm,1.0s
MYKOM Kota Tinggi 52.99 231 *e*P P 23 07 57.4 +1.2
comp=Z,13nm,0.9s
ARU Arti 53.18 316 LR LR 23 33 02.9
comp=Z,202nm,20.7s,baz=60,slow=39
ARU Arti 53.18 316*c* *i*P P 23 07 57.1 0.0
ARU *PP **pP** 23 08 14.7 +1.2
ARU 23 09 03.5
ARU 23 09 55.3
ARU S S 23 15 25.3 +2.3
ARU 23 17 35.4
ARU SS SS 23 19 01.5 -1.1
ARU pmax pmax
comp=Z,95nm,1.2s
ARU Arti 53.18 316 *e*P P 23 07 57.2 +0.1
comp=Z,82nm,1.1s
DLBC Dease Lake 54.19 40 P P 23 08 00.7 -3.9
comp=Z,2.3nm,0.7s,baz=314,slow=1.4,SNR=4.1
DLBC Dease Lake 54.19 40 *e*P P 23 08 04.6 +0.1
comp=Z,5.5nm,0.9s
PSI Prapat 55.16 237 *e*P P 23 08 12.8 +0.6
PSI pmax pmax
comp=Z,18nm,0.9s
PSI Prapat 55.16 237 *e*P P 23 08 12.8 +0.6
comp=Z,18nm,0.9s
HOPEN Hopen 55.34 345 IAmb IAmb 23 08 11.6
comp=Z,525nm,2.4s
HOPEN *e*P P 23 08 12.9 +0.4
AB31 Akbulak array 55.39 308*ce*P P 23 08 13.1 -0.1
AB31 pmax pmax
comp=Z,25nm,0.7s
ABKAR Akbulak array 55.39 308 *e*P P 23 08 13.6 +0.3
comp=Z,239nm,0.7s
MTN Manton Dam 55.66 193 *e*P P 23 08 15.2 -0.3
comp=Z,21nm,0.9s
SPA0 Spitsbergen Ar 55.73 348 *e*P P 23 08 15.1 -0.2
SPA0 IAmb IAmb 23 08 31.1
comp=Z,220nm,2.5s
SPA0 IAMs_20 IAMs_20 23 30 04.9
comp=Z,236nm,20.2s
SPA0 Spitsbergen Ar 55.73 348 *e*P P 23 08 15.4 +0.2
SPITS Spitsbergen Ar 55.73 348 P P 23 08 14.9 -0.4
comp=Z,7.5nm,0.7s,baz=120,slow=5.1,SNR=13
KBS Kingsbay 55.82 350 *e*P P 23 08 15.9 +0.1
KBS IAmb IAmb 23 08 16.6
comp=Z,19nm,0.8s
KBS *epP **pP** 23 08 33.9 +1.5
KBS Kingsbay 55.82 350 *e*P P 23 08 16.0 +0.1
KBS pmax pmax
comp=Z,19nm,0.8s
KBS Kingsbay 55.82 350 *e*P P 23 08 16.0 +0.1
comp=Z,19nm,0.8s
AKTO Aktyubinsk 55.98 310 LR LR 23 33 37.5
comp=Z,174nm,20.3s,slow=37
KBL Kabul 56.48 288 *e*P P 23 08 20.6 -0.9
KBL pmax pmax
comp=Z,43nm,0.8s
KBL Kabul 56.48 288 *e*P P 23 08 20.6 -0.9
comp=Z,43nm,0.8s
HSPB Hornsund (broa 56.68 347 *e*P P 23 08 22.4 +0.4
HSPB IAmb IAmb 23 08 22.9
comp=Z,56nm,1.2s
GSI Gunungsitoli 57.17 237 *e*P P 23 08 26.9 +0.6
comp=Z,58nm,1.2s
RES Resolute Bay 57.50 15 P P 23 08 27.5 -0.4
comp=Z,23nm,0.7s,baz=330,slow=4.1,SNR=45
RES Resolute Bay 57.50 15 *e*P P 23 08 27.4 -0.5
RES pmax pmax
comp=Z,22nm,0.8s
RES Resolute Bay 57.50 15 *e*P P 23 08 27.4 -0.5
comp=Z,22nm,0.8s
LVZ Lovozero 57.85 335‖ *e*P P 23 08 30.6 +0.1
LVZ pmax pmax
comp=Z,17nm,1.1s
YKA Yellowknife Ar 59.05 32 P P 23 08 38.9 +0.1
comp=Z,4.4nm,0.8s,baz=306,slow=6.9,SNR=22
YKB5 Yellowknife Ar 59.05 32 *e*P P 23 08 38.9 +0.1
HYB Hyderabad 59.26 266 *i* P P 23 08 42.0 +1.0
HYB *e* 23 09 05.0
HAMF Hammerfest 59.32 340 *e*P P 23 08 40.1 -0.5
ARCES ARCESS Array B 59.56 339 P P 23 08 42.1 -0.2
comp=Z,5.2nm,0.8s,baz=81,slow=8.2,SNR=7.7
ARCES LR LR 23 39 37.8
comp=Z,78nm,18.5s,baz=55,slow=41
ARE0 ARCESS Array S 59.56 339 *e*P P 23 08 42.1 -0.2
KLMR Klimovskoe 59.95 327 *e*P P 23 08 43.4 -1.6
KLMR *e* 23 10 55.7
KLMR pmax pmax
comp=Z,26nm,0.9s
DAG Danmarks Havn 60.80 355⇑ *i*P P 23 08 50.0 -0.7
HEF Hetta 60.81 338 *e*P P 23 08 50.5 -0.3
KIF Kilpisjarvi 61.17 340 *e*P P 23 08 52.6 -0.6
TRO Tromso 61.20 341 *e*P P 23 08 53.5 +0.1
TRO IAmb IAmb 23 08 54.1
comp=Z,23nm,0.8s
FITZ Fitzroy Crossi 61.88 198 *e*P P 23 08 59.7 +1.1
comp=Z,13nm,1.3s
POO Poona 62.07 270 *e*P P 23 08 56.0 -4.1
WRAB Tennant Creek 62.17 189*de*P P 23 09 00.1 -0.4
WRAB pmax pmax
comp=Z,22nm,1.2s
GEYT Alibeck 62.17 297 P P 23 09 00.8 +0.2
comp=Z,29nm,0.8s,baz=29,slow=3.4,SNR=78
GEYT LR LR 23 37 52.8
comp=Z,216nm,20.2s,baz=60,slow=38
WB2 Warramunga Arr 62.18 189 *e*P P 23 08 59.9 -0.7
comp=Z,24nm,1.1s
WR1 Warramunga Arr 62.18 189 *e*P P 23 08 59.9 -0.7
comp=Z,38nm,1.4s
WRA Warramunga Arr 62.18 189 P P 23 08 59.9 -0.7
comp=Z,4.1nm,0.5s,baz=7.8,slow=7.1,SNR=61
WRA PKP2bc 23 38 14.3
comp=Z,0.9nm,0.9s,baz=189,slow=2.5,SNR=7.7
WRA Warramunga Arr 62.18 189 *i* P P 23 08 59.7 -0.9
WRA pmax pmax
comp=Z,4.0nm,0.5s
A04D Lummi Island 62.68 48 P P 23 09 03.6 0.0
baz=304
STEI Steigen 63.37 340 *e*P P 23 09 07.3 -0.6
STEI IAmb IAmb 23 09 22.4
comp=Z,1µm,4.3s
LOF Lofoten 63.64 341 *e*P P 23 09 09.9 +0.2
MOS Moscow 63.70 322 *e*P P 23 09 09.4 -0.9
MOS pmax pmax
comp=Z,44nm,0.9s
PALK Pallekele 64.32 256 LR LR 23 38 39.2
comp=Z,51nm,20.4s,baz=116,slow=37
PALK Pallekele 64.32 256 P P 23 09 15.2 +0.1
PALK Pallekele 64.32 256 *i* P P 23 09 16.1 +1.0
VRH Novokhopyorsk 64.41 317 *e*P P 23 09 14.2 -0.9
VRH pmax pmax
comp=Z,20nm,0.6s
OBN Obninsk 64.56 322*c* *i*P P 23 09 15.4 -0.5
OBN *e* 23 09 33.3
OBN *e* 23 09 50.2
OBN *e* 23 11 37.9
OBN pmax pmax
comp=Z,24nm,0.5s
OBN MLR MLR
comp=Z,136nm,18.0s
OBN Obninsk 64.56 322 *e*P P 23 09 16.0 +0.1
comp=Z,38nm,0.5s
B08A Colville Reser 64.73 47 *e*P P 23 09 18.1 +0.9
comp=Z,11nm,1.4s
FIA0 FINESS Array S 64.73 332 *e*P P 23 09 16.7 -0.3
FIA0 FINESS Array S 64.73 332 *e*P P 23 09 16.7 -0.3
FINES FINESS Array B 64.73 332 P P 23 09 16.7 -0.3
comp=Z,40nm,0.7s,baz=46,slow=8.2,SNR=151
FINES LR LR 23 40 12.9
comp=Z,222nm,19.2s,baz=42,slow=38
KONS Konsvik 65.00 340 *e*P P 23 09 19.0 +0.4
G05D Wamic, OR 65.43 51 P P 23 09 22.9 +1.1
baz=306
SUMG Summit 65.63 0⇑ *i*P P 23 09 23.5 +0.4
comp=Z,19nm,0.8s
SUMG Summit 65.63 0 *e*P P 23 09 23.4 +0.4
SUMG pmax pmax
comp=Z,19nm,0.7s
SUMG Summit 65.63 0 *e*P P 23 09 23.4 +0.3
comp=Z,19nm,0.7s
I04A Tendick Farm, 65.64 52 P P 23 09 24.4 +1.2
baz=306
VSR Storozhevoye 65.70 318 *e*P P 23 09 22.8 -0.6
VSR pmax pmax
comp=Z,20nm,0.5s
AS01 Alice Springs 65.90 189 *e*P P 23 09 24.7 -0.3
AS31 Alice Springs 65.91 189 *e*P P 23 09 24.9 0.0
comp=Z,3.1nm,1.2s
ASAR Alice Springs 65.91 189 P P 23 09 24.9 0.0
comp=Z,2.8nm,0.9s,baz=9.2,slow=6.0,SNR=17
ASAR LR LR 23 37 32.6
comp=Z,62nm,21.0s,baz=357,slow=35
ASAR Alice Springs 65.91 189 P P 23 09 25.0 0.0
I05D Terrebonne, OR 65.95 51 P P 23 09 26.3 +1.1
baz=306
NEW Newport 65.98 46 P P 23 09 25.9 +0.6
comp=Z,3.5nm,0.8s,baz=357,slow=6.6,SNR=6.1
NEW Newport 65.98 46 P P 23 09 26.0 +0.6
baz=307
NEW Newport 65.98 46 *e*P P 23 09 27.0 +1.6
NEW *e*PP **pP** 23 09 43.4 +1.1
NEW pmax pmax
comp=Z,6.0nm,0.9s
NEW Newport 65.98 46 *e*P P 23 09 27.0 +1.6
comp=Z,6.3nm,0.9s
NEW *epP **pP** 23 09 43.4 +1.1
VSU Vasula 66.52 329*c* *i*P P 23 09 28.1 -0.4
VSU pmax pmax
comp=Z,123nm,1.0s
YBH Yreka Blue Hor 66.67 54 *e*P P 23 09 32.0 +2.1
YBH pmax pmax
comp=Z,6.0nm,0.9s
YBH Yreka Blue Hor 66.67 54 *e*P P 23 09 32.0 +2.1
comp=Z,6.0nm,0.9s
M02C Callahan 66.78 55 P P 23 09 32.0 +1.4
baz=306
N02D Trinity Center 67.12 55 P P 23 09 33.3 +0.5
baz=307
M04C Macdoel 67.16 54 P P 23 09 33.7 +0.6
baz=307
K05A Summer Lake 67.16 53 *e*P P 23 09 34.7 +1.5
comp=Z,14nm,1.1s
K05A *epP **pP** 23 09 50.8 +0.7
K05A *e*PcP **PcP** **23 10 02.9 +2.0**
WALA Waterton Lakes 67.18 44 *e*P P 23 09 34.2 +1.1
comp=Z,6.0nm,0.9s
GOF Gofitskoye 67.37 311⇑ *e*P P 23 09 34.9 +0.7
GOF pmax pmax
comp=Z,49nm,0.9s
BLMT Blacktail Moun 67.60 45 *e*P P 23 09 37.6 +1.8
JTMT Jette 67.81 45 *e*P P 23 09 38.6 +1.6
NCK Nalchik 68.00 309‖ *e*P P 23 09 39.0 +0.8
NCK pmax pmax
comp=Z,25nm,1.0s
O03D Paynes Creek 68.07 55 P P 23 09 39.2 +0.4
baz=307
SWMT Swartz Lake 68.10 45 *e*P P 23 09 40.3 +1.4
GUDG Gudauri 68.12 308 P P 23 09 39.4 +0.2
KIV Kislovodsk 68.24 310 *i* P P 23 09 41.0 +1.2
SNR=30
KIV Kislovodsk 68.24 310 *e*P P 23 09 40.6 +0.8
KIV pmax pmax
comp=Z,108nm,1.1s
KIV MLR MLR
comp=Z,71nm,17.0s
KIV Kislovodsk 68.24 310 P P 23 09 40.7 +0.8
SNR=19
KIV Kislovodsk 68.24 310 *e*P P 23 09 40.8 +0.9
comp=Z,80nm,0.9s
ZEI Tsey 68.26 308 *e*P P 23 09 39.1 -1.0
ZEI pmax pmax
comp=Z,34nm,0.6s
KBZ Khabaz 68.26 310 P P 23 09 40.8 +1.0
comp=Z,23nm,0.8s,baz=44,slow=4.4,SNR=33
KBZ LR LR 23 44 59.0
comp=Z,80nm,18.8s,baz=46,slow=41
TBLG Delisi 68.41 307 P P 23 09 41.5 +0.7
TBLG Delisi 68.41 307 P P 23 09 41.5 +0.7
MSO Missoula 68.56 46 P P 23 09 42.4 +0.6
baz=309
ONI Oni 68.64 308 P P 23 09 43.3 +1.0
ONI Oni 68.64 308 P P 23 09 43.3 +1.0
ORV Oroville 68.70 56 *e*P P 23 09 43.3 +0.6
ORV pmax pmax
comp=Z,4.0nm,0.9s
ORV Oroville 68.70 56 *e*P P 23 09 43.3 +0.6
comp=Z,4.0nm,0.9s
MICGM Minsk 68.78 325 *e* P 23 09 42.0 -0.8
MNK Minsk 68.78 325 *e*P P 23 09 42.0 -0.8
NACGM Naroch 68.96 326 *e* P 23 09 43.0 -1.0
FFC Flin Flon 69.03 34 *e*P P 23 09 44.9 +0.5
FFC pmax pmax
comp=Z,15nm,0.9s
FFC Flin Flon 69.03 34 *e*P P 23 09 44.9 +0.5
comp=Z,15nm,0.9s
AKH Akhalkalaki 69.34 307⇑ *i*P P 23 09 48.0 +1.2
AKH Akhalkalaki 69.34 307 P P 23 09 47.8 +1.0
AKH Akhalkalaki 69.34 307 P P 23 09 47.8 +1.0
GNI Garni 69.37 306 *i* P P 23 09 48.6 +1.6
SNR=10.0
GNI Garni 69.37 306*c* *i*P P 23 09 48.2 +1.2
GNI pmax pmax
comp=Z,115nm,1.2s
GNI Garni 69.37 306 P P 23 09 48.4 +1.4
SNR=8.1
GNI Garni 69.37 306 *e*P P 23 09 48.4 +1.4
comp=Z,24nm,0.8s
DOMB Dombas 69.63 339 *e*P P 23 09 47.8 -0.2
DOMB IAmb IAmb 23 09 48.3
comp=Z,18nm,0.8s
NC405 NORSAR Array S 69.64 337 *e*P P 23 09 48.0 -0.1
NC303 NORSAR Array S 69.65 337 *e*P P 23 09 48.0 -0.2
HRY Holter Researc 69.75 45 *e*P P 23 09 50.6 +1.5
NC204 NORSAR Array S 69.78 337 *e*P P 23 09 48.4 -0.6
NB201 NORSAR Array S 69.81 337 *e*P P 23 09 49.0 -0.2
NB2 NORSAR Subarra 69.84 337 P P 23 09 48.7 -0.7
comp=Z,28nm,0.7s,baz=37,slow=6.5
NB2 NORSAR Subarra 69.84 337 P P 23 09 48.7 -0.7
baz=37,slow=6.5
NB200 NORSAR Array S 69.84 337 *e*P P 23 09 49.0 -0.3
NOA NORSAR Array B 69.84 337 P P 23 09 49.0 -0.3
comp=Z,27nm,0.7s,baz=38,slow=6.2,SNR=124
NOA LR LR 23 44 03.8
comp=Z,75nm,20.5s,baz=35,slow=39
NBO02 NORSAR Array S 69.94 337 *e*P P 23 09 49.5 -0.5
EGMT Eagleton 69.97 43 P P 23 09 50.8 +0.3
baz=311
EGMT Eagleton 69.97 43 *e*P P 23 09 51.5 +1.1
comp=Z,15nm,0.9s
NBO00 NORSAR Array S 69.97 337 *e*P P 23 09 50.2 +0.1
NC602 NORSAR Array S 69.99 337 *e*P P 23 09 49.5 -0.8
LRM Limekiln Ridge 70.00 46 *e*P P 23 09 51.8 +0.9
AKN Aaknes 70.07 340 *e*P P 23 09 50.8 +0.1
NAO01 NORSAR Array S 70.09 337 *e*P P 23 09 50.6 -0.2
CMB Columbia Colle 70.32 56 *e*P P 23 09 54.3 +1.6
CMB pmax pmax
comp=Z,4.0nm,0.8s
CMB Columbia Colle 70.32 56 *e*P P 23 09 54.3 +1.6
comp=Z,4.0nm,0.8s
HLID Hailey 70.37 49 P P 23 09 54.1 +0.9
baz=310
BANOM Banah 70.42 288 P P 23 09 53.6 +0.2
BOZ Bozeman (W) 70.55 46 P P 23 09 54.9 +0.8
baz=311
BOZ Bozeman (W) 70.55 46 *e*P P 23 09 55.3 +1.2
BOZ pmax pmax
comp=Z,6.0nm,0.8s
BOZ Bozeman (W) 70.55 46 *e*P P 23 09 55.2 +1.2
comp=Z,5.7nm,0.8s
WAKR Walker 70.62 55 *e*P P 23 09 56.6 +1.9
comp=Z,13nm,1.5s
ANN Anapa 70.63 313 *e*P P 23 09 54.1 -0.3
ANN pmax pmax
comp=Z,31nm,0.9s
AKASG Malin Array Be 70.81 322 P P 23 09 55.2 -0.2
comp=Z,15nm,0.6s,baz=44,slow=6.6,SNR=72
AKASG LR LR 23 43 42.6
comp=Z,143nm,19.3s,baz=35,slow=38
AKASG Malin Array Be 70.81 322*ce*P P 23 09 55.0 -0.4
AKASG pmax pmax
comp=Z,6.0nm,0.3s
AKBB Malin Array Si 70.81 322 *e*P P 23 09 54.9 -0.5
AKBB pmax pmax
comp=Z,31nm,0.8s
AKBB Malin Array Si 70.81 322 *e*P P 23 09 54.9 -0.5
comp=Z,31nm,0.8s
KIEV Kiev 70.82 322*c* *i*P P 23 09 55.0 -0.4
KIEV pmax pmax
comp=Z,25nm,0.8s
KIEV Kiev 70.82 322 *e*P P 23 09 54.5 -0.9
comp=Z,31nm,0.8s
AK11 Malin Array Si 70.85 322 *e*P P 23 09 55.4 -0.2
OSL Oslo 70.88 337 *e*P P 23 09 55.5 -0.1
OSL IAmb IAmb 23 09 55.6
comp=Z,27nm,0.8s
SUW Suwalki 71.08 327 *e*P P 23 09 56.9 -0.1
UOSS Minazif 71.08 287 *e*P P 23 09 57.5 0.0
comp=Z,28nm,0.8s
HOQ Hoqain 71.13 285 P P 23 09 58.0 +0.2
SNR=7.0
HATD Hatta, Dubai 71.21 287 *i* P P 23 09 58.6 +0.4
SNR=11
ASHO Ashiyiah 71.35 287 *i* P P 23 09 59.3 +0.2
SNR=8.3
KONO Kongsberg 71.44 337 *e*P P 23 09 58.9 -0.1
KONO Kongsberg 71.44 337‖ *e*P P 23 09 59.2 +0.2
KONO pmax pmax
comp=Z,148nm,2.5s
GCMT Greycliff 71.49 45 *e*P P 23 10 01.4 +1.6
SUE Sulen 71.59 340 *e*P P 23 09 59.9 0.0
FAQ Al Faqa, Dubai 71.64 287 *i* P P 23 10 01.0 +0.2
SNR=11
ASK Askoy 71.97 339 *e*P P 23 10 02.4 +0.2
BER Bergen 72.02 339 *e*P P 23 10 02.4 0.0
BER *epP **PcP** **23 10 20.6 -0.1**

BER IAmb IAmb 23 10 22.8
comp=Z,41nm,1.2s
ODD1 Odda 72.07 338 *e*P **P** **23 10 03.0 +0.2**
ODD1 IAmb IAmb 23 10 03.1
comp=Z,19nm,0.9s
IMW Indian Meadow 72.07 47 *e*P **P** **23 10 05.6 +2.1**
comp=Z,5.7nm,0.9s
SIM Simferopol' 72.31 315 *e*P **P** **23 10 04.7 +0.2**
SIM pmax pmax
comp=Z,25nm,0.9s
SIM MLR MLR
comp=Z,140nm,22.0s
TPAW Teton Pass 72.33 47 *e*P **P** **23 10 07.1 +2.0**
comp=Z,8.3nm,1.1s
DGMT Dagmar 72.40 40 P **P** **23 10 05.5 +0.5**
baz=314
DGMT Dagmar 72.40 40 *e*P **P** **23 10 06.0 +1.0**
comp=Z,22nm,0.9s
BLS5 Blasjo 72.53 338 *e*P **P** **23 10 05.8 +0.3**
BLS5 IAmb IAmb 23 10 30.8
comp=Z,116nm,2.0s
LAO LASA Array 72.65 42 P **P** **23 10 07.5 +0.9**
baz=314
PKM Mcpherson Peak 72.65 59 P **P** **23 10 08.2 +1.2**
baz=310
SORM Soroca 73.01 320⇑ *i*P **P** **23 10 08.2 -0.4**
KMY Karmoy 73.04 339 *e*P **P** **23 10 08.6 +0.1**
KMY IAmb IAmb 23 10 09.0
comp=Z,2.1nm,0.8s
KMY *e*pP **pP** **23 10 27.4 +1.7**
R11A Troy Canyon, C 73.05 54 P **P** **23 10 10.0 +0.7**
baz=311
R11A Troy Canyon, C 73.05 54 *e*P **P** **23 10 10.4 +1.1**
comp=Z,3.6nm,1.0s
STAV Stavanger 73.15 338 *e*P **P** **23 10 09.2 +0.1**
SNART Snartemo 73.22 337 *e*P **P** **23 10 10.2 +0.5**
SNART IAmb IAmb 23 10 34.0
comp=Z,155nm,2.5s
HWUT Hardware Ranch 73.24 49 *e*P **P** **23 10 12.0 +1.7**
comp=Z,7.7nm,1.1s
MPMC Manual Prospec 73.37 56 P **P** **23 10 12.0 +0.8**
baz=310
BSD Bornholm Skovb 73.38 332⇑ *i*P **P** **23 10 10.2 -0.4**
comp=Z,19nm,0.8s
DUG Dugway, Tooele 73.47 51 P **P** **23 10 12.9 +1.2**
baz=312,SNR=6.3
DUG Dugway, Tooele 73.47 51 *e*P **P** **23 10 13.1 +1.4**
DUG pmax pmax
comp=Z,6.0nm,0.8s
DUG Dugway, Tooele 73.47 51 *e*P **P** **23 10 13.1 +1.4**
comp=Z,5.6nm,0.8s
FURC Furnace Creek, 73.49 56 P **P** **23 10 12.8 +1.3**
baz=310
TPNV Topopah Spring 73.55 55 P **P** **23 10 13.2 +1.0**
baz=311
TPNV Topopah Spring 73.55 55 *e*P **P** **23 10 13.6 +1.3**
TPNV pmax pmax
comp=Z,9.0nm,0.9s
TPNV Topopah Spring 73.55 55 *e*P **P** **23 10 13.6 +1.3**
comp=Z,9.0nm,0.9s
BW06 Boulder Array 73.58 47 P **P** **23 10 12.1 -0.3**
baz=313
BW06 Boulder Array 73.58 47 *e*P **P** **23 10 13.0 +0.6**
PD31 Pinedale Array 73.58 47 *e*P **P** **23 10 13.0 +0.6**
PDAR Pinedale Array 73.58 47 P **P** **23 10 12.9 +0.6**
comp=Z,4.1nm,0.8s,baz=276,slow=2.8,SNR=33
PDAR LR LR 23 43 05.1
comp=Z,28nm,20.9s,baz=267,slow=36
KIS Kishinev 73.58 319 *e*P **P** **23 10 11.0 -1.0**
KIS Kishinev 73.58 319 *e*P **P** **23 10 11.0 -1.0**
KIS *e* 23 10 34.0
STKA Stephens Creek 73.61 181 P **P** **23 10 12.8 +0.6**
comp=Z,1.5nm,0.6s,baz=302,slow=10,SNR=2.9
STKA PP **PP** **23 12 56.9 -0.6**
comp=Z,1.3nm,0.8s,baz=295,slow=6.4,SNR=3.1
STKA Stephens Creek 73.61 181 *e*P **P** **23 10 12.8 +0.6**
STKA *e* 23 12 56.9
STKA pmax pmax
comp=Z,6.0nm,1.8s
STKA Stephens Creek 73.61 181 *e*P **P** **23 10 12.8 +0.6**
comp=Z,5.5nm,1.8s
STKA *e*PP **PP** **23 12 56.9 -0.6**
TCUT Toone Canyon 73.66 49 *e*P **P** **23 10 14.5 +1.6**
comp=Z,12nm,1.0s
BEL Belsk 73.66 327 *e*P **P** **23 10 13.1 +0.8**
COP Copenhagen 73.78 333⇑ *i*P **P** **23 10 13.0 +0.1**
comp=Z,26nm,0.9s
LVV L'vov 73.78 324 *e*P **P** **23 10 12.6 -0.5**
EDW2 Edwards Air Fo 73.81 58 P **P** **23 10 14.8 +1.1**
baz=310
KBSD Kabsdagh 73.91 305 *i*P **P** **23 10 15.2 +1.0**
GKP Gorka Klasztor 73.97 329 *e*P **P** **23 10 14.2 +0.1**
NLU North Lily Min 74.05 50 *e*P **P** **23 10 16.7 +1.5**
comp=Z,3.8nm,0.9s
NLU *e*pP **PcP** **23 10 31.1 +1.0**
IAS Iasi 74.05 320⇓ *i*P **P** **23 10 15.1 +0.4**
LLD Lille Linde 74.14 333 *i*P **P** **23 10 15.3 +0.3**
MUD Monsted U'grnd 74.20 335 *i*P **P** **23 10 15.6 +0.2**
comp=Z,16nm,0.7s
LEOM Leova 74.23 319⇓ *i*P **P** **23 10 16.2 +0.4**
GSC Goldstone, Bar 74.28 57 P **P** **23 10 17.4 +1.0**
baz=311
KWP Kalwaria Pacla 74.50 324 *e*P **P** **23 10 18.1 +0.8**
SHPR Sheep Range 74.51 55 *e*P **P** **23 10 19.7 +1.9**
comp=Z,7.6nm,1.3s
SFNV Sufian 74.55 305 *i*P **P** **23 10 19.0 +1.0**
PRAR RASCA 74.57 321⇑ *i*P **P** **23 10 17.9 +0.2**
MZRK Al-Mazaregh 74.61 304 *i*P **P** **23 10 19.5 +1.3**
TUQ Turquoise Moun 74.74 56 P **P** **23 10 20.1 +1.0**
baz=311
BUR08 Bucovina Ar. S 74.84 321 *e*P **P** **23 10 19.8 +0.3**
ULM Lac du Bonnet 74.85 34 P **P** **23 10 19.1 -0.3**
comp=Z,7.7nm,0.9s,baz=308,slow=8.5,SNR=7.7
ULM LR LR 23 44 49.2
comp=Z,31nm,18.7s,baz=332,slow=37
ULM Lac du Bonnet 74.85 34 *e*P **P** **23 10 19.4 +0.1**
ULM pmax pmax
comp=Z,10.0nm,0.9s
ULM Lac du Bonnet 74.85 34 *e*P **P** **23 10 19.4 +0.1**
comp=Z,9.5nm,0.9s
BURAR Bucovina Array 74.86 321⇓ *i*P **P** **23 10 19.9 +0.4**
TLCR 74.87 318⇓ *i*P **P** **23 10 19.9 +0.4**
HEC Hector,Ludlow 74.88 57 P **P** **23 10 20.8 +0.9**
baz=311
CCUT Cedar City 74.90 53 *e*P **P** **23 10 22.0 +1.9**
comp=Z,8.9nm,1.5s
MSU Marysvale 74.95 52 *e*P **P** **23 10 22.1 +1.7**
MSU Marysvale 74.95 52 *e*P **P** **23 10 22.1 +1.7**
TESR Tescani 74.98 320⇓ *i*P **P** **23 10 20.3 +0.2**
TMUT Trail Mountain 74.99 50 *e*P **P** **23 10 22.3 +1.6**
comp=Z,4.1nm,0.7s
MDND Maddock 75.00 38 P **P** **23 10 20.0 -0.3**
baz=317
P17A Butcher Ranch, 75.14 50 *e*P **P** **23 10 23.1 +1.7**
comp=Z,12nm,0.9s
CFR Carcaliu 75.21 318⇑ *i*P **P** **23 10 21.5 +0.1**
MTPU Mount Pierson 75.27 52 *e*P **P** **23 10 24.5 +2.1**
comp=Z,4.9nm,1.1s
K22A Casper 75.28 45 *e*P **P** **23 10 23.6 +1.4**
comp=Z,35nm,1.0s
STHS Stebnicka Huta 75.29 325 *e*P **P** **23 10 23.2 +1.3**
STHS *e*pP **PcP** **23 10 36.7 +1.7**
STHS *e*sP **sP** **23 10 43.2 -2.9**
STHS *e*PP **PP** **23 13 08.2 -2.3**
OJC Ojcow 75.30 326 *e*P **P** **23 10 22.4 +0.6**
OJC Ojcow 75.30 326 *e*P **P** **23 10 22.5 +0.6**
OJC pmax pmax
comp=Z,37nm,0.7s
OJC Ojcow 75.30 326 *e*P **P** **23 10 22.4 +0.6**
comp=Z,37nm,0.7s
GMRC Granite Mounta 75.33 56 P **P** **23 10 23.8 +1.3**
baz=311
UZH Uzhgorod 75.43 324 *e*P **P** **23 10 21.7 -0.9**
UZH *e* 23 10 32.9
UZH *e* 23 10 42.5
SRU San Rafael Swe 75.51 50 *e*P **P** **23 10 24.7 +1.1**
SRU pmax pmax
comp=Z,11nm,0.9s
SRU San Rafael Swe 75.51 50 *e*P **P** **23 10 24.6 +1.1**
comp=Z,11nm,0.9s
RSSD Black Hills 75.54 43 P **P** **23 10 24.1 +0.4**
baz=315
RSSD Black Hills 75.54 43 *e*P **P** **23 10 24.2 +0.5**
RSSD pmax pmax
comp=Z,8.0nm,0.9s
RSSD Black Hills 75.54 43 *e*P **P** **23 10 24.2 +0.5**
comp=Z,8.2nm,0.9s
KNB Kanab 75.57 53 *e*P **P** **23 10 26.0 +2.1**
KNB pmax pmax
comp=Z,8.0nm,1.1s
KNB Kanab 75.57 53 *e*P **P** **23 10 26.0 +2.1**
comp=Z,7.7nm,1.1s
CRVS Cervenica-Dubn 75.59 324 *e*P **P** **23 10 24.0 +0.4**
CRVS *e*pP **PcP** **23 10 38.5 +2.2**
A32A Rocking H Ranc 75.59 36 P **P** **23 10 22.8 -0.8**
baz=319
PFO Pinyon Flats O 75.60 58 P **P** **23 10 24.8 +0.7**
baz=311
TPFO Pinon Flats 75.61 58 P **P** **23 10 24.6 +0.5**
baz=311
BELC Belle Mtn. Jos 75.63 57 P **P** **23 10 25.0 +0.7**
baz=311
ARCR ARCALIA 75.64 322⇑ *i*P P 23 10 14.1 -10
HARR Harsova 75.66 318⇓ *i*P **P** **23 10 24.8 +0.8**
TLB Topalu 75.68 318⇑ *i*P **P** **23 10 24.4 +0.3**
NIE Niedzica 75.70 325 *e*P **P** **23 10 25.1 +0.9**
C31A Landman Farms, 75.89 37 P **P** **23 10 25.0 -0.3**
baz=318
B32A Ashes, Strandq 75.97 36 P **P** **23 10 25.5 -0.2**
baz=319,SNR=7.2
ISR Istrita 76.04 319⇓ *i*P **P** **23 10 27.3 +1.0**
A33A Warroad 76.05 35 P **P** **23 10 25.3 -0.9**
baz=320,SNR=7.0
MLR Muntele Rosu 76.06 320⇓ *i*P **P** **23 10 26.4 -0.1**
MLR Muntele Rosu 76.06 320 *e*P **P** **23 10 26.9 +0.4**
MLR pmax pmax
comp=Z,40nm,1.8s
MLR Muntele Rosu 76.06 320 *e*P **P** **23 10 26.9 +0.4**
comp=Z,40nm,1.8s
IRM Iron Mountain 76.06 57 P **P** **23 10 27.5 +0.9**
baz=312
O20A White River Ci 76.09 48 P **P** **23 10 27.4 +0.5**
baz=314
O20A White River Ci 76.09 48 *e*P **P** **23 10 27.9 +1.0**
comp=Z,5.4nm,0.8s
BR101 Keskin Array S 76.12 311 *e*P **P** **23 10 27.4 +0.5**
BR131 Keskin Array S 76.12 311 *e*P **P** **23 10 27.4 +0.5**
BRTR Keskin Array B 76.12 311 P **P** **23 10 27.4 +0.5**
comp=Z,11nm,0.7s,baz=71,slow=3.8,SNR=67
BRTR PP **PP** **23 13 18.9 +0.9**
comp=Z,3.4nm,0.8s,baz=63,slow=5.7,SNR=8.7
BRTR LR LR 23 48 49.7
comp=Z,40nm,18.6s,baz=50,slow=39
BRTR Keskin Array B 76.12 311 *ce*P **P** **23 10 27.3 +0.3**
BRTR pmax pmax
comp=Z,12nm,0.8s
BC3 Big Chuckawall 76.20 57 P **P** **23 10 27.3 -0.1**
baz=312
W13A Hualapai Mount 76.21 55 *e*P **P** **23 10 29.1 +1.4**
comp=Z,3.3nm,0.8s
KSP Ksiaz 76.23 328 *e*P **P** **23 10 27.8 +0.5**
LANS Liptovska Anna 76.25 325 *e*P **P** **23 10 28.7 +1.3**
LANS *e*pP **pP** **23 10 42.2 -2.5**
LANS *e*sP **sP** **23 10 47.6 -4.1**
CJR Cluj-Napoca 76.27 322⇑ *i*P **P** **23 10 28.7 +1.1**
OKC Ostrava-Krasne 76.27 327⇑ *i*P **P** **23 10 28.1 +0.7**
OKC Ostrava-Krasne 76.27 327⇑ *i*P **P** **23 10 28.1 +0.7**
U15A North Rim 76.28 53 *e*P **P** **23 10 30.1 +2.0**
comp=Z,6.8nm,1.1s
KECS Kecovo 76.33 324 *e*P **P** **23 10 27.9 +0.1**
KECS *e*pP **PcP** **23 10 42.1 +2.6**
KECS *e*sP **sP** **23 10 49.9 -2.1**
KECS *e*PP **PP** **23 13 17.5 -1.7**
AGMN Agassiz Nation 76.33 36 P **P** **23 10 27.4 -0.5**
baz=320,SNR=5.2
AGMN Agassiz Nation 76.33 36 *e*P **P** **23 10 27.8 0.0**
comp=Z,10.0nm,0.9s
F29A Eureka 76.37 40 P **P** **23 10 28.5 +0.4**
baz=318
D31A Mcclaflin, Tow 76.45 38 P **P** **23 10 28.7 +0.2**
baz=319
SULR 76.50 319⇑ *i*P **P** **23 10 29.5 +0.7**
BR231 Keskin MP Arra 76.52 312 *e*P **P** **23 10 27.8 -1.4**
VOIR 76.53 320⇓ *i*P **P** **23 10 30.0 +0.9**
MORC Moravsky Berou 76.57 327⇓ *i*P **P** **23 10 29.5 +0.3**
MORC Moravsky Berou 76.57 327 *e*P **P** **23 10 29.9 +0.7**
MORC pmax pmax
comp=Z,82nm,0.8s
MORC Moravsky Berou 76.57 327 *e*P **P** **23 10 29.9 +0.7**
comp=Z,82nm,0.8s
PDMCI Parker Dam,Lak 76.58 56 P **P** **23 10 30.2 +0.7**
baz=312
UPC Upice 76.61 328⇑ *e*P **P** **23 10 30.2 +0.9**
UPC Upice 76.61 328 *e*P **P** **23 10 30.2 +0.9**
DPC Dobruska-Polom 76.61 328⇑ *i*P **P** **23 10 30.2 +0.8**
DPC *e*pP **pP** **23 10 49.9 +3.2**
DPC Dobruska-Polom 76.61 328⇑ *i*P **P** **23 10 30.2 +0.8**
DPC *e* 23 10 49.9
DRGR 76.61 322⇑ *i*P **P** **23 10 29.5 -0.1**
KRLC Kraliky 76.64 327⇑ *i*P **P** **23 10 30.2 +0.6**
KRLC *e*sP **sP** **23 10 52.1 -1.7**
KRLC Kraliky 76.64 327⇑ *i*P **P** **23 10 30.2 +0.6**
KRLC *e* 23 10 52.1
B34A Aery, Baudette 76.71 35 P **P** **23 10 29.6 -0.4**
baz=320
Y12C Blythe 76.72 57 P **P** **23 10 31.2 +0.9**
baz=312
F30A Leola 76.75 39 P **P** **23 10 30.4 +0.2**
baz=318
ARR Arges 76.78 320⇓ *i*P **P** **23 10 32.1 +1.6**
C33A Trail 76.78 36 P **P** **23 10 30.1 -0.3**
baz=320
PHWY Pilot Hill 76.80 46 *e*P **P** **23 10 31.9 +1.0**
comp=Z,5.1nm,1.0s
N23A Red Feather La 76.82 46 P **P** **23 10 31.8 +0.8**
baz=315
N23A Red Feather La 76.82 46 *e*P **P** **23 10 32.2 +1.2**
comp=Z,13nm,1.2s
PV10 Paradox Valley 76.86 50 *e*P **P** **23 10 33.1 +1.8**
PSZ Piszkesteto 77.02 324⇑ *i*P **P** **23 10 32.4 +0.6**
PSZ Piszkesteto 77.02 324 *e*P **P** **23 10 31.8 0.0**
PSZ pmax pmax
comp=Z,25nm,1.1s
PSZ Piszkesteto 77.02 324 *e*P **P** **23 10 31.8 0.0**
comp=Z,25nm,1.1s
PSZ Piszkesteto 77.02 324⇑ *e*P **P** **23 10 32.6 +0.8**
VYHS Vyhne 77.03 325 *e*P **P** **23 10 32.3 +0.5**
VYHS *e*sP **pP** **23 10 51.4 +2.4**
VYHS *e*PP **PP** **23 13 23.7 -1.4**
VYHS *e*S **S** **23 20 08.9 -6.3**
PV05 Paradox Valley 77.03 50 *e*P **P** **23 10 33.6 +1.3**
BRG Berggiesshubel 77.11 329 *e*P **P** **23 10 32.0 -0.1**
comp=Z,7.4nm,1.0s
comp=N,132nm,16.8s
comp=E,104nm,14.8s
comp=Z,167nm,25.8s
BRG Berggiesshubel 77.11 329 *e*P **P** **23 10 32.0 -0.1**
BRG pmax pmax
comp=Z,7.0nm,1.0s
BRG MLR MLR
comp=N,132nm,16.8s
BRG MLR MLR
comp=E,104nm,14.8s
BRG MLR MLR
comp=Z,167nm,25.8s
CLL Collm 77.11 330⇑ *i*P **P** **23 10 32.0 -0.1**
comp=Z,26nm,0.8s
CLL *e*pP **pP** **23 10 48.0 -1.4**
CLL *i* sP **sP** **23 10 54.1 -2.3**
CLL *e*PP **PP** **23 13 25.0 -0.7**
CLL *e*S **S** **23 20 12.0 -4.0**
CLL *e*PS **PnS** **23 21 00.0 -1.9**
CLL *e*SS SS 23 25 36.0 +23
CLL *e* 23 26 42.0
CLL Collm 77.11 330 *e*P **P** **23 10 32.1 -0.1**
CLL pmax pmax
comp=Z,25nm,0.7s
CLL Collm 77.11 330 *e*P **P** **23 10 32.1 -0.1**
comp=Z,25nm,0.7s
PVCC Panska Ves 77.15 329⇑ *i*P **P** **23 10 33.1 +0.7**
PVCC Panska Ves 77.15 329⇑ *i*P **P** **23 10 33.1 +0.7**
B35A Bob, Littlefor 77.20 35 P **P** **23 10 32.5 -0.2**
baz=321,SNR=8.8
DEV Deva 77.21 321⇑ *i*P **P** **23 10 33.7 +0.9**
C34A RKJ Ranch, Bem 77.24 36 P **P** **23 10 32.1 -0.8**
baz=320
PV01 Paradox Valley 77.29 50 *e*P **P** **23 10 35.1 +1.4**
VRAC Vranov 77.32 327⇑ *i*P **P** **23 10 34.3 +0.9**
WUAZ Wupatki 77.45 53 P **P** **23 10 36.1 +1.5**
baz=313
WUAZ Wupatki 77.45 53 *e*P **P** **23 10 37.0 +2.5**
comp=Z,7.4nm,1.0s
SMCO Snowmass 77.46 48 *e*P **P** **23 10 35.7 +0.8**
comp=Z,7.6nm,1.0s
SIRR Siria 77.49 322⇑ *i*P **P** **23 10 35.1 +0.7**
Y14A Wickenburg 77.53 56 *e*P **P** **23 10 36.2 +1.3**
comp=Z,24nm,1.1s
GOPC GO Pecny, Ondr 77.56 328⇑ *i*P **P** **23 10 35.4 +0.7**
GOPC GO Pecny, Ondr 77.56 328⇑ *i*P **P** **23 10 35.4 +0.7**
PRU Pruhonice 77.59 329⇑ *i*P **P** **23 10 35.3 +0.4**
PRU *es*P **sP** **23 10 57.5 -1.6**
PRU AMS AMS 23 45 50.0
comp=Z,200nm,21.5s
PRU Pruhonice 77.59 329⇑ *i*P **P** **23 10 35.3 +0.4**
PRU *e* 23 10 57.5
PRU MLR MLR
comp=Z,200nm,21.5s
C35A Jirik Farms, M 77.61 35 P **P** **23 10 34.6 -0.4**
baz=321
E33A Westby DABS, E 77.63 37 P **P** **23 10 35.2 0.0**
baz=326
ISCO Idaho Springs 77.77 47 P **P** **23 10 37.2 +0.7**
baz=315
ISCO Idaho Springs 77.77 47 *e*P **P** **23 10 37.6 +1.2**
ISCO pmax pmax
comp=Z,9.0nm,1.3s
ISCO Idaho Springs 77.77 47 *e*P **P** **23 10 37.6 +1.2**
comp=Z,8.9nm,1.3s
SUSD Miller 77.81 40 P **P** **23 10 36.0 -0.2**
baz=318
G32A Webster 77.89 39 P **P** **23 10 36.6 -0.1**
baz=319
MVCO Mesa Verde 77.97 51 P **P** **23 10 37.6 +0.1**
baz=314
MVCO Mesa Verde 77.97 51 *e*P **P** **23 10 39.0 +1.4**
comp=Z,16nm,1.5s
BZS Buzias 78.00 322⇓ *i*P **P** **23 10 36.7 -0.5**
F33A 5 Mile Ranch, 78.01 38 P **P** **23 10 37.2 -0.1**
baz=320
C36A Pine Crest Far 78.05 35 P **P** **23 10 37.1 -0.4**
baz=321,SNR=6.5
D35A Remer 78.05 36 P **P** **23 10 36.9 -0.6**
baz=321
CSKK Cs˙tkako 78.15 325⇓ *e*P P 23 10 32.7 -5.3
X16A Lo Mia Camp, P 78.16 54 *e*P **P** **23 10 40.5 +2.0**
comp=Z,4.4nm,0.8s
NKC Novy Kostel 78.19 330⇑ *e*P **P** **23 10 38.4 +0.2**
NKC Novy Kostel 78.19 330 *e*P **P** **23 10 38.4 +0.2**
E35A Pequot Lakes 78.30 36 P **P** **23 10 38.3 -0.6**
baz=321
C37A Embarrass 78.34 34 P **P** **23 10 38.4 -0.7**
baz=322
MARH Ras Al Marh 78.36 305 *i*P **P** **23 10 40.9 +1.1**
D36A Goodland 78.36 35 P **P** **23 10 38.6 -0.6**
baz=321
J30A Dallas 78.39 41 P **P** **23 10 39.4 -0.1**
baz=318
BANR Banloc 78.40 322⇓ *i*P **P** **23 10 39.9 +0.5**
EYMN Ely 78.46 34 P **P** **23 10 39.3 -0.5**
baz=322
EYMN Ely 78.46 34 *e*P **P** **23 10 39.9 +0.2**
comp=Z,16nm,0.8s
H32A Carlson Farm, 78.49 39 P **P** **23 10 39.5 -0.5**
baz=319
F34A Alexandria 78.51 37 P **P** **23 10 39.6 -0.5**
baz=320
S22A 4UR Ranch, Cre 78.55 49 P **P** **23 10 41.3 +0.5**
baz=315,SNR=5.7
S22A 4UR Ranch, Cre 78.55 49 *e*P **P** **23 10 42.1 +1.4**
comp=Z,4.8nm,1.0s
ZALF Zalf 78.59 304 *i*P **P** **23 10 42.2 +1.5**
MDVR Moldovita 78.59 321⇑ *i*P **P** **23 10 40.5 -0.1**
Q24A Divide 78.62 47 P **P** **23 10 40.7 -0.5**
baz=316
Q24A Divide 78.62 47 *e*P **P** **23 10 42.8 +1.7**
comp=Z,5.0nm,0.8s
KHC Kasperske Hory 78.66 329⇑ *i*P **P** **23 10 41.3 +0.4**
KHC *es*P **sP** **23 11 04.0 -1.1**
KHC Kasperske Hory 78.66 329⇑ *i*P **P** **23 10 41.3 +0.4**
KHC *e* 23 11 04.0
KHC Kasperske Hory 78.66 329 *e*P **P** **23 10 41.2 +0.4**
comp=Z,8.8nm,0.8s
H33A Prehn Over Nor 78.68 39 P **P** **23 10 40.9 -0.1**
baz=320
D37A Cotton 78.69 35 P **P** **23 10 40.3 -0.7**
baz=322
MPEP Malo Peshtene 78.70 319 *i*P **P** **23 10 41.8 +0.7**
CONA Conrad Observa 78.71 327 *i*P **P** **23 10 42.0 +0.9**
comp=Z,11nm,0.9s,SNR=8.9
C38A Sawbill Land. 78.73 34 P **P** **23 10 40.8 -0.5**
baz=322
G34A Benson 78.76 38 P **P** **23 10 41.2 -0.2**
baz=320
F35A Swanville 78.77 37 P **P** **23 10 41.4 -0.1**
baz=321
J31A Geddes 78.78 41 P **P** **23 10 41.2 -0.4**
baz=318
DIM Dimitrovgrad 78.78 317 *i*P **P** **23 10 42.3 +0.7**
K30A Basset 78.81 42 P **P** **23 10 41.9 +0.1**
baz=318
E36A McGregor 78.83 36 P **P** **23 10 41.5 -0.3**
baz=321,SNR=7.7
GEC2 GERESS Array S 78.84 328 *e*P **P** **23 10 42.1 +0.2**
GEC2 pmax pmax
comp=Z,8.0nm,0.9s
GEC2 GERESS Array S 78.84 328 *e*P **P** **23 10 42.1 +0.1**
comp=Z,7.8nm,0.9s
GERES GERESS Array B 78.84 328 P **P** **23 10 42.2 +0.2**
comp=Z,5.2nm,0.7s,baz=32,slow=5.3,SNR=62
GERES PP **PP** **23 13 42.0 +1.7**
comp=Z,8.8nm,1.4s,baz=40,slow=10,SNR=3.6
GERES LR LR 23 48 01.5
comp=Z,61nm,21.9s,baz=34,slow=38
GEA0 GERESS Array S 78.84 328 *e*P **P** **23 10 41.9 0.0**
TOTH TOTAH 78.84 305 *i*P **P** **23 10 42.7 +0.6**
214A Organ Pipe Nat 78.99 57 P **P** **23 10 42.7 -0.3**
baz=313
GRFO Grafenberg 79.09 330 *e*P **P** **23 10 43.9 +0.7**
GRFO pmax pmax
comp=Z,33nm,0.8s
GRFO Grafenberg 79.09 330 *e*P **P** **23 10 43.9 +0.7**
comp=Z,33nm,0.8s
BRBR Barbar 79.10 305 *i*P **P** **23 10 44.4 +0.6**
J32A Parkston 79.15 40 P **P** **23 10 42.9 -0.7**
baz=319
F36A Milaca 79.23 36 P **P** **23 10 43.3 -0.6**
baz=321
K31A O'Neill 79.27 41 P **P** **23 10 44.5 +0.3**
baz=319
SDCO Great Sand Dun 79.29 48 P **P** **23 10 45.9 +1.0**
baz=316,SNR=5.2
SDCO Great Sand Dun 79.29 48 *e*P **P** **23 10 45.9 +1.0**
comp=Z,3.5nm,1.0s
G35A Watkins 79.30 37 P **P** **23 10 45.0 +0.6**
baz=321
ARSA Arzberg 79.39 326 *i*P **P** **23 10 45.5 +0.7**
comp=Z,6.9nm,1.0s
MOA Molln 79.42 327 *i*P **P** **23 10 45.5 +0.5**
comp=Z,6.7nm,0.8s,SNR=5.2
RZN Rozhen 79.46 318 *i*P **P** **23 10 46.4 +0.9**
ECSD EROS Data Cent 79.46 39 P **P** **23 10 45.4 +0.2**
baz=320
ECSD EROS Data Cent 79.46 39 *e*P **P** **23 10 45.5 +0.2**
comp=Z,14nm,0.8s
H35A Sunnyside Ranc 79.55 38 P **P** **23 10 46.3 +0.6**
baz=321
L31A Butterfield Fa 79.56 42 P **P** **23 10 46.5 +0.6**
baz=319
CSS Mathiatis 79.59 308 *e*P **P** **23 10 46.6 +0.4**
comp=Z,5.5nm,0.7s
TCHB Talchebab 79.60 305 *i*P **P** **23 10 47.2 +0.9**
J33A Davis 79.61 40 P **P** **23 10 46.3 +0.1**
baz=320
TUC Tucson 80.00 55 *e*P **P** **23 10 50.1 +1.6**
TUC pmax pmax
comp=Z,15nm,1.9s
TUC Tucson 80.00 55 *e*P **P** **23 10 50.1 +1.6**
comp=Z,15nm,1.9s
MMB Musomiste 80.02 318 *i*P **P** **23 10 49.3 +0.9**
PERS Pernice 80.04 326 *i*P **P** **23 10 48.8 +0.3**
SPMN Marine on St. 80.04 36 P **P** **23 10 48.6 +0.3**
baz=322
SOKA Soboth 80.04 326 *i*P **P** **23 10 48.9 +0.4**
comp=Z,26nm,0.8s,SNR=18
H36A Jessenland, He 80.05 37 P **P** **23 10 48.4 0.0**
baz=321
BEBN Eben Emael 80.10 334 P **P** **23 10 47.9 -0.6**
I35A Creekview Farm 80.13 38 P **P** **23 10 48.5 -0.4**

baz=321
K33A **Hardington** 80.13 40 P P 23 10 49.2 +0.2
baz=320
KKB **Krupnik** 80.13 319 *i* P P 23 10 49.8 +0.8
MEM **Membach** 80.15 334 P P 23 10 48.8 -0.1
comp=Z,10nm,0.9s
SCHQ **Schefferville** 80.25 17 P P 23 10 49.4 0.0
comp=Z,12nm,0.9s,baz=346,slow=5.5,SNR=14
SCHQ LR LR 23 51 26.0
comp=Z,32nm,18.0s,baz=300,slow=39
SCHQ **Schefferville** 80.25 17 *e*P P 23 10 49.8 +0.4
comp=Z,12nm,0.9s
T25A **Trinidad** 80.33 48 P P 23 10 51.1 +0.8
baz=316,SNR=7.4
T25A **Trinidad** 80.33 48 *e*P P 23 10 51.1 +0.8
comp=Z,10nm,0.9s
GOLS **Golise** 80.33 326 *i* P P 23 10 50.0 0.0
OBKA **Obir** 80.38 326 *i* P P 23 10 50.1 -0.2
comp=Z,15nm,0.7s,SNR=6.9
KBA **Koelnbreinsper** 80.41 327 *i* P P 23 10 50.8 +0.3
comp=Z,13nm,0.7s,SNR=7.8
I36A **Fitzsimmons Fa** 80.44 38 P P 23 10 50.4 -0.1
baz=321
BGNE **Belgrade** 80.48 42 P P 23 10 50.7 -0.1
baz=319
H37A **Dierke Farm, C** 80.50 37 P P 23 10 50.4 -0.4
baz=322
K34A **Le Mars** 80.50 40 P P 23 10 50.9 -0.1
baz=320
LEGS **Legarje** 80.51 326 *i* P P 23 10 50.9 -0.1
N31A **Bailey Ranch,** 80.52 43 P P 23 10 50.8 -0.3
baz=319
BCLA **Clavier** 80.55 334 P P 23 10 50.8 -0.2
STU **Stuttgart** 80.60 331 *e*P P 23 10 51.9 +0.6
STU pmax pmax
comp=Z,26nm,0.8s
STU **Stuttgart** 80.60 331 *e*P P 23 10 51.9 +0.6
comp=Z,26nm,0.8s
MYKA **Terra Mystica** 80.65 327 *i* P P 23 10 51.6 -0.1
comp=Z,14nm,0.8s,SNR=8.1
LAZ **Ladron** 80.72 52 *e*P P 23 10 54.6 +2.1
I37A **Lemond, Waseca** 80.72 37 P P 23 10 52.2 +0.1
baz=322
ANMO **Albuquerque** 80.73 51 P P 23 10 53.8 +1.2
baz=316
ANMO **Albuquerque** 80.73 51 *ce*P P 23 10 52.7 +0.1
ANMO pmax pmax
comp=Z,4.0nm,1.1s
ANMO **Albuquerque** 80.73 51 *e*P P 23 10 54.0 +1.5
comp=Z,7.4nm,1.3s
LJU **Ljubljana** 80.76 326 *i* P P 23 10 52.1 -0.1
PLE **Pljevlja** 80.78 322⇑ *i*P P 23 10 52.7 +0.2
VAY **Valandovo** 80.80 319⇑ *i*P P 23 10 52.8 +0.3
SNF **Seneffe** 80.80 334 P P 23 10 52.2 -0.1
J36A **Seneca 1, Swea** 80.83 38 P P 23 10 52.4 -0.3
baz=321
SKO **Skopje** 80.85 320⇑ *i*P P 23 10 53.5 +0.7
K35A **Storm Lake** 80.88 39 P P 23 10 52.8 -0.2
baz=321
GBAS **Gorenja Brezov** 80.89 326 *i* P P 23 10 52.4 -0.5
WATA **Walderalm** 80.89 329 *i* P P 23 10 53.4 +0.2
comp=Z,20nm,1.0s,SNR=11
IVA **Berane** 80.90 321 *e*P P 23 10 53.7 +0.6
WLF **Walferdange** 80.91 333 P P 23 10 53.8 +0.9
comp=Z,5.4nm,1.3s
WLF **Walferdange** 80.91 333 *e*P P 23 10 53.2 +0.2
WLF pmax pmax
comp=Z,37nm,1.6s
WLF **Walferdange** 80.91 333 *e*P P 23 10 53.2 +0.2
comp=Z,37nm,1.6s
LANF **Langenberg** 80.92 332⇑ *e*P P 23 10 53.2 +0.1
WTTA **Wattenberg** 80.93 329 *i* P P 23 10 53.9 +0.6
comp=Z,16nm,0.8s,SNR=7.1
ABTA **Abfaltersbach** 81.01 328 *i* P P 23 10 52.1 -1.6
comp=Z,7.4nm,0.9s
DOU **Dourbes** 81.06 334 P P 23 10 54.1 +0.4
MOTA **Moosalm** 81.07 329 *i* P P 23 10 54.5 +0.4
comp=Z,28nm,0.7s,SNR=32
PVY **Plav** 81.08 321⇑ *i*P P 23 10 54.5 +0.3
RETA **Reutte** 81.08 329 *i* P P 23 10 54.5 +0.5
comp=Z,23nm,0.8s,SNR=20
UPM **Unac-Piva** 81.10 322⇑ *i*P P 23 10 54.0 -0.3
I38A **Scanlan Farm,** 81.18 37 P P 23 10 54.1 -0.4
baz=322
J37A **Redenius Farm,** 81.20 38 P P 23 10 54.6 -0.1
baz=322,SNR=5.6
BFO **Black Forest** 81.28 331 *i* P P 23 10 55.2 +0.2
BFO **Black Forest** 81.28 331 *e*P P 23 10 55.0 0.0
comp=Z,11nm,0.9s
DSB **Dublin** 81.31 342 *e*P P 23 10 55.2 +0.2
comp=Z,14nm,0.9s
NKME **Niksic** 81.42 322⇑ *i*P P 23 10 55.3 -0.5
UDBI **Udbina** 81.45 325 P P 23 10 55.4 -0.6
FETA **Feichten** 81.48 329 *i* P P 23 10 56.6 +0.4
comp=Z,16nm,0.8s,SNR=10
BRY **Bratogost** 81.50 322⇑ *i*P P 23 10 55.9 -0.5
PDG **Podgorica** 81.54 321⇓ *i*P P 23 10 56.2 -0.2
TTG **Podgorica** 81.54 321⇑ *i*P P 23 10 56.4 0.0
DAVA **Damuels** 81.58 330 *i* P P 23 10 57.1 +0.3
comp=Z,26nm,0.8s,SNR=17
K37A **Belmond** 81.59 38 P P 23 10 56.0 -0.7
baz=322,SNR=13
P32A **Huiting Farm,** 81.59 43 P P 23 10 55.7 -1.1
baz=319
CEME **Cevo** 81.60 321⇑ *i*P P 23 10 56.5 -0.4
CBKS **Cedar Bluff** 81.62 44 P P 23 10 56.4 -0.6
baz=318
M35A **Neola** 81.63 40 P P 23 10 56.4 -0.5
baz=320
121A **Cookes Peak, D** 81.66 53 P P 23 10 58.8 +1.3
baz=315
J38A **Wedel Dairy, R** 81.69 37 P P 23 10 56.5 -0.7
baz=322
DRME **Dracevica, Mon** 81.76 321⇑ *i*P P 23 10 57.7 +0.1
ECH **Echery** 81.80 332⇑ *e*P P 23 10 57.6 -0.1
BUM **Brajici-Budva** 81.81 321⇑ *i*P P 23 10 57.3 -0.6
OHR **Ohrid** 81.82 319⇑ *i*P P 23 10 57.9 -0.2
HCY **Herceg Novi** 81.88 322⇑ *i*P P 23 10 57.5 -0.7
ULC **Ulcinj** 81.90 321⇑ *i*P P 23 10 57.1 -1.3
FUORN **Ofenpass-Fuorn** 81.99 329 *e*P P 23 10 59.6 +0.5
comp=Z,46nm,0.8s
J39A **Decorah** 82.02 37 P P 23 10 58.0 -0.9
baz=323
L37A **Phoenix Point,** 82.04 39 P P 23 10 58.9 -0.2
baz=322,SNR=6.8
M36A **Felix, Anita** 82.07 40 P P 23 10 59.1 -0.2
baz=321
K38A **Parkersburg** 82.08 38 P P 23 10 59.1 -0.2
baz=322
TIR **Tirane** 82.09 320⇓ *i*P P 23 10 59.6 +0.3
TIR **Tirane** 82.09 320 *e*P P 23 10 59.6 +0.3
TIR pmax pmax
comp=Z,43nm,0.8s
TIR **Tirane** 82.09 320 *e*P P 23 10 59.6 +0.3
comp=Z,43nm,0.8s
Q32A **Meitler Ranch,** 82.09 43 P P 23 10 59.0 -0.5
baz=319
MOF **Molkenrain** 82.11 331⇑ *e*P P 23 10 59.3 -0.2
N35A **Tabor** 82.12 41 P P 23 10 59.3 -0.3
baz=321
O34A **Beatrice** 82.13 42 P P 23 10 58.7 -0.9
baz=320
P33A **Williams Farm,** 82.19 43 P P 23 10 59.4 -0.6
baz=320
THEF **They Montfort** 82.20 332⇑ *e*P P 23 10 59.8 0.0
L38A **Oak Wood Farm,** 82.39 38 P P 23 11 00.5 -0.4
baz=322
J40A **Soldiers Grove** 82.39 36 P P 23 10 59.9 -1.1
baz=323
K39A **Oelwein** 82.44 37 P P 23 11 00.3 -0.8
baz=323,SNR=5.9
Q33A **Connelly Farm,** 82.46 43 P P 23 11 01.0 -0.3
baz=320
SCIA **State Center** 82.46 38 *e*P P 23 11 01.9 +0.6
comp=Z,42nm,1.0s
M37A **Trindle Farm,** 82.46 39 P P 23 11 00.2 -1.0
baz=321
TUE **Stuetta** 82.47 329 *e*P P 23 11 01.0 -0.5
comp=Z,18nm,0.8s
P34A **Walnut Farm, R** 82.55 42 P P 23 11 01.0 -0.7
baz=320
AGG **Agios Georgios** 82.66 317 *e*P P 23 11 01.6 -0.8
AGG pmax pmax
comp=Z,43nm,1.1s
AGG **Agios Georgios** 82.66 317 *e*P P 23 11 01.6 -0.8
comp=Z,43nm,1.1s

J41A **Loganville** 82.74 36 P P 23 11 02.2 -0.4
baz=324
K40A **Colesburg** 82.77 37 P P 23 11 02.1 -0.8
baz=323
L39A **Vinton** 82.84 38 P P 23 11 02.6 -0.6
baz=323,SNR=8.1
M38A **Pleasantville** 82.85 39 P P 23 11 02.6 -0.7
baz=322
S32A **Newby Ranch, P** 82.87 45 P P 23 11 03.5 0.0
baz=319
N37A **Lee Faris, Mou** 82.89 40 P P 23 11 03.6 0.0
baz=321
R33A **Olander Ranch,** 82.90 44 P P 23 11 03.0 -0.7
baz=320
P35A **Duane Minner,** 82.96 42 P P 23 11 03.4 -0.5
baz=320
Q34A **Chapman** 82.97 43 P P 23 11 03.4 -0.6
baz=320
KSU1 **Kansas State U** 83.00 42 P P 23 11 03.5 -0.6
baz=320
KSU1 **Kansas State U** 83.00 42 *e*P P 23 11 04.2 +0.1
comp=Z,12nm,0.6s
O36A **Bolckow** 83.01 41 P P 23 11 04.2 0.0
baz=321
K41A **Shullsburg** 83.22 36 P P 23 11 04.9 -0.3
baz=324
L40A **Anamosa** 83.24 37 P P 23 11 04.6 -0.7
baz=323,SNR=6.1
T32A **Huddler Ranch,** 83.26 45 P P 23 11 05.7 +0.1
baz=319
M39A **Webster** 83.28 38 P P 23 11 05.6 +0.1
baz=322
R34A **Isabella, Hill** 83.28 43 P P 23 11 05.7 0.0
baz=320
P36A **Good Intent, A** 83.29 41 P P 23 11 05.4 -0.2
baz=321,SNR=7.8
SENIN **Lac Senin/Sane** 83.32 331 *e*P P 23 11 05.8 -0.1
comp=Z,16nm,0.8s
N38A **Joes South For** 83.32 39 P P 23 11 05.7 0.0
baz=322
O37A **Wolven Farm, M** 83.38 40 P P 23 11 06.0 0.0
baz=322
S33A **Kaszmaul Farm,** 83.43 44 P P 23 11 06.5 0.0
baz=320
Q35A **Mercer Eighty,** 83.47 42 P P 23 11 06.2 -0.4
baz=320
AMTX **Amarillo** 83.48 48 P P 23 11 07.0 +0.2
baz=318
VLDQ **Val d'Or** 83.50 26 *e*P P 23 11 05.5 -0.9
comp=Z,34nm,0.8s
MSTX **Muleshoe** 83.55 49 P P 23 11 07.4 +0.2
baz=317
L41A **Preston** 83.56 37 P P 23 11 06.7 -0.2
baz=324
N39A **Derby Farms, D** 83.60 39 P P 23 11 07.3 +0.1
baz=322
MNTX **Cornudas Mount** 83.68 53 P P 23 11 08.6 +0.8
baz=316
MNTX **Cornudas Mount** 83.68 53 *e*P P 23 11 08.9 +1.1
comp=Z,7.3nm,1.1s
P37A **Lathrop** 83.73 41 P P 23 11 07.8 -0.1
baz=321,SNR=5.7
O38A **Galt** 83.74 40 P P 23 11 07.9 0.0
baz=322
R35A **Emporia Munici** 83.80 43 P P 23 11 08.3 0.0
baz=320
P38A **Dawn** 84.10 40 P P 23 11 09.9 +0.1
baz=322
IDI **Anoyia** 84.13 313 *e*P P 23 11 09.0 -1.1
comp=Z,44nm,0.9s
R36A **Gordon, Harris** 84.14 42 P P 23 11 09.6 -0.4
baz=321,SNR=8.3
AQU **L'Aquila** 84.22 325 *e*P P 23 11 11.1 +0.7
AQU pmax pmax
comp=Z,31nm,0.8s
AQU **L'Aquila** 84.22 325 *e*P P 23 11 11.1 +0.7
comp=Z,31nm,0.8s
S35A **Otter Creek Ra** 84.23 43 P P 23 11 10.9 +0.4
baz=320,SNR=13
Q37A **Longview Farm,** 84.24 41 P P 23 11 09.9 -0.5
baz=321
U33A **Lingo Farm, Me** 84.25 45 P P 23 11 10.6 0.0
baz=320
T34A **McClaskey Farm** 84.29 44 P P 23 11 11.0 +0.3
baz=320
V32A **Arapaho** 84.30 46 P P 23 11 11.1 +0.2
baz=319
R37A **Teagarden Farm** 84.49 42 P P 23 11 11.1 -0.6
baz=321
O40A **La Belle** 84.49 39 P P 23 11 11.8 +0.1
baz=323,SNR=5.2
U34A **Anderson Ranch** 84.55 45 P P 23 11 12.2 +0.1
baz=320
S36A **Lake Cedric, C** 84.56 43 P P 23 11 12.2 0.0
baz=321
P39B **Salisbury** 84.58 40 P P 23 11 12.3 +0.1
baz=322
Q38A **Cooks Store, C** 84.58 41 P P 23 11 11.7 -0.5
baz=322,SNR=7.3
V33A **Lossen Ranch,** 84.63 45 P P 23 11 12.4 -0.1
baz=320
W32A **Sentinel** 84.64 46 P P 23 11 13.2 +0.6
baz=319,SNR=5.4
T35A **Sooner Cattle** 84.72 44 P P 23 11 13.4 +0.4
baz=320,SNR=5.3
Q39A **Willow Grove F** 84.82 40 P P 23 11 13.7 +0.3
baz=322,SNR=14
P40A **Paris** 84.88 39 P P 23 11 13.9 +0.3
baz=323,SNR=7.7
S37A **Fort Scott** 84.92 42 P P 23 11 13.8 -0.1
baz=321,SNR=5.2
T36A **Boggs Farm, Ca** 84.93 43 P P 23 11 13.9 -0.1
baz=321
O41A **Passleys Farm,** 84.95 38 P P 23 11 14.0 0.0
baz=323,SNR=6.5
PLDF **La Plantade** 84.96 333⇑ *e*P P 23 11 15.4 +1.3
V34A **Guthrie** 85.02 45 P P 23 11 14.6 +0.1
baz=320
U35A **Pawnee** 85.02 44 P P 23 11 14.4 -0.1
baz=320
R38A **Fenwick Farm,** 85.04 41 P P 23 11 13.8 -0.7
baz=322
AGO **Saint Agoulin** 85.06 333⇑ *e*P P 23 11 16.0 +1.5
WMOK **Wichita Mounta** 85.18 46 P P 23 11 15.7 +0.4
baz=319
WMOK **Wichita Mounta** 85.18 46 *e*P P 23 11 16.2 +0.9
WMOK pmax pmax
comp=Z,6.0nm,0.7s
WMOK **Wichita Mounta** 85.18 46 *e*P P 23 11 16.2 +0.9
comp=Z,6.4nm,0.7s
P41A **Barry, Barry** 85.22 39 P P 23 11 15.3 -0.1
baz=323,SNR=5.9
SSB **Saint Sauveur** 85.24 332 *e*P P 23 11 15.0 -0.5
SSB pmax pmax
comp=Z,12nm,0.8s
SSB **Saint Sauveur** 85.24 332 *e*P P 23 11 15.0 -0.5
comp=Z,12nm,0.8s
TIP **Timpagrande** 85.26 321 *e*P P 23 11 16.2 +0.5
comp=Z,31nm,1.1s
Q40A **Laux Farm, Aux** 85.29 40 P P 23 11 15.7 -0.1
baz=323,SNR=5.5
HDIL **Hopedale** 85.32 37 P P 23 11 16.0 +0.1
baz=324
HDIL **Hopedale** 85.32 37 *e*P P 23 11 16.5 +0.6
comp=Z,24nm,0.9s
PYM **Petit Puy Mans** 85.36 333 *e*P P 23 11 17.2 +1.1
R39A **Chumby, Stover** 85.36 41 P P 23 11 15.8 -0.4
baz=322,SNR=7.3
T37A **Cheneyville 18** 85.37 42 P P 23 11 16.0 -0.2
baz=321,SNR=7.2
S38A **Stockton** 85.48 42 P P 23 11 16.2 -0.5
baz=322
U36A **Oologah** 85.52 43 P P 23 11 17.1 +0.2
baz=321
P42A **Winchester** 85.62 38 P P 23 11 17.4 0.0
baz=324,SNR=5.1
S39A **Bolivar** 85.72 41 P P 23 11 17.3 -0.6
baz=322,SNR=9.7
LBL **Lubilhac** 85.73 332 *e*P P 23 11 19.7 +1.8
T38A **Diamond** 85.75 42 P P 23 11 18.0 -0.1
baz=322,SNR=12
R40A **Maddies Statio** 85.75 40 P P 23 11 17.8 -0.2
baz=323,SNR=6.9
X34A **Smith Ranch, M** 85.79 46 P P 23 11 18.5 +0.1
baz=320
Y33A **Hilltop Ranch,** 85.81 47 P P 23 11 18.6 +0.2
baz=319
U37A **Salina** 85.82 43 P P 23 11 18.6 +0.2

baz=321
TUL1 **Leonard** 85.86 44 P P 23 11 18.7 +0.1
baz=321
V36A **Jenks** 85.88 44 P P 23 11 18.8 +0.1
baz=321
W35A **Tecumseh** 85.88 45 P P 23 11 18.9 +0.1
baz=320
Q42A **Golden Eagle** 86.08 39 P P 23 11 19.7 +0.1
baz=324
TRQ **Mont Tremblant** 86.09 25 *e*P P 23 11 19.4 -0.2
LMQ **La Malbaie** 86.13 22 *e*P P 23 11 19.7 -0.1
U38A **Gravette** 86.17 43 P P 23 11 20.0 -0.2
baz=322,SNR=5.5
S40A **Lebanon** 86.19 41 P P 23 11 19.8 -0.5
baz=323,SNR=5.6
PPT **Papeete** 86.21 118 LR LR 23 43 15.0
comp=Z,60nm,20.4s,baz=0.5,slow=31
T39A **Clever** 86.21 42 P P 23 11 19.9 -0.5
baz=322
V37A **Hulbert** 86.22 43 P P 23 11 20.6 +0.2
baz=321,SNR=5.6
PPT2 **Papeete2** 86.23 118 *e*LR LR 23 38 34.0
comp=Z,254nm,26.8s
DAMY **Dhamar** 86.23 286 *e*P P 23 11 22.4 +1.3
comp=Z,20nm,0.9s
W36A **Wetumka** 86.23 45 P P 23 11 20.5 +0.1
baz=321
Z33A **Whitaker Ranch** 86.28 47 P P 23 11 20.9 +0.1
baz=319
ABTX **Abilene, Hawle** 86.30 48 P P 23 11 20.8 0.0
baz=319
Y34A **Reagan Ranch,** 86.32 46 P P 23 11 20.6 -0.4
baz=320
PLVO **Plevna** 86.32 27 *e*P P 23 11 20.8 0.0
comp=Z,14nm,0.7s
X35A **Drake** 86.40 46 P P 23 11 21.1 -0.3
baz=320
TX31 **Lajitas Ar. Si** 86.41 53 *e*P P 23 11 22.1 +0.5
LTX **Lajitas** 86.41 53 *e*P P 23 11 22.7 +1.1
LTX **Lajitas** 86.41 53 *e*P P 23 11 22.7 +1.1
TXAR **Lajitas Array** 86.41 53 P P 23 11 22.7 +1.1
comp=Z,4.3nm,0.7s,baz=293,slow=3.7,SNR=52
TXAR PKKPbc **PKKPbc** 23 29 18.8 +2.4
comp=Z,0.1nm,0.7s,baz=142,slow=6.3,SNR=4.5
SFIN **Lafayette** 86.43 36 P P 23 11 20.8 -0.6
baz=326
HHAR **Hobbs** 86.51 42 *e*P P 23 11 22.1 +0.2
comp=Z,7.2nm,1.1s
T40A **Mansfield** 86.53 41 P P 23 11 21.6 -0.4
baz=323,SNR=5.0
S41A **Jillco Farms,** 86.56 40 P P 23 11 21.7 -0.4
baz=323,SNR=5.4
X36A **Centrahoma** 86.60 45 P P 23 11 22.5 +0.2
baz=321
V38A **Canehill** 86.61 43 P P 23 11 22.1 -0.2
baz=322
W37B **Quinton** 86.64 44 P P 23 11 22.6 +0.1
baz=321
TAOE **Nuku Hiva Isla** 86.65 105 *e*LR LR 23 39 02.3
comp=Z,256nm,24.4s
U39A **Green Forest** 86.67 42 P P 23 11 22.5 -0.2
baz=322,SNR=9.7
133A **Hamilton Ranch** 86.71 48 P P 23 11 23.1 +0.2
baz=319
Q44A **Meyer Farm, Va** 86.78 38 P P 23 11 23.6 +0.5
baz=324
T41A **Mountain View** 86.99 41 P P 23 11 24.0 -0.2
baz=323,SNR=8.1
U40A **Yellville** 87.00 42 P P 23 11 24.1 -0.1
baz=322,SNR=12
V39A **Pettigrew** 87.01 42 P P 23 11 24.1 -0.2
baz=322,SNR=5.1
233A **Rising Star** 87.17 48 P P 23 11 25.7 +0.5
baz=319
W38A **Poteau** 87.17 44 P P 23 11 25.4 +0.4
baz=322
134A **White-Moore Ra** 87.20 47 P P 23 11 25.7 +0.4
baz=320
R44A **Waltonville** 87.28 38 P P 23 11 25.5 -0.1
baz=324
X38A **Whitesboro** 87.32 44 P P 23 11 25.9 +0.1
baz=321
S43A **Fulton Ridge,** 87.37 39 P P 23 11 25.8 -0.2
baz=324,SNR=6.1
MEH **Mehetia** 87.43 117 *e*T T 00 47 21.2
comp=Z,31nm,0.3s
W39A **Magazine** 87.44 43 P P 23 11 26.0 -0.4
baz=322
V40A **Witts Springs** 87.45 42 P P 23 11 26.2 -0.3
baz=322
U41A **Viola** 87.47 41 P P 23 11 25.7 -0.8
baz=323
Z36A **Blue Ridge** 87.56 46 P P 23 11 26.6 -0.4
baz=321
234A **Clairette** 87.60 48 P P 23 11 27.4 +0.2
baz=320
S44A **Carbondale** 87.65 39 P P 23 11 27.6 +0.3
baz=324,SNR=6.5
SIUC **Southern Illin** 87.65 39 *e*P P 23 11 28.2 +0.9
comp=Z,35nm,0.8s
U42A **Revenden** 87.79 41 P P 23 11 27.8 -0.2
baz=323
V41A **Mountainview** 87.79 42 P P 23 11 28.0 -0.1
baz=323
W40A **Ferguson Farm,** 87.81 43 P P 23 11 28.1 0.0
baz=322
X39A **Fountain Ranch** 87.81 44 P P 23 11 28.5 +0.4
baz=322
JCT **Junction City** 87.81 50 P P 23 11 28.7 +0.4
baz=319
PBMO **Poplar Bluff** 87.84 40 *e*P P 23 11 29.0 +0.7
comp=Z,20nm,0.9s
S45A **Carrier Mills** 87.98 38 P P 23 11 28.9 0.0
baz=325
WHTX **Lake Whitney,** 87.98 47 P P 23 11 29.1 +0.1
baz=320
433A **Art** 88.01 49 P P 23 11 28.9 -0.3
baz=319
334A **Lometa** 88.05 48 P P 23 11 29.6 +0.2
baz=320
MIAR **Mount Ida** 88.06 43 P P 23 11 29.6 +0.3
baz=322,SNR=6.6
MIAR **Mount Ida** 88.06 43 *e*P P 23 11 30.0 +0.7
MIAR pmax pmax
comp=Z,8.0nm,0.8s
MIAR **Mount Ida** 88.06 43 *e*P P 23 11 30.0 +0.7
comp=Z,8.0nm,0.8s
X201 **Greenbrier Sit** 88.08 42 *e*P P 23 11 29.9 +0.5
comp=Z,9.7nm,0.9s
WHAR **Wooly Hollow** 88.12 42 *e*P P 23 11 30.1 +0.5
comp=Z,14nm,0.9s
V42A **Cord** 88.15 41 P P 23 11 29.9 +0.2
baz=323
W41B **Gary Mavity, V** 88.23 42 P P 23 11 30.1 -0.1
baz=323
Y39A **Lockesburg** 88.27 44 P P 23 11 30.8 +0.5
baz=322
ACSO **Alum Creek Sta** 88.28 33 *e*P P 23 11 31.1 +0.8
comp=Z,24nm,0.7s
Z38A **Mt. Pleasant** 88.34 45 P P 23 11 30.7 0.0
baz=321
434A **Burnet** 88.43 49 P P 23 11 31.2 +0.1
baz=320
X40A **Basin Creek Fa** 88.48 43 P P 23 11 31.4 +0.1
baz=322
M54A **Oil Creek Stat** 88.48 30 P P 23 11 31.4 +0.1
baz=330,SNR=5.5
N54A **Moraine State** 88.83 31 P P 23 11 33.0 +0.1
baz=330,SNR=6.3
534A **Blanco** 88.91 49 P P 23 11 33.5 +0.1
baz=320
633A **Saathoff Ranch** 88.94 50 P P 23 11 33.8 +0.2
baz=319
LMN **Caledonia Moun** 89.12 19 *e*P P 23 11 34.8 +0.7
comp=Z,16nm,0.8s
Z40A **Long Farm, Mag** 89.16 44 P P 23 11 35.0 +0.5
baz=322
WVT **Waverly** 89.59 39 *e*P P 23 11 37.3 +0.8
WVT pmax pmax
comp=Z,7.0nm,0.9s
WVT **Waverly** 89.59 39 *e*P P 23 11 37.3 +0.8
comp=Z,6.9nm,0.9s
833A **Chaparral WMA,** 89.67 51 P P 23 11 38.0 +1.0
baz=319
SSPA **Standing Stone** 89.90 30 *e*P P 23 11 38.5 +0.6
comp=Z,22nm,0.9s
240A **Hunter Patters** 89.93 45 P P 23 11 38.5 +0.4
baz=322

141A	**Papa Simpson,** baz=322	**89.93**	**44**	P	**P**	**23 11 38.5**	**+0.4**
O56A	**Blue Knob Stat** baz=331,SNR=7.1	**89.97**	**30**	P	**P**	**23 11 38.7**	**+0.4**
537A	**Green Hill Far** baz=321	**90.07**	**48**	P	**P**	**23 11 39.6**	**+0.8**
X45A	**UM Field Stati** baz=324	**90.23**	**41**	P	**P**	**23 11 39.8**	**+0.3**
933A	**Laredo** baz=319	**90.27**	**51**	P	**P**	**23 11 41.1**	**+1.2**
N59A	**State Game Lan** baz=333	**90.41**	**28**	P	**P**	**23 11 40.5**	**+0.2**
538A	**Harpers Horsep** baz=321	**90.42**	**47**	P	**P**	**23 11 41.2**	**+0.8**
TBI	**Tubuai** comp=Z,171nm,35.5s	**90.44**	**122**	*e*LR	LR	23 40 12.1	
TBI	**Tubuai** comp=Z,11nm,0.3s	**90.44**	**122**	*e*T	T	00 51 02.2	
736A	**Circle Diamond** baz=320	**90.52**	**49**	P	**P**	**23 11 42.0**	**+1.1**
WES	**Weston**	**90.55**	**24**	*e*P	**P**	**23 11 41.9**	**+1.1**
WES	comp=Z,37nm,0.9s			pmax	pmax		
WES	**Weston** comp=Z,37nm,0.9s	**90.55**	**24**	*e*P	**P**	**23 11 41.9**	**+1.1**
Y46A	**Houston** baz=325	**90.93**	**41**	P	**P**	**23 11 42.9**	**+0.2**
SWET	**Sewanee** comp=Z,2.7nm,1.0s	**91.21**	**38**	*e*P	**P**	**23 11 44.8**	**+0.7**
KEST	**Kesra** comp=Z,5.3nm,0.8s,baz=143,slow=2.8,SNR=8.0	**91.47**	**324**	P	**P**	**23 11 44.9**	**-0.4**
KEST	comp=Z,94nm,19.4s,baz=303,slow=38			LR	LR	23 57 19.3	
KEST	**Kesra** comp=Z,12nm,1.0s	**91.47**	**324**	*e*P	**P**	**23 11 44.9**	**-0.4**
CPCT	**Cooper Cave** comp=Z,5.8nm,1.1s	**91.65**	**37**	*e*P	**P**	**23 11 46.6**	**+0.5**
445A	**Amite** baz=324	**92.74**	**43**	P	**P**	**23 11 50.8**	**-0.4**
ES19	**SONSECA Array**	**93.05**	**335**	*e*P	**P**	**23 11 52.5**	**-0.1**
ESDC	**Sonseca Array** comp=Z,3.1nm,0.7s,baz=18,slow=4.0,SNR=18	**93.09**	**335**	P	**P**	**23 11 52.7**	**-0.1**
ESDC	comp=Z,46nm,18.6s,baz=325,slow=39			LR	LR	23 59 42.1	
KMSC	**Kings Mountain** baz=329	**93.30**	**35**	P	**P**	**23 11 53.8**	**+0.1**
KMBO	**Kilima Mbogo** comp=Z,1.8nm,0.9s,baz=72,slow=6.7,SNR=5.6	**102.03**	**279**	P	**Pdif**	**23 12 34.1**	**+0.5**
TOA1	**Torodi Ar. Sit**	**114.24**	**318**	*e*PKiKP	**PKiKP**	**23 17 17.8**	**-0.7**
TOA1				*e*PP	**PP**	**23 18 09.8**	**-3.8**
TOA1				*e*PKKPbc	**PKKPbc**	**23 27 57.4**	**+0.2**
TORD	**Torodi Ar. Bea** comp=Z,0.3nm,0.3s,baz=18,slow=2.4,SNR=23	**114.25**	**317**	PKP	PKPdf	23 17 17.8	-0.8
TORD	comp=Z,6.0nm,1.0s,baz=33,slow=5.9,SNR=6.3			PP	**PP**	**23 18 09.8**	**-3.8**
TORD	comp=Z,0.5nm,1.0s,baz=164,slow=6.0,SNR=4.2			PKKPbc	**PKKPbc**	**23 27 57.4**	**+0.3**
VNDA	**Vanda** comp=Z,0.9nm,0.8s,baz=299,slow=4.8,SNR=6.4	**119.95**	**175**	PKP	**PKPdf**	**23 17 27.3**	**-0.3**
SDV	**Santo Domingo**	**120.90**	**39**	*e*PKPdf	**PKPdf**	**23 17 31.8**	**+0.1**
DBIC	**Dimbokro** comp=Z,1.9nm,0.7s,baz=0.0,slow=12,SNR=4.1	**123.04**	**320**	PKP	**PKPdf**	**23 17 34.5**	**-0.9**
DBIC	comp=Z,5.7nm,1.0s,baz=30,slow=10,SNR=3.3			PP	**PP**	**23 19 13.5**	**-0.9**
MAW	**Mawson** comp=Z,1.8nm,0.7s,baz=105,slow=2.6,SNR=8.0	**124.43**	**207**	PKP	**PKPdf**	**23 17 36.4**	**0.0**
QSPA	**South Pole Qui**	**131.83**	**180**	*e*PKPdf	**PKPdf**	**23 17 51.5**	**+0.9**
LPAZ	**La Paz** comp=Z,0.6nm,0.4s,baz=296,slow=6.1,SNR=6.8	**143.26**	**55**	PKP	PKPbc	23 18 10.8	-0.3
PB11	**IPOC Station P**	**144.90**	**61**	*e*PKPdf	**PKPdf**	**23 18 16.5**	**+0.4**
SNAA	**Sanae**	**145.81**	**199**	P	**PKPdf**	**23 18 16.3**	**+0.2**
SNAA	**Sanae**	**145.81**	**199**	*e*PKP2	**PKPdf**	**23 18 16.2**	**+0.2**
SNAA	**Sanae**	**145.81**	**199**	*e*PKPdf	**PKPdf**	**23 18 16.1**	**+0.2**
VNA1	**Neumayer--Stat**	**147.79**	**198**	P	**PKPbc**	**23 18 22.2**	**0.0**
PLCA	**Paso Flores** comp=Z,2.8nm,1.0s,baz=275,slow=10,SNR=2.9	**155.28**	**98**	PKPbc	PKPbc	23 18 41.6	

MEX 25 23:11:06.8±0.3, 16°44N×99°95W, h8km±3km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ACP2	**Acapulco**	**0.43**	**8**	*e*P		Pg	23 11 14.9	-0.4
ACP2				*e*S		Sg	23 11 21.1	0.0
ACX	**Acapulco**	**0.43**	**12**	*e*P		Pn	23 11 18.1	-1.3
ACX				*e*S		Sb	23 11 24.5	+1.0
MEIG	**Mezcala**	**1.51**	**12**	*e*P		Pn	23 11 30.8	-3.5
MEIG				*i* S		Sn	23 11 49.1	-5.1
ARIG	**Puente Sto Nin**	**1.87**	**348**	*e*P		Pn	23 11 35.7	-3.5
ARIG				*e*S		Sn	23 11 58.3	-4.7
PLIG	**Platanillo**	**1.99**	**12**	*e*P		Pn	23 11 37.4	-3.4
PLIG				*i* S		Sn	23 12 01.5	-4.5

*ISK **25** 23:20:05.9, 40°79N×27°73E, h8km, MD2.5*
*ISCJB **25** 23:20:06.2±0.4, 40°79N±0°03×27°74E±0°03, h7km±5km, Error ellipse: s-maj=5.4km s-min=3.9km az=0.4*
*CSEM **25** 23:20:06.4±0.1, 40°79N×27°74E, h8km, MD2.5, Error ellipse: s-maj=2.3km s-min=1.5km az=4.0*
*DDA **25** 23:20:06.3, 40°78N×27°74E, h7km, Ml2.2*

ISC 25 23:20:06.6±1.0, 40°79N±0°03×27°74E±0°02, h8km±9km, n31,σ0°42/46, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SBT4	**Kumbag-Tekirda**	**0.16**	**283**	*e*PG		**Pg**	**23 20 08.8**	**0.0**
SBT4	**Kumbag-Tekirda**	**0.16**	**283**	*e*Pg		**Pg**	**23 20 09.8**	**0.0**
SBT3	**Marmara-Eregli**	**0.20**	**63**	*e*PG		**Pg**	**23 20 10.4**	**-0.1**
SBT3	**Marmara-Eregli**	**0.20**	**63**	*e*Pg		**Pg**	**23 20 10.5**	**-0.1**
MRMT	**Marmara Adasi**	**0.22**	**210**	*e*PG		**Pg**	**23 20 10.7**	**-0.3**
MRMT				*e*SG		**Sg**	**23 20 14.3**	**+0.3**
MRMT	**Marmara Adasi**	**0.22**	**210**	*e*Pg		**Pg**	**23 20 10.7**	**-0.3**
MRMT				*e*Sg		**Sg**	**23 20 14.3**	**+0.3**
TKR	**Tekirdag**	**0.25**	**322**	*e*PG		**Pg**	**23 20 10.9**	**-0.6**
TKR				*e*SG		**Sg**	**23 20 15.4**	**+0.5**
TKR	**Tekirdag**	**0.25**	**322**	*e*Pg		**Pg**	**23 20 10.9**	**-0.6**
TKR				*e*Sg		**Sg**	**23 20 15.4**	**+0.5**
SART	**Tekirdag**	**0.44**	**256**	*i* P		**Pg**	**23 20 15.0**	**-0.1**
SART				*i* S		**Sg**	**23 20 21.5**	**+0.6**
SART	**Tekirdag**	**0.44**	**256**	P		**Pg**	**23 20 15.0**	**-0.1**
SART				S		**Sg**	**23 20 21.5**	**+0.6**
RKY	**Sarkoy-Tekirda**	**0.44**	**256**	*e*PG		**Pg**	**23 20 15.1**	**0.0**
RKY	**Sarkoy-Tekirda**	**0.44**	**256**	*e*Pg		**Pg**	**23 20 15.1**	**0.0**
EDC	**Edincik**	**0.46**	**168**	*e*PG		**Pg**	**23 20 15.3**	**-0.1**
EDC	**Edincik**	**0.46**	**168**	*e*Pg		**Pg**	**23 20 15.3**	**-0.1**
KRBG	**Karabiga-Canak**	**0.52**	**220**	*e*PG		**Pg**	**23 20 16.2**	**-0.5**
KRBG	**Karabiga-Canak**	**0.52**	**220**	*e*Pg		**Pg**	**23 20 16.2**	**-0.5**
KNL	**Bal˙˙kesir**	**0.55**	**197**	*i* P		**Pg**	**23 20 16.1**	**-1.1**
KNL				*i* S		**Sg**	**23 20 24.7**	**+0.4**
ELBA	**Catalca**	**0.63**	**56**	*i* P		**Pg**	**23 20 18.3**	**-0.5**
ELBA	**Catalca**	**0.63**	**56**	P		**Pg**	**23 20 18.3**	**-0.5**
KCTX	**Karacabey (Bur**	**0.71**	**138**	*e*PG		**Pg**	**23 20 19.9**	**-0.3**
KCTX	**Karacabey (Bur**	**0.71**	**138**	*e*Pg		**Pg**	**23 20 19.9**	**-0.3**
KESN	**Edirne-Kesan**	**0.80**	**273**	*i* P		**Pb**	**23 20 22.5**	**-0.6**
KESN				*i* S		**Sg**	**23 20 32.7**	**+0.1**
KESN	**Edirne-Kesan**	**0.80**	**273**	P		**Pb**	**23 20 22.5**	**-0.6**
KESN				S		**Sg**	**23 20 32.7**	**+0.1**
SBT5	**Esenkoy-Cinarc**	**0.88**	**100**	*e*PG		**Pg**	**23 20 23.5**	**0.0**
SBT5				*e*SG		**Sb**	**23 20 36.0**	**-0.1**
SBT5	**Esenkoy-Cinarc**	**0.88**	**100**	*e*Pg		**Pg**	**23 20 23.5**	**0.0**
SBT5				*e*Sg		**Sb**	**23 20 36.0**	**-0.1**
ARMT	**Armutlu**	**0.88**	**105**	*e*PG		**Pg**	**23 20 23.3**	**-0.2**
ARMT				*e*SG		**Sb**	**23 20 36.6**	**+0.4**
ARMT	**Armutlu**	**0.88**	**105**	*e*Pg		**Pg**	**23 20 23.3**	**-0.2**
ARMT				*e*Sg		**Sb**	**23 20 36.6**	**+0.4**
ALN	**Alexandroupoli**	**1.29**	**275**	*e*PN		**Pb**	**23 20 30.7**	**-0.4**
ALN				*e*SN		**Sn**	**23 20 49.0**	**+0.6**
ALN	**Alexandroupoli**	**1.29**	**275**	*e*Pn		**Pb**	**23 20 30.7**	**-0.4**
ALN				*e*Sn		**Sn**	**23 20 49.0**	**+0.6**
EDRB	**Edirne**	**1.29**	**325**	*e*PN		**Pb**	**23 20 30.7**	**-0.4**
EDRB	**Edirne**	**1.29**	**325**	*e*Pn		**Pb**	**23 20 30.7**	**-0.4**

*IDC **25** 23:26:07.0±1.2, 27°43N×56°54E, h0km, mb3.6/9, mb1 3.7/11, mb1mx3.6/49, mbtmp3.7/11, ML3.6/2, Error ellipse: s-maj=22.4km s-min=21.9km az=25.0*
*OMAN **25** 23:26:07.8, 27°42N×56°58E, h18km*
*TEH **25** 23:26:08.1, 27°53N×56°54E, h8km, ML3.2*
*ISCJB **25** 23:26:08.7±0.6, 27°57N±0°02×56°58E±0°04, h6km±4km, mb3.5/9, Error ellipse: s-maj=6.7km s-min=3.8km az=5.0*
*CSEM **25** 23:26:10.5±0.2, 27°50N×56°55E, h10km, ML3.2, Error ellipse: s-maj=5.6km s-min=4.0km az=95.0*
*DSN **25** 23:26:10.8±0.0, 27°54N×56°52E, h15km, ML3.6/7, Error ellipse: s-maj=10.4km s-min=3.4km az=278.0*

ISC 25 23:26:09.1±0.7, 27°46N±0°02×56°56E±0°03, h13km±4km, n61,σ1°47/70, mb3.5/9, Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
IBND	**Bandar-abas**	**0.02**	**250**	*e*Pg		**Pg**	**23 26 11.4**	**+0.1**
IBND				*e*Sg		**Sg**	**23 26 12.9**	**0.0**
IBND				*e*AMB		AMB	23 26 13.6	
	comp=Z,2683μm,0.1s							
IBND	**Bandar-abas**	**0.02**	**250**	*e*Pg		**Pg**	**23 26 11.4**	**+0.1**
IBND				*e*Sg		**Sg**	**23 26 12.9**	**0.0**
NIAN	**Nian**	**0.26**	**67**	*e*Pg		**Pg**	**23 26 14.4**	**-0.2**
NIAN	**Nian**	**0.26**	**67**	*e*Pg		**Pg**	**23 26 14.4**	**-0.2**
GENO	**Geno**	**0.35**	**261**	*e*Pg		**Pg**	**23 26 16.4**	**+0.1**
GENO	**Geno**	**0.35**	**261**	*e*Pg		**Pg**	**23 26 16.4**	**+0.1**
BNDS	**Bandar-Abbas**	**0.35**	**261**	*e*Pg		**Pg**	**23 26 16.2**	**-0.1**
BNDS				*e*Sg		**Sb**	**23 26 22.1**	**-0.9**
KHSK	**Kohestak**	**0.82**	**148**	*e*Pn		**Pn**	**23 26 28.0**	**+1.5**
KHSK	**Kohestak**	**0.82**	**148**	*e*Pn		**Pn**	**23 26 28.0**	**+1.5**
BANOM	**Banah** SNR=160	**1.54**	**189**	*e*P		**Pg**	**23 26 38.3**	**-0.5**
BANOM				S		**Sg**	**23 27 00.8**	**+1.9**
BANOM	**Banah** SNR=160	**1.54**	**189**	P		**Pg**	**23 26 38.3**	**-0.5**
BANOM				S		**Sg**	**23 27 01.4**	**+2.5**
BANOM	**Banah** SNR=160	**1.54**	**189**	Pn		**Pg**	**23 26 38.3**	**-0.5**
BANOM	**Banah** SNR=160	**1.54**	**189**	Pn		**Pg**	**23 26 38.3**	**-0.5**
BANOM				S		**Sg**	**23 27 00.8**	**+1.9**
NGRK	**Negar Kerman**	**2.18**	**4**	*e*Pn		**Pn**	**23 26 47.1**	**+1.5**
NGRK	**Negar Kerman**	**2.18**	**4**	*e*Pn		**Pn**	**23 26 47.1**	**+1.5**
KRBR	**Kerman**	**2.52**	**4**	*e*Pn		**Pn**	**23 26 51.6**	**+1.4**
KRBR				*e*Sg		**Sb**	**23 27 27.2**	**+1.6**
UOSS	**Minazif**	**2.52**	**187**	P		**Pb**	**23 26 52.2**	**-2.1**
CHMN	**Cheshme madani**	**2.54**	**19**	*e*Pn		**Pn**	**23 26 52.5**	**+2.0**
CHMN	**Cheshme madani**	**2.54**	**19**	*e*Pn		**Pn**	**23 26 52.5**	**+2.0**
NAZ	**Nazwa, Dubai** SNR=8.2	**2.59**	**198**	*e*P		**Pb**	**23 26 54.1**	**-1.3**
NAZ	**Nazwa, Dubai** SNR=8.2	**2.59**	**198**	P		**Pb**	**23 26 54.1**	**-1.3**
HATD	**Hatta, Dubai**	**2.65**	**189**	P		**Pb**	**23 26 55.4**	**-1.1**
HATD	**Hatta, Dubai**	**2.65**	**189**	P		**Pb**	**23 26 55.4**	**-1.1**
ASHO	**Ashiyiah** SNR=19	**2.80**	**189**	*e*P		**Pb**	**23 26 56.6**	**-2.4**
ASHO	**Ashiyiah** SNR=19	**2.80**	**189**	P		**Pb**	**23 26 56.7**	**-2.4**
ASHO	**Ashiyiah** SNR=19	**2.80**	**189**	Pn		**Pb**	**23 26 56.7**	**-2.4**
ASHO	**Ashiyiah** SNR=19	**2.80**	**189**	P		**Pb**	**23 26 56.6**	**-2.4**
FAQ	**Al Faqa, Dubai** SNR=7.3	**2.84**	**198**	*e*P		**Pn**	**23 26 56.6**	**+2.3**
FAQ	**Al Faqa, Dubai** SNR=12	**2.84**	**198**	P		**Pn**	**23 26 56.6**	**+2.3**
FAQ	**Al Faqa, Dubai** SNR=12	**2.84**	**198**	Pn		**Pn**	**23 26 56.6**	**+2.3**
FAQ	**Al Faqa, Dubai** SNR=12	**2.84**	**198**	Pn		**Pn**	**23 26 56.6**	**+2.3**
KHGB	**Koh Gabri**	**2.91**	**359**	*e*Pn		**Pn**	**23 26 57.7**	**+2.3**
KHGB	**Koh Gabri**	**2.91**	**359**	*e*Pn		**Pn**	**23 26 57.7**	**+2.3**
GHIR	**Ghir-Karzin**	**3.27**	**285**	*e*Pn		**Pn**	**23 27 02.0**	**+1.7**
ISRV	**Sarvestan**	**3.59**	**303**	*e*Pn		**Pn**	**23 27 07.1**	**+2.2**
ISRV	comp=Z,536nm,0.4s			*e*AMB		AMB	23 28 52.3	
ISRV	**Sarvestan**	**3.59**	**303**	*e*Pn		**Pn**	**23 27 07.1**	**+2.2**
IBAF	**Bafgh**	**4.21**	**348**	*e*Pn		**Pn**	**23 27 14.5**	**+1.3**
IBAF				*e*Sg		**Sg**	**23 28 24.5**	**+0.1**
IBAF	comp=Z,210nm,0.3s			*e*AMB		AMB	23 28 37.5	
IBAF	**Bafgh**	**4.21**	**348**	*e*Pn		**Pn**	**23 27 14.5**	**+1.3**
IBAF				*e*Sg		**Sg**	**23 28 24.5**	**+0.1**
IMEH	**Mehriz** SNR=19	**4.27**	**337**	*e*Pn		**Pn**	**23 27 15.4**	**+1.2**
IMEH	comp=Z,373nm,0.2s			*e*AMB		AMB	23 27 20.2	
IMEH	**Mehriz**	**4.27**	**337**	*e*Pn		**Pn**	**23 27 15.4**	**+1.2**
ZHSF	**Zahedan**	**4.28**	**59**	*e*Pn		**Pn**	**23 27 15.9**	**+1.7**
WSAR	**Kuhdi Sarin** comp=Z,5.2nm,0.3s,baz=6.7,slow=15,SNR=33	**4.60**	**156**	Pn		**Pn**	**23 27 19.7**	**+1.3**
WSAR	comp=Z,4.2nm,0.3s,baz=18,slow=23,SNR=9.3			Sn		**Sn**	**23 28 10.6**	**-1.2**
ISAD	**Sadrabad**	**5.10**	**331**	*e*Pn		**Pn**	**23 27 27.1**	**+1.5**
ISAD	comp=Z,208nm,0.2s			*e*AMB		AMB	23 27 32.5	
ISAD	**Sadrabad**	**5.10**	**331**	*e*Pn		**Pn**	**23 27 27.1**	**+1.5**
ICHK	**Chekchek**	**5.13**	**339**	*e*Pn		**Pn**	**23 27 27.2**	**+1.3**
ICHK	comp=Z,172nm,0.3s			*e*AMB		AMB	23 28 32.9	
ICHK	**Chekchek**	**5.13**	**339**	*e*Pn		**Pn**	**23 27 27.2**	**+1.3**
IKOO	**Kooshah** comp=Z,195nm,0.3s	**5.38**	**23**	*e*AMB		AMB	23 29 10.7	
IRAM	**Ramesheh**	**5.66**	**321**	*e*Pn		**Pn**	**23 27 33.7**	**+0.4**
IRAM	comp=Z,95nm,0.2s			*e*AMB		AMB	23 27 42.1	
IRAM	**Ramesheh**	**5.66**	**321**	*e*Pn		**Pn**	**23 27 33.7**	**+0.4**
IPIR	**Pirpir**	**7.16**	**318**	*e*Pn		**Pn**	**23 27 55.0**	**+1.1**
IPIR	comp=Z,66nm,0.2s			*e*AMB		AMB	23 29 17.2	
IPIR	**Pirpir**	**7.16**	**318**	*e*Pn		**Pn**	**23 27 55.0**	**+1.1**
KVAR	**Kislovodsk Arr** baz=187,slow=8.1,SNR=2.1	**19.90**	**329**	P		**P**	**23 30 40.9**	**+0.4**
BRTR	**Keskin Array B** comp=Z,0.4nm,0.6s,baz=140,slow=12,SNR=3.3	**22.61**	**309**	P		**P**	**23 31 10.0**	**+0.2**
AKTO	**Aktyubinsk** comp=Z,2.6nm,0.8s,baz=183,slow=8.5,SNR=7.1	**22.97**	**2**	P		**P**	**23 31 13.9**	**+0.6**
BVAR	**Borovoye Array** comp=Z,1.0nm,0.8s,baz=211,slow=10,SNR=7.4	**27.53**	**18**	P		**P**	**23 31 56.3**	**+0.8**
MKAR	**Makanchi Array** comp=Z,0.2nm,0.4s,baz=218,slow=6.8,SNR=3.6	**27.96**	**40**	P		**P**	**23 31 59.3**	**-0.1**
KURBB	**Kurchatov Arra** comp=Z,0.9nm,0.9s,baz=228,slow=8.3,SNR=6.4	**28.54**	**30**	P		**P**	**23 32 04.6**	**+0.1**
ZALV	**Zalesovo Beam** comp=Z,1.0nm,0.3s,baz=246,slow=10,SNR=5.3	**33.63**	**30**	P		**P**	**23 32 48.5**	**-0.8**
FINES	**FINESS Array B** comp=Z,1.0nm,0.8s,baz=145,slow=8.5,SNR=7.1	**39.63**	**338**	P		**P**	**23 33 39.9**	**-0.4**
SONM	**Songino Array** comp=Z,0.2nm,0.4s,baz=248,slow=6.1,SNR=2.5	**43.52**	**48**	P		**P**	**23 34 12.5**	**-0.1**
TORD	**Torodi Ar. Bea** comp=Z,0.5nm,0.7s,baz=66,slow=7.4,SNR=5.3	**53.00**	**266**	P		**P**	**23 35 25.0**	**-1.1**

*NIED **25** 23:36:00, 38°20N×141°90E, h47km, Mw3.8 Best double couple: M0 5.73000×10^14 NP1:φs208.00000°, δ20.00000°, λ104.00000°. NP2:φs13.00000°, δ71.00000°, λ85.00000°.*
*ISCJB **25** 23:36:01.8±1.0, 38°23N±0°05×141°94E±0°10, h52km±7km, mb3.9/12, MS3.0/1, Error ellipse: s-maj=13.6km s-min=6.3km az=19.8*
*JMA **25** 23:36:03.0±0.1, 38°27N×141°88E, h46km±1km, M3.7*
JMA Felt I J1.
*IDC **25** 23:36:06.6±4.0, 38°22N×141°88E, h80km±32km, mb3.5/11, mb1 3.5/14, mb1mx3.4/44, mbtmp3.8/14, MS2.8/4, Ms1 2.8/4, ms1mx2.5/40, Error ellipse: s-maj=39.4km s-min=15.9km az=76.0*

ISC 25 23:36:02.7±1.7, 38°23N±0°06×142°0E±0°1, h44km±14km, n33,σ1°19/33, mb3.8/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.54**	**294**	P		**Pn**	**23 36 13.6**	**-0.6**
JIO				S		**Sn**	**23 36 21.0**	**-1.3**
OFUJ	**Ofunato**	**0.88**	**344**	P		**Pn**	**23 36 18.3**	**-0.4**
OFUJ				S		**Sn**	**23 36 29.5**	**-0.9**
JMK	**Ichinoseki**	**0.93**	**321**	P		**Pn**	**23 36 19.1**	**-0.3**
JMK				S		**Sn**	**23 36 30.4**	**-1.2**
JMM	**Marumori**	**1.00**	**249**	P		**Pn**	**23 36 19.5**	**-0.8**
JMM				S		**Sn**	**23 36 31.7**	**-1.6**
JOU	**Okura**	**1.04**	**278**	P		**Pn**	**23 36 20.6**	**-0.3**
JOU				S		**Sn**	**23 36 33.4**	**-0.9**
JFK	**Kawauchi**	**1.23**	**226**	S		**Sn**	**23 36 37.6**	**-1.3**
JOM	**Ohasama**	**1.35**	**337**	P		**Pn**	**23 36 25.1**	**0.0**
JOM				*e*S		**Sn**	**23 36 41.5**	**-0.3**
JYK	**Kaneyama**	**1.44**	**299**	P		**Pn**	**23 36 26.1**	**-0.3**
JYK				*e*S		**Sn**	**23 36 43.0**	**-1.1**
JYS	**Shirataka**	**1.51**	**270**	P		**Pn**	**23 36 27.0**	**-0.2**
JYS				*e*S		**Sn**	**23 36 45.6**	**-0.1**
JRG	**Rokugo**	**1.57**	**318**	P		**Pn**	**23 36 28.0**	**-0.1**
MJAR	**Matsushiro Arr** 3.5nm,0.3s,baz=72,slow=12,SNR=9.6	**3.44**	**242**	P		**Pn**	**23 36 57.0**	**+3.2**
MJAR						LR	23 38 27.9	
	comp=Z,89nm,18.5s,baz=70,slow=42							
USRK	**Ussuriysk Ar.** 0.5nm,0.3s,baz=117,slow=14,SNR=10	**9.60**	**312**	P		**Pn**	**23 38 22.1**	**+3.9**
JNU	**Nakatsue** 0.1nm,0.3s,baz=24,slow=18,SNR=2.4	**10.37**	**244**	P		**Pn**	**23 38 30.0**	**+1.2**
KSRS	**Korea Array** 0.2nm,0.3s,baz=74,slow=14,SNR=2.8	**11.14**	**270**	P		Pn	23 38 49.6	+10
KSRS						LR	23 42 36.2	
	comp=Z,32nm,18.6s,baz=128,slow=35							
KLR	**Kul˙dur** comp=Z,40nm,19.0s,baz=143,slow=36	**13.23**	**329**	LR		LR	23 43 57.0	
H11N2	**WAKE ISLAND Hy** baz=316,slow=75,SNR=396	**28.40**	**123**	T		T	00 12 04.8	
H11N1	**WAKE ISLAND Hy** baz=316,slow=75,SNR=100	**28.41**	**123**	T		T	00 12 05.0	
H11N3	**WAKE ISLAND Hy** baz=316,slow=75,SNR=262	**28.42**	**123**	T		T	00 12 05.9	
H11S1	**WAKE ISLAND Hy** baz=318,slow=76,SNR=31	**29.16**	**125**	T		T	00 13 03.6	
H11S3	**WAKE ISLAND Hy** baz=318,slow=76,SNR=118	**29.16**	**126**	T		T	00 13 03.1	
H11S2	**WAKE ISLAND Hy** baz=318,slow=76,SNR=42	**29.18**	**125**	T		T	00 13 04.2	
SIJI	**Sorong** 55nm,0.4s,baz=7.1,slow=8.1,SNR=2.4	**40.14**	**197**	P		**P**	**23 43 34.3**	**-0.1**
ZALV	**Zalesovo Beam** 1.0nm,0.4s,baz=88,slow=7.4,SNR=4.7	**41.45**	**311**	P		**P**	**23 43 44.2**	**-0.6**
MKAR	**Makanchi Array** 0.9nm,0.6s,baz=82,slow=8.8,SNR=6.3	**43.87**	**301**	P		**P**	**23 44 04.6**	**0.0**
MKAR	comp=Z,17nm,18.8s,baz=164,slow=36					LR	00 02 14.0	
KURBB	**Kurchatov Arra** 1.3nm,0.5s,baz=82,slow=8.4,SNR=14	**45.63**	**307**	P		**P**	**23 44 18.1**	**-0.4**
BVAR	**Borovoye Array** 0.3nm,0.5s,baz=69,slow=9.4,SNR=3.5	**50.10**	**312**	P		**P**	**23 44 52.7**	**-0.5**
ARU	**Arti** 0.9nm,0.4s,baz=94,slow=16,SNR=3.0	**55.77**	**318**	P		**P**	**23 45 34.0**	**-0.8**
WRA	**Warramunga Arr** 0.4nm,0.7s,baz=5.2,slow=7.4,SNR=4.3	**58.31**	**188**	P		**P**	**23 45 52.8**	**-0.3**
ASAR	**Alice Springs** 0.2nm,0.4s,baz=15,slow=7.7,SNR=3.5	**62.03**	**188**	P		**P**	**23 46 19.0**	**+0.4**
FINES	**FINESS Array B** 1.3nm,0.7s,baz=71,slow=8.3,SNR=5.3	**67.97**	**332**	P		**P**	**23 46 56.6**	**0.0**
NOA	**NORSAR Array B** 0.9nm,0.7s,baz=39,slow=6.0,SNR=3.5	**73.26**	**337**	P		**P**	**23 47 29.3**	**+0.3**
AKASG	**Malin Array Be** 0.5nm,0.4s,baz=54,slow=6.2,SNR=4.4	**73.62**	**322**	P		**P**	**23 47 30.7**	**-0.6**
PDAR	**Pinedale Array** 0.1nm,0.3s,baz=278,slow=2.6,SNR=2.6	**76.51**	**46**	P		**P**	**23 47 48.1**	**-0.2**

IDC 25 23:44:26.1±2.1, 5°87S×130°04E, h0km, mb3.5/1, mb1 3.6/4, mb1mx3.4/27, mbtmp3.4/4, ML3.0/3, Error ellipse: s-maj=80.6km s-min=28.1km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi** 0.0nm,0.3s,baz=27,slow=6.8,SNR=2.9	**12.90**	**199**	Pn		Pn	23 47 31.4	+0.6
FITZ	0.2nm,0.3s,baz=78,slow=6.8,SNR=3.7			Sn		Sn	23 49 38.9	-16
WRA	**Warramunga Arr** 0.1nm,0.3s,baz=344,slow=12,SNR=4.7	**14.60**	**164**	Pn		Pn	23 47 55.6	+1.4
WRA	0.1nm,0.3s,baz=339,slow=21,SNR=5.0			Sn		Sn	23 50 22.0	-15
ASAR	**Alice Springs** 0.1nm,0.3s,baz=345,slow=10,SNR=4.6	**18.08**	**169**	P		Pn	23 48 37.5	-1.4
MKAR	**Makanchi Array** 0.3nm,0.5s,baz=129,slow=5.7,SNR=3.2	**67.31**	**327**	P		P	23 55 22.9	+0.1

IDC 25 23:46:00.8±1.1, 19°03N×45°98W, h0km, mb3.6/6, mb1 3.9/6, mb1mx3.6/28, mbtmp3.6/6, Error ellipse: s-maj=38.3km s-min=26.0km az=5.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
H05N1	**Guadeloupe/Mar** SNR=21	**14.62**	**262**	T		T	00 05 54.4	
H10N3	**ASCENSION HYDR** baz=310	**40.94**	**128**	T		T	00 37 08.6	
H10N2	**ASCENSION HYDR** baz=310	**40.94**	**128**	T		T	00 37 09.1	
H10N1	**ASCENSION HYDR** baz=310	**40.96**	**128**	T		T	00 37 06.9	
LPAZ	**La Paz** 0.7nm,0.

ARLS	**Aral** baz=50	**2.95**	**51**	⇓*i*P		**Pn**	**00 17 28.0**	**+0.2**
ARLS				⇓*i*S		**Sn**	**00 18 01.4**	**-1.0**
MRKS	**Merke** 25nm,0.4s	**3.07**	**28**	*e*P		**Pb**	**00 17 34.0**	**-2.6**
MRKS				*e*S		**Sb**	**00 18 11.8**	**-1.9**
KK31	**Karatay Array** 0.8nm,0.1s,baz=134,slow=9.8,SNR=73	**3.10**	**350**	⇑Pn		**Pn**	**00 17 31.4**	**+1.7**
KK31				⇑Pg		**Pb**	**00 17 37.4**	**+0.6**
KK31	10nm,0.4s,baz=156,slow=14,SNR=8.2			⇓Lg		Lg	00 18 17.0	
EKS2	**Erkin-Say** baz=34	**3.23**	**35**	⇑*i*P		**Pn**	**00 17 32.1**	**+0.5**
EKS2				⇑*i*S		**Sn**	**00 18 09.1**	**-0.2**
UCH	**Uchtor** baz=47	**3.29**	**48**	⇓*i*P		**Pn**	**00 17 32.7**	**0.0**
UCH				⇓*i*S		**Sn**	**00 18 10.4**	**-0.8**
AAK	**Ala-Archa** baz=42	**3.55**	**42**	⇑*i*P		**Pn**	**00 17 36.8**	**+0.7**
AAK				⇑*i*S		**Sn**	**00 18 16.0**	**-1.3**
AAK	**Ala-Archa** 8.3nm,0.7s	**3.55**	**42**	⇓Pn		**Pn**	**00 17 37.5**	**+1.4**
AAK	12nm,0.5s			⇑Pg		**Pb**	**00 17 47.2**	**+2.5**
AAK	27nm,0.5s			⇓Lg		Lg	00 18 27.9	
KZA	**Kyzart** baz=55	**3.64**	**55**	⇑*i*P		**Pn**	**00 17 37.9**	**+0.4**
KZA				⇑*i*S		**Sn**	**00 18 18.7**	**-1.1**
KBK	**Karagaybulak** baz=45	**3.81**	**46**	⇑*i*P		**Pn**	**00 17 39.9**	**+0.2**
KBK				⇑*i*S		**Sn**	**00 18 22.4**	**-1.3**
TKM2	**Tokmak 2** 27nm,0.5s	**4.34**	**47**	⇓Pn		**Pn**	**00 17 47.8**	**+0.8**
TKM2	30nm,0.7s			⇓Lg		Lg	00 18 52.1	
BMNS	**Besmoynak** 20nm,0.4s	**4.51**	**46**	*e*P		**Pb**	**00 18 00.4**	**-0.5**
BMNS	57nm,0.5s			*e*S		**Sb**	**00 18 56.9**	**+2.0**
KST	**Kastek** 3.5nm,0.5s	**4.63**	**48**	*e*P		**Pb**	**00 18 02.5**	**-0.5**
KST	12nm,0.8s			*e*S		**Sb**	**00 19 00.9**	**+2.5**
DGS	**Degeres** 4.3nm,0.5s	**4.65**	**45**	*e*P		**Pb**	**00 18 02.4**	**-1.0**
DGS	32nm,0.8s			*e*S		**Sb**	**00 19 01.2**	**+2.2**
IZV	**Izvestkoviy** 5.7nm,0.3s	**5.01**	**52**	*e*P		**Pb**	**00 18 08.4**	**-1.1**
IZV	13nm,0.6s			*e*S		**Sb**	**00 19 10.3**	**+1.1**
TNSS	**Tian-Shan** 4.0nm,0.5s	**5.21**	**53**	*e*P		**Pb**	**00 18 13.1**	**0.0**
TNSS	18nm,0.9s			*e*S		**Sb**	**00 19 18.7**	**+3.3**
KUU	**Kurty** 5.5nm,0.3s	**5.40**	**43**	*e*P		**Pb**	**00 18 16.0**	**0.0**
KUU	6.0nm,0.6s			*e*S		**Sb**	**00 19 23.9**	**+3.6**
ARXS	**Arharly** 3.9nm,0.7s	**6.42**	**47**	*e*P		**Pb**	**00 18 35.3**	**+1.9**
ARXS	14nm,0.5s			*e*S		**Sb**	**00 19 56.6**	**+6.9**
MK31	**Makanchi Array** 0.4nm,0.4s,baz=229,slow=14,SNR=9.1	**10.48**	**46**	P		**Pn**	**00 19 10.2**	**-0.8**
MKAR	**Makanchi Array** 0.2nm,0.3s,baz=230,slow=14,SNR=7.8	**10.48**	**46**	Pn		**Pn**	**00 19 10.3**	**-0.7**
MKAR	0.1nm,0.3s,baz=245,slow=26,SNR=2.8			Lg		Lg	00 22 13.3	
AB31	**Akbulak array** 0.2nm,0.4s,baz=129,slow=13,SNR=8.2	**12.21**	**323**	⇑P		**Pn**	**00 19 33.6**	**-1.0**
FINES	**FINESS Array B** 0.7nm,0.8s,baz=104,slow=8.7,SNR=3.4	**34.70**	**323**	P		**P**	**00 23 29.1**	**-0.7**
ARCES	**ARCESS Array B** 2.1nm,0.8s,baz=102,slow=8.4,SNR=3.0	**37.96**	**336**	P		**P**	**00 23 58.0**	**+0.4**
TORD	**Torodi Ar. Bea** 0.4nm,0.8s,baz=63,slow=6.6,SNR=6.4	**66.04**	**267**	P		**P**	**00 27 27.2**	**0.0**

*CASC **26** 00:19:05.9±0.9, 14°.19N×90°.24W, h2km±5km, MD4.1, ML3.9, mb4.2(NEIC)*
*IDC **26** 00:19:06.0±1.3, 14°.45N×90°.08W, h0km, mb3.8/4, mb1 4.1/7, mb1mx3.8/39, mbtmp3.9/7, ML3.6/3, MS3.5/13, Ms1 3.5/13, ms1mx3.2/40, Error ellipse: s-maj=47.9km s-min=17.8km az=41.0*
*NEIC **26** 00:19:08.2±3.2, 14°.01N×90°.06W, h30km±28km, mb4.2/22, MD3.9(SNET), Error ellipse: s-maj=16.7km s-min=9.4km az=215.0*
NEIC Felt [IV] at Guatemala. Also felt at Antigua Guatemala and Mixco. Felt [I] at Ahuachapan, El Salvador.

ISC 26 00:19:07.9±1.4, 14°.23N±0°.07×90°.05W±0°.06, h17km±10km, n208, σ1§30/195, mb4.1/19, MS3.5/10, 5C-3D, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CUS1	**Cusmapa**	**0.33**	**162**	⇑*i*P	**Pg**	**00 19 14.8**	**-0.1**
RBDL	**Robledal**	**0.37**	**108**	⇑*i*P	**Pb**	**00 19 17.3**	**+1.1**
RBDL				*e*S	**Sn**	**00 19 26.8**	**+1.2**
IXG	**Ixpaco**	**0.39**	**262**	⇓*e*P	Pg	00 19 10.8	-5.3
RTR	**El Retiro**	**0.52**	**130**	⇑*e*P	**Pb**	**00 19 19.4**	**+0.8**
MONT	**Ecomontaæa**	**0.54**	**133**	⇓*e*P	**Pb**	**00 19 19.9**	**+0.9**
SBLS	**San Blas**	**0.57**	**133**	*e*P	**Pb**	**00 19 20.0**	**+0.4**
BOQS	**Boqueron**	**0.90**	**123**	⇓*e*P	**Pn**	**00 19 26.2**	**+0.3**
BOQS				*e*S	**Sn**	**00 19 40.9**	**+2.3**
MRL	**Marmol**	**0.90**	**23**	*e*P	**Pn**	**00 19 25.8**	**-0.2**
COLS	**Colinas**	**0.92**	**127**	*e*P	**Pn**	**00 19 26.4**	**+0.2**
COLS				*e*S	**Sn**	**00 19 42.3**	**+3.2**
SNET	**Serv Nac Est T**	**0.96**	**124**	*e*Pn	**Pg**	**00 19 26.9**	**+0.3**
SNET				*e*Sn	**Sn**	**00 19 43.2**	**+3.2**
SNET	**Serv Nac Est T** comp=Z,3µm,0.4s	**0.96**	**124**	AML	AML	00 19 48.1	
LFU	**La Fuente**	**1.03**	**118**	*e*P	**Pg**	**00 19 28.0**	**+0.2**
LBRS	**Las Brisas**	**1.09**	**116**	⇑*e*P	**Pg**	**00 19 29.4**	**+0.3**
LFRS	**El Faro**	**1.14**	**122**	⇑*e*P	**Pg**	**00 19 30.1**	**+0.2**
CCIG	**Comitan**	**2.87**	**316**	*e*Pn	**Pn**	**00 19 52.9**	**-0.1**
CCIG				*e*Sn	**Sn**	**00 20 29.8**	**+2.6**
CMIG	**Matias Romero** comp=Z,7.4nm,0.3s,baz=108,slow=12,SNR=26	**5.45**	**302**	Pn	**Pn**	**00 20 27.2**	**-1.2**
CMIG				Sn	**Sn**	**00 21 35.1**	**+4.3**
CMIG	comp=Z,10nm,0.3s,baz=72,slow=20,SNR=3.4			Lg	Lg	00 21 54.5	
CMIG	comp=Z,15nm,0.3s,baz=214,slow=21,SNR=6.7			LR	LR	00 22 36.5	
TLIG	**Tlapa** comp=Z,884nm,18.2s,baz=124,slow=40	**8.84**	**293**	*e*Pn	**Pn**	**00 21 16.6**	**+1.6**
UNM	**Universidad Na**	**10.10**	**301**	*e*Pn	**Pn**	**00 21 31.7**	**-0.8**
MOIG	**Morelia**	**11.95**	**298**	*e*Pn	**Pn**	**00 22 00.6**	**+2.8**
035Z	**Hargill** baz=147	**14.30**	**330**	P	**Pn**	**00 22 32.6**	**+3.0**
034A	**Hebbronville** baz=146	**15.10**	**329**	P	**Pn**	**00 22 42.2**	**+1.7**
934A	**Benavides** baz=148	**15.47**	**331**	P	**P**	**00 22 48.8**	**-1.0**
835A	**Beeville** baz=152	**15.74**	**334**	P	**Pn**	**00 22 50.9**	**+1.9**
933A	**Laredo** baz=146	**15.85**	**329**	P	**Pn**	**00 22 50.6**	**+0.3**
834A	**Tilden** baz=149	**15.93**	**332**	P	**Pn**	**00 22 52.9**	**+1.7**
833A	**Chaparral WMA,** baz=147	**16.49**	**330**	P	**P**	**00 23 00.3**	**-0.8**
446A	**Poplarville** baz=183	**16.50**	**2**	P	**Pn**	**00 22 58.8**	**+0.3**
636A	**Smothers Creek** baz=156	**16.50**	**338**	P	**P**	**00 23 00.3**	**-0.9**
441A	**DeRidder** baz=170	**16.69**	**351**	P	**P**	**00 23 03.3**	**0.0**
832A	**Faith Ranch, C** baz=145	**16.75**	**328**	P	**Pn**	**00 23 02.8**	**+1.0**
733A	**Divot King Ran** baz=148	**16.77**	**331**	P	**P**	**00 23 04.5**	**+0.2**
537A	**Green Hill Far** baz=159	**16.80**	**341**	P	**Pn**	**00 23 02.1**	**-0.3**
344A	**Westbrook Farm** baz=178	**17.16**	**358**	P	**P**	**00 23 08.4**	**0.0**
535A	**Dale** baz=155	**17.19**	**337**	P	**P**	**00 23 09.3**	**+0.5**
342A	**Flagon Creek P** baz=173	**17.19**	**353**	P	**P**	**00 23 08.5**	**-0.3**
341A	**Kurthwood** baz=170	**17.26**	**351**	P	**P**	**00 23 09.4**	**-0.2**
633A	**Saathoff Ranch** baz=149	**17.35**	**332**	P	**Pn**	**00 23 09.7**	**+0.5**
534A	**Blanco** baz=152	**17.54**	**335**	P	**Pn**	**00 23 11.3**	**-0.4**
244A	**Avery, Jackson** baz=178	**17.74**	**358**	P	**P**	**00 23 14.8**	**-0.1**
533A	**Kerrville** baz=151	**17.81**	**334**	P	**Pn**	**00 23 15.0**	**-0.1**
242A	**Grayson** baz=174	**17.85**	**354**	P	**Pn**	**00 23 14.4**	**-1.2**
248A	**Dixon Mills** baz=188	**17.91**	**6**	P	**Pn**	**00 23 15.2**	**-1.0**
NATX	**Nacogdoches** baz=166	**17.95**	**347**	P	**P**	**00 23 17.3**	**+0.1**
OTAV	**Otavalo** comp=Z,9.9nm,1.4s	**18.03**	**139**	*e*Pn	**Pn**	**00 23 13.2**	**-5.1**
240A	**Hunter Patters** baz=169	**18.05**	**350**	P	**P**	**00 23 18.7**	**+0.5**
ROSC	**El Rosal** comp=Z,56nm,21.3s,baz=67,slow=38	**18.09**	**120**	LR	LR	00 30 37.8	
434A	**Burnet** baz=154	**18.15**	**337**	P	**Pn**	**00 23 19.0**	**-0.3**
239A	**Gary** baz=166	**18.16**	**348**	P	**Pn**	**00 23 19.4**	**+0.1**
335A	**Moody** baz=157	**18.27**	**339**	P	**Pn**	**00 23 19.7**	**-1.0**
433A	**Art** baz=152,SNR=6.0	**18.43**	**335**	P	**P**	**00 23 21.9**	**-0.7**
147A	**Livingston** baz=186	**18.43**	**5**	P	**Pn**	**00 23 23.4**	**+0.8**
JCT	**Junction City** baz=149	**18.50**	**333**	P	**Pn**	**00 23 23.6**	**+0.1**
JCT	**Junction City** comp=Z,4.1nm,0.9s	**18.50**	**333**	*e*P	**Pn**	**00 23 25.0**	**+1.5**
334A	**Lometa** baz=155	**18.61**	**338**	P	**P**	**00 23 24.4**	**-0.1**
333A	**Richland Sprin** baz=153	**18.89**	**336**	P	**Pn**	**00 23 28.5**	**+0.3**
Z46A	**Louisville** baz=184	**18.91**	**3**	P	**Pn**	**00 23 28.7**	**+0.3**
WHTX	**Lake Whitney,** baz=158	**18.93**	**340**	P	**Pn**	**00 23 30.3**	**+1.5**
WHTX	**Lake Whitney,** comp=Z,11nm,0.8s	**18.93**	**340**	*e*P	**Pn**	**00 23 33.5**	**+4.8**
Z47A	**Carrollton** baz=186	**18.97**	**5**	P	**Pn**	**00 23 29.8**	**+0.7**
Z41A	**Richland Creek** baz=172	**19.11**	**353**	P	**Pn**	**00 23 31.3**	**+0.5**
234A	**Clairette** baz=156	**19.18**	**339**	P	**Pn**	**00 23 33.0**	**+1.3**
Z40A	**Long Farm, Mag** baz=170	**19.19**	**351**	P	**Pn**	**00 23 32.0**	**+0.2**
GRTK	**Grand Turk** comp=Z,148nm,1.2s	**19.40**	**65**	*e*P	**P**	**00 23 30.3**	**-2.9**
135A	**Vickery Place,** baz=158	**19.44**	**341**	P	**P**	**00 23 33.6**	**0.0**
233A	**Rising Star** baz=154	**19.47**	**337**	P	**P**	**00 23 33.5**	**-0.4**
WLAR	**White Oak Lake** comp=Z,19nm,0.9s	**19.57**	**352**	*e*P	**Pn**	**00 23 35.9**	**-0.4**
Y42A	**Garnett, Star** baz=175	**19.58**	**356**	P	**P**	**00 23 34.6**	**-0.5**
TXAR	**Lajitas Array** comp=Z,0.1nm,0.3s,baz=151,slow=13,SNR=19	**19.61**	**322**	P	**P**	**00 23 36.1**	**+0.5**
TXAR	comp=Z,46nm,20.9s,baz=0.0,slow=43			LR	LR	00 32 54.5	
TX31	**Lajitas Ar. Si**	**19.61**	**322**	*e*P	**Pn**	**00 23 36.8**	**-0.2**
134A	**White-Moore Ra** baz=157	**19.67**	**340**	P	**Pn**	**00 23 37.4**	**-0.2**
Y47A	**UCPARC, Winfie** baz=186	**19.69**	**5**	P	**Pn**	**00 23 37.2**	**-0.6**
Y41A	**Eaglette Beard** baz=173	**19.70**	**354**	P	**Pn**	**00 23 37.6**	**-0.3**
SDV	**Santo Domingo** comp=Z,0.2nm,0.3s,baz=297,slow=7.3,SNR=4.4	**19.75**	**103**	P	**Pn**	**00 23 39.7**	**+0.9**
Z36A	**Blue Ridge** baz=162	**19.82**	**344**	P	**P**	**00 23 38.6**	**+0.8**
Y40A	**Okolona** baz=171	**19.91**	**352**	P	**Pn**	**00 23 40.4**	**0.0**
Y39A	**Lockesburg** baz=169	**19.96**	**350**	P	**P**	**00 23 40.0**	**+0.7**
133A	**Hamilton Ranch** baz=154	**20.00**	**338**	P	**Pn**	**00 23 41.3**	**-0.3**
Y38A	**Idabel** baz=167	**20.07**	**349**	P	Pn	00 23 42.3	+0.1
Z35A	**Pehaven, San** baz=160	**20.11**	**342**	P	Pn	00 23 43.8	+1.1
ABTX	**Abilene, Hawle** baz=153	**20.29**	**336**	P	Pn	00 23 44.3	-0.7
ABTX	**Abilene, Hawle** comp=Z,12nm,1.1s	**20.29**	**336**	*e*P	**P**	**00 23 42.8**	**-0.1**
Y37A	**Hugo** baz=165	**20.30**	**347**	P	**P**	**00 23 43.7**	**+0.8**
X40A	**Basin Creek Fa** baz=172	**20.33**	**353**	P	Pn	00 23 44.9	-0.4
Z34A	**Collier Ranch,** baz=158	**20.35**	**341**	P	**P**	**00 23 44.6**	**+1.1**
Y36A	**Durant** baz=163	**20.38**	**345**	P	**P**	**00 23 44.9**	**+1.0**
MIAR	**Mount Ida** baz=170	**20.48**	**352**	P	**P**	**00 23 45.3**	**+0.5**
MIAR	**Mount Ida** comp=Z,9.2nm,0.8s	**20.48**	**352**	*e*P	Pn	00 23 46.3	-0.7
X39A	**Fountain Ranch** baz=169	**20.52**	**350**	P	Pn	00 23 46.9	-0.7
Z33A	**Whitaker Ranch** baz=156	**20.56**	**339**	P	**P**	**00 23 46.0**	**+0.2**
UALR	**University of** comp=Z,14nm,1.0s	**20.56**	**355**	*e*P	Pn	00 23 48.8	+0.8
Y35A	**Marietta** baz=161,SNR=8.6	**20.59**	**343**	P	**P**	**00 23 47.2**	**+1.1**
X38A	**Whitesboro** baz=167,SNR=10	**20.80**	**349**	P	**P**	**00 23 49.4**	**+1.0**
X37A	**Clayton** baz=166	**20.83**	**348**	P	**P**	**00 23 49.5**	**+0.8**
Y34A	**Reagan Ranch,** baz=159	**20.85**	**342**	P	**P**	**00 23 49.9**	**+1.1**
W41B	**Gary Mavity, V** baz=174	**20.95**	**355**	P	**P**	**00 23 50.4**	**+0.5**
X35A	**Drake** baz=161	**21.04**	**344**	P	**P**	**00 23 51.5**	**+0.6**
X36A	**Centrahoma** baz=163	**21.04**	**345**	P	**P**	**00 23 50.9**	**-0.1**
W40A	**Ferguson Farm,** baz=172	**21.05**	**353**	P	**P**	**00 23 52.8**	**+1.8**
WHAR	**Wooly Hollow** comp=Z,13nm,1.3s	**21.07**	**355**	*e*P	**P**	**00 23 53.2**	**+2.0**
X201	**Greenbrier Sit** comp=Z,9.9nm,1.1s	**21.08**	**355**	*e*P	**P**	**00 23 53.1**	**+1.8**
W38A	**Poteau** baz=168	**21.14**	**350**	P	**P**	**00 23 53.2**	**+1.2**
W39A	**Magazine** baz=170	**21.15**	**352**	P	**P**	**00 23 52.6**	**+0.5**
Y33A	**Hilltop Ranch,** baz=157	**21.17**	**340**	P	**P**	**00 23 52.0**	**-0.4**
SWET	**Sewanee** comp=Z,3.7nm,1.0s	**21.22**	**9**	*e*P	**P**	**00 23 54.8**	**+1.8**
W37B	**Quinton** baz=166,SNR=11	**21.38**	**348**	P	**P**	**00 23 55.8**	**+1.3**
X34A	**Smith Ranch, M** baz=159,SNR=11	**21.47**	**342**	P	**P**	**00 23 56.9**	**+1.4**
LPIG	**La Paz** comp=Z,154nm,18.7s,baz=110,slow=36	**21.48**	**300**	LR	LR	00 31 58.8	
V42A	**Cord** baz=177	**21.52**	**357**	P	**P**	**00 23 56.6**	**+0.5**
V41A	**Mountainview** baz=175	**21.55**	**355**	P	**P**	**00 23 56.2**	**-0.2**
W36A	**Wetumka** baz=164	**21.55**	**346**	P	**P**	**00 23 54.8**	**-1.6**
X33A	**Lawton** baz=158	**21.62**	**341**	P	**P**	**00 23 55.3**	**-1.9**
V40A	**Witts Springs** baz=173	**21.63**	**354**	P	**P**	**00 23 58.3**	**+1.0**
CPCT	**Cooper Cave** comp=Z,8.3nm,1.2s	**21.71**	**12**	*e*P	**P**	**00 24 00.1**	**+2.0**
W35A	**Tecumseh** baz=162,SNR=6.1	**21.72**	**345**	P	**P**	**00 23 56.9**	**-1.4**
V39A	**Pettigrew** baz=171	**21.76**	**352**	P	**P**	**00 23 57.3**	**-1.5**
X32A	**Elmer** baz=156	**21.77**	**339**	P	**P**	**00 23 58.3**	**-0.5**
WMOK	**Wichita Mounta** baz=157	**21.89**	**340**	P	**P**	**00 23 59.0**	**-1.1**
WMOK	**Wichita Mounta** comp=Z,4.9nm,1.0s	**21.89**	**340**	*e*P	**P**	**00 23 59.5**	**-0.6**
V38A	**Canehill** baz=169	**21.89**	**350**	P	**P**	**00 23 59.2**	**-0.9**
V37A	**Hulbert** baz=167,SNR=12	**22.04**	**349**	P	**P**	**00 24 01.7**	**0.0**
W34A	**Bridge Creek,** baz=160,SNR=8.5	**22.04**	**343**	P	**P**	**00 24 00.8**	**-1.0**
W34A	**Bridge Creek,** comp=Z,56nm,0.9s	**22.04**	**343**	*e*P	**P**	**00 24 03.0**	**+1.3**
U42A	**Revenden** baz=177	**22.05**	**357**	P	**P**	**00 24 01.9**	**+0.1**
TKL	**Tuckaleechee C** comp=Z,5.2nm,1.0s,baz=202,slow=2.8,SNR=4.1	**22.07**	**14**	P	**P**	**00 24 03.7**	**+1.7**
TKL	comp=Z,95nm,19.1s,baz=190,slow=39			LR	LR	00 33 22.6	
W33A	**Caddo, Fort Co** baz=156	**22.17**	**341**	P	**P**	**00 24 02.5**	**-0.6**
U40A	**Yellville** baz=173	**22.18**	**354**	P	**P**	**00 24 01.9**	**-1.2**
TUL1	**Leonard** baz=165	**22.20**	**348**	P	**P**	**00 24 02.5**	**-0.9**
TUL1	**Leonard** comp=Z,10nm,0.9s	**22.20**	**348**	*e*P	**P**	**00 24 03.7**	**+0.4**
HHAR	**Hobbs** comp=Z,13nm,0.9s	**22.23**	**352**	*e*P	**P**	**00 24 05.0**	**+1.2**
U39A	**Green Forest** baz=171,SNR=5.3	**22.27**	**353**	P	**P**	**00 24 04.4**	**+0.2**
V35A	**Meyer Ranch, C** baz=163	**22.29**	**345**	P	**P**	**00 24 04.1**	**-0.3**
MNTX	**Cornudas Mount** baz=138	**22.35**	**324**	P	**P**	**00 24 04.3**	**-0.8**
MNTX	**Cornudas Mount** comp=Z,2.2nm,0.9s	**22.35**	**324**	*e*P	**P**	**00 24 04.8**	**-0.2**
W32A	**Sentinel** baz=156	**22.39**	**340**	P	**P**	**00 24 04.4**	**-1.1**
U38A	**Gravette** baz=169	**22.45**	**351**	P	**P**	**00 24 05.0**	**-1.2**
PBMO	**Poplar Bluff** comp=Z,6.7nm,0.8s	**22.46**	**359**	*e*P	**P**	**00 24 07.0**	**+0.9**
V34A	**Guthrie** baz=161	**22.53**	**344**	P	**P**	**00 24 06.1**	**-0.9**
V34A	**Guthrie** comp=Z,21nm,1.1s	**22.53**	**344**	*e*P	**P**	**00 24 06.3**	**-0.7**
U37A	**Salina** baz=167,SNR=8.2	**22.55**	**349**	P	**P**	**00 24 05.9**	**-1.2**
V33A	**Lossen Ranch,** baz=159,SNR=7.0	**22.74**	**342**	P	**P**	**00 24 07.9**	**-1.2**
T41A	**Mountain View** baz=176	**22.77**	**356**	P	**P**	**00 24 09.5**	**0.0**
MSTX	**Muleshoe** baz=147	**22.78**	**332**	P	**P**	**00 24 08.2**	**-1.6**
U35A	**Pawnee** baz=163	**22.85**	**346**	P	**P**	**00 24 09.3**	**-0.9**
V32A	**Arapaho** baz=157	**22.87**	**341**	P	**P**	**00 24 09.2**	**-1.4**
T39A	**Clever** baz=172	**22.89**	**353**	P	**P**	**00 24 09.1**	**-1.7**
T40A	**Mansfield** baz=174	**22.93**	**355**	P	**P**	**00 24 09.5**	**-1.7**
T38A	**Diamond** baz=170	**23.02**	**351**	P	**P**	**00 24 09.3**	**-2.8**
AMTX	**Amarillo** baz=150	**23.09**	**335**	P	**P**	**00 24 10.3**	**-2.6**
U34A	**Anderson Ranch** baz=162	**23.11**	**344**	P	**P**	**00 24 11.2**	**-1.8**
T37A	**Cheneyville 18** baz=168,SNR=5.3	**23.21**	**350**	P	**P**	**00 24 13.6**	**-0.4**
S43A	**Fulton Ridge,** baz=180	**23.25**	**360**	P	**P**	**00 24 15.1**	**+0.7**
U33A	**Lingo Farm, Me** baz=160	**23.26**	**343**	P	**P**	**00 24 12.8**	**-1.7**
SJG	**San Juan** comp=Z,78nm,18.2s,baz=252,slow=39	**23.27**	**77**	LR	LR	00 34 03.4	
S41A	**Jillco Farms,** baz=176	**23.31**	**357**	P	**P**	**00 24 15.1**	**+0.1**
T35A	**Sooner Cattle** baz=164	**23.32**	**347**	P	**P**	**00 24 13.8**	**-1.4**
T36A	**Boggs Farm, Ca** baz=166	**23.32**	**348**	P	**P**	**00 24 14.4**	**-0.8**
S40A	**Lebanon** baz=174	**23.38**	**355**	P	**P**	**00 24 15.8**	**+0.1**
S44A	**Carbondale** baz=182	**23.38**	**2**	P	**P**	**00 24 15.3**	**-0.4**
U32A	**Winter Ranch,** baz=158	**23.47**	**342**	P	**P**	**00 24 15.3**	**-1.3**
S39A	**Bolivar** baz=172	**23.55**	**353**	P	**P**	**00 24 17.3**	**-0.1**
S38A	**Stockton** baz=171	**23.56**	**352**	P	**P**	**00 24 16.9**	**-0.6**
T34A	**McClaskey Farm** baz=163	**23.57**	**346**	P	**P**	**00 24 16.7**	**-1.0**
S37A	**Fort Scott** baz=169	**23.82**	**351**	P	**P**	**00 24 19.1**	**-0.9**
T33A	**Patterson Ranc** baz=160	**23.90**	**344**	P	**P**	**00 24 19.4**	**-1.4**
S36A	**Lake Cedric, C** baz=167	**23.91**	**349**	P	**P**	**00 24 19.4**	**-1.5**
R44A	**Waltonville** baz=182	**23.94**	**2**	P	**P**	**00 24 20.4**	**-0.7**
S35A	**Otter Creek Ra** baz=165	**24.01**	**348**	P	**P**	**00 24 21.0**	**-0.8**
R40A	**Maddies Statio** baz=175	**24.05**	**356**	P	**P**	**00 24 21.0**	**-1.1**
R38A	**Fenwick Farm,** baz=171	**24.11**	**353**	P	**P**	**00 24 22.4**	**-0.3**
R39A	**Chumby, Stover** baz=173	**24.13**	**354**	P	**P**	**00 24 22.7**	**-0.3**
WCI	**Wyandotte Cave** comp=Z,7.7nm,0.7s	**24.14**	**7**	*e*P	**P**	**00 24 23.6**	**+0.6**
ATAH	**Atahualpa** comp=Z,116nm,21.1s,baz=332,slow=34	**24.17**	**151**	LR	LR	00 32 55.3	
T32A	**Huddler Ranch,** baz=159	**24.19**	**343**	P	**P**	**00 24 22.5**	**-1.0**
S34A	**Willow Spring** baz=163	**24.20**	**346**	P	**P**	**00 24 22.4**	**-1.2**
121A	**Cookes Peak, D** baz=135	**24.36**	**321**	P	**P**	**00 24 24.5**	**-0.9**
Q44A	**Meyer Farm, Va** baz=183	**24.59**	**2**	P	**P**	**00 24 26.6**	**-0.5**
R35A	**Emporia Munici** baz=166	**24.61**	**348**	P	**P**	**00 24 26.0**	**-1.3**
S32A	**Newby Ranch, P** baz=159	**24.67**	**343**	P	**P**	**00 24 25.7**	**-2.2**
R34A	**Isabella, Hill** baz=163	**24.81**	**346**	P	**P**	**00 24 27.6**	**-1.5**
Q38A	**Cooks Store, C** baz=172	**24.84**	**353**	P	**P**	**00 24 28.3**	**-1.1**
R33A	**Olander Ranch,** baz=162	**24.99**	**345**	P	**P**	**00 24 30.7**	**-0.1**
P42A	**Winchester** baz=180	**25.26**	**359**	P	**P**	**00 24 32.3**	**-0.9**
R32A	**Long Quarter,** baz=160	**25.29**	**344**	P	**P**	**00 24 32.2**	**-1.2**
Q34A	**Chapman** baz=164	**25.34**	**347**	P	**P**	**00 24 32.8**	**-1.1**
P36A	**Good Intent, A** baz=169	**25.70**	**351**	P	**P**	**00 24 35.6**	**-1.5**
Q32A	**Meitler Ranch,** baz=161	**25.78**	**345**	P	**P**	**00 24 36.6**	**-1.4**
O40A	**La Belle** baz=176	**25.84**	**357**	P	**P**	**00 24 37.1**	**-1.4**
CBKS	**Cedar Bluff** baz=158	**25.94**	**343**	P	**P**	**00 24 37.5**	**-1.9**
L41A	**Preston** baz=179	**27.75**	**359**	P	**P**	**00 24 53.3**	**-2.3**
L40A	**Anamosa** baz=178	**27.75**	**358**	P	**P**	**00 24 53.8**	**-1.8**
K37A	**Belmond** baz=173	**28.61**	**354**	P	**P**	**00 25 02.4**	**-0.9**
LCMT	**Little Creek M** comp=Z,8.8nm,1.8s	**30.70**	**322**	*e*P	**P**	**00 25 21.5**	**-0.5**
PFO	**Pinyon Flats O** comp=Z,136nm,18.1s,baz=132,slow=40	**30.75**	**313**	LR	LR	00 39 19.4	
PDAR	**Pinedale Array** comp=Z,53nm,18.2s,baz=166,slow=44	**33.03**	**333**	LR	LR	00 43 07.3	
B32A	**Ashes, Strandq** baz=169	**34.49**	**352**	P	**P**	**00 25 54.8**	**-0.1**
ULM	**Lac du Bonnet** comp=Z,0.8nm,0.3s,baz=267,slow=17,SNR=1.9	**36.23**	**354**	P	**P**	**00 26 08.5**	**-1.4**
LPAZ	**La Paz** comp=Z,0.6nm,0.6s,baz=295,slow=9.2,SNR=4.7	**37.26**	**144**	P	**P**	**00 26 21.8**	**+2.1**
EDM	**Edmonton** comp=Z,20nm,1.4s	**43.05**	**340**	*e*P	**P**	**00 27 07.5**	**+0.8**
SCHQ	**Schefferville** comp=Z,56nm,20.9s,baz=164,slow=35	**44.37**	**19**	LR	LR	00 44 59.4	
YKA	**Yellowknife Ar** comp=Z,1.2nm,0.8s,baz=146,slow=7.6,SNR=7.2	**51.25**	**346**	P	**P**	**00 28 09.1**	**-1.4**

YKB5	**Yellowknife Ar**	**51.25**	**346**	*e*P	**P**	**00 28 09.1**	**-1.4**
CPUP	**Villa Florida**	**51.36**	**142**	LR	LR	00 51 32.9	
	comp=Z,54nm,18.3s,baz=274,slow=38						
ILAR	**Eielson Array**	**63.38**	**336**	P	**P**	**00 29 34.9**	**-1.1**
	comp=Z,0.3nm,0.6s,baz=128,slow=5.8,SNR=4.7						
ILB	**Eielson Array**	**63.38**	**336**	*e*P	**P**	**00 29 34.9**	**-1.1**
KEST	**Kesra**	**89.25**	**53**	LR	LR	01 05 04.0	
	comp=Z,213nm,19.5s,baz=315,slow=31						
YAK	**Yakutsk**	**97.83**	**342**	LR	LR	01 21 30.3	
	comp=Z,17nm,21.2s,baz=316,slow=38						
WR1	**Warramunga Arr**	**137.28**	**256**	*e*PKPdf	**PKPdf**	**00 38 31.4**	**+0.1**
WRA	**Warramunga Arr**	**137.28**	**256**	PKP	**PKPdf**	**00 38 31.4**	**+0.1**
	comp=Z,0.3nm,0.4s,baz=95,slow=2.9,SNR=8.4						

*IDC **26** 00:24:53.1±1.4,30.˚40S×179.˚35W,h309km±21km, mb3.0/2, mb1 3.3/3, mb1mx3.1/23, mbtmp3.9/3, Error ellipse: s-maj=49.3km s-min=22.2km az=115.0*

ISC 26 00:24:51.9±1.1,30.˚4S±0.˚1×179.˚4W±0.˚2, h300km, n26, σ2.9 01/31, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.73**	**50**	P		**P**	**Pn**	**00 25 38.4**	**+1.8**
	56nm,0.3s,baz=66,slow=22,SNR=4.1								
RAO				S			**S**	**00 26 08.6**	**-3.7**
	121nm,0.3s,baz=76,slow=18,SNR=4.0								
MXZ	**Matakaoa Point**	**7.41**	**194**	*e*P		N	**Pn**	**00 26 40.7**	**+2.5**
MXZ				*e*S			**S**	**00 28 04.2**	**0.0**
WMGZ	**Waiomatatini S**	**7.64**	**193**	*e*P		N	**Pn**	**00 26 42.8**	**+1.9**
HAZ	**Te Kaha**	**7.72**	**197**	PN		N	**Pn**	**00 26 44.1**	**+2.2**
HAZ				SN			**S**	**00 28 11.5**	**+0.4**
PKGZ	**Pakihiroa**	**7.78**	**195**	PN		N	**Pn**	**00 26 43.9**	**+1.2**
RUGZ	**Raukumara Rang**	**7.94**	**197**	PN		N	**Pn**	**00 26 47.6**	**+2.8**
TWGZ	**Tauwhareparae**	**8.07**	**195**	*e*SN		**S**		**00 28 20.7**	**+1.6**
CNGZ	**Carnagh Statio**	**8.32**	**193**	*e*PN		Pn		00 26 54.9	+5.6
MWZ	**Matawai**	**8.33**	**197**	*e*PN		N	**Pn**	**00 26 49.3**	**-0.2**
URZ	**Urewera**	**8.37**	**199**	P		N	**Pn**	**00 26 51.3**	**+1.4**
	4.3nm,0.3s,baz=271,slow=4.7,SNR=37								
URZ				S			**S**	**00 28 26.8**	**+1.1**
	2.0nm,0.3s,baz=18,slow=20,SNR=7.3								
URZ	**Urewera**	**8.37**	**199**	*e*PN		N	**Pn**	**00 26 49.2**	**-0.7**
URZ				SN			**S**	**00 28 25.4**	**-0.3**
RAGZ	**Rawiri**	**8.51**	**197**	*e*PN		N	**Pn**	**00 26 53.1**	**+1.4**
SNGZ	**Shannon Statio**	**8.80**	**197**	*e*PN		N	**Pn**	**00 26 56.3**	**+1.1**
BKZ	**Black Stump Fm**	**9.39**	**200**	*e*PN		N	**Pn**	**00 27 03.3**	**+0.8**
KAHZ	**Kahuranaki**	**9.87**	**197**	*e*PN		P		**00 27 08.8**	**-1.3**
PNHZ	**Pukenui**	**10.17**	**199**	*e*PN		N	**Pn**	**00 27 13.6**	**+1.6**
TSZ	**Takapari Road**	**10.37**	**200**	PN		N	**Pn**	**00 27 16.0**	**+1.5**
TSZ				SN			**S**	**00 29 08.1**	**-2.9**
HOWZ	**Holdsworth Sta**	**11.28**	**200**	*e*PN		N	**Pn**	**00 27 24.7**	**-0.9**
OGWZ	**Otaki Gorge**	**11.31**	**201**	*e*PN		N	**Pn**	**00 27 25.2**	**-0.7**
KIW	**Kapiti Island**	**11.43**	**202**	*e*PN		N	**Pn**	**00 27 27.7**	**+0.3**
TUWZ	**Tuamarina**	**12.27**	**204**	*e*PN		N	**Pn**	**00 27 38.4**	**+0.9**
THZ	**Tophouse**	**12.94**	**206**	PN		P		**00 27 47.7**	**+1.6**
THZ				SN			**S**	**00 30 05.1**	**-3.8**
MQZ	**McQueen's Vall**	**14.72**	**203**	*e*SN			**S**	**00 30 41.5**	**-5.2**
ASAR	**Alice Springs**	**41.88**	**268**	P		P		**00 32 13.7**	**0.0**
	0.2nm,0.3s,baz=98,slow=7.7,SNR=4.6								
WRA	**Warramunga Arr**	**42.86**	**273**	P		P		**00 32 22.8**	**+1.2**
	0.4nm,0.4s,baz=110,slow=7.9,SNR=14								
FINES	**FINESS Array B**	**144.69**	**339**	PKP		PKPbc		00 43 51.6	-0.2
	2.1nm,0.4s,baz=57,slow=5.1,SNR=21								

*GUC **26** 00:33:46.8±0.6,22.˚39S×68.˚98W,h115km±4km, ML3.9*
*ISCJB **26** 00:33:47.5±0.9,22.˚40S±0.˚05-69.˚0W±0.˚1, h116km±6km, mb3.4/3, Error ellipse: s-maj=19.5km s-min=7.3km az=16.7*
*IDC **26** 00:34:31.7±5.8, 17.˚23S×67.˚05W, h321km±9km, mb2.9/3, mb1 3.2/3, mb1mx2.9/26, mbtmp3.6/3, Error ellipse: s-maj=225.8km s-min=31.0km az=21.0*

ISC 26 00:33:48.7±1.2,22.˚38S±0.˚06×69.˚1W±0.˚1, h112km±8km, n13, σ0.85/21, mb3.7/3, 5C-3D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**0.57**	**236**	⇑*i*P		**P**	**Pn**	**00 34 05.6**	**-0.8**
PB06				*i* S			**Sn**	**00 34 19.9**	**+0.2**
PB06				IAML				00 34 20.5	
	comp=N,5μm,0.1s								
PB09	**IPOC Station P**	**0.61**	**344**	⇓*i*P		**P**	**Pn**	**00 34 06.2**	**-0.5**
PB09				*i* S			**Sn**	**00 34 20.3**	**+0.1**
PB09				IAML				00 34 21.0	
	comp=N,8μm,0.6s								
PB07	**IPOC Station P**	**1.01**	**310**	⇑*i*P		**P**	**Pn**	**00 34 10.2**	**-0.1**
PB07				*i* S			**Sn**	**00 34 27.3**	**+0.8**
PB07				IAML				00 34 27.9	
	comp=E,2μm,0.1s								
PB04	**IPOC Station P**	**1.01**	**272**	⇑*i*P		**P**	**Pn**	**00 34 10.2**	**-0.1**
PB04				*i* S			**Sn**	**00 34 27.6**	**+1.0**
PB01	**IPOC Station P**	**1.39**	**343**	⇑*i*P		**P**	**Pn**	**00 34 13.6**	**-0.8**
PB01				*i* S			**Sn**	**00 34 33.9**	**0.0**
PB10	**IPOC Station P**	**1.78**	**230**	*e*P		**P**	**Pn**	**00 34 17.9**	**-1.1**
PB10				*i* S			**Sn**	**00 34 41.9**	**-0.3**
PB10				IAML				00 34 42.9	
	comp=E,1μm,0.2s								
PB08	**IPOC Station P**	**2.23**	**358**	⇓*i*P		**P**	**Pn**	**00 34 24.5**	**-0.6**
PB08				*i* S			**Sn**	**00 34 53.4**	**+0.6**
HMBC	**Humberstone**	**2.23**	**340**	⇑*i*P		**P**	**Pn**	**00 34 23.3**	**-1.5**
HMBC				*i* S			**Sn**	**00 34 52.4**	**-0.1**
MNMC	**Minye Minye**	**3.27**	**351**	⇓*i*P		**P**	**Pn**	**00 34 36.9**	**-1.7**
LPAZ	**La Paz**	**6.12**	**8**	P		**P**	**Pn**	**00 35 17.1**	**-0.2**
	comp=E,0.4nm,0.3s,baz=176,slow=13,SNR=20								
LPAZ				S			Sn	00 35 53.6	-33
	comp=E,0.4nm,0.3s,baz=185,slow=6.1,SNR=5.2								
PDAR	**Pinedale Array**	**74.80**	**330**	P		**P**		**00 45 17.8**	**+0.9**
	comp=E,0.1nm,0.4s,baz=134,slow=6.4,SNR=2.7								
TORD	**Torodi Ar. Bea**	**77.78**	**70**	P		**P**		**00 45 34.9**	**+0.8**
	comp=E,0.4nm,0.3s,baz=252,slow=5.8,SNR=11								
YKA	**Yellowknife Ar**	**91.97**	**341**	P		**P**		**00 46 43.4**	**-0.8**
	comp=E,0.3nm,0.6s,baz=123,slow=4.5,SNR=3.7								

*IDC **26** 00:33:54.3±1.3,20.˚07S×176.˚94E, h0km, mb4.2/11, mb1 4.4/12, mb1mx4.2/34, mbtmp4.2/12, ML2.7/1, MS3.4/5, Ms1 3.4/5, ms1mx3.0/29, Error ellipse: s-maj=56.2km s-min=19.0km az=151.0*
*NEIC **26** 00:33:54.8±0.4, 20.˚09S×177.˚05E, h10km, mb4.7/12, Error ellipse: s-maj=12.9km s-min=8.3km az=117.0*
*ISCJB **26** 00:33:57.2±0.5,20.˚07S±0.˚06×176.˚99E±0.˚09, h33km, mb4.5/24, MS3.4/2, Error ellipse: s-maj=12.8km s-min=6.7km az=31.4*

ISC 26 00:33:58.8±0.5,20.˚06S±0.˚09×177.˚1E±0.˚1, h35km, n64, σ1.49/55, mb4.6/24, 6C-4D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**2.49**	**22**	*e*Pn		**P**	**Pn**	**00 34 34.6**	**-2.3**
MSVF				*e*Sn			**Sn**	**00 35 06.0**	**-0.1**
DZM	**Mont Dzumac**	**10.12**	**257**	Pn		**P**	**Pn**	**00 36 21.4**	**-0.4**
	0.1nm,0.3s,baz=15,slow=20,SNR=2.4								
DZM				LR			LR	00 39 32.3	
	comp=Z,522nm,21.0s,baz=69,slow=34								
DZM	**Mont Dzumac**	**10.12**	**257**	*e*LR			LR	00 38 37.4	
	570nm,25.1s								
DZM	**Mont Dzumac**	**10.12**	**257**	*e*Pn		**P**	**Pn**	**00 36 24.6**	**+2.8**
AFI	**Afiamalu**	**12.29**	**62**	LR			LR	00 40 48.5	
	comp=Z,177nm,21.0s,baz=212,slow=33								
HNR	**Honiara**	**19.62**	**300**	LR			LR	00 45 52.8	
	comp=Z,32nm,18.6s,baz=201,slow=37								
KHZ	**Kahutara**	**22.49**	**187**	*e*P		**P**		**00 38 52.2**	**-3.0**
	37nm,0.9s								
LTZ	**Lake Taylor**	**23.02**	**189**	*e*P		**P**		**00 39 00.5**	**-0.3**
	23nm,0.8s								
FOZ	**Fox Glacier**	**24.19**	**193**	*e*P		**P**		**00 39 11.5**	**-0.4**
	141nm,1.8s								
EIDS	**Eidsvold**	**24.53**	**253**	*e*P		**P**		**00 39 15.0**	**-0.3**
	5.3nm,0.8s								
PMG	**Port Moresby**	**30.75**	**286**	LR		LR		00 49 46.3	
	comp=Z,75nm,18.1s,baz=44,slow=31								
PPT2	**Papeete2**	**31.64**	**91**	*e*LR		LR		00 48 48.0	
	170nm,26.5s								
STKA	**Stephens Creek**	**33.85**	**242**	P		**P**		**00 40 37.8**	**-0.3**
	4.2nm,0.9s,baz=68,slow=9.8,SNR=6.3								
STKA				LR			LR	00 53 16.4	
	comp=Z,71nm,18.9s,baz=26,slow=34								
BBOO	**Buckleboo**	**38.63**	**242**	*e*P		**P**		**00 41 18.5**	**-0.5**
	14nm,1.0s								
WB2	**Warramunga Arr**	**40.06**	**263**	*e*P		**P**		**00 41 29.8**	**-1.3**
AS01	**Alice Springs**	**40.07**	**257**	*e*P		**P**		**00 41 30.2**	**-1.0**
WR1	**Warramunga Arr**	**40.07**	**263**	*e*P		**P**		**00 41 29.3**	**-1.8**
	35nm,2.0s								
WRA	**Warramunga Arr**	**40.07**	**263**	P		**P**		**00 41 29.3**	**-1.9**
	1.9nm,0.9s,baz=94,slow=9.0,SNR=5.5								
AS31	**Alice Springs**	**40.11**	**257**	*e*P		**P**		**00 41 31.1**	**-0.4**
	3.7nm,0.8s								
ASAR	**Alice Springs**	**40.11**	**257**	P		**P**		**00 41 31.1**	**-0.4**
	10nm,0.8s,baz=86,slow=8.4,SNR=81								
GUMO	**Guam**	**46.06**	**314**	*e*P		**P**		**00 42 17.7**	**-1.8**
	355nm,1.4s								
HON	**Honolulu**	**47.81**	**32**	*e*P		**P**		**00 42 31.1**	**-1.9**
	142nm,0.8s								
FITZ	**Fitzroy Crossi**	**48.49**	**263**	P		**P**		**00 42 38.8**	**+0.3**
	10.0nm,1.1s,baz=121,slow=12								
FITZ	**Fitzroy Crossi**	**48.49**	**263**	*e*P		**P**		**00 42 39.3**	**+0.8**
	17nm,1.3s								
MBWA	**Marble Bar**	**53.42**	**258**	*e*P		**P**		**00 43 15.1**	**-0.5**
	44nm,1.8s								
VNDA	**Vanda**	**57.99**	**184**	*e*P		**P**		**00 43 47.0**	**-0.5**
	13nm,1.9s								
SBA	**Scott Base**	**58.06**	**183**	*e*P		**P**		**00 43 48.7**	**+0.8**
	7.5nm,1.4s								
QSPA	**South Pole Qui**	**70.01**	**180**	*e*P		**P**		**00 45 06.2**	**-0.6**
PETK	**Petropavlovsk-**	**74.77**	**348**	P		**P**		**00 45 36.3**	**+1.3**
	2.3nm,0.7s,baz=144,slow=13,SNR=4.4								
PEA1	**Petropavlovsk-**	**74.77**	**348**	*e*P		**P**		**00 45 36.3**	**+1.3**
KLR	**Kul'dur**	**79.87**	**332**	P		**P**		**00 46 04.6**	**+0.9**
	0.5nm,0.5s,baz=70,slow=6.9,SNR=3.6								
CM31	**Chiang Mai Arr**	**85.62**	**291**	*e*P		**P**		**00 46 35.2**	**+0.9**
CMAR	**Chiang Mai Arr**	**85.62**	**291**	P		**P**		**00 46 35.2**	**+0.9**
	1.1nm,0.3s,baz=126,slow=3.8,SNR=7.9								
ILAR	**Eielson Array**	**88.98**	**15**	P		**P**		**00 46 50.1**	**+0.7**
	0.8nm,0.9s,baz=242,slow=5.0,SNR=3.8								
ILB	**Eielson Array**	**88.98**	**15**	*e*P		**P**		**00 46 50.1**	**+0.7**
LTX	**Lajitas**	**90.76**	**59**	*e*P		**P**		**00 47 01.9**	**+3.2**
TXAR	**Lajitas Array**	**90.76**	**59**	P		**P**		**00 47 01.9**	**+3.2**
	1.3nm,0.9s,baz=224,slow=3.5,SNR=8.7								
PD31	**Pinedale Array**	**91.86**	**45**	*e*P		**P**		**00 47 05.1**	**+1.4**
PDAR	**Pinedale Array**	**91.86**	**45**	P		**P**		**00 47 05.1**	**+1.4**
	0.5nm,0.8s,baz=219,slow=4.0,SNR=3.4								
SONA0	**Songino Array**	**92.42**	**320**	*e*P		**P**		**00 47 06.6**	**+0.6**
	3.2nm,1.2s								
SONM	**Songino Array**	**92.42**	**320**	P		**P**		**00 47 06.6**	**+0.6**
	0.4nm,0.5s,baz=144,slow=5.5,SNR=4.3								
BR101	**Keskin Array S**	**143.06**	**310**	*e*PKPdf		**PKPdf**		**00 53 27.9**	**-1.5**
BRTR	**Keskin Array B**	**143.06**	**310**	PKP		**PKPdf**		**00 53 27.9**	**-1.5**
	0.6nm,0.8s,baz=33,slow=4.7,SNR=3.9								
MMAI	**Mount Meron Ar**	**143.56**	**299**	PKP		PKPbc		00 53 28.4	+0.6
	0.5nm,0.4s,baz=49,slow=10,SNR=3.6								
TLCR		**143.75**	**321**	⇓*i*P		PKPbc		00 53 28.8	+1.0
CFR	**Carcaliu**	**144.15**	**321**	⇑*i*P		PKPbc		00 53 29.6	+0.6
TESR	**Tescani**	**144.21**	**324**	⇑*i*P		PKPbc		00 53 30.0	+0.8
BURAR	**Bucovina Array**	**144.28**	**327**	⇑*i*P		PKPbc		00 53 29.5	0.0
EIL	**Elat**	**144.46**	**293**	PKP		PKPbc		00 53 30.5	-0.1
	5.1nm,0.8s,baz=351,slow=2.2,SNR=7.1								
TLB	**Topalu**	**144.53**	**321**	⇓*i*P		**PKPdf**		**00 53 31.2**	**-0.4**
EKA	**Eskdalemuir Ar**	**144.78**	**0**	PKP		**PKPab**		**00 53 30.7**	**+0.1**
	2.0nm,0.6s,baz=355,slow=2.9,SNR=10								
ARCR	**ARCALIA**	**145.07**	**327**	⇑*i*P		**PKPdf**		**00 53 33.5**	**+1.0**
CRVS	**Cervenica-Dubn**	**145.20**	**331**	*e*		**PKPdf**		**00 53 33.1**	**+0.4**
MLR	**Muntele Rosu**	**145.22**	**323**	PKPbc		**PKPdf**		**00 53 33.3**	**+0.3**
	1.0nm,0.9s,baz=132,slow=5.3,SNR=7.1								
MLR	**Muntele Rosu**	**145.22**	**323**	*e*PKPbc		**PKPdf**		**00 53 33.1**	**+0.1**
DOPR	**Dopca**	**145.24**	**325**	⇓*i*P		**PKPdf**		**00 53 33.6**	**+0.7**
KECS	**Kecovo**	**145.94**	**332**	*e*		**PKPab**		**00 53 36.0**	**+0.8**
ARR	**Arges**	**146.03**	**324**	⇓*i*P		**PKPab**		**00 53 37.5**	**+1.8**
DRGR		**146.10**	**328**	⇑*i*P		**PKPab**		**00 53 35.7**	**-0.2**
CLL	**Collm**	**146.39**	**342**	*e*		**PKPdf**		**00 53 29.0**	**-5.6**
CLL				⇑*i*PKP		**PKPbc**		**00 53 36.1**	**+0.2**
	comp=Z,9.0nm,1.1s								
CLL				*i*				00 53 43.2	
VYHS	**Vyhne**	**146.65**	**333**	*e*		**PKPbc**		**00 53 37.3**	**+0.5**
GERES	**GERESS Array B**	**148.32**	**339**	PKPbc		**PKPbc**		**00 53 41.7**	**+0.3**
	comp=Z,1.0nm,0.8s,baz=48,slow=2.0,SNR=9.3								
ARSA	**Arzberg**	**148.99**	**335**	*i* PKiKP		**PKPbc**		**00 53 43.6**	**+0.5**
	comp=Z,4.2nm,1.6s								
DAVOX	**Davos/Dischmat**	**151.36**	**341**	PKPbc		**PKPbc**		**00 53 49.7**	**+0.6**
	comp=Z,3.0nm,0.8s,baz=311,slow=15,SNR=3.9								

*ISCJB **26** 00:34:54.4±0.9,39.˚19N±0.˚03×72.˚47E±0.˚04, h15km±7km, mb3.8/17, MS3.2/6, Error ellipse: s-maj=5.1km s-min=4.2km az=31.0*
*KRNET **26** 00:34:56.9±0.1,39.˚42N×72.˚49E, h20km, mb3.9*
*IDC **26** 00:34:57.7±4.6,39.˚30N×72.˚54E, h23km±31km, mb3.7/16, mb1 3.9/24, mb1mx3.7/63, mbtmp3.9/24, ML3.4/8, MS3.1/9, Ms1 3.2/9, ms1mx2.8/57, Error ellipse: s-maj=13.4km s-min=11.3km az=168.0*
*NNC **26** 00:35:00.9±1.6,39.˚70N×72.˚47E, h0km, mb4.2, mpv4.0, Error ellipse: s-maj=14.4km s-min=9.8km az=14.0*

ISC 26 00:34:54.8±1.4,39.˚24N±0.˚04×72.˚48E±0.˚04, h5km±9km, n60, σ1.47/75, mb3.9/17, MS3.2/6, 28C-19D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DRK	**Karamyk**	**0.58**	**295**	⇓*i*P		**Pg**		**00 35 06.6**	**+0.6**
DRK				*i* S			**Sg**	**00 35 14.1**	**+0.4**
	baz=277								
OHH	**Osh**	**1.31**	**10**	⇓*i*P		**Pn**		**00 35 17.3**	**-2.5**
OHH	baz=11			*i* S			**Sb**	**00 35 33.1**	**-3.9**
BTK	**Batken**	**1.52**	**303**	⇓*i*P		**Pn**		**00 35 21.9**	**-0.9**
BTK	baz=297			*i* S			**Sn**	**00 35 42.3**	**-0.7**
	baz=297								
ARSB	**Arslanbob**	**2.12**	**10**	⇑*i*P		**Pn**		**00 35 31.7**	**+0.7**
ARSB	baz=11			*i* S			**Sn**	**00 35 56.7**	**-1.1**
	baz=11								
ARK	**Arkit**	**2.59**	**351**	⇓*i*P		**Pn**		**00 35 37.5**	**+0.1**
ARK	baz=351			*i* S			**Sn**	**00 36 07.3**	**-2.0**
	baz=351								
ARLS	**Aral**	**2.97**	**28**	⇑*i*P		**Pn**		**00 35 43.7**	**+1.0**
ARLS	baz=29			*i* S			**Sn**	**00 36 17.8**	**-1.0**
	baz=29								
AML	**Almayashu**	**3.03**	**17**	⇑*i*P		**Pn**		**00 35 44.5**	**+0.7**
AML	baz=18			*i* S			**Sn**	**00 36 22.3**	**+1.6**
	baz=18								
MNAS	**Manas**	**3.25**	**0**	⇑*i*P		**Pn**		**00 35 46.8**	**+0.3**
MNAS	baz=0.0			*i* S			**Sn**	**00 36 23.7**	**-1.9**
	baz=0.0								
MNAS	**Manas**	**3.25**	**0**	⇑Pn		**Pn**		**00 35 47.6**	**+1.1**
MNAS	57nm,0.6s			⇓Lg		Lg		00 36 28.5	
	222nm,0.6s								
UCH	**Uchtor**	**3.36**	**27**	⇑*i*P		**Pn**		**00 35 49.1**	**+0.7**
UCH	baz=28			*i* S			**Sn**	**00 36 30.8**	**+1.9**
	baz=28								
KZA	**Kyzart**	**3.53**	**36**	⇑*i*P		**Pn**		**00 35 50.9**	**+0.2**
KZA	baz=37			*i* S			**Sn**	**00 36 34.0**	**+1.0**
	baz=37								
EKS2	**Erkin-Say**	**3.56**	**16**	⇓*i*P		**Pn**		**00 35 51.4**	**+0.6**
EKS2	baz=16			*i* S			**Sn**	**00 36 35.1**	**+1.9**
	baz=16								
AAK	**Ala-Archa**	**3.72**	**24**	Pn		**Pn**		**00 35 55.3**	**+2.2**
	11nm,0.3s,baz=190,slow=6.8,SNR=30								
AAK				Sn			**Sn**	**00 36 40.8**	**+3.5**
	9.2nm,0.3s,baz=155,slow=13,SNR=11								
AAK	**Ala-Archa**	**3.72**	**24**	⇑*i*P		**Pn**		**00 35 53.5**	**+0.5**
AAK	baz=25			*i* S			**Sn**	**00 36 38.2**	**+0.9**
	baz=25								
AAK	**Ala-Archa**	**3.72**	**24**	⇓Pn		**Pn**		**00 35 55.4**	**+2.4**
AAK	21nm,0.5s			⇑Pg		**Pb**		**00 36 01.3**	**+0.2**
	70nm,0.6s								
AAK				⇑Lg		Lg		00 36 45.9	
	127nm,0.6s								
KBK	**Karagaybulak**	**3.89**	**28**	⇑*i*P		**Pn**		**00 35 55.7**	**+0.3**
KBK	baz=29			*i* S			**Sn**	**00 36 42.9**	**+1.3**
	baz=29								
CHMS	**Chumysh**	**4.13**	**24**	⇑*i*P		**Pn**		**00 35 59.2**	**+0.7**
CHMS	baz=25			*i* S			**Sn**	**00 36 48.1**	**+0.9**
	baz=25								
KK31	**Karatay Array**	**4.14**	**340**	⇑Pn		**Pn**		**00 35 59.5**	**+0.9**
	10nm,0.3s,baz=148,slow=12,SNR=267								
KK31				⇓Sn			**Sn**	**00 36 45.2**	**-2.2**
	87nm,0.5s,baz=146,slow=23,SNR=5.3								
TKM2	**Tokmak 2**	**4.37**	**32**	⇑Pn		**Pn**		**00 36 03.9**	**+2.0**
	6.3nm,0.5s								
TKM2				⇑Pg		**Pb**		**00 36 13.6**	**+1.5**
	19nm,0.5s								
TKM2				⇓Lg		Lg		00 37 06.9	
	107nm,0.8s								
PDGK	**Podgornoye**	**6.67**	**50**	⇓Pn		**Pn**		**00 36 34.6**	**+1.2**
	13nm,0.6s								
PDGK				⇑Lg		Lg		00 38 21.7	
	37nm,0.8s								
THN	**Thein Dam**	**7.28**	**158**	*e*P		Pn		00 36 47.0	+5.3
THN				*e*S			**Sg**	**00 38 46.8**	**-1.6**
OTUK	**Ortayu**	**9.01**	**359**	⇑Pn		**Pn**		**00 37 05.5**	**+0.1**
	3.4nm,0.7s								
OTUK				⇑Lg		Lg		00 39 32.1	
	38nm,0.9s								
MK31	**Makanchi Array**	**10.41**	**40**	Pn		**Pn**		**00 37 26.6**	**+1.9**
	5.0nm,0.9s,baz=227,slow=12,SNR=19								
MK31				⇓Lg		Lg		00 40 21.7	
	7.2nm,0.9s								
MKAR	**Makanchi Array**	**10.41**	**40**	Pn		**Pn**		**00 37 26.6**	**+1.9**
	0.2nm,0.3s,baz=228,slow=13,SNR=15								
MKAR				Lg			Lg	00 40 18.2	
	0.2nm,0.3s,baz=220,slow=24,SNR=4.0								
GEYT	**Alibeck**	**11.32**	**268**	Pn		**Pn**		**00 37 38.6**	**+1.4**
	0.5nm,0.3s,baz=91,slow=7.8,SNR=4.5								
GEYT				Sn			**Sn**	**00 39 45.4**	**+1.3**
	0.6nm,0.3s,baz=94,slow=20,SNR=3.0								
KURBB	**Kurchatov Arra**	**12.16**	**19**	Pn		**Pn**		**00 37 46.8**	**-1.7**
	0.1nm,0.3s,baz=214,slow=13,SNR=11								
KURBB				Lg			Lg	00 41 11.6	
	0.1nm,0.3s,baz=208,slow=28,SNR=4.6								
KURBB	**Kurchatov Arra**	**12.16**	**19**	⇓Pn		**Pn**		**00 37 47.9**	**-0.6**
	2.0nm,0.5s								
KURBB				⇓Lg		Lg		00 41 15.9	
	39nm,1.1s								
WMQ	**Urumqi**	**12.28**	**63**	*e*P		Pn		00 37 59.3	+9.0
AB31	**Akbulak array**	**13.44**	**322**	⇑Pn		**Pn**		**00 38 03.1**	**-2.9**
	2.4nm,0.5s								
BVA0	**Borovoye Array**	**13.87**	**355**	Pn		**Pn**		**00 38 12.1**	**+0.3**
	0.2nm,1.0s,baz=154,slow=9.0,SNR=11								
BVAR	**Borovoye Array**	**13.87**	**355**	Pn		**Pn**		**00 38 08.7**	**-3.2**
	0.3nm,0.3s,baz=162,slow=12,SNR=7.3								
BVAR				Lg			Lg	00 42 10.1	
	0.2nm,0.3s,baz=177,slow=29,SNR=3.4								
PYUN	**Piuthan**	**14.13**	**139**	*e*P		**Pn**		**00 38 14.4**	**-1.3**
	12nm,0.4s								
KOLN	**Koldanda**	**14.71**	**138**	*e*P		**Pn**		**00 38 21.8**	**-1.9**
	7.2nm,0.4s								
GKN	**Gorkha**	**15.08**	**134**	*e*P		**Pn**		**00 38 29.0**	**+0.3**
	16nm,0.5s								
AKTO	**Aktyubinsk**	**15.16**	**322**	Pn		**Pn**		**00 38 27.9**	**-1.5**
	0.4nm,0.3s,baz=126,slow=15,SNR=10								
AKTO				Sn			Sn	00 41 06.0	-12
	0.2nm,0.3s,baz=28,slow=19,SNR=4.1								
AKTO				LR			LR	00 44 45.9	
	comp=Z,68nm,18.3s,baz=146,slow=39								
AKTO	**Aktyubinsk**	**15.16**	**322**	⇓Pn		**Pn**		**00 38 30.9**	**+1.5**
	26nm,1.1s								
KKN	**Kakani**	**15.61**	**133**	*e*P		**Pn**		**00 38

PDO S **Sb** 00 52 54.2 -0.4
PDO Prodromos 0.26 194 P **Pb** 00 52 50.4 +0.1
PDO AML AML 00 52 55.8
PDO S **Sb** 00 52 56.0 +1.4
PDO AML AML 00 52 57.4
PVO Paravola 0.31 138 P **Pb** 00 52 50.7 -0.3
PVO S **Sb** 00 52 55.2 -0.7
PVO Paravola 0.31 138 P **Pb** 00 52 50.8 -0.3
PVO S **Sb** 00 52 56.0 +0.1
PVO Paravola 0.31 138 P **Pb** 00 52 50.8 -0.3
PVO S **Sb** 00 52 57.5 +1.6
DSL Palaion Diasel 0.31 335 P **Pb** 00 52 51.3 +0.1
DSL S **Sb** 00 52 56.0 -0.1
DSL Palaion Diasel 0.31 335 P **Pb** 00 52 51.3 +0.1
DSL S **Sb** 00 52 56.0 -0.1
DSL Palaion Diasel 0.31 335 P **Pb** 00 52 51.3 +0.1
DSL AML AML 00 52 57.4
DSL AML AML 00 52 57.5
DSL S **Sn** 00 52 58.0 -1.1
EVR Evrytania 0.43 81 P **Pb** 00 52 52.8 -0.3
EVR S **Sb** 00 52 58.6 -0.7
EVR Evrytania 0.43 81 P **Pb** 00 52 52.9 -0.2
EVR S **Sb** 00 52 58.6 -0.7
EVR Evrytania 0.43 81 P **Pb** 00 52 53.1 0.0
LKD2 S **Sb** 00 53 00.8 +0.3
LKD2 Lefkada island 0.48 263 P **Pb** 00 52 53.4 -0.4
LKD2 S **Sb** 00 53 00.8 +0.3
LKD2 Lefkada island 0.48 263 P **Pb** 00 52 53.4 -0.4
LKD2 S **Sb** 00 53 01.2 +0.7
LKD2 AML AML 00 53 07.5
comp=N,33493µm,0.4s
LKD2 AML AML 00 53 07.7
comp=E,38074µm,0.4s
ANX Ano Chora 0.57 116 P **Pb** 00 52 54.8 -0.7
ANX S **Sb** 00 53 03.8 +0.5
ANX Ano Chora 0.57 116 P **Pb** 00 52 55.5 0.0
ANX S **Sb** 00 53 03.8 +0.5
ANX Ano Chora 0.57 116 P **Pb** 00 52 55.5 0.0
VVK Vomvokou 0.60 135 P **Pb** 00 52 55.1 -0.9
VVK S **Sn** 00 53 05.6 -0.6
AXS Araxos 0.66 172 P **Pb** 00 52 56.2 -0.7
AXS Araxos 0.66 172 P **Pb** 00 52 56.2 -0.7
AXS S **Sb** 00 53 06.1 +0.6
AXS Araxos 0.66 172 P **Pb** 00 52 56.1 -0.7
AXS S **Sn** 00 52 57.7 -0.2
UPR University Cam 0.70 144 P **Pb** 00 52 57.7 +0.2
UPR S **Sb** 00 53 07.4 +0.7
UPR University Cam 0.70 144 P **Pb** 00 52 57.8 +0.2
UPR S **Sb** 00 53 07.4 +0.7
UPR University Cam 0.70 144 P **Pb** 00 52 57.8 +0.3
SERG Sergoula 0.76 125 P **Pb** 00 52 58.4 -0.2
SERG Sergoula 0.76 125 P **Pb** 00 52 58.4 -0.2
SERG S **Sb** 00 53 09.2 +0.7
TRIZ Trizonia 0.80 127 P **Pb** 00 52 59.2 0.0
RLS Riolos of Patr 0.81 169 P **Pb** 00 52 58.6 -0.7
RLS S **Sn** 00 53 11.3 +0.2
RLS Riolos of Patr 0.81 169 P **Pb** 00 52 58.7 -0.6
RLS S **Sn** 00 53 11.3 +0.2
KALE Kalithea 0.82 123 P **Pb** 00 52 59.4 -0.3
KALE Kalithea 0.82 123 P **Pb** 00 52 59.8 +0.1
KALE Kalithea 0.82 123 P **Pb** 00 52 59.8 +0.1
LAKA Lakka 0.83 137 P **Pb** 00 52 58.6 -1.1
LAKA Lakka 0.83 137 P **Pb** 00 52 59.2 -0.5
LAKA Lakka 0.83 137 P **Pb** 00 52 59.2 -0.5
KFL Anninata 0.83 207 P **Pb** 00 52 59.3 -0.4
KFL S **Sn** 00 53 11.4 -0.2
KFL Anninata 0.83 207 P **Pb** 00 52 59.5 -0.2
KFL S **Sn** 00 53 11.4 -0.2
KFL Anninata 0.83 207 P **Pb** 00 52 59.5 -0.2
AGG Agios Georgios 0.85 78 P **Pb** 00 53 00.2 +0.1
AGG S **Sn** 00 53 12.3 0.0
AGG Agios Georgios 0.85 78 P **Pn** 00 53 00.5 0.0
AGG S **Sn** 00 53 12.3 0.0
AGG Agios Georgios 0.85 78 P **Pn** 00 53 00.5 0.0
AGG AML AML 00 53 14.6
comp=N,13610µm,0.5s
AGG AML AML 00 53 24.2
comp=E,12408µm,0.9s
VLS Valsamata 0.85 219 P **Pb** 00 52 59.1 -1.1
VLS S **Sn** 00 53 12.0 -0.3
VLS Valsamata 0.85 219 P **Pb** 00 52 59.1 -1.1
VLS S **Sn** 00 53 12.1 -0.3
JAN Janina 0.87 338 P **Pn** 00 53 01.0 +0.2
JAN S **Sn** 00 53 12.7 -0.1
JAN Janina 0.87 338 P **Pn** 00 53 01.0 +0.2
JAN S **Sn** 00 53 12.7 -0.1
THL Klokotos Trika 0.92 39 P **Pb** 00 53 01.5 +0.1
THL S **Sn** 00 53 15.3 +1.3
THL Klokotos Trika 0.92 39 P **Pb** 00 53 01.5 +0.1
THL S **Sn** 00 53 14.4 +0.4
VTN Vitineika 0.93 184 P **Pb** 00 53 01.2 -0.3
VTN Vitineika 0.93 184 P **Pb** 00 53 01.2 -0.3
DRO Drossia 0.96 158 P **Pb** 00 53 01.0 -1.0
DRO S **Sn** 00 53 17.0 +2.9
DRO Drossia 0.96 158 P **Pb** 00 53 03.3 -1.7
IGT Igoumenitsa 1.00 314 P **Pb** 00 53 03.4 +0.8
IGT S **Sn** 00 53 18.3 +2.5
IGT Igoumenitsa 1.00 314 P **Pb** 00 53 02.8 +0.2
IGT S **Sn** 00 53 18.3 +2.5
IGT Igoumenitsa 1.00 314 P **Pb** 00 53 03.3 +0.8
IGT AML AML 00 53 24.3
comp=E,7259µm,0.6s
IGT AML AML 00 53 29.0
comp=N,4824µm,0.5s
KLV Kalavryta, Ach 1.06 139 P **Pn** 00 53 03.0 -0.5
KLV Kalavryta, Ach 1.06 139 P **Pn** 00 53 03.0 -0.5
KLV Kalavryta, Ach 1.06 139 P **Pn** 00 53 02.9 -0.5
DSF Desfina 1.08 113 P **Pn** 00 53 03.4 -0.4
DSF Desfina 1.08 113 P **Pn** 00 53 03.4 -0.4
DSF Desfina 1.08 113 P **Pn** 00 53 03.3 -0.4
SGD Sagiada 1.11 314 P **Pb** 00 53 05.1 +0.7
SGD Sagiada 1.11 314 P **Pb** 00 53 05.1 +0.7
SGD Sagiada 1.11 314 P **Pb** 00 53 05.2 +0.7
KPRO Kipourio 1.11 4 P **Pb** 00 53 04.9 +0.3
KPRO Kipourio 1.11 4 P **Pb** 00 53 04.9 +0.3
KPRO Kipourio 1.11 4 P **Pb** 00 53 05.3 +0.7
KPRO AML AML 00 53 26.5
comp=E,9289µm,0.4s
KPRO AML AML 00 53 26.5
comp=N,10990µm,0.8s
ZKS Zakynthos 1.21 198 P **Pb** 00 53 06.3 +0.1
ZKS Zakynthos 1.21 198 P **Pb** 00 53 06.3 +0.1
ZKS S **Sb** 00 53 23.7 +2.3
ZKS Zakynthos 1.21 198 P **Pn** 00 53 04.0 -1.5
PENT Pentalofos 1.35 356 P **Pb** 00 53 10.0 +1.3
PENT Pentalofos 1.35 356 P **Pb** 00 53 09.8 +1.1
PENT Pentalofos 1.35 356 P **Pb** 00 53 09.8 +1.1
THAL Thalero 1.36 126 P **Pb** 00 53 09.1 +0.2
THAL Thalero 1.36 126 P **Pb** 00 53 09.1 +0.2
THAL Thalero 1.36 126 P **Pb** 00 53 10.1 +1.2
LKR Lokris 1.37 98 P **Pb** 00 53 08.8 -0.2
LKR Lokris 1.37 98 P **Pb** 00 53 08.8 -0.2
LKR Lokris 1.37 98 P **Pb** 00 53 08.7 -0.2
ATAL Atalanti 1.38 96 P **Pb** 00 53 09.2 0.0
ATAL Atalanti 1.38 96 P **Pb** 00 53 09.4 +0.2
ATAL Atalanti 1.38 96 P **Pb** 00 53 09.4 +0.2
PROD Prodromos 1.41 114 P **Pb** 00 53 11.1 +1.4
PROD Prodromos 1.41 114 P **Pb** 00 53 11.1 +1.4
FYTO Fytoko, Volos 1.42 66 P **Pb** 00 53 09.9 +0.1
FYTO Fytoko, Volos 1.42 66 P **Pb** 00 53 09.9 +0.1
FYTO Fytoko, Volos 1.42 66 P **Pb** 00 53 10.1 +0.3
KEK Kerkira 1.43 308 P **Pb** 00 53 10.2 +0.2
KEK Kerkira 1.43 308 P **Pb** 00 53 10.1 +0.1
KEK S **Sb** 00 53 28.4 +0.7
KZN Kozani 1.51 15 P **Pb** 00 53 11.7 +0.3
KZN Kozani 1.51 15 P **Pb** 00 53 11.7 +0.3
TRIP Tripoli 1.54 149 P **Pb** 00 53 13.3 +1.4
TRIP Tripoli 1.54 149 P **Pb** 00 53 13.3 +1.4
LIT Litokhoron 1.57 37 P **Pb** 00 53 12.3 -0.1
LIT Litokhoron 1.57 37 P **Pb** 00 53 11.8 -0.6
LIT Litokhoron 1.57 37 P **Pb** 00 53 11.8 -0.6
LTK Loutraki 1.57 121 P **Pb** 00 53 12.7 +0.3
LTK Loutraki 1.57 121 P **Pb** 00 53 12.7 +0.3
LTK Loutraki 1.57 121 P **Pb** 00 53 13.8 +1.4
XOR Xorichti 1.59 70 P **Pb** 00 53 11.9 -0.8
XOR Xorichti 1.59 70 P **Pb** 00 53 11.9 -0.8
XOR Xorichti 1.59 70 P **Pb** 00 53 11.9 -0.8
NEO Neokhori 1.59 73 P **Pb** 00 53 12.9 +0.1
NEO Neokhori 1.59 73 P **Pb** 00 53 12.9 +0.1

VIL2 Platees 1.69 111 P **Pb** 00 53 15.0 +0.5
VLX Vlachokerasia 1.72 149 P **Pb** 00 53 15.3 +0.3
VLX Vlachokerasia 1.72 149 P **Pb** 00 53 14.3 -0.7
VLX Vlachokerasia 1.72 149 P **Pb** 00 53 14.3 -0.7
SKIA Skiathos 1.75 79 P **Pb** 00 53 14.4 -0.9
SKIA Skiathos 1.75 79 P **Pb** 00 53 14.4 -0.9
ITM Ithomi 1.75 162 P **Pb** 00 53 15.4 0.0
ITM Ithomi 1.75 162 P **Pb** 00 53 15.4 0.0
ITM Ithomi 1.75 162 P **Pb** 00 53 17.2 +1.9
VILL Villia 1.75 112 P **Pb** 00 53 14.8 -0.6
VILL Villia 1.75 112 P **Pb** 00 53 14.8 -0.6
FNA Florina 1.94 3 P **Pb** 00 53 18.7 +0.1
FNA Florina 1.94 3 P **Pb** 00 53 18.7 +0.1
FNA Florina 1.94 3 P **Pb** 00 53 18.8 +0.8
PYL PYLOS 1.99 169 P **Pb** 00 53 18.7 -0.8
PYL PYLOS 1.99 169 P **Pb** 00 53 18.7 -0.8
PYL PYLOS 1.99 169 P **Pb** 00 53 20.1 +0.7
DID Didima 2.05 130 P **Pb** 00 53 19.5 -1.1
DID Didima 2.05 130 P **Pb** 00 53 19.5 -1.1
DID Didima 2.05 130 P **Pb** 00 53 19.5 -1.1
AOS Alonnisos 2.06 80 P **Pn** 00 53 17.4 +0.2
AOS Alonnisos 2.06 80 P **Pn** 00 53 17.4 +0.2
ATH Athens Observa 2.12 114 P **Pn** 00 53 19.6 +1.7
EREA Eretria 2.13 101 P **Pn** 00 53 19.6 +1.4
EREA Eretria 2.13 101 P **Pn** 00 53 19.6 +1.4
EREA Eretria 2.13 101 P **Pn** 00 53 20.2 +2.0
PAIG Paliouri 2.16 59 P **Pn** 00 53 19.7 +1.2
PAIG Paliouri 2.16 59 P **Pn** 00 53 19.7 +1.2
PAIG Paliouri 2.16 59 P **Pn** 00 53 18.6 +0.1
ATHU Athens Univers 2.17 113 P **Pb** 00 53 20.8 -1.8
ATHU Athens Univers 2.17 113 P **Pb** 00 53 20.8 -1.8
PTL Penteli 2.19 111 P **Pb** 00 53 20.9 +1.9
PTL Penteli 2.19 111 P **Pb** 00 53 20.9 +1.9
PTL Penteli 2.19 111 P **Pb** 00 53 21.6 -1.4
THE Thessaloniki 2.21 36 P **Pn** 00 53 20.9 +1.7
THE Thessaloniki 2.21 36 P **Pn** 00 53 20.9 +1.7
VLY Voula,Athens 2.22 116 P **Pn** 00 53 21.4 +2.0
VLY Voula,Athens 2.22 116 P **Pn** 00 53 21.4 +2.0
VLY Voula,Athens 2.22 116 P **Pb** 00 53 22.4 -1.1
HORT Hortiatis 2.25 38 P **Pn** 00 53 21.2 +1.4
HORT Hortiatis 2.25 38 P **Pn** 00 53 21.2 +1.4
HORT Hortiatis 2.25 38 P **Pn** 00 53 20.4 +0.5
PLG Polygyros 2.27 47 P **Pn** 00 53 21.2 +1.1
PLG Polygyros 2.27 47 P **Pn** 00 53 21.2 +1.1
PLG Polygyros 2.27 47 P **Pn** 00 53 20.6 +0.4
OHR Ohrid 2.29 351 *i* Pn **Pb** 00 53 23.9 -0.7
OHR Ohrid 2.29 351 *i* Pn **Pb** 00 53 23.9 -0.7
VLI Veliai 2.51 148 P **Pb** 00 53 26.2 -2.1
VLI Veliai 2.51 148 P **Pb** 00 53 26.2 -2.1
SOH Sokhos 2.54 39 P **Pn** 00 53 26.5 +2.7
SOH Sokhos 2.54 39 P **Pn** 00 53 26.6 +2.7
OUR Ouranopolis 2.57 54 P **Pn** 00 53 25.5 +1.3
OUR Ouranopolis 2.57 54 P **Pn** 00 53 25.5 +1.3
OUR Ouranopolis 2.57 54 P **Pn** 00 53 25.8 +1.6
VAY Valandovo 2.67 22 *i* Pn **Pn** 00 53 28.3 +2.8
VAY *eSn* **Sb** 00 54 00.9 -2.4
VAY Valandovo 2.67 22 *i* Pn **Pn** 00 53 28.2 +2.8
VAY *eSn* **Sb** 00 54 00.9 -2.4
TIR Tirane 2.72 337 ⇑*i*P **Pn** 00 53 28.7 +2.5
TIR Tirane 2.72 337 ⇑*i*P **Pn** 00 53 28.7 +2.5
SRS Serrai 2.89 38 P **Pn** 00 53 30.2 +1.7
SRS Serrai 2.89 38 P **Pn** 00 53 30.2 +1.7
SRS Serrai 2.89 38 P **Pn** 00 53 30.3 +1.7
SKO Skopje 3.12 2 *i* Pn **Pn** 00 53 34.5 +2.7
SKO Skopje 3.12 2 *i* Pn **Pn** 00 53 34.5 +2.7
LIA Limnos Island 3.21 70 P **Pn** 00 53 33.7 +0.7
ULC Ulcinj 3.47 334 ⇓*i*Pn **Pn** 00 53 38.1 +1.5
ULC *eSn* **Sn** 00 54 17.7 +0.7
ULC Ulcinj 3.47 334 ⇓*i*Pn **Pn** 00 53 38.1 +1.5
ULC *eSn* **Sn** 00 54 17.7 +0.7
TAR1 Taranto 3.50 300 *e*Pn **Pn** 00 53 38.0 +1.1
DRME Dracevica, Mon 3.69 335 ⇑*i*Pn **Pn** 00 53 40.9 +1.3
DRME *eSn* **Sn** 00 54 22.0 -0.4
DRME Dracevica, Mon 3.69 335 ⇑*i*Pn **Pn** 00 53 40.9 +1.3
DRME *eSn* **Sn** 00 54 22.0 -0.4
CHOS Chios island 3.78 96 P **Pn** 00 53 42.6 +1.7
CHOS Chios island 3.78 96 P **Pn** 00 53 42.6 +1.7
APE Apeiranthos 3.81 116 ⇑*i*P **Pn** 00 53 44.1 +2.8
APE Apeiranthos 3.81 116 ⇑*i*P **Pn** 00 53 44.1 +2.8
PVY Plav 3.87 346 *e*Pn **Pn** 00 53 43.9 +1.7
PVY *eSn* **Sn** 00 54 26.6 -0.4
PVY Plav 3.87 346 *e*Pn **Pn** 00 53 43.9 +1.7
PVY *eSn* **Sn** 00 54 26.6 -0.4
PDG Podgorica 3.89 338 ⇓*i*P **Pn** 00 53 43.1 +0.8
PDG Podgorica 3.89 338 ⇓*i*P **Pn** 00 53 43.1 +0.8
PDG *eSn* **Sn** 00 54 26.4 -0.8
TTG Podgorica 3.89 338 ⇑*i*Pn **Pn** 00 53 43.0 +0.8
TTG *eSn* **Sn** 00 54 26.4 -0.8
BUM Brajici-Budva 3.89 333 ⇑*i*Pn **Pn** 00 53 43.9 +1.5
BUM *eSn* **Sn** 00 54 26.9 -0.5
BUM Brajici-Budva 3.89 333 ⇑*i*Pn **Pn** 00 53 43.9 +1.5
BUM *eSn* **Sn** 00 54 26.9 -0.5
BARS Barje 3.99 6 ⇑*i*Pn **Pn** 00 53 45.9 +2.3
IMMV Iera Moni Meta 4.02 146 P **Pn** 00 53 48.1 +4.0
IMMV Iera Moni Meta 4.02 146 P **Pn** 00 53 48.1 +4.0
SG1 Sgolgore (BA) 4.05 301 *e*Pn **Pn** 00 53 45.5 +0.9
BAI Bari 4.05 305 *e*Pn **Pn** 00 53 45.5 +1.0
CEME Cevo 4.10 335 ⇓*i*Pn **Pn** 00 53 45.9 +0.6
CEME *eSn* **Sn** 00 54 32.0 -0.6
CEME Cevo 4.10 335 ⇓*i*Pn **Pn** 00 53 45.9 +0.6
CEME *eSn* **Sn** 00 54 32.0 -0.6
BEY Berane 4.15 346 ⇓*i*Pn **Pn** 00 53 48.2 +2.2
BEY *eSn* **Sn** 00 54 37.1 +0.3
IVA Berane 4.15 346 ⇓*i*Pn **Pn** 00 53 48.2 +2.2
IVA *eSn* **Sn** 00 54 34.1 +0.3
HCY Herceg Novi 4.17 331 ⇑*i*Pn **Pn** 00 53 46.6 +0.5
HCY *eSn* **Sn** 00 54 33.9 -0.2
HCY Herceg Novi 4.17 331 ⇑*i*Pn **Pn** 00 53 46.6 +0.5
HCY *eSn* **Sn** 00 54 33.9 -0.2
NKME Niksic 4.29 337 ⇓*i*Pn **Pn** 00 53 49.4 +1.6
NKME *eSn* **Sn** 00 54 37.0 -0.1
NKME Niksic 4.29 337 ⇓*i*Pn **Pn** 00 53 49.4 +1.6
NKME *eSn* **Sn** 00 54 37.0 -0.1
NKY Niksic 4.32 337 ⇓*i*Pn **Pn** 00 53 48.8 +0.5
NKY *eSn* **Sn** 00 54 37.7 -0.3
NKY Niksic 4.32 337 ⇓*i*Pn **Pn** 00 53 48.8 +0.5
NKY *eSn* **Sn** 00 54 37.7 -0.3
CDT Castel del Mon 4.44 302 *e*Pn **Pn** 00 53 50.9 +1.1
TREB Trebinje 4.45 331 ⇑*i*Pn **Pn** 00 53 50.3 +0.3
BRY Bratogost 4.55 334 *e*Pn **Pn** 00 53 51.9 +0.5
BRY *eSn* **Sn** 00 54 42.2 -1.4
BRY Bratogost 4.55 334 *e*Pn **Pn** 00 53 51.9 +0.5
BRY *eSn* **Sn** 00 54 42.2 -1.4
IDI Anoyia 4.59 140 Pn **Pn** 00 53 53.2 +1.3
comp=N,1.7nm,0.3s,baz=231,slow=6.2,SNR=17
IDI Sn **Sn** 00 54 47.1 +2.5
comp=N,2.2nm,0.3s,baz=264,slow=22,SNR=4.0
PLE Pljevlja 4.70 343 ⇓*i*Pn **Pn** 00 53 54.4 +0.9
PLE *eSn* **Sn** 00 54 46.9 -0.4
PLE Pljevlja 4.70 343 ⇓*i*Pn **Pn** 00 53 54.4 +0.9
PLE *eSn* **Sn** 00 54 46.9 -0.4
UPM Unac-Piva 4.70 338 ⇓*i*Pn **Pn** 00 53 55.5 +1.9
UPM *eSn* **Sn** 00 54 46.7 -0.8
UPM Unac-Piva 4.70 338 ⇓*i*Pn **Pn** 00 53 55.5 +1.9
UPM *eSn* **Sn** 00 54 46.7 -0.8
IVAS Ivanjica 4.80 350 ⇑*i*Pn **Pn** 00 53 56.1 +1.3
MS1 Monte Sant'Ang 4.97 307 *e*Pn **Pn** 00 53 57.9 +0.7
BOLS Boljevac 5.00 6 ⇑*i*Pn **Pn** 00 53 58.2 +0.6
ZAGS Zajecar 5.01 8 ⇑*i*Pn **Pn** 00 53 59.1 +1.4
GRUS Gruza 5.05 355 ⇑*i*Pn **Pn** 00 53 59.7 +1.4
BBLS Lazići 5.21 345 ⇑*i*Pn **Pn** 00 54 01.2 +0.8
DIVS Divibare 5.33 350 ⇑*i*Pn **Pn** 00 54 03.1 +0.9
TRUS Trudelj 5.41 353 ⇓*i*Pn **Pn** 00 54 04.2 +1.0
VAE Valguarnera 5.57 258 Pn **Pn** 00 54 07.4 +1.9
comp=N,2.2nm,0.3s,baz=170,slow=10.0,SNR=16
VAE Sn **Sn** 00 55 10.3 +1.6
comp=N,5.5nm,0.3s,baz=342,slow=20,SNR=4.0
TEKS Tekeris 5.84 348 *e*Pn **Pn** 00 54 09.9 +0.8
MDVR Moldovita 5.94 3 ⇑*i*P **Pn** 00 54 11.8 +1.3
MDVR Moldovita 5.94 3 ⇑*i*P **Pn** 00 54 11.8 +1.3
DOB Doboj 6.34 339 *e*Pn **Pn** 00 54 15.6 -0.3
FGSL Fruska Gora 6.40 351 ⇑*i*Pn **Pn** 00 54 17.0 +0.2
BLY Banja Luka 6.64 334 ⇑*i*Pn **Pn** 00 54 20.2 +0.2
LOT Lotru 6.85 15 ⇑*i*P **Pn** 00 54 25.9 +2.8
LOT Lotru 6.85 15 ⇑*i*P **Pn** 00 54 25.9 +2.8
AQU L'Aquila 6.93 303 *e*Pn **Pn** 00 54 27.0 +2.9
VOIR 7.16 22 ⇑*i*P **Pn** 00 54 31.1 +3.8
ISR Istrita 7.40 30 ⇑*i*P **Pn** 00 54 34.1 +3.6
ISR Istrita 7.40 30 ⇑*i*P **Pn** 00 54 34.1 +3.6
MLR Muntele Rosu 7.49 26 Pn **Pn** 00 54 34.3 +2.4
baz=273,slow=4.1
MLR Sn **Sn** 00 56 01.7 +5.6
comp=N,0.1nm,0.3s,baz=127,slow=20,SNR=2.6
MLR Muntele Rosu 7.49 26 ⇑*i*P Pn 00 54 36.9 +5.0
BOJS Bojanci 8.01 328 *i* Pn **Pn** 00 54 39.0 +0.1
BOJS *e*Sn **Sn** 00 56 02.7 -5.9
comp=E,9.0nm,0.3s
BOJS Bojanci 8.01 328 *i* Pn **Pn** 00 54 39.0 +0.1
PLOR Plostina 8.05 28 ⇓*i*P **Pn** 00 54 44.0 +4.5
VRI Vrincioaia 8.09 28 ⇑*i*P **Pn** 00 54 44.3 +4.3
CRES Cresnjev 8.19 330 *i* Pn **Pn** 00 54 40.9 -0.5
comp=E,18nm,0.6s
CRES Cresnjev 8.19 330 ⇑*i*Pn **Pn** 00 54 40.5 -0.8
BEHE Becsehely 8.30 338 *e*Pn **Pn** 00 54 43.4 +0.5
VISS Visnje 8.42 328 *i* Pn **Pn** 00 54 44.6 +0.1
VISS *e*Sn **Sn** 00 56 14.2 -4.6
comp=Z,3.0nm,0.1s
VISS Visnje 8.42 328 *i* Pn **Pn** 00 54 44.6 +0.1
CEY Cerknica 8.55 326 ⇑*i*Pn **Pn** 00 54 45.9 -0.3
LJU Ljubljana 8.74 327 *e*Pn **Pn** 00 54 48.9 0.0
SOKA Soboth 9.06 332 *i* Pn **Pn** 00 54 52.8 -0.6
comp=Z,4.8nm,0.4s,SNR=16
SOKA Soboth 9.06 332 Pn **Pn** 00 54 52.8 -0.6
comp=Z,4.8nm,0.4s,SNR=16
OBKA Obir 9.11 329 *i* Pn **Pn** 00 54 54.9 +0.9
comp=Z,4.2nm,0.5s
OBKA Obir 9.11 329 Pn **Pn** 00 54 54.9 +0.9
comp=Z,4.2nm,0.5s
ARSA Arzberg 9.39 335 *i* Pn **Pn** 00 54 57.6 -0.2
comp=Z,2.4nm,0.5s
ARSA Arzberg 9.39 335 Pn **Pn** 00 54 57.6 -0.2
comp=Z,2.4nm,0.5s
MYKA Terra Mystica 9.58 327 *i* Pn **Pn** 00 55 00.5 0.0
comp=Z,0.6nm,0.3s
MYKA Terra Mystica 9.58 327 Pn **Pn** 00 55 00.5 0.0
comp=Z,0.6nm,0.3s
BRTR Keskin Array B 9.64 81 Pn **Pn** 00 55 05.0 +3.7
comp=Z,0.5nm,0.3s,baz=265,slow=12,SNR=20
KECS Kecovo 9.65 357 *e*Pn **Pn** 00 55 02.3 +1.0
KECS Kecovo 9.65 357 *e*PN **Pn** 00 55 02.3 +1.0
KECS Kecovo 9.65 357 *e*SG 00 58 00.4
VYHS Vyhne 9.80 350 *e*Pn **Pn** 00 55 04.0 +0.6
VYHS Vyhne 9.80 350 *e*PN **Pn** 00 55 04.0 +0.6
VYHS *e*SN **Sn** 00 56 46.2 -6.5
CONA Conrad Observa 9.89 338 *i* Pn **Pn** 00 55 04.9 +0.2
comp=Z,1.5nm,0.5s
CONA Conrad Observa 9.89 338 Pn **Pn** 00 55 04.9 +0.2
comp=Z,1.5nm,0.5s
KEST Kesra 9.99 256 Pn **Pn** 00 55 07.2 +1.0
comp=Z,0.3nm,0.3s,baz=66,slow=3.3,SNR=11
KBA Koelnbreinsper 10.06 327 *i* Pn **Pn** 00 55 07.6 +0.5
comp=Z,3.8nm,0.5s
KBA Koelnbreinsper 10.06 327 Pn **Pn** 00 55 07.6 +0.5
comp=Z,3.8nm,0.5s
ABTA Abfaltersbach 10.18 324 *i* Pn **Pn** 00 55 09.1 +0.5
comp=Z,2.7nm,0.5s,SNR=5.0
ABTA Abfaltersbach 10.18 324 Pn **Pn** 00 55 09.1 +0.5
comp=Z,2.7nm,0.5s,SNR=5.0
MOA Molln 10.34 333 *i* Pn **Pn** 00 55 11.9 +1.1
comp=Z,3.1nm,0.5s,SNR=8.4
MOA Molln 10.34 333 Pn **Pn** 00 55 11.9 +1.1
comp=Z,3.1nm,0.5s,SNR=8.4
LANS Liptovska Anna 10.38 353 *e*Pn **Pn** 00 55 14.9 +3.5
LANS Liptovska Anna 10.38 353 *e*PN **Pn** 00 55 14.9 +3.5
LANS *e*SN Sn 00 56 56.2 -11
STHS Stebnicka Huta 10.57 360 *e*PN **Pn** 00 55 11.2 -2.7
WTTA Wattenberg 10.96 323 *i* Pn **Pn** 00 55 20.5 +1.0
comp=Z,4.6nm,0.5s
WTTA Wattenberg 10.96 323 Pn **Pn** 00 55 20.5 +1.0
comp=Z,4.6nm,0.5s
WATA Walderalm 11.04 323 *i* Pn **Pn** 00 55 21.8 +1.3
comp=Z,2.6nm,0.4s
WATA Walderalm 11.04 323 Pn **Pn** 00 55 21.8 +1.3
comp=Z,2.6nm,0.4s
FETA Feichten 11.23 320 *i* Pn **Pn** 00 55 22.2 -0.9
comp=Z,3.2nm,0.7s
FETA Feichten 11.23 320 Pn **Pn** 00 55 22.2 -0.9
comp=Z,3.2nm,0.7s
MOTA Moosalm 11.27 322 *i* Pn **Pn** 00 55 24.1 +0.4
comp=Z,8.9nm,0.7s,SNR=15
MOTA Moosalm 11.27 322 Pn **Pn** 00 55 24.1 +0.4
comp=Z,8.9nm,0.7s,SNR=15
GERES GERESS Array B 11.38 334 Pn **Pn** 00 55 24.5 -0.6
comp=Z,0.5nm,0.3s,baz=157,slow=14,SNR=15
GERES Sn **Sn** 00 57 27.3 -4.2
comp=Z,0.4nm,0.3s,baz=153,slow=24,SNR=7.2
GERES LR LR 01 00 55.2
comp=Z,119nm,18.1s,baz=138,slow=44
DAVOX Davos/Dischmat 11.51 317 Pn **Pn** 00 55 26.8 -0.2
comp=Z,0.5nm,0.3s,baz=49,slow=4.4,SNR=5.9
DAVOX Sn **Sn** 00 57 31.2 -3.7
RETA Reutte 11.54 322 *i* Pn **Pn** 00 55 27.3 0.0
comp=Z,3.5nm,0.9s
RETA Reutte 11.54 322 Pn **Pn** 00 55 27.3 0.0
comp=Z,3.5nm,0.9s
KHC Kasperske Hory 11.67 334 *e*P **Pn** 00 55 27.5 -1.5
KHC *ex* x 00 55 43.0
KHC *eS* **Sn** 00 57 35.1 -3.3
KHC Kasperske Hory 11.67 334 Pn **Pn** 00 55 27.5 -1.5
KHC Sn **Sn** 00 57 35.1 -3.3
DAVA Damuels 11.84 319 *i* Pn **Pn** 00 55 32.2 +0.7
comp=Z,3.0nm,0.5s
DAVA Damuels 11.84 319 Pn **Pn** 00 55 32.2 +0.7
comp=Z,3.0nm,0.5s
MMAI Mount Meron Ar 12.85 113 Pn **Pn** 00 55 44.2 -1.0
comp=Z,0.3nm,0.3s,baz=294,slow=14,SNR=3.1
CLL Collm 13.74 338 *i* (P) **P** 00 56 07.3 +1.7
comp=Z,2.0nm,0.5s
CLL *e* 00 58 48.0
ASF Jabal al Asfar 14.36 113 Pn **Pn** 00 56 05.1 -0.9
comp=Z,0.0nm,0.3s,baz=214,slow=3.6,SNR=3.2
EIL Elat 14.54 125 Pn **Pn** 00 56 04.8 -3.5
comp=Z,0.7nm,0.3s,baz=300,slow=3.8,SNR=8.2
ESDC Sonseca Array 19.54 280 P **Pn** 00 57 11.0 -0.2
comp=Z,0.2nm,0.3s,baz=74,slow=11,SNR=8.4
HFS Hagfors 21.84 350 P **P** 00 57 33.6 -0.9
comp=Z,5.0nm,0.4s,baz=163,slow=10,SNR=72
FINES FINESS Array B 22.82 6 P **P** 00 57 43.1 -1.7
comp=Z,3.8nm,0.9s,baz=168,slow=11,SNR=10
NOA NORSAR Array B 23.08 347 P **P** 00 57 45.8 -1.9
comp=Z,2.1nm,0.5s,baz=157,slow=9.0,SNR=18
EKA Eskdalemuir Ar 23.23 323 P **P** 00 57 48.8 -0.4
comp=Z,1.4nm,0.4s,baz=119,slow=9.2,SNR=24
GEYT Alibeck 28.78 80 P **P** 00 58 39.8 -0.2
comp=Z,1.0nm,0.4s,baz=303,slow=8.3,SNR=3.5
ARCES ARCESS Array B 30.83 3 P **P** 00 58 57.0 -0.7
comp=Z,1.4nm,0.5s,baz=188,slow=10.0,SNR=4.7
TORD Torodi Ar. Bea 30.92 219 P **P** 00 58 59.1 +0.1
comp=Z,1.0nm,0.9s,baz=40,slow=8.2,SNR=12
MKAR Makanchi Array 44.46 59 P **P** 01 00 52.7 -0.4
comp=Z,2.9nm,0.4s,baz=278,slow=7.5,SNR=23
ZALV Zalesovo Beam 44.81 49 P **P** 01 00 55.5 -0.2
comp=Z,6.1nm,0.5s,baz=273,slow=8.7,SNR=24
SCHQ Schefferville 58.36 317 P **P** 01 02 37.2 +0.2
comp=Z,1.1nm,0.3s,baz=18,slow=3.2,SNR=3.5
SONM Songino Array 59.58 51 P **P** 01 02 46.7 +0.9
comp=Z,0.2nm,0.4s,baz=255,slow=4.3,SNR=2.5
INK Inuvik 71.50 350 P **P** 01 04 02.8 +0.6
comp=Z,2.6nm,0.8s,baz=247,slow=2.4,SNR=3.1
YKA Yellowknife Ar 72.96 340 P **P** 01 04 11.4 +0.3
comp=Z,0.4nm,0.7s,baz=33,slow=5.4,SNR=4.2
ULM Lac du Bonnet 75.50 324 P **P** 01 04 25.7 -0.4
comp=Z,0.8nm,0.4s,baz=74,slow=5.0,SNR=3.5
TXAR Lajitas Array 94.93 314 P **P** 01 06 05.9 +1.3
comp=Z,0.2nm,0.6s,baz=75,slow=4.2,SNR=4.5

MEX 26 00:54:12.1±0.3, 14°.53N×93°.51W, h15km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.19**	**37**	*eP*	Pn	00 54 45.2	-3.0
CCIG				*eS*	Sn	00 55 10.8	-4.3

*ROM **26** 01:03:33.3±0.4, 36°.35N×12°.80E, h15km±3km, MI3.7/17, Error ellipse: s-maj=5.5km s-min=5.0km az=179.0*

*CSEM **26** 01:03:36.0±0.6, 36.38N× 12.99E, h20km, ML3.7, Error ellipse: s-maj=13.1km s-min=5.8km az=4.0*
*LDG **26** 01:03:37.7±0.7, 36.21N× 13.03E, h30km, Md3.5/1, Ml3.6/6, Error ellipse: s-maj=18.0km s-min=7.2km az=5.0*

ISC 26 01:03:37.8±1.9, 36.47N±0.06× 12.93E±0.04, h31km±14km, n105, σ1♀45/116, mb3.7/9, MS3.0/9, Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FAVR	**Favara**	**0.99**	**36**	Pg		**Pn**		**01 03 55.6**	**0.0**
	4µm,1.0s								
FAVR	**Favara**	**0.99**	**36**	Pg		**Pn**		**01 03 55.6**	**0.0**
	4µm,1.0s								
CLTB	**Caltabellotta**	**1.13**	**11**	Pg		**Pn**		**01 03 56.1**	**-1.5**
CLTB				Sg		**Sb**		**01 04 13.9**	**+0.6**
	10µm,0.5s								
CLTB	**Caltabellotta**	**1.13**	**11**	Pg		**Pn**		**01 03 56.1**	**-1.5**
CLTB				Sg		**Sb**		**01 04 13.9**	**+0.6**
	10µm,0.5s								
MMGO	**Monte Magaggia**	**1.19**	**2**	Pg		**Pn**		**01 03 57.1**	**-1.3**
MMGO	**Monte Magaggia**	**1.19**	**2**	Pg		**Pn**		**01 03 57.1**	**-1.3**
CAVT	**Castelvetrano**	**1.22**	**353**	Pg		**Pn**		**01 03 57.3**	**-1.4**
	1.0nm,0.1s								
CAVT	**Castelvetrano**	**1.22**	**353**	Pg		**Pn**		**01 03 57.3**	**-1.4**
	1.0nm,0.1s								
MFNL	**Monte Finestre**	**1.32**	**360**	Pg		**Pn**		**01 04 00.0**	**-0.2**
MFNL	**Monte Finestre**	**1.32**	**360**	Pg		**Pn**		**01 04 00.0**	**-0.2**
CRJA	**Costa Raja**	**1.33**	**2**	Pg		**Pn**		**01 03 59.8**	**-0.5**
CRJA	**Costa Raja**	**1.33**	**2**	Pg		**Pn**		**01 03 59.8**	**-0.5**
MTGR	**Montagna Grand**	**1.43**	**355**	Pg		**Pn**		**01 04 01.0**	**-0.7**
	158nm,0.2s								
MTGR	**Montagna Grand**	**1.43**	**355**	Pg		**Pn**		**01 04 01.0**	**-0.7**
	158nm,0.2s								
ALJA	**Alia**	**1.44**	**27**	Pg		**Pn**		**01 04 01.7**	**-0.1**
ALJA				Sg		**Sb**		**01 04 21.8**	**-0.2**
	1µm,0.6s								
ALJA	**Alia**	**1.44**	**27**	Pg		**Pn**		**01 04 01.7**	**-0.1**
ALJA				Sg		**Sb**		**01 04 21.8**	**-0.2**
	1µm,0.6s								
CORL	**Corleone**	**1.46**	**12**	Pg		**Pn**		**01 04 01.2**	**-0.8**
	1µm,0.7s								
CORL	**Corleone**	**1.46**	**12**	Pg		**Pn**		**01 04 01.2**	**-0.8**
	1µm,0.7s								
VAE	**Valguarnera**	**1.56**	**49**	Pn		**Pn**		**01 04 03.0**	**-0.4**
	24nm,0.3s,baz=321,slow=3.9,SNR=47								
VAE						Sn		**01 04 22.9**	**+0.3**
	69nm,0.3s,baz=214,slow=2.7,SNR=9.3								
SOLUN	**Solunto**	**1.69**	**16**	Pg		**Pn**		**01 04 04.6**	**-0.6**
SOLUN				Sg		**Sb**		**01 04 27.4**	**-1.7**
	2µm,1.6s								
SOLUN	**Solunto**	**1.69**	**16**	Pg		**Pn**		**01 04 04.6**	**-0.6**
SOLUN				Sg		**Sb**		**01 04 27.4**	**-1.7**
	2µm,1.6s								
MPG	**Monte Pellegri**	**1.73**	**11**	Pg		**Pn**		**01 04 05.6**	**-0.1**
MPG				Sg		**Sb**		**01 04 28.7**	**-1.5**
	598nm,1.0s								
MPG	**Monte Pellegri**	**1.73**	**11**	Pg		**Pn**		**01 04 05.6**	**-0.1**
MPG				Sg		**Sb**		**01 04 28.7**	**-1.5**
	598nm,1.0s								
GIB	**Gibilmanna**	**1.75**	**30**	Pg		**Pn**		**01 04 06.0**	**-0.2**
GIB				Sg		**Sb**		**01 04 30.9**	**-0.1**
	4µm,1.3s								
GIB	**Gibilmanna**	**1.75**	**30**	Pg		**Pn**		**01 04 06.0**	**-0.2**
GIB				Sg		**Sb**		**01 04 30.9**	**-0.1**
	4µm,1.3s								
PLLN	**Pollina**	**1.80**	**32**	Pg		**Pn**		**01 04 07.3**	**+0.5**
PLLN				Sg		**Sb**		**01 04 32.2**	**-0.2**
	570nm,0.6s								
PLLN	**Pollina**	**1.80**	**32**	Pg		**Pn**		**01 04 07.3**	**+0.5**
PLLN				Sg		**Sb**		**01 04 32.2**	**-0.2**
	570nm,0.6s								
HCRL	**Carlentini**	**1.87**	**64**	Pg		**Pn**		**01 04 05.5**	**-2.2**
	2µm,0.8s								
HCRL	**Carlentini**	**1.87**	**64**	Pg		**Pn**		**01 04 05.5**	**-2.2**
	2µm,0.8s								
AGST	**Augusta-Monte**	**2.00**	**66**	Pg		**Pn**		**01 04 08.1**	**-1.4**
	1µm,0.9s								
AGST	**Augusta-Monte**	**2.00**	**66**	Pg		**Pn**		**01 04 08.1**	**-1.4**
	1µm,0.9s								
MNO	**Monte Soro**	**2.03**	**43**	Pg		**Pn**		**01 04 10.7**	**+0.6**
	867nm,0.9s								
MNO	**Monte Soro**	**2.03**	**43**	Pg		**Pn**		**01 04 10.7**	**+0.6**
	867nm,0.9s								
MSFR	**San Fratello**	**2.05**	**40**	Pg		**Pn**		**01 04 10.4**	**+0.2**
	821nm,1.2s								
MSFR	**San Fratello**	**2.05**	**40**	Pg		**Pn**		**01 04 10.4**	**+0.2**
	821nm,1.2s								
MUCR	**Ucria**	**2.21**	**44**	Pg		**Pn**		**01 04 12.6**	**+0.2**
	691nm,0.9s								
MUCR	**Ucria**	**2.21**	**44**	Pg		**Pn**		**01 04 12.6**	**+0.2**
	691nm,0.9s								
MMME	**Mongiuffi-Meli**	**2.36**	**51**	Pg		**Pn**		**01 04 14.7**	**+0.2**
	290nm,0.6s								
MMME	**Mongiuffi-Meli**	**2.36**	**51**	Pg		**Pn**		**01 04 14.7**	**+0.2**
	290nm,0.6s								
GMB	**Gambarie**	**2.87**	**53**	Pg		**Pn**		**01 04 21.7**	**+0.2**
GMB	**Gambarie**	**2.87**	**53**	Pg		**Pn**		**01 04 21.7**	**+0.2**
CEL	**Celeste**	**2.96**	**52**	Pg		**Pn**		**01 04 22.5**	**-0.2**
	314nm,1.2s								
CEL	**Celeste**	**2.96**	**52**	Pg		**Pn**		**01 04 22.5**	**-0.2**
	314nm,1.2s								
SOI	**Samo**	**2.96**	**56**	Pg		**Pn**		**01 04 21.5**	**-1.2**
	279nm,1.4s								
SOI	**Samo**	**2.96**	**56**	Pg		**Pn**		**01 04 21.5**	**-1.2**
	279nm,1.4s								
KEST	**Kesra**	**3.00**	**257**	Pn		**Pn**		**01 04 23.0**	**-0.3**
	3.1nm,0.3s,baz=54,slow=8.4,SNR=75								
KEST						Sn		**01 04 58.8**	**+0.6**
	21nm,0.3s,baz=67,slow=13,SNR=7.8								
CAR1	**CAROLEI**	**3.80**	**42**	Pg		**Pn**		**01 04 34.1**	**-0.2**
	102nm,0.8s								
CAR1	**CAROLEI**	**3.80**	**42**	Pg		**Pn**		**01 04 34.1**	**-0.2**
	102nm,0.8s								
TIP	**Timpagrande**	**4.06**	**47**	Pg		**Pn**		**01 04 38.5**	**+0.6**
	76nm,1.3s								
TIP	**Timpagrande**	**4.06**	**47**	Pg		**Pn**		**01 04 38.5**	**+0.6**
	76nm,1.3s								
VSL	**Villasalto**	**4.13**	**318**	Pg		**Pn**		**01 04 38.9**	**+0.2**
VSL				Sg		**Sn**		**01 05 24.2**	**-1.7**
	34nm,0.3s								
VSL	**Villasalto**	**4.13**	**318**	Pg		**Pn**		**01 04 38.9**	**+0.2**
CUC	**Castrocucco**	**4.19**	**32**	Pg		**Pn**		**01 04 40.5**	**+0.9**
	30nm,0.8s								
CUC	**Castrocucco**	**4.19**	**32**	Pg		**Pn**		**01 04 40.5**	**+0.9**
	30nm,0.8s								
DGI	**Dorgali Grotta**	**4.65**	**327**	Pg		**Pn**		**01 04 46.4**	**+0.5**
DGI	**Dorgali Grotta**	**4.65**	**327**	Pg		**Pn**		**01 04 46.4**	**+0.5**
PGF	**Pioggiola**	**6.79**	**335**	*e*Pn		**Pn**		**01 05 17.0**	**+1.6**
PGF	**Pioggiola**	**6.79**	**335**	*e*P		Pn		01 05 21.8	+6.4
PGF				*e*Sn		**Sn**		**01 06 32.0**	**+0.3**
	16nm,0.4s								
PGF	**Pioggiola**	**6.79**	**335**	*e*Pn		**Pn**		**01 05 17.0**	**+1.6**
PGF				*e*Sn		**Sn**		**01 06 32.0**	**+0.3**
	8.2nm,0.4s								
LMR	**La Mourre**	**8.45**	**326**	*e*Pn		**Pn**		**01 05 38.6**	**+0.6**
LMR				*e*Sn		**Sn**		**01 07 10.0**	**-2.2**
	1.0nm,0.2s								
LMR	**La Mourre**	**8.45**	**326**	*e*Pn		**Pn**		**01 05 38.6**	**+0.6**
SBF	**Sospel**	**8.50**	**332**	*e*Pn		**Pn**		**01 05 39.7**	**+0.9**
SBF				*e*Sn		**Sn**		**01 07 11.9**	**-1.7**
	33nm,0.7s								
SBF	**Sospel**	**8.50**	**332**	*e*Pn		**Pn**		**01 05 39.7**	**+0.9**
FRF	**La Foret Royal**	**8.57**	**328**	*e*Pn		**Pn**		**01 05 40.1**	**+0.5**
FRF				*e*Sn		**Sn**		**01 07 13.1**	**-2.1**
	1.0nm,0.3s								
FRF	**La Foret Royal**	**8.57**	**328**	*e*Pn		**Pn**		**01 05 40.1**	**+0.5**
MBDF	**Montbardon**	**9.48**	**332**	*e*Pn		**Pn**		**01 05 54.8**	**+2.4**
MBDF	**Montbardon**	**9.48**	**332**	*e*P		Pn		01 06 00.0	+7.6
MBDF				*e*Sn		**Sn**		**01 07 36.5**	**-1.4**
	8.2nm,0.6s								
MBDF	**Montbardon**	**9.48**	**332**	*e*Pn		**Pn**		**01 05 54.8**	**+2.4**
IDI	**Anoyia**	**9.78**	**93**	Pn		**Pn**		**01 05 57.9**	**+1.5**
	0.2nm,0.3s,baz=90,slow=20,SNR=2.9								
IDI						Sn		**01 07 38.0**	**-7.0**
	0.4nm,0.3s,baz=342,slow=20,SNR=3.4								
IDI						LR	LR	01 09 57.2	
	comp=Z,47nm,20.6s,baz=280,slow=39								
ORIF	**Oris-en-Rattie**	**9.99**	**330**	*e*Pn		**Pn**		**01 06 01.7**	**+2.4**
ORIF	**Oris-en-Rattie**	**9.99**	**330**	*e*P		Pn		01 06 06.3	+7.0
ORIF	**Oris-en-Rattie**	**9.99**	**330**	*e*Pn		**Pn**		**01 06 01.7**	**+2.4**
LPL	**La Plagne**	**10.18**	**335**	*e*Pn		**Pn**		**01 06 03.3**	**+1.4**
LPL	**La Plagne**	**10.18**	**335**	*e*Pn		**Pn**		**01 06 03.3**	**+1.4**
DAVOX	**Davos/Dischmat**	**10.55**	**348**	Pn		**Pn**		**01 06 10.9**	**+3.9**
	0.2nm,0.3s,baz=151,slow=19,SNR=3.6								
DAVOX						LR	LR	01 10 34.6	
	comp=Z,63nm,19.0s,baz=186,slow=40								
MTLF	**Montolieu**	**10.71**	**313**	*e*Pn		**Pn**		**01 06 10.4**	**+1.4**
MTLF	**Montolieu**	**10.71**	**313**	*e*P		Pn		01 06 15.8	+6.8
MTLF				*e*Sn		**Sn**		**01 08 04.3**	**-3.5**
	0.5nm,0.2s								
MTLF	**Montolieu**	**10.71**	**313**	*e*Pn		**Pn**		**01 06 10.4**	**+1.4**
EPF	**Esparros**	**11.69**	**308**	*e*Pn		**Pn**		**01 06 23.0**	**+0.5**
EPF	**Esparros**	**11.69**	**308**	*e*Pn		**Pn**		**01 06 23.0**	**+0.5**
GERES	**GERESS Array B**	**12.38**	**2**	Pn		P		01 06 38.5	-5.1
	baz=170,slow=13,SNR=2.5								
GERES						LR	LR	01 12 09.4	
	comp=Z,58nm,18.8s,baz=188,slow=42								
CDF	**Champ du Feu**	**12.64**	**343**	*e*P		**P**		**01 06 42.8**	**-3.7**
KHC	**Kasperske Hory**	**12.67**	**2**	*e*P		**P**		**01 06 44.9**	**-1.8**
VRAC	**Vranov**	**13.11**	**11**	LR		LR		01 12 56.7	
	comp=Z,55nm,18.5s,baz=205,slow=43								
ESDC	**Sonseca Array**	**13.69**	**289**	Pn		**Pn**		**01 06 52.5**	**+2.6**
	0.3nm,0.3s,baz=93,slow=12,SNR=5.2								
CLL	**Collm**	**14.84**	**0**	*e*P		**P**		**01 07 13.0**	**+2.3**
	comp=Z,4.0nm,1.3s								
CLL				*i*				01 07 16.3	
	comp=Z,4.0nm,1.0s								
MDT	**Midelt**	**14.89**	**261**	Pn		**Pn**		**01 07 07.8**	**+1.5**
	comp=Z,0.1nm,0.3s,baz=99,slow=15,SNR=4.8								
MDT						LR	LR	01 13 38.6	
	comp=Z,50nm,19.3s,baz=84,slow=41								
BRTR	**Keskin Array B**	**16.62**	**72**	Pn		**P**		**01 07 31.9**	**+1.2**
	comp=Z,0.0nm,0.3s,baz=263,slow=7.1,SNR=5.8								
BRTR						LR		01 14 06.9	
	comp=Z,35nm,21.9s,baz=258,slow=38								
MMAI	**Mount Meron Ar**	**18.78**	**94**	LR		LR		01 17 05.7	
	comp=Z,15nm,19.1s,baz=15,slow=43								
HFS	**Hagfors**	**23.69**	**1**	P		**P**		**01 08 45.1**	**-1.5**
	comp=Z,1.2nm,0.6s,baz=187,slow=10,SNR=6.5								
HFS						LR	LR	01 19 27.2	
	comp=Z,26nm,20.0s,baz=194,slow=40								
NB2	**NORSAR Subarra**	**24.62**	**358**	P		**P**		**01 08 55.1**	**-0.1**
	comp=Z,3.6nm,1.2s,baz=171,slow=10								
NB2	**NORSAR Subarra**	**24.62**	**358**	P		**P**		**01 08 55.1**	**-0.1**
	comp=Z,3.6nm,1.2s,SNR=5.0								
NOA	**NORSAR Array B**	**24.62**	**358**	P		**P**		**01 08 55.4**	**+0.2**
	comp=Z,0.8nm,0.7s,baz=172,slow=11,SNR=4.0								
NOA						LR	LR	01 19 58.0	
	comp=Z,16nm,20.6s,baz=100,slow=40								
OBN	**Obninsk**	**24.68**	**33**	LR		LR		01 20 22.9	
	comp=Z,32nm,18.3s,baz=273,slow=41								
GNI	**Garni**	**25.16**	**72**	LR		LR		01 18 53.5	
	comp=Z,27nm,20.7s,baz=254,slow=36								
TORD	**Torodi Ar. Bea**	**25.32**	**206**	P		**P**		**01 09 01.5**	**-0.3**
	comp=Z,0.9nm,1.0s,baz=0.0,slow=8.6,SNR=5.1								
TORD						LR	LR	01 18 54.1	
	comp=Z,56nm,18.5s,baz=200,slow=36								
FINES	**FINESS Array B**	**26.34**	**14**	P		**P**		**01 09 09.8**	**-0.9**
	comp=Z,1.3nm,0.8s,baz=189,slow=8.0,SNR=3.8								
FINES						LR	LR	01 21 34.5	
	comp=Z,43nm,18.2s,baz=229,slow=41								
DBIC	**Dimbokro**	**33.83**	**213**	LR		LR		01 25 48.5	
	comp=Z,43nm,21.9s,baz=33,slow=39								
ARCES	**ARCESS Array B**	**33.83**	**8**	LR		LR		01 25 32.9	
	comp=Z,41nm,18.5s,baz=221,slow=39								
AKTO	**Aktyubinsk**	**35.02**	**52**	P		**P**		**01 10 27.4**	**0.0**
	comp=Z,0.5nm,0.5s,baz=269,slow=10,SNR=3.0								
ZALV	**Zalesovo Beam**	**51.28**	**46**	P		**P**		**01 12 41.2**	**+2.5**
	comp=Z,0.3nm,0.3s,baz=304,slow=5.0,SNR=5.6								
MKAR	**Makanchi Array**	**51.30**	**55**	P		**P**		**01 12 38.3**	**-0.6**
	comp=Z,0.6nm,0.6s,baz=295,slow=6.6,SNR=5.1								
BOSA	**Boshof**	**65.77**	**168**	LR		LR		01 44 08.6	
	comp=Z,30nm,21.8s,baz=186,slow=37								
SONM	**Songino Array**	**66.14**	**47**	P		**P**		**01 14 25.2**	**+2.9**
	comp=Z,0.5nm,0.5s,baz=294,slow=7.7,SNR=3.7								
YKA	**Yellowknife Ar**	**72.78**	**337**	P		**P**		**01 15 03.4**	**+0.6**
	comp=Z,0.4nm,0.8s,baz=38,slow=6.8,SNR=3.2								

MEX 26 01:04:47.8±0.7, 16.18N×100.05W, h15km±493km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ACP2	**Acapulco**	**0.71**	**13**	*e*P		Pg		01 04 56.2	-5.4
ACP2				*e*S		Sg		01 05 04.8	-6.2
ACX	**Acapulco**	**0.71**	**15**	*i* P		Pg		01 04 59.0	-2.7
ACX				*e*S		Sg		01 05 07.3	-3.7
CAIG	**El Cayaco**	**0.88**	**347**	*e*P		Pb		01 05 01.7	-3.2
CAIG				*e*S		Sb		01 05 13.1	-3.4
MEIG	**Mezcala**	**1.78**	**13**	*e*P		Pn		01 05 15.4	-2.8
MEIG				*i* S		Sn		01 05 36.7	-3.9
ARIG	**Puente Sto Nin**	**2.10**	**352**	*e*P		Pn		01 05 19.8	-2.8
ARIG				*i* S		Sn		01 05 44.3	-4.2
PLIG	**Platanillo**	**2.26**	**13**	*e*P		Pn		01 05 22.5	-2.2

*NIED **26** 01:05:00, 39.00N× 142.70E, h5km, Mw3.8 Best double couple: M0 6.48000×10^14 NP1:φ±113.00000°, δ45.00000°, λ-76.00000°. NP2:φ±274.00000°, δ47.00000°, λ-104.00000°.*
*IDC **26** 01:05:34.6±0.8, 38.94N× 142.84E, h0km, mb3.8/11, mb1 4.0/13, mb1mx3.7/45, mbtmp3.8/13, ML2.9/2, MS2.9/4, Ms1 2.9/4, ms1mx2.5/39, Error ellipse: s-maj=24.7km s-min=17.2km az=98.0*
*ISCJB **26** 01:05:35.3±1.8, 39.03N±0.04× 142.74E±0.06, h13km±11km, mb3.8/11, MS3.1/2, Error ellipse: s-maj=7.8km s-min=6.3km az=41.0*
*JMA **26** 01:05:35.4±0.1, 39.03N× 142.74E, h20km±2km, M3.8*

ISC 26 01:05:35.9±2.4, 39.06N±0.05× 142.66E±0.08, h5km±14km, n33, σ1♀23/30, mb4.0/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.77**	**272**	P		**Pg**		**01 05 51.2**	**+0.4**
MIYJ	**Miyakonagasawa**	**0.83**	**309**	P		**Pb**		**01 05 52.0**	**-0.8**
MIYJ				*e*S		**Sb**		**01 06 04.1**	**-0.2**
JTH	**Tanohata**	**1.07**	**325**	P		**Pb**		**01 05 56.3**	**-0.6**
JMK	**Ichinoseki**	**1.13**	**265**	P		**Pn**		**01 05 56.9**	**-1.4**
JOM	**Ohasama**	**1.14**	**292**	P		**Pn**		**01 05 57.3**	**-1.2**
JOM				*e*S		**Sb**		**01 06 13.1**	**-0.1**
JIO	**Ouri**	**1.19**	**240**	P		**Pn**		**01 05 57.0**	**-2.2**
JIO				*e*S		**Sb**		**01 06 13.1**	**-1.5**
JANG	**Nango**	**1.58**	**326**	P		**Pn**		**01 06 03.7**	**-0.9**
JANG				*e*S		**Sn**		**01 06 24.4**	**-1.0**
JRG	**Rokugo**	**1.61**	**283**	P		**Pn**		**01 06 05.2**	**+0.2**
JOU	**Okura**	**1.71**	**247**	P		**Pn**		**01 06 05.6**	**-0.8**
JOU				*e*S		**Sn**		**01 06 27.5**	**-1.1**
JYK	**Kaneyama**	**1.80**	**266**	P		**Pn**		**01 06 07.7**	**+0.1**
MAT	**Matsushiro**	**4.33**	**236**	P		**Pn**		**01 06 44.7**	**+2.3**
MAT				*e*S		**Sn**		**01 07 35.2**	**+1.9**
MJAR	**Matsushiro Arr**	**4.33**	**236**	Pn		**Pn**		**01 06 43.4**	**+1.0**
	3.3nm,0.3s,baz=8.5,slow=25,SNR=12								
MJAR						LR	LR	01 08 35.9	
	comp=Z,86nm,18.6s,baz=50,slow=42								
USRK	**Ussuriysk Ar.**	**9.49**	**306**	Pn		**Pn**		**01 07 54.5**	**+1.2**
	0.3nm,0.3s,baz=120,slow=13,SNR=2.7								
KSRS	**Korea Array**	**11.70**	**267**	Pn		Pn		01 08 33.3	+10
	0.2nm,0.3s,baz=74,slow=14,SNR=3.9								
PETK	**Petropavlovsk-**	**17.44**	**31**	LR		LR		01 17 01.4	
	comp=Z,20nm,18.7s,baz=153,slow=39								
MA2	**Magadan**	**21.17**	**11**	P		**P**		**01 10 22.4**	**+0.6**
	5.8nm,0.6s,baz=197,slow=14,SNR=4.6								
SEY	**Seymchan**	**24.62**	**11**	P		**P**		**01 10 56.9**	**+0.1**
	1.7nm,0.7s,baz=180,slow=11,SNR=3.9								
H11N2	**WAKE ISLAND Hy**	**28.43**	**126**	T		T		01 41 11.1	
	baz=318,slow=75,SNR=268								
H11N1	**WAKE ISLAND Hy**	**28.44**	**126**	T		T		01 41 08.2	
	baz=318,slow=75,SNR=168								
H11N3	**WAKE ISLAND Hy**	**28.45**	**126**	T		T		01 41 09.0	
	baz=318,slow=75,SNR=242								
H11S1	**WAKE ISLAND Hy**	**29.22**	**128**	T		T		01 42 10.7	
	baz=320,slow=76,SNR=22								
H11S3	**WAKE ISLAND Hy**	**29.23**	**128**	T		T		01 42 10.2	
	baz=320,slow=76,SNR=16								
H11S2	**WAKE ISLAND Hy**	**29.24**	**128**	T		T		01 42 10.9	
	baz=320,slow=76,SNR=12								
ZALV	**Zalesovo Beam**	**41.31**	**311**	P		**P**		**01 13 22.5**	**+0.4**
	1.1nm,0.4s,baz=95,slow=11,SNR=4.5								
MKAR	**Makanchi Array**	**43.91**	**301**	P		**P**		**01 13 43.8**	**+0.3**
	0.8nm,0.8s,baz=80,slow=10.0,SNR=4.2								
ILAR	**Eielson Array**	**47.26**	**33**	P		**P**		**01 14 09.8**	**+0.2**
	0.9nm,0.8s,baz=266,slow=6.6,SNR=9.8								
INK	**Inuvik**	**52.14**	**28**	LR		LR		01 40 48.7	
	comp=Z,18nm,18.3s,baz=136,slow=40								
AKTO	**Aktyubinsk**	**58.06**	**311**	P		**P**		**01 15 32.5**	**+2.7**
	0.5nm,0.3s,baz=51,slow=13,SNR=2.9								
WRA	**Warramunga Arr**	**59.21**	**189**	P		**P**		**01 15 36.5**	**-1.5**
	2.3nm,0.4s,baz=6.6,slow=7.0,SNR=25								
ASAR	**Alice Springs**	**62.94**	**189**	P		**P**		**01 16 02.1**	**-1.2**
	0.8nm,0.7s,baz=15,slow=7.5,SNR=6.4								
HFS	**Hagfors**	**72.64**	**336**	P		**P**		**01 17 04.0**	**-0.1**
	0.4nm,0.3s,baz=9.1,slow=3.6,SNR=4.1								
NOA	**NORSAR Array B**	**72.70**	**338**	P		**P**		**01 17 03.9**	**-0.5**
	0.3nm,0.6s,baz=37,slow=6.1,SNR=3.0								
NOA						LR	LR	01 51 40.3	
	comp=Z,12nm,22.0s,baz=40,slow=38								
TXAR	**Lajitas Array**	**88.11**	**53**	P		**P**		**01 18 27.4**	**-0.5**
	0.2nm,0.7s,baz=329,slow=4.4,SNR=4.3								

*IDC **26** 01:09:50.9±1.3, 38.42N×21.86E, h0km, mb3.3/6, mb1 3.4/8, mb1mx3.3/45, mbtmp3.3/8, ML2.5/2, Error ellipse: s-maj=28.4km s-min=20.7km az=68.0*
*ATH **26** 01:09:51.7, 38.31N×21.78E, h18km±1km, ML2.7/26, Error ellipse: s-maj=1.2km s-min=0.5km az=308.0*
*ISCJB **26** 01:09:51.8±0.2, 38.33N±0.01×21.76E±0.02, h10km±1km, mb3.3/6, Error ellipse: s-maj=2.4km s-min=2.1km az=163.2*
*IASPEI **26** 01:09:51.9±0.8, 38.31N±0.01×21.78E±0.01, h10km±4km, mb3.3/6, Error ellipse: s-maj=2.1km s-min=1.9km az=140.6, GT5 selection from ISC bulletin GT5 identified by Bond¨ir and McLaughlin (2009) selection criteria Bond¨ir and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*CSEM **26** 01:09:51.9±0.1, 38.32N×21.77E, h5km, ML2.7, Error ellipse: s-maj=1.6km s-min=1.4km az=166.0*
*THE **26** 01:09:52.0, 38.32N×21.78E, h8km±1km, ML3.0/8, Error ellipse: s-maj=1.2km s-min=0.4km az=160.0*

ISC 26 01:09:52.1±0.7, 38.32N±0.01×21.78E±0.01, h11km±4km, n109, σ0♀71/188, mb3.3/6, Greece

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.04**	**169**	P		**Pg**		**01 09 53.5**	**-0.6**
UPR				S		**Sg**		**01 09 54.7**	**-0.8**
UPR	**University Cam**	**0.04**	**169**	P		**Pg**		**01 09 53.5**	**-0.6**
UPR				S		**Sg**		**01 09 55.0**	**-0.5**
UPR	**University Cam**	**0.04**	**169**	P		**Pg**		**01 09 54.1**	**0.0**
VVK	**Vomvokou**	**0.10**	**15**	P		**Pg**		**01 09 54.6**	**-0.3**
VVK				S		**Sg**		**01 09 56.2**	**-0.7**
LAKA	**Lakka**	**0.18**	**117**	P		**Pg**		**01 09 55.8**	**-0.2**
LAKA				S		**Sg**		**01 09 58.8**	**+0.2**
LAKA	**Lakka**	**0.18**	**117**	P		**Pg**		**01 09 55.8**	**-0.2**
LAKA				S		**Sg**		**01 09 58.8**	**+0.2**
TRIZ	**Trizonia**	**0.24**	**79**	P		**Pg**		**01 09 57.0**	**0.0**
TRIZ				S		**Sg**		**01 10 00.6**	**+0.3**
SERG	**Sergoula**	**0.24**	**67**	P		**Pg**		**01 09 57.0**	**0.0**
SERG				S		**Sg**		**01 10 01.0**	**+0.6**
SERG	**Sergoula**	**0.24**	**67**	P		**Pg**		**01 09 57.0**	**0.0**
SERG				S		**Sg**		**01 10 01.0**	**+0.6**
KALE	**Kalithea**	**0.29**	**76**	P		**Pg**		**01 09 57.9**	**-0.1**
KALE	**Kalithea**	**0.29**	**76**	P		**Pg**		**01 09 58.0**	**-0.1**
KALE				S		**Sg**		**01 10 02.3**	**+0.3**
KALE	**Kalithea**	**0.29**	**76**	P		**Pg**		**01 09 57.9**	**-0.1**
KALE				S		**Sg**		**01 10 02.3**	**+0.3**
KALE					AML	AML		01 10 03.8	

AGG	**Agios Georgios**	**0.82**	**31**	P	**Pg**	01 10 07.0	**-1.0**		
AGG				S	**Sb**	01 10 20.1	**+0.5**		
AGG	**Agios Georgios**	**0.82**	**31**	P	**Pg**	01 10 07.0	**-1.0**		
AGG				S	**Sg**	01 10 18.9	**+0.1**		
AGG	**Agios Georgios**	**0.82**	**31**	P	**Pg**	01 10 06.5	**-1.5**		
AGG				S	**Sb**	01 10 20.1	**+0.5**		
AGG				AML	AML	01 10 21.9			
	comp=E,5292μm,0.2s								
AGG				AML	AML	01 10 24.6			
	comp=N,2698μm,0.5s								
TRIP	**Tripoli**	**0.88**	**154**	P	**Pg**	01 10 08.2	**-0.9**		
TRIP				S	**Sg**	01 10 19.3	**-1.3**		
TRIP	**Tripoli**	**0.88**	**154**	P	**Pg**	01 10 08.2	**-0.9**		
TRIP				S	**Sg**	01 10 19.3	**-1.3**		
TRIP				AML	AML	01 10 28.0			
	comp=N,438μm,0.4s								
TRIP				AML	AML	01 10 29.2			
	comp=E,671μm,0.5s								
PROD	**Prodromos**	**0.89**	**94**	P	**Pn**	01 10 10.1	**-0.4**		
PROD				S	**Sg**	01 10 19.3	**-1.4**		
PROD	**Prodromos**	**0.89**	**94**	P	**Pn**	01 10 10.2	**-0.4**		
PROD				S	**Sg**	01 10 19.3	**-1.4**		
PROD				AML	AML	01 10 26.9			
	comp=E,1941μm,0.5s								
PROD				AML	AML	01 10 28.9			
	comp=N,1279μm,0.4s								
VLS	**Valsamata**	**0.95**	**262**	P	**Pg**	01 10 08.9	**-1.4**		
VLS	**Valsamata**	**0.95**	**262**	P	**Pg**	01 10 08.9	**-1.4**		
VLS				S	**Sb**	01 10 23.9	**+0.8**		
LTK	**Loutraki**	**0.98**	**107**	P	**Pb**	01 10 11.0	**-0.1**		
LTK				S	**Sg**	01 10 23.8	**0.0**		
LTK	**Loutraki**	**0.98**	**107**	P	**Pb**	01 10 11.0	**-0.1**		
LTK				S	**Sg**	01 10 23.8	**0.0**		
LTK				AML	AML	01 10 31.4			
	comp=E,372μm,0.4s								
LTK				AML	AML	01 10 31.8			
	comp=N,578μm,0.4s								
LKD2	**Lefkada island**	**0.99**	**298**	P	**Pg**	01 10 10.1	**-1.1**		
LKD2				S	**Sn**	01 10 26.2	**+0.1**		
LKD2	**Lefkada island**	**0.99**	**298**	P	**Pg**	01 10 10.1	**-1.1**		
LKD2				S	**Sn**	01 10 26.2	**+0.1**		
LKD2	**Lefkada island**	**0.99**	**298**	P	**Pg**	01 10 09.5	**-1.7**		
LKD2				S	**Sn**	01 10 26.6	**+0.4**		
LKD2				AML	AML	01 10 32.6			
	comp=N,1378μm,0.6s								
LKD2				AML	AML	01 10 34.0			
	comp=E,1701μm,0.6s								
ZKS	**Zakynthos**	**1.00**	**232**	P	**Pg**	01 10 10.3	**-1.0**		
ZKS	**Zakynthos**	**1.00**	**232**	P	**Pg**	01 10 10.3	**-1.0**		
ZKS				S	**Sb**	01 10 24.9	**+0.3**		
ZKS	**Zakynthos**	**1.00**	**232**	P	**Pg**	01 10 10.3	**-1.0**		
ZKS				S	**Sb**	01 10 24.9	**+0.3**		
ZKS				AML	AML	01 10 34.4			
	comp=N,3940μm,0.3s								
ZKS				AML	AML	01 10 34.5			
	comp=E,1983μm,0.5s								
LKR	**Lokris**	**1.01**	**71**	P	**Pg**	01 10 10.4	**-1.2**		
LKR	**Lokris**	**1.01**	**71**	P	**Pg**	01 10 10.6	**-1.0**		
LKR				S	**Sb**	01 10 25.4	**+0.4**		
LKR	**Lokris**	**1.01**	**71**	P	**Pg**	01 10 10.6	**-1.0**		
LKR				S	**Sb**	01 10 25.4	**+0.4**		
LKR				AML	AML	01 10 30.5			
	comp=N,1380μm,0.3s								
LKR				AML	AML	01 10 30.8			
	comp=E,818μm,0.2s								
ATAL	**Atalanti**	**1.04**	**69**	P	**Pg**	01 10 11.0	**-1.2**		
ATAL				S	**Sg**	01 10 25.7	**-0.1**		
ATAL	**Atalanti**	**1.04**	**69**	P	**Pb**	01 10 12.2	**0.0**		
ATAL				S	**Sg**	01 10 25.7	**-0.1**		
ATAL	**Atalanti**	**1.04**	**69**	P	**Pb**	01 10 12.2	**0.0**		
ATAL				S	**Sn**	01 10 27.2	**-0.1**		
ATAL				AML	AML	01 10 31.0			
	comp=E,332μm,0.4s								
ATAL				AML	AML	01 10 31.2			
	comp=N,686μm,0.5s								
VLX	**Vlachokerasia**	**1.06**	**153**	P	**Pg**	01 10 11.7	**-0.8**		
VLX	**Vlachokerasia**	**1.06**	**153**	P	**Pg**	01 10 11.9	**-0.6**		
VLX				S	**Sg**	01 10 25.5	**-0.8**		
VLX	**Vlachokerasia**	**1.06**	**153**	P	**Pg**	01 10 11.9	**-0.6**		
VLX				S	**Sg**	01 10 25.6	**-0.8**		
VLX				AML	AML	01 10 38.7			
	comp=E,539μm,1.0s								
VLX				AML	AML	01 10 38.7			
	comp=N,550μm,0.5s								
ITM	**Ithomi**	**1.14**	**174**	P	**Pg**	01 10 13.4	**-0.7**		
ITM	**Ithomi**	**1.14**	**174**	P	**Pg**	01 10 13.4	**-0.7**		
ITM				S	**Sg**	01 10 28.1	**-0.8**		
ITM	**Ithomi**	**1.14**	**174**	P	**Pg**	01 10 13.2	**-0.9**		
ITM				S	**Sg**	01 10 28.1	**-0.8**		
ITM				AML	AML	01 10 34.4			
	comp=N,606μm,0.7s								
ITM				AML	AML	01 10 37.9			
	comp=E,459μm,0.5s								
VIL2	**Platees**	**1.18**	**95**	P	**Pn**	01 10 15.4	**+0.8**		
VIL2				S	**Sn**	01 10 32.0	**+1.4**		
VIL2				AML	AML	01 10 35.3			
	comp=E,787μm,0.5s								
VIL2				AML	AML	01 10 40.9			
	comp=N,828μm,0.8s								
VILL	**Villia**	**1.22**	**97**	P	**Pn**	01 10 15.4	**+0.3**		
VILL				S	**Sn**	01 10 32.0	**+0.3**		
SMIA	**Simia**	**1.25**	**63**	P	**Pn**	01 10 15.2	**-0.4**		
SMIA	**Simia**	**1.25**	**63**	P	**Pn**	01 10 15.2	**-0.4**		
SMIA				S	**Sn**	01 10 33.0	**+0.5**		
SMIA	**Simia**	**1.25**	**63**	P	**Pg**	01 10 16.1	**-0.1**		
SMIA				S	**Sn**	01 10 33.0	**+0.5**		
SMIA				AML	AML	01 10 38.1			
	comp=E,1221μm,0.5s								
SMIA				AML	AML	01 10 40.4			
	comp=N,1789μm,0.5s								
THL	**Klokotos Trika**	**1.26**	**8**	P	**Pn**	01 10 15.6	**0.0**		
THL	**Klokotos Trika**	**1.26**	**8**	P	**Pn**	01 10 15.6	**0.0**		
THL				S	**Sn**	01 10 33.5	**+1.0**		
FYTO	**Fytoko, Volos**	**1.42**	**39**	P	**Pb**	01 10 18.4	**-0.1**		
FYTO	**Fytoko, Volos**	**1.42**	**39**	P	**Pb**	01 10 18.4	**-0.1**		
PYL	**PYLOS**	**1.42**	**181**	P	**Pn**	01 10 17.9	**0.0**		
PYL				S	**Sg**	01 10 38.0	**+0.2**		
PYL	**PYLOS**	**1.42**	**181**	P	**Pn**	01 10 17.9	**0.0**		
PYL				S	**Sg**	01 10 38.0	**+0.2**		
PYL				AML	AML	01 10 49.8			
	comp=E,251μm,0.4s								
PYL				AML	AML	01 10 51.0			
	comp=N,210μm,0.4s								
ATHU	**Athens Univers**	**1.62**	**102**	P	**Pn**	01 10 20.9	**+0.3**		
ATHU				S	**Sn**	01 10 41.0	**-0.6**		
ATHU	**Athens Univers**	**1.62**	**102**	P	**Pn**	01 10 20.9	**+0.3**		
ATHU				S	**Sn**	01 10 41.0	**-0.6**		
ATHU				AML	AML	01 10 51.5			
	comp=E,68μm,0.6s								
ATHU				AML	AML	01 10 51.5			
	comp=N,145μm,0.5s								
PTL	**Penteli**	**1.67**	**99**	P	**Pb**	01 10 22.3	**-0.5**		
PTL				S	**Sb**	01 10 44.1	**+0.2**		
PTL	**Penteli**	**1.67**	**99**	P	**Pb**	01 10 22.3	**-0.5**		
PTL				S	**Sb**	01 10 44.1	**+0.2**		
PTL				AML	AML	01 10 49.4			
	comp=N,179μm,0.5s								
PTL				AML	AML	01 10 51.1			
	comp=E,164μm,0.5s								
EREA	**Eretria**	**1.70**	**86**	P	**Pn**	01 10 22.5	**+0.8**		
EREA				S	**Sb**	01 10 44.3	**-0.4**		
EREA	**Eretria**	**1.70**	**86**	P	**Pn**	01 10 22.5	**+0.8**		
EREA				S	**Sb**	01 10 44.3	**-0.4**		
EREA				AML	AML	01 10 53.7			
	comp=E,295μm,0.8s								
EREA				AML	AML	01 10 57.2			
	comp=N,231μm,0.8s								
VLI	**Veliai**	**1.85**	**150**	P	**Pb**	01 10 25.9	**+0.1**		
VLI	**Veliai**	**1.85**	**150**	P	**Pb**	01 10 25.9	**+0.1**		
IDI	**Anoyia**	**3.92**	**140**	Pn	**Pn**	01 10 54.7	**+2.4**		
	comp=N,0.3nm,0.3s,baz=334,slow=14,SNR=4.3								
IDI				Sn	**Sn**	01 11 40.6	**+2.2**		
	comp=N,0.2nm,0.3s,baz=288,slow=20,SNR=2.2								
UDBI	**Udbina**	**7.67**	**326**	*e*Pn	**Pn**	01 11 44.4	**+0.6**		
UDBI				Sn	**Sn**	01 13 12.0	**+1.2**		
UDBI	**Udbina**	**7.67**	**326**	*e*Pn	**Pn**	01 11 44.4	**+0.6**		
UDBI				Sn	**Sn**	01 13 11.9	**+1.2**		
NVLJ	**Novalja**	**8.11**	**322**	*e*Pn	**Pn**	01 11 50.5	**+0.8**		
NVLJ				Sn	**Sn**	01 13 19.1	**-2.3**		
NVLJ	**Novalja**	**8.11**	**322**	*e*Pn	**Pn**	01 11 50.5	**+0.8**		
NVLJ				Sn	**Sn**	01 13 19.1	**-2.3**		
BRTR	**Keskin Array B**	**9.34**	**78**	Pn	**Pn**	01 12 07.3	**+0.5**		
	comp=N,0.1nm,0.3s,baz=267,slow=14,SNR=2.6								
HFS	**Hagfors**	**22.43**	**349**	P	**P**	01 14 50.4	**-0.3**		
	comp=N,0.8nm,0.5s,baz=159,slow=12,SNR=7.8								
FINES	**FINESS Array B**	**23.30**	**5**	P	**P**	01 14 58.7	**-1.0**		
	comp=N,0.8nm,0.7s,baz=177,slow=9.0,SNR=2.7								
NOA	**NORSAR Array B**	**23.69**	**347**	P	**P**	01 15 03.3	**-0.3**		
	comp=N,0.3nm,0.5s,baz=151,slow=10,SNR=3.0								
EKA	**Eskdalemuir Ar**	**23.89**	**324**	P	**P**	01 15 05.7	**+0.1**		
	comp=N,0.4nm,0.6s,baz=115,slow=7.9,SNR=2.8								
TORD	**Torodi Ar. Bea**	**30.77**	**221**	P	**P**	01 16 08.5	**+0.8**		
	comp=N,0.3nm,0.7s,baz=34,slow=9.3,SNR=3.3								
ZALV	**Zalesovo Beam**	**44.86**	**48**	P	**P**	01 18 05.8	**-0.4**		
	comp=N,0.4nm,0.3s,baz=258,slow=7.2,SNR=2.7								

ISCJB ***26*** *01:25:48.5±0.8,21.7°N±0.1°×143.3°E±0.2,h311km,mb3.4/9, Error ellipse: s-maj=31.3km s-min=15.8km az=175.5*
IDC ***26*** *01:25:49.9±5.7,21.7°N×143.2°E,h309km±57km, mb3.1/10,mb1 3.4/10,mb1mx3.1/38,mbtmp3.8/10,Error ellipse: s-maj=30.2km s-min=14.2km az=86.0*

ISC 26 01:25:50.0±1.0,21.7°N±0.1°×143.2°E±0.3,h311km,n11, σ0.946/11,mb3.5/9,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KSRS	**Korea Array**	**20.53**	**323**	P		**P**	**01 30 05.7**	**+0.2**
	1.1nm,0.5s,baz=150,slow=9.5,SNR=6.1							
KLR	**Kul'dur**	**28.93**	**344**	P		**P**	01 31 20.9	**-0.1**
	0.9nm,0.5s,baz=184,slow=7.3,SNR=4.8							
WRA	**Warramunga Arr**	**42.31**	**192**	P		**P**	**01 33 14.0**	**-0.2**
	0.7nm,0.3s,baz=17,slow=9.6,SNR=12							
ASAR	**Alice Springs**	**46.02**	**192**	P		**P**	**01 33 43.6**	**+0.2**
	0.3nm,0.6s,baz=131,slow=9.6,SNR=4.4							
ZALV	**Zalesovo Beam**	**54.23**	**322**	P		**P**	**01 34 44.0**	**-0.2**
	1.6nm,0.8s,baz=101,slow=6.2,SNR=5.1							
MKAR	**Makanchi Array**	**54.72**	**313**	P		**P**	**01 34 48.2**	**+0.3**
	0.3nm,0.5s,baz=80,slow=9.7,SNR=3.4							
ILAR	**Eielson Array**	**61.99**	**27**	P		**P**	**01 35 37.1**	**-0.3**
	0.4nm,0.7s,baz=246,slow=5.9,SNR=4.3							
YKA	**Yellowknife Ar**	**76.41**	**28**	P		**P**	**01 37 06.0**	**+0.7**
	0.6nm,0.5s,baz=292,slow=6.0,SNR=8.7							
KBZ	**Khabaz**	**82.39**	**314**	P		**P**	**01 37 38.3**	**+0.5**
	0.9nm,0.5s,baz=132,slow=4.5,SNR=4.1							
FINES	**FINESS Array B**	**83.18**	**334**	P		**P**	**01 37 40.6**	**-0.8**
	0.7nm,0.3s,baz=66,slow=5.2,SNR=11							
TORD	**Torodi Ar. Bea**	**128.77**	**309**	PKP		**PKPdf**	**01 44 21.4**	**-0.1**
	0.4nm,0.8s,baz=48,slow=2.1,SNR=4.4							

IDC ***26*** *01:37:24.3±1.2,7.79S×158.56E,h0km,mb3.9/6, mb1 4.0/7,mb1mx3.8/33,mbtmp4.0/7,ML4.2/1,MS2.8/1, Ms1 2.8/1,ms1mx2.3/29,Error ellipse: s-maj=30.6km s-min=22.7km az=54.0*
ISCJB ***26*** *01:37:30.7±0.9,7.9S±0.1°×158.5E±0.1°,h61km,mb3.9/6, Error ellipse: s-maj=24.4km s-min=11.4km az=40.4*

ISC 26 01:37:32.1±1.1,7.9S±0.2°×158.5E±0.2,h61km,n15, σ1.559/10,mb3.9/6,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HNR	**Honiara**	**2.05**	**137**	Pn		Pn	01 38 00.2	-4.1
	80nm,0.3s,baz=191,slow=4.2,SNR=19							
HNR				Sn		**Sn**	**01 38 31.5**	**+2.6**
	192nm,0.3s,baz=104,slow=19,SNR=13							
HNR				LR		LR	01 39 09.0	
	comp=Z,198nm,18.9s,baz=337,slow=49							
HNR	**Honiara**	**2.05**	**137**	*e*P		**Pn**	**01 38 03.0**	**-1.3**
HNR				*e*S		**Sn**	**01 38 28.0**	**-0.8**
WRA	**Warramunga Arr**	**26.30**	**240**	P		**P**	**01 43 03.7**	**+1.5**
	2.2nm,0.6s,baz=64,slow=8.7,SNR=18							
H11S3	**WAKE ISLAND Hy**	**27.45**	**17**	T		T	02 11 40.0	
	baz=198,slow=76,SNR=185							
H11S2	**WAKE ISLAND Hy**	**27.46**	**17**	T		T	02 11 40.1	
	baz=198,slow=76,SNR=195							
H11S1	**WAKE ISLAND Hy**	**27.47**	**17**	T		T	02 11 41.2	
	baz=198,slow=76,SNR=108							
ASAR	**Alice Springs**	**28.32**	**234**	P		**P**	**01 43 21.2**	**+0.9**
	0.5nm,0.5s,baz=61,slow=9.6,SNR=5.4							
H11N1	**WAKE ISLAND Hy**	**28.67**	**17**	T		T	02 13 20.3	
	baz=196,slow=76,SNR=46							
H11N3	**WAKE ISLAND Hy**	**28.68**	**17**	T		T	02 13 14.6	
	baz=196,slow=76,SNR=72							
H11N2	**WAKE ISLAND Hy**	**28.69**	**17**	T		T	02 13 15.2	
	baz=196,slow=76,SNR=50							
FITZ	**Fitzroy Crossi**	**33.55**	**249**	P		**P**	**01 44 05.4**	**-1.0**
	0.8nm,0.6s,baz=55,slow=8.2,SNR=4.6							
SONM	**Songino Array**	**72.03**	**326**	P		**P**	**01 48 49.3**	**-0.4**
	0.6nm,0.4s,baz=131,slow=4.4,SNR=3.5							
MKAR	**Makanchi Array**	**86.42**	**318**	P		**P**	**01 50 07.4**	**-0.7**
	0.7nm,0.7s,baz=88,slow=6.1,SNR=3.9							
ZALV	**Zalesovo Beam**	**86.92**	**325**	P		**P**	**01 50 12.2**	**+1.9**
	0.5nm,0.3s,baz=81,slow=4.5,SNR=2.9							
TORD	**Torodi Ar. Bea**	**156.65**	**285**	PKPab		**PKPab**	**01 57 50.9**	**+0.1**
	0.4nm,0.7s,baz=99,slow=3.4,SNR=5.6							

MEX 26 01:52:25.3±0.3,17.50N×100.89W,h24km±15km,MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.56**	**281**	*e*P		Pb	01 52 34.6	-1.9
ZIIG				*e*S		Sb	01 52 42.0	-2.1
CAIG	**El Cayaco**	**0.75**	**127**	*e*P		Pb	01 52 37.2	-2.5
CAIG				*e*S		Sb	01 52 46.8	-2.6
ARIG	**Puente Sto Nin**	**0.93**	**34**	*e*P		Pb	01 52 39.9	-3.0
ARIG				*e*S		Sb	01 52 51.5	-3.3
MEIG	**Mezcala**	**1.28**	**71**	*i* P		Pn	01 52 45.2	-2.6
MEIG				*i* S		Sn	01 53 00.5	-3.9
PLIG	**Platanillo**	**1.59**	**56**	*e*P		Pn	01 52 49.0	-3.1
PLIG				*i* S		Sn	01 53 08.4	-3.6
TLIG	**Tlapa**	**2.22**	**88**	*i* P		Pn	01 52 58.8	-2.0
TLIG				*i* S		Sn	01 53 24.8	-2.8

IDC ***26*** *01:52:33.2±2.5,20.36S×70.50W,h0km,mb3.7/2, mb1 4.0/3,mb1mx3.7/17,mbtmp3.8/3,ML3.9/1,Error ellipse: s-maj=66.3km s-min=59.2km az=5.0*
NEIC ***26*** *01:52:47.0,19.29S×70.14W,h57km,mb3.8/1,After GUC.*
NEIC Felt [II] at Alto Hospicio, Camina, Cuya, Huara, Iquique, Mamina and Pisagua.
GUC ***26*** *01:52:47.6±0.6,19.29S×70.14W,h57km±3km,ML3.8*

ISC 26 01:52:47.1±1.0,19.24S±0.05×70.14W±0.09,h63km±8km, n20,σ1.939/21,3C-4D,Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PSGC	**Pisagua**	**0.36**	**177**	*e*P		**Pn**	**01 52 58.0**	**0.0**
PSGC				*i* S		**Sn**	**01 53 05.3**	**-0.7**
PSGC				IAML			01 53 05.8	
	comp=N,12μm,0.4s							
MNMC	**Minye Minye**	**0.53**	**79**	*i* P		**Pn**	**01 53 00.2**	**+0.4**
MNMC				*i* S		**Sn**	**01 53 09.6**	**+0.4**
MNMC				IAML			01 53 13.0	
	comp=N,11μm,0.3s							
PB12	**IPOC Station P**	**0.64**	**344**	*i* P		**Pn**	**01 53 02.1**	**+1.2**
PB12				*i* S		**Sn**	**01 53 12.5**	**+1.5**
PB11	**IPOC Station P**	**0.70**	**139**	*e*P		**Pn**	**01 53 01.8**	**+0.2**
PB11				*e*S		**Sn**	**01 53 12.1**	**-0.1**
HMBC	**Humberstone**	**1.06**	**167**	*i* P		**Pn**	**01 53 06.3**	**+0.1**
HMBC				*e*S		**Sn**	**01 53 19.5**	**-0.9**
HMBC				IAML			01 53 23.4	
	comp=E,4μm,0.4s							
PB08	**IPOC Station P**	**1.30**	**134**	*e*P		**Pn**	**01 53 10.3**	**+0.9**
PB08				*e*S		**Sn**	**01 53 27.3**	**+1.1**
PB08				IAML			01 53 30.4	
	comp=E,3μm,0.2s							
PB01	**IPOC Station P**	**1.90**	**161**	*i* P		**Pn**	**01 53 17.5**	**+0.2**
PB01				*i* S		**Sn**	**01 53 40.5**	**+0.2**
PB01				IAML			01 53 55.1	
	comp=E,1μm,0.2s							
PB07	**IPOC Station P**	**2.49**	**174**	*e*P		**Pn**	**01 53 26.6**	**+1.2**
PB07				IAML			01 54 11.9	
	comp=E,601nm,0.5s							
PB06	**IPOC Station P**	**3.49**	**171**	*e*P		**Pn**	**01 53 39.5**	**+0.4**
PB06				IAML			01 54 38.9	
	comp=E,254nm,0.4s							
LPAZ	**La Paz**	**3.50**	**34**	Pn		Pn	01 53 45.0	+5.4
	comp=E,3.2nm,0.3s,baz=192,slow=6.2,SNR=106							
LVC	**Limon Verde**	**3.55**	**161**	*e*Pn		**Pn**	**01 53 42.1**	**+2.0**
LVC				*e*S		**Sn**	**01 54 25.1**	**+4.1**
TRQA	**Tornquist**	**20.06**	**161**	*e*P		**P**	**01 57 14.7**	**-0.5**
	comp=E,4.7nm,0.9s							
TORD	**Torodi Ar. Bea**	**77.71**	**71**	P		**P**	**02 04 36.2**	**-1.4**
	comp=E,0.3nm,0.5s,baz=247,slow=5.7,SNR=11							
YKA	**Yellowknife Ar**	**88.68**	**341**	P		**P**	**02 05 32.5**	**-0.6**
	comp=E,0.3nm,0.7s,baz=146,slow=6.0,SNR=4.1							
H11S2	**WAKE ISLAND Hy**	**26.41**	**279**	T		T	04 30 53.7	
	baz=103							
H11S1	**WAKE ISLAND Hy**	**26.42**	**279**	T		T	04 30 52.5	
	baz=103							
H11S3	**WAKE ISLAND Hy**	**26.43**	**279**	T		T	04 30 55.3	
	baz=103							
H11N3	**WAKE ISLAND Hy**	**26.44**	**281**	T		T	04 30 58.3	
	baz=100							
H11N2	**WAKE ISLAND Hy**	**26.45**	**281**	T		T	04 30 59.3	
	baz=100							
H11N1	**WAKE ISLAND Hy**	**26.45**	**281**	T		T	04 30 59.0	
	baz=100							

CSEM ***26*** *02:20:25.5±0.3,49.75N×18.34E,h2km,Error ellipse: s-maj=14.9km s-min=4.7km az=31.0*

PRU 26 02:20:25.9,49.80N×18.36E,h0km,1D,Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OKC	**Ostrava-Krasne**	**0.14**	**285**	*i* Pg		Pg	02 20 28.8	+0.2
OKC				*e*SG		Sg	02 20 31.5	+1.0
	comp=Z,16nm,0.4s							
OKC	**Ostrava-Krasne**	**0.14**	**285**	Pg		Pg	02 20 28.8	+0.2
OKC				Sg		Sg	02 20 31.5	+1.0
	16nm,0.4s							
MORC	**Moravsky Berou**	**0.53**	**268**	*e*Pg		Pg	02 20 36.2	+0.2
MORC				*e*Sg		Sg	02 20 43.7	+0.8
LANS	**Liptovska Anna**	**0.97**	**132**	*e*Pg		Pg	02 20 43.3	-1.2
LANS				*e*Sg		Sg	02 20 57.0	-0.1
LANS	**Liptovska Anna**	**0.97**	**132**	*e*PG		Pg	02 20 43.3	-1.2
LANS				*e*SG		Sg	02 20 57.0	-0.1
VYHS	**Vyhne**	**1.34**	**166**	*e*Pn		Pg	02 20 50.2	-1.4
VYHS				*e*Sn		Sg	02 21 09.3	+0.3
VYHS	**Vyhne**	**1.34**	**166**	*e*PN		Pg	02 20 50.2	-1.4
VYHS				*e*SN		Sg	02 21 09.3	+0.3
VYHS				*e*LG		Lg	02 21 11.0	
DPC	**Dobruska-Polom**	**1.42**	**294**	*e*PG		Pn	02 20 51.8	-1.3
DPC				*e*SG		Sg	02 21 10.5	-1.1
	comp=Z,2.0nm,0.3s							
DPC	**Dobruska-Polom**	**1.42**	**294**	Pg		Pn	02 20 51.8	-1.3
DPC				Sg		Sg	02 21 10.5	-1.1
	2.0nm,0.3s							
STHS	**Stebnicka Huta**	**1.92**	**100**	*e*Pn		Pn	02 21 00.0	+0.2
STHS	**Stebnicka Huta**	**1.92**	**100**	*e*PN		Pn	02 21 00.0	+0.2

CSEM ***26*** *02:20:57.5±0.6,49.91N×18.55E,h1km,Error ellipse: s-maj=15.0km s-min=4.2km az=28.0*

PRU 26 02:20:58.9,49.83N×18.47E,h0km,1D,Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OKC	**Ostrava-Krasne**	**0.21**	**272**	*i* Pg		Pg	02 21 03.2	+0.3
OKC				*e*SG		Sg	02 21 06.5	+0.9
	comp=Z,13nm,0.5s							
OKC	**Ostrava-Krasne**	**0.21**	**272**	Pg		Pg	02 21 03.2	+0.3
OKC				Sg		Sg	02 21 06.5	+0.9
	13nm,0.5s							
MORC	**Moravsky Berou**	**0.60**	**265**	*e*Pg		Pg	02 21 10.7	+0.3
MORC				*e*Sg		Sg	02 21 19.0	+0.7
LANS	**Liptovska Anna**	**0.94**	**136**	*e*Pg		Pg	02 21 16.7	-0.2
LANS				*e*Sg		Sg	02 21 29.7	+0.6
LANS	**Liptovska Anna**	**0.94**	**136**	*e*PG		Pg	02 21 16.7	-0.2
LANS				*e*SG		Sg	02 21 29.7	+0.6
KRLC	**Kraliky**	**1.12**	**283**	*e*SG		Sg	02 21 34.4	-0.4
KRLC	**Kraliky**	**1.12**	**283**	Sg		Sg	02 21 34.4	-0.4
VYHS	**Vyhne**	**1.36**	**170**	*e*Pn		Pg	02 21 23.9	-1.0
VYHS				*e*Sn		Sg	02 21 41.9	-0.6
VYHS	**Vyhne**	**1.36**	**170**	*e*PN		Pg	02 21 23.9	-1.0
VYHS				*e*SN		Sg	02 21 41.9	-0.6
VYHS				*e*LG		Lg	02 21 44.2	
DPC	**Dobruska-Polom**	**1.48**	**291**	*e*PG		Pn	02 21 25.9	-0.9
DPC				*e*SG		Sg	02 21 45.7	-0.7
DPC	**Dobruska-Polom**	**1.48**	**291**	Pg		Pn	02 21 25.9	-0.9
DPC				Sg		Sg	02 21 45.7	-0.7

NIED ***26*** *02:27:00,39.10N×142.40E,h32km,Mw3.6 Best double couple: M0 2.73000×10^14 NP1:φs=273.00000°,δ40.00000°, λ171.00000°. NP2:φs 10.00000°,δ84.00000°,λ50.00000°.*
IDC ***26*** *02:27:35.5±1.9,39.25N×142.91E,h0km,mb3.6/4,

MJAR			LR	LR	02 32 37.3	
	comp=Z,78nm,18.6s,baz=150,slow=39					
MAT	**Matsushiro**	**2.75 301**	P	**Pn**	**02 31 33.5**	**+1.3**
MAT			*e*S	**Sn**	**02 32 01.9**	**-2.3**
KSRS	**Korea Array**	**10.90 286**	LR	LR	02 37 47.8	
	comp=Z,68nm,18.5s,baz=86,slow=38					
USRK	**Ussuriysk Ar.**	**11.43 325**	LR	LR	02 37 45.3	
	comp=Z,80nm,21.2s,baz=234,slow=36					
KLR	**Kul'dur**	**15.65 337**	LR	LR	02 40 06.3	
	comp=Z,32nm,18.6s,baz=20,slow=35					
H11N2	**WAKE ISLAND Hy**	**27.44 117**	T	T	03 05 23.2	
	baz=308					
H11N1	**WAKE ISLAND Hy**	**27.45 117**	T	T	03 05 20.9	
	baz=308					
H11N3	**WAKE ISLAND Hy**	**27.46 117**	T	T	03 05 21.7	
	baz=308					
H11S3	**WAKE ISLAND Hy**	**28.09 120**	T	T	03 06 19.1	
	baz=310,slow=75					
H11S1	**WAKE ISLAND Hy**	**28.09 120**	T	T	03 06 19.6	
	baz=310,slow=75					
H11S2	**WAKE ISLAND Hy**	**28.10 120**	T	T	03 06 23.2	
	baz=310,slow=75					
ZALV	**Zalesovo Beam**	**43.02 314**	P	**P**	**02 38 46.0**	**+0.8**
	0.5nm,0.4s,baz=88,slow=6.7,SNR=2.5					
MKAR	**Makanchi Array**	**44.94 304**	P	**P**	**02 39 02.0**	**+1.2**
	0.3nm,0.5s,baz=86,slow=10,SNR=2.9					
ILAR	**Eielson Array**	**51.19 32**	P	**P**	**02 39 50.0**	**+1.4**
	0.3nm,0.8s,baz=251,slow=5.6,SNR=3.6					
WRA	**Warramunga Arr**	**55.20 188**	P	**P**	**02 40 18.7**	**+0.1**
	1.1nm,0.6s,baz=3.9,slow=7.4,SNR=15					
ASAR	**Alice Springs**	**58.92 188**	P	**P**	**02 40 47.3**	**+2.3**
	0.8nm,0.9s,baz=18,slow=13,SNR=4.5					

*IDC **26** 02:49:24.9±4.2, 37.°18S×179.°01E, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.5/23, mbtmp3.4/2, Error ellipse: s-maj=95.5km s-min=35.6km az=129.0*
*WEL **26** 02:49:29.8±0.8, 37.°46S×179.°08E, h33km, ML3.8/15, Error ellipse: s-maj=6.0km s-min=5.8km az=0.0*

ISC 26 02:49:26.5±1.8, 37.°57S±0.°07×179.°22E±0.°09, h20km±5km, n30, σ0°81/35, 3C, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WMGZ	**Waiomatatini S**	**0.69**	**248**	⇑PN	**Pn**	**02 49 41.4**	**+0.2**
WMGZ				SN	**Sn**	**02 49 51.6**	**+0.3**
WMGZ				AML	AML	02 49 51.7	
MXZ	**Matakaoa Point**	**0.73**	**270**	PN	**Pb**	**02 49 40.4**	**-0.1**
MXZ				SN	**Sg**	**02 49 50.6**	**0.0**
MXZ				AML	AML	02 50 00.7	
MXZ				AML	AML	02 50 03.0	
MXZ				AML	AML	02 50 03.7	
PUZ	**Puketiti**	**0.92**	**236**	⇑PN	**Pn**	**02 49 45.1**	**+0.8**
PUZ				AML	AML	02 49 58.6	
PUZ				AML	AML	02 50 11.9	
PKGZ	**Pakihiroa**	**0.96**	**250**	⇑PN	**Pn**	**02 49 45.3**	**+0.3**
PKGZ				SN	**Sb**	**02 49 58.1**	**+1.1**
TWGZ	**Tauwhareparae**	**1.16**	**238**	PN	**Pg**	**02 49 48.9**	**0.0**
TWGZ				AML	AML	02 50 06.5	
TWGZ				AML	AML	02 50 13.5	
HAZ	**Te Kaha**	**1.16**	**260**	PN	**Pg**	**02 49 48.3**	**-0.7**
HAZ				*e*SN	**Sb**	**02 50 01.4**	**-1.1**
HAZ				AML	AML	02 50 06.2	
HAZ				AML	AML	02 50 08.4	
HAZ				AML	AML	02 50 08.4	
CNGZ	**Carnagh Statio**	**1.22**	**221**	PN	**Pg**	**02 49 50.6**	**+0.5**
CNGZ				AML	AML	02 50 36.5	
CNGZ				AML	AML	02 50 40.9	
RUGZ	**Raukumara Rang**	**1.29**	**252**	PN	**Pb**	**02 49 50.2**	**+0.1**
TKGZ	**Te Karaka**	**1.39**	**231**	PN	**Pb**	**02 49 51.9**	**+0.1**
TKGZ				AML	AML	02 50 16.1	
TKGZ				AML	AML	02 50 18.0	
RIGZ	**Rimuhau**	**1.62**	**225**	PN	**Pb**	**02 49 55.7**	**0.0**
RIGZ				AML	AML	02 50 29.5	
RIGZ				AML	AML	02 50 33.1	
RAGZ	**Rawiri**	**1.70**	**236**	*e*PN	**Pb**	**02 49 56.1**	**-1.1**
RAGZ				AML	AML	02 50 23.1	
RAGZ				AML	AML	02 50 31.1	
URZ	**Urewera**	**1.81**	**247**	Pn	**Pb**	**02 49 58.0**	**-0.9**
	13nm,0.3s,baz=274,slow=2.1,SNR=70						
URZ				Sn	**Sb**	**02 50 21.3**	**+0.1**
	24nm,0.3s,baz=49,slow=9.5,SNR=9.2						
URZ	**Urewera**	**1.81**	**247**	PN	**Pb**	**02 49 58.2**	**-0.8**
URZ				AML	AML	02 50 26.8	
URZ				AML	AML	02 50 27.6	
SNGZ	**Shannon Statio**	**1.92**	**230**	PN	**Pb**	**02 49 59.9**	**-0.9**
SNGZ				AML	AML	02 50 40.3	
SNGZ				AML	AML	02 50 45.5	
MUGZ	**Murupara**	**2.14**	**244**	PN	**Pn**	**02 50 02.5**	**+1.4**
NMHZ	**Naumai**	**2.44**	**230**	PN	**Pn**	**02 50 05.9**	**+0.6**
NMHZ				AML	AML	02 50 40.1	
NMHZ				AML	AML	02 50 43.4	
MRHZ	**Matea Rd**	**2.55**	**239**	PN	**Pn**	**02 50 07.7**	**+1.0**
BKZ	**Black Stump Fm**	**2.67**	**233**	PN	**Pn**	**02 50 09.4**	**+0.9**
BKZ				AML	AML	02 50 50.5	
BKZ				AML	AML	02 51 22.8	
MCHZ	**McNeill Hill**	**2.73**	**226**	PN	**Pn**	**02 50 10.7**	**+1.5**
MCHZ				AML	AML	02 50 48.4	
MCHZ				AML	AML	02 50 55.2	
KAHZ	**Kahuranaki**	**2.88**	**219**	PN	**Pn**	**02 50 12.2**	**+0.8**
KUZ	**Kuaotunu**	**2.92**	**285**	*e*PN	**Pn**	**02 50 12.5**	**+0.7**
KRHZ	**Kereru**	**3.05**	**226**	PN	**Pn**	**02 50 13.9**	**+0.2**
KRHZ				AML	AML	02 51 00.0	
KRHZ				AML	AML	02 51 01.2	
NGZ	**Ngauruhoe**	**3.27**	**239**	*e*PN	**Pn**	**02 50 17.5**	**+0.7**
MKAZ	**Moumakai**	**3.27**	**277**	PN	**Pn**	**02 50 17.7**	**+1.1**
GRZ	**Great Barrier**	**3.29**	**292**	*e*PN	**Pn**	**02 50 18.3**	**+1.3**
WNVZ	**Wahianoa**	**3.34**	**237**	PN	**Pn**	**02 50 18.5**	**+0.7**
MRZ	**Mangatainoka R**	**4.19**	**221**	*e*PN	**Pn**	**02 50 28.7**	**-0.7**
ASAR	**Alice Springs**	**41.01**	**276**	P	**P**	**02 57 08.6**	**+0.2**
	0.3nm,0.5s,baz=121,slow=8.4,SNR=4.2						
WRA	**Warramunga Arr**	**42.65**	**282**	P	**P**	**02 57 20.9**	**-1.0**
	0.5nm,0.6s,baz=121,slow=7.8,SNR=4.2						
ARCES	**ARCESS Array B**	**144.98**	**344**	PKP	**PKPdf**	**03 09 01.0**	**-0.2**
	2.5nm,1.0s,baz=18,slow=3.2,SNR=2.5						

*ISCJB **26** 03:02:55.6±1.2, 39.°20N±0.°05×142.°3E±0.°1, h49km±12km, mb3.5/5, Error ellipse: s-maj=19.1km s-min=6.7km az=17.9*
*JMA **26** 03:02:55.4±0.1, 39.°23N×142.°40E, h33km±1km, M3.3*
*IDC **26** 03:02:57.8±6.8, 39.°02N×142.°75E, h50km±73km, mb3.2/5, mb1 3.5/8, mb1mx3.3/37, mbtmp3.4/8, ML2.8/3, Error ellipse: s-maj=101.0km s-min=19.1km az=114.0*

ISC 26 03:02:55.4±1.7, 39.°25N±0.°05×142.°40E±0.°09, h32km±11km, n19, σ1°41/22, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.55**	**306**	P	**Pb**	**03 03 06.5**	**-0.3**
MIYJ				S	**Sb**	**03 03 14.8**	**+0.2**
OFUJ	**Ofunato**	**0.59**	**254**	P	**Pb**	**03 03 07.0**	**-0.4**
OFUJ				S	**Sb**	**03 03 15.2**	**-0.4**
JTH	**Tanohata**	**0.80**	**329**	P	**Pn**	**03 03 10.4**	**-0.1**
JTH				S	**Sn**	**03 03 21.8**	**+0.5**
JOM	**Ohasama**	**0.89**	**285**	P	**Pn**	**03 03 11.8**	**+0.2**
JOM				S	**Sn**	**03 03 23.6**	**+0.3**
JMK	**Ichinoseki**	**0.96**	**252**	P	**Pn**	**03 03 12.6**	**0.0**
JMK				S	**Sn**	**03 03 25.0**	**-0.2**
JKZ	**Kuzumaki**	**1.10**	**312**	P	**Pn**	**03 03 15.4**	**+0.7**
JKZ				S	**Sb**	**03 03 29.6**	**-0.2**
JIO	**Ouri**	**1.14**	**226**	P	**Pn**	**03 03 14.6**	**-0.5**
JIO				S	**Sn**	**03 03 28.6**	**-1.0**
MAT	**Matsushiro**	**4.28**	**232**	P	**Pn**	**03 04 02.4**	**+4.2**
MAT				S	**Sn**	**03 04 45.6**	**-1.4**
MJAR	**Matsushiro Arr**	**4.28**	**232**	P	**Pn**	**03 04 00.9**	**+2.7**
	0.8nm,0.3s,baz=48,slow=9.7,SNR=14						
ASAJ	**Asahikawa**	**4.87**	**2**	P	Pn	03 04 11.9	+5.6
	0.4nm,0.3s,baz=180,slow=10,SNR=2.4						
USRK	**Ussuriysk Ar.**	**9.22**	**306**	P	Pn	03 05 12.9	+6.9
	0.2nm,0.3s,baz=113,slow=15,SNR=4.7						
H11N2	**WAKE ISLAND Hy**	**28.71**	**126**	T	T	03 39 16.8	
	baz=318,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**28.72**	**126**	T	T	03 39 16.9	
	baz=318,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**28.73**	**126**	T	T	03 39 18.8	
	baz=318,slow=75,SNR=16						
ILAR	**Eielson Array**	**47.22**	**33**	P	**P**	**03 11 26.1**	**+1.3**
	0.3nm,0.6s,baz=265,slow=6.5,SNR=7.0						
WRA	**Warramunga Arr**	**59.36**	**189**	P	**P**	**03 12 53.8**	**-0.7**
	0.6nm,0.5s,baz=7.3,slow=7.1,SNR=13						
ASAR	**Alice Springs**	**63.09**	**189**	P	**P**	**03 13 18.7**	**-1.0**
	0.2nm,0.5s,baz=1.9,slow=6.9,SNR=3.5						
PDAR	**Pinedale Array**	**75.57**	**46**	P	**P**	**03 14 35.4**	**-1.8**
	0.2nm,0.5s,baz=284,slow=4.2,SNR=2.4						
TXAR	**Lajitas Array**	**88.16**	**53**	P	**P**	**03 15 44.1**	**+0.8**
	0.1nm,0.6s,baz=326,slow=6.4,SNR=3.0						

*ISCJB **26** 03:06:54.7±0.5, 40.°82N±0.°02×31.°01E±0.°03, h3km±4km, Error ellipse: s-maj=3.9km s-min=3.2km az=6.8*
*DDA **26** 03:06:54.0, 40.°81N×31.°00E, h25km, Md2.7*
*ISK **26** 03:06:54.9, 40.°80N×30.°99E, h5km, ML2.4*
*CSEM **26** 03:06:54.9±0.1, 40.°82N×31.°01E, h2km, MD2.3, Error ellipse: s-maj=2.4km s-min=2.0km az=168.0*

ISC 26 03:06:55.2±0.9, 40.°81N±0.°02×31.°01E±0.°02, h9km±6km, n51, σ0°58/82, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SAHE	**Sakarya_HENDEK**	**0.12**	**289**	*i* P	**Pg**	**03 06 58.1**	**+0.1**
SAHE				*i* S	**Sg**	**03 07 00.6**	**+0.6**
SAHE	**Sakarya_HENDEK**	**0.12**	**289**	P	**Pg**	**03 06 58.1**	**+0.1**
SAHE				S	**Sg**	**03 07 00.6**	**+0.6**
BTAS	**Taskesti**	**0.24**	**181**	*i* P	**Pg**	**03 06 59.3**	**-0.8**
BTAS				*i* S	**Sg**	**03 07 02.3**	**-1.1**
BTAS	**Taskesti**	**0.24**	**181**	P	**Pg**	**03 06 59.3**	**-0.8**
BTAS				S	**Sg**	**03 07 02.3**	**-1.1**
MDUB	**Mudurnu**	**0.37**	**157**	*e*PG	**Pg**	**03 07 02.4**	**+0.1**
MDUB				*e*SG	**Sg**	**03 07 07.6**	**+0.2**
MDUB	**Mudurnu**	**0.37**	**157**	*e*Pg	**Pg**	**03 07 02.4**	**-0.1**
MDUB				*e*Sg	**Sg**	**03 07 07.6**	**+0.2**
GULT	**Gulveren**	**0.53**	**225**	*e*PG	**Pg**	**03 07 05.2**	**-0.3**
GULT				*e*SG	**Sg**	**03 07 13.0**	**+0.5**
GULT	**Gulveren**	**0.53**	**225**	*e*Pg	**Pg**	**03 07 05.2**	**-0.3**
GULT				*e*Sg	**Sg**	**03 07 13.0**	**+0.5**
SPNC	**Sapanca-Adapaz**	**0.54**	**257**	*e*PG	**Pg**	**03 07 05.7**	**0.0**
SPNC	**Sapanca-Adapaz**	**0.54**	**257**	*e*Pg	**Pg**	**03 07 05.7**	**0.0**
KDZE	**Karadeniz Ereo**	**0.60**	**33**	*e*PG	**Pg**	**03 07 06.6**	**-0.2**
KDZE	**Karadeniz Ereo**	**0.60**	**33**	*e*Pg	**Pg**	**03 07 06.6**	**-0.2**
KAND	**Kocaeli-Kandir**	**0.68**	**295**	*i* P	**Pg**	**03 07 08.0**	**-0.2**
KAND				*i* S	**Sg**	**03 07 17.6**	**+0.5**
KAND	**Kocaeli-Kandir**	**0.68**	**295**	P	**Pg**	**03 07 08.0**	**-0.2**
KAND				S	**Sg**	**03 07 17.6**	**+0.5**
BCAM	**Yenicaga**	**0.81**	**89**	*i* P	**Pg**	**03 07 10.3**	**-0.4**
BCAM				*i* S	**Sg**	**03 07 21.1**	**-0.1**
BCAM	**Yenicaga**	**0.81**	**89**	P	**Pg**	**03 07 10.3**	**-0.4**
BCAM				S	**Sg**	**03 07 21.1**	**-0.1**
HRT	**Hereke**	**1.01**	**271**	*e*PG	**Pg**	**03 07 14.5**	**-0.2**
HRT				*e*SG	**Sb**	**03 07 28.8**	**+0.4**
HRT	**Hereke**	**1.01**	**271**	*e*Pg	**Pg**	**03 07 14.5**	**-0.2**
HRT				*e*Sg	**Sb**	**03 07 28.8**	**+0.4**
BORA	**Eskisehir**	**1.02**	**205**	*i* P	**Pg**	**03 07 13.8**	**-1.0**
BORA				*i* S	**Sb**	**03 07 28.8**	**+0.2**
BORA	**Eskisehir**	**1.02**	**205**	P	**Pg**	**03 07 13.8**	**-1.0**
BORA				S	**Sb**	**03 07 28.8**	**+0.2**
ADVT	**Abdulvahap**	**1.04**	**249**	*e*PG	**Pg**	**03 07 14.6**	**-0.5**
ADVT				*e*SG	**Sn**	**03 07 29.9**	**-0.5**
ADVT	**Abdulvahap**	**1.04**	**249**	*e*Pg	**Pg**	**03 07 14.6**	**-0.5**
ADVT				*e*Sg	**Sn**	**03 07 30.0**	**-0.5**
CAVI	**Cavuskoy**	**1.08**	**236**	*e*PG	**Pg**	**03 07 15.2**	**-0.6**
CAVI				*e*SG	**Sb**	**03 07 30.4**	**+0.3**
CAVI	**Cavuskoy**	**1.08**	**236**	*e*Pg	**Pg**	**03 07 15.3**	**-0.6**
CAVI				*e*Sg	**Sb**	**03 07 30.4**	**+0.3**
SILT	**Sile**	**1.09**	**289**	*e*PN	**Pn**	**03 07 16.5**	**0.0**
SILT	**Sile**	**1.09**	**289**	*e*Pn	**Pn**	**03 07 16.5**	**0.0**
BTIN	**Bart¯–n**	**1.25**	**48**	*i* P	**Pg**	**03 07 17.8**	**-1.3**
BTIN				*i* S	**Sg**	**03 07 35.0**	**-0.4**
BTIN	**Bart¯–n**	**1.25**	**48**	P	**Pg**	**03 07 17.8**	**-1.3**
BTIN				S	**Sg**	**03 07 35.0**	**-0.4**
IZI	**Iznik**	**1.26**	**248**	*e*PN	**Pb**	**03 07 19.1**	**0.0**
IZI	**Iznik**	**1.26**	**248**	*e*Pn	**Pb**	**03 07 19.1**	**0.0**
ESKT	**Eskisehir**	**1.30**	**185**	*e*PN	**Pb**	**03 07 20.5**	**+0.7**
ESKT	**Eskisehir**	**1.30**	**185**	*i* P	**Pb**	**03 07 20.2**	**+0.4**
ESKT				*i* S	**Sn**	**03 07 37.7**	**+0.6**
ESKT	**Eskisehir**	**1.30**	**185**	*e*Pn	**Pb**	**03 07 20.5**	**+0.7**
SEYT	**Eskypehyr**	**1.30**	**185**	P	**Pb**	**03 07 20.2**	**+0.4**
SEYT				S	**Sn**	**03 07 37.7**	**+0.6**
SAFT	**Safranbolu**	**1.34**	**71**	*e*PN	**Pg**	**03 07 21.4**	**+0.5**
SAFT	**Safranbolu**	**1.34**	**71**	*e*Pn	**Pg**	**03 07 21.4**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.42**	**164**	*e*PN	**Pn**	**03 07 21.4**	**+0.2**
SVRH				*e*SN	**Sn**	**03 07 41.6**	**+1.5**
SVRH	**Sivrihisar-ESK**	**1.42**	**164**	*e*Pn	**Pn**	**03 07 21.4**	**+0.2**
SVRH				*e*Sn	**Sn**	**03 07 41.6**	**+1.5**
BUY	**Buyukada**	**1.43**	**272**	*i* P	**Pn**	**03 07 21.5**	**+0.2**
BUY				*i* S	**Sb**	**03 07 39.9**	**-0.5**
BUY	**Buyukada**	**1.43**	**272**	P	**Pn**	**03 07 21.5**	**+0.2**
BUY				S	**Sb**	**03 07 39.9**	**-0.5**
IGD	**Bursa**	**1.48**	**249**	*i* P	**Pn**	**03 07 21.4**	**-0.6**
IGD				*i* S	**Sn**	**03 07 40.9**	**-0.5**
ISK	**Istanbul-Kandi**	**1.50**	**280**	*e*PN	**Pb**	**03 07 22.9**	**-0.2**
ISK	**Istanbul-Kandi**	**1.50**	**280**	*e*Pn	**Pb**	**03 07 22.9**	**-0.2**
KLYT	**Kilyos**	**1.55**	**287**	*e*PN	**Pb**	**03 07 23.6**	**-0.4**
KLYT	**Kilyos**	**1.55**	**287**	*e*Pn	**Pb**	**03 07 23.6**	**-0.4**
ARMT	**Armutlu**	**1.65**	**262**	*e*PN	**Pn**	**03 07 24.8**	**+0.5**
ARMT	**Armutlu**	**1.65**	**262**	*e*Pn	**Pn**	**03 07 24.8**	**+0.5**
TVSB	**Tavsanli**	**1.80**	**221**	*e*PN	**Pb**	**03 07 27.9**	**-0.5**
TVSB	**Tavsanli**	**1.80**	**221**	*e*Pn	**Pb**	**03 07 27.9**	**-0.5**
ELBA	**Catalca**	**1.98**	**281**	*i* P	**Pb**	**03 07 30.4**	**-0.9**
ELBA				*i* S	**Sn**	**03 07 54.4**	**+0.7**
ELBA	**Catalca**	**1.98**	**281**	P	**Pb**	**03 07 30.4**	**-0.9**
ELBA				S	**Sn**	**03 07 54.4**	**+0.7**

MEX 26 03:14:47.2±0.3, 16.°51N×98.°39W, h4km±8km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.28**	**114**	*e*P	Pg	03 14 52.0	-0.5
PNIG				*i* S	Sg	03 14 56.3	+0.1
TLIG	**Tlapa**	**1.06**	**351**	*e*P	Pg	03 15 05.2	-2.5
TLIG				*e*S	Sg	03 15 18.7	-2.8
VHO	**Vista Hermosa**	**1.68**	**70**	*i* P	Pn	03 15 14.9	-2.7
VHO				*i* S	Sn	03 15 34.6	-5.1
PLIG	**Platanillo**	**2.16**	**331**	*i* P	Pn	03 15 20.8	-3.2
PLIG				*e*S	Sn	03 15 46.5	-4.8
HUIG	**Huatulco**	**2.31**	**108**	*e*P	Pn	03 15 22.8	-3.2
HUIG				*i* S	Sn	03 15 50.5	-4.4
YAIG	**Yautepec**	**2.43**	**345**	*i* P	Pn	03 15 25.1	-2.7
YAIG				*i* S	Sn	03 15 54.0	-4.1

*HLW **26** 03:18:15.5, 35.°11N×23.°51E, h22km±10km, Md3.8, MI3.7*
*ISCJB **26** 03:18:16.4±0.9, 34.°81N±0.°04×23.°05E±0.°09, h38km, Error ellipse: s-maj=10.5km s-min=5.8km az=169.8*
*CSEM **26** 03:18:17.4±0.5, 34.°86N×23.°14E, h30km, ML3.1, Error ellipse: s-maj=13.9km s-min=8.2km az=73.0*
*ATH **26** 03:18:17.4, 34.°95N×23.°19E, h38km±3km, ML3.1/3, Error ellipse: s-maj=6.7km s-min=1.9km az=45.0*

ISC 26 03:18:18.1±1.4, 34.°84N±0.°04×23.°15E±0.°07, h38km, n27, σ1°09/35, Crete

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GVD	**Gavdhos**	**0.77**	**90**	P	**Pn**	**03 18 33.2**	**+0.7**
GVD				S	**Sn**	**03 18 44.1**	**+1.2**
GVD	**Gavdhos**	**0.77**	**90**	P	**Pn**	**03 18 33.2**	**+0.7**
GVD				S	**Sn**	**03 18 44.1**	**+1.2**
GVD				AML	AML	03 18 50.8	
	comp=E,5069μm,0.3s						
GVD				AML	AML	03 18 52.9	
	comp=N,3930μm,0.4s						
IMMV	**Iera Moni Meta**	**0.92**	**48**	P	**Pn**	**03 18 33.3**	**-1.2**
IMMV				S	**Sn**	**03 18 47.1**	**+0.5**
IMMV	**Iera Moni Meta**	**0.92**	**48**	P	**Pn**	**03 18 33.3**	**-1.2**
IMMV				S	**Sn**	**03 18 47.1**	**+0.5**
IMMV				AML	AML	03 18 48.5	
	comp=E,2799μm,0.7s						
IMMV				AML	AML	03 18 51.7	
	comp=N,2454μm,0.9s						
ANKY	**Antikythira Is**	**1.03**	**7**	P	**Pn**	**03 18 34.2**	**-1.8**
ANKY				S	**Sn**	**03 18 48.3**	**-0.9**
ANKY	**Antikythira Is**	**1.03**	**7**	P	**Pn**	**03 18 34.2**	**-1.8**
ANKY				S	**Sn**	**03 18 48.3**	**-0.9**
ANKY				AML	AML	03 18 53.8	
	comp=N,1775μm,0.7s						
ANKY				AML	AML	03 18 57.2	
	comp=E,1471μm,0.9s						
VAM	**Vamos**	**1.03**	**57**	P	**Pn**	**03 18 35.3**	**-0.7**
SIVA	**Sivas**	**1.38**	**82**	P	**Pn**	**03 18 40.7**	**-0.1**
SIVA	**Sivas**	**1.38**	**82**	P	**Pn**	**03 18 40.7**	**-0.1**
KYTH	**Kithira**	**1.42**	**357**	P	**Pn**	**03 18 42.5**	**+1.1**
KYTH	**Kithira**	**1.42**	**357**	P	**Pn**	**03 18 42.5**	**+1.1**
IDI	**Anoyia**	**1.50**	**72**	P	**Pn**	**03 18 41.9**	**-0.6**
IDI	**Anoyia**	**1.50**	**72**	P	**Pn**	**03 18 41.9**	**-0.6**
VLI	**Veliai**	**1.88**	**355**	P	**Pn**	**03 18 47.5**	**-0.2**
VLI	**Veliai**	**1.88**	**355**	P	**Pn**	**03 18 47.5**	**-0.2**
LAST	**Lasithi**	**1.94**	**80**	P	**Pn**	**03 18 49.1**	**+0.5**
LAST	**Lasithi**	**1.94**	**80**	P	**Pn**	**03 18 49.1**	**+0.5**
NPS	**Neapolis**	**2.06**	**78**	P	**Pn**	**03 18 51.3**	**+1.0**
NPS	**Neapolis**	**2.06**	**78**	P	**Pn**	**03 18 51.4**	**+1.0**
ZKR	**Zakros**	**2.54**	**83**	P	**Pn**	**03 18 57.4**	**+0.7**
ZKR	**Zakros**	**2.54**	**83**	P	**Pn**	**03 18 57.4**	**+0.7**
SLUM	**Salum**	**3.76**	**152**	P	**Pn**	**03 19 13.6**	**0.0**
	baz=157						
SLUM				S	**Sn**	**03 19 56.1**	**-0.6**
	baz=157						
SLUM				AMP		03 20 00.0	
	comp=E,100μm,0.2s,logA/T=5.6,baz=157						
SLUM	**Salum**	**3.76**	**152**	P	**Pn**	**03 19 13.6**	**0.0**
SLUM				S	**Sn**	**03 19 56.1**	**-0.6**
SWA2		**5.92**	**160**	P	**Pn**	**03 19 44.3**	**+1.1**
	baz=163						
SWA2				AMP		03 20 00.0	
	comp=N,240μm,0.2s,logA/T=6.0,baz=163						
SWA2		**5.92**	**160**	P	**Pn**	**03 19 44.3**	**+1.1**
RSH		**9.70**	**111**	P	**Pn**	**03 20 32.6**	**-2.5**
	baz=112						
RSH		**9.70**	**111**	P	**Pn**	**03 20 32.6**	**-2.5**

*ISCJB **26** 03:25:11.1±0.7, 34.°67N±0.°05×29.°10E±0.°09, h35km, Error ellipse: s-maj=11.0km s-min=5.9km az=16.9*
*HLW **26** 03:25:14.6, 34.°48N×29.°11E, h31km±17km, Md3.2, MI3.1*
*CSEM **26** 03:26:04.3, 35.°62N×29.°68E, h35km, MD3.2*
*DDA **26** 03:26:04.3, 35.°62N×29.°68E, h35km, Md3.2*

ISC 26 03:25:11.7±1.2, 34.°64N±0.°04×29.°07E±0.°06, h35km, n14, σ1°93/20, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AKAS	**Kas**	**1.65**	**15**	*i* P	Pn	03 25 38.1	-0.2
AKAS				*i* S	**Sn**	**03 25 57.1**	**-1.3**
AKAS	**Kas**	**1.65**	**15**	P	Pn	03 25 38.1	-0.2
AKAS				S	**Sn**	**03 25 57.1**	**-1.3**
KORT	**Korkueli**	**2.58**	**23**	*i* P	**Pn**	**03 25 51.1**	**0.0**
KORT	**Korkueli**	**2.58**	**23**	P	**Pn**	**03 25 51.1**	**0.0**
GOLH	**Golhisar**	**2.62**	**9**	*i* P	**Pn**	**03 25 52.6**	**+0.9**
GOLH				*i* S	**Sn**	**03 26 21.7**	**-0.7**
GOLH	**Golhisar**	**2.62**	**9**	P	**Pn**	**03 25 52.6**	**+0.9**
GOLH				S	**Sn**	**03 26 21.7**	**-0.7**
ERMK	**Ermenek**	**3.71**	**56**	*i* P	**Pn**	**03 26 09.1**	**+2.4**
ERMK				*i* S	**Sn**	**03 26 50.0**	**+0.7**
ERMK	**Ermenek**	**3.71**	**56**	P	**Pn**	**03 26 09.1**	**+2.4**
ERMK				S	**Sn**	**03 26 50.0**	**+0.7**
SLUM	**Salum**	**4.51**	**227**	P	**Pn**	**03 26 19.7**	**+2.2**
	baz=229						
SLUM				AMP		03 27 00.0	
	comp=N,30μm,0.2s,logA/T=5.2,baz=229						
SLUM				S	**Sn**	**03 27 06.8**	**-2.0**
	baz=229						
KDHN	**Kadinhani**	**4.58**	**31**	*i* P	Pn	03 26 18.1	-0.5
KDHN				*i* S	**Sn**	**03 27 08.2**	**-2.5**
KDHN	**Kadinhani**	**4.58**	**31**	P	Pn	03 26 18.1	-0.5
KDHN				S	**Sn**	**03 27 08.2**	**-2.5**
RSH		**5.36**	**132**	P	**Pn**	**03 26 30.5**	**+1.3**
	baz=130						
SWA2		**6.20**	**211**	P	**Pn**	**03 26 42.5**	**+1.8**
	baz=212						
HNKL	**Nakhl**	**6.27**	**137**	P	**Pn**	**03 26 43.2**	**+1.5**
	baz=136						
HNKL				AMP		03 27 00.0	
	comp=E,30μm,0.6s,logA/T=4.7,baz=136						
HNKL				S	**Sn**	**03 27 48.0**	**-4.2**
	baz=136						

*ISCJB **26** 03:37:53.5±1.6, 35.°44N±0.°08×27.°37E±0.°08, h12km±7km, Error ellipse: s-maj=16.2km s-min=5.7km az=144.1*
*CSEM **26** 03:37:53.9±0.6, 35.°47N×27.°30E, h12km, ML2.

TCUT	**Toone Canyon**	**0.91**	**173**	*e*Pg		**Pn**	**03 38 45.6**	**+0.2**
WBC	**Weber Canyon**	**0.92**	**197**	*e*Pg		**Pn**	**03 38 45.5**	**+0.1**
HVU	**Hansel Valley**	**0.94**	**255**	*e*Pg		**Pb**	**03 38 44.9**	**+0.1**
SPUT	**South Promonto**	**0.98**	**224**	*e*Pg		**Pn**	**03 38 46.1**	**-0.1**
FPU	**Francis Peak**	**1.02**	**192**	*e*Pg		**Pn**	**03 38 47.4**	**+0.5**
NAIU	**Northern Antel**	**1.13**	**207**	*e*Pg		**Pn**	**03 38 49.2**	**+1.0**
N16A	**Rees Ranch, Co**	**1.14**	**176**	*e*Pg		**Pn**	**03 38 49.7**	**+1.2**
RBU	**Red Butte Cany**	**1.26**	**189**	*e*Pn		**Pg**	**03 38 51.4**	**+1.2**
SAIU	**Southern Antel**	**1.26**	**202**	*e*Pn		**Pg**	**03 38 51.3**	**+1.0**
HRU	**Hogsback Ridge**	**1.26**	**192**	*e*Pn		**Pg**	**03 38 51.3**	**+1.0**
CTU	**Camp Tracy**	**1.34**	**186**	*e*Pn		**Pg**	**03 38 52.8**	**+1.0**
SNUT	**Stansbury Nort**	**1.35**	**213**	*e*Pn		**Pg**	**03 38 52.5**	**+0.5**
RCJ	**Ross Creek**	**1.37**	**176**	*e*Pn		**Pg**	**03 38 53.1**	**+0.8**
HTU	**Hoyt Peak**	**1.37**	**169**	*e*Pn		**Pg**	**03 38 53.2**	**+0.8**
MHD	**Mile High Driv**	**1.38**	**188**	*e*Pn		**Pg**	**03 38 53.1**	**+0.7**
KLJ	**Keetly**	**1.40**	**175**	*e*Pn		**Pg**	**03 38 53.5**	**+0.7**
HLJ	**Hailstone**	**1.42**	**175**	*e*Pn		**Pg**	**03 38 53.8**	**+0.6**
JLU	**Jordanelle**	**1.42**	**177**	*e*Pn		**Pg**	**03 38 53.9**	**+0.5**
REDW	**Red Top Meadow**	**1.43**	**21**	*e*Pn		**Pb**	**03 38 52.6**	**-0.5**
REDW				*e*S		**Sg**	**03 39 12.2**	**0.0**
NOQ	**North Oquirrh**	**1.44**	**198**	*e*Pn		**Pg**	**03 38 53.9**	**+0.3**
LDJ	**Lady**	**1.45**	**176**	*e*Pn		**Pg**	**03 38 54.3**	**+0.4**
GMU	**Granite Mounta**	**1.46**	**186**	*e*Pn		**Pg**	**03 38 54.3**	**+0.3**
TPAW	**Teton Pass**	**1.53**	**17**	*e*Pn		**Pb**	**03 38 54.5**	**-0.4**
TPAW				*e*S		**Sg**	**03 39 15.7**	**+0.4**
SNOW	**Snow King Moun**	**1.55**	**22**	*e*Pn		**Pg**	**03 38 55.2**	**-0.7**
SNOW				*e*S		**Sn**	**03 39 13.8**	**-0.9**
BGU	**Big Grassy Mou**	**1.56**	**226**	*e*Pn		**Pb**	**03 38 55.1**	**-0.2**
WTU	**Western Traver**	**1.60**	**191**	*e*Pn		**Pb**	**03 38 56.4**	**+0.5**
DCU	**Deer Creek Res**	**1.61**	**179**	*e*Pn		**Pb**	**03 38 56.7**	**+0.5**
DAU	**Daniels Canyon**	**1.62**	**172**	*e*Pn		**Pb**	**03 38 57.0**	**+0.5**
CWU	**Camp Williams**	**1.63**	**195**	*e*Pn		**Pb**	**03 38 56.9**	**+0.4**
BW06	**Boulder Array**	**1.65**	**63**	Pb		**Pg**	**03 38 57.3**	**-0.5**
	baz=245							
BW06				S		**Sg**	**03 39 19.0**	**-0.3**
	baz=245							
BW06	**Boulder Array**	**1.65**	**63**	*e*Pn		**Pg**	**03 38 57.4**	**-0.4**
BW06				*e*S		**Sg**	**03 39 19.2**	**0.0**
PD31	**Pinedale Array**	**1.65**	**63**	*e*Pn		**Pg**	**03 38 57.4**	**-0.5**
PDAR	**Pinedale Array**	**1.65**	**63**	Pg		**Pg**	**03 38 57.6**	**-0.2**
	428nm,0.3s,baz=227,slow=14,SNR=7400							
PDAR				Lg		Lg	03 39 18.9	
	116nm,0.3s,baz=238,slow=22,SNR=9.2							
LOHW	**Long Hollow**	**1.73**	**23**	*e*Pn		**Pb**	**03 38 57.9**	**-0.4**
LOHW				*e*S		**Sg**	**03 39 22.0**	**+0.1**
MOOW	**Moose Ponds**	**1.82**	**19**	*e*Pn		**Pb**	**03 38 59.1**	**-0.7**
MOOW				*e*S		**Sg**	**03 39 23.4**	**-1.3**
IMW	**Indian Meadow**	**1.93**	**13**	*e*Pn		**Pb**	**03 39 00.7**	**-0.9**
IMW				*e*S		**Sg**	**03 39 28.6**	**+0.6**
WMUT	**West Mountain**	**1.96**	**186**	*e*Pn		**Pb**	**03 39 01.8**	**-0.3**
DUG	**Dugway, Tooele**	**2.06**	**208**	P		**Pn**	**03 39 02.4**	**+1.3**
	baz=26							
DUG	**Dugway, Tooele**	**2.06**	**208**	*e*Pn		**Pn**	**03 39 02.4**	**+1.3**
DUG				*e*S		**Sn**	**03 39 28.2**	**+1.1**
NLU	**North Lily Min**	**2.10**	**191**	*e*Pn		**Pb**	**03 39 03.7**	**-0.9**
FLWY	**Flagg Ranch**	**2.15**	**17**	*e*Pn		**Pb**	**03 39 04.2**	**-1.2**
FLWY				*e*S		**Sg**	**03 39 33.9**	**-1.4**
MCID	**Moose Creek**	**2.18**	**7**	*e*Pn		**Pb**	**03 39 04.3**	**-1.6**
YPP	**Pitchstone Pla**	**2.31**	**13**	*e*Pn		**Pb**	**03 39 07.1**	**-1.0**
ARGU	**Argyle Ridge**	**2.33**	**161**	*e*Pn		**Pb**	**03 39 07.4**	**-1.0**
ELU	**Electric Lake**	**2.40**	**174**	*e*Pn		**Pb**	**03 39 08.4**	**-1.3**
DCM	**Dugout Coal Mi**	**2.44**	**162**	*e*Pn		**Pb**	**03 39 09.1**	**-1.3**
H17A	**Grant Village**	**2.48**	**16**	*e*Pn		**Pb**	**03 39 09.9**	**-1.0**
H17A				*e*S		**Sb**	**03 39 42.5**	**+0.9**
YFT	**Old Faithful**	**2.48**	**12**	*e*Pn		**Pb**	**03 39 11.4**	**+0.3**
LEVU	**Levan**	**2.52**	**185**	*e*Pn		**Pb**	**03 39 10.1**	**-1.6**
HLID	**Hailey**	**2.61**	**307**	Pb		**Pb**	**03 39 12.2**	**-0.9**
	baz=125							
HLID	**Hailey**	**2.61**	**307**	*e*Pn		**Pb**	**03 39 10.4**	**-2.7**
HLID				*e*S		**Sb**	**03 39 46.3**	**+0.9**
P17A	**Butcher Ranch,**	**2.62**	**166**	*e*Pn		**Pb**	**03 39 12.5**	**-0.9**
MOMT	**Monida**	**2.64**	**347**	*e*Pn		**Pb**	**03 39 10.8**	**-2.9**
LKWY	**Lake**	**2.68**	**18**	*e*Pn		**Pn**	**03 39 09.0**	**-0.7**
LKWY				*e*S		**Sb**	**03 39 44.9**	**-2.6**
YMR	**Madison River**	**2.68**	**9**	*e*Pn		**Pb**	**03 39 13.8**	**-0.6**
FSU	**Fish Springs**	**2.69**	**212**	*e*Pn		**Pb**	**03 39 12.2**	**+2.4**
SNO	**Snow College**	**2.71**	**180**	*e*Pn		**Pn**	**03 39 12.6**	**+2.5**
DBD	**Des Bee Dove**	**2.73**	**172**	*e*Pn		**Pb**	**03 39 13.1**	**-2.2**
TMUT	**Trail Mountain**	**2.74**	**174**	*e*Pn		**Pb**	**03 39 13.8**	**-1.6**
YHB	**Horse Butte**	**2.74**	**5**	*e*Pn		**Pb**	**03 39 14.8**	**-0.6**
YMC	**Maple Creek**	**2.76**	**8**	*e*Pn		**Pb**	**03 39 12.7**	**-3.1**
QLMT	**Earthquake Lak**	**2.81**	**2**	*e*Pn		**Pb**	**03 39 14.8**	**-1.8**
YHH	**Holmes Hill**	**2.81**	**10**	*e*Pn		**Pb**	**03 39 15.8**	**-0.8**
SGU	**Sterling**	**2.84**	**181**	*e*Pn		**Pn**	**03 39 14.6**	**+2.6**
MCMT	**McKenzie Canyo**	**2.96**	**342**	*e*Pn		**Pb**	**03 39 17.8**	**-1.3**
SRU	**San Rafael Swe**	**3.01**	**165**	*e*Pn		**Pn**	**03 39 17.1**	**+2.9**
WCU	**Willow Creek**	**3.08**	**188**	*e*Pn		**Pn**	**03 39 17.9**	**+2.6**
O20A	**White River Ci**	**3.13**	**126**	P		**Pb**	**03 39 19.3**	**-2.9**
	baz=308							
O20A				S		**Sb**	**03 39 58.1**	**-2.5**
	baz=308							
O20A	**White River Ci**	**3.13**	**126**	*e*Pn		**Pb**	**03 39 19.2**	**-2.9**
O20A				*e*S		**Sb**	**03 39 58.4**	**-2.2**
OWUT	**Old Woman Plat**	**3.24**	**178**	*e*Pn		**Pn**	**03 39 20.2**	**+2.8**
DLMT	**Dillon**	**3.42**	**348**	*e*Pn		**Pn**	**03 39 22.2**	**+2.4**
DLMT				*e*S		**Sg**	**03 40 17.9**	**+1.9**
MFID	**Camas Ranch**	**3.44**	**295**	*e*Pn		**Pb**	**03 39 24.8**	**-2.6**
MFID				*e*S		**Sb**	**03 40 09.5**	**+0.1**
RLMT	**Red Lodge**	**3.51**	**27**	*e*Pn		**Pn**	**03 39 22.3**	**+1.2**
RLMT				*e*S		**Sb**	**03 40 12.6**	**+1.1**
MSU	**Marysvale**	**3.54**	**188**	*e*Pn		**Pn**	**03 39 24.5**	**+3.0**
BOZ	**Bozeman (W)**	**3.62**	**359**	*e*Pn		**Pb**	**03 39 27.4**	**-3.0**
BOZ				*e*S		**Sb**	**03 40 14.7**	**+0.2**
K22A	**Casper**	**3.78**	**79**	P		**Pn**	**03 39 28.0**	**+3.3**
	baz=263							
K22A	**Casper**	**3.78**	**79**	*e*Pn		**Pn**	**03 39 27.9**	**+3.1**
K22A				*e*S		**Sg**	**03 40 23.2**	**-4.2**
MMU	**Miners Mountai**	**3.83**	**177**	*e*Pn		**Pn**	**03 39 28.5**	**+3.0**
PV09	**Paradox Valley**	**3.98**	**151**	*e*Pn		**Pn**	**03 39 30.9**	**+3.2**
MTPU	**Mount Pierson**	**4.01**	**187**	*e*Pn		**Pn**	**03 39 31.6**	**+3.5**
PV10	**Paradox Valley**	**4.12**	**151**	*e*Pn		**Pb**	**03 39 34.7**	**-4.3**
PV04	**Paradox Valley**	**4.15**	**150**	*e*Pn		**Pn**	**03 39 32.4**	**+2.5**
PV04				*e*S		**Sb**	**03 40 35.0**	**+5.1**
N23A	**Red Feather La**	**4.36**	**103**	P		**Pn**	**03 39 35.6**	**+2.7**
	baz=287							
PV05	**Paradox Valley**	**4.37**	**154**	*e*Pn		**Pn**	**03 39 36.6**	**+3.7**
SMCO	**Snowmass**	**4.50**	**128**	*e*Pn		**Pn**	**03 39 37.6**	**+2.8**
SMCO				*e*Pg		**Pb**	**03 39 48.3**	**+2.8**
SMCO				*e*S		**Sb**	**03 40 44.6**	**+4.6**
PV01	**Paradox Valley**	**4.51**	**149**	*e*Pn		**Pg**	**03 39 36.7**	**+1.9**
PV01				*e*Pg		**Pg**	**03 39 49.5**	**-3.0**
PV01				*e*S		**Sb**	**03 40 45.9**	**+5.8**
BMN	**Battle Mountai**	**4.56**	**251**	*e*Pn		**Pn**	**03 39 38.6**	**+3.1**
BMN				*e*Pg		**Pg**	**03 39 51.7**	**-1.7**
BMN				*e*S		**Sg**	**03 40 51.3**	**-1.3**
PHWY	**Pilot Hill**	**4.62**	**97**	*e*Pn		**Pn**	**03 39 38.6**	**+2.1**
PHWY				*e*S		**Sn**	**03 40 32.3**	**+1.9**
R11A	**Troy Canyon, C**	**4.80**	**221**	*e*Pn		**Pn**	**03 39 43.2**	**+4.4**
R11A				*e*Pg		**Pg**	**03 39 56.4**	**-1.5**
R11A				*e*S		**Sg**	**03 40 56.2**	**-3.9**
ISCO	**Idaho Springs**	**5.02**	**114**	P		**Pn**	**03 39 45.1**	**+3.2**
	baz=298							
ISCO	**Idaho Springs**	**5.02**	**114**	*e*Pn		**Pn**	**03 39 44.9**	**+3.0**
ISCO				*e*Pg		**Pg**	**03 39 59.5**	**-2.7**
ISCO				*e*S		**Sb**	**03 41 01.0**	**+6.1**
BMO	**Blue Mountains**	**5.05**	**306**	*e*Pn		Pn	03 39 47.2	+5.0
	20nm,0.6s							
BMO				*e*S		**Sg**	**03 41 03.0**	**-5.3**
KNB	**Kanab**	**5.10**	**192**	*e*Pn		Pn	03 39 49.0	+6.2
LCMT	**Little Creek M**	**5.17**	**195**	*e*Pn		Pn	03 39 49.2	+5.3
WVOR	**Wild Horse Val**	**5.28**	**277**	*e*Pn		**Pb**	**03 39 54.6**	**-4.0**
	84nm,1.1s							
WVOR				*e*S		**Sb**	**03 41 08.1**	**+6.0**
MVCO	**Mesa Verde**	**5.35**	**153**	P		**Pn**	**03 39 49.0**	**+2.5**
	baz=335							
MVCO	**Mesa Verde**	**5.35**	**153**	*e*Pn		**Pn**	**03 39 49.1**	**+2.5**
MVCO				*e*Pg		**Pg**	**03 40 04.9**	**-3.7**
MVCO				*e*S		**Sg**	**03 41 15.2**	**-2.8**
S22A	**4UR Ranch, Cre**	**5.61**	**138**	*e*Pn		**Pn**	**03 39 52.9**	**+2.9**
U15A	**North Rim**	**5.62**	**186**	*e*Pn		Pn	03 39 56.5	+6.3
RSSD	**Black Hills**	**5.89**	**67**	P		**Pn**	**03 39 55.6**	**+1.8**
	baz=252							
RSSD	**Black Hills**	**5.89**	**67**	*e*Pn		**Pn**	**03 39 55.6**	**+1.8**
RSSD				*e*S		**Sn**	**03 41 03.4**	**+1.8**
LAO	**LASA Array**	**6.03**	**38**	*e*Pn		**Pn**	**03 39 56.9**	**+1.4**
LAO				*e*S		**Sn**	**03 41 08.2**	**+3.5**
EGMT	**Eagleton**	**6.13**	**11**	*e*Pn		Pn	03 40 01.5	+4.5
SHPR	**Sheep Range**	**6.18**	**208**	*e*Pn		Pn	03 40 03.4	+5.7
SDCO	**Great Sand Dun**	**6.32**	**131**	P		**Pn**	**03 40 02.5**	**+2.8**
	baz=315							
SDCO	**Great Sand Dun**	**6.32**	**131**	*e*Pn		**Pn**	**03 40 02.3**	**+2.6**
SDCO				*e*Pg		**Pg**	**03 40 26.2**	**-0.8**
SDCO				*e*S		**Sg**	**03 41 51.7**	**+2.8**
WUAZ	**Wupatki**	**6.50**	**179**	P		**Pn**	**03 40 06.5**	**+4.3**
	baz=359							
WUAZ	**Wupatki**	**6.50**	**179**	*e*Pn		**Pn**	**03 40 06.6**	**+4.5**
WUAZ				*e*S		**Sg**	**03 41 49.9**	**-4.8**
MOD	**Modoc Plateau**	**6.53**	**272**	*e*Pn		Pn	03 40 07.7	+5.2
	15nm,0.6s							
MOD				*e*S		**Sb**	**03 41 43.4**	**+5.3**
OGNE	**Ogallala**	**7.23**	**95**	*e*Pn		**Pn**	**03 40 13.8**	**+1.7**
	60nm,0.7s							
T25A	**Trinidad**	**7.36**	**129**	*e*Pn		**Pn**	**03 40 18.3**	**+4.3**
NEW	**Newport**	**7.38**	**330**	Pn		Pn	03 40 18.4	+4.4
	0.1nm,0.3s,baz=143,slow=10,SNR=2.0							
NEW				Lg		Lg	03 42 15.4	
	0.3nm,0.3s,baz=62,slow=23,SNR=7.2							
NEW	**Newport**	**7.38**	**330**	*e*Pn		**Pn**	**03 40 18.1**	**+4.1**
NEW				Lg		Lg	03 42 15.4	
NEW				*e*S		**Sg**	**03 42 22.4**	**-0.3**
KSCO	**Kaye Shedlock'**	**7.43**	**111**	Pn		**Pn**	**03 40 19.1**	**+4.1**
KSCO				*e*Pg		**Pg**	**03 40 45.6**	**-2.9**
DGMT	**Dagmar**	**8.27**	**36**	*e*Pn		**Pn**	**03 40 28.9**	**+2.6**
ECSD	**EROS Data Cent**	**11.10**	**76**	*e*Pn		**Pn**	**03 41 04.9**	**0.0**
ULM	**Lac du Bonnet**	**13.61**	**47**	Pn		**Pn**	**03 41 37.4**	**-1.9**
	0.3nm,0.3s,baz=220,slow=18,SNR=3.2							
TXAR	**Lajitas Array**	**14.18**	**151**	Pn		**P**	**03 41 51.2**	**-3.6**
	0.0nm,0.3s,baz=348,slow=12,SNR=6.1							
YKA	**Yellowknife Ar**	**20.58**	**356**	P		Pn	03 43 06.1	-1.2
	0.4nm,0.8s,baz=173,slow=8.6,SNR=4.1							
ILAR	**Eielson Array**	**30.33**	**331**	P		**P**	**03 44 40.2**	**+2.5**
	0.2nm,0.5s,baz=119,slow=6.7,SNR=4.5							

KRSC 26 03:47:56.6±1.9, 55°.40N×166°.14E, h37km±13km, ML3.8, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**0.22**	**206**	*i*	P	Pn		03 48 03.9	-1.4
BKI				*i*	S	Sn		03 48 09.1	-4.6
MKZ	**Mys Kozlova**	**2.68**	**253**		P	Pn		03 49 40.9	+3.8
MKZ					S	Sn		03 49 11.8	+3.6
SMKR	**Semkarok**	**2.88**	**296**		P	Pn		03 48 42.8	+2.9
SMKR					S	Sn		03 49 16.5	+3.2
BDR	**Baidarnaya**	**3.01**	**295**	*e*	P	Pn		03 48 45.5	+3.8
BDR				*e*	S	Sn		03 49 21.3	+4.9
SRKR	**Sorokina**	**3.06**	**296**		P	Pn		03 48 43.3	+0.9
BZMR	**Bezymyannaya**	**3.24**	**282**		P	Pn		03 48 50.1	+5.1
KPT	**Kopyto**	**3.40**	**282**		P	Pn		03 48 50.9	+3.8
TUMR	**Tumrok**	**3.42**	**270**	*e*	P	Pn		03 48 52.4	+4.9
TUMR				*e*	S	Sn		03 49 34.2	+7.4
SPN	**Mys Shipunski**	**4.27**	**240**	*e*	S	Sn		03 49 50.4	+3.0
NLC	**Nalytchevo**	**4.57**	**243**		S	Sn		03 49 59.9	+5.2
SDLR	**Sedlovina**	**4.75**	**246**		P	Pn		03 49 10.7	+5.0
UGLR	**Uglovaya**	**4.81**	**246**		P	Pn		03 49 12.0	+5.4
AVH	**Avacha**	**4.83**	**247**		P	Pn		03 49 11.2	+4.4
KRK	**Arik**	**4.83**	**248**		P	Pn		03 49 11.9	+5.1
GNL	**Ganaly**	**5.07**	**254**	*e*	P	Pn		03 49 15.5	+5.4
RUS	**Russkaya**	**5.40**	**240**		P	Pn		03 49 19.6	+5.1

*WAR **26** 03:52:28.6, 50°.19N×16°.13E, h1km, Mw2.4*
*ISCJB **26** 03:53:02.3±0.7, 50°.23N±0°.05×19°.03E±0°.04, h0km, Error ellipse: s-maj=7.2km s-min=2.8km az=13.8*
*CSEM **26** 03:53:03.2±0.3, 50°.25N×19°.04E, h1km, Error ellipse: s-maj=6.7km s-min=2.5km az=11.0*
*PRU **26** 03:53:04.2, 50°.23N×19°.04E, h0km*

ISC 26 03:53:03.5±0.9, 50°.19N±0°.05×19°.02E±0°.02, h0km, n25, σ0°38/45, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.50**	**87**	*e*Pg		**Pg**		**03 53 13.2**	**+0.1**
OJC				*e*Sg		**Sg**		**03 53 19.7**	**+0.2**
OJC	**Ojcow**	**0.50**	**87**	*e*Pg		**Pg**		**03 53 13.2**	**+0.1**
OJC				*e*Sg		**Sg**		**03 53 19.7**	**+0.2**
MORC	**Moravsky Berou**	**1.04**	**247**	*e*Pg		**Pb**		**03 53 24.7**	**+0.3**
MORC				*e*Sg		**Sn**		**03 53 40.3**	**-0.4**
LANS	**Liptovska Anna**	**1.08**	**164**	*e*Pg		**Pb**		**03 53 25.4**	**+0.3**
LANS				*e*Sg		**Sb**		**03 53 40.1**	**+0.3**
LANS	**Liptovska Anna**	**1.08**	**164**	*e*PG		**Pb**		**03 53 25.4**	**+0.3**
LANS				*e*SG		**Sb**		**03 53 40.1**	**+0.3**
NIE	**Niedzica**	**1.13**	**133**	*e*Pg		**Pb**		**03 53 26.1**	**+0.1**
NIE				*e*Sg		**Sb**		**03 53 41.1**	**-0.2**
NIE	**Niedzica**	**1.13**	**133**	*e*Pg		**Pb**		**03 53 26.1**	**+0.1**
NIE				*e*Sg		**Sb**		**03 53 41.1**	**-0.2**
NIE	**Niedzica**	**1.13**	**133**	*e*Pg		**Pb**		**03 53 26.1**	**+0.1**
NIE				*e*Sg		**Sb**		**03 53 41.1**	**-0.2**
KRLC	**Kraliky**	**1.45**	**266**	*e*PG		**Pg**		**03 53 31.1**	**-0.1**
KRLC				*e*SG		**Sn**		**03 53 51.4**	**+0.7**
KRLC	**Kraliky**	**1.45**	**266**	Pg		**Pg**		**03 53 31.1**	**-0.1**
KRLC				Sg		**Sn**		**03 53 51.4**	**+0.7**
STHS	**Stebnicka Huta**	**1.64**	**117**	*e*Pg		**Pg**		**03 53 34.8**	**0.0**
STHS				*e*Sg		**Sg**		**03 53 56.3**	**+0.3**
STHS	**Stebnicka Huta**	**1.64**	**117**	*e*PG		**Pg**		**03 53 34.8**	**0.0**
STHS				*e*SG		**Sg**		**03 53 56.2**	**+0.3**
STHS				eLG		Lg		03 54 11.5	
VYHS	**Vyhne**	**1.70**	**184**	*e*Pn		**Pn**		**03 53 34.6**	**+0.1**
VYHS				*e*Sn		**Sn**		**03 53 57.1**	**+0.1**
VYHS	**Vyhne**	**1.70**	**184**	*e*PN		**Pn**		**03 53 34.6**	**+0.1**
VYHS				*e*SN		**Sn**		**03 53 57.1**	**+0.1**
VYHS				eLG		Lg		03 53 59.5	
DPC	**Dobruska-Polom**	**1.74**	**276**	*e*PG		**Pb**		**03 53 36.0**	**-0.3**
DPC				*e*SG		**Sg**		**03 54 00.0**	**+0.6**
	comp=Z,11nm,0.5s								
DPC	**Dobruska-Polom**	**1.74**	**276**	Pg		**Pb**		**03 53 36.0**	**-0.3**
DPC				Sg		**Sg**		**03 54 00.0**	**+0.6**
	11nm,0.5s								
KECS	**Kecovo**	**1.96**	**150**	*e*Pn		**Pn**		**03 53 37.3**	**-0.7**
KECS				*e*Sn		**Sn**		**03 54 02.6**	**-0.7**
KECS	**Kecovo**	**1.96**	**150**	*e*PN		**Pn**		**03 53 37.3**	**-0.7**
KECS				*e*SN		**Sn**		**03 54 02.6**	**-0.7**
KECS				eLG		Lg		03 54 11.5	
CRVS	**Cervenica-Dubn**	**2.05**	**128**	*e*Pg		**Pg**		**03 53 42.8**	**+0.1**
CRVS				*e*Sg		**Sg**		**03 54 09.4**	**+0.2**
CRVS	**Cervenica-Dubn**	**2.05**	**128**	*e*PG		**Pg**		**03 53 42.8**	**+0.1**
CRVS				*e*SG		**Sg**		**03 54 09.4**	**+0.2**
PRU	**Pruhonice**	**2.89**	**268**	*e*SG		**Sg**		**03 54 36.6**	**+0.2**
	comp=Z,3.3nm,0.7s								
PRU	**Pruhonice**	**2.89**	**268**	Sg		**Sg**		**03 54 36.6**	**+0.2**
	3.3nm,0.7s								
BRG	**Berggiesshubel**	**3.31**	**284**	SG		**Sb**		**03 54 43.9**	**0.0**
	2.1nm,0.5s								
KHC	**Kasperske Hory**	**3.69**	**255**	*e*SG		**Sg**		**03 55 01.4**	**-0.7**
	comp=Z,2.2nm,0.4s								
KHC	**Kasperske Hory**	**3.69**	**255**	Sg		**Sg**		**03 55 01.4**	**-0.7**
	2.2nm,0.4s								

*CSEM **26** 03:59:16.0±0.7, 51°.56N×16°.09E, h1km, ML2.6/5, Error ellipse: s-maj=10.7km s-min=7.3km az=176.0*
*PRU **26** 03:59:16.5, 51°.56N×16°.06E, h0km*

ISC 26 03:59:15.9±1.9, 51°.58N±0°.09×16°.08E±0°.06, h0km, n16, σ0°52/29, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.75**	**170**	*e*Pg		**Pg**		**03 59 30.6**	**+0.4**
KSP				*e*Sg		**Sg**		**03 59 40.3**	**+0.5**
KSP	**Ksiaz**	**0.75**	**170**	*e*Pg		**Pg**		**03 59 30.6**	**+0.4**
KSP				*e*Sg		**Sg**		**03 59 40.3**	**+0.5**
UPC	**Upice**	**1.07**	**182**	*e*PG		**Pg**		**03 59 36.7**	**+0.3**
UPC				*e*SG		**Sg**		**03 59 50.5**	**+0.2**
	comp=Z,12nm,0.3s								
UPC	**Upice**	**1.07**	**182**	Pg		**Pg**		**03 59 36.7**	**+0.3**
UPC				Sg		**Sg**		**03 59 50.5**	**+0.2**
	12nm,0.3s								
DPC	**Dobruska-Polom**	**1.24**	**173**	*e*PG		**Pg**		**03 59 39.4**	**-0.2**
DPC				*e*SG		**Sg**		**03 59 55.3**	**-0.3**
	comp=Z,4.2nm,0.3s								
DPC	**Dobruska-Polom**	**1.24**	**173**	Pg		**Pg**		**03 59 39.4**	**-0.2**
DPC				Sg		**Sg**		**03 59 55.3**	**-0.3**
	4.2nm,0.3s								
PVCC	**Panska Ves**	**1.42**	**223**	*e*PG		**Pb**		**03 59 43.4**	**+0.2**
PVCC				*e*SG		**Sb**		**04 00 01.9**	**0.0**
	comp=Z,16nm,0.2s								
PVCC	**Panska Ves**	**1.42**	**223**	Pg		**Pb**		**03 59 43.4**	**+0.2**
PVCC				Sg		**Sb**		**04 00 01.9**	**0.0**
	16nm,0.2s								
BRG	**Berggiesshubel**	**1.52**	**243**	PG		**Pb**		**03 59 44.9**	**0.0**
BRG				SG		**Sn**		**04 00 05.0**	**+0.2**
	16nm,0.4s								

KRLC	**Kraliky**	**1.57**	**163**	*e*PG		**Pn**	**03 59 44.7**	**-0.3**
KRLC				*e*SG		**Sb**	**04 00 05.8**	**-0.3**
KRLC	**Kraliky**	**1.57**	**163**	Pg		**Pn**	**03 59 44.7**	**-0.3**
KRLC				Sg		**Sb**	**04 00 05.8**	**-0.3**
PRU	**Pruhonice**	**1.87**	**212**	*e*SG		**Sb**	**04 00 15.0**	**+0.3**
	comp=Z,3.5nm,0.3s								
PRU	**Pruhonice**	**1.87**	**212**	Sg		**Sb**	**04 00 15.0**	**+0.3**
	3.5nm,0.3s								
CLL	**Collm**	**1.95**	**263**	*e*Pg		**Pb**	**03 59 52.0**	**-0.2**
CLL				*e*Sg		**Sg**	**04 00 19.0**	**+0.6**
MORC	**Moravsky Berou**	**2.03**	**152**	*e*Pn		**Pn**	**03 59 51.0**	**-0.3**
KHC	**Kasperske Hory**	**2.93**	**214**	*e*PG		**Pb**	**04 00 09.6**	**+0.6**
KHC				*e*SG		**Sg**	**04 00 47.9**	**-2.0**
	comp=Z,1.4nm,0.3s								

*NNC **26** 04:04:07.5±0.9, 36°.70N×56°.10E, h0km, mb5.0, mpv5.9, Error ellipse: s-maj=10.3km s-min=6.1km az=162.0*
*BJI **26** 04:04:09.3, 36°.79N×56°.46E, h10km, mb4.7/50, mB4.8/38, Ms4.6/40, Ms7 4.3/37*
*ISCJB **26** 04:04:10.8±0.1, 36°.61N±0°.02×56°.83E±0°.02, h10km, mb4.8/145, MS4.0/41, Error ellipse: s-maj=2.4km s-min=1.7km az=1.2*
*THR **26** 04:04:10.7±0.9, 36°.52N×56°.89E, h6km±6km, ML4.7*
*NEIC **26** 04:04:10.7, 36°.52N×56°.89E, h6km, mb5.0/46, ML4.7(THR), MN4.7(TEH), After THR.*
*CSEM **26** 04:04:11.0±0.1, 36°.64N×56°.88E, h2km, mb4.9/79, Error ellipse: s-maj=2.7km s-min=2.2km az=175.0*
*MOS **26** 04:04:12.6±1.1, 36°.66N×56°.81E, h25km, mb5.1/31, MS4.0/16, Error ellipse: s-maj=5.7km s-min=4.0km az=124.8*
*TEH **26** 04:04:12.6, 36°.58N×56°.93E, h10km,

	comp=Z,8µm,0.6s									
IKLH	**Kolahrood**		**5.42**	**234**	*e*Pn		**Pn**	**04 05 34.1**	**+0.9**
IKLH					*e*AMB		AMB	04 07 18.6	
	comp=Z,10µm,0.4s									
IKLH	**Kolahrood**		**5.42**	**234**	*e*Pn		**Pn**	**04 05 34.1**	**+0.9**
IMEH	**Mehriz**		**5.52**	**200**	*e*Pn		**Pn**	**04 05 34.0**	**-0.5**
IMEH					*e*AMB		AMB	04 07 16.5	
	comp=N,12µm,0.4s									
IMEH	**Mehriz**		**5.52**	**200**	*e*Pn		**Pn**	**04 05 34.0**	**-0.5**
IGAR	**Gharneh**		**5.77**	**225**	*e*Pn		**Pn**	**04 05 38.0**	**+0.1**
IGAR					*e*AMB		AMB	04 07 19.2	
	comp=Z,5µm,0.5s									
ASAO	**Ashtian**		**5.92**	**252**	*e*Pn		**Pn**	**04 05 40.9**	**+0.8**
ASAO	**Ashtian**		**5.92**	**252**	*e*Pn		**Pn**	**04 05 40.9**	**+0.8**
IPIR	**Pirpir**		**6.27**	**233**	*e*Pn		**Pn**	**04 05 47.5**	**+2.6**
IPIR					*e*AMB		AMB	04 05 52.0	
	comp=Z,6µm,0.3s									
IPIR	**Pirpir**		**6.27**	**233**	*e*Pn		**Pn**	**04 05 47.5**	**+2.6**
KHMZ	**Khomeyn**		**6.32**	**245**	*e*Pn		**Pn**	**04 05 46.7**	**+1.2**
KHMZ	**Khomeyn**		**6.32**	**245**	*e*Pn		**Pn**	**04 05 46.7**	**+1.2**
KRBR	**Kerman**		**6.60**	**181**	*e*Pn		**Pn**	**04 05 49.9**	**+0.5**
KRBR	**Kerman**		**6.60**	**181**	*e*Pn		**Pn**	**04 05 49.9**	**+0.5**
ZHSF	**Zahedan**		**7.71**	**154**	*e*Pn		**Pn**	**04 06 04.9**	**+0.4**
ZHSF	**Zahedan**		**7.71**	**154**	*e*Pn		**Pn**	**04 06 04.9**	**+0.4**
SNGE	**Sanandaj**		**7.86**	**262**	*e*Pn		**Pn**	**04 06 08.3**	**+1.8**
SNGE	**Sanandaj**		**7.86**	**262**	*e*Pn		**Pn**	**04 06 08.4**	**+1.8**
GHIR	**Ghir-Karzin**		**8.91**	**203**	*e*Pn		**Pn**	**04 06 21.4**	**+0.5**
GHIR	**Ghir-Karzin**		**8.91**	**203**	*e*Pn		**Pn**	**04 06 21.4**	**+0.5**
AHBU	**AHRAM**		**9.02**	**213**	*e*Pn		**Pn**	**04 06 22.8**	**+0.5**
MAKU	**Maku**		**9.99**	**290**	*e*Pn		**Pn**	**04 06 38.0**	**+2.2**
MAKU	**Maku**		**9.99**	**290**	*e*Pn		**Pn**	**04 06 38.0**	**+2.2**
GNI	**Garni**		**10.14**	**294**	Pn		**Pn**	**04 06 39.9**	**+2.1**
	comp=Z,2.3nm,0.3s,baz=18,slow=3.1,SNR=16									
GNI					LR		LR	04 11 44.1		
	comp=Z,418nm,18.4s,baz=99,slow=44									
GNI	**Garni**		**10.14**	**294**	*i* P		**Pn**	**04 06 37.3**	**-0.6**
	SNR=12									
GNI	**Garni**		**10.14**	**294**	*de*P		**Pn**	**04 06 39.2**	**+1.3**
GNI					pmax		pmax			
	comp=Z,131nm,1.0s									
GNI	**Garni**		**10.14**	**294**	P		**Pn**	**04 06 37.3**	**-0.6**
	SNR=12									
GNI	**Garni**		**10.14**	**294**	*e*Pn		**Pn**	**04 06 40.0**	**+2.1**
GNI	**Garni**		**10.14**	**294**	*e*Pn		**Pn**	**04 06 40.0**	**+2.1**
GNI					*e*S		Sn	04 08 41.6	+10	
KBL	**Kabul**		**10.14**	**98**	*e*P		**Pn**	**04 06 39.5**	**+1.5**
KBL	**Kabul**		**10.14**	**98**	*e*Pn		**Pn**	**04 06 39.5**	**+1.5**
KBL	**Kabul**		**10.14**	**98**	*e*Pn		**Pn**	**04 06 39.5**	**+1.5**
DGRG	**David-gareji**		**10.15**	**302**	P		**Pn**	**04 06 39.1**	**+1.2**
DGRG	**David-gareji**		**10.15**	**302**	P		**Pn**	**04 06 39.1**	**+1.2**
DGRG	**David-gareji**		**10.15**	**302**	P		**Pn**	**04 06 39.1**	**+1.2**
TBLG	**Delisi**		**10.70**	**302**	P		**Pn**	**04 06 45.0**	**-0.4**
TBLG	**Delisi**		**10.70**	**302**	P		**Pn**	**04 06 45.0**	**-0.4**
TBLG	**Delisi**		**10.70**	**302**	P		**Pn**	**04 06 45.0**	**-0.4**
GROC	**Groznyy**		**10.74**	**311**	*e*P		**Pn**	**04 06 45.4**	**-0.5**
GROC					*e*S		**Sn**	**04 08 46.9**	**+0.7**
GROC					pmax		pmax			
	comp=Z,34nm,0.4s									
GROC	**Groznyy**		**10.74**	**311**	*e*P		**Pn**	**04 06 45.4**	**-0.5**
	comp=Z,34nm,0.4s									
GROC					*e*S		**Sn**	**04 08 46.9**	**+0.7**
GUDG	**Gudauri**		**11.20**	**305**	P		**Pn**	**04 06 52.0**	**-0.4**
BGD	**Bogdanovka**		**11.32**	**299**	P		**Pn**	**04 06 56.7**	**+2.7**
AKH	**Akhalkalaki**		**11.44**	**299**	P		**Pn**	**04 06 57.0**	**+1.3**
AKH	**Akhalkalaki**		**11.44**	**299**	P		**Pn**	**04 06 57.0**	**+1.3**
AKH	**Akhalkalaki**		**11.44**	**299**	P		**Pn**	**04 06 57.0**	**+1.3**
IUG	**Iuzhnay**		**11.61**	**57**	*e*P		**Pn**	**04 06 54.6**	**-3.2**
	comp=Z,250nm,0.9s									
IUG					LRM		MLR	04 11 49.1		
	comp=Z,234nm,7.6s									
NAZ	**Nazwa, Dubai**		**11.62**	**185**	P		**Pn**	**04 07 00.4**	**+2.4**
NAZ	**Nazwa, Dubai**		**11.62**	**185**	P		**Pn**	**04 07 00.4**	**+2.4**
UOSS	**Minazif**		**11.63**	**183**	*e*Pn		**Pn**	**04 06 59.0**	**+0.9**
UOSS	**Minazif**		**11.63**	**183**	P		**Pn**	**04 06 59.3**	**+1.2**
UOSS	**Minazif**		**11.63**	**183**	*e*Pn		**Pn**	**04 06 59.0**	**+0.9**
ZEI	**Tsey**		**11.73**	**306**	*e*P		**Pn**	**04 06 58.7**	**-0.8**
ZEI					pmax		pmax			
	comp=Z,65nm,0.6s									
ZEI	**Tsey**		**11.73**	**306**	*e*P		**Pn**	**04 06 58.7**	**-0.8**
	comp=Z,65nm,0.6s									
HATD	**Hatta, Dubai**		**11.75**	**183**	P		**Pn**	**04 07 00.3**	**+0.5**
HATD	**Hatta, Dubai**		**11.75**	**183**	P		**Pn**	**04 07 00.3**	**+0.5**
ASHO	**Ashiyiah**		**11.90**	**183**	P		**Pn**	**04 07 03.4**	**+1.6**
ASHO	**Ashiyiah**		**11.90**	**183**	P		**Pn**	**04 07 03.4**	**+1.6**
ONI	**Oni**		**11.93**	**304**	P		**Pn**	**04 07 01.4**	**-0.8**
ONI	**Oni**		**11.93**	**304**	P		**Pn**	**04 07 01.4**	**-0.8**
ONI	**Oni**		**11.93**	**304**	P		**Pn**	**04 07 01.4**	**-0.8**
NCK	**Nalchik**	⇑	**12.26**	**308**	*e*P		**Pn**	**04 07 06.6**	**-0.1**
NCK	**Nalchik**		**12.26**	**308**	*e*P		**Pn**	**04 07 06.6**	**-0.1**
KK31	**Karatay Array**		**12.34**	**54**	⇑Pn		**Pn**	**04 07 09.3**	**+1.5**
	comp=Z,18nm,1.0s,baz=239,slow=16,SNR=52									
KK31					⇓Sn		Sn	04 09 35.5	+10	
	comp=Z,30nm,0.8s,baz=252,slow=14,SNR=3.6									
KK31					⇓Lg		Lg	04 10 53.5		
KK31	**Karatay Array**		**12.34**	**54**	P		**Pn**	**04 07 05.2**	**-2.6**
KK31					pmax		pmax			
	comp=Z,15nm,1.0s									
KK31	**Karatay Array**		**12.34**	**54**	P		**Pn**	**04 07 05.2**	**-2.6**
	comp=Z,15nm,1.0s									
KK31	**Karatay Array**		**12.34**	**54**	Pn		**Pn**	**04 07 09.3**	**+1.5**
	comp=Z,18nm,1.0s,SNR=52									
KKAR	**Karatay Array**		**12.34**	**54**	*e*P		**Pn**	**04 07 06.0**	**-1.7**
KKAR					*e*S		**Sn**	**04 09 25.3**	**0.0**
KKAR					pmax		pmax			
	comp=Z,13nm,0.7s									
KKAR	**Karatay Array**		**12.34**	**54**	*e*Pn		**Pn**	**04 07 06.0**	**-1.7**
	comp=Z,13nm,0.7s									
KKAR					*e*S		**Sn**	**04 09 25.3**	**0.0**
KKAR	**Karatay Array**		**12.34**	**54**	*e*Pn		**Pn**	**04 07 06.0**	**-1.7**
	comp=Z,13nm,0.7s									
KKAR					*e*S		**Sn**	**04 09 25.3**	**0.0**
CEP	**Cherat**		**12.63**	**98**	P		**Pn**	**04 07 10.2**	**-1.6**
KBZ	**Khabaz**		**12.82**	**308**	Pn		**Pn**	**04 07 14.7**	**+0.4**
	comp=Z,0.6nm,0.3s,baz=131,slow=9.9,SNR=11									
KBZ					LR		LR	04 13 21.9		
	comp=Z,147nm,20.7s,baz=125,slow=43									
AB31	**Akbulak array**		**12.85**	**9**	Pn		**Pn**	**04 07 11.4**	**-3.2**
	comp=Z,15nm,0.8s,baz=199,slow=15,SNR=102									
AB31					⇓Sn		**Sn**	**04 09 34.9**	**-2.7**
	comp=Z,19nm,0.7s,baz=200,slow=24,SNR=6.6									
AB31					⇑Lg		Lg	04 10 55.4		
	comp=Z,2.1nm,0.4s,baz=192,slow=23,SNR=4.3									
AB31	**Akbulak array**		**12.85**	**9**	P		**Pn**	**04 07 11.4**	**-3.2**
AB31					S		**Sn**	**04 09 29.9**	**-7.8**
AB31					pmax		pmax			
	comp=Z,15nm,0.8s									
AB31					smax		smax			
	comp=N,19nm,0.7s									
AB31	**Akbulak array**		**12.85**	**9**	P		**Pn**	**04 07 11.4**	**-3.2**
	comp=N,15nm,0.8s									
AB31					S		**Sn**	**04 09 29.9**	**-7.8**
	comp=N,19nm,0.7s									
AB31					Sn		Sn	04 09 34.9	-2.8	
	comp=N,19nm,0.7s,SNR=6.6									
ABKAR	**Akbulak array**		**12.85**	**9**	*e*Pn		**Pn**	**04 07 12.2**	**-2.4**
ABKAR					*e*S		**Sn**	**04 09 32.3**	**-5.4**
KVAR	**Kislovodsk Arr**		**13.06**	**309**	Pn		**Pn**	**04 07 17.4**	**-0.2**
	baz=120,slow=14,SNR=22									
KVAR					Sn		**Sn**	**04 09 37.4**	**-5.6**
	baz=4.8,slow=12,SNR=2.6									
KVAR					LR		LR	04 14 02.7		
	comp=N,259nm,19.1s,baz=110,slow=45									
KIV	**Kislovodsk**		**13.06**	**309**	*i* P		**Pn**	**04 07 16.1**	**-1.6**
	SNR=9.4									
KIV	**Kislovodsk**		**13.06**	**309**	*e*P		**Pn**	**04 07 16.7**	**-1.0**
KIV					*e*S		**Sn**	**04 09 40.0**	**-3.1**
KIV					pmax		pmax			
	comp=Z,56nm,0.9s									
KIV					MLR		MLR			
	comp=Z,118nm,12.0s									
KIV	**Kislovodsk**		**13.06**	**309**	*e*P		**Pn**	**04 07 16.7**	**-1.0**
	comp=Z,56nm,0.9s									
KIV					*e*S		**Sn**	**04 09 40.0**	**-3.1**
	comp=Z,118nm,12.0s									
KIV	**Kislovodsk**		**13.06**	**309**	*e*Pn		**Pn**	**04 07 16.1**	**-1.6**
KIV					*e*S		**Sn**	**04 09 37.8**	**-5.3**
WSAR	**Wadi Sarin**		**13.40**	**173**	Pn		**Pn**	**04 07 23.6**	**+1.2**
	comp=Z,0.3nm,0.3s,baz=47,slow=19,SNR=3.6									
WSAR					LR		LR	04 13 38.4		
	comp=Z,344nm,18.2s,baz=332,slow=42									
GOF	**Gofitskoye**	⇑	**13.43**	**313**	*e*P		**Pn**	**04 07 21.5**	**-1.0**
GOF					*e*S		**Sn**	**04 09 49.6**	**-2.2**
GOF					pmax		pmax			
	comp=Z,98nm,1.2s									
GOF					pmax		pmax			
	comp=N,151nm,1.0s									
GOF					pmax		pmax			
	comp=E,153nm,0.9s									
GOF	**Gofitskoye**		**13.43**	**313**	*e*P		**Pn**	**04 07 21.5**	**-1.0**
	comp=E,151nm,1.0s									
GOF					*e*S		**Sn**	**04 09 49.6**	**-2.2**
MNAS	**Manas**		**13.43**	**59**	⇓Pn		**Pn**	**04 07 25.5**	**+2.7**
	comp=E,28nm,1.3s									
MNAS					⇓Sn		Sn	04 10 03.1	+11	
	comp=E,64nm,1.3s									
MNAS					⇓Lg		Lg	04 11 26.6		
	comp=E,171nm,1.7s									
MNAS	**Manas**		**13.43**	**59**	P		**Pn**	**04 07 22.3**	**-0.5**
MNAS					pmax		pmax			
	comp=Z,21nm,1.0s									
MNAS	**Manas**		**13.43**	**59**	P		**Pn**	**04 07 22.3**	**-0.5**
	comp=Z,21nm,1.0s									
MNAS	**Manas**		**13.43**	**59**	Pn		**Pn**	**04 07 25.5**	**+2.7**
	comp=Z,28nm,1.3s									
CHCP	**Chirah Chowk**		**13.75**	**97**	P		**Pn**	**04 07 26.2**	**-0.9**
AKTK	**Aktyubinsk**		**13.86**	**3**	P		**Pn**	**04 07 25.3**	**-3.1**
	comp=Z,63nm,0.8s									
AKTO	**Aktyubinsk**		**13.86**	**3**	Pn		**Pn**	**04 07 26.6**	**-1.8**
	comp=Z,1.9nm,0.3s,baz=182,slow=14,SNR=93									
AKTO					Sn		**Sn**	**04 09 54.9**	**-7.4**
	comp=Z,0.7nm,0.3s,baz=246,slow=20,SNR=2.6									
AKTO					LR		LR	04 13 47.9		
	comp=Z,524nm,18.9s,baz=169,slow=41									
AKTO	**Aktyubinsk**		**13.86**	**3**	⇑Pn		**Pn**	**04 07 24.8**	**-3.6**
	comp=Z,63nm,0.8s									
AKTO					⇓Sn		**Sn**	**04 09 59.3**	**-3.0**
	comp=Z,37nm,0.8s									
AKTO					⇑Lg		Lg	04 11 24.9		
	comp=Z,157nm,1.9s									
AKTO	**Aktyubinsk**		**13.86**	**3**	P		**Pn**	**04 07 25.3**	**-3.1**
AKTO					pmax		pmax			
	comp=Z,63nm,0.8s									
AKTO	**Aktyubinsk**		**13.86**	**3**	Pn		**Pn**	**04 07 26.6**	**-1.8**
AKTO					Sn		**Sn**	**04 09 59.3**	**-3.0**
	comp=Z,37nm,0.8s									
SOC	**Sochi**		**14.84**	**303**	*e*P		Pn	04 07 29.1	-13	
SOC					MLR		MLR			
	comp=Z,252nm,19.0s									
SOC	**Sochi**		**14.84**	**303**	*e*P		Pn	04 07 29.1	-13	
	comp=Z,252nm,19.0s									
AAK	**Ala-Archa**		**14.87**	**61**	Pn		**Pn**	**04 07 41.4**	**-1.0**
	comp=Z,0.7nm,0.3s,baz=232,slow=12,SNR=8.3									
AAK					LR		LR	04 14 37.8		
	comp=Z,895nm,19.4s,baz=248,slow=42									
AAK	**Ala-Archa**		**14.87**	**61**	⇓Pn		**P**	**04 07 45.4**	**-2.8**
	comp=Z,26nm,0.9s									
AAK					⇑Lg		Lg	04 12 12.2		
	comp=Z,102nm,1.6s									
AAK	**Ala-Archa**		**14.87**	**61**	*de*P		**Pn**	**04 07 44.3**	**+1.9**
AAK					pmax		pmax			
	comp=Z,33nm,0.9s									
AAK	**Ala-Archa**		**14.87**	**61**	*e*Pn		**Pn**	**04 07 41.7**	**-0.7**
AAK	**Ala-Archa**		**14.87**	**61**	*e*P		**Pn**	**04 07 44.3**	**+1.9**
	comp=Z,33nm,0.9s									
AAK	**Ala-Archa**		**14.87**	**61**	*e*Pn		**Pn**	**04 07 41.7**	**-0.7**
AAK					*e*S		**Sn**	**04 10 29.2**	**+2.0**
FRU	**Bishkek**		**15.01**	**60**	*e*P		**Pn**	**04 07 41.0**	**-3.3**
FRU					pmax		pmax			
	comp=E,2µm,8.0s									
FRU	**Bishkek**		**15.01**	**60**	*e*P		**Pn**	**04 07 41.0**	**-3.3**
KSH	**Kashi**		**15.35**	**73**	*e*P		**Pn**	**04 07 43.5**	**-5.3**
KSH					*ep*P		P	04 07 47.0	-6.5	
KSH					*es*P		pP	04 07 50.8	-5.6	
KSH					*e*PP		**PnPn**	**04 07 55.5**	**-1.3**
KSH					pmax		pmax			
	comp=E,15nm,0.7s									
KSH					LR		LR			
	comp=E,2µm,6.9s									
KSH					LR		LR			
	comp=E,900nm,3.4s									
KSH					LR		LR			
	comp=E,780nm,10.1s									
BTLS	**Baital**		**15.49**	**52**	*e*P		**Pn**	**04 07 46.8**	**-3.7**
	comp=E,66nm,0.8s									
BTLS					*e*S		**Sn**	**04 10 38.2**	**-3.8**
BTLS					LRM		MLR	04 14 34.8		
	comp=E,357nm,11.7s									
TKM2	**Tokmak 2**		**15.73**	**61**	⇓Pn		**Pn**	**04 07 55.0**	**+1.2**
	comp=E,25nm,1.1s									
TKM2					⇑Sn		**S**	**04 10 59.9**	**-3.3**
	comp=E,38nm,1.4s									
TKM2					⇓Lg		Lg	04 12 41.1		
	comp=E,100nm,1.4s									
TKM2	**Tokmak 2**		**15.73**	**61**	P		**Pn**	**04 07 54.9**	**+1.2**
TKM2					pmax		pmax			
	comp=Z,25nm,1.2s									
TKM2	**Tokmak 2**		**15.73**	**61**	Pn		**Pn**	**04 07 55.0**	**+1.2**
	comp=Z,25nm,1.1s									
THN	**Thein Dam**		**16.10**	**99**	*e*P		**P**	**04 08 01.4**	**-0.3**
OTUK	**Ortayu**		**16.28**	**40**	⇓Pn		**Pn**	**04 07 58.6**	**-2.1**
	comp=Z,51nm,1.1s									
OTUK					⇑Sn		**Sn**	**04 11 07.4**	**+6.1**
	comp=Z,22nm,0.9s									
OTUK					⇑Lg		Lg	04 12 56.2		
	comp=Z,162nm,1.6s									
OTUK	**Ortayu**		**16.28**	**40**	P		**Pn**	**04 07 58.7**	**-2.1**
OTUK					pmax		pmax			
	comp=Z,51nm,1.1s									
OTUK	**Ortayu**		**16.28**	**40**	Pn		**Pn**	**04 07 58.6**	**-2.1**
	comp=Z,51nm,1.1s									
KUU	**Kurty**		**16.55**	**58**	*e*P		**Pn**	**04 08 03.0**	**-1.2**
	comp=Z,74nm,1.2s									
KUU					*e*S		**Sn**	**04 11 06.7**	**-1.1**
KUU					LRM		MLR	04 15 13.6		
	comp=Z,206nm,6.2s									
DHRM	**DHARAMSHALA**		**16.62**	**99**	*e*P		**Pn**	**04 08 04.3**	**-1.0**
AAA	**Alma-Ata**		**16.77**	**60**	*e*P		**P**	**04 08 11.6**	**+2.3**
AAA					*e*S		**Sn**	**04 11 16.6**	**+3.2**
AAA					pmax		pmax			
	comp=Z,200nm,2.2s									
AAA					smax		smax			
	comp=N,300nm,4.7s									
AAA					smax		smax			
	comp=Z,2µm,15.0s									
AAA	**Alma-Ata**		**16.77**	**60**	*e*P		**Pn**	**04 08 05.7**	**-1.4**
AAA					LRM		MLR	04 15 27.4		
	comp=Z,345nm,12.1s									
AAA	**Alma-Ata**		**16.77**	**60**	*e*P		**P**	**04 08 11.6**	**+2.3**
	comp=Z,200nm,2.2s									
AAA					*e*S		**Sn**	**04 11 16.6**	**+3.2**
	comp=Z,2µm,15.0s									
MDOK	**Medeo**		**16.82**	**61**	*e*P		**Pn**	**04 08 06.5**	**-1.1**
	comp=Z,81nm,1.4s									
MDOK					*e*S		**Sn**	**04 11 13.3**	**-1.2**
MDOK					LRM		MLR	04 15 59.5		
	comp=Z,745nm,13.1s									
BHK	**Bhakra**		**17.02**	**102**	*e*P		**P**	**04 08 11.5**	**-0.6**
ASF	**Jabal al Asfar**		**17.05**	**261**	Pn		**Pn**	**04 08 12.3**	**+1.7**
	comp=Z,0.1nm,0.3s,baz=33,slow=4.2,SNR=20									
BHJ	**Bhuj**		**17.30**	**137**	*e*P		**Pn**	**04 08 11.8**	**-1.9**
SDNR	**Sundarnagar**		**17.43**	**101**	*e*P		**Pn**	**04 08 14.0**	**-1.3**
BRZS	**Berezniki**		**17.61**	**36**	*e*P		**Pn**	**04 08 16.0**	**-1.4**
	comp=Z,14nm,0.5s									
BRZS					*e*S		**Sn**	**04 11 31.6**	**-1.8**
BRZS					LRM		MLR	04 16 04.0		
	comp=Z,53nm,10.5s									
SMLA	**Simla**		**17.73**	**102**	*e*P		**P**	**04 08 19.2**	**-0.6**
SMLA					IAmb		IAmb	04 08 22.2		
	comp=Z,66nm,0.6s									
MMAI	**Mount Meron Ar**		**17.96**	**265**	P		**Pn**	**04 08 22.4**	**+0.4**
	comp=Z,1.9nm,0.3s,baz=73,slow=14,SNR=9.8									
MMAI					LR		LR	04 16 10.5		
	comp=Z,327nm,18.6s,baz=65,slow=40									
VRH	**Novokhopyorsk**		**18.16**	**328**	*e*P		**Pn**	**04 08 23.0**	**-1.2**
VRH					pmax		pmax			
	comp=Z,70nm,0.8s									
VRH	**Novokhopyorsk**		**18.16**	**328**	*e*P		**Pn**	**04 08 23.0**	**-1.2**
	comp=Z,70nm,0.8s									
UZB	**Uzynbulak**		**18.21**	**62**	*e*P		**Pn**	**04 08 24.1**	**-0.9**
	comp=Z,72nm,1.6s									
UZB					*e*S		**Sn**	**04 11 47.5**	**-0.8**
UZB					LRM		MLR	04 15 57.8		
	comp=Z,183nm,9.3s									
PDGK	**Podgornoye**		**18.58**	**62**	⇓Pn		**Pn**	**04 08 32.8**	**+3.5**
	comp=Z,35nm,1.3s									
PDGK					⇑Lg		Lg	04 14 12.8		
	comp=Z,82nm,1.8s									
PDGK	**Podgornoye**		**18.58**	**62**	P		**P**	**04 08 27.3**	**-1.8**
PDGK					pmax		pmax			
	comp=Z,20nm,0.9s									
PDGK	**Podgornoye**		**18.58**	**62**	P		**P**	**04 08 27.3**	**-1.8**
	comp=Z,20nm,0.9s									
DDI	**Dehra Dun**		**18.75**	**103**	*e*P		**P**	**04 08 30.3**	**-0.9**
DDI					IAmb		IAmb	04 08 34.8		
SHLS	**Shalkode**		**18.82**	**63**	*e*P		**P**	**04 08 30.7**	**-1.4**
	comp=Z,113nm,1.4s									
SHLS					*e*S		**Sn**	**04 12 02.4**	**-0.9**
SHLS					LRM		MLR	04 16 58.4		
	comp=Z,193nm,13.3s									
NDI	**New Delhi**		**18.86**	**109**	*e*P		**P**	**04 08 27.0**	**-5.3**
BRVK	**Borovoye**		**18.96**	**26**	*ce*P		**P**	**04 08 33.3**	**+0.1**
BRVK					pmax		pmax			
	comp=Z,140nm,2.5s									
BRVK	**Borovoye**		**18.96**	**26**	*e*P		**P**	**04 08 33.3**	**+0.1**
	comp=Z,140nm,2.5s									
BRVK	**Borovoye**		**18.96**	**26**	*e*Pn		**P**	**04 08 33.1**	**-0.2**
	comp=Z,49nm,1.0s									
BRVK					*e*S		**Sn**	**04 11 57.9**	**-8.2**
BVA0	**Borovoye Array**		**18.97**	**26**	⇑Pn		**Pn**	**04 08 34.3**	**+0.3**
	comp=Z,45nm,0.8s,baz=205,slow=7.4,SNR=184									
BVA0					⇑Lg		Lg	04 14 16.3		
	comp=Z,58nm,1.4s,baz=237,slow=18,SNR=4.0									
BVA0	**Borovoye Array**		**18.97**	**26**	P		**P**	**04 08 32.7**	**-0.7**
BVA0					pmax		pmax			
	comp=Z,45nm,0.8s									
BVA0	**Borovoye Array**		**18.97**	**26**	P		**P**	**04 08 32.7**	**-0.7**
	comp=Z,45nm,0.8s									
BVA0	**Borovoye Array**		**18.97**	**26**	Pn		**Pn**	**04 08 34.3**	**+0.3**
	comp=Z,45nm,0.8s,SNR=184									
BVAR	**Borovoye Array**		**18.97**	**26**	P		**P**	**04 08 32.7**	**-0.7**
	comp=Z,1.3nm,0.3s,baz=207,slow=9.3,SNR=58									
BVAR					S		**Sn**	**04 12 00.5**	**-5.8**
	comp=Z,0.4nm,0.3s,baz=230,slow=24,SNR=3.9									
BVAR					LR		LR	04 16 38.4		
	comp=Z,362nm,18.5s,baz=237,slow=39									
SIM	**Simferopol'**		**19.09**	**303**	*e*P		**P**	**04 08 35.1**	**+0.4**
SIM					pmax		pmax			
	comp=Z,136nm,1.4s									
SIM					pmax		pmax			
	comp=Z,140nm,17.0s									
SIM	**Simferopol'**		**19.09**	**303**	*e*P		**P**	**04 08 35.1**	**+0.4**
	comp=Z,140nm,17.0s									
CSS	**Mathiatis**		**19.14**	**272**	*e*P		**P**	**04 08 35.8**	**+0.4**
	comp=Z,8.2nm,1.0s									
CSS	**Mathiatis**		**19.14**	**272**	*e*P		**P**	**04 08 35.8**	**+0.4**
	comp=Z,8.2nm,1.0s									
VSR	**Storozhevoye**		**19.31**	**325**	*e*P		**P**	**04 08 37.2**	**+0.1**
VSR					pmax		pmax			
	comp=Z,80nm,0.8s									
VSR	**Storozhevoye**		**19.31**	**325**	*e*P		**P**	**04 08 37.2**	**+0.1**
	comp=Z,80nm,0.8s									
EIL	**Elat**		**19.57**	**256**	P		**P**	**04 08 41.5**	**+1.4**
	comp=Z,0.2nm,0.3s,baz=298,slow=5.9,SNR=6.9									
EIL					LR		LR	04 16 56.0		
	comp=Z,95nm,20.7s,baz=66,slow=39									
VORR	**Voronezh**		**19.60**	**326**	*e*P		**P**	**04 08 39.0**	**-1.2**
VORR					pmax		pmax			
	comp=Z,300nm,1.2s									
VORR	**Voronezh**		**19.60**	**326**	*e*P		**P**	**04 08 39.0**	**-1.2**
	comp=Z,300nm,1.2s						

KIS **Kishinev** 23.22 305 *e*P P 04 09 19.0 -0.1
KIS *e* 04 09 23.0
KIS *e* 04 09 46.0
KIS MLR MLR
comp=E,300nm,13.0s
KIS MLR MLR
comp=Z,400nm,13.0s
KIS MLR MLR
comp=Z,300nm,16.0s
KIS Kishinev 23.22 305 *e*P **P 04 09 19.0 -0.1**
CFR Carcaliu 23.24 301⇑*i*P **P 04 09 19.0 -0.3**
CFR Carcaliu 23.24 301⇑*i*P **P 04 09 19.0 -0.3**
PYUN Piuthan 23.60 104 *e*P **P 04 09 24.0 +0.7**
comp=Z,173nm,1.3s
SORM Soroca 23.86 308⇓*i*P **P 04 09 25.4 0.0**
SORM Soroca 23.86 308⇓*i*P **P 04 09 25.4 0.0**
KARP Karpathos 23.98 276 P **P 04 09 24.8 -1.9**
KARP Karpathos 23.98 276 *e*P **P 04 09 27.5 +0.8**
comp=Z,69nm,0.9s
KARP Karpathos 23.98 276 *e*P **P 04 09 27.5 +0.8**
comp=Z,69nm,0.9s
PRK Paraskevi 24.21 286 P **P 04 09 28.6 -0.2**
PRK Paraskevi 24.21 286 P **P 04 09 28.6 -0.2**
PRK Paraskevi 24.21 286 P **P 04 09 28.6 -0.2**
PRK Paraskevi 24.21 286 P **P 04 09 28.6 -0.2**
KOLN Koldanda 24.23 104 *e*P **P 04 09 29.9 +0.6**
comp=Z,97nm,1.1s
AKASG Malin Array Be 24.28 314 P **P 04 09 29.0 -0.3**
comp=Z,18nm,0.7s,baz=121,slow=8.6,SNR=50
AKASG LR LR 04 21 46.5
comp=Z,286nm,19.1s,baz=105,slow=43
AKBB Malin Array Si 24.28 314 *e*P **P 04 09 28.9 -0.4**
AKBB pmax pmax
comp=Z,72nm,1.0s
AKBB Malin Array Si 24.28 314 *e*P **P 04 09 28.9 -0.4**
comp=Z,72nm,1.0s
AKBB Malin Array Si 24.28 314 *e*P **P 04 09 28.9 -0.4**
comp=Z,72nm,1.0s
KIEV Kiev 24.29 314*c i*P **P 04 09 29.0 -0.3**
KIEV pmax pmax
comp=Z,29nm,0.9s
KIEV Kiev 24.29 314 P **P 04 09 29.0 -0.3**
SNR=41
KIEV Kiev 24.29 314 *e*P **P 04 09 28.8 -0.5**
comp=Z,71nm,1.0s
AK11 Malin Array Si 24.30 314 *e*P **P 04 09 29.1 -0.4**
AK11 Malin Array Si 24.30 314 *e*P **P 04 09 29.1 -0.4**
ISR Istrita 24.34 300⇑*i*P **P 04 09 31.8 +1.8**
ISR Istrita 24.34 300⇑*i*P **P 04 09 31.8 +1.8**
VRI Vrincioaia 24.35 302⇑*i*P **P 04 09 31.0 +1.0**
VRI Vrincioaia 24.35 302⇑*i*P **P 04 09 31.0 +1.0**
PLOR Plostina 24.40 302⇓*i*P **P 04 09 31.9 +1.4**
PLOR Plostina 24.40 302⇓*i*P **P 04 09 31.9 +1.4**
GADA Gvkgeada 24.46 288 P **P 04 09 30.1 -0.9**
GADA Gvkgeada 24.46 288 P **P 04 09 30.1 -0.9**
GADA Gvkgeada 24.46 288 P **P 04 09 30.1 -0.9**
SZH Strazhica 24.53 295 *i*P **P 04 09 37.9 +6.2**
WMQ Urumqi 24.54 63 P **P 04 09 34.0 +2.2**
WMQ pP sP 04 09 39.0 +2.9
WMQ S **S 04 13 56.0 +3.6**
WMQ pmax pmax
comp=Z,25nm,1.0s
WMQ pmax pmax
comp=Z,190nm,6.4s
WMQ LR LR
comp=Z,1μm,13.4s
WMQ LR LR
comp=Z,860nm,12.0s
WMQ LR LR
comp=Z,990nm,17.2s
TESR Tescani 24.54 303⇑*i*P **P 04 09 32.5 +0.7**
TESR Tescani 24.54 303⇑*i*P **P 04 09 32.5 +0.7**
DAMY Dhamar 24.60 210 *e*P **P 04 09 33.7 +0.9**
comp=Z,32nm,1.0s
DAMY Dhamar 24.60 210 *e*P **P 04 09 33.7 +0.9**
comp=Z,32nm,1.0s
NGP Nagpur 24.71 122 *e*P **P 04 09 32.5 -1.0**
NGP IAmb IAmb 04 09 35.6
comp=Z,9.6nm,0.5s
SMTH Samothraki Isl 24.73 289 P **P 04 09 33.3 -0.2**
SMTH Samothraki Isl 24.73 289 P **P 04 09 33.3 -0.2**
SMTH Samothraki Isl 24.73 289 P **P 04 09 33.3 -0.2**
MLR Muntele Rosu 24.82 301 P **P 04 09 35.6 +1.2**
comp=Z,3.4nm,0.8s,baz=46,slow=3.9,SNR=31
MLR LR LR 04 22 35.8
comp=Z,75nm,18.2s,baz=64,slow=44
MLR Muntele Rosu 24.82 301⇑*i*P **P 04 09 36.3 +1.9**
MLR Muntele Rosu 24.82 301 *e*P **P 04 09 36.6 +2.2**
MLR Muntele Rosu 24.82 301 *e*P **P 04 09 36.6 +2.2**
MLR Muntele Rosu 24.82 301 *e*P **P 04 09 36.6 +2.2**
KDZ Kurdzhali 24.82 291 *i*P P 04 09 42.0 +7.7
GKN Gorkha 24.94 102 *e*P **P 04 09 36.4 +0.7**
comp=Z,69nm,0.8s
APE Apeiranthos 25.02 281⇑*i*P **P 04 09 36.3 +0.1**
APE Apeiranthos 25.02 281*c i*P **P 04 09 36.2 +0.1**
APE pmax pmax
comp=Z,65nm,0.8s
APE Apeiranthos 25.02 281⇑*i*P **P 04 09 36.3 +0.1**
PRAR RASCA 25.02 305⇑*i*P **P 04 09 36.2 +0.1**
PRAR RASCA 25.02 305⇑*i*P **P 04 09 36.2 +0.1**
SANT Santorini 25.18 279 *e*P **P 04 09 37.9 +0.2**
SANT Santorini 25.18 279 *e*P **P 04 09 37.9 +0.2**
DOPR Dopca 25.29 302⇓*i*P **P 04 09 39.9 +1.4**
DOPR Dopca 25.29 302⇓*i*P **P 04 09 39.9 +1.4**
MTUR Matau 25.39 300⇓*i*P **P 04 09 42.7 +3.2**
LAST Lasithi 25.40 276 P **P 04 09 39.3 -0.4**
LAST Lasithi 25.40 276 *e*P **P 04 09 39.8 +0.1**
comp=Z,74nm,0.8s
LAST Lasithi 25.40 276 *e*P **P 04 09 39.8 +0.1**
comp=Z,74nm,0.8s
VOIR 25.43 300⇓*i*P **P 04 09 41.1 +1.2**
VOIR 25.43 300⇓*i*P **P 04 09 41.1 +1.2**
DMN Daman 25.49 102 *e*P **P 04 09 41.3 +0.5**
comp=Z,142nm,1.0s
KKN Kakani 25.54 102 *e*P **P 04 09 42.6 +1.4**
comp=Z,147nm,1.1s
NVS Novosibirsk 25.68 36 *e*P P 04 09 52.0 +10
NVS pmax pmax
comp=Z,14nm,1.0s
ARR Arges 25.71 300⇓*i*P **P 04 09 43.8 +1.4**
ARR Arges 25.71 300⇓*i*P **P 04 09 43.8 +1.4**
PKIN Phulchoki 25.73 102 *e*P **P 04 09 44.1 +1.1**
comp=Z,117nm,0.9s
BURAR Bucovina Array 25.75 305⇑*i*P **P 04 09 43.4 +0.6**
BURAR Bucovina Array 25.75 305⇑*i*P **P 04 09 43.4 +0.6**
BUR08 Bucovina Ar. S 25.77 305 *e*P **P 04 09 43.8 +0.8**
BUR08 Bucovina Ar. S 25.77 305 *e*P **P 04 09 43.8 +0.8**
IDI Anoyia 25.85 277 P **P 04 09 43.7 -0.1**
comp=Z,38nm,0.7s,baz=108,slow=3.7,SNR=14
IDI Anoyia 25.85 277 *e*P **P 04 09 44.0 +0.2**
IDI Anoyia 25.85 277 *e*P **P 04 09 44.0 +0.2**
GUN Gumba 25.96 101 *e*P **P 04 09 46.7 +1.5**
comp=Z,455nm,1.2s
SIVA Sivas 25.97 276 P **P 04 09 44.5 -0.3**
SIVA Sivas 25.97 276 P **P 04 09 44.5 -0.3**
SIVA Sivas 25.97 276 P **P 04 09 44.5 -0.3**
ZAA0 Zalesovo Array 25.98 39 *e*P **P 04 09 45.2 +0.5**
ZAA0 Zalesovo Array 25.98 39 *e*P **P 04 09 45.2 +0.5**
ZALV Zalesovo Beam 25.98 39 P **P 04 09 45.1 +0.4**
comp=Z,2.1nm,0.7s,baz=247,slow=9.5,SNR=5.6
NVR Nevrokopi 25.98 291 P **P 04 09 45.8 +0.9**
NVR Nevrokopi 25.98 291 P **P 04 09 45.8 +0.9**
NVR Nevrokopi 25.98 291 P **P 04 09 45.8 +0.9**
MMB Musomiste 26.09 291 *i*P **P 04 09 46.7 +0.9**
MPEP Malo Peshtene 26.13 295 *i*P **P 04 09 49.5 +3.3**
SRS Serrai 26.19 290 P **P 04 09 46.4 -0.4**
SRS Serrai 26.19 290 P **P 04 09 46.4 -0.4**
SRS Serrai 26.19 290 P **P 04 09 46.4 -0.4**
SRS Serrai 26.19 290 P **P 04 09 46.4 -0.4**
PTL Penteli 26.20 283 P **P 04 09 47.1 +0.2**
PTL Penteli 26.20 283 P **P 04 09 47.1 +0.2**
PTL Penteli 26.20 283 P **P 04 09 47.1 +0.2**
ATHU Athens Univers 26.27 283 P **P 04 09 47.8 +0.3**
ATHU Athens Univers 26.27 283 P **P 04 09 47.8 +0.3**
ATHU Athens Univers 26.27 283 P **P 04 09 47.8 +0.3**
VLY Voula,Athens 26.28 283 P **P 04 09 47.5 -0.1**
VLY Voula,Athens 26.28 283 P **P 04 09 47.5 -0.1**
VLY Voula,Athens 26.28 283 P **P 04 09 47.5 -0.1**
JIRN Jiri 26.32 101 *e*P **P 04 09 49.9 +1.5**
comp=Z,2μm,1.1s
ATH Athens Observa 26.32 283 P **P 04 09 48.5 +0.6**
ATH Athens Observa 26.32 283 P **P 04 09 48.5 +0.6**
ATH Athens Observa 26.32 283 P **P 04 09 48.5 +0.6**
KLMR Klimovskoe 26.66 341 *e*P **P 04 09 47.9 -2.8**
KLMR pmax pmax
comp=Z,54nm,1.0s
MICGM Minsk 26.77 321 *e* **P 04 09 52.0 +0.2**
MNK Minsk 26.77 321 *e*P **P 04 09 52.0 +0.2**
RAMN Ramite 26.97 102 *e*P **P 04 09 53.9 -0.3**
comp=Z,86nm,0.7s
HYB Hyderabad 27.07 129 *i*P **P 04 09 56.5 +1.6**
LVV L'vov 27.08 310 *e*P **P 04 09 55.3 +0.6**
LVV *e* 04 10 50.1
LVV *e*S **S 04 14 32.2 -0.4**
LVV MLR MLR
comp=N,100nm,14.0s
LVV MLR MLR
comp=E,200nm,14.0s
LVV MLR MLR
comp=Z,200nm,15.0s
LVV L'vov 27.08 310 *e*P **P 04 09 55.3 +0.6**
LVV *e*S **S 04 14 32.2 -0.4**
comp=Z,200nm,15.0s
DRGR 27.25 303⇓*i*P **P 04 09 56.6 +0.2**
DRGR 27.25 303⇓*i*P **P 04 09 56.6 +0.2**
AGG Agios Georgios 27.28 286 *e*P **P 04 09 57.6 +0.9**
AGG pmax pmax
comp=Z,69nm,1.2s
AGG Agios Georgios 27.28 286 *e*P **P 04 09 57.5 +0.9**
comp=Z,69nm,1.2s
AGG Agios Georgios 27.28 286 *e*P **P 04 09 57.5 +0.9**
comp=Z,69nm,1.2s
NACGM Naroch 27.52 321 *e* **P 04 09 55.0 -3.5**
MDVR Moldovita 27.70 298⇓*i*P **P 04 10 01.2 +0.9**
MDVR Moldovita 27.70 298⇓*i*P **P 04 10 01.2 +0.9**
IDID Didziasalis 27.74 322 *e*P **P 04 10 01.2 +0.7**
IDID IAmb IAmb 04 10 30.3
comp=Z,18nm,0.9s
IDID Didziasalis 27.74 322 *e*P **P 04 10 01.2 +0.7**
SNR=27
BZS Buzias 27.84 300⇓*i*P **P 04 10 02.7 +1.1**
BZS Buzias 27.84 300⇓*i*P **P 04 10 02.7 +1.1**
UZH Uzhgorod 27.89 306 *e*P **P 04 10 02.1 +0.2**
UZH *e* 04 10 05.5
UZH *i* 04 10 12.1
UZH Uzhgorod 27.89 306 *e*P **P 04 10 02.1 +0.2**
SIRR Siria 27.89 301⇓*i*P **P 04 10 03.5 +1.5**
SIRR Siria 27.89 301⇓*i*P **P 04 10 03.5 +1.5**
ATD Arta Tunnel 27.97 210 LR LR 04 22 17.3
comp=Z,287nm,18.9s,baz=33,slow=39
BOK Bokaro 28.04 109 *e*P **P 04 10 02.5 -1.0**
BOK IAmb IAmb 04 10 05.6
comp=Z,28nm,1.1s
ISAL Salakas 28.18 322 *e*P **P 04 10 05.0 +0.6**
ISAL IAmb IAmb 04 10 37.1
comp=Z,24nm,0.8s
ISAL Salakas 28.18 322 *e*P **P 04 10 05.0 +0.6**
SNR=27
IZAR Zarasai 28.20 322 *e*P **P 04 10 05.4 +0.8**
IZAR IAmb IAmb 04 10 37.6
comp=Z,13nm,0.8s
IZAR Zarasai 28.20 322 *e*P **P 04 10 05.4 +0.8**
SNR=27
CRVS Cervenica-Dubn 28.48 307 *e*P **P 04 10 08.1 +0.9**
comp=Z,3.6nm,1.2s
CRVS Cervenica-Dubn 28.48 307 *e*P **P 04 10 08.1 +0.9**
LKD2 Lefkada island 28.61 285 P **P 04 10 07.5 -1.0**
LKD2 Lefkada island 28.61 285 P **P 04 10 07.5 -1.0**
LKD2 Lefkada island 28.61 285 P **P 04 10 07.5 -1.0**
STHS Stebnicka Huta 28.73 308 *e*P **P 04 10 12.8 +3.3**
IGT Igoumenitsa 28.77 287 P **P 04 10 09.3 -0.6**
IGT Igoumenitsa 28.77 287 P **P 04 10 09.3 -0.6**
IGT Igoumenitsa 28.77 287 P **P 04 10 09.3 -0.6**
IGT Igoumenitsa 28.77 287 P **P 04 10 09.3 -0.6**
KECS Kecovo 29.03 306 *e*P **P 04 10 16.4 +4.3**
PSZ Piszkesteto 29.33 304 *e*P **P 04 10 16.8 +1.9**
PSZ pmax pmax
comp=Z,14nm,1.0s
PSZ Piszkesteto 29.33 304 *e*P **P 04 10 16.8 +1.9**
comp=Z,14nm,1.0s
PSZ Piszkesteto 29.33 304 *e*P **P 04 10 16.8 +1.9**
comp=Z,14nm,1.0s
NIE Niedzica 29.34 307 *e*P **P 04 10 16.5 +1.6**
NIE Niedzica 29.34 307 *e*P **P 04 10 16.5 +1.6**
PDG Podgorica 29.41 293⇓*i*P **P 04 10 16.3 +0.8**
PDG Podgorica 29.41 293⇓*i*P **P 04 10 16.3 +0.8**
LSA Lhasa 29.42 93 *e*P **P 04 10 16.2 -0.1**
LSA pmax pmax
comp=Z,4.0nm,0.4s
LSA Lhasa 29.42 93 *e*P **P 04 10 16.2 -0.1**
comp=Z,3.7nm,0.4s
LSA Lhasa 29.42 93 *e*P **P 04 10 16.2 -0.1**
comp=Z,3.7nm,0.4s
VSU Vasula 29.43 328*d i*P **P 04 10 15.7 +0.2**
VSU pmax pmax
comp=Z,43nm,1.0s
VSU Vasula 29.43 328 *i*P **P 04 10 15.7 +0.2**
comp=Z,43nm,1.0s
LANS Liptovska Anna 29.82 307 *e*P **P 04 10 22.8 +3.7**
OJC Ojcow 29.83 309 *e*P **P 04 10 19.5 +0.4**
OJC Ojcow 29.83 309 *e*P **P 04 10 19.5 +0.4**
OJC Ojcow 29.83 309 *e*P **P 04 10 19.5 +0.4**
OJC Ojcow 29.83 309 *e*P **P 04 10 19.9 +0.8**
comp=Z,59nm,1.8s
VIS Vishakhapatnam 29.99 122 *e*P **P 04 10 19.3 -1.5**
BWNR Bhubaneshwar 30.05 115 *e*P **P 04 10 20.0 -1.3**
VYHS Vyhne 30.12 305 *e*P **P 04 10 22.3 +0.6**
comp=Z,4.0nm,1.4s
VYHS Vyhne 30.12 305 *e*P **P 04 10 22.3 +0.6**
KRAR Krasnoyarsk 31.05 40⇓*e*P **P 04 10 32.4 +2.5**
KRAR Krasnoyarsk 31.05 40 *e*P **P 04 10 32.4 +2.5**
MORC Moravsky Berou 31.17 307 *e*P **P 04 10 32.4 +1.4**
MORC pmax pmax
comp=Z,154nm,2.0s
MORC Moravsky Berou 31.17 307 *e*P **P 04 10 32.4 +1.4**
comp=Z,154nm,2.0s
MORC Moravsky Berou 31.17 307 *e*P **P 04 10 32.4 +1.4**
comp=Z,154nm,2.0s
FINES FINESS Array B 31.48 332 P **P 04 10 34.1 +0.5**
comp=Z,3.2nm,0.7s,baz=120,slow=11,SNR=15
FINES LR LR 04 25 53.6
comp=Z,177nm,18.0s,baz=132,slow=41
SHL Shillong 31.80 100 *e*P **P 04 10 33.6 -3.4**
SHL IAmb IAmb 04 10 38.7
comp=Z,43nm,2.0s
DPC Dobruska-Polom 32.04 308 *e*P **P 04 10 40.0 +1.3**
DPC *ex* x 04 10 45.1
DPC AMS AMS 04 26 20.0
comp=Z,200nm,16.5s
DPC Dobruska-Polom 32.04 308 *e*P **P 04 10 40.0 +1.3**
DPC *e* 04 10 45.1
DPC MLR MLR
comp=Z,200nm,16.5s
DPC Dobruska-Polom 32.04 308 P **P 04 10 40.0 +1.3**
ARSA Arzberg 32.19 302 *i*pP **P 04 10 40.9 +0.8**
comp=Z,3.0nm,0.5s
ARSA Arzberg 32.19 302 P **P 04 10 40.9 +0.8**
comp=Z,3.0nm,0.5s
UPC Upice 32.26 309 AMS AMS 04 26 20.0
comp=Z,200nm,13.8s
OBKA Obir 32.82 301 *i*sP **P 04 10 47.3 +1.7**
comp=Z,2.2nm,0.6s
OBKA Obir 32.82 301 P **P 04 10 47.3 +1.7**
comp=Z,2.2nm,0.6s
GOPC GO Pecny, Ondr 32.95 307 AMS AMS 04 26 50.0
comp=Z,200nm,15.1s
MOA Molln 33.08 303 *e*P **P 04 10 47.8 0.0**
comp=Z,6.2nm,1.8s
MOA Molln 33.08 303 P **P 04 10 47.8 0.0**
comp=Z,6.2nm,1.8s
PRU Pruhonice 33.12 307 *e*P **P 04 10 51.0 +2.9**
PRU AMS AMS 04 26 50.0
comp=Z,200nm,17.3s
PRU Pruhonice 33.12 307 *e*P **P 04 10 51.0 +2.9**
PRU MLR MLR
comp=Z,200nm,17.3s
PRU Pruhonice 33.12 307 *e*P **P 04 10 51.0 +2.9**
comp=Z,200nm,17.3s
PVCC Panska Ves 33.17 308 *e*P **P 04 10 50.1 +1.5**
PVCC AMS AMS 04 27 10.0
comp=Z,200nm,12.9s
PVCC Panska Ves 33.17 308 *e*P **P 04 10 50.1 +1.5**
PVCC MLR MLR
comp=Z,200nm,12.9s
PVCC Panska Ves 33.17 308 P **P 04 10 50.1 +1.5**
TRD Trivandrum 33.41 142 *e*P **P 04 10 50.0 -1.0**
MYKA Terra Mystica 33.45 301 *i*sP **P 04 10 55.6 +4.5**
comp=Z,2.0nm,0.5s
GEA0 GERESS Array S 33.54 305 *e*P **P 04 10 52.0 +0.1**
GEA0 GERESS Array S 33.54 305 *e*P **P 04 10 52.0 +0.1**
GEC2 GERESS Array S 33.54 305 *e*P **P 04 10 52.3 +0.4**
GEC2 pmax pmax
comp=Z,16nm,1.4s
GEC2 GERESS Array S 33.54 305 *e*P **P 04 10 52.3 +0.4**
comp=Z,16nm,1.4s
GEC2 GERESS Array S 33.54 305 *e*P **P 04 10 52.3 +0.4**
comp=Z,16nm,1.4s
GERES GERESS Array B 33.54 305 P **P 04 10 50.6 -1.2**
comp=Z,0.7nm,0.6s,baz=99,slow=8.5,SNR=6.6
GERES LR LR 04 27 22.5
comp=Z,165nm,18.5s,baz=76,slow=41
BRG Berggiesshubel 33.62 309 *e*P **P 04 10 53.4 +1.0**
comp=Z,23nm,1.4s
BRG S **S 04 16 18.0 +3.1**
comp=N,257nm,13.6s
comp=E,118nm,13.8s
comp=Z,164nm,14.7s
BRG Berggiesshubel 33.62 309 *e*P **P 04 10 53.4 +1.0**
BRG S **S 04 16 18.0 +3.1**
BRG pmax pmax
comp=Z,23nm,1.4s
BRG MLR MLR
comp=N,257nm,13.6s
BRG MLR MLR
comp=E,118nm,13.8s
BRG MLR MLR
comp=Z,164nm,14.7s
BRG Berggiesshubel 33.62 309 *e*P **P 04 10 53.4 +1.0**
comp=Z,23nm,1.4s
BRG S **S 04 16 18.0 +3.1**
comp=Z,164nm,14.7s
KHC Kasperske Hory 33.64 306 *e*P **P 04 10 53.0 +0.2**
KHC *ex* x 04 11 19.5
KHC AMS AMS 04 26 40.0
comp=Z,200nm,15.9s
KHC Kasperske Hory 33.64 306 *e*P **P 04 10 53.0 +0.2**
KHC MLR MLR
comp=Z,200nm,15.9s
KHC Kasperske Hory 33.64 306 P **P 04 10 53.0 +0.2**
KBA Koelnbreinsper 33.67 302 *i*sP **P 04 10 56.7 +3.5**
comp=Z,3.4nm,0.7s
GTA Gaotai 33.74 72 P **P 04 10 56.0 +2.2**
GTA pP sP 04 11 00.5 +2.4
GTA sP pP 04 11 03.0 +6.1
GTA S **S 04 16 19.5 +2.2**
GTA sS sS 04 16 26.5 +4.1
GTA SS **SnSn 04 18 27.0 +5.7**
GTA pmax pmax
comp=Z,8.0nm,1.3s
GTA pmax pmax
comp=Z,140nm,5.1s
GTA LR LR
comp=Z,440nm,13.0s
GTA LR LR
comp=Z,320nm,12.6s
GTA LR LR
comp=Z,300nm,14.1s
APA Apatity 33.74 344⇓*i*P **P 04 10 53.4 +0.1**
APA pmax pmax
comp=Z,2.0nm,0.9s
APA MLR MLR
comp=Z,600nm,15.0s
APA Apatity 33.74 344 *i*P **P 04 10 53.4 +0.1**
comp=Z,600nm,15.0s
LVZ Lovozero 33.75 345*c i*P **P 04 10 53.8 +0.3**
LVZ pmax pmax
comp=Z,63nm,1.7s
LVZ Lovozero 33.75 345 *i*P **P 04 10 53.8 +0.3**
comp=Z,63nm,1.7s
BSD Bornholm Skovb 33.92 317 *i*P **P 04 10 53.9 -1.0**
comp=Z,15nm,0.8s
BSD Bornholm Skovb 33.92 317 *i*P **P 04 10 53.9 -1.0**
BSD pmax pmax
comp=Z,15nm,0.8s
BSD Bornholm Skovb 33.92 317 *i*P **P 04 10 54.0 -1.0**
ABTA Abfaltersbach 34.23 301 *i*pP **P 04 10 58.4 +0.5**
comp=Z,3.5nm,0.7s
ABTA Abfaltersbach 34.23 301 P **P 04 10 58.4 +0.5**
comp=Z,3.5nm,0.7s
CLL Collm 34.27 309 *i*P **P 04 10 58.5 +0.4**
comp=Z,6.0nm,1.0s
CLL *i* 04 11 01.7
comp=Z,15nm,1.5s
CLL *i*PP **PP 04 12 16.6 +1.1**
comp=Z,20nm,1.6s
CLL *i*PPP PPP 04 12 22.9
CLL *i* 04 12 27.0
CLL *e*S **S 04 16 30.0 +5.1**
CLL Collm 34.27 309 *i*P **P 04 10 58.5 +0.4**
CLL *i* 04 11 01.7
CLL *e*S **S 04 16 30.0 +5.1**
CLL pmax pmax
comp=Z,6.0nm,1.0s
CLL Collm 34.27 309 *i*P **P 04 10 58.5 +0.4**
comp=Z,6.0nm,1.0s
RGN Rugen 34.67 315 P **P 04 11 00.3 -1.2**
comp=Z,38nm,0.9s
RGN Rugen 34.67 315 P **P 04 11 00.3 -1.2**
comp=Z,38nm,0.9s
WTTA Wattenberg 34.84 302 *i*pP **P 04 11 03.5 +0.2**
comp=Z,9.5nm,0.8s
WTTA Wattenberg 34.84 302 P **P 04 11 03.5 +0.2**
comp=Z,9.5nm,0.8s
MOTA Moosalm 35.20 302 *i*pP **P 04 11 06.8 +0.4**
comp=Z,2.2nm,0.6s
MOTA Moosalm 35.20 302 P **P 04 11 06.8 +0.4**
comp=Z,2.2nm,0.6s
RETA Reutte 35.43 303 *i*pP **P 04 11 09.1 +0.8**
comp=Z,2.6nm,0.6s
RETA Reutte 35.43 303 P **P 04 11 09.1 +0.8**
comp=Z,2.6nm,0.6s
FETA Feichten 35.45 302 *i*pP **P 04 11 08.5 -0.1**
comp=Z,1.2nm,0.5s
FETA Feichten 35.45 302 P **P 04 11 08.5 -0.1**
comp=Z,1.2nm,0.5s
FUORN Ofenpass-Fuorn 35.77 301 *e*P **P 04 11 12.2 +0.7**
comp=Z,10nm,1.0s
FUORN Ofenpass-Fuorn 35.77 301 *e*P **P 04 11 12.2 +0.7**
comp=Z,10nm,1.0s
ZAK Zakamensk 35.80 52 *e*P **P 04 11 07.0 -4.4**
ZAK pmax pmax
comp=Z,4.0nm,1.9s
DAVA Damuels 36.03 302 *i*P **P 04 11 13.1 -0.4**
comp=Z,7.3nm,0.7s
DAVA Damuels 36.03 302 P **P 04 11 13.1 -0.4**
comp=Z,7.3nm,0.7s
DAVOX Davos/Dischmat 36.04 301 P **P 04 11 12.3 -1.3**
comp=Z,3.9nm,0.7s,baz=137,slow=7.9,SNR=5.4
HFS Hagfors 36.12 325 P **P 04 11 13.5 -0.4**
comp=Z,10nm,0.8s,baz=106,slow=9.4,SNR=24
TUE Stuetta 36.41 301 *e*P **P 04 11 16.2 -0.6**
comp=Z,6.7nm,0.9s
TUE Stuetta 36.41 301 *e*P **P 04 11 16.2 -0.6**
comp=Z,6.7nm,0.9s
NRIK Noril'sk 36.82 18 P **P 04 11 20.3 +0.5**
comp=Z,3.2nm,0.3s,baz=218,slow=4.8,SNR=5.9
NRIK LR LR 04 27 44.1
comp=Z,209nm,19.9s,baz=216,slow=38
ARA0 ARCESS Array S 37.11 342 *e*P **P 04 11 22.2 -0.1**
ARA0 ARCESS Array S 37.11 342 *e*P **P 04 11 22.2 -0.1**
ARCES ARCESS Array B 37.11 342 P **P 04 11 21.9 -0.4**
comp=Z,5.3nm,0.7s,baz=143,slow=9.1,SNR=12
ARCES LR LR 04 27 48.7
comp=Z,263nm,20.0s,baz=128,slow=38
NC602 NORSAR Array S 37.33 325 *e*P **P 04 11 24.2 0.0**
NC602 NORSAR Array S 37.33 325 *e*P **P 04 11 24.2 0.0**
NC405 NORSAR Array S 37.38 325 *e*P **P 04 11 24.7 0.0**
NC405 NORSAR Array S 37.38 325 *e*P **P 04 11 24.7 0.0**
NB201 NORSAR Array S 37.55 325 *e*P **P 04 11 25.7 -0.5**
NB201 NORSAR Array S 37.55 325 *e*P **P 04 11 25.7 -0.5**
LZH Lanzhou 37.56 76 *e*P **P 04 11 29.5 +2.8**
LZH pP sP 04 11 33.5 +2.5
LZH sP pP 04 11 35.0 +5.2
LZH PP **PnPn 04 12 56.5 +3.4**
LZH *e*S **S 04 17 18.0 +1.9**
LZH sS ScP 04 17 28.8 -3.1
LZH SS **SnSn 04 19 48.5 -5.5**
LZH pmax pmax
comp=Z,34nm,1.0s
LZH pmax pmax
comp=Z,130nm,4.6s
LZH LR LR

	comp=Z,610nm,10.1s											
LZH					LR	LR						
	comp=Z,740nm,10.5s											
LZH					LR	LR						
	comp=Z,930nm,12.8s											
NC303	**NORSAR Array S**	**37.58**	**326**	*eP*	**P**		**04**	**11**	**25.4**	**-0.9**		
NC303	**NORSAR Array S**	**37.58**	**326**	*eP*	**P**		**04**	**11**	**25.4**	**-0.9**		
NB2	**NORSAR Subarra**	**37.59**	**325**	P	**P**		**04**	**11**	**26.0**	**-0.4**		
	comp=Z,40nm,1.4s,baz=111,slow=8.6											
NB2	**NORSAR Subarra**	**37.59**	**325**	P	**P**		**04**	**11**	**26.0**	**-0.4**		
	baz=111,slow=8.6											
NB2	**NORSAR Subarra**	**37.59**	**325**	P	**P**		**04**	**11**	**26.0**	**-0.4**		
	SNR=9.2											
NOA	**NORSAR Array B**	**37.59**	**325**	P	**P**		**04**	**11**	**26.1**	**-0.4**		
	comp=Z,8.4nm,0.8s,baz=111,slow=8.2,SNR=29											
NOA					LR	LR	04	28	45.8			
	comp=Z,163nm,18.0s,baz=110,slow=39											
NAO01	**NORSAR Array S**	**37.67**	**325**	*eP*	**P**		**04**	**11**	**27.5**	**+0.3**		
NAO01	**NORSAR Array S**	**37.67**	**325**	*eP*	**P**		**04**	**11**	**27.5**	**+0.3**		
NBO02	**NORSAR Array S**	**37.75**	**325**	*eP*	**P**		**04**	**11**	**27.5**	**-0.3**		
NBO02	**NORSAR Array S**	**37.75**	**325**	*eP*	**P**		**04**	**11**	**27.5**	**-0.3**		
SONM	**Songino Array**	**37.77**	**57**	P	**P**		**04**	**11**	**28.4**	**+0.1**		
	comp=Z,1.8nm,0.9s,baz=280,slow=8.6,SNR=9.2											
SONM					LR	LR	04	27	40.5			
	comp=Z,234nm,19.1s,baz=258,slow=37											
SONA1	**Songino Array**	**37.78**	**57**	*eP*	**P**		**04**	**11**	**28.4**	**0.0**		
SONA1	**Songino Array**	**37.78**	**57**	*eP*	**P**		**04**	**11**	**28.4**	**0.0**		
NBO00	**NORSAR Array S**	**37.78**	**325**	*eP*	**P**		**04**	**11**	**28.5**	**+0.4**		
NBO00	**NORSAR Array S**	**37.78**	**325**	*eP*	**P**		**04**	**11**	**28.4**	**+0.4**		
SENIN	**Lac Senin/Sane**	**37.83**	**301**	*eP*	**P**		**04**	**11**	**28.5**	**-0.4**		
	comp=Z,11nm,0.8s											
SENIN	**Lac Senin/Sane**	**37.83**	**301**	*eP*	**P**		**04**	**11**	**28.5**	**-0.4**		
	comp=Z,11nm,0.8s											
KONO	**Kongsberg**	**37.93**	**323**	*eP*	**P**		**04**	**11**	**29.2**	**-0.1**		
KONO					pmax	pmax						
	comp=Z,79nm,1.0s											
KONO	**Kongsberg**	**37.93**	**323**	*eP*	**P**		**04**	**11**	**29.2**	**-0.1**		
	comp=Z,79nm,1.0s											
KEST	**Kesra**	**38.05**	**283**	P	**P**		**04**	**11**	**30.1**	**-0.6**		
	comp=Z,14nm,1.0s,baz=43,slow=2.7,SNR=7.7											
MEM	**Membach**	**38.62**	**308**	P	**P**		**04**	**11**	**36.0**	**+0.8**		
MEM	**Membach**	**38.62**	**308**	P	**P**		**04**	**11**	**36.0**	**+0.8**		
CD2	**Chengdu**	**39.11**	**84**	*eP*	**P**		**04**	**11**	**39.3**	**-0.4**		
CD2					pP	sP	04	11	44.5	+0.5		
CD2					S	**S**	**04**	**17**	**38.8**	**-0.6**		
CD2					SS	**SS**	**04**	**20**	**32.5**	**+0.8**		
CD2					pmax	pmax						
	comp=Z,20nm,0.5s											
CD2					pmax	pmax						
	comp=Z,220nm,5.2s											
DOU	**Dourbes**	**39.52**	**307**	P	**P**		**04**	**11**	**43.6**	**+0.8**		
DOU	**Dourbes**	**39.52**	**307**	P	**P**		**04**	**11**	**43.5**	**+0.8**		
DGPR	**DIGLIPUR**	**39.83**	**116**	*eP*	**P**		**04**	**11**	**45.9**	**+0.2**		
DGPR					IAmb	IAmb	04	11	47.5			
	comp=Z,61nm,1.4s											
SSB	**Saint Sauveur**	**39.84**	**299**	*eP*	**P**		**04**	**11**	**45.1**	**-0.5**		
SSB					pmax	pmax						
	comp=Z,16nm,1.1s											
SSB	**Saint Sauveur**	**39.84**	**299**	*eP*	**P**		**04**	**11**	**45.1**	**-0.5**		
	comp=Z,16nm,1.1s											
SSB	**Saint Sauveur**	**39.84**	**299**	*eP*	**P**		**04**	**11**	**45.1**	**-0.5**		
	comp=Z,16nm,1.1s											
CMAI	**Chiengmai2**	**40.35**	**103**	P	**P**		**04**	**11**	**54.2**	**+4.0**		
	comp=Z,87nm,1.0s											
KMI	**Kunming**	**40.68**	**93**	P	**P**		**04**	**11**	**56.0**	**+3.0**		
KMI					pP	sP	04	11	58.5	+1.2		
KMI					pmax	pmax						
	comp=Z,52nm,0.8s											
KMI					LR	LR						
	comp=Z,240nm,12.2s											
KMI					LR	LR						
	comp=Z,160nm,16.1s											
KMI					LR	LR						
	comp=Z,110nm,15.8s											
PBA	**Port Blair**	**40.73**	**118**	*eP*	P	P	04	11	51.7	-1.5		
PBA					IAmb	IAmb	04	11	53.7			
	comp=Z,130nm,1.4s											
CHTO	**Chiang Mai**	**40.90**	**104**	P	**P**		**04**	**11**	**56.6**	**+2.1**		
	comp=Z,143nm,0.9s											
CHTO	**Chiang Mai**	**40.90**	**104**	*eP*	**P**		**04**	**11**	**55.9**	**+1.4**		
CHTO					pmax	pmax						
	comp=Z,20nm,0.8s											
CHTO	**Chiang Mai**	**40.90**	**104**	*eP*	**P**		**04**	**11**	**55.9**	**+1.4**		
	comp=Z,20nm,0.8s											
CHTO	**Chiang Mai**	**40.90**	**104**	*eP*	**P**		**04**	**11**	**55.9**	**+1.4**		
	comp=Z,20nm,0.8s											
CMMT	**Chiang Mai**	**40.90**	**104**	P	P		04	12	02.4	+7.8		
	comp=Z,32nm,0.9s											
SET	**Setif**	**41.00**	**285**	P	**P**		**04**	**11**	**57.0**	**+1.7**		
CM31	**Chiang Mai Arr**	**41.10**	**105**	*eP*	**P**		**04**	**11**	**58.8**	**+2.6**		
CMAR	**Chiang Mai Arr**	**41.10**	**105**	P	**P**		**04**	**11**	**56.2**	**0.0**		
	comp=Z,20nm,0.8s,baz=299,slow=8.4,SNR=55											
CMAR					LR	LR	04	33	54.9			
	comp=Z,90nm,18.6s,baz=265,slow=43											
CM01	**Chiang Mai Arr**	**41.13**	**105**	*eP*	**P**		**04**	**11**	**57.9**	**+1.4**		
CM01	**Chiang Mai Arr**	**41.13**	**105**	*eP*	**P**		**04**	**11**	**57.9**	**+1.4**		
LAMP	**Lampang**	**41.60**	**104**	P	**P**		**04**	**12**	**02.7**	**+2.4**		
	comp=Z,13nm,1.0s											
KMBO	**Kilima Mbogo**	**41.72**	**210**	P	**P**		**04**	**12**	**02.4**	**+0.9**		
	comp=Z,1.3nm,0.7s,baz=28,slow=9.1,SNR=4.6											
KMBO					LR	LR	04	29	23.0			
	comp=Z,155nm,19.7s,baz=7.5,slow=36											
KMBO	**Kilima Mbogo**	**41.72**	**210**	*eP*	**P**		**04**	**12**	**03.9**	**+2.3**		
XAN	**Xi'an**	**42.14**	**77**	P	**P**		**04**	**12**	**05.5**	**+0.8**		
XAN					pP	sP	04	12	10.5	+1.5		
XAN					PP	PP	04	13	50.5	+8.4		
XAN					S	S	04	18	33.3	+8.8		
XAN					pmax	pmax						
	comp=Z,11nm,0.9s											
XAN					pmax	pmax						
	comp=Z,47nm,4.9s											
XAN					LR	LR						
	comp=Z,400nm,19.1s											
XAN					LR	LR						
	comp=Z,120nm,16.7s											
XAN					LR	LR						
	comp=Z,450nm,21.8s											
SUKH	**Sukhothai**	**42.19**	**105**	P	**P**		**04**	**12**	**08.1**	**+3.0**		
	comp=Z,7.4nm,1.1s,comp=Z,56nm											
HHC	**Hu-ho-hao-te**	**42.32**	**67**	*eP*	**P**		**04**	**12**	**07.3**	**+1.2**		
HHC					PP	**PP**	**04**	**13**	**48.5**	**+4.5**		
HHC					S	**S**	**04**	**18**	**29.0**	**+1.9**		
HHC					SS	**SS**	**04**	**21**	**30.3**	**-5.1**		
HHC					pmax	pmax						
	comp=Z,14nm,1.2s											
HHC					pmax	pmax						
	comp=Z,83nm,4.1s											
HHC					LR	LR						
	comp=Z,260nm,12.3s											
HHC					LR	LR						
	comp=Z,190nm,11.1s											
HHC					LR	LR						
	comp=Z,150nm,10.0s											
UMPA	**Umpang Tak**	**42.34**	**107**	P	**P**		**04**	**12**	**10.2**	**+3.7**		
	comp=Z,10nm,1.2s,comp=Z,651nm											
UTTA	**Uttaradit**	**42.76**	**104**	P	**P**		**04**	**12**	**12.2**	**+2.4**		
	comp=Z,8.8nm,0.8s											
GYA	**Guiyang**	**43.23**	**89**	P	**P**		**04**	**12**	**14.8**	**+1.1**		
GYA					PP	**PP**	**04**	**13**	**58.5**	**+4.4**		
GYA					PcP	**PcP**	**04**	**14**	**04.3**	**+1.4**		
GYA					ScP	**ScP**	**04**	**17**	**53.0**	**-1.2**		
GYA					S	**S**	**04**	**18**	**41.8**	**+0.9**		
GYA					SS	**SS**	**04**	**21**	**47.5**	**-6.3**		
GYA					pmax	pmax						
	comp=Z,20nm,1.0s											
GYA					pmax	pmax						
	comp=Z,120nm,5.8s											
GYA					LR	LR						
	comp=Z,480nm,18.3s											
GYA					LR	LR						
	comp=Z,430nm,19.0s											
GYA					LR	LR						
	comp=Z,460nm,19.4s											
PBKT	**Sadao Pong**	**43.76**	**105**	P	**P**		**04**	**12**	**20.6**	**+2.7**		
	comp=Z,28nm,0.8s,comp=Z,2μm											
EKA	**Eskdalemuir Ar**	**44.19**	**315**	P	**P**		**04**	**12**	**20.2**	**-0.7**		
	comp=Z,4.4nm,0.6s,baz=103,slow=8.0,SNR=21											
NONG	**Nongkai**	**44.61**	**102**	P	**P**		**04**	**12**	**26.6**	**+1.9**		
	comp=Z,56nm,1.4s											
PHET	**Kaeng Krachan**	**44.95**	**110**	P	**P**		**04**	**12**	**32.0**	**+4.6**		
	comp=Z,7.5nm,0.8s											
SPITS	**Spitsbergen Ar**	**45.00**	**349**	P	**P**		**04**	**12**	**27.2**	**+0.1**		
	comp=Z,14nm,1.1s,baz=157,slow=12,SNR=5.3											
SKNT	**Sakolnakorn**	**45.88**	**102**	P	**P**		**04**	**12**	**36.8**	**+2.0**		
	comp=Z,29nm,1.0s											
BJI	**Beijing**	**45.93**	**67**	P	**P**		**04**	**12**	**36.0**	**+1.1**		
BJI					S	**S**	**04**	**19**	**19.5**	**+0.1**		
BJI					pmax	pmax						
	comp=Z,7.0nm,0.7s											
BJI					LR	LR						
	comp=Z,310nm,10.1s											
BJI					LR	LR						
	comp=Z,340nm,22.1s											
BJI					LR	LR						
	comp=Z,320nm,19.8s											
TAM	**Tamanrasset**	**46.15**	**267**	*eP*	**P**		**04**	**12**	**37.4**	**+0.3**		
TAM					pmax	pmax						
	comp=Z,12nm,1.2s											
TAM	**Tamanrasset**	**46.15**	**267**	*eP*	**P**		**04**	**12**	**37.4**	**+0.3**		
	comp=Z,12nm,1.2s											
TAM	**Tamanrasset**	**46.15**	**267**	*eP*	**P**		**04**	**12**	**37.4**	**+0.3**		
	comp=Z,12nm,1.2s											
ES19	**SONSECA Array**	**47.07**	**293**	*eP*	**P**		**04**	**12**	**43.8**	**-0.2**		
ES19	**SONSECA Array**	**47.07**	**293**	*eP*	**P**		**04**	**12**	**43.8**	**-0.2**		
ESDC	**Sonseca Array**	**47.13**	**293**	P	**P**		**04**	**12**	**43.9**	**-0.6**		
	comp=Z,7.9nm,0.8s,baz=67,slow=8.1,SNR=40											
ESLA	**Sonseca Array**	**47.13**	**293**	*eP*	**P**		**04**	**12**	**44.3**	**-0.1**		
	comp=Z,9.7nm,0.8s											
ESLA	**Sonseca Array**	**47.13**	**293**	*eP*	**P**		**04**	**12**	**44.3**	**-0.1**		
	comp=Z,9.7nm,0.8s											
PKDT	**Phuket**	**47.30**	**117**	P	P		04	12	52.0	+6.1		
	comp=Z,57nm,1.0s											
SURA	**Surathani**	**47.38**	**114**	P	P		04	12	51.4	+4.9		
	comp=Z,28nm,1.0s,comp=Z,7μm											
PAB	**San Pablo**	**47.45**	**293**	*eP*	**P**		**04**	**12**	**45.7**	**-1.3**		
PAB					pmax	pmax						
	comp=Z,17nm,1.1s											
PAB	**San Pablo**	**47.45**	**293**	*eP*	**P**		**04**	**12**	**45.7**	**-1.3**		
	comp=Z,17nm,1.1s											
PAB	**San Pablo**	**47.45**	**293**	*eP*	**P**		**04**	**12**	**45.7**	**-1.3**		
	comp=Z,17nm,1.1s											
UBPT	**Khong Chiam**	**48.02**	**103**	P	**P**		**04**	**12**	**53.3**	**+1.8**		
	comp=Z,11nm,1.1s											
TRTT	**Trang**	**48.32**	**116**	P	**P**		**04**	**12**	**55.8**	**+2.0**		
	comp=Z,31nm,1.2s											
MVO	**Moncorvo**	**48.95**	**296**	*eP*	**P**		**04**	**12**	**58.5**	**0.0**		
	comp=Z,15nm,1.2s											
MVO	**Moncorvo**	**48.95**	**296**	*eP*	**P**		**04**	**12**	**58.5**	**0.0**		
	comp=Z,15nm,1.2s											
PVRL	**Vila Real**	**49.41**	**296**	*eP*	**P**		**04**	**13**	**02.3**	**+0.3**		
	comp=Z,32nm,1.5s											
PVRL	**Vila Real**	**49.41**	**296**	*eP*	**P**		**04**	**13**	**02.3**	**+0.3**		
	comp=Z,32nm,1.5s											
QIZ	**Qiongzhong**	**49.41**	**96**	P	**P**		**04**	**13**	**04.8**	**+2.6**		
QIZ					S	**S**	**04**	**20**	**14.0**	**+4.6**		
QIZ					pmax	pmax						
	comp=Z,64nm,5.8s											
QIZ					LR	LR						
	comp=Z,150nm,13.1s											
QIZ					LR	LR						
	comp=Z,140nm,18.8s											
POLO	**Lamas de Olo**	**49.44**	**296**	*eP*	**P**		**04**	**13**	**02.3**	**0.0**		
	comp=Z,9.3nm,1.5s											
POLO	**Lamas de Olo**	**49.44**	**296**	*eP*	**P**		**04**	**13**	**02.3**	**0.0**		
	comp=Z,9.3nm,1.5s											
SKLT	**Songkhla**	**49.44**	**115**	P	**P**		**04**	**13**	**05.6**	**+3.1**		
	comp=Z,19nm,1.1s											
PGAV	**Gavieira, Arco**	**49.61**	**297**	*eP*	**P**		**04**	**13**	**04.1**	**+0.5**		
	comp=Z,39nm,1.5s											
PGAV	**Gavieira, Arco**	**49.61**	**297**	*eP*	**P**		**04**	**13**	**04.1**	**+0.5**		
	comp=Z,39nm,1.5s											
PCBR	**Castelo Branco**	**49.66**	**294**	*eP*	**P**		**04**	**13**	**04.0**	**+0.1**		
	comp=Z,25nm,1.3s											
PCBR	**Castelo Branco**	**49.66**	**294**	*eP*	**P**		**04**	**13**	**04.0**	**+0.1**		
	comp=Z,25nm,1.3s											
PVIS	**Viseu**	**49.70**	**296**	*eP*	**P**		**04**	**13**	**04.7**	**+0.4**		
	comp=Z,27nm,1.9s											
PVIS					*epP*	**sP**	**04**	**13**	**11.7**	**+3.0**		
PVIS	**Viseu**	**49.70**	**296**	*eP*	**P**		**04**	**13**	**04.7**	**+0.4**		
	comp=Z,27nm,1.9s											
PMRV	**Marv??o**	**49.73**	**294**	*eP*	**P**		**04**	**13**	**04.8**	**+0.3**		
	comp=Z,25nm,1.5s											
PMRV					*epP*	**sP**	**04**	**13**	**10.3**	**+1.5**		
PMRV	**Marv??o**	**49.73**	**294**	*eP*	**P**		**04**	**13**	**04.8**	**+0.3**		
	comp=Z,25nm,1.5s											
PBAR	**Barrancos**	**49.87**	**292**	*eP*	**P**		**04**	**13**	**05.2**	**-0.3**		
	comp=Z,57nm,1.7s											
PBAR					*epP*	**sP**	**04**	**13**	**10.4**	**+0.5**		
PBAR	**Barrancos**	**49.87**	**292**	*eP*	**P**		**04**	**13**	**05.2**	**-0.3**		
	comp=Z,57nm,1.7s											
PESTR	**Estremoz**	**50.05**	**293**	*eP*	**P**		**04**	**13**	**06.7**	**-0.2**		
	comp=Z,27nm,1.2s											
PESTR	**Estremoz**	**50.05**	**293**	*eP*	**P**		**04**	**13**	**06.7**	**-0.2**		
	comp=Z,27nm,1.2s											
PTOM	**Tomar**	**50.42**	**294**	*eP*	**P**		**04**	**13**	**10.5**	**+0.9**		
	comp=Z,35nm,1.5s											
PTOM	**Tomar**	**50.42**	**294**	*eP*	**P**		**04**	**13**	**10.5**	**+0.9**		
	comp=Z,35nm,1.5s											
PMTG	**Montargil**	**50.46**	**294**	*eP*	**P**		**04**	**13**	**10.0**	**+0.1**		
	comp=Z,21nm,1.2s											
PMTG	**Montargil**	**50.46**	**294**	*eP*	**P**		**04**	**13**	**10.0**	**+0.1**		
	comp=Z,21nm,1.2s											
EVO	**Evora**	**50.48**	**293**	*eP*	**P**		**04**	**13**	**07.5**	**-2.6**		
	comp=Z,18nm,1.9s											
PBEJ	**Beja**	**50.53**	**292**	*eP*	**P**		**04**	**13**	**10.8**	**+0.3**		
	comp=Z,25nm,1.5s											
PBEJ	**Beja**	**50.53**	**292**	*eP*	**P**		**04**	**13**	**10.8**	**+0.3**		
	comp=Z,25nm,1.5s											
PVAQ	**Vaqueiros**	**50.63**	**292**	*eP*	**P**		**04**	**13**	**11.1**	**-0.2**		
	comp=Z,36nm,1.4s											
PVAQ					*epP*	**sP**	**04**	**13**	**17.0**	**+1.3**		
PVAQ	**Vaqueiros**	**50.63**	**292**	*eP*	**P**		**04**	**13**	**11.1**	**-0.2**		
	comp=Z,36nm,1.4s											
PVAQ					*epP*	**sP**	**04**	**13**	**17.0**	**+1.3**		
KULM	**Kulim**	**50.75**	**117**	*eP*	**P**		**04**	**13**	**11.8**	**-0.6**		
	comp=Z,23nm,0.9s											
KULM	**Kulim**	**50.75**	**117**	*eP*	**P**		**04**	**13**	**11.8**	**-0.6**		
	comp=Z,23nm,0.9s											
PCVE	**Castro Verde**	**50.80**	**292**	*eP*	**P**		**04**	**13**	**12.4**	**-0.1**		
	comp=Z,32nm,1.5s											
PCVE	**Castro Verde**	**50.80**	**292**	*eP*	**P**		**04**	**13**	**12.4**	**-0.1**		
	comp=Z,32nm,1.5s											
PNCL	**Nicolau / Gran**	**51.00**	**293**	*eP*	**P**		**04**	**13**	**14.3**	**+0.3**		
PNCL					*epP*	**sP**	**04**	**13**	**20.1**	**+1.7**		
PNCL	**Nicolau / Gran**	**51.00**	**293**	*eP*	**P**		**04**	**13**	**14.3**	**+0.3**		
PSI	**Prapat**	**51.29**	**121**	*eP*	**P**		**04**	**13**	**15.3**	**-1.3**		
PSI					pmax	pmax						
	comp=Z,32nm,0.8s											
PSI	**Prapat**	**51.29**	**121**	*eP*	**P**		**04**	**13**	**15.3**	**-1.3**		
	comp=Z,32nm,0.8s											
GSI	**Gunungsitoli**	**51.46**	**123**	*eP*	**P**		**04**	**13**	**19.1**	**+1.4**		
	comp=Z,22nm,0.9s											
GSI	**Gunungsitoli**	**51.46**	**123**	*eP*	**P**		**04**	**13**	**19.1**	**+1.4**		
	comp=Z,22nm,0.9s											
IPM	**Ipoh**	**51.58**	**118**	*eP*	**P**		**04**	**13**	**19.2**	**+0.5**		
	comp=Z,54nm,1.4s											
IPM	**Ipoh**	**51.58**	**118**	*eP*	**P**		**04**	**13**	**19.2**	**+0.5**		
	comp=Z,54nm,1.4s											
KLR	**Kul'dur**	**54.15**	**51**	P	**P**		**04**	**13**	**37.0**	**-0.2**		
	comp=Z,2.0nm,0.9s,baz=297,slow=9.4,SNR=5.7											
KLR	**Kul'dur**	**54.15**	**51**	P	**P**		**04**	**13**	**37.0**	**-0.2**		
KLR	**Kul'dur**	**54.15**	**51**	P	**P**		**04**	**13**	**37.0**	**-0.2**		
TOA0	**Torodi Ar. Sit**	**54.40**	**259**	*eP*	**P**		**04**	**13**	**39.0**	**-0.5**		
TOA0	**Torodi Ar. Sit**	**54.40**	**259**	*eP*	**P**		**04**	**13**	**39.0**	**-0.5**		
TORD	**Torodi Ar. Bea**	**54.40**	**259**	P	**P**		**04**	**13**	**38.5**	**-0.9**		
	comp=Z,29nm,0.9s,baz=54,slow=6.6,SNR=99											
TORD					LR	LR	04	37	44.8			
	comp=Z,95nm,18.2s,baz=95,slow=37											
KS01	**Wonju Array Si**	**55.42**	**66**	*eP*	**P**		**04**	**13**	**47.1**	**+0.5**		
KS01	**Wonju Array Si**	**55.42**	**66**	*eP*	**P**		**04**	**13**	**47.1**	**+0.5**		
KSAR	**Wonju Array Be**	**55.42**	**66**	P	**P**		**04**	**13**	**47.6**	**+1.0**		
KSAR	**Wonju Array Be**	**55.42**	**66**	P	**P**		**04**	**13**	**47.6**	**+1.0**		
KSAR	**Wonju Array Be**	**55.42**	**66**	P	**P**		**04**	**13**	**47.6**	**+1.0**		
KSRS	**Korea Array**	**55.45**	**66**	P	**P**		**04**	**13**	**47.6**	**+0.8**		
	comp=Z,3.7nm,0.7s,baz=292,slow=6.7,SNR=13											
KSRS					LR	LR	04	40	11.0			
	comp=Z,153nm,18.2s,baz=281,slow=39											
USRK	**Ussuriysk Ar.**	**55.88**	**57**	LR	LR		04	38	13.5			
	comp=Z,105nm,19.0s,baz=314,slow=36											
TPUB	**Ta-pu**	**55.92**	**85**	*eP*	**P**		**04**	**13**	**48.5**	**-1.9**		
	comp=Z,36nm,0.3s											
TPUB	**Ta-pu**	**55.92**	**85**	*eP*	**P**		**04**	**13**	**48.5**	**-1.9**		
	comp=Z,36nm,0.3s											
SSLB	**Suanglung**	**55.94**	**84**	*eP*	**P**		**04**	**13**	**49.7**	**-0.9**		
	comp=Z,11nm,0.8s											
SSLB	**Suanglung**	**55.94**	**84**	*eP*	**P**		**04**	**13**	**49.6**	**-0.9**		
	comp=Z,11nm,0.8s											
SUMG	**Summit**	**57.07**	**339**	*i* P	**P**		**04**	**13**	**59.3**	**+1.0**		
SUMG	**Summit**	**57.07**	**339**	*i* P	**P**		**04**	**13**	**59.3**	**+1.0**		
SUMG	**Summit**	**57.07**	**339**	*eP*	**P**		**04**	**13**	**58.7**	**+0.4**		
	comp=Z,8.9nm,0.9s											
SUMG	**Summit**	**57.07**	**339**	*eP*	**P**		**04**	**13**	**58.7**	**+0.4**		
	comp=Z,8.9nm,0.9s											
LSZ	**Lusaka**	**58.26**	**213**	*eP*	**P**		**04**	**14**	**06.7**	**-0.3**		
LSZ					pmax	pmax						
	comp=Z,11nm,1.1s											
LSZ	**Lusaka**	**58.26**	**213**	*eP*	**P**		**04**	**14**	**06.7**	**-0.3**		
	comp=Z,11nm,1.1s											
LSZ	**Lusaka**	**58.26**	**213**	*eP*	**P**		**04**	**14**	**06.7**	**-0.3**		
	comp=Z,11nm,1.1s											
SBUM	**Sibu**	**61.18**	**110**	*eP*	**P**		**04**	**14**	**26.8**	**-0.3**		
	comp=Z,16nm,0.9s											
SBUM	**Sibu**	**61.18**	**110**	*eP*	**P**		**04**	**14**	**26.8**	**-0.3**		
	comp=Z,16nm,0.9s											
KKM	**Kota Kinabalu**	**61.97**	**104**	*eP*	**P**		**04**	**14**	**33.0**	**+0.3**		
	comp=Z,36nm,0.9s											
KKM	**Kota Kinabalu**	**61.97**	**104**	*eP*	**P**		**04**	**14**	**33.0**	**+0.3**		
	comp=Z,36nm,0.9s											
BILL	**Bilibino**	**63.30**	**23**	*i* P	**P**		**04**	**14**	**42.4**	**+1.8**		
BILL				*e*			04	16	58.4			
BILL				*e*	PPP	PPP	04	18	31.8			
BILL				*i* S	S		04	22	59.9	-12		
BILL				*e*	SSS	SSS	04	30	03.3			
BILL					pmax	pmax						
	comp=Z,12nm,1.1s											
BILL					MLR	MLR						
	comp=Z,176nm,18.0s											
BILL	**Bilibino**	**63.30**	**23**	*i* P	**P**		**04**	**14**	**42.4**	**+1.8**		
	comp=Z,12nm,1.1s											
MJAR	**Matsushiro Arr**	**63.30**	**63**	P	**P**		**04**	**14**	**40.6**	**-0.6**		
	comp=Z,3.0nm,1.0s,baz=293,slow=9.2,SNR=7.9											
MJAR					LR	LR	04	44	28.4			
	comp=Z,98nm,18.4s,baz=280,slow=38											
DBIC	**Dimbokro**	**63.42**	**258**	P	**P**		**04**	**14**	**40.4**	**-1.7**		
	comp=Z,6.7nm,1.0s,baz=22,slow=8.9,SNR=4.0											
DBIC					LR	LR	04	45	47.7			
	comp=Z,142nm,19.3s,baz=24,slow=39											
KIC	**Kosan Boka**	**63.52**	**258**	*eP*	**P**		**04**	**14**	**42.3**	**-0.5**		
	comp=Z,35nm,1.1s											
TIC	**Toumodi**	**63.57**	**258**	*eP*	**P**		**04**	**14**	**42.3**	**-0.9**		
LIC	**Lamto**	**63.83**	**258**	*eP*	**

HYT	Haines Junctio	82.21	7	*e*P		P	04 16 34.7	+1.5
HYT	Haines Junctio	82.21	7	*e*P		P	04 16 34.7	+1.5
KDAK	Kodiak Island	82.77	15	*i* P		P	04 16 38.2	+2.3
KDAK	Kodiak Island	82.77	15	*i* P		P	04 16 38.2	+2.3
LMQ	La Malbaie	83.84	327	*e*P		P	04 16 41.6	-0.1
LMQ	La Malbaie	83.84	327	*e*P		P	04 16 41.6	-0.1
FITZ	Fitzroy Crossi	84.63	117	P		P	04 16 44.6	-1.4
	comp=Z,11nm,1.0s,baz=283,slow=3.5,SNR=10							
FITZ	Fitzroy Crossi	84.63	117	*e*P		P	04 16 44.8	-1.2
FITZ	Fitzroy Crossi	84.63	117	*e*P		P	04 16 44.8	-1.2
DLBC	Dease Lake	85.14	4	*e*P		P	04 16 49.3	+1.1
DLBC	Dease Lake	85.14	4	*e*P		P	04 16 49.3	+1.1
FFC	Flin Flon	87.23	348	*e*P		P	04 16 58.0	-0.4
FFC	Flin Flon	87.23	348	*e*P		P	04 16 58.0	-0.4
FFC	Flin Flon	87.23	348	*e*P		P	04 16 58.0	-0.4
EDM	Edmonton	90.14	354	*e*P		P	04 17 12.2	-0.1
EDM					pmax	pmax		
	comp=Z,16nm,0.7s							
EDM	Edmonton	90.14	354	*e*P		P	04 17 12.2	-0.1
	comp=Z,16nm,0.7s							
EDM	Edmonton	90.14	354	*e*P		P	04 17 12.2	-0.1
	comp=Z,16nm,0.7s							
ULM	Lac du Bonnet	90.23	343	P		P	04 17 11.0	-1.7
	comp=Z,2.2nm,0.7s,baz=72,slow=5.6,SNR=5.0							
ULM	Lac du Bonnet	90.23	343	*e*P		P	04 17 11.9	-0.8
ULM	Lac du Bonnet	90.23	343	*e*P		P	04 17 11.9	-0.8
ULM	Lac du Bonnet	90.23	343	*e*P		P	04 17 11.9	-0.8
WRA	Warramunga Arr	92.14	113	P		P	04 17 21.0	-1.0
	comp=Z,1.3nm,0.6s,baz=316,slow=4.2,SNR=12							
WRAB	Tennant Creek	92.14	113	*e*P		P	04 17 23.1	+1.1
WRAB					pmax	pmax		
	comp=Z,2.0nm,1.0s							
WRAB	Tennant Creek	92.14	113	*e*P		P	04 17 23.1	+1.1
	comp=Z,2.0nm,1.0s							
WRAB	Tennant Creek	92.14	113	*e*P		P	04 17 23.1	+1.1
	comp=Z,2.0nm,1.0s							
ASAR	Alice Springs	94.11	116	P		P	04 17 28.8	-2.3
	comp=Z,3.6nm,1.1s,baz=303,slow=5.1,SNR=9.0							
AS01	Alice Springs	94.14	116	*e*P		P	04 17 31.5	+0.4
AS01	Alice Springs	94.14	116	*e*P		P	04 17 31.5	+0.4
SLMT	Seeley Lake	96.09	353	*e*P		P	04 17 40.1	+0.1
SLMT	Seeley Lake	96.09	353	*e*P		P	04 17 40.1	+0.1

ISCJB ***26*** *04:05:56.6±1.1, 36°.10N±0°.05×142°.28E±0°.09, h23km, mb3.5/2, Error ellipse: s-maj=10.7km s-min=7.3km az=178.8*
JMA ***26*** *04:06:00.3±0.2, 36°.16N×141°.93E, h77km±4km, M2.9*
IDC ***26*** *04:06:02.1±6.1, 35°.97N×142°.14E, h49km±50km, mb3.2/2, mb1 3.5/4, mb1mx3.1/62, mbtmp3.5/4, ML3.3/2, Error ellipse: s-maj=55.0km s-min=16.9km az=68.0*

ISC 26 04:05:57.6±1.7, 36°.13N±0°.06×142°.2E±0°.1, h23km, n14, σ1s00/18, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	Chosi	1.20	249	P	Pn	04 06 19.1	+0.1
CHOJ				*e*S	Sn	04 06 33.5	-1.0
JHO	Hitachi	1.43	290	P	Pn	04 06 21.3	-0.8
ONAJ	Iwakimizuishiy	1.51	310	P	Pn	04 06 23.1	-0.2
JFK	Kawauchi	1.65	319	P	Pn	04 06 25.4	+0.2
BSO1	Boso 1	1.80	215	P	Pb	04 06 28.6	-1.0
BSO1				*e*S	Sn	04 06 50.0	+1.4
BSO3	Boso 3	1.94	227	P	Pn	04 06 30.2	+1.3
JFT	Otama	2.06	313	P	Pn	04 06 31.8	+1.0
JAG	Ashikaga	2.27	278	P	Pn	04 06 33.6	-0.1
JRY	Ryogami san	2.70	268	P	Pn	04 06 39.7	0.0
JOD2	Odawara 2	2.71	252	P	Pn	04 06 40.4	+0.7
MJAR	Matsushiro Arr	3.28	278	P	Pn	04 06 49.5	+1.9
	2.8nm,0.3s,baz=111,slow=8.7,SNR=25						
MJAR				S	Sn	04 07 27.2	+1.3
	0.9nm,0.3s,baz=75,slow=16,SNR=3.6						
JHJ	Hachijo jima 2	3.62	215	P	Pn	04 06 52.8	+0.5
	10nm,0.3s,baz=80,slow=19,SNR=5.7						
JHJ				S	Sn	04 07 33.2	-1.2
	14nm,0.3s,baz=73,slow=19,SNR=3.8						
WRA	Warramunga Arr	56.27	189	P	P	04 15 36.7	+0.3
	0.6nm,1.0s,baz=3.8,slow=7.4,SNR=3.7						
ASAR	Alice Springs	60.00	189	P	P	04 16 02.0	-0.4
	0.3nm,0.7s,baz=9.2,slow=8.7,SNR=2.8						

DDA ***26*** *04:08:59.9, 37°.36N×36°.23E, h15km, MI3.5*
ISK ***26*** *04:09:00.9, 37°.37N×36°.20E, h5km, MD2.9*
CSEM ***26*** *04:09:01.3±0.1, 37°.37N×36°.20E, h2km, ML3.5, Error ellipse: s-maj=3.7km s-min=3.4km az=163.0*

ISC 26 04:09:00.2±0.9, 37°.37N±0°.02×36°.24E±0°.02, h13km±7km, n59, σ0s98/81, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ANDN	Andirin	0.23	22	*i* P	Pg	04 09 04.7	-0.5
ANDN				*i* S	Sg	04 09 09.5	+1.0
ANDN	Andirin	0.23	22	P	Pg	04 09 04.7	-0.5
ANDN				S	Sg	04 09 09.5	+1.0
KOZT	Kozan	0.35	289	*e*PG	Pg	04 09 06.8	-0.4
KOZT	Kozan	0.35	289	*e*Pg	Pg	04 09 06.8	-0.4
CEYT	Ceyhan	0.53	228	*e*PG	Pb	04 09 11.4	+0.1
CEYT	Ceyhan	0.53	228	*e*Pg	Pb	04 09 11.4	+0.1
HCB	Kahramanmara¯	0.53	93	*i* P	Pg	04 09 10.7	+0.1
HCB				*i* S	Sg	04 09 17.8	+0.1
KMRS	Kahramanmaras	0.54	76	*e*PG	Pn	04 09 12.4	-1.3
KMRS	Kahramanmaras	0.54	76	*e*Pg	Pn	04 09 12.4	-1.3
AKO	Adana	0.64	278	*i* P	Pg	04 09 12.3	-0.3
YURE	YUREGIR	0.73	222	*i* P	Pn	04 09 16.4	+0.2
YURE	YUREGIR	0.73	222	P	Pn	04 09 16.4	+0.2
GAZ	Gaziantep	0.80	104	*e*PG	Pn	04 09 17.2	0.0
GAZ				*e*SG	Sn	04 09 29.1	+0.1
GAZ	Gaziantep	0.80	104	*e*Pg	Pn	04 09 17.2	0.0
GAZ				*e*Sg	Sn	04 09 29.1	+0.1
KUZU	Kuzuini	0.90	131	*i* P	Pn	04 09 18.8	+0.3
KUZU				*i* S	Sn	04 09 30.3	-1.1
KUZU	Kuzuini	0.90	131	P	Pn	04 09 18.8	+0.3
KUZU				S	Sn	04 09 30.3	-1.1
KARA	Karaisali	0.95	264	*e*PG	Pn	04 09 19.3	+0.1
KARA	Karaisali	0.95	264	*e*Pg	Pn	04 09 19.3	+0.1
TAHT	Tahtakopru-Hat	0.99	182	*e*PG	Pn	04 09 20.5	+0.7
TAHT				*e*SG	Sn	04 09 34.6	+0.9
TAHT	Tahtakopru-Hat	0.99	182	*e*Pg	Pn	04 09 20.5	+0.7
TAHT				*e*Sg	Sn	04 09 34.6	+0.9
YAHY	KAYSERI_Yahyal	1.00	316	*i* P	Pb	04 09 19.0	-0.4
YAHY				*i* S	Sn	04 09 33.6	-0.4
YAHY	KAYSERI_Yahyal	1.00	316	P	Pb	04 09 19.0	-0.4
YAHY				S	Sn	04 09 33.7	-0.4
SARI	SarD1z-Kayseri	1.04	8	*e*PG	Pg	04 09 21.1	+0.8
SARI				*e*SG	Sn	04 09 36.4	+1.2
KRTS	Karatas	1.05	221	*e*PG	Pg	04 09 21.3	+0.8
KRTS	Karatas	1.05	221	*e*Pg	Pg	04 09 21.3	+0.8
GZT	Gaziantep	1.06	90	*i* P	Pg	04 09 20.9	+0.4
GZT				*i* S	Sn	04 09 37.0	+1.6
GULE	Gulek	1.17	266	*i* P	Pb	04 09 19.8	-2.5
GULE				*i* S	Sg	04 09 39.3	+1.4
GULE	Gulek	1.17	266	P	Pb	04 09 19.8	-2.5
GULE				S	Sg	04 09 39.3	+1.4
DED	Mersin	1.22	251	*i* P	Pb	04 09 22.8	-0.3
DED				*i* S	Sg	04 09 39.3	-0.2
YAYL	Yayladag	1.34	185	*i* P	Pb	04 09 24.6	-0.6
YAYL				*i* S	Sg	04 09 42.7	-0.6
YAYL	Yayladag	1.34	185	P	Pb	04 09 24.6	-0.6
YAYL				S	Sg	04 09 42.7	-0.6
MERS	Mersin	1.46	250	*e*PN	Pg	04 09 28.0	-0.2
MERS	Mersin	1.46	250	*e*Pn	Pg	04 09 28.0	-0.2
NIG	Nigde	1.49	300	*e*PN	Pg	04 09 28.3	-0.5
NIG	Nigde	1.49	300	*e*Pn	Pg	04 09 28.3	-0.5
BNN	Bunyan	1.51	348	*e*PN	Pg	04 09 29.8	+0.6
BNN	Bunyan	1.51	348	*e*Pn	Pg	04 09 29.8	+0.6
DARE	Darende-Malaty	1.55	39	*e*PN	Pg	04 09 29.8	-0.1
DARE	Darende-Malaty	1.55	39	*e*Pn	Pg	04 09 29.8	-0.1
ATAB	Bozova	1.64	86	*i* P	Pg	04 09 31.4	-0.3
ATAB				*i* S	Sg	04 09 55.1	+2.2
ATAB	Bozova	1.64	86	P	Pg	04 09 31.4	-0.3
ATAB				S	Sg	04 09 55.1	+2.2
KERG	Konya-Eregli	1.68	272	*i* P	Pb	04 09 31.0	-0.1
KERG	Konya-Eregli	1.68	272	P	Pb	04 09 31.0	-0.1
CUALT	Altinyayla-SIV	1.94	12	*i* P	Pg	04 09 37.5	0.0
CUALT				*i* S	Sg	04 10 04.1	+1.5
CUALT	Altinyayla-SIV	1.94	12	P	Pg	04 09 37.5	0.0
CUALT				S	Sg	04 10 04.1	+1.5
CUSAR	Sarkisla-SIVAS	2.04	0	*i* P	Pb	04 09 37.7	+0.4
CUSAR	Sarkisla-SIVAS	2.04	0	P	Pb	04 09 37.7	+0.4
CUKAN	kangal_SIVAS	2.17	26	*i* P	Pb	04 09 39.0	-0.4
CUKAN	kangal_SIVAS	2.17	26	P	Pb	04 09 39.0	-0.4
SULT	Sultanhani-AKS	2.31	292	*e*PN	Pb	04 09 40.2	-1.5
SULT	Sultanhani-AKS	2.31	292	*e*Pn	Pb	04 09 40.2	-1.5
IKL	Isikli	2.34	242	*e*PN	Pb	04 09 41.1	-1.1
IKL	Isikli	2.34	242	*e*Pn	Pb	04 09 41.1	-1.1
YOZ	Yozgat	2.38	343	*e*PN	Pb	04 09 41.7	-1.2
YOZ	Yozgat	2.38	343	*e*Pn	Pb	04 09 41.7	-1.2
SVRC	Sivrice-ELAZID	2.63	67	*e*PN	Pb	04 09 45.9	-1.3
SVRC	Sivrice-ELAZID	2.63	67	*e*Pn	Pb	04 09 45.9	-1.3
PTK	Pertek	2.91	58	*e*PN	Pb	04 09 49.9	-2.2
PTK	Pertek	2.91	58	*e*Pn	Pb	04 09 49.9	-2.2

BYKL ***26*** *04:13:34.6±0.2, 55°.47N×110°.43E*
MOS ***26*** *04:13:34.5±1.8, 55°.47N×110°.46E, h7km, mb4.2/1, Error ellipse: s-maj=31.5km s-min=15.5km az=71.9*

ISC 26 04:13:34.1±0.7, 55°.42N±0°.03×110°.52E±0°.02, h10km, n34, σ2s81/72, 4C-2D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KMO	Kumora	0.61	39	⇓*i* Pg	Pg	04 13 45.0	-1.0
KMO				*e*Sg	Sg	04 13 53.1	-0.9
KMO				Pmax			
	142nm,0.3s						
KMO				Smax			
	646nm,1.1s						
KMO	Kumora	0.61	39	*e*PG	Pg	04 13 45.0	-1.0
KMO				*e*		04 13 53.2	
KMO				pmax	pmax		
	comp=Z,96nm,0.3s						
KMO				smax	smax		
	comp=N,647nm,1.1s						
YLYR	Ulyunkhan	0.65	145	⇓*i* Pg	Pb	04 13 47.5	-0.1
	comp=N,181nm,0.5s						
YLYR				⇑*i* Pg	Pb	04 13 47.5	-0.1
	comp=N,112nm,0.5s						
YLYR				⇑*i* Pg	Pb	04 13 47.5	-0.1
	comp=N,186nm,0.5s						
YLYR				*e*Sg	Sb	04 13 57.5	+0.7
YLYR				Pmax			
	comp=N,246nm,0.2s						
YLYR				Smax			
	comp=N,376nm,0.1s						
YLYR	Ulyunkhan	0.65	145	⇑*i* PG	Pb	04 13 47.5	-0.1
YLYR				*e*		04 13 56.3	
YLYR				pmax	pmax		
	comp=Z,247nm,0.2s						
YLYR				smax	smax		
	comp=N,373nm,0.1s						
NIZ	Nizh Angarsk	0.66	304	⇑*i* Pg	Pg	04 13 45.4	-1.5
NIZ				*e*Sg	Sg	04 13 54.4	-1.2
NIZ				Pmax			
	comp=N,94nm,0.4s						
NIZ				Smax			
	comp=N,435nm,0.4s						
YOA	Uoyan	0.99	43	*e*Pg	Pg	04 13 52.6	-0.6
YOA				*e*Sg	Sb	04 14 06.2	-0.3
YOA				*e*		04 14 12.2	
YOA				Pmax			
	comp=N,286nm,0.2s						
YOA				max			
	comp=N,957nm,0.2s						
SYVR	Suvo	1.79	190	*e*Pg	Pg	04 14 07.5	-0.9
SYVR				*e*Sg	Sg	04 14 32.2	+0.7
SYVR				Pmax			
	comp=N,102nm,0.7s						
SYVR				Smax			
	comp=N,279nm,0.7s						
SYVR	Suvo	1.79	190	*e*PN	Pg	04 14 07.4	-0.9
SYVR				*e*		04 14 32.5	
SYVR				pmax	pmax		
	comp=Z,104nm,0.7s						
SYVR				smax	smax		
	comp=E,283nm,0.7s						
SVKR	Severomuysk	1.86	66	*e*Pg	Pg	04 14 09.1	-0.6
SVKR				*e*Sg	Sg	04 14 34.4	+0.6
SVKR				Pmax			
	comp=E,354nm,0.2s						
SVKR				Smax			
	comp=E,918nm,0.4s						
MXMB	Maximikha	2.39	206	*e*Pg	Pb	04 14 17.9	+0.7
MXMB				*e*Sg	Sg	04 14 50.1	-0.8
MXMB				*e*		04 14 52.6	
OGRR	Ongureny	2.46	225	*e*Pn	Pn	04 14 16.3	+2.0
OGRR				*e*Pg	Pb	04 14 18.7	+0.3
OGRR				*e*Sg	Sb	04 14 50.7	+2.0
OGRR				Pmax			
	comp=E,24nm,0.3s						
OGRR				Smax			
	comp=E,120nm,0.7s						
OGRR	Ongureny	2.46	225	*e*PN	Pb	04 14 19.2	+0.8
OGRR				*e*		04 14 49.6	
OGRR				pmax	pmax		
	comp=Z,24nm,0.3s						
OGRR				smax	smax		
	comp=E,132nm,1.0s						
BOD	Bodaibo	3.09	37	*e*Pn	Pn	04 14 23.6	+0.8
BOD				*e*Pg	Pb	04 14 28.8	-0.2
BOD				*e*Sn	Sn	04 15 01.8	+2.1
BOD				*e*Sg	Sb	04 15 08.5	+1.8
BOD				Pmax			
	comp=E,13nm,0.4s						
BOD				Smax			
	comp=E,78nm,0.4s						
NLYR	Nelyaty	3.11	68	*e*Pn	Pn	04 14 24.9	+1.7
NLYR				*e*Pg	Pb	04 14 30.8	+1.3
NLYR				*e*		04 15 04.4	
NLYR				*e*Sg	Sg	04 15 10.9	-3.0
NLYR				Pmax			
	comp=E,21nm,0.6s						
NLYR				Smax			
	comp=E,118nm,1.6s						
ZRHB	Zarechye	3.49	216	*e*Pg	Pb	04 14 37.6	+1.7
ZRHB				*e*Sg	Sg	04 15 24.0	-2.0
ZRHB				Pmax			
	comp=E,27nm,0.7s						
ZRHB				Smax			
	comp=E,230nm,1.2s						
TRG	Tyrgan	3.62	224	*e*Pn	Pn	04 14 33.1	+2.9
TRG				*e*Pg	Pb	04 14 39.0	+0.8
TRG				*e*Sg	Sb	04 15 26.4	+4.3
TRG				Pmax			
	comp=E,19nm,0.8s						
TRG				Smax			
	comp=E,59nm,0.5s						
UUDB	Ulan-Yde	3.94	207	*e*Pn	Pn	04 14 35.9	+1.3
UUDB				*e*Pg	Pb	04 14 46.1	+2.5
UUDB				*e*Sg	Sg	04 15 38.3	-2.2
UUDB				*e*		04 15 47.1	
UUDB				Pmax			
	comp=E,32nm,0.7s						
UUDB				max			
	comp=E,72nm,0.8s						
KAB	Kabansk	4.08	216	*e*Sg	Sg	04 15 42.7	-2.2
KAB				Smax			
	comp=E,140nm,0.2s						
STDB	Stepnoy Dvoret	4.08	219	*e*Sg	Sg	04 15 42.4	-2.5
HRMR	Khuramsha	4.35	211	*e*Pg	Pb	04 14 53.7	+3.1
HRMR				*e*Sg	Sg	04 15 50.1	-3.5
HRMR				Pmax			
	comp=E,32nm,0.7s						
HRMR				Smax			
	comp=E,142nm,0.8s						
CRS	Chara	4.58	68	*e*Pg	Pg	04 14 57.7	-4.1
CRS				*e*Sg	Sg	04 15 58.3	-2.8
CRS				Pmax			
	comp=E,35nm,1.7s						
CRS				Smax			
	comp=E,82nm,1.2s						
IRK	Irkutsk	4.88	232	*e*Sg	Sg	04 16 05.0	-5.5
IRK				*e*		04 16 07.5	
IRK				max			
	comp=E,243nm,0.4s						
IRK	Irkutsk	4.88	232	*e*PN	Pg	04 15 04.2	-3.2
IRK				*e*		04 16 05.7	
IRK				pmax	pmax		
	comp=Z,146nm,0.1s						
IRK				smax	smax		
	comp=N,245nm,0.3s						
LSTR	Listvyanka	4.91	226	*e*Sg	Sg	04 16 07.3	-4.2
LSTR				Smax			
	comp=N,45nm,1.4s						
IVK	Ivanovka	5.13	228	*e*Pn	Pn	04 14 53.0	+2.1
IVK				*e*Pg	Pb	04 15 06.0	+2.2
IVK				*e*Sn	Sn	04 15 49.6	-0.5
IVK				*e*Sg	Sb	04 16 12.3	+6.8
IVK				Pmax			
	comp=N,3.0nm,0.2s						
IVK				Smax			
	comp=N,57nm,1.3s						
TUP	Tupik	5.53	96	*e*Pn	Pn	04 14 58.3	+1.8
TUP				*e*		04 15 00.8	
TUP				*e*Pg	Pg	04 15 15.5	-4.5
TUP				*e*Sn	Sn	04 15 59.9	-0.2
TUP				*e*Sg	Sg	04 16 28.4	-3.2
TUP				Pmax			
	comp=N,6.0nm,0.8s						
TUP				Smax			
	comp=N,80nm,1.2s						
TUP	Tupik	5.53	96	*e*PN	Pn	04 14 58.2	+1.8
TUP				*e*		04 15 14.6	
TUP				*e*S	Sn	04 16 00.1	0.0
TUP				*e*		04 16 26.5	
TUP				pmax	pmax		
	comp=Z,5.0nm,0.4s						
TUP				smax	smax		
	comp=N,80nm,1.1s						
TLY	Talaya	5.55	230	*e*Pg	Pb	04 15 13.2	+2.2
TLY				*e*		04 16 00.1	
TLY				*e*Sg	Sg	04 16 25.6	-6.4
TLY				Pmax			
	comp=N,3.0nm,0.3s						
TLY				Smax			
	comp=N,28nm,1.2s						
TLY	Talaya	5.55	230	*e*PN	Pg	04 15 17.4	-2.9
TLY				*e*		04 16 27.0	
TLY				pmax	pmax		
	comp=Z,5.0nm,0.4s						
TLY				smax	smax		
	comp=E,9.0nm,0.7s						
KPC	Khapcheranga	5.83	168	*e*Pn	Pn	04 15 01.9	+1.3
KPC				*e*		04 15 10.1	
KPC				*e*Pg	Pb	04 15 19.3	+3.4
KPC				*e*Sn	Sn	04 16 07.6	+0.1
KPC				*e*		04 16 24.4	
KPC				*e*Sg	Sg	04 16 36.9	-4.3
KPC				Pmax			
	comp=E,3.0nm,0.8s						
KPC				Smax			
	comp=E,31nm,1.1s						
ZAK	Zakamensk	6.67	224	*e*		04 16 42.7	
ZAK				*e*Sg	Sg	04 17 00.3	-7.9
ZAK				Smax			
	comp=E,27nm,1.2s						
MOY	Mondy	6.80	240	*e*Pn	Pn	04 15 16.4	+2.4
MOY				*e*		04 15 33.4	
MOY				*e*Sn	Sn	04 16 28.9	-2.6
MOY				*e*Sg	Sg	04 17 03.6	-8.7
MOY				max			
	comp=E,6.0nm,0.6s						
MOY				Smax			
	comp=E,39nm,1.6s						
ORL	Orlik	6.94	250	*e*Pn	Pn	04 15 17.0	+1.1
ORL				*e*		04 15 29.8	
ORL				*e*Pg	Pb	04 15 38.0	+3.2
ORL				*e*Sn	Sn	04 16 32.2	-2.7
ORL				*e*Sg	Sg	04 17 08.6	-8.1
ORL				Pmax			
	comp=E,5.0nm,0.4s						
ORL				Smax			
	comp=E,47nm,1.5s						
ORL	Orlik	6.94	250	*e*PN	Pn	04 15 17.3	+1.4
ORL				*e*		04 15 39.6	
ORL				*e*		04 17 09.4	
ORL				pmax	pmax		
	comp=Z,5.0nm,0.5s						
ORL				smax	smax		
	comp=N,47nm,1.2s						

IDC ***26*** *04:36:21.4±0.9, 40°.62N×78°.21E, h0km, mb3.5/6, mb1 3.6/11, mb1mx3.5/44, mbtmp3.5/11, ML3.3/5, MS2.8/4, Ms1 2.8/4, ms1mx2.4/40, Error ellipse: s-maj=19.4km s-min=14.5km az=48.0*
KRNET ***26*** *04:36:23.8±0.1, 40°.79N×78°.32E, mb4.0*
SOME ***26*** *04:36:23.2, 40°.73N×78°.40E, h15km, MS3.1*
MOS ***26*** *04:36:24.9±1.7, 40°.77N×78°.53E, h21km, mb4.7/4, Error ellipse: s-maj=13.8km s-min=7.3km az=105.1*
BJI ***26*** *04:36:25.3, 40°.79N×78°.32E, h13km, ML3.5/8*
NNC ***26*** *04:36:27.2±1.1, 40°.96N×78°.23E, h0km, mb4.0, mpv3.7, Error ellipse: s-maj=10.3km s-min=5.1km az=160.0*

ISC 26 04:36:28.8±1.5, 41°.06N±0°.06×78°.38E±0°.03, h18km±8km, n74, σ1s88/113, mb3.7/10, MS2.9/4, 39C-20D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KDJ	Kajisay	1.40	320	⇓*i* P	Pn	04 36 53.3	-0.4
	baz=328						
KDJ				⇓*i* S	Sg	04 37 15.4	+1.2
	baz=328						
PRZ	Przheval'sk	1.43	1	⇑*i* P	Pb	04 36 55.6	+0.6
	baz=2.0						
PRZ				⇑*i* S	Sg	04 37 19.1	+4.1
	baz=2.0						
ANVS	Anan'yevo	1.81	343	⇓*i* P	Pb	04 37 02.0	+0.5
	baz=346						
ANVS				⇓*i* S	Sg	04 37 28.6	+1.5
	baz=346						
ULHL	Ulahol	2.00	307	⇑*i* P	Pn	04 37 03.0	+1.1
	baz=313						
ULHL				⇑*i* S	Sg	04 37 32.0	-1.2
	baz=313						
SATY	Saty	2.00	1	*e*P	Pb	04 37 05.9	+1.1
	579nm,0.4s						
SATY				*e*S	Sg	04 37 36.3	+3.0
	704nm,0.4s						
ZHN	Zhinishke	2.11	1	*e*P	Pb	04 37 07.8	+1.1
	390nm,0.4s						
ZHN				*e*S	Sg	04 37 39.6	+2.8
	521nm,0.4s						
UZB	Uzynbulak	2.14	13	*e*P	Pb	04 37 07.0	-0.3
	35nm,0.5s						
UZB				*e*S	Sg	04 37 38.5	+0.7
	264nm,0.8s						
TNSS	Tian-Shan	2.25	332	*e*P	Pb	04 37 09.6	+0.4
	272nm,0.3s						
TNSS				*e*S	Sg	04 37 43.1	+1.6
	431nm,0.9s						
BOOM	Boomskoye usch	2.32	309	⇑*i* P	Pn	04 37 06.8	+0.5
	baz=314						
BOOM				⇑*i* S	Sb	04 37 39.3	+0.7
	baz=314						
MDOK	Medeo	2.33	335	*e*P	Pb	04 37 10.1	-0.2
	187nm,0.3s						
MDOK				*e*S	Sg	04 37 44.2	+0.5
	531nm,0.8s						
KOTS	Kotyrbulak	2.37	337	*e*P	Pb	04 37 12.0	+0.9
KOTS				*e*S	Sg	04 37 47.1	+2.0
IZV	Izvestkoviy	2.38	327	*e*P	Pb	04 37 11.1	-0.1
	116nm,0.4s						
IZV				*e*S	Sg	04 37 45.7	+0.4
	345nm,0.5s						
SHLS	Shalkode	2.38	28	*e*P	Pb	04 37 10.0	-1.2
	72nm,0.5s						
SHLS				*e*S	Sg	04 37 44.6	-0.8
	369nm,0.7s						
KSH	Kashi	2.40	231	Pn	Pn	04 37 10.0	+2.7
KSH				Sn	Sn	04 37

KPKS	**Kokpek**	**2.42**	**5**	*e*P		**Pb**	**04 37 12.9**	**+1.0**
	418nm,0.5s								
KPKS				*e*S		**Sg**	**04 37 48.0**	**+1.4**
	669nm,0.5s								
AAA	**Alma-Ata**	**2.46**	**335**	*i* PN		**Pb**	**04 37 13.1**	**+0.6**
AAA				*i* S		**Sg**	**04 37 48.1**	**+0.2**
AAA	**Alma-Ata**	**2.46**	**335**	*e*P		**Pb**	**04 37 12.5**	**0.0**
	1μm,0.2s								
AAA				⇓*i*S		**Sg**	**04 37 48.1**	**+0.2**
	1μm,0.5s								
KZA	**Kyzart**	**2.56**	**294**	⇑*i*P		**Pn**	**04 37 09.6**	**-0.2**
	baz=300								
KZA				⇑*i*S		**Sb**	**04 37 45.1**	**-0.7**
	baz=300								
KST	**Kastek**	**2.68**	**319**	*e*P		**Pb**	**04 37 15.9**	**-0.4**
	18nm,0.5s								
KST				*e*S		**Sg**	**04 37 53.8**	**-1.2**
	130nm,0.6s								
TKM2	**Tokmak 2**	**2.79**	**313**	⇑*i*P		**Pn**	**04 37 14.4**	**+1.6**
	baz=317								
TKM2				⇑*i*S		**Sb**	**04 37 52.0**	**-0.2**
	baz=317								
TKM2	**Tokmak 2**	**2.79**	**313**	⇑Pn		**Pn**	**04 37 14.1**	**+1.3**
	34nm,0.4s								
TKM2				⇑Lg		Lg	04 37 56.4		
	125nm,0.5s								
TKM2	**Tokmak 2**	**2.79**	**313**	*e*PN		**Pn**	**04 37 13.6**	**+0.8**
KTMS	**Ketmen**	**2.80**	**31**	*e*P		**Pb**	**04 37 18.6**	**+0.2**
	23nm,0.6s								
KTMS				*e*S		**Sg**	**04 37 58.5**	**-0.4**
	228nm,0.8s								
BMNS	**Besmoynak**	**2.88**	**316**	*e*P		**Pb**	**04 37 18.8**	**-0.9**
	288nm,0.5s								
BMNS				*e*S		**Sg**	**04 37 58.8**	**-2.5**
	652nm,0.7s								
DGS	**Degeres**	**2.92**	**319**	*e*P		**Pb**	**04 37 19.9**	**-0.6**
	56nm,0.7s								
DGS				*e*S		**Sg**	**04 38 00.7**	**-2.0**
	274nm,0.6s								
MNBS	**Baschi**	**3.02**	**0**	*e*P		**Pb**	**04 37 21.7**	**-0.4**
	279nm,0.6s								
MNBS				*e*S		**Sg**	**04 38 03.9**	**-2.0**
	260nm,0.8s								
KBK	**Karagaybulak**	**3.02**	**303**	⇑*i*P		**Pn**	**04 37 16.7**	**+0.8**
	baz=308								
KBK				⇑*i*S		**Sb**	**04 37 56.4**	**-2.4**
	baz=308								
UCH	**Uchtor**	**3.13**	**293**	⇑*i*P		**Pn**	**04 37 16.7**	**-0.9**
	baz=298								
UCH				⇑*i*S		**Sn**	**04 37 58.1**	**+3.4**
	baz=298								
ARLS	**Aral**	**3.15**	**286**	⇑*i*P		**Pn**	**04 37 16.5**	**-1.2**
	baz=291								
ARLS				⇑*i*S		**Sn**	**04 37 55.5**	**+0.5**
	baz=291								
ARXS	**Arharly**	**3.18**	**353**	*e*P		**Pb**	**04 37 25.7**	**+0.9**
	88nm,0.6s								
ARXS				*e*S		**Sg**	**04 38 10.8**	**-0.2**
	165nm,0.5s								
FRU1	**Bishkek**	**3.30**	**303**	⇑*i*P		**Pn**	**04 37 20.1**	**+0.4**
	baz=307								
FRU1				⇑*i*S		**Sb**	**04 38 04.2**	**-2.6**
	baz=307								
AAK	**Ala-Archa**	**3.30**	**300**	Pn		**Pn**	**04 37 20.5**	**+0.7**
	2.0nm,0.3s,baz=134,slow=8.0,SNR=8.0								
AAK				Lg		Lg	04 38 09.9		
	14nm,0.3s,baz=261,slow=19,SNR=17								
AAK				LR		LR	04 38 13.3		
	comp=Z,31nm,21.8s,baz=198,slow=32								
AAK	**Ala-Archa**	**3.30**	**300**	⇑*i*P		**Pn**	**04 37 20.7**	**+0.9**
	baz=304								
AAK				⇑*i*S		**Sn**	**04 38 03.1**	**+4.4**
	baz=304								
AAK	**Ala-Archa**	**3.30**	**300**	⇑Pn		**Pn**	**04 37 19.7**	**-0.1**
	3.9nm,0.5s								
AAK				⇑Pg		**Pb**	**04 37 25.8**	**-1.2**
	20nm,0.4s								
AAK				⇑Lg		Lg	04 38 10.1		
	92nm,0.6s								
AAK	**Ala-Archa**	**3.30**	**300**	*e*PN		**Pn**	**04 37 19.7**	**-0.1**
CHMS	**Chumysh**	**3.33**	**307**	⇓*i*P		**Pn**	**04 37 20.6**	**+0.6**
	baz=311								
CHMS				⇓*i*S		**Sb**	**04 38 05.1**	**-2.4**
	baz=311								
DJR	**Jarkent**	**3.43**	**17**	*e*P		**Pb**	**04 37 30.8**	**+1.6**
	34nm,0.4s								
DJR				⇓*i*S		**Sg**	**04 38 19.3**	**+0.1**
	165nm,0.5s								
AML	**Almayashu**	**3.68**	**289**	⇑*i*P		**Pn**	**04 37 24.6**	**-0.5**
	baz=293								
AML				⇑*i*S		**Sn**	**04 38 10.8**	**+2.6**
	baz=293								
MRKS	**Merke**	**4.20**	**295**	*e*P		**Pb**	**04 37 41.5**	**-0.8**
	36nm,0.4s								
MRKS				*e*S		**Sb**	**04 38 37.7**	**+5.0**
	44nm,0.8s								
KAPS	**Kapalarasan**	**4.29**	**9**	*e*P		**Pg**	**04 37 48.1**	**-2.8**
	14nm,0.6s								
KAPS				⇑*i*S		**Sg**	**04 38 49.2**	**+2.8**
	53nm,0.9s								
MNAS	**Manas**	**4.62**	**290**	⇑Pn		**Pn**	**04 37 37.3**	**-0.6**
	1.7nm,0.5s								
MNAS				⇑Pg		**Pb**	**04 37 49.4**	**0.0**
	16nm,0.6s								
MNAS				⇑Lg		Lg	04 38 50.8		
	32nm,0.6s								
MNAS	**Manas**	**4.62**	**290**	*e*PN		**Pn**	**04 37 37.3**	**-0.6**
KK31	**Karatay Array**	**6.20**	**292**	Pg		**Pb**	**04 38 18.7**	**+2.4**
	4.2nm,0.5s,baz=116,slow=18,SNR=21								
KK31				⇓Lg		Lg	04 39 39.5		
	10nm,0.7s,baz=107,slow=27,SNR=6.5								
KK31	**Karatay Array**	**6.20**	**292**	*e*PN		**Pb**	**04 38 16.9**	**+0.6**
MK31	**Makanchi Array**	**6.39**	**25**	Pn		**Pn**	**04 38 03.0**	**+0.9**
	0.4nm,0.3s,baz=203,slow=13,SNR=22								
MK31				⇓Pg		**Pg**	**04 38 26.4**	**-4.7**
	1.4nm,0.5s								
MK31				⇓Sn		**Sn**	**04 39 19.0**	**+4.4**
	3.0nm,0.5s,baz=206,slow=22,SNR=4.0								
MK31				⇑Lg		Lg	04 39 53.8		
	5.8nm,0.6s								
MK31	**Makanchi Array**	**6.39**	**25**	PN		**Pn**	**04 38 03.0**	**+0.9**
MK31							04 39 17.5		
MK31							04 39 49.1		
MK31				smax		smax			
	comp=N,3.0nm,0.5s								
MK31				pmax		pmax			
	comp=N,6.0nm,0.6s								
MKAR	**Makanchi Array**	**6.39**	**25**	Pn		**Pn**	**04 38 03.4**	**+1.4**
	comp=N,0.6nm,0.3s,baz=209,slow=16,SNR=17								
MKAR				Sn		**Sn**	**04 39 17.9**	**+3.3**
	comp=N,1.2nm,0.3s,baz=207,slow=23,SNR=8.3								
MKAR				Lg		Lg	04 39 52.5		
	comp=N,1.2nm,0.3s,baz=203,slow=22,SNR=3.5								
WMQ	**Urumqi**	**7.42**	**65**	*e*Pn		**Pn**	**04 38 16.8**	**+0.5**
WMQ				Sn		**Sn**	**04 39 38.0**	**-2.0**
WMQ				smax		smax			
	comp=N,37nm,0.6s								
WMQ				smax		smax			
	comp=N,51nm,0.7s								
OTUK	**Ortayu**	**8.38**	**331**	⇓Pn		**Pn**	**04 38 29.4**	**+0.1**
	comp=N,1.9nm,0.5s								
OTUK				⇓Lg		Lg	04 40 52.1		
	comp=N,12nm,0.7s								
OTUK	**Ortayu**	**8.38**	**331**	P		**Pn**	**04 38 29.3**	**+0.1**
OTUK				pmax		pmax			
	comp=Z,1.0nm,0.5s								
OTUK				pmax		pmax			
	comp=N,12nm,0.7s								
KURBB	**Kurchatov Arra**	**9.57**	**1**	Pn		**Pn**	**04 38 45.9**	**+0.3**
	comp=N,0.3nm,0.3s,baz=187,slow=12,SNR=24								
KURBB				Lg		Lg	04 41 34.8		
	comp=N,0.2nm,0.3s,baz=187,slow=29,SNR=4.7								
KURBB	**Kurchatov Arra**	**9.57**	**1**	⇓Pn		**Pn**	**04 38 45.4**	**-0.1**
	comp=N,1.7nm,0.5s								
KURBB				⇓Lg		Lg	04 41 34.8		
	comp=N,37nm,0.8s								
KURK	**Kurchatov**	**9.66**	**1***c*	*i*P		**Pn**	**04 38 48.0**	**+1.1**
BVAR	**Borovoye Array**	**13.14**	**338**	Pn		**Pn**	**04 39 32.5**	**-1.9**
	comp=N,0.6nm,0.3s,baz=144,slow=13,SNR=10								
BVAR				Lg		Lg	04 43 25.3		
	comp=N,0.2nm,0.3s,baz=154,slow=23,SNR=4.9								
BRVK	**Borovoye**	**13.20**	**338***c*	*i*P		**Pn**	**04 39 35.9**	**+0.6**
ZALV	**Zalesovo Beam**	**13.60**	**16**	Pn		**Pn**	**04 39 42.9**	**+2.2**
	comp=N,0.2nm,0.3s,baz=210,slow=8.3,SNR=3.1								
ARU	**Arti**	**20.07**	**327***d*	*i*P		**P**	**04 41 02.5**	**+1.5**
ARU							04 41 14.9		
ARU				S		**S**	**04 44 46.7**	**+1.1**
ARU						pmax	pmax		
	comp=Z,3.0nm,1.0s								
SONM	**Songino Array**	**21.04**	**62**	P		**P**	**04 41 11.2**	**-0.5**
	comp=Z,1.1nm,0.9s,baz=248,slow=10,SNR=2.5								
GNI	**Garni**	**25.47**	**279***d*	*i*P		**P**	**04 41 57.1**	**+1.1**
GNI						pmax	pmax		
	comp=Z,41nm,1.5s								
NCK	**Nalchik**	**25.74**	**287**	*i*P		**P**	**04 41 59.4**	**+1.2**
NCK						pmax	pmax		
	comp=Z,10.0nm,0.3s								
KIV	**Kislovodsk**	**26.35**	**288**	*e*P		**P**	**04 42 04.2**	**+0.4**
KIV						pmax	pmax		
	comp=Z,5.0nm,1.0s								
VSR	**Storozhevoye**	**28.70**	**304**	*e*P		**P**	**04 42 25.3**	**+0.7**
VSR						pmax	pmax		
	comp=Z,4.0nm,0.7s								
OBN	**Obninsk**	**30.75**	**311**⇑	*e*P		**P**	**04 42 44.2**	**+1.4**
OBN				*e*			04 43 43.6		
OBN				*e*S		**S**	**04 47 37.2**	**-7.6**
OBN				pmax		pmax			
	comp=Z,9.0nm,0.8s								
OBN				MLR		MLR			
	comp=Z,24nm,16.0s								
AKASG	**Malin Array Be**	**34.97**	**303**	LR		LR	04 58 40.2		
	comp=Z,21nm,20.5s,baz=335,slow=38								
FINES	**FINESS Array B**	**37.25**	**321**	P		**P**	**04 43 36.7**	**-2.3**
	comp=Z,1.0nm,0.8s,baz=81,slow=8.9,SNR=2.8								
FINES				LR		LR	04 59 47.6		
	comp=Z,32nm,18.7s,baz=52,slow=38								
NOA	**NORSAR Array B**	**44.41**	**320**	LR		LR	05 03 29.6		
	comp=Z,15nm,18.7s,baz=240,slow=36								
TORD	**Torodi Ar. Bea**	**71.49**	**271**	P		P	04 47 42.9	-5.8	
	comp=Z,0.4nm,0.6s,baz=43,slow=5.4,SNR=13								
YKA	**Yellowknife Ar**	**76.27**	**6**	P		P	04 48 12.3	-3.6	
	comp=Z,0.1nm,0.6s,baz=342,slow=5.6,SNR=2.8								
WRA	**Warramunga Arr**	**79.84**	**128**	P		P	04 48 31.8	-4.5	
	comp=Z,0.4nm,0.9s,baz=328,slow=5.5,SNR=4.0								
ASAR	**Alice Springs**	**82.45**	**130**	P		P	04 48 45.0	-5.1	
	comp=Z,0.4nm,0.6s,baz=325,slow=6.0,SNR=3.9								

GUC 26 04:49:48.9±0.6, 36.84S×72.23W, h31km±4km, ML4.5, 2C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TALC	**Talca**	**1.51**	**19**	⇑*i*P			Pb	04 50 18.5	+2.1
TALC				*i* S			Sb	04 50 34.4	-0.7
NICH	**Los Niches**	**2.00**	**24**	⇑*i*P			Pb	04 50 26.1	+1.5
NICH				*i* S			Sb	04 50 48.2	-0.9
ANTU	**Antumapu**	**3.51**	**22**	*e*P			Pn	04 50 43.5	+2.1
ANTU				*i* S			Sn	04 51 24.8	+2.8
ANTU				IAML				04 51 32.2	
	comp=N,826nm,0.5s								
CLCH	**Cerro Calan**	**3.70**	**23**	*e*P			Pn	04 50 46.3	+2.3
CLCH				*i* S			Sn	04 51 29.0	+2.4
CLCH				IAML				04 51 43.4	
	comp=N,929nm,1.1s								
FCH	**Farellones**	**3.84**	**25**	*e*P			Pn	04 50 48.5	+2.2
FCH				IAML				04 51 48.1	
	comp=E,190nm,0.4s								
PEL	**Peldehue**	**3.90**	**19**	⇓*i*P			Pn	04 50 48.1	+1.4
PEL				*i* S			Sn	04 51 33.9	+2.5
PEL				IAML				04 51 46.5	
	comp=N,379nm,1.8s								
ROCH	**El Roble**	**3.98**	**15**	⇓*i*P			Pn	04 50 47.5	-0.5
ROCH				*i* S			Sn	04 51 37.0	+3.2
ROCH				IAML				04 51 47.5	
	comp=N,394nm,0.5s								

IDC 26 04:49:49.4±1.9, 3.51S×151.24E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.5/35, mbtmp3.8/5, MS3.3/2, Ms1 3.3/2, ms1mx2.7/28, Error ellipse: s-maj=79.2km s-min=24.8km az=117.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**10.46**	**125**	LR		LR	LR	04 55 53.4	
	comp=Z,192nm,19.6s,baz=296,slow=35								
WRA	**Warramunga Arr**	**23.21**	**224**	P		P		04 54 58.9	+0.7
	2.5nm,0.9s,baz=48,slow=9.6,SNR=15								
DZM	**Mont Dzumac**	**23.63**	**143**	LR		LR		05 01 35.8	
	comp=Z,65nm,20.6s,baz=225,slow=30								
ASAR	**Alice Springs**	**26.12**	**218**	P		P		04 55 24.7	-0.6
	0.8nm,0.8s,baz=44,slow=9.0,SNR=5.0								
ZALV	**Zalesovo Beam**	**79.22**	**327**	P		P		05 01 56.8	+0.5
	0.3nm,0.3s,baz=98,slow=4.4,SNR=2.6								
ILAR	**Eielson Array**	**81.56**	**22**	P		P		05 02 08.8	+0.1
	0.7nm,0.8s,baz=243,slow=5.7,SNR=9.1								
BVAR	**Borovoye Array**	**87.28**	**323**	P		P		05 02 37.2	-0.8
	1.2nm,0.7s,baz=99,slow=6.8,SNR=6.0								

*IDC **26** 04:58:45.9±0.7, 27.51N×56.47E, h0km, mb3.9/18, mb1 4.1/21, mb1mx3.9/41, mbtmp4.0/21, ML4.2/3, MS3.0/6, Ms1 3.0/6, ms1mx2.7/49, Error ellipse: s-maj=17.1km s-min=14.7km az=126.0*
*THR **26** 04:58:47.7±0.4, 27.44N×56.60E, h5km±4km, ML3.6*
*TEH **26** 04:58:47.1, 27.45N×56.57E, h16km, ML3.7*
*ISCJB **26** 04:58:48.1±0.3, 27.56N±0.03×56.59E±0.04, h18km, mb3.9/19, MS3.1/3, Error ellipse: s-maj=5.5km s-min=4.0km az=176.6*
*NEIC **26** 04:58:48.2, 27.43N×56.58E, h8km, mb4.0/3, ML3.6(THR), After THR.*
*DSN **26** 04:58:49.8±0.8, 27.56N×56.48E, h15km, ML4.1/7, Error ellipse: s-maj=31.9km s-min=6.6km az=97.0*
*CSEM **26** 04:58:49.2±0.2, 27.52N×56.55E, h15km, ML3.7, Error ellipse: s-maj=8.0km s-min=5.9km az=85.0*
*OMAN **26** 04:58:49.7±3.7, 27.42N×56.78E, h8km, Error ellipse: s-maj=101.9km s-min=26.7km az=122.0*

ISC 26 04:58:48.7±0.5, 27.49N±0.03×56.56E±0.03, h18km, n101, σ1.975/99, mb3.9/20, MS3.1/3, Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
IBND	**Bandar-abas**	**0.04**	**200**	*e*Pg			**Pb**	**04 58 50.4**	**-1.6**
IBND				*e*AMB			AMB	04 58 50.5	
	comp=Z,1866μm,0.0s								
IBND	**Bandar-abas**	**0.04**	**200**	*e*Pg			**Pb**	**04 58 50.4**	**-1.6**
NIAN	**Nian**	**0.26**	**74**	*e*Pg			**Pg**	**04 58 53.9**	**-0.7**
NIAN	**Nian**	**0.26**	**74**	*e*Pg			**Pg**	**04 58 53.9**	**-0.7**
GENO	**Geno**	**0.35**	**255**	*e*Pg			**Pg**	**04 58 55.8**	**-0.5**
GENO	**Geno**	**0.35**	**255**	*e*Pg			**Pg**	**04 58 55.8**	**-0.5**
BNDS	**Bandar-Abbas**	**0.35**	**255**	*e*Pg			**Pg**	**04 58 55.6**	**-0.7**
BNDS				AML			AML	04 59 04.9	
	comp=N,11μm,0.4s								
BNDS	**Bandar-Abbas**	**0.35**	**255**	*e*Pg			**Pg**	**04 58 55.6**	**-0.7**
BNDS	**Bandar-Abbas**	**0.35**	**255**	Pg			Pg	04 58 55.0	-1.3
KHSK	**Kohestak**	**0.85**	**149**	*e*Pg			**Pn**	**04 59 07.7**	**+1.8**
KHSK	**Kohestak**	**0.85**	**149**	*e*Pg			**Pn**	**04 59 07.7**	**+1.8**
BANOM	**Banah**	**1.58**	**188**	*e*P			**Pn**	**04 59 17.6**	**+1.7**
	SNR=441								
BANOM				S			**Sb**	**04 59 40.2**	**+3.1**
BANOM	**Banah**	**1.58**	**188**	P			**Pn**	**04 59 17.6**	**+1.7**
	SNR=441								
BANOM	**Banah**	**1.58**	**188**	P			**Pn**	**04 59 17.6**	**+1.7**
	SNR=441								
BANOM				S			**Sb**	**04 59 40.2**	**+3.1**
NGRK	**Negar Kerman**	**2.15**	**4**	*e*Pn			**Pb**	**04 59 27.0**	**-0.4**
NGRK	**Negar Kerman**	**2.15**	**4**	*e*Pn			**Pb**	**04 59 27.0**	**-0.4**
KRBR	**Kerman**	**2.49**	**4**	*e*Pn			**Pb**	**04 59 31.8**	**-1.4**
KRBR				AML			AML	05 00 16.2	
	comp=N,311nm,0.6s								
KRBR	**Kerman**	**2.49**	**4**	Pn			**Pn**	**04 59 31.0**	**+2.3**
KRBR	**Kerman**	**2.49**	**4**	Pn			**Pn**	**04 59 31.0**	**+2.3**
TVBK	**TV Kerman**	**2.49**	**4**	*e*Pn			**Pb**	**04 59 33.2**	**0.0**
TVBK	**TV Kerman**	**2.49**	**4**	*e*Pn			**Pb**	**04 59 33.2**	**0.0**
CHMN	**Cheshme madani**	**2.51**	**20**	*e*Pn			**Pb**	**04 59 33.1**	**-0.5**
CHMN	**Cheshme madani**	**2.51**	**20**	*e*Pn			**Pb**	**04 59 33.1**	**-0.5**
UOSS	**Minazif**	**2.56**	**187**	P			**Pn**	**04 59 31.8**	**+2.5**
	SNR=15								
NAZ	**Nazwa, Dubai**	**2.62**	**198**	*e*P			**Pn**	**04 59 33.2**	**+3.1**
	SNR=20								
NAZ	**Nazwa, Dubai**	**2.62**	**198**	P			**Pn**	**04 59 33.1**	**+2.9**
	SNR=15								
NAZ	**Nazwa, Dubai**	**2.62**	**198**	P			**Pn**	**04 59 33.1**	**+2.9**
	SNR=15								
HATD	**Hatta, Dubai**	**2.68**	**188**	*e*P			**Pn**	**04 59 33.7**	**+2.7**
	SNR=22								
HATD	**Hatta, Dubai**	**2.68**	**188**	P			**Pn**	**04 59 33.4**	**+2.3**
	SNR=12								
HATD	**Hatta, Dubai**	**2.68**	**188**	P			**Pn**	**04 59 33.4**	**+2.3**
	SNR=12								
ASHO	**Ashiyiah**	**2.83**	**189**	*e*P			**Pn**	**04 59 35.4**	**+2.3**
	SNR=32								
ASHO	**Ashiyiah**	**2.83**	**189**	P			**Pn**	**04 59 35.4**	**+2.3**
	SNR=32								
ASHO	**Ashiyiah**	**2.83**	**189**	P			**Pn**	**04 59 35.4**	**+2.3**
	SNR=32								
FAQ	**Al Faqa, Dubai**	**2.87**	**198**	*e*P			**Pn**	**04 59 35.8**	**+2.2**
	SNR=9.9								
FAQ	**Al Faqa, Dubai**	**2.87**	**198**	P			**Pn**	**04 59 35.9**	**+2.3**
	SNR=9.9								
FAQ	**Al Faqa, Dubai**	**2.87**	**198**	P			**Pn**	**04 59 35.8**	**+2.2**
	SNR=9.9								
KHGB	**Koh Gabri**	**2.88**	**359**	*e*Pn			**Pn**	**04 59 37.1**	**+3.2**
KHGB	**Koh Gabri**	**2.88**	**359**	*e*Pn			**Pn**	**04 59 37.1**	**+3.2**
GHIR	**Ghir-Karzin**	**3.26**	**285**	*e*Pn			**Pn**	**04 59 42.3**	**+3.2**
GHIR						AML	AML	05 00 49.6	
	comp=E,87nm,0.5s								
GHIR	**Ghir-Karzin**	**3.26**	**285**	Pn			**Pn**	**04 59 42.0**	**+2.9**
GHIR	**Ghir-Karzin**	**3.26**	**285**	Pn			**Pn**	**04 59 42.0**	**+2.9**
ISRV	**Sarvestan**	**3.57**	**303**	*e*Pn			**Pn**	**04 59 46.0**	**+2.4**
ISRV				*e*AMB			AMB	05 01 26.1	
	comp=Z,2μm,0.6s								
ISRV	**Sarvestan**	**3.57**	**303**	*e*Pn			**Pn**	**04 59 46.0**	**+2.4**
CHBR	**Chabahar**	**3.99**	**117**	*e*Pn			**Pn**	**04 59 50.8**	**+1.8**
CHBR	**Chabahar**	**3.99**	**117**	*e*Pn			**Pn**	**04 59 50.8**	**+1.8**
IBAF	**Bafgh**	**4.17**	**348**	*e*Pn			**Pn**	**04 59 53.0**	**+1.3**
IBAF				*e*AMB			AMB	05 01 16.9	
	comp=Z,574nm,0.3s								
IBAF	**Bafgh**	**4.17**	**348**	*e*Pn			**Pn**	**04 59 53.0**	**+1.3**
IMEH	**Mehriz**	**4.24**	**337**	*e*Pn			**Pn**	**04 59 54.9**	**+2.2**
IMEH				*e*AMB			AMB	04 59 58.2	
	comp=Z,924nm,0.1s								
IMEH	**Mehriz**	**4.24**	**337**	*e*Pn			**Pn**	**04 59 54.9**	**+2.2**
ZHSF	**Zahedan**	**4.27**	**59**	*e*Pn			**Pn**	**04 59 55.7**	**+2.7**
ZHSF	**Zahedan**	**4.27**	**59**	Pn			**Pn**	**04 59 56.0**	**+3.0**
ZHSF	**Zahedan**	**4.27**	**59**	Pn			**Pn**	**04 59 56.0**	**+3.0**
SMDO	**Samad**	**4.62**	**163**	P			**Pn**	**04 59 58.5**	**+0.8**
	SNR=8.5								
SMDO	**Samad**	**4.62**	**163**	P			**Pn**	**04 59 58.5**	**+0.8**
	SNR=8.5								
WSAR	**Wadi Sarin**	**4.63**	**156**	Pn			**Pn**	**04 59 59.4**	**+1.6**
	comp=Z,9.9nm,0.3s,baz=292,slow=4.2,SNR=39								
WSAR				Sn			**Sn**	**05 00 50.6**	**-0.6**
	comp=Z,8.9nm,0.3s,baz=17,slow=23,SNR=11								
WSAR				LR			LR	05 01 51.0	
	comp=Z,122nm,20.5s,baz=4.0,slow=40								
ICHK	**Chekchek**	**5.09**	**339**	*e*AMB			AMB	05 00 07.8	
	comp=Z,2μm,0.1s								
ICHK				*e*Pn			**Pn**	**05 00 04.4**	**0.0**
IKOO	**Kooshah**	**5.36**	**23**	*e*Pn			**Pn**	**05 00 09.0**	**+1.0**
IKOO				*e*AMB			AMB	05 01 50.1	
	comp=Z,555nm,0.3s								
IKOO	**Kooshah**	**5.36**	**23**	*e*Pn			**Pn**	**05 00 09.0**	**+1.0**
IRAM	**Ramesheh**	**5.63**	**321**	*e*Pn			**Pn**	**05 00 13.8**	**+2.0**
IRAM				*e*AMB			AMB	05 01 25.7	
	comp=Z,242nm,0.2s								
IRAM	**Ramesheh**	**5.63**	**321**	*e*Pn			**Pn**	**05 00 13.8**	**+2.0**
IGAR	**Gharneh**	**6.27**	**322**	*e*Pn			**Pn**	**05 00 22.1**	**+1.5**
IGAR				*e*AMB			AMB	05 00 29.3	
	comp=Z,295nm,0.1s								
IZEF	**Zefreh**	**6.51**	**327**	*e*Pn			**Pn**	**05 00 25.1**	**+1.2**
IZEF				*e*AMB			AMB	05 00 29.1	
	comp=Z,188nm,0.2s								
IZEF	**Zefreh**	**6.51**	**327**	*e*Pn			**Pn**	**05 00 25.1**	**+1.2**
IPIR	**Pirpir**	**7.13**	**318**	*e*Pn			**Pn**	**05 00 34.4**	**+1.9**
IPIR				*e*AMB			AMB	05 02 05.7	
	comp=Z,278nm,0.4s								
IPIR	**Pirpir**	**7.13**	**318**	*e*Pn			**Pn**	**05 00 34.4**	**+1.9**
IKLH	**Kolahrood**	**7.23**	**325**	*e*Pn			**Pn**	**05 00 36.2**	**+2.5**
IKLH				*e*AMB			AMB	05 00 41.8	
	comp=Z,164nm,0.2s								
IKLH	**Kolahrood**	**7.23**	**325**	*e*Pn			**Pn**	**05 00 36.2**	**+2.5**
GEYT	**Alibeck**	**10.49**	**7**	LR			LR	05 05 44.1	
	comp=Z,82nm,20.8s,baz=110,slow=40								
ASF	**Jabal al Asfar**	**17.68**	**290**	P			**Pn**	**05 02 53.6**	**-0.6**
	comp=Z,0.4nm,0.3s,baz=27,slow=2.3,SNR=2.3								
MMAI	**Mount Meron Ar**	**19.08**	**292**	P			**P**	**05 03 09.8**	**-0.6**
	comp=Z,1.2nm,0.3s,baz=101,slow=15,SNR=3.2								
EIL	**Elat**	**19.10**	**282**	LR			LR	05 12 37.8	
	comp=Z,46nm,20.8s,baz=40,slow=44								
KKAR	**Kar

JTM eS Sn 05 11 35.8 -0.2
JRG Rokugo 1.28 248 P Pn 05 11 21.7 +0.6

IDC 26 05:12:44.3±2.2, 7.00S×130.14E, h0km, mb3.7/1, mb1 4.1/3, mb1mx3.6/34, mbtmp3.9/3, ML4.0/2, Error ellipse: s-maj=133.9km s-min=31.6km az=69.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.50**	**163**	Pn	Pn	05 15 57.5	+0.2
	0.9nm,0.3s,baz=346,slow=13,SNR=27						
WRA				Sn	Sn	05 18 16.9	-11
	1.3nm,0.3s,baz=344,slow=22,SNR=11						
ASAR	**Alice Springs**	**16.96**	**168**	Pn	Pn	05 16 43.0	-0.2
	0.5nm,0.3s,baz=348,slow=10,SNR=14						
ASAR				Sn	Sn	05 19 38.3	-14
	0.2nm,0.3s,baz=354,slow=28,SNR=3.8						
MKAR	**Makanchi Array**	**68.30**	**327**	P	P	05 23 47.4	0.0
	0.3nm,0.4s,baz=128,slow=5.3,SNR=5.2						

*FUNV **26** 05:30:59.9, 6.65N×73.24W, h158km, MW2.9*
*ISCJB **26** 05:31:00.8±0.5, 6.82N±0.04×73.07W±0.04, h157km±5km, Error ellipse: s-maj=8.5km s-min=3.7km az=36.5*
*RSNC **26** 05:31:02.9±0.5, 6.77N×73.08W, h147km±2km, ML3.0*
ISC 26 05:31:00.9±1.3, 6.80N±0.04×73.05W±0.05, h158km±7km, n24, σ1§84/44, 2C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.24**	**299**	*e*P	**Pn**	**05 31 22.9**	**+0.4**
BTLC				*e*S	**Sn**	**05 31 38.3**	**-0.7**
BARC	**Barichara**	**0.24**	**211**	*i* P	**Pn**	**05 31 22.6**	**0.0**
BARC				*i*	**Sn**	**05 31 37.9**	**-1.2**
BARC				*i*		05 31 38.9	
	comp=Z,272nm,0.4s						
GIRC	**Giron, Santand**	**0.31**	**333**	*i* P	**Pn**	**05 31 22.7**	**+0.2**
GIRC				*e*S	**Sn**	**05 31 38.0**	**-1.2**
PAMC	**Pamplona, Colo**	**0.64**	**33**	*e*P	**Pn**	**05 31 25.4**	**+0.9**
PAMC				*e*S	**Sn**	**05 31 42.4**	**0.0**
BRRC	**Barranca, Sant**	**0.72**	**295**	↑*i*P	**Pn**	**05 31 24.4**	**+0.1**
BRRC				*i*		05 31 24.8	
	comp=Z,529nm,0.2s						
BRRC				*e*S	**Sn**	**05 31 42.0**	**-0.3**
RUSC	**La Rusia**	**0.90**	**182**	*e*P	**Pn**	**05 31 26.4**	**+0.1**
RUSC				*e*S	**Sn**	**05 31 44.9**	**-0.8**
RUSC				*i*		05 31 46.5	
	comp=Z,81nm,0.3s						
CBRI	**Barrientos, No**	**0.94**	**16**	*i* P	**Pn**	**05 31 27.1**	**+1.0**
CBRI				*e*S	**Sn**	**05 31 45.6**	**0.0**
CAPV	**Capacho**	**1.29**	**35**	↑*e*P	**Pn**	**05 31 30.5**	**+1.3**
CAPV				*e*S	**Sn**	**05 31 51.1**	**+0.2**
OCAC	**Ocana**	**1.45**	**350**	*e*P	**Pn**	**05 31 31.1**	**+0.4**
OCAC				*e*S	**Sn**	**05 31 53.6**	**-0.2**
OCAC				*i*		05 31 59.6	
	comp=Z,118nm,0.4s						
NORC	**Norcasia**	**2.18**	**236**	*e*P	**Pn**	**05 31 38.9**	**+0.2**
NORC				*e*S	**Sn**	**05 32 07.6**	**-0.2**
CHIC	**Chingaza**	**2.26**	**197**	*e*P	**Pn**	**05 31 40.4**	**+0.5**
CHIC				*e*S	**Sn**	**05 32 10.3**	**+0.2**
CHIC				*i*		05 32 17.8	
	comp=Z,42nm,0.4s						
HELC	**Santa Helena**	**2.53**	**256**	*e*P	**Pn**	**05 31 43.9**	**+0.8**
HELC				*e*S	**Sn**	**05 32 15.6**	**-0.1**
VIGV	**El Vigia**	**2.63**	**39**	*e*P	**Pn**	**05 31 45.0**	**+1.0**
VIGV				*e*S	**Sn**	**05 32 18.0**	**+0.7**
SOCV	**Socops**	**2.63**	**56**	*e*P	**Pn**	**05 31 45.1**	**+1.2**
SOCV				*e*S	**Sn**	**05 32 18.2**	**+0.9**
VILC	**Villavicencio,**	**2.75**	**193**	*e*P	**Pn**	**05 31 46.3**	**+0.8**
VILC				*e*S	**Sn**	**05 32 19.5**	**-0.7**
VILC				*i*		05 32 24.3	
	comp=Z,27nm,0.3s						
DBBC	**Dabeiba**	**3.14**	**274**	*e*P	**Pn**	**05 31 51.1**	**+0.7**
TOLC	**Tolima**	**3.15**	**226**	*e*P	**Pn**	**05 31 52.0**	**+1.2**
TOLC				*e*S	**Sn**	**05 32 29.1**	**-0.4**
ELOV	**Elorza**	**3.55**	**87**	*e*P	**Pn**	**05 31 56.4**	**+0.9**
PRAC	**Prado**	**3.57**	**211**	*e*P	**Pn**	**05 31 56.2**	**+0.3**
PRAC				*e*S	**Sn**	**05 32 38.1**	**-0.4**
VIRV	**Villa del Rosa**	**3.73**	**10**	*e*P	**Pn**	**05 31 57.3**	**-0.6**
VIRV				*e*S	**Sn**	**05 32 41.4**	**-0.9**
CURV	**Curarigua**	**4.42**	**44**	*e*P	**Pn**	**05 32 06.6**	**-0.3**
CURV				*e*S	**Sn**	**05 32 58.4**	**0.0**
DABV	**Dabajuro**	**4.74**	**30**	*e*P	**Pn**	**05 32 11.5**	**+0.5**
BAUV	**El Baul**	**5.40**	**66**	*e*P	**Pn**	**05 32 20.0**	**+0.3**
BAUV				⇓*e*S	**Sn**	**05 33 18.3**	**-3.1**
MONV	**Montecano**	**5.96**	**30**	*e*P	**Pn**	**05 32 26.3**	**-0.8**

*NIED **26** 05:42:00, 35.30N×141.20E, h26km, Mw4.0 Best double couple: Mo1.18000×10^15 NP1:φs=285.00000°, δ72.00000°, λ-175.00000°. NP2:φs=194.00000°, δ85.00000°, λ-18.00000°.*
*IDC **26** 05:42:21.7±0.7, 35.28N×140.87E, h0km, mb3.8/12, mb1 4.0/14, mb1mx3.9/45, mbtmp3.9/14, ML3.9/2, MS2.8/7, Ms1 2.9/7, ms1mx2.7/41, Error ellipse: s-maj=23.6km s-min=15.8km az=93.0*
*ISCJB **26** 05:42:24.0±0.6, 35.26N±0.04×141.23E±0.07, h33km, mb3.9/14, MS2.8/5, Error ellipse: s-maj=8.5km s-min=5.0km az=169.2*
*JMA **26** 05:42:24.0±0.1, 35.28N×141.23E, h30km±2km, M3.8*
*NEIC **26** 05:42:27.3±1.4, 35.31N×141.05E, h40km±12km, mb4.1/1, Error ellipse: s-maj=16.4km s-min=11.3km az=86.0*
ISC 26 05:42:26.4±0.7, 35.28N±0.05×141.08E±0.08, h33km, n41, σ1§29/35, mb3.8/14, MS2.9/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.46**	**337**	*e*P	**Pg**	**05 42 34.6**	**-1.8**
CHOJ				S	**Sb**	**05 42 41.8**	**-1.4**
BSO1	**Boso 1**	**0.63**	**188**	P	**Pn**	**05 42 36.5**	**-2.0**
BSO1				*e*X		05 42 46.7	
KTR	**Katsuura**	**0.64**	**258**	P	**Pn**	**05 42 38.4**	**-0.7**
BSO3	**Boso 3**	**0.67**	**225**	P	**Pn**	**05 42 38.2**	**-1.1**
BSO3				*e*X		05 42 48.8	
BSO4	**Boso 4**	**0.68**	**245**	P	**Pn**	**05 42 38.9**	**-0.6**
JCN	**Nagara**	**0.73**	**281**	P	**Pn**	**05 42 40.5**	**+0.1**
JYT	**Yasato**	**1.19**	**323**	P	**Pn**	**05 42 46.0**	**-0.7**
JYT				*e*S	**Sb**	**05 43 03.1**	**-0.4**
JHJ2	**Mitsune**	**2.41**	**206**	*e*Pn	**Pn**	**05 43 03.9**	**+0.5**
JHJ	**Hachijo jima 2**	**2.41**	**207**	Pn	**Pn**	**05 43 02.1**	**-1.4**
	58nm,0.3s,baz=326,slow=21,SNR=8.8						
JHJ				Sn	**Sn**	**05 43 31.1**	**-0.8**
	101nm,0.3s,baz=78,slow=22,SNR=6.2						
MJAR	**Matsushiro Arr**	**2.65**	**299**	Pn	**Pn**	**05 43 08.1**	**+1.2**
	6.9nm,0.3s,baz=103,slow=15,SNR=22						
MJAR				LR	LR	05 43 38.3	
	comp=Z,30nm,20.5s,baz=135,slow=31						
MAJO	**Matsushiro**	**2.65**	**299**	*e*Pn	**Pn**	**05 43 08.7**	**+1.9**
MAT	**Matsushiro**	**2.65**	**299**	P	**Pn**	**05 43 09.3**	**+2.4**
MAT				*e*S	**Sn**	**05 43 39.1**	**+1.2**
ASAJ	**Asahikawa**	**8.90**	**7**	Pn	**Pn**	**05 44 30.9**	**-1.8**
	1.8nm,0.3s,baz=217,slow=15,SNR=6.2						
KSRS	**Korea Array**	**10.83**	**285**	Pn	**Pn**	**05 45 00.4**	**+1.3**
	0.3nm,0.3s,baz=106,slow=13,SNR=2.9						
KSRS				LR	LR	05 49 22.8	
	comp=Z,89nm,18.6s,baz=129,slow=39						
KSAR	**Wonju Array Be**	**10.86**	**285**	Pn	**Pn**	**05 45 00.3**	**+0.9**
PETK	**Petropavlovsk-**	**21.34**	**28**	LR	LR	05 55 08.0	
	comp=Z,29nm,21.4s,baz=213,slow=36						
MA2	**Magadan**	**25.12**	**12**	LR	LR	05 59 20.0	
	comp=Z,30nm,18.7s,baz=140,slow=40						
H11N2	**WAKE ISLAND Hy**	**27.53**	**117**	T	T	06 17 13.1	
	baz=310,slow=75,SNR=300						
H11N1	**WAKE ISLAND Hy**	**27.54**	**117**	T	T	06 17 13.6	
	baz=310,slow=75,SNR=413						
H11N3	**WAKE ISLAND Hy**	**27.55**	**117**	T	T	06 17 14.4	
	baz=310,slow=75,SNR=326						
H11S3	**WAKE ISLAND Hy**	**28.18**	**120**	T	T	06 17 55.1	
	baz=312,slow=76,SNR=662						
H11S1	**WAKE ISLAND Hy**	**28.18**	**120**	T	T	06 17 47.0	
	baz=312,slow=76,SNR=967						
H11S2	**WAKE ISLAND Hy**	**28.20**	**120**	T	T	06 17 53.4	
	baz=312,slow=76,SNR=578						
SONM	**Songino Array**	**28.58**	**307**	P	**P**	**05 48 17.4**	**-2.0**
	0.3nm,0.3s,baz=101,slow=7.5,SNR=4.5						
TLY	**Talaya**	**31.30**	**313**	LR	LR	06 02 06.8	
	comp=Z,22nm,18.1s,baz=39,slow=38						
CMAR	**Chiang Mai Arr**	**40.82**	**257**	LR	LR	06 08 09.2	
	comp=Z,19nm,18.3s,baz=90,slow=38						

ZALV Zalesovo Beam 42.91 314 P **P** 05 50 21.1 -0.5
0.9nm,0.5s,baz=95,slow=7.4,SNR=3.2
ZALV LR LR 06 08 34.1
comp=Z,13nm,18.8s,baz=70,slow=37
MKAR Makanchi Array 44.84 304 P **P** 05 50 36.9 -0.4
0.7nm,0.5s,baz=91,slow=9.3,SNR=4.5
KURK Kurchatov 46.82 309 P **P** 05 50 54.0 +1.3
KURBB Kurchatov Arra 46.88 309 P **P** 05 50 54.1 +0.7
1.4nm,0.4s,baz=85,slow=7.7,SNR=4.8
ILAR Eielson Array 51.12 32 P **P** 05 51 26.1 +0.6
0.3nm,0.7s,baz=267,slow=6.3,SNR=6.3
BVAR Borovoye Array 51.56 313 P **P** 05 51 27.4 -1.6
0.3nm,0.4s,baz=116,slow=13,SNR=2.4
WRAB Tennant Creek 55.28 188 *e*P **P** 05 51 56.5 -0.1
8.3nm,1.2s
WRA Warramunga Arr 55.29 188 P **P** 05 51 56.0 -0.7
3.8nm,0.8s,baz=22,slow=7.2,SNR=44
ABKAR Akbulak array 58.87 311 *e*P **P** 05 52 21.3 -0.5
0.8nm,0.5s
ASAR Alice Springs 59.02 188 P **P** 05 52 23.1 0.0
0.4nm,0.4s,baz=4.0,slow=6.7,SNR=5.8
FINES FINESS Array B 70.24 332 P **P** 05 53 35.8 0.0
1.4nm,0.9s,baz=24,slow=11,SNR=2.6
NOA NORSAR Array B 75.70 337 P **P** 05 54 07.4 -0.8
0.4nm,0.7s,baz=32,slow=8.0,SNR=2.8
PDAR Pinedale Array 79.09 45 P **P** 05 54 28.7 +0.9
0.4nm,0.6s,baz=299,slow=2.4,SNR=5.9
TXAR Lajitas Array 91.40 52 P **P** 05 55 31.9 +2.4
0.4nm,0.8s,baz=306,slow=3.0,SNR=6.0
LPAZ La Paz 147.79 62 PKPbc **PKPbc** 06 02 10.7 +1.6
0.7nm,0.8s,baz=269,slow=4.1,SNR=4.6

*ISCJB **26** 05:45:05.4±2.0, 32.38S±0.09×177.8W±0.3, h20km, mb4.1/3, Error ellipse: s-maj=38.4km s-min=9.3km az=12.6*
*IDC **26** 05:45:06.1±2.1, 32.35S×178.07W, h0km, mb4.2/3, mb1 4.3/4, mb1mx3.9/27, mbtmp4.1/4, ML3.4/1, Error ellipse: s-maj=52.9km s-min=33.3km az=127.0*
ISC 26 05:45:07.9±2.1, 32.38S±0.1×177.79W±0.3, h20km, n13, σ1§10/19, mb4.3/3, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PKGZ	**Pakihiroa**	**6.49**	**210**	*e*PN	**Pn**	**05 46 42.2**	**-0.1**
PKGZ				SN	**Sn**	**05 47 55.9**	**+0.3**
HAZ	**Te Kaha**	**6.50**	**212**	*e*PN	**Pn**	**05 46 43.4**	**+1.0**
HAZ				*e*SN	**Sn**	**05 47 59.1**	**+3.1**
PUZ	**Puketiti**	**6.57**	**208**	*e*PN	**Pn**	**05 46 43.1**	**-0.2**
PUZ				SN	**Sn**	**05 47 56.7**	**-1.0**
TWGZ	**Tauwhareparae**	**6.77**	**209**	*e*PN	**Pn**	**05 46 46.0**	**-0.1**
TWGZ				*e*SN	**Sn**	**05 48 03.7**	**+1.0**
CNGZ	**Carnagh Statio**	**6.95**	**206**	*e*PN	**Pn**	**05 46 48.1**	**-0.4**
URZ	**Urewera**	**7.22**	**213**	Pn	**Pn**	**05 46 51.2**	**-1.1**
	0.6nm,0.3s,baz=24,slow=20,SNR=6.5						
URZ				Sn	**Sn**	**05 48 12.2**	**-1.4**
	1.6nm,0.3s,baz=153,slow=18,SNR=6.6						
URZ	**Urewera**	**7.22**	**213**	*e*PN	**Pn**	**05 46 51.5**	**-0.7**
URZ				*e*SN	**Sn**	**05 48 12.8**	**-0.9**
SNGZ	**Shannon Statio**	**7.55**	**210**	*e*PN	**Pn**	**05 46 56.1**	**-0.7**
CTA	**Charters Tower**	**34.27**	**282**	P	**P**	**05 51 53.2**	**+0.5**
	1.3nm,0.2s,baz=108,slow=3.2,SNR=3.5						
ASAR	**Alice Springs**	**43.16**	**269**	P	**P**	**05 53 07.3**	**-0.1**
	0.9nm,0.5s,baz=107,slow=7.3,SNR=8.8						
WRA	**Warramunga Arr**	**44.33**	**274**	P	**P**	**05 53 16.1**	**-0.6**
	1.9nm,0.4s,baz=114,slow=7.9,SNR=17						
KURBB	**Kurchatov Arra**	**122.48**	**315**	PKP	**PKPdf**	**06 04 02.2**	**+0.9**
	0.5nm,0.5s,baz=93,slow=2.3,SNR=4.1						
FINES	**FINESS Array B**	**146.97**	**339**	PKPbc	**PKPab**	**06 04 49.2**	**-0.5**
	2.9nm,0.7s,baz=35,slow=4.7,SNR=13						

IDC 26 05:55:31.3±999.0, 51.70N×115.34E, h0km, Error ellipse: s-maj=466.6km s-min=144.5km az=68.0, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I34MN	**SONGINO INFRAS**	**6.98**	**240**	*i*		06 43 10.0	
	baz=54,slow=316,SNR=0.6						
I46RU	**ZALESOVO INFRA**	**18.52**	**289**	*i*		07 46 50.0	
	baz=87,slow=311,SNR=1.1						
I31KZ	**AKTYUBINSK INF**	**35.26**	**291**	*i*		09 29 30.0	
	baz=66,slow=312,SNR=0.6						

*SOME **26** 05:57:16.0, 44.37N×81.05E, h5km*
*NNC **26** 05:57:17.9±0.6, 44.39N×80.89E, h0km, mb3.7, mpv3.4, Error ellipse: s-maj=10.5km s-min=2.3km az=122.0*
*IDC **26** 05:57:22.3±1.8, 44.79N×81.16E, h0km, mb1 3.4/6, mb1mx3.2/45, mbtmp3.4/6, ML3.2/6, Error ellipse: s-maj=28.8km s-min=11.6km az=132.0*
ISC 26 05:57:17.2±1.6, 44.34N±0.04×80.95E±0.05, h2km±12km, n27, σ1§50/46, 11C-8D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**0.83**	**270**	*e*P	**Pg**	**05 57 32.9**	**-0.3**
	83nm,0.3s						
DJR				*e*S	**Sb**	**05 57 44.8**	**-1.4**
	125nm,0.2s						
KTMS	**Ketmen**	**1.00**	**206**	*e*P	**Pg**	**05 57 36.7**	**+0.4**
	45nm,0.3s						
KTMS				*e*S	**Sb**	**05 57 51.7**	**+0.8**
	56nm,0.5s						
PDGK	**Podgornoye**	**1.47**	**227**	⇓P	**Pn**	**05 57 44.6**	**0.0**
	23nm,0.3s						
PDGK				⇓S	**Sg**	**05 58 05.4**	**+1.0**
	108nm,0.4s						
KAPS	**Kapalarasan**	**1.48**	**310**	*e*P	**Pg**	**05 57 45.6**	**+0.1**
	102nm,0.4s						
KAPS				*e*S	**Sg**	**05 58 07.2**	**+2.6**
	374nm,0.4s						
UZB	**Uzynbulak**	**1.84**	**230**	*e*P	**Pb**	**05 57 51.0**	**-0.6**
	122nm,0.3s						
UZB				*e*S	**Sg**	**05 58 16.6**	**+0.3**
	123nm,0.5s						
KPKS	**Kokpek**	**1.86**	**243**	*e*P	**Pb**	**05 57 51.2**	**-0.8**
	286nm,0.2s						
KPKS				*e*S	**Sg**	**05 58 17.3**	**+0.4**
	549nm,0.4s						
ZHN	**Zhinishke**	**2.17**	**238**	*e*P	**Pb**	**05 57 56.1**	**-1.1**
	63nm,0.4s						
ZHN				*e*S	**Sb**	**05 58 25.5**	**+0.9**
	274nm,0.4s						
ARXS	**Arharly**	**2.25**	**268**	*e*P	**Pb**	**05 57 58.3**	**-0.2**
	74nm,0.3s						
ARXS				*e*S	**Sg**	**05 58 28.8**	**-0.7**
	159nm,0.4s						
SATY	**Saty**	**2.25**	**236**	*e*P	**Pb**	**05 57 57.4**	**-1.2**
	187nm,0.2s						
SATY				*e*S	**Sb**	**05 58 27.7**	**+0.8**
	213nm,0.3s						
MAKZ	**Makanchi**	**2.57**	**16**	↑Pn	**Pn**	**05 58 00.2**	**+0.4**
	5.3nm,0.5s						
MAKZ				↑Sn	**Sb**	**05 58 34.1**	**-1.9**
	9.1nm,0.6s						
MK31	**Makanchi Array**	**2.62**	**20**	↑Pn	**Pn**	**05 58 01.6**	**+1.0**
	1.0nm,0.2s,baz=200,slow=13,SNR=183						
MK31				⇓Sn	**Sn**	**05 58 33.6**	**+0.6**
	61nm,0.9s,baz=192,slow=30,SNR=5.3						
MKAR	**Makanchi Array**	**2.62**	**20**	Pn	**Pn**	**05 58 01.7**	**+1.1**
	3.4nm,0.3s,baz=201,slow=14,SNR=93						
MKAR				Sn	**Sn**	**05 58 30.6**	**-2.4**
	1.9nm,0.3s,baz=199,slow=14,SNR=4.2						
KOTS	**Kotyrbulak**	**2.99**	**250**	*e*P	**Pb**	**05 58 11.4**	**+0.1**
KOTS				*e*S	**Sg**	**05 58 51.0**	**-2.4**
MDOK	**Medeo**	**3.06**	**249**	*e*P	**Pb**	**05 58 12.5**	**0.0**
	25nm,0.7s						
MDOK				*e*S	**Sg**	**05 58 53.0**	**-2.7**
	28nm,0.8s						
TNSS	**Tian-Shan**	**3.19**	**247**	*e*P	**Pb**	**05 58 14.4**	**-0.3**
	9.8nm,0.4s						
TNSS				*e*S	**Sg**	**05 58 56.5**	**-3.0**
	42nm,0.7s						
IZV	**Izvestkoviy**	**3.41**	**249**	*e*P	**Pb**	**05 58 19.2**	**+0.8**
	27nm,0.5s						
IZV				*e*S	**Sg**	**05 59 04.6**	**-2.0**
	39nm,0.5s						
TKM2	**Tokmak 2**	**4.14**	**252**	↑Pg	**Pb**	**05 58 33.3**	**+2.5**
	11nm,0.5s						
TKM2				↑Lg	Lg	05 59 30.9	
	23nm,0.7s						
AAK	**Ala-Archa**	**5.00**	**252**	Pn	**Pb**	**05 58 46.1**	**+0.6**
	4.3nm,0.3s,baz=99,slow=7.9,SNR=10						
AAK				Sn	**Sg**	**05 59 55.2**	**-2.6**
	0.4nm,0.3s,baz=186,slow=19,SNR=1.9						
AAK	**Ala-Archa**	**5.00**	**252**	↑Pg	**Pb**	**05 58 47.8**	**+2.3**
	3.6nm,0.3s						
AAK				↑Lg	Lg	05 59 56.4	
	16nm,1.1s						
MNAS	**Manas**	**6.43**	**256**	⇓Pg	**Pb**	**05 59 13.7**	**+3.9**
	0.8nm,0.4s						
MNAS				⇓Lg	Lg	06 00 40.9	
	4.6nm,0.7s						
KURBB	**Kurchatov Arra**	**6.49**	**346**	Pn	**Pn**	**05 58 53.5**	**-0.2**
	0.2nm,0.3s,baz=169,slow=12,SNR=7.6						
KURBB				Sn	**Sn**	**06 00 07.6**	**-0.7**
	0.1nm,0.3s,baz=156,slow=26,SNR=3.8						
KURBB				Lg	Lg	06 00 42.6	
	0.2nm,0.3s,baz=189,slow=25,SNR=6.1						
KURBB	**Kurchatov Arra**	**6.49**	**346**	⇓Pn	**Pn**	**05 58 55.4**	**+1.7**
	1.2nm,0.5s						
KURBB				⇑Sn	**Sn**	**06 00 08.7**	**+0.4**
	6.5nm,0.7s						
KURBB				⇓Lg	Lg	06 00 42.4	
	29nm,0.7s						
OTUK	**Ortayu**	**7.13**	**306**	⇓Pn	**Pn**	**05 59 02.6**	**+0.2**
	1.9nm,0.6s						
OTUK				⇑Sn	**Sn**	**06 00 23.6**	**-0.4**
	1.2nm,0.5s						
OTUK				⇑Lg	Lg	06 01 02.6	
	6.0nm,0.9s						
KK31	**Karatay Array**	**7.67**	**264**	⇑Lg	Lg	06 01 19.6	
	2.8nm,0.6s,baz=68,slow=26,SNR=4.7						
ZALV	**Zalesovo Beam**	**9.94**	**13**	Pn	**Pn**	**05 59 39.9**	**-1.0**
	0.5nm,0.3s,baz=195,slow=14,SNR=5.6						
ZALV				Lg	Lg	06 02 25.9	
	0.1nm,0.3s,baz=187,slow=23,SNR=2.4						
BVAR	**Borovoye Array**	**11.13**	**325**	Pn	**Pn**	**05 59 57.5**	**+0.2**
	0.1nm,0.3s,baz=137,slow=13,SNR=3.1						
SONM	**Songino Array**	**17.96**	**70**	P	**Pn**	**06 01 28.0**	**0.0**
	0.2nm,0.3s,baz=253,slow=14,SNR=3.3						

*IDC **26** 06:07:22.7±1.1, 55.88S×26.80W, h0km, mb4.3/4, mb1 4.4/4, mb1mx4.1/18, mbtmp4.3/4, Error ellipse: s-maj=39.0km s-min=27.5km az=76.0*
*ISCJB **26** 06:07:28.9±0.9, 55.9S±0.2×26.8W±0.4, h63km, mb4.3/4, Error ellipse: s-maj=39.0km s-min=14.4km az=153.3*
ISC 26 06:07:30.6±1.0, 56.0S±0.2×26.9W±0.3, h63km, n13, σ1§00/7, mb4.3/4, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**16.80**	**158**	P	**P**	**06 11 22.3**	**-0.2**
SNAA	**Sanae**	**18.74**	**156**	P	**P**	**06 11 42.5**	**-1.4**
CPUP	**Villa Florida**	**36.90**	**311**	P	**P**	**06 14 32.1**	**-0.9**
	1.5nm,0.7s,baz=152,slow=7.4,SNR=4.0						
VNDA	**Vanda**	**46.66**	**183**	P	**P**	**06 15 52.8**	**+0.8**
	3.7nm,0.7s,baz=194,slow=7.0,SNR=21						
H10S2	**ASCENSION HYDR**	**47.87**	**16**	T	T	07 08 49.6	
	baz=189,slow=75,SNR=28						
H10S3	**ASCENSION HYDR**	**47.88**	**16**	T	T	07 08 54.0	
	baz=189,slow=75,SNR=35						
H10S1	**ASCENSION HYDR**	**47.89**	**16**	T	T	07 08 54.0	
	baz=189,slow=75,SNR=36						
H10N1	**ASCENSION HYDR**	**48.99**	**16**	T	T	07 10 15.1	
	baz=188						
H10N3	**ASCENSION HYDR**	**48.99**	**16**	T	T	07 10 17.6	
	baz=188,slow=74,SNR=16						
H10N2	**ASCENSION HYDR**	**49.01**	**16**	T	T	07 10 16.8	
	baz=188,slow=74,SNR=3.7						
LPAZ	**La Paz**	**50.49**	**305**	P	**P**	**06 16 23.1**	**+0.3**
	2.9nm,0.5s,baz=158,slow=6.1,SNR=27						
TORD	**Torodi Ar. Bea**	**72.90**	**29**	P	**P**	**06 18 52.9**	**+0.2**
	1.4nm,0.4s,baz=201,slow=6.1,SNR=25						
ILAR	**Eielson Array**	**150.20**	**312**	PKPbc	**PKPbc**	**06 27 13.5**	**+0.7**
	1.4nm,0.7s,baz=126,slow=2.5,SNR=4.7						

*BJI **26** 06:16:43.7, 53.06N×160.07E, h58km, mb4.9/33, mB4.8/27, Ms5.3/20, Ms7 4.9/20*
*KRSC **26** 06:16:43.3±1.1, 52.75N×160.18E, h56km±11km, ML5.0*
*NEIC **26** 06:16:45.6±0.2, 52.96N×159.93E, h35km, mb5.4/111, Error ellipse: s-maj=5.7km s-min=2.7km az=164.0*
*MOS **26** 06:16:45.7±1.0, 52.89N×159.90E, h57km, mb5.4/54, Error ellipse: s-maj=6.5km s-min=4.6km az=98.9*
MOS Felt (II) at Petropavlovsk-Kamchatskiy.
*ISCJB **26** 06:16:46.0±0.3, 52.82N±0.02×160.01E±0.03, h63km±2km, mb5.1/181, Error ellipse: s-maj=4.3km s-min=2.3km az=155.7*
*IDC **26** 06:16:49.8±1.3, 52.92N×159.84E, h79km±10km, mb4.3/29, mb1 4.5/33, mb1mx4.4/49, mbtmp4.7/33, Error ellipse: s-maj=14.4km s-min=8.9km az=145.0*
ISC 26 06:16:47.0±0.5, 52.87N±0.04×159.93E±0.04, h51km±4km, n700, σ1§17/726, mb5.2/181, MS4.8/6, 30C-2D, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.24**	**13**	PN	**Pn**	**06 16 53.4**	**-2.3**
SPN	**Mys Shipunski**	**0.24**	**13**	*i* P	**Pn**	**06 16 53.4**	**-2.3**
NLC	**Nalytchevo**	**0.47**	**311**	PN	**Pn**	**06 16 57.5**	**-0.4**
NLC				S	**Sn**	**06 17 06.7**	**+0.9**
NLC	**Nalytchevo**	**0.47**	**311**	*i* P	**Pn**	**06 16 57.5**	**-0.4**
NLC				*i* S	**Sn**	**06 17 06.5**	**+0.7**
DALK	**Dalny**	**0.73**	**284**	PN	**Pn**	**06 17 01.3**	**+0.2**
DALK				S	**Sn**	**06 17 13.1**	**+1.6**
DALK	**Dalny**	**0.73**	**284**	*i* P	**Pn**	**06 17 01.3**	**+0.2**
DALK				*e*S	**Sn**	**06 17 13.9**	**+2.4**
UGLR	**Uglovaya**	**0.75**	**298**	PN	**Pn**	**06 17 02.0**	**+0.5**
SDLR	**Sedlovina**	**0.76**	**304**	PN	**Pn**	**06 17 01.9**	**+0.4**
SDLR	**Sedlovina**	**0.76**	**304**	*i* P	**Pn**	**06 17 02.0**	**+0.4**
PET	**Petropavlovsk**	**0.79**	**282**	PN	**Pn**	**06 17 02.0**	**+0.2**
PET				S	**Sn**	**06 17 14.3**	**+1.5**
PET	**Petropavlovsk**

comp=N,2µm,0.6s
SKR smax smax

comp=E,2µm,0.8s
SKR Severo-Kuril's 3.22 229 *e*P **Pn** **06 17 34.8 -0.2**
SKR S **Sn** **06 18 11.4 -0.7**
LGNR Loginova 3.25 7 *i* P **Pn** **06 17 38.1 +2.4**
CIRR Tsirk 3.29 8 *i* P **Pn** **06 17 37.9 +1.8**
KRSR Krestovskiy 3.38 6 *e*P **Pn** **06 17 38.3 +1.1**
KLY Klyuchi 3.48 7 *e*P **Pn** **06 17 40.4 +1.9**
KLY S **Sn** **06 18 21.3 +2.9**
KBG Krutoberegovo 3.76 24 *e*P **Pn** **06 17 42.9 +0.6**
KBG S **Sn** **06 18 26.1 +0.8**
BDR Baidarnaya 3.78 11 *e*P **Pn** **06 17 44.4 +1.6**
BDR *e*S **Sn** **06 18 27.6 +1.6**
SMKR Semkarok 3.83 13 *i* P **Pn** **06 17 44.5 +1.1**
SMKR *e*S **Sn** **06 18 27.6 +0.5**
SRKR Sorokina 3.86 10 *e*P **Pn** **06 17 45.3 +1.5**
BKI Bering 4.26 54 *e*P **Pn** **06 17 46.3 -2.9**
OSSR Ossora 6.63 14 P **Pn** **06 18 23.7 +2.0**
MA2 Magadan 8.44 326 P **Pn** **06 18 48.3 +1.9**
comp=E,0.7nm,0.3s,baz=158,slow=19,SNR=3.5
MA2 Magadan 8.44 326 *e*PN **Pn** **06 18 46.6 +0.2**
MA2 pmax pmax

comp=Z,113nm,1.0s
MA2 Magadan 8.44 326 *e*Pn **Pn** **06 18 46.6 +0.2**
comp=Z,113nm,1.0s
MA2 P **Pn** **06 18 48.3 +1.9**
SMY Shemya 8.59 85 *e*PN **Pn** **06 18 45.9 -2.6**
SMY Shemya 8.59 85 *e*Pn **Pn** **06 18 45.9 -2.6**
KMSK Kamenskaya 10.19 17 P **Pn** **06 19 11.8 +1.5**
SEY Seymchan 10.85 341 P **Pn** **06 19 24.0 +4.6**
comp=Z,0.1nm,0.3s,baz=139,slow=12,SNR=17
SEY Seymchan 10.85 341 *e*PN **Pn** **06 19 20.7 +1.3**
TYV Tymovskoe 10.87 266 *e*PN **Pn** **06 19 23.2 +3.5**
TYV pmax pmax

comp=Z,92nm,1.4s
KUR Kuril'sk 10.99 231 PN **Pn** **06 19 25.8 +4.5**
NKL Nikolayevsk 11.60 279 *e*PN Pn 06 19 43.5 +14
NKL pmax pmax

comp=E,43nm,1.0s
NKL pmax pmax

comp=Z,80nm,1.0s
YSS Yuzh-Sakhalins 12.54 249 *e*PN **P** **06 19 55.8 +3.1**
YSS pmax pmax

comp=Z,20nm,0.5s
YUK Yuzh-Kuril'sk 12.84 232 *e*PN **Pn** **06 19 47.6 +1.1**
ASAJ Asahikawa 14.42 240 P **Pn** **06 20 08.3 +0.4**
comp=Z,2.3nm,0.3s,baz=55,slow=12,SNR=25
ASAJ Asahikawa 14.42 240 *e*Pn **Pn** **06 20 08.8 +0.9**
BILL Bilibino 15.53 9⇑ *e*P **Pn** **06 20 23.6 +1.4**
BILL *e*S **Sn** **06 23 16.9 +4.0**
BILL pmax pmax

comp=Z,36nm,0.7s
BILL MLR MLR

comp=Z,9µm,23.0s
BILL Bilibino 15.53 9 *e*Pn **P** **06 20 26.9 +1.3**
comp=Z,118nm,0.8s
ERM Erimo 15.66 233 *e*P **Pn** **06 20 19.1 -5.0**
ERM pmax pmax

comp=Z,26nm,0.5s
ERM Erimo 15.66 233 *e*Pn **Pn** **06 20 19.1 -5.0**
comp=Z,26nm,0.5s
HABR Khabarovsk 16.34 264 *e*P **Pn** **06 20 31.1 -1.5**
HABR *e*S **Sn** **06 23 31.7 -1.1**
HABR pmax pmax

comp=N,13nm,0.9s
HABR pmax pmax

comp=Z,12nm,0.9s
HABR pmax pmax

comp=E,19nm,0.9s
HABR MLR MLR

comp=Z,9µm,17.0s
KLR Kul'dur 18.04 270 P **Pn** **06 20 54.1 +0.5**
comp=Z,2.0nm,0.3s,baz=63,slow=10,SNR=44
KLR Kul'dur 18.04 270 *c i*P **Pn** **06 20 54.6 +1.0**
YAK Yakutsk 18.52 312 P **P** **06 20 58.1 -0.5**
comp=Z,0.0nm,0.3s,baz=337,slow=3.0,SNR=6.9
YAK Yakutsk 18.52 312 *e*P **P** **06 20 58.2 -0.5**
YAK pmax pmax

comp=Z,48nm,1.1s
YAK pmax pmax

comp=E,28nm,1.4s
YAK pmax pmax

comp=N,15nm,1.1s
YAK Yakutsk 18.52 312 *e*P **P** **06 20 57.9 -0.8**
comp=N,177nm,0.8s
UNV Unalaska Valle 19.96 74 *e*P **P** **06 21 14.1 -0.4**
comp=N,103nm,1.7s
USRK Ussuriysk Ar. 20.33 256 P **P** **06 21 17.1 -1.5**
comp=N,18nm,0.8s,baz=56,slow=9.6,SNR=18
MSHR Mys Shultsa 21.78 253 *e*P **P** **06 21 35.2 +1.0**
MJB9 Matsu-Tunnel 22.33 232 *e*P **P** **06 21 40.6 +0.5**
comp=N,41nm,0.8s
MAJO Matsushiro 22.33 232 *e*P **P** **06 21 40.4 +0.2**
MAJO Matsushiro 22.33 232 *e*P **P** **06 21 40.6 +0.4**
comp=N,157nm,0.8s
MAT Matsushiro 22.33 232 P **P** **06 21 40.3 +0.1**
MJAR Matsushiro Arr 22.33 232 P **P** **06 21 40.0 -0.2**
comp=N,16nm,0.8s,baz=22,slow=9.9,SNR=49
TIXI Tiksi 23.25 336 P **P** **06 21 47.2 -2.2**
comp=N,13nm,0.5s,baz=115,slow=9.7,SNR=5.7
TIXI Tiksi 23.25 336 *e*P **P** **06 21 47.6 -1.7**
TIXI Tiksi 23.25 336 *e*P **P** **06 21 48.5 -0.8**
comp=N,54nm,0.8s
INU Inuyama 23.86 232 *e*P **P** **06 21 57.0 +1.6**
comp=N,91nm,0.7s
CN2 Changchun 24.45 262 *e*P **P** **06 21 57.0 -3.7**
CN2 pmax pmax

comp=N,10.0nm,0.5s
TT01 Tatalina 24.97 49 *e*P **P** **06 22 04.9 -0.4**
TTA Tatalina 24.98 49 *e*P **P** **06 22 05.3 -0.1**
TTA pmax pmax

comp=Z,158nm,1.3s
TTA Tatalina 24.98 49 *e*P **P** **06 22 05.3 -0.1**
comp=Z,158nm,1.3s
SVW2 Sparrevohn 25.14 53 *e*P **P** **06 22 06.2 -0.6**
comp=Z,17nm,1.0s
HIA Hailar 25.28 278 *e*P **P** **06 22 07.2 -1.0**
HIA pmax pmax

comp=Z,52nm,0.8s
HIA Hailar 25.28 278 *e*P **P** **06 22 07.2 -1.0**
comp=Z,52nm,0.8s
CAST Castle Rocks 26.77 48 *e*P **P** **06 22 21.6 0.0**
comp=Z,53nm,1.3s
KDAK Kodiak Island 27.00 60 *e*P **P** **06 22 23.2 -0.4**
KDAK pmax pmax

comp=Z,46nm,1.3s
KDAK Kodiak Island 27.00 60 *e*P **P** **06 22 23.2 -0.4**
comp=Z,46nm,1.3s
KS01 Wonju Array Si 27.04 248 *e*P **P** **06 22 25.7 +1.6**
KSRS Korea Array 27.04 248 P **P** **06 22 24.3 +0.1**
comp=Z,13nm,0.9s,baz=44,slow=9.0,SNR=23
KSAR Wonju Array Be 27.07 248 P **P** **06 22 24.3 -0.1**
KSAR Wonju Array Be 27.07 248 P **P** **06 22 24.3 -0.1**
BPAW Bear Paw Mtn. 27.27 46 *e*P **P** **06 22 26.4 +0.3**
comp=Z,66nm,1.4s
KTH Kantishna Hill 27.29 48 *e*P **P** **06 22 25.6 -0.7**
comp=Z,279nm,1.9s
MLY Manley 27.40 44 *e*P **P** **06 22 27.8 +0.6**
comp=Z,85nm,1.5s
CNPM China Poot 27.42 56 *e*P **P** **06 22 26.3 -1.1**
comp=Z,56nm,1.3s
SUA Susitna One 27.46 52 *e*P **P** **06 22 27.1 -0.8**
comp=Z,24nm,1.1s
TRF Thorofare Moun 27.58 48 *e*P **P** **06 22 29.1 +0.1**
comp=Z,88nm,1.4s
COLD Coldfoot 27.79 40 *e*P **P** **06 22 30.9 +0.2**
comp=Z,82nm,1.2s
PMR Palmer 28.22 52 *e*P **P** **06 22 34.0 -0.5**
PMR pmax pmax

comp=Z,15nm,1.1s
PMR Palmer 28.22 52 *e*P **P** **06 22 34.0 -0.5**
comp=Z,15nm,1.1s
RND Reindeer 28.23 48 *e*P **P** **06 22 34.3 -0.4**
RND pmax pmax

comp=Z,124nm,1.2s
RND Reindeer 28.23 48 *e*P **P** **06 22 34.2 -0.4**
comp=Z,124nm,1.2s
SEW Seward 28.24 55 *e*P **P** **06 22 33.0 -1.7**
comp=Z,89nm,1.3s
MDM Murphy Dome 28.47 45 *e*P **P** **06 22 36.6 -0.1**
comp=Z,99nm,1.4s
WRH Wood River Hil 28.53 46 *e*P **P** **06 22 37.2 -0.1**
comp=Z,128nm,1.2s
SML Sawmill 28.58 51 *e*P **P** **06 22 37.4 -0.3**
SML pmax pmax

comp=Z,141nm,1.2s
SML Sawmill 28.58 51 *e*P **P** **06 22 37.4 -0.3**
comp=Z,141nm,1.2s
COLA College 28.63 45 *e*P **P** **06 22 37.6 -0.5**
COLA pmax pmax

comp=Z,3.0nm,0.6s
COLA College 28.63 45 *e*P **P** **06 22 37.6 -0.5**
comp=Z,3.2nm,0.6s
CCB Clear Creek Bu 28.65 45 *e*P **P** **06 22 38.2 -0.1**
comp=Z,104nm,1.3s
JNU Nakatsue 28.69 238 P **P** **06 22 39.9 +0.9**
comp=Z,9.5nm,0.8s,baz=49,slow=7.2,SNR=6.7
DHY Denali Highway 28.91 48 *e*P **P** **06 22 40.1 -0.8**
comp=Z,126nm,1.5s
HDA Harding Lake 29.03 46 *e*P **P** **06 22 40.9 -0.8**
comp=Z,17nm,0.7s
IL1 Eielson Array 29.05 45 *e*P **P** **06 22 41.9 +0.1**
ILAR Eielson Array 29.05 45 P **P** **06 22 40.8 -1.0**
comp=Z,1.4nm,0.6s,baz=265,slow=6.1,SNR=24
ILB Eielson Array 29.05 45 *e*P **P** **06 22 41.3 -0.5**
SCM Sheep Creek Mo 29.05 51 *e*P **P** **06 22 41.7 -0.3**
SCM pmax pmax

comp=Z,95nm,1.3s
SCM Sheep Creek Mo 29.05 51 *e*P **P** **06 22 41.7 -0.3**
comp=Z,95nm,1.3s
FYU Fort Yukon 29.71 41 *e*P **P** **06 22 48.0 +0.3**
comp=Z,249nm,1.4s
DOT Dot Lake 30.35 47 *e*P **P** **06 22 51.8 -1.6**
comp=Z,145nm,1.7s
EGAK Eagle 31.49 45 *e*P **P** **06 23 02.2 -1.2**
comp=Z,100nm,1.5s
BJI Beijing 32.24 264 P **P** **06 23 08.8 -1.4**
BJI S **S** **06 28 19.3 -0.4**
BJI pmax pmax

comp=Z,5.0nm,0.7s
BJI LR LR

comp=Z,4µm,22.0s
BJI LR LR

comp=Z,3µm,22.3s
BJI LR LR

comp=Z,2µm,29.1s
DAWY Dawson 32.35 46 *e*P **P** **06 23 10.6 -0.4**
comp=Z,43nm,1.4s
H11N2 WAKE ISLAND Hy 33.51 168 T T 06 58 54.9
baz=353,slow=76,SNR=4802
H11N3 WAKE ISLAND Hy 33.53 168 T T 06 58 54.9
baz=353,slow=76,SNR=6091
H11N1 WAKE ISLAND Hy 33.53 168 T T 06 58 54.9
baz=353,slow=76,SNR=5923
TLY Talaya 33.71 291 *e*P **P** **06 23 23.2 +0.2**
TLY pmax pmax

comp=Z,4.0nm,0.5s
SONA1 Songino Array 33.85 283 *e*P **P** **06 23 23.4 -0.9**
SONM Songino Array 33.86 283 P **P** **06 23 23.8 -0.7**
comp=Z,5.9nm,0.7s,baz=63,slow=8.2,SNR=26
SONM PcP **PcP** **06 26 02.7 +0.6**
comp=Z,5.1nm,0.6s,baz=67,slow=1.8,SNR=4.5
HYT Haines Junctio 33.89 51 *e*P **P** **06 23 25.1 +0.5**
comp=Z,70nm,1.5s
INK Inuvik 34.11 37 P **P** **06 23 26.3 +0.2**
comp=Z,5.9nm,0.4s,baz=281,slow=6.2,SNR=22
INK Inuvik 34.11 37 *e*P **P** **06 23 26.4 +0.2**
comp=Z,110nm,1.3s
ZAK Zakamensk 34.48 289 *e*P **P** **06 23 27.5 -2.3**
HHC Hu-ho-hao-te 34.54 269 *e*P **P** **06 23 31.5 +1.1**
HHC S **S** **06 28 54.5 -1.1**
HHC pmax pmax

comp=Z,13nm,0.9s
HHC pmax pmax

comp=Z,57nm,6.2s
HHC LR LR

comp=Z,3µm,17.3s
HHC LR LR

comp=Z,2µm,16.0s
HHC LR LR

comp=Z,2µm,22.2s
H11S1 WAKE ISLAND Hy 34.69 169 T T 07 00 24.3
baz=351,slow=76,SNR=294
H11S3 WAKE ISLAND Hy 34.70 169 T T 07 00 24.3
baz=351
H11S2 WAKE ISLAND Hy 34.71 169 T T 07 00 24.3
baz=351,slow=76,SNR=335
JOW Kunigami 35.10 235 *e*P **P** **06 23 37.6 +2.4**
comp=Z,96nm,0.8s
MOY Mondy 35.21 292 *e*P **P** **06 23 36.4 +0.3**
MOY pmax pmax

comp=Z,59nm,2.7s
NJ2 Nanjing 36.09 251 *e*P **P** **06 23 43.0 -0.6**
NJ2 pmax pmax

comp=Z,10.0nm,0.8s
DLBC Dease Lake 38.26 53 P **P** **06 24 02.9 +1.0**
comp=Z,4.1nm,0.6s,baz=296,slow=8.9,SNR=10
DLBC Dease Lake 38.26 53 *e*P **P** **06 24 03.5 +1.7**
comp=Z,41nm,1.3s
YULB Yu-li 41.49 240 *e*P **P** **06 24 30.3 +1.4**
comp=Z,113nm,1.8s
GTA Gaotai 42.53 276 *e*P **P** **06 24 36.5 -0.9**
GTA pP pP 06 24 52.5 +1.5
GTA sP sP 06 24 59.8 +2.8
ZAA0 Zalesovo Array 42.82 303 *e*P **P** **06 24 37.4 -1.9**
ZAA0 *e*P **P** **06 24 37.6 -1.7**
ZALV Zalesovo Beam 42.82 303 P **P** **06 24 37.3 -2.0**
comp=Z,4.3nm,0.7s,baz=57,slow=7.4,SNR=9.4
NVS Novosibirsk 43.16 305 *e*P **P** **06 24 41.3 -0.8**
NVS pmax pmax

comp=Z,28nm,1.0s
NVS pmax pmax

comp=N,7.0nm,0.9s
NVS pmax pmax

comp=E,17nm,0.9s
YKA Yellowknife Ar 43.40 42 P **P** **06 24 43.9 0.0**
comp=E,3.7nm,0.6s,baz=299,slow=7.2,SNR=45
RES Resolute Bay 43.57 22 P **P** **06 24 45.2 0.0**
comp=E,8.3nm,0.8s,baz=313,slow=7.0,SNR=6.1
CD2 Chengdu 45.85 264 P **P** **06 25 02.8 -1.1**
CD2 pP pP 06 25 17.3 -0.3
CD2 sP sP 06 25 24.0 +0.5
CD2 PcS **PcS** **06 30 34.0 -0.9**
CD2 S **S** **06 31 42.5 -1.7**
CD2 sS sS 06 32 07.5 +0.3
CD2 pmax pmax

comp=E,20nm,0.5s
CD2 pmax pmax

comp=E,320nm,5.2s
CD2 LR LR

comp=E,3µm,24.5s
CD2 LR LR

comp=E,2µm,22.5s
CD2 LR LR

comp=E,1µm,27.5s
A04D Lummi Island 46.86 62 P **P** **06 25 11.8 +0.3**
baz=306
WMQ Urumqi 46.95 289 *e*P **P** **06 25 14.3 +1.9**
WMQ pP pP 06 25 26.8 +0.6
WMQ pmax pmax

comp=E,13nm,0.5s
WMQ pmax pmax

comp=E,120nm,4.2s
KBS Kingsbay 47.09 352 *e*P **P** **06 25 13.3 +0.3**
KBS pmax pmax

comp=Z,41nm,0.8s
KBS Kingsbay 47.09 352 *e*P **P** **06 25 13.3 +0.3**
comp=Z,41nm,0.8s
SPA0 Spitsbergen Ar 47.34 350 *e*P **P** **06 25 14.9 0.0**
GYA Guiyang 47.35 258⇑ *i*P **P** **06 25 16.5 +0.7**
GYA pP pP 06 25 31.0 +1.5
GYA PP **PP** **06 27 07.5 +0.2**
GYA ScP **ScP** **06 30 35.8 +0.5**
GYA S **S** **06 32 04.3 -1.7**
GYA sS sS 06 32 30.0 +1.0
GYA SS **SS** **06 35 26.5 -7.3**
GYA pmax pmax

comp=Z,30nm,0.9s
GYA pmax pmax

comp=Z,140nm,5.8s
GYA LR LR

comp=Z,580nm,18.3s
GYA LR LR

comp=Z,530nm,19.0s
GYA LR LR

comp=Z,560nm,19.4s
B05A Bryant 47.46 62 P **P** **06 25 15.6 -0.6**
baz=307
KURK Kurchatov 47.77 302 *c i*P **P** **06 25 16.8 -1.8**
KURK pmax pmax

comp=Z,59nm,0.9s
MK31 Makanchi Array 48.16 296 *i* P **P** **06 25 20.1 -1.6**
MK31 pmax pmax

comp=Z,11nm,0.5s
MK31 Makanchi Array 48.16 296 *e*P **P** **06 25 20.1 -1.6**
MKAR Makanchi Array 48.16 296 P **P** **06 25 20.0 -1.8**
comp=Z,9.2nm,0.5s,baz=57,slow=7.0,SNR=114
MKAR Makanchi Array 48.16 296 P **P** **06 25 20.0 -1.8**
MKAR pmax pmax

comp=Z,9.0nm,0.5s
MKAR Makanchi Array 48.16 296 *e*P **P** **06 25 20.1 -1.6**
MK01 Makanchi Array 48.17 296 *e*P **P** **06 25 19.9 -1.9**
MAKZ Makanchi 48.33 296 *e*P **P** **06 25 21.3 -1.7**
MAKZ pmax pmax

comp=Z,38nm,1.1s
MAKZ Makanchi 48.33 296 *e*P **P** **06 25 21.3 -1.7**
comp=Z,38nm,1.1s
B08A Colville Reser 48.88 61 *e*P **P** **06 25 27.3 0.0**
comp=Z,42nm,1.1s
I03D Drain, OR 49.57 68 P **P** **06 25 33.1 +0.6**
baz=309
G05D Wamic, OR 49.73 65 P **P** **06 25 33.7 -0.1**
baz=309
I04A Tendick Farm, 50.04 67 P **P** **06 25 35.9 -0.2**
baz=310
NEW Newport 50.10 60 P **P** **06 25 35.9 -0.7**
baz=308
KULLO Kullorsuaq 50.43 12⇑ *i*P **P** **06 25 38.3 -0.3**
comp=Z,26nm,0.6s
KULLO Kullorsuaq 50.43 12⇑ *i*P **P** **06 25 38.3 -0.3**
KULLO pmax pmax

comp=Z,26nm,0.6s
BVA0 Borovoye Array 50.45 308 *i*P **P** **06 25 37.3 -1.8**
BRVK Borovoye 50.48 309 *e*P **P** **06 25 37.8 -1.5**
BRVK pmax pmax

comp=Z,31nm,0.7s
BRVK Borovoye 50.48 309 *e*P **P** **06 25 37.8 -1.5**
comp=Z,31nm,0.7s
J04D Umpqua Nationa 50.56 68 P **P** **06 25 40.1 -0.1**
baz=310
DAG Danmarks Havn 50.63 360⇑ *i*P **P** **06 25 39.6 -0.5**
comp=Z,20nm,0.8s
DAG Danmarks Havn 50.63 360⇑ *i*P **P** **06 25 39.6 -0.5**
DAG pmax pmax

comp=Z,15nm,0.8s
J05D Fort Rock, OR 51.02 67 P **P** **06 25 43.5 -0.2**
baz=310
WALA Waterton Lakes 51.26 57 *e*P **P** **06 25 45.5 +0.1**
comp=Z,81nm,1.4s
QIZ Qiongzhong 51.27 248 P **P** **06 25 46.8 +1.3**
QIZ pmax pmax

comp=Z,18nm,1.0s
QIZ Qiongzhong 51.27 248 *e*P **P** **06 25 46.8 +1.3**
comp=Z,15nm,1.1s
M02C Callahan 51.33 70 P **P** **06 25 46.3 +0.3**
baz=311
BSMT Bassoo Peak 51.58 59 *e*P **P** **06 25 47.9 +0.1**
M04C Macdoel 51.65 69 P **P** **06 25 48.5 +0.1**
baz=311
N02D Trinity Center 51.69 70 P **P** **06 25 49.0 +0.3**
baz=311
PDGK Podgornoye 51.89 294 P **P** **06 25 47.5 -2.4**
PDGK pmax pmax

comp=Z,13nm,1.1s
OTUK Ortayu 52.52 303 P **P** **06 25 52.4 -2.2**
OTUK pmax pmax

comp=Z,10.0nm,1.0s
O03D Paynes Creek 52.66 70 P **P** **06 25 55.1 -0.7**
baz=312
MSO Missoula 52.68 59 P **P** **06 25 55.5 -0.4**
baz=311
LVZ Lovozero 52.87 337 *e*P **P** **06 25 57.1 +0.2**
LVZ pmax pmax

comp=Z,21nm,1.1s
WVOR Wild Horse Val 53.02 66 *e*P **P** **06 25 59.1 +0.6**
WVOR pmax pmax

comp=Z,96nm,2.0s
WVOR Wild Horse Val 53.02 66 *e*P **P** **06 25 59.1 +0.6**
comp=Z,96nm,2.0s
ARCES ARCESS Array B 53.47 342 P **P** **06 26 01.1 -0.2**
comp=Z,4.7nm,0.7s,baz=44,slow=8.9,SNR=10
ARU Arti 53.50 317 *c i*P **P** **06 26 00.3 -1.3**
ARU *PP **pP** **06 26 17.9 +2.3**
ARU 06 28 00.8
ARU S **S** **06 33 28.4 -1.9**
ARU SS **SKiKP** **06 37 12.9 +1.1**
ARU pmax pmax

comp=Z,13nm,0.8s
ARU Arti 53.50 317 *e*P **P** **06 26 00.1 -1.5**
comp=Z,44nm,0.7s
FCC Fort Churchill 53.72 38 *e*P **P** **06 26 03.0 -0.2**
FCC pmax pmax

comp=Z,77nm,1.1s
FCC Fort Churchill 53.72 38 *e*P **P** **06 26 03.0 -0.2**
comp=Z,77nm,1.1s
MFID Camas Ranch 53.92 64 *e*P **P** **06 26 05.6 +0.6**
comp=Z,24nm,1.4s
SUMG Summit 54.20 7 *i*P **P** **06 26 07.2 +0.2**
comp=Z,27nm,0.9s
SUMG Summit 54.20 7 *i*P **P** **06 26 07.2 +0.2**
SUMG pmax pmax

comp=Z,27nm,0.9s
SUMG Summit 54.20 7 *e*P **P** **06 26 07.2 +0.2**
comp=Z,139nm,1.0s
TKM2 Tokmak 2 54.30 296 P **P** **06 26 05.1 -2.9**
TKM2 pmax pmax

comp=Z,6.0nm,0.7s
LSA Lhasa 54.34 273 *e*P **P** **06 26 08.6 -0.1**
LSA pmax pmax

comp=Z,9.0nm,0.8s
LSA Lhasa 54.34 273 *e*P **P** **06 26 08.6 -0.1**
comp=Z,9.0nm,0.8s
PAHR Pah Rah Range 54.43 69 *e*P **P** **06 26 09.5 +0.6**
comp=Z,68nm,1.3s
HLID Hailey 54.58 63 P **P** **06 26 09.2 -0.8**
baz=312
BOZ Bozeman (W) 54.66 59 P **P** **06 26 09.9 -0.6**
baz=312
BOZ Bozeman (W) 54.66 59 *e*P **P** **06 26 11.1 +0.6**
BOZ pmax pmax

comp=Z,34nm,1.1s
BOZ Bozeman (W) 54.66 59 *e*P **P** **06 26 11.1 +0.6**
comp=Z,34nm,1.1s
PNTR Pine Nut 54.72 70 *e*P **P** **06 26 12.4 +1.3**
comp=Z,57nm,1.1s
YERR Yerington 55.00 70 *e*P **P** **06 26 13.9 +0.8**
comp=Z,74nm,1.4s
AAK Ala-Archa 55.09 296 P **P** **06 26 12.2 -1.4**
AAK pmax pmax

comp=Z,20nm,1.3s
AAK Ala-Archa 55.09 296 *e*P **P** **06 26 12.6 -1.0**
comp=Z,13nm,0.8s
BMN Battle Mountai 55.15 67 *e*P **P** **06 26 15.2 +1.1**
BMN pmax pmax

comp=Z,60nm,1.2s
BMN Battle Mountai 55.15 67 *e*P **P** **06 26 15.2 +1.1**
comp=Z,60nm,1.2s
WAKR Walker 55.21 70 *e*P **P** **06 26 15.8 +1.2**
comp=Z,39nm,1.1s
TVH1 TV Hill, Hawth 55.63 70 *e*P **P** **06 26 18.5 +0.7**
comp=Z,42nm,1.1s
RLMT Red Lodge 56.24 58 P **P** **06 26 21.1 -0.8**
baz=313
RLMT Red Lodge 56.24 58 *e*P **P** **06 26 23.0 +1.1**
comp=Z,82nm,1.5s
MNAS Manas 56.27 297 P **P** **06 26 21.2 -0.9**
KSH Kashi 56.40 293 P **P** **06 26 26.0 +3.0**
KSH pP pP 06 26 42.0 +4.9
KSH *e*sP sP 06 26 48.5 +5.6
KSH *e*ScP **ScP** **06 31 14.5 +0.2**
KSH S **S** **06 34 11.0 +1.1**
KSH ScS **ScS** **06 36 05.8 -1.8**
KSH pmax pmax

comp=Z,29nm,2.7s
KSH LR LR

comp=Z,740nm,13.8s
KSH LR LR

comp=Z,870nm,15.1s
KSH LR LR

comp=Z,930nm,27.1s
LAO LASA Array 56.71 55 P **P** **06 26 24.5 -0.5**
baz=314
LAO LASA Array 56.71 55 *e*P **P** **06 26 24.7 -0.4**
comp=Z,2.0nm,0.4s
KK31 Karatay Array 56.91 299 *i*P **P** **06 26 24.7 -1.8**
KK31 pmax pmax

comp=Z,5.0nm,0.7s

KKAR	**Karatay Array**	56.91	299	*e*P		P		06 26 25.0	-1.5
KKAR	comp=Z,8.0nm,0.7s			pmax		pmax			
KKAR	**Karatay Array**	56.91	299	*e*P		P		06 26 25.0	-1.5
KLMR	comp=Z,8.0nm,0.7s **Klimovskoe**	57.10	330	*e*P		P		06 26 24.8	-2.6
KLMR	comp=Z,14nm,1.1s			pmax		pmax			
VES	**Vestal, Richgr** baz=315	57.26	73	P		P		06 26 28.5	-0.5
CWC	**Cottonwood Cre** baz=315	57.42	71	P		P		06 26 30.0	-0.3
C25A	**Freed Ranch, W** baz=315	57.45	53	P		P		06 26 29.5	-0.8
R11A	**Troy Canyon, C** baz=314	57.51	68	P		P		06 26 30.9	-0.1
R11A	**Troy Canyon, C** comp=Z,26nm,1.4s	57.51	68	*e*P		P		06 26 31.3	+0.4
BW06	**Boulder Array** baz=314	57.72	61	P		P		06 26 32.4	0.0
BW06	**Boulder Array**	57.72	61	*e*P		P		06 26 32.6	+0.2
BW06				*e*P		P		06 26 32.7	+0.3
PD31	**Pinedale Array**	57.72	61	*e*P		P		06 26 33.0	+0.6
PDAR	**Pinedale Array** comp=Z,1.2nm,0.6s,baz=301,slow=2.9,SNR=14	57.72	61	P		P		06 26 32.6	+0.2
DUG	**Dugway, Tooele** baz=314	57.76	65	P		P		06 26 32.5	-0.1
DUG	**Dugway, Tooele**	57.76	65	*e*P		P		06 26 33.3	+0.7
DUG	comp=Z,7.0nm,1.4s			pmax		pmax			
DUG	**Dugway, Tooele** comp=Z,6.9nm,1.4s	57.76	65	*e*P		P		06 26 33.3	+0.7
CHTO	**Chiang Mai**	57.76	258	*e*P		P		06 26 33.3	+0.6
CHTO	comp=Z,23nm,0.8s			pmax		pmax			
CHTO	**Chiang Mai** comp=Z,23nm,0.8s	57.76	258	*e*P		P		06 26 33.3	+0.6
AB31	**Akbulak array**	57.87	310	*e*P		P		06 26 31.0	-2.0
AB31	comp=Z,2.0nm,0.5s			pmax		pmax			
ABKAR	**Akbulak array**	57.87	310	*e*P		P		06 26 31.5	-1.5
MPMC	**Manual Prospec** baz=315	58.03	71	P		P		06 26 34.3	-0.4
CMAR	**Chiang Mai Arr** comp=Z,4.5nm,0.7s,baz=26,slow=6.7,SNR=16	58.04	258	P		P		06 26 35.5	+0.8
FURC	**Furnace Creek,** baz=315	58.10	71	P		P		06 26 35.2	+0.4
TPNV	**Topopah Spring** baz=315	58.11	70	P		P		06 26 35.4	+0.2
TPNV	**Topopah Spring**	58.11	70	*e*P		P		06 26 35.8	+0.6
TPNV	comp=Z,51nm,1.3s			pmax		pmax			
TPNV	**Topopah Spring** comp=Z,51nm,1.3s	58.11	70	*e*P		P		06 26 35.8	+0.6
EDW2	**Edwards Air Fo** baz=316	58.57	73	P		P		06 26 38.6	+0.3
JIRN	**Jiri**	58.82	276	*e*P		P		06 26 39.3	-1.1
GUN	**Gumba** comp=Z,23nm,0.4s	58.82	276	*e*P		P		06 26 40.2	-0.2
GSC	**Goldstone, Bar** baz=316	58.96	71	P		P		06 26 41.1	+0.1
ULM	**Lac du Bonnet** comp=Z,6.2nm,0.5s,baz=315,slow=6.5,SNR=23	59.05	47	P		P		06 26 41.2	0.0
ULM	**Lac du Bonnet**	59.05	47	*e*P		P		06 26 41.3	0.0
ULM	comp=Z,44nm,1.1s			pmax		pmax			
ULM	**Lac du Bonnet** comp=Z,44nm,1.1s	59.05	47	*e*P		P		06 26 41.3	0.0
RAMN	**Ramite** comp=Z,79nm,0.5s	59.09	275	*e*P		P		06 26 41.0	-1.2
KKN	**Kakani** comp=Z,21nm,0.5s	59.27	276	*e*P		P		06 26 42.0	-1.4
CCUT	**Cedar City** comp=Z,22nm,1.2s	59.31	67	*e*P		P		06 26 44.4	+0.8
PKIN	**Phulchoki** comp=Z,37nm,0.7s	59.36	276	*e*P		P		06 26 43.4	-0.6
DMN	**Daman** comp=Z,25nm,0.5s	59.51	276	*e*P		P		06 26 44.3	-0.8
B31A	**Greenbush Farm** baz=317,SNR=8.8	59.58	49	P		P		06 26 45.6	+0.6
RSSD	**Black Hills** baz=316	59.61	56	P		P		06 26 46.0	+0.4
RSSD	**Black Hills**	59.61	56	*e*P		P		06 26 45.8	+0.2
RSSD	comp=Z,166nm,1.5s			pmax		pmax			
RSSD	**Black Hills** comp=Z,166nm,1.5s	59.61	56	*e*P		P		06 26 45.8	+0.2
A32A	**Rocking H Ranc** baz=317	59.75	48	P		P		06 26 45.6	-0.5
LCMT	**Little Creek M** comp=Z,38nm,1.2s	59.76	68	*e*P		P		06 26 47.6	+1.0
MURC	**Murrieta** baz=316	59.95	73	P		P		06 26 47.5	-0.2
GMRC	**Granite Mounta** baz=316	59.98	71	P		P		06 26 47.8	-0.3
C31A	**Landman Farms,** baz=317,SNR=6.6	60.00	50	P		P		06 26 47.4	-0.5
LDFC	**Landfair** comp=Z,59nm,1.2s	60.09	70	*e*P		P		06 26 48.9	+0.1
B32A	**Ashes, Strandq** baz=317,SNR=5.7	60.11	48	P		P		06 26 48.4	-0.2
A33A	**Warroad** baz=318,SNR=5.7	60.23	47	P		P		06 26 49.0	-0.4
O20A	**White River Ci** baz=316	60.28	62	P		P		06 26 49.9	-0.2
FINES	**FINESS Array B** comp=Z,6.6nm,0.5s,baz=33,slow=8.2,SNR=49	60.29	336	P		P		06 26 49.0	-0.6
FINES	**FINESS Array B**	60.29	336	P		P		06 26 49.0	-0.6
KOLN	**Koldanda** comp=Z,22nm,0.5s	60.30	278	*e*P		P		06 26 49.3	-1.1
BELC	**Belle Mtn. Jos** baz=316	60.35	72	P		P		06 26 50.1	-0.5
TPFO	**Pinon Flats** baz=316	60.37	73	P		P		06 26 50.5	-0.2
PYUN	**Piuthan**	60.42	278	*e*P		P		06 26 50.1	-1.2
F29A	**Eureka** baz=317	60.45	52	P		P		06 26 50.5	-0.5
AGMN	**Agassiz Nation** baz=318	60.49	48	P		P		06 26 50.5	-0.7
AGMN	**Agassiz Nation** comp=Z,35nm,1.0s	60.49	48	*e*P		P		06 26 50.9	-0.3
C32A	**Crookston** baz=318	60.53	49	P		P		06 26 51.1	-0.4
IRM	**Iron Mountain** baz=316	60.73	71	P		P		06 26 53.3	+0.2
W13A	**Hualapai Mount** comp=Z,24nm,1.3s	60.77	70	*e*P		P		06 26 54.0	+0.5
D32A	**Dogwood Acres,** baz=318	60.82	50	P		P		06 26 53.3	-0.1
E31A	**Nome** baz=317,SNR=6.7	60.84	51	P		P		06 26 53.2	-0.4
B34A	**Aery, Baudette** baz=318,SNR=5.9	60.89	47	P		P		06 26 53.2	-0.7
BC3	**Big Chuckawall** baz=317	60.91	72	P		P		06 26 54.1	-0.3
C33A	**Trail** baz=318	60.92	48	P		P		06 26 53.8	-0.4
N23A	**Red Feather La** baz=316	60.95	60	P		P		06 26 55.2	+0.4
PV09	**Paradox Valley**	60.97	64	*e*P		P		06 26 56.3	+1.3
PV04	**Paradox Valley**	61.17	64	P		P		06 26 55.8	-0.4
F31A	**Hecla** baz=318	61.18	51	P		P		06 26 55.8	-0.1
PDMCI	**Parker Dam,Lak** baz=317	61.20	70	P		P		06 26 56.0	-0.2
D33A	**AnnSam, Waubun** baz=318	61.35	49	P		P		06 26 56.5	-0.5
Y12C	**Blythe** baz=317	61.38	71	P		P		06 26 57.5	0.0
B35A	**Bob, Littlefor** baz=319	61.39	47	P		P		06 26 56.5	-0.8
C34A	**RKJ Ranch, Bem** baz=318	61.40	48	P		P		06 26 56.8	-0.5
D34A	**Park Rapids** baz=318,SNR=9.1	61.69	49	P		P		06 26 58.8	-0.5
F32A	**Veblen** baz=318	61.70	51	P		P		06 26 58.9	-0.5
GLA	**Glamis** baz=317	61.71	72	P		P		06 26 59.7	0.0
E33A	**Westby DABS, E** baz=318	61.75	50	P		P		06 26 59.3	-0.5
C35A	**Jirik Farms, M** baz=319	61.78	47	P		P		06 26 59.1	-0.8
WUAZ	**Wupatki** baz=317	61.89	68	P		P		06 27 01.0	0.0
ISCO	**Idaho Springs** baz=317	61.92	61	P		P		06 27 01.8	+0.4
ISCO	**Idaho Springs**	61.92	61	*e*P		P		06 27 02.2	+0.8
ISCO	comp=Z,62nm,1.4s			pmax		pmax			
ISCO	**Idaho Springs** comp=Z,62nm,1.4s	61.92	61	*e*P		P		06 27 02.2	+0.8
F33A	**5 Mile Ranch,** baz=318	62.11	50	P		P		06 27 01.8	-0.4
D35A	**Remer** baz=319	62.21	48	P		P		06 27 02.2	-0.7
C36A	**Pine Crest Far** baz=319	62.24	47	P		P		06 27 02.7	-0.3
J30A	**Dallas** baz=318	62.45	54	P		P		06 27 05.9	+1.4
G33A	**Ortonville** baz=319	62.53	51	P		P		06 27 04.4	-0.6
D36A	**Goodland** baz=319	62.53	47	P		P		06 27 04.6	-0.4
C37A	**Embarrass** baz=320	62.55	46	P		P		06 27 04.5	-0.6
H32A	**Carlson Farm,** baz=318	62.57	52	P		P		06 27 05.1	-0.3
X16A	**Lo Mia Camp, P** comp=Z,29nm,1.4s	62.65	69	*e*P		P		06 27 07.2	+1.0
OBN	**Obninsk**	62.66	327	⇑*e*P		P		06 27 05.3	-0.3
OBN				*e*				06 29 26.9	
OBN				*e*S		S		06 36 03.5	+34
OBN	comp=Z,6.0nm,0.8s			pmax		pmax			
OBN	comp=Z,2μm,22.0s			MLR		MLR			
EYMN	**Ely** baz=320	62.68	46	P		P		06 27 05.3	-0.7
EYMN	**Ely** comp=Z,41nm,1.0s	62.68	46	*e*P		P		06 27 05.9	-0.1
VSU	**Vasula**	62.72	334	*e*P		P		06 27 05.8	-0.2
VSU	comp=Z,50nm,0.9s			pmax		pmax			
S22A	**4UR Ranch, Cre** baz=317	62.77	63	P		P		06 27 07.4	+0.4
S22A	**4UR Ranch, Cre** comp=Z,60nm,1.5s	62.77	63	*e*P		P		06 27 08.2	+1.1
H33A	**Prehn Over Nor** baz=319	62.77	51	P		P		06 27 06.5	-0.1
G34A	**Benson** baz=319	62.87	50	P		P		06 27 06.7	-0.5
D37A	**Cotton** baz=320	62.88	47	P		P		06 27 06.9	-0.4
F35A	**Swanville** baz=319	62.89	49	P		P		06 27 06.9	-0.5
C38A	**Sawbill Land.** baz=320	62.96	46	P		P		06 27 07.0	-0.8
E36A	**McGregor** baz=320	62.99	48	P		P		06 27 07.8	-0.3
J32A	**Parkston** baz=319	63.22	53	P		P		06 27 08.8	-0.8
H34A	**Spellman Lake,** baz=319	63.23	51	P		P		06 27 09.3	-0.4
F36A	**Milaca** baz=320	63.37	49	P		P		06 27 09.8	-0.8
G35A	**Watkins** baz=319	63.42	50	P		P		06 27 10.9	0.0
SDCO	**Great Sand Dun** baz=318	63.48	62	P		P		06 27 11.8	0.0
ECSD	**EROS Data Cent** baz=319,SNR=5.9	63.54	52	P		P		06 27 11.1	-0.6
ECSD	**EROS Data Cent** comp=Z,50nm,1.3s	63.54	52	*e*P		P		06 27 11.5	-0.2
L31A	**Butterfield Fa** baz=319	63.63	54	P		P		06 27 12.2	-0.2
H35A	**Sunnyside Ranc** baz=319,SNR=9.5	63.65	50	P		P		06 27 12.2	-0.2
NB2	**NORSAR Subarra** comp=Z,13nm,0.5s,baz=25,slow=6.5	63.73	344	P		P		06 27 12.2	-0.6
NB2	**NORSAR Subarra** baz=25,slow=6.5	63.73	344	P		P		06 27 12.2	-0.6
NOA	**NORSAR Array B** comp=Z,18nm,0.7s,baz=22,slow=6.6,SNR=84	63.73	344	P		P		06 27 12.2	-0.6
G36A	**St. Michael** baz=320	63.74	49	P		P		06 27 12.3	-0.7
VRH	**Novokhopyorsk**	64.03	322	*e*P		P		06 27 13.8	-1.0
VRH	comp=Z,50nm,0.7s			pmax		pmax			
H36A	**Jessenland, He** baz=320,SNR=7.4	64.16	50	P		P		06 27 15.8	0.0
SPMN	**Marine on St.** baz=320	64.18	49	P		P		06 27 15.2	-0.7
SPMN	**Marine on St.** comp=Z,42nm,1.0s	64.18	49	*e*P		P		06 27 15.9	0.0
J34A	**George** baz=319	64.19	52	P		P		06 27 15.8	-0.2
I35A	**Creekview Farm** baz=320	64.22	51	P		P		06 27 15.7	-0.5
J35A	**Mitford** baz=320	64.48	51	P		P		06 27 17.5	-0.5
T25A	**Trinidad** baz=318	64.51	62	P		P		06 27 17.6	-0.9
I36A	**Fitzsimmons Fa** baz=320	64.55	50	P		P		06 27 18.0	-0.3
TUC	**Tucson** baz=318	64.57	70	P		P		06 27 18.4	-0.3
K34A	**Le Mars** baz=320	64.58	52	P		P		06 27 18.0	-0.6
H37A	**Dierke Farm, C** baz=320	64.62	49	P		P		06 27 18.6	-0.2
I37A	**Lemond, Waseca** baz=320,SNR=11	64.84	50	P		P		06 27 20.2	0.0
J36A	**Seneca 1, Swea** baz=320	64.92	51	P		P		06 27 20.6	-0.2
N32A	**Stulken Farm,** baz=319	64.96	55	P		P		06 27 20.3	-0.8
VSR	**Storozhevoye**	64.96	323	*e*P		P		06 27 20.0	-0.9
VSR	comp=Z,6.0nm,0.6s			pmax		pmax			
K35A	**Storm Lake** baz=320	64.96	52	P		P		06 27 20.2	-0.8
L34A	**Svendsen Farm,** baz=320	64.99	53	P		P		06 27 20.4	-0.8
ANMO	**Albuquerque**	65.03	65	*e*P		P		06 27 21.8	-0.1
M34A	**Aspy Farms, Fr** baz=320	65.24	54	P		P		06 27 22.1	-0.8
L35A	**Bielow Farm, R** baz=320	65.28	52	P		P		06 27 22.3	-0.8
J37A	**Redenius Farm,** baz=320	65.31	50	P		P		06 27 22.4	-0.8
I38A	**Scanlan Farm,** baz=321	65.31	49	P		P		06 27 22.5	-0.7
KONO	**Kongsberg**	65.32	344	*e*P		P		06 27 22.9	-0.2
KONO	comp=Z,53nm,1.0s			pmax		pmax			
P32A	**Huiting Farm,** baz=320	65.67	56	P		P		06 27 24.9	-0.8
K37A	**Belmond** baz=320	65.68	51	P		P		06 27 24.9	-0.8
L36A	**Harm Buss Farm** baz=320	65.71	52	P		P		06 27 25.2	-0.7
J38A	**Wedel Dairy, R** baz=321	65.80	50	P		P		06 27 25.2	-1.2
MICGM	**Minsk**	65.85	332	*e*		P		06 27 26.0	-0.6
MNK	**Minsk**	65.85	332	*e*P		P		06 27 26.0	-0.6
SCHQ	**Schefferville** comp=Z,6.4nm,0.5s,baz=346,slow=7.4,SNR=14	65.90	28	P		P		06 27 26.0	-0.9
SCHQ	**Schefferville** comp=Z,36nm,0.8s	65.90	28	*e*P		P		06 27 26.4	-0.5
L37A	**Phoenix Point,** baz=321	66.12	51	P		P		06 27 27.7	-0.8
J39A	**Decorah** baz=321	66.14	49	P		P		06 27 27.9	-0.7
K38A	**Parkersburg** baz=321	66.18	50	P		P		06 27 28.1	-0.8
O34A	**Beatrice** baz=320	66.19	55	P		P		06 27 28.0	-1.0
L38A	**Oak Wood Farm,** baz=321	66.49	51	P		P		06 27 30.2	-0.7
R32A	**Long Quarter,** baz=320	66.52	57	P		P		06 27 29.8	-1.4
Q33A	**Connelly Farm,** baz=320	66.53	56	P		P		06 27 30.0	-1.2
J40A	**Soldiers Grove** baz=322	66.53	49	P		P		06 27 29.8	-1.4
M37A	**Trindle Farm,** baz=321	66.54	52	P		P		06 27 30.5	-0.7
SCIA	**State Center** comp=Z,123nm,1.0s	66.55	51	*e*P		P		06 27 31.1	-0.1
K39A	**Oelwein** baz=321	66.55	50	P		P		06 27 29.4	-1.8
P34A	**Walnut Farm, R** baz=320	66.61	55	P		P		06 27 31.0	-0.8
J41A	**Loganville** baz=322	66.89	48	P		P		06 27 32.4	-1.0
K40A	**Colesburg** baz=322	66.90	49	P		P		06 27 32.6	-0.8
M38A	**Pleasantville** baz=321	66.94	51	P		P		06 27 33.1	-0.7
L39A	**Vinton** baz=321	66.95	50	P		P		06 27 32.6	-1.2
S32A	**Newby Ranch, P** baz=320	66.96	58	P		P		06 27 33.0	-1.0
N37A	**Lee Faris, Mou** baz=321	66.96	53	P		P		06 27 33.1	-0.8
R33A	**Olander Ranch,** baz=320	66.98	57	P		P		06 27 33.1	-1.0
P35A	**Duane Minner,** baz=320	67.03	55	P		P		06 27 33.4	-1.0
GEYT	**Alibeck** comp=Z,3.2nm,0.5s,baz=58,slow=3.7,SNR=5.9	67.13	303	P		P		06 27 34.0	-1.0
K41A	**Shullsburg** baz=322	67.35	49	P		P		06 27 35.3	-1.1
P36A	**Good Intent, A** baz=321	67.36	54	P		P		06 27 35.2	-1.3
R34A	**Isabella, Hill** baz=320	67.36	56	P		P		06 27 35.1	-1.4
L40A	**Anamosa** baz=322	67.36	50	P		P		06 27 35.3	-1.1
T32A	**Huddler Ranch,** baz=320	67.36	58	P		P		06 27 35.4	-1.1
M39A	**Webster** baz=322,SNR=8.7	67.37	51	P		P		06 27 35.8	-0.7
N38A	**Joes South For** baz=321	67.40	52	P		P		06 27 35.8	-0.9
O37A	**Wolven Farm, M** baz=321	67.45	53	P		P		06 27 36.1	-0.9
L41A	**Preston** baz=322	67.68	49	P		P		06 27 37.4	-1.1
N39A	**Derby Farms, D** baz=322	67.68	51	P		P		06 27 37.7	-0.8
MSTX	**Muleshoe** baz=320	67.77	63	P		P		06 27 39.1	-0.2
MSTX	**Muleshoe** comp=Z,60nm,1.3s	67.77	63	*e*P		P		06 27 39.4	+0.1
P37A	**Lathrop** baz=321	67.80	53	P		P		06 27 38.5	-0.8
KLNR	**Kaliningrad**	67.81	336	*e*P		P		06 27 38.7	-0.3
KLNR	comp=Z,55nm,0.9s			pmax		pmax			
O38A	**Galt** baz=321	67.81	53	P		P		06 27 38.4	-0.9
MNTX	**Cornudas Mount** baz=320	68.06	66	P		P		06 27 41.1	+0.1
MNTX	**Cornudas Mount** comp=Z,52nm,1.5s	68.06	66	*e*P		P		06 27 41.5	+0.5
O39A	**Kirksville** baz=322	68.15	52	P		P		06 27 40.3	-1.2
P38A	**Dawn** baz=321	68.17	53	P		P		06 27 40.3	-1.3
VLDQ	**Val d'Or** comp=Z,65nm,1.1s	68.20	37	*e*P		P		06 27 39.6	-1.9
R36A	**Gordon, Harris** baz=321	68.21	55	P		P		06 27 40.6	-1.2
S35A	**Otter Creek Ra** baz=321	68.30	56	P		P		06 27 41.3	-1.1
U33A	**Lingo Farm, Me** baz=321	68.35	58	P		P		06 27 41.7	-1.1
BSD	**Bornholm Skovb** comp=Z,25nm,0.6s	68.56	339	⇑*i*P		P		06 27 43.4	-0.3
BSD	**Bornholm Skovb**	68.56	339	⇑*i*P		P		06 27 43.4	-0.3
BSD	comp=Z,25nm,0.6s			pmax		pmax			
O40A	**La Belle** baz=322,SNR=5.7	68.57	51	P		P		06 27 43.2	-0.9
S36A	**Lake Cedric, C** baz=321	68.63	56	P		P		06 27 43.6	-0.8
Q38A	**Cooks Store, C** baz=322	68.64	53	P		P		06 27 43.3	-1.2
P39B	**Salisbury** baz=322	68.65	52	P		P		06 27 43.7	-0.9
AKASG	**Malin Array Be** comp=Z,16nm,0.5s,baz=30,slow=6.3,SNR=43	68.76	329	P		P		06 27 44.4	-0.7
AKBB	**Malin Array Si**	68.76	329	*e*P		P		06 27 44.7	-0.3
AKBB	comp=Z,106nm,0.9s			pmax		pmax			
AKBB	**Malin Array Si** comp=Z,106nm,0.9s	68.76	329	*e*P		P		06 27 44.6	-0.3
W32A	**Sentinel** baz=320	68.77	60	P		P		06 27 45.2	-0.2
KIEV	**Kiev**	68.77	329	*c i*P		P		06 27 44.3	-0.7
KIEV	comp=Z,23nm,0.9s			pmax		pmax			
KIEV	**Kiev** comp=Z,106nm,0.9s	68.77	329	*e*P		P		06 27 44.4	-0.7
AK11	**Malin Array Si**	68.80	329	*e*P		P		06 27 44.7	-0.6
LLD	**Lille Linde**	68.91	341	*i*P		P		06 27 46.3	+0.4
LLD	**Lille Linde**	68.91	341	*i*P		P		06 27 46.3	+0.4
P40A	**Paris** baz=322	68.95	52	P		P		06 27 45.5	-0.9
S37A	**Fort Scott** baz=321	68.98	55	P		P		06 27 45.6	-1.1
O41A	**Passleys Farm,** baz=322,SNR=5.2	69.05	51	P		P		06 27 46.1	-0.9
R38A	**Fenwick Farm,** baz=322	69.11	54	P		P		06 27 45.8	-1.6
V34A	**Guthrie** baz=321	69.11	58	P		P		06 27 46.7	-0.8
W33A	**Caddo, Fort Co** baz=321	69.15	59	P		P		06 27 47.6	-0.2
X32A	**Elmer** baz=321	69.28	60	P		P		06 27 48.3	-0.3
WMOK	**Wichita Mounta** baz=321	69.31	60	P		P		06 27 48.3	-0.4
WMOK	**Wichita Mounta**	69.31	60	*e*P		P		06 27 48.4	-0.4
WMOK	comp=Z,44nm,1.2s			pmax		pmax			
WMOK	**Wichita Mounta** comp=Z,44nm,1.2s	69.31	60	*e*P		P		06 27 48.4	-0.4
Q40A	**Laux Farm, Aux** baz=322	69.36	52	P		P		06 27 48.0	-1.0
R39A	**Chumby, Stover** baz=322,SNR=5.8	69.43	53	P		P		06 27 47.9	-1.5
T37A	**Cheneyville 18** baz=322	69.44	55	P		P		06 27 48.4	-1.1
HDIL	**Hopedale** baz=323	69.44	50	P		P		06 27 48.5	-0.9
HDIL	**Hopedale** comp=Z,69nm,0.9s	69.44	50	*e*P		P		06 27 49.0	-0.4
W34A	**Bridge Creek,** baz=321	69.45	59	P		P		06 27 48.8	-0.8
V35A	**Meyer Ranch, C** baz=321	69.52	58	P		P		06 27 49.1	-0.9
NCK	**Nalchik**	69.53	316	*e*P		P		06 27 50.2	+0.2
NCK	comp=Z,11nm,0.9s			pmax		pmax			
KIV	**Kislovodsk**	69.54	317	*e*P		P		06 27 49.9	-0.2
KIV	comp=Z,9.0nm,1.0s			pmax		pmax			
S38A	**Stockton** baz=322	69.54	54	P		P		06 27 48.6	-1.5
KBZ	**Khabaz** comp=Z,8.3nm,0.7s,baz=74,slow=2.8,SNR=15	69.63	316	P		P		06 27 50.6	+0.1
P42A	**Winchester** baz=323	69.72	51	P		P		06 27 49.9	-1.3
GKP	**Gorka Klasztor**	69.75	337	*e*P		P		06 27 51.7	+0.7
GKP	**Gorka Klasztor**	69.75	337	*e*P		P		06 27 51.7	+0.7
S39A	**Bolivar** baz=322	69.78	54	P		P		06 27 50.0	-1.6
T38A	**Diamond** baz=322	69.81	55	P		P		06 27 50.7	-1.1
R40A	**Maddies Statio** baz=322	69.82	53	P		P		06 27 50.6	-1.2
U37A	**Salina** baz=322	69.89	56	P		P		06 27 51.5	-0.8
TUL1	**Leonard** baz=322	69.94	57	P		P		06 27 51.7	-0.9
Y33A	**Hilltop Ranch,** baz=321	69.95	60	P		P		06 27 51.6	-1.1
V36A	**Jenks** baz=322	69.96	57	P		P		06 27 51.9	-0.8
W35A	**Tecumseh** baz=321	69.97	58	P		P		06 27 52.0	-0.8
ZEI	**Tsey**	69.98	315	*e*P		P		06 27 52.0	-1.0
ZEI	comp=Z,20nm,0.6s			pmax		pmax			
Q42A	**Golden Eagle** baz=323,SNR=8.7	70.16	51	P		P		06 27 53.5	-0.4
BEL	**Belsk**	70.18	334	*e*P		P		06 27 54.9	+1.2
BEL	**Belsk**	70.18	334	*e*P		P		06 27 54.9	+1.2
U38A	**Gravette** baz=322	70.23	56	P		P		06 27 53.6	-0.8

S40A	Lebanon	70.25	54	P		P	06 27 53.3	-1.2
	baz=322,SNR=5.7							
V37A	Hulbert	70.29	56	P		P	06 27 53.7	-1.0
	baz=322							
W36A	Wetumka	70.32	58	P		P	06 27 54.3	-0.6
	baz=322							
Y34A	Reagan Ranch,	70.44	60	P		P	06 27 55.2	-0.5
	baz=321							
ABTX	Abilene, Hawle	70.48	62	P		P	06 27 55.9	-0.1
	baz=321							
Q43A	New Douglas	70.53	51	P		P	06 27 54.6	-1.5
	baz=323							
HHAR	Hobbs	70.58	55	*e*P		P	06 27 55.5	-1.1
	comp=Z,46nm,1.0s							
SFIN	Lafayette	70.58	48	P		P	06 27 55.4	-1.0
	baz=324							
T40A	Mansfield	70.60	54	P		P	06 27 55.3	-1.4
	baz=322							
S41A	Jillco Farms,	70.63	53	P		P	06 27 55.5	-1.2
	baz=323,SNR=5.2							
V38A	Canehill	70.67	56	P		P	06 27 56.2	-0.9
	baz=322,SNR=11							
W37B	Quinton	70.72	57	P		P	06 27 56.7	-0.7
	baz=322							
U39A	Green Forest	70.73	55	P		P	06 27 56.3	-1.1
	baz=322,SNR=20							
TX31	Lajitas Ar. Si	70.81	67	*e*P		P	06 27 58.0	-0.1
TX31				*e*P		P	06 27 58.5	+0.3
TXAR	Lajitas Array	70.82	67	P		P	06 27 58.2	0.0
	comp=Z,2.4nm,0.9s,baz=300,slow=4.6,SNR=24							
133A	Hamilton Ranch	70.88	61	P		P	06 27 57.3	-1.1
	baz=321							
T41A	Mountain View	71.05	53	P		P	06 27 58.4	-1.0
	baz=323,SNR=5.8							
U40A	Yellville	71.06	55	P		P	06 27 58.2	-1.2
	baz=322,SNR=10							
V39A	Pettigrew	71.08	55	P		P	06 27 58.7	-0.9
	baz=322							
X37A	Clayton	71.19	57	P		P	06 27 59.5	-0.6
	baz=322							
LMQ	La Malbaie	71.19	33	*e*P		P	06 27 59.5	-0.5
W38A	Poteau	71.24	57	P		P	06 27 60.0	-0.5
	baz=322							
Y36A	Durant	71.25	59	P		P	06 27 59.6	-1.0
	baz=322							
233A	Rising Star	71.35	62	P		P	06 28 00.5	-0.7
	baz=321							
134A	White-Moore Ra	71.35	61	P		P	06 28 00.6	-0.6
	baz=322							
R44A	Waltonville	71.38	51	P		P	06 28 00.5	-0.7
	baz=324,SNR=5.9							
S43A	Fulton Ridge,	71.45	52	P		P	06 28 00.9	-0.9
	baz=323							
V40A	Witts Springs	71.51	55	P		P	06 28 01.2	-1.0
	baz=323							
W39A	Magazine	71.51	56	P		P	06 28 01.2	-0.9
	baz=322							
U41A	Viola	71.53	54	P		P	06 28 01.0	-1.2
	baz=323							
KWP	Kalwaria Pacla	71.65	332	*e*P		P	06 28 03.8	+1.0
KWP	Kalwaria Pacla	71.65	332	*e*P		P	06 28 03.8	+1.0
S44A	Carbondale	71.74	51	P		P	06 28 02.6	-0.9
	baz=324							
GNI	Garni	71.76	313	*e*P		P	06 28 04.6	+0.8
GNI				pmax	pmax			
	comp=Z,33nm,0.8s							
333A	Richland Sprin	71.84	62	P		P	06 28 03.5	-0.7
	baz=322							
U42A	Revenden	71.86	54	P		P	06 28 03.8	-0.4
	baz=323							
V41A	Mountainview	71.86	55	P		P	06 28 02.9	-1.3
	baz=323,SNR=6.4							
W40A	Ferguson Farm,	71.87	56	P		P	06 28 03.4	-0.9
	baz=323							
X39A	Fountain Ranch	71.89	57	P		P	06 28 03.4	-1.0
	baz=322							
OJC	Ojcow	71.91	334	*e*P		P	06 28 04.8	+0.5
OJC	Ojcow	71.91	334	*e*P		P	06 28 04.0	-0.3
OJC				pmax	pmax			
	comp=Z,142nm,1.1s							
OJC	Ojcow	71.91	334	*e*P		P	06 28 04.0	-0.3
	comp=Z,142nm,1.1s							
JCT	Junction City	72.06	63	P		P	06 28 05.0	-0.6
	baz=321							
S45A	Carrier Mills	72.07	51	P		P	06 28 04.7	-0.7
	baz=324							
MIAR	Mount Ida	72.13	56	P		P	06 28 05.1	-0.8
	baz=323,SNR=5.1							
MIAR	Mount Ida	72.13	56	*e*P		P	06 28 05.3	-0.6
MIAR				pmax	pmax			
	comp=Z,42nm,1.2s							
MIAR	Mount Ida	72.13	56	*e*P		P	06 28 05.3	-0.6
	comp=Z,42nm,1.2s							
WHAR	Wooly Hollow	72.19	55	*e*P		P	06 28 05.5	-0.6
	comp=Z,84nm,1.3s							
KSP	Ksiaz	72.21	337	*e*P		P	06 28 06.5	+0.4
KSP	Ksiaz	72.21	337	*e*P		P	06 28 06.5	+0.4
V42A	Cord	72.22	54	P		P	06 28 05.3	-1.0
	baz=323							
433A	Art	72.22	63	P		P	06 28 06.1	-0.4
	baz=322							
334A	Lometa	72.23	62	P		P	06 28 06.1	-0.4
	baz=322							
STHS	Stebnicka Huta	72.25	333	*e*P		P	06 28 07.6	+1.2
STHS				*es*P		sP	06 28 27.0	+0.3
W41B	Gary Mavity, V	72.30	55	P		P	06 28 06.1	-0.8
	baz=323,SNR=5.6							
PARMO	Parma	72.33	52	*e*P		P	06 28 07.2	+0.2
Y39A	Lockesburg	72.35	57	P		P	06 28 06.7	-0.5
	baz=322							
NIE	Niedzica	72.51	334	*e*P		P	06 28 08.8	+0.9
NIE	Niedzica	72.51	334	*e*P		P	06 28 08.8	+0.9
CLL	Collm	72.53	339	⇑*i*P		P	06 28 08.0	0.0
	comp=Z,34nm,1.0s							
CLL				*e*			06 28 20.0	
CLL				*e*PcP		pP	06 28 23.0	+0.5
CLL	Collm	72.53	339	⇑*i*P		P	06 28 08.0	0.0
CLL				*e*			06 28 20.0	
CLL				pmax	pmax			
	comp=Z,34nm,1.0s							
CLL	Collm	72.53	339	*e*P		P	06 28 08.2	+0.2
	comp=Z,166nm,1.1s							
X40A	Basin Creek Fa	72.55	56	P		P	06 28 07.7	-0.6
	baz=323							
UPC	Upice	72.59	337	*e*P		P	06 28 09.1	+0.7
UPC	Upice	72.59	337	*e*P		P	06 28 09.1	+0.7
434A	Burnet	72.62	62	P		P	06 28 08.2	-0.7
	baz=322							
CRVS	Cervenica-Dubn	72.66	333	*e*P		P	06 28 09.4	+0.6
DPC	Dobruska-Polom	72.66	337	*e*P		P	06 28 10.0	+1.2
DPC	Dobruska-Polom	72.66	337	*e*P		P	06 28 10.0	+1.2
UZH	Uzhgorod	72.67	332	*e*P		P	06 28 09.0	+0.2
UZH				*e*			06 28 23.0	
OKC	Ostrava-Krasne	72.69	335	*e*P		P	06 28 09.4	+0.5
OKC	Ostrava-Krasne	72.69	335	*e*P		P	06 28 09.4	+0.5
BUR08	Bucovina Ar. S	72.70	330	*e*P		P	06 28 09.3	+0.2
X41A	Kaden, Bauxite	72.70	56	P		P	06 28 08.6	-0.6
	baz=323							
BURAR	Bucovina Array	72.72	330	⇓*i*P		P	06 28 09.5	+0.2
BRG	Berggiesshubel	72.73	338	*e*P		P	06 28 09.2	+0.1
	comp=Z,12nm,1.0s							
BRG	Berggiesshubel	72.73	338	*e*P		P	06 28 09.2	+0.1
BRG				pmax	pmax			
	comp=Z,12nm,1.0s							
533A	Kerrville	72.79	63	P		P	06 28 09.4	-0.5
	baz=322							
KRLC	Kraliky	72.81	336	*e*P		P	06 28 10.5	+0.8
KRLC	Kraliky	72.81	336	*e*P		P	06 28 10.5	+0.8
MORC	Moravsky Berou	72.89	336	⇑*i*P		P	06 28 10.7	+0.5
MORC	Moravsky Berou	72.89	336	*e*P		P	06 28 10.6	+0.4
MORC	Moravsky Berou	72.89	336	*e*P		P	06 28 10.6	+0.4
	comp=Z,389nm,1.0s							
PVCC	Panska Ves	72.91	338	*e*P		P	06 28 11.0	+0.8
PVCC	Panska Ves	72.91	338	*e*P		P	06 28 11.0	+0.8
LANS	Liptovska Anna	72.97	334	*e*P		P	06 28 12.2	+1.5
534A	Blanco	73.12	63	P		P	06 28 11.3	-0.5
	baz=322							
WTSB	Winterswijk	73.13	343	*e*P		P	06 28 12.0	+0.5
	comp=Z,38nm,0.6s							
Y41A	Eaglette Beard	73.14	56	P		P	06 28 11.1	-0.7
	baz=323							
Z40A	Long Farm, Mag	73.24	57	P		P	06 28 12.1	-0.3
	baz=323							
KECS	Kecovo	73.31	333	*e*P		P	06 28 13.0	+0.4
PRU	Pruhonice	73.42	338	*e*P		P	06 28 14.1	+0.8
PRU	Pruhonice	73.42	338	*e*P		P	06 28 14.1	+0.8
GOPC	GO Pecny, Ondr	73.43	337	*e*P		P	06 28 13.9	+0.5
GOPC	GO Pecny, Ondr	73.43	337	*e*P		P	06 28 13.9	+0.5
VRAC	Vranov	73.56	336	⇑*i*P		P	06 28 15.0	+0.9
Y42A	Garnett, Star	73.59	55	P		P	06 28 14.3	-0.2
	baz=323							
NKC	Novy Kostel	73.66	339	*e*P		P	06 28 15.1	+0.4
NKC	Novy Kostel	73.66	339	*e*P		P	06 28 15.1	+0.4
832A	Faith Ranch, C	73.67	65	P		P	06 28 14.9	-0.2
	baz=322							
WVT	Waverly	73.67	51	*e*P		P	06 28 14.9	0.0
WVT				pmax	pmax			
	comp=Z,29nm,0.9s							
WVT	Waverly	73.67	51	*e*P		P	06 28 14.9	0.0
	comp=Z,29nm,0.9s							
TLCR		73.72	326	⇓*i*P		P	06 28 15.4	+0.3
VYHS	Vyhne	73.74	334	*e*P		P	06 28 15.9	+0.7
NATX	Nacogdoches	73.78	59	P		P	06 28 15.5	-0.2
	baz=323							
VRI	Vrincioaia	73.81	328	⇑*i*P		P	06 28 15.5	-0.1
PLOR	Plostina	73.84	328	⇑*i*P		P	06 28 16.2	+0.3
CFR	Carcaliu	73.95	327	⇑*i*P		P	06 28 16.2	-0.2
PSZ	Piszkesteto	73.99	333	⇑*i*P		P	06 28 18.2	+1.5
PSZ	Piszkesteto	73.99	333	*e*P		P	06 28 17.8	+1.1
PSZ				pmax	pmax			
	comp=Z,111nm,1.0s							
PSZ	Piszkesteto	73.99	333	*e*P		P	06 28 17.8	+1.1
	comp=Z,111nm,1.0s							
CJR	Cluj-Napoca	74.02	330	⇑*i*P		P	06 28 17.7	+0.8
DOPR	Dopca	74.14	329	⇑*i*P		P	06 28 17.9	+0.3
DRGR		74.21	331	⇑*i*P		P	06 28 18.3	+0.3
Y44A	Strider, Charl	74.27	54	P		P	06 28 18.1	-0.4
	baz=324							
X45A	UM Field Stati	74.30	53	P		P	06 28 18.0	-0.7
	baz=324							
O56A	Blue Knob Stat	74.36	43	P		P	06 28 18.0	-0.9
	baz=328							
MLR	Muntele Rosu	74.39	328	⇑*i*P		P	06 28 19.8	+0.6
MLR	Muntele Rosu	74.39	328	*e*P		P	06 28 19.6	+0.4
MLR				pmax	pmax			
	comp=Z,130nm,0.9s							
MLR	Muntele Rosu	74.39	328	*e*P		P	06 28 19.6	+0.4
	comp=Z,130nm,0.9s							
HGN	Heimansgroeve	74.44	343	*e*P		P	06 28 19.6	+0.4
	comp=Z,266nm,1.1s							
KHC	Kasperske Hory	74.45	338	*e*P		P	06 28 20.0	+0.7
KHC	Kasperske Hory	74.45	338	*e*P		P	06 28 20.1	+0.7
KHC				pmax	pmax			
	comp=Z,46nm,1.1s							
KHC	Kasperske Hory	74.45	338	*e*P		P	06 28 20.1	+0.7
	comp=Z,46nm,1.1s							
LMN	Caledonia Moun	74.47	31	*e*P		P	06 28 19.2	-0.2
	comp=Z,32nm,0.8s							
TLB	Topalu	74.51	326	⇑*i*P		P	06 28 18.8	-0.9
MEM	Membach	74.58	343	P		P	06 28 20.5	+0.5
	comp=Z,37nm,0.9s							
933A	Laredo	74.58	65	P		P	06 28 21.2	+0.8
	baz=322							
UCC	Uccle	74.67	344	P		P	06 28 20.1	-0.4
Y45A	Yeager Farm, C	74.68	54	P		P	06 28 20.6	-0.3
	baz=324							
GEC2	GERESS Array S	74.69	338	*e*P		P	06 28 20.7	-0.1
GEC2				pmax	pmax			
	comp=Z,83nm,1.2s							
GEC2	GERESS Array S	74.69	338	*e*P		P	06 28 20.6	-0.1
	comp=Z,83nm,1.2s							
GERES	GERESS Array B	74.69	338	P		P	06 28 21.1	+0.4
	comp=Z,2.5nm,0.3s,baz=36,slow=3.4,SNR=29							
VOIR		74.72	329	⇑*i*P		P	06 28 21.6	+0.6
242A	Grayson	74.83	57	P		P	06 28 21.3	-0.4
	baz=324							
DZM	Mont Dzumac	74.83	174	*e*S		S	06 38 01.7	+7.1
	comp=Z,379nm,24.8s							
DZM	Mont Dzumac	74.83	174	*e*LR		LR	06 51 36.0	
	comp=Z,2μm,26.1s							
BCLA	Clavier	74.88	344	P		P	06 28 21.8	0.0
N59A	State Game Lan	74.93	40	P		P	06 28 20.8	-1.4
	baz=329							
SNF	Seneffe	74.97	344	P		P	06 28 21.8	-0.5
Y46A	Houston	75.00	53	P		P	06 28 22.2	-0.5
	baz=324							
934A	Benavides	75.00	64	P		P	06 28 24.1	+1.3
	baz=322							
Z45A	Winona	75.00	54	P		P	06 28 22.4	-0.4
	baz=324							
SULR		75.01	328	⇑*i*P		P	06 28 22.5	-0.1
CONA	Conrad Observa	75.03	336	*i* P		P	06 28 23.5	+0.7
	comp=Z,21nm,1.1s,SNR=9.8							
SWET	Sewanee	75.31	51	*e*P		P	06 28 23.9	-0.6
	comp=Z,14nm,0.9s							
DOU	Dourbes	75.31	344	P		P	06 28 24.5	+0.3
034A	Hebbronville	75.33	65	P		P	06 28 25.9	+1.2
	baz=322							
Y47A	UCPARC, Winfie	75.47	53	P		P	06 28 24.4	-1.0
	baz=325							
MOA	Moln	75.49	337	*i* P		P	06 28 22.8	-2.5
	comp=Z,8.8nm,1.1s							
244A	Avery, Jackson	75.58	56	P		P	06 28 25.6	-0.5
	baz=324							
BZS	Buzias	75.60	331	⇑*i*P		P	06 28 25.9	-0.1
ARSA	Arzberg	75.74	336	*i* P		P	06 28 27.5	+0.8
	comp=Z,16nm,0.9s,SNR=6.2							
035A	Encino	75.75	64	P		P	06 28 27.6	+0.5
	baz=322							
WRAB	Tennant Creek	75.82	205	*e*P		P	06 28 26.2	-1.2
WRAB				pmax	pmax			
	comp=Z,10.0nm,1.0s							
WRA	Warramunga Arr	75.83	205	P		P	06 28 26.8	-0.7
	comp=Z,3.1nm,0.8s,baz=19,slow=6.0,SNR=23							
146A	Union	75.91	54	P		P	06 28 27.2	-0.7
	baz=324							
Z47A	Carrollton	75.94	53	P		P	06 28 27.4	-0.6
	baz=325							
Z48A	Northport	76.04	53	P		P	06 28 27.7	-1.0
	baz=325							
147A	Livingston	76.27	54	P		P	06 28 29.2	-0.7
	baz=325							
BFO	Black Forest	76.33	341	*i* P		P	06 28 30.7	+0.6
BFO	Black Forest	76.33	341	*e*P		P	06 28 30.5	+0.4
	comp=Z,66nm,1.1s							
MDVR	Moldovita	76.33	331	⇑*i*P		P	06 28 29.8	-0.4
SOKA	Soboth	76.40	336	*i* P		P	06 28 31.1	+0.5
	comp=Z,24nm,1.1s,SNR=11							
KBA	Koelnbreinsper	76.43	337	*i* P		P	06 28 32.1	+1.2
	comp=Z,61nm,0.9s,SNR=28							
WATA	Walderlim	76.59	338	*i* P		P	06 28 30.4	-1.3
	comp=Z,5.6nm,0.5s							
RETA	Reutte	76.62	339	*i* P		P	06 28 31.2	-0.6
	comp=Z,10nm,1.0s							
WTTA	Wattenberg	76.64	338	*i* P		P	06 28 32.6	+0.5
	comp=Z,20nm,1.4s,SNR=5.5							
OBKA	Obir	76.67	336	*i* P		P	06 28 33.3	+1.2
	comp=Z,30nm,1.2s,SNR=6.3							
MOTA	Moosalm	76.69	339	*i* P		P	06 28 32.6	+0.3
	comp=Z,23nm,1.1s,SNR=7.0							
MYKA	Terra Mystica	76.78	337	*i* P		P	06 28 32.2	-0.5
	comp=Z,6.1nm,0.6s							
ABTA	Abfaltersbach	76.93	338	*i* P		P	06 28 34.5	+0.8
	comp=Z,28nm,1.0s,SNR=8.0							
ANTO	Ankara	76.93	321	*e*P		P	06 28 33.1	-0.7
ANTO				pmax	pmax			
	comp=Z,30nm,0.7s							
ANTO	Ankara	76.93	321	*e*P		P	06 28 33.1	-0.7
	comp=Z,30nm,0.7s							
DAVA	Damuels	77.00	340	*i* P		P	06 28 31.4	-2.7
	comp=Z,8.9nm,0.9s							
FETA	Feichten	77.07	339	*i* P		P	06 28 35.7	+1.2
	comp=Z,19nm,1.1s,SNR=8.2							
KMSC	Kings Mountain	77.48	47	P		P	06 28 36.0	-0.7
	baz=327							
FUORN	Ofenpass-Fuorn	77.56	339	*e*P		P	06 28 37.0	-0.3
	comp=Z,111nm,1.1s							
TUE	Stuetta	77.89	340	*e*P		P	06 28 39.2	0.0
	comp=Z,100nm,0.9s							
SENIN	Lac Senin/Sane	78.41	341	*e*P		P	06 28 42.9	+0.8
	comp=Z,120nm,1.6s							
VAY	Valandovo	79.21	329	*i* P		P	06 28 45.3	-1.0
AS01	Alice Springs	79.50	204	*e*P		P	06 28 47.9	+0.1
AS31	Alice Springs	79.51	204	*e*P		P	06 28 48.3	+0.4
	comp=Z,7.1nm,1.2s							
ASAR	Alice Springs	79.51	204	P		P	06 28 48.0	+0.2
	comp=Z,2.8nm,0.6s,baz=15,slow=5.0,SNR=44							
TIGA	Tifton	79.53	51	P		P	06 28 46.5	-1.6
	baz=327							
TAOE	Nuku Hiva Isla	79.71	120	*e*LR		LR	06 53 48.6	
	comp=Z,1μm,34.0s							
OHR	Ohrid	79.95	330	*i* P		P	06 28 49.9	-0.5
SSB	Saint Sauveur	79.98	343	*e*P		P	06 28 51.0	+0.6
SSB				pmax	pmax			
	comp=Z,50nm,0.9s							
SSB	Saint Sauveur	79.98	343	*e*P		P	06 28 51.0	+0.6
	comp=Z,50nm,0.9s							
TIR	Tirane	80.02	331	*e*P		P	06 28 51.3	+0.7
TIR				pmax	pmax			
	comp=Z,116nm,0.8s							
TIR	Tirane	80.02	331	*e*P		P	06 28 51.3	+0.7
	comp=Z,116nm,0.8s							
CSS	Mathiatis	80.98	318	*e*P		P	06 28 55.6	-0.3
	comp=Z,29nm,0.8s							
PPT2	Papeete2	82.59	132	*e*S		S	06 39 24.7	+7.2
	comp=Z,281nm,27.2s							
PPT2	Papeete2	82.59	132	*e*LR		LR	06 54 59.3	
	comp=Z,3μm,25.0s,baz=327							
LAST	Lasithi	83.80	324	*e*P		P	06 29 10.0	-0.7
	comp=Z,164nm,1.0s							
ES19	SONSECA Array	86.75	348	*e*P		P	06 29 25.4	+0.2
ESDC	Sonseca Array	86.78	348	P		P	06 29 25.1	-0.4
	comp=Z,2.1nm,0.6s,baz=359,slow=5.0,SNR=11							
TBI	Tubuai	87.69	135	*e*S		S	06 40 14.0	+6.4
	comp=Z,637nm,28.8s							
TBI	Tubuai	87.69	135	*e*LR		LR	06 57 28.2	
	comp=Z,2μm,24.0s,baz=331							
TBI	Tubuai	87.69	135	*e*T		T	08 06 28.5	
	comp=Z,3.6nm,0.2s							
KEST	Kesra	88.13	336	P		P	06 29 30.9	-1.2
	comp=Z,4.1nm,0.8s,baz=276,slow=4.0,SNR=4.8							
RKT	Rikitea	94.33	123	*e*S		S	06 41 09.6	+1.5
	comp=Z,263nm,26.5s							
RKT	Rikitea	94.33	123	*e*LR		LR	07 00 37.6	
	comp=Z,1μm,25.5s,baz=323							
RKT	Rikitea	94.33	123	*e*T		T	08 14 41.3	
	comp=Z,2.0nm,0.2s							
TORD	Torodi Ar. Bea	111.64	337	PKiKP		PKiKP	06 35 14.9	-0.9
	comp=Z,0.4nm,0.4s,baz=16,slow=2.6,SNR=7.8							
DBIC	Dimbokro	119.30	343	PKP		PKPdf	06 35 29.9	-0.6
	comp=Z,4.7nm,0.8s,baz=15,slow=5.7,SNR=4.5							
DBIC	Dimbokro	119.30	343	PKIKP		PKPdf	06 35 30.0	-0.6
LPAZ	La Paz	127.65	64	PKP		PKPdf	06 35 47.6	+0.4
	comp=Z,0.6nm,0.7s,baz=0.3,slow=6.6,SNR=4.5							
PLCA	Paso Flores	144.10	91	PKP		PKPbc	06 36 14.3	-0.1
	comp=Z,2.9nm,0.8s,baz=347,slow=2.9,SNR=6.0							

BJI ***26*** *06:17:33.6,52.°96N×160.°28E,h43km,mb5.2/75,mB5.2/68, Ms5.4/86,Ms7 5.3/81*

KRSC ***26*** *06:17:36.3±0.9,52.°72N×160.°12E,h25km±12km,ML5.5, FELT [III-IV] at Petropavlovsk, Institute, Ribachiy, Pionersky; [III] at Nikolaevka, river Karimshina (stationary KF GS); [II-III] at Svetliy.*

NEIC ***26*** *06:17:37.5±0.1,52.°99N×159.°79E,h33km,mb5.4/262, ME5.1,MS5.1/147,MW5.6,MW5.4,Error ellipse: s-maj=3.9km s-min=2.1km az=162.0,Moment Tensor Solution. s75 Moment tensor: Scale 10¹⁷Nm; Mrr1.43; Mθθ-0.29; Mφφ-1.14; Mrθ0.53; Mθφ-0.40; Mφr0.54; Best double couple: M₀1.60000×10¹⁷ NP1:φ₀193.00000°, δ32.00000°,λ74.00000°. NP2:φ₀32.00000°,δ59.00000°, λ100.00000°. Principal axes: T 1.6400, Plg74.0000°, Azm327.0000°; N -0.1700, Plg8.0000°, Azm207.0000°; P -1.4700, Plg14.0000°, Azm115.0000°; Broadband fault plane solution: P waves. NP1:φ₀241.00000°,δ36.00000°, λ121.00000°. NP2:φ₀25.00000°,δ60.00000°,λ70.00000°. Principal axes: T Plg68.0000°, Azm254.0000°; N Plg0.0000°, Azm0.0000°; P Plg13.0000°, Azm129.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

GCMT ***26*** *06:17:37.5±0.1,52.°74N×160.°28E,h41km,MW5.6/115, Moment Tensor Solution. s110,c224; s115,c276; Duration: 1s5 Moment tensor: Scale 10¹⁷Nm; Mrr2.46±.04; Mθθ-0.90±.03; Mφφ-1.56±.03; Mrθ0.70±.03; Mθφ-1.23±.02; Mφr1.02±.03; Best double couple: M₀2.77200×10¹⁷ NP1:φ₀36.00000°,δ58.00000°, λ88.00000°. NP2:φ₀219.00000°,δ32.00000°,λ92.00000°. Principal axes: T 2.7510, Plg77.0000°, Azm301.0000°; N 0.0430, Plg1.0000°, Azm37.0000°; P -2.7930, Plg13.0000°, Azm127.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISCJB ***26*** *06:17:38.4±0.3,52.°89N×0.°02×159.°98E±0.°02,h61km±2km, mb5.4/404 Error ellipse: s-maj=3.7km s-min=1.8km az=169.7*

NEIC ***26*** *06:17:38.0±0.0,52.°98N×159.°88E,h43km,Moment Tensor Solution. s24 Moment tensor: Scale 10¹⁷Nm; Mrr1.53; Mθθ-0.90; Mφφ-0.64; Mrθ1.04; Mθφ-0.31; Mφr2.04; Best double couple: M₀2.70000×10¹⁷ NP1:φ₀31.00000°, δ75.00000°,λ84.00000°. NP2:φ₀235.00000°,δ16.00000°, λ113.00000°. Principal axes: T 2.9100, Plg58.0000°, Azm292.0000°; N -0.5600, Plg6.0000°, Azm32.0000°; P -2.3400, Plg30.0000°, Azm126.0000°;*

MOS ***26*** *06:17:39.1±1.0,52.°91N×159.°77E,h67km,mb5.6/85, MS5.2/61 Error ellipse: s-maj=6.0km s-min=4.0km az=91.3*

MOS Felt (III-IV) at Petropavlovsk-Kamchatskiy, Institut, Ribachiy, Pionerskiy; (III) at Nikolaevka; (II-III) at Svetlyi.

IDC ***26*** *06:17:41.9±1.2,52.°93N×159.°89E,h76km±9km,mb4.8/39, mb1 4.9/43,mb1mx4.8/51,mbtmp5.1/43,MS4.9/5, Ms1 4.9/5,ms1mx4.7/11,Error ellipse: s-maj=10.7km s-min=7.7km az=137.0*

ISC 26 06:17:39.4±0.3,52.°89N±0.°04×159.°98E±0.°03,h55km±2km, h54km:pP-P,n1546,σ1s46/1631,mb5.4/428,MS5.1/200, 136C-18D,Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h	m	s	Res ISC
SPN	Mys Shipunski	0.21	7	PN		Pn		06 17 44.7			-3.7
SPN	Mys Shipunski	0.21	7	P		Pn		06 17 44.7			-3.7
NLC	Nalytchevo	0.47	306	PN		Pn		06 17 49.7			-1.0
NLC				S		Sn		06 17 58.3			-0.5
NLC	Nalytchevo	0.47	306	*e*P		Pn		06 17 49.7			-1.0
NLC				*e*S		Sn		06 17 58.3			-0.5

	comp=N,1.2nm,0.3s,baz=145,slow=9.0,SNR=9.5								
MA2					LR	LR	06 23 37.2		
	comp=N,16μm,18.1s,baz=128,slow=42								
SMY	**Shemya**	**8.56**	**85**	*e*PN		**Pn**	**06 19 38.1**	**-2.4**
SMY	**Shemya**	**8.56**	**85**	*e*Pn		**Pn**	**06 19 38.1**	**-2.4**
SMY				*e*Sn		**Sn**	**06 21 08.4**	**-7.0**
SEY	**Seymchan**	**10.84**	**341**	P		**Pn**	**06 20 15.9**	**+4.3**
	comp=N,0.4nm,0.3s,baz=145,slow=11,SNR=15								
SEY	**Seymchan**	**10.84**	**341**	*i* PN		**Pn**	**06 20 12.2**	**+0.6**
TYV	**Tymovskoe**	**10.90**	**266**	*e*PN		**Pn**	**06 20 17.0**	**+4.5**
TYV				*e*S		**Sn**	**06 22 18.0**	**+5.1**
TYV					pmax	pmax			
	comp=E,112nm,1.2s								
TYV					pmax	pmax			
	comp=Z,380nm,1.4s								
TYV					pmax	pmax			
	comp=E,3μm,4.0s								
TYV					smax	smax			
	comp=E,7μm,7.0s								
TYV					MLR	MLR			
	comp=E,16μm,14.0s								
KUR	**Kuril'sk**	**11.03**	**231**	*i* PN		**Pn**	**06 20 14.9**	**+0.6**
NKL	**Nikolayevsk**	**11.63**	**279**	*i* PN		**Pn**	**06 20 26.0**	**+3.6**
NKL					pmax	pmax			
	comp=E,950nm,3.0s								
NKL					pmax	pmax			
	comp=Z,950nm,3.0s								
NKL					pmax	pmax			
	comp=E,2μm,6.0s								
NKL					pmax	pmax			
	comp=Z,1μm,6.0s								
NKL					MLR	MLR			
	comp=N,6μm,16.0s								
NKL					MLR	MLR			
	comp=E,9μm,16.0s								
NKL					MLR	MLR			
	comp=Z,13μm,18.0s								
YSS	**Yuzh-Sakhalins**	**12.58**	**249**	*o*e*i*PN		**Pn**	**06 20 37.1**	**+1.7**
YSS				*e*S		**Sn**	**06 22 56.0**	**+2.2**
YSS					pmax	pmax			
	comp=Z,1μm,7.0s								
YSS					pmax	pmax			
	comp=N,700nm,8.0s								
YSS					pmax	pmax			
	comp=E,1μm,6.0s								
YSS					pmax	pmax			
	comp=Z,50nm,1.5s								
YSS					MLR	MLR			
	comp=Z,7μm,14.0s								
YSS					MLR	MLR			
	comp=N,4μm,15.0s								
YSS					MLR	MLR			
	comp=E,5μm,18.0s								
YSS	**Yuzh-Sakhalins**	**12.58**	**249**	*e*Pn		**Pn**	**06 20 37.6**	**+2.2**
YUK	**Yuzh-Kuril'sk**	**12.88**	**232**	*e*PN		**Pn**	**06 20 39.4**	**-0.1**
ASAJ	**Asahikawa**	**14.46**	**240**	P		**Pn**	**06 21 00.9**	**+0.1**
	comp=E,6.5nm,0.3s,baz=38,slow=11,SNR=14								
BILL	**Bilibino**	**15.50**	**9**	*e*P		**Pn**	**06 21 14.7**	**+0.6**
BILL					pmax	pmax			
	comp=Z,129nm,0.8s								
BILL	**Bilibino**	**15.50**	**9**	*e*Pn		**Pn**	**06 21 14.7**	**+0.6**
	comp=Z,129nm,0.8s								
ERM	**Erimo**	**15.70**	**233**	*e*P		**Pn**	**06 21 16.5**	**-0.3**
ERM					pmax	pmax			
	comp=Z,64nm,0.6s								
ERM	**Erimo**	**15.70**	**233**	*e*Pn		**Pn**	**06 21 16.5**	**-0.3**
	comp=Z,64nm,0.6s								
HABR	**Khabarovsk**	**16.37**	**264**	*c*e*i*P		**Pn**	**06 21 22.4**	**-2.9**
HABR				S		**Sn**	**06 24 22.4**	**-3.5**
HABR					pmax	pmax			
	comp=N,28nm,1.6s								
HABR					pmax	pmax			
	comp=E,92nm,1.6s								
HABR					pmax	pmax			
	comp=Z,101nm,1.6s								
HABR					MLR	MLR			
	comp=Z,8μm,15.0s								
KLR	**Kul'dur**	**18.07**	**270**	P		**Pn**	**06 21 47.4**	**+1.1**
	comp=Z,5.9nm,0.3s,baz=54,slow=7.6,SNR=25								
KLR	**Kul'dur**	**18.07**	**270**	*c i*P		**P**	**06 21 44.8**	**-1.3**
YAK	**Yakutsk**	**18.52**	**312**	P		**P**	**06 21 50.1**	**-0.8**
	comp=Z,0.0nm,0.3s,baz=103,slow=2.4,SNR=11								
YAK	**Yakutsk**	**18.52**	**312**	*e*P		**P**	**06 21 49.8**	**-1.1**
YAK				*e*S		**S**	**06 25 18.5**	**-0.5**
YAK					pmax	pmax			
	comp=Z,179nm,1.0s								
YAK					pmax	pmax			
	comp=E,147nm,1.3s								
YAK					pmax	pmax			
	comp=N,65nm,1.2s								
YAK					pmax	pmax			
	comp=Z,1μm,2.3s								
YAK					pmax	pmax			
	comp=E,964nm,2.2s								
YAK					pmax	pmax			
	comp=N,538nm,2.3s								
YAK					smax	smax			
	comp=N,617nm,2.3s								
YAK					smax	smax			
	comp=E,383nm,2.0s								
YAK					MLR	MLR			
	comp=E,5μm,16.0s								
YAK					MLR	MLR			
	comp=E,7μm,17.0s								
YAK					MLR	MLR			
	comp=Z,7μm,14.0s								
YAK	**Yakutsk**	**18.52**	**312**	*e*P		**P**	**06 21 51.0**	**+0.1**
	comp=Z,177nm,0.8s								
NIKH	**Nikolski High**	**18.72**	**77**	*e*P		**Pn**	**06 21 54.4**	**+0.3**
	comp=Z,416nm,1.2s								
UNV	**Unalaska Valle**	**19.92**	**74**	*e*P		**P**	**06 22 07.3**	**+1.1**
	comp=Z,156nm,1.2s								
AKUT	**Akutan**	**20.29**	**73**	*e*P		**P**	**06 22 11.5**	**+1.2**
	comp=Z,413nm,1.4s								
USRK	**Ussuriysk Ar.**	**20.36**	**256**	P		**P**	**06 22 10.2**	**-1.0**
	comp=Z,59nm,0.8s,baz=54,slow=11,SNR=19								
CLNS	**Chul'man**	**20.43**	**295**	*e*P		**P**	**06 22 07.5**	**-4.3**
CLNS				*e*			06 22 26.6		
CLNS				*e*S		**S**	**06 25 57.9**	**+0.6**
CLNS				*e*SS		**SnSn**	**06 26 27.9**	**+9.2**
CLNS					pmax	pmax			
	comp=Z,35nm,0.9s								
CLNS					pmax	pmax			
	comp=E,28nm,0.8s								
CLNS					smax	smax			
	comp=E,386nm,11.1s								
CLNS					smax	smax			
	comp=N,678nm,12.2s								
CLNS					MLR	MLR			
	comp=N,1μm,14.0s								
CLNS					MLR	MLR			
	comp=Z,5μm,13.0s								
CLNS					MLR	MLR			
	comp=E,3μm,13.0s								
VLA	**Vladivostok**	**21.06**	**254**	*e*P		**P**	**06 22 16.2**	**-2.5**
VLA					pmax	pmax			
	comp=Z,27nm,0.9s								
MDJ	**Mudanjiang**	**21.55**	**260**	P		**P**	**06 22 21.3**	**-2.6**
MDJ				pP		pP	06 22 34.0	-2.3
MDJ				sP		sP	06 22 41.8	-1.3
MDJ				S		Sn	06 26 25.0	-5.5
MDJ					pmax	pmax			
	comp=Z,39nm,1.0s								
MDJ					pmax	pmax			
	comp=Z,340nm,6.9s								
MDJ					LR	LR			
	comp=Z,970nm,19.6s								
MDJ					LR	LR			
	comp=Z,4μm,21.5s								
MDJ					LR	LR			
	comp=Z,6μm,15.6s								
MDJ	**Mudanjiang**	**21.55**	**260**	*e*P		**P**	**06 22 23.0**	**-0.9**
	comp=Z,80nm,1.2s								
MDJ					LR	LR			
	comp=Z,5μm,20.0s								
MSHR	**Mys Shultsa**	**21.82**	**253**	*d i*P		**P**	**06 22 24.6**	**-2.2**
MJB9	**Matsu-Tunnel**	**22.37**	**232**	*e*P		**P**	**06 22 33.5**	**+0.7**
	comp=Z,69nm,1.1s								
MAJO	**Matsushiro**	**22.37**	**232**	*c i*P		**P**	**06 22 31.3**	**-1.5**
MAJO					pmax	pmax			
	comp=Z,1μm,0.9s								
MAJO	**Matsushiro**	**22.37**	**232**	PFAKE			06 22 40.0	+7.2	
MAJO					LR	LR			
	comp=Z,4μm,20.0s								
MAT	**Matsushiro**	**22.37**	**232**	P		**P**	**06 22 32.4**	**-0.4**
MAT				S		**S**	**06 26 35.0**	**0.0**
MJAR	**Matsushiro Arr**	**22.37**	**232**	P		**P**	**06 22 32.8**	**0.0**
	comp=Z,81nm,0.8s,baz=17,slow=9.5,SNR=20								
MJAR					LR	LR	06 32 28.1		
	comp=Z,3μm,20.6s,baz=45,slow=40								
SDPT	**Sand Point**	**23.09**	**68**	*e*P		**P**	**06 22 42.1**	**+2.0**
	comp=Z,106nm,1.1s								
TIXI	**Tiksi**	**23.24**	**335**	P		**P**	**06 22 40.7**	**-0.7**
	comp=Z,58nm,0.8s,baz=136,slow=11,SNR=11								
TIXI					LR	LR	06 32 43.3		
	comp=Z,6μm,20.0s,baz=218,slow=39								
TIXI	**Tiksi**	**23.24**	**335**	*c i*P		**P**	**06 22 39.6**	**-1.8**
TIXI					pmax	pmax			
	comp=Z,62nm,0.8s								
TIXI	**Tiksi**	**23.24**	**335**	*e*P		**P**	**06 22 40.5**	**-0.8**
	comp=Z,190nm,1.3s								
INU	**Inuyama**	**23.90**	**232**	*e*P		**P**	**06 22 48.1**	**+0.2**
	comp=Z,91nm,0.7s								
CHGN	**Chignik**	**24.07**	**65**	*e*P		**P**	**06 22 55.9**	**+6.6**
CN2	**Changchun**	**24.48**	**262**	*e*P		**P**	**06 22 50.8**	**-2.3**
CN2				*es*P		pP	06 23 08.0	+1.2
CN2				*e*S		**S**	**06 27 05.8**	**-3.5**
CN2					pmax	pmax			
	comp=Z,40nm,1.5s								
CN2					pmax	pmax			
	comp=Z,400nm,5.0s								
CN2					LR	LR			
	comp=Z,4μm,18.0s								
CN2					LR	LR			
	comp=Z,7μm,18.0s								
CN2					LR	LR			
	comp=Z,6μm,18.0s								
SVW2	**Sparrevohn**	**25.11**	**53**	*e*P		**P**	**06 22 59.4**	**+0.8**
	comp=Z,75nm,1.4s								
HIA	**Hailar**	**25.30**	**278**	*e*P		**P**	**06 22 59.2**	**-1.4**
HIA					pmax	pmax			
	comp=Z,124nm,0.6s								
HIA					MLR	MLR			
	comp=Z,5μm,19.0s								
HIA	**Hailar**	**25.30**	**278**	*e*P		**P**	**06 22 59.1**	**-1.4**
	comp=Z,124nm,0.6s								
HIA					LR	LR			
	comp=Z,5μm,19.0s								
BOD	**Bodaibo**	**26.18**	**299**	*e*P		**P**	**06 23 06.5**	**-1.9**
BOD					pmax	pmax			
	comp=Z,51nm,1.5s								
PPLA	**Purkeypile**	**26.68**	**49**	*e*P		**P**	**06 23 14.3**	**+1.2**
	comp=Z,144nm,1.3s								
OHAK	**Old Harbor**	**26.69**	**62**	*e*P		**P**	**06 23 12.1**	**-0.8**
	comp=Z,109nm,1.2s								
CAST	**Castle Rocks**	**26.73**	**48**	*e*P		**P**	**06 23 14.3**	**+1.0**
	comp=Z,136nm,1.7s								
SNY	**Shenyang**	**26.74**	**260**	⇑P		**P**	**06 23 11.8**	**-1.8**
SNY					pmax	pmax			
	comp=Z,680nm,4.7s								
SNY					LR	LR			
	comp=Z,3μm,19.6s								
SNY					LR	LR			
	comp=Z,7μm,15.2s								
SNY					LR	LR			
	comp=Z,9μm,15.7s								
SPU	**Mount Spurr**	**26.81**	**53**	*e*P		**P**	**06 23 15.1**	**+1.0**
KDAK	**Kodiak Island**	**26.96**	**60**	*c e*P		**P**	**06 23 18.2**	**+2.8**
KDAK	**Kodiak Island**	**26.96**	**60**	*e*P		**P**	**06 23 14.3**	**-1.0**
	comp=Z,160nm,1.5s								
KDAK					LR	LR			
	comp=Z,1μm,21.0s								
KS01	**Wonju Array Si**	**27.08**	**248**	*e*P		**P**	**06 23 16.7**	**+0.1**
KS01				*e*PcP		**PcP**	**06 26 37.7**	**+1.4**
KSRS	**Korea Array**	**27.08**	**248**	P		**P**	**06 23 16.6**	**0.0**
	comp=Z,32nm,0.8s,baz=46,slow=8.9,SNR=24								
KSRS				PcP		**PcP**	**06 26 37.6**	**+1.3**
	comp=Z,4.0nm,0.8s,baz=328,slow=2.1,SNR=6.4								
KS15	**Wonju Array Si**	**27.11**	**248**	*e*P		**P**	**06 23 17.0**	**+0.1**
KSAR	**Wonju Array Be**	**27.11**	**248**	P		**P**	**06 23 16.7**	**-0.2**
KSAR							06 26 37.6		
KSAR	**Wonju Array Be**	**27.11**	**248**	P		**P**	**06 23 16.6**	**-0.2**
KSAR				PcP		**PcP**	**06 26 37.6**	**+1.3**
BPAW	**Bear Paw Mtn.**	**27.23**	**46**	*e*P		**P**	**06 23 18.5**	**+0.7**
	comp=Z,73nm,1.2s								
KTH	**Kantishna Hill**	**27.25**	**48**	*e*P		**P**	**06 23 18.9**	**+0.8**
	comp=Z,145nm,1.4s								
MLY	**Manley**	**27.36**	**44**	*e*P		**P**	**06 23 19.8**	**+0.8**
	comp=Z,74nm,1.2s								
CNPM	**China Poot**	**27.39**	**56**	*e*P		**P**	**06 23 19.4**	**+0.1**
	comp=Z,34nm,1.0s								
SUA	**Susitna One**	**27.42**	**52**	*e*P		**P**	**06 23 19.6**	**-0.1**
	comp=Z,40nm,1.2s								
SUA				*e*PcP		**PcP**	**06 26 37.7**	**+0.9**
BRLK	**Bradley Lake**	**27.53**	**56**	*e*P		**P**	**06 23 20.4**	**-0.1**
	comp=Z,41nm,1.2s								
COLD	**Coldfoot**	**27.75**	**40**	*e*P		**P**	**06 23 23.1**	**+0.7**
	comp=Z,82nm,1.2s								
INCN	**Inchon**	**27.79**	**250**	PFAKE			06 23 30.0	+7.0	
INCN					LR	LR			
	comp=Z,2μm,20.0s								
RC01	**Rabbit Creek A**	**27.94**	**53**	*e*P		**P**	**06 23 25.3**	**+1.2**
	comp=Z,41nm,1.3s								
MCK	**McKinley**	**28.14**	**47**	*e*P		**P**	**06 23 26.1**	**+0.2**
MCK					pmax	pmax			
	comp=Z,115nm,1.3s								
MCK	**McKinley**	**28.14**	**47**	*e*P		**P**	**06 23 26.1**	**+0.2**
	comp=Z,115nm,1.3s								
PMR	**Palmer**	**28.18**	**52**	*e*P		**P**	**06 23 26.5**	**+0.2**
PMR					pmax	pmax			
	comp=Z,11nm,1.0s								
PMR	**Palmer**	**28.18**	**52**	*e*P		**P**	**06 23 26.4**	**+0.2**
	comp=Z,11nm,1.0s								
RND	**Reindeer**	**28.19**	**48**	*e*P		**P**	**06 23 26.2**	**-0.2**
RND					pmax	pmax			
	comp=Z,124nm,1.2s								
RND	**Reindeer**	**28.19**	**48**	*e*P		**P**	**06 23 26.2**	**-0.2**
	comp=Z,124nm,1.2s								
SEW	**Seward**	**28.20**	**55**	*e*P		**P**	**06 23 25.2**	**-1.2**
	comp=Z,89nm,1.3s								
MDM	**Murphy Dome**	**28.43**	**45**	*e*P		**P**	**06 23 29.1**	**+0.6**
	comp=Z,99nm,1.4s								
WRH	**Wood River Hil**	**28.49**	**46**	*e*P		**P**	**06 23 29.6**	**+0.5**
	comp=Z,128nm,1.2s								
SML	**Sawmill**	**28.54**	**51**	*e*P		**P**	**06 23 29.6**	**+0.1**
SML					pmax	pmax			
	comp=Z,141nm,1.2s								
SML	**Sawmill**	**28.54**	**51**	*e*P		**P**	**06 23 29.6**	**+0.1**
	comp=Z,141nm,1.2s								
COLA	**College**	**28.59**	**45**	*e*P		**P**	**06 23 30.6**	**+0.8**
COLA					pmax	pmax			
	comp=Z,102nm,1.3s								
COLA					MLR	MLR			
	comp=Z,2μm,22.0s								
COLA	**College**	**28.59**	**45**	*e*P		**P**	**06 23 30.6**	**+0.8**
	comp=Z,102nm,1.3s								
COLA					LR	LR			
	comp=Z,2μm,22.0s								
JNU	**Nakatsue**	**28.73**	**238**	P		**P**	**06 23 32.7**	**+1.3**
	comp=Z,29nm,0.9s,baz=1.4,slow=2.1,SNR=11								
JNU					LR	LR	06 34 33.4		
	comp=Z,9.0nm,21.8s,baz=38,slow=35								
JNU	**Nakatsue**	**28.73**	**238**	*e*P		**P**	**06 23 33.0**	**+1.6**
	comp=Z,35nm,0.7s								
DHY	**Denali Highway**	**28.87**	**49**	*e*P		**P**	**06 23 32.5**	**-0.1**
	comp=Z,126nm,1.5s								
HDA	**Harding Lake**	**28.99**	**46**	*e*P		**P**	**06 23 33.7**	**+0.3**
	comp=Z,121nm,1.9s								
ILAR	**Eielson Array**	**29.00**	**45**	P		**P**	**06 23 33.5**	**0.0**
	comp=Z,5.2nm,0.8s,baz=259,slow=7.2,SNR=12								
ILAR					PcP	**PcP**	**06 26 40.1**	**-0.4**	
	comp=Z,2.1nm,0.7s,baz=286,slow=3.4,SNR=4.6								
IL1	**Eielson Array**	**29.01**	**45**	*e*P		**P**	**06 23 33.0**	**-0.6**
SCM	**Sheep Creek Mo**	**29.01**	**51**	*e*P		**P**	**06 23 34.2**	**+0.5**
SCM					pmax	pmax			
	comp=Z,64nm,1.0s								
SCM	**Sheep Creek Mo**	**29.01**	**51**	*e*P		**P**	**06 23 34.2**	**+0.5**
	comp=Z,64nm,1.0s								
FYU	**Fort Yukon**	**29.67**	**41**	*e*P		**P**	**06 23 40.1**	**+0.7**
	comp=Z,249nm,1.4s								
KLU	**Klutina**	**29.72**	**52**	*e*P		**P**	**06 23 40.3**	**+0.3**
	comp=Z,40nm,1.2s								
DL2	**Dalian**	**29.73**	**257**	⇑*i*P		**P**	**06 23 37.0**	**-3.2**
DL2					pmax	pmax			
	comp=Z,310nm,6.3s								
DL2					LR	LR			
	comp=Z,4μm,17.0s								
DL2					LR	LR			
	comp=Z,4μm,18.3s								
DL2					LR	LR			
	comp=Z,5μm,20.6s								
MIDW	**Midway**	**29.82**	**137**	PFAKE			06 23 50.0	+9.0	
MIDW					LR	LR			
	comp=Z,4μm,20.0s								
DIV	**Divide**	**29.84**	**52**	*e*P		**P**	**06 23 41.5**	**+0.4**
	comp=Z,35nm,1.1s								
BMRM	**Bremner River**	**30.43**	**52**	*e*P		**P**	**06 23 46.5**	**+0.3**
	comp=Z,55nm,1.0s								
MENT	**Mentasta**	**30.55**	**48**	*e*P		**P**	**06 23 48.7**	**+1.5**
	comp=Z,18nm,1.0s								
CRQM	**Cirque**	**31.18**	**53**	*e*P		**P**	**06 23 54.5**	**+1.5**
	comp=Z,172nm,1.5s								
EGAK	**Eagle**	**31.45**	**45**	*e*P		**P**	**06 23 54.6**	**-0.6**
	comp=Z,74nm,1.3s								
EGAK					LR	LR			
	comp=Z,2μm,22.0s								
BJI	**Beijing**	**32.28**	**264**	P		**P**	**06 24 01.5**	**-1.1**
BJI				sP		**pP**	**06 24 16.8**	**+0.3**
BJI				PcP		**PcP**	**06 26 50.5**	**+0.9**
BJI				S		**S**	**06 29 12.8**	**+0.7**
BJI				sS		**sS**	**06 29 33.5**	**-2.1**
BJI					pmax	pmax			
	comp=Z,14nm,1.7s								
BJI					pmax	pmax			
	comp=Z,310nm,5.4s								
BJI					LR	LR			
	comp=Z,4μm,16.2s								
BJI					LR	LR			
	comp=Z,5μm,16.2s								
BJI					LR	LR			
	comp=Z,5μm,20.6s								
BJT	**Baijiatuau**	**32.30**	**264**	PFAKE			06 24 10.0	+7.2	
BJT					LR	LR			
	comp=Z,6μm,20.0s								
DAWY	**Dawson**	**32.31**	**46**	*e*P		**P**	**06 24 03.1**	**+0.4**
	comp=Z,43nm,1.4s								
PCA	**Pinnacle**	**32.72**	**53**	*e*P		**P**	**06 24 07.7**	**+1.3**
	comp=Z,221nm,1.3s								
IRK	**Irkutsk**	**33.15**	**292**	*e*P		**P**	**06 24 08.1**	**-2.0**
IRK				*e*			06 25 18.6		
IRK					pmax	pmax			
	comp=Z,132nm,3.2s								
TLY	**Talaya**	**33.73**	**291**	P		**P**	**06 24 16.5**	**+1.2**
	comp=Z,7.8nm,0.7s,baz=52,slow=9.5,SNR=4.2								
TLY				PcP		**PcP**	**06 26 54.4**	**+0.8**	
	comp=Z,14nm,0.8s,baz=196,slow=2.0,SNR=8.2								
TLY	**Talaya**	**33.73**	**291**	*c i*P		**P**	**06 24 14.6**	**-0.7**
TLY				*e*			06 25 46.0		
TLY				*e*			06 26 54.6		
TLY					pmax	pmax			
	comp=Z,29nm,1.3s								
TLY					MLR	MLR			
	comp=Z,3μm,16.0s								
TLY	**Talaya**	**33.73**	**291**	*e*P		**P**	**06 24 16.4**	**+1.2**
	comp=Z,68nm,1.7s								
TLY				PcP		**PcP**	**06 26 54.4**	**+0.8**	
TLY					LR	LR			
	comp=Z,2μm,20.0s								
HYT	**Haines Junctio**	**33.85**	**51**	*e*P		**P**	**06 24 17.4**	**+1.1**
	comp=Z,70nm,1.5s								
SONA1	**Songino Array**	**33.87**	**283**	*e*P		**P**	**06 24 15.6**	**-1.0**
SONM	**Songino Array**	**33.88**	**283**	P		**P**	**06 24 16.4**	**-0.3**
	comp=Z,24nm,0.8s,baz=65,slow=7.4,SNR=31								
SONM				PcP		**PcP**	**06 26 54.9**	**+0.8**	
	comp=Z,21nm,0.8s,baz=77,slow=1.5,SNR=19								
WAKE	**Wake Island**	**33.94**	**169**	PFAKE			06 24 30.0	+13	
WAKE					LR	LR			
	comp=Z,4μm,20.0s								
INK	**Inuvik**	**34.07**	**37**	P		**P**	**06 24 18.5**	**+0.5**
	comp=Z,11nm,0.7s,baz=278,slow=8.3,SNR=24								
INK	**Inuvik**	**34.07**	**37**	*e*P		**P**	**06 24 18.4**	**+0.5**
INK					pmax	pmax			
	comp=Z,110nm,1.3s								
INK	**Inuvik**	**34.07**	**37**	*e*P		**P**	**06 24 18.4**	**+0.5**
	comp=Z,110nm,1.3s								
TIA	**Tai'an**	**34.20**	**258**	*e*P		**P**	**06 24 18.5**	**-0.9**
TIA				pP		**pP**	**06 24 30.8**	**-2.5**
TIA				PP		**PP**	**06 25 36.8**	**-0.7**
TIA					pmax	pmax			
	comp=Z,40nm,1.0s								
TIA					LR	LR			
	comp=Z,4μm,20.2s								
TIA					LR	LR			
	comp=Z,5μm,19.4s								
TIA					LR	LR			
	comp=Z,6μm,22.3s								
ZAK	**Zakamensk**	**34.50**	**289**	*e*P		**P**	**06 24 21.2**	**-0.8**
ZAK				*e*			06 26 56.2		
ZAK					pmax	pmax			
	comp=Z,13nm,1.5s								
HHC	**Hu-ho-hao-te**	**34.57**	**269**	*e*P		**P**	**06 24 22.3**	**-0.5**
HHC				sP		sP	06 24 43.5	+0.3	
HHC				PP		**PnPn**	**06 25 39.0**	**-0.4**
HHC				S		**S**	**06 29 47.3**	**-0.6**
HHC				sS		sS	06 30 10.5	-1.0	
HHC					pmax	pmax			
	comp=Z,22nm,0.9s								
HHC					pmax	pmax			
	comp=Z,140nm,4.4s								
HHC					LR	LR			
	comp=Z,3μm,15.0s								
HHC					LR	LR			
	comp=Z,5μm,15.5s								
HHC					LR	LR			
	comp=Z,5μm,15.9s								
JOW	**Kunigami**	**35.14**	**235**	*e*P		**P**	**06 24 27.8**	**+0.2**
SKAG	**Skagway**	**35.29**	**53**	*e*P		**P**	**06 24 30.2**	**+1.7**
	comp=Z,149nm,1.7s								
SSE	**Sheshan**	**35.52**	**248**	⇑P		**P**	**06 24 30.8**	**0.0**
SSE				sP		**pP**	**06 24 46.5**	**+1.7**
SSE				S		**S**	**06 30 03.3**	**+1.1**
SSE				sS		**sS**	**06 30 26.0**	**+0.1**
SSE					pmax	pmax			
	comp=Z,47nm,0.6s								
SSE					pmax	pmax			
	comp=Z,350nm,6.5s								
SSE					LR	LR			
	comp=Z,610nm,23.5s								
SSE					LR	LR			
	comp=Z,1μm,23.5s								
SSE					LR	LR			
	comp=Z,2μm,18.9s								
TIY	**Taiyuan**	**36.01**	**264**	*e*P		**P**	**06 24 34.8**	**-0.3**
TIY				S		**S**	**06 30 09.8**	**-0.1**
TIY					pmax	pmax			
	comp=Z,190nm,7.8s								
TIY					LR	LR			
	comp=Z,2μm,13.4s								
TIY					LR	LR			
	comp=Z,2μm,12.3s								
TIY					LR	LR			
	comp=Z,3μm,15.2s								
NRIK	**Noril'sk**	**36.03**	**325**	P		**P**	**06 24 34.5**	**-0.4**
	comp=Z,3.8nm,0.6s,baz=84,slow=7.5,SNR=7.3								
NRIK				PcP		**PcP**	**06 27 00.9**	**+1.0**	
	comp=Z,11nm,0.8s,baz=156,slow=3.8,SNR=3.9								
NJ2	**Nanjing**	**36.13**	**251**	*e*P		**P**	**06 24 35.5**	**-0.5**
NJ2				sP		**pP**	**06 24 50.3**	**+0.3**	
NJ2					pmax	pmax			
	comp=Z,29nm,0.8s								
NJ2					LR	LR			
	comp=Z,3μm,19.8s								
NJ2					LR	LR			
	comp=Z,1μm,16.3s								
NJ2					L

XAN pP pP 06 25 21.8 -5.9
XAN PP **PnPn** **06 26 51.3 -0.6**
XAN PcP **PcP** **06 27 11.8 -2.9**
XAN S **S** **06 31 24.5 +5.6**
XAN ScS **ScS** **06 35 10.0 -3.8**
XAN pmax pmax
comp=Z,11nm,0.9s
XAN pmax pmax
comp=Z,310nm,12.5s
XAN LR LR
comp=Z,3μm,14.5s
XAN LR LR
comp=Z,4μm,16.6s
XAN LR LR
comp=Z,6μm,16.2s
GUMO Guam 41.02 203 PFAKE 06 25 30.0 +13
GUMO LR LR
comp=Z,1μm,19.0s
SSLB Suanglung 41.39 241 *e*P **P** **06 25 22.2 +2.0**
comp=Z,19nm,0.7s
YULB Yu-li 41.53 240 *e*P **P** **06 25 22.4 +1.1**
comp=Z,113nm,1.8s
QZH Quanzhou 41.73 244⇑ *i*P **P** **06 25 23.3 +0.4**
QZH pP **pP** **06 25 37.5 +0.4**
QZH S **S** **06 31 36.0 +0.1**
QZH pmax pmax
comp=Z,1μm,4.8s
QZH LR LR
comp=Z,2μm,16.4s
QZH LR LR
comp=Z,1μm,14.0s
QZH LR LR
comp=Z,2μm,18.8s
TPUB Ta-pu 41.96 241 *e*P **P** **06 25 25.6 +0.7**
comp=Z,65nm,1.2s
BBB Bella Bella 42.03 61 *e*P **P** **06 25 26.7 +1.6**
BBB *e*pP **pP** **06 25 35.9 -3.4**
TWG Pinlang 42.12 240 *e*P **P** **06 25 28.1 +2.1**
comp=Z,175nm,0.6s
LZH Lanzhou 42.27 270 *e*P **P** **06 25 26.8 -0.6**
LZH pP pP 06 25 39.3 -2.4
LZH sP sP 06 25 42.8 -5.3
LZH PP **PP** **06 27 06.8 +0.8**
LZH S **S** **06 31 46.3 +2.2**
LZH sS sS 06 32 08.5 +0.4
LZH SS **SS** **06 34 54.0 +0.3**
LZH pmax pmax
comp=Z,100nm,1.2s
LZH pmax pmax
comp=Z,320nm,4.5s
LZH LR LR
comp=Z,4μm,16.2s
LZH LR LR
comp=Z,4μm,16.0s
LZH LR LR
comp=Z,4μm,16.6s
GTA Gaotai 42.56 276⇑ P **P** **06 25 28.8 -0.9**
GTA pP pP 06 25 40.8 -3.2
GTA sP sP 06 25 46.0 -4.4
GTA PP **PP** **06 27 10.5 +1.5**
GTA PcP **PcP** **06 27 22.8 +1.6**
GTA ScP **ScP** **06 31 04.0 -3.1**
GTA PcS **PcS** **06 31 15.0 +1.6**
GTA S **S** **06 31 47.8 -0.5**
GTA sS sS 06 32 08.3 -4.0
GTA SS **SS** **06 34 52.0 -7.3**
GTA pmax pmax
comp=Z,20nm,1.5s
GTA pmax pmax
comp=Z,400nm,7.8s
GTA LR LR
comp=Z,3μm,15.9s
GTA LR LR
comp=Z,4μm,15.9s
GTA LR LR
comp=Z,5μm,16.6s
ZAA0 Zalesovo Array 42.83 303 *e*P **P** **06 25 29.3 -2.2**
ZAA0 *e*P **P** **06 25 29.7 -1.8**
ZALV Zalesovo Beam 42.83 303 P **P** **06 25 29.4 -2.1**
comp=Z,14nm,0.7s,baz=55,slow=7.2,SNR=21
ZALV PcP **PcP** **06 27 21.4 -0.2**
comp=Z,6.9nm,0.8s,baz=28,slow=5.2,SNR=4.9
ENH Enshi 42.91 259 *e*P **P** **06 25 31.2 -1.3**
comp=Z,50nm,0.8s
ENH LR LR
comp=Z,4μm,20.0s
NVS Novosibirsk 43.17 305 *e*P **P** **06 25 33.4 -0.9**
NVS *e* 06 25 47.1
NVS *e*S **S** **06 31 54.0 -2.6**
NVS pmax pmax
comp=Z,105nm,0.9s
NVS pmax pmax
comp=N,42nm,1.2s
NVS pmax pmax
comp=E,95nm,1.1s
NVS smax smax
comp=N,38nm,2.1s
NVS smax smax
comp=E,18nm,1.6s
JOHN Johnston Islan 43.29 135 PFAKE 06 25 50.0 +14
JOHN LR LR
comp=Z,298nm,20.0s
YKA Yellowknife Ar 43.36 42 P **P** **06 25 36.0 +0.4**
comp=Z,12nm,0.8s,baz=300,slow=8.1,SNR=23
YKA PcP **PcP** **06 27 23.8 +0.5**
comp=Z,2.3nm,0.7s,baz=305,slow=3.4,SNR=4.9
YKA Yellowknife Ar 43.36 42 P **P** **06 25 36.0 +0.4**
YKA 06 27 23.8
YKA pmax pmax
comp=Z,12nm,0.8s
RES Resolute Bay 43.54 22 P **P** **06 25 37.4 +0.5**
comp=Z,30nm,0.8s,baz=303,slow=7.8,SNR=16
RES Resolute Bay 43.54 22 *e*P **P** **06 25 37.9 +0.9**
comp=Z,32nm,0.8s
KIP Kipapa 44.90 118 PFAKE 06 26 00.0 +12
KIP LR LR
comp=Z,2μm,20.0s
CD2 Chengdu 45.88 264⇑ P **P** **06 25 54.8 -1.4**
CD2 pP pP 06 26 06.8 -3.9
CD2 sP sP 06 26 12.3 -4.7
CD2 PcS **PcS** **06 31 26.0 -1.1**
CD2 S **S** **06 32 33.8 -2.7**
CD2 sS sS 06 32 56.5 -4.2
CD2 pmax pmax
comp=Z,40nm,0.5s
CD2 pmax pmax
comp=Z,350nm,5.5s
CD2 LR LR
comp=Z,3μm,16.5s
CD2 LR LR
comp=Z,2μm,15.0s
CD2 LR LR
comp=Z,3μm,15.8s
GZH Guangzhou 46.11 248 P P 06 25 53.0 -5.0
GZH S **S** **06 32 31.5 -8.3**
GZH pmax pmax
comp=Z,820nm,5.3s
ZSN Zaisan 46.63 295 *e*P P 06 25 57.0 -4.9
comp=Z,287nm,0.9s
ZSN *e*S **S** **06 32 41.0 -5.9**
ZSN *i* LR LR 06 45 52.5
comp=Z,891nm,13.4s
A04D Lummi Island 46.83 62 P **P** **06 26 04.4 +1.1**
baz=306
WMQ Urumqi 46.97 289⇑ *i*P **P** **06 26 04.0 -0.7**
WMQ pP pP 06 26 15.3 -3.8
WMQ sP sP 06 26 19.5 -6.0
WMQ PcP **PcP** **06 27 37.5 +1.2**
WMQ S **S** **06 32 52.5 +0.6**
WMQ sS sS 06 33 14.3 -1.9
WMQ ScS **ScS** **06 35 54.5 +0.8**
WMQ pmax pmax
comp=Z,45nm,1.2s
WMQ pmax pmax
comp=Z,290nm,5.8s
WMQ LR LR
comp=Z,3μm,18.0s
WMQ LR LR
comp=Z,4μm,15.2s
WMQ LR LR
comp=Z,4μm,17.2s
NLWA Neilton Lookou 46.98 64 *e*P **P** **06 26 06.5 +1.9**
comp=Z,39nm,1.1s
NLWA LR LR
comp=Z,2μm,22.0s

KBS Kingsbay 47.07 352 *e*P **P** **06 26 04.9 0.0**
KBS IAmb IAmb 06 26 07.1
comp=Z,45nm,0.8s
KBS *e*S **S** **06 32 50.4 -1.9**
KBS Kingsbay 47.07 352 *e*P **P** **06 26 05.9 +1.0**
KBS pmax pmax
comp=Z,41nm,0.8s
KBS MLR MLR
comp=Z,1μm,20.0s
KBS Kingsbay 47.07 352 *e*P **P** **06 26 05.9 +1.0**
comp=Z,41nm,0.8s
KBS LR LR
comp=Z,1μm,20.0s
SPA0 Spitsbergen Ar 47.32 350 *e*P **P** **06 26 06.8 -0.1**
SPA0 IAmb IAmb 06 26 09.1
comp=Z,103nm,1.0s
SPA0 *e*S **S** **06 32 55.8 -0.2**
GYA Guiyang 47.39 258⇑ *i*P **P** **06 26 07.8 -0.4**
GYA pP pP 06 26 22.0 -0.6
GYA PP **PP** **06 28 00.3 +0.6**
GYA ScP **ScP** **06 31 29.8 +2.7**
GYA S **S** **06 32 58.5 +0.2**
GYA sS sS 06 33 21.0 -1.6
GYA SS **SS** **06 36 20.0 -6.2**
GYA pmax pmax
comp=Z,40nm,0.9s
GYA pmax pmax
comp=Z,180nm,6.8s
GYA LR LR
comp=Z,930nm,18.9s
GYA LR LR
comp=Z,810nm,20.2s
GYA LR LR
comp=Z,840nm,19.8s
B05A Bryant 47.42 63 P **P** **06 26 08.4 +0.4**
baz=307
POHA Pohakuloa 47.59 117 PFAKE 06 26 20.0 +10
POHA LR LR
comp=Z,1μm,21.0s
B06A Marblemount 47.60 62 *e*P **P** **06 26 10.6 +1.3**
comp=Z,74nm,1.6s
E03A Lebam 47.65 65 *e*P **P** **06 26 12.1 +2.3**
comp=Z,62nm,1.2s
KURK Kurchatov 47.78 302 *c i*P **P** **06 26 08.7 -2.1**
KURK pmax pmax
comp=Z,180nm,0.9s
KURK Kurchatov 47.78 302 P **P** **06 26 10.7 0.0**
KURK PcP **PcP** **06 27 38.9 0.0**
KURBB Kurchatov Arra 47.88 302 P **P** **06 26 10.7 -0.8**
comp=Z,56nm,0.8s,baz=59,slow=7.4,SNR=6.7
KURBB PcP **PcP** **06 27 38.9 -0.4**
comp=Z,8.1nm,0.7s,baz=56,slow=3.1,SNR=4.3
D05A Enumclaw 48.13 64 *e*P **P** **06 26 14.7 +1.2**
comp=Z,37nm,1.0s
MKAR Makanchi Array 48.18 296 P **P** **06 26 12.1 -1.9**
comp=Z,22nm,0.6s,baz=57,slow=7.3,SNR=39
F04D Rainier, OR 48.24 65 P **P** **06 26 15.2 +0.9**
baz=308
C06D Leavenworth 48.27 62 P **P** **06 26 15.0 +0.4**
baz=307
MAKZ Makanchi 48.34 296 *e*P **P** **06 26 13.7 -1.5**
MAKZ pmax pmax
comp=Z,38nm,1.1s
MAKZ Makanchi 48.34 296 *e*P **P** **06 26 13.7 -1.5**
comp=Z,38nm,1.1s
HSPB Hornsund (broa 48.45 350 *e*P **P** **06 26 15.0 -0.5**
G03D McMinnville, O 48.63 66 P **P** **06 26 18.6 +1.1**
baz=308
F04A Amboy 48.66 65 *e*P **P** **06 26 18.9 +1.3**
comp=Z,28nm,0.9s
B08A Colville Reser 48.84 61 *e*P **P** **06 26 19.2 +0.2**
EDM Edmonton 48.94 53 *e*P **P** **06 26 20.6 +0.9**
EDM pmax pmax
comp=Z,109nm,1.3s
EDM Edmonton 48.94 53 *e*P **P** **06 26 20.6 +0.9**
comp=Z,109nm,1.3s
TGY Tagaytay City 49.52 233 P **P** **06 26 24.4 -0.2**
comp=Z,82nm,0.3s,baz=263,slow=9.9,SNR=3.4
I03D Drain, OR 49.53 68 P **P** **06 26 24.9 +0.6**
baz=310
H04A Detroit Lake 49.56 66 *e*P **P** **06 26 25.2 +0.6**
comp=Z,39nm,1.3s
G05D Wamic, OR 49.69 65 P **P** **06 26 25.9 +0.3**
baz=309
C09A Chrisman Ranch 49.74 61 *e*P **P** **06 26 25.9 0.0**
comp=Z,38nm,1.2s
D08A Wollman Farm, 49.86 62 *e*P **P** **06 26 27.4 +0.7**
comp=Z,24nm,1.2s
HAWA Hanford 49.95 63 *e*P **P** **06 26 28.2 +0.8**
comp=Z,40nm,1.3s
HAWA LR LR
comp=Z,1μm,22.0s
I04A Tendick Farm, 50.00 67 P **P** **06 26 28.1 +0.2**
baz=310,SNR=6.8
NEW Newport 50.06 60 P **P** **06 26 27.5 -0.8**
comp=Z,3.9nm,0.7s,baz=298,slow=6.7,SNR=16
NEW Newport 50.06 60 P **P** **06 26 28.1 -0.2**
baz=309,SNR=8.8
NEW S **S** **06 33 35.9 +0.7**
baz=309
NEW Newport 50.06 60 *e*P **P** **06 26 28.3 0.0**
NEW pmax pmax
comp=Z,26nm,1.1s
NEW MLR MLR
comp=Z,1μm,22.0s
NEW Newport 50.06 60 *e*P **P** **06 26 28.3 0.0**
comp=Z,26nm,1.1s
NEW LR LR
comp=Z,1μm,22.0s
BJO Bjornoya 50.20 347 *e*P **P** **06 26 29.9 +1.0**
BJO IAmb IAmb 06 26 30.6
comp=Z,92nm,1.0s
BJO *e*pP **pP** **06 26 41.5 -2.0**
I05D Terrebonne, OR 50.25 66 P **P** **06 26 30.1 +0.3**
baz=310
L02D Cave Junction, 50.37 70 P **P** **06 26 31.4 +0.7**
baz=310
KULLO Kullorsuaq 50.40 12⇑ *i*P **P** **06 26 30.3 -0.1**
comp=Z,82nm,0.9s
KULLO Kullorsuaq 50.40 12⇑ *i*P **P** **06 26 30.3 -0.1**
KULLO pmax pmax
comp=Z,82nm,0.9s
HUMO Hull Mountain 50.45 69 *e*P **P** **06 26 32.7 +1.4**
comp=Z,34nm,1.4s
BVAR Borovoye Array 50.46 308 P **P** **06 26 30.1 -1.1**
baz=53,slow=7.7
BRVK Borovoye 50.49 309 *c i*P **P** **06 26 29.8 -1.6**
BRVK pmax pmax
comp=Z,71nm,0.6s
BRVK Borovoye 50.49 309 *e*P **P** **06 26 30.2 -1.3**
comp=Z,31nm,0.7s
BRVK LR LR
comp=Z,3μm,19.0s
J04D Umpqua Nationa 50.52 68 P **P** **06 26 32.6 +0.5**
baz=310
DAG Danmarks Havn 50.60 360⇑ *i*P **P** **06 26 31.8 -0.2**
comp=Z,107nm,1.0s
DAG *i* 06 26 45.2
DAG Danmarks Havn 50.60 360⇑ *i*P **P** **06 26 31.8 -0.2**
DAG *i* 06 26 45.2
DAG pmax pmax
comp=Z,110nm,1.0s
E09A Wood Farm, Sta 50.62 62 P **P** **06 26 32.4 -0.1**
KMI Kunming 50.72 260 P **P** **06 26 33.3 -0.5**
KMI pP pP 06 26 46.5 -1.9
KMI PP **PP** **06 28 26.0 -4.1**
KMI S **S** **06 33 45.8 +0.6**
KMI SS **SS** **06 37 20.0 +0.1**
KMI pmax pmax
comp=Z,23nm,1.0s
KMI pmax pmax
comp=Z,340nm,7.0s
KMI LR LR
comp=Z,2μm,20.7s
KMI LR LR
comp=Z,3μm,19.4s
KMI LR LR
comp=Z,3μm,19.4s
G08A Pilot Rock 50.95 64 *e*P **P** **06 26 35.6 +0.5**
comp=Z,20nm,1.4s
J05D Fort Rock, OR 50.98 67 P **P** **06 26 36.2 +0.7**
baz=310,SNR=5.9
BUOR Burton Butte 51.06 69 P **P** **06 26 37.1 +1.0**
K04D Chiloquin, OR 51.12 68 P **P** **06 26 37.1 +0.6**
baz=311
KHMM Horse Mountain 51.13 71 *e*P **P** **06 26 39.1 +2.5**
comp=Z,76nm,1.4s
YBH Yreka Blue Hor 51.16 70 *e*P **P** **06 26 38.4 +1.7**
YBH pmax pmax
comp=Z,81nm,1.5s
YBH Yreka Blue Hor 51.16 70 *e*P **P** **06 26 38.4 +1.7**
comp=Z,81nm,1.5s
WALA Waterton Lakes 51.23 57 *e*P **P** **06 26 37.8 +0.7**
comp=Z,81nm,1.4s
M02C Callahan 51.30 70 P **P** **06 26 38.5 +0.7**
baz=311,SNR=5.9
QIZ Qiongzhong 51.30 249 P **P** **06 26 39.0 +1.1**
QIZ sP **pP** **06 26 54.0 +1.5**
QIZ PP **PP** **06 28 37.3 +2.1**
QIZ S **S** **06 33 56.3 +3.4**
QIZ pmax pmax
comp=Z,76nm,1.2s
QIZ pmax pmax
comp=Z,460nm,7.2s
QIZ LR LR
comp=Z,1μm,18.4s
QIZ LR LR
comp=Z,760nm,15.2s
QIZ LR LR
comp=Z,1μm,18.4s
QIZ Qiongzhong 51.30 249 *e*P **P** **06 26 38.8 +0.9**
comp=Z,99nm,1.1s
QIZ LR LR
comp=Z,957nm,19.0s
F10A Beach Ranch, E 51.45 62 P **P** **06 26 38.7 -0.2**
LHEM Herd Peak 51.50 69 P **P** **06 26 40.7 +1.2**
K05A Summer Lake 51.53 68 *e*P **P** **06 26 41.2 +1.5**
comp=Z,68nm,1.4s
BSMT Bassoo Peak 51.54 59 P **P** **06 26 39.8 +0.2**
M04C Macdoel 51.62 69 P **P** **06 26 40.7 +0.5**
baz=311,SNR=5.3
N02D Trinity Center 51.65 70 P **P** **06 26 41.3 +0.9**
baz=311
BLMT Blacktail Moun 51.66 59 *e*P **P** **06 26 41.8 +1.2**
JTMT Jette 51.87 59 *e*P **P** **06 26 43.1 +1.1**
WDC Whiskeytown Da 52.01 71 *e*P **P** **06 26 45.0 +2.0**
WDC pmax pmax
comp=Z,29nm,1.2s
WDC Whiskeytown Da 52.01 71 *e*P **P** **06 26 45.0 +2.0**
comp=Z,29nm,1.2s
SOKR Solikamsk 52.08 321 *d i*P **P** **06 26 41.5 -1.6**
SOKR S **S** **06 34 09.0 +6.5**
SOKR pmax pmax
comp=Z,24nm,0.9s
SOKR MLR MLR
comp=Z,5μm,17.0s
BMO Blue Mountains 52.13 63 *e*P **P** **06 26 44.3 +0.3**
comp=Z,28nm,1.3s
BMO LR LR
comp=Z,2μm,22.0s
SWMT Swartz Lake 52.17 59 *e*P **P** **06 26 44.5 +0.3**
UZB Uzynbulak 52.28 294 *e*P **P** **06 26 42.2 -3.0**
comp=Z,205nm,1.1s
UZB *e*S **S** **06 34 01.9 -4.3**
UZB *i* LR LR 06 49 20.7
comp=Z,348nm,13.6s
SVE Sverdlovsk 52.38 317 *e*P **P** **06 26 44.6 -0.9**
SVE *e*S **S** **06 34 09.3 +2.5**
SVE *e* 06 37 45.3
SVE pmax pmax
comp=Z,27nm,0.8s
SVE MLR MLR
comp=Z,4μm,17.0s
MOD Modoc Plateau 52.40 68 *e*P **P** **06 26 47.4 +1.3**
comp=Z,42nm,1.1s
TARA Tarawa 52.48 164 PFAKE 06 27 00.0 +13
TARA LR LR
comp=Z,100nm,20.0s
ZHN Zhinishke 52.59 294 *e*P **P** **06 26 44.7 -2.7**
comp=Z,340nm,0.9s
ZHN *e*S **S** **06 34 06.7 -3.7**
ZHN *i* LR LR 06 49 30.8
comp=Z,353nm,13.6s
SLMT Seeley Lake 52.60 59 *e*P **P** **06 26 48.2 +0.7**
O03D Paynes Creek 52.62 70 P **P** **06 26 47.6 0.0**
baz=312,SNR=9.2
O03D Paynes Creek 52.62 70 P **P** **06 26 47.6 0.0**
MSO Missoula 52.64 60 P **P** **06 26 47.3 -0.4**
baz=311,SNR=14
MSO Missoula 52.64 60 *e*P **P** **06 26 48.2 +0.5**
comp=Z,50nm,1.4s
SATY Saty 52.68 294 *e*P **P** **06 26 45.5 -2.6**
comp=Z,527nm,1.1s
SATY *e*S **S** **06 34 07.7 -3.9**
SATY *i* LR LR 06 49 37.2
comp=Z,642nm,15.2s
HAMF Hammerfest 52.85 343 *e*P **P** **06 26 48.6 -0.1**
HAMF IAmb IAmb 06 26 49.2
comp=Z,79nm,1.3s
LVZ Lovozero 52.86 337 *i* P **P** **06 26 48.9 0.0**
LVZ pmax pmax
comp=Z,52nm,1.7s
LVZ Lovozero 52.86 337 *e*P **P** **06 26 48.4 -0.5**
comp=Z,53nm,1.0s
LVZ LR LR
comp=Z,2μm,19.0s
CHMT Chamberlain Mo 52.94 59 *e*P **P** **06 26 50.6 +0.5**
WVOR Wild Horse Val 52.98 66 *e*P **P** **06 26 51.5 +1.1**
WVOR pmax pmax
comp=Z,96nm,2.0s
WVOR MLR MLR
comp=Z,1μm,21.0s
WVOR Wild Horse Val 52.98 66 *e*P **P** **06 26 51.5 +1.1**
comp=Z,96nm,2.0s
WVOR LR LR
comp=Z,1μm,21.0s
FFC Flin Flon 53.21 46 *e*P **P** **06 26 51.6 -0.1**
FFC pmax pmax
comp=Z,27nm,1.0s
FFC MLR MLR
comp=Z,1μm,21.0s
FFC Flin Flon 53.21 46 *e*P **P** **06 26 51.6 -0.1**
comp=Z,27nm,1.0s
FFC LR LR
comp=Z,1μm,21.0s
KUU Kurty 53.26 296 *e*P **P** **06 26 49.5 -2.7**
comp=Z,626nm,0.8s
KUU *e*S **S** **06 34 15.0 -4.3**
KUU *i* LR LR 06 50 25.5
comp=Z,565nm,12.7s
ORV Oroville 53.28 71 *e*P **P** **06 26 53.1 +0.7**
ORV pmax pmax
comp=Z,22nm,1.1s
ORV Oroville 53.28 71 *e*P **P** **06 26 53.1 +0.7**
comp=Z,22nm,1.1s
AAA Alma-Ata 53.34 295 *i* P **P** **06 26 53.3 +0.4**
AAA pmax pmax
comp=Z,4μm,23.0s
MDOK Medeo 53.36 295 *e*P **P** **06 26 50.2 -2.9**
comp=Z,80nm,0.8s
MDOK *e*S **S** **06 34 16.7 -4.1**
MDOK *i* LR LR 06 49 08.6
comp=Z,2μm,17.4s
APA Apatity 53.41 337⇓ *i*P **P** **06 26 53.6 +0.7**
APA pmax pmax
comp=Z,12nm,0.9s
APA pmax pmax
comp=Z,4μm,23.0s
ARA0 ARCESS Array S 53.46 342 *e*P **P** **06 26 52.3 -0.9**
ARCES ARCESS Array B 53.46 342 P **P** **06 26 51.8 -1.4**
comp=Z,19nm,0.9s,baz=39,slow=7.8,SNR=17
ARCES PcP **PcP** **06 28 00.0 +0.4**
comp=Z,14nm,1.0s,baz=46,slow=7.7,SNR=3.4
ARE0 ARCESS Array S 53.46 342 *e*P **P** **06 26 52.4 -0.9**
ARE0 IAmb IAmb 06 26 54.3
comp=Z,155nm,1.6s
ARE0 ARCESS Array S 53.46 342 *e*P **P** **06 26 52.8 -0.5**
comp=Z,123nm,1.5s
ARU Arti 53.50 317 *c i*P **P** **06 26 52.4 -1.3**
ARU *PP **pP** **06 27 08.2 -0.2**
ARU 06 27 57.8
ARU 06 28 54.1
ARU S **S** **06 34 21.1 -1.0**
ARU *SS **sS** **06 34 50.7 +3.9**
ARU 06 36 40.3
ARU SS **SS** **06 37 54.3 -7.8**
ARU pmax pmax
comp=Z,48nm,0.8s
ARU MLR MLR
comp=Z,3μm,21.0s
ARU Arti 53.50 317 *e*P **P** **06 26 53.2 -0.5**
comp=Z,44nm,0.7s

ARU LR LR
comp=Z,3µm,20.0s
FCC Fort Churchill 53.68 38 *e*P **P 06 26 55.2 +0.2**
comp=Z,77nm,1.1s
BTLS Baital 53.74 299 *e*P **P 06 26 53.2 -2.4**
comp=Z,95nm,0.9s
BTLS *e*S **S 06 34 21.9 -3.8**
BTLS *i* LR LR 06 50 20.8
comp=Z,340nm,14.7s
HRY Holter Researc 53.81 58 *e*P **P 06 26 57.4 +1.1**
MFID Camas Ranch 53.88 64 *e*P **P 06 26 57.8 +0.9**
comp=Z,24nm,1.4s
AFDM Forest Hills D 54.00 71 *e*P **P 06 26 58.8 +1.1**
comp=Z,26nm,1.2s
EGMT Eagleton 54.00 56 P **P 06 26 57.7 0.0**
baz=312,SNR=9.8
EGMT Eagleton 54.00 56 *e*P **P 06 26 58.1 +0.5**
comp=Z,86nm,1.6s
EGMT LR LR
comp=Z,1µm,22.0s
LRM Limekiln Ridge 54.08 60 *e*P **P 06 26 59.2 +0.7**
SUMG Summit 54.17 7⇑ *i*P **P 06 26 59.3 +0.4**
comp=Z,158nm,1.1s
comp=Z,2µm,16.0s
SUMG Summit 54.17 7⇑ *i*P **P 06 26 59.3 +0.4**
SUMG pmax pmax
comp=Z,160nm,1.1s
SUMG MLR MLR
comp=Z,2µm,16.0s
SUMG Summit 54.17 7 *e*P **P 06 26 59.3 +0.4**
comp=Z,139nm,1.0s
DLMT Dillon 54.31 60 *e*P **P 06 27 00.1 +0.1**
comp=Z,78nm,1.9s
LSA Lhasa 54.37 273 *e*P **P 06 27 01.0 0.0**
LSA pmax pmax
comp=Z,24nm,0.8s
LSA MLR MLR
comp=Z,2µm,20.0s
LSA Lhasa 54.37 273 *e*P **P 06 27 01.0 0.0**
comp=Z,24nm,0.8s
LSA LR LR
comp=Z,2µm,20.0s
PAHR Pah Rah Range 54.39 69 *e*P **P 06 27 01.8 +1.1**
comp=Z,68nm,1.3s
MCMT McKenzie Canyo 54.53 61 *e*P **P 06 27 02.4 +0.6**
TRO Tromso 54.53 344 *e*P **P 06 27 00.5 -0.5**
TRO IAmb IAmb 06 27 02.8
comp=Z,63nm,1.2s
HLID Hailey 54.55 63 P **P 06 27 02.3 +0.6**
baz=312,SNR=12
HLID Hailey 54.55 63 PFAKE 06 27 10.0 +8.2
HLID LR LR
comp=Z,2µm,22.0s
BOZ Bozeman (W) 54.62 59 P **P 06 27 02.9 +0.6**
baz=312,SNR=9.4
BOZ Bozeman (W) 54.62 59 *e*P **P 06 27 03.1 +0.8**
BOZ pmax pmax
comp=Z,34nm,1.1s
BOZ MLR MLR
comp=Z,919nm,21.0s
BOZ Bozeman (W) 54.62 59 *e*P **P 06 27 03.1 +0.8**
comp=Z,34nm,1.1s
BOZ LR LR
comp=Z,919nm,21.0s
PNTR Pine Nut 54.69 70 *e*P **P 06 27 04.5 +1.6**
comp=Z,57nm,1.1s
FRU Bishkek 54.91 296 ⇓ *i*P **P 06 27 03.0 -1.2**
FRU *e* 06 27 19.0
FRU pmax pmax
comp=Z,120nm,2.0s
CMB Columbia Colle 54.95 72 *e*P **P 06 27 06.0 +1.4**
CMB pmax pmax
comp=Z,39nm,1.3s
CMB Columbia Colle 54.95 72 *e*P **P 06 27 06.0 +1.4**
comp=Z,39nm,1.3s
YERR Yerington 54.96 70 *e*P **P 06 27 06.5 +1.6**
comp=Z,74nm,1.4s
AAK Ala-Archa 55.10 296 P **P 06 27 05.0 -0.8**
comp=Z,57nm,1.0s,baz=74,slow=6.9,SNR=4.6
AAK Ala-Archa 55.10 296 P **P 06 27 05.0 -0.8**
AAK MLR MLR
comp=Z,2µm,19.0s
AAK Ala-Archa 55.10 296 P **P 06 27 05.0 -0.8**
AAK LR LR
comp=Z,2µm,19.0s
BMN Battle Mountai 55.12 67 *e*P **P 06 27 07.1 +1.2**
BMN pmax pmax
comp=Z,60nm,1.2s
BMN Battle Mountai 55.12 67 *e*P **P 06 27 07.1 +1.2**
comp=Z,60nm,1.2s
WAKR Walker 55.18 71 *e*P **P 06 27 08.1 +1.6**
comp=Z,39nm,1.1s
QLMT Earthquake Lak 55.28 60 *e*P **P 06 27 08.4 +1.3**
YHB Horse Butte 55.45 60 *e*P **P 06 27 09.9 +1.5**
comp=Z,35nm,1.0s
GCMT Greycliff 55.54 58 *e*P **P 06 27 09.8 +0.9**
YHH Holmes Hill 55.61 60 *e*P **P 06 27 10.8 +1.2**
comp=Z,27nm,1.1s
TVH3 East Aurora ar 55.63 70 *e*P **P 06 27 11.5 +1.8**
comp=Z,44nm,1.4s
YMR Madison River 55.63 60 *e*P **P 06 27 11.3 +1.6**
comp=Z,36nm,1.1s
TVH2 Borealis Mine 55.65 70 *e*P **P 06 27 11.0 +1.1**
comp=Z,35nm,1.4s
YFT Old Faithful 55.85 60 *e*P P 06 27 16.1 +4.9
comp=Z,30nm,0.9s
NONG Nongkai 55.91 254 P **P 06 27 12.7 +1.1**
comp=Z,41nm,1.3s,comp=Z,6µm
YPP Pitchstone Pla 55.99 60 *e*P **P 06 27 15.2 +2.9**
comp=Z,82nm,1.7s
LKWY Lake 56.00 60 PFAKE 06 27 30.0 +18
LKWY LR LR
comp=Z,1µm,20.0s
H17A Grant Village 56.02 60 P **P 06 27 14.0 +1.5**
baz=313
H17A Grant Village 56.02 60 *e*P **P 06 27 15.3 +2.8**
comp=Z,36nm,1.0s
ILULI Ilulissat 56.09 13⇑ *i*P **P 06 27 11.3 -0.9**
comp=Z,67nm,0.8s
comp=Z,1µm,18.0s
ILULI Ilulissat 56.09 13⇑ *i*P **P 06 27 11.3 -0.9**
ILULI pmax pmax
comp=Z,67nm,0.8s
ILULI MLR MLR
comp=Z,1µm,18.0s
MLAC Mammoth, Mammo 56.12 71 P **P 06 27 14.1 +0.9**
baz=314
JMIC Jan Mayen 56.15 355 *e*P **P 06 27 13.8 +1.1**
JMIC IAmb IAmb 06 27 15.3
comp=Z,90nm,0.9s
JMIC *e*pP **pP 06 27 24.3 -3.2**
FLWY Flagg Ranch 56.17 60 *e*P **P 06 27 15.6 +2.1**
comp=Z,95nm,1.4s
IMW Indian Meadow 56.17 60 *e*P **P 06 27 14.9 +1.3**
comp=Z,32nm,1.1s
RLMT Red Lodge 56.20 58 P **P 06 27 14.7 +0.9**
baz=314,SNR=10
RLMT Red Lodge 56.20 58 *e*P **P 06 27 15.3 +1.6**
comp=Z,82nm,1.5s
RLMT LR LR
comp=Z,1µm,22.0s
SKNT Sakolnakorn 56.28 253 P **P 06 27 15.0 +0.7**
comp=Z,117nm,1.3s
MOOW Moose Ponds 56.38 60 *e*P **P 06 27 16.6 +1.6**
comp=Z,18nm,1.2s
KSH Kashi 56.42 293 P **P 06 27 17.5 +2.3**
KSH *e*pP pP 06 27 30.0 0.0
KSH *e*PcP **PcP 06 28 14.8 +3.1**
KSH *e*PP **PP 06 29 24.8 +3.9**
KSH PcS **PcS 06 32 13.8 +1.4**
KSH S **S 06 35 01.8 -0.1**
KSH pmax pmax
comp=Z,21nm,1.0s
KSH LR LR
comp=Z,3µm,20.8s
KSH LR LR
comp=Z,2µm,15.0s
KSH LR LR
comp=Z,3µm,17.1s
DGMT Dagmar 56.44 53 P **P 06 27 15.2 +0.2**
baz=314,SNR=6.6
DGMT Dagmar 56.44 53 PFAKE 06 27 30.0 +15
DGMT LR LR
comp=Z,2µm,20.0s
TPAW Teton Pass 56.44 61 *e*P **P 06 27 17.5 +1.9**
comp=Z,65nm,1.5s
LOHW Long Hollow 56.54 61 *e*P **P 06 27 17.9 +1.7**
comp=Z,75nm,1.8s
SNOW Snow King Moun 56.57 61 *e*P **P 06 27 18.3 +1.9**
comp=Z,48nm,1.4s
REDW Red Top Meadow 56.58 61 *e*P **P 06 27 18.3 +1.8**
comp=Z,72nm,1.4s
HVU Hansel Valley 56.64 63 *e*P **P 06 27 18.6 +1.8**
HVU pmax pmax
comp=Z,41nm,1.2s
HVU Hansel Valley 56.64 63 *e*P **P 06 27 18.6 +1.8**
comp=Z,41nm,1.2s
STEI Steigen 56.66 345 *e*P **P 06 27 16.4 +0.1**
STEI IAmb IAmb 06 27 17.3
comp=Z,100nm,1.6s
LAO LASA Array 56.67 55 P **P 06 27 17.3 +0.4**
baz=314,SNR=9.9
LAO LASA Array 56.67 55 *e*P **P 06 27 18.2 +1.4**
comp=Z,93nm,1.4s
LAO LR LR
comp=Z,2µm,22.0s
LOF Lofoten 56.74 346 *e*P **P 06 27 16.6 -0.3**
LOF IAmb IAmb 06 27 18.1
comp=Z,178nm,0.8s
UBPT Khong Chiam 56.78 250 P **P 06 27 19.6 +1.7**
comp=Z,73nm,1.2s,comp=Z,1µm
RCTC Rector, Farmer 56.81 72 P **P 06 27 18.6 +0.7**
baz=315
AHID Auburn Hatcher 56.86 62 *e*P **P 06 27 19.8 +1.3**
comp=Z,39nm,1.1s
AHID LR LR
comp=Z,1µm,22.0s
TIN Tinemaha, Big 56.87 71 P **P 06 27 19.7 +1.3**
baz=314
CMAI Chiengmai2 56.87 259 P **P 06 27 20.3 +1.6**
comp=Z,264nm,1.3s,comp=Z,29µm
KKAR Karatay Array 56.92 299 *e*P **P 06 27 17.7 -0.9**
KKAR pmax pmax
comp=Z,29nm,0.8s
KKAR Karatay Array 56.92 299 *e*P **P 06 27 17.7 -0.9**
comp=Z,29nm,0.8s
SCO Scoresbysund 56.92 1⇑ *i*P **P 06 27 18.6 +0.5**
SCO *i* 06 27 32.7
SCO Scoresbysund 56.92 1⇑ *i*P **P 06 27 18.6 +0.5**
SCO *i* 06 27 32.7
SMMC Simmler 57.07 74 P **P 06 27 20.7 +1.0**
baz=315
KLMR Klimovskoe 57.09 330 *e*P **P 06 27 16.9 -2.6**
KLMR pmax pmax
comp=Z,58nm,1.1s
BGU Big Grassy Mou 57.09 64 *e*P **P 06 27 21.3 +1.3**
comp=Z,29nm,1.2s
VES Vestal, Richgr 57.23 73 P **P 06 27 21.2 +0.4**
baz=315
CWC Cottonwood Cre 57.38 71 P **P 06 27 22.8 +0.6**
baz=315
GRAC Grapevine Rang 57.40 70 P **P 06 27 22.9 +0.7**
baz=315
C25A Freed Ranch, W 57.41 53 P **P 06 27 22.7 +0.7**
baz=315
HWUT Hardware Ranch 57.42 63 *e*P **P 06 27 23.8 +1.5**
comp=Z,45nm,1.1s
HWUT LR LR
comp=Z,742nm,21.0s
R11A Troy Canyon, C 57.47 68 P **P 06 27 23.3 +0.6**
baz=315,SNR=9.2
R11A Troy Canyon, C 57.47 68 *e*P **P 06 27 23.7 +1.0**
comp=Z,26nm,1.4s
PKM Mcpherson Peak 57.47 74 P **P 06 27 23.3 +0.5**
baz=315
JAY Jayapura 57.54 203 P **P 06 27 24.1 +0.9**
LAMP Lampang 57.61 258 P **P 06 27 24.9 +1.2**
comp=Z,10.0nm,0.9s
UTTA Uttaradit 57.68 256 P **P 06 27 25.3 +1.1**
comp=Z,11nm,1.0s,comp=Z,107nm
BW06 Boulder Array 57.68 61 P **P 06 27 24.8 +0.6**
baz=314,SNR=13
BW06 Boulder Array 57.68 61 PFAKE 06 27 40.0 +16
BW06 LR LR
comp=Z,842nm,22.0s
PD31 Pinedale Array 57.68 61 *e*P **P 06 27 25.3 +1.1**
PDAR Pinedale Array 57.68 61 P **P 06 27 24.9 +0.7**
comp=Z,6.8nm,0.8s,baz=300,slow=3.3,SNR=23
ISA Isabella, Lake 57.70 72 P **P 06 27 24.3 0.0**
baz=315
ISA Isabella, Lake 57.70 72 *e*P **P 06 27 25.5 +1.2**
ISA pmax pmax
comp=Z,16nm,1.2s
ISA Isabella, Lake 57.70 72 *e*P **P 06 27 25.5 +1.2**
comp=Z,16nm,1.2s
DUG Dugway, Tooele 57.72 65 P **P 06 27 25.2 +0.8**
baz=315,SNR=7.7
DUG Dugway, Tooele 57.72 65 *e*P **P 06 27 25.8 +1.3**
comp=Z,63nm,1.4s
DUG LR LR
comp=Z,1µm,22.0s
GENI Genyem 57.74 204 P P 06 27 30.4 +5.8
DAC Darwin (Calif) 57.78 71 *e*P **P 06 27 25.5 +0.6**
DAC pmax pmax
comp=Z,43nm,1.8s
DAC Darwin (Calif) 57.78 71 *e*P **P 06 27 25.5 +0.6**
comp=Z,43nm,1.8s
CMMT Chiang Mai 57.80 258 P **P 06 27 25.7 +0.7**
comp=Z,43nm,1.2s,comp=Z,848nm
CHTO Chiang Mai 57.80 258 P **P 06 27 25.8 +0.8**
comp=Z,190nm,1.2s,comp=Z,4µm
CHTO Chiang Mai 57.80 258 *e*P **P 06 27 25.5 +0.5**
CHTO pmax pmax
comp=Z,23nm,0.8s
CHTO MLR MLR
comp=Z,2µm,19.0s
CHTO Chiang Mai 57.80 258 P **P 06 27 25.1 +0.1**
SNR=9.7
CHTO Chiang Mai 57.80 258 P **P 06 27 25.1 +0.1**
SNR=9.7
CHTO Chiang Mai 57.80 258 *e*P **P 06 27 25.5 +0.5**
comp=Z,23nm,0.8s
CHTO LR LR
comp=Z,2µm,19.0s
TCUT Toone Canyon 57.84 63 *e*P **P 06 27 27.0 +1.6**
comp=Z,53nm,1.2s
IUG luzhnay 57.84 299 *e*P **P 06 27 22.3 -2.9**
comp=Z,650nm,0.8s
IUG *e*S **S 06 35 16.5 -4.0**
IUG *i* LR LR 06 52 49.9
comp=Z,1µm,13.9s
SBC Santa Barbara 57.84 74 P **P 06 27 26.0 +0.8**
baz=315
ARVC Arvin 57.88 73 P **P 06 27 25.9 +0.5**
baz=315
CTU Camp Tracy 57.95 64 *e*P **P 06 27 27.6 +1.5**
comp=Z,72nm,1.1s
MPMC Manual Prospec 57.99 71 P **P 06 27 27.2 +0.7**
baz=315,SNR=7.3
FURC Furnace Creek, 58.06 71 P **P 06 27 25.5 +0.9**
baz=315,SNR=10
CMAR Chiang Mai Arr 58.07 258 P **P 06 27 27.3 +0.4**
comp=Z,15nm,0.7s,baz=26,slow=7.0,SNR=17
TPNV Topopah Spring 58.07 70 P **P 06 27 27.7 +0.7**
baz=315,SNR=11
TPNV Topopah Spring 58.07 70 *e*P **P 06 28 2.2 +1.2**
TPNV pmax pmax
comp=Z,51nm,1.3s
TPNV Topopah Spring 58.07 70 *e*P **P 06 28 2.2 +1.2**
comp=Z,51nm,1.3s
JLU Jordanelle 58.18 64 *e*P **P 06 29.4 +1.6**
comp=Z,43nm,1.4s
SFJD Kangerlussuaq 58.23 14 *e*P **P 06 27 27.3 0.0**
SFJD pmax pmax
comp=Z,37nm,0.9s
SFJD MLR MLR
comp=Z,1µm,20.0s
SFJD Kangerlussuaq 58.23 14 *e*P **P 06 27 27.3 0.0**
comp=Z,37nm,0.9s
SFJD LR LR
comp=Z,1µm,20.0s
LRMC Laurel Mtn Rad 58.29 72 P **P 06 27 28.9 +0.4**
baz=315
D26A Manning 58.29 53 P **P 06 27 29.0 +0.8**
baz=315
OSI Osito Audit: C 58.30 73 P **P 06 27 28.8 +0.3**
baz=316
KONS Konsvik 58.31 345 *e*P **P 06 27 28.1 +0.1**
KONS IAmb IAmb 06 27 29.1
comp=Z,55nm,1.1s
PBKT Sadao Pong 58.36 255 P **P 06 27 29.9 +1.0**
comp=Z,38nm,1.2s,comp=Z,1µm
SUKH Sukhothai 58.43 257 P **P 06 27 30.6 +1.2**
comp=Z,4.5nm,0.8s,comp=Z,76nm
EDW2 Edwards Air Fo 58.53 73 P **P 06 27 30.6 +0.5**
baz=316,SNR=7.9
SWI Sorong 58.71 214 P **P 06 27 32.0 +0.7**
KKM Kota Kinabalu 58.78 234 PFAKE 06 27 40.0 +8.0
KKM LR LR
comp=Z,673nm,19.0s
DECC Green Verdugo 58.78 73 P **P 06 27 32.1 +0.4**
baz=316
SHOC Shoshone, Teco 58.80 71 P **P 06 27 32.8 +0.9**
baz=316
JIRN Jiri 58.84 276 *e*P **P 06 27 32.1 -0.6**
GUN Gumba 58.85 276 *e*P **P 06 27 31.5 -1.2**
GSC Goldstone, Bar 58.92 72 P **P 06 27 32.9 +0.1**
baz=316,SNR=5.5
GSC Goldstone, Bar 58.92 72 *e*P **P 06 27 33.7 +0.9**
GSC pmax pmax
comp=Z,42nm,1.4s
GSC Goldstone, Bar 58.92 72 *e*P **P 06 27 33.7 +0.9**
comp=Z,42nm,1.4s
PASC Pasadena Art C 58.93 73 *e*P **P 06 27 33.6 +0.8**
comp=Z,17nm,0.9s
MWC Mount Wilson 58.96 73 *e*P **P 06 27 34.1 +0.9**
MWC pmax pmax
comp=Z,43nm,1.2s
MWC Mount Wilson 58.96 73 *e*P **P 06 27 34.1 +0.9**
comp=Z,43nm,1.2s
SHPR Sheep Range 59.01 69 *e*P **P 06 27 34.9 +1.4**
comp=Z,25nm,1.4s
ULM Lac du Bonnet 59.01 47 P **P 06 27 33.4 +0.4**
comp=Z,7.8nm,0.4s,baz=318,slow=7.5,SNR=22
ULM Lac du Bonnet 59.01 47 *e*P **P 06 27 33.5 +0.4**
ULM pmax pmax
comp=Z,44nm,1.1s
ULM Lac du Bonnet 59.01 47 *e*P **P 06 27 33.5 +0.4**
comp=Z,44nm,1.1s
MDND Maddock 59.05 51 P **P 06 27 34.2 +0.8**
baz=316
RRX Edison Barstow 59.11 72 P **P 06 27 35.0 +1.0**
baz=316
RAMN Ramite 59.12 275 *e*P **P 06 27 33.3 -1.1**
comp=Z,185nm,0.6s
BFSC Mount Baldy Ra 59.18 73 P **P 06 27 35.3 +0.6**
baz=316
FMP Fort Macarthur 59.19 74 P **P 06 27 34.9 +0.3**
baz=316
TMUT Trail Mountain 59.23 65 *e*P **P 06 27 36.9 +1.7**
comp=Z,28nm,1.1s
MSU Marysvale 59.25 66⇑ *e*P **P 06 27 32.6 -2.6**
MSU Marysvale 59.25 66 *e*PcP **P 06 27 32.6 -2.6**
CCUT Cedar City 59.28 67 *e*P **P 06 27 36.7 +1.3**
comp=Z,22nm,1.2s
KKN Kakani 59.30 276 *e*P **P 06 27 35.0 -0.6**
comp=Z,51nm,0.3s
TUQ Turquoise Moun 59.33 71 P **P 06 27 36.3 +0.7**
baz=316
CIS Catalina Islan 59.34 74 P **P 06 27 35.8 +0.2**
baz=316
K22A Casper 59.35 59 P **P 06 27 36.2 +0.4**
baz=316,SNR=6.1
K22A Casper 59.35 59 *e*P **P 06 27 36.8 +1.0**
comp=Z,64nm,1.5s
P17A Butcher Ranch, 59.36 64 *e*P **P 06 27 37.5 +1.6**
comp=Z,36nm,1.2s
A31A Linda, St. Vin 59.38 48 P **P 06 27 36.0 +0.4**
baz=317
PKIN Phulchoki 59.38 276 *e*P **P 06 27 36.2 -0.1**
comp=Z,103nm,0.7s
SZCU Shurtz Canyon 59.40 67 *e*P **P 06 27 37.5 +1.3**
comp=Z,30nm,1.1s
H25A Fruitdale 59.44 56 P **P 06 27 36.6 +0.4**
baz=316
HEC Hector,Ludlow 59.53 72 P **P 06 27 37.4 +0.4**
baz=316
GKN Gorkha 59.53 277 *e*P **P 06 27 35.9 -1.3**
comp=Z,93nm,0.8s
DMN Daman 59.53 276 *e*P **P 06 27 36.9 -0.4**
comp=Z,84nm,0.5s
B31A Greenbush Farm 59.54 49 P **P 06 27 37.4 +0.7**
baz=317,SNR=16
SCI2 San Clemente I 59.57 75 P **P 06 27 37.4 +0.2**
baz=316
RSSD Black Hills 59.57 56 P **P 06 27 37.7 +0.4**
baz=316
RSSD Black Hills 59.57 56 *e*P **P 06 27 38.2 +0.8**
RSSD pmax pmax
comp=Z,166nm,1.5s
RSSD Black Hills 59.57 56 *e*P **P 06 27 38.2 +0.8**
comp=Z,166nm,1.5s
MTPU Mount Pierson 59.58 66 *e*P **P 06 27 39.5 +1.9**
comp=Z,25nm,1.2s
BBRC Big Bear Solar 59.59 72 P **P 06 27 38.0 +0.3**
baz=316
A32A Rocking H Ranc 59.71 48 P **P 06 27 38.0 +0.1**
baz=317,SNR=12
LCMT Little Creek M 59.73 68 *e*P **P 06 27 39.9 +1.5**
comp=Z,9nm,1.2s
SRU San Rafael Swe 59.74 64 *e*P **P 06 27 40.0 +1.5**
SRU pmax pmax
comp=Z,53nm,1.1s
SRU San Rafael Swe 59.74 64 *e*P **P 06 27 40.0 +1.5**
comp=Z,52nm,1.1s
UMPA Umpang Tak 59.88 257 P **P 06 27 41.6 +2.1**
comp=Z,19nm,1.1s,comp=Z,1µm
MURC Murrieta 59.91 73 P **P 06 27 39.6 0.0**
baz=316
GMRC Granite Mounta 59.95 71 P **P 06 27 40.2 +0.3**
baz=316,SNR=9.8
KNB Kanab 59.96 67 *e*P **P 06 27 41.6 +1.6**
KNB pmax pmax
comp=Z,117nm,1.7s
KNB Kanab 59.96 67 *e*P **P 06 27 41.6 +1.6**
comp=Z,117nm,1.7s
C31A Landman Farms, 59.96 50 P **P 06 27 39.6 -0.1**
baz=317,SNR=9.4
LDFC Landfair 60.05 71 *e*P **P 06 27 41.4 +0.8**
comp=Z,59nm,1.2s
B32A Ashes, Strandq 60.07 48 P **P 06 27 40.5 +0.1**
baz=317,SNR=17
A33A Warroad 60.19 47 P **P 06 27 41.2 0.0**
baz=318,SNR=16
O20A White River Ci 60.24 62 P **P 06 27 41.8 -0.2**
baz=316,SNR=8.7
O20A White River Ci 60.24 62 *e*P **P 06 27 43.0 +1.0**
comp=Z,75nm,1.6s
FINES FINESS Array B 60.28 337 P **P 06 27 41.4 -0.2**
comp=Z,43nm,0.8s,baz=43,slow=8.6,SNR=29
BELC Belle Mtn. Jos 60.31 72 P **P 06 27 42.4 0.0**
baz=316,SNR=5.4
KOLN Koldanda 60.32 278 *e*P **P 06 27 41.1 -1.6**
comp=Z,47nm,0.4s
PFO Pinyon Flats O 60.33 73 P **P 06 27 42.4 -0.1**
baz=316
PFO Pinyon Flats O 60.33 73 *e*P **P 06 27 44.8 +2.2**
PFO pmax pmax
comp=Z,41nm,1.8s
PFO MLR MLR
comp=Z,1µm,22.0s
PFO Pinyon Flats O 60.33 73 *e*P **P 06 27 44.8 +2.2**
comp=Z,41nm,1.8s
PFO LR LR
comp=Z,1µm,22.0s
TPFO Pinon Flats 60.33 73 P **P 06 27 42.2 -0.4**
baz=316
F29A Eureka 60.41 52 P **P 06 27 43.0 +0.2**
baz=317
AGMN Agassiz Nation 60.45 48 P **P 06 27 42.9 -0.1**
baz=318,SNR=13
AGMN Agassiz Nation 60.45 48 *e*P **P 06 27 43.2 +0.2**
comp=Z,35nm,1.0s
PYUN Piuthan 60.45 278 *e*P **P 06 27 42.1 -1.4**
109C Camp Elliot, M 60.47 74 P **P 06 27 43.7 +0.3**
baz=317
C32A Crookston 60.49 49 P **P 06 27 43.5 +0.2**
baz=318
D31A Mcclaflin, Tow 60.51 50 P **P 06 27 43.9 +0.4**
baz=317
NEE2 Needles Airpor 60.55 70 P **P 06 27 44.2 +0.3**
baz=316
B33A Robert and Kas 60.59 48 P **P 06 27 44.0 0.0**
baz=318,SNR=5.7
IRM Iron Mountain 60.69 71 P **P 06 27 45.3 +0.4**
baz=316,SNR=8.1
W13A Hualapai Mount 60.73 70 *e*P **P 06 27 46.4 +1.0**
D32A Dogwood Acres, 60.78 50 P **P 06 27 45.3 +0.1**
baz=318
F30A Leola 60.79 52 P **P 06 27 45.4 +0.1**
baz=317
E31A Nome 60.80 51 P **P 06 27 45.3 -0.1**

baz=318,SNR=11
B34A Aery, Baudette 60.85 47 P P 06 27 45.3 -0.4
baz=318,SNR=14
MONP2 Monument Peak 60.87 73 P P 06 27 46.2 -0.1
baz=317
PHWY Pilot Hill 60.87 59 eP P 06 27 47.0 +0.7
comp=Z,14nm,1.3s
BAR Barrett 60.88 74 eP P 06 27 47.0 +0.8
comp=Z,28nm,1.3s
BC3 Big Chuckawall 60.88 72 P P 06 27 46.3 0.0
baz=317,SNR=6.1
C33A Trail 60.88 48 P P 06 27 45.9 -0.1
baz=318,SNR=7.5
N23A Red Feather La 60.91 60 P P 06 27 47.4 +0.8
baz=316
PV09 Paradox Valley 60.93 64 eP P 06 27 48.1 +1.3
PV10 Paradox Valley 61.07 64 eP P 06 27 49.3 +1.6
F31A Hecla 61.14 51 P P 06 27 47.3 -0.4
baz=318,SNR=5.3
E32A Braaten, Kindr 61.15 50 P P 06 27 47.6 -0.2
baz=318
PDMCI Parker Dam,Lak 61.16 70 P P 06 27 48.4 +0.4
baz=317,SNR=8.2
SWSC Sam W. Stewart 61.19 73 P P 06 27 48.5 +0.3
baz=317
IKP In-Ko-Pah, Jac 61.22 73 P P 06 27 48.9 +0.3
baz=317
PV05 Paradox Valley 61.25 64 eP P 06 27 50.2 +1.3
D33A AnnSam, Waubun 61.31 49 P P 06 27 48.9 0.0
baz=318,SNR=10
Y12C Blythe 61.34 71 P P 06 27 49.8 +0.5
baz=317
Y12C Blythe 61.34 71 eP P 06 27 50.6 +1.3
comp=Z,78nm,1.6s
B35A Bob, Littlefor 61.35 47 P P 06 27 49.0 -0.1
baz=319,SNR=10
C34A RKJ Ranch, Bem 61.36 48 P P 06 27 49.1 -0.1
baz=318,SNR=7.0
PV01 Paradox Valley 61.50 64 eP P 06 27 51.7 +1.1
SMCO Snowmass 61.61 62 eP P 06 27 52.5 +1.1
comp=Z,38nm,1.4s
G31A Conde 61.63 52 P P 06 27 50.8 -0.3
baz=318
D34A Park Rapids 61.65 49 P P 06 27 50.9 -0.2
baz=318,SNR=11
F32A Veblen 61.66 51 P P 06 27 50.8 -0.4
baz=318
GLA Glamis 61.67 72 P P 06 27 51.8 +0.2
baz=317
GLA Glamis 61.67 72 eP P 06 27 52.6 +1.0
GLA pmax pmax
comp=Z,61nm,1.3s
GLA Glamis 61.67 72 eP P 06 27 52.6 +1.0
comp=Z,61nm,1.3s
E33A Westby DABS, E 61.71 50 P P 06 27 51.8 +0.2
baz=318,SNR=11
SANI Sanana 61.72 219 P P 06 27 51.3 -0.6
C35A Jirik Farms, M 61.74 47 P P 06 27 51.1 -0.6
baz=319,SNR=16
MOS Moscow 61.79 327 eP P 06 27 50.6 -1.3
SUSD Miller 61.85 53 P P 06 27 52.0 -0.5
baz=318
WUAZ Wupatki 61.85 68 P P 06 27 53.8 +0.9
baz=317,SNR=7.3
WUAZ Wupatki 61.85 68 eP P 06 27 54.5 +1.6
WUAZ LR LR
comp=Z,49nm,1.3s
comp=Z,774nm,22.0s
ISCO Idaho Springs 61.88 61 P P 06 27 54.4 +1.2
baz=317,SNR=14
ISCO Idaho Springs 61.88 61 eP P 06 27 54.8 +1.6
ISCO pmax pmax
comp=Z,62nm,1.4s
ISCO MLR MLR
comp=Z,1μm,22.0s
ISCO Idaho Springs 61.88 61 eP P 06 27 54.8 +1.6
comp=Z,62nm,1.4s
ISCO LR LR
comp=Z,1μm,22.0s
G32A Webster 61.94 51 P P 06 27 52.9 -0.3
baz=318
PHET Kaeng Krachan 62.04 254 P P 06 27 56.1 +2.0
comp=Z,31nm,1.0s,comp=Z,283nm
H31A Wolsey 62.05 53 P P 06 27 53.8 -0.1
baz=318
F33A 5 Mile Ranch, 62.07 50 P P 06 27 54.2 +0.2
baz=318,SNR=14
Y14A Wickenburg 62.07 70 eP P 06 27 55.5 +1.2
comp=Z,156nm,1.4s
HNR Honiara 62.08 180 PFAKE 06 28 10.0 +16
HNR LR LR
comp=Z,1μm,19.0s
E34A Wadena 62.09 49 P P 06 27 53.9 -0.2
baz=319,SNR=7.4
D35A Remer 62.17 48 P P 06 27 54.3 -0.4
baz=319,SNR=7.7
C36A Pine Crest Far 62.20 47 P P 06 27 54.5 -0.4
baz=319,SNR=11
MVCO Mesa Verde 62.21 64 P P 06 27 55.8 +0.4
baz=317,SNR=6.2
MVCO Mesa Verde 62.21 64 eP P 06 27 56.5 +1.1
comp=Z,61nm,1.5s
MVCO LR LR
comp=Z,818nm,22.0s
I31A Royce, Wessing 62.35 53 P P 06 27 55.3 -0.6
baz=318
E35A Pequot Lakes 62.40 49 P P 06 27 56.0 -0.2
baz=319,SNR=6.1
J30A Dallas 62.41 54 P P 06 27 55.9 -0.5
baz=318
G33A Ortonville 62.49 51 P P 06 27 56.5 -0.3
baz=319,SNR=5.7
D36A Goodland 62.49 47 P P 06 27 56.2 -0.6
baz=319,SNR=13
C37A Embarrass 62.51 46 P P 06 27 56.4 -0.5
baz=320,SNR=7.8
H32A Carlson Farm, 62.53 52 P P 06 27 56.7 -0.4
baz=318,SNR=6.9
F34A Alexandria 62.59 50 P P 06 27 57.5 +0.1
baz=319,SNR=6.9
X16A Lo Mia Camp, P 62.61 69 eP P 06 27 59.2 +1.2
EYMN Ely 62.65 46 P P 06 27 57.5 -0.3
baz=320,SNR=13
EYMN Ely 62.65 46 eP P 06 27 57.8 0.0
comp=Z,41nm,1.0s
EYMN LR LR
comp=Z,1μm,19.0s
OBN Obninsk 62.65 327c iP P 06 27 56.8 -0.8
OBN pmax pmax
comp=Z,172nm,1.7s
OBN Obninsk 62.65 327 PFAKE 06 28 10.0 +12
OBN LR LR
comp=Z,1μm,20.0s
BORG Borgarnes 62.69 1 eP P 06 28 00.1 +2.3
BORG pmax pmax
comp=Z,77nm,1.2s
BORG Borgarnes 62.69 1 eP P 06 28 00.1 +2.3
comp=Z,77nm,1.2s
VSU Vasula 62.70 334c iP P 06 27 58.1 +0.1
VSU pmax pmax
comp=Z,238nm,1.0s
H33A Prehn Over Nor 62.73 51 P P 06 27 58.1 -0.3
baz=319,SNR=6.8
S22A 4UR Ranch, Cre 62.73 63 P P 06 27 59.8 +0.9
baz=317,SNR=14
Q24A Divide 62.73 61 P P 06 27 59.1 +0.2
baz=318
Q24A Divide 62.73 61 eP P 06 28 00.3 +1.4
comp=Z,24nm,1.3s
J31A Geddes 62.80 54 P P 06 27 58.7 -0.2
baz=318,SNR=5.4
G34A Benson 62.83 50 P P 06 27 59.1 +0.1
baz=319
K30A Basset 62.83 55 P P 06 27 58.9 -0.2
baz=318,SNR=5.6
D37A Cotton 62.84 47 P P 06 27 58.9 -0.2
baz=320,SNR=12
MOL Molde 62.85 346 eP P 06 27 59.2 +0.4
MOL IAmb IAmb 06 28 00.1
comp=Z,227nm,1.6s
F35A Swanville 62.85 49 P P 06 27 59.3 +0.1
baz=319,SNR=10
I32A Karley and Nic 62.87 52 P P 06 27 58.9 -0.5
baz=319
OGNE Ogallala 62.90 57 P P 06 27 59.8 +0.1
baz=318,SNR=11
OGNE Ogallala 62.90 57 eP P 06 28 00.9 +1.2
comp=Z,163nm,1.5s
OGNE LR LR
comp=Z,840nm,20.0s
C38A Sawbill Land. 62.92 46 P P 06 27 59.4 -0.3
baz=320,SNR=12
E36A McGregor 62.95 48 P P 06 27 59.7 -0.2
baz=320,SNR=12
PMG Port Moresby 63.01 194 P P 06 28 00.4 -0.1
comp=Z,13nm,0.8s,baz=42,slow=12,SNR=3.1
PMG Port Moresby 63.01 194c iP P 06 28 00.0 -0.5
PMG pmax pmax
comp=Z,75nm,1.0s
PMG Port Moresby 63.01 194 P P 06 28 00.4 -0.1
PMG LR LR
comp=Z,730nm,20.0s
W18A Petrified Fore 63.05 67 P P 06 28 01.4 +0.4
baz=318
DOMB Dombas 63.12 345 eP P 06 28 00.5 -0.3
DOMB IAmb IAmb 06 28 02.0
comp=Z,82nm,0.9s
I33A Coleman 63.17 52 P P 06 28 00.9 -0.5
baz=319
J32A Parkston 63.18 53 P P 06 28 00.3 -1.1
baz=319
H34A Spellman Lake, 63.19 51 P P 06 28 01.2 -0.3
baz=319,SNR=8.4
K31A O'Neill 63.30 54 P P 06 28 01.9 -0.4
baz=319
E37A Wrenshall 63.30 47 P P 06 28 01.6 -0.6
baz=320
AKN Aaknes 63.30 346 eP P 06 28 02.6 +0.6
AKN IAmb IAmb 06 28 04.0
comp=Z,103nm,0.8s
AKN eS S 06 36 32.4 +3.0
F36A Milaca 63.33 49 P P 06 28 02.1 -0.3
baz=320,SNR=8.3
C39A Grand Marais 63.33 45 P P 06 28 01.7 -0.6
baz=321
FUNA Funafuti 63.34 159 PFAKE 06 28 20.0 +17
FUNA LR LR
comp=Z,6μm,19.0s
X18A Snowflake 63.37 67 eP P 06 28 04.6 +1.5
G35A Watkins 63.38 50 P P 06 28 02.9 +0.2
baz=320,SNR=8.8
SDCO Great Sand Dun 63.44 62 P P 06 28 04.2 +0.6
baz=318,SNR=18
SDCO Great Sand Dun 63.44 62 eP P 06 28 04.9 +1.3
comp=Z,42nm,1.5s
SDCO LR LR
comp=Z,835nm,22.0s
ECSD EROS Data Cent 63.50 52 P P 06 28 03.2 -0.4
baz=319,SNR=12
ECSD EROS Data Cent 63.50 52 eP P 06 28 03.5 0.0
comp=Z,50nm,1.3s
ECSD LR LR
comp=Z,2μm,22.0s
L31A Butterfield Fa 63.59 55 P P 06 28 04.3 +0.1
baz=319,SNR=9.9
H35A Sunnyside Ranc 63.61 50 P P 06 28 04.7 +0.5
baz=320,SNR=18
I34A Hadley 63.63 51 P P 06 28 04.1 -0.3
baz=319,SNR=5.3
214A Organ Pipe Nat 63.63 71 P P 06 28 05.0 +0.4
baz=318,SNR=7.4
214A Organ Pipe Nat 63.63 71 eP P 06 28 05.6 +0.9
comp=Z,136nm,1.2s
J33A Davis 63.64 53 P P 06 28 04.1 -0.4
baz=319,SNR=6.7
K32A Verdigre 63.65 54 P P 06 28 04.1 -0.5
baz=319
G36A St. Michael 63.70 49 P P 06 28 04.7 -0.2
baz=320,SNR=5.3
NB2 NORSAR Subarra 63.72 344 P P 06 28 04.6 -0.1
comp=Z,96nm,0.9s,baz=20,slow=6.9
NB2 NORSAR Subarra 63.72 344 P P 06 28 04.6 -0.1
baz=20,slow=6.9
NOA NORSAR Array B 63.72 344 P P 06 28 05.0 +0.3
comp=Z,47nm,0.7s,baz=20,slow=6.6,SNR=56
NOA LR LR 06 59 28.3
comp=Z,640nm,19.6s,baz=30,slow=39
KBL Kabul 63.84 293 eP P 06 28 04.0 -2.2
KBL pmax pmax
comp=Z,28nm,0.9s
KBL Kabul 63.84 293 eP P 06 28 04.0 -2.2
comp=Z,28nm,0.9s
SBUM Sibu 63.85 235 ⇓P P 06 28 05.9 -0.3
NC602 NORSAR Array S 63.95 343 eP P 06 28 06.2 0.0
NC602 IAmb IAmb 06 28 07.3
comp=Z,42nm,1.0s
NC602 epP pP 06 28 18.7 -2.5
KSCO Kaye Shedlock' 64.02 59 P P 06 28 07.1 -0.1
baz=318,SNR=7.5
KSCO Kaye Shedlock' 64.02 59 eP P 06 28 08.2 +0.9
comp=Z,52nm,1.3s
VRH Novokhopyorsk 64.03 322 eP P 06 28 06.1 -0.7
VRH pmax pmax
comp=Z,140nm,0.7s
H36A Jessenland, He 64.12 50 P P 06 28 07.9 +0.3
baz=320,SNR=13
L32A Elgin 64.12 54 P P 06 28 07.4 -0.3
baz=319
M31A Lambtecht Ranc 64.14 55 P P 06 28 07.5 -0.3
baz=319
SPMN Marine on St. 64.14 49 P P 06 28 07.6 -0.2
baz=320,SNR=10
J34A George 64.15 52 P P 06 28 07.7 -0.1
baz=320
K33A Hardington 64.16 53 P P 06 28 07.8 -0.1
baz=319
I35A Creekview Farm 64.18 51 P P 06 28 07.7 -0.3
baz=320,SNR=6.6
L33A Hoskins 64.36 54 P P 06 28 08.8 -0.5
baz=319
J35A Milford 64.45 51 P P 06 28 09.4 -0.4
baz=320
T25A Trinidad 64.47 62 P P 06 28 10.7 +0.4
baz=318,SNR=13
T25A Trinidad 64.47 62 eP P 06 28 11.2 +1.0
comp=Z,57nm,1.4s
BGNE Belgrade 64.50 55 P P 06 28 09.9 -0.3
baz=319
I36A Fitzsimmons Fa 64.51 50 P P 06 28 09.9 -0.3
baz=320
TUC Tucson 64.53 70 P P 06 28 11.1 +0.5
baz=318
TUC Tucson 64.53 70 eP P 06 28 11.7 +1.1
TUC pmax pmax
comp=Z,19nm,1.3s
TUC MLR MLR
comp=Z,665nm,21.0s
TUC Tucson 64.53 70 eP P 06 28 11.7 +1.1
comp=Z,19nm,1.3s
TUC LR LR
comp=Z,665nm,21.0s
K34A Le Mars 64.54 52 P P 06 28 10.1 -0.2
baz=320,SNR=7.0
N31A Bailey Ranch, 64.54 56 P P 06 28 10.2 -0.3
baz=319
H37A Dierke Farm, C 64.58 49 P P 06 28 10.8 +0.2
baz=320,SNR=6.1
SUE Sulen 64.69 347 eP P 06 28 11.1 +0.1
SUE IAmb IAmb 06 28 12.6
comp=Z,94nm,1.0s
I37A Lemond, Waseca 64.80 50 P P 06 28 12.4 +0.3
baz=320,SNR=20
OSL Oslo 64.84 343 IAmb IAmb 06 28 13.1
comp=Z,116nm,1.2s
M33A Taylor Creek F 64.85 54 P P 06 28 12.2 -0.2
baz=320
O31A Woolen Ranch, 64.86 56 P P 06 28 11.9 -0.7
baz=319
J36A Seneca 1, Swea 64.88 51 P P 06 28 12.6 0.0
baz=320,SNR=10.0
N32A Stulken Farm, 64.92 55 P P 06 28 12.3 -0.6
baz=319
K35A Storm Lake 64.92 52 P P 06 28 12.2 -0.7
baz=320,SNR=10.0
L34A Svendsen Farm, 64.95 53 P P 06 28 12.6 -0.5
baz=320
VSR Storozhevoye 64.96 323 eP P 06 28 12.4 -0.5
VSR pmax pmax
comp=Z,40nm,1.0s
ANMO Albuquerque 64.99 65 P P 06 28 14.4 +0.7
baz=318
ANMO Albuquerque 64.99 65c iP P 06 28 14.8 +1.1
ANMO pmax pmax
comp=Z,8.0nm,1.2s
ANMO Albuquerque 64.99 65 eP P 06 28 14.9 +1.1
comp=Z,20nm,1.3s
ANMO LR LR
comp=Z,787nm,22.0s
LAZ Ladron 65.02 66 eP P 06 28 15.2 +1.4
SURA Surathani 65.05 251 P P 06 28 16.1 +2.1
comp=Z,78nm,1.0s
COWI Conover 65.10 46 eP P 06 28 14.0 0.0
comp=Z,37nm,1.0s
COWI LR LR
comp=Z,1μm,21.0s
TTSI Tana Toraja 65.14 225 P P 06 28 13.9 -0.6
ASK Askoy 65.18 347 eP P 06 28 14.9 +0.7
ASK IAmb IAmb 06 28 15.8
comp=Z,84nm,0.9s
M34A Aspy Farms, Fr 65.20 54 P P 06 28 14.5 -0.2
baz=320,SNR=6.2
IZAR Zarasai 65.21 333 eP P 06 28 14.8 +0.3
IZAR IAmb IAmb 06 28 16.9
comp=Z,23nm,0.6s
L35A Bielow Farm, R 65.24 53 P P 06 28 14.1 -0.8
baz=320
BER Bergen 65.26 346 eP P 06 28 14.7 0.0
BER IAmb IAmb 06 28 16.4
comp=Z,115nm,0.9s
J37A Redenius Farm, 65.27 50 P P 06 28 14.5 -0.6
baz=320,SNR=14
I38A Scanlan Farm, 65.27 49 P P 06 28 14.9 -0.2
baz=321,SNR=6.7
KONO Kongsberg 65.30 344 eP P 06 28 15.6 +0.6
KONO IAmb IAmb 06 28 16.6
comp=Z,97nm,1.2s
KONO eS S 06 36 58.3 +4.2
KONO Kongsberg 65.30 344c iP P 06 28 15.1 +0.1
KONO pmax pmax
comp=Z,315nm,1.2s
KONO Kongsberg 65.30 344 eP P 06 28 15.8 +0.8
comp=Z,88nm,1.2s
KONO LR LR
comp=Z,1μm,20.0s
O32A Brockman Farm, 65.31 56 P P 06 28 14.4 -1.0
baz=320
N33A J Bar K, Exete 65.36 55 P P 06 28 14.8 -0.9
baz=320
LPM Los Pinos Moun 65.37 65 eP P 06 28 17.6 +1.5
Y22D IRIS PASSCAL I 65.39 66 P P 06 28 17.4 +1.2
baz=319
ISAL Salakas 65.40 333 eP P 06 28 16.1 +0.4
ISAL IAmb IAmb 06 28 18.1
comp=Z,26nm,0.7s
IDID Didziasalis 65.45 333 eP P 06 28 16.4 +0.4
IDID IAmb IAmb 06 28 18.4
comp=Z,33nm,0.7s
BNM Barren Site 65.49 65 eP P 06 28 18.1 +1.1
ODD1 Odda 65.52 346 eP P 06 28 16.8 +0.3
ODD1 IAmb IAmb 06 28 18.2
comp=Z,89nm,1.0s
P32A Huiting Farm, 65.63 56 P P 06 28 16.2 -1.3
baz=320,SNR=5.2
K37A Belmond 65.64 51 P P 06 28 17.0 -0.5
baz=321,SNR=8.1
KSM Kuching 65.65 237 eP P 06 28 19.1 +1.3
comp=Z,69nm,1.2s
KSM LR LR
comp=Z,276nm,21.0s
M35A Neola 65.66 53 P P 06 28 17.3 -0.3
baz=320
CBKS Cedar Bluff 65.66 58 P P 06 28 17.0 -0.7
baz=319
CBKS Cedar Bluff 65.66 58 eP P 06 28 17.8 0.0
CBKS pmax pmax
comp=Z,42nm,1.1s
CBKS MLR MLR
comp=Z,916nm,19.0s
CBKS Cedar Bluff 65.66 58 eP P 06 28 17.8 0.0
comp=Z,42nm,1.1s
CBKS LR LR
comp=Z,916nm,19.0s
L36A Harm Buss Farm 65.67 52 P P 06 28 17.1 -0.6
baz=320,SNR=5.4
SURT Suratani 65.70 252 P P 06 28 21.0 +2.8
comp=Z,55nm,2.2s,comp=Z,764nm
N34A Lincoln 65.75 54 P P 06 28 17.3 -0.9
baz=320
J38A Wedel Dairy, R 65.76 50 P P 06 28 17.6 -0.6
baz=321,SNR=6.8
O33A Hebron 65.79 55 P P 06 28 17.5 -1.0
baz=320
NACGM Naroch 65.80 333 e P 06 28 18.0 -0.3
NACGM eLQ LQ 06 53 12.0
NACGM eLR LR 06 57 04.0
MICGM Minsk 65.84 332⇑ eP P 06 28 18.0 -0.6
MICGM PM 06 28 20.0
comp=Z,0.5nm,1.4s
MICGM PM 06 28 21.0
comp=N,0.4nm,1.6s
MICGM eLR LR 06 53 20.0
MICGM LRM MLR 07 00 32.0
comp=Z,3.4nm,18.0s
MNK Minsk 65.84 332⇑ eP P 06 28 18.0 -0.6
MNK pmax pmax
comp=Z,490nm,1.4s
MNK pmax pmax
comp=N,350nm,1.6s
MNK MLR MLR
comp=Z,3μm,18.0s
SCHQ Schefferville 65.86 28 P P 06 28 18.3 -0.5
comp=Z,24nm,0.7s,baz=356,slow=7.2,SNR=22
SCHQ Schefferville 65.86 28 eP P 06 28 18.7 -0.1
comp=Z,36nm,0.8s
YEL1 Yell 65.89 350 eP P 06 28 19.9 +1.1
SPSI Sidrap Palu 65.99 225 P P 06 28 20.1 +0.1
BLS5 Blasjo 66.02 346 eP P 06 28 19.8 +0.1
BLS5 IAmb IAmb 06 28 21.3
comp=Z,56nm,0.9s
BLS5 eS S 06 36 59.6 -3.3
121A Cookes Peak, D 66.06 67 P P 06 28 21.2 +0.6
baz=319,SNR=6.6
121A Cookes Peak, D 66.06 67 eP P 06 28 21.5 +1.0
comp=Z,31nm,1.4s
L37A Phoenix Point, 66.08 51 P P 06 28 19.5 -0.8
baz=321,SNR=8.3
TRTT Trang 66.09 250 P P 06 28 22.5 +1.8
comp=Z,74nm,1.7s,comp=Z,1μm
M36A Felix, Anita 66.10 53 P P 06 28 20.0 -0.5
baz=320
J39A Decorah 66.10 49 P P 06 28 19.3 -1.1
baz=321,SNR=10
SKLT Songkhla 66.11 249 P P 06 28 22.8 +2.0
comp=Z,62nm,1.4s
Q32A Meitler Ranch, 66.13 57 P P 06 28 19.7 -1.0
baz=320,SNR=6.9
K38A Parkersburg 66.14 50 P P 06 28 20.4 -0.4
baz=321
N35A Tabor 66.15 53 P P 06 28 20.1 -0.7
baz=320
O34A Beatrice 66.15 55 P P 06 28 19.6 -1.3
baz=320,SNR=9.1
KTGM Kuala Trenggan 66.21 246 ⇓P P 06 28 22.3 +0.8
P33A Williams Farm, 66.22 56 P P 06 28 20.3 -1.0
baz=320
LRW Lerwick 66.31 350 eP P 06 28 21.6 +0.1
LRW AMB AMB 06 28 22.8
comp=Z,65nm,1.0s
KMY Karmoy 66.40 346 eP P 06 28 22.8 +0.7
KMY IAmb IAmb 06 28 23.8
comp=Z,5.0nm,0.8s
L38A Oak Wood Farm, 66.45 51 P P 06 28 22.1 -0.6
baz=321,SNR=9.6
O35A Humboldt 66.47 54 P P 06 28 22.0 -0.9
baz=320
R32A Long Quarter, 66.48 57 P P 06 28 21.8 -1.2
baz=320
Q33A Connelly Farm, 66.49 56 P P 06 28 21.9 -1.1
baz=320,SNR=6.8
J40A Soldiers Grove 66.50 49 P P 06 28 21.7 -1.3
baz=322
M37A Trindle Farm, 66.50 52 P P 06 28 22.4 -0.6
baz=321
SCIA State Center 66.51 51 PFAKE 06 28 40.0 +17
SCIA LR LR
comp=Z,2μm,21.0s
K39A Oelwein 66.51 50 P P 06 28 21.8 -1.2
baz=321,SNR=8.5
N36A Muff Farm, Cla 66.52 53 P P 06 28 22.5 -0.7
baz=321
P34A Walnut Farm, R 66.57 55 P P 06 28 22.0 -1.5
baz=320,SNR=6.3
STAV Stavanger 66.60 346 eP P 06 28 23.3 0.0

STAV IAmb IAmb 06 28 25.0
comp=Z,106nm,0.9s
HOMB Homborsund 66.79 344 *e*P **P** **06 28 24.5 0.0**
HOMB IAmb IAmb 06 28 25.7
comp=Z,208nm,2.0s
J41A Loganville 66.85 48 P **P** **06 28 24.6 -0.7**
baz=322,SNR=8.6
K40A Colesburg 66.86 49 P **P** **06 28 24.5 -0.7**
baz=322,SNR=5.7
M38A Pleasantville 66.89 52 P **P** **06 28 25.2 -0.3**
baz=321,SNR=8.9
L39A Vinton 66.91 50 P **P** **06 28 25.0 -0.6**
baz=322,SNR=11
S32A Newby Ranch, P 66.92 58 P **P** **06 28 24.3 -1.4**
baz=320
N37A Lee Faris, Mou 66.92 53 P **P** **06 28 25.2 -0.5**
baz=321,SNR=7.8
KAPI Kappang 66.94 224 *e*P **P** **06 28 27.1 +1.1**
comp=Z,90nm,1.5s
KAPI LR LR
comp=Z,290nm,21.0s
R33A Olander Ranch, 66.94 57 P **P** **06 28 24.6 -1.3**
baz=320,SNR=6.3
P35A Duane Minner, 66.99 55 P **P** **06 28 24.9 -1.3**
baz=321
Q34A Chapman 66.99 56 P **P** **06 28 25.1 -1.1**
baz=320
KSU1 Kansas State U 67.02 55 P **P** **06 28 25.3 -1.1**
baz=320
KSU1 Kansas State U 67.02 55 PFAKE 06 28 40.0 +14
KSU1 LR LR
comp=Z,2µm,20.0s
O36A Bolckow 67.04 54 P **P** **06 28 25.8 -0.6**
baz=321
JFWS Jewell Farm 67.10 49 *e*P **P** **06 28 26.7 -0.1**
JFWS pmax pmax
comp=Z,68nm,1.5s
JFWS MLR MLR
comp=Z,2µm,20.0s
JFWS Jewell Farm 67.10 49 *e*P **P** **06 28 26.7 -0.1**
comp=Z,68nm,1.5s
JFWS LR LR
comp=Z,2µm,20.0s
GEYT Alibeck 67.14 303 P **P** **06 28 26.6 -0.6**
comp=Z,14nm,0.7s,baz=25,slow=4.9,SNR=11
K41A Shullsburg 67.31 49 P **P** **06 28 27.2 -1.0**
baz=322,SNR=6.9
P36A Good Intent, A 67.32 54 P **P** **06 28 27.1 -1.1**
baz=321
R34A Isabella, Hill 67.32 56 P **P** **06 28 27.2 -1.1**
baz=320,SNR=5.9
L40A Anamosa 67.32 50 P **P** **06 28 27.0 -1.2**
baz=322,SNR=7.3
T32A Huddler Ranch, 67.32 58 P **P** **06 28 26.8 -1.6**
baz=320
M39A Webster 67.33 51 P **P** **06 28 27.9 -0.4**
baz=322,SNR=13
N38A Joes South For 67.36 52 P **P** **06 28 28.0 -0.6**
baz=321
O37A Wolven Farm, M 67.41 53 P **P** **06 28 28.4 -0.4**
baz=321
S33A Kaszmaul Farm, 67.48 57 P **P** **06 28 28.4 -0.9**
baz=320,SNR=5.4
Q35A Mercer Eighty, 67.49 55 P **P** **06 28 28.2 -1.2**
baz=321
AMTX Amarillo 67.62 62 P **P** **06 28 30.7 +0.3**
baz=320
AMTX Amarillo 67.62 62 *e*P **P** **06 28 31.1 +0.7**
comp=Z,57nm,1.4s
KULM Kulim 67.63 248 ⇑P **P** **06 28 30.3 -0.2**
KULM Kulim 67.63 248 *e*P **P** **06 28 30.2 -0.3**
comp=Z,294nm,2.1s
KULM LR LR
comp=Z,716nm,19.0s
L41A Preston 67.64 49 P **P** **06 28 29.4 -0.8**
baz=322,SNR=8.5
N39A Derby Farms, D 67.64 51 P **P** **06 28 29.9 -0.4**
baz=322,SNR=8.4
Q36A Arnold C. Orve 67.70 55 P **P** **06 28 29.3 -1.4**
baz=321
MSTX Muleshoe 67.73 63 P **P** **06 28 30.8 -0.3**
baz=320,SNR=15
MSTX Muleshoe 67.73 63 *e*P **P** **06 28 31.6 +0.5**
comp=Z,60nm,1.3s
BBKI Banjar Baru 67.73 230 P **P** **06 28 32.7 +1.6**
comp=Z,130nm,1.1s,comp=Z,8µm
T33A Patterson Ranc 67.74 58 P **P** **06 28 29.8 -1.2**
baz=320
P37A Lathrop 67.76 53 P **P** **06 28 30.2 -0.9**
baz=321,SNR=6.7
O38A Galt 67.77 53 P **P** **06 28 30.7 -0.4**
baz=321
KLNR Kaliningrad 67.80 336*c* *i*P **P** **06 28 31.1 +0.1**
KLNR pmax pmax
comp=Z,165nm,0.9s
R35A Emporia Munici 67.83 56 P **P** **06 28 30.5 -1.0**
baz=321
S34A Willow Spring 67.84 57 P **P** **06 28 30.2 -1.4**
baz=321
U32A Winter Ranch, 67.89 59 P **P** **06 28 31.6 -0.4**
baz=320
MNTX Cornudas Mount 68.02 66 P **P** **06 28 33.4 +0.6**
baz=322,SNR=15
MNTX Cornudas Mount 68.02 66 *e*P **P** **06 28 33.7 +0.8**
comp=Z,52nm,1.5s
MNTX LR LR
comp=Z,675nm,21.0s
IPM Ipoh 68.08 247 ⇑P **P** **06 28 33.4 0.0**
IPM Ipoh 68.08 247 *e*P **P** **06 28 33.5 +0.2**
comp=Z,15nm,0.6s
O39A Kirksville 68.11 52 P **P** **06 28 32.6 -0.7**
baz=322,SNR=8.8
P38A Dawn 68.13 53 P **P** **06 28 32.8 -0.5**
baz=322,SNR=9.1
COEN Coen 68.13 198 *e*P **P** **06 28 34.5 +1.0**
comp=Z,52nm,1.1s
VLDQ Val d'Or 68.17 37 *e*P **P** **06 28 32.0 -1.4**
comp=Z,65nm,1.1s
R36A Gordon, Harris 68.17 55 P **P** **06 28 32.3 -1.3**
baz=321,SNR=5.3
S35A Otter Creek Ra 68.26 56 P **P** **06 28 32.9 -1.3**
baz=321
Q37A Longview Farm, 68.26 54 P **P** **06 28 33.0 -1.2**
baz=321
U33A Lingo Farm, Me 68.31 58 P **P** **06 28 33.7 -0.9**
baz=321,SNR=5.5
T34A McClaskey Farm 68.33 57 P **P** **06 28 33.5 -1.2**
baz=321,SNR=7.7
V32A Arapaho 68.37 59 P **P** **06 28 34.9 -0.1**
baz=320
R37A Teagarden Farm 68.51 55 P **P** **06 28 34.2 -1.6**
baz=321
COP Copenhagen 68.52 341⇑ *i*P **P** **06 28 36.1 +0.6**
comp=Z,84nm,0.8s
COP *i* 06 28 49.6
comp=Z,1µm,20.0s
COP Copenhagen 68.52 341⇑ *i*P **P** **06 28 36.1 +0.6**
COP *i* 06 28 49.6
COP pmax pmax
comp=Z,84nm,0.8s
COP MLR MLR
comp=Z,1µm,20.0s
O40A La Belle 68.53 52 P **P** **06 28 35.5 -0.4**
baz=322,SNR=15
BSD Bornholm Skovb 68.55 339⇑ *i*P **P** **06 28 35.5 -0.2**
comp=Z,1µm,23.0s
BSD Bornholm Skovb 68.55 339⇑ *i*P **P** **06 28 35.5 -0.2**
BSD MLR MLR
comp=Z,1µm,23.0s
S36A Lake Cedric, C 68.59 56 P **P** **06 28 35.3 -0.9**
baz=321,SNR=8.4
Q38A Cooks Store, C 68.60 53 P **P** **06 28 35.5 -0.9**
baz=322,SNR=8.5
U34A Anderson Ranch 68.60 58 P **P** **06 28 35.4 -1.0**
baz=321
U34A Anderson Ranch 68.60 58 *e*P **P** **06 28 36.4 0.0**
comp=Z,13nm,0.5s
P39B Salisbury 68.61 53 P **P** **06 28 35.7 -0.6**
baz=322,SNR=9.2
V33A Lossen Ranch, 68.69 59 P **P** **06 28 35.9 -1.0**
baz=321
W32A Sentinel 68.73 60 P **P** **06 28 37.6 +0.4**
baz=321,SNR=18
AKASG Malin Array Be 68.75 329 P **P** **06 28 36.2 -0.8**
comp=Z,54nm,0.6s,baz=30,slow=6.4,SNR=54
T35A Sooner Cattle 68.75 57 P **P** **06 28 36.4 -0.9**
baz=321,SNR=5.6
KIEV Kiev 68.76 329*c* *i*P **P** **06 28 36.3 -0.8**
KIEV pmax pmax
comp=Z,98nm,0.9s
KIEV Kiev 68.76 329 *e*P **P** **06 28 36.6 -0.4**
comp=Z,106nm,0.9s
KIEV LR LR
comp=Z,2µm,20.0s
MYKOM Kota Tinggi 68.77 243 ⇓P **P** **06 28 40.1 +2.5**
FRIM Kepong 68.78 246 ⇑P **P** **06 28 38.3 +0.6**
Q39A Willow Grove F 68.85 53 P **P** **06 28 37.4 -0.5**
baz=322
KGM Kluang 68.86 244 ⇑P **P** **06 28 39.7 +1.5**
LLD Lille Linde 68.90 341 *i* P **P** **06 28 38.5 +0.7**
comp=Z,185nm,0.9s
LLD Lille Linde 68.90 341 *i* P **P** **06 28 38.5 +0.7**
LLD pmax pmax
comp=Z,180nm,0.9s
P40A Paris 68.92 52 P **P** **06 28 37.9 -0.4**
baz=322,SNR=12
S37A Fort Scott 68.94 55 P **P** **06 28 37.3 -1.2**
baz=322,SNR=5.4
T36A Boggs Farm, Ca 68.96 56 P **P** **06 28 37.6 -1.0**
baz=321
O41A Passleys Farm, 69.01 51 P **P** **06 28 38.8 0.0**
baz=322,SNR=14
MCD Coleburn Disti 69.04 350⇑ *e*P **P** **06 28 38.8 +0.1**
U35A Pawnee 69.06 57 P **P** **06 28 38.7 -0.5**
baz=321
R38A Fenwick Farm, 69.07 54 P **P** **06 28 37.9 -1.3**
baz=322,SNR=6.7
V34A Guthrie 69.08 58 P **P** **06 28 38.8 -0.5**
baz=321,SNR=12
V34A Guthrie 69.08 58 *e*P **P** **06 28 39.3 0.0**
comp=Z,66nm,1.3s
W33A Caddo, Fort Co 69.11 59 P **P** **06 28 40.1 +0.5**
baz=321,SNR=11
X32A Elmer 69.25 60 P **P** **06 28 40.2 -0.2**
baz=321,SNR=14
WMOK Wichita Mounta 69.27 60 P **P** **06 28 40.6 0.0**
baz=321,SNR=14
WMOK Wichita Mounta 69.27 60 PFAKE 06 28 50.0 +9.5
WMOK LR LR
comp=Z,744nm,21.0s
P41A Barry, Barry 69.27 51 P **P** **06 28 39.9 -0.5**
baz=322
MME1 Meikle Cairn 69.27 350 *e*P **P** **06 28 40.5 +0.4**
MDO Dochfour 69.28 351 *e*P **P** **06 28 39.9 -0.3**
KAC Achnashellach 69.31 352 *e*P **P** **06 28 41.3 +0.9**
O42A Bath 69.32 50 P **P** **06 28 39.8 -0.9**
baz=323
Q40A Laux Farm, Aux 69.32 52 P **P** **06 28 40.3 -0.5**
baz=322,SNR=8.7
R39A Chumby, Stover 69.39 53 P **P** **06 28 40.4 -0.9**
baz=322,SNR=7.5
T37A Cheneyville 18 69.39 56 P **P** **06 28 40.4 -0.9**
baz=322,SNR=7.8
HDIL Hopedale 69.40 50 P **P** **06 28 41.0 -0.2**
baz=323,SNR=11
HDIL Hopedale 69.40 50 *e*P **P** **06 28 40.9 -0.3**
comp=Z,69nm,0.9s
HDIL LR LR
comp=Z,884nm,19.0s
W34A Bridge Creek, 69.41 59 P **P** **06 28 41.5 +0.1**
baz=321,SNR=6.4
W34A Bridge Creek, 69.41 59 *e*P **P** **06 28 41.5 +0.1**
comp=Z,49nm,1.1s
RGN Rugen 69.41 340 *e*P **P** **06 28 41.9 +0.9**
comp=Z,432nm,1.2s
V35A Meyer Ranch, C 69.48 58 P **P** **06 28 41.3 -0.5**
baz=321
S38A Stockton 69.50 55 P **P** **06 28 41.0 -1.0**
baz=322,SNR=16
KPL Plockton 69.50 352 *e*P **P** **06 28 42.3 +0.8**
NCK Nalchik 69.53 316⇑ *i*P **P** **06 28 42.7 +0.7**
NCK pmax pmax
comp=Z,32nm,0.9s
KIV Kislovodsk 69.54 317 *i* P **P** **06 28 42.2 +0.1**
SNR=18
KIV Kislovodsk 69.54 317 *e*P **P** **06 28 41.9 -0.3**
KIV *e*S **S** **06 37 44.1 -1.5**
KIV pmax pmax
comp=Z,28nm,1.0s
KIV MLR MLR
comp=Z,2µm,17.0s
KIV Kislovodsk 69.54 317 P **P** **06 28 42.2 +0.1**
SNR=12
KIV Kislovodsk 69.54 317 P **P** **06 28 42.2 +0.1**
SNR=12
KIV Kislovodsk 69.54 317 PFAKE 06 28 50.0 +7.8
KIV LR LR
comp=Z,3µm,19.0s
U36A Oologah 69.55 57 P **P** **06 28 41.6 -0.6**
baz=322
X33A Lawton 69.56 60 P **P** **06 28 42.4 0.0**
baz=321,SNR=5.6
DRUM Mains of Drumt 69.62 350 *e*P **P** **06 28 42.3 0.0**
KBZ Khabaz 69.64 316 P **P** **06 28 42.9 +0.3**
comp=Z,34nm,0.9s,baz=53,slow=5.9,SNR=33
P42A Winchester 69.68 51 P **P** **06 28 42.3 -0.6**
baz=323,SNR=12
GKP Gorka Klasztor 69.73 337 *e*P **P** **06 28 43.5 +0.5**
GKP LMZ LR 07 00 06.6
comp=Z,2µm,24.7s
GKP Gorka Klasztor 69.73 337 *e*P **P** **06 28 43.5 +0.5**
GKP MLR MLR
comp=Z,2µm,24.7s
S39A Bolivar 69.74 54 P **P** **06 28 42.1 -1.3**
baz=322,SNR=8.2
T38A Diamond 69.78 55 P **P** **06 28 42.4 -1.2**
baz=322,SNR=15
R40A Maddies Statio 69.78 53 P **P** **06 28 42.9 -0.7**
baz=322,SNR=8.6
U37A Salina 69.86 56 P **P** **06 28 43.8 -0.3**
baz=322,SNR=12
X34A Smith Ranch, M 69.87 59 P **P** **06 28 44.5 +0.3**
baz=321,SNR=7.6
TUL1 Leonard 69.90 57 P **P** **06 28 43.9 -0.5**
baz=322,SNR=12
TUL1 Leonard 69.90 57 *e*P **P** **06 28 44.5 +0.1**
comp=Z,55nm,1.1s
Y33A Hilltop Ranch, 69.91 60 P **P** **06 28 44.3 -0.2**
baz=321,SNR=6.2
V36A Jenks 69.92 57 P **P** **06 28 44.0 -0.5**
baz=322,SNR=12
W35A Tecumseh 69.94 58 P **P** **06 28 44.5 -0.1**
baz=321,SNR=9.7
ZEI Tsey 69.98 315 *e*P **P** **06 28 45.0 0.0**
ZEI pmax pmax
comp=Z,61nm,0.6s
MTN Manton Dam 70.01 210 *e*P **P** **06 28 45.8 +0.6**
comp=Z,204nm,1.8s
EDU Dundee 70.03 350 *e*P **P** **06 28 45.2 +0.4**
Q42A Golden Eagle 70.12 51 P **P** **06 28 45.8 +0.1**
baz=323,SNR=17
BEL Belsk 70.17 334 *e*P **P** **06 28 46.7 +1.0**
BEL LMZ LR 07 02 47.5
comp=Z,3µm,19.7s
BEL Belsk 70.17 334 *e*P **P** **06 28 46.7 +1.0**
BEL MLR MLR
comp=Z,3µm,19.7s
U38A Gravette 70.19 56 P **P** **06 28 45.5 -0.7**
baz=322,SNR=11
S40A Lebanon 70.22 54 P **P** **06 28 45.5 -0.8**
baz=322,SNR=12
T39A Clever 70.24 55 P **P** **06 28 45.5 -0.9**
baz=322,SNR=5.4
V37A Hulbert 70.25 57 P **P** **06 28 45.9 -0.6**
baz=322,SNR=12
W36A Wetumka 70.28 58 P **P** **06 28 46.5 -0.2**
baz=322,SNR=9.6
Z33A Whitaker Ranch 70.40 61 P **P** **06 28 47.0 -0.5**
baz=321
Y34A Reagan Ranch, 70.41 60 P **P** **06 28 47.3 -0.2**
baz=321,SNR=8.5
ABTX Abilene, Hawle 70.44 62 P **P** **06 28 47.6 -0.2**
baz=321,SNR=8.8
ABTX Abilene, Hawle 70.44 62 *e*P **P** **06 28 48.4 +0.6**
comp=Z,71nm,1.3s
X35A Drake 70.47 59 P **P** **06 28 47.3 -0.6**
baz=322,SNR=5.8
Q43A New Douglas 70.49 51 P **P** **06 28 47.3 -0.6**
baz=323
AAM Ann Arbor 70.50 45 *e*P **P** **06 28 48.4 +0.5**
AAM pmax pmax
comp=Z,64nm,1.1s
AAM MLR MLR
comp=Z,759nm,20.0s
AAM Ann Arbor 70.50 45 *e*P **P** **06 28 48.4 +0.5**
comp=Z,64nm,1.1s
AAM LR LR
comp=Z,759nm,20.0s
EAB Aberfoyle 70.52 351⇑ *e*P **P** **06 28 47.8 0.0**
HHAR Hobbs 70.54 55 *e*P **P** **06 28 47.8 -0.6**
comp=Z,46nm,1.0s
SFIN Lafayette 70.54 48 P **P** **06 28 47.4 -0.8**
baz=324
SFIN Lafayette 70.54 48 *e*P **P** **06 28 48.1 -0.2**
comp=Z,103nm,1.9s
T40A Mansfield 70.56 54 P **P** **06 28 47.3 -1.1**
baz=322,SNR=8.9
S41A Jillco Farms, 70.59 53 P **P** **06 28 47.9 -0.7**
baz=323,SNR=11
ESY Stoneypath 70.61 350 *e*P **P** **06 28 48.4 +0.1**
V38A Canehill 70.64 56 P **P** **06 28 48.3 -0.7**
baz=322,SNR=16
PSI Prapat 70.64 248 *e*P **P** **06 28 49.7 +0.4**
comp=Z,50nm,1.4s
X36A Centrahoma 70.66 58 P **P** **06 28 49.0 -0.1**
baz=322,SNR=5.4
W37B Quinton 70.69 57 P **P** **06 28 49.1 -0.1**
baz=322,SNR=10.0
U39A Green Forest 70.69 55 P **P** **06 28 48.2 -1.1**
baz=322,SNR=16
Z34A Collier Ranch, 70.78 60 P **P** **06 28 49.4 -0.4**
baz=321
TXAR Lajitas Array 70.78 67 P **P** **06 28 50.8 +0.8**
comp=Z,14nm,1.1s,baz=296,slow=3.7,SNR=19
Y35A Marietta 70.82 59 P **P** **06 28 49.9 -0.2**
baz=322
TRQ Mont Tremblant 70.82 37 *e*P **P** **06 28 49.2 -0.7**
AFI Afiamalu 70.83 151 PFAKE 06 29 00.0 +10
AFI LR LR
comp=Z,1µm,20.0s
133A Hamilton Ranch 70.84 61 P **P** **06 28 49.9 -0.3**
baz=321,SNR=12
Q44A Meyer Farm, Va 70.84 50 P **P** **06 28 49.3 -0.8**
baz=324,SNR=6.0
PLVO Plevna 70.89 39 *e*P **P** **06 28 49.7 -0.6**
PGBU Glenifferbraes 70.91 351 *e*P **P** **06 28 50.6 +0.5**
PGBU AMB AMB 06 28 52.1
comp=Z,206nm,1.2s
ANN Anapa 70.94 321 *e*P **P** **06 28 49.3 -1.2**
T41A Mountain View 71.01 53 P **P** **06 28 50.3 -0.8**
baz=323,SNR=10
U40A Yellville 71.02 55 P **P** **06 28 50.4 -0.8**
baz=322,SNR=16
V39A Pettigrew 71.04 56 P **P** **06 28 50.7 -0.7**
baz=322
SOC Sochi 71.06 318*c* *i*P **P** **06 28 51.1 -0.2**
SOC *e* 06 31 24.6
SOC *e*PPP PPP 06 33 05.6
SOC *e*S **S** **06 38 03.8 +0.6**
SOC pmax pmax
comp=Z,63nm,0.9s
SOC MLR MLR
comp=Z,2µm,16.0s
LVV L'vov 71.09 332*d* *i*P **P** **06 28 51.5 +0.1**
LVV *e*S **S** **06 38 01.2 -2.2**
LVV MLR MLR
comp=E,2µm,20.0s
LVV MLR MLR
comp=N,3µm,19.0s
LVV MLR MLR
comp=Z,4µm,19.5s
X37A Clayton 71.15 58 P **P** **06 28 51.5 -0.5**
baz=322,SNR=5.3
LMQ La Malbaie 71.15 33 *e*P **P** **06 28 51.6 -0.2**
Z35A Perchaven, San 71.16 60 P **P** **06 28 51.2 -0.9**
baz=322
HYB Hyderabad 71.16 274 *i* P **P** **06 28 52.0 -0.3**
W38A Poteau 71.20 57 P **P** **06 28 52.2 -0.1**
baz=322,SNR=11
Y36A Durant 71.22 59 P **P** **06 28 52.0 -0.4**
baz=322,SNR=6.3
ESK Eskdalemuir 71.26 350 *e*P **P** **06 28 52.1 -0.2**
ESK pmax pmax
comp=Z,75nm,1.0s
ESK MLR MLR
comp=Z,641nm,19.0s
ESK Eskdalemuir 71.26 350 *e*P **P** **06 28 52.1 -0.2**
comp=Z,75nm,1.0s
ESK LR LR
comp=Z,641nm,19.0s
SORM Soroca 71.27 328⇑ *i*P **P** **06 28 51.9 -0.6**
AKH Akhalkalaki 71.28 315⇑ *i*P **P** **06 28 53.5 +0.6**
233A Rising Star 71.31 62 P **P** **06 28 52.4 -0.6**
baz=321,SNR=11
134A White-Moore Ra 71.31 61 P **P** **06 28 52.8 -0.3**
baz=322,SNR=11
R44A Waltonville 71.34 51 P **P** **06 28 52.7 -0.4**
baz=324,SNR=14
X38A Whitesboro 71.36 57 P **P** **06 28 53.1 -0.2**
baz=322,SNR=6.1
OLIL Olney 71.41 50 *e*P **P** **06 28 53.6 +0.1**
comp=Z,51nm,1.2s
S43A Fulton Ridge, 71.41 52 P **P** **06 28 52.8 -0.7**
baz=323,SNR=9.6
GMK Mull of Kintyr 71.47 351 *e*P **P** **06 28 54.4 +0.8**
V40A Witts Springs 71.47 55 P **P** **06 28 52.9 -1.1**
baz=323,SNR=10
W39A Magazine 71.47 56 P **P** **06 28 53.6 -0.4**
baz=322,SNR=8.9
BHH Howats Hill 71.48 350⇑ *e*P **P** **06 28 53.4 -0.3**
U41A Viola 71.49 54 P **P** **06 28 53.1 -0.9**
baz=323,SNR=7.1
HPIG 71.50 70 *e*P **P** **06 28 55.0 +0.5**
comp=Z,73nm,2.0s
Y37A Hugo 71.50 58 P **P** **06 28 53.7 -0.4**
baz=322
Z36A Blue Ridge 71.63 59 P **P** **06 28 54.3 -0.7**
baz=322,SNR=7.6
KWP Kalwaria Pacla 71.64 332 *e*P **P** **06 28 55.6 +0.9**
KWP LMZ LR 06 58 56.4
comp=Z,2µm,28.6s
KWP Kalwaria Pacla 71.64 332 *e*P **P** **06 28 55.6 +0.9**
135A Vickery Place, 71.68 60 P **P** **06 28 55.0 -0.3**
baz=322
S44A Carbondale 71.70 51 P **P** **06 28 55.1 -0.2**
baz=324,SNR=7.9
SIUC Southern Illin 71.70 51 *e*P **P** **06 28 55.5 +0.2**
comp=Z,48nm,0.9s
234A Clairette 71.72 61 P **P** **06 28 55.2 -0.4**
baz=322,SNR=9.0
GNI Garni 71.77 313 *i* P **P** **06 28 56.7 +0.8**
SNR=9.5
GNI Garni 71.77 313*c* *i*P **P** **06 28 56.7 +0.8**
GNI pmax pmax
comp=Z,363nm,1.8s
GNI Garni 71.77 313 P **P** **06 28 56.7 +0.8**
SNR=12
GNI Garni 71.77 313 P **P** **06 28 56.7 +0.8**
SNR=12
GNI Garni 71.77 313 *e*P **P** **06 28 57.2 +1.4**
comp=Z,249nm,1.8s
GNI LR LR
comp=Z,2µm,21.0s
BLO Bloomington 71.78 49 *e*P **P** **06 28 55.7 -0.1**
BLO pmax pmax
comp=Z,22nm,1.0s
BLO Bloomington 71.78 49 *e*P **P** **06 28 55.7 -0.1**
comp=Z,22nm,1.0s
333A Richland Sprin 71.80 62 P **P** **06 28 55.7 -0.4**
baz=322,SNR=13
U42A Revenden 71.82 54 P **P** **06 28 55.2 -0.8**
baz=323
V41A Mountainview 71.82 55 P **P** **06 28 55.1 -0.9**
baz=323,SNR=11
W40A Ferguson Farm, 71.83 56 P **P** **06 28 55.6 -0.5**
baz=323,SNR=7.6
BBO1 Bothel 71.84 350 *e*P **P** **06 28 56.5 +0.7**
X39A Fountain Ranch 71.85 57 P **P** **06 28 56.0 -0.2**
baz=322,SNR=11
GAL1 Galloway 71.86 351 *e*P **P** **06 28 56.5 +0.6**
GAL1 AMB AMB 06 28 57.6
comp=Z,28nm,1.5s
PBMO Poplar Bluff 71.87 53 *e*P **P** **06 28 56.4 +0.1**
comp=Z,63nm,1.1s
OJC Ojcow 71.90 334 *e*P **P** **06 28 56.7 +0.4**
OJC *es*P **pP** **06 29 11.7 +0.1**
OJC LMZ LR 07 03 53.5
comp=Z,4µm,19.6s
OJC Ojcow 71.90 334 *e*P **P** **06 28 56.7 +0.4**
OJC *e**SP **pP** **06 29 11.7 +0.1**
OJC MLR MLR
comp=Z,4µm,19.6s

OJC	Ojcow		71.90	334	*e*P		P	06 28 56.9	+0.6
	comp=Z,142nm,1.1s									
KESW	Keswick, Cumbr		71.97	350	*e*P		P	06 28 56.9	+0.3
KESW					AMB		AMB	06 28 58.7	
	comp=Z,152nm,0.9s									
Y38A	Idabel		71.99	57	P		P	06 28 56.7	-0.4
	baz=322									
JCT	Junction City		72.02	63	P		P	06 28 56.9	-0.5
	baz=322,SNR=11									
JCT	Junction City		72.02	63	*e*P		P	06 28 57.7	+0.3
JCT					pmax		pmax			
	comp=Z,47nm,1.2s									
JCT					MLR		MLR			
	comp=Z,855nm,21.0s									
JCT	Junction City		72.02	63	*e*P		P	06 28 57.7	+0.3
	comp=Z,47nm,1.2s									
JCT					LR		LR			
	comp=Z,855nm,21.0s									
S45A	Carrier Mills		72.03	51	P		P	06 28 56.8	-0.5
	baz=324,SNR=8.8									
MSVF	Nonsavu		72.05	162	*e*P		P	06 28 59.3	+1.8
MSVF					pmax		pmax			
	comp=Z,32nm,1.1s									
MSVF	Nonsavu		72.05	162	PFAKE			06 29 10.0	+12
MSVF					LR		LR			
	comp=Z,688nm,19.0s									
SIM	Simferopol'		72.06	323	*e*P		P	06 28 57.7	+0.4
SIM					*e*'PP		sP	06 29 18.0	-0.8
SIM					*e*S		S	06 38 14.0	-0.6
SIM					pmax		pmax			
	comp=Z,42nm,0.8s									
SIM					pmax		pmax			
	comp=Z,150nm,12.8s									
SIM					MLR		MLR			
	comp=Z,8μm,18.0s									
MIAR	Mount Ida		72.09	56	P		P	06 28 57.3	-0.3
	baz=323,SNR=10.0									
MIAR	Mount Ida		72.09	56	*e*P		P	06 28 58.0	+0.3
MIAR					pmax		pmax			
	comp=Z,42nm,1.2s									
MIAR					MLR		MLR			
	comp=Z,1μm,19.0s									
MIAR	Mount Ida		72.09	56	*e*P		P	06 28 58.0	+0.3
	comp=Z,42nm,1.2s									
MIAR					LR		LR			
	comp=Z,1μm,19.0s									
WHTX	Lake Whitney,		72.09	61	P		P	06 28 57.3	-0.5
	baz=322									
WHTX	Lake Whitney,		72.09	61	*e*P		P	06 28 58.2	+0.5
	comp=Z,52nm,1.3s									
X201	Greenbrier Sit		72.11	55	*e*P		P	06 28 57.2	-0.6
	comp=Z,56nm,1.3s									
Z37A	Pogue Cattle C		72.11	59	P		P	06 28 57.3	-0.5
	baz=322									
KIS	Kishinev		72.12	327	⇑*i*P		P	06 28 54.0	-3.6
	comp=Z,600nm,2.0s									
KIS	Kishinev		72.12	327	*e*PcP		PcP	06 29 10.0	-5.7
KIS					*e*S		S	06 38 10.0	-5.3
KIS					LRM		MLR	07 04 30.0	
	comp=Z,3μm,18.0s									
KIS	Kishinev		72.12	327	α*i*P		P	06 28 54.0	-3.6
KIS					*e*			06 29 10.0	
KIS					*e*			06 31 40.0	
KIS					*e*			06 33 30.0	
KIS					*e*S		S	06 38 10.0	-5.3
KIS					*e*			06 38 40.0	
KIS					*e*			06 39 13.0	
KIS					pmax		pmax			
	comp=Z,600nm,2.0s									
KIS					pmax		pmax			
	comp=N,300nm,2.0s									
KIS					MLR		MLR			
	comp=E,2μm,16.0s									
KIS					MLR		MLR			
	comp=Z,4μm,16.0s									
KIS					MLR		MLR			
	comp=N,3μm,18.0s									
KIS					MLR		MLR			
	comp=Z,4μm,16.0s									
X301	Greenbrier Sit		72.13	55	*e*P		P	06 28 57.4	-0.5
	comp=Z,38nm,1.2s									
WHAR	Wooly Hollow		72.15	55	*e*P		P	06 28 57.8	-0.2
	comp=Z,84nm,1.3s									
V42A	Cord		72.18	54	P		P	06 28 57.2	-1.0
	baz=323,SNR=8.5									
LONY	Lake Ozonia		72.18	38	*e*P		P	06 28 57.2	-0.9
	comp=Z,32nm,1.3s									
LONY					LR		LR			
	comp=Z,765nm,21.0s									
433A	Art		72.19	63	P		P	06 28 58.3	-0.1
	baz=322,SNR=16									
334A	Lometa		72.19	62	P		P	06 28 58.1	-0.2
	baz=322,SNR=7.4									
KSP	Ksiaz		72.20	337	*e*P		P	06 28 58.5	+0.4
KSP					*e*sP		pP	06 29 13.4	0.0
KSP					LMZ		LR	07 01 59.7	
	comp=Z,2μm,23.9s									
KSP	Ksiaz		72.20	337	*e*P		P	06 28 58.5	+0.4
KSP					*e*'SP		pP	06 29 13.4	0.0
KSP					MLR		MLR			
	comp=Z,2μm,23.9s									
136A	Ennis		72.20	60	P		P	06 28 57.8	-0.6
	baz=322,SNR=6.1									
USIN	University of		72.23	50	*e*P		P	06 28 58.8	+0.4
	comp=Z,74nm,0.9s									
STHS	Stebnicka Huta		72.24	333	*e*P		P	06 28 59.8	+1.4
W41B	Gary Mavity, V		72.26	55	P		P	06 28 58.0	-0.6
	baz=323,SNR=12									
PARMO	Parma		72.29	52	*e*P		P	06 29 00.2	+1.4
Y39A	Lockesburg		72.31	57	P		P	06 28 58.2	-0.8
	baz=323									
Z38A	Mt. Pleasant		72.39	58	P		P	06 28 58.9	-0.6
	baz=322									
ACSO	Alum Creek Sta		72.48	46	*e*P		P	06 29 00.2	+0.3
	comp=Z,82nm,1.3s									
ACSO					LR		LR			
	comp=Z,812nm,19.0s									
NIE	Niedzica		72.50	334	*e*P		P	06 29 00.7	+0.8
NIE					LMZ		LR	07 04 14.4	
	comp=Z,2μm,19.8s									
NIE	Niedzica		72.50	334	*e*P		P	06 29 00.7	+0.8
NIE					MLR		MLR			
	comp=Z,2μm,19.8s									
MMNY	Mt. Morris Dam		72.51	41	*e*P		P	06 28 59.8	-0.3
137A	Heron Place, G		72.51	59	P		P	06 28 59.8	-0.4
	baz=322									
ALLY	Alegheny Colle		72.51	43	*e*P		P	06 29 01.0	+0.9
	comp=Z,154nm,1.5s									
X40A	Basin Creek Fa		72.51	56	P		P	06 28 59.7	-0.5
	baz=323,SNR=7.5									
CLL	Collm		72.52	339	⇑*i*P		P	06 29 00.1	+0.2
	comp=Z,179nm,1.1s									
CLL					*i* pP		pP	06 29 15.5	+0.3
CLL					*e*PP		PP	06 31 42.0	+1.0
CLL					*e*PPP		PPP	06 33 30.0	
CLL					*e*S		S	06 38 22.0	+2.3
CLL					*i* pS		pS	06 38 39.8	+1.4
CLL					*e*sS		sS	06 38 50.0	+4.5
CLL					*e*PS		PnS	06 39 00.0	+3.8
CLL					*e*SS		SS	06 43 06.0	+8.0
CLL					*e*			06 44 06.0	
CLL					*e*			06 47 06.0	
CLL	Collm		72.52	339	⇑*i*P		P	06 29 00.1	+0.2
CLL					*i* 'PP		pP	06 29 15.5	+0.3
CLL					*e*S		S	06 38 22.0	+2.3
CLL					pmax		pmax			
	comp=Z,179nm,1.1s									
CLL	Collm		72.52	339	*e*P		P	06 28 59.4	-0.6
	comp=Z,166nm,1.1s									
UALR	University of		72.53	55	*e*P		P	06 29 00.2	0.0
	comp=Z,64nm,2.0s									
WIM	Isle of Man		72.57	351	*e*P		P	06 29 00.2	0.0
UPC	Upice		72.58	337	⇑*e*P		P	06 29 01.1	+0.8
UPC					*e*S		S	06 38 21.8	+1.3
UPC					*ex*		x	06 39 13.8	
UPC					AMS		AMS	07 07 00.0	
	comp=Z,2μm,15.2s									
UPC	Upice		72.58	337	*e*P		P	06 29 01.1	+0.8
UPC					*e*S		S	06 38 21.8	+1.3
UPC					*e*			06 39 13.8	
UPC					MLR		MLR			
	comp=Z,2μm,15.2s									
434A	Burnet		72.58	62	P		P	06 29 00.2	-0.5
	baz=322,SNR=9.5									
GMM	Mts of Mourne		72.60	351	*e*P		P	06 29 00.3	-0.1
GSI	Gunungsitoli		72.63	248	P		P	06 29 03.7	+2.6
	comp=Z,45nm,1.1s									
GSI	Gunungsitoli		72.63	248	*e*P		P	06 29 01.4	+0.3
	comp=Z,346nm,2.0s									
WCI	Wyandotte Cave		72.65	49	*e*P		P	06 29 01.2	+0.2
WCI					pmax		pmax			
	comp=Z,40nm,0.9s									
WCI	Wyandotte Cave		72.65	49	*e*P		P	06 29 01.2	+0.2
	comp=Z,40nm,0.9s									
CRVS	Cervenica-Dubn		72.65	333	*e*P		P	06 29 01.4	+0.6
DPC	Dobruska-Polom		72.65	337	⇑*i*P		P	06 29 01.7	+0.9
DPC					*e*sP		pP	06 29 15.9	-0.2
DPC					*ex*		x	06 30 47.6	
DPC					*e*S		S	06 38 21.9	+0.5
DPC					AMS		AMS	07 06 50.0	
	comp=Z,2μm,15.7s									
DPC	Dobruska-Polom		72.65	337	⇑*i*P		P	06 29 01.7	+0.9
DPC					*e*			06 29 15.9	
DPC					*e*S		S	06 38 21.9	+0.5
DPC					MLR		MLR			
	comp=Z,2μm,15.7s									
UZH	Uzhgorod		72.66	332	⇑*i*P		P	06 29 00.0	-0.8
UZH					*e*			06 29 19.3	
UZH					*e*			06 31 41.7	
UZH					*e*S		S	06 38 18.4	-3.0
UZH					*i*			06 39 03.3	
UZH					*e*			06 43 07.7	
UZH					MLR		MLR			
	comp=N,6μm,18.0s									
UZH					MLR		MLR			
	comp=E,2μm,18.0s									
UZH					MLR		MLR			
	comp=Z,480nm,18.0s									
Y40A	Okolona		72.66	56	P		P	06 29 00.6	-0.4
	baz=323									
335A	Moody		72.66	61	P		P	06 29 00.9	-0.2
	baz=322,SNR=5.7									
X41A	Kaden, Bauxite		72.67	56	P		P	06 29 00.5	-0.6
	baz=323									
OKC	Ostrava-Krasne		72.67	335	⇑*e*P		P	06 29 01.6	+0.7
OKC					*ex*		x	06 29 16.2	
OKC					*e*S		S	06 38 22.9	+1.4
OKC					*ex*		x	06 39 17.2	
OKC					AMS		AMS	07 04 30.0	
	comp=Z,2μm,19.2s									
OKC	Ostrava-Krasne		72.67	335	*e*P		P	06 29 01.6	+0.7
OKC					*e*			06 29 16.2	
OKC					*e*S		S	06 38 22.9	+1.4
OKC					*e*			06 39 17.2	
OKC					MLR		MLR			
	comp=Z,2μm,19.2s									
BURAR	Bucovina Array		72.71	330	⇑*i*P		P	06 29 01.2	-0.1
BRG	Berggiesshubel		72.72	338	*e*P		P	06 29 01.4	+0.3
	comp=Z,101nm,1.3s									
BRG					*i*			06 29 17.1	
	comp=Z,49nm,1.2s									
BRG					PP		PP	06 31 38.0	-4.7
BRG					S		S	06 38 20.0	-2.0
BRG					PS		PnS	06 38 44.0	-15
	comp=N,2μm,21.0s									
	comp=E,1μm,20.1s									
	comp=Z,2μm,24.7s									
BRG	Berggiesshubel		72.72	338	*e*P		P	06 29 01.4	+0.3
BRG					*i*			06 29 17.0	
BRG					S		S	06 38 20.0	-2.0
BRG					pmax		pmax			
	comp=Z,101nm,1.3s									
BRG					MLR		MLR			
	comp=N,2μm,21.0s									
BRG					MLR		MLR			
	comp=E,1μm,20.1s									
BRG					MLR		MLR			
	comp=Z,2μm,24.7s									
GNAR	Gosnell		72.72	53	*e*P		P	06 29 03.1	+1.8
533A	Kerrville		72.75	63	P		P	06 29 01.4	-0.3
	baz=322,SNR=11									
KRLC	Kraliky		72.79	336	⇑*e*P		P	06 29 02.8	+1.1
KRLC	Kraliky		72.79	336	*e*P		P	06 29 02.8	+1.1
138A	Matatall Enter		72.81	59	P		P	06 29 01.8	-0.1
	baz=322									
Z39A	Irene McRaven,		72.81	58	P		P	06 29 01.6	-0.4
	baz=323									
M54A	Oil Creek Stat		72.83	43	P		P	06 29 01.3	-0.7
	baz=327,SNR=7.2									
NCB	Newcomb		72.87	38	*e*P		P	06 29 01.8	-0.4
	comp=Z,0.5nm,1.4s									
MORC	Moravsky Berou		72.88	336	⇓*i*P		P	06 29 03.0	+0.7
MORC	Moravsky Berou		72.88	336	*e*P		P	06 29 02.9	+0.7
MORC					pmax		pmax			
	comp=Z,389nm,1.0s									
MORC	Moravsky Berou		72.88	336	*e*P		P	06 29 02.9	+0.7
	comp=Z,389nm,1.0s									
V44A	Blytheville		72.89	53	P		P	06 29 02.2	-0.2
	baz=324									
336A	Riesel		72.89	61	P		P	06 29 02.3	-0.2
	baz=322									
PVCC	Panska Ves		72.90	338	⇑*e*P		P	06 29 03.9	+1.7
PVCC					AMS		AMS	07 07 10.0	
	comp=Z,2μm,14.5s									
PVCC	Panska Ves		72.90	338	*e*P		P	06 29 03.9	+1.7
PVCC					MLR		MLR			
	comp=Z,2μm,14.5s									
237A	Washetta, Mont		72.95	59	P		P	06 29 02.5	-0.4
	baz=322									
LANS	Liptovska Anna		72.96	334	*e*P		P	06 29 04.3	+1.6
435B	Jarrell		72.97	62	P		P	06 29 03.2	+0.2
	baz=322									
WLAR	White Oak Lake		73.00	57	*e*P		P	06 29 03.9	+0.8
	comp=Z,65nm,1.2s									
TRPA	Tarpa		73.04	332	⇑*e*P		P	06 29 03.8	+0.7
534A	Blanco		73.08	63	P		P	06 29 03.6	-0.1
	baz=322,SNR=10									
Y41A	Eaglette Beard		73.10	56	P		P	06 29 03.4	-0.3
	baz=323									
WTSB	Winterswijk		73.11	343	*e*P		P	06 29 03.8	+0.4
	comp=Z,161nm,0.8s									
WTSB					*e*pP		pP	06 29 18.7	-0.1
WTSB					*e*sP		sP	06 29 29.6	+4.7
N54A	Moraine State		73.15	43	P		P	06 29 03.3	-0.6
	baz=327,SNR=10									
633A	Saathoff Ranch		73.15	64	P		P	06 29 04.3	+0.2
	baz=322,SNR=6.9									
Z40A	Long Farm, Mag		73.20	57	P		P	06 29 04.1	-0.2
	baz=323									
TESR	Tescani		73.25	328	⇑*i*P		P	06 29 04.2	-0.2
KECS	Kecovo		73.30	333	*e*P		P	06 29 05.0	+0.4
238A	Jacksonville		73.31	59	P		P	06 29 05.2	+0.3
	baz=323,SNR=5.2									
WPM1	Penmaenmawr		73.37	350	*e*P		P	06 29 05.6	+0.6
DRLN	Deer Lake		73.38	25	*e*P		P	06 29 06.1	+1.0
436A	Wall Ranch, Ga		73.40	61	P		P	06 29 05.7	+0.2
	baz=322									
PRU	Pruhonice		73.41	338	⇑*e*P		P	06 29 05.9	+0.7
PRU					*ep*P		pP	06 29 16.6	-4.0
PRU					*ex*		x	06 30 44.7	
PRU					*e*S		SKiKP	06 38 30.3	-0.3
PRU					*ex*		x	06 39 22.2	
PRU					AMS		AMS	07 07 30.0	
	comp=Z,2μm,14.3s									
PRU	Pruhonice		73.41	338	*e*P		P	06 29 05.9	+0.7
PRU					*e*			06 29 16.6	
PRU					*e*S		SKiKP	06 38 30.3	-0.3
PRU					*e*			06 39 22.2	
PRU					MLR		MLR			
	comp=Z,2μm,14.3s									
V45A	Humboldt		73.41	52	P		P	06 29 05.2	-0.3
	baz=324									
GOPC	GO Pecny, Ondr		73.42	337	⇑*e*P		P	06 29 05.9	+0.6
GOPC					*ep*P		pP	06 29 17.3	-3.4
GOPC					*e*S		SKiKP	06 38 32.4	+1.8
GOPC					*ex*		x	06 39 27.5	
GOPC					AMS		AMS	07 07 20.0	
	comp=Z,2μm,14.3s									
GOPC	GO Pecny, Ondr		73.42	337	*e*P		P	06 29 05.9	+0.6
GOPC					*e*			06 29 17.3	
GOPC					*e*S		SKiKP	06 38 32.4	+1.8
GOPC					*e*			06 39 27.5	
GOPC					MLR		MLR			
	comp=Z,2μm,14.3s									
337A	Centerville		73.45	60	P		P	06 29 05.8	0.0
	baz=322									
X43A	Marvell		73.46	54	P		P	06 29 05.8	0.0
	baz=324,SNR=5.9									
LBNH	Lisbon		73.47	36	*e*P		P	06 29 06.3	+0.5
LBNH					pmax		pmax			
	comp=Z,52nm,1.3s									
LBNH	Lisbon		73.47	36	*e*P		P	06 29 06.3	+0.5
	comp=Z,52nm,1.3s									
W44A	Shelby Farms P		73.48	53	P		P	06 29 05.9	0.0
	baz=324									
PKME	Peaks-Kenny Pk		73.50	34	*e*P		P	06 29 06.3	+0.4
	comp=Z,32nm,1.1s									
PKME					LR		LR			
	comp=Z,2μm,20.0s									
Z41A	Richland Creek		73.50	57	P		P	06 29 06.1	+0.1
	baz=323									
VRAC	Vranov		73.55	336	⇑*i*P		P	06 29 07.0	+0.9
Y42A	Garnett, Star		73.55	56	P		P	06 29 06.4	0.0
	baz=323									
535A	Dale		73.57	62	P		P	06 29 06.6	+0.1
	baz=322									
ACCN	Adirondack Com		73.58	38	*e*P		P	06 29 06.1	-0.2
	comp=Z,38nm,1.2s									
CWF	Charnwood Fore		73.58	348	⇑*e*P		P	06 29 05.9	-0.3
CWF					AMB		AMB	06 29 08.1	
	comp=Z,81nm,1.4s									
CWF	Charnwood Fore		73.58	348	*e*P		P	06 29 07.1	+0.9
	comp=Z,302nm,1.9s									
140A	Cam and Jess,		73.60	58	P		P	06 29 06.9	+0.2
	baz=323									
DSB	Dublin		73.62	352	*e*P		P	06 29 06.6	+0.2
	comp=Z,45nm,1.0s									
832A	Faith Ranch, C		73.63	65	P		P	06 29 07.3	+0.4
	baz=322,SNR=10									
239A	Gary		73.63	59	P		P	06 29 06.8	0.0
	baz=323									
WVT	Waverly		73.64	51	*e*P		P	06 29 06.9	+0.1
WVT					pmax		pmax			
	comp=Z,29nm,0.9s									
WVT	Waverly		73.64	51	*e*P		P	06 29 06.9	+0.1
	comp=Z,29nm,0.9s									
CTA	Charters Tower		73.64	193	P		P	06 29 06.2	-0.6
	baz=303,slow=8.4									
CTAO	Charters Tower		73.64	193	*e*P		P	06 29 07.4	+0.6
CTAO					pmax		pmax			
	comp=Z,64nm,1.2s									
CTAO					MLR		MLR			
	comp=Z,804nm,21.0s									
CTAO	Charters Tower		73.64	193	*e*P		P	06 29 07.4	+0.6
	comp=Z,64nm,1.2s									
CTAO					LR		LR			
	comp=Z,804nm,21.0s									
NKC	Novy Kostel		73.65	339	⇑*i*P		P	06 29 07.2	+0.5
NKC					*ep*P		pP	06 29 18.3	-3.7
NKC					*e*S		S	06 38 33.0	+0.4
NKC					*ex*		x	06 39 26.8	
NKC					AMS		AMS	07 08 00.0	
	comp=Z,1μm,16.1s									
NKC	Novy Kostel		73.65	339	⇑*i*P		P	06 29 07.2	+0.5
NKC					*e*			06 29 18.3	
NKC					*e*S		S	06 38 33.0	+0.4
NKC					*e*			06 39 26.8	
NKC					MLR		MLR			
	comp=Z,1μm,16.1s									
FOEL	Foel Wylfa		73.65	349	*e*P		P	06 29 06.6	0.0
FOEL					AMB		AMB	06 29 07.6	
	comp=Z,86nm,2.0s									
634A	China Grove, S		73.66	63	P		P	06 29 07.0	0.0
	baz=322									
LHSI	Lahat		73.66	240	P		P	06 29 08.0	+0.9
	comp=Z,74nm,1.5s,comp=Z,2μm									
733A	Divot King Ran		73.66	64	P		P	06 29 07.5	+0.4
	baz=322									
437A	Phantom Ranch,		73.70	60	P		P	06 29 07.7	+0.4
	baz=322									
BINY	Binghamton		73.71	40	*e*P		P	06 29 07.1	-0.1
	comp=Z,61nm,1.4s									
BINY					LR		LR			
	comp=Z,804nm,20.0s									
TLCR			73.71	326	⇑*i*P		P	06 29 07.4	+0.3
338A	Crockett		73.72	60	P		P	06 29 07.5	+0.2
	baz=323									
VYHS	Vyhne		73.73	334	*e*P		P	06 29 07.9	+0.7
NATX	Nacogdoches		73.74	59	P		P	06 29 07.5	0.0
	baz=323									
NATX	Nacogdoches		73.74	59	*e*P		P	06 29 08.0	+0.5
	comp=Z,78nm,1.3s									
NATX					LR		LR			
	comp=Z,748nm,21.0s									
LLW	Llanuwychllyn		73.74	350	*e*P		P	06 29 07.1	0.0
LLW					AMB		AMB	06 29 08.0	
	comp=Z,531nm,2.0s									
KLSI			73.76	239	P		P	06 29 08.4	+0.7
	comp=Z,34nm,1.3s,comp=Z,792nm									
W45A	Hickory Valley		73.77	53	P		P	06 29 07.3	-0.3
	baz=324,SNR=5.1									
ODBI	Odobesti		73.78	328	⇓*i*P		P	06 29 09.6	+2.1
VRI	Vrincioaia		73.80	328	⇑*i*P		P	06 29 07.8	+0.2
536A	Bastrop		73.80	62	P		P	06 29 08.2	+0.3
	baz=322									
HNH	Hanover		73.81	37	*e*P		P	06 29 08.1	+0.4
	comp=Z,38nm,1.1s									
X44A	Crenshaw		73.83	54	P		P	06 29 08.1	+0.1
	baz=324,SNR=6.0									
PLOR	Plostina		73.84	328	⇑*i*P		P	06 29 08.0	+0.1
833A	Chaparral WMA,		73.92	64	P		P	06 29 08.9	+0.3
	baz=322,SNR=5.3									
Y43A	Makayla and Ka		73.92	55	P		P	06 29 08.6	+0.2
	baz=324									
Z42A	Norrel Spur, H		73.92	56	P		P	06 29 08.6	+0.1
	baz=323									
CFR	Carcaliu		73.95	327	⇑*i*P		P	06 29 08.3	-0.1
635A	Leesville		73.96	63	P		P	06 29 08.4	-0.4
	baz=322									
734A	La Parita Cree		73.96	63	P		P	06 29 09.3	+0.5
	baz=322									
141A	Papa Simpson,		73.97	57	P		P	06 29 08.9	+0.1
	baz=323									
PSZ	Piszkesteto		73.98	333	⇑*i*P		P	06 29 10.0	+1.3
PSZ	Piszkesteto		73.98	333	*e*P		P	06 29 09.4	+0.7
PSZ					pmax		pmax			
	comp=Z,111nm,1.0s									
PSZ					MLR		MLR			
	comp=Z,3μm,19.0s									
PSZ	Piszkesteto		73.98	333	*e*P		P	06 29 09.4	+0.7
	comp=Z,111nm,1.0s									
PSZ					LR		LR			
	comp=Z,3μm,19.0s									
PSZ	Piszkesteto		73.98	333	⇑*e*P		P	06 29 09.5	+0.7
240A	Hunter Patters		73.98	58	P		P	06 29 08.7	-0.1
	baz=323									
HLM1	Long Mynd		73.98	349	*e*P		P	06 29 08.8	+0.2
HLM1					AMB		AMB	06 29 10.5	
	comp=Z,72nm,1.3s									
WVL	Waterville		73.99	35	*e*P		P	06 29 08.8	+0.1
	comp=Z,155nm,1.5s									
CJR	Cluj-Napoca		74.01	330	⇑*i*P		P	06 29 09.6	+0.7
SMOL	Smolenice		74.08	335	*e*P		P	06 29 11.0	+1.8
438A	Sam Houston St		74.11	60	P		P	06 29 10.3	+0.7
	baz=323									
339A	Huntington		74.13	59	P		P	06 29 09.9	+0.2
	baz=323									
DOPR	Dopca		74.13	329

340A	**Bronson**	**74.41**	**59**	P		**P**	**06 29 11.5**	**+0.1**
	baz=323							
HGN	**Heimansgroeve**	**74.42**	**343**	*e*P		**P**	**06 29 11.5**	**+0.3**
	comp=Z,206nm,1.1s							
HGN				*e*pP		**pP**	**06 29 26.4**	**-0.1**
HGN				*e*sP		**sP**	**06 29 36.0**	**+3.4**
HGN				*e*S		S	06 38 50.0	+8.9
GRFO	**Grafenberg**	**74.42**	**340**	*e*P		**P**	**06 29 12.3**	**+1.1**
GRFO				pmax		pmax		
	comp=Z,160nm,1.1s							
GRFO	**Grafenberg**	**74.42**	**340**	*e*P		**P**	**06 29 12.2**	**+1.1**
	comp=Z,160nm,1.1s							
241A	**Mo Tay, Goldon**	**74.43**	**57**	P		**P**	**06 29 11.8**	**+0.4**
	baz=323							
LMN	**Caledonia Moun**	**74.43**	**31**	*e*P		**P**	**06 29 11.6**	**+0.3**
KHC	**Kasperske Hory**	**74.43**	**338⇑**	*e*P		**P**	**06 29 12.1**	**+0.8**
KHC				*e*pP		**PcP**	**06 29 23.5**	**-2.2**
KHC				*e*S		**S**	**06 38 43.6**	**+2.1**
KHC				*ex*		x	06 39 37.9	
KHC				AMS		AMS	07 08 00.0	
	comp=Z,3µm,14.3s							
KHC	**Kasperske Hory**	**74.43**	**338**	*e*P		**P**	**06 29 12.1**	**+0.8**
KHC				*e*			06 29 23.5	
KHC				*e*S		**S**	**06 38 43.6**	**+2.1**
KHC				*e*			06 39 37.9	
KHC				MLR		MLR		
	comp=Z,3µm,14.3s							
KHC	**Kasperske Hory**	**74.43**	**338**	*e*P		**P**	**06 29 12.0**	**+0.7**
	comp=Z,46nm,1.1s							
BEBN	**Eben Emael**	**74.44**	**343**	P		**P**	**06 29 11.7**	**+0.5**
GGN	**Saint George**	**74.44**	**32**	*e*P		**P**	**06 29 11.6**	**+0.3**
HARR	**Harsova**	**74.45**	**327⇑**	*i*P		**P**	**06 29 10.7**	**-0.7**
439A	**Center Grove,**	**74.45**	**60**	P		**P**	**06 29 11.7**	**0.0**
	baz=323							
142A	**Monroe**	**74.50**	**56**	P		**P**	**06 29 12.1**	**+0.2**
	baz=324							
TLB	**Topalu**	**74.50**	**327⇑**	*i*P		**P**	**06 29 11.6**	**-0.1**
MCH1	**Michaelchurch**	**74.51**	**349**	*e*P		**P**	**06 29 11.4**	**-0.2**
MCH1				AMB		AMB	06 29 13.5	
	comp=Z,59nm,1.1s							
LPW	**Lampeter**	**74.51**	**350**	*e*P		**P**	**06 29 11.9**	**+0.3**
LPW				AMB		AMB	06 29 13.4	
	comp=Z,51nm,1.2s							
538A	**Harpers Horsep**	**74.52**	**60**	P		**P**	**06 29 13.0**	**+1.0**
	baz=323							
ISR	**Istrita**	**74.52**	**328⇑**	*i*P		**P**	**06 29 12.4**	**+0.5**
834A	**Tilden**	**74.53**	**64**	P		**P**	**06 29 13.7**	**+1.5**
	baz=322,SNR=8.4							
933A	**Laredo**	**74.54**	**65**	P		**P**	**06 29 13.3**	**+1.1**
	baz=322,SNR=18							
MEM	**Membach**	**74.56**	**343**	P		**P**	**06 29 12.7**	**+0.7**
	comp=Z,154nm,0.9s							
EMMW	**East Machias**	**74.60**	**33**	*e*P		**P**	**06 29 12.6**	**+0.3**
BUD	**Budapest**	**74.61**	**334⇑**	*e*P		**P**	**06 29 13.3**	**+1.0**
Y45A	**Yeager Farm, C**	**74.64**	**54**	P		**P**	**06 29 12.8**	**+0.1**
	baz=324,SNR=13							
MONM	**Monmouth**	**74.64**	**349**	*e*P		**P**	**06 29 12.7**	**+0.3**
MONM				AMB		AMB	06 29 14.3	
	comp=Z,114nm,1.6s							
143A	**Socs Landing,**	**74.65**	**56**	P		**P**	**06 29 12.9**	**+0.2**
	baz=324							
GEC2	**GERESS Array S**	**74.67**	**338**	*e*P		**P**	**06 29 13.5**	**+0.7**
GEC2	**GERESS Array S**	**74.67**	**338**	*e*P		**P**	**06 29 13.4**	**+0.7**
GERES	**GERESS Array B**	**74.67**	**338**	P		**P**	**06 29 13.2**	**+0.5**
	comp=Z,19nm,0.8s,baz=35,slow=4.9,SNR=42							
Z44A	**Pea Ridge, Bel**	**74.67**	**55**	P		**P**	**06 29 12.8**	**-0.1**
	baz=324							
GEA0	**GERESS Array S**	**74.68**	**338**	*e*P		**P**	**06 29 12.7**	**-0.1**
736A	**Circle Diamond**	**74.68**	**62**	P		**P**	**06 29 14.4**	**+1.4**
	baz=322							
637A	**Eagle Lake**	**74.69**	**61**	P		**P**	**06 29 13.9**	**+0.9**
	baz=323							
VOIR		**74.71**	**329⇑**	*i*P		**P**	**06 29 13.8**	**+0.8**
242A	**Grayson**	**74.79**	**57**	P		**P**	**06 29 13.8**	**+0.2**
	baz=324,SNR=6.8							
835A	**Beeville**	**74.80**	**63**	P		**P**	**06 29 14.8**	**+1.2**
	baz=322,SNR=5.2							
341A	**Kurthwood**	**74.85**	**58**	P		**P**	**06 29 14.2**	**+0.3**
	baz=323,SNR=5.7							
DZM	**Mont Dzumac**	**74.86**	**174**	P		**P**	**06 29 15.2**	**+1.3**
	comp=Z,36nm,1.2s,baz=38,slow=9.0,SNR=4.9							
DZM	**Mont Dzumac**	**74.86**	**174**	*e*P		**P**	**06 29 15.0**	**+1.1**
BCLA	**Clavier**	**74.86**	**344**	P		**P**	**06 29 13.6**	**-0.1**
N59A	**State Game Lan**	**74.89**	**40**	P		**P**	**06 29 13.4**	**-0.7**
	baz=329							
MTUR	**Matau**	**74.90**	**329⇓**	*i*P		**P**	**06 29 16.1**	**+2.0**
ARR	**Arges**	**74.91**	**329⇑**	*i*P		**P**	**06 29 15.2**	**+1.1**
440A	**Kirbyville**	**74.91**	**59**	P		**P**	**06 29 14.7**	**+0.4**
	baz=323							
SNF	**Seneffe**	**74.95**	**344**	P		**P**	**06 29 14.6**	**+0.5**
Y46A	**Houston**	**74.96**	**53**	P		**P**	**06 29 14.4**	**-0.1**
	baz=324,SNR=12							
934A	**Benavides**	**74.96**	**64**	P		**P**	**06 29 16.3**	**+1.7**
	baz=322,SNR=9.5							
Z45A	**Winona**	**74.97**	**54**	P		**P**	**06 29 14.8**	**+0.3**
	baz=324,SNR=5.6							
SIRR	**Siria**	**74.99**	**331⇓**	*i*P		**P**	**06 29 15.4**	**+0.9**
SULR		**75.01**	**328⇓**	*i*P		**P**	**06 29 14.9**	**+0.3**
CONA	**Conrad Observa**	**75.01**	**336**	*i*P		**P**	**06 29 15.8**	**+1.1**
	comp=Z,102nm,1.0s,SNR=48							
539A	**Cross D Ranch,**	**75.02**	**60**	P		**P**	**06 29 15.8**	**+1.0**
	baz=323							
HRV	**Adam Dziewonsk**	**75.11**	**37**	*e*P		**P**	**06 29 15.9**	**+0.6**
HRV				pmax		pmax		
	comp=Z,47nm,1.4s							
HRV	**Adam Dziewonsk**	**75.11**	**37**	*e*P		**P**	**06 29 15.9**	**+0.6**
	comp=Z,47nm,1.4s							
737A	**Port Lavaca**	**75.17**	**62**	P		**P**	**06 29 17.2**	**+1.4**
	baz=323							
638A	**Rosharon**	**75.18**	**61**	P		**P**	**06 29 16.3**	**+0.5**
	baz=323							
144A	**Alexander Plac**	**75.20**	**55**	P		**P**	**06 29 16.4**	**+0.4**
	baz=324							
342A	**Flagon Creek P**	**75.25**	**57**	P		**P**	**06 29 16.8**	**+0.6**
	baz=324							
PSN	**Preselentsi**	**75.25**	**326**	*i*P		**P**	**06 29 17.8**	**+1.7**
243A	**Waterproof**	**75.27**	**57**	P		**P**	**06 29 16.9**	**+0.6**
	baz=324							
SWET	**Sewanee**	**75.27**	**51**	*e*P		**P**	**06 29 16.3**	**-0.1**
	comp=Z,14nm,0.9s							
TZTN	**Tazewell**	**75.28**	**48**	*e*P		**P**	**06 29 16.9**	**+0.5**
	comp=Z,46nm,1.2s							
034A	**Hebbronville**	**75.30**	**65**	P		**P**	**06 29 18.0**	**+1.5**
	baz=322,SNR=14							
DOU	**Dourbes**	**75.30**	**344**	P		**P**	**06 29 16.6**	**+0.4**
441A	**DeRidder**	**75.30**	**58**	P		**P**	**06 29 17.7**	**+1.2**
	baz=323							
WES	**Weston**	**75.31**	**37**	*e*P		**P**	**06 29 16.7**	**+0.3**
WES				pmax		pmax		
	comp=Z,72nm,1.2s							
WES	**Weston**	**75.31**	**37**	*e*P		**P**	**06 29 16.7**	**+0.3**
	comp=Z,72nm,1.2s							
540A	**Vidor**	**75.32**	**59**	P		**P**	**06 29 17.8**	**+1.2**
	baz=323							
KVTX	**Kingsville**	**75.35**	**64**	PFAKE			06 29 30.0	+13
KVTX				LR		LR		
	comp=Z,829nm,22.0s							
BCX	**Boston College**	**75.40**	**37**	*e*P		**P**	**06 29 18.1**	**+1.1**
	comp=Z,88nm,1.2s							
Y47A	**UCPARC, Winfie**	**75.43**	**53**	P		**P**	**06 29 16.7**	**-0.5**
	baz=325,SNR=7.1							
WLF	**Walferdange**	**75.44**	**343**	P		**P**	**06 29 18.4**	**+1.3**
	comp=Z,75nm,2.4s							
WLF	**Walferdange**	**75.44**	**343**	*e*P		**P**	**06 29 18.5**	**+1.5**
WLF				MLR		MLR		
	comp=Z,2µm,21.0s							
WLF	**Walferdange**	**75.44**	**343**	*e*P		**P**	**06 29 18.5**	**+1.5**
WLF				LR		LR		
	comp=Z,2µm,21.0s							
MVL	**Millersville**	**75.44**	**41**	*e*P		**P**	**06 29 17.9**	**+0.8**
	comp=Z,37nm,1.4s							
145A	**Houston Renfro**	**75.47**	**55**	P		**P**	**06 29 17.8**	**+0.3**
	baz=324							
MOA	**Molln**	**75.47**	**337**	*i*P		**P**	**06 29 18.2**	**+0.9**
	comp=Z,70nm,1.5s,SNR=22							
Z46A	**Louisville**	**75.48**	**54**	P		**P**	**06 29 17.9**	**+0.4**
	baz=324							
VBMS	**Vicksburg**	**75.48**	**56**	P		**P**	**06 29 17.9**	**+0.3**
	baz=324							
PAL	**Palisades**	**75.54**	**39**	*e*P		**P**	**06 29 18.3**	**+0.6**
PAL				pmax		pmax		
	comp=Z,145nm,1.6s							
PAL	**Palisades**	**75.54**	**39**	*e*P		**P**	**06 29 18.3**	**+0.6**
	comp=Z,145nm,1.6s							
244A	**Avery, Jackson**	**75.54**	**56**	P		**P**	**06 29 18.2**	**+0.3**
	baz=324,SNR=8.3							
BZS	**Buzias**	**75.59**	**331⇑**	*i*P		**P**	**06 29 17.8**	**-0.2**
BRYW	**Bryant College**	**75.63**	**37**	*e*P		**P**	**06 29 18.5**	**+0.2**
	comp=Z,82nm,1.3s							
343A	**Vidalia**	**75.68**	**57**	P		**P**	**06 29 19.6**	**+0.9**
	baz=324							
CPNY	**Central Park**	**75.70**	**39**	*e*P		**P**	**06 29 18.6**	**-0.1**
	comp=Z,91nm,1.3s							
035A	**Encino**	**75.71**	**64**	P		**P**	**06 29 20.0**	**+1.1**
	baz=323							
442A	**Mamou**	**75.72**	**58**	P		**P**	**06 29 19.7**	**+0.8**
	baz=324							
ARSA	**Arzberg**	**75.73**	**336**	*i*P		**P**	**06 29 19.9**	**+1.1**
	comp=Z,91nm,1.1s,SNR=27							
CPCT	**Cooper Cave**	**75.73**	**49**	*e*P		**P**	**06 29 19.2**	**+0.2**
	comp=Z,22nm,1.1s							
SDMD	**Soldier's Deli**	**75.75**	**42**	*e*P		**P**	**06 29 19.0**	**0.0**
	comp=Z,38nm,1.3s							
LANF	**Langenberg**	**75.79**	**342⇑**	*e*P		**P**	**06 29 19.8**	**+0.7**
WRAB	**Tennant Creek**	**75.86**	**205***c*	*i*P		**P**	**06 29 18.8**	**-0.8**
WRAB				pmax		pmax		
	comp=Z,69nm,1.2s							
WRAB	**Tennant Creek**	**75.86**	**205**	*e*P		**P**	**06 29 19.8**	**+0.1**
	comp=Z,47nm,1.3s							
WRAB				LR		LR		
	comp=Z,425nm,20.0s							
WB2	**Warramunga Arr**	**75.87**	**205**	*e*P		**P**	**06 29 18.5**	**-1.2**
WB2				*e*P		**P**	**06 29 19.4**	**-0.2**
WRA	**Warramunga Arr**	**75.87**	**205**	P		**P**	**06 29 19.1**	**-0.7**
	comp=Z,15nm,0.9s,baz=18,slow=6.2,SNR=29							
146A	**Union**	**75.87**	**54**	P		**P**	**06 29 20.2**	**+0.4**
	baz=325,SNR=5.9							
Z47A	**Carrollton**	**75.90**	**53**	P		**P**	**06 29 19.6**	**-0.3**
	baz=325,SNR=8.1							
245A	**Little AP, Sta**	**75.94**	**55**	P		**P**	**06 29 20.5**	**+0.3**
	baz=324							
PRD	**Provadia**	**75.95**	**326**	*i*P		**P**	**06 29 21.6**	**+1.6**
344A	**Westbrook Farm**	**75.99**	**56**	P		**P**	**06 29 21.5**	**+1.0**
	baz=324,SNR=6.0							
Z48A	**Northport**	**76.00**	**53**	P		**P**	**06 29 19.9**	**-0.6**
	baz=325,SNR=6.8							
443A	**Delano Plantat**	**76.01**	**57**	P		**P**	**06 29 21.4**	**+0.8**
	baz=324							
035Z	**Hargill**	**76.11**	**65**	P		**P**	**06 29 22.2**	**+1.0**
	baz=323							
BLA	**Blacksburg**	**76.11**	**46**	*e*P		**P**	**06 29 21.4**	**+0.3**
BLA				*e*			06 29 31.7	
BLA				pmax		pmax		
	comp=Z,59nm,1.3s							
BLA				MLR		MLR		
	comp=Z,668nm,22.0s							
BLA	**Blacksburg**	**76.11**	**46**	*e*P		**P**	**06 29 21.4**	**+0.3**
	comp=Z,59nm,1.3s							
BLA				*e*PcP		**PcP**	**06 29 31.7**	**-1.4**
BLA				LR		LR		
	comp=Z,668nm,22.0s							
542A	**Morse**	**76.13**	**58**	P		**P**	**06 29 22.6**	**+1.3**
	baz=324							
BEHE	**Becsehely**	**76.14**	**335⇑**	*e*P		**P**	**06 29 22.3**	**+1.2**
DYA	**Yadsworthy**	**76.15**	**349**	*e*P		**P**	**06 29 21.0**	**-0.1**
DYA	**Yadsworthy**	**76.15**	**349**	*e*P		**P**	**06 29 21.6**	**+0.6**
ZIMR		**76.21**	**328⇑**	*i*P		**P**	**06 29 22.0**	**+0.5**
147A	**Livingston**	**76.23**	**54**	P		**P**	**06 29 21.8**	**+0.1**
	baz=325,SNR=9.6							
BFO	**Black Forest**	**76.31**	**341**	*e*P		**P**	**06 29 22.6**	**+0.5**
BFO				MLR		MLR		
	comp=Z,887nm,19.0s							
BFO	**Black Forest**	**76.31**	**341**	*e*P		**P**	**06 29 22.6**	**+0.5**
BFO				LR		LR		
	comp=Z,887nm,19.0s							
MDVR	**Moldovita**	**76.32**	**331⇓**	*i*P		**P**	**06 29 22.1**	**-0.1**
246A	**Jackson Lee, B**	**76.34**	**55**	P		**P**	**06 29 22.9**	**+0.5**
	baz=325							
SOKA	**Soboth**	**76.38**	**336**	*i*P		**P**	**06 29 23.5**	**+0.9**
	comp=Z,144nm,1.3s,SNR=40							
PERS	**Pernice**	**76.40**	**336**	*e*P		**P**	**06 29 23.5**	**+0.8**
KBA	**Koelnbreinsper**	**76.42**	**337**	*i*P		**P**	**06 29 24.4**	**+1.5**
	comp=Z,224nm,0.8s,SNR=49							
345A	**Thompson Farm,**	**76.46**	**56**	P		**P**	**06 29 23.6**	**+0.5**
	baz=324							
ZAIG	**Zacatecas**	**76.49**	**70**	*e*P		**P**	**06 29 25.1**	**+1.3**
	comp=Z,19nm,1.1s							
543A	**St. Martinvill**	**76.52**	**58**	P		**P**	**06 29 24.5**	**+1.1**
	baz=324							
LRAL	**Lakeview Retre**	**76.55**	**53**	*e*P		**P**	**06 29 23.2**	**-0.4**
	comp=Z,9.3nm,0.8s							
CBN	**Corbin Frederi**	**76.56**	**43**	*e*P		**P**	**06 29 24.1**	**+0.6**
	comp=Z,72nm,1.3s							
CBN				LR		LR		
	comp=Z,571nm,19.0s							
247A	**Quitman**	**76.56**	**54**	P		**P**	**06 29 24.4**	**+0.7**
	baz=325							
WATA	**Walderalm**	**76.58**	**339**	*i*P		**P**	**06 29 24.8**	**+1.0**
	comp=Z,118nm,1.3s,SNR=12							
444A	**Pine Grove**	**76.58**	**57**	P		**P**	**06 29 24.7**	**+0.9**
	baz=324							
RETA	**Reutte**	**76.61**	**339**	*i*P		**P**	**06 29 24.4**	**+0.6**
	comp=Z,48nm,1.0s,SNR=18							
WTTA	**Wattenberg**	**76.63**	**338**	*i*P		**P**	**06 29 25.4**	**+1.4**
	comp=Z,142nm,1.3s,SNR=34							
ECH	**Echery**	**76.65**	**342⇑**	*e*P		**P**	**06 29 24.4**	**+0.4**
OBKA	**Obir**	**76.66**	**336**	*i*P		**P**	**06 29 25.3**	**+1.2**
	comp=Z,153nm,1.1s,SNR=36							
MOTA	**Moosalm**	**76.67**	**339**	*i*P		**P**	**06 29 25.3**	**+1.0**
	comp=Z,150nm,1.3s,SNR=16							
346A	**Big Creek Wild**	**76.68**	**55**	P		**P**	**06 29 25.0**	**+0.6**
	baz=325							
FITZ	**Fitzroy Crossi**	**76.69**	**213**	P		**P**	**06 29 24.4**	**0.0**
	comp=Z,12nm,1.0s,baz=5.9,slow=9.4,SNR=10							
FITZ	**Fitzroy Crossi**	**76.69**	**213**	*e*P		**P**	**06 29 24.9**	**+0.5**
MYKA	**Terra Mystica**	**76.77**	**337**	*i*P		**P**	**06 29 25.5**	**+0.8**
	comp=Z,84nm,1.2s,SNR=24							
445A	**Amite**	**76.77**	**56**	P		**P**	**06 29 25.9**	**+1.0**
	baz=324							
544A	**White Castle**	**76.86**	**57**	P		**P**	**06 29 26.4**	**+1.0**
	baz=324							
THEF	**They Montfort**	**76.86**	**342⇑**	*e*P		**P**	**06 29 25.9**	**+0.8**
JMB	**Yambol**	**76.87**	**326**	*i*P		**P**	**06 29 26.2**	**+0.9**
ABTA	**Abfaltersbach**	**76.92**	**338**	*i*P		**P**	**06 29 26.4**	**+0.8**
	comp=Z,126nm,1.1s,SNR=28							
ANTO	**Ankara**	**76.93**	**321**	*e*P		**P**	**06 29 26.4**	**+0.6**
ANTO				pmax		pmax		
	comp=Z,198nm,0.8s							
ANTO				MLR		MLR		
	comp=Z,1µm,22.0s							
ANTO	**Ankara**	**76.93**	**321**	*e*P		**P**	**06 29 26.4**	**+0.6**
	comp=Z,198nm,0.8s							
ANTO				LR		LR		
	comp=Z,1µm,22.0s							
248A	**Dixon Mills**	**76.96**	**54**	P		**P**	**06 29 26.4**	**+0.4**
	baz=325							
DAVA	**Damuels**	**76.99**	**340**	*i*P		**P**	**06 29 26.7**	**+0.7**
	comp=Z,67nm,1.2s,SNR=14							
MPEP	**Malo Peshtene**	**77.00**	**329**	*i*P		**P**	**06 29 26.8**	**+0.8**
MOF	**Molkenrain**	**77.00**	**342⇑**	*e*P		**P**	**06 29 26.4**	**+0.3**
FETA	**Feichten**	**77.06**	**339**	*i*P		**P**	**06 29 27.5**	**+1.1**
	comp=Z,88nm,1.1s,SNR=22							
LJU	**Ljubljana**	**77.10**	**336**	*e*P		**P**	**06 29 26.5**	**0.0**
LJU				*e*			06 29 41.5	
347A	**Saraland**	**77.13**	**55**	P		**P**	**06 29 27.7**	**+0.8**
	baz=325,SNR=5.6							
JQE	**Queens East**	**77.15**	**348⇑**	*e*P		**P**	**06 29 26.8**	**+0.1**
JSA	**Saint Aubin**	**77.17**	**348**	*e*P		**P**	**06 29 26.7**	**-0.1**
JSA				AMB		AMB	06 29 28.8	
	comp=Z,95nm,1.1s							
446A	**Poplarville**	**77.21**	**56**	P		**P**	**06 29 28.2**	**+0.9**
	baz=325							
VISS	**Visnje**	**77.25**	**336**	*i*P		**P**	**06 29 27.4**	**+0.1**
JAVS	**Javornik**	**77.36**	**336**	*i*P		**P**	**06 29 27.8**	**-0.3**
BOJS	**Bojanci**	**77.43**	**335**	*i*P		**P**	**06 29 28.8**	**+0.4**
348A	**Jackson**	**77.43**	**54**	P		**P**	**06 29 29.2**	**+0.6**
	baz=325							
KMSC	**Kings Mountain**	**77.44**	**47**	P		**P**	**06 29 28.3**	**-0.2**
	baz=327,SNR=6.0							
KMSC	**Kings Mountain**	**77.44**	**47**	*e*P		**P**	**06 29 28.6**	**0.0**
KMSC				*e*PcP		**PcP**	**06 29 37.4**	**-1.5**
DIVS	**Divibare**	**77.45**	**332**	P		**P**	**06 29 26.3**	**-2.3**
546A	**Slidell**	**77.49**	**56**	P		**P**	**06 29 29.3**	**+0.4**
	baz=325							
FUORN	**Ofenpass-Fuorn**	**77.54**	**339**	*e*P		**P**	**06 29 31.0**	**+1.7**
447A	**Lucedale**	**77.56**	**55**	P		**P**	**06 29 29.9**	**+0.6**
	baz=325							
PGB	**Panagyurishte**	**77.59**	**328**	*i*P		**P**	**06 29 30.8**	**+1.4**
TRI	**Trieste**	**77.60**	**336**	*e*P		**P**	**06 29 29.4**	**+0.1**
TRI	**Trieste**	**77.60**	**336**	*e*P		**P**	**06 29 29.4**	**+0.1**
PALK	**Pallekele**	**77.77**	**266**	*i*P		**P**	**06 29 30.9**	**+0.2**
	SNR=6.7							
PLD	**Plovdiv**	**77.81**	**328**	*i*P		**P**	**06 29 31.7**	**+1.1**
448A	**Bay Minette**	**77.85**	**54**	P		**P**	**06 29 31.9**	**+1.0**
	baz=325							
TUE	**Stuetta**	**77.88**	**340**	*e*P		**P**	**06 29 32.2**	**+1.1**
TUE				LR		LR		
	comp=Z,2µm,19.0s							
GOGA	**Godfrey**	**77.91**	**50**	*e*P		**P**	**06 29 31.7**	**+0.5**
GOGA				pmax		pmax		
	comp=Z,85nm,2.0s							
GOGA				MLR		MLR		
	comp=Z,1µm,19.0s							
GOGA	**Godfrey**	**77.91**	**50**	*e*P		**P**	**06 29 31.7**	**+0.5**
	comp=Z,85nm,2.0s							
GOGA				LR		LR		
	comp=Z,1µm,19.0s							
BRAL	**Brewton**	**78.05**	**54**	PFAKE			06 29 50.0	+18
BRAL				LR		LR		
	comp=Z,1µm,22.0s							
JSC	**Jenkinsville**	**78.19**	**48**	*e*P		**P**	**06 29 33.8**	**+1.0**
JSC				*e*			06 29 42.3	
JSC	**Jenkinsville**	**78.19**	**48**	*e*P		**P**	**06 29 33.8**	**+1.0**
JSC				*e*PcP		**PcP**	**06 29 42.3**	**+0.2**
UOSS	**Minazif**	**78.31**	**296**	*e*P		**P**	**06 29 32.6**	**-0.9**
EIDS	**Eidsvold**	**78.31**	**188**	*e*P		**P**	**06 29 34.3**	**+1.0**
PLE	**Pljevlja**	**78.33**	**332⇑**	*i*P		**P**	**06 29 33.7**	**+0.2**
SENIN	**Lac Senin/Sane**	**78.40**	**341**	*e*P		**P**	**06 29 35.2**	**+1.2**
HATD	**Hatta, Dubai**	**78.44**	**296**	*i*P		**P**	**06 29 34.1**	**-0.3**
	SNR=11							
HATD	**Hatta, Dubai**	**78.44**	**296**	P		**P**	**06 29 33.5**	**-0.9**
	SNR=6.8							
HATD	**Hatta, Dubai**	**78.44**	**296**	P		**P**	**06 29 33.5**	**-0.9**
	SNR=6.8							
ALN	**Alexandroupoli**	**78.45**	**326**	P		**P**	**06 29 30.3**	**-3.8**
ALN	**Alexandroupoli**	**78.45**	**326**	P		**P**	**06 29 30.3**	**-3.8**
ALN	**Alexandroupoli**	**78.45**	**326**	P		**P**	**06 29 30.3**	**-3.8**
ENEZ	**Enez**	**78.56**	**326**	P		**P**	**06 29 33.9**	**-0.8**
NAZ	**Nazwa, Dubai**	**78.57**	**296**	P		**P**	**06 29 33.8**	**-1.2**
UPM	**Unac-Piva**	**78.58**	**332⇑**	*i*P		**P**	**06 29 34.7**	**-0.3**
ASHO	**Ashiyiah**	**78.59**	**296**	*i*P		**P**	**06 29 34.4**	**-0.8**
	SNR=7.5							
ASHO	**Ashiyiah**	**78.59**	**296**	P		**P**	**06 29 34.0**	**-1.2**
	SNR=10							
ASHO	**Ashiyiah**	**78.59**	**296**	P		**P**	**06 29 34.0**	**-1.2**
	SNR=10							
MMB	**Musomiste**	**78.59**	**328**	*i*P		**P**	**06 29 35.5**	**+0.6**
IVA	**Berane**	**78.60**	**331**	*e*P		**P**	**06 29 34.9**	**-0.1**
WBK	**Wadi Bani Khal**	**78.63**	**292**	P		**P**	**06 29 34.8**	**-0.6**
	SNR=6.5							
WBK	**Wadi Bani Khal**	**78.63**	**292**	P		**P**	**06 29 34.8**	**-0.6**
	SNR=6.5							
NVR	**Nevrokopi**	**78.77**	**328**	P		**P**	**06 29 35.0**	**-0.9**
NVR	**Nevrokopi**	**78.77**	**328**	P		**P**	**06 29 35.0**	**-0.9**
HOQ	**Hoqain**	**78.78**	**294**	P		**P**	**06 29 36.3**	**+0.1**
	SNR=6.6							
HOQ	**Hoqain**	**78.78**	**294**	P		**P**	**06 29 36.3**	**+0.1**
	SNR=6.6							
SMDO	**Samad**	**78.79**	**293**	P		**P**	**06 29 36.7**	**+0.3**
	SNR=5.1							
SMDO	**Samad**	**78.79**	**293**	P		**P**	**06 29 36.7**	**+0.3**
	SNR=5.1							
PVY	**Plav**	**78.84**	**331⇑**	*i*P		**P**	**06 29 36.1**	**-0.3**
CNNC	**Cliffs of the**	**78.86**	**45**	PFAKE			06 29 50.0	+14
CNNC				LR		LR		
	comp=Z,1µm,22.0s							
KAVA	**Kavala**	**78.87**	**327**	P		**P**	**06 29 35.2**	**-1.2**
KAVA	**Kavala**	**78.87**	**327**	P		**P**	**06 29 35.2**	**-1.2**
NKY	**Niksic**	**78.92**	**332⇑**	*i*P		**P**	**06 29 36.2**	**-0.6**
BRY	**Bratogost**	**78.96**	**332⇑**	*i*P		**P**	**06 29 36.4**	**-0.7**
NKME	**Niksic**	**78.97**	**332**	*e*P		**P**	**06 29 36.4**	**-0.6**
SMTH	**Samothraki Isl**	**79.01**	**326**	P		**P**	**06 29 34.2**	**-3.0**
SMTH	**Samothraki Isl**	**79.01**	**326**	P		**P**	**06 29 34.2**	**-3.0**
SRS	**Serrai**	**79.06**	**328**	P		**P**	**06 29 35.8**	**-1.7**
SRS	**Serrai**	**79.06**	**328**	P		**P**	**06 29 35.8**	**-1.7**
SRS	**Serrai**	**79.06**	**328**	P		**P**	**06 29 35.8**	**-1.7**
RSL	**Roselend**	**79.18**	**341⇑**	*e*P		**P**	**06 29 39.2**	**+1.0**
CEME	**Cevo**	**79.18**	**332⇑**	*i*P		**P**	**06 29 37.6**	**-0.6**
PDG	**Podgorica**	**79.19**	**332⇑**

AQU LR LR
comp=Z,2μm,19.0s
REVF Revere 80.90 340↑ eP P 06 29 47.6 +0.2
CSS Mathiatis 80.98 318 P P 06 29 48.1 +0.2
CSS Mathiatis 80.98 318 P P 06 29 45.3 -2.6
CSS Mathiatis 80.98 318 eP P 06 29 47.0 -1.0
CSS LR LR
comp=Z,255nm,19.0s
FETY Fethiye 81.17 322 P P 06 29 46.8 -2.1
FETY Fethiye 81.17 322 P P 06 29 46.8 -2.1
AKMC Akamas 81.33 319 P P 06 29 48.9 -0.9
SZAC Souni 81.34 318 P P 06 29 50.2 +0.3
AGG Agios Georgios 81.37 328 eP P 06 29 49.9 -0.1
AGG Agios Georgios 81.37 328 eP P 06 29 49.9 -0.1
PPCY Paphos 81.44 319 P P 06 29 49.8 -0.5
LKR Lokris 81.49 327 P P 06 29 46.3 -4.2
LKR Lokris 81.49 327 P P 06 29 46.3 -4.2
KEK Kerkira 81.53 330 P P 06 29 48.0 -2.7
KEK Kerkira 81.53 330 P P 06 29 48.0 -2.7
MBWA Marble Bar 81.60 218 eP P 06 29 50.9 -0.2
MBWA LR LR
comp=Z,434nm,20.0s
DSL Palaion Diasel 81.66 329 P P 06 29 48.6 -2.9
DSL Palaion Diasel 81.66 329 P P 06 29 48.6 -2.9
PTL Penteli 81.75 326 P P 06 29 48.4 -3.6
PTL Penteli 81.75 326 P P 06 29 48.4 -3.6
KLV Vilia 81.83 327 P P 06 29 49.3 -3.1
DSF Desfina 81.86 328 P P 06 29 47.7 -4.9
DSF Desfina 81.86 328 P P 06 29 47.7 -4.9
PVO Paravola 82.00 328 P P 06 29 50.2 -3.0
KALE Kalithea 82.01 328 P P 06 29 52.1 -1.3
KALE Kalithea 82.01 328 P P 06 29 52.1 -1.3
SERG Sergoula 82.01 328 P P 06 29 48.5 -4.8
APE Apeiranthos 82.06 325 eP P 06 29 52.1 -1.6
APE pmax pmax
comp=Z,24nm,0.9s
LKD2 Lefkada island 82.11 329 P P 06 29 50.2 -3.7
LKD2 Lefkada island 82.11 329 P P 06 29 50.2 -3.7
LAKA Lakka 82.20 328 P P 06 29 50.2 -4.1
LAKA Lakka 82.20 328 P P 06 29 50.2 -4.1
KLV Kalavryta, Ach 82.32 328 P P 06 29 49.7 -5.3
KLV Kalavryta, Ach 82.32 328 P P 06 29 49.7 -5.3
CUC Castrocucco 82.42 333 eP P 06 29 56.4 +1.0
CUC LR LR
comp=Z,1μm,19.0s
DRO Drossia 82.54 328 P P 06 29 53.3 -2.8
LRDF Laroque-de-Fa 82.58 343↑ eP P 06 29 57.8 +1.6
VLS Valsamata 82.69 329 P P 06 29 54.8 -2.1
VLS Valsamata 82.69 329 P P 06 29 54.8 -2.1
VLS Valsamata 82.69 329 P P 06 29 54.8 -2.1
SANT Santorini 82.71 325 PFAKE 06 30 10.0 +13
SANT LR LR
comp=Z,1μm,20.0s
KARP Karpathos 82.84 323 eP P 06 29 56.3 -1.4
TLIG Tlapa 82.89 70 eP P 06 29 59.6 +1.3
TLIG epP **pP 06 30 12.2 -1.7**
TIP Timpagrande 82.92 332 P P **06 29 56.9 -1.2**
TIP Timpagrande 82.92 332 eP P 06 29 58.5 +0.4
TIP LR LR
comp=Z,2μm,19.0s
FILF Fillols 82.95 343↑ eP P 06 29 59.7 +1.5
VIEF Viey 83.05 345↑ eP P 06 30 00.4 +1.7
LARF Larrau 83.05 346 eP P 06 30 00.5 +1.8
RESF Ens 83.07 345↑ eP P 06 30 00.8 +1.9
VALF Valcebollere 83.19 344↑ eP P 06 30 01.4 +1.8
LAST Lasithi 83.79 324 P P 06 29 59.0 -3.7
LAST Lasithi 83.79 324 eP P 06 30 01.9 -0.8
IDI Anoyia 83.89 324 eP P 06 30 01.6 -1.5
CEL Celeste 84.02 332 PFAKE 06 30 10.0 +6.3
CEL LR LR
comp=Z,2μm,19.0s
VSL Villasalto 84.52 338 eP P 06 30 07.7 +1.5
VSL LR LR
comp=Z,1μm,19.0s
PGAV Gavieira, Arco 84.97 351 eP P 06 30 08.9 +0.3
comp=Z,78nm,1.8s
PGAV Gavieira, Arco 84.97 351 eS S 06 40 37.9 +4.9
PGAV Gavieira, Arco 84.97 351 eLQ LQ 06 50 55.6
PGAV eLR LR 06 59 01.7
comp=Z,539nm,18.0s
PBRG Braganca 84.98 350 eP P 06 30 09.2 +0.6
comp=Z,85nm,1.6s
PBRG epP **pP 06 30 22.7 -1.5**
PCAB Cabril 85.20 351 eP P 06 30 09.4 -0.2
comp=Z,81nm,1.9s
CLTB Caltabellotta 85.39 334 PFAKE 06 30 20.0 +9.3
CLTB LR LR
comp=Z,1μm,19.0s
POLO Lamas de Olo 85.52 351 eP P 06 30 11.5 +0.2
comp=Z,34nm,1.8s
POLO epP **pP 06 30 25.4 -1.6**
POLO Lamas de Olo 85.52 351 eS S 06 40 36.9 -1.5
PVRL Vila Real 85.61 351 eP P 06 30 12.5 +0.8
comp=Z,126nm,1.6s
PVRL epP **pP 06 30 26.0 -1.3**
MVO Moncorvo 85.65 350 eP P 06 30 12.4 +0.5
comp=Z,82nm,1.7s
MVO epP **pP 06 30 26.2 -1.4**
MVO Moncorvo 85.65 350 eS S 06 40 38.2 -1.4
MVO Moncorvo 85.65 350 eLQ LQ 06 55 24.4
MVO eLR LR 06 59 18.8
comp=Z,588nm,20.0s
STKA Stephens Creek 85.92 196 P P 06 30 13.7 +0.7
comp=Z,5.7nm,0.8s,baz=4.2,slow=6.8,SNR=9.4
PVIS Viseu 86.18 351 eP P 06 30 15.8 +1.3
comp=Z,61nm,1.8s
PVIS epP **pP 06 30 29.7 -0.5**
BBSR BB Station 86.60 37 PFAKE 06 30 30.0 +13
BBSR LR LR
comp=Z,703nm,20.0s
WDD Wied Dalam 86.66 333 PFAKE 06 30 30.0 +13
WDD LR LR
comp=Z,930nm,20.0s
ES19 SONSECA Array 86.73 348 eP P 06 30 17.8 +0.5
ESDC Sonseca Array 86.76 348 P P 06 30 17.8 +0.4
comp=Z,16nm,0.9s,baz=3.4,slow=4.7,SNR=19
ESDC LR LR 07 13 19.6
comp=Z,221nm,18.6s,baz=25,slow=38
ESLA Sonseca Array 86.76 348 eP P 06 30 18.2 +0.8
PCAS Casmilo, Conde 86.89 351 eP P 06 30 19.9 +1.9
comp=Z,56nm,1.9s
PCAS epP **pP 06 30 32.5 -1.2**
PCAS Casmilo, Conde 86.89 351 eS S 06 40 54.3 +2.6
PAB San Pablo 86.94 348 eP P 06 30 19.3 +1.0
PAB MLR MLR
comp=Z,909nm,20.0s
PAB San Pablo 86.94 348 eP P 06 30 19.3 +1.0
PAB LR LR
comp=Z,909nm,20.0s
PCBR Castelo Branco 87.00 350 eP P 06 30 20.4 +1.9
comp=Z,41nm,1.1s
PCBR epP **pP 06 30 30.8 -3.4**
PTOM Tomar 87.31 351 eP P 06 30 21.5 +1.5
comp=Z,41nm,1.3s
PMRV Marv??o 87.40 350 eP P 06 30 20.5 0.0
comp=Z,35nm,1.9s
PMRV epP **pP 06 30 35.0 -1.2**
PMRV Marv??o 87.40 350 eS S 06 40 59.1 +2.5
PMRV Marv??o 87.40 350 eLQ LQ 06 55 44.6
PMRV eLR LR 07 02 11.1
comp=Z,729nm,20.0s
PESTR Estremoz 87.98 350 eS S 06 40 46.4 -16
KEST Kesra 88.11 336 P P 06 30 24.3 +0.3
comp=Z,13nm,0.8s,baz=161,slow=0.7,SNR=8.8
KEST Kesra 88.11 336 eP P 06 30 24.7 +0.7
EVO Evora 88.35 351 eP P 06 30 26.2 +1.2
comp=Z,32nm,1.5s
CAN Canberra 88.37 189 PFAKE 06 30 40.0 +15
CAN LR LR
comp=Z,645nm,19.0s
OUZ Omahuta 88.54 169 epP pP 06 30 39.0 -2.3
PBAR Barrancos 88.61 350 eP P 06 30 26.9 +0.7
comp=Z,88nm,1.4s
PBAR epP **pP 06 30 40.5 -1.4**
PBAR Barrancos 88.61 350 eS S 06 41 11.0 +3.0
PNCL Nicolau / Gran 88.82 351 eP P 06 30 26.2 -0.9
comp=Z,27nm,1.6s
MESJ Messejana 89.06 351 eP P 06 30 28.5 +0.2
PCVE Castro Verde 89.25 351 eP P 06 30 29.4 +0.2
comp=Z,55nm,1.5s
PVAQ Vaqueiros 89.44 350 eP P 06 30 31.6 +1.5
comp=Z,37nm,1.3s
PVAQ Vaqueiros 89.44 350 eS S 06 41 18.3 +2.4
PVAQ Vaqueiros 89.44 350 eLQ LQ 06 56 08.1
PVAQ eLR LR 07 03 20.7
comp=Z,827nm,20.0s
CMLA Cha da Macela 89.59 4 PFAKE 06 30 40.0 +9.2
CMLA LR LR
comp=Z,528nm,19.0s
PBDV Barranco-do-Ve 89.62 350 eS S 06 41 23.1 +5.5
MORF Marmelete 89.63 351 eP P 06 30 31.4 +0.4
PFVI Vila Bisbo 89.82 351 eP P 06 30 32.8 +0.9
comp=Z,133nm,1.5s
NWAO Narrogin (SRO) 93.22 215 PFAKE 06 31 00.0 +13
NWAO LR LR
comp=Z,414nm,20.0s
GTBY Guantanamo Bay 93.25 51 PFAKE 06 31 00.0 +12
GTBY LR LR
comp=Z,1μm,22.0s
MTDJ Mount Denham 93.55 53 PFAKE 06 31 00.0 +10
MTDJ LR LR
comp=Z,863nm,21.0s
GRTK Grand Turk 93.68 47 PFAKE 06 31 00.0 +10
GRTK LR LR
comp=Z,764nm,22.0s
SNZO South Karori 94.69 169 PFAKE 06 31 10.0 +16
SNZO LR LR
comp=Z,1μm,20.0s
SDDR Presa de Saban 95.83 48 PFAKE 06 31 10.0 +10
SDDR LR LR
comp=Z,534nm,20.0s
TAU Tasmania Unive 96.05 189 PFAKE 06 31 10.0 +10
TAU LR LR
comp=Z,595nm,21.0s
SJG San Juan 98.83 44 PFAKE 06 31 30.0 +17
SJG LR LR
comp=Z,535nm,21.0s
ANWB Willy Bob 101.00 40 PFAKE 06 31 30.0 +7.0
ANWB LR LR
comp=Z,412nm,19.0s
TAM Tamanrasset 101.42 336 PFAKE 06 31 40.0 +15
TAM LR LR
comp=Z,731nm,22.0s
FDF Fort de France 103.92 41 PFAKE 06 31 50.0 +14
FDF LR LR
comp=Z,414nm,19.0s
SDV Santo Domingo 104.94 52 PFAKE 06 31 50.0 +9.1
SDV LR LR
comp=Z,334nm,21.0s
BBGH Gun Hill 105.99 40 PFAKE 06 36 10.0
BBGH LR LR
comp=Z,1μm,20.0s
GRGR Grenville 106.06 43 PFAKE 06 36 10.0
GRGR LR LR
comp=Z,422nm,19.0s
OTAV Otavalo 108.30 64 PFAKE 06 36 10.0
OTAV LR LR
comp=Z,213nm,21.0s
KMBO Kilima Mbogo 110.06 296 PFAKE 06 36 20.0
KMBO LR LR
comp=Z,706nm,20.0s
TORD Torodi Ar. Bea 111.62 337 PKiKP **PKiKP 06 36 07.8 0.0**
comp=Z,1.3nm,0.7s,baz=2.9,slow=2.0,SNR=9.1
TORD PKKPab **PKKPab 06 47 11.1 -2.5**
comp=Z,1.6nm,1.1s,baz=235,slow=5.2,SNR=4.2
SACV Santiago Islan 112.35 4 PFAKE 06 36 20.0
SACV LR LR
comp=Z,244nm,22.0s
MBAR Mbarara 113.05 303 PFAKE 06 36 20.0
MBAR LR LR
comp=Z,457nm,21.0s
ABPO Ambohimpanom 118.65 276 PFAKE 06 36 30.0 +8.7
ABPO LR LR
comp=Z,318nm,22.0s
DBIC Dimbokro 119.28 343 PKP **PKPdf 06 36 22.6 +0.1**
comp=Z,6.5nm,0.7s,baz=15,slow=3.9,SNR=7.5
TIC Toumodi 119.34 343 *e*PKP2 **PKPdf 06 36 22.8 +0.1**
KIC Kosan Boka 119.56 342 *e*PKP2 **PKPdf 06 36 23.3 +0.2**
comp=Z,21nm,0.9s
LIC Lamto 119.75 343 *e*PKP2 **PKPdf 06 36 24.3 +0.9**
comp=Z,81nm,1.7s
SAML Samuel 124.03 55 PFAKE 06 36 40.0 +8.4
SAML LR LR
comp=Z,450nm,21.0s
LSZ Lusaka 126.73 296 PFAKE 06 36 50.0 +13
LSZ LR LR
comp=Z,934nm,19.0s
LPAZ La Paz 127.61 64 PKP **PKPdf 06 36 39.8 +0.7**
comp=Z,1.9nm,0.8s,baz=7.5,slow=7.5,SNR=9.1
VNDA Vanda 130.15 179 PKP **PKPdf 06 36 41.7 +0.4**
comp=Z,0.9nm,1.0s,baz=348,slow=3.3,SNR=3.6
SBA Scott Base 130.54 178 PFAKE 06 36 50.0 +7.9
SBA LR LR
comp=Z,577nm,21.0s
RCBR Riachuelo 131.30 21 PFAKE 06 37 00.0 +14
RCBR LR LR
comp=Z,397nm,22.0s
ASCN Ascension 134.94 352 PFAKE 06 37 00.0 +7.7
ASCN LR LR
comp=Z,802nm,19.0s
TSUM Tsumeb 135.54 305 PFAKE 06 37 10.0 +17
TSUM LR LR
comp=Z,704nm,19.0s
BOSA Boshof 138.93 288 PKP **PKPdf 06 36 59.1 -0.3**
comp=Z,5.6nm,0.9s,baz=353,slow=3.3,SNR=4.8
CPUP Villa Florida 141.58 61 PKP **PKPdf 06 37 02.8 -1.3**
comp=Z,4.2nm,1.0s,baz=150,slow=3.8,SNR=3.2
QSPA South Pole Qui 142.64 180 PFAKE 06 37 20.0 +15
QSPA LR LR
comp=Z,542nm,22.0s
PLCA Paso Flores 144.07 91 PKP PKPbc 06 37 06.5 +0.1
comp=Z,9.1nm,0.8s,baz=332,slow=5.1,SNR=9.2
SPB Sao Paulo 144.10 46 PFAKE 06 37 20.0 +11
SPB LR LR
comp=Z,658nm,20.0s
SUR Sutherland 144.28 289 PFAKE 06 37 20.0 +11
SUR LR LR
comp=Z,1μm,19.0s
TRQA Tornquist 147.57 80 *e*PKPdf **PKPdf 06 37 15.4 +1.3**
SYO Syowa Base 148.49 216↑ *e*PKPdf **PKPbc 06 37 17.0 -1.3**
SYO Syowa Base 148.49 216↑ *e*PKiKP **PKPab 06 37 23.7 +1.8**
PMSA Palmer Station 154.89 135 PFAKE 06 37 40.0 +6.9
PMSA LR LR
comp=Z,715nm,20.0s
SNAA Sanae 159.69 196 PKP **PKPab 06 38 07.4 -2.0**
VNA1 Neumayer--Stat 161.40 192 PKP **PKPab 06 38 11.8 -4.9**

*ISCJB **26** 06:23:34.9±1.0,38.88N±0.04×142.0E±0.1, h56km±6km, mb3.9/8, Error ellipse: s-maj=15.5km s-min=5.8km az=17.4*
*JMA **26** 06:23:36.0,38.88N×141.99E, h49km±1km, M3.8*
JMA Felt I J1.
*IDC **26** 06:23:40.7±3.5,38.81N×141.88E, h94km±30km, mb3.6/8, mb1 3.6/11, mb1mx3.4/48, mbtmp3.9/11, Error ellipse: s-maj=33.5km s-min=23.7km az=73.0*

ISC 26 06:23:35.9±1.5, 38.86N±0.06×142.1E±0.1, h48km±11km, n22, σ1§55/30, mb4.0/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.39**	**305**	P	**Pn**	**06 23 45.4**	**-0.4**
OFUJ				S	**Sn**	**06 23 51.7**	**-1.0**
JMK	**Ichinoseki**	**0.68**	**278**	P	**Pn**	**06 23 48.6**	**-0.7**
JMK				S	**Sn**	**06 23 57.5**	**-1.4**
JIO	**Ouri**	**0.70**	**235**	P	**Pn**	**06 23 49.1**	**-0.5**
JIO				S	**Sn**	**06 23 57.9**	**-1.5**
JOM	**Ohasama**	**0.86**	**315**	P	**Pn**	**06 23 51.2**	**-0.6**
JOM				S	**Sn**	**06 24 02.1**	**-1.3**
JOU	**Okura**	**1.21**	**246**	P	**Pn**	**06 23 55.8**	**-0.7**
JOU				*e*S	**Sn**	**06 24 10.8**	**-1.0**
JRG	**Rokugo**	**1.24**	**296**	P	**Pn**	**06 23 56.2**	**-0.7**
JYK	**Kaneyama**	**1.34**	**273**	P	**Pn**	**06 23 57.6**	**-0.7**
JMM	**Marumori**	**1.42**	**226**	P	**Pn**	**06 23 58.8**	**-0.5**
JMM				*e*S	**Sn**	**06 24 15.2**	**-1.5**
JANG	**Nango**	**1.57**	**344**	P	**Pn**	**06 24 00.9**	**-0.5**
JANG				*e*S	**Sn**	**06 24 19.8**	**-0.8**
MJAR	**Matsushiro Arr**	**3.84**	**234**	P	**Pn**	**06 24 34.6**	**+2.0**
	1.5nm,0.3s,baz=37,slow=12,SNR=4.1						
MAT	**Matsushiro**	**3.84**	**234**	P	**Pn**	**06 24 35.6**	**+3.0**
MAT				*e*S	**Sn**	**06 25 15.5**	**-1.0**
ASAJ	**Asahikawa**	**5.26**	**4**	S	**Sn**	**06 25 50.2**	**-1.1**
	0.4nm,0.3s,baz=105,slow=20,SNR=2.8						
USRK	**Ussuriysk Ar.**	**9.25**	**308**	P	**Pn**	**06 25 49.6**	**+2.9**
	baz=125,slow=14,SNR=5.0						
KSRS	**Korea Array**	**11.23**	**267**	P	**Pn**	**06 26 17.8**	**+4.0**
	0.3nm,0.3s,baz=78,slow=14,SNR=3.3						
SONM	**Songino Array**	**27.25**	**301**	P	**P**	**06 29 16.1**	**+0.5**
	1.2nm,0.9s,baz=77,slow=6.2,SNR=3.5						
ZALV	**Zalesovo Beam**	**41.09**	**311**	P	**P**	**06 31 13.2**	**-1.6**
	1.0nm,0.4s,baz=78,slow=7.7,SNR=3.3						
MKAR	**Makanchi Array**	**43.62**	**301**	P	**P**	**06 31 34.5**	**-0.9**
	3.0nm,0.8s,baz=79,slow=8.1,SNR=6.2						
KURBB	**Kurchatov Arra**	**45.31**	**307**	P	**P**	**06 31 47.5**	**-1.4**
	2.9nm,0.6s,baz=81,slow=8.2,SNR=10.0						
ILAR	**Eielson Array**	**47.68**	**33**	P	**P**	**06 32 08.3**	**+1.1**
	0.3nm,0.7s,baz=272,slow=5.8,SNR=3.7						
BVAR	**Borovoye Array**	**49.75**	**311**	P	**P**	**06 32 22.4**	**-0.8**
	1.1nm,0.6s,baz=64,slow=9.8,SNR=3.3						
WRA	**Warramunga Arr**	**58.94**	**189**	P	**P**	**06 33 29.6**	**-0.8**
	0.5nm,0.6s,baz=6.0,slow=7.2,SNR=4.1						
FINES	**FINESS Array B**	**67.44**	**332**	P	**P**	**06 34 25.9**	**-0.3**
	1.0nm,0.6s,baz=54,slow=7.1,SNR=3.5						

*TIF **26** 06:34:39.9,41.27N×43.59E, h15km*
*DDA **26** 06:34:39.3,41.31N×43.60E, h7km, Ml3.5*
*ISCJB **26** 06:34:40.8±0.5,41.25N±0.03×43.56E±0.03, h10km±3km, Error ellipse: s-maj=4.6km s-min=3.5km az=148.1*
*CSEM **26** 06:34:40.3±0.1,41.26N×43.55E, h8km, ML2.7, Error ellipse: s-maj=3.0km s-min=2.0km az=157.0*

ISC 26 06:34:40.4±0.8, 41.26N±0.03×43.57E±0.02, h12km±4km, n25, σ0§43/48, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BGD	**Bogdanovka**	**0.03**	**73**	P	**Pg**	**06 34 43.1**	**+0.2**
BGD				S	**Sg**	**06 34 44.7**	**+0.1**
BGD	**Bogdanovka**	**0.03**	**73**	P	**Pg**	**06 34 43.1**	**+0.2**
BGD				S	**Sg**	**06 34 44.9**	**+0.2**
AKH	**Akhalkalaki**	**0.16**	**340**	P	**Pg**	**06 34 44.3**	**0.0**
AKH				S	**Sg**	**06 34 46.8**	**-0.3**
AKH	**Akhalkalaki**	**0.16**	**340**	P	**Pg**	**06 34 44.3**	**0.0**
AKH				S	**Sg**	**06 34 46.8**	**-0.3**
EAK	**Akyaka**	**0.57**	**177**	*i* P	**Pg**	**06 34 51.6**	**0.0**
EAK				*i* S	**Sb**	**06 35 00.2**	**-0.3**
EAK	**Akyaka**	**0.57**	**177**	P	**Pg**	**06 34 51.6**	**0.0**
EAK				S	**Sb**	**06 35 00.2**	**-0.3**
KZR	**Kazreti**	**0.65**	**79**	P	**Pg**	**06 34 52.9**	**-0.2**
KZR				S	**Sg**	**06 35 01.7**	**0.0**
KZR	**Kazreti**	**0.65**	**79**	P	**Pg**	**06 34 52.9**	**-0.2**
KZR				S	**Sg**	**06 35 01.7**	**0.0**
EPOS	**Posof**	**0.68**	**292**	*i* P	**Pg**	**06 34 53.5**	**-0.1**
EPOS				*i* S	**Sg**	**06 35 02.4**	**-0.1**
EPOS	**Posof**	**0.68**	**292**	P	**Pg**	**06 34 53.5**	**-0.1**
EPOS				S	**Sg**	**06 35 02.4**	**-0.1**
DIGO	**Kars**	**0.85**	**190**	*i* P	**Pg**	**06 34 56.9**	**0.0**
DIGO				*i* S	**Sb**	**06 35 09.2**	**+0.5**
TBLG	**Delisi**	**1.00**	**61**	P	**Pb**	**06 34 59.4**	**-0.2**
TBLG				S	**Sg**	**06 35 12.8**	**+0.1**
TBLG	**Delisi**	**1.00**	**61**	P	**Pb**	**06 34 59.2**	**-0.4**
TBLG				S	**Sg**	**06 35 12.8**	**+0.1**
SEAG	**Tbilisi Sea**	**1.06**	**61**	P	**Pb**	**06 35 00.4**	**-0.2**
SEAG				S	**Sn**	**06 35 15.2**	**-0.5**
SEAG	**Tbilisi Sea**	**1.06**	**61**	P	**Pb**	**06 35 00.4**	**-0.2**
SEAG				S	**Sn**	**06 35 15.2**	**-0.5**
DUS	**Dusheti**	**1.19**	**45**	P	**Sg**	**06 35 19.8**	**+0.9**
DUS	**Dusheti**	**1.19**	**45**	S	**Sn**	**06 35 20.7**	**+1.7**
ARTV	**Artvin**	**1.24**	**267**	*i* P	**Pn**	**06 35 03.2**	**-0.4**
ARTV				*i* S	**Sg**	**06 35 21.2**	**+0.9**
ARTV	**Artvin**	**1.24**	**267**	P	**Pn**	**06 35 03.2**	**-0.4**
ARTV				S	**Sg**	**06 35 21.2**	**+0.9**
ONI	**Oni**	**1.33**	**356**	P	**Pn**	**06 35 05.0**	**+0.1**
ONI				S	**Sn**	**06 35 22.8**	**+0.2**
GUDG	**Gudauri**	**1.39**	**29**	P	**Pb**	**06 35 06.2**	**-0.1**
GUDG				S	**Sg**	**06 35 25.6**	**+0.5**
DDEM	**Demirkent**	**1.42**	**256**	*i* P	**Pn**	**06 35 06.1**	**0.0**
DDEM				*i* S	**Sb**	**06 35 24.9**	**+0.1**
DDEM	**Demirkent**	**1.42**	**256**	P	**Pn**	**06 35 06.1**	**0.0**
DDEM				S	**Sb**	**06 35 25.0**	**+0.1**
DBOC	**Borcka**	**1.43**	**274**	*i* P	**Pb**	**06 35 06.7**	**-0.3**
DBOC				*i* S	**Sb**	**06 35 25.2**	**0.0**
DBOC	**Borcka**	**1.43**	**274**	P	**Pb**	**06 35 06.7**	**-0.3**
DBOC				S	**Sb**	**06 35 25.2**	**0.0**

*IDC **26** 06:35:38.5±0.8, 16.80N×85.73W, h0km, mb4.3/18, mb1 4.5/22, mb1mx4.4/38, mbtmp4.4/22, ML3.4/3, MS3.9/6, Ms1 3.9/6, ms1mx3.6/35, Error ellipse: s-maj=23.8km s-min=13.3km az=56.0*
*NEIC **26** 06:35:42.4±2.1, 16.88N×85.72W, h14km±13km, mb4.8/133, Error ellipse: s-maj=5.4km s-min=3.8km az=201.0*
NEIC Felt [II] at Roatan. Also felt at Jose Santos Guardiola and Sandy Bay.
*GCMT **26** 06:35:42.4±0.3, 17.03N×85.84W, h32km±1km, MW5.1/68, Moment Tensor Solution. s23,c25; s68,c95; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-0.65±.34; Mθθ-1.81±.23; Mϕϕ2.47±.25; Mrθ-0.03±.25; Mϕθ4.18±.17; Mϕr1.02±.28; Best double couple: Mo4.80100×10^16 NP1:ϕs167.00000°, δ90.00000°, λ-168.00000°. NP2: ϕs77.00000°, δ78.00000°, λ0.00000°. Principal axes: T 5.1530, Plg8.0000°, Azm301.0000°; N -0.6960, Plg78.0000°, Azm167.0000°; P -4.4490, Plg8.0000°, Azm32.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISCJB **26** 06:35:45.0±0.3, 17.11N±0.03×85.81W±0.03, h33km, mb4.7/115, MS4.3/6 Error ellipse: s-maj=4.2km s-min=3.4km az=15.1*

ISC 26 06:35:44.3±0.3, 17.02N±0.04×85.55W±0.05, h28km, n538, σ1§65/527, mb4.7/117, MS4.2/6, 1D, North of Honduras

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ESTN	**Estel**	**3.97**	**192**	*e*S	**Sb**	**06 37 43.5**	**+2.2**
BOAB	**BOACO BROADBAN**	**4.54**	**181**	*e*P	Pb	06 37 15.6	+12
CNGN	**Cerro Negro**	**4.63**	**194**	*e*S	**Sb**	**06 38 03.0**	**+2.9**
ESPN	**Las Esperanzas**	**4.94**	**166**	*e*P	Pb	06 37 16.1	+6.0
ACON	**Acoyapa**	**5.03**	**176**	*e*P	**Pb**	**06 37 15.4**	**+3.7**
CONN	**Concepcion**	**5.42**	**181**	*e*S	**Sb**	**06 38 26.4**	**+3.5**
MTDJ	**Mount Denham**	**7.73**	**80**	*e*Pn	**Pn**	**06 37 36.3**	**+1.1**
BBJ	**Bamboo Saint A**	**8.01**	**79**	*i* P	**Pn**	**06 37 39.6**	**+0.7**
STH	**Stony Hill**	**8.40**	**81**	*i* P	**Pn**	**06 37 46.0**	**+1.7**
HOJ	**Hope**	**8.45**	**82**	*i* P	**Pn**	**06 37 47.2**	**+2.3**
CMIG	**Matias Romero**	**8.93**	**272**	Pn	Pn	06 37 44.8	-6.8
	1.8nm,0.3s,baz=104,slow=8.4,SNR=31						
CMIG				Sn	Sn	06 39 16.0	-15
	0.9nm,0.3s,baz=60,slow=20,SNR=1.6						
CMIG				LR	LR	06 41 24.7	
	comp=Z,1μm,18.8s,baz=81,slow=40						
GTBY	**Guantanamo Bay**	**10.32**	**72**	*e*Pn	**Pn**	**06 38 12.3**	**+1.8**
DWPF	**Disney Wildern**	**11.68**	**18**	*e*Pn	**Pn**	**06 38 28.7**	**-0.4**
TLIG	**Tlapa**	**12.45**	**274**	*e*Pn	**Pn**	**06 38 37.0**	**-2.9**
SDDR	**Presa de Saban**	**13.71**	**80**	*e*Pn	**P**	**06 39 02.5**	**-2.8**
447A	**Lucedale**	**14.01**	**349**	P	**Pn**	**06 38 59.4**	**-1.6**
	baz=168,SNR=15						
448A	**Bay Minette**	**14.01**	**352**	P	**Pn**	**06 39 00.5**	**-0.5**
	baz=172,SNR=6.6						
446A	**Poplarville**	**14.15**	**346**	P	**Pn**	**06 39 01.8**	**-1.1**
	baz=166,SNR=14						
BRAL	**Brewton**	**14.16**	**355**	*e*Pn	**Pn**	**06 39 03.0**	**0.0**
543A	**St. Martinvill**	**14.23**	**337**	P	**Pn**	**06 39 03.6**	**-0.4**
	baz=156						
445A	**Amite**	**14.34**	**343**	P	**Pn**	**06 39 05.0**	**-0.4**
	baz=162						
TIGA	**Tifton**	**14.47**	**7**	P	**Pn**	**06 39 04.2**	**-3.0**
	baz=188,SNR=15						
TIGA	**Tifton**	**14.47**	**7**	*e*Pn	**Pn**	**06 39 04.9**	**-2.4**
	80nm,0.6s						
348A	**Jackson**	**14.49**	**352**	P	**Pn**	**06 39 07.7**	**+0.1**
	baz=172,SNR=22						
HELC	**Santa Helena**	**14.55**	**137**	*e*Pn	**P**	**06 39 14.9**	**-0.1**
347A	**Saraland**	**14.58**	**350**	P	**Pn**	**06 39 08.4**	**-0.3**
	baz=169						
346A	**Big Creek Wild**	**14.75**	**347**	P	**Pn**	**06 39 09.2**	**-1.8**
	baz=166						
345A	**Thompson Farm,**	**14.80**	**345**	P	**Pn**	**06 39 10.2**	**-1.6**
	baz=164						
035Z	**Hargill**	**14.95**	**311**	P	**Pn**	**06 39 09.3**	**-4.4**
	baz=127,SNR=24						
442A	**Mamou**	**15.01**	**337**	P	**Pn**	**06 39 13.7**	**-0.8**
	baz=155						
MOIG	**Morelia**	**15.09**	**283**	*e*Pn	**Pn**	**06 39 15.2**	**-0.7**
248A	**Dixon Mills**	**15.14**	**353**	P	**Pn**	**06 39 15.7**	**-0.6**
	baz=173,SNR=17						
247A	**Quitman**	**15.23**	**350**	P	**Pn**	**06 39 17.5**	**+0.1**
	baz=170,SNR=44						

035A **Encino** 15.26 312 P Pn 06 39 12.8 -5.0
baz=129,SNR=10
246A **Jackson Lee, B** 15.28 348 P Pn 06 39 16.9 -1.2
baz=168
441A **DeRidder** 15.35 334 P Pn 06 39 19.8 +0.8
baz=152
737A **Port Lavaca** 15.40 321 P Pn 06 39 20.8 +1.1
baz=138
245A **Little AP, Sta** 15.46 346 P Pn 06 39 19.4 -1.1
baz=165
KVTX **Kingsville** 15.49 315 *e*Pn Pn 06 39 18.4 -2.5
208nm,1.4s
539A **Cross D Ranch,** 15.50 329 P Pn 06 39 18.2 -2.8
baz=146
342A **Flagon Creek P** 15.57 338 P Pn 06 39 19.6 -2.3
baz=156
244A **Avery, Jackson** 15.67 344 P Pn 06 39 22.0 -1.2
baz=162,SNR=7.4
440A **Kirbyville** 15.67 332 P Pn 06 39 22.3 -0.9
baz=150,SNR=11
034A **Hebbronville** 15.75 312 P Pn 06 39 20.3 -3.9
baz=128,SNR=20
243A **Waterproof** 15.75 341 P Pn 06 39 22.3 -1.9
baz=159
147A **Livingston** 15.78 352 P Pn 06 39 24.5 -0.2
baz=171,SNR=26
VBMS **Vicksburg** 15.79 344 P Pn 06 39 23.8 -1.0
baz=163
637A **Eagle Lake** 15.84 323 P Pn 06 39 22.1 -3.2
baz=140,SNR=10
341A **Kurthwood** 15.85 335 P Pn 06 39 23.5 -2.0
baz=153
146A **Union** 15.88 349 P Pn 06 39 22.9 -3.0
baz=168,SNR=12
736A **Circle Diamond** 15.91 320 P Pn 06 39 23.9 -2.4
baz=137,SNR=25
835A **Beeville** 15.94 317 P Pn 06 39 22.9 -3.7
baz=133,SNR=15
934A **Benavides** 15.96 314 P Pn 06 39 22.6 -4.3
baz=130,SNR=12
538A **Harpers Horsep** 15.98 327 P Pn 06 39 27.1 -0.1
baz=144
LRAL **Lakeview Retre** 16.00 356 *e*Pn Pn 06 39 26.6 -0.9
59nm,0.9s
145A **Houston Renfro** 16.02 346 P Pn 06 39 26.9 -0.8
baz=165
439A **Center Grove,** 16.09 330 P Pn 06 39 25.3 -3.2
baz=147,SNR=12
242A **Grayson** 16.13 339 P Pn 06 39 27.7 -1.4
baz=158
144A **Alexander Plac** 16.16 345 P Pn 06 39 28.2 -1.2
baz=164
340A **Bronson** 16.22 334 P Pn 06 39 27.3 -2.9
baz=151
Z47A **Carrollton** 16.27 352 P Pn 06 39 30.7 -0.2
baz=172,SNR=74
636A **Smothers Creek** 16.29 322 P Pn 06 39 27.8 -3.3
baz=138,SNR=54
735A **Kenedy** 16.31 318 P Pn 06 39 29.0 -2.4
baz=135,SNR=17
834A **Tilden** 16.31 315 P Pn 06 39 27.6 -3.8
baz=131,SNR=45
ROSC **El Rosal** 16.35 136 Pn Pn 06 39 29.1 -3.3
0.4nm,0.3s,baz=343,slow=17,SNR=2.3
ROSC Sn S 06 42 42.5 -2.8
0.6nm,0.3s,baz=90,slow=20,SNR=2.0
ROSC LR LR 06 48 06.6
comp=Z,197nm,18.5s,baz=19,slow=46
ROSC **El Rosal** 16.35 136 *e*Pn P 06 39 34.0 -1.1
33nm,0.9s
ROSC Sn S 06 42 42.5 -2.8
241A **Mo Tay, Goldon** 16.37 337 P Pn 06 39 29.9 -2.3
baz=155
Z48A **Northport** 16.39 354 P Pn 06 39 31.2 -1.2
baz=174,SNR=28
Z46A **Louisville** 16.40 350 P Pn 06 39 31.9 -0.6
baz=169,SNR=19
438A **Sam Houston St** 16.40 328 P Pn 06 39 30.0 -2.5
baz=145,SNR=13
GOGA **Godfrey** 16.43 6 *e*Pn Pn 06 39 32.2 -0.7
60nm,0.8s
339A **Huntington** 16.44 332 P Pn 06 39 30.7 -2.4
baz=149,SNR=28
RUSC **La Rusia** 16.46 131 *e*Pn Pn 06 39 34.8 +1.0
13nm,1.0s
143A **Socs Landing,** 16.49 342 P Pn 06 39 32.5 -1.2
baz=161
933A **Laredo** 16.50 312 P Pn 06 39 29.5 -4.3
baz=128,SNR=81
142A **Monroe** 16.51 341 P Pn 06 39 32.4 -1.6
baz=159
RGRS **Roger Stewart** 16.55 16 *e*Pn Pn 06 39 35.1 +0.8
3µm,0.4s
SDV **Santo Domingo** 16.62 117 Pn Pn 06 39 35.7 +0.1
4.9nm,0.3s,baz=330,slow=6.3,SNR=8.8
SDV Sn Sn 06 42 32.1 -7.4
1.4nm,0.3s,baz=327,slow=14,SNR=2.1
SDV **Santo Domingo** 16.62 117 *e*P Pn 06 39 33.7 -1.9
SDV **Santo Domingo** 16.62 117 *e*Pn P 06 39 37.3 -0.6
177nm,1.6s
SDV Sn Sn 06 42 32.1 -7.4
635A **Leesville** 16.66 320 P Pn 06 39 32.7 -3.1
baz=136,SNR=12
Z45A **Winona** 16.71 348 P Pn 06 39 35.6 -0.8
baz=167,SNR=6.7
240A **Hunter Patters** 16.71 335 P Pn 06 39 34.0 -2.5
baz=152
536A **Bastrop** 16.73 323 P Pn 06 39 34.0 -2.7
baz=139
NHSC **New Hope** 16.74 16 *e*Pn Pn 06 39 35.9 -0.9
337nm,1.1s
Z44A **Pea Ridge, Bel** 16.78 346 P Pn 06 39 34.8 -2.5
baz=164
734A **La Parita Cree** 16.79 317 P Pn 06 39 33.6 -3.8
baz=133,SNR=6.3
338A **Crockett** 16.81 330 P Pn 06 39 35.1 -2.7
baz=147
NATX **Nacogdoches** 16.85 332 P Pn 06 39 35.2 -3.0
baz=149,SNR=8.4
NATX **Nacogdoches** 16.85 332 *e*Pn Pn 06 39 37.3 -0.9
92nm,0.8s
NATX *e*Sn Sn 06 42 29.7 -15
PRAC **Prado** 16.86 140 *e*P Pn 06 39 37.7 -0.8
PRAC **Prado** 16.86 140 *e*Pn P 06 39 39.6 -0.7
57nm,1.0s
141A **Papa Simpson,** 16.89 338 P Pn 06 39 36.7 -2.0
baz=156
CHIC **Chingaza** 16.90 135 *e*P Pn 06 39 38.8 -0.5
Y47A **UCPARC, Winfie** 16.94 353 P Pn 06 39 39.5 +0.1
baz=173,SNR=118
239A **Gary** 16.99 333 P Pn 06 39 36.9 -3.0
baz=150
535A **Dale** 16.99 322 P Pn 06 39 36.6 -3.5
baz=138,SNR=8.8
ZAIG **Zacatecas** 17.00 292 *e*Pn Pn 06 39 38.0 -2.4
833A **Chaparral WMA,** 17.01 314 P Pn 06 39 36.1 -4.2
baz=129,SNR=146
634A **China Grove, S** 17.01 319 P Pn 06 39 37.8 -2.4
baz=134,SNR=9.4
Y46A **Houston** 17.06 351 P Pn 06 39 40.3 -0.5
baz=170,SNR=67
337A **Centerville** 17.06 328 P Pn 06 39 38.5 -2.3
baz=145
Y45A **Yeager Farm, C** 17.16 349 P Pn 06 39 41.2 -0.9
baz=168,SNR=13
140A **Cam and Jess,** 17.17 336 P Pn 06 39 41.5 -0.7
baz=154
Z42A **Norrel Spur, H** 17.19 342 P Pn 06 39 41.6 -0.8
baz=160
733A **Divot King Ran** 17.19 315 P Pn 06 39 39.2 -3.4
baz=131,SNR=71
238A **Jacksonville** 17.26 332 P Pn 06 39 40.9 -2.5
baz=148,SNR=7.9
Y44A **Strider, Charl** 17.39 347 P Pn 06 39 44.1 -0.8
baz=166,SNR=6.7
832A **Faith Ranch, C** 17.39 313 P Pn 06 39 40.9 -4.1
baz=128,SNR=88
Y43A **Makayla and Ka** 17.51 345 P Pn 06 39 46.6 +0.2
baz=163
534A **Blanco** 17.54 320 P Pn 06 39 44.0 -2.9
baz=136
435B **Jarrell** 17.56 323 P Pn 06 39 44.3 -2.8
baz=139,SNR=20
237A **Washetta, Mont** 17.58 330 P Pn 06 39 45.5 -1.9
baz=146,SNR=11
633A **Saathoff Ranch** 17.59 317 P Pn 06 39 44.3 -3.3
baz=133,SNR=154
336A **Riesel** 17.61 326 P Pn 06 39 44.5 -3.2
baz=143,SNR=9.6
JSC **Jenkinsville** 17.62 12 *e*Pn Pn 06 39 47.3 -0.5
46nm,0.5s
Z40A **Long Farm, Mag** 17.66 338 P Pn 06 39 46.7 -1.5
baz=155,SNR=7.9
Y42A **Garnett, Star** 17.66 343 P Pn 06 39 47.1 -1.2
baz=161
X45A **UM Field Stati** 17.68 349 P Pn 06 39 48.4 -0.1
baz=168,SNR=10
OXF **Oxford** 17.77 349 *e*Pn Pn 06 39 49.5 0.0
167nm,0.9s
138A **Matatall Enter** 17.81 333 P Pn 06 39 49.0 -1.1
baz=150
335A **Moody** 17.85 325 P Pn 06 39 48.7 -1.9
baz=141,SNR=11
X44A **Crenshaw** 17.89 348 P P 06 39 51.6 0.0
baz=166,SNR=7.0
533A **Kerrville** 17.92 319 P Pn 06 39 49.0 -2.5
baz=134,SNR=128
Z39A **Irene McRaven,** 17.93 336 P Pn 06 39 51.7 0.0
baz=153
WLAR **White Oak Lake** 17.94 339 *e*Pn Pn 06 39 52.0 +0.2
35nm,0.9s
Y41A **Eaglette Beard** 17.95 341 P P 06 39 53.1 +0.8
baz=158
434A **Burnet** 17.98 322 P Pn 06 39 50.0 -2.3
baz=138
137A **Heron Place, G** 18.05 331 P Pn 06 39 51.9 -1.3
baz=148,SNR=13
X43A **Marvell** 18.07 346 P Pn 06 39 51.8 -1.5
baz=164
OTAV **Otavalo** 18.08 157 *e*P P 06 39 56.4 +2.1
SWET **Sewanee** 18.13 359 *e*Pn P 06 39 54.5 +0.2
12nm,0.6s
FLOC **Florencia** 18.16 147 *e*P Pn 06 39 51.8 -2.8
136A **Ennis** 18.32 329 P P 06 39 53.4 -3.0
baz=145
334A **Lometa** 18.34 323 P P 06 39 55.2 -1.4
baz=139,SNR=35
W45A **Hickory Valley** 18.36 350 P P 06 39 56.7 -0.1
baz=170,SNR=16
CPCT **Cooper Cave** 18.38 3 *e*P Pn 06 39 57.7 +0.6
21nm,0.7s
WHTX **Lake Whitney,** 18.41 326 P P 06 39 55.7 -1.6
baz=142,SNR=22
WHTX **Lake Whitney,** 18.41 326 *e*Pn P 06 39 56.1 -1.2
152nm,1.0s
433A **Art** 18.43 320 P P 06 39 55.3 -2.2
baz=136,SNR=74
KMSC **Kings Mountain** 18.44 11 P P 06 39 57.2 -0.4
baz=193,SNR=23
KMSC **Kings Mountain** 18.44 11 *e*P Pn 06 39 57.8 -0.1
79nm,0.8s
X41A **Kaden, Bauxite** 18.49 342 P P 06 39 57.1 -1.2
baz=159
Y39A **Lockesburg** 18.52 337 P P 06 39 57.7 -0.8
baz=154,SNR=43
SJG **San Juan** 18.53 84 P Pn 06 40 03.4 +4.4
2.0nm,0.3s,baz=250,slow=11,SNR=8.7
SJG **San Juan** 18.53 84 *e*P Pn 06 40 04.6 +5.5
22nm,0.6s
TKL **Tuckaleechee C** 18.64 5 P Pn 06 40 00.6 +0.4
2.7nm,0.3s,baz=175,slow=14,SNR=37
TKL S Sn 06 43 16.7 -11
4.9nm,0.3s,baz=133,slow=21,SNR=8.2
TKL **Tuckaleechee C** 18.64 5 *e*P Pn 06 40 01.4 +1.1
51nm,0.8s
TKL S Sn 06 43 16.7 -11
JCT **Junction City** 18.68 318 P P 06 39 58.2 -2.2
baz=133,SNR=15
JCT **Junction City** 18.68 318 *e*P P 06 39 58.2 -2.2
48nm,0.8s
UALR **University of** 18.70 342 *e*P P 06 40 00.7 +0.2
32nm,1.1s
UALR *e*Sn Sn 06 43 15.6 -14
Y38A **Idabel** 18.75 336 P Pn 06 40 01.8 +0.1
baz=152,SNR=15
333A **Richland Sprin** 18.77 322 P P 06 40 00.8 -0.5
baz=137,SNR=72
234A **Clairette** 18.79 325 P P 06 40 01.2 -0.3
baz=140,SNR=36
HUMP **Col San Antoni** 18.81 84 *e*P Pn 06 40 07.5 +5.0
23nm,0.6s
135A **Vickery Place,** 18.83 327 P P 06 40 00.9 -1.1
baz=143
MIAR **Mount Ida** 18.88 339 P Pn 06 40 03.2 0.0
baz=156,SNR=11
MIAR **Mount Ida** 18.88 339 *e*P P 06 40 02.5 0.0
22nm,0.8s
V45A **Humboldt** 18.90 351 P Pn 06 40 03.1 -0.3
baz=170
Z36A **Blue Ridge** 18.93 331 P P 06 40 02.8 -0.2
baz=147,SNR=30
X39A **Fountain Ranch** 19.04 338 P P 06 40 04.2 0.0
baz=155
W41B **Gary Mavity, V** 19.05 343 P Pn 06 40 04.9 -0.3
baz=161
HALT **Halls** 19.12 351 *e*P P 06 40 05.0 -0.1
70µm,0.6s
HALT *e*Sn S 06 43 41.8 +1.5
WVT **Waverly** 19.15 354 *e*P Pn 06 40 07.0 +0.6
47nm,0.8s
X301 **Greenbrier Sit** 19.15 343 *e*P Pn 06 40 07.2 +0.7
18nm,0.9s
X301 *e*Sn Sn 06 43 36.6 -3.7
Y37A **Hugo** 19.16 334 P Pn 06 40 06.7 +0.1
baz=150
WHAR **Wooly Hollow** 19.17 343 *e*P Pn 06 40 07.4 +0.7
21nm,0.8s
134A **White-Moore Ra** 19.19 326 P P 06 40 05.6 -0.4
baz=142,SNR=9.4
X201 **Greenbrier Sit** 19.19 343 *e*P Pn 06 40 07.3 +0.3
27nm,1.0s
233A **Rising Star** 19.23 323 P P 06 40 05.9 -0.4
baz=139,SNR=19
GNAR **Gosnell** 19.29 349 *e*P Pn 06 40 09.5 +1.4
GNAR *e*Sn Sn 06 43 39.8 -3.8
Z35A **Perchaven, San** 19.37 329 P P 06 40 08.2 +0.4
baz=145
Y36A **Durant** 19.38 332 P Pn 06 40 09.5 +0.3
baz=148
CNNC **Cliffs of the** 19.39 19 *e*P Pn 06 40 10.1 +0.8
60nm,0.5s
V42A **Cord** 19.42 346 P Pn 06 40 10.1 +0.4
baz=164
X38A **Whitesboro** 19.45 336 P P 06 40 09.2 +0.5
baz=153
UTMT **University of** 19.48 352 *e*P Pn 06 40 10.9 +0.6
278nm,1.1s
TZTN **Tazewell** 19.53 5 *e*P Pn 06 40 11.8 +0.7
24nm,0.7s
W39A **Magazine** 19.54 339 P Pn 06 40 12.1 +1.0
baz=156
X37A **Clayton** 19.59 335 P Pn 06 40 11.2 -0.4
baz=152,SNR=13
V41A **Mountainview** 19.60 344 P Pn 06 40 11.9 0.0
baz=162
133A **Hamilton Ranch** 19.67 325 P P 06 40 11.5 +0.3
baz=140,SNR=30
W38A **Poteau** 19.69 338 P Pn 06 40 13.6 +0.7
baz=154,SNR=19
Z34A **Collier Ranch,** 19.73 328 P Pn 06 40 13.0 -0.4
baz=143
Y35A **Marietta** 19.73 331 P Pn 06 40 13.3 -0.1
baz=146
V40A **Witts Springs** 19.80 342 P Pn 06 40 14.2 -0.1
baz=160,SNR=11
U42A **Revenden** 19.91 346 P Pn 06 40 15.2 -0.3
baz=164,SNR=12
PARMO **Parma** 19.92 350 *e*P Pn 06 40 15.0 -0.6
PARMO *e*S S 06 43 56.5 -0.1
X36A **Centrahoma** 19.98 333 P P 06 40 15.2 +0.7
baz=149,SNR=6.4
U41A **Viola** 20.07 345 P Pn 06 40 16.5 -0.9
baz=163
V39A **Pettigrew** 20.09 341 P Pn 06 40 18.2 +0.6
baz=158
W37B **Quinton** 20.09 336 P Pn 06 40 17.0 -0.6
baz=152,SNR=8.0
ABTX **Abilene, Hawle** 20.10 323 P P 06 40 16.0 +0.2
baz=138,SNR=7.9
ABTX **Abilene, Hawle** 20.10 323 *e*P P 06 40 16.3 +0.5
102nm,1.3s
Z33A **Whitaker Ranch** 20.11 326 P P 06 40 16.4 +0.5
baz=141,SNR=25
X35A **Drake** 20.11 332 P Pn 06 40 17.1 -0.8
baz=147,SNR=10
Y34A **Reagan Ranch,** 20.12 329 P P 06 40 16.8 +0.8
baz=145
PBMO **Poplar Bluff** 20.16 349 *e*P Pn 06 40 18.0 -0.4
42nm,0.9s
U40A **Yellville** 20.33 343 P Pn 06 40 19.4 -1.0
baz=160
V38A **Canehill** 20.36 339 P Pn 06 40 20.0 -0.8
baz=156
W36A **Wetumka** 20.41 334 P P 06 40 20.1 +0.8
baz=150,SNR=8.5
U39A **Green Forest** 20.53 341 P Pn 06 40 22.1 -0.7
baz=158,SNR=12
HHAR **Hobbs** 20.59 340 *e*P P 06 40 22.0 +0.9
12nm,1.0s
Y33A **Hilltop Ranch,** 20.60 328 P P 06 40 21.6 +0.4
baz=143,SNR=11
BLA **Blacksburg** 20.62 12 *e*P Pn 06 40 24.1 +0.3
60nm,0.9s
V37A **Hulbert** 20.64 337 P P 06 40 21.8 +0.2
baz=154,SNR=8.8
TXAR **Lajitas Array** 20.65 310 P P 06 40 21.4 -0.6
25nm,0.9s,baz=128,slow=10,SNR=226
TXAR S S 06 43 58.6 -13
0.7nm,0.3s,baz=130,slow=25,SNR=6.9
TX31 **Lajitas Ar. Si** 20.65 310 *e*P P 06 40 21.8 -0.2
TX31 *e*P Pn 06 40 21.9 -2.4
X34A **Smith Ranch, M** 20.68 330 P P 06 40 23.1 +1.0
baz=146,SNR=8.7
T41A **Mountain View** 20.69 346 P Pn 06 40 23.7 -1.0
baz=164,SNR=22
W35A **Tecumseh** 20.70 333 P P 06 40 23.1 +0.8
baz=149
VWCC **Virginia Weste** 20.74 13 *e*P Pn 06 40 25.8 +0.5
S45A **Carrier Mills** 20.76 353 P P 06 40 24.1 +1.2
baz=172
S44A **Carbondale** 20.86 352 P Pn 06 40 25.4 -1.1
baz=170,SNR=17
V36A **Jenks** 20.86 336 P Pn 06 40 26.2 -0.4
baz=152
S43A **Fulton Ridge,** 20.86 350 P P 06 40 25.1 +1.1
baz=168,SNR=16
SIUC **Southern Illin** 20.87 352 *e*P Pn 06 40 25.9 -0.9
137nm,0.9s
U38A **Gravette** 20.88 340 P Pn 06 40 25.7 -1.2
baz=156
TUL1 **Leonard** 20.91 336 P Pn 06 40 25.9 -1.3
baz=152,SNR=7.6
TUL1 **Leonard** 20.91 336 *e*P P 06 40 25.4 +0.8
USIN **University of** 20.95 355 *e*P Pn 06 40 26.4 -1.2
104nm,0.8s
X33A **Lawton** 20.96 329 P P 06 40 24.9 -0.2
baz=144,SNR=28
T40A **Mansfield** 20.98 344 P Pn 06 40 26.9 -1.2
baz=162,SNR=7.1
HPIG **21.08 301** *e*P P **06 40 26.5 -0.3**
58nm,1.1s
U37A **Salina** 21.10 338 P P 06 40 28.2 +1.6
baz=154
T39A **Clever** 21.10 342 P P 06 40 28.7 +2.0
baz=159
WCI **Wyandotte Cave** 21.14 358 *e*P P 06 40 28.7 +1.5
106nm,0.8s
W34A **Bridge Creek,** 21.17 331 P P 06 40 27.8 +0.3
baz=147
W34A **Bridge Creek,** 21.17 331 *e*P P 06 40 27.9 +0.5
63nm,0.9s
V35A **Meyer Ranch, C** 21.20 334 P P 06 40 27.8 0.0
baz=150
S41A **Jillco Farms,** 21.21 346 P P 06 40 28.0 +0.1
baz=164,SNR=8.2
WMOK **Wichita Mounta** 21.25 329 P P 06 40 28.1 -0.2
baz=144,SNR=41
WMOK **Wichita Mounta** 21.25 329 *e*P P 06 40 28.1 -0.2
33nm,1.0s
X32A **Elmer** 21.26 327 P P 06 40 28.0 -0.4
baz=142,SNR=19
U36A **Oologah** 21.31 337 P P 06 40 29.1 +0.2
baz=153
R44A **Waltonville** 21.38 352 P P 06 40 30.6 +1.0
baz=171,SNR=9.7
T38A **Diamond** 21.39 341 P P 06 40 29.3 -0.4
baz=157
S40A **Lebanon** 21.40 345 P P 06 40 30.8 +1.0
baz=162,SNR=11
PCRV **Puerto La Cruz** 21.42 106 P P 06 40 30.0 -0.3
9.6nm,1.0s,baz=11,slow=10,SNR=2.2
W33A **Caddo, Fort Co** 21.43 330 P P 06 40 30.5 +0.3
baz=145,SNR=7.0
SMRT **St. Maarten** 21.45 84 *e*P P 06 40 35.0 +4.4
64nm,0.9s
V34A **Guthrie** 21.56 333 P P 06 40 30.4 -1.2
baz=148,SNR=7.3
V34A **Guthrie** 21.56 333 *e*P P 06 40 32.1 +0.5
24nm,0.8s
T37A **Cheneyville 18** 21.67 339 P P 06 40 32.7 -0.1
baz=156
U35A **Pawnee** 21.68 335 P P 06 40 32.5 -0.4
baz=150
S39A **Bolivar** 21.70 343 P P 06 40 33.1 0.0
baz=160,SNR=6.1
OLIL **Olney** 21.75 355 *e*P P 06 40 35.6 +2.0
84nm,0.8s
W32A **Sentinel** 21.79 328 P P 06 40 34.0 -0.1
baz=143,SNR=37
S38A **Stockton** 21.82 342 P P 06 40 35.1 +0.8
baz=159,SNR=6.2
V33A **Lossen Ranch,** 21.89 331 P P 06 40 34.7 -0.5
baz=146
T36A **Boggs Farm, Ca** 21.96 337 P P 06 40 35.6 -0.2
baz=153
R40A **Maddie Statio** 22.00 346 P P 06 40 36.8 +0.5
baz=163,SNR=9.7
Q44A **Meyer Farm, Va** 22.02 353 P P 06 40 38.7 +2.2
baz=172
T35A **Sooner Cattle** 22.07 336 P P 06 40 38.0 +0.9
baz=152
U34A **Anderson Ranch** 22.07 334 P P 06 40 36.7 -0.4
baz=149
U34A **Anderson Ranch** 22.07 334 *e*P P 06 40 36.9 -0.2
29nm,0.9s
U34A *e*S S 06 44 43.4 +4.3
BLO **Bloomington** 22.09 358 *e*P P 06 40 38.7 +1.4
114nm,0.8s
Q43A **New Douglas** 22.14 351 P P 06 40 39.7 +1.9
baz=170
V32A **Arapaho** 22.17 330 P P 06 40 38.3 +0.1
baz=144
R39A **Chumby, Stover** 22.21 344 P P 06 40 39.6 +1.0
baz=161,SNR=7.7
S37A **Fort Scott** 22.22 340 P P 06 40 38.9 +0.2
baz=156,SNR=6.5
Q42A **Golden Eagle** 22.25 350 P P 06 40 40.9 +2.0
baz=168
CBN **Corbin Frederi** 22.30 17 *e*P P 06 40 41.9 +2.5
140nm,0.6s
U33A **Lingo Farm, Me** 22.32 332 P P 06 40 40.1 +0.3
baz=147
R38A **Fenwick Farm,** 22.33 342 P P 06 40 41.3 +1.5
baz=159
T34A **McClaskey Farm** 22.43 335 P P 06 40 40.8 -0.1
baz=150,SNR=5.1
S36A **Lake Cedric, C** 22.45 339 P P 06 40 41.6 +0.5
baz=155
Q40A **Laux Farm, Aux** 22.63 347 P P 06 40 44.1 +1.0
baz=164
S35A **Otter Creek Ra** 22.67 337 P P 06 40 44.6 +1.1
baz=153
U32A **Winter Ranch,** 22.68 331 P P 06 40 43.2 -0.4
baz=145
R37A **Teagarden Farm** 22.73 341 P P 06 40 44.6 +0.5
baz=157
P42A **Winchester** 22.87 350 P P 06 40 46.2 +0.6
baz=169,SNR=5.6
Q39A **Willow Grove F** 22.89 345 P P 06 40 46.5 +0.7
baz=162
MSTX **Muleshoe** 22.89 321 P P 06 40 44.0 -2.0
baz=134,SNR=16
MSTX **Muleshoe** 22.89 321 *e*P P 06 40 44.2 -1.8
48nm,1.0s
AMTX **Amarillo** 22.90 324 P P 06 40 45.2 -0.8
baz=138
AMTX **Amarillo** 22.90 324 *e*P P 06 40 45.1 -0.9
30nm,0.7s
T33A **Patterson Ranc** 22.92 333 P P 06 40 45.4 -0.7
baz=148
R36A **Gordon, Harris** 22.96 340 P P 06 40 46.2 -0.3
baz=156
Q38A **Cooks Store, C** 22.98 344 P P 06 40 45.5 -1.1
baz=160

S34A **Willow Spring** 22.98 336 P P 06 40 47.0 +0.2
baz=151
Q37A **Longview Farm,** 23.13 342 P P 06 40 49.7 +1.5
baz=158
P40A **Paris** 23.14 347 P P 06 40 48.9 +0.6
baz=164
MNTX **Cornudas Mount** 23.18 313 P P 06 40 46.8 -2.0
baz=125,SNR=78
MNTX **Cornudas Mount** 23.18 313 *e*P P 06 40 46.8 -2.0
44nm,1.1s
R35A **Emporia Munici** 23.19 338 P P 06 40 49.6 +0.7
baz=154
ACSO **Alum Creek Sta** 23.24 5 *e*P P 06 40 51.6 +2.3
33nm,0.9s
S33A **Kaszmaul Farm,** 23.25 334 P P 06 40 49.1 -0.4
baz=149
P39B **Salisbury** 23.25 346 P P 06 40 50.4 +0.9
baz=163
T32A **Huddler Ranch,** 23.30 332 P P 06 40 49.9 -0.1
baz=147
SFIN **Lafayette** 23.32 357 P P 06 40 52.1 +2.0
baz=177
SFIN **Lafayette** 23.32 357 *e*P P 06 40 52.2 +2.2
54nm,0.8s
O42A **Bath** 23.43 351 P P 06 40 53.6 +2.4
baz=170
O41A **Passleys Farm,** 23.48 350 P P 06 40 53.8 +2.1
baz=166
Q36A **Arnold C. Orve** 23.52 340 P P 06 40 53.1 +1.0
baz=156
R34A **Isabella, Hill** 23.56 336 P P 06 40 53.6 +1.1
baz=152
SDMD **Soldier's Deli** 23.57 17 *e*P P 06 40 55.0 +2.4
36nm,0.7s
P38A **Dawn** 23.58 344 P P 06 40 53.9 +1.3
baz=161
Q35A **Mercer Eighty,** 23.62 339 P P 06 40 53.9 +0.9
baz=155
O40A **La Belle** 23.67 348 P P 06 40 54.5 +1.0
baz=165
HDIL **Hopedale** 23.68 353 P P 06 40 54.9 +1.3
baz=172
S32A **Newby Ranch, P** 23.74 333 P P 06 40 53.9 -0.3
baz=147
P37A **Lathrop** 23.76 343 P P 06 40 55.3 +0.9
baz=159
SLBS **Sierra La Lagu** 23.80 290 *e*P P 06 40 55.0 0.0
18nm,1.2s
R33A **Olander Ranch,** 23.86 335 P P 06 40 55.6 +0.3
baz=150,SNR=6.2
O39A **Kirksville** 23.94 347 P P 06 40 57.6 +1.6
baz=164
O56A **Blue Knob Stat** 23.95 13 P P 06 40 58.2 +2.0
baz=197,SNR=19
Q34A **Chapman** 23.99 338 P P 06 40 57.2 +0.6
baz=153
O38A **Galt** 24.03 345 P P 06 40 58.6 +1.7
baz=162
KSU1 **Kansas State U** 24.03 338 P P 06 40 57.1 +0.2
baz=154
KSU1 **Kansas State U** 24.03 338 *e*P P 06 40 58.0 +1.0
15nm,0.8s
P36A **Good Intent, A** 24.04 341 P P 06 40 57.5 +0.5
baz=157
P35A **Duane Minner,** 24.22 340 P P 06 40 59.1 +0.5
baz=156
O37A **Wolven Farm, M** 24.25 344 P P 06 40 58.5 -0.4
baz=160
R32A **Long Quarter,** 24.25 334 P P 06 40 57.8 -1.2
baz=149
MVL **Millersville** 24.25 17 *e*P P 06 41 02.0 +3.1
54nm,1.4s
BBSR **BB Station** 24.27 47 *e*P P 06 41 02.2 +3.0
37nm,0.8s
N54A **Moraine State** 24.34 10 P P 06 41 01.2 +1.4
baz=193,SNR=5.0
Q33A **Connelly Farm,** 24.39 336 P P 06 41 00.7 +0.4
baz=151
SSPA **Standing Stone** 24.45 14 *e*P P 06 41 03.3 +2.5
56nm,0.8s
PSUB **Penn St. - Bra** 24.46 19 *e*P P 06 41 03.2 +2.4
16nm,0.7s
P34A **Walnut Farm, R** 24.51 339 P P 06 41 01.6 +0.3
baz=154
N39A **Derby Farms, D** 24.53 347 P P 06 41 02.4 +0.9
baz=164
N38A **Joes South For** 24.61 346 P P 06 41 03.8 +1.6
baz=163
Q32A **Meitler Ranch,** 24.67 335 P P 06 41 03.0 +0.2
baz=150
P33A **Williams Farm,** 24.72 337 P P 06 41 04.0 +0.7
baz=152
N37A **Lee Faris, Mou** 24.82 344 P P 06 41 05.5 +1.4
baz=160
O35A **Humboldt** 24.85 341 P P 06 41 04.9 +0.5
baz=156
M54A **Oil Creek Stat** 24.93 11 P P 06 41 07.3 +2.2
baz=194,SNR=8.5
CBKS **Cedar Bluff** 25.01 333 P P 06 41 05.4 -0.5
baz=147
CBKS **Cedar Bluff** 25.01 333 *e*P P 06 41 05.7 -0.3
17nm,0.9s
O34A **Beatrice** 25.03 340 P P 06 41 06.5 +0.5
baz=155
M39A **Webster** 25.04 348 P P 06 41 07.5 +1.4
baz=165
N36A **Muff Farm, Cla** 25.07 343 P P 06 41 06.5 +0.1
baz=159
M38A **Pleasantville** 25.20 346 P P 06 41 08.8 +1.3
baz=163
P32A **Huiting Farm,** 25.23 336 P P 06 41 08.4 +0.5
baz=150
O33A **Hebron** 25.24 338 P P 06 41 09.3 +1.3
baz=153
N59A **State Game Lan** 25.27 18 P P 06 41 10.5 +2.3
baz=203,SNR=24
121A **Cookes Peak, D** 25.35 312 P P 06 41 09.0 -0.2
baz=123,SNR=18
121A **Cookes Peak, D** 25.35 312 *e*P P 06 41 09.4 +0.2
57nm,1.4s
BRNJ **Basking Ridge** 25.42 20 *e*P P 06 41 12.8 +3.2
175nm,1.5s
L40A **Anamosa** 25.43 350 P P 06 41 11.3 +1.7
baz=168
BNM **Barren Site** 25.46 316 *e*P P 06 41 10.2 -0.1
ERPA **Erie** 25.47 10 *e*P P 06 41 11.9 +2.0
86nm,0.9s
N34A **Lincoln** 25.56 340 P P 06 41 11.8 +1.0
baz=156
LPM **Los Pinos Moun** 25.56 316 *e*P P 06 41 11.6 +0.5
Y22D **IRIS PASSCAL I** 25.61 316 P P 06 41 11.7 +0.1
baz=127
M36A **Felix, Anita** 25.62 344 P P 06 41 14.2 +2.8
baz=160
L39A **Vinton** 25.63 349 P P 06 41 14.4 +3.0
baz=166
O32A **Brockman Farm,** 25.66 337 P P 06 41 12.9 +1.1
baz=151
CPNY **Central Park** 25.72 21 *e*P P 06 41 16.7 +4.5
65nm,0.9s
ODNJ **Ogdensburg** 25.77 19 *e*P P 06 41 15.4 +2.7
42nm,0.9s
N33A **J Bar K, Exete** 25.78 339 P P 06 41 14.5 +1.6
baz=154
ANMO **Albuquerque** 25.84 318 P P 06 41 13.6 0.0
baz=129
ANMO **Albuquerque** 25.84 318 *e*P P 06 41 13.3 -0.4
19nm,1.2s
319A **Douglas** 25.87 308 *e*P P 06 41 14.2 +0.3
41nm,1.0s
PAL **Palisades** 25.93 20 *e*P P 06 41 16.8 +2.7
99nm,0.8s
LAZ **Ladron** 25.95 316 *e*P P 06 41 14.8 +0.1
O31A **Woolen Ranch,** 25.97 335 P P 06 41 14.5 -0.1
baz=149
L37A **Phoenix Point,** 26.00 346 P P 06 41 17.3 +2.5
baz=162
T25A **Trinidad** 26.06 324 P P 06 41 15.5 -0.2
baz=136,SNR=8.2
T25A **Trinidad** 26.06 324 *e*P P 06 41 16.1 +0.4
18nm,1.0s
JFWS **Jewell Farm** 26.12 352 *e*P P 06 41 17.0 +1.1
62nm,0.8s
L36A **Harm Buss Farm** 26.20 344 P P 06 41 17.2 +0.6
baz=160
BINY **Binghamton** 26.40 16 *e*P P 06 41 21.0 +2.6
46nm,0.8s
MMNY **Mt. Morris Dam** 26.45 13 *e*P P 06 41 20.8 +1.9

KSCO **Kaye Shedlock'** 26.51 329 P P 06 41 19.3 -0.3
baz=142
KSCO **Kaye Shedlock'** 26.51 329 *e*P P 06 41 19.9 +0.3
16nm,0.8s
SRIG **Santa Rosalia** 26.71 297 *e*P P 06 41 20.8 -0.5
30nm,0.8s
SDCO **Great Sand Dun** 27.10 324 P P 06 41 24.6 -0.5
baz=135,SNR=7.7
SDCO **Great Sand Dun** 27.10 324 *e*P P 06 41 25.0 -0.1
7.8nm,1.0s
J36A **Seneca 1, Swea** 27.27 346 P P 06 41 27.7 +1.5
baz=162
TUC **Tucson** 27.43 308 P P 06 41 28.1 +0.1
baz=118
TUC **Tucson** 27.43 308 *e*P P 06 41 27.9 -0.1
17nm,1.1s
TRY **Troy** 27.56 19 *e*P P 06 41 32.0 +3.2
94nm,1.5s
QUA2 **Belchertown** 27.59 21 *e*P P 06 41 31.7 +2.6
25nm,0.8s
K32A **Verdigre** 27.68 340 P P 06 41 30.3 +0.4
baz=154
OGNE **Ogallala** 27.77 333 P P 06 41 31.2 +0.4
baz=145
OGNE **Ogallala** 27.77 333 *e*P P 06 41 31.4 +0.6
22nm,0.8s
S22A **4UR Ranch, Cre** 27.87 322 P P 06 41 31.2 -0.9
baz=133
S22A **4UR Ranch, Cre** 27.87 322 *e*P P 06 41 31.2 -0.9
14nm,1.4s
X18A **Snowflake** 27.94 313 *e*P P 06 41 33.5 +0.9
W18A **Petrified Fore** 28.11 315 P P 06 41 34.3 +0.2
baz=124
SADO **Sadowa** 28.19 10 P P 06 41 35.5 +1.0
22nm,0.9s,baz=212,slow=8.4,SNR=9.6
NCB **Newcomb** 28.53 17 *e*P P 06 41 39.8 +2.3
0.2nm,1.1s
MVCO **Mesa Verde** 28.54 319 P P 06 41 37.1 -0.8
baz=129
MVCO **Mesa Verde** 28.54 319 *e*P P 06 41 38.5 +0.5
8.0nm,1.0s
ISCO **Idaho Springs** 28.62 327 P P 06 41 38.1 -0.7
baz=137
ISCO **Idaho Springs** 28.62 327 *e*P P 06 41 39.1 +0.3
5.1nm,1.0s
214A **Organ Pipe Nat** 28.82 306 P P 06 41 39.8 -0.5
baz=115,SNR=5.8
214A **Organ Pipe Nat** 28.82 306 *e*P P 06 41 39.8 -0.5
53nm,1.3s
HNH **Hanover** 28.88 20 *e*P P 06 41 43.4 +2.8
137nm,2.0s
FFD **Franklin Falls** 28.89 21 *e*P P 06 41 43.9 +3.3
38nm,1.0s
LONY **Lake Ozonia** 29.03 16 *e*P P 06 41 44.1 +2.2
41nm,0.9s
WUAZ **Wupatki** 29.45 314 P P 06 41 46.1 0.0
baz=123,SNR=7.8
WUAZ **Wupatki** 29.45 314 *e*P P 06 41 46.8 +0.8
14nm,1.1s
LBNH **Lisbon** 29.48 20 *e*P P 06 41 48.5 +2.6
18nm,0.8s
FRNY **Flat Rock** 29.50 17 *e*P P 06 41 47.8 +1.8
14nm,0.9s
Y14A **Whitburg** 29.84 310 *e*P P 06 41 49.6 +0.3
27nm,1.1s
113A **Mohawk Valley,** 29.89 307 *e*P P 06 41 49.8 0.0
3.9nm,1.0s
O20A **White River Ci** 30.29 324 P P 06 41 53.7 +0.2
baz=134
TRQ **Mont Tremblant** 30.52 15 *e*P P 06 41 57.4 +2.2
WVL **Waterville** 30.55 23 *e*P P 06 41 58.8 +3.5
40nm,1.0s
U15A **North Rim** 30.57 314 *e*P P 06 41 56.8 +0.8
21nm,1.6s
D37A **Cotton** 30.59 351 P P 06 41 57.7 +2.0
baz=167
GLA **Glamis** 30.82 307 P P 06 41 58.0 0.0
baz=114
GLA **Glamis** 30.82 307 *e*P P 06 41 58.7 +0.7
8.4nm,1.0s
PDMCI **Parker Dam,Lak** 30.84 309 P P 06 41 57.9 -0.2
baz=117
Y12C **Blythe** 30.89 308 P P 06 41 57.7 -0.8
baz=116
EKU **East Kanab** 31.05 315 *e*P P 06 41 58.2 -2.0
K22A **Casper** 31.19 329 P P 06 42 01.4 0.0
baz=139
K22A **Casper** 31.19 329 *e*P P 06 42 02.3 +1.0
22nm,1.3s
RSSD **Black Hills** 31.21 334 P P 06 42 02.2 +0.7
baz=145
KNB **Kanab** 31.24 315 *e*P P 06 42 02.8 +1.0
9.9nm,1.0s
PKME **Peaks-Kenny Pk** 31.29 22 *e*P P 06 42 04.6 +2.8
43nm,1.1s
MTPU **Mount Pierson** 31.38 317 *e*P P 06 42 03.9 +0.6
24nm,1.9s
LCMT **Little Creek M** 31.52 315 *e*P P 06 42 05.1 +0.8
5.8nm,0.9s
IRM **Iron Mountain** 31.53 308 P P 06 42 04.8 +0.6
baz=116
SWSC **Sam W. Stewart** 31.53 306 P P 06 42 04.5 +0.3
baz=113
BC3 **Big Chuckawall** 31.55 307 P P 06 42 04.6 +0.1
baz=115
D31A **Mcclaflin, Tow** 31.60 344 P P 06 42 06.1 +1.6
baz=158
MSU **Marysvale** 31.64 318 *e*P P 06 42 05.9 +0.5
VLDQ **Val d'Or** 31.72 10 *e*P P 06 42 07.2 +1.6
20nm,0.9s
CCUT **Cedar City** 31.89 315 *e*P P 06 42 08.3 +0.7
3.8nm,1.0s
LDFC **Landfair** 31.90 310 *e*P P 06 42 08.7 +1.1
32nm,0.9s
MONP2 **Monument Peak** 32.00 305 P P 06 42 09.0 +0.5
baz=113
BELC **Belle Mtn. Jos** 32.10 308 P P 06 42 09.5 +0.1
baz=115,SNR=9.9
GMRC **Granite Mounta** 32.18 309 P P 06 42 10.3 +0.3
baz=116
TPFO **Pinon Flats** 32.29 307 P P 06 42 10.9 -0.1
baz=114,SNR=6.6
PFO **Pinyon Flats O** 32.30 307 P P 06 42 10.5 -0.6
baz=114,SNR=6.1
PFO **Pinyon Flats O** 32.30 307 *e*P P 06 42 11.2 +0.1
7.2nm,0.8s
109C **Camp Elliot, M** 32.53 305 P P 06 42 12.8 -0.1
baz=112
B32A **Ashes, Strandq** 32.56 346 P P 06 42 13.9 +0.8
baz=161
SHPR **Sheep Range** 32.60 312 *e*P P 06 42 14.7 +0.9
10nm,1.1s
TUQ **Turquoise Moun** 32.66 310 P P 06 42 13.8 -0.4
baz=117
HEC **Hector,Ludlow** 32.70 309 P P 06 42 14.4 -0.2
baz=116
BW06 **Boulder Array** 32.82 326 P P 06 42 15.1 -0.5
baz=135
BW06 **Boulder Array** 32.82 326 *e*P P 06 42 14.7 -1.0
BW06 *e*P P 06 42 15.2 -0.5
PDAR **Pinedale Array** 32.82 326 P P 06 42 14.7 -1.0
0.8nm,0.8s,baz=127,slow=9.6,SNR=8.9
MDND **Maddock** 32.85 342 P P 06 42 16.3 +0.7
baz=155
B31A **Greenbush Farm** 32.85 345 P P 06 42 16.3 +0.8
baz=159
MURC **Murrieta** 32.86 306 P P 06 42 16.1 +0.2
baz=113
BBRC **Big Bear Solar** 32.91 307 P P 06 42 17.2 +0.6
baz=114
LMQ **La Malbaie** 32.93 19 *e*P P 06 42 18.2 +2.0
DUG **Dugway, Tooele** 33.03 320 P P 06 42 17.9 +0.5
baz=127
SHOC **Shoshone, Teco** 33.12 311 P P 06 42 18.6 +0.5
baz=117
HWUT **Hardware Ranch** 33.16 323 *e*P P 06 42 18.2 -0.3
3.2nm,0.8s
GSC **Goldstone, Bar** 33.25 309 P P 06 42 19.7 +0.3
baz=116
GSC **Goldstone, Bar** 33.25 309 *e*P P 06 42 20.2 +0.9
7.4nm,1.0s
BFSC **Mount Baldy Ra** 33.46 307 P P 06 42 20.8 -0.5
baz=113
LMN **Caledonia Moun** 33.55 27 *e*P P 06 42 24.0 +2.3
26nm,1.0s
TPNV **Topopah Spring** 33.58 312 P P 06 42 22.9 +0.5
baz=118,SNR=10
TPNV **Topopah Spring** 33.58 312 *e*P P 06 42 23.7 +1.4

17nm,1.1s
FURC **Furnace Creek,** 33.80 311 P P 06 42 24.6 +0.6
baz=117,SNR=22
R11A **Troy Canyon, C** 33.80 315 P P 06 42 24.6 +0.4
baz=121,SNR=5.3
R11A **Troy Canyon, C** 33.80 315 *e*P P 06 42 24.9 +0.6
8.3nm,1.5s
REDW **Red Top Meadow** 33.92 326 *e*P P 06 42 25.2 0.0
24nm,1.3s
SNOW **Snow King Moun** 33.94 326 *e*P P 06 42 25.7 +0.3
19nm,1.3s
EDW2 **Edwards Air Fo** 33.97 308 P P 06 42 25.0 -0.5
baz=114
LRMC **Laurel Mtn Rad** 33.97 309 P P 06 42 26.4 +0.6
baz=115
TPAW **Teton Pass** 34.06 326 *e*P P 06 42 26.8 +0.3
21nm,1.4s
MPMC **Manual Prospec** 34.08 310 P P 06 42 26.7 0.0
baz=116,SNR=28
ULM **Lac du Bonnet** 34.18 348 P P 06 42 27.8 +0.6
2.3nm,0.9s,baz=164,slow=2.1,SNR=3.1
IMW **Indian Meadow** 34.33 327 *e*P P 06 42 28.9 +0.1
8.9nm,1.1s
RLMT **Red Lodge** 34.36 330 P P 06 42 29.1 +0.1
baz=138
RLMT **Red Lodge** 34.36 330 *e*P P 06 42 29.1 +0.1
7.0nm,1.0s
GRAC **Grapevine Rang** 34.40 312 P P 06 42 29.3 +0.1
baz=117
OSI **Osito Audit: C** 34.42 307 P P 06 42 29.4 -0.1
baz=113
BLG **Laguna Peak, P** 34.50 306 P P 06 42 29.8 -0.3
baz=112
ISA **Isabella, Lake** 34.64 309 P P 06 42 31.4 0.0
baz=114
ISA **Isabella, Lake** 34.64 309 *e*P P 06 42 32.5 +1.1
16nm,1.1s
CWC **Cottonwood Cre** 34.67 310 P P 06 42 31.2 -0.6
baz=116
ARVC **Arvin** 34.70 308 P P 06 42 31.9 +0.2
baz=113,SNR=6.3
TIN **Tinemaha, Big** 35.04 311 P P 06 42 35.5 +0.6
baz=116
VES **Vestal, Richgr** 35.16 309 P P 06 42 36.5 +0.7
baz=114
RCTC **Rector, Farmer** 35.47 309 P P 06 42 38.9 +0.5
baz=114
SMMC **Simmler** 35.65 307 P P 06 42 40.1 0.0
baz=112
MLAC **Mammoth, Mammo** 35.73 312 P P 06 42 39.5 -1.5
baz=116
BOZ **Bozeman (W)** 35.90 328 P P 06 42 42.2 0.0
baz=135
BOZ **Bozeman (W)** 35.90 328 *e*P P 06 42 42.4 +0.2
4.6nm,1.0s
BMN **Battle Mountai** 35.96 317 *e*P P 06 42 43.3 +0.5
15nm,1.4s
MCMT **McKenzie Canyo** 35.97 326 *e*P P 06 42 44.1 +1.1
PAGB **Antelope Grade** 36.00 308 *e*P P 06 42 44.1 +1.1
82nm,0.6s
TVH2 **Borealis Mine** 36.00 313 *e*P P 06 42 44.0 +0.7
19nm,1.9s
HLID **Hailey** 36.02 323 P P 06 42 43.6 +0.3
baz=129
LRM **Limekiln Ridge** 36.43 328 *e*P P 06 42 46.9 0.0
WAKR **Walker** 36.54 313 *e*P P 06 42 48.9 +1.1
33nm,1.6s
YERR **Yerington** 36.62 314 *e*P P 06 42 49.2 +0.7
37nm,1.9s
EGMT **Eagleton** 36.74 333 P P 06 42 49.5 +0.2
baz=139
EGMT **Eagleton** 36.74 333 *e*P P 06 42 49.8 +0.6
10nm,1.0s
MFID **Camas Ranch** 36.75 322 *e*P P 06 42 50.4 +0.9
16nm,1.8s
PNTR **Pine Nut** 36.91 313 *e*P P 06 42 51.5 +0.5
39nm,1.8s
CMB **Columbia Colle** 37.01 311 *e*P P 06 42 52.0 +0.3
16nm,1.4s
PAHR **Pah Rah Range** 37.05 315 *e*P P 06 42 52.4 +0.3
8.6nm,1.2s
LPAZ **La Paz** 37.28 152 P P 06 42 52.5 -2.3
0.6nm,1.0s,baz=0.0,slow=14,SNR=2.0
LPAZ LR LR 06 59 32.9
comp=Z,154nm,19.3s,baz=309,slow=39
MSO **Missoula** 37.88 328 P P 06 42 58.9 0.0
baz=133
WVOR **Wild Horse Val** 37.91 319 *e*P P 06 42 59.2 -0.2
9.2nm,1.3s
ORV **Oroville** 38.44 313 *e*P P 06 43 03.9 +0.2
14nm,1.4s
BMO **Blue Mountains** 38.46 323 *e*P P 06 43 02.6 -1.3
8.9nm,1.6s
F10A **Beach Ranch, E** 39.08 324 *e*P P 06 43 07.5 -1.6
6.6nm,0.9s
F10A *e*PcP PcP 06 45 21.4 +2.8
M04C **Macdoel** 39.66 316 P P 06 43 14.0 -0.1
baz=118
SCHQ **Schefferville** 40.40 17 P P 06 43 20.9 +1.1
23nm,0.6s,baz=217,slow=6.8,SNR=34
SCHQ **Schefferville** 40.40 17 *e*P P 06 43 20.8 +0.9
56nm,1.2s
I05D **Terrebonne, OR** 40.59 320 P P 06 43 21.6 +0.1
baz=121
SIV **San Ignacio** 40.72 142 P P 06 43 21.2 -1.7
3.3nm,0.6s,baz=319,slow=8.2,SNR=12
H04A **Detroit Lake** 41.28 320 *e*P P 06 43 26.8 -0.5
7.1nm,0.8s
LON **Longmire** 42.13 323 *e*P P 06 43 33.9 -0.3
3.9nm,0.8s
EDM **Edmonton** 42.16 335 *e*P P 06 43 34.4 +0.1
14nm,0.8s
BBB **Bella Bella** 48.47 326 LR LR 07 06 55.7
comp=Z,93nm,18.7s,baz=129,slow=39
YKA **Yellowknife Ar** 49.77 343 P P 06 44 33.3 -0.8
0.9nm,0.9s,baz=143,slow=7.4,SNR=6.2
DLBC **Dease Lake** 52.67 332 *e*P P 06 44 57.1 +1.1
SFJD **Kangerlussuaq** 54.85 16 LR LR 07 08 08.7
comp=Z,122nm,20.0s,baz=274,slow=35
PLCA **I Piso Flores** 59.12 167 P P 06 45 40.1 -2.2
1.8nm,0.9s,baz=324,slow=8.7,SNR=2.2
SUMG **Summit** 61.73 15 *i*P P 06 46 00.4 +0.2
28nm,1.0s
SUMG *i* 06 46 12.9
SUMG **Summit** 61.73 15 *e*P P 06 46 00.4 +0.2
ILAR **Eielson Array** 62.65 335 P P 06 46 05.5 -0.6
2.2nm,0.7s,baz=116,slow=5.2,SNR=29
TRF **Thorofare Moun** 63.69 333 *e*P P 06 46 12.6 -0.6
16nm,1.4s
BPAW **Bear Paw Mtn.** 64.16 334 *e*P P 06 46 15.3 -0.7
1.9nm,0.9s
DAG **Danmarks Havn** 68.31 13 *i*P P 06 46 54.3 +12
4.8nm,0.7s
ESDC **Sonseca Array** 72.96 53 P P 06 47 12.3 +0.8
4.8nm,0.7s,baz=285,slow=5.6,SNR=18
NB2 **NORSAR Subarra** 78.51 30 P P 06 47 42.9 +0.1
comp=Z,5.9nm,1.1s,baz=282,slow=5.9
NOA **NORSAR Array B** 78.51 30 P P 06 47 42.3 -0.5
comp=Z,2.0nm,0.9s,baz=286,slow=5.5,SNR=3.8
DBIC **Dimbokro** 79.20 86 P P 06 47 46.5 -0.9
comp=Z,5.2nm,0.8s,baz=251,slow=3.8,SNR=5.9
ARCES **ARCESS Array B** 81.29 19 P P 06 47 57.3 -0.4
comp=Z,3.7nm,0.8s,baz=326,slow=6.3,SNR=4.9
GERES **GERESS Array B** 83.29 41 P P 06 48 08.1 -0.6
comp=Z,1.3nm,0.8s,baz=318,slow=1.8,SNR=9.2
TORD **Torodi Ar. Bea** 83.65 78 P P 06 48 10.1 -0.9
comp=Z,1.1nm,0.7s,baz=252,slow=4.0,SNR=5.1
FINES **FINESS Array B** 85.09 27 P P 06 48 17.2 -0.1
comp=Z,6.1nm,0.8s,baz=280,slow=3.3,SNR=21
LANS **Liptovska Anna** 86.75 39 *e*P P 06 48 27.2 +1.2
KECS **Kecovo** 87.63 40 *e*P P 06 48 30.8 +0.6
STHS **Stebnicka Huta** 87.72 39 *e*P P 06 48 31.9 +1.3
SEY **Seymchan** 88.50 337 LR LR 07 32 28.1
comp=Z,989nm,20.1s,baz=150,slow=38
NRIK **Noril'sk** 93.74 2 LR LR 07 31 44.9
comp=Z,122nm,21.0s,baz=244,slow=36
HHC **Hu-ho-hao-te** 120.28 345 *e*PKP PKPdf 06 54 31.3 -2.0
HHC PP PP 06 55 58.8 +1.0
HHC AMB AMB
comp=Z,240nm,10.4s
HHC LR LR
comp=N,64nm,9.9s
HHC LR LR
comp=E,120nm,14.8s
HHC LR LR
comp=Z,72nm,13.6s
KSH **Kashi** 121.17 17 *e*PKP PKPdf 06 54 35.3 +0.2
KSH *es*PKP 06 54 49.3

KSH				*e*PP	PP	06 56 13.5	+10	
KSH				SKS	**SKSdf**	**07 01 43.0**	**-2.5**	
KSH				SKKS	**SKKSac**	**07 03 00.0**	**-3.2**	
KSH				AMB	AMB			
	comp=Z,110nm,2.7s							
GYA	**Guiyang**	**135.19**	**344**	*e*Pdif	**Pdif**	**06 52 01.8**	**-2.3**	
GYA				PKP	**PKPdf**	**06 55 02.0**	**-0.1**	
GYA				PP	**PP**	**06 57 40.5**	**+4.4**	
GYA				AMB	AMB			
	comp=Z,110nm,7.8s							
WRA	**Warramunga Arr**	**142.12**	**259**	PKhKP	PKPpre	06 55 07.0		
	comp=Z,0.5nm,0.6s,baz=90,slow=3.5,SNR=5.9							
WRA				PKP	**PKPdf**	**06 55 12.8**	**-1.9**	
	comp=Z,0.6nm,0.8s,baz=93,slow=3.2,SNR=4.2							
ASAR	**Alice Springs**	**142.51**	**253**	PKhKP	PKPpre	06 55 07.7		
	comp=Z,0.7nm,0.7s,baz=105,slow=3.1,SNR=6.9							
CMAR	**Chiang Mai Arr**	**144.47**	**353**	PKP	**PKPab**	**06 55 16.7**	**-0.5**	
	comp=Z,1.0nm,0.4s,baz=331,slow=3.0,SNR=4.2							

*SJA **26** 06:52:08.4±0.7, 32.67S×69.93W, h124km±4km, ML2.7, MW2.9*
*ISCJB **26** 06:52:09.1±1.2, 32.70S±0.07×69.92W±0.07, h126km±10km, Error ellipse: s-maj=13.1km s-min=6.9km az=140.6*
*GUC **26** 06:52:10.5±0.8, 32.42S×69.86W, h43km±7km, ML2.5*
ISC 26 06:52:09.8±2.5, 32°68S±0°08×69°92W±0°06, h121km±19km, n12, σ0°58/19, 2D, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUSP	**Uspallata**	**0.65**	**45**	*i* P	**Pn**	**06 52 28.8**	**-0.4**
PEL	**Peldehue**	**0.79**	**234**	*i* P	**Pn**	**06 52 30.1**	**+0.1**
PEL				*i* S	**Sn**	**06 52 43.6**	**-1.6**
PEL				IAML		06 52 46.5	
	comp=N,173nm,0.2s						
CLCH	**Cerro Calan**	**0.88**	**216**	*i* P	**Pn**	**06 52 31.2**	**+0.4**
CLCH				*i* S	**Sn**	**06 52 47.5**	**+0.8**
CLCH				IAML		06 52 52.0	
	comp=E,178nm,0.6s						
ASAL	**Salagasta**	**0.92**	**85**	*i* P	**Pn**	**06 52 31.0**	**-0.2**
ASAL				*i* S	**Sn**	**06 52 47.9**	**+0.4**
ROCH	**El Roble**	**0.96**	**252**	*i* P	**Pn**	**06 52 31.6**	**-0.1**
ROCH				*i* S	**Sn**	**06 52 48.3**	**0.0**
ROCH				IAML		06 52 50.6	
	comp=N,374nm,0.3s						
ROC1	**El Roble**	**0.96**	**252**	*i* P	**Pn**	**06 52 31.6**	**-0.2**
ROC1				*i* S	**Sn**	**06 52 48.7**	**+0.3**
AAGR	**Agrelo**	**1.00**	**114**	*i* P	**Pn**	**06 52 32.2**	**+0.1**
RTLS	**Leoncito**	**1.03**	**31**	*i* P	**Pn**	**06 52 32.4**	**-0.1**
RTLS				*i* S	**Sn**	**06 52 50.0**	**+0.3**
AMOG	**MOGNA**	**2.12**	**35**	*i* P	**Pn**	**06 52 44.5**	**-0.4**
ACCO	**Cerro Coronel**	**2.21**	**20**	*i* P	**Pn**	**06 52 46.3**	**0.0**
ACCO				IAML		06 52 47.3	
	comp=Z,35nm,0.2s						
ACCO				*i* S	**Sn**	**06 53 14.9**	**+0.7**
ACAN	**Cantantal**	**2.35**	**81**	*i* P	**Pn**	**06 52 47.1**	**-0.5**
ACDV	**Cuesta del Vie**	**2.60**	**16**	*i* P	**Pn**	**06 52 51.1**	**0.0**

*ISCJB **26** 07:01:42.5±0.6, 56.23N±0.06×154.31W±0.08, h27km, mb3.9/14, MS3.7/1, Error ellipse: s-maj=9.5km s-min=4.3km az=142.0*
*NEIC **26** 07:01:42.1, 56.25N×154.26W, h10km, ML3.7(AEIC), After AEIC.*
*IDC **26** 07:01:48.9±4.3, 56.45N×154.42W, h58km±38km, mb3.4/13, mb1 3.6/15, mb1mx3.4/53, mbtmp3.7/15, ML3.8/2, MS3.6/2, Ms1 3.6/2, ms1mx2.9/52, Error ellipse: s-maj=29.2km s-min=15.1km az=11.0*
ISC 26 07:01:44.8±0.7, 56°32N±0°07×154°38W±0°05, h27km, n59, σ1°40/57, mb3.9/14, Kodiak Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHAK	**Old Harbor**	**1.08**	**33**	P	**Pn**	**07 02 03.0**	**-1.2**
OHAK				S	**Sb**	**07 02 20.0**	**+1.4**
KDAK	**Kodiak Island**	**1.76**	**33**	P	**Pn**	**07 02 12.4**	**-1.1**
KDAK				S	**Sb**	**07 02 37.6**	**-0.4**
KABR	**Katmai Barrier**	**1.84**	**350**	P	**Pn**	**07 02 14.6**	**-0.1**
KABR				S	**Sb**	**07 02 42.2**	**+1.7**
KCE	**Katmai Mt Cerb**	**1.98**	**348**	P	**Pn**	**07 02 17.1**	**+0.6**
KAWH	**Katmai**	**2.08**	**354**	P	**Pn**	**07 02 17.9**	**-0.1**
KAWH				S	**Sb**	**07 02 47.6**	**+0.4**
KVTA	**Katmai Vly 10**	**2.12**	**347**	P	**Pn**	**07 02 18.4**	**-0.1**
AZAC	**Aniakchak**	**2.21**	**287**	P	**Pn**	**07 02 20.4**	**+0.7**
ANNW	**Aniakchak Nort**	**2.22**	**289**	P	**Pn**	**07 02 19.2**	**-0.6**
KELA	**Mount Kelaz**	**2.25**	**341**	P	**Pn**	**07 02 20.4**	**+0.1**
CHGN	**Chignik**	**2.25**	**271**	P	**Pn**	**07 02 19.7**	**-0.5**
KAHC	**Katmai Hardscr**	**2.36**	**352**	P	**Pn**	**07 02 21.9**	**+0.1**
FOPK	**Fourpeaked Vol**	**2.49**	**11**	P	**Pn**	**07 02 23.5**	**-0.1**
VNSG	**Veniaminof 6**	**2.64**	**268**	P	**Pn**	**07 02 26.0**	**+0.4**
CDD	**Cape Douglas**	**2.64**	**8**	P	**Pn**	**07 02 27.2**	**+1.5**
VNHG	**Veniaminof 1**	**2.67**	**270**	P	**Pn**	**07 02 27.1**	**+0.9**
AUSE	**Augustine SEas**	**3.07**	**9**	P	**Pn**	**07 02 32.0**	**+0.5**
SDPT	**Sand Point**	**3.58**	**257**	P	**Pn**	**07 02 38.1**	**-0.4**
CNPM	**China Poot**	**3.62**	**26**	P	**Pn**	**07 02 38.6**	**-0.6**
BRLK	**Bradley Lake**	**3.92**	**27**	P	**Pn**	**07 02 41.9**	**-1.3**
RDWB	**Redoubt West**	**4.25**	**10**	P	**Pn**	**07 02 48.0**	**+0.1**
PS4A	**Pavlof South-4**	**4.33**	**260**	P	**Pn**	**07 02 48.6**	**-0.2**
SEW	**Seward**	**4.60**	**32**	*e*Pn	**Pn**	**07 02 50.3**	**-2.2**
SEW				*e*Pg	**Pb**	**07 03 08.7**	**+4.0**
SEW				*e*Sg	Sb	07 04 12.1	+13
DTNA	**Dutton South F**	**4.60**	**258**	P	**Pn**	**07 02 51.8**	**-0.8**
SVW2	**Sparrevohn**	**4.83**	**353**	P	**Pn**	**07 02 55.9**	**+0.2**
RC01	**Rabbit Creek A**	**5.36**	**25**	*e*Pn	**Pn**	**07 03 03.8**	**+1.0**
	32nm,0.8s						
SUA	**Susitna One**	**5.49**	**19**	P	**Pn**	**07 03 05.5**	**+0.7**
PMR	**Palmer**	**5.94**	**25**	*e*Pn	**Pn**	**07 03 12.1**	**+1.2**
	9.9nm,0.4s						
SML	**Sawmill**	**6.32**	**27**	*e*Pn	**Pn**	**07 03 18.7**	**+2.6**
	3.1nm,0.7s						
PPLA	**Purkeypile**	**6.69**	**9**	*e*Pn	**Pn**	**07 03 22.8**	**+1.5**
	9.0nm,0.7s						
TRF	**Thorofare Moun**	**7.44**	**14**	*e*Pn	**Pn**	**07 03 32.2**	**+0.6**
	9.5nm,0.7s						
KTH	**Kantishna Hill**	**7.46**	**12**	*e*Pn	**Pn**	**07 03 32.1**	**+0.4**
	8.9nm,0.7s						
BPAW	**Bear Paw Mtn.**	**7.98**	**11**	*e*Pn	**Pn**	**07 03 38.2**	**-0.7**
	1.4nm,0.7s						
DOT	**Dot Lake**	**8.97**	**31**	*e*Pn	**Pn**	**07 03 53.7**	**+1.3**
	10nm,0.7s						
ILAR	**Eielson Array**	**9.23**	**20**	P	**Pn**	**07 03 56.6**	**+0.5**
	0.4nm,0.3s,baz=201,slow=14,SNR=16						
ILAR				S	**Sn**	**07 05 32.6**	**-6.3**
	0.2nm,0.3s,baz=213,slow=23,SNR=3.1						
DLBC	**Dease Lake**	**13.28**	**71**	LR	LR	07 09 17.1	
	comp=Z,189nm,19.2s,baz=76,slow=34						
INK	**Inuvik**	**15.32**	**30**	P	**P**	**07 05 21.6**	**-1.7**
	0.2nm,0.3s,baz=243,slow=14,SNR=2.6						
YKA	**Yellowknife Ar**	**20.88**	**56**	P	**P**	**07 06 25.1**	**+0.6**
	0.3nm,0.6s,baz=269,slow=10.0,SNR=5.1						
SEY	**Seymchan**	**27.00**	**306**	P	**P**	**07 07 22.7**	**-1.3**
	1.3nm,0.5s,baz=102,slow=8.7,SNR=6.3						
PETK	**Petropavlovsk-**	**27.42**	**284**	P	**P**	**07 07 29.7**	**+1.8**
	5.9nm,0.4s,baz=72,slow=13,SNR=9.3						
PDAR	**Pinedale Array**	**31.48**	**96**	P	**P**	**07 08 05.3**	**+1.1**
	0.1nm,0.4s,baz=303,slow=5.3,SNR=2.4						
PFO	**Pinyon Flats O**	**34.48**	**115**	LR	LR	07 21 23.0	
	comp=Z,128nm,18.1s,baz=20,slow=34						
KLR	**Kul'dur**	**43.23**	**293**	P	**P**	**07 09 42.6**	**-0.7**
	1.0nm,0.5s,baz=16,slow=6.9,SNR=6.2						
TXAR	**Lajitas Array**	**44.54**	**106**	P	**P**	**07 09 55.0**	**+0.9**
	0.1nm,0.5s,baz=324,slow=4.5,SNR=2.6						
H11N2	**WAKE ISLAND Hy**	**46.52**	**234**	T	T	08 00 02.8	
	baz=29,slow=76,SNR=4.2						
H11N3	**WAKE ISLAND Hy**	**46.53**	**234**	T	T	08 00 04.6	
	baz=29,slow=76,SNR=5.1						
H11N1	**WAKE ISLAND Hy**	**46.54**	**234**	T	T	08 00 01.8	
	baz=29,slow=76,SNR=3.1						
NRIK	**Noril'sk**	**46.89**	**335**	P	**P**	**07 10 12.1**	**0.0**
	9.1nm,0.5s,baz=58,slow=6.1,SNR=11						
H11S1	**WAKE ISLAND Hy**	**47.68**	**234**	T	T	08 01 37.9	
	baz=28,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy**	**47.69**	**234**	T	T	08 01 48.0	
	baz=28,slow=75,SNR=2.8						
H11S3	**WAKE ISLAND Hy**	**47.70**	**234**	T	T	08 01 34.0	
	baz=28,slow=75,SNR=3.7						
KSRS	**Korea Array**	**53.32**	**284**	P	**P**	**07 11 01.9**	**+0.6**
	0.8nm,0.5s,baz=46,slow=6.9,SNR=4.3						
KSAR	**Wonju Array Be**	**53.35**	**284**	P	**P**	**07 11 01.9**	**+0.4**
SONM	**Songino Array**	**56.39**	**307**	P	**P**	**07 11 23.5**	**0.0**
	2.3nm,0.9s,baz=39,slow=8.2,SNR=8.7						
ZALV	**Zalesovo Beam**	**59.92**	**324**	P	**P**	**07 11 48.0**	**+0.1**
	1.0nm,0.5s,baz=42,slow=8.2,SNR=4.1						
NOA	**NORSAR Array B**	**62.43**	**8**	P	**P**	**07 12 04.9**	**+0.1**
	0.7nm,0.8s,baz=332,slow=5.5,SNR=2.1						
FINES	**FINESS Array B**	**62.57**	**360**	P	**P**	**07 12 05.4**	**-0.3**
	0.6nm,0.6s,baz=15,slow=7.9,SNR=3.4						
MKAR	**Makanchi Array**	**66.85**	**321**	P	**P**	**07 12 32.6**	**-1.3**
	0.4nm,0.5s,baz=52,slow=8.3,SNR=6.4						
AKASG	**Malin Array Be**	**73.30**	**358**	P	**P**	**07 13 12.5**	**-0.8**
	0.7nm,0.5s,baz=9.1,slow=6.8,SNR=3.3						
CMAR	**Chiang Mai Arr**	**83.71**	**294**	P	**P**	**07 14 10.2**	**-1.0**
	1.4nm,0.3s,baz=18,slow=5.2,SNR=4.1						

*ATH **26** 07:08:05.9, 38.28N×26.56E, h21km±5km, ML2.6/4, Error ellipse: s-maj=5.1km s-min=1.0km az=243.0*
*DDA **26** 07:08:05.6, 38.25N×26.53E, h16km, Ml3.0*
*ISCJB **26** 07:08:06.4±0.4, 38.29N±0.02×26.57E±0.03, h13km±3km, Error ellipse: s-maj=5.0km s-min=3.3km az=145.0*
*CSEM **26** 07:08:06.4±0.1, 38.29N×26.58E, h10km, ML3.0, Error ellipse: s-maj=3.3km s-min=2.6km az=52.0*
*ISK **26** 07:08:06.3, 38.32N×26.57E, h18km, MD3.0*
ISC 26 07:08:06.3±0.8, 38°27N±0°02×26°57E±0°02, h16km±5km, n55, σ0°44/77, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URLA	**Izmir**	**0.09**	**14**	*i* P	**Pg**	**07 08 09.4**	**-0.3**
URLA				*i* S	**Sg**	**07 08 11.8**	**-0.1**
URLA	**Izmir**	**0.09**	**14**	P	**Pg**	**07 08 09.4**	**-0.3**
URLA				S	**Sg**	**07 08 11.8**	**-0.1**
CESE	**˜e˜me**	**0.22**	**286**	*e*PG	**Pg**	**07 08 11.6**	**+0.3**
CESE				*e*SG	**Sb**	**07 08 15.4**	**-0.3**
CESE	**˜e˜me**	**0.22**	**286**	*e*Pg	**Pg**	**07 08 11.6**	**+0.3**
CESE				*e*Sg	**Sb**	**07 08 15.4**	**-0.3**
KRBN	**Karaburun**	**0.32**	**358**	*e*PG	**Pg**	**07 08 12.7**	**-0.4**
KRBN	**Karaburun**	**0.32**	**358**	*e*Pg	**Pg**	**07 08 12.7**	**-0.4**
DGB	**˜zmir**	**0.33**	**131**	*i* P	**Pg**	**07 08 13.2**	**0.0**
DGB				*i* S	**Sg**	**07 08 18.3**	**+0.4**
CHOS	**Chios island**	**0.42**	**286**	*e*PG	**Pb**	**07 08 15.4**	**0.0**
CHOS	**Chios island**	**0.42**	**286**	P	**Pg**	**07 08 15.0**	**+0.1**
CHOS	**Chios island**	**0.42**	**286**	*e*Pg	**Pb**	**07 08 15.4**	**0.0**
CHOS				S	**Sg**	**07 08 20.7**	**+0.1**
CHOS	**Chios island**	**0.42**	**286**	P	**Pg**	**07 08 15.0**	**+0.1**
CHOS				S	**Sg**	**07 08 20.7**	**+0.1**
CHOS				AML	AML	07 08 21.8	
	comp=N,1426µm,0.3s						
CHOS				AML	AML	07 08 22.4	
	comp=E,1885µm,0.3s						
FOCM	**Fo˜ça**	**0.46**	**16**	*e*PG	**Pg**	**07 08 15.4**	**-0.1**
FOCM	**Fo˜ça**	**0.46**	**16**	*e*Pg	**Pg**	**07 08 15.5**	**-0.1**
IZM	**Izmir**	**0.56**	**77**	*e*PG	**Pb**	**07 08 17.7**	**-0.1**
IZM	**Izmir**	**0.56**	**77**	*e*Pg	**Pb**	**07 08 17.7**	**-0.1**
SMG	**Samos**	**0.60**	**159**	P	**Pg**	**07 08 17.5**	**-0.7**
SMG				S	**Sb**	**07 08 27.0**	**+0.2**
SMG	**Samos**	**0.60**	**159**	P	**Pg**	**07 08 17.5**	**-0.7**
SMG				S	**Sb**	**07 08 27.0**	**+0.2**
SMG				AML	AML	07 08 29.3	
	comp=E,2324µm,0.3s						
SMG				AML	AML	07 08 29.4	
	comp=N,2167µm,0.3s						
CAND	**Candarli**	**0.71**	**15**	*e*PG	**Pg**	**07 08 19.7**	**-0.5**
GCAM	**G?zelcaml?**	**0.78**	**137**	*i* P	**Pb**	**07 08 20.6**	**-0.9**
GCAM				*i* S	**Sb**	**07 08 32.0**	**+0.2**
GCAM	**G?zelcaml?**	**0.78**	**137**	P	**Pb**	**07 08 20.6**	**-0.9**
GCAM				S	**Sb**	**07 08 32.0**	**+0.2**
PRK	**Paraskevi**	**1.00**	**347**	P	**Pg**	**07 08 25.6**	**-0.1**
PRK				S	**Sg**	**07 08 38.8**	**0.0**
PRK	**Paraskevi**	**1.00**	**347**	P	**Pg**	**07 08 25.6**	**-0.1**
PRK				S	**Sg**	**07 08 38.8**	**0.0**
PRK				AML	AML	07 08 41.7	
	comp=E,1034µm,0.8s						
PRK				AML	AML	07 08 41.9	
	comp=N,624µm,0.6s						
SIGR	**SIGRI**	**1.09**	**330**	*e*PG	**Pb**	**07 08 26.4**	**-0.5**
SIGR	**SIGRI**	**1.09**	**330**	P	**Pb**	**07 08 26.2**	**-0.6**
SIGR				S	**Sb**	**07 08 40.5**	**-0.3**
SIGR	**SIGRI**	**1.09**	**330**	P	**Pb**	**07 08 26.2**	**-0.6**
SIGR				S	**Sb**	**07 08 40.5**	**-0.3**
SIGR				AML	AML	07 08 41.4	
	comp=N,333µm,0.4s						
SIGR				AML	AML	07 08 41.5	
	comp=E,346µm,0.4s						
AKS	**Akhisar**	**1.15**	**58**	*e*PN	**Pb**	**07 08 27.8**	**-0.1**
AKS				*e*SN	**Sg**	**07 08 43.5**	**0.0**
AKS	**Akhisar**	**1.15**	**58**	*e*Pn	**Pb**	**07 08 27.8**	**-0.1**
AKS				*e*Sn	**Sg**	**07 08 43.5**	**0.0**
BDRM	**Kayabasi**	**1.39**	**150**	*i* P	**Pb**	**07 08 31.8**	**-0.2**
BDRM				*i* S	**Sg**	**07 08 50.8**	**-0.4**
BDRM	**Kayabasi**	**1.39**	**150**	P	**Pb**	**07 08 31.8**	**-0.2**
BDRM				S	**Sg**	**07 08 50.8**	**-0.4**
APE	**Apeiranthos**	**1.46**	**215**	P	**Pb**	**07 08 33.3**	**+0.2**
APE	**Apeiranthos**	**1.46**	**215**	P	**Pb**	**07 08 33.3**	**+0.2**
EZN	**Ezine**	**1.56**	**353**	*e*PN	**Pn**	**07 08 33.1**	**-0.4**
EZN	**Ezine**	**1.56**	**353**	*e*Pn	**Pn**	**07 08 33.1**	**-0.4**
MANT	**Manisa**	**1.58**	**81**	*i* P	**Pn**	**07 08 34.5**	**+0.6**
MANT				*i* S	**Sb**	**07 08 56.0**	**+0.9**
MANT	**Manisa**	**1.58**	**81**	P	**Pn**	**07 08 34.5**	**+0.6**
MANT				S	**Sb**	**07 08 56.0**	**+0.9**
BALB	**Balikesir**	**1.71**	**36**	*e*PN	**Pn**	**07 08 35.5**	**0.0**
BALB	**Balikesir**	**1.71**	**36**	*e*Pn	**Pn**	**07 08 35.5**	**0.0**
DEMI	**Demirci**	**1.85**	**65**	*i* P	**Pb**	**07 08 40.0**	**+0.2**
DEMI				*i* S	**Sg**	**07 09 05.5**	**-0.5**
DEMI	**Demirci**	**1.85**	**65**	P	**Pb**	**07 08 40.0**	**+0.2**
LPK	**Lapseki**	**2.10**	**4**	*e*PN	**Pn**	**07 08 41.4**	**+0.5**
LPK	**Lapseki**	**2.10**	**4**	*e*Pn	**Pn**	**07 08 41.4**	**+0.5**
GELI	**Tayfur-Gelibol**	**2.12**	**358**	*e*PN	**Pn**	**07 08 41.4**	**+0.2**
GELI	**Tayfur-Gelibol**	**2.12**	**358**	*e*Pn	**Pn**	**07 08 41.4**	**+0.2**
ERIK	**Erikli-Kesan**	**2.40**	**359**	*e*PN	**Pn**	**07 08 44.5**	**-0.4**
ERIK	**Erikli-Kesan**	**2.40**	**359**	*e*Pn	**Pn**	**07 08 44.5**	**-0.4**
RKY	**Sarkoy-Tekirda**	**2.46**	**11**	*e*PN	**Pn**	**07 08 46.0**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.46**	**11**	*e*Pn	**Pn**	**07 08 46.0**	**+0.2**
MRMT	**Marmara Adasi**	**2.46**	**19**	*e*PN	**Pn**	**07 08 45.7**	**-0.2**
MRMT	**Marmara Adasi**	**2.46**	**19**	*e*Pn	**Pn**	**07 08 45.7**	**-0.2**
ALN	**Alexandroupoli**	**2.65**	**351**	*e*PN	**Pn**	**07 08 49.4**	**+0.9**
ALN	**Alexandroupoli**	**2.65**	**351**	*e*Pn	**Pn**	**07 08 49.4**	**+0.9**
SBT4	**Kumbag-Tekirda**	**2.66**	**16**	*e*PN	**Pn**	**07 08 49.3**	**+0.9**
SBT4	**Kumbag-Tekirda**	**2.66**	**16**	*e*Pn	**Pn**	**07 08 49.3**	**+0.9**
SBT3	**Marmara-Eregli**	**2.83**	**22**	*e*PN	**Pn**	**07 08 51.5**	**+0.8**
SBT3	**Marmara-Eregli**	**2.83**	**22**	*e*Pn	**Pn**	**07 08 51.5**	**+0.8**

*ISCJB **26** 07:08:08.3±0.6, 19.83S±0.03×178.17W±0.03, h557km±7km, mb4.8/286, Error ellipse: s-maj=5.4km s-min=3.3km az=154.8*
*IDC **26** 07:08:09.9±1.1, 19.78S×178.10W, h565km±12km, mb4.3/28, mb1 4.4/29, mb1mx4.2/38, mbtmp5.1/29, Error ellipse: s-maj=10.4km s-min=8.5km az=147.0*
*BJI **26** 07:08:09.6, 19.83S×177.68W, h595km, mb5.0/44, mB4.9/24*
*NEIC **26** 07:08:10.5±0.4, 19.84S×178.15W, h574km±4km, mb4.8/227, Error ellipse: s-maj=4.4km s-min=3.1km az=137.0*
*MOS **26** 07:08:12.0±1.0, 19.69S×178.27W, h600km, mb4.9/42, Error ellipse: s-maj=9.5km s-min=7.8km az=76.2*
ISC 26 07:08:10.7±0.4, 19°83S±0°04×178°01W±0°05, h581km±3km, h582km:pP-P, n798, σ1°28/859, mb4.8/286, 17C-32D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.28**	**299**	*c i*P	**P**	**07 09 37.7**	**+0.7**
MSVF	**Nonsavu**	**4.28**	**299**	*e*P	**P**	**07 09 37.8**	**+0.7**
NIUE	**Niue**	**7.66**	**86**	P	**P**	**07 10 05.9**	**-0.3**
	baz=7.5,SNR=25						
AFI	**Afiamalu**	**8.38**	**46**	*e*P	**P**	**07 10 11.2**	**-2.1**
AFI				*e*S	**S**	**07 11 48.4**	**-5.3**
AFI	**Afiamalu**	**8.38**	**46**	*e*P	**P**	**07 10 11.2**	**-2.1**
AFI				*e*S	**S**	**07 11 48.4**	**-5.3**
RAO	**Raoul Island**	**9.38**	**180**	S	**S**	**07 12 08.1**	**-3.1**
	118nm,0.3s,baz=71,slow=22,SNR=6.3						
RAO	**Raoul Island**	**9.38**	**180**	*e*S	**S**	**07 12 10.7**	**-0.5**
FUNA	**Funafuti**	**11.56**	**346**	*e*P	**P**	**07 10 43.5**	**-1.6**
DZM	**Mont Dzumac**	**14.70**	**259**	P	**P**	**07 11 18.2**	**+1.5**
	4.4nm,0.3s,baz=88,slow=19,SNR=27						
DZM	**Mont Dzumac**	**14.70**	**259**	*e*P	**P**	**07 11 17.4**	**+0.7**
OUZ	**Omahuta**	**17.03**	**204**	*e*P	**P**	**07 11 40.2**	**+2.0**
	216nm,0.8s						
RAR	**Rarotonga**	**17.14**	**98**	P	**P**	**07 11 39.8**	**+0.4**
	2.7nm,0.3s,baz=247,slow=7.2,SNR=10						
RAR	**Rarotonga**	**17.14**	**98**	*e*P	**P**	**07 11 40.2**	**+0.9**
	33nm,0.8s						
KUZ	**Kuaotunu**	**17.72**	**197**	*e*PN	**P**	**07 11 44.9**	**+0.4**
MXZ	**Matakaoa Point**	**17.96**	**190**	*e*P	**P**	**07 11 45.0**	**-1.6**
	562nm,1.8s						
MKAZ	**Moumakai**	**18.21**	**198**	*e*PN	**P**	**07 11 50.1**	**+1.2**
HAZ	**Te Kaha**	**18.23**	**191**	*e*PN	**P**	**07 11 47.8**	**-1.3**
HAZ				*e*SN	**S**	**07 14 39.2**	**-7.3**
PUZ	**Puketiti**	**18.46**	**189**	*e*PN	**P**	**07 11 49.9**	**-1.3**
PUZ				*e*SN	**S**	**07 14 43.6**	**-6.7**
TWGZ	**Tauwhareparae**	**18.61**	**190**	*e*PN	**P**	**07 11 50.5**	**-2.1**
MWZ	**Matawai**	**18.84**	**191**	*e*PN	**P**	**07 11 52.4**	**-2.3**
URZ	**Urewera**	**18.84**	**192**	P	**P**	**07 11 51.9**	**-2.7**
	34nm,0.3s,baz=277,slow=2.6,SNR=163						
URZ				S	**S**	**07 14 50.1**	**-6.3**
	0.8nm,0.3s,baz=73,slow=20,SNR=5.6						
URZ	**Urewera**	**18.84**	**192**	*e*P	**P**	**07 11 51.8**	**-2.8**
	98nm,0.9s						
URZ				S	**S**	**07 14 50.1**	**-6.3**
URZ	**Urewera**	**18.84**	**192**	*e*PN	**P**	**07 11 51.4**	**-3.2**
HIZ	**Hauiti**	**19.62**	**197**	*e*P	**P**	**07 12 02.9**	**+1.2**
	138nm,1.1s						
BKZ	**Black Stump Fm**	**19.84**	**193**	*e*P	**P**	**07 12 02.0**	**-1.8**
	143nm,1.6s						
BFZ	**Birch Farm**	**21.35**	**192**	*e*P	**P**	**07 12 15.9**	**-1.4**
	214nm,1.6s						
SNZO	**South Karori**	**22.29**	**195**	*e*P	**P**	**07 12 24.2**	**-1.4**
	305nm,1.5s						
QRZ	**Quartz Range**	**22.43**	**199**	*e*PN	**P**	**07 12 26.4**	**-0.5**
NNZ	**Nelson**	**22.55**	**197**	*e*PN	**P**	**07 12 26.2**	**-1.7**
TUWZ	**Tuamarina**	**22.59**	**196**	*e*PN	**P**	**07 12 26.0**	**-2.3**
THZ	**Tophouse**	**23.18**	**197**	*e*P	**P**	**07 12 33.3**	**-0.4**
	42nm,0.8s						
THZ	**Tophouse**	**23.18**	**197**	*e*PN	**P**	**07 12 31.4**	**-2.3**
KHZ	**Kahutara**	**23.62**	**196**	*e*P	**P**	**07 12 36.0**	**-1.5**
	168nm,1.5s						
KHZ	**Kahutara**	**23.62**	**196**	*e*PN	**P**	**07 12 35.6**	**-1.9**
LTZ	**Lake Taylor**	**24.30**	**198**	*e*P	**P**	**07 12 41.8**	**-1.8**
	56nm,0.9s						
OXZ	**Oxford**	**24.87**	**197**	*e*P	**P**	**07 12 47.7**	**-0.8**
	122nm,1.4s						
CRLZ	**Canterbury Las**	**24.94**	**196**	*e*P	**P**	**07 12 47.8**	**-1.3**
	265nm,1.8s						
MQZ	**McQueen's Vall**	**25.06**	**196**	*e*P	**P**	**07 12 48.6**	**-1.5**
	236nm,1.9s						
RPZ	**Rata Peaks**	**25.52**	**199**	P	**P**	**07 12 53.5**	**-0.7**
	17nm,0.5s,baz=358,slow=1.4,SNR=12						
RPZ	**Rata Peaks**	**25.52**	**199**	*e*P	**P**	**07 12 53.8**	**-0.4**
	203nm,2.0s						
FOZ	**Fox Glacier**	**25.74**	**201**	*e*P	**P**	**07 12 55.2**	**-1.0**
	57nm,0.7s						
FOZ	**Fox Glacier**	**25.74**	**201**	*e*PN	**P**	**07 12 54.4**	**-1.8**
LBZ	**Lake Benmore**	**26.39**	**199**	*e*P	**P**	**07 13 00.1**	**-1.8**
	153nm,1.8s						
JCZ	**Jackson Bay**	**26.57**	**202**	*e*PN	**P**	**07 13 02.1**	**-1.5**
ODZ	**Otahua Downs**	**26.85**	**198**	*e*P	**P**	**07 13 05.0**	**-0.9**
	60nm,1.4s						
PPT	**Papeete**	**27.01**	**90**	P	**P**	**07 13 08.0**	**+0.2**
	18nm,0.7s,baz=233,slow=18,SNR=4.0						
PPT	**Papeete**	**27.01**	**90**	*e*P	**P**	**07 13 08.7**	**+0.9**
PPT	**Papeete**	**27.01**	**90**	*e*P	**P**	**07 13 08.7**	**+0.9**
WKZ	**Wanaka**	**27.16**	**200**	*e*P	**P**	**07 13 07.5**	**-1.1**
	112nm,1.4s						
MLZ	**Mavora Lakes**	**27.93**	**201**	*e*P	**P**	**07 13 15.7**	**+0.2**
	51nm,0.7s						
DCZ	**Deep Cove**	**28.36**	**202**	*e*P	**

MTN Manton Dam 49.15 270 P P 07 16 05.9 -1.0
baz=49,SNR=11
MTN Manton Dam 49.15 270 eP P 07 16 05.8 -1.0
comp=Z,52nm,0.8s
FORT Forrest 49.55 246 P P 07 16 08.8 -0.7
baz=50,SNR=30
FORT Forrest 49.55 246 eP P 07 16 08.6 -0.9
comp=Z,419nm,0.7s
WRKA Warakurna 49.64 254 P P 07 16 09.9 -0.5
baz=50,SNR=233
KNRA Kununurra 50.70 266 P P 07 16 17.4 -0.7
baz=51
FAKI Fak Fak 51.34 283 eP P 07 16 22.1 -0.7
comp=Z,36nm,1.1s
SWI Sorong 53.07 284 P P 07 16 35.2 +0.1
comp=Z,156nm,1.0s,comp=Z,1μm
FITZ Fitzroy Crossi 53.11 262 P P 07 16 35.0 -0.4
comp=Z,10nm,0.5s,baz=103,slow=4.3,SNR=70
FITZ Fitzroy Crossi 53.11 262 P P 07 16 35.0 -0.4
baz=53,SNR=18
FITZ Fitzroy Crossi 53.11 262 eP P 07 16 35.3 -0.1
comp=Z,13nm,0.6s
KMBL Kambalda 54.83 245 P P 07 16 45.9 -1.4
baz=55
SOEI Soe 56.48 271 P P 07 17 00.0 +1.0
SOEI Soe 56.48 271 eP P 07 17 00.1 +1.0
comp=Z,108nm,0.8s
SANI Sanana 57.45 281 P P 07 17 04.5 -1.1
MBWA Marble Bar 57.99 257 eP P 07 17 08.4 -0.7
comp=Z,31nm,0.7s
MEEK Meekatharra 58.13 250 P P 07 17 09.0 -1.1
baz=58,SNR=15
KLBR Kellerberrin 58.33 245 P P 07 17 10.6 -0.7
baz=58,SNR=21
SBA Scott Base 58.53 184 eP P 07 17 14.3 +2.5
SBA pmax pmax
comp=Z,44nm,1.1s
SBA Scott Base 58.53 184 eP P 07 17 14.3 +2.5
comp=Z,44nm,1.1s
VNDA Vanda 58.57 185 P P 07 17 13.7 +1.6
comp=Z,6.9nm,0.6s,baz=360,slow=7.8,SNR=73
VNDA ScP ScP 07 21 01.7 +2.3
comp=Z,2.3nm,0.9s,baz=349,slow=4.4,SNR=5.4
VNDA Vanda 58.57 185 eP P 07 17 13.8 +1.8
VNDA pmax pmax
comp=Z,40nm,1.6s
VNDA Vanda 58.57 185 eP P 07 17 13.8 +1.8
comp=Z,40nm,1.6s
VNDA ScP ScP 07 21 01.7 +2.3
NWAO Narrogin (SRO) 58.66 243 P P 07 17 13.0 -0.4
baz=59,SNR=3.5
NWAO P P 07 17 13.0 -0.4
baz=59,SNR=3.5
NWAO Narrogin (SRO) 58.66 243 eP P 07 17 13.2 -0.3
NWAO pmax pmax
comp=Z,58nm,1.5s
NWAO Narrogin (SRO) 58.66 243 eP P 07 17 13.2 -0.3
comp=Z,58nm,1.5s
BLDU Ballidu 59.32 246 P P 07 17 17.3 -0.6
baz=59,SNR=21
MUN Mundaring 59.61 244 P P 07 17 19.7 -0.1
baz=60
MORW Morawa 60.08 247 P P 07 17 22.3 -0.6
baz=60,SNR=7.0
KAPI Kappang 62.22 275 eP P 07 17 36.8 -0.4
comp=Z,69nm,1.6s
GIRL Giralia 62.72 254 P P 07 17 40.9 +0.6
baz=63,SNR=22
PLAI Plampang 62.86 270 P P 07 17 40.8 -0.5
comp=Z,87nm,0.8s
PCI Palu 63.58 279 P P 07 17 48.4 +2.5
TWSI Taliwang, Sumb 63.73 270 P P 07 17 46.4 -0.5
JHJ2 Mitsune 66.29 322 eP P 07 18 02.7 +0.2
comp=Z,311nm,1.3s
JHJ Hachijo jima 2 66.31 322 P P 07 18 02.0 -0.6
comp=Z,101nm,0.3s,baz=64,slow=22,SNR=9.6
BLJI Banyuglugur 67.13 270 P P 07 18 15.7 +7.6
BBKI Banjar Baru 67.35 275 P P 07 18 11.2 +1.8
PWJI Pagerwojo 68.73 269 P P 07 18 19.9 +2.1
comp=Z,53nm,1.4s
PCJI Pacitan 69.27 269 P P 07 18 21.0 0.0
comp=Z,213nm,0.6s
KKM Kota Kinabalu 69.58 285 eP P 07 18 23.2 +0.2
comp=Z,37nm,0.6s
MJAR Matsushiro Arr 69.67 324 P P 07 18 22.4 -0.5
comp=Z,24nm,0.6s,baz=158,slow=6.0,SNR=58
MAJO Matsushiro 69.67 324 *d iP* P 07 18 22.5 -0.4
MAJO pmax pmax
comp=Z,142nm,0.9s
MAJO Matsushiro 69.67 324 eP P 07 18 22.7 -0.2
comp=Z,33nm,0.6s
MAT Matsushiro 69.67 324 P P 07 18 22.4 -0.5
MJB9 Matsu-Tunnel 69.68 324 eP P 07 18 23.0 0.0
comp=Z,8.4nm,0.6s
UGM Wanagama 69.97 269 eP P 07 18 24.8 -0.5
comp=Z,513nm,1.8s
QSPA South Pole Qui 70.23 180 eP P 07 18 27.0 +1.1
ERM Erimo 71.24 330 eP P 07 18 31.9 -0.1
ERM pmax pmax
comp=Z,11nm,1.0s
STKI Sintang 71.72 277 P P 07 18 28.8 -6.7
JNU Nakatsue 71.79 317 P P 07 18 35.4 -0.1
comp=Z,18nm,0.9s,baz=114,slow=4.2,SNR=11
JNU Nakatsue 71.79 317 eP P 07 18 35.4 -0.1
comp=Z,24nm,0.9s
KUR Kuril'sk 71.82 335 eP P 07 18 35.3 0.0
YOJ Yonaguni jima 72.35 305 eP P 07 18 38.6 -0.2
YOJ pmax pmax
comp=Z,70nm,0.6s
YOJ Yonaguni jima 72.35 305 eP P 07 18 38.6 -0.2
comp=Z,70nm,0.6s
SMY Shemya 72.58 355 eP P 07 18 38.8 -0.7
SMY pmax pmax
comp=Z,118nm,1.1s
SMY Shemya 72.58 355 eP P 07 18 38.8 -0.7
comp=Z,118nm,1.1s
CISI Cisompet, Garu 72.63 268 eP P 07 18 39.7 -1.1
comp=Z,44nm,0.8s
NIKH Nikolski High 72.93 6 eP P 07 18 41.2 -0.4
comp=Z,77nm,0.7s
YULB Yu-li 73.13 303 eP P 07 18 41.2 -2.1
comp=Z,15nm,0.7s
ASAJ Asahikawa 73.14 331 P P 07 18 44.4 +1.4
comp=Z,62nm,0.7s,baz=201,slow=1.6
ASAJ Asahikawa 73.14 331 eP P 07 18 44.1 +1.2
comp=Z,68nm,0.8s
NACB Ningan'chiao 73.30 304 eP P 07 18 43.4 -0.9
comp=Z,54nm,0.8s
KSM Kuching 73.31 278 eP P 07 18 44.8 +0.1
comp=Z,43nm,1.0s
SSLB Suanglung 73.60 303 eP P 07 18 44.6 -1.5
comp=Z,28nm,0.6s
TPUB Ta-pu 73.61 303 eP P 07 18 44.5 -1.6
comp=Z,84nm,0.8s
YHNB Yeheng 73.72 304 eP P 07 18 45.9 -0.9
comp=Z,36nm,0.8s
XMIS Christmas Isla 73.76 265 eP P 07 18 47.0 -0.2
comp=Z,135nm,1.2s
TATO Taipei 73.80 305 eP P 07 18 46.2 -0.8
comp=Z,60nm,0.6s
SKR Severo-Kuril's 73.82 343 *i* P P 07 18 44.1 -2.5
UNV Unalaska Valle 74.04 7 eP P 07 18 46.8 -0.9
comp=Z,28nm,0.5s
AKUT Akutan 74.41 7 eP P 07 18 48.9 -1.0
comp=Z,269nm,1.9s
CGJI Cibinong 74.92 268 P P 07 18 52.6 -1.1
comp=Z,141nm,0.7s,comp=Z,5μm
YSS Yuzh-Sakhalins 75.30 333 *jiP* P 07 18 55.8 +0.8
YSS *e* 07 19 00.3
YSS pmax pmax
comp=Z,70nm,0.9s
YSS Yuzh-Sakhalins 75.30 333 eP P 07 18 55.8 +0.8
comp=Z,72nm,0.9s
PET Petropavlovsk 75.32 346 eP P 07 18 54.6 -0.3
PET pmax pmax
comp=Z,40nm,1.1s
PET Petropavlovsk 75.32 346 eP P 07 18 54.6 -0.3
comp=Z,40nm,1.1s
PEA0 Petropavlovsk- 75.63 345 eP P 07 18 56.4 -0.3
PEA0B Petropavlovsk- 75.63 345 eP P 07 18 56.6 -0.1
comp=Z,40nm,0.7s
PETK Petropavlovsk- 75.63 345 P P 07 18 56.6 -0.1
comp=Z,36nm,0.7s,baz=124,slow=7.8,SNR=46
PPBI Pangkal Pinang 75.97 273 P P 07 19 00.5 +1.0
SDPT Sand Point 76.36 10 eP P 07 18 59.8 -0.8
comp=Z,53nm,0.8s
KSRS Korea Array 76.39 318 P P 07 19 01.9 +0.7
comp=Z,5.3nm,0.6s,baz=136,slow=6.3,SNR=19
KASI Kota Agung 76.40 269 P P 07 19 00.9 -1.0
comp=Z,116nm,0.9s
KSAR Wonju Array Be 76.40 318 P P 07 19 01.9 +0.6
KSAR Wonju Array Be 76.40 318 P P 07 19 01.9 +0.6
KS01 Wonju Array Si 76.42 318 eP P 07 19 00.9 -0.5
KLSI 76.45 270 P P 07 19 01.3 -0.9
comp=Z,17nm,1.1s
SNCC San Nicolas Is 76.80 47 P P 07 19 05.1 +1.5
baz=236
LWLI Liwa 76.98 269 P P 07 19 04.7 -0.5
comp=Z,115nm,0.8s,comp=Z,11μm
SPIA Saint Paul Isl 76.99 4 eP P 07 19 04.2 +0.2
comp=Z,73nm,1.1s
SCZ2 Santa Cruz Isl 77.15 47 P P 07 19 07.2 +1.7
baz=235
SCI2 San Clemente I 77.33 48 P P 07 19 07.8 +1.3
baz=236
PKM Mcpherson Peak 77.53 46 P P 07 19 08.7 +0.9
baz=235
SAO San Andreas Ge 77.55 43 eP P 07 19 09.3 +1.7
SAO pmax pmax
comp=Z,16nm,0.9s
SAO San Andreas Ge 77.55 43 eP P 07 19 09.3 +1.7
comp=Z,16nm,0.9s
BLG Laguna Peak, P 77.60 47 P P 07 19 08.9 +1.0
baz=236
CHGN Chignik 77.62 11 eP P 07 19 07.4 0.0
PMPB Monarch Peak 77.65 44 eP P 07 19 10.3 +2.0
comp=Z,45nm,1.4s
VLA Vladivostok 77.74 325 eP P 07 19 08.0 -0.4
VLA pmax pmax
comp=Z,26nm,0.8s
MSHR Mys Shultsa 77.78 324 *i* P P 07 19 08.1 -0.5
HOPS Hopland Field 77.87 41 eP P 07 19 11.2 +1.9
comp=Z,72nm,1.6s
MNAI Manna 78.23 270 eP P 07 19 10.8 -1.0
comp=Z,273nm,1.2s
KMRM Mail Ridge 78.25 39 eP P 07 19 12.9 +1.5
comp=Z,36nm,0.9s
ARVC Arvin 78.33 46 P P 07 19 13.2 +1.4
baz=236
MWC Mount Wilson 78.36 47 eP P 07 19 13.6 +1.4
MWC pmax pmax
comp=Z,12nm,0.8s
MWC Mount Wilson 78.36 47 eP P 07 19 13.6 +1.4
comp=Z,12nm,0.8s
USRK Ussuriysk Ar. 78.41 326 P P 07 19 13.3 +1.3
comp=Z,30nm,0.7s,baz=131,slow=3.4,SNR=67
JCC Jacoby Creek, 78.43 39 eP P 07 19 13.7 +1.5
comp=Z,35nm,1.3s
TYV Tymovskoe 78.43 336 eP P 07 19 10.5 -1.4
TYV pmax pmax
comp=Z,18nm,0.5s
BAR Barrett 78.49 49 eP P 07 19 14.0 +1.2
comp=Z,5.7nm,0.9s
VES Vestal, Richgr 78.57 45 P P 07 19 14.1 +1.1
baz=235
MURC Murrieta 78.61 48 P P 07 19 14.6 +1.2
baz=237
BFSC Mount Baldy Ra 78.64 47 P P 07 19 14.7 +1.1
baz=236
EDW2 Edwards Air Fo 78.77 47 P P 07 19 15.4 +1.2
baz=236,SNR=8.1
MONP2 Monument Peak 78.78 49 P P 07 19 15.8 +1.3
baz=238,SNR=9.9
KSI Kapahiang 78.80 270 P P 07 19 14.3 -0.6
comp=Z,148nm,0.8s
IKP In-Ko-Pah, Jac 78.87 49 P P 07 19 16.5 +1.7
baz=238
ISA Isabella, Lake 78.88 46 P P 07 19 16.3 +1.5
baz=236
ISA Isabella, Lake 78.88 46 eP P 07 19 16.5 +1.7
ISA pmax pmax
comp=Z,36nm,1.8s
ISA Isabella, Lake 78.88 46 eP P 07 19 16.5 +1.7
comp=Z,36nm,1.8s
KRMB Red Mountain 78.94 38 eP P 07 19 16.9 +1.8
comp=Z,36nm,1.5s
CMB Columbia Colle 78.98 43 eP P 07 19 12.4 -2.9
CMB Columbia Colle 78.98 43 eP P 07 19 12.3 -2.9
comp=Z,230nm,0.3s
PFO Pinyon Flats O 79.14 48 P P 07 19 17.4 +1.1
baz=237
PFO Pinyon Flats O 79.14 48 eP P 07 19 17.9 +1.6
PFO pmax pmax
comp=Z,7.0nm,1.0s
PFO Pinyon Flats O 79.14 48 eP P 07 19 17.9 +1.6
comp=Z,6.9nm,1.0s
TPFO Pinon Flats 79.14 48 P P 07 19 17.6 +1.3
baz=237
WDC Whiskeytown Da 79.17 40 eP P 07 19 17.5 +1.4
WDC pmax pmax
comp=Z,12nm,0.9s
WDC Whiskeytown Da 79.17 40 eP P 07 19 17.5 +1.4
comp=Z,12nm,0.9s
ORV Oroville 79.18 41 eP P 07 19 17.1 +0.9
ORV pmax pmax
comp=Z,20nm,0.6s
ORV Oroville 79.18 41 eP P 07 19 17.1 +0.9
comp=Z,20nm,0.6s
SLBS Sierra La Lagu 79.18 60 eP P 07 19 18.3 +1.6
comp=Z,15nm,1.1s
SWSC Sam W. Stewart 79.25 49 P P 07 19 17.9 +1.2
baz=238
N02D Trinity Center 79.31 39 P P 07 19 18.6 +1.6
baz=232,SNR=6.8
O03D Paynes Creek 79.44 40 P P 07 19 18.9 +1.2
baz=233,SNR=9.5
NJ2 Nanjing 79.45 310 eP P 07 19 18.0 +0.2
NJ2 pmax pmax
comp=Z,18nm,1.0s
MYKOM Kota Tinggi 79.46 276 eP P 07 19 18.5 +0.2
comp=Z,39nm,0.9s
M02C Callahan 79.48 39 P P 07 19 19.8 +1.9
baz=232,SNR=12
OHAK Old Harbor 79.50 13 eP P 07 19 17.6 +0.2
comp=Z,37nm,1.1s
L02D Cave Junction, 79.52 38 P P 07 19 19.7 +1.8
baz=231
CWC Cottonwood Cre 79.58 45 P P 07 19 19.8 +1.3
baz=236
BELC Belle Mtn. Jos 79.67 48 P P 07 19 20.4 +1.3
baz=238,SNR=7.2
MPMC Maui Prospec 79.76 46 P P 07 19 20.8 +1.2
baz=236,SNR=6.9
YBH Yreka Blue Hor 79.78 39 eP P 07 19 21.1 +1.7
YBH pmax pmax
comp=Z,22nm,0.9s
YBH Yreka Blue Hor 79.78 39 eP P 07 19 21.1 +1.7
comp=Z,22nm,0.9s
GSC Goldstone, Bar 79.81 47 P P 07 19 21.0 +1.3
baz=237
GSC Goldstone, Bar 79.81 47 eP P 07 19 21.3 +1.5
GSC pmax pmax
comp=Z,6.0nm,1.1s
GSC Goldstone, Bar 79.81 47 eP P 07 19 21.3 +1.5
comp=Z,5.8nm,1.1s
DAC Darwin (Calif) 79.81 46 eP P 07 19 21.5 +1.7
DAC pmax pmax
comp=Z,4.0nm,0.8s
DAC Darwin (Calif) 79.81 46 eP P 07 19 21.5 +1.7
comp=Z,3.9nm,0.8s
TIN Tinemaha, Big 79.82 45 P P 07 19 21.6 +1.8
baz=236
HABR Khabarovsk 79.86 330 eP P 07 19 17.8 -1.7
HABR *e* 07 19 22.5
HABR *e**SP **sP** 07 22 24.4 +3.3
HABR *e* 07 22 30.4
HABR *e*PPP PPP 07 24 24.9
HABR *e*S **S** 07 28 33.3 -2.4
HABR *e* 07 28 47.8
HABR *e*SS **SS** 07 34 02.2 -0.7
HABR *e*SSS SSS 07 37 35.2
HABR pmax pmax
comp=E,13nm,0.9s
HABR pmax pmax
comp=Z,39nm,0.9s
HABR pmax pmax
comp=N,10.0nm,0.8s
HABR MLR MLR
comp=Z,76nm,20.0s
BC3 Big Chuckawall 79.87 49 P P 07 19 22.0 +1.8
baz=238
HEC Hector,Ludlow 79.88 47 P P 07 19 21.1 +1.0
baz=237
MDJ Mudanjiang 79.97 325 P P 07 19 21.5 +1.3
MDJ pmax pmax
comp=Z,50nm,0.7s
MDJ pmax pmax
comp=Z,210nm,10.4s
MDJ Mudanjiang 79.97 325 eP P 07 19 21.5 +1.3
comp=Z,42nm,0.8s
GLA Glamis 80.00 50 P P 07 19 22.6 +1.9
baz=238,SNR=6.0
GLA Glamis 80.00 50 eP P 07 19 23.0 +2.3
GLA pmax pmax
comp=Z,20nm,1.2s
GLA Glamis 80.00 50 eP P 07 19 23.0 +2.3
comp=Z,20nm,1.2s
KDAK Kodiak Island 80.17 13 *i* P P 07 19 18.6 -2.3
KDAK Kodiak Island 80.17 13 eP P 07 19 19.1 -1.8
comp=Z,28nm,0.9s
HUMO Hull Mountain 80.17 38 eP P 07 19 23.1 +1.7
comp=Z,24nm,1.4s
M04C Macdoel 80.32 39 P P 07 19 23.7 +1.4
baz=232,SNR=6.6
GMRC Granite Mounta 80.32 48 P P 07 19 23.7 +1.2
baz=238,SNR=6.6
IRM Iron Mountain 80.35 48 P P 07 19 24.1 +1.5
baz=238,SNR=7.0
GRAC Grapevine Rang 80.36 45 P P 07 19 24.0 +1.5
baz=236,SNR=7.4
FURC Furnace Creek, 80.41 46 P P 07 19 23.9 +1.2
baz=237,SNR=5.6
TUQ Turquoise Moun 80.49 47 P P 07 19 24.2 +0.8
baz=238
SHOC Shoshone, Teco 80.50 46 P P 07 19 24.4 +1.2
baz=237
QIZ Qiongzhong 80.58 294 P P 07 19 24.0 0.0
QIZ pmax pmax
comp=Z,10.0nm,1.0s
Y12C Blythe 80.58 49 P P 07 19 25.3 +1.7
baz=239
Y12C Blythe 80.58 49 eP P 07 19 25.8 +2.1
comp=Z,10nm,0.8s
113A Mohawk Valley, 80.62 50 eP P 07 19 25.5 +1.6
comp=Z,9.7nm,1.0s
I03D Drain, OR 80.63 37 P P 07 19 24.7 +1.0
baz=231
LDFC Landfair 80.86 48 eP P 07 19 27.1 +1.9
comp=Z,23nm,0.8s
K04D Chiloquin, OR 80.89 38 P P 07 19 26.6 +1.4
baz=232
214A Organ Pipe Nat 80.91 51 P P 07 19 27.3 +1.8
baz=240,SNR=7.7
214A Organ Pipe Nat 80.91 51 eP P 07 19 27.0 +1.6
comp=Z,17nm,0.6s
NKL Nikolayevsk 80.99 336 eP P 07 19 23.5 -1.7
NKL pmax pmax
comp=Z,43nm,1.0s
NEE2 Needles Airpor 81.04 48 P P 07 19 26.7 +0.7
baz=238
J04D Umpqua Nationa 81.06 38 P P 07 19 27.5 +1.4
baz=232,SNR=11
TPNV Topopah Spring 81.08 46 P P 07 19 27.7 +1.3
baz=237,SNR=11
TPNV Topopah Spring 81.08 46 eP P 07 19 27.8 +1.4
TPNV pmax pmax
comp=Z,11nm,1.0s
TPNV Topopah Spring 81.08 46 eP P 07 19 27.8 +1.4
comp=Z,11nm,1.0s
PDMCI Parker Dam,Lak 81.14 49 P P 07 19 28.2 +1.7
baz=239,SNR=6.5
COR Corvallis 81.22 36 eP P 07 19 28.2 +1.5
COR pmax pmax
comp=Z,66nm,1.5s
COR Corvallis 81.22 36 eP P 07 19 28.2 +1.5
comp=Z,66nm,1.5s
I04A Tendick Farm, 81.22 37 P P 07 19 27.9 +1.1
baz=232,SNR=8.4
MOD Modoc Plateau 81.31 40 eP P 07 19 28.7 +1.3
comp=Z,25nm,1.1s
K05A Summer Lake 81.45 39 eP P 07 19 29.7 +1.5
comp=Z,46nm,1.1s
SHPR Sheep Range 81.58 46 eP P 07 19 30.8 +1.8
comp=Z,4.9nm,0.9s
J05D Fort Rock, OR 81.59 38 P P 07 19 30.5 +1.7
baz=233,SNR=20
G03D McMinnville, O 81.63 36 P P 07 19 30.1 +1.3
baz=231
W13A Hualapai Mount 81.73 48 eP P 07 19 31.4 +1.5
comp=Z,5.2nm,0.8s
Y14A Wickenburg 81.76 50 eP P 07 19 31.2 +1.4
comp=Z,30nm,0.8s
CN2 Changchun 81.77 322 eP P 07 19 30.0 +0.5
CN2 pmax pmax
comp=Z,30nm,1.0s
PMSA Palmer Station 81.90 157 eP P 07 19 30.8 +0.9
comp=Z,15nm,0.8s
KLR Kul'dur 81.95 329 P P 07 19 31.0 +0.7
comp=Z,11nm,0.9s,baz=102,slow=4.2,SNR=33
KLR Kul'dur 81.95 329 eP P 07 19 30.5 +0.2
CNPM China Poot 82.06 13 eP P 07 19 31.0 +0.4
comp=Z,27nm,0.8s
HOM Homer 82.09 13 eP P 07 19 31.3 +0.6
comp=Z,111nm,1.0s
I05D Terrebonne, OR 82.17 37 P P 07 19 32.9 +1.3
baz=233,SNR=10
R11A Troy Canyon, C 82.28 45 P P 07 19 33.4 +0.9
baz=237,SNR=8.0
R11A Troy Canyon, C 82.28 45 eP P 07 19 33.0 +0.5
comp=Z,5.8nm,1.2s
E03A Lebam 82.31 35 eP P 07 19 33.0 +0.9
comp=Z,29nm,0.9s
BRLK Bradley Lake 82.35 13 eP P 07 19 32.0 -0.1
comp=Z,41nm,0.9s
BMN Battle Mountai 82.36 42 eP P 07 19 34.0 +1.2
BMN pmax pmax
comp=Z,19nm,0.9s
BMN Battle Mountai 82.36 42 eP P 07 19 34.0 +1.2
comp=Z,19nm,0.9s
F04A Amboy 82.54 35 eP P 07 19 34.5 +1.2
comp=Z,17nm,0.6s
TUC Tucson 82.58 52 P P 07 19 35.9 +1.9
baz=241
TUC Tucson 82.58 52 eP P 07 19 36.2 +2.2
TUC pmax pmax
comp=Z,15nm,1.1s
TUC Tucson 82.58 52 eP P 07 19 36.2 +2.2
comp=Z,15nm,1.1s
RSO Redoubt South 82.59 12 eP P 07 19 33.1 -0.5
WVOR Wild Horse Val 82.63 40 eP P 07 19 35.3 +1.3
WVOR pmax pmax
comp=Z,20nm,1.1s
WVOR Wild Horse Val 82.63 40 eP P 07 19 35.3 +1.3
comp=Z,20nm,1.1s
SVW2 Sparrevohn 82.65 11 eP P 07 19 33.2 -0.4
comp=Z,11nm,0.7s
DIB Dawson Inlet, 82.69 26 eP P 07 19 34.6 +0.7
comp=Z,15nm,1.1s
NLWA Neilton Lookou 82.69 34 eP P 07 19 35.9 +1.7
comp=Z,26nm,1.1s
G05D Wamic, OR 82.73 37 P P 07 19 35.3 +0.9
baz=232
TIA Tai'an 82.82 312 *jiP* P 07 19 35.0 0.0
TIA pmax pmax
comp=Z,20nm,0.7s
UBPT Khong Chiam 82.91 289 P P 07 19 36.3 +0.4
comp=Z,28nm,0.9s
SEW Seward 82.97 14 eP P 07 19 35.1 0.0
comp=Z,22nm,0.8s
IPM Ipoh 83.04 277 eP P 07 19 37.2 +0.6
comp=Z,68nm,0.6s
G06A Carlson Farm, 83.11 37 eP P 07 19 36.7 +0.4
comp=Z,14nm,1.1s
X16A Lo Mia Camp, P 83.12 50 eP P 07 19 38.6 +1.8
comp=Z,12nm,1.0s
MA2 Magadan 83.14 345 P P 07 19 35.1 -0.9
comp=Z,18nm,0.6s,baz=142,slow=5.3,SNR=12
MA2 Magadan 83.14 345 eP P 07 19 34.6 -1.4
MA2 pmax pmax
comp=Z,55nm,0.7s
MA2 Magadan 83.14 345 eP P 07 19 34.6 -1.4
comp=Z,55nm,0.7s
LCMT Little Creek M 83.16 47 eP P 07 19 38.4 +1.5
comp=Z,9.2nm,0.9s
319A Douglas 83.26 53 eP P 07 19 39.7 +2.3
comp=Z,27nm,1.1s
CCUT Cedar City 83.36 46 eP P 07 19 39.5 +1.6
comp=Z,8.2nm,1.0s
LON Longmire 83.38 35 eP P 07 19 38.6 +1.0
LON pmax pmax
comp=Z,20nm,1.7s
LON Longmire 83.38 35 eP P 07 19 38.6 +1.0

comp=Z,20nm,1.7s
SPU Mount Spurr 83.39 12 eP P 07 19 36.6 -0.7
KNB Kanab 83.45 47 eP P 07 19 40.3 +1.9
KNB pmax pmax
comp=Z,10.0nm,1.1s
KNB Kanab 83.45 47 eP P 07 19 40.3 +1.9
comp=Z,9.8nm,1.1s
GAMB Gambell 83.48 3 eP P 07 19 38.5 +0.9
comp=Z,28nm,0.7s
U15A North Rim 83.52 48 eP P 07 19 40.6 +1.7
comp=Z,16nm,0.9s
D05A Enumclaw 83.56 35 eP P 07 19 40.2 +1.9
comp=Z,39nm,1.2s
SZCU Shurtz Canyon 83.56 46 eP P 07 19 40.9 +1.9
comp=Z,12nm,1.1s
KULM Kulim 83.67 278 eP P 07 19 40.5 +0.7
comp=Z,32nm,0.8s
WUAZ Wupatki 83.71 49 P P 07 19 40.9 +1.3
baz=240
WUAZ Wupatki 83.71 49 eP P 07 19 40.8 +1.1
comp=Z,8.8nm,1.0s
RC01 Rabbit Creek A 83.79 13 eP P 07 19 39.1 -0.2
comp=Z,28nm,0.9s
BBB Bella Bella 83.82 28 eP P 07 19 40.5 +1.0
comp=Z,38nm,1.4s
SUA Susitna One 83.92 13 eP P 07 19 39.6 -0.4
comp=Z,40nm,0.7s
PKCU Pink Cliffs 84.02 47 eP P 07 19 44.0 +2.7
comp=Z,5.0nm,0.7s
G08A Pilot Rock 84.09 37 eP P 07 19 42.4 +1.1
comp=Z,21nm,1.3s
B05A Bryant 84.17 34 P P 07 19 42.2 +0.8
baz=232
FID Port Fidalgo 84.24 15 eP P 07 19 41.0 -0.5
comp=Z,70nm,1.7s
EYAK Cordova Ski Ar 84.25 15 eP P 07 19 41.7 +0.2
comp=Z,45nm,1.5s
X18A Snowflake 84.25 50 eP P 07 19 44.3 +1.9
comp=Z,5.1nm,0.8s
TT01 Tatalina 84.27 10 eP P 07 19 41.9 +0.3
TTA Tatalina 84.29 10 eP P 07 19 40.5 -1.3
TTA pmax pmax
comp=Z,21nm,1.0s
TTA Tatalina 84.29 10 eP P 07 19 40.5 -1.3
comp=Z,21nm,1.0s
SKLT Songkhla 84.36 280 P P 07 19 44.2 +1.1
comp=Z,57nm,0.9s,comp=Z,3µm
PMR Palmer 84.38 13 eP P 07 19 41.8 -0.2
PMR pmax pmax
comp=Z,18nm,0.6s
PMR Palmer 84.38 13 eP P 07 19 41.8 -0.2
comp=Z,18nm,0.6s
RAGM Ragged Mountai 84.38 16 eP P 07 19 42.7 +0.5
comp=Z,47nm,1.3s
MTPU Mount Pierson 84.41 46 eP P 07 19 45.3 +2.0
comp=Z,9.9nm,0.8s
HAWA Hanford 84.42 36 eP P 07 19 44.2 +1.5
comp=Z,14nm,1.0s
PSI Prapat 84.43 275 P P 07 19 43.0 -0.7
comp=Z,21nm,0.8s,baz=159,slow=4.2,SNR=10
PSI Prapat 84.43 275 eP P 07 19 43.0 -0.7
PSI pmax pmax
comp=Z,29nm,0.9s
PSI Prapat 84.43 275 eP P 07 19 43.0 -0.7
comp=Z,29nm,0.9s
MSU Marysvale 84.65 46 eP P 07 19 45.4 +1.1
MSU Marysvale 84.65 46 eP P 07 19 45.4 +1.1
W18A Petrified Fore 84.69 50 P P 07 19 45.4 +0.9
baz=241
SML Sawmill 84.74 14 eP P 07 19 43.9 0.0
SML pmax pmax
comp=Z,12nm,0.8s
SML Sawmill 84.74 14 eP P 07 19 43.9 0.0
comp=Z,12nm,0.8s
DIV Divide 84.75 15 eP P 07 19 44.3 +0.3
comp=Z,32nm,0.8s
BMO Blue Mountains 84.80 39 eP P 07 19 45.4 +0.7
comp=Z,6.0nm,0.9s
SKNT Sakolnakorn 84.88 290 P P 07 19 45.8 +0.2
comp=Z,45nm,1.2s
MFID Camas Ranch 84.88 40 eP P 07 19 46.2 +1.1
comp=Z,13nm,1.3s
BMRM Bremner River 84.90 16 eP P 07 19 44.8 +0.1
comp=Z,26nm,0.7s
121A Cookes Peak, D 84.92 53 P P 07 19 47.4 +1.7
baz=243
121A Cookes Peak, D 84.92 53 eP P 07 19 47.7 +2.0
comp=Z,8.9nm,0.9s
PPLA Purkeypile 84.93 12 eP P 07 19 43.9 -1.0
comp=Z,26nm,1.6s
SCM Sheep Creek Mo 84.99 14 eP P 07 19 45.3 +0.1
SCM pmax pmax
comp=Z,54nm,0.7s
SCM Sheep Creek Mo 84.99 14 eP P 07 19 45.3 +0.1
comp=Z,54nm,0.7s
KLU Klutina 85.03 15 eP P 07 19 45.6 +0.2
comp=Z,14nm,1.0s
WRAK Wrangell Islan 85.11 24 eP P 07 19 47.1 +1.4
comp=Z,23nm,0.9s
D08A Wollman Farm, 85.15 36 eP P 07 19 47.4 +1.1
comp=Z,11nm,1.0s
DHAK Deception Hill 85.15 19 eP P 07 19 47.2 +1.2
comp=Z,51nm,1.0s
GSI Gunungsitoli 85.19 273 P P 07 19 48.2 +1.0
comp=Z,84nm,0.8s
GSI Gunungsitoli 85.19 273 eP P 07 19 48.0 +0.8
comp=Z,55nm,0.7s
E09A Wood Farm, Sta 85.27 37 eP P 07 19 48.5 +1.7
comp=Z,17nm,1.2s
BJT Baijiatuau 85.41 315 eP P 07 19 48.1 +0.5
BJT pmax pmax
comp=Z,22nm,0.7s
BJT Baijiatuau 85.41 315 eP P 07 19 48.1 +0.5
comp=Z,22nm,0.7s
BJI Beijing 85.42 315 P P 07 19 48.0 +0.4
BJI sP sP 07 22 52.3 +1.5
BJI S S 07 29 33.0 +2.1
BJI sS sS 07 33 12.5 -0.7
BJI pmax pmax
comp=Z,29nm,0.8s
BJI pmax pmax
comp=Z,170nm,9.7s
CAST Castle Rocks 85.43 11 eP P 07 19 45.8 -1.4
comp=Z,27nm,0.7s
TRTT Trang 85.45 280 P P 07 19 50.1 +1.7
comp=Z,59nm,1.3s
F10A Beach Ranch, E 85.48 38 eP P 07 19 48.5 +0.5
comp=Z,26nm,0.8s
BALM Baldy 85.55 17 eP P 07 19 48.1 +0.2
BALM Baldy 85.55 17 eP P 07 19 48.1 +0.2
BALM ePcP PcP 07 19 48.5 -1.3
ENH Enshi 85.66 304 eP P 07 19 49.1 0.0
comp=Z,50nm,0.8s
B08A Colville Reser 85.69 35 eP P 07 19 49.2 +0.4
comp=Z,10nm,0.8s
TMUT Trail Mountain 85.70 46 eP P 07 19 50.2 +0.8
comp=Z,7.1nm,0.7s
SEY Seymchan 85.73 347 P P 07 19 48.5 0.0
comp=Z,28nm,0.6s,baz=145,slow=5.6,SNR=106
KTH Kantishna Hill 85.77 12 eP P 07 19 47.7 -1.2
comp=Z,25nm,1.0s
TRF Thorofare Moun 85.80 12 eP P 07 19 48.2 -0.9
comp=Z,40nm,0.9s
HLID Hailey 85.83 41 P P 07 19 51.1 +1.3
baz=238
HLID Hailey 85.83 41 eP P 07 19 50.6 +0.8
comp=Z,8.6nm,0.9s
C09A Chrisman Ranch 85.94 36 eP P 07 19 50.5 +0.6
comp=Z,8.5nm,0.8s
SURA Surathani 85.98 281 P P 07 19 52.6 +1.7
comp=Z,41nm,1.1s
RND Reindeer 86.05 13 eP P 07 19 49.9 -0.3
RND pmax pmax
comp=Z,58nm,0.8s
RND Reindeer 86.05 13 eP P 07 19 49.9 -0.3
comp=Z,58nm,0.8s
SRU San Rafael Swe 86.07 46 eP P 07 19 52.4 +1.3
SRU pmax pmax
comp=Z,8.0nm,0.9s
SRU San Rafael Swe 86.07 46 eP P 07 19 52.4 +1.3
comp=Z,8.3nm,0.9s
DHY Denali Highway 86.08 13 eP P 07 19 50.2 -0.2
comp=Z,9.7nm,1.0s
PATY Pattaya 86.18 285 P P 07 19 53.8 +2.0
comp=Z,19nm,0.7s,comp=Z,3µm
LAZ Ladron 86.25 52 eP P 07 19 53.8 +1.7
BPAW Bear Paw Mtn. 86.26 12 eP P 07 19 50.1 -1.0
comp=Z,26nm,1.8s
GYA Guiyang 86.31 300 P P 07 19 52.8 +0.4
GYA pP pP 07 21 58.5 +1.0
GYA sP sP 07 22 56.3 +0.5
GYA PP PP 07 23 27.0 +2.2
GYA SKS SKSac 07 29 21.8 -2.3
GYA S S 07 29 39.5 -0.9
GYA pmax pmax
comp=Z,10.0nm,1.0s
MCK McKinley 86.33 13 eP P 07 19 51.0 -0.4
MCK pmax pmax
comp=Z,34nm,0.8s
MCK McKinley 86.33 13 eP P 07 19 51.0 -0.4
comp=Z,34nm,0.8s
MNTX Cornudas Mount 86.37 55 P P 07 19 53.6 +1.2
baz=244
MNTX Cornudas Mount 86.37 55 eP P 07 19 54.0 +1.5
comp=Z,7.6nm,1.0s
TCUT Toone Canyon 86.47 44 eP P 07 19 54.4 +1.4
comp=Z,7.4nm,0.8s
BNM Barren Site 86.51 52 eP P 07 19 54.6 +1.3
MVCO Mesa Verde 86.56 49 P P 07 19 54.0 +0.6
baz=242
LPM Los Pinos Moun 86.58 52 eP P 07 19 55.1 +1.5
HWUT Hardware Ranch 86.61 44 eP P 07 19 53.9 +0.4
comp=Z,2.2nm,0.8s
SURT Suratani 86.67 281 P P 07 19 57.1 +2.9
comp=Z,20nm,1.0s
TX31 Lajitas Ar. Si 86.70 57 eP P 07 19 55.9 +1.8
TXAR Lajitas Array 86.70 57 P P 07 19 56.0 +1.9
comp=Z,4.9nm,0.7s,baz=218,slow=6.9,SNR=78
TXAR pP pP 07 21 59.8 +0.4
comp=Z,1.0nm,1.0s,baz=223,slow=3.7,SNR=3.3
PV09 Paradox Valley 86.72 47 eP P 07 19 55.6 +1.4
PV10 Paradox Valley 86.73 47 eP P 07 19 53.9 -0.3
HYT Haines Junctio 86.75 19 eP P 07 19 54.4 +0.8
comp=Z,12nm,1.0s
MENT Mentasta 86.80 15 eP P 07 19 54.0 +0.3
comp=Z,16nm,1.2s
NEW Newport 86.84 36 P P 07 19 54.6 +0.3
comp=Z,2.3nm,0.6s,baz=272,slow=2.9,SNR=5.1
NEW Newport 86.84 36 P P 07 19 54.7 +0.5
baz=236
NEW Newport 86.84 36 eP P 07 19 54.8 +0.5
NEW pmax pmax
comp=Z,4.0nm,0.8s
NEW Newport 86.84 36 eP P 07 19 54.8 +0.5
comp=Z,3.7nm,0.8s
PV01 Paradox Valley 86.94 48 eP P 07 19 56.2 +0.9
ANMO Albuquerque 87.00 51 P P 07 19 56.4 +0.8
baz=243
ANMO Albuquerque 87.00 51 i P P 07 19 54.0 -1.5
ANMO pmax pmax
comp=Z,5.0nm,1.1s
ANMO Albuquerque 87.00 51 eP P 07 19 56.5 +1.0
comp=Z,5.0nm,1.0s
LHMI Lhok Sumawe 87.11 277 eP P 07 19 56.5 +0.2
comp=Z,146nm,1.1s
MLY Manley 87.14 11 eP P 07 19 54.5 -0.7
comp=Z,18nm,0.6s
WRH Wood River Hil 87.16 12 eP P 07 19 54.7 -0.6
comp=Z,45nm,0.9s
MLSI Meulaboh, Aceh 87.29 275 P P 07 19 58.9 +1.8
comp=Z,104nm,0.8s
PHET Kaeng Krachan 87.30 285 P P 07 19 58.9 +1.8
comp=Z,22nm,0.8s,comp=Z,215nm
DOT Dot Lake 87.32 14 eP P 07 19 56.1 0.0
comp=Z,41nm,1.0s
HDA Harding Lake 87.34 13 eP P 07 19 56.1 0.0
comp=Z,59nm,1.0s
CCB Clear Creek Bu 87.37 13 eP P 07 19 55.6 -0.7
comp=Z,48nm,0.6s
PBKT Sadao Pong 87.40 289 P P 07 19 58.8 +1.3
comp=Z,27nm,1.1s,comp=Z,1µm
DLBC Dease Lake 87.44 23 P P 07 19 58.1 +1.2
comp=Z,6.6nm,0.8s,baz=218,slow=5.8,SNR=17
DLBC Dease Lake 87.44 23 eP P 07 19 58.1 +1.2
comp=Z,8.6nm,0.8s
MCMT McKenzie Canyo 87.45 40 eP P 07 19 58.8 +1.3
AHID Auburn Hatcher 87.49 43 eP P 07 19 58.5 +0.8
comp=Z,6.2nm,0.8s
MDM Murphy Dome 87.56 12 eP P 07 19 56.3 -0.9
comp=Z,37nm,0.8s
COLA College 87.56 12 eP P 07 19 56.6 -0.5
COLA pmax pmax
comp=Z,63nm,0.7s
COLA College 87.56 12 eP P 07 19 56.6 -0.5
comp=Z,63nm,0.7s
IL1 Eielson Array 87.67 13 eP P 07 19 57.0 -0.7
ILAR Eielson Array 87.67 13 P P 07 19 57.1 -0.6
comp=Z,17nm,0.8s,baz=217,slow=5.7,SNR=142
ILAR pP pP 07 22 01.9 -1.4
comp=Z,2.0nm,1.1s,baz=236,slow=6.5,SNR=5.4
ILB Eielson Array 87.67 13 eP P 07 19 56.9 -0.8
XAN Xi'an 87.72 307 P P 07 19 59.5 +0.8
XAN pmax pmax
comp=Z,75nm,0.9s
XAN pmax pmax
comp=Z,66nm,6.8s
MSO Missoula 87.85 38 P P 07 19 59.2 +0.1
baz=238
MSO Missoula 87.85 38 eP P 07 20 00.1 +1.0
comp=Z,4.1nm,0.7s
DLMT Dillon 87.88 40 eP P 07 20 00.5 +1.2
comp=Z,18nm,1.1s
BSMT Bassoo Peak 87.92 37 eP P 07 20 00.1 +0.6
REDW Red Top Meadow 87.95 42 eP P 07 20 00.8 +1.0
comp=Z,21nm,1.2s
TPAW Teton Pass 87.95 42 eP P 07 20 01.0 +1.1
comp=Z,8.9nm,1.0s
S22A 4UR Ranch, Cre 87.98 49 P P 07 20 01.2 +1.0
baz=243
S22A 4UR Ranch, Cre 87.98 49 eP P 07 20 01.4 +1.2
comp=Z,4.2nm,0.9s
SNOW Snow King Moun 88.06 42 eP P 07 20 01.6 +1.2
comp=Z,19nm,1.0s
O20A White River Ci 88.11 46 P P 07 20 01.6 +1.0
baz=242
O20A White River Ci 88.11 46 eP P 07 20 01.8 +1.2
comp=Z,12nm,1.4s
IMW Indian Meadow 88.16 42 eP P 07 20 02.3 +1.4
comp=Z,13nm,0.9s
UTTA Uttaradit 88.20 289 P P 07 20 03.2 +2.0
comp=Z,3.9nm,1.2s,comp=Z,168nm
LRM Limekiln Ridge 88.20 40 eP P 07 20 02.1 +1.1
MOOW Moose Ponds 88.21 42 eP P 07 20 02.5 +1.5
comp=Z,4.6nm,0.9s
LOHW Long Hollow 88.23 42 eP P 07 20 02.2 +1.1
comp=Z,31nm,1.7s
CHMT Chamberlain Mo 88.30 38 eP P 07 20 02.0 +0.7
QLMT Earthquake Lak 88.32 41 eP P 07 20 03.4 +1.9
SLMT Seeley Lake 88.33 38 eP P 07 20 01.7 +0.3
BILL Bilibino 88.38 354 ||| eP P 07 19 59.8 -1.1
BILL e*PP pP 07 22 08.4 +1.6
BILL ePPP PPP 07 25 39.9
BILL pmax pmax
comp=Z,11nm,0.9s
FLWY Flagg Ranch 88.40 42 eP P 07 20 03.9 +2.0
comp=Z,19nm,1.0s
BW06 Boulder Array 88.48 43 P P 07 20 02.8 +0.5
baz=241
BW06 Boulder Array 88.48 43 eP P 07 20 02.9 +0.5
comp=Z,7.7nm,0.9s
PD31 Pinedale Array 88.48 43 eP P 07 20 03.1 +0.7
PDAR Pinedale Array 88.48 43 P P 07 20 03.0 +0.7
comp=Z,4.5nm,0.6s,baz=204,slow=3.1,SNR=57
YFT Old Faithful 88.50 41 eP P 07 20 03.8 +1.5
comp=Z,12nm,0.9s
YMR Madison River 88.53 41 eP P 07 20 04.0 +1.5
comp=Z,25nm,1.3s
SMCO Snowmass 88.53 47 eP P 07 20 04.0 +1.2
comp=Z,6.0nm,1.1s
BOZ Bozeman (W) 88.61 40 P P 07 20 03.8 +1.1
baz=240
BOZ Bozeman (W) 88.61 40 eP P 07 20 03.8 +1.1
BOZ pmax pmax
comp=Z,12nm,0.9s
BOZ Bozeman (W) 88.61 40 eP P 07 20 03.8 +1.1
comp=Z,12nm,0.9s
H17A Grant Village 88.63 41 P P 07 20 05.1 +2.1
baz=240
H17A Grant Village 88.63 41 eP P 07 20 05.4 +2.4
comp=Z,12nm,1.0s
SNAA Sanae 88.67 178 P P 07 20 02.2 -0.3
SNAA Sanae 88.67 178 c iP P 07 20 02.0 -0.5
SNAA Sanae 88.67 178 eP P 07 20 02.0 -0.5
comp=Z,4.5nm,0.8s
DAWY Dawson 88.82 16 eP P 07 20 03.6 +0.4
comp=Z,24nm,0.8s
HHC Hu-ho-hao-te 88.88 314 eP P 07 20 05.3 +1.2
HHC S S 07 30 06.0 +2.5
HHC pmax pmax
comp=Z,22nm,1.2s
HHC pmax pmax
comp=Z,86nm,4.9s
SDCO Great Sand Dun 88.93 49 P P 07 20 05.2 +0.7
baz=244
SDCO Great Sand Dun 88.93 49 eP P 07 20 05.6 +1.0
comp=Z,2.3nm,0.9s
SUKH Sukhothai 88.93 289 P P 07 20 06.0 +1.4
comp=Z,9.2nm,0.9s,comp=Z,71nm
EGAK Eagle 88.97 15 eP P 07 20 03.9 +0.2
comp=Z,28nm,0.8s
HRY Holter Researc 89.03 39 eP P 07 20 06.0 +1.4
KMI Kunming 89.04 297 P P 07 20 04.0 -1.3
KMI pmax pmax
comp=Z,53nm,0.5s
WALA Waterton Lakes 89.05 36 eP P 07 20 05.7 +1.0
comp=Z,8.5nm,1.0s
UMPA Umpang Tak 89.16 287 P P 07 20 07.5 +1.7
comp=Z,8.8nm,1.0s
COLD Coldfoot 89.23 10 eP P 07 20 05.3 +0.4
comp=Z,19nm,0.8s
832A Faith Ranch, C 89.25 60 P P 07 20 06.6 +0.7
baz=247
LAMP Lampang 89.30 290 P P 07 20 07.7 +1.4
comp=Z,21nm,0.8s,comp=Z,168nm
MSTX Muleshoe 89.32 53 P P 07 20 06.9 +0.7
baz=246
MSTX Muleshoe 89.32 53 eP P 07 20 07.0 +0.7
comp=Z,7.1nm,0.6s
NVL N'lazarevskaya 89.38 183 eP P 07 20 05.8 +0.1
T25A Trinidad 89.44 50 P P 07 20 08.2 +1.3
baz=245
VNA1 Neumayer--Stat 89.47 177 P P 07 20 06.3 +0.2
933A Laredo 89.56 60 P P 07 20 08.7 +1.4
baz=247
FYU Fort Yukon 89.57 13 eP P 07 20 06.0 -0.5
comp=Z,5.7nm,0.7s
833A Chaparral WMA, 89.73 60 P P 07 20 08.7 +0.5
baz=247
PLCA Paso Flores 89.73 134 P P 07 20 09.6 +1.5
comp=Z,1.3nm,0.6s,baz=294,slow=6.9,SNR=3.5
PLCA Paso Flores 89.73 134 eP P 07 20 09.6 +1.5
PLCA pmax pmax
comp=Z,48nm,2.0s
PLCA Paso Flores 89.73 134 eP P 07 20 09.6 +1.5
comp=Z,48nm,2.0s
ISCO Idaho Springs 89.75 47 P P 07 20 09.2 +0.8
baz=244
RLMT Red Lodge 89.80 41 P P 07 20 09.1 +0.8
baz=241
RLMT Red Lodge 89.80 41 eP P 07 20 10.0 +1.7
comp=Z,24nm,1.5s
034A Hebbronville 89.83 61 P P 07 20 10.4 +1.8
baz=248
CM01 Chiang Mai Arr 89.86 290 eP P 07 20 10.2 +1.2
GCMT Greycliff 89.88 41 eP P 07 20 10.1 +1.5
CMAR Chiang Mai Arr 89.89 290 P P 07 20 10.6 +1.5
comp=Z,21nm,0.9s,baz=119,slow=2.9,SNR=79
733A Divot King Ran 89.97 59 P P 07 20 10.5 +1.3
baz=247
CMMT Chiang Mai 90.01 290 P P 07 20 10.4 +0.8
comp=Z,34nm,0.8s,comp=Z,489nm
N23A Red Feather La 90.01 46 P P 07 20 10.7 +1.2
baz=244
N23A Red Feather La 90.01 46 eP P 07 20 11.0 +1.5
comp=Z,7.5nm,0.8s
CHTO Chiang Mai 90.01 290 P P 07 20 10.4 +0.8
comp=Z,152nm,0.8s,comp=Z,2µm
CHTO Chiang Mai 90.01 290 eP P 07 20 10.7 +1.0
CHTO pmax pmax
comp=Z,25nm,0.8s
CHTO Chiang Mai 90.01 290 eP P 07 20 10.7 +1.0
comp=Z,25nm,0.8s
035Z Hargill 90.12 62 P P 07 20 10.8 +0.9
baz=248
JCT Junction City 90.23 58 P P 07 20 11.1 +0.6
baz=247
035A Encino 90.27 62 P P 07 20 12.5 +1.9
baz=248
CMAI Chiengmai2 90.32 291 P P 07 20 12.0 +0.8
comp=Z,190nm,0.9s,comp=Z,10µm
633A Saathoff Ranch 90.34 59 P P 07 20 12.1 +1.1
baz=247
K22A Casper 90.41 44 P P 07 20 11.8 +0.6
baz=243
K22A Casper 90.41 44 eP P 07 20 11.3 +0.2
comp=Z,12nm,1.2s
PHWY Pilot Hill 90.52 46 eP P 07 20 12.8 +1.0
comp=Z,4.2nm,0.8s
AMTX Amarillo 90.52 53 P P 07 20 12.1 +0.4
baz=246
533A Kerrville 90.69 58 P P 07 20 13.3 +0.7
baz=248
433A Art 90.91 58 P P 07 20 14.0 +0.4
baz=248
EGMT Eagleton 90.91 39 P P 07 20 13.7 +0.5
baz=241
534A Blanco 91.12 59 P P 07 20 15.4 +0.8
baz=248
ABTX Abilene, Hawle 91.19 56 P P 07 20 15.5 +0.7
baz=247
333A Richland Sprin 91.21 57 P P 07 20 15.5 +0.5
baz=248
YAK Yakutsk 91.50 338 i P P 07 20 14.8 -0.6
YAK pmax pmax
comp=Z,23nm,0.9s
KSCO Kaye Shedlock' 91.51 49 P P 07 20 17.5 +1.2
baz=246
233A Rising Star 91.54 57 P P 07 20 17.0 +0.5
baz=248
EDM Edmonton 91.56 33 eP P 07 20 16.4 +0.4
EDM pmax pmax
comp=Z,16nm,1.3s
EDM Edmonton 91.56 33 eP P 07 20 16.4 +0.4
comp=Z,16nm,1.3s
434A Burnet 91.58 58 P P 07 20 17.1 +0.4
baz=248
133A Hamilton Ranch 91.75 56 P P 07 20 17.9 +0.6
baz=248
334A Lometa 91.80 57 P P 07 20 18.5 +0.8
baz=248
736A Circle Diamond 91.86 60 P P 07 20 19.2 +1.3
baz=248
Z33A Whitaker Ranch 92.12 55 P P 07 20 19.4 +0.3
baz=248
X32A Elmer 92.15 54 P P 07 20 19.8 +0.6
baz=248
LZH Lanzhou 92.36 307 eP P 07 20 20.8 +0.5
LZH pmax pmax
comp=Z,22nm,1.0s
LZH pmax pmax
comp=Z,87nm,4.3s
134A White-Moore Ra 92.39 56 P P 07 20 20.8 +0.5
baz=248
LAO LASA Array 92.41 41 P P 07 20 21.9 +1.7
baz=244
LAO LASA Array 92.41 41 eP P 07 20 22.1 +1.9
comp=Z,11nm,1.0s
W32A Sentinel 92.45 54 P P 07 20 21.3 +0.7
baz=248
RSSD Black Hills 92.68 44 P P 07 20 22.0 +0.3
baz=245
RSSD Black Hills 92.68 44 eP P 07 20 22.4 +0.7
RSSD pmax pmax
comp=Z,7.0nm,1.2s
RSSD Black Hills 92.68 44 eP P 07 20 22.4 +0.7
comp=Z,6.9nm,1.2s
OGNE Ogalala 92.71 47 P P 07 20 22.3 +0.6
baz=246
X33A Lawton 92.80 54 P P 07 20 22.6 +0.5
baz=248
336A Riesel 92.93 58 P P 07 20 23.0 +0.2
baz=249
X34A Smith Ranch, M 93.33 55 P P 07 20 25.8 +1.2
baz=248
638A Rosharon 93.35 60 P P 07 20 26.3 +1.5
baz=249
CBKS Cedar Bluff 93.50 50 P P 07 20 26.2 +0.9
baz=247
INK Inuvik 93.64 15 P P 07 20 24.5 -0.6
comp=Z,7.3nm,0.9s,baz=228,slow=5.2,SNR=6.0
INK Inuvik 93.64 15 eP P 07 20 25.1 0.0
INK pmax pmax

	comp=Z,11nm,1.1s								
INK	**Inuvik**	**93.64**	**15**	*e*P		**P**	07 20 25.1	**0.0**	
	comp=Z,11nm,1.1s								
S32A	**Newby Ranch, P**	**93.66**	**51**	P		**P**	**07 20 26.7**	**+0.6**	
	baz=248								
R32A	**Long Quarter,**	**94.09**	**51**	P		**P**	**07 20 29.3**	**+1.3**	
	baz=248								
Y36A	**Durant**	**94.27**	**56**	P		**P**	**07 20 30.3**	**+1.4**	
	baz=249								
O31A	**Woolen Ranch,**	**94.30**	**49**	P		**P**	**07 20 29.9**	**+0.9**	
	baz=248								
Q32A	**Meitler Ranch,**	**94.42**	**50**	P		**P**	**07 20 30.3**	**+0.8**	
	baz=248								
DGMT	**Dagmar**	**94.42**	**40**	P		**P**	**07 20 30.4**	**+1.2**	
	baz=245								
DGMT	**Dagmar**	**94.42**	**40**	*e*P		**P**	**07 20 30.7**	**+1.5**	
	comp=Z,15nm,0.9s								
O32A	**Brockman Farm,**	**95.09**	**49**	P		**P**	**07 20 33.2**	**+0.7**	
	baz=248								
SONA1	**Songino Array**	**95.25**	**319**	*e*P		**P**	**07 20 32.1**	**-1.0**	
SONM	**Songino Array**	**95.25**	**319**	P		**P**	**07 20 32.4**	**-0.7**	
	comp=Z,1.1nm,0.4s,baz=126,slow=5.6,SNR=6.9								
YKA	**Yellowknife Ar**	**95.91**	**25**	P		**P**	**07 20 35.4**	**-0.1**	
	comp=Z,2.1nm,0.8s,baz=237,slow=4.5,SNR=16								
YKB5	**Yellowknife Ar**	**95.91**	**25**	*e*P		**P**	**07 20 34.7**	**-0.9**	
YKB5				*e*PcP		**P**	**07 20 34.8**	**-0.7**	
YKW3	**Yellowknife Ar**	**95.94**	**25**	*e*P		**P**	**07 20 35.6**	**-0.1**	
	comp=Z,2.4nm,0.7s								
T37A	**Cheneyville 18**	**96.44**	**53**	Pdiff		**P**	**07 20 38.8**	**+0.2**	
	baz=250								
141A	**Papa Simpson,**	**96.49**	**58**	Pdiff		**P**	**07 20 39.4**	**+0.5**	
	baz=251								
P37A	**Lathrop**	**97.69**	**51**	Pdiff		**P**	**07 20 45.1**	**+1.0**	
	baz=251								
TIXI	**Tiksi**	**98.10**	**345**	*i* P		Pdif	07 20 42.7	-2.4	
TIXI				pmax		pmax			
	comp=Z,9.0nm,1.1s								
TLY	**Talaya**	**98.37**	**322**	*e*P		Pdif	07 20 46.1	-0.7	
TLY				pmax		pmax			
	comp=Z,1.0nm,0.8s								
I35A	**Creekview Farm**	**98.64**	**47**	Pdiff		**P**	**07 20 48.8**	**+0.5**	
	baz=251								
D33A	**AnnSam, Waubun**	**99.14**	**43**	Pdiff		**Pdif**	**07 20 51.1**	**+0.8**	
	baz=251								
K37A	**Belmond**	**99.22**	**48**	Pdiff		**Pdif**	**07 20 51.8**	**+1.0**	
	baz=252								
X45A	**UM Field Stati**	**99.84**	**57**	Pdiff		**Pdif**	**07 20 54.4**	**+0.6**	
	baz=253								
ULM	**Lac du Bonnet**	**100.13**	**40**	PKKPbc		PKKPbc	07 37 10.4	-1.0	
	comp=Z,1.4nm,0.7s,baz=301,slow=21,SNR=3.1								
F36A	**Milaca**	**100.25**	**45**	Pdiff		**Pdif**	**07 20 56.5**	**+1.1**	
	baz=252								
I38A	**Scanlan Farm,**	**100.51**	**47**	Pdiff		**Pdif**	**07 20 57.5**	**+1.0**	
	baz=253								
LPAZ	**La Paz**	**102.32**	**112**	PKKPbc		PKKPbc	07 37 04.7	-0.4	
	comp=Z,0.7nm,0.5s,baz=50,slow=2.2,SNR=6.4								
ZALV	**Zalesovo Beam**	**109.97**	**321**	PKiKP		**PKiKP**	**07 25 35.1**	**-1.4**	
	comp=Z,2.9nm,0.6s,baz=126,slow=1.0,SNR=12								
MK31	**Makanchi Array**	**110.74**	**314**	*i* PKIKP		**PKiKP**	**07 25 36.4**	**-1.8**	
MK31				pmax		pmax			
	comp=Z,3.0nm,0.6s								
MKAR	**Makanchi Array**	**110.74**	**314**	Pdiff		**Pdif**	**07 21 43.7**	**+1.7**	
MKAR				PKIKP		**PKiKP**	**07 25 37.0**	**-1.3**	
	comp=Z,2.8nm,0.6s,baz=125,slow=0.2,SNR=29								
KURK	**Kurchatov**	**113.50**	**318**	PKiKP		**PKiKP**	**07 25 42.1**	**-1.1**	
KURBB	**Kurchatov Arra**	**113.55**	**317**	PKiKP		**PKiKP**	**07 25 42.1**	**-1.2**	
	comp=Z,3.3nm,0.6s,baz=95,slow=1.8,SNR=40								
KSH	**Kashi**	**114.50**	**305**	*e*PKP		PKPdf	07 25 44.3	-1.5	
KSH				*e*PP		**PP**	**07 26 59.0**	**+5.1**	
KSH				*es*PKP			07 28 59.8		
KSH				SKKS			07 32 49.8		
KSH				AMB		AMB			
	comp=Z,64nm,4.1s								
TKM2	**Tokmak 2**	**115.09**	**309**	PKIKP		PKPpre	07 25 40.8		
TKM2				pmax		pmax			
	comp=Z,1.0nm,0.5s								
PKME	**Peaks-Kenny Pk**	**116.88**	**49**	*e*PKPdf		**PKPdf**	**07 25 49.7**	**-0.2**	
MNAS	**Manas**	**117.34**	**308**	PKIKP		**PKPdf**	**07 25 50.0**	**-1.2**	
MNAS				pmax		pmax			
	comp=Z,6.0nm,0.6s								
OTUK	**Ortayu**	**117.55**	**315**	PKIKP		**PKPdf**	**07 25 50.0**	**-1.2**	
OTUK				pmax		pmax			
	comp=Z,4.0nm,0.5s								
BVA0	**Borovoye Array**	**118.56**	**320**	PKIKP		**PKPdf**	**07 25 51.2**	**-1.8**	
BVA0				pmax		pmax			
	comp=Z,5.0nm,0.5s								
BRVK	**Borovoye**	**118.63**	**320***c*	*i* PKIKP		**PKPdf**	**07 25 51.9**	**-1.2**	
BRVK				pmax		pmax			
	comp=Z,25nm,1.0s								
BRVK	**Borovoye**	**118.63**	**320**	*e*PKPdf		**PKPdf**	**07 25 52.5**	**-0.6**	
KK31	**Karatay Array**	**118.82**	**309**	*i* PKIKP		**PKPdf**	**07 25 51.7**	**-2.2**	
KK31				pmax		pmax			
	comp=Z,3.0nm,0.6s								
KBL	**Kabul**	**119.56**	**299**	*e*PKIKP		**PKPdf**	**07 25 55.9**	**+0.1**	
KBL	**Kabul**	**119.56**	**299**	*e*PKPdf		**PKPdf**	**07 25 55.9**	**+0.1**	
DZET	**Dzherino**	**119.99**	**304**	PKIKP		**PKPdf**	**07 25 55.6**	**-0.8**	
DZET				pmax		pmax			
	comp=Z,12nm,0.5s								
LMN	**Caledonia Moun**	**120.03**	**48**	*e*PKPdf		**PKPdf**	**07 25 55.3**	**-0.7**	
SPA0	**Spitsbergen Ar**	**121.20**	**357**	*e*PKPdf		**PKPdf**	**07 25 57.2**	**-0.2**	
SPITS	**Spitsbergen Ar**	**121.20**	**357**	PKP		**PKPdf**	**07 25 56.6**	**-0.8**	
	comp=Z,6.9nm,0.7s,baz=102,slow=6.1,SNR=8.0								
DAG	**Danmarks Havn**	**122.08**	**6**	*i* P		**PKPdf**	**07 25 57.6**	**-1.5**	
	comp=Z,3.2nm,0.5s								
DAG	**Danmarks Havn**	**122.08**	**6**	*i* PKIKP		**PKPdf**	**07 25 57.6**	**-1.5**	
DAG				pmax		pmax			
	comp=Z,2.0nm,0.5s								
SUMG	**Summit**	**122.51**	**13**	*i* P		**PKPdf**	**07 26 00.4**	**-0.2**	
SUMG	**Summit**	**122.51**	**13**	*i* PKIKP		**PKPdf**	**07 26 00.4**	**-0.2**	
SUMG	**Summit**	**122.51**	**13**	*e*PKPdf		**PKPdf**	**07 26 00.5**	**0.0**	
ARU	**Arti**	**124.65**	**326**	*i* PKIKP		**PKPdf**	**07 26 04.1**	**-0.4**	
ARU							07 26 02.8		
ARU				SP		SP	07 32 18.8		
ARU				SS		**SS**	07 37 01.8	-1.8	
ARU				SS		**SS**	**07 44 03.0**	**-8.1**	
ARU	**Arti**	**124.65**	**326**	*e*PKPdf		**PKPdf**	**07 26 04.2**	**-0.4**	
SUR	**Sutherland**	**125.05**	**199**	*e*PKPdf		**PKPdf**	**07 26 06.7**	**+0.2**	
AB31	**Akbulak array**	**125.60**	**317**	*i* PKIKP		**PKPdf**	**07 26 05.8**	**-0.8**	
AB31				pmax		pmax			
	comp=Z,3.0nm,0.7s								
ABKAR	**Akbulak array**	**125.60**	**317**	*e*PKPdf		**PKPdf**	**07 26 06.5**	**-0.1**	
AKTO	**Aktyubinsk**	**126.56**	**319**	PKP		**PKPdf**	**07 26 08.5**	**+0.1**	
	comp=Z,6.1nm,0.8s,baz=68,slow=2.3,SNR=21								
ARA0	**ARCESS Array S**	**128.27**	**350**	*e*PKPdf		**PKPdf**	**07 26 10.4**	**-0.7**	
ARCES	**ARCESS Array B**	**128.27**	**350**	PKP		**PKPdf**	**07 26 10.7**	**-0.4**	
	comp=Z,6.0nm,0.4s,baz=7.9,slow=0.9,SNR=23								
ARCES				SKPbc		SKPbc	07 28 39.6		
	comp=Z,3.1nm,0.8s,baz=54,slow=9.2,SNR=5.2								
ARE0	**ARCESS Array S**	**128.27**	**350**	*e*PKPdf		**PKPdf**	**07 26 10.7**	**-0.5**	
GEYT	**Alibeck**	**128.42**	**303**	PKP		**PKPdf**	**07 26 12.3**	**-0.1**	
	comp=Z,4.9nm,0.7s,baz=20,slow=5.4,SNR=7.4								
GEYT				SKPbc		SKPbc	07 28 39.8		
	comp=Z,2.2nm,0.6s,baz=318,slow=2.0,SNR=5.7								
UOSS	**Minazif**	**129.88**	**286**	*e*PKPdf		**PKPdf**	**07 26 15.2**	**-0.3**	
KLMR	**Klimovskoe**	**131.27**	**337**	*e*PKIKP		**PKPdf**	**07 26 14.2**	**-2.8**	
KLMR				*e*			07 28 45.5		
KLMR				pmax		pmax			
	comp=Z,4.0nm,0.6s								
FIA1	**FINESS Array S**	**135.13**	**344**	*e*PKPdf		**PKPdf**	**07 26 25.1**	**+0.9**	
FINES	**FINESS Array B**	**135.13**	**344**	PKhKP		PKPpre	07 26 09.6		
	comp=Z,0.7nm,0.5s,baz=72,slow=4.0,SNR=6.0								
FINES				PKP		**PKPdf**	**07 26 23.9**	**-0.3**	
	comp=Z,5.4nm,0.7s,baz=95,slow=1.8,SNR=6.7								
FINES				SKPbc		**SKPbc**	**07 29 02.8**	**+1.7**	
	comp=Z,3.1nm,0.8s,baz=129,slow=2.7,SNR=5.0								
VSR	**Storozhevoye**	**137.22**	**326**	*i* PKIKP		**PKPdf**	**07 26 27.6**	**-0.8**	
VSU	**Vasula**	**137.42**	**341**	PKIKP		**PKPdf**	**07 26 28.3**	**-0.2**	
NC303	**NORSAR Array S**	**138.12**	**353**	*e*PKPdf		**PKPdf**	**07 26 31.4**	**+1.6**	
NB201	**NORSAR Array S**	**138.30**	**353**	*e*PKPpre		PKPpre	07 26 23.7		
NB201				*e*PKPdf		**PKiKP**	**07 26 32.0**	**-0.5**	
NB2	**NORSAR Subarra**	**138.32**	**353**	PKP		PKPpre	07 26 19.5		
	comp=Z,3.8nm,0.7s,baz=20,slow=3.8								
NOA	**NORSAR Array B**	**138.32**	**353**	PKhKP		PKPpre	07 26 20.1		
	comp=Z,0.8nm,0.6s,baz=16,slow=4.1,SNR=13								
NOA				PKP		**PKiKP**	**07 26 31.8**	**-0.7**	
	comp=Z,2.8nm,0.7s,baz=18,slow=4.2,SNR=9.5								
NBO02	**NORSAR Array S**	**138.35**	**354**	*e*PKPpre		PKPpre	07 26 20.2		
NBO02				*e*PKPdf		**PKiKP**	**07 26 32.0**	**-0.5**	
NBO00	**NORSAR Array S**	**138.38**	**354**	*e*PKPdf		**PKPdf**	**07 26 31.8**	**+1.4**	
KBZ	**Khabaz**	**138.43**	**314**	SKPbc		**SKPbc**	**07 29 12.0**	**+0.7**	
	comp=Z,1.6nm,0.6s,baz=80,slow=6.1,SNR=3.7								
KVAR	**Kislovodsk Arr**	**138.48**	**315**	SKPbc		**SKiKP**	**07 29 13.9**	**-1.1**	
	comp=Z,3.0nm,0.5s,baz=342,slow=20,SNR=4.4								
NC602	**NORSAR Array S**	**138.58**	**353**	*e*PKPpre		PKPpre	07 26 24.3		

AKH	**Akhalkalaki**	**138.81**	**311**	⇓*i*P		**PKPdf**	**07 26 35.3**	**+3.4**	
AKASG	**Malin Array Be**	**142.43**	**331**	PKhKP		PKPpre	07 26 34.1		
	comp=Z,13nm,0.3s,baz=43,slow=4.3,SNR=76								
AKASG				SKPbc		**SKiKP**	**07 29 22.5**	**-0.2**	
	comp=Z,4.2nm,0.8s,baz=36,slow=3.2,SNR=7.1								
AKBB	**Malin Array Si**	**142.43**	**331**	*e*PKHKP		PKPpre	07 26 33.7		
AKBB	**Malin Array Si**	**142.43**	**331**	*e*PKPpre		PKPpre	07 26 33.7		
KIEV	**Kiev**	**142.44**	**332**	*e*PKHKP		PKPpre	07 26 33.6		
KIEV	**Kiev**	**142.44**	**332**	*e*PKPpre		PKPpre	07 26 33.6		
AK11	**Malin Array Si**	**142.47**	**332**	*e*PKPpre		PKPpre	07 26 33.9		
MUD	**Monsted U'grnd**	**143.04**	**353**	*i* P		PKPab	07 26 36.5	0.0	
	comp=Z,36nm,0.8s								
MUD	**Monsted U'grnd**	**143.04**	**353**	*i* PKIKP		PKPab	07 26 36.5	0.0	
MUD				pmax		pmax			
	comp=Z,36nm,0.8s								
COP	**Copenhagen**	**143.35**	**350**	*i* P		PKPab	07 26 36.9	-0.8	
COP	**Copenhagen**	**143.35**	**350**	*i* PKIKP		PKPab	07 26 36.9	-0.8	
BSD	**Bornholm Skovb**	**143.44**	**348**	⇓*i*P		PKPab	07 26 37.3	-0.7	
	comp=Z,66nm,0.9s								
BSD	**Bornholm Skovb**	**143.44**	**348**	⇓*i*PKIKP		PKPab	07 26 37.3	-0.7	
BSD				pmax		pmax			
	comp=Z,66nm,0.9s								
SIM	**Simferopol'**	**143.48**	**321**	*e*PKIKP		PKPbc	07 26 38.9	+0.2	
SIM				pmax		pmax			
	comp=Z,88nm,0.9s								
LLD	**Lille Linde**	**143.72**	**350**	*i* P		PKPbc	07 26 38.7	-0.4	
	comp=Z,61nm,0.9s								
LLD	**Lille Linde**	**143.72**	**350**	*i* PKIKP		PKPbc	07 26 38.7	-0.4	
LLD				pmax		pmax			
	comp=Z,61nm,0.9s								
RGN	**Rugen**	**144.28**	**349**	*e*PKPbc		**PKPdf**	**07 26 41.1**	**+0.1**	
SORM	**Soroca**	**144.63**	**329**	⇓*i*P		**PKPdf**	**07 26 41.4**	**-0.4**	
BEL	**Belsk**	**144.83**	**340**	*e*PKP		**PKPab**	**07 26 43.3**	**-0.2**	
BEL	**Belsk**	**144.83**	**340**	*e*PKIKP		**PKPab**	**07 26 43.3**	**-0.2**	
MBAR	**Mbarara**	**145.27**	**238**	*e*PKP2		**PKPbc**	**07 26 45.3**	**0.0**	
MBAR	**Mbarara**	**145.27**	**238**	*e*PKPdf		**PKPbc**	**07 26 45.3**	**0.0**	
LVV	**L'vov**	**145.30**	**335**	*e*PKP2		**PKPbc**	**07 26 43.8**	**-0.3**	
KWP	**Kalwaria Pacla**	**145.97**	**336**	*e*PKP		**PKPbc**	**07 26 46.4**	**+0.3**	
KWP	**Kalwaria Pacla**	**145.97**	**336**	*e*PKP2		**PKPbc**	**07 26 46.4**	**+0.3**	
DSB	**Dublin**	**146.03**	**9**	*e*PKPdf		**PKPbc**	**07 26 45.6**	**-0.5**	
TLCR		**146.37**	**325**	⇓*i*P		**PKPbc**	**07 26 46.8**	**-0.4**	
BRTR	**Keskin Array B**	**146.38**	**313**	PKPbc		**PKPbc**	**07 26 47.6**	**-0.1**	
	comp=Z,16nm,0.5s,baz=130,slow=3.4,SNR=70								
BUR08	**Bucovina Ar. S**	**146.46**	**331**	*e*PKPbc		**PKPbc**	**07 26 48.1**	**+0.5**	
BURAR	**Bucovina Array**	**146.48**	**331**	⇑*i*P		**PKPbc**	**07 26 48.1**	**+0.5**	
OJC	**Ojcow**	**146.54**	**339**	*e*PKP		**PKPbc**	**07 26 47.7**	**+0.1**	
OJC	**Ojcow**	**146.54**	**339**	*e*PKP2		**PKPbc**	**07 26 47.7**	**+0.1**	
OJC	**Ojcow**	**146.54**	**339**	*e*PKPbc		**PKPbc**	**07 26 47.6**	**0.0**	
TESR	**Tescani**	**146.59**	**328**	⇓*i*P		**PKPbc**	**07 26 47.8**	**0.0**	
STHS	**Stebnicka Huta**	**146.70**	**337**	*e*PKP		**PKPbc**	**07 26 48.6**	**+0.5**	
STHS				*e*			07 26 52.5		
CFR	**Carcaliu**	**146.74**	**325**	⇓*i*P		**PKPbc**	**07 26 48.1**	**-0.1**	
UZH	**Uzhgorod**	**146.94**	**335**	*e*PKP2		**PKPbc**	**07 26 49.0**	**+0.3**	
VRI	**Vrincioaia**	**147.00**	**328**	⇓*i*P		**PKPbc**	**07 26 48.4**	**-0.6**	
NIE	**Niedzica**	**147.04**	**338**	*e*PKP		**PKPbc**	**07 26 49.7**	**+0.7**	
NIE	**Niedzica**	**147.04**	**338**	*e*PKP2		**PKPbc**	**07 26 49.7**	**+0.7**	
CRVS	**Cervenica-Dubn**	**147.04**	**336**	*e*PKP		**PKPbc**	**07 26 49.3**	**+0.3**	
CRVS				*e*			07 26 52.9		
KSP	**Ksiaz**	**147.05**	**343**	*e*PKP		**PKPbc**	**07 26 49.8**	**+0.9**	
KSP	**Ksiaz**	**147.05**	**343**	*e*PKP2		**PKPbc**	**07 26 49.8**	**+0.9**	
PLOR	**Plostina**	**147.06**	**328**	⇓*i*P		**PKPbc**	**07 26 48.4**	**-0.7**	
CWF	**Charnwood Fore**	**147.06**	**4**	*e*PKPbc		**PKPbc**	**07 26 48.8**	**-0.1**	
TLB	**Topalu**	**147.17**	**325**	⇓*i*P		**PKPbc**	**07 26 49.2**	**-0.2**	
OKC	**Ostrava-Krasne**	**147.41**	**340**	⇑*e*PKP		**PKPbc**	**07 26 49.9**	**+0.1**	
OKC				*e*PKPAB		**PKPab**	**07 26 54.7**	**+0.9**	
OKC	**Ostrava-Krasne**	**147.41**	**340**	*e*PKP2		**PKPbc**	**07 26 49.9**	**+0.1**	
CLL	**Collm**	**147.41**	**347**	*e*PKPdf		**PKPdf**	**07 26 47.0**	**+0.6**	
CLL				⇓*i*PKPbc		**PKPbc**	**07 26 49.9**	**+0.1**	
	comp=Z,78nm,0.9s								
CLL				⇑*i*PKPab		**PKPab**	**07 26 53.5**	**-0.3**	
	comp=Z,32nm,0.8s								
CLL				*e*SKPbc		**SKPbc**	**07 29 27.0**	**-5.9**	
CLL	**Collm**	**147.41**	**347**	⇓*e*PKIKP		**PKPdf**	**07 26 47.0**	**+0.6**	
CLL				*i*			07 26 53.5		
CLL				pmax		pmax			
	comp=Z,78nm,0.9s								
CLL				pmax		pmax			
	comp=Z,32nm,0.8s								
CLL	**Collm**	**147.41**	**347**	*e*PKPbc		**PKPbc**	**07 26 50.4**	**+0.6**	
UPC	**Upice**	**147.43**	**343**	⇑*i*PKP		**PKPbc**	**07 26 50.2**	**+0.3**	
UPC				*e*PKPAB		**PKPab**	**07 26 54.5**	**+0.6**	
UPC	**Upice**	**147.43**	**343**	*i* PKP2		**PKPbc**	**07 26 50.2**	**+0.3**	
DPC	**Dobruska-Polom**	**147.49**	**343**	⇑*i*PKP		**PKPbc**	**07 26 50.7**	**+0.6**	
DPC				*e*PKPAB		**PKPab**	**07 26 54.9**	**+0.7**	
DPC	**Dobruska-Polom**	**147.49**	**343**	*i* PKP2		**PKPbc**	**07 26 50.7**	**+0.6**	
LANS	**Liptovska Anna**	**147.56**	**338**	*e*PKP		**PKPbc**	**07 26 51.5**	**+1.2**	
LANS				*e*			07 26 54.5		
DOPR	**Dopca**	**147.60**	**329**	⇓*i*P		**PKPbc**	**07 26 51.2**	**+0.7**	
KRLC	**Kraliky**	**147.61**	**342**	⇑*e*PKP		**PKPbc**	**07 26 50.7**	**+0.3**	
KRLC				*e*PKPAB		**PKPab**	**07 26 55.2**	**+0.5**	
KRLC	**Kraliky**	**147.61**	**342**	*e*PKP2		**PKPbc**	**07 26 50.7**	**+0.3**	
ISR	**Istrita**	**147.61**	**327**	⇓*i*P		**PKPbc**	**07 26 50.7**	**+0.1**	
BRG	**Berggiesshubel**	**147.62**	**346**	*e*PKP		**PKPdf**	**07 26 46.9**	**+0.2**	
	comp=Z,8.9nm,1.4s								
BRG				*i*			07 26 50.5		
	comp=Z,33nm,0.7s								
BRG				*i*			07 26 54.5		
	comp=Z,25nm,0.7s								
	comp=N,104nm,20.3s								
	comp=E,203nm,21.1s								
	comp=Z,326nm,14.9s								
BRG	**Berggiesshubel**	**147.62**	**346**	*e*PKIKP		**PKPdf**	**07 26 46.9**	**+0.2**	
BRG				*i*			07 26 54.5		
BRG				pmax		pmax			
	comp=Z,9.0nm,1.4s								
BRG				MLR		MLR			
	comp=N,104nm,20.3s								
BRG				MLR		MLR			
	comp=E,203nm,21.1s								
BRG				MLR		MLR			
	comp=Z,326nm,14.9s								
MORC	**Moravsky Berou**	**147.65**	**341**	⇓*i*P		**PKPbc**	**07 26 50.7**	**+0.2**	
MORC	**Moravsky Berou**	**147.65**	**341**	*e*PKP2		**PKPbc**	**07 26 51.0**	**+0.4**	
MORC	**Moravsky Berou**	**147.65**	**341**	*e*PKPbc		**PKPbc**	**07 26 51.0**	**+0.4**	
MLR	**Muntele Rosu**	**147.66**	**328**	⇓*i*P		**PKPbc**	**07 26 50.3**	**-0.5**	
MLR	**Muntele Rosu**	**147.66**	**328**	*e*PKP2		**PKPbc**	**07 26 50.5**	**-0.3**	
MLR	**Muntele Rosu**	**147.66**	**328**	*e*PKPbc		**PKPbc**	**07 26 50.5**	**-0.3**	
WTSB	**Winterswijk**	**147.71**	**354**	*e*PKPbc		**PKPbc**	**07 26 50.5**	**0.0**	
	comp=Z,63nm,0.7s								
WTSB				*e*PKPab		**PKPab**	**07 26 54.6**	**-0.3**	
KECS	**Kecovo**	**147.76**	**337**	*e*PKP		**PKPbc**	**07 26 51.0**	**+0.2**	
KECS				*e*			07 26 55.6		
PVCC	**Panska Ves**	**147.79**	**345**	⇑*e*PKP		**PKPbc**	**07 26 51.3**	**+0.5**	
PVCC				*e*PKPAB		**PKPab**	**07 26 55.8**	**+0.5**	
PVCC	**Panska Ves**	**147.79**	**345**	*e*PKP2		**PKPbc**	**07 26 51.3**	**+0.5**	
ROSA	**Rosais**	**147.82**	**48**	*e*PKPbc		**PKPbc**	**07 26 51.7**	**+0.4**	
CJR	**Cluj-Napoca**	**147.89**	**332**	⇑*i*P		**PKPbc**	**07 26 51.6**	**+0.3**	
VOIR		**148.14**	**329**	⇑*i*P		**PKPbc**	**07 26 51.8**	**-0.2**	
DRGR		**148.22**	**333**	⇓*i*P		**PKPbc**	**07 26 52.0**	**-0.1**	
PRU	**Pruhonice**	**148.29**	**345**	⇑*e*PKP		**PKPbc**	**07 26 52.8**	**+0.7**	
PRU				*e*PKPAB		**PKPab**	**07 26 57.8**	**+0.4**	
PRU	**Pruhonice**	**148.29**	**345**	*e*PKP2		**PKPbc**	**07 26 52.8**	**+0.7**	
GOPC	**GO Pecny, Ondr**	**148.30**	**344**	⇑*e*PKP		**PKPbc**	**07 26 52.4**	**+0.3**	
GOPC				*e*PKPAB		**PKPab**	**07 26 57.9**	**+0.4**	
GOPC	**GO Pecny, Ondr**	**148.30**	**344**	*e*PKP2		**PKPbc**	**07 26 52.4**	**+0.3**	
VYHS	**Vyhne**	**148.34**	**338**	*e*PKP		**PKPbc**	**07 26 52.7**	**+0.4**	
VYHS				*e*			07 26 58.2		
VRAC	**Vranov**	**148.35**	**342**	⇓*i*P		**PKPbc**	**07 26 52.7**	**+0.4**	
ARR	**Arges**	**148.40**	**329**	⇓*i*P		**PKPbc**	**07 26 53.4**	**+0.8**	
PSZ	**Piszkesteto**	**148.45**	**337**	⇓*i*P		**PKPbc**	**07 26 52.7**	**0.0**	
PSZ	**Piszkesteto**	**148.45**	**337**	*e*PKP2		**PKPbc**	**07 26 52.6**	**0.0**	
PSZ	**Piszkesteto**	**148.45**	**337**	*e*PKPbc		**PKPbc**	**07 26 52.6**	**0.0**	
PSZ	**Piszkesteto**	**148.45**	**337**	*ex*		**PKPbc**	**07 26 52.4**	**-0.2**	
CSS	**Mathiatis**	**148.52**	**305**	*e*PKPbc		**PKPbc**	**07 26 52.7**	**-0.5**	
NKC	**Novy Kostel**	**148.55**	**347**	⇑*e*PKP		**PKPbc**	**07 26 53.0**	**+0.3**	
NKC				*e*PKPAB		**PKPab**	**07 26 58.6**	**+0.1**	
NKC	**Novy Kostel**	**148.55**	**347**	*e*PKP2		**PKPbc**	**07 26 53.0**	**+0.3**	
LOT	**Lotru**	**148.75**	**330**	⇑*i*P		**PKPbc**	**07 26 52.8**	**-0.7**	
SMOL	**Smolenice**	**148.79**	**340**	*e*PKP		**PKPbc**	**07 26 54.2**	**+0.8**	
HUMR	**Humele**	**148.82**	**327**	⇓*i*P		**PKPbc**	**07 26 52.8**	**-0.8**	
BEBN	**Eben Emael**	**148.97**	**355**	PKPab		**PKPab**	**07 26 59.8**	**-0.3**	
HGN	**Heimansgroeve**	**148.98**	**355**	*e*PKPbc		**PKPbc**	**07 26 53.7**	**-0.1**	
	comp=Z,33nm,1.0s								
HGN				*e*PKPab		**PKPab**	**07 26 59.9**	**-0.3**	
SIRR	**Siria**	**149.08**	**333**	⇓*i*P		**PKPbc**	**07 26 54.9**	**+0.7**	
DYA	**Yadsworthy**	**149.10**	**7**	*e*PKPbc		**PKPbc**	**07 26 53.9**	**-0.1**	
MEM	**Membach**	**149.13**	**355**	PKP		**PKPdf**	**07 26 48.5**	**-0.6**	
MEM				PKPbc		**PKPbc**	**07 26 54.2**	**+0.2**	
MEM				PKPab		**PKPab**	**07 27 01.0**	**+0.2**	
GRFO	**Grafenberg**	**149.31**	**348**	*e*PKP2		**PKPbc**	**07 26 55.3**	**+0.7**	
GRFO	**Grafenberg**	**149.31**	**348**	*e*PKPbc		**PKPbc**	**07 26 55.3**	**+0.7**	
KHC	**Kasperske Hory**	**149.32**	**345**	*i* PKPDF		**PKPdf**	**07 26 50.2**	**+0.6**	

KHC				⇑*e*PKP		**PKPbc**	**07 26 54.8**	**+0.1**	
KHC				*e*PKPAB		**PKPab**	**07 27 02.1**	**+0.3**	
KHC	**Kasperske Hory**	**149.32**	**345**	*e*PKPdf		**PKPdf**	**07 26 49.8**	**+0.2**	
KHC				*e*PKPbc		**PKPbc**	**07 26 55.0**	**+0.3**	
KHC				*e*PKPab		**PKPab**	**07 27 03.0**	**+1.2**	
SNF	**Seneffe**	**149.34**	**357**	PKPbc		**PKPbc**	**07 26 54.8**	**+0.2**	
SNF				PKPab		**PKPab**	**07 27 01.6**	**0.0**	
BCLA	**Clavier**	**149.37**	**356

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.93**	**184**	P	P	07 45 13.4	-0.2
	0.2nm,0.3s,baz=5.2,slow=11,SNR=3.9						
WRA	**Warramunga Arr**	**22.85**	**162**	P	P	07 45 43.9	-1.2
	1.0nm,0.5s,baz=341,slow=11,SNR=33						
ASAR	**Alice Springs**	**26.27**	**166**	P	P	07 46 18.7	+1.4
	0.2nm,0.3s,baz=345,slow=11,SNR=5.4						
MKAR	**Makanchi Array**	**59.25**	**326**	P	P	07 50 43.8	+0.4
	0.5nm,0.4s,baz=118,slow=7.8,SNR=7.1						
KURBB	**Kurchatov Arra**	**63.45**	**328**	P	P	07 51 11.2	-0.5
	0.5nm,0.5s,baz=126,slow=5.9,SNR=8.3						

IDC 26 07:43:03.0±2.7, 3°.26S×133°.92E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.5/46, mbtmp3.6/4, ML3.3/2, Error ellipse: s-maj=110.7km s-min=27.4km az=81.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**16.59**	**179**	Pn	P	07 46 58.7	-1.1
	0.1nm,0.3s,baz=359,slow=12,SNR=6.4						
FITZ	**Fitzroy Crossi**	**16.84**	**208**	Pn	Pn	07 46 59.1	-1.1
	0.1nm,0.3s,baz=34,slow=13,SNR=3.9						
ASAR	**Alice Springs**	**20.29**	**180**	P	P	07 47 40.3	-0.2
	2.4nm,0.7s,baz=3.9,slow=12,SNR=20						
MKAR	**Makanchi Array**	**67.37**	**324**	P	P	07 54 00.1	0.0
	0.2nm,0.5s,baz=126,slow=7.3,SNR=2.9						

MEX 26 07:50:37.8±0.9, 16°.03N×96°.60W, h10km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PANG	**Puerto Angel**	**0.38**	**161**	*i* P	Pg	07 50 45.2	-0.2
PANG				*i* S	Sg	07 50 51.3	+0.8
HUIG	**Huatulco**	**0.54**	**119**	*e*P	Pg	07 50 47.1	-1.2
HUIG				*e*S	Sg	07 50 54.3	-1.2
VHO	**Vista Hermosa**	**1.04**	**353**	*e*P	Pg	07 50 54.9	-3.0
VHO				*e*S	Sg	07 51 08.7	-2.8
PNIG	**Pinotepa**	**1.51**	**284**	*e*P	Pn	07 51 01.1	-3.9
PNIG				*i* S	Sn	07 51 18.9	-5.8
TPIG	**Tehuac#an**	**2.48**	**343**	*i* P	Pn	07 51 15.6	-2.9
TPIG				*i* S	Sn	07 51 44.6	-4.4
PHPU	**Puebla**	**3.35**	**334**	*i* P	Pn	07 51 26.8	-3.7
PHPU				*i* S	Sn	07 52 06.2	-4.2

*IDC **26** 07:51:38.1±1.4, 20°.82S×178°.81W, h567km±15km, mb3.4/16, mb1 3.6/17, mb1mx3.5/35, mbtmp4.3/17, Error ellipse: s-maj=18.3km s-min=11.5km az=143.0*

*ISCJB **26** 07:51:40.0±0.6, 21°.24S±0°.09×178°.8W±0°.1, h619km, mb3.8/16, Error ellipse: s-maj=14.8km s-min=10.2km az=24.6*

ISC 26 07:51:42.3±0.6, 21°.1S±0°.1×178°.9W±0°.1, h619km, n44, σ1=96/44, mb3.8/15, 5C-3D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**9.89**	**45**	P	P	07 53 52.6	-7.9
	1.5nm,0.3s,baz=216,slow=4.6,SNR=3.0						
AFI				S	S	07 55 40.9	-13
	1.1nm,0.3s,baz=236,slow=23,SNR=2.4						
URZ	**Urewera**	**17.41**	**191**	P	**P**	**07 55 08.1**	**-3.4**
	2.7nm,0.3s,baz=341,slow=4.6,SNR=18						
URZ				S	**S**	**07 57 57.8**	**-3.6**
	0.4nm,0.3s,baz=10.0,slow=17,SNR=4.8						
CTA	**Charters Tower**	**32.59**	**265**	P	**P**	**07 57 25.2**	**+0.1**
	2.7nm,0.4s,baz=89,slow=12,SNR=6.8						
PMG	**Port Moresby**	**34.67**	**284**	P	**P**	**07 57 42.1**	**-0.4**
	12nm,0.7s,baz=165,slow=9.3,SNR=3.6						
STKA	**Stephens Creek**	**36.76**	**245**	P	**P**	**07 58 00.1**	**+0.7**
	1.6nm,0.7s,baz=80,slow=11,SNR=5.2						
ASAR	**Alice Springs**	**43.55**	**257**	P	**P**	**07 58 53.7**	**+0.1**
	0.8nm,0.4s,baz=93,slow=7.7,SNR=24						
ASAR				PcP	**PcP**	**08 00 26.1**	**-0.9**
	0.9nm,0.5s,baz=82,slow=7.8,SNR=6.9						
ASAR				ScP	**ScP**	**08 03 26.8**	**+6.3**
	0.2nm,0.7s,baz=98,slow=3.9,SNR=4.3						
WRA	**Warramunga Arr**	**43.68**	**263**	P	**P**	**07 58 53.8**	**-0.8**
	0.4nm,0.3s,baz=96,slow=7.9,SNR=29						
WRA				S	**S**	**08 04 40.1**	**-1.2**
	0.5nm,0.8s,baz=98,slow=13,SNR=2.8						
VNDA	**Vanda**	**57.21**	**185**	P	**P**	**08 00 33.9**	**+2.3**
	1.4nm,0.6s,baz=355,slow=6.7,SNR=14						
MJAR	**Matsushiro Arr**	**70.22**	**324**	P	**P**	**08 01 53.2**	**-1.4**
	1.1nm,0.5s,baz=162,slow=7.0,SNR=4.2						
PETK	**Petropavlovsk-**	**76.67**	**346**	P	**P**	**08 02 30.0**	**-0.7**
	4.8nm,0.7s,baz=124,slow=7.1,SNR=12						
USRK	**Ussuriysk Ar.**	**79.01**	**326**	P	**P**	**08 02 43.1**	**-0.3**
	2.5nm,0.8s,baz=174,slow=1.9,SNR=6.1						
PFO	**Pinyon Flats O**	**80.62**	**49**	P	**P**	**08 02 49.6**	**-2.7**
	2.1nm,0.6s,baz=163,slow=4.3,SNR=4.3						
KLR	**Kul'dur**	**82.64**	**330**	P	**P**	**08 03 02.1**	**+0.2**
	0.6nm,0.5s,baz=76,slow=7.8,SNR=4.9						
TXAR	**Lajitas Array**	**88.11**	**58**	P	**P**	**08 03 29.7**	**+0.9**
	2.1nm,0.8s,baz=221,slow=6.2,SNR=31						
ILAR	**Eielson Array**	**89.11**	**13**	P	**P**	**08 03 31.1**	**-1.5**
	1.9nm,0.8s,baz=226,slow=5.5,SNR=19						
CMAR	**Chiang Mai Arr**	**89.53**	**290**	P	**P**	**08 03 36.8**	**+1.3**
	0.9nm,0.3s,baz=133,slow=3.3,SNR=8.2						
PDAR	**Pinedale Array**	**90.00**	**44**	P	**P**	**08 03 37.2**	**-0.2**
	2.0nm,0.7s,baz=212,slow=3.7,SNR=23						
YKA	**Yellowknife Ar**	**97.44**	**25**	P	Pdif	08 04 09.4	-1.0
	0.2nm,0.6s,baz=245,slow=4.2,SNR=4.6						
BVAR	**Borovoye Array**	**119.01**	**320**	PKP	**PKPdf**	**08 09 21.0**	**-0.6**
	1.0nm,0.4s,baz=132,slow=2.2,SNR=6.0						
SPITS	**Spitsbergen Ar**	**122.44**	**356**	PKP	**PKPdf**	**08 09 27.1**	**-0.5**
	3.3nm,0.8s,baz=104,slow=6.1,SNR=3.0						
ARU	**Arti**	**125.23**	**325**	PKP	**PKPdf**	**08 09 32.6**	**-0.8**
	5.8nm,0.2s,baz=168,slow=19,SNR=3.1						
AKTO	**Aktyubinsk**	**126.97**	**318**	PKP	**PKPdf**	**08 09 36.3**	**-0.7**
	0.8nm,0.5s,baz=82,slow=7.1,SNR=3.5						
ARCES	**ARCESS Array B**	**129.38**	**349**	PKP	**PKPdf**	**08 09 40.5**	**-0.6**
	1.8nm,0.6s,baz=41,slow=6.0,SNR=3.9						
FINES	**FINESS Array B**	**136.13**	**343**	PKP	**PKPdf**	**08 09 54.0**	**+0.1**
	1.8nm,0.8s,baz=72,slow=4.5,SNR=4.5						
FINES				SKPbc	**SKiKP**	**08 12 32.2**	**-1.7**
	2.0nm,0.9s,baz=133,slow=8.4,SNR=4.4						
NOA	**NORSAR Array B**	**139.50**	**352**	PKhKP	PKPpre	08 09 53.0	
	0.8nm,0.7s,baz=9.4,slow=2.3,SNR=3.9						
HFS	**Hagfors**	**140.02**	**350**	PKhKP	PKPpre	08 09 53.1	
	0.8nm,0.3s,baz=62,slow=3.5,SNR=11						
AKASG	**Malin Array Be**	**143.14**	**330**	PKhKP	PKPpre	08 10 04.2	
	6.1nm,0.4s,baz=42,slow=4.6,SNR=31						
SORM	**Soroca**	**145.29**	**327**	↑*i*P	**PKPbc**	**08 10 12.5**	**+0.6**
ASF	**Jabal al Asfar**	**146.31**	**297**	PKPbc	**PKPbc**	**08 10 15.6**	**+0.1**
	2.5nm,0.7s,baz=135,slow=1.4,SNR=5.4						
BRTR	**Keskin Array B**	**146.62**	**311**	PKPbc	**PKPbc**	**08 10 16.1**	**-0.1**
	1.6nm,0.5s,baz=147,slow=5.6,SNR=9.1						
BURAR	**Bucovina Array**	**147.18**	**329**	↑*i*P	**PKPbc**	**08 10 18.5**	**+1.2**
MMAI	**Mount Meron Ar**	**147.38**	**299**	PKPbc	**PKPbc**	**08 10 17.3**	**-1.0**
	2.1nm,0.4s,baz=40,slow=6.6,SNR=6.1						
VRI	**Vrincioaia**	**147.62**	**326**	↓*i*P	**PKPbc**	**08 10 19.0**	**+0.6**
TLB	**Topalu**	**147.71**	**323**	↓*i*P	**PKPbc**	**08 10 18.9**	**+0.3**
MLR	**Muntele Rosu**	**148.28**	**326**	PKPbc	**PKPbc**	**08 10 20.0**	**-0.2**
	0.8nm,0.6s,baz=36,slow=2.6,SNR=5.3						
MLR	**Muntele Rosu**	**148.28**	**326**	↑*i*P	**PKPbc**	**08 10 21.2**	**+1.0**
CLL	**Collm**	**148.47**	**346**	*i* P	**PKPbc**	**08 10 20.4**	**+0.1**
VOIR		**148.78**	**327**	↓*i*P	**PKPbc**	**08 10 21.9**	**+0.5**
BZS	**Buzias**	**150.34**	**330**	↑*i*P	**PKPbc**	**08 10 25.0**	**+0.1**
KHC	**Kasperske Hory**	**150.34**	**343**	*e*P	**PKPbc**	**08 10 24.5**	**-0.4**
GERES	**GERESS Array B**	**150.56**	**343**	PKPbc	**PKPbc**	**08 10 25.1**	**-0.4**
	1.4nm,0.6s,baz=48,slow=2.0,SNR=14						
MDVR	**Moldovita**	**150.91**	**329**	↑*i*P	**PKPbc**	**08 10 25.9**	**-0.4**
VAE	**Valguarnera**	**160.03**	**328**	PKP	**PKPdf**	**08 10 36.1**	**+4.0**
	16nm,0.4s,baz=80,slow=11,SNR=2.9						
TORD	**Torodi Ar. Bea**	**172.04**	**184**	PKP	**PKPdf**	**08 10 48.6**	**+6.6**
	0.8nm,0.9s,baz=204,slow=3.5,SNR=4.9						

IDC 26 07:59:24.6±2.1, 8°.18S×119°.09E, h0km, mb3.3/2, mb1 3.6/4, mb1mx3.3/58, mbtmp3.4/4, ML3.4/1, Error ellipse: s-maj=193.7km s-min=23.9km az=54.0, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.74**	**148**	Pn	Pn	08 02 13.2	-0.3
	baz=329,slow=12						
FITZ				Sn	Sn	08 04 22.5	-3.0
	baz=53,slow=20,SNR=1.8						
WRA	**Warramunga Arr**	**18.84**	**130**	P	P	08 03 44.9	-1.3
	0.1nm,0.3s,baz=303,slow=13,SNR=7.1						
ASAR	**Alice Springs**	**20.95**	**139**	P	P	08 04 10.5	+1.2
	0.4nm,0.4s,baz=312,slow=8.9,SNR=10.0						
MKAR	**Makanchi Array**	**63.77**	**333**	P	P	08 09 58.4	-0.1
	0.2nm,0.4s,baz=148,slow=8.5,SNR=2.3						

*MOS **26** 08:02:28.6±1.0, 7°.68N×126°.62E, h36km, mb5.5/54, MS4.5/7, Error ellipse: s-maj=9.1km s-min=5.2km az=106.0*

*NEIC **26** 08:02:29.7±0.1, 7°.56N×126°.78E, h35km, mb5.1/97, Error ellipse: s-maj=4.1km s-min=3.0km az=87.0*

NEIC Felt [IV PIVS] at Cateel; [III PIVS] at Boston and Davao; [II PIVS] at Mati, New Corella and Tagum. Also felt at Cagayan de Oro.

*DJA **26** 08:02:30.0±0.8, 8°.N±5°×12°.7E±°, h43km±6km, M5.1/35, mb5.2/35, mB5.5/13, Mw(mB)5.0/13, Mwp6.5/1*

*IDC **26** 08:02:30.6±1.6, 7°.55N×126°.69E, h44km±14km, mb4.8/50, mb1 4.8/51, mb1mx4.7/61, mbtmp5.0/51, ML3.4/1, MS4.3/29, Ms1 4.3/29, ms1mx4.1/53, Error ellipse: s-maj=13.9km s-min=7.8km az=78.0*

*MAN **26** 08:02:30, 7°.68N×126°.78E, h5km, mb5.6, ML4.6, MS4.9*

MAN INTENSITY IV - CATEEL DAVAO ORIENTAL; INTENSITY III - DAVAO CITY; INTENSITY II - TAGUM CITY.

*BJI **26** 08:02:31.9, 7°.36N×126°.91E, h87km, mb4.8/51, mB4.8/42, Ms4.6/52, Ms7 4.4/51*

*ISCJB **26** 08:02:31.6±0.5, 7°.53N±0°.02×126°.90E±0°.03, h69km±4km, mb5.0/175, Error ellipse: s-maj=4.5km s-min=2.9km az=163.7*

*GCMT **26** 08:02:33.8±0.2, 7°.56N×126°.95E, h28km, MW5.1/88, Moment Tensor Solution. s66,c102; s88,c139; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr 4.82±.22; Mθθ 3.45±.14; Mϕϕ 1.38±.17; Mrθ -0.94±.21; Mrϕ -3.46±.10; Mθϕ 2.30±.31; Best double couple: M◎6.05600×10^16 NP1 ϕ29.00000°, δ54.00000°, λ57.00000°. NP2: ϕ257.00000°, δ47.00000°, λ127.00000°. Principal axes: T 6.0470, Plg63.0000°, Azm239.0000°; N 0.0070, Plg26.0000°, Azm50.0000°; P -6.0640, Plg4.0000°, Azm142.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*KLM **26** 08:02:46.8, 7°.19N×126°.30E, h141km, mb5.1, MS6.3*

ISC 26 08:02:32.1±0.4, 7°.57N±0°.03×126°.90E±0°.04, h58km±3km, h58km:pP-P, n814, σ1=46/858, mb5.0/174, MS4.4/57, 20C-19D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.81**	**319**	↓*i*P	**Pn**	**08 02 45.6**	**-2.0**
BIPH				*i* S	**Sn**	**08 02 56.6**	**-2.4**
DMPH	**Davao City--Mi**	**1.46**	**251**	↑*e*P	**Pn**	**08 02 57.6**	**+1.4**
DMPH				*e*S	**Sn**	**08 03 20.1**	**+5.7**
KCP	**Kidapawan**	**1.88**	**253**	↑*i*P	**Pn**	**08 03 02.4**	**+0.4**
KCP				*i* S	**Sn**	**08 03 27.3**	**+2.7**
CGP	**Cagayan de Oro**	**2.35**	**292**	↑*e*P	**Pn**	**08 03 08.4**	**0.0**
CGP				*i* S	**Sn**	**08 03 39.1**	**+3.0**
GSPH	**General Santos**	**2.44**	**233**	↓*e*P	**Pn**	**08 03 08.0**	**-1.6**
CTBH	**Cotabato--PC H**	**2.66**	**263**	↓*e*P	**Pn**	**08 03 13.1**	**+0.6**
DCPH	**Dipolog City**	**3.65**	**286**	↓*e*P	**Pn**	**08 03 29.0**	**+2.9**
DCPH				*e*S	**Sn**	**08 04 12.8**	**+4.8**
TBP	**Tagbilaran**	**3.67**	**305**	*i* P	**Pn**	**08 03 27.8**	**+1.5**
TBP				*i* S	**Sn**	**08 04 11.2**	**+2.9**
LLP	**Lapu-Lapu**	**3.98**	**313**	↑*e*P	**Pn**	**08 03 31.9**	**+1.3**
LLP				*e*S	**Sn**	**08 04 18.9**	**+2.8**
SNPH	**Sibulan**	**4.03**	**296**	↓*i*P	**Pn**	**08 03 32.3**	**+1.0**
SNPH				*i* S	**Sn**	**08 04 19.4**	**+2.0**
PLP	**Palo**	**4.04**	**332**	↓*e*P	**Pn**	**08 03 29.4**	**-2.0**
SGSI	**Sangihe**	**4.10**	**200**	P	Pn	08 03 21.9	-10
RCP	**Roxas**	**5.70**	**314**	↓*e*P	**Pn**	**08 03 54.6**	**+0.4**
GTOI	**Gorontalo**	**7.91**	**210**	P	**Pn**	**08 04 24.5**	**0.0**
LBMI	**Labuha**	**8.18**	**176**	P	**Pn**	**08 04 28.3**	**+0.1**
LQP	**Lukban**	**8.36**	**321**	↑*e*P	Pn	08 04 41.8	+11
MRSI	**Marisa**	**8.61**	**215**	P	**Pn**	**08 04 35.8**	**+1.7**
MYLDM	**Lahad Datu**	**8.68**	**255**	↓P	Pn	08 04 40.8	+5.7
MYLDM	**Lahad Datu**	**8.68**	**255**	*e*Pn	Pn	08 04 40.8	+5.8
TGY	**Tagaytay City**	**8.74**	**318**	P	Pn	08 04 44.5	+8.6
	39nm,0.3s,baz=155,slow=4.0,SNR=4.6						
TGY				LR	LR	08 08 27.7	
	comp=Z,4μm,19.6s,baz=131,slow=41						
SWI	**Sorong**	**9.44**	**152**	P	**Pn**	**08 04 43.3**	**-2.2**
TSM	**Tawau**	**9.55**	**251**	↑P	**Pn**	**08 04 50.6**	**+3.6**
SANI	**Sanana**	**9.60**	**185**	P	**Pn**	**08 04 43.7**	**-4.0**
SDKM	**Sandakan**	**9.83**	**259**	↓P	Pn	08 04 56.6	+5.8
KKM	**Kota Kinabalu**	**10.72**	**263**	*e*Pn	Pn	08 05 07.5	+4.4
NLAI	**Namlea**	**10.74**	**179**	P	**Pn**	**08 05 01.8**	**-1.5**
FAKI	**Fak Fak**	**11.71**	**153**	P	**Pn**	**08 05 14.8**	**-1.7**
FAKI	**Fak Fak**	**11.71**	**153**	*e*Pn	**Pn**	**08 05 15.1**	**-1.5**
TTSI	**Tana Toraja**	**12.70**	**214**	P	**Pn**	**08 05 33.1**	**+3.1**
SPSI	**Sidrap Palu**	**13.49**	**212**	P	**Pn**	**08 05 41.7**	**+0.9**
KAPI	**Kappang**	**14.40**	**210**	*e*Pn	**Pn**	**08 05 52.9**	**0.0**
SBUM	**Sibu**	**15.48**	**252**	*e*Pn	**P**	**08 06 09.2**	**-1.1**
	119nm,0.8s						
TWG	**Pinlang**	**16.16**	**340**	*e*Pn	**P**	**08 06 17.7**	**-0.1**
	73nm,0.7s						
BBKI	**Banjar Baru**	**16.28**	**228**	P	**P**	**08 06 20.9**	**+1.7**
YULB	**Yu-li**	**16.62**	**342**	*e*Pn	**P**	**08 06 22.9**	**0.0**
	11nm,0.9s						
YULB				*e*S	**S**	**08 09 31.1**	**-2.7**
TPUB	**Ta-pu**	**16.76**	**340**	*e*Pn	**P**	**08 06 24.1**	**-0.3**
	34nm,1.1s						
TPUB				*e*Sn	**S**	**08 09 32.9**	**-3.6**
JAY	**Jayapura**	**17.03**	**126**	P	**P**	**08 06 27.8**	**+0.2**
	0.1nm,0.3s,baz=266,slow=23,SNR=7.4						
STKI	**Sintang**	**17.09**	**245**	P	**P**	**08 06 31.7**	**+3.5**
SOEI	**Soe**	**17.41**	**189**	P	**P**	**08 06 32.5**	**+0.7**
SOEI	**Soe**	**17.41**	**189**	*e*Pn	**P**	**08 06 33.0**	**+1.1**
	96nm,0.8s						
KSM	**Kuching**	**17.61**	**251**	*e*P	**P**	**08 06 34.4**	**+0.5**
	60nm,0.8s						
YHNB	**Yeheng**	**17.80**	**343**	*e*P	**P**	**08 06 38.2**	**+2.2**
	24nm,0.9s						
GUMO	**Guam**	**18.64**	**70**	LR	LR	08 12 16.7	
	comp=Z,802nm,22.0s,baz=234,slow=31						
PLAI	**Plampang**	**18.66**	**209**	P	**P**	**08 06 45.1**	**-0.3**
QZH	**Quanzhou**	**19.01**	**336**	↑*i*P	**Pn**	**08 06 49.5**	**-1.0**
QZH				S	**S**	**08 10 18.0**	**-4.0**
QZH				LR	LR		
	comp=N,1μm,15.2s						
QZH				LR	LR		
	comp=E,920nm,13.6s						
QZH				LR	LR		
	comp=Z,2μm,22.0s						
TWSI	**Taliwang, Sumb**	**19.03**	**212**	P	**P**	**08 06 49.3**	**-0.2**
SRBI	**Singaraja**	**19.43**	**217**	P	**Pn**	**08 06 55.2**	**-0.4**
QIZ	**Qiongzhong**	**20.11**	**306**	P	**P**	**08 07 01.0**	**-0.2**
QIZ				pP	**sP**	**08 07 17.0**	**-4.3**
QIZ				S	**S**	**08 10 44.5**	**+0.4**
QIZ				sS	**sS**	**08 11 10.0**	**+5.2**
QIZ				pmax	pmax		
	comp=Z,13nm,1.0s						
QIZ				LR	LR		
	comp=N,700nm,16.6s						
QIZ				LR	LR		
	comp=E,1μm,16.0s						
QIZ				LR	LR		
	comp=Z,2μm,16.6s						
QIZ	**Qiongzhong**	**20.11**	**306**	*e*P	**P**	**08 07 00.4**	**-0.8**
	44nm,1.1s						
BLJI	**Banyuglugur**	**20.19**	**221**	P	Pn	08 07 04.4	-0.1
GZH	**Guangzhou**	**20.19**	**321**	P	Pn	08 07 13.5	+9.1
GZH				S	Sn	08 11 00.0	+8.8
GZH				pmax	pmax		
	comp=Z,310nm,8.2s						
GRJI	**Gresik**	**20.35**	**225**	P	Pn	08 07 07.2	+0.8
JAGI	**Jajag, Banyuwa**	**20.38**	**219**	P	Pn	08 07 06.7	-0.1
JAGI	**Jajag, Banyuwa**	**20.38**	**219**	*e*P	Pn	08 07 05.3	-1.5
	comp=Z,49nm,0.8s						
MTN	**Manton Dam**	**20.72**	**168**	P	**P**	**08 07 06.9**	**-0.8**
	baz=21,SNR=28						
MTN	**Manton Dam**	**20.72**	**168**	*e*P	**P**	**08 07 07.0**	**-0.8**
	comp=Z,47nm,0.8s						
KDU	**Kakadu**	**20.88**	**165**	P	**P**	**08 07 08.4**	**-1.1**
	baz=21,SNR=6.4						
NGJI	**Ngawi**	**21.39**	**226**	P	**P**	**08 07 17.9**	**+2.9**
UBPT	**Khong Chiam**	**22.34**	**292**	P	**P**	**08 07 25.1**	**-0.2**
	comp=Z,38nn,1.3s,comp=Z,771nm						
UGM	**Wanagama**	**22.43**	**227**	*e*P	**P**	**08 07 26.1**	**-0.2**
	comp=Z,194nm,1.3s						
DSRI	**Dabo**	**23.66**	**251**	P	**P**	**08 07 39.5**	**+1.0**
MYKOM	**Kota Tinggi**	**23.67**	**257**	↓P	**P**	**08 07 39.4**	**+0.8**
MYKOM	**Kota Tinggi**	**23.67**	**257**	*e*P	**P**	**08 07 39.4**	**+0.8**
	comp=Z,70nm,0.8s						
KTGM	**Kuala Trenggan**	**23.72**	**266**	↓P	**P**	**08 07 39.3**	**+0.2**
SSE	**Sheshan**	**24.00**	**348**	*e*P	**P**	**08 07 43.3**	**+1.9**
SSE				pP	**sP**	**08 08 00.3**	**-2.4**
SSE				S	**S**	**08 11 56.0**	**+1.6**
SSE				sS		08 12 28.5	
SSE				pmax	pmax		
	comp=Z,22nm,0.6s						
SSE				pmax	pmax		
	comp=Z,50nm,5.0s						
SSE				LR	LR		
	comp=Z,400nm,18.8s						
SSE				LR	LR		
	comp=Z,94nm,18.8s						
SSE				LR	LR		
	comp=Z,550nm,18.6s						
KGM	**Kluang**	**24.13**	**258**	↑P	**P**	**08 07 43.4**	**+0.6**
SKNT	**Sakolnakorn**	**24.24**	**295**	P	**P**	**08 07 43.5**	**-0.3**
	comp=Z,53nm,1.3s						
KLSI		**25.25**	**242**	P	**P**	**08 07 54.8**	**+1.8**
NJ2	**Nanjing**	**25.48**	**344**	*e*P	**P**	**08 07 58.5**	**+3.6**
NJ2				S	**S**	**08 12 19.8**	**+1.7**
NJ2				pmax	pmax		
	comp=Z,7.0nm,0.5s						
NJ2				LR	LR		
	comp=Z,550nm,21.7s						
NJ2				LR	LR		
	comp=Z,910nm,15.2s						
NJ2				LR	LR		
	comp=Z,700nm,21.7s						
FITZ	**Fitzroy Crossi**	**25.54**	**183**	P	**P**	**08 07 54.7**	**-0.8**
	comp=Z,26nm,0.5s,baz=23,slow=8.2,SNR=48						
FITZ				PcP	**PcP**	**08 11 26.0**	**+0.2**
	comp=Z,6.0nm,0.5s,baz=358,slow=1.8,SNR=6.6						
FITZ	**Fitzroy Crossi**	**25.54**	**183**	P	**P**	**08 07 54.8**	**-0.8**
	baz=26,SNR=38						
FITZ	**Fitzroy Crossi**	**25.54**	**183**	*e*P	**P**	**08 07 54.9**	**-0.7**
	comp=Z,33nm,0.9s						
FITZ				PcP	**PcP**	**08 11 26.0**	**+0.2**
JNU	**Nakatsue**	**25.69**	**8**	P	**P**	**08 07 56.9**	**0.0**
	comp=Z,56nm,0.9s,baz=206,slow=3.7,SNR=16						
JNU	**Nakatsue**	**25.69**	**8**	*e*P	**P**	**08 07 56.2**	**-0.6**
	comp=Z,72nm,1.0s						
IPM	**Ipoh**	**25.91**	**265**	*e*P	**P**	**08 07 58.4**	**-0.7**
	comp=Z,21nm,1.0s						
PMG	**Port Moresby**	**26.30**	**130**	P	**P**	**08 08 02.0**	**-0.5**
PMG				pmax	pmax		
	comp=Z,44nm,1.0s						
PMG	**Port Moresby**	**26.30**	**130**	*e*P	**P**	**08 08 02.3**	**-0.2**
	comp=Z,226nm,0.9s						
BKNI	**Bangkinang**	**26.77**	**256**	*e*P	**P**	**08 08 05.7**	**-1.1**
	comp=Z,126nm,0.5s						
COEN	**Coen**	**26.81**	**143**	P	**P**	**08 08 06.5**	**-0.5**
	baz=27,SNR=12						
COEN	**Coen**	**26.81**	**143**	*e*P	**P**	**08 08 07.3**	**+0.2**
	comp=Z,95nm,1.8s						
GYA	**Guiyang**	**26.89**	**317**	P	**P**	**08 08 10.5**	**+2.7**
GYA				pP	sP	08 08 28.3	-0.8
GYA				sP	pP	08 08 38.0	+16
GYA				PP	**PnPn**	**08 08 58.5**	**+6.0**
GYA				PcP	**PcP**	**08 11 31.8**	**+2.7**
GYA				S	**S**	**08 12 39.0**	**-1.7**
GYA				sS	sS	08 13 11.3	+6.0
GYA				SS	**SnSn**	**08 13 57.5**	**+6.9**
GYA				ScP	**ScP**	**08 15 02.0**	**-2.5**
GYA				ScS	**ScS**	**08 18 52.5**	**-3.2**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,130nm,5.0s						
GYA				LR	LR		
	comp=Z,730nm,16.9s						
GYA				LR	LR		
	comp=Z,610nm,17.2s						
GYA				LR	LR		
	comp=Z,640nm,17.6s						
PHET	**Kaeng Krachan**	**27.34**	**283**	P	**P**	**08 08 15.7**	**+3.8**
	comp=Z,14nm,1.0s						
UTTA	**Uttaradit**	**27.58**	**294**	P	P	08 08 23.2	+9.2
PDSI	**Padang**	**27.68**	**253**	P	**P**	**08 08 14.8**	**-0.2**
JHJ	**Hachijo jima 2**	**28.09**	**23**	LR	LR	08 17 35.9	
	comp=Z,653nm,21.3s,baz=270,slow=32						
PSI	**Prapat**	**28.25**	**262**	P	**P**	**08 08 18.9**	**-1.3**
	comp=Z,12nm,0.7s,baz=149,slow=3.0,SNR=5.6						
PSI				PcP	**PcP**	**08 11 32.6**	**0.0**
	comp=Z,17nm,0.7s,baz=165,slow=23,SNR=7.8						
PSI	**Prapat**	**28.25**	**262**	*e*P	**P**	**08 08 19.9**	**-0.3**
PSI				*e*		08 11 33.0	
PSI				pmax	pmax		
	comp=Z,17nm,1.0s

comp=Z,220nm,1.9s
QIS Mount Isa 30.62 156 P **P** **08 08 40.2 -0.8**
baz=31,SNR=18
MAJO Matsushiro 30.62 18⇑ *i*P **P** **08 08 39.8 -1.0**
MAJO pmax pmax
comp=Z,45nm,0.8s
MAJO Matsushiro 30.62 18 *e*P **P** **08 08 40.1 -0.7**
comp=Z,24nm,1.4s
MAT Matsushiro 30.62 18 P **P** **08 08 39.8 -1.0**
MAT S **S** **08 13 44.2 +5.2**
MJAR Matsushiro Arr 30.62 18 P **P** **08 08 40.2 -0.7**
comp=Z,6.7nm,0.8s,baz=192,slow=9.4,SNR=14
MJAR PcP **PcP** **08 11 38.8 +0.6**
comp=Z,5.2nm,0.8s,baz=195,slow=3.5,SNR=8.1
MJAR LR LR 08 19 47.1
comp=Z,461nm,20.6s,baz=195,slow=34
MJB9 Matsu-Tunnel 30.63 18 *e*P **P** **08 08 40.3 -0.6**
comp=Z,5.7nm,1.3s
MTSU Mount Surprise 30.79 146 P **P** **08 08 41.7 -0.8**
baz=31,SNR=15
XAN Xi'an 31.13 330 P **P** **08 08 45.5 +0.2**
XAN pP sP 08 09 03.0 -3.8
XAN PP **PnPn** **08 09 51.8 +2.9**
XAN PcP **PcP** **08 11 39.0 -0.5**
XAN S **S** **08 13 45.3 -1.8**
XAN SS **SnSn** **08 15 34.5 +0.8**
XAN pmax pmax
comp=Z,11nm,0.6s
XAN pmax pmax
comp=Z,77nm,6.4s
XAN LR LR
comp=Z,420nm,21.3s
XAN LR LR
comp=Z,330nm,20.7s
XAN LR LR
comp=Z,760nm,21.6s
CD2 Chengdu 31.74 320 *e*P **P** **08 08 51.0 +0.2**
CD2 pP sP 08 09 09.5 -2.7
CD2 sP pP 08 09 19.0 +14
CD2 S **S** **08 13 56.0 -0.7**
CD2 sS sS 08 14 28.5 +7.1
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,220nm,5.0s
CD2 LR LR
comp=Z,1μm,18.4s
CD2 LR LR
comp=Z,1μm,17.3s
CD2 LR LR
comp=Z,1μm,17.1s
AS31 Alice Springs 31.79 168 *e*P **P** **08 08 50.0 -1.2**
comp=Z,3.7nm,0.6s
ASAR Alice Springs 31.80 168 P **P** **08 08 50.5 -0.7**
comp=Z,2.1nm,0.5s,baz=7.9,slow=9.8,SNR=26
ASAR PcP **PcP** **08 11 41.5 +0.1**
comp=Z,14nm,0.5s,baz=340,slow=2.4,SNR=31
ASAR S **S** **08 13 55.2 -2.3**
comp=Z,1.3nm,0.8s,baz=337,slow=14,SNR=4.1
ASAR ScP **ScP** **08 15 20.2 +0.2**
comp=Z,1.2nm,0.8s,baz=355,slow=1.7,SNR=4.6
ASAR LR LR 08 23 20.6
comp=Z,283nm,18.4s,baz=312,slow=39
ASAR P3KPbc 08 40 23.6
comp=Z,0.2nm,0.5s,baz=175,slow=4.5,SNR=4.5
AS01 Alice Springs 31.80 168 *e*P **P** **08 08 50.8 -0.5**
WRKA Warakurna 32.44 178 P **P** **08 08 56.4 -0.6**
baz=32,SNR=56
GIRL Giralia 32.49 202 P **P** **08 08 58.0 +0.7**
baz=33,SNR=5.5
CTA Charters Tower 33.44 146 P **P** **08 09 06.7 +1.0**
comp=Z,5.8nm,0.6s,baz=330,slow=10,SNR=9.9
CTA LR LR 08 25 16.1
comp=Z,467nm,18.2s,baz=274,slow=41
BJI Beijing 33.72 345 P **P** **08 09 09.3 +1.4**
BJI sP sP 08 09 35.5 +6.1
BJI S **S** **08 14 27.0 -0.1**
BJI sS sS 08 15 00.0 +8.1
BJI pmax pmax
comp=Z,11nm,1.3s
BJI pmax pmax
comp=Z,90nm,4.1s
BJI LR LR
comp=Z,310nm,18.8s
BJI LR LR
comp=Z,380nm,19.3s
BJI LR LR
comp=Z,250nm,20.4s
SNY Shenyang 34.24 356⇓ P **P** **08 09 13.0 +0.7**
SNY S **S** **08 14 37.8 +2.8**
SNY pmax pmax
comp=Z,35nm,0.7s
SNY pmax pmax
comp=Z,100nm,3.6s
SNY LR LR
comp=Z,560nm,20.1s
SNY LR LR
comp=Z,400nm,18.1s
SNY LR LR
comp=Z,430nm,17.5s
MEEK Meekatharra 34.95 193 P **P** **08 09 17.8 -0.8**
baz=35,SNR=29
MSHR Mys Shultsa 35.07 5⇑ *i*P **P** **08 09 20.7 +1.2**
VLA Vladivostok 35.67 6*c i*P **P** **08 09 25.6 +0.9**
VLA pmax pmax
comp=Z,79nm,1.0s
HHC Hu-ho-hao-te 35.84 340 *e*P **P** **08 09 28.0 +1.7**
HHC PP **PP** **08 10 54.8 +6.1**
HHC S **S** **08 14 56.8 -3.3**
HHC SS **SnSn** **08 17 23.5 -4.4**
HHC pmax pmax
comp=Z,12nm,0.9s
HHC pmax pmax
comp=Z,53nm,4.3s
HHC LR LR
comp=Z,410nm,15.5s
HHC LR LR
comp=Z,260nm,13.4s
HHC LR LR
comp=Z,390nm,17.7s
CN2 Changchun 36.11 358 *e*P **P** **08 09 29.5 +1.1**
CN2 *e*S **S** **08 15 06.5 +2.8**
CN2 pmax pmax
comp=Z,10.0nm,0.5s
CN2 pmax pmax
comp=Z,400nm,3.0s
CN2 LR LR
comp=Z,800nm,20.0s
CN2 LR LR
comp=Z,600nm,20.0s
CN2 LR LR
comp=Z,400nm,22.0s
USRK Ussuriysk Ar. 36.75 6 P **P** **08 09 35.0 +1.1**
comp=Z,85nm,0.8s,baz=192,slow=8.0,SNR=199
USRK LR LR 08 22 37.5
comp=Z,291nm,21.2s,baz=181,slow=33
MDJ Mudanjiang 36.97 3 P **P** **08 09 37.0 +1.2**
MDJ pP sP 08 09 53.5 -3.8
MDJ S **S** **08 15 19.8 +2.9**
MDJ pmax pmax
comp=Z,61nm,0.8s
MDJ pmax pmax
comp=Z,54nm,5.5s
MDJ LR LR
comp=Z,230nm,23.5s
MDJ LR LR
comp=Z,140nm,15.7s
MDJ LR LR
comp=Z,330nm,26.1s
MDJ Mudanjiang 36.97 3 *e*P **P** **08 09 36.7 +1.0**
comp=Z,57nm,0.9s
HNR Honiara 37.00 117 LR LR 08 25 27.8
comp=Z,198nm,18.9s,baz=309,slow=37
ERM Erimo 37.20 20 *e*P **P** **08 09 39.8 +2.1**
ERM pmax pmax
comp=Z,33nm,0.9s
ERM Erimo 37.20 20 *e*P **P** **08 09 39.8 +2.1**
comp=Z,33nm,0.9s
MORW Morawa 37.90 196 P **P** **08 09 43.5 -0.3**
baz=38,SNR=18
FORT Forrest 38.15 178 P **P** **08 09 45.6 -0.1**
baz=38,SNR=56
FORT Forrest 38.15 178 *e*P **P** **08 09 45.7 -0.1**
comp=Z,742nm,0.6s
ASAJ Asahikawa 38.90 18 P **P** **08 09 54.2 +2.2**
comp=Z,43nm,0.4s,baz=223,slow=6.8
ASAJ Asahikawa 38.90 18 *e*P **P** **08 09 53.7 +1.7**
comp=Z,131nm,1.1s
KMBL Kambalda 39.02 187 P **P** **08 09 52.8 -0.3**
baz=39,SNR=9.6
BLDU Ballidu 39.21 194 P **P** **08 09 54.5 -0.3**
baz=39,SNR=99
KLBR Kellerberrin 39.91 192 P **P** **08 10 00.5 -0.1**
baz=40,SNR=41
GTA Gaotai 39.95 327 *e*P **P** **08 10 02.0 +1.0**
GTA pP sP 08 10 19.8 -2.9
GTA sP pP 08 10 28.5 +13
GTA PcP **PcP** **08 12 06.5 +1.0**
GTA S **S** **08 16 01.8 -0.5**
GTA sS sS 08 16 32.8 +5.3
GTA SS **SS** **08 18 55.3 -5.7**
GTA pmax pmax
comp=Z,4.0nm,1.2s
GTA pmax pmax
comp=Z,86nm,6.0s
GTA LR LR
comp=Z,440nm,18.1s
GTA LR LR
comp=Z,460nm,16.6s
GTA LR LR
comp=Z,850nm,18.1s
H11S3 WAKE ISLAND Hy 40.16 70 T T 08 53 21.8
baz=262,slow=75,SNR=80
H11S1 WAKE ISLAND Hy 40.18 70 T T 08 53 22.3
baz=262,slow=75,SNR=33
H11S2 WAKE ISLAND Hy 40.18 70 T T 08 53 22.3
baz=262,slow=75,SNR=42
EIDS Eidsvold 40.33 145 *e*P **P** **08 10 04.5 +0.4**
comp=Z,9.3nm,1.0s
H11N1 WAKE ISLAND Hy 40.58 69 T T 08 53 54.5
baz=265,slow=75,SNR=66
H11N2 WAKE ISLAND Hy 40.59 69 T T 08 53 55.6
baz=265,slow=75,SNR=55
H11N3 WAKE ISLAND Hy 40.60 69 T T 08 53 57.3
baz=265,slow=75,SNR=52
BBOO Buckleboo 41.10 168 P **P** **08 10 09.6 -0.7**
baz=41,SNR=58
BBOO Buckleboo 41.10 168 *e*P **P** **08 10 09.8 -0.5**
comp=Z,21nm,0.8s
NWAO Narrogin (SRO) 41.31 192 P **P** **08 10 12.2 +0.1**
comp=Z,44nm,0.7s,baz=242,slow=7.8,SNR=32
NWAO Narrogin (SRO) 41.31 192 P **P** **08 10 12.2 +0.1**
baz=41,SNR=19
NWAO P **P** **08 10 12.2 +0.1**
baz=41,SNR=19
NWAO Narrogin (SRO) 41.31 192 *e*P **P** **08 10 12.6 +0.5**
NWAO pmax pmax
comp=Z,171nm,1.4s
NWAO Narrogin (SRO) 41.31 192 *e*P **P** **08 10 12.6 +0.5**
comp=Z,171nm,1.4s
HABR Khabarovsk 41.34 8 *e*P **P** **08 10 10.9 -1.2**
HABR *e**PP **pP** **08 10 28.2 +1.2**
HABR 08 11 48.0
HABR *e* 08 12 07.5
HABR *e*S **S** **08 16 21.4 -1.0**
HABR *e*SS **SS** **08 19 29.5 +1.4**
HABR *e* 08 20 07.5
HABR pmax pmax
comp=Z,75nm,1.7s
HABR pmax pmax
comp=N,24nm,1.6s
HABR pmax pmax
comp=E,23nm,1.6s
HABR MLR MLR
comp=Z,88nm,16.0s
YSS Yuzh-Sakhalins 41.52 16 *e*P **P** **08 10 10.9 -2.7**
YSS *e* 08 10 23.3
YSS *e* 08 11 56.0
YSS *e*S **S** **08 16 19.0 -6.1**
YSS *e*SSS SSS 08 19 25.0
YSS pmax pmax
comp=Z,30nm,0.2s
YSS MLR MLR
comp=Z,300nm,17.0s
YSS Yuzh-Sakhalins 41.52 16 *e*P **P** **08 10 15.1 +1.5**
comp=Z,50nm,0.7s
STKA Stephens Creek 41.67 161 P **P** **08 10 14.7 -0.3**
comp=Z,10nm,0.6s,baz=337,slow=8.3,SNR=46
STKA LR LR 08 31 06.0
comp=Z,327nm,18.2s,baz=317,slow=41
STKA Stephens Creek 41.67 161 P **P** **08 10 14.4 -0.6**
baz=42,SNR=31
STKA Stephens Creek 41.67 161 *e*P **P** **08 10 14.9 -0.1**
STKA pmax pmax
comp=Z,4.0nm,0.8s
STKA Stephens Creek 41.67 161 *e*P **P** **08 10 14.9 -0.1**
comp=Z,3.9nm,0.8s
KUR Kuril'sk 41.69 22 *i*P **P** **08 10 17.6 +2.6**
KLR Kul'dur 41.72 5 P **P** **08 10 15.8 +0.6**
comp=Z,14nm,0.6s,baz=196,slow=5.2,SNR=68
KLR PcP **PcP** **08 12 11.4 +0.6**
comp=Z,9.2nm,0.9s,baz=215,slow=5.2,SNR=5.2
KLR Kul'dur 41.72 5⇑ *i*P **P** **08 10 15.6 +0.4**
HTT Hallett 42.35 165 P **P** **08 10 20.3 -0.3**
baz=42,SNR=4.2
RAMN Ramite 42.78 302 *e*P **P** **08 10 23.9 -0.7**
comp=Z,22nm,0.5s
RKGY Rocky Gully 42.99 192 P **P** **08 10 26.8 +1.1**
baz=43,SNR=14
JIRN Jiri 43.36 303 *e*P **P** **08 10 28.6 -0.8**
GUN Gumba 43.70 303 *e*P **P** **08 10 30.6 -1.5**
SONM Songino Array 43.75 340 P **P** **08 10 31.4 -0.4**
comp=Z,2.6nm,0.9s,baz=158,slow=8.4,SNR=7.8
SONM PcP **PcP** **08 12 17.5 -0.4**
comp=Z,3.0nm,0.7s,baz=163,slow=4.4,SNR=5.2
SONM LR LR 08 30 57.5
comp=Z,364nm,18.0s,baz=134,slow=39
SONA1 Songino Array 43.76 340 *e*P **P** **08 10 30.8 -1.2**
KKN Kakani 44.16 302 *e*P **P** **08 10 34.5 -1.2**
DMN Daman 44.25 302 *e*P **P** **08 10 35.3 -1.1**
ARMA Armidale 44.61 149 *e*P **P** **08 10 40.1 +1.1**
comp=Z,13nm,0.8s
TYV Tymovskoe 45.09 14 *e*P **P** **08 10 42.2 -0.2**
TYV pmax pmax
comp=Z,13nm,0.8s
KOLN Koldanda 45.57 302 *e*P **P** **08 10 46.1 -0.7**
comp=Z,24nm,0.6s
PALK Pallekele 45.79 273 PcP **PcP** **08 12 26.2 +0.7**
comp=Z,9.3nm,0.9s,baz=118,slow=0.4,SNR=4.4
PYUN Piuthan 46.19 302 *e*P **P** **08 10 50.8 -0.9**
ARPS Mount Arapiles 46.28 163 P **P** **08 10 51.9 0.0**
baz=46,SNR=30
ZAK Zakamensk 46.99 339 *e*P **P** **08 10 57.3 -0.2**
ZAK *e* 08 12 28.8
ZAK pmax pmax
comp=Z,9.0nm,1.2s
TOO Toolangi 48.16 160 P **P** **08 11 06.5 0.0**
baz=48,SNR=4.8
CLNS Chul'man 49.16 359 *e*P **P** **08 11 13.8 -0.2**
CLNS pmax pmax
comp=E,7.0nm,0.9s
CLNS pmax pmax
comp=Z,26nm,0.9s
CLNS pmax pmax
comp=N,11nm,0.8s
SKR Severo-Kuril's 49.35 24 *e*P **P** **08 11 16.4 +0.9**
SKR pmax pmax
comp=Z,54nm,1.0s
WMQ Urumqi 49.73 323 P P 08 11 30.0 +11
WMQ pP sP 08 11 54.5 +14
WMQ PcP PP 08 13 03.0 -11
WMQ S S 08 18 33.5 +10
WMQ sS sS 08 18 57.8 +8.4
WMQ Urumqi 49.73 323 SS **SS** **08 21 59.5 +2.8**
WMQ pmax pmax
comp=Z,17nm,0.6s
WMQ pmax pmax
comp=Z,70nm,3.7s
WMQ LR LR
comp=N,960nm,17.5s
WMQ LR LR
comp=E,760nm,14.7s
WMQ LR LR
comp=Z,700nm,18.5s
BOD Bodaibo 51.11 351 *e*P **P** **08 11 26.6 -2.1**
BOD pmax pmax
comp=Z,16nm,1.3s
PEA0 Petropavlovsk- 51.84 23 *e*P **P** **08 11 36.4 +2.1**
PEA0B Petropavlovsk- 51.84 23 *e*P **P** **08 11 36.4 +2.1**
comp=Z,53nm,0.7s
PETK Petropavlovsk- 51.84 23 P **P** **08 11 36.6 +2.3**
comp=Z,42nm,0.6s,baz=192,slow=3.9,SNR=82
PETK LR LR 08 37 06.7
comp=Z,152nm,18.0s,baz=218,slow=40
PET Petropavlovsk 52.15 24 *e*P **P** **08 11 37.9 +1.4**
PET pmax pmax
comp=Z,59nm,0.9s
PET pmax pmax
comp=Z,100nm,19.0s
PET Petropavlovsk 52.15 24 *e*P **P** **08 11 38.0 +1.4**
comp=Z,174nm,1.5s
THN Thein Dam 53.46 305 *e*P **P** **08 11 43.8 -2.8**
THN *e*S **PcP** **08 12 56.2 +3.2**
YAK Yakutsk 54.39 2 P **P** **08 11 53.3 +0.5**
comp=Z,25nm,0.4s,baz=253,slow=2.8,SNR=8.3
YAK Yakutsk 54.39 2 *e*P **P** **08 11 52.7 -0.1**
YAK pmax pmax
comp=Z,55nm,1.0s
YAK pmax pmax
comp=N,31nm,1.1s
YAK pmax pmax
comp=E,11nm,1.3s
YAK Yakutsk 54.39 2 *e*P **P** **08 11 53.3 +0.5**
comp=E,46nm,0.6s
MK01 Makanchi Array 54.53 324 *e*P **P** **08 11 53.3 -0.9**
MK31 Makanchi Array 54.55 324 *i*P **P** **08 11 53.5 -0.8**
MK31 pmax pmax
comp=Z,5.0nm,0.8s
MK31 Makanchi Array 54.55 324 *e*P **P** **08 11 53.6 -0.7**
MKAR Makanchi Array 54.55 324 P **P** **08 11 53.9 -0.4**
comp=Z,6.7nm,0.5s,baz=123,slow=8.3,SNR=58
MKAR PcP **PcP** **08 12 56.3 -0.6**
comp=Z,17nm,0.7s,baz=119,slow=4.3,SNR=12
MKAR ScP **ScP** **08 16 50.9 +0.4**
comp=Z,0.8nm,0.7s,baz=113,slow=3.7,SNR=3.4
MKAR LR LR 08 36 52.9
comp=Z,524nm,20.3s,baz=128,slow=38
MKAR PKPPKP **P'P'df** **08 42 02.1 -5.5**
comp=Z,0.2nm,0.5s,baz=260,slow=4.8,SNR=3.6
PDGK Podgornoye 54.61 319 *i*P **P** **08 11 53.7 -1.1**
PDGK pmax pmax
comp=Z,21nm,1.0s
MAKZ Makanchi 54.74 324 P **P** **08 11 53.7 -2.0**
MAKZ pmax pmax
comp=Z,17nm,1.0s
MAKZ Makanchi 54.74 324 *e*P **P** **08 11 54.9 -0.8**
comp=Z,19nm,0.6s
MA2 Magadan 54.96 15 P **P** **08 11 58.5 +1.5**
comp=Z,15nm,0.7s,baz=185,slow=10,SNR=12
MA2 Magadan 54.96 15 *e*P **P** **08 11 58.1 +1.0**
MA2 pmax pmax
comp=Z,86nm,0.8s
MA2 Magadan 54.96 15 *e*P **P** **08 11 58.1 +1.0**
comp=Z,86nm,0.8s
KSH Kashi 55.50 313 *e*P **P** **08 12 05.5 +4.0**
KSH *e*pP sP 08 12 25.0 +1.4
KSH *e*sP pP 08 12 33.8 +17
KSH *e*PcP **PcP** **08 13 03.5 +2.5**
KSH *e*PP **PP** **08 14 12.0 +6.0**
KSH S **S** **08 19 43.5 +0.8**
KSH pmax pmax
comp=Z,78nm,5.2s
KSH LR LR
comp=Z,780nm,15.1s
KSH LR LR
comp=Z,300nm,13.9s
KSH LR LR
comp=Z,520nm,15.9s
ZAA0 Zalesovo Array 57.28 332 *e*P **P** **08 12 12.3 -1.3**
ZALV Zalesovo Beam 57.28 332 P **P** **08 12 11.8 -1.8**
comp=Z,2.1nm,0.3s,baz=130,slow=5.6,SNR=9.0
ZALV PcP **PcP** **08 13 05.9 -1.4**
comp=Z,5.1nm,0.7s,baz=131,slow=4.5,SNR=4.6
ZALV LR LR 08 37 41.9
comp=Z,243nm,21.0s,baz=72,slow=37
ZALV PKP2bc 08 42 12.1
comp=Z,0.5nm,0.2s,baz=290,slow=4.4,SNR=4.3
AAK Ala-Archa 57.68 316 PcP **PcP** **08 13 09.7 +0.2**
comp=Z,3.6nm,0.3s,baz=171,slow=5.1,SNR=5.4
SEY Seymchan 58.27 13*d i*P **P** **08 12 22.1 +1.6**
NVS Novosibirsk 58.56 332 *e*P **P** **08 12 21.2 -1.4**
NVS *e* 08 13 10.7
NVS *e*S **S** **08 20 22.3 +0.3**
NVS pmax pmax
comp=Z,11nm,0.9s
NVS pmax pmax
comp=N,6.0nm,0.8s
NVS pmax pmax
comp=E,6.0nm,0.8s
NVS smax smax
comp=N,9.0nm,1.1s
NVS smax smax
comp=E,14nm,1.6s
KURK Kurchatov 58.63 326*c e*P **P** **08 12 22.3 -0.9**
KURK pmax pmax
comp=Z,50nm,1.0s
KURK Kurchatov 58.63 326 P **P** **08 12 22.1 -1.1**
KURK P'P' 08 41 54.4
KURBB Kurchatov Arra 58.64 326 P **P** **08 12 22.1 -1.1**
comp=Z,7.9nm,0.6s,baz=125,slow=6.2,SNR=62
KURBB PKPPKP **P'P'df** **08 41 54.4 -6.9**
comp=Z,0.7nm,0.7s,baz=270,slow=3.8,SNR=7.1
MNAS Manas 59.00 315 *i*P **P** **08 12 24.9 -1.2**
MNAS pmax pmax
comp=Z,11nm,0.9s
KK31 Karatay Array 60.59 316 *i*P **P** **08 12 35.4 -1.5**
KK31 pmax pmax
comp=Z,13nm,1.0s
OTUK Ortayu 61.21 322 P **P** **08 12 39.6 -1.4**
OTUK pmax pmax
comp=Z,6.0nm,0.7s
TIXI Tiksi 64.02 1 P **P** **08 12 59.3 0.0**
comp=Z,28nm,0.5s,baz=181,slow=3.9,SNR=21
TIXI Tiksi 64.02 1 *e*P **P** **08 12 59.0 -0.2**
TIXI pmax pmax
comp=Z,50nm,0.9s
TIXI Tiksi 64.02 1 *e*P **P** **08 12 59.0 -0.2**
comp=Z,50nm,0.9s
BVA0 Borovoye Array 64.23 326 *i*P **P** **08 12 59.0 -2.0**
BVA0 pmax pmax
comp=Z,9.0nm,1.0s
BVAR Borovoye Array 64.23 326 P **P** **08 12 59.8 -1.1**
comp=Z,7.6nm,0.7s,baz=119,slow=9.2,SNR=23
BVAR PcP **PcP** **08 13 34.7 -0.7**
comp=Z,8.4nm,0.7s,baz=123,slow=5.5,SNR=6.0
BVAR S **S** **08 21 34.7 +0.6**
comp=Z,0.5nm,0.4s,baz=106,slow=16,SNR=4.6
BRVK Borovoye 64.30 326⇑ *i*P **P** **08 13 00.4 -1.0**
BRVK pmax pmax
comp=Z,31nm,1.0s
BRVK Borovoye 64.30 326 *e*P **P** **08 13 00.6 -0.8**
comp=Z,10nm,0.8s
BILL Bilibino 65.82 15⇓ *e*P **P** **08 13 11.0 0.0**
BILL *e* 08 15 40.6
BILL *e*PPP PPP 08 17 13.9
BILL *e*S SKSac 08 22 34.6 -27
BILL pmax pmax
comp=Z,6.0nm,0.9s
NRIK Noril'sk 66.76 346 P **P** **08 13 16.4 -0.6**
comp=Z,19nm,0.8s,baz=123,slow=6.3,SNR=23
NRIK PcP **PcP** **08 13 45.4 -0.1**
comp=Z,7.0nm,0.5s,baz=95,slow=4.1,SNR=4.7
NRIK LR LR 08 45 48.4
comp=Z,226nm,19.5s,baz=148,slow=39
NIKH Nikolski High 68.61 36 *e*P **P** **08 13 29.8 +0.9**
comp=Z,43nm,0.6s
GEYT Alibeck 68.66 308 P **P** **08 13 29.4 -0.3**
comp=Z,10.0nm,0.7s,baz=132,slow=4.2,SNR=17
GEYT PcP **PcP** **08 13 54.9 +0.7**
comp=Z,19nm,0.7s,baz=114,slow=1.8,SNR=14
GEYT LR LR 08 48 27.3
comp=Z,289nm,19.0s,baz=95,slow=40
AB31 Akbulak array 69.32 320 *i*P **P** **08 13 31.8 -1.6**
AB31 pmax pmax
comp=Z,3.0nm,0.7s
ABKAR Akbulak array 69.32 320 *e*P **P** **08 13 32.1 -1.3**
UNV Unalaska Valle 70.20 35 *e*P **P** **08 13 39.8 +1.1**
comp=Z,28nm,0.7s
AKUT Akutan 70.69 35 *e*P **P** **08 13 42.4 +0.8**
comp=Z,85nm,1.0s
AKTO Aktyubinsk 70.79 321 P **P** **08 13 41.3 -1.1**
comp=Z,3.1nm,0.6s,baz=94,slow=9.9,SNR=12
AKTO LR LR 08 48 12.9
comp=Z,295nm,18.7s,baz=114,slow=39
AKTO Aktyubinsk 70.79 321 P **P** **08 13 40.0 -2.4**
AKTO pmax pmax
comp=Z,6.0nm,0.8s
SVE Sverdlovsk 70.81 328 *e*P **P** **08 13 41.0 -1.4**
SVE pmax pmax

ARU **Arti** 71.81 327 P **P** 08 13 46.9 -1.5
comp=Z,4.4nm,0.2s,baz=80,slow=3.7,SNR=7.9
ARU **Arti** 71.81 327 *d i*P **P** 08 13 46.8 -1.6
ARU *PP **pP** 08 14 01.0 -3.5
ARU 08 16 25.4
ARU S **S** 08 23 02.8 -1.6
ARU SS **SS** 08 27 36.9 -4.4
ARU pmax pmax
comp=Z,16nm,1.7s
ARU MLR MLR
comp=Z,250nm,18.0s
ARU **Arti** 71.81 327 *e*P **P** 08 13 47.4 -1.1
comp=Z,8.1nm,0.7s
KIP **Kipapa** 73.42 70⇑ *e*P **P** 08 14 01.9 +3.2
KIP pmax pmax
comp=Z,219nm,1.0s
SDPT **Sand Point** 73.94 35 *e*P **P** 08 14 01.6 +0.5
comp=Z,58nm,1.1s
CHGN **Chignik** 75.25 34 *e*P **P** 08 14 09.2 +0.6
SVW2 **Sparrevohn** 77.38 29 *e*P **P** 08 14 22.7 +2.1
comp=Z,23nm,1.2s
TT01 **Tatalina** 77.41 27 *e*P **P** 08 14 21.5 +0.7
TTA **Tatalina** 77.42 27 *e*P **P** 08 14 22.5 +1.6
TTA pmax pmax
comp=Z,6.0nm,0.7s
TTA **Tatalina** 77.42 27 *e*P **P** 08 14 22.5 +1.6
comp=Z,5.8nm,0.7s
MIR **Mirnyy** 77.92 193 *i* P **P** 08 14 23.5 +0.1
MIR pmax pmax
comp=Z,6.0nm,1.2s
OHAK **Old Harbor** 78.16 33 *e*P **P** 08 14 25.2 +0.2
comp=Z,28nm,1.0s
KDAK **Kodiak Island** 78.58 33 *i* P **P** 08 14 28.4 +1.1
KDAK **Kodiak Island** 78.58 33 *e*P **P** 08 14 29.0 +1.7
comp=Z,27nm,0.6s
SPU **Mount Spurr** 79.09 29 *e*P **P** 08 14 31.1 +0.9
PPLA **Purkeypile** 79.16 27 *e*P **P** 08 14 31.9 +1.3
comp=Z,8.9nm,0.7s
GNI **Garni** 79.18 309 P **P** 08 14 30.7 -0.5
comp=Z,5.4nm,0.4s,baz=173,slow=8.4,SNR=8.2
GNI LR LR 08 54 25.5
comp=Z,132nm,20.6s,baz=70,slow=39
GNI **Garni** 79.18 309⇓ *i*P **P** 08 14 32.2 +1.0
GNI pmax pmax
comp=Z,68nm,1.2s
CAST **Castle Rocks** 79.25 27 *e*P **P** 08 14 32.5 +1.5
comp=Z,12nm,0.7s
CNPM **China Poot** 79.39 31 *e*P **P** 08 14 32.9 +1.1
comp=Z,52nm,1.4s
BRLK **Bradley Lake** 79.58 31 *e*P **P** 08 14 33.3 +0.4
comp=Z,44nm,1.3s
SUA **Susitna One** 79.74 29 *e*P **P** 08 14 34.2 +0.4
comp=Z,25nm,0.9s
ZEI **Tsey** 79.77 312 *e*P **P** 08 14 33.3 -1.2
ZEI pmax pmax
comp=Z,38nm,0.6s
KTH **Kantishna Hill** 79.78 27 *e*P **P** 08 14 35.2 +1.3
comp=Z,57nm,1.8s
BPAW **Bear Paw Mtn.** 79.78 26 *e*P **P** 08 14 35.3 +1.4
comp=Z,22nm,0.7s
MLY **Manley** 79.95 25 *e*P **P** 08 14 35.9 +1.2
comp=Z,13nm,0.6s
NCK **Nalchik** 79.98 313⇓ *e*P **P** 08 14 34.8 -0.6
NCK pmax pmax
comp=Z,8.0nm,0.6s
TRF **Thorofare Moun** 80.06 27 *e*P **P** 08 14 36.1 +0.6
comp=Z,15nm,0.8s
RC01 **Rabbit Creek A** 80.20 29 *e*P **P** 08 14 36.8 +0.7
comp=Z,20nm,0.9s
COLD **Coldfoot** 80.31 23 *e*P **P** 08 14 37.4 +0.8
comp=Z,10nm,0.8s
SEW **Seward** 80.31 30 *e*P **P** 08 14 37.6 +0.9
comp=Z,27nm,1.1s
KBZ **Khabaz** 80.49 313 P **P** 08 14 36.8 -1.2
comp=Z,10nm,1.0s,baz=77,slow=4.4,SNR=12
KBZ LR LR 08 55 34.6
comp=Z,221nm,18.2s,baz=88,slow=40
PMR **Palmer** 80.51 29 *e*P **P** 08 14 37.5 -0.2
PMR pmax pmax
comp=Z,15nm,0.7s
PMR **Palmer** 80.51 29 *e*P **P** 08 14 37.5 -0.2
comp=Z,15nm,0.7s
KVAR **Kislovodsk Arr** 80.63 313 P **P** 08 14 38.6 -0.3
comp=Z,12nm,0.7s,baz=58,slow=19,SNR=9.5
KIV **Kislovodsk** 80.63 313 *e*P **P** 08 14 39.6 +0.7
KIV pmax pmax
comp=Z,15nm,0.9s
KIV MLR MLR
comp=Z,223nm,19.0s
MCK **McKinley** 80.67 27 *e*P **P** 08 14 39.4 +0.8
MCK pmax pmax
comp=Z,35nm,0.8s
MCK **McKinley** 80.67 27 *e*P **P** 08 14 39.4 +0.8
comp=Z,34nm,0.8s
RND **Reindeer** 80.70 27 *e*P **P** 08 14 39.2 +0.4
RND pmax pmax
comp=Z,16nm,0.7s
RND **Reindeer** 80.70 27 *e*P **P** 08 14 39.2 +0.4
comp=Z,16nm,0.7s
SML **Sawmill** 80.90 29 *e*P **P** 08 14 40.9 +1.0
SML pmax pmax
comp=Z,19nm,0.7s
SML **Sawmill** 80.90 29 *e*P **P** 08 14 40.9 +1.0
comp=Z,20nm,0.7s
MDM **Murphy Dome** 81.01 25 *e*P **P** 08 14 41.5 +1.1
comp=Z,14nm,0.8s
WRH **Wood River Hil** 81.06 26 *e*P **P** 08 14 41.4 +0.7
comp=Z,14nm,1.0s
VRH **Novokhopyorsk** 81.13 321 *e*P **P** 08 14 39.8 -1.4
VRH pmax pmax
comp=Z,20nm,0.6s
COLA **College** 81.17 26 *e*P **P** 08 14 41.7 +0.5
COLA pmax pmax
comp=Z,11nm,0.9s
COLA **College** 81.17 26 *e*P **P** 08 14 41.7 +0.5
comp=Z,11nm,0.9s
CCB **Clear Creek Bu** 81.19 26 *e*P **P** 08 14 41.5 +0.2
comp=Z,20nm,1.3s
DHY **Denali Highway** 81.36 27 *e*P **P** 08 14 43.6 +1.1
comp=Z,5.8nm,0.6s
SCM **Sheep Creek Mo** 81.38 29 *e*P **P** 08 14 43.8 +1.3
SCM pmax pmax
comp=Z,20nm,0.7s
SCM **Sheep Creek Mo** 81.38 29 *e*P **P** 08 14 43.8 +1.3
comp=Z,20nm,0.7s
HDA **Harding Lake** 81.56 26 *e*P **P** 08 14 43.5 +0.2
comp=Z,34nm,1.2s
IL1 **Eielson Array** 81.58 26 *e*P **P** 08 14 43.0 -0.5
ILAR **Eielson Array** 81.58 26 P **P** 08 14 43.2 -0.2
comp=Z,5.6nm,0.6s,baz=250,slow=4.8,SNR=80
ILAR PKKPbc **PKKPbc** 08 33 15.8 -2.9
comp=Z,0.7nm,0.7s,baz=123,slow=1.9,SNR=7.2
ILB **Eielson Array** 81.58 26 *e*P **P** 08 14 43.0 -0.5
KLU **Klutina** 82.05 29 *e*P **P** 08 14 46.5 +0.5
comp=Z,7.8nm,0.6s
DIV **Divide** 82.13 29 *e*P **P** 08 14 47.5 +1.0
comp=Z,22nm,1.0s
KLMR **Klimovskoe** 82.16 330 *e*P **P** 08 14 44.0 -2.5
KLMR *eS **S** 08 24 53.4 -3.5
KLMR pmax pmax
comp=Z,14nm,0.8s
FYU **Fort Yukon** 82.25 24 *e*P **P** 08 14 47.4 +0.6
comp=Z,51nm,1.6s
BMRM **Bremner River** 82.70 29 *e*P **P** 08 14 50.1 +0.6
comp=Z,38nm,1.7s
VSR **Storozhevoye** 82.73 321 *e*P **P** 08 14 48.5 -1.2
VSR pmax pmax
comp=Z,30nm,1.5s
SOC **Sochi** 82.80 313 *e*P **P** 08 14 48.2 -2.0
SOC *e 08 18 05.0
SOC *eS **S** 08 24 58.1 -6.0
SOC *eSS **SS** 08 30 21.3 -6.2
SOC pmax pmax
comp=Z,22nm,0.8s
SOC MLR MLR
comp=Z,158nm,22.0s
DOT **Dot Lake** 82.84 27 *e*P **P** 08 14 51.2 +1.1
comp=Z,18nm,0.6s
MENT **Mentasta** 83.03 27 *e*P **P** 08 14 52.2 +1.2
comp=Z,11nm,0.5s
EGAK **Eagle** 84.03 26 *e*P **P** 08 14 57.5 +1.4
comp=Z,14nm,0.8s
OBN **Obninsk** 84.04 325 P **P** 08 14 55.3 -0.9
comp=Z,18nm,0.3s,baz=76,slow=2.9,SNR=8.5
OBN **Obninsk** 84.04 325 *ce*P **P** 08 14 54.8 -1.5
OBN *e 08 18 10.5
OBN *ePPP PPP 08 20 03.5
OBN pmax pmax
comp=Z,27nm,1.5s
OBN MLR MLR
comp=Z,343nm,18.0s
DAWY **Dawson** 84.87 26 *e*P **P** 08 15 02.0 +1.6
comp=Z,19nm,1.0s
PCA **Pinnacle** 84.91 30 *e*P **P** 08 15 00.6 -0.1
comp=Z,143nm,1.6s
ASF **Jabal al Asfar** 86.02 302 P **P** 08 15 07.3 +0.4
comp=Z,15nm,1.0s,baz=42,slow=0.4,SNR=17
PPT **Papeete** 86.14 108 LR LR 08 45 10.0
comp=Z,109nm,21.5s,baz=242,slow=30
PPT2 **Papeete2** 86.14 108 *e*S **S** 08 25 45.9 +7.5
comp=Z,133nm,24.8s
PPT2 **Papeete2** 86.14 108 *e*LR LR 08 42 32.5
comp=Z,285nm,23.2s
HYT **Haines Junctio** 86.17 29 *e*P **P** 08 15 07.9 +0.9
comp=Z,8.5nm,0.8s
INK **Inuvik** 86.55 22 *e*P **P** 08 15 09.0 +0.5
INK pmax pmax
comp=Z,6.0nm,0.8s
INK **Inuvik** 86.55 22 *e*P **P** 08 15 09.0 +0.5
comp=Z,6.5nm,0.8s
SIM **Simferopol'** 86.67 315 *de*P **P** 08 15 09.3 -0.4
SIM pmax pmax
comp=Z,46nm,0.8s
SIM pmax pmax
comp=Z,300nm,19.0s
SPA0 **Spitsbergen Ar** 86.77 349 *e*P **P** 08 15 09.2 -0.4
SPITS **Spitsbergen Ar** 86.77 349 P **P** 08 15 08.7 -0.8
comp=Z,3.8nm,0.5s,baz=98,slow=6.0,SNR=21
SPITS LR LR 08 59 06.0
comp=Z,226nm,20.5s,baz=65,slow=39
ARCES **ARCESS Array B** 86.92 340 P **P** 08 15 09.9 -0.5
comp=Z,4.7nm,0.6s,baz=72,slow=5.2,SNR=12
ARCES LR LR 08 59 37.3
comp=Z,144nm,18.2s,baz=106,slow=39
TBI **Tubuai** 87.17 114 *e*S **S** 08 25 53.5 +5.5
comp=Z,150nm,25.8s
TBI **Tubuai** 87.17 114 *e*LR LR 08 43 00.9
comp=Z,222nm,26.0s
MMAI **Mount Meron Ar** 87.18 303 P **P** 08 15 12.8 +0.3
comp=Z,12nm,0.7s,baz=82,slow=6.8,SNR=19
VNDA **Vanda** 87.19 173 P **P** 08 15 11.5 +0.1
comp=Z,9.7nm,0.7s,baz=315,slow=5.8,SNR=68
VNDA LR LR 08 53 56.0
comp=Z,96nm,19.6s,baz=344,slow=35
VNDA **Vanda** 87.19 173 *e*P **P** 08 15 11.4 -0.1
VNDA pmax pmax
comp=Z,15nm,0.9s
VNDA **Vanda** 87.19 173 *e*P **P** 08 15 11.4 -0.1
comp=Z,15nm,0.9s
MAW **Mawson** 87.40 200 P **P** 08 15 12.5 -0.1
comp=Z,2.7nm,0.6s,baz=90,slow=9.2,SNR=5.8
MAW **Mawson** 87.40 200 P **P** 08 15 12.8 +0.2
baz=87,SNR=4.7
MAW **Mawson** 87.40 200 *e*P **P** 08 15 12.6 0.0
MAW pmax pmax
comp=Z,1.0nm,1.1s
MAW **Mawson** 87.40 200 *e*P **P** 08 15 12.6 0.0
comp=Z,1.4nm,1.1s
BRTR **Keskin Array B** 87.72 310 P **P** 08 15 13.6 -1.5
comp=Z,7.8nm,0.7s,baz=103,slow=4.5,SNR=34
BRTR LR LR 08 59 42.5
comp=Z,78nm,20.6s,baz=87,slow=39
EIL **Elat** 87.98 300 P **P** 08 15 16.2 -0.1
comp=Z,10.0nm,0.7s,baz=346,slow=3.1,SNR=5.8
SBA **Scott Base** 88.09 172 *e*P **P** 08 15 16.6 +0.8
SBA pmax pmax
comp=Z,18nm,1.0s
SBA **Scott Base** 88.09 172 *e*P **P** 08 15 16.6 +0.8
comp=Z,18nm,1.0s
FINES **FINESS Array B** 88.55 332 P **P** 08 15 17.2 -1.0
comp=Z,6.4nm,0.6s,baz=73,slow=5.1,SNR=39
FINES LR LR 08 58 42.8
comp=Z,216nm,19.7s,baz=88,slow=38
CSS **Mathiatis** 88.62 305 *e*P **P** 08 15 18.4 -0.9
comp=Z,6.9nm,0.7s
AKASG **Malin Array Be** 89.03 321 P **P** 08 15 19.4 -1.4
comp=Z,11nm,0.7s,baz=66,slow=4.7,SNR=26
AKASG LR LR 08 59 09.6
comp=Z,164nm,18.9s,baz=70,slow=38
AKBB **Malin Array Si** 89.03 321 *e*P **P** 08 15 19.6 -1.2
AKBB pmax pmax
comp=Z,53nm,1.3s
AKBB **Malin Array Si** 89.03 321 *e*P **P** 08 15 19.6 -1.2
comp=Z,53nm,1.3s
KIEV **Kiev** 89.05 321 *e*P **P** 08 15 19.5 -1.3
KIEV pmax pmax
comp=Z,58nm,1.3s
KIEV **Kiev** 89.05 321 *e*P **P** 08 15 19.5 -1.3
comp=Z,58nm,1.3s
AK11 **Malin Array Si** 89.07 321 *e*P **P** 08 15 19.6 -1.4
KMBO **Kilima Mbogo** 89.80 269 P **P** 08 15 25.4 -0.1
comp=Z,15nm,0.2s,baz=12,slow=5.8,SNR=5.5
KMBO **Kilima Mbogo** 89.80 269 *i* P **P** 08 15 26.7 +1.2
KMBO pmax pmax
comp=Z,15nm,0.2s
MLR **Muntele Rosu** 92.26 316 P **P** 08 15 35.2 -1.0
comp=Z,1.3nm,0.9s,baz=67,slow=2.7,SNR=5.5
MLR **Muntele Rosu** 92.26 316 *e*P **P** 08 15 35.4 -0.8
MLR pmax pmax
comp=Z,12nm,1.3s
MLR **Muntele Rosu** 92.26 316 *e*P **P** 08 15 35.4 -0.8
comp=Z,12nm,1.3s
BUR08 **Bucovina Ar. S** 92.26 318 *e*P **P** 08 15 35.6 -0.4
LVV **L'vov** 92.48 321 *e*P **P** 08 15 35.3 -1.6
DAG **Danmarks Havn** 93.49 353⇑ *i*P **P** 08 15 39.6 -1.4
comp=Z,20nm,0.8s
DAG **Danmarks Havn** 93.49 353⇑ *i*P **P** 08 15 39.6 -1.4
DAG pmax pmax
comp=Z,15nm,0.8s
UZH **Uzhgorod** 93.89 320⇓ *i*P **P** 08 15 42.5 -0.9
UZH *i* 08 15 49.9
RES **Resolute Bay** 94.02 10 *e*P **P** 08 15 44.1 +0.6
RES pmax pmax
comp=Z,20nm,1.0s
RES **Resolute Bay** 94.02 10 *e*P **P** 08 15 44.0 +0.6
comp=Z,20nm,1.0s
TAOE **Nuku Hiva Isla** 94.04 98 *e*LR LR 08 46 13.1
comp=Z,316nm,22.0s
STHS **Stebnicka Huta** 94.33 321 *e*P **P** 08 15 45.6 +0.1
CRVS **Cervenica-Dubn** 94.34 320 *e*P **P** 08 15 45.5 0.0
HFS **Hagfors** 94.71 333 P **P** 08 15 45.4 -1.5
comp=Z,3.0nm,0.5s,baz=104,slow=6.3,SNR=22
LAST **Lasithi** 94.92 306 *e*P **P** 08 15 47.7 -0.8
comp=Z,119nm,1.9s
OJC **Ojcow** 94.99 322 *e*P **P** 08 15 48.0 -0.4
OJC pmax pmax
comp=Z,13nm,1.1s
OJC **Ojcow** 94.99 322 *e*P **P** 08 15 48.0 -0.4
comp=Z,13nm,1.1s
KECS **Kecovo** 95.08 320 *e*P **P** 08 15 48.2 -0.7
IDI **Anoyia** 95.36 307 P **P** 08 15 48.8 -1.8
comp=Z,12nm,0.8s,baz=14,slow=7.8,SNR=7.1
IDI **Anoyia** 95.36 307 *e*P **P** 08 15 49.2 -1.3
comp=Z,19nm,0.9s
NB2 **NORSAR Subarra** 95.44 334 P **P** 08 15 48.1 -2.2
comp=Z,2.8nm,0.7s,baz=66,slow=4.6
NOA **NORSAR Array B** 95.44 334 P **P** 08 15 48.9 -1.4
comp=Z,2.3nm,0.8s,baz=65,slow=4.6,SNR=7.5
NOA LR LR 09 02 12.8
comp=Z,138nm,20.4s,baz=20,slow=38
LANS **Liptovska Anna** 95.52 321 *e*P **P** 08 15 51.0 +0.1
YKA **Yellowknife Ar** 95.95 24 P **P** 08 15 53.0 +0.6
comp=Z,4.6nm,0.7s,baz=301,slow=4.7,SNR=53
YKA PP **PP** 08 19 49.1 +4.2
comp=Z,0.7nm,0.9s,baz=305,slow=7.6,SNR=5.1
YKA PKiKP **PKiKP** 08 20 31.4 +0.3
comp=Z,0.5nm,0.5s,baz=307,slow=1.9,SNR=8.8
YKA PKKPbc **PKKPdf** 08 32 38.1 -4.9
comp=Z,0.8nm,0.6s,baz=120,slow=3.0,SNR=11
YKA LR LR 08 58 43.2
comp=Z,7.7nm,21.7s,baz=0.0,slow=35
SYO **Syowa Base** 96.05 201⇑ *e*P **P** 08 15 51.8 -0.9
BSD **Bornholm Skovb** 96.09 328 *i* P **P** 08 15 52.0 -1.3
comp=Z,18nm,1.3s
BSD **Bornholm Skovb** 96.09 328 *e*P **P** 08 15 52.0 -1.3
BSD pmax pmax
comp=Z,18nm,1.3s
VYHS **Vyhne** 96.13 321 *e*P **P** 08 15 52.9 -0.8
MORC **Moravsky Berou** 96.51 322 *e*P **P** 08 15 55.2 -0.2
MORC pmax pmax
comp=Z,23nm,1.0s
MORC **Moravsky Berou** 96.51 322 *e*P **P** 08 15 55.2 -0.2
comp=Z,23nm,1.0s
DPC **Dobruska-Polom** 97.05 323 *e*P Pdif 08 15 57.8 -0.1
DPC *epP pP 08 16 12.2 -2.3
DPC AMS AMS 09 01 50.0
comp=Z,200nm,16.4s
DPC **Dobruska-Polom** 97.05 323 *e*P Pdif 08 15 57.8 -0.1
DPC *e 08 16 12.2
DPC MLR MLR
comp=Z,200nm,16.4s
UPC **Upice** 97.18 323 AMS AMS 09 02 10.0
comp=Z,300nm,21.4s
VRAC **Vranov** 97.25 322 P Pdif 08 15 58.8 0.0
comp=Z,6.5nm,0.7s,baz=78,slow=4.8,SNR=7.6
PVCC **Panska Ves** 98.03 323 AMS AMS 09 02 50.0
comp=Z,200nm,17.3s
GOPC **GO Pecny, Ondr** 98.13 323 AMS AMS 09 02 30.0
comp=Z,200nm,20.9s
PRU **Pruhonice** 98.25 323 *e*P **P** **08 16 03.0** -0.2
PRU *ex* x 08 16 13.5
PRU AMS AMS 09 07 20.0
comp=Z,200nm,19.1s
PRU **Pruhonice** 98.25 323 *e*P **P** **08 16 03.0** -0.2
PRU *e 08 16 13.5
PRU MLR MLR
comp=Z,200nm,19.1s
CLL **Collm** 98.64 325 *e*Pdif **P** **08 16 04.0** -0.9
comp=Z,4.0nm,0.7s
CLL Lm MLR 09 03 00.0
comp=N,100nm,18.9s
CLL Lm MLR 09 03 00.0
comp=E,100nm,19.8s
CLL Lm MLR 09 03 00.0
comp=Z,200nm,19.1s
CLL **Collm** 98.64 325 *e*P **P** **08 16 04.0** -0.9
CLL pmax pmax
comp=Z,4.0nm,0.7s
CLL MLR MLR
comp=Z,200nm,19.1s
KHC **Kasperske Hory** 99.15 322 *e*P **Pdif** **08 16 06.9** -0.4
KHC AMS AMS 09 03 20.0
comp=Z,200nm,21.0s
KHC **Kasperske Hory** 99.15 322 *e*P **Pdif** **08 16 06.9** -0.4
KHC MLR MLR
comp=Z,200nm,21.0s
GEC2 **GERESS Array S** 99.19 322 *e*P **Pdif** **08 16 07.3** -0.3
GEC2 pmax pmax
comp=Z,4.0nm,0.8s
GEC2 **GERESS Array S** 99.19 322 *e*P **Pdif** **08 16 07.3** -0.3
comp=Z,4.0nm,0.8s
GERES **GERESS Array B** 99.19 322 P **Pdif** **08 16 07.1** -0.4
comp=Z,3.0nm,0.7s,baz=59,slow=5.1,SNR=23
GERES LR LR 09 05 15.2
comp=Z,114nm,18.2s,baz=79,slow=38
GEA0 **GERESS Array S** 99.19 322 *e*P **Pdif** **08 16 06.6** -0.9
NKC **Novy Kostel** 99.39 324 AMS AMS 09 03 40.0
comp=Z,300nm,20.0s
RKT **Rikitea** 100.38 112 *e*LR LR 08 49 06.8
comp=Z,188nm,23.5s
NEW **Newport** 101.11 38 P **Pdif** **08 16 15.8** -0.3
baz=295
DAVOX **Davos/Dischmat** 102.38 321 P **Pdif** **08 16 21.4** -0.5
comp=Z,1.9nm,0.5s,baz=90,slow=20,SNR=3.4
HLID **Hailey** 104.83 41 P **Pdif** **08 16 32.7** -0.3
baz=296
BOZ **Bozeman (W)** 105.65 38 P **PKiKP** **08 20 50.3** +0.9
baz=299
MPMC **Manual Prospec** 105.69 49 P **PKiKP** **08 20 50.6** +0.8
baz=292
EDW2 **Edwards Air Fo** 105.74 51 P **PKiKP** **08 20 50.8** +1.0
baz=291
TPNV **Topopah Spring** 106.28 48 P **PKiKP** **08 20 51.1** +0.3
baz=293
HEC **Hector,Ludlow** 107.03 50 P **PKiKP** **08 20 51.8** -0.3
baz=292
SNOW **Snow King Moun** 107.25 40 *e*PKPdf **PKiKP** **08 20 53.9** +1.3
KEST **Kesra** 107.28 311 PKKPab PKKPab 08 32 19.6 -4.9
comp=Z,2.4nm,0.7s,baz=54,slow=18,SNR=2.6
DUG **Dugway, Tooele** 107.39 44 P **PKiKP** **08 20 54.0** +1.2
baz=296
TPFO **Pinon Flats** 107.39 51 P **PKiKP** **08 20 54.2** +1.2
baz=292
GMRC **Granite Mounta** 107.56 50 P **PKiKP** **08 20 55.0** +1.8
baz=293
BELC **Belle Mtn. Jos** 107.60 51 P **PKiKP** **08 20 54.8** +1.5
baz=292
SWSC **Sam W. Stewart** 108.15 52 P **PKiKP** **08 20 55.6** +1.4
baz=292
IRM **Iron Mountain** 108.19 50 P **PKiKP** **08 20 55.9** +1.6
baz=293
LAO **LASA Array** 108.33 35 P **PKiKP** **08 20 55.6** +1.4
baz=304
PDAR **Pinedale Array** 108.35 40 PKiKP **PKiKP** **08 20 55.5** +0.9
comp=Z,0.7nm,0.5s,baz=106,slow=1.3,SNR=6.7
PDAR PKKPbc **PKKPbc** **08 32 04.0** -2.5
comp=Z,0.3nm,0.5s,baz=116,slow=6.9,SNR=4.8
PDAR PKKPab **PKKPab** **08 32 16.5** -3.5
comp=Z,1.1nm,0.8s,baz=120,slow=6.3,SNR=9.5
WUAZ **Wupatki** 110.46 48 P **PKiKP** **08 20 59.9** +1.2
baz=296
O20A **White River Ci** 110.51 42 P **PKiKP** **08 21 00.0** +1.4
baz=300
O20A **White River Ci** 110.51 42 *e*PKPdf **PKiKP** **08 20 59.9** +1.2
214A **Organ Pipe Nat** 110.86 52 P **PKiKP** **08 21 00.2** +0.9
baz=294
RSSD **Black Hills** 111.05 37 P **PKiKP** **08 21 00.0** +0.4
baz=305
ULM **Lac du Bonnet** 111.52 28 PKiKP **PKiKP** **08 20 59.3** -0.7
comp=Z,1.7nm,0.5s,baz=346,slow=18,SNR=5.8
N23A **Red Feather La** 111.63 41 P **PKiKP** **08 21 02.2** +1.4
baz=302
MVCO **Mesa Verde** 111.75 45 P **PKiKP** **08 21 02.4** +1.2
baz=299
MVCO **Mesa Verde** 111.75 45 *e*PKPdf **PKiKP** **08 21 02.5** +1.4
A31A **Linda, St. Vin** 111.79 30 P **PKiKP** **08 21 02.4** +1.8
baz=312
SMCO **Snowmass** 111.83 43 *e*PKPdf **PKiKP** **08 21 02.7** +1.2
W18A **Petrified Fore** 111.84 48 P **PKiKP** **08 21 02.8** +1.5
baz=297
TUC **Tucson** 112.28 51 P **PKiKP** **08 21 03.0** +0.9
baz=295
ISCO **Idaho Springs** 112.42 41 P **PKiKP** **08 21 03.0** +0.5
baz=302
ISCO **Idaho Springs** 112.42 41 *e*PKIKP **PKiKP** **08 21 03.2** +0.8
ISCO **Idaho Springs** 112.42 41 *e*PKPdf **PKiKP** **08 21 03.2** +0.8
B32A **Ashes, Strandq** 112.47 30 P **PKiKP** **08 21 01.2** -0.6
baz=313
S22A **4UR Ranch, Cre** 112.65 44 P **PKiKP** **08 21 03.9** +1.0
baz=300
A33A **Warroad** 112.65 29 P **PKiKP** **08 21 01.9** -0.3
baz=314
E31A **Nome** 113.00 32 P **PKiKP** **08 21 03.0** +0.1
baz=311
B33A **Robert and Kas** 113.02 29 P **PKiKP** **08 21 02.7** -0.2
baz=314
Q24A **Divide** 113.16 42 P **PKiKP** **08 21 05.0** +1.1
baz=302
C33A **Trail** 113.28 30 P **PKiKP** **08 21 02.8** -0.6
baz=313
B34A **Aery, Baudette** 113.32 29 P **PKiKP** **08 21 03.3** -0.2
baz=314
SDCO **Great Sand Dun** 113.56 43 P **PKiKP** **08 21 05.4** +0.8
baz=301
SDCO **Great Sand Dun** 113.56 43 *e*PKPdf **PKiKP** **08 21 05.4** +0.8
D33A **AnnSam, Waubun** 113.66 30 P **PKiKP** **08 21 04.1** -0.1
baz=313
C34A **RKJ Ranch, Bem** 113.78 30 P **PKiKP** **08 21 04.2** -0.2
baz=314
B35A **Bob, Littlefor** 113.84 28 P **PKiKP** **08 21 04.3** -0.2
baz=315
E33A **Westby DABS, E** 114.01 31 P PKPdf 08 21 04.9 0.0
baz=313
D34A **Park Rapids** 114.02 30 P PKPdf 08 21 04.5 -0.4
baz=314
J30A **Dallas** 114.17 35 P PKPdf 08 21 05.3 0.0
baz=308
C35A **Jirik Farms, M** 114.19 29 P PKPdf 08 21 04.5 -0.7
baz=315
I31A **Royce, Wessing** 114.27 34 P PKPdf 08 21 05.8 +0.3
baz=309
ANMO **Albuquerque** 114.29 46 P PKPdf 08 21 07.1 +1.0
baz=299
ANMO **Albuquerque** 114.29 46 *e*PKIKP PKPdf 08 21 07.1 +1.1
ANMO **Albuquerque** 114.29 46 *e*PKPdf PKPdf 08 21 07.1 +1.1
F33A **5 Mile Ranch,** 114.31 32 P PKPdf 08 21 05.6 +0.2
baz=312
E34A **Wadena** 114.43 31 P PKPdf 08 21 05.4 -0.3
baz=313
121A **Cookes Peak, D** 114.46 49 P PKPdf 08 21 07.0 +0.6

	baz=298						
K30A	Basset	114.50	36	P	PKPdf	08 21 06.8	+0.8
	baz=308						
D35A	Remer	114.59	30	P	PKPdf	08 21 05.4	-0.6
	baz=315						
T25A	Trinidad	114.61	43	P	PKPdf	08 21 07.2	+0.6
	baz=302						
C36A	Pine Crest Far	114.69	28	P	PKPdf	08 21 05.7	-0.5
	baz=316						
E35A	Pequot Lakes	114.78	30	P	PKPdf	08 21 06.3	0.0
	baz=314						
K31A	O'Neill	115.03	36	P	PKPdf	08 21 07.1	+0.1
	baz=309						
G34A	Benson	115.05	32	P	PKPdf	08 21 07.0	+0.1
	baz=312						
J32A	Parkston	115.08	35	P	PKPdf	08 21 07.1	+0.1
	baz=310						
EYMN	Ely	115.18	27	P	PKPdf	08 21 07.1	0.0
	baz=317						
F35A	Swanville	115.18	31	P	PKPdf	08 21 07.1	-0.1
	baz=314						
D37A	Cotton	115.32	29	P	PKPdf	08 21 07.2	-0.2
	baz=316						
H34A	Spellman Lake,	115.36	32	P	PKPdf	08 21 07.9	+0.4
	baz=312						
E36A	McGregor	115.38	30	P	PKPdf	08 21 07.6	+0.1
	baz=315						
C38A	Sawbill Land.	115.45	28	P	PKPdf	08 21 07.8	+0.2
	baz=318						
K32A	Verdigre	115.46	35	P	PKPdf	08 21 07.9	+0.1
	baz=309						
ECSD	EROS Data Cent	115.53	34	P	PKPdf	08 21 08.1	+0.2
	baz=311						
ECSD	EROS Data Cent	115.53	34	*e*PKPdf	PKPdf	08 21 07.9	0.0
F36A	Milaca	115.70	30	P	PKPdf	08 21 08.4	+0.3
	baz=315						
H35A	Sunnyside Ranc	115.84	32	P	PKPdf	08 21 08.6	+0.1
	baz=313						
G36A	St. Michael	116.03	31	P	PKPdf	08 21 08.9	+0.1
	baz=314						
J34A	George	116.18	34	P	PKPdf	08 21 09.0	-0.1
	baz=312						
I35A	Creekview Farm	116.33	33	P	PKPdf	08 21 09.6	+0.2
	baz=313						
H36A	Jesseniand, He	116.39	31	P	PKPdf	08 21 10.0	+0.4
	baz=314						
K34A	Le Mars	116.50	34	P	PKPdf	08 21 09.7	0.0
	baz=311						
SPMN	Marine on St.	116.51	30	P	PKPdf	08 21 09.7	0.0
	baz=315						
M33A	Taylor Creek F	116.59	36	P	PKPdf	08 21 10.2	+0.1
	baz=310						
MNTX	Cornudas Mount	116.65	49	P	PKPdf	08 21 11.6	+1.1
	baz=299						
MNTX	Cornudas Mount	116.65	49	*e*PKPdf	PKPdf	08 21 11.5	+1.1
SCHQ	Schefferville	116.77	9	PKP	PKPdf	08 21 10.3	+0.4
	comp=Z,3.4nm,0.7s,baz=54,slow=5.3,SNR=4.5						
O32A	Brockman Farm,	116.78	37	P	PKPdf	08 21 10.2	-0.2
	baz=308						
L34A	Svendsen Farm,	116.81	35	P	PKPdf	08 21 10.2	-0.2
	baz=311						
K35A	Storm Lake	116.95	34	P	PKPdf	08 21 10.4	-0.3
	baz=312						
P32A	Huiting Farm,	116.97	38	P	PKPdf	08 21 10.8	0.0
	baz=308						
N33A	J Bar K, Exete	116.97	37	P	PKPdf	08 21 10.3	-0.4
	baz=309						
J36A	Seneca 1, Swea	117.03	33	P	PKPdf	08 21 10.7	0.0
	baz=313						
I37A	Lemond, Waseca	117.06	32	P	PKPdf	08 21 11.1	+0.3
	baz=314						
L35A	Bielow Farm, R	117.19	34	P	PKPdf	08 21 11.2	0.0
	baz=311						
O33A	Hebron	117.31	37	P	PKPdf	08 21 11.2	-0.2
	baz=309						
Q32A	Meitler Ranch,	117.38	39	P	PKPdf	08 21 12.0	+0.4
	baz=308						
MSTX	Muleshoe	117.41	46	P	PKPdf	08 21 12.4	+0.4
	baz=302						
MSTX	Muleshoe	117.41	46	*e*PKPdf	PKPdf	08 21 12.8	+0.9
J37A	Redenius Farm,	117.46	32	P	PKPdf	08 21 11.5	-0.2
	baz=314						
M35A	Neola	117.52	35	P	PKPdf	08 21 11.7	-0.1
	baz=311						
I38A	Scanlan Farm,	117.59	31	P	PKPdf	08 21 11.5	-0.4
	baz=315						
R32A	Long Quarter,	117.63	39	P	PKPdf	08 21 12.3	+0.2
	baz=307						
P33A	Williams Farm,	117.64	38	P	PKPdf	08 21 12.4	+0.3
	baz=308						
AMTX	Amarillo	117.69	44	P	PKPdf	08 21 13.0	+0.6
	baz=303						
O34A	Beatrice	117.77	37	P	PKPdf	08 21 12.2	-0.1
	baz=310						
K37A	Belmond	117.79	33	P	PKPdf	08 21 12.0	-0.2
	baz=313,SNR=7.2						
Q33A	Connelly Farm,	117.82	38	P	PKPdf	08 21 12.7	+0.3
	baz=308						
S32A	Newby Ranch, P	117.91	40	P	PKPdf	08 21 12.8	+0.1
	baz=307						
J38A	Wedel Dairy, R	118.02	32	P	PKPdf	08 21 12.3	-0.4
	baz=315						
P34A	Walnut Farm, R	118.09	37	P	PKPdf	08 21 12.6	-0.4
	baz=309						
R33A	Olander Ranch,	118.15	39	P	PKPdf	08 21 13.6	+0.5
	baz=308						
L37A	Phoenix Point,	118.17	33	P	PKPdf	08 21 12.9	-0.1
	baz=313						
O35A	Humboldt	118.18	36	P	PKPdf	08 21 12.8	-0.3
	baz=310						
T32A	Huddler Ranch,	118.23	41	P	PKPdf	08 21 14.1	+0.8
	baz=306						
K38A	Parkersburg	118.33	32	P	PKPdf	08 21 13.0	-0.3
	baz=314						
N36A	Muff Farm, Cla	118.37	35	P	PKPdf	08 21 13.7	+0.2
	baz=311						
J39A	Decorah	118.41	31	P	PKPdf	08 21 12.9	-0.5
	baz=316,SNR=6.3						
Q34A	Chapman	118.42	38	P	PKPdf	08 21 14.0	+0.4
	baz=309						
M37A	Trindle Farm,	118.49	34	P	PKPdf	08 21 14.0	+0.3
	baz=312						
KSU1	Kansas State U	118.50	38	P	PKPdf	08 21 14.2	+0.4
	baz=309						
KSU1	Kansas State U	118.50	38	*e*PKPdf	PKPdf	08 21 13.6	-0.2
L38A	Oak Wood Farm,	118.58	33	P	PKPdf	08 21 13.9	+0.1
	baz=314						
P35A	Duane Minner,	118.59	37	P	PKPdf	08 21 13.4	-0.5
	baz=310						
R34A	Isabella, Hill	118.61	39	P	PKPdf	08 21 14.4	+0.4
	baz=308						
HPIG		118.62	54	*e*PKPdf	PKPdf	08 21 15.1	+0.5
U32A	Winter Ranch,	118.65	41	P	PKPdf	08 21 14.8	+0.6
	baz=306						
T33A	Patterson Ranc	118.72	40	P	PKPdf	08 21 15.0	+0.8
	baz=307						
K39A	Oelwein	118.76	32	P	PKPdf	08 21 13.7	-0.4
	baz=315						
N37A	Lee Faris, Mou	118.83	35	P	PKPdf	08 21 14.6	+0.3
	baz=312						
J40A	Soldiers Grove	118.86	31	P	PKPdf	08 21 13.7	-0.6
	baz=316						
M38A	Pleasantville	118.95	34	P	PKPdf	08 21 14.4	-0.1
	baz=313						
Q35A	Mercer Eighty,	119.00	37	P	PKPdf	08 21 14.7	-0.1
	baz=310						
V32A	Arapaho	119.00	42	P	PKPdf	08 21 15.9	+1.1
	baz=306						
P36A	Good Intent, A	119.01	36	P	PKPdf	08 21 14.5	-0.2
	baz=311						
S34A	Willow Spring	119.07	39	P	PKPdf	08 21 15.4	+0.5
	baz=308						
TX31	Lajitas Ar. Si	119.08	51	*e*PKPdf	PKPdf	08 21 16.4	+1.1
TXAR	Lajitas Array	119.08	51	PKP	PKPdf	08 21 16.3	+1.0
	comp=Z,2.6nm,0.6s,baz=343,slow=0.8,SNR=60						
TXAR				PKKPbc	PKKPbc	08 31 28.2	-1.4
	comp=Z,0.8nm,0.7s,baz=122,slow=5.5,SNR=9.9						
L39A	Vinton	119.11	32	P	PKPdf	08 21 14.5	-0.3
	baz=315,SNR=5.2						
K40A	Colesburg	119.15	31	P	PKPdf	08 21 14.5	-0.4
	baz=316,SNR=6.3						
U33A	Lingo Farm, Me	119.19	41	P	PKPdf	08 21 15.5	+0.3
	baz=307						
W32A	Sentinel	119.21	43	P	PKPdf	08 21 15.7	+0.4
	baz=305						
J41A	Loganville	119.24	30	P	PKPdf	08 21 14.8	-0.2
	baz=317						
O37A	Wolven Farm, M	119.26	35	P	PKPdf	08 21 15.3	+0.1
	baz=312						
Q36A	Arnold C. Orve	119.28	37	P	PKPdf	08 21 14.7	-0.6
	baz=310						
N38A	Joes South For	119.36	34	P	PKPdf	08 21 15.1	-0.2
	baz=313						
T34A	McClaskey Farm	119.43	40	P	PKPdf	08 21 15.8	+0.2
	baz=308						
V33A	Loseen Ranch,	119.44	41	P	PKPdf	08 21 16.2	+0.5
	baz=306						
JFWS	Jewell Farm	119.45	31	*e*PKIKP	PKPdf	08 21 14.7	-0.7
JFWS	Jewell Farm	119.45	31	*e*PKPdf	PKPdf	08 21 14.7	-0.7
M39A	Webster	119.47	33	P	PKPdf	08 21 15.5	0.0
	baz=314						
P37A	Lathrop	119.53	36	P	PKPdf	08 21 15.5	-0.2
	baz=312,SNR=5.2						
L40A	Anamosa	119.56	32	P	PKPdf	08 21 15.3	-0.4
	baz=316						
U34A	Anderson Ranch	119.57	40	P	PKPdf	08 21 16.2	+0.3
	baz=307						
S35A	Otter Creek Ra	119.57	39	P	PKPdf	08 21 16.1	+0.2
	baz=309						
X32A	Elmer	119.58	43	P	PKPdf	08 21 16.2	+0.2
	baz=305						
K41A	Shullsburg	119.65	31	P	PKPdf	08 21 15.4	-0.4
	baz=317						
R36A	Gordon, Harris	119.67	38	P	PKPdf	08 21 16.0	0.0
	baz=310						
N39A	Derby Farms, D	119.70	34	P	PKPdf	08 21 15.5	-0.5
	baz=314						
W33A	Caddo, Fort Co	119.72	42	P	PKPdf	08 21 17.1	+0.8
	baz=306						
WMOK	Wichita Mounta	119.75	43	P	PKPdf	08 21 16.6	+0.3
	baz=305						
WMOK	Wichita Mounta	119.75	43	*e*PKIKP	PKPdf	08 21 16.8	+0.5
WMOK	Wichita Mounta	119.75	43	*e*PKPdf	PKPdf	08 21 16.8	+0.5
T35A	Sooner Cattle	119.93	39	P	PKPdf	08 21 17.1	+0.5
	baz=308						
L41A	Preston	119.93	31	P	PKPdf	08 21 17.8	+1.4
	baz=316						
V34A	Guthrie	119.94	41	P	PKPdf	08 21 17.4	+0.8
	baz=307						
V34A	Guthrie	119.94	41	*e*PKPdf	PKPdf	08 21 17.2	+0.6
P38A	Dawn	119.98	35	P	PKPdf	08 21 16.7	+0.1
	baz=312,SNR=6.7						
S36A	Lake Cedric, C	119.99	38	P	PKPdf	08 21 16.8	+0.1
	baz=310						
X33A	Lawton	120.05	43	P	PKPdf	08 21 17.4	+0.5
	baz=306						
R37A	Teagarden Farm	120.08	37	P	PKPdf	08 21 16.6	-0.2
	baz=310,SNR=6.8						
O39A	Kirksville	120.11	34	P	PKPdf	08 21 16.8	0.0
	baz=314,SNR=6.2						
U35A	Pawnee	120.12	40	P	PKPdf	08 21 17.5	+0.5
	baz=308						
W34A	Bridge Creek,	120.13	42	P	PKPdf	08 21 17.8	+0.8
	baz=306						
W34A	Bridge Creek,	120.13	42	*e*PKPdf	PKPdf	08 21 18.4	+1.3
T36A	Boggs Farm, Ca	120.23	39	P	PKPdf	08 21 17.5	+0.3
	baz=309						
Y33A	Hilltop Ranch,	120.27	43	P	PKPdf	08 21 17.9	+0.6
	baz=305						
ABTX	Abilene, Hawle	120.34	45	P	PKPdf	08 21 18.0	+0.4
	baz=304						
Q38A	Cooks Store, C	120.37	36	P	PKPdf	08 21 17.3	-0.1
	baz=312						
V35A	Meyer Ranch, C	120.42	41	P	PKPdf	08 21 18.1	+0.5
	baz=308						
S37A	Fort Scott	120.44	38	P	PKPdf	08 21 17.7	+0.2
	baz=310,SNR=8.7						
X34A	Smith Ranch, M	120.46	42	P	PKPdf	08 21 18.6	+0.9
	baz=306						
P39B	Salisbury	120.51	35	P	PKPdf	08 21 17.6	0.0
	baz=313,SNR=7.5						
O40A	La Belle	120.57	34	P	PKPdf	08 21 17.5	-0.1
	baz=314						
Z33A	Whitaker Ranch	120.58	44	P	PKPdf	08 21 18.8	+0.9
	baz=305						
Q39A	Willow Grove F	120.69	35	P	PKPdf	08 21 18.2	+0.3
	baz=313,SNR=17						
R38A	Fenwick Farm,	120.71	37	P	PKPdf	08 21 17.5	-0.5
	baz=311,SNR=5.2						
U36A	Oologah	120.74	39	P	PKPdf	08 21 18.4	+0.3
	baz=309						
W35A	Tecumseh	120.77	41	P	PKPdf	08 21 18.7	+0.5
	baz=307						
T37A	Cheneyville 18	120.79	38	P	PKPdf	08 21 18.4	+0.2
	baz=310						
133A	Hamilton Ranch	120.86	45	P	PKPdf	08 21 19.1	+0.6
	baz=304						
P40A	Paris	120.88	35	P	PKPdf	08 21 18.3	0.0
	baz=314						
Y34A	Reagan Ranch,	120.89	43	P	PKPdf	08 21 19.1	+0.6
	baz=306						
V36A	Jenks	120.98	40	P	PKPdf	08 21 19.2	+0.6
	baz=308						
TUL1	Leonard	121.00	40	P	PKPdf	08 21 19.1	+0.4
	baz=309						
TUL1	Leonard	121.00	40	*e*PKPdf	PKPdf	08 21 19.7	+1.1
S38A	Stockton	121.08	37	P	PKPdf	08 21 18.6	-0.1
	baz=311,SNR=11						
Z34A	Collier Ranch,	121.12	44	P	PKPdf	08 21 19.5	+0.6
	baz=306						
U37A	Salina	121.12	39	P	PKPdf	08 21 19.3	+0.4
	baz=309						
O41A	Passleys Farm,	121.12	33	P	PKPdf	08 21 18.6	-0.1
	baz=315,SNR=10						
R39A	Chumby, Stover	121.14	36	P	PKPdf	08 21 19.0	+0.2
	baz=312,SNR=12						
X35A	Drake	121.15	42	P	PKPdf	08 21 19.0	+0.1
	baz=307						
W36A	Wetumka	121.20	41	P	PKPdf	08 21 19.8	+0.7
	baz=308						
233A	Rising Star	121.20	45	P	PKPdf	08 21 19.7	+0.5
	baz=304						
T38A	Diamond	121.23	38	P	PKPdf	08 21 19.4	+0.3
	baz=310,SNR=13						
Q40A	Laux Farm, Aux	121.23	35	P	PKPdf	08 21 18.9	-0.1
	baz=313						
S39A	Bolivar	121.39	37	P	PKPdf	08 21 19.6	+0.3
	baz=312,SNR=31						
JCT	Junction City	121.39	47	P	PKPdf	08 21 20.5	+0.9
	baz=302						
JCT	Junction City	121.39	47	*e*PKIKP	PKPdf	08 21 20.3	+0.7
JCT	Junction City	121.39	47	*e*PKPdf	PKPdf	08 21 20.3	+0.7
Y35A	Marietta	121.40	43	P	PKPdf	08 21 20.1	+0.6
	baz=306						
V37A	Hulbert	121.43	40	P	PKPdf	08 21 19.9	+0.5
	baz=309,SNR=15						
X36A	Centrahoma	121.46	42	P	PKPdf	08 21 20.3	+0.7
	baz=307,SNR=15						
134A	White-Moore Ra	121.46	44	P	PKPdf	08 21 20.5	+0.9
	baz=305						
O42A	Bath	121.50	33	P	PKPdf	08 21 19.4	-0.1
	baz=316						
333A	Richland Sprin	121.52	46	P	PKPdf	08 21 20.2	+0.4
	baz=304						
U38A	Gravette	121.55	39	P	PKPdf	08 21 19.9	+0.2
	baz=310,SNR=19						
Z35A	Perchaven, San	121.59	43	P	PKPdf	08 21 20.7	+0.8
	baz=306						
R40A	Maddies Statio	121.60	36	P	PKPdf	08 21 20.0	+0.3
	baz=313,SNR=18						
HDIL	Hopedale	121.65	32	P	PKPdf	08 21 19.7	-0.1
	baz=317						
HDIL	Hopedale	121.65	32	*e*PKPdf	PKPdf	08 21 19.9	+0.2
W37B	Quinton	121.71	40	P	PKPdf	08 21 20.8	+0.8
	baz=308,SNR=13						
234A	Clairette	121.75	45	P	PKPdf	08 21 20.9	+0.7
	baz=305						
433A	Art	121.76	47	P	PKPdf	08 21 20.8	+0.5
	baz=303						
P42A	Winchester	121.79	33	P	PKPdf	08 21 20.2	+0.1
	baz=315						
T39A	Clever	121.79	37	P	PKPdf	08 21 20.5	+0.4
	baz=311,SNR=17						
TOA0	Torodi Ar. Sit	121.81	291	*e*PKPdf	PKPdf	08 21 20.1	-0.6
TORD	Torodi Ar. Bea	121.81	291	PKP	PKPdf	08 21 20.1	-0.6
	comp=Z,5.8nm,0.4s,baz=65,slow=2.0,SNR=131						
TORD				PKKPbc	PKKPbc	08 31 18.8	-0.2
	comp=Z,0.5nm,0.5s,baz=269,slow=2.9,SNR=7.4						
V38A	Canehill	121.91	39	P	PKPdf	08 21 20.5	+0.1
	baz=310,SNR=16						
Y36A	Durant	121.91	42	P	PKPdf	08 21 21.3	+0.9
	baz=307,SNR=28						
HHAR	Hobbs	121.93	39	*e*PKPdf	PKPdf	08 21 20.5	0.0
S40A	Lebanon	121.93	36	P	PKPdf	08 21 20.5	+0.1
	baz=312,SNR=6.0						
135A	Vickery Place,	121.94	44	P	PKPdf	08 21 21.8	+1.3
	baz=306,SNR=7.9						
334A	Lometa	122.05	46	P	PKPdf	08 21 21.4	+0.6
	baz=304,SNR=12						
X37A	Clayton	122.09	41	P	PKPdf	08 21 21.6	+0.8
	baz=308,SNR=9.8						
U39A	Green Forest	122.15	38	P	PKPdf	08 21 20.9	0.0
	baz=311,SNR=17						
Q42A	Golden Eagle	122.16	34	P	PKPdf	08 21 21.0	+0.2
	baz=315						
533A	Kerrville	122.17	47	P	PKPdf	08 21 21.6	+0.5
	baz=303						
Z36A	Blue Ridge	122.18	43	P	PKPdf	08 21 21.7	+0.7
	baz=307						
T40A	Mansfield	122.22	37	P	PKPdf	08 21 21.1	+0.2
	baz=312,SNR=17						
WHTX	Lake Whitney,	122.23	45	P	PKPdf	08 21 22.2	+1.1
	baz=305,SNR=9.8						
WHTX	Lake Whitney,	122.23	45	*e*PKPdf	PKPdf	08 21 22.1	+1.0
Y37A	Hugo	122.30	42	P	PKPdf	08 21 21.7	+0.5
	baz=308						
434A	Burnet	122.32	46	P	PKPdf	08 21 21.8	+0.4
	baz=304,SNR=7.7						
W38A	Poteau	122.34	40	P	PKPdf	08 21 22.1	+0.9
	baz=309,SNR=10						
S41A	Jillco Farms,	122.38	36	P	PKPdf	08 21 21.6	+0.3
	baz=313,SNR=19						
X38A	Whitesboro	122.39	41	P	PKPdf	08 21 22.4	+1.1
	baz=309,SNR=9.2						
633A	Saathoff Ranch	122.39	48	P	PKPdf	08 21 22.4	+0.9
	baz=302						
V39A	Pettigrew	122.40	39	P	PKPdf	08 21 21.5	+0.1
	baz=310,SNR=12						
832A	Faith Ranch, C	122.41	50	P	PKPdf	08 21 22.9	+1.3
	baz=301,SNR=19						
U40A	Yellville	122.55	38	P	PKPdf	08 21 21.9	+0.3
	baz=311,SNR=30						
136A	Ennis	122.59	44	P	PKPdf	08 21 22.8	+1.1
	baz=306,SNR=7.2						
Q43A	New Douglas	122.60	33	P	PKPdf	08 21 21.7	+0.1
	baz=316						
534A	Blanco	122.60	47	P	PKPdf	08 21 22.7	+0.8
	baz=303,SNR=16						
335A	Moody	122.65	45	P	PKPdf	08 21 22.9	+1.0
	baz=305,SNR=13						
733A	Divot King Ran	122.70	49	P	PKPdf	08 21 23.5	+1.4
	baz=302,SNR=7.9						
W39A	Magazine	122.72	39	P	PKPdf	08 21 22.4	+0.4
	baz=310,SNR=13						
T41A	Mountain View	122.74	36	P	PKPdf	08 21 22.2	+0.2
	baz=313,SNR=9.7						
Z37A	Pogue Cattle C	122.77	42	P	PKPdf	08 21 23.0	+0.9
	baz=307						
435B	Jarrell	122.82	46	P	PKPdf	08 21 23.2	+1.0
	baz=304						
833A	Chaparral WMA,	122.83	49	P	PKPdf	08 21 24.0	+1.6
	baz=302,SNR=16						
Y38A	Idabel	122.91	41	P	PKPdf	08 21 22.9	+0.5
	baz=308,SNR=6.6						
SFIN	Lafayette	122.92	31	P	PKPdf	08 21 22.5	+0.3
	baz=319						
V40A	Witts Springs	122.93	38	P	PKPdf	08 21 22.5	+0.1
	baz=311,SNR=20						
X39A	Fountain Ranch	122.95	40	P	PKPdf	08 21 23.5	+1.1
	baz=309,SNR=31						
Q44A	Meyer Farm, Va	123.00	33	P	PKPdf	08 21 22.8	+0.4
	baz=316						
336A	Riesel	123.00	45	P	PKPdf	08 21 23.7	+1.2
	baz=305,SNR=5.4						
634A	China Grove, S	123.04	48	P	PKPdf	08 21 23.7	+0.9
	baz=303						
137A	Heron Place, G	123.04	43	P	PKPdf	08 21 24.3	+1.7
	baz=307,SNR=5.3						
TRQ	Mont Tremblant	123.12	18	*e*PKPdf	PKPdf	08 21 22.5	0.0
U41A	Viola	123.12	37	P	PKPdf	08 21 23.1	+0.4
	baz=312,SNR=16						
Z38A	Mt. Pleasant	123.16	42	P	PKPdf	08 21 23.8	+1.0
	baz=308						
W40A	Ferguson Farm,	123.17	39	P	PKPdf	08 21 23.2	+0.4
	baz=311						
734A	La Parita Cree	123.18	48	P	PKPdf	08 21 24.7	+1.8
	baz=303,SNR=7.0						
535A	Dale	123.25	47	P	PKPdf	08 21 24.4	+1.3
	baz=304						
MIAR	Mount Ida	123.27	40	P	PKPdf	08 21 23.9	+0.9
	baz=310,SNR=24						
MIAR	Mount Ida	123.27	40	*e*PKIKP	PKPdf	08 21 23.9	+0.9
MIAR	Mount Ida	123.27	40	*e*PKPdf	PKPdf	08 21 23.9	+0.9
933A	Laredo	123.29	50	P	PKPdf	08 21 25.2	+2.0
	baz=301,SNR=17						
Y39A	Lockesburg	123.32	41	P	PKPdf	08 21 24.0	+0.8
	baz=309,SNR=7.8						
V41A	Mountainview	123.35	38	P	PKPdf	08 21 23.2	0.0
	baz=312,SNR=5.1						
S43A	Fulton Ridge,	123.35	35	P	PKPdf	08 21 22.9	-0.2
	baz=315						
237A	Washetta, Mont	123.36	44	P	PKPdf	08 21 24.9	+1.7
	baz=307,SNR=6.9						
R44A	Waltonville	123.43	34	P	PKPdf	08 21 23.4	+0.2
	baz=316						
138A	Matatall Enter	123.45	43	P	PKPdf	08 21 24.7	+1.3
	baz=308						
635A	Leesville	123.46	47	P	PKPdf	08 21 24.8	+1.3
	baz=304						
U42A	Revenden	123.52	37	P	PKPdf	08 21 23.4	0.0
	baz=313						
834A	Tilden	123.56	49	P	PKPdf	08 21 25.6	+1.8
	baz=302,SNR=6.5						
536A	Bastrop	123.59	46	P	PKPdf	08 21 24.8	+1.1
	baz=304						
OLIL	Olney	123.61	33	*e*PKPdf	PKPdf	08 21 24.4	+0.8
W41B	Gary Mavity, V	123.69	38	P	PKPdf	08 21 23.9	0.0
	baz=311						
Z39A	Irene McRaven,	123.70	41	P	PKPdf	08 21 24.8	+0.9
	baz=309						
PBMO	Poplar Bluff	123.70	36	*e*PKPdf	PKPdf	08 21 23.6	-0.2
337A	Centerville	123.71	44	P	PKPdf	08 21 25.4	+1.4
	baz=306						
735A	Kenedy	123.72	48	P	PKPdf	08 21 25.5	+1.5
	baz=303						
S44A	Carbondale	123.73	34	P	PKPdf	08 21 24.3	+0.5
	baz=316						
X40A	Basin Creek Fa	123.78	39	P	PKPdf	08 21 25.4	+1.4
	baz=310						
V42A	Cord	123.80	37	P	PKPdf	08 21 24.0	0.0
	baz=313						
Y40A	Okolona	123.80	40	P	PKPdf	08 21 24.5	+0.5
	baz=310						
238A	Jacksonville	123.83	43	P	PKPdf	08 21 25.1	+1.0
	baz=307						
934A	Benavides	123.86	50	P	PKPdf	08 21 26.2	+1.9
	baz=302						
UALR	University of	123.90	39	*e*PKPdf	PKPdf	08 21 25.2	+1.0
636A	Smothers Creek	123.93	47	P	PKPdf	08 21 26.7	+2.3
	baz=304,SNR=11						
X41A	Kaden, Bauxite	123.97	39	P	PKPdf	08 21 24.8	+0.5
	baz=311						
835A	Beeville	124.02	48	P	PKPdf	08 21 26

339A	**Huntington** baz=307	**124.61**	**43**	P		**PKPdf**	**08 21 26.4 +0.7**
V44A	**Blytheville** baz=314	**124.67**	**36**	P		**PKPdf**	**08 21 26.2 +0.6**
240A	**Hunter Patters** baz=308	**124.72**	**42**	P		**PKPdf**	**08 21 26.7 +0.8**
737A	**Port Lavaca** baz=304	**124.78**	**47**	P		**PKPdf**	**08 21 26.9 +0.8**
035Z	**Hargill** baz=302	**124.80**	**50**	P		**PKPdf**	**08 21 27.5 +1.3**
141A	**Papa Simpson,** baz=310	**124.93**	**41**	P		**PKPdf**	**08 21 27.3 +1.1**
WCl	**Wyandotte Cave**	**124.94**	**32**	*e*PKIKP		**PKPdf**	**08 21 26.6 +0.4**
WCl	**Wyandotte Cave**	**124.94**	**32**	*e*PKPdf		**PKPdf**	**08 21 26.6 +0.4**
X43A	**Marvell** baz=312	**124.97**	**38**	P		**PKPdf**	**08 21 26.9 +0.7**
340A	**Bronson** baz=308	**125.02**	**43**	P		**PKPdf**	**08 21 27.5 +1.1**
ACSO	**Alum Creek Sta**	**125.02**	**28**	*e*PKPdf		**PKPdf**	**08 21 26.4 +0.2**
Z42A	**Norrel Spur, H** baz=311	**125.12**	**40**	P		**PKPdf**	**08 21 27.6 +1.0**
V45A	**Humboldt** baz=315	**125.28**	**36**	P		**PKPdf**	**08 21 27.1 +0.2**
241A	**Mo Tay, Goldon** baz=309	**125.29**	**42**	P		**PKPdf**	**08 21 28.3 +1.4**
Y43A	**Makayla and Ka** baz=312	**125.34**	**39**	P		**PKPdf**	**08 21 27.9 +0.9**
440A	**Kirbyville** baz=306	**125.38**	**44**	P		**PKPdf**	**08 21 28.5 +1.4**
M54A	**Oil Creek Stat** baz=327	**125.42**	**24**	P		**PKPdf**	**08 21 27.0 0.0**
MDV	**Middlebury**	**125.54**	**18**	*e*PKPdf		**PKPdf**	**08 21 27.9 +0.8**
W45A	**Hickory Valley** baz=314	**125.55**	**36**	P		**PKPdf**	**08 21 27.5 +0.1**
341A	**Kurthwood** baz=309	**125.55**	**43**	P		**PKPdf**	**08 21 28.8 +1.4**
142A	**Monroe** baz=310	**125.59**	**41**	P		**PKPdf**	**08 21 28.2 +0.7**
WVT	**Waverly**	**125.64**	**35**	*e*PKIKP		**PKPdf**	**08 21 27.8 +0.3**
WVT	**Waverly**	**125.64**	**35**	*e*PKPdf		**PKPdf**	**08 21 27.8 +0.3**
N54A	**Moraine State** baz=327	**125.74**	**25**	P		**PKPdf**	**08 21 27.9 +0.3**
Y44A	**Strider, Charl** baz=313	**125.75**	**38**	P		**PKPdf**	**08 21 28.6 +0.9**
242A	**Grayson** baz=310	**125.77**	**41**	P		**PKPdf**	**08 21 28.7 +0.8**
LMN	**Caledonia Moun**	**125.79**	**10**	*e*PKPdf		**PKPdf**	**08 21 28.0 +0.4**
143A	**Socs Landing,** baz=311	**125.84**	**40**	P		**PKPdf**	**08 21 28.8 +0.8**
OXF	**Oxford**	**125.86**	**37**	*e*PKIKP		**PKPdf**	**08 21 28.7 +0.7**
OXF	**Oxford**	**125.86**	**37**	*e*PKPdf		**PKPdf**	**08 21 28.7 +0.7**
441A	**DeRidder** baz=308	**125.90**	**43**	P		**PKPdf**	**08 21 29.5 +1.4**
X45A	**UM Field Stati** baz=314	**125.93**	**37**	P		**PKPdf**	**08 21 28.3 +0.2**
Z44A	**Pea Ridge, Bel** baz=312	**126.08**	**39**	P		**PKPdf**	**08 21 29.0 +0.6**
HNH	**Hanover**	**126.08**	**17**	*e*PKPdf		**PKPdf**	**08 21 28.5 +0.3**
342A	**Flagon Creek P** baz=309	**126.09**	**42**	P		**PKPdf**	**08 21 29.9 +1.4**
Y45A	**Yeager Farm, C** baz=313	**126.23**	**38**	P		**PKPdf**	**08 21 29.1 +0.4**
BINY	**Binghamton**	**126.23**	**21**	*e*PKPdf		**PKPdf**	**08 21 29.3 +0.8**
Z45A	**Winona** baz=313	**126.47**	**38**	P		**PKPdf**	**08 21 29.8 +0.6**
144A	**Alexander Plac** baz=312	**126.51**	**40**	P		**PKPdf**	**08 21 30.0 +0.7**
Y46A	**Houston** baz=314	**126.63**	**37**	P		**PKPdf**	**08 21 29.5 +0.1**
VBMS	**Vicksburg** baz=312	**126.72**	**40**	P		**PKPdf**	**08 21 30.3 +0.6**
244A	**Avery, Jackson** baz=311	**126.73**	**40**	P		**PKPdf**	**08 21 30.5 +0.8**
443A	**Delano Plantat** baz=310	**126.84**	**42**	P		**PKPdf**	**08 21 30.9 +1.0**
145A	**Houston Renfro** baz=312	**126.84**	**39**	P		**PKPdf**	**08 21 30.7 +0.8**
SSPA	**Standing Stone**	**126.87**	**24**	*e*PKPdf		**PKPdf**	**08 21 30.6 +0.9**
O56A	**Blue Knob Stat** baz=328	**126.91**	**24**	P		**PKPdf**	**08 21 30.5 +0.6**
Z46A	**Louisville** baz=314	**127.05**	**38**	P		**PKPdf**	**08 21 31.1 +0.8**
344A	**Westbrook Farm** baz=311	**127.09**	**41**	P		**PKPdf**	**08 21 31.4 +1.0**
Y47A	**UCPARC, Winfie** baz=315	**127.22**	**37**	P		**PKPdf**	**08 21 30.6 0.0**
245A	**Little AP, Sta** baz=312	**127.24**	**40**	P		**PKPdf**	**08 21 31.6 +0.9**
146A	**Union** baz=313	**127.36**	**39**	P		**PKPdf**	**08 21 31.3 +0.3**
SWET	**Sewanee**	**127.37**	**34**	*e*PKPdf		**PKPdf**	**08 21 31.2 +0.3**
N59A	**State Game Lan** baz=332	**127.43**	**22**	P		**PKPdf**	**08 21 31.5 +0.6**
444A	**Pine Grove** baz=310	**127.55**	**42**	P		**PKPdf**	**08 21 31.1 -0.2**
Z47A	**Carrollton** baz=314	**127.58**	**37**	P		**PKPdf**	**08 21 31.8 +0.5**
345A	**Thompson Farm,** baz=311	**127.63**	**40**	P		**PKPdf**	**08 21 32.1 +0.7**
Z48A	**Northport** baz=315	**127.76**	**37**	P		**PKPdf**	**08 21 31.7 0.0**
147A	**Livingston** baz=314	**127.82**	**38**	P		**PKPdf**	**08 21 31.7 -0.1**
346A	**Big Creek Wild** baz=312	**127.94**	**40**	P		**PKPdf**	**08 21 32.4 +0.3**
CPCT	**Cooper Cave**	**127.96**	**33**	*e*PKPdf		**PKPdf**	**08 21 33.4 +1.4**
247A	**Quitman** baz=313	**128.03**	**39**	P		**PKPdf**	**08 21 33.0 +0.8**
TKL	**Tuckaleechee C**	**128.20**	**32**	*e*PKIKP		**PKPdf**	**08 21 33.3 +0.8**
TKL	**Tuckaleechee C**	**128.20**	**32**	*e*PKPdf		**PKPdf**	**08 21 33.3 +0.8**
LRAL	**Lakeview Retre**	**128.33**	**37**	*e*PKPdf		**PKPdf**	**08 21 33.0 +0.3**
347A	**Saraland** baz=313	**128.52**	**39**	P		**PKPdf**	**08 21 34.1 +1.0**
447A	**Lucedale** baz=312	**128.85**	**40**	P		**PKPdf**	**08 21 35.0 +1.2**
348A	**Jackson** baz=314	**128.91**	**39**	P		**PKPdf**	**08 21 35.0 +1.1**
BRAL	**Brewton**	**129.60**	**38**	*e*PKPdf		**PKPdf**	**08 21 35.9 +0.6**
KIC	**Kosan Boka** comp=Z,19nm,0.5s	**129.82**	**285**	*e*PKIKP		**PKPdf**	**08 21 36.4 +0.3**
DBIC	**Dimbokro** comp=Z,4.1nm,0.5s,baz=70,slow=3.8,SNR=8.7	**129.84**	**285**	PKP		**PKPdf**	**08 21 35.8 -0.4**
DBIC	comp=Z,5.8nm,0.9s,baz=85,slow=3.3,SNR=6.0			SKPbc	SKPab	08 24 53.1	-0.3
KMSC	**Kings Mountain** baz=323	**129.85**	**30**	P		**PKPdf**	**08 21 35.0 -0.6**
TIC	**Toumodi**	**130.01**	**285**	*e*PKIKP		**PKPdf**	**08 21 36.7 +0.2**
LIC	**Lamto** comp=Z,46nm,0.6s	**130.13**	**285**	*e*PKIKP		**PKPdf**	**08 21 36.9 +0.2**
PLCA	**Paso Flores** comp=Z,6.8nm,0.7s,baz=250,slow=2.8,SNR=23	**143.50**	**157**	PKP	PKPbc	08 21 59.2	+1.2
SDDR	**Presa de Saban**	**148.10**	**34**	*e*PKPbc		**PKPbc**	**08 22 13.2 +0.9**
TRQA	**Tornquist**	**148.61**	**166**	*e*PKPbc		**PKPbc**	**08 22 13.5 +0.4**
ROC1	**El Roble**	**149.75**	**149**	*e*PKPbc		**PKPbc**	**08 22 17.2 +0.8**
IDE	**Isla Desecheo**	**150.56**	**29**	*e*PKPbc		**PKPbc**	**08 22 19.6 +1.2**
MPR	**Mayaguez**	**150.87**	**28**	*e*PKPbc		**PKPbc**	**08 22 19.3 +0.2**
CELP	**Cerrillos**	**151.25**	**27**	*e*PKPbc		**PKPbc**	**08 22 20.7 +0.7**
SJG	**San Juan**	**151.41**	**27**	*e*PKIKP		**PKPbc**	**08 22 20.4 +0.1**
SJG	**San Juan**	**151.41**	**27**	*e*PKPbc		**PKPbc**	**08 22 20.4 +0.1**
HUMP	**Col San Antoni**	**151.52**	**26**	*e*PKPbc		**PKPbc**	**08 22 20.5 -0.1**
STVI	**Saint Thomas**	**151.71**	**24**	*e*PKPdf		**PKPdf**	**08 22 14.6 -0.1**
STVI				*e*PKPbc		**PKPbc**	**08 22 21.0 0.0**
LCO	**Las Campanas**	**152.99**	**144**	*e*PKPbc		**PKPbc**	**08 22 24.6 +0.6**
OTAV	**Otavalo**	**153.56**	**74**	*e*PKPdf		**PKPdf**	**08 22 19.0 +0.8**
HELC	**Santa Helena**	**153.78**	**59**	*e*P		**PKPdf**	**08 22 15.6 -2.8**
GRMC	**Gramalote, San**	**155.17**	**53**	*e*P		**PKPdf**	**08 22 26.2 +6.2**
CBRI	**Barrientos, No**	**155.17**	**53**	*e*P		**PKPdf**	**08 22 23.5 +3.5**
ROSC	**El Rosal** comp=Z,11nm,0.9s,baz=266,slow=0.8,SNR=5.0	**155.50**	**60**	PKP		**PKPdf**	**08 22 21.7 +0.9**
BARC	**Barichara**	**155.52**	**55**	*e*P		**PKPdf**	**08 22 20.9 +0.2**
CHIC	**Chingaza**	**156.11**	**60**	*e*P		**PKPdf**	**08 22 18.2 -3.4**
CPUP	**Villa Florida** comp=Z,6.9nm,1.1s,baz=246,slow=2.9,SNR=4.6	**160.92**	**168**	PKPab		**PKPab**	**08 23 10.2 +1.2**
LPAZ	**La Paz** comp=Z,4.4nm,1.1s,baz=269,slow=4.8,SNR=10	**162.94**	**122**	PKP		**PKPdf**	**08 22 30.4 +0.8**
LPAZ				PKPab		**PKPab**	**08 23 21.0 +1.8**
LPAZ	**La Paz** comp=Z,1.3nm,0.7s,baz=282,slow=3.6,SNR=3.7	**162.94**	**122**	*e*PKIKP		**PKPdf**	**08 22 30.8 +1.2**
LPAZ				*e*PKPdf		**PKPdf**	08 23 21.0 **+1.2**
LPAZ	**La Paz**	**162.94**	**122**	*e*PKPdf		**PKPdf**	**08 22 30.8 +1.2**
LPAZ				PKPab		**PKPab**	**08 23 21.0 +1.8**
PTGA	**Pitinga**	**170.35**	**46**	*e*PKPdf		**PKPdf**	**08 22 34.5 -0.1**

*IDC **26** 08:15:41.7±1.2,23°.64N×121°.96E,h0km,mb3.7/9,*
mb1 3.8/10,mb1mx3.6/60,mbtmp3.8/10,ML3.7/1,Error ellipse: s-maj=66.7km s-min=19.1km az=66.0
*ISCJB **26** 08:15:43.2±0.7,23°.77N±0°.02×122°.52E±0°.01,h11km±4km, mb3.6/9,Error ellipse: s-maj=2.7km s-min=2.1km az=147.4*
*JMA **26** 08:15:43.8±0.2,23°.82N×122°.47E,h20km±4km,M3.7*
*TAP **26** 08:15:44.8,23°.85N×122°.48E,h25km±1km,ML4.2,D*
ISC 26 08:15:42.2±1.1,23°.78N±0°.02×122°.49E±0°.02,h9km±8km, n83,σ0s79/153,mb3.7/9,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.79**	**32**	P			**Pb**	**08 15 58.3**	**+0.2**
JYNG				S			**Sg**	**08 16 07.4**	**-0.2**
YOJ	**Yonaguni jima**	**0.83**	**35**	P			**Pb**	**08 15 59.1**	**+0.3**
YOJ				S			**Sg**	**08 16 08.5**	**-0.5**
HWA	**Hwalien** baz=266	**0.83**	**284**	*e*P			**Pn**	**08 15 59.9**	**-0.2**
HWA				*e*S			**Sn**	**08 16 11.8**	**-0.7**
TWD	**Chiawan** baz=272	**0.87**	**290**	*e*P			**Pb**	**08 15 59.9**	**+0.4**
TWD				*e*S			**Sb**	**08 16 11.4**	**+0.2**
ENA	**Nanau** baz=322	**0.94**	**313**	P			**Pn**	**08 16 01.3**	**-0.3**
ENA				*e*S			**Sb**	**08 16 13.7**	**+0.5**
ESL	**Shilin** baz=266	**0.97**	**272**	*e*P			**Pb**	**08 16 01.3**	**+0.1**
ESL				*e*S			**Sg**	**08 16 13.6**	**+0.2**
TWC	**Suao** baz=322	**1.01**	**325**	*e*P			**Pb**	**08 16 02.0**	**+0.2**
TWC				*e*S			**Sg**	**08 16 13.9**	**-0.8**
EHY	**Hungye** baz=250	**1.10**	**256**	P			**Pn**	**08 16 04.1**	**+0.2**
EHY				*e*S			**Sb**	**08 16 18.2**	**+0.1**
EGS	baz=318	**1.17**	**334**	*e*P			**Pn**	**08 16 05.4**	**+0.5**
EGS				*e*S			**Sn**	**08 16 21.4**	**+0.5**
TWF1	**Yuli** baz=243	**1.17**	**249**	*i* P			**Pg**	**08 16 05.3**	**+0.5**
TWF1				S			**Sb**	**08 16 19.9**	**-0.1**
WHF	**Hehuan Shan** baz=271	**1.18**	**288**	*e*P			**Pb**	**08 16 05.0**	**0.0**
WHF				*e*S			**Sb**	**08 16 20.6**	**+0.2**
ILA	**Ilan** baz=323	**1.19**	**326**	*e*P			**Pg**	**08 16 05.7**	**+0.6**
ILA				*e*S			**Sn**	**08 16 22.7**	**+1.4**
TWE	**Neicheng** baz=318	**1.20**	**321**	*e*P			**Pg**	**08 16 05.6**	**+0.4**
TWE				*e*S			**Sn**	**08 16 22.3**	**+0.8**
ENTT	**Nioudou** baz=297	**1.20**	**316**	*e*P			**Pg**	**08 16 05.7**	**+0.4**
ENTT				*e*S			**Sn**	**08 16 22.8**	**+1.2**
NNS	**Nan Shan** baz=287	**1.21**	**303**	*e*P			**Pg**	**08 16 05.6**	**+0.1**
NNS				*e*S			**Sb**	**08 16 20.0**	**-1.2**
HATJ	**Hateruma jima**	**1.23**	**77**	P			**Pg**	**08 16 06.3**	**+0.4**
HATJ				S			**Sb**	**08 16 21.7**	**0.0**
CHKT	**Chengkung** baz=221	**1.24**	**237**	*e*P			**Pn**	**08 16 05.6**	**-0.1**
CHKT				S			**Sb**	**08 16 20.6**	**-1.1**
WDT	**Danda** baz=265	**1.24**	**269**	*e*P			**Pn**	**08 16 06.1**	**+0.1**
IRIF	**Iriomote-Funau**	**1.26**	**64**	P			**Pg**	**08 16 06.8**	**+0.4**
IRIF				S			**Sn**	**08 16 23.1**	**0.0**
TWT	**Tachien** baz=275	**1.29**	**292**	*e*P			**Pg**	**08 16 07.2**	**+0.2**
TWT				*e*S			**Sb**	**08 16 22.1**	**-1.3**
TWB1	**Santiao Chiao** baz=356	**1.30**	**340**	*e*P			**Pb**	**08 16 06.8**	**-0.1**
TWB1				*e*S			**Sg**	**08 16 24.4**	**+0.2**
NSK	**Sanguang** baz=307	**1.36**	**311**	*e*P			**Pb**	**08 16 07.9**	**0.0**
NSK				*e*S			**Sg**	**08 16 26.3**	**+0.2**
NWF	**Wu-fen Shan** baz=330	**1.44**	**333**	*e*P			**Pb**	**08 16 08.8**	**-0.4**
NWF				*e*S			**Sg**	**08 16 28.5**	**0.0**
YUS	**Yu-Shan** baz=253	**1.44**	**259**	*e*P			**Pb**	**08 16 09.8**	**+0.3**
YUS				*e*S			**Sb**	**08 16 27.5**	**-0.7**
TWA	**Mucha** baz=322	**1.45**	**326**	*e*P			**Pg**	**08 16 10.0**	**0.0**
TWA				*e*S			**Sg**	**08 16 29.2**	**+0.3**
SMLT	**Sun Moon Lake** baz=269	**1.46**	**274**	*e*P			**Pb**	**08 16 09.7**	**+0.1**
SMLT				*e*S			**Sn**	**08 16 27.9**	**-0.2**
JKRS	**Kuro-shima**	**1.46**	**72**	P			**Pb**	**08 16 09.7**	**+0.1**
JKRS				S			**Sn**	**08 16 27.9**	**-0.2**
ELDTW	**Lidau** baz=242	**1.48**	**247**	P			**Pn**	**08 16 09.4**	**+0.3**
ELDTW				*e*S			**Sn**	**08 16 27.6**	**-1.0**
TYC	**Yuchr** baz=270	**1.50**	**275**	*e*P			**Pb**	**08 16 10.2**	**0.0**
TYC				*e*S			**Sn**	**08 16 27.7**	**-1.3**
TAP1	**Taipei** baz=321	**1.53**	**325**	*e*P			**Pb**	**08 16 10.6**	**-0.1**
TAP1				*e*S			**Sg**	**08 16 32.1**	**+0.7**
TAP	**Taipei** baz=321	**1.54**	**325**	*e*P			**Pg**	**08 16 11.9**	**+0.1**
TAP				*e*S			**Sg**	**08 16 32.2**	**+0.5**
ALS	**Alishan** baz=255	**1.57**	**260**	*e*P			**Pb**	**08 16 11.8**	**+0.3**
ALS				*e*S			**Sn**	**08 16 31.3**	**+0.2**
NSTT	**Nanjuang** baz=285	**1.60**	**302**	*e*P			**Pg**	**08 16 12.4**	**-0.5**
NSTT				*e*S			**Sb**	**08 16 32.5**	**+0.2**
TTN	**Taitung** baz=217	**1.60**	**231**	*e*P			**Pn**	**08 16 11.0**	**+0.3**
TWG	**Pinlang** baz=220	**1.62**	**234**	*e*P			**Pn**	**08 16 11.4**	**+0.5**
TWG				*e*S			**Sn**	**08 16 31.8**	**-0.1**
JIJ	**Ishigaki jima**	**1.62**	**69**	P			**Pb**	**08 16 12.2**	**-0.1**
JIJ				S			**Sb**	**08 16 32.8**	**0.0**
TWS1	**Kuangyinshan** baz=321	**1.64**	**324**	*e*P			**Pb**	**08 16 12.4**	**-0.2**
TWS1				*e*S			**Sb**	**08 16 32.8**	**-0.5**
WNT	**Mingjian** baz=268	**1.66**	**274**	*e*P			**Pg**	**08 16 13.7**	**-0.3**
WNT				*e*S			**Sg**	**08 16 34.8**	**-0.7**
TWQ1	**Liyutan** baz=284	**1.67**	**290**	*e*P			**Pg**	**08 16 13.8**	**-0.4**
TWQ1				*e*S			**Sg**	**08 16 35.3**	**-0.5**
CHN5	**Tsauling** baz=259	**1.67**	**264**	*e*P			**Pb**	**08 16 13.6**	**+0.4**
CHN5				*e*S			**Sb**	**08 16 35.1**	**+0.7**
NCU	**National Centr** baz=310	**1.68**	**315**	*e*P			**Pg**	**08 16 13.8**	**-0.6**
NCU				*e*S			**Sg**	**08 16 35.4**	**-0.7**
TWY	**Chenhua** baz=329	**1.69**	**332**	*e*P			**Pb**	**08 16 13.9**	**+0.3**
TWY				*e*S			**Sg**	**08 16 36.6**	**-0.1**
TCU	**Taichung** baz=277	**1.70**	**283**	*e*P			**Pg**	**08 16 14.6**	**-0.2**
TCU				*e*S			**Sg**	**08 16 36.4**	**-0.5**
NSY	**Sanyi** baz=286	**1.70**	**292**	*e*P			**Pb**	**08 16 14.2**	**+0.5**
NSY				*e*S			**Sg**	**08 16 36.4**	**-0.5**
STYT	**Tauyuan** baz=244	**1.71**	**249**	*e*P			**Pb**	**08 16 13.8**	**0.0**
STYT				*e*S			**Sn**	**08 16 34.9**	**+0.7**
WGK	**Gukeng** baz=262	**1.77**	**267**	*e*P			**Pg**	**08 16 15.9**	**-0.2**
WGK				*e*S			**Sb**	**08 16 38.1**	**+1.0**
CHN4	**Tsaushan** baz=242	**1.79**	**257**	*e*P			**Pb**	**08 16 15.7**	**+0.5**
CHN4				*e*S			**Sg**	**08 16 39.2**	**-0.7**
WTP	**Ta-pu** baz=248	**1.80**	**253**	*e*P			**Pb**	**08 16 15.7**	**+0.3**
WTP				*e*S			**Sb**	**08 16 39.0**	**+0.9**
JISG	**Ishigakijimahi**	**1.85**	**64**	P			**Pn**	**08 16 14.0**	**-0.1**
JISG				S			**Sn**	**08 16 36.0**	**-1.5**
CHN2	**Minshiung** baz=257	**1.86**	**263**	*e*P			**Pg**	**08 16 17.6**	**-0.3**
CHN2				*e*S			**Sg**	**08 16 41.5**	**-0.6**
PCYT	**Pengchaiyu** baz=333	**1.88**	**348**	*e*P			**Pn**	**08 16 15.1**	**+0.6**
SGST	**Jiashian** baz=244	**1.88**	**249**	*e*P			**Pb**	**08 16 17.2**	**+0.4**
SGST				*e*S			**Sb**	**08 16 41.8**	**+1.3**
CHN1	**Nanshi** baz=247	**1.90**	**252**	*e*P			**Pb**	**08 16 17.4**	**+0.4**
CHN1				*e*S			**Sb**	**08 16 42.2**	**+1.3**
TWK	**Hsinying** baz=249	**1.91**	**255**	*e*P			**Pb**	**08 16 17.4**	**+0.1**
TWK				*e*S			**Sb**	**08 16 42.1**	**+0.9**
CHY	**Chiayi** baz=256	**1.92**	**262**	*e*P			**Pg**	**08 16 18.3**	**-0.6**
CHY				*e*S			**Sb**	**08 16 41.7**	**+0.4**
LAY	**Lan-yu** baz=204	**1.94**	**207**	*e*P			**Pn**	**08 16 14.9**	**-0.4**
LAY				*e*S			**Sn**	**08 16 38.9**	**-1.0**
WTCT	**Ta-ch'eng** baz=255	**2.02**	**273**	*e*P			**Pb**	**08 16 19.0**	**-0.1**
WTCT				*e*S			**Sb**	**08 16 44.9**	**+0.5**
EAST	**Anshuo** baz=223	**2.06**	**228**	*e*P			**Pn**	**08 16 17.7**	**+0.7**
EAST				*e*S			**Sn**	**08 16 41.9**	**-0.9**
CHN3	**Shinhua** baz=245	**2.07**	**251**	*e*P			**Pb**	**08 16 19.3**	**-0.7**
CHN3				*e*S			**Sg**	**08 16 48.2**	**-0.7**
WSF	**Szhu** baz=261	**2.08**	**267**	*e*P			**Pb**	**08 16 19.2**	**-1.0**
WSF				*e*S			**Sb**	**08 16 46.8**	**+0.6**
TWM1	**Shoushan** baz=241	**2.13**	**244**	*e*P			**Pb**	**08 16 22.0**	**+1.1**
TWM1				*e*S			**Sg**	**08 16 51.2**	**+0.7**
CHN8	**Yiju** baz=253	**2.13**	**259**	*e*P			**Pb**	**08 16 21.4**	**+0.3**
CHN8				*e*S			**Sb**	**08 16 47.4**	**-0.2**
SCLT	**Jiali** baz=249	**2.19**	**254**	*e*P			**Pb**	**08 16 23.0**	**+1.0**
SCLT				*e*S			**Sb**	**08 16 49.5**	**+0.2**
JTJ	**Tarama**	**2.19**	**67**	P			**Pn**	**08 16 20.4**	**+1.6**
JTJ				*e*S			**Sn**	**08 16 47.5**	**+1.4**
TAI1	**Yung-k'ang** baz=258	**2.20**	**251**	*e*P			**Pg**	**08 16 24.8**	**+0.3**
TAI1				*e*S			**Sb**	**08 16 50.6**	**+1.0**
SCZT	**Fangliau** baz=219	**2.22**	**231**	*e*P			**Pb**	**08 16 21.2**	**-1.3**
SCZT				*e*S			**Sn**	**08 16 48.0**	**+1.2**
TSEB	**Hengchuen, Pin** baz=225	**2.38**	**218**	*e*P			**Pn**	**08 16 23.6**	**+2.2**
TSEB				*e*S			**Sb**	**08 16 53.5**	**-1.1**
HEN	**Hengchun** baz=219	**2.39**	**223**	*e*P			**Pn**	**08 16 23.4**	**+1.8**
HEN				*e*S			**Sn**	**08 16 53.0**	**+1.9**
TWK1	**Hengchun** baz=217	**2.40**	**221**	*e*P			**Pn**	**08 16 23.6**	**+1.9**
TWK1				*e*S			**Sn**	**08 16 53.1**	**+1.9**
TWP	**Hsiaoliuchiu** baz=229	**2.42**	**234**	*e*P			**Pg**	**08 16 27.9**	**-0.8**
TWP				*e*S			**Sb**	**08 16 55.7**	**-0.3**
WDGT	**Dungji** baz=253	**2.65**	**259**	*e*P			**Pn**	**08 16 26.8**	**+1.7**
WDGT				*e*S			**Sn**	**08 16 57.1**	**-0.3**
PNG	**Penghu** baz=260	**2.70**	**266**	*e*P			**Pn**	**08 16 27.5**	**+1.7**
PNG				*e*S			**Sn**	**08 16 59.9**	**+1.3**
KNM	**Kinmen** baz=273	**3.76**	**280**	*e*P			**Pn**	**08 16 42.9**	**+2.5**
KNM				*e*S			**Sn**	**08 17 25.2**	**+0.4**
KSRS	**Korea Array** 0.4nm,0.3s,baz=198,slow=12,SNR=8.7	**14.40**	**18**	Pn			**P**	**08 19 12.2**	**-1.1**
SONM	**Songino Array** 0.6nm,0.5s,baz=138,slow=6.9,SNR=4.5	**27.21**	**336**	P			**P**	**08 21 25.6**	**-0.8**
MKAR	**Makanchi Array** 2.0nm,0.8s,baz=102,slow=11,SNR=7.9	**39.46**	**316**	P			**P**	**08 23 12.7**	**-0.1**
ZALV	**Zalesovo Beam** 0.7nm,0.5s,baz=93,slow=10,SNR=3.6	**41.23**	**327**	P			**P**	**08 23 25.9**	**-1.4**
KURBB	**Kurchatov Arra** 0.2nm,0.3s,baz=110,slow=8.2,SNR=4.2	**43.18**	**320**	P			**P**	**08 23 42.4**	**-0.9**
WRA	**Warramunga Arr** 0.6nm,1.0s,baz=346,slow=8.9,SNR=5.2	**44.97**	**164**	P			**P**	**08 23 58.2**	**+0.3**
ASAR	**Alice Springs** 0.7nm,0.9s,baz=352,slow=15,SNR=4.2	**48.45**	**166**	P			**P**	**08 24 26.1**	**+0.9**
BVAR	**Borovoye Array** 0.5nm,0.5s,baz=101,slow=7.9,SNR=3.8	**48.74**	**321**	P			**P**	**08 24 26.0**	**-1.1**
FINES	**FINESS Array B** 0.3nm,0.4s,baz=48,slow=5.7,SNR=3.5	**72.39**	**330**	P			**P**	**08 27 09.3**	**+0.9**
BRTR	**Keskin Array B** 0.6nm,0.4s,baz=127,slow=3.9,SNR=4.0	**74.37**	**307**	P			**P**	**08 27 20.4**	**-0.4**

IDC 26 08:18:59.7±744.0,56°.97N×64°.47E,h0km,Error ellipse: s-maj=314.3km s-min=149.3km az=48.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF** baz=29,slow=318,SNR=0.8	**7.60**	**213**	*i*				09 11 20.0	
I43RU	**DUBNA INFRASON** baz=80,slow=319,SNR=0.3	**14.88**	**281**	*i*				09 59 00.0	
I26DE	**FREYUNG INFRAS** baz=56,slow=319,SNR=0.4	**31.01**	**277**	*i*				11 23 30.0	

*ISCJB **26** 08:29:36.3±0.4,11°.11N±0°.03×62°.12W±0°.03,h118km±5km, Error ellipse: s-maj=6.0km s-min=2.8km az=136.6*
*FUNV **26** 08:29:37.9,11°.09N×61°.97W,h110km,MW3.8*
*TRN **26** 08:29:38.3,11°.12N×62°.07W,h109km,MD4.2*
TRN Felt MMI II, III in Trinidad.
ISC 26 08:29:36.2±1.0,11°.08N±0°.04×62°.13W±0°.04, h118km±10km,n62,σ1s92/86,12C-8D,Windward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GUIV	**Guiria**	**0.44**	**192**	⇓*e*P			**Pn**	**08 29 55.4**	**+1.8**
GUIV				*e*S			**Sn**	**08 30 07.5**	**+0.8**
TCE	**Chacachacare**	**0.53**	**135**	*e*P			**Pn**	**08 29 55.8**	**+1.6**
TRN	**Trinidad (W)**	**0.84**	**121**	⇑*i*P			**Pn**	**08 29 57.9**	**+1.4**
TRN				*e*S			**Sn**	**08 30 11.1**	**-0.7**
TPP	**Pointe-a-Pierr**	**1.01**	**138**	⇑*i*P			**Pn**	**08 30 00.3**	**+2.1**

TPP					*e*S		**Sn**	**08 30 15.0**	**+0.2**
GRGR	**Grenville**	**1.15**	**24**		*e*P		**Pn**	**08 30 00.3**	**+0.6**
GRGR					*e*S		**Sn**	**08 30 16.5**	**-0.8**
GRGR	**Grenville**	**1.15**	**24**	⇑	*e*P		**Pn**	**08 30 00.2**	**+0.6**
GRGR					*e*S		**Sn**	**08 30 14.7**	**-2.7**
CRUV	**Carupano**	**1.16**	**250**	⇓	*e*P		**Pn**	**08 30 01.8**	**+2.1**
CRUV					*e*S		**Sn**	**08 30 18.8**	**+1.4**
GRW	**Mount Saint Ca**	**1.17**	**23**		*e*P		**Pn**	**08 30 01.6**	**+1.7**
TBH	**Brigand Hill**	**1.20**	**119**	⇑	*i*P		**Pn**	**08 30 01.6**	**+1.5**
TBH					*e*S		**Sn**	**08 30 17.3**	**-1.0**
GUNV	**Guanoco**	**1.21**	**221**	⇓	*e*P		**Pn**	**08 30 02.9**	**+2.6**
GUNV					*e*S		**Sn**	**08 30 19.6**	**+1.2**
GRSS	**Sisters**	**1.31**	**23**		*e*P		**Pn**	**08 30 03.2**	**+1.8**
GRSS					*e*S		**Sn**	**08 30 20.7**	**+0.2**
TPR	**Prospect**	**1.33**	**85**		*e*P		**Pn**	**08 30 02.2**	**+0.6**
TPR					*e*S		**Sn**	**08 30 20.7**	**-0.2**
BOT	**Bacolet**	**1.39**	**86**	⇑	*i*P		**Pn**	**08 30 02.6**	**+0.4**
BOT					*e*S		**Sn**	**08 30 21.2**	**-0.8**
TOSP	**Speyside**	**1.58**	**82**	⇑	*i*P		**Pn**	**08 30 04.5**	**0.0**
TOSP					*e*S		**Sn**	**08 30 24.8**	**-1.2**
SVB	**Belmont**	**2.34**	**21**		*e*P		**Pn**	**08 30 15.1**	**+1.1**
SVB					*e*S		**Sn**	**08 30 41.5**	**-1.4**
ORIV	**Oritupano**	**2.36**	**212**	⇑	*e*P		**Pn**	**08 30 16.6**	**+2.4**
ORIV				⇓	*e*S		**Sn**	**08 30 44.0**	**+0.7**
PCRV	**Puerto La Cruz**	**2.62**	**250**	⇑	*i*P		**Pn**	**08 30 19.9**	**+2.4**
PCRV					*e*S		**Sn**	**08 30 50.5**	**+1.2**
MCLT	**Moule a Chique**	**2.86**	**24**		*e*P		**Pn**	**08 30 21.2**	**+0.5**
MCLT					*e*S		**Sn**	**08 30 53.3**	**-1.6**
SLW	**Petit Monier**	**3.15**	**22**		*e*P		**Pn**	**08 30 25.3**	**+0.8**
BBGH	**Gun Hill**	**3.25**	**51**		*e*P		**Pn**	**08 30 27.4**	**+1.6**
BBGH					*e*S		**Sn**	**08 31 02.7**	**-1.3**
BBSP	**Saint Philip**	**3.30**	**52**		*e*P		**Pn**	**08 30 28.7**	**+2.2**
BBSP					*e*S		**Sn**	**08 31 04.5**	**-0.7**
PRGV	**PARIAGUAN**	**3.38**	**227**		*e*P		**Pn**	**08 30 29.1**	**+1.6**
PRGV					*e*S		**Sn**	**08 31 07.4**	**+0.2**
TRMF	**Trois Ilets**	**3.59**	**17**		*e*P		**Pn**	**08 30 31.4**	**+1.1**
ZAM	**Aeronautique**	**3.64**	**17**		*e*P		**Pn**	**08 30 32.0**	**+1.1**
MVM	**Montagne Vaucl**	**3.66**	**19**		*e*P		**Pn**	**08 30 32.0**	**+0.8**
CUPV	**Cœpira**	**3.73**	**255**	⇑	*i*P		**Pn**	**08 30 34.3**	**+2.0**
CUPV					*e*S		**Sn**	**08 31 16.8**	**+1.2**
FDF	**Fort de France**	**3.76**	**15**		*e*P		**Pn**	**08 30 32.9**	**+0.4**
FDF					*e*S		**Sn**	**08 31 14.2**	**-1.9**
PML	**Morne Lenard**	**3.79**	**14**		*e*P		**Pn**	**08 30 34.0**	**+1.0**
GBMF	**Grand Be**	**3.81**	**14**		*e*P		**Pn**	**08 30 34.4**	**+1.1**
PCM	**Pelee Case Pet**	**3.82**	**14**		*e*P		**Pn**	**08 30 34.4**	**+1.1**
PCM	**Pelee Case Pet**	**3.82**	**14**		*e*P		**Pn**	**08 30 34.5**	**+1.1**
BAMF	**Morne Balai**	**3.84**	**14**		*e*P		**Pn**	**08 30 34.7**	**+1.1**
BIRV	**Birongo**	**4.11**	**262**		*e*P		**Pn**	**08 30 39.7**	**+2.5**
BIRV					*e*S		**Sn**	**08 31 25.1**	**+0.6**
DLPL	**La Plaine**	**4.32**	**11**		*e*P		**Pn**	**08 30 41.8**	**+1.8**
BBL	**Barber's Block**	**4.47**	**8**		*e*P		**Pn**	**08 30 42.9**	**+0.9**
MERV	**Las Mercedes**	**4.48**	**246**		*e*S		**Sn**	**08 31 33.9**	**+0.4**
DWS	**Wesley**	**4.53**	**10**		*e*P		**Pn**	**08 30 44.0**	**+1.2**
DWS	**Wesley**	**4.53**	**10**		*e*S		**Sn**	**08 31 32.6**	**-2.0**
FUNV	**FUNVISIS**	**4.63**	**263**		*e*P		**Pn**	**08 30 47.0**	**+2.7**
TBG	**Guadaloupe-3**	**4.77**	**6**		*e*P		**Pn**	**08 30 46.3**	**+0.2**
MGG	**Marie-Galante**	**4.88**	**9**		*e*P		**Pn**	**08 30 49.8**	**+2.3**
LUEV	**Luepa**	**5.25**	**173**	⇓	*e*P		**Pn**	**08 30 52.4**	**-0.2**
LUEV					*e*S		**Sn**	**08 31 47.2**	**-4.9**
TURV	**Turiamo**	**5.64**	**264**		*e*P		**Pn**	**08 30 59.1**	**+1.3**
TURV					*e*S		**Sn**	**08 32 00.2**	**-1.3**
BAUV	**El Baul**	**6.19**	**250**		*e*S		**Sn**	**08 32 12.1**	**-2.8**
MAPV	**Macapo**	**6.34**	**259**	⇓	*e*P		**Pn**	**08 31 08.2**	**+0.9**
MAPV					*e*S		**Sn**	**08 32 16.6**	**-1.9**
ANWB	**Willy Bob**	**6.56**	**3**		*e*P		**Pn**	**08 31 12.8**	**+2.6**
ANWB	**Willy Bob**	**6.56**	**3**		*e*S		**Sn**	**08 32 20.0**	**-3.6**
TEPV	**Terepaima**	**7.03**	**262**		*e*P		**Pn**	**08 31 17.9**	**+1.2**
TEPV					*e*S		**Sn**	**08 32 32.1**	**-3.1**
SANV	**Sanarito**	**7.45**	**259**	⇑	*e*P		**Pn**	**08 31 22.6**	**+0.2**
SANV					*e*S		**Sn**	**08 32 41.2**	**-4.3**
SIQV	**Siquisique**	**7.55**	**267**		*e*P		**Pn**	**08 31 24.8**	**+1.1**
CURV	**Curarigua**	**7.77**	**263**	⇓	*e*P		**Pn**	**08 31 27.9**	**+1.2**
CURV				⇓	*e*S		**Sn**	**08 32 49.0**	**-4.2**
ELOV	**Elorza**	**8.31**	**241**	⇓	*e*P		**Pn**	**08 31 33.8**	**-0.2**
ELOV					*e*S		**Sn**	**08 33 01.0**	**-5.3**
CBRI	**Barrientos, No**	**11.04**	**253**		*e*P		**Pn**	**08 32 08.1**	**-2.9**
GRMC	**Gramalote, San**	**11.04**	**253**	⇑	*e*P		Pn	08 32 06.0	-5.0
PAMC	**Pamplona, Colo**	**11.07**	**251**		*e*P		**Pn**	**08 32 08.4**	**-3.3**
OCAC	**Ocana**	**11.38**	**257**		*e*P		Pn	08 32 20.8	+5.2
BARC	**Barichara**	**11.79**	**249**		*e*P		Pn	08 32 16.3	-4.8
RUSC	**La Rusia**	**11.99**	**245**		*i*P		Pn	08 32 18.9	-5.0
ROSC	**El Rosal**	**13.56**	**244**		*i*P		**Pn**	**08 32 44.2**	**-0.2**
NORC	**Norcasia**	**13.74**	**248**		*i*P		**Pn**	**08 32 42.9**	**-3.4**
SJAC	**San Juan de Ar**	**14.05**	**237**		*i*P		Pn	08 32 45.5	-4.8
PRAC	**Prado**	**14.60**	**241**		*e*P		**Pn**	**08 33 00.1**	**+2.7**

*ISCJB **26** 08:38:20.5±0.5,5°.41N±0°.05×126°.16E±0°.09,h100km, mb3.9/14, Error ellipse: s-maj=13.6km s-min=6.5km az=167.3*
*IDC **26** 08:38:22.4±2.5,5°.45N×125°.89E,h103km±22km,mb3.6/14, mb1 3.7/14,mb1mx3.5/45,mbtmp4.0/14, Error ellipse: s-maj=34.4km s-min=11.1km az=75.0*
*MAN **26** 08:38:24,5°.31N×125°.56E,h107km,mb5.1,ML4.1,MS4.3*
*DJA **26** 08:38:53.3±3.2,3°N±21°×12°5E±°,h173km±38km,M4.2/6, MLv4.2/6*

ISC 26 08:38:22.1±0.6,5°38N±0°.06×126°0E±0°.1,h100km,n24, σ1§43/29,mb3.9/14,3C,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GSPH	**General Santos**	**1.28**	**303**	*e*P	**Pn**	**08 38 45.3**	**-0.6**
DMPH	**Davao City--Mi**	**1.77**	**343**	⇑*e*P	**Pn**	**08 38 54.3**	**+2.4**
DMPH				*e*S	**Sn**	**08 39 18.7**	**+4.3**
KCP	**Kidapawan**	**1.87**	**330**	⇑*e*P	**Pn**	**08 38 54.7**	**+1.6**
KCP				*i* S	**Sn**	**08 39 16.9**	**+0.2**
CTBH	**Cotabato--PC H**	**2.55**	**316**	⇑*i*P	**Pn**	**08 39 02.5**	**+0.6**
KMSI	**Cibinong**	**5.19**	**203**	P	**Pn**	**08 39 37.2**	**-0.2**
GTOI	**Gorontalo**	**5.59**	**213**	P	**Pn**	**08 39 44.0**	**+1.1**
LBMI	**Labuha**	**6.15**	**169**	P	**Pn**	**08 39 56.7**	**+6.2**
MRSI	**Marisa**	**6.35**	**220**	P	**Pn**	**08 39 55.4**	**+2.2**
SANI	**Sanana**	**7.38**	**180**	P	**Pn**	**08 40 05.3**	**-1.9**
FITZ	**Fitzroy Crossi**	**23.33**	**181**	P	**P**	**08 43 22.9**	**+1.3**
	5.3nm,0.4s,baz=13,slow=9.4,SNR=10.0						
WRA	**Warramunga Arr**	**26.45**	**162**	P	**P**	**08 43 50.6**	**+0.6**
	0.9nm,0.3s,baz=337,slow=10,SNR=27						
WRA				ScP	**ScP**	**08 50 43.3**	**-0.6**
	0.4nm,0.9s,baz=342,slow=3.0,SNR=2.9						
ASAR	**Alice Springs**	**29.87**	**165**	P	**P**	**08 44 21.1**	**+0.8**
	1.1nm,0.5s,baz=340,slow=7.0,SNR=25						
ASAR				PcP	**PcP**	**08 47 20.8**	**-0.5**
	0.5nm,0.7s,baz=354,slow=2.3,SNR=3.8						
ASAR				ScP	**ScP**	**08 50 54.0**	**-0.5**
	0.4nm,0.7s,baz=346,slow=3.1,SNR=4.8						
STKA	**Stephens Creek**	**39.91**	**159**	P	**P**	**08 45 47.4**	**+1.0**
	1.5nm,0.6s,baz=347,slow=9.5,SNR=4.1						
KLR	**Kul'dur**	**43.97**	**5**	P	**P**	**08 46 18.2**	**-1.1**
	0.6nm,0.4s,baz=160,slow=11,SNR=2.5						
SONM	**Songino Array**	**45.53**	**342**	P	**P**	**08 46 31.0**	**-0.8**
	0.4nm,0.5s,baz=159,slow=8.6,SNR=2.1						
SONM				PcP	**PcP**	**08 48 08.3**	**-0.7**
	0.5nm,0.6s,baz=132,slow=2.1,SNR=3.3						
PETK	**Petropavlovsk-**	**54.19**	**23**	P	**P**	**08 47 38.1**	**+0.9**
	0.8nm,0.5s,baz=199,slow=3.1,SNR=3.1						
MKAR	**Makanchi Array**	**55.81**	**325**	P	**P**	**08 47 48.4**	**-0.7**
	1.8nm,0.5s,baz=122,slow=8.2,SNR=19						
ZALV	**Zalesovo Beam**	**58.81**	**333**	P	**P**	**08 48 08.0**	**-1.9**
	0.8nm,0.3s,baz=133,slow=6.3,SNR=3.2						
KURBB	**Kurchatov Arra**	**59.98**	**327**	P	**P**	**08 48 16.9**	**-1.2**
	1.4nm,0.6s,baz=127,slow=6.0,SNR=9.2						
BVAR	**Borovoye Array**	**65.57**	**327**	P	**P**	**08 48 54.9**	**-0.2**
	0.6nm,0.5s,baz=127,slow=11,SNR=3.7						
ILAR	**Eielson Array**	**83.93**	**25**	P	**P**	**08 50 40.2**	**-0.6**
	0.2nm,0.6s,baz=257,slow=6.2,SNR=2.8						
VNDA	**Vanda**	**85.14**	**173**	P	**P**	**08 50 47.6**	**+1.0**
	0.5nm,0.5s,baz=316,slow=7.3,SNR=6.6						
FINES	**FINESS Array B**	**90.06**	**332**	P	**P**	**08 51 09.4**	**-1.1**
	0.7nm,0.6s,baz=101,slow=9.9,SNR=3.9						
TORD	**Torodi Ar. Bea**	**121.73**	**289**	PKP	**PKPdf**	**08 57 04.8**	**-0.7**
	0.7nm,0.6s,baz=93,slow=1.1,SNR=4.4						

*ISCJB **26** 08:52:35.5±1.8,34°.56S±0°.03×72°.78W±0°.05,h1km±11km, mb4.7/47,MS4.1/6,Error ellipse: s-maj=6.3km s-min=5.1km az=3.7*
*GUC **26** 08:52:35.2±0.5,34°.57S×72°.88W,h26km±5km,ML4.4*
*IDC **26** 08:52:36.1±0.8,34°.51S×72°.69W,h0km,mb3.9/6, mb1 4.1/10,mb1mx3.9/35,mbtmp4.0/10,ML4.2/4,MS4.1/9, Ms1 4.1/9,ms1mx3.8/20,Error ellipse: s-maj=34.9km s-min=17.9km az=86.0*

*NEIC **26** 08:52:41.6±1.7,34°.51S×72°.46W,h34km±12km,mb4.7/42, ML4.4(GUC),Error ellipse: s-maj=8.5km s-min=4.6km az=87.0*

ISC 26 08:52:37.7±1.8,34°54S±0°.03×72°57W±0°.08,h8km±10km, n94,σ1§16/104,mb4.7/47,MS4.2/6,3C-2D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TALC	**Talca**	**1.15**	**138**	⇑*i*P	**Pg**	**08 52 59.1**	**-0.7**
TALC				*i* S	**Sn**	**08 53 17.2**	**+1.1**
ROC1	**El Roble**	**2.03**	**40**	*i* P	**Pb**	**08 53 15.7**	**+0.7**
ROC1				*i* S	Sg	08 53 53.8	+11
ROC1	**El Roble**	**2.03**	**40**	*e*Pn	**Pn**	**08 53 12.6**	**+0.1**
ROCH	**El Roble**	**2.03**	**40**	⇑*i*P	**Pn**	**08 53 12.6**	**+0.1**
ROCH				*i* S	**Sg**	**08 53 42.7**	**-0.3**
ROCH				IAML		08 53 54.6	
	comp=N,2μm,0.4s						
CLCH	**Cerro Calan**	**2.04**	**57**	*e*P	**Pb**	**08 53 13.9**	**-1.2**
CLCH				*i* S	**Sg**	**08 53 43.5**	**+0.3**
CLCH				IAML		08 53 53.8	
	comp=E,4μm,0.8s						
CCHI	**Chillan**	**2.10**	**169**	⇑*i*P	**Pn**	**08 53 13.5**	**+0.3**
CCHI				*i* S	**Sn**	**08 53 39.1**	**-0.4**
CCHI				IAML		08 53 52.1	
	comp=N,5μm,0.6s						
PEL	**Peldehue**	**2.10**	**49**	⇓*i*P	**Pn**	**08 53 14.7**	**+1.4**
PEL				*i* S	**Sb**	**08 53 41.0**	**-1.3**
PEL				IAML		08 54 04.5	
	comp=N,3μm,1.6s						
AUSP	**Uspallata**	**3.53**	**50**	*i* P	**Pn**	**08 53 36.3**	**+3.2**
CANA	**Caviahue**	**3.56**	**160**	*i* P	**Pn**	**08 53 36.1**	**+2.7**
CANA				IAML		08 54 02.8	
	comp=Z,122nm,0.6s						
CANA				*i* S	**Sg**	**08 54 31.3**	**-0.7**
ASAL	**Salagasta**	**3.67**	**59**	*i* P	**Pb**	**08 53 41.0**	**-2.0**
RTLS	**Leoncito**	**3.87**	**46**	*i* P	**Pn**	**08 53 40.5**	**+2.6**
RTCV	**Cerro Valdivia**	**4.31**	**53**	*i* P	**Pn**	**08 53 47.3**	**+3.7**
LCO	**Las Campanas**	**5.74**	**17**	*e*Pn	**Pn**	**08 54 02.1**	**-1.4**
PLCA	**Paso Flores**	**6.39**	**166**	Pn	**Pn**	**08 54 13.2**	**+1.0**
	comp=Z,1.6nm,0.3s,baz=1.3,slow=10,SNR=42						
PLCA				Lg	Lg	08 55 57.4	
	comp=Z,0.5nm,0.3s,baz=54,slow=8.7,SNR=2.2						
PLCA				LR	LR	08 56 45.3	
	comp=Z,822nm,19.3s,baz=14,slow=39						
TRQA	**Tornquist**	**9.24**	**115**	*e*Pn	**Pn**	**08 54 51.9**	**+0.6**
LVC	**Limon Verde**	**12.31**	**16**	Pn	**Pn**	**08 55 33.5**	**-0.2**
	comp=Z,12nm,0.3s,baz=180,slow=7.1,SNR=3.3						
LVC				Lg	Lg	08 58 57.4	
	comp=Z,10nm,0.3s,baz=144,slow=20,SNR=4.6						
LVC				LR	LR	08 59 47.6	
	comp=Z,1μm,19.5s,baz=224,slow=35						
CHRN	**Cochrane**	**12.70**	**180**	*e*Pn	**Pn**	**08 55 39.0**	**+0.4**
CPUP	**Villa Florida**	**15.47**	**62**	Pn	**Pn**	**08 56 17.3**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=210,slow=15,SNR=2.4						
CPUP				LR	LR	09 03 23.2	
	comp=Z,838nm,18.0s,baz=242,slow=42						
LPAZ	**La Paz**	**18.61**	**13**	P	**Pn**	**08 56 56.8**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=200,slow=8.1,SNR=9.8						
LPAZ	**La Paz**	**18.61**	**13**	*e*P	**Pn**	**08 56 57.2**	**+0.7**
	comp=Z,63nm,2.0s						
SIV	**San Ignacio**	**21.16**	**32**	P	**P**	**08 57 23.1**	**-0.4**
	comp=Z,2.3nm,0.8s,baz=221,slow=13,SNR=7.9						
SIV				LR	LR	09 07 18.5	
	comp=Z,796nm,18.3s,baz=214,slow=42						
NNA	**Nana**	**22.79**	**349**	LR	LR	09 04 31.8	
	comp=Z,299nm,19.8s,baz=191,slow=32						
OTAV	**Otavalo**	**35.03**	**350**	*e*P	**P**	**08 59 32.5**	**+0.9**
	comp=Z,15nm,1.4s						
PTGA	**Pitinga**	**35.64**	**22**	*e*P	**P**	**08 59 36.3**	**0.0**
	comp=Z,5.7nm,1.0s						
GRGR	**Grenville**	**47.56**	**15**	*e*P	**P**	**09 01 13.6**	**-0.3**
	comp=Z,90nm,1.0s						
VNA1	**Neumayer--Stat**	**49.35**	**157**	P	**P**	**09 01 28.9**	**+1.8**
SNAA	**Sanae**	**51.25**	**158**	P	**P**	**09 01 42.3**	**+0.6**
SNAA	**Sanae**	**51.25**	**158**	P	**P**	**09 01 42.2**	**+0.6**
	comp=Z,4.3nm,0.6s,baz=273,slow=7.3,SNR=19						
SNAA	**Sanae**	**51.25**	**158**	*e*P	**P**	**09 01 42.0**	**+0.4**
	comp=Z,15nm,1.2s						
VNDA	**Vanda**	**63.49**	**191**	*e*P	**P**	**09 03 07.5**	**-0.2**
	comp=Z,10nm,1.6s						
SYO	**Syowa Base**	**65.53**	**158**	⇓*e*P	**P**	**09 03 20.0**	**-1.2**
TAOE	**Nuku Hiva Isla**	**66.58**	**275**	*e*P	**P**	**09 03 30.4**	**+1.4**
	comp=Z,302nm,1.6s						
JCT	**Junction City**	**69.58**	**335**	*e*P	**P**	**09 03 47.0**	**-0.3**
	comp=Z,27nm,1.8s						
TX31	**Lajitas Ar. Si**	**69.99**	**331**	*e*P	**P**	**09 03 49.8**	**-0.2**
TXAR	**Lajitas Array**	**69.99**	**331**	P	**P**	**09 03 49.4**	**-0.6**
	comp=Z,0.4nm,0.5s,baz=156,slow=8.9,SNR=11						
CPCT	**Cooper Cave**	**70.52**	**350**	*e*P	**P**	**09 03 51.9**	**-1.0**
	comp=Z,8.2nm,1.4s						
HBAR	**Harrisburg**	**71.75**	**345**	*e*P	**P**	**09 04 00.6**	**+0.2**
MNTX	**Cornudas Mount**	**72.77**	**331**	*e*P	**P**	**09 04 05.1**	**-1.5**
	comp=Z,2.4nm,0.9s						
MAW	**Mawson**	**72.79**	**164**	P	**P**	**09 04 06.5**	**+0.3**
	comp=Z,4.2nm,1.2s,baz=128,slow=20,SNR=6.4						
MAW				LR	LR	09 36 11.1	
	comp=Z,134nm,19.6s,baz=241,slow=36						
MAW	**Mawson**	**72.79**	**164**	*e*P	**P**	**09 04 06.7**	**+0.5**
	comp=Z,1.6nm,1.4s						
MSTX	**Muleshoe**	**73.80**	**334**	*e*P	**P**	**09 04 12.0**	**-0.7**
	comp=Z,25nm,1.8s						
TUC	**Tucson**	**75.58**	**327**	*e*P	**P**	**09 04 23.4**	**+0.3**
	comp=Z,8.0nm,1.7s						
DBIC	**Dimbokro**	**75.77**	**71**	LR	LR	09 36 25.9	
	comp=Z,77nm,18.9s,baz=264,slow=35						
LAZ	**Ladron**	**75.84**	**331**	*e*P	**P**	**09 04 23.6**	**-1.0**
ANMO	**Albuquerque**	**76.05**	**332**	*e*P	**P**	**09 04 25.9**	**+0.1**
	comp=Z,10nm,1.8s						
X18A	**Snowflake**	**77.11**	**329**	*e*P	**P**	**09 04 32.3**	**+0.5**
	comp=Z,17nm,2.0s						
T25A	**Trinidad**	**77.22**	**334**	*e*P	**P**	**09 04 33.0**	**+0.5**
	comp=Z,16nm,1.4s						
X16A	**Lo Mia Camp, P**	**77.66**	**328**	*e*P	**P**	**09 04 34.9**	**0.0**
	comp=Z,10nm,1.8s						
SDCO	**Great Sand Dun**	**78.16**	**334**	*e*P	**P**	**09 04 37.8**	**+0.1**
	comp=Z,3.2nm,1.3s						
WUAZ	**Wupatki**	**78.56**	**329**	*e*P	**P**	**09 04 40.0**	**+0.1**
	comp=Z,11nm,1.6s						
S22A	**4UR Ranch, Cre**	**78.65**	**333**	*e*P	**P**	**09 04 41.4**	**+0.9**
	comp=Z,9.3nm,1.8s						
MVCO	**Mesa Verde**	**78.82**	**331**	*e*P	**P**	**09 04 41.6**	**+0.2**
	comp=Z,16nm,1.8s						
Q24A	**Divide**	**79.11**	**335**	*e*P	**P**	**09 04 43.0**	**0.0**
	comp=Z,4.3nm,0.7s						
U15A	**North Rim**	**79.72**	**328**	*e*P	**P**	**09 04 46.8**	**+0.4**
	comp=Z,18nm,1.8s						
PV05	**Paradox Valley**	**79.81**	**331**	*e*P	**P**	**09 04 46.6**	**-0.1**
SMCO	**Snowmass**	**79.96**	**334**	*e*P	**P**	**09 04 48.3**	**+0.5**
	comp=Z,24nm,1.9s						
KNB	**Kanab**	**80.45**	**328**	*e*P	**P**	**09 04 50.8**	**+0.7**
	comp=Z,23nm,1.7s						
LCMT	**Little Creek M**	**80.63**	**328**	*e*P	**P**	**09 04 50.9**	**-0.1**
	comp=Z,12nm,1.8s						
ECSD	**EROS Data Cent**	**80.93**	**343**	*e*P	**P**	**09 04 51.4**	**-0.9**
	comp=Z,10nm,1.5s						
SHPR	**Sheep Range**	**81.06**	**326**	*e*P	**P**	**09 04 53.9**	**+0.5**
	comp=Z,9.3nm,1.6s						
CCUT	**Cedar City**	**81.13**	**328**	*e*P	**P**	**09 04 54.8**	**+1.0**
	comp=Z,13nm,1.7s						
O20A	**White River Ci**	**81.27**	**333**	*e*P	**P**	**09 04 55.2**	**+0.7**
	comp=Z,15nm,1.8s						
MSU	**Marysvale**	**81.43**	**330**	*e*P	**P**	**09 04 56.0**	**+0.6**
P18A	**Preston Nutter**	**81.60**	**332**	*e*P	**P**	**09 04 56.1**	**-0.3**
	comp=Z,8.4nm,0.8s						
P17A	**Butcher Ranch,**	**81.66**	**331**	*e*P	**P**	**09 04 56.5**	**-0.1**
	comp=Z,15nm,1.8s						
DAC	**Darwin (Calif)**	**82.01**	**325**	*e*P	**P**	**09 05 00.2**	**+1.8**
	comp=Z,4.3nm,1.1s						
R11A	**Troy Canyon, C**	**82.77**	**327**	*e*P	**P**	**09 05 03.0**	**+0.6**
	comp=Z,14nm,1.9s						
DUG	**Dugway, Tooele**	**83.12**	**330**	*e*P	**P**	**09 05 04.2**	**+0.1**
	comp=Z,15nm,1.6s						
TCUT	**Toone Canyon**	**83.33**	**332**	*e*P	**P**	**09 05 04.9**	**-0.4**
	comp=Z,17nm,0.8s						
HWUT	**Hardware Ranch**	**83.81**	**332**	*e*P	**P**	**09 05 07.3**	**-0.4**
	comp=Z,25nm,2.0s						
BW06	**Boulder Array**	**84.05**	**334**	*e*P	**P**	**09 05 08.1**	**-0.8**
PDAR	**Pinedale Array**	**84.05**	**334**	P	**P**	**09 05 08.5**	**-0.4**
	comp=Z,0.2nm,0.7s,baz=153,slow=6.9,SNR=3.1						
PDAR				LR	LR	09 39 08.6	
	comp=Z,89nm,18.1s,baz=146,slow=33						
TVH3	**East Aurora ar**	**84.26**	**325**	*e*P	**P**	**09 05 10.6**	**+0.5**
	comp=Z,6.7nm,1.4s						
HVU	**Hansel Valley**	**84.44**	**331**	*e*P	**P**	**09 05 10.7**	**-0.2**
	comp=Z,5.0nm,1.1s						
TOA0	**Torodi Ar. Sit**	**84.81**	**70**	*e*P	**P**	**09 05 12.9**	**-0.2**
	comp=Z,35nm,1.9s						
TORD	**Torodi Ar. Bea**	**84.81**	**70**	P	**P**	**09 05 12.5**	**-0.6**
	comp=Z,1.3nm,0.8s,baz=233,slow=3.6,SNR=5.2						
TORD				LR	LR	09 42 28.0	
	comp=Z,122nm,18.1s,baz=240,slow=35						
PAHR	**Pah Rah Range**	**85.60**	**326**	*e*P	**P**	**09 05 17.5**	**+0.8**
	comp=Z,7.4nm,1.2s						
HLID	**Hailey**	**86.59**	**331**	*e*P	**P**	**09 05 21.8**	**+0.2**
	comp=Z,12nm,1.9s						
MCMT	**McKenzie Canyo**	**87.04**	**333**	*e*P	**P**	**09 05 24.2**	**+0.4**
K05A	**Summer Lake**	**88.69**	**327**	*e*P	**P**	**09 05 32.7**	**+1.0**
	comp=Z,7.2nm,1.1s						
SCHQ	**Schefferville**	**89.15**	**3**	*e*P	**P**	**09 05 33.5**	**+0.3**
	comp=Z,31nm,2.0s						
SLMT	**Seeley Lake**	**89.32**	**333**	*e*P	**P**	**09 05 34.6**	**+0.2**
LVP	**Lakeview Peak**	**91.97**	**328**	*e*P	**P**	**09 05 50.3**	**+3.5**
AS01	**Alice Springs**	**116.87**	**207**	*e*PKPdf	**PKPdf**	**09 11 21.6**	**-1.8**
WB2	**Warramunga Arr**	**120.07**	**209**	*e*PKPdf	**PKPdf**	**09 11 28.3**	**-1.4**
WRA	**Warramunga Arr**	**120.08**	**209**	PKP	**PKPdf**	**09 11 28.2**	**-1.5**
	comp=Z,0.4nm,0.5s,baz=155,slow=1.8,SNR=14						
BVAR	**Borovoye Array**	**147.97**	**43**	PKPbc	**PKPbc**	**09 12 22.4**	**-0.8**
	comp=Z,1.4nm,0.5s,baz=316,slow=4.1,SNR=6.8						
KURBB	**Kurchatov Arra**	**153.56**	**44**	PKPbc	**PKPbc**	**09 12 36.0**	**-0.5**
	comp=Z,0.5nm,0.4s,baz=284,slow=2.8,SNR=6.1						
KURK	**Kurchatov**	**153.57**	**43**	PKPbc	**PKPbc**	**09 12 36.0**	**-0.6**
KSH	**Kashi**	**154.48**	**70**	*e*PKPbc	**PKPdf**	**09 12 30.5**	**-0.1**
KSH				*e*PP	**PP**	**09 16 31.8**	**+2.5**
KSH				SKS	**SKSdf**	**09 19 36.0**	**-1.8**
ZALV	**Zalesovo Beam**	**154.92**	**32**	PKPbc	**PKPbc**	**09 12 38.5**	**-0.7**
	comp=Z,0.6nm,0.4s,baz=290,slow=4.4,SNR=3.8						
MKAR	**Makanchi Array**	**157.45**	**50**	PKPab	**PKPab**	**09 13 04.8**	**-1.0**
	comp=Z,0.5nm,0.6s,baz=297,slow=4.4,SNR=3.0						
GYA	**Guiyang**	**171.92**	**175**	PKPbc	**PKPdf**	**09 12 46.0**	**-1.5**
GYA				PKPab	**PKPab**	**09 14 11.3**	**+1.5**
GYA				PKS	**PKSdf**	**09 16 16.8**	**-3.3**
GYA				PP	**PP**	**09 18

*SKHL **26** 09:19:56.6±0.2, 44.°37N×148.°27E, h30km±4km, mb4.2/3*
ISC 26 09:19:54.0±3.4, 44.°3N±0.°1×148.°5E±0.°2, h55km, n12, σ1°37/18, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**0.99**	**335**	*i* P	**Pn**	**09 20 11.9**	**+0.2**
KUR				AMB	AMB	09 20 12.5	
	40nm,0.3s						
KUR				AMB	AMB	09 20 12.5	
	150nm,0.3s						
KUR				*i* S	**Sn**	**09 20 23.6**	**-1.1**
KUR				A	A	09 20 24.6	
	320nm,0.4s						
KUR				A	A	09 20 24.6	
	500nm,0.4s						
SHO	**Shikotan**	**1.26**	**249**	*i* P	**Pn**	**09 20 15.2**	**-0.1**
SHO				AMB	AMB	09 20 16.4	
	200nm,0.3s						
SHO				AMB	AMB	09 20 16.4	
	80nm,0.3s						
SHO				*i* S	**Sn**	**09 20 29.0**	**-2.2**
SHO				A	A	09 20 30.3	
	150nm,0.4s						
SHO				A	A	09 20 30.3	
	470nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**1.89**	**262**	*i* P	**Pn**	**09 20 24.5**	**+0.6**
YUK				AMB	AMB	09 20 27.2	
	60nm,0.4s						
YUK				AMB	AMB	09 20 27.2	
	110nm,0.4s						
YUK				*i* S	**Sn**	**09 20 46.5**	**0.0**
YUK				A	A	09 20 50.2	
	140nm,0.3s						
YUK				A	A	09 20 50.2	
	210nm,0.3s						
NEM2	**Nemuro 2**	**2.19**	**245**	P	**Pn**	**09 20 28.0**	**0.0**
NEM2				*e*S	**Sn**	**09 20 51.7**	**-2.2**
JRA	**Rausu**	**2.43**	**262**	*e*S	**Sn**	**09 21 00.4**	**+0.6**
JNK	**Nakash**	**2.80**	**256**	*e*S	**Sn**	**09 21 08.9**	**0.0**
JAK	**Akkeshi**	**3.04**	**245**	P	**Pn**	**09 20 40.2**	**+0.6**
JAK				*e*S	**Sn**	**09 21 13.3**	**-1.4**
JTKR	**Abashiri--Toko**	**3.29**	**265**	P	Pn	09 20 45.8	+2.7
JAR	**Ashorobuto**	**3.55**	**255**	P	**Pn**	**09 20 48.1**	**+1.5**
JAR				*e*S	**Sn**	**09 21 26.7**	**-0.5**
JCH	**Churui**	**4.09**	**247**	P	**Pn**	**09 20 55.6**	**+1.6**
JKB	**Kayabe**	**5.96**	**248**	P	**Pn**	**09 21 21.4**	**+1.8**
JOT	**Ohata**	**6.19**	**244**	P	**Pn**	**09 21 24.1**	**+1.3**
JOT				*e*S	**Sn**	**09 22 30.3**	**-1.9**

*NIED **26** 09:33:00, 37.°40N×142.°20E, h23km, Mw3.5 Best double couple: M0 1.69000×10^14 NP1: φ=154.00000°, δ=9.00000°, λ=18.00000°. NP2: φ=46.00000°, δ=87.00000°, λ=99.00000°.*
JMA 26 09:33:39.9±0.2, 37.°37N×142.°24E, h14km±3km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.09**	**270**	P	Pb	09 34 00.3	-0.2
JFK				*e*S	Sb	09 34 14.6	0.0
ONAJ	**Iwakimizuishiy**	**1.18**	**257**	P	Pn	09 34 01.6	-0.5
JMM	**Marumori**	**1.25**	**294**	P	Pn	09 34 02.7	-0.3
JIO	**Ouri**	**1.29**	**327**	P	Pn	09 34 03.1	-0.4
JFT	**Otama**	**1.52**	**276**	P	Pb	09 34 07.5	-0.4
JFT				*e*S	Sb	09 34 27.3	+0.2
JOU	**Okura**	**1.59**	**309**	P	Pn	09 34 08.4	+0.7
JOU				S	Sn	09 34 28.6	+0.5
JMK	**Ichinoseki**	**1.77**	**333**	P	Pn	09 34 10.8	+0.7
JYS	**Shirataka**	**1.92**	**297**	P	Pb	09 34 14.1	-0.6
JYS				S	Sb	09 34 38.4	-0.1
JFY	**Yanaizu**	**2.02**	**272**	P	Pn	09 34 14.8	+1.2
JYK	**Kaneyama**	**2.14**	**317**	P	Pn	09 34 16.4	+1.2
JOM	**Ohasama**	**2.23**	**341**	P	Pn	09 34 17.7	+1.3
MAT	**Matsushiro**	**3.33**	**257**	P	Pn	09 34 34.7	+3.1
MAT				*e*S	Sb	09 35 18.7	-0.5

*ISCJB **26** 09:37:59.9±1.0, 37.°22N±0.°09×72.°28E±0.°09, h176km, mb3.6/7, Error ellipse: s-maj=12.8km s-min=9.4km az=153.4*
*IDC **26** 09:38:00.9±4.1, 37.°22N×72.°34E, h177km±34km, mb3.3/7, mb1 3.4/12, mb1mx3.1/59, mbtmp3.8/12, Error ellipse: s-maj=32.1km s-min=25.8km az=11.0*
*NNC **26** 09:38:07.2±2.3, 37.°88N×72.°17E, h0km, mb4.3, mpv3.9, Error ellipse: s-maj=21.3km s-min=9.5km az=148.0*
ISC 26 09:38:01.5±1.1, 37.°33N±0.°10×72.°28E±0.°09, h176km, n19, σ1°63/24, mb3.6/7, 7C-3D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZET	**Dzherino**	**3.10**	**299**	⇑P	**Pn**	**09 38 53.1**	**+1.8**
	18nm,0.3s						
DZET				⇓S	**Sn**	**09 39 29.1**	**-0.9**
	150nm,0.3s						
MNAS	**Manas**	**5.16**	**2**	⇑P	**Pn**	**09 39 19.0**	**+1.6**
	16nm,0.3s						
MNAS				⇑S	**Sn**	**09 40 14.5**	**-2.7**
	53nm,0.8s						
AAK	**Ala-Archa**	**5.57**	**17**	P	**Pn**	**09 39 24.9**	**+2.0**
	6.8nm,0.3s,baz=193,slow=1.6,SNR=21						
AAK				S	**Sn**	**09 40 26.3**	**-0.6**
	4.7nm,0.3s,baz=176,slow=14,SNR=10						
AAK	**Ala-Archa**	**5.57**	**17**	⇓P	**Pn**	**09 39 24.7**	**+1.9**
	13nm,0.5s						
AAK				⇓S	**Sn**	**09 40 25.9**	**-0.9**
	24nm,0.8s						
KK31	**Karatay Array**	**5.92**	**347**	P	**Pn**	**09 39 28.4**	**+0.9**
	1.1nm,0.2s,baz=148,slow=8.9,SNR=40						
KK31				⇑S	**Sn**	**09 40 30.9**	**-4.1**
	24nm,0.5s,baz=148,slow=16,SNR=20						
TKM2	**Tokmak 2**	**6.14**	**23**	⇑P	**Pn**	**09 39 32.0**	**+1.6**
	5.2nm,0.5s						
MKAR	**Makanchi Array**	**12.02**	**35**	P	**Pn**	**09 40 48.7**	**+1.5**
	0.1nm,0.3s,baz=229,slow=13,SNR=2.6						
AB31	**Akbulak array**	**14.90**	**327**	⇑P	**P**	**09 41 25.0**	**+0.4**
	2.8nm,0.7s,baz=135,slow=16,SNR=19						
BVAR	**Borovoye Array**	**15.75**	**356**	P	**P**	**09 41 34.9**	**+0.8**
	0.2nm,0.3s,baz=182,slow=11,SNR=3.1						
AKTO	**Aktyubinsk**	**16.61**	**327**	P	**Pn**	**09 41 44.6**	**+0.4**
	1.0nm,0.3s,baz=130,slow=10,SNR=11						
AKTO	**Aktyubinsk**	**16.61**	**327**	⇑P	**Pn**	**09 41 45.7**	**+1.5**
	2.4nm,0.5s						
ZALV	**Zalesovo Beam**	**18.74**	**24**	P	**P**	**09 42 07.5**	**+0.8**
	1.1nm,0.3s,baz=221,slow=10,SNR=18						
FINES	**FINESS Array B**	**37.38**	**325**	P	**P**	**09 44 57.2**	**+0.4**
	0.4nm,0.3s,baz=126,slow=9.8,SNR=3.3						
ARCES	**ARCESS Array B**	**40.78**	**337**	P	**P**	**09 45 25.3**	**+0.3**
	1.3nm,0.7s,baz=124,slow=11,SNR=2.9						
HFS	**Hagfors**	**43.06**	**321**	P	**P**	**09 45 43.5**	**-0.1**
	0.9nm,0.5s,baz=108,slow=9.5,SNR=8.9						
NOA	**NORSAR Array B**	**44.34**	**322**	P	**P**	**09 45 53.5**	**-0.4**
	0.5nm,0.5s,baz=94,slow=8.5,SNR=3.1						
TORD	**Torodi Ar. Bea**	**66.76**	**269**	P	**P**	**09 48 33.7**	**-0.5**
	0.3nm,0.4s,baz=47,slow=5.4,SNR=8.7						
YKA	**Yellowknife Ar**	**80.37**	**3**	P	**P**	**09 49 52.8**	**+0.1**
	0.3nm,0.5s,baz=352,slow=5.4,SNR=6.1						
STKA	**Stephens Creek**	**94.46**	**127**	P	**P**	**09 50 59.1**	**-2.4**
	1.4nm,0.9s,baz=300,slow=20,SNR=3.7						

*IDC **26** 09:46:31.7±1.3, 37.°13S×95.°97W, h0km, mb4.1/4, mb1 4.4/4, mb1mx4.0/30, mbtmp4.1/4, MS3.7/7, Ms1 3.7/7, ms1mx3.4/25, Error ellipse: s-maj=52.4km s-min=31.7km az=85.0*
*ISCJB **26** 09:46:32.0±0.7, 37.°0S±0.°1×95.°9W±0.°3, h10km, mb4.4/19, MS3.7/7, Error ellipse: s-maj=34.4km s-min=16.8km az=173.4*
*NEIC **26** 09:46:33.7±0.4, 37.°05S×95.°90W, h10km, mb4.5/14, Error ellipse: s-maj=22.1km s-min=10.8km az=83.0*
ISC 26 09:46:33.8±0.9, 37.°1S±0.°2×95.°9W±0.°3, h10km, n29, σ0°53/19, mb4.4/19, MS3.6/7, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**20.05**	**108**	LR	LR	09 56 58.8	
	comp=Z,304nm,19.4s,baz=346,slow=31						
LVC	**Limon Verde**	**27.37**	**66**	LR	LR	09 59 07.9	
	comp=Z,164nm,20.7s,baz=221,slow=28						
LPAZ	**La Paz**	**32.11**	**57**	P	**P**	**09 53 02.2**	**+0.2**
	1.6nm,1.0s,baz=233,slow=15,SNR=4.9						
CPUP	**Villa Florida**	**34.31**	**83**	LR	LR	10 05 17.6	
	comp=Z,109nm,20.9s,baz=284,slow=33						
ROSC	**El Rosal**	**46.30**	**30**	LR	LR	10 13 03.6	
	comp=Z,67nm,18.4s,baz=260,slow=34						
PPT	**Papeete**	**50.80**	**277**	LR	LR	10 11 05.6	
	comp=Z,112nm,18.1s,baz=146,slow=29						
QSPA	**South Pole Qui**	**53.16**	**180**	*e*P	**P**	**09 55 52.2**	**+0.6**
	4.7nm,0.6s						
VNDA	**Vanda**	**56.72**	**195**	LR	LR	10 16 32.7	
	comp=Z,41nm,18.1s,baz=133,slow=32						
TXAR	**Lajitas Array**	**66.44**	**353**	P	**P**	**09 57 23.5**	**+0.2**
	2.1nm,0.9s,baz=176,slow=9.6,SNR=19						
JCT	**Junction City**	**67.29**	**356**	*e*P	**P**	**09 57 28.2**	**-0.4**
	4.4nm,0.8s						
WHTX	**Lake Whitney,**	**68.71**	**359**	*e*P	**P**	**09 57 36.9**	**-0.5**
	5.3nm,0.9s						
MNTX	**Cornudas Mount**	**68.97**	**351**	*e*P	**P**	**09 57 37.8**	**-1.2**
	1.2nm,0.9s						
TUC	**Tucson**	**70.40**	**347**	*e*P	**P**	**09 57 47.9**	**-0.1**
	7.4nm,1.1s						
MSTX	**Muleshoe**	**70.96**	**354**	*e*P	**P**	**09 57 50.8**	**-0.5**
	11nm,0.9s						
AMTX	**Amarillo**	**71.78**	**355**	*e*P	**P**	**09 57 55.9**	**-0.4**
	12nm,1.1s						
ANMO	**Albuquerque**	**72.31**	**351**	*e*P	**P**	**09 57 59.6**	**0.0**
	3.0nm,1.1s						
MAW	**Mawson**	**74.42**	**172**	P	**P**	**09 58 10.8**	**-0.7**
	2.6nm,0.9s,baz=226,slow=7.3,SNR=5.1						
MVCO	**Mesa Verde**	**74.81**	**350**	*e*P	**P**	**09 58 14.2**	**-0.1**
	6.3nm,1.2s						
PV01	**Paradox Valley**	**75.73**	**350**	*e*P	**P**	**09 58 19.8**	**+0.2**
	379nm,1.0s						
SMCO	**Snowmass**	**76.55**	**351**	*e*P	**P**	**09 58 24.9**	**+0.5**
	3.7nm,1.0s						
R11A	**Troy Canyon, C**	**77.20**	**344**	*e*P	**P**	**09 58 28.6**	**+0.7**
	2.3nm,1.2s						
BW06	**Boulder Array**	**80.42**	**350**	*e*P	**P**	**09 58 45.1**	**-0.4**
	5.0nm,1.2s						
PDAR	**Pinedale Array**	**80.42**	**350**	P	**P**	**09 58 45.2**	**-0.2**
	1.8nm,0.7s,baz=157,slow=5.8,SNR=18						
WVOR	**Wild Horse Val**	**81.79**	**343**	*e*P	**P**	**09 58 52.8**	**+0.1**
	1.8nm,0.9s						
HLID	**Hailey**	**81.99**	**347**	*e*P	**P**	**09 58 54.3**	**+0.5**
	2.2nm,0.7s						
DBIC	**Dimbokro**	**94.81**	**85**	LR	LR	10 37 11.6	
	comp=Z,47nm,21.1s,baz=206,slow=32						
H01W1	**Cape Leeuwin H**	**103.14**	**205**	T	T	11 56 27.7	
	baz=154,slow=75,SNR=31						
H01W2	**Cape Leeuwin H**	**103.15**	**205**	T	T	11 56 27.9	
	baz=154,slow=75,SNR=54						
H01W3	**Cape Leeuwin H**	**103.16**	**205**	T	T	11 56 26.5	
	baz=154,slow=75,SNR=47						

MEX 26 09:48:58.4±0.3, 14.°30N×92.°29W, h30km±25km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.98**	**4**	*e*P	Pn	09 49 28.2	-1.9

MEX 26 10:03:09.4±0.3, 32.°38N×115.°25W, h15km±17km, MD3.6, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBX	**Cerro Bola**	**1.20**	**267**	*e*P	Pn	10 03 28.1	-3.7
CBX				*e*S	Sb	10 03 42.4	-5.0
TJIG	**Tijuana**	**1.21**	**273**	*e*P	Pn	10 03 27.9	-3.9
TJIG				*i* S	Sb	10 03 42.6	-4.8
SPIG	**San Pedro Mart**	**1.35**	**188**	*e*S	Sb	10 03 47.1	-4.7

*DDA **26** 10:04:01.3, 40.°93N×35.°95E, h7km, Ml2.7*
*CSEM **26** 10:04:01.8±0.5, 40.°90N×35.°91E, h5km, ML2.7, Error ellipse: s-maj=12.1km s-min=6.2km az=132.0*
*ISCJB **26** 10:04:02.4±1.0, 40.°91N±0.°05×35.°88E±0.°07, h4km±8km, Error ellipse: s-maj=9.6km s-min=7.3km az=32.2*
*ISK **26** 10:04:03.4, 41.°18N×36.°20E, h5km, ML2.0*
ISC 26 10:04:02.6±1.2, 40.°92N±0.°04×35.°88E±0.°04, h7km±9km, n13, σ0°73/23, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HAVZ	**Havza**	**0.20**	**323**	*i* P	**Pg**	**10 04 05.8**	**-0.8**
HAVZ				*i* S	**Sg**	**10 04 09.7**	**+0.5**
HAVZ	**Havza**	**0.20**	**323**	P	**Pg**	**10 04 05.8**	**-0.8**
HAVZ				S	**Sg**	**10 04 09.7**	**+0.5**
KVT	**Kavak**	**0.21**	**39**	*e*PG	**Pg**	**10 04 07.0**	**+0.2**
KVT				*e*SG	**Sg**	**10 04 10.0**	**+0.4**
KVT	**Kavak**	**0.21**	**39**	*e*Pg	**Pg**	**10 04 07.0**	**+0.2**
KVT				*e*Sg	**Sg**	**10 04 10.0**	**+0.4**
SAMS	**Samsun-Alacam**	**0.50**	**28**	*i* P	**Pg**	**10 04 10.8**	**-1.5**
SAMS				*i* S	**Sb**	**10 04 21.7**	**+0.4**
SAMS	**Samsun-Alacam**	**0.50**	**28**	P	**Pg**	**10 04 10.8**	**-1.5**
BOYT	**Boyabat**	**0.89**	**305**	*i* P	**Pg**	**10 04 19.4**	**-0.3**
BOYT				*i* S	**Sb**	**10 04 33.0**	**+0.5**
BOYT	**Boyabat**	**0.89**	**305**	P	**Pg**	**10 04 19.4**	**-0.3**
BOYT				S	**Sb**	**10 04 33.0**	**+0.5**
COAL	**Corum-Alaca**	**0.95**	**226**	*i* P	**Pg**	**10 04 20.0**	**-0.8**
COAL				*i* S	**Sb**	**10 04 35.0**	**+0.8**
COAL	**Corum-Alaca**	**0.95**	**226**	P	**Pg**	**10 04 20.0**	**-0.8**
COAL				S	**Sb**	**10 04 35.0**	**+0.8**
CORM	**Corum**	**1.20**	**232**	*e*PN	Pn	10 04 33.5	+7.5
SNOP	**Sinop**	**1.21**	**336**	*e*PN	**Pn**	**10 04 25.9**	**0.0**
SNOP				*e*SN	**Sn**	**10 04 42.5**	**-0.1**
SNOP	**Sinop**	**1.21**	**336**	*e*Pn	**Pn**	**10 04 25.9**	**0.0**
SNOP				*e*Sn	**Sn**	**10 04 42.5**	**-0.1**

IDC 26 10:05:16.9±2.0, 8.°74S×127.°02E, h0km, mb3.5/1, mb1 3.6/4, mb1mx3.4/45, mbtmp3.5/4, ML3.6/3, MS2.9/1, Ms1 2.9/1, ms1mx2.3/31, Error ellipse: s-maj=92.3km s-min=28.6km az=71.0, Timor region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**9.40**	**188**	Pn	Pn	10 07 34.3	+0.6
	0.3nm,0.3s,baz=5.8,slow=9.0,SNR=15						
FITZ				Sn	Sn	10 09 12.3	-8.0
	0.2nm,0.3s,baz=331,slow=19,SNR=4.7						
WRA	**Warramunga Arr**	**13.20**	**148**	Pn	Pn	10 08 25.1	-0.6
	0.4nm,0.3s,baz=320,slow=14,SNR=40						
WRA				Sn	Sn	10 10 46.2	-7.2
	0.2nm,0.3s,baz=323,slow=23,SNR=7.1						
ASAR	**Alice Springs**	**16.24**	**157**	Pn	Pn	10 09 06.5	-0.1
	0.1nm,0.3s,baz=332,slow=9.7,SNR=11						
ASAR				Sn	Sn	10 11 56.5	-11
	0.1nm,0.3s,baz=320,slow=18,SNR=3.4						
JHJ	**Hachijo jima 2**	**43.37**	**16**	LR	LR	10 29 19.2	
	comp=Z,17nm,21.1s,baz=74,slow=33						
MKAR	**Makanchi Array**	**68.11**	**329**	P	P	10 16 18.7	0.0
	0.2nm,0.4s,baz=124,slow=7.0,SNR=4.1						

MEX 26 10:07:06.0±0.3, 14.°69N×92.°31W, h100km±5km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.59**	**6**	*e*P	Pn	10 07 32.1	-1.4
CCIG				*i* S	Sn	10 07 53.0	-1.4

*NEIC **26** 10:08:36.7±2.5, 14.°62S×167.°48E, h134km±20km, mb4.7/7, Error ellipse: s-maj=20.3km s-min=12.4km az=207.0*
*ISCJB **26** 10:08:37.5±0.8, 14.°76S±0.°08×167.°4E±0.°1, h150km, mb4.2/13, Error ellipse: s-maj=17.1km s-min=10.7km az=170.0*
*IDC **26** 10:08:37.9±4.5, 14.°66S×167.°40E, h142km±36km, mb3.8/10, mb1 4.0/11, mb1mx3.6/39, mbtmp4.3/11, MS3.3/1, Ms1 3.3/1, ms1mx2.5/26, Error ellipse: s-maj=30.7km s-min=19.2km az=30.0*
ISC 26 10:08:39.1±0.9, 14.°77S±0.°09×167.°3E±0.°1, h150km, n20, σ0°90/22, mb4.2/12, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**7.31**	**186**	P	**Pn**	**10 10 24.2**	**+0.8**
	6.6nm,0.3s,baz=25,slow=17,SNR=24						
DZM				S	**Sn**	**10 11 44.0**	**-1.2**
	5.6nm,0.3s,baz=90,slow=20,SNR=7.0						
DZM	**Mont Dzumac**	**7.31**	**186**	*e*Pn	**Pn**	**10 10 22.7**	**-0.6**
	32nm,0.6s						
DZM				*e*Sn	**Sn**	**10 11 44.9**	**-0.3**
EIDS	**Eidsvold**	**18.51**	**233**	*e*P	**Pn**	**10 12 46.2**	**+0.2**
	4.4nm,0.6s						
EIDS				*e*S	**Sn**	**10 16 12.8**	**-1.6**
PMG	**Port Moresby**	**20.41**	**283**	LR	LR	10 19 09.1	
	comp=Z,70nm,18.4s,baz=74,slow=31						
CTA	**Charters Tower**	**20.77**	**252**	P	Pn	10 13 09.9	-2.8
	7.4nm,0.8s,baz=80,slow=12,SNR=5.6						
CTAO	**Charters Tower**	**20.77**	**252**	*e*P	Pn	10 13 10.1	-2.6
	49nm,0.8s						
URZ	**Urewera**	**24.95**	**161**	P	**P**	**10 13 48.1**	**-0.5**
	4.3nm,0.5s,baz=29,slow=19,SNR=4.8						
STKA	**Stephens Creek**	**29.00**	**230**	P	**P**	**10 14 26.4**	**+1.6**
	5.2nm,0.8s,baz=56,slow=8.6,SNR=12						
STKA				PcP	**PcP**	**10 17 30.1**	**+0.3**
	1.1nm,0.9s,baz=109,slow=4.4,SNR=5.5						
WRA	**Warramunga Arr**	**31.85**	**256**	P	**P**	**10 14 49.7**	**-0.5**
	1.3nm,0.5s,baz=85,slow=9.1,SNR=11						
WRA				PcP	**PcP**	**10 17 37.6**	**0.0**
	0.6nm,0.9s,baz=90,slow=7.9,SNR=3.9						
ASAR	**Alice Springs**	**32.69**	**249**	P	**P**	**10 14 57.1**	**-0.4**
	1.3nm,0.4s,baz=76,slow=9.2,SNR=18						
ASAR				PcP	**PcP**	**10 17 39.2**	**-0.7**
	0.8nm,0.7s,baz=79,slow=2.5,SNR=7.1						
BBOO	**Buckleboo**	**33.58**	**232**	*e*P	**P**	**10 15 06.3**	**+1.2**
	2.2nm,0.4s						
FITZ	**Fitzroy Crossi**	**40.05**	**259**	P	**P**	**10 16 00.1**	**+0.2**
	3.4nm,0.4s,baz=81,slow=7.7						
MBWA	**Marble Bar**	**45.57**	**255**	*e*P	**P**	**10 16 45.0**	**+0.6**
	7.5nm,0.5s						
VNDA	**Vanda**	**62.82**	**181**	P	**P**	**10 18 48.6**	**+0.3**
	1.9nm,0.7s,baz=352,slow=6.7,SNR=13						
SBA	**Scott Base**	**63.09**	**180**	*e*P	**P**	**10 18 51.4**	**+1.2**
	7.4nm,0.8s						
QSPA	**South Pole Qui**	**75.26**	**180**	*e*P	**P**	**10 20 05.2**	**-0.2**
	20nm,0.9s						
MAW	**Mawson**	**81.86**	**202**	P	**P**	**10 20 41.9**	**+0.6**
	1.7nm,0.8s,baz=122,slow=8.5,SNR=6.5						
ILAR	**Eielson Array**	**86.55**	**18**	P	**P**	**10 21 03.8**	**-1.1**
	0.4nm,0.7s,baz=219,slow=6.8,SNR=4.5						
MKAR	**Makanchi Array**	**97.26**	**316**	P	Pdif	10 21 55.1	+0.1
	0.5nm,0.6s,baz=84,slow=6.2,SNR=3.8						
TORD	**Torodi Ar. Bea**	**165.94**	**265**	PKPab	**PKPab**	**10 29 26.7**	**-1.2**
	1.0nm,1.0s,baz=130,slow=2.4,SNR=3.8						

IDC 26 10:16:20.4±999.0, 47.°25N×47.°27E, h0km, Error ellipse: s-maj=486.9km s-min=200.6km az=133.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I43RU	**DUBNA INFRASON**	**1.31**	**331**	*i*		11 31 07.8	
	baz=142,slow=317,SNR=0.2						
I26DE	**FREYUNG INFRAS**	**22.39**	**287**	*i*		12 31 35.2	
	baz=81,slow=304,SNR=2.2						
I48TN	**KESRA INFRASON**	**80.33**	**262**	*i*		13 22 40.0	
	baz=56,slow=301,SNR=0.4						

*IDC **26** 10:27:11.6±5.3, 17.°99S×178.°10W, h502km±58km, mb3.4/8, mb1 3.6/8, mb1mx3.2/35, mbtmp4.3/8, Error ellipse: s-maj=29.1km s-min=25.8km az=153.0*
*ISCJB **26** 10:27:17.1±1.0, 18.°2S±0.°2×178.°2W±0.°2, h590km, mb3.8/7, Error ellipse: s-maj=30.5km s-min=17.9km az=31.6*
ISC 26 10:27:18.6±1.0, 18.°2S±0.°2×178.°2W±0.°2, h590km, n11, σ1°13/13, mb3.7/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**20.43**	**191**	P	**P**	**10 31 14.6**	**-1.8**
	16nm,1.2s,baz=300,slow=4.2,SNR=5.6						
STKA	**Stephens Creek**	**38.66**	**241**	P	**P**	**10 33 54.3**	**+1.3**
	4.9nm,0.7s,baz=93,slow=11,SNR=18						
WRA	**Warramunga Arr**	**44.76**	**260**	P	**P**	**10 34 40.4**	**-0.7**
	3.5nm,0.5s,baz=93,slow=7.4,SNR=82						
WRA				PcP	**PcP**	**10 36 11.2**	**+0.9**
	0.6nm,0.6s,baz=92,slow=3.5,SNR=3.3						
ASAR	**Alice Springs**	**44.89**	**254**	P	**P**	**10 34 42.5**	**+0.4**
	24nm,0.6s,baz=88,slow=8.3,SNR=467						
ASAR				PcP	**PcP**	**10 36 11.7**	**+0.9**
	0.7nm,0.5s,baz=101,slow=3.7,SNR=4.2						
MJAR	**Matsushiro Arr**	**68.22**	**323**	P	**P**	**10 37 20.7**	**-0.7**
	1.1nm,0.5s,baz=158,slow=5.9,SNR=3.8						
SEY	**Seymchan**	**84.07**	**347**	P	**P**	**10 38 46.9**	**-0.8**
	1.0nm,0.5s,baz=59,slow=6.0,SNR=3.5						
ILAR	**Eielson Array**	**86.10**	**13**	P	**P**	**10 38 56.8**	**-0.6**
	0.2nm,0.4s,baz=222,slow=4.9,SNR=5.3						
PDAR	**Pinedale Array**	**87.42**	**43**	P	**P**	**10 39 05.7**	**+1.3**
	0.2nm,0.5s,baz=282,slow=4.5,SNR=2.9						
BRTR	**Keskin Array B**	**145.09**	**315**	PKPbc	**PKPbc**	**10 45 51.5**	**+0.4**
	1.5nm,0.8s,baz=108,slow=4.0,SNR=5.8						
MMAI	**Mount Meron Ar**	**146.43**	**303**	PKPbc	**PKPab**	**10 45 56.5**	**-1.1**
	1.3nm,0.5s,baz=119,slow=1.8,SNR=3.1						
GERES	**GERESS Array B**	**147.91**	**345**	PKPbc	**PKPbc**	**10 45 59.3**	**+1.0**
	0.8nm,0.4s,baz=29,slow=3.0,SNR=8.2						

*ISCJB **26** 10:33:29.0±1.3, 18.°4S±0.°2×178.°3W±0.°2, h557km, mb3.8/5, Error ellipse: s-maj=33.6km s-min=24.4km az=161.0*
*IDC **26** 10:33:29.9±8.5, 18.°32S×178.°25W, h560km±98km, mb3.2/6, mb1 3.4/6, mb1mx3.0/32, mbtmp4.2/6, Error ellipse: s-maj=58.7km s-min=29.7km az=14.0*
ISC 26 10:33:29.6±1.2, 18.°3S±0.°3×178.°3W±0.°2, h557km, n7, σ1°00/8, mb3.8/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**20.29**	**191**	P	**P**	**10 37 27.0**	**-0.8**
	4.5nm,0.8s,baz=356,slow=19,SNR=3.0						
CTA	**Charters Tower**	**33.53**	**261**	P	**P**	**10 39 23.7**	**-0.2**
	3.5nm,0.6s,baz=107,slow=14,SNR=4.0						
STKA	**Stephens Creek**	**38.57**	**242**	P	**P

MKAR				Sn	**Sn**	10 37 11.3	**+1.0**
	0.2nm,0.3s,baz=29,slow=27,SNR=6.9						
MKAR				Lg	Lg	10 37 52.2	
	0.3nm,0.3s,baz=29,slow=33,SNR=8.4						
BVAR	**Borovoye Array**	**10.35 274**		Pn	**Pn**	10 36 23.6	**+1.0**
	0.2nm,0.3s,baz=76,slow=14,SNR=3.9						
BVAR				Sn	**Sn**	10 38 17.6	**+0.4**
	0.6nm,0.3s,baz=235,slow=36,SNR=4.1						

*ISCJB **26** 10:42:32.7±0.7, 32°.25N±0°.04×115°.43W±0°.07, h2km±12km, Error ellipse: s-maj=10.7km s-min=5.0km az=150.4*
*ECX **26** 10:42:34.1±0.6, 32°.29N×115°.38W, h5km, MD2.0, ML2.1*
*MEX **26** 10:42:34.6±0.4, 32°.36N×115°.27W, h12km±51km, MD3.6*
ISC 26 10:42:32.8±1.1, 32°.27N±0°.05×115°.40W±0°.05, h13km±12km, n13, σ0s35/19, 2C-3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.17**	**30**	*eP*	**Pg**	**10 42 36.6**	**-0.2**
CPBX				*eS*	**Sg**	**10 42 39.5**	**0.0**
CPBX				IAML		10 42 40.1	
	comp=E,2μm,0.2s						
CPBX				⇓*e*		10 42 40.1	
CPBX				IAML		10 42 41.7	
	comp=N,1μm,0.1s						
SGL	**Mount Signal**	**0.47**	**324**	⇑*iP*	**Pg**	**10 42 42.2**	**+0.2**
YUH	**Yuha Desert**	**0.58**	**311**	⇑*iP*	**Pg**	**10 42 44.2**	**0.0**
COK	**Cook Ranch**	**0.64**	**335**	⇓*eP*	**Pg**	**10 42 45.4**	**+0.1**
IKP	**In-Ko-Pah, Jac**	**0.71**	**303**	*eP*	**Pg**	**10 42 46.7**	**+0.1**
CRR	**Carrizo Plain**	**0.78**	**322**	⇓*iP*	**Pg**	**10 42 47.8**	**-0.1**
ECBX	**El Chinero**	**0.85**	**159**	*eP*	**Pg**	**10 42 49.5**	**+0.3**
ECBX				*eS*	**Sg**	**10 43 01.1**	**+0.7**
CBX	**Cerro Bola**	**1.07**	**273**	*eP*	**Pg**	**10 42 53.3**	**-0.1**
CBX				*eS*	**Sg**	**10 43 07.2**	**-0.2**
CBX	**Cerro Bola**	**1.07**	**273**	*eP*	**Pg**	**10 42 53.4**	**-0.1**
CBX				*eS*	**Sg**	**10 43 07.8**	**+0.4**
TJIG	**Tijuana**	**1.09**	**279**	*eP*	**Pg**	**10 42 53.4**	**-0.4**
TJIG				*iS*	**Sg**	**10 43 08.0**	**0.0**
SPIG	**San Pedro Mart**	**1.22**	**183**	*eP*	**Pn**	**10 42 55.4**	**-0.4**
SPIG				*eS*	**Sb**	**10 43 11.7**	**0.0**
SPIG	**San Pedro Mart**	**1.22**	**183**	*eP*	**Pn**	**10 42 55.2**	**-0.7**
SDRC	**San Diego Road**	**1.38**	**290**	*eP*	**Pn**	**10 42 58.2**	**+0.4**

*IDC **26** 10:48:21.1±1.9, 22°.06S×169°.94E, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.7/26, mbtmp3.8/5, ML3.8/1, MS3.5/1, Ms1 3.5/1, ms1mx2.5/35, Error ellipse: s-maj=72.3km s-min=31.1km az=160.0*
*NEIC **26** 10:48:22.7±0.9, 21°.95S×169°.86E, h10km, mb4.4/3, Error ellipse: s-maj=24.7km s-min=17.1km az=194.0*
*ISCJB **26** 10:48:23.6±1.3, 22°.1S±0°.2×169°.9E±0°.1, h25km, mb4.0/7, MS3.5/1, Error ellipse: s-maj=33.8km s-min=12.8km az=12.3*
ISC 26 10:48:25.1±1.2, 22°.0S±0°.2×169°.9E±0°.1, h25km, n12, σ0s89/13, mb3.9/7, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.19**	**268**	Pn	**Pn**	**10 49 14.5**	**+0.8**
	10nm,0.3s,baz=126,slow=18,SNR=88						
DZM				Sn	**Sn**	**10 49 51.9**	**+0.9**
	5.7nm,0.3s,baz=63,slow=21,SNR=3.8						
DZM	**Mont Dzumac**	**3.19**	**268**	*eP*n	**Pn**	**10 49 13.1**	**-0.6**
DZM				*eS*n	**Sn**	**10 49 50.8**	**-0.1**
STKA	**Stephens Creek**	**27.01**	**243**	P	**P**	**10 54 05.2**	**0.0**
	1.1nm,0.7s,baz=87,slow=9.6,SNR=5.6						
ASAR	**Alice Springs**	**33.15**	**260**	P	**P**	**10 54 59.9**	**+0.3**
	0.9nm,0.7s,baz=77,slow=8.4,SNR=14						
WRA	**Warramunga Arr**	**33.20**	**267**	P	**P**	**10 54 59.7**	**-0.5**
	0.7nm,0.5s,baz=99,slow=8.1,SNR=11						
MBWA	**Marble Bar**	**46.47**	**261**	*eP*	**P**	**10 56 49.0**	**-1.4**
	2.0nm,0.5s						
NWAO	**Narrogin (SRO)**	**47.55**	**245**	LR	LR	11 16 39.5	
	comp=Z,50nm,18.1s,slow=36						
SBA	**Scott Base**	**55.95**	**181**	*eP*	**P**	**10 58 00.1**	**-0.6**
	1.0nm,0.7s						
QSPA	**South Pole Qui**	**68.09**	**180**	*eP*	**P**	**10 59 23.9**	**+1.3**
	5.7nm,1.1s						
SONM	**Songino Array**	**89.75**	**323**	P	**P**	**11 01 22.4**	**+1.1**
	0.4nm,0.5s,baz=116,slow=3.4,SNR=3.9						
GERES	**GERESS Array B**	**147.16**	**331**	PKPbc	**PKPbc**	**11 08 05.4**	**-0.7**
	0.6nm,0.5s,baz=35,slow=3.6,SNR=5.6						
TORD	**Torodi Ar. Bea**	**165.72**	**234**	PKP	**PKPdf**	**11 08 28.1**	**-0.4**
	0.6nm,1.0s,baz=151,slow=3.3,SNR=3.1						

*SOME **26** 10:58:52.0, 44°.63N×82°.22E, h10km*
ISC 26 10:58:51.7±2.1, 44°.64N±0°.07×82°.26E±0°.09, h3km±20km, n8, σ0s96/16, 2C-2D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**1.79**	**261**	*eP*	**Pb**	**10 59 25.2**	**0.0**
	3.0nm,0.2s						
DJR				*eS*	**Sg**	**10 59 49.4**	**0.0**
	4.6nm,0.2s						
KTMS	**Ketmen**	**1.82**	**230**	*eP*	**Pg**	**10 59 26.4**	**-0.2**
	2.2nm,0.1s						
KTMS				*eS*	**Sg**	**10 59 51.4**	**+1.3**
	11nm,0.5s						
MK31	**Makanchi Array**	**2.16**	**1**	⇓P	**Pb**	**10 59 31.4**	**0.0**
	2.5nm,0.2s,baz=182,slow=14,SNR=72						
MK31				⇑S	**Sb**	**10 59 58.8**	**+0.3**
	1.7nm,0.5s,baz=187,slow=28,SNR=8.0						
KAPS	**Kapalarasan**	**2.16**	**288**	*eP*	**Pb**	**10 59 30.3**	**-1.1**
	1.3nm,0.3s						
KAPS				*eS*	**Sb**	**10 59 58.1**	**-0.5**
	2.3nm,0.4s						
PDGK	**Podgornoye**	**2.39**	**238**	⇑P	**Pb**	**10 59 34.5**	**-0.9**
	1.3nm,0.6s						
PDGK				⇓S	**Sb**	**11 00 06.4**	**+1.2**
	5.6nm,0.7s						
UZB	**Uzynbulak**	**2.77**	**239**	*eP*	**Pb**	**10 59 41.0**	**-0.9**
	1.1nm,0.2s						
UZB				*eS*	**Sb**	**11 00 16.2**	**-0.1**
	2.8nm,0.2s						
KPKS	**Kokpek**	**2.83**	**247**	*eP*	**Pb**	**10 59 41.9**	**-1.0**
	6.6nm,0.2s						
KPKS				*eS*	**Sb**	**11 00 17.8**	**-0.2**
	18nm,0.3s						
ARXS	**Arharly**	**3.21**	**264**	*eP*	**Pb**	**10 59 49.1**	**-0.1**
	3.0nm,0.5s						
ARXS				*eS*	**Sb**	**11 00 30.6**	**+1.9**
	5.2nm,0.5s						

*JMA **26** 11:02:11.4±0.2, 37°.72N×144°.45E, h43km, M3.8*
*IDC **26** 11:02:18.0±5.8, 37°.63N×143°.78E, h0km, mb3.7/2, mb1 3.8/4, mb1mx3.4/46, mbtmp3.7/4, ML3.3/2, Error ellipse: s-maj=115.4km s-min=37.9km az=6.0*
ISC 26 11:02:07.6±2.2, 37°.57N±0°.07×144°.8E±0°.1, h35km, n21, σ2s05/29, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.85**	**289**	P	**Pn**	**11 02 51.6**	**+1.1**
JIO				S	**Sn**	**11 03 21.5**	**-2.1**
OFUJ	**Ofunato**	**2.87**	**303**	P	**Pn**	**11 02 51.9**	**+1.1**
OFUJ				S	**Sn**	**11 03 22.6**	**-1.6**
MIYJ	**Miyakonagasawa**	**3.06**	**312**	P	**Pn**	**11 02 54.3**	**+0.8**
MIYJ				S	**Sn**	**11 03 26.5**	**-2.4**
JMK	**Ichinoseki**	**3.12**	**297**	P	**Pn**	**11 02 55.7**	**+1.4**
JOM	**Ohasama**	**3.33**	**306**	P	**Pn**	**11 02 58.7**	**+1.6**
JOM				S	**Sn**	**11 03 34.3**	**-1.1**
JOU	**Okura**	**3.35**	**285**	P	**Pn**	**11 02 59.2**	**+1.8**
JOU				*eS*	**Sn**	**11 03 34.8**	**-1.1**
JFT	**Otama**	**3.53**	**270**	P	**Pn**	**11 03 02.3**	**+2.4**
JFT				S	**Sn**	**11 03 39.5**	**-1.0**
JRG	**Rokugo**	**3.73**	**301**	P	**Pn**	**11 03 04.6**	**+2.0**
JYK	**Kaneyama**	**3.73**	**292**	P	**Pn**	**11 03 04.5**	**+1.9**
JYK				*eS*	**Sn**	**11 03 44.4**	**-0.9**
JTM	**Tenmabayashi**	**4.31**	**319**	P	**Pn**	**11 03 12.1**	**+1.4**
JTM				S	**Sn**	**11 03 56.7**	**-3.0**
JOT	**Ohata**	**4.78**	**324**	P	**Pn**	**11 03 18.7**	**+1.7**
JRY	**Ryogami san**	**4.97**	**254**	P	**Pn**	**11 03 21.1**	**+1.4**
JRY				*eS*	**Sn**	**11 04 12.6**	**-3.3**
JCH	**Churui**	**5.15**	**348**	P	**Pn**	**11 03 23.4**	**+1.3**
JKB	**Kayabe**	**5.19**	**327**	P	**Pn**	**11 03 25.0**	**+2.4**
MJAR	**Matsushiro Arr**	**5.35**	**261**	Pn	**Pn**	**11 03 28.1**	**+3.1**
	0.8nm,0.3s,baz=90,slow=15,SNR=6.6						
MJAR				Sn	**Sn**	**11 04 24.7**	**-0.7**
	0.2nm,0.3s,baz=104,slow=36,SNR=2.8						
NEM2	**Nemuro 2**	**5.83**	**7**	P	**Pn**	**11 03 31.6**	**+0.1**
JHJ	**Hachijo jima 2**	**6.03**	**224**	Pn	Pn	11 03 41.5	+7.2
	3.8nm,0.3s,baz=345,slow=20,SNR=4.4						
JHJ				Sn	**Sn**	**11 04 37.9**	**-4.3**
	4.7nm,0.3s,baz=255,slow=23,SNR=5.9						
JOSM	**Okushiri--Mats**	**6.08**	**319**	P	**Pn**	**11 03 36.9**	**+2.0**
JTKR	**Abashiri--Toko**	**6.42**	**354**	P	**Pn**	**11 03 41.0**	**+1.4**
WRA	**Warramunga Arr**	**58.05**	**192**	P	P	11 12 12.0	+15
	0.8nm,0.5s,baz=10,slow=7.0,SNR=12						
ASAR	**Alice Springs**	**61.77**	**191**	P	P	11 12 37.9	+15
	0.2nm,0.4s,baz=8.1,slow=7.5,SNR=8.1						

IDC 26 11:04:33.5±1.2, 13°.87N×143°.75E, h0km, mb3.2/4, mb1 3.6/4, mb1mx3.3/46, mbtmp3.2/4, Error ellipse: s-maj=31.6km s-min=22.5km az=118.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**1.12**	**104**	Pn	Pn	11 04 56.3	-0.2
	56nm,0.3s,baz=223,slow=19,SNR=33						
GUMO				Sn	Sg	11 05 08.4	-1.2
	186nm,0.3s,baz=306,slow=19,SNR=13						
GUMO				LR	LR	11 05 28.0	
	comp=Z,181nm,18.8s,baz=176,slow=49						
WRA	**Warramunga Arr**	**34.85**	**196**	P	P	11 11 26.4	-0.1
	0.2nm,0.6s,baz=12,slow=9.3,SNR=3.9						
ASAR	**Alice Springs**	**38.52**	**195**	P	P	11 11 58.0	+0.1
	0.2nm,0.5s,baz=32,slow=7.4,SNR=8.3						
ILAR	**Eielson Array**	**68.79**	**25**	P	P	11 15 39.9	+0.7
	0.2nm,0.6s,baz=250,slow=6.6,SNR=3.0						
YKA	**Yellowknife Ar**	**83.12**	**27**	P	P	11 17 00.2	-0.8
	0.2nm,0.6s,baz=276,slow=4.7,SNR=2.7						

IDC 26 11:11:41.0±2.9, 30°.43S×175°.95W, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.5/30, mbtmp3.6/3, ML3.3/1, Error ellipse: s-maj=67.9km s-min=54.8km az=6.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**2.07**	**304**	Pn	Pn	11 12 16.6	-0.5
	10nm,0.3s,baz=90,slow=20,SNR=2.4						
RAO				Sn	Sn	11 12 38.9	-4.7
	157nm,0.3s,baz=33,slow=19,SNR=5.6						
ASAR	**Alice Springs**	**44.87**	**266**	P	P	11 19 57.7	+0.2
	0.5nm,0.7s,baz=109,slow=7.3,SNR=8.7						
WRA	**Warramunga Arr**	**45.87**	**271**	P	P	11 20 04.9	-0.5
	0.5nm,0.7s,baz=114,slow=6.6,SNR=6.2						
FINES	**FINESS Array B**	**145.76**	**341**	PKPbc	PKPdf	11 31 20.6	-0.3
	4.0nm,1.2s,baz=5.7,slow=2.8,SNR=4.9						

*IDC **26** 11:15:06.9±1.0, 13°.1N×145°.69E, h0km, mb3.8/6, mb1 4.0/6, mb1mx3.6/53, mbtmp3.8/6, Error ellipse: s-maj=24.4km s-min=18.2km az=62.0*
*ISCJB **26** 11:15:11.1±0.9, 13°.1N±0°.1×145°.7E±0°.1, h43km, mb3.8/6, Error ellipse: s-maj=21.5km s-min=11.6km az=43.8*
ISC 26 11:15:13.0±1.1, 13°.1N±0°.2×145°.6E±0°.2, h43km, n7, σ0s59/8, mb3.6/6, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**0.88**	**306**	Pn	**Pn**	**11 15 28.1**	**-0.8**
	76nm,0.3s,baz=124,slow=5.4,SNR=53						
GUMO				LR	LR	11 15 35.7	
	comp=Z,44nm,20.7s,baz=94,slow=31						
GUMO				Sn	**Sn**	**11 15 41.4**	**+0.9**
	90nm,0.3s,baz=162,slow=20,SNR=11						
WRA	**Warramunga Arr**	**34.63**	**199**	P	**P**	**11 21 58.4**	**0.0**
	0.5nm,0.6s,baz=21,slow=9.6,SNR=10						
ASAR	**Alice Springs**	**38.27**	**197**	P	**P**	**11 22 29.7**	**+0.3**
	0.4nm,0.6s,baz=20,slow=9.0,SNR=11						
KURBB	**Kurchatov Arra**	**65.47**	**320**	P	**P**	**11 25 51.6**	**0.0**
	1.1nm,0.2s,baz=106,slow=6.4,SNR=5.4						
ILAR	**Eielson Array**	**68.72**	**25**	P	**P**	**11 26 12.1**	**0.0**
	0.3nm,0.5s,baz=248,slow=5.6,SNR=5.7						
BVAR	**Borovoye Array**	**70.77**	**322**	P	**P**	**11 26 24.8**	**-0.1**
	1.5nm,0.6s,baz=103,slow=8.0,SNR=7.3						
YKA	**Yellowknife Ar**	**82.98**	**27**	P	**P**	**11 27 33.7**	**+0.3**
	0.3nm,0.5s,baz=288,slow=5.3,SNR=6.5						

*IDC **26** 11:34:08.7±0.6, 25°.50N×142°.71E, h0km, mb4.2/27, mb1 4.3/30, mb1mx4.2/49, mbtmp4.2/30, ML3.4/3, MS3.5/13, Ms1 3.5/13, ms1mx3.2/46, Error ellipse: s-maj=20.0km s-min=12.4km az=83.0*
*NEIC **26** 11:34:10.2±0.3, 25°.50N×142°.74E, h10km, mb4.6/7, Error ellipse: s-maj=8.9km s-min=5.7km az=81.0*
*MOS **26** 11:34:11.2±0.8, 25°.48N×142°.68E, h29km, mb4.6/12, Error ellipse: s-maj=18.2km s-min=7.8km az=115.4*
*ISCJB **26** 11:34:12.5±0.4, 25°.51N±0°.06×142°.7E±0°.1, h38km, mb4.2/35, MS3.5/9, Error ellipse: s-maj=13.4km s-min=8.1km az=169.4*
ISC 26 11:34:14.6±0.6, 25°.51N±0°.07×142°.6E±0°.1, h38km, n73, σ1s44/69, mb4.3/35, MS3.5/9, 4C, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**7.97**	**343**	Pn	**Pn**	**11 36 07.6**	**-0.3**
	2.3nm,0.3s,baz=127,slow=20,SNR=3.9						
JHJ				Sn	**Sn**	**11 37 34.5**	**-2.2**
	baz=86,slow=16,SNR=2.0						
JHJ				LR	LR	11 39 10.5	
	comp=Z,424nm,18.6s,baz=160,slow=38						
MJAR	**Matsushiro Arr**	**11.62**	**342**	Pn	**Pn**	**11 36 57.6**	**-0.3**
	0.2nm,0.3s,baz=160,slow=12,SNR=3.1						
MJAR				Sn	**Sn**	**11 39 04.6**	**-1.8**
	baz=165,slow=10,SNR=3.4						
MJAR				LR	LR	11 41 18.7	
	comp=Z,143nm,18.0s,baz=155,slow=37						
GUMO	**Guam**	**12.05**	**169**	LR	LR	11 40 53.7	
	comp=Z,125nm,19.4s,baz=20,slow=34						
ERM	**Erimo**	**16.46**	**1**	*i*P	**P**	**11 38 07.8**	**+2.8**
ERM				pmax	pmax		
	comp=Z,36nm,1.7s						
KSRS	**Korea Array**	**17.26**	**317**	P	**Pn**	**11 38 12.9**	**+0.3**
	comp=Z,0.1nm,0.3s,baz=138,slow=12,SNR=5.3						
KSRS				LR	LR	11 44 48.0	
	comp=Z,148nm,18.1s,baz=125,slow=37						
KSAR	**Wonju Array Be**	**17.27**	**317**	P	**Pn**	**11 38 13.0**	**+0.1**
KSAR	**Wonju Array Be**	**17.27**	**317**	P	**Pn**	**11 38 12.9**	**+0.1**
ASAJ	**Asahikawa**	**18.56**	**360**	*eP*	**P**	**11 38 25.4**	**-2.6**
	comp=Z,3.2nm,1.0s						
MSHR	**Mys Shultsa**	**19.46**	**334**	*i*P	**Pn**	**11 38 42.2**	**+2.8**
USRK	**Ussuriysk Ar.**	**20.55**	**338**	P	**P**	**11 38 50.0**	**+0.3**
	comp=Z,4.3nm,0.7s,baz=169,slow=8.6,SNR=7.1						
YSS	**Yuzh-Sakhalins**	**21.40**	**0**	*eP*	**P**	**11 39 05.5**	**+6.6**
YSS				*e*		11 39 20.1	
H11N1	**WAKE ISLAND Hy**	**23.12**	**100**	T	T	12 02 54.2	
	baz=290,slow=74,SNR=8.8						
H11N2	**WAKE ISLAND Hy**	**23.12**	**99**	T	T	12 02 59.9	
	baz=290,slow=74,SNR=8.2						
H11N3	**WAKE ISLAND Hy**	**23.14**	**99**	T	T	12 02 55.4	
	baz=290,slow=74,SNR=9.4						
H11S3	**WAKE ISLAND Hy**	**23.36**	**103**	T	T	12 03 09.6	
	baz=292,slow=75,SNR=6.4						
H11S1	**WAKE ISLAND Hy**	**23.37**	**103**	T	T	12 03 09.8	
	baz=292,slow=75,SNR=7.2						
H11S2	**WAKE ISLAND Hy**	**23.38**	**103**	T	T	12 03 13.1	
	baz=292,slow=75,SNR=7.9						
KLR	**Kul'dur**	**25.15**	**343**	P	**P**	**11 39 37.0**	**+1.0**
	comp=Z,11nm,0.8s,baz=147,slow=8.2,SNR=41						
KLR	**Kul'dur**	**25.15**	**343**	*c*P	**P**	**11 39 36.8**	**+0.8**
HIA	**Hailar**	**29.65**	**329**	*eP*	**P**	**11 40 17.1**	**+0.6**
HIA				pmax	pmax		
	comp=Z,7.0nm,1.1s						
PETK	**Petropavlovsk-**	**29.80**	**18**	LR	LR	11 51 01.0	
	comp=Z,22nm,21.4s,baz=206,slow=34						
SONM	**Songino Array**	**36.13**	**318**	P	**P**	**11 41 13.4**	**+0.2**
	comp=Z,1.0nm,0.7s,baz=131,slow=7.4,SNR=4.5						
SONM				LR	LR	11 57 17.5	
	comp=Z,70nm,19.3s,baz=102,slow=38						
YAK	**Yakutsk**	**37.53**	**350**	*eP*	**P**	**11 41 27.3**	**+2.6**
YAK				pmax	pmax		
	comp=Z,4.0nm,0.7s						
SEY	**Seymchan**	**37.97**	**7**	P	**P**	**11 41 28.3**	**-0.1**
	comp=Z,1.6nm,0.8s,baz=208,slow=13,SNR=5.3						
HNR	**Honiara**	**38.62**	**152**	LR	LR	11 56 14.1	
	comp=Z,81nm,18.7s,baz=356,slow=34						
ZAK	**Zakamensk**	**39.06**	**320**	*eP*	**P**	**11 41 37.7**	**-0.2**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
CMAR	**Chiang Mai Arr**	**40.96**	**269**	P	**P**	**11 41 54.1**	**+0.2**
	comp=Z,0.5nm,0.3s,baz=50,slow=8.4,SNR=3.6						
CMAR				LR	LR	11 58 45.5	
	comp=Z,32nm,19.5s,baz=70,slow=36						
WRAB	**Tennant Creek**	**45.88**	**191**	*eP*	**P**	**11 42 32.7**	**-0.8**
WRAB				pmax	pmax		
	comp=Z,6.0nm,0.7s						
WRAB	**Tennant Creek**	**45.88**	**191**	*eP*	**P**	**11 42 32.7**	**-0.8**
	comp=Z,5.6nm,0.7s						
WRA	**Warramunga Arr**	**45.90**	**191**	P	**P**	**11 42 33.0**	**-0.6**
	comp=Z,3.0nm,0.3s,baz=9.3,slow=8.7,SNR=117						
WRA	**Warramunga Arr**	**45.90**	**191**	P	**P**	**11 42 33.0**	**-0.6**
FITZ	**Fitzroy Crossi**	**46.40**	**203**	P	**P**	**11 42 37.7**	**+0.2**
	comp=Z,3.1nm,0.7s,baz=38,slow=12,SNR=14						
FITZ	**Fitzroy Crossi**	**46.40**	**203**	*eP*	**P**	**11 42 37.5**	**+0.1**
	comp=Z,3.2nm,0.7s						
ASAR	**Alice Springs**	**49.61**	**191**	P	**P**	**11 43 01.9**	**-0.5**
	comp=Z,0.6nm,0.6s,baz=17,slow=10.0,SNR=16						
ZALV	**Zalesovo Beam**	**50.94**	**320**	P	**P**	**11 43 11.5**	**-0.5**
	comp=Z,0.7nm,0.4s,baz=123,slow=7.1,SNR=2.9						
ZALV				PcP	**PcP**	**11 44 27.6**	**-0.4**
	comp=Z,0.8nm,0.3s,baz=114,slow=6.8,SNR=6.4						
MKAR	**Makanchi Array**	**51.79**	**311**	P	**P**	**11 43 18.8**	**+0.2**
	comp=Z,1.1nm,0.7s,baz=86,slow=8.5,SNR=6.9						
MKAR				PcP	**PcP**	**11 44 32.1**	**+0.8**
	comp=Z,0.5nm,0.6s,baz=90,slow=4.5,SNR=2.7						
MKAR				LR	LR	12 06 21.1	
	comp=Z,49nm,19.8s,baz=92,slow=37						
NRIK	**Noril'sk**	**54.26**	**339**	P	**P**	**11 43 36.7**	**+0.3**
	comp=Z,3.7nm,0.6s,baz=101,slow=12,SNR=3.6						
NRIK				LR	LR	12 07 38.2	
	comp=Z,81nm,18.3s,baz=264,slow=37						
KURK	**Kurchatov**	**54.37**	**315**	P	**P**	**11 43 37.9**	**+0.4**
KURK	**Kurchatov**	**54.37**	**315**	P	**P**	**11 43 37.9**	**+0.4**
KURBB	**Kurchatov Arra**	**54.43**	**315**	P	**P**	**11 43 37.9**	**0.0**
	comp=Z,5.5nm,0.6s,baz=91,slow=8.0,SNR=28						
STKA	**Stephens Creek**	**57.08**	**181**	P	**P**	**11 43 56.4**	**-0.6**
	comp=Z,2.6nm,0.9s,baz=358,slow=5.4,SNR=4.5						
TRF	**Thorofare Moun**	**57.27**	**29**	*eP*	**P**	**11 43 57.9**	**-0.3**
	comp=Z,1.8nm,0.8s						
ILAR	**Eielson Array**	**58.91**	**28**	P	**P**	**11 44 08.6**	**-1.0**
	comp=Z,1.0nm,0.7s,baz=256,slow=5.9,SNR=17						
BVAR	**Borovoye Array**	**59.47**	**318**	P	**P**	**11 44 13.9**	**+0.3**
	comp=Z,5.2nm,0.6s,baz=89,slow=8.2,SNR=22						
BRVK	**Borovoye**	**59.53**	**318**	*c*P	**P**	**11 44 13.9**	**-0.1**
BRVK				pmax	pmax		
	comp=Z,19nm,1.0s						
BRVK	**Borovoye**	**59.53**	**318**	*eP*	**P**	**11 44 14.3**	**+0.3**
	comp=Z,9.2nm,0.6s						
KKAR	**Karatay Array**	**60.33**	**307**	*eP*	**P**	**11 44 20.0**	**+0.3**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KKAR	**Karatay Array**	**60.33**	**307**	*eP*	**P**	**11 44 19.9**	**+0.3**
	comp=Z,1.3nm,0.5s						
ARU	**Arti**	**65.91**	**323**	P	**P**	**11 44 56.1**	**-0.3**
	comp=Z,7.4nm,0.8s,baz=96,slow=3.2,SNR=11						
ARU	**Arti**	**65.91**	**323**	*c*P	**P**	**11 44 56.6**	**+0.2**
ARU						11 45 25.7	
ARU						11 47 18.7	
ARU				S	**S**	**11 53 44.7**	**+3.9**
ARU				SS	**SS**	**11 57 51.3**	**-4.4**
ARU				pmax	pmax		
	comp=Z,11nm,1.0s						
ARU	**Arti**	**65.91**	**323**	*eP*	**P**	**11 44 56.3**	**-0.1**
ABKAR	**Akbulak array**	**66.48**	**315**	*eP*	**P**	**11 45 00.2**	**0.0**
	comp=Z,3.7nm,0.8s						
AKTO	**Aktyubinsk**	**67.44**	**316**	P	**P**	**11 45 06.0**	**-0.3**
	comp=Z,2.5nm,0.6s,baz=80,slow=12,SNR=5.3						
AKTO	**Aktyubinsk**	**67.44**	**316**	P	**P**	**11 45 06.0**	**-0.3**
GEYT	**Alibeck**	**70.69**	**303**	P	**P**	**11 45 27.4**	**+0.6**
	comp=Z,1.5nm,0.4s,baz=46,slow=4.2,SNR=2.4						
YKA	**Yellowknife Ar**	**73.34**	**28**	P	**P**	**11 45 41.5**	**-0.6**
	comp=Z,1.1nm,0.6s,baz=293,slow=5.9,SNR=13						
NCK	**Nalchik**	**79.01**	**313**	*eP*	**P**	**11 46 13.5**	**-1.2**
KBZ	**Khabaz**	**79.37**	**313**	P	**P**	**11 46 17.4**	**+0.8**
	comp=Z,5.2nm,0.8s,baz=178,slow=6.3,SNR=7.4						
FINES	**FINESS Array B**	**79.53**	**334**	P	**P**	**11 46 17.2**	**+0.1**
	comp=Z,1.5nm,0.4s,baz=78,slow=5.5,SNR=11						
FFC	**Flin Flon**	**82.87**	**32**	*eP*	**P**	**11 46 33.5**	**-1.6**
FFC				pmax	pmax		
	comp=Z,6.0nm,1.3s						
FFC	**Flin Flon**	**82.87**	**32**	*eP*	**P**	**11 46 33.5**	**-1.6**
	comp=Z,6.3nm,1.3s						
AKASG	**Malin Array Be**	**84.12**	**324**	P	**P**	**11 46 41.0**	**-0.6**
	comp=Z,1.5nm,0.7s,baz=50,slow=5.5,SNR=6.7						
AKASG	**Malin Array Be**	**84.12**	**324**	*ce*P	**P**	**11

LPAZ	**La Paz**	**1.51**	**81**	P	Pn	12 02 40.5	+0.6
	16nm,0.3s,baz=303,slow=7.3,SNR=528							
LPAZ				S	S	12 03 07.1	+0.5
	4.4nm,0.3s,baz=336,slow=20,SNR=12							
LVC	**Limon Verde**	**6.10**	**173**	P	Pn	12 03 35.2	+1.3
	54nm,0.3s,baz=5.2,slow=11,SNR=39							
LVC				S	S	12 04 42.9	-1.2
	83nm,0.3s,baz=337,slow=10,SNR=12							
PTGA	**Pitinga**	**18.39**	**32**	P	P	12 06 03.6	-1.2
	0.3nm,0.3s,baz=214,slow=16,SNR=3.0							
TORD	**Torodi Ar. Bea**	**76.44**	**72**	P	P	12 13 33.0	+0.5
	0.7nm,0.9s,baz=252,slow=5.2,SNR=3.7							
YKA	**Yellowknife Ar**	**86.27**	**341**	P	P	12 14 22.9	-0.2
	0.2nm,0.7s,baz=130,slow=5.0,SNR=4.8							

IDC 26 12:17:23.1±2.5, 54°10'N×86°37'E, h0km, mb1 3.1/2, mb1mx3.0/61, mbtmp3.1/2, ML2.6/2, Error ellipse: s-maj=19.3km s-min=12.3km az=57.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.93**	**261**	*i*		12 23 30.0	
	baz=82,slow=316,SNR=4.8						
ZALV	**Zalesovo Beam**	**0.93**	**261**	Pg	Pg	12 17 39.8	-1.2
	0.8nm,0.3s,baz=80,slow=17,SNR=10.0						
ZALV				Lg	Lg	12 17 54.1	
	1.9nm,0.3s,baz=79,slow=30,SNR=18						
KURBB	**Kurchatov Arra**	**5.93**	**237**	Pn	Pn	12 18 53.2	+1.0
	0.1nm,0.3s,baz=54,slow=14,SNR=6.1						
KURBB				Lg	Lg	12 20 32.2	
	0.0nm,0.3s,baz=55,slow=29,SNR=2.9						
MKAR	**Makanchi Array**	**7.77**	**201**	Pn	Pn	12 19 18.4	+1.0
	0.2nm,0.3s,baz=21,slow=13,SNR=9.3						
MKAR				Lg	Lg	12 21 30.9	
	0.1nm,0.3s,baz=23,slow=30,SNR=3.3						

*CSEM **26** 12:24:01.3±0.1, 40°64N×27°66E, h36km±1km, MD2.1, Error ellipse: s-maj=5.0km s-min=2.2km az=91.0*
*DDA **26** 12:24:05.1, 40°76N×27°69E, h7km, Md2.5*
ISK 26 12:24:01.5, 40°67N×27°73E, h29km, MD2.1, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRMT	**Marmara Adasi**	**0.13**	**236**	*e*PG	Pn	12 24 07.4	-0.2
MRMT				*e*SG	Sb	12 24 11.7	+1.0
MRMT	**Marmara Adasi**	**0.13**	**236**	*e*Pg	Pn	12 24 07.4	-0.2
MRMT				*e*Sg	Sb	12 24 11.7	+1.0
SBT4	**Kumbag-Tekirda**	**0.21**	**316**	*e*PG	Pb	12 24 07.9	+0.3
SBT4				*e*SG	Sb	12 24 13.0	+1.2
SBT4	**Kumbag-Tekirda**	**0.21**	**316**	*e*Pg	Pb	12 24 07.9	+0.3
SBT4				*e*Sg	Sb	12 24 13.0	+1.2
SBT3	**Marmara-Eregli**	**0.28**	**41**	*e*PG	Pn	12 24 09.4	-0.1
SBT3	**Marmara-Eregli**	**0.28**	**41**	*e*Pg	Pn	12 24 09.4	-0.1
CTKS	**Kestanelik-??a**	**0.81**	**46**	*e*PG	Pb	12 24 17.5	+0.5
CTKS				*e*SG	Sn	12 24 28.9	+0.8
CTKS	**Kestanelik-??a**	**0.81**	**46**	*e*Pg	Pb	12 24 17.5	+0.4
CTKS				*e*Sg	Sn	12 24 28.9	+0.9
ARMT	**Armutlu**	**0.87**	**97**	*e*PG	Pb	12 24 17.9	0.0
ARMT	**Armutlu**	**0.87**	**97**	*e*Pg	Pb	12 24 17.9	-0.1
SBT5	**Esenkoy-Cinarc**	**0.87**	**92**	*e*PG	Pb	12 24 18.0	-0.1
SBT5	**Esenkoy-Cinarc**	**0.87**	**92**	*e*Pg	Pb	12 24 18.0	-0.1

DDA 26 12:24:28.2, 38°86N×27°88E, h7km, Md2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.68**	**74**	*i* P	Pg	12 24 41.5	+0.2
DEMI				*i* S	Sb	12 24 51.3	-0.7
DEMI	**Demirci**	**0.68**	**74**	P	Pg	12 24 41.5	+0.3
DEMI				S	Sb	12 24 51.3	-0.7

*IDC **26** 12:25:04.0±0.8, 13°12N×145°73E, h0km, mb3.8/8, mb1 4.0/8, mb1mx3.7/41, mbtmp3.8/8, Error ellipse: s-maj=20.5km s-min=17.0km az=85.0*
*ISCJB **26** 12:25:08.4±0.7, 13°07N±0°10×145°7E±0°1, h43km, mb3.8/8, Error ellipse: s-maj=16.8km s-min=10.8km az=44.9*
ISC 26 12:25:10.2±0.9, 13°1N±0°1×145°6E±0°1, h43km, n13, σ0§63/13, mb3.8/8, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.88**	**302**		**Pn**	**12 25 25.6**	**-0.6**
	147nm,0.3s,baz=108,slow=5.7,SNR=53						
GUMO				Sn	**Sn**	**12 25 38.4**	**+0.6**
	324nm,0.3s,baz=173,slow=19,SNR=16						
WRA	**Warramunga Arr**	**34.68**	**199**	P	**P**	**12 31 55.4**	**-0.6**
	0.6nm,0.6s,baz=22,slow=9.8,SNR=10						
FITZ	**Fitzroy Crossi**	**36.76**	**213**	P	**P**	**12 32 14.6**	**+0.8**
	0.5nm,0.6s,baz=351,slow=13,SNR=2.4						
ASAR	**Alice Springs**	**38.32**	**198**	P	**P**	**12 32 26.8**	**-0.2**
	0.4nm,0.6s,baz=25,slow=8.5,SNR=13						
MKAR	**Makanchi Array**	**62.35**	**316**	P	**P**	**12 35 28.9**	**+0.5**
	0.5nm,0.4s,baz=92,slow=9.2,SNR=11						
ILAR	**Eielson Array**	**68.67**	**25**	P	**P**	**12 36 08.6**	**-0.3**
	0.5nm,0.5s,baz=250,slow=5.6,SNR=14						
INK	**Inuvik**	**74.52**	**22**	P	**P**	**12 36 44.5**	**+0.6**
	1.7nm,0.7s,baz=333,slow=2.3,SNR=3.0						
YKA	**Yellowknife Ar**	**82.93**	**27**	P	**P**	**12 37 30.9**	**+0.6**
	0.5nm,0.5s,baz=284,slow=5.0,SNR=10						
FINES	**FINESS Array B**	**91.90**	**335**	P	**P**	**12 38 12.8**	**-1.0**
	0.7nm,0.5s,baz=46,slow=4.4,SNR=5.2						
DBIC	**Dimbokro**	**144.71**	**302**	PKP	**PKPdf**	**12 44 43.0**	**-0.3**
	2.4nm,0.5s,baz=48,slow=3.7,SNR=6.5						
KIC	**Kosan Boka**	**144.78**	**302**	*e*PKP1	**PKPdf**	**12 44 43.0**	**-0.5**
	25nm,1.0s						
TIC	**Toumodi**	**144.85**	**302**	*e*PKP1	PKPbc	12 44 43.1	+0.4
LIC	**Lamto**	**145.09**	**302**	*e*PKP1	**PKPdf**	**12 44 44.0**	**0.0**
	64nm,1.4s						

*NIED **26** 12:31:00.3, 37°50N×141°50E, h71km, Mw3.5 Best double couple: M0 2.19000×10^14 NP1:φs232.00000°, δ29.00000°, λ72.00000°. NP2:φs71.00000°, δ62.00000°, λ99.00000°.*
JMA 26 12:31:18.6, 37°52N×141°46E, h54km±1km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.49**	**252**	P	Pn	12 31 30.0	-0.1
JFK				S	Sn	12 31 38.2	-0.1
JMM	**Marumori**	**0.63**	**303**	P	Pn	12 31 31.8	+0.1
JMM				S	Sn	12 31 41.3	+0.1
ONAJ	**Iwakimizuishiy**	**0.67**	**232**	P	Pn	12 31 32.2	0.0
ONAJ				S	Sn	12 31 41.9	-0.2
JFT	**Otama**	**0.89**	**270**	P	Pn	12 31 35.7	+0.7
JFT				S	Sn	12 31 47.8	+0.7
JIO	**Ouri**	**0.94**	**355**	P	Pn	12 31 35.7	+0.1
JIO				S	Sn	12 31 47.9	-0.2
JOU	**Okura**	**1.05**	**324**	P	Pn	12 31 37.1	-0.1
JYS	**Shirataka**	**1.31**	**303**	P	Pn	12 31 41.0	+0.4
JYS				S	Sn	12 31 57.7	+0.7
JFY	**Yanaizu**	**1.40**	**266**	P	Pn	12 31 42.3	+0.5
JFY				S	Sn	12 31 59.7	+0.4
JMK	**Ichinoseki**	**1.44**	**353**	P	Pn	12 31 42.6	+0.2
JMK				S	Sn	12 32 00.6	+0.4
JYK	**Kaneyama**	**1.64**	**328**	P	Pn	12 31 45.6	+0.5
JNS	**Sasagawa**	**1.73**	**281**	P	Pn	12 31 46.9	+0.7
JYA	**Atsumi**	**1.75**	**308**	P	Pn	12 31 46.9	+0.4
JYA				S	Sn	12 32 09.5	+1.9
MAT	**Matsushiro**	**2.78**	**250**	P	Pn	12 32 01.7	+1.0
MAT				S	Sn	12 32 38.3	+5.3

*DDA **26** 12:49:48.0, 40°30N×29°79E, h6km, Md2.7*
*ISK **26** 12:49:48.7, 40°23N×29°91E, h15km, MD2.5*
*ISCJB **26** 12:49:49.1±0.5, 40°22N±0°04×29°95E±0°03, h4km±7km, Error ellipse: s-maj=6.3km s-min=4.4km az=168.7*
*CSEM **26** 12:49:49.1±0.3, 40°21N×29°96E, h8km, MD2.5, Error ellipse: s-maj=7.4km s-min=5.4km az=155.0*
ISC 26 12:49:49.3±0.8, 40°18N±0°04×29°94E±0°02, h13km±5km, n17, σ1§29/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAVI	**Cavuskoy**	**0.07**	**285**	*e*PG	**Pg**	**12 49 51.5**	**-0.5**
CAVI				*e*SG	**Sg**	**12 49 54.1**	**+0.2**
CAVI	**Cavuskoy**	**0.07**	**285**	*e*Pg	**Pg**	**12 49 51.5**	**-0.5**
CAVI				*e*Sg	**Sg**	**12 49 54.1**	**+0.2**
BORA	**Eskisehir**	**0.50**	**127**	*i* P	**Pg**	**12 49 57.0**	**-2.1**
BORA				*i* S	**Sg**	**12 50 05.3**	**-0.5**
BORA	**Eskisehir**	**0.50**	**127**	P	**Pg**	**12 49 57.0**	**-2.1**
BORA				S	**Sg**	**12 50 05.3**	**-0.5**
GULT	**Gulveren**	**0.51**	**60**	*e*PG	**Pg**	**12 49 59.0**	**-0.2**
GULT				*e*SG	**Sb**	**12 50 06.8**	**-0.7**
GULT	**Gulveren**	**0.51**	**60**	*e*Pg	**Pg**	**12 49 59.1**	**-0.2**
GULT				*e*Sg	**Sb**	**12 50 06.8**	**-0.7**
IGD	**Bursa**	**0.57**	**278**	*i* P	**Pg**	**12 49 56.9**	**-3.5**
IGD				*i* S	**Sb**	**12 50 07.6**	**-1.5**
TVSB	**Tavsanli**	**0.82**	**207**	*e*PG	**Pb**	**12 50 05.9**	**+0.5**
TVSB	**Tavsanli**	**0.82**	**207**	*e*Pg	**Pb**	**12 50 05.9**	**+0.5**
ARMT	**Armutlu**	**0.91**	**295**	*e*PG	**Pg**	**12 50 05.7**	**-1.1**
ARMT				*e*SG	**Sb**	**12 50 18.6**	**-0.3**
ARMT	**Armutlu**	**0.91**	**295**	*e*Pg	**Pg**	**12 50 05.7**	**-1.1**
ARMT				*e*Sg	**Sb**	**12 50 18.6**	**-0.3**
SAHE	**Sakarya_HENDEK**	**0.97**	**46**	*i* P	**Pg**	**12 50 06.3**	**-1.7**
SAHE				*i* S	**Sb**	**12 50 21.1**	**+0.4**
SAHE	**Sakarya_HENDEK**	**0.97**	**46**	P	**Pg**	**12 50 06.3**	**-1.7**
SAHE				S	**Sb**	**12 50 21.1**	**+0.4**
MDUB	**Mudurnu**	**1.01**	**73**	*e*PG	**Pb**	**12 50 08.4**	**-0.2**
MDUB	**Mudurnu**	**1.01**	**73**	*e*Pg	**Pb**	**12 50 08.4**	**-0.2**
GDZ	**Gediz**	**1.15**	**198**	*i* P	**Pn**	**12 50 12.7**	**+1.5**
GDZ				*i* S	**Sn**	**12 50 28.2**	**+1.4**
GDZ	**Gediz**	**1.15**	**198**	P	**Pn**	**12 50 12.7**	**+1.5**
GDZ				S	**Sn**	**12 50 28.2**	**+1.4**

*NIED **26** 13:07:00, 39°00N×142°40E, h29km, Mw3.4 Best double couple: M0 1.67000×10^14 NP1:φs59.00000°, δ7.00000°, λ-24.00000°. NP2:φs173.00000°, δ87.00000°, λ-97.00000°.*
*ISCJB **26** 13:07:29.3±1.2, 38°92N±0°04×142°47E±0°07, h26km±7km, mb3.7/6, Error ellipse: s-maj=9.8km s-min=5.7km az=15.0*
*JMA **26** 13:07:31.2±0.1, 38°96N×142°39E, h32km±1km, M3.7*
*IDC **26** 13:07:33.9±2.6, 38°90N×142°37E, h52km±25km, mb3.5/6, mb1 3.6/8, mb1mx3.3/62, mbtmp3.7/8, ML3.3/2, MS2.4/2, Ms1 2.4/2, ms1mx2.1/29, Error ellipse: s-maj=28.8km s-min=18.8km az=92.0*
ISC 26 13:07:30.7±1.9, 38°95N±0°05×142°41E±0°08, h27km±13km, n26, σ1§56/29, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.59**	**283**	P	**Pb**	**13 07 42.8**	**+0.2**
OFUJ				S	**Sb**	**13 07 50.7**	**+0.1**
MIYJ	**Miyakonagasawa**	**0.78**	**324**	P	**Pn**	**13 07 45.1**	**-0.8**
MIYJ				S	**Sb**	**13 07 55.0**	**-0.9**
JMK	**Ichinoseki**	**0.93**	**271**	P	**Pn**	**13 07 47.9**	**0.0**
JMK				S	**Sn**	**13 07 59.5**	**-0.8**
JIO	**Ouri**	**0.96**	**240**	P	**Pn**	**13 07 48.0**	**-0.4**
JIO				S	**Sn**	**13 07 59.3**	**-1.9**
JOM	**Ohasama**	**1.01**	**302**	P	**Pn**	**13 07 49.3**	**+0.1**
JOM				S	**Sn**	**13 08 02.0**	**-0.5**
JTH	**Tanohata**	**1.08**	**337**	S	**Sb**	**13 08 04.7**	**+0.3**
JRG	**Rokugo**	**1.45**	**289**	P	**Pb**	**13 07 56.2**	**-0.9**
JRG				*e*S	**Sb**	**13 08 15.0**	**-0.1**
JOU	**Okura**	**1.48**	**248**	P	**Pn**	**13 07 56.3**	**+0.7**
JOU				S	**Sn**	**13 08 14.3**	**+0.2**
JANG	**Nango**	**1.58**	**334**	*e*S	**Sb**	**13 08 18.2**	**-0.7**
MJAR	**Matsushiro Arr**	**4.10**	**235**	P	**Pn**	**13 08 34.1**	**+2.4**
	1.6nm,0.3s,baz=41,slow=10,SNR=27						
MJAR				LR	LR	13 10 20.0	
	comp=Z,68nm,19.3s,baz=30,slow=41						
MAT	**Matsushiro**	**4.10**	**236**	P	**Pn**	**13 08 35.3**	**+3.6**
MAT				*e*S	**Sn**	**13 09 17.8**	**-1.0**
ASAJ	**Asahikawa**	**5.17**	**2**	P	**Pn**	**13 08 48.3**	**+2.0**
	baz=198,slow=13						
ASAJ				S	**Sn**	**13 09 44.9**	**0.0**
	0.2nm,0.3s,baz=203,slow=18,SNR=3.2						
JHJ	**Hachijo jima 2**	**6.19**	**201**	P	**Pn**	**13 09 01.8**	**+1.4**
	3.1nm,0.3s,baz=90,slow=20,SNR=3.3						
JHJ				S	**Sn**	**13 10 05.3**	**-4.9**
	2.7nm,0.3s,baz=53,slow=20,SNR=2.7						
KSRS	**Korea Array**	**11.50**	**267**	LR	LR	13 14 18.3	
	comp=Z,14nm,18.4s,baz=235,slow=35						
H11N2	**WAKE ISLAND Hy 28.53**	**125**		T	T	13 43 48.2	
	baz=317,slow=75,SNR=59						
H11N1	**WAKE ISLAND Hy 28.54**	**125**		T	T	13 43 48.9	
	baz=317,slow=75,SNR=56						
H11N3	**WAKE ISLAND Hy 28.55**	**125**		T	T	13 43 49.5	
	baz=317,slow=75,SNR=43						
H11S1	**WAKE ISLAND Hy 29.31**	**127**		T	T	13 44 46.6	
	baz=319,slow=76,SNR=3.6						
H11S3	**WAKE ISLAND Hy 29.31**	**127**		T	T	13 44 47.1	
	baz=319,slow=76,SNR=5.7						
H11S2	**WAKE ISLAND Hy 29.33**	**127**		T	T	13 44 48.3	
	baz=319,slow=76,SNR=5.3						
ZALV	**Zalesovo Beam**	**41.23**	**311**	P	**P**	**13 15 13.4**	**+0.3**
	0.7nm,0.5s,baz=81,slow=9.2,SNR=2.7						
MKAR	**Makanchi Array**	**43.80**	**301**	P	**P**	**13 15 34.4**	**+0.3**
	0.8nm,0.5s,baz=82,slow=8.4,SNR=6.7						
KURBB	**Kurchatov Arra**	**45.47**	**307**	P	**P**	**13 15 47.2**	**0.0**
	2.2nm,0.6s,baz=81,slow=8.2,SNR=16						
ILAR	**Eielson Array**	**47.46**	**33**	P	**P**	**13 16 03.9**	**+1.1**
	0.5nm,0.7s,baz=270,slow=5.7,SNR=6.9						
BVAR	**Borovoye Array**	**49.88**	**311**	P	**P**	**13 16 22.0**	**+0.5**
	0.5nm,0.5s,baz=71,slow=6.2,SNR=3.3						
WRA	**Warramunga Arr**	**59.06**	**189**	P	**P**	**13 17 28.0**	**-0.5**
	0.2nm,0.4s,baz=6.6,slow=6.9,SNR=12						

*IDC **26** 13:15:54.0±0.8, 10°91S×165°53E, h0km, mb4.1/11, mb1 4.3/13, mb1mx4.1/35, mbtmp4.2/13, ML4.7/2, MS3.9/8, Ms1 3.9/8, ms1mx3.3/39, Error ellipse: s-maj=23.9km s-min=18.8km az=124.0*
*ISCJB **26** 13:15:56.8±0.5, 11°07S±0°07×165°43E±0°07, h30km, mb4.1/14, MS3.9/6, Error ellipse: s-maj=10.2km s-min=9.4km az=162.7*
*NEIC **26** 13:15:57.6±4.4, 10°97S×165°51E, h24km±31km, mb4.3/5, Error ellipse: s-maj=13.6km s-min=11.5km az=214.0*
ISC 26 13:15:58.6±0.7, 11°01S±0°07×165°42E±0°08, h30km, n37, σ1§42/26, mb4.0/14, MS3.9/6, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.61**	**286**	Pn	**Pn**	**13 17 20.8**	**+0.7**
	32nm,0.3s,baz=141,slow=7.1,SNR=11						
HNR				Sn	**Sn**	**13 18 24.5**	**+0.9**
	baz=15,slow=20,SNR=3.0						
HNR				LR	LR	13 19 40.2	
	comp=Z,1μm,20.4s,baz=112,slow=40						
HNR	**Honiara**	**5.61**	**286**	*e*P	**Pn**	**13 17 20.0**	**-0.1**
HNR				*e*S	**Sn**	**13 18 19.0**	**-4.6**
DZM	**Mont Dzumac**	**11.05**	**175**	Pn	**Pn**	**13 18 36.0**	**+1.2**
	3.2nm,0.3s,baz=61,slow=13,SNR=5.4						
DZM				Sn	**Sn**	**13 20 35.4**	**-2.0**
	0.3nm,0.3s,baz=344,slow=19,SNR=2.1						
DZM	**Mont Dzumac**	**11.05**	**175**	*e*LR	LR	13 21 34.4	
	417nm,24.6s						
DZM	**Mont Dzumac**	**11.05**	**175**	*e*Pn	**Pn**	**13 18 34.0**	**-0.7**
DZM				Sn	**Sn**	**13 20 35.4**	**-2.0**
PMG	**Port Moresby**	**18.05**	**273**	LR	LR	13 26 34.6	
	comp=Z,654nm,18.8s,baz=129,slow=35						
EIDS	**Eidsvold**	**19.71**	**222**	*e*Pn	**Pn**	**13 20 28.4**	**+1.0**
	4.8nm,0.8s						
CTA	**Charters Tower**	**20.54**	**242**	P	Pn	13 20 36.6	-0.6
	12nm,0.9s,baz=86,slow=13,SNR=3.9						
CTAO	**Charters Tower**	**20.54**	**242**	*e*P	**P**	**13 20 35.9**	**+1.1**
	259nm,1.3s						
URZ	**Urewera**	**29.09**	**161**	P	**P**	**13 21 57.2**	**+0.6**
	12nm,0.9s,baz=280,slow=2.7,SNR=3.4						
H11S2	**WAKE ISLAND Hy 29.34**	**2**		T	T	13 52 36.2	
	baz=183,slow=76,SNR=67						
H11S3	**WAKE ISLAND Hy 29.34**	**2**		T	T	13 52 41.1	
	baz=183,slow=76,SNR=48						
H11S1	**WAKE ISLAND Hy 29.35**	**2**		T	T	13 52 39.2	
	baz=183,slow=76,SNR=16						
STKA	**Stephens Creek**	**30.25**	**223**	P	**P**	**13 22 07.9**	**+0.9**
	1.4nm,0.8s,baz=56,slow=11,SNR=2.3						
STKA				LR	LR	13 33 42.7	
	comp=Z,325nm,18.7s,baz=28,slow=35						
H11N1	**WAKE ISLAND Hy 30.56**	**3**		T	T	13 54 10.6	
	baz=182,slow=76,SNR=59						
H11N3	**WAKE ISLAND Hy 30.57**	**3**		T	T	13 54 07.1	
	baz=182,slow=76,SNR=16						
H11N2	**WAKE ISLAND Hy 30.58**	**3**		T	T	13 54 12.0	
	baz=182,slow=76,SNR=9.8						
WRAB	**Tennant Creek**	**31.19**	**250**	*e*P	**P**	**13 22 14.9**	**-0.5**
	1.7nm,0.7s						
WRA	**Warramunga Arr**	**31.20**	**250**	P	**P**	**13 22 15.3**	**-0.2**
	1.9nm,0.6s,baz=82,slow=9.1,SNR=22						
WRA				PcP	**PcP**	**13 25 11.1**	**+1.0**
	0.7nm,0.8s,baz=70,slow=3.2,SNR=5.2						
GUMO	**Guam**	**31.83**	**320**	LR	LR	13 34 30.6	
	comp=Z,103nm,18.5s,baz=140,slow=35						
ASAR	**Alice Springs**	**32.53**	**243**	P	**P**	**13 22 26.7**	**-0.5**
	5.5nm,0.7s,baz=64,slow=10.0,SNR=82						
ASAR				PcP	**PcP**	**13 25 14.3**	**+0.6**
	0.5nm,0.7s,baz=59,slow=1.5,SNR=5.9						
ASAR				LR	LR	13 34 32.8	
	comp=Z,231nm,19.4s,baz=77,slow=34						
RAR	**Rarotonga**	**34.87**	**111**	LR	LR	13 33 56.1	
	comp=Z,150nm,19.3s,baz=292,slow=31						
PPT	**Papeete**	**44.01**	**104**	LR	LR	13 38 09.5	
	comp=Z,141nm,18.9s,baz=256,slow=30						
PPT2	**Papeete2**	**44.01**	**104**	*e*S	S	13 30 48.2	+14
	59nm,25.0s						
PPT2				*e*LR	LR	13 36 44.0	
	190nm,21.8s						
TBI	**Tubuai**	**44.64**	**112**	*e*S	S	13 30 57.6	+14
	60nm,27.8s						
TBI				*e*LR	LR	13 36 59.6	
	181nm,26.5s						
TAOE	**Nuku Hiva Isla**	**53.60**	**93**	*e*LR	LR	13 41 02.0	
	107nm,25.1s						
RKT	**Rikitea**	**57.90**	**110**	*e*LR	LR	13 43 04.3	
	198nm,24.5s						
CMAR	**Chiang Mai Arr**	**71.81**	**294**	P	**P**	**13 27 20.2**	**+1.3**
	0.7nm,0.8s,baz=123,slow=6.6,SNR=3.3						
SONM	**Songino Array**	**78.45**	**324**	P	**P**	**13 27 57.2**	**+0.4**
	0.5nm,0.7s,baz=127,slow=4.1,SNR=3.1						
COLA	**College**	**83.35**	**18**	*e*P	**P**	**13 28 21.1**	**-1.3**
	2.6nm,0.8s						
ILAR	**Eielson Array**	**83.58**	**19**	P	**P**	**13 28 23.3**	**-0.3**
	0.7nm,0.6s,baz=239,slow=4.9,SNR=13						
HLID	**Hailey**	**90.48**	**46**	*e*P	**P**	**13 28 58.3**	**+0.4**
	2.6nm,1.1s						
DLMT	**Dillon**	**92.17**	**44**	*e*P	**P**	**13 29 06.4**	**+0.7**
	3.2nm,1.0s						
MKAR	**Makanchi Array**	**93.28**	**317**	P	**P**	**13 29 10.7**	**+0.2**
	0.5nm,0.8s,baz=86,slow=5.9,SNR=3.1						
PDAR	**Pinedale Array**	**93.76**	**47**	P	**P**	**13 29 11.6**	**-1.5**
	0.2nm,0.4s,baz=241,slow=5.0,SNR=3.4						
YKA	**Yellowknife Ar**	**95.08**	**27**	P	**P**	**13 29 17.0**	**-1.4**
	0.3nm,0.7s,baz=258,slow=4.0,SNR=4.2						
TXAR	**Lajitas Array**	**96.09**	**61**	LR	LR	14 08 52.7	
	comp=Z,71nm,18.0s,baz=0.0,slow=33						

*NIED **26** 13:19:00, 38°20N×144°00E, h5km, Mw3.5 Best double couple: M0 2.29000×10^14 NP1:φs15.00000°, δ36.00000°, λ-80.00000°. NP2:φs182.00000°, δ54.00000°, λ-97.00000°.*
*IDC **26** 13:19:12.8±2.6, 38°06N×144°44E, h0km, mb3.5/3, mb1 3.7/5, mb1mx3.4/52, mbtmp3.6/5, ML3.7/2, MS2.5/2, Ms1 2.5/2, ms1mx2.1/37, Error ellipse: s-maj=56.7km s-min=30.8km az=75.0*
*ISCJB **26** 13:19:16.7±0.8, 38°07N±0°05×144°12E±0°07, h33km, mb3.5/3, Error ellipse: s-maj=7.5km s-min=7.0km az=18.6*
*JMA **26** 13:19:17.7±0.2, 38°17N×144°05E, h33km, M3.8*
ISC 26 13:19:17.0±1.3, 38°08N±0°06×144°27E±0°09, h35km, n23, σ1§83/33, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.27**	**297**	P	**Pn**	**13 19 51.4**	**-0.6**
OFUJ				*e*S	**Sn**	**13 20 16.2**	**-2.5**
JIO	**Ouri**	**2.33**	**280**	P	**Pn**	**13 19 52.5**	**-0.3**
JIO				S	**Sn**	**13 20 17.4**	**-2.8**
MIYJ	**Miyakonagasawa**	**2.43**	**309**	P	**Pn**	**13 19 53.3**	**-0.9**
JMK	**Ichinoseki**	**2.55**	**291**	P	**Pn**	**13 19 55.6**	**-0.2**
JMK				*e*S	**Sn**	**13 20 23.4**	**-2.1**
JOM	**Ohasama**	**2.71**	**302**	P	**Pn**	**13 19 58.2**	**+0.1**
JOM				S	**Sn**	**13 20 28.0**	**-1.6**
JOU	**Okura**	**2.85**	**277**	P	**Pn**	**13 20 00.6**	**+0.5**
JANG	**Nango**	**3.13**	**318**	P	**Pn**	**13 20 03.8**	**-0.1**
JRG	**Rokugo**	**3.13**	**296**	P	**Pn**	**13 20 04.6**	**+0.8**
JRG				S	**Sn**	**13 20 39.8**	**-0.2**
JFT	**Otama**	**3.17**	**261**	P	**Pn**	**13 20 04.7**	**+0.4**
JFT				S	**Sn**	**13 20 39.4**	**-1.5**
JYK	**Kaneyama**	**3.18**	**286**	P	**Pn**	**13 20 04.9**	**+0.4**
JYK				S	**Sn**	**13 20 40.3**	**-0.9**
JOT	**Ohata**	**4.13**	**324**	P	**Pn**	**13 20 18.3**	**+0.8**
JKB	**Kayabe**	**4.54**	**328**	P	**Pn**	**13 20 24.2**	**+1.0**
JCH	**Churui**	**4.58**	**352**	P	**Pn**	**13 20 23.4**	**-0.3**
JCH				S	**Sn**	**13 21 12.6**	**-3.1**
JRY	**Ryogami san**	**4.76**	**246**	P	**Pn**	**13 20 26.4**	**+0.1**
JRY				S	**Sn**	**13 21 17.3**	**-3.0**
MJAR	**Matsushiro Arr**	**5.07**	**254**	Pn	**Pn**	**13 20 31.8**	**+1.3**
	2.1nm,0.3s,baz=82,slow=15,SNR=16						
MJAR				Sn	**Sn**	**13 21 27.9**	**0.0**
	0.8nm,0.3s,baz=83,slow=26,SNR=4.1						
MJAR				LR	LR	13 22 45.3

baz=179,slow=73,SNR=124
H10N3 ASCENSION HYDR 6.27 359 T T 13 35 00.1
baz=179,slow=73,SNR=830
H10N2 ASCENSION HYDR 6.28 360 T T 13 35 01.0
baz=179,slow=73,SNR=235
LIC Lamto 22.29 25 *e*P **P 13 32 01.3 +1.2**
162nm,1.7s
KIC Kosan Boka 22.54 26 *e*P **P 13 32 02.9 +0.2**
100nm,1.2s
RCBR Riachuelo 22.68 289 P **P 13 32 04.5 +0.1**
17nm,0.9s,baz=105,slow=14,SNR=4.0
RCBR LR LR 13 38 28.2
comp=Z,237nm,20.5s,baz=100,slow=30
TIC Toumodi 22.68 25 *e*P **P 13 32 03.3 -0.9**
DBIC Dimbokro 22.77 25 P **P 13 32 04.9 -0.3**
23nm,1.0s,baz=181,slow=11,SNR=11
DBIC LR LR 13 38 47.7
comp=Z,336nm,19.4s,baz=185,slow=31
DBIC Dimbokro 22.77 25 *e*P **P 13 32 05.1 -0.1**
36nm,1.1s
TOA0 Torodi Ar. Sit 31.48 31 *e*P **P 13 33 23.9 -0.7**
TORD Torodi Ar. Bea 31.48 31 P **P 13 33 23.8 -0.7**
17nm,1.0s,baz=214,slow=6.7,SNR=31
TORD LR LR 13 44 17.8
comp=Z,406nm,18.1s,baz=205,slow=33
LBTB Lobatse 39.10 112 P **P 13 34 30.5 +0.2**
3.6nm,0.9s,baz=300,slow=7.0,SNR=3.1
BOSA Boshof 39.47 118 P **P 13 34 33.6 +0.3**
4.8nm,0.8s,baz=279,slow=7.1,SNR=5.8
BOSA LR LR 13 47 20.9
comp=Z,149nm,21.8s,baz=279,slow=31
LSZ Lusaka 41.20 97 P **P 13 34 47.6 -0.1**
2.4nm,0.6s,baz=284,slow=9.1,SNR=3.1
LSZ Lusaka 41.20 97 *e*P **P 13 34 49.5 +1.7**
23nm,1.6s
MATP Matopo 41.38 105 P **P 13 34 48.6 -0.7**
8.4nm,0.7s,baz=270,slow=9.4,SNR=14
TAM Tamanrasset 41.60 28 *e*P **P 13 34 52.9 +2.0**
6.8nm,1.1s
CPUP Villa Florida 41.84 246 P **P 13 34 54.5 +1.7**
3.5nm,0.8s,baz=86,slow=7.4,SNR=5.2
CPUP LR LR 13 49 59.6
comp=Z,404nm,18.4s,baz=107,slow=33
SIV San Ignacio 44.99 261 P **P 13 35 19.2 +0.8**
2.8nm,0.9s,baz=91,slow=11,SNR=3.2
MBAR Mbarara 46.66 77 *e*P **P 13 35 33.1 +1.3**
PTGA Pitinga 46.95 282 P **P 13 35 34.4 +0.6**
5.8nm,0.8s,baz=111,slow=9.6,SNR=7.4
PTGA Pitinga 46.95 282 *e*P **P 13 35 34.3 +0.4**
14nm,1.1s
LPAZ La Paz 51.73 260 P **P 13 36 09.7 -1.4**
1.7nm,0.8s,baz=116,slow=7.3,SNR=5.6
LPAZ LR LR 13 56 23.1
comp=Z,156nm,21.5s,baz=104,slow=34
LPAZ La Paz 51.73 260 *e*P **P 13 36 09.8 -1.3**
12nm,1.6s
KMBO Kilima Mbogo 52.70 80 P **P 13 36 19.5 +1.6**
3.3nm,0.9s,baz=228,slow=9.8,SNR=7.4
KMBO LR LR 13 56 17.2
comp=Z,166nm,20.6s,baz=271,slow=33
KMBO Kilima Mbogo 52.70 80 *e*P **P 13 36 17.9 0.0**
11nm,1.2s
H05S1 Guadeloupe/Mar 53.98 300 T T 14 34 45.3
SNR=9.4
ESDC Sonseca Array 54.43 10 P **P 13 36 29.6 -0.2**
3.5nm,0.9s,baz=190,slow=6.6,SNR=14
ESDC LR LR 13 58 11.6
comp=Z,92nm,20.0s,baz=115,slow=34
ES19 SONSECA Array 54.47 10 *e*P **P 13 36 29.3 -0.8**
KEST Kesra 54.48 24 P **P 13 36 30.3 -0.1**
12nm,1.0s,baz=224,slow=4.8,SNR=8.9
KEST LR LR 13 58 16.6
comp=Z,212nm,20.7s,baz=216,slow=34
KEST Kesra 54.48 24 *e*P **P 13 36 30.8 +0.4**
13nm,1.0s
H05N1 Guadeloupe/Mar 55.11 302 T T 14 36 09.3
SNR=9.2
PLCA Paso Flores 55.32 230 LR LR 13 56 54.1
comp=Z,204nm,21.1s,baz=144,slow=32
SNAA Sanae 57.92 176 P **P 13 36 54.2 -0.2**
2.7nm,1.0s,baz=341,slow=10,SNR=6.1
ROSC El Rosal 62.31 283 P **P 13 37 26.6 +0.8**
3.6nm,0.5s,baz=166,slow=0.8,SNR=4.7
ROSC LR LR 14 02 37.1
comp=Z,161nm,21.6s,baz=248,slow=34
SYO Syowa Base 64.41 161‖ *e*P **P 13 37 37.0 -1.4**
DAVA Damuels 64.92 18 *i* P **P 13 37 41.3 -0.9**
12nm,1.1s
FETA Feichten 64.94 19 *i* P **P 13 37 43.3 +1.0**
7.0nm,0.9s
ABTA Abfaltersbach 65.28 20 *i* P **P 13 37 46.1 +1.7**
1.8nm,0.5s
MOTA Moosalm 65.35 19 *i* P **P 13 37 41.8 -3.1**
2.2nm,0.5s
RETA Reutte 65.37 19 *i* P **P 13 37 44.2 -0.7**
1.8nm,0.5s
WTTA Wattenberg 65.45 19 *i* pP **P 13 37 48.7 +3.1**
7.2nm,1.1s
MYKA Terra Mystica 65.56 21 *i* P **P 13 37 46.5 +0.3**
4.4nm,1.1s
SOKA Soboth 66.09 22 *i* P **P 13 37 50.1 +0.5**
6.5nm,1.0s
ARSA Arzberg 66.75 22 *i* P **P 13 37 55.4 +1.6**
3.2nm,0.6s
MOA Molln 66.83 21 *i* P **P 13 37 53.7 -0.6**
7.1nm,1.0s
CONA Conrad Observa 67.45 22 *i* P **P 13 37 58.7 +0.4**
6.3nm,1.0s
GEA0 GERESS Array S 67.49 20 *e*P **P 13 37 57.6 -1.0**
GERES GERESS Array B 67.50 20 P **P 13 37 57.8 -0.8**
0.5nm,0.3s,baz=195,slow=4.1,SNR=8.3
GERES PP **PP 13 40 28.2 +0.5**
3.2nm,1.0s,baz=211,slow=9.0,SNR=13
GERES LR LR 14 06 44.1
comp=Z,159nm,19.8s,baz=221,slow=35
KHC Kasperske Hory 67.71 19 *e*PP PP 13 40 26.0 -3.5
VYHS Vyhne 69.02 23 *e*P **P 13 38 07.8 -0.2**
BR231 Keskin MP Arra 69.37 37 *e*P **P 13 38 12.6 +2.0**
CLL Collm 69.44 18 *e*(S) S 13 47 28.0 +11
CLL *e* 13 51 49.0
KECS Kecovo 69.65 24 *e*P **P 13 38 11.8 -0.1**
BR131 Keskin Array S 69.81 38 *e*P **P 13 38 13.4 +0.1**
BRTR Keskin Array B 69.81 38 P **P 13 38 13.7 +0.4**
2.5nm,0.9s,baz=204,slow=6.7,SNR=14
STHS Stebnicka Huta 70.70 24 *e*P **P 13 38 19.6 +1.3**
MAW Mawson 72.18 157 P **P 13 38 27.0 0.0**
2.5nm,0.8s,baz=268,slow=6.8,SNR=6.4
MAW Mawson 72.18 157 *e*P **P 13 38 27.0 0.0**
1.5nm,1.3s
AK11 Malin Array Si 74.96 27 *e*P **P 13 38 42.4 -1.2**
KIEV Kiev 74.99 27 *e*P **P 13 38 42.4 -1.4**
12nm,1.2s
AKASG Malin Array Be 75.00 27 P **P 13 38 42.5 -1.3**
5.0nm,0.8s,baz=224,slow=5.7,SNR=21
AKASG LR LR 14 11 05.8
comp=Z,69nm,21.8s,baz=250,slow=35
AKBB Malin Array Si 75.00 27 *e*P **P 13 38 42.6 -1.2**
12nm,1.1s
QSPA South Pole Qui 76.01 180 *e*P **P 13 38 50.4 +0.7**
NB2 NORSAR Subarra 77.68 12 P **P 13 38 58.7 -0.2**
comp=Z,2.8nm,0.9s,baz=205,slow=5.9
NOA NORSAR Array B 77.68 12 P **P 13 38 59.0 +0.2**
comp=Z,1.3nm,0.8s,baz=42,slow=3.6,SNR=5.9
NOA LR LR 14 11 54.7
comp=Z,28nm,22.0s,baz=210,slow=35
KBZ Khabaz 77.75 39 P **P 13 38 59.0 -0.6**
comp=Z,1.7nm,0.4s,baz=225,slow=5.7,SNR=3.6
UOSS Minazif 79.05 61 *e*P **P 13 39 06.5 -0.7**
comp=Z,31nm,1.1s
SCHQ Schefferville 81.70 332 P **P 13 39 20.4 -0.5**
comp=Z,2.5nm,0.5s,baz=142,slow=7.8,SNR=2.7
FINES FINESS Array B 81.88 18 P **P 13 39 21.2 -0.3**
comp=Z,2.8nm,0.8s,baz=202,slow=1.5,SNR=11
FINES LR LR 14 17 23.2
comp=Z,44nm,18.3s,baz=210,slow=37
FIA1 FINESS Array S 81.88 18 *e*P **P 13 39 20.9 -0.6**
GEYT Alibeck 85.34 49 P **P 13 39 39.3 -0.7**
comp=Z,3.7nm,0.8s,baz=266,slow=4.3,SNR=7.7
SBA Scott Base 88.17 180 *e*P **P 13 39 54.0 +0.9**
comp=Z,19nm,1.6s
VNDA Vanda 88.48 179 P **P 13 39 53.8 -0.7**
comp=Z,1.0nm,0.9s,baz=246,slow=3.5,SNR=4.8
ABKAR Akbulak array 90.71 39 *e*P **P 13 40 05.0 -0.4**
TXAR Lajitas Array 96.14 299 P **P 13 40 30.4 -0.6**
comp=Z,0.4nm,0.8s,baz=116,slow=5.7,SNR=4.8
KSH Kashi 99.17 52 *e*P **Pdif 13 40 43.3 -1.2**
KSH *e*pP pP 13 40 47.3 -1.9
KSH *e*PP **PP 13 44 47.5 +0.2**
KSH Kashi 99.17 52 SS SS 13 59 02.0 -2.7
KSH pmax pmax
comp=Z,94nm,3.8s
KSH LR LR
comp=N,110nm,7.2s
KSH LR LR
comp=E,120nm,7.5s
KSH LR LR
comp=Z,80nm,7.0s
TBI Tubuai 122.34 230 *e*LR LR 14 23 54.8
comp=Z,136nm,33.8s
GYA Guiyang 123.84 68 *e*Pdif **Pdif 13 42 33.8 -0.6**
GYA PKP **PKPdf 13 46 00.3 -1.2**
GYA PP **PP 13 47 47.3 +2.5**
GYA AMB AMB
comp=Z,110nm,7.8s
PPT2 Papeete2 125.65 236 *e*LR LR 14 25 28.0
comp=Z,117nm,27.5s
HHC Hu-ho-hao-te 126.22 50 *e*PKP **PKPdf 13 46 01.3 -4.3**
HHC PP PP 13 47 47.5 -13
HHC AMB AMB
comp=Z,47nm,5.6s
HHC LR LR
comp=N,92nm,16.0s
HHC LR LR
comp=E,55nm,14.8s
HHC LR LR
comp=Z,78nm,14.8s
MJAR Matsushiro Arr 146.92 43 PKPbc **PKPdf 13 46 43.9 +0.3**
comp=Z,5.6nm,1.0s,baz=293,slow=3.8,SNR=9.6

*IDC **26** 13:35:25.4±0.8,35°.82N×140°.81E,h0km,mb3.8/10, mb1 3.9/12,mb1mx3.8/48,mbtmp3.7/12,ML3.5/2,Error ellipse: s-maj=22.3km s-min=19.7km az=15.0*
*ISCJB **26** 13:35:26.5±0.7, 35°.80N±0°.03×140°.89E±0°.07, h21km±4km, mb3.8/11,Error ellipse: s-maj=9.7km s-min=5.5km az=167.6*
*NEIC **26** 13:35:26.8±0.5,35°.78N×140°.79E, h10km,mb4.6/1,Error ellipse: s-maj=10.7km s-min=9.4km az=206.0*
NEIC Recorded [2 JMA] in Ibaraki.
*JMA **26** 13:35:26.5±0.1, 35°.82N×140°.92E, h12km±1km, M4.2*
JMA Felt II J1.

ISC 26 13:35:26.9±0.9, 35°.81N±0°.04×140°.81E±0°.06, h11km±6km, n31,σ0s57/32, mb3.8/11, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.11**	**160**	⇑P	**Pg**	**13 35 29.7**	**0.0**
CHOJ				S	**Sg**	**13 35 32.0**	**+0.2**
JCN	**Nagara**	**0.63**	**232**	⇑P	**Pn**	**13 35 41.3**	**-0.4**
JCN				S	**Sn**	**13 35 52.4**	**+0.7**
JYT	**Yasato**	**0.66**	**310**	⇓P	**Pb**	**13 35 40.3**	**0.0**
JYT				S	**Sb**	**13 35 49.9**	**+0.5**
JHO	**Hitachi**	**0.83**	**346**	⇓P	**Pg**	**13 35 42.2**	**-0.7**
JHO				S	**Sg**	**13 35 53.4**	**-0.3**
BSO4	**Boso 4**	**0.90**	**206**	P	**Pn**	**13 35 45.1**	**-0.3**
BSO3	**Boso 3**	**1.03**	**194**	P	**Pb**	**13 35 46.3**	**-0.3**
MJAR	**Matsushiro Arr**	**2.23**	**290**	Pn	**Pn**	**13 36 03.6**	**-0.2**
	15nm,0.3s,baz=94,slow=8.5,SNR=97						
MJAR				Sn	**Sn**	**13 36 31.0**	**-0.4**
	12nm,0.3s,baz=93,slow=27,SNR=9.2						
MAJO	**Matsushiro**	**2.23**	**290**	*e*Pn	**Pn**	**13 36 03.9**	**+0.1**
MAT	**Matsushiro**	**2.23**	**290**	P	**Pn**	**13 36 04.2**	**+0.4**
MAT				*e*S	**Sg**	**13 36 38.6**	**-0.1**
JHJ2	**Mitsune**	**2.81**	**197**	*e*Pn	**Pn**	**13 36 11.4**	**-0.3**
JHJ	**Hachijo jima 2**	**2.81**	**198**	Pn	**Pn**	**13 36 12.8**	**+1.1**
	19nm,0.3s,baz=279,slow=8.2,SNR=12						
JHJ				Sn	**Sn**	**13 36 44.1**	**-1.5**
	45nm,0.3s,baz=72,slow=20,SNR=7.0						
H11N2	**WAKE ISLAND Hy**	**27.97**	**118**	T	T	14 10 19.0	
	baz=312						
H11N1	**WAKE ISLAND Hy**	**27.98**	**118**	T	T	14 10 19.1	
	baz=312						
H11N3	**WAKE ISLAND Hy**	**27.99**	**118**	T	T	14 10 23.2	
	baz=312						
SONM	**Songino Array**	**28.09**	**306**	P	**P**	**13 41 19.7**	**+1.1**
	0.3nm,0.3s,baz=106,slow=11,SNR=2.9						
H11S1	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	14 11 03.8	
	baz=313						
H11S3	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	14 11 03.9	
	baz=313						
H11S2	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	14 10 59.9	
	baz=313						
ZALV	**Zalesovo Beam**	**42.39**	**313**	P	**P**	**13 43 20.1**	**-1.0**
	0.4nm,0.3s,baz=101,slow=7.2,SNR=3.1						
MKAR	**Makanchi Array**	**44.37**	**303**	P	**P**	**13 43 37.5**	**+0.3**
	1.0nm,0.7s,baz=86,slow=9.3,SNR=6.3						
KURK	**Kurchatov**	**46.32**	**309**	P	**P**	**13 43 52.9**	**+0.4**
KURBB	**Kurchatov Arra**	**46.38**	**309**	P	**P**	**13 43 52.9**	**-0.1**
	0.9nm,0.4s,baz=82,slow=7.6,SNR=14						
ILAR	**Eielson Array**	**50.79**	**32**	P	**P**	**13 44 27.1**	**+0.3**
	0.7nm,0.8s,baz=269,slow=6.6,SNR=8.2						
ABKAR	**Akbulak array**	**58.36**	**311**	*e*P	**P**	**13 45 21.9**	**0.0**
	4.2nm,0.7s						
YKA	**Yellowknife Ar**	**65.11**	**30**	P	**P**	**13 46 07.3**	**+0.1**
	0.5nm,0.8s,baz=307,slow=6.1,SNR=2.7						
STKA	**Stephens Creek**	**67.33**	**179**	P	**P**	**13 46 21.0**	**-0.7**
	0.8nm,0.6s,baz=351,slow=10,SNR=4.7						
NB2	**NORSAR Subarra**	**75.13**	**337**	P	**P**	**13 47 09.0**	**+0.2**
	comp=Z,1.3nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**75.13**	**337**	P	**P**	**13 47 08.9**	**+0.2**
	comp=Z,0.9nm,0.8s,baz=40,slow=5.9,SNR=3.5						
PDAR	**Pinedale Array**	**78.87**	**45**	P	**P**	**13 47 30.8**	**+0.4**
	comp=Z,0.4nm,0.7s,baz=348,slow=3.6,SNR=4.1						
TXAR	**Lajitas Array**	**91.25**	**52**	P	**P**	**13 48 32.5**	**-0.1**
	comp=Z,0.2nm,0.5s,baz=308,slow=4.4,SNR=2.6						
LPAZ	**La Paz**	**147.72**	**61**	PKPbc	**PKPab**	**13 55 14.6**	**-0.5**
	comp=Z,2.1nm,0.9s,baz=34,slow=6.7,SNR=6.1						

*BJI **26** 13:35:55.7,38°.26N×142°.40E, h60km,mb4.4/22,mB4.7/16, Ms4.1/9,Ms7 3.9/9*
*MOS **26** 13:35:58.6±1.5,38°.44N×141°.96E, h49km,mb5.3/4,Error ellipse: s-maj=10.1km s-min=6.2km az=82.6*
*ISCJB **26** 13:35:59.3±0.5,38°.37N±0°.03×141°.99E±0°.05, h60km±3km, mb4.3/34,MS2.8/4,Error ellipse: s-maj=6.9km s-min=4.3km az=28.1*
*NIED **26** 13:36:00,38°.40N×141°.80E,h59km,Mw4.3 Best double couple: M0 3.02000×10^15 NP1:φs 116.00000°, δ34.00000°, λ111.00000°. NP2:φs 270.00000°, δ58.00000°, λ76.00000°.*
*NEIC **26** 13:36:01.2±0.4,38°.44N×141°.90E, h58km±3km,mb4.6/5, Error ellipse: s-maj=8.0km s-min=4.8km az=120.0*
NEIC Felt at Sendai. Recorded [3 JMA] in Iwate and Miyagi.
*JMA **26** 13:36:01.7±0.1,38°.39N×141°.83E, h59km±1km,M4.4*
JMA Felt III J1.
*IDC **26** 13:36:01.3±0.6,38°.40N×141°.76E,h57km±4km,mb3.9/21, mb1 4.1/25,mb1mx4.0/45,mbtmp4.2/25,MS2.8/3, Ms1 2.8/3,ms1mx2.6/29,Error ellipse: s-maj=13.8km s-min=10.8km az=99.0*

ISC 26 13:36:00.9±0.6, 38°.41N±0°.05×141°.95E±0°.05, h57km±4km, h57km:pP-P,n105,σ1s73/120, mb4.2/34, MS2.9/4, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.47**	**275**	P	**Pn**	**13 36 12.5**	**+0.1**
JIO				S	**Sn**	**13 36 20.1**	**-0.6**
OFUJ	**Ofunato**	**0.70**	**342**	P	**Pn**	**13 36 15.9**	**+0.8**
OFUJ				S	**Sn**	**13 36 26.2**	**+0.8**
JMK	**Ichinoseki**	**0.79**	**314**	P	**Pn**	**13 36 16.6**	**+0.5**
JMK				S	**Sn**	**13 36 27.2**	**0.0**
JOU	**Okura**	**1.01**	**268**	P	**Pn**	**13 36 18.7**	**-0.3**
JOU				S	**Sn**	**13 36 31.3**	**-1.2**
JMM	**Marumori**	**1.06**	**240**	P	**Pn**	**13 36 19.0**	**-0.7**
JMM				S	**Sn**	**13 36 31.7**	**-1.9**
JOM	**Ohasama**	**1.18**	**334**	P	**Pn**	**13 36 22.0**	**+0.8**
JOM				S	**Sn**	**13 36 37.3**	**+1.0**
JYK	**Kaneyama**	**1.34**	**293**	P	**Pn**	**13 36 23.6**	**+0.1**
JYK				S	**Sn**	**13 36 39.9**	**-0.4**
JFK	**Kawauchi**	**1.35**	**220**	S	**Sn**	**13 36 39.0**	**-1.4**
JRG	**Rokugo**	**1.42**	**314**	P	**Pn**	**13 36 24.9**	**+0.4**
JRG				S	**Sn**	**13 36 42.6**	**+0.4**
JYS	**Shirataka**	**1.50**	**263**	P	**Pn**	**13 36 25.5**	**0.0**
JYS				S	**Sn**	**13 36 43.4**	**-0.6**
JFT	**Otama**	**1.56**	**236**	S	**Sn**	**13 36 44.2**	**-1.3**
JYA	**Atsumi**	**1.77**	**277**	P	**Pn**	**13 36 29.4**	**+0.3**
MJAR	**Matsushiro Arr**	**3.51**	**239**	P	**Pn**	**13 36 52.0**	**-1.1**
	27nm,0.3s,baz=45,slow=12,SNR=13						
MAJO	**Matsushiro**	**3.52**	**239**	*e*P	**Pn**	**13 36 52.5**	**-0.6**
MAJO	**Matsushiro**	**3.52**	**239**	*e*Pn	**Pn**	**13 36 54.6**	**+1.5**
MJB9	**Matsu-Tunnel**	**3.52**	**239**	*e*Pn	**Pn**	**13 36 54.6**	**+1.5**
ERM	**Erimo**	**3.72**	**14**	*e*P	**Pn**	**13 36 55.8**	**0.0**
ERM	**Erimo**	**3.72**	**14**	*e*Pn	**Pn**	**13 36 55.8**	**0.0**
INU	**Inuyama**	**5.00**	**234**	*e*Pn	**Pn**	**13 37 09.6**	**-3.7**
JHJ2	**Mitsune**	**5.57**	**199**	*e*Pn	**Pn**	**13 37 20.2**	**-0.9**
JHJ	**Hachijo jima 2**	**5.57**	**199**	P	**Pn**	**13 37 19.8**	**-1.3**
	68nm,0.3s,baz=72,slow=20,SNR=19						
JHJ				S	**Sn**	**13 38 18.4**	**-5.4**
	75nm,0.3s,baz=91,slow=22,SNR=8.7						
ASAJ	**Asahikawa**	**5.72**	**5**	P	**Pn**	**13 37 23.3**	**+0.1**
	baz=229,slow=10						
ASAJ				S	**Sn**	**13 38 24.5**	**-3.0**
	baz=225,slow=19						
YUK	**Yuzh-Kuril'sk**	**6.34**	**26**	*e*P	**Pn**	**13 37 30.9**	**-0.8**
KUR	**Kuril'sk**	**8.12**	**31**	*c i*P	**Pn**	**13 37 55.7**	**-0.3**
KUR				*i* S	**Sn**	**13 39 23.0**	**-3.3**
KUR				pmax	pmax		
	comp=N,16nm,0.6s						
KUR				pmax	pmax		
	comp=Z,55nm,0.6s						
KUR				pmax	pmax		
	comp=E,14nm,0.6s						
KUR				pmax	pmax		
	comp=Z,217nm,3.5s						
KUR				smax	smax		
	comp=N,40nm,0.6s						
KUR				smax	smax		
	comp=E,101nm,0.6s						
KUR				smax	smax		
	comp=N,196nm,3.3s						
KUR				smax	smax		
	comp=E,197nm,3.9s						
YSS	**Yuzh-Sakhalins**	**8.56**	**4**‖	*e*P	**Pn**	**13 38 01.8**	**-0.2**
YSS				*e*S	**Sn**	**13 39 28.9**	**-8.1**
YSS				pmax	pmax		
	comp=Z,50nm,0.8s						
YSS	**Yuzh-Sakhalins**	**8.56**	**4**	*e*Pn	**Pn**	**13 38 02.0**	**0.0**
VLA	**Vladivostok**	**8.97**	**305**	*e*P	**Pn**	**13 38 06.6**	**-1.0**
USRK	**Ussuriysk Ar.**	**9.46**	**311**	P	**Pn**	**13 38 15.7**	**+1.2**
	comp=Z,2.2nm,0.3s,baz=121,slow=14,SNR=21						
JNU	**Nakatsue**	**10.43**	**243**	P	**Pn**	**13 38 27.7**	**0.0**
	comp=Z,0.2nm,0.3s,baz=14,slow=8.3,SNR=4.5						
JNU	**Nakatsue**	**10.43**	**243**	*e*Pn	**Pn**	**13 38 30.0**	**+2.3**
KSRS	**Korea Array**	**11.12**	**269**	P	**Pn**	**13 38 41.0**	**+3.8**
	comp=Z,0.7nm,0.3s,baz=79,slow=14,SNR=7.8						
KSRS	**Korea Array**	**11.12**	**269**	P	**Pn**	**13 38 41.0**	**+3.8**
KSRS				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MDJ	**Mudanjiang**	**11.14**	**308**	P	Pn	13 38 42.8	+5.4
MDJ				pmax	pmax		
	comp=Z,9.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,41nm,7.2s						
KSAR	**Wonju Array Be**	**11.15**	**269**	P	**Pn**	**13 38 41.0**	**+3.4**
KSAR	**Wonju Array Be**	**11.15**	**269**	P	**Pn**	**13 38 41.0**	**+3.4**
TYV	**Tymovskoe**	**12.46**	**2**	*e*P	**Pn**	**13 38 52.5**	**-2.8**
TYV				pmax	pmax		
	comp=Z,31nm,1.0s						
KLR	**Kul'dur**	**13.07**	**329**	P	**Pn**	**13 39 02.5**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=127,slow=16,SNR=2.8						
KLR	**Kul'dur**	**13.07**	**329**	*e*P	**Pn**	**13 39 02.2**	**-1.4**
SKR	**Severo-Kuril's**	**15.85**	**35**	*e*P	**Pn**	**13 39 39.2**	**-1.0**
SKR				pmax	pmax		
	comp=Z,38nm,1.0s						
PEA0	**Petropavlovsk-**	**18.29**	**31**	*e*P	**P**	**13 40 08.6**	**-1.3**
PETK	**Petropavlovsk-**	**18.29**	**31**	P	**P**	**13 40 08.5**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=205,slow=10,SNR=7.3						
MA2	**Magadan**	**21.92**	**12**	P	**P**	**13 40 49.3**	**+0.1**
	comp=Z,15nm,0.5s,baz=189,slow=9.6,SNR=26						
MA2				LR	LR	13 49 20.3	
	comp=Z,45nm,19.9s,baz=178,slow=36						
MA2	**Magadan**	**21.92**	**12**	P	**P**	**13 40 48.9**	**-0.2**
MA2				pmax	pmax		
	comp=Z,54nm,0.6s						
MA2	**Magadan**	**21.92**	**12**	P	**P**	**13 40 48.9**	**-0.2**
	comp=Z,54nm,0.6s						
HHC	**Hu-ho-hao-te**	**23.48**	**286**	*e*P	**P**	**13 41 04.5**	**-1.0**
HHC				S	**S**	**13 45 08.5**	**-6.3**
HHC				pmax	pmax		
	comp=Z,16nm,1.1s						
HHC				pmax	pmax		
	comp=Z,66nm,4.1s						
HHC				LR	LR		
	comp=Z,82nm,13.4s						
HHC				LR	LR		
	comp=Z,64nm,12.3s						
HHC				LR	LR		
	comp=Z,57nm,11.3s						
YAK	**Yakutsk**	**24.83**	**346**	P	**P**	**13 41 18.3**	**+0.9**
	comp=Z,13nm,0.5s,baz=153,slow=2.5,SNR=4.7						
GUMO	**Guam**	**24.86**	**173**	LR	LR	13 56 56.3	
	comp=Z,6.9nm,18.7s,baz=44,slow=50						
SEY	**Seymchan**	**25.36**	**11**	P	**P**	**13 41 23.5**	**+1.3**
	comp=Z,4.6nm,0.8s,baz=217,slow=6.9,SNR=13						
SEY	**Seymchan**	**25.36**	**11**	*e*P	**P**	**13 41 23.2**	**+1.0**
SONM	**Songino Array**	**27.40**	**302**	P	**P**	**13 41 40.5**	**-0.5**
	comp=Z,0.4nm,0.3s,baz=110,slow=8.8,SNR=2.6						
SONM				pP	**pP**	**13 41 54.3**	**-0.9**
	comp=Z,1.0nm,0.6s,baz=109,slow=8.5,SNR=3.4						
H11N2	**WAKE ISLAND Hy**	**28.52**	**124**	T	T	14 12 17.9	
	baz=316,slow=75,SNR=63						
H11N1	**WAKE ISLAND Hy**	**28.53**	**124**	T	T	14 12 13.4	
	baz=316,slow=75,SNR=100						
H11N3	**WAKE ISLAND Hy**	**28.54**	**124**	T	T	14 12 20.2	
	baz=316,slow=75,SNR=98						
H11S1	**WAKE ISLAND Hy**	**29.28**	**126**	T	T	14 13 09.4	
	baz=319,slow=76,SNR=48						
H11S3	**WAKE ISLAND Hy**	**29.28**	**126**	T	T	14 13 09.4	
	baz=319,slow=76,SNR=104						
H11S2	**WAKE ISLAND Hy**	**29.30**	**126**	T	T	14 13 09.4	
	baz=319,slow=76,SNR=80						
TLY	**Talaya**	**29.77**	**309**	P	**P**	**13 42 02.2**	**+0.2**
	comp=Z,2.0nm,0.7s,baz=135,slow=2.9,SNR=4.4						
GYA	**Guiyang**	**31.89**	**259**	P	**P**	**13 42 22.0**	**+1.0**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**32.12**	**268**	*e*P	**P**	**13 42 22.5**	**-0.4**
GTA	**Gaotai**	**32.59**	**285**	*e*P	**P**	**13 42 29.0**	**+2.0**
GTA				pP	pP	13 42 42.8	+1.4
GTA				sP	sP	13 42 49.5	+1.4
GTA				pmax	pmax		
	comp=Z,2.0nm,1.4s						
WMQ	**Urumqi**	**40.62**	**296**	*e*P	**P**	**13 43 34.5**	**-0.6**
WMQ				pP	pP	13 43 50.0	+0.2
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,110nm,5.7s						
ZAA0	**Zalesovo Array**	**41.32**	**311**	*e*P	**P**	**13 43 40.5**	**-0.1**
ZALV	**Zalesovo Beam**	**41.32**	**311**	P	**P**	**13 43 40.5**	**-0.1**
	comp=Z,2.5nm,0.5s,baz=86,slow=7.4,SNR=10.0						
ZALV				pP	**pP**	**13 43 54.3**	**-1.0**
	comp=Z,7.7nm,0.9s,baz=85,slow=7.7,SNR=7.5						
ZALV				PcP	**PcP**	**13 45 38.0**	**-0.1**
	comp=Z,0.8nm,0.3s,baz=64,slow=3.4,SNR=4.5						
CMAR	**Chiang Mai Arr**	**42.27**	**254**	P	**P**	**13 43 48.6**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=54,slow=4.6,SNR=3.4						
MK01	**Makanchi Array**	**43.76**	**301**	*e*P	**P**	**13 43 59.9**	**-0.7**
MKAR	**Makanchi Array**	**43.76**	**301**	P	**P**	**13 43 59.9**	**-0.7**
	comp=Z,1.4nm,0.7s,baz=84,slow=11,SNR=7.7						
KURK	**Kurchatov**	**45.43**	**307**	P	**P**	**13 44 13.9**	**+0.1**
KURK				*PP	**pP**	**13 44 28.2**	**-0.5**
KURK	**Kurchatov**	**45.43**	**307**	P	**P**	**13 44 13.9**	**+0.1**
KURK				pP	**pP**	**13 44 28.2**	**-0.5**
KURBB	**Kurchatov Arra**	**45.50**	**307**

comp=Z,69nm,5.7s
KSH LR LR
comp=Z,130nm,5.6s
INK Inuvik 52.97 28 pP pP 13 45 26.4 +0.1
comp=Z,2.9nm,0.5s,baz=305,slow=6.6,SNR=4.4
SVE Sverdlovsk 54.40 318 *e*P **pP 13 45 36.8 -0.2**
SVE pmax pmax
comp=Z,19nm,0.9s
ARU Arti 55.62 318 *d* iP **pP 13 45 44.9 -0.9**
ARU pmax pmax
comp=Z,21nm,1.2s
ABKAR Akbulak array 57.38 310 *e*P **P 13 45 42.0 -1.2**
FITZ Fitzroy Crossi 58.26 198 P P **13 45 49.8 +0.3**
comp=Z,2.3nm,0.5s,baz=22,slow=11,SNR=2.8
WRAB Tennant Creek 58.47 188 *c* iP **P 13 45 50.1 -0.9**
WRAB pmax pmax
comp=Z,20nm,0.8s
WRAB Tennant Creek 58.47 188 *e*P **P 13 45 50.3 -0.7**
comp=Z,5.8nm,0.8s
WB2 Warramunga Arr 58.48 188 *e*P **P 13 45 50.6 -0.5**
comp=Z,9.5nm,0.7s
WRA Warramunga Arr 58.48 188 P **P 13 45 50.5 -0.6**
comp=Z,10nm,0.6s,baz=5.9,slow=7.2,SNR=24
RES Resolute Bay 61.16 15 pP pP 13 46 24.9 +0.5
comp=Z,4.9nm,0.6s,baz=303,slow=10,SNR=2.8
ASAR Alice Springs 62.21 188 P **P 13 46 16.6 +0.1**
comp=Z,4.6nm,0.7s,baz=11,slow=6.0,SNR=10
YKA Yellowknife Ar 62.41 31 P **P 13 46 18.4 +1.1**
comp=Z,0.3nm,0.5s,baz=302,slow=6.2,SNR=3.8
GEYT Alibeck 63.55 299 P **P 13 46 27.9 +2.4**
comp=Z,0.9nm,0.5s,baz=75,slow=8.4,SNR=2.3
GEYT pP **pP 13 46 39.9 -1.2**
comp=Z,2.3nm,0.7s,baz=43,slow=7.2,SNR=3.2
FINES FINESS Array B 67.80 332 P **P 13 46 52.0 -0.3**
comp=Z,1.3nm,0.8s,baz=63,slow=3.7,SNR=3.1
STKA Stephens Creek 69.93 180 P **P 13 47 05.9 +0.1**
comp=Z,1.6nm,0.7s,baz=347,slow=11,SNR=4.7
KIV Kislovodsk 70.33 311 *e*P **P 13 47 10.6 +2.1**
KIV pmax pmax
comp=Z,5.0nm,0.9s
KBZ Khabaz 70.33 311 P **P 13 47 07.9 -0.4**
comp=Z,1.1nm,0.5s,baz=49,slow=9.3,SNR=2.8
NOA NORSAR Array B 73.08 337 P **P 13 47 24.6 -0.1**
comp=Z,0.6nm,0.7s,baz=43,slow=5.5,SNR=3.9
NOA pP **pP 13 47 40.3 -0.3**
comp=Z,0.7nm,0.6s,baz=39,slow=5.9,SNR=3.0
BOZ Bozeman (W) 73.43 45 *e*P **P 13 47 28.6 +1.5**
BOZ pmax pmax
comp=Z,2.0nm,0.8s
BOZ Bozeman (W) 73.43 45 *e*P **P 13 47 28.6 +1.5**
comp=Z,1.5nm,0.8s
AKASG Malin Array Be 73.47 322 P **P 13 47 26.8 -0.3**
comp=Z,0.7nm,0.4s,baz=46,slow=5.7,SNR=2.7
AKASG pP **PcP 13 47 42.1 -0.8**
comp=Z,1.2nm,0.5s,baz=46,slow=6.1,SNR=2.1
R11A Troy Canyon, C 75.58 52 *e*P **P 13 47 41.3 +1.5**
comp=Z,3.7nm,1.4s
BW06 Boulder Array 76.40 46 *e*P **P 13 47 45.4 +1.0**
PDAR Pinedale Array 76.40 46 P **P 13 47 45.5 +1.1**
comp=Z,1.2nm,0.6s,baz=267,slow=1.8,SNR=11
PDAR pP **pP 13 48 02.0 +1.6**
comp=Z,2.2nm,0.6s,baz=263,slow=2.7,SNR=9.2
BRTR Keskin Array B 78.26 312 pP pP 13 48 09.5 -1.3
comp=Z,0.8nm,0.5s,baz=63,slow=3.3,SNR=3.8
KECS Kecovo 79.10 325 *e*P **P 13 47 56.8 -2.2**
GERES GERESS Array B 81.77 328 P **P 13 48 13.1 -0.4**
comp=Z,0.4nm,0.2s,baz=46,slow=7.0,SNR=4.5
ANMO Albuquerque 83.38 50 *e*P **P 13 48 24.4 +2.2**
ANMO pmax pmax
comp=Z,2.0nm,1.1s
BFO Black Forest 84.31 331 *i* P **P 13 48 28.1 +1.6**
TX31 Lajitas Ar. Si 88.94 53 *e*P **P 13 48 51.1 +1.5**
TXAR Lajitas Array 88.95 53 P **P 13 48 50.7 +1.1**
comp=Z,1.3nm,0.6s,baz=305,slow=3.3,SNR=16
TXAR pP **pP 13 49 07.8 +1.9**
comp=Z,0.6nm,0.6s,baz=294,slow=3.6,SNR=4.1
LPAZ La Paz 145.62 58 PKPbc **PKPab 13 55 34.5 -0.1**
comp=Z,3.5nm,0.6s,baz=334,slow=4.1,SNR=11

MDD 26 13:36:27.4±5.7, 32.78N×7.49W, h0km, mb3.5/4, Error ellipse: s-maj=75.1km s-min=51.9km az=102.0, PRXIMO, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PVAQ	**Vaqueiros**	**4.61**	**358**	*e*Pn	Pn	13 37 38.0	-0.4
PVAQ				*e*Sn	Sn	13 38 34.2	+1.5
PVAQ				A	A	13 38 50.7	
	3.1nm,0.5s						
PVAQ	**Vaqueiros**	**4.61**	**358**	Pn	Pn	13 37 38.0	-0.4
PVAQ				Sn	Sn	13 38 34.2	+1.5
	3.1nm,0.5s						
EGRO	**El Granado**	**4.74**	**0**	Pn	Pn	13 37 40.2	0.0
	0.3nm,0.1s,SNR=7.9						
PCVE	**Castro Verde**	**4.86**	**355**	*e*Pn	Pn	13 37 41.5	-0.3
PCVE				*e*Sn	Sn	13 38 40.6	+1.9
PCVE	**Castro Verde**	**4.86**	**355**	Pn	Pn	13 37 41.5	-0.3
PCVE				Sn	Sn	13 38 40.6	+1.9
EMIN	**Mina Concepcio**	**5.02**	**7**	Pn	Pn	13 37 43.6	-0.4
	0.4nm,0.2s,SNR=7.9						
EMIN				Sn	Sn	13 38 42.9	+0.2
	0.5nm,0.2s,SNR=7.9						
MESJ	**Messejana**	**5.08**	**353**	*e*Pn	Pn	13 37 44.8	0.0
MESJ	**Messejana**	**5.08**	**353**	Pn	Pn	13 37 44.8	0.0
PBAR	**Barrancos**	**5.39**	**4**	*e*Pn	Pn	13 37 49.6	+0.5
PBAR				*e*Sn	Sn	13 38 54.0	+2.1
PBAR	**Barrancos**	**5.39**	**4**	Pn	Pn	13 37 49.6	+0.5
PBAR				Sn	Sn	13 38 54.0	+2.1
ECAB	**El Cabril**	**5.54**	**17**	Pn	Pn	13 37 51.4	+0.2
	0.4nm,0.2s,SNR=7.9						
ECAB				Sn	Sn	13 38 56.2	+0.5
	0.2nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**5.87**	**23**	Pn	Pn	13 37 56.2	+0.4
	0.4nm,0.2s,SNR=7.9						
EADA				Sn	Sn	13 39 04.6	+0.8
	0.2nm,0.1s,SNR=7.9						

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*IDC **26** 13:40:55.2±2.2, 5.52S×129.19E, h241km±23km, mb3.5/4, mb1 3.9/8, mb1mx3.4/39, mbtmp4.4/8, Error ellipse: s-maj=41.8km s-min=15.5km az=85.0*

ISC 26 13:40:54.7±0.8, 5.59S±0.07×129.5E±0.2, h250km, n10, σ1s63/13, mb3.9/4, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**5.01**	**21**	P	**Pn**	**13 42 11.7**	**+1.0**
	20nm,0.3s,baz=269,slow=24,SNR=9.4						
SIJI				S	**S**	**13 43 07.5**	**-3.9**
	13nm,0.3s,baz=269,slow=24,SNR=15						
FITZ	**Fitzroy Crossi**	**12.99**	**196**	P	**Pn**	**13 43 49.3**	**-1.3**
	0.9nm,0.3s,baz=34,slow=11,SNR=33						
WRA	**Warramunga Arr**	**15.03**	**162**	P	**Pn**	**13 44 16.9**	**+1.6**
	2.4nm,0.3s,baz=341,slow=13,SNR=107						
WRA				S	**S**	**13 47 01.0**	**-0.2**
	0.8nm,0.3s,baz=338,slow=21,SNR=7.9						
ASAR	**Alice Springs**	**18.47**	**167**	P	**Pn**	**13 44 56.1**	**+0.2**
	4.8nm,0.3s,baz=346,slow=11,SNR=567						
ASAR				S	**S**	**13 48 09.3**	**-0.7**
	0.6nm,0.3s,baz=344,slow=20,SNR=2.2						
MKAR	**Makanchi Array**	**66.77**	**327**	P	**P**	**13 51 19.9**	**+0.4**
	1.4nm,0.5s,baz=117,slow=9.1,SNR=14						
ZALV	**Zalesovo Beam**	**70.10**	**334**	P	**P**	**13 51 39.9**	**+0.1**
	1.2nm,0.3s,baz=115,slow=4.2,SNR=4.9						
SEY	**Seymchan**	**70.52**	**11**	P	**P**	**13 51 44.1**	**+2.0**
	1.3nm,0.6s,baz=225,slow=13,SNR=6.5						
ILAR	**Eielson Array**	**92.30**	**25**	P	**P**	**13 53 36.3**	**+0.1**
	0.3nm,0.9s,baz=263,slow=6.3,SNR=3.4						
TORD	**Torodi Ar. Bea**	**128.03**	**282**	PKP	**PKPdf**	**13 59 32.4**	**+0.4**
	0.2nm,0.4s,baz=50,slow=1.7,SNR=3.7						
CPUP	**Villa Florida**	**147.59**	**169**	PKPbc	**PKPab**	**14 00 11.9**	**-1.0**
	1.4nm,0.8s,baz=165,slow=8.0,SNR=3.0						

MEX 26 13:41:09.7±0.3, 15.43N×96.35W, h3km±7km, MD3.9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PANG	**Puerto Angel**	**0.27**	**333**	*e*P	Pg	13 41 14.7	-0.2
PANG				*i* S	Sg	13 41 18.4	+0.1
HUIG	**Huatulco**	**0.41**	**34**	*e*P	Pg	13 41 17.3	-0.3
HUIG				*i* S	Sg	13 41 23.3	+0.3
VHO	**Vista Hermosa**	**1.68**	**347**	*i* P	Pn	13 41 36.0	-4.2
VHO				*i* S	Sn	13 41 57.9	-4.5

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*NIED **26** 13:41:00.37.40N×141.60E, h32km, Mw3.7 Best double couple: M0 3.99000×10^14 NP1:ϕ=141.00000°, δ=37.00000°, λ=-40.00000°. NP2:ϕ=265.00000°, δ=68.00000°, λ=-120.00000°.*

*ISCJB **26** 13:41:27.4±0.9, 37.35N±0.04×141.64E±0.07, h41km±9km, mb3.5/7, MS4.0/1, Error ellipse: s-maj=9.8km s-min=5.2km az=19.4*

*JMA **26** 13:41:29.0±0.1, 37.38N×141.52E, h44km±2km, M3.9*

JMA Felt II J1.

*IDC **26** 13:41:29.6±0.9, 37.29N×141.52E, h42km±8km, mb3.3/7, mb1 3.6/10, mb1mx3.4/36, mbtmp3.6/10, ML3.3/3, MS2.6/2, Ms1 2.6/2, ms1mx2.4/20, Error ellipse: s-maj=20.6km s-min=16.7km az=109.0*

ISC 26 13:41:27.8±0.8, 37.36N±0.04×141.56E±0.05, h28km±4km, n30, σ1s06/38, mb3.4/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.55**	**271**	P	**Pn**	**13 41 40.0**	**+0.2**
JFK				S	**Sn**	**13 41 47.5**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.66**	**248**	P	**Pn**	**13 41 41.6**	**+0.2**
ONAJ				S	**Sn**	**13 41 50.3**	**-0.5**
JMM	**Marumori**	**0.80**	**310**	P	**Pb**	**13 41 43.2**	**+0.1**
JMM				S	**Sb**	**13 41 53.2**	**-0.3**
JFT	**Otama**	**0.99**	**280**	P	**Pb**	**13 41 46.7**	**+0.4**
JFT				S	**Sn**	**13 41 59.0**	**+0.1**
JHO	**Hitachi**	**1.09**	**227**	P	**Pn**	**13 41 47.1**	**-0.1**
JIO	**Ouri**	**1.11**	**351**	P	**Pn**	**13 41 47.6**	**+0.1**
JIO				S	**Sn**	**13 42 00.4**	**-1.5**
JOU	**Okura**	**1.23**	**325**	P	**Pn**	**13 41 49.5**	**+0.2**
JOU				S	**Sn**	**13 42 04.9**	**-0.1**
JYS	**Shiratake**	**1.47**	**307**	P	**Pn**	**13 41 53.2**	**+0.8**
JYS				S	**Sb**	**13 42 11.8**	**-0.9**
JFY	**Yanaizu**	**1.48**	**273**	P	**Pn**	**13 41 53.4**	**+0.8**
JFY				S	**Sb**	**13 42 11.9**	**-1.2**
JMK	**Ichinoseki**	**1.62**	**351**	P	**Pn**	**13 41 55.1**	**+0.6**
JMK				S	**Sn**	**13 42 14.2**	**-0.2**
MJAR	**Matsushiro Arr**	**2.81**	**254**	P	**Pn**	**13 42 12.5**	**+1.6**
	5.5nm,0.3s,baz=80,slow=16,SNR=33						
MJAR				S	**Sn**	**13 42 44.9**	**+1.1**
	8.2nm,0.3s,baz=97,slow=26,SNR=6.0						
MJAR				LR	LR	13 43 29.4	
	comp=Z,77nm,20.1s,baz=95,slow=44						
MAT	**Matsushiro**	**2.81**	**254**	P	**Pn**	**13 42 12.9**	**+2.0**
MAT				S	**Sb**	**13 42 47.6**	**-3.6**
JHJ	**Hachijo jima 2**	**4.47**	**200**	P	**Pn**	**13 42 34.6**	**+0.9**
	37nm,0.3s,baz=331,slow=20,SNR=21						
JHJ				S	**Sn**	**13 43 23.6**	**-1.2**
	69nm,0.3s,baz=112,slow=19,SNR=6.8						
JHJ				LR	LR	13 44 36.9	
	comp=Z,88nm,19.4s,baz=43,slow=43						
ASAJ	**Asahikawa**	**6.80**	**6**	P	**Pn**	**13 43 04.8**	**-1.0**
	baz=248,slow=9.3						
ASAJ				S	**Sn**	**13 44 20.9**	**-1.2**
	baz=162,slow=20						
USRK	**Ussuriysk Ar.**	**9.97**	**316**	P	**Pn**	**13 43 50.2**	**+1.1**
	0.3nm,0.3s,baz=108,slow=14,SNR=3.3						
SEY	**Seymchan**	**26.45**	**11**	P	**P**	**13 47 03.3**	**+1.2**
	1.2nm,0.9s,baz=245,slow=14,SNR=2.3						
SONM	**Songino Array**	**27.70**	**303**	P	**P**	**13 47 13.8**	**+0.1**
	0.3nm,0.4s,baz=110,slow=8.2,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**28.21**	**121**	T	T	14 17 31.4	
	baz=314,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy**	**28.22**	**122**	T	T	14 17 33.3	
	baz=314,slow=75,SNR=2.8						
H11N3	**WAKE ISLAND Hy**	**28.23**	**121**	T	T	14 17 40.9	
	baz=314,slow=75,SNR=26						
H11S1	**WAKE ISLAND Hy**	**28.94**	**124**	T	T	14 18 28.5	
	baz=315						
H11S3	**WAKE ISLAND Hy**	**28.94**	**124**	T	T	14 18 47.0	
	baz=315						
H11S2	**WAKE ISLAND Hy**	**28.95**	**124**	T	T	14 18 34.5	
	baz=315						
MKAR	**Makanchi Array**	**44.05**	**302**	P	**P**	**13 49 32.7**	**-0.4**
	0.3nm,0.6s,baz=88,slow=9.3,SNR=3.0						
MKAR				pP	**sP**	**13 49 44.2**	**-0.7**
	1.0nm,0.7s,baz=95,slow=10,SNR=6.7						
ILAR	**Eielson Array**	**49.16**	**33**	P	**P**	**13 50 13.6**	**+0.7**
	0.3nm,0.8s,baz=270,slow=7.4,SNR=4.1						
ILAR				pP	**sP**	**13 50 25.1**	**+0.4**
	0.4nm,0.7s,baz=267,slow=5.4,SNR=4.2						
CTA	**Charters Tower**	**57.30**	**175**	LR	LR	14 13 30.4	
	comp=Z,137nm,20.8s,baz=248,slow=34						
WRA	**Warramunga Arr**	**57.39**	**188**	P	**P**	**13 51 12.8**	**-1.0**
	0.9nm,0.5s,baz=6.3,slow=7.3,SNR=7.0						
ASAR	**Alice Springs**	**61.12**	**188**	P	**P**	**13 51 39.0**	**-0.6**
	0.5nm,0.8s,baz=11,slow=7.0,SNR=3.9						
PDAR	**Pinedale Array**	**77.36**	**46**	pP	pP	13 53 34.4	+5.2
	0.4nm,0.6s,baz=298,slow=3.2,SNR=3.2						
TXAR	**Lajitas Array**	**89.83**	**52**	P	**P**	**13 54 24.7**	**+0.4**
	0.1nm,0.6s,baz=297,slow=4.0,SNR=2.2						
TXAR				pP	**sP**	**13 54 37.3**	**+0.7**
	0.2nm,0.6s,baz=330,slow=4.8,SNR=2.6						

IDC 26 13:56:05.0±7.4, 2.06N×124.78E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/38, mbtmp3.6/4, Error ellipse: s-maj=127.6km s-min=104.2km az=113.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**20.05**	**178**	P	P	14 00 38.4	-1.4
	1.9nm,1.0s,baz=336,slow=10.0,SNR=2.5						
WRA	**Warramunga Arr**	**23.80**	**157**	P	P	14 01 20.1	+0.4
	2.5nm,0.9s,baz=338,slow=10,SNR=22						
ASAR	**Alice Springs**	**27.07**	**161**	P	P	14 01 50.0	+0.5
	0.4nm,0.6s,baz=337,slow=6.7,SNR=13						
STKA	**Stephens Creek**	**37.34**	**156**	P	P	14 03 18.9	-0.3
	0.9nm,0.7s,baz=333,slow=9.0,SNR=2.6						

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*CSEM **26** 13:58:16.3±1.5, 35.79N×33.82E, h5km, MD2.2, Error ellipse: s-maj=27.4km s-min=14.4km az=157.0*

*ISCJB **26** 13:58:20.8±1.7, 36.1N±0.1×33.64E±0.09, h27km±4km, Error ellipse: s-maj=25.9km s-min=7.0km az=154.8*

*ISK **26** 13:58:20.4, 36.04N×33.81E, h6km, MD2.2*

*DDA **26** 13:58:22.2, 36.39N×33.50E, h7km, Md2.8*

ISC 26 13:58:20.5±2.0, 36.1N±0.1×33.69E±0.08, h25km±6km, n12, σ0s56/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKKU	**Akkuyu-Mersin**	**0.14**	**305**	*e*PG	**Pb**	**13 58 25.8**	**+0.3**
AKKU				*e*SG	**Sb**	**13 58 29.5**	**+0.7**
AKKU	**Akkuyu-Mersin**	**0.14**	**305**	*e*Pg	**Pb**	**13 58 25.8**	**+0.3**
AKKU				*e*Sg	**Sb**	**13 58 29.5**	**+0.7**
IKL	**Isikli**	**0.16**	**359**	PG	**Pb**	**13 58 25.5**	**-0.2**
IKL				*e*SG	**Sb**	**13 58 28.9**	**-0.3**
IKL	**Isikli**	**0.16**	**359**	*i* Pg	**Pb**	**13 58 25.5**	**-0.2**
IKL				*e*Sg	**Sb**	**13 58 28.9**	**-0.3**
KIZK	**Mersin**	**0.54**	**42**	*i* P	**Pn**	**13 58 32.3**	**-0.4**
KIZK				*i* S	**Sn**	**13 58 40.5**	**-0.5**
KIZK	**Mersin**	**0.54**	**42**	P	**Pn**	**13 58 32.3**	**-0.4**
KIZK				S	**Sn**	**13 58 40.5**	**-0.5**
MERS	**Mersin**	**1.03**	**40**	*e*PG	**Pn**	**13 58 39.3**	**-0.2**
MERS				*e*SG	**Sb**	**13 58 54.3**	**+1.3**
MERS	**Mersin**	**1.03**	**40**	*e*Pg	**Pn**	**13 58 39.3**	**-0.2**
MERS				*e*Sg	**Sb**	**13 58 54.3**	**+1.3**
GAZI	**Gazipasa**	**1.12**	**278**	*i* P	**Pn**	**13 58 40.5**	**-0.2**
GAZI				*i* S	**Sn**	**13 58 55.1**	**-0.2**
GAZI	**Gazipasa**	**1.12**	**278**	P	**Pn**	**13 58 40.5**	**-0.2**
KERG	**Konya-Eregli**	**1.38**	**15**	*i* P	**Pn**	**13 58 44.1**	**-0.2**
KERG				*i* S	**Sn**	**13 59 01.8**	**-0.1**
KERG	**Konya-Eregli**	**1.38**	**15**	P	**Pn**	**13 58 44.1**	**-0.2**
KERG				S	**Sn**	**13 59 01.8**	**-0.1**

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*BJI **26** 14:26:18.5, 9.49S×66.66E, h10km, mb5.0/75, mB5.3/70, Ms5.5/76, Ms7 5.2/73*

*ISCJB **26** 14:26:21.8±0.9, 9.24S±0.04×67.13E±0.02, h9km±5km, mb5.1/196, MS5.2/187, Error ellipse: s-maj=6.4km s-min=3.9km az=179.0*

*MOS **26** 14:26:21.9±1.5, 9.22S×67.27E, h10km, mb5.3/58, MS5.0/38, Error ellipse: s-maj=7.3km s-min=5.0km az=95.0*

*IDC **26** 14:26:21.8±0.4, 9.20S×67.17E, h0km, mb4.7/45, mb1 4.8/45, mb1mx4.7/51, mbtmp4.7/45, MS5.1/44, Ms1 5.1/44, ms1mx5.0/50, Error ellipse: s-maj=12.4km s-min=11.3km az=39.0*

*NEIC **26** 14:26:22.0±0.0, 9.23S×67.10E, h12km, Moment Tensor Solution. s17 Moment tensor: Scale 10^17Nm; Mrr0.45; Mθθ-5.34; Mϕϕ4.89; Mrθ1.67; Mrϕ0.78; Mθϕ1.17; Best double couple: M0 5.60000×10^17 NP1:ϕ=50.00000°, δ89.00000°, λ21.00000°. NP2:ϕ=319.00000°, δ68.00000°, λ179.00000°. Principal axes: T 5.3100, Plg15.0000°, Azm276.0000°; N 0.4900, Plg68.0000°, Azm51.0000°; P -5.8100, Plg14.0000°, Azm182.0000°;*

*NEIC **26** 14:26:22.9±0.2, 9.23S×67.11E, h10km, mb5.2/70, MS5.4/102, MW5.8, MW5.7 Error ellipse: s-maj=5.9km s-min=4.6km az=184.0, Moment Tensor Solution. s51 Moment tensor: Scale 10^17Nm; Mrr0.43; Mθθ-4.98; Mϕϕ4.56; Mrθ0.92; Mθϕ-0.42; Mϕr1.06; Best double couple: M0 5.00000×10^17 NP1:ϕ=312.00000°, δ73.00000°, λ178.00000°. NP2:ϕ=43.00000°, δ88.00000°, λ17.00000°. Principal axes: T 4.8200, Plg13.0000°, Azm269.0000°; N 0.3500, Plg73.0000°, Azm51.0000°; P -5.1700, Plg10.0000°, Azm176.0000°;*

*GCMT **26** 14:26:22.9±0.1, 9.20S×67.12E, h19km, MW5.8/132, Moment Tensor Solution. s122,c231; s132,c401; Duration: 1s9 Moment tensor: Scale 10^17Nm; Mrr0.44±.05; Mθθ-5.99±.05; Mϕϕ5.56±.05; Mrθ-0.28±.10; Mθϕ0.79±.04; Mϕr1.91±.12; Best double couple: M0 6.15100×10^17 NP1:ϕ=318.00000°, δ80.00000°, λ164.00000°. NP2:ϕ=50.00000°, δ75.00000°, λ10.00000°. Principal axes: T 6.2300, Plg18.0000°, Azm273.0000°; N -0.1510, Plg72.0000°, Azm106.0000°; P -6.0710, Plg4.0000°, Azm5.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISC 26 14:26:24.7±0.5, 9.26S±0.05×67.13E±0.04, h16km±2km, h16km:pP-P, n831, σ2s02/806, mb5.1/201, MS5.2/189, 29C-18D, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**4.80**	**53**	Pn	Pb	14 27 42.2	-6.2
	baz=232,slow=17						
H08N3				Sn	**Sn**	**14 28 32.0**	**+0.6**
H08N3				T	T	14 32 25.3	
	baz=234,slow=75,SNR=1011						
H08N2	**Diego Garcia H**	**4.82**	**53**	Pn	Pb	14 27 42.6	-6.1
	baz=232,slow=17						
H08N2				Sn	**Sn**	**14 28 31.3**	**-0.6**
H08N2				T	T	14 32 24.3	
	baz=234,slow=75,SNR=1473						
H08N1	**Diego Garcia H**	**4.82**	**53**	Pn	Pb	14 27 42.5	-6.2
	baz=232,slow=17						
H08N1				Sn	**Sn**	**14 28 31.3**	**-0.6**
H08N1				T	T	14 32 42.3	
	baz=234,slow=75,SNR=879						
H08S1	**Diego Garcia H**	**5.53**	**74**	Pn	Pn	14 27 38.2	-8.0
	baz=272,slow=15						
H08S1				Sn	Sn	14 28 37.3	-12
H08S3	**Diego Garcia H**	**5.54**	**73**	Pn	Pn	14 27 38.2	-8.2
	baz=272,slow=15						
H08S3				Sn	Sn	14 28 37.3	-12
H08S2	**Diego Garcia H**	**5.55**	**74**	Pn	Pn	14 27 38.2	-8.2
	baz=272,slow=15						
H08S2				Sn	Sn	14 28 37.3	-13
DGAR	**Diego Garcia**	**5.58**	**71**	*c* iP	**Pn**	**14 27 42.8**	**-4.4**
DGAR	**Diego Garcia**	**5.58**	**71**	*e*Pn	**Pn**	**14 27 42.6**	**-4.5**
PALK	**Pallekele**	**21.28**	**40**	P	**P**	**14 31 12.1**	**+1.4**
	42nm,1.0s,baz=296,slow=2.5,SNR=10						
PALK				LR	LR	14 37 15.4	
	comp=Z,7μm,21.6s,baz=354,slow=31						
PALK	**Pallekele**	**21.28**	**40**	*i* P	**P**	**14 31 11.6**	**+0.8**
	SNR=6.5						
PALK	**Pallekele**	**21.28**	**40**	*e*P	**P**	**14 31 11.8**	**+1.0**
	180nm,1.4s						
OPO	**Ambohidratompo**	**21.43**	**242**	P	**P**	**14 31 13.5**	**+1.1**
	31nm,1.0s,baz=66,slow=20,SNR=20						
OPO				LR	LR	14 37 34.0	
	comp=Z,4μm,19.8s,baz=62,slow=31						
ABPO	**Ambohimpanom**	**21.57**	**241**	*e*P	**P**	**14 31 13.0**	**-1.0**
ABPO				pmax	pmax		
	comp=Z,172nm,0.9s						
ABPO				MLR	MLR		
	comp=Z,4μm,22.0s						
ABPO	**Ambohimpanom**	**21.57**	**241**	*e*P	**P**	**14 31 13.0**	**-1.0**
	comp=Z,172nm,0.9s						
ABPO				LR	LR		
	comp=Z,4μm,22.0s						
HYB	**Hyderabad**	**28.82**	**23**	*i* P	**P**	**14 32 22.0**	**-0.4**
HYB				*e*S	**S**	**14 37 10.0**	**-1.8**
HYB				LR	LR		
	comp=Z,18nm,12.0s						
COCO	**West Island**	**29.33**	**98**	PFAKE		14 32 40.0	+13
COCO				LR	LR		
	comp=Z,7μm,19.0s						
KMBO	**Kilima Mbogo**	**30.80**	**283**	P	**P**	**14 32 41.1**	**+0.8**
	comp=Z,13nm,1.0s,baz=77,slow=9.5,SNR=22						
KMBO				LR	LR	14 43 03.1	
	comp=Z,2μm,19.0s,baz=105,slow=32						
KMBO	**Kilima Mbogo**	**30.80**	**283**	*e*P	**P**	**14 32 40.4**	**+0.1**
	comp=Z,34nm,1.3s						
GSI	**Gunungsitoli**	**32.10**	**72**	P	**P**	**14 32 51.5**	**0.0**
GSI	**Gunungsitoli**	**32.10**	**72**	*e*P	**P**	**14 32 51.2**	**-0.3**
	comp=Z,103nm,1.5s						
GSI				LR	LR		
	comp=Z,8μm,19.0s						
DAMY	**Dhamar**	**32.70**	**316**	PFAKE		14 33 10.0	+13
DAMY				LR	LR		
	comp=Z,5μm,22.0s						
LHMI	**Lhok Sumawe**	**33.03**	**65**	PFAKE		14 33 10.0	+10
LHMI				LR	LR		
	comp=Z,6μm,20.0s						
KCSI	**Kotacane, Aceh**	**33.08**	**69**	P	**P**	**14 33 01.0**	**+0.9**
WSAR	**Wadi Sarin**	**33.35**	**346**	LR	LR	14 43 38.2	
	comp=Z,4μm,18.9s,slow=31						
FURI	**Furi**	**33.58**	**302**	PFAKE		14 33 20.0	+15
FURI				LR	LR		
	comp=Z,2μm,18.0s						
MNSI	**Mandailing Nat**	**33.83**	**75**	P	**P**	**14 33 08.3**	**+1.7**
PSI	**Prapat**	**33.88**	**71**	*e*P	**P**	**14 33 03.8**	**-3.4**
PSI				pmax	pmax		
	comp=Z,25nm,0.8s						
PSI				MLR	MLR		
	comp=Z,10μm,19.0s						
PSI	**Prapat**	**33.88**	**71**	*e*P	**P**	**14 33 03.8**	**-3.4**
	comp=Z,25nm,0.8s						
PSI				LR	LR		
	comp=Z,10μm,19.0s						
BKNI	**Bangkinang**	**35.09**	**76**	PFAKE		14 33 30.0	+12
BKNI				LR	LR		
	comp=Z,5μm,22.0s						
ASHO	**Ashiyiah**	**35.43**	**342**	*i* P	**P**	**14 33 19.4**	**-0.8**
	SNR=12						
HATD	**Hatta, Dubai**	**35.54**	**343**	*i* P	**P**	**14 33 22.0**	**+0.8**
	SNR=9.8						
FAQ	**Al Faqa, Dubai**	**35.

comp=Z,20nm,1.0s
KASI Kota Agung 37.23 87 P **P** **14 33 36.8 +0.9**
KLSI 37.59 86 P **P** **14 33 40.5 +1.6**
KGM Kluang 37.76 75 ⇑P **P** **14 33 42.4 +2.0**
XMIS Christmas Isla 37.96 95 PFAKE 14 33 50.0 +7.9
XMIS LR LR
comp=Z,4μm,20.0s
MYKOM Kota Tinggi 38.20 75 ⇑P **P** **14 33 45.4 +1.3**
MYKOM Kota Tinggi 38.20 75 *e*P **P** **14 33 44.6 +0.5**
comp=Z,46nm,0.9s
MYKOM LR LR
comp=Z,4μm,21.0s
CGJI Cibinong 38.28 89 P **P** **14 33 45.1 +0.4**
DSRI Dabo 38.28 79 P **P** **14 33 46.3 +1.5**
comp=Z,195nm,1.1s,comp=Z,4μm
LSZ Lusaka 38.47 257 *e*P **P** **14 33 46.1 -0.4**
LSZ pmax pmax
comp=Z,114nm,1.1s
LSZ MLR MLR
comp=Z,4μm,19.0s
LSZ Lusaka 38.47 257 *e*P **P** **14 33 46.1 -0.4**
comp=Z,114nm,1.1s
LSZ LR LR
comp=Z,4μm,19.0s
TPRI Tanjung Pinang 38.60 77 P **P** **14 33 48.6 +1.2**
comp=Z,52nm,1.4s,comp=Z,28μm
KTGM Kuala Trenggan 38.71 69 ⇓P **P** **14 33 49.2 +0.9**
KOLN Koldanda 40.12 23 *e*P **P** **14 34 00.4 +0.2**
comp=Z,39nm,0.8s
LEM Lembang 40.15 90 P P 14 34 08.5 +7.9
PYUN Piuthan 40.19 22 *e*P **P** **14 34 00.8 +0.1**
comp=Z,98nm,0.9s
CISI Cisompet, Garu 40.27 91 PFAKE 14 34 10.0 +8.5
CISI LR LR
comp=Z,3μm,22.0s
UMPA Umpang Tak 40.34 51 P **P** **14 34 03.4 +1.5**
comp=Z,7.1nm,1.1s,comp=Z,111nm
DMN Daman 40.58 25 *e*P **P** **14 34 04.6 +0.6**
comp=Z,63nm,0.9s
RAMN Ramite 40.66 27 *e*P **P** **14 34 05.7 +1.1**
comp=Z,89nm,0.9s
GKN Gorkha 40.74 24 *e*P **P** **14 34 05.4 +0.2**
comp=Z,67nm,0.9s
KKN Kakani 40.81 25 *e*P **P** **14 34 06.0 +0.1**
comp=Z,51nm,0.9s
MHMT Maesarieng 40.84 48 P **P** **14 34 07.6 +1.6**
comp=Z,39nm,1.0s
JIRN Jiri 41.09 26 *e*P **P** **14 34 08.7 +0.4**
GUN Gumba 41.17 26 *e*P **P** **14 34 09.6 +0.6**
CM01 Chiang Mai Arr 41.76 49 *e*P **P** **14 34 13.7 +0.2**
CM31 Chiang Mai Arr 41.77 49 *e*P **P** **14 34 14.2 +0.6**
CMAR Chiang Mai Arr 41.77 49 P **P** **14 34 14.4 +0.8**
comp=Z,8.9nm,0.8s,baz=242,slow=9.3,SNR=46
CMAR PcP **PcP** **14 36 10.5 +0.6**
comp=Z,3.0nm,0.7s,baz=237,slow=4.8,SNR=4.1
CMAR LR LR 14 49 26.2
comp=Z,1μm,19.0s,baz=238,slow=33
CHTO Chiang Mai 41.99 48 P **P** **14 34 16.1 +0.6**
comp=Z,117nm,0.9s,comp=Z,3μm
CHTO Chiang Mai 41.99 48 *e*P **P** **14 34 15.2 -0.2**
CHTO pmax pmax
comp=Z,18nm,0.8s
CHTO Chiang Mai 41.99 48 *e*P **P** **14 34 15.2 -0.2**
comp=Z,18nm,0.8s
CMMT Chiang Mai 41.99 48 P **P** **14 34 16.0 +0.5**
comp=Z,30nm,0.8s,comp=Z,771nm
SHL Shillong 42.18 34 *e*P **P** **14 34 19.0 +1.9**
SHL *e*S **S** **14 40 40.0 +3.1**
PBKT Sadao Pong 42.19 53 P **P** **14 34 18.1 +1.0**
comp=Z,37nm,1.1s,comp=Z,868nm
LAMP Lampang 42.32 49 P **P** **14 34 19.3 +1.1**
comp=Z,74nm,0.9s
LBTB Lobatse 42.46 243 *e*P **P** **14 34 18.8 -0.6**
LBTB pmax pmax
comp=Z,29nm,0.9s
LBTB Lobatse 42.46 243 *e*P **P** **14 34 18.8 -0.6**
comp=Z,29nm,0.9s
UTTA Uttaradit 42.55 51 P **P** **14 34 21.1 +1.1**
comp=Z,10.0nm,1.0s,comp=Z,96nm
CHAI Chaiyaphum 42.62 54 P **P** **14 34 21.8 +1.2**
comp=Z,12nm,1.0s,comp=Z,122nm
CMAI Chiengmai2 42.77 47 P **P** **14 34 23.5 +1.5**
comp=Z,180nm,0.9s
UGM Wanagama 42.91 92 PFAKE 14 34 30.0 +6.9
UGM LR LR
comp=Z,3μm,21.0s
WOJI Wonogiri, Jawa 43.32 92 P **P** **14 34 27.0 +0.7**
PCJI Pacitan 43.53 92 P **P** **14 34 28.8 +0.7**
KBL Kabul 43.60 2 *e*P **P** **14 34 28.6 +0.1**
KBL pmax pmax
comp=Z,37nm,1.3s
KBL MLR MLR
comp=Z,2μm,20.0s
KBL Kabul 43.60 2 *e*P **P** **14 34 28.6 +0.1**
comp=Z,37nm,1.3s
KBL LR LR
comp=Z,2μm,20.0s
BOSA Boshof 43.74 238 P **P** **14 34 29.3 -0.5**
comp=Z,33nm,1.1s,baz=76,slow=7.9,SNR=13
BOSA LR LR 14 51 07.8
comp=Z,1μm,18.9s,baz=71,slow=34
BOSA Boshof 43.74 238 *e*P **P** **14 34 28.7 -1.0**
comp=Z,38nm,1.1s
PWJI Pagerwojo 44.17 92 P **P** **14 34 33.6 +0.4**
KSM Kuching 44.32 78 ⇓P **P** **14 34 35.5 +1.1**
KSM Kuching 44.32 78 *e*P **P** **14 34 34.5 +0.1**
comp=Z,41nm,1.1s
KSM LR LR
comp=Z,2μm,20.0s
NONG Nongkai 44.74 53 P **P** **14 34 38.2 +0.5**
comp=Z,38nm,1.8s
SKNT Sakolnakorn 44.81 55 P **P** **14 34 38.8 +0.6**
comp=Z,30nm,1.7s
STKI Sintang 45.12 81 P **P** **14 34 42.5 +1.7**
LSA Lhasa 45.12 30 P **P** **14 34 42.0 +0.9**
LSA S **S** **14 41 24.0 +3.7**
LSA LR LR
comp=Z,1μm,17.2s
LSA LR LR
comp=Z,1μm,21.0s
LSA LR LR
comp=Z,4μm,23.2s
LSA Lhasa 45.12 30 *e*P **P** **14 34 42.0 +0.9**
LSA pmax pmax
comp=Z,34nm,0.9s
LSA MLR MLR
comp=Z,3μm,20.0s
LSA Lhasa 45.12 30 *e*P **P** **14 34 42.0 +0.9**
comp=Z,34nm,0.9s
LSA LR LR
comp=Z,3μm,20.0s
UBPT Khong Chiam 45.15 58 P **P** **14 34 41.4 +0.5**
comp=Z,21nm,0.8s,comp=Z,522nm
SBUM Sibu 46.41 78 *e*P **P** **14 34 51.0 -0.1**
comp=Z,33nm,1.2s
SBUM LR LR
comp=Z,4μm,22.0s
JAGI Jajag, Banyuwa 46.45 93 P **P** **14 34 51.7 +0.4**
JAGI Jajag, Banyuwa 46.45 93 *e*P **P** **14 34 50.6 -0.8**
comp=Z,60nm,0.8s
JAGI LR LR
comp=Z,3μm,20.0s
BTM Bintulu 47.44 77 ⇓P **P** **14 35 00.2 +1.1**
GEYT Alibeck 47.70 350 P **P** **14 35 00.1 -0.6**
comp=Z,2.4nm,0.9s,baz=193,slow=5.8,SNR=6.6
GEYT LR LR 14 54 04.5
comp=Z,1μm,18.5s,baz=150,slow=35
KMI Kunming 48.71 45 P **P** **14 35 09.0 +0.1**
KMI pP sP 14 35 19.0 +3.0
KMI sP pP 14 35 23.0 +9.0
KMI PP **PP** **14 37 02.3 +0.1**
KMI S **S** **14 42 11.0 -0.3**
KMI pmax pmax
comp=Z,14nm,0.5s
KMI pmax pmax
comp=Z,280nm,7.3s
KMI LR LR
comp=Z,1μm,14.4s
KMI LR LR
comp=Z,1μm,14.2s
KMI LR LR
comp=Z,1μm,19.5s
TSUM Tsumeb 48.88 253 *e*P **P** **14 35 09.6 -0.7**
comp=Z,17nm,1.0s
TSUM LR LR
comp=Z,1μm,19.0s
TWSI Taliwang, Sumb 49.12 94 P P 14 35 18.2 +6.2
KSH Kashi 49.22 9 P **P** **14 35 09.0 -3.5**
KSH *ep*P pP 14 35 12.5 -5.1
KSH *es*P sP 14 35 16.0 -3.6
KSH *e*PP **PP** **14 37 01.5 -5.1**
KSH *e*ScP **ScP** **14 40 27.5 -2.8**
KSH PcS **PcS** **14 40 29.8 -2.2**
KSH S **S** **14 42 09.3 -8.5**
KSH ScS **ScS** **14 44 58.5 -5.7**
KSH pmax pmax
comp=Z,27nm,0.8s
KSH LR LR
comp=Z,6μm,18.1s
KSH LR LR
comp=Z,3μm,12.1s
KSH LR LR
comp=Z,5μm,18.9s
EIL Elat 49.58 322 LR LR 14 54 04.1
comp=Z,3μm,18.5s,baz=147,slow=34
H01W3 Cape Leeuwin H 49.88 128 T T 15 28 56.3
baz=290,slow=75,SNR=1807
H01W2 Cape Leeuwin H 49.88 128 T T 15 28 56.6
baz=290,slow=75,SNR=1427
H01W1 Cape Leeuwin H 49.90 128 T T 15 28 57.6
baz=290,slow=75,SNR=1319
ASF Jabal al Asfar 50.31 326 LR LR 14 53 35.0
comp=Z,2μm,20.8s,baz=100,slow=32
QIZ Qiongzhong 50.63 56 P **P** **14 35 23.5 0.0**
QIZ PP **PP** **14 37 18.8 -0.8**
QIZ S **S** **14 42 39.0 +1.0**
QIZ SS **SS** **14 46 15.3 +2.7**
QIZ pmax pmax
comp=Z,12nm,1.4s
QIZ pmax pmax
comp=Z,310nm,10.3s
QIZ LR LR
comp=Z,3μm,14.6s
QIZ LR LR
comp=Z,2μm,15.8s
QIZ Qiongzhong 50.63 56 *e*P **P** **14 35 23.7 +0.3**
comp=Z,55nm,1.6s
QIZ LR LR
comp=Z,2μm,22.0s
IUG Iuzhnay 51.23 3 *i* P **P** **14 35 25.3 -2.4**
comp=Z,241nm,1.3s
IUG *e*S **S** **14 42 44.2 -1.5**
IUG LR LR 14 57 05.5
comp=Z,336nm,12.4s
KKM Kota Kinabalu 51.23 75 ⇑P **P** **14 35 28.9 +0.7**
KKM Kota Kinabalu 51.23 75 PFAKE 14 35 40.0 +12
KKM LR LR
comp=Z,3μm,21.0s
MNAS Manas 51.73 5 P **P** **14 35 31.0 -0.5**
MNAS pmax pmax
comp=Z,25nm,1.1s
NWAO Narrogin (SRO) 51.76 125 P **P** **14 35 31.1 -0.7**
comp=Z,17nm,1.0s,baz=352,slow=7.0,SNR=4.6
NWAO Narrogin (SRO) 51.76 125 P **P** **14 35 31.1 -0.7**
NWAO MLR MLR
comp=Z,5μm,20.0s
NWAO Narrogin (SRO) 51.76 125 P **P** **14 35 31.1 -0.7**
NWAO LR LR
comp=Z,5μm,20.0s
MMAI Mount Meron Ar 51.77 326 LR LR 14 55 03.5
MBWA Marble Bar 51.91 110 *e*P **P** **14 35 32.8 -0.3**
comp=Z,18nm,0.9s
MBWA LR LR
comp=Z,4μm,20.0s
SDKM Sandakan 52.05 75 ⇑P **P** **14 35 34.2 0.0**
KDM Kudat 52.07 74 ⇓P **P** **14 35 35.4 +1.1**
AAK Ala-Archa 52.09 7 P **P** **14 35 32.5 -1.6**
comp=Z,5.8nm,0.5s,baz=173,slow=10,SNR=8.1
AAK Ala-Archa 52.09 7 *e*P **P** **14 35 33.1 -1.0**
AAK pmax pmax
comp=Z,21nm,1.1s
AAK Ala-Archa 52.09 7 *e*P **P** **14 35 33.7 -0.4**
comp=Z,107nm,2.0s
AAK LR LR
comp=Z,2μm,21.0s
KKAR Karatay Array 52.20 3 *e*P **P** **14 35 34.2 -0.6**
KKAR Karatay Array 52.20 3 *e*P **P** **14 35 34.2 -0.6**
FRU Bishkek 52.29 7 *e*P **P** **14 35 34.0 -1.5**
FRU *e* 14 43 00.0
FRU pmax pmax
comp=E,5μm,14.0s
GYA Guiyang 52.30 46 ⇑*i*P **P** **14 35 35.0 -1.0**
GYA PcP **PcP** **14 36 48.3 +1.1**
GYA PP **PP** **14 37 36.8 +2.1**
GYA ScP **ScP** **14 40 44.0 +0.1**
GYA S **S** **14 43 01.3 +0.3**
GYA SS **SS** **14 46 38.5 -0.5**
GYA pmax pmax
comp=E,20nm,1.0s
GYA pmax pmax
comp=E,240nm,7.8s
GYA LR LR
comp=E,2μm,17.4s
GYA LR LR
comp=E,910nm,16.8s
GYA LR LR
comp=E,1μm,17.4s
KAPI Kappang 52.35 89 LR LR 14 56 13.0
comp=E,2μm,20.1s,baz=231,slow=34
TKM2 Tokmak 2 52.50 8 P **P** **14 35 35.6 -1.7**
TKM2 pmax pmax
comp=Z,36nm,1.3s
MDOK Medeo 52.95 9 *e*P **P** **14 35 38.9 -1.7**
comp=Z,110nm,2.0s
MDOK *e*S **S** **14 43 08.6 -0.9**
MDOK LR LR 14 57 04.3
comp=Z,808nm,16.6s
SATY Saty 53.08 10 *e*P **P** **14 35 38.8 -2.6**
comp=Z,324nm,1.0s
SATY *e*S **S** **14 43 09.2 -1.9**
SATY LR LR 14 58 08.8
comp=Z,716nm,11.2s
CD2 Chengdu 53.20 40 ⇓P **P** **14 35 42.5 +0.1**
CD2 pP pP 14 35 45.0 -2.6
CD2 PP **PP** **14 37 42.8 +0.1**
CD2 PcS **PcS** **14 40 48.8 -0.6**
CD2 S **S** **14 43 15.5 +2.6**
CD2 SS **SS** **14 46 56.8 +3.9**
CD2 pmax pmax
comp=Z,80nm,0.6s
CD2 pmax pmax
comp=Z,520nm,7.8s
CD2 LR LR
comp=Z,2μm,21.1s
CD2 LR LR
comp=Z,2μm,19.1s
CD2 LR LR
comp=Z,2μm,15.7s
UZB Uzynbulak 53.27 11 *e*P **P** **14 35 40.3 -2.6**
comp=Z,152nm,1.6s
UZB *e*S **S** **14 43 12.3 -1.5**
UZB LR LR 14 58 35.3
comp=Z,538nm,11.2s
GNI Garni 53.35 339 P **P** **14 35 43.9 +0.4**
comp=Z,20nm,0.9s,baz=240,slow=0.7,SNR=11
GNI Garni 53.35 339 *e*P **P** **14 35 42.2 -1.3**
comp=Z,51nm,1.1s
SHLS Shalkode 53.45 12 *e*P **P** **14 35 41.4 -2.8**
comp=Z,118nm,0.9s
SHLS *e*S **S** **14 43 14.5 -1.8**
SHLS LR LR 14 58 31.9
comp=Z,339nm,12.1s
KPKS Kokpek 53.52 10 *e*P **P** **14 35 42.1 -2.6**
comp=Z,115nm,0.9s
KPKS *e*S **S** **14 43 15.3 -1.7**
KPKS LR LR 14 58 43.6
comp=Z,711nm,11.4s
PDGK Podgornoye 53.54 11 P **P** **14 35 43.1 -1.5**
PDGK pmax pmax
comp=Z,21nm,0.9s
KUU Kurty 53.56 8 *e*P **P** **14 35 42.4 -2.5**
comp=Z,96nm,1.5s
KUU *e*S **S** **14 43 15.9 -1.5**
KUU LR LR 14 58 44.7
comp=Z,722nm,12.7s
CSS Mathiatis 54.37 326 PFAKE 14 36 00.0 +9.1
CSS LR LR
comp=Z,700nm,19.0s
GZH Guangzhou 55.49 54 P P 14 36 10.5 +11
GZH S S 14 44 00.0 +16
GZH Guangzhou 55.49 54 SS SS 14 47 46.8 +18
GZH pmax pmax
comp=Z,430nm,7.5s
ZEI Tsey 55.98 339 *e*P **P** **14 36 04.6 +2.0**
ZEI pmax pmax
comp=Z,37nm,0.4s
WMQ Urumqi 56.04 18 P **P** **14 36 03.0 +0.1**
WMQ pP pP 14 36 06.5 -1.5
WMQ sP sP 14 36 08.8 -1.2
WMQ PP **PP** **14 38 11.0 +3.0**
WMQ S **S** **14 43 49.8 -1.0**
WMQ ScS **ScS** **14 45 50.0 -1.6**
WMQ pmax pmax
comp=Z,35nm,1.5s
WMQ pmax pmax
comp=Z,670nm,4.3s
WMQ LR LR
comp=Z,4μm,14.2s
WMQ LR LR
comp=Z,4μm,22.4s
WMQ LR LR
comp=Z,6μm,25.6s
SOEI Soe 56.30 96 P **P** **14 36 06.5 +1.1**
SOEI Soe 56.30 96 *e*P **P** **14 36 04.0 -1.4**
comp=Z,161nm,1.0s
SOEI LR LR
comp=Z,7μm,22.0s
ENH Enshi 56.58 44 *e*P **P** **14 36 05.8 -1.1**
comp=Z,79nm,1.6s
ENH LR LR
comp=Z,2μm,19.0s
LZH Lanzhou 56.83 35 *e*P P 14 36 14.0 +5.2
LZH pP sP 14 36 20.8 +4.9
LZH PP **PP** **14 38 17.3 +2.0**
LZH S **S** **14 44 03.5 +1.7**
LZH sS sS 14 44 13.0 +2.7
LZH SS **SS** **14 47 53.3 +3.0**
LZH pmax pmax
comp=Z,31nm,1.0s
LZH pmax pmax
comp=Z,140nm,4.3s
LZH LR LR
comp=Z,930nm,13.4s
LZH LR LR
comp=Z,1μm,14.1s
LZH LR LR
comp=Z,1μm,14.6s
GTA Gaotai 57.15 30 P **P** **14 36 10.5 -0.4**
GTA pP pP 14 36 15.0 -1.1
GTA sP sP 14 36 17.3 -0.8
GTA PP **PP** **14 38 20.5 +2.4**
GTA S **S** **14 44 06.0 +0.2**
GTA sS sS 14 44 13.5 -0.8
GTA SS **SS** **14 47 56.8 +1.7**
GTA pmax pmax
comp=Z,6.0nm,1.1s
GTA pmax pmax
comp=Z,280nm,6.7s
GTA LR LR
comp=Z,1μm,20.4s
GTA LR LR
comp=Z,2μm,22.8s
GTA LR LR
comp=Z,2μm,21.4s
KBZ Khabaz 57.15 339 P **P** **14 36 09.9 -0.7**
comp=Z,9.6nm,0.9s,baz=158,slow=3.9,SNR=12
KBZ LR LR 15 00 35.1
comp=Z,2μm,18.3s,baz=164,slow=36
FITZ Fitzroy Crossi 57.33 106 LR LR 14 59 47.6
comp=Z,3μm,18.4s,baz=274,slow=35
FITZ Fitzroy Crossi 57.33 106 *e*P **P** **14 36 11.3 -1.2**
comp=Z,12nm,0.8s
MAKZ Makanchi 57.37 12 P **P** **14 36 10.1 -2.1**
MAKZ pmax pmax
comp=Z,19nm,1.0s
MAKZ Makanchi 57.37 12 *e*P **P** **14 36 10.3 -1.9**
comp=Z,16nm,0.9s
MAKZ LR LR
comp=Z,2μm,20.0s
MK01 Makanchi Array 57.40 12 *e*P **P** **14 36 10.2 -2.2**
KIV Kislovodsk 57.42 339 *e*P **P** **14 36 12.8 +0.1**
KIV *e* 14 37 07.4
KIV *e* 14 38 20.2
KIV *e*S **S** **14 44 10.4 +1.2**
KIV *e*SS **SS** **14 48 01.3 +2.1**
KIV pmax pmax
comp=Z,12nm,1.1s
KIV MLR MLR
comp=Z,1μm,17.0s
MK31 Makanchi Array 57.42 12 *i* P **P** **14 36 10.5 -2.1**
MK31 pmax pmax
comp=Z,8.0nm,0.7s
MK31 Makanchi Array 57.42 12 *e*P **P** **14 36 10.7 -1.9**
MKAR Makanchi Array 57.42 12 P **P** **14 36 11.0 -1.6**
comp=Z,8.6nm,0.7s,baz=200,slow=8.2,SNR=29
MKAR LR LR 15 00 58.1
comp=Z,2μm,20.3s,baz=207,slow=36
MKAR Makanchi Array 57.42 12 P **P** **14 36 11.0 -1.6**
MKAR pmax pmax
comp=Z,9.0nm,0.7s
MKAR MLR MLR
comp=Z,2μm,20.3s
MKAR Makanchi Array 57.42 12 *e*P **P** **14 36 10.5 -2.1**
OTUK Ortayu 57.44 4 P **P** **14 36 12.1 -0.6**
OTUK pmax pmax
comp=Z,20nm,1.3s
BR131 Keskin Array S 57.78 330 *e*P **P** **14 36 15.1 -0.3**
BRTR Keskin Array B 57.78 330 P **P** **14 36 15.4 0.0**
comp=Z,12nm,1.0s,baz=142,slow=9.1,SNR=21
BRTR LR LR 14 59 09.1
comp=Z,2μm,21.9s,baz=134,slow=34
BRTR Keskin Array B 57.78 330 *i* P **P** **14 36 15.8 +0.4**
BRTR pmax pmax
comp=Z,12nm,1.0s
SOC Sochi 58.20 337 *e*P **P** **14 36 19.6 +1.5**
SOC *e* 14 38 22.0
SOC *e*PPP PPP 14 39 44.8
SOC *e*S **S** **14 44 21.8 +2.7**
SOC pmax pmax
comp=Z,27nm,0.9s
SOC MLR MLR
comp=Z,2μm,18.0s
TGY Tagaytay City 58.21 67 LR LR 14 58 12.5
comp=Z,2μm,19.6s,baz=187,slow=33
BR231 Keskin MP Arra 58.30 329 *e*P **P** **14 36 15.6 -3.4**
MAW Mawson 58.34 182 P **P** **14 36 18.5 -0.2**
comp=Z,18nm,0.9s,baz=336,slow=9.6,SNR=9.3
MAW LR LR 14 56 45.3
comp=Z,2μm,18.9s,baz=5.0,slow=31
MAW Mawson 58.34 182 *e*P **P** **14 36 18.8 +0.2**
MAW pmax pmax
comp=Z,9.0nm,1.1s
MAW Mawson 58.34 182 *e*P **P** **14 36 18.8 +0.2**
comp=Z,8.8nm,1.1s
KARP Karpathos 58.37 322 PFAKE 14 36 30.0 +11
KARP LR LR
comp=Z,600nm,21.0s
XAN Xi'an 58.53 40 P **P** **14 36 20.0 -0.7**
XAN sP sP 14 36 26.3 -1.5
XAN PcP **PcP** **14 37 10.5 -0.5**
XAN PP **PP** **14 38 30.8 +0.4**
XAN S **S** **14 44 20.8 -3.2**
XAN ScS **ScS** **14 46 05.8 -4.4**
XAN pmax pmax
comp=Z,30nm,1.1s
XAN pmax pmax
comp=Z,360nm,9.0s
XAN LR LR
comp=Z,1μm,16.0s
XAN LR LR
comp=Z,920nm,15.6s
XAN LR LR
comp=Z,1μm,17.5s
AB31 Akbulak array 58.61 354 *i* P **P** **14 36 19.0 -1.8**
AB31 pmax pmax
comp=Z,20nm,0.9s
ABKAR Akbulak array 58.61 354 *e*P **P** **14 36 18.9 -1.9**
BRZS Berezniki 59.19 4 *e*P **P** **14 36 22.8 -2.1**
comp=Z,18nm,0.9s
BRZS *e*S **S** **14 44 30.9 -1.0**
BRZS LR LR 15 02 01.8
CTBH Cotabato--PC H 59.22 76 ⇑*i*P **P** **14 36 25.0 -0.8**
AKTO Aktyubinsk 59.98 353 P **P** **14 36 28.9 -1.3**
comp=Z,15nm,1.1s,baz=162,slow=7.1,SNR=23
AKTO Aktyubinsk 59.98 353 P **P** **14 36 28.5 -1.7**
AKTO pmax pmax

comp=Z,36nm,0.8s
FORT Forrest 60.39 120 PFAKE 14 36 50.0 +16
FORT LR LR
comp=Z,58μm,20.0s
KURBB Kurchatov Arra 60.46 8 P **P** **14 36 32.3 -1.2**
comp=Z,5.6nm,0.6s,baz=207,slow=7.1,SNR=25
KURK Kurchatov 60.56 8 P **P** **14 36 32.3 -1.9**
KURK Kurchatov 60.56 8 P **P** **14 36 32.3 -1.9**
QZH Quanzhou 60.58 55 SS SS 14 49 01.0 +12
QZH pmax pmax
comp=Z,730nm,9.3s
QZH LR LR
comp=N,2μm,12.7s
QZH LR LR
comp=E,2μm,16.1s
QZH LR LR
comp=Z,4μm,16.9s
TPUB Ta-pu 61.52 57 PFAKE 14 36 50.0 +8.7
TPUB LR LR
comp=Z,2μm,18.0s
SIM Simferopol' 61.63 334 *ce*P **P** **14 36 42.3 +0.7**
SIM *e*S **S** **14 45 02.0 -1.2**
SIM pmax pmax
comp=Z,50nm,0.4s
SIM pmax pmax
comp=Z,100nm,9.1s
SIM pmax pmax
comp=Z,1μm,19.0s
TWG Pinlang 61.68 58 PFAKE 14 36 50.0 +7.6
TWG LR LR
comp=Z,6μm,19.0s
SSLB Suanglung 61.99 57 PFAKE 14 37 00.0 +15
SSLB LR LR
comp=Z,3μm,21.0s
BVA0 Borovoye Array 62.10 2 P **P** **14 36 43.0 -1.7**
BVA0 pmax pmax
comp=Z,21nm,1.2s
BVAR Borovoye Array 62.10 2 P **P** **14 36 43.3 -1.4**
comp=Z,7.7nm,0.7s,baz=156,slow=7.8,SNR=47
BVAR LR LR 15 03 11.0
comp=Z,2μm,20.4s,baz=190,slow=36
YULB Yu-li 62.11 57 *e*P **P** **14 36 45.1 -0.3**
comp=Z,93nm,1.9s
YULB LR LR
comp=Z,2μm,18.0s
BRVK Borovoye 62.13 2 *d i*P **P** **14 36 43.4 -1.4**
BRVK pmax pmax
comp=Z,19nm,0.8s
BRVK Borovoye 62.13 2 *e*P **P** **14 36 43.0 -1.8**
comp=Z,21nm,1.0s
BRVK LR LR
comp=Z,2μm,18.0s
SYO Syowa Base 62.32 191⇓ *e*X **P** **14 36 43.8 -2.1**
SYO Syowa Base 62.32 191⇓ *ep*P **P** **14 36 48.0 +2.1**
NACB Ninganchiao 62.69 57 PFAKE 14 37 00.0 +11
NACB LR LR
comp=Z,3μm,22.0s
YHNB Yeheng 62.72 56 PFAKE 14 37 00.0 +11
YHNB LR LR
comp=Z,3μm,19.0s
TATO Taipei 62.95 56 PFAKE 14 37 00.0 +9.2
TATO LR LR
comp=Z,3μm,18.0s
TIY Taiyuan 63.05 39 *e*P **P** **14 36 53.5 +2.1**
TIY S **S** **14 45 23.0 +1.3**
TIY pmax pmax
comp=Z,37nm,0.8s
TIY pmax pmax
comp=Z,350nm,10.5s
TIY LR LR
comp=Z,1μm,16.0s
TIY LR LR
comp=Z,1μm,14.7s
TIY LR LR
comp=Z,900nm,14.1s
BTO Baotou 63.45 35 *e*P **P** **14 36 52.0 -2.1**
AGG Agios Georgios 63.55 322 *e*P **P** **14 36 53.6 -1.0**
AGG pmax pmax
comp=Z,94nm,1.4s
AGG MLR MLR
comp=Z,1μm,21.0s
AGG Agios Georgios 63.55 322 *e*P **P** **14 36 53.6 -1.0**
comp=Z,94nm,1.4s
AGG LR LR
comp=Z,1μm,21.0s
YOJ Yonaguni jima 63.98 57 PFAKE 14 37 10.0 +12
YOJ LR LR
comp=Z,2μm,22.0s
VRH Novokhopyorsk 64.11 343 *e*P **P** **14 36 59.5 +1.5**
VRH pmax pmax
comp=Z,10.0nm,0.6s
TLB Topalu 64.17 330⇑ *i*P **P** **14 36 59.8 +1.3**
NJ2 Nanjing 64.23 48 *e*P **P** **14 36 59.0 -0.2**
NJ2 S **S** **14 45 35.5 -0.9**
NJ2 SS **SS** **14 49 54.5 +8.3**
NJ2 pmax pmax
comp=Z,10.0nm,0.6s
NJ2 pmax pmax
comp=Z,600nm,7.1s
NJ2 LR LR
comp=Z,920nm,17.9s
NJ2 LR LR
comp=Z,1μm,15.2s
NJ2 LR LR
comp=Z,1μm,15.7s
HARR Harsova 64.30 330⇓ *i*P **P** **14 37 00.0 +0.6**
SZH Strazhica 64.32 328 *i* P P 14 37 06.4 +6.9
MMB Musomiste 64.39 325 *i* P **P** **14 37 03.8 +3.7**
HHC Hu-ho-hao-te 64.50 36 *e*P **P** **14 37 01.8 +0.8**
HHC PP **PP** **14 39 20.0 -3.1**
HHC S **S** **14 45 38.5 -1.2**
HHC sS sS 14 45 49.5 +1.2
HHC ScS **SKSac** **14 46 52.5 -2.4**
HHC SS **SS** **14 49 50.0 -0.4**
HHC pmax pmax
comp=Z,9.0nm,0.9s
HHC pmax pmax
comp=Z,290nm,4.3s
HHC LR LR
comp=Z,780nm,14.4s
HHC LR LR
comp=Z,1μm,14.3s
HHC LR LR
comp=Z,780nm,17.1s
CFR Carcaliu 64.56 330⇑ *i*P **P** **14 37 01.1 +0.1**
ZAA0 Zalesovo Array 64.73 11 *e*P **P** **14 37 00.0 -1.9**
ZALV Zalesovo Beam 64.73 11 P **P** **14 37 00.3 -1.7**
comp=Z,6.7nm,0.7s,baz=212,slow=6.7,SNR=20
ZALV LR LR 15 03 43.5
comp=Z,2μm,18.5s,baz=236,slow=35
PGB Panagyurishte 64.78 326 *i* P P 14 37 08.4 +5.7
VSR Storozhevoye 64.91 341 *e*P **P** **14 37 03.4 +0.2**
VSR pmax pmax
comp=Z,20nm,1.1s
FAKI Fak Fak 64.99 89 PFAKE 14 37 20.0 +15
FAKI LR LR
comp=Z,1μm,22.0s
ASAR Alice Springs 65.12 112 P **P** **14 37 05.0 -0.4**
comp=Z,9.7nm,0.8s,baz=277,slow=6.0,SNR=85
ASAR LR LR 15 04 35.1
comp=Z,3μm,18.0s,baz=274,slow=35
ASAR PKP2ab 15 06 00.2
comp=Z,1.2nm,1.2s,baz=88,slow=3.3,SNR=4.2
ASAR Alice Springs 65.12 112 P **P** **14 37 05.0 -0.4**
AS31 Alice Springs 65.12 112 *e*P **P** **14 37 04.1 -1.2**
comp=Z,3.3nm,0.6s
AS31 LR LR
comp=Z,100nm,18.0s
AS01 Alice Springs 65.17 112 *e*P **P** **14 37 04.5 -1.1**
TIA Tai'an 65.22 43 ⇓P **P** **14 37 05.8 +0.2**
TIA S **S** **14 45 50.0 +1.5**
TIA SS **SS** **14 50 10.8 +9.2**
TIA pmax pmax
comp=Z,20nm,1.2s
TIA pmax pmax
comp=Z,450nm,7.8s
TIA LR LR
comp=Z,1μm,22.0s
TIA LR LR
comp=Z,2μm,19.4s
TIA LR LR
comp=Z,1μm,25.3s
NVS Novosibirsk 65.28 10⇓ *i*P **P** **14 37 04.9 -0.7**
NVS *e*S **S** **14 45 49.4 +1.0**
NVS pmax pmax
comp=N,21nm,1.5s
NVS pmax pmax
comp=E,14nm,1.5s
NVS pmax pmax
comp=Z,43nm,1.5s
NVS smax smax
comp=N,26nm,2.5s
NVS smax smax
comp=E,23nm,2.5s
ISR Istrita 65.30 330⇑ *i*P **P** **14 37 08.8 +2.8**
SSE Sheshan 65.49 50 *e*P **P** **14 37 09.0 +1.6**
SSE PcP **PcP** **14 37 41.0 +1.8**
SSE S **S** **14 45 53.5 +1.6**
SSE sS **sS** **14 46 00.8 +0.2**
SSE pmax pmax
comp=E,52nm,0.7s
SSE pmax pmax
comp=E,64nm,3.5s
SSE LR LR
comp=E,290nm,23.5s
SSE LR LR
comp=E,1μm,23.5s
SSE LR LR
comp=E,1μm,17.2s
MPEP Malo Peshtene 65.55 327 *i* P **P** **14 37 09.4 +1.8**
WC1 Warramunga Arr 65.55 108 PFAKE 14 37 20.0 +12
WC1 LR LR
comp=Z,4μm,21.0s
WC4 Warramunga Arr 65.55 108 PFAKE 14 37 20.0 +12
WC4 LR LR
comp=Z,5μm,21.0s
WR1 Warramunga Arr 65.55 108 PFAKE 14 37 20.0 +12
WR1 LR LR
comp=Z,6μm,22.0s
WRA Warramunga Arr 65.55 108 P **P** **14 37 07.9 -0.2**
comp=Z,13nm,0.9s,baz=278,slow=6.0,SNR=67
WRA LR LR 15 01 52.6
comp=Z,5μm,21.7s,baz=280,slow=32
WRA PKP2ab 15 05 56.1
comp=Z,1.6nm,1.1s,baz=64,slow=3.8,SNR=4.8
WRAB Tennant Creek 65.56 108 *c i*P **P** **14 37 08.0 -0.2**
WRAB pmax pmax
comp=Z,44nm,1.0s
WRAB Tennant Creek 65.56 108 *e*P **P** **14 37 07.2 -1.0**
comp=Z,26nm,0.9s
WRAB LR LR
comp=Z,6μm,22.0s
WB2 Warramunga Arr 65.56 108 *e*P **P** **14 37 07.7 -0.5**
comp=Z,27nm,0.9s
WB2 LR LR
comp=Z,6μm,21.0s
WB3 Warramunga Arr 65.57 108 PFAKE 14 37 20.0 +12
WB3 LR LR
comp=Z,5μm,22.0s
KIS Kishinev 65.57 332 *e*P **P** **14 37 08.0 +0.4**
KIS LRM MLR 15 07 48.0
comp=Z,800nm,16.0s
KIS Kishinev 65.57 332 *e*P **P** **14 37 08.0 +0.4**
KIS *e* 14 39 40.0
KIS *e* 14 41 16.0
KIS *e* 14 45 52.0
KIS *e* 14 46 30.0
KIS MLR MLR
comp=Z,700nm,15.0s
KIS MLR MLR
comp=Z,800nm,16.0s
WB4 Warramunga Arr 65.57 108 PFAKE 14 37 20.0 +12
WB4 LR LR
comp=Z,5μm,21.0s
WR2 Warramunga Arr 65.57 108 PFAKE 14 37 20.0 +12
WR2 LR LR
comp=Z,5μm,21.0s
WC2 Warramunga Arr 65.58 108 PFAKE 14 37 20.0 +12
WC2 LR LR
comp=Z,6μm,22.0s
WB5 Warramunga Arr 65.58 108 PFAKE 14 37 20.0 +12
WB5 LR LR
comp=Z,5μm,21.0s
WB6 Warramunga Arr 65.58 108 PFAKE 14 37 20.0 +12
WB6 LR LR
comp=Z,5μm,22.0s
WC3 Warramunga Arr 65.58 108 PFAKE 14 37 20.0 +12
WC3 LR LR
comp=Z,5μm,20.0s
WB8 Warramunga Arr 65.59 108 PFAKE 14 37 20.0 +12
WB8 LR LR
comp=Z,5μm,21.0s
WR3 Warramunga Arr 65.60 108 PFAKE 14 37 20.0 +12
WR3 LR LR
comp=Z,5μm,21.0s
WB9 Warramunga Arr 65.60 108 PFAKE 14 37 20.0 +12
WB9 LR LR
comp=Z,9μm,21.0s
WB0 Warramunga Arr 65.61 107 PFAKE 14 37 20.0 +12
WB0 LR LR
comp=Z,4μm,21.0s
WR4 Warramunga Arr 65.61 108 PFAKE 14 37 20.0 +11
WR4 LR LR
comp=Z,5μm,22.0s
WR5 Warramunga Arr 65.64 108 PFAKE 14 37 20.0 +11
WR5 LR LR
comp=Z,5μm,21.0s
WR6 Warramunga Arr 65.66 108 PFAKE 14 37 20.0 +11
WR6 LR LR
comp=Z,5μm,20.0s
WR7 Warramunga Arr 65.68 108 PFAKE 14 37 20.0 +11
WR7 LR LR
comp=Z,5μm,21.0s
WR8 Warramunga Arr 65.70 108 PFAKE 14 37 20.0 +11
WR8 LR LR
comp=Z,6μm,22.0s
WR9 Warramunga Arr 65.72 108 PFAKE 14 37 20.0 +11
WR9 LR LR
comp=Z,6μm,22.0s
VRI Vrincioaia 65.74 330⇑ *i*P **P** **14 37 09.1 +0.3**
WR0 Warramunga Arr 65.74 108 PFAKE 14 37 20.0 +11
WR0 LR LR
comp=Z,5μm,21.0s
PLOR Plostina 65.77 330⇑ *i*P **P** **14 37 09.4 +0.4**
ARU Arti 65.84 355 P **P** **14 37 08.3 -0.9**
comp=Z,4.4nm,0.5s,baz=156,slow=1.5,SNR=12
ARU LR LR 15 06 11.5
comp=Z,850nm,18.8s,baz=170,slow=36
ARU Arti 65.84 355 *d i*P **P** **14 37 08.0 -1.1**
ARU 14 37 43.6
ARU S **S** **14 45 54.9 -0.3**
ARU 14 47 01.1
ARU pmax pmax
comp=Z,38nm,1.7s
ARU MLR MLR
comp=Z,1μm,19.0s
ARU Arti 65.84 355 *e*P **P** **14 37 07.7 -1.4**
comp=Z,72nm,1.5s
MLR Muntele Rosu 65.86 330 P **P** **14 37 10.6 +0.9**
comp=Z,1.7nm,0.7s,baz=166,slow=4.9,SNR=12
MLR Muntele Rosu 65.86 330⇓ *i*P **P** **14 37 11.6 +1.9**
SVE Sverdlovsk 66.07 356 *e*P **P** **14 37 09.7 -0.9**
SVE *e*S **S** **14 45 56.7 -1.3**
SVE pmax pmax
comp=Z,38nm,1.4s
MTUR Matau 66.12 329⇑ *i*P **P** **14 37 14.1 +2.8**
TESR Tescani 66.24 331⇑ *i*P **P** **14 37 14.2 +2.3**
VOIR 66.28 329⇑ *i*P **P** **14 37 13.4 +1.1**
ARR Arges 66.44 329⇑ *i*P **P** **14 37 15.0 +1.7**
DOPR Dopca 66.47 330⇓ *i*P **P** **14 37 14.5 +1.0**
SORM Soroca 66.62 333⇑ *i*P **P** **14 37 14.6 +0.3**
SONM Songino Array 66.63 28 P **P** **14 37 14.7 +0.2**
comp=Z,10nm,0.9s,baz=220,slow=6.1,SNR=41
SONM LR LR 15 05 34.9
comp=Z,3μm,20.6s,baz=220,slow=35
SONM PKP2ab 15 05 51.7
comp=Z,1.4nm,1.1s,baz=64,slow=3.4,SNR=4.7
SONA1 Songino Array 66.64 28 *e*P **P** **14 37 14.0 -0.7**
BJT Baijiatuau 66.77 39 *e*P **P** **14 37 16.1 +0.6**
BJT pmax pmax
comp=Z,21nm,0.8s
BJT Baijiatuau 66.77 39 *e*P **P** **14 37 16.1 +0.6**
comp=Z,21nm,0.8s
BJI Beijing 66.78 39 P **P** **14 37 15.8 +0.3**
BJI PP **PP** **14 39 45.5 +2.6**
BJI S **S** **14 46 09.5 +2.2**
BJI SS **SS** **14 50 26.5 +0.8**
BJI pmax pmax
comp=Z,21nm,0.9s
BJI pmax pmax
comp=Z,290nm,5.6s
BJI LR LR
comp=Z,410nm,29.2s
BJI LR LR
comp=Z,1μm,25.4s
BJI LR LR
comp=Z,890nm,35.8s
LOT Lotru 66.94 328⇓ *i*P **P** **14 37 17.0 +0.4**
ZAK Zakamensk 67.21 24 *e*P **P** **14 37 17.1 -1.1**
ZAK pmax pmax
comp=Z,7.0nm,1.7s
BBOO Buckleboo 67.35 122 *e*P **P** **14 37 18.7 -0.7**
comp=Z,28nm,1.1s
BBOO LR LR
comp=Z,5μm,20.0s
PDG Podgorica 67.50 324⇑ *i*P **P** **14 37 22.9 +2.9**
MDVR Moldovita 67.59 327⇑ *i*P **P** **14 37 21.7 +1.1**
BURAR Bucovina Array 67.71 331⇑ *i*P **P** **14 37 24.3 +2.9**
BUR08 Bucovina Ar. S 67.74 331 *e*P **P** **14 37 23.6 +2.0**
AKASG Malin Array Be 68.17 335 P **P** **14 37 22.3 -1.7**
comp=Z,6.0nm,0.6s,baz=134,slow=5.7,SNR=17
AKASG PP **PP** **14 39 56.3 +1.6**
comp=Z,0.2nm,0.3s,baz=134,slow=7.5,SNR=2.7
AKASG LR LR 15 07 30.0
comp=Z,2μm,20.5s,baz=145,slow=36
AKASG Malin Array Be 68.17 335 *i* P **P** **14 37 25.2 +1.1**
AKASG pmax pmax
comp=Z,6.0nm,0.6s
AKBB Malin Array Si 68.17 335 *e*P **P** **14 37 22.2 -1.9**
AKBB pmax pmax
comp=Z,14nm,0.9s
AKBB MLR MLR
comp=Z,1μm,20.0s
AKBB Malin Array Si 68.17 335 *e*P **P** **14 37 22.2 -1.9**
comp=Z,14nm,0.9s
AKBB LR LR
comp=Z,1μm,20.0s
KIEV Kiev 68.17 335 *e*P **P** **14 37 24.2 +0.1**
KIEV pmax pmax
comp=Z,11nm,0.9s
KIEV Kiev 68.17 335 *e*P **P** **14 37 22.3 -1.8**
comp=Z,12nm,0.9s
KIEV LR LR
comp=Z,1μm,20.0s
AK11 Malin Array Si 68.17 335 *e*P **P** **14 37 22.1 -2.0**
TAM Tamanrasset 68.18 299 *e*P **P** **14 37 20.6 -4.4**
TAM pmax pmax
comp=Z,6.0nm,1.0s
TAM MLR MLR
comp=Z,900nm,18.0s
TAM Tamanrasset 68.18 299 *e*P **P** **14 37 20.6 -4.4**
comp=Z,5.6nm,1.0s
TAM LR LR
comp=Z,900nm,18.0s
BZS Buzias 68.18 327⇓ *i*P **P** **14 37 25.5 +1.2**
TLY Talaya 68.36 23 P **P** **14 37 25.6 +0.3**
comp=Z,4.6nm,0.7s,baz=210,slow=5.2,SNR=6.4
TLY LR LR 15 05 53.2
comp=Z,1μm,21.9s,baz=219,slow=35
TLY Talaya 68.36 23 *e*P **P** **14 37 26.6 +1.3**
TLY *e*S **S** **14 46 20.0 -5.9**
TLY *e*SS **SS** **14 50 50.3 +0.6**
TLY pmax pmax
comp=Z,14nm,1.5s
TLY MLR MLR
comp=Z,1μm,16.0s
TLY Talaya 68.36 23 *e*P **P** **14 37 22.8 -2.6**
comp=Z,22nm,1.4s
SIRR Siria 68.59 328⇑ *i*P **P** **14 37 29.3 +2.5**
TOA0 Torodi Ar. Sit 68.67 288 *e*P **P** **14 37 26.2 -1.8**
comp=Z,23nm,1.4s
TORD Torodi Ar. Bea 68.67 288 P **P** **14 37 26.9 -1.1**
comp=Z,3.3nm,0.8s,baz=104,slow=6.3,SNR=17
OBN Obninsk 69.05 342 P **P** **14 37 30.7 +1.2**
comp=Z,21nm,0.4s,baz=186,slow=23,SNR=4.6
OBN Obninsk 69.05 342⇓ *e*P **P** **14 37 31.1 +1.6**
OBN *e* 14 40 02.3
OBN *e*PPP PPP 14 41 41.2
OBN *i* S **S** **14 46 39.9 +6.1**
OBN *e*SSS SSS 14 54 04.1
OBN pmax pmax
comp=Z,35nm,1.7s
OBN MLR MLR
comp=Z,1μm,18.0s
OBN Obninsk 69.05 342 P **P** **14 37 30.7 +1.2**
OBN LR LR
comp=Z,1μm,18.0s
SOKR Solikamsk 69.13 354⇑ *i*P **P** **14 37 27.6 -2.2**
SOKR S **S** **14 46 30.6 -3.9**
SOKR pmax pmax
comp=Z,26nm,0.9s
SOKR MLR MLR
comp=Z,943nm,19.0s
JOW Kunigami 69.28 57 PFAKE 14 37 40.0 +8.5
JOW LR LR
comp=Z,1μm,20.0s
DL2 Dalian 69.68 43 P **P** **14 37 38.3 +4.5**
DL2 S **S** **14 46 49.5 +7.5**
DL2 pmax pmax
comp=Z,210nm,5.2s
DL2 LR LR
comp=Z,980nm,25.1s
DL2 LR LR
comp=Z,940nm,20.2s
DL2 LR LR
comp=Z,1μm,17.2s
LVV L'vov 69.81 332 *e*P **P** **14 37 36.0 +1.7**
LVV *e*S **S** **14 46 40.0 -3.1**
LVV MLR MLR
comp=Z,500nm,15.0s
UZH Uzhgorod 69.83 330 *e*P **P** **14 37 36.0 +1.5**
UZH *e* 14 37 40.9
UZH *e* 14 40 11.0
UZH *e* 14 41 55.7
UZH *e* 14 46 43.6
UZH *e* 14 47 17.0
UZH *e* 14 47 38.5
UZH *e* 14 51 15.3
UZH MLR MLR
comp=N,1μm,15.0s
UZH MLR MLR
comp=E,1μm,15.0s
UZH MLR MLR
comp=Z,480nm,15.0s
NVL N'lazarevskaya 70.30 197 *e*P **P** **14 37 37.6 +0.6**
NVL *e**PP **sP** **14 37 42.5 -1.7**
NVL *e* 14 40 14.8
NVL *e*S **S** **14 46 53.9 +5.7**
KEST Kesra 70.41 313 P **P** **14 37 39.5 +1.1**
comp=Z,5.9nm,1.0s,baz=90,slow=10,SNR=4.6
KEST LR LR 15 07 08.7
comp=Z,1μm,19.7s,baz=56,slow=35
KEST Kesra 70.41 313 *e*P **P** **14 37 36.9 -1.5**
comp=Z,11nm,1.0s
PSZ Piszkesteto 70.58 328 PFAKE 14 37 50.0 +11
PSZ LR LR
comp=Z,900nm,21.0s
KECS Kecovo 70.64 329 *e*P **P** **14 37 42.3 +2.9**
STHS Stebnicka Huta 70.87 330 *e*P **P** **14 37 43.7 +2.8**
NIE Niedzica 71.34 330 *e*P **P** **14 37 46.3 +2.6**
NIE Niedzica 71.34 330 *e*P **P** **14 37 46.3 +2.6**
VYHS Vyhne 71.49 328 *e*P **P** **14 37 47.1 +2.5**
MICGM Minsk 71.58 337 *e* **P** **14 37 47.0 +2.0**
MICGM *e*LR LR 15 03 40.0
MNK Minsk 71.58 337 *e*P **P** **14 37 47.0 +2.0**
LANS Liptovska Anna 71.58 329 *e*P **P** **14 37 47.8 +2.6**
STKA Stephens Creek 72.01 120 P **P** **14 37 47.3 -0.9**
comp=Z,5.1nm,0.9s,baz=288,slow=6.8,SNR=11
STKA LR LR 15 04 51.7
comp=Z,3μm,21.1s,baz=252,slow=32
STKA Stephens Creek 72.01 120 *e*P **P** **14 37 46.2 -2.0**
STKA pmax pmax
comp=Z,2.0nm,1.0s
STKA Stephens Creek 72.01 120 *e*P **P** **14 37 46.2 -2.0**
comp=Z,2.3nm,1.0s
OJC Ojcow 72.11 330 *e*P **P** **14 37 49.7 +1.4**
OJC Ojcow 72.11 330 *e*P **P** **14 37 49.7 +1.4**
NACGM Naroch 72.30 337 *e* P 14 37 56.0 +6.7
NACGM *e*LQ LQ 14 47 12.0
NACGM *e*LR LR 14 55 46.0
SOKA Soboth 72.44 325 *i* pP pP 14 37 53.5 -2.3
comp=Z,22nm,1.5s,SNR=5.2
INCN Inchon 72.45 46 PFAKE 14 38 00.0 +9.4
INCN LR LR
comp=Z,900nm,18.0s
ARSA Arzberg 72.50 326 *i* P **P** **14 37 51.6 +0.8**

comp=Z,19nm,1.7s
OBKA Obir 72.62 325 *i* sP **P 14 37 56.0 +4.4**
comp=Z,19nm,1.1s
OKC Ostrava-Krasne 72.68 329 *e*P **P 14 37 54.9 +3.2**
OKC *e*PP **PP 14 40 35.6 +1.9**
OKC *ex* x 14 47 01.8
OKC *ex* x 14 51 43.3
OKC AMS AMS 15 11 30.0
comp=Z,500nm,18.4s
OKC Ostrava-Krasne 72.68 329 *e*P **P 14 37 54.9 +3.2**
OKC *e* 14 40 35.6
OKC MLR MLR
comp=Z,500nm,18.4s
CONA Conrad Observa 72.72 327 *i* P **P 14 37 52.4 +0.3**
comp=Z,26nm,1.4s,SNR=10
MORC Moravsky Berou 72.95 329 *e*P **P 14 37 51.6 -1.8**
MORC pmax pmax
comp=Z,54nm,1.3s
MORC Moravsky Berou 72.95 329 *e*P **P 14 37 51.6 -1.8**
comp=Z,54nm,1.3s
VRAC Vranov 73.16 328 P **P 14 37 56.7 +2.1**
comp=Z,1.8nm,0.4s,baz=134,slow=4.5,SNR=5.8
VRAC LR LR 15 11 49.5
comp=Z,314nm,18.2s,baz=125,slow=37
MYKA Terra Mystica 73.21 325 *i* pP pP 14 37 58.3 -2.0
comp=Z,17nm,1.7s,SNR=5.4
KLMR Klimovskoe 73.22 346 *e*P **P 14 37 52.9 -1.7**
KLMR pmax pmax
comp=Z,78nm,1.4s
KIC Kosan Boka 73.28 280 *e*P **P 14 37 55.2 -0.8**
comp=Z,145nm,1.4s
KSAR Wonju Array Be 73.32 46 P **P 14 37 55.5 -0.3**
KSAR Wonju Array Be 73.32 46 P **P 14 37 55.5 -0.3**
KS01 Wonju Array Si 73.34 46 *e*P **P 14 37 55.2 -0.8**
KSRS Korea Array 73.36 46 P **P 14 37 55.5 -0.4**
comp=Z,5.5nm,0.8s,baz=221,slow=6.3,SNR=6.5
KSRS LR LR 15 11 15.8
comp=Z,963nm,18.7s,baz=245,slow=37
KSRS Korea Array 73.36 46 P **P 14 37 55.5 -0.4**
KSRS pmax pmax
comp=Z,5.0nm,0.8s
KSRS MLR MLR
comp=Z,963nm,18.7s
DBIC Dimbokro 73.45 280 P **P 14 37 56.0 -1.0**
comp=Z,15nm,0.9s,baz=83,slow=5.7,SNR=11
DBIC LR LR 15 10 28.5
comp=Z,510nm,18.1s,baz=74,slow=36
DBIC Dimbokro 73.45 280 *e*P **P 14 37 55.9 -1.1**
comp=Z,21nm,1.0s
KRLC Kraliky 73.52 329 *e*P **P 14 37 59.7 +2.9**
KRLC Kraliky 73.52 329 *e*P **P 14 37 59.7 +2.9**
LIC Lamto 73.53 279 *e*P **P 14 37 55.3 -2.2**
comp=Z,44nm,0.8s
MOA Molln 73.55 326 *i* P **P 14 37 56.9 0.0**
comp=Z,30nm,1.0s,SNR=7.4
TIC Toumodi 73.60 280 *e*P **P 14 37 57.2 -0.8**
KBA Koelnbreinsper 73.63 325 *i* pP **P 14 38 01.0 +3.4**
comp=Z,7.6nm,0.8s,SNR=6.1
JNU Nakatsue 73.78 52 P **P 14 37 59.0 +0.4**
comp=Z,13nm,1.0s,baz=349,slow=6.5,SNR=7.6
JNU Nakatsue 73.78 52 *e*P **P 14 37 58.0 -0.6**
comp=Z,27nm,1.0s
JNU LR LR
comp=Z,100nm,18.0s
ABTA Abfaltersbach 73.92 324 *i* P **P 14 38 00.2 +1.0**
comp=Z,22nm,0.9s,SNR=6.7
DPC Dobruska-Polom 73.93 329 *e*P **P 14 38 01.6 +2.5**
DPC *e*PP **PP 14 40 46.3 +2.0**
DPC *e*S **SKiKP 14 47 27.4 -0.2**
DPC *ex* x 14 51 55.3
DPC AMS AMS 15 12 10.0
comp=Z,600nm,17.0s
DPC Dobruska-Polom 73.93 329 *e*P **P 14 38 01.6 +2.5**
DPC *e* 14 40 46.3
DPC *e*S **SKiKP 14 47 27.4 -0.2**
DPC MLR MLR
comp=Z,600nm,17.0s
UPC Upice 74.18 329 *e*P **P 14 38 03.8 +3.3**
UPC *e*PP **PP 14 40 49.1 +2.7**
UPC *e*S **SKiKP 14 47 30.2 +2.3**
UPC *ex* x 14 51 56.4
UPC AMS AMS 15 12 30.0
comp=Z,800nm,15.6s
UPC Upice 74.18 329 *e*P **P 14 38 03.8 +3.3**
UPC *e* 14 40 49.1
UPC *e*S **SKiKP 14 47 30.2 +2.3**
UPC MLR MLR
comp=Z,800nm,15.6s
KSP Ksiaz 74.24 329 *e*P P 14 38 07.9 +7.1
KSP Ksiaz 74.24 329 *e*P P 14 38 07.9 +7.0
COEN Coen 74.37 102 PFAKE 14 38 10.0 +7.6
COEN LR LR
comp=Z,3μm,20.0s
GEA0 GERESS Array S 74.42 327 *e*P **P 14 38 01.4 -0.7**
GEC2 GERESS Array S 74.42 327 *e*P **P 14 38 01.3 -0.8**
GEC2 pmax pmax
comp=Z,5.0nm,0.9s
GEC2 GERESS Array S 74.42 327 *e*P **P 14 38 01.3 -0.8**
comp=Z,4.8nm,0.9s
GERES GERESS Array B 74.42 327 P **P 14 38 02.2 +0.1**
comp=Z,1.3nm,0.8s,baz=168,slow=6.8,SNR=8.0
GERES PP **PP 14 40 50.3 +1.7**
comp=Z,0.3nm,0.3s,baz=145,slow=10,SNR=2.7
GERES LR LR 15 11 09.8
comp=Z,202nm,19.8s,baz=122,slow=36
GOPC GO Pecny, Ondr 74.46 328 *e*P **P 14 38 05.5 +3.3**
GOPC *e*PCP **sP 14 38 12.0 +2.5**
GOPC *e*S **SKiKP 14 47 31.9 +3.5**
GOPC *ex* x 14 51 59.8
GOPC AMS AMS 15 14 00.0
comp=Z,700nm,17.9s
GOPC GO Pecny, Ondr 74.46 328 *e*P **P 14 38 05.5 +3.3**
GOPC *e* 14 38 12.0
GOPC *e*S **SKiKP 14 47 31.9 +3.5**
GOPC MLR MLR
comp=Z,700nm,17.9s
CN2 Changchun 74.63 40 *e*P **P 14 38 01.8 -1.5**
CN2 *e*S **S 14 47 45.5 +6.9**
CN2 pmax pmax
comp=Z,10.0nm,0.5s
CN2 pmax pmax
comp=Z,100nm,6.0s
CN2 LR LR
comp=Z,1μm,16.0s
CN2 LR LR
comp=Z,1μm,16.0s
CN2 LR LR
comp=Z,1μm,17.0s
PRU Pruhonice 74.63 328 *e*P **P 14 38 05.8 +2.6**
PRU *e*PCP **sP 14 38 12.9 +2.5**
PRU *e*PP **PP 14 40 52.5 +2.2**
PRU *e*S **S 14 47 35.2 -3.1**
PRU *e*SS **SS 14 52 16.6 -9.4**
PRU AMS AMS 15 14 00.0
comp=Z,700nm,17.2s
PRU Pruhonice 74.63 328 *e*P **P 14 38 05.8 +2.6**
PRU *e* 14 38 12.9
PRU *e* 14 40 52.5
PRU *e*S **S 14 47 35.2 -3.1**
PRU MLR MLR
comp=Z,700nm,17.2s
KHC Kasperske Hory 74.65 327 *e*P **P 14 38 05.7 +2.3**
KHC *ex* x 14 38 12.1
KHC *e*S **SKiKP 14 47 33.6 +4.9**
KHC *ex* x 14 52 15.9
KHC AMS AMS 15 14 00.0
comp=Z,500nm,16.0s
KHC Kasperske Hory 74.65 327 *e*P **P 14 38 05.7 +2.3**
KHC *e* 14 38 12.1
KHC *e*S **SKiKP 14 47 33.6 +4.9**
KHC MLR MLR
comp=Z,500nm,16.0s
KHC Kasperske Hory 74.65 327 *e*P **P 14 38 02.2 -1.1**
comp=Z,8.7nm,1.2s
WTTA Wattenberg 74.70 324 *i* sP **P 14 38 07.9 +4.0**
comp=Z,46nm,1.1s
WATA Walderalm 74.78 324 *i* sP **P 14 38 08.1 +3.9**
comp=Z,35nm,1.1s
KLNR Kaliningrad 74.80 334 *e*P **P 14 38 04.9 +0.9**
KLNR pmax pmax
comp=Z,67nm,1.1s
PVCC Panska Ves 74.93 328 AMS AMS 15 12 50.0
comp=Z,400nm,18.5s
VSU Vasula 74.98 339 *i* P **P 14 38 05.0 0.0**
VSU pmax pmax
comp=Z,64nm,1.2s
SNAA Sanae 75.01 198 P **P 14 38 05.5 +0.4**
SNAA Sanae 75.01 198 *e*P **P 14 38 07.7 +2.6**
SNAA Sanae 75.01 198 *e*P **P 14 38 04.2 -0.9**
comp=Z,32nm,1.5s
MOTA Moosalm 75.05 324 *i* pP **P 14 38 07.8 +1.9**
comp=Z,9.9nm,0.8s
FETA Feichten 75.10 324 *i* P **P 14 38 05.7 -0.5**
comp=Z,12nm,0.9s,SNR=6.4
FUORN Ofenpass-Fuorn 75.16 323 *e*P **P 14 38 05.5 -1.1**
comp=Z,29nm,1.1s
RETA Reutte 75.33 324 *i* pP **P 14 38 10.8 +3.5**
BRG Berggiesshubel 75.46 328 *e*P **P 14 38 10.9 +3.0**
comp=Z,27nm,1.5s
BRG *i* PCP **PcP 14 38 25.1 +4.2**
comp=Z,28nm,1.1s
BRG S **S 14 47 47.0 -0.5**
BRG SS **SS 14 52 31.0 -7.5**
comp=N,463nm,17.0s
comp=E,291nm,16.2s
comp=Z,701nm,15.9s
BRG Berggiesshubel 75.46 328 *e*P **P 14 38 10.9 +3.0**
BRG *i* 14 38 25.1
BRG S **S 14 47 47.0 -0.5**
BRG pmax pmax
comp=Z,27nm,1.5s
BRG MLR MLR
comp=N,463nm,17.0s
BRG MLR MLR
comp=E,291nm,16.2s
BRG MLR MLR
comp=Z,701nm,15.9s
DAVA Damuels 75.73 324 *i* P **P 14 38 09.3 -0.5**
comp=Z,29nm,1.0s,SNR=8.3
NKC Novy Kostel 75.88 327 *e*P **P 14 38 11.0 +0.6**
NKC *e*S **S 14 47 50.1 -2.2**
NKC AMS AMS 15 16 30.0
comp=Z,600nm,17.1s
NKC Novy Kostel 75.88 327 *e*P **P 14 38 11.0 +0.6**
NKC *e*S **S 14 47 50.1 -2.2**
NKC MLR MLR
comp=Z,600nm,17.1s
CLL Collm 76.19 328 *e*P **P 14 38 13.0 +0.9**
comp=Z,24nm,1.3s
CLL *i* 14 38 29.1
comp=Z,46nm,1.2s
CLL *e*PP **PP 14 41 06.0 +2.6**
CLL *e*PPP PPP 14 42 48.0
CLL *e*S S **14 47 57.0 +1.4**
CLL *e*SS SS 14 52 38.0 -12
CLL *e*SSS SSS 14 56 24.0
CLL *e*SSSS 14 58 06.0
CLL LmV 15 15 00.0
comp=Z,700nm,18.1s
CLL Collm 76.19 328 *e*P **P 14 38 13.0 +0.9**
CLL *i* 14 38 29.1
CLL *e*S **S 14 47 57.0 +1.4**
CLL pmax pmax
comp=Z,24nm,1.3s
CLL MLR MLR
comp=Z,700nm,18.1s
CLL Collm 76.19 328 *e*P **P 14 38 12.5 +0.4**
comp=Z,41nm,1.1s
GRFO Grafenberg 76.25 326 *e*P **P 14 38 10.9 -1.6**
GRFO pmax pmax
comp=Z,54nm,1.2s
GRFO MLR MLR
comp=Z,501nm,22.0s
GRFO Grafenberg 76.25 326 *e*P **P 14 38 10.8 -1.6**
comp=Z,54nm,1.2s
GRFO LR LR
comp=Z,501nm,22.0s
VNA1 Neumayer--Stat 76.48 199 P P 14 38 20.4 +7.0
TAU Tasmania Unive 76.59 132 PFAKE 14 38 30.0 +15
TAU LR LR
comp=Z,3μm,21.0s
CTAO Charters Tower 76.73 108 *e*P **P 14 38 15.1 -0.8**
CTAO pmax pmax
comp=Z,22nm,1.1s
CTAO MLR MLR
comp=Z,4μm,20.0s
CTAO Charters Tower 76.73 108 *e*P **P 14 38 15.1 -0.8**
comp=Z,22nm,1.1s
CTAO LR LR
comp=Z,4μm,20.0s
SENIN Lac Senin/Sane 76.81 322 *e*P **P 14 38 15.4 -0.6**
comp=Z,86nm,1.8s
SENIN LR LR
comp=Z,500nm,20.0s
BOD Bodaibo 76.94 24 *e*P **P 14 38 17.3 +1.1**
BFO Black Forest 77.16 324 *e*P **P 14 38 16.8 -0.9**
BFO pmax pmax
comp=Z,33nm,1.5s
BFO Black Forest 77.16 324 *e*P **P 14 38 16.8 -0.9**
comp=Z,32nm,1.5s
FIA1 FINESS Array S 77.44 341 *e*P **P 14 38 17.9 -1.0**
FINES FINESS Array B 77.44 341 P **P 14 38 18.5 -0.4**
comp=Z,7.4nm,1.1s,baz=66,slow=4.6,SNR=9.8
FINES PP **PP 14 41 17.5 +3.9**
comp=Z,1.5nm,0.7s,baz=119,slow=12,SNR=3.8
FINES LR LR 15 13 54.8
comp=Z,441nm,18.3s,baz=143,slow=37
FINES FINESS Array B 77.44 341 *i* P **P 14 38 20.3 +1.4**
FINES pmax pmax
comp=Z,7.0nm,1.1s
BSD Bornholm Skovb 77.49 332 *i* P **P 14 38 21.6 +2.3**
comp=Z,780nm,16.0s
BSD Bornholm Skovb 77.49 332 *e*P **P 14 38 21.6 +2.3**
BSD MLR MLR
comp=Z,790nm,16.0s
MDJ Mudanjiang 77.65 40 P **P 14 38 20.3 -0.1**
MDJ sP pP 14 38 24.3 -1.5
MDJ S **S 14 48 12.8 +1.1**
MDJ ScS **SKKSac 14 48 34.3 +0.1**
MDJ pmax pmax
comp=Z,26nm,0.7s
MDJ pmax pmax
comp=Z,260nm,6.3s
MDJ LR LR
comp=Z,1μm,19.4s
MDJ LR LR
comp=Z,830nm,12.2s
MDJ LR LR
comp=Z,910nm,17.0s
MDJ Mudanjiang 77.65 40 *e*P **P 14 38 19.9 -0.6**
comp=Z,20nm,0.8s
ECH Echery 77.79 324 *e*P **P 14 38 22.3 +1.1**
SSB Saint Sauveur 78.01 320 *e*P **P 14 38 21.7 -0.9**
SSB pmax pmax
comp=Z,14nm,1.0s
SSB Saint Sauveur 78.01 320 *e*P **P 14 38 21.7 -0.9**
comp=Z,14nm,1.0s
CAN Canberra 78.10 124 PFAKE 14 38 30.0 +6.6
CAN LR LR
comp=Z,2μm,18.0s
THEF They Montfort 78.48 323 *e*P **P 14 38 27.5 +2.5**
PMG Port Moresby 78.78 98 PFAKE 14 38 40.0 +13
PMG LR LR
comp=Z,2μm,20.0s
LBL Lubilhac 78.82 320 *e*P **P 14 38 27.9 +0.9**
PLDF La Plantade 78.90 320 *e*P **P 14 38 30.7 +3.2**
COP Copenhagen 78.97 332 *i* P **P 14 38 30.1 +2.6**
comp=Z,440nm,14.0s
COP Copenhagen 78.97 332 *e*P **P 14 38 30.1 +2.6**
COP MLR MLR
comp=Z,440nm,14.0s
USRK Ussuriysk Ar. 79.02 42 P **P 14 38 26.9 -1.1**
comp=Z,6.5nm,0.8s,baz=243,slow=5.2,SNR=11
USRK LR LR 15 15 41.9
comp=Z,618nm,18.5s,baz=231,slow=38
AGO Saint Agoulin 79.24 320 *e*P **P 14 38 30.7 +1.4**
INU Inuyama 79.32 51 *e*P **P 14 38 27.3 -2.6**
comp=Z,14nm,0.8s
MEM Membach 79.60 325 P **P 14 38 31.7 +0.7**
comp=Z,11nm,1.2s
NRIK Noril'sk 79.70 7 P **P 14 38 29.7 -1.5**
comp=Z,1.1nm,0.5s,baz=214,slow=3.6,SNR=3.1
NRIK LR LR 15 15 48.9
comp=Z,2μm,18.4s,baz=202,slow=37
BCLA Clavier 79.91 325 P **P 14 38 32.7 0.0**
comp=Z,14nm,1.3s
DOU Dourbes 80.16 325 XP **P 14 38 37.5 +3.4**
APA Apatity 80.36 348 *i* P P 14 38 29.0 -5.8
APA *i* 14 41 43.0
APA pmax pmax
comp=Z,1μm,30.0s
GUMO Guam 80.42 75 LR LR 15 10 46.7
comp=Z,291nm,21.6s,baz=244,slow=33
MJB9 Matsu-Tunnel 80.62 51 *e*P **P 14 38 35.6 -1.3**
comp=Z,11nm,1.5s
MAJO Matsushiro 80.62 51 *e*P **P 14 38 35.7 -1.3**
MAJO pmax pmax
comp=Z,44nm,1.5s
MAJO Matsushiro 80.62 51 *e*P **P 14 38 35.7 -1.3**
comp=Z,44nm,1.5s
MAT Matsushiro 80.62 51 P **P 14 38 36.8 -0.2**
MAT S **S 14 48 43.0 -0.8**
MJAR Matsushiro Arr 80.62 51 P **P 14 38 36.7 -0.3**
comp=Z,12nm,1.0s,baz=248,slow=5.3,SNR=13
MJAR LR LR 15 12 40.4
comp=Z,600nm,21.0s,baz=260,slow=34
ARMA Armidale 80.66 119 PFAKE 14 38 50.0 +12
ARMA LR LR
comp=Z,4μm,22.0s
EIDS Eidsvold 80.67 114 PFAKE 14 38 50.0 +13
EIDS LR LR
comp=Z,4μm,18.0s
MUD Monsted U'grnd 80.92 332 *i* P **P 14 38 41.7 +3.7**
MUD Monsted U'grnd 80.92 332 *e*P **P 14 38 41.7 +3.7**
KLR Kul'dur 80.99 37 P **P 14 38 36.7 -1.9**
comp=Z,8.3nm,0.9s,baz=276,slow=5.6,SNR=12
KLR Kul'dur 80.99 37 *e*P **P 14 38 37.6 -1.0**
HFS Hagfors 81.03 336 P **P 14 38 37.1 -1.4**
comp=Z,11nm,0.8s,baz=139,slow=7.0,SNR=19
HFS LR LR 15 16 54.3
comp=Z,797nm,18.5s,baz=130,slow=37
CBIJ Chichi jima 81.12 61 PFAKE 14 38 50.0 +10
CBIJ LR LR
comp=Z,100nm,21.0s
ES19 SONSECA Array 81.61 312 *e*P **P 14 38 41.0 -1.2**
ESDC Sonseca Array 81.65 312 P **P 14 38 41.6 -0.8**
comp=Z,3.4nm,0.9s,baz=102,slow=4.1,SNR=9.1
ESDC LR LR 15 16 08.8
comp=Z,232nm,18.1s,baz=85,slow=37
ESLA Sonseca Array 81.65 312 *e*P **P 14 38 41.9 -0.5**
comp=Z,36nm,1.8s
ESLA LR LR
comp=Z,700nm,21.0s
PAB San Pablo 81.89 312 *e*P **P 14 38 43.2 -0.5**
PAB pmax pmax
comp=Z,31nm,1.4s
PAB MLR MLR
comp=Z,700nm,21.0s
PAB San Pablo 81.89 312 *e*P **P 14 38 43.2 -0.5**
comp=Z,31nm,1.4s
PAB LR LR
comp=Z,700nm,21.0s
VNDA Vanda 82.05 167 P **P 14 38 44.4 +0.6**
comp=Z,1.5nm,0.8s,baz=251,slow=2.9,SNR=3.8
VNDA LR LR 15 09 47.4
comp=Z,2μm,21.8s,baz=271,slow=32
VNDA Vanda 82.05 167 *e*P **P 14 38 42.7 -1.0**
comp=Z,16nm,1.4s
NC602 NORSAR Array S 82.25 336 *e*P **P 14 38 43.8 -1.2**
KONO Kongsberg 82.45 334 *i* P **P 14 38 47.9 +1.8**
KONO pmax pmax
comp=Z,75nm,1.1s
KONO Kongsberg 82.45 334 *e*P **P 14 38 43.4 -2.7**
comp=Z,28nm,1.2s
KONO LR LR
comp=Z,1μm,20.0s
NB2 NORSAR Subarra 82.55 336 P **P 14 38 49.0 +2.3**
comp=Z,16nm,1.2s,baz=114,slow=5.6
NOA NORSAR Array B 82.55 336 P **P 14 38 46.3 -0.3**
comp=Z,6.9nm,1.1s,baz=116,slow=5.3,SNR=7.0
NOA LR LR 15 16 03.3
comp=Z,664nm,19.9s,baz=105,slow=36
HABR Khabarovsk 82.67 38 *ce*P **P 14 38 44.3 -3.2**
HABR *e* 14 38 49.2
HABR *e**SP **pP 14 38 51.3 -1.5**
HABR *e* 14 41 52.9
HABR *e*PPP PPP 14 43 43.5
HABR *e*S **S 14 49 01.0 -3.4**
HABR *e* 14 49 07.4
HABR *e*SS **SS 14 54 22.7 -4.2**
HABR *e*SSS SSS 14 57 50.9
HABR pmax pmax
comp=E,7.0nm,0.7s
HABR pmax pmax
comp=Z,20nm,1.3s
HABR pmax pmax
comp=N,6.0nm,0.7s
HABR MLR MLR
comp=Z,509nm,16.0s
NBO02 NORSAR Array S 82.70 336 *e*P **P 14 38 44.9 -2.5**
NBO00 NORSAR Array S 82.72 336 *e*P **P 14 38 50.3 +2.8**
SBA Scott Base 83.03 168 PFAKE 14 39 00.0 +11
SBA LR LR
comp=Z,1μm,22.0s
PBAR Barrancos 83.46 310 *e*S **S 14 49 13.6 +0.7**
ARA0 ARCESS Array S 83.69 346 *e*P **P 14 38 52.2 -0.1**
ARCES ARCESS Array B 83.69 346 P **P 14 38 52.1 -0.2**
comp=Z,18nm,0.9s,baz=132,slow=5.1,SNR=20
ARCES LR LR 15 17 48.5
comp=Z,1μm,19.8s,baz=141,slow=37
ARE0 ARCESS Array S 83.69 346 *e*P **P 14 38 52.0 -0.3**
comp=Z,38nm,1.0s
ARE0 LR LR
comp=Z,1μm,20.0s
PVAQ Vaqueiros 83.75 309 *e*P **P 14 38 57.2 +3.9**
comp=Z,39nm,1.8s
PVAQ Vaqueiros 83.75 309 *e*S **S 14 49 21.6 +5.7**
PVAQ Vaqueiros 83.75 309 *e*LQ LQ 15 02 41.7
PVAQ *e*LR LR 15 06 50.5
comp=Z,948nm,18.0s
PBDV Barranco-do-Ve 83.87 309 *e*P **P 14 38 57.5 +3.5**
comp=Z,50nm,1.5s
PBDV Barranco-do-Ve 83.87 309 *e*S **S 14 49 16.3 -0.9**
PCVE Castro Verde 84.06 310 *e*P P 14 39 02.2 +7.3
comp=Z,28nm,1.7s
PCVE Castro Verde 84.06 310 *e*S **S 14 49 21.9 +2.9**
PESTR Estremoz 84.08 311 *e*P P 14 38 59.9 +4.9
comp=Z,23nm,1.4s
PESTR Estremoz 84.08 311 *e*S **S 14 49 22.1 +3.0**
PMRV Marv??o 84.09 311 *e*P **P 14 38 57.5 +2.5**
comp=Z,31nm,1.4s
PMRV Marv??o 84.09 311 *e*S **S 14 49 27.3 +8.0**
PMRV Marv??o 84.09 311 *e*LQ LQ 15 01 40.7
PMRV *e*LR LR 15 07 59.8
comp=Z,797nm,20.0s
MESJ Messejana 84.26 310 *e*P **P 14 38 54.8 -1.1**
MESJ *e*S **S 14 49 17.3 -3.6**
MESJ AMS AMS 15 17 48.2
comp=E,734nm,19.8s
MESJ Messejana 84.26 310 *e*P P 14 39 02.9 +7.0
comp=E,28nm,1.7s
PCBR Castelo Branco 84.28 312 *e*P **P 14 39 00.5 +4.6**
comp=E,26nm,1.5s
EVO Evora 84.30 310 *e*P P 14 39 02.9 +6.8
comp=E,18nm,1.3s
PBRG Braganca 84.33 314 *e*P P 14 39 03.1 +6.9
comp=E,24nm,2.0s
MVO Moncorvo 84.34 313 *e*P **P 14 38 56.7 +0.4**
comp=E,30nm,1.4s
MVO Moncorvo 84.34 313 *e*S **S 14 49 25.1 +3.3**
MVO Moncorvo 84.34 313 *e*LQ LQ 15 01 31.1
MVO *e*LR LR 15 07 53.8
comp=E,573nm,18.0s
MORF Marmelete 84.44 309 *e*P **P 14 38 55.6 -1.3**
MORF *e*S **S 14 49 18.6 -4.3**
MORF AMS AMS 15 12 17.2
comp=Z,913nm,22.7s
MORF Marmelete 84.44 309 *e*P P 14 39 04.0 +7.1
comp=Z,66nm,1.4s
MORF Marmelete 84.44 309 *e*S **S 14 49 29.4 +6.5**
RABL Rabaul 84.45 93 PFAKE 14 39 10.0 +13
RABL LR LR
comp=Z,900nm,22.0s
MTE Manteigas 84.49 312 *e*P **P 14 39 01.7 +4.6**
comp=Z,35nm,1.5s
MTE Manteigas 84.49 312 *e*S **S 14 49 28.3 +5.0**
MTE Manteigas 84.49 312 *e*LQ LQ 15 01 36.4
MTE *e*LR LR 15 08 05.0
comp=Z,572nm,18.0s
PFVI Vila Bisbo 84.53 309 *e*P P 14 39 04.9 +7.6
comp=Z,61nm,1.3s
PFVI Vila Bisbo 84.53 309 PFAKE 14 39 10.0 +13
PFVI LR LR
comp=Z,1μm,18.0s
PNCL Nicolau / Gran 84.57 310 *e*P P 14 39 04.0 +6.5
comp=Z,28nm,1.7s
PNCL Nicolau / Gran 84.57 310 *e*S **S 14 49 29.0 +5.0**

CWF	Charnwood Fore	84.62	325	*eP*	P	14 39 01.7	+4.3		
	comp=Z,27nm,0.9s								
PVRL	Vila Real	84.87	313	*eP*	P	14 39 08.5	+10		
	comp=Z,36nm,1.4s								
POLO	Lamas de Olo	84.95	313	*eP*	P	14 39 06.0	+6.5		
	comp=Z,14nm,1.7s								
POLO	Lamas de Olo	84.95	313	*eS*	S	14 49 33.6	+5.6		
PCAS	Casmilo, Conde	85.09	312	*eP*	P	14 39 06.1	+6.0		
	comp=Z,30nm,1.5s								
PCAS	Casmilo, Conde	85.09	312	*eS*	S	14 49 25.3	-3.9		
PMST	Lisbon--Monsan	85.23	310	*eP*	P	14 39 05.2	+4.4		
	comp=Z,73nm,1.6s								
PMAFR	Mafra	85.37	311	*eP*	P	14 39 02.5	+1.0		
	comp=Z,90nm,1.3s								
PMAFR	Mafra	85.37	311	*eS*	S	14 49 36.0	+4.0		
PGAV	Gavieira, Arco	85.46	314	*eP*	P	14 39 09.0	+7.0		
	comp=Z,28nm,2.0s								
PGAV	Gavieira, Arco	85.46	314	*eLQ*	LQ	15 02 09.1			
PGAV				*eLR*	LR	15 08 03.2			
	comp=Z,705nm,20.0s								
YAK	Yakutsk	85.79	25	P	P	14 39 02.3	-0.6		
	comp=Z,7.0nm,0.5s,baz=126,slow=0.9,SNR=4.3								
YAK	Yakutsk	85.79	25	*eP*	P	14 39 02.6	-0.4		
YAK				*e*		14 39 05.9			
YAK				*ePPP*	PPP	14 44 17.1			
YAK				*eS*	S	14 49 24.9	-10		
YAK				*eSS*	SS	14 55 13.4	+1.2		
YAK				pmax	pmax				
	comp=Z,24nm,1.2s								
YAK				pmax	pmax				
	comp=N,5.0nm,1.3s								
YAK				pmax	pmax				
	comp=E,10.0nm,1.3s								
YAK				pmax	pmax				
	comp=Z,110nm,4.2s								
YAK				smax	smax				
	comp=N,142nm,7.8s								
YAK				smax	smax				
	comp=E,318nm,10.2s								
YAK				MLR	MLR				
	comp=E,1µm,20.0s								
YAK				MLR	MLR				
	comp=N,788nm,19.0s								
YAK				MLR	MLR				
	comp=Z,1µm,18.0s								
YAK	Yakutsk	85.79	25	*eP*	P	14 39 02.1	-0.8		
	comp=Z,21nm,0.9s								
YAK				LR	LR				
	comp=Z,1µm,21.0s								
ERM	Erimo	85.93	46	*eP*	P	14 39 03.4	-0.8		
ERM				pmax	pmax				
	comp=Z,10.0nm,1.0s								
LHI	Lord Howe Isla	86.87	121	PFAKE		14 39 20.0	+11		
LHI				LR	LR				
	comp=Z,2µm,20.0s								
YSS	Yuzh-Sakhalins	87.06	42	*eP*	P	14 39 09.5	-0.1		
YSS				*e*		14 42 40.0			
YSS				*eS*	S	14 49 42.0	-6.1		
YSS				*ePS*	PnS	14 50 52.0	+3.2		
YSS				*eSS*	SS	14 55 29.0	-2.6		
YSS				*eSSS*	SSS	14 58 54.0			
YSS				pmax	pmax				
	comp=Z,20nm,1.2s								
YSS				pmax	pmax				
	comp=N,100nm,4.0s								
YSS				pmax	pmax				
	comp=Z,200nm,4.0s								
YSS				smax	smax				
	comp=N,500nm,10.0s								
YSS	Yuzh-Sakhalins	87.06	42	*eP*	P	14 39 08.5	-1.1		
	comp=N,64nm,1.2s								
DSB	Dublin	87.67	325	*eP*	P	14 39 17.0	+4.6		
	comp=N,23nm,1.1s								
NKL	Nikolayevsk	87.67	35	*eP*	P	14 39 12.0	-0.4		
NKL				*eS*	S	14 49 50.0	-3.7		
NKL				pmax	pmax				
	comp=N,30nm,1.0s								
NKL				pmax	pmax				
	comp=Z,50nm,1.0s								
NKL				pmax	pmax				
	comp=Z,500nm,4.0s								
NKL				smax	smax				
	comp=N,1µm,10.0s								
NKL				smax	smax				
	comp=E,700nm,10.0s								
YUK	Yuzh-Kuril'sk	88.38	45	*eP*	P	14 39 16.4	+0.4		
KUR	Kuril'sk	90.05	44	*eP*	P	14 39 30.3	+6.5		
KUR				S	SKSac	14 49 50.0	-4.2		
KUR				*i*		14 50 13.5			
KUR				*eSS*	SS	14 56 18.2	+2.9		
KUR				*eSSS*	SSS	14 59 56.2			
KUR				MLR	MLR				
	comp=Z,523nm,19.0s								
KUR				MLR	MLR				
	comp=N,507nm,22.0s								
KUR				MLR	MLR				
	comp=E,500nm,19.0s								
TIXI	Tiksi	90.21	16	PFAKE		14 39 30.0	+6.0		
TIXI				LR	LR				
	comp=Z,2µm,19.0s								
PMOZ	Porto Moniz, M	90.23	303	*eLR*	LR	15 06 27.2			
	comp=Z,935nm,18.0s								
HNR	Honiara	91.26	100	LR	LR	15 15 38.0			
	comp=Z,779nm,21.1s,baz=238,slow=32								
KBS	Kingsbay	92.75	351	PFAKE		14 39 50.0	+14		
KBS				LR	LR				
	comp=Z,1µm,21.0s								
LBZ	Lake Benmore	92.78	136	PFAKE		14 39 50.0	+13		
LBZ				LR	LR				
	comp=Z,3µm,18.0s								
SACV	Santiago Islan	93.05	285	PFAKE		14 39 50.0	+12		
SACV				LR	LR				
	comp=Z,600nm,19.0s								
LTZ	Lake Taylor	94.68	135	PFAKE		14 40 00.0	+15		
LTZ				LR	LR				
	comp=Z,3µm,20.0s								
MA2	Magadan	94.70	30	P	P	14 39 43.2	-1.9		
	comp=Z,5.4nm,0.9s,baz=214,slow=3.6,SNR=2.4								
DZM	Mont Dzumac	95.08	113	LR	LR	15 20 23.9			
	comp=Z,1µm,19.9s,baz=260,slow=34								
DZM	Mont Dzumac	95.08	113	*eSS*	SS	14 57 29.0	+0.6		
	comp=Z,592nm,25.9s								
DZM				*eLQ*	LQ	15 06 26.7			
	comp=Z,2µm,41.4s								
DZM				*eLR*	LR	15 10 34.4			
	comp=Z,7µm,26.1s								
SEY	Seymchan	96.02	27	P	P	14 39 49.9	-1.1		
	comp=Z,0.9nm,0.4s,baz=329,slow=8.7,SNR=4.4								
SEY	Seymchan	96.02	27	*i* P	P	14 39 50.6	-0.3		
PETK	Petropavlovsk-	97.67	37	P	P	14 39 57.5	-1.2		
	comp=Z,1.4nm,0.9s,baz=248,slow=4.8,SNR=2.4								
PETK				LR	LR	15 23 16.7			
	comp=Z,398nm,21.9s,baz=259,slow=35								
CMLA	Cha da Macela	97.68	307	PFAKE		14 40 10.0	+11		
CMLA				LR	LR				
	comp=Z,1µm,19.0s								
BFZ	Birch Farm	98.17	133	PFAKE		14 40 10.0	+8.7		
BFZ				LR	LR				
	comp=Z,3µm,19.0s								
BKZ	Black Stump Fm	98.85	132	PFAKE		14 40 10.0	+5.5		
BKZ				LR	LR				
	comp=Z,3µm,22.0s								
MLY	Manley	118.40	17	*ePKPdf*	PKPdf	14 45 09.9	-1.3		
INK	Inuvik	119.46	9	PKP	PKPdf	14 45 11.1	-2.0		
	comp=Z,1.5nm,0.7s,baz=0.0,slow=6.1,SNR=12								
WRH	Wood River Hil	119.58	17	*ePKPdf*	PKPdf	14 45 09.9	-3.5		
IL1	Eielson Array	119.68	16	*ePKPdf*	PKPdf	14 45 12.3	-1.4		
ILAR	Eielson Array	119.68	16	PKP	PKPdf	14 45 13.2	-0.4		
	comp=Z,1.2nm,0.7s,baz=310,slow=2.6,SNR=13								
TRF	Thorofare Moun	119.68	18	*ePKPdf*	PKPdf	14 45 11.4	-2.4		
SUA	Susitna One	120.96	20	*ePKPdf*	PKPdf	14 45 16.8	+0.4		
EGAK	Eagle	121.13	14	*ePKPdf*	PKPdf	14 45 16.7	+0.3		
YKA	Yellowknife Ar	126.85	1	PKP	PKPdf	14 45 29.7	+2.3		
	comp=Z,3.4nm,0.8s,baz=354,slow=2.2,SNR=22								
YKA				PP	PP	14 47 27.8	+3.7		
	comp=Z,2.3nm,1.0s,baz=355,slow=7.0,SNR=5.1								
LPAZ	La Paz	128.96	240	PKP	PKPdf	14 45 33.9	+0.3		
	comp=Z,2.8nm,0.8s,baz=73,slow=7.6,SNR=11								
TBI	Tubuai	131.72	133	*ePP*	PP	14 48 00.9	+3.8		
	comp=Z,113nm,27.0s								
TBI	Tubuai	131.72	133	*eSS*	SS	15 05 27.8	-3.9		
	comp=Z,285nm,27.5s								
TBI	Tubuai	131.72	133	*eLR*	LR	15 27 42.5			
	comp=Z,856nm,23.5s								
PPT2	Papeete2	134.98	126	*ePP*	PP	14 48 19.2	+0.8		
	comp=Z,198nm,25.0s								
PPT2	Papeete2	134.98	126	*eSS*	SS	15 06 13.9	+2.0		
	comp=Z,734nm,27.5s								
PPT2	Papeete2	134.98	126	*eLR*	LR	15 28 55.0			
	comp=Z,729nm,22.5s								
EYMN	Ely	137.42	339	*ePKPdf*	PKPdf	14 45 45.7	-2.1		
RKT	Rikitea	141.22	146	*eSS*	SS	15 07 34.8	+11		
	comp=Z,437nm,32.8s								
RKT	Rikitea	141.22	146	*eLR*	LR	15 32 07.8			
	comp=Z,1µm,25.0s								
RKT	Rikitea	141.22	146	*eT*	T	17 23 10.4			
	comp=Z,26nm,0.2s								
SFIN	Lafayette	141.47	328	P	PKPdf	14 45 53.5	-1.9		
L40A	baz=43 Anamosa	142.18	333	P	PKPdf	14 45 56.6	0.0		
	baz=36								
I34A	Hadley	142.33	340	P	PKPdf	14 45 57.5	+0.6		
	baz=28								
K38A	Parkersburg	142.36	335	P	PKPdf	14 45 57.3	+0.3		
	baz=34								
J36A	Seneca 1, Swea	142.40	338	P	PKPdf	14 45 57.0	0.0		
	baz=31								
H32A	Carlson Farm,	142.43	342	P	PKPdf	14 45 56.7	-0.3		
	baz=25								
L39A	Vinton	142.47	334	P	PKPdf	14 45 57.1	0.0		
	baz=35								
MSO	Missoula	142.55	1	P	PKPdf	14 45 56.5	-0.8		
	baz=358								
K37A	Belmond	142.61	336	P	PKPdf	14 45 57.0	-0.3		
	baz=32								
I33A	Coleman	142.63	341	P	PKPdf	14 45 57.4	0.0		
	baz=27								
H31A	Wolsey	142.76	343	P	PKPdf	14 45 58.5	+0.9		
	baz=24								
ECSD	EROS Data Cent	142.85	340	P	PKPdf	14 45 58.7	+0.9		
	baz=27								
ECSD	EROS Data Cent	142.85	340	*ePKPdf*	PKPdf	14 45 56.0	-1.8		
L38A	Oak Wood Farm,	142.86	335	P	PKPdf	14 45 54.6	-3.2		
	baz=34								
SUSD	Miller	142.93	343	P	PKPdf	14 45 53.7	-4.2		
	baz=23								
J34A	George	143.03	339	P	PKPdf	14 45 56.8	-1.3		
	baz=28								
M39A	Webster	143.07	334	P	PKPab	14 45 54.0	+0.5		
	baz=35								
O42A	Bath	143.12	330	P	PKPab	14 45 54.1	+0.4		
	baz=40								
I31A	Royce, Wessing	143.19	343	P	PKPab	14 45 52.9	-1.1		
	baz=24								
J33A	Davis	143.34	340	P	PKPab	14 45 53.8	-0.8		
	baz=27								
Q44A	Meyer Farm, Va	143.56	328	P	PKPab	14 45 55.9	+0.3		
	baz=42								
M38A	Pleasantville	143.56	335	P	PKPbc	14 45 56.8	+0.4		
	baz=34								
O41A	Passleys Farm,	143.57	331	P	PKPbc	14 45 57.8	+1.4		
	baz=38								
J32A	Parkston	143.57	341	P	PKPab	14 45 54.6	-1.0		
	baz=26								
L36A	Harm Buss Farm	143.58	337	P	PKPbc	14 45 56.2	-0.2		
	baz=31								
K34A	Le Mars	143.60	339	P	PKPbc	14 45 56.8	+0.4		
	baz=29								
N39A	Derby Farms, D	143.70	334	P	PKPbc	14 45 57.1	+0.2		
	baz=35								
P42A	Winchester	143.72	330	P	PKPbc	14 45 57.1	+0.2		
	baz=40								
BOZ	Bozeman (W)	143.73	359	P	PKPbc	14 45 57.6	+0.7		
	baz=2.1								
H25A	Fruitdale	143.87	349	P	PKPbc	14 45 57.6	+0.3		
	baz=16								
Q43A	New Douglas	143.88	329	P	PKPdf	14 45 59.2	-0.5		
	baz=41								
L35A	Belcher Farm, R	143.90	338	P	PKPbc	14 45 58.6	+1.2		
	baz=30								
J31A	Geddes	143.92	342	P	PKPbc	14 45 58.3	+0.9		
	baz=24								
M37A	Trindle Farm,	143.93	336	P	PKPdf	14 45 58.7	-1.0		
	baz=33								
K33A	Hardington	143.99	340	P	PKPdf	14 45 58.8	-1.0		
	baz=27								
P41A	Barry, Barry	144.00	331	P	PKPdf	14 46 00.6	+0.7		
	baz=38								
O40A	La Belle	144.03	332	P	PKPdf	14 46 00.6	+0.6		
	baz=37								
R44A	Waltonville	144.07	327	P	PKPdf	14 46 00.8	+0.7		
	baz=43								
N38A	Joes South For	144.09	334	P	PKPdf	14 46 00.8	+0.7		
	baz=34								
RLMT	Red Lodge	144.14	356	P	PKPdf	14 45 59.9	-0.4		
	baz=6.1								
M36A	Felix, Anita	144.18	337	P	PKPdf	14 46 00.2	0.0		
	baz=31								
S45A	Carrier Mills	144.21	326	P	PKPbc	14 45 59.4	+1.0		
	baz=44								
O39A	Kirksville	144.23	333	P	PKPbc	14 45 59.4	+1.0		
	baz=36								
K32A	Verdigre	144.26	341	P	PKPdf	14 46 00.0	-0.3		
	baz=26								
I05D	Terrebonne, OR	144.29	10	P	PKPbc	14 45 59.2	+0.6		
	baz=346								
Q42A	Golden Eagle	144.33	329	P	PKPdf	14 46 00.7	+0.2		
	baz=40								
L34A	Svendsen Farm,	144.33	339	P	PKPdf	14 46 01.2	+0.7		
	baz=29								
BMO	Blue Mountains	144.34	5	*ePKPdf*	PKPbc	14 45 59.1	+0.3		
RSSD	Black Hills	144.43	349	P	PKPdf	14 46 01.0	+0.2		
	baz=15								
RSSD	Black Hills	144.43	349	*ePKIKP*	PKPab	14 45 59.1	+0.1		
RSSD	Black Hills	144.43	349	*ePKPdf*	PKPab	14 45 59.0	+0.1		
L33A	Hoskins	144.47	340	P	PKPdf	14 46 01.1	+0.4		
	baz=27								
I03D	Drain, OR	144.50	13	P	PKPdf	14 46 01.1	+0.5		
	baz=342								
M35A	Neola	144.51	338	P	PKPdf	14 46 01.5	+0.7		
	baz=30								
N37A	Lee Faris, Mou	144.53	335	P	PKPdf	14 46 01.7	+0.8		
	baz=33								
K31A	O'Neill	144.53	342	P	PKPdf	14 46 01.9	+1.1		
	baz=24								
OTAV	Otavalo	144.58	257	*ePKPdf*	PKPbc	14 46 01.7	+0.8		
P40A	Paris	144.58	332	P	PKPdf	14 46 01.3	+0.3		
	baz=37								
I04A	Tendick Farm,	144.61	12	P	PKPdf	14 46 02.0	+1.1		
	baz=344								
K30A	Basset	144.74	343	P	PKPab	14 45 59.8	-0.2		
	baz=23								
O38A	Galt	144.75	334	P	PKPdf	14 46 01.5	+0.3		
	baz=34								
N36A	Muff Farm, Cla	144.79	336	P	PKPdf	14 46 01.6	+0.3		
	baz=32								
M34A	Kapy Farms, Fr	144.81	339	P	PKPdf	14 46 01.7	+0.4		
	baz=29								
L32A	Elgin	144.86	341	P	PKPdf	14 46 03.3	+1.9		
	baz=26,SNR=6.8								
P39B	Salisbury	144.94	332	P	PKPdf	14 46 02.4	+0.8		
	baz=36								
H17A	Grant Village	144.94	357	P	PKPdf	14 46 04.0	+2.3		
	baz=4.0								
L31A	Butterfield Fa	144.97	342	P	PKPdf	14 46 02.6	+1.0		
	baz=25								
M33A	Taylor Creek F	144.97	339	P	PKPdf	14 46 03.2	+1.6		
	baz=28,SNR=12								
TIGA	Tifton	144.98	313	P	PKPdf	14 46 03.6	+1.8		
	baz=57								
O37A	Wolven Farm, M	145.00	335	P	PKPdf	14 46 02.6	+0.9		
	baz=33								
N35A	Tabor	145.02	337	P	PKPdf	14 46 03.0	+1.3		
	baz=31								
Q40A	Lanz Farm, Aux	145.02	331	P	PKPdf	14 46 03.3	+1.6		
	baz=38								
S43A	Fulton Ridge,	145.10	327	P	PKPdf	14 46 03.6	+1.7		
	baz=42								
P38A	Dawn	145.18	333	P	PKPdf	14 46 03.8	+1.8		
	baz=35,SNR=10								
J05D	Fort Rock, OR	145.33	11	P	PKPdf	14 46 04.4	+2.1		
	baz=346								
N34A	Lincoln	145.36	338	P	PKPdf	14 46 04.3	+2.1		
	baz=29,SNR=5.7								
O36A	Bolckow	145.37	335	P	PKPdf	14 46 04.5	+2.2		
	baz=32,SNR=7.9								
Q39A	Willow Grove F	145.40	332	P	PKPdf	14 46 04.4	+2.0		
	baz=36,SNR=9.0								
BGNE	Belgrade	145.44	340	P	PKPab	14 46 04.1	+1.5		
	baz=26								
P37A	Lathrop	145.56	334	P	PKPab	14 46 04.6	+1.6		
	baz=34								
MOOW	Moose Ponds	145.59	357	*ePKPdf*	PKPdf	14 46 01.5	-1.4		
HUMO	Hull Mountain	145.63	13	*ePKPdf*	PKPdf	14 46 00.7	-2.0		
O35A	Humboldt	145.63	337	P	PKPab	14 46 05.2	+2.0		
	baz=31,SNR=6.0								
R40A	Maddies Statio	145.66	331	P	PKPab	14 46 05.2	+1.8		
	baz=38,SNR=37								
LOHW	Long Hollow	145.72	357	*ePKPdf*	PKPdf	14 46 03.0	-0.1		
Q38A	Cooks Store, C	145.76	333	P	PKPab	14 46 05.1	+1.4		
	baz=35,SNR=14								
M31A	Lambtecht Ranc	145.76	341	P	PKPab	14 46 05.8	+2.1		
	baz=25								
N33A	J Bar K, Exete	145.79	339	P	PKPab	14 46 05.0	+1.2		
	baz=28,SNR=5.3								
V45A	Humboldt	145.80	324	P	PKPab	14 46 05.1	+1.1		
	baz=45								
HLID	Hailey	145.81	2	P	PKPab	14 46 06.1	+2.1		
	baz=357								
K04D	Chiloquin, OR	145.87	12	P	PKPab	14 46 05.5	+1.4		
	baz=344								
L02D	Cave Junction,	145.90	14	P	PKPab	14 46 06.6	+2.4		
	baz=341,SNR=9.0								
S41A	Jillco Farms,	145.95	329	P	PKPab	14 46 06.1	+1.6		
	baz=39,SNR=8.1								
REDW	Red Top Meadow	145.99	357	*ePKPdf*	PKPdf	14 46 03.9	+0.3		
O34A	Beatrice	146.00	338	P	PKPab	14 46 05.3	+0.6		
	baz=29								
R39A	Chumby, Stover	146.01	331	P	PKPab	14 46 06.2	+1.5		
	baz=37,SNR=15								
N32A	Stulken Farm,	146.06	340	P	PKPab	14 46 05.3	+0.5		
	baz=26								
Q37A	Longview Farm,	146.20	334	P	PKPab	14 46 05.2	-0.2		
	baz=34								
N31A	Bailey Ranch,	146.23	341	P	PKPab	14 46 06.2	+0.7		
	baz=25								
V44A	Blytheville	146.28	325	P	PKPab	14 46 07.3	+1.5		
	baz=44								
K22A	Casper	146.28	352	P	PKPab	14 46 06.6	+0.9		
	baz=11								
P35A	Duane Minner,	146.31	336	P	PKPab	14 46 06.5	+0.7		
	baz=31,SNR=6.0								
S40A	Lebanon	146.32	330	P	PKPab	14 46 06.8	+0.9		
	baz=38,SNR=6.6								
W45A	Hickory Valley	146.34	324	P	PKPab	14 46 06.9	+0.8		
	baz=46								
Y47A	UCPARC, Winfie	146.38	321	P	PKPab	14 46 06.9	+0.6		
	baz=49								
T41A	Mountain View	146.38	329	P	PKPab	14 46 07.3	+1.1		
	baz=40,SNR=10								
LRAL	Lakeview Retre	146.39	319	*ePKPdf*	PKPbc	14 46 05.0	-0.5		
O33A	Hebron	146.43	339	P	PKPab	14 46 07.2	+1.0		
	baz=28,SNR=12								
BW06	Boulder Array	146.50	356	P	PKPab	14 46 07.5	+0.8		
	baz=5.9								
BW06	Boulder Array	146.50	356	*ePKPdf*	PKPdf	14 46 04.4	-0.1		
BW06				*e*PKPdf	PKPbc	14 46 04.7	-1.1		
PD31	Pinedale Array	146.50	356	*ePKPdf*	PKPdf	14 46 04.8	+0.3		
PDAR	Pinedale Array	146.50	356	PKPbc	PKPdf	14 46 05.0	+0.5		
	comp=Z,9.5nm,1.0s,baz=70,slow=1.7,SNR=35								
O32A	Brockman Farm,	146.51	340	P	PKPab	14 46 07.5	+0.9		
	baz=27,SNR=6.7								
R38A	Fenwick Farm,	146.52	332	P	PKPab	14 46 07.6	+1.0		
	baz=36,SNR=8.6								
Z48A	Northport	146.53	320	P	PKPab	14 46 07.7	+0.9		
	baz=50								
Q36A	Arnold C. Orve	146.56	335	P	PKPab	14 46 07.6	+0.8		
	baz=32								
P34A	Walnut Farm, R	146.61	337	P	PKPab	14 46 08.0	+1.1		
	baz=30,SNR=15								
U42A	Revenden	146.63	327	P	PKPab	14 46 08.1	+1.0		
	baz=41,SNR=12								
S39A	Bolivar	146.65	331	P	PKPab	14 46 08.2	+1.1		
	baz=37,SNR=7.0								
M04C	Macdoel	146.66	12	P	PKPab	14 46 08.7	+1.5		
	baz=344,SNR=6.7								
T40A	Mansfield	146.68	330	P	PKPab	14 46 08.4	+1.1		
	baz=39,SNR=25								
W44A	Shelby Farms P	146.72	324	P	PKPab	14 46 08.5	+1.0		
	baz=45								
M02C	Callahan	146.81	14	P	PKPab	14 46 08.7	+1.0		
	baz=342,SNR=12								
R37A	Teagarden Farm	146.83	334	P	PKPab	14 46 08.5	+0.7		
	baz=34,SNR=5.5								
Q35A	Mercer Eighty,	146.88	336	P	PKPab	14 46 08.4	+0.3		
	baz=31,SNR=5.1								
KSU1	Kansas State U	146.91	336	P	PKPab	14 46 08.5	+0.4		
	baz=30								
O31A	Woolen Ranch,	146.96	341	P	PKPab	14 46 08.4	+0.1		
	baz=25								
S38A	Stockton	146.97	332	P	PKPab	14 46 08.6	+0.2		
	baz=36,SNR=15								
X45A	UM Field Stati	146.97	323	P	PKPab	14 46 08.5	-0.1		
	baz=46								
Z47A	Carrollton	146.98	320	P	PKPab	14 46 09.1	+0.5		
	baz=49								
U41A	Viola	147.00	328	P	PKPab	14 46 09.1	+0.5		
	baz=40,SNR=7.1								
OGNE	Ogallala	147.01	345	P	PKPab	14 46 08.3	-0.3		
	baz=20								
Y46A	Houston	147.02	322	P	PKPab	14 46 08.8	+0.1		
	baz=47,SNR=15								
P33A	Williams Farm,	147.03	338	P	PKPab	14 46 08.6	0.0		
	baz=28								
R36A	Gordon, Harris	147.12	334	P	PKPab	14 46 09.0	0.0		
	baz=33,SNR=6.0								
V42A	Cord	147.12	327	P	PKPab	14 46 08.8	-0.2		
	baz=42,SNR=6.2								
P32A	Huiting Farm,	147.19	339	P	PKPab	14 46 09.3	+0.1		
	baz=27								
Q34A	Chapman	147.19	337	P	PKPab	14 46 09.5	+0.2		
	baz=30								
T39A	Clever	147.20	330	P	PKPab	14 46 09.7	+0.3		
	baz=37								
N02D	Trinity Center	147.24	14	P	PKPab	14 46 09.1	-0.4		
	baz=342,SNR=8.7								
S37A	Fort Scott	147.29	333	P	PKPab	14 46 09.2	-0.5		
	baz=34,SNR=7.4								
X44A	Crenshaw	147.37	324	P	PKPab	14 46 09.8	-0.2		
	baz=45								
R35A	Emporia Munici	147.41	335	P	PKPab	14 46 09.8	-0.3		
	baz=32								
TAOE	Nuku Hiva Isla	147.42	123	*eLR*	LR	15 34 48.9			
	comp=Z,1µm,29.8s								
PHWY	Pilot Hill	147.42	350	*ePKPbc*	PKPbc	14 46 07.5	-1.0		
147A	Livingston	147.44

O03D	Paynes Creek baz=343,SNR=7.5	148.09	13	P		PKPab	14 46 11.6	-1.3
R33A	Olander Ranch, baz=29	148.13	337	P		PKPab	14 46 12.4	-0.6
U38A	Gravette baz=36,SNR=7.8	148.16	331	P		PKPab	14 46 12.1	-1.1
V39A	Pettigrew baz=38,SNR=9.8	148.27	329	P		PKPab	14 46 12.7	-1.0
R32A	Long Quarter, baz=27	148.29	339	P		PKPab	14 46 12.5	-1.1
CBKS	Cedar Bluff baz=25	148.30	340	P		PKPab	14 46 12.5	-1.2
S34A	Willow Spring baz=31	148.31	336	P		PKPab	14 46 12.7	-1.0
T36A	Boggs Farm, Ca baz=33,SNR=8.7	148.33	334	P		PKPab	14 46 13.0	-0.8
Z44A	Pea Ridge, Bel baz=46	148.39	322	P		PKPab	14 46 13.4	-0.8
W40A	Ferguson Farm, baz=40	148.48	328	P		PKPab	14 46 13.1	-1.3
U37A	Salina baz=35,SNR=8.2	148.53	332	P		PKPab	14 46 13.2	-1.4
145A	Houston Renfro baz=47	148.54	321	P		PKPab	14 46 13.4	-1.4
V38A	Canehill baz=37	148.63	330	P		PKPbc	14 46 13.4	+1.8
T35A	Sooner Cattle baz=32	148.73	334	P		PKPbc	14 46 13.2	+1.4
S33A	Kaszmaul Farm, baz=29	148.76	337	P		PKPab	14 46 13.9	-1.6
Y42A	Garnett, Star baz=43	148.79	325	P		PKPab	14 46 14.3	-1.5
U36A	Oologah baz=34,SNR=5.3	148.82	333	P		PKPbc	14 46 13.7	+1.6
X40A	Basin Creek Fa baz=41	148.89	327	P		PKPab	14 46 14.8	-1.3
245A	Little AP, Sta baz=48	148.90	320	P		PKPbc	14 46 14.2	+1.9
T34A	McCluskey Farm baz=31	148.93	335	P		PKPab	14 46 14.4	-1.8
V37A	Hulbert baz=36,SNR=6.5	148.97	331	P		PKPbc	14 46 13.6	+1.2
O20A	White River Ci baz=8.9	148.98	353	P		PKPbc	14 46 14.6	+2.0
KSCO	Kaye Shedlock' baz=20	148.99	344	P		PKPbc	14 46 14.5	+1.9
S32A	Newby Ranch, P baz=27	149.02	338	P		PKPbc	14 46 14.6	+2.0
346A	Big Creek Wild baz=50	149.05	319	P		PKPbc	14 46 14.8	+2.1
VBMS	Vicksburg baz=47	149.17	321	P		PKPbc	14 46 14.9	+1.9
Y41A	Eaglette Beard baz=42	149.22	326	P		PKPbc	14 46 14.9	+1.8
MIAR	Mount Ida baz=40,SNR=12	149.24	328	P		PKPbc	14 46 15.2	+2.1
MIAR	Mount Ida	149.24	328	*e*PKP2		PKPbc	14 46 13.5	+0.3
MIAR	Mount Ida	149.24	328	*e*PKPbc		PKPbc	14 46 13.5	+0.3
TUL1	Leonard baz=34	149.25	332	P		PKPbc	14 46 14.8	+1.7
U35A	Pawnee baz=32	149.28	334	P		PKPbc	14 46 14.6	+1.4
Z42A	Norrel Spur, H baz=44	149.29	324	P		PKPbc	14 46 15.1	+1.8
T33A	Patterson Ranc baz=29	149.30	337	P		PKPbc	14 46 15.0	+1.8
W38A	Poteau baz=37	149.31	330	P		PKPbc	14 46 14.6	+1.3
446A	Poplarville baz=50	149.36	318	P		PKPbc	14 46 15.2	+1.7
244A	Avery, Jackson baz=47	149.39	321	P		PKPbc	14 46 15.6	+2.0
V36A	Jenks baz=34	149.42	332	P		PKPbc	14 46 15.5	+1.9
X39A	Fountain Ranch baz=39,SNR=18	149.55	328	P		PKPbc	14 46 16.2	+2.3
AFDM	Forest Hills D	149.56	13	*e*PKPbc		PKPbc	14 46 13.2	-0.7
Q24A	Divide baz=15	149.62	348	P		PKPbc	14 46 16.1	+1.7
W37B	Quinton baz=36	149.71	331	P		PKPbc	14 46 16.1	+1.8
SMCO	Snowmass	149.75	351	*e*PKPbc		PKPbc	14 46 14.0	-0.8
X38A	Whitesboro baz=37	149.79	330	P		PKPbc	14 46 17.1	+2.6
Z41A	Richland Creek baz=42	149.79	325	P		PKPbc	14 46 16.5	+1.9
U33A	Lingo Farm, Me baz=30	149.81	336	P		PKPbc	14 46 16.4	+1.9
344A	Westbrook Farm baz=48	149.82	320	P		PKPbc	14 46 16.9	+2.3
V35A	Meyer Ranch, C baz=33	149.84	333	P		PKPbc	14 46 16.3	+1.7
Y39A	Lockesburg baz=39	149.98	328	P		PKPbc	14 46 16.3	+1.3
243A	Waterproof baz=46	150.00	322	P		PKPbc	14 46 17.2	+2.1
V34A	Guthrie baz=32	150.07	334	P		PKPbc	14 46 16.6	+1.4
W36A	Wetumka baz=34	150.08	332	P		PKPbc	14 46 16.9	+1.7
X37A	Clayton baz=36	150.12	330	P		PKPbc	14 46 16.5	+1.2
Z40A	Long Farm, Mag baz=41	150.12	326	P		PKPbc	14 46 16.2	+0.9
SRU	San Rafael Swe	150.21	356	*e*PKIKP		PKPbc	14 46 14.2	-1.4
SRU	San Rafael Swe	150.21	356	*e*PKPbc		PKPbc	14 46 14.2	-1.4
U32A	Winter Ranch, baz=28	150.21	337	P		PKPbc	14 46 16.8	+1.3
242A	Grayson baz=45	150.27	323	P		PKPbc	14 46 17.4	+1.6
Y38A	Idabel baz=38	150.32	328	P		PKPbc	14 46 17.4	+1.6
W35A	Tecumseh baz=33,SNR=5.4	150.37	333	P		PKPbc	14 46 17.5	+1.6
X36A	Centrahoma baz=35,SNR=8.2	150.61	331	P		PKPbc	14 46 17.7	+1.2
W34A	Bridge Creek, baz=32	150.69	334	P		PKPbc	14 46 18.7	+2.0
PV10	Paradox Valley	150.81	354	*e*PKPbc		PKPbc	14 46 16.5	-0.7
342A	Flagon Creek P baz=45	150.86	322	P		PKPbc	14 46 18.8	+1.6
MSU	Marysvale	150.87	359	*e*PKIKP		PKPab	14 46 22.0	-2.4
MSU	Marysvale	150.87	359	*e*PKPab		PKPab	14 46 21.9	-2.4
SDCO	Great Sand Dun baz=15	150.87	348	P		PKPbc	14 46 18.2	+0.8
R11A	Troy Canyon, C baz=354,SNR=8.9	150.94	4	P		PKPbc	14 46 18.6	+1.2
R11A	Troy Canyon, C	150.94	4	*e*PKPbc		PKPbc	14 46 15.8	-1.6
X35A	Drake baz=34,SNR=17	151.04	332	P		PKPbc	14 46 19.0	+1.5
W33A	Caddo, Fort Co baz=30	151.06	335	P		PKPbc	14 46 19.1	+1.6
Y36A	Durant baz=36	151.12	331	P		PKPbc	14 46 19.5	+1.8
T25A	Trinidad baz=18	151.21	346	P		PKPbc	14 46 19.7	+1.6
240A	Hunter Patters baz=42	151.23	325	P		PKPbc	14 46 20.1	+2.1
X34A	Smith Ranch, M baz=32,SNR=6.0	151.26	334	P		PKPbc	14 46 19.8	+1.8
MTPU	Mount Pierson	151.34	359	*e*PKPab		PKPab	14 46 22.7	-3.8
341A	Kurthwood baz=44	151.40	323	P		PKPbc	14 46 20.5	+2.1
W32A	Sentinel baz=29,SNR=6.5	151.40	336	P		PKPbc	14 46 20.0	+1.7
Y35A	Marietta baz=34,SNR=6.2	151.47	332	P		PKPbc	14 46 20.4	+1.9
138A	Matatall Enter baz=39	151.49	327	P		PKPbc	14 46 20.5	+1.9
WMOK	Wichita Mounta baz=30,SNR=11	151.54	335	P		PKPbc	14 46 20.2	+1.5
WMOK	Wichita Mounta	151.54	335	*e*PKIKP		PKPbc	14 46 17.8	-0.9
WMOK	Wichita Mounta	151.54	335	*e*PKPbc		PKPbc	14 46 17.8	-0.9
239A	Gary baz=41	151.65	326	P		PKPbc	14 46 21.1	+2.1
Z36A	Blue Ridge baz=36	151.70	330	P		PKPbc	14 46 21.3	+2.2
340A	Bronson baz=43	151.76	324	P		PKPbc	14 46 20.9	+1.6
Y34A	Reagan Ranch, baz=33,SNR=5.5	151.76	333	P		PKPbc	14 46 20.8	+1.6
CCUT	Cedar City	151.83	1	*e*PKPbc		PKPbc	14 46 17.8	-1.7
137A	Heron Place, G baz=38	151.89	328	P		PKPbc	14 46 21.7	+2.2
NATX	Nacogdoches baz=41	151.95	326	P		PKPbc	14 46 22.0	+2.4
X32A	Elmer baz=30	152.03	336	P		PKPbc	14 46 22.3	+2.5
Z35A	Perchaven, San baz=34	152.05	331	P		PKPbc	14 46 22.1	+2.3
GRAC	Grapevine Rang baz=351,SNR=6.5	152.09	8	P		PKPbc	14 46 22.8	+2.9
Y33A	Hilltop Ranch, baz=31	152.10	334	P		PKPbc	14 46 22.2	+2.2
TPNV	Topopah Spring baz=353,SNR=5.9	152.27	6	P		PKPbc	14 46 23.0	+2.5
LCMT	Little Creek M	152.37	1	*e*PKPbc		PKPbc	14 46 18.5	-2.1
237A	Washetta, Mont baz=38	152.39	327	P		PKPbc	14 46 22.9	+2.3
136A	Ennis baz=37	152.39	329	P		PKPbc	14 46 22.5	+1.9
CWC	Cottonwood Cre baz=349	152.53	9	P		PKPbc	14 46 23.2	+2.1
U15A	North Rim	152.95	359	*e*PKPbc		PKPbc	14 46 19.5	-2.7
MPMC	Manual Prospec baz=350	153.00	8	P		PKPbc	14 46 25.7	+3.5
438A	Sam Houston St baz=41	153.16	325	P		PKPbc	14 46 25.3	+2.9
336A	Riesel baz=37	153.41	328	P		PKPbc	14 46 25.4	+2.5
133A	Hamilton Ranch baz=32	153.42	333	P		PKPbc	14 46 25.8	+2.8
234A	Clairette baz=34	153.56	331	P		PKPbc	14 46 25.9	+2.6
WUAZ	Wupatki baz=3.4,SNR=7.0	153.83	357	P		PKPbc	14 46 26.4	+2.4
TXAR	Lajitas Array comp=Z,0.9nm,1.0s,baz=222,slow=1.7,SNR=6.5	158.25	338	PKP		PKPdf	14 46 22.8	+0.8
TXAR				PP		PP	14 50 34.2	-0.3
	comp=Z,0.2nm,0.5s,baz=10.0,slow=6.2,SNR=2.2							

NIED ***26*** *14:34:00,38.80N×142.00E,h44km,Mw3.4 Best double couple: M₀1.50000×10¹⁴ NP1:φ₀210.00000°,δ20.00000°, λ101.00000°. NP2:φ₀19.00000°,δ70.00000°,λ86.00000°.*
ISCJB ***26*** *14:34:43.3±1.1,38.84N±0.06×142.1E±0.1,h51km, mb3.7/5,Error ellipse: s-maj=12.5km s-min=7.9km az=170.8*
JMA ***26*** *14:34:44.9±0.1,38.85N×142.05E,h46km±1km,M3.6*
JMA Felt I J1.
IDC ***26*** *14:34:47.1±8.3,38.82N×141.98E,h70km±52km, mb3.5/5, mb1 3.5/8,mb1mx3.2/62,mbtmp3.7/8,ML2.7/3,MS2.5/1, Ms1 2.5/1,ms1mx2.1/44,Error ellipse: s-maj=115.7km s-min=20.9km az=70.0*

ISC 26 14:34:44.7±1.4,38.81N±0.06×142.1E±0.1,h51km,n22, σ1s16/20,mb3.6/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	Ofunato	0.41	313	P		14 34 54.6	-0.3
OFUJ				S		14 35 01.2	-1.1
JIO	Ouri	0.65	238	P		14 34 58.0	+0.1
JIO				S		14 35 06.7	-0.7
JMK	Ichinoseki	0.67	283	P		14 34 58.0	0.0
JMK				S		14 35 07.1	-0.6
JOM	Ohasama	0.89	319	P		14 35 00.8	-0.2
JOM				S		14 35 12.1	-0.8
JOU	Okura	1.17	248	P		14 35 05.2	+0.4
JRG	Rokugo	1.25	299	P		14 35 05.9	+0.1
JYK	Kaneyama	1.33	275	P		14 35 07.2	+0.4
MJAR	Matsushiro Arr 1.0nm,0.3s,baz=34,slow=13,SNR=13	3.80	235	P		14 35 42.9	+2.2
JHJ	Hachijo jima 2 2.3nm,0.3s,baz=90,slow=20,SNR=3.9	5.97	199	P		14 36 12.3	+1.9
JHJ				S		14 37 14.4	-3.0
	4.1nm,0.3s,baz=35,slow=18,SNR=3.0						
USRK	Ussuriysk Ar. 0.1nm,0.3s,baz=116,slow=13,SNR=3.0	9.27	309	P		14 36 57.2	+1.5
KSRS	Korea Array comp=Z,20nm,18.2s,baz=285,slow=36	11.21	267	LR	LR	14 41 28.1	
H11N2	WAKE ISLAND Hy baz=317,slow=75,SNR=147	28.68	124	T	T	15 11 00.7	
H11N1	WAKE ISLAND Hy baz=317,slow=75,SNR=212	28.68	124	T	T	15 11 02.4	
H11N3	WAKE ISLAND Hy baz=317,slow=75,SNR=136	28.69	124	T	T	15 11 03.9	
H11S1	WAKE ISLAND Hy baz=319,slow=76,SNR=50	29.45	126	T	T	15 12 00.1	
H11S3	WAKE ISLAND Hy baz=319,slow=76,SNR=88	29.45	126	T	T	15 11 57.9	
H11S2	WAKE ISLAND Hy baz=319,slow=76,SNR=58	29.47	126	T	T	15 12 03.3	
ZALV	Zalesovo Beam 0.4nm,0.3s,baz=94,slow=9.5,SNR=2.4	41.12	311	P	P	14 42 23.7	+0.3
MKAR	Makanchi Array 0.5nm,0.5s,baz=84,slow=9.9,SNR=6.9	43.63	301	P	P	14 42 44.0	0.0
KURBB	Kurchatov Arra 1.8nm,0.5s,baz=80,slow=8.1,SNR=8.2	45.33	307	P	P	14 42 57.8	+0.3
BVAR	Borovoye Array 0.6nm,0.3s,baz=70,slow=8.9,SNR=4.4	49.77	311	P	P	14 43 31.8	-0.1
WRA	Warramunga Arr 0.2nm,0.5s,baz=6.2,slow=7.0,SNR=6.0	58.88	188	P	P	14 44 38.6	+0.2

DDA ***26*** *14:43:32.9,37.22N×28.23E,h7km,Md2.8*
ISK ***26*** *14:43:33.8,37.24N×28.14E,h14km,MD2.5*
CSEM ***26*** *14:43:34.2±0.3,37.27N×28.17E,h2km,MD2.5,Error ellipse: s-maj=6.0km s-min=4.9km az=22.0*

ISC 26 14:43:33.7±1.2,37.27N±0.05×28.19E±0.03,h7km±12km, n17,σ1s02/30,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MLSB	Milas	0.33	275	*e*PG	Pg	14 43 40.0	-0.1
MLSB				*e*SG	Sg	14 43 45.1	+0.6
MLSB	Milas	0.33	275	*e*Pg	Pg	14 43 40.1	-0.1
MLSB				*e*Sg	Sg	14 43 45.1	+0.6
TURN	Turunc	0.52	140	*i* P	Pg	14 43 41.2	-2.4
TURN				*i* S	Sg	14 43 48.5	-1.9
DALY	Dalyan (Mu˘la	0.59	140	*e*PG	Pg	14 43 45.6	+0.6
DALY				*e*SG	Sb	14 43 54.6	-0.1
DALY	Dalyan (Mu˘la	0.59	140	*e*Pg	Pg	14 43 45.6	+0.6
DALY				*e*Sg	Sb	14 43 54.7	-0.1
BDRM	Kayabasi	0.63	251	*i* P	Pg	14 43 45.1	-0.6
BDRM				*i* S	Sg	14 43 54.7	+0.8
BDRM	Kayabasi	0.63	251	P	Pg	14 43 45.1	-0.6
BDRM				S	Sg	14 43 54.7	+0.8
AYDB	Zeytinkoy-Aydi	0.72	341	*e*PG	Pb	14 43 48.5	-0.1
AYDB	Zeytinkoy-Aydi	0.72	341	*e*Pg	Pb	14 43 48.5	-0.1
BODT	Bodrum	0.73	254	*e*PG	Pg	14 43 47.4	-0.3
BODT				*e*SG	Sg	14 43 57.8	+0.6
BODT	Bodrum	0.73	254	*e*Pg	Pg	14 43 47.4	-0.3
BODT				*e*Sg	Sg	14 43 57.8	+0.6
GCAM	G?zelcaml?	0.87	300	*i* P	Pn	14 43 51.9	-0.5
GCAM	G?zelcaml?	0.87	300	P	Pn	14 43 51.9	-0.5
MANT	Manisa	1.25	13	*i* P	Pn	14 43 57.2	-0.6
MANT				*i* S	Sn	14 44 15.6	+0.5
MANT	Manisa	1.25	13	P	Pn	14 43 57.2	-0.6
MANT				S	Sn	14 44 15.6	+0.5
AKAS	Kas	1.54	132	*i* P	Pb	14 44 02.7	+0.1
AKAS				*i* S	Sg	14 44 25.5	+2.3
AKAS	Kas	1.54	132	P	Pb	14 44 02.7	+0.1
AKAS				S	Sg	14 44 25.5	+2.3

MEX 26 14:47:29.7±0.3,14.22N×92.29W,h15km,MD3.8,Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	Comitan	2.06	4	*e*P	Pn	14 48 01.4	-2.6
CCIG				*i* S	Sn	14 48 25.2	-4.3

IDC 26 14:48:25.3±2.0,17.32S×178.49W,h551km±27km, mb3.0/5,mb1 3.2/6,mb1mx2.9/37,mbtmp4.0/6,Error ellipse: s-maj=88.6km s-min=18.0km az=148.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	Afiamalu 1.3nm,0.3s,baz=230,slow=19,SNR=3.9	7.30	63	P	P	14 50 16.3	-0.1
STKA	Stephens Creek 1.3nm,0.5s,baz=84,slow=8.9,SNR=6.9	38.85	240	P	P	14 55 03.8	+0.1
WRA	Warramunga Arr 1.1nm,0.7s,baz=94,slow=7.0,SNR=31	44.67	259	P	P	14 55 49.2	-0.5
WRA				PcP	PcP	14 57 19.7	-0.7
	0.6nm,0.8s,baz=93,slow=3.6,SNR=4.5						
ASAR	Alice Springs 5.7nm,0.5s,baz=89,slow=8.1,SNR=127	44.88	254	P	P	14 55 51.3	-0.1
ASAR				PcP	PcP	14 57 20.4	-0.8
	0.4nm,0.5s,baz=113,slow=3.5,SNR=4.1						
FITZ	Fitzroy Crossi 1.4nm,0.9s,baz=111,slow=4.5,SNR=6.5	53.05	260	P	P	14 56 51.9	+0.1
ILAR	Eielson Array 0.1nm,0.5s,baz=219,slow=5.1,SNR=4.2	85.33	13	P	P	15 00 03.6	-0.4
BRTR	Keskin Array B 0.3nm,0.3s,baz=79,slow=3.0,SNR=3.0	144.31	315	PKP	PKPbc	15 06 58.9	-0.3
GERES	GERESS Array B 0.4nm,0.6s,baz=45,slow=1.5,SNR=3.6	147.03	345	PKPbc	PKPbc	15 07 06.4	-0.2

IDC 26 14:56:04.7±2.4,30.41S×176.30W,h0km,mb3.5/2, mb1 3.9/3,mb1mx3.6/27,mbtmp3.7/3,ML3.1/1,Error ellipse: s-maj=43.9km s-min=29.6km az=80.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island 37nm,0.3s,baz=60,slow=20,SNR=2.1	1.82	309	Pn	Pn	14 56 37.9	+0.6
RAO				Sn	Sn	14 57 01.1	0.0
	161nm,0.3s,baz=11,slow=23,SNR=4.1						
URZ	Urewera 0.2nm,0.3s,baz=49,slow=20,SNR=4.3	9.54	213	Pn	Pn	14 58 23.3	+0.1
URZ				Sn	Sn	15 00 12.0	+0.9
	0.4nm,0.3s,baz=58,slow=21,SNR=3.0						
ASAR	Alice Springs 0.3nm,0.6s,baz=104,slow=7.1,SNR=4.6	44.58	266	P	P	15 04 18.7	-0.1
WRA	Warramunga Arr 0.7nm,0.7s,baz=110,slow=8.0,SNR=10	45.57	271	P	P	15 04 26.4	-0.3
FINES	FINESS Array B 1.3nm,0.8s,baz=58,slow=3.6,SNR=3.9	145.65	341	PKPbc	PKPdf	15 15 43.6	-0.7

BJI ***26*** *15:00:20.9,22.16N×121.64E,h7km,ML4.2/4,Ms3.9/2, Ms7 3.7/2*
ISCJB ***26*** *15:00:23.7±0.3,22.05N±0.02×121.63E±0.03, h122km±2km,mb3.9/11,Error ellipse: s-maj=4.6km s-min=3.5km az=40.8*
JMA ***26*** *15:00:23.6±0.2,21.97N×121.67E,h102km±4km,M3.7*
TAP ***26*** *15:00:24.3,22.06N×121.64E,h115km,ML4.7,C*
IDC ***26*** *15:00:28.6±5.2,21.87N×121.72E,h169km±51km, mb3.5/12,mb1 3.6/12,mb1mx3.3/48,mbtmp3.9/12,Error ellipse: s-maj=22.5km s-min=10.9km az=62.0*

ISC 26 15:00:24.1±0.7,22.01N±0.03×121.63E±0.04,h122km±5km, n93,σ1s05/146,mb4.0/11,35C-2D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LAY	Lan-yu baz=239	0.08	288	⇑*i* P	Pn	15 00 40.2	-0.7
LAY				S	Sn	15 00 51.8	-1.6
TSEB	Hengchuen, Pin baz=258	0.69	261	*i* P	Pn	15 00 44.5	+0.9
TSEB				*i* S	Sn	15 00 58.9	+0.6
TAW	Tawu baz=296	0.76	297	*e*P	Pn	15 00 43.5	-0.7
TAW				S	Sn	15 00 58.1	-1.3
TWK1	Hengchun baz=259	0.77	265	⇑*i* P	Pn	15 00 44.7	+0.4
TWK1				*i* S	Sn	15 00 59.1	-0.3
EAST	Anshuo baz=294	0.81	297	⇑*i* P	Pn	15 00 44.3	-0.4
EAST				*i* S	Sn	15 00 59.2	-1.0
HEN	Hengchun baz=274	0.83	270	⇑*i* P	Pn	15 00 45.2	+0.5
HEN				*i* S	Sn	15 01 00.0	-0.3
ECL	Taimali baz=316	0.85	313	⇑*i* P	Pn	15 00 44.1	-0.8
ECL				S	Sn	15 00 59.1	-1.6
TTN	Taitung baz=319	0.86	329	⇑*i* P	Pn	15 00 45.5	+0.4
TTN				*e*S	Sn	15 01 01.8	+0.9
TWG	Pinlang baz=319	0.95	327	⇑*i* P	Pn	15 00 45.4	-0.6
TWG				*e*S	Sn	15 01 00.5	-2.0
SCZT	Fangliau baz=287	1.00	291	⇑*i* P	Pn	15 00 46.3	0.0
SCZT				S	Sn	15 01 02.0	-1.1
CHKT	Chengkung baz=350	1.11	347	⇑*i* P	Pn	15 00 47.1	-0.3
CHKT				*i* S	Sn	15 01 03.9	-1.2
TWP	Hsiaoliuchiu baz=282	1.22	286	⇑*i* P	Pn	15 00 50.1	+1.5
TWP				*e*S	Sn	15 01 09.9	+2.7
SGLT	Jiouru baz=301	1.27	304	⇑P	Pn	15 00 50.1	+1.0
ELDTW	Lidau baz=333	1.30	334	⇑*i* P	Pn	15 00 49.1	-0.5
ELDTW				*e*S	Sn	15 01 08.6	-0.3
KAU	Kaohsiung baz=291	1.34	294	⇑*i* P	Pn	15 00 50.8	+0.9
KAU				*i* S	Sn	15 01 10.8	+1.3
TWF1	Yuli baz=339	1.37	347	P	Pn	15 00 49.7	-0.5
TWF1				*e*S	Sn	15 01 10.8	+0.7
TWM1	Shoushan baz=303	1.38	306	⇑*i* P	Pn	15 00 51.3	+1.0
STYT	Tauyuan baz=315	1.40	325	⇑*i* P	Pn	15 00 50.7	+0.1
STYT				S	Sn	15 01 09.8	-1.0
SGST	Jiashian baz=307	1.44	318	⇑*i* P	Pn	15 00 51.3	+0.3
SGST				*e*S	Sn	15 01 10.6	-0.9
EHY	Hungye baz=342	1.51	349	⇑*i* P	Pn	15 00 51.2	-0.7
EHY				S	Sn	15 01 11.2	-1.8
WTP	Ta-pu baz=313	1.54	323	⇑*i* P	Pn	15 00 52.4	+0.1
WTP				*e*S	Sn	15 01 12.4	-1.4
CHN1	Nanshi baz=309	1.55	319	⇑*i* P	Pn	15 00 52.4	+0.1
CHN1				*i* S	Sn	15 01 12.2	-1.6
YUS	Yu-Shan baz=327	1.60	337	⇑*i* P	Pn	15 00 54.0	+0.7
YUS				S	Sn	15 01 15.1	-0.4
TWK	Hsinying baz=310	1.63	320	⇑*i* P	Pn	15 00 53.1	-0.2
TWK				*i* S	Sn	15 01 14.3	-1.3
CHN4	Tsaushan baz=315	1.64	324	⇑*i* P	Pn	15 00 53.4	+0.1
CHN4				S	Sn	15 01 14.1	-1.6
TAI1	Yung-k'ang baz=306	1.65	308	⇑*i* P	Pn	15 00 53.8	+0.4
TAI1				*e*S	Sn	15 01 14.6	-1.1
ALS	Alishan baz=322	1.67	333	⇑*i* P	Pn	15 00 54.2	+0.2
ALS				*e*S	Sn	15 01 16.4	-0.5
SCLT	Jiali baz=309	1.76	311	⇑*i* P	Pn	15 00 54.9	+0.2
SCLT				*i* S	Sn	15 01 17.7	-0.4
ESL	Shilin baz=350	1.80	354	*e*P	Pn	15 00 54.6	-0.7
ESL				*e*S	Sn	15 01 17.1	-1.9
CHN5	Tsauling baz=322	1.80	331	⇑*i* P	Pn	15 00 55.1	-0.3
CHN5				S	Sn	15 01 18.5	-0.8
CHN2	Minshiung	1.85	325	⇑*i* P	Pn	15 00 55.7	-0.1

	baz=324							
CHN2				*e*S	**Sn**	**15 01 18.9**	**-1.2**
	baz=324							
CHY	**Chiayi**	**1.85**	**323**	⇑*i*P	**Pn**	**15 00 55.7**	**-0.2**
	baz=331							
CHY				S	**Sn**	**15 01 18.5**	**-1.6**
	baz=331							
CHN8	**Yiju**	**1.86**	**316**	⇑*i*P	**Pn**	**15 00 55.9**	**-0.1**
	baz=313							
CHN8				S	**Sn**	**15 01 19.1**	**-1.3**
	baz=313							
WGK	**Gukeng**	**1.93**	**330**	P	**Pn**	**15 00 56.6**	**-0.3**
	baz=329							
WGK				*e*S	**Sn**	**15 01 20.7**	**-1.2**
	baz=329							
SMLT	**Sun Moon Lake**	**1.98**	**340**	*e*P	**Pn**	**15 00 57.3**	**-0.3**
	baz=331							
SMLT				*e*S	**Sn**	**15 01 23.2**	**+0.1**
	baz=331							
TYC	**Yuchr**	**2.01**	**339**	*e*P	**Pn**	**15 00 57.4**	**-0.4**
	baz=331							
TYC				*e*S	**Sn**	**15 01 22.8**	**-0.8**
	baz=331							
WNT	**Mingjian**	**2.05**	**335**	⇑*i*P	**Pn**	**15 00 58.4**	**+0.1**
	baz=335							
WNT				S	**Sn**	**15 01 24.0**	**-0.5**
	baz=335							
TWD	**Chiawan**	**2.06**	**359**	P	**Pn**	**15 00 57.9**	**-0.5**
	baz=8.0							
TWD				*e*S	**Sn**	**15 01 22.8**	**-1.9**
	baz=8.0							
WSF	**Szhu**	**2.07**	**321**	⇑*i*P	**Pn**	**15 00 58.1**	**-0.5**
	baz=311							
WSF				S	**Sn**	**15 01 23.3**	**-1.7**
	baz=311							
WHF	**Hehuan Shan**	**2.15**	**351**	⇑P	**Pn**	**15 01 00.1**	**+0.2**
	baz=358							
WHF				*e*S	**Sn**	**15 01 27.1**	**-0.3**
	baz=358							
WDGT	**Dungji**	**2.20**	**305**	⇑*i*P	**Pn**	**15 00 59.5**	**-0.7**
	baz=302							
WDGT				S	**Sn**	**15 01 24.8**	**-3.1**
	baz=302							
WTCT	**Ta-ch'eng**	**2.22**	**326**	P	**Pn**	**15 00 59.9**	**-0.6**
	baz=332							
WTCT				*e*S	**Sn**	**15 01 27.3**	**-1.1**
	baz=332							
TWT	**Tachien**	**2.27**	**349**	*e*P	**Pn**	**15 01 01.9**	**+0.6**
	baz=345							
TWT				*e*S	**Sn**	**15 01 29.4**	**-0.2**
	baz=345							
TCU	**Taichung**	**2.30**	**338**	*e*P	**Pn**	**15 01 01.4**	**-0.1**
	baz=330							
TCU				*e*S	**Sn**	**15 01 29.8**	**-0.3**
	baz=330							
ENA	**Nanau**	**2.41**	**2**	*e*P	**Pn**	**15 01 03.3**	**+0.5**
	baz=10.0							
ENA				*e*S	**Sn**	**15 01 30.4**	**-2.1**
	baz=10.0							
NNS	**Nan Shan**	**2.43**	**354**	⇑P	**Pn**	**15 01 03.6**	**+0.4**
	baz=359							
NNS				*e*S	**Sn**	**15 01 32.5**	**-0.7**
	baz=359							
TWQ1	**Liyutan**	**2.45**	**341**	*e*P	**Pn**	**15 01 03.0**	**-0.4**
	baz=342							
TWQ1				*e*S	**Sn**	**15 01 33.5**	**-0.1**
	baz=342							
PNG	**Penghu**	**2.46**	**309**	*i* P	**Pn**	**15 01 02.9**	**-0.6**
	baz=301							
PNG				*i* S	**Sn**	**15 01 31.0**	**-2.7**
	baz=301							
NSY	**Sanyi**	**2.52**	**342**	*e*P	**Pn**	**15 01 03.4**	**-0.9**
	baz=343							
TWC	**Suao**	**2.59**	**4**	*e*P	**Pn**	**15 01 05.5**	**+0.3**
	baz=13							
TWC				*e*S	**Sn**	**15 01 36.6**	**-0.1**
	baz=13							
ENTT	**Nioudou**	**2.61**	**359**	*e*P	**Pn**	**15 01 05.2**	**-0.3**
ENTT				*e*S	**Sn**	**15 01 37.2**	**-0.1**
NSK	**Sanguang**	**2.66**	**355**	⇑*i*P	**Pn**	**15 01 07.0**	**+0.8**
	baz=357							
NSK				S	**Sn**	**15 01 38.5**	**0.0**
	baz=357							
NSTT	**Nanjuang**	**2.67**	**348**	*e*P	**Pn**	**15 01 07.1**	**+0.9**
	baz=338							
TWE	**Neicheng**	**2.69**	**1**	*e*P	**Pn**	**15 01 06.9**	**+0.4**
	baz=357							
TWE				*e*S	**Sn**	**15 01 39.6**	**+0.5**
	baz=357							
JYNG	**Yonagunijimaku**	**2.71**	**26**	P	**Pn**	**15 01 07.1**	**+0.4**
JYNG				*e*S	**Sn**	**15 01 40.3**	**+0.8**
YOJ	**Yonaguni jima**	**2.75**	**27**	P	**Pn**	**15 01 07.9**	**+0.7**
YOJ				S	**Sn**	**15 01 39.8**	**-0.5**
YOJ	**Yonaguni jima**	**2.75**	**27**	P	**Pn**	**15 01 07.3**	**+0.2**
	baz=34							
YOJ				*e*S	**Sn**	**15 01 40.4**	**+0.1**
	baz=34							
EGS		**2.83**	**6**	*e*P	**Pn**	**15 01 08.8**	**+0.6**
	baz=13							
HATJ	**Hateruma jima**	**2.85**	**44**	P	**Pn**	**15 01 08.4**	**-0.1**
HATJ				S	**Sn**	**15 01 43.1**	**+0.3**
TWA	**Mucha**	**2.95**	**359**	*e*P	**Pn**	**15 01 10.6**	**+0.7**
	baz=351							
IRIF	**Iriomote-Funau**	**3.01**	**39**	P	**Pn**	**15 01 10.6**	**0.0**
NWF	**Wu-fen Shan**	**3.05**	**3**	*e*P	**Pn**	**15 01 11.4**	**+0.3**
	baz=353							
NWF				*e*S	**Sn**	**15 01 48.2**	**+0.8**
	baz=353							
JKRS	**Kuro-shima**	**3.11**	**44**	P	**Pn**	**15 01 12.0**	**+0.1**
TWY	**Chenhua**	**3.25**	**359**	*e*P	**Pn**	**15 01 12.0**	**-1.7**
	baz=352							
JIJ	**Ishigaki jima**	**3.29**	**44**	P	**Pn**	**15 01 13.6**	**-0.6**
JIJ				*e*S	**Sn**	**15 01 51.8**	**-1.2**
JISG	**Ishigakijimahi**	**3.55**	**43**	P	**Pn**	**15 01 16.9**	**-0.8**
JISG				*e*S	**Sn**	**15 01 59.3**	**0.0**
KNM	**Kinmen**	**3.79**	**310**	*e*P	**Pn**	**15 01 20.7**	**-0.2**
	baz=306							
PIP	**Pasuquin**	**3.79**	**195**	⇓*i*P	**Pn**	**15 01 20.7**	**-0.3**
PIP				*e*S	**Sn**	**15 02 02.7**	**-2.3**
JTJ	**Tarama**	**3.85**	**47**	P	**Pn**	**15 01 21.3**	**-0.3**
QZH	**Quanzhou**	**4.04**	**317**	⇓*i*Pn	**Pn**	**15 01 23.0**	**-1.2**
QZH				Sn	**Sn**	**15 02 07.5**	**-3.2**
QZH				smax	smax		
	comp=N,730nm,0.3s							
QZH				smax	smax			
	comp=E,570nm,0.3s							
JIRB	**Irabujima**	**4.29**	**49**	P	**Pn**	**15 01 27.3**	**-0.3**
JMJ	**Miyako jima 2**	**4.37**	**50**	P	**Pn**	**15 01 28.2**	**-0.4**
JIKM	**Ikemajima**	**4.41**	**48**	P	**Pn**	**15 01 28.6**	**-0.5**
MJAR	**Matsushiro Arr**	**20.42**	**41**	P	Pn	15 04 54.0	-0.8
	1.1nm,0.8s,baz=231,slow=8.0,SNR=4.8							
GTOI	**Gorontalo**	**21.29**	**176**	P	**P**	**15 05 02.3**	**+1.2**
MRSI	**Marisa**	**21.41**	**179**	P	**P**	**15 05 05.6**	**+3.3**
CMAR	**Chiang Mai Arr**	**21.57**	**265**	P	**P**	**15 05 05.8**	**+1.6**
	1.7nm,0.7s,baz=63,slow=8.3,SNR=14							
MKAR	**Makanchi Array**	**40.19**	**318**	P	**P**	**15 07 49.7**	**+1.3**
	1.2nm,0.4s,baz=109,slow=9.6,SNR=20							
H11N1	**WAKE ISLAND Hy**	**42.24**	**85**	T	T	15 54 21.0		
	baz=278							
H11N2	**WAKE ISLAND Hy**	**42.24**	**85**	T	T	15 53 54.3		
	baz=278,slow=74							
H11N3	**WAKE ISLAND Hy**	**42.26**	**85**	T	T	15 54 04.0		
	baz=278,slow=74							
ZALV	**Zalesovo Beam**	**42.29**	**328**	P	**P**	**15 08 05.8**	**+0.3**
	1.7nm,0.4s,baz=112,slow=8.1,SNR=8.9							
H11S3	**WAKE ISLAND Hy**	**42.30**	**86**	T	T	15 53 44.2		
	baz=283,slow=74,SNR=9.9							
H11S1	**WAKE ISLAND Hy**	**42.31**	**86**	T	T	15 53 39.5		
	baz=283,slow=74,SNR=7.0							
H11S2	**WAKE ISLAND Hy**	**42.32**	**86**	T	T	15 53 41.1		
	baz=283,slow=74,SNR=6.6							
WRA	**Warramunga Arr**	**43.51**	**163**	P	**P**	**15 08 13.2**	**-2.4**
	2.3nm,0.6s,baz=344,slow=9.1,SNR=48							
WRA				PcP	**PP**	**15 09 59.6**	**+0.2**
	0.3nm,0.6s,baz=350,slow=4.1,SNR=3.0							
KURBB	**Kurchatov Arra**	**44.04**	**321**	P	**P**	**15 08 20.2**	**+0.7**
	1.0nm,0.5s,baz=115,slow=7.8,SNR=13							
ASAR	**Alice Springs**	**46.95**	**165**	P	**P**	**15 08 41.2**	**-1.5**
	1.0nm,0.3s,baz=342,slow=6.6,SNR=39							
BVAR	**Borovoye Array**	**49.62**	**322**	P	**P**	**15 09 03.3**	**+0.4**
	0.5nm,0.4s,baz=129,slow=12,SNR=3.6							
GEYT	**Alibeck**	**56.26**	**302**	P	**P**	**15 09 53.4**	**+1.4**
	2.0nm,0.8s,baz=57,slow=5.5,SNR=5.3							
STKA	**Stephens Creek**	**56.90**	**160**	P	**P**	**15 09 55.0**	**-1.3**
	1.3nm,0.5s,baz=341,slow=7.9,SNR=13							
FINES	**FINESS Array B**	**73.52**	**330**	P	**P**	**15 11 43.8**	**+0.6**
	0.5nm,0.4s,baz=38,slow=7.2,SNR=6.8							

YKA	**Yellowknife Ar**	**84.80**	**23**	P	**P**	**15 12 43.7**	**-0.9**
	0.4nm,0.7s,baz=306,slow=5.5,SNR=3.9							

*ISCJB **26** 15:02:53.6±0.8, 52°.39N±0°.08×62°.65E±0°.10, h0km, mb3.1/1, Error ellipse: s-maj=12.8km s-min=7.5km az=158.4*
*NNC **26** 15:02:57.5±0.9, 52°.39N×62°.88E, h0km, mb3.0, mpv2.7, Error ellipse: s-maj=19.9km s-min=3.6km az=153.0, Suspected Mining explosion.*
*IDC **26** 15:02:58.5±1.3, 52°.45N×62°.87E, h0km, mb3.0/1, mb1 3.1/2, mb1mx2.9/36, mbtmp3.0/2, ML2.6/1, Error ellipse: s-maj=34.9km s-min=11.3km az=160.0*
ISC 26 15:02:58.1±1.0, **52°.50N**±0°.10×**62°.84E**±0°.07, **h0**km, **n9**, σ0**°88/8, 2C-4D, Western Kazakhstan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKTO	**Aktyubinsk**	**3.66**	**238**	Pg	**Pb**	**15 04 04.6**	**+1.1**
	0.2nm,0.3s,baz=50,slow=14,SNR=4.3						
AKTO				Lg	Lg	15 04 53.2	
	0.3nm,0.3s,baz=341,slow=23,SNR=9.3						
AKTO	**Aktyubinsk**	**3.66**	**238**	⇓Pg	**Pb**	**15 04 03.1**	**-0.4**
	2.3nm,1.0s						
AKTO				⇑Lg	Lg	15 04 52.9	
	4.8nm,0.8s						
I31KZ	**AKTYUBINSK INF**	**3.66**	**237**	*i*		15 24 10.0	
	baz=50,slow=306,SNR=6.0						
AB31	**Akbulak array**	**3.73**	**211**	⇓Pg	**Pb**	**15 04 04.1**	**-0.7**
	0.5nm,0.4s,baz=25,slow=15,SNR=10						
AB31				⇑Lg	Lg	15 04 52.9	
	4.9nm,0.7s,baz=35,slow=27,SNR=9.5						
BVA0	**Borovoye Array**	**4.62**	**80**	Pn	**Pn**	**15 04 08.9**	**-0.2**
	1.4nm,0.8s,baz=278,slow=11,SNR=13						
BVA0				⇓Sn	**Sn**	**15 05 03.2**	**-0.1**
	0.8nm,0.4s						
BVA0				⇓Lg	Lg	15 05 25.2	
	4.5nm,0.9s,baz=267,slow=27,SNR=7.6						
BVAR	**Borovoye Array**	**4.62**	**80**	Pn	**Pn**	**15 04 09.8**	**+0.7**
	0.3nm,0.3s,baz=269,slow=13,SNR=7.1						
BVAR				Lg	Lg	15 05 23.9	
	0.5nm,0.3s,baz=259,slow=27,SNR=10.0						
ARU	**Arti**	**4.66**	**329**	Pg	**Pg**	**15 04 26.6**	**-0.8**
	0.0nm,0.3s,baz=270,slow=15,SNR=5.0						
ARU				Lg	Lg	15 05 21.7	
	0.0nm,0.3s,baz=278,slow=21,SNR=19						
I43RU	**DUBNA INFRASON**	**5.39**	**296**	*i*		16 33 00.0	
	baz=99,slow=319,SNR=1.1						
FINES	**FINESS Array B**	**21.67**	**309**	P	**P**	**15 07 50.8**	**+0.9**
	0.3nm,0.3s,baz=108,slow=13,SNR=4.9						

MEX 26 15:28:07.5±0.9, **14°.40N×92°.68W, h140**km, **MD3.8, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.94**	**16**	*e*P	Pn	15 28 40.8	-0.8
CCIG				*e*S	Sn	15 29 06.2	-1.4

*IDC **26** 15:29:55.3±8.3, 39°.82N×142°.54E, h0km, mb3.3/2, mb1 3.6/3, mb1mx3.2/27, mbtmp3.3/3, ML3.3/1, Error ellipse: s-maj=206.4km s-min=48.9km az=156.0*
*ISCJB **26** 15:30:03.5±1.3, 38°.99N±0°.04×142°.46E±0°.09, h22km±8km, mb3.5/2, Error ellipse: s-maj=11.4km s-min=6.5km az=6.2*
*JMA **26** 15:30:05.2±0.1, 39°.05N×142°.38E, h31km±1km, M3.6*
JMA Felt I J1
ISC 26 15:30:04.2±2.1, **39°.01N**±0°.05×**142°.40E**±0°.09, **h24**km±14km, **n20**, σ1°**30/23, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.57**	**277**	P	**Pb**	**15 33 16.5**	**+0.9**
OFUJ				S	**Sn**	**15 30 24.2**	**-1.4**
MIYJ	**Miyakonagasawa**	**0.72**	**321**	P	**Pb**	**15 30 18.1**	**0.0**
MIYJ				S	**Sn**	**15 30 27.3**	**-2.0**
JMK	**Ichinoseki**	**0.92**	**266**	P	**Pb**	**15 30 21.8**	**+0.3**
JMK				S	**Sn**	**15 30 33.5**	**-0.7**
JOM	**Ohasama**	**0.97**	**298**	P	**Pb**	**15 30 22.6**	**+0.1**
JOM				S	**Sb**	**15 30 35.2**	**+0.3**
JIO	**Ouri**	**0.99**	**236**	P	**Pb**	**15 30 22.3**	**-0.5**
JIO				S	**Sn**	**15 30 34.5**	**-1.5**
JTH	**Tanohata**	**1.01**	**336**	P	**Pb**	**15 30 23.0**	**-0.1**
JKZ	**Kuzumaki**	**1.27**	**320**	P	**Pb**	**15 30 27.2**	**-0.4**
JKZ				S	**Sb**	**15 30 42.9**	**-0.7**
JRG	**Rokugo**	**1.42**	**286**	P	**Pb**	**15 30 30.1**	**0.0**
JRG				S	**Sb**	**15 30 48.1**	**+0.3**
JOU	**Okura**	**1.50**	**245**	P	**Pb**	**15 30 30.7**	**-0.8**
JANG	**Nango**	**1.52**	**334**	P	**Pb**	**15 30 30.3**	**-1.4**
JANG				S	**Sb**	**15 30 50.5**	**-0.1**
MJAR	**Matsushiro Arr**	**4.14**	**235**	Pn	**Pn**	**15 31 08.7**	**+2.7**
	1.5nm,0.3s,baz=39,slow=12,SNR=8.5						
MJAR				Sn	**Sb**	**15 32 02.6**	**-3.3**
	baz=70,slow=21,SNR=2.8						
MAT	**Matsushiro**	**4.14**	**235**	P	Pb	15 31 10.4	-6.0
MAT				*e*S	**Sn**	**15 31 53.3**	**-0.3**
H11N2	**WAKE ISLAND Hy**	**28.57**	**125**	T	T	16 06 23.3	
	baz=317,slow=75,SNR=45						
H11N1	**WAKE ISLAND Hy**	**28.58**	**125**	T	T	16 06 32.9	
	baz=317,slow=75,SNR=45						
H11N3	**WAKE ISLAND Hy**	**28.59**	**125**	T	T	16 06 23.0	
	baz=317,slow=75,SNR=36						
H11S1	**WAKE ISLAND Hy**	**29.36**	**127**	T	T	16 07 22.9	
	baz=319,slow=76,SNR=9.6						
H11S3	**WAKE ISLAND Hy**	**29.36**	**127**	T	T	16 07 23.2	
	baz=319,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**29.37**	**127**	T	T	16 07 28.7	
	baz=319,slow=76,SNR=7.9						
WRA	**Warramunga Arr**	**59.13**	**189**	P	**P**	**15 40 02.6**	**-0.3**
	0.4nm,0.7s,baz=6.3,slow=6.8,SNR=2.8						
ASAR	**Alice Springs**	**62.86**	**189**	P	**P**	**15 40 28.7**	**+0.5**
	0.2nm,0.8s,baz=9.2,slow=7.5,SNR=3.1						

*ISK **26** 15:37:44.9, 37°.71N×35°.85E, h5km, MD2.9*
*DDA **26** 15:37:45.4, 37°.83N×35°.87E, h7km, Md3.0*
*CSEM **26** 15:37:46.0±0.2, 37°.76N×35°.85E, h2km, MD2.9, Error ellipse: s-maj=5.6km s-min=4.3km az=22.0*
ISC 26 15:37:45.9±1.1, **37°.76N**±0°.02×**35°.88E**±0°.02, **h8**km±9km, **n39**, σ1°**32/58, Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOZT	**Kozan**	**0.28**	**188**	*e*PG	**Pg**	**15 37 50.4**	**-1.1**
KOZT	**Kozan**	**0.28**	**188**	*e*Pg	**Pg**	**15 37 50.4**	**-1.1**
ANDN	**Andirin**	**0.41**	**115**	*i* P	**Pg**	**15 37 53.2**	**-0.7**
ANDN				*i* S	**Sg**	**15 38 00.1**	**+0.7**
ANDN	**Andirin**	**0.41**	**115**	P	**Pg**	**15 37 53.2**	**-0.7**
ANDN				S	**Sg**	**15 38 00.1**	**+0.7**
AKO	**Adana**	**0.45**	**229**	*i* P	**Pg**	**15 37 53.5**	**-1.2**
AKO				*i* S	**Sb**	**15 38 01.2**	**-1.8**
YAHY	**KAYSERI_Yahyal**	**0.53**	**310**	*i* P	**Pg**	**15 37 55.1**	**-1.1**
YAHY				*i* S	**Sb**	**15 38 04.3**	**-1.0**
YAHY	**KAYSERI_Yahyal**	**0.53**	**310**	P	**Pg**	**15 37 55.1**	**-1.1**
YAHY				S	**Sb**	**15 38 04.3**	**-1.0**
CEYT	**Ceyhan**	**0.75**	**188**	*e*PG	**Pb**	**15 38 00.4**	**-0.9**
CEYT	**Ceyhan**	**0.75**	**188**	*e*Pg	**Pb**	**15 38 00.4**	**-0.9**
SARI	**SarD1z-Kayseri**	**0.78**	**33**	*e*PG	**Pn**	**15 38 02.1**	**-1.3**
KARA	**Karaisali**	**0.82**	**233**	*e*PG	**Pg**	**15 38 00.9**	**-0.8**
KARA	**Karaisali**	**0.82**	**233**	*e*Pg	**Pg**	**15 38 00.9**	**-0.8**
KMRS	**Kahramanmaras**	**0.85**	**107**	*e*PG	**Pg**	**15 38 02.1**	**-0.2**
KMRS				*e*SG	**Sn**	**15 38 15.3**	**-1.6**
KMRS	**Kahramanmaras**	**0.85**	**107**	*e*Pg	**Pg**	**15 38 02.1**	**-0.2**
KMRS				*e*Sg	**Sn**	**15 38 15.3**	**-1.6**
HCB	**Kahramanmara¯**	**0.92**	**116**	*i* P	**Pg**	**15 38 02.6**	**-0.9**
HCB				*i* S	**Sn**	**15 38 18.3**	**-0.2**
YURE	**YUREGIR**	**0.95**	**192**	*i* P	**Pn**	**15 38 05.6**	**0.0**
YURE	**YUREGIR**	**0.95**	**192**	P	**Pn**	**15 38 05.6**	**0.0**
NIG	**Nigde**	**1.06**	**290**	*e*PG	**Pn**	**15 38 06.3**	**-1.1**
NIG	**Nigde**	**1.06**	**290**	*e*Pg	**Pn**	**15 38 06.3**	**-1.1**
BNN	**Bunyan**	**1.09**	**359**	*e*PN	**Pn**	**15 38 07.2**	**-0.5**
BNN				*e*SN	**Sn**	**15 38 25.2**	**+2.2**
BNN	**Bunyan**	**1.09**	**359**	*e*Pn	**Pn**	**15 38 07.2**	**-0.5**
BNN				*e*Sn	**Sn**	**15 38 25.2**	**+2.2**
DED	**Mersin**	**1.17**	**228**	*i* P	**Pn**	**15 38 07.9**	**-0.7**
DED				*i* S	**Sn**	**15 38 25.2**	**+0.5**
GAZ	**Gaziantep**	**1.21**	**118**	*e*PN	**Pg**	**15 38 09.9**	**+0.8**
GAZ				*e*SN	**Sn**	**15 38 27.3**	**+1.4**
GAZ	**Gaziantep**	**1.21**	**118**	*e*Pn	**Pg**	**15 38 09.9**	**+0.8**
GAZ				*e*Sn	**Sn**	**15 38 27.3**	**+1.4**
KUZU	**Kuzuini**	**1.37**	**135**	*i* P	**Pb**	**15 38 11.5**	**-0.3**
KUZU				*i* S	**Sg**	**15 38 32.4**	**+2.4**
KUZU	**Kuzuini**	**1.37**	**135**	P	**Pb**	**15 38 11.5**	**-0.3**
KUZU				S	**Sg**	**15 38 32.4**	**+2.4**
GZT	**Gaziantep**	**1.40**	**106**	*i* P	**Pn**	**15 38 11.4**	**-0.4**
MERS	**Mersin**	**1.40**	**231**	*e*PN	**Pb**	**15 38 11.8**	**-0.5**
MERS				*e*SN	**Sg**	**15 38 31.8**	**+0.9**
MERS	**Mersin**	**1.40**	**231**	*e*Pn	**Pb**	**15 38 11.8**	**-0.5**
MERS				*e*Sn	**Sg**	**15 38 31.8**	**+0.9**
KERG	**Konya-Eregli**	**1.43**	**257**	*i* P	**Pg**	**15 38 13.7**	**+0.2**
KERG				*i* S	**Sg**	**15 38 36.1**	**+4.1**
KERG	**Konya-Eregli**	**1.43**	**257**	P	**Pg**	**15 38 13.6**	**+0.2**
KERG				S	**Sg**	**15 38 36.1**	**+4.1**
DARE	**Darende-Malaty**	**1.50**	**57**	*e*PN	**Pg**	**15 38 14.5**	**-0.3**
DARE	**Darende-Malaty**	**1.50**	**57**	*e*Pn	**Pg**	**15 38 14.5**	**-0.3**
CUALT	**Altinyayla-SIV**	**1.66**	**24**	*i* P	**Pg**	**15 38 17.8**	**0.0**
CUALT	**Altinyayla-SIV**	**1.66**	**24**	P	**Pg**	**15 38 17.8**	**0.0**
YESY	**Yesilyurt**	**1.69**	**271**	*e*PN	**Pb**	**15 38 16.1**	**-1.2**
YESY	**Yesilyurt**	**1.69**	**271**	*e*Pn	**Pb**	**15 38 16.1**	**-1.2**
IKL	**Isikli**	**2.32**	**230**	*e*PN	**Pn**	**15 38 25.1**	**+0.8**
IKL	**Isikli**	**2.32**	**230**	*e*Pn	**Pn**	**15 38 25.2**	**+0.8**

*IDC **26** 15:45:48.3±6.2, 35°.61N×140°.86E, h0km, mb3.2/2, mb1 3.4/3, mb1mx3.2/33, mbtmp3.1/3, ML3.0/1, Error ellipse: s-maj=155.3km s-min=26.2km az=44.0*
*ISCJB **26** 15:45:49.6±1.1, 35°.76N±0°.06×140°.99E±0°.10, h26km±4km, mb3.4/2, Error ellipse: s-maj=14.1km s-min=8.4km az=154.0*
*JMA **26** 15:45:50.5±0.2, 35°.83N×141°.00E, h14km±1km, M3.5*
ISC 26 15:45:50.4±1.4, **35°.82N**±0°.06×**140°.96E**±0°.10, **h17**km±6km, **n15**, σ0°**89/15, 1C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.15**	**215**	⇑P	**Pg**	**15 45 54.4**	**-0.1**
CHOJ				*e*S	**Sg**	**15 45 57.3**	**+0.2**
JCN	**Nagara**	**0.74**	**237**	⇓P	**Pn**	**15 46 06.4**	**+0.3**
JCN				S	**Sn**	**15 46 17.7**	**+0.7**
JYT	**Yasato**	**0.74**	**303**	P	**Pb**	**15 46 04.6**	**-0.3**
JYT				S	**Sb**	**15 46 14.8**	**0.0**
JHO	**Hitachi**	**0.85**	**338**	P	**Pb**	**15 46 06.2**	**-0.6**
JHO				S	**Sg**	**15 46 18.5**	**+0.3**
MJAR	**Matsushiro Arr**	**2.34**	**289**	Pn	**Pn**	**15 46 28.2**	**0.0**
	3.8nm,0.3s,baz=108,slow=8.8,SNR=30						
MJAR				Sn	**Sn**	**15 46 56.1**	**-0.5**
	2.9nm,0.3s,baz=128,slow=14,SNR=8.0						
MAT	**Matsushiro**	**2.34**	**289**	P	**Pn**	**15 46 28.7**	**+0.5**
MAT				*e*S	**Sn**	**15 46 55.6**	**-1.0**
H11N2	**WAKE ISLAND Hy**	**27.87**	**118**	T	T	16 20 41.3	
	baz=311,slow=75,SNR=39						
H11N1	**WAKE ISLAND Hy**	**27.88**	**118**	T	T	16 20 39.8	
	baz=311,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**27.89**	**118**	T	T	16 20 43.0	
	baz=311,slow=75,SNR=29						
H11S3	**WAKE ISLAND Hy**	**28.54**	**120**	T	T	16 21 26.0	
	baz=312,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**28.54**	**120**	T	T	16 21 33.0	
	baz=312,slow=75,SNR=22						
H11S2	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	16 21 27.2	
	baz=312,slow=75,SNR=22						
WRA	**Warramunga Arr**	**55.81**	**188**	P	**P**	**15 55 25.5**	**-1.3**
	0.5nm,1.1s,baz=6.2,slow=7.6,SNR=2.9						
ASAR	**Alice Springs**	**59.54**	**188**	P	**P**	**15 55 52.0**	**-1.0**
	0.2nm,0.7s,baz=21,slow=8.1,SNR=3.0						
KHC	**Kasperske Hory**	**83.38**	**328**	*e*P	**P**	**15 58 18.5**	**+1.8**
KHC				*ex*	x	15 58 22.5	

MEX 26 15:51:57.4±0.5, **15°.20N×92°.80W, h99**km±24km, **MD3.9, Mexico-Guatemala border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.25**	**30**	*e*P	Pn	15 52 20.4	-0.5
CCIG				*e*S	Sn	15 52 36.4	-2.0

*ISCJB **26** 15:57:40.5±0.3, 61°.50N±0°.03×152°.19W±0°.05, h132km±4km, mb3.6/1, Error ellipse: s-maj=4.8km s-min=3.5km az=135.5*
*NEIC **26** 15:57:42.6, 61°.49N×152°.18W, h121km, MG3.2(AEIC), After AEIC.*
*IDC **26** 15:57:45.6±7.8, 61°.81N×151°.86W, h136km±51km, mb3.3/1, mb1 3.4/4, mb1mx3.0/32, mbtmp3.6/4, Error ellipse: s-maj=68.7km s-min=55.0km az=50.0*
ISC 26 15:57:41.6±1.0, **61°.51N**±0°.04×**152°.20W**±0°.04, **h128**km±7km, **n88**, σ0°**78/98, Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STLK	**Strandline Lak**	**0.17**	**93**	P	**Pn**	**15 57 58.6**	**-0.6**
SPWE	**Spurr West**	**0.29**	**217**	P	**Pn**	**15 57 59.3**	**-0.3**
CKL	**Chakachamna La**	**0.32**	**192**	P	**Pn**	**15 57 59.2

ILAR	**Eielson Array**	**4.07**	**34**	P	**Pn**	**15 58 41.7**	**-0.3**
	5.3nm,0.3s,baz=213,slow=14,SNR=137						
ILAR				S	**Sn**	**15 59 25.4**	**-3.5**
	6.2nm,0.3s,baz=209,slow=20,SNR=10						
VRDI	**Verde Repeater**	**4.22**	**90**	P	**Pn**	**15 58 43.5**	**-0.8**
DOT	**Dot Lake**	**4.33**	**57**	*e*Pn	**Pn**	**15 58 45.7**	**+0.1**
OHAK	**Old Harbor**	**4.34**	**188**	P	**Pn**	**15 58 43.5**	**-2.1**
MCARA	**McCarthy VSAT**	**4.41**	**88**	P	**Pn**	**15 58 47.6**	**+1.0**
CRQM	**Cirque**	**4.46**	**96**	P	**Pn**	**15 58 47.5**	**+0.1**
KHIT	**Khitrov Hills**	**4.49**	**100**	P	**Pn**	**15 58 48.4**	**+0.6**
IM3	**Indian Mountai**	**4.54**	**352**	P	**Pn**	**15 58 48.6**	**+0.2**
TGL	**Tana Glacier**	**4.60**	**95**	P	**Pn**	**15 58 49.9**	**+0.5**
PTPK	**Patty Peak**	**4.70**	**90**	P	**Pn**	**15 58 50.6**	**-0.1**
BALM	**Baldy**	**4.78**	**91**	P	**Pn**	**15 58 51.4**	**-0.3**
KIAG	**Kiagna River**	**4.79**	**93**	P	**Pn**	**15 58 51.5**	**-0.4**
ISLE	**Juniper Island**	**4.88**	**96**	P	**Pn**	**15 58 53.1**	**+0.1**
BAGL	**Bagley Icefiel**	**5.03**	**97**	P	**Pn**	**15 58 53.6**	**-1.2**
BARN	**Barnard Glacie**	**5.10**	**90**	P	**Pn**	**15 58 56.9**	**+0.8**
BCA3	**Beaver Creek A**	**5.11**	**68**	P	**Pn**	**15 58 56.5**	**+0.5**
GRNC	**Granite Creek**	**5.12**	**94**	P	**Pn**	**15 58 56.5**	**+0.1**
MESA	**MESA**	**5.19**	**100**	P	**Pn**	**15 58 57.3**	**+0.1**
CTGM	**Chitina Glacie**	**5.28**	**91**	P	**Pn**	**15 58 59.0**	**+0.6**
LOGN	**Logan Glacier**	**5.46**	**92**	P	**Pn**	**15 59 01.3**	**+0.4**
COLD	**Coldfoot**	**5.81**	**8**	P	**Pn**	**15 59 05.4**	**+0.1**
EGAK	**Eagle**	**5.98**	**52**	*e*Pn	**Pn**	**15 59 07.3**	**-0.3**
	8.0nm,0.5s						
PCA	**Pinnacle**	**6.01**	**98**	P	**Pn**	**15 59 08.8**	**+0.6**
DAWY	**Dawson**	**6.41**	**61**	P	**Pn**	**15 59 14.1**	**+0.6**
BM3	**Burnt Mountain**	**6.78**	**26**	P	**Pn**	**15 59 17.9**	**-0.5**
INK	**Inuvik**	**10.42**	**41**	P	**Pn**	**16 00 07.8**	**+0.6**
	0.4nm,0.3s,baz=235,slow=19,SNR=5.3						
YKA	**Yellowknife Ar**	**17.52**	**70**	P	**P**	**16 01 38.1**	**+1.4**
	0.1nm,0.3s,baz=286,slow=11,SNR=5.4						
NOA	**NORSAR Array B**	**57.12**	**10**	P	**P**	**16 07 14.5**	**+0.4**
	0.7nm,0.7s,baz=352,slow=7.3,SNR=3.5						

NNC 26 16:03:44.1±2.6, 37.48N×69.74E, h0km, mb4.2, mpv3.9, 4C-3D, Error ellipse: s-maj=23.6km s-min=19.2km az=149.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAS	**Manas**	**5.43**	**22**	⇓P	Pn	16 05 05.8	-0.7
	10nm,0.4s						
KK31	**Karatay Array**	**5.65**	**6**	P	Pn	16 05 08.2	-1.2
	4.6nm,0.3s,baz=189,slow=13,SNR=64						
KK31				⇑S	Sn	16 06 16.7	+1.7
	6.5nm,0.5s,baz=176,slow=26,SNR=9.5						
AAK	**Ala-Archa**	**6.31**	**34**	⇓P	Pn	16 05 19.3	+0.7
	4.4nm,0.7s						
AAK				⇑S	Sn	16 06 32.7	+1.2
	5.8nm,0.7s						
TKM2	**Tokmak 2**	**7.04**	**38**	⇑P	Pn	16 05 30.1	+1.4
	8.0nm,0.9s						
TKM2				⇑S	Sn	16 06 50.0	+0.4
	5.5nm,0.6s						
AB31	**Akbulak array**	**13.75**	**332**	⇓P	Pn	16 07 00.7	+0.5
	1.0nm,0.3s,baz=142,slow=12,SNR=39						

*ISCJB **26** 16:36:51.7±0.5, 39.12N±0.03×40.29E±0.03, h4km±5km, Error ellipse: s-maj=4.8km s-min=3.5km az=36.6*
*CSEM **26** 16:36:51.8±0.2, 39.10N×40.31E, h5km, MD3.2, Error ellipse: s-maj=4.6km s-min=4.5km az=54.0*
*ISK **26** 16:36:51.3, 39.10N×40.32E, h8km, MD3.2*
*DDA **26** 16:36:51.7, 39.10N×40.25E, h25km, Ml3.5*

ISC 26 16:36:51.6±1.2, 39.09N±0.02×40.29E±0.02, h2km±10km, n52, σ1s12/74, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BINT	**Bingol**	**0.26**	**144**	*e*Pg	**Pg**	**16 36 57.6**	**+0.9**
BINT				*e*Sg	**Sb**	**16 37 02.5**	**-1.7**
BNGB	**Bing¯¶l**	**0.32**	**108**	*e*PG	**Pg**	**16 36 57.6**	**-0.1**
BNGB				*e*SG	**Sg**	**16 37 02.5**	**+0.7**
YEDI	**Yedisu-Bingol**	**0.40**	**29**	*e*PG	**Pg**	**16 36 59.0**	**-0.3**
YEDI	**Yedisu-Bingol**	**0.40**	**29**	*e*Pg	**Pg**	**16 36 59.0**	**-0.3**
BNGL	**BINGOL**	**0.68**	**101**	*i* P	**Pb**	**16 37 05.9**	**-0.5**
BNGL				*i* S	**Sb**	**16 37 17.0**	**+0.6**
PTK	**Pertek**	**0.73**	**255**	*e*PG	**Pg**	**16 37 05.6**	**0.0**
PTK	**Pertek**	**0.73**	**255**	*e*Pg	**Pg**	**16 37 05.6**	**0.0**
ECAT	**Cat-ERZURUM**	**0.74**	**46**	*i* P	**Pg**	**16 37 05.0**	**-0.8**
ECAT	**Cat-ERZURUM**	**0.74**	**46**	P	**Pg**	**16 37 05.0**	**-0.8**
EUZM	**Uzumlu**	**0.77**	**323**	*i* P	**Pg**	**16 37 06.5**	**+0.1**
EUZM	**Uzumlu**	**0.77**	**323**	P	**Pg**	**16 37 06.5**	**+0.1**
SVRC	**Sivrice-ELAZID**	**1.05**	**228**	*e*PG	**Pb**	**16 37 12.3**	**-0.2**
SVRC	**Sivrice-ELAZID**	**1.05**	**228**	*e*Pg	**Pb**	**16 37 12.4**	**-0.2**
DYBB	**Diyarbakir**	**1.14**	**186**	*e*PN	**Pg**	**16 37 31.2**	**+0.2**
DYBB				*e*SN	**Sn**	**16 37 31.2**	**+0.3**
EZM	**Erzurum**	**1.16**	**45**	*e*PN	**Pg**	**16 37 13.5**	**-0.4**
ERZM	**Erzurum**	**1.16**	**45**	*i* P	**Pg**	**16 37 13.6**	**-0.3**
ERZM	**Erzurum**	**1.16**	**45**	P	**Pg**	**16 37 13.6**	**-0.3**
DIYA	**Diyarbakir**	**1.17**	**187**	*i* P	**Pn**	**16 37 14.8**	**-0.3**
DIYA				*i* S	**Sn**	**16 37 31.3**	**-0.5**
DIYA				*i* S	**Sb**	**16 37 32.6**	**+2.3**
DIYA	**Diyarbakir**	**1.17**	**187**	P	**Pn**	**16 37 14.8**	**-0.3**
DIYA				S	**Sn**	**16 37 31.3**	**-0.5**
SVAN	**Silvan-Diyarba**	**1.18**	**143**	*e*PN	**Pg**	**16 37 14.3**	**+0.1**
SVAN				*e*SN	**Sb**	**16 37 30.3**	**-0.1**
SVAN	**Silvan-Diyarba**	**1.18**	**143**	*e*Pn	**Pg**	**16 37 14.3**	**+0.1**
SVAN				*e*Sn	**Sb**	**16 37 30.3**	**-0.1**
ELZG	**Elazig**	**1.18**	**240**	*i* P	**Pg**	**16 37 13.2**	**-1.0**
ELZG				*i* S	**Sn**	**16 37 31.3**	**-0.8**
ELZG	**Elazig**	**1.18**	**240**	P	**Pg**	**16 37 13.2**	**-1.0**
ELZG				S	**Sn**	**16 37 31.3**	**-0.8**
DIY	**Diyarbakir**	**1.19**	**182**	*e*Pn	**Pg**	**16 37 13.6**	**-0.9**
DIY				*e*Sn	**Sn**	**16 37 31.3**	**-1.0**
REFA	**Refahiye_ERZ¯**	**1.22**	**285**	*i* P	**Pn**	**16 37 17.0**	**+1.1**
REFA				*i* S	**Sn**	**16 37 39.1**	**+5.9**
REFA	**Refahiye_ERZ¯**	**1.22**	**285**	P	**Pn**	**16 37 17.0**	**+1.1**
KELT	**Kelkit**	**1.33**	**323**	*i* P	**Pn**	**16 37 16.2**	**-1.2**
KELT	**Kelkit**	**1.33**	**323**	P	**Pn**	**16 37 16.2**	**-1.2**
ILIC	**ilic-Erzincan**	**1.39**	**286**	*e*PN	**Pn**	**16 37 17.5**	**-0.6**
ILIC	**ilic-Erzincan**	**1.39**	**286**	*e*Pn	**Pn**	**16 37 17.5**	**-0.6**
KEMA	**Kemaliye**	**1.41**	**278**	*i* P	**Pn**	**16 37 16.8**	**-1.6**
KEMA				*i* S	**Sb**	**16 37 35.2**	**-2.0**
KEMA	**Kemaliye**	**1.41**	**278**	P	**Pn**	**16 37 16.8**	**-1.6**
KEMA				S	**Sb**	**16 37 35.2**	**-2.0**
BTMN	**Batman**	**1.42**	**147**	*i* P	**Pb**	**16 37 18.6**	**-0.3**
BTMN				*i* S	**Sg**	**16 37 37.8**	**+0.5**
BTMN	**Batman**	**1.42**	**147**	P	**Pb**	**16 37 18.6**	**-0.3**
BTMN				S	**Sg**	**16 37 37.8**	**+0.5**
MAZI	**Mazidag**	**1.63**	**176**	*e*PN	**Pn**	**16 37 21.4**	**-0.1**
MAZI	**Mazidag**	**1.63**	**176**	*e*Pn	**Pn**	**16 37 21.4**	**-0.1**
MARD	**Mardin**	**1.81**	**168**	*i* P	**Pb**	**16 37 24.7**	**-0.9**
MARD				*i* S	**Sg**	**16 37 49.3**	**-0.6**
MARD				*i* S	**Sb**	**16 37 49.5**	**+0.6**
SUSE	**Susehri**	**1.96**	**305**	*i* P	**Pb**	**16 37 27.8**	**-0.4**
SUSE				*i* S	**Sg**	**16 37 55.9**	**+1.3**
SUSE	**Susehri**	**1.96**	**305**	P	**Pb**	**16 37 27.8**	**-0.4**
TUTA	**Tutak**	**1.98**	**80**	*i* P	**Pb**	**16 37 28.0**	**-0.6**
TUTA				*i* S	**Sg**	**16 37 57.2**	**+1.9**
TUTA	**Tutak**	**1.98**	**80**	P	**Pb**	**16 37 28.0**	**-0.6**
AGRB	**Hanur-Agry**	**2.15**	**76**	*e*PN	**Pn**	**16 37 28.5**	**-0.2**
AGRB	**Hanur-Agry**	**2.15**	**76**	*e*Pn	**Pn**	**16 37 28.5**	**-0.2**
ESPY	**Espiye-Giresun**	**2.18**	**327**	*e*PN	**Pn**	**16 37 29.1**	**+0.1**
ESPY	**Espiye-Giresun**	**2.18**	**327**	*e*Pn	**Pn**	**16 37 29.1**	**+0.1**
CUKAN	**kangal_SIVAS**	**2.21**	**277**	*i* P	**Pb**	**16 37 31.3**	**-1.0**
CUKAN				*i* S	**Sb**	**16 38 01.1**	**+0.9**
CUKAN	**kangal_SIVAS**	**2.21**	**277**	P	**Pb**	**16 37 31.3**	**-1.0**
DARE	**Darende-Malaty**	**2.25**	**258**	*e*PN	**Pn**	**16 37 31.3**	**+1.2**
DARE	**Darende-Malaty**	**2.25**	**258**	*e*Pn	**Pn**	**16 37 31.3**	**+1.2**
SURC	**SANLIURFA_SURC**	**2.58**	**212**	*i* P	**Pn**	**16 37 34.7**	**+0.3**
SURC	**SANLIURFA_SURC**	**2.58**	**212**	P	**Pn**	**16 37 34.7**	**+0.3**
SARI	**SarD1z-Kayseri**	**3.10**	**259**	*e*Pn	**Pn**	**16 37 42.6**	**+0.8**

*NIED **26** 16:49:00, 37.40N×138.60E, h11km, Mw3.6 Best double couple: M0 3.13000×10^14 NP1:φs31.00000°, δ37.00000°, λ55.00000°. NP2:φs252.00000°, δ60.00000°, λ113.00000°.*
*IDC **26** 16:49:51.5±1.0, 37.37N×138.94E, h0km, mb3.6/4, mb1 3.7/7, mb1mx3.4/48, mbtmp3.5/7, ML2.3/2, Error ellipse: s-maj=25.8km s-min=11.1km az=116.0*
*ISCJB **26** 16:49:54.6±0.4, 37.39N±0.03×138.61E±0.04, h29km±4km, mb3.7/4, Error ellipse: s-maj=5.5km s-min=4.7km az=8.6*
*JMA **26** 16:49:55.2±0.1, 37.39N×138.60E, h18km±2km, M3.7 Broadband fault plane solution: P waves. NP1: φs242.00000°, δ82.00000°, λ101.00000°. NP2:φs9.00000°, δ14.00000°, λ37.00000°. Principal axes: T Plg52.0000°, Azm165.0000°; N Plg11.0000°, Azm61.0000°; P Plg36.0000°, Azm323.0000°;*
JMA Felt III J1.

ISC 26 16:49:55.3±0.9, 37.39N±0.03×138.62E±0.03, h23km±7km, n19, σ1s30/31, mb3.6/4, 1C-3D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIZZ	**Izumozaki**	**0.15**	**26**	P	**Pb**	**16 49 59.8**	**-0.4**
JIZZ				S	**Sb**	**16 50 03.9**	**+0.4**
JHK	**Hiroka**	**0.34**	**114**	⇓P	**Pb**	**16 50 02.4**	**-0.5**
JHK				S	**Sb**	**16 50 07.4**	**-0.6**
JJN	**Nakama**	**0.47**	**232**	⇑P	**Pb**	**16 50 04.1**	**-0.8**
JJN				S	**Sb**	**16 50 11.1**	**-0.3**
JNS	**Sasagawa**	**0.70**	**52**	⇓P	**Pb**	**16 50 08.6**	**-0.2**
JNS				S	**Sb**	**16 50 18.5**	**+0.6**
JSD	**Sado**	**0.71**	**336**	⇓P	**Pb**	**16 50 08.0**	**-0.9**
JSD				S	**Sb**	**16 50 17.6**	**-0.6**
JKT	**Katashina**	**0.80**	**141**	P	**Pb**	**16 50 10.2**	**-0.4**
JKT				S	**Sb**	**16 50 20.9**	**-0.1**
JGK	**Kuni**	**0.83**	**179**	P	**Pb**	**16 50 10.9**	**-0.2**
JGK				S	**Sb**	**16 50 22.0**	**+0.2**
JFY	**Yanaizu**	**0.86**	**89**	P	**Pb**	**16 50 11.3**	**-0.3**
JFY				S	**Sb**	**16 50 22.8**	**+0.1**
MAT	**Matsushiro**	**0.91**	**202**	P	**Pb**	**16 50 11.5**	**-1.0**
MAT				S	**Sb**	**16 50 23.3**	**-0.9**
MAT	**Matsushiro**	**0.91**	**202**	P	**Pb**	**16 50 11.4**	**-1.0**
MAT				S	**Sb**	**16 50 23.2**	**-0.9**
MJAR	**Matsushiro Arr**	**0.91**	**202**	Pg	**Pb**	**16 50 11.6**	**-0.8**
	98nm,0.3s,baz=17,slow=16,SNR=945						
MJAR				Lg	Lg	16 50 23.6	
	243nm,0.3s,baz=20,slow=29,SNR=77						
JHJ	**Hachijo jima 2**	**4.37**	**167**	Pn	**Pn**	**16 51 02.8**	**+2.6**
	40nm,0.3s,baz=275,slow=1.1,SNR=28						
JHJ				Sn	**Sn**	**16 51 48.4**	**-2.1**
	baz=55,slow=19,SNR=2.0						
ASAJ	**Asahikawa**	**7.36**	**23**	Pn	**Pn**	**16 51 38.6**	**-2.7**
	0.1nm,0.3s,baz=177,slow=9.3,SNR=2.0						
USRK	**Ussuriysk Ar.**	**8.46**	**326**	Pn	**Pn**	**16 51 57.4**	**+1.1**
	0.2nm,0.3s,baz=136,slow=14,SNR=2.9						
KSRS	**Korea Array**	**8.52**	**274**	Pn	**Pn**	**16 51 59.8**	**+2.6**
	0.8nm,0.3s,baz=90,slow=15,SNR=10.0						
SONM	**Songino Array**	**25.74**	**304**	P	**P**	**16 55 26.2**	**+2.1**
	0.7nm,0.8s,baz=95,slow=7.2,SNR=3.2						
ILAR	**Eielson Array**	**50.38**	**32**	P	**P**	**16 58 47.9**	**-2.5**
	0.2nm,0.6s,baz=263,slow=5.3,SNR=2.5						
WRA	**Warramunga Arr**	**57.17**	**185**	P	**P**	**16 59 40.5**	**+0.1**
	3.3nm,0.8s,baz=0.1,slow=7.4,SNR=13						
WRA				PcP	**PcP**	**17 00 36.0**	**+1.2**
	0.3nm,0.6s,baz=355,slow=4.7,SNR=4.6						
ASAR	**Alice Springs**	**60.89**	**185**	P	**P**	**17 00 05.9**	**-0.3**
	0.7nm,0.8s,baz=14,slow=13,SNR=13						

MAN 26 16:57:00, 15.17N×120.01E, h20km, mb4.2, ML3.0, MS2.8, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCPH	**Palayan**	**1.11**	**69**	⇑*e*P	Pn	16 57 20.5	0.0
PCPH				*e*S	Sn	16 57 36.0	+0.7
TGY	**Tagaytay City**	**1.39**	**140**	⇑*e*P	Pn	16 57 24.2	-0.1
TGY				*i* S	Sb	16 57 43.7	+1.1
LQP	**Lukban**	**1.81**	**125**	*e*P	Pb	16 57 32.5	-0.1

*SJA **26** 17:03:26.3±0.4, 33.74S×70.10W, h20km, ML3.0, MW3.5*
*GUC **26** 17:03:29.2±0.6, 33.58S×70.00W, h4km±3km, ML3.0*

ISC 26 17:03:29.1±1.1, 33.61S±0.07×70.02W±0.04, h12km±8km, n11, σ0s95/19, 2C-4D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YECH	**El Yeso**	**0.08**	**226**	⇑*i* P	**Pg**	**17 03 32.0**	**+0.1**
YECH				*i* S	**Sg**	**17 03 34.2**	**+0.1**
FCH	**Farellones**	**0.36**	**321**	⇓*i* P	**Pg**	**17 03 36.7**	**+0.2**
FCH				*i* S	**Sg**	**17 03 42.0**	**+0.5**
FSR	**Penalolen**	**0.45**	**287**	⇑*i* P	**Pb**	**17 03 39.5**	**+0.6**
FSR				*e*S	**Sb**	**17 03 46.0**	**+0.5**
CLCH	**Cerro Calan**	**0.48**	**296**	⇓*i* P	**Pg**	**17 03 39.0**	**+0.5**
CLCH				*i* S	**Sg**	**17 03 46.1**	**+1.0**
CLCH				IAML		17 03 47.2	
	comp=N,3μm,0.8s						
ANTU	**Antumapu**	**0.52**	**275**	*i* S	**Sb**	**17 03 47.3**	**-0.3**
PEL	**Peldehue**	**0.73**	**310**	⇓*i* P	**Pg**	**17 03 43.0**	**-0.2**
PEL				*i* S	**Sg**	**17 03 53.0**	**+0.3**
ROC1	**El Roble**	**1.05**	**307**	*i* P	**Pb**	**17 03 47.0**	**-2.3**
ROC1				*i* S	**Sb**	**17 04 02.6**	**-0.5**
ROCH	**El Roble**	**1.05**	**307**	⇓*i* P	**Pb**	**17 03 48.7**	**-0.6**
ROCH				*i* S	**Sb**	**17 04 02.6**	**-0.4**
ROCH				IAML		17 04 05.5	
	comp=N,706nm,0.4s						
AAGR	**Agrelo**	**1.13**	**62**	*i* P	**Pn**	**17 03 50.1**	**-0.7**
ARCO	**CERRO ARCO**	**1.19**	**50**	*i* P	**Pg**	**17 03 51.8**	**-0.2**
ARCO				*i* S	**Sn**	**17 04 10.1**	**+2.1**
ARCO				IAML		17 04 10.2	
	comp=Z,225nm,0.3s						
AUSP	**Uspallata**	**1.48**	**21**	*i* P	**Pb**	**17 03 56.6**	**-0.2**

IDC 26 17:09:19.0±11.0, 20.61S×177.34W, h435km±107km, mb3.6/9, mb1 3.8/9, mb1mx3.4/35, mbtmp4.3/9, Error ellipse: s-maj=82.2km s-min=25.8km az=118.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**45.09**	**257**	P	P	17 16 55.2	+0.3
	4.0nm,0.7s,baz=90,slow=7.7,SNR=134						
ASAR				PcP	PcP	17 18 26.4	-0.6
	0.8nm,0.7s,baz=107,slow=3.7,SNR=7.8						
WRA	**Warramunga Arr**	**45.19**	**262**	P	P	17 16 55.2	-0.6
	1.6nm,0.3s,baz=96,slow=7.6,SNR=91						
WRA				PcP	PcP	17 18 26.7	-0.6
	0.5nm,1.1s,baz=98,slow=5.2,SNR=3.0						
MJAR	**Matsushiro Arr**	**70.66**	**323**	P	P	17 19 48.6	-0.9
	1.0nm,0.5s,baz=140,slow=6.4,SNR=3.2						
PETK	**Petropavlovsk-**	**76.53**	**345**	P	P	17 20 22.6	-0.1
	4.4nm,0.7s,baz=124,slow=7.1,SNR=4.6						
USRK	**Ussuriysk Ar.**	**79.40**	**326**	P	P	17 20 38.9	+0.4
	3.6nm,0.7s,baz=119,slow=1.8,SNR=6.9						
KLR	**Kul'dur**	**82.93**	**329**	P	P	17 20 57.4	+0.7
	0.9nm,0.5s,baz=131,slow=4.2,SNR=4.6						
SEY	**Seymchan**	**86.62**	**347**	P	P	17 21 14.4	0.0
	2.3nm,0.7s,baz=147,slow=5.5,SNR=9.3						
ILAR	**Eielson Array**	**88.28**	**13**	P	P	17 21 22.5	+0.2
	1.1nm,0.7s,baz=221,slow=5.5,SNR=8.7						
CMAR	**Chiang Mai Arr**	**90.73**	**289**	P	P	17 21 35.5	+0.7
	1.7nm,0.8s,baz=120,slow=2.3,SNR=9.4						
FINES	**FINESS Array B**	**136.04**	**344**	PKP	PKPdf	17 27 47.2	-1.8
	0.5nm,0.7s,baz=106,slow=4.2,SNR=4.3						
AKASG	**Malin Array Be**	**143.40**	**332**	PKhKP	PKPpre	17 27 59.1	
	3.4nm,0.6s,baz=42,slow=4.4,SNR=14						
BRTR	**Keskin Array B**	**147.36**	**313**	PKPbc	PKPbc	17 28 12.3	-0.8
	1.6nm,0.6s,baz=133,slow=4.5,SNR=9.5						
CLL	**Collm**	**148.30**	**348**	*i* PKP	PKPbc	17 28 15.0	+0.1
	comp=Z,7.0nm,0.9s						
KHC	**Kasperske Hory**	**150.23**	**345**	*e*P	PKPbc	17 28 19.0	-0.7
GERES	**GERESS Array B**	**150.46**	**345**	PKPbc	PKPbc	17 28 20.1	-0.2
	comp=Z,0.9nm,0.7s,baz=45,slow=2.1,SNR=8.8						

*IDC **26** 17:17:00.8±2.0, 35.26N×142.04E, h0km, mb3.4/5, mb1 3.4/7, mb1mx3.3/40, mbtmp3.3/7, ML3.1/2, Error ellipse: s-maj=45.3km s-min=21.5km az=76.0*
*ISCJB **26** 17:17:01.6±1.0, 35.38N±0.05×142.09E±0.09, h22km, mb3.3/5, Error ellipse: s-maj=10.2km s-min=7.1km az=3.8*
*JMA **26** 17:17:01.3±0.4, 35.46N×142.19E, h64km±5km, M3.0*

ISC 26 17:17:04.6±1.3, 35.38N±0.06×141.85E±0.09, h22km, n16, σ0s90/21, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.87**	**292**	P	**Pn**	**17 17 21.4**	**-0.1**
BSO1	**Boso 1**	**1.02**	**225**	P	**Pb**	**17 17 23.3**	**+0.1**
BSO1				*e*X		17 17 40.2	
BSO3	**Boso 3**	**1.24**	**243**	P	**Pb**	**17 17 27.2**	**+0.1**
BSO4	**Boso 4**	**1.30**	**253**	P	**Pb**	**17 17 28.3**	**+0.1**
JIM2	**Oshima 3**	**2.09**	**252**	P	**Pn**	**17 17 38.3**	**0.0**
JIM2				*e*S	**Sb**	**17 18 06.9**	**-0.5**
JAG	**Ashikaga**	**2.21**	**299**	P	**Pn**	**17 17 39.4**	**-0.5**
JOD2	**Odawara 2**	**2.26**	**268**	P	**Pn**	**17 17 41.1**	**+0.4**
JOD2				*e*S	**Sb**	**17 18 10.7**	**-1.6**
JFT	**Otama**	**2.46**	**331**	P	**Pn**	**17 17 42.3**	**-1.1**
JFT				S	**Sn**	**17 18 12.3**	**-0.5**
JHJ	**Hachijo jima 2**	**2.83**	**218**	Pn	**Pn**	**17 17 48.2**	**-0.3**
	11nm,0.3s,baz=344,slow=21,SNR=15						
JHJ				Sn	**Sn**	**17 18 22.1**	**+0.2**
	38nm,0.3s,baz=315,slow=21,SNR=9.4						
MJAR	**Matsushiro Arr**	**3.18**	**292**	Pn	**Pn**	**17 17 53.8**	**+0.6**
	1.3nm,0.3s,baz=114,slow=7.5,SNR=14						
MAT	**Matsushiro**	**3.18**	**293**	P	**Pn**	**17 17 54.2**	**+1.0**
MAT				*e*S	**Sn**	**17 18 29.9**	**-0.6**
SONM	**Songino Array**	**29.03**	**306**	P	**P**	**17 23 04.0**	**+1.0**
	0.2nm,0.6s,baz=113,slow=11,SNR=2.0						
ZALV	**Zalesovo Beam**	**43.30**	**314**	P	**P**	**17 25 06.5**	**+2.0**
	0.4nm,0.3s,baz=111,slow=8.8,SNR=2.8						
MKAR	**Makanchi Array**	**45.31**	**304**	P	**P**	**17 25 21.3**	**+0.6**
	0.3nm,0.7s,baz=111,slow=7.9,SNR=2.5						
WRA	**Warramunga Arr**	**55.48**	**189**	P	**P**	**17 26 36.6**	**-1.1**
	0.3nm,0.7s,baz=7.8,slow=7.3,SNR=3.8						
ASAR	**Alice Springs**	**59.20**	**188**	P	**P**	**17 27 02.8**	**-1.2**
	0.3nm,0.9s,baz=1.8,slow=7.0,SNR=3.3						

*ISK **26** 17:21:03.3, 39.83N×41.87E, h8km, MD2.8*
*CSEM **26** 17:21:03.7±0.2, 39.74N×41.96E, h15km, MD2.6, Error ellipse: s-maj=5.9km s-min=4.9km az=123.0*
*ISCJB **26** 17:21:04.2±0.5, 39.78N±0.02×41.90E±0.04, h7km±5km, Error ellipse: s-maj=5.0km s-min=3.9km az=14.7*
*DDA **26** 17:21:04.3, 39.84N×41.94E, h7km, Md2.6*

ISC 26 17:21:04.0±1.0, 39.81N±0.02×41.94E±0.03, h11km±8km, n28, σ0s99/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOMI	**Horasan**	**0.24**	**353**	*i* P	**Pg**	**17 21 09.4**	**+0.2**
HOMI				*i* S	**Sg**	**17 21 14.0**	**+1.4**
ERZM	**Erzurum**	**0.46**	**283**	*i* P	**Pb**	**17 21 13.7**	**-0.5**
ERZM	**Erzurum**	**0.46**	**283**	P	**Pb**	**17 21 13.7**	**-0.5**
EZM	**Erzurum**	**0.46**	**283**	*e*PG	**Pg**	**17 21 11.9**	**-1.1**
VRTB	**Varto-Mus**	**0.75**	**211**	*e*PG	**Pg**	**17 21 17.8**	**-0.6**
VRTB				*e*SG	**Sg**	**17 21 28.9**	**+0.7**
VRTB	**Varto-Mus**	**0.75**	**211**	*e*Pg	**Pg**	**17 21 17.8**	**-0.6**
VRTB				*e*Sg	**Sg**	**17 21 28.9**	**+0.7**
TUTA	**Tutak**	**0.78**	**121**	*i* P	**Pg**	**17 21 18.4**	**-0.7**
TUTA				*i* S	**Sb**	**17 21 31.6**	**+1.1**
TUTA	**Tutak**	**0.78**	**121**	P	**Pg**	**17 21 18.4**	**-0.7**
SENK	**Senkaya-Erzuru**	**0.82**	**22**	*e*PG	**Pb**	**17 21 20.1**	**-0.2**
SENK	**Senkaya-Erzuru**	**0.82**	**22**	*e*Pg	**Pb**	**17 21 20.1**	**-0.2**
AGRB	**Hanur-Agry**	**0.84**	**105**	*e*PG	**Pg**	**17 21 20.2**	**0.0**
AGRB				*e*SG	**Sn**	**17 21 34.4**	**0.0**
AGRB	**Hanur-Agry**	**0.84**	**105**	*e*Pg	**Pg**	**17 21 20.2**	**0.0**
AGRB				*e*Sg	**Sn**	**17 21 34.4**	**0.0**
BNGL	**BINGOL**	**1.05**	**216**	*i* P	**Pb**	**17 21 24.7**	**+0.4**
BNGL				*i* S	**Sg**	**17 21 37.8**	**0.0**
DDEM	**Demirkent**	**1.10**	**352**	*i* P	**Pb**	**17 21 24.7**	**-0.3**
DDEM				*i* S	**Sn**	**17 21 40.5**	**-0.1**
DDEM	**Demirkent**	**1.10**	**352**	P	**Pb**	**17 21 24.7**	**-0.3**
DDEM				S	**Sn**	**17 21 40.5**	**-0.1**
KOPT	**Kop Dagi**	**1.13**	**281**	*i* P	**Pb**	**17 21 25.5**	**-0.2**
KOPT				*i* S	**Sn**	**17 21 45.9**	**+4

ISC 26 17:33:08.1±1.5, 40°0N±0°.1×71°44E±0°.04, h12km±15km, n10, σ0°67/19, 13C-2D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**0.48**	**273**	⇑*i*P			**Pg**	**17 33 17.4**	**-0.1**
	baz=277								
BTK				⇑*i*S			**Sg**	**17 33 24.6**	**+0.7**
	baz=277								
OHH	**Osh**	**1.14**	**64**	⇑*i*P			**Pb**	**17 33 28.6**	**-1.1**
	baz=63								
OHH				⇑*i*S			**Sg**	**17 33 45.2**	**+0.4**
	baz=63								
ARSB	**Arslanbob**	**1.74**	**42**	⇑*i*P			**Pn**	**17 33 39.0**	**+0.7**
	baz=42								
ARSB				⇑*i*S			**Sn**	**17 34 01.3**	**+0.8**
	baz=42								
ARK	**Arkit**	**1.81**	**12**	⇑*e*P			**Pn**	**17 33 39.3**	**+0.2**
	baz=14								
ARK				⇑*i*S			**Sn**	**17 34 01.8**	**-0.3**
	baz=14								
IUG	**Iuzhnay**	**2.37**	**334**	*e*P			**Pb**	**17 33 49.6**	**-1.0**
	12nm,0.3s								
IUG				*e*S			**Sb**	**17 34 19.1**	**-0.8**
	17nm,0.4s								
MNAS	**Manas**	**2.58**	**18**	⇑*i*P			**Pn**	**17 33 50.7**	**+0.9**
	baz=18								
MNAS				⇑*i*S			**Sn**	**17 34 21.3**	**+0.2**
	baz=18								
MNAS	**Manas**	**2.58**	**18**	⇓S			**Sb**	**17 34 25.8**	**-0.3**
	1.2nm,0.3s								
ARLS	**Aral**	**2.84**	**49**	⇑*i*P			**Pn**	**17 33 53.9**	**+0.4**
	baz=49								
ARLS				⇑*i*S			**Sn**	**17 34 27.7**	**0.0**
	baz=49								
MRKS	**Merke**	**3.02**	**26**	*e*P			**Pb**	**17 34 01.2**	**-0.6**
	1.3nm,0.3s								
MRKS				*e*S			**Sb**	**17 34 38.9**	**+0.1**
	3.6nm,0.3s								
KK31	**Karatay Array**	**3.15**	**347**	⇑P			**Pb**	**17 34 03.5**	**-0.5**
	0.8nm,0.6s,baz=178,slow=16,SNR=4.3								
KK31				⇓S			**Sb**	**17 34 42.7**	**+0.5**
	0.6nm,0.3s,baz=168,slow=34,SNR=4.1								

*ISCJB **26** 17:40:48.5±0.2, 3°.29S±0°.02×150°.81E±0°.03, h10km, mb5.2/131, MS4.7/27, Error ellipse: s-maj=4.3km s-min=3.3km az=174.1*

*BJI **26** 17:40:48.8, 3°.17S×150°.84E, h9km, mb4.9/68, mB5.1/54, Ms5.1/59, Ms7 4.8/56*

*IDC **26** 17:40:49.4±0.5, 3°.29S×150°.64E, h0km, mb4.6/19, mb1 4.7/22, mb1mx4.6/35, mbtmp4.6/22, ML4.1/2, MS4.5/12, Ms1 4.5/12, ms1mx4.3/35, Error ellipse: s-maj=16.0km s-min=9.9km az=102.0*

*NEIC **26** 17:40:50.0±0.2, 3°.29S×150°.71E, h10km, mb5.4/87, Error ellipse: s-maj=4.8km s-min=4.2km az=88.0*

*GCMT **26** 17:40:50.0±0.2, 3°.20S×150°.68E, h18km, MW5.3/103, Moment Tensor Solution. s44,c71; s103,c180; Duration: 1ꜱ1 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.01±.03; $M_{\theta\theta}$-0.16±.03; $M_{\phi\phi}$0.17±.03; $M_{r\theta}$-0.09±.06; $M_{\theta\phi}$1.15±.02; $M_{\phi r}$0.03±.05; Best double couple: M_o1.16600×10^{17} NP1:ϕ_s86.00000°, δ88.00000°, λ-4.00000°. NP2:ϕ_s176.00000°, δ86.00000°, λ-178.00000°. Principal axes: T 1.1690, Plg2.0000°, Azm131.0000°; N -0.0050, Plg86.0000°, Azm241.0000°; P -1.1630, Plg4.0000°, Azm41.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*MOS **26** 17:40:54.1±1.5, 3°.15S×150°.31E, h33km, mb5.2/22 Error ellipse: s-maj=10.4km s-min=6.8km az=94.1*

*DJA **26** 17:40:57.6±1.7, 3°.5S×15°.1E±1°.3, h41km±9km, M5.4/28, mb5.4/28, mB5.8/19, MLv5.7/1, Mw(mB)5.3/19*

ISC 26 17:40:51.6±0.5, 3°.28S±0°.04×150°.87E±0°.04, h17km±2km, h17km:pP-P, n291, σ1ꜱ84/330, mb5.1/131, MS4.6/29, 10C-11D, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**1.58**	**125**	*e*Pn			**Pn**	**17 41 17.7**	**-1.2**
MANU	**Manus Island**	**3.71**	**289**	*e*Pn			**Pn**	**17 41 44.1**	**-4.1**
PMG	**Port Moresby**	**7.12**	**211**	Pn			**Pn**	**17 42 36.0**	**+1.0**
	12nm,0.3s,baz=28,slow=5.7,SNR=101								
PMG				LR			LR	17 44 51.1	
	comp=Z,2μm,20.5s,baz=54,slow=34								
PMG	**Port Moresby**	**7.12**	**211**	*d*iP			**Pn**	**17 42 36.2**	**+1.2**
PMG				pmax		pmax			
	comp=Z,3μm,1.0s								
PMG	**Port Moresby**	**7.12**	**211**	*e*Pn			**Pn**	**17 42 37.0**	**+2.0**
JAY	**Jayapura**	**10.18**	**274**	Pn			**Pn**	**17 43 13.7**	**-3.4**
	comp=Z,0.0nm,0.3s,baz=90,slow=20,SNR=3.3								
JAY				Sn			**Sn**	**17 45 15.7**	**+4.6**
	comp=Z,0.0nm,0.3s,baz=90,slow=20,SNR=2.0								
JAY				LR			LR	17 46 23.4	
	comp=Z,135nm,19.0s,baz=11,slow=34								
JAY	**Jayapura**	**10.18**	**274**	P			**Pn**	**17 43 18.0**	**+0.9**
GENI	**Genyem**	**10.71**	**273**	P			**Pn**	**17 43 24.2**	**-0.2**
HNR	**Honiara**	**10.89**	**125**	Pn			**Pn**	**17 43 29.3**	**+2.5**
	comp=Z,2.4nm,0.3s,baz=302,slow=19,SNR=2.6								
HNR				Sn			Sn	17 45 44.6	+16
	comp=Z,2.5nm,0.3s,baz=238,slow=9.5,SNR=2.2								
HNR				LR			LR	17 47 41.2	
	comp=Z,6μm,21.1s,baz=296,slow=37								
HNR	**Honiara**	**10.89**	**125**	*e*P			Pn	17 43 35.0	+8.1
HNR	**Honiara**	**10.89**	**125**	*e*P			**Pn**	**17 43 27.0**	**+0.2**
HNR	**Honiara**	**10.89**	**125**	*e*Pn			**Pn**	**17 43 27.0**	**+0.2**
PATS	**Pohnpei**	**12.50**	**36**	*e*Pn			**Pn**	**17 43 48.7**	**-0.1**
COEN	**Coen**	**13.05**	**215**	P			**Pn**	**17 43 56.8**	**+0.4**
	baz=13,SNR=15								
COEN	**Coen**	**13.05**	**215**	*e*Pn			**Pn**	**17 43 56.6**	**+0.3**
MTSU	**Mount Surprise**	**16.10**	**203**	P			**Pn**	**17 44 38.4**	**+1.1**
	baz=16,SNR=40								
CTA	**Charters Tower**	**17.30**	**195**	P			**P**	**17 44 53.3**	**-0.6**
	comp=Z,0.3nm,0.3s,baz=10,slow=13,SNR=16								
CTA				S			**S**	**17 48 11.2**	**-2.3**
	comp=Z,0.2nm,0.3s,baz=29,slow=13,SNR=2.7								
CTAO	**Charters Tower**	**17.30**	**195**	*e*P			**P**	**17 44 54.6**	**+0.7**
CTAO				pmax		pmax			
	comp=Z,139nm,1.4s								
CTAO	**Charters Tower**	**17.30**	**195**	*e*Pn			**P**	**17 44 54.6**	**+0.7**
	comp=Z,139nm,1.4s								
GUMO	**Guam**	**17.79**	**341**	*e*P			**P**	**17 45 02.1**	**+2.9**
GUMO				pmax		pmax			
	comp=Z,612nm,1.6s								
GUMO	**Guam**	**17.79**	**341**	*e*Pn			**P**	**17 45 02.1**	**+2.9**
	comp=Z,612nm,1.6s								
FAKI	**Fak Fak**	**18.60**	**271**	P			**P**	**17 45 06.5**	**-1.8**
FAKI	**Fak Fak**	**18.60**	**271**	*e*P			**P**	**17 45 05.5**	**-2.7**
	comp=Z,146nm,0.9s								
SWI	**Sorong**	**19.74**	**277**	P			**Pn**	**17 45 21.7**	**-0.6**
	comp=Z,162nm,0.8s,comp=Z,1μm								
SAUI	**Saumlaki**	**20.02**	**256**	*e*P			**P**	**17 45 20.5**	**-3.4**
	comp=Z,491nm,0.9s								
QIS	**Mount Isa**	**20.38**	**212**	P			**P**	**17 45 27.3**	**-0.4**
	baz=20,SNR=70								
KDU	**Kakadu**	**20.46**	**242**	P			**P**	**17 45 26.8**	**-1.8**
	baz=20,SNR=14								
BNDI	**Bandanaira**	**20.95**	**266**	P			Pn	17 45 40.7	+4.1
MTN	**Manton Dam**	**21.71**	**243**	P			**P**	**17 45 40.1**	**-2.0**
	baz=22,SNR=26								
MTN	**Manton Dam**	**21.71**	**243**	*e*P			**P**	**17 45 39.9**	**-2.2**
	comp=Z,230nm,1.0s								
EIDS	**Eidsvold**	**21.96**	**179**	P			**P**	**17 45 46.1**	**+1.4**
	baz=22,SNR=9.4								
EIDS	**Eidsvold**	**21.96**	**179**	*e*P			**P**	**17 45 44.7**	**0.0**
	comp=Z,82nm,1.3s								
TARA	**Tarawa**	**22.52**	**79**	*e*P			**P**	**17 45 49.8**	**-1.0**
	comp=Z,342nm,1.6s								
WRAB	**Tennant Creek**	**23.11**	**223**	*d*iP			**P**	**17 45 55.1**	**-1.8**
WRAB				pmax		pmax			
	comp=Z,432nm,1.2s								
WRAB	**Tennant Creek**	**23.11**	**223**	*e*P			**P**	**17 45 54.8**	**-2.1**
	comp=Z,224nm,0.8s								
WC3	**Warramunga Arr**	**23.11**	**223**	*e*P			**P**	**17 45 54.6**	**-2.3**
	comp=Z,178nm,0.8s								
WB2	**Warramunga Arr**	**23.11**	**223**	*e*P			**P**	**17 45 53.5**	**-3.5**
WR1	**Warramunga Arr**	**23.12**	**223**	*e*P			**P**	**17 45 55.1**	**-2.0**
	comp=Z,324nm,1.0s								
WR1				*e*S			**S**	**17 50 07.7**	**-0.2**
WRA	**Warramunga Arr**	**23.12**	**223**	P			**P**	**17 45 55.1**	**-2.0**
	comp=Z,75nm,1.0s,baz=47,slow=9.7,SNR=116								
WRA				S			**S**	**17 50 07.7**	**-0.2**
	comp=Z,3.4nm,1.1s,baz=45,slow=18,SNR=4.3								
WRA				LR			LR	17 54 58.6	
	comp=Z,1μm,18.5s,baz=35,slow=37								
RMQ	**Roma**	**23.16**	**185**	P			**P**	**17 45 58.3**	**+0.9**
	baz=23,SNR=44								
LBMI	**Labuha**	**23.50**	**276**	P			**P**	**17 46 02.8**	**+1.9**
QLP	**Quilpie**	**24.03**	**195**	P			**P**	**17 46 04.9**	**-1.0**
	baz=24,SNR=8.7								
DZM	**Mont Dzumac**	**24.03**	**142**	P			**P**	**17 46 06.9**	**+0.9**
	comp=Z,35nm,0.9s,baz=314,slow=15,SNR=13								
DZM				LR			LR	17 54 25.0	
	comp=Z,2μm,21.0s,baz=318,slow=34								
DZM	**Mont Dzumac**	**24.03**	**142**	*e*P			**P**	**17 46 05.3**	**-0.7**
	comp=Z,291nm,1.6s								
SANI	**Sanana**	**24.89**	**272**	P			**P**	**17 46 15.0**	**+1.2**
AS01	**Alice Springs**	**26.04**	**217**	*e*P			**P**	**17 46 23.0**	**-1.3**
AS31	**Alice Springs**	**26.07**	**218**	*e*P			**P**	**17 46 23.1**	**-1.4**
	comp=Z,19nm,0.8s								
ASAR	**Alice Springs**	**26.07**	**218**	P			**P**	**17 46 23.5**	**-1.0**
	comp=Z,21nm,0.9s,baz=54,slow=6.3,SNR=39								
ASAR				S			**S**	**17 50 56.5**	**+1.3**
	comp=Z,1.0nm,0.9s,baz=41,slow=26,SNR=2.2								
ASAR				LR			LR	17 57 38.0	
	comp=Z,2μm,19.1s,baz=30,slow=39								
ARMA	**Armidale**	**27.00**	**179**	P			**P**	**17 46 33.2**	**+0.3**
	baz=27,SNR=4.3								
ARMA	**Armidale**	**27.00**	**179**	*e*P			**P**	**17 46 36.9**	**+4.0**
	comp=Z,32nm,1.2s								
KMSI	**Cibinong**	**27.15**	**278**	P			**P**	**17 46 35.6**	**+1.3**
SOEI	**Soe**	**27.19**	**255**	P			**P**	**17 46 38.4**	**+3.6**
SOEI	**Soe**	**27.19**	**255**	*e*P			**P**	**17 46 33.1**	**-1.7**
	comp=Z,189nm,1.0s								
LUWI	**Luwuk**	**28.16**	**274**	*e*P			**P**	**17 46 42.1**	**-1.3**
	comp=Z,99nm,1.0s								
CMSA	**Cobar Meteorol**	**28.53**	**189**	P			**P**	**17 46 46.1**	**-0.3**
	baz=29,SNR=13								
FUNA	**Funafuti**	**28.64**	**102**	*e*P			**P**	**17 46 48.3**	**+0.7**
	comp=Z,342nm,1.3s								
FITZ	**Fitzroy Crossi**	**28.77**	**237**	P			**P**	**17 46 46.6**	**-2.1**
	comp=Z,44nm,1.0s,baz=60,slow=12,SNR=27								
FITZ	**Fitzroy Crossi**	**28.77**	**237**	P			**P**	**17 46 46.7**	**-2.1**
	baz=29,SNR=42								
FITZ	**Fitzroy Crossi**	**28.77**	**237**	*e*P			**P**	**17 46 46.4**	**-2.4**
	comp=Z,278nm,1.3s								
LHI	**Lord Howe Isla**	**29.13**	**166**	*e*P			**P**	**17 46 50.7**	**-1.0**
	comp=Z,286nm,1.5s								
MRSI	**Marisa**	**29.16**	**277**	P			**P**	**17 46 52.9**	**+0.7**
STKA	**Stephens Creek**	**29.75**	**196**	P			**P**	**17 46 55.9**	**-1.4**
	comp=Z,6.7nm,1.1s,baz=19,slow=10,SNR=7.2								
STKA				LR			LR	17 58 41.3	
	comp=Z,1μm,20.3s,baz=6.7,slow=36								
STKA	**Stephens Creek**	**29.75**	**196**	P			**P**	**17 46 56.0**	**-1.4**
	baz=30,SNR=6.0								
STKA	**Stephens Creek**	**29.75**	**196**	*e*P			**P**	**17 46 55.5**	**-1.8**
STKA				pmax		pmax			
	comp=Z,5.0nm,1.1s								
STKA	**Stephens Creek**	**29.75**	**196**	*e*P			**P**	**17 46 55.5**	**-1.8**
	comp=Z,4.6nm,1.1s								
MSVF	**Nonsavu**	**30.27**	**120**	*e*P			P	17 47 10.7	+8.6
MSVF				pmax		pmax			
	comp=Z,36nm,1.3s								
WRKA	**Warakurna**	**30.66**	**223**	P			**P**	**17 47 03.5**	**-2.0**
	baz=31,SNR=24								
WSI	**Waingapu**	**31.02**	**257**	P			**P**	**17 47 13.4**	**+4.7**
KAPI	**Kappang**	**31.08**	**266**	*e*P			**P**	**17 47 05.8**	**-3.5**
	comp=Z,40nm,1.2s								
PCI	**Palu**	**31.10**	**274**	P			**P**	**17 47 11.2**	**+1.7**
HTT	**Hallett**	**32.01**	**199**	P			**P**	**17 47 18.8**	**+1.5**
	baz=32,SNR=6.0								
BBOO	**Bokeboo**	**32.49**	**204**	*e*P			**P**	**17 47 20.0**	**-1.5**
	comp=Z,48nm,1.6s								
PLAI	**Plampang**	**33.35**	**259**	P			**P**	**17 47 32.0**	**+2.8**
MYLDM	**Lahad Datu**	**33.41**	**284**	⇓P			**P**	**17 47 30.0**	**+0.3**
MYLDM	**Lahad Datu**	**33.41**	**284**	*e*P			**P**	**17 47 29.2**	**-0.5**
	comp=Z,61nm,1.2s								
TWSI	**Taliwang, Sumb**	**34.22**	**259**	P			**P**	**17 47 40.3**	**+3.5**
ARPS	**Mount Arapiles**	**34.35**	**193**	P			**P**	**17 47 37.1**	**-0.5**
	baz=35,SNR=8.9								
TOO	**Toolangi**	**34.48**	**188**	P			**P**	**17 47 39.2**	**+0.5**
	baz=35,SNR=4.9								
SDKM	**Sandakan**	**34.78**	**285**	⇑P			**P**	**17 47 42.1**	**+0.3**
FORT	**Forrest**	**34.81**	**216**	P			**P**	**17 47 40.2**	**-1.5**
	baz=35,SNR=7.7								
FORT	**Forrest**	**34.81**	**216**	*e*P			**P**	**17 47 40.4**	**-1.4**
	comp=Z,644nm,0.9s								
MBWA	**Marble Bar**	**35.11**	**237**	*e*P			**P**	**17 47 42.0**	**-2.4**
	comp=Z,83nm,0.8s								
KDM	**Kudat**	**35.45**	**287**	⇓P			**P**	**17 47 49.0**	**+1.6**
KKM	**Kota Kinabalu**	**35.83**	**285**	⇓P			**P**	**17 47 50.4**	**-0.4**
KKM	**Kota Kinabalu**	**35.83**	**285**	*e*P			**P**	**17 47 48.1**	**-2.7**
	comp=Z,50nm,1.1s								
JOW	**Kunigami**	**37.05**	**325**	*e*P			**P**	**17 47 59.1**	**-1.8**
	comp=Z,71nm,1.3s								
OUZ	**Omahuta**	**38.13**	**149**	*e*P			**P**	**17 48 10.1**	**+0.1**
	comp=Z,75nm,1.5s								
BTM	**Bintulu**	**38.31**	**279**	⇑P			**P**	**17 48 12.3**	**+0.5**
MEEK	**Meekatharra**	**38.64**	**230**	P			**P**	**17 48 12.6**	**-1.8**
	baz=39,SNR=23								
SBUM	**Sibu**	**39.05**	**278**	⇓P			**P**	**17 48 18.2**	**+0.2**
SBUM	**Sibu**	**39.05**	**278**	*e*P			**P**	**17 48 17.1**	**-0.9**
	comp=Z,37nm,1.2s								
KMBL	**Kambalda**	**39.06**	**221**	P			**P**	**17 48 16.1**	**-1.8**
	baz=39,SNR=4.5								
PWJI	**Pagerwojo**	**39.15**	**261**	P			**P**	**17 48 21.2**	**+2.4**
YULB	**Yu-li**	**39.16**	**314**	*e*P			**P**	**17 48 16.9**	**-1.9**
	comp=Z,25nm,1.1s								
RAO	**Raoul Island**	**39.30**	**134**	LR			LR	18 02 10.6	
	comp=Z,973nm,21.9s,baz=328,slow=32								
NACB	**Ninganchiao**	**39.44**	**315**	*e*P			**P**	**17 48 19.6**	**-1.5**
	comp=Z,24nm,0.9s								
STKI	**Sintang**	**39.51**	**274**	P			**P**	**17 48 22.4**	**+0.5**
TPUB	**Ta-pu**	**39.59**	**313**	*e*P			**P**	**17 48 20.2**	**-2.1**
	comp=Z,27nm,1.2s								
SSLB	**Suanglung**	**39.66**	**314**	*e*P			**P**	**17 48 19.4**	**-3.5**
	comp=Z,13nm,1.0s								
PCJI	**Pacitan**	**39.78**	**261**	P			**P**	**17 48 28.7**	**+4.6**
YHNB	**Yeheng**	**39.91**	**316**	*e*P			**P**	**17 48 24.1**	**-1.1**
	comp=Z,58nm,1.2s								
TATO	**Taipei**	**40.03**	**316**	*e*P			**P**	**17 48 24.9**	**-1.1**
	comp=Z,216nm,1.8s								
GIRL	**Giralia**	**40.37**	**238**	P			**P**	**17 48 27.6**	**-1.3**
	baz=40,SNR=6.1								
INU	**Inuyama**	**40.56**	**342**	*e*P			**P**	**17 48 27.3**	**-2.9**
	comp=Z,48nm,1.7s								
KSM	**Kuching**	**40.82**	**276**	⇑P			**P**	**17 48 32.5**	**-0.2**
KSM	**Kuching**	**40.82**	**276**	*e*P			**P**	**17 48 31.9**	**-0.9**
	comp=Z,46nm,1.1s								
JNU	**Nakatsue**	**40.85**	**334**	*e*P			**P**	**17 48 31.7**	**-1.0**
	comp=Z,36nm,1.1s								
HIZ	**Hauiti**	**41.34**	**151**	*e*P			**P**	**17 48 36.4**	**-0.2**
	comp=Z,137nm,1.3s								
MJAR	**Matsushiro Arr**	**41.34**	**344**	P			**P**	**17 48 34.5**	**-2.2**
	comp=Z,3.0nm,0.9s,baz=170,slow=8.7,SNR=6.4								
MJAR				LR			LR	18 05 05.7	
	comp=Z,233nm,18.2s,baz=150,slow=35								
MAJO	**Matsushiro**	**41.34**	**344**	*e*P			**P**	**17 48 33.9**	**-2.8**
MAJO				pmax		pmax			
	comp=Z,13nm,1.0s								
MAJO	**Matsushiro**	**41.34**	**344**	*e*P			**P**	**17 48 33.9**	**-2.8**
	comp=Z,13nm,1.0s								
MAT	**Matsushiro**	**41.34**	**344**	P			**P**	**17 48 34.2**	**-2.5**
MAT				S			**S**	**17 54 45.6**	**-5.0**
MJB9	**Matsu-Tunnel**	**41.35**	**344**	*e*P			**P**	**17 48 34.4**	**-2.3**
	comp=Z,3.3nm,1.0s								
MORW	**Morawa**	**41.85**	**229**	P			**P**	**17 48 38.8**	**-2.2**
	baz=42,SNR=10								
KLBR	**Kellerberrin**	**41.99**	**224**	P			**P**	**17 48 39.4**	**-2.7**
	baz=42,SNR=3.9								
QZH	**Quanzhou**	**42.06**	**314**	⇓*i*P			**P**	**17 48 38.0**	**-4.7**
QZH				S			**S**	**17 54 56.3**	**-5.1**
QZH				LR			LR		
	comp=Z,2μm,22.7s								
QZH				LR			LR		
	comp=Z,880nm,14.8s								
QZH				LR			LR		
	comp=Z,1μm,24.0s								
BLDU	**Ballidu**	**42.18**	**226**	P			**P**	**17 48 41.6**	**-2.1**
	baz=42,SNR=5.4								
URZ	**Urewera**	**42.27**	**149**	P			**P**	**17 48 45.9**	**+1.7**
	comp=Z,4.5nm,0.6s,baz=350,slow=12,SNR=3.0								
URZ				LR			LR	18 03 38.0	
	comp=Z,569nm,18.6s,baz=309,slow=32								
CISI	**Cisompet, Garu**	**43.06**	**262**	P			**P**	**17 48 54.8**	**+3.7**
CISI	**Cisompet, Garu**	**43.06**	**262**	*e*P			**P**	**17 48 47.5**	**-3.6**
	comp=Z,103nm,0.9s								
BFZ	**Birch Farm**	**43.70**	**152**	*e*P			**P**	**17 48 57.2**	**+1.4**
	comp=Z,157nm,0.7s								
CNJI	**Cibinong**	**43.72**	**263**	P			P	17 49 05.7	+9.3
JOHN	**Johnston Islan**	**43.88**	**62**	*e*P			**P**	**17 48 56.4**	**-1.1**
	comp=Z,140nm,1.0s								
KHZ	**Kahutara**	**43.91**	**156**	*e*P			**P**	**17 48 55.1**	**-2.4**
	comp=Z,137nm,1.7s								
RPZ	**Rata Peaks**	**44.06**	**159**	LR			LR	18 04 48.8	
	comp=Z,1μm,21.4s,baz=320,slow=33								
RPZ	**Rata Peaks**	**44.06**	**159**	*e*P			**P**	**17 48 57.1**	**-1.5**
	comp=Z,6.1nm,1.1s								
LBZ	**Lake Benmore**	**44.34**	**160**	*e*P			**P**	**17 49 01.9**	**+1.0**
	comp=Z,115nm,1.5s								
SSE	**Sheshan**	**44.37**	**323**	*e*P			**P**	**17 49 02.0**	**+0.7**
SSE				pP			**sP**	**17 49 08.8**	**0.0**
SSE				S			**S**	**17 55 34.5**	**-0.6**
SSE				sS			**sS**	**17 55 46.0**	**+2.0**
SSE				pmax		pmax			
	comp=Z,39nm,0.7s								
SSE				pmax		pmax			
	comp=Z,72nm,3.5s								
SSE				LR			LR		
	comp=Z,330nm,23.1s								
SSE				LR			LR		
	comp=Z,490nm,23.1s								
SSE				LR			LR		
	comp=Z,520nm,19.8s								
DCZ	**Deep Cove**	**44.37**	**164**	*e*P			**P**	**17 49 00.6**	**-0.5**
	comp=Z,174nm,1.7s								
MLZ	**Mavora Lakes**	**44.56**	**163**	*e*P			**P**	**17 49 02.7**	**0.0**
	comp=Z,250nm,1.9s								
GZH	**Guangzhou**	**45.01**	**308**	P			**P**	**17 49 07.5**	**+1.0**
GZH				S			**S**	**17 55 47.3**	**+2.6**
GZH				LR			LR		
	comp=Z,2μm,18.0s								
CGJI	**Cibinong**	**45.12**	**264**	P			P	17 49 14.7	+7.1
XMIS	**Christmas Isla**	**45.42**	**259**	*e*P			**P**	**17 49 06.8**	**-3.1**
	comp=Z,178nm,1.5s								
ERM	**Erimo**	**45.62**	**352**	*e*P			**P**	**17 49 09.2**	**-1.9**
ERM				pmax		pmax			
	comp=Z,20nm,1.2s								
ERM	**Erimo**	**45.62**	**352**	*e*P			**P**	**17 49 09.2**	**-1.9**
	comp=Z,20nm,1.2s								
KSRS	**Korea Array**	**45.80**	**334**	P			**P**	**17 49 12.3**	**-0.1**
	comp=Z,1.4nm,0.7s,baz=142,slow=6.2,SNR=4.0								
KSRS				LR			LR	18 05 50.8	
	comp=Z,180nm,20.5s,baz=144,slow=33								
KSAR	**Wonju Array Be**	**45.80**	**334**	P			**P**	**17 49 12.4**	**-0.2**
KSAR	**Wonju Array Be**	**45.80**	**334**	P			**P**	**17 49 12.3**	**-0.2**
KS01	**Wonju Array Si**	**45.83**	**334**	*e*P			**P**	**17 49 11.8**	**-1.0**
QIZ	**Qiongzhong**	**46.04**	**300**	P			**P**	**17 49 14.5**	**-0.3**
QIZ				sP			**pP**	**17 49 20.5**	**+0.3**
QIZ				PP			**PP**	**17 51 01.3**	**-1.7**
QIZ				S			**S**	**17 55 59.5**	**-0.3**
QIZ				pmax		pmax			
	comp=Z,19nm,1.2s								
QIZ				pmax		pmax			
	comp=Z,81nm,4.4s								
QIZ				LR			LR		
	comp=Z,540nm,19.9s								
QIZ				LR			LR		
	comp=Z,940nm,22.9s								
QIZ	**Qiongzhong**	**46.04**	**300**	*e*P			**P**	**17 49 14.7**	**-0.1**
	comp=Z,23nm,1.1s								
KASI	**Kota Agung**	**46.28**	**266**	P			P	17 49 23.1	+6.3
INCN	**Inchon**	**46.39**	**333**	*e*P			**P**	**17 49 16.4**	**-0.8**
	comp=Z,66nm,1.3s								
NJ2	**Nanjing**	**46.46**	**322**	*e*P			**P**	**17 49 18.3**	**+0.4**
NJ2				pmax		pmax			
	comp=Z,11nm,0.5s								
LWLI	**Liwa**	**46.71**	**266**	P			P	17 49 28.1	+7.8
LHSI	**Lahat**	**47.26**	**268**	P			P	17 49 30.5	+6.1
MYKOM	**Kota Tinggi**	**47.27**	**275**	⇑P			**P**	**17 49 24.5**	**0.0**
MYKOM	**Kota Tinggi**	**47.27**	**275**	*e*P			**P**	**17 49 23.8**	**-0.8**
	comp=Z,34nm,1.2s								
ASAJ	**Asahikawa**	**47.76**	**352**	*e*P			**P**	**17 49 27.8**	**0.0**
	comp=Z,28nm,1.1s								
KGM	**Kluang**	**47.82**	**276**	⇓P			**P**	**17 49 28.8**	**0.0**
KUR	**Kuril'sk**	**48.37**	**357**	*i*P			**P**	**17 49 34.4**	**+1.9**
WHN	**Wuhan**	**48.44**	**317**	P		

HABR				*e*SS	**SS**	**18 01 21.2**	**-0.2**		
HABR				pmax	pmax				
	comp=E,11nm,1.6s								
HABR				pmax	pmax				
	comp=N,11nm,1.6s								
HABR				pmax	pmax				
	comp=Z,21nm,1.6s								
HABR				MLR	MLR				
	comp=Z,335nm,23.0s								
GSI	**Gunungsitoli**	**53.47 274**		P	P	17 50 17.7	+6.2		
GSI	**Gunungsitoli**	**53.47 274**		*e*P	**P**	**17 50 08.4**	**-3.1**		
	comp=Z,36nm,0.9s								
KCSI	**Kotacane, Aceh**	**53.50 277**		P	**P**	**17 50 10.4**	**-1.3**		
BJT	**Baijiatuao**	**53.56 327**		*e*P	**P**	**17 50 09.0**	**-2.7**		
BJT				pmax	pmax				
	comp=Z,56nm,1.8s								
BJT	**Baijiatuao**	**53.56 327**		*e*P	**P**	**17 50 09.0**	**-2.7**		
	comp=Z,56nm,1.8s								
BJI	**Beijing**	**53.58 327**		P	**P**	**17 50 11.5**	**-0.3**		
BJI				PP	**PP**	**17 52 14.5**	**+1.9**		
BJI				S	**S**	**17 57 42.3**	**-2.1**		
BJI				pmax	pmax				
	comp=Z,12nm,2.0s								
BJI				pmax	pmax				
	comp=Z,200nm,3.6s								
BJI				LR	LR				
	comp=Z,560nm,10.6s								
BJI				LR	LR				
	comp=Z,490nm,11.9s								
BJI				LR	LR				
	comp=Z,580nm,25.3s								
UTTA	**Uttaradit**	**53.82 295**		P	**P**	**17 50 14.4**	**+0.5**		
	comp=Z,7.4nm,1.0s,comp=Z,66nm								
COCO	**West Island**	**54.18 257**		*e*P	**P**	**17 50 14.7**	**-1.9**		
COCO	**West Island**	**54.18 257**		*e*P	**P**	**17 50 14.7**	**-1.9**		
	comp=Z,140nm,0.4s								
SRDT	**SRDT**	**54.19 290**		P	**P**	**17 50 17.6**	**+0.9**		
	comp=Z,121nm,1.1s								
XAN	**Xi'an**	**54.20 317**		P	**P**	**17 50 16.0**	**-0.6**		
XAN				sP	sP	17 50 23.3	-0.8		
XAN				PcP	**PcP**	**17 51 20.3**	**-0.6**		
XAN				PP	**PP**	**17 52 19.0**	**+0.5**		
XAN				S	**S**	**17 57 50.0**	**-3.2**		
XAN				ScS	**ScS**	**17 59 59.5**	**-6.1**		
XAN				SS	**SKiKP**	**18 01 30.0**	**+2.0**		
XAN				pmax	pmax				
	comp=Z,27nm,1.5s								
XAN				pmax	pmax				
	comp=Z,120nm,5.9s								
XAN				LR	LR				
	comp=Z,480nm,19.0s								
XAN				LR	LR				
	comp=Z,500nm,19.9s								
XAN				LR	LR				
	comp=Z,930nm,21.8s								
TYV	**Tymovskoe**	**54.39 354**		*e*P	P	17 50 07.0	-11		
TYV				pmax	pmax				
	comp=Z,8.0nm,0.6s								
KMI	**Kunming**	**54.55 304**		P	**P**	**17 50 20.3**	**+0.9**		
KMI				pP	sP	17 50 26.3	-0.7		
KMI				PP	**PP**	**17 52 22.0**	**+0.1**		
KMI				S	**S**	**17 58 01.3**	**+2.8**		
KMI				pmax	pmax				
	comp=Z,28nm,1.3s								
KMI				pmax	pmax				
	comp=Z,160nm,5.0s								
KMI				LR	LR				
	comp=Z,290nm,13.3s								
KMI				LR	LR				
	comp=Z,430nm,19.9s								
KMI				LR	LR				
	comp=Z,550nm,26.0s								
SUKH	**Sukhothai**	**54.58 294**		P	**P**	**17 50 20.3**	**+0.8**		
	comp=Z,5.9nm,1.1s,comp=Z,61nm								
KLR	**Kul'dur**	**54.87 345**	*c*	*i*P	**P**	**17 50 21.1**	**+0.1**		
LAMP	**Lampang**	**54.89 295**		P	**P**	**17 50 22.6**	**+0.8**		
	comp=Z,8.3nm,1.0s								
UMPA	**Umpang Tak**	**54.92 292**		P	**P**	**17 50 23.3**	**+1.2**		
	comp=Z,6.2nm,1.1s,comp=Z,101nm								
CM01	**Chiang Mai Arr**	**55.47 295**		*e*P	**P**	**17 50 25.9**	**0.0**		
CM31	**Chiang Mai Arr**	**55.49 295**		*e*P	**P**	**17 50 26.2**	**+0.1**		
CMAR	**Chiang Mai Arr**	**55.49 295**		P	**P**	**17 50 26.6**	**+0.5**		
	comp=Z,16nm,1.0s,baz=112,slow=5.4,SNR=63								
CMAR				LR	LR	18 13 55.4			
	comp=Z,226nm,19.4s,baz=107,slow=36								
CMMT	**Chiang Mai**	**55.60 295**		P	**P**	**17 50 27.1**	**+0.2**		
	comp=Z,23nm,1.3s								
CHTO	**Chiang Mai**	**55.60 295**		P	**P**	**17 50 27.2**	**+0.3**		
	comp=Z,103nm,1.3s								
CHTO	**Chiang Mai**	**55.60 295**		*e*P	**P**	**17 50 27.1**	**+0.2**		
CHTO				pmax	pmax				
	comp=Z,40nm,1.4s								
CHTO	**Chiang Mai**	**55.60 295**		*e*P	**P**	**17 50 27.1**	**+0.2**		
	comp=Z,40nm,1.4s								
CMAI	**Chiengmai2**	**55.85 297**		P	**P**	**17 50 29.4**	**+0.5**		
	comp=Z,1μm,0.7s,comp=Z,115μm								
CD2	**Chengdu**	**56.29 311**		⇑P	**P**	**17 50 31.0**	**-0.7**		
CD2				pP	pP	17 50 36.5	-0.7		
CD2				PP	**PP**	**17 52 36.5**	**-0.8**		
CD2				PcS	**PcS**	**17 55 28.8**	**-1.0**		
CD2				S	**S**	**17 58 21.0**	**-0.4**		
CD2				sS	sS	17 58 30.5	+0.1		
CD2				SS	**SS**	**18 02 09.5**	**+1.0**		
CD2				pmax	pmax				
	comp=Z,20nm,0.5s								
CD2				pmax	pmax				
	comp=Z,180nm,4.1s								
CD2				LR	LR				
	comp=Z,700nm,18.6s								
CD2				LR	LR				
	comp=Z,960nm,24.5s								
CD2				LR	LR				
	comp=Z,890nm,18.6s								
PEA0	**Petropavlovsk-**	**56.48 5**		*e*P	**P**	**17 50 33.0**	**+0.4**		
PEA0B	**Petropavlovsk-**	**56.48 5**		*e*P	**P**	**17 50 33.8**	**+1.2**		
	comp=Z,44nm,1.3s								
PETK	**Petropavlovsk-**	**56.48 5**		P	**P**	**17 50 33.0**	**+0.5**		
	comp=Z,3.6nm,0.5s,baz=149,slow=3.9,SNR=14								
PEA1	**Petropavlovsk-**	**56.48 5**		*e*P	**P**	**17 50 33.0**	**+0.5**		
PET	**Petropavlovsk**	**56.48 6**		*e*P	**P**	**17 50 33.5**	**+1.0**		
PET				pmax	pmax				
	comp=Z,46nm,1.5s								
PET	**Petropavlovsk**	**56.48 6**		*e*P	**P**	**17 50 33.5**	**+1.0**		
	comp=Z,46nm,1.5s								
HHC	**Hu-ho-hao-te**	**56.70 325**		*e*P	**P**	**17 50 35.0**	**+0.5**		
HHC				PP	**PP**	**17 52 42.0**	**+1.2**		
HHC				S	**S**	**17 58 24.8**	**-1.8**		
HHC				sS	sS	17 58 34.5	-1.1		
HHC				pmax	pmax				
	comp=Z,15nm,1.2s								
HHC				pmax	pmax				
	comp=Z,79nm,3.8s								
HHC				LR	LR				
	comp=Z,520nm,14.2s								
HHC				LR	LR				
	comp=Z,420nm,16.2s								
HHC				LR	LR				
	comp=Z,500nm,16.3s								
NKL	**Nikolayevsk**	**56.88 353**		*e*P	**P**	**17 50 37.0**	**+1.7**		
HLK	**Haleakala**	**57.06 63**		*e*P	**P**	**17 50 37.6**	**+0.1**		
	comp=Z,321nm,1.3s								
BTO	**Baotou**	**57.44 324**		*e*P	**P**	**17 50 39.3**	**-0.5**		
LZH	**Lanzhou**	**58.81 316**		*e*P	**P**	**17 50 51.0**	**+1.5**		
LZH				pP	pP	17 50 55.5	+0.5		
LZH				sP	sP	17 51 02.8	+5.7		
LZH				*e*S	**S**	**17 58 53.5**	**-1.0**		
LZH				sS	sS	17 59 03.0	-0.6		
LZH				SS	**SS**	**18 02 48.8**	**+0.7**		
LZH				pmax	pmax				
	comp=Z,73nm,1.3s								
LZH				pmax	pmax				
	comp=Z,230nm,4.5s								
LZH				LR	LR				
	comp=Z,530nm,13.9s								
LZH				LR	LR				
	comp=Z,530nm,12.1s								
LZH				LR	LR				
	comp=Z,730nm,16.0s								
HIA	**Hailar**	**58.88 337**		*e*P	**P**	**17 50 49.5**	**0.0**		
HIA				pmax	pmax				
	comp=Z,27nm,1.1s								
HIA	**Hailar**	**58.88 337**		*e*P	**P**	**17 50 49.5**	**0.0**		
	comp=Z,27nm,1.1s								
SMY	**Shemya**	**59.15 16**		*e*P	**P**	**17 50 52.5**	**+1.2**		
SMY				pmax	pmax				
	comp=Z,136nm,1.4s								
SMY	**Shemya**	**59.15 16**		*e*P	**P**	**17 50 52.5**	**+1.2**		
	comp=Z,136nm,1.4s								
MA2	**Magadan**	**62.66 360**		*i*P	**P**	**17 51 19.2**	**+4.1**		
GTA	**Gaotai**	**63.24 318**		⇑P	**P**	**17 51 20.0**	**+0.5**		
GTA				pP	pP	17 51 25.0	-0.1		
GTA				sP	sP	17 51 28.3	+1.1		
GTA				S	**S**	**17 59 51.8**	**+1.0**		
GTA				sS	sS	17 59 59.3	-0.7		
GTA				SS	**SS**	**18 03 59.5**	**+2.0**		
GTA				pmax	pmax				
	comp=Z,13nm,1.4s								
GTA				pmax	pmax				
	comp=Z,130nm,5.1s								
GTA				LR	LR				
	comp=Z,700nm,15.2s								
GTA				LR	LR				
	comp=Z,430nm,19.5s								
GTA				LR	LR				
	comp=Z,1μm,16.2s								
SHL	**Shillong**	**63.88 300**		*e*P	**P**	**17 51 26.0**	**+1.9**		
SHL				*e*S	**S**	**18 00 04.0**	**+4.6**		
SONA0	**Songino Array**	**64.03 328**		*e*P	**P**	**17 51 23.7**	**-0.8**		
	comp=Z,8.4nm,1.0s								
SONM	**Songino Array**	**64.03 328**		P	**P**	**17 51 23.7**	**-0.8**		
	comp=Z,2.3nm,1.0s,baz=148,slow=5.8,SNR=14								
SONA1	**Songino Array**	**64.03 328**		*e*P	**P**	**17 51 23.7**	**-0.9**		
NIKH	**Nikolski High**	**65.46 25**		*e*P	**P**	**17 51 32.5**	**-1.0**		
	comp=Z,221nm,1.2s								
LSA	**Lhasa**	**65.80 305**		*e*P	**P**	**17 51 36.3**	**-0.6**		
LSA				pmax	pmax				
	comp=Z,14nm,1.0s								
LSA	**Lhasa**	**65.80 305**		*e*P	**P**	**17 51 36.2**	**-0.6**		
	comp=Z,14nm,1.0s								
SEY	**Seymchan**	**66.05 1**		*i*P	**P**	**17 51 40.6**	**+3.5**		
YAK	**Yakutsk**	**67.12 349**		*e*P	**P**	**17 51 45.6**	**+1.6**		
YAK				pmax	pmax				
	comp=N,12nm,1.5s								
YAK				pmax	pmax				
	comp=Z,25nm,1.4s								
YAK				pmax	pmax				
	comp=E,6.0nm,1.8s								
YAK	**Yakutsk**	**67.12 349**		*e*P	**P**	**17 51 42.4**	**-1.6**		
	comp=E,23nm,0.8s								
ZAK	**Zakamensk**	**67.21 329**		*e*P	**P**	**17 51 44.8**	**-0.2**		
ZAK				pmax	pmax				
	comp=Z,14nm,1.2s								
AKUT	**Akutan**	**67.59 26**		*e*P	**P**	**17 51 47.1**	**0.0**		
	comp=Z,205nm,1.4s								
TLY	**Talaya**	**67.81 330**		*e*P	**P**	**17 51 47.2**	**-1.5**		
TLY				pmax	pmax				
	comp=Z,8.0nm,1.1s								
TLY	**Talaya**	**67.81 330**		*e*P	**P**	**17 51 47.1**	**-1.5**		
	comp=Z,8.3nm,1.1s								
JIRN	**Jiri**	**69.36 301**		*e*P	**P**	**17 51 59.5**	**+0.2**		
GUN	**Gumba**	**69.69 301**		*e*P	**P**	**17 52 01.5**	**+0.2**		
PKIN	**Phulchoki**	**70.02 301**		*e*P	**P**	**17 52 04.0**	**+0.8**		
	comp=Z,12nm,0.7s								
KKN	**Kakani**	**70.17 301**		*e*P	**P**	**17 52 03.9**	**-0.2**		
DMN	**Daman**	**70.28 301**		*e*P	**P**	**17 52 05.0**	**+0.2**		
	comp=Z,46nm,0.9s								
SDPT	**Sand Point**	**70.73 27**		*e*P	**P**	**17 52 09.1**	**+2.5**		
	comp=Z,224nm,1.4s								
GKN	**Gorkha**	**70.78 301**		*e*P	**P**	**17 52 07.5**	**-0.2**		
	comp=Z,97nm,1.3s								
KOLN	**Koldanda**	**71.61 301**		*e*P	**P**	**17 52 12.4**	**-0.4**		
	comp=Z,25nm,0.8s								
BILL	**Bilibino**	**71.98**	6⇑	*e*P	P	17 52 18.8	+4.9		
BILL				*e*		17 52 36.9			
BILL				pmax	pmax				
	comp=Z,31nm,2.5s								
BILL				MLR	MLR				
	comp=Z,4μm,16.0s								
BILL	**Bilibino**	**71.98 6**		*e*P	**P**	**17 52 15.0**	**+1.1**		
	comp=Z,11nm,1.0s								
PYUN	**Piuthan**	**72.21 301**		*e*P	**P**	**17 52 15.8**	**-0.7**		
	comp=Z,47nm,0.9s								
WMQ	**Urumqi**	**73.33 318**		*e*P	**P**	**17 52 23.5**	**+0.9**		
WMQ				pP	pP	17 52 29.0	+0.8		
WMQ				sP	sP	17 52 32.5	+2.2		
WMQ				S	**SKiKP**	**18 01 52.8**	**-0.8**		
WMQ				ScS	**SKSac**	**18 02 27.5**	**-0.8**		
WMQ				SS	**SS**	**18 06 31.5**	**-1.6**		
WMQ				pmax	pmax				
	comp=Z,15nm,1.8s								
WMQ				pmax	pmax				
	comp=Z,160nm,3.7s								
WMQ				LR	LR				
	comp=Z,920nm,16.4s								
WMQ				LR	LR				
	comp=Z,410nm,14.2s								
WMQ				LR	LR				
	comp=Z,870nm,21.8s								
VNDA	**Vanda**	**74.41 178**		P	**P**	**17 52 29.2**	**+1.0**		
	comp=Z,2.0nm,0.8s,baz=330,slow=6.5,SNR=5.1								
VNDA	**Vanda**	**74.41 178**		*e*P	**P**	**17 52 29.2**	**+1.0**		
VNDA				pmax	pmax				
	comp=Z,14nm,1.2s								
VNDA	**Vanda**	**74.41 178**		*e*P	**P**	**17 52 29.2**	**+1.0**		
	comp=Z,14nm,1.2s								
OHAK	**Old Harbor**	**75.09 28**		*e*P	**P**	**17 52 33.4**	**+0.9**		
	comp=Z,188nm,1.4s								
SVW2	**Sparrevohn**	**76.20 24**		*e*P	**P**	**17 52 40.3**	**+1.5**		
	comp=Z,90nm,1.1s								
RSO	**Redoubt South**	**77.02 25**		*e*P	**P**	**17 52 43.4**	**-0.3**		
TT01	**Tatalina**	**77.06 22**		*e*P	**P**	**17 52 44.6**	**+1.0**		
TTA	**Tatalina**	**77.08 22**		*e*P	**P**	**17 52 44.5**	**+0.7**		
TTA				pmax	pmax				
	comp=Z,59nm,1.0s								
TTA	**Tatalina**	**77.08 22**		*e*P	**P**	**17 52 44.5**	**+0.7**		
	comp=Z,59nm,1.0s								
MK01	**Makanchi Array**	**77.91 319**		*e*P	**P**	**17 52 47.9**	**-0.8**		
MK31	**Makanchi Array**	**77.92 319**		*e*P	**P**	**17 52 48.0**	**-0.8**		
MK31	**Makanchi Array**	**77.92 319**		*e*P	**P**	**17 52 48.0**	**-0.8**		
MK32	**Makanchi Array**	**77.92 319**		*e*P	**P**	**17 52 49.2**	**+0.4**		
MKAR	**Makanchi Array**	**77.92 319**		P	**P**	**17 52 49.2**	**+0.4**		
	comp=Z,4.7nm,1.0s,baz=98,slow=7.5,SNR=17								
MKAR	**Makanchi Array**	**77.92 319**		*e*P	**P**	**17 52 48.2**	**-0.6**		
	comp=Z,53nm,1.0s								
MAKZ	**Makanchi**	**78.13 319**		*e*P	**P**	**17 52 49.1**	**-0.8**		
MAKZ				pmax	pmax				
	comp=Z,29nm,1.5s								
MAKZ	**Makanchi**	**78.13 319**		*e*P	**P**	**17 52 49.1**	**-0.8**		
	comp=Z,29nm,1.5s								
ZAA0	**Zalesovo Array**	**78.83 327**		*e*P	**P**	**17 52 52.0**	**-1.6**		
ZALV	**Zalesovo Beam**	**78.83 327**		P	**P**	**17 52 52.9**	**-0.7**		
	comp=Z,1.9nm,0.7s,baz=104,slow=6.3,SNR=9.8								
ZAA1	**Zalesovo Array**	**78.83 327**		*e*P	**P**	**17 52 52.9**	**-0.7**		
CAST	**Castle Rocks**	**78.84 23**		*e*P	**P**	**17 52 52.8**	**-0.7**		
	comp=Z,448nm,1.9s								
NVS	**Novosibirsk**	**80.02 327**	⇓	*i*P	**P**	**17 53 00.9**	**+0.9**		
NVS				pmax	pmax				
	comp=N,13nm,1.8s								
NVS				pmax	pmax				
	comp=E,24nm,1.8s								
NVS				pmax	pmax				
	comp=Z,34nm,1.8s								
KSH	**Kashi**	**80.49 311**		*e*P	**P**	**17 53 05.0**	**+1.9**		
KSH				*e*pP	sP	17 53 10.5	-0.4		
KSH				*e*sP	PcP	17 53 12.5	+2.4		
KSH				*e*PP	**PP**	**17 56 10.8**	**+4.2**		
KSH				S	**S**	**18 03 10.3**	**+1.0**		
KSH				SKS	**SKSac**	**18 03 17.8**	**-3.1**		
KSH				SS	**SS**	**18 08 27.8**	**+6.1**		
KSH				pmax	pmax				
	comp=Z,80nm,2.1s								
KSH				LR	LR				
	comp=Z,320nm,12.4s								
KSH				LR	LR				
	comp=Z,300nm,10.2s								
KSH				LR	LR				
	comp=Z,530nm,20.9s								
NRIK	**Noril'sk**	**83.92 341**		P	**P**	**17 53 21.0**	**+0.7**		
	comp=Z,4.6nm,0.6s,baz=130,slow=5.2,SNR=11								
KKAR	**Karatay Array**	**85.19 314**		*e*P	**P**	**17 53 26.9**	**-0.4**		
KKAR				pmax	pmax				
	comp=Z,119nm,1.1s								
KKAR	**Karatay Array**	**85.19 314**		*e*P	**P**	**17 53 26.9**	**-0.4**		
	comp=Z,120nm,1.1s								
MAW	**Mawson**	**86.22 203**		P	**P**	**17 53 32.5**	**+0.6**		
	comp=Z,2.2nm,0.9s,baz=97,slow=8.8,SNR=3.9								
MAW	**Mawson**	**86.22 203**		*e*P	**P**	**17 53 36.0**	**+4.1**		
MAW				pmax	pmax				
	comp=Z,5.0nm,0.4s								
MAW	**Mawson**	**86.22 203**		*e*P	P	**17 53 36.0**	**+4.1**		
	comp=Z,5.2nm,0.4s								
QSPA	**South Pole Qui**	**86.67 180**		*e*P	**P**	**17 53 33.8**	**-0.5**		
BRVK	**Borovoye**	**86.95 323**		*e*P	**P**	**17 53 36.4**	**+0.7**		
BRVK				pmax	pmax				
	comp=Z,6.0nm,1.1s								
ABKAR	**Akbulak array**	**93.07 319**		*e*P	**P**	**17 54 02.4**	**-2.2**		
	comp=Z,20nm,0.8s								
ARU	**Arti**	**93.99 326**	*d*	*i*P	**P**	**17 54 08.9**	**+0.3**		
ARU						17 57 54.4			
ARU				PPP	PPP	17 59 54.2			
ARU				S	**SKSac**	**18 04 42.8**	**+0.1**		
ARU				SP	**SP**	**18 06 33.4**	**+1.5**		
ARU				SS	**SS**	**18 11 43.8**	**+6.0**		
ARU				pmax	pmax				
	comp=Z,5.0nm,1.7s								
GEYT	**Alibeck**	**94.17 308**		P	**P**	**17 54 09.2**	**-0.7**		
	comp=Z,1.8nm,0.9s,baz=158,slow=4.8,SNR=4.7								
GEYT				PP	**PP**	**17 57 57.0**	**+0.3**		
	comp=Z,1.1nm,0.4s,baz=10,slow=9.2,SNR=5.6								
YKB5	**Yellowknife Ar**	**94.98 28**		*e*P	**P**	**17 54 12.4**	**-0.6**		
YKA	**Yellowknife Ar**	**94.99 28**		P	**P**	**17 54 12.5**	**-0.6**		
	comp=Z,1.5nm,0.9s,baz=272,slow=4.9,SNR=3.3								
YPP	**Pitchstone Pla**	**98.24 46**		*e*P	**P**	**17 54 25.3**	**-3.3**		
	comp=Z,129nm,1.8s								
CLL	**Collm**	**120.60 331**		*e*(PKPdf)	**PKPdf**	**17 59 45.0**	**+2.5**		
CLL				*i*		17 59 50.5			
CLL	**Collm**	**120.60 331**		*e*PKIKP	**PKPdf**	**17 59 45.0**	**+2.5**		
CLL				*i*		17 59 50.5			
GERES	**GERESS Array B**	**121.76 328**		PKP	**PKPdf**	**17 59 46.2**	**+1.2**		
	comp=Z,0.8nm,0.8s,baz=64,slow=5.6,SNR=3.4								
LPAZ	**La Paz**	**136.83 118**		PKP	**PKPdf**	**18 00 18.0**	**+2.9**		
	comp=Z,1.8nm,0.9s,baz=357,slow=2.6,SNR=4.9								
SDV	**Santo Domingo**	**138.38 80**		PKP	**PKPdf**	**18 00 19.4**	**+1.9**		
	comp=Z,4.1nm,0.3s,baz=318,slow=8.9,SNR=2.7								
PCRV	**Puerto La Cruz**	**144.10 77**		PKP	**PKPdf**	**18 00 29.5**	**+1.9**		
	comp=Z,6.0nm,0.6s,baz=233,slow=3.2,SNR=4.1								
TOA0	**Torodi Ar. Sit**	**148.00 290**		*e*PKPbc	**PKPbc**	**18 00 36.7**	**-0.6**		
TORD	**Torodi Ar. Bea**	**148.00 290**		PKPbc	**PKPbc**	**18 00 37.2**	**0.0**		
	comp=Z,3.8nm,0.8s,baz=67,slow=2.9,SNR=17								
TOA1	**Torodi Ar. Sit**	**148.00 290**		*e*PKPbc	**PKPbc**	**18 00 37.2**	**0.0**		
PTGA	**Pitinga**	**148.92 97**		PKPbc	**PKPbc**	**18 00 40.0**	**+0.3**		
	comp=Z,7.6nm,1.1s,baz=71,slow=13,SNR=4.7								
PTGA	**Pitinga**	**148.92 97**		*e*PKPbc	**PKPbc**	**18 00 39.5**	**-0.2**		

IDC ***26*** *17:44:17.8±0.5,25.16N×109.54W,h0km,mb4.8/29, mb1 4.9/33,mb1mx4.9/46,mbtmp4.8/33,ML4.5/4,MS5.7/30, Ms1 5.7/30,ms1mx5.6/37,Error ellipse: s-maj=16.7km s-min=9.5km az=66.0*

MEX ***26*** *17:44:18.7±0.3,25.11N×109.64W,h13km±4km,MD5.9*

MOS ***26*** *17:44:18.1±1.2,25.13N×109.54W,h10km,mb5.7/52, MS6.0/25,Error ellipse: s-maj=6.2km s-min=3.5km az=95.4*

NEIC ***26*** *17:44:20.4±0.2,25.10N×109.53W,h12km,mb5.6/215, ME6.0,MS5.8/141,MW6.0,MD5.9(MEX),Error ellipse: s-maj=4.1km s-min=2.5km az=215.0,Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*

NEIC Felt [III] at Los Mochis, Sinaloa. Also felt at Guasave. Felt at La Paz, Baja California Sur.

ISCJB ***26*** *17:44:20.3±0.2,25.26N±0.02×109.42W±0.01,h17km, mb5.4/212,MS5.8/199,Error ellipse: s-maj=2.8km s-min=1.5km az=16.0*

GCMT ***26*** *17:44:20.4±0.1,25.06N×109.63W,h18km,MW6.0/138, Moment Tensor Solution. s128,c269; s138,c492; Duration: 2s6 Moment tensor: Scale 1018Nm; Mrr-0.07±.01; Mθθ-1.36±.01; Mϕϕ1.43±.01; Mrθ-0.35±.02; Mθϕ-0.12±.01; Mϕr0.01±.02; Best double couple: M₀1.44500×1018 NP1:ϕs133.00000°,δ81.00000°, λ-169.00000°. NP2:ϕs42.00000°,δ79.00000°,λ-9.00000°. Principal axes: T 1.4360, Plg1.0000°, Azm267.0000°; N 0.0210, Plg76.0000°, Azm173.0000°; P -1.4540, Plg14.0000°, Azm358.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC ***26*** *17:44:21.0±0.0,25.09N×109.55W,h11km,Moment Tensor Solution. s43 Moment tensor: Scale 1018Nm; Mrr-0.17; Mθθ-1.09; Mϕϕ1.26; Mrθ0.17; Mθϕ-0.13; Mϕr-0.27; Best double couple: M₀1.20000×1018 NP1:ϕs132.00000°, δ89.00000°,λ165.00000°. NP2:ϕs222.00000°,δ75.00000°, λ1.00000°. Principal axes: T 1.3200, Plg10.0000°, Azm86.0000°; N -0.1900, Plg75.0000°, Azm309.0000°; P -1.1300, Plg9.0000°, Azm178.0000°;*

BJI ***26*** *17:44:22.3,25.20N×109.60W,h20km,mb5.4/13, mB5.9/31,Ms6.1/33,Ms7 5.8/31*

ISC 26 17:44:21.5±0.2,25.09N±0.03×109.54W±0.03,h17km, n1304,σ2s09/1291,mb5.6/234,MS5.9/202,5C-17D,Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPIG	**La Paz**	**1.21**	**216**	Pg	Pn	17 44 37.0	-6.6
	379nm,0.3s,baz=186,slow=1.7,SNR=112						
LPIG				Lg	Lg	17 44 53.1	
	5μm,0.3s,baz=240,slow=8.1,SNR=30						
LPIG	**La Paz**	**1.21**	**216**	*e*P	Pn	17 44 37.0	-6.6
LPIG				*i* S	**Sb**	**17 44 51.4**	**-7.9**
SLBS	**Sierra La Lagu**	**1.45**	**195**	*e*Pn	Pn	17 44 40.1	-6.9
GUYB	**Guaymas**	**3.04**	**337**	*e*P	Pn	17 45 02.8	-6.1
SRIG	**Santa Rosalia**	**3.29**	**313**	*e*P	Pn	17 45 05.9	-6.4
SRIG				*i* S	**Sn**	**17 45 43.0**	**-8.0**
SRIG	**Santa Rosalia**	**3.29**	**313**	*e*Pn	Pn	17 45 07.0	-5.3
SRIG				*e*S	**Sn**	**17 45 43.5**	**-7.5**
MAIG	**Mazatlaan**	**3.42**	**123**	*e*P	**Pn**	**17 45 10.4**	**-3.6**
MAIG	**Mazatlaan**	**3.42**	**123**	*e*P	**Pn**	**17 45 10.4**	**-3.6**
HPIG		**3.94**	**61**	*e*P	**Pn**	**17 45 18.3**	**-3.1**
HPIG				*i* S	**Sn**	**17 46 04.0**	**-3.3**
HPIG		**3.94**	**61**	*e*Pn	**Pn**	**17 45 18.3**	**-3.1**
HPIG				*e*S	**Sb**	**17 46 19.7**	**+1.6**
HSIG		**4.11**	**342**	*i* P	Pn	17 45 18.7	-4.9
HSIG				*i* S	**Sn**	**17 46 05.2**	**-6.2**

Y14A	Wickenburg	9.32	342	ePn	Pn	17 46 32.9	-2.2
CPRX	Cap Rock	9.34	31	ePn	Pn	17 46 34.3	-1.1
BNM	Barren Site	9.38	15	ePn	Pn	17 46 34.2	-1.9
MOIG	Morelia	9.41	123	ePn	Pn	17 46 36.8	+0.1
X18A	Snowflake	9.41	358	ePn	Pn	17 46 35.5	-1.1
X16A	Lo Mia Camp, P	9.44	350	ePn	Pn	17 46 35.1	-1.8
IKP	In-Ko-Pah, Jac baz=141,SNR=100	9.48	324	P	Pn	17 46 36.5	-0.9
LAZ	Ladron	9.51	12	ePn	Pn	17 46 36.4	-1.6
LPM	Los Pinos Moun	9.53	15	ePn	Pn	17 46 37.3	-0.9
CBX	Cerro Bola	9.53	321	eP	Pn	17 46 33.9	-4.2
CBX	Cerro Bola	9.53	321	iP	Pn	17 46 36.7	-1.4
933A	Laredo baz=257	9.54	73	P	Pn	17 46 36.0	-2.1
SWSC	Sam W. Stewart baz=143,SNR=18	9.55	326	P	Pn	17 46 36.5	-1.8
833A	Chaparral WMA, baz=253	9.62	68	P	Pn	17 46 37.3	-2.0
Y12C	Blythe baz=152,SNR=16	9.66	334	P	Pn	17 46 39.0	-0.8
Y12C	Blythe	9.66	334	ePn	Pn	17 46 38.5	-1.3
BAR	Barrett	9.81	322	ePn	Pn	17 46 41.8	-0.1
733A	Divot King Ran baz=251	9.83	66	P	Pn	17 46 40.3	-1.8
MONP2	Monument Peak baz=140,SNR=103	9.84	324	P	Pn	17 46 41.5	-0.9
034A	Hebbronville baz=261,SNR=26	9.95	76	P	Pn	17 46 42.4	-1.4
BC3	Big Chuckawall baz=147,SNR=58	9.97	330	P	Pn	17 46 44.2	+0.1
W18A	Petrified Fore baz=179,SNR=64	10.00	359	P	Pn	17 46 44.8	+0.2
W18A	Petrified Fore	10.00	359	ePn	Pn	17 46 44.1	-0.5
PDMCI	Parker Dam,Lak baz=155,SNR=60	10.01	338	P	Pn	17 46 44.1	-0.5
JCT	Junction City baz=240,SNR=14	10.15	56	P	Pn	17 46 47.4	+0.9
JCT	Junction City	10.15	56	eP	Pn	17 46 47.5	+0.9
JCT	Junction City	10.15	56	ePn	Pn	17 46 47.5	+0.9
ANMO	Albuquerque baz=196	10.18	14	P	Pn	17 46 46.1	-1.0
ANMO	Albuquerque	10.18	14	diP	Pn	17 46 48.2	+1.1
ANMO	comp=Z,376nm,1.7s			pmax	pmax		
ANMO	Albuquerque	10.18	14	ePn	Pn	17 46 47.1	0.0
633A	Saathoff Ranch baz=247,SNR=11	10.19	62	P	Pn	17 46 46.5	-0.6
934A	Benavides baz=258	10.19	73	P	Pn	17 46 45.5	-1.6
109C	Camp Elliot, M baz=138	10.21	321	P	Pn	17 46 47.2	-0.1
IRM	Iron Mountain baz=150,SNR=74	10.27	333	P	Pn	17 46 47.4	-0.7
834A	Tilden baz=255	10.28	71	P	Pn	17 46 46.8	-1.6
TPFO	Pinon Flats baz=143,SNR=62	10.41	326	P	Pn	17 46 50.1	-0.1
PFO	Pinyon Flats O comp=Z,0.2nm,0.3s,baz=147,slow=13,SNR=26	10.42	326	Pn	Pn	17 46 51.1	+0.8
PFO	comp=Z,0.2nm,0.3s,baz=138,slow=16,SNR=1.7			Sn	Sn	17 48 52.8	+6.1
PFO	comp=Z,0.2nm,0.3s,baz=260,slow=18,SNR=2.3			Lg	Lg	17 49 49.7	
PFO	Pinyon Flats O baz=143,SNR=58	10.42	326	P	Pn	17 46 49.6	-0.6
PFO	Pinyon Flats O	10.42	326	ePn	Pn	17 46 50.2	0.0
PFO				eSn	Sn	17 48 52.8	+6.1
PFO				eLg	Lg	17 49 49.7	
035Z	Hargill baz=265	10.43	80	P	Pn	17 46 49.6	-0.6
035A	Encino baz=262	10.45	77	P	Pn	17 46 48.7	-1.8
734A	La Parita Cree baz=252	10.48	67	P	Pn	17 46 50.7	-0.3
BELC	Belle Mtn. Jos baz=146,SNR=46	10.51	329	P	Pn	17 46 50.2	-1.4
WUAZ	Wupatki baz=171,SNR=21	10.51	352	P	Pn	17 46 51.1	-0.5
WUAZ	Wupatki	10.51	352	ePn	Pn	17 46 51.1	-0.5
533A	Kerrville baz=244	10.55	60	P	Pn	17 46 51.6	-0.5
NEE2	Needles Airpor baz=154,SNR=13	10.60	337	P	Pn	17 46 51.5	-1.2
MSTX	Muleshoe baz=215,SNR=29	10.63	32	P	Pn	17 46 51.6	-1.5
MSTX	Muleshoe	10.63	32	ePn	Pn	17 46 52.0	-1.1
W13A	Hualapai Mount	10.66	340	ePn	Pn	17 46 53.6	-0.1
KVTX	Kingsville	10.73	74	ePn	Pn	17 46 53.5	-1.0
MURC	Murrieta baz=140,SNR=13	10.79	324	P	Pn	17 46 53.6	-1.7
MURC	baz=140			S	Sn	17 49 00.3	+4.6
DEIG	Demacu	10.80	114	eP	Pn	17 46 53.1	-2.6
DEIG	Demacu	10.80	114	eP	Pn	17 46 53.1	-2.6
433A	Art baz=241,SNR=26	10.82	56	P	Pn	17 46 55.6	-0.1
634A	China Grove, S baz=249	10.83	64	P	Pn	17 46 54.9	-0.9
835A	Beeville baz=256	10.94	71	P	Pn	17 46 55.8	-1.6
534A	Blanco baz=246,SNR=9.3	10.98	61	P	Pn	17 46 58.2	+0.4
GMRC	Granite Mounta baz=150,SNR=47	11.02	333	P	Pn	17 46 58.1	-0.5
LDFC	Landfair	11.06	335	ePn	Pn	17 46 59.4	+0.4
735A	Kenedy baz=253	11.11	68	P	Pn	17 46 59.0	-0.7
SCI2	San Clemente I baz=133	11.13	317	P	Pn	17 47 00.1	+0.3
BBRC	Big Bear Solar baz=143	11.16	327	P	Pn	17 47 01.2	+0.6
UNM	Universidad Na	11.17	119	eP	Pn	17 47 02.5	+1.7
UNM	Universidad Na	11.17	119	ePn	Pn	17 47 02.5	+1.7
333A	Richland Sprin baz=239,SNR=12	11.19	54	P	Pn	17 47 01.0	+0.3
936A	North Padre Is baz=261	11.22	75	P	Pn	17 47 00.8	-0.3
635A	Leesville baz=250	11.31	65	P	Pn	17 47 01.0	-1.3
CIS	Catalina Islan baz=135	11.34	319	P	Pn	17 47 02.4	-0.4
HEC	Hector,Ludlow baz=147,SNR=24	11.35	330	P	Pn	17 47 01.6	-1.4
ABTX	Abilene, Hawle baz=232	11.46	47	P	Pn	17 47 03.4	-1.1
ABTX	Abilene, Hawle	11.46	47	ePn	Pn	17 47 03.6	-0.9
434A	Burnet baz=243,SNR=13	11.47	58	P	Pn	17 47 04.8	+0.1
FMP	Fort Macarthur baz=136	11.49	320	P	Pn	17 47 04.1	-0.7
BFSC	Mount Baldy Ra baz=140,SNR=46	11.53	324	P	Pn	17 47 05.0	-0.5
U15A	North Rim	11.55	349	ePn	Pn	17 47 06.8	+0.9
233A	Rising Star baz=236	11.62	51	P	Pn	17 47 06.6	0.0
TUQ	Turquoise Moun baz=150,SNR=35	11.69	333	P	Pn	17 47 07.8	0.0
RRX	Edison Barstow baz=145	11.70	328	P	Pn	17 47 07.9	+0.2
535A	Dale baz=248	11.70	62	P	Pn	17 47 07.7	0.0
MWC	Mount Wilson	11.73	323	eP	Pn	17 47 07.9	-0.4
MWC	Mount Wilson	11.73	323	ePn	Pn	17 47 07.9	-0.4
334A	Lometa baz=241,SNR=13	11.74	55	P	Pn	17 47 08.9	+0.6
PASC	Pasadena Art C	11.76	322	ePn	Pn	17 47 07.8	-0.8
736A	Circle Diamond baz=254	11.76	68	P	Pn	17 47 07.5	-1.1
AMTX	Amarillo baz=217	11.89	33	P	Pn	17 47 09.0	-1.5
AMTX	Amarillo	11.89	33	ePn	Pn	17 47 08.9	-1.5
DECC	Green Verdugo baz=138	11.90	322	P	Pn	17 47 10.0	-0.5
SNCC	San Nicolas Is baz=130,SNR=6.4	11.92	315	P	Pn	17 47 09.1	-1.6
SNCC	San Nicolas Is	11.92	315	ePn	Pn	17 47 09.1	-1.6
636A	Smothers Creek baz=251,SNR=8.3	11.93	66	P	Pn	17 47 10.5	-0.4
133A	Hamilton Ranch baz=234,SNR=9.5	11.94	49	P	Pn	17 47 09.3	-1.7
GSC	Goldstone, Bar baz=146,SNR=58	11.96	330	P	Pn	17 47 11.5	+0.3
GSC	Goldstone, Bar	11.96	330	eP	Pn	17 47 11.6	+0.3
GSC	Goldstone, Bar	11.96	330	ePn	Pn	17 47 11.6	+0.3
435B	Jarrell baz=245	11.99	59	P	Pn	17 47 11.8	+0.2
MVCO	Mesa Verde baz=184,SNR=15	12.12	4	P	Pn	17 47 13.2	-0.4
MVCO	Mesa Verde	12.12	4	ePn	Pn	17 47 13.2	-0.4
536A	Bastrop baz=249	12.12	63	P	Pn	17 47 12.9	-0.6
234A	Clairette baz=238	12.15	53	P	Pn	17 47 13.6	-0.3
EDW2	Edwards Air Fo baz=141,SNR=51	12.20	325	P	Pn	17 47 15.1	+0.5
BLG	Laguna Peak, P baz=135	12.22	320	P	Pn	17 47 13.2	-1.7
SHOC	Shoshone, Teco baz=150,SNR=20	12.23	333	P	Pn	17 47 14.5	-0.6
737A	Port Lavaca baz=256	12.24	70	P	Pn	17 47 14.3	-0.9
LCMT	Little Creek M	12.30	346	ePn	Pn	17 47 16.3	+0.2
335A	Moody baz=243	12.33	57	P	Pn	17 47 15.4	-0.9
SHPR	Sheep Range	12.36	338	ePn	Pn	17 47 18.5	+1.7
OSI	Osito Audit: C baz=138,SNR=6.1	12.39	322	P	Pn	17 47 17.4	+0.3
OSI	Osito Audit: C	12.39	322	ePn	Pn	17 47 16.8	-0.4
Z33A	Whitaker Ranch baz=232,SNR=26	12.45	47	P	Pn	17 47 17.0	-1.0
SCZ2	Santa Cruz Isl baz=133,SNR=11	12.48	318	P	Pn	17 47 18.0	-0.4
134A	White-Moore Ra baz=236	12.50	51	P	Pn	17 47 18.4	-0.3
LRMC	Laurel Mtn Rad baz=144,SNR=66	12.51	328	P	Pn	17 47 19.5	+0.6
637A	Eagle Lake baz=253	12.52	67	P	Pn	17 47 18.2	-0.7
PKCU	Pink Cliffs	12.54	350	ePn	Pn	17 47 19.2	-0.3
436A	Wall Ranch, Ga baz=246	12.60	60	P	Pn	17 47 19.4	-0.7
WHTX	Lake Whitney, baz=240	12.64	54	P	Pn	17 47 20.1	-0.5
WHTX	Lake Whitney,	12.64	54	ePn	Pn	17 47 20.6	0.0
TLIG	Tiaja	12.67	124	ePn	Pn	17 47 22.7	+1.5
537A	Green Hill Far baz=250	12.73	64	P	Pn	17 47 20.8	-1.0
T25A	Trinidad	12.78	19	P	Pn	17 47 23.8	+1.0
T25A	Trinidad	12.78	19	ePn	Pn	17 47 23.0	+0.3
336A	Riesel baz=244	12.82	58	P	Pn	17 47 23.0	-0.1
S22A	4UR Ranch, Cre baz=191,SNR=25	12.83	10	P	Pn	17 47 23.8	+0.5
S22A	4UR Ranch, Cre	12.83	10	ePn	Pn	17 47 23.8	+0.5
ARVC	Arvin baz=139,SNR=26	12.83	323	P	Pn	17 47 23.9	+0.8
SZCU	Shurtz Canyon	12.83	347	ePn	Pn	17 47 24.2	+0.8
SBC	Santa Barbara baz=134	12.84	319	P	Pn	17 47 22.3	-0.9
CCUT	Cedar City	12.84	346	ePn	Pn	17 47 24.0	+0.4
X32A	Elmer baz=226	12.87	41	P	Pn	17 47 22.2	-1.4
MPMC	Manual Prospec baz=151,SNR=237	12.89	330	P	Pn	17 47 24.8	+0.6
PV05	Paradox Valley	12.95	2	ePn	Pn	17 47 25.4	+0.3
FURC	Furnace Creek, baz=149,SNR=14	12.96	333	P	Pn	17 47 25.5	+0.6
135A	Vickery Place, baz=238	12.97	52	P	Pn	17 47 24.3	-0.8
Y33A	Hilltop Ranch, baz=230	13.00	44	P	Pn	17 47 23.2	-2.3
PV01	Paradox Valley	13.03	3	ePn	Pn	17 47 26.3	+0.2
ISA	Isabella, Lake baz=142,SNR=64	13.05	326	P	Pn	17 47 26.9	+0.6
ISA	Isabella, Lake	13.05	326	eP	Pn	17 47 26.6	+0.4
ISA	Isabella, Lake	13.05	326	ePn	Pn	17 47 26.6	+0.4
Z34A	Collier Ranch, baz=234	13.07	48	P	Pn	17 47 25.4	-1.1
SDCO	Great Sand Dun baz=196,SNR=60	13.08	14	P	Pn	17 47 27.6	+0.8
SDCO	Great Sand Dun	13.08	14	ePn	Pn	17 47 26.8	0.0
MTPU	Mount Pierson	13.11	351	ePn	Pn	17 47 28.2	+1.0
DAC	Darwin (Calif)	13.12	330	eP	Pn	17 47 27.7	+0.4
DAC	Darwin (Calif)	13.12	330	ePn	Pn	17 47 27.7	+0.4
TPNV	Topopah Spring baz=152,SNR=71	13.14	336	P	Pn	17 47 29.1	+1.6
TPNV	Topopah Spring	13.14	336	eP	Pn	17 47 29.0	+1.4
TPNV	Topopah Spring	13.14	336	ePn	Pn	17 47 29.0	+1.4
437A	Phantom Ranch, baz=247	13.14	61	P	Pn	17 47 25.9	-1.6
PKM	Mcpherson Peak baz=135,SNR=23	13.21	320	P	Pn	17 47 28.9	+0.4
638A	Rosharon baz=254	13.25	68	P	Pn	17 47 27.7	-1.2
PV10	Paradox Valley	13.25	2	ePn	Pn	17 47 27.5	-1.7
236A	Katherine and baz=242	13.34	56	P	Pn	17 47 30.1	0.0
PV09	Paradox Valley	13.37	1	ePn	Pn	17 47 30.6	-0.3
W32A	Sentinel baz=224	13.38	39	P	Pn	17 47 27.5	-3.2
WMOK	Wichita Mounta baz=227,SNR=29	13.39	42	P	Pn	17 47 28.1	-2.7
WMOK	Wichita Mounta	13.39	42	eP	Pn	17 47 28.0	-2.7
WMOK	Wichita Mounta	13.39	42	ePn	Pn	17 47 28.0	-2.7
X33A	Lawton baz=228	13.43	43	P	Pn	17 47 27.6	-3.6
538A	Harpers Horsep baz=251	13.45	65	P	Pn	17 47 30.1	-1.6
CWC	Cottonwood Cre baz=145	13.48	329	P	Pn	17 47 32.0	-0.2
Z35A	Perchaven, San baz=236	13.50	50	P	Pn	17 47 30.9	-1.4
VES	Vestal, Richgr baz=140,SNR=28	13.50	325	P	Pn	17 47 32.4	+0.1
Y34A	Reagan Ranch, baz=232,SNR=12	13.53	47	P	Pn	17 47 30.4	-2.2
337A	Centerville baz=246	13.54	60	P	Pn	17 47 31.9	-0.9
136A	Ennis baz=240	13.57	54	P	Pn	17 47 31.6	-1.6
MSU	Marysvale	13.57	351	eP	Pn	17 47 34.3	+0.9
MSU	Marysvale	13.57	351	ePn	Pn	17 47 34.3	+0.9
SMMC	Simmler baz=136,SNR=12	13.61	321	P	Pn	17 47 33.4	-0.5
GRAC	Grapevine Rang baz=148,SNR=26	13.63	332	P	Pn	17 47 35.4	+1.3
438A	San Houston St baz=249	13.65	62	P	Pn	17 47 33.6	-0.8
TCRU	Three Creeks R	13.70	350	ePn	Pn	17 47 34.8	-0.5
W33A	Caddo, Fort Co baz=226,SNR=17	13.86	41	P	Pn	17 47 35.7	-1.4
X34A	Smith Ranch, M baz=230	13.88	44	P	Pn	17 47 34.4	-3.1
PSUT	Pine Spring	13.89	346	ePn	Pn	17 47 39.2	+1.4
V32A	Arapaho baz=223,SNR=5.1	13.93	38	P	Pn	17 47 36.5	-1.7
RCTC	Rector, Farmer baz=141,SNR=15	13.94	326	P	Pn	17 47 39.5	+1.2
Y35A	Marietta baz=234	13.98	48	P	Pn	17 47 37.6	-1.2
338A	Crockett baz=247	14.00	60	P	Pn	17 47 37.3	-1.9
SRU	San Rafael Swe	14.01	357	eP	Pn	17 47 38.8	-0.6
SRU	San Rafael Swe	14.01	357	ePn	Pn	17 47 38.8	-0.6
Z36A	Blue Ridge baz=238,SNR=11	14.04	52	P	Pn	17 47 38.8	-0.9
EFD	Emergency Oper	14.04	319	eSn	S	17 50 26.3	-10
539A	Cross D Ranch, baz=253	14.05	66	P	Pn	17 47 38.1	-1.7
TIN	Tinemaha, Big baz=146,SNR=12	14.05	330	P	Pn	17 47 41.4	+1.5
PAGB	Antelope Grade	14.06	321	ePn	Pn	17 47 40.1	+0.2
R11A	Troy Canyon, C baz=157,SNR=104	14.18	340	P	Pn	17 47 42.3	+0.6
R11A	Troy Canyon, C	14.18	340	ePn	Pn	17 47 42.2	+0.5
137A	Heron Place, G baz=242	14.20	55	P	Pn	17 47 39.8	-2.0
SMCO	Snowmass	14.21	8	ePn	Pn	17 47 42.2	-0.2
439A	Center Grove, baz=250	14.23	63	P	Pn	17 47 40.1	-2.3
TMUT	Trail Mountain	14.23	355	ePn	Pn	17 47 42.5	-0.2
X35A	Drake baz=233	14.31	47	P	Pn	17 47 40.2	-3.2
Q24A	Divide baz=196,SNR=14	14.32	14	P	Pn	17 47 43.6	-0.2
Q24A	Divide	14.32	14	ePn	Pn	17 47 42.9	-0.9
W34A	Bridge Creek, baz=226	14.33	42	P	Pn	17 47 41.1	-2.6
W34A	Bridge Creek,	14.33	42	ePn	Pn	17 47 41.1	-2.6
P17A	Butcher Ranch,	14.38	356	ePn	Pn	17 47 43.7	-0.7
238A	Jacksonville	14.41	58	P	Pn	17 47 42.7	-2.1
U32A	Winter Ranch, baz=222,SNR=8.7	14.43	36	P	Pn	17 47 43.3	-1.8
Y36A	Durant baz=236	14.49	50	P	Pn	17 47 42.2	-3.6
P18A	Preston Nutter	14.51	358	ePn	Pn	17 47 45.6	-0.7
Z37A	Pogue Cattle C baz=240	14.59	53	P	Pn	17 47 46.0	-1.2
339A	Huntington baz=248	14.59	61	P	Pn	17 47 45.4	-1.9
NATX	Nacogdoches baz=247	14.67	60	P	Pn	17 47 46.6	-1.7
NATX	Nacogdoches	14.67	60	ePn	Pn	17 47 46.1	-2.3
540A	Vidor baz=253	14.70	66	P	Pn	17 47 47.0	-1.6
PMPB	Monarch Peak	14.71	322	ePn	Pn	17 47 46.9	-2.0
138A	Matatall Enter baz=243	14.72	56	P	Pn	17 47 47.5	-1.5
MLAC	Mammoth, Mammo baz=145,SNR=16	14.80	330	P	Pn	17 47 50.7	+0.5
X36A	Centrahoma baz=234,SNR=11	14.82	47	P	Pn	17 47 48.9	-1.5
W35A	Tecumseh baz=231,SNR=14	14.84	45	P	Pn	17 47 48.4	-2.2
440A	Kirbyville baz=252	14.87	64	P	Pn	17 47 48.5	-2.6
V34A	Guthrie baz=227	14.89	41	P	Pn	17 47 48.5	-2.7
V34A	Guthrie comp=Z,581nm,1.7s	14.89	41	ePn	Pn	17 47 48.7	-2.6
239A	Gary baz=246	14.92	59	P	Pn	17 47 49.6	-2.1
U33A	Lingo Farm, Me baz=224	14.96	38	P	Pn	17 47 49.4	-2.8
NLU	North Lily Min	14.97	352	ePn	Pn	17 47 52.3	-0.4
MPU	Maple Canyon comp=Z,308nm,1.3s	14.99	354	ePn	Pn	17 47 52.3	-0.5
Y37A	Hugo baz=237	14.99	51	P	Pn	17 47 51.1	-1.6
ISCO	Idaho Springs baz=194,SNR=46	15.03	12	P	Pn	17 47 53.4	-0.1
ISCO	Idaho Springs	15.03	12	eP	Pn	17 47 52.8	-0.7
ISCO	Idaho Springs	15.03	12	ePn	Pn	17 47 52.8	-0.7
O20A	White River Ci baz=184,SNR=43	15.04	4	P	Pn	17 47 52.8	-0.7
O20A	White River Ci comp=Z,472nm,1.4s	15.04	4	ePn	Pn	17 47 53.1	-0.4
KSCO	Kaye Shedlock' baz=205	15.06	21	P	Pn	17 47 52.6	-1.0
KSCO	Kaye Shedlock' comp=Z,293nm,1.2s	15.06	21	ePn	Pn	17 47 52.2	-1.4
T32A	Huddler Ranch, baz=220,SNR=14	15.08	34	P	Pn	17 47 51.5	-2.4
Z38A	Mt. Pleasant baz=241	15.08	54	P	Pn	17 47 51.9	-1.9
340A	Bronson baz=249	15.15	62	P	Pn	17 47 52.1	-2.7
BRMM	Rolling Bench	15.18	323	ePn	Pn	17 47 56.0	+0.9
BSMM	Soledad Missio	15.19	321	ePn	Pn	17 47 50.8	-4.6
BSMM				ePcP	PcP	17 53 04.5	+3.0
W36A	Wetumka baz=232,SNR=10	15.25	46	P	Pn	17 47 53.5	-2.6
V35A	Meyer Ranch, C baz=229,SNR=14	15.25	43	P	Pn	17 47 53.0	-3.1
U34A	Anderson Ranch baz=226,SNR=15	15.29	39	P	Pn	17 47 53.4	-3.2
U34A	Anderson Ranch comp=Z,283nm,0.9s	15.29	39	ePn	Pn	17 47 53.6	-3.0
DUG	Dugway, Tooele baz=169,SNR=102	15.31	350	P	Pn	17 47 56.7	-0.3
DUG	Dugway, Tooele	15.31	350	eP	Pn	17 47 55.9	-1.1
DUG	comp=Z,564nm,1.4s			pmax	pmax		
DUG	Dugway, Tooele comp=Z,564nm,1.4s	15.31	350	ePn	Pn	17 47 55.9	-1.1
541A	Lake Charles baz=255	15.32	68	P	Pn	17 47 54.6	-2.4
T33A	Patterson Ranc baz=222	15.36	36	P	Pn	17 47 54.9	-2.7
TVH2	Borealis Mine comp=Z,185nm,1.2s	15.38	332	ePn	Pn	17 47 58.6	+0.6
TVH3	East Aurora ar comp=Z,274nm,1.1s	15.39	331	ePn	Pn	17 47 59.0	+0.9
TVH1	TV Hill, Hawth comp=Z,529nm,1.4s	15.45	332	ePn	Pn	17 47 59.6	+0.5
SAO	San Andreas Ge	15.47	322	eP	Pn	17 47 57.7	-1.3
SAO	comp=Z,152nm,1.1s			pmax	pmax		
SAO	San Andreas Ge comp=Z,152nm,1.1s	15.47	322	ePn	Pn	17 47 57.7	-1.3
S32A	Newby Ranch, P baz=219	15.47	33	P	Pn	17 47 56.6	-2.5
240A	Hunter Patters baz=247	15.48	60	P	Pn	17 47 56.5	-2.7
X37A	Clayton baz=236,SNR=28	15.50	49	P	Pn	17 47 56.7	-2.6
441A	DeRidder baz=253	15.51	65	P	Pn	17 47 57.1	-2.3
JLU	Jordanelle comp=Z,252nm,1.4s	15.55	355	ePn	Pn	17 47 59.9	-0.3
Y38A	Idabel baz=239,SNR=18	15.60	52	P	Pn	17 47 58.7	-1.9
Z39A	Irene McRaven, baz=243,SNR=22	15.67	55	P	Pn	17 47 59.8	-1.7
CTU	Camp Tracy comp=Z,775nm,1.2s	15.67	354	ePn	Pn	17 48 00.9	-0.8
341A	Kurthwood baz=251	15.71	63	P	Pn	17 47 58.9	-3.2
U35A	Pawnee baz=228	15.72	41	P	Pn	17 47 58.6	-3.6
W37B	Quinton baz=234,SNR=14	15.77	47	P	Pn	17 47 59.2	-3.6
WAKR	Walker comp=Z,520nm,1.3s	15.79	330	ePn	Pn	17 48 03.8	+0.6
CMIG	Matias Romero comp=Z,0.3nm,0.3s,baz=306,slow=13,SNR=24	15.81	117	Pn	Pn	17 48 03.3	-0.2
CMIG	comp=Z,0.1nm,0.3s,baz=354,slow=9.2,SNR=1.7			Sn	Sn	17 51 03.2	+4.7
CMIG	comp=Z,0.2nm,0.3s,baz=75,slow=16,SNR=2.8			Lg	Lg	17 52 50.6	
CMIG	comp=Z,73µm,18.8s,baz=277,slow=37			LR	LR	17 54 09.8	
V36A	Jenks baz=231,SNR=11	15.83	44	P	Pn	17 48 00.5	-3.1
CMB	Columbia Colle	15.86	327	eP	Pn	17 48 02.7	-1.3
CMB	comp=Z,204nm,1.1s			pmax	pmax		
CMB	Columbia Colle comp=Z,204nm,1.1s	15.86	327	ePn	Pn	17 48 02.7	-1.3
542A	Morse baz=256	15.87	68	P	Pn	17 48 01.5	-2.6
140A	Cam and Jess, baz=246	15.87	58	P	Pn	17 48 01.8	-2.3
S33A	Kaszmaul Farm, baz=221,SNR=9.0	15.87	36	P	Pn	17 48 02.1	-2.0
T34A	McClaskey Farm baz=225,SNR=24	15.90	39	P	Pn	17 48 02.6	-1.9
X38A	Whitesboro baz=237,SNR=25	15.92	50	P	Pn	17 48 02.6	-2.2
CBKS	Cedar Bluff baz=214,SNR=16	16.00	29	P	Pn	17 48 04.2	-1.5
CBKS	Cedar Bluff	16.00	29	eP	Pn	17 48 05.2	-0.6
CBKS	comp=Z,2µm,1.4s			pmax	pmax		
CBKS	Cedar Bluff comp=Z,2µm,1.4s	16.00	29	ePn	Pn	17 48 05.2	-0.6
TUL1	Leonard baz=231	16.00	44	P	Pn	17 48 03.4	-2.4
TUL1	Leonard comp=Z,141nm,1.0s	16.00	44	ePn	Pn	17 48 05.9	+0.1
N23A	Red Feather La baz=192,SNR=19	16.04	10	P	Pn	17 48 06.4	-0.3
N23A	Red Feather La comp=Z,581nm,1.5s	16.04	10	ePn	Pn	17 48 05.8	-0.8
BGU	Big Grassy Mou comp=Z,470nm,1.6s	16.06	350	ePn	Pn	17 48 06.7	0.0
TCUT	Toone Canyon comp=Z,1µm,1.4s	16.06	355	ePn	Pn	17 48 06.2	-0.6
Y39A	Lockesburg baz=241	16.06	53	P	Pn	17 48 04.3	-2.3
YERR	Yerington comp=Z,837nm,1.2s	16.10	332	ePn	Pn	17 48 07.5	+0.3
442A	Mamou baz=254	16.12	66	P	Pn	17 48 04.8	-2.6
241A	Mo Tay, Goldon baz=249	16.14	61	P	Pn	17 48 04.8	-2.8
R32A	Long Quarter, baz=218	16.15	32	P	Pn	17 48 04.9	-2.8

T35A	Sooner Cattle	16.22	40	P		Pn	17 48 05.8	-2.8	
	baz=227,SNR=30								
Z40A	Long Farm, Mag	16.26	56	P		Pn	17 48 05.6	-3.6	
	baz=244								
X39A	Fountain Ranch	16.33	51	P		Pn	17 48 09.1	-1.0	
	baz=239,SNR=21								
PNTR	Pine Nut	16.34	331	ePn		P	17 48 11.8	-1.4	
	comp=Z,1µm,1.1s								
U36A	Oologah	16.34	43	P		Pn	17 48 07.5	-2.7	
	baz=230,SNR=8.7								
W38A	Poteau	16.35	49	P		Pn	17 48 09.0	-1.3	
	baz=236,SNR=80								
SPUT	South Promonto	16.36	352	ePn		P	17 48 12.4	-0.9	
	comp=Z,334nm,1.5s								
141A	Papa Simpson,	16.37	59	P		Pn	17 48 08.0	-2.5	
	baz=247								
342A	Flagon Creek P	16.40	64	P		Pn	17 48 07.7	-3.2	
	baz=252,SNR=7.5								
V37A	Hulbert	16.40	46	P		Pn	17 48 06.9	-4.1	
	baz=233,SNR=19								
R33A	Olander Ranch,	16.42	34	P		Pn	17 48 08.3	-2.9	
	baz=220,SNR=20								
S34A	Willow Spring	16.43	37	P		Pn	17 48 08.4	-2.9	
	baz=224,SNR=11								
543A	St. Martinvill	16.44	68	P		Pn	17 48 08.7	-2.8	
	baz=257								
PHWY	Pilot Hill	16.52	11	ePn		Pn	17 48 11.5	-1.2	
	comp=Z,413nm,1.6s								
HWUT	Hardware Ranch	16.56	355	ePn		Pn	17 48 13.4	+0.3	
	comp=Z,2µm,1.8s								
BMN	Battle Mountai	16.60	339	eP		Pn	17 48 13.6	+0.1	
BMN				pmax		pmax			
	comp=Z,558nm,1.2s								
BMN	Battle Mountai	16.60	339	ePn		Pn	17 48 13.6	+0.1	
	comp=Z,558nm,1.2s								
WLAR	White Oak Lake	16.67	55	ePn		Pn	17 48 12.8	-1.5	
	comp=Z,345nm,1.0s								
443A	Delano Plantat	16.67	66	P		Pn	17 48 11.5	-2.9	
	baz=254								
Q32A	Meitler Ranch,	16.67	31	P		Pn	17 48 11.2	-3.2	
	baz=217,SNR=36								
T36A	Boggs Farm, Ca	16.69	41	P		Pn	17 48 11.8	-2.8	
	baz=228								
Y40A	Okolona	16.69	54	P		Pn	17 48 13.1	-1.5	
	baz=242,SNR=45								
Z41A	Richland Creek	16.71	57	P		Pn	17 48 12.4	-2.5	
	baz=245								
MIAR	Mount Ida	16.73	52	P		Pn	17 48 13.4	-1.7	
	baz=240,SNR=26								
MIAR	Mount Ida	16.73	52	eP		Pn	17 48 13.2	-2.0	
MIAR				pmax		pmax			
	comp=Z,105nm,0.9s								
MIAR	Mount Ida	16.73	52	ePn		Pn	17 48 13.2	-2.0	
	comp=Z,104nm,0.9s								
U37A	Salina	16.74	44	P		Pn	17 48 12.4	-2.8	
	baz=232,SNR=27								
PAHR	Pah Rah Range	16.76	333	ePn		P	17 48 16.7	-1.1	
	comp=Z,741nm,1.5s								
242A	Grayson	16.77	62	P		Pn	17 48 13.7	-1.9	
	baz=250								
R34A	Isabella, Hill	16.80	35	P		Pn	17 48 14.2	-1.8	
	baz=222,SNR=18								
S35A	Otter Creek Ra	16.86	39	P		Pn	17 48 14.6	-2.1	
	baz=226,SNR=19								
AFDM	Forest Hills D	16.86	328	ePn		Pn	17 48 15.1	-1.7	
	comp=Z,181nm,1.1s								
HVU	Hansel Valley	16.86	352	eP		Pn	17 48 17.0	+0.1	
HVU				pmax		pmax			
	comp=Z,713nm,1.4s								
HVU	Hansel Valley	16.86	352	ePn		Pn	17 48 17.0	+0.1	
	comp=Z,713nm,1.4s								
V38A	Canehill	16.87	47	P		Pn	17 48 14.4	-2.5	
	baz=234,SNR=32								
W39A	Magazine	16.92	50	P		Pn	17 48 16.2	-1.4	
	baz=238,SNR=16								
343A	Vidalia	16.95	65	P		Pn	17 48 15.4	-2.5	
	baz=253								
OGNE	Ogallala	17.00	20	P		Pn	17 48 16.5	-2.1	
	baz=204								
OGNE	Ogallala	17.00	20	ePn		Pn	17 48 17.1	-1.5	
	comp=Z,2µm,2.0s								
Q33A	Connelly Farm,	17.03	33	P		Pn	17 48 16.8	-2.0	
	baz=219,SNR=45								
544A	White Castle	17.03	69	P		Pn	17 48 18.4	-0.6	
	baz=257								
142A	Monroe	17.10	60	P		Pn	17 48 16.5	-3.3	
	baz=249								
Y41A	Eaglette Beard	17.13	55	P		Pn	17 48 18.9	-1.2	
	baz=244,SNR=16								
P32A	Huiting Farm,	17.16	30	P		Pn	17 48 18.7	-1.9	
	baz=216,SNR=26								
U38A	Gravette	17.22	45	P		Pn	17 48 19.1	-2.3	
	baz=233,SNR=20								
X40A	Basin Creek Fa	17.24	53	P		Pn	17 48 19.1	-2.5	
	baz=241,SNR=17								
243A	Waterproof	17.24	63	P		Pn	17 48 19.6	-2.0	
	baz=251								
MCCM	Marconi Confer	17.25	322	ePn		Pn	17 48 19.8	-1.8	
	comp=Z,286nm,1.0s								
O31A	Woolen Ranch,	17.29	27	P		Pn	17 48 20.0	-2.2	
	baz=213								
S36A	Lake Cedric, C	17.30	40	P		Pn	17 48 19.9	-2.4	
	baz=227,SNR=24								
T37A	Cheneyville 18	17.31	43	P		Pn	17 48 19.7	-2.7	
	baz=230,SNR=35								
V39A	Pettigrew	17.37	48	P		Pn	17 48 20.6	-2.5	
	baz=236,SNR=33								
Z42A	Norrel Spur, H	17.37	58	P		Pn	17 48 21.1	-2.1	
	baz=246								
R35A	Emporia Munici	17.38	37	P		Pn	17 48 21.7	-1.5	
	baz=224,SNR=11								
Q34A	Chapman	17.42	35	P		Pn	17 48 22.0	-1.7	
	baz=221								
W40A	Ferguson Farm,	17.42	51	P		Pn	17 48 22.9	-0.9	
	baz=239,SNR=17								
HHAR	Hobbs	17.42	47	ePn		Pn	17 48 22.1	-1.8	
	comp=Z,100nm,0.9s								
P33A	Williams Farm,	17.44	32	P		Pn	17 48 21.1	-2.9	
	baz=218								
X41A	Kaden, Bauxite	17.48	54	P		Pn	17 48 22.7	-1.8	
	baz=242								
143A	Socs Landing,	17.58	60	P		Pn	17 48 24.0	-1.8	
	baz=249								
ORV	Oroville	17.59	328	eP		Pn	17 48 25.7	-0.2	
ORV				pmax		pmax			
	comp=Z,235nm,1.3s								
ORV	Oroville	17.59	328	ePn		Pn	17 48 25.6	-0.2	
	comp=Z,235nm,1.3s								
545A	Edgard	17.59	69	P		Pn	17 48 23.5	-2.3	
	baz=258								
BW06	Boulder Array	17.63	360	P		Pn	17 48 24.9	-1.7	
	baz=180,SNR=146								
BW06	Boulder Array	17.63	360	ePn		Pn	17 48 24.2	-2.3	
	comp=Z,408nm,1.4s								
PD31	Pinedale Array	17.63	360	ePn		Pn	17 48 24.9	-1.7	
PD31				eSn		Sn	17 51 43.0	+0.2	
PD31				e			17 53 36.7		
PDAR	Pinedale Array	17.63	360	P		Pn	17 48 25.2	-1.4	
	comp=Z,0.7nm,0.3s,baz=170,slow=9.0,SNR=120								
PDAR				S		Sn	17 51 43.0	+0.2	
	comp=Z,0.1nm,0.3s,baz=183,slow=16,SNR=2.1								
PDAR				Lg		Lg	17 53 36.7		
	comp=Z,0.1nm,0.3s,baz=182,slow=33,SNR=2.8								
PDAR				LR		LR	17 55 25.2		
	comp=Z,47µm,19.6s,baz=192,slow=38								
T38A	Diamond	17.64	44	P		Pn	17 48 24.1	-2.4	
	baz=232,SNR=17								
AHID	Auburn Hatcher	17.68	356	ePn		Pn	17 48 25.6	-1.5	
	comp=Z,352nm,1.4s								
GDXM	Geysers	17.68	324	ePn		Pn	17 48 24.0	-3.0	
	comp=Z,230nm,1.3s								
K22A	Casper	17.69	7	P		Pn	17 48 26.1	-1.2	
	baz=189,SNR=20								
K22A	Casper	17.69	7	ePn		Pn	17 48 25.8	-1.4	
	comp=Z,1µm,1.8s								
KSU1	Kansas State U	17.72	35	P		Pn	17 48 26.0	-1.5	
	baz=222,SNR=9.8								
KSU1	Kansas State U	17.72	35	ePn		P	17 48 29.4	+1.1	
	comp=Z,162nm,0.8s								
344A	Westbrook Farm	17.73	65	P		Pn	17 48 25.1	-2.4	
	baz=254,SNR=13								
Y42A	Garnett, Star	17.73	56	P		Pn	17 48 25.0	-2.5	
	baz=245								
UALR	University of	17.73	53	ePn		Pn	17 48 26.1	-1.5	
	comp=Z,139nm,1.0s								
R36A	Gordon, Harris	17.76	39	P		Pn	17 48 26.4	-1.6	
	baz=226,SNR=32								
CCAR	Cane Creek	17.77	56	ePn		Pn	17 48 26.5	-1.6	
	comp=Z,945nm,1.9s								
S37A	Fort Scott	17.78	41	P		Pn	17 48 26.2	-2.0	
	baz=229,SNR=46								
U39A	Green Forest	17.78	47	P		Pn	17 48 25.9	-2.4	
	baz=235,SNR=24								
O32A	Brockman Farm,	17.83	29	P		Pn	17 48 26.4	-2.4	
	baz=215,SNR=21								
Q35A	Mercer Eighty,	17.85	36	P		Pn	17 48 27.7	-1.4	
	baz=224,SNR=50								
445A	Amite	17.87	67	P		Pn	17 48 26.2	-3.1	
	baz=256								
Z43A	Armstrong Fami	17.89	59	P		Pn	17 48 27.4	-2.2	
	baz=248								
V40A	Witts Springs	17.91	49	P		Pn	17 48 27.3	-2.6	
	baz=238,SNR=24								
X301	Greenbrier Sit	17.92	52	ePn		P	17 48 30.0	-0.5	
	comp=Z,330nm,1.3s								
244A	Avery, Jackson	17.94	63	P		Pn	17 48 28.6	-1.6	
	baz=252,SNR=9.6								
P34A	Walnut Farm, R	17.95	34	P		Pn	17 48 28.6	-1.7	
	baz=220,SNR=39								
HOPS	Hopland Field	17.96	324	ePn		Pn	17 48 29.5	-1.0	
	comp=Z,258nm,1.3s								
X201	Greenbrier Sit	17.97	52	ePn		Pn	17 48 29.4	-1.1	
	comp=Z,391nm,1.3s								
O33A	Hebron	17.99	31	P		Pn	17 48 28.7	-2.1	
	baz=217,SNR=15								
W41B	Gary Mavity, V	17.99	52	P		Pn	17 48 29.5	-1.4	
	baz=241,SNR=45								
N31A	Bailey Ranch,	18.00	27	P		Pn	17 48 29.2	-1.8	
	baz=212								
WHAR	Wooly Hollow	18.02	52	ePn		Pn	17 48 30.6	-0.6	
	comp=Z,492nm,1.5s								
646A	Port Sulphur	18.07	71	P		Pn	17 48 29.5	-2.3	
	baz=260								
VBMS	Vicksburg	18.13	63	P		Pn	17 48 30.4	-2.1	
	baz=252								
VBMS	Vicksburg	18.13	63	ePn		Pn	17 48 30.3	-2.2	
	comp=Z,926nm,1.7s								
R37A	Teagarden Farm	18.14	40	P		Pn	17 48 31.4	-1.3	
	baz=228,SNR=63								
U40A	Yellville	18.19	48	P		Pn	17 48 31.6	-1.7	
	baz=236,SNR=42								
T39A	Clever	18.22	45	P		Pn	17 48 31.8	-1.8	
	baz=234,SNR=18								
N32A	Stulken Farm,	18.23	28	P		Pn	17 48 32.0	-1.8	
	baz=214								
Q36A	Arnold C. Orve	18.23	37	P		Pn	17 48 32.2	-1.6	
	baz=225								
S38A	Stockton	18.25	43	P		Pn	17 48 32.3	-1.7	
	baz=231,SNR=32								
REDW	Red Top Meadow	18.26	357	ePn		Pn	17 48 32.5	-1.8	
	comp=Z,759nm,1.9s								
345A	Thmpson Farm,	18.27	66	P		Pn	17 48 31.9	-2.3	
	baz=255								
546A	Slidell	18.28	69	P		Pn	17 48 32.3	-2.1	
	baz=258								
O03D	Paynes Creek	18.31	329	P		P	17 48 35.1	+0.2	
	baz=142,SNR=73								
O03D	Paynes Creek	18.31	329	ePn		P	17 48 35.2	+0.3	
144A	Alexander Plac	18.34	61	P		Pn	17 48 33.0	-2.1	
	baz=251								
P35A	Duane Minner,	18.35	35	P		Pn	17 48 33.5	-1.7	
	baz=232,SNR=46								
SNOW	Snow King Moun	18.36	357	eP		Pn	17 48 34.2	-1.3	
	comp=Z,661nm,1.4s								
V41A	Mountainview	18.36	50	P		Pn	17 48 34.1	-1.3	
	baz=239,SNR=104								
TPAW	Teton Pass	18.39	357	eP		P	17 48 34.5	-1.4	
	comp=Z,423nm,1.6s								
Y43A	Makayla and Ka	18.41	57	P		P	17 48 34.5	-1.4	
	baz=246								
M31A	Lambrecht Ranc	18.44	26	P		P	17 48 35.3	-0.8	
	baz=212,SNR=6.4								
CCIG	Comitan	18.47	115	eP		P	17 48 36.7	-0.2	
	comp=Z,449nm,1.8s								
LOHW	Long Hollow	18.50	358	eP		P	17 48 35.7	-1.4	
	comp=Z,423nm,1.8s								
O34A	Beatrice	18.50	32	P		P	17 48 35.1	-1.8	
	baz=219,SNR=14								
Z44A	Pea Ridge, Bel	18.55	60	P		P	17 48 36.5	-0.9	
	baz=249,SNR=9.4								
245A	Little AP, Sta	18.57	64	P		P	17 48 36.2	-1.5	
	baz=253,SNR=11								
R38A	Fenwick Farm,	18.61	42	P		P	17 48 36.4	-1.6	
	baz=230,SNR=54								
MOOW	Moose Ponds	18.64	357	eP		P	17 48 37.5	-1.1	
	comp=Z,243nm,1.3s								
S39A	Bolivar	18.66	44	P		P	17 48 36.6	-2.0	
	baz=232,SNR=43								
X43A	Marell	18.69	55	P		Pn	17 48 39.5	+0.1	
	baz=245								
446A	Poplarville	18.70	68	P		P	17 48 37.7	-1.3	
	baz=257,SNR=18								
145A	Houston Renfro	18.72	62	P		P	17 48 38.1	-1.2	
	baz=251								
KCPM	Cahto Peak	18.74	324	eP		P	17 48 35.0	-4.6	
	comp=Z,0.1nm,0.7s								
Q37A	Longview Farm,	18.74	39	P		P	17 48 38.6	-0.9	
	baz=227,SNR=9.4								
346A	Big Creek Wild	18.75	66	P		P	17 48 37.9	-1.8	
	baz=255								
IMW	Indian Meadow	18.80	357	eP		P	17 48 39.6	-0.8	
	comp=Z,199nm,1.1s								
U41A	Viola	18.82	49	P		P	17 48 39.2	-1.1	
	baz=238,SNR=21								
BGNE	Belgrade	18.83	27	P		P	17 48 39.6	-0.8	
	baz=214,SNR=13								
BGNE	Belgrade	18.83	27	eP		P	17 48 39.3	-1.2	
	comp=Z,1µm,1.7s								
P36A	Good Intent, A	18.84	36	P		P	17 48 39.0	-1.6	
	baz=224								
T40A	Mansfield	18.85	46	P		P	17 48 39.9	-0.9	
	baz=235,SNR=59								
HLID	Hailey	18.86	349	P		Pn	17 48 41.1	-0.4	
	baz=166,SNR=58								
HLID	Hailey	18.86	349	eP		Pn	17 48 41.6	+0.1	
	comp=Z,131nm,1.1s								
WVOR	Wild Horse Val	18.86	339	eP		P	17 48 40.2	-0.7	
WVOR				pmax		pmax			
	comp=Z,495nm,1.4s								
WVOR	Wild Horse Val	18.86	339	eP		P	17 48 40.2	-0.7	
	comp=Z,495nm,1.4s								
WDC	Whiskeytown Da	18.89	328	eP		P	17 48 39.8	-1.3	
WDC				pmax		pmax			
	comp=Z,185nm,1.1s								
WDC	Whiskeytown Da	18.89	328	eP		P	17 48 39.8	-1.3	
	comp=Z,185nm,1.1s								
V42A	Cool	18.91	51	P		P	17 48 40.9	-0.5	
	baz=240,SNR=53								
O35A	Humboldt	18.95	34	P		P	17 48 41.2	-0.6	
	baz=221,SNR=13								
FLWY	Flagg Ranch	18.97	357	eP		P	17 48 41.9	-0.3	
	comp=Z,250nm,1.1s								
Y44A	Strider, Charl	18.98	58	P		P	17 48 41.6	-0.5	
	baz=247,SNR=9.7								
MOD	Modoc Plateau	18.99	335	eP		P	17 48 42.5	+0.1	
	comp=Z,760nm,1.4s								
MFID	Camas Ranch	18.99	346	eP		P	17 48 42.1	-0.3	
	comp=Z,342nm,1.4s								
N34A	Lincoln	19.10	32	P		P	17 48 41.8	-1.7	
	baz=219								
S40A	Lebanon	19.12	45	P		P	17 48 42.9	-0.9	
	baz=234,SNR=38								
Z45A	Winona	19.16	60	P		P	17 48 44.3	+0.2	
	baz=250,SNR=8.7								
YPP	Pitchstone Pla	19.16	357	eP		P	17 48 44.4	0.0	
	comp=Z,725nm,2.0s								
KMRM	Mail Ridge	19.20	325	eP		P	17 48 44.7	+0.1	
	comp=Z,766nm,1.1s								
L31A	Butterfield Fa	19.20	25	P		P	17 48 43.2	-1.4	
	baz=211								
R39A	Chumby, Stover	19.22	43	P		P	17 48 43.8	-0.9	
	baz=231,SNR=45								
X44A	Crenshaw	19.24	56	P		Pn	17 48 46.2	+0.2	
	baz=246,SNR=5.2								
N02D	Trinity Center	19.27	328	P		P	17 48 43.5	-1.9	
	baz=141,SNR=14								
H17A	Grant Village	19.28	358	P		P	17 48 45.7	+0.1	
	baz=177								
H17A	Grant Village	19.28	358	eP		Pn	17 48 45.9	-0.8	
	comp=Z,366nm,1.6s								
Q38A	Cooks Store, C	19.28	40	P		P	17 48 44.5	-1.0	
	baz=229,SNR=27								
P37A	Lathrop	19.29	38	P		P	17 48 44.5	-1.1	
	baz=226,SNR=12								
U42A	Revenden	19.29	50	P		P	17 48 44.6	-1.0	
	baz=239,SNR=27								
447A	Lucedale	19.30	68	P		P	17 48 44.4	-1.2	
	baz=258								
T41A	Mountain View	19.30	48	P		P	17 48 44.7	-0.9	
	baz=237,SNR=22								
HBAR	Harrisburg	19.32	53	eP		Pn	17 48 46.6	-0.4	
O36A	Bolckow	19.34	36	P		P	17 48 44.6	-1.5	
	baz=223								
YFT	Old Faithful	19.34	357	eP		Pn	17 48 47.1	-0.3	
	comp=Z,639nm,1.7s								
K30A	Basset	19.35	23	P		P	17 48 45.7	-0.5	
	baz=208,SNR=31								
M33A	Taylor Creek F	19.37	29	P		P	17 48 45.4	-1.1	
	baz=216,SNR=7.0								
L32A	Elgin	19.38	27	P		P	17 48 46.1	-0.4	
	baz=213								
146A	Union	19.43	63	P		P	17 48 46.1	-1.1	
	baz=252								
LKWY	Lake	19.44	358	eP		Pn	17 48 47.8	-0.9	
LKWY				pmax		pmax			
	comp=Z,1µm,1.8s								
LKWY	Lake	19.44	358	eP		Pn	17 48 47.8	-0.9	
	comp=Z,1µm,1.8s								
Y45A	Yeager Farm, C	19.45	59	P		Pn	17 48 48.7	+0.1	
	baz=248,SNR=22								
RSSD	Black Hills	19.51	12	P		P	17 48 46.9	-1.1	
	baz=195								
RSSD	Black Hills	19.51	12	eP		P	17 48 47.0	-1.1	
RSSD				pmax		pmax			
	comp=Z,68nm,1.0s								
RSSD	Black Hills	19.51	12	eP		P	17 48 47.0	-1.1	
	comp=Z,68nm,1.0s								
347A	Saraland	19.52	66	P		P	17 48 47.4	-0.7	
	baz=256								
M04C	Macdoel	19.52	332	P		P	17 48 48.3	+0.1	
	baz=145,SNR=92								
N35A	Tabor	19.54	33	P		P	17 48 47.5	-0.7	
	baz=220,SNR=8.8								
YMR	Madison River	19.57	357	eP		P	17 48 48.8	0.0	
	comp=Z,747nm,1.9s								
M34A	Aspy Farms, Fr	19.59	30	P		P	17 48 47.6	-1.1	
	baz=217								
YNR	Norris Junctio	19.60	358	eP		P	17 48 49.5	+0.3	
	comp=Z,155nm,1.1s								
S41A	Jillco Farms,	19.61	46	P		P	17 48 48.8	-0.3	
	baz=236,SNR=46								
K31A	O'Neill	19.62	24	P		P	17 48 48.4	-0.7	
	baz=210,SNR=9.0								
247A	Quitman	19.63	65	P		P	17 48 48.8	-0.5	
	baz=255,SNR=16								
MET	Memphis--Engin	19.66	55	eP		Pn	17 48 50.8	-0.2	
	comp=Z,2µm,1.8s								
YHB	Horse Butte	19.66	356	eP		P	17 48 49.4	-0.4	
	comp=Z,151nm,1.2s								
M02C	Callahan	19.67	329	P		P	17 48 48.7	-1.0	
	baz=142								
YHH	Holmes Hill	19.68	357	eP		P	17 48 50.2	+0.1	
	comp=Z,348nm,1.7s								
R40A	Maddies Statio	19.68	44	P		P	17 48 49.2	-0.6	
	baz=233,SNR=23								
KHMM	Horse Mountain	19.70	327	eP		P	17 48 50.2	+0.1	
	comp=Z,486nm,1.2s								
Z46A	Louisville	19.70	61	P		P	17 48 50.4	+0.4	
	baz=251								
Q39A	Willow Grove F	19.72	41	P		P	17 48 49.2	-1.0	
	baz=230,SNR=52								
W44A	Shelby Farms P	19.75	55	P		P	17 48 49.1	-1.5	
	baz=245								
QLMT	Earthquake Lak	19.75	356	eP		Pn	17 48 51.4	-0.9	
P38A	Dawn	19.77	39	P		P	17 48 49.8	-1.1	
	baz=228,SNR=18								
X45A	UM Field Stati	19.78	57	P		Pn	17 48 51.5	-0.9	
	baz=247								
OXF	Oxford	19.80	57	eP		Pn	17 48 53.1	+0.4	
OXF				pmax		pmax			
	comp=Z,269nm,1.2s								
OXF	Oxford	19.80	57	eP		Pn	17 48 53.1	+0.4	
	comp=Z,269nm,1.2s								
JCC	Jacoby Creek,	19.80	326	eP		P	17 48 51.0	-0.1	
	comp=Z,503nm,1.1s								
O37A	Wolven Farm, M	19.80	37	P		P	17 48 50.0	-1.1	
	baz=225,SNR=8.1								
L33A	Hoskins	19.82	28	P		P	17 48 50.3	-1.0	
	baz=214								
HOG	Hoback Mounta	19.84	333	P		Pn	17 48 52.5	-0.9	
N36A	Muff Farm, Cla	19.84	34	P		P	17 48 50.8	-0.7	
	baz=222								
MCMT	McKenzie Canyo	19.88	353	eP		P	17 48 52.4	+0.3	
K05A	Summer Lake	19.92	335	eP		P	17 48 52.9	+0.3	
	comp=Z,1µm,1.5s								
K32A	Verdigre	19.95	26	P		P	17 48 52.7	0.0	
	baz=212								
GNAR	Gosnell	19.97	53	eP		Pn	17 48 53.8	-0.9	
J30A	Dallas	19.97	22	P		P	17 48 53.0	0.0	
	baz=208								
M35A	Neola	19.97	32	P		P	17 48 52.1	-0.8	
	baz=219								
RLMT	Red Lodge	19.99	1	P		P	17 48 52.6	-0.8	
	baz=181,SNR=22								
RLMT	Red Lodge	19.99	1	eP		P	17 48 53.2	-0.1	
	comp=Z,335nm,1.5s								
448A	Bay Minette	19.99	68	P		P	17 48 52.5	-0.7	
	baz=258								
Y46A	Houston	19.99	59	P		Pn	17 48 54.1	-0.9	
	baz=249,SNR=29								
V44A	Blytheville	19.99	53	P		P	17 48 53.6	+0.4	
	baz=243								
L34A	Svendsen Farm,	20.05	30	P		P	17 48 52.4	-1.4	
	baz=217,SNR=7.0								
348A	Jackson	20.06	67	P		P	17 48 53.7	-0.3	
	baz=257								
PBMO	Poplar Bluff	20.07	50	eP		Pn	17 48 57.0	+1.1	
	comp=Z,92nm,1.0s								
147A	Livingston	20.07	63	P		Pn	17 48 55.1	-0.9	
	baz=253,SNR=16								
H25A	Fruitdale	20.07	12	P		P	17 48 54.6	+0.4	
	baz=196,SNR=5.9								
P39B	Salisbury	20.14	40	P		P	17 48 54.8	+0.1	
	baz=229,SNR=18								
O38A	Galt	20.14	38	P		P	17 48 54.5	-0.3	
	baz=227,SNR=10								
K04D	Chiloquin, OR	20.18	333	P

comp=Z,103nm,1.3s
BMO Blue Mountains 20.70 344 *eP* P 17 49 00.2 -0.7
comp=Z,320nm,1.4s
BMO LR LR
comp=Z,22µm,19.0s
S43A Fulton Ridge, 20.71 48 P P 17 48 59.3 -1.7
baz=239,SNR=26
BRAL Brewton 20.72 68 *eP* Pn 17 49 02.7 -0.8
comp=Z,770nm,1.3s
BRAL LR LR
comp=Z,29µm,20.0s
M37A Trindle Farm, 20.74 35 P P 17 48 59.8 -1.5
baz=223,SNR=9.7
N38A Joes South For 20.74 37 P P 17 48 59.7 -1.6
baz=226
K34A Le Mars 20.75 29 P P 17 48 59.2 -2.2
baz=216,SNR=10
O39A Kirksville 20.76 39 P P 17 49 00.3 -1.2
baz=228,SNR=9.1
Y47A UCPARC, Winfie 20.79 60 P Pn 17 49 03.1 -1.3
baz=251,SNR=16
LRM Limekiln Ridge 20.82 354 *eP* P 17 49 01.8 -0.6
J04D Umpqua Nationa 20.84 333 P P 17 49 02.2 -0.3
baz=146,SNR=25
Z48A Northport 20.86 62 P P 17 49 03.0 +0.4
baz=252,SNR=32
J33A Davis 20.90 26 P P 17 49 02.4 -0.7
baz=214,SNR=17
I31A Royce, Wessing 20.92 23 P P 17 49 02.6 -0.6
baz=209,SNR=5.9
L36A Harm Buss Farm 20.95 32 P P 17 49 02.7 -0.9
baz=220
UTMT University of 20.97 53 *eP* Pn 17 49 07.2 +0.8
comp=Z,500nm,1.1s
O40A La Belle 21.06 40 P P 17 49 03.8 -0.9
baz=230,SNR=64
SUSD Miller 21.14 21 P P 17 49 04.7 -0.9
baz=207,SNR=6.8
Q42A Golden Eagle 21.15 45 P P 17 49 04.6 -1.1
baz=235,SNR=16
K35A Storm Lake 21.16 30 P P 17 49 04.9 -1.0
baz=218,SNR=11
M38A Pleasantville 21.20 36 P P 17 49 05.3 -0.9
baz=225,SNR=25
N39A Derby Farms, D 21.20 38 P P 17 49 05.0 -1.3
baz=227,SNR=7.9
LRAL Lakeview Retre 21.20 63 *eP* P 17 49 06.9 +0.5
comp=Z,188nm,1.1s
P41A Barry, Barry 21.27 42 P P 17 49 05.5 -1.5
baz=232,SNR=14
J34A George 21.29 28 P P 17 49 06.0 -1.2
baz=216
I32A Karley and Nic 21.30 25 P P 17 49 05.4 -1.9
baz=211
H31A Wolsey 21.33 22 P P 17 49 06.5 -1.2
baz=208
S44A Carbondale 21.34 49 P P 17 49 06.3 -1.5
baz=240,SNR=16
SIUC Southern Illin 21.37 49 *eP* P 17 49 08.1 0.0
comp=Z,182nm,1.0s
ECSD EROS Data Cent 21.39 26 P P 17 49 06.9 -1.4
baz=214,SNR=43
ECSD EROS Data Cent 21.39 26 *eP* P 17 49 06.2 -2.1
comp=Z,272nm,1.2s
ECSD LR LR
comp=Z,4µm,21.0s
I04A Tendick Farm, 21.42 334 P P 17 49 07.0 -1.7
baz=146,SNR=17
L37A Phoenix Point, 21.42 34 P P 17 49 07.5 -1.1
baz=222,SNR=52
I05D Terrebonne, OR 21.47 336 P P 17 49 07.9 -1.4
baz=150,SNR=17
IRO Indian Ridge 21.53 334 *eP* P 17 49 09.5 -0.5
SCIA State Center 21.54 35 *eP* P 17 49 10.8 +0.9
comp=Z,742nm,1.7s
SCIA LR LR
comp=Z,3µm,19.0s
G08A Pilot Rock 21.55 342 *eP* P 17 49 09.4 -0.7
comp=Z,393nm,1.4s
I33A Coleman 21.58 26 P P 17 49 08.5 -1.8
baz=213,SNR=8.8
WVT Waverly 21.63 54 *eP* P 17 49 11.1 +0.1
WVT pmax pmax
comp=Z,298nm,0.8s
WVT Waverly 21.63 54 *eP* P 17 49 11.1 +0.1
comp=Z,298nm,0.8s
O41A Passleys Farm, 21.65 42 P P 17 49 09.3 -1.8
baz=232,SNR=16
HRY Holter Researc 21.65 356 *eP* P 17 49 10.9 -0.3
P42A Winchester 21.66 43 P P 17 49 09.9 -1.3
baz=234,SNR=31
J35A Milford 21.68 29 P P 17 49 10.1 -1.3
baz=217
Q43A New Douglas 21.70 46 P P 17 49 11.0 -0.6
baz=236,SNR=19
LAO LASA Array 21.72 6 P P 17 49 10.9 -1.0
baz=188,SNR=21
LAO LASA Array 21.72 6 *eP* P 17 49 10.8 -1.1
comp=Z,1µm,1.9s
LAO LR LR
comp=Z,19µm,20.0s
H32A Carlson Farm, 21.72 24 P P 17 49 10.9 -1.0
baz=211,SNR=10
I03D Drain, OR 21.73 332 P P 17 49 11.0 -0.8
baz=144,SNR=13
F10A Beach Ranch, E 21.74 345 *eP* P 17 49 10.9 -1.1
comp=Z,495nm,1.4s
R44A Waltonville 21.74 48 P P 17 49 11.4 -0.6
baz=239,SNR=14
M39A Webster 21.79 37 P P 17 49 11.2 -1.4
baz=227,SNR=11
S45A Carrier Mills 21.79 50 P P 17 49 11.6 -1.1
baz=241,SNR=21
L38A Oak Wood Farm, 21.84 35 P P 17 49 11.8 -1.3
baz=224,SNR=25
CROR Criterion Ridg 21.91 338 P P 17 49 13.3 -0.6
VTHM Trough 21.94 339 P P 17 49 13.6 -0.6
I34A Hadley 21.95 27 P P 17 49 13.6 -0.7
baz=215,SNR=5.4
K37A Belmond 21.95 33 P P 17 49 12.8 -1.6
baz=222,SNR=23
MSO Missoula 21.98 352 P P 17 49 13.9 -0.8
baz=169,SNR=71
MSO Missoula 21.98 352 *eP* P 17 49 14.1 -0.6
comp=Z,367nm,1.4s
CHMT Chamberlain Mo 21.98 353 *eP* P 17 49 14.1 -0.7
G06A Carlson Farm, 22.01 339 *eP* P 17 49 14.0 -1.0
comp=Z,458nm,1.5s
J36A Seneca 1, Swea 22.05 31 P P 17 49 14.0 -1.3
baz=219,SNR=11
G31A Conde 22.08 22 P P 17 49 13.7 -1.9
baz=208
F29A Eureka 22.12 18 P P 17 49 14.3 -1.8
baz=204
Q44A Meyer Farm, Va 22.13 47 P P 17 49 14.5 -1.7
baz=237,SNR=27
H33A Prehn Over Nor 22.13 25 P P 17 49 14.6 -1.7
baz=212
I35A Creekview Farm 22.17 29 P P 17 49 15.2 -1.6
baz=217
O42A Bath 22.18 43 P P 17 49 15.7 -1.1
baz=233
G05D Wamic, OR 22.25 338 P P 17 49 15.5 -2.0
baz=151,SNR=14
K38A Parkersburg 22.30 34 P P 17 49 15.3 -2.7
baz=224,SNR=9.4
L39A Vinton 22.33 36 P P 17 49 15.7 -2.6
baz=226,SNR=17
SLMT Seeley Lake 22.33 353 *eP* P 17 49 17.8 -0.7
G32A Webster 22.35 23 P P 17 49 16.6 -2.0
baz=210
F30A Leola 22.36 20 P P 17 49 16.5 -2.2
baz=206,SNR=11
J37A Redenius Farm, 22.40 32 P P 17 49 17.9 -1.3
baz=221,SNR=44
COR Corvallis 22.43 334 *eP* P 17 49 18.2 -1.2
COR pmax pmax
comp=Z,541nm,1.0s
COR Corvallis 22.43 334 *eP* P 17 49 18.2 -1.2
comp=Z,541nm,1.0s
E09A Wood Farm, Sta 22.46 344 *eP* P 17 49 17.8 -2.0
comp=Z,367nm,1.3s
H34A Spellman Lake, 22.50 26 P P 17 49 19.1 -1.1
baz=214,SNR=11
USIN University of 22.57 50 *eP* P 17 49 20.7 -0.2
comp=Z,264nm,1.1s
D26A Manning 22.61 13 P P 17 49 19.5 -2.0
baz=197,SNR=11

F31A Hecla 22.62 21 P P 17 49 19.2 -2.3
baz=207
OLIL Olney 22.65 48 *eP* P 17 49 21.1 -0.7
comp=Z,277nm,1.1s
SWMT Swartz Lake 22.65 352 *eP* P 17 49 20.7 -1.2
G33A Ortonville 22.68 25 P P 17 49 20.1 -2.1
baz=212
L40A Anamosa 22.71 37 P P 17 49 20.5 -1.9
baz=227,SNR=28
HAWA Hanford 22.72 342 *eP* P 17 49 21.2 -1.3
comp=Z,412nm,1.3s
HAWA LR LR
comp=Z,34µm,21.0s
SWET Sewanee 22.72 58 *eP* P 17 49 23.2 +0.6
comp=Z,144nm,1.8s
I36A Fitzsimmons Fa 22.73 30 P P 17 49 21.2 -1.5
baz=219
K39A Oelwein 22.80 35 P P 17 49 20.6 -2.8
baz=225,SNR=7.7
HDIL Hopedale 22.88 43 P P 17 49 22.6 -1.6
baz=234,SNR=8.2
HDIL Hopedale 22.88 43 *eP* P 17 49 25.2 +1.0
comp=Z,287nm,1.0s
HDIL LR LR
comp=Z,16µm,22.0s
EGMT Eagleton 22.89 360 P P 17 49 23.0 -1.4
baz=180,SNR=41
EGMT Eagleton 22.89 360 *eP* P 17 49 23.4 -1.0
comp=Z,512nm,1.3s
EGMT LR LR
comp=Z,26µm,21.0s
H35A Sunnyside Ranc 22.91 28 P P 17 49 23.3 -1.3
baz=216,SNR=20
JTMT Jette 22.92 352 *eP* P 17 49 23.8 -1.0
J38A Wedel Dairy, R 22.94 33 P P 17 49 23.2 -1.6
baz=223,SNR=16
G03D McMinnville, O 22.94 335 P P 17 49 23.7 -1.0
baz=146,SNR=11
E07A Sunnyside 22.96 342 *eP* P 17 49 24.1 -1.0
comp=Z,377nm,1.3s
YBMT Yellow Bay 23.00 352 *eP* P 17 49 25.8 +0.2
F32A Veblen 23.01 23 P P 17 49 23.3 -2.2
baz=210
I37A Lemond, Waseca 23.01 31 P P 17 49 24.1 -1.5
baz=220,SNR=7.1
G34A Benson 23.03 26 P P 17 49 23.5 -2.2
baz=214
BSMT Bassoo Peak 23.09 351 *eP* P 17 49 25.4 -1.2
L41A Preston 23.12 38 P P 17 49 24.8 -1.9
baz=229,SNR=9.9
D08A Wollman Farm, 23.16 344 *eP* P 17 49 25.1 -2.0
comp=Z,137nm,1.3s
K40A Colesburg 23.19 36 P P 17 49 25.3 -2.1
baz=226,SNR=14
BLMT Blacktail Moun 23.19 352 *eP* P 17 49 27.4 -0.2
H36A Jessenland, He 23.21 29 P P 17 49 25.7 -1.9
baz=218
F04A Amboy 23.23 337 *eP* P 17 49 26.4 -1.4
comp=Z,319nm,1.4s
F33A 5 Mile Ranch, 23.28 24 P P 17 49 26.0 -2.3
baz=212,SNR=7.6
J39A Decorah 23.34 34 P P 17 49 26.8 -2.1
baz=224
E31A Nome 23.36 21 P P 17 49 27.2 -1.9
baz=207,SNR=9.0
KMOR Kings Mountain 23.38 335 P P 17 49 28.9 -0.5
FL2 Flat Top 2 23.43 337 *eP* P 17 49 29.0 -1.0
G35A Watkins 23.48 27 P P 17 49 28.8 -1.5
baz=216
I38A Scanlan Farm, 23.54 32 P P 17 49 29.0 -1.9
baz=222,SNR=11
F04D Rainier, OR 23.58 336 P P 17 49 30.0 -1.2
baz=148
K41A Shullsburg 23.58 37 P P 17 49 29.5 -1.8
baz=228,SNR=9.8
F34A Alexandria 23.64 25 P P 17 49 29.9 -2.0
baz=214
WCI Wyandotte Cave 23.65 51 *eP* P 17 49 32.8 +0.8
WCI pmax pmax
comp=Z,208nm,1.4s
WCI Wyandotte Cave 23.65 51 *eP* P 17 49 32.8 +0.8
comp=Z,208nm,1.4s
F03A Seaside 23.65 335 *eP* P 17 49 32.3 +0.4
comp=Z,755nm,1.4s
E32A Braaten, Kindr 23.66 22 P P 17 49 30.0 -2.1
baz=205
H37A Dierke Farm, C 23.67 31 P P 17 49 30.2 -1.9
baz=220
TIGA Tifton 23.68 69 P P 17 49 31.9 -0.5
baz=261
TIGA Tifton 23.68 69 *eP* P 17 49 32.7 +0.3
comp=Z,237nm,1.1s
C09A Chrisman Ranch 23.70 345 *eP* P 17 49 31.6 -0.9
comp=Z,489nm,1.8s
DGMT Dagmar 23.71 9 P P 17 49 30.7 -1.9
baz=192
DGMT Dagmar 23.71 9 *eP* P 17 49 32.3 -0.3
comp=Z,674nm,1.6s
DGMT LR LR
comp=Z,10µm,19.0s
LON Longmire 23.73 339 *eP* P 17 49 31.6 -1.2
LON pmax pmax
comp=Z,727nm,1.4s
LON Longmire 23.73 339 *eP* P 17 49 31.6 -1.2
comp=Z,727nm,1.4s
G36A St. Michael 23.80 28 P P 17 49 31.5 -2.0
baz=218
JFWS Jewell Farm 23.82 37 *eP* P 17 49 34.2 +0.6
JFWS pmax pmax
comp=Z,109nm,0.8s
JFWS MLR MLR
comp=Z,5µm,22.0s
JFWS Jewell Farm 23.82 37 *eP* P 17 49 34.2 +0.6
comp=Z,109nm,0.8s
JFWS LR LR
comp=Z,5µm,22.0s
LTY Liberty 23.83 341 *eP* P 17 49 33.4 -0.4
comp=Z,579nm,1.7s
D31A Mcclaflin, Tow 23.85 20 P P 17 49 31.7 -2.1
baz=207
OBSR Observation Ro 23.87 339 *eP* P 17 49 33.9 -0.4
J40A Soldiers Grove 23.88 35 P P 17 49 32.0 -2.1
baz=226
SAW Saint Andrews 23.88 343 P P 17 49 33.4 -0.8
CPCT Cooper Cave 23.89 59 *eP* P 17 49 33.9 -0.4
comp=Z,274nm,1.5s
NEW Newport 23.89 347 P P 17 49 32.5 -1.8
comp=Z,67nm,0.8s,baz=165,slow=11,SNR=59
NEW LR LR 17 58 32.9
comp=Z,14µm,19.9s,baz=169,slow=36
NEW Newport 23.89 347 P P 17 49 32.7 -1.5
baz=163,SNR=154
NEW Newport 23.89 347 *eP* P 17 49 32.8 -1.5
NEW pmax pmax
comp=Z,820nm,1.5s
NEW MLR MLR
comp=Z,22µm,21.0s
NEW Newport 23.89 347 *eP* P 17 49 32.8 -1.5
comp=Z,820nm,1.5s
NEW LR LR
comp=Z,22µm,21.0s
BLO Bloomington 23.93 49 *eP* P 17 49 36.6 +1.9
BLO pmax pmax
comp=Z,231nm,1.3s
BLO Bloomington 23.93 49 *eP* P 17 49 36.6 +1.9
comp=Z,231nm,1.3s
E33A Westby DABS, E 23.95 23 P P 17 49 32.7 -2.1
baz=211
F35A Swanville 23.96 26 P P 17 49 33.3 -1.6
baz=215
MDND Maddock 24.04 17 P P 17 49 32.8 -2.8
baz=202
MDND Maddock 24.04 17 *eP* P 17 49 35.6 0.0
comp=Z,228nm,1.2s
D32A Dogwood Acres, 24.15 21 P P 17 49 34.1 -2.5
baz=209
GOGA Godfrey 24.16 64 *eP* P 17 49 36.8 -0.1
GOGA pmax pmax
comp=Z,383nm,1.6s
GOGA MLR MLR
comp=Z,8µm,21.0s
GOGA Godfrey 24.16 64 *eP* P 17 49 36.8 -0.1
comp=Z,383nm,1.6s
GOGA LR LR
comp=Z,8µm,21.0s
SFIN Lafayette 24.17 45 P P 17 49 35.4 -1.4
baz=238,SNR=33
SFIN Lafayette 24.17 45 *eP* P 17 49 35.7 -1.2

comp=Z,232nm,0.7s
WALA Waterton Lakes 24.17 353 *eP* P 17 49 36.3 -0.7
comp=Z,361nm,1.5s
E03A Lebam 24.17 336 *eP* P 17 49 36.9 +0.1
comp=Z,310nm,1.0s
D05A Enumclaw 24.18 339 *eP* P 17 49 37.4 +0.5
comp=Z,1µm,1.9s
SPMN Marine on St. 24.21 30 P P 17 49 35.8 -1.5
baz=219,SNR=7.1
SPMN Marine on St. 24.21 30 *eP* P 17 49 37.6 +0.3
comp=Z,105nm,1.0s
J41A Loganville 24.25 36 P P 17 49 35.2 -2.4
baz=227
E34A Wadena 24.27 25 P P 17 49 35.8 -2.0
baz=213
F36A Milaca 24.40 28 P P 17 49 37.4 -1.5
baz=217,SNR=45
B08A Colville Reser 24.47 344 *eP* P 17 49 38.5 -1.1
NLW Nelson Butte 24.48 342 P P 17 49 40.1 +0.3
C06D Leavenworth 24.50 341 P P 17 49 39.1 -0.7
baz=154
C31A Landman Farms, 24.51 19 P P 17 49 37.6 -2.4
baz=206,SNR=13
TKL Tuckaleechee C 24.53 58 P P 17 49 40.4 +0.2
comp=Z,27nm,1.0s,baz=248,slow=9.2,SNR=20
TKL S S 17 54 06.9 +6.7
comp=Z,6.2nm,0.9s,baz=239,slow=19,SNR=2.5
TKL Lg Lg 17 57 19.6
comp=Z,5.9nm,0.9s,baz=162,slow=6.4,SNR=2.0
TKL LR LR 17 59 38.5
comp=Z,33µm,21.5s,baz=254,slow=38
D33A AnnSam, Waubun 24.56 23 P P 17 49 38.2 -2.2
baz=211
E35A Pequot Lakes 24.60 26 P P 17 49 39.0 -1.8
baz=215
GNW Green Mountain 24.78 338 *eP* P 17 49 41.0 -1.3
C32A Crookston 24.92 21 P P 17 49 41.2 -2.4
baz=209
TZTN Tazewell 24.99 57 *eP* P 17 49 45.0 +0.6
comp=Z,621nm,1.8s
NLWA Neilton Lookou 25.00 337 *eP* P 17 49 44.9 +0.5
comp=Z,569nm,1.7s
NLWA LR LR
comp=Z,16µm,19.0s
E36A McGregor 25.03 27 P P 17 49 42.1 -2.6
baz=217,SNR=18
B31A Greenbush Farm 25.10 19 P P 17 49 43.8 -1.4
baz=206
C33A Trail 25.11 22 P P 17 49 43.4 -2.0
baz=210
B05A Bryant 25.16 340 P P 17 49 43.9 -1.9
baz=152,SNR=7.7
D35A Remer 25.17 25 P P 17 49 43.8 -2.1
baz=215,SNR=8.1
DWPF Disney Wildern 25.29 77 *eP* P 17 49 47.5 +0.3
comp=Z,334nm,1.3s
C34A RKJ Ranch, Bem 25.32 24 P P 17 49 45.1 -2.2
baz=212
B32A Ashes, Strandq 25.41 20 P P 17 49 45.8 -2.3
baz=208,SNR=19
E37A Wrenshall 25.43 28 P P 17 49 45.8 -2.5
baz=218
AGMN Agassiz Nation 25.55 21 *eP* P 17 49 47.3 -2.0
AGMN LR LR
comp=Z,26µm,19.0s
D36A Goodland 25.60 26 P P 17 49 47.6 -2.2
baz=216,SNR=6.5
B33A Robert and Kas 25.62 22 P P 17 49 48.1 -1.9
baz=210
A31A Linda, St. Vin 25.69 19 P P 17 49 48.2 -2.4
baz=206
C35A Jirik Farms, M 25.71 25 P P 17 49 49.3 -1.5
baz=214,SNR=8.8
A04D Lummi Island 25.75 340 P P 17 49 49.8 -1.4
baz=152,SNR=6.2
A32A Rocking H Ranc 25.89 20 P P 17 49 50.1 -2.3
baz=208
D37A Cotton 25.89 27 P P 17 49 50.1 -2.4
baz=218,SNR=8.2
PGC Sidney 25.93 339 *eP* P 17 49 53.5 +0.7
comp=Z,381nm,1.1s
B34A Aery, Baudette 26.12 23 P P 17 49 52.4 -2.2
baz=212
JSC Jenkinsville 26.15 63 *eP* P 17 49 55.4 +0.5
JSC pmax pmax
comp=Z,306nm,1.9s
JSC Jenkinsville 26.15 63 *eP* P 17 49 55.4 +0.5
comp=Z,306nm,1.9s
C36A Pine Crest Far 26.20 26 P P 17 49 52.7 -2.6
baz=216,SNR=14
A33A Warroad 26.26 21 P P 17 49 54.0 -1.8
baz=210
KMSC Kings Mountain 26.30 61 P P 17 49 54.7 -1.6
baz=255
KMSC Kings Mountain 26.30 61 *eP* P 17 49 57.1 +0.9
comp=Z,525nm,1.9s
B35A Bob, Littlefor 26.35 24 P P 17 49 54.9 -1.7
baz=214,SNR=9.3
C37A Embarrass 26.44 27 P P 17 49 55.0 -2.5
baz=217,SNR=11
COWI Conover 26.59 33 *eP* P 17 49 57.4 -1.5
comp=Z,82nm,1.4s
COWI LR LR
comp=Z,27µm,21.0s
NHSC New Hope 26.80 66 PFAKE 17 50 10.0 +9.2
NHSC LR LR
comp=Z,54µm,19.0s
C38A Sawbill Land. 26.81 28 P P 17 49 58.3 -2.5
baz=219,SNR=9.7
ACSO Alum Creek Sta 26.84 49 *eP* P 17 50 04.2 +3.1
comp=Z,111nm,1.1s
ACSO LR LR
comp=Z,16µm,20.0s
EYMN Ely 26.90 27 P P 17 49 59.0 -2.6
baz=218,SNR=37
EYMN Ely 26.90 27 *eP* P 17 49 59.3 -2.3
comp=Z,78nm,1.1s
EYMN LR LR
comp=Z,49µm,19.0s
ULM Lac du Bonnet 27.26 19 P P 17 50 02.4 -2.3
comp=Z,15nm,1.0s,baz=207,slow=9.1,SNR=19
ULM Lg Lg 17 58 31.6
comp=Z,2.0nm,0.5s,baz=99,slow=13,SNR=3.8
ULM LR LR 18 01 10.9
comp=Z,23µm,21.2s,baz=204,slow=37
ULM Lac du Bonnet 27.26 19 *eP* P 17 50 02.7 -2.0
ULM pmax pmax
comp=Z,49nm,0.9s
ULM Lac du Bonnet 27.26 19 *eP* P 17 50 02.7 -2.0
comp=Z,49nm,0.9s
ULM Lg Lg 17 58 31.6
AAM Ann Arbor 27.38 45 PFAKE 17 50 20.0 +14
AAM LR LR
comp=Z,8µm,20.0s
C39A Grand Marais 27.39 29 P P 17 50 03.8 -2.1
baz=221,SNR=22
BLA Blacksburg 27.58 57 PFAKE 17 50 20.0 +12
BLA LR LR
comp=Z,23µm,22.0s
EDM Edmonton 28.24 355 *eP* P 17 50 11.9 -1.7
EDM pmax pmax
comp=Z,649nm,1.7s
EDM Edmonton 28.24 355 *eP* P 17 50 11.9 -1.7
comp=Z,649nm,1.7s
CNNC Cliffs of the 29.06 62 PFAKE 17 50 30.0 +9.0
CNNC LR LR
comp=Z,60µm,20.0s
N54A Moraine State 29.22 50 P P 17 50 20.0 -2.3
baz=246
M54A Oil Creek Stat 29.66 49 P P 17 50 24.3 -2.0
baz=246
URVA University of 29.89 58 *eP* P 17 50 29.1 +0.8
O56A Blue Knob Stat 29.96 52 P P 17 50 27.4 -1.6
baz=249
FFC Flin Flon 30.13 9 *eP* P 17 50 28.6 -1.6
FFC pmax pmax
comp=Z,284nm,2.0s
FFC MLR MLR
comp=Z,32µm,20.0s
FFC Flin Flon 30.13 9 *eP* P 17 50 28.6 -1.6
comp=Z,284nm,2.0s
FFC LR LR
comp=Z,32µm,20.0s
CBN Corbin Frederi 30.18 57 PFAKE 17 50 40.0 +9.1
CBN LR LR
comp=Z,30µm,20.0s
MTDJ Mount Denham 30.47 97 PFAKE 17 50 50.0 +16
MTDJ LR LR

comp=Z,21µm,20.0s
BBB Bella Bella 30.52 337 P P 17 50 32.6 -1.1
comp=Z,4.4nm,0.8s,baz=139,slow=11,SNR=2.5
BBB LR LR 18 03 08.2
comp=Z,17µm,20.0s,baz=164,slow=37
SSPA Standing Stone 30.57 52 *eP* **P 17 50 33.4 -0.9**
comp=Z,74nm,1.1s
MMNY Mt. Morris Dam 31.36 48 *eP* **P 17 50 42.7 +1.5**
SADO Sadowa 31.45 44 LR LR 18 02 30.8
comp=Z,20µm,19.4s,baz=249,slow=35
SADO Sadowa 31.45 44 *eP* **P 17 50 42.8 +0.8**
comp=Z,36nm,1.2s
PAYG Puerto Ayora 31.67 141 PFAKE 17 51 00.0 +16
PAYG LR LR
comp=Z,4µm,20.0s
GTBY Guantanamo Bay 32.16 92 PFAKE 17 51 00.0 +11
GTBY LR LR
comp=Z,21µm,21.0s
N59A State Game Lan 32.18 52 P **P 17 50 46.9 -1.7**
baz=251
KSPA Keystone Colle 32.39 51 *eP* **P 17 50 50.8 +0.4**
comp=Z,27nm,1.0s
BINY Binghamton 32.47 50 *eP* **P 17 50 50.7 -0.3**
comp=Z,50nm,1.0s
BINY LR LR
comp=Z,35µm,19.0s
PLVO Plevna 32.88 45 *eP* **P 17 50 54.7 +0.1**
comp=Z,56nm,1.0s
PAL Palisades 33.55 53 *eP* **P 17 51 01.4 +0.9**
PAL pmax pmax
comp=Z,20nm,0.8s
PAL Palisades 33.55 53 *eP* **P 17 51 01.4 +0.9**
comp=Z,20nm,0.8s
VLDQ Val d'Or 34.12 39 *eP* **P 17 51 03.5 -1.8**
comp=Z,91nm,1.2s
NCB Newcomb 34.31 48 *eP* **P 17 51 06.1 -1.0**
comp=Z,0.5nm,0.9s
LONY Lake Ozonia 34.32 47 *eP* **P 17 51 08.1 +1.0**
comp=Z,46nm,1.0s
LONY LR LR
comp=Z,27µm,21.0s
TRQ Mont Tremblant 34.98 44 *eP* **P 17 51 12.1 -0.9**
QUA2 Belchertown 35.04 51 *eP* **P 17 51 13.2 -0.1**
comp=Z,36nm,0.9s
FRNY Flat Rock 35.05 47 *eP* **P 17 51 13.3 -0.2**
comp=Z,52nm,0.9s
GRTK Grand Turk 35.37 88 PFAKE 17 51 30.0 +14
GRTK LR LR
comp=Z,18µm,21.0s
FCC Fort Churchill 35.38 14 *eP* **P 17 51 13.9 -2.1**
FCC pmax pmax
comp=Z,113nm,1.1s
FCC Fort Churchill 35.38 14 *eP* **P 17 51 13.9 -2.1**
comp=Z,113nm,1.1s
WRAK Wrangell Islan 35.41 338 *eP* **P 17 51 17.0 +0.7**
comp=Z,160nm,1.4s
WRAK LR LR
comp=Z,14µm,22.0s
SDDR Presa de Saban 35.89 92 PFAKE 17 51 30.0 +9.0
SDDR LR LR
comp=Z,10µm,22.0s
LBNH Lisbon 35.95 48 *eP* **P 17 51 22.6 +1.3**
LBNH pmax pmax
comp=Z,92nm,1.4s
LBNH Lisbon 35.95 48 *eP* **P 17 51 22.6 +1.3**
comp=Z,92nm,1.4s
DLBC Dease Lake 36.35 342 P **P 17 51 23.9 -0.6**
comp=Z,14nm,0.8s,baz=169,slow=6.7,SNR=26
DLBC Dease Lake 36.35 342 *eP* **P 17 51 25.0 +0.5**
comp=Z,109nm,1.1s
YKA Yellowknife Ar 37.55 356 P **P 17 51 32.5 -2.0**
comp=Z,22nm,0.9s,baz=174,slow=7.8,SNR=138
YKA LR LR 18 07 39.6
comp=Z,3µm,20.1s,baz=180,slow=37
YKA P3KPbc 18 22 02.3
comp=Z,0.3nm,0.7s,baz=352,slow=3.7,SNR=3.9
YKB5 Yellowknife Ar 37.55 356 *eP* **P 17 51 32.5 -2.0**
YKB5 *e* 18 22 02.3
HELC Santa Helena 37.58 114 *eP* P 17 51 42.1 +6.3
WVL Waterville 37.60 49 *eP* **P 17 51 37.4 +2.2**
comp=Z,115nm,1.3s
TUMC Tumaco 37.66 123 *eP* **P 17 51 38.3 +2.3**
URIC Uribia, Colomb 37.89 104 *eP* P 17 51 32.7 -5.3
PKME Peaks-Kenny Pk 38.06 48 *eP* **P 17 51 40.3 +1.2**
comp=Z,52nm,1.4s
PKME LR LR
comp=Z,17µm,20.0s
LMQ La Malbaie 38.17 44 *eP* **P 17 51 40.0 0.0**
BRRC Barranca, Sant 38.61 111 *eP* P 17 51 49.0 +5.0
TOLC Tolima 38.66 116 *eP* **P 17 51 46.8 +2.0**
POPC Popayan, Colom 38.79 120 *eP* P 17 51 53.2 +7.3
OTAV Otavalo 38.90 125 *eP* **P 17 51 47.8 +0.8**
OTAV Otavalo 38.90 125 *eP* **P 17 51 47.9 +0.8**
comp=Z,136nm,1.3s
OTAV LR LR
comp=Z,5µm,20.0s
CMBC Cumbal 38.91 123 *eP* **P 17 51 49.0 +1.9**
GRMC Gramalote, San 39.06 110 *eP* **P 17 51 49.2 +1.1**
CBRI Barrientos, No 39.07 110 *eP* P 17 51 54.6 +6.4
BARC Barichara 39.32 112 *eP* **P 17 51 50.7 +0.4**
ROSC El Rosal 39.33 115 P **P 17 51 52.9 +2.4**
comp=Z,4.8nm,0.3s,baz=330,slow=15,SNR=8.3
ROSC LR LR 18 10 20.2
comp=Z,7µm,21.2s,baz=340,slow=40
ROSC El Rosal 39.33 115 *eP* **P 17 51 54.4 +3.9**
PRAC Prado 39.51 117 *eP* **P 17 51 53.2 +1.5**
BBSR BB Station 39.76 69 PFAKE 17 52 00.0 +6.5
BBSR LR LR
comp=Z,9µm,19.0s
RUSC La Rusia 39.78 113 *eP* **P 17 51 54.4 0.0**
CHIC Chingaza 39.93 115 *eP* **P 17 51 57.3 +1.7**
VILC Villavicencio, 40.25 115 *eP* P 17 52 03.7 +5.8
SDV Santo Domingo 40.36 107 LR LR 18 09 46.9
comp=Z,16µm,21.3s,baz=308,slow=38
SDV Santo Domingo 40.36 107 *eP* **P 17 52 02.9 +4.0**
SDV Santo Domingo 40.36 107 *eP* P 17 52 05.4 +6.5
comp=Z,45nm,0.9s
SDV LR LR
comp=Z,17µm,21.0s
SJAC San Juan de Ar 40.52 117 *eP* **P 17 52 03.8 +3.7**
HYT Haines Junctio 40.53 339 *eP* **P 17 52 00.8 +1.1**
SJG San Juan 40.80 91 *eP* **P 17 52 00.6 -1.7**
SJG pmax pmax
comp=Z,138nm,1.2s
SJG MLR MLR
comp=Z,16µm,22.0s
SJG San Juan 40.80 91 *eP* **P 17 52 00.6 -1.7**
comp=Z,138nm,1.2s
SJG LR LR
comp=Z,16µm,22.0s
LMN Caledonia Moun 41.25 48 *eP* **P 17 52 05.0 -0.7**
comp=Z,74nm,1.1s
CRQM Cirque 42.42 336 *eP* **P 17 52 15.9 +0.6**
POHA Pohakuloa 42.69 272 PFAKE 17 52 30.0 +12
POHA LR LR
comp=Z,11µm,21.0s
SCHQ Schefferville 43.16 35 P **P 17 52 19.4 -1.7**
comp=Z,46nm,1.0s,baz=248,slow=6.5,SNR=23
SCHQ LR LR 18 09 58.6
comp=Z,16µm,18.2s,baz=247,slow=36
SCHQ Schefferville 43.16 35 *eP* **P 17 52 19.7 -1.4**
comp=Z,81nm,1.0s
DAWY Dawson 43.57 341 *eP* **P 17 52 24.6 +0.2**
comp=Z,165nm,1.2s
FID Port Fidalgo 43.68 335 *eP* **P 17 52 25.9 +0.7**
comp=Z,268nm,1.6s
ATAH Atahualpa 44.10 132 P **P 17 52 30.4 +0.8**
comp=Z,11nm,0.8s,baz=323,slow=8.8,SNR=2.0
MENT Mentasta 44.10 338 *eP* **P 17 52 29.1 +0.5**
comp=Z,65nm,1.2s
KIP Kipapa 44.51 276 *eP* **P 17 52 30.7 -1.7**
KIP Kipapa 44.51 276 PFAKE 17 52 40.0 +7.6
KIP LR LR
comp=Z,16µm,20.0s
EGAK Eagle 44.61 341 *eP* **P 17 52 32.2 -0.4**
EGAK LR LR
comp=Z,7µm,19.0s
SCM Sheep Creek Mo 44.67 336 *eP* **P 17 52 33.8 +0.6**
SCM pmax pmax
comp=Z,98nm,1.3s
SCM Sheep Creek Mo 44.67 336 *eP* **P 17 52 33.8 +0.6**
comp=Z,98nm,1.3s
KDAK Kodiak Island 44.68 329 *eP* **P 17 52 33.8 +0.6**
KDAK pmax pmax
comp=Z,272nm,1.6s
KDAK MLR MLR
comp=Z,2µm,19.0s
KDAK Kodiak Island 44.68 329 *eP* **P 17 52 33.8 +0.6**
comp=Z,272nm,1.6s
KDAK LR LR
comp=Z,2µm,19.0s
DOT Dot Lake 44.70 339 *eP* **P 17 52 33.5 +0.1**
comp=Z,172nm,1.2s
PAX Paxson 44.72 338 *eP* **P 17 52 33.4 -0.3**
PAX pmax pmax
comp=Z,101nm,1.6s
PAX Paxson 44.72 338 *eP* **P 17 52 33.4 -0.3**
comp=Z,100nm,1.6s
OHAK Old Harbor 44.75 328 *eP* **P 17 52 34.0 +0.2**
comp=Z,188nm,1.4s
ANWB Willy Bob 44.89 90 PFAKE 17 52 50.0 +15
ANWB LR LR
comp=Z,5µm,22.0s
BRLK Bradley Lake 44.91 332 *eP* **P 17 52 35.5 +0.4**
comp=Z,131nm,1.2s
CNPM China Poot 44.94 331 *eP* **P 17 52 36.7 +1.3**
comp=Z,89nm,1.2s
SML Sawmill 45.03 335 *eP* **P 17 52 36.1 0.0**
SML pmax pmax
comp=Z,114nm,1.3s
SML Sawmill 45.03 335 *eP* **P 17 52 36.1 0.0**
comp=Z,114nm,1.3s
TAOE Nuku Hiva Isla 45.03 225 *eS* **S 17 59 21.0 +6.0**
comp=Z,650nm,23.5s
TAOE *e*LQ LQ 18 03 20.1
comp=Z,34µm,26.3s
TAOE *e*LR LR 18 05 06.8
comp=Z,12µm,26.2s,baz=53
PCRV Puerto La Cruz 45.06 101 LR LR 18 12 14.6
comp=Z,8µm,21.3s,baz=287,slow=37
RC01 Rabbit Creek A 45.16 334 *eP* **P 17 52 38.9 +1.8**
comp=Z,110nm,1.3s
PMR Palmer 45.21 335 *eP* **P 17 52 37.0 -0.4**
PMR pmax pmax
comp=Z,142nm,1.4s
PMR Palmer 45.21 335 *eP* **P 17 52 37.0 -0.4**
comp=Z,142nm,1.4s
DHY Denali Highway 45.45 337 *eP* **P 17 52 39.1 -0.4**
comp=Z,44nm,1.1s
INK Inuvik 45.62 348 P **P 17 52 39.8 -0.7**
comp=Z,18nm,1.1s,baz=150,slow=7.4,SNR=14
INK Inuvik 45.62 348 *eP* **P 17 52 40.0 -0.5**
INK pmax pmax
comp=Z,581nm,2.0s
INK Inuvik 45.62 348 *eP* **P 17 52 40.0 -0.5**
comp=Z,581nm,2.0s
SUA Susitna One 45.77 334 *eP* **P 17 52 41.9 -0.1**
SPU Mount Spurr 46.15 333 *eP* **P 17 52 44.7 -0.3**
RND Reindeer 46.19 337 *eP* **P 17 52 45.1 -0.1**
RND pmax pmax
comp=Z,60nm,1.0s
RND Reindeer 46.19 337 *eP* **P 17 52 45.1 -0.1**
comp=Z,60nm,1.0s
IL1 Eielson Array 46.38 339 *eP* **P 17 52 44.6 -2.0**
ILAR Eielson Array 46.38 339 P **P 17 52 45.8 -0.8**
comp=Z,17nm,1.0s,baz=150,slow=6.6,SNR=119
ILAR LR LR 18 13 30.9
comp=Z,9µm,18.3s,baz=139,slow=38
ILB Eielson Array 46.38 339 *eP* **P 17 52 45.9 -0.7**
MCK McKinley 46.41 337 *eP* **P 17 52 46.9 -0.1**
MCK pmax pmax
comp=Z,86nm,1.1s
MCK McKinley 46.41 337 *eP* **P 17 52 46.9 -0.1**
comp=Z,86nm,1.1s
FDF Fort de France 46.43 93 PFAKE 17 53 00.0 +12
FDF LR LR
comp=Z,7µm,22.0s
WRH Wood River Hil 46.58 338 *eP* **P 17 52 47.5 -0.7**
comp=Z,72nm,1.1s
CCB Clear Creek Bu 46.60 338 *eP* **P 17 52 47.5 -0.8**
comp=Z,49nm,1.0s
TRF Thorofare Moun 46.73 336 *eP* **P 17 52 49.0 -0.7**
comp=Z,740nm,1.8s
COLA College 46.76 339 *eP* **P 17 52 50.3 +0.8**
COLA pmax pmax
comp=Z,73nm,0.9s
COLA MLR MLR
comp=Z,7µm,20.0s
COLA College 46.76 339 *eP* **P 17 52 50.3 +0.8**
comp=Z,73nm,0.9s
COLA LR LR
comp=Z,7µm,20.0s
DRLN Deer Lake 46.84 45 *eP* **P 17 52 48.7 -1.7**
comp=Z,704nm,2.0s
BWN Browne 46.87 337 *eP* **P 17 52 50.2 -0.3**
comp=Z,378nm,1.2s
MDM Murphy Dome 46.94 339 *eP* **P 17 52 50.3 -0.7**
comp=Z,105nm,1.4s
GRGR Grenville 46.94 97 *eP* P 17 52 57.5 +5.7
comp=Z,378nm,1.3s
GRGR LR LR
comp=Z,7µm,21.0s
FRB Frobisher Bay 46.99 24 P **P 17 52 49.4 -2.0**
comp=Z,17nm,1.1s,baz=248,slow=3.6,SNR=7.1
KTH Kantishna Hill 47.02 336 *eP* **P 17 52 50.1 -1.7**
comp=Z,118nm,1.0s
FYU Fort Yukon 47.08 341 *eP* **P 17 52 52.3 +0.3**
comp=Z,506nm,1.5s
PPLA Purkeypile 47.13 335 *eP* **P 17 52 52.0 -0.7**
comp=Z,489nm,1.4s
PPLA Purkeypile 47.13 335 *eP* **P 17 52 52.2 -0.5**
comp=Z,489nm,1.4s
BPAW Bear Paw Mtn. 47.36 337 *eP* **P 17 52 53.3 -1.1**
comp=Z,233nm,1.3s
MLY Manley 47.82 338 *eP* **P 17 52 57.1 -0.9**
comp=Z,96nm,0.9s
BBGH Gun Hill 48.45 95 PFAKE 17 53 10.0 +6.6
BBGH LR LR
comp=Z,17µm,22.0s
NNA Nana 48.73 135 P **P 17 53 05.6 +0.1**
comp=Z,36nm,1.2s,baz=305,slow=7.0,SNR=3.3
NNA Nana 48.73 135 *eP* **P 17 53 05.6 +0.1**
NNA MLR MLR
comp=Z,2µm,21.0s
NNA Nana 48.73 135 *eP* **P 17 53 05.6 +0.1**
NNA LR LR
comp=Z,2µm,21.0s
COLD Coldfoot 48.99 340 *eP* **P 17 53 06.9 0.0**
comp=Z,68nm,1.0s
RES Resolute Bay 50.23 5 P **P 17 53 14.4 -1.7**
comp=Z,17nm,0.9s,baz=191,slow=5.1,SNR=5.3
RES Resolute Bay 50.23 5 *eP* **P 17 53 17.0 +0.8**
RES pmax pmax
comp=Z,72nm,1.1s
RES Resolute Bay 50.23 5 *eP* **P 17 53 17.0 +0.8**
comp=Z,72nm,1.1s
UNV Unalaska Valle 50.76 320 *eP* P 17 53 25.3 +4.9
comp=Z,166nm,1.3s
RPN Rapa Nui 51.91 180 PFAKE 17 53 40.0 +11
RPN LR LR
comp=Z,4µm,19.0s
PTCN Pitcairn Islan 53.69 203 PFAKE 17 53 50.0 +7.5
PTCN LR LR
comp=Z,9µm,20.0s
RKT Rikitea 53.90 209 *eS* **S 18 01 22.4 +3.6**
RKT comp=Z,4µm,27.0s *e*LQ LQ 18 07 15.5
RKT comp=Z,6µm,28.8s *e*LR LR 18 09 34.2
comp=Z,9µm,25.2s,baz=26
PTGA Pitinga 54.36 111 P **P 17 53 46.8 -0.9**
comp=Z,4.3nm,0.7s,baz=306,slow=9.4,SNR=9.4
PTGA Pitinga 54.36 111 *eP* **P 17 53 46.8 -0.9**
comp=Z,47nm,1.1s
PTGA LR LR
comp=Z,40µm,21.0s
SFJD Kangerlussuaq 55.13 24 P **P 17 53 51.6 -0.8**
comp=Z,21nm,0.8s,baz=250,slow=8.0,SNR=9.5
SFJD Kangerlussuaq 55.13 24 *i* P **P 17 53 51.5 -1.0**
SFJD Kangerlussuaq 55.13 24 *i* P **P 17 53 51.5 -1.0**
SFJD Kangerlussuaq 55.13 24 *eP* **P 17 53 51.6 -0.8**
SFJD LR LR
comp=Z,17µm,20.0s
ILULI Ilulissat 55.71 22 *i* P **P 17 53 55.1 -1.6**
comp=Z,53nm,1.0s
ILULI Ilulissat 55.71 22 *i* P **P 17 53 55.1 -1.6**
ILULI pmax pmax
comp=Z,53nm,1.0s
KULLO Kullorsuaq 56.31 15⇓ *iP* **P 17 53 59.4 -1.5**
comp=Z,236nm,1.8s
KULLO Kullorsuaq 56.31 15⇓ *iP* **P 17 53 59.4 -1.5**
KULLO pmax pmax
comp=Z,240nm,1.8s
SAML Samuel 56.42 121 *eP* **P 17 54 01.8 -0.7**
comp=Z,50nm,1.1s
SAML LR LR
comp=Z,4µm,19.0s
LPAZ La Paz 57.62 131 P **P 17 54 11.9 +0.2**
comp=Z,4.7nm,1.2s,baz=333,slow=4.8,SNR=9.1
LPAZ La Paz 57.62 131 *eP* **P 17 54 11.6 -0.1**
comp=Z,41nm,1.4s
PPT2 Papeete2 57.62 227 *eS* **S 18 02 12.2 +3.4**
comp=Z,6µm,26.8s
PPT2 *e*LQ LQ 18 08 42.2
comp=Z,9µm,23.8s
PPT2 *e*LR LR 18 10 57.6
comp=Z,15µm,27.0s,baz=30
PB11 IPOC Station P 59.10 135 *eP* P 17 54 26.4 +5.0
comp=Z,82nm,0.9s
MIDW Midway 59.98 289 PFAKE 17 54 40.0 +13
MIDW LR LR
comp=Z,6µm,20.0s
PB01 IPOC Station P 60.14 136 *eP* **P 17 54 29.2 +0.7**
comp=Z,58nm,0.8s
SUMG Summit 60.62 19⇓ *iP* **P 17 54 30.1 -1.4**
comp=Z,98nm,1.1s
SUMG Summit 60.62 19⇓ *iP* **P 17 54 30.1 -1.4**
SUMG pmax pmax
comp=Z,98nm,1.1s
SUMG Summit 60.62 19 *eP* **P 17 54 29.2 -2.2**
comp=Z,104nm,1.1s
LVC Limon Verde 61.66 137 *eP* **P 17 54 41.2 +2.0**
comp=Z,51nm,1.1s
LVC LR LR
comp=Z,3µm,21.0s
TBI Tubuai 61.78 222 *eS* **S 18 03 05.8 +3.8**
comp=Z,2µm,31.0s
TBI *e*LQ LQ 18 10 20.3
comp=Z,9µm,38.2s
TBI *e*LR LR 18 12 46.0
comp=Z,5µm,30.8s,baz=38
SIV San Ignacio 62.43 126 P **P 17 54 42.5 -1.6**
comp=Z,9.6nm,1.0s,baz=315,slow=6.4,SNR=8.5
BILL Bilibino 64.83 336⇑ *eP* **P 17 54 59.4 +0.2**
BILL *e* 17 55 32.3
BILL *e* 17 57 24.8
BILL *e*PPP PPP 17 58 54.4
BILL *i* S **S 18 03 44.4 +5.2**
BILL pmax pmax
comp=Z,23nm,1.2s
BILL MLR MLR
comp=Z,4µm,16.0s
BILL Bilibino 64.83 336 *eP* **P 17 55 00.0 +0.9**
comp=Z,75nm,1.2s
BILL LR LR
comp=Z,4µm,21.0s
LCO Las Campanas 65.47 143 *eP* **P 17 55 06.0 +1.9**
comp=Z,57nm,1.0s
LCO LR LR
comp=Z,3µm,21.0s
SCO Scoresbysund 65.79 22 *i* P **P 17 55 03.6 -1.7**
comp=Z,21µm,16.0s
SCO Scoresbysund 65.79 22 *i* P **P 17 55 03.6 -1.7**
SCO MLR MLR
comp=Z,21µm,16.0s
H07S1 FLORES T-PHASE 65.88 56 *e*LQ LQ 18 11 32.5
DAG Danmarks Havn 65.97 15⇓ *iP* **P 17 55 03.9 -2.5**
comp=Z,34nm,0.9s
DAG Danmarks Havn 65.97 15⇓ *iP* **P 17 55 03.9 -2.5**
DAG pmax pmax
comp=Z,29nm,0.9s
BORG Borgarnes 66.85 28 PFAKE 17 55 20.0 +7.8
BORG LR LR
comp=Z,10µm,20.0s
RAR Rarotonga 67.08 231 PFAKE 17 55 30.0 +16
RAR LR LR
comp=Z,6µm,19.0s
ROSA Rosais 68.28 56 *e*LQ LQ 18 11 59.8
PGRA Graciosa 68.40 56 *e*LQ LQ 18 11 53.0
ROC1 El Roble 68.42 146 *eP* P 17 55 28.0 +5.2
comp=Z,82nm,1.0s
JMIC Jan Mayen 70.03 20 *eP* **P 17 55 29.9 -2.0**
JMIC *e*S **S 18 04 44.2 +2.7**
JMIC IVMs_BB IVMs_BB 18 28 35.3
comp=Z,3µm,13.1s
PSET Sete Cidades 70.44 57 *e*LQ LQ 18 12 53.2
CMLA Cha da Macela 70.60 57 *e*LQ LQ 18 12 54.6
CMLA Cha da Macela 70.60 57 PFAKE 17 55 50.0 +14
CMLA LR LR
comp=Z,6µm,19.0s
PSMN Pico do Norte, 71.18 57 *e*LQ LQ 18 13 01.4
KBS Kingsbay 71.20 10 *eP* **P 17 55 37.9 -1.1**
KBS IAmb IAmb 17 55 49.6
comp=Z,216nm,1.9s
KBS *e*S **S 18 04 58.6 +3.6**
KBS IVMs_BB IVMs_BB 18 28 04.2
comp=Z,10µm,14.9s
KBS Kingsbay 71.20 10 PFAKE 17 55 50.0 +11
KBS LR LR
comp=Z,16µm,19.0s
PET Petropavlovsk 71.41 320 *eP* **P 17 55 39.9 -0.8**
PET *e*S **S 18 04 56.6 -1.5**
PET *e*SS **SS 18 09 33.1 +0.9**
PET pmax pmax
comp=Z,400nm,9.9s
PET pmax pmax
comp=Z,500nm,13.5s
PET pmax pmax
comp=Z,2µm,20.0s
PET pmax pmax
comp=Z,1µm,18.0s
PET Petropavlovsk 71.41 320 *eP* **P 17 55 42.0 +1.3**
comp=Z,104nm,1.2s
PET LR LR
comp=Z,1µm,21.0s
SEY Seymchan 71.54 331 *i* P **P 17 55 39.6 -1.7**
CPUP Villa Florida 71.78 132 P **P 17 55 42.4 -0.9**
comp=Z,16nm,1.0s,baz=308,slow=8.3,SNR=7.7
CPUP LR LR 18 24 56.0
comp=Z,1µm,21.8s,baz=336,slow=34
CPUP Villa Florida 71.78 132 *eP* **P 17 55 42.7 -0.5**
CPUP Villa Florida 71.78 132 *eP* **P 17 55 42.7 -0.5**
PEA1 Petropavlovsk- 71.93 321 *eP* **P 17 55 42.5 -1.4**
PEA0 Petropavlovsk- 71.94 321 *eP* **P 17 55 41.6 -2.2**
PEA0B Petropavlovsk- 71.94 321 *eP* **P 17 55 42.8 -1.1**
comp=Z,115nm,1.0s
PETK Petropavlovsk- 71.94 321 P **P 17 55 42.5 -1.4**
comp=Z,17nm,0.9s,baz=79,slow=10,SNR=17
PETK LR LR 18 23 57.8
comp=Z,752nm,21.9s,baz=73,slow=33
AFI Afiamalu 71.98 245 PFAKE 17 56 00.0 +15
AFI LR LR
comp=Z,7µm,20.0s
SPA0 Spitsbergen Ar 72.36 10 *eP* **P 17 55 45.8 -0.2**
SPA0 IAmb IAmb 17 55 55.5
comp=Z,120nm,1.6s
SPA0 *e*S **S 18 05 09.9 +1.5**
SPA0 IVMs_BB IVMs_BB 18 28 49.3
comp=Z,10µm,14.8s
HSPB Hornsund (broa 72.97 11 *eP* **P 17 55 49.6 0.0**
HSPB IAmb IAmb 17 55 59.6
comp=Z,113nm,1.7s
HSPB *e*S **S 18 05 17.1 +1.7**
HSPB *e*SS **SS 18 10 01.5 +6.5**
HSPB IVMs_BB IVMs_BB 18 28 51.8
comp=Z,6µm,17.6s
MA2 Magadan 73.42 328 *eP* **P 17 55 51.2 -1.4**
MA2 Magadan 73.42 328 PFAKE 17 56 00.0 +7.4
MA2 LR LR
comp=Z,3µm,22.0s
SKR Severo-Kuril's 73.64 319 *eP* **P 17 55 52.0 -2.0**
SKR *e*S **SKiKP 18 05 17.7 -5.6**
SKR pmax pmax
comp=Z,600nm,4.1s
SKR pmax pmax
comp=Z,63nm,1.1s
SKR MLR MLR
comp=Z,600nm,20.0s
PLCA Paso Flores 74.84 150 P **P 17 56 01.1 +0.1**
comp=Z,42nm,0.9s,baz=342,slow=5.4,SNR=14
PLCA LR LR 18 22 42.5
comp=Z,5µm,18.5s,baz=356,slow=31
PLCA Paso Flores 74.84 150 *eP* **P 17 56 01.9 +0.8**
PLCA pmax pmax
comp=Z,87nm,0.9s
PLCA Paso Flores 74.84 150 *eP* **P 17 56 01.9 +0.8**
comp=Z,87nm,0.9s
HOPEN Hopen 74.89 10 *eP* **P 17 55 59.9 -1.0**
HOPEN IAmb IAmb 17 56 28.1

HOPEN *e*S **S** **18 05 36.8 -0.2**
HOPEN IVMs_BB IVMs_BB 18 30 25.8
comp=Z,11µm,15.4s
BJO Bjornoya 75.30 13 *e*S **S** **18 05 46.4 +4.8**
BJO IVMs_BB IVMs_BB 18 29 48.5
comp=Z,4µm,21.7s
TIXI Tiksi 75.55 344⇓ *i*P **P** **17 56 04.3 -0.5**
TIXI pmax pmax
comp=Z,12nm,0.8s
TIXI Tiksi 75.55 344 *e*P **P** **17 56 04.2 -0.5**
comp=Z,63nm,1.1s
TIXI LR LR
comp=Z,7µm,20.0s
VAL Valentia 76.08 39 *e*S **S** **18 05 49.3 -1.5**
VAL Valentia 76.08 39⇓ *i*SS SS 18 10 47.2 +3.9
WAKE Wake Island 76.66 285 PFAKE 17 56 20.0 +8.1
WAKE LR LR
comp=Z,5µm,19.0s
FUNA Funafuti 76.94 254 PFAKE 17 56 20.0 +6.4
FUNA LR LR
comp=Z,6µm,19.0s
TRQA Tornquist 77.05 143 PFAKE 17 56 30.0 +16
TRQA LR LR
comp=Z,3µm,21.0s
SPB Sao Paulo 77.21 124 PFAKE 17 56 30.0 +15
SPB LR LR
comp=Z,6µm,20.0s
RCBR Riachuelo 77.78 102 PFAKE 17 56 30.0 +12
RCBR LR LR
comp=Z,7µm,21.0s
LOF Lofoten 78.14 19 *e*P **P** **17 56 17.9 -1.5**
LOF IAmb IAmb 17 56 28.9
comp=Z,130nm,1.4s
LOF *e*S **S** **18 06 14.0 +1.3**
LOF IVMs_BB IVMs_BB 18 32 03.5
comp=Z,6µm,14.9s
TARA Tarawa 78.14 266 PFAKE 17 56 30.0 +10
TARA LR LR
comp=Z,692nm,20.0s
ESK Eskdalemuir 78.45 34 *e*P **P** **17 56 19.7 -1.6**
ESK pmax pmax
comp=Z,39nm,1.1s
ESK MLR MLR
comp=Z,7µm,20.0s
ESK Eskdalemuir 78.45 34 *e*P **P** **17 56 19.7 -1.6**
comp=Z,39nm,1.1s
ESK LR LR
comp=Z,7µm,20.0s
TRO Tromso 78.61 16 *e*P **P** **17 56 20.3 -1.6**
TRO IAmb IAmb 17 56 32.1
comp=Z,96nm,1.4s
TRO *e*S **S** **18 06 19.4 +1.7**
TRO IVMs_BB IVMs_BB 18 32 05.7
comp=Z,3µm,17.0s
PMOZ Porto Moniz, M 78.68 59 *e*P **P** **17 56 26.7 +3.5**
comp=Z,136nm,1.3s
PMOZ Porto Moniz, M 78.68 59 *e*PP PP 17 59 24.7 +3.7
PMOZ *e*S **S** **18 06 24.1 +4.1**
PMOZ *e*SS **SS** **18 11 26.1 +2.4**
PMOZ Porto Moniz, M 78.68 59 *e*LR LR 18 21 46.6
comp=Z,5µm,18.0s
STEI Steigen 78.76 18 *e*P **P** **17 56 22.4 -0.4**
STEI IAmb IAmb 17 56 32.6
comp=Z,64nm,1.3s
PMAR Madeira 78.94 59 *e*P P 17 56 30.3 +5.6
comp=Z,190nm,1.6s
PMAR Madeira 78.94 59 *e*PP PP 17 59 18.9 -4.4
FUL Funchal 78.98 59 *e*P **P** **17 56 27.6 +2.9**
comp=Z,124nm,1.9s
HAMF Hammerfest 79.02 14 *e*P **P** **17 56 22.5 -1.6**
HAMF IAmb IAmb 17 56 35.2
comp=Z,190nm,2.2s
HAMF *e*S **S** **18 06 21.8 -0.2**
HAMF IVMs_BB IVMs_BB 18 34 23.1
comp=Z,3µm,13.1s
FOO Floro 79.05 26 *e*P **P** **17 56 24.4 -0.1**
FOO IAmb IAmb 17 56 33.9
comp=Z,45nm,1.1s
FOO *e*S **S** **18 06 23.3 +0.7**
FOO *e*SS **SS** **18 11 30.0 +2.7**
FOO IVMs_BB IVMs_BB 18 33 10.7
comp=Z,5µm,15.4s
SUE Sulen 79.22 27 *e*P **P** **17 56 25.8 +0.4**
SUE IAmb IAmb 17 56 30.9
comp=Z,19nm,0.9s
SUE *e*S **S** **18 06 25.6 +1.0**
SUE *e*SS **SS** **18 11 30.1 0.0**
SUE IVMs_BB IVMs_BB 18 30 00.8
comp=Z,4µm,13.4s
PMPS Porto Santo 79.26 59 *e*P P 17 56 35.6 +9.4
comp=Z,202nm,1.6s
PMPS Porto Santo 79.26 59 *e*PP PP 17 59 24.8 -0.9
MOL Molde 79.48 25 IAmb IAmb 17 56 36.3
comp=Z,150nm,1.8s
MOL *e*S **S** **18 06 30.9 +3.7**
MOL *e*SS **SS** **18 11 34.9 +1.0**
MOL IVMs_BB IVMs_BB 18 28 53.3
comp=Z,2µm,20.1s
AKN Aaknes 79.49 25 *e*P **P** **17 56 27.8 +0.9**
AKN IAmb IAmb 17 56 38.1
comp=Z,39nm,1.0s
AKN *e*SS SS 18 11 34.1 -0.1
AKN IVMs_BB IVMs_BB 18 28 53.4
comp=Z,3µm,17.2s
ASK Askoy 79.72 27 IAmb IAmb 17 56 36.8
comp=Z,146nm,2.0s
BER Bergen 79.83 27 *e*P **P** **17 56 28.9 +0.1**
BER IAmb IAmb 17 57 06.1
comp=Z,203nm,2.1s
BER *e*S **S** **18 06 33.8 +2.8**
BER *e*SS **SS** **18 11 35.2 -3.9**
BER IVMs_BB IVMs_BB 18 31 28.6
comp=Z,5µm,15.5s
SACV Santiago Islan 80.18 78 PFAKE 17 56 40.0 +8.5
SACV LR LR
comp=Z,2µm,20.0s
ARA0 ARCESS Array S 80.26 15 *e*P **P** **17 56 29.1 -1.9**
ARCES ARCESS Array B 80.26 15 P **P** **17 56 29.4 -1.6**
comp=Z,10nm,0.7s,baz=312,slow=5.8,SNR=16
ARCES LR LR 18 34 12.2
comp=Z,6µm,18.1s,baz=330,slow=37
ARE0 ARCESS Array S 80.26 15 *e*P **P** **17 56 29.3 -1.7**
ARE0 IAmb IAmb 17 56 40.2
comp=Z,68nm,1.3s
ARE0 *e*S **S** **18 06 36.7 +1.3**
ARE0 IVMs_BB IVMs_BB 18 33 32.0
comp=Z,2µm,15.6s
ARE0 ARCESS Array S 80.26 15 *e*P **P** **17 56 30.9 -0.2**
comp=Z,55nm,1.2s
DYA Yadsworthy 80.32 39 *e*P **P** **17 56 30.1 -1.5**
DOMB Dombas 80.36 25 *e*P **P** **17 56 30.4 -1.4**
DOMB IAmb IAmb 17 57 05.3
comp=Z,57nm,1.4s
DOMB *e*S **S** **18 06 37.6 +0.9**
DOMB *e*SS **SS** **18 11 45.6 -1.6**
DOMB IVMs_BB IVMs_BB 18 33 29.9
comp=Z,3µm,18.9s
KMY Karmoy 80.44 28 *e*P **P** **17 56 32.9 +0.8**
KMY IAmb IAmb 17 56 41.3
comp=Z,13nm,0.9s
KMY *e*S **S** **18 06 39.4 +2.0**
KMY *e*SS **SS** **18 11 48.3 -0.1**
KMY IVMs_BB IVMs_BB 18 35 28.4
comp=Z,2µm,40.3s
ODD1 Odda 80.63 27 *e*P **P** **17 56 33.8 +0.6**
ODD1 IAmb IAmb 17 56 54.2
comp=Z,41nm,1.2s
ODD1 IVMs_BB IVMs_BB 18 33 35.8
comp=Z,5µm,15.5s
STAV Stavanger 80.79 28 *e*P **P** **17 56 30.4 -3.6**
STAV IAmb IAmb 17 56 42.9
comp=Z,40nm,1.3s
STAV *e*S **S** **18 06 41.8 +0.8**
STAV IVMs_BB IVMs_BB 18 35 30.6
comp=Z,3µm,14.9s
BLS5 Blasjo 80.83 28 *e*P **P** **17 56 34.2 0.0**
BLS5 IAmb IAmb 17 56 59.3
comp=Z,60nm,1.6s
BLS5 *e*S **S** **18 06 43.1 +1.5**
BLS5 *e*SS **SS** **18 11 53.4 -1.0**
BLS5 IVMs_BB IVMs_BB 18 33 02.4
comp=Z,4µm,15.2s
KUR Kuril'sk 80.87 316*d* *i*P **P** **17 56 32.2 -2.5**
KUR *e*PPP PPP 18 01 31.3

KUR *i*S **S** **18 06 41.9 -0.5**
KUR *e*SS **SS** **18 12 04.0 +8.4**
KUR pmax pmax
comp=Z,299nm,4.7s
KUR pmax pmax
comp=N,571nm,17.0s
KUR pmax pmax
comp=E,2µm,17.0s
KUR pmax pmax
comp=Z,918nm,17.0s
YAK Yakutsk 81.19 336 *e*P **P** **17 56 34.1 -1.9**
YAK *e* 17 56 40.8
YAK *e* 17 59 41.5
YAK *e*S **S** **18 06 38.2 -7.0**
YAK *e**SS **sS** **18 06 54.2 -0.3**
YAK *e*SSS SSS 18 15 23.1
YAK pmax pmax
comp=Z,122nm,1.2s
YAK pmax pmax
comp=N,20nm,1.2s
YAK pmax pmax
comp=E,43nm,1.2s
YAK pmax pmax
comp=E,181nm,7.8s
YAK pmax pmax
comp=Z,527nm,9.9s
YAK pmax pmax
comp=N,176nm,7.5s
YAK smax smax
comp=N,545nm,7.2s
YAK smax smax
comp=E,666nm,10.2s
YAK MLR MLR
comp=Z,4µm,20.0s
YAK MLR MLR
comp=N,2µm,16.0s
YAK MLR MLR
comp=E,2µm,17.0s
YAK Yakutsk 81.19 336 *e*P **P** **17 56 33.6 -2.4**
comp=E,108nm,1.0s
YAK LR LR
comp=Z,3µm,19.0s
NKL Nikolayevsk 81.27 325 *e*P P 17 56 26.0 -11
NKL *e*S **S** **18 06 46.0 -0.3**
NKL *e* 18 12 08.0
comp=Z,600nm,8.0s
NKL pmax pmax
comp=E,500nm,11.0s
NKL smax smax
comp=N,2µm,16.0s
TYV Tymovskoe 81.34 322 *e*P **P** **17 56 34.0 -3.1**
TYV pmax pmax
comp=Z,44nm,1.0s
TYV MLR MLR
comp=E,4µm,20.0s
PGAV Gavieira, Arco 81.44 48 *e*P **P** **17 56 39.4 +1.4**
comp=E,92nm,1.6s
PGAV Gavieira, Arco 81.44 48 *e*S **S** **18 06 49.8 +1.0**
PGAV *e*SS **SS** **18 12 09.1 +4.6**
PGAV *e*LQ LQ 18 18 13.3
PGAV *e*LR LR 18 24 25.3
comp=E,8µm,20.0s
NBO00 NORSAR Array S 81.63 25 *e*P **P** **17 56 37.7 -0.8**
NBO02 NORSAR Array S 81.65 25 *e*P **P** **17 56 37.3 -1.3**
PCAB Cabril 81.72 48 *e*P **P** **17 56 39.2 -0.1**
comp=E,84nm,1.8s
NC303 NORSAR Array S 81.74 25 *e*P **P** **17 56 39.6 +0.6**
NAO01 NORSAR Array S 81.79 25 *e*P **P** **17 56 41.2 +1.9**
NB2 NORSAR Subarra 81.79 25 P **P** **17 56 37.7 -1.7**
comp=Z,54nm,1.7s,baz=307,slow=5.3
NB2 NORSAR Subarra 81.79 25 P **P** **17 56 37.7 -1.7**
baz=307,slow=5.3
NB200 NORSAR Array S 81.79 25 *e*P **P** **17 56 38.0 -1.3**
NOA NORSAR Array B 81.79 25 P **P** **17 56 38.1 -1.3**
comp=Z,14nm,1.2s,baz=308,slow=5.4,SNR=10
NB201 NORSAR Array S 81.82 25 *e*P **P** **17 56 40.1 +0.6**
NC405 NORSAR Array S 81.94 25 *e*P **P** **17 56 41.7 +1.6**
KONO Kongsberg 82.00 27 *e*P **P** **17 56 39.5 -0.9**
KONO IAmb IAmb 17 56 49.3
comp=Z,868nm,2.6s
KONO *e*S **S** **18 06 54.4 +0.7**
KONO *e*SS **SS** **18 12 10.3 -1.3**
KONO IVMs_BB IVMs_BB 18 34 54.5
comp=Z,4µm,15.9s
KONO Kongsberg 82.00 27 *e*P **P** **17 56 38.3 -2.1**
KONO pmax pmax
comp=Z,187nm,1.1s
KONO Kongsberg 82.00 27 *e*P **P** **17 56 40.4 0.0**
comp=Z,134nm,1.4s
KONO LR LR
comp=Z,9µm,22.0s
POLO Lamas de Olo 82.02 48 *e*P **P** **17 56 44.8 +3.8**
comp=Z,37nm,1.5s
POLO Lamas de Olo 82.02 48 *e*S **S** **18 06 58.9 +4.1**
PMAFR Mafra 82.06 51 *e*P **P** **17 56 42.3 +1.2**
comp=Z,161nm,2.1s
PMAFR Mafra 82.06 51 *e*S **S** **18 06 58.4 +3.3**
NC602 NORSAR Array S 82.11 25 *e*P **P** **17 56 40.0 -1.0**
NC602 IAmb IAmb 17 56 51.3
comp=Z,169nm,1.6s
NC602 *e*S **S** **18 06 57.8 +3.1**
NC602 *e*SS **SS** **18 12 13.2 0.0**
NC602 IVMs_BB IVMs_BB 18 31 42.2
comp=Z,3µm,17.3s
NC602 NORSAR Array S 82.11 25 *e*P **P** **17 56 42.5 +1.5**
PVRL Vila Real 82.12 48 *e*P **P** **17 56 42.1 +0.6**
comp=Z,60nm,1.5s
PCAS Casmilo, Conde 82.12 50 *e*P **P** **17 56 42.6 +1.1**
comp=Z,80nm,1.6s
PCAS Casmilo, Conde 82.12 50 *e*S **S** **18 06 57.3 +1.6**
LIS Lisbon 82.25 51 *e*P **P** **17 56 43.6 +1.5**
LIS AMS AMS 18 31 25.4
comp=Z,11µm,16.7s
LIS Lisbon 82.25 51 *e*P **P** **17 56 44.6 +2.5**
comp=Z,132nm,1.1s
LIS Lisbon 82.25 51 *e*PP PP 17 59 53.1 +2.8
OSL Oslo 82.28 26 *e*P **P** **17 56 42.3 +0.5**
OSL IAmb IAmb 17 56 51.6
comp=Z,128nm,1.4s
OSL *e*S **S** **18 07 00.5 +4.0**
OSL IVMs_BB IVMs_BB 18 34 19.1
comp=Z,5µm,16.4s
MSVF Nonsavu 82.33 246 PFAKE 17 56 50.0 +7.1
MSVF LR LR
comp=Z,11µm,19.0s
HOMB Homborsund 82.37 28 *e*P **P** **17 56 41.8 -0.5**
HOMB IAmb IAmb 17 56 53.3
comp=Z,69nm,1.2s
HOMB *e*SS SS 18 12 17.3 +0.2
HOMB IVMs_BB IVMs_BB 18 30 50.2
comp=Z,5µm,17.2s
PTOM Tomar 82.38 50 *e*P **P** **17 56 44.2 +1.4**
comp=Z,136nm,1.2s
PTOM Tomar 82.38 50 *e*PP PP 17 59 42.3 -9.0
PBRG Braganca 82.53 47 *e*P **P** **17 56 44.7 +1.1**
comp=Z,49nm,1.7s
PBRG *e*S SKiKP 18 06 05.4 +28
MTE Manteigas 82.62 49 *e*P **P** **17 56 46.2 +2.0**
comp=Z,111nm,1.0s
MTE Manteigas 82.62 49 *e*S **S** **18 07 05.5 +4.5**
MTE *e*SS **SS** **18 12 23.9 +1.8**
MTE *e*LQ LQ 18 18 54.3
MTE *e*LR LR 18 23 49.4
comp=Z,10µm,20.0s
MTE Manteigas 82.62 49 *e*P **P** **17 56 44.8 +0.7**
comp=Z,75nm,1.0s
MTE LR LR
comp=Z,11µm,21.0s
MVO Moncorvo 82.63 48 *e*P **P** **17 56 44.5 +0.3**
comp=Z,134nm,2.0s
MVO Moncorvo 82.63 48 *e*S **S** **18 07 05.5 +4.5**
MVO *e*SS **SS** **18 12 25.7 +3.5**
MVO *e*LQ LQ 18 18 54.6
MVO *e*LR LR 18 25 16.9
comp=Z,8µm,20.0s
YUK Yuzh-Kuril'sk 82.69 315 *e*P **P** **17 56 43.5 -0.8**
PCBR Castelo Branco 82.92 49 *e*P **P** **17 56 47.4 +1.8**
comp=Z,73nm,1.6s
PNCL Nicolau / Gran 82.96 51 *e*P **P** **17 56 46.5 +0.7**
comp=Z,66nm,1.6s
PNCL Nicolau / Gran 82.96 51 *e*S **S** **18 07 09.0 +4.8**
PTEO Sao Teotonio 83.07 52 *e*P **P** **17 56 41.8 -4.6**
comp=Z,97nm,1.7s
EVO Evora 83.13 51 *e*P **P** **17 56 48.0 +1.3**
comp=Z,112nm,1.9s

EVO Evora 83.13 51 *e*PP PP 17 59 57.3 -0.2
PMRV Marv??o 83.17 50 *e*P **P** **17 56 48.0 +1.1**
comp=Z,120nm,2.0s
PMRV Marv??o 83.17 50 *e*PP PP 17 59 46.3 -12
PMRV *e*S **S** **18 07 08.1 +1.7**
PMRV *e*SS **SS** **18 12 31.9 +1.8**
PMRV *e*LQ LQ 18 19 05.0
PMRV *e*LR LR 18 24 09.7
comp=Z,8µm,18.0s
PFVI Vila Bisbo 83.18 52 *e*P **P** **17 56 49.2 +2.2**
comp=Z,99nm,1.8s
PFVI Vila Bisbo 83.18 52 *e*S **S** **18 07 15.2 +8.7**
YSS Yuzh-Sakhalins 83.21 319*c* *i*P **P** **17 56 43.9 -3.0**
YSS *e*PPP PPP 18 01 58.0
YSS *e*S **S** **18 07 02.0 -4.4**
YSS *e*PS **PnS** **18 07 56.0 -2.0**
YSS pmax pmax
comp=Z,500nm,3.0s
YSS pmax pmax
comp=Z,30nm,2.8s
YSS Yuzh-Sakhalins 83.21 319 PFAKE 17 57 00.0 +13
YSS LR LR
comp=Z,764nm,19.0s
MORF Marmelete 83.22 52 *e*P **P** **17 56 48.4 +1.1**
MORF *e*S **S** **18 07 09.6 +2.4**
MORF AMS AMS 18 27 49.5
comp=N,11µm,19.8s
MORF Marmelete 83.22 52 *e*P **P** **17 56 47.4 +0.1**
comp=N,134nm,1.8s
MORF Marmelete 83.22 52 *e*S **S** **18 07 12.3 +5.1**
PESTR Estremoz 83.28 50 *e*P **P** **17 56 48.8 +1.3**
comp=N,104nm,1.8s
PESTR Estremoz 83.28 50 *e*S **S** **18 07 10.2 +2.6**
MESJ Messejana 83.30 51 *e*P **P** **17 56 48.8 +1.2**
MESJ *e*S **S** **18 07 10.1 +2.4**
MESJ AMS AMS 18 34 04.3
comp=Z,14µm,19.2s
MESJ Messejana 83.30 51 *e*P **P** **17 56 49.8 +2.2**
comp=Z,63nm,1.8s
MESJ Messejana 83.30 51 *e*PP PP 17 59 46.6 -12
PBEJ Beja 83.46 51 *e*P **P** **17 56 52.3 +3.8**
comp=Z,66nm,1.6s
PCVE Castro Verde 83.52 52 *e*P **P** **17 56 50.1 +1.4**
comp=Z,135nm,1.8s
PCVE Castro Verde 83.52 52 *e*S **S** **18 07 13.0 +3.0**
LVZ Lovozero 83.56 13 *e*P **P** **17 56 49.3 +0.8**
LVZ pmax pmax
comp=Z,61nm,1.0s
LVZ Lovozero 83.56 13 *e*P **P** **17 56 49.2 +0.8**
comp=Z,61nm,1.0s
APA Apatity 83.58 13⇓ *i*P **P** **17 56 48.4 -0.1**
APA *i* PPP PPP 18 01 56.0
APA *i* S **S** **18 07 08.0 -1.5**
APA *i* PS **PnS** **18 08 07.0 +5.2**
APA pmax pmax
comp=Z,12nm,1.0s
MUD Monsted U'grnd 83.75 29 *i* P **P** **17 56 49.1 -0.4**
comp=Z,71nm,1.4s
comp=Z,9µm,20.0s
MUD Monsted U'grnd 83.75 29 *e*P **P** **17 56 49.1 -0.4**
MUD pmax pmax
comp=Z,71nm,1.4s
MUD MLR MLR
comp=Z,9µm,20.0s
PBDV Barranco-do-Ve 83.77 52 *e*P **P** **17 56 53.0 +2.9**
comp=Z,202nm,1.9s
PBDV Barranco-do-Ve 83.77 52 *e*S **S** **18 07 15.3 +2.7**
PVAQ Vaqueiros 83.85 52 *e*P **P** **17 56 51.2 +0.8**
comp=Z,101nm,2.0s
PVAQ Vaqueiros 83.85 52 *e*S **S** **18 07 17.4 +4.1**
PVAQ *e*SS **SS** **18 12 34.6 -5.7**
PVAQ *e*LQ LQ 18 19 05.2
PVAQ *e*LR LR 18 25 20.7
comp=Z,12µm,18.0s
PBAR Barrancos 83.98 51 *e*P **P** **17 56 52.7 +1.6**
comp=Z,193nm,1.8s
PBAR Barrancos 83.98 51 *e*S **S** **18 07 16.8 +2.2**
ASAJ Asahikawa 84.71 316 *e*P **P** **17 56 52.9 -1.8**
comp=Z,27nm,1.0s
RAO Raoul Island 85.01 235 PFAKE 17 57 10.0 +14
RAO LR LR
comp=Z,4µm,19.0s
NRIK Noril'sk 85.03 354 P **P** **17 56 53.7 -2.1**
comp=Z,26nm,0.9s,baz=46,slow=4.6,SNR=11
NRIK PP **PP** **18 00 17.8 +5.7**
comp=Z,1.6nm,0.4s,baz=21,slow=10,SNR=5.1
NRIK LR LR 18 35 46.8
comp=Z,5µm,21.2s,baz=33,slow=36
DOU Dourbes 85.19 36 P **P** **17 56 57.8 +0.8**
comp=Z,20nm,1.9s
PAB San Pablo 85.20 48 *e*P **P** **17 56 58.8 +1.4**
PAB pmax pmax
comp=Z,202nm,1.9s
PAB MLR MLR
comp=Z,9µm,20.0s
PAB San Pablo 85.20 48 *e*P **P** **17 56 58.8 +1.4**
comp=Z,202nm,1.9s
PAB LR LR
comp=Z,9µm,20.0s
WTSB Winterswijk 85.27 34 *e*P **P** **17 56 57.6 +0.3**
comp=Z,41nm,1.4s
BCLA Clavier 85.38 36 P **P** **17 56 58.0 +0.1**
comp=Z,30nm,2.2s
ESDC Sonseca Array 85.39 48 P **P** **17 56 55.8 -2.5**
comp=Z,3.7nm,1.1s,baz=307,slow=5.7,SNR=6.1
ESDC LR LR 18 32 19.3
comp=Z,6µm,20.1s,baz=295,slow=34
ERM Erimo 85.40 314*c* *i*P **P** **17 56 57.3 -0.8**
ERM pmax pmax
comp=Z,31nm,1.2s
ERM Erimo 85.40 314 PFAKE 17 57 10.0 +12
ERM LR LR
comp=Z,2µm,21.0s
ES19 SONSECA Array 85.43 48 *e*P **P** **17 56 56.8 -1.7**
HGN Heimansgroeve 85.52 35 *e*P **P** **17 56 59.0 +0.4**
comp=Z,141nm,2.3s
HGN Heimansgroeve 85.52 35 *e*S **S** **18 07 32.8 +3.4**
MEM Membach 85.65 35 P **P** **17 57 01.1 +1.8**
comp=Z,18nm,1.6s
WLF Walferdange 86.27 36 *e*P **P** **17 57 05.5 +3.2**
WLF pmax pmax
comp=Z,135nm,2.0s
WLF MLR MLR
comp=Z,9µm,21.0s
WLF Walferdange 86.27 36 *e*P **P** **17 57 05.5 +3.2**
comp=Z,135nm,2.0s
WLF LR LR
comp=Z,9µm,21.0s
CLNS Chul'man 86.42 333 *e*P P 17 57 08.4 +5.4
CLNS pmax pmax
comp=N,6.0nm,0.9s
CLNS pmax pmax
comp=Z,16nm,1.3s
FIA0 FINESS Array S 86.65 20 *e*P **P** **17 57 01.6 -2.3**
FIA0 *e* 18 00 33.4
FIA0 FINESS Array S 86.65 20 *e*P **P** **17 57 01.6 -2.3**
FIA0 *e*PP PP 18 00 33.4 +8.1
FIA1 FINESS Array S 86.65 20 *e*P **P** **17 57 01.5 -2.4**
FINES FINESS Array B 86.65 20 P **P** **17 57 01.6 -2.3**
comp=Z,11nm,0.9s,baz=353,slow=4.4,SNR=22
FINES PP PP 18 00 33.4 +8.1
comp=Z,3.8nm,1.0s,baz=2.6,slow=4.2,SNR=4.4
FINES LR LR 18 35 16.4
comp=Z,10µm,19.0s,baz=324,slow=35
HABR Khabarovsk 86.80 323*de*P **P** **17 57 02.4 -2.5**
HABR *e* 17 57 04.5
HABR *e**PP **PcP** **17 57 07.4 +0.2**
HABR *e* 18 00 24.5
HABR *e*PPP PPP 18 02 18.7
HABR *e*PS S 18 07 27.9 -14
HABR *e**SS **SKKSac** **18 07 36.7 -2.9**
HABR *e*SS **SS** **18 13 22.4 -0.5**
HABR *e*SSS SSS 18 16 55.0
HABR pmax pmax
comp=Z,21nm,2.0s
HABR MLR MLR
comp=Z,1µm,19.0s
SSB Saint Sauveur 87.85 40 PFAKE 17 57 20.0 +10
SSB LR LR
comp=Z,5µm,19.0s
KLR Kul'dur 88.11 325 *e*P **P** **17 57 10.4 -0.9**
BFO Black Forest 88.21 36 PFAKE 17 57 20.0 +8.2
BFO LR LR
comp=Z,9µm,19.0s
CLL Collm 88.73 32 *e*P **P** **17 57 14.0 -0.1**

CLL e 17 57 21.0
comp=Z,31nm,1.7s
CLL e 18 00 27.0
CLL ePP **PP** **18 00 41.0 -1.3**
comp=Z,81nm,2.5s
CLL eS **S** **18 07 52.0 -8.4**
comp=N,900nm,27.9s
CLL eS **S** **18 07 52.0 -8.4**
comp=E,700nm,19.5s
CLL ePS **PnS** **18 09 03.0 -1.4**
CLL eSS **SS** **18 13 44.0 -6.8**
CLL eSSS SSS 18 17 24.0
CLL eSSSS 18 20 38.0
CLL Lmax 18 37 00.0
CLL Lm MLR 18 40 00.0
comp=Z,7μm,19.6s
CLL Collm 88.73 32 eP **P** **17 57 14.0 -0.1**
CLL e 17 57 21.0
CLL eS **S** **18 07 52.0 -8.4**
CLL MLR MLR
comp=Z,7μm,19.6s
EFI East Falkland 88.76 151 PFAKE 17 57 20.0 +6.1
EFI LR LR
comp=Z,3μm,19.0s
NKC Novy Kostel 89.15 33 eP **P** **17 57 15.4 -0.8**
NKC ePP **PP** **18 00 45.0 -0.8**
NKC eS **S** **18 08 08.7 +4.2**
NKC eSS **SS** **18 14 01.4 +4.3**
NKC AMS AMS 18 35 30.0
comp=Z,10μm,19.8s
NKC Novy Kostel 89.15 33 eP **P** **17 57 15.4 -0.8**
NKC e 18 00 45.0
NKC e 18 08 08.7
NKC eSS SS 18 14 01.4 +4.3
NKC MLR MLR
comp=Z,10μm,19.8s
VSU Vasula 89.18 21 *i* P **P** **17 57 14.8 -1.3**
VSU pmax pmax
comp=Z,41nm,1.7s
BNI Bardonecchia 89.22 39 PFAKE 17 57 30.0 +13
BNI LR LR
comp=Z,8μm,20.0s
BRG Berggiesshubel 89.46 32 eP P 17 57 23.2 +5.6
comp=Z,47nm,1.9s
BRG PP **PP** **18 00 46.0 -2.2**
BRG SKS **SKSac** **18 07 46.0 -1.2**
BRG S **ScS** **18 08 11.0 -1.0**
BRG PS **PnS** **18 09 11.0 -2.1**
BRG SS **SS** **18 14 06.0 +4.5**
comp=N,6μm,17.2s
comp=E,7μm,15.0s
comp=Z,10μm,15.1s
BRG Berggiesshubel 89.46 32 eP P 17 57 23.2 +5.6
BRG 18 00 46.0
BRG 18 07 46.0
BRG S **ScS** **18 08 11.0 -1.0**
BRG PS **PnS** **18 09 11.0 -2.1**
BRG SS **SS** **18 14 06.0 +4.5**
BRG pmax pmax
comp=Z,47nm,1.9s
BRG MLR MLR
comp=N,6μm,17.2s
BRG MLR MLR
comp=E,7μm,15.0s
BRG MLR MLR
comp=Z,10μm,15.1s
BOD Bodaibo 89.74 338 eP **P** **17 57 16.5 -2.2**
BOD e 18 00 51.5
BOD pmax pmax
comp=Z,34nm,1.5s
TUE Stuetta 89.88 37 PFAKE 17 57 30.0 +10
TUE LR LR
comp=Z,13μm,19.0s
PVCC Panska Ves 89.99 32 ePP PP 18 00 51.7 -0.7
PVCC AMS AMS 18 37 40.0
comp=Z,10μm,15.6s
PRU Pruhonice 90.33 32 eP **P** **17 57 22.8 +1.1**
PRU ePP **PP** **18 00 54.3 -0.8**
PRU eSKS **SKSac** **18 07 52.5 +0.2**
PRU eS **ScS** **18 08 18.3 -0.9**
PRU eSS **SS** **18 14 12.7 -1.4**
PRU AMS AMS 18 36 30.0
comp=Z,8μm,19.9s
PRU Pruhonice 90.33 32 eP **P** **17 57 22.8 +1.1**
PRU e 18 00 54.3
PRU e 18 07 52.5
PRU e 18 08 18.3
PRU eSS SS 18 14 12.7 -1.4
PRU MLR MLR
comp=Z,8μm,19.9s
KHC Kasperske Hory 90.42 33 eP **P** **17 57 24.1 +1.9**
KHC ePP **PP** **18 00 56.5 +0.6**
KHC eS **S** **18 08 20.0 +3.6**
KHC eSS **SS** **18 14 19.4 +3.8**
KHC AMS AMS 18 36 00.0
comp=Z,12μm,18.3s
KHC Kasperske Hory 90.42 33 eP **P** **17 57 24.1 +1.9**
KHC e 18 00 56.5
KHC e 18 08 20.0
KHC eSS SS 18 14 19.4 +3.8
KHC MLR MLR
comp=Z,12μm,18.3s
GOPC GO Pecny, Ondr 90.50 32 eP **P** **17 57 19.9 -2.6**
GOPC eSKS **SKSac** **18 07 53.9 +0.6**
GOPC eS **ScS** **18 08 19.2 -1.5**
GOPC eSS **SS** **18 14 20.7 +4.1**
GOPC AMS AMS 18 38 00.0
comp=Z,7μm,16.9s
GOPC GO Pecny, Ondr 90.50 32 eP **P** **17 57 19.9 -2.6**
GOPC e 18 07 53.9
GOPC e 18 08 19.2
GOPC eSS SS 18 14 20.7 +4.1
GOPC MLR MLR
comp=Z,7μm,16.9s
GEC2 GERESS Array S 90.67 34 eP **P** **17 57 27.9 +4.5**
GEC2 pmax pmax
comp=Z,20nm,1.7s
GEC2 GERESS Array S 90.67 34 eP **P** **17 57 27.9 +4.5**
comp=Z,20nm,1.7s
GERES GERESS Array B 90.67 34 P **P** **17 57 20.6 -2.8**
comp=Z,0.7nm,0.8s,baz=330,slow=5.1,SNR=5.3
GERES LR LR 18 37 06.8
comp=Z,9μm,19.3s,baz=303,slow=35
GEA0 GERESS Array S 90.68 34 eP **P** **17 57 22.3 -1.1**
UPC Upice 90.69 31 eP P 17 57 17.7 -5.7
UPC ePP **PP** **18 00 57.9 -0.1**
UPC eSKS **SKSac** **18 07 54.0 -0.3**
UPC eS **ScS** **18 08 21.4 -0.8**
UPC eSS **SS** **18 14 21.5 +2.2**
UPC AMS AMS 18 37 10.0
comp=Z,10μm,19.4s
UPC Upice 90.69 31 eP P 17 57 17.7 -5.7
UPC e 18 00 57.9
UPC e 18 07 54.0
UPC e 18 08 21.4
UPC eSS SS 18 14 21.5 +2.2
UPC MLR MLR
comp=Z,10μm,19.4s
KLMR Klimovskoe 90.74 15 eP **P** **17 57 21.5 -1.8**
KLMR e 18 00 54.1
KLMR pmax pmax
comp=Z,28nm,1.0s
DPC Dobruska-Polom 90.94 31 eP **P** **17 57 24.2 -0.4**
DPC AMS AMS 18 37 10.0
comp=Z,9μm,19.6s
DPC Dobruska-Polom 90.94 31 eP **P** **17 57 24.2 -0.4**
DPC MLR MLR
comp=Z,9μm,19.6s
USRK Ussuriysk Ar. 91.03 321 P **P** **17 57 23.3 -1.7**
comp=Z,3.2nm,0.8s,baz=43,slow=11,SNR=7.7
MJAR Matsushiro Arr 91.52 312 P **P** **17 57 24.9 -2.6**
comp=Z,3.3nm,1.1s,baz=44,slow=4.0,SNR=6.6
MJAR LR LR 18 33 00.3
comp=Z,2μm,19.8s,baz=50,slow=32
MAJO Matsushiro 91.52 312 eP **P** **17 57 26.0 -1.5**
MAJO pmax pmax
comp=Z,24nm,0.8s
MAJO Matsushiro 91.52 312 eP **P** **17 57 28.4 +0.8**
comp=Z,68nm,1.8s
MAJO LR LR
comp=Z,3μm,20.0s
MAT Matsushiro 91.52 312 P **P** **17 57 27.6 +0.1**
MAT S **S** **18 08 26.6 -0.2**
MJB9 Matsu-Tunnel 91.52 312 eP **P** **17 57 28.4 +0.8**
comp=Z,17nm,1.8s
VRAC Vranov 91.78 32 LR LR 18 41 31.8
comp=Z,5μm,19.0s,baz=298,slow=37
MDJ Mudanjiang 92.13 322 P P 17 57 34.8 +4.7
MDJ pmax pmax
comp=Z,3.0nm,0.7s
MDJ pmax pmax
comp=Z,260nm,8.6s
MDJ Mudanjiang 92.13 322 PFAKE 17 57 40.0 +10
MDJ LR LR
comp=Z,2μm,19.0s
OKC Ostrava-Krasne 92.15 31 ePP PP 18 01 09.7 +0.2
OKC eSKS **SKSac** **18 08 04.3 +1.7**
OKC eS **ScS** **18 08 37.9 +3.6**
OKC AMS AMS 18 37 40.0
comp=Z,10μm,17.7s
JHJ Hachijo jima 2 92.26 308 LR LR 18 32 42.6
comp=Z,882nm,21.1s,baz=100,slow=32
MICGM Minsk 92.69 23 *e* **P** **17 57 29.0 -3.5**
MICGM eLQ LQ 18 23 24.0
MICGM LQM 18 28 48.0
comp=E,9.3nm,32.0s
MICGM eLR LR 18 29 22.0
MICGM LRM MLR 18 36 28.0
comp=Z,9.2nm,20.0s
MICGM LRM MLR 18 36 48.0
comp=Z,5.9nm,20.0s
MNK Minsk 92.69 23 *e*P **P** **17 57 29.0 -3.5**
JAVS Javornik 92.79 36 *i* P P 17 57 40.6 +7.3
PERS Pernice 92.85 35 *i* P P 17 57 40.5 +7.1
VISS Visnje 93.25 35 *i* P P 17 57 40.0 +4.6
VYHS Vyhne 93.41 31 eP P 17 57 41.4 +5.4
BOJS Bojanci 93.67 35 eP **P** **17 57 40.8 +3.6**
STHS Stebnicka Huta 93.87 30 eP **P** **17 57 40.2 +2.1**
HIA Hailar 93.95 330 eP **P** **17 57 36.2 -2.3**
HIA pmax pmax
comp=Z,5.0nm,1.1s
HIA Hailar 93.95 330 PFAKE 17 57 50.0 +12
HIA LR LR
comp=Z,2μm,19.0s
DZM Mont Dzumac 94.01 248 eS **S** **18 08 51.4 +2.0**
comp=Z,2μm,26.1s
DZM eSS **SS** **18 15 14.6 +4.8**
comp=Z,2μm,26.6s
DZM eLQ LQ 18 23 57.0
comp=Z,3μm,26.2s
DZM eLR LR 18 28 00.9
comp=Z,12μm,24.2s,baz=68
VSL Villasalto 94.13 43 PFAKE 17 57 50.0 +10
VSL LR LR
comp=Z,4μm,19.0s
PSZ Piszkesteto 94.32 31 PFAKE 17 57 50.0 +10
PSZ LR LR
comp=Z,9μm,20.0s
HNR Honiara 94.40 262 PFAKE 17 57 50.0 +8.9
HNR LR LR
comp=Z,8μm,20.0s
AQU L'Aquila 94.73 39 PFAKE 17 57 50.0 +7.8
AQU LR LR
comp=Z,6μm,20.0s
LVV L'vov 94.79 28 eP P 17 57 50.3 +8.0
LVV eS **S** **18 09 01.0 +5.8**
LVV ePS **PS** **18 10 09.2 -3.5**
LVV eSS **SS** **18 15 12.5 -5.4**
LVV MLR MLR
comp=N,3μm,20.0s
LVV MLR MLR
comp=E,4μm,20.0s
LVV MLR MLR
comp=Z,6μm,20.0s
SOKR Solikamsk 94.88 7⇑ *i*P P 17 57 48.3 +5.9
SOKR S **SKSac** **18 08 12.9 -4.2**
SOKR pmax pmax
comp=Z,16nm,1.1s
UZH Uzhgorod 94.91 30 eP **P** **17 57 40.0 -2.8**
UZH *e* 17 57 44.7
UZH *e* 18 01 35.9
UZH *e* 18 03 31.3
UZH eS **S** **18 08 47.7 -8.6**
UZH *e* 18 10 07.3
UZH *e* 18 19 00.9
UZH MLR MLR
comp=N,11μm,16.0s
UZH MLR MLR
comp=E,5μm,16.0s
UZH MLR MLR
comp=Z,1μm,16.0s
CN2 Changchun 94.92 323 eS **S** **18 08 52.8 -3.8**
CN2 Changchun 94.92 323 SS SS 18 15 20.5 +0.3
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,100nm,3.0s
CN2 LR LR
comp=N,2μm,18.0s
CN2 LR LR
comp=E,2μm,18.0s
CN2 LR LR
comp=Z,1μm,20.0s
OBN Obninsk 95.01 19⇑ eP **P** **17 57 42.4 -0.7**
OBN *e* 18 01 33.1
OBN *i* S **SKSac** **18 08 13.9 -4.1**
OBN *i* SS **SS** **18 15 15.1 -5.4**
OBN pmax pmax
comp=Z,4.0nm,1.1s
OBN MLR MLR
comp=Z,5μm,18.0s
OBN Obninsk 95.01 19 PFAKE 17 57 50.0 +6.9
OBN LR LR
comp=Z,6μm,21.0s
KIEV Kiev 96.21 25 eP **P** **17 57 47.3 -1.4**
KIEV pmax pmax
comp=Z,3.0nm,1.0s
KIEV Kiev 96.21 25 PFAKE 17 58 00.0 +11
KIEV LR LR
comp=Z,7μm,20.0s
AKASG Malin Array Be 96.21 25 P **P** **17 57 46.8 -1.9**
comp=Z,0.2nm,0.3s,baz=310,slow=3.9,SNR=4.7
AKASG PP **PP** **18 01 44.0 +3.1**
comp=Z,0.3nm,0.3s,baz=325,slow=6.9,SNR=6.5
AKASG LR LR 18 40 51.8
comp=Z,7μm,21.0s,baz=310,slow=35
AKASG Malin Array Be 96.21 25 *i* P **P** **17 57 47.2 -1.5**
AKBB Malin Array Si 96.21 25 eP **P** **17 57 46.8 -1.9**
AKBB *e* 18 01 44.0
AKBB pmax pmax
comp=Z,25nm,2.0s
AKBB Malin Array Si 96.21 25 *e*P **P** **17 57 46.8 -1.9**
comp=Z,25nm,2.0s
AKBB ePP **PP** **18 01 44.0 +3.1**
PMSA Palmer Station 96.24 162 PFAKE 17 58 00.0 +12
PMSA LR LR
comp=Z,2μm,21.0s
SNZO South Karori 96.27 227 PFAKE 17 58 00.0 +11
SNZO LR LR
comp=Z,4μm,22.0s
KEST Kesra 96.38 46 P P 17 57 58.3 +8.3
comp=Z,4.7nm,0.9s,baz=98,slow=5.2,SNR=5.3
KEST PP PP 18 01 54.1 +11
comp=Z,3.8nm,0.9s,baz=244,slow=8.6,SNR=5.6
KEST LR LR 18 40 36.9
comp=Z,5μm,19.1s,baz=259,slow=35
KEST Kesra 96.38 46 eP P 17 57 58.7 +8.7
comp=Z,18nm,1.3s
KEST ePP PP 18 01 54.5 +11
SNY Shenyang 97.27 323 ⇓P Pdif 17 57 59.0 +5.2
SNY SKS **SKSac** **18 08 32.0 +1.6**
SNY S **SKKSac** **18 09 05.5 +8.0**
SNY SS **SS** **18 15 58.5 +5.1**
SNY pmax pmax
comp=Z,8.0nm,0.2s
SNY pmax pmax
comp=Z,200nm,3.3s
SNY LR LR
comp=Z,1μm,20.2s
SNY LR LR
comp=Z,3μm,16.5s
SNY LR LR
comp=Z,4μm,18.1s
KSRS Korea Array 97.63 317 LR LR 18 35 31.3
comp=Z,952nm,21.6s,baz=43,slow=32
CUC Castrocucco 97.65 39 PFAKE 17 58 10.0 +14
CUC LR LR
comp=Z,3μm,19.0s
CLTB Caltabellotta 97.68 42 PFAKE 17 58 10.0 +14
CLTB LR LR
comp=Z,2μm,19.0s
GUMO Guam 97.97 289 LR LR 18 33 42.5
comp=Z,3μm,22.0s,baz=82,slow=30
ASCN Ascension 97.98 95 PFAKE 17 58 10.0 +13
ASCN LR LR
comp=Z,2μm,19.0s
ARU Arti 98.18 7 PP PP 18 01 57.6 +1.7
comp=Z,0.7nm,0.3s,baz=34,slow=9.8,SNR=4.0
ARU LR LR 18 46 03.3
comp=Z,11μm,19.2s,baz=342,slow=38
ARU Arti 98.18 7*c i*P **P** **17 57 56.5 -1.0**
ARU 18 01 57.5
ARU PPP PPP 18 03 59.3
ARU S **SKSac** **18 08 33.7 -0.8**
ARU PS **PS** **18 10 49.2 -0.1**
ARU pmax pmax
comp=Z,13nm,1.7s
ARU Arti 98.18 7 eP **P** **17 57 56.4 -1.0**
ARU ePP **PP** **18 01 57.6 +1.7**
TLY Talaya 98.19 340 eP Pdif 17 57 57.9 +0.2
TLY *e* 18 01 51.5
TLY *e* 18 08 38.2
TLY ePS **PS** **18 10 55.7 +6.0**
TLY pmax pmax
comp=Z,17nm,1.6s
TLY Talaya 98.19 340 PFAKE 17 58 10.0 +12
TLY LR LR
comp=Z,4μm,21.0s
INCN Inchon 98.40 318 PFAKE 17 58 10.0 +11
INCN LR LR
comp=Z,2μm,19.0s
TIP Timpagrande 98.73 39 PFAKE 17 58 10.0 +10
TIP LR LR
comp=Z,7μm,22.0s
CEL Celeste 98.84 40 PFAKE 17 58 10.0 +9.0
CEL LR LR
comp=Z,4μm,19.0s
TIR Tirane 98.96 36 PFAKE 17 58 10.0 +8.7
TIR LR LR
comp=Z,7μm,22.0s
KIS Kishinev 98.99 27 ePP PP 18 01 53.0 -9.4
KIS eSKS **SKSac** **18 08 40.0 +1.0**
KIS Kishinev 98.99 27 ePS PS 18 10 52.0 -6.5
KIS eSS SS 18 16 30.0 +13
KIS LRM MLR 18 45 08.0
comp=Z,5μm,16.0s
VSR Storozhevoye 99.17 19 eP **Pdif** **17 58 00.6 -1.4**
VSR pmax pmax
comp=Z,9.0nm,1.1s
ZAK Zakamensk 99.43 339 eP **Pdif** **17 58 09.2 +5.8**
ZAK pmax pmax
comp=Z,5.0nm,1.8s
WDD Wied Dalam 99.60 43 PFAKE 17 58 20.0 +16
WDD LR LR
comp=Z,5μm,22.0s
ZAA1 Zalesovo Array 100.31 351 ePdif **Pdif** **17 58 06.6 -0.5**
ZAA1 ePP PP 18 02 21.0 +8.8
ZALV Zalesovo Beam 100.32 351 P **Pdif** **17 58 06.6 -0.5**
comp=Z,0.4nm,0.4s,baz=349,slow=4.7,SNR=3.7
ZALV PP PP 18 02 21.0 +8.8
comp=Z,2.5nm,0.9s,baz=345,slow=7.1,SNR=5.9
SONA1 Songino Array 100.53 336 ePdif **Pdif** **17 58 07.2 -1.2**
SONA0 Songino Array 100.55 336 ePdif **Pdif** **17 58 07.4 -1.0**
SONA0 ePP PP 18 02 22.0 +7.6
SONA0 ePKKPdf **PKKPdf** **18 14 30.6 +2.6**
SONM Songino Array 100.55 336 P **Pdif** **17 58 07.4 -1.0**
comp=Z,1.3nm,1.0s,baz=90,slow=1.5,SNR=5.2
SONM PP PP 18 02 22.0 +7.6
comp=Z,1.4nm,1.0s,baz=34,slow=6.5,SNR=6.9
SONM PKKP **PKKPdf** **18 14 30.6 +2.6**
comp=Z,0.3nm,0.7s,baz=191,slow=2.4,SNR=3.9
HOPE Hope Point 100.75 145 PFAKE 17 58 20.0 +11
HOPE LR LR
comp=Z,1μm,21.0s
TAM Tamanrasset 101.07 58 PFAKE 17 58 20.0 +8.7
TAM LR LR
comp=Z,7μm,21.0s
BRVK Borovoye 102.18 0 PFAKE 17 58 30.0 +15
BRVK LR LR
comp=Z,5μm,19.0s
BVAR Borovoye Array 102.22 0 PKKP **PKKPdf** **18 14 24.8 0.0**
comp=Z,1.2nm,0.9s,baz=147,slow=3.0,SNR=5.1
BJI Beijing 102.47 326 P **Pdif** **17 58 17.3 +0.4**
BJI PP **PP** **18 02 27.8 -1.1**
BJI S **Sdif** **18 09 59.3 -1.3**
BJI SS **SS** **18 17 11.5 +5.7**
BJI pmax pmax
comp=Z,5.0nm,0.7s
BJI pmax pmax
comp=Z,160nm,8.2s
BJI LR LR
comp=Z,1μm,21.7s
BJI LR LR
comp=Z,2μm,23.3s
BJI LR LR
comp=Z,1μm,27.9s
BJT Baijiatuau 102.48 326 PFAKE 17 58 30.0 +13
BJT LR LR
comp=Z,2μm,21.0s
SIM Simferopol' 102.81 26 eP **Pdif** **17 58 17.2 -1.2**
SIM *e* 18 02 30.0
SIM ePS **SKSac** **18 08 56.0 -1.6**
SIM eS **Sdif** **18 10 09.0 +5.6**
SIM ePS **PS** **18 11 43.0 +3.8**
SIM ePPS PPS 18 12 34.0
SIM pmax pmax
comp=Z,30nm,12.9s
SIM pmax pmax
comp=Z,130nm,11.5s
SIM MLR MLR
comp=Z,5μm,16.0s
SIM pmax pmax
comp=E,4μm,18.0s
TOA1 Torodi Ar. Sit 102.97 69 ePdif **Pdif** **17 58 18.9 -0.7**
TORD Torodi Ar. Bea 102.98 69 P **Pdif** **17 58 18.9 -0.7**
comp=E,1.0nm,0.9s,baz=251,slow=4.4,SNR=3.3
KURK Kurchatov 104.19 355 ePKKPbc PKKPbc 18 14 15.3 +2.0
KURBB Kurchatov Arra 104.29 355 PKKPbc PKKPbc 18 14 15.3 +2.3
comp=E,0.9nm,0.9s,baz=207,slow=2.5,SNR=7.3
SANT Santorini 105.57 36 PFAKE 18 03 00.0
SANT LR LR
comp=Z,3μm,21.0s
PMG Port Moresby 105.92 267 PFAKE 18 03 00.0
PMG LR LR
comp=Z,5μm,20.0s
ANTO Ankara 106.45 29 PFAKE 18 03 00.0
ANTO LR LR
comp=Z,4μm,20.0s
KIV Kislovodsk 106.72 21 PFAKE 18 03 00.0
KIV LR LR
comp=Z,8μm,21.0s
NJ2 Nanjing 106.77 318 ePdif **Pdif** **17 58 36.5 +0.3**
NJ2 SS SS 18 18 02.0 -3.4
NJ2 AMB AMB
comp=Z,900nm,12.0s
NJ2 LR LR
comp=Z,3μm,16.3s
NJ2 LR LR
comp=Z,2μm,16.3s
NJ2 LR LR
comp=Z,4μm,17.9s
BR101 Keskin Array S 106.94 29 ePKiKP **PKiKP** **18 02 45.7 -1.1**
BR101 ePP **PP** **18 03 04.0 +1.8**
BR101 ePKKPdf **PKKPdf** **18 14 12.3 -4.0**
BRTR Keskin Array B 106.94 29 PKiKP **PKiKP** **18 02 45.7 -1.1**
comp=Z,0.5nm,0.7s,baz=329,slow=0.8,SNR=2.8
BRTR PP **PP** **18 03 04.0 +1.8**
comp=Z,1.2nm,0.9s,baz=309,slow=7.8,SNR=4.6
BRTR PKKP **PKKPdf** **18 14 12.3 -4.0**
comp=Z,0.9nm,0.8s,baz=163,slow=2.4,SNR=5.1
KBZ Khabaz 106.99 21 PP PP 18 03 09.5 +7.4
comp=Z,1.1nm,0.6s,baz=40,slow=7.9,SNR=3.6
MK32 Makanchi Array 107.66 352 ePP PP 18 03 08.1 +1.1
MK32 ePKKPbc **PKKPbc** **18 14 07.2 +4.5**
MK32 ePKKPdf **PKKPab** **18 14 21.8 +2.5**
MKAR Makanchi Array 107.66 352 PP PP 18 03 08.1 +1.1
comp=Z,2.1nm,1.1s,baz=29,slow=5.5,SNR=4.1
MKAR PKKPbc **PKKPbc** **18 14 07.2 +4.5**
comp=Z,1.3nm,1.0s,baz=190,slow=3.5,SNR=4.4
MKAR PKKPab **PKKPab** **18 14 21.8 +2.5**
comp=Z,2.8nm,0.9s,baz=186,slow=3.7,SNR=9.2
SHEL Horse Pasture 108.85 99 PFAKE 18 03 00.0
SHEL LR LR
comp=Z,1μm,20.0s

WMQ	**Urumqi**	**109.63**	**347**	*e*PKP	**PKiKP**	**18 02 49.8**	**-1.8**
WMQ				PP	**PP**	**18 03 28.8**	**+7.4**
WMQ				SKS	**SKSdf**	**18 09 53.0**	**-10**
WMQ				SS	**SS**	**18 18 44.5**	**+1.8**
WMQ				AMB	AMB		
	comp=Z,270nm,6.0s						
WMQ				LR	LR		
	comp=Z,4μm,16.6s						
WMQ				LR	LR		
	comp=Z,3μm,16.6s						
WMQ				LR	LR		
	comp=Z,3μm,18.3s						
TATO	**Taipei**	**109.91**	**311**	PFAKE		18 03 00.0	
TATO				LR	LR		
	comp=Z,2μm,22.0s						
YHNB	**Yeheng**	**110.19**	**311**	PFAKE		18 03 00.0	
YHNB				LR	LR		
	comp=Z,2μm,19.0s						
GTA	**Gaotai**	**110.22**	**336**	*e*PKP	**PKiKP**	**18 02 56.5**	**+3.6**
GTA				PP	PP	18 03 34.0	+8.0
GTA				SKS	**SKSdf**	**18 10 08.0**	**+3.4**
GTA				AMB	AMB		
	comp=Z,470nm,7.1s						
GTA				LR	LR		
	comp=Z,2μm,19.5s						
GTA				LR	LR		
	comp=Z,3μm,20.0s						
GTA				LR	LR		
	comp=Z,3μm,18.6s						
WHN	**Wuhan**	**110.52**	**320**	SS	SS	18 18 53.5	-2.3
WHN				LR	LR		
	comp=N,2μm,14.8s						
WHN				LR	LR		
	comp=E,6μm,19.6s						
WHN				LR	LR		
	comp=Z,7μm,17.8s						
CSS	**Mathiatis**	**110.68**	**32**	PFAKE		18 03 00.0	
CSS				LR	LR		
	comp=Z,552nm,20.0s						
CTAO	**Charters Tower**	**110.68**	**257**	PFAKE		18 03 10.0	
CTAO				LR	LR		
	comp=Z,4μm,19.0s						
GNI	**Garni**	**110.81**	**21**	PFAKE		18 03 10.0	
GNI				LR	LR		
	comp=Z,7μm,20.0s						
LZH	**Lanzhou**	**111.47**	**331**	*e*PKP	**PKiKP**	**18 02 51.5**	**-3.9**
LZH				sPKP		18 03 06.3	
LZH				PP	**PP**	**18 03 37.0**	**+1.9**
LZH				SS	SS	18 19 14.0	+5.8
LZH				AMB	AMB		
	comp=Z,140nm,6.2s						
LZH				LR	LR		
	comp=Z,2μm,15.8s						
LZH				LR	LR		
	comp=Z,3μm,16.6s						
LZH				LR	LR		
	comp=Z,3μm,17.1s						
AAK	**Ala-Archa**	**112.51**	**357**	PFAKE		18 03 10.0	
AAK				LR	LR		
	comp=Z,9μm,20.0s						
CAN	**Canberra**	**112.96**	**241**	PFAKE		18 03 10.0	
CAN				LR	LR		
	comp=Z,4μm,22.0s						
SBA	**Scott Base**	**113.02**	**193**	PFAKE		18 03 10.0	
SBA				LR	LR		
	comp=Z,3μm,21.0s						
ENH	**Enshi**	**113.45**	**324**	PFAKE		18 03 10.0	
ENH				LR	LR		
	comp=Z,2μm,20.0s						
QSPA	**South Pole Qui**	**114.96**	**180**	PFAKE		18 03 10.0	+9.1
QSPA				LR	LR		
	comp=Z,4μm,22.0s						
KSH	**Kashi**	**115.52**	**355**	*e*PKP	**PKPdf**	**18 03 05.3**	**+2.3**
KSH				*e*PP	**PP**	**18 04 09.8**	**+6.3**
KSH				PKS	**PKSdf**	**18 06 41.0**	**+1.1**
KSH				SKS	**SKSdf**	**18 10 16.5**	**+1.8**
KSH				SKKS	**SKKSac**	**18 11 02.3**	**-3.5**
KSH				AMB	AMB		
	comp=Z,94nm,4.5s						
KSH				LR	LR		
	comp=Z,4μm,17.8s						
KSH				LR	LR		
	comp=Z,2μm,15.3s						
KSH				LR	LR		
	comp=Z,4μm,19.6s						
CD2	**Chengdu**	**115.84**	**328**	PKP	**PKPdf**	**18 03 03.3**	**-0.5**
CD2				sPKP		18 03 08.0	
CD2				SKS	**SKSdf**	**18 10 15.5**	**0.0**
CD2				SKKS	**SKKSac**	**18 11 04.5**	**-3.6**
CD2				SS	**SS**	**18 20 05.3**	**-0.7**
CD2				AMB	AMB		
	comp=Z,310nm,6.5s						
CD2				LR	LR		
	comp=Z,2μm,17.5s						
CD2				LR	LR		
	comp=Z,3μm,20.4s						
CD2				LR	LR		
	comp=Z,3μm,19.6s						
TAU	**Tasmania Unive**	**115.95**	**233**	PFAKE		18 03 10.0	+6.6
TAU				LR	LR		
	comp=Z,3μm,21.0s						
GEYT	**Alibeck**	**116.25**	**11**	PKKPab	PKKPab	18 13 40.8	-0.2
	comp=Z,1.7nm,0.8s,baz=182,slow=5.2,SNR=4.5						
GYA	**Guiyang**	**117.97**	**323**	Pdif	**Pdif**	**17 59 25.8**	**-0.6**
GYA				PKP	**PKiKP**	**18 03 08.3**	**+0.2**
GYA				PP	**PP**	**18 04 25.0**	**+3.7**
GYA				PKS	**PKSdf**	**18 06 44.3**	**-0.8**
GYA				SKKS		18 11 17.5	
GYA				SS	**SS**	**18 20 33.0**	**-1.3**
GYA				AMB	AMB		
	comp=Z,180nm,7.9s						
GYA				LR	LR		
	comp=Z,150nm,20.0s						
GYA				LR	LR		
	comp=Z,190nm,21.0s						
KMI	**Kunming**	**121.12**	**326**	PKP	**PKPdf**	**18 03 13.5**	**-0.8**
KMI				LR	LR		
	comp=Z,1μm,18.0s						
KMI				LR	LR		
	comp=Z,1μm,20.1s						
KMI				LR	LR		
	comp=Z,2μm,18.9s						
WRAB	**Tennant Creek**	**121.22**	**261**	PFAKE		18 03 30.0	+16
WRAB				LR	LR		
	comp=Z,4μm,19.0s						
WB2	**Warramunga Arr**	**121.23**	**261**	*e*PKPdf	**PKPdf**	**18 03 13.3**	**-0.9**
WR1	**Warramunga Arr**	**121.24**	**261**	*e*PKPdf	**PKPdf**	**18 03 11.7**	**-2.5**
WR1				*e*PKKPbc	**PKKPab**	**18 13 23.4**	**+7.1**
WRA	**Warramunga Arr**	**121.24**	**261**	PKP	**PKPdf**	**18 03 11.7**	**-2.5**
	comp=Z,1.6nm,0.8s,baz=65,slow=1.9,SNR=9.2						
WRA				PKKPbc	**PKKPab**	**18 13 23.4**	**+7.1**
	comp=Z,2.2nm,1.0s,baz=253,slow=2.2,SNR=7.8						
QIZ	**Qiongzhong**	**121.76**	**315**	PKP	**PKPdf**	**18 03 15.5**	**+0.1**
QIZ				PP	**PP**	**18 04 48.0**	**+0.5**
QIZ				SS	SS	18 21 25.0	+1.7
QIZ				LR	LR		
	comp=Z,2μm,19.0s						
QIZ				LR	LR		
	comp=Z,2μm,19.0s						
QIZ	**Qiongzhong**	**121.76**	**315**	PFAKE		18 03 30.0	+15
QIZ				LR	LR		
	comp=Z,2μm,19.0s						
LSA	**Lhasa**	**122.02**	**339**	PFAKE		18 03 30.0	+14
LSA				LR	LR		
	comp=Z,2μm,20.0s						
AS01	**Alice Springs**	**122.64**	**257**	*e*PKPdf	**PKPdf**	**18 03 15.4**	**-1.5**
AS31	**Alice Springs**	**122.69**	**257**	*e*PKPdf	**PKPdf**	**18 03 14.3**	**-2.7**
AS31				*e*		18 05 15.4	
AS31				*e*PKKPbc	**PKKPbc**	**18 13 09.1**	**-0.8**
AS31				*e*PKKSdf	PKKSdf	18 17 11.6	-13
ASAR	**Alice Springs**	**122.69**	**257**	PKP	**PKPdf**	**18 03 14.3**	**-2.7**
	comp=Z,2.0nm,0.9s,baz=88,slow=2.0,SNR=14						
ASAR				PP	PP	18 05 15.4	+20
	comp=Z,0.8nm,0.9s,baz=76,slow=7.6,SNR=4.9						
ASAR				PKKPbc	**PKKPbc**	**18 13 09.1**	**-0.8**
	comp=Z,1.2nm,0.8s,baz=254,slow=3.4,SNR=9.6						
ASAR				SKKP		18 17 11.6	
	comp=Z,1.2nm,1.0s,baz=266,slow=2.5,SNR=5.1						
KKM	**Kota Kinabalu**	**125.81**	**299**	PFAKE		18 03 30.0	+6.6
KKM				LR	LR		
	comp=Z,1μm,20.0s						
CHTO	**Chiang Mai**	**128.30**	**325**	PFAKE		18 03 40.0	+12
CHTO				LR	LR		
	comp=Z,1μm,21.0s						
CM31	**Chiang Mai Arr**	**128.59**	**325**	*e*PKPdf	**PKPdf**	**18 03 27.7**	**-0.8**
CMAR	**Chiang Mai Arr**	**128.59**	**325**	PKP	**PKPdf**	**18 03 27.7**	**-0.8**
	comp=Z,1.3nm,0.9s,baz=338,slow=2.5,SNR=8.2						
CM01	**Chiang Mai Arr**	**128.62**	**325**	*e*PKPdf	**PKPdf**	**18 03 28.7**	**+0.2**
KAPI	**Kappang**	**128.74**	**285**	PFAKE		18 03 40.0	+11
KAPI				LR	LR		
	comp=Z,1μm,19.0s						
TSUM	**Tsumeb**	**130.92**	**94**	PKP	**PKPdf**	**18 03 33.7**	**+0.7**
	comp=Z,2.1nm,0.8s,baz=156,slow=3.3,SNR=3.2						
TSUM	**Tsumeb**	**130.92**	**94**	*e*PKPdf	**PKPdf**	**18 03 33.7**	**+0.7**
TSUM				LR	LR		
	comp=Z,3μm,20.0s						
SYO	**Syowa Base**	**132.36**	**166**	*e*PdiffI	**Pdif**	**18 00 28.6**	**-0.4**
SYO	**Syowa Base**	**132.36**	**166**	*e*pPdiffI	pPdif	18 00 33.7	-1.0
KSM	**Kuching**	**133.25**	**298**	PFAKE		18 03 50.0	+13
KSM				LR	LR		
	comp=Z,2μm,22.0s						
MBWA	**Marble Bar**	**134.72**	**264**	PFAKE		18 03 50.0	+10
MBWA				LR	LR		
	comp=Z,5μm,22.0s						
SUR	**Sutherland**	**136.18**	**111**	PFAKE		18 03 50.0	+7.4
SUR				LR	LR		
	comp=Z,3μm,19.0s						
MAW	**Mawson**	**137.22**	**176**	*e*PKIKP	**PKPdf**	**18 03 42.7**	**-0.4**
MAW	**Mawson**	**137.22**	**176**	*e*PKPdf	**PKPdf**	**18 03 42.7**	**-0.4**
KULM	**Kulim**	**137.89**	**312**	PFAKE		18 04 00.0	+14
KULM				LR	LR		
	comp=Z,2μm,20.0s						
NWAO	**Narrogin (SRO)**	**138.63**	**248**	PFAKE		18 04 00.0	+13
NWAO				LR	LR		
	comp=Z,5μm,20.0s						
LSZ	**Lusaka**	**139.28**	**84**	PKiKP	PKPpre	18 03 40.5	
	comp=Z,2.9nm,0.9s,baz=297,slow=2.3,SNR=2.3						
LSZ				PKP	**PKPdf**	**18 03 48.4**	**-0.2**
	comp=Z,5.0nm,0.8s,baz=271,slow=1.4,SNR=7.0						
LSZ	**Lusaka**	**139.28**	**84**	*e*PKPdf	**PKPdf**	**18 03 45.2**	**-3.4**
LSZ				LR	LR		
	comp=Z,3μm,21.0s						
BOSA	**Boshof**	**139.69**	**105**	PKP	**PKPdf**	**18 03 46.9**	**-2.2**
	comp=Z,2.9nm,0.9s,baz=289,slow=1.7,SNR=3.4						
KMBO	**Kilima Mbogo**	**140.06**	**59**	PKP	**PKPdf**	**18 03 49.6**	**-0.7**
	comp=Z,0.8nm,0.3s,baz=332,slow=4.0,SNR=2.4						
KMBO	**Kilima Mbogo**	**140.06**	**59**	*e*PKIKP	**PKPdf**	**18 03 49.6**	**-0.7**
KMBO				MLR	MLR		
	comp=Z,5μm,20.0s						
KMBO	**Kilima Mbogo**	**140.06**	**59**	*e*PKPdf	**PKPdf**	**18 03 49.6**	**-0.7**
KMBO				LR	LR		
	comp=Z,5μm,20.0s						
COCO	**West Island**	**151.98**	**292**	PFAKE		18 04 20.0	+3.5
COCO				LR	LR		
	comp=Z,2μm,21.0s						
PAF	**Port-aux-Franc**	**155.78**	**180**	PFAKE		18 04 30.0	-11
PAF				LR	LR		
	comp=Z,3μm,19.0s						
ABPO	**Ambohimpanom**	**157.65**	**79**	PFAKE		18 04 30.0	+12
ABPO				LR	LR		
	comp=Z,1μm,19.0s						
DGAR	**Diego Garcia**	**162.32**	**353**	PFAKE		18 04 30.0	+6.9
DGAR				LR	LR		
	comp=Z,4μm,20.0s						
RER	**Riviere de l'E**	**165.91**	**77**	PFAKE		18 04 40.0	+14
RER				LR	LR		
	comp=Z,6μm,19.0s						

*IDC **26** 18:14:27.4±1.4, 7°.84S×118°.88E, h0km, mb3.7/5, mb1 3.8/8, mb1mx3.5/37, mbtmp3.7/8, ML3.2/3, Error ellipse: s-maj=56.0km s-min=18.7km az=59.0*
*ISCJB **26** 18:14:30.4±1.1, 7°.79S±0°.07×119°.0E±0°.2, h34km, mb3.7/5, Error ellipse: s-maj=25.2km s-min=9.3km az=173.2*

ISC 26 18:14:32.3±1.4, 7°.85S±0°.09×119°.1E±0°.2, h34km, n8, σ2ş36/10, mb3.7/5, Flores Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**2.88**	**12**	Pn		**Pn**	**18 15 15.0**	**-0.8**
	3.9nm,0.3s,baz=191,slow=0.8,SNR=10							
KAPI				Sn		**Sn**	**18 15 48.1**	**-1.2**
	6.6nm,0.3s,baz=338,slow=23,SNR=6.6							
FITZ	**Fitzroy Crossi**	**12.00**	**149**	Pn		**Pn**	**18 17 19.6**	**-1.4**
	0.0nm,0.3s,baz=319,slow=20,SNR=2.3							
FITZ				Sn		**Sn**	**18 19 29.2**	**-4.5**
	0.1nm,0.3s,baz=183,slow=19,SNR=4.1							
WRA	**Warramunga Arr**	**19.01**	**131**	P		**Pn**	**18 18 53.4**	**+1.0**
	0.2nm,0.3s,baz=307,slow=11,SNR=9.7							
ASAR	**Alice Springs**	**21.16**	**140**	P		**P**	**18 19 16.9**	**+2.1**
	2.1nm,0.5s,baz=310,slow=9.9,SNR=34							
CTA	**Charters Tower**	**28.94**	**118**	P		**P**	**18 20 30.9**	**+2.2**
	8.3nm,1.1s,baz=299,slow=10,SNR=1.9							
STKA	**Stephens Creek**	**31.76**	**142**	P		**P**	**18 20 55.0**	**+1.6**
	0.6nm,0.5s,baz=319,slow=12,SNR=3.9							
MKAR	**Makanchi Array**	**63.50**	**333**	P		**P**	**18 24 59.3**	**+0.2**
	0.3nm,0.6s,baz=129,slow=7.9,SNR=3.3							
KURBB	**Kurchatov Arra**	**68.00**	**333**	P		**P**	**18 25 26.7**	**-1.3**
	0.1nm,0.6s,baz=144,slow=5.7,SNR=2.9							

*MEX **26** 18:17:43.5±0.3, 24°.44N×108°.47W, h10km, MD4.0*
*IDC **26** 18:17:54.3±3.2, 24°.45N×109°.29W, h0km, mb3.7/3, mb1 4.0/6, mb1mx3.8/33, mbtmp3.6/6, ML4.1/3, Error ellipse: s-maj=58.6km s-min=11.1km az=145.0*
*ISCJB **26** 18:17:56.9±0.6, 24°.71N±0°.05×109°.38W±0°.05, h10km, mb4.3/9, Error ellipse: s-maj=8.0km s-min=5.9km az=138.8*
*NEIC **26** 18:17:56.4±0.8, 24°.47N×109°.37W, h10km, mb4.1/13, Error ellipse: s-maj=11.1km s-min=8.0km az=140.0*

ISC 26 18:17:56.1±0.8, 24°.58N±0°.06×109°.40W±0°.05, h10km, n51, σ2ş19/54, mb4.2/9, Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LPIG	**La Paz**	**0.95**	**240**	Pg		**Pg**	**18 18 11.9**	**-2.6**
	26nm,0.3s,baz=45,slow=4.3,SNR=4.5							
LPIG				Lg		Lg	18 18 28.4	
	385nm,0.3s,baz=222,slow=18,SNR=23							
LPIG	**La Paz**	**0.95**	**240**	*e*P		**Pg**	**18 18 10.0**	**-4.5**
LPIG				*i* S		**Sn**	**18 18 30.4**	**+1.2**
SLBS	**Sierra La Lagu**	**1.02**	**209**	*e*Pn		**Pn**	**18 18 16.9**	**+0.3**
GUYB	**Guaymas**	**3.56**	**339**	*i* P		Pn	18 18 42.5	-9.0
GUYB				*i* S		**Sn**	**18 19 30.2**	**-3.4**
SRIG	**Santa Rosalia**	**3.74**	**317**	*i* P		Pn	18 18 48.2	-5.7
SRIG				*i* S		**Sn**	**18 19 38.8**	**+0.8**
SRIG	**Santa Rosalia**	**3.74**	**317**	*i* P		Pn	18 18 47.2	-6.7
SRIG				*i* S		Sn	18 19 09.6	-28
HPIG		**4.11**	**54**	*e*Pn		**Pn**	**18 19 01.3**	**+2.1**
HSIG		**4.63**	**343**	*i* P		Pn	18 18 56.6	-10
HSIG				*i* S		**Sn**	**18 19 54.7**	**-5.4**
HSIG		**4.63**	**343**	*i* P		Pn	18 18 56.6	-10
HSIG				*e*Pg		**Pg**	**18 19 23.3**	**-1.6**
319A	**Douglas**	**6.77**	**1**	*e*Pn		**Pn**	**18 19 34.8**	**-0.9**
LTX	**Lajitas**	**6.97**	**46**	*e*Pn		**Pn**	**18 19 39.5**	**+1.1**
LTX				*e*Sn		**Sn**	**18 20 55.3**	**-2.5**
LTX				*e*Lg		Lg	18 21 29.1	
TX31	**Lajitas Ar. Si**	**6.97**	**46**	*e*Pn		**Pn**	**18 19 39.5**	**+1.0**
TX31				*e*Pg		**Pg**	**18 20 06.4**	**-3.2**
TXAR	**Lajitas Array**	**6.97**	**46**	Pn		**Pn**	**18 19 39.5**	**+1.1**
	0.6nm,0.3s,baz=228,slow=13,SNR=19							
TXAR				Sn		**Sn**	**18 20 55.3**	**-2.5**
	1.3nm,0.3s,baz=204,slow=30,SNR=6.7							
TXAR				Lg		Lg	18 21 29.1	
	1.1nm,0.3s,baz=236,slow=27,SNR=4.3							
TUC	**Tucson**	**7.80**	**351**	*e*Pn		**Pn**	**18 19 48.5**	**-1.2**
GLA	**Glamis**	**9.69**	**332**	*e*Pn		**Pn**	**18 20 14.9**	**-0.7**
BNM	**Barren Site**	**9.84**	**14**	*e*Pn		**Pn**	**18 20 20.2**	**+2.3**
Y14A	**Wickenburg**	**9.84**	**342**	*e*Pn		**Pn**	**18 20 18.6**	**+0.8**
ANMO	**Albuquerque**	**10.64**	**13**	*e*Pn		**Pn**	**18 20 31.3**	**+2.5**
PFO	**Pinyon Flats O**	**10.91**	**327**	Pn		**Pn**	**18 20 34.7**	**+2.2**
	0.2nm,0.3s,baz=143,slow=11,SNR=2.9							
U15A	**North Rim**	**12.07**	**349**	*e*Pn		**Pn**	**18 20 50.5**	**+2.1**
LCMT	**Little Creek M**	**12.82**	**346**	*e*Pn		**Pn**	**18 21 00.8**	**+2.1**
CCUT	**Cedar City**	**13.37**	**346**	*e*Pn		**Pn**	**18 21 09.7**	**+3.6**
MTPU	**Mount Pierson**	**13.63**	**351**	*e*Pn		**Pn**	**18 21 13.7**	**+3.9**
R11A	**Troy Canyon, C**	**14.70**	**341**	*e*Pn		**Pn**	**18 21 26.4**	**+2.1**
SMCO	**Snowmass**	**14.70**	**7**	*e*Pn		**Pn**	**18 21 27.0**	**+2.4**
O20A	**White River Ci**	**15.54**	**3**	*e*Pn		**Pn**	**18 21 37.3**	**+1.8**
BSMM	**Soledad Missio**	**15.66**	**321**	*e*Pn		**Pn**	**18 21 31.4**	**-5.6**
BSMM				*e*Sn		Sn	18 24 12.7	-18
BSMM				*e*S		**S**	**18 24 44.6**	**-1.4**
DUG	**Dugway, Tooele**	**15.83**	**350**	*e*Pn		**Pn**	**18 21 39.1**	**-0.1**
	4.0nm,1.0s							
WAKR	**Walker**	**16.29**	**331**	*e*Pn		**P**	**18 21 48.4**	**+0.2**
	28nm,1.9s							
TCUT	**Toone Canyon**	**16.58**	**355**	*e*Pn		**P**	**18 21 52.5**	**+1.1**
	6.6nm,0.7s							
PNTR	**Pine Nut**	**16.84**	**332**	*e*Pn		**P**	**18 21 55.9**	**+1.5**
HWUT	**Hardware Ranch**	**17.08**	**354**	*e*Pn		**P**	**18 21 56.2**	**-0.7**
	6.8nm,1.1s							
BMN	**Battle Mountai**	**17.11**	**339**	*e*Pn		**Pn**	**18 21 56.4**	**+0.8**
	6.3nm,1.2s							
HVU	**Hansel Valley**	**17.38**	**352**	*e*Pn		**P**	**18 22 00.3**	**0.0**
	13nm,1.4s							
BW06	**Boulder Array**	**18.14**	**360**	*e*Pn		**Pn**	**18 22 07.9**	**-0.5**
PD31	**Pinedale Array**	**18.14**	**360**	*e*Pn		**Pn**	**18 22 07.4**	**-1.0**
PDAR	**Pinedale Array**	**18.14**	**360**	P		**P**	**18 22 09.8**	**+1.1**
	0.1nm,0.3s,baz=175,slow=12,SNR=13							
BMO	**Blue Mountains**	**21.22**	**344**	*e*P		**P**	**18 22 42.8**	**+0.7**
	2.7nm,0.9s							
F10A	**Beach Ranch, E**	**22.26**	**345**	*e*P		**P**	**18 22 54.4**	**+1.0**
	7.9nm,1.3s							
HOOD	**Mount Hood Mea**	**22.95**	**337**	*e*Sn		Sn	18 27 32.4	+5.9
NEW	**Newport**	**24.41**	**347**	P		**P**	**18 23 16.5**	**+1.7**
	2.9nm,0.7s,baz=133,slow=10,SNR=4.1							
NEW	**Newport**	**24.41**	**347**	*e*P		**P**	**18 23 16.3**	**+1.5**
	13nm,1.5s							
SFIN	**Lafayette**	**24.44**	**44**	*e*P		**P**	**18 23 16.4**	**+1.3**
	68nm,1.5s							
E03A	**Lebam**	**24.69**	**336**	*e*P		**P**	**18 23 17.6**	**+0.5**
	41nm,1.5s							
WALA	**Waterton Lakes**	**24.69**	**353**	*e*P		**P**	**18 23 17.9**	**+0.5**
	15nm,0.3s							
YKA	**Yellowknife Ar**	**38.06**	**356**	P		**P**	**18 25 15.7**	**+1.1**
	0.3nm,0.3s,baz=166,slow=8.1,SNR=7.0							
YKB5	**Yellowknife Ar**	**38.06**	**356**	*e*P		**P**	**18 25 16.4**	**+1.8**
IL1	**Eielson Array**	**46.89**	**339**	*e*P		**P**	**18 26 28.8**	**+2.4**
ILAR	**Eielson Array**	**46.89**	**339**	P		**P**	**18 26 26.5**	**+0.1**
	0.8nm,0.9s,baz=147,slow=7.6,SNR=8.5							
ILB	**Eielson Array**	**46.89**	**339**	*e*P		**P**	**18 26 27.8**	**+1.5**
PPLA	**Purkeypile**	**47.64**	**335**	*e*P		**P**	**18 26 35.5**	**+3.1**
	27nm,1.6s							

*ISCJB **26** 18:23:12.6±0.6, 39°.06N±0°.05×29°.07E±0°.05, h4km±7km, Error ellipse: s-maj=8.6km s-min=5.3km az=146.7*
*DDA **26** 18:23:12.6, 39°.06N×29°.10E, h7km, Md2.6*
*ISK **26** 18:23:12.4, 39°.06N×29°.07E, h5km, MD2.6*
*CSEM **26** 18:23:12.6±0.1, 39°.07N×29°.07E, h2km, MD2.6, Error ellipse: s-maj=4.3km s-min=2.9km az=138.0*

ISC 26 18:23:12.9±1.0, 39°.06N±0°.03×29°.08E±0°.03, h7km±8km, n35, σ0ş55/41, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SIMA	**Simav-Kutahya**	**0.07**	**285**	*e*PG		**Pg**	**18 23 14.6**	**-0.2**
SIMA	**Simav-Kutahya**	**0.07**	**285**	*e*Pg		**Pg**	**18 23 14.6**	**-0.2**
GEDZ	**Gediz**	**0.26**	**94**	*e*PG		**Pg**	**18 23 18.4**	**+0.3**
GEDZ	**Gediz**	**0.26**	**94**	*e*Pg		**Pg**	**18 23 18.4**	**+0.3**
DEMI	**Demirci**	**0.28**	**266**	*i* P		**Pg**	**18 23 18.4**	**0.0**
DEMI	**Demirci**	**0.28**	**266**	P		**Pg**	**18 23 18.4**	**0.0**
GDZ	**Gediz**	**0.32**	**85**	*i* P		**Pg**	**18 23 18.8**	**-0.4**
GDZ	**Gediz**	**0.32**	**85**	P		**Pg**	**18 23 18.8**	**-0.4**
TVSB	**Tavsanli**	**0.49**	**38**	*e*PG		**Pg**	**18 23 21.9**	**-0.4**
TVSB	**Tavsanli**	**0.49**	**38**	*e*Pg		**Pg**	**18 23 21.9**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**211**	*e*PG		**Pg**	**18 23 25.4**	**+0.2**
KULA				*e*SG		**Sg**	**18 23 34.0**	**+0.5**
KULA	**Kula-Manisa**	**0.64**	**211**	*e*Pg		**Pg**	**18 23 25.4**	**+0.2**
KULA				*e*Sg		**Sg**	**18 23 34.0**	**+0.5**
MANT	**Manisa**	**0.70**	**215**	*i* P		**Pg**	**18 23 25.5**	**-0.9**
MANT	**Manisa**	**0.70**	**215**	P		**Pg**	**18 23 25.5**	**-0.9**
BALB	**Balikesir**	**1.09**	**302**	*e*PN		**Pb**	**18 23 34.1**	**0.0**
BALB				*e*SN		**Sn**	**18 23 49.6**	**-0.4**
BALB	**Balikesir**	**1.09**	**302**	*e*Pn		**Pb**	**18 23 34.1**	**0.0**
BALB				*e*Sn		**Sn**	**18 23 49.6**	**-0.4**
IGD	**Bursa**	**1.20**	**5**	*i* P		**Pg**	**18 23 35.7**	**-0.3**
CAVI	**Cavuskoy**	**1.28**	**27**	*e*PN		**Pg**	**18 23 37.0**	**-0.5**
CAVI				*e*SN		**Sn**	**18 23 55.7**	**+0.9**
CAVI	**Cavuskoy**	**1.28**	**27**	*e*Pn		**Pg**	**18 23 37.0**	**-0.5**
CAVI				*e*Sn		**Sn**	**18 23 55.7**	**+0.9**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*PN		**Pg**	**18 23 38.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*Pn		**Pg**	**18 23 38.5**	**+0.2**
BORA	**Eskisehir**	**1.34**	**52**	*i* P		**Pn**	**18 23 36.7**	**-1.5**
BORA	**Eskisehir**	**1.34**	**52**	P		**Pn**	**18 23 36.7**	**-1.5**
GEMT	**Gemlik**	**1.37**	**4**	*e*PN		**Pg**	**18 23 38.9**	**-0.3**
GEMT	**Gemlik**	**1.37**	**4**	*e*Pn		**Pg**	**18 23 38.9**	**-0.3**
ESKT	**Eskisehir**	**1.45**	**71**	*i* P		**Pn**	**18 23 39.9**	**+0.2**
SEYT	**Eskypehir**	**1.45**	**71**	P		**Pn**	**18 23 39.9**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**220**	*e*PN		**Pb**	**18 23 40.1**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**220**	*e*Pn		**Pb**	**18 23 40.1**	**-0.2**
ARMT	**Armutlu**	**1.51**	**354**	*e*PN		**Pb**	**18 23 41.1**	**-0.1**
ARMT	**Armutlu**	**1.51**	**354**	*e*Pn		**Pb**	**18 23 41.1**	**-0.1**
SBT5	**Esenkoy-Cinarc**	**1.57**	**355**	*e*PN		**Pn**	**18 23 41.4**	**+0.2**
SBT5	**Esenkoy-Cinarc**	**1.57**	**355**	*e*Pn		**Pn**	**18 23 41.4**	**+0.2**
GULT	**Gulveren**	**1.76**	**39**	*e*PN		**Pn**	**18 23 44.4**	**+0.5**
GULT	**Gulveren**	**1.76**	**39**	*e*Pn		**Pn**	**18 23 44.4**	**+0.5**

*IDC **26** 18:24:28.3±0.4, 1°.30N×126°.28E, h0km, mb4.4/29, mb1 4.5/30, mb1mx4.5/44, mbtmp4.4/30, ML4.5/

FITZ	Fitzroy Crossi	19.30	182	eP		P	18 28 54.6	-1.1	
	7.7nm,0.6s								
CISI	Cisompet, Garu	20.50	244	eP		P	18 29 08.0	-1.0	
	35nm,0.6s								
YULB	Yu-li	22.50	348	eP		P	18 29 27.2	-3.2	
	11nm,0.9s								
WRAB	Tennant Creek	22.51	160	i P		P	18 29 28.9	-1.6	
WRAB					pmax	pmax			
	comp=Z,90nm,1.0s								
WR1	Warramunga Arr	22.51	160	eP		P	18 29 28.9	-1.6	
	comp=Z,35nm,0.6s								
WR1				eS		S	18 33 33.0	-1.1	
WRA	Warramunga Arr	22.51	160	P		P	18 29 28.9	-1.6	
	comp=Z,67nm,1.1s,baz=333,slow=11,SNR=194								
WRA				S		S	18 33 33.0	-1.1	
	comp=Z,2.8nm,0.8s,baz=332,slow=21,SNR=5.8								
WRA	Warramunga Arr	22.51	160	P		P	18 29 29.0	-1.6	
WRA				S		S	18 33 33.0	-1.1	
WRA					pmax	pmax			
	comp=Z,67nm,1.1s								
WRA					smax	smax			
	comp=N,3.0nm,0.8s								
COEN	Coen	22.52	133	eP		P	18 29 30.0	-0.6	
	comp=N,33nm,1.5s								
WB2	Warramunga Arr	22.52	160	eP		P	18 29 28.6	-2.0	
MYKOM	Kota Tinggi	22.52	272	eP		P	18 29 28.9	-1.8	
	comp=N,20nm,1.2s								
TPUB	Ta-pu	22.57	346	eP		P	18 29 29.4	-1.6	
	comp=N,19nm,0.6s								
SSLB	Suanglung	22.96	347	eP		P	18 29 32.6	-2.6	
	comp=N,31nm,1.6s								
MBWA	Marble Bar	23.25	196	eP		P	18 29 35.9	-2.1	
	comp=N,15nm,1.0s								
PMG	Port Moresby	23.28	118	P		P	18 29 36.0	-2.3	
PMG	Port Moresby	23.28	118	eP		P	18 29 36.1	-2.3	
	comp=N,35nm,1.3s								
XMIS	Christmas Isla	23.71	240	eP		P	18 29 39.5	-2.9	
	comp=N,216nm,1.7s								
QIZ	Qiongzhong	23.93	318	P		P	18 29 45.5	+1.0	
QIZ				LR		LR			
	comp=N,570nm,23.4s								
MNAI	Manna	24.07	256	eP		P	18 29 46.1	+0.3	
	comp=N,165nm,1.0s								
BKNI	Bangkinang	25.35	268	eP		P	18 29 51.4	-6.1	
	comp=N,68nm,0.5s								
JOW	Kunigami	25.45	4	eP		P	18 29 59.4	+1.2	
	comp=N,56nm,1.2s								
IPM	Ipoh	25.51	278	eP		P	18 29 58.9	0.0	
	comp=N,19nm,1.3s								
AS31	Alice Springs	25.88	164	eP		P	18 30 01.1	-1.0	
	comp=N,5.3nm,0.9s								
ASAR	Alice Springs	25.88	164	P		P	18 30 01.4	-0.7	
	comp=N,7.3nm,0.6s,baz=343,slow=8.2,SNR=136								
ASAR				PcP		PcP	18 33 30.9	+0.6	
	comp=N,1.3nm,0.6s,baz=336,slow=2.1,SNR=6.7								
ASAR				S		S	18 34 36.1	+7.7	
	comp=N,1.0nm,0.8s,baz=351,slow=23,SNR=4.7								
AS01	Alice Springs	25.89	164	eP		P	18 30 01.3	-0.9	
KULM	Kulim	25.98	279	eP		P	18 30 04.4	+1.2	
	comp=N,40nm,1.7s								
RABL	Rabaul	26.34	102	eP		P	18 30 07.1	+0.7	
	comp=N,75nm,0.6s								
PSI	Prapat	27.47	274	P		P	18 30 15.4	-1.3	
	comp=N,7.5nm,0.6s,baz=149,slow=1.8,SNR=4.4								
PSI	Prapat	27.47	274	eP		P	18 30 14.1	-2.6	
	comp=N,18nm,1.2s								
CHAI	Chaiyaphum	28.08	302	P		P	18 30 31.2	+9.2	
	comp=N,2.9nm,0.7s								
GSI	Gunungsitoli	28.79	270	eP		P	18 30 26.3	-2.0	
	comp=N,17nm,0.8s								
CTA	Charters Tower	28.84	139	P		P	18 30 30.6	+1.9	
	comp=N,3.5nm,0.8s,baz=0.0,slow=10,SNR=2.6								
NJ2	Nanjing	31.40	348	eP		P	18 30 51.5	+0.4	
CM01	Chiang Mai Arr	31.83	304	eP		P	18 30 53.9	-1.2	
CM01				ePcP		PcP	18 33 46.8	+1.5	
CMAR	Chiang Mai Arr	31.86	304	P		P	18 30 56.6	+1.2	
	comp=N,0.8nm,0.7s,baz=118,slow=6.7,SNR=6.8								
CMAR				PcP		PcP	18 33 46.9	+1.6	
	comp=N,1.3nm,0.9s,baz=176,slow=2.0,SNR=8.0								
FORT	Forrest	31.95	177	eP		P	18 30 54.2	-1.8	
	comp=N,140nm,0.6s								
CHTO	Chiang Mai	32.03	305	eP		P	18 30 56.1	-0.9	
	comp=N,7.7nm,1.4s								
ENH	Enshi	32.97	332	eP		P	18 31 04.1	-1.0	
	comp=N,5.4nm,0.9s								
NWAO	Narrogin (SRO)	35.12	193	P		P	18 31 23.5	-0.1	
	comp=N,5.8nm,0.3s,baz=259,slow=8.0,SNR=21								
BBOO	Buckleboo	35.14	166	eP		P	18 31 22.7	-1.1	
	comp=N,63nm,1.8s								
INU	Inuyama	35.29	15	eP		P	18 31 26.1	+1.1	
	comp=N,15nm,1.2s								
KS15	Wonju Array Si	35.99	2	eP		P	18 31 31.0	0.0	
KSAR	Wonju Array Be	35.99	2	P		P	18 31 31.8	+0.8	
KSRS	Korea Array	36.00	2	P		P	18 31 31.8	+0.7	
	comp=N,1.5nm,0.7s,baz=180,slow=10,SNR=4.8								
STKA	Stephens Creek	36.02	158	P		P	18 31 31.2	-0.1	
	comp=N,6.5nm,0.5s,baz=347,slow=8.3,SNR=25								
STKA	Stephens Creek	36.02	158	eP		P	18 31 31.2	-0.1	
	comp=N,3.9nm,1.3s								
CD2	Chengdu	36.41	326	eP		P	18 31 36.0	+1.2	
CD2				pP		sP	18 31 56.0	+1.2	
CD2				sP		pP	18 32 06.0	+17	
CD2				S		S	18 37 13.3	+0.5	
CD2				sS		ScP	18 37 48.3	+7.8	
CD2				pmax		pmax			
	comp=N,10.0nm,0.5s								
CD2				pmax		pmax			
	comp=N,120nm,5.0s								
MJAR	Matsushiro Arr	36.73	16	P		P	18 31 37.2	-0.2	
	comp=N,3.4nm,0.8s,baz=183,slow=9.5,SNR=14								
MAJO	Matsushiro	36.74	16	eP		P	18 31 36.2	-1.2	
	comp=N,14nm,0.6s								
MAT	Matsushiro	36.74	16	P		P	18 31 37.2	-0.2	
MJB9	Matsu-Tunnel	36.74	16	eP		P	18 31 36.3	-1.1	
	comp=N,3.6nm,0.6s								
BJI	Beijing	39.66	348	P		P	18 32 04.5	+2.6	
BJI				S		S	18 38 02.3	+0.9	
BJI				pmax		pmax			
	comp=N,8.0nm,0.6s								
BJI				LR		LR			
	comp=N,2μm,18.9s								
BJI				LR		LR			
	comp=N,2μm,17.0s								
BJI				LR		LR			
	comp=N,2μm,23.0s								
ARMA	Armidale	39.67	145	eP		P	18 32 03.1	+0.8	
	comp=N,15nm,1.1s								
HHC	Hu-ho-hao-te	41.59	343	eP		P	18 32 19.0	+1.1	
HHC				S		S	18 38 24.0	-6.4	
HHC				pmax		pmax			
	comp=N,9.0nm,1.1s								
HHC				pmax		pmax			
	comp=N,120nm,9.3s								
HHC				LR		LR			
	comp=N,2μm,18.3s								
HHC				LR		LR			
	comp=N,2μm,18.1s								
HHC				LR		LR			
	comp=N,1μm,13.0s								
CAN	Canberra	42.13	152	eP		P	18 32 23.5	+1.1	
	comp=N,78nm,1.8s								
USRK	Ussuriysk Ar.	43.00	6	P		P	18 32 30.9	+1.6	
	comp=N,5.1nm,0.7s,baz=202,slow=8.3,SNR=11								
ERM	Erimo	43.25	18	eP		P	18 32 31.3	+0.1	
	comp=N,7.8nm,0.9s								
WAKE	Wake Island	43.29	63	eP		P	18 32 31.6	-0.3	
	comp=N,330nm,1.7s								
LSA	Lhasa	43.80	314	eP		P	18 32 36.2	-0.3	
	comp=N,15nm,1.7s								
ASAJ	Asahikawa	45.00	17	eP		P	18 32 45.8	+0.6	
	comp=N,12nm,1.1s								
GTA	Gaotai	45.00	331	eP		P	18 32 48.0	+2.4	
GTA					pmax	pmax			
	comp=N,3.0nm,0.9s								
DZM	Mont Dzumac	45.47	123	eP		P	18 32 48.0	-1.5	
	comp=N,28nm,1.1s								
JIRN	Jiri	46.54	308	eP		P	18 32 58.2	+0.1	
GUN	Gumba	46.90	308	eP		P	18 33 00.5	-0.4	
	comp=N,20nm,0.3s								
PKIN	Phulchoki	47.13	307	eP		P	18 33 02.0	-0.6	
	comp=N,5.4nm,0.4s								
KKN	Kakani	47.31	308	eP		P	18 33 03.9	-0.1	
	comp=N,5.5nm,0.3s								
GKN	Gorkha	47.92	308	eP		P	18 33 08.3	-0.3	
	comp=N,5.1nm,0.3s								
KLR	Kul'dur	47.97	5	P		P	18 33 08.5	+0.1	
	comp=N,2.9nm,0.6s,baz=218,slow=3.3,SNR=11								

HIA	Hailar	48.12	354	eP		P	18 33 09.5	-0.2	
HIA					pmax	pmax			
	comp=Z,5.0nm,1.1s								
KOLN	Koldanda	48.64	307	eP		P	18 33 13.1	-1.2	
	comp=Z,17nm,0.5s								
PYUN	Piuthan	49.27	307	eP		P	18 33 18.3	-0.8	
	comp=Z,21nm,0.5s								
SONA0	Songino Array	49.48	342	eP		P	18 33 20.2	-0.1	
	comp=Z,2.5nm,1.0s								
SONA0				ePcP		PcP	18 34 42.7	+1.1	
SONM	Songino Array	49.48	342	P		P	18 33 20.2	-0.1	
	comp=Z,1.0nm,0.5s,baz=159,slow=9.7,SNR=8.0								
SONM				PcP		PcP	18 34 42.7	+1.1	
	comp=Z,1.5nm,0.8s,baz=154,slow=3.1,SNR=4.8								
SONA1	Songino Array	49.49	342	eP		P	18 33 20.6	+0.3	
SONA1				ePcP		PcP	18 34 42.4	+0.7	
WMQ	Urumqi	54.51	326	eP		P	18 34 00.0	+2.3	
WMQ				pP		sP	18 34 20.0	+1.7	
WMQ				pmax		pmax			
	comp=Z,11nm,0.7s								
WMQ				pmax		pmax			
	comp=Z,170nm,7.4s								
PEA0	Petropavlovsk-	57.80	22	eP		P	18 34 22.1	+1.3	
PEA0				ePcP		PcP	18 35 13.6	+0.6	
PEA0B	Petropavlovsk-	57.80	22	eP		P	18 34 22.3	+1.4	
	comp=Z,12nm,1.0s								
PETK	Petropavlovsk-	57.80	22	P		P	18 34 22.6	+1.8	
	comp=Z,3.4nm,0.6s,baz=180,slow=5.6,SNR=17								
PEA1	Petropavlovsk-	57.80	22	eP		P	18 34 22.6	+1.7	
PDGK	Podgornoye	59.07	322	P		P	18 34 30.3	+0.4	
PDGK				pmax		pmax			
	comp=Z,5.0nm,1.1s								
MK01	Makanchi Array	59.33	326	eP		P	18 34 30.6	-1.1	
MK01				ePcP		PcP	18 35 19.1	-0.2	
MK31	Makanchi Array	59.35	326	P		P	18 34 30.7	-1.1	
MK31				pmax		pmax			
	comp=Z,2.0nm,0.4s								
MK31	Makanchi Array	59.35	326	eP		P	18 34 30.9	-0.9	
MK31				ePcP		PcP	18 35 19.1	-0.3	
MK32	Makanchi Array	59.35	326	eP		P	18 34 31.2	-0.7	
MK32				ePcP		PcP	18 35 19.6	+0.3	
MKAR	Makanchi Array	59.35	326	P		P	18 34 31.2	-0.7	
	comp=Z,3.7nm,0.4s,baz=120,slow=8.2,SNR=42								
MKAR				PcP		PcP	18 35 19.6	+0.3	
	comp=Z,2.6nm,0.7s,baz=120,slow=6.3,SNR=6.1								
MKAR	Makanchi Array	59.35	326	i P		P	18 34 31.0	-0.9	
MKAR				pmax		pmax			
	comp=Z,4.0nm,0.4s								
MKAR	Makanchi Array	59.35	326	eP		P	18 34 30.9	-0.9	
	comp=Z,44nm,0.6s								
MKAR				ePcP		PcP	18 35 18.8	-0.5	
KSH	Kashi	59.52	316	P		P	18 34 36.5	+3.2	
KSH				esP		sP	18 35 05.3	+11	
KSH				ePP		PP	18 36 50.5	+5.3	
KSH				S		S	18 42 38.8	-0.5	
KSH				ScS		ScS	18 44 15.5	-3.8	
KSH				pmax		pmax			
	comp=Z,65nm,3.9s								
MAKZ	Makanchi	59.53	326	eP		P	18 34 32.3	-0.8	
YAK	Yakutsk	60.63	2	eP		P	18 34 40.5	+0.3	
YAK				pmax		pmax			
	comp=Z,13nm,1.0s								
YAK	Yakutsk	60.63	2	eP		P	18 34 40.8	+0.6	
	comp=Z,13nm,0.8s								
MA2	Magadan	61.13	14	i P		P	18 34 44.6	+0.9	
TKM2	Tokmak 2	61.33	320	P		P	18 34 44.3	-1.4	
TKM2				pmax		pmax			
	comp=Z,3.0nm,0.9s								
AAK	Ala-Archa	61.92	319	eP		P	18 34 48.5	-1.1	
AAK				pmax		pmax			
	comp=Z,5.0nm,1.0s								
AAK	Ala-Archa	61.92	319	eP		P	18 34 48.5	-1.1	
	comp=Z,9.7nm,1.5s								
ZAA0	Zalesovo Array	62.59	334	eP		P	18 34 52.2	-1.3	
ZALV	Zalesovo Beam	62.59	334	P		P	18 34 52.5	-1.0	
	comp=Z,1.9nm,0.4s,baz=142,slow=7.1,SNR=9.7								
ZAA1	Zalesovo Array	62.59	334	eP		P	18 34 52.5	-1.1	
KBL	Kabul	62.73	309	eP		P	18 34 54.9	-0.3	
	comp=Z,4.6nm,0.8s								
MNAS	Manas	63.18	318	P		P	18 34 57.6	-0.4	
MNAS				pmax		pmax			
	comp=Z,6.0nm,1.1s								
SEY	Seymchan	64.46	13	i P		P	18 35 07.6	+1.8	
KK31	Karatay Array	64.77	318	i P		P	18 35 08.3	+0.1	
KK31				pmax		pmax			
	comp=Z,3.0nm,0.9s								
KKAR	Karatay Array	64.77	318	eP		P	18 35 08.1	-0.2	
	comp=Z,19nm,0.6s								
JOHN	Johnston Islan	64.85	72	eP		P	18 35 08.7	-0.5	
	comp=Z,143nm,1.0s								
OTUK	Ortayu	65.84	324	P		P	18 35 13.6	-1.5	
OTUK				pmax		pmax			
	comp=Z,5.0nm,1.1s								
BVA0	Borovoye Array	69.16	328	i P		P	18 35 34.5	-1.4	
BVA0				pmax		pmax			
	comp=Z,1.0nm,0.5s								
BRVK	Borovoye	69.23	328	i P		P	18 35 36.0	-0.3	
BRVK				pmax		pmax			
	comp=Z,11nm,0.8s								
BRVK	Borovoye	69.23	328	eP		P	18 35 35.2	-1.1	
	comp=Z,3.7nm,0.7s								
GSTR	Great Sitkin T	69.60	34	eP		P	18 35 35.9	-2.8	
BILL	Bilibino	71.97	15	eP		P	18 35 52.9	+0.1	
BILL				e			18 38 31.3		
BILL				ePPP		PPP	18 40 20.2		
BILL				pmax		pmax			
	comp=Z,4.0nm,1.1s								
GEYT	Alibeck	72.14	309	P		P	18 35 54.2	-0.2	
	comp=Z,2.6nm,0.7s,baz=151,slow=3.4,SNR=8.1								
NRIK	Noril'sk	72.69	347	P		P	18 35 57.5	+0.6	
	comp=Z,6.0nm,0.6s,baz=128,slow=6.1,SNR=5.6								
AB31	Akbulak array	73.80	321	P		P	18 36 03.3	-0.6	
AB31				pmax		pmax			
	comp=Z,3.0nm,0.7s								
ABKAR	Akbulak array	73.80	321	eP		P	18 36 03.1	-0.8	
	comp=Z,32nm,0.6s								
AKTO	Aktyubinsk	75.34	322	P		P	18 36 12.6	-0.2	
AKTO				pmax		pmax			
	comp=Z,6.0nm,0.7s								
SVE	Sverdlovsk	75.83	329	eP		P	18 36 15.8	+0.3	
ARU	Arti	76.79	328	c iP		P	18 36 20.5	-0.5	
ARU				*PP		sP	18 36 40.4	-1.7	
ARU							18 39 18.8		
ARU				S		S	18 46 02.6	-1.6	
ARU				pmax		pmax			
	comp=Z,16nm,1.7s								
ARU	Arti	76.79	328	eP		P	18 36 20.4	-0.5	
	comp=Z,6.7nm,0.6s								
SDPT	Sand Point	79.39	34	eP		P	18 36 36.0	+0.6	
	comp=Z,206nm,0.6s								
VNDA	Vanda	81.08	173	P		P	18 36 44.6	+0.5	
	comp=Z,1.6nm,0.6s,baz=315,slow=6.4,SNR=13								
VNDA	Vanda	81.08	173	eP		P	18 36 43.2	-0.8	
	comp=Z,3.0nm,1.0s								
MAW	Mawson	81.37	200	P		P	18 36 46.7	+0.9	
	comp=Z,2.0nm,0.6s,baz=98,slow=7.7,SNR=7.7								
MAW	Mawson	81.37	200	eP		P	18 36 46.3	+0.6	
	comp=Z,4.5nm,1.6s								
SVW2	Sparrevohn	83.09	29	eP		P	18 36 56.8	+1.8	
	comp=Z,8.7nm,0.8s								
TT01	Tatalina	83.20	27	eP		P	18 36 57.5	+2.1	
TTA	Tatalina	83.21	27	eP		P	18 36 56.9	+1.3	
	comp=Z,11nm,0.8s								
OHAK	Old Harbor	83.67	33	eP		P	18 36 59.5	+1.5	
	comp=Z,50nm,1.8s								
KDAK	Kodiak Island	84.12	32	i P		P	18 37 02.1	+1.9	
KDAK	Kodiak Island	84.12	32	eP		P	18 37 01.8	+1.6	
	comp=Z,11nm,0.8s								
RSO	Redoubt South	84.36	29	eP		P	18 37 02.3	+0.6	
KBZ	Khabaz	84.38	314	P		P	18 37 02.4	+0.5	
	comp=Z,2.6nm,0.7s,baz=90,slow=7.1,SNR=5.6								
KBZ	Khabaz	84.38	314	P		P	18 37 02.4	+0.5	
KBZ				pmax		pmax			
	comp=Z,2.0nm,0.5s								
KVAR	Kislovodsk Arr	84.54	314	P		P	18 37 03.9	+1.1	
	comp=Z,3.4nm,0.8s,baz=135,slow=4.3,SNR=3.5								
KIV	Kislovodsk	84.55	314	eP		P	18 37 04.0	+1.1	
	comp=Z,29nm,1.7s								
SPU	Mount Spurr	84.79	29	eP		P	18 37 04.6	+0.9	
CNPM	China Poot	85.01	30	eP		P	18 37 05.8	+1.0	
BRLK	Bradley Lake	85.21	30	eP		P	18 37 06.5	+0.7	
	comp=Z,15nm,0.8s								
SUA	Susitna One	85.45	29	eP		P	18 37 07.6	+0.5	
	comp=Z,10nm,0.8s								
VRH	Novokhopyorsk	85.63	321	eP		P	18 37 08.4	+0.4	
VRH					pmax	pmax			
	comp=Z,10.0nm,0.4s								
MLY	Manley	85.81	25	eP		P	18 37 09.3	+0.7	
	comp=Z,3.7nm,0.6s								
COLD	Coldfoot	86.25	23	eP		P	18 37 11.6	+0.9	
	comp=Z,5.9nm,1.0s								
CCB	Clear Creek Bu	87.03	25	eP		P	18 37 14.4	-0.2	
	comp=Z,9.1nm,1.5s								
VSR	Storozhevoye	87.24	321	eP		P	18 37 13.9	-2.0	
VSR				pmax		pmax			
	comp=Z,7.0nm,1.0s								
KLMR	Klimovskoe	87.33	331	eP		P	18 37 11.4	-4.7	
KLMR				pmax		pmax			
	comp=Z,3.0nm,0.6s								
IL1	Eielson Array	87.43	25	eP		P	18 37 15.4	-1.2	
ILAR	Eielson Array	87.43	25	P		P	18 37 16.0	-0.5	
	comp=Z,1.3nm,0.6s,baz=246,slow=5.0,SNR=13								
ILB	Eielson Array	87.43	25	eP		P	18 37 16.1	-0.5	
OBN	Obninsk	88.83	325	ceP		P	18 37 22.6	-0.7	
OBN				e			18 40 51.6		
OBN				eS		S	18 48 01.1	-5.5	
OBN				pmax		pmax			
	comp=Z,6.0nm,0.5s								
OBN				MLR		MLR			
	comp=Z,386nm,19.0s								
ASF	Jabal al Asfar	88.87	302	P		P	18 37 24.7	+0.5	
	comp=Z,2.5nm,0.5s,baz=48,slow=6.4,SNR=6.4								
KMBO	Kilima Mbogo	89.15	269	P		P	18 37 27.4	+1.4	
	comp=Z,0.7nm,0.4s,baz=81,slow=19,SNR=3.4								
KMBO	Kilima Mbogo	89.15	269	eP		P	18 37 27.4	+1.4	
	comp=Z,4.2nm,1.1s								
MMAI	Mount Meron Ar	90.11	303	P		P	18 37 30.5	+0.5	
	comp=Z,1.4nm,0.5s,baz=76,slow=10,SNR=3.7								
DAWY	Dawson	90.70	26	eP		P	18 37 32.4	+0.5	
	comp=Z,20nm,1.9s								
BR101	Keskin Array S	91.28	310	eP		P	18 37 34.6	-0.7	
BRTR	Keskin Array B	91.28	310	P		P	18 37 34.7	-0.7	
	comp=Z,0.3nm,0.4s,baz=112,slow=6.4,SNR=3.4								
BR231	Keskin MP Arra	91.94	310	eP		P	18 37 35.0	-3.4	
FIA0	FINESS Array S	93.79	332	eP		P	18 37 47.9	+1.7	
FINES	FINESS Array B	93.79	332	P		P	18 37 47.9	+1.7	
	comp=Z,1.4nm,0.5s,baz=90,slow=3.8,SNR=3.5								
WRAK	Wrangell Islan	95.16	33	eP		P	18 37 51.8	-0.8	
	comp=Z,34nm,1.4s								
MLR	Muntele Rosu	96.39	316	P		P	18 38 00.6	+2.0	
	comp=Z,0.2nm,0.6s,baz=28,slow=4.1,SNR=5.6								
BUR08	Bucovina Ar. S	96.57	318	eP		P	18 37 58.8	-0.6	
HFS	Hagfors	99.98	332	P		Pdif	18 38 15.8	+1.5	
	comp=Z,1.2nm,0.9s,baz=108,slow=3.2,SNR=5.1								
TORD	Torodi Ar. Bea	123.30	287	PKP		PKPdf	18 43 27.7	+0.5	
	comp=Z,2.4nm,0.8s,baz=56,slow=2.2,SNR=11								
TOA1	Torodi Ar. Sit	123.30	287	ePKPdf		PKPdf	18 43 27.7	+0.5	
LTX	Lajitas	123.34	53	ePKPdf		PKPdf	18 43 28.1	+1.0	
TXAR	Lajitas Array	123.34	53	PKP		PKPdf	18 43 28.1	+1.0	
	comp=Z,0.5nm,0.8s,baz=343,slow=0.9,SNR=3.8								

IDC 26 18:26:58.7±7.6, 24.02N×108.80W, h0km, mb3.6/1, mb1 3.7/3, mb1mx3.5/40, mbtmpg3.2/3, ML3.9/2, Error ellipse: s-maj=145.0km s-min=28.5km az=152.0, Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LPIG	La Paz	1.39	274	Pg		Pg	18 27 23.7	-1.6
	29nm,0.3s,baz=207,slow=7.5,SNR=8.8							
LPIG				Lg		Lg	18 27 37.5	
	73nm,0.3s,baz=198,slow=19,SNR=23							
TXAR	Lajitas Array	7.00	40	Pn		Pn	18 28 42.7	+0.1
	0.2nm,0.3s,baz=225,slow=13,SNR=12							
TXAR				Sn		Sn	18 29 57.5	-5.6
	0.5nm,0.3s,baz=260,slow=13,SNR=11							
TXAR				Lg		Lg	18 30 35.0	
	0.3nm,0.3s,baz=240,slow=18,SNR=4.1							
PDAR	Pinedale Array	18.71	358	P		P	18 31 17.6	-1.4
	0.1nm,0.3s,baz=182,slow=12,SNR=3.7							
ILAR	Eielson Array	47.61	339	P		P	18 35 37.3	+1.2
	0.8nm,0.9s,baz=143,slow=6.4,SNR=8.4							

MEX 26 18:31:49.9±0.4, 15.89N×96.73W, h43km±11km, MD3.9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PANG	Puerto Angel	0.34	132	eP		Pn	18 31 57.1	-1.6
PANG				eS		Sn	18 32 03.2	-1.8
HUIG	Huatulco	0.61	102	eP		Pn	18 32 00.5	-1.7
HUIG				eS		Sn	18 32 09.1	-1.9
OXBJ	Oaxaca	1.17	0	eP		Pn	18 32 08.3	-1.7
VHO	Vista Hermosa	1.17	360	eP		Pn	18 32 08.4	-1.6
VHO				eS		Sn	18 32 21.8	-3.2

*IDC **26** 18:57:10.6±1.1, 24.96N×109.49W, h0km, mb4.2/9, mb1 4.4/12, mb1mx4.1/40, mbtmp4.1/12, ML4.3/3, Error ellipse: s-maj=26.7km s-min=13.5km az=129.0*
*ISCJB **26** 18:57:11.6±0.3, 24.91N±0.03×109.60W±0.02, h17km, mb4.5/62, Error ellipse: s-maj=4.1km s-min=2.5km az=8.8*
*NEIC **26** 18:57:11.3±0.4, 24.83N×109.51W, h10km, mb4.3/112, Error ellipse: s-maj=5.3km s-min=4.0km az=200.0*
*MEX **26** 18:57:13.6±0.5, 25.

	baz=142								
X16A	Lo Mia Camp, P	9.65	351	*e*Pn	Pn	18 59 29.6	-1.2		
LAZ	Ladron	9.73	12	*e*Pn	Pn	18 59 29.0	-2.9		
LPM	Los Pinos Moun	9.75	15	*e*Pn	Pn	18 59 30.4	-1.8		
Y12C	Blythe	9.85	335	P	Pn	18 59 34.2	+0.9		
	baz=153								
Y12C	Blythe	9.85	335	*e*Pn	Pn	18 59 34.7	+1.5		
BAR	Barrett	9.96	323	*e*Pn	Pn	18 59 34.1	-0.8		
MONP2	Monument Peak	9.99	325	P	Pn	18 59 35.3	-0.2		
	baz=141								
BC3	Big Chuckawall	10.14	331	P	Pn	18 59 39.2	+1.7		
	baz=148								
PDMCI	Parker Dam,Lak	10.20	338	P	Pn	18 59 38.3	+0.2		
	baz=156								
W18A	Petrified Fore	10.22	359	P	Pn	18 59 38.1	-0.4		
	baz=179,SNR=9.4								
W18A	Petrified Fore	10.22	359	*e*Pn	Pn	18 59 39.7	+1.2		
ANMO	Albuquerque	10.40	14	P	Pn	18 59 42.4	+1.3		
	baz=195								
ANMO	Albuquerque	10.40	14	*e*Pn	Pn	18 59 41.9	+0.9		
IRM	Iron Mountain	10.45	334	P	Pn	18 59 42.1	+0.5		
	baz=151								
TPFO	Pinon Flats	10.57	327	P	Pn	18 59 44.5	+1.1		
	baz=144								
PFO	Pinyon Flats O	10.58	327	Pn	Pn	18 59 45.0	+1.5		
	0.2nm,0.3s,baz=176,slow=10,SNR=4.6								
PFO	Pinyon Flats O	10.58	327	*e*Pn	Pn	18 59 45.0	+1.5		
BELC	Belle Mtn. Jos	10.68	330	P	Pn	18 59 45.5	+0.6		
	baz=147								
WUAZ	Wupatki	10.73	352	P	Pn	18 59 45.8	+0.3		
	baz=171,SNR=6.0								
WUAZ	Wupatki	10.73	352	*e*Pn	Pn	18 59 46.7	+1.2		
NEE2	Needles Airpor	10.79	337	P	Pn	18 59 47.2	+1.0		
	baz=155								
KVTX	Kingsville	10.83	73	*e*Pn	Pn	18 59 44.9	-1.8		
MSTX	Muleshoe	10.83	32	*e*Pn	Pn	18 59 48.1	+1.2		
W13A	Hualapai Mount	10.86	341	*e*Pn	Pn	18 59 49.2	+1.9		
GMRC	Granite Mounta	11.20	333	P	Pn	18 59 51.8	-0.2		
	baz=150								
LDFC	Landfair	11.24	336	*e*Pn	Pn	18 59 55.2	+2.7		
U15A	North Rim	11.76	349	*e*Pn	Pn	19 00 01.8	+2.1		
TUQ	Turquoise Moun	11.87	334	P	Pn	19 00 02.4	+1.2		
	baz=151								
MWC	Mount Wilson	11.88	324	*e*Pn	Pn	18 59 59.6	-1.8		
PASC	Pasadena Art C	11.91	323	*e*Pn	Pn	18 59 58.5	-3.1		
SNCC	San Nicolas Is	12.05	316	*e*Pn	Pn	19 00 01.7	-1.8		
AMTX	Amarillo	12.10	33	*e*Pn	Pn	19 00 03.9	-0.3		
GSC	Goldstone, Bar	12.13	331	P	Pn	19 00 05.5	+0.8		
	baz=147								
GSC	Goldstone, Bar	12.13	331	*e*Pn	Pn	19 00 07.1	+2.4		
MVCO	Mesa Verde	12.34	4	P	Pn	19 00 08.1	+0.5		
	baz=184								
MVCO	Mesa Verde	12.34	4	*e*Pn	Pn	19 00 07.3	-0.3		
SHOC	Shoshone, Teco	12.42	334	P	Pn	19 00 09.7	+1.2		
	baz=150								
KNB	Kanab	12.42	348	*e*Pn	Pn	19 00 10.1	+1.4		
LCMT	Little Creek M	12.51	346	*e*Pn	Pn	19 00 11.1	+1.3		
SHPR	Sheep Range	12.55	339	*e*Pn	Pn	19 00 12.0	+1.5		
LRMC	Laurel Mtn Rad	12.68	328	P	Pn	19 00 13.8	+1.6		
	baz=144								
PKCU	Pink Cliffs	12.75	350	*e*Pn	Pn	19 00 16.5	+3.1		
T25A	Trinidad	13.01	19	P	Pn	19 00 18.1	+1.4		
	baz=201								
T25A	Trinidad	13.01	19	*e*Pn	Pn	19 00 17.6	+0.9		
SZCU	Shurtz Canyon	13.04	348	*e*Pn	Pn	19 00 19.3	+2.2		
CCUT	Cedar City	13.05	347	*e*Pn	Pn	19 00 20.0	+2.7		
S22A	4UR Ranch, Cre	13.05	10	P	Pn	19 00 19.7	+2.3		
	baz=191								
S22A	4UR Ranch, Cre	13.05	10	*e*Pn	Pn	19 00 19.6	+2.2		
X32A	Elmer	13.06	41	P	Pn	19 00 17.7	+0.5		
	baz=225								
MPMC	Manual Prospec	13.07	330	P	Pn	19 00 19.3	+1.7		
	baz=146,SNR=12								
FURC	Furnace Creek,	13.14	333	P	Pn	19 00 19.9	+1.5		
	baz=150								
PV05	Paradox Valley	13.18	2	*e*Pn	Pn	19 00 19.5	+0.5		
ISA	Isabella, Lake	13.21	327	P	Pn	19 00 20.5	+1.1		
	baz=142								
ISA	Isabella, Lake	13.21	327	*e*Pn	Pn	19 00 19.6	+0.2		
PV01	Paradox Valley	13.25	3	*e*Pn	Pn	19 00 20.6	+0.5		
DAC	Darwin (Calif)	13.29	331	*e*Pn	Pn	19 00 23.5	+2.9		
SDCO	Great Sand Dun	13.30	14	P	Pn	19 00 22.5	+1.7		
	baz=196,SNR=5.2								
SDCO	Great Sand Dun	13.30	14	*e*Pn	Pn	19 00 22.6	+1.9		
MTPU	Mount Pierson	13.32	351	*e*Pn	Pn	19 00 24.6	+3.5		
TPNV	Topopah Spring	13.33	336	P	Pn	19 00 22.7	+1.6		
	baz=153,SNR=5.9								
TPNV	Topopah Spring	13.33	336	*e*Pn	Pn	19 00 24.2	+3.2		
PV10	Paradox Valley	13.47	2	*e*Pn	Pn	19 00 23.4	+0.3		
W32A	Sentinel	13.58	39	P	Pn	19 00 24.7	+0.4		
	baz=224								
WMOK	Wichita Mounta	13.58	41	P	Pn	19 00 24.9	+0.6		
	baz=226								
WMOK	Wichita Mounta	13.58	41	*e*Pn	Pn	19 00 24.8	+0.5		
PV09	Paradox Valley	13.59	1	*e*Pn	Pn	19 00 24.3	-0.5		
CWC	Cottonwood Cre	13.65	330	P	Pn	19 00 27.1	+1.6		
	baz=145								
VES	Vestal, Richgr	13.66	325	P	Pn	19 00 26.8	+1.4		
	baz=141								
MSU	Marysvale	13.78	351	*e*Pn	Pn	19 00 30.1	+2.8		
GRAC	Grapevine Rang	13.80	333	P	Pn	19 00 28.3	+0.8		
	baz=149								
TCRU	Three Creeks R	13.91	351	*e*Pn	Pn	19 00 30.6	+1.5		
PSUT	Pine Spring	14.10	346	*e*Pn	Pn	19 00 31.8	+0.2		
V32A	Arapaho	14.12	38	P	Pn	19 00 32.9	+1.2		
	baz=222								
DCD	Diablo Creek	14.18	319	*e*Sn	Sn	19 03 00.9	-8.6		
SRU	San Rafael Swe	14.22	357	*e*Pn	Pn	19 00 33.8	+0.5		
R11A	Troy Canyon, C	14.38	341	P	Pn	19 00 37.1	+1.7		
	baz=157,SNR=8.7								
R11A	Troy Canyon, C	14.38	341	*e*Pn	Pn	19 00 35.6	+0.2		
SMCO	Snowmass	14.44	8	*e*Pn	Pn	19 00 37.8	+1.4		
TMUT	Trail Mountain	14.45	355	*e*Pn	Pn	19 00 37.9	+1.3		
Q24A	Divide	14.54	14	P	Pn	19 00 38.8	+1.0		
	baz=196								
Q24A	Divide	14.54	14	*e*Pn	Pn	19 00 38.5	+0.7		
P17A	Butcher Ranch,	14.60	356	*e*Pn	Pn	19 00 38.3	-0.1		
U32A	Winter Ranch,	14.63	36	P	Pn	19 00 39.6	+0.8		
	baz=221								
P18A	Preston Nutter	14.73	358	*e*Pn	Pn	19 00 40.9	+0.5		
MLAC	Mammoth, Mammo	14.97	330	P	Pn	19 00 45.1	+1.6		
	baz=146								
W35A	Tecumseh	15.02	44	P	Pn	19 00 45.0	+1.0		
	baz=230								
NLU	North Lily Min	15.19	353	*e*Pn	Pn	19 00 45.5	-0.9		
	8.6nm,1.3s								
MPU	Maple Canyon	15.20	354	*e*Pn	Pn	19 00 47.1	+0.6		
	11nm,1.0s								
ISCO	Idaho Springs	15.26	12	P	Pn	19 00 48.1	+0.7		
	baz=194								
ISCO	Idaho Springs	15.26	12	*e*Pn	Pn	19 00 48.1	+0.7		
	6.8nm,0.8s								
O20A	White River Ci	15.26	4	P	Pn	19 00 48.3	+0.9		
	baz=184								
O20A	White River Ci	15.26	4	*e*Pn	Pn	19 00 47.2	-0.2		
	32nm,1.0s								
KSCO	Kaye Shedlock'	15.28	21	*e*Pn	Pn	19 00 47.8	+0.3		
	31nm,1.4s								
T32A	Huddler Ranch,	15.28	34	P	Pn	19 00 47.8	+0.3		
	baz=219								
W36A	Watumka	15.43	45	P	Pn	19 00 50.6	+1.2		
	baz=232								
V35A	Meyer Ranch, C	15.44	42	P	P	19 00 52.4	-1.5		
	baz=228								
U34A	Anderson Ranch	15.48	39	P	Pn	19 00 52.3	+2.2		
	baz=225								
U34A	Anderson Ranch	15.48	39	*e*Pn	Pn	19 00 50.0	-0.1		
	22nm,0.9s								
DUG	Dugway, Tooele	15.52	351	P	P	19 00 54.5	-0.5		
	baz=169,SNR=13								
DUG	Dugway, Tooele	15.52	351	*e*Pn	Pn	19 00 51.1	+0.3		
	21nm,1.1s								
TVH2	Borealis Mine	15.56	332	*e*Pn	Pn	19 00 51.2	-0.1		
	9.9nm,0.4s								
T33A	Patterson Ranc	15.56	36	P	Pn	19 00 53.1	+2.0		
	baz=221								
TVH3	East Aurora ar	15.57	332	*e*Pn	Pn	19 00 52.3	+0.9		
	17nm,1.3s								
TVH1	TV Hill, Hawth	15.63	332	*e*Pn	Pn	19 00 53.6	+1.3		
	44nm,1.6s								
X37A	Clayton	15.67	49	P	Pn	19 00 54.2	+1.6		
	baz=235								
CMIG	Matias Romero	15.74	117	Pn	P	19 00 58.7	+1.2		
	0.2nm,0.3s,baz=273,slow=22,SNR=5.6								
JLU	Jordanelle	15.77	355	*e*Pn	Pn	19 00 55.0	+1.0		
	47nm,1.9s								
CTU	Camp Tracy	15.88	354	*e*Pn	Pn	19 00 55.8	+0.3		
	40nm,0.9s								
W37B	Quinton	15.95	47	P	Pn	19 00 58.1	+1.9		
	baz=234								
WAKR	Walker	15.96	331	*e*Pn	Pn	19 00 57.9	+1.4		
	30nm,1.5s								
CMB	Columbia Colle	16.02	328	*e*Pn	Pn	19 00 57.7	+0.6		
	13nm,1.4s								
T34A	McClaskey Farm	16.10	38	P	Pn	19 00 59.8	+1.8		
	baz=224								
CBKS	Cedar Bluff	16.21	29	P	P	19 01 02.0	-0.5		
	baz=213								
CBKS	Cedar Bluff	16.21	29	*e*Pn	Pn	19 00 58.7	-0.8		
	91nm,1.3s								
Y39A	Lockesburg	16.22	53	P	Pn	19 01 01.6	+1.9		
	baz=240								
N23A	Red Feather La	16.27	10	P	P	19 01 02.9	-0.6		
	baz=192								
N23A	Red Feather La	16.27	10	*e*Pn	Pn	19 01 01.4	+1.0		
	15nm,1.3s								
BGU	Big Grassy Mou	16.27	351	*e*Pn	Pn	19 01 02.1	+1.8		
	16nm,1.2s								
YERR	Yerington	16.27	332	*e*Pn	Pn	19 01 01.6	+1.2		
	34nm,1.3s								
TCUT	Toone Canyon	16.28	355	*e*Pn	Pn	19 01 01.3	+0.8		
	25nm,0.9s								
R32A	Long Quarter,	16.36	32	P	P	19 01 04.0	-0.2		
	baz=217								
T35A	Sooner Cattle	16.41	40	P	P	19 01 04.6	-0.1		
	baz=226								
X39A	Fountain Ranch	16.50	51	P	P	19 01 05.4	-0.4		
	baz=238								
PNTR	Pine Nut	16.51	332	*e*Pn	P	19 01 05.9	-0.3		
	38nm,1.1s								
W38A	Poteau	16.52	49	P	P	19 01 05.7	-0.2		
	baz=236								
SPUT	South Promonto	16.57	352	*e*Pn	Pn	19 01 05.6	+1.4		
	19nm,1.1s								
V37A	Hulbert	16.58	45	P	Pn	19 01 05.7	+1.5		
	baz=232								
R33A	Olander Ranch,	16.62	34	P	Pn	19 01 06.2	+1.5		
	baz=219								
S34A	Willow Spring	16.63	37	P	Pn	19 01 06.1	+1.4		
	baz=223								
PHWY	Pilot Hill	16.74	11	*e*Pn	Pn	19 01 06.6	+0.1		
	15nm,1.1s								
HWUT	Hardware Ranch	16.77	355	*e*Pn	Pn	19 01 07.7	+0.9		
	20nm,1.0s								
BMN	Battle Mountai	16.79	339	*e*Pn	Pn	19 01 08.1	+1.2		
	25nm,1.4s								
Y40A	Okolona	16.85	54	P	Pn	19 01 08.5	+0.9		
	baz=241								
T36A	Boggs Farm, Ca	16.88	41	P	Pn	19 01 09.1	+1.2		
	baz=227								
Q32A	Meitler Ranch,	16.88	31	P	P	19 01 10.1	+0.2		
	baz=216								
MIAR	Mount Ida	16.90	52	*e*Pn	P	19 01 10.0	-0.2		
	6.3nm,1.0s								
U37A	Salina	16.92	44	P	Pn	19 01 09.9	+1.4		
	baz=231								
PAHR	Pah Rah Range	16.94	333	*e*Pn	P	19 01 10.5	-0.3		
	8.4nm,1.0s								
R34A	Isabella, Hill	17.00	35	P	Pn	19 01 10.0	+0.5		
	baz=221								
AFDM	Forest Hills D	17.02	328	*e*Pn	P	19 01 11.2	-0.4		
	7.2nm,1.2s								
V38A	Canehill	17.05	46	P	P	19 01 11.8	0.0		
	baz=234								
S35A	Otter Creek Ra	17.05	38	P	P	19 01 12.1	+0.3		
	baz=225								
HVU	Hansel Valley	17.07	352	*e*Pn	P	19 01 11.9	-0.3		
	28nm,1.4s								
W39A	Mazine	17.09	49	P	P	19 01 12.4	+0.1		
	baz=237								
Q33A	Connelly Farm,	17.23	32	P	Pn	19 01 13.4	+1.0		
	baz=218								
P32A	Huiting Farm,	17.37	30	P	P	19 01 15.6	+0.2		
	baz=215								
X40A	Basin Creek Fa	17.40	53	P	Pn	19 01 15.3	+0.8		
	baz=241								
U38A	Gravette	17.41	45	P	Pn	19 01 15.1	+0.5		
	baz=232								
S36A	Lake Cedric, C	17.50	40	P	Pn	19 01 15.8	+0.1		
	baz=226								
T37A	Cheneyville 18	17.50	42	P	Pn	19 01 16.2	+0.5		
	baz=230								
O31A	Woolen Ranch,	17.50	27	P	Pn	19 01 16.6	+0.9		
	baz=212								
V39A	Pettigrew	17.54	48	P	Pn	19 01 16.6	+0.3		
	baz=235								
R35A	Emoria Munici	17.57	37	P	P	19 01 18.0	+0.4		
	baz=224								
W40A	Ferguson Farm,	17.59	50	P	Pn	19 01 17.8	+1.0		
	baz=238								
Q34A	Chapman	17.62	34	P	P	19 01 18.3	+0.2		
	baz=221								
P33A	Williams Farm,	17.64	32	P	P	19 01 18.7	+0.3		
	baz=218								
GARM	Arbuckle	17.66	326	*e*Sn	Sn	19 04 28.8	-5.4		
ORV	Oroville	17.75	328	*e*Pn	P	19 01 19.7	+0.1		
	7.1nm,1.1s								
T38A	Diamond	17.83	44	P	Pn	19 01 20.8	+0.9		
	baz=231								
GSGM	Seigler Mounta	17.84	325	*e*Sn	Sn	19 04 36.8	-1.5		
GDXM	Geysers	17.84	324	*e*Pn	Pn	19 01 18.3	-1.6		
	23nm,1.5s								
BW06	Boulder Array	17.85	0	P	Pn	19 01 20.5	+0.2		
	baz=180,SNR=21								
BW06	Boulder Array	17.85	0	*e*Pn	Pn	19 01 19.5	-0.8		
PD31	Pinedale Array	17.85	0	*e*Pn	Pn	19 01 19.2	-1.0		
PDAR	Pinedale Array	17.85	0	P	Pn	19 01 20.3	0.0		
	0.3nm,0.3s,baz=167,slow=9.1,SNR=59								
PDAR				Lg	Lg	19 06 35.3			
	0.2nm,0.3s,baz=208,slow=38,SNR=2.6								
AHID	Auburn Hatcher	17.89	356	*e*Pn	Pn	19 01 20.8	0.0		
	21nm,1.4s								
K22A	Casper	17.91	7	P	Pn	19 01 21.3	+0.3		
	baz=189								
K22A	Casper	17.91	7	*e*Pn	Pn	19 01 20.6	-0.4		
	12nm,1.0s								
KSU1	Kansas State U	17.93	35	P	Pn	19 01 21.8	+0.8		
	baz=221								
KSU1	Kansas State U	17.93	35	*e*Pn	Pn	19 01 21.1	+0.1		
	11nm,0.7s								
R36A	Gordon, Harris	17.96	38	P	Pn	19 01 22.0	+0.6		
	baz=225								
U39A	Green Forest	17.96	47	P	Pn	19 01 21.8	+0.3		
	baz=234								
S37A	Fort Scott	17.97	41	P	Pn	19 01 21.9	+0.4		
	baz=228,SNR=6.0								
O32A	Brockman Farm,	18.04	29	P	Pn	19 01 22.9	+0.6		
	baz=215								
Q35A	Mercer Eighty,	18.05	36	P	P	19 01 23.3	+0.5		
	baz=223,SNR=5.1								
X301	Greenbrier Sit	18.08	51	*e*Pn	Pn	19 01 23.2	+0.3		
	29nm,1.6s								
X201	Greenbrier Sit	18.14	51	*e*Pn	Pn	19 01 22.8	-0.8		
	44nm,1.8s								
P34A	Walnut Farm, R	18.15	33	P	P	19 01 24.7	+0.7		
	baz=220								
WHAR	Wooly Hollow	18.19	51	*e*Pn	P	19 01 25.0	+0.6		
	16nm,1.2s								
O33A	Hebron	18.20	31	P	P	19 01 25.3	+0.7		
	baz=217								
R37A	Teagarden Farm	18.34	40	P	P	19 01 26.2	+0.2		
	baz=227,SNR=6.1								
U40A	Yellville	18.36	48	P	P	19 01 26.8	+0.4		
	baz=236								
T39A	Clever	18.40	45	P	P	19 01 26.6	-0.2		
	baz=233								
CCIG	Comitan	18.41	114	*e*P	P	19 01 25.8	-1.4		
	16nm,0.4s								
Q36A	Arnold C. Orve	18.43	37	P	Pn	19 01 28.1	+0.9		
	baz=224								
S38A	Stockton	18.44	43	P	Pn	19 01 28.3	+1.0		
	baz=230								
N32A	Stulken Farm,	18.44	28	P	Pn	19 01 28.1	+0.7		
	baz=214								
REDW	Red Top Meadow	18.48	357	*e*P	P	19 01 27.9	+0.1		
	8.9nm,1.0s								
O03D	Paynes Creek	18.48	329	P	Pn	19 01 29.1	+1.2		
	baz=143,SNR=5.6								
V41A	Mountainview	18.53	50	P	P	19 01 28.5	+0.3		
	baz=238								
P35A	Duane Minner,	18.55	35	P	Pn	19 01 29.4	+0.8		
	baz=222								
SNOW	Snow King Moun	18.57	357	*e*P	P	19 01 29.0	+0.1		
	14nm,0.4s								
TPAW	Teton Pass	18.61	357	*e*P	P	19 01 28.1	-1.1		
	14nm,1.2s								
M31A	Lambtecht Ranc	18.65	26	P	Pn	19 01 30.4	+0.6		
	baz=211								
245A	Little AP, Sta	18.71	63	P	P	19 01 30.7	+0.6		
	baz=252								
O34A	Beatrice	18.71	32	P	P	19 01 30.4	+0.3		
	baz=219								
LOHW	Long Hollow	18.72	358	*e*P	P	19 01 30.8	+0.4		
	20nm,1.5s								
R38A	Fenwick Farm,	18.80	41	P	P	19 01 31.5	+0.5		
	baz=229,SNR=5.2								
S39A	Bolivar	18.84	43	P	P	19 01 31.8	+0.2		
	baz=232								
MOOW	Moose Ponds	18.86	357	*e*P	P	19 01 31.6	-0.4		
	30nm,2.0s								
Q37A	Longview Farm,	18.94	39	P	Pn	19 01 34.0	+0.7		
	baz=227								
U41A	Viola	18.99	49	P	P	19 01 34.2	+0.9		
	baz=238								
IMW	Indian Meadow	19.02	357	*e*P	Pn	19 01 34.9	+0.4		
	16nm,1.0s								
T40A	Mansfield	19.03	46	P	Pn	19 01 35.2	+0.7		
	baz=234								
BGNE	Belgrade	19.04	27	P	P	19 01 34.2	+0.5		
	baz=213								
BGNE	Belgrade	19.04	27	*e*P	P	19 01 34.5	+0.8		
	57nm,1.1s								
P36A	Good Intent, A	19.04	36	P	P	19 01 34.6	+0.8		
	baz=223								
WVOR	Wild Horse Val	19.05	339	*e*P	Pn	19 01 35.2	+0.4		
	22nm,1.3s								
WDC	Whiskeytown Da	19.05	328	*e*P	P	19 01 34.2	+0.3		
	5.2nm,1.0s								
HLID	Hailey	19.07	349	P	Pn	19 01 35.3	+0.3		
	baz=166								
HLID	Hailey	19.07	349	*e*P	P	19 01 34.8	+0.6		
	8.3nm,1.0s								
V42A	Cord	19.08	51	P	Pn	19 01 35.2	+0.2		
	baz=240								
O35A	Humboldt	19.16	33	P	Pn	19 01 36.4	+0.5		
	baz=220								
MOD	Modoc Plateau	19.18	335	*e*P	Pn	19 01 37.0	+0.7		
	15nm,1.0s								
FLWY	Flagg Ranch	19.19	358	*e*P	Pn	19 01 36.5	0.0		
	16nm,1.0s								
MFID	Camas Ranch	19.20	346	*e*P	Pn	19 01 37.2	+0.7		
	15nm,1.4s								
S40A	Lebanon	19.31	45	P	P	19 01 37.2	+0.6		
	baz=233								
YPP	Pitchstone Pla	19.38	357	*e*P	P	19 01 36.6	-1.2		
	13nm,1.3s								
R39A	Chumby, Stover	19.41	42	P	P	19 01 38.9	+1.1		
	baz=231,SNR=6.9								
447A	Lucedale	19.41	68	P	P	19 01 38.3	+0.5		
	baz=257								
U42A	Revenden	19.46	50	P	Pn	19 01 40.3	+0.7		
	baz=239								
T41A	Mountain View	19.47	47	P	Pn	19 01 40.4	+0.6		
	baz=236								
Q38A	Cooks Store, C	19.48	40	P	Pn	19 01 40.0	+0.2		
	baz=228								
P37A	Lathrop	19.49	37	P	Pn	19 01 40.0	+0.1		
	baz=225								
K30A	Basset	19.57	22	P	Pn	19 01 41.4	+0.5		
	baz=208								
M33A	Taylor Creek F	19.58	29	P	P	19 01 40.7	+1.0		
	baz=215								
M04C	Macdoel	19.70	332	P	Pn	19 01 43.7	+1.1		
	baz=145,SNR=6.3								
RSSD	Black Hills	19.73	12	P	P	19 01 42.5	+0.9		
	baz=195								
RSSD	Black Hills	19.73	12	*e*P	P	19 01 41.4	-0.1		
	5.2nm,1.1s								
247A	Quitman	19.76	64	P	P	19 01 42.8	+1.2		
	baz=254								
YMR	Madison River	19.79	357	*e*P	P	19 01 42.0	-0.1		
	14nm,0.5s								
S41A	Jillco Farms,	19.79	46	P	P	19 01 43.2	+1.2		
	baz=235								
M34A	Aspy Farms, Fr	19.80	30	P	Pn	19 01 43.6	0.0		
	baz=217								
R40A	Maddies Statio	19.87	44	P	P	19 01 43.9	+1.1		
	baz=232								
YHB	Horse Butte	19.88	357	*e*P	P	19 01 43.0	-0.2		
	12nm,0.8s								
YHH	Holmes Hill	19.90	357	*e*P	P	19 01 41.7	-1.7		
	5.1nm,0.9s								
Q39A	Willow Grove F	19.91	41	P	Pn	19 01 44.8	-0.2		
	baz=229								
P38A	Dawn	19.97	39	P	P	19 01 44.3	+0.4		
	baz=227								
QLMT	Earthquake Lak	19.97	356	*e*P	P	19 01 45.1	+1.0		
L33A	Hoskins	20.03	28	P	P	19 01 45.9	+1.2		
	baz=214								
MCMT	McKenzie Canyo	20.09	353	*e*P	P	19 01 45.2	-0.3		
K05A	Summer Lake	20.11	335	*e*P	Pn	19 01 47.7	+0.2		
	27nm,1.3s								
K32A	Verdigre	20.16	26	P	P	19 01 46.5	+0.5		
	baz=212								
J30A	Dallas	20.19	22	P	P	19 01 47.2	+0.9		
	baz=207								
147A	Livingston	20.21	63	P	P	19 01 48.0	+1.4

G08A	Pilot Rock 8.5nm,1.2s	21.74	342	eP	P	19 02 03.8	+0.6	
WVT	Waverly 9.2nm,0.9s	21.79	54	eP	P	19 02 04.8	+1.2	
O41A	Passleys Farm, baz=231	21.84	41	P	P	19 02 05.5	+1.4	
P42A	Winchester baz=233	21.84	43	P	P	19 02 05.9	+1.7	
Q43A	New Douglas baz=236	21.88	45	P	P	19 02 05.3	+0.8	
I03D	Drain, OR baz=145	21.90	332	P	P	19 02 06.5	+1.8	
R44A	Waltonville baz=238	21.91	48	P	P	19 02 05.8	+0.9	
H32A	Carlson Farm, baz=210	21.94	24	P	P	19 02 05.6	+0.5	
LAO	LASA Array baz=188	21.94	6	P	P	19 02 05.6	+0.4	
LAO	LASA Array 35nm,1.4s	21.94	6	eP	P	19 02 04.0	-1.2	
F10A	Beach Ranch, E 15nm,1.0s	21.94	346	eP	P	19 02 05.3	+0.1	
M39A	Webster baz=226	21.99	37	P	P	19 02 08.0	+2.3	
L38A	Oak Wood Farm, baz=224	22.04	35	P	P	19 02 07.5	+1.3	
K37A	Belmond baz=221	22.16	32	P	P	19 02 07.1	-0.4	
MSO	Missoula baz=169,SNR=9.5	22.19	352	P	P	19 02 08.3	+0.3	
MSO	Missoula 15nm,1.0s	22.19	352	eP	P	19 02 07.3	-0.7	
CHMT	Chamberlain Mo	22.20	353	eP	P	19 02 08.2	+0.2	
G06A	Carlson Farm, 37nm,2.0s	22.20	339	eP	P	19 02 07.9	-0.1	
J36A	Seneca 1, Swea baz=219	22.26	30	P	P	19 02 09.4	+0.8	
Q44A	Meyer Farm, Va baz=237	22.30	46	P	P	19 02 10.7	+1.6	
H33A	Prehn Over Nor baz=212	22.35	25	P	P	19 02 10.0	+0.4	
G05D	Wamic, OR baz=151	22.44	338	P	P	19 02 11.3	+0.8	
SLMT	Seeley Lake	22.55	353	eP	P	19 02 12.1	+0.3	
J37A	Redenius Farm, baz=220,SNR=6.2	22.61	32	P	P	19 02 13.1	+0.7	
E09A	Wood Farm, Sta 12nm,1.1s	22.66	345	eP	P	19 02 11.4	-1.5	
H34A	Spellman Lake, baz=214	22.71	26	P	P	19 02 14.4	+1.0	
D26A	Manning baz=197	22.84	13	P	P	19 02 14.6	-0.1	
SWMT	Swartz Lake	22.87	352	eP	P	19 02 15.0	-0.1	
G33A	Ortonville baz=212	22.90	24	P	P	19 02 16.8	+1.5	
L40A	Anamosa baz=227	22.91	37	P	P	19 02 17.7	+2.3	
HAWA	Hanford 12nm,1.0s	22.91	342	eP	P	19 02 14.8	-0.6	
NEWO	Newport DOGAMI	22.95	333	eSn	Sn	19 06 45.7	+4.5	
K39A	Oelwein baz=225	23.00	35	P	P	19 02 16.9	+0.5	
HDIL	Hopedale baz=233	23.07	42	P	P	19 02 18.5	+1.4	
EGMT	Eagleton baz=179,SNR=6.6	23.11	360	P	P	19 02 18.2	+0.6	
EGMT	Eagleton 24nm,1.0s	23.11	360	eP	P	19 02 19.2	+1.6	
G03D	McMinnville, O baz=147	23.12	335	P	P	19 02 18.5	+0.9	
H35A	Sunnyside Ranc baz=216	23.13	28	P	P	19 02 19.3	+1.6	
I37A	Lemond, Waseca baz=220	23.22	31	P	P	19 02 19.2	+0.5	
G34A	Benson baz=213	23.25	26	P	P	19 02 19.6	+0.7	
BSMT	Bassoo Peak	23.31	351	eP	P	19 02 19.2	-0.5	
D08A	Wollman Farm, 7.8nm,0.9s	23.36	344	eP	P	19 02 19.2	-0.9	
H36A	Jessenland, He baz=218	23.42	29	P	P	19 02 21.1	+0.4	
F33A	5 Mile Ranch, baz=211	23.50	24	P	P	19 02 22.0	+0.6	
J39A	Decorah baz=224	23.54	34	P	P	19 02 22.3	+0.4	
I38A	Scanlan Farm, baz=222	23.75	32	P	P	19 02 25.2	+1.3	
TIGA	Tifton baz=260	23.80	68	P	P	19 02 26.0	+1.5	
F34A	Alexandria baz=214	23.85	25	P	P	19 02 25.7	+0.8	
H37A	Dierke Farm, C baz=220	23.88	30	P	P	19 02 26.2	+1.1	
C09A	Chrisman Ranch 10nm,1.2s	23.90	345	eP	P	19 02 24.5	-0.8	
LON	Longmire 18nm,1.1s	23.93	339	eP	P	19 02 25.2	-0.4	
DGMT	Dagmar baz=192	23.94	9	P	P	19 02 25.9	+0.3	
LTY	Liberty 9.1nm,1.4s	24.03	341	eP	P	19 02 26.3	-0.3	
CPCT	Cooper Cave 32nm,1.8s	24.03	58	eP	P	19 02 26.2	-0.4	
NEW	Newport 14nm,0.9s,baz=161,slow=11,SNR=17	24.10	348	P	P	19 02 26.8	-0.4	
NEW	Newport baz=163,SNR=9.6	24.10	348	eP	P	19 02 27.0	-0.1	
NEW	Newport 18nm,0.9s	24.10	348	eP	P	19 02 27.4	+0.2	
F35A	Swanville baz=215	24.18	26	P	P	19 02 28.4	+0.5	
MDND	Maddock baz=202	24.26	16	P	P	19 02 29.3	+0.7	
MDND	Maddock 22nm,0.9s	24.26	16	eP	P	19 02 28.5	-0.1	
SFIN	Lafayette baz=237	24.35	45	P	P	19 02 29.5	0.0	
SFIN	Lafayette 17nm,0.8s	24.35	45	eP	P	19 02 29.0	-0.5	
E03A	Lebam 26nm,0.9s	24.36	336	eP	P	19 02 27.7	-1.8	
D05A	Enumclaw 15nm,0.9s	24.37	339	eP	P	19 02 30.2	+0.6	
WALA	Waterton Lakes 26nm,1.1s	24.38	353	eP	P	19 02 29.4	-0.5	
F36A	Milaca baz=217,SNR=5.8	24.61	28	P	P	19 02 32.2	+0.4	
B08A	Colville Reser 58nm,1.9s	24.68	344	eP	P	19 02 32.0	-0.5	
TKL	Tuckaleechee C 0.9nm,0.3s,baz=238,slow=12,SNR=1.6	24.68	58	P	P	19 02 33.4	+0.8	
C31A	Landman Farms, baz=206	24.73	19	P	P	19 02 33.2	+0.3	
E35A	Pequot Lakes baz=214	24.82	25	P	P	19 02 34.0	+0.3	
NLWA	Neilton Lookou 24nm,1.6s	25.19	337	eP	P	19 02 40.8	+3.7	
SWID	South Whidbey	25.23	340	eP	P	19 02 37.8	+0.4	
E36A	McGregor baz=216	25.25	27	P	P	19 02 37.6	0.0	
D35A	Remer baz=214	25.39	25	P	P	19 02 38.0	-0.8	
B32A	Ashes, Strandq baz=208	25.63	20	P	P	19 02 39.4	-1.6	
D36A	Goodland baz=216	25.82	26	P	P	19 02 42.5	-0.2	
C35A	Jirik Farms, M baz=214	25.93	25	P	P	19 02 43.6	-0.1	
B34A	Aery, Baudette baz=212	26.34	23	P	P	19 02 47.5	0.0	
C36A	Pine Crest Far baz=216	26.41	26	P	P	19 02 48.1	-0.1	
C37A	Embarrass baz=217	26.65	27	P	P	19 02 50.2	-0.1	
EYMN	Ely baz=218	27.11	27	P	P	19 02 54.2	-0.3	
EYMN	Ely 4.3nm,0.9s	27.11	27	eP	P	19 02 53.7	-0.7	
ULM	Lac du Bonnet 4.0nm,1.0s,baz=214,slow=7.2,SNR=4.4	27.48	19	P	P	19 02 56.8	-0.9	
ULM	Lac du Bonnet 8.1nm,1.1s	27.48	19	eP	P	19 02 56.7	-0.9	
AAM	Ann Arbor 37nm,0.3s	27.56	44	eP	P	19 02 59.4	+0.9	
C39A	Grand Marais baz=220	27.60	29	P	P	19 02 58.2	-0.6	
EDM	Edmonton 20nm,1.3s	28.46	355	eP	P	19 03 06.7	+0.2	
SADO	Sadowa 17nm,1.3s	31.64	43	eP	P	19 03 33.1	-1.5	
PLVO	Plevna 14nm,1.2s	33.06	44	eP	P	19 03 47.1	0.0	
TRQ	Mont Tremblant	35.17	44	eP	P	19 04 05.9	+0.4	
GRTK	Grand Turk 103nm,1.0s	35.42	87	eP	P	19 04 07.3	-0.5	
FCC	Fort Churchill 19nm,1.2s	35.60	14	eP	P	19 04 08.3	-0.6	
HRV	Adam Dziewonsk 22nm,1.4s	35.84	51	eP	P	19 04 11.6	+0.5	
DLBC	Dease Lake 6.6nm,1.0s	36.55	342	eP	P	19 04 18.9	+1.8	
YKA	Yellowknife Ar 6.0nm,0.9s,baz=174,slow=8.0,SNR=40	37.77	356	P	P	19 04 27.5	+0.2	
YKB5	Yellowknife Ar	37.77	356	eP	P	19 04 26.3	-1.0	
YKW3	Yellowknife Ar 6.6nm,0.7s	37.83	356	eP	P	19 04 27.4	-0.5	
LMQ	La Malbaie 7.3nm,0.9s	38.36	44	eP	P	19 04 33.2	+0.7	
SCHQ	Schefferville 5.5nm,0.9s,baz=230,slow=5.2,SNR=5.4	43.36	35	P	P	19 05 13.1	-0.6	
SCHQ	Schefferville 9.8nm,1.1s	43.36	35	eP	P	19 05 13.3	-0.4	
DAWY	Dawson 6.5nm,0.8s	43.77	342	eP	P	19 05 18.3	+1.4	
EGAK	Eagle 4.3nm,0.8s	44.81	341	eP	P	19 05 25.7	+0.5	
INK	Inuvik 6.0nm,1.1s	45.82	348	eP	P	19 05 33.3	+0.2	
HDA	Harding Lake 33nm,1.8s	46.35	339	eP	P	19 05 36.8	-0.6	
RND	Reindeer 3.2nm,0.8s	46.38	337	eP	P	19 05 38.5	+0.8	
ILAR	Eielson Array 4.2nm,0.9s,baz=152,slow=6.9,SNR=17	46.57	339	P	P	19 05 40.5	+1.5	
ILB	Eielson Array	46.57	339	eP	P	19 05 39.7	+0.6	
MCK	McKinley 6.5nm,1.0s	46.60	337	eP	P	19 05 39.8	+0.4	
TRF	Thorofare Moun 8.6nm,0.7s	46.92	336	eP	P	19 05 43.0	+0.9	
CHGN	Chignik	47.12	325	eP	P	19 05 42.9	-0.5	
KTH	Kantishna Hill 5.6nm,0.8s	47.21	336	eP	P	19 05 45.3	+1.1	
FYU	Fort Yukon 9.3nm,0.8s	47.27	341	eP	P	19 05 45.1	+0.6	
PPLA	Purkeypile 7.4nm,0.7s	47.31	335	eP	P	19 05 46.6	+1.5	
BPAW	Bear Paw Mtn. 5.7nm,0.9s	47.55	337	eP	P	19 05 47.6	+0.8	
CAST	Castle Rocks 3.4nm,0.6s	47.56	336	eP	P	19 05 46.8	-0.1	
SVW2	Sparrevohn 4.1nm,1.0s	47.77	332	eP	P	19 05 49.1	+0.6	
SDPT	Sand Point 36nm,1.0s	47.89	323	eP	P	19 05 50.1	+0.6	
MLY	Manley 5.8nm,0.9s	48.01	338	eP	P	19 05 51.1	+0.7	
TT01	Tatalina	48.82	334	eP	P	19 05 56.9	+0.3	
TTA	Tatalina 2.9nm,0.9s	48.83	334	eP	P	19 05 57.1	+0.4	
COLD	Coldfoot 5.8nm,1.2s	49.19	340	eP	P	19 06 00.5	+1.2	
PPT	Papeete	57.43	227	eP	P	19 06 59.4	-1.2	
SUMG	Summit 21nm,1.7s	60.84	19	eP	P	19 07 24.6	+0.7	
PB10	IPOC Station P 115nm,1.5s	61.19	139	eP	P	19 07 25.9	-0.6	
SEY	Seymchan 0.9nm,0.8s,baz=152,slow=5.6,SNR=3.5	71.71	332	P	P	19 08 33.5	+0.2	
PEA1	Petropavlovsk-	72.08	321	eP	P	19 08 35.8	+0.1	
PETK	Petropavlovsk- 1.8nm,0.7s,baz=81,slow=10,SNR=3.1	72.08	321	P	P	19 08 35.8	+0.1	
NB200	NORSAR Array S	82.01	25	eP	P	19 09 33.0	+1.5	
NOA	NORSAR Array B 0.6nm,0.8s,baz=324,slow=6.1,SNR=2.3	82.01	25	P	P	19 09 33.0	+1.5	
BJI	Beijing	102.63	326	P	Pdif	19 11 07.0	-1.6	
BJI	comp=Z,6.0nm,0.9s			pmax	pmax			
WR1	Warramunga Arr	121.17	261	ePKPdf	PKPdf	19 16 05.7	+0.6	
WRA	Warramunga Arr comp=Z,0.4nm,1.0s,baz=54,slow=1.8,SNR=2.6	121.17	261	PKP	PKPdf	19 16 05.7	+0.6	
ASAR	Alice Springs comp=Z,0.1nm,0.6s,baz=82,slow=2.0,SNR=2.7	122.60	257	PKP	PKPdf	19 16 12.8	+5.0	

*ISCJB **26** 19:07:11.8±0.7, 36.45N±0.04×140.94E±0.07, h53km±5km, mb3.7/10, Error ellipse: s-maj=10.0km s-min=5.1km az=22.7*

*JMA **26** 19:07:13.7±0.1, 36.47N×140.74E, h52km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φs23.00000°, δ74.00000°, λ83.00000°. NP2:φs228.00000°, δ17.00000°, λ114.00000°. Principal axes: T Plg60.0000°, Azm283.0000°; N Plg7.0000°, Azm25.0000°; P Plg29.0000°, Azm119.0000°;*

JMA Felt II J1.

*IDC **26** 19:07:15.8±2.5, 36.39N×140.80E, h71km±21km, mb3.4/9, mb1 3.5/12, mb1mx3.4/39, mbtmp3.7/12 Error ellipse: s-maj=24.0km s-min=9.9km az=64.0*

ISC 26 19:07:13.4±1.1, 36.47N±0.05×140.88E±0.07, h47km±8km, n31,σ1°06/35, mb3.8/10, 7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	Hitachi	0.29	301	∥P	Pn	19 07 22.3	+0.2
JHO				S	Sn	19 07 27.8	-0.5
JYT	Yasato	0.60	247	∥P	Pn	19 07 25.2	-0.5
JYT				S	Sn	19 07 33.1	-1.4
ONAJ	Iwakimizuishiy	0.64	354	∥P	Pn	19 07 26.2	-0.1
ONAJ				S	Sn	19 07 35.1	-0.5
JFK	Kawauchi	0.90	360	∥P	Pn	19 07 29.4	-0.4
JFK				S	Sn	19 07 40.7	-1.0
JFT	Otama	1.14	338	P	Pn	19 07 33.1	+0.2
JFT				S	Sn	19 07 47.3	-0.1
JAG	Ashikaga	1.15	268	∥P	Pn	19 07 32.3	-0.8
JFY	Yanaizu	1.33	315	∥P	Pn	19 07 35.4	-0.2
JKT	Katashina	1.34	283	∥P	Pn	19 07 35.3	-0.5
JMM	Marumori	1.40	357	P	Pn	19 07 36.8	+0.3
JMM				S	Sn	19 07 53.7	-0.1
MJAR	Matsushiro Arr	2.15	273	P	Pn	19 07 46.3	-0.5
MJAR	28nm,0.3s,baz=92,slow=9.7,SNR=230			S	Sn	19 08 14.4	+2.1
MAT	9.6nm,0.3s,baz=70,slow=16,SNR=6.3 Matsushiro	2.15	273	P	Pn	19 07 47.0	+0.2
MAT				eS	Sn	19 08 12.9	+0.6
JHJ	Hachijo jima 2 8.6nm,0.3s,baz=331,slow=23,SNR=18	3.46	195	P	Pn	19 08 05.0	+0.3
JHJ	19nm,0.3s,baz=73,slow=19,SNR=6.4			S	Sn	19 08 44.8	+0.4
ASAJ	Asahikawa baz=198,slow=12	7.75	9	P	Pn	19 09 02.8	-0.8
ASAJ	baz=288,slow=20			S	Sn	19 10 30.1	+0.1
USRK	Ussuriysk Ar. 0.3nm,0.3s,baz=135,slow=13,SNR=3.4	10.28	321	P	Pn	19 09 42.2	+4.1
SONM	Songino Array 0.8nm,0.7s,baz=110,slow=9.1,SNR=6.5	27.75	305	P	P	19 12 56.6	-1.0
H11N2	WAKE ISLAND Hy baz=312,slow=75,SNR=15	28.24	119	T	T	19 42 53.1	
H11N1	WAKE ISLAND Hy baz=312,slow=75,SNR=16	28.25	119	T	T	19 42 53.1	
H11N3	WAKE ISLAND Hy baz=312,slow=75,SNR=17	28.26	119	T	T	19 42 53.1	
H11S1	WAKE ISLAND Hy baz=314,slow=75,SNR=107	28.92	121	T	T	19 43 43.6	
H11S3	WAKE ISLAND Hy baz=314,slow=75,SNR=44	28.92	121	T	T	19 43 43.6	
H11S2	WAKE ISLAND Hy baz=314,slow=75,SNR=53	28.94	121	T	T	19 43 43.6	
ZALV	Zalesovo Beam 1.0nm,0.4s,baz=92,slow=8.4,SNR=5.4	41.98	313	P	P	19 14 59.0	-0.6
MKAR	Makanchi Array 0.6nm,0.7s,baz=80,slow=10,SNR=6.6	44.06	303	P	P	19 15 16.7	+0.1
ILAR	Eielson Array 0.7nm,0.9s,baz=277,slow=6.2,SNR=7.3	50.20	32	P	P	19 16 05.8	+1.7
WRA	Warramunga Arr 0.2nm,0.4s,baz=5.4,slow=7.1,SNR=7.4	56.44	187	P	P	19 16 49.8	-0.6
ASAR	Alice Springs 0.2nm,0.6s,baz=4.2,slow=7.3,SNR=3.7	60.17	187	P	P	19 17 16.6	+0.2
GEYT	Alibeck 0.6nm,0.6s,baz=95,slow=14,SNR=2.5	63.73	299	P	P	19 17 40.1	-0.3
FINES	FINESS Array B 0.5nm,0.3s,baz=56,slow=6.0,SNR=8.7	69.11	332	P	P	19 18 13.7	-0.6
AKASG	Malin Array Be	74.48	322	P	P	19 18 45.5	-1.1
NB2	NORSAR Subarra comp=Z,0.9nm,0.6s,baz=40,slow=6.2	74.54	337	P	P	19 18 46.3	-0.6
NOA	NORSAR Array B 0.6nm,0.5s,baz=43,slow=5.4,SNR=4.8	74.54	337	P	P	19 18 46.6	-0.3

IDC 26 19:16:30.4±2.2, 24.76N×109.27W, h0km, mb4.0/3, mb1 4.2/5, mb1mx3.8/34, mbtmp3.8/5, ML3.7/1, Error ellipse: s-maj=53.7km s-min=10.1km az=136.0, Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPIG	La Paz 54nm,0.3s,baz=17,slow=2.1,SNR=29	1.15	236	Pg	Pg	19 16 52.2	-0.3
LPIG				Lg	Lg	19 17 08.4	
TXAR	Lajitas Array 0.3nm,0.3s,baz=222,slow=12,SNR=13	6.76	46	Pn	Pn	19 18 12.3	+1.3
TXAR	0.3nm,0.3s,baz=229,slow=27,SNR=3.0			Sn	Sn	19 19 28.7	0.0
TXAR	0.6nm,0.3s,baz=243,slow=19,SNR=3.9			Lg	Lg	19 20 02.9	
PDAR	Pinedale Array baz=169,slow=10.0,SNR=15	17.97	359	P	Pn	19 20 41.4	-0.5
NEW	Newport 3.0nm,0.6s,baz=158,slow=9.6,SNR=5.9	24.27	347	P	P	19 21 49.0	-0.3
YKA	Yellowknife Ar 2.2nm,1.0s,baz=173,slow=7.8,SNR=11	37.90	356	P	P	19 23 48.7	-0.3
ILAR	Eielson Array 1.4nm,0.9s,baz=150,slow=6.5,SNR=5.2	46.77	339	P	P	19 25 02.0	+0.7

*BJI **26** 19:17:02.9, 48.47N×154.31E, h96km, mb4.9/48, mB5.1/23*

*ISCJB **26** 19:17:07.6±0.3, 48.29N±0.02×153.64E±0.03, h101km±2km, mb4.7/256, Error ellipse: s-maj=4.3km s-min=1.8km az=144.3*

*SKHL **26** 19:17:07.0±0.3, 47.98N×154.15E, h106km±2km, mb5.5/4, Ms4.5/3, msh5.5/4*

*NEIC **26** 19:17:08.2±0.1, 48.31N×153.55E, mb4.8/196, Error ellipse: s-maj=3.5km s-min=2.0km az=149.0*

*MOS **26** 19:17:08.1±1.0, 48.31N×153.63E, h107km, mb4.7/46, Error ellipse: s-maj=6.6km s-min=3.3km az=70.7*

*IDC **26** 19:17:10.0±0.8, 48.36N×153.57E, h108km±6km, mb4.2/28, mb1 4.4/37, mb1mx4.3/40, mbtmp4.6/37, Error ellipse: s-maj=11.9km s-min=8.4km az=142.0*

ISC 26 19:17:08.2±0.3, 48.22N±0.04×153.79E±0.03, h95km±2km, h95km:pP-P,n737,σ1°46/869, mb4.7/256, 12C-3D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	Severo-Kuril's	2.90	31	c iPN	Pn	19 17 53.1	+0.8
SKR				i S	Sn	19 18 27.4	+1.0
SKR	Severo-Kuril's	2.90	31	eP	Pn	19 17 53.4	+1.1
SKR	1μm,1.0s			AMB	AMB	19 17 55.5	
SKR	1μm,0.5s			AMB	AMB	19 17 55.7	
SKR				eS	Sn	19 18 28.0	+1.6
SKR	4μm,1.0s			A	A	19 18 36.4	
SKR	3μm,0.3s			A	A	19 18 36.4	
SKR	4μm,0.3s			A	A	19 18 36.4	
PAU	Pauzhetka	3.79	30	eP	Pn	19 18 03.9	-0.5
PAU	500nm,0.5s			AMB	AMB	19 18 05.4	
PAU				eS	Sn	19 18 46.8	-1.2
PAU	5μm,0.6s			A	A	19 18 56.7	
PAU	13μm,20.0s			AMS	AMS	19 19 37.0	
PAU	18μm,20.0s			AMS	AMS	19 19 37.0	
ASAK	Asacha	4.93	31	PN	Pn	19 18 21.0	+1.1
ASAK				S	Sn	19 19 15.6	-0.1
KUR	Kuril'sk	5.05	236	cePN	Pn	19 18 23.7	+2.3
KUR	comp=Z,97nm,0.5s			pmax	pmax		
KUR	comp=N,33nm,0.6s			pmax	pmax		
KUR	comp=E,20nm,0.5s			pmax	pmax		
KUR	Kuril'sk	5.05	236	eP	Pn	19 18 23.1	+1.7
KUR	comp=E,600nm,1.0s			AMB	AMB	19 18 25.5	
KUR	comp=E,400nm,1.0s			AMB	AMB	19 18 28.9	
KUR				eS	Sn	19 19 20.7	+2.3
KUR	comp=E,2μm,2.0s			A	A	19 19 28.2	
KUR	comp=E,2μm,2.0s			A	A	19 19 28.2	
KUR	comp=E,2μm,2.0s			A	A	19 19 28.8	
KUR	comp=E,2μm,2.0s			A	A	19 19 28.8	
GRL	Gorelyy	5.13	31	PN	Pn	19 18 23.1	+0.5
GRL				S	Sn	19 19 20.0	-0.6
RUS	Russkaya	5.19	34	PN	Pn	19 18 22.4	-0.9
RUS				S	Sn	19 19 17.4	-4.4
RUS	Russkaya	5.19	34	eP	Pn	19 18 22.4	-0.9
KRMR	Karymshinskiy	5.38	29	PN	Pn	19 18 27.0	+1.1
KRMR				S	Sn	19 19 29.4	+2.9
PEA0	Petropavlovsk-	5.49	25	ePn	Pn	19 18 28.4	+1.0
PEA0B	Petropavlovsk-	5.49	25	ePn	Pn	19 18 28.8	+1.4
PETK	Petropavlovsk- comp=E,16nm,0.3s,baz=190,slow=12,SNR=120	5.49	25	P	Pn	19 18 28.9	+1.6
PETK	Petropavlovsk-	5.49	25	PN	Pn	19 18 29.0	+1.6
PEA1	Petropavlovsk-	5.50	25	ePn	Pn	19 18 28.9	+1.5
PET	Petropavlovsk	5.72	31	ePN	Pn	19 18 30.4	-0.1
PET				eS	Sn	19 19 32.9	-1.8
PET	comp=E,749nm,0.6s			smax	smax		
PET	comp=N,1μm,0.5s			smax	smax		
PET	comp=Z,600nm,16.0s			smax	smax		
PET	comp=Z,800nm,19.0s			smax	smax		
PET	Petropavlovsk	5.72	31	ePn	Pn	19 18 30.7	+0.2
PET				eSn	Sn	19 19 27.8	-6.8
PET	Petropavlovsk	5.72	31	eP	Pn	19 18 30.8	+0.3
PET	comp=Z,80nm,0.5s			AMB	AMB	19 18 36.4	
PET				eS	Sn	19 19 32.2	-2.5
PET	comp=Z,1μm,0.5s			A	A	19 19 56.7	
PET	comp=Z,750nm,0.5s			A	A	19 19 56.7	
PET	comp=Z,800nm,19.0s			AMS	AMS	19 20 26.4	
DALK	Dalny	5.76	31	PN	Pn	19 18 31.0	0.0
DALK				S	Sn	19 19 33.3	-2.4
UGLR	Uglovaya	5.93	31	PN	Pn	19 18 34.1	+0.6
UGLR				S	Sn	19 19 37.4	-2.6
AVH	Avacha	5.95	30	PN	Pn	19 18 35.5	+1.8
AVH				S	Sn	19 19 40.1	-0.3
SMAR	Somma	5.97	30	PN	Pn	19 18 34.6	+0.5
KRER	Koryakskii	5.99	30	PN	Pn	19 18 35.8	+1.5
KRER				S	Sn	19 19 42.3	+0.8
KRX	Arik	6.00	29	PN	Pn	19 18 35.8	+1.4
KRX				S	Sn	19 19 41.4	-0.3
SDLR	Sedlovina	6.01	31	PN	Pn	19 18 34.7	+0.2
SDLR				S	Sn	19 19 38.5	-3.4
GNL	Ganaly	6.08	24	PN	Pn	19 18 37.2	+1.7
NLC	Nalytchevo	6.09	33	PN	Pn	19 18 34.0	-1.4
SPN	Mys Shipunski	6.29	37	PN	Pn	19 18 37.2	-1.0
SHO	Shikotan	6.51	231	c iPN	Pn	19 18 39.7	-1.5
SHO				i S	Sn	19 19 51.8	-2.1
SHO	comp=Z,120nm,0.7s			pmax	pmax		
SHO	comp=E,81nm,0.4s			pmax	pmax		
SHO	comp=N,98nm,0.6s			pmax	pmax		
SHO	Shikotan	6.51	231	eP	Pn	19 18 39.8	-1.5
SHO	comp=N,80nm,0.4s			AMB	AMB	19 18 47.9	
SHO				AMB	AMB	19 18 57.8	

comp=N,300nm,4.0s
SHO eS Sn 19 19 51.5 -2.4
SHO A A 19 20 01.6
comp=N,300nm,0.6s
SHO A A 19 20 02.2
comp=N,3µm,5.0s
SHO AMS AMS 19 20 57.1
comp=N,5µm,15.0s
YUK Yuzh-Kuril'sk 6.91 236 c *i* PN **Pn 19 18 47.5 +0.7**
YUK *i* S **Sn 19 20 05.7 +1.9**
YUK pmax pmax
comp=Z,304nm,0.6s
YUK pmax pmax
comp=N,127nm,0.5s
YUK pmax pmax
comp=E,130nm,0.5s
YUK Yuzh-Kuril'sk 6.91 236 *e*P **Pn 19 18 47.3 +0.5**
YUK AMB AMB 19 18 47.8
comp=E,200nm,1.0s
YUK AMB AMB 19 18 51.5
comp=E,400nm,0.6s
YUK eS **Sn 19 20 03.0 -0.8**
YUK A A 19 20 14.0
comp=E,600nm,2.0s
YUK A A 19 20 18.0
comp=E,600nm,0.7s
JRA Rausu 7.39 238 P **Pn 19 18 54.1 +0.9**
NEM2 Nemuro 2 7.42 232 P **Pn 19 18 51.6 -2.1**
NEM2 eS **Sn 19 20 10.1 -6.2**
YSS Yuzh-Sakhalins 7.57 264 ⇓ *i* PN **Pn 19 18 58.6 +3.0**
YSS eS **Sn 19 20 24.5 +4.8**
YSS pmax pmax
comp=Z,60nm,0.7s
YSS smax smax
comp=N,100nm,0.8s
YSS smax smax
comp=E,60nm,1.0s
YSS Yuzh-Sakhalins 7.57 264 *e*Pn **Pn 19 18 58.3 +2.6**
YSS *e*Sn **Sn 19 20 19.2 -0.5**
YSS Yuzh-Sakhalins 7.57 264 *e*P **Pn 19 18 58.6 +3.0**
YSS AMB AMB 19 19 01.0
comp=E,60nm,0.7s
YSS eS **Sn 19 20 22.0 +2.3**
YSS A A 19 20 27.3
comp=E,60nm,1.0s
YSS AMS AMS 19 25 50.0
comp=E,400nm,15.0s
YSS AMS AMS 19 25 50.0
comp=E,600nm,15.0s
TYV Tymovskoe 7.71 294 *e*PN **Pn 19 18 58.2 +0.7**
TYV pmax pmax
comp=Z,211nm,1.0s
TYV Tymovskoe 7.71 294 *e*P **Pn 19 19 00.5 +3.0**
TYV AMB AMB 19 19 01.8
comp=Z,210nm,1.0s
UGL Uglegorsk 7.81 281 *e*P **Pn 19 19 02.5 +3.6**
UGL AMB AMB 19 19 03.6
comp=Z,200nm,0.7s
UGL eS **Sn 19 20 30.3 +4.7**
UGL A A 19 20 49.5
comp=Z,60nm,0.4s
JNK Nakash 7.84 237 P **Pn 19 18 59.2 -0.2**
JNK eS **Sn 19 20 26.4 0.0**
MKZ Mys Kozlova 8.05 35 PN **Pn 19 18 59.7 -2.5**
JTKR Abashiri--Toko 8.07 242 P **Pn 19 19 04.0 +1.5**
JTKR eS **Sn 19 20 40.2 +8.2**
TUMR Tumrok 8.10 27 PN **Pn 19 19 04.6 +1.7**
JAK Akkeshi 8.24 234 P **Pn 19 19 02.7 -2.1**
JAK eS **Sn 19 20 30.0 -6.1**
ESO Esso 8.29 20 PN **Pn 19 19 08.2 +2.8**
JSE Soyaes 8.38 251 P Pn 19 19 11.5 +4.9
JMP Maruseppu 8.38 244 P **Pn 19 19 08.6 +1.9**
KMNR Kamenistaya 8.53 25 PN **Pn 19 19 11.5 +2.7**
JAR Ashorobuto 8.56 239 P **Pn 19 19 10.0 +0.9**
JAR eS **Sn 19 20 42.7 -1.2**
JWK2 Keihoku 8.66 255 P Pn 19 19 15.9 +5.4
KOZ Kozyrevsk 8.69 23 PN **Pn 19 19 12.8 +1.9**
KPT Kopyto 8.71 25 PN **Pn 19 19 12.2 +1.0**
BZMR Bezymyannaya 8.76 26 PN **Pn 19 19 12.8 +0.9**
JOB Onbets 8.77 236 P **Pn 19 19 11.4 -0.6**
JOB eS **Sn 19 20 45.4 -3.7**
JKA Kamikawa-asahi 8.78 246 *e*P **Pn 19 19 14.8 +2.6**
ASAJ Asahikawa 8.78 246 P **Pn 19 19 14.8 +2.6**
comp=Z,15nm,0.3s,baz=74,slow=13,SNR=104
ASAJ Asahikawa 8.78 246 P **Pn 19 19 15.1 +2.9**
ASAJ Asahikawa 8.78 246 *e*Pn **Pn 19 19 14.5 +2.3**
JKK2 Kamakawa 2 8.82 245 P **Pn 19 19 14.7 +2.0**
JSS Shosan 9.10 250 P **Pn 19 19 21.1 +4.6**
KLY Klyuchi 9.13 25 PN **Pn 19 19 17.9 +1.1**
JCH Churui 9.22 236 P **Pn 19 19 16.8 -1.4**
JCH eS **Sn 19 20 54.7 -5.4**
JFR Furan 9.32 241 P **Pn 19 19 22.0 +2.5**
JAB Ashibetsu 9.34 244 P **Pn 19 19 22.1 +2.3**
BDR Baidarnaya 9.51 26 PN **Pn 19 19 22.5 +0.4**
SRR Sorokina 9.57 25 PN **Pn 19 19 23.2 +0.3**
SMKR Semkarok 9.60 26 PN **Pn 19 19 24.4 +1.2**
NKL Nikolayevsk 9.67 306 *i* PN **Pn 19 19 24.6 +0.5**
NKL pmax pmax
comp=N,40nm,1.0s
NKL pmax pmax
comp=E,80nm,1.0s
NKL pmax pmax
comp=Z,120nm,1.0s
NKL Nikolayevsk 9.67 306 *e*P **Pn 19 19 24.6 +0.5**
comp=Z,50nm,1.0s
NKL AMB AMB 19 19 26.0
comp=Z,40nm,1.0s
NKL AMB AMB 19 19 26.0
comp=Z,80nm,1.0s
NKL AMB AMB 19 19 26.0
comp=Z,120nm,1.0s
JBT2 Biratori 2 9.69 240 P **Pn 19 19 24.0 -0.5**
KBG Krutoberegovo 9.72 31 PN **Pn 19 19 22.0 -2.9**
ERM Erimo 9.74 234 *e*PN **Pn 19 19 24.2 -1.0**
ERM Erimo 9.74 234 *e*Pn **Pn 19 19 24.1 -1.0**
ERM eSn **Sn 19 21 08.4 -4.2**
JEM Erimo 9.74 234 P **Pn 19 19 23.7 -1.5**
JNBK Urakawa-nobuka 9.78 237 P **Pn 19 19 23.7 -2.1**
JEW Eniwo 10.19 243 P **Pn 19 19 31.3 0.0**
BKI Bering 10.29 43 PN **Pn 19 19 30.1 -2.5**
BKI Bering 10.29 43 *e*P **Pn 19 19 29.8 -2.8**
JNB Noboribetsu 10.65 242 P **Pn 19 19 36.5 -1.1**
JNB eS **Sn 19 21 30.8 -4.0**
JKB Kayabe 11.01 240 P **Pn 19 19 40.5 -2.0**
JKB eS **Sn 19 21 35.9 -7.7**
JSH Shimam 11.14 245 P **Pn 19 19 45.0 +0.7**
JYM2 Yakumo 2 11.26 242 P **Pn 19 19 44.1 -1.8**
MA2 Magadan 11.52 352 P **Pn 19 19 49.4 +0.3**
comp=Z,1.5nm,0.3s,baz=170,slow=11,SNR=11
GRNR Gornyy 11.58 289 *e*P **Pn 19 19 51.8 +1.7**
GRNR AMB AMB 19 19 53.0
comp=Z,30nm,1.0s
TEY Ternei 12.23 261 *e*P **Pn 19 20 01.2 +2.3**
TEY AMB AMB 19 20 06.0
comp=Z,30nm,1.0s
TEY AMB AMB 19 20 06.0
comp=Z,40nm,1.0s
HABR Khabarovsk 12.47 278 *e*PN **Pn 19 20 01.8 -0.2**
HABR eS **Sn 19 22 19.7 +0.8**
HABR pmax pmax
comp=Z,28nm,1.3s
HABR pmax pmax
comp=N,4.0nm,0.6s
HABR pmax pmax
comp=E,22nm,1.3s
HABR MLR MLR
comp=Z,169nm,11.0s
HABR Khabarovsk 12.47 278 *e*P **Pn 19 20 01.8 -0.2**
JIO Ouri 13.29 227 eS Sn 19 22 27.1 -12
SMY Shemya 13.69 63 *e*P **Pn 19 20 17.9 -0.1**
SMY *e* 19 22 41.1
SMY Shemya 13.69 63 *e*Pn **Pn 19 20 17.9 -0.1**
SMY eSn **Sn 19 22 41.1 -7.2**
JYA Atsumi 14.02 232 P **Pn 19 20 21.1 -1.3**
EKMR Ekimchan 14.07 298 *e*P **P 19 20 25.0 -2.6**
EKMR AMB AMB 19 20 30.1
comp=Z,40nm,0.6s
KLR Kul'dur 14.57 282 P **Pn 19 20 29.8 +0.3**
comp=Z,0.9nm,0.3s,baz=81,slow=14,SNR=79
SEY Seymchan 14.77 357 P **Pn 19 20 32.8 +1.0**
comp=Z,0.7nm,0.3s,baz=178,slow=10,SNR=16
USRK Ussuriysk Ar. 15.60 263 P **Pn 19 20 43.2 +0.7**
comp=Z,5.1nm,0.3s,baz=72,slow=9.8,SNR=64
MJAR Matsushiro Arr 16.35 230 P **Pn 19 20 51.4 -0.5**
comp=Z,0.9nm,0.3s,baz=26,slow=11,SNR=22
MJB9 Matsu-Tunnel 16.35 230 *e*Pn **Pn 19 20 50.1 -1.8**
comp=Z,8.0nm,0.8s
MAJO Matsushiro 16.35 230 *e*P **Pn 19 20 49.9 -2.0**
MAJO pmax pmax
comp=Z,32nm,0.8s
MAJO Matsushiro 16.35 230 *e*Pn **Pn 19 20 49.9 -2.0**
comp=Z,32nm,0.8s
MAJO Matsushiro 16.35 230 *e*P **Pn 19 20 49.9 -2.0**
MAT Matsushiro 16.35 230 P **P 19 20 54.0 +0.9**
BMKR Bomnak 16.79 302 *e*P **P 19 20 57.8 0.0**
BMKR AMB AMB 19 21 01.7
comp=Z,40nm,0.6s
MDJ Mudanjiang 17.05 267 P **P 19 21 00.5 -0.2**
MDJ pmax pmax
comp=Z,29nm,0.8s
MDJ pmax pmax
comp=Z,460nm,12.9s
MDJ Mudanjiang 17.05 267 *e*Pn **Pn 19 20 59.7 -0.7**
comp=Z,61nm,1.1s
ZEA Zeya 17.54 298 *e*P **Pn 19 21 06.2 -0.1**
ZEA AMB AMB 19 21 14.7
comp=Z,30nm,1.0s
KROS Kirovskiy 17.81 300 *e*P **Pn 19 21 09.5 0.0**
KROS AMB AMB 19 21 12.6
comp=Z,7.0nm,0.6s
INU Inuyama 17.89 230 *e*P **P 19 21 08.5 -1.4**
comp=Z,22nm,0.9s
JHJ2 Mitsune 18.39 220 *e*P **P 19 21 14.6 -0.9**
comp=Z,283nm,1.3s
JHJ Hachijo jima 2 18.40 220 P **Pn 19 21 16.9 0.0**
comp=Z,4.9nm,0.3s,baz=174,slow=6.3,SNR=5.7
JHJ S **S 19 24 34.8 -5.8**
comp=Z,2.7nm,0.3s,baz=83,slow=22,SNR=2.5
YAK Yakutsk 19.36 324 P **P 19 21 25.7 -0.1**
comp=Z,0.1nm,0.3s,baz=291,slow=1.2,SNR=33
YAK Yakutsk 19.36 324 *e*P **P 19 21 25.6 -0.3**
YAK eS **S 19 24 56.9 -2.6**
YAK pmax pmax
comp=Z,151nm,0.9s
YAK pmax pmax
comp=N,65nm,1.3s
YAK pmax pmax
comp=E,70nm,1.3s
YAK smax smax
comp=E,60nm,2.1s
YAK smax smax
comp=N,57nm,1.8s
YAK Yakutsk 19.36 324 *e*P **P 19 21 25.5 -0.3**
comp=N,189nm,0.7s
YAK eS **S 19 24 57.3 -2.2**
CLNS Chul'man 19.45 307 *e*P **Pn 19 21 28.3 -0.8**
CLNS pmax pmax
comp=Z,146nm,0.8s
CLNS pmax pmax
comp=E,120nm,1.1s
CLNS pmax pmax
comp=N,110nm,1.3s
BILL Bilibino 20.86 13 *e*P **P 19 21 41.7 -0.2**
BILL pmax pmax
comp=Z,16nm,1.0s
BILL Bilibino 20.86 13 *e*P **P 19 21 41.7 -0.2**
comp=Z,16nm,1.0s
BILL Bilibino 20.86 13 *e*P **P 19 21 41.7 -0.2**
KSRS Korea Array 21.70 250 P **P 19 21 52.0 +0.8**
comp=Z,19nm,0.7s,baz=48,slow=11,SNR=29
KS01 Wonju Array Si 21.71 250 *e*P **P 19 21 51.4 +0.1**
KS15 Wonju Array Si 21.73 250 *e*P **P 19 21 51.0 -0.6**
KSAR Wonju Array Be 21.73 250 P **P 19 21 52.0 +0.4**
KSAR Wonju Array Be 21.73 250 P **P 19 21 52.0 +0.4**
HIA Hailar 22.37 286 *e*P **P 19 21 58.0 -0.2**
HIA pmax pmax
comp=Z,44nm,1.5s
HIA Hailar 22.37 286 *e*P **P 19 21 58.0 -0.2**
comp=Z,44nm,1.5s
INCN Inchon 22.50 252 *e*P **P 19 21 58.8 -0.9**
comp=Z,32nm,1.1s
JNU Nakatsue 22.88 237 P **P 19 22 04.4 +0.8**
comp=Z,6.3nm,0.7s,baz=23,slow=7.7,SNR=4.8
CBIJ Chichi jima 22.95 207 *e*P **P 19 22 05.7 +1.4**
comp=Z,18nm,0.8s
SPIA Saint Paul Isl 23.32 54 *e*P **P 19 22 09.0 +1.5**
comp=Z,180nm,1.5s
NIKH Nikolski High 24.00 64 *e*P **P 19 22 12.7 -0.9**
comp=Z,60nm,1.1s
GAMB Gambell 24.37 38 *e*P **P 19 22 16.5 -0.4**
comp=Z,64nm,1.6s
DL2 Dalian 24.94 260 P **P 19 22 22.5 +0.2**
DL2 pmax pmax
comp=Z,52nm,1.0s
TIXI Tiksi 26.20 342 P **P 19 22 31.7 -1.6**
comp=Z,6.6nm,0.7s,baz=125,slow=12,SNR=3.1
SDPT Sand Point 28.73 58 *e*P **P 19 22 56.5 +0.3**
comp=Z,32nm,1.0s
JOW Kunigami 29.18 232 *e*P **P 19 23 00.6 +0.2**
comp=Z,36nm,1.1s
MIDW Midway 29.93 121 *e*P **P 19 23 06.7 -0.3**
comp=Z,113nm,1.3s
H11N2 WAKE ISLAND Hy 30.34 155 T T 19 55 20.2
baz=342,slow=76,SNR=822
H11N1 WAKE ISLAND Hy 30.35 155 T T 19 55 24.0
baz=342,slow=76,SNR=1138
H11N3 WAKE ISLAND Hy 30.35 155 T T 19 55 24.0
baz=342,slow=76,SNR=569
HHC Hu-ho-hao-te 30.67 272 *e*P **P 19 23 13.0 -0.6**
HHC S **S 19 28 10.8 +1.6**
HHC pmax pmax
comp=Z,18nm,1.1s
HHC pmax pmax
comp=Z,240nm,6.5s
HHC LR LR
comp=Z,210nm,10.2s
HHC LR LR
comp=Z,240nm,13.6s
HHC LR LR
comp=Z,230nm,13.5s
TT01 Tatalina 31.02 43 *e*P **P 19 23 17.4 +1.1**
TTA Tatalina 31.02 43 *e*P **P 19 23 17.4 +0.9**
TTA pmax pmax
comp=Z,9.0nm,0.7s
TTA Tatalina 31.02 43 *e*P **P 19 23 17.4 +0.9**
comp=Z,9.1nm,0.7s
SVW2 Sparrevohn 31.14 47 *e*P **P 19 23 18.7 +1.3**
comp=Z,14nm,0.9s
SONA1 Songino Array 31.29 287 *e*P **P 19 23 16.9 -2.1**
SONA1 *e*pP **pP 19 23 39.9 -0.7**
SONA0 Songino Array 31.30 287 *e*P **P 19 23 17.3 -1.9**
comp=Z,5.1nm,0.8s
SONA0 *e*PcP **PcP 19 26 10.2 -0.7**
SONA0 *e*ScP **ScP 19 29 43.8 -1.2**
SONM Songino Array 31.30 287 P **P 19 23 17.3 -1.9**
comp=Z,2.2nm,0.8s,baz=63,slow=8.2,SNR=15
SONM PcP **PcP 19 26 10.2 -0.7**
comp=Z,1.0nm,0.9s,baz=27,slow=1.6,SNR=3.2
SONM ScP **ScP 19 29 43.8 -1.2**
comp=Z,1.6nm,0.8s,baz=71,slow=3.0,SNR=8.1
H11S1 WAKE ISLAND Hy 31.45 156 T T 19 56 46.3
baz=343,slow=76,SNR=1750
H11S3 WAKE ISLAND Hy 31.45 156 T T 19 56 49.5
baz=343,slow=76,SNR=1858
H11S2 WAKE ISLAND Hy 31.46 156 T T 19 56 47.6
baz=343,slow=76,SNR=1709
OHAK Old Harbor 32.52 54 *e*P **P 19 23 29.4 -0.1**
comp=Z,30nm,0.9s
RSO Redoubt South 32.53 48 *e*P **P 19 23 31.0 +1.2**
PPLA Purkeypile 32.77 43 *e*P **P 19 23 33.2 +1.4**
comp=Z,31nm,1.4s
PPLA *e*pP **pP 19 23 53.8 +0.3**
CAST Castle Rocks 32.83 42 *e*P **P 19 23 33.4 +1.2**
comp=Z,6.9nm,0.7s
KDAK Kodiak Island 32.84 53 *e*P **P 19 23 32.5 +0.3**
KDAK Kodiak Island 32.84 53 *e*P **P 19 23 32.2 0.0**
comp=Z,38nm,0.8s
SPU Mount Spurr 32.85 46 *e*P **P 19 23 34.0 +1.6**
BPAW Bear Paw Mtn. 33.34 41 *e*P **P 19 23 37.1 +0.5**
comp=Z,8.6nm,0.9s
BPAW *e*pP **pP 19 23 57.3 -1.0**
KTH Kantishna Hill 33.35 42 *e*P **P 19 23 38.1 +1.3**
comp=Z,32nm,1.1s
KTH *e*pP **pP 19 23 58.9 +0.5**
CNPM China Poot 33.36 49 *e*P **P 19 23 37.2 +0.4**
comp=Z,29nm,0.5s
SUA Susitna One 33.47 46 *e*P **P 19 23 38.2 +0.3**
MLY Manley 33.48 39 *e*P **P 19 23 38.7 +0.9**
BRLK Bradley Lake 33.51 49 *e*P **P 19 23 38.5 +0.3**
comp=Z,18nm,0.6s
TRF Thorofare Moun 33.64 42 *e*P **P 19 23 40.3 +0.9**
comp=Z,13nm,0.8s
COLD Coldfoot 33.87 35 *e*P **P 19 23 41.9 +0.8**
comp=Z,9.4nm,0.5s
COLD *e*pP **pP 19 24 03.1 +0.3**
RC01 Rabbit Creek A 33.98 46 *e*P **P 19 23 42.8 +0.7**
comp=Z,18nm,0.7s
BWN Browne 34.01 41 *e*P **P 19 23 43.9 +1.6**
comp=Z,53nm,1.0s
BWN *e*pP **pP 19 24 04.8 +0.7**
SEW Seward 34.20 48 *e*P **P 19 23 44.3 +0.3**
comp=Z,16nm,0.8s
PMR Palmer 34.23 46 *e*P **P 19 23 44.7 +0.4**
PMR pmax pmax
comp=Z,8.0nm,0.6s
PMR Palmer 34.23 46 *e*P **P 19 23 44.6 +0.4**
comp=Z,8.0nm,0.6s
MCK McKinley 34.24 42 *e*P **P 19 23 44.9 +0.5**
MCK *e*PP **pP 19 24 07.0 +0.9**
MCK pmax pmax
comp=Z,18nm,1.0s
MCK McKinley 34.24 42 *e*P **P 19 23 44.9 +0.5**
comp=Z,18nm,1.0s
MCK *e*pP **pP 19 24 07.0 +0.9**
MCK McKinley 34.24 42 *e*P **P 19 23 44.9 +0.5**
MCK *e*pP **pP 19 24 07.0 +0.9**
RND Reindeer 34.28 42 *e*P **P 19 23 45.2 +0.3**
RND *e*PP **pP 19 24 07.0 +0.4**
RND pmax pmax
comp=Z,18nm,0.9s
RND Reindeer 34.28 42 *e*P **P 19 23 45.2 +0.3**
comp=Z,18nm,0.9s
RND *e*pP **pP 19 24 07.0 +0.4**
MDM Murphy Dome 34.55 40 *e*P **P 19 23 48.1 +1.0**
comp=Z,13nm,0.8s
SML Sawmill 34.60 45 *e*P **P 19 23 48.7 +1.1**
SML pmax pmax
comp=Z,84nm,0.7s
SML Sawmill 34.60 45 *e*P **P 19 23 48.7 +1.1**
comp=Z,84nm,0.7s
WRH Wood River Hil 34.61 40 *e*P **P 19 23 48.6 +1.0**
WRH *e*pP **pP 19 24 09.6 +0.3**
COLA College 34.71 40 *e*P **P 19 23 49.6 +1.2**
COLA *e*PP **pP 19 24 11.1 +1.0**
COLA pmax pmax
comp=Z,23nm,0.8s
COLA College 34.71 40 *e*P **P 19 23 49.6 +1.2**
comp=Z,23nm,0.8s
COLA *e*pP **pP 19 24 11.1 +1.0**
COLA College 34.71 40 *e*P **P 19 23 49.6 +1.2**
COLA pP **pP 19 24 11.1 +1.0**
CCB Clear Creek Bu 34.73 40 *e*P **P 19 23 49.3 +0.8**
CCB *e*pP **pP 19 24 10.6 +0.3**
WHN Wuhan 34.76 254 ⇑ P **P 19 23 49.3 +0.1**
DHY Denali Highway 34.97 43 *e*P **P 19 23 51.4 +0.6**
comp=Z,27nm,1.3s
DHY *e*pP **pP 19 24 12.6 0.0**
SCM Sheep Creek Mo 35.07 45 *e*P **P 19 23 52.6 +0.9**
SCM pmax pmax
comp=Z,25nm,0.7s
SCM Sheep Creek Mo 35.07 45 *e*P **P 19 23 52.6 +0.9**
comp=Z,24nm,0.7s
HDA Harding Lake 35.10 40 *e*P **P 19 23 52.0 +0.2**
comp=Z,10nm,0.6s
HDA *e*pP **pP 19 24 14.2 +0.6**
IL1 Eielson Array 35.12 40 *e*P **P 19 23 52.4 +0.5**
IL1 *e*pP **pP 19 24 13.3 +0.4**
ILAR Eielson Array 35.12 40 P **P 19 23 52.5 +0.5**
comp=Z,6.8nm,1.0s,baz=257,slow=9.3,SNR=53
ILAR ScP **ScP 19 29 55.8 -2.1**
comp=Z,0.4nm,0.8s,baz=276,slow=4.8,SNR=4.2
ILB Eielson Array 35.12 40 *e*P **P 19 23 52.3 +0.3**
FID Port Fidalgo 35.59 47 *e*P **P 19 23 56.3 +0.2**
comp=Z,19nm,0.8s
SSLB Suanglung 35.61 239 *e*P **P 19 23 57.5 +0.9**
comp=Z,35nm,1.9s
KLU Klutina 35.77 45 *e*P **P 19 23 58.8 +1.1**
comp=Z,20nm,0.9s
FYU Fort Yukon 35.79 37 *e*P **P 19 23 54.2 -3.5**
PAX Paxson 35.84 43 *e*P **P 19 23 59.6 +1.4**
PAX *e*PP **pP 19 24 19.1 -0.9**
PAX pmax pmax
comp=Z,7.0nm,0.9s
PAX Paxson 35.84 43 *e*P **P 19 23 59.6 +1.4**
comp=Z,7.3nm,0.9s
PAX *e*pP **pP 19 24 19.1 -0.9**
DIV Divide 35.89 46 *e*P **P 19 23 59.8 +1.1**
comp=Z,32nm,0.6s
EYAK Cordova Ski Ar 35.98 47 *e*P **P 19 24 00.1 +0.8**
comp=Z,19nm,1.2s
XAN Xi'an 36.11 264 P **P 19 24 00.8 0.0**
XAN pP pP 19 24 23.3 +0.6
XAN sP sP 19 24 35.0 +1.3
XAN pmax pmax
comp=Z,15nm,0.9s
TPUB Ta-pu 36.18 238 *e*P **P 19 24 02.5 +1.1**
comp=Z,71nm,1.8s
TWG Pinlang 36.30 237 *e*P **P 19 24 03.4 +0.9**
comp=Z,500nm,2.0s
DOT Dot Lake 36.41 42 *e*P **P 19 24 02.9 -0.1**
comp=Z,20nm,0.7s
BMRM Bremner River 36.48 46 *e*P **P 19 24 05.0 +1.4**
comp=Z,23nm,0.8s
RAGM Ragged Mountai 36.53 47 *e*P **P 19 24 05.6 +1.5**
comp=Z,26nm,0.9s
MENT Mentasta 36.64 43 *e*P **P 19 24 06.0 +1.1**
comp=Z,9.3nm,0.6s
CRQM Cirque 37.22 46 *e*P **P 19 24 11.9 +1.9**
comp=Z,48nm,0.8s
BALM Baldy 37.55 46 *e*P **P 19 24 14.3 +1.5**
BALM pmax pmax
comp=Z,15nm,0.9s
BALM Baldy 37.55 46 *e*P **P 19 24 14.3 +1.5**
comp=Z,15nm,0.9s
EGAK Eagle 37.57 40 *e*P **P 19 24 13.2 +0.4**
comp=Z,18nm,0.8s
EGAK *e*pP **pP 19 24 34.8 +0.1**
NRIK Noril'sk 37.75 328 pP pP 19 24 39.6 +3.5
comp=Z,2.3nm,0.5s,baz=80,slow=6.1,SNR=1.7
ENH Enshi 38.09 258 *e*P **P 19 24 17.0 -0.6**
comp=Z,11nm,0.7s
DAWY Dawson 38.42 41 *e*P **P 19 24 20.8 +0.8**
comp=Z,4.9nm,0.6s
PCA Pinnacle 38.75 47 *e*P **P 19 24 23.9 +1.1**
comp=Z,41nm,0.8s
GTA Gaotai 39.21 278 *e*P **P 19 24 26.8 -0.2**
GTA pP pP 19 24 48.3 -0.8
GTA sP sP 19 24 59.5 -0.5
GTA pmax pmax
comp=Z,5.0nm,1.3s
HYT Haines Junctio 39.91 45 *e*P **P 19 24 34.7 +2.2**
INK Inuvik 40.17 33 P **P 19 24 35.5 +1.1**
comp=Z,6.8nm,0.5s,baz=290,slow=6.1,SNR=29
INK Inuvik 40.17 33 *e*P **P 19 24 35.7 +1.3**
INK pmax pmax
comp=Z,7.0nm,0.5s
INK Inuvik 40.17 33 *e*P **P 19 24 35.7 +1.3**
comp=Z,7.2nm,0.5s
CD2 Chengdu 41.47 264 *e*P **P 19 24 44.8 -0.8**
CD2 pP pP 19 25 06.3 -1.6
CD2 sP sP 19 25 17.0 -1.7
CD2 PcS **PcS 19 30 33.0 -0.1**
CD2 S **S 19 30 53.0 -0.9**
CD2 SS **SS 19 34 01.5 0.0**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.2s
ZAA1 Zalesovo Array 42.13 305 *e*P **P 19 24 49.1 -1.5**
ZAA1 *e*PcP **PcP 19 26 43.1 -0.1**
ZAA0 Zalesovo Array 42.14 305 *e*P **P 19 24 49.7 -1.0**
ZAA0 *e*PcP **PcP 19 26 43.1 -0.2**
ZALV Zalesovo Beam 42.14 305 P **P 19 24 49.1 -1.5**
comp=Z,2.5nm,0.5s,baz=66,slow=6.2,SNR=16
ZALV PcP **PcP 19 26 43.1 -0.1**
comp=Z,6.3nm,0.8s,baz=75,slow=2.1,SNR=12
GYA Guiyang 42.49 257 *e*P **P 19 24 54.3 +0.3**
GYA pP pP 19 25 16.8 +0.4
GYA sP sP 19 25 26.5 -0.7
GYA PP **PP 19 26 37.0 +2.9**
GYA S **S 19 31 10.3 +1.2**
GYA pmax pmax
comp=Z,10.0nm,0.8s
WRAK Wrangell Islan 43.83 50 *e*P **P 19 25 06.8 +2.5**
comp=Z,44nm,1.6s

DLBC **Dease Lake** 44.25 47 *e*P P 19 25 10.3 +2.6
comp=Z,17nm,1.3s
WMQ **Urumqi** 44.83 290 P P 19 25 12.5 -0.1
WMQ pP pP 19 25 36.3 +1.2
WMQ pmax pmax
comp=Z,14nm,0.6s
WMQ pmax pmax
comp=Z,160nm,6.1s
KMI **Kunming** 45.97 259 P P 19 25 22.3 +0.4
KMI pmax pmax
comp=Z,26nm,0.8s
OPA **Opana** 46.55 107 *e*P P 19 25 26.5 +0.3
OPA pmax pmax
comp=Z,194nm,1.7s
OPA **Opana** 46.55 107 *e*P P 19 25 26.5 +0.3
comp=Z,194nm,1.7s
MK31 **Makanchi Array** 46.68 296 *i* P P 19 25 25.5 -1.5
MK31 pmax pmax
comp=Z,7.0nm,0.6s
MK31 **Makanchi Array** 46.68 296 *e*P P 19 25 25.6 -1.4
MK31 *ep*P pP 19 25 46.8 -2.9
MK31 *e*PcP PcP 19 26 59.5 +0.4
MK32 **Makanchi Array** 46.68 296 *e*P P 19 25 25.9 -1.2
MK32 *ep*P pP 19 25 52.7 +3.0
MK32 *e*PcP PcP 19 26 58.8 -0.3
MK32 *e*ScP ScP 19 30 42.5 -1.3
MKAR **Makanchi Array** 46.68 296 P P 19 25 25.9 -1.2
comp=Z,6.0nm,0.6s,baz=73,slow=7.8,SNR=61
MKAR pP pP 19 25 52.7 +3.0
comp=Z,8.2nm,1.0s,baz=61,slow=7.5,SNR=5.3
MKAR PcP PcP 19 26 58.8 -0.3
comp=Z,2.9nm,0.7s,baz=63,slow=4.9,SNR=5.2
MKAR ScP ScP 19 30 42.5 -1.3
comp=Z,0.5nm,0.8s,baz=54,slow=5.8,SNR=3.7
MKAR **Makanchi Array** 46.68 296 *e*P P 19 25 25.5 -1.5
comp=Z,88nm,0.7s
MKAR *ep*P pP 19 25 46.8 -2.9
MKAR pP pP 19 25 52.7 +3.0
MKAR *e*PcP PcP 19 26 58.5 -0.5
MKAR ScP ScP 19 30 42.5 -1.3
MK01 **Makanchi Array** 46.69 296 *e*P P 19 25 25.4 -1.6
MK01 *e*PcP PcP 19 26 59.0 -0.1
MAKZ **Makanchi** 46.86 297 P P 19 25 26.2 -2.2
MAKZ pmax pmax
comp=Z,6.0nm,0.6s
MAKZ **Makanchi** 46.86 297 *e*P P 19 25 27.1 -1.3
RES **Resolute Bay** 49.30 19 *e*P P 19 25 46.9 +0.2
RES pmax pmax
comp=Z,9.0nm,0.8s
RES **Resolute Bay** 49.30 19 *e*P P 19 25 46.9 +0.2
comp=Z,8.7nm,0.8s
YKA **Yellowknife Ar** 49.48 38 P P 19 25 49.4 +1.2
comp=Z,14nm,0.8s,baz=299,slow=7.5,SNR=45
YKA pP pP 19 26 14.0 +2.9
comp=Z,2.3nm,0.6s,baz=300,slow=7.5,SNR=2.8
POHA **Pohakuloa** 49.54 107 *e*P P 19 25 48.9 -0.6
comp=Z,91nm,0.7s
PDGK **Podgornoye** 50.18 294 P P 19 25 51.9 -1.9
PDGK pmax pmax
comp=Z,5.0nm,0.9s
BVA0 **Borovoye Array** 50.29 309 *i* P P 19 25 52.6 -1.9
BVA0 pmax pmax
comp=Z,4.0nm,0.6s
BRVK **Borovoye** 50.32 309 *e*P P 19 25 53.3 -1.5
BRVK **Borovoye** 50.32 309 *e*P P 19 25 52.9 -1.9
comp=Z,7.1nm,0.5s
MANU **Manus Island** 50.37 188 *e*P P 19 25 57.5 +2.0
comp=Z,65nm,0.8s
LSA **Lhasa** 50.66 272 *e*P P 19 25 59.1 +0.9
LSA pmax pmax
comp=Z,7.0nm,0.6s
LSA **Lhasa** 50.66 272 *e*P P 19 25 59.1 +0.9
comp=Z,7.3nm,0.6s
NONG **Nongkai** 50.76 252 P P 19 25 59.8 +1.4
comp=Z,25nm,1.0s
SKNT **Sakolnakorn** 51.04 250 P P 19 26 02.2 +1.6
comp=Z,13nm,0.9s
OTUK **Ortayu** 51.73 303 P P 19 26 03.7 -1.7
OTUK pmax pmax
comp=Z,12nm,1.2s
CMAI **Chiengmai2** 52.03 257 P P 19 26 09.7 +1.5
comp=Z,93nm,1.2s
RABL **Rabaul** 52.21 182 *e*P P 19 26 09.5 +0.3
comp=Z,67nm,0.5s
UTTA **Uttaradit** 52.65 254 P P 19 26 14.7 +2.2
comp=Z,3.2nm,0.8s
LAMP **Lampang** 52.67 255 P P 19 26 14.6 +1.9
comp=Z,7.6nm,0.9s
NLWA **Neilton Lookou** 52.70 58 *e*P P 19 26 13.4 +0.8
comp=Z,33nm,1.8s
CMMT **Chiang Mai** 52.91 256 P P 19 26 15.5 +1.1
comp=Z,28nm,0.8s
CHTO **Chiang Mai** 52.91 256 P P 19 26 15.5 +1.1
comp=Z,124nm,0.8s
CHTO **Chiang Mai** 52.91 256 *e*P P 19 26 15.0 +0.5
CHTO pmax pmax
comp=Z,17nm,0.6s
CHTO **Chiang Mai** 52.91 256 *e*P P 19 26 15.0 +0.5
comp=Z,17nm,0.6s
CHAI **Chaiyaphum** 53.10 251 P P 19 26 17.0 +1.1
comp=Z,7.6nm,0.7s,comp=Z,91nm
CM31 **Chiang Mai Arr** 53.17 256 *e*P P 19 26 17.7 +1.3
CMAR **Chiang Mai Arr** 53.17 256 P P 19 26 17.2 +0.9
comp=Z,6.4nm,0.8s,baz=31,slow=7.4,SNR=37
CM01 **Chiang Mai Arr** 53.18 256 *e*P P 19 26 16.9 +0.4
CM01 *ep*P pP 19 26 40.5 +0.9
AAK **Ala-Archa** 53.60 296 *e*P P 19 26 20.0 +0.6
AAK **Ala-Archa** 53.60 296 *e*P P 19 26 17.4 -2.0
comp=Z,3.9nm,0.6s
ARU **Arti** 54.24 317 *c i* P P 19 26 21.6 -2.1
ARU *PP pP 19 26 45.1 -1.8
ARU 19 27 26.0
ARU 19 28 23.0
ARU S S 19 33 50.9 -2.5
ARU SS SKiKP 19 37 27.7 +3.4
ARU pmax pmax
comp=Z,4.0nm,0.5s
ARU **Arti** 54.24 317 *e*P P 19 26 21.8 -1.9
ARU *ep*P pP 19 26 45.5 -1.5
KSH **Kashi** 54.52 292 *e*P P 19 26 29.8 +3.6
KSH *ep*P pP 19 26 52.8 +3.4
KSH *es*P sP 19 27 03.8 +3.8
KSH *e*ScP ScP 19 31 19.5 +1.8
KSH S S 19 33 59.8 +1.8
KSH ScS ScS 19 36 04.8 -1.3
KSH SS SS 19 37 44.5 +3.3
KSH pmax pmax
comp=Z,52nm,4.1s
KSH LR LR
comp=Z,460nm,15.6s
KSH LR LR
comp=Z,340nm,14.7s
KSH LR LR
comp=Z,610nm,18.3s
B08A **Colville Reser** 54.67 55 *e*P P 19 26 27.2 +0.2
B08A *ep*P pP 19 26 49.2 -1.1
EDM **Edmonton** 54.97 47 *e*P P 19 26 29.8 +0.7
EDM pmax pmax
comp=Z,26nm,0.8s
EDM **Edmonton** 54.97 47 *e*P P 19 26 29.8 +0.7
comp=Z,26nm,0.8s
I03D **Drain, OR** 55.11 61 P P 19 26 32.5 +2.4
baz=306
JIRN **Jiri** 55.29 274 *e*P P 19 26 33.1 +1.0
G05D **Wamic, OR** 55.38 59 P P 19 26 33.3 +1.2
baz=306
C09A **Chrisman Ranch** 55.58 55 *e*P P 19 26 33.2 -0.3
comp=Z,4.3nm,0.9s
I04A **Tendick Farm,** 55.60 61 P P 19 26 35.8 +2.1
baz=307
D08A **Wollman Farm,** 55.66 56 *e*P P 19 26 34.7 +0.7
comp=Z,3.7nm,0.9s
KKAR **Karatay Array** 55.70 298 *e*P P 19 26 32.5 -1.9
KKAR *e**PP pP 19 26 56.4 -1.4
KKAR **Karatay Array** 55.70 298 *e*P P 19 26 32.5 -1.9
KKAR *ep*P pP 19 26 56.4 -1.4
KKN **Kakani** 55.81 275 *e*P P 19 26 36.3 +0.6
comp=Z,10nm,0.5s
L02D **Cave Junction,** 55.87 63 P P 19 26 37.6 +2.0
baz=307
PKIN **Phulchoki** 55.88 274 *e*P P 19 26 36.7 +0.5
comp=Z,10nm,0.7s
I05D **Terrebonne, OR** 55.90 60 P P 19 26 37.6 +1.8
baz=307
NEW **Newport** 55.93 54 P P 19 26 36.6 +0.5
comp=Z,1.9nm,0.5s,baz=324,slow=6.6,SNR=4.7
NEW **Newport** 55.93 54 P P 19 26 38.3 +2.3
baz=306
NEW **Newport** 55.93 54 *e*P P 19 26 36.5 +0.5
NEW pmax pmax
comp=Z,18nm,1.8s
NEW **Newport** 55.93 54 *e*P P 19 26 36.5 +0.4
comp=Z,18nm,1.8s
LUWI **Luwuk** 55.97 218 *e*P P 19 26 37.5 +0.9
comp=Z,104nm,1.2s
DMN **Daman** 56.05 275 *e*P P 19 26 37.4 0.0
GKN **Gorkha** 56.10 275 *e*P P 19 26 37.6 -0.1
comp=Z,12nm,0.5s
J04D **Umpqua Nationa** 56.10 61 P P 19 26 39.9 +2.3
baz=307
E09A **Wood Farm, Sta** 56.41 56 *e*P P 19 26 39.4 0.0
comp=Z,5.0nm,0.9s
JCC **Jacoby Creek,** 56.42 64 *e*P P 19 26 41.0 +1.5
comp=Z,65nm,1.4s
ARA0 **ARCESS Array S** 56.62 341 *e*P P 19 26 40.3 -0.2
ARCES **ARCESS Array B** 56.62 341 P P 19 26 39.9 -0.7
comp=Z,1.5nm,0.6s,baz=18,slow=7.0,SNR=3.1
G08A **Pilot Rock** 56.69 58 *e*P P 19 26 42.2 +0.7
comp=Z,4.9nm,1.4s
M02C **Callahan** 56.78 63 P P 19 26 44.2 +2.0
baz=308
KOLN **Koldanda** 56.94 276 *e*P P 19 26 43.6 -0.1
comp=Z,7.5nm,0.5s
N02D **Trinity Center** 57.12 64 P P 19 26 47.1 +2.5
baz=308
K05A **Summer Lake** 57.12 61 *e*P P 19 26 46.7 +1.9
K05A *ep*P pP 19 27 09.4 +1.2
PYUN **Piuthan** 57.13 277 *e*P P 19 26 45.1 +0.1
WALA **Waterton Lakes** 57.16 51 *e*P P 19 26 45.4 +0.6
comp=Z,7.8nm,0.8s
WALA *ep*P pP 19 27 08.9 +0.6
F10A **Beach Ranch, E** 57.24 56 *e*P P 19 26 46.6 +1.2
comp=Z,3.6nm,0.9s
BSMT **Bassoo Peak** 57.43 53 *e*P P 19 26 47.8 +0.9
BLMT **Blacktail Moun** 57.56 53 *e*P P 19 26 49.0 +1.3
AB31 **Akbulak array** 57.84 309 P P 19 26 46.6 -2.8
AB31 pmax pmax
comp=Z,1.0nm,0.5s
ABKAR **Akbulak array** 57.84 309 *e*P P 19 26 47.5 -1.9
comp=Z,28nm,0.8s
BMO **Blue Mountains** 57.88 57 *e*P P 19 26 51.5 +1.6
BMO *e**PP pP 19 27 14.6 +1.2
BMO pmax pmax
comp=Z,3.0nm,0.8s
BMO **Blue Mountains** 57.88 57 *e*P P 19 26 51.5 +1.6
comp=Z,3.0nm,0.8s
BMO *ep*P pP 19 27 14.6 +1.2
SBUM **Sibu** 57.89 231 *e*P P 19 26 51.1 +0.9
comp=Z,3.2nm,0.8s
MOD **Modoc Plateau** 57.98 61 *e*P P 19 26 52.0 +1.3
comp=Z,4.9nm,0.8s
SWMT **Swartz Lake** 58.06 53 *e*P P 19 26 51.5 +0.3
O03D **Paynes Creek** 58.08 64 P P 19 26 53.1 +1.7
baz=309
AKTO **Aktyubinsk** 58.09 311 P P 19 26 50.2 -1.0
AKTO pmax pmax
comp=Z,3.0nm,0.7s
SLMT **Seeley Lake** 58.50 53 *e*P P 19 26 54.5 +0.3
MSO **Missoula** 58.51 54 P P 19 26 55.9 +1.6
baz=309
MSO **Missoula** 58.51 54 *e*P P 19 26 55.5 +1.1
WVOR **Wild Horse Val** 58.62 60 *e*P P 19 26 56.5 +1.3
WVOR *e**PP pP 19 27 20.1 +1.4
WVOR **Wild Horse Val** 58.62 60 *e*P P 19 26 56.5 +1.3
WVOR *ep*P pP 19 27 20.1 +1.4
ORV **Oroville** 58.72 64 *e*P P 19 26 56.4 +0.7
ORV pmax pmax
comp=Z,7.0nm,1.4s
ORV **Oroville** 58.72 64 *e*P P 19 26 56.4 +0.7
comp=Z,6.6nm,1.4s
MCCM **Marconi Confer** 58.77 66 *e*P P 19 26 55.2 -0.8
comp=Z,85nm,1.2s
CHMT **Chamberlain Mo** 58.83 53 *e*P P 19 26 57.4 +0.7
KLMR **Klimovskoe** 59.09 329 *e*P P 19 26 55.2 -2.7
KLMR pmax pmax
comp=Z,5.0nm,0.8s
SUMG **Summit** 59.20 4 *i* P P 19 27 00.0 +1.0
comp=Z,9.0nm,1.0s
SUMG **Summit** 59.20 4 *i* P P 19 27 00.0 +1.0
SUMG pmax pmax
comp=Z,9.0nm,1.0s
SUMG **Summit** 59.20 4 *e*P P 19 26 58.8 -0.2
comp=Z,7.2nm,0.9s
FFC **Flin Flon** 59.32 41 *e*P P 19 27 00.0 +0.4
FFC pmax pmax
comp=Z,15nm,1.0s
FFC **Flin Flon** 59.32 41 *e*P P 19 27 00.0 +0.4
comp=Z,15nm,1.0s
MFID **Camas Ranch** 59.61 58 *e*P P 19 27 02.5 +0.5
comp=Z,14nm,1.9s
KSM **Kuching** 59.73 233 *e*P P 19 27 03.8 +0.9
comp=Z,8.7nm,0.9s
FCC **Fort Churchill** 59.78 34 *e*P P 19 27 02.8 +0.1
FCC pmax pmax
comp=Z,18nm,0.8s
FCC **Fort Churchill** 59.78 34 *e*P P 19 27 02.8 +0.1
comp=Z,18nm,0.8s
PAHR **Pah Rah Range** 59.89 63 *e*P P 19 27 04.9 +0.9
comp=Z,4.9nm,1.0s
LRM **Limekiln Ridge** 59.95 54 *e*P P 19 27 06.2 +1.8
LRM *ep*P pP 19 27 27.9 -0.1
EGMT **Eagleton** 59.96 50 P P 19 27 05.9 +1.6
baz=310
EGMT **Eagleton** 59.96 50 *e*P P 19 27 05.0 +0.7
comp=Z,8.7nm,0.8s
PNTR **Pine Nut** 60.16 64 *e*P P 19 27 08.2 +2.3
comp=Z,8.2nm,0.8s
DLMT **Dillon** 60.16 54 *e*P P 19 27 06.6 +0.8
comp=Z,7.2nm,1.1s
HLID **Hailey** 60.31 57 P P 19 27 08.6 +1.7
baz=310
MCMT **McKenzie Canyo** 60.37 55 *e*P P 19 27 09.0 +1.7
YERR **Yerington** 60.44 63 *e*P P 19 27 09.6 +1.8
comp=Z,5.0nm,0.8s
YERR *ep*P pP 19 27 30.1 -1.3
BOZ **Bozeman (W)** 60.50 53 P P 19 27 10.0 +1.9
baz=310
BOZ **Bozeman (W)** 60.50 53 *e*P P 19 27 09.9 +1.9
BOZ *e**PP pP 19 27 32.9 +1.2
BOZ pmax pmax
comp=Z,11nm,0.8s
BOZ **Bozeman (W)** 60.50 53 *e*P P 19 27 09.9 +1.9
comp=Z,10nm,0.8s
BOZ *ep*P pP 19 27 32.9 +1.2
WAKR **Walker** 60.63 64 *e*P P 19 27 11.0 +1.9
comp=Z,6.0nm,0.9s
BMN **Battle Mountai** 60.71 61 *e*P P 19 27 11.4 +1.8
BMN pmax pmax
comp=Z,5.0nm,0.8s
BMN **Battle Mountai** 60.71 61 *e*P P 19 27 11.3 +1.8
comp=Z,4.7nm,0.8s
TVH1 **TV Hill, Hawth** 61.06 64 *e*P P 19 27 12.6 +0.4
comp=Z,5.8nm,1.1s
TVH3 **East Aurora ar** 61.10 64 *e*P P 19 27 13.1 +0.8
comp=Z,5.7nm,1.2s
QLMT **Earthquake Lak** 61.14 54 *e*P P 19 27 13.8 +1.4
GCMT **Greycliff** 61.46 52 *e*P P 19 27 16.6 +2.1
YFT **Old Faithful** 61.71 54 *e*P P 19 27 17.9 +1.6
comp=Z,13nm,1.1s
YPP **Pitchstone Pla** 61.84 54 *e*P P 19 27 18.0 +0.7
comp=Z,122nm,0.2s
H17A **Grant Village** 61.88 54 P P 19 27 20.5 +3.0
baz=311
H17A **Grant Village** 61.88 54 *e*P P 19 27 19.5 +2.0
comp=Z,13nm,0.8s
KBL **Kabul** 61.95 291 *e*P P 19 27 15.9 -2.2
KBL pmax pmax
comp=Z,4.0nm,0.9s
KBL **Kabul** 61.95 291 *e*P P 19 27 15.9 -2.2
comp=Z,4.4nm,0.9s
IMW **Indian Meadow** 62.02 55 *e*P P 19 27 19.3 +0.9
comp=Z,6.9nm,0.9s
FLWY **Flagg Ranch** 62.02 54 *e*P P 19 27 19.6 +1.2
comp=Z,5.8nm,0.8s
RLMT **Red Lodge** 62.11 53 P P 19 27 20.5 +1.5
baz=312
RLMT **Red Lodge** 62.11 53 *e*P P 19 27 19.5 +0.6
RLMT *ep*P pP 19 27 44.6 +1.9
MOOW **Moose Ponds** 62.22 55 *e*P P 19 27 21.5 +1.7
comp=Z,3.7nm,0.9s
MOOW *ep*P pP 19 27 45.2 +1.7
TPAW **Teton Pass** 62.28 55 *e*P P 19 27 21.5 +1.3
comp=Z,9.1nm,0.8s
TPAW *ep*P pP 19 27 46.3 +2.3
LOHW **Long Hollow** 62.38 55 *e*P P 19 27 22.7 +1.9
comp=Z,8.7nm,1.1s
LOHW *ep*P pP 19 27 45.6 +0.9
HVU **Hansel Valley** 62.39 57 *e*P P 19 27 21.9 +1.1
HVU *e**PP pP 19 27 45.8 +1.2
HVU **Hansel Valley** 62.39 57 *e*P P 19 27 21.9 +1.1
HVU *ep*P pP 19 27 45.8 +1.2
SNOW **Snow King Moun** 62.40 55 *e*P P 19 27 22.8 +1.8
comp=Z,7.4nm,0.6s
REDW **Red Top Meadow** 62.41 55 *e*P P 19 27 22.8 +1.7
comp=Z,8.6nm,0.9s
REDW *ep*P pP 19 27 45.9 +1.1
DGMT **Dagmar** 62.47 47 P P 19 27 22.6 +1.5
baz=313
DGMT **Dagmar** 62.47 47 *e*P P 19 27 22.8 +1.8
DGMT *ep*P pP 19 27 46.3 +1.4
COEN **Coen** 62.61 192 *e*P P 19 27 22.8 +0.5
comp=Z,10nm,0.6s
LAO **LASA Array** 62.65 50 P P 19 27 24.0 +1.6
baz=312
LAO **LASA Array** 62.65 50 *e*P P 19 27 23.8 +1.4
LAO *ep*P pP 19 27 46.5 +0.3
AHID **Auburn Hatcher** 62.67 56 *e*P P 19 27 23.9 +1.1
comp=Z,10nm,1.4s
AHID *ep*P pP 19 27 47.0 +0.4
CWC **Cottonwood Cre** 62.79 65 P P 19 27 25.1 +1.5
baz=312
GRAC **Grapevine Rang** 62.86 64 P P 19 27 25.7 +1.8
baz=312
FIA1 **FINESS Array S** 62.90 335 *e*P P 19 27 22.0 -1.7
FIA0 **FINESS Array S** 62.91 335 *e*P P 19 27 22.1 -1.6
FIA0 **FINESS Array S** 62.91 335 *e*P P 19 27 22.1 -1.6
FINES **FINESS Array B** 62.91 335 P P 19 27 22.1 -1.6
comp=Z,3.2nm,0.5s,baz=31,slow=7.9,SNR=40
R11A **Troy Canyon, C** 63.02 62 P P 19 27 26.7 +1.6
baz=312
R11A **Troy Canyon, C** 63.02 62 *e*P P 19 27 26.3 +1.2
comp=Z,4.7nm,1.0s
R11A *ep*P pP 19 27 47.9 -1.1
HWUT **Hardware Ranch** 63.18 57 *e*P P 19 27 28.0 +1.9
comp=Z,3.8nm,0.7s
DAC **Darwin (Calif)** 63.19 65 *e*P P 19 27 26.9 +0.6
DAC pmax pmax
comp=Z,4.0nm,0.9s
DAC **Darwin (Calif)** 63.19 65 *e*P P 19 27 26.9 +0.6
comp=Z,4.3nm,0.9s
MPMC **Manual Prospec** 63.40 65 P P 19 27 28.5 +0.8
baz=312
DUG **Dugway, Tooele** 63.41 59 P P 19 27 29.1 +1.5
baz=312
DUG **Dugway, Tooele** 63.41 59 *e*P P 19 27 29.3 +1.7
DUG pmax pmax
comp=Z,11nm,1.3s
DUG **Dugway, Tooele** 63.41 59 *e*P P 19 27 29.3 +1.7
comp=Z,11nm,1.3s
FURC **Furnace Creek,** 63.51 64 P P 19 27 29.8 +1.8
baz=312
BW06 **Boulder Array** 63.52 55 P P 19 27 30.0 +1.6
baz=312
BW06 **Boulder Array** 63.52 55 *e*P P 19 27 29.7 +1.3
BW06 *ep*P pP 19 27 53.1 +0.9
BW06 *ep*P pP 19 27 54.1 +1.9
PD31 **Pinedale Array** 63.52 55 *e*P P 19 27 29.7 +1.3
PD31 *ep*P pP 19 27 53.8 +1.5
PDAR **Pinedale Array** 63.52 55 P P 19 27 29.8 +1.3
comp=Z,6.8nm,0.9s,baz=318,slow=2.0,SNR=39
PDAR pP pP 19 27 53.8 +1.5
comp=Z,5.1nm,0.9s,baz=302,slow=2.8,SNR=6.2
TPNV **Topopah Spring** 63.56 63 P P 19 27 30.3 +1.7
baz=312
TPNV **Topopah Spring** 63.56 63 *e*P P 19 27 30.1 +1.5
TPNV *e**PP pP 19 27 52.1 -0.4
TPNV pmax pmax
comp=Z,6.0nm,0.8s
TPNV **Topopah Spring** 63.56 63 *e*P P 19 27 30.1 +1.5
comp=Z,5.6nm,0.8s
TPNV *ep*P pP 19 27 52.1 -0.4
TCUT **Toone Canyon** 63.59 57 *e*P P 19 27 30.2 +1.3
comp=Z,7.1nm,0.8s
CTU **Camp Tracy** 63.69 58 *e*P P 19 27 30.1 +0.6
comp=Z,14nm,0.7s
JLU **Jordanelle** 63.92 58 *e*P P 19 27 32.6 +1.6
comp=Z,5.9nm,1.2s
PSUT **Pine Spring** 63.92 61 *e*P P 19 27 31.4 +0.3
comp=Z,13nm,0.7s
NLU **North Lily Min** 63.99 59 *e*P P 19 27 32.9 +1.4
comp=Z,3.4nm,0.7s
MTN **Manton Dam** 64.04 205 *e*P P 19 27 32.2 +0.6
comp=Z,16nm,0.8s
MPU **Maple Canyon** 64.21 58 *e*P P 19 27 34.1 +1.2
comp=Z,4.8nm,0.7s
GSC **Goldstone, Bar** 64.32 65 P P 19 27 34.3 +0.8
baz=312
SHPR **Sheep Range** 64.50 63 *e*P P 19 27 37.0 +2.2
comp=Z,4.7nm,1.0s
BFSC **Mount Baldy Ra** 64.51 67 P P 19 27 35.9 +1.0
baz=312
CCUT **Cedar City** 64.86 61 *e*P P 19 27 39.1 +1.9
comp=Z,3.6nm,1.0s
CCUT *ep*P pP 19 27 59.0 -2.2
TMUT **Trail Mountain** 64.93 59 *e*P P 19 27 39.5 +1.8
comp=Z,5.0nm,0.9s
SZCU **Shurtz Canyon** 65.00 61 *e*P P 19 27 38.6 +0.6
comp=Z,17nm,1.6s
P17A **Butcher Ranch,** 65.08 58 *e*P P 19 27 39.9 +1.4
comp=Z,8.4nm,1.3s
ULM **Lac du Bonnet** 65.11 42 P P 19 27 38.8 +0.4
comp=Z,5.0nm,0.6s,baz=310,slow=7.8,SNR=9.6
ULM **Lac du Bonnet** 65.11 42 *e*P P 19 27 38.5 +0.2
comp=Z,5.6nm,0.7s
MTPU **Mount Pierson** 65.22 60 *e*P P 19 27 41.1 +1.4
comp=Z,3.6nm,0.9s
MURC **Murrieta** 65.22 67 P P 19 27 41.0 +1.6
baz=313
K22A **Casper** 65.24 53 *e*P P 19 27 40.2 +0.7
comp=Z,33nm,1.8s
LCMT **Little Creek M** 65.30 62 *e*P P 19 27 41.7 +1.7
comp=Z,5.5nm,0.8s
GMRC **Granite Mounta** 65.36 65 P P 19 27 41.8 +1.4
baz=313
SRU **San Rafael Swe** 65.45 58 *e*P P 19 27 42.5 +1.5
SRU pmax pmax
comp=Z,11nm,0.8s
SRU **San Rafael Swe** 65.45 58 *e*P P 19 27 42.5 +1.5
comp=Z,11nm,0.8s
RSSD **Black Hills** 65.53 51 P P 19 27 42.6 +1.2
baz=314
RSSD **Black Hills** 65.53 51 *e*P P 19 27 42.5 +1.0
RSSD pmax pmax
comp=Z,9.0nm,0.8s
RSSD **Black Hills** 65.53 51 *e*P P 19 27 42.5 +1.0
comp=Z,9.3nm,0.8s
KNB **Kanab** 65.54 61 *e*P P 19 27 39.8 -1.8
KNB pmax pmax
comp=Z,23nm,1.6s
KNB **Kanab** 65.54 61 *e*P P 19 27 39.8 -1.8
comp=Z,23nm,1.6s
PKCU **Pink Cliffs** 65.55 61 *e*P P 19 27 42.9 +1.1
comp=Z,14nm,1.6s
BELC **Belle Mtn. Jos** 65.69 66 P P 19 27 43.5 +1.0
baz=313
IRM **Iron Mountain** 66.10 65 P P 19 27 46.5 +1.5
baz=313
B32A **Ashes, Strandq** 66.16 43 P P 19 27 46.1 +1.0
baz=317
BAR **Barrett** 66.17 67 *e*P P 19 27 46.4 +1.0
comp=Z,9.1nm,1.1s
MONP2 **Monument Peak** 66.18 67 P P 19 27 46.5 +0.8
baz=313
W13A **Hualapai Mount** 66.22 64 *e*P P 19 27 47.3 +1.4
comp=Z,2.7nm,0.8s
BC3 **Big Chuckawall** 66.25 66 P P 19 27 47.2 +1.1
baz=313
U15A **North Rim** 66.25 62 *e*P P 19 27 48.0 +1.7
comp=Z,4.1nm,0.9s
A33A **Warroad** 66.29 42 P P 19 27 47.0 +1.1
baz=317
IKP **In-Ko-Pah, Jac** 66.54 67 P P 19 27 49.3 +1.4
baz=314
AGMN **Agassiz Nation** 66.54 43 P P 19 27 48.2 +0.7
baz=317
AGMN **Agassiz Nation** 66.54 43 *e*P P 19 27 48.0 +0.4
comp=Z,5.0nm,0.9s
PDMCI **Parker Dam,Lak** 66.61 64 P P 19 27 49.8 +1.7

PV09 **Paradox Valley** 66.66 58 *e*P P 19 27 49.4 +0.5
Y12C **Blythe** 66.75 65 P P 19 27 51.0 +1.9
baz=314
Y12C **Blythe** 66.75 65 *e*P P 19 27 49.3 +0.2
comp=Z,11nm,1.2s
N23A **Red Feather La** 66.77 54 P P 19 27 51.0 +1.5
baz=315
N23A **Red Feather La** 66.77 54 *e*P P 19 27 50.4 +1.0
comp=Z,15nm,1.4s
PV10 **Paradox Valley** 66.80 58 *e*P P 19 27 51.5 +1.8
NC405 **NORSAR Array S** 66.81 341 *e*P P 19 27 48.1 -1.0
E31A **Nome** 66.86 45 P P 19 27 50.2 +0.6
baz=317
NB201 **NORSAR Array S** 66.96 341 *e*P P 19 27 48.9 -1.1
PV05 **Paradox Valley** 66.97 58 *e*P P 19 27 52.3 +1.6
PV05 *e*pP pP 19 28 16.1 +1.3
NB2 **NORSAR Subarra** 66.98 341 P P 19 27 49.0 -1.2
comp=Z,1.6nm,0.5s,baz=30,slow=6.5
NB200 **NORSAR Array S** 66.98 341 *e*P P 19 27 48.6 -1.6
NOA **NORSAR Array B** 66.98 341 P P 19 27 48.6 -1.6
comp=Z,1.5nm,0.5s,baz=29,slow=6.5,SNR=14
GLA **Glamis** 67.05 66 P P 19 27 52.4 +1.3
baz=314
GLA **Glamis** 67.05 66 *e*P P 19 27 52.4 +1.3
GLA pmax pmax
comp=Z,8.0nm,0.9s
GLA **Glamis** 67.05 66 *e*P P 19 27 52.4 +1.3
comp=Z,7.8nm,0.9s
PV01 **Paradox Valley** 67.23 58 *e*P P 19 27 53.1 +0.8
SMCO **Snowmass** 67.40 56 *e*P P 19 27 54.2 +0.5
SMCO *e*pP pP 19 28 18.2 +0.5
WUAZ **Wupatki** 67.42 62 P P 19 27 55.3 +1.8
baz=314
WUAZ **Wupatki** 67.42 62 *e*P P 19 27 55.2 +1.7
comp=Z,6.5nm,1.0s
B35A **Bob, Littlefor** 67.46 42 P P 19 27 53.3 -0.1
baz=318
Y14A **Wickenburg** 67.54 64 *e*P P 19 27 55.7 +1.6
comp=Z,17nm,0.9s
Y14A *e*pP pP 19 28 19.9 +1.6
ISCO **Idaho Springs** 67.71 55 P P 19 27 57.1 +1.6
baz=315
ISCO **Idaho Springs** 67.71 55 *e*P P 19 27 57.3 +1.8
ISCO *e*PP pP 19 28 17.1 -2.5
ISCO pmax pmax
comp=Z,6.0nm,0.9s
ISCO **Idaho Springs** 67.71 55 *e*P P 19 27 57.3 +1.8
comp=Z,6.2nm,0.9s
ISCO *e*pP pP 19 28 17.1 -2.5
113A **Mohawk Valley,** 67.89 65 *e*P P 19 27 57.0 +0.7
comp=Z,4.7nm,1.2s
MVCO **Mesa Verde** 67.91 59 P P 19 27 57.7 +1.0
baz=315
MVCO **Mesa Verde** 67.91 59 *e*P P 19 27 57.8 +1.0
comp=Z,8.2nm,1.0s
F33A **5 Mile Ranch,** 68.14 45 P P 19 27 58.7 +1.0
baz=318
X16A **Lo Mia Camp, P** 68.14 63 *e*P P 19 27 59.9 +1.8
comp=Z,5.2nm,0.9s
D35A **Remer** 68.26 43 P P 19 27 58.9 +0.5
baz=318
C36A **Pine Crest Far** 68.30 42 P P 19 27 58.6 -0.1
baz=319
S22A **4UR Ranch, Cre** 68.48 57 P P 19 28 01.4 +1.1
baz=315
S22A **4UR Ranch, Cre** 68.48 57 *e*P P 19 28 01.8 +1.5
comp=Z,6.2nm,1.0s
Q24A **Divide** 68.56 55 P P 19 28 01.7 +0.9
baz=315
KONO **Kongsberg** 68.59 341 *e*P P 19 28 00.3 +0.1
KONO pmax pmax
comp=Z,31nm,1.6s
KONO **Kongsberg** 68.59 341 *e*P P 19 28 00.3 +0.1
comp=Z,31nm,1.6s
C37A **Embarrass** 68.62 41 P P 19 28 00.8 +0.2
baz=319
EYMN **Ely** 68.75 41 P P 19 28 01.8 +0.3
baz=320
EYMN **Ely** 68.75 41 *e*P P 19 28 01.6 +0.1
comp=Z,9.4nm,0.9s
X18A **Snowflake** 68.95 62 *e*P P 19 28 04.6 +1.5
comp=Z,3.7nm,0.8s
AFI **Afiamalu** 69.02 144 *e*P P 19 28 04.7 +1.2
AFI pmax pmax
comp=Z,66nm,1.1s
AFI **Afiamalu** 69.02 144 *e*P P 19 28 04.7 +1.2
comp=Z,66nm,1.1s
C38A **Sawbill Land.** 69.03 41 P P 19 28 03.2 0.0
baz=320
214A **Organ Pipe Nat** 69.03 65 P P 19 28 05.3 +1.8
baz=315
E36A **McGregor** 69.05 43 P P 19 28 03.6 +0.3
baz=319
MSVF **Nonsavu** 69.14 155 *e*P P 19 28 06.1 +1.9
MSVF pmax pmax
comp=Z,141nm,1.7s
MSVF **Nonsavu** 69.14 155 *e*P P 19 28 06.0 +1.9
comp=Z,140nm,1.7s
SDCO **Great Sand Dun** 69.23 56 P P 19 28 05.7 +0.8
baz=316
SDCO **Great Sand Dun** 69.23 56 *e*P P 19 28 05.8 +0.8
comp=Z,2.5nm,0.8s
F36A **Milaca** 69.42 44 P P 19 28 05.6 0.0
baz=319
C39A **Grand Marais** 69.45 40 P P 19 28 05.8 +0.1
baz=320
ECSD **EROS Data Cent** 69.54 47 P P 19 28 07.1 +0.7
baz=318
ECSD **EROS Data Cent** 69.54 47 *e*P P 19 28 06.7 +0.2
comp=Z,5.0nm,0.8s
TUC **Tucson** 70.01 64 P P 19 28 11.3 +1.7
baz=315
TUC **Tucson** 70.01 64 *e*P P 19 28 10.5 +0.9
TUC pmax pmax
comp=Z,4.0nm,1.1s
TUC **Tucson** 70.01 64 *e*P P 19 28 10.5 +0.9
comp=Z,3.8nm,1.1s
WRAB **Tennant Creek** 70.04 199 *e*P P 19 28 10.2 +0.6
WRAB **Tennant Creek** 70.04 199 *e*P P 19 28 09.8 +0.2
comp=Z,22nm,0.8s
WB2 **Warramunga Arr** 70.05 199 *e*P P 19 28 08.8 -0.8
WR1 **Warramunga Arr** 70.05 199 *e*P P 19 28 10.0 +0.4
comp=Z,23nm,0.8s
WRA **Warramunga Arr** 70.05 199 P P 19 28 10.0 +0.4
comp=Z,21nm,0.7s,baz=16,slow=6.1,SNR=118
KBZ **Khabaz** 70.17 314 P P 19 28 09.2 -1.0
comp=Z,2.5nm,0.6s,baz=79,slow=3.0,SNR=4.3
SPMN **Marine on St.** 70.23 44 *e*P P 19 28 10.9 +0.3
comp=Z,19nm,0.3s
T25A **Trinidad** 70.27 56 P P 19 28 12.0 +0.8
baz=316
T25A **Trinidad** 70.27 56 *e*P P 19 28 11.8 +0.6
comp=Z,7.6nm,0.9s
AKASG **Malin Array Be** 70.58 326 P P 19 28 11.3 -1.3
comp=Z,2.4nm,0.5s,baz=33,slow=6.2,SNR=6.5
AKBB **Malin Array Si** 70.58 326 *e*P P 19 28 11.0 -1.6
AKBB **Malin Array Si** 70.58 326 *e*P P 19 28 11.0 -1.6
KIEV **Kiev** 70.59 326 *e*P P 19 28 10.9 -1.7
KIEV pmax pmax
comp=Z,3.0nm,0.6s
KIEV **Kiev** 70.59 326 *e*P P 19 28 10.9 -1.7
comp=Z,3.3nm,0.6s
FITZ **Fitzroy Crossi** 70.66 208 *e*P P 19 28 14.0 +0.7
comp=Z,5.7nm,0.8s
ANMO **Albuquerque** 70.68 59 P P 19 28 15.0 +1.3
baz=316
ANMO **Albuquerque** 70.68 59 *e*P P 19 28 15.5 +1.7
ANMO **Albuquerque** 70.68 59 *e*P P 19 28 14.8 +1.0
comp=Z,3.4nm,0.8s
I37A **Lemond, Waseca** 70.87 45 P P 19 28 15.7 +1.2
baz=320
BNM **Barren Site** 71.15 60 *e*P P 19 28 17.6 +1.0
319A **Douglas** 71.57 64 *e*P P 19 28 20.5 +1.4
comp=Z,16nm,0.9s
121A **Cookes Peak, D** 71.63 62 P P 19 28 21.4 +1.9
baz=316
SCHQ **Schefferville** 71.78 23 P P 19 28 19.6 -0.2
comp=Z,6.8nm,0.5s,baz=299,slow=4.6,SNR=7.0
SCHQ **Schefferville** 71.78 23 *e*P P 19 28 20.2 +0.4
comp=Z,8.4nm,0.6s
Q32A **Meitler Ranch,** 72.07 51 P P 19 28 22.4 +0.6
baz=318
L37A **Phoenix Point,** 72.14 46 P P 19 28 22.6 +0.5
baz=320
O34A **Beatrice** 72.14 49 P P 19 28 22.2 0.0
baz=319

Q33A **Connelly Farm,** 72.44 51 P P 19 28 24.3 +0.3
baz=319
P34A **Walnut Farm, R** 72.55 50 P P 19 28 25.1 +0.4
baz=319
SRIG **Santa Rosalia** 72.65 68 *e*P P 19 28 26.3 +0.9
comp=Z,15nm,0.6s
S32A **Newby Ranch, P** 72.83 52 P P 19 28 27.2 +0.8
baz=318
L39A **Vinton** 72.98 45 P P 19 28 26.7 -0.4
baz=321
T32A **Huddler Ranch,** 73.22 53 P P 19 28 28.9 +0.2
baz=318
R34A **Isabella, Hill** 73.27 51 P P 19 28 29.5 +0.6
baz=319
EIDS **Eidsvold** 73.29 183 *e*P P 19 28 30.0 +1.1
comp=Z,5.5nm,0.8s
M39A **Webster** 73.39 46 P P 19 28 29.6 0.0
baz=321
AMTX **Amarillo** 73.42 56 P P 19 28 31.1 +1.1
baz=318
AMTX **Amarillo** 73.42 56 *e*P P 19 28 30.9 +0.9
comp=Z,16nm,1.0s
MSTX **Muleshoe** 73.48 57 P P 19 28 31.2 +0.8
baz=318
MSTX **Muleshoe** 73.48 57 *e*P P 19 28 30.4 0.0
comp=Z,9.1nm,1.0s
MNTX **Cornudas Mount** 73.64 61 P P 19 28 32.1 +0.8
baz=317
MNTX **Cornudas Mount** 73.64 61 *e*P P 19 28 32.4 +1.1
comp=Z,2.6nm,1.0s
AS01 **Alice Springs** 73.73 199 *e*P P 19 28 32.6 +0.9
AS31 **Alice Springs** 73.75 199 *e*P P 19 28 32.5 +0.8
comp=Z,1.9nm,0.6s
ASAR **Alice Springs** 73.75 199 P P 19 28 32.9 +1.2
comp=Z,4.5nm,0.6s,baz=12,slow=5.7,SNR=102
P37A **Lathrop** 73.77 48 P P 19 28 32.0 +0.2
baz=320
U32A **Winter Ranch,** 73.78 53 P P 19 28 32.2 +0.3
baz=319
R35A **Emporia Munici** 73.80 50 P P 19 28 32.1 +0.1
baz=319
R36A **Gordon, Harris** 74.15 50 P P 19 28 34.2 +0.1
baz=320
P38A **Dawn** 74.15 48 P P 19 28 34.8 +0.8
baz=320
U33A **Lingo Farm, Me** 74.21 53 P P 19 28 35.1 +0.6
baz=319
V32A **Arapaho** 74.25 54 P P 19 28 35.3 +0.6
baz=319
OJC **Ojcow** 74.25 331 *e*P P 19 28 33.7 -0.7
OJC pmax pmax
comp=Z,3.0nm,0.7s
OJC **Ojcow** 74.25 331 *e*P P 19 28 33.7 -0.7
comp=Z,3.3nm,0.7s
T34A **McClaskey Farm** 74.26 52 P P 19 28 35.0 +0.3
baz=319
VLDQ **Val d'Or** 74.26 33 *e*P P 19 28 33.3 -1.2
comp=Z,11nm,0.9s
Q37A **Longview Farm,** 74.27 49 P P 19 28 34.6 -0.1
baz=320
U34A **Anderson Ranch** 74.52 52 P P 19 28 36.9 +0.6
baz=319
U34A **Anderson Ranch** 74.52 52 *e*P P 19 28 36.6 +0.4
comp=Z,13nm,1.1s
S36A **Lake Cedric, C** 74.56 50 P P 19 28 36.9 +0.4
baz=320
O40A **La Belle** 74.58 46 P P 19 28 37.9 +1.4
baz=321
W32A **Sentinel** 74.58 54 P P 19 28 38.3 +1.7
baz=319
BUR08 **Bucovina Ar. S** 74.59 327 *e*P P 19 28 35.6 -1.0
BURAR **Bucovina Array** 74.61 327 *i*P P 19 28 35.6 -1.1
Q38A **Cooks Store, C** 74.62 48 P P 19 28 36.8 0.0
baz=320,SNR=7.3
P39B **Salisbury** 74.64 47 P P 19 28 38.4 +1.6
baz=321
T35A **Sooner Cattle** 74.70 51 P P 19 28 37.6 +0.4
baz=320
Q39A **Willow Grove F** 74.87 48 P P 19 28 38.9 +0.7
baz=321
T36A **Boggs Farm, Ca** 74.92 51 P P 19 28 38.8 +0.3
baz=320
S37A **Fort Scott** 74.93 50 P P 19 28 38.4 -0.1
baz=320
P40A **Paris** 74.95 47 P P 19 28 39.5 +0.8
baz=321
V34A **Guthrie** 74.98 53 P P 19 28 39.4 +0.5
baz=319
V34A **Guthrie** 74.98 53 *e*P P 19 28 39.5 +0.6
comp=Z,20nm,0.8s
V34A *e*pP pP 19 29 03.6 +0.2
U35A **Pawnee** 74.99 52 P P 19 28 38.8 -0.1
baz=320
O41A **Passleys Farm,** 75.06 46 P P 19 28 40.8 +1.5
baz=322
R38A **Fenwick Farm,** 75.07 49 P P 19 28 39.2 -0.2
baz=320
X32A **Elmer** 75.09 55 P P 19 28 40.8 +1.2
baz=319
WMOK **Wichita Mounta** 75.12 54 P P 19 28 40.4 +0.5
baz=319,SNR=11
WMOK **Wichita Mounta** 75.12 54 *e*P P 19 28 40.3 +0.5
WMOK *e*PP pP 19 29 04.6 +0.3
WMOK pmax pmax
comp=Z,10.0nm,1.0s
WMOK **Wichita Mounta** 75.12 54 *e*P P 19 28 40.3 +0.5
comp=Z,10nm,1.0s
WMOK *e*pP pP 19 29 04.6 +0.3
DPC **Dobruska-Polom** 75.22 333 *e*P P 19 28 40.6 +0.5
DPC *ex* x 19 28 45.4
DPC **Dobruska-Polom** 75.22 333 *e*P P 19 28 40.6 +0.5
CLL **Collm** 75.31 336 *i*P P 19 28 39.5 -1.0
comp=Z,13nm,1.0s
CLL *i* 19 28 45.3
CLL *es*P sP 19 29 14.0 -1.4
CLL **Collm** 75.31 336 *i*P P 19 28 39.5 -1.0
CLL pmax pmax
comp=Z,13nm,1.0s
CLL **Collm** 75.31 336 *e*P P 19 28 39.6 -0.9
comp=Z,9.1nm,0.8s
KRLC **Kraliky** 75.32 333 *e*P P 19 28 41.2 +0.5
KRLC **Kraliky** 75.32 333 *e*P P 19 28 41.2 +0.5
P41A **Barry, Barry** 75.32 46 P P 19 28 41.2 +0.4
baz=322
MORC **Moravsky Berou** 75.35 332 *i*P P 19 28 39.4 -1.4
MORC **Moravsky Berou** 75.35 332 *e*P P 19 28 40.3 -0.5
MORC pmax pmax
comp=Z,19nm,0.9s
MORC **Moravsky Berou** 75.35 332 *e*P P 19 28 40.3 -0.5
comp=Z,19nm,0.9s
Q40A **Laux Farm, Aux** 75.36 47 P P 19 28 41.5 +0.5
baz=321
T37A **Cheneyville 18** 75.37 50 P P 19 28 40.0 -1.1
baz=320,SNR=8.1
V35A **Meyer Ranch, C** 75.40 52 P P 19 28 41.6 +0.3
baz=320
R39A **Chumby, Stover** 75.41 48 P P 19 28 41.3 0.0
baz=321
BRG **Berggiesshubel** 75.44 335 *e*PKP P 19 28 41.1 -0.2
comp=Z,3.3nm,0.9s
BRG **Berggiesshubel** 75.44 335 *e*P P 19 28 41.1 -0.2
BRG pmax pmax
comp=Z,3.0nm,0.9s
S38A **Stockton** 75.49 49 P P 19 28 41.5 -0.3
baz=321
U36A **Oologah** 75.50 51 P P 19 28 42.7 +0.9
baz=320
CFR **Carcaliu** 75.53 324 *i*P P 19 28 41.6 -0.2
X34A **Smith Ranch, M** 75.74 54 P P 19 28 44.2 +0.9
baz=319
S39A **Bolivar** 75.74 49 P P 19 28 42.6 -0.7
baz=321
T38A **Diamond** 75.75 50 P P 19 28 42.7 -0.6
baz=320,SNR=7.3
Y33A **Hilltop Ranch,** 75.76 55 P P 19 28 43.3 -0.1
baz=319
R40A **Maddies Statio** 75.81 48 P P 19 28 44.0 +0.4
baz=321
U37A **Salina** 75.81 51 P P 19 28 43.1 -0.6
baz=320,SNR=7.8
TUL1 **Leonard** 75.84 52 P P 19 28 44.5 +0.7
baz=320
W35A **Tecumseh** 75.84 53 P P 19 28 44.3 +0.4
baz=320,SNR=7.1
V36A **Jenks** 75.85 52 P P 19 28 44.7 +0.8
baz=320
GOPC **GO Pecny, Ondr** 76.06 334 *e*P P 19 28 45.0 +0.2

GOPC *ex* x 19 28 50.2
GOPC **GO Pecny, Ondr** 76.06 334 *e*P P 19 28 45.0 +0.2
GOPC *e* 19 28 50.2
PRU **Pruhonice** 76.06 334 *e*P P 19 28 44.3 -0.5
PRU *ex* x 19 28 49.4
PRU **Pruhonice** 76.06 334 *e*P P 19 28 44.3 -0.5
MLR **Muntele Rosu** 76.12 325 *i*P P 19 28 45.5 +0.1
MLR **Muntele Rosu** 76.12 325 *e*P P 19 28 45.1 -0.3
MLR pmax pmax
comp=Z,5.0nm,0.8s
MLR **Muntele Rosu** 76.12 325 *e*P P 19 28 45.1 -0.3
comp=Z,5.4nm,0.8s
U38A **Gravette** 76.16 50 P P 19 28 45.8 +0.2
baz=321
Q42A **Golden Eagle** 76.17 46 P P 19 28 47.0 +1.4
baz=322
W36A **Wetumka** 76.19 52 P P 19 28 46.0 +0.2
baz=320,SNR=5.4
V37A **Hulbert** 76.20 51 P P 19 28 45.4 -0.4
baz=320,SNR=9.0
Z33A **Whitaker Ranch** 76.22 55 P P 19 28 46.4 +0.4
baz=319
S40A **Lebanon** 76.23 48 P P 19 28 46.5 +0.5
baz=321,SNR=5.5
T39A **Clever** 76.23 49 P P 19 28 46.8 +0.8
baz=321
Y34A **Reagan Ranch,** 76.27 54 P P 19 28 47.3 +1.0
baz=320
X35A **Drake** 76.36 53 P P 19 28 47.5 +0.8
baz=320
TX31 **Lajitas Ar. Si** 76.38 61 *e*P P 19 28 48.0 +0.8
TX31 *e*pP pP 19 29 12.3 +0.6
LTX **Lajitas** 76.38 61 *e*P P 19 28 48.4 +1.3
LTX **Lajitas** 76.38 61 *e*P P 19 28 48.4 +1.3
TXAR **Lajitas Array** 76.38 61 P P 19 28 48.4 +1.3
comp=Z,8.4nm,0.6s,baz=298,slow=5.0,SNR=78
NKC **Novy Kostel** 76.44 336 *e*P P 19 28 47.3 +0.3
NKC **Novy Kostel** 76.44 336 *e*P P 19 28 47.3 +0.3
HHAR **Hobbs** 76.51 50 *e*P P 19 28 47.7 +0.1
comp=Z,9.4nm,0.8s
X36A **Centrahoma** 76.56 53 P P 19 28 48.1 +0.2
baz=320
T40A **Mansfield** 76.57 49 P P 19 28 48.0 +0.1
baz=321
V38A **Canehill** 76.59 51 P P 19 28 48.4 +0.3
baz=321,SNR=9.9
S41A **Jillco Farms,** 76.61 48 P P 19 28 48.8 +0.6
baz=322
W37B **Quinton** 76.61 52 P P 19 28 48.5 +0.3
baz=320
133A **Hamilton Ranch** 76.65 56 P P 19 28 49.5 +1.0
baz=319
U39A **Green Forest** 76.67 50 P P 19 28 48.4 -0.1
baz=321,SNR=16
ARR **Arges** 76.72 326 *i*P P 19 28 49.0 +0.3
TRQ **Mont Tremblant** 76.91 32 *e*P P 19 28 49.6 -0.2
V39A **Pettigrew** 77.01 50 P P 19 28 50.2 -0.3
baz=321,SNR=10
U40A **Yellville** 77.01 50 P P 19 28 50.1 -0.4
baz=321,SNR=14
T41A **Mountain View** 77.03 48 P P 19 28 50.8 +0.3
baz=322
X37A **Clayton** 77.07 52 P P 19 28 51.4 +0.6
baz=320
Y36A **Durant** 77.11 53 P P 19 28 51.8 +0.9
baz=320
KHC **Kasperske Hory** 77.11 334 *e*P P 19 28 50.8 0.0
KHC *ex* x 19 28 54.9
KHC **Kasperske Hory** 77.11 334 *e*P P 19 28 50.8 0.0
KHC *e* 19 28 54.9
KHC **Kasperske Hory** 77.11 334 *e*P P 19 28 50.9 0.0
comp=Z,4.9nm,1.1s
W38A **Poteau** 77.15 51 P P 19 28 52.0 +0.9
baz=321
X38A **Whitesboro** 77.29 52 P P 19 28 52.5 +0.5
baz=321
GEC2 **GERESS Array S** 77.33 334 *e*P P 19 28 50.9 -1.2
GEC2 pmax pmax
comp=Z,4.0nm,1.0s
GEC2 **GERESS Array S** 77.33 334 *e*P P 19 28 50.9 -1.2
comp=Z,3.9nm,1.0s
GERES **GERESS Array B** 77.33 334 P P 19 28 51.5 -0.6
comp=Z,1.9nm,0.7s,baz=31,slow=6.2,SNR=20
GEA0 **GERESS Array S** 77.34 334 *e*P P 19 28 51.2 -0.9
W39A **Magazine** 77.43 51 P P 19 28 52.8 0.0
baz=321
V40A **Witts Springs** 77.46 50 P P 19 28 52.4 -0.5
baz=321
CONA **Conrad Observa** 77.50 333 *i*P P 19 28 52.5 -0.6
comp=Z,2.5nm,0.6s
Z36A **Blue Ridge** 77.51 54 P P 19 28 53.3 +0.1
baz=320
333A **Richland Sprin** 77.58 57 P P 19 28 54.6 +0.9
baz=319
BZS **Buzias** 77.61 328 *i*P P 19 28 53.3 -0.3
BR101 **Keskin Array S** 77.63 317 *e*P P 19 28 53.2 -0.8
BR131 **Keskin Array S** 77.63 317 *e*P P 19 28 53.3 -0.7
BRTR **Keskin Array B** 77.63 317 P P 19 28 53.2 -0.8
comp=Z,1.1nm,0.6s,baz=55,slow=5.5,SNR=6.3
MEM **Membach** 77.73 340 P P 19 28 54.4 +0.3
comp=Z,6.3nm,1.0s
JCT **Junction City** 77.75 58 P P 19 28 55.2 +0.5
baz=319
JCT **Junction City** 77.75 58 *e*P P 19 28 55.6 +0.9
JCT **Junction City** 77.75 58 *e*P P 19 28 55.6 +0.9
X39A **Fountain Ranch** 77.79 52 P P 19 28 55.4 +0.6
baz=321,SNR=5.2
V41A **Mountainview** 77.81 49 P P 19 28 54.7 -0.2
baz=322,SNR=5.4
WHTX **Lake Whitney,** 77.92 55 P P 19 28 55.6 0.0
baz=320
BR231 **Keskin MP Arra** 77.93 318 *e*P P 19 28 53.8 -1.8
433A **Art** 77.95 57 P P 19 28 56.4 +0.6
baz=320
334A **Lometa** 77.99 56 P P 19 28 56.5 +0.5
baz=320
MIAR **Mount Ida** 78.04 51 P P 19 28 56.7 +0.5
baz=321,SNR=7.1
MIAR **Mount Ida** 78.04 51 *e*P P 19 28 56.3 +0.1
MIAR *e*PP pP 19 29 20.4 -0.4
MIAR **Mount Ida** 78.04 51 *e*P P 19 28 56.3 +0.1
MIAR *e*pP pP 19 29 20.4 -0.4
MOA **Molln** 78.06 333 *i*P P 19 28 55.4 -0.7
comp=Z,1.7nm,0.6s
BCLA **Clavier** 78.07 340 P P 19 28 55.6 -0.4
comp=Z,6.4nm,1.4s
ARSA **Arzberg** 78.21 332 *i*P P 19 28 56.3 -0.6
comp=Z,0.3nm,0.2s
Y39A **Lockesburg** 78.24 52 P P 19 28 58.2 +0.9
baz=321
MDVR **Moldovita** 78.30 327 *i*P P 19 28 54.9 -2.6
X40A **Basin Creek Fa** 78.47 51 P P 19 28 59.2 +0.7
baz=322
533A **Kerrville** 78.50 58 P P 19 28 59.5 +0.7
baz=320
138A **Matatall Enter** 78.70 53 P P 19 29 00.2 +0.4
baz=321
534A **Blanco** 78.84 57 P P 19 29 01.7 +1.0
baz=320
SOKA **Soboth** 78.88 332 *i*P P 19 29 00.3 -0.4
comp=Z,2.6nm,0.7s,SNR=6.0
KBA **Koelnbreinsper** 79.03 334 *i*P P 19 29 00.1 -1.6
comp=Z,6.6nm,0.6s,SNR=10
OBKA **Obir** 79.17 333 *i*P P 19 29 00.8 -1.6
comp=Z,1.5nm,0.6s
N54A **Moraine State** 79.27 38 P P 19 29 03.2 +0.3
baz=327
BFO **Black Forest** 79.28 337 *e*P P 19 29 01.5 -1.2
BFO pmax pmax
comp=Z,5.0nm,0.9s
BFO **Black Forest** 79.28 337 *e*P P 19 29 01.5 -1.2
comp=Z,5.2nm,0.9s
WATA **Walderalm** 79.31 335 *i*P P 19 29 03.0 -0.1
comp=Z,3.8nm,0.3s
MYKA **Terra Mystica** 79.34 333 *i*P P 19 29 01.8 -1.4
comp=Z,0.7nm,0.2s
WTTA **Wattenberg** 79.36 335 *i*P P 19 29 04.1 +0.7
comp=Z,3.7nm,0.5s
733A **Divot King Ran** 79.37 59 P P 19 29 03.9 +0.4
baz=320
RETA **Reutte** 79.40 335 *i*P P 19 29 00.7 -2.8
comp=Z,3.0nm,0.3s
MOTA **Moosalm** 79.43 335 *i*P P 19 29 04.1 +0.3
comp=Z,6.0nm,0.6s,SNR=5.4
ABTA **Abfaltersbach** 79.57 334 *i*P P 19 29 03.3 -1.2
comp=Z,1.7nm,0.5s

NATX	**Nacogdoches**	**79.62**	**54**	P		**P**	**19 29 05.7**	**+0.8**
	baz=321							
WVT	**Waverly**	**79.69**	**46**	*e*P		**P**	**19 29 05.3**	**+0.2**
WVT				pmax		pmax		
	comp=Z,40nm,2.0s							
WVT	**Waverly**	**79.69**	**46**	*e*P		**P**	**19 29 05.3**	**+0.2**
	comp=Z,40nm,2.0s							
DAVA	**Damuels**	**79.82**	**336**	*i* P		**P**	**19 29 05.4**	**-0.5**
	comp=Z,4.6nm,0.7s							
FETA	**Feichten**	**79.83**	**335**	*i* P		**P**	**19 29 03.2**	**-2.8**
	comp=Z,1.1nm,0.4s							
933A	**Laredo**	**80.22**	**59**	P		**P**	**19 29 09.4**	**+1.2**
	baz=320							
FUORN	**Ofenpass-Fuorn**	**80.33**	**335**	*e*P		**P**	**19 29 08.4**	**-0.4**
	comp=Z,5.5nm,0.9s							
SSPA	**Standing Stone**	**80.41**	**37**	*e*P		**P**	**19 29 08.0**	**-1.0**
	comp=Z,17nm,1.2s							
STKA	**Stephens Creek**	**80.48**	**190**	P		**P**	**19 29 09.7**	**+0.6**
	comp=Z,2.8nm,0.5s,baz=2.0,slow=7.1,SNR=9.3							
STKA	**Stephens Creek**	**80.48**	**190**	*e*P		**P**	**19 29 09.4**	**+0.3**
STKA				pmax		pmax		
	comp=Z,1.0nm,0.8s							
STKA	**Stephens Creek**	**80.48**	**190**	*e*P		**P**	**19 29 09.4**	**+0.3**
	comp=Z,1.0nm,0.8s							
Y45A	**Yeager Farm, C**	**80.64**	**49**	P		**P**	**19 29 10.7**	**+0.4**
	baz=323							
TUE	**Stuetta**	**80.72**	**336**	*e*P		**P**	**19 29 10.3**	**-0.4**
	comp=Z,8.7nm,0.7s							
N59A	**State Game Lan**	**81.01**	**36**	P		**P**	**19 29 12.4**	**+0.3**
	baz=329							
PDG	**Podgorica**	**81.23**	**328**	‖ *i* P		**P**	**19 29 11.4**	**-1.9**
SWET	**Sewanee**	**81.33**	**46**	*e*P		**P**	**19 29 13.2**	**-0.9**
	comp=Z,3.0nm,0.7s							
SENIN	**Lac Senin/Sane**	**81.36**	**337**	*e*P		**P**	**19 29 13.8**	**-0.4**
	comp=Z,3.3nm,0.7s							
Z47A	**Carrollton**	**81.91**	**48**	P		**P**	**19 29 17.7**	**+0.7**
	baz=324							
245A	**Little AP, Sta**	**81.92**	**50**	P		**P**	**19 29 17.1**	**0.0**
	baz=323							
FORT	**Forrest**	**81.95**	**202**	*e*P		**P**	**19 29 18.0**	**+1.1**
	comp=Z,278nm,0.6s							
TKL	**Tuckaleechee C**	**81.99**	**44**	P		**P**	**19 29 16.9**	**-0.5**
	comp=Z,4.8nm,0.9s,baz=319,slow=6.9,SNR=3.5							
TKL	**Tuckaleechee C**	**81.99**	**44**	*e*P		**P**	**19 29 16.6**	**-0.9**
TKL				pmax		pmax		
	comp=Z,13nm,1.2s							
TKL	**Tuckaleechee C**	**81.99**	**44**	*e*P		**P**	**19 29 16.6**	**-0.9**
	comp=Z,13nm,1.2s							
Z48A	**Northport**	**82.03**	**48**	P		**P**	**19 29 17.8**	**+0.2**
	baz=324							
147A	**Livingston**	**82.23**	**49**	P		**P**	**19 29 19.6**	**+0.9**
	baz=324							
SSB	**Saint Sauveur**	**83.06**	**339**	*e*P		**P**	**19 29 22.7**	**-0.2**
SSB				pmax		pmax		
	comp=Z,9.0nm,1.1s							
SSB	**Saint Sauveur**	**83.06**	**339**	*e*P		**P**	**19 29 22.7**	**-0.2**
	comp=Z,9.1nm,1.1s							
ES19	**SONSECA Array**	**90.25**	**343**	*e*P		**P**	**19 29 57.5**	**-0.5**
ESDC	**Sonseca Array**	**90.28**	**343**	P		**P**	**19 29 56.5**	**-1.7**
	comp=Z,0.2nm,0.4s,baz=35,slow=1.8,SNR=4.8							
KEST	**Kesra**	**90.59**	**332**	P		**P**	**19 30 00.1**	**+0.4**
	comp=Z,4.3nm,0.7s,baz=237,slow=0.3,SNR=5.7							
KEST	**Kesra**	**90.59**	**332**	*e*P		**P**	**19 29 59.7**	**-0.1**
	comp=Z,20nm,1.6s							
BFZ	**Birch Farm**	**90.73**	**163**	*e*P		**P**	**19 30 03.0**	**+3.2**
	comp=Z,73nm,0.7s							
VNDA	**Vanda**	**125.56**	**178**	PKP		**PKPdf**	**19 35 56.7**	**+0.2**
	comp=Z,1.5nm,0.8s,baz=320,slow=3.4,SNR=10							
VNDA	**Vanda**	**125.56**	**178**	*e*PKPdf		**PKPdf**	**19 35 56.8**	**+0.3**
LPAZ	**La Paz**	**133.25**	**62**	PKP		**PKPdf**	**19 36 14.0**	**+0.3**
	comp=Z,1.1nm,0.7s,baz=217,slow=3.6,SNR=3.8							
MAW	**Mawson**	**133.69**	**212**	PKP		**PKPdf**	**19 36 10.2**	**-1.9**
	comp=Z,2.2nm,0.8s,baz=284,slow=4.7,SNR=5.3							
CPUP	**Villa Florida**	**147.33**	**59**	PKPbc		**PKPbc**	**19 36 40.3**	**-0.2**
	comp=Z,5.3nm,0.6s,baz=328,slow=2.2,SNR=9.9							
CPUP	**Villa Florida**	**147.33**	**59**	*e*PKPbc		**PKPbc**	**19 36 40.8**	**+0.3**
PLCA	**Paso Flores**	**147.86**	**93**	PKPbc		**PKPbc**	**19 36 42.0**	**+0.4**
	comp=Z,16nm,0.8s,baz=294,slow=3.2,SNR=18							
PLCA	**Paso Flores**	**147.86**	**93**	*e*PKPbc		**PKPbc**	**19 36 42.5**	**+0.9**

*NIED **26** 19:29:00,37.40N×141.70E,h20km,Mw4.2 Best double couple: M₀1.92000×10¹⁵ NP1:φ=290.00000°,δ47.00000°, λ=-57.00000°. NP2:φ=66.00000°,δ53.00000°, λ=-120.00000°.*

*ISCJB **26** 19:29:18.8±0.8,37.38N±0.03×141.76E±0.07,h40km±8km, mb3.7/11,Error ellipse: s-maj=8.9km s-min=5.5km az=15.8*

*JMA **26** 19:29:20.8±0.1,37.42N×141.61E,h42km±2km,M4.0*
JMA Felt I J1.

*NEIC **26** 19:29:20.2±2.2,37.40N×141.74E,h34km±16km,mb4.3/1, Error ellipse: s-maj=12.0km s-min=6.6km az=113.0*

NEIC Recorded [1 JMA] in Fukushima and Miyagi.

*IDC **26** 19:29:21.7±0.8,37.39N×141.61E,h45km±7km,mb3.5/10, mb1 3.7/14,mb1mx3.6/39,mbtmp3.8/14,ML3.2/3,MS3.8/1, Ms1 3.8/1,ms1mx3.0/39,Error ellipse: s-maj=19.5km s-min=14.9km az=98.0*

ISC 26 19:29:20.8±0.9,37.42N±0.05×141.70E±0.08,h35km±5km, n39,σ1$47/45,mb3.6/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.66**	**266**	P	**Pn**	**19 29 32.7**	**-1.0**
JFK				S	**Sn**	**19 29 41.0**	**-1.9**
ONAJ	**Iwakimizuishiy**	**0.79**	**246**	P	**Pn**	**19 29 34.5**	**-1.0**
ONAJ				S	**Sn**	**19 29 43.9**	**-2.2**
JMM	**Marumori**	**0.85**	**302**	P	**Pn**	**19 29 35.5**	**-0.8**
JMM				S	**Sn**	**19 29 45.9**	**-1.6**
JIO	**Ouri**	**1.07**	**345**	P	**Pn**	**19 29 39.0**	**-0.3**
JIO				S	**Sn**	**19 29 51.6**	**-1.4**
JFT	**Otama**	**1.09**	**276**	P	**Pn**	**19 29 39.5**	**-0.1**
JFT				S	**Sn**	**19 29 52.7**	**-0.8**
JHO	**Hitachi**	**1.22**	**229**	P	**Pn**	**19 29 40.1**	**-1.2**
JOU	**Okura**	**1.25**	**319**	P	**Pn**	**19 29 41.4**	**-0.5**
JYS	**Shirataka**	**1.52**	**302**	P	**Pn**	**19 29 45.4**	**-0.2**
JYS				*e*S	**Sn**	**19 30 03.7**	**-0.5**
JMK	**Ichinoseki**	**1.58**	**346**	P	**Pn**	**19 29 46.6**	**+0.3**
JFY	**Yanaizu**	**1.59**	**270**	P	**Pn**	**19 29 46.3**	**-0.2**
JFY				*e*S	**Sn**	**19 30 05.7**	**-0.2**
MJAR	**Matsushiro Arr**	**2.93**	**254**	P	**Pn**	**19 30 05.7**	**+0.7**
	5.3nm,0.3s,baz=84,slow=16,SNR=34						
MJAR				S	**Sn**	**19 30 43.7**	**+4.8**
	9.6nm,0.3s,baz=87,slow=27,SNR=6.6						
MAJO	**Matsushiro**	**2.93**	**254**	*e*Pn	**Pn**	**19 30 04.7**	**-0.3**
MAT	**Matsushiro**	**2.93**	**254**	P	**Pn**	**19 30 06.8**	**+1.8**
MAT				*e*S	**Sn**	**19 30 26.3**	**+3.3**
JHJ2	**Mitsune**	**4.57**	**200**	*e*Pn	**Pn**	**19 30 26.7**	**-0.7**
JHJ2				*e*Sn	**Sn**	**19 31 16.6**	**-2.7**
JHJ	**Hachijo jima 2**	**4.57**	**201**	P	**Pn**	**19 30 27.5**	**+0.1**
	20nm,0.3s,baz=233,slow=24,SNR=30						
JHJ				S	**Sn**	**19 31 16.3**	**-3.0**
	43nm,0.3s,baz=265,slow=23,SNR=12						
ERM	**Erimo**	**4.72**	**13**	*e*Pn	**Pn**	**19 30 28.6**	**-0.9**
ERM				*e*Sn	**Sn**	**19 31 20.9**	**-2.1**
ASAJ	**Asahikawa**	**6.72**	**6**	P	**Pn**	**19 30 57.0**	**-0.1**
	baz=205,slow=12						
ASAJ	**Asahikawa**	**6.72**	**6**	*e*Pn	**Pn**	**19 30 56.3**	**-0.7**
USRK	**Ussuriysk Ar.**	**10.00**	**316**	P	**Pn**	**19 31 43.2**	**+1.3**
	0.2nm,0.3s,baz=127,slow=14,SNR=2.4						
KLR	**Kul'dur**	**13.83**	**332**	LR	LR	19 37 09.3	
	comp=Z,416nm,19.3s,baz=190,slow=34						
SONM	**Songino Array**	**27.76**	**303**	P	**P**	**19 35 06.0**	**-0.3**
	0.4nm,0.5s,baz=97,slow=8.9,SNR=5.6						
H11N2	**WAKE ISLAND Hy**	**28.15**	**122**	T	T	20 04 44.4	
	baz=314,slow=74						
H11N1	**WAKE ISLAND Hy**	**28.16**	**122**	T	T	20 04 46.6	
	baz=314,slow=74						
H11N3	**WAKE ISLAND Hy**	**28.17**	**122**	T	T	20 04 47.4	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**28.88**	**124**	T	T	20 05 37.1	
	baz=316,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**28.88**	**124**	T	T	20 05 36.5	
	baz=316,slow=76,SNR=18						
H11S2	**WAKE ISLAND Hy**	**28.89**	**124**	T	T	20 05 37.7	
	baz=316,slow=76,SNR=13						
CMAR	**Chiang Mai Arr**	**41.82**	**255**	P	**P**	**19 37 06.9**	**-0.4**
	0.3nm,0.4s,baz=56,slow=6.8,SNR=3.6						
ZALV	**Zalesovo Beam**	**41.83**	**312**	P	**P**	**19 37 07.1**	**+0.1**
	0.4nm,0.4s,baz=80,slow=10,SNR=3.3						
MKAR	**Makanchi Array**	**44.11**	**302**	P	**P**	**19 37 24.9**	**-0.8**
	1.2nm,0.7s,baz=88,slow=9.4,SNR=8.9						
ILAR	**Eielson Array**	**49.05**	**33**	P	**P**	**19 38 04.6**	**+0.6**
	0.3nm,0.6s,baz=268,slow=6.7,SNR=4.1						
WRAB	**Tennant Creek**	**57.46**	**188**	*e*P	**P**	**19 39 05.0**	**-1.4**
	2.1nm,0.7s						
WRA	**Warramunga Arr**	**57.48**	**188**	P	**P**	**19 39 05.2**	**-1.2**
	1.8nm,0.5s,baz=6.1,slow=7.2,SNR=46						
ASAR	**Alice Springs**	**61.20**	**188**	P	**P**	**19 39 31.6**	**-0.6**
	0.9nm,0.8s,baz=15,slow=11,SNR=10.0						
FINES	**FINESS Array B**	**68.58**	**332**	P	**P**	**19 40 18.9**	**-0.7**
	1.1nm,0.7s,baz=30,slow=8.8,SNR=5.2						
FINES				pP	**pP**	**19 40 31.3**	**+0.9**
	1.0nm,0.6s,baz=46,slow=9.9,SNR=2.5						
NB2	**NORSAR Subarra**	**73.92**	**337**	P	pP	19 41 03.6	+0.7
	comp=Z,1.9nm,0.9s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.92**	**337**	P	**P**	**19 40 51.4**	**-0.6**
	comp=Z,0.5nm,0.7s,baz=40,slow=6.0,SNR=2.7						
NOA				pP	**pP**	**19 41 04.1**	**+1.2**
	comp=Z,1.0nm,0.8s,baz=40,slow=6.0,SNR=4.2						
PDAR	**Pinedale Array**	**77.23**	**46**	P	**P**	**19 41 12.2**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=347,slow=3.7,SNR=2.9						
PDAR				pP	**sP**	**19 41 26.8**	**+0.3**
	comp=Z,0.4nm,0.7s,baz=277,slow=7.2,SNR=3.1						
GERES	**GERESS Array B**	**82.50**	**328**	pP	pP	19 41 52.6	+1.7
	comp=Z,0.2nm,0.4s,baz=70,slow=1.6,SNR=2.6						

*IDC **26** 19:40:25.8±0.5,25.02N×109.67W,h0km,mb4.6/19, mb1 4.8/22,mb1mx4.6/37,mbtmp4.6/22,ML4.2/3,MS4.2/19, Ms1 4.2/19,ms1mx4.1/36,Error ellipse: s-maj=14.2km s-min=8.8km az=104.0*

*BJI **26** 19:40:26.6,25.00N×109.50W,h10km,mb5.0/5,mB5.5/12, Ms5.1/8,Ms7 4.8/8*

*GCMT **26** 19:40:27.6±0.5,24.97N×109.73W,h24km±1km,MW5.1/77, Moment Tensor Solution. s8,c8; s77,c97; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr=2.76±.46; Mθθ-1.35±.24; Mφφ4.11±.29; Mrt-3.02±.40; Mθφ-1.62±.16; Mθr0.86±.26; Best double couple: M₀5.06100×10¹⁶ NP1:φ=132.00000°,δ68.00000°,λ-129.00000°. NP2: φ=17.00000°,δ44.00000°,λ-33.00000°. Principal axes: T 4.9520, Plg14.0000°, Azm249.0000°; N 0.2170, Plg36.0000°, Azm149.0000°; P -5.1690, Plg51.0000°, Azm357.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*MEX **26** 19:40:27.6±0.4,25.10N×109.55W,h10km,MD4.7*

*ISCJB **26** 19:40:27.1±0.2,25.06N±0.02×109.53W±0.01,h17km, mb5.0/152,MS4.4/24,Error ellipse: s-maj=3.1km s-min=1.6km az=13.0*

*NEIC **26** 19:40:27.6±1.0,24.96N×109.53W,h13km±6km,mb5.0/214, MD4.7(MEX),Error ellipse: s-maj=4.1km s-min=2.7km az=198.0*

ISC 26 19:40:28.5±0.3,25.06N±0.04×109.66W±0.04,h17km, n845,σ1$52/830,mb5.1/153,MS4.5/24,Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPIG	**La Paz**	**1.12**	**212**	Pg	**Pn**	**19 40 46.7**	**-2.8**
	231nm,0.3s,baz=5.3,slow=1.4,SNR=74						
LPIG				Lg	Lg	19 41 01.0	
	1μm,0.3s,baz=237,slow=18,SNR=32						
LPIG				LR	LR	19 41 15.9	
	comp=Z,4μm,20.0s,baz=35,slow=46						
LPIG	**La Paz**	**1.12**	**212**	*i* P	**Pn**	**19 40 46.6**	**-2.8**
LPIG				*i* S	**Sb**	**19 41 01.8**	**-1.9**
SLBS	**Sierra La Lagu**	**1.39**	**191**	*e*Pn	**Pn**	**19 40 50.6**	**-2.6**
GUYB	**Guaymas**	**3.03**	**339**	*i* P	**Pn**	**19 41 13.0**	**-2.7**
GUYB				*i* S	**Sn**	**19 41 48.0**	**-3.6**
SRIG	**Santa Rosalia**	**3.24**	**315**	*e*P	**Pn**	**19 41 16.2**	**-2.3**
SRIG				*i* S	**Sn**	**19 41 54.8**	**-1.8**
SRIG	**Santa Rosalia**	**3.24**	**315**	*e*Pn	**Pn**	**19 41 17.5**	**-1.0**
SRIG				*i* S	**Sn**	**19 41 54.8**	**-1.8**
HPIG		**4.05**	**62**	*e*Pn	**Pn**	**19 41 27.1**	**-2.8**
HSIG		**4.11**	**344**	*i* P	**Pn**	**19 41 27.6**	**-3.0**
HSIG				*i* S	**Sn**	**19 42 14.6**	**-3.6**
HSIG		**4.11**	**344**	*e*Pn	**Pn**	**19 41 27.9**	**-2.6**
HSIG				*i* S	**Sn**	**19 42 14.6**	**-3.6**
319A	**Douglas**	**6.30**	**3**	*e*Pn	**Pn**	**19 41 59.2**	**-1.6**
TX31	**Lajitas Ar. Si**	**6.82**	**50**	*e*Pn	**Pn**	**19 42 04.8**	**-3.1**
LTX	**Lajitas**	**6.82**	**50**	*e*Pn	**Pn**	**19 42 05.1**	**-2.8**
LTX				*e*Sn	**Sn**	**19 43 22.9**	**-2.4**
LTX				eLg	Lg	19 43 58.8	
TXAR	**Lajitas Array**	**6.82**	**50**	Pn	**Pn**	**19 42 05.1**	**-2.8**
	3.0nm,0.3s,baz=231,slow=12,SNR=50						
TXAR				Sn	**Sn**	**19 43 22.9**	**-2.4**
	3.8nm,0.3s,baz=357,slow=23,SNR=7.2						
TXAR				Lg	Lg	19 43 58.8	
	3.8nm,0.3s,baz=230,slow=27,SNR=5.4						
ZAIG	**Zacatecas**	**6.87**	**108**	*e*Pn	**Pn**	**19 42 08.2**	**-0.6**
TUC	**Tucson**	**7.29**	**352**	P	**Pn**	**19 42 13.7**	**-0.6**
	baz=171						
TUC	**Tucson**	**7.29**	**352**	*e*Pn	**Pn**	**19 42 13.6**	**-0.8**
214A	**Organ Pipe Nat**	**7.41**	**339**	P	**Pn**	**19 42 14.8**	**-1.1**
	baz=157						
MNTX	**Cornudas Mount**	**7.61**	**29**	P	**Pn**	**19 42 18.2**	**-0.5**
	baz=210,SNR=28						
MNTX	**Cornudas Mount**	**7.61**	**29**	*e*Pn	**Pn**	**19 42 16.9**	**-1.7**
121A	**Cookes Peak, D**	**7.62**	**12**	P	**Pn**	**19 42 19.0**	**0.0**
	baz=192,SNR=48						
113A	**Mohawk Valley,**	**8.48**	**336**	*e*Pn	**Pn**	**19 42 33.3**	**+2.7**
GLA	**Glamis**	**9.16**	**332**	P	**Pn**	**19 42 41.8**	**+1.9**
	baz=149,SNR=8.5						
GLA	**Glamis**	**9.16**	**332**	*e*Pn	**Pn**	**19 42 39.3**	**-0.6**
832A	**Faith Ranch, C**	**9.23**	**68**	P	**Pn**	**19 42 40.8**	**-0.1**
	baz=251						
Y22D	**IRIS PASSCAL I**	**9.29**	**14**	P	**Pn**	**19 42 44.1**	**+2.2**
	baz=195						
Y22D	**IRIS PASSCAL I**	**9.29**	**14**	*e*Pn	**Pn**	**19 42 40.6**	**-1.2**
Y14A	**Wickenburg**	**9.32**	**343**	*e*Pn	**Pn**	**19 42 41.5**	**-0.6**
BNM	**Barren Site**	**9.44**	**15**	*e*Pn	**Pn**	**19 42 43.8**	**-0.1**
X18A	**Snowflake**	**9.44**	**359**	*e*Pn	**Pn**	**19 42 45.3**	**+1.4**
IKP	**In-Ko-Pah, Jac**	**9.44**	**325**	P	**Pn**	**19 42 46.1**	**+2.3**
	baz=142,SNR=14						
X16A	**Lo Lia Camp, P**	**9.46**	**351**	*e*Pn	**Pn**	**19 42 44.2**	**+0.1**
SWSC	**Sam W. Stewart**	**9.52**	**327**	P	**Pn**	**19 42 47.9**	**+3.1**
	baz=144						
LAZ	**Ladron**	**9.56**	**13**	*e*Pn	**Pn**	**19 42 45.1**	**-0.5**
LPM	**Los Pinos Moun**	**9.59**	**15**	*e*Pn	**Pn**	**19 42 46.7**	**+0.7**
Y12C	**Blythe**	**9.64**	**335**	P	**Pn**	**19 42 49.8**	**+3.3**
	baz=152,SNR=6.9						
Y12C	**Blythe**	**9.64**	**335**	*e*Pn	**Pn**	**19 42 47.9**	**+1.4**
933A	**Laredo**	**9.65**	**72**	P	**Pn**	**19 42 47.7**	**+1.0**
	baz=256						
833A	**Chaparral WMA,**	**9.73**	**68**	P	**Pn**	**19 42 49.8**	**+2.0**
	baz=252						
BAR	**Barrett**	**9.77**	**323**	*e*Pn	**Pn**	**19 42 48.7**	**+0.5**
MONP2	**Monument Peak**	**9.80**	**324**	P	**Pn**	**19 42 51.3**	**+2.5**
	baz=141,SNR=11						
733A	**Divot King Ran**	**9.94**	**66**	P	**Pn**	**19 42 51.8**	**+1.2**
	baz=250						
BC3	**Big Chuckawall**	**9.95**	**331**	P	**Pn**	**19 42 52.8**	**+2.1**
	baz=148,SNR=8.5						
PDMCI	**Parker Dam,Lak**	**10.00**	**338**	P	**Pn**	**19 42 53.9**	**+2.5**
	baz=156,SNR=10						
W18A	**Petrified Fore**	**10.03**	**360**	P	**Pn**	**19 42 53.6**	**+1.7**
	baz=179,SNR=23						
W18A	**Petrified Fore**	**10.03**	**360**	*e*Pn	**Pn**	**19 42 54.5**	**+2.5**
034A	**Hebbronville**	**10.06**	**76**	P	**Pn**	**19 42 53.0**	**+0.7**
	baz=260						
109C	**Camp Elliot, M**	**10.17**	**322**	P	**Pn**	**19 42 56.5**	**+2.8**
	baz=138						
ANMO	**Albuquerque**	**10.23**	**15**	P	**Pn**	**19 42 56.6**	**+1.8**
	baz=196						
ANMO	**Albuquerque**	**10.23**	**15**	*e*Pn	**Pn**	**19 42 56.6**	**+1.8**
IRM	**Iron Mountain**	**10.25**	**334**	P	**Pn**	**19 42 56.8**	**+2.0**
	baz=151,SNR=11						
JCT	**Junction City**	**10.26**	**56**	P	**Pn**	**19 42 55.7**	**+0.8**
	baz=240						
JCT	**Junction City**	**10.26**	**56**	*e*Pn	**Pn**	**19 42 56.6**	**+1.6**
633A	**Saathoff Ranch**	**10.30**	**63**	P	**Pn**	**19 42 55.9**	**+0.4**
	baz=246						
934A	**Benavides**	**10.30**	**73**	P	**Pn**	**19 42 55.8**	**+0.3**
	baz=258						
TPFO	**Pinon Flats**	**10.38**	**327**	P	**Pn**	**19 42 59.8**	**+3.1**
	baz=143,SNR=18						
PFO	**Pinyon Flats O**	**10.38**	**327**	Pn	**Pn**	**19 42 59.6**	**+2.8**
	0.2nm,0.3s,baz=144,slow=13,SNR=15						
PFO				LR	LR	19 46 16.3	
	comp=Z,603nm,21.9s,baz=156,slow=34						
PFO	**Pinyon Flats O**	**10.38**	**327**	P	**Pn**	**19 43 00.1**	**+3.4**
	baz=143,SNR=15						
PFO	**Pinyon Flats O**	**10.38**	**327**	*e*Pn	**Pn**	**19 43 00.2**	**+3.4**
834A	**Tilden**	**10.39**	**70**	P	**Pn**	**19 42 58.7**	**+1.9**
	baz=255						
BELC	**Belle Mtn. Jos**	**10.48**	**330**	P	**Pn**	**19 43 00.3**	**+2.2**
	baz=146						
WUAZ	**Wupatki**	**10.53**	**352**	P	**Pn**	**19 43 00.9**	**+2.1**
	baz=171,SNR=14						
WUAZ	**Wupatki**	**10.53**	**352**	*e*Pn	**Pn**	**19 43 01.4**	**+2.6**
035Z	**Hargill**	**10.54**	**80**	P	**Pn**	**19 42 60.0**	**+1.2**
	baz=264						
035A	**Encino**	**10.56**	**77**	P	**Pn**	**19 43 00.2**	**+1.1**
	baz=262						
NEE2	**Needles Airpor**	**10.59**	**337**	P	**Pn**	**19 43 01.9**	**+2.4**
	baz=154						
W13A	**Hualapai Mount**	**10.65**	**341**	*e*Pn	**Pn**	**19 43 03.3**	**+2.7**
533A	**Kerrville**	**10.66**	**60**	P	**Pn**	**19 43 01.3**	**+0.8**
	baz=244						
MSTX	**Muleshoe**	**10.71**	**32**	P	**Pn**	**19 43 01.7**	**+0.4**
	baz=215,SNR=8.7						
MSTX	**Muleshoe**	**10.71**	**32**	*e*Pn	**Pn**	**19 43 01.9**	**+0.7**
MURC	**Murrieta**	**10.75**	**324**	P	**Pn**	**19 43 03.8**	**+2.1**
	baz=140						
433A	**Art**	**10.93**	**56**	P	**Pn**	**19 43 04.5**	**+0.3**
	baz=240						
GMRC	**Granite Mounta**	**11.00**	**333**	P	**Pn**	**19 43 07.2**	**+2.0**
	baz=150,SNR=8.8						
LDFC	**Landfair**	**11.04**	**336**	*e*Pn	**Pn**	**19 43 10.2**	**+4.4**
SCI2	**San Clemente I**	**11.08**	**317**	P	**Pn**	**19 43 08.0**	**+1.8**
	baz=133						
BBRC	**Big Bear Solar**	**11.13**	**327**	P	**Pn**	**19 43 08.7**	**+1.6**
	baz=144						
333A	**Richland Sprin**	**11.29**	**54**	P	**Pn**	**19 43 08.7**	**-0.4**
	baz=238						
HEC	**Hector,Ludlow**	**11.33**	**331**	P	**Pn**	**19 43 12.4**	**+2.8**
	baz=147						
635A	**Leesville**	**11.42**	**65**	P	**Pn**	**19 43 11.3**	**+0.5**
	baz=250						
BFSC	**Mount Baldy Ra**	**11.49**	**325**	P	**Pn**	**19 43 13.2**	**+1.2**
	baz=141						
U15A	**North Rim**	**11.56**	**349**	*e*Pn	**Pn**	**19 43 16.2**	**+3.2**
ABTX	**Abilene, Hawle**	**11.56**	**47**	P	**Pn**	**19 43 13.4**	**+0.6**
	baz=231						
ABTX	**Abilene, Hawle**	**11.56**	**47**	*e*Pn	**Pn**	**19 43 12.1**	**-0.8**
434A	**Burnet**	**11.58**	**58**	P	**Pn**	**19 43 14.1**	**+1.0**
	baz=242						
TUQ	**Turquoise Moun**	**11.67**	**334**	P	**Pn**	**19 43 15.8**	**+1.3**
	baz=150						
MWC	**Mount Wilson**	**11.69**	**323**	*e*Pn	**Pn**	**19 43 17.2**	**+2.4**
233A	**Rising Star**	**11.72**	**51**	P	**Pn**	**19 43 14.5**	**-0.5**
	baz=236						
PASC	**Pasadena Art C**	**11.72**	**323**	*e*Pn	**Pn**	**19 43 17.2**	**+2.2**
SNCC	**San Nicolas Is**	**11.87**	**316**	*e*Pn	**Pn**	**19 43 18.4**	**+1.4**
GSC	**Goldstone, Bar**	**11.93**	**330**	P	**Pn**	**19 43 19.8**	**+1.9**
	baz=147						
GSC	**Goldstone, Bar**	**11.93**	**330**	*e*Pn	**Pn**	**19 43 22.1**	**+4.2**
AMTX	**Amarillo**	**11.98**	**33**	P	**Pn**	**19 43 18.2**	**-0.3**
	baz=216						
AMTX	**Amarillo**	**11.98**	**33**	*e*Pn	**Pn**	**19 43 18.7**	**+0.2**
636A	**Smothers Creek**	**12.04**	**66**	P	**Pn**	**19 43 19.6**	**+0.3**
	baz=251						
133A	**Hamilton Ranch**	**12.04**	**49**	P	**Pn**	**19 43 19.1**	**-0.3**
	baz=233						
435B	**Jarrell**	**12.10**	**59**	P	**Pn**	**19 43 20.6**	**+0.5**
	baz=244						
MVCO	**Mesa Verde**	**12.15**	**4**	P	**Pn**	**19 43 22.0**	**+0.9**
	baz=184,SNR=9.9						
MVCO	**Mesa Verde**	**12.15**	**4**	*e*Pn	**Pn**	**19 43 22.6**	**+1.5**
EDW2	**Edwards Air Fo**	**12.16**	**326**	P	**Pn**	**19 43 23.3**	**+2.3**
	baz=141,SNR=6.3						
SHOC	**Shoshone, Teco**	**12.22**	**334**	P	**Pn**	**19 43 24.4**	**+2.7**
	baz=150						
KNB	**Kanab**	**12.22**	**348**	*e*Pn	**Pn**	**19 43 24.3**	**+2.3**
LCMT	**Little Creek M**	**12.30**	**346**	*e*Pn	**Pn**	**19 43 26.0**	**+3.0**
OSI	**Osito Audit: C**	**12.35**	**323**	*e*Pn	**Pn**	**19 43 26.8**	**+3.2**
SHPR	**Sheep Range**	**12.35**	**339**	*e*Pn	**Pn**	**19 43 26.9**	**+3.3**
SCZ2	**Santa Cruz Isl**	**12.43**	**318**	P	**Pn**	**19 43 25.8**	**+1.1**
	baz=133

338A	Crockett baz=246	14.11	60	P		Pn	19 43 47.7	0.0
Z36A	Blue Ridge baz=237	14.14	52	P		Pn	19 43 48.6	+0.5
539A	Cross D Ranch, baz=252	14.16	66	P		Pn	19 43 49.2	+0.9
R11A	Troy Canyon, C baz=157,SNR=22	14.17	341	P		Pn	19 43 51.4	+2.7
R11A	Troy Canyon, C	14.17	341	ePn		Pn	19 43 51.6	+3.0
BLDC	Black Mountain	14.25	320	ePn		Pn	19 43 50.2	+0.6
TMUT	Trail Mountain	14.26	355	ePn		Pn	19 43 51.8	+1.9
SMCO	Snowmass	14.26	8	ePn		Pn	19 43 51.5	+1.5
137A	Heron Place, G baz=241	14.30	55	P		Pn	19 43 50.7	+0.5
439A	Center Grove, baz=250	14.34	63	P		Pn	19 43 53.4	+2.6
Q24A	Divide baz=196	14.38	14	P		Pn	19 43 54.5	+3.0
Q24A	Divide	14.38	14	ePn		Pn	19 43 52.1	+0.6
P17A	Butcher Ranch,	14.40	357	ePn		Pn	19 43 53.1	+1.3
X35A	Drake baz=232	14.41	47	P		Pn	19 43 52.5	+0.8
W34A	Bridge Creek, baz=228	14.43	43	P		Pn	19 43 53.0	+1.0
W34A	Bridge Creek,	14.43	43	ePn		Pn	19 43 53.1	+1.0
238A	Jacksonville baz=244	14.52	58	P		Pn	19 43 53.0	-0.3
U32A	Winter Ranch, baz=221	14.52	37	P		Pn	19 43 54.8	+1.5
P18A	Preston Nutter	14.54	358	ePn		Pn	19 43 53.3	-0.4
Y36A	Durant baz=236	14.59	50	P		Pn	19 43 55.0	+0.8
PMPB	Monarch Peak	14.67	322	ePn		Pn	19 43 54.1	-1.3
Z37A	Pogue Cattle C baz=239	14.69	53	P		Pn	19 43 55.4	-0.2
339A	Huntington baz=248	14.70	61	P		Pn	19 43 55.3	-0.4
MLAC	Mammoth, Mammo baz=145	14.77	330	P		Pn	19 43 57.5	+0.6
NATX	Nacogdoches baz=246	14.78	60	P		Pn	19 43 56.1	-0.6
NATX	Nacogdoches	14.78	60	ePn		Pn	19 43 54.9	-1.9
540A	Vidor baz=253	14.81	66	P		Pn	19 43 57.1	0.0
138A	Matatall Enter baz=242	14.83	56	P		Pn	19 43 58.3	+0.9
X36A	Centrahoma baz=233	14.93	47	P		Pn	19 43 57.4	-1.3
W35A	Tecumseh baz=230	14.94	45	P		Pn	19 43 59.1	+0.2
V34A	Guthrie baz=227	14.98	41	P		Pn	19 44 00.6	+1.1
V34A	Guthrie	14.98	41	ePn		Pn	19 43 58.3	-1.2
NLU	North Lily Min 72nm,1.6s	14.99	353	ePn		Pn	19 44 00.4	+0.6
MPU	Maple Canyon 66nm,1.4s	15.01	354	ePn		Pn	19 44 01.0	+1.1
239A	Gary baz=246	15.03	59	P		Pn	19 44 00.2	0.0
U33A	Lingo Farm, Me baz=224	15.05	38	P		Pn	19 44 00.8	+0.4
SHG	Shirttail Gulc	15.07	321	ePn		Pn	19 44 00.1	-0.5
BPIM	Pinnacles	15.08	322	ePn		Pn	19 43 60.0	-0.8
O20A	White River Ci baz=184,SNR=15	15.08	4	P		Pn	19 44 02.1	+1.1
O20A	White River Ci 97nm,1.1s	15.08	4	ePn		Pn	19 44 02.2	+1.3
ISCO	Idaho Springs baz=194,SNR=16	15.09	12	P		Pn	19 44 02.3	+1.2
ISCO	Idaho Springs 66nm,1.3s	15.09	12	ePn		Pn	19 44 02.6	+1.5
Y37A	Hugo baz=237,SNR=6.7	15.10	51	P		Pn	19 44 01.3	+0.3
KSCO	Kaye Shedlock' baz=205	15.12	21	P		Pn	19 44 01.5	0.0
KSCO	Kaye Shedlock' 51nm,1.1s	15.12	21	ePn		Pn	19 44 01.5	0.0
BSMM	Soledad Missio	15.15	321	ePn		Pn	19 43 59.8	-2.0
T32A	Huddler Ranch, baz=220	15.16	35	P		Pn	19 44 02.0	+0.1
Z38A	Mt. Pleasant baz=241	15.18	54	P		Pn	19 44 01.4	-0.7
JHC	Johnson Canyon	15.24	321	ePn		Pn	19 43 57.0	-5.9
340A	Bronson baz=249	15.26	62	P		Pn	19 44 00.9	-2.3
DUG	Dugway, Tooele baz=169,SNR=30	15.32	351	P		Pn	19 44 04.5	+0.3
DUG	Dugway, Tooele 44nm,1.1s	15.32	351	ePn		P	19 44 07.2	-1.7
BPRM	Ponciano Ridge	15.34	320	ePn		Pn	19 43 59.0	-5.3
W36A	Wetumka baz=232	15.35	46	P		Pn	19 44 03.4	-1.0
V35A	Meyer Ranch, C baz=229	15.35	43	P		Pn	19 44 04.0	-0.4
TVH2	Borealis Mine 119nm,1.8s	15.36	332	ePn		Pn	19 44 06.7	+2.0
TVH3	East Aurora ar 156nm,1.6s	15.37	332	ePn		P	19 44 07.5	-1.9
U34A	Anderson Ranch baz=225,SNR=9.1	15.38	40	P		Pn	19 44 05.4	+0.6
U34A	Anderson Ranch 386nm,1.5s	15.38	40	ePn		Pn	19 44 04.7	-0.1
TVH1	TV Hill, Hawth 315nm,1.9s	15.43	332	ePn		P	19 44 08.4	-1.8
T33A	Patterson Ranc baz=222	15.45	36	P		Pn	19 44 06.6	+0.9
S32A	Newby Ranch, P baz=218	15.56	33	P		Pn	19 44 07.0	-0.1
JLU	Jordanelle 44nm,1.3s	15.57	355	ePn		Pn	19 44 08.9	+1.4
X37A	Clayton baz=236,SNR=16	15.60	49	P		Pn	19 44 08.8	+1.2
441A	DeRidder baz=252	15.62	65	P		Pn	19 44 06.2	-1.6
CTU	Camp Tracy 145nm,1.3s	15.69	354	ePn		Pn	19 44 10.7	+1.7
Y38A	Idabel baz=239	15.70	52	P		Pn	19 44 07.9	-1.0
WAKR	Walker 194nm,1.6s	15.76	331	ePn		P	19 44 12.6	-1.1
Z39A	Irene McRaven, baz=242	15.77	55	P		Pn	19 44 11.5	+1.7
U35A	Pawnee baz=227	15.81	41	P		Pn	19 44 11.0	+0.7
341A	Kurthwood baz=250	15.81	63	P		Pn	19 44 11.8	+1.4
CMB	Columbia Colle 37nm,1.4s	15.83	327	ePn		Pn	19 44 11.2	+0.6
W37B	Quinton baz=234,SNR=8.6	15.87	47	P		Pn	19 44 10.0	-1.1
CMIG	Matias Romero 0.1nm,0.3s,baz=318,slow=15,SNR=3.2	15.89	117	Pn		Pn	19 44 12.9	+1.4
CMIG	comp=Z,1µm,19.5s,baz=301,slow=38			LR		LR	19 50 27.8	
V36A	Jenks baz=231	15.93	45	P		Pn	19 44 11.3	-0.6
S33A	Kaszmaul Farm, baz=221	15.96	36	P		Pn	19 44 12.8	+0.6
140A	Cam and Jess, baz=245	15.98	58	P		Pn	19 44 11.4	-1.0
T34A	McClaskey Farm baz=225,SNR=14	15.99	39	P		Pn	19 44 13.3	+0.6
X38A	Whitesboro baz=237,SNR=19	16.02	50	P		Pn	19 44 12.6	-0.4
BGU	Big Grassy Mou 37nm,1.3s	16.07	351	ePn		Pn	19 44 14.9	+1.1
YERR	Yerington 350nm,1.6s	16.07	332	ePn		P	19 44 17.1	-0.1
CBKS	Cedar Bluff baz=214,SNR=11	16.07	29	P		Pn	19 44 14.0	+0.2
CBKS	Cedar Bluff 293nm,1.2s	16.07	29	ePn		Pn	19 44 12.8	-1.0
TCUT	Toone Canyon 116nm,1.2s	16.08	355	ePn		Pn	19 44 15.6	+1.5
N23A	Red Feather La baz=192	16.09	10	P		Pn	19 44 12.9	-1.3
N23A	Red Feather La 96nm,1.6s	16.09	10	ePn		P	19 44 15.9	-1.6
TUL1	Leonard baz=231	16.10	45	P		Pn	19 44 12.5	-1.5
TUL1	Leonard 49nm,1.3s	16.10	45	ePn		Pn	19 44 12.3	-1.7
Y39A	Lockesburg baz=240	16.17	53	P		Pn	19 44 15.7	+0.8
R32A	Long Quarter, baz=217	16.23	32	P		Pn	19 44 15.0	-0.8
241A	Mo Tay, Goldon baz=248	16.25	61	P		Pn	19 44 15.8	-0.2
T35A	Sooner Cattle baz=227,SNR=10	16.31	40	P		Pn	19 44 17.0	+0.3
PNTR	Pine Nut 136nm,1.1s	16.32	331	ePn		P	19 44 20.3	+0.4
BGH	Bear Gulch	16.34	322	ePcP		PcP	19 49 12.0	+2.0
Z40A	Long Farm, Mag baz=244	16.37	56	P		Pn	19 44 18.2	+0.7
SPUT	South Promonto 65nm,1.4s	16.37	353	ePn		P	19 44 19.4	-1.1
X39A	Fountain Ranch baz=238,SNR=29	16.44	51	P		Pn	19 44 18.8	+0.4
U36A	Oologah baz=230	16.44	43	P		Pn	19 44 19.0	+0.7
W38A	Poteau baz=236,SNR=30	16.45	49	P		Pn	19 44 18.6	+0.1
141A	Papa Simpson, baz=246	16.48	59	P		Pn	19 44 19.1	+0.2
V37A	Hulbert baz=232,SNR=7.4	16.50	46	P		Pn	19 44 18.0	-1.1
R33A	Olander Ranch, baz=220	16.51	34	P		Pn	19 44 19.4	+0.2
342A	Flagon Creek P baz=251,SNR=6.3	16.51	64	P		Pn	19 44 18.6	-0.7
S34A	Willow Spring baz=223,SNR=7.0	16.52	37	P		Pn	19 44 19.6	+0.2
543A	St. Martinvill baz=256	16.55	68	P		Pn	19 44 15.7	-4.2
PHWY	Pilot Hill 63nm,1.4s	16.57	11	ePn		Pn	19 44 20.6	+0.3
HWUT	Hardware Ranch 75nm,1.1s	16.58	355	ePn		Pn	19 44 21.6	+1.2
BMN	Battle Mountai 81nm,1.1s	16.59	339	ePn		P	19 44 21.8	-1.0
PAHR	Pah Rah Range 169nm,1.5s	16.74	333	ePn		P	19 44 25.2	+0.6
Q32A	Meitler Ranch, baz=217,SNR=13	16.76	31	P		Pn	19 44 20.4	-2.0
WLAR	White Oak Lake 218nm,1.2s	16.77	55	ePn		P	19 44 25.0	+0.3
T36A	Boggs Farm, Ca baz=228,SNR=6.0	16.78	41	P		Pn	19 44 20.0	-2.7
Y40A	Okolona baz=242,SNR=9.2	16.80	54	P		Pn	19 44 21.1	-1.8
Z41A	Richland Creek baz=245	16.82	57	P		Pn	19 44 23.3	+0.1
AFDM	Forest Hills D 41nm,1.3s	16.83	328	ePn		P	19 44 26.2	+0.8
U37A	Salina baz=231,SNR=14	16.83	44	P		Pn	19 44 21.4	-1.9
MIAR	Mount Ida baz=240,SNR=12	16.84	52	P		Pn	19 44 22.5	-0.9
MIAR	Mount Ida 57nm,1.4s	16.84	52	ePn		P	19 44 25.3	-0.2
242A	Grayson baz=249	16.88	62	P		Pn	19 44 22.4	-1.5
HVU	Hansel Valley 115nm,1.4s	16.88	352	ePn		P	19 44 25.9	-0.2
R34A	Isabella, Hill baz=222,SNR=8.4	16.88	36	P		Pn	19 44 23.2	-0.8
S35A	Otter Creek Ra baz=225,SNR=9.5	16.95	39	P		Pn	19 44 24.1	-0.7
V38A	Canehill baz=234,SNR=13	16.97	47	P		Pn	19 44 23.9	-1.2
W39A	Magazine baz=237,SNR=11	17.02	50	P		Pn	19 44 23.4	-2.4
343A	Vidalia baz=253	17.06	65	P		P	19 44 27.3	-0.7
OGNE	Ogallala baz=204	17.07	20	P		Pn	19 44 26.9	+0.5
OGNE	Ogallala 149nm,1.3s	17.07	20	ePn		Pn	19 44 26.5	+0.1
Q33A	Connelly Farm, baz=219,SNR=15	17.11	33	P		Pn	19 44 27.0	+0.2
544A	White Castle baz=257	17.14	69	P		Pn	19 44 26.9	-0.4
142A	Monroe baz=248	17.21	60	P		Pn	19 44 26.2	-1.9
Y41A	Eaglette Beard baz=243,SNR=7.3	17.23	55	P		Pn	19 44 28.0	-0.3
P32A	Huiting Farm, baz=215,SNR=8.3	17.24	30	P		Pn	19 44 27.0	-1.6
U38A	Gravette baz=233,SNR=11	17.32	45	P		Pn	19 44 26.6	-2.9
X40A	Basin Creek Fa baz=241	17.34	53	P		Pn	19 44 29.4	-0.4
243A	Waterproof baz=251	17.35	63	P		Pn	19 44 29.2	-0.7
O31A	Woolen Ranch, baz=212	17.36	27	P		Pn	19 44 29.5	-0.5
S36A	Lake Cedric, C baz=227,SNR=6.9	17.40	40	P		Pn	19 44 30.0	-0.4
T37A	Cheneyville 18 baz=230,SNR=18	17.41	43	P		Pn	19 44 28.9	-1.6
R35A	Emporia Munici baz=224	17.47	38	P		P	19 44 32.8	+0.3
V39A	Pettigrew baz=236	17.47	48	P		Pn	19 44 29.8	-1.6
Z42A	Norrel Spur, H baz=246	17.48	58	P		P	19 44 32.8	+0.2
Q34A	Chapman baz=221	17.50	35	P		P	19 44 32.9	0.0
P33A	Williams Farm, baz=218	17.52	32	P		Pn	19 44 31.5	-0.5
HHAR	Hobbs 55nm,1.5s	17.52	47	ePn		Pn	19 44 29.1	-2.9
W40A	Ferguson Farm, baz=239,SNR=14	17.52	51	P		P	19 44 33.7	+0.7
ORV	Oroville 73nm,1.6s	17.56	328	ePn		P	19 44 34.6	+1.2
X41A	Kaden, Bauxite baz=242	17.58	54	P		Pn	19 44 32.9	+0.2
GDXM	Geysers 32nm,1.1s	17.64	324	ePn		P	19 44 35.2	+0.7
BW06	Boulder Array baz=180,SNR=55	17.66	0	P		Pn	19 44 33.7	-0.2
BW06	Boulder Array	17.66	0	ePn		Pn	19 44 33.5	-0.4
PD31	Pinedale Array	17.66	0	ePn		Pn	19 44 34.1	+0.1
PDAR	Pinedale Array 0.4nm,0.3s,baz=170,slow=9.0,SNR=70	17.66	0	P		Pn	19 44 34.4	+0.4
PDAR				Lg		Lg	19 49 44.4	
PDAR	0.1nm,0.3s,baz=195,slow=23,SNR=2.5			LR		LR	19 51 41.0	
143A	comp=Z,2µm,18.1s,baz=177,slow=38 Socs Landing, baz=249	17.69	60	P		Pn	19 44 34.2	+0.1
AHID	Auburn Hatcher 108nm,1.5s	17.70	356	ePn		P	19 44 35.2	0.0
K22A	Casper baz=189	17.74	8	P		Pn	19 44 35.1	+0.3
K22A	Casper 52nm,1.2s	17.74	8	ePn		Pn	19 44 34.5	-0.3
T38A	Diamond baz=231,SNR=9.0	17.74	44	P		Pn	19 44 32.7	-2.0
KSU1	Kansas State U baz=221	17.81	35	P		Pn	19 44 35.7	+0.2
KSU1	Kansas State U 132nm,1.5s	17.81	35	ePn		Pn	19 44 35.7	+0.2
Y42A	Garnett, Star baz=245	17.83	57	P		Pn	19 44 35.3	-0.6
344A	Westbrook Farm baz=253	17.84	65	P		Pn	19 44 35.6	-0.3
UALR	University of 70nm,1.3s	17.84	53	ePn		P	19 44 36.9	+0.4
R36A	Gordon, Harris baz=226,SNR=16	17.86	39	P		Pn	19 44 35.7	-0.4
S37A	Fort Scott baz=228,SNR=26	17.87	41	P		Pn	19 44 34.0	-2.3
CCAR	Cane Creek 151nm,1.4s	17.88	56	ePn		Pn	19 44 36.0	-0.4
U39A	Green Forest baz=235,SNR=12	17.88	47	P		Pn	19 44 34.9	-1.6
O32A	Brockman Farm, baz=215	17.91	29	P		Pn	19 44 35.2	-1.5
HOPS	Hopland Field 119nm,1.5s	17.93	324	ePn		Pn	19 44 37.1	+0.1
445A	Amite baz=256	17.98	67	P		Pn	19 44 36.0	-1.6
Z43A	Armstrong Fami baz=247	18.00	59	P		Pn	19 44 35.6	-2.3
V40A	Witts Springs baz=238	18.01	50	P		Pn	19 44 37.5	-0.6
X301	Greenbrier Sit 120nm,1.4s	18.02	52	ePn		Pn	19 44 38.0	-0.2
P34A	Walnut Farm, R baz=220,SNR=14	18.03	34	P		Pn	19 44 38.1	-0.2
244A	Avery, Jackson baz=252	18.05	63	P		P	19 44 40.0	+1.1
X201	Greenbrier Sit	18.07	52	ePn		P	19 44 39.0	-0.1
O33A	Hebron baz=217 134nm,1.4s	18.07	31	P		P	19 44 39.3	+0.1
N31A	Bailey Ranch, baz=212	18.08	27	P		Pn	19 44 37.0	-1.9
W41B	Gary Mavity, V baz=240,SNR=7.3	18.10	52	P		Pn	19 44 38.6	-0.5
WHAR	Wooly Hollow 224nm,1.5s	18.12	52	ePn		P	19 44 39.5	-0.2
VBMS	Vicksburg baz=251	18.24	63	P		Pn	19 44 38.4	-2.4
VBMS	Vicksburg 392nm,1.6s	18.24	63	ePn		Pn	19 44 40.5	-0.3
R37A	Teagarden Farm baz=227,SNR=29	18.24	40	P		Pn	19 44 40.7	-0.1
O03D	Paynes Creek baz=142,SNR=17	18.28	329	P		P	19 44 43.4	+1.9
O03D	Paynes Creek	18.28	329	P		P	19 44 45.6	+4.1
REDW	Red Top Meadow 82nm,1.4s	18.29	357	ePn		P	19 44 41.8	+0.1
U40A	Yellville baz=236,SNR=12	18.29	48	P		Pn	19 44 40.8	-0.6
N32A	Stulken Farm, baz=214	18.31	28	P		Pn	19 44 40.2	-1.5
T39A	Clever baz=233,SNR=7.8	18.32	46	P		Pn	19 44 40.1	-1.7
Q36A	Arnold C. Orve baz=224	18.32	37	P		Pn	19 44 41.0	-0.9
S38A	Stockton baz=231,SNR=6.9	18.35	43	P		Pn	19 44 40.8	-1.4
345A	Thompson Farm, baz=255	18.38	66	P		P	19 44 41.8	-0.7
SNOW	Snow King Moun 222nm,1.8s	18.38	357	eP		Pn	19 44 43.1	+0.4
TPAW	Teton Pass 59nm,1.4s	18.42	357	eP		Pn	19 44 43.5	+0.3
P35A	Duane Minner, baz=222,SNR=27	18.43	35	P		Pn	19 44 43.5	+0.3
144A	Alexander Plac baz=250	18.44	61	P		P	19 44 42.7	-0.6
V41A	Mountainview baz=239,SNR=28	18.47	51	P		P	19 44 42.2	-1.3
M31A	Lambtecht Ranc baz=211	18.51	26	P		Pn	19 44 45.6	+1.5
Y43A	Makayla and Ka baz=246	18.52	57	P		P	19 44 43.1	-0.9
LOHW	Long Hollow 37nm,1.4s	18.52	358	eP		Pn	19 44 44.9	+0.4
CCIG	Comitan 106nm,1.5s	18.56	115	eP		P	19 44 44.1	-0.6
O34A	Beatrice baz=219,SNR=6.5	18.59	33	P		P	19 44 44.5	-0.2
Z44A	Pea Ridge, Bel baz=248	18.66	60	P		P	19 44 44.6	-0.9
MOOW	Moose Ponds 21nm,1.2s	18.67	358	eP		Pn	19 44 46.3	+0.1
245A	Little AP, Sta baz=253	18.68	64	P		P	19 44 44.4	-1.4
R38A	Fenwick Farm, baz=230,SNR=19	18.70	42	P		P	19 44 43.4	-2.6
S39A	Bolivar baz=232,SNR=16	18.75	44	P		P	19 44 44.8	-1.9
X43A	Marvell baz=244	18.80	56	P		Pn	19 44 47.5	-0.1
446A	Poplarville baz=257	18.81	68	P		P	19 44 46.1	-1.1
IMW	Indian Meadow 34nm,1.0s	18.82	357	eP		Pn	19 44 49.1	+0.9
145A	Houston Renfro baz=251	18.83	62	P		P	19 44 46.9	-0.6
Q37A	Longview Farm, baz=227	18.83	39	P		P	19 44 46.6	-0.9
WVOR	Wild Horse Val 72nm,1.3s	18.85	339	eP		Pn	19 44 49.5	+1.2
LTIM	Timbered Crate	18.85	331	P		Pn	19 44 50.8	+2.4
WDC	Whiskeytown Da 35nm,1.4s	18.86	328	eP		Pn	19 44 48.4	+0.1
346A	Big Creek Wild baz=255	18.86	66	P		P	19 44 46.4	-1.5
HLID	Hailey baz=166	18.87	349	P		Pn	19 44 50.0	+1.4
HLID	Hailey 51nm,1.6s	18.87	349	eP		Pn	19 44 49.3	+0.8
BGNE	Belgrade baz=213,SNR=7.9	18.90	28	P		Pn	19 44 49.0	+0.1
BGNE	Belgrade 212nm,1.3s	18.90	28	eP		Pn	19 44 48.6	-0.3
U41A	Viola baz=238,SNR=12	18.92	49	P		P	19 44 46.8	-1.6
P36A	Good Intent, A baz=224	18.93	36	P		P	19 44 47.3	-1.2
T40A	Mansfield baz=235,SNR=12	18.95	46	P		P	19 44 46.8	-2.0
MOD	Modoc Plateau 241nm,1.7s	18.98	335	eP		Pn	19 44 51.2	+1.3
FLWY	Flagg Ranch 90nm,1.4s	19.00	358	eP		Pn	19 44 51.3	+1.0
MFID	Camas Ranch 111nm,1.8s	19.00	346	eP		P	19 44 49.8	+0.4
V42A	Cord baz=240,SNR=26	19.02	51	P		P	19 44 49.1	-0.3
O35A	Humboldt baz=221,SNR=9.7	19.04	34	P		Pn	19 44 50.5	-0.1
Y44A	Strider, Charl baz=247	19.08	58	P		P	19 44 49.8	-0.5
KMRM	Mail Ridge 176nm,1.3s	19.16	325	eP		Pn	19 44 53.4	+1.3
N34A	Lincoln baz=218	19.18	32	P		P	19 44 50.8	-0.6
YPP	Pitchstone Pla 88nm,1.7s	19.19	357	eP		P	19 44 50.7	-1.0
S40A	Lebanon baz=234,SNR=14	19.22	45	P		Pn	19 44 52.9	+0.2
N02D	Trinity Center baz=142	19.24	329	P		Pn	19 44 54.0	+0.9
Z45A	Winona baz=249	19.27	60	P		P	19 44 51.8	-0.5
L31A	Butterfield Fa baz=210	19.27	25	P		Pn	19 44 53.7	+0.3
H17A	Grant Village baz=177	19.31	358	P		Pn	19 44 55.5	+1.5
H17A	Grant Village 63nm,1.4s	19.31	358	eP		Pn	19 44 54.5	+0.5
R39A	Chumby, Stover baz=231,SNR=28	19.31	43	P		P	19 44 52.6	-0.2
X44A	Crenshaw baz=246	19.34	56	P		Pn	19 44 54.5	+0.3
YFT	Old Faithful 205nm,2.0s	19.37	357	eP		P	19 44 54.0	+0.4
Q38A	Cooks Store, C baz=228,SNR=12	19.38	40	P		P	19 44 53.2	-0.2
P37A	Lathrop baz=226,SNR=6.8	19.38	38	P		P	19 44 53.6	+0.1
U42A	Revenden baz=239,SNR=13	19.39	50	P		Pn	19 44 54.2	-0.6
T41A	Mountain View baz=236,SNR=16	19.40	48	P		Pn	19 44 54.2	-0.6
447A	Lucedale baz=258	19.41	68	P		Pn	19 44 54.4	-0.6
HBAR	Harrisburg	19.42	53	eP		Pn	19 44 54.4	-0.7
K30A	Basset baz=208,SNR=9.3	19.42	23	P		P	19 44 54.3	+0.4
O36A	Bolckow baz=223	19.43	36	P		P	19 44 52.8	-1.2
M33A	Taylor Creek F baz=215	19.45	29	P		P	19 44 54.6	+0.4
L32A	Elgin baz=213	19.46	27	P		Pn	19 44 55.7	+0.1
M04C	Macdoel baz=145,SNR=20	19.50	332	P		Pn	19 44 56.6	+0.5
146A	Union baz=252	19.54	63	P		P	19 44 55.1	-0.2
RSSD	Black Hills baz=195	19.56	12	P		P	19 44 56.4	+0.7
RSSD	Black Hills 26nm,1.4s	19.56	12	eP		P	19 44 54.6	-1.0
Y45A	Yeager Farm, C baz=248	19.56	59	P		Pn	19 44 56.3	-0.6
YMR	Madison River 37nm,1.2s	19.59	357	eP		P	19 44 54.2	-1.8
N35A	Tabor baz=220	19.62	33	P		Pn	19 44 57.1	-0.4
YNR	Norris Junctio 48nm,0.9s	19.63	358	eP		P	19 44 56.0	-0.4
347A	Saraland baz=256	19.63	66	P		P	19 44 56.0	-0.2
M02C	Callahan baz=142	19.64	329	P		Pn	19 44 57.6	-0.2

KHMM	Horse Mountain	19.66	327	eP	Pn	19 44 57.9	-0.3
	94nm,1.2s						
M34A	Aspy Farms, Fr	19.67	30	P	P	19 44 55.5	-1.1
	baz=217						
YHB	Horse Butte	19.69	357	eP	P	19 44 54.4	-2.6
	37nm,1.1s						
K31A	O'Neill	19.69	24	P	Pn	19 44 58.5	+0.2
	baz=210						
S41A	Jillco Farms,	19.71	46	P	P	19 44 55.6	-1.5
	baz=235,SNR=26						
YHH	Holmes Hill	19.71	357	eP	Pn	19 44 58.8	0.0
	30nm,1.3s						
247A	Quitman	19.74	65	P	Pn	19 44 59.5	+0.5
	baz=254						
JCC	Jacoby Creek,	19.77	326	eP	Pn	19 45 01.6	+2.4
	159nm,1.4s						
QLMT	Earthquake Lak	19.78	356	eP	Pn	19 45 00.3	+0.7
R40A	Maddies Statio	19.78	44	P	P	19 44 58.0	+0.2
	baz=233,SNR=11						
Z46A	Louisville	19.80	61	P	P	19 44 58.4	+0.3
	baz=251						
Q39A	Willow Grove F	19.81	41	P	P	19 44 58.3	+0.1
	baz=230,SNR=17						
W44A	Shelby Farms P	19.86	55	P	P	19 44 54.4	-4.2
	baz=244						
P38A	Dawn	19.87	39	P	P	19 44 58.9	+0.1
	baz=227,SNR=11						
X45A	UM Field Stati	19.89	57	P	P	19 44 57.7	-1.3
	baz=247						
MCMT	McKenzie Canyo	19.89	353	eP	Pn	19 45 01.3	+0.3
O37A	Wolven Farm, M	19.89	37	P	P	19 44 58.9	-0.2
	baz=225						
L33A	Hoskins	19.90	28	P	P	19 44 59.4	+0.2
	baz=214						
K05A	Summer Lake	19.91	335	eP	Pn	19 45 01.2	+0.2
	217nm,1.4s						
OXF	Oxford	19.91	57	eP	P	19 44 59.1	-0.1
	168nm,1.5s						
N36A	Muff Farm, Cla	19.93	34	P	P	19 44 58.3	-1.2
	baz=222						
RLMT	Red Lodge	20.02	1	P	P	19 45 01.3	+0.6
	baz=181,SNR=6.3						
RLMT	Red Lodge	20.02	1	eP	P	19 45 01.1	+0.4
	62nm,1.6s						
K32A	Verdigre	20.02	26	P	P	19 44 59.5	-1.0
	baz=212						
J30A	Dallas	20.04	22	P	P	19 45 00.4	-0.2
	baz=207						
M35A	Neola	20.06	32	P	P	19 45 01.2	+0.4
	baz=219						
448A	Bay Minette	20.10	68	P	P	19 44 58.6	-2.8
	baz=258						
Y46A	Houston	20.10	59	P	P	19 45 00.8	-0.5
	baz=249,SNR=10						
H25A	Fruitdale	20.13	13	P	P	19 45 02.5	+0.8
	baz=196						
L34A	Svendsen Farm,	20.13	30	P	P	19 45 01.4	-0.2
	baz=217						
K04D	Chiloquin, OR	20.16	333	P	Pn	19 45 04.7	+0.7
	baz=146						
348A	Jackson	20.17	67	P	P	19 45 01.9	-0.3
	baz=257						
PBMO	Poplar Bluff	20.17	50	eP	Pn	19 45 03.8	-0.2
	76nm,1.6s						
147A	Livingston	20.18	63	P	P	19 45 01.7	-0.6
	baz=253,SNR=15						
P39B	Salisbury	20.23	41	P	P	19 45 03.2	+0.5
	baz=229,SNR=14						
O38A	Galt	20.23	38	P	P	19 45 02.8	0.0
	baz=226						
KRMB	Red Mountain	20.24	328	eP	Pn	19 45 06.6	+1.6
	55nm,1.1s						
J31A	Geddes	20.27	24	P	Pn	19 45 04.3	-0.9
	baz=209						
N37A	Lee Faris, Mou	20.28	36	P	P	19 45 02.9	-0.4
	baz=224						
Q40A	Laux Farm, Aux	20.33	43	P	P	19 45 03.9	+0.1
	baz=232,SNR=17						
W45A	Hickory Valley	20.33	56	P	P	19 45 02.6	-1.3
	baz=245						
K33A	Hardington	20.37	28	P	P	19 45 05.0	+0.7
	baz=214						
DLMT	Dillon	20.40	354	eP	Pn	19 45 06.8	0.0
	68nm,1.1s						
248A	Dixon Mills	20.46	65	P	P	19 45 03.4	-1.9
	baz=255						
M36A	Felix, Anita	20.48	33	P	P	19 45 04.8	-0.7
	baz=221						
Z47A	Carrollton	20.50	62	P	P	19 45 05.1	-0.6
	baz=252,SNR=14						
J05D	Fort Rock, OR	20.51	335	P	P	19 45 06.3	+0.4
	baz=149,SNR=5.8						
HALT	Halls	20.54	53	eP	P	19 45 06.2	0.0
BOZ	Bozeman (W)	20.61	356	P	P	19 45 07.4	+0.5
	baz=175,SNR=23						
BOZ	Bozeman (W)	20.61	356	eP	P	19 45 07.8	+0.8
	28nm,1.2s						
L35A	Bielow Farm, R	20.63	31	P	P	19 45 07.8	+0.7
	baz=218						
HUMO	Hull Mountain	20.65	331	eP	P	19 45 07.5	+0.1
	15nm,1.3s						
J32A	Parkston	20.67	25	P	P	19 45 05.3	-2.2
	baz=211						
P40A	Paris	20.68	41	P	P	19 45 07.1	-0.5
	baz=230,SNR=33						
GCMT	Greycliff	20.69	360	eP	P	19 45 07.7	-0.1
BMO	Blue Mountains	20.70	344	eP	P	19 45 08.6	+0.6
	87nm,1.5s						
GLAT	Glass	20.74	53	eP	P	19 45 07.4	-0.9
V45A	Humboldt	20.74	54	P	P	19 45 06.6	-1.7
	baz=244						
S43A	Fulton Ridge,	20.82	49	P	P	19 45 08.1	-1.0
	baz=238,SNR=9.0						
J04D	Umpqua Nationa	20.82	334	P	Pn	19 45 11.5	-0.3
	baz=147						
M37A	Trindle Farm,	20.82	35	P	Pn	19 45 10.5	-1.1
	baz=223						
N38A	Joes South For	20.83	37	P	P	19 45 10.0	+0.7
	baz=226						
BRAL	Brewton	20.83	68	eP	Pn	19 45 14.0	+2.2
	226nm,1.1s						
K34A	Le Mars	20.83	29	P	Pn	19 45 10.6	-1.1
	baz=216						
LRM	Limekiln Ridge	20.84	354	eP	P	19 45 10.4	+0.8
O39A	Kirksville	20.85	39	P	P	19 45 10.2	+0.8
	baz=228						
Y47A	UCPARC, Winfie	20.90	60	P	Pn	19 45 11.2	-1.4
	baz=250						
Z48A	Northport	20.96	62	P	P	19 45 10.7	0.0
	baz=252,SNR=14						
J33A	Davis	20.98	27	P	P	19 45 11.6	+0.7
	baz=213						
I31A	Royce, Wessing	20.99	23	P	P	19 45 12.0	+1.1
	baz=209						
L36A	Harm Buss Farm	21.04	32	P	P	19 45 11.9	+0.4
	baz=220						
UTMT	University of	21.07	53	eP	P	19 45 12.4	+0.5
	146nm,1.0s						
O40A	La Belle	21.15	40	P	P	19 45 13.2	+0.5
	baz=230,SNR=31						
SUSD	Miller	21.21	22	P	P	19 45 15.0	+1.7
	baz=207						
Q42A	Golden Eagle	21.25	45	P	P	19 45 13.6	-0.1
	baz=235						
K35A	Storm Lake	21.25	30	P	P	19 45 13.5	-0.2
	baz=218						
M38A	Pleasantville	21.29	36	P	P	19 45 13.0	-1.2
	baz=224,SNR=13						
N39A	Derby Farms, D	21.29	38	P	P	19 45 14.0	-0.2
	baz=227						
LRAL	Lakeview Retre	21.31	63	eP	P	19 45 14.2	-0.3
	155nm,1.3s						
P41A	Barry, Barry	21.36	42	P	P	19 45 15.5	+0.5
	baz=232,SNR=9.7						
J34A	George	21.37	28	P	P	19 45 15.2	+0.1
	baz=216						
I32A	Karley and Nic	21.38	25	P	P	19 45 15.2	+0.1
	baz=211						
H31A	Wolsey	21.40	22	P	P	19 45 15.5	+0.2
	baz=208						
I04A	Tendick Farm,	21.40	334	P	P	19 45 15.5	+0.1
	baz=147,SNR=11						
S44A	Carbondale	21.44	49	P	P	19 45 15.4	-0.4
	baz=239						
I05D	Terrebonne, OR	21.46	337	P	P	19 45 16.7	+0.7
	baz=150,SNR=8.2						
ECSD	EROS Data Cent	21.46	27	P	P	19 45 14.6	-1.5
	baz=214,SNR=21						
ECSD	EROS Data Cent	21.46	27	eP	P	19 45 15.0	-1.1
	88nm,1.3s						
SIUC	Southern Illin	21.48	49	eP	P	19 45 16.2	0.0
	126nm,1.4s						
L37A	Phoenix Point,	21.51	34	P	P	19 45 16.3	-0.2
	baz=222,SNR=10						
G08A	Pilot Rock	21.54	342	eP	P	19 45 17.8	+0.8
	32nm,1.1s						
SCIA	State Center	21.62	35	eP	P	19 45 18.7	+1.0
	172nm,1.4s						
I33A	Coleman	21.65	26	P	P	19 45 18.2	+0.1
	baz=213						
HRY	Holter Researc	21.68	356	eP	P	19 45 19.2	+0.8
I03D	Drain, OR	21.70	332	P	P	19 45 19.8	+1.2
	baz=144,SNR=6.3						
WVT	Waverly	21.74	54	eP	P	19 45 19.0	-0.1
	134nm,1.3s						
F10A	Beach Ranch, E	21.74	346	eP	P	19 45 19.5	+0.4
	54nm,1.1s						
O41A	Passleys Farm,	21.74	42	P	P	19 45 18.9	-0.2
	baz=232,SNR=7.3						
P42A	Winchester	21.75	44	P	P	19 45 18.7	-0.5
	baz=234,SNR=7.7						
LAO	LASA Array	21.76	6	P	P	19 45 19.3	+0.1
	baz=188						
LAO	LASA Array	21.76	6	eP	P	19 45 18.9	-0.3
	47nm,1.0s						
J35A	Milford	21.76	29	P	P	19 45 20.0	+0.7
	baz=217						
H32A	Carlson Farm,	21.80	24	P	P	19 45 19.7	+0.1
	baz=211,SNR=8.0						
Q43A	New Douglas	21.80	46	P	P	19 45 19.2	-0.4
	baz=236,SNR=15						
R44A	Waltonville	21.84	48	P	P	19 45 20.0	-0.1
	baz=238,SNR=8.0						
M39A	Webster	21.88	37	P	P	19 45 20.6	+0.1
	baz=226,SNR=14						
S45A	Carrier Mills	21.90	50	P	P	19 45 19.4	-1.3
	baz=240						
L38A	Oak Wood Farm,	21.93	35	P	P	19 45 19.8	-1.2
	baz=224,SNR=8.2						
VTHM	Trough	21.93	339	P	P	19 45 22.0	+0.9
MSO	Missoula	21.99	352	P	P	19 45 20.5	-1.3
	baz=169,SNR=37						
MSO	Missoula	21.99	352	eP	P	19 45 23.1	+1.3
	69nm,1.3s						
CHMT	Chamberlain Mo	22.00	353	eP	P	19 45 23.1	+1.1
G06A	Carlson Farm,	22.00	339	eP	P	19 45 22.6	+0.8
	52nm,1.3s						
I34A	Hadley	22.03	27	P	P	19 45 21.5	-0.6
	baz=215						
K37A	Belmond	22.04	33	P	P	19 45 21.3	-0.9
	baz=221,SNR=7.5						
J36A	Seneca 1, Swea	22.13	31	P	P	19 45 21.7	-1.5
	baz=219						
G31A	Conde	22.15	22	P	P	19 45 23.8	+0.5
	baz=208						
F29A	Eureka	22.19	18	P	P	19 45 22.4	-1.4
	baz=204						
H33A	Prehn Over Nor	22.21	25	P	P	19 45 22.6	-1.4
	baz=212						
Q44A	Meyer Farm, Va	22.23	47	P	P	19 45 23.5	-0.8
	baz=237,SNR=18						
G05D	Wamic, OR	22.24	338	P	P	19 45 24.9	+0.6
	baz=151						
I35A	Creekview Farm	22.25	29	P	P	19 45 23.5	-1.1
	baz=217,SNR=5.6						
O42A	Bath	22.28	43	P	P	19 45 23.4	-1.4
	baz=233						
SLMT	Seeley Lake	22.35	353	eP	P	19 45 26.4	+0.8
K38A	Parkersburg	22.39	34	P	P	19 45 26.3	+0.4
	baz=223						
COR	Corvallis	22.41	334	eP	P	19 45 27.8	+1.6
	291nm,1.9s						
L39A	Vinton	22.42	36	P	P	19 45 24.2	-2.1
	baz=226,SNR=6.2						
G32A	Webster	22.42	23	P	P	19 45 24.5	-1.8
	baz=210						
F30A	Leola	22.43	20	P	P	19 45 26.0	-0.4
	baz=206						
E09A	Wood Farm, Sta	22.46	345	eP	P	19 45 26.3	-0.4
	65nm,1.4s						
J37A	Redenius Farm,	22.49	32	P	P	19 45 26.1	-0.9
	baz=221,SNR=11						
H34A	Spellman Lake,	22.57	26	P	P	19 45 27.4	-0.6
	baz=214,SNR=8.2						
USIN	University of	22.67	50	eP	P	19 45 29.3	+0.3
	120nm,1.2s						
D26A	Manning	22.67	13	P	P	19 45 27.8	-1.1
	baz=197						
SWMT	Swartz Lake	22.67	352	eP	P	19 45 28.9	-0.1
F31A	Hecla	22.69	21	P	P	19 45 27.5	-1.7
	baz=207						
HAWA	Hanford	22.71	342	eP	P	19 45 30.0	+0.6
	54nm,1.1s						
OLIL	Olney	22.75	48	eP	P	19 45 29.7	-0.2
	81nm,1.4s						
G33A	Ortonville	22.76	25	P	P	19 45 29.9	+0.1
	baz=212						
L40A	Anamosa	22.80	37	P	P	19 45 29.1	-1.2
	baz=227,SNR=8.2						
I36A	Fitzsimmons Fa	22.81	30	P	P	19 45 29.4	-1.1
	baz=219						
SWET	Sewanee	22.83	58	eP	P	19 45 29.1	-1.7
	24nm,1.4s						
K39A	Oelwein	22.88	35	P	P	19 45 28.7	-2.5
	baz=225,SNR=6.0						
G03D	McMinnville, O	22.92	335	P	P	19 45 32.6	+1.1
	baz=147,SNR=7.4						
EGMT	Eagleton	22.92	360	P	P	19 45 31.5	-0.1
	baz=180						
EGMT	Eagleton	22.92	360	eP	P	19 45 31.4	-0.3
	84nm,1.4s						
JTMT	Jette	22.94	352	eP	P	19 45 32.7	+0.8
E07A	Sunnyside	22.95	342	eP	P	19 45 32.7	+0.8
	43nm,1.0s						
HDIL	Hopedale	22.98	43	P	P	19 45 30.8	-1.4
	baz=233						
HDIL	Hopedale	22.98	43	eP	P	19 45 38.9	+6.7
	43nm,0.9s						
H35A	Sunnyside Ranc	22.99	28	P	P	19 45 32.1	-0.2
	baz=216						
YBMT	Yellow Bay	23.02	352	eP	P	19 45 31.6	-1.2
J38A	Wedel Dairy, R	23.02	33	P	P	19 45 31.9	-0.7
	baz=223,SNR=6.2						
F32A	Veblen	23.08	23	P	P	19 45 31.6	-1.7
	baz=210						
I37A	Lemond, Waseca	23.09	31	P	P	19 45 31.9	-1.5
	baz=220						
G34A	Benson	23.11	26	P	P	19 45 32.1	-1.3
	baz=214						
BSMT	Bassoo Peak	23.11	351	eP	P	19 45 34.0	+0.3
D08A	Wollman Farm,	23.16	344	eP	P	19 45 33.6	-0.5
	13nm,0.9s						
BLMT	Blacktail Moun	23.21	352	eP	P	19 45 33.1	-1.6
L41A	Preston	23.21	38	P	P	19 45 32.5	-2.1
	baz=229						
F04A	Amboy	23.22	337	eP	P	19 45 35.3	+0.7
	28nm,1.0s						
K40A	Colesburg	23.28	36	P	P	19 45 33.7	-1.5
	baz=226						
H36A	Jessenland, He	23.29	29	P	P	19 45 35.5	+0.2
	baz=218						
F33A	5 Mile Ranch,	23.36	24	P	P	19 45 35.3	-0.7
	baz=212						
KMOR	Kings Mountain	23.36	335	P	P	19 45 37.6	+1.4
J39A	Decorah	23.42	34	P	P	19 45 34.4	-2.3
	baz=224						
E31A	Nome	23.43	21	P	P	19 45 35.2	-1.5
	baz=207						
G35A	Watkins	23.56	28	P	P	19 45 36.8	-1.2
	baz=216						
F04D	Rainier, OR	23.56	336	P	P	19 45 38.7	+0.7
	baz=148						
I38A	Scanlan Farm,	23.62	32	P	P	19 45 38.4	-0.3
	baz=222						
F03A	Seaside	23.64	335	eP	P	19 45 39.8	+1.0
	222nm,1.8s						
K41A	Shullsburg	23.67	38	P	P	19 45 37.6	-1.5
	baz=228						
C09A	Chrisman Ranch	23.70	345	eP	P	19 45 39.4	0.0
	48nm,1.4s						
F34A	Alexandria	23.71	26	P	P	19 45 37.4	-2.1
	baz=214						
LON	Longmire	23.72	339	eP	P	19 45 40.8	+1.1
	142nm,1.7s						
E32A	Braaten, Kindr	23.73	22	P	P	19 45 36.0	-3.7
	baz=209						
H37A	Dierke Farm, C	23.75	31	P	P	19 45 37.6	-2.2
	baz=220						
WCI	Wyandotte Cave	23.75	51	eP	P	19 45 39.4	-0.6
	126nm,1.6s						
DGMT	Dagmar	23.76	9	P	P	19 45 39.2	-0.8
	baz=192						
TIGA	Tifton	23.79	69	P	P	19 45 40.3	-0.1
	baz=261						
TIGA	Tifton	23.79	69	eP	P	19 45 38.8	-1.7
	208nm,1.4s						
LTY	Liberty	23.82	341	eP	P	19 45 41.4	+0.8
	110nm,1.9s						
FMW	Mount Fremont	23.84	339	eP	P	19 45 43.1	+2.1
G36A	St. Michael	23.88	29	P	P	19 45 40.2	-0.9
	baz=217						
NEW	Newport	23.90	348	P	P	19 45 41.5	+0.2
	34nm,0.8s,baz=164,slow=11,SNR=43						
NEW	Newport	23.90	348	P	P	19 45 40.1	-1.2
	baz=163,SNR=26						
NEW	Newport	23.90	348	eP	P	19 45 41.4	+0.1
	157nm,1.6s						
JFWS	Jewell Farm	23.91	37	eP	P	19 45 40.8	-0.6
	44nm,0.9s						
D31A	Mcclaflin, Tow	23.92	20	P	P	19 45 41.1	-0.3
	baz=207						
J40A	Soldiers Grove	23.97	36	P	P	19 45 41.9	-0.1
	baz=226						
CPCT	Cooper Cave	23.99	59	eP	P	19 45 41.6	-0.7
	77nm,1.3s						
E33A	Westby DABS, E	24.03	24	P	P	19 45 41.4	-1.0
	baz=211						
BLO	Bloomington	24.03	49	eP	P	19 45 42.3	-0.3
	104nm,1.5s						
F35A	Swanville	24.04	27	P	P	19 45 42.5	-0.1
	baz=215						
MDND	Maddock	24.10	17	P	P	19 45 43.4	+0.3
	baz=202						
MDND	Maddock	24.10	17	eP	P	19 45 42.5	-0.6
	44nm,0.8s						
E03A	Lebam	24.16	336	eP	P	19 45 43.7	+0.1
	64nm,1.0s						
D05A	Enumclaw	24.17	339	eP	P	19 45 44.6	+0.8
	102nm,1.4s						
WALA	Waterton Lakes	24.19	353	eP	P	19 45 44.2	+0.1
	91nm,1.5s						
D32A	Dogwood Acres,	24.22	21	P	P	19 45 43.6	-0.7
	baz=208						
SFIN	Lafayette	24.27	45	P	P	19 45 43.4	-1.4
	baz=237,SNR=13						
SFIN	Lafayette	24.27	45	eP	P	19 45 44.0	-0.7
	169nm,1.3s						
GOGA	Godfrey	24.27	64	eP	P	19 45 43.6	-1.3
	151nm,1.6s						
SPMN	Marine on St.	24.29	30	P	P	19 45 44.2	-0.8
	baz=219						
SPMN	Marine on St.	24.29	30	eP	P	19 45 44.1	-0.8
	55nm,1.4s						
J41A	Loganville	24.34	37	P	P	19 45 45.2	-0.2
	baz=227						
E34A	Wadena	24.34	25	P	P	19 45 43.2	-2.2
	baz=213						
B08A	Colville Reser	24.48	344	eP	P	19 45 46.8	+0.2
	75nm,1.4s						
F36A	Milaca	24.48	28	P	P	19 45 46.2	-0.4
	baz=217,SNR=21						
C06D	Leavenworth	24.49	342	P	P	19 45 47.2	+0.4
	baz=155						
C31A	Landman Farms,	24.57	20	P	P	19 45 46.5	-1.0
	baz=206						
D33A	AnnSam, Waubun	24.63	23	P	P	19 45 45.8	-2.2
	baz=211						
TKL	Tuckaleechee C	24.64	59	P	P	19 45 49.2	+1.0
	77nm,1.3s,baz=253,slow=5.8,SNR=11						
TKL				LR	LR	19 56 16.1	
	comp=Z,2μm,18.6s,baz=262,slow=38						
TKL	Tuckaleechee C	24.64	59	eP	P	19 45 47.9	-0.3
	167nm,1.4s						
E35A	Pequot Lakes	24.68	26	P	P	19 45 48.6	+0.2
	baz=214						
C32A	Crookston	24.98	21	P	P	19 45 47.4	-3.8
	baz=209						
NLWA	Neilton Lookou	24.98	337	eP	P	19 45 51.5	+0.3
	61nm,1.5s						
TZTN	Tazewell	25.10	57	eP	P	19 45 53.2	+0.9
	140nm,1.3s						
E36A	McGregor	25.11	27	P	P	19 45 50.5	-1.8
	baz=217						
B05A	Bryant	25.15	340	P	P	19 45 51.1	-1.6
	baz=152						
C33A	Trail	25.18	22	P	P	19 45 50.9	-2.1
	baz=210						
B06A	Marblemount	25.20	341	eP	P	19 45 53.7	+0.6
	78nm,1.8s						
D35A	Remer	25.25	26	P	P	19 45 49.3	-4.3
	baz=214						
DWPF	Disney Wildern	25.40	77	eP	P	19 45 55.2	+0.1
	303nm,1.5s						
B32A	Ashes, Strandq	25.48	21	P	P	19 45 54.7	-1.0
	baz=208						
AGMN	Agassiz Nation	25.62	22	P	P	19 45 55.9	-1.0
	baz=210						
AGMN	Agassiz Nation	25.62	22	eP	P	19 45 56.6	-0.3
	27nm,1.4s						
D36A	Goodland	25.68	27	P	P	19 45 55.5	-2.0
	baz=216						
B33A	Robert and Kas	25.69	22	P	P	19 45 54.6	-2.9
	baz=210						
A04D	Lummi Island	25.75	340	P	P	19 45 55.2	-2.9
	baz=152						
C35A	Jirik Farms, M	25.79	25	P	P	19 45 54.2	-4.3
	baz=214,SNR=10						
PGC	Sidney	25.92	339	eP	P	19 45 59.8	+0.1
	44nm,1.0s						
A32A	Rocking H Ranc	25.95	20	P	P	19 45 56.2	-3.7
	baz=208						
D37A	Cotton	25.97	27	P	P	19 45 55.7	-4.4
	baz=217						
B34A	Aery, Baudette	26.20	23	P	P	19 46 01.5	-0.7
	baz=212						
C36A	Pine Crest Far	26.28	26	P	P	19 46 01.1	-1.8
	baz=216,SNR=6.9						
A33A	Warroad	26.33	21	P	P	19 46 03.6	+0.3
	baz=210						
KMSC	Kings Mountain	26.40	61	P	P	19 46 00.3	-3.9
	baz=255,SNR=5.5						
KMSC	Kings Mountain	26.40	61	eP	P	19 46 03.9	-0.3
	35nm,1.0s						
B35A	Bob, Littlefor	26.43	24	P	P	19 46 04.5	+0.3
	baz=214						
C37A	Embarrass	26.52	27	P	P	19 46 04.7	-0.4
	baz=217						
COWI	Conover	26.68	33	eP	P	19 46 06.5	0.0
C38A	Sawbill Land.	26.89	28	P	P	19 46 05.3	-3.1
	baz=219						
NHSC	New Hope	26.91	66	eP	P	19 46 10.5	+1.7
	156nm,1.4s						
ACSO	Alum Creek Sta	26.95	49	eP	P	19 46 07.8	-1.3
	24nm,1.0s						
EYMN	Ely	26.98	28	P	P	19 46 07.8	-1.4
	baz=218,SNR=18						
EYMN	Ely	26.98	28	eP	P	19 46 08.0	-1.3
	40nm,1.3s						
ULM	Lac du Bonnet	27.32	19	P	P	19 46 10.7	-1.5
	5.6nm,1.1s,baz=205,slow=10.0,SNR=5.6						
ULM				LR	LR	19 57 18.8	
	comp=Z,609nm,19.3s,baz=214,slow=37						
ULM	Lac du Bonnet	27.32	19	eP	P	19 46 10.8	-1.5
	25nm,1.4s						
C39A	Grand Marais	27.47	29	P	P	19 46 12.2	-1.4
	baz=221,SNR=9.6						
AAM	Ann Arbor	27.48	45	eP	P	19 46 12.4	-1.3
	68nm,1.4s						
EDM	Edmonton	28.26	355	eP	P	19 46 20.5	-0.2
	89nm,1.5s						
URVA	University of	29.99	58	eP	P	19 46 35.9	-0.2
FFC	Flin Flon	30.17	9	eP	P	19 46 36.9	-0.7
	42nm,1.5s						
SSPA	Standing Stone	30.68	52	eP	P	19 46 41.6	-0.6
	21nm,1.0s						
SDMD	Soldier's Deli	31.04	55	eP	P	19 46 43.8	-1.6
	17nm,1.6s						
MMNY	Mt. Morris Dam	31.45	48	eP	P	19 46 48.1	-0.9
KSPA	Keystone Colle	32.50	51	eP	P	19 47 01.4	+3.2
	43nm,1.6s						
PLVO	Plevna	32.98	45	eP	P	19 47 02.0	-0.3
	58nm,1.4s						
VLDQ	Val d'Or	34.21	39	eP	P	19 47 11.7	-1.4
	70nm,1.4s						

TRY	Troy	34.36	50	*e*P		P	19 47 13.2	-1.2	
	48nm,1.5s								
NCB	Newcomb	34.41	48	*e*P		P	19 47 14.0	-0.9	
	0.5nm,1.3s								
LONY	Lake Ozonia	34.42	47	*e*P		P	19 47 14.3	-0.7	
	35nm,1.3s								
ACCN	Adirondack Com	34.58	49	*e*P		P	19 47 16.1	-0.3	
	64nm,2.0s								
TRQ	Mont Tremblant	35.08	44	*e*P		P	19 47 20.2	-0.5	
QUA2	Belchertown	35.14	51	*e*P		P	19 47 21.1	-0.2	
	31nm,1.3s								
FRNY	Flat Rock	35.15	47	*e*P		P	19 47 20.7	-0.6	
	29nm,1.3s								
FCC	Fort Churchill	35.43	14	*e*P		P	19 47 22.5	-0.9	
	26nm,1.1s								
HNH	Hanover	35.63	49	*e*P		P	19 47 26.8	+1.4	
	102nm,2.0s								
FFD	Franklin Falls	35.99	50	*e*P		P	19 47 28.8	+0.3	
	92nm,1.5s								
BCX	Boston College	36.00	52	*e*P		P	19 47 29.9	+1.3	
	32nm,1.0s								
LBNH	Lisbon	36.06	48	*e*P		P	19 47 29.7	+0.7	
DLBC	Dease Lake	36.35	342	P		P	19 47 32.5	+1.1	
	11nm,0.9s,baz=150,slow=7.7,SNR=13								
DLBC	Dease Lake	36.35	342	*e*P		P	19 47 33.2	+1.8	
	12nm,0.9s								
DBBC	Dabeiba	36.65	114	*e*P		P	19 47 38.1	+3.6	
YKA	Yellowknife Ar	37.57	356	P		P	19 47 41.7	0.0	
	18nm,0.9s,baz=173,slow=8.0,SNR=56								
YKA					LR	LR	20 03 46.0		
	comp=Z,68nm,19.9s,baz=180,slow=37								
HELC	Santa Helena	37.66	114	*e*P		P	19 47 43.0	-0.4	
WVL	Waterville	37.70	49	*e*P		P	19 47 42.9	-0.1	
	55nm,1.4s								
LMQ	La Malbaie	38.27	44	*e*P		P	19 47 47.4	-0.4	
SKAG	Skagway	38.78	339	*e*P		P	19 47 54.1	+2.2	
	21nm,0.5s								
OTAV	Otavalo	38.97	125	*e*P		P	19 47 57.9	+3.3	
OTAV	Otavalo	38.97	125	*e*P		P	19 47 55.4	+0.8	
	36nm,1.3s								
CMBC	Cumbal	38.98	123	*e*P		P	19 47 55.4	+0.7	
CBRI	Barrientos, No	39.16	110	*e*P		P	19 47 56.0	+0.2	
EMMW	East Machias	39.25	49	*e*P		P	19 47 54.5	-1.6	
	61nm,1.4s								
BARC	Barichara	39.41	112	*e*P		P	19 47 57.4	-0.6	
ROSC	El Rosal	39.41	115	LR		LR	20 04 26.1		
	comp=Z,169nm,20.2s,baz=246,slow=37								
CHIC	Chingaza	40.02	115	*e*P		P	19 48 08.5	+5.3	
SDV	Santo Domingo	40.45	106	P		P	19 48 07.2	+0.5	
	4.1nm,0.4s,baz=260,slow=6.9,SNR=3.8								
SDV	Santo Domingo	40.45	106	*e*P		P	19 48 06.9	+0.2	
SDV	Santo Domingo	40.45	106	*e*P		P	19 48 06.7	0.0	
	19nm,0.9s								
HYT	Haines Junctio	40.53	339	*e*P		P	19 48 09.2	+2.5	
	9.7nm,1.3s								
SJAC	San Juan de Ar	40.61	116	*e*P		P	19 48 10.7	+2.8	
SJG	San Juan	40.91	91	*e*P		P	19 48 09.4	-0.7	
	61nm,1.1s								
LMN	Caledonia Moun	41.35	48	*e*P		P	19 48 13.3	-0.2	
	40nm,1.3s								
RAGM	Ragged Mountai	42.74	335	*e*P		P	19 48 24.0	-0.6	
	32nm,0.7s								
SCHQ	Schefferville	43.24	35	P		P	19 48 28.3	-0.5	
	14nm,0.8s,baz=248,slow=7.2,SNR=11								
SCHQ					LR	LR	20 07 31.4		
	comp=Z,434nm,21.9s,baz=256,slow=38								
SCHQ	Schefferville	43.24	35	*e*P		P	19 48 28.1	-0.7	
	49nm,1.3s								
DAWY	Dawson	43.56	342	*e*P		P	19 48 32.5	+1.2	
	21nm,0.9s								
DIV	Divide	43.63	336	*e*P		P	19 48 32.8	+0.9	
	42nm,1.9s								
FID	Port Fidalgo	43.66	335	*e*P		P	19 48 32.2	+0.2	
	35nm,1.3s								
KLU	Klutina	43.91	336	*e*P		P	19 48 36.4	+2.3	
	46nm,1.9s								
MENT	Mentasta	44.09	338	*e*P		P	19 48 37.3	+1.8	
	29nm,1.6s								
ATAH	Atahualpa	44.16	132	P		P	19 48 38.4	+1.4	
	12nm,1.1s,baz=5.9,slow=9.8,SNR=4.1								
SEW	Seward	44.47	333	*e*P		P	19 48 40.1	+1.6	
	31nm,1.5s								
EGAK	Eagle	44.61	341	*e*P		P	19 48 41.0	+1.4	
	12nm,0.9s								
KDAK	Kodiak Island	44.65	329	*e*P		P	19 48 41.4	+1.5	
	54nm,1.5s								
DOT	Dot Lake	44.69	339	*e*P		P	19 48 41.5	+1.2	
	22nm,0.8s								
PAX	Paxson	44.71	338	*e*P		P	19 48 42.0	+1.4	
	11nm,1.3s								
OHAK	Old Harbor	44.72	328	*e*P		P	19 48 42.2	+1.6	
	48nm,1.7s								
BRLK	Bradley Lake	44.89	332	*e*P		P	19 48 43.7	+1.8	
	38nm,1.4s								
CNPM	China Poot	44.91	331	*e*P		P	19 48 43.0	+0.9	
	45nm,1.7s								
SML	Sawmill	45.02	335	*e*P		P	19 48 44.7	+1.8	
	28nm,1.3s								
RC01	Rabbit Creek A	45.14	334	*e*P		P	19 48 45.2	+1.3	
	37nm,1.7s								
HOM	Homer	45.16	331	*e*P		P	19 48 46.7	+2.7	
	140nm,0.3s								
PMR	Palmer	45.19	335	*e*P		P	19 48 45.7	+1.5	
	30nm,1.4s								
DHY	Denali Highway	45.44	337	*e*P		P	19 48 47.3	+0.8	
	18nm,1.4s								
GDHS	Morne Mazeau,	45.46	92	*e*P		P	19 48 47.7	+0.7	
	55nm,0.9s								
INK	Inuvik	45.62	348	P		P	19 48 48.0	+0.5	
	9.4nm,1.0s,baz=142,slow=8.3,SNR=10								
INK	Inuvik	45.62	348	*e*P		P	19 48 47.8	+0.2	
	27nm,1.1s								
SUA	Susitna One	45.76	334	*e*P		P	19 48 50.7	+1.8	
	11nm,0.8s								
KEKH	Kekaha	45.80	277	*e*P		P	19 48 48.8	-0.7	
	148nm,1.2s								
RSO	Redoubt South	46.05	332	*e*P		P	19 48 52.4	+1.1	
SPU	Mount Spurr	46.13	333	*e*P		P	19 48 52.6	+0.8	
HDA	Harding Lake	46.15	339	*e*P		P	19 48 53.1	+1.3	
	26nm,1.5s								
RND	Reindeer	46.17	337	*e*P		P	19 48 53.4	+1.4	
	47nm,1.7s								
IL1	Eielson Array	46.37	339	*e*P		P	19 48 54.2	+0.8	
ILAR	Eielson Array	46.37	339	P		P	19 48 54.6	+1.1	
	14nm,1.0s,baz=151,slow=6.7,SNR=68								
ILB	Eielson Array	46.37	339	*e*P		P	19 48 54.5	+1.1	
MCK	McKinley	46.40	337	*e*P		P	19 48 55.1	+1.3	
	29nm,1.3s								
WRH	Wood River Hil	46.57	338	*e*P		P	19 48 56.1	+1.1	
	18nm,1.2s								
CCB	Clear Creek Bu	46.59	339	*e*P		P	19 48 56.0	+0.8	
	16nm,1.2s								
TRF	Thorofare Moun	46.72	336	*e*P		P	19 48 57.7	+1.2	
	111nm,1.4s								
COLA	College	46.75	339	*e*P		P	19 48 57.4	+1.0	
	12nm,0.6s								
BWN	Browne	46.86	337	*e*P		P	19 48 58.3	+1.0	
	96nm,1.2s								
CHGN	Chignik	46.92	325	*e*P		P	19 48 59.0	+1.1	
MDM	Murphy Dome	46.93	339	*e*P		P	19 48 58.0	+0.1	
	17nm,1.1s								
DRLN	Deer Lake	46.94	45	*e*P		P	19 48 57.5	-0.7	
	75nm,1.1s								
KTH	Kantishna Hill	47.01	336	*e*P		P	19 48 59.7	+1.1	
	48nm,1.3s								
GRGR	Grenville	47.04	97	*e*P		P	19 48 57.9	-1.5	
	129nm,1.1s								
FRB	Frobisher Bay	47.06	24	LR		LR	20 07 38.1		
	comp=Z,433nm,18.4s,baz=216,slow=35								
FYU	Fort Yukon	47.07	341	*e*P		P	19 48 59.2	+0.3	
	101nm,1.4s								
PPLA	Purkeypile	47.11	335	*e*P		P	19 49 00.4	+0.9	
	125nm,1.4s								
BPAW	Bear Paw Mtn.	47.35	337	*e*P		P	19 49 02.1	+0.9	
	51nm,1.3s								
CAST	Castle Rocks	47.36	336	*e*P		P	19 49 01.7	+0.3	
	29nm,1.1s								
SVW2	Sparrevohn	47.57	332	*e*P		P	19 49 03.4	+0.4	
	24nm,1.3s								
MLY	Manley	47.81	338	*e*P		P	19 49 05.7	+0.8	
	34nm,1.2s								
TT01	Tatalina	48.62	334	*e*P		P	19 49 11.3	+0.2	
TTA	Tatalina	48.63	334	*e*P		P	19 49 11.5	+0.3	
	29nm,1.4s								
COLD	Coldfoot	48.98	340	*e*P		P	19 49 15.2	+1.4	
	28nm,1.2s								
RES	Resolute Bay	50.27	5	*e*P		P	19 49 22.9	-0.5	
	24nm,1.1s								
PTCN	Pitcairn Islan	53.62	203	*e*P		P	19 49 48.5	-0.5	
	149nm,0.6s								
PTGA	Pitinga	54.45	110	*e*P		P	19 49 55.1	-0.2	
	19nm,1.0s								
SFJD	Kangerlussuaq	55.20	24	*e*P		P	19 49 60.0	0.0	
	64nm,1.4s								
PPT	Papeete	57.51	227	LR		LR	20 10 21.3		
	comp=Z,151nm,18.4s,baz=261,slow=31								
LPAZ	La Paz	57.68	131	P		P	19 50 18.6	-0.4	
	1.1nm,0.7s,baz=336,slow=4.8,SNR=3.9								
LPAZ	La Paz	57.68	131	*e*P		P	19 50 18.6	-0.4	
	11nm,1.3s								
SUMG	Summit	60.68	19	*i* P		P	19 50 37.9	-1.0	
	57nm,1.3s								
SUMG	Summit	60.68	19	*e*P		P	19 50 37.6	-1.2	
	56nm,1.3s								
BILL	Bilibino	64.82	336	*e*P		P	19 51 05.5	-0.5	
	32nm,1.2s								
DAG	Danmarks Havn	66.03	15	*i* P		P	19 51 10.2	-3.5	
	40nm,1.4s								
CPUP	Villa Florida	71.84	132	P		P	19 51 50.1	-0.4	
	6.2nm,0.9s,baz=305,slow=5.3,SNR=8.2								
CPUP	Villa Florida	71.84	132	*e*P		P	19 51 50.4	-0.2	
PEA1	Petropavlovsk-	71.89	321	*e*P		P	19 51 51.0	+0.5	
PEA0	Petropavlovsk-	71.89	321	*e*P		P	19 51 50.2	-0.4	
PEA0B	Petropavlovsk-	71.89	321	*e*P		P	19 51 50.6	0.0	
	62nm,1.4s								
PETK	Petropavlovsk-	71.89	321	P		P	19 51 51.0	+0.5	
	6.1nm,0.7s,baz=82,slow=11,SNR=12								
PLCA	Paso Flores	74.87	150	P		P	19 52 09.4	+1.2	
	8.4nm,0.9s,baz=330,slow=5.3,SNR=11								
PLCA	Paso Flores	74.87	150	*e*P		P	19 52 08.8	+0.6	
	21nm,1.1s								
ESK	Eskdalemuir	78.53	34	*e*P		P	19 52 27.9	-0.9	
	30nm,1.3s								
ARCES	ARCES Array B	80.32	15	P		P	19 52 38.0	-0.3	
	5.2nm,0.7s,baz=318,slow=5.2,SNR=11								
ARCES					LR	LR	20 27 41.9		
	comp=Z,119nm,21.7s,baz=145,slow=35								
CWF	Charnwood Fore	80.75	36	*e*P		P	19 52 40.4	-0.4	
	21nm,1.3s								
YAK	Yakutsk	81.18	336	*e*P		P	19 52 42.4	-0.5	
	14nm,0.8s								
NBO02	NORSAR Array S	81.72	25	*e*P		P	19 52 46.6	+0.7	
NAO01	NORSAR Array S	81.86	25	*e*P		P	19 52 47.9	+1.3	
NB2	NORSAR Subarra	81.87	25	P		P	19 52 46.4	-0.3	
	2.8nm,1.0s,baz=305,slow=4.8								
NB200	NORSAR Array S	81.87	25	*e*P		P	19 52 46.6	0.0	
NOA	NORSAR Array B	81.87	25	P		P	19 52 46.7	0.0	
	comp=Z,2.0nm,0.7s,baz=304,slow=4.7,SNR=12								
NB201	NORSAR Array S	81.89	25	*e*P		P	19 52 47.2	+0.4	
KONO	Kongsberg	82.08	27	*e*P		P	19 52 48.5	+0.7	
	comp=Z,55nm,1.4s								
NC602	NORSAR Array S	82.18	25	*e*P		P	19 52 48.8	+0.5	
ASAJ	Asahikawa	84.66	316	*e*P		P	19 53 01.4	0.0	
	comp=Z,48nm,1.8s								
NRIK	Noril'sk	85.05	354	P		P	19 53 02.5	-0.3	
	comp=Z,7.7nm,0.6s,baz=1.4,slow=2.8,SNR=7.6								
NRIK					LR	LR	20 31 32.2		
	comp=Z,121nm,20.9s,baz=182,slow=36								
DOU	Dourbes	85.28	36	AP		pP	19 53 08.1	-1.9	
ERM	Erimo	85.34	314	*e*P		P	19 53 04.4	-0.4	
	comp=Z,40nm,1.4s								
ESDC	Sonseca Array	85.50	48	P		P	19 53 05.3	-0.4	
	comp=Z,0.1nm,0.3s,baz=316,slow=7.1,SNR=3.8								
ESDC					LR	LR	20 28 25.9		
	comp=Z,231nm,20.7s,baz=155,slow=34								
ES19	SONSECA Array	85.53	48	*e*P		P	19 53 05.1	-0.8	
MEM	Membach	85.73	35	P		P	19 53 07.1	+0.5	
	comp=Z,6.8nm,1.6s								
WLF	Walferdange	86.35	36	XP		P	19 53 14.2	+4.5	
FIA0	FINESS Array S	86.71	20	*e*P		P	19 53 10.4	-0.8	
FIA1	FINESS Array S	86.71	20	*e*P		P	19 53 09.9	-1.3	
FINES	FINESS Array B	86.71	20	P		P	19 53 10.4	-0.8	
	comp=Z,2.5nm,0.7s,baz=355,slow=4.0,SNR=8.8								
FINES					LR	LR	20 31 40.4		
	comp=Z,183nm,18.6s,baz=300,slow=35								
KLR	Kul'dur	88.08	325		LR	LR	20 31 48.3		
	comp=Z,64nm,18.1s,baz=180,slow=35								
BRG	Berggiesshubel	89.55	32	*e*P		P	19 53 24.8	-0.2	
	comp=Z,3.1nm,1.0s								
PVCC	Panska Ves	90.07	32		AMS	AMS	20 33 50.0		
	comp=Z,300nm,13.8s								
PRU	Pruhonice	90.42	32		AMS	AMS	20 31 50.0		
	comp=Z,300nm,21.4s								
KHC	Kasperske Hory	90.51	33	*e*P		P	19 53 35.0	+5.5	
KHC					AMS	AMS	20 32 10.0		
	comp=Z,300nm,18.5s								
GOPC	GO Pecny, Ondr	90.59	32		AMS	AMS	20 35 10.0		
	comp=Z,300nm,16.9s								
GERES	GERESS Array B	90.76	33	P		P	19 53 35.6	+4.8	
	comp=Z,0.3nm,0.7s,baz=2.3,slow=4.9,SNR=4.1								
GERES					LR	LR	20 33 13.3		
	comp=Z,261nm,20.4s,baz=273,slow=35								
GEA0	GERESS Array S	90.76	33	*e*P		P	19 53 35.9	+5.1	
UPC	Upice	90.77	31		AMS	AMS	20 35 40.0		
	comp=Z,300nm,14.1s								
DPC	Dobruska-Polom	91.03	31		AMS	AMS	20 33 20.0		
	comp=Z,300nm,17.8s								
MJAR	Matsushiro Ar	91.46	312	P		P	19 53 35.0	+0.8	
	comp=Z,1.0nm,0.7s,baz=62,slow=3.9,SNR=3.7								
OKC	Ostrava-Krasne	92.23	31		AMS	AMS	20 36 30.0		
	comp=Z,300nm,16.0s								
KEST	Kesra	96.48	46		LR	LR	20 36 40.1		
	comp=Z,243nm,18.7s,baz=212,slow=35								
GUMO	Guam	97.87	289		LR	LR	20 29 59.8		
	comp=Z,81nm,20.1s,baz=62,slow=30								
TLY	Talaya	98.18	340		LR	LR	20 42 47.1		
	comp=Z,61nm,18.4s,baz=69,slow=38								
SONM	Songino Array	100.53	336		PP	PP	19 58 32.7	+11	
	comp=Z,0.4nm,1.0s,baz=38,slow=7.5,SNR=4.2								
BVAR	Borovoye Array	102.25	360		PP	PP	19 58 35.1	+1.4	
	comp=Z,1.5nm,0.8s,baz=2.9,slow=8.7,SNR=5.0								
KURK	Kurchatov	104.21	355	*e*PKiKP		**PKiKP**	**19 58 49.6**	**+1.5**	
KURBB	Kurchatov Arra	104.31	355		PP	PP	19 58 49.6	+0.6	
	comp=Z,1.4nm,1.0s,baz=1.3,slow=6.3,SNR=5.6								
BR101	Keskin Array S	107.02	29	*e*PP		PP	19 59 11.0	+1.2	
BRTR	Keskin Array B	107.02	29	PP		PP	19 59 11.0	+1.2	
	comp=Z,0.6nm,0.8s,baz=327,slow=7.7,SNR=4.1								
MK32	Makanchi Array	107.67	351	*e*PP		PP	19 59 20.6	+6.6	
MK32				*e*PKKPdf		**PKKPab**	**20 10 29.7**	**+3.5**	
MKAR	Makanchi Array	107.67	351	PP		PP	19 59 20.6	+6.6	
	comp=Z,1.2nm,1.1s,baz=46,slow=10,SNR=4.0								
MKAR				PKKPab		**PKKPab**	**20 10 29.7**	**+3.5**	
	comp=Z,1.2nm,1.1s,baz=176,slow=9.4,SNR=4.2								
WMQ	Urumqi	109.63	347	*e*PKP		**PKiKP**	**19 58 56.3**	**-2.3**	
WMQ					LR	LR			
	comp=Z,200nm,22.6s								
WMQ					LR	LR			
	comp=Z,190nm,23.2s								
WMQ					LR	LR			
	comp=Z,190nm,22.8s								
KSH	Kashi	115.55	355	*e*PKP		**PKPdf**	**19 59 13.3**	**+3.3**	
KSH				*e*PP		PP	20 00 20.8	+10	
KSH				PKS		**PKSdf**	**20 02 48.5**	**+1.6**	
KSH				SKS		**SKSdf**	**20 06 24.3**	**+2.6**	
KSH				SKKS		**SKKSac**	**20 07 12.5**	**-0.4**	
KSH				SS		**SS**	**20 16 17.0**	**+8.7**	
KSH				AMB		AMB			
	comp=Z,26nm,3.2s								
KSH					LR	LR			
	comp=Z,110nm,9.8s								
KSH					LR	LR			
	comp=Z,83nm,7.7s								
KSH					LR	LR			
	comp=Z,180nm,8.7s								
CD2	Chengdu	115.81	328	PKP		**PKPdf**	**19 59 10.0**	**-0.7**	
CD2				sPKP			19 59 16.0		
CD2				SKS		**SKSdf**	**20 06 22.0**	**-0.4**	
CD2				SKKS		**SKKSac**	**20 07 11.8**	**-3.1**	
CD2				SS		**SS**	**20 16 13.0**	**+0.4**	
CD2				AMB		AMB			
	comp=Z,120nm,5.8s								
GYA	Guiyang	117.93	323	*e*Pdif		**Pdif**	**19 55 33.0**	**-0.1**	
GYA				PKP		**PKiKP**	**19 59 15.5**	**+0.5**	
GYA				PP		**PP**	**20 00 32.3**	**+4.3**	
GYA				AMB		AMB			
	comp=Z,110nm,7.8s								
WR1	Warramunga Arr	121.13	261	*e*PKPdf		**PKPdf**	**19 59 20.1**	**-0.9**	
WRA	Warramunga Arr	121.13	261	PKP		**PKPdf**	**19 59 20.1**	**-0.9**	
	comp=Z,0.7nm,0.6s,baz=72,slow=2.2,SNR=7.5								
ASAR	Alice Springs	122.58	257	PKP		**PKPdf**	**19 59 22.7**	**-1.0**	
	comp=Z,0.6nm,0.7s,baz=77,slow=2.2,SNR=10.0								
ASAR				PKKPbc		**PKKPab**	**20 09 17.8**	**+0.5**	
	comp=Z,0.6nm,0.8s,baz=237,slow=4.5,SNR=6.1								
CMAR	Chiang Mai Arr	128.56	324	PKP		**PKPdf**	**19 59 35.9**	**+0.6**	
	comp=Z,0.4nm,0.6s,baz=318,slow=1.2,SNR=4.1								

*IDC **26** 19:48:29.9s±1.7,24.93N×122.31E,h0km,mb3.6/7,*
mb1 3.7/7,mb1mx3.4/42,mbtmp3.6/7, Error ellipse:
s-maj=156.6km s-min=16.7km az=64.0
*ISCJB **26** 19:48:30.9s±0.5,24.94N±0.03×122.14E±0.02,h3km±4km,*
mb3.6/7, Error ellipse: s-maj=5.1km s-min=3.4km az=10.2
*JMA **26** 19:48:31.8s±0.1,24.90N×122.03E,h31km,M3.2*
*TAP **26** 19:48:31.4,24.91N×122.04E,h13km,ML3.4,B*

ISC 26 19:48:31.5±0.9,24.90N±0.03×122.08E±0.03,h13km±6km,
n57,σ0.81/71,mb3.6/7,11D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
TWB1	Santiao Chiao	0.14	323	⇓*i*P			Pg	19 48 34.8	-0.1
	baz=326								
TWB1				*i* S			Sg	19 48 36.9	-0.4
	baz=326								
EGS		0.14	248	⇓*i*P			Pg	19 48 35.1	+0.2
	baz=245								
EGS				*i* S			Sb	19 48 37.9	-1.2
	baz=245								
NWF	Wu-fen Shan	0.32	303	⇓*i*P			Pb	19 48 38.6	-0.5
	baz=304								
NWF				*i* S			Sb	19 48 43.0	-1.3
	baz=304								
ILA	Ilan	0.33	246	*e*P			Pb	19 48 39.0	-0.3
	baz=234								
TWC	Suao	0.36	216	P			Pg	19 48 38.6	-0.1
	baz=210								
TWE	Neicheng	0.41	245	⇓*i*P			Pb	19 48 39.8	-0.9
	baz=236								
TWE				S			Sb	19 48 45.8	-1.1
	baz=236								
TWA	Mucha	0.46	280	*e*P			Pb	19 48 40.8	-0.6
	baz=281								
TWA				S			Sb	19 48 46.8	-1.4
	baz=281								
TAP1	Taipei	0.52	286	⇓*i*P			Pb	19 48 42.7	+0.2
	baz=284								
ENTT	Nioudou	0.53	241	⇓*i*P			Pg	19 48 41.9	0.0
	baz=232								
TAP	Taipei	0.54	285	⇓P			Pb	19 48 42.9	+0.1
	baz=286								
TAP				*i* S			Sb	19 48 49.3	-1.2
	baz=286								
ENA	Nanau	0.56	213	⇓P			Pg	19 48 42.1	-0.4
	baz=218								
TWY	Chenhua	0.57	311	⇓*i*P			Pb	19 48 43.7	+0.3
	baz=311								
TWS1	Kuangyinshan	0.63	289	⇓*i*P			Pn	19 48 45.1	-1.1
	baz=299								
TWS1				*e*S			Sb	19 48 53.1	-0.1
	baz=299								
NSK	Sanguang	0.69	251	⇓*i*P			Pg	19 48 44.5	-0.4
	baz=252								
NSK				S			Sg	19 48 53.2	-0.8
	baz=252								
PCYT	Pengchaiyu	0.73	360	P			Pn	19 48 46.7	-0.9
	baz=7.0								
NNS	Nan Shan	0.79	235	*e*P			Pg	19 48 46.5	-0.2
	baz=234								
NCU	National Centr	0.81	275	*e*P			Pn	19 48 48.2	-0.5
	baz=276								
NCU				*e*S			Sn	19 49 00.3	-0.3
	baz=276								
JYNG	Yonagunijimaku	0.91	119	P			Pb	19 48 49.3	+0.2
JYNG				*e*S			Sb	19 49 00.7	-0.4
TWD	Chiawan	0.93	208	*e*P			Pb	19 48 49.2	-0.2
	baz=205								
YOJ	Yonaguni jima	0.95	117	P			Pb	19 48 49.3	-0.6
YOJ	Yonaguni jima	0.95	117	*e*P			Pb	19 48 49.1	-0.8
	baz=116								
HSN	Hsinchu	1.01	265	*e*P			Pn	19 48 50.9	-0.5
	baz=268								
HSN				*e*S			Sn	19 49 04.3	-1.2
	baz=268								
NSTT	Nanjuang	1.01	255	*e*P			Pn	19 48 51.4	-0.1
	baz=252								
NSTT				*e*S			Sn	19 49 05.3	-0.3
	baz=252								
TWT	Tachien	1.04	232	*e*P			Pn	19 48 51.5	-0.5
	baz=230								
WHF	Hehuan Shan	1.05	225	*e*P			Pg	19 48 51.6	-0.3
	baz=225								
ESL	Shilin	1.23	209	*e*P			Pn	19 48 54.0	-0.4
	baz=210								
NSY	Sanyi	1.29	248	*e*P			Pg	19 48 57.2	+0.9
	baz=252								
NSY				*e*S			Sg	19 49 14.9	+1.8
	baz=252								
TWQ1	Liyutan	1.31	245	*e*P			Pg	19 48 57.1	+0.5
	baz=263								
SMLT	Sun Moon Lake	1.48	227	*e*P			Pb	19 48 58.8	-0.1
	baz=221								
TCU	Taichung	1.48	240

ERZM	**Erzurum**	**0.56**	**108**	*i* P	**Pg**	**19 56 07.0**	**+0.1**
ERZM	**Erzurum**	**0.56**	**108**	P	**Pg**	**19 56 07.0**	**+0.1**
YEDI	**Yedisu-Bingol**	**0.65**	**189**	*e*PG	**Pg**	**19 56 08.8**	**+0.3**
YEDI				*e*SG	**Sb**	**19 56 19.2**	**+0.5**
YEDI	**Yedisu-Bingol**	**0.65**	**189**	*e*Pg	**Pg**	**19 56 08.8**	**+0.3**
YEDI				*e*Sg	**Sb**	**19 56 19.3**	**+0.5**
KELT	**Kelkit**	**1.09**	**274**	*i* P	**Pb**	**19 56 17.0**	**-0.3**
KELT	**Kelkit**	**1.09**	**274**	P	**Pb**	**19 56 17.0**	**-0.3**
SENK	**Senkaya-Erzuru**	**1.37**	**69**	*e*PN	**Pg**	**19 56 23.1**	**+0.7**
SENK	**Senkaya-Erzuru**	**1.37**	**69**	*e*Pn	**Pg**	**19 56 23.1**	**+0.7**
ARTV	**Artvin**	**1.46**	**40**	*i* P	**Pn**	**19 56 22.5**	**-0.4**
ARTV	**Artvin**	**1.46**	**40**	P	**Pn**	**19 56 22.5**	**-0.4**
DBOC	**Borcka**	**1.48**	**30**	*i* P	**Pb**	**19 56 23.3**	**-0.4**
DBOC	**Borcka**	**1.48**	**30**	P	**Pb**	**19 56 23.3**	**-0.4**
PTK	**Pertek**	**1.54**	**220**	*e*PN	**Pg**	**19 56 26.1**	**+0.4**
PTK	**Pertek**	**1.54**	**220**	*e*Pn	**Pg**	**19 56 26.1**	**+0.4**
ESPY	**Espiye-Giresun**	**1.71**	**300**	*e*PN	**Pb**	**19 56 27.2**	**-0.4**
ESPY				*e*SN	**Sg**	**19 56 51.2**	**+0.3**
ESPY	**Espiye-Giresun**	**1.71**	**300**	*e*Pn	**Pb**	**19 56 27.2**	**-0.4**
ESPY				*e*Sn	**Sg**	**19 56 51.2**	**+0.3**

MAN 26 19:57:46,15°.16N×119°.92E,h27km,mb4.7,ML3.6,MS3.6, 2C,Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCPH	**Palayan**	**1.20**	**70**⇑	*e*P	Pn	19 58 07.1	+0.1
PCPH				*e*S	Sb	19 58 23.5	+0.2
TGY	**Tagaytay City**	**1.44**	**137**⇑	*e*P	Pn	19 58 11.1	+0.7

*ISCJB **26** 20:05:58.2±0.5,41°.09N±0°.06×140°.1E±0°.1,h160km±4km, mb3.4/4,Error ellipse: s-maj=15.5km s-min=8.3km az=153.0*
*JMA **26** 20:05:59.3±0.1,41°.08N×140°.11E,h155km±1km,M2.4*
*IDC **26** 20:06:10.3±10.0,42°.20N×139°.68E,h203km±39km, mb3.1/4,mb1 3.1/5,mb1mx2.8/36,mbtmp3.6/5,Error ellipse: s-maj=208.7km s-min=28.0km az=170.0*

ISC 26 20:05:59.0±0.9,41°.07N±0°.06×140°.13E±0°.08,h157km±7km, n18,σ0°55/25,mb3.5/4,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JSI2	**Shiura 2**	**0.21**	**94**	P	**Pn**	**20 06 20.3**	**+0.2**
JSI2				*e*S	**Sn**	**20 06 36.1**	**-0.1**
JIW	**Iwasaki**	**0.49**	**191**	P	**Pn**	**20 06 21.4**	**+0.3**
JIW				*e*S	**Sn**	**20 06 38.1**	**+0.2**
JSR	**Shiriuchi**	**0.51**	**25**	P	**Pn**	**20 06 21.2**	**+0.1**
JSR				*e*S	**Sn**	**20 06 37.6**	**-0.5**
JOT	**Ohata**	**0.76**	**66**	P	**Pn**	**20 06 22.9**	**+0.3**
JTM	**Tenmabayashi**	**0.77**	**111**	P	**Pn**	**20 06 23.1**	**+0.5**
JTM				*e*S	**Sn**	**20 06 40.7**	**0.0**
JAH	**Hinai**	**0.96**	**156**	P	**Pn**	**20 06 24.6**	**+0.5**
JAH				S	**Sn**	**20 06 43.8**	**+0.5**
JYM2	**Yakumo 2**	**1.06**	**10**	P	**Pn**	**20 06 25.3**	**+0.4**
JKB	**Kayabe**	**1.06**	**40**	P	**Pn**	**20 06 25.2**	**+0.3**
JOSM	**Okushiri--Mats**	**1.12**	**334**	P	**Pn**	**20 06 25.4**	**0.0**
JOSM				*e*S	**Sn**	**20 06 45.0**	**-0.8**
JANG	**Nango**	**1.27**	**123**	P	**Pn**	**20 06 26.6**	**-0.2**
JANG				*e*S	**Sn**	**20 06 48.5**	**+0.5**
JOM	**Ohasama**	**1.83**	**150**	P	**Pn**	**20 06 32.5**	**-0.1**
JYK	**Kaneyama**	**2.16**	**175**	P	**Pn**	**20 06 36.7**	**+0.3**
JMK	**Ichinoseki**	**2.28**	**158**	P	**Pn**	**20 06 37.5**	**-0.3**
USRK	**Ussuriysk Ar.**	**6.77**	**300**	P	**Pn**	**20 07 37.0**	**+1.2**
	0.4nm,0.3s,baz=98,slow=15,SNR=6.8						
ZALV	**Zalesovo Beam**	**38.53**	**309**	P	**P**	**20 13 05.3**	**-0.5**
	0.4nm,0.4s,baz=100,slow=8.1,SNR=2.7						
MKAR	**Makanchi Array**	**41.23**	**298**	P	**P**	**20 13 27.9**	**-0.3**
	0.9nm,0.7s,baz=80,slow=8.1,SNR=7.1						
ILAR	**Eielson Array**	**46.67**	**34**	P	**P**	**20 14 12.3**	**+0.9**
	0.4nm,0.8s,baz=294,slow=6.8,SNR=5.0						
BVAR	**Borovoye Array**	**47.18**	**309**	P	**P**	**20 14 14.2**	**-1.1**
	0.4nm,0.3s,baz=72,slow=9.7,SNR=5.1						

*NEIC **26** 20:17:43.4,16°.98N×100°.02W,h35km,MD4.1(MEX),After MEX.*

MEX 26 20:17:43.3±0.6,16°.98N×100°.02W,h36km±4km,MD4.1, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ACP2	**Acapulco**	**0.16**	**130**	*e*P	Pn	20 17 48.4	-3.4
ACP2				*e*S	Sn	20 17 52.6	-6.6
ACX	**Acapulco**	**0.18**	**126**	*i* P	Pn	20 17 49.6	-1.9
ACX				*i* S	Sn	20 17 54.4	-4.1
ACX	**Acapulco**	**0.18**	**126**	*i* P	Pn	20 17 49.6	-1.9
ACX				*i* S	Sn	20 17 54.4	-4.0
CAIG	**El Cayaco**	**0.25**	**286**	*i* P	Pn	20 17 49.0	-2.1
CAIG				*e*S	Sn	20 17 54.0	-3.5
CAIG	**El Cayaco**	**0.25**	**286**	*i* P	Pn	20 17 49.0	-2.1
CAIG				*e*S	Sn	20 17 54.0	-3.5
MEIG	**Mezcala**	**1.01**	**22**	*i* P	Pn	20 17 59.0	-2.1
MEIG				*e*S	Sn	20 18 11.7	-2.5
MEIG	**Mezcala**	**1.01**	**22**	*i* P	Pn	20 17 59.0	-2.1
MEIG				*e*S	Sn	20 18 11.7	-2.5
ARIG	**Puente Sto Nin**	**1.33**	**346**	*i* P	Pn	20 18 04.0	-1.4
ARIG				*i* S	Sn	20 18 19.9	-2.1
PLIG	**Platanillo**	**1.49**	**19**	*e*P	Pn	20 18 06.4	-1.3
PLIG				*e*S	Sn	20 18 24.0	-1.9
PLIG	**Platanillo**	**1.49**	**19**	*e*P	Pn	20 18 06.4	-1.3
PLIG				*e*S	Sn	20 18 24.0	-1.9
TLIG	**Tlapa**	**1.50**	**67**	*e*P	Pn	20 18 06.6	-1.2
TLIG				*i* S	Sn	20 18 24.1	-2.2
ZIIG	**Zihuatanejo**	**1.52**	**295**	*e*P	Pn	20 18 06.7	-1.3
ZIIG				*i* S	Sn	20 18 25.0	-1.5
ZIIG	**Zihuatanejo**	**1.52**	**295**	*e*P	Pn	20 18 06.7	-1.3
ZIIG				*e*S	Sn	20 18 24.2	-2.3
PNIG	**Pinotepa**	**1.90**	**108**	*i* P	Pn	20 18 11.9	-1.3
PNIG				*e*S	Sn	20 18 33.8	-2.1
PNIG	**Pinotepa**	**1.90**	**108**	*i* P	Pn	20 18 11.9	-1.3
PNIG				*e*S	Sn	20 18 33.8	-2.1

*DDA **26** 20:20:28.7,39°.10N×40°.26E,h3km,Md2.9*
*ISK **26** 20:20:28.3,39°.09N×40°.30E,h9km,MD2.7*
*ISCJB **26** 20:20:29.0±0.5,39°.10N±0°.03×40°.28E±0°.03,h5km±5km, Error ellipse: s-maj=5.0km s-min=4.2km az=19.2*
*CSEM **26** 20:20:29.0±0.2,39°.09N×40°.27E,h2km,MD2.7,Error ellipse: s-maj=5.8km s-min=5.7km az=178.0*

ISC 26 20:20:28.8±1.1,39°.09N±0°.02×40°.27E±0°.02,h5km±12km, n37,σ0°52/47,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BINT	**Bingol**	**0.28**	**141**	*e*Pg	**Pg**	**20 20 35.1**	**+0.9**
BINT				*e*Sg	**Sb**	**20 20 39.7**	**-1.7**
BNGB	**Bing¨¶l**	**0.34**	**107**	*e*PG	**Pg**	**20 20 35.0**	**-0.3**
BNGB				*e*SG	**Sg**	**20 20 39.7**	**-0.1**
YEDI	**Yedisu-Bingol**	**0.41**	**32**	*e*PG	**Pg**	**20 20 36.4**	**-0.4**
YEDI				*e*SG	**Sg**	**20 20 42.3**	**+0.1**
YEDI	**Yedisu-Bingol**	**0.41**	**32**	*e*Pg	**Pg**	**20 20 36.4**	**-0.4**
YEDI				*e*Sg	**Sg**	**20 20 42.3**	**+0.1**
BNGL	**BINGOL**	**0.70**	**101**	*i* P	**Pg**	**20 20 42.4**	**+0.1**
PTK	**Pertek**	**0.71**	**254**	*e*PG	**Pg**	**20 20 42.8**	**+0.4**
PTK				*e*SG	**Sb**	**20 20 53.4**	**-0.5**
PTK	**Pertek**	**0.71**	**254**	*e*Pg	**Pg**	**20 20 42.8**	**+0.4**
PTK				*e*Sg	**Sb**	**20 20 53.4**	**-0.5**
EUZM	**Uzumlu**	**0.76**	**325**	*i* P	**Pg**	**20 20 43.5**	**+0.1**
EUZM	**Uzumlu**	**0.76**	**325**	P	**Pg**	**20 20 43.5**	**+0.1**
KOPT	**Kop Dagi**	**0.94**	**11**	*i* P	**Pg**	**20 20 46.6**	**-0.4**
KOPT	**Kop Dagi**	**0.94**	**11**	P	**Pg**	**20 20 46.6**	**-0.4**
ELZG	**Elazig**	**1.16**	**240**	*i* P	**Pg**	**20 20 50.5**	**-0.6**
ELZG	**Elazig**	**1.16**	**240**	P	**Pg**	**20 20 50.5**	**-0.6**
DIYA	**Diyarbakir**	**1.17**	**186**	*i* P	**Pb**	**20 20 51.8**	**+0.2**
DIYA	**Diyarbakir**	**1.17**	**186**	P	**Pb**	**20 20 51.8**	**+0.2**
EZM	**Erzurum**	**1.18**	**46**	*e*PN	**Pg**	**20 20 51.3**	**-0.1**
ERZM	**Erzurum**	**1.18**	**46**	*i* P	**Pb**	**20 20 52.0**	**+0.1**
ERZM	**Erzurum**	**1.18**	**46**	P	**Pb**	**20 20 52.0**	**+0.1**
SVAN	**Silvan-Diyarba**	**1.19**	**142**	*e*PN	**Pg**	**20 20 51.0**	**-0.6**
SVAN				*e*SN	**Sb**	**20 21 08.1**	**+0.5**
SVAN	**Silvan-Diyarba**	**1.19**	**142**	*e*Pn	**Pg**	**20 20 51.0**	**-0.6**
SVAN				*e*Sn	**Sb**	**20 21 08.1**	**+0.5**
KELT	**Kelkit**	**1.31**	**324**	*i* P	**Pg**	**20 20 53.9**	**-0.1**
KELT	**Kelkit**	**1.31**	**324**	P	**Pg**	**20 20 53.9**	**-0.1**
ILIC	**ilic-Erzincan**	**1.37**	**286**	*e*PN	**Pg**	**20 20 54.7**	**0.0**
ILIC				*e*SN	**Sb**	**20 21 13.2**	**+0.4**
ILIC	**ilic-Erzincan**	**1.37**	**286**	*e*Pn	**Pn**	**20 20 54.7**	**0.0**
ILIC				*e*Sn	**Sb**	**20 21 13.2**	**+0.4**
KEMA	**Kemaliye**	**1.39**	**278**	*i* P	**Pn**	**20 20 54.6**	**-0.4**
KEMA	**Kemaliye**	**1.39**	**278**	P	**Pn**	**20 20 54.6**	**-0.4**
HOMI	**Horasan**	**1.59**	**53**	*i* P	**Pn**	**20 20 58.0**	**+0.2**
MAZI	**Mazidag**	**1.63**	**175**	*e*PN	**Pn**	**20 20 58.4**	**+0.1**
MAZI	**Mazidag**	**1.63**	**175**	*e*Pn	**Pn**	**20 20 58.4**	**+0.1**
SUSE	**Susehri**	**1.94**	**306**	*i* P	**Pg**	**20 21 05.7**	**-0.4**
SUSE	**Susehri**	**1.94**	**306**	P	**Pg**	**20 21 05.7**	**-0.4**
TUTA	**Tutak**	**2.00**	**80**	*i* P	**Pb**	**20 21 06.2**	**+0.3**
TUTA	**Tutak**	**2.00**	**80**	P	**Pb**	**20 21 06.2**	**+0.3**
CUKAN	**kangal_SIVAS**	**2.19**	**277**	*i* P	**Pb**	**20 21 08.6**	**-0.3**
CUKAN	**kangal_SIVAS**	**2.19**	**277**	P	**Pb**	**20 21 08.6**	**-0.3**
SVSK	**Karacayir**	**2.66**	**289**	*e*PN	**Pn**	**20 21 13.5**	**+1.2**
SVSK	**Karacayir**	**2.66**	**289**	*e*Pn	**Pn**	**20 21 13.5**	**+1.2**

JMA 26 20:24:57.5±0.3,38°.94N×143°.09E,h22km±4km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.12**	**278**	P	Pn	20 25 17.9	+0.1
OFUJ				*e*S	Sn	20 25 32.9	+0.4
MIYJ	**Miyakonagasawa**	**1.17**	**303**	P	Pb	20 25 19.2	+0.1
MIYJ				*e*S	Sn	20 25 34.1	+0.2
JIO	**Ouri**	**1.45**	**251**	P	Pn	20 25 23.0	+0.7
JIO				S	Sn	20 25 40.6	0.0
JOM	**Ohasama**	**1.50**	**291**	P	Pn	20 25 23.1	+0.1
JOM				*e*S	Sn	20 25 42.0	+0.2
JKZ	**Kuzumaki**	**1.72**	**308**	P	Pn	20 25 26.7	+0.6
JKZ				*e*S	Sn	20 25 48.3	+0.9
JANG	**Nango**	**1.88**	**320**	P	Pn	20 25 29.1	+0.8
JOU	**Okura**	**1.98**	**254**	P	Pn	20 25 31.0	+1.2

BUC 26 20:42:35.2±1.2,45°.75N×26°.53E,h143km±9km,MD2.9/2, 4C-8D,Error ellipse: s-maj=7.7km s-min=6.2km az=85.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PLOR	**Plostina**	**0.14**	**39**⇓	*i* P	Pn	20 42 54.5	-0.1
PLOR	**Plostina**	**0.14**	**39**⇓	*i* P	Pn	20 42 54.5	-0.1
PLOR				*i* S	Sn	20 43 09.0	-0.4
VRI	**Vrincioaia**	**0.18**	**49**	S	Sn	20 43 09.1	-0.3
VRI	**Vrincioaia**	**0.18**	**49**	*i* S	Sn	20 43 09.1	-0.3
MLR	**Muntele Rosu**	**0.48**	**238**⇓	*i* P	Pn	20 42 56.0	+0.2
MLR	**Muntele Rosu**	**0.48**	**238**⇓	*i* P	Pn	20 42 56.0	+0.2
MLR				*i* S	Sn	20 43 10.6	-0.9
ISR	**Istrita**	**0.63**	**179**	S	Sn	20 43 11.9	-0.9
ISR	**Istrita**	**0.63**	**179**	*i* S	Sn	20 43 11.9	-0.9
TESR	**Tescani**	**0.77**	**6**	S	Sn	20 43 13.3	-1.2
TESR	**Tescani**	**0.77**	**6**	*i* S	Sn	20 43 13.3	-1.2
DOPR	**Dopca**	**0.83**	**286**⇑	*i* P	Pn	20 42 58.4	+0.5
DOPR	**Dopca**	**0.83**	**286**⇑	*i* P	Pn	20 42 58.4	+0.5
DOPR				*i* S	Sn	20 43 13.7	-1.5
VOIR		**1.08**	**254**⇓	*i* P	Pn	20 43 00.1	0.0
VOIR		**1.08**	**254**⇓	*i* P	Pn	20 43 00.1	0.0
VOIR				*i* S	Sn	20 43 17.5	-1.6
SULR		**1.08**	**190**	S	Sn	20 43 18.2	-0.8
SULR		**1.08**	**190**	*i* S	Sn	20 43 18.2	-0.8
CFR	**Carcaliu**	**1.27**	**116**⇑	*i* P	Pn	20 43 02.3	+0.5
CFR	**Carcaliu**	**1.27**	**116**⇑	*i* P	Pn	20 43 02.3	+0.5
CFR				*i* S	Sn	20 43 21.0	-1.0
TLB	**Topalu**	**1.58**	**137**⇓	*i* P	Pn	20 43 05.1	0.0
TLB	**Topalu**	**1.58**	**137**⇓	*i* P	Pn	20 43 05.1	0.0
TLB				*i* S	Sn	20 43 26.1	-1.8
MILM	**Milestii Mici**	**1.97**	**53**	S	Sn	20 43 35.1	-0.7
MILM	**Milestii Mici**	**1.97**	**53**	*i* S	Sn	20 43 35.1	-0.7

*BUC **26** 20:43:32.8±0.8,47°.56N×22°.30E,h3km,MD2.8/3,Error ellipse: s-maj=10.2km s-min=6.8km az=33.0*
*ISCJB **26** 20:43:33.3±0.4,47°.57N±0°.02×22°.27E±0°.02,h4km±3km, Error ellipse: s-maj=2.8km s-min=2.8km az=154.0*
*SIGU **26** 20:43:33.8,47°.58N×22°.36E,h3km,mb2.5*
*CSEM **26** 20:43:34.1±0.1,47°.56N×22°.29E,h5km,ML2.3,Error ellipse: s-maj=3.1km s-min=1.7km az=47.0*
*PRU **26** 20:43:35.2,47°.50N×22°.12E,h0km*

ISC 26 20:43:34.3±1.1,47°.56N±0°.02×22°.31E±0°.02,h6km±9km, n66,σ0°73/108,32C-6D,Romania

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TRPA	**Tarpa**	**0.60**	**15**⇓	*e*Pg	**Pg**	**20 43 46.2**	**+0.4**
TRPA				⇓*e*Sg	**Sg**	**20 43 53.7**	**+0.2**
TRPA	**Tarpa**	**0.60**	**15**⇓	*e*Pg	**Pg**	**20 43 46.2**	**+0.4**
TRPA				*e*Sg	**Sg**	**20 43 53.7**	**+0.2**
TRSU	**Trosnyk**	**0.70**	**39**	*i* Pg	**Pg**	**20 43 46.8**	**-0.8**
TRSU				Pgm		20 43 49.6	
TRSU				*e*Sg	**Sg**	**20 43 56.2**	**-0.5**
TRSU				Sgm		20 44 00.2	
BERU	**Beregovo**	**0.72**	**18**	*i* Pg	**Pg**	**20 43 47.5**	**-0.5**
BERU				*i* Sg	**Sg**	**20 43 57.5**	**+0.1**
DRGR		**0.81**	**160**⇑	*i* P	**Pg**	**20 43 49.8**	**-0.1**
DRGR		**0.81**	**160**⇑	*i* P	**Pg**	**20 43 49.8**	**-0.1**
DRGR				*i* S	**Sg**	**20 44 00.6**	**+0.2**
DRGR		**0.81**	**160**⇑	*i* P	**Pg**	**20 43 49.8**	**-0.1**
DRGR				S	**Sg**	**20 44 00.6**	**+0.2**
KORU	**Korolevo**	**0.82**	**42**	*i* Pg	**Pg**	**20 43 50.3**	**+0.3**
KORU				Pgm		20 43 50.9	
KORU				*i* Sg	**Sg**	**20 44 01.1**	**+0.4**
KORU				Sgm		20 44 02.5	
MUKU	**Mukachevo**	**0.94**	**16**	*i* Pg	**Pg**	**20 43 51.4**	**-0.8**
MUKU				Pgm		20 43 53.2	
MUKU				*i* Sg	**Sg**	**20 44 04.2**	**-0.2**
MUKU				Sgm		20 44 06.2	
UZH	**Uzhgorod**	**1.08**	**360**	*e*Pg	**Pg**	**20 43 53.9**	**-1.0**
UZH				Pgm		20 43 54.8	
UZH				*e*Sg	**Sg**	**20 44 08.7**	**-0.2**
UZH				Sgm		20 44 10.3	
ONO	**Onokovtsy**	**1.11**	**1**	*e*Pg	**Pb**	**20 43 55.6**	**-0.3**
ONO				*e*Sg	**Sb**	**20 44 11.0**	**+0.4**
CJR	**Cluj-Napoca**	**1.22**	**133**⇑	*i* P	**Pg**	**20 43 57.2**	**-0.4**
CJR	**Cluj-Napoca**	**1.22**	**133**⇑	*i* P	**Pg**	**20 43 57.2**	**-0.4**
CJR				*i* S	**Sg**	**20 44 13.7**	**+0.3**
CJR	**Cluj-Napoca**	**1.22**	**133**⇑	*i* P	**Pg**	**20 43 57.2**	**-0.4**
CJR				S	**Sg**	**20 44 13.7**	**+0.3**
MEZ	**Mezhgor'ye**	**1.26**	**40**	*e*Pg	**Pg**	**20 43 57.1**	**-1.3**
MEZ				Pgm		20 44 01.9	
MEZ				*e*Sg	**Sg**	**20 44 13.9**	**-0.8**
MEZ				Sgm		20 44 15.1	
RAKU	**Rahkiv**	**1.34**	**69**	*e*Pn	**Pn**	**20 43 57.6**	**-2.0**
RAKU				*e*Sn	**Sb**	**20 44 17.4**	**+0.1**
SIRR	**Siria**	**1.36**	**199**⇑	*i* P	**Pn**	**20 43 59.7**	**-0.2**
SIRR	**Siria**	**1.36**	**199**⇑	*i* P	**Pn**	**20 43 59.7**	**-0.2**
SIRR				*i* S	**Sb**	**20 44 18.3**	**+0.4**
SIRR	**Siria**	**1.36**	**199**⇑	*i* P	**Pn**	**20 43 59.7**	**-0.2**
SIRR				S	**Sb**	**20 44 18.3**	**+0.4**
ARCR	**ARCALIA**	**1.47**	**108**⇑	*i* P	**Pb**	**20 44 02.0**	**0.0**
ARCR	**ARCALIA**	**1.47**	**108**⇑	*i* P	**Pb**	**20 44 02.0**	**0.0**
ARCR				*i* S	**Sb**	**20 44 20.5**	**-0.5**
ARCR	**ARCALIA**	**1.47**	**108**⇑	*i* P	**Pb**	**20 44 02.0**	**0.0**
ARCR				S	**Sb**	**20 44 20.5**	**-0.5**
STZU	**Stuzhytsa**	**1.48**	**8**	*e*Pn	**Pn**	**20 44 00.9**	**-0.6**
STZU				Pnm		20 44 03.3	
STZU				*e*Sn	**Sb**	**20 44 21.1**	**-0.1**
STZU				Snm		20 44 22.7	
KECS	**Kecovo**	**1.54**	**308**	*e*Pg	**Pg**	**20 44 03.3**	**-0.4**
KECS				*e*Sg	**Sg**	**20 44 24.1**	**+0.5**
KECS	**Kecovo**	**1.54**	**308**	*e*PG	**Pg**	**20 44 03.3**	**-0.4**
KECS				*e*SG	**Sg**	**20 44 24.1**	**+0.5**
KECS				*e*LG	Lg	20 44 25.3	
PSZ	**Piszkesteto**	**1.67**	**283**⇑	*i* P	**Pn**	**20 44 03.4**	**-0.7**
PSZ	**Piszkesteto**	**1.67**	**283**⇑	*i* P	**Pn**	**20 44 03.4**	**-0.7**
PSZ				*i* S	**Sn**	**20 44 26.3**	**+0.4**
PSZ	**Piszkesteto**	**1.67**	**283**	*e*Pn	**Pn**	**20 44 03.5**	**-0.7**
PSZ				S	**Sn**	**20 44 26.3**	**+0.4**
PSZ	**Piszkesteto**	**1.67**	**283**	*e*Pn	**Pn**	**20 44 03.5**	**-0.7**
PSZ				*ex*	x	20 44 29.4	
DEV	**Deva**	**1.72**	**166**⇑	*i* P	**Pb**	**20 44 06.4**	**+0.1**
DEV	**Deva**	**1.72**	**166**⇑	*i* P	**Pb**	**20 44 06.4**	**+0.1**
DEV				*i* S	**Sn**	**20 44 27.8**	**+0.7**
DEV	**Deva**	**1.72**	**166**⇑	*i* P	**Pb**	**20 44 06.4**	**+0.1**
DEV				S	**Sn**	**20 44 27.8**	**+0.7**
SHIU	**Shidnytsya**	**1.81**	**22**	*e*Pn	**Pn**	**20 44 06.5**	**+0.4**
SHIU				*e*Sn	**Sb**	**20 44 30.3**	**-0.6**
STNU	**Starunia**	**1.87**	**51**	*e*Pn	**Pn**	**20 44 06.9**	**0.0**
STNU				*e*Sn	**Sn**	**20 44 30.3**	**-0.5**
BURAR	**Bucovina Array**	**1.97**	**87**⇑	*i* P	**Pn**	**20 44 07.8**	**-0.5**
BURAR	**Bucovina Array**	**1.97**	**87**⇑	*i* P	**Pn**	**20 44 07.8**	**-0.5**
BURAR				*i* S	**Sn**	**20 44 34.1**	**+0.7**
BURAR	**Bucovina Array**	**1.97**	**87**⇑	*i* P	**Pn**	**20 44 07.8**	**-0.5**
BURAR				S	**Sn**	**20 44 34.1**	**+0.7**
STHS	**Stebnicka Huta**	**1.99**	**340**	*e*Pn	**Pn**	**20 44 08.1**	**-0.5**
STHS	**Stebnicka Huta**	**1.99**	**340**	*e*PN	**Pn**	**20 44 08.1**	**-0.5**
STHS				*e*PG	**Pg**	**20 44 15.8**	**+3.3**
STHS				*e*SG	**Sg**	**20 44 41.2**	**+2.9**
STHS				*e*LG	Lg	20 44 47.8	
BZS	**Buzias**	**2.00**	**194**⇑	*i* P	**Pn**	**20 44 08.4**	**-0.2**
BZS	**Buzias**	**2.00**	**194**⇑	*i* P	**Pn**	**20 44 08.4**	**-0.2**
BZS				*i* S	**Sn**	**20 44 33.5**	**-0.4**
BZS	**Buzias**	**2.00**	**194**⇑	*i* P	**Pn**	**20 44 08.4**	**-0.2**
BZS				S	**Sn**	**20 44 33.5**	**-0.4**
LANS	**Liptovska Anna**	**2.48**	**311**	*e*Pn	**Pn**	**20 44 15.6**	**+0.4**
LANS	**Liptovska Anna**	**2.48**	**311**	*e*PN	**Pn**	**20 44 15.6**	**+0.4**
LANS				*e*PG	**Pg**	**20 44 21.2**	**-0.5**
LANS				*e*SG	**Sg**	**20 44 53.0**	**-0.8**
VYHS	**Vyhne**	**2.51**	**293**	*e*Pn	Pn	20 44 10.5	-5.2
VYHS	**Vyhne**	**2.51**	**293**	*e*PN	Pn	20 44 10.5	-5.2
VYHS				*e*PG	**Pg**	**20 44 21.9**	**-0.5**
VYHS				*e*SG	**Sg**	**20 44 55.2**	**+0.3**
VYHS				*e*LG	Lg	20 45 05.5	
DOPR	**Dopca**	**2.65**	**126**⇑	*i* P	**Pn**	**20 44 17.3**	**-0.3**
DOPR	**Dopca**	**2.65**	**126**⇑	*i* P	**Pn**	**20 44 17.3**	**-0.3**
DOPR				*i* S	**Sn**	**20 44 50.5**	**+0.5**
DOPR	**Dopca**	**2.65**	**126**⇑	*i* P	**Pn**	**20 44 17.3**	**-0.3**
DOPR				S	**Sn**	**20 44 50.5**	**+0.5**
MDVR	**Moldovita**	**2.80**	**189**⇑	*i* P	**Pn**	**20 44 19.3**	**-0.4**
MDVR	**Moldovita**	**2.80**	**189**⇑	*i* P	**Pn**	**20 44 19.3**	**-0.4**
MDVR	**Moldovita**	**2.80**	**189**⇑	*i* P	**Pn**	**20 44 19.3**	**-0.4**
VOIR		**2.84**	**137**⇓	*i* P	**Pn**	**20 44 20.2**	**-0.1**
VOIR		**2.84**	**137**⇓	*i* P	**Pn**	**20 44 20.2**	**-0.1**
VOIR		**2.84**	**137**⇓	*i* P	**Pn**	**20 44 20.2**	**-0.1**
KMPD	**K-Podol'skiy**	**2.96**	**69**	*e*Pn	**Pn**	**20 44 23.3**	**+1.4**
KMPD				*e*Sn	**Sn**	**20 44 57.9**	**+0.2**
HORU	**Horodok**	**3.21**	**57**	*e*Sn	**Sn**	**20 45 05.3**	**+1.5**
NDNU	**Novodnistrovsk**	**3.55**	**71**	*e*Pn	**Pn**	**20 44 31.5**	**+1.6**
MORC	**Moravsky Berou**	**3.86**	**307**⇑	*i* P	**Pn**	**20 44 34.1**	**-0.2**
MORC	**Moravsky Berou**	**3.86**	**307**⇑	*i* P	**Pn**	**20 44 34.1**	**-0.2**
MORC	**Moravsky Berou**	**3.86**	**307**⇑	*i* P	**Pn**	**20 44 34.1**	**-0.2**
VRAC	**Vranov**	**4.19**	**297**	*e*Pn	**Pn**	**20 44 38.2**	**-0.5**
KRLC	**Kraliky**	**4.44**	**307**	*e*PN	**Pn**	**20 44 42.3**	**+0.1**
KRLC				*e*SN	**Sn**	**20 45 32.6**	**-1.6**
KRLC	**Kraliky**	**4.44**	**307**	*e*Pn	**Pn**	**20 44 42.3**	**+0.1**
KRLC				*e*Sn	**Sn**	**20 45 32.6**	**-1.6**
DPC	**Dobruska-Polom**	**4.83**	**308**	*e*PN	**Pn**	**20 44 48.3**	**+0.7**
DPC				*e*SN	**Sn**	**20 45 43.5**	**-0.4**
DPC	**Dobruska-Polom**	**4.83**	**308**	*e*Pn	**Pn**

OTAV **Otavalo** 3.42 329 *e*P Pn 20 59 23.2 +2.6
OTAV **Otavalo** 3.42 329 *e*Pn Pn 20 59 22.7 +2.1
OTAV *e*Sn Sn 20 59 44.0 -17
CUIC **Cuicocha-Domo** 3.43 331 ⇑P Pn 20 59 23.0 +2.3
baz=333
ASDO **Santo Domingo** 3.43 315 P Pn 20 59 22.1 +1.7
baz=318
COTA **Cotacachi** 3.45 332 ⇓P Pn 20 59 24.0 +3.0
baz=333
URCU **Urcuqui** 3.50 334 ⇑P Pn 20 59 25.6 +3.9
baz=335
ATUL **Tulc¦n** 3.62 344 P Pn 20 59 24.4 +1.3
baz=345
CMBC **Cumbal** 3.81 343 *e*P Pn 20 59 29.1 +3.3
LITE **Lita** 3.88 335 P Pn 20 59 29.6 +3.2
baz=336
MAG1 **Magdalena** 4.04 311 P Pn 20 59 29.7 +1.2
baz=313
ALIBE **La Libertad** 4.16 277 P Pn 20 59 28.3 -1.7
baz=304
JAMA **Jama** 4.26 305 P Pn 20 59 29.5 -2.0
baz=307
CRUC **La Cruz** 4.27 357 *e*P Pn 20 59 34.1 +2.2
AMANT **Manta** 4.39 294 P Pn 20 59 34.6 +1.5
baz=296
ATAH **Atahualpa** 4.69 201 P Pn 20 59 37.5 -0.1
319nm,0.3s,baz=24,slow=9.3,SNR=1719
ATAH S Sn 21 00 27.7 -3.4
134nm,0.3s,baz=150,slow=20,SNR=5.4
POPC **Popayan, Colom** 5.23 0 *e*P Pn 20 59 47.3 +2.6
SJAC **San Juan de Ar** 6.57 25 *e*P Pn 21 00 04.5 +1.9
GUVC **San Jose del G** 6.64 38 *e*P Pn 21 00 05.9 +2.4
PRAC **Prado** 6.65 16 *e*P Pn 21 00 06.3 +2.5
MALC **Bahia Malaga** 6.72 355 *e*P Pn 21 00 01.4 -3.3
TOLC **Tolima** 7.40 11 *e*P Pn 21 00 20.2 +6.2
VILC **Villavicencio,** 7.43 24 *e*P Pn 21 00 17.2 +2.8
ROSC **El Rosal** 7.89 18 P Pn 21 00 24.3 +3.5
7.0nm,0.3s,baz=174,slow=9.7,SNR=12
ROSC **El Rosal** 7.89 18 *e*P Pn 21 00 23.1 +2.4
ROSC **El Rosal** 7.89 18 *e*Pn Pn 21 00 23.6 +2.8
CHIC **Chingaza** 7.89 22 *e*P Pn 21 00 23.3 +2.4
GUYC **Guyana, Colomb** 8.01 10 *e*P Pn 21 00 26.9 +4.4
HELC **Santa Helena** 8.94 8 *e*P Pn 21 00 37.2 +2.2
NNA **Nana** 9.20 181 P Pn 21 00 38.0 -0.3
64nm,0.3s,baz=347,slow=12,SNR=66
NNA S Sn 21 02 08.8 -11
56nm,0.3s,baz=302,slow=22,SNR=7.5
RUSC **La Rusia** 9.30 23 *e*P Pn 21 00 42.8 +2.8
BARC **Barichara** 9.91 21 *e*P Pn 21 00 50.9 +3.0
SDV **Santo Domingo** 13.03 28 P Pn 21 01 30.7 +1.2
6.5nm,0.3s,baz=198,slow=12,SNR=23
SDV LR LR 21 07 12.1
comp=Z,174nm,18.8s,baz=174,slow=40
SDV **Santo Domingo** 13.03 28 P P 21 01 32.8 -2.6
baz=27
SDV **Santo Domingo** 13.03 28 *e*Pn Pn 21 01 29.3 -0.1
PAYG **Puerto Ayora** 13.72 278 *e*Pn Pn 21 01 36.1 -2.1
HDC **Heredia** 14.64 330 *e*Pn Pn 21 01 50.2 +0.1
SAML **Samuel** 14.81 115 ⇑P Pn 21 01 50.8 -1.3
baz=114
SAML **Samuel** 14.81 115 *e*Pn Pn 21 01 49.4 -2.7
LPAZ **La Paz** 15.90 148 P Pn 21 02 03.7 -2.7
0.2nm,0.3s,baz=324,slow=11,SNR=3.3
LPAZ **La Paz** 15.90 148 ⇓P P 21 02 10.7 +3.0
baz=147
LPAZ **La Paz** 15.90 148 *e*Pn Pn 21 02 07.0 +0.6
27nm,0.7s
PTGA **Pitinga** 16.86 84 P Pn 21 02 16.5 -1.0
9.3nm,0.3s,baz=270,slow=16,SNR=29
PTGA S Sn 21 05 20.1 -5.2
4.6nm,0.3s,baz=343,slow=19,SNR=3.0
PTGA **Pitinga** 16.86 84 *e*Pn Pn 21 02 15.4 -2.2
84nm,0.6s
PTGA *e*Sn Sn 21 05 20.1 -5.2
PCRV **Puerto La Cruz** 17.58 43 P Pn 21 02 27.4 +1.1
2.9nm,0.3s,baz=204,slow=11,SNR=9.4
PB11 **IPOC Station P** 18.28 158 *e*P Pn 21 02 34.1 -0.6
93nm,0.8s
PB11 *e*S S 21 05 55.4 -1.4
PB01 **IPOC Station P** 19.52 159 *e*P Pn 21 02 48.2 -1.1
47nm,0.9s
SIV **San Ignacio** 20.27 132 P Pn 21 02 56.5 -1.5
16nm,0.4s,baz=330,slow=12,SNR=65
PB04 **IPOC Station P** 20.51 162 *e*P P 21 02 59.0 +1.4
223nm,1.5s
MTDJ **Mount Denham** 20.84 358 *e*P P 21 02 58.8 -2.3
105nm,0.9s
GRGR **Grenville** 21.02 45 *e*P P 21 03 02.2 -0.8
159nm,1.0s
LVC **Limon Verde** 21.17 160 P P 21 03 06.8 +1.9
171nm,0.6s,baz=337,slow=6.8,SNR=27
PB10 **IPOC Station P** 21.51 164 *e*P P 21 03 11.2 +3.0
60nm,0.9s
SDDR **Presa de Saban** 22.22 14 *e*P P 21 03 16.3 +0.6
64nm,0.9s
GTBY **Guantanamo Bay** 22.57 4 *e*P P 21 03 18.5 -0.6
116nm,1.2s
MPR **Mayaguez** 22.84 24 *e*P P 21 03 21.5 -0.3
43nm,0.9s
CELP **Cerrillos** 22.96 25 *e*P P 21 03 23.3 +0.3
SJG **San Juan** 23.18 26 P P 21 03 25.7 +0.8
58nm,0.6s,baz=183,slow=6.7,SNR=22
SJG **San Juan** 23.18 26 *e*P P 21 03 25.0 0.0
66nm,0.7s
FDF **Fort de France** 23.21 41 *e*P P 21 03 24.4 -0.9
175nm,1.2s
HUMP **Col San Antoni** 23.34 27 *e*P P 21 03 25.6 -0.9
25nm,0.9s
STVI **Saint Thomas** 23.93 28 *e*P P 21 03 29.1 -2.8
85nm,1.5s
GDHS **Morne Mazeau,** 23.97 38 *e*P P 21 03 32.0 -0.4
71nm,0.8s
SABA **Saba** 24.19 33 *e*P P 21 03 31.1 -3.2
95nm,1.1s
SEUS **St. Eustatius** 24.23 34 *e*P P 21 03 33.0 -1.5
215nm,1.1s
CCIG **Comitan** 24.27 322 *e*P P 21 03 35.1 -0.1
38nm,0.7s
ABVI **Anegada Island** 24.56 29 *e*P P 21 03 35.4 -2.2
122nm,0.9s
SMRT **St. Maarten** 24.64 33 *e*P P 21 03 35.6 -2.6
118nm,1.4s
GRTK **Grand Turk** 24.70 13 *e*P P 21 03 37.0 -1.8
103nm,1.0s
CMIG **Matias Romero** 26.64 318 P P 21 03 56.9 +0.5
36nm,0.7s,baz=113,slow=6.0,SNR=73
CMIG PcP PcP 21 07 18.3 +0.6
6.6nm,0.6s,baz=24,slow=3.6,SNR=8.2
LCO **Las Campanas** 26.76 168 *e*P P 21 03 59.0 +1.3
51nm,1.0s
TLIG **Tlapa** 29.51 314 *e*P P 21 04 23.1 +1.0
20nm,0.7s
TLIG *e*PcP PcP 21 07 25.1 +0.2
CPUP **Villa Florida** 29.95 143 P P 21 04 25.7 0.0
9.1nm,0.8s,baz=326,slow=11,SNR=3.1
CPUP PcP PcP 21 07 26.4 +0.7
6.1nm,0.7s,baz=313,slow=4.2,SNR=4.4
CPUP **Villa Florida** 29.95 143 *e*P P 21 04 25.5 -0.2
CPUP *e*pP pP 21 04 49.5 -1.8
CPUP PcP PcP 21 07 26.4 +0.7
ROC1 **El Roble** 30.56 171 *e*P P 21 04 31.5 +0.2
41nm,0.7s
MOIG **Morelia** 32.77 314 *e*P P 21 04 52.5 +1.7
56nm,0.6s
TIGA **Tifton** 34.60 350 *e*P P 21 05 04.6 -1.7
142nm,2.0s
546A **Slidell** 35.05 340 P P 21 05 11.0 +0.8
baz=157
446A **Poplarville** 35.45 341 P P 21 05 14.5 +0.9
baz=158
348A **Jackson** 35.58 343 P P 21 05 14.9 +0.2
baz=160
035Z **Hargill** 35.61 326 P P 21 05 16.9 +1.9
baz=141
ZAIG **Zacatecas** 35.76 316 *e*P P 21 05 17.9 +1.1
18nm,0.9s
ZAIG *e*pP pP 21 05 46.4 +3.8
347A **Saraland** 35.76 343 P P 21 05 16.6 +0.4
baz=159
NHSC **New Hope** 35.79 355 *e*P P 21 05 15.8 -0.6
NHSC *e*pP pP 21 05 46.4 +4.0
035A **Encino** 36.00 326 P P 21 05 20.0 +1.7
baz=142,SNR=13
346A **Big Creek Wild** 36.03 341 P P 21 05 19.0 +0.4
baz=158
345A **Thompson Farm,** 36.14 340 P P 21 05 20.1 +0.6
baz=157
248A **Dixon Mills** 36.18 344 P P 21 05 19.7 -0.1
baz=161
247A **Quitman** 36.39 343 P P 21 05 21.2 -0.3
baz=160
034A **Hebbronville** 36.42 326 P P 21 05 23.6 +1.7
baz=141,SNR=30
442A **Mamou** 36.48 337 P P 21 05 22.7 +0.4
baz=158
GOGA **Godfrey** 36.51 350 *e*P P 21 05 22.1 -0.5
16nm,0.8s
GOGA *e*PcP PcP 21 07 43.0 -0.9
344A **Westbrook Farm** 36.51 340 P P 21 05 23.4 +0.7
baz=156
934A **Benavides** 36.75 327 P P 21 05 26.4 +1.7
baz=142,SNR=14
245A **Little AP, Sta** 36.77 341 P P 21 05 24.8 0.0
baz=158
147A **Livingston** 36.87 344 P P 21 05 25.0 -0.7
baz=160
LRAL **Lakeview Retre** 36.88 346 *e*P P 21 05 25.1 -0.6
24nm,1.0s
LRAL *e*pP pP 21 05 54.1 +2.4
835A **Beeville** 36.92 328 P P 21 05 27.7 +1.6
baz=143
342A **Flagon Creek P** 37.02 338 P P 21 05 27.4 +0.4
baz=153
JSC **Jenkinsville** 37.06 354 *e*pP pP 21 05 56.5 +3.2
JSC *e*PcP PcP 21 07 45.9 +0.3
736A **Circle Diamond** 37.06 330 P P 21 05 29.0 +1.7
baz=145
146A **Union** 37.06 343 P P 21 05 27.2 -0.1
baz=159
637A **Eagle Lake** 37.10 331 P P 21 05 28.7 +1.1
baz=146,SNR=6.5
440A **Kirbyville** 37.13 335 P P 21 05 28.8 +0.9
baz=150
VBMS **Vicksburg** 37.14 340 P P 21 05 28.0 0.0
baz=157
243A **Waterproof** 37.17 339 P P 21 05 28.2 0.0
baz=155
834A **Tilden** 37.18 327 P P 21 05 29.6 +1.3
baz=142,SNR=10
933A **Laredo** 37.18 326 P P 21 05 29.8 +1.5
baz=141
145A **Houston Renfro** 37.30 341 P P 21 05 29.3 -0.1
baz=158
Z47A **Carrollton** 37.31 344 P P 21 05 29.1 -0.3
baz=161,SNR=5.8
341A **Kurthwood** 37.32 336 P P 21 05 29.6 +0.1
baz=152
Z48A **Northport** 37.34 345 P P 21 05 29.2 -0.4
baz=162,SNR=7.2
538A **Harpers Horsep** 37.35 333 P P 21 05 30.6 +0.9
baz=148
735A **Kenedy** 37.36 329 P P 21 05 31.0 +1.2
baz=144
144A **Alexander Plac** 37.49 341 P P 21 05 30.6 -0.2
baz=157
636A **Smothers Creek** 37.49 330 P P 21 05 32.0 +1.1
baz=145,SNR=12
439A **Center Grove,** 37.52 334 P P 21 05 31.6 +0.4
baz=149
Z46A **Louisville** 37.55 343 P P 21 05 31.5 +0.1
baz=160
242A **Grayson** 37.58 338 P P 21 05 31.4 -0.2
baz=154
TRQA **Tornquist** 37.66 161 *e*P P 21 05 32.8 +0.4
36nm,1.3s
TRQA *e*pP pP 21 06 00.3 +1.9
TRQA *e*PcP PcP 21 07 48.3 +0.8
340A **Bronson** 37.68 336 P P 21 05 32.4 -0.2
baz=151
734A **La Parita Cree** 37.75 328 P P 21 05 34.1 +0.9
baz=143
635A **Leesville** 37.77 329 P P 21 05 33.7 +0.3
baz=144
438A **Sam Houston St** 37.79 333 P P 21 05 33.8 +0.3
baz=148
833A **Chaparral WMA,** 37.79 326 P P 21 05 34.5 +0.9
baz=141
241A **Mo Tay, Goldon** 37.83 337 P P 21 05 33.6 -0.2
baz=153
143A **Socs Landing,** 37.88 340 P P 21 05 33.9 -0.4
baz=156
339A **Huntington** 37.89 335 P P 21 05 34.0 -0.3
baz=150
Y47A **UCPARC, Winfie** 37.92 345 P P 21 05 34.0 -0.5
baz=162,SNR=7.3
KMSC **Kings Mountain** 37.92 354 *e*P P 21 05 35.3 +0.8
KMSC *e*pP pP 21 06 02.4 +1.8
KMSC *e*PcP PcP 21 07 47.9 -0.3
142A **Monroe** 37.94 339 P P 21 05 34.3 -0.3
baz=155
Z45A **Winona** 37.94 342 P P 21 05 34.3 -0.4
baz=158
536A **Bastrop** 37.98 331 P P 21 05 35.6 +0.5
baz=146
733A **Divot King Ran** 38.05 327 P P 21 05 36.5 +0.9
baz=142
634A **China Grove, S** 38.07 329 P P 21 05 36.6 +0.8
baz=143
Z44A **Pea Ridge, Bel** 38.09 341 P P 21 05 35.7 -0.2
baz=157,SNR=7.2
832A **Faith Ranch, C** 38.09 326 P P 21 05 37.1 +1.0
baz=140
Y46A **Houston** 38.17 344 P P 21 05 36.1 -0.5
baz=160,SNR=12
535A **Dale** 38.19 330 P P 21 05 37.3 +0.5
baz=145
338A **Crockett** 38.24 334 P P 21 05 37.9 +0.7
baz=149
PLCA **Paso Flores** 38.24 172 P P 21 05 38.4 +1.1
28nm,0.8s,baz=9.3,slow=9.2,SNR=49
PLCA PcP PcP 21 07 50.1 +0.9
6.1nm,0.7s,baz=4.8,slow=4.7,SNR=3.6
PLCA **Paso Flores** 38.24 172 *e*P P 21 05 38.1 +0.9
47nm,1.0s
PLCA *e*pP pP 21 06 05.1 +1.7
PLCA PcP PcP 21 07 50.1 +0.9
Z43A **Armstrong Fami** 38.29 340 P P 21 05 37.0 -0.6
baz=156
NATX **Nacogdoches** 38.30 335 P P 21 05 38.1 +0.3
baz=150
NATX **Nacogdoches** 38.30 335 *e*P P 21 05 37.6 -0.2
52nm,1.1s
NATX *e*pP pP 21 06 06.3 +2.3
141A **Papa Simpson,** 38.34 338 P P 21 05 38.2 +0.1
baz=153
Y45A **Yeager Farm, C** 38.35 343 P P 21 05 38.2 +0.1
baz=159,SNR=11
436A **Wall Ranch, Ga** 38.42 332 P P 21 05 39.5 +0.8
baz=146
239A **Gary** 38.45 335 P P 21 05 39.3 +0.3
baz=151
337A **Centerville** 38.46 333 P P 21 05 39.8 +0.7
baz=148
633A **Saathoff Ranch** 38.56 328 P P 21 05 40.9 +0.8
baz=142
Z42A **Norrel Spur, H** 38.59 339 P P 21 05 39.7 -0.5
baz=155
140A **Cam and Jess,** 38.63 337 P P 21 05 40.8 +0.3
baz=157
Y44A **Strider, Charl** 38.65 342 P P 21 05 40.0 -0.6
baz=158
534A **Blanco** 38.65 329 P P 21 05 41.0 +0.3
baz=144
CPCT **Cooper Cave** 38.68 350 *e*P P 21 05 40.9 +0.1
20nm,0.7s
CPCT *e*pP pP 21 06 07.7 +0.7
238A **Jacksonville** 38.71 335 P P 21 05 41.7 +0.5
baz=150
SWET **Sewnee** 38.72 348 *e*P P 21 05 40.8 -0.5
8.8nm,0.7s
TKL **Tuckaleechee C** 38.75 351 *e*P P 21 05 41.4 -0.1
65nm,1.9s
435B **Jarrell** 38.81 331 P P 21 05 42.7 +0.6
baz=145
Y43A **Makayla and Ka** 38.83 341 P P 21 05 41.4 -0.7
baz=157
X45A **UM Field Stati** 38.83 343 P P 21 05 40.9 -1.3
baz=159
Z41A **Richland Creek** 38.89 338 P P 21 05 42.4 -0.2
baz=154
OXF **Oxford** 38.92 343 *e*P P 21 05 42.0 -0.9
33nm,0.9s
336A **Riesel** 38.96 332 P P 21 05 43.7 +0.5
baz=147
533A **Kerrville** 38.97 328 P P 21 05 44.1 +0.6
baz=143,SNR=10
Y42A **Garnett, Star** 39.05 340 P P 21 05 43.7 -0.3
baz=156
Z40A **Long Farm, Mag** 39.11 338 P P 21 05 44.2 -0.3
baz=153
CCAR **Cane Creek** 39.12 340 *e*P P 21 05 44.4 -0.1
76nm,1.0s
CCAR *e*pP pP 21 06 12.6 +1.8
CCAR *e*PcP PcP 21 07 52.9 +0.9
335A **Moody** 39.15 331 P P 21 05 45.3 +0.5
baz=146
434A **Burnet** 39.18 330 P P 21 05 45.3 +0.2
baz=144
138A **Matatall Enter** 39.26 335 P P 21 05 46.3 +0.6
baz=150
Y41A **Eaglette Beard** 39.38 339 P P 21 05 46.6 -0.1
baz=154
WLAR **White Oak Lake** 39.39 338 *e*P P 21 05 46.6 -0.2
56nm,0.9s
WLAR *e*pP pP 21 06 15.6 +2.5
WLAR *e*PcP PcP 21 07 53.7 +0.9
Z39A **Irene McRaven,** 39.40 337 P P 21 05 47.4 +0.5
baz=152
W45A **Hickory Valley** 39.46 344 P P 21 05 46.4 -0.9
baz=160
137A **Heron Place, G** 39.49 334 P P 21 05 48.3 +0.7
baz=149
433A **Art** 39.55 329 P P 21 05 49.0 +0.8
baz=143
334A **Lometa** 39.58 330 P P 21 05 49.1 +0.6
baz=145
TZTN **Tazewell** 39.59 351 *e*P P 21 05 48.5 0.0
31nm,0.6s
TZTN *e*pP pP 21 06 16.6 +1.9
W44A **Shelby Farms P** 39.62 343 P P 21 05 47.7 -1.0
baz=159
JCT **Junction City** 39.70 328 P P 21 05 50.5 +1.0
baz=142
JCT **Junction City** 39.70 328 *e*P P 21 05 49.7 +0.2
34nm,0.8s
JCT *e*pP pP 21 06 19.8 +4.0
136A **Ennis** 39.73 333 P P 21 05 50.0 +0.4
baz=148
Z38A **Mt. Pleasant** 39.73 336 P P 21 05 50.1 +0.4
baz=151
Y40A **Okolona** 39.74 338 P P 21 05 49.7 0.0
baz=154,SNR=9.4
WHTX **Lake Whitney,** 39.75 332 P P 21 05 50.4 +0.5
baz=146
WHTX **Lake Whitney,** 39.75 332 *e*P P 21 05 50.5 +0.7
40nm,0.8s
WHTX *e*pP pP 21 06 17.2 +1.0
WHTX *e*PcP PcP 21 07 54.7 +0.6
BLA **Blacksburg** 39.88 355 *e*P P 21 05 51.7 +0.8
18nm,1.1s
X41A **Kaden, Bauxite** 39.90 339 P P 21 05 50.3 -0.7
baz=155
V45A **Humboldt** 39.95 344 P P 21 05 50.0 -1.4
baz=161
333A **Richland Sprin** 39.95 330 P P 21 05 51.9 +0.3
baz=144
Z37A **Pogue Cattle C** 39.95 335 P P 21 05 51.6 +0.1
baz=150
Y39A **Lockesburg** 39.98 337 P P 21 05 51.7 0.0
baz=152,SNR=5.4
X40A **Basin Creek Fa** 40.00 339 P P 21 05 51.9 0.0
baz=154
WVT **Waverly** 40.03 346 *e*P P 21 05 50.4 -1.6
22nm,0.6s
WVT *e*pP pP 21 06 18.1 -0.3
WVT *e*PcP PcP 21 07 54.6 -0.2
234A **Clairette** 40.08 331 P P 21 05 53.0 +0.4
baz=145,SNR=6.3
UALR **University of** 40.09 340 *e*P P 21 05 51.8 -0.7
54nm,0.8s
UALR *e*pP pP 21 06 20.3 +1.3
135A **Vickery Place,** 40.20 332 P P 21 05 53.9 +0.4
baz=147
HALT **Halls** 40.21 344 *e*P P 21 05 51.8 -1.7
74µm,0.6s
Y38A **Idabel** 40.22 337 P P 21 05 53.7 0.0
baz=151
HBAR **Harrisburg** 40.26 342 *e*P P 21 05 53.5 -0.5
HBAR *e*PcP PcP 21 07 55.9 +0.3
V44A **Blytheville** 40.29 343 P P 21 05 53.0 -1.2
baz=159
MIAR **Mount Ida** 40.32 338 P P 21 05 53.9 -0.6
baz=153
MIAR **Mount Ida** 40.32 338 *e*P P 21 05 53.9 -0.6
23nm,1.1s
Z36A **Blue Ridge** 40.36 334 P P 21 05 55.1 +0.2
baz=149
W41B **Gary Mavity, V** 40.42 340 P P 21 05 54.7 -0.6
baz=156
GNAR **Gosnell** 40.45 343 *e*P P 21 05 54.8 -0.8
233A **Rising Star** 40.47 330 P P 21 05 56.6 +0.8
baz=144
UTMT **University of** 40.49 345 *e*P P 21 05 54.2 -1.7
149nm,0.3s
X39A **Fountain Ranch** 40.49 338 P P 21 05 55.7 -0.3
baz=152,SNR=9.8
X301 **Greenbrier Sit** 40.53 340 *e*P P 21 05 55.3 -0.9
41nm,0.8s
X301 *e*pP pP 21 06 24.4 +1.8
X301 *e*PcP PcP 21 07 57.2 +0.7
GLAT **Glass** 40.53 344 *e*P P 21 05 54.6 -1.6
GLAT *e*pP pP 21 06 23.3 +0.7
WHAR **Wooly Hollow** 40.54 340 *e*P P 21 05 55.3 -1.0
39nm,0.9s
WHAR *e*pP pP 21 06 24.4 +1.7
WHAR *e*PcP PcP 21 07 57.9 +1.3
X201 **Greenbrier Sit** 40.57 340 *e*P P 21 05 55.6 -0.9
44nm,0.8s
X201 *e*pP pP 21 06 23.9 +1.0
X201 *e*PcP PcP 21 07 57.3 +0.6
HPIG 40.62 318 *e*P P 21 05 57.5 +0.1
58nm,1.6s
Y37A **Hugo** 40.63 336 P P 21 05 57.5 +0.5
baz=150,SNR=7.3
V42A **Cord** 40.72 342 P P 21 05 56.5 -1.2
baz=157
W40A **Ferguson Farm,** 40.72 339 P P 21 05 57.7 -0.1
baz=154
Z35A **Perchaven, San** 40.78 333 P P 21 05 59.0 +0.8
baz=148
RCBR **Riachuelo** 40.81 96 *e*P P 21 06 00.1 +1.2
60nm,1.4s
Y36A **Durant** 40.84 335 P P 21 05 59.4 +0.7
baz=149
X38A **Whitesboro** 40.91 337 P P 21 05 59.5 +0.2
baz=152,SNR=6.1
V41A **Mountainview** 40.95 341 P P 21 05 58.8 -0.9
baz=156
133A **Hamilton Ranch** 40.96 331 P P 21 06 00.8 +1.0
baz=145,SNR=25
W39A **Magazine** 40.98 338 P P 21 05 59.8 -0.1
baz=153,SNR=9.4
LTX **Lajitas** 41.02 323 *e*P P 21 06 01.2 +0.7
LTX *e*PcP PcP 21 07 59.2 +0.8
TXAR **Lajitas Array** 41.02 323 P P 21 06 01.2 +0.7
12nm,0.9s,baz=147,slow=8.9,SNR=105
TXAR PcP PcP 21 07 59.2 +0.8
11nm,0.7s,baz=148,slow=6.5,SNR=17
TX31 **Lajitas Ar. Si** 41.02 323 *e*P P 21 06 01.0 +0.5
TX31 *e*pP pP 21 06 28.6 +1.7
TX31 *e*pP pP 21 06 29.3 +2.3
TX31 *e*PcP PcP 21 07 59.0 +0.6
TX31 *e*PcP PcP 21 07 59.3 +0.9
PARMO **Parma** 41.03 344 *e*P P 21 05 59.9 -0.3
X37A **Clayton** 41.05 336 P P 21 06 00.7 +0.2
baz=151,SNR=6.2
Z34A **Collier Ranch,** 41.11 333 P P 21 06 01.7 +0.6
baz=147,SNR=5.3
W38A **Poteau** 41.14 338 P P 21 06 01.2 0.0
baz=152,SNR=7.7
Y35A **Marietta** 41.17 334 P P 21 06 02.2 +0.7
baz=148,SNR=5.6
U42A **Revenden** 41.17 342 P P 21 06 00.5 -1.0
baz=158
V40A **Witts Springs** 41.19 340 P P 21 06 01.1 -0.6
baz=155
ABTX **Abilene, Hawle** 41.33 330 P P 21 06 03.8 +0.9
baz=144,SNR=30
ABTX **Abilene, Hawle** 41.33 330 *e*P P 21 06 03.4 +0.5
112nm,0.8s
ABTX *e*pP pP 21 06 29.5 +0.2
ABTX *e*PcP PcP 21 07 59.9 +0.7

PBMO	**Poplar Bluff** 58nm,0.8s	41.33	343	*e*P	P	21 06 01.3	-1.4
PBMO				*e*PcP	PcP	21 07 58.9	-0.1
U41A	**Viola** baz=157	41.38	341	P	P	21 06 02.1	-1.1
Z33A	**Whitaker Ranch** baz=145,SNR=42	41.44	332	P	P	21 06 04.7	+0.9
X36A	**Centrahoma** baz=149,SNR=7.0	41.44	335	P	P	21 06 03.7	+0.1
V39A	**Pettigrew** baz=154,SNR=17	41.51	339	P	P	21 06 03.7	-0.6
Y34A	**Reagan Ranch,** baz=147,SNR=7.5	41.53	333	P	P	21 06 04.9	+0.4
W37B	**Quinton** baz=151,SNR=8.4	41.56	337	P	P	21 06 04.5	-0.1
X35A	**Drake** baz=148,SNR=5.1	41.56	334	P	P	21 06 04.5	-0.2
SLBS	**Sierra La Lagu** 22nm,0.8s	41.66	311	*e*P	P	21 06 06.4	+0.7
S45A	**Carrier Mills** baz=162,SNR=5.1	41.68	346	P	P	21 06 04.3	-1.2
U40A	**Yellville** baz=155,SNR=25	41.70	340	P	P	21 06 05.1	-0.7
WCI	**Wyandotte Cave** 32nm,1.0s	41.70	349	*e*P	P	21 06 03.9	-1.9
USIN	**University of** 91nm,1.0s	41.74	347	*e*P	P	21 06 05.0	-1.1
V38A	**Canehill** baz=153	41.80	338	P	P	21 06 06.0	-0.6
S44A	**Carbondale** baz=161,SNR=12	41.87	345	P	P	21 06 06.0	-1.1
SIUC	**Southern Illin** 107nm,0.8s	41.88	345	*e*P	P	21 06 06.0	-1.2
SIUC				*e*PcP	PcP	21 08 00.9	0.0
W36A	**Wetumka** baz=150,SNR=15	41.88	336	P	P	21 06 06.9	-0.3
SDMD	**Soldier's Deli** 4.7nm,0.7s	41.93	360	*e*P	P	21 06 08.2	+0.6
SDMD				*e*PcP	PcP	21 08 00.5	-0.5
U39A	**Green Forest** baz=154	41.94	340	P	P	21 06 06.9	-0.9
Y33A	**Hilltop Ranch,** baz=146,SNR=9.4	41.97	332	P	P	21 06 08.8	+0.7
S43A	**Fulton Ridge,** baz=160	41.97	344	P	P	21 06 06.7	-1.2
T41A	**Mountain View** baz=157	41.97	342	P	P	21 06 06.9	-1.1
HHAR	**Hobbs** 67nm,1.1s	42.01	339	*e*P	P	21 06 07.4	-0.9
HHAR				*e*pP	pP	21 06 36.4	+1.5
HHAR				*e*PcP	PcP	21 08 01.2	-0.1
V37A	**Hulbert** baz=152	42.10	337	P	P	21 06 08.7	-0.3
X34A	**Smith Ranch, M** baz=148,SNR=13	42.10	334	P	P	21 06 09.7	+0.6
W35A	**Tecumseh** baz=149	42.16	335	P	P	21 06 09.3	-0.3
U38A	**Gravette** baz=153	42.31	339	P	P	21 06 10.0	-0.7
T40A	**Mansfield** baz=156,SNR=35	42.31	341	P	P	21 06 09.9	-0.9
V36A	**Jenks** baz=151,SNR=9.2	42.33	337	P	P	21 06 10.6	-0.2
R44A	**Waltonville** baz=161,SNR=12	42.35	346	P	P	21 06 09.9	-1.1
X33A	**Lawton** baz=147,SNR=41	42.35	333	P	P	21 06 11.5	+0.4
TUL1	**Leonard** baz=151,SNR=6.6	42.37	337	P	P	21 06 11.0	-0.2
TUL1	**Leonard** 72nm,1.3s	42.37	337	*e*P	P	21 06 10.7	-0.6
TUL1				*e*PcP	PcP	21 08 02.8	+0.2
S41A	**Jillco Farms,** baz=157,SNR=16	42.47	342	P	P	21 06 10.6	-1.4
T39A	**Clever** baz=155	42.48	340	P	P	21 06 11.1	-1.0
MVL	**Millersville** 18nm,1.4s	42.52	0	*e*P	P	21 06 12.0	-0.4
U37A	**Salina** baz=152,SNR=13	42.55	338	P	P	21 06 12.3	-0.4
OLIL	**Olney** 56nm,1.0s	42.57	347	*e*P	P	21 06 11.3	-1.5
OLIL				*e*pP	pP	21 06 40.8	+1.4
OLIL				*e*PcP	PcP	21 08 03.0	-0.1
W34A	**Bridge Creek,** baz=148	42.61	334	P	P	21 06 13.4	+0.2
W34A	**Bridge Creek,** 49nm,0.9s	42.61	334	*e*P	P	21 06 13.3	0.0
W34A				*e*pP	pP	21 06 42.0	+2.1
W34A				*e*PcP	PcP	21 08 04.5	+1.0
X32A	**Elmer** baz=145,SNR=29	42.62	332	P	P	21 06 14.2	+0.9
WMOK	**Wichita Mounta** baz=146	42.65	333	P	P	21 06 13.8	+0.3
WMOK	**Wichita Mounta** 64nm,0.8s	42.65	333	*e*P	P	21 06 13.4	-0.1
WMOK				*e*pP	pP	21 06 42.0	+1.9
WMOK				*e*PcP	PcP	21 08 04.0	+0.5
BLO	**Bloomington** 43nm,0.6s	42.66	349	*e*P	P	21 06 12.3	-1.3
BLO				*e*PcP	PcP	21 08 03.6	+0.1
V35A	**Meyer Ranch, C** baz=150	42.67	336	P	P	21 06 13.4	-0.3
S40A	**Lebanon** baz=156	42.71	341	P	P	21 06 13.1	-0.9
U36A	**Oologah** baz=151	42.77	337	P	P	21 06 14.3	-0.1
T38A	**Diamond** baz=154	42.81	339	P	P	21 06 13.9	-0.9
O56A	**Blue Knob Stat** baz=177	42.82	358	P	P	21 06 15.1	+0.2
W33A	**Caddo, Fort Co** baz=147,SNR=23	42.85	333	P	P	21 06 15.8	+0.7
Q44A	**Meyer Farm, Va** baz=162	42.95	346	P	P	21 06 14.5	-1.4
V34A	**Guthrie** baz=149	43.01	335	P	P	21 06 16.3	-0.2
V34A	**Guthrie** 104nm,0.9s	43.01	335	*e*P	P	21 06 16.1	-0.3
V34A				*e*pP	pP	21 06 44.2	+1.2
V34A				*e*PP	PcP	21 08 05.6	+0.9
S39A	**Bolivar** baz=155	43.06	341	P	P	21 06 15.7	-1.1
T37A	**Cheneyville 18** baz=153	43.11	339	P	P	21 06 16.8	-0.4
LUPA	**Lehigh Univers**	43.13	1	*e*PP	PP	21 08 04.5	+4.6
ACSO	**Alum Creek Sta** 11nm,0.7s	43.14	353	*e*P	P	21 06 16.6	-0.7
ACSO				*e*PP	PcP	21 08 03.8	-1.2
U35A	**Pawnee** baz=150	43.15	336	P	P	21 06 17.5	0.0
Q43A	**New Douglas** baz=161	43.16	345	P	P	21 06 16.2	-1.3
SSPA	**Standing Stone** 7.6nm,0.8s	43.17	359	*e*P	P	21 06 18.4	+0.9
SSPA				*e*PP	PcP	21 08 05.4	+0.2
W32A	**Sentinel** baz=146,SNR=78	43.18	333	P	P	21 06 18.7	+0.9
S38A	**Stockton** baz=154	43.21	340	P	P	21 06 16.7	-1.3
R40A	**Maddies Statio** baz=157	43.28	342	P	P	21 06 17.3	-1.2
Q42A	**Golden Eagle** baz=160	43.35	344	P	P	21 06 18.0	-1.1
T36A	**Boggs Farm, Ca** baz=151	43.41	338	P	P	21 06 19.3	-0.3
T35A	**Sooner Cattle** baz=150	43.53	337	P	P	21 06 20.5	-0.1
U34A	**Anderson Ranch** baz=149	43.53	335	P	P	21 06 20.6	-0.1
U34A	**Anderson Ranch** 76nm,0.9s	43.53	335	*e*P	P	21 06 20.0	-0.6
U34A				*e*pP	pP	21 06 46.4	-0.9
R39A	**Chumby, Stover** baz=156	43.54	341	P	P	21 06 19.5	-1.1
V32A	**Arapaho** baz=146,SNR=31	43.58	333	P	P	21 06 21.8	+0.8
ODNJ	**Ogdensburg**	43.64	2	*e*PP	PP	21 08 06.3	+1.0
S37A	**Fort Scott** baz=153	43.65	339	P	P	21 06 20.6	-0.8
R38A	**Fenwick Farm,** baz=155	43.71	340	P	P	21 06 20.8	-1.2
MNTX	**Cornudas Mount** baz=136	43.75	324	P	P	21 06 23.0	+0.5
MNTX	**Cornudas Mount** 26nm,0.8s	43.75	324	*e*P	P	21 06 22.7	+0.3
MNTX				*e*pP	pP	21 06 49.1	-0.1
U33A	**Lingo Farm, Me** baz=148	43.77	335	P	P	21 06 22.4	-0.2
CPRX	**Cap Rock**	43.86	326	*e*P	P	21 06 24.9	+1.4
CPRX				*es*P	pP	21 06 54.4	+4.2
CPRX				*e*PP	PP	21 08 08.9	+0.9
Q40A	**Laux Farm, Aux** baz=158	43.87	343	P	P	21 06 22.0	-1.2
S36A	**Lake Cedric, C** baz=152,SNR=7.2	43.89	338	P	P	21 06 22.8	-0.7
T34A	**McCluskey Farm** baz=150,SNR=11	43.90	336	P	P	21 06 23.6	+0.1
P42A	**Winchester** baz=160	43.93	345	P	P	21 06 22.5	-1.3
SFIN	**Lafayette** baz=165	43.94	349	P	P	21 06 22.0	-1.8
SFIN	**Lafayette** 18nm,0.8s	43.94	349	*e*P	P	21 06 22.1	-1.6
SFIN				*e*PcP	PcP	21 08 07.3	-0.4
YLE	**Yale** 20nm,0.8s	43.97	4	*e*P	P	21 06 22.9	-1.1
MSTX	**Muleshoe** baz=141,SNR=6.1	43.99	328	P	P	21 06 25.1	+0.6
MSTX	**Muleshoe** 75nm,0.6s	43.99	328	*e*P	P	21 06 24.8	+0.4
MSTX				*e*pP	pP	21 06 53.5	+2.3
MSTX				*e*PcP	PcP	21 08 08.6	+0.3
U32A	**Winter Ranch,** baz=147,SNR=9.2	44.11	334	P	P	21 06 25.5	+0.2
S35A	**Otter Creek Ra** baz=151,SNR=8.8	44.13	338	P	P	21 06 24.8	-0.5
R37A	**Teagarden Farm** baz=153	44.14	339	P	P	21 06 24.4	-1.0
AMTX	**Amarillo** baz=143	44.15	330	P	P	21 06 26.3	+0.6
AMTX	**Amarillo** 114nm,0.7s	44.15	330	*e*P	P	21 06 25.9	+0.3
AMTX				*e*pP	pP	21 06 54.6	+2.2
AMTX				*e*PcP	PcP	21 08 09.7	+1.0
Q39A	**Willow Grove F** baz=156	44.19	342	P	P	21 06 24.7	-1.1
P41A	**Barry, Barry** baz=159	44.21	344	P	P	21 06 24.6	-1.3
ALLY	**Alegheny Colle**	44.28	356	*e*P	P	21 06 25.0	-1.5
ALLY				*e*pP	pP	21 06 53.0	-0.2
Q38A	**Cooks Store, C** baz=155	44.31	341	P	P	21 06 25.9	-0.9
P40A	**Paris** baz=158	44.35	343	P	P	21 06 25.6	-1.4
T33A	**Patterson Ranc** baz=148,SNR=12	44.38	335	P	P	21 06 27.5	+0.1
R36A	**Gordon, Harris** baz=152	44.39	339	P	P	21 06 26.7	-0.7
O42A	**Bath** baz=161	44.44	345	P	P	21 06 26.3	-1.4
S34A	**Willow Spring** baz=150,SNR=8.3	44.45	337	P	P	21 06 27.7	-0.2
CHRN	**Cochrane**	44.49	176	*e*P	P	21 06 28.3	+0.2
Q37A	**Longview Farm,** baz=154	44.51	340	P	P	21 06 27.2	-1.2
P39B	**Salisbury** baz=157	44.52	342	P	P	21 06 27.2	-1.3
O41A	**Passleys Farm,** baz=160	44.57	344	P	P	21 06 27.2	-1.6
HDIL	**Hopedale** baz=162,SNR=8.6	44.59	346	P	P	21 06 27.3	-1.6
HDIL	**Hopedale** 79nm,0.6s	44.59	346	*e*P	P	21 06 27.4	-1.5
R35A	**Emporia Munici** baz=152	44.64	338	P	P	21 06 29.3	-0.2
S33A	**Kaszmaul Farm,** baz=149	44.72	336	P	P	21 06 30.3	+0.2
BINY	**Binghamton** 13nm,0.8s	44.72	1	*e*P	P	21 06 31.7	+1.7
ERPA	**Erie** 30nm,0.9s	44.73	357	*e*P	P	21 06 30.2	+0.1
T32A	**Huddler Ranch,** baz=148,SNR=16	44.75	335	P	P	21 06 30.8	+0.4
O40A	**La Belle** baz=158	44.85	343	P	P	21 06 29.7	-1.3
P38A	**Dawn** baz=156	44.89	342	P	P	21 06 30.1	-1.3
Q36A	**Arnold C. Orve** baz=153,SNR=6.3	44.94	339	P	P	21 06 30.8	-1.0
R34A	**Isabella, Hill** baz=150,SNR=13	45.02	337	P	P	21 06 32.5	0.0
Q35A	**Mercer Eighty,** baz=152	45.06	339	P	P	21 06 32.2	-0.5
P37A	**Lathrop** baz=155	45.12	341	P	P	21 06 32.0	-1.2
O39A	**Kirksville** baz=157,SNR=5.4	45.17	343	P	P	21 06 32.4	-1.1
S32A	**Newby Ranch, P** baz=148	45.20	335	P	P	21 06 34.8	+0.9
MMNY	**Mt. Morris Dam**	45.26	359	*e*P	P	21 06 33.9	-0.3
MMNY				*e*PcP	PcP	21 08 12.4	+0.2
R33A	**Olander Ranch,** baz=149,SNR=5.8	45.32	336	P	P	21 06 35.1	+0.2
O38A	**Galt** baz=156	45.33	342	P	P	21 06 33.7	-1.1
Q34A	**Chapman** baz=151	45.45	338	P	P	21 06 35.5	-0.3
KSU1	**Kansas State U** baz=152	45.48	338	P	P	21 06 35.5	-0.6
KSU1	**Kansas State U** 57nm,0.8s	45.48	338	*e*P	P	21 06 35.9	-0.1
HSIG		45.54	316	*e*P	P	21 06 37.0	+0.3
HSIG	13nm,0.9s			*e*pP	pP	21 07 05.9	+2.3
HSIG				*e*PcP	PcP	21 08 13.9	+0.3
O37A	**Wolven Farm, M** baz=155	45.58	341	P	P	21 06 35.5	-1.3
P35A	**Duane Minner,** baz=152	45.64	339	P	P	21 06 36.5	-0.8
R32A	**Long Quarter,** baz=148,SNR=5.5	45.72	336	P	P	21 06 38.3	+0.4
N39A	**Derby Farms, D** baz=158	45.73	343	P	P	21 06 36.6	-1.3
121A	**Cookes Peak, D** baz=134,SNR=18	45.78	323	P	P	21 06 40.4	+1.7
O36A	**Bolckow** baz=154	45.81	340	P	P	21 06 37.2	-1.5
Q33A	**Connelly Farm,** baz=150,SNR=6.1	45.86	337	P	P	21 06 39.1	+0.1
N38A	**Joes South For** baz=157	45.87	342	P	P	21 06 37.8	-1.2
319A	**Douglas**	45.93	320	*e*P	P	21 06 39.8	-0.1
319A				*e*pP	pP	21 07 08.6	+1.8
319A				*e*PcP	PcP	21 08 16.0	+1.0
P34A	**Walnut Farm, R** baz=151	45.95	338	P	P	21 06 39.4	-0.4
ACCN	**Adirondack Com**	45.98	3	*e*P	P	21 06 41.3	+1.4
ACCN				*e*PcP	PcP	21 08 14.8	+0.1
N37A	**Lee Faris, Mou** baz=155	46.14	342	P	P	21 06 39.9	-1.3
Q32A	**Meitler Ranch,** baz=149,SNR=12	46.14	336	P	P	21 06 41.3	0.0
P33A	**Williams Farm,** baz=150	46.18	337	P	P	21 06 41.5	-0.1
M39A	**Webster** baz=158	46.19	344	P	P	21 06 40.2	-1.4
BNM	**Barren Site**	46.24	325	*e*P	P	21 06 43.3	+0.9
BNM				*e*pP	pP	21 07 11.9	+2.5
BNM				*e*PcP	PcP	21 08 17.2	+1.0
O35A	**Humboldt** baz=153	46.26	340	P	P	21 06 40.7	-1.4
L41A	**Preston** baz=161,SNR=41	46.31	346	P	P	21 06 40.9	-1.6
Y22D	**IRIS PASSCAL I** baz=136	46.35	325	P	P	21 06 44.8	+1.6
Y22D	**IRIS PASSCAL I**	46.35	325	*e*P	P	21 06 45.0	+1.8
Y22D				*e*PcP	PcP	21 08 17.7	+1.2
LPM	**Los Pinos Moun**	46.36	325	*e*P	P	21 06 43.8	+0.5
LPM				*e*pP	pP	21 07 13.2	+2.9
LPM				*e*PcP	PcP	21 08 17.2	+0.6
M38A	**Pleasantville** baz=157	46.43	343	P	P	21 06 42.2	-1.3
N36A	**Muff Farm, Cla** baz=154	46.43	341	P	P	21 06 42.5	-1.0
O34A	**Beatrice** baz=152	46.46	339	P	P	21 06 42.8	-0.9
CBKS	**Cedar Bluff** baz=147,SNR=13	46.47	335	P	P	21 06 44.4	+0.5
CBKS	**Cedar Bluff** 100nm,0.8s	46.47	335	*e*P	P	21 06 44.6	+0.7
L40A	**Anamosa** baz=160	46.48	345	P	P	21 06 42.5	-1.3
NCB	**Newcomb**	46.54	2	*e*P	P	21 06 44.9	+0.6
NCB	0.1nm,0.8s			*e*PcP	PcP	21 08 16.7	-0.1
MDV	**Middlebury**	46.62	4	*e*P	P	21 06 44.6	-0.3
MDV				*e*PcP	PcP	21 08 16.7	-0.2
M37A	**Trindle Farm,** baz=156	46.67	342	P	P	21 06 44.2	-1.1
O33A	**Hebron** baz=151	46.70	338	P	P	21 06 45.3	-0.3
P32A	**Huiting Farm,** baz=149	46.70	337	P	P	21 06 45.5	-0.1
N35A	**Tabor** baz=154	46.70	340	P	P	21 06 44.4	-1.2
LAZ	**Ladron**	46.72	325	*e*P	P	21 06 46.9	+0.8
LAZ				*e*pP	pP	21 07 16.3	+3.2
LAZ				*e*S	S	21 13 23.3	-4.0
ANMO	**Albuquerque** baz=137	46.72	326	P	P	21 06 47.5	+1.4
ANMO	**Albuquerque** 75nm,0.8s	46.72	326	*e*P	P	21 06 47.2	+1.1
ANMO				*e*pP	pP	21 07 16.1	+3.0
L39A	**Vinton** baz=159	46.75	344	P	P	21 06 44.4	-1.5
K41A	**Shullsburg** baz=161	46.77	346	P	P	21 06 44.7	-1.4
SCIA	**State Center** 84nm,0.8s	46.88	343	*e*P	P	21 06 45.9	-1.1
SCIA				*e*pP	pP	21 07 14.6	+0.6
SCIA				*e*PcP	PcP	21 08 18.5	+0.5
LBNH	**Lisbon**	46.95	5	*e*PcP	PcP	21 08 18.8	+0.6
M36A	**Felix, Anita** baz=155	46.95	341	P	P	21 06 46.4	-1.2
N34A	**Lincoln** baz=152	46.97	339	P	P	21 06 46.4	-1.4
L38A	**Oak Wood Farm,** baz=158	47.03	343	P	P	21 06 46.7	-1.4
JFWS	**Jewell Farm** 71nm,0.7s	47.05	346	*e*P	P	21 06 46.9	-1.4
JFWS				*e*PcP	PcP	21 08 19.2	+0.6
K40A	**Colesburg** baz=160	47.06	345	P	P	21 06 46.8	-1.5
O32A	**Brockman Farm,** baz=150	47.12	337	P	P	21 06 48.6	-0.3
LONY	**Lake Ozonia**	47.17	2	*e*P	P	21 06 49.8	+0.6
LONY				*e*PcP	PcP	21 08 19.3	+0.3
L37A	**Phoenix Point,** baz=156	47.24	343	P	P	21 06 48.4	-1.3
M35A	**Neola** baz=154,SNR=6.8	47.26	341	P	P	21 06 48.7	-1.2
K39A	**Oelwein** baz=159	47.26	345	P	P	21 06 48.2	-1.7
T25A	**Trinidad** baz=141,SNR=47	47.28	330	P	P	21 06 51.9	+1.5
T25A	**Trinidad** 69nm,0.8s	47.28	330	*e*P	P	21 06 51.5	+1.1
T25A				*e*pP	pP	21 07 18.3	+0.8
T25A				*e*PcP	PcP	21 08 20.4	+0.6
J41A	**Loganville** baz=162,SNR=6.6	47.42	347	P	P	21 06 49.8	-1.4
FRNY	**Flat Rock** 11nm,0.8s	47.43	3	*e*P	P	21 06 51.8	+0.6
FRNY				*e*PcP	PcP	21 08 19.9	+0.1
O31A	**Woolen Ranch,** baz=148	47.44	336	P	P	21 06 51.2	-0.2
K38A	**Parkersburg** baz=158	47.44	344	P	P	21 06 49.8	-1.5
L36A	**Harm Buss Farm** baz=155	47.50	342	P	P	21 06 50.8	-1.0
WVL	**Waterville** 65nm,1.7s	47.50	7	*e*P	P	21 06 52.9	+1.2
TUC	**Tucson** baz=131	47.51	320	P	P	21 06 53.1	+1.0
TUC	**Tucson**	47.51	320	*e*P	P	21 06 52.5	+0.4
TUC				*e*pP	pP	21 07 20.0	+0.8
PLVO	**Plevna** 23nm,1.2s	47.56	360	*e*P	P	21 06 53.3	+1.2
PLVO				*e*PcP	PcP	21 08 20.1	-0.2
N32A	**Stulken Farm,** baz=150	47.56	338	P	P	21 06 52.0	-0.3
M34A	**Aspy Farms, Fr** baz=153	47.59	340	P	P	21 06 51.6	-0.8
J40A	**Soldiers Grove** baz=161,SNR=11	47.62	346	P	P	21 06 51.2	-1.5
L35A	**Bielow Farm, R** baz=154,SNR=7.8	47.79	341	P	P	21 06 52.7	-1.3
K37A	**Belmond** baz=157	47.80	343	P	P	21 06 52.4	-1.7
J39A	**Decorah** baz=160	47.80	345	P	P	21 06 52.4	-1.7
N31A	**Bailey Ranch,** baz=149	47.87	337	P	P	21 06 54.6	0.0
M33A	**Taylor Creek F** baz=152	47.87	339	P	P	21 06 53.6	-1.0
KSCO	**Kaye Shedlock'** baz=144	47.91	333	P	P	21 06 56.0	+0.9
KSCO	**Kaye Shedlock'** 110nm,1.4s	47.91	333	*e*P	P	21 06 55.9	+0.8
L34A	**Svendsen Farm,** baz=153	47.93	340	P	P	21 06 53.8	-1.4
J38A	**Wedel Dairy, R** baz=158	47.99	345	P	P	21 06 53.7	-1.8
BGNE	**Belgrade** baz=150,SNR=7.9	48.07	338	P	P	21 06 55.6	-0.6
BGNE	**Belgrade** 66nm,0.6s	48.07	338	*e*P	P	21 06 55.3	-0.9
PKME	**Peaks-Kenny Pk** 6.9nm,0.7s	48.24	7	*e*P	P	21 06 58.0	+0.7
K35A	**Storm Lake** baz=155	48.24	342	P	P	21 06 56.3	-1.1
J37A	**Redenius Farm,** baz=157	48.27	344	P	P	21 06 56.1	-1.7
SDCO	**Great Sand Dun** baz=140,SNR=128	48.30	329	P	P	21 06 59.6	+1.1
SDCO	**Great Sand Dun** 80nm,0.9s	48.30	329	*e*P	P	21 06 59.5	+1.1
SDCO				*e*pP	pP	21 07 28.1	+2.5
M31A	**Lambtecht Ranc** baz=150	48.32	338	P	P	21 06 58.2	+0.1
L33A	**Hoskins** baz=152,SNR=6.7	48.42	340	P	P	21 06 57.9	-1.0
X18A	**Snowflake** 9.7nm,0.7s	48.46	323	*e*P	P	21 07 00.6	+1.1
X18A				*e*pP	pP	21 07 28.2	+1.5
K34A	**Le Mars** baz=154	48.48	341	P	P	21 06 57.9	-1.4
J36A	**Seneca 1, Swea** baz=156	48.52	343	P	P	21 06 58.0	-1.6
L32A	**Elgin** baz=151	48.54	339	P	P	21 06 59.0	-0.8
214A	**Organ Pipe Nat** baz=128,SNR=28	48.61	318	P	P	21 07 01.6	+1.1
I38A	**Scanlan Farm,** baz=159	48.62	345	P	P	21 06 58.8	-1.5
K33A	**Hardington** baz=152	48.71	340	P	P	21 07 00.2	-0.9
W18A	**Petrified Fore** baz=134,SNR=23	48.74	324	P	P	21 07 03.1	+1.4
W18A	**Petrified Fore** 94nm,1.0s	48.74	324	*e*P	P	21 07 02.6	+0.9
W18A				*e*pP	pP	21 07 31.7	+2.8
TRQ	**Mont Tremblant**	48.78	2	*e*P	P	21 07 01.6	0.0
TRQ				*e*pP	pP	21 07 32.3	+3.5
TRQ				*e*PcP	PcP	21 08 25.0	+0.2
J35A	**Milford** baz=155	48.81	342	P	P	21 07 00.4	-1.5
J34A	**George** baz=154,SNR=8.7	48.98	341	P	P	21 07 02.0	-1.1
L31A	**Butterfield Fa** baz=150,SNR=5.3	48.99	338	P	P	21 07 03.0	-0.2
S22A	**4UR Ranch, Cre** baz=138,SNR=29	48.99	328	P	P	21 07 04.8	+1.1
S22A	**4UR Ranch, Cre** 40nm,1.2s	48.99	328	*e*P	P	21 07 04.3	+0.6
S22A				*e*pP	pP	21 07 32.5	+1.6
S22A				*e*PcP	PcP	21 08 26.9	+0.8
I36A	**Fitzsimmons Fa** baz=157	49.06	344	P	P	21 07 01.9	-1.8
Q24A	**Divide** baz=141,SNR=13	49.07	331	P	P	21 07 04.9	+0.7
Q24A	**Divide** 19nm,0.8s	49.07	331	*e*P	P	21 07 04.4	+0.1
Q24A				*e*pP	pP	21 07 32.8	+1.3
Q24A				*e*PcP	PcP	21 08 27.0	+0.7
K32A	**Verdigre** baz=151	49.10	339	P	P	21 07 02.9	-1.2
I35A	**Creekview Farm** baz=156	49.19	343	P	P	21 07 03.4	-1.3
OGNE	**Ogallala**	49.22	335	P	P	21 07 05.9	+0.8

	baz=146						
OGNE	Ogallala	49.22	335	eP	P	21 07 06.0	+0.8
	82nm,0.8s						
OGNE				ePcP	PcP	21 08 27.6	+1.1
H37A	Dierke Farm, C	49.28	345	P	P	21 07 03.9	-1.5
	baz=158						
X16A	Lo Mia Camp, P	49.30	322	eP	P	21 07 07.2	+1.2
	22nm,0.8s						
X16A				epP	pP	21 07 36.0	+2.8
X16A				ePcP	PcP	21 08 27.3	+0.2
J33A	Davis	49.33	341	P	P	21 07 04.5	-1.3
	baz=153,SNR=5.0						
K31A	O'Neill	49.34	339	P	P	21 07 05.7	-0.3
	baz=150,SNR=6.8						
MVCO	Mesa Verde	49.50	326	P	P	21 07 08.3	+0.8
	baz=136,SNR=14						
MVCO	Mesa Verde	49.50	326	eP	P	21 07 07.7	+0.2
	22nm,0.8s						
MVCO				epP	pP	21 07 34.1	-0.7
MVCO				ePcP	PcP	21 08 28.3	+0.4
LMN	Caledonia Moun	49.51	11	eP	P	21 07 07.0	-0.1
	13nm,0.6s						
LMN				ePcP	PcP	21 08 27.0	-0.4
H36A	Jessenland, He	49.55	344	P	P	21 07 06.0	-1.4
	baz=157,SNR=9.1						
ECSD	EROS Data Cent	49.59	341	P	P	21 07 06.6	-1.2
	baz=153						
ECSD	EROS Data Cent	49.59	341	eP	P	21 07 06.1	-1.6
	23nm,0.8s						
ECSD				ePcP	PcP	21 08 27.4	-0.3
I34A	Hadley	49.62	342	P	P	21 07 06.8	-1.2
	baz=154						
J32A	Parkston	49.68	340	P	P	21 07 07.3	-1.1
	baz=152						
K30A	Basset	49.71	338	P	P	21 07 08.7	0.0
	baz=149						
113A	Mohawk Valley,	49.74	318	eP	P	21 07 10.2	+1.0
113A				epP	pP	21 07 38.6	+2.2
113A				ePcP	PcP	21 08 29.2	+0.8
SPMN	Marine on St.	49.85	345	P	P	21 07 08.1	-1.6
	baz=159						
SPMN	Marine on St.	49.85	345	eP	P	21 07 08.2	-1.5
	60nm,1.1s						
SPMN				ePcP	PcP	21 08 28.4	-0.2
COWI	Conover	49.85	349	eP	P	21 07 08.8	-0.9
	70nm,1.6s						
H35A	Sunnyside Ranc	49.91	343	P	P	21 07 08.7	-1.5
	baz=156						
J31A	Geddes	49.92	339	P	P	21 07 09.2	-1.1
	baz=151						
I33A	Coleman	49.93	341	P	P	21 07 09.1	-1.2
	baz=153						
ISCO	Idaho Springs	49.94	331	P	P	21 07 11.7	+0.8
	baz=141,SNR=23						
ISCO	Idaho Springs	49.94	331	eP	P	21 07 10.9	0.0
	18nm,0.7s						
ISCO				epP	pP	21 07 40.4	+2.2
ISCO				ePcP	PcP	21 08 29.6	+0.1
Y14A	Wickenburg	49.98	320	eP	P	21 07 11.5	+0.6
	56nm,0.8s						
Y14A				epP	pP	21 07 40.1	+1.8
Y14A				ePcP	PcP	21 08 29.8	+0.4
WUAZ	Wupatki	49.99	323	P	P	21 07 12.6	+1.5
	baz=132,SNR=46						
WUAZ	Wupatki	49.99	323	eP	P	21 07 11.8	+0.7
	52nm,0.8s						
WUAZ				epP	pP	21 07 40.8	+2.3
WUAZ				ePcP	PcP	21 08 30.8	+1.2
G36A	St. Michael	50.10	344	P	P	21 07 10.1	-1.5
	baz=158						
I32A	Karley and Nic	50.13	341	P	P	21 07 10.7	-1.1
	baz=152						
SMCO	Snowmass	50.14	329	eP	P	21 07 13.3	+0.8
	17nm,0.8s						
H34A	Spellman Lake,	50.17	342	P	P	21 07 10.8	-1.3
	baz=155						
PV01	Paradox Valley	50.21	327	eP	P	21 07 13.7	+0.9
PV01				epP	pP	21 07 43.5	+3.3
J30A	Dallas	50.22	338	P	P	21 07 11.9	-0.7
	baz=150,SNR=7.0						
G35A	Watkins	50.29	344	P	P	21 07 11.6	-1.5
	baz=157						
PV05	Paradox Valley	50.46	327	eP	P	21 07 15.1	+0.4
PV05				epP	pP	21 07 44.0	+2.0
H33A	Prehn Over Nor	50.48	342	P	P	21 07 13.2	-1.3
	baz=154						
I31A	Royce, Wessing	50.49	340	P	P	21 07 13.4	-1.2
	baz=151						
H32A	Carlson Farm,	50.54	341	P	P	21 07 13.9	-1.1
	baz=153,SNR=6.9						
GLA	Glamis	50.62	318	P	P	21 07 16.9	+1.1
	baz=127						
GLA	Glamis	50.62	318	eP	P	21 07 16.9	+1.1
GLA				epP	pP	21 07 45.5	+2.3
GLA				ePcP	PcP	21 08 31.6	-0.2
F36A	Milaca	50.63	345	P	P	21 07 13.9	-1.6
	baz=158,SNR=18						
VLDQ	Val d'Or	50.63	359	eP	P	21 07 15.4	-0.1
	27nm,1.4s						
PV10	Paradox Valley	50.64	327	eP	P	21 07 15.9	-0.2
G34A	Benson	50.65	343	P	P	21 07 14.3	-1.4
	baz=155						
PV09	Paradox Valley	50.78	327	eP	P	21 07 17.8	+0.6
G33A	Ortonville	50.84	342	P	P	21 07 15.7	-1.5
	baz=154						
Y12C	Blythe	50.85	319	P	P	21 07 18.6	+1.2
	baz=128						
Y12C	Blythe	50.85	319	eP	P	21 07 18.1	+0.6
	14nm,1.0s						
Y12C				epP	pP	21 07 47.1	+2.3
Y12C				ePcP	PcP	21 08 32.8	+0.3
H31A	Wolsey	50.87	340	P	P	21 07 16.5	-0.9
	baz=151						
F35A	Swanville	50.90	344	P	P	21 07 16.4	-1.2
	baz=157						
PDMCI	Parker Dam,Lak	50.94	320	P	P	21 07 19.2	+1.1
	baz=128						
N23A	Red Feather La	50.95	332	P	P	21 07 19.2	+0.8
	baz=141,SNR=13						
N23A	Red Feather La	50.95	332	eP	P	21 07 18.6	+0.2
	38nm,1.4s						
N23A				epP	pP	21 07 48.8	+3.0
E37A	Wrenshall	51.00	346	P	P	21 07 17.1	-1.2
	baz=160						
SUSD	Miller	51.00	340	P	P	21 07 17.6	-0.8
	baz=151						
F34A	Alexandria	51.04	343	P	P	21 07 17.4	-1.2
	baz=156						
PHWY	Pilot Hill	51.04	332	eP	P	21 07 19.4	+0.3
	19nm,0.6s						
PHWY				ePcP	PcP	21 08 33.5	0.0
U15A	North Rim	51.15	323	eP	P	21 07 21.0	+1.0
	17nm,0.9s						
U15A				epP	pP	21 07 50.5	+3.0
U15A				ePcP	PcP	21 08 34.3	+0.3
E36A	McGregor	51.17	345	P	P	21 07 18.6	-1.0
	baz=158,SNR=42						
SWSC	Sam W. Stewart	51.22	317	P	P	21 07 21.3	+1.1
	baz=126						
G32A	Webster	51.23	341	P	P	21 07 19.1	-1.0
	baz=153						
IKP	In-Ko-Pah, Jac	51.26	317	P	P	21 07 22.0	+1.4
	baz=126						
W13A	Hualapai Mount	51.27	321	eP	P	21 07 22.0	+1.2
	23nm,0.8s						
W13A				epP	pP	21 07 51.3	+3.0
W13A				ePcP	PcP	21 08 35.2	+0.8
F33A	5 Mile Ranch,	51.38	343	P	P	21 07 19.7	-1.5
	baz=155,SNR=8.6						
BC3	Big Chuckawall	51.41	318	P	P	21 07 23.0	+1.2
	baz=127						
G31A	Conde	51.44	341	P	P	21 07 20.5	-1.1
	baz=152						
E35A	Pequot Lakes	51.50	344	P	P	21 07 21.0	-1.1
	baz=157						
IRM	Iron Mountain	51.50	319	P	P	21 07 23.5	+1.1
	baz=128,SNR=14						
O20A	White River Ci	51.51	329	P	P	21 07 23.2	+0.7
	baz=138,SNR=9.7						
O20A	White River Ci	51.51	329	eP	P	21 07 23.4	+1.0
	12nm,0.9s						
NEE2	Needles Airpor	51.54	320	P	P	21 07 23.8	+1.3
	baz=126						
D37A	Cotton	51.56	346	P	P	21 07 21.7	-0.8
	baz=160,SNR=54						
MONP2	Monument Peak	51.61	317	P	P	21 07 24.6	+1.2
	baz=126						
BAR	Barrett	51.66	316	eP	P	21 07 24.7	+1.1
	16nm,0.9s						
BAR				epP	pP	21 07 53.1	+2.1
E34A	Wadena	51.67	344	P	P	21 07 22.4	-0.9
	baz=156						
C39A	Grand Marais	51.69	349	P	P	21 07 22.1	-1.3
	baz=163,SNR=35						
D36A	Goodland	51.76	346	P	P	21 07 22.9	-1.1
	baz=159,SNR=18						
C38A	Sawbill Land.	51.83	348	P	P	21 07 22.9	-1.6
	baz=161						
PKCU	Pink Cliffs	51.84	324	eP	P	21 07 26.8	+1.6
	12nm,0.9s						
KNB	Kanab	51.86	323	eP	P	21 07 26.1	+1.0
	14nm,0.8s						
KNB				ePcP	PcP	21 08 37.4	+0.9
D35A	Remer	51.89	345	P	P	21 07 23.7	-1.3
	baz=158						
E33A	Westby DABS, E	51.90	343	P	P	21 07 23.3	-1.8
	baz=155						
SRU	San Rafael Swe	51.97	327	eP	P	21 07 26.4	+0.4
	38nm,1.0s						
SRU				epP	pP	21 07 55.9	+2.4
SRU				ePcP	PcP	21 08 37.1	+0.2
BELC	Belle Mtn. Jos	51.98	318	P	P	21 07 27.2	+1.2
	baz=127						
F31A	Hecla	52.01	341	P	P	21 07 24.8	-1.1
	baz=152,SNR=6.5						
C37A	Embarrass	52.04	347	P	P	21 07 25.3	-0.8
	baz=160,SNR=50						
LDFC	Landfair	52.04	320	eP	P	21 07 28.1	+1.7
	48nm,0.4s						
TPFO	Pinon Flats	52.05	317	P	P	21 07 27.5	+0.9
	baz=126,SNR=6.3						
PFO	Pinyon Flats O	52.05	317	P	P	21 07 27.6	+1.0
	baz=126,SNR=5.8						
PFO	Pinyon Flats O	52.05	317	eP	P	21 07 27.6	+1.0
	17nm,1.1s						
PFO				epP	pP	21 07 56.9	+2.8
109C	Camp Elliot, M	52.08	316	P	P	21 07 27.7	+1.1
	baz=125						
EYMN	Ely	52.10	347	P	P	21 07 25.2	-1.2
	baz=161,SNR=51						
EYMN	Ely	52.10	347	eP	P	21 07 25.0	-1.5
	46nm,0.8s						
EYMN				ePcP	PcP	21 08 35.8	-1.2
LCMT	Little Creek M	52.11	323	eP	P	21 07 28.1	+1.1
	20nm,1.0s						
LCMT				epP	pP	21 07 56.2	+1.8
LCMT				ePcP	PcP	21 08 37.2	-0.2
MTPU	Mount Pierson	52.17	325	eP	P	21 07 28.3	+0.6
MTPU				ePcP	PcP	21 08 38.8	+0.9
P18A	Preston Nutter	52.19	327	eP	P	21 07 28.1	+0.4
P18A				ePcP	PcP	21 08 38.2	+0.4
GMRC	Granite Mounta	52.22	319	P	P	21 07 28.8	+1.0
	baz=127,SNR=14						
C36A	Pine Crest Far	52.22	346	P	P	21 07 26.8	-0.6
	baz=159,SNR=78						
F30A	Leola	52.25	340	P	P	21 07 27.0	-0.6
	baz=151						
E32A	Braaten, Kindr	52.30	342	P	P	21 07 26.7	-1.2
	baz=154						
P17A	Butcher Ranch,	52.35	327	eP	P	21 07 29.1	+0.3
	44nm,0.9s						
P17A				epP	pP	21 07 58.2	+1.9
USHA	Ushuaia	52.38	174	P	P	21 07 30.1	+1.7
	80nm,0.7s,baz=354,slow=6.0,SNR=12						
SZCU	Shurtz Canyon	52.40	324	eP	P	21 07 30.0	+0.8
	23nm,0.9s						
SZCU				epP	pP	21 07 59.5	+2.8
SZCU				ePcP	PcP	21 08 39.4	+0.8
D33A	AnnSam, Waubun	52.43	344	P	P	21 07 27.8	-1.2
	baz=156						
C35A	Jirik Farms, M	52.45	345	P	P	21 07 27.9	-1.2
	baz=158,SNR=17						
TMUT	Trail Mountain	52.48	326	eP	P	21 07 30.6	+0.7
TMUT				epP	pP	21 08 00.6	+3.2
TMUT				ePcP	PcP	21 08 39.7	+0.7
MSU	Marysvale	52.49	325	eP	P	21 07 30.9	+1.1
MSU				epP	pP	21 08 00.4	+3.0
MSU				ePcP	PcP	21 08 40.1	+1.2
E31A	Nome	52.52	342	P	P	21 07 28.8	-0.8
	baz=153						
F29A	Eureka	52.52	340	P	P	21 07 29.1	-0.6
	baz=150						
CCUT	Cedar City	52.53	323	eP	P	21 07 31.4	+1.2
	16nm,1.0s						
CCUT				epP	pP	21 08 00.4	+2.6
CCUT				ePcP	PcP	21 08 40.2	+1.1
MURC	Murrieta	52.55	317	P	P	21 07 31.2	+1.1
	baz=125,SNR=6.0						
K22A	Casper	52.59	333	P	P	21 07 31.0	+0.5
	baz=141						
K22A	Casper	52.59	333	eP	P	21 07 30.6	+0.2
	45nm,1.3s						
K22A				ePcP	PcP	21 08 38.0	-1.1
C34A	RKJ Ranch, Bem	52.64	345	P	P	21 07 29.6	-0.9
	baz=157						
RSSD	Black Hills	52.67	335	P	P	21 07 32.3	+1.2
	baz=145						
RSSD	Black Hills	52.67	335	eP	P	21 07 32.3	+1.2
	46nm,0.8s						
HEC	Hector,Ludlow	52.69	319	P	P	21 07 32.6	+1.4
	baz=127,SNR=7.2						
TCRU	Three Creeks R	52.71	325	eP	P	21 07 32.8	+1.3
	23nm,1.0s						
TCRU				epP	pP	21 08 01.9	+2.8
BBRC	Big Bear Solar	52.75	318	P	P	21 07 33.5	+1.7
	baz=126						
D32A	Dogwood Acres,	52.77	343	P	P	21 07 30.5	-0.9
	baz=154						
TUQ	Turquoise Moun	52.79	320	P	P	21 07 33.1	+1.1
	baz=128						
D31A	Mcclaflin, Tow	52.90	342	P	P	21 07 31.6	-0.8
	baz=153						
H25A	Fruitdale	52.91	336	P	P	21 07 33.2	+0.6
	baz=145,SNR=6.9						
SHPR	Sheep Range	52.96	321	eP	P	21 07 34.7	+1.4
	35nm,1.2s						
C33A	Trail	52.98	344	P	P	21 07 31.7	-1.2
	baz=156						
B35A	Bob, Littlefor	53.00	346	P	P	21 07 31.9	-1.2
	baz=158,SNR=37						
RRX	Edison Barstow	53.16	318	P	P	21 07 35.9	+1.4
	baz=126						
MPU	Maple Canyon	53.22	327	eP	P	21 07 35.6	+0.4
	28nm,0.9s						
MPU				epP	pP	21 08 05.0	+2.2
MPU				ePcP	PcP	21 08 41.7	+0.1
BFSC	Mount Baldy Ra	53.23	317	P	P	21 07 36.4	+1.1
	baz=125						
C32A	Crookston	53.25	343	P	P	21 07 34.1	-0.8
	baz=155,SNR=7.2						
CIS	Catalina Islan	53.27	316	P	P	21 07 36.7	+1.2
	baz=124						
GSC	Goldstone, Bar	53.28	319	P	P	21 07 36.9	+1.3
	baz=127,SNR=13						
GSC	Goldstone, Bar	53.28	319	eP	P	21 07 36.5	+1.0
	20nm,0.9s						
GSC				epP	pP	21 08 05.3	+2.2
GSC				eS	S	21 14 59.2	+0.9
SHOC	Shoshone, Teco	53.30	320	P	P	21 07 36.8	+1.2
	baz=128						
B34A	Aery, Baudette	53.35	345	P	P	21 07 34.7	-0.9
	baz=157,SNR=32						
FMP	Fort Macarthur	53.37	316	P	P	21 07 37.5	+1.5
	baz=124						
B33A	Robert and Kas	53.40	344	P	P	21 07 34.9	-1.1
	baz=156,SNR=7.3						
NLU	North Lily Min	53.42	326	eP	P	21 07 37.5	+0.8
	11nm,1.0s						
NLU				ePcP	PcP	21 08 43.2	+0.8
PSUT	Pine Spring	53.48	324	eP	P	21 07 36.8	-0.3
	16nm,0.9s						
AGMN	Agassiz Nation	53.49	344	P	P	21 07 36.0	-0.7
	baz=156,SNR=44						
AGMN	Agassiz Nation	53.49	344	eP	P	21 07 36.1	-0.6
	93nm,0.7s						
MWC	Mount Wilson	53.49	317	eP	P	21 07 37.4	+0.2
	28nm,0.9s						
MWC				epP	pP	21 08 06.3	+1.5
JLU	Jordanelle	53.53	327	eP	P	21 07 37.9	+0.4
	44nm,0.8s						
JLU				epP	pP	21 08 07.4	+2.2
JLU				ePcP	PcP	21 08 43.8	+0.9
PASC	Pasadena Art C	53.55	317	eP	P	21 07 38.5	+1.1
	56nm,1.4s						
C31A	Landman Farms,	53.57	343	P	P	21 07 36.6	-0.7
	baz=154,SNR=28						
DECC	Green Verdugo	53.70	317	P	P	21 07 39.8	+1.3
	baz=125						
CTU	Camp Tracy	53.76	327	eP	P	21 07 39.4	+0.3
	74nm,1.1s						
B32A	Ashes, Strandq	53.77	344	P	P	21 07 38.0	-0.7
	baz=155,SNR=23						
EDW2	Edwards Air Fo	53.83	318	P	P	21 07 40.4	+0.9
	baz=125,SNR=15						
TCUT	Toone Canyon	53.88	328	eP	P	21 07 40.9	+0.9
	127nm,0.6s						
TCUT				epP	pP	21 08 09.6	+1.9
TCUT				ePcP	PcP	21 08 44.6	+0.5
TPNV	Topopah Spring	53.92	321	P	P	21 07 41.7	+1.4
	baz=128,SNR=27						
TPNV	Topopah Spring	53.92	321	eP	P	21 07 41.2	+0.9
	30nm,0.9s						
TPNV				epP	pP	21 08 10.3	+2.3
A33A	Warroad	53.95	345	P	P	21 07 39.3	-0.8
	baz=157,SNR=27						
SNCC	San Nicolas Is	53.97	315	P	P	21 07 40.8	+0.4
	baz=123						
LRMC	Laurel Mtn Rad	53.97	319	P	P	21 07 41.8	+1.2
	baz=126						
DUG	Dugway, Tooele	54.00	326	P	P	21 07 42.0	+1.3
	baz=133,SNR=26						
DUG	Dugway, Tooele	54.00	326	eP	P	21 07 41.4	+0.6
	130nm,1.6s						
DUG				epP	pP	21 08 10.9	+2.5
FURC	Furnace Creek,	54.02	320	P	P	21 07 42.0	+1.3
	baz=127,SNR=11						
B31A	Greenbush Farm	54.11	343	P	P	21 07 40.4	-0.8
	baz=154,SNR=10						
BLG	Laguna Peak, P	54.12	316	P	P	21 07 43.0	+1.4
	baz=124						
BW06	Boulder Array	54.12	330	P	P	21 07 42.0	+0.3
	baz=138						
BW06	Boulder Array	54.12	330	eP	P	21 07 41.2	-0.5
	44nm,1.4s						
BW06				ePcP	PcP	21 08 44.3	-0.8
PD31	Pinedale Array	54.12	330	eP	P	21 07 41.5	-0.2
PD31				ePcP	PcP	21 08 44.5	-0.5
PDAR	Pinedale Array	54.12	330	P	P	21 07 41.5	-0.2
	9.5nm,0.6s,baz=120,slow=8.8,SNR=92						
PDAR				PcP	PcP	21 08 44.5	-0.5
	6.0nm,0.6s,baz=128,slow=5.8,SNR=9.9						
MPMC	Manual Prospec	54.18	319	P	P	21 07 42.9	+0.7
	baz=126						
MDND	Maddock	54.20	341	P	P	21 07 42.0	+0.1
	baz=151,SNR=13						
MDND	Maddock	54.20	341	eP	P	21 07 41.7	-0.2
	97nm,0.8s						
MDND				epP	pP	21 08 11.6	+2.0
A32A	Rocking H Ranc	54.23	344	P	P	21 07 41.2	-0.9
	baz=155,SNR=10						
HWUT	Hardware Ranch	54.30	328	eP	P	21 07 42.7	-0.3
	108nm,1.4s						
HWUT				epP	pP	21 08 12.6	+1.8
HWUT				ePcP	PcP	21 08 45.6	-0.1
DAC	Darwin (Calif)	54.38	319	eP	P	21 07 43.9	+0.3
DAC				epP	pP	21 08 13.2	+1.8
DAC				ePcP	PcP	21 08 46.8	+0.7
DRLN	Deer Lake	54.39	15	eP	P	21 07 43.3	+0.1
	41nm,0.9s						
R11A	Troy Canyon, C	54.39	323	P	P	21 07 44.9	+1.2
	baz=130,SNR=32						
R11A	Troy Canyon, C	54.39	323	eP	P	21 07 44.5	+0.9
	20nm,1.0s						
R11A				ePcP	PcP	21 08 46.4	+0.3
SCZ2	Santa Cruz Isl	54.45	316	P	P	21 07 45.1	+1.1
	baz=123						
D26A	Manning	54.47	339	P	P	21 07 44.2	+0.3
	baz=148,SNR=17						
ARVC	Arvin	54.53	318	P	P	21 07 45.6	+1.1
	baz=125						
ISA	Isabella, Lake	54.60	318	P	P	21 07 46.3	+1.2
	baz=125						
ISA	Isabella, Lake	54.60	318	eP	P	21 07 46.1	+1.0
	21nm,1.1s						
ISA				epP	pP	21 08 14.8	+1.9
BGU	Big Grassy Mou	54.62	327	eP	P	21 07 45.7	+0.5
	60nm,1.4s						
BGU				epP	pP	21 08 14.8	+1.8
GRAC	Grapevine Rang	54.66	320	P	P	21 07 46.8	+1.3
	baz=127						
CWC	Cottonwood Cre	54.79	319	P	P	21 07 47.9	+1.3
	baz=126						
AHID	Auburn Hatcher	54.90	329	eP	P	21 07 47.2	-0.1
	39nm,0.8s						
PKM	Mcpherson Peak	55.06	317	P	P	21 07 49.5	+0.9
	baz=124						
HVU	Hansel Valley	55.07	328	eP	P	21 07 48.6	+0.1
	16nm,1.0s						
VES	Vestal, Richgr	55.11	318	P	P	21 07 49.7	+1.1
	baz=125,SNR=9.7						
REDW	Red Top Meadow	55.20	330	eP	P	21 07 49.7	+0.2
	32nm,0.9s						
REDW				epP	pP	21 08 19.2	+1.9
SNOW	Snow King Moun	55.23	330	eP	P	21 07 50.1	+0.4
	90nm,1.5s						
TIN	Tinemaha, Big	55.25	320	P	P	21 07 51.2	+1.3
	baz=126						
LOHW	Long Hollow	55.27	330	eP	P	21 07 50.2	+0.3
	21nm,0.8s						
ULM	Lac du Bonnet	55.28	345	P	P	21 07 48.5	-1.2
	52nm,0.6s,baz=156,slow=7.6,SNR=87						
ULM	Lac du Bonnet	55.28	345	eP	P	21 07 48.1	-1.5
	60nm,0.8s						
TPAW	Teton Pass	55.35	330	eP	P	21 07 50.7	+0.1
	16nm,0.7s						
SMMC	Simmler	55.42	317	P	P	21 07 52.3	+1.3
	baz=124						
MOOW	Moose Ponds	55.44	330	eP	P	21 07 51.0	-0.1
	20nm,1.0s						
MOOW				epP	pP	21 08 21.0	+2.0
MOOW				ePcP	PcP	21 08 50.2	+0.2
RCTC	Rector, Farmer	55.48	318	P	P	21 07 52.0	+0.7
	baz=125						
IMW	Indian Meadow	55.64	330	eP	P	21 07 52.5	-0.2
	28nm,0.6s						
IMW				ePcP	PcP	21 08 51.4	+0.5
LAO	LASA Array	55.66	336	P	P	21 07 52.6	+0.1
	baz=143						
LAO	LASA Array	55.66	336	eP	P	21 07 52.1	-0.4
	37nm,1.1s						
FLWY	Flagg Ranch	55.66	331	eP	P	21 07 53.6	+0.9
	48nm,0.8s						
RLMT	Red Lodge	55.76	333	P	P	21 07 53.7	+0.3
	baz=139,SNR=14						
RLMT	Red Lodge	55.76	333	eP	P	21 07 53.5	+0.1
	18nm,0.6s						
PAGB	Antelope Grade	55.83	317	eP	P	21 07 54.9	+1.0
	24nm,1.2s						
YPP	Pitchstone Pla	55.85	331	eP	P	21 07 54.1	0.0
	14nm,0.9s						
MLAC	Mammoth, Mammo	55.98	320	P	P	21 07 56.2	+1.0
	baz=126						
YFT	Old Faithful	56.00	331	eP	P	21 07 56.8	+1.6
	22nm,1.1s						
YMR	Madison River	56.22	331	eP	P	21 07 57.7	+1.0
	32nm,0.7s						
YHH	Holmes Hill	56.25	331	eP	P	21 07 57.8	+0.8
	23nm,0.7s						
DGMT	Dagmar	56.33	338	P	P	21 07 57.8	+0.6
	baz=146,SNR=5.6						
DGMT	Dagmar	56.33	338	eP	P	21 07 58.3	+1.1
	49nm,0.8s						
TVH2	Borealis Mine	56.37	321	eP	P	21 07 58.9	+0.9
	10nm,0.5s						
YHB	Horse Butte	56.39	331	eP	P	21 07 59.2	+1.3
	45nm,0.8s						
TVH3	East Aurora ar	56.40	321	eP	P	21 07 58.9	+0.8
	6.6nm,0.8s						
TVH3				epP	pP	21 08 27.9	+1.9
TVH1	TV Hill, Hawth	56.42	321	eP	P	21 07 58.6	+0.1
	11nm,0.8s						
TVH1				epP	pP	21 08 29.3	+2.9
TVH1				ePcP	PcP	21 08 54.9	+0.7
GCMT	Greycliff	56.45	333	eP	P	21 07 58.9	+0.7
PMPB	Monarch Peak	56.47	318	eP	P	21 07 59.6	+1.1
	25nm,0.9s						
QLMT	Ear

14nm,0.8s
WAKR ePP pP 21 08 32.0 +2.5
YERR Yerington 57.04 321 eP P 21 08 03.2 +0.6
10nm,0.8s
HLID Hailey 57.17 328 P P 21 08 04.1 +0.6
baz=133,SNR=22
HLID Hailey 57.17 328 eP P 21 08 04.0 +0.5
24nm,0.8s
CMB Columbia Colle 57.21 320 eP P 21 08 03.8 +0.1
7.4nm,0.8s
BOZ Bozeman (W) 57.26 331 P P 21 08 04.5 +0.5
baz=137,SNR=71
BOZ Bozeman (W) 57.26 331 eP P 21 08 04.0 0.0
41nm,0.8s
BOZ ePP pP 21 08 30.9 -1.0
MCMT McKenzie Canyo 57.26 330 eP P 21 08 04.9 +0.8
HSFM Saint Francis 57.26 318 eP P 21 08 04.8 +0.8
PNTR Pine Nut 57.32 321 eP P 21 08 06.2 +1.6
14nm,0.7s
DLMT Dillon 57.52 331 eP P 21 08 06.2 +0.4
13nm,0.8s
PAHR Pah Rah Range 57.55 322 eP P 21 08 07.7 +1.5
47nm,1.4s
LRM Limekiln Ridge 57.78 331 eP P 21 08 08.3 +0.5
MFID Camas Ranch 57.83 327 eP P 21 08 08.7 +0.7
90nm,0.9s
MFID ePP pP 21 08 37.0 +1.0
SCHQ Schefferville 57.94 7 P P 21 08 08.7 +0.3
17nm,0.7s,baz=187,slow=5.0,SNR=12
SCHQ LR LR 21 33 49.4
comp=Z,65nm,18.6s,baz=232,slow=37
SCHQ Schefferville 57.94 7 eP P 21 08 08.5 +0.1
22nm,0.8s
AFDM Forest Hills D 58.11 320 eP P 21 08 09.7 -0.2
9.2nm,0.9s
HRY Holter Researc 58.13 332 eP P 21 08 10.6 +0.6
EGMT Eagleton 58.19 334 P P 21 08 10.6 +0.2
baz=140,SNR=5.1
EGMT Eagleton 58.19 334 eP P 21 08 09.5 -0.8
31nm,0.8s
WVOR Wild Horse Val 58.77 325 eP P 21 08 14.8 +0.3
45nm,0.9s
WVOR ePP pP 21 08 44.1 +1.4
ORV Oroville 58.79 320 eP P 21 08 15.4 +0.8
45nm,1.0s
ORV ePP pP 21 08 44.1 +1.4
CHMT Chamberlain Mo 58.95 332 eP P 21 08 16.0 +0.2
MSO Missoula 59.22 331 P P 21 08 18.3 +0.8
baz=135,SNR=21
MSO Missoula 59.22 331 eP P 21 08 18.4 +0.8
34nm,0.8s
SLMT Seeley Lake 59.30 332 eP P 21 08 17.5 -0.7
SLMT ePcP PcP 21 09 05.3 +0.2
O03D Paynes Creek 59.41 321 P P 21 08 19.1 +0.2
baz=125
MOD Modoc Plateau 59.43 323 eP P 21 08 19.2 +0.1
8.4nm,0.6s
BMO Blue Mountains 59.58 328 eP P 21 08 20.0 -0.1
13nm,1.0s
BMO ePP pP 21 08 49.1 +0.9
SWMT Swartz Lake 59.73 332 eP P 21 08 21.1 +0.1
YBMT Yellow Bay 59.99 332 eP P 21 08 23.4 +0.6
WDC Whiskeytown Da 60.03 321 eP P 21 08 21.5 -1.6
7.5nm,0.6s
JTMT Jette 60.04 332 eP P 21 08 23.6 +0.5
JTMT ePcP PcP 21 09 08.5 +0.5
BLMT Blacktail Moun 60.26 332 eP P 21 08 25.7 +0.9
K05A Summer Lake 60.27 324 eP P 21 08 26.2 +1.3
78nm,1.4s
F10A Beach Ranch, E 60.28 329 eP P 21 08 25.1 +0.2
24nm,0.8s
M04C Macdoel 60.28 322 P P 21 08 25.5 +0.6
baz=125
BSMT Bassoo Peak 60.35 331 eP P 21 08 26.0 +0.7
N02D Trinity Center 60.36 321 P P 21 08 24.6 -0.8
baz=124
KMRM Mail Ridge 60.58 320 eP P 21 08 28.6 +1.7
35nm,1.2s
M02C Callahan 60.68 322 P P 21 08 27.5 -0.1
baz=124
G08A Pilot Rock 60.76 327 eP P 21 08 28.6 +0.5
48nm,0.8s
J05D Fort Rock, OR 60.80 324 P P 21 08 29.5 +1.0
baz=127,SNR=6.4
WALA Waterton Lakes 60.80 333 eP P 21 08 28.2 -0.2
23nm,0.8s
WALA esP sP 21 09 08.8 -0.5
KHMM Horse Mountain 60.95 321 eP P 21 08 30.4 +0.9
43nm,1.1s
FFC Flin Flon 60.95 344 eP P 21 08 28.3 -0.8
38nm,1.2s
HOPE Hope Point 60.96 154 eP P 21 08 30.0 +1.0
61nm,0.9s
JCC Jacoby Creek, 61.10 320 eP P 21 08 30.8 +0.5
66nm,1.4s
E09A Wood Farm, Sta 61.12 329 eP P 21 08 29.9 -0.4
97nm,1.8s
J04D Umpqua Nationa 61.29 324 P P 21 08 32.6 +0.7
baz=126
KRMB Red Mountain 61.41 321 eP P 21 08 34.0 +1.4
64nm,1.3s
HUMO Hull Mountain 61.44 323 eP P 21 08 31.8 -0.8
11nm,1.3s
I05D Terrebonne, OR 61.50 325 P P 21 08 34.3 +1.3
baz=127,SNR=16
VTHM Trough 61.57 326 P P 21 08 35.1 +1.7
L02D Cave Junction, 61.58 322 P P 21 08 34.1 +0.5
baz=124
G06A Carlson Farm, 61.65 326 eP P 21 08 35.5 +1.5
42nm,1.0s
CROR Criterion Ridg 61.69 326 P P 21 08 36.0 +1.7
NEW Newport 61.77 331 P P 21 08 35.2 +0.4
baz=133,SNR=23
NEW Newport 61.77 331 eP P 21 08 34.6 -0.1
33nm,0.8s
NEW ePP pP 21 09 04.3 +1.2
HAWA Hanford 61.77 328 eP P 21 08 35.7 +1.0
17nm,0.8s
HBO Huckleberry Mo 61.77 324 P P 21 08 35.4 +0.4
I04A Tendick Farm, 61.80 324 P P 21 08 35.3 +0.2
baz=126
IRO Indian Ridge 61.83 324 eP P 21 08 35.8 +0.4
D08A Wollman Farm, 61.88 329 eP P 21 08 35.7 +0.2
14nm,0.9s
G05D Wamic, OR 62.03 326 P P 21 08 38.2 +1.6
baz=127,SNR=14
C09A Chrisman Ranch 62.03 330 eP P 21 08 37.8 +1.3
26nm,1.0s
E07A Sunnyside 62.05 328 eP P 21 08 37.0 +0.3
30nm,0.8s
TRW Toppenish Ridg 62.25 327 P P 21 08 39.6 +1.5
I03D Drain, OR 62.29 323 P P 21 08 38.8 +0.5
baz=125,SNR=5.8
PMSA Palmer Station 62.59 174 P P 21 08 40.8 +1.0
10nm,0.7s,baz=351,slow=5.0,SNR=9.1
COR Corvallis 62.78 324 eP P 21 08 41.4 -0.1
84nm,1.1s
FCC Fort Churchill 62.84 350 eP P 21 08 40.5 -1.1
41nm,0.8s
LTY Liberty 62.92 328 eP P 21 08 42.9 +0.3
23nm,0.9s
B08A Colville Reser 62.93 330 eP P 21 08 42.5 0.0
26nm,0.8s
ETW Entiat 62.96 328 eP P 21 08 44.0 +1.2
F04A Amboy 63.06 326 eP P 21 08 43.5 +0.2
21nm,0.9s
G03D McMinnville, O 63.12 325 P P 21 08 44.8 +1.1
baz=126
LON Longmire 63.22 327 eP P 21 08 44.6 +0.1
22nm,0.9s
C06D Leavenworth 63.46 328 P P 21 08 46.9 +0.9
baz=129
F04D Rainier, OR 63.48 326 P P 21 08 47.6 +1.4
baz=126
D05A Enumclaw 63.59 327 eP P 21 08 47.2 +0.5
80nm,0.9s
EDM Edmonton 63.63 336 eP P 21 08 46.5 -0.5
67nm,0.7s
E03A Lebam 64.07 326 eP P 21 08 50.5 +0.6
64nm,0.9s
B06A Marblemount 64.14 329 eP P 21 08 50.6 +0.3
36nm,0.7s
B05A Bryant 64.30 328 P P 21 08 51.6 +0.2
baz=128
MBW Mount Baker 64.52 329 P P 21 08 53.3 +0.2
NLWA Neilton Lookou 64.73 327 eP P 21 08 55.4 +1.1
49nm,1.0s

A04D Lummi Island 64.90 328 P P 21 08 56.3 +1.0
baz=128,SNR=7.9
PGC Sidney 65.25 328 eP P 21 08 58.5 +0.9
35nm,0.9s
BBB Bella Bella 69.73 329 eP P 21 09 27.4 +1.7
43nm,1.0s
YKA Yellowknife Ar 71.09 342 P P 21 09 33.1 -0.6
18nm,0.7s,baz=140,slow=5.7,SNR=157
YKB5 Yellowknife Ar 71.09 342 eP P 21 09 32.8 -0.9
YKW3 Yellowknife Ar 71.14 342 eP P 21 09 33.3 -0.8
20nm,0.8s
SFJD Kangerlussuaq 71.99 10 eP P 21 09 38.9 -0.2
77nm,1.6s
LIC Lamto 72.12 83 eP P 21 09 41.7 +0.7
81nm,1.0s
TIC Toumodi 72.17 82 eP P 21 09 42.1 +0.8
DBIC Dimbokro 72.33 82 P P 21 09 43.1 +0.9
41nm,0.7s,baz=259,slow=4.5,SNR=73
DBIC pP pP 21 10 09.3 -2.0
23nm,0.7s,baz=266,slow=6.8,SNR=4.4
DBIC Dimbokro 72.33 82 eP P 21 09 43.1 +0.9
63nm,1.0s
DBIC epP pP 21 10 08.7 -2.6
KIC Kosan Boka 72.42 82 eP P 21 09 43.8 +1.1
122nm,0.7s
PPT Papeete 72.84 253 eP P 21 09 45.8 +0.6
WRAK Wrangell Islan 74.09 332 eP P 21 09 52.8 +1.2
14nm,1.0s
DLBC Dease Lake 74.11 334 eP P 21 09 53.0 +1.1
29nm,0.9s
PFVI Vila Bisbo 74.21 50 eP P 21 09 54.6 +1.8
109nm,1.7s
PFVI Vila Bisbo 74.21 50 eP P 21 09 54.0 +1.2
103nm,1.2s
PTEO Sao Teotonio 74.40 50 eP P 21 09 55.9 +2.0
82nm,1.6s
PNCL Nicolau / Gran 74.71 49 eP P 21 09 57.0 +1.4
24nm,1.9s
PBDV Barranco-do-Ve 74.93 50 eP P 21 09 58.8 +1.8
26nm,1.1s
PCVE Castro Verde 74.95 50 eP P 21 09 58.8 +1.7
30nm,1.8s
EVO Evora 75.21 49 eP P 21 09 59.5 +1.0
24nm,1.5s
PESTR Estremoz 75.62 49 eP P 21 10 01.9 +1.0
41nm,1.1s
PVIS Viseu 75.90 47 eP P 21 10 03.1 +0.6
PMRV Marv??o 75.92 48 eP P 21 10 03.1 +0.5
29nm,1.4s
PCBR Castelo Branco 75.97 48 eP P 21 10 03.5 +0.7
31nm,1.6s
MTE Manteigas 76.07 47 eP P 21 10 04.0 +0.5
30nm,1.7s
PVRL Vila Real 76.19 46 eP P 21 10 04.7 +0.6
35nm,1.4s
MVO Moncorvo 76.65 47 eP P 21 10 07.5 +0.7
41nm,0.8s
PBRG Braganca 77.03 46 eP P 21 10 09.5 +0.6
22nm,0.9s
PAB San Pablo 78.23 49 eP P 21 10 16.7 +1.1
15nm,1.0s
ESDC Sonseca Array 78.55 49 P P 21 10 18.0 +0.7
4.4nm,0.7s,baz=259,slow=6.6,SNR=28
ESDC LR LR 21 40 54.1
comp=Z,37nm,21.9s,baz=310,slow=32
ESLA Sonseca Array 78.55 49 eP P 21 10 18.2 +0.9
54nm,2.0s
HYT Haines Junctio 78.60 334 eP P 21 10 19.1 +1.8
17nm,1.2s
ES19 SONSECA Array 78.60 49 eP P 21 10 17.8 +0.2
SUMG Summit 78.98 11 eP P 21 10 19.5 +0.1
SUMG epP pP 21 10 46.5 -2.5
CCA1 Carnmenellis 80.35 38 eP P 21 10 26.5 -0.3
CCA1 AMB AMB 21 10 28.1
comp=Z,42nm,1.6s
INK Inuvik 80.83 342 eP P 21 10 29.4 +0.6
comp=Z,63nm,1.0s
BALM Baldy 80.83 333 eP P 21 10 30.2 +1.0
comp=Z,15nm,1.0s
DAWY Dawson 80.84 337 eP P 21 10 29.1 0.0
comp=Z,18nm,1.0s
CRQM Cirque 81.08 333 eP P 21 10 31.6 +0.9
comp=Z,18nm,0.9s
LPW Lampeter 81.58 37 eP P 21 10 33.6 +0.4
LPW AMB AMB 21 10 34.8
comp=Z,37nm,1.0s
YLL Llanberis 81.79 35 eP P 21 10 34.8 +0.5
BMRM Bremner River 81.83 333 eP P 21 10 34.8 +0.3
comp=Z,28nm,1.0s
EGAK Eagle 81.84 337 eP P 21 10 34.4 +0.1
comp=Z,61nm,0.9s
EGAK epP pP 21 11 03.9 -0.2
GAL1 Galloway 81.96 34 eP P 21 10 35.0 -0.2
GAL1 AMB AMB 21 10 36.1
comp=Z,42nm,1.0s
MENT Mentasta 82.16 335 eP P 21 10 36.0 -0.1
comp=Z,12nm,0.6s
KPL Plockton 82.18 31 eP P 21 10 36.5 +0.3
MCH1 Michaelchurch 82.18 37 eP P 21 10 36.3 -0.1
MCH1 AMB AMB 21 10 37.6
comp=Z,15nm,0.9s
MONM Monmouth 82.26 37 eP P 21 10 37.3 +0.5
MONM AMB AMB 21 10 37.8
comp=Z,46nm,0.9s
FOEL Foel Wylfa 82.29 36 eP P 21 10 37.0 0.0
SNAA Sanae 82.38 162 eP P 21 10 37.6 +0.4
comp=Z,32nm,0.8s
SNAA epP pP 21 11 08.7 +1.8
HLM1 Long Mynd 82.38 36 eP P 21 10 37.9 +0.5
KAC Achnashellach 82.41 31 eP P 21 10 37.9 +0.4
DIV Divide 82.42 333 eP P 21 10 37.6 +0.1
comp=Z,18nm,1.0s
EAB Aberfoyle 82.54 33 eP P 21 10 38.5 +0.4
DOT Dot Lake 82.57 335 eP P 21 10 38.2 0.0
comp=Z,83nm,1.0s
DOT epP pP 21 11 09.3 +1.3
KLU Klutina 82.61 333 eP P 21 10 38.5 -0.1
comp=Z,26nm,0.9s
STRD Stroud 82.63 37 eP P 21 10 38.7 0.0
STRD AMB AMB 21 10 39.9
comp=Z,32nm,0.9s
KESW Keswick, Cumbr 82.78 34 eP P 21 10 39.2 -0.3
KESW AMB AMB 21 10 41.0
comp=Z,67nm,0.9s
MDO Dochfour 82.88 31 eP P 21 10 40.1 +0.2
PAX Paxson 82.92 335 eP P 21 10 39.4 -0.8
comp=Z,30nm,0.9s
ESK Eskdalemuir 82.92 34 eP P 21 10 40.1 0.0
ESK AMB AMB 21 10 45.2
comp=Z,74nm,1.6s
ESK Eskdalemuir 82.92 34 eP P 21 10 40.2 0.0
comp=Z,9.8nm,0.8s
ECK Cauldkaine Hil 82.92 34 eP P 21 10 40.5 +0.3
EDU Dundee 83.34 32 eP P 21 10 43.2 +0.9
SCM Sheep Creek Mo 83.35 333 eP P 21 10 42.3 -0.1
comp=Z,42nm,1.0s
SCM epP pP 21 11 13.1 +0.9
CWF Charnwood Fore 83.37 36 eP P 21 10 42.1 -0.4
ESY Stoneypath 83.40 33 eP P 21 10 43.3 +0.7
BIGH Upper Bighouse 83.40 30 eP P 21 10 42.3 -0.3
MCD Coleburn Disti 83.49 31 eP P 21 10 43.2 +0.1
DHY Denali Highway 83.77 334 eP P 21 10 44.7 +0.1
comp=Z,27nm,1.7s
SML Sawmill 83.80 333 eP P 21 10 44.7 +0.1
comp=Z,46nm,1.0s
SML epP pP 21 11 15.7 +1.2
SEW Seward 83.82 331 eP P 21 10 44.2 -0.5
comp=Z,15nm,1.0s
TAM Tamanrasset 83.90 67 eP P 21 10 44.3 -1.8
comp=Z,28nm,1.0s
HDA Harding Lake 84.02 336 eP P 21 10 45.7 0.0
comp=Z,42nm,1.3s
HDA epP pP 21 11 16.1 +0.6
FYU Fort Yukon 84.09 338 eP P 21 10 46.3 +0.4
comp=Z,79nm,1.4s
PMR Palmer 84.10 333 eP P 21 10 45.8 -0.2
comp=Z,11nm,1.0s
IL1 Eielson Array 84.12 336 eP P 21 10 45.4 -0.7
ILAR Eielson Array 84.12 336 P P 21 10 45.8 -0.3
comp=Z,8.7nm,0.9s,baz=120,slow=3.3,SNR=59
ILAR pP pP 21 11 14.2 -1.7
comp=Z,5.5nm,0.8s,baz=127,slow=4.1,SNR=7.7
ILAR PP PP 21 13 59.9 -1.9
comp=Z,2.3nm,0.9s,baz=106,slow=7.4,SNR=8.5
ILB Eielson Array 84.12 336 eP P 21 10 45.9 -0.2
ILB epP pP 21 11 17.1 +1.2

RC01 Rabbit Creek A 84.24 332 eP P 21 10 46.6 -0.1
comp=Z,34nm,1.1s
RC01 epP pP 21 11 17.1 +0.4
BRLK Bradley Lake 84.43 331 eP P 21 10 47.6 -0.1
comp=Z,32nm,1.0s
BRLK epP pP 21 11 18.8 +1.1
CCB Clear Creek Bu 84.45 336 eP P 21 10 47.4 -0.3
comp=Z,7.4nm,0.9s
RND Reindeer 84.51 335 eP P 21 10 48.2 0.0
comp=Z,99nm,1.6s
WRH Wood River Hil 84.51 336 eP P 21 10 47.6 -0.5
comp=Z,9.8nm,1.1s
MCK McKinley 84.64 335 eP P 21 10 49.2 +0.4
comp=Z,26nm,1.1s
MCK epP pP 21 11 19.5 +0.8
MDM Murphy Dome 84.72 336 eP P 21 10 48.8 -0.4
comp=Z,40nm,1.2s
SUA Susitna One 84.81 332 eP P 21 10 50.4 +0.7
comp=Z,23nm,0.9s
SUA epP pP 21 11 21.8 +2.1
BWN Browne 84.99 335 eP P 21 10 50.8 +0.3
comp=Z,64nm,1.1s
BWN epP pP 21 11 21.7 +1.2
OHAK Old Harbor 85.04 328 eP P 21 10 50.8 0.0
comp=Z,21nm,1.4s
TRF Thorofare Moun 85.14 334 eP P 21 10 51.3 -0.2
comp=Z,63nm,1.6s
SPU Mount Spurr 85.35 332 eP P 21 10 52.2 -0.2
KTH Kantishna Hill 85.44 334 eP P 21 10 52.8 -0.1
comp=Z,26nm,0.9s
RSO Redoubt South 85.51 331 eP P 21 10 53.2 -0.2
RSO epP pP 21 11 24.6 +1.2
BPAW Bear Paw Mtn. 85.61 335 eP P 21 10 53.6 0.0
comp=Z,41nm,0.9s
MLY Manley 85.76 336 eP P 21 10 54.2 -0.2
comp=Z,23nm,1.0s
SSB Saint Sauveur 85.77 44 eP P 21 10 55.6 +0.8
comp=Z,6.9nm,1.0s
PPLA Purkeypile 85.83 334 eP P 21 10 54.9 0.0
comp=Z,100nm,1.5s
CAST Castle Rocks 85.91 334 eP P 21 10 54.7 -0.4
comp=Z,29nm,0.9s
COLD Coldfoot 86.16 338 eP P 21 10 57.3 +1.0
comp=Z,36nm,1.3s
SVW2 Sparrevohn 87.00 331 eP P 21 10 60.0 -0.5
comp=Z,24nm,1.0s
QSPA South Pole Qui 87.34 180 eP P 21 11 03.2 +1.0
WLF Walferdange 87.44 40 eP P 21 11 03.4 +0.6
comp=Z,16nm,0.9s
TT01 Tatalina 87.54 333 eP P 21 11 02.6 -0.5
TTA Tatalina 87.55 333 eP P 21 11 02.8 -0.3
comp=Z,24nm,1.6s
KEST Kesra 88.38 54 P P 21 11 08.2 +0.6
comp=Z,12nm,1.0s,baz=246,slow=6.1,SNR=9.4
KEST Kesra 88.38 54 eP P 21 11 06.1 -1.6
comp=Z,9.7nm,0.8s
VSL Villasalto 88.70 51 eP P 21 11 09.2 +0.2
comp=Z,20nm,0.9s
TUE Stuetta 89.24 44 eP P 21 11 11.9 +0.2
comp=Z,8.9nm,0.7s
DAVA Damuels 89.67 43 *i* PcP P 21 11 14.4 +0.8
comp=Z,9.7nm,0.7s,SNR=5.9
FETA Feichten 90.23 43 *i* PcP P 21 11 16.4 +0.2
comp=Z,12nm,1.1s,SNR=8.0
RETA Reutte 90.28 43 *i* PcP P 21 11 17.1 +0.7
comp=Z,7.1nm,1.1s
MOTA Moosalm 90.50 43 *i* PcP P 21 11 17.8 +0.3
comp=Z,8.7nm,0.8s,SNR=7.4
WATA Walderalm 90.82 43 *i* PcP P 21 11 19.5 +0.6
comp=Z,3.8nm,0.5s
WTTA Wattenberg 90.86 43 *i* PcP P 21 11 20.1 +0.9
comp=Z,6.8nm,0.8s
NBO00 NORSAR Array S 91.15 29 eP P 21 11 19.6 -0.4
NBO02 NORSAR Array S 91.19 29 eP P 21 11 21.3 +1.1
NB2 NORSAR Subarra 91.36 29 P P 21 11 21.7 +0.7
comp=Z,6.8nm,1.0s,baz=265,slow=4.6
NB2 NORSAR Subarra 91.36 29 P P 21 11 21.7 +0.7
baz=265,slow=4.6
NB200 NORSAR Array S 91.36 29 eP P 21 11 21.6 +0.7
NB200 epP pP 21 11 47.7 -3.5
NOA NORSAR Array B 91.36 29 P P 21 11 21.6 +0.7
comp=Z,5.0nm,1.0s,baz=268,slow=4.7,SNR=13
NOA pP pP 21 11 47.7 -3.5
comp=Z,1.9nm,0.9s,baz=268,slow=4.7,SNR=3.0
ABTA Abfaltersbach 91.44 43 *i* PcP P 21 11 21.9 +0.2
comp=Z,8.9nm,1.0s,SNR=5.5
NKC Novy Kostel 91.54 40 *i* P P 21 11 23.6 +1.6
NC405 NORSAR Array S 91.61 29 eP P 21 11 22.7 +0.6
KBA Koelnbreinsper 92.02 43 *i* PcP P 21 11 25.2 +0.7
comp=Z,5.5nm,0.9s
MYKA Terra Mystica 92.21 44 *i* PcP P 21 11 26.0 +0.7
comp=Z,9.5nm,1.5s
KHC Kasperske Hory 92.23 41 *i* P P 21 11 26.3 +1.0
KHC epP pP 21 11 57.9 +2.4
GEA0 GERESS Array S 92.31 41 eP P 21 11 25.3 -0.4
GERES GERESS Array B 92.31 41 P P 21 11 25.7 -0.1
comp=Z,1.1nm,0.8s,baz=243,slow=4.3,SNR=9.8
MOA Molln 92.66 42 *i* PcP P 21 11 27.9 +0.7
comp=Z,12nm,1.7s,SNR=6.4
SBA Scott Base 92.77 191 eP P 21 11 28.4 +1.3
comp=Z,23nm,1.4s
SBA epP pP 21 12 00.0 +2.6
PRU Pruhonice 92.88 40 *i* P P 21 11 29.0 +0.8
SOKA Soboth 93.17 44 *i* PcP P 21 11 30.1 +0.3
comp=Z,2.0nm,1.0s
TSUM Tsumeb 93.17 109 eP P 21 11 31.9 +1.6
comp=Z,33nm,1.5s
TSUM epP pP 21 12 03.0 +2.4
ARSA Arzberg 93.51 43 *i* PcP P 21 11 32.0 +0.8
comp=Z,2.2nm,0.7s
CONA Conrad Observa 93.74 42 *i* PcP P 21 11 33.0 +0.6
comp=Z,5.8nm,1.0s
UPC Upice 93.83 40 eP P 21 11 33.9 +1.3
VNDA Vanda 93.85 191 P P 21 11 33.3 +1.2
comp=Z,2.8nm,0.8s,baz=113,slow=5.1,SNR=16
VNDA pP pP 21 11 60.0 -2.4
comp=Z,1.3nm,0.9s,baz=137,slow=3.8,SNR=2.1
VNDA Vanda 93.85 191 eP P 21 11 32.7 +0.6
VNDA epP pP 21 12 04.4 +2.0
DPC Dobruska-Polom 94.03 40 *i* P P 21 11 34.6 +1.1
DPC epP pP 21 12 01.3 -2.5
KRLC Kraliky 94.32 40 eP P 21 11 36.5 +1.6
MORC Moravsky Berou 94.82 40 eP P 21 11 37.8 +0.6
comp=Z,66nm,1.7s
ARCES ARCESS Array B 96.81 20 P P 21 11 45.0 -0.8
comp=Z,2.5nm,0.6s,baz=282,slow=4.5,SNR=7.3
FIA0 FINESS Array S 98.50 28 eP P 21 11 53.4 0.0
FIA0 epP pP 21 12 21.4 -2.3
FIA0 ePKKPbc PKKPbc 21 28 23.1 -2.5
FINES FINESS Array B 98.50 28 P P 21 11 53.4 0.0
comp=Z,2.6nm,0.8s,baz=270,slow=2.8,SNR=9.1
FINES pP pP 21 12 21.4 -2.3
comp=Z,1.7nm,0.8s,baz=258,slow=4.1,SNR=3.3
FINES PKKPbc PKKPbc 21 28 23.1 -2.5
comp=Z,0.9nm,0.7s,baz=111,slow=7.6,SNR=5.0
BOSA Boshof 99.19 119 PKKPbc PKKPbc 21 28 21.8 -0.8
comp=Z,1.4nm,0.5s,baz=351,slow=1.1,SNR=5.3
BR101 Keskin Array S 107.34 49 ePKiKP PKiKP 21 16 40.7 -1.1
BR101 ePKKPdf PKKPdf 21 28 12.1 +0.4
BRTR Keskin Array B 107.34 49 PKiKP PKiKP 21 16 40.7 -1.1
comp=Z,0.5nm,0.7s,baz=262,slow=2.9,SNR=4.2
BRTR PKKP PKKPdf 21 28 12.1 +0.4
comp=Z,0.5nm,0.5s,baz=130,slow=4.5,SNR=4.6
KBZ Khabaz 112.98 43 PKiKP PKiKP 21 16 52.5 +0.5
comp=Z,2.5nm,0.7s,baz=208,slow=4.0,SNR=5.7
ARU Arti 115.69 26 ePKPdf PKPdf 21 16 57.3 +0.4
ABKAR Akbulak array 120.78 32 ePKPdf PKPdf 21 17 07.5 +0.5
ABKAR epPKPdf pPKPdf 21 17 36.0 -2.4
BVAR Borovoye Array 122.98 23 PKKPbc PKKPbc 21 27 02.2 -2.9
comp=Z,1.0nm,0.6s,baz=165,slow=6.0,SNR=5.5
GEYT Alibeck 125.86 44 PKP PKPdf 21 17 17.6 +0.5
comp=Z,8.3nm,0.7s,baz=270,slow=4.4,SNR=23
GEYT pPKP pPKPdf 21 17 45.9 -2.7
comp=Z,2.8nm,0.8s,baz=258,slow=2.7,SNR=2.5
ZAA1 Zalesovo Array 126.73 14 ePKPdf PKPdf 21 17 18.5 +0.3
ZAA1 epPKPdf pPKPdf 21 17 46.4 -3.3
ZAA0 Zalesovo Array 126.74 14 ePKPdf PKPdf 21 17 18.1 -0.1
ZAA0 ePKPdf PKiKP 21 17 18.5 -0.2
ZALV Zalesovo Beam 126.74 14 PKP PKPdf 21 17 18.5 +0.3
comp=Z,9.8nm,0.5s,baz=259,slow=3.1,SNR=66
ZALV pPKP pPKPdf 21 17 46.4 -3.3
comp=Z,2.1nm,0.6s,baz=259,slow=2.9,SNR=2.3
KLR Kul'dur 127.69 337 PKP PKPdf 21 17 20.1 -0.1
comp=Z,11nm,0.7s,baz=41,slow=2.3,SNR=43
KLR pPKP pPKPdf 21 17 49.3 -2.4
comp=Z,3.0nm,0.6s,baz=47,slow=2.8,SNR=3.7

STKA	**Stephens Creek**	**129.94**	**223**	PKP	**PKPdf**	**21 17 25.0**	**-0.1**	
	comp=Z,8.3nm,0.8s,baz=97,slow=1.0,SNR=16							
STKA	**Stephens Creek**	**129.94**	**223**	*e*PKPdf	**PKPdf**	**21 17 24.4**	**-0.6**	
USRK	**Ussuriysk Ar.**	**131.53**	**333**	PKP	**PKPdf**	**21 17 27.5**	**-0.1**	
	comp=Z,7.1nm,0.8s,baz=343,slow=1.5,SNR=18							
USRK				pPKP	**pPKPdf**	**21 17 55.5**	**-3.7**	
	comp=Z,1.5nm,0.8s,baz=338,slow=1.6,SNR=1.9							
CTA	**Charters Tower**	**132.13**	**240**	PKP	**PKPdf**	**21 17 29.7**	**+0.2**	
	comp=Z,5.2nm,0.6s,baz=126,slow=5.2,SNR=8.7							
MAKZ	**Makanchi**	**132.34**	**20**	*e*PKPdf	**PKPdf**	**21 17 28.7**	**-0.4**	
MK31	**Makanchi Array**	**132.46**	**19**	*e*PKPdf	**PKPdf**	**21 17 29.1**	**-0.3**	
MK31				*ep*PKPdf	**pPKPdf**	**21 17 58.5**	**-2.5**	
MK32	**Makanchi Array**	**132.46**	**19**	*e*PKPdf	**PKPdf**	**21 17 29.3**	**-0.1**	
MK32				*ep*PKPdf	**pPKPdf**	**21 17 56.6**	**-4.3**	
MKAR	**Makanchi Array**	**132.46**	**19**	PKP	**PKPdf**	**21 17 29.3**	**-0.1**	
	comp=Z,3.4nm,0.5s,baz=318,slow=1.9,SNR=68							
MKAR				pPKP	**pPKPdf**	**21 17 56.6**	**-4.3**	
	comp=Z,1.0nm,0.7s,baz=310,slow=1.1,SNR=2.3							
MKAR	**Makanchi Array**	**132.46**	**19**	*e*PKPdf	**PKPdf**	**21 17 29.2**	**-0.1**	
MKAR				*ep*PKPdf	**pPKPdf**	**21 17 58.0**	**-2.9**	
MK01	**Makanchi Array**	**132.48**	**20**	*e*PKPdf	**PKPdf**	**21 17 29.1**	**-0.3**	
AAK	**Ala-Archa**	**132.68**	**29**	*e*PKPdf	**PKPdf**	**21 17 30.0**	**-0.1**	
MJAR	**Matsushiro Arr**	**133.44**	**321**	PKP	**PKPdf**	**21 17 31.4**	**-0.2**	
	comp=Z,2.5nm,0.6s,baz=101,slow=1.1,SNR=7.0							
SONA1	**Songino Array**	**134.97**	**357**	*e*PKPdf	**PKPdf**	**21 17 34.5**	**+0.3**	
SONA0	**Songino Array**	**134.99**	**357**	*e*PKPpre	PKPpre	21 17 21.6		
SONA0				*e*PKPdf	**PKPdf**	**21 17 34.3**	**+0.1**	
SONA0				*ep*PKPdf	pPKPdf	21 18 03.2	-2.6	
SONM	**Songino Array**	**134.99**	**357**	PKhKP	PKPpre	21 17 21.6		
	comp=Z,0.3nm,0.4s,baz=325,slow=2.3,SNR=3.7							
SONM				PKP	**PKPdf**	**21 17 34.3**	**+0.1**	
	comp=Z,5.9nm,0.6s,baz=328,slow=1.5,SNR=35							
SONM				pPKP	pPKPdf	21 18 03.2	-2.6	
	comp=Z,1.5nm,0.7s,baz=333,slow=2.4,SNR=1.4							
KBL	**Kabul**	**135.10**	**41**	*e*PKPdf	**PKPdf**	**21 17 33.5**	**-1.4**	
KSH	**Kashi**	**135.76**	**31**	PKP	**PKPdf**	**21 17 37.5**	**+1.6**	
KSH				*es*PKP		21 18 15.3		
KSH				*e*PP	**PP**	**21 20 17.5**	**+3.1**	
KSH				PKS	**PKSdf**	**21 21 12.5**	**+0.2**	
KSH				SKS	**SKSdf**	**21 24 37.0**	**+0.4**	
KSH				SKKS	**SKKSac**	**21 26 56.5**	**-2.8**	
KSH				AMB	AMB			
	comp=Z,120nm,5.7s							
KSH				LR	LR			
	comp=Z,91nm,6.7s							
KSH				LR	LR			
	comp=Z,93nm,7.1s							
KSH				LR	LR			
	comp=Z,120nm,6.7s							
WMQ	**Urumqi**	**136.81**	**17**	*e*PKP	**PKPdf**	**21 17 38.8**	**+1.1**	
WMQ				LR	LR			
	comp=Z,140nm,27.3s							
WMQ				LR	LR			
	comp=Z,160nm,26.5s							
WMQ				LR	LR			
	comp=Z,140nm,28.4s							
KS01	**Wonju Array Si**	**138.69**	**330**	*e*PKPpre	PKPpre	21 17 30.4		
KS01				*e*PKPdf	**PKPdf**	**21 17 41.3**	**+0.1**	
KS01				*ep*PKPdf	pPKPdf	21 18 10.1	-2.7	
KSRS	**Korea Array**	**138.69**	**330**	PKhKP	PKPpre	21 17 30.1		
	comp=Z,3.0nm,0.9s,baz=51,slow=3.9,SNR=6.2							
KSRS				PKP	**PKPdf**	**21 17 41.1**	**-0.1**	
	comp=Z,9.6nm,0.8s,baz=2.7,slow=1.5,SNR=20							
KSRS				pPKP	pPKPdf	21 18 09.8	-3.0	
	comp=Z,3.3nm,0.9s,baz=19,slow=2.5,SNR=2.1							
KS15	**Wonju Array Si**	**138.72**	**330**	*e*PKPpre	PKPpre	21 17 30.0		
KS15				*e*PKPdf	**PKPdf**	**21 17 39.8**	**-1.5**	
KSAR	**Wonju Array Be**	**138.72**	**330**	PKPpre	PKPpre	21 17 30.1		
KSAR				PKP	**PKPdf**	**21 17 41.1**	**-0.1**	
KSAR				pPKP	pPKPdf	21 18 09.8	-3.1	
AS01	**Alice Springs**	**140.26**	**227**	*e*PKPpre	PKPpre	21 17 35.8		
AS01				*e*PKPdf	**PKPdf**	**21 17 43.8**	**-0.8**	
AS31	**Alice Springs**	**140.29**	**227**	*e*PKPpre	PKPpre	21 17 36.7		
AS31				*e*PKPdf	**PKPdf**	**21 17 43.7**	**-0.9**	
ASAR	**Alice Springs**	**140.29**	**227**	PKhKP	PKPpre	21 17 37.1		
	comp=Z,2.7nm,0.5s,baz=130,slow=3.5,SNR=51							
ASAR				PKP	**PKPdf**	**21 17 43.9**	**-0.7**	
	comp=Z,9.7nm,0.8s,baz=123,slow=1.9,SNR=36							
ASAR				pPKP	pPKPdf	21 18 12.3	-3.9	
	comp=Z,1.2nm,0.5s,baz=130,slow=3.2,SNR=1.7							
BJI	**Beijing**	**141.06**	**344**	PKP	**PKPdf**	**21 17 45.0**	**-0.4**	
BJI				AMB	AMB			
	comp=Z,130nm,6.0s							
BJI				LR	LR			
	comp=Z,35nm,20.3s							
HHC	**Hu-ho-hao-te**	**141.32**	**350**	*e*PKP	**PKPdf**	**21 17 48.8**	**+2.8**	
HHC				SS	SS	21 39 07.0	-0.5	
HHC				AMB	AMB			
	comp=Z,39nm,6.1s							
HHC				LR	LR			
	comp=Z,81nm,13.6s							
HHC				LR	LR			
	comp=Z,75nm,13.6s							
HHC				LR	LR			
	comp=Z,61nm,14.8s							
WB2	**Warramunga Arr**	**142.08**	**232**	*e*PKPpre	PKPpre	21 17 42.2		
WB2				*e*PKPpre	PKPpre	21 17 42.5		
WB2				*e*PKPdf	**PKPdf**	**21 17 46.6**	**-1.2**	
WB2				*e*PKP	**PKiKP**	**21 17 46.8**	**-4.1**	
WRAB	**Tennant Creek**	**142.09**	**232**	*e*PKPpre	PKPpre	21 17 39.2		
WRAB				*e*PKPdf	**PKPdf**	**21 17 47.3**	**-0.6**	
WR1	**Warramunga Arr**	**142.09**	**232**	*e*PKPpre	PKPpre	21 17 42.6		
WR1				*ep*PKPdf	pPKPdf	21 18 17.6	-1.8	
WRA	**Warramunga Arr**	**142.09**	**232**	PKhKP	PKPpre	21 17 42.6		
	comp=Z,6.6nm,0.7s,baz=123,slow=2.4,SNR=52							
WRA				pPKP	pPKPdf	21 18 17.6	-1.8	
	comp=Z,5.3nm,0.9s,baz=121,slow=2.7,SNR=3.5							
GTA	**Gaotai**	**143.35**	**5**	*e*PKP	PKPbc	21 17 48.3	+1.2	
GTA				pPKP	pPKPdf	21 18 19.5	-1.8	
GTA				sPKP		21 18 33.3		
JOW	**Kunigami**	**146.12**	**317**	*e*PKPdf	**PKPdf**	**21 17 54.1**	**-0.6**	
LZH	**Lanzhou**	**146.80**	**359**	PKPbc	**PKPab**	**21 17 59.3**	**+0.2**	
LZH				pPKP	pPKPdf	21 18 27.5	+0.1	
LZH				AMB	AMB			
	comp=Z,140nm,5.9s							
NJ2	**Nanjing**	**147.36**	**335**	*e*PKPbc	**PKPbc**	**21 17 58.5**	**-0.6**	
PYUN	**Piuthan**	**148.19**	**36**	*e*P	**PKPdf**	**21 17 59.3**	**+0.9**	
	comp=Z,162nm,0.7s							
MTN	**Manton Dam**	**148.32**	**240**	*e*PKPdf	**PKPdf**	**21 17 58.4**	**-0.2**	
XAN	**Xi'an**	**148.41**	**351**	PKPbc	**PKPdf**	**21 17 59.0**	**+0.6**	
XAN				AMB	AMB			
	comp=Z,62nm,6.3s							
KOLN	**Koldanda**	**148.79**	**35**	*e*P	**PKPdf**	**21 18 00.1**	**+0.7**	
	comp=Z,63nm,0.6s							
GKN	**Gorkha**	**149.20**	**34**	*e*P	**PKPdf**	**21 18 00.9**	**+0.9**	
	comp=Z,207nm,0.8s							
KKN	**Kakani**	**149.72**	**33**	*e*P	**PKPdf**	**21 18 01.6**	**+0.7**	
	comp=Z,153nm,0.6s							
DMN	**Daman**	**149.76**	**33**	*e*P	**PKPdf**	**21 18 01.8**	**+0.8**	
	comp=Z,157nm,0.7s							
FITZ	**Fitzroy Crossi**	**149.78**	**226**	PKP	**PKPdf**	**21 18 01.0**	**+0.1**	
	comp=Z,31nm,1.0s,baz=133,slow=3.8,SNR=17							
FITZ				PKPbc	**PKPbc**	**21 18 05.6**	**-0.1**	
	comp=Z,33nm,1.0s,baz=125,slow=3.0,SNR=31							
FITZ	**Fitzroy Crossi**	**149.78**	**226**	*e*PKPdf	**PKPdf**	**21 18 00.9**	**0.0**	
FITZ				*e*PKPbc	**PKPbc**	**21 18 05.6**	**-0.1**	
FITZ				*e*PKPab	**PKPab**	**21 18 11.5**	**+0.2**	
GUN	**Gumba**	**149.94**	**32**	*e*P	**PKPdf**	**21 18 02.3**	**+0.9**	
	comp=Z,176nm,0.7s							
PKIN	**Phulchoki**	**149.95**	**33**	*e*P	**PKPdf**	**21 18 02.4**	**+1.1**	
JIRN	**Jiri**	**150.31**	**32**	*e*P	**PKPdf**	**21 18 03.0**	**+1.0**	
	comp=Z,518nm,0.7s							
WHN	**Wuhan**	**150.42**	**340**	⇓PKPbc	**PKPbc**	**21 18 07.0**	**+0.1**	
FAKI	**Fak Fak**	**150.51**	**259**	*e*PKPbc	**PKPbc**	**21 18 07.8**	**+0.1**	
LSA	**Lhasa**	**150.81**	**22**	*e*PKPdf	**PKPdf**	**21 18 04.0**	**+1.2**	
LSA				*e*PKPbc	**PKiKP**	**21 18 09.8**	**+0.7**	
MBWA	**Marble Bar**	**151.31**	**213**	*e*PKPbc	**PKPbc**	**21 18 08.8**	**-0.5**	
HYB	**Hyderabad**	**151.67**	**57**	*i* PKP	**PKPdf**	**21 18 04.0**	**+0.1**	
HYB				*e*		21 18 11.0		
HYB				*e*PKPAB	**PKPab**	**21 18 19.5**	**+0.2**	
HYB				*e*		21 18 43.0		
HYB				*e*		21 18 51.0		
CD2	**Chengdu**	**151.97**	**359**	PKPbc	**PKPdf**	**21 18 02.0**	**-2.0**	
CD2				pPKP	pPKPdf	21 18 35.5	-0.2	
CD2				sPKP		21 18 48.5		
CD2				PP	**PP**	**21 21 50.5**	**-0.1**	
CD2				SKS	**SKSdf**	**21 24 57.8**	**-3.3**	
CD2				SKKS	**SKKSac**	**21 28 28.0**	**-3.8**	
CD2				SS	**SS**	**21 41 07.5**	**-0.1**	
CD2				AMB	AMB			
	comp=Z,120nm,5.6s							
ENH	**Enshi**	**151.98**	**349**	*e*PKPdf	**PKPdf**	**21 18 04.6**	**+0.6**	
ENH				*e*PKPbc	**PKiKP**	**21 18 11.1**	**+0.1**	
ENH				*ep*PKPbc	**pPKPbc**	**21 18 43.3**	**+1.2**	
SSLB	**Suanglung**	**152.98**	**322**	*e*PKPdf	**PKPdf**	**21 18 05.7**	**0.0**	
SSLB				*e*PKPbc	**PKPbc**	**21 18 11.8**	**-1.3**	
GYA	**Guiyang**	**156.18**	**352**	PKP	**PKPdf**	**21 18 07.0**	**-3.2**	
GYA				PKPab	**PKPab**	**21 18 39.0**	**+0.8**	
GYA				pPKP	pPKPdf	21 18 42.3	+0.5	
GYA				PKS	**PKSdf**	**21 21 41.5**	**-2.9**	
GYA				PP	**PP**	**21 22 18.5**	**+4.1**	
GYA				AMB	AMB			
	comp=Z,120nm,8.2s							
CMAI	**Chiengmai2**	**162.41**	**13**	PKP	**PKPdf**	**21 18 18.4**	**+0.8**	
CHTO	**Chiang Mai**	**163.46**	**15**	PKP	**PKPdf**	**21 18 19.9**	**+1.5**	
CHTO	**Chiang Mai**	**163.46**	**15**	*e*PKPdf	**PKPdf**	**21 18 18.2**	**-0.2**	
CHTO				*e*PKPab	**PKPab**	**21 19 09.0**	**-0.8**	
CHTO				*ep*PKPab	**pPKPab**	**21 19 40.7**	**+0.5**	
CMMT	**Chiang Mai**	**163.46**	**15**	PKP	**PKPdf**	**21 18 19.8**	**+1.4**	
CM31	**Chiang Mai Arr**	**163.80**	**15**	*e*PKPdf	**PKPdf**	**21 18 19.4**	**+0.7**	
CM31				*e*PKPab	**PKPab**	**21 19 10.3**	**-1.0**	
CM31				*ep*PKPab	**pPKPab**	**21 19 42.5**	**+0.8**	
CMAR	**Chiang Mai Arr**	**163.80**	**15**	PKP	**PKPdf**	**21 18 19.1**	**+0.4**	
	comp=Z,5.2nm,1.0s,baz=304,slow=2.0,SNR=21							
CMAR				pPKP	**pPKPdf**	**21 18 47.5**	**-3.0**	
	comp=Z,2.1nm,0.9s,baz=302,slow=1.7,SNR=2.1							
CMAR				PKPab	**PKPab**	**21 19 10.8**	**-0.5**	
	comp=Z,7.5nm,0.7s,baz=331,slow=5.4,SNR=22							
CMAR				PP	**PP**	**21 22 55.2**	**-0.3**	
	comp=Z,0.6nm,0.3s,baz=344,slow=5.2,SNR=4.5							
CM01	**Chiang Mai Arr**	**163.84**	**15**	*e*PKPdf	**PKPdf**	**21 18 19.0**	**+0.2**	
CM01				*ep*PKPdf	**pPKPdf**	**21 18 51.2**	**+0.7**	
CM01				*e*PKPab	**PKPab**	**21 19 10.8**	**-0.6**	
CM01				*ep*PKPab	**pPKPab**	**21 19 42.5**	**+0.6**	
LAMP	**Lampang**	**163.90**	**13**	PKP	**PKPdf**	**21 18 19.8**	**+1.0**	
NONG	**Nongkai**	**164.76**	**1**	PKP	**PKPdf**	**21 18 20.5**	**+0.9**	
SKNT	**Sakolnakorn**	**165.82**	**357**	PKP	**PKPdf**	**21 18 22.1**	**+1.6**	
PBKT	**Sadao Pong**	**166.06**	**9**	PKP	**PKPdf**	**21 18 21.6**	**+0.9**	
KSM	**Kuching**	**172.87**	**260**	*e*PKPdf	**PKPdf**	**21 18 24.7**	**-0.2**	
KSM				*ep*PKPdf	**pPKPdf**	**21 18 57.6**	**+0.9**	

*ISCJB **26** 21:01:27.9±0.5, 51°.51N±0°.03×16°.11E±0°.03, h0km, Error ellipse: s-maj=4.1km s-min=2.6km az=12.8*
*CSEM **26** 21:01:29.2±0.3, 51°.54N×16°.09E, h2km, ML3.1/11, Error ellipse: s-maj=5.1km s-min=3.8km az=179.0*
*VIE **26** 21:01:32.2±0.9, 51°.37N×16°.17E, h0km, mb2.3/5, ML2.4/6, Error ellipse: s-maj=9.0km s-min=6.5km az=107.0, Suspected Mining induced.*

ISC 26 21:01:28.5±0.8, 51°.60N±0°.03×16°.11E±0°.02, h0km, n38, σ0≥98/76, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
KSP	**Ksiaz**	**0.76**	**171**	*e*Pg	**Pg**	**21 01 43.7**	**+0.6**	
KSP				*e*Sg	**Sg**	**21 01 53.0**	**0.0**	
KSP	**Ksiaz**	**0.76**	**171**	*e*Pg	**Pg**	**21 01 43.7**	**+0.6**	
KSP				*e*Sg	**Sg**	**21 01 53.0**	**0.0**	
UPC	**Upice**	**1.09**	**183**	*e*PG	**Pg**	**21 01 49.7**	**+0.3**	
UPC				*e*SG	**Sg**	**21 02 03.4**	**-0.1**	
	comp=Z,37nm,0.3s							
UPC	**Upice**	**1.09**	**183**	Pg	**Pg**	**21 01 49.7**	**+0.3**	
UPC				Sg	**Sg**	**21 02 03.4**	**-0.1**	
	37nm,0.3s							
DPC	**Dobruska-Polom**	**1.26**	**174**	*e*PG	**Pg**	**21 01 52.5**	**0.0**	
DPC				*e*SG	**Sg**	**21 02 08.0**	**-0.8**	
	comp=Z,16nm,0.3s							
DPC	**Dobruska-Polom**	**1.26**	**174**	Pg	**Pg**	**21 01 52.5**	**0.0**	
DPC				Sg	**Sg**	**21 02 08.0**	**-0.8**	
	16nm,0.3s							
PVCC	**Panska Ves**	**1.45**	**223**	*e*PG	**Pn**	**21 01 56.1**	**+0.2**	
PVCC				*e*SG	**Sg**	**21 02 15.2**	**+0.3**	
	comp=Z,86nm,0.2s							
PVCC	**Panska Ves**	**1.45**	**223**	Pg	**Pn**	**21 01 56.1**	**+0.2**	
PVCC				Sg	**Sg**	**21 02 15.2**	**+0.3**	
	86nm,0.2s							
BRG	**Berggiesshubel**	**1.54**	**243**	PN	**Pn**	**21 01 57.2**	**0.0**	
BRG				PG	**Pb**	**21 01 58.4**	**+0.5**	
BRG				SG	**Sn**	**21 02 18.2**	**+0.3**	
	28nm,0.4s							
KRLC	**Kraliky**	**1.58**	**164**	*e*PG	**Pn**	**21 01 57.9**	**+0.1**	
KRLC				*e*SG	**Sn**	**21 02 18.0**	**-1.0**	
KRLC	**Kraliky**	**1.58**	**164**	Pg	**Pn**	**21 01 57.9**	**+0.1**	
KRLC				Sg	**Sn**	**21 02 18.0**	**-1.0**	
GOPC	**GO Pecny, Ondr**	**1.88**	**207**	*e*PN	**Pn**	**21 02 02.6**	**+0.7**	
GOPC				*e*PG	**Pb**	**21 02 03.7**	**0.0**	
GOPC				*e*SG	**Sn**	**21 02 27.4**	**+1.0**	
	comp=Z,6.8nm,0.3s							
GOPC	**GO Pecny, Ondr**	**1.88**	**207**	Pn	**Pn**	**21 02 02.6**	**+0.7**	
PRU	**Pruhonice**	**1.89**	**212**	*e*PN	**Pn**	**21 02 01.8**	**-0.2**	
PRU				*e*PG	**Pb**	**21 02 03.7**	**-0.2**	
PRU				*e*SG	**Sb**	**21 02 28.0**	**-0.1**	
	comp=Z,12nm,0.3s							
PRU	**Pruhonice**	**1.89**	**212**	Pn	**Pn**	**21 02 01.8**	**-0.2**	
CLL	**Collm**	**1.96**	**263**	*i* Pn	**Pn**	**21 02 02.6**	**-0.4**	
	comp=Z,6.0nm,0.4s							
CLL				*i* Pg	**Pb**	**21 02 05.6**	**+0.5**	
CLL				*i*		21 02 09.8		
CLL				*e*		21 02 24.0		
CLL				*i* Sg	**Sg**	**21 02 32.1**	**+0.5**	
	comp=Z,8.0nm,0.4s							
MORC	**Moravsky Berou**	**2.04**	**153**	*e*Pn	**Pn**	**21 02 04.1**	**0.0**	
MORC				*e*Sg	**Sb**	**21 02 31.6**	**-0.7**	
OKC	**Ostrava-Krasne**	**2.19**	**143**	*e*SG	**Sg**	**21 02 38.7**	**0.0**	
	comp=Z,24nm,0.6s							
OKC	**Ostrava-Krasne**	**2.19**	**143**	Sg	**Sg**	**21 02 38.7**	**0.0**	
	comp=Z,24nm,0.6s							
VRAC	**Vranov**	**2.31**	**172**	*e*Pn	**Pn**	**21 02 08.1**	**+0.3**	
VRAC				*e*Sg	**Sb**	**21 02 39.4**	**-0.7**	
NKC	**Novy Kostel**	**2.69**	**241**	*e*PN	**Pn**	**21 02 13.4**	**+0.4**	
NKC				*e*PG	**Pg**	**21 02 19.9**	**-0.1**	
NKC				*e*SG	**Sg**	**21 02 54.9**	**+0.1**	
	comp=Z,18nm,0.3s							
NKC	**Novy Kostel**	**2.69**	**241**	Pn	**Pn**	**21 02 13.4**	**+0.4**	
OJC	**Ojcow**	**2.71**	**119**	*e*Pg	**Pg**	**21 02 21.2**	**+0.8**	
OJC				*e*Sg	**Sg**	**21 02 56.4**	**+0.8**	
OJC	**Ojcow**	**2.71**	**119**	*e*Pg	**Pg**	**21 02 21.2**	**+0.8**	
OJC				*e*Sg	**Sg**	**21 02 56.4**	**+0.8**	
KHC	**Kasperske Hory**	**2.95**	**214**	*e*PN	**Pn**	**21 02 16.4**	**-0.3**	
KHC				*e*PG	**Pb**	**21 02 23.0**	**+1.0**	
KHC				*e*SN	**Sn**	**21 02 50.4**	**-2.4**	
KHC				*e*SG	**Sb**	**21 03 00.8**	**+2.2**	
	comp=Z,4.8nm,0.3s							
KHC	**Kasperske Hory**	**2.95**	**214**	Pn	**Pn**	**21 02 16.4**	**-0.3**	
LANS	**Liptovska Anna**	**3.26**	**137**	*e*Pn	**Pn**	**21 02 19.1**	**-1.8**	
LANS	**Liptovska Anna**	**3.26**	**137**	*e*PN	**Pn**	**21 02 19.1**	**-1.8**	
LANS				*e*PG	**Sg**	**21 02 30.3**	**-0.6**	
LANS				*e*SG	**Sg**	**21 03 12.5**	**-0.6**	
VYHS	**Vyhne**	**3.57**	**149**	*e*Pn	**Pn**	**21 02 24.0**	**-1.1**	
VYHS	**Vyhne**	**3.57**	**149**	*e*PN	**Pn**	**21 02 24.0**	**-1.1**	
VYHS				*e*PG	**Pg**	**21 02 36.0**	**-0.8**	
VYHS				*e*SG	**Sg**	**21 03 21.6**	**-1.5**	
VYHS				*e*LG	Lg	21 03 43.7		
BSD	**Bornholm Skovb**	**3.59**	**349**	*i* P	**Pn**	**21 02 25.8**	**+0.4**	
BSD				*i* S	**Sn**	**21 03 05.9**	**-2.6**	
BSD	**Bornholm Skovb**	**3.59**	**349**	*i* P	**Pn**	**21 02 25.9**	**+0.5**	
	SNR=56							
BSD				*i* S	**Sn**	**21 03 05.9**	**-2.6**	
CONA	**Conrad Observa**	**3.68**	**183**	Pn	**Pn**	**21 02 27.6**	**+1.0**	
	comp=Z,0.5nm,0.2s							
CONA				Sg	**Sg**	**21 03 26.2**	**-0.3**	
	comp=Z,3.9nm,0.3s							
MOA	**Molln**	**3.94**	**198**	Pn	**Pn**	**21 02 30.9**	**+0.7**	
	comp=Z,1.3nm,0.2s							
MOA				Sg	**Sg**	**21 03 35.6**	**+0.7**	
	comp=Z,1.4nm,0.2s							
STHS	**Stebnicka Huta**	**3.94**	**122**	*e*Pn	**Pn**	**21 02 31.7**	**+1.5**	
STHS	**Stebnicka Huta**	**3.94**	**122**	*e*PN	**Pn**	**21 02 31.7**	**+1.5**	
STHS				*e*PG	**Pg**	**21 02 44.8**	**+0.9**	
STHS				*e*SG	**Sg**	**21 03 37.7**	**+2.8**	
STHS				*e*LG	Lg	21 03 42.0		
ARSA	**Arzberg**	**4.37**	**185**	Pn	**Pn**	**21 02 37.4**	**+1.3**	
	comp=Z,0.2nm,0.1s							
KBA	**Koelnbreinsper**	**4.87**	**203**	Pn	**Pn**	**21 02 44.0**	**+0.9**	
	comp=Z,1.3nm,0.3s							
KBA				Sg	**Sg**	**21 04 03.1**	**-1.8**	
	comp=Z,1.6nm,0.3s							

GUC 26 21:05:15.7±0.7, 34°.34S×72°.53W, h26km±17km, ML3.5, 1C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
CHPI	**Pichilemu**	**0.44**	**97**	⇓*i* P	Pb	21 05 24.9	0.0	
CHPI				*i* S	Sb	21 05 31.1	-0.2	
NICH	**Los Niches**	**1.26**	**122**	⇓*i* P	Pn	21 05 37.9	+0.3	
NICH				*i* S	Sb	21 05 54.7	0.0	
TALC	**Talca**	**1.29**	**145**	⇓*i* P	Pn	21 05 38.4	+0.4	
TALC				*i* S	Sn	21 05 54.9	+0.5	
ANTU	**Antumapu**	**1.75**	**65**	*e*P	Pn	21 05 45.6	+1.2	
ANTU				*i* S	Sb	21 06 08.1	-0.8	
ANTU				IAML		21 06 16.7		
	comp=E,821nm,0.1s							
ROCH	**El Roble**	**1.86**	**43**	⇑*i* P	Pb	21 05 47.7	-1.5	
ROCH				*i* S	Sb	21 06 12.4	+0.3	
ROCH				IAML		21 06 21.5		
	comp=N,523nm,0.6s							
CLCH	**Cerro Calan**	**1.91**	**61**	*e*P	Pn	21 05 46.0	-0.6	
CLCH				*i* S	Sn	21 06 11.1	+1.3	
CLCH				IAML		21 06 21.7		
	comp=E,673nm,0.0s							
PEL	**Peldehue**	**1.95**	**53**	IAML		21 06 24.7		
	comp=N,758nm,0.5s							
FCH	**Farellones**	**2.12**	**62**	IAML		21 06 29.2		
	comp=N,400nm,0.4s							

*ISCJB **26** 21:07:46.9±0.4, 49°.84N±0°.03×18°.48E±0°.03, h0km, Error ellipse: s-maj=5.0km s-min=2.4km az=10.8*
*CSEM **26** 21:07:47.8±0.2, 49°.83N×18°.50E, h1km, ML2.5/7, Error ellipse: s-maj=6.2km s-min=2.8km az=9.0*
*IPEC **26** 21:07:48.1±0.2, 49°.81N×18°.57E, h0km±3km, ML1.6/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*
*PRU **26** 21:07:48.6, 49°.86N×18°.47E, h0km*

ISC 26 21:07:48.0±0.8, 49°.84N±0°.03×18°.54E±0°.02, h0km, n28, σ0≥92/47, 3C, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
OKC	**Ostrava-Krasne**	**0.25**	**270**	⇑*i* PG	**Pg**	**21 07 53.7**	**+0.9**	
OKC				*e*SG	**Sg**	**21 07 56.6**	**+0.5**	
	comp=Z,24nm,0.4s							
OKC	**Ostrava-Krasne**	**0.25**	**270**	Pg	**Pg**	**21 07 53.7**	**+0.9**	
OKC				Sg	**Sg**	**21 07 56.6**	**+0.5**	
	24nm,0.4s							
MORC	**Moravsky Berou**	**0.65**	**265**	*e*Pg	**Pg**	**21 08 01.0**	**+0.6**	
MORC				*e*Sg	**Sg**	**21 08 08.9**	**+0.1**	
	12nm,0.3s							
OJC	**Ojcow**	**0.90**	**64**	*e*Pg	**Pg**	**21 08 05.2**	**-0.1**	
OJC				*e*Sg	**Sb**	**21 08 18.1**	**-1.0**	
OJC	**Ojcow**	**0.90**	**64**	*e*Pg	**Pg**	**21 08 05.2**	**-0.1**	
OJC				*e*Sg	**Sb**	**21 08 18.1**	**-1.0**	
LANS	**Liptovska Anna**	**0.92**	**138**	*e*Pg	**Pg**	**21 08 05.5**	**-0.1**	
LANS				*e*Sg	**Sb**	**21 08 19.6**	**0.0**	
LANS	**Liptovska Anna**	**0.92**	**138**	*e*PG	**Pg**	**21 08 05.5**	**-0.1**	
LANS				*e*SG	**Sb**	**21 08 19.6**	**0.0**	
KRLC	**Kraliky**	**1.16**	**283**	*e*PG	**Pg**	**21 08 09.8**	**-0.4**	
KRLC				*e*SG	**Sg**	**21 08 24.7**	**-0.5**	
KRLC	**Kraliky**	**1.16**	**283**	Pg	**Pg**	**21 08 09.8**	**-0.4**	
KRLC				Sg	**Sg**	**21 08 24.7**	**-0.5**	
NIE	**Niedzica**	**1.22**	**109**	*e*Pg	**Pg**	**21 08 11.5**	**0.0**	
NIE				*e*Sg	**Sn**	**21 08 30.4**	**+

JOT	**Ohata**	**3.93**	**317**	P	Pn	21 14 15.3	+2.9
JOT				S	Sn	21 14 58.2	+0.9
JCH	**Churui**	**4.15**	**347**	P	Pn	21 14 16.5	+1.1
JCH				S	Sn	21 15 01.5	-1.2
JKB	**Kayabe**	**4.31**	**321**	P	Pn	21 14 20.5	+2.9
JKB				S	Sn	21 15 07.6	+1.1
NEM2	**Nemuro 2**	**4.86**	**10**	P	Pn	21 14 23.4	-1.8
NEM2				S	Sn	21 15 16.2	-4.0
JRY	**Ryogami san**	**5.23**	**243**	P	Pn	21 14 30.6	+0.3
JRY				S	Sn	21 15 26.6	-2.7
JOSM	**Okushiri--Mats**	**5.28**	**313**	P	Pn	21 14 33.6	+2.8
JTKR	**Abashiri--Toko**	**5.42**	**354**	P	Pn	21 14 33.4	+0.5

IDC 26 21:15:01.4±1.9, 5°31S×151°19E, h0km, mb3.7/5, mb1 4.0/5, mb1mx3.6/38, mbtmp3.7/5, Error ellipse: s-maj=69.6km s-min=23.8km az=120.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**21.92**	**227**	P	P	21 19 57.3	+0.7
	0.9nm,0.5s,baz=50,slow=10.0,SNR=9.2						
ASAR	**Alice Springs**	**24.71**	**221**	P	P	21 20 25.1	+0.6
	0.4nm,0.3s,baz=49,slow=8.5,SNR=6.7						
FITZ	**Fitzroy Crossi**	**28.01**	**241**	P		21 20 53.0	-1.4
	3.0nm,0.7s,baz=49,slow=10,SNR=8.8						
SONM	**Songino Array**	**65.92**	**329**	P	P	21 25 50.5	+1.1
	0.3nm,0.5s,baz=132,slow=6.6,SNR=2.4						
ILAR	**Eielson Array**	**83.24**	**22**	P	P	21 27 28.7	-0.9
	0.4nm,0.8s,baz=231,slow=4.3,SNR=3.8						

*NIED **26** 21:22:00, 38°10N×143°40E, h17km, Mw3.7 Best double couple: M₀3.44000×10¹⁴ NP1:φ₀s119.00000°, δ10.00000°, λ62.00000°. NP2:φ₀s328.00000°, δ81.00000°, λ95.00000°.*
*IDC **26** 21:22:41.0±2.0, 37°86N×143°66E, h0km, mb3.7/5, mb1 3.7/9, mb1mx3.5/49, mbtmp3.7/9, ML3.6/3, MS3.5/2, Ms1 3.5/2, ms1mx2.6/44, Error ellipse: s-maj=39.8km s-min=25.2km az=137.0*
*ISCJB **26** 21:22:43.5±0.9, 38°01N±0°06×143°40E±0°09, h19km, mb3.6/5, MS3.4/2, Error ellipse: s-maj=10.6km s-min=7.5km az=29.0*
*JMA **26** 21:22:44.8±0.3, 38°07N×143°37E, h36km, M3.7*
ISC 26 21:22:43.8±1.2, 37°97N±0°06×143°47E±0°09, h19km, n26, σ2s37/28, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.74**	**287**	P	**Pn**	**21 23 12.3**	**-0.7**
OFUJ	**Ofunato**	**1.79**	**309**	P	**Pn**	**21 23 12.6**	**-1.2**
JMK	**Ichinoseki**	**2.02**	**300**	P	**Pn**	**21 23 16.2**	**-0.7**
JOU	**Okura**	**2.25**	**281**	P	**Pn**	**21 23 20.1**	**0.0**
JOM	**Ohasama**	**2.27**	**312**	*e*S	**Sn**	**21 23 45.8**	**-2.0**
JFT	**Otama**	**2.53**	**261**	P	**Pn**	**21 23 24.5**	**+0.6**
JFT				S	**Sn**	**21 23 53.8**	**-0.4**
JYK	**Kaneyama**	**2.62**	**292**	P	**Pn**	**21 23 24.9**	**-0.2**
JRG	**Rokugo**	**2.64**	**303**	P	**Pn**	**21 23 25.0**	**-0.4**
JTM	**Tenmabayashi**	**3.37**	**327**	*e*S	**Sn**	**21 24 11.4**	**-3.5**
JAG	**Ashikaga**	**3.56**	**246**	P	**Pn**	**21 23 38.5**	**+0.4**
JRY	**Ryogami san**	**4.15**	**243**	P	**Pn**	**21 23 46.8**	**+0.6**
JRY				*e*S	**Sn**	**21 24 30.9**	**-3.3**
JNBK	**Urakawa-nobuka**	**4.34**	**353**	*e*S	**Sn**	**21 24 35.2**	**-3.5**
MJAR	**Matsushiro Arr**	**4.44**	**253**	Pn	**Pn**	**21 23 51.6**	**+1.5**
	2.2nm,0.3s,baz=76,slow=14,SNR=14						
MJAR				Sn	**Sn**	**21 24 38.8**	**-2.4**
	0.5nm,0.3s,baz=74,slow=27,SNR=5.0						
MAT	**Matsushiro**	**4.44**	**253**	P	**Pn**	**21 23 52.0**	**+1.9**
MAT				*e*S	**Sn**	**21 24 37.3**	**-4.0**
JHJ	**Hachijo jima 2**	**5.70**	**213**	Pn	**Pn**	**21 24 07.2**	**-0.3**
	12nm,0.3s,baz=135,slow=23,SNR=9.8						
JHJ				Sn	**Sn**	**21 25 07.4**	**-5.0**
	5.1nm,0.3s,baz=253,slow=19,SNR=4.1						
ASAJ	**Asahikawa**	**6.17**	**354**	Pn	**Pn**	**21 24 16.0**	**+2.1**
	0.9nm,0.3s,baz=192,slow=26,SNR=6.7						
ASAJ				Sn	**Sn**	**21 25 19.7**	**-4.2**
	0.6nm,0.3s,baz=323,slow=20,SNR=3.7						
USRK	**Ussuriysk Ar.**	**10.66**	**309**	Pn	**Pn**	**21 25 19.3**	**+3.8**
	0.2nm,0.3s,baz=120,slow=14,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**27.28**	**125**	T	T	21 57 17.5	
	baz=317,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy**	**27.29**	**125**	T	T	21 57 31.6	
	baz=317,slow=75,SNR=8.8						
H11N3	**WAKE ISLAND Hy**	**27.30**	**125**	T	T	21 57 14.3	
	baz=317,slow=75,SNR=13						
SONM	**Songino Array**	**28.65**	**302**	P	**P**	**21 28 39.9**	**+0.6**
	0.5nm,0.7s,baz=97,slow=8.3,SNR=3.4						
SONM				LR	LR	21 40 40.6	
	comp=Z,48nm,20.9s,baz=41,slow=37						
ZALV	**Zalesovo Beam**	**42.50**	**312**	P	**P**	**21 30 40.1**	**+2.4**
	0.5nm,0.5s,baz=72,slow=9.3,SNR=3.0						
KURBB	**Kurchatov Arra**	**46.72**	**306**	P	**P**	**21 31 11.9**	**+0.6**
	0.9nm,0.6s,baz=82,slow=8.0,SNR=11						
ILAR	**Eielson Array**	**47.82**	**33**	P	**P**	**21 31 20.1**	**+0.3**
	0.4nm,0.7s,baz=280,slow=5.4,SNR=3.9						
CTA	**Charters Tower**	**57.81**	**177**	LR	LR	21 58 36.0	
	comp=Z,72nm,19.4s,baz=61,slow=37						
FINES	**FINESS Array B**	**68.74**	**333**	P	**P**	**21 33 47.2**	**+1.3**
	1.3nm,0.9s,baz=44,slow=8.2,SNR=2.9						

IDC 26 21:33:31.8±11.0, 2°37N×94°11E, h0km, mb3.9/3, mb1 3.9/4, mb1mx3.5/44, mbtmp3.8/4, ML4.0/1, Error ellipse: s-maj=231.9km s-min=105.7km az=150.0, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**16.68**	**16**	Pn	Pn	21 37 27.2	+0.2
	0.2nm,0.3s,baz=209,slow=11,SNR=11						
MKAR	**Makanchi Array**	**45.44**	**349**	P	P	21 41 52.4	0.0
	1.1nm,0.6s,baz=165,slow=9.5,SNR=14						
SONM	**Songino Array**	**46.52**	**11**	P	P	21 42 00.8	-0.4
	0.1nm,0.3s,baz=186,slow=8.4,SNR=3.7						
ZALV	**Zalesovo Beam**	**51.98**	**353**	P	P	21 42 42.6	0.0
	1.3nm,0.5s,baz=175,slow=7.5,SNR=7.4						

MEX 26 21:40:40.9±0.9, 27°93N×112°05W, h13km, MD3.9, Baja California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SRIG	**Santa Rosalia**	**0.63**	**196**	*e*P	Pg	21 40 52.2	-1.1
SRIG				*e*S	Sg	21 40 59.3	-2.3
GUYB	**Guaymas**	**1.04**	**92**	*e*P	Pb	21 40 58.2	-2.6
GUYB				*e*S	Sb	21 41 09.6	-4.8

*ISCJB **26** 21:44:07.6±0.7, 6°78N±0°05×72°99W±0°07, h162km±7km, Error ellipse: s-maj=14.0km s-min=4.8km az=35.6*
*RSNC **26** 21:44:10.2±0.5, 6°75N×73°08W, h149km±4km, ML2.8*
*FUNV **26** 21:44:11.5, 7°12N×73°04W, h173km, MW2.8*
ISC 26 21:44:06.3±1.5, 6°86N±0°05×73°06W±0°07, h175km±10km, n18, σ1s96/31, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.29**	**204**	*i* P	**Pn**	**21 44 30.1**	**0.0**
BARC				*e*S	**Sn**	**21 44 45.7**	**-2.7**
BARC				*i*		21 44 48.1	
	comp=Z,119nm,0.3s						
PAMC	**Pamplona, Colo**	**0.60**	**37**	*e*P	**Pn**	**21 44 32.9**	**+1.3**
PAMC				*e*S	**Sn**	**21 44 50.1**	**-0.9**
BRRC	**Barranca, Sant**	**0.69**	**291**	*e*P	**Pn**	**21 44 32.0**	**+0.6**
BRRC				*e*S	**Sn**	**21 44 49.5**	**-1.3**
BRRC				*i*		21 44 51.8	
	comp=Z,137nm,0.2s						
CBRI	**Barrientos, No**	**0.90**	**17**	*e*P	**Pn**	**21 44 34.7**	**+1.7**
CBRI				*e*S	**Sn**	**21 44 53.9**	**+0.3**
CBRI				*i*		21 44 55.4	
	comp=Z,63nm,0.3s						
CAPV	**Capacho**	**1.25**	**36**	*e*P	**Pn**	**21 44 37.8**	**+2.0**
CAPV				*e*S	**Sn**	**21 44 58.6**	**0.0**
OCAC	**Ocana**	**1.40**	**350**	*e*P	**Pn**	**21 44 39.1**	**+2.1**
OCAC				*e*S	**Sn**	**21 45 01.9**	**+1.0**
OCAC				*i*		21 45 06.6	
	comp=Z,88nm,0.2s						
CHIC	**Chingaza**	**2.31**	**197**	*e*P	**Pn**	**21 44 48.0**	**+1.0**
CHIC				*e*S	**Sn**	**21 45 17.1**	**-1.4**
CHIC				*i*		21 45 25.3	
	comp=Z,27nm,0.3s						
VIGV	**El Vigia**	**2.59**	**40**	*e*P	**Pn**	**21 44 51.9**	**+2.0**
VIGV				*e*S	**Sn**	**21 45 21.1**	**-2.7**
SOCV	**Socops**	**2.61**	**57**	*e*P	**Pn**	**21 44 52.1**	**+2.1**
SOCV				*e*S	**Sn**	**21 45 22.3**	**-1.7**
SDV	**Santo Domingo**	**3.14**	**50**	*e*P	**Pn**	**21 44 59.0**	**+2.3**
SDV				*e*S	**Sn**	**21 45 33.6**	**-2.3**
TOLC	**Tolima**	**3.18**	**225**	*e*P	**Pn**	**21 44 59.5**	**+2.2**
TOLC				*e*S	**Sn**	**21 45 36.6**	**-0.5**
PRAC	**Prado**	**3.61**	**210**	*e*P	**Pn**	**21 45 03.7**	**+1.3**
PRAC				*e*S	**Sn**	**21 45 45.1**	**-1.2**
SJAC	**San Juan de Ar**	**3.67**	**194**	*e*P	**Pn**	**21 45 03.8**	**+0.6**
VIRV	**Villa del Rosa**	**3.68**	**10**	*e*P	**Pn**	**21 45 03.8**	**+0.6**
VIRV				*e*S	**Sn**	**21 45 42.2**	**-5.6**
CURV	**Curarigua**	**4.39**	**44**	*e*P	**Pn**	**21 45 13.9**	**+1.5**
BAUV	**El Baul**	**5.39**	**67**	*e*P	**Pn**	**21 45 26.6**	**+1.2**
MAPV	**Macapo**	**5.43**	**57**	*e*P	**Pn**	**21 45 27.3**	**+1.4**
MONV	**Montecano**	**5.91**	**31**	*e*P	**Pn**	**21 45 33.3**	**+1.1**

*GUC **26** 21:48:25.6±0.7, 34°69S×71°81W, h28km±4km, ML3.5*
ISC 26 21:48:25.6±1.6, 34°69S±0°04×71°83W±0°09, h11km±14km, n15, σ1s57/27, 6C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NICH	**Los Niches**	**0.58**	**122**	*i*P	**Pb**	**21 48 37.9**	**+0.2**
NICH				*i* S	**Sb**	**21 48 46.3**	**+0.2**
TALC	**Talca**	**0.72**	**167**	*e*P	**Pg**	**21 48 39.4**	**-0.1**
TALC				*i* S	**Sg**	**21 48 48.7**	**-0.2**
RCDM	**Rinconada Maip**	**1.47**	**36**	*i*P	**Pn**	**21 48 51.9**	**-0.1**
RCDM				*i* S	**Sb**	**21 49 11.6**	**-0.1**
ANTU	**Antumapu**	**1.50**	**42**	*e*P	**Pn**	**21 48 52.4**	**0.0**
ANTU				*e*S	**Sb**	**21 49 12.4**	**-0.1**
CLCH	**Cerro Calan**	**1.68**	**40**	*i*P	**Pn**	**21 48 54.9**	**-0.1**
CLCH				*i* S	**Sb**	**21 49 17.7**	**-0.1**
PEL	**Peldehue**	**1.82**	**32**	*i*P	**Pn**	**21 48 57.5**	**+0.8**
PEL				*i* S	**Sb**	**21 49 21.3**	**-0.3**
ROC1	**El Roble**	**1.84**	**22**	*i* P	**Pn**	**21 48 57.5**	**+0.1**
ROC1				*i* S	**Sg**	**21 49 29.3**	**+4.4**
ROCH	**El Roble**	**1.85**	**22**	*i*P	**Pn**	**21 48 57.6**	**+0.3**
ROCH				*i* S	**Sb**	**21 49 22.7**	**0.0**
FCH	**Farellones**	**1.87**	**44**	*i*P	**Pn**	**21 48 58.1**	**+0.4**
FCH				*i* S	**Sb**	**21 49 23.2**	**-0.2**
FCH				IAML		21 49 27.8	
	comp=N,641nm,0.2s						
CCHI	**Chillan**	**1.92**	**186**	*e*P	**Pn**	**21 48 58.7**	**+0.7**
CCHI				*i* S	**Sb**	**21 49 23.9**	**-0.4**
AAGR	**Agrelo**	**2.97**	**58**	*i* P	**Pb**	**21 49 16.1**	**-2.4**
ARCO	**CERRO ARCO**	**3.04**	**53**	*i* P	**Pb**	**21 49 17.2**	**-2.6**
ARCO				*i* S	**Sg**	**21 50 04.2**	**+0.9**
ARCO				IAML		21 50 04.7	
	comp=Z,61nm,0.4s						
AUSP	**Uspallata**	**3.20**	**40**	*i* P	**Pn**	**21 49 18.2**	**+2.1**
AUSP				*i* S	**Sg**	**21 50 06.0**	**-2.5**
ASAL	**Salagasta**	**3.26**	**51**	*i* P	**Pn**	**21 49 19.6**	**+2.9**
RTLS	**Leoncito**	**3.58**	**37**	*i* P	**Pn**	**21 49 23.1**	**+1.8**

IDC 26 21:57:04.0±31.0, 20°48S×177°80W, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.6/32, mbtmp3.9/4, Error ellipse: s-maj=598.4km s-min=148.1km az=89.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**37.97**	**244**	P	P	22 04 23.0	-0.7
	0.9nm,0.4s,baz=79,slow=10,SNR=4.7						
ASAR	**Alice Springs**	**44.71**	**257**	P	P	22 05 19.2	0.0
	1.4nm,0.7s,baz=92,slow=7.9,SNR=8.7						
WRA	**Warramunga Arr**	**44.79**	**262**	P	P	22 05 20.3	+0.3
	0.5nm,0.3s,baz=96,slow=8.2,SNR=48						
FITZ	**Fitzroy Crossi**	**53.22**	**262**	P	P	22 06 24.4	-0.3
	0.7nm,0.3s,baz=101,slow=7.1,SNR=8.6						

*ISCJB **26** 21:59:42.8±1.0, 32°33N±0°06×115°29W±0°07, h20km±8km, Error ellipse: s-maj=12.9km s-min=6.6km az=42.2*
*MEX **26** 21:59:43.1±0.5, 32°55N×115°18W, h20km±254km, MD3.5*
*ECX **26** 21:59:44.5±0.7, 32°29N×115°31W, h6km, MD2.1, ML2.3*
ISC 26 21:59:42.0±1.3, 32°36N±0°09×115°25W±0°08, h24km±9km, n10, σ0s72/17, 1D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.06**	**43**	*e*P	**Pb**	**21 59 46.0**	**-0.3**
MBIG				*e*S	**Sb**	**21 59 49.4**	**+0.3**
CPBX	**Cerro Prieto**	**0.07**	**319**	*e*P	**Pb**	**21 59 46.7**	**+0.3**
CPBX				*e*S	**Sb**	**21 59 49.5**	**+0.2**
CPBX				⇓*e*		21 59 50.6	
CPBX				IAML		21 59 50.6	
	comp=N,4μm,0.2s						
WESC	**Westside Schoo**	**0.57**	**314**	*e*P	**Pn**	**21 59 55.0**	**+0.4**
RMX	**La Rumorosa**	**0.74**	**289**	*e*P	**Pb**	**21 59 56.5**	**+0.2**
RMX				*e*S	**Sb**	**22 00 05.9**	**-0.2**
IKP	**In-Ko-Pah, Jac**	**0.78**	**292**	*e*P	**Pn**	**21 59 57.9**	**+0.3**
ECBX	**El Chinero**	**0.90**	**169**	*e*P	**Pn**	**21 59 59.3**	**+0.2**
ECBX				*e*S	**Sn**	**22 00 11.1**	**-0.2**
CBX	**Cerro Bola**	**1.20**	**268**	*e*P	**Pn**	**22 00 03.5**	**+0.2**
CBX				*i* S	**Sn**	**22 00 17.4**	**-1.5**
CBX	**Cerro Bola**	**1.20**	**268**	*e*P	**Pb**	**22 00 04.6**	**+0.5**
CBX				*e*S	**Sb**	**22 00 20.0**	**+0.7**
CBX				IAML		22 00 25.2	
	comp=E,68nm,0.5s						
TJIG	**Tijuana**	**1.21**	**274**	*i* P	**Pn**	**22 00 02.0**	**-1.3**
TJIG				*e*S	**Sn**	**22 00 18.4**	**-0.6**
BAR	**Barrett**	**1.25**	**285**	*e*P	**Pb**	**22 00 05.7**	**+0.9**

*ISCJB **26** 22:02:01.4±0.4, 4°97S±0°05×151°84E±0°07, h150km, mb4.6/30, Error ellipse: s-maj=9.5km s-min=6.9km az=15.0*
*IDC **26** 22:02:01.7±4.4, 4°95S×151°81E, h132km±36km, mb3.9/10, mb1 4.0/12, mb1mx3.7/31, mbtmp4.3/12, Error ellipse: s-maj=32.9km s-min=18.2km az=86.0*
*NEIC **26** 22:02:01.7±0.7, 4°98S×151°84E, h137km±7km, mb4.9/21, Error ellipse: s-maj=8.1km s-min=6.0km az=91.0*
ISC 26 22:02:02.7±0.5, 4°92S±0°06×151°81E±0°08, h150km, n47, σ1s62/54, mb4.8/30, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RABL	**Rabaul**	**0.81**	**26**	*e*Pn	**Pn**	**22 02 23.5**	**-2.5**
RABL				*e*Sn	**Sn**	**22 02 38.6**	**-5.2**
PMG	**Port Moresby**	**6.41**	**226**	P	**Pn**	**22 03 35.2**	**+0.2**
	3.3nm,0.3s,baz=97,slow=7.8,SNR=5.2						
PMG				S	**Sn**	**22 04 44.8**	**-2.4**
	20nm,0.3s,baz=207,slow=21,SNR=13						
PMG	**Port Moresby**	**6.41**	**226**	*e*Pn	**Pn**	**22 03 31.1**	**-3.9**
PMG				*e*Sn	**Sn**	**22 04 27.7**	**-20**
PMG				S	**Sn**	**22 04 44.8**	**-2.4**
COEN	**Coen**	**12.37**	**223**	*e*Pn	**Pn**	**22 04 55.1**	**+1.2**
CTA	**Charters Tower**	**16.02**	**199**	P	**P**	**22 05 40.2**	**-0.1**
	0.6nm,0.3s,baz=16,slow=15,SNR=4.1						
GUMO	**Guam**	**19.64**	**340**	*e*P	**P**	**22 06 15.9**	**-3.9**
	444nm,1.4s						
MTN	**Manton Dam**	**21.88**	**248**	*e*P	**P**	**22 06 44.2**	**+0.4**
	18nm,0.7s						
DZM	**Mont Dzumac**	**22.17**	**142**	*e*P	**P**	**22 06 47.7**	**+0.9**
	64nm,1.9s						
WRAB	**Tennant Creek**	**22.62**	**227**	*e*P	**P**	**22 06 50.9**	**-0.2**
	29nm,0.6s						
WB2	**Warramunga Arr**	**22.62**	**227**	*e*P	**P**	**22 06 51.0**	**-0.1**
WR1	**Warramunga Arr**	**22.63**	**227**	*e*P	**P**	**22 06 51.0**	**-0.2**
	30nm,0.6s						
WR1				*e*PcP	**PcP**	**22 10 40.3**	**+1.2**
WRA	**Warramunga Arr**	**22.63**	**227**	P	**P**	**22 06 51.0**	**-0.2**
	26nm,0.7s,baz=51,slow=10,SNR=14						
WRA				PcP	**PcP**	**22 10 40.3**	**+1.2**
	1.7nm,0.9s,baz=45,slow=2.4,SNR=5.4						
ARMA	**Armidale**	**25.36**	**180**	*e*P	**P**	**22 07 16.1**	**0.0**
	26nm,1.5s						
AS01	**Alice Springs**	**25.37**	**221**	*e*P	**P**	**22 07 16.5**	**+0.3**
AS31	**Alice Springs**	**25.40**	**221**	*e*P	**P**	**22 07 16.8**	**+0.3**
	4.2nm,0.6s						
AS31				*e*PcP	**PcP**	**22 10 46.5**	**+1.5**
ASAR	**Alice Springs**	**25.40**	**221**	P	**P**	**22 07 16.4**	**-0.1**
	11nm,0.6s,baz=54,slow=8.7,SNR=35						
ASAR				PcP	**PcP**	**22 10 46.5**	**+1.5**
	1.0nm,0.8s,baz=46,slow=4.0,SNR=4.6						
STKA	**Stephens Creek**	**28.48**	**198**	P	**P**	**22 07 44.0**	**+0.1**
	2.0nm,0.6s,baz=37,slow=9.0,SNR=6.0						
STKA	**Stephens Creek**	**28.48**	**198**	*e*P	**P**	**22 07 44.0**	**+0.1**
	3.9nm,1.8s						
FITZ	**Fitzroy Crossi**	**28.74**	**241**	P	**P**	**22 07 46.0**	**-0.3**
	11nm,0.5s,baz=51,slow=7.3,SNR=55						
BBOO	**Buckleboo**	**31.41**	**206**	*e*P	**P**	**22 08 09.6**	**-0.1**
	33nm,1.2s						
CBIJ	**Chichi jima**	**33.16**	**344**	*e*P	**P**	**22 08 25.9**	**+0.9**
	22nm,0.8s						
MBWA	**Marble Bar**	**35.06**	**240**	*e*P	**P**	**22 08 41.3**	**-0.2**
	17nm,0.5s						
AFI	**Afiamalu**	**36.97**	**107**	*e*P	**P**	**22 08 58.0**	**0.0**
	262nm,1.6s						
JAGI	**Jajag, Banyuwa**	**37.55**	**263**	*e*P	**P**	**22 09 03.1**	**+0.3**
	38nm,1.1s						
THZ	**Tophouse**	**41.24**	**156**	*e*P	**P**	**22 09 31.4**	**-1.6**
	50nm,1.4s						
OXZ	**Oxford**	**42.23**	**158**	*e*P	**P**	**22 09 39.6**	**-1.4**
	28nm,0.5s						
CRLZ	**Canterbury Las**	**42.66**	**158**	*e*P	**P**	**22 09 43.0**	**-1.4**
	227nm,1.8s						
MNAI	**Manna**	**48.69**	**269**	*e*P	**P**	**22 10 31.3**	**-1.0**
	269nm,1.1s						
MCQ	**Macquarie Isla**	**49.77**	**175**	*e*P	**P**	**22 10 38.9**	**-0.8**
	401nm,1.4s						
KULM	**Kulim**	**52.09**	**281**	*e*P	**P**	**22 10 56.7**	**-1.1**
	23nm,1.3s						
BJT	**Baijiatsuu**	**55.44**	**327**	*e*P	**P**	**22 11 21.4**	**-0.3**
	5.0nm,0.5s						
CM01	**Chiang Mai Arr**	**57.01**	**296**	*e*P	**P**	**22 11 34.8**	**+1.6**
CM31	**Chiang Mai Arr**	**57.03**	**296**	*e*P	**P**	**22 11 35.5**	**+2.0**
CMAR	**Chiang Mai Arr**	**57.03**	**296**	P	**P**	**22 11 35.5**	**+2.0**
	1.7nm,0.7s,baz=111,slow=5.4,SNR=12						
SONA0	**Songino Array**	**65.90**	**328**	*e*P	**P**	**22 12 34.2**	**+1.6**
	4.9nm,1.5s						
SONM	**Songino Array**	**65.90**	**328**	P	**P**	**22 12 34.2**	**+1.6**
	1.1nm,0.6s,baz=145,slow=3.9,SNR=8.1						
VNDA	**Vanda**	**72.75**	**178**	P	**P**	**22 13 15.7**	**+1.7**
	0.7nm,0.7s,baz=329,slow=4.8,SNR=5.6						
MK01	**Makanchi Array**	**79.75**	**319**	*e*P	**P**	**22 13 55.3**	**+1.1**
MK32	**Makanchi Array**	**79.77**	**319**	*e*P	**P**	**22 13 55.1**	**+0.8**
MKAR	**Makanchi Array**	**79.77**	**319**	P	**P**	**22 13 55.1**	**+0.8**
	1.2nm,0.9s,baz=112,slow=5.4,SNR=6.9						
ZALV	**Zalesovo Beam**	**80.70**	**327**	P	**P**	**22 13 59.4**	**+0.3**
	0.6nm,0.4s,baz=112,slow=4.0,SNR=3.5						
ZAA1	**Zalesovo Array**	**80.71**	**327**	*e*P	**P**	**22 13 59.4**	**+0.3**
IL1	**Eielson Array**	**82.64**	**22**	*e*P	**P**	**22 14 11.1**	**+2.1**
ILAR	**Eielson Array**	**82.64**	**22**	P	**P**	**22 14 09.0**	**0.0**
	0.9nm,1.0s,baz=232,slow=2.1,SNR=6.0						
ILB	**Eielson Array**	**82.64**	**22**	*e*P	**P**	**22 14 09.0**	**0.0**
FYU	**Fort Yukon**	**84.08**	**21**	*e*P	**P**	**22 14 19.7**	**+3.5**
	17nm,0.5s						
GERES	**GERESS Array B**	**123.64**	**328**	PKP	**PKPdf**	**22 20 43.1**	**+0.3**
	0.4nm,0.5s,baz=42,slow=1.6,SNR=6.2						

*DDA **26** 22:36:50.6, 39°27N×28°03E, h7km, Md2.8*
*ISCJB **26** 22:36:51.2±0.5, 39°27N±0°02×28°07E±0°03, h1km±4km, Error ellipse: s-maj=4.1km s-min=3.9km az=154.3*
*CSEM **26** 22:36:51.6±0.1, 39°27N×28°08E, h2km, ML2.6, Error ellipse: s-maj=2.9km s-min=2.7km az=64.0*
*ISK **26** 22:36:51.3, 39°28N×28°07E, h5km, ML2.6*
ISC 26 22:36:51.5±1.2, 39°28N±0°02×28°07E±0°02, h5km±11km, n100, σ0s67/112, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BALB	**Balikesir**	**0.39**	**338**	*e*PG	**Pg**	**22 36 59.6**	**+0.5**
BALB				*e*SG	**Sb**	**22 37 05.9**	**-1.3**
BALB	**Balikesir**	**0.39**	**338**	*e*Pg	**Pg**	**22 36 59.6**	**+0.5**
BALB				*e*Sg	**Sb**	**22 37 05.9**	**-1.3**
AKS	**Akhisar**	**0.44**	**207**	*e*PG	**Pg**	**22 36 60.0**	**0.0**
AKS	**Akhisar**	**0.44**	**207**	*e*Pg	**Pg**	**22 37 00.0**	**0.0**
DST	**Dursunbey**	**0.54**	**52**	*e*PG	**Pg**	**22 37 01.7**	**-0.2**
DST	**Dursunbey**	**0.54**	**52**	*e*Pg	**Pg**	**22 37 01.7**	**-0.2**
DEMI	**Demirci**	**0.56**	**115**	*i* P	**Pg**	**22 37 02.3**	**+0.1**
DEMI	**Demirci**	**0.56**	**115**	P	**Pg**	**22 37 02.3**	**+0.1**
SIMA	**Simav-Kutahya**	**0.74**	**105**	*e*PG	**Pb**	**22 37 06.3**	**-0.6**
SIMA	**Simav-Kutahya**	**0.74**	**105**	*e*Pg	**Pb**	**22 37 06.3**	**-0.6**
GONE	**Gonen-Balikesi**	**0.82**	**339**	*e*PG	**Pb**	**22 37 08.1**	**-0.2**
GONE	**Gonen-Balikesi**	**0.82**	**339**	*e*Pg	**Pb**	**22 37 08.1**	**-0.2**
MANT	**Manisa**	**0.87**	**154**	*i* P	**Pg**	**22 37 06.9**	**-1.3**
MANT	**Manisa**	**0.87**	**154**	P	**Pg**	**22 37 06.9**	**-1.3**
KULA	**Kula-Manisa**	**0.89**	**148**	*e*PG	**Pb**	**22 37 09.3**	**-0.2**
KULA	**Kula-Manisa**	**0.89**	**148**	*e*Pg	**Pb**	**22 37 09.3**	**-0.2**
DKL	**Dikili**	**0.93**	**258**	*e*PG	**Pb**	**22 37 09.6**	**-0.4**
DKL	**Dikili**	**0.93**	**258**	*e*Pg	**Pb**	**22 37 09.

ESKT	**Eskisehir**	**2.17**	**83**	*e*Pn	**Pn**	**22 37 29.1**	**+0.7**
SEYT	**Eskypehyr**	**2.17**	**83**	P	**Pg**	**22 37 32.8**	**-0.3**
GULT	**Gulveren**	**2.21**	**58**	*e*PN	**Pn**	**22 37 30.1**	**+1.2**
GULT	**Gulveren**	**2.21**	**58**	*e*Pn	**Pn**	**22 37 30.1**	**+1.2**
ALN	**Alexandroupoli**	**2.24**	**317**	*e*Pn	**Pn**	**22 37 30.5**	**+1.3**
ALN	**Alexandroupoli**	**2.24**	**317**	*e*Pn	**Pn**	**22 37 30.5**	**+1.3**
BDRM	**Kayabasi**	**2.26**	**193**	*i* P	**Pg**	**22 37 34.6**	**-0.2**
BDRM	**Kayabasi**	**2.26**	**193**	P	**Pg**	**22 37 34.6**	**-0.2**
BODT	**Bodrum**	**2.29**	**195**	*e*PN	**Pn**	**22 37 31.3**	**+1.4**
BODT	**Bodrum**	**2.29**	**195**	*e*Pn	**Pn**	**22 37 31.3**	**+1.4**
SAHE	**Sakarya_HENDEK**	**2.66**	**53**	*i* P	**Pg**	**22 37 40.9**	**-1.5**
MDUB	**Mudurnu**	**2.69**	**63**	*e*PN	**Pn**	**22 37 36.5**	**+1.0**
MDUB	**Mudurnu**	**2.69**	**63**	*e*Pn	**Pn**	**22 37 36.5**	**+1.0**
EDRB	**Edirne**	**2.76**	**339**	*e*PN	**Pn**	**22 37 38.0**	**+1.6**
EDRB	**Edirne**	**2.76**	**339**	*e*Pn	**Pn**	**22 37 38.0**	**+1.6**

CSEM ***26*** *22:39:05.4±0.3, 50.29°N×19.25°E, h1km, Error ellipse: s-maj=8.2km s-min=3.6km az=8.0*

PRU 26 22:39:06.4, 50.27°N×19.24°E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OJC	**Ojcow**	**0.36**	**98**	*e*Pg	Pg	22 39 12.6	-0.7
OJC				*e*Sg	Sg	22 39 17.1	-0.9
OJC	**Ojcow**	**0.36**	**98**	*e*Pg	Pg	22 39 12.6	-0.7
OJC				*e*Sg	Sg	22 39 17.1	-0.9
OKC	**Ostrava-Krasne** comp=Z,3.6nm,0.3s	**0.83**	**239**	*e*SG	Sb	22 39 34.2	-1.1
OKC	**Ostrava-Krasne** 3.6nm,0.3s	**0.83**	**239**	Sg	Sb	22 39 34.2	-1.1
LANS	**Liptovska Anna**	**1.13**	**172**	*e*Pg	Pg	22 39 27.4	-0.6
LANS				*e*Sg	Sg	22 39 42.3	-0.4
LANS	**Liptovska Anna**	**1.13**	**172**	*e*PG	Pg	22 39 27.4	-0.6
LANS				*e*SG	Sg	22 39 42.3	-0.4
MORC	**Moravsky Berou**	**1.20**	**246**	*e*Pg	Pg	22 39 29.4	0.0
MORC				*e*Sg	Sg	22 39 45.7	-0.4
STHS	**Stebnicka Huta**	**1.55**	**123**	*e*Pn	Pn	22 39 35.1	-0.2
STHS	**Stebnicka Huta**	**1.55**	**123**	*e*PN	Pn	22 39 35.1	-0.2
STHS				*e*SN	Sb	22 39 56.2	0.0
STHS				*e*LG	Lg	22 40 03.8	
KRLC	**Kraliky**	**1.59**	**264**	*e*PG	Pn	22 39 36.0	+0.1
KRLC				*e*SG	Sb	22 39 57.4	0.0
KRLC	**Kraliky**	**1.59**	**264**	Pg	Pn	22 39 36.0	+0.1
KRLC				Sg	Sb	22 39 57.4	0.0
VYHS	**Vyhne**	**1.80**	**189**	*e*Pn	Pn	22 39 37.0	-1.7
VYHS	**Vyhne**	**1.80**	**189**	*e*PN	Pn	22 39 37.0	-1.7
VYHS				*e*SN	Sn	22 39 59.2	-3.0
VYHS				*e*LG	Lg	22 40 02.0	
DPC	**Dobruska-Polom**	**1.87**	**274**	*e*PG	Pb	22 39 40.7	-0.8
DPC	comp=Z,2.6nm,0.4s			*e*SG	Sb	22 40 05.7	+0.2
DPC	**Dobruska-Polom** 2.6nm,0.4s	**1.87**	**274**	Pg	Pb	22 39 40.7	-0.8
DPC				Sg	Sb	22 40 05.7	+0.2
KHC	**Kasperske Hory**	**3.85**	**255**	*e*SG	Sg	22 41 09.0	-1.0
KHC	**Kasperske Hory**	**3.85**	**255**	Sg	Sg	22 41 09.0	-1.0

IDC ***26*** *22:40:49.9±4.1, 58.63°S×25.54°W, h82km±36km, mb4.2/9, mb1 4.4/11, mb1mx4.3/20, mbtmp4.6/11, MS3.5/9, Ms1 3.4/9, ms1mx3.3/21, Error ellipse: s-maj=19.8km s-min=13.9km az=21.0*

ISCJB ***26*** *22:40:50.4±0.4, 58.71°S±0.07°×25.5°W±0.1, h100km, mb4.7/23, Error ellipse: s-maj=11.7km s-min=6.3km az=36.2*

NEIC ***26*** *22:40:52.1±1.1, 58.70°S×25.49°W, h102km±9km, mb4.9/18, Error ellipse: s-maj=8.5km s-min=5.7km az=217.0*

ISC 26 22:40:51.9±0.5, 58.73°S±0.09°×25.43°W±0.08, h100km, n65, σ0°85/52, mb4.8/22, 1D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HOPE	**Hope Point**	**7.56**	**301**	*e*Pn	**Pn**	**22 42 39.4**	**+0.2**
HOPE				*e*Sn	**Sn**	**22 44 05.1**	**+1.9**
VNA1	**Neumayer--Stat**	**13.95**	**156**	P	**Pn**	**22 44 02.9**	**-1.9**
SNAA	**Sanae**	**15.90**	**154**	P	**Pn**	**22 44 29.0**	**-0.6**
SNAA	**Sanae** 4.6nm,0.3s,baz=353,slow=12,SNR=10	**15.90**	**154**	P	**Pn**	**22 44 29.0**	**-0.6**
SNAA	0.9nm,0.3s,baz=316,slow=15,SNR=7.7			S	Sn	22 47 09.1	-16
SNAA	**Sanae** 27nm,0.6s	**15.90**	**154**	*e*Pn	**Pn**	**22 44 28.6**	**-1.0**
SNAA				*e*Sn	Sn	22 47 09.1	-16
PMSA	**Palmer Station** 5.2nm,0.3s,baz=75,slow=7.2,SNR=26	**19.00**	**235**	P	**P**	**22 45 06.2**	**+1.0**
PMSA	comp=Z,124nm,21.3s,baz=68,slow=30			LR	LR	22 50 18.2	
PMSA	**Palmer Station** 48nm,0.7s	**19.00**	**235**	*e*P	**P**	**22 45 06.1**	**+0.9**
EFI	**East Falkland** 236nm,1.7s	**19.76**	**277**	*e*P	**P**	**22 45 13.9**	**+0.4**
USHA	**Ushuaia** 179nm,0.8s,baz=101,slow=12,SNR=25	**23.57**	**261**	P	**P**	**22 45 52.0**	**-1.0**
USHA	comp=Z,702nm,20.4s,baz=96,slow=31			LR	LR	22 53 01.0	
SYO	**Syowa Base**	**28.93**	**138**	*e*P	P	22 46 46.4	+5.5
TRQA	**Tornquist** 69nm,1.9s	**31.29**	**295**	*e*P	**P**	**22 47 02.4**	**+0.2**
QSPA	**South Pole Qui** 8.0nm,0.6s	**31.51**	**180**	*e*P	**P**	**22 47 04.7**	**+0.7**
PLCA	**Paso Flores** 12nm,0.7s,baz=171,slow=7.4,SNR=21	**33.46**	**282**	P	**P**	**22 47 20.3**	**-0.8**
PLCA	comp=Z,47nm,18.0s,baz=154,slow=36			LR	LR	23 01 02.0	
PLCA	**Paso Flores** 13nm,0.6s	**33.46**	**282**	*e*P	**P**	**22 47 20.3**	**-0.8**
MAW	**Mawson** 2.7nm,0.9s,baz=227,slow=8.9,SNR=9.1	**37.44**	**141**	P	**P**	**22 47 54.5**	**-0.3**
MAW	comp=Z,66nm,21.7s,baz=239,slow=32			LR	LR	23 00 44.4	
MAW	**Mawson** 1.0nm,0.8s	**37.44**	**141**	*e*P	**P**	**22 47 54.8**	**0.0**
CPUP	**Villa Florida** 1.3nm,0.6s,baz=160,slow=8.7,SNR=5.0	**39.30**	**312**	P	**P**	**22 48 08.8**	**-2.0**
CPUP	comp=Z,21nm,18.5s,baz=166,slow=39			LR	LR	23 06 14.9	
ROC1	**El Roble** 21nm,0.7s	**39.73**	**290**	*e*P	**P**	**22 48 15.3**	**+0.7**
SUR	**Sutherland** 0.5nm,0.7s,baz=188,slow=7.6,SNR=7.9	**40.54**	**70**	P	**P**	**22 48 22.2**	**+0.9**
SUR	**Sutherland** 60nm,1.5s	**40.54**	**70**	*e*P	**P**	**22 48 22.2**	**+0.9**
LCO	**Las Campanas** 86nm,1.6s	**42.84**	**294**	*e*P	**P**	**22 48 39.7**	**-0.4**
SBA	**Scott Base** 14nm,1.2s	**43.46**	**184**	*e*P	**P**	**22 48 45.0**	**+0.8**
VNDA	**Vanda** 6.6nm,0.6s,baz=186,slow=7.0,SNR=50	**43.93**	**182**	P	**P**	**22 48 49.5**	**+1.5**
VNDA	**Vanda** 7.4nm,0.7s	**43.93**	**182**	*e*P	**P**	**22 48 49.4**	**+1.4**
BOSA	**Boshof** 12nm,0.7s,baz=206,slow=6.6,SNR=28	**45.81**	**72**	P	**P**	**22 49 03.4**	**-0.2**
BOSA	comp=Z,70nm,20.1s,baz=209,slow=30			LR	LR	23 03 46.0	
BOSA	**Boshof**	**45.81**	**72**	*e*P	**P**	**22 49 03.8**	**+0.2**
LVC	**Limon Verde** 37nm,1.6s	**47.48**	**300**	*e*P	**P**	**22 49 16.1**	**-0.8**
TSUM	**Tsumeb** 7.6nm,0.8s	**50.26**	**57**	*e*P	**P**	**22 49 38.7**	**+0.8**
PB11	**IPOC Station P** 28nm,1.2s	**50.30**	**301**	*e*P	**P**	**22 49 36.8**	**-1.5**
H10S2	**ASCENSION HYDR** baz=188,slow=75,SNR=149	**50.34**	**14**	T	T	23 44 11.6	
H10S3	**ASCENSION HYDR** baz=188,slow=75,SNR=126	**50.34**	**14**	T	T	23 44 14.2	
H10S1	**ASCENSION HYDR** baz=188,slow=75,SNR=142	**50.36**	**14**	T	T	23 44 15.1	
H10N1	**ASCENSION HYDR** baz=181,slow=72,SNR=9.8	**51.46**	**14**	T	T	23 45 35.9	
H10N3	**ASCENSION HYDR** baz=181,slow=72,SNR=86	**51.46**	**14**	T	T	23 45 39.7	
H10N2	**ASCENSION HYDR** baz=181,slow=72,SNR=16	**51.48**	**14**	T	T	23 45 41.4	
LPAZ	**La Paz** 1.6nm,0.5s,baz=135,slow=5.6,SNR=7.6	**52.70**	**305**	P	**P**	**22 49 55.4**	**-1.3**
LPAZ	**La Paz** 21nm,1.8s	**52.70**	**305**	*e*P	**P**	**22 49 55.8**	**-0.9**
LSZ	**Lusaka** 10nm,0.7s	**58.53**	**66**	*e*P	**P**	**22 50 38.1**	**+0.2**
LIC	**Lamto** 73nm,1.5s	**66.79**	**22**	*e*PKP2	P	22 51 40.3	+7.8
KIC	**Kosan Boka** 76nm,1.6s	**66.98**	**22**	*e*PKP2	P	22 51 41.6	+7.9
TIC	**Toumodi**	**67.20**	**22**	*e*PKP2	P	22 51 41.5	+6.4
DBIC	**Dimbokro** comp=Z,28nm,20.5s,baz=148,slow=30	**67.25**	**22**	LR	LR	23 14 30.8	
STKA	**Stephens Creek** 3.3nm,0.9s,baz=191,slow=4.6,SNR=4.1	**89.09**	**169**	P	**P**	**22 53 35.8**	**+0.1**
PPT	**Papeete** comp=Z,17nm,18.4s,baz=114,slow=30	**91.34**	**232**	LR	LR	23 27 19.7	
MDT	**Midelt** comp=Z,17nm,18.2s,slow=33	**92.85**	**17**	LR	LR	23 31 48.3	
ASAR	**Alice Springs** 0.5nm,0.6s,baz=184,slow=4.2,SNR=8.6	**96.14**	**161**	P	**P**	**22 54 08.5**	**+0.2**
AS31	**Alice Springs** 0.9nm,0.8s	**96.14**	**161**	*e*P	**P**	**22 54 08.5**	**+0.2**
WRA	**Warramunga Arr** 0.6nm,1.0s,baz=193,slow=4.6,SNR=3.4	**99.86**	**161**	P	**Pdif**	**22 54 24.7**	**-0.3**
PD31	**Pinedale Array**	**122.54**	**300**	*e*PKPdf	**PKPdf**	**22 59 34.0**	**-0.8**
PDAR	**Pinedale Array** 0.7nm,0.5s,baz=120,slow=4.9,SNR=9.4	**122.54**	**300**	PKP	**PKPdf**	**22 59 34.0**	**-0.8**
ULM	**Lac du Bonnet** 2.2nm,0.5s,baz=192,slow=0.7,SNR=6.5	**122.82**	**314**	PKP	**PKPdf**	**22 59 33.7**	**-1.1**
CM31	**Chiang Mai Arr**	**123.23**	**111**	*e*PKPdf	**PKPdf**	**22 59 36.4**	**-0.2**
CMAR	**Chiang Mai Arr** 0.7nm,0.5s,baz=238,slow=1.7,SNR=3.2	**123.23**	**111**	PKP	**PKPdf**	**22 59 36.4**	**-0.2**
FIA0	**FINESS Array S**	**126.32**	**28**	*e*PKPdf	**PKPdf**	**22 59 41.1**	**-0.1**
FINES	**FINESS Array B** 0.7nm,0.5s,baz=222,slow=1.9,SNR=9.5	**126.32**	**28**	PKP	**PKPdf**	**22 59 41.1**	**-0.1**
FRB	**Frobisher Bay** 4.9nm,0.8s,baz=163,slow=1.8,SNR=4.1	**126.50**	**338**	PKP	**PKPdf**	**22 59 42.0**	**+0.7**
YKA	**Yellowknife Ar** 4.0nm,0.6s,baz=129,slow=2.2,SNR=24	**138.78**	**315**	PKP	**PKPdf**	**23 00 05.0**	**+0.4**
YKA	**Yellowknife Ar**	**138.78**	**315**	PKP	**PKPdf**	**23 00 05.0**	**+0.4**
YKB5	**Yellowknife Ar**	**138.78**	**315**	*e*PKPdf	**PKPdf**	**23 00 05.0**	**+0.4**
ZALV	**Zalesovo Beam** 0.6nm,0.5s,baz=260,slow=2.5,SNR=3.2	**142.65**	**66**	PKhKP	PKPpre	23 00 07.5	
INK	**Inuvik** 21nm,0.7s,baz=89,slow=2.6,SNR=60	**148.46**	**318**	PKPbc	**PKPbc**	**23 00 25.2**	**+0.2**
SONA0	**Songino Array**	**149.87**	**90**	*e*PKPbc	**PKPbc**	**23 00 29.6**	**+0.3**
SONM	**Songino Array** 1.1nm,0.4s,baz=227,slow=9.8	**149.87**	**90**	PKPbc	**PKPbc**	**23 00 29.6**	**+0.3**
ILAR	**Eielson Array** 14nm,0.8s,baz=142,slow=2.8,SNR=99	**152.56**	**307**	PKPbc	**PKPbc**	**23 00 35.1**	**+0.3**
ILB	**Eielson Array**	**152.56**	**307**	*e*PKPbc	**PKPbc**	**23 00 35.2**	**+0.3**

NIED ***26*** *22:47:00, 38.50°N×144.60°E, h5km, Mw3.8 Best double couple: M₀6.21000×10¹⁴ NP1:φ₀30.00000°, δ18.00000°, λ-97.00000°. NP2:φ₀218.00000°, δ72.00000°, λ-88.00000°.*

IDC ***26*** *22:47:39.5±1.0, 38.35°N×144.90°E, h0km, mb3.5/5, mb1 3.8/8, mb1mx3.6/40, mbtmp3.7/8, ML3.3/3, MS2.8/8, Ms1 2.8/8, ms1mx2.5/37, Error ellipse: s-maj=30.3km s-min=21.4km az=124.0*

ISCJB ***26*** *22:47:41.9±0.7, 38.54N±0.04°×144.69E±0.05°, h29km, mb3.5/5, MS3.1/4, Error ellipse: s-maj=6.6km s-min=5.4km az=141.7*

JMA ***26*** *22:47:43.8±0.2, 38.54N×144.59E, h35km, M4.0*

ISC 26 22:47:43.6±1.0, 38.56N±0.06°×144.72E±0.08, h29km, n28, σ1°85/35, mb3.5/5, MS3.0/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.44**	**283**	P	**Pn**	**22 48 21.5**	**0.0**
MIYJ	**Miyakonagasawa**	**2.48**	**295**	P	**Pn**	**22 48 21.9**	**-0.1**
MIYJ				S	**Sn**	**22 48 50.0**	**-1.2**
JIO	**Ouri**	**2.65**	**269**	P	**Pn**	**22 48 23.9**	**-0.4**
JIO				S	**Sn**	**22 48 53.2**	**-2.2**
JMK	**Ichinoseki**	**2.76**	**279**	P	**Pn**	**22 48 26.2**	**+0.3**
JOM	**Ohasama**	**2.82**	**290**	P	**Pn**	**22 48 27.2**	**+0.5**
JOM				S	**Sn**	**22 48 59.6**	**-0.1**
JANG	**Nango**	**3.07**	**307**	P	**Pn**	**22 48 30.0**	**-0.2**
JANG				S	**Sn**	**22 49 05.2**	**-0.7**
JYK	**Kaneyama**	**3.43**	**277**	P	**Pn**	**22 48 36.0**	**+0.9**
JYK				S	**Sn**	**22 49 15.4**	**+0.7**
JFT	**Otama**	**3.61**	**255**	P	**Pn**	**22 48 38.3**	**+0.7**
JFT				S	**Sn**	**22 49 18.2**	**-1.1**
JOT	**Ohata**	**3.99**	**316**	P	**Pn**	**22 48 44.4**	**+1.7**
JOT				S	**Sn**	**22 49 27.5**	**-1.0**
JCH	**Churui**	**4.18**	**346**	P	**Pn**	**22 48 45.2**	**-0.2**
JCH				*e*S	**Sn**	**22 49 31.8**	**-1.4**
NEM2	**Nemuro 2**	**4.86**	**9**	P	**Pn**	**22 48 53.2**	**-1.6**
NEM2				*e*S	**Sn**	**22 49 44.7**	**-5.4**
JRY	**Ryogami san**	**5.29**	**243**	P	**Pn**	**22 48 59.7**	**-0.9**
JRY				*e*S	**Sn**	**22 49 56.2**	**-4.4**
JTKR	**Abashiri--Toko**	**5.44**	**354**	P	**Pn**	**22 49 02.6**	**-0.1**
JTKR				*e*S	**Sn**	**22 50 01.2**	**-3.1**
MJAR	**Matsushiro Arr** 1.3nm,0.3s,baz=62,slow=8.9,SNR=19	**5.55**	**251**	Pn	**Pn**	**22 49 04.5**	**+0.3**
MJAR	0.7nm,0.3s,baz=81,slow=16,SNR=3.2			Sn	**Sn**	**22 50 06.5**	**-0.6**
MJAR	comp=Z,23nm,21.5s,baz=170,slow=39			LR	LR	22 51 17.3	
MAT	**Matsushiro**	**5.55**	**251**	P	**Pn**	**22 49 05.0**	**+0.7**
MAT				S	**Sn**	**22 50 04.9**	**-2.2**
JHJ	**Hachijo jima 2** 7.8nm,0.3s,baz=283,slow=22,SNR=4.7	**6.75**	**218**	Pn	**Pn**	**22 49 17.9**	**-2.8**
JHJ	11nm,0.3s,baz=72,slow=20,SNR=4.3			Sn	Sn	22 50 27.4	-9.1
USRK	**Ussuriysk Ar.** 0.5nm,0.3s,baz=109,slow=14,SNR=8.5	**11.10**	**305**	Pn	**Pn**	**22 50 24.0**	**+3.8**
USRK	comp=Z,44nm,21.7s,baz=165,slow=35			LR	LR	22 54 17.9	
KSRS	**Korea Array** comp=Z,15nm,21.9s,baz=260,slow=36	**13.29**	**270**	LR	LR	22 55 43.8	
KLR	**Kul'dur** comp=Z,26nm,18.9s,baz=139,slow=37	**14.16**	**323**	LR	LR	22 56 32.5	
YAK	**Yakutsk** comp=Z,18nm,18.4s,baz=216,slow=42	**25.26**	**343**	LR	LR	23 05 42.3	
TLY	**Talaya** comp=Z,28nm,19.2s,baz=187,slow=36	**31.38**	**308**	LR	LR	23 06 52.8	
MKAR	**Makanchi Array** 0.2nm,0.6s,baz=64,slow=6.6,SNR=2.7	**45.54**	**301**	P	**P**	**22 56 01.9**	**+1.3**
ILAR	**Eielson Array** 0.4nm,0.8s,baz=255,slow=6.4,SNR=4.0	**46.80**	**33**	P	**P**	**22 56 10.6**	**+0.5**
WRA	**Warramunga Arr** 1.1nm,0.6s,baz=13,slow=7.3,SNR=9.8	**59.00**	**191**	P	**P**	**22 57 39.5**	**-1.2**
ASAR	**Alice Springs** 0.3nm,0.7s,baz=8.9,slow=6.6,SNR=3.5	**62.72**	**191**	P	**P**	**22 58 05.7**	**-0.2**
DZM	**Mont Dzumac** comp=Z,57nm,21.8s,baz=195,slow=30	**63.66**	**157**	LR	LR	23 18 48.8	
HFS	**Hagfors** comp=Z,9.4nm,21.0s,slow=38	**73.75**	**337**	LR	LR	23 34 02.0	
PDAR	**Pinedale Array** 0.2nm,0.6s,baz=345,slow=2.1,SNR=3.2	**74.72**	**47**	P	**P**	**22 59 22.0**	**+1.1**

WEL 26 22:57:08.1±0.7, 36.49°S×177.27°E, h131km±19km, ML3.5/7, 1C, Error ellipse: s-maj=14.9km s-min=13.7km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HAZ	**Te Kaha**	**1.32**	**162**	↑PN	Pn	22 57 34.6	+0.3
HAZ				SN	Sn	22 57 54.2	-0.1
HAZ				AML	AML	22 57 56.8	
HAZ				AML	AML	22 58 01.4	
MXZ	**Matakaoa Point**	**1.35**	**142**	PN	Pn	22 57 34.5	-0.1
MXZ				SN	Sn	22 57 55.2	+0.3
RUGZ	**Raukumara Rang**	**1.50**	**168**	PN	Pn	22 57 35.9	-0.5
PKGZ	**Pakihiroa**	**1.53**	**155**	PN	Pn	22 57 37.0	+0.3
WMGZ	**Waiomatatini S**	**1.61**	**146**	PN	Pn	22 57 37.0	-0.4
WMGZ				AML	AML	22 58 00.5	
WMGZ				AML	AML	22 58 01.1	
URZ	**Urewera**	**1.77**	**184**	PN	Pn	22 57 39.7	+0.4
URZ				SN	Sn	22 58 04.2	+1.1
URZ				AML	AML	22 58 08.2	
MWZ	**Matawai**	**1.85**	**174**	PN	Pn	22 57 40.1	-0.2
MWZ				*e*SN	Sn	22 58 04.7	-0.4
TKGZ	**Te Karaka**	**2.00**	**167**	PN	Pn	22 57 41.4	-0.7
TKGZ				AML	AML	22 58 08.4	
TKGZ				AML	AML	22 58 09.3	
CNGZ	**Carnagh Statio**	**2.12**	**160**	PN	Pn	22 57 43.0	-0.6
SNGZ	**Shannon Statio**	**2.28**	**179**	PN	Pn	22 57 45.7	0.0
SNGZ				SN	Sn	22 58 13.9	-0.6
SNGZ				AML	AML	22 58 17.4	
KNZ	**Kokohu**	**2.54**	**173**	PN	Pn	22 57 47.3	-1.6
MOVZ	**Moawhango**	**3.15**	**202**	PN	Pn	22 57 55.9	-0.8
KRHZ	**Kereru**	**3.22**	**192**	PN	Pn	22 57 55.8	-1.8
KAHZ	**Kahuranaki**	**3.31**	**185**	PN	Pn	22 57 57.1	-1.7
PNHZ	**Pukenui**	**3.52**	**194**	PN	Pn	22 57 59.7	-1.8
PXZ	**Pawanui**	**3.54**	**185**	PN	Pn	22 57 59.3	-2.6
PXZ				AML	AML	22 58 48.2	
TSZ	**Takapari Road**	**3.70**	**196**	PN	Pn	22 58 01.6	-2.4
CAW	**Cannon Point**	**4.92**	**200**	PN	Pn	22 58 15.6	-4.5
TCW	**Tory Channel**	**5.26**	**205**	PN	Pn	22 58 20.5	-4.1
TUWZ	**Tuamarina**	**5.57**	**207**	PN	Pn	22 58 24.5	-4.2
THZ	**Tophouse**	**6.26**	**211**	PN	Pn	22 58 34.4	-3.7
KHZ	**Kahutara**	**6.58**	**205**	PN	Pn	22 58 37.7	-4.7
MQZ	**McQueen's Vall**	**8.02**	**205**	PN	Pn	22 58 54.5	-7.2

NIED ***26*** *23:01:00, 39.90°N×142.40E, h44km, Mw3.7 Best double couple: M₀4.09000×10¹⁴ NP1:φ₀214.00000°, δ18.00000°, λ100.00000°. NP2:φ₀23.00000°, δ73.00000°, λ87.00000°.*

ISCJB ***26*** *23:01:47.4±1.1, 39.92°N±0.04°×142.4E±0.1, h46km±8km, mb3.5/4, MS2.7/1, Error ellipse: s-maj=14.8km s-min=7.3km az=2.2*

JMA ***26*** *23:01:47.8±0.1, 39.91°N×142.41E, h39km±1km, M3.7*

IDC ***26*** *23:01:48.8±3.4, 39.95°N×142.75E, h61km±27km, mb3.4/4, mb1 3.5/7, mb1mx3.2/50, mbtmp3.7/7, ML2.7/2, MS2.6/4, Ms1 2.6/4, ms1mx2.3/32, Error ellipse: s-maj=47.5km s-min=24.1km az=84.0*

ISC 26 23:01:47.3±1.9, 39.92N±0.04°×142.43E±0.10, h31km±11km, n20, σ1°56/25, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.44**	**273**	P	**Pn**	**23 01 57.4**	**0.0**
JTH				S	**Sb**	**23 02 04.1**	**+0.8**
MIYJ	**Miyakonagasawa**	**0.58**	**235**	P	**Pn**	**23 01 59.1**	**0.0**
MIYJ				S	**Sb**	**23 02 07.2**	**+0.1**
JANG	**Nango**	**0.84**	**303**	P	**Pb**	**23 02 02.5**	**-0.9**
JANG				*e*S	**Sb**	**23 02 12.7**	**-1.6**
JKZ	**Kuzumaki**	**0.85**	**275**	P	**Pb**	**23 02 03.5**	**-0.1**
JKZ				S	**Sb**	**23 02 14.1**	**-0.6**
JOM	**Ohasama**	**0.98**	**244**	P	**Pb**	**23 02 05.1**	**-0.7**
JOM				S	**Sb**	**23 02 17.2**	**-1.2**
OFUJ	**Ofunato**	**1.02**	**216**	P	**Pn**	**23 02 05.5**	**0.0**
JMK	**Ichinoseki**	**1.34**	**225**	P	**Pn**	**23 02 10.3**	**+0.4**
JTM	**Tenmabayashi**	**1.36**	**310**	P	**Pn**	**23 02 10.5**	**+0.4**
JTM				S	**Sn**	**23 02 28.0**	**+0.9**
JAH	**Hinai**	**1.41**	**282**	P	**Pn**	**23 02 11.4**	**+0.7**
JRG	**Rokugo**	**1.48**	**250**	P	**Pn**	**23 02 12.8**	**+1.0**
ASAJ	**Asahikawa**	**4.20**	**2**	P	**Pn**	**23 02 49.5**	**+0.4**
MJAR	**Matsushiro Arr** 0.7nm,0.3s,baz=32,slow=13,SNR=17	**4.73**	**226**	P	**Pn**	**23 02 59.7**	**+3.2**
MJAR	comp=Z,37nm,21.7s,baz=350,slow=40			LR	LR	23 05 03.9	
MAT	**Matsushiro**	**4.73**	**226**	P	**Pn**	**23 02 59.8**	**+3.3**
MAT				*e*S	**Sn**	**23 03 50.7**	**+0.3**
USRK	**Ussuriysk Ar.** 0.4nm,0.3s,baz=116,slow=13,SNR=6.9	**8.87**	**302**	P	**Pn**	**23 03 57.5**	**+4.3**
KSRS	**Korea Array** 0.3nm,0.3s,baz=70,slow=14,SNR=4.3	**11.61**	**262**	P	Pn	23 04 42.5	+12
KSRS	comp=Z,25nm,19.8s,baz=205,slow=34			LR	LR	23 08 37.1	
KLR	**Kul'dur** comp=Z,34nm,18.6s,baz=102,slow=36	**12.02**	**324**	LR	LR	23 09 06.2	
SONM	**Songino Array** 0.6nm,0.3s,baz=96,slow=7.6,SNR=3.9	**26.96**	**299**	P	**P**	**23 07 26.7**	**+0.6**
SONM	comp=Z,21nm,20.4s,baz=39,slow=36			LR	LR	23 18 10.4	
ZALV	**Zalesovo Beam** 1.0nm,0.4s,baz=96,slow=7.7,SNR=5.0	**40.62**	**310**	P	**P**	**23 09 23.5**	**-0.6**
MKAR	**Makanchi Array** 0.4nm,0.5s,baz=87,slow=10,SNR=8.9	**43.33**	**300**	P	**P**	**23 09 45.5**	**-0.8**
WRA	**Warramunga Arr** 0.2nm,0.5s,baz=5.9,slow=6.8,SNR=3.9	**60.02**	**189**	P	**P**	**23 11 49.9**	**-1.2**

BJI 26 23:19:40.2, 37.40N×122.06E, h8km, ML3.5/7, 1D, Northeastern China

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DL2	**Dalian**	**1.54**	**347**	Pn	Pn	23 20 06.3	-1.7
DL2				Pg	Pb	23 20 08.3	-0.7
DL2				Sn	Sn	23 20 25.3	-2.9
DL2				Sg	Sb	23 20 27.3	-1.4
DL2	comp=N,510nm,0.5s			smax	smax		
DL2	comp=E,480nm,0.4s			smax	smax		
TIA	**Tai'an**	**4.13**	**255**	Pg	Pb	23 20 54.8	+1.6
TIA				Sg	Sg	23 21 49.8	-3.2
TIA	comp=N,110nm,0.5s			smax	smax		
TIA	comp=E,80nm,0.5s			smax	smax		
SNY	**Shenyang**	**4.58**	**14**	||Pg	Pb	23 21 03.8	+3.1
SNY				Sg	Sb	23 21 56.8	+0.9
SNY	comp=N,120nm,0.5s			smax	smax		
SNY	comp=E,100nm,0.5s			smax	smax		
WMQ	**Urumqi**	**26.73**	**295**	*e*P	P	23 25 22.5	+2.3

ISK ***26*** *23:37:35.2, 39.10°N×40.35E, h28km, MD2.6*

DDA ***26*** *23:37:36.5, 39.05°N×40.21E, h7km, MD2.6*

CSEM ***26*** *23:37:37.0±0.5, 39.13°N×40.32E, h2km, MD2.6, Error ellipse: s-maj=9.9km s-min=8.7km az=156.0*

ISC 26 23:37:36.5±1.1, 39.11N±0.03°×40.33E±0.03, h11km±10km, n17, σ0°70/28, Turkey

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

*BJI **26** 23:42:54.0, 35°.86N × 92°.77E, h10km, mb4.1/4, ML3.9/7, Ms3.8/11, Ms7 3.6/11*

ISC 26 23:42:53.7±0.5, 35°.79N±0°.05 × 92°.58E±0°.06, h10km, n65, σ1§72/60, mb4.1/18, MS3.4/19, Qinghai

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LSA	**Lhasa**	**6.19**	**192**	Pn		**Pn**	**23 44 25.9**	**+0.2**
LSA				*e*Sg		**Sg**	**23 46 12.7**	**0.0**
GTA	**Gaotai**	**6.78**	**56**	*e*Pn		**Pn**	**23 44 34.8**	**+1.3**
GTA				Sn		**Sn**	**23 45 53.3**	**+2.5**
GTA				LR	LR			
	comp=N,350nm,7.1s							
GTA				LR	LR			
	comp=E,480nm,7.4s							
GTA				LR	LR			
	comp=Z,540nm,11.0s							
WMQ	**Urumqi**	**8.85**	**336**	*e*P		**Pn**	**23 45 00.5**	**-1.3**
WMQ				smax		smax		
	comp=N,140nm,0.6s							
WMQ				smax		smax		
	comp=E,190nm,0.7s							
MK01	**Makanchi Array**	**13.40**	**328**	*e*Pn		**Pn**	**23 46 03.5**	**-0.5**
MK01				*e*Sn		**Sn**	**23 48 29.9**	**-3.1**
MK31	**Makanchi Array**	**13.42**	**328**	*e*Pn		**Pn**	**23 46 04.4**	**+0.2**
MK31				*e*Sn		**Sn**	**23 48 29.0**	**-4.5**
MK32	**Makanchi Array**	**13.42**	**328**	*e*Pn		**Pn**	**23 46 04.4**	**+0.1**
MK32				*e*Sn		**Sn**	**23 48 31.1**	**-2.4**
MKAR	**Makanchi Array**	**13.42**	**328**	Pn		**Pn**	**23 46 04.4**	**+0.1**
	0.6nm,0.3s,baz=139,slow=14,SNR=18							
MKAR				Sn		**Sn**	**23 48 31.1**	**-2.5**
	baz=136,slow=26,SNR=3.8							
MKAR				LR	LR		23 51 54.4	
	comp=Z,189nm,21.4s,baz=152,slow=40							
MKAR	**Makanchi Array**	**13.42**	**328**	*e*Pn		**Pn**	**23 46 04.4**	**+0.1**
MKAR				*e*Sn		**Sn**	**23 48 29.3**	**-4.2**
MAKZ	**Makanchi**	**13.57**	**327**	*e*Pn		**Pn**	**23 46 08.7**	**+2.5**
KSH	**Kashi**	**13.67**	**291**	P		**P**	**23 46 13.8**	**-2.9**
KSH				S		Sn	23 48 50.8	+11
KSH				SS		**S**	**23 49 07.5**	**+4.7**
KSH				pmax		pmax		
	comp=Z,6.0nm,1.1s							
KSH				LR	LR			
	comp=N,190nm,6.6s							
KSH				LR	LR			
	comp=E,230nm,8.3s							
KSH				LR	LR			
	comp=Z,370nm,6.9s							
AAK	**Ala-Archa**	**15.58**	**301**	Pn		**Pn**	**23 46 34.8**	**+1.2**
	0.2nm,0.3s,baz=156,slow=10.0,SNR=3.1							
SONA0	**Songino Array**	**15.81**	**36**	*e*Pn		**Pn**	**23 46 37.0**	**+0.6**
	6.0nm,1.3s							
SONM	**Songino Array**	**15.81**	**36**	Pn		**Pn**	**23 46 37.0**	**+0.6**
	0.3nm,0.3s,baz=220,slow=14,SNR=8.8							
SONM				LR	LR		23 52 39.7	
	comp=Z,72nm,21.4s,baz=241,slow=38							
SONA1	**Songino Array**	**15.82**	**36**	*e*Pn		**Pn**	**23 46 37.7**	**+1.1**
CHTO	**Chiang Mai**	**17.83**	**160**	*e*Pn		**Pn**	**23 47 01.3**	**-0.7**
	4.7nm,1.0s							
KURBB	**Kurchatov Arra**	**17.97**	**330**	Pn		**Pn**	**23 47 02.4**	**-1.2**
	0.1nm,0.3s,baz=137,slow=11,SNR=23							
KURK	**Kurchatov**	**18.00**	**330**	*e*Pn		**Pn**	**23 47 02.4**	**-1.6**
CM31	**Chiang Mai Arr**	**18.16**	**160**	*e*Pn		**Pn**	**23 47 05.3**	**-0.8**
CMAR	**Chiang Mai Arr**	**18.16**	**160**	P		**Pn**	**23 47 05.3**	**-0.8**
	baz=336,slow=12,SNR=14							
CM01	**Chiang Mai Arr**	**18.20**	**160**	*e*Pn		**Pn**	**23 47 06.0**	**-0.6**
KKAR	**Karatay Array**	**18.51**	**300**	*e*P		**Pn**	**23 47 11.2**	**+0.9**
	30nm,0.8s							
ZAA0	**Zalesovo Array**	**18.95**	**346**	*e*P		**P**	**23 47 14.4**	**-0.4**
ZALV	**Zalesovo Beam**	**18.95**	**346**	P		**P**	**23 47 14.3**	**-0.5**
	baz=170,slow=8.8,SNR=5.1							
ZALV				LR	LR		23 54 55.3	
	comp=Z,97nm,21.3s,baz=60,slow=38							
ZAA1	**Zalesovo Array**	**18.95**	**346**	*e*P		**P**	**23 47 14.3**	**-0.6**
KBL	**Kabul**	**19.28**	**273**	*e*P		**P**	**23 47 17.6**	**-1.2**
	4.6nm,1.0s							
BVAR	**Borovoye Array**	**23.25**	**325**	P		**P**	**23 48 02.3**	**+1.2**
	3.3nm,0.7s,baz=133,slow=10,SNR=26							
BRVK	**Borovoye**	**23.32**	**325**	*e*P		**P**	**23 48 03.8**	**+2.0**
	41nm,1.9s							
ABKAR	**Akbulak array**	**27.32**	**310**	*e*P		**P**	**23 48 38.8**	**+0.3**
	5.4nm,1.6s							
GEYT	**Alibeck**	**27.57**	**285**	P		**P**	**23 48 44.1**	**+3.2**
	0.8nm,0.5s,baz=115,slow=10.0,SNR=3.7							
GEYT				LR	LR		00 01 47.3	
	comp=Z,49nm,18.4s,baz=270,slow=41							
AKTO	**Aktyubinsk**	**28.86**	**311**	P		**P**	**23 48 53.7**	**+1.4**
	1.1nm,0.8s,baz=95,slow=11,SNR=5.5							
AKTO				LR	LR		00 01 21.8	
	comp=Z,92nm,18.7s,baz=145,slow=38							
ARU	**Arti**	**30.85**	**323**	P		**P**	**23 49 11.3**	**+1.5**
	1.0nm,0.4s,baz=82,slow=7.1,SNR=5.6							
ARU				LR	LR		00 02 16.8	
	comp=Z,102nm,18.5s,baz=130,slow=38							
ARU	**Arti**	**30.85**	**323**	*e*P		**P**	**23 49 11.3**	**+1.5**
	7.6nm,1.2s							
USRK	**Ussuriysk Ar.**	**31.09**	**62**	LR		LR	00 03 06.2	
	comp=Z,74nm,19.0s,baz=233,slow=40							
KLR	**Kul'dur**	**31.47**	**52**	LR		LR	00 02 09.3	
	comp=Z,23nm,19.9s,baz=256,slow=37							
NRIK	**Noril'sk**	**33.72**	**357**	LR		LR	00 04 11.6	
	comp=Z,156nm,19.2s,baz=150,slow=38							
YAK	**Yakutsk**	**34.99**	**30**	LR		LR	00 04 41.7	
	comp=Z,134nm,19.1s,baz=238,slow=38							
MJAR	**Matsushiro Arr**	**36.58**	**75**	LR		LR	00 06 19.0	
	comp=Z,16nm,18.6s,baz=90,slow=39							
GNI	**Garni**	**37.60**	**291**	LR		LR	00 06 55.5	
	comp=Z,19nm,21.8s,baz=66,slow=38							
KBZ	**Khabaz**	**38.52**	**297**	LR		LR	00 09 05.7	
	comp=Z,59nm,20.4s,baz=60,slow=41							
KVAR	**Kislovodsk Arr**	**38.64**	**298**	LR		LR	00 09 18.2	
	comp=Z,56nm,19.0s,baz=44,slow=41							
MYLDM	**Lahad Datu**	**38.70**	**136**	*e*P		**P**	**23 50 16.2**	**-1.7**
	90nm,1.6s							
OBN	**Obninsk**	**42.46**	**315**	LR		LR	00 09 14.2	
	comp=Z,63nm,21.8s,baz=90,slow=37							
BR101	**Keskin Array S**	**46.04**	**293**	*e*P		**P**	**23 51 19.1**	**+1.3**
BR131	**Keskin Array S**	**46.04**	**293**	*e*P		**P**	**23 51 17.9**	**+0.2**
BRTR	**Keskin Array B**	**46.04**	**293**	P		**P**	**23 51 19.1**	**+1.3**
	1.0nm,0.8s,baz=91,slow=7.5,SNR=6.5							
BRTR				LR		LR	00 15 15.6	
	comp=Z,11nm,19.9s,baz=8.5,slow=42							
BR231	**Keskin MP Arra**	**46.65**	**294**	*e*P		**P**	**23 51 20.4**	**-2.1**
PETK	**Petropavlovsk-**	**47.87**	**48**	LR		LR	00 13 13.1	
	comp=Z,33nm,18.4s,baz=197,slow=38							
FIA1	**FINESS Array S**	**48.21**	**324**	*e*P		**P**	**23 51 35.1**	**+1.0**
	11nm,1.4s							
FIA0	**FINESS Array S**	**48.21**	**324**	*e*P		**P**	**23 51 34.9**	**+0.7**
FINES	**FINESS Array B**	**48.21**	**324**	P		**P**	**23 51 34.9**	**+0.7**
	0.8nm,0.6s,baz=89,slow=8.1,SNR=10							
FINES				LR		LR	00 12 36.0	
	comp=Z,42nm,18.4s,baz=78,slow=37							
ARCES	**ARCESS Array B**	**48.97**	**335**	LR		LR	00 13 49.2	
	comp=Z,53nm,18.9s,baz=97,slow=38							
SANT	**Santorini**	**53.21**	**292**	*e*P		**P**	**23 52 14.4**	**+2.1**
	74nm,1.4s							
NC405	**NORSAR Array S**	**55.13**	**324**	*e*P		**P**	**23 52 26.7**	**+0.8**
NB2	**NORSAR Subarra**	**55.38**	**324**	P		**P**	**23 52 28.1**	**+0.4**
	comp=Z,0.8nm,0.5s,baz=77,slow=7.4							
NB200	**NORSAR Array S**	**55.38**	**324**	*e*P		**P**	**23 52 28.2**	**+0.4**
NOA	**NORSAR Array B**	**55.38**	**324**	P		**P**	**23 52 28.2**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=77,slow=7.9,SNR=5.0							
NOA				LR		LR	00 17 09.1	
	comp=Z,30nm,18.4s,baz=75,slow=37							
GERES	**GERESS Array B**	**57.27**	**310**	LR		LR	00 17 28.5	
	comp=Z,16nm,19.9s,baz=28,slow=36							
FITZ	**Fitzroy Crossi**	**62.08**	**144**	*e*P		**P**	**23 53 12.4**	**-2.4**
	comp=Z,11nm,1.6s							
WR1	**Warramunga Arr**	**68.09**	**138**	*e*P		**P**	**23 53 53.4**	**-0.5**
	comp=Z,32nm,1.9s							
WRA	**Warramunga Arr**	**68.09**	**138**	P		**P**	**23 53 53.4**	**-0.5**
	comp=Z,2.7nm,1.0s,baz=336,slow=7.0,SNR=10							
ILAR	**Eielson Array**	**69.57**	**23**	P		**P**	**23 54 00.9**	**-1.6**
	comp=Z,1.1nm,1.0s,baz=310,slow=5.8,SNR=7.8							
ILB	**Eielson Array**	**69.57**	**23**	*e*P		**P**	**23 54 00.9**	**-1.6**
AS31	**Alice Springs**	**70.89**	**140**	*e*P		**P**	**23 54 11.4**	**+0.3**
	comp=Z,1.4nm,1.2s							
ASAR	**Alice Springs**	**70.89**	**140**	P		**P**	**23 54 11.4**	**+0.3**
	comp=Z,1.2nm,0.8s,baz=325,slow=5.9,SNR=10							
NWAO	**Narrogin (SRO)**	**72.16**	**158**	LR		LR	00 30 45.2	
	comp=Z,16nm,18.1s,slow=40							

*MOS **27** 00:00:20.6±0.4, 52°.75N × 154°.39E, h515km, mb4.5/1, Error ellipse: s-maj=54.4km s-min=30.8km az=138.1*

KRSC 27 00:00:25.8±1.2, 52°.79N × 154°.85E, h462km±14km, ML4.5,

Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GNL	**Ganaly**	**2.07**	**63**	P		P	00 01 28.8	+1.0
GNL				S		S	00 02 17.8	-0.5
GNL	**Ganaly**	**2.07**	**63**	*e*P		P	00 01 28.8	+1.0
GNL				S		S	00 02 17.8	-0.5
SKR	**Severo-Kuril's**	**2.25**	**159**	P		P	00 01 29.3	+0.5
SKR	**Severo-Kuril's**	**2.25**	**159**	P		P	00 01 29.3	+0.5
RUS	**Russkaya**	**2.26**	**98**	P		P	00 01 30.5	+1.7
RUS	**Russkaya**	**2.26**	**98**	*e*P		P	00 01 30.5	+1.7
AVH	**Avacha**	**2.39**	**77**	P		P	00 01 31.5	+1.8
AVH	**Avacha**	**2.39**	**77**	*e*P		P	00 01 31.5	+1.8
KRER	**Koryakskii**	**2.41**	**76**	P		P	00 01 32.3	+2.4
KRER	**Koryakskii**	**2.41**	**76**	*e*P		P	00 01 32.3	+2.4
SDLR	**Sedlovina**	**2.48**	**77**	P		P	00 01 32.2	+1.9
SDLR	**Sedlovina**	**2.48**	**77**	P		P	00 01 32.2	+1.9
SPN	**Mys Shipunski**	**3.14**	**82**	P		P	00 01 36.1	+1.4
SPN				S		S	00 02 30.3	-0.6
SPN	**Mys Shipunski**	**3.14**	**82**	*e*P		P	00 01 36.1	+1.4
SPN				*e*S		S	00 02 30.3	-0.6
ESO	**Esso**	**3.87**	**34**	P		P	00 01 41.1	+0.7
ESO	**Esso**	**3.87**	**34**	*e*P		P	00 01 41.1	+0.7
MKZ	**Mys Kozlova**	**4.46**	**64**	P		P	00 01 46.7	+1.2
MKZ				S		S	00 02 48.8	-1.9
MKZ	**Mys Kozlova**	**4.46**	**64**	*e*P		P	00 01 46.7	+1.2
MKZ				*e*S		S	00 02 48.8	-1.9

*ISCJB **27** 00:10:10.6±0.5, 60°.06N±0°.02 × 140°.05W±0°.04, h9km±3km, Error ellipse: s-maj=4.1km s-min=3.0km az=15.3*

*PGC **27** 00:10:10.0±0.3, 59°.94N × 140°.16W, h5km, ML2.6/9, 81km northwest of Yakutat, Ak Southeastern Alaska*

*NEIC **27** 00:10:10.0, 59°.94N × 140°.16W, h5km, ML2.6(AEIC), ML2.6(OTT), After OTT.*

ISC 27 00:10:09.9±0.9, 60°.01N±0°.03 × 140°.01W±0°.02, h16km±6km, n44, σ1§08/68, Southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PCA	**Pinnacle**	**0.15**	**305**	P		**Pg**	**00 10 13.9**	**-0.1**
PCA				S		**Sg**	**00 10 16.9**	**+0.3**
PCA	**Pinnacle**	**0.15**	**305**	P		**Pg**	**00 10 13.7**	**-0.3**
PCA				S		**Sb**	**00 10 17.2**	**-0.3**
SAMH	**Samovar Hills**	**0.41**	**288**	P		**Pb**	**00 10 18.9**	**+0.2**
SAMH				S		**Sb**	**00 10 25.5**	**+0.8**
YKU2	**Yakutat**	**0.53**	**161**	P		**Pb**	**00 10 21.7**	**+0.9**
YKU2				S		**Sn**	**00 10 31.1**	**-0.3**
TABL	**Table Mountain**	**0.71**	**308**	P		**Pg**	**00 10 23.6**	**-0.2**
TABL				S		**Sb**	**00 10 34.1**	**+0.4**
RKAV	**Rock Avalanche**	**0.73**	**294**	P		**Pb**	**00 10 24.3**	**0.0**
RKAV				S		**Sb**	**00 10 34.9**	**+0.7**
LOGN	**Logan Glacier**	**0.95**	**329**	P		**Pb**	**00 10 27.6**	**-0.5**
LOGN				S		**Sb**	**00 10 40.3**	**-0.4**
MESA	**MESA**	**0.99**	**281**	P		**Pb**	**00 10 28.7**	**0.0**
MESA				S		**Sg**	**00 10 42.5**	**+0.5**
YUK7	**Dusty Glacier**	**1.07**	**60**	P		**Pg**	**00 10 30.7**	**+0.2**
YUK7				S		**Sn**	**00 10 46.4**	**+1.3**
GRNC	**Granite Creek**	**1.13**	**311**	P		**Pb**	**00 10 30.1**	**-1.1**
GRNC				S		**Sb**	**00 10 44.6**	**-1.1**
BAGL	**Bagley Icefiel**	**1.14**	**296**	P		**Pn**	**00 10 30.7**	**-0.5**
BAGL				S		**Sn**	**00 10 46.4**	**-0.2**
CTGM	**Chitina Glacie**	**1.16**	**326**	P		**Pn**	**00 10 30.9**	**-0.7**
CTGM				S		**Sb**	**00 10 46.3**	**-0.3**
CTGM	**Chitina Glacie**	**1.16**	**326**	P		**Pn**	**00 10 31.2**	**-0.5**
YUK6	**Outpost Mounta**	**1.24**	**40**	P		**Pg**	**00 10 34.3**	**+0.4**
YUK6				S		**Sg**	**00 10 51.2**	**+1.2**
DHAK	**Deception Hill**	**1.30**	**134**	P		**Pg**	**00 10 34.5**	**-0.4**
DHAK				S		**Sg**	**00 10 52.6**	**+0.8**
ISLE	**Juniper Island**	**1.30**	**298**	P		**Pn**	**00 10 33.0**	**-0.7**
BARN	**Barnard Glacie**	**1.33**	**323**	P		**Pn**	**00 10 34.5**	**-0.1**
BARN				S		**Sb**	**00 10 51.3**	**-0.3**
KULT	**Kultieth River**	**1.38**	**281**	P		**Pb**	**00 10 35.1**	**-0.2**
KIAG	**Kiagna River**	**1.48**	**309**	P		**Pn**	**00 10 35.6**	**-0.4**
WAX	**Waxell Ridge**	**1.48**	**289**	P		**Pn**	**00 10 36.5**	**+0.5**
HYT	**Haines Junctio**	**1.49**	**56**	Pn		**Pg**	**00 10 38.2**	**-0.3**
HYT				Sg		**Sg**	**00 10 58.6**	**+0.8**
HYT	**Haines Junctio**	**1.49**	**56**	P		**Pg**	**00 10 38.2**	**-0.3**
BALM	**Baldy**	**1.55**	**313**	Pn		**Pn**	**00 10 36.5**	**-0.4**
BALM				Sg		**Sb**	**00 10 57.3**	**-0.4**
BALM	**Baldy**	**1.55**	**313**	P		**Pn**	**00 10 36.6**	**-0.4**
YUK5	**Granite Creek**	**1.55**	**42**	Pn		**Pg**	**00 10 39.7**	**+0.1**
YUK5				Sg		**Sg**	**00 11 00.7**	**+0.9**
KHIT	**Khitrov Hills**	**1.67**	**286**	P		**Pn**	**00 10 39.5**	**+0.8**
PTPK	**Patty Peak**	**1.69**	**315**	P		**Pn**	**00 10 39.5**	**+0.5**
CRQM	**Cirque**	**1.73**	**297**	P		**Pn**	**00 10 39.3**	**-0.1**
YUK3	**Moose Creek**	**1.79**	**353**	Pn		**Pb**	**00 10 42.8**	**+0.4**
YUK3				Sg		**Sg**	**00 11 07.1**	**-0.3**
YUK2	**White River**	**1.83**	**348**	Pn		**Sg**	**00 10 49.4**	**+0.3**
YUK2				Sg		**Sg**	**00 11 08.2**	**+0.6**
BERG	**Berg Lake**	**1.88**	**283**	P		**Pn**	**00 10 42.3**	**+0.8**
SUCK	**Suckling Hills**	**1.89**	**274**	P		**Pn**	**00 10 42.6**	**+1.0**
PLBC	**Pleasant Camp**	**1.93**	**105**	Pn		**Pb**	**00 10 43.7**	**-1.0**
PLBC				Sg		**Sb**	**00 11 09.2**	**+0.8**
PLBC	**Pleasant Camp**	**1.93**	**105**	P		**Pb**	**00 10 43.6**	**-1.0**
MCARA	**McCarthy VSAT**	**2.02**	**314**	P		**Pn**	**00 10 43.8**	**+0.5**
VRDI	**Verde Repeater**	**2.09**	**307**	P		**Pn**	**00 10 45.2**	**+0.8**
YUK1	**Sand Pete Hill**	**2.17**	**354**	Pn		**Pb**	**00 10 48.1**	**-0.7**
YUK1				Sg		**Sb**	**00 11 15.5**	**0.0**
KAIM	**Kayak Island**	**2.22**	**270**	P		**Pn**	**00 10 46.7**	**+0.7**
RAGM	**Ragged Mountai**	**2.36**	**281**	P		**Pn**	**00 10 49.2**	**+1.2**
BMRM	**Bremner River**	**2.47**	**295**	P		**Pn**	**00 10 50.3**	**+0.8**
DIV	**Divide**	**3.06**	**294**	Sg		**Sb**	**00 11 39.7**	**-1.3**
DAWY	**Dawson**	**4.08**	**4**	Pn		**Pn**	**00 11 14.1**	**+2.5**
DAWY				Sg		**Sg**	**00 12 18.2**	**-2.6**
DOT	**Dot Lake**	**4.13**	**334**	Pn		**Pn**	**00 11 14.1**	**+1.9**
DLBC	**Dease Lake**	**5.36**	**103**	Sn		**Sn**	**00 12 31.5**	**+0.7**
DLBC				Sg		**Sg**	**00 12 56.1**	**-5.8**

*ISCJB **27** 00:28:39.5±0.5, 50°.13N±0°.04 × 19°.00E±0°.03, h0km, Error ellipse: s-maj=5.2km s-min=2.3km az=16.0*

*CSEM **27** 00:28:40.7±0.3, 50°.14N × 19°.08E, h2km, ML2.7/5, Error ellipse: s-maj=7.6km s-min=3.4km az=9.0*

*WAR **27** 00:28:41.5, 50°.09N × 19°.20E, h1km, Mw2.4*

*PRU **27** 00:28:41.5, 50°.14N × 19°.07E, h0km*

ISC 27 00:28:40.7±0.8, 50°.09N±0°.03 × 19°.09E±0°.02, h0km, n35, σ0§62/62, Poland

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OJC	**Ojcow**	**0.48**	**74**	*e*Pg		**Pg**	**00 28 49.3**	**-0.6**
OJC				*e*Sg		**Sg**	**00 28 55.8**	**-0.2**
OJC	**Ojcow**	**0.48**	**74**	*e*Pg		**Pg**	**00 28 49.3**	**-0.6**
OJC				*e*Sg		**Sg**	**00 28 55.8**	**-0.2**
OJC	**Ojcow**	**0.48**	**74**	*e*Pg		**Pg**	**00 28 49.3**	**-0.6**
OJC				*e*Sg		**Sg**	**00 28 55.8**	**-0.2**
OKC	**Ostrava-Krasne**	**0.66**	**248**	*e*PG		**Pb**	**00 28 55.0**	**0.0**
OKC				*e*SG		**Sb**	**00 29 05.0**	**+0.3**
	comp=Z,10nm,0.4s							
OKC	**Ostrava-Krasne**	**0.66**	**248**	Pg		**Pb**	**00 28 55.0**	**0.0**
LANS	**Liptovska Anna**	**0.97**	**165**	*e*PG		**Pb**	**00 29 00.0**	**-0.4**
LANS				*e*SG		**Sb**	**00 29 13.8**	**0.0**
NIE	**Niedzica**	**1.03**	**130**	*e*Pg		**Pg**	**00 29 00.5**	**0.0**
NIE				*e*Sg		**Sb**	**00 29 14.9**	**-0.7**
NIE	**Niedzica**	**1.03**	**130**	*e*Pg		**Pg**	**00 29 00.5**	**0.0**
NIE				*e*Sg		**Sb**	**00 29 14.9**	**-0.7**
NIE	**Niedzica**	**1.03**	**130**	*e*Pg		**Pg**	**00 29 00.5**	**0.0**
NIE				*e*Sg		**Sb**	**00 29 14.9**	**-0.7**
MORC	**Moravsky Berou**	**1.04**	**253**	*e*Pg		**Pb**	**00 29 01.4**	**-0.3**
MORC				*e*Sg		**Sb**	**00 29 17.0**	**+1.0**
KRLC	**Kraliky**	**1.48**	**270**	*e*PG		**Pn**	**00 29 08.0**	**-0.7**
KRLC				*e*SG		**Sn**	**00 29 29.1**	**+0.2**
KRLC	**Kraliky**	**1.48**	**270**	Pg		**Pn**	**00 29 08.0**	**-0.7**
KRLC				Sg		**Sn**	**00 29 29.1**	**+0.2**
STHS	**Stebnicka Huta**	**1.55**	**115**	*e*Pn		**Pg**	**00 29 10.5**	**0.0**
STHS				*e*Sn		**Sg**	**00 29 32.8**	**+2.2**
STHS	**Stebnicka Huta**	**1.55**	**115**	*e*PN		**Pg**	**00 29 10.5**	**0.0**
STHS				*e*SN		**Sg**	**00 29 32.8**	**+2.2**
STHS				*e*LG		Lg	00 29 38.7	
VYHS	**Vyhne**	**1.60**	**186**	*e*Pn		**Pn**	**00 29 10.2**	**-0.1**
VYHS				*e*Sn		**Sg**	**00 29 32.0**	**-0.2**
VYHS	**Vyhne**	**1.60**	**186**	*e*PN		**Pn**	**00 29 10.2**	**-0.1**
VYHS				*e*SN		**Sg**	**00 29 32.0**	**-0.2**
VYHS				*e*LG		Lg	00 29 33.8	
DPC	**Dobruska-Polom**	**1.79**	**279**	*e*PG		**Pn**	**00 29 13.2**	**+0.2**
DPC				*e*SG		**Sg**	**00 29 38.1**	**-0.3**
	comp=Z,12nm,0.4s							
DPC	**Dobruska-Polom**	**1.79**	**279**	Pg		**Pn**	**00 29 13.2**	**+0.2**
DPC				Sg		**Sg**	**00 29 38.1**	**-0.3**
	12nm,0.4s							
VRAC	**Vranov**	**1.80**	**245**	*e*Pn		**Pb**	**00 29 14.3**	**-0.2**
VRAC				*e*Sg		**Sg**	**00 29 39.2**	**+0.8**
KECS	**Kecovo**	**1.85**	**150**	*e*Pn		**Pb**	**00 29 15.5**	**+0.1**
KECS				*e*Sn		**Sb**	**00 29 38.5**	**-0.6**
KECS	**Kecovo**	**1.85**	**150**	*e*PN		**Pb**	**00 29 15.5**	**+0.1**
KECS				*e*SN		**Sb**	**00 29 38.4**	**-0.6**
KECS				*e*LG		Lg	00 29 39.5	
SMOL	**Smolenice**	**1.91**	**215**	*e*Pg		**Pg**	**00 29 17.0**	**-0.4**
SMOL				*e*Sg		**Sg**	**00 29 42.1**	**0.0**
SMOL	**Smolenice**	**1.91**	**215**	*e*PG		**Pg**	**00 29 17.0**	**-0.4**
SMOL				*e*SG		**Sg**	**00 29 42.1**	**0.0**
UPC	**Upice**	**2.02**	**283**	*e*SG		**Sb**	**00 29 44.5**	**+0.6**
	comp=Z,4.6nm,0.4s							
UPC	**Upice**	**2.02**	**283**	Sg		**Sb**	**00 29 44.5**	**+0.6**
	4.6nm,0.4s							
GOPC	**GO Pecny, Ondr**	**2.78**	**268**	*e*SG		**Sg**	**00 30 09.6**	**-0.4**
	comp=Z,3.6nm,0.4s							
GOPC	**GO Pecny, Ondr**	**2.78**	**268**	Sg		**Sg**	**00 30 09.6**	**-0.4**
	3.6nm,0.4s							
PVCC	**Panska Ves**	**2.93**	**280**	*e*SG		**Sg**	**00 30 15.3**	**+0.5**
	comp=Z,7.9nm,0.4s							
PVCC	**Panska Ves**	**2.93**	**280**	Sg		**Sg**	**00 30 15.3**	**+0.5**
	7.9nm,0.4s							
PRU	**Pruhonice**	**2.93**	**270**	*e*PG		**Pg**	**00 29 36.7**	**-0.2**
PRU				*e*SG		**Sg**	**00 30 14.2**	**-0.7**
	comp=Z,3.2nm,0.5s							
PRU	**Pruhonice**	**2.93**	**270**	Pg		**Pg**	**00 29 36.7**	**-0.2**
PRU				Sg		**Sg**	**00 30 14.2**	**-0.7**
	3.2nm,0.5s							
BRG	**Berggiesshubel**	**3.38**	**285**	SG		**Sg**	**00 30 29.5**	**+0.3**
	2.9nm,0.5s							
KHC	**Kasperske Hory**	**3.71**	**257**	*e*PN		**Pn**	**00 29 40.1**	**+0.8**
KHC				*e*PG		**Pg**	**00 29 51.8**	**0.0**
KHC				*e*SG		**Sg**	**00 30 39.1**	**-0.7**
KHC	**Kasperske Hory**	**3.71**	**257**	Pn		**Pn**	**00 29 40.1**	**+0.8**
KHC				Sg		**Sg**	**00 30 39.1**	**-0.7**
NKC	**Novy Kostel**	**4.27**	**274**	*e*SG		**Sg**	**00 30 58.5**	**+0.6**

*ISCJB **27** 00:33:16.9±0.2, 38°.33N±0°.01 × 21°.73E±0°.02, h11km±1km, mb3.8/8, MS2.5/2, Error ellipse: s-maj=2.5km s-min=2.0km az=31.3*

*ATH **27** 00:33:17.0, 38°.32N × 21°.77E, h19km±1km, ML3.4/10, Error ellipse: s-maj=1.0km s-min=0.6km az=322.0*

*IDC **27** 00:33:16.5±1.5, 38°.38N × 21°.71E, h0km, mb3.8/8, mb1 3.7/13, mb1mx3.6/50, mbtmp3.6/13, ML3.7/4, MS2.6/4, Ms1 2.6/4, ms1mx2.1/52, Error ellipse: s-maj=26.7km s-min=16.0km az=34.0*

*THE **27** 00:33:17.2, 38°.32N × 21°.77E, h2km±1km, ML3.5/7, Error ellipse: s-maj=1.1km s-min=0.4km az=221.0*

*CSEM **27** 00:33:17.4±0.1, 38°.29N × 21°.78E, h5km, ML3.4, Error ellipse: s-maj=2.7km s-min=2.2km az=36.0*

*IASPEI **27** 00:33:17.2±0.8, 38°.32N±0°.02 × 21°.77E±0°.01, h7km±5km, mb3.6/8, Error ellipse: s-maj=2.3km s-min=2.1km az=2.8, GT5 selection from ISC bulletin GT5 identified by Bond¨¡r and McLaughlin (2009) selection criteria Bond¨¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., <b>80

THAL	Thalero	0.76	112	P		Pg	00 33 31.8	-0.2
THAL	Thalero	0.76	112	P		Pg	00 33 31.8	-0.2
AMT	Artemida-Makis	0.79	184	P		Pg	00 33 32.3	-0.3
AMT	Artemida-Makis	0.79	184	P		Pg	00 33 32.3	-0.3
AMT				S		Sn	00 33 46.7	-0.5
AMT	Artemida-Makis	0.79	184	P		Pg	00 33 32.6	0.0
KFL	Anninata	0.80	255	P		Pg	00 33 32.4	-0.4
KFL	Anninata	0.80	255	P		Pg	00 33 33.0	+0.2
KFL	Anninata	0.80	255	P		Pg	00 33 33.0	+0.2
AGG	Agios Georgios	0.82	32	P		Pg	00 33 32.6	-0.7
AGG				S		Sb	00 33 44.8	-0.7
AGG	Agios Georgios	0.82	32	P		Pg	00 33 32.3	-1.0
TRIP	Tripoli	0.89	153	P		Pg	00 33 33.8	-0.7
TRIP				S		Sb	00 33 46.7	-0.7
TRIP	Tripoli	0.89	153	P		Pg	00 33 33.8	-0.7
TRIP				S		Sb	00 33 46.7	-0.7
TRIP				AML	AML		00 33 51.6	
	comp=E,4222µm,0.5s							
TRIP				AML	AML		00 33 53.7	
	comp=N,4115µm,0.6s							
PROD	Prodromos	0.89	94	P		Pg	00 33 34.5	0.0
PROD				S		Sg	00 33 45.8	-0.3
PROD	Prodromos	0.89	94	P		Pg	00 33 34.5	0.0
PROD				S		Sg	00 33 45.8	-0.3
PROD				AML	AML		00 33 52.1	
	comp=N,7288µm,0.5s							
PROD				AML	AML		00 33 53.2	
	comp=E,6469µm,0.3s							
VLS	Valsamata	0.94	261	P		Pg	00 33 34.2	-1.3
VLS	Valsamata	0.94	261	P		Pg	00 33 34.2	-1.3
LKD2	Lefkada island	0.99	298	P		Pg	00 33 35.2	-1.2
LKD2				S		Sb	00 33 50.6	+0.4
LKD2	Lefkada island	0.99	298	P		Pg	00 33 35.2	-1.2
LKD2				S		Sb	00 33 50.6	+0.4
LKD2	Lefkada island	0.99	298	P		Pg	00 33 34.9	-1.5
LTK	Loutraki	0.99	107	P		Pg	00 33 35.8	-0.6
LTK	Loutraki	0.99	107	P		Pg	00 33 36.2	-0.2
LTK	Loutraki	0.99	107	P		Pg	00 33 36.2	-0.2
ZKS	Zakynthos	1.00	231	P		Pg	00 33 35.3	-1.3
ZKS	Zakynthos	1.00	231	P		Pg	00 33 35.6	-1.0
ZKS	Zakynthos	1.00	231	P		Pg	00 33 35.6	-1.0
LOUT	Loutraki	1.01	109	P		Pg	00 33 36.2	-0.5
LOUT	Loutraki	1.01	109	P		Pg	00 33 36.2	0.0
LOUT	Loutraki	1.01	109	P		Pg	00 33 36.7	0.0
LKR	Lokris	1.02	71	P		Pg	00 33 35.9	-1.1
LKR	Lokris	1.02	71	P		Pg	00 33 36.4	-0.6
LKR				S		Sg	00 33 50.2	0.0
LKR	Lokris	1.02	71	P		Pg	00 33 36.4	-0.6
LKR				S		Sg	00 33 50.2	0.0
LKR				AML	AML		00 33 54.8	
	comp=E,3290µm,0.2s							
LKR				AML	AML		00 33 55.7	
	comp=N,3120µm,0.2s							
ATAL	Atalanti	1.05	69	P		Pg	00 33 36.3	-1.2
ATAL	Atalanti	1.05	69	P		Pg	00 33 36.3	-1.2
ATAL				S		Sn	00 33 53.1	-0.5
ATAL	Atalanti	1.05	69	P		Pg	00 33 35.1	-2.4
ATAL				S		Sn	00 33 53.1	-0.5
ATAL				AML	AML		00 33 57.0	
	comp=N,2282µm,0.6s							
ATAL				AML	AML		00 33 57.3	
	comp=E,1150µm,0.7s							
VLX	Vlachokerasia	1.07	153	P		Pg	00 33 36.8	-1.1
VLX	Vlachokerasia	1.07	153	P		Pg	00 33 37.0	-0.9
VLX	Vlachokerasia	1.07	153	P		Pg	00 33 37.0	-0.9
ITM	Ithomi	1.15	174	P		Pg	00 33 38.6	-0.8
ITM	Ithomi	1.15	174	P		Pg	00 33 38.6	-0.8
ITM	Ithomi	1.15	174	P		Pn	00 33 39.9	-0.2
VIL2	Platees	1.19	95	P		Pn	00 33 42.0	+1.5
VIL2				S		Sn	00 33 57.1	+0.2
VIL2				AML	AML		00 34 02.0	
	comp=E,2958µm,0.5s							
VIL2				AML	AML		00 34 06.7	
	comp=N,4003µm,0.7s							
VILL	Villia	1.23	97	P		Pg	00 33 40.1	-0.8
VILL	Villia	1.23	97	P		Pg	00 33 40.1	-0.8
VILL				S		Sb	00 33 57.1	0.0
THL	Klokotos Trika	1.25	9	P		Pn	00 33 42.8	+1.3
THL				S		Sn	00 33 58.6	0.0
SMIA	Simia	1.26	63	P		Pg	00 33 40.6	-0.9
SMIA	Simia	1.26	63	P		Pn	00 33 41.6	+0.1
SMIA	Simia	1.26	63	P		Pn	00 33 41.6	+0.1
FYTO	Fytoko, Volos	1.42	40	P		Pn	00 33 43.4	-0.3
FYTO	Fytoko, Volos	1.42	40	P		Pn	00 33 43.4	-0.3
DID	Didima	1.42	125	P		Pn	00 33 43.1	+1.7
DID	Didima	1.42	125	P		Pn	00 33 43.7	-0.1
DID	Didima	1.42	125	P		Pn	00 33 43.7	-0.1
PYL	PYLOS	1.43	181	P		Pn	00 33 42.8	-1.0
PYL	PYLOS	1.43	181	P		Pn	00 33 43.4	-0.4
PYL	PYLOS	1.43	181	P		Pn	00 33 43.4	-0.4
NEO	Neokhori	1.50	49	P		Pn	00 33 43.9	-1.0
NEO	Neokhori	1.50	49	P		Pn	00 33 44.6	-0.3
NEO	Neokhori	1.50	49	P		Pn	00 33 44.6	-0.3
XOR	Xorichti	1.52	46	P		Pn	00 33 44.3	-0.9
XOR	Xorichti	1.52	46	P		Pn	00 33 45.1	-0.1
XOR	Xorichti	1.52	46	P		Pn	00 33 45.1	-0.1
SKIA	Skiathos	1.57	57	P		Pn	00 33 44.8	-1.0
SKIA	Skiathos	1.57	57	P		Pn	00 33 45.6	-0.3
SKIA	Skiathos	1.57	57	P		Pn	00 33 45.6	-0.3
ATH	Athens Observa	1.57	102	P		Pn	00 33 45.5	-0.4
ATH	Athens Observa	1.57	102	P		Pn	00 33 45.5	-0.4
ATHU	Athens Univers	1.63	102	P		Pn	00 33 46.3	-0.3
ATHU	Athens Univers	1.63	102	P		Pn	00 33 46.3	-0.3
IGT	Igoumenitsa	1.65	318	P		Pn	00 33 46.7	-0.2
IGT	Igoumenitsa	1.65	318	P		Pn	00 33 46.7	-0.2
IGT	Igoumenitsa	1.65	318	P		Pg	00 33 49.4	+0.4
VLY	Voula,Athens	1.67	106	P		Pn	00 33 46.5	-0.6
VLY	Voula,Athens	1.67	106	P		Pn	00 33 46.8	-0.3
VLY	Voula,Athens	1.67	106	P		Pn	00 33 46.8	-0.3
PTL	Penteli	1.67	99	P		Pn	00 33 46.6	-0.7
PTL	Penteli	1.67	99	P		Pn	00 33 47.2	-0.1
PTL	Penteli	1.67	99	P		Pn	00 33 47.2	-0.1
EREA	Eretria	1.70	86	P		Pn	00 33 47.1	-0.6
EREA	Eretria	1.70	86	P		Pn	00 33 48.2	+0.5
EREA	Eretria	1.70	86	P		Pn	00 33 48.2	+0.5
VLI	Veliai	1.85	150	P		Pn	00 33 49.6	-0.1
VLI	Veliai	1.85	150	P		Pn	00 33 49.6	-0.1
VLI	Veliai	1.85	150	P		Pb	00 33 51.2	-0.5
AOS	Alonnisos	1.85	62	P		Pn	00 33 48.5	-1.2
AOS	Alonnisos	1.85	62	P		Pn	00 33 48.5	-1.2
LIT	Litokhoron	1.86	17	P		Pn	00 33 50.0	+0.2
LIT	Litokhoron	1.86	17	P		Pn	00 33 50.5	+0.7
LIT	Litokhoron	1.86	17	P		Pn	00 33 50.5	+0.7
KARY	Karystos	2.12	97	P		Pn	00 33 52.6	-0.8
KARY	Karystos	2.12	97	P		Pn	00 33 53.4	0.0
KARY	Karystos	2.12	97	P		Pn	00 33 53.4	0.0
PLG	Polygyros	2.42	32	P		Pn	00 33 57.3	-0.3
PLG	Polygyros	2.42	32	P		Pn	00 33 57.3	-0.3
SERI	Serifos	2.45	117	P		Pn	00 33 56.0	-1.9
SERI	Serifos	2.45	117	P		Pn	00 33 56.0	-1.9
FNA	Florina	2.48	353	P		Pb	00 34 02.3	0.0
HORT	Hortiatis	2.49	24	P		Pn	00 33 58.4	-0.2
HORT	Hortiatis	2.49	24	P		Pn	00 33 58.4	-0.2
OUR	Ouranopolis	2.64	40	P		Pn	00 33 59.0	-1.5
OUR	Ouranopolis	2.64	40	P		Pn	00 33 59.0	-1.5
GRG	Griva	2.67	10	P		Pn	00 34 01.7	+0.7
GRG	Griva	2.67	10	P		Pn	00 34 01.7	+0.7
GRG	Griva	2.67	10	P		Pn	00 34 02.4	+1.3
SOH	Sokhos	2.78	26	P		Pn	00 34 03.1	+0.6
SOH	Sokhos	2.78	26	P		Pn	00 34 03.1	+0.6
OHR	Ohrid	2.88	345	*i* Pn		Pb	00 34 09.3	0.0
OHR	Ohrid	2.88	345	*i* Pn		Pb	00 34 09.3	0.0
KNT	Kendrikon	2.96	17	P		Pn	00 34 05.5	+0.5
KNT	Kendrikon	2.96	17	P		Pn	00 34 05.5	+0.5
KNT	Kendrikon	2.96	17	P		Pn	00 34 05.9	+0.9
VAY	Valandovo	3.06	11	*i* Pn		Pb	00 34 09.4	-2.9
VAY	Valandovo	3.06	11	*i* Pn		Pb	00 34 09.3	-2.9
APE	Apeiranthos	3.23	112	‖ *i*P		Pn	00 34 08.9	+0.1
APE	Apeiranthos	3.23	112	P		Pn	00 34 08.0	-0.7
APE	Apeiranthos	3.23	112	P		Pn	00 34 08.0	-0.7
TIR	Tirane	3.36	335	‖ *i*P		Pn	00 34 12.9	+2.5
TIR	Tirane	3.36	335	‖ *i*P		Pn	00 34 12.9	+2.5
SKO	Skopje	3.65	356	*i* Pn		Pn	00 34 16.5	+2.0
SKO	Skopje	3.65	356	*i* Pn		Pn	00 34 16.5	+2.0
IDI	Anoyia	3.93	139	Pn		Pn	00 34 19.7	+1.4
	comp=N,1.8nm,0.3s,baz=328,slow=14,SNR=26							
IDI				Sn		Sn	00 35 07.1	+2.3
	comp=N,2.4nm,0.3s,baz=84,slow=23,SNR=4.6							
TAR1	Taranto	4.11	304	*e*Pn		Pn	00 34 22.4	+1.7
DRME	Dracevica, Mon	4.34	334	*e*Pn		Pn	00 34 25.0	+1.2
BARS	Barje	4.49	0	*e*Pn		Pn	00 34 28.3	+2.4
PDG	Podgorica	4.53	336	‖ *i*P		Pn	00 34 28.4	+1.9
PDG	Podgorica	4.53	336	*e*Pn		Pn	00 34 27.9	+1.4
PDG	Podgorica	4.53	336	‖ *i*P		Pn	00 34 28.4	+1.9
SG1	Sgolgore (BA)	4.67	304	*e*Pn		Pn	00 34 29.0	+0.6
BAI	Bari	4.69	308	*e*Pn		Pn	00 34 29.0	+0.4
HCY	Herceg Novi	4.82	330	*e*Pn		Pn	00 34 29.8	-0.7
CDT	Castel del Mon	5.05	305	*e*Pn		Pn	00 34 34.1	+0.4
TREB	Trebinje	5.10	330	*e*Pn		Pn	00 34 33.7	-0.7
BRY	Bratogost	5.19	333	*e*Pn		Pn	00 34 35.1	-0.6
BOVS	Bovan	5.31	359	*e*Pn		Pn	00 34 39.9	+2.7
UPM	Unac-Piva	5.34	337	*e*Pn		Pn	00 34 40.9	+3.1
IVAS	Ivanjica	5.39	347	*e*Pn		Pn	00 34 40.3	+1.9
BOLS	Boljevac	5.50	1	*e*Pn		Pn	00 34 41.5	+1.7
MS1	Monte Sant'Ang	5.61	309	*e*Pn		Pn	00 34 41.4	+0.1
BBLS	Lazići	5.82	343	*e*Pn		Pn	00 34 45.1	+0.8
DIVS	Divibare	5.92	347	*e*Pn		Pn	00 34 46.4	+0.7
TEKS	Tekeris	6.44	346	*e*Pn		Pn	00 34 52.5	-0.3
MDVR	Moldovita	6.45	360	‖ *i*P		Pn	00 34 54.5	+1.5
MDVR	Moldovita	6.45	360	‖ *i*P		Pn	00 34 54.5	+1.5
LOT	Lotru	7.27	11	‖ *i*P		Pn	00 35 05.8	+1.5
LOT	Lotru	7.27	11	‖ *i*P		Pn	00 35 05.8	+1.5
BLY	Banja Luka	7.28	333	*e*Pn		Pn	00 35 04.3	0.0
ARR	Arges	7.36	16	‖ *i*P		Pn	00 35 06.9	+1.5
ARR	Arges	7.36	16	‖ *i*P		Pn	00 35 06.9	+1.5
VOIR		7.52	18	‖ *i*P		Pn	00 35 08.9	+1.3
VOIR		7.52	18	‖ *i*P		Pn	00 35 08.9	+1.3
UDBI	Udbina	7.67	326	*i* Pn		Pn	00 35 10.3	+0.6
UDBI				Sn		Sn	00 36 36.6	-0.1
UDBI	Udbina	7.67	326	*i* Pn		Pn	00 35 10.2	+0.6
UDBI				Sn		Sn	00 36 36.6	-0.1
MLR	Muntele Rosu	7.81	22	Pn		Pn	00 35 13.8	+2.2
	baz=181,slow=15							
MLR	Muntele Rosu	7.81	22	‖ *i*P		Pn	00 35 14.0	+2.4
MLR	Muntele Rosu	7.81	22	‖ *i*P		Pn	00 35 14.0	+2.4
NVLJ	Novalja	8.10	322	*e*Pn		Pn	00 35 15.4	-0.2
NVLJ				Sn		Sn	00 36 45.5	-1.9
NVLJ	Novalja	8.10	322	*e*Pn		Pn	00 35 15.3	-0.2
PLOR	Plostina	8.35	24	‖ *i*P		Pn	00 35 21.8	+2.8
PLOR	Plostina	8.35	24	‖ *i*P		Pn	00 35 21.8	+2.8
VRI	Vrincioaia	8.39	24	‖ *i*P		Pn	00 35 21.5	+2.0
VRI	Vrincioaia	8.39	24	‖ *i*P		Pn	00 35 21.5	+2.0
CRES	Cresnjev	8.84	330	*e*Pn		Pn	00 35 23.9	-1.8
BRTR	Keskin Array B	9.34	78	Pn		Pn	00 35 35.0	+2.3
	comp=N,0.3nm,0.3s,baz=260,slow=12,SNR=15							
SOKA	Soboth	9.71	331	*i* Pn		Pn	00 35 37.6	-0.1
	comp=N,1.1nm,0.5s							
SOKA	Soboth	9.71	331	Pn		Pn	00 35 37.6	-0.1
	comp=N,1.1nm,0.5s							
OBKA	Obir	9.76	329	*i* Pn		Pn	00 35 38.8	+0.4
	comp=N,1.1nm,0.4s							
OBKA				*i* Sn		Sn	00 37 30.8	+2.4
	comp=N,0.5nm,0.2s							
OBKA	Obir	9.76	329	Pn		Pn	00 35 38.8	+0.4
	comp=N,1.1nm,0.4s							
OBKA				Sn		Sn	00 37 30.8	+2.4
	comp=N,0.5nm,0.2s							
ARSA	Arzberg	10.03	335	*i* Pn		Pn	00 35 49.8	+7.9
	comp=N,1.6nm,0.6s							
KECS	Kecovo	10.20	355	*e*Pn		Pn	00 35 43.4	-0.9
KECS	Kecovo	10.20	355	*e*PN		Pn	00 35 43.4	-0.9
MYKA	Terra Mystica	10.24	327	*i* Sn		Sn	00 37 41.8	+1.8
	comp=N,0.1nm,0.1s							
MYKA	Terra Mystica	10.24	327	Sn		Sn	00 37 41.8	+1.8
	comp=N,0.1nm,0.1s							
CONA	Conrad Observa	10.52	338	*i* Pn		Pn	00 35 50.2	+1.4
CONA	Conrad Observa	10.52	338	Pn		Pn	00 35 50.2	+1.4
ABTA	Abfaltersbach	10.83	324	*i* Pn		Pn	00 35 52.7	-0.4
	comp=N,1.2nm,0.5s							
ABTA	Abfaltersbach	10.83	324	Pn		Pn	00 35 52.7	-0.4
	comp=N,1.2nm,0.5s							
MOA	Molln	10.98	333	*i* Pn		Pn	00 35 56.5	+1.5
	comp=N,0.1nm,0.1s							
MOA				*i* Sn		Sn	00 37 59.5	+1.4
	comp=N,0.2nm,0.1s							
MOA	Molln	10.98	333	Pn		Pn	00 35 56.5	+1.5
	comp=N,0.1nm,0.1s							
MOA				Sn		Sn	00 37 59.5	+1.4
	comp=N,0.2nm,0.1s							
STHS	Stebnicka Huta	11.10	358	*e*Pn		Pn	00 35 56.9	+0.3
STHS	Stebnicka Huta	11.10	358	*e*PN		Pn	00 35 56.9	+0.3
VRAC	Vranov	11.60	343	LR		LR	00 40 53.6	
	comp=N,33nm,21.8s,baz=196,slow=40							
WATA	Walderalm	11.70	324	*i* Pn		Pn	00 36 05.8	+0.9
	comp=N,0.8nm,0.2s							
WATA	Walderalm	11.70	324	Pn		Pn	00 36 05.8	+0.9
	comp=N,0.8nm,0.2s							
MOTA	Moosalm	11.93	322	*i* Pn		Pn	00 36 07.9	-0.2
	comp=N,2.2nm,0.5s							
MOTA	Moosalm	11.93	322	Pn		Pn	00 36 07.9	-0.2
	comp=N,2.2nm,0.5s							
GERES	GERESS Array B	12.03	334	Pn		Pn	00 36 09.1	-0.3
	comp=N,0.1nm,0.3s,baz=146,slow=18,SNR=3.7							
GERES				LR		LR	00 40 50.7	
	comp=N,18nm,21.6s,baz=140,slow=38							
RETA	Reutte	12.19	322	*i* Pn		Pn	00 36 13.3	+1.7
	comp=N,0.1nm,0.1s							
RETA	Reutte	12.19	322	Pn		Pn	00 36 13.3	+1.7
	comp=N,0.1nm,0.1s							
DAVA	Damuels	12.49	320	*i* Pn		Pn	00 36 16.8	+1.0
	comp=N,0.6nm,0.4s							
DAVA	Damuels	12.49	320	Pn		Pn	00 36 16.8	+1.0
	comp=N,0.6nm,0.4s							
ESDC	Sonseca Array	20.03	282	P		P	00 37 51.6	+0.6
	comp=N,0.2nm,0.3s,baz=80,slow=11,SNR=5.2							
HFS	Hagfors	22.42	349	P		P	00 38 15.2	-1.4
	comp=N,0.9nm,0.4s,baz=156,slow=11,SNR=17							
FINES	FINESS Array B	23.30	5	P		P	00 38 24.0	-1.7
	comp=N,0.6nm,0.5s,baz=160,slow=12,SNR=6.9							
FINES				LR		LR	00 48 21.0	
	comp=N,22nm,18.1s,baz=270,slow=39							
NB2	NORSAR Subarra	23.68	347	P		P	00 38 28.4	-1.2
	comp=Z,0.7nm,0.5s,baz=151,slow=10							
NB2	NORSAR Subarra	23.68	347	P		P	00 38 28.4	-1.2
	comp=Z,0.7nm,0.5s,SNR=3.6							
NOA	NORSAR Array B	23.68	347	P		P	00 38 28.8	-0.8
	comp=Z,0.3nm,0.6s,baz=162,slow=10,SNR=4.9							
NOA				LR		LR	00 48 18.5	
	comp=Z,9.8nm,19.4s,baz=280,slow=38							
EKA	Eskdalemuir Ar	23.89	324	P		P	00 38 31.0	-0.6
	comp=Z,0.9nm,0.6s,baz=126,slow=9.4,SNR=7.0							
BVAR	Borovoye Array	35.27	50	P		P	00 40 21.8	+0.5
	comp=Z,0.6nm,0.6s,baz=244,slow=6.4,SNR=4.7							
KURBB	Kurchatov Arra	41.35	54	P		P	00 41 03.6	-0.3
	comp=Z,1.5nm,0.6s,baz=281,slow=8.7,SNR=13							
MKAR	Makanchi Array	44.39	59	P		P	00 41 28.5	-0.1
	comp=Z,4.6nm,0.5s,baz=275,slow=7.4,SNR=75							
ZALV	Zalesovo Beam	44.86	48	P		P	00 41 31.9	-0.4
	comp=Z,3.5nm,0.4s,baz=270,slow=8.7,SNR=21							

CSEM ***27*** *00:36:49.1,39.17N×32.87E,h10km,ML2.9*
DDA 27 00:36:49.1,39.17N×32.87E,h10km,Ml2.9,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBAL	Bala	0.42	27	*i* P	Pg	00 36 57.3	-0.2
BBAL	Bala	0.42	27	*i* P	Pg	00 36 57.4	-0.1
BBAL	Bala	0.42	27	P	Pg	00 36 57.4	-0.1
AKSY	AKSARAY - Alti	0.86	126	*i* P	Pb	00 37 06.7	+0.4
AKSY				*i* S	Sb	00 37 18.3	+0.4
AKSY	AKSARAY - Alti	0.86	126	P	Pb	00 37 06.7	+0.5
AKSY				S	Sb	00 37 18.3	+0.4
CDAG	Cicekdag	1.25	68	*i* P	Pb	00 37 12.8	0.0
CDAG				*i* S	Sn	00 37 29.7	+0.1
CDAG	Cicekdag	1.25	68	P	Pb	00 37 12.8	0.0
CDAG				S	Sn	00 37 29.7	+0.1
ELDT	Eldivan	1.39	18	*i* P	Pg	00 37 15.9	0.0
ELDT				*i* S	Sg	00 37 35.2	+1.3
ELDT	Eldivan	1.39	18	P	Pg	00 37 15.9	+0.1
ELDT				S	Sg	00 37 35.2	+1.3
KMER	Konya-Meram	1.45	196	*i* P	Pn	00 37 15.8	+0.3
KMER	Konya-Meram	1.45	196	P	Pn	00 37 15.8	+0.3
AVNS	Nevsehir-Avano	1.58	102	*i* P	Pb	00 37 18.7	+0.2
AVNS				*i* S	Sg	00 37 41.7	+1.7
AVNS	Nevsehir-Avano	1.58	102	P	Pb	00 37 18.7	+0.2
AVNS				S	Sg	00 37 41.7	+1.7
BCAM	Yenicaga	1.76	340	*i* P	Pg	00 37 22.7	-0.2
BCAM	Yenicaga	1.76	340	P	Pg	00 37 22.7	-0.2
COAL	Corum-Alaca	1.96	56	*i* P	Pb	00 37 24.9	-0.1
COAL				*i* S	Sg	00 37 51.8	-0.4
COAL	Corum-Alaca	1.96	56	P	Pb	00 37 24.9	-0.1
COAL				S	Sg	00 37 51.8	-0.4
CTAK	Corum_Osmancik	2.09	44	*i* P	Pb	00 37 27.8	+0.6
CTAK	Corum_Osmancik	2.09	44	P	Pb	00 37 27.8	+0.6
YAHY	KAYSERI_Yahyal	2.23	118	*i* P	Pg	00 37 31.3	-0.5
YAHY	KAYSERI_Yahyal	2.23	118	P	Pg	00 37 31.3	-0.5
SAHE	Sakarya_HENDEK	2.29	318	*i* P	Pb	00 37 30.7	+0.2
SAHE	Sakarya_HENDEK	2.29	318	P	Pb	00 37 30.7	+0.2
CUSAR	Sarkisla-SIVAS	2.63	83	*i* P	Pb	00 37 35.0	-1.4
CUSAR				*i* S	Sg	00 38 14.1	+0.5
CUSAR	Sarkisla-SIVAS	2.63	83	P	Pb	00 37 35.0	-1.4
CUSAR				S	Sg	00 38 14.1	+0.5

ISCJB ***27*** *00:36:48.6±0.5,39.10N±0.04×29.10E±0.03,h1km±7km,*
Error ellipse: s-maj=6.6km s-min=3.6km az=161.8
DDA ***27*** *00:36:48.4,39.05N×29.10E,h7km,Ml3.1*
CSEM ***27*** *00:36:48.9±0.1,39.10N×29.11E,h2km,MD2.8,Error*
ellipse: s-maj=3.8km s-min=3.2km az=145.0
ISK ***27*** *00:36:48.5,39.10N×29.09E,h5km,MD2.8*
ISC 27 00:36:49.1±0.9,39.09N±0.03×29.10E±0.02,h7km±8km,
n81,σ0.965/95,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIMA	Simav-Kutahya	0.09	264	*e*PG	Pg	00 36 51.2	0.0
SIMA	Simav-Kutahya	0.09	264	*e*Pg	Pg	00 36 51.2	0.0
GEDZ	Gediz	0.25	101	*e*PG	Pg	00 36 54.2	+0.2
GEDZ	Gediz	0.25	101	*e*Pg	Pg	00 36 54.2	+0.2
GDZ	Gediz	0.30	91	*i* P	Pg	00 36 54.9	-0.1
GDZ				*i* S	Sg	00 36 59.4	+0.4
GDZ	Gediz	0.30	91	P	Sg	00 36 54.9	-0.1
GDZ				S	Sg	00 36 59.4	+0.4
DEMI	Demirci	0.30	260	*i* P	Pg	00 36 54.8	-0.2
DEMI				*i* S	Sg	00 36 59.2	+0.2
DEMI	Demirci	0.30	260	P	Pg	00 36 54.8	-0.2
DEMI				S	Sg	00 36 59.2	+0.2
TVSB	Tavsanli	0.45	38	*e*PG	Pg	00 36 57.8	-0.1
TVSB	Tavsanli	0.45	38	*e*Pg	Pg	00 36 57.8	-0.1
KULA	Kula-Manisa	0.67	211	*e*PG	Pg	00 37 02.3	+0.3
KULA				*e*SG	Sg	00 37 11.0	+0.3
KULA	Kula-Manisa	0.67	211	*e*Pg	Pg	00 37 02.3	+0.3
KULA				*e*Sg	Sg	00 37 11.0	+0.3
MANT	Manisa	0.73	215	*i* P	Pg	00 37 02.4	-0.8
MANT				*i* S	Sg	00 37 12.1	-0.7
MANT	Manisa	0.73	215	P	Pg	00 37 02.4	-0.8
MANT				S	Sg	00 37 12.1	-0.7
KHL	Karahalli	0.84	156	*e*PG	Pg	00 37 05.1	-0.1
KHL	Karahalli	0.84	156	*e*Pg	Pg	00 37 05.1	-0.1
AKS	Akhisar	1.02	258	*e*PG	Pg	00 37 08.6	-0.1
AKS	Akhisar	1.02	258	*e*Pg	Pg	00 37 08.6	-0.1
BALB	Balikesir	1.09	300	*e*PN	Pg	00 37 09.6	-0.4
BALB	Balikesir	1.09	300	*e*Pn	Pg	00 37 09.6	-0.4
CAVI	Cavuskoy	1.25	27	*e*PN	Pb	00 37 12.5	-0.5
CAVI				*e*SN	Sn	00 37 30.4	+0.2
CAVI	Cavuskoy	1.25	27	*e*Pn	Pb	00 37 12.5	-0.5
CAVI				*e*Sn	Sn	00 37 30.4	+0.2
IZI	Iznik	1.27	13	*e*PN	Pn

	0.8nm,0.1s,SNR=7.9						
ENIJ			S	Sn	00 43 42.0	-6.3	
	3.5nm,0.2s,SNR=7.9						
ENIJ	**Nijar**	**1.63 319**	P	Pn	00 43 23.9	-3.7	
	0.8nm,0.1s,SNR=7.9						
ENIJ			S	Sn	00 43 42.0	-6.3	
	3.5nm,0.2s,SNR=7.9						
EALB	**Alboran**	**1.77 277**	P	Pn	00 43 25.8	-3.5	
	1.3nm,0.1s,SNR=7.9						
EALB			S	Sn	00 43 46.2	-5.4	
	1.7nm,0.1s,SNR=7.9						
EALB	**Alboran**	**1.77 277**	P	Pn	00 43 25.8	-3.6	
	1.3nm,0.1s,SNR=7.9						
EALB			S	Sn	00 43 46.2	-5.4	
	1.7nm,0.1s,SNR=7.9						
EBER	**Berja**	**1.99 306**	P	Pn	00 43 29.1	-3.6	
	0.4nm,0.1s,SNR=7.9						
EBER			S	Sn	00 43 51.8	-5.7	
	0.1nm,0.1s,SNR=7.9						
EBER	**Berja**	**1.99 306**	P	Pn	00 43 29.1	-3.6	
	0.4nm,0.1s,SNR=7.9						
EBER			S	Sn	00 43 51.8	-5.7	
	0.1nm,0.1s,SNR=7.9						
EMUR	**La Murta**	**2.11 352**	P	Pn	00 43 30.1	-4.1	
	0.4nm,0.2s,SNR=7.9						
EMUR			S	Sn	00 43 53.3	-7.0	
	0.4nm,0.1s,SNR=7.9						
EMUR	**La Murta**	**2.11 352**	P	Pn	00 43 30.1	-4.1	
	0.4nm,0.2s,SNR=7.9						
EMUR			S	Sn	00 43 53.3	-7.0	
	0.4nm,0.1s,SNR=7.9						
EQES	**Quesada**	**2.71 320**	P	Pn	00 43 41.3	-1.1	
	0.5nm,0.1s,SNR=15						
EQES			S	Sn	00 44 13.2	-1.9	
	0.4nm,0.1s,SNR=7.9						
EQES	**Quesada**	**2.71 320**	P	Pn	00 43 41.3	-1.2	
	0.5nm,0.1s,SNR=15						
EQES			S	Sn	00 44 13.2	-1.8	
	0.4nm,0.1s,SNR=7.9						
ETOB	**Tobarra**	**2.94 350**	P	Pn	00 43 43.5	-2.1	
	5.4nm,1.1s,SNR=6.5						
ETOB			S	Sn	00 44 16.1	-4.7	
	0.5nm,0.1s,SNR=7.9						
ETOB	**Tobarra**	**2.94 350**	P	Pn	00 43 43.5	-2.2	
	5.4nm,1.1s,SNR=6.5						

ISK ***27*** *00:44:52.9, 39°.12N× 29°.07E, h6km, MD2.7*
ISCJB ***27*** *00:44:53.1± 0.4, 39°.10N± 0°.04× 29°.06E± 0°.03, h9km, Error ellipse: s-maj=5.8km s-min=3.4km az=155.6*
DDA ***27*** *00:44:53.6, 38°.95N× 29°.15E, h7km, Md2.5*
CSEM ***27*** *00:44:53.2± 0.1, 39°.09N× 29°.06E, h5km, MD2.7, Error ellipse: s-maj=3.8km s-min=2.8km az=148.0*

ISC 27 00:44:53.5± 0.9, 39°.10N± 0°.03× 29°.06E± 0°.02, h9km, n30, σ0s60/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.27**	**258**	*i* S	**Sg**	**00 45 03.2**	**+0.5**
DEMI	**Demirci**	**0.27**	**258**	S	**Sg**	**00 45 03.2**	**+0.5**
GEDZ	**Gediz**	**0.28**	**101**	*e*PG	**Pg**	**00 44 59.4**	**+0.2**
GEDZ	**Gediz**	**0.28**	**101**	*e*Pg	**Pg**	**00 44 59.4**	**+0.2**
GDZ	**Gediz**	**0.33**	**92**	*i* P	**Pg**	**00 45 00.1**	**-0.1**
GDZ				*i* S	**Sg**	**00 45 04.3**	**-0.2**
GDZ	**Gediz**	**0.33**	**92**	P	**Pg**	**00 45 00.1**	**-0.1**
GDZ				S	**Sg**	**00 45 04.3**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**00 45 02.1**	**-0.6**
TVSB				*e*SG	**Sg**	**00 45 08.3**	**-0.6**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**00 45 02.1**	**-0.6**
TVSB				*e*Sg	**Sg**	**00 45 08.3**	**-0.6**
DST	**Dursunbey**	**0.61**	**326**	*e*PG	**Pg**	**00 45 04.8**	**-0.5**
DST	**Dursunbey**	**0.61**	**326**	*e*Pg	**Pg**	**00 45 04.8**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**00 45 06.0**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**00 45 06.0**	**-0.3**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**00 45 05.9**	**-1.6**
MANT				*i* S	**Sg**	**00 45 16.1**	**-0.8**
MANT	**Manisa**	**0.72**	**213**	P	**Pg**	**00 45 05.9**	**-1.6**
MANT				S	**Sg**	**00 45 16.1**	**-0.8**
KHL	**Karahalli**	**0.86**	**155**	*e*PG	**Pg**	**00 45 09.7**	**-0.3**
KHL	**Karahalli**	**0.86**	**155**	*e*Pg	**Pg**	**00 45 09.7**	**-0.3**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pg**	**00 45 12.7**	**+0.1**
AKS				*e*SG	**Sb**	**00 45 27.0**	**+0.9**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pg**	**00 45 12.7**	**+0.1**
AKS				*e*Sg	**Sb**	**00 45 27.0**	**+0.9**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pg**	**00 45 14.0**	**+0.1**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pg**	**00 45 14.0**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pn**	**00 45 17.0**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pn**	**00 45 17.0**	**-0.3**
SHUT	**Suhut-Afyon**	**1.29**	**115**	*e*PN	**Pg**	**00 45 18.6**	**+0.4**
SHUT	**Suhut-Afyon**	**1.29**	**115**	*e*Pn	**Pg**	**00 45 18.6**	**+0.4**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pn**	**00 45 18.1**	**-0.3**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pn**	**00 45 18.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*PN	**Pn**	**00 45 20.6**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*Pn	**Pn**	**00 45 20.6**	**+0.3**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**00 45 24.6**	**+0.5**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**00 45 24.6**	**+0.5**

ISCJB ***27*** *00:45:01.9± 0.4, 40°.66N± 0°.03× 29°.05E± 0°.04, h8km± 6km, Error ellipse: s-maj=5.6km s-min=4.8km az=161.7*
CSEM ***27*** *00:45:01.7, 40°.66N× 29°.06E, h11km, ML2.3*
ISK ***27*** *00:45:01.7, 40°.66N× 29°.06E, h11km, ML2.3*

ISC 27 00:45:01.9± 1.1, 40°.66N± 0°.03× 29°.06E± 0°.02, h13km± 9km, n42, σ0s37/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SBT5	**Esenkoy-Cinarc**	**0.14**	**259**	*e*PG	**Pg**	**00 45 05.7**	**+0.3**
SBT5	**Esenkoy-Cinarc**	**0.14**	**259**	*e*Pg	**Pg**	**00 45 05.7**	**+0.3**
ARMT	**Armutlu**	**0.18**	**239**	*e*PG	**Pg**	**00 45 05.6**	**-0.4**
ARMT	**Armutlu**	**0.18**	**239**	*e*Pg	**Pg**	**00 45 05.6**	**-0.4**
GEMT	**Gemlik**	**0.24**	**156**	*e*PG	**Pg**	**00 45 06.8**	**-0.3**
GEMT	**Gemlik**	**0.24**	**156**	*e*Pg	**Pg**	**00 45 06.8**	**-0.3**
MDNY	**Mudanya-Bursa**	**0.32**	**205**	*e*PG	**Pg**	**00 45 08.4**	**0.0**
MDNY	**Mudanya-Bursa**	**0.32**	**205**	*e*Pg	**Pg**	**00 45 08.4**	**0.0**
ISK	**Istanbul-Kandi**	**0.41**	**360**	*e*PG	**Pg**	**00 45 10.4**	**+0.3**
ISK	**Istanbul-Kandi**	**0.41**	**360**	*e*Pg	**Pg**	**00 45 10.4**	**+0.3**
IZI	**Iznik**	**0.45**	**135**	*e*PG	**Pg**	**00 45 10.9**	**+0.1**
IZI	**Iznik**	**0.45**	**135**	*e*Pg	**Pg**	**00 45 10.9**	**+0.1**
SBT2	**Guzelce-Avcila**	**0.47**	**298**	*e*PG	**Pb**	**00 45 11.5**	**-0.5**
SBT2	**Guzelce-Avcila**	**0.47**	**298**	*e*Pg	**Pb**	**00 45 11.5**	**-0.5**
HRT	**Hereke**	**0.49**	**70**	*e*PG	**Pg**	**00 45 11.8**	**+0.2**
HRT				*e*SG	**Sb**	**00 45 19.1**	**-0.5**
HRT	**Hereke**	**0.49**	**70**	*e*Pg	**Pg**	**00 45 11.8**	**+0.2**
HRT				*e*Sg	**Sb**	**00 45 19.1**	**-0.5**
ADVT	**Abdulvahap**	**0.56**	**113**	*e*PG	**Pb**	**00 45 13.2**	**-0.5**
ADVT	**Abdulvahap**	**0.56**	**113**	*e*Pg	**Pb**	**00 45 13.2**	**-0.5**
KLYT	**Kilyos**	**0.60**	**359**	*e*PG	**Pb**	**00 45 13.9**	**-0.3**
KLYT				*e*SG	**Sb**	**00 45 22.1**	**-0.4**
KLYT	**Kilyos**	**0.60**	**359**	*e*Pg	**Pb**	**00 45 13.9**	**-0.3**
KLYT				*e*Sg	**Sb**	**00 45 22.1**	**-0.4**
KCTX	**Karacabey (Bur**	**0.66**	**234**	*e*PG	**Pb**	**00 45 15.4**	**0.0**
KCTX	**Karacabey (Bur**	**0.66**	**234**	*e*Pg	**Pb**	**00 45 15.4**	**0.0**
SILT	**Sile**	**0.66**	**42**	*e*PG	**Pb**	**00 45 15.3**	**-0.1**
SILT	**Sile**	**0.66**	**42**	*e*Pg	**Pb**	**00 45 15.3**	**-0.1**
ELBA	**Catalca**	**0.68**	**316**	*i* P	**Pg**	**00 45 15.0**	**-0.2**
ELBA	**Catalca**	**0.68**	**316**	P	**Pg**	**00 45 15.0**	**-0.2**
CTKS	**Kestanelik-??a**	**0.71**	**324**	*e*PG	**Pg**	**00 45 15.5**	**-0.3**
CTKS	**Kestanelik-??a**	**0.71**	**324**	*e*Pg	**Pg**	**00 45 15.5**	**-0.3**
EDC	**Edincik**	**0.96**	**252**	*e*PG	**Pg**	**00 45 20.3**	**-0.2**
EDC	**Edincik**	**0.96**	**252**	*e*Pg	**Pg**	**00 45 20.3**	**-0.2**
KAND	**Kocaeli-Kandir**	**0.96**	**63**	*i* P	**Pb**	**00 45 20.5**	**+0.1**
KAND	**Kocaeli-Kandir**	**0.96**	**63**	P	**Pb**	**00 45 20.5**	**+0.1**
CTYL	**Yalikoy Yolu**	**1.00**	**325**	*e*PG	**Pg**	**00 45 20.8**	**-0.5**
CTYL	**Yalikoy Yolu**	**1.00**	**325**	*e*Pg	**Pg**	**00 45 20.8**	**-0.5**
MRMT	**Marmara Adasi**	**1.12**	**268**	*e*PN	**Pn**	**00 45 23.9**	**+0.7**
MRMT	**Marmara Adasi**	**1.12**	**268**	*e*Pn	**Pn**	**00 45 24.0**	**+0.7**
GULT	**Gulveren**	**1.13**	**101**	*e*PN	**Pn**	**00 45 23.9**	**+0.4**
GULT	**Gulveren**	**1.13**	**101**	*e*Pn	**Pn**	**00 45 24.0**	**+0.5**
SBT4	**Kumbag-Tekirda**	**1.17**	**279**	*e*PN	**Pg**	**00 45 25.0**	**+0.6**
SBT4	**Kumbag-Tekirda**	**1.17**	**279**	*e*Pn	**Pg**	**00 45 25.0**	**+0.6**
KRBG	**Karabiga-Canak**	**1.37**	**259**	*e*PN	**Pb**	**00 45 27.2**	**-0.1**
KRBG	**Karabiga-Canak**	**1.37**	**259**	*e*Pn	**Pb**	**00 45 27.2**	**-0.1**

CSEM ***27*** *00:52:56.4± 0.3, 50°.27N× 18°.99E, h2km, Error ellipse: s-maj=8.3km s-min=3.5km az=6.0*

PRU 27 00:52:57.1, 50°.24N× 18°.99E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OJC	**Ojcow**	**0.52**	**92**	*e*Pg	Pg	00 53 05.9	-1.1
OJC				*e*Sg	Sg	00 53 12.5	-1.3
OJC	**Ojcow**	**0.52**	**92**	*e*Pg	Pg	00 53 05.9	-1.1
OJC				*e*Sg	Sg	00 53 12.5	-1.3
OKC	**Ostrava-Krasne**	**0.68**	**234**	*e*SG	Sg	00 53 18.1	-0.7
OKC	**Ostrava-Krasne**	**0.68**	**234**	Sg	Sg	00 53 18.1	-0.7
MORC	**Moravsky Berou**	**1.04**	**244**	*e*Pg	Pb	00 53 17.7	-0.3
MORC				*e*Sg	Sg	00 53 31.1	+0.5
LANS	**Liptovska Anna**	**1.13**	**164**	*e*Pg	Pg	00 53 18.9	+0.1
LANS				*e*Sg	Sg	00 53 33.3	-0.2
LANS	**Liptovska Anna**	**1.13**	**164**	*e*PG	Pg	00 53 18.9	+0.1
LANS				*e*SG	Sg	00 53 33.3	-0.2
NIE	**Niedzica**	**1.18**	**134**	*e*Pg	Pg	00 53 20.0	+0.3
NIE				*e*Sg	Sg	00 53 34.3	-0.7
NIE	**Niedzica**	**1.18**	**134**	*e*Pg	Pg	00 53 20.0	+0.3
NIE				*e*Sg	Sg	00 53 34.3	-0.7
KRLC	**Kraliky**	**1.43**	**264**	*e*PG	Pn	00 53 23.5	-0.8
KRLC				*e*SG	Sn	00 53 43.7	-0.2
KRLC	**Kraliky**	**1.43**	**264**	Pg	Pn	00 53 23.5	-0.8
KRLC				Sg	Sn	00 53 43.7	-0.2
STHS	**Stebnicka Huta**	**1.68**	**119**	*e*Pn	Pn	00 53 28.1	+0.4
STHS				*e*Sn	Sn	00 53 48.8	-1.1
STHS	**Stebnicka Huta**	**1.68**	**119**	*e*PN	Pn	00 53 28.1	+0.4
STHS				*e*SN	Sn	00 53 48.8	-1.1
STHS				eLG	Lg	00 53 59.2	
DPC	**Dobruska-Polom**	**1.71**	**275**	*e*PG	Pn	00 53 28.2	-0.1
DPC				*e*SG	Sg	00 53 52.1	0.0
	comp=Z,3.4nm,0.5s						
DPC	**Dobruska-Polom**	**1.71**	**275**	Pg	Pn	00 53 28.2	-0.1
DPC				Sg	Sg	00 53 52.1	0.0
	3.4nm,0.5s						
VYHS	**Vyhne**	**1.75**	**183**	*e*Pn	Pn	00 53 27.3	-1.4
VYHS				*e*Sn	Sn	00 53 50.3	-1.4
VYHS	**Vyhne**	**1.75**	**183**	*e*PN	Pn	00 53 27.3	-1.4
VYHS				*e*SN	Sn	00 53 50.3	-1.4
VYHS				eLG	Lg	00 53 54.0	
VRAC	**Vranov**	**1.81**	**240**	*e*Pn	Pn	00 53 30.2	+0.6
VRAC				*e*Sg	Sb	00 53 53.9	-0.5
KHC	**Kasperske Hory**	**3.69**	**255**	*e*SG	Sg	00 54 55.0	-0.4
KHC	**Kasperske Hory**	**3.69**	**255**	Sg	Sg	00 54 55.0	-0.4

ISCJB ***27*** *00:54:17.1± 0.8, 63°.8N± 0°.2× 19°.3W± 0°.2, h10km, mb3.5/8, MS2.9/9, Error ellipse: s-maj=27.5km s-min=9.9km az=23.2*
IDC ***27*** *00:54:17.3± 1.1, 63°.68N× 19°.27W, h0km, mb3.6/8, mb1 3.9/8, mb1mx3.5/51, mbtmp3.6/8, MS3.0/14, Ms1 3.0/14, ms1mx2.8/43, Error ellipse: s-maj=31.9km s-min=12.6km az=32.0*

ISC 27 00:54:18.0± 0.8, 63°.6N± 0°.2× 19°.3W± 0°.1, h10km, n22, σ1s49/12, mb3.5/8, MS2.8/9, Iceland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BORG	**Borgarnes**	**1.46**	**323**	Pg	**Pn**	**00 54 41.6**	**-2.8**
	108nm,0.3s,baz=141,slow=13,SNR=427						
BORG				Lg	Lg	00 55 02.0	
	37nm,0.3s,baz=320,slow=21,SNR=17						
EKA	**Eskdalemuir Ar**	**11.62**	**128**	Pn	**Pn**	**00 57 01.4**	**-2.4**
	baz=327,slow=12,SNR=4.9						
SFJD	**Kangerlussuaq**	**13.44**	**298**	LR	LR	01 01 56.8	
	comp=Z,90nm,19.2s,baz=58,slow=34						
NOA	**NORSAR Array B**	**14.33**	**86**	LR	LR	01 03 06.3	
	comp=Z,35nm,18.7s,baz=305,slow=37						
HFS	**Hagfors**	**15.83**	**88**	Pn	**P**	**00 58 04.7**	**+0.2**
	0.0nm,0.3s,baz=303,slow=8.0,SNR=4.3						
HFS				LR	LR	01 04 03.8	
	comp=Z,43nm,19.0s,baz=294,slow=37						
SPITS	**Spitsbergen Ar**	**18.17**	**23**	LR	LR	01 03 34.8	
	comp=Z,23nm,19.4s,baz=330,slow=31						
ARCES	**ARCESS Array B**	**18.39**	**52**	LR	LR	01 04 31.4	
	comp=Z,33nm,20.4s,baz=246,slow=34						
FINES	**FINESS Array B**	**20.71**	**75**	P	**P**	**00 58 57.9**	**-0.1**
	4.5nm,0.9s,baz=304,slow=9.9,SNR=12						
FINES				LR	LR	01 06 38.8	
	comp=Z,28nm,18.8s,baz=298,slow=36						
FRB	**Frobisher Bay**	**21.42**	**293**	P	**P**	**00 59 06.2**	**+0.6**
	6.9nm,1.0s,baz=70,slow=12,SNR=3.0						
FRB				LR	LR	01 06 20.2	
	comp=Z,26nm,19.5s,baz=154,slow=34						
BRG	**Berggiesshubel**	**21.72**	**110**	*e*PKP	**P**	**00 59 10.2**	**+1.2**
	5.2nm,1.2s						
GERES	**GERESS Array B**	**23.18**	**114**	P	**P**	**00 59 25.3**	**+0.7**
	0.2nm,0.4s,baz=337,slow=6.4,SNR=4.3						
GERES				LR	LR	01 08 27.8	
	comp=Z,23nm,19.4s,baz=325,slow=37						
DAVOX	**Davos/Dischmat**	**23.35**	**122**	LR	LR	01 08 30.3	
	comp=Z,51nm,20.1s,baz=281,slow=36						
VRAC	**Vranov**	**24.02**	**110**	LR	LR	01 10 32.9	
	comp=Z,28nm,18.1s,baz=347,slow=41						
RES	**Resolute Bay**	**26.89**	**325**	LR	LR	01 10 17.9	
	comp=Z,42nm,18.8s,baz=12,slow=36						
OBN	**Obninsk**	**28.80**	**81**	LR	LR	01 11 49.8	
	comp=Z,23nm,19.5s,baz=86,slow=37						
BRTR	**Keskin Array B**	**38.99**	**102**	P	**P**	**01 01 44.3**	**0.0**
	0.8nm,0.8s,baz=334,slow=9.6,SNR=5.1						
KBZ	**Khabaz**	**39.88**	**90**	LR	LR	01 18 42.2	
	comp=Z,32nm,18.9s,baz=305,slow=37						
ULM	**Lac du Bonnet**	**41.20**	**289**	LR	LR	01 18 06.2	
	comp=Z,31nm,18.8s,baz=350,slow=35						
BVAR	**Borovoye Array**	**44.41**	**60**	P	**P**	**01 02 29.8**	**+1.5**
	0.5nm,0.8s,baz=350,slow=7.3,SNR=3.5						
ILAR	**Eielson Array**	**46.27**	**332**	P	**P**	**01 02 43.7**	**+0.7**
	0.4nm,0.7s,baz=38,slow=7.2,SNR=5.2						
PDAR	**Pinedale Array**	**52.87**	**293**	P	**P**	**01 03 34.4**	**+0.5**
	0.4nm,0.3s,baz=53,slow=9.8,SNR=4.3						
TXAR	**Lajitas Array**	**61.69**	**279**	P	**P**	**01 04 37.3**	**+1.1**
	0.3nm,0.8s,baz=30,slow=7.6,SNR=3.2						

CSEM ***27*** *00:54:21.9± 0.4, 50°.10N× 18°.67E, h2km, Error ellipse: s-maj=9.9km s-min=4.3km az=2.0*

PRU 27 00:54:22.9, 50°.07N× 18°.65E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OKC	**Ostrava-Krasne**	**0.40**	**235**	*e*SG	Sg	00 54 37.3	+1.6
OKC	**Ostrava-Krasne**	**0.40**	**235**	Sg	Sg	00 54 37.3	+1.6
OJC	**Ojcow**	**0.75**	**78**	*e*Pg	Pg	00 54 35.2	-2.1
OJC				*e*Sg	Sg	00 54 46.7	-0.4
OJC	**Ojcow**	**0.75**	**78**	*e*Pg	Pg	00 54 35.2	-2.1
OJC				*e*Sg	Sg	00 54 46.7	-0.4
MORC	**Moravsky Berou**	**0.77**	**248**	*e*Pg	Pg	00 54 37.7	0.0
MORC				*e*Sg	Sg	00 54 48.7	+1.0
LANS	**Liptovska Anna**	**1.06**	**150**	*e*Pg	Pg	00 54 42.2	-1.0
LANS				*e*Sg	Sg	00 54 55.6	-1.4
LANS	**Liptovska Anna**	**1.06**	**150**	*e*PG	Pg	00 54 42.2	-1.0
LANS				*e*SG	Sg	00 54 55.6	-1.4
KRLC	**Kraliky**	**1.20**	**271**	*e*SG	Sg	00 55 00.8	-0.7
KRLC	**Kraliky**	**1.20**	**271**	Sg	Sg	00 55 00.8	-0.7
NIE	**Niedzica**	**1.25**	**121**	*e*Pg	Pg	00 54 44.9	-2.0
NIE				*e*Sg	Sg	00 55 02.3	-0.8
NIE	**Niedzica**	**1.25**	**121**	*e*Pg	Pg	00 54 44.9	-2.0
NIE				*e*Sg	Sg	00 55 02.3	-0.8
DPC	**Dobruska-Polom**	**1.52**	**282**	*e*PG	Pn	00 54 50.9	-0.5
DPC				*e*SG	Sg	00 55 11.8	0.0
	comp=Z,2.8nm,0.3s						
DPC	**Dobruska-Polom**	**1.52**	**282**	Pg	Pn	00 54 50.9	-0.5
DPC				Sg	Sg	00 55 11.8	0.0
	2.8nm,0.3s						
VRAC	**Vranov**	**1.54**	**241**	*e*Pn	Pn	00 54 51.0	-0.6
VRAC				*e*Sg	Sg	00 55 11.6	-0.7
VYHS	**Vyhne**	**1.58**	**176**	*e*Pn	Pg	00 54 53.4	+0.2
VYHS				*e*Sn	Sn	00 55 11.3	-2.1
VYHS	**Vyhne**	**1.58**	**176**	*e*PN	Pg	00 54 53.4	+0.2
VYHS				*e*SN	Sn	00 55 11.3	-2.1
VYHS				eLG	Lg	00 55 16.5	
STHS	**Stebnicka Huta**	**1.81**	**110**	*e*Pn	Pn	00 54 55.4	+0.1
STHS				*e*Sn	Sb	00 55 19.7	-0.3
STHS	**Stebnicka Huta**	**1.81**	**110**	*e*PN	Pn	00 54 55.4	+0.1
STHS				*e*SN	Sb	00 55 19.7	-0.3
STHS				eLG	Lg	00 55 24.8	
TREC	**Trest**	**2.20**	**251**	*e*SG	Sb	00 55 31.5	+0.3
	comp=Z,1.9nm,0.2s						
TREC	**Trest**	**2.20**	**251**	Sg	Sb	00 55 31.5	+0.3
	1.9nm,0.2s						
KHC	**Kasperske Hory**	**3.43**	**256**	*e*SG	Sg	00 56 10.9	-2.1
KHC	**Kasperske Hory**	**3.43**	**256**	Sg	Sg	00 56 10.9	-2.1

BJI ***27*** *00:56:09.1, 14°.36N× 153°.16E, h10km, mb5.2/72, mB5.1/50, Ms4.6/60, Ms7 4.3/52*
IDC ***27*** *00:56:15.3± 0.4, 14°.90N× 152°.59E, h0km, mb5.0/37, mb1 5.1/38, mb1mx5.0/48, mbtmp5.0/38, ML5.8/1, MS4.1/36, Ms1 4.1/36, ms1mx4.1/42, Error ellipse: s-maj=16.1km s-min=10.5km az=83.0*
NEIC ***27*** *00:56:17.3± 0.1, 14°.92N× 152°.52E, h10km, mb5.4/229, Error ellipse: s-maj=3.3km s-min=2.3km az=142.0*
ISCJB ***27*** *00:56:17.0± 1.1, 14°.96N± 0°.03× 152°.51E± 0°.02, h18km± 7km, mb5.3/316, MS4.2/57, Error ellipse: s-maj=4.6km s-min=3.1km az=168.9*
MOS ***27*** *00:56:19.1± 0.9, 14°.98N× 152°.40E, h33km, mb5.5/86, MS4.1/5, Error ellipse: s-maj=7.0km s-min=5.0km az=94.9*
GCMT ***27*** *00:56:25.9± 0.2, 14°.88N× 152°.46E, h20km, MW5.0/84, Moment Tensor Solution. s49,c68; s84,c149; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr 4.12± .17; Mθθ -4.11± .11; Mφφ -0.01± .12; Mrθ -1.17± .19; Mφθ 1.20± .08; Mφr -0.16± .29; Best double couple: M=4.44000×10^16 NP1: φs 279.00000°, δ 52.00000°, λ 82.00000°. NP2: φs 112.00000°, δ 38.00000°, λ 100.00000°. Principal axes: T 4.3080, Plg80.0000°, Azm152.0000°; N 0.2640, Plg6.0000°, Azm284.0000°; P -4.5720, Plg7.0000°, Azm14.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 27 00:56:19.2± 0.5, 14°.92N± 0°.04× 152°.57E± 0°.04, h24km± 3km, h24km: pP-P, n78, σ1s25/807, mb5.3/315, MS4.3/58, 20C-7D, North Pacific Ocean

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ANA2	**Anatahan**	**6.75**	**283**	*e*Pn	**Pn**	**00 57 52.2**	**-4.6**
ANA2				*e*Sn	**Sn**	**00 59 07.2**	**-5.8**
SARN	**Sarigan**	**6.77**	**286**	*e*Pn	**Pn**	**00 57 56.1**	**-1.0**
SARN				*e*Sn	**Sn**	**00 59 04.8**	**-8.6**
GUMO	**Guam**	**7.58**	**261**	Pn	**Pn**	**00 58 06.5**	**-1.7**
	147nm,0.3s,baz=137,slow=11,SNR=37						
GUMO				Sn	**Sn**	**00 59 26.5**	**-6.9**
	242nm,0.3s,baz=359,slow=20,SNR=16						
GUMO				LR	LR	01 02 20.4	
	comp=Z,442nm,18.1s,baz=72,slow=48						
PATS	**Pohnpei**	**9.82**	**144**	*e*Pn	Pn	00 58 33.7	-5.3
PATS				*e*Sn	Sn	01 00 13.5	-15
H11S3	**WAKE ISLAND Hy 13.99**		**73**	T	T	01 12 14.6	
	baz=264,slow=75,SNR=6.8						
H11S1	**WAKE ISLAND Hy 14.00**		**73**	T	T	01 12 16.1	
	baz=264,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy 14.00**		**73**	T	T	01 12 15.8	
	baz=264,slow=75,SNR=13						
WAKE	**Wake Island**	**14.15**	**70**	*e*Pn	Pn	00 59 31.8	-6.4
WAKE				*e*Sn	Sn	01 01 59.5	-15
H11N1	**WAKE ISLAND Hy 14.48**		**69**	T	T	01 15 05.7	
	baz=256,slow=75,SNR=16						
H11N2	**WAKE ISLAND Hy 14.49**		**69**	T	T	01 15 06.2	
	baz=256,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy 14.50**		**69**	T	T	01 15 04.5	
	baz=256,slow=75,SNR=13						
MANU	**Manus Island**	**17.63**	**197**	*e*Pn	**P**	**01 00 24.7**	**+0.6**
	400nm,1.4s						
RABL	**Rabaul**	**19.00**	**181**	*e*P	**Pn**	**01 00 42.4**	**+2.3**
	455nm,0.8s						
JAY	**Jayapura**	**20.93**	**215**	P	Pn	01 01 02.4	-0.6
	7.6nm,1.0s,baz=282,slow=20,SNR=18						
JAY	**Jayapura**	**20.93**	**215**	P	Pn	01 01 03.0	0.0
GENI	**Genyem**	**21.30**	**216**	P	**P**	**01 01 07.1**	**+2.8**
JHJ	**Hachijo jima 2**	**21.51**	**330**	P	**P**	**01 01 08.7**	**+2.3**
	68nm,0.7s,baz=

MTN	**Manton Dam**	**34.80**	**219**	*e*P	**P**	**01 03 08.4**	**+0.1**
	comp=Z,245nm,0.8s							
MYLDM	**Lahad Datu**	**34.86**	**257**	⇑P	**P**	**01 03 10.8**	**+1.9**
MYLDM	**Lahad Datu**	**34.86**	**257**	*e*P	**P**	**01 03 06.8**	**-2.0**
	comp=Z,64nm,1.1s							
NJ2	**Nanjing**	**35.11**	**305**	*e*P	**P**	**01 03 13.5**	**+2.7**
NJ2				PP	**PnPn**	**01 04 28.0**	**-0.6**
NJ2				pmax	pmax			
	comp=Z,20nm,0.5s							
CTAO	**Charters Tower**	**35.34**	**190**	*e*P	**P**	**01 03 12.3**	**-0.5**
CTAO				pmax	pmax			
	comp=Z,64nm,0.8s							
CTAO	**Charters Tower**	**35.34**	**190**	*e*P	**P**	**01 03 12.3**	**-0.5**
	comp=Z,64nm,0.8s							
MDJ	**Mudanjiang**	**35.43**	**331**	*e*P	P	01 03 19.0	+5.6
	comp=Z,29nm,1.0s							
TSM	**Tawau**	**35.74**	**256**	⇓P	**P**	**01 03 18.2**	**+1.8**
KDM	**Kudat**	**35.93**	**261**	⇑P	**P**	**01 03 19.0**	**+0.9**
SDKM	**Sandakan**	**35.95**	**259**	⇑P	**P**	**01 03 19.5**	**+1.2**
DL2	**Dalian**	**36.19**	**317**	P	**P**	**01 03 21.5**	**+1.5**
DL2				*e*S	**S**	**01 09 04.5**	**+5.8**
DL2				pmax	pmax			
	comp=Z,46nm,0.8s							
DL2				LR	LR			
	comp=Z,330nm,14.3s							
DL2				LR	LR			
	comp=Z,370nm,17.8s							
HABR	**Khabarovsk**	**36.44**	**340**	*e*P	**P**	**01 03 19.6**	**-2.3**
HABR				*e**PP	**pP**	**01 03 29.1**	**-0.1**
HABR				*e**SP	**sP**	**01 03 33.3**	**+1.1**
HABR				*e*		01 05 43.3		
HABR				*e*SSS	SSS	01 11 47.2		
HABR				*e*		01 13 33.3		
HABR				pmax	pmax			
	comp=Z,27nm,1.6s							
HABR				pmax	pmax			
	comp=N,19nm,1.6s							
HABR				pmax	pmax			
	comp=E,5.0nm,0.7s							
HABR				MLR	MLR			
	comp=Z,186nm,20.0s							
SNY	**Shenyang**	**36.68**	**323**	⇑P	**P**	**01 03 24.5**	**+0.4**
SNY				pmax	pmax			
	comp=Z,29nm,0.8s							
SNY				LR	LR			
	comp=Z,370nm,18.8s							
SNY				LR	LR			
	comp=Z,280nm,16.1s							
SNY				LR	LR			
	comp=Z,490nm,20.6s							
TYV	**Tymovskoe**	**36.73**	**349**	*e*P	**P**	**01 03 26.8**	**+2.4**
TYV				pmax	pmax			
	comp=Z,8.0nm,0.5s							
KKM	**Kota Kinabalu**	**36.77**	**260**	⇓P	**P**	**01 03 26.5**	**+1.1**
CN2	**Changchun**	**36.91**	**327**	*e*P	**P**	**01 03 27.0**	**+0.9**
CN2				pmax	pmax			
	comp=Z,10.0nm,0.7s							
CN2				LR	LR			
	comp=Z,500nm,16.0s							
CN2				LR	LR			
	comp=Z,300nm,16.0s							
CN2				LR	LR			
	comp=Z,300nm,17.0s							
TTSI	**Tana Toraja**	**37.02**	**244**	P	**P**	**01 03 28.6**	**+1.3**
SOEI	**Soe**	**37.26**	**231**	P	P	01 03 36.4	+6.9
SOEI	**Soe**	**37.26**	**231**	*e*P	**P**	**01 03 30.6**	**+1.1**
	comp=Z,78nm,0.9s							
SPSI	**Sidrap Palu**	**37.52**	**243**	P	**P**	**01 03 32.1**	**+0.5**
	comp=Z,43nm,1.1s							
GZH	**Guangzhou**	**37.87**	**288**	P	**P**	**01 03 34.0**	**-0.5**
GZH				S	**S**	**01 09 23.0**	**-1.6**
GZH				pmax	pmax			
	comp=Z,69nm,1.0s							
TIA	**Tai'an**	**38.05**	**310**	⇑P	**P**	**01 03 35.8**	**-0.1**
TIA				pmax	pmax			
	comp=Z,40nm,1.1s							
KAPI	**Kappang**	**38.08**	**241**	*e*P	**P**	**01 03 37.0**	**+0.7**
	comp=Z,57nm,1.4s							
KLR	**Kul'dur**	**38.22**	**338**	P	**P**	**01 03 38.2**	**+1.1**
	comp=Z,6.2nm,0.9s,baz=144,slow=9.7,SNR=15							
WHN	**Wuhan**	**38.31**	**301**	⇓P	**P**	**01 03 39.0**	**+0.9**
WHN				sP	**sP**	**01 03 51.0**	**+2.6**
WHN				S	**S**	**01 09 32.8**	**+1.7**
WHN				pmax	pmax			
	comp=Z,60nm,1.0s							
WHN				LR	LR			
	comp=Z,610nm,13.5s							
WHN				LR	LR			
	comp=Z,490nm,18.0s							
WHN				LR	LR			
	comp=Z,860nm,17.1s							
PEA0	**Petropavlovsk-**	**38.31**	**5**	*e*P	**P**	**01 03 39.4**	**+1.6**
PEA0B	**Petropavlovsk-**	**38.31**	**5**	*e*P	**P**	**01 03 37.7**	**-0.1**
	comp=Z,91nm,1.3s							
PETK	**Petropavlovsk-**	**38.31**	**5**	P	**P**	**01 03 39.2**	**+1.4**
	comp=Z,5.1nm,0.7s,baz=168,slow=8.4,SNR=6.7							
PETK				LR	LR	01 17 00.1		
	comp=Z,363nm,21.7s,baz=198,slow=32							
PEA1	**Petropavlovsk-**	**38.32**	**5**	*e*P	**P**	**01 03 39.1**	**+1.3**
PET	**Petropavlovsk**	**38.32**	**6**	*e*P	**P**	**01 03 39.2**	**+1.4**
PET				*e*		01 05 09.0		
PET				*e*S	**S**	**01 09 29.1**	**-1.5**
PET				*e*SS	**SnSn**	**01 12 07.2**	**-9.4**
PET				pmax	pmax			
	comp=Z,37nm,1.1s							
PET				pmax	pmax			
	comp=Z,200nm,16.0s							
WRAB	**Tennant Creek**	**39.00**	**208**	*e*P	**P**	**01 03 43.7**	**-0.2**
WRAB				pmax	pmax			
	comp=Z,60nm,0.9s							
WRAB	**Tennant Creek**	**39.00**	**208**	*e*P	**P**	**01 03 43.7**	**-0.2**
	comp=Z,60nm,0.9s							
WB2	**Warramunga Arr**	**39.01**	**208**	*e*P	**P**	**01 03 43.6**	**-0.4**
WR1	**Warramunga Arr**	**39.01**	**208**	*e*P	**P**	**01 03 43.8**	**-0.3**
	comp=Z,65nm,0.8s							
WR1				*e*PcP	**PcP**	**01 05 54.2**	**0.0**
WRA	**Warramunga Arr**	**39.01**	**208**	P	**P**	**01 03 43.8**	**-0.3**
	comp=Z,44nm,0.8s,baz=34,slow=8.7,SNR=141							
WRA				PcP	**PcP**	**01 05 54.2**	**0.0**
	comp=Z,4.4nm,0.8s,baz=19,slow=4.2,SNR=3.5							
WRA				LR	LR	01 20 10.8		
	comp=Z,360nm,19.1s,baz=35,slow=37							
WRA	**Warramunga Arr**	**39.01**	**208**	*ce*P	**P**	**01 03 43.9**	**-0.1**
WRA				pmax	pmax			
	comp=Z,44nm,0.8s							
DZM	**Mont Dzumac**	**39.20**	**159**	P	**P**	**01 03 45.0**	**-0.7**
	comp=Z,26nm,0.9s,baz=34,slow=14,SNR=8.8							
DZM	**Mont Dzumac**	**39.20**	**159**	*e*LR	LR	01 14 34.5		
	comp=Z,740nm,21.1s							
DZM	**Mont Dzumac**	**39.20**	**159**	*e*P	**P**	**01 03 43.5**	**-2.2**
	comp=Z,40nm,1.1s							
NKL	**Nikolayevsk**	**39.28**	**349**	*e*P	P	01 03 53.2	+7.3
EIDS	**Eidsvold**	**40.08**	**182**	*e*P	**P**	**01 03 49.5**	**-3.3**
	comp=Z,6.3nm,0.8s							
BJT	**Baijiatuau**	**40.41**	**315**	*e*P	**P**	**01 03 55.4**	**-0.1**
BJT				pmax	pmax			
	comp=Z,117nm,1.0s							
BJT	**Baijiatuau**	**40.41**	**315**	*e*P	**P**	**01 03 55.4**	**-0.1**
	comp=Z,117nm,1.0s							
BJI	**Beijing**	**40.41**	**315**	P	**P**	**01 03 55.3**	**-0.2**
BJI				pP	**pP**	**01 04 00.3**	**-2.6**
BJI				SS	SS	01 13 08.8	+6.8
BJI				pmax	pmax			
	comp=Z,44nm,1.1s							
BJI				pmax	pmax			
	comp=Z,220nm,3.0s							
BJI				LR	LR			
	comp=Z,190nm,19.4s							
BJI				LR	LR			
	comp=Z,220nm,20.8s							
BJI				LR	LR			
	comp=Z,230nm,22.2s							
QIZ	**Qiongzhong**	**40.99**	**282**	P	**P**	**01 04 02.0**	**+1.4**
QIZ				sP	**pP**	**01 04 05.5**	**-2.5**
QIZ				S	**S**	**01 10 14.3**	**+2.6**
QIZ				SS	**SS**	**01 13 17.0**	**+2.8**
QIZ				pmax	pmax			
	comp=Z,20nm,1.1s							
QIZ				pmax	pmax			
	comp=Z,79nm,9.8s							
QIZ				LR	LR			
	comp=Z,150nm,16.3s							
QIZ				LR	LR			
	comp=Z,170nm,18.0s							
QIZ	**Qiongzhong**	**40.99**	**282**	*e*P	**P**	**01 04 01.8**	**+1.2**
	comp=Z,24nm,1.1s							
SBUM	**Sibu**	**41.67**	**257**	*e*P	**P**	**01 04 06.6**	**+0.4**
	comp=Z,90nm,1.5s							
FITZ	**Fitzroy Crossi**	**42.21**	**220**	LR	LR	01 22 24.7		
	comp=Z,457nm,18.7s,baz=48,slow=37							
FITZ	**Fitzroy Crossi**	**42.21**	**220**	*e*P	**P**	**01 04 10.7**	**+0.2**
ENH	**Enshi**	**42.34**	**299**	*e*P	**P**	**01 04 11.6**	**0.0**
	comp=Z,26nm,0.8s							
AS01	**Alice Springs**	**42.45**	**206**	*e*P	**P**	**01 04 11.3**	**-1.1**
AS31	**Alice Springs**	**42.47**	**206**	*e*P	**P**	**01 04 12.4**	**-0.2**
	comp=Z,12nm,0.6s							
ASAR	**Alice Springs**	**42.47**	**206**	P	**P**	**01 04 12.3**	**-0.3**
	comp=Z,38nm,0.7s,baz=31,slow=7.0,SNR=362							
ASAR				LR	LR	01 22 24.1		
	comp=Z,488nm,19.2s,baz=29,slow=37							
TWSI	**Taliwang, Sumb**	**42.47**	**239**	P	**P**	**01 04 12.2**	**-0.5**
	comp=Z,70nm,0.8s							
STKI	**Sintang**	**43.21**	**254**	P	**P**	**01 04 19.3**	**+0.6**
XAN	**Xi'an**	**43.66**	**304**	P	**P**	**01 04 21.8**	**-0.4**
XAN				pP	pP	01 04 27.0	-2.6
XAN				pmax	pmax			
	comp=Z,24nm,1.1s							
XAN				pmax	pmax			
	comp=Z,130nm,7.6s							
KSM	**Kuching**	**43.80**	**256**	*e*P	**P**	**01 04 23.9**	**+0.5**
	comp=Z,66nm,1.0s							
HHC	**Hu-ho-hao-te**	**43.93**	**314**	*e*P	**P**	**01 04 24.3**	**-0.1**
HHC				pP	pP	01 04 28.3	-3.5
HHC				S	**S**	**01 10 51.8**	**-2.9**
HHC				pmax	pmax			
	comp=Z,23nm,1.0s							
HHC				pmax	pmax			
	comp=Z,88nm,5.7s							
HHC				LR	LR			
	comp=Z,170nm,15.1s							
HHC				LR	LR			
	comp=Z,240nm,15.4s							
HHC				LR	LR			
	comp=Z,290nm,16.9s							
ABJI	**Asem Bagus**	**44.20**	**242**	P	**P**	**01 04 28.8**	**+2.1**
GYA	**Guiyang**	**44.24**	**293**	⇑*i*P	**P**	**01 04 27.0**	**0.0**
GYA				pP	pP	01 04 33.3	-1.2
GYA				PcP	**PcP**	**01 06 12.0**	**+0.5**
GYA				PP	**PP**	**01 06 13.3**	**+2.9**
GYA				ScP	**ScP**	**01 10 03.0**	**+0.9**
GYA				S	**S**	**01 11 01.8**	**+2.2**
GYA				ScS	**ScS**	**01 14 23.5**	**-1.1**
GYA				pmax	pmax			
	comp=Z,40nm,1.0s							
GYA				pmax	pmax			
	comp=Z,130nm,5.0s							
GYA				LR	LR			
	comp=Z,650nm,18.3s							
GYA				LR	LR			
	comp=Z,590nm,18.5s							
GYA				LR	LR			
	comp=Z,620nm,19.2s							
BLJI	**Banyuglugur**	**44.72**	**242**	P	**P**	**01 04 32.4**	**+1.6**
ARMA	**Armidale**	**45.09**	**181**	*e*P	**P**	**01 04 34.7**	**+1.0**
	comp=Z,91nm,0.8s							
UBPT	**Khong Chiam**	**45.40**	**277**	P	**P**	**01 04 37.3**	**+1.0**
	comp=Z,43nm,0.8s							
NGJI	**Ngawi**	**46.38**	**244**	P	**P**	**01 04 46.6**	**+2.6**
	comp=Z,89nm,1.0s							
PWJI	**Pagerwojo**	**46.40**	**243**	P	**P**	**01 04 43.2**	**-0.9**
SKNT	**Sakolnakorn**	**46.67**	**279**	P	**P**	**01 04 46.6**	**+0.3**
	comp=Z,44nm,1.1s							
CLNS	**Chul'man**	**46.82**	**340**	*e*P	P	01 04 58.7	+12
CLNS				pmax	pmax			
	comp=Z,24μm,1.0s							
CLNS				pmax	pmax			
	comp=E,8.0nm,0.9s							
CLNS				pmax	pmax			
	comp=N,14nm,1.3s							
CLNS				pmax	pmax			
	comp=Z,102nm,14.0s							
CLNS				pmax	pmax			
	comp=N,74nm,14.0s							
CD2	**Chengdu**	**47.31**	**298**	*e*P	**P**	**01 04 51.3**	**+0.1**
CD2				pP	pP	01 04 56.3	-2.4
CD2				PP	**PP**	**01 06 42.0**	**-0.5**
CD2				PcS	**PcS**	**01 10 17.3**	**-0.1**
CD2				S	**S**	**01 11 45.0**	**+1.4**
CD2				SS	**SS**	**01 15 14.3**	**+3.1**
CD2				pmax	pmax			
	comp=N,20nm,0.6s							
CD2				pmax	pmax			
	comp=N,180nm,5.4s							
CD2				LR	LR			
	comp=N,780nm,17.2s							
CD2				LR	LR			
	comp=N,310nm,19.6s							
NONG	**Nongkai**	**47.38**	**281**	P	**P**	**01 04 52.4**	**+0.6**
	comp=N,32nm,1.1s,comp=N,11μm							
KMI	**Kunming**	**47.67**	**290**	P	**P**	**01 04 55.0**	**+0.7**
KMI				pP	pP	01 05 00.5	-1.3
KMI				sP	sP	01 05 02.5	-2.2
KMI				PP	**PP**	**01 06 46.0**	**-0.1**
KMI				S	**S**	**01 11 49.8**	**+0.6**
KMI				pmax	pmax			
	comp=N,38nm,1.0s							
KMI				pmax	pmax			
	comp=N,150nm,4.5s							
KMI				LR	LR			
	comp=N,170nm,18.4s							
KMI				LR	LR			
	comp=N,200nm,21.3s							
KMI				LR	LR			
	comp=N,210nm,19.2s							
STKA	**Stephens Creek**	**47.71**	**193**	P	**P**	**01 04 53.4**	**-0.7**
	comp=N,14nm,0.7s,baz=354,slow=8.3,SNR=22							
STKA				LR	LR	01 24 02.8		
	comp=N,213nm,20.8s,baz=24,slow=35							
STKA	**Stephens Creek**	**47.71**	**193**	*e*P	**P**	**01 04 53.3**	**-0.7**
STKA	**Stephens Creek**	**47.71**	**193**	*e*P	**P**	**01 04 53.4**	**-0.7**
	comp=N,3.9nm,0.8s							
SEY	**Seymchan**	**47.95**	**360**	P	**P**	**01 04 56.2**	**+0.7**
	comp=N,7.5nm,0.6s,baz=173,slow=6.6,SNR=22							
SEY				PcP	**PcP**	**01 06 23.2**	**-0.3**
	comp=N,8.4nm,0.9s,baz=77,slow=3.9,SNR=3.9							
LZH	**Lanzhou**	**48.19**	**305**	*e*P	**P**	**01 04 59.5**	**+1.4**
LZH				pP	pP	01 05 04.3	-1.3
LZH				sP	sP	01 05 07.3	-1.2
LZH				PP	**PP**	**01 06 48.5**	**-2.0**
LZH				*e*S	**S**	**01 11 55.3**	**-0.9**
LZH				pmax	pmax			
	comp=N,36nm,0.8s							
LZH				pmax	pmax			
	comp=N,160nm,4.6s							
LZH				LR	LR			
	comp=N,680nm,15.3s							
LZH				LR	LR			
	comp=N,850nm,16.8s							
LZH				LR	LR			
	comp=N,990nm,17.0s							
MBWA	**Marble Bar**	**48.22**	**223**	*e*P	**P**	**01 04 58.1**	**0.0**
	comp=N,37nm,0.9s							
PBKT	**Sadao Pong**	**49.58**	**279**	P	**P**	**01 05 09.5**	**+0.8**
	comp=N,67nm,1.1s,comp=N,13μm							
YAK	**Yakutsk**	**49.79**	**346**	P	**P**	**01 05 09.9**	**+0.2**
	comp=N,28nm,0.5s,baz=221,slow=0.9,SNR=5.7							
YAK	**Yakutsk**	**49.79**	**346**	*e*P	**P**	**01 05 09.5**	**-0.2**
YAK				*e*		01 05 21.4		
YAK				pmax	pmax			
	comp=Z,24nm,0.8s							
YAK				pmax	pmax			
	comp=N,13nm,1.1s							
YAK				pmax	pmax			
	comp=E,7.0nm,1.5s							
YAK				pmax	pmax			
	comp=Z,64nm,0.9s							
YAK				pmax	pmax			
	comp=N,26nm,1.1s							
YAK				pmax	pmax			
	comp=E,9.0nm,1.4s							
YAK	**Yakutsk**	**49.79**	**346**	*e*P	**P**	**01 05 10.2**	**+0.6**
	comp=E,66nm,0.6s							
UTTA	**Uttaradit**	**49.87**	**281**	P	**P**	**01 05 11.2**	**+0.3**
	comp=E,18nm,0.9s,comp=E,178nm							
BBOO	**Buckleboo**	**50.02**	**198**	*e*P	**P**	**01 05 11.6**	**-0.2**
	comp=E,58nm,0.7s							
CAN	**Canberra**	**50.08**	**184**	*e*P	**P**	**01 05 13.4**	**+1.1**
CAN				pmax	pmax			
	comp=Z,27nm,1.0s							
CAN	**Canberra**	**50.08**	**184**	*e*P	**P**	**01 05 13.4**	**+1.1**
	comp=Z,27nm,1.0s							
SONA0	**Songino Array**	**50.20**	**321**	*e*P	**P**	**01 05 13.6**	**+0.4**
	comp=Z,97nm,1.1s							
SONA1	**Songino Array**	**50.20**	**321**	*e*P	**P**	**01 05 13.5**	**+0.3**
SONM	**Songino Array**	**50.20**	**321**	P	**P**	**01 05 13.6**	**+0.4**
	comp=Z,29nm,0.9s,baz=120,slow=7.4,SNR=97							
SONM				LR	LR	01 25 33.1		
	comp=Z,246nm,21.7s,baz=90,slow=35							
LAMP	**Lampang**	**50.68**	**282**	P	**P**	**01 05 17.5**	**+0.4**
	comp=Z,19nm,0.8s,comp=Z,183nm							
SUKH	**Sukhothai**	**50.77**	**281**	P	**P**	**01 05 18.4**	**+0.6**
	comp=Z,16nm,1.0s,comp=Z,157nm							
CMAI	**Chiengmai2**	**51.14**	**284**	P	**P**	**01 05 21.1**	**+0.3**
	comp=Z,426nm,1.1s,comp=Z,5μm							
FORT	**Forrest**	**51.19**	**207**	*e*P	**P**	**01 05 21.3**	**+0.7**
	comp=Z,692nm,0.7s							
KLSI		**51.25**	**251**	P	**P**	**01 05 23.1**	**+1.7**
CMMT	**Chiang Mai**	**51.30**	**282**	P	**P**	**01 05 21.9**	**+0.1**
	comp=Z,42nm,0.8s,comp=Z,441nm							
CHTO	**Chiang Mai**	**51.31**	**282**	P	**P**	**01 05 22.0**	**+0.1**
	comp=Z,184nm,0.9s,comp=Z,2μm							
CHTO	**Chiang Mai**	**51.31**	**282**	*e*P	**P**	**01 05 22.2**	**+0.3**
CHTO				pmax	pmax			
	comp=Z,30nm,0.8s							
CHTO	**Chiang Mai**	**51.31**	**282**	*e*P	**P**	**01 05 22.2**	**+0.3**
	comp=Z,30nm,0.8s							
CM01	**Chiang Mai Arr**	**51.32**	**282**	*e*P	**P**	**01 05 21.7**	**-0.3**
PHET	**Kaeng Krachan**	**51.32**	**275**	P	**P**	**01 05 23.2**	**+1.2**
	comp=Z,15nm,0.8s							
CM31	**Chiang Mai Arr**	**51.34**	**282**	*e*P	**P**	**01 05 23.0**	**+1.0**
CMAR	**Chiang Mai Arr**	**51.34**	**282**	P	**P**	**01 05 23.0**	**+1.0**
	comp=Z,65nm,0.8s,baz=78,slow=6.1,SNR=227							
CMAR				LR	LR	01 28 03.1		
	comp=Z,63nm,18.7s,baz=118,slow=37							
SKLT	**Songkhla**	**51.46**	**267**	P	**P**	**01 05 25.0**	**+1.9**
	comp=Z,65nm,1.1s							
UMPA	**Umpang Tak**	**51.63**	**279**	P	**P**	**01 05 25.5**	**+1.2**
	comp=Z,20nm,1.0s,comp=Z,1μm							
BOD	**Bodaibo**	**51.63**	**335**	*e*P	**P**	**01 05 23.3**	**-0.3**
BOD				pmax	pmax			
	comp=Z,51nm,1.4s							
SURA	**Surathani**	**51.99**	**270**	P	**P**	**01 05 28.8**	**+1.8**
	comp=Z,176nm,0.8s							
GTA	**Gaotai**	**52.04**	**309**	⇑P	**P**	**01 05 27.3**	**+0.1**
GTA				pP	pP	01 05 31.8	-2.9
GTA				sP	sP	01 05 34.3	-3.4
GTA				PcP	**PcP**	**01 06 39.5**	**+0.3**
GTA				S	**S**	**01 12 49.5**	**-0.2**
GTA				pmax	pmax			
	comp=Z,13nm,1.6s							
GTA				pmax	pmax			
	comp=Z,88nm,4.5s							
GTA				LR	LR			
	comp=Z,93nm,17.6s							
GTA				LR	LR			
	comp=Z,170nm,18.5s							
GTA				LR	LR			
	comp=Z,160nm,18.5s							
TRTT	**Trang**	**52.21**	**268**	P	**P**	**01 05 31.1**	**+2.5**
	comp=Z,48nm,1.5s							
KRAB	**Krabi**	**52.60**	**269**	P	**P**	**01 05 33.3**	**+1.7**
	comp=Z,57nm,0.8s,comp=Z,7μm							
KSI	**Kapahiang**	**52.82**	**254**	P	**P**	**01 05 36.0**	**+2.8**
ZAK	**Zakamensk**	**53.11**	**323**	*e*P	**P**	**01 05 34.0**	**-0.9**
ZAK				pmax	pmax			
	comp=Z,18nm,1.1s							
TLY	**Talaya**	**53.43**	**324**	P	**P**	**01 05 37.3**	**+0.1**
	comp=Z,11nm,0.8s,baz=158,slow=4.2,SNR=14							
TLY	**Talaya**	**53.43**	**324**	*e*P	**P**	**01 05 37.2**	**+0.1**
TLY				*e*S	**S**	**01 13 07.5**	**-0.6**
TLY				*e*SS	**SS**	**01 16 45.7**	**-2.6**
TLY				*e*SSS	SSS	01 18 33.6		
TLY				pmax	pmax			
	comp=Z,32nm,1.5s							
TLY	**Talaya**	**53.43**	**324**	*e*P	**P**	**01 05 37.3**	**+0.1**
	comp=Z,32nm,0.9s							
BILL	**Bilibino**	**53.81**	**6**	*d i*P	**P**	**01 05 40.4**	**+0.8**
BILL				*i*		01 05 50.7		
BILL				*i*		01 06 41.9		
BILL				pmax	pmax			
	comp=Z,34nm,0.9s							
BILL	**Bilibino**	**53.81**	**6**	*e*P	**P**	**01 05 40.6**	**+0.9**
	comp=Z,98nm,1.1s							
PSI	**Prapat**	**54.21**	**263**	*e*P	**P**	**01 05 44.1**	**+0.6**
PSI				pmax	pmax			
	comp=Z,46nm,1.3s							
PSI	**Prapat**	**54.21**	**263**	*e*P	**P**	**01 05 44.1**	**+0.6**
	comp=Z,46nm,1.3s							
GAMB	**Gambell**	**54.70**	**19**	*e*P	**P**	**01 05 47.5**	**+1.5**
	comp=Z,36nm,1.2s							
CHGN	**Chignik**	**55.54**	**31**	*e*P	**P**	**01 05 56.2**	**+4.0**
GSI	**Gunungsitoli**	**55.93**	**261**	P	**P**	**01 05 58.6**	**+2.8**
GSI	**Gunungsitoli**	**55.93**	**261**	*e*P	**P**	**01 05 55.8**	**0.0**
	comp=Z,33nm,0.9s							
URZ	**Urewera**	**57.70**	**157**	LR	LR	01 29 54.7		
	comp=Z,188nm,18.2s,baz=323,slow=35							
LSA	**Lhasa**	**58.09**	**296**	*e*P	**P**	**01 06 12.6**	**+1.1**
LSA				pmax	pmax			
	comp=Z,37nm,0.8s							
LSA	**Lhasa**	**58.09**	**296**	*e*P	**P**	**01 06 12.6**	**+1.1**
	comp=Z,37nm,0.8s							
BKZ	**Black Stump Fm**	**58.27**	**158**	*e*P	**P**	**01 06 11.3**	**-0.6**
	comp=Z,37nm,1.1s							
TIXI	**Tiksi**	**58.46**	**351**	P	P	01 06 18.7	+5.9
	comp=Z,8.7nm,0.8s,baz=235,slow=2.9,SNR=2.7							
OHAK	**Old Harbor**	**58.48**	**31**	*e*P	**P**	**01 06 13.7**	**+0.5**
	comp=Z,58nm,1.7s							
KDAK	**Kodiak Island**	**59.05**	**31**	*ce*P	**P**	**01 06 18.0**	**+0.9**
KDAK	**Kodiak Island**	**59.05**	**31**	*e*P	**P**	**01 06 17.7**	**+0.6**
	comp=Z,15nm,0.9s							
SVW2	**Sparrevohn**	**59.08**	**26**	*e*P	**P**	**01 06 18.3**	**+1.0**
	comp=Z,17nm,1.0s							
TT01	**Tatalina**	**59.76**	**24**	*e*P	**P**	**01 06 22.5**	**+0.6**
TTA	**Tatalina**	**59.78**	**24**	*e*P	**P**	**01 06 22.8**	**+0.6**
TTA				pmax	pmax			
	comp=Z,33nm,1.7s							
TTA	**Tatalina**	**59.78**	**24**	*e*P	**P**	**01 06 22.8**	**+0.6**
	comp=Z,32nm,1.7s							
RSO	**Redoubt South**	**60.05**	**28**	*e*P	**P**	**01 06 24.2**	**0.0**
CNPM	**China Poot**	**60.38**	**29**	*e*P	**P**	**01 06 26.6**	**+0.4**
	comp=Z,29nm,0.9s							
BRLK	**Bradley Lake**	**60.63**	**29**	*e*P	**P**	**01 06 28.0**	**0.0**
	comp=Z,21nm,1.0s							
RPZ	**Rata Peaks**	**60.76**	**165**	LR	LR	01 32 32.1		
	comp=Z,269nm,18.1s,baz=331,slow=36							
KRAR	**Krasnoyarsk**	**60.94**	**326**	P	**P**	**01 06 29.0**	**-1.1**
PPLA	**Purkeypile**	**61.32**	**25**	*e*P	**P**	**01 06 33.9**	**+1.1**
	comp=Z,153nm,2.0s							
SUA	**Susitna One**	**61.35**	**27**	*e*P	**P**	**01 06 33.5**	**+0.5**
	comp=Z,11nm,1.0s							
SEW	**Seward**	**61.43**	**29**	*e*P	**P**	**01 06 34.1**	**+0.8**
	comp=Z,20nm,1.0s							
CAST	**Castle Rocks**	**61.59**	**25**	*e*P	**P**	**01 06 31.9**	**-2.5**
	comp=Z,37nm,1.0s							
RC01	**Rabbit Creek A**	**61.66**	**28**	*e*P	**P**	**01 06 35.3**	**+0.4**
	comp=Z,55nm,1.4s							
WMQ	**Urumqi**	**61.72**	**312**	⇑*i*P	**P**	**01 06 36.0**	**+0.3**
WMQ				pP	pP	01 06 40.8	-2.6
WMQ				sP	sP	01 06 48.8	+2.5
WMQ				PcP	**PcP**	**01 07 16.5**	**-0.4**
WMQ				PP	**PP**	**01 08 58.5**	**+6.9**
WMQ				S	**S**	**01 15 01.5**	**+4.2**
WMQ				SS	**

SML Sawmill 62.55 27 eP P 01 06 41.7 +0.8
comp=Z,32nm,0.9s
GUN Gumba 62.76 294 eP P 01 06 43.5 +0.2
comp=Z,171nm,0.9s
MLY Manley 62.80 24 eP P 01 06 43.4 +0.9
comp=Z,32nm,1.2s
RND Reindeer 62.91 26 eP P 01 06 43.2 -0.1
RND pmax pmax
comp=Z,44nm,1.1s
RND Reindeer 62.91 26 eP P 01 06 43.2 -0.1
comp=Z,44nm,1.1s
BWN Browne 62.96 25 eP P 01 06 44.4 +0.8
comp=Z,51nm,0.8s
MCK McKinley 63.00 25 eP P 01 06 44.1 +0.2
MCK pmax pmax
comp=Z,28nm,1.1s
MCK McKinley 63.00 25 eP P 01 06 44.0 +0.2
comp=Z,28nm,1.1s
SCM Sheep Creek Mo 63.01 27 eP P 01 06 44.8 +0.8
SCM pmax pmax
comp=Z,74nm,0.9s
SCM Sheep Creek Mo 63.01 27 eP P 01 06 44.8 +0.8
comp=Z,74nm,0.9s
FID Port Fidalgo 63.04 29 eP P 01 06 44.7 +0.6
comp=Z,50nm,1.0s
PKIN Phulchoki 63.20 294 eP P 01 06 46.3 +0.1
comp=Z,50nm,0.7s
KKN Kakani 63.29 294 eP P 01 06 46.5 -0.2
comp=Z,58nm,0.7s
EYAK Cordova Ski Ar 63.32 29 eP P 01 06 47.2 +1.3
comp=Z,22nm,0.8s
DHY Denali Highway 63.42 26 eP P 01 06 47.1 +0.3
comp=Z,21nm,0.9s
DMN Daman 63.46 294 eP P 01 06 47.7 -0.2
comp=Z,58nm,0.8s
DIV Divide 63.48 29 eP P 01 06 48.2 +1.0
comp=Z,34nm,0.9s
KLU Klutina 63.53 28 eP P 01 06 48.4 +0.9
comp=Z,23nm,1.0s
WRH Wood River Hil 63.63 25 eP P 01 06 47.7 -0.3
comp=Z,23nm,0.8s
MDM Murphy Dome 63.75 24 eP P 01 06 49.8 +1.0
comp=Z,18nm,1.0s
CCB Clear Creek Bu 63.80 24 eP P 01 06 48.6 -0.5
comp=Z,26nm,1.2s
GKN Gorkha 63.85 294 eP P 01 06 50.1 -0.2
comp=Z,167nm,1.0s
COLA College 63.87 24 eP P 01 06 51.4 +1.9
COLA pmax pmax
comp=Z,25nm,1.0s
COLA College 63.87 24 eP P 01 06 51.4 +1.9
comp=Z,25nm,1.0s
BMRM Bremner River 63.98 29 eP P 01 06 51.4 +1.0
comp=Z,21nm,1.2s
HDA Harding Lake 64.06 25 eP P 01 06 50.3 -0.5
comp=Z,35nm,0.9s
PAX Paxson 64.20 27 eP P 01 06 52.3 +0.4
PAX pmax pmax
comp=Z,20nm,0.7s
PAX Paxson 64.20 27 eP P 01 06 52.3 +0.4
comp=Z,20nm,0.7s
IL1 Eielson Array 64.22 24 eP P 01 06 50.8 -1.0
ILAR Eielson Array 64.22 24 P P 01 06 51.3 -0.5
comp=Z,15nm,1.0s,baz=249,slow=5.5,SNR=81
ILAR LR LR 01 34 01.2
comp=Z,262nm,19.7s,baz=255,slow=35
ILB Eielson Array 64.22 24 eP P 01 06 51.0 -0.8
CRQM Cirque 64.61 29 eP P 01 06 56.0 +1.3
comp=Z,34nm,1.0s
KOLN Koldanda 64.78 294 eP P 01 06 56.0 -0.5
comp=Z,48nm,0.9s
MENT Mentasta 64.95 27 eP P 01 06 58.0 +1.3
comp=Z,17nm,1.0s
ZAA0 Zalesovo Array 64.99 323 eP P 01 06 56.5 -0.6
ZALV Zalesovo Beam 64.99 323 P P 01 06 56.5 -0.6
comp=Z,23nm,0.9s,baz=104,slow=6.3,SNR=63
ZALV LR LR 01 34 32.7
comp=Z,182nm,21.1s,baz=70,slow=35
ZALV PKP2bc 01 35 41.6
comp=Z,0.3nm,0.3s,baz=308,slow=5.1,SNR=3.8
ZAA1 Zalesovo Array 64.99 323 eP P 01 06 56.5 -0.6
ZAA1 ⇑e 01 35 41.6
DOT Dot Lake 65.02 26 eP P 01 06 57.5 +0.4
comp=Z,136nm,1.4s
BALM Baldy 65.06 29 eP P 01 06 58.5 +1.0
BALM pmax pmax
comp=Z,21nm,0.9s
BALM Baldy 65.06 29 eP P 01 06 58.5 +1.0
comp=Z,21nm,0.9s
PYUN Piuthan 65.30 294 eP P 01 06 59.2 -0.6
comp=Z,122nm,1.0s
FYU Fort Yukon 65.49 23 eP P 01 07 01.3 +1.2
comp=Z,238nm,1.5s
PPT Papeete 65.56 117 LR LR 01 32 02.0
comp=Z,302nm,18.5s,baz=338,slow=33
PPT2 Papeete2 65.56 117 eS S 01 15 40.6 -5.1
comp=Z,66nm,24.2s
PPT2 Papeete2 65.56 117 eLR LR 01 26 46.8
comp=Z,384nm,23.0s,baz=290
MK01 Makanchi Array 65.78 315 eP P 01 07 01.6 -0.8
MK31 Makanchi Array 65.79 315 iP P 01 07 01.7 -0.7
MK31 pmax pmax
comp=Z,13nm,1.2s
MK31 Makanchi Array 65.79 315 eP P 01 07 02.4 -0.1
MK32 Makanchi Array 65.79 315 eP P 01 07 02.3 -0.2
MK32 ⇑e 01 35 38.7
MKAR Makanchi Array 65.79 315 P P 01 07 02.3 -0.1
comp=Z,11nm,0.7s,baz=89,slow=8.2,SNR=80
MKAR LR LR 01 35 13.2
comp=Z,71nm,21.8s,baz=84,slow=36
MKAR PKP2bc 01 35 38.7
comp=Z,0.8nm,0.8s,baz=264,slow=4.3,SNR=4.5
MKAR Makanchi Array 65.79 315 eP P 01 07 02.4 -0.1
comp=Z,106nm,0.6s
MAKZ Makanchi 66.00 315 iP P 01 07 03.1 -0.7
MAKZ pmax pmax
comp=Z,20nm,0.7s
MAKZ Makanchi 66.00 315 eP P 01 07 03.8 0.0
comp=Z,40nm,1.0s
NVS Novosibirsk 66.04 324⇓iP P 01 07 04.0 +0.2
NVS pmax pmax
comp=Z,75nm,1.2s
NVS pmax pmax
comp=N,21nm,1.4s
NVS pmax pmax
comp=E,53nm,1.4s
EGAK Eagle 66.55 25 eP P 01 07 07.8 +0.8
comp=E,74nm,1.0s
DAWY Dawson 67.12 26 eP P 01 07 11.8 +1.1
comp=E,39nm,1.3s
HYT Haines Junctio 67.32 30 eP P 01 07 13.6 +1.6
comp=E,43nm,1.0s
NRIK Noril'sk 67.41 340 P P 01 07 12.3 0.0
comp=E,25nm,1.1s,baz=107,slow=8.2,SNR=16
NRIK LR LR 01 35 59.2
comp=E,276nm,21.3s,baz=94,slow=35
NRIK Noril'sk 67.41 340 P P 01 07 12.3 0.0
NRIK pmax pmax
comp=Z,18nm,0.9s
PDGK Podgornoye 67.65 311 iP P 01 07 15.1 +0.8
TBI Tubuai 68.27 123 eLR LR 01 28 01.8
comp=Z,161nm,29.0s
KURK Kurchatov 68.44 319 eP'P'df P'P'df 01 35 34.5 -4.2
KURBB Kurchatov Arra 68.49 319 PKP2bc P'P'df 01 35 34.5 -4.2
comp=Z,5.8nm,1.1s,baz=272,slow=3.5,SNR=16
INK Inuvik 70.30 22 P P 01 07 30.3 +0.1
comp=Z,24nm,0.8s,baz=43,slow=4.7,SNR=3.1
INK Inuvik 70.30 22 eP P 01 07 30.4 +0.1
INK pmax pmax
comp=Z,42nm,1.0s
INK Inuvik 70.30 22 eP P 01 07 30.4 +0.1
comp=Z,42nm,1.0s
NDI New Delhi 70.30 295 eP P 01 07 24.0 -7.1
KSH Kashi 70.39 307 P P 01 07 33.8 +2.2
KSH epP pP 01 07 38.3 -1.1
KSH ePP PP 01 10 11.5 +4.0
KSH S S 01 16 44.5 +1.4
KSH ScS SKKSac 01 17 32.5 +0.2
KSH pmax pmax
comp=Z,12nm,0.9s
KSH pmax pmax
comp=Z,110nm,4.3s
KSH LR LR
comp=Z,100nm,5.5s
KSH LR LR
comp=Z,110nm,8.0s
KSH LR LR
comp=Z,210nm,6.0s
TKM2 Tokmak 2 70.50 311 iP P 01 07 31.2 -1.1
TKM2 pmax pmax
comp=Z,9.0nm,0.8s
PALK Pallekele 70.69 273 eP P 01 07 34.2 +0.5
PALK pmax pmax
comp=Z,32nm,0.9s
PALK Pallekele 70.69 273 eP P 01 07 34.2 +0.5
comp=Z,32nm,0.9s
HYB Hyderabad 70.71 283 iP P 01 07 33.0 -0.8
TAOE Nuku Hiva Isla 70.75 105 eLR LR 01 29 09.0
comp=Z,186nm,24.5s
DLBC Dease Lake 70.82 33 eP P 01 07 35.0 +1.2
comp=Z,34nm,1.0s
THN Thein Dam 71.18 300 eP P 01 07 34.0 -2.3
FRU Bishkek 71.22 311 eP P 01 07 36.0 -0.5
FRU e 01 07 48.0
AAK Ala-Archa 71.33 310 P P 01 07 37.1 -0.2
comp=Z,1.9nm,0.3s,baz=92,slow=6.5,SNR=7.4
AAK LR LR 01 40 58.2
comp=Z,87nm,19.7s,baz=56,slow=38
OTUK Ortayu 72.54 316 P P 01 07 41.6 -2.7
OTUK pmax pmax
comp=Z,8.0nm,0.8s
MNAS Manas 72.80 310 iP P 01 07 44.9 -1.2
BVA0 Borovoye Array 73.53 321 iP P 01 07 49.4 -0.6
BVA0 pmax pmax
comp=Z,31nm,0.8s
BVAR Borovoye Array 73.53 321 P P 01 07 50.0 -0.1
comp=Z,28nm,0.7s,baz=90,slow=7.4,SNR=196
BVAR LR LR 01 39 51.4
comp=Z,150nm,21.9s,baz=74,slow=36
BVAR Borovoye Array 73.53 321 P P 01 07 50.0 -0.1
BRVK Borovoye 73.60 321 ceP P 01 07 49.7 -0.7
BRVK pmax pmax
comp=Z,29nm,1.0s
BRVK Borovoye 73.60 321 eP P 01 07 50.2 -0.2
comp=Z,34nm,1.0s
KK31 Karatay Array 74.21 311 ceP P 01 07 53.6 -0.6
KK31 pmax pmax
comp=Z,18nm,1.1s
KKAR Karatay Array 74.21 311 eP P 01 07 54.0 -0.2
KKAR pmax pmax
comp=Z,117nm,0.9s
KKAR Karatay Array 74.21 311 eP P 01 07 54.0 -0.2
comp=Z,117nm,0.9s
NLWA Neilton Lookou 74.85 44 eP P 01 07 59.5 +1.6
comp=Z,31nm,1.1s
E03A Lebam 75.14 45 eP P 01 08 00.9 +1.4
comp=Z,45nm,1.0s
A04D Lummi Island 75.49 43 P P 01 08 02.6 +1.1
baz=276
G03D McMinnville, O 75.50 47 P P 01 08 02.6 +1.0
baz=277
I03D Drain, OR 75.62 48 P P 01 08 03.3 +1.1
baz=277
L02D Cave Junction, 75.62 50 P P 01 08 03.7 +1.3
baz=277
KHMM Horse Mountain 75.69 51 eP P 01 08 05.0 +2.0
comp=Z,44nm,1.1s
KMRM Mail Ridge 75.79 52 eP P 01 08 05.6 +2.1
comp=Z,49nm,1.1s
B05A Bryant 75.94 43 P P 01 08 04.8 +0.7
baz=277
F04A Amboy 76.00 46 eP P 01 08 05.3 +0.9
comp=Z,31nm,1.0s
MBW Mount Baker 76.01 43 P P 01 08 05.3 +0.6
HUMO Hull Mountain 76.04 49 eP P 01 08 06.3 +1.5
comp=Z,14nm,0.9s
JCW Jim Creek 76.06 43 eP P 01 08 05.7 +0.9
D05A Enumclaw 76.14 44 eP P 01 08 06.8 +1.6
comp=Z,33nm,1.0s
M02C Callahan 76.28 50 P P 01 08 07.4 +1.2
baz=278,SNR=8.1
I04A Tendick Farm, 76.28 48 P P 01 08 06.5 +0.4
baz=278,SNR=6.5
LON Longmire 76.32 45 eP P 01 08 07.0 +0.6
LON pmax pmax
comp=Z,14nm,1.3s
LON Longmire 76.32 45 eP P 01 08 07.0 +0.6
comp=Z,14nm,1.3s
YBH Yreka Blue Hor 76.33 50 eP P 01 08 07.8 +1.2
YBH pmax pmax
comp=Z,30nm,0.8s
YBH Yreka Blue Hor 76.33 50 eP P 01 08 07.8 +1.2
comp=Z,30nm,0.8s
KBL Kabul 76.44 302 eP P 01 08 06.7 -0.7
KBL pmax pmax
comp=Z,40nm,1.0s
KBL Kabul 76.44 302 eP P 01 08 06.7 -0.7
comp=Z,40nm,1.0s
N02D Trinity Center 76.44 51 P P 01 08 08.4 +1.2
baz=278
J04D Umpqua Nationa 76.57 48 P P 01 08 08.6 +0.6
baz=278,SNR=6.4
WDC Whiskeytown Da 76.62 51 eP P 01 08 09.0 +0.9
WDC pmax pmax
comp=Z,23nm,1.1s
WDC Whiskeytown Da 76.62 51 eP P 01 08 09.0 +0.9
comp=Z,22nm,1.1s
G05D Wamic, OR 76.86 46 P P 01 08 10.1 +0.7
baz=278
K04D Chiloquin, OR 76.91 49 P P 01 08 10.5 +0.7
baz=278
I05D Terrebonne, OR 76.97 47 P P 01 08 10.9 +0.8
baz=278
M04C Macdoel 76.97 50 P P 01 08 11.2 +0.9
baz=278,SNR=14
LTY Liberty 77.02 44 eP P 01 08 10.7 +0.3
comp=Z,11nm,0.8s
CROR Criterion Ridg 77.12 47 P P 01 08 11.5 +0.5
NLW Nelson Butte 77.13 43 P P 01 08 11.8 +0.8
J05D Fort Rock, OR 77.20 48 P P 01 08 12.3 +0.8
baz=278,SNR=12
ETW Entiat 77.20 44 eP P 01 08 11.8 +0.4
O03D Paynes Creek 77.22 51 P P 01 08 12.1 +0.5
baz=279,SNR=17
O03D Paynes Creek 77.22 51 eP P 01 08 12.1 +0.5
G06A Carlson Farm, 77.34 46 eP P 01 08 12.9 +0.8
comp=Z,12nm,0.9s
PNT Penticton 77.43 42 eP P 01 08 12.9 +0.4
PNT Penticton 77.43 42 eP P 01 08 12.9 +0.4
WTV Waterville 77.44 44 eP P 01 08 12.9 +0.2
K05A Summer Lake 77.53 49 eP P 01 08 14.4 +1.0
comp=Z,48nm,0.8s
ORV Oroville 77.57 52 eP P 01 08 13.9 +0.5
ORV pmax pmax
comp=Z,32nm,0.8s
ORV Oroville 77.57 52 eP P 01 08 13.9 +0.5
comp=Z,32nm,0.8s
B08A Colville Reser 77.76 43 eP P 01 08 14.7 +0.3
comp=Z,21nm,0.8s
HAWA Hanford 77.92 45 eP P 01 08 16.2 +1.0
comp=Z,19nm,0.8s
AFDM Forest Hills D 78.07 53 eP P 01 08 17.0 +0.7
comp=Z,33nm,1.1s
MOD Modoc Plateau 78.09 50 eP P 01 08 15.3 -1.2
comp=Z,26nm,0.8s
YKW3 Yellowknife Ar 78.18 28 eP P 01 08 16.2 -0.2
comp=Z,30nm,0.9s
YKA Yewknife Ar 78.20 28 P P 01 08 16.2 -0.2
comp=Z,16nm,0.8s,baz=280,slow=5.5,SNR=80
YKA LR LR 01 39 51.7
comp=Z,28nm,21.7s,baz=0.0,slow=34
YKB5 Yellowknife Ar 78.20 28 eP P 01 08 15.4 -1.0
D08A Wollman Farm, 78.23 44 eP P 01 08 17.5 +0.5
comp=Z,20nm,0.9s
G08A Pilot Rock 78.50 46 eP P 01 08 18.9 +0.3
comp=Z,15nm,1.1s
C09A Chnan Ranch 78.55 43 eP P 01 08 19.1 +0.3
comp=Z,15nm,0.7s
CMB Columbia Colle 78.68 54 eP P 01 08 20.1 +0.4
CMB pmax pmax
comp=Z,20nm,1.0s
CMB Columbia Colle 78.68 54 eP P 01 08 20.1 +0.4
comp=Z,20nm,1.0s
SVE Sverdlovsk 78.70 326⇓eP P 01 08 19.2 -0.2
SVE pmax pmax
comp=Z,31nm,1.0s
E09A Wood Farm, Sta 78.85 45 eP P 01 08 21.4 +1.0
comp=Z,26nm,0.8s
PNTR Pine Nut 79.10 52 eP P 01 08 23.7 +1.5
comp=Z,45nm,0.8s
PAHR Pah Rah Range 79.15 52 eP P 01 08 23.1 +0.7
comp=Z,30nm,1.1s
PAGB Antelope Grade 79.20 56 eP P 01 08 23.9 +1.4
comp=Z,37nm,0.9s
WVOR Wild Horse Val 79.22 49 eP P 01 08 23.4 +0.7
WVOR pmax pmax
comp=Z,29nm,0.9s
WVOR Wild Horse Val 79.22 49 eP P 01 08 23.4 +0.7
comp=Z,29nm,0.9s
NEW Newport 79.23 43 P P 01 08 22.7 +0.2
baz=280,SNR=22
NEW Newport 79.23 43 eP P 01 08 22.9 +0.4
NEW pmax pmax
comp=Z,31nm,0.8s
NEW Newport 79.23 43 eP P 01 08 22.9 +0.4
comp=Z,31nm,0.8s
WAKR Walker 79.33 53 eP P 01 08 24.6 +1.1
comp=Z,30nm,1.1s
YERR Yerington 79.39 52 eP P 01 08 20.0 -3.8
comp=Z,40nm,0.8s
F10A Beach Ranch, E 79.57 45 eP P 01 08 25.1 +0.6
comp=Z,17nm,1.0s
PKM Mcpherson Peak 79.71 57 P P 01 08 26.3 +0.8
baz=281
BMO Blue Mountains 79.73 46 eP P 01 08 25.8 +0.4
BMO pmax pmax
comp=Z,31nm,0.8s
BMO Blue Mountains 79.73 46 eP P 01 08 25.8 +0.4
comp=Z,31nm,0.8s
TVH3 East Aurora ar 79.83 53 eP P 01 08 27.3 +1.1
comp=Z,33nm,1.1s
TVH1 TV Hill, Hawth 79.86 53 eP P 01 08 27.4 +0.9
comp=Z,33nm,0.9s
TVH2 Borealis Mine 79.88 53 eP P 01 08 27.4 +0.9
comp=Z,18nm,0.8s
ARU Arti 79.90 326 P P 01 08 25.8 -0.1
comp=Z,19nm,0.6s,baz=98,slow=4.3,SNR=54
ARU LR LR 01 44 20.1
comp=Z,104nm,19.6s,baz=72,slow=36
ARU Arti 79.90 326 ciP P 01 08 25.6 -0.3
ARU 01 11 25.5
ARU S S 01 18 29.2 +1.3
ARU SS SS 01 23 33.1 -4.0
ARU pmax pmax
comp=Z,67nm,1.7s
ARU Arti 79.90 326 eP P 01 08 25.8 -0.1
comp=Z,37nm,0.7s
SCZ2 Santa Cruz Isl 80.02 57 P P 01 08 27.2 +0.1
baz=281
VES Vestal, Richgr 80.11 56 P P 01 08 27.2 -0.2
baz=281,SNR=12
SOKR Solikamsk 80.16 329 ciP P 01 08 24.7 -2.5
SOKR pmax pmax
comp=Z,33nm,1.0s
SNCC San Nicolas Is 80.26 58 P P 01 08 28.5 +0.2
baz=282
RKT Rikitea 80.31 117 eLR LR 01 33 12.0
comp=Z,189nm,30.5s
ARVC Arvin 80.45 56 P P 01 08 29.6 +0.2
baz=282
BLG Laguna Peak, P 80.46 57 P P 01 08 30.4 +1.0
baz=282
AB31 Akbulak array 80.54 318 ceP P 01 08 28.5 -1.0
AB31 pmax pmax
comp=Z,3.0nm,0.6s
ABKAR Akbulak array 80.54 318 eP P 01 08 28.8 -0.7
comp=Z,45nm,0.6s
TIN Tinemaha, Big 80.54 54 P P 01 08 30.7 +0.8
baz=282
EDM Edmonton 80.61 37 eP P 01 08 30.1 +0.2
EDM pmax pmax
comp=Z,47nm,1.0s
EDM Edmonton 80.61 37 eP P 01 08 30.1 +0.2
comp=Z,47nm,1.0s
ISA Isabella, Lake 80.63 56 P P 01 08 30.1 -0.3
baz=282,SNR=8.9
ISA Isabella, Lake 80.63 56 eP P 01 08 30.7 +0.3
ISA pmax pmax
comp=Z,19nm,0.8s
ISA Isabella, Lake 80.63 56 eP P 01 08 30.7 +0.3
comp=Z,19nm,0.8s
BMN Battle Mountai 80.64 51 eP P 01 08 30.7 +0.2
BMN pmax pmax
comp=Z,53nm,1.5s
BMN Battle Mountai 80.64 51 eP P 01 08 30.7 +0.2
comp=Z,53nm,1.5s
CWC Cottonwood Cre 80.79 55 P P 01 08 31.9 +0.5
baz=282
BSMT Bassoo Peak 80.85 43 eP P 01 08 31.9 +0.4
DECC Green Verdugo 81.03 57 P P 01 08 32.8 +0.3
baz=282
MFID Camas Ranch 81.05 48 eP P 01 08 33.1 +0.5
comp=Z,32nm,0.9s
BLMT Blacktail Moun 81.09 43 eP P 01 08 33.2 +0.4
SCI2 San Clemente I 81.12 58 P P 01 08 32.9 0.0
baz=282
CIS Catalina Islan 81.14 58 P P 01 08 33.4 +0.4
baz=282
WALA Waterton Lakes 81.16 42 eP P 01 08 34.0 +0.9
comp=Z,37nm,1.1s
EDW2 Edwards Air Fo 81.17 56 P P 01 08 33.7 +0.4
baz=282,SNR=6.6
JTMT Jette 81.20 43 eP P 01 08 33.4 +0.1
GRAC Grapevine Rang 81.23 54 P P 01 08 34.1 +0.5
baz=282
MWC Mount Wilson 81.26 57 eP P 01 08 34.4 +0.5
MWC pmax pmax
comp=Z,65nm,1.4s
MWC Mount Wilson 81.26 57 eP P 01 08 34.4 +0.5
comp=Z,65nm,1.4s
LRMC Laurel Mtn Rad 81.30 56 P P 01 08 34.7 +0.6
baz=282
MPMC Manual Prospec 81.33 55 P P 01 08 34.7 +0.4
baz=282,SNR=56
YBMT Yellow Bay 81.35 43 eP P 01 08 34.2 +0.2
SWMT Swartz Lake 81.44 43 eP P 01 08 34.2 -0.3
AKTO Aktyubinsk 81.50 320 P P 01 08 34.1 -0.6
comp=Z,4.2nm,0.6s,baz=89,slow=8.4,SNR=14
AKTO LR LR 01 44 56.8
comp=Z,87nm,21.4s,baz=65,slow=36
AKTO Aktyubinsk 81.50 320 iP P 01 08 33.2 -1.4
AKTO pmax pmax
comp=Z,5.0nm,0.7s
MSO Missoula 81.63 44 P P 01 08 34.7 -0.8
baz=283,SNR=7.7
MSO Missoula 81.63 44 eP P 01 08 35.3 -0.2
comp=Z,8.8nm,1.1s
FURC Furnace Creek, 81.74 55 P P 01 08 36.7 +0.5
baz=282,SNR=10.0
SLMT Seeley Lake 81.83 43 eP P 01 08 36.4 -0.2
RRX Edison Barstow 81.98 56 P P 01 08 38.0 +0.5
baz=283
HLID Hailey 82.03 47 P P 01 08 38.1 +0.3
baz=283
HLID Hailey 82.03 47 eP P 01 08 38.1 +0.3
comp=Z,15nm,0.9s
GSC Goldstone, Bar 82.04 56 P P 01 08 38.2 +0.3
baz=283,SNR=31
GSC Goldstone, Bar 82.04 56 eP P 01 08 38.4 +0.5
GSC pmax pmax
comp=Z,38nm,0.9s
GSC Goldstone, Bar 82.04 56 eP P 01 08 38.4 +0.5
comp=Z,38nm,0.9s
CHMT Chamberlain Mo 82.07 44 eP P 01 08 37.3 -0.7
MURC Murrieta 82.09 57 P P 01 08 37.9 -0.2
baz=283,SNR=6.2
TPNV Topopah Spring 82.12 54 P P 01 08 38.7 +0.4
baz=283,SNR=29
TPNV Topopah Spring 82.12 54 eP P 01 08 38.9 +0.5
TPNV pmax pmax
comp=Z,35nm,0.8s
TPNV Topopah Spring 82.12 54 eP P 01 08 38.9 +0.5
comp=Z,35nm,0.8s
109C Camp Elliot, M 82.32 58 P P 01 08 39.4 +0.1
baz=283
R11A Troy Canyon, C 82.32 52 P P 01 08 40.0 +0.6
baz=283,SNR=71
R11A Troy Canyon, C 82.32 52 eP P 01 08 40.1 +0.6
comp=Z,36nm,0.9s
SHOC Shoshone, Teco 82.33 55 P P 01 08 39.5 +0.2
baz=283,SNR=5.3
HEC Hector,Ludlow 82.52 56 P P 01 08 40.3 -0.1
baz=283,SNR=12
PFO Pinyon Flats O 82.69 57 P P 01 08 41.2 -0.1
baz=283,SNR=12
PFO Pinyon Flats O 82.69 57 eP P 01 08 41.2 -0.1
PFO pmax pmax
comp=Z,26nm,1.0s
PFO Pinyon Flats O 82.69 57 eP P 01 08 41.2 -0.1
comp=Z,26nm,1.0s
TPFO Pinon Flats 82.69 57 P P 01 08 41.3 -0.1

baz=283,SNR=14
TUQ Turquoise Moun 82.71 55 P P 01 08 41.6 +0.1
baz=283,SNR=37
BAR Barrett 82.72 58 eP P 01 08 41.8 +0.4
comp=Z,27nm,1.1s
MCMT McKenzie Canyo 82.83 46 eP P 01 08 42.4 +0.4
LRM Limekiln Ridge 82.86 45 eP P 01 08 42.1 -0.1
DLMT Dillon 82.88 45 eP P 01 08 42.2 +0.1
comp=Z,12nm,0.8s
MONP2 Monument Peak 82.88 58 P P 01 08 42.4 -0.1
baz=283,SNR=28
BELC Belle Mtn. Jos 82.97 57 P P 01 08 42.7 -0.2
baz=283,SNR=17
GMRC Granite Mounta 83.07 56 P P 01 08 43.5 +0.2
baz=283,SNR=29
SHPR Sheep Range 83.07 54 eP P 01 08 44.1 +0.8
comp=Z,22nm,0.9s
IKP In-Ko-Pah, Jac 83.19 58 P P 01 08 43.9 0.0
baz=283,SNR=14
SWSC Sam W. Stewart 83.38 58 P P 01 08 44.5 -0.2
baz=284,SNR=7.8
LDFC Landfair 83.44 56 eP P 01 08 46.1 +0.9
comp=Z,94nm,0.8s
BOZ Bozeman (W) 83.47 45 P P 01 08 45.4 +0.3
baz=285,SNR=54
BOZ Bozeman (W) 83.47 45 eP P 01 08 45.6 +0.4
BOZ pmax pmax
comp=Z,24nm,0.8s
BOZ Bozeman (W) 83.47 45 eP P 01 08 45.6 +0.4
comp=Z,24nm,0.8s
BC3 Big Chuckawall 83.50 57 P P 01 08 45.7 +0.2
baz=284,SNR=19
HVU Hansel Valley 83.62 49 eP P 01 08 47.0 +0.9
HVU Hansel Valley 83.62 49 eP P 01 08 47.0 +0.9
IRM Iron Mountain 83.63 56 P P 01 08 46.2 +0.1
baz=284,SNR=24
BGU Big Grassy Mou 83.64 49 eP P 01 08 46.6 +0.4
comp=Z,15nm,1.2s
QLMT Earthquake Lak 83.81 45 eP P 01 08 48.0 +1.0
NEE2 Needles Airpor 83.91 56 P P 01 08 47.8 +0.4
baz=284
DUG Dugway, Tooele 83.98 50 P P 01 08 48.3 +0.4
baz=284
DUG Dugway, Tooele 83.98 50 eP P 01 08 48.3 +0.4
DUG pmax pmax
comp=Z,21nm,0.8s
DUG Dugway, Tooele 83.98 50 eP P 01 08 48.3 +0.4
comp=Z,22nm,0.8s
YHB Horse Butte 83.99 45 eP P 01 08 49.5 +1.5
comp=Z,44nm,0.9s
EGMT Eagleton 84.09 42 P P 01 08 48.3 0.0
baz=286
GLA Glamis 84.15 57 P P 01 08 49.1 +0.3
baz=284,SNR=16
GLA Glamis 84.15 57 eP P 01 08 46.0 -2.8
GLA pmax pmax
comp=Z,32nm,0.8s
GLA Glamis 84.15 57 eP P 01 08 46.0 -2.8
comp=Z,32nm,0.8s
YMR Madison River 84.17 45 eP P 01 08 50.6 +1.7
comp=Z,63nm,0.8s
CCUT Cedar City 84.22 53 eP P 01 08 50.1 +0.9
comp=Z,25nm,1.1s
YHH Holmes Hill 84.22 45 eP P 01 08 50.6 +1.4
comp=Z,25nm,1.0s
Y12C Blythe 84.22 57 P P 01 08 49.4 +0.3
baz=284,SNR=10
Y12C Blythe 84.22 57 eP P 01 08 49.5 +0.4
comp=Z,26nm,0.8s
YFT Old Faithful 84.32 46 eP P 01 08 52.4 +2.8
comp=Z,56nm,0.8s
YNR Norris Junctio 84.35 45 eP P 01 08 52.5 +2.6
comp=Z,78nm,0.9s
YPP Pitchstone Pla 84.39 46 eP P 01 08 51.8 +1.7
comp=Z,7.7nm,0.8s
IMW Indian Meadow 84.39 46 eP P 01 08 51.1 +1.0
comp=Z,26nm,0.8s
PDMCI Parker Dam,Lak 84.40 56 P P 01 08 50.1 +0.1
baz=284,SNR=11
W13A Hualapai Mount 84.41 55 eP P 01 08 50.5 +0.2
comp=Z,14nm,0.8s
GEYT Alibeck 84.41 308 P P 01 08 50.2 +0.2
comp=Z,13nm,0.9s,baz=48,slow=4.3,SNR=32
GEYT LR LR 01 48 24.0
comp=Z,108nm,21.2s,baz=85,slow=37
SZCU Shurtz Canyon 84.42 53 eP P 01 08 51.0 +0.8
comp=Z,30nm,1.0s
LCMT Little Creek M 84.44 53 eP P 01 08 51.0 +0.7
comp=Z,23nm,1.0s
TPAW Teton Pass 84.49 47 eP P 01 08 51.3 +0.7
comp=Z,16nm,0.7s
FLWY Flagg Ranch 84.51 46 eP P 01 08 51.8 +1.2
comp=Z,46nm,0.8s
H17A Grant Village 84.51 46 P P 01 08 52.7 +2.1
baz=286
HWUT Hardware Ranch 84.54 49 eP P 01 08 51.4 +0.6
comp=Z,28nm,0.9s
MOOW Moose Ponds 84.56 46 eP P 01 08 51.5 +0.6
comp=Z,14nm,0.6s
AHID Auburn Hatcher 84.57 47 eP P 01 08 51.3 +0.4
comp=Z,38nm,0.8s
NLU North Lily Min 84.59 50 eP P 01 08 51.5 +0.4
comp=Z,19nm,1.0s
REDW Red Top Meadow 84.59 47 eP P 01 08 51.9 +0.8
comp=Z,24nm,1.1s
SNOW Snow King Moun 84.63 47 eP P 01 08 52.3 +1.0
comp=Z,9.2nm,0.8s
CTU Camp Tracy 84.64 49 eP P 01 08 51.9 +0.6
comp=Z,40nm,1.0s
LOHW Long Hollow 84.70 46 eP P 01 08 52.0 +0.4
comp=Z,41nm,1.8s
GCMT Greycliff 84.75 44 eP P 01 08 52.5 +0.8
KNB Kanab 84.77 53 eP P 01 08 53.0 +1.0
KNB pmax pmax
comp=Z,48nm,1.0s
KNB Kanab 84.77 53 eP P 01 08 53.0 +1.0
comp=Z,48nm,1.0s
TCUT Toone Canyon 84.78 49 eP P 01 08 52.7 +0.6
comp=Z,33nm,0.7s
MSU Marysvale 84.88 52 eP P 01 08 53.4 +0.7
MSU Marysvale 84.88 52 eP P 01 08 53.4 +0.7
JLU Jordanelle 84.89 49 eP P 01 08 49.7 -3.0
comp=Z,31nm,0.8s
MTPU Mount Pierson 85.00 52 eP P 01 08 54.6 +1.2
comp=Z,36nm,1.9s
113A Mohawk Valley, 85.08 58 eP P 01 08 53.6 +0.2
comp=Z,19nm,0.8s
RLMT Red Lodge 85.21 45 P P 01 08 55.1 +1.0
baz=286,SNR=13
RLMT Red Lodge 85.21 45 eP P 01 08 55.2 +1.1
comp=Z,19nm,1.0s
U15A North Rim 85.33 54 eP P 01 08 55.7 +0.7
comp=Z,40nm,0.9s
Y14A Wickenburg 85.40 56 eP P 01 08 55.3 +0.2
comp=Z,61nm,0.7s
TMUT Trail Mountain 85.41 51 eP P 01 08 56.2 +0.9
comp=Z,38nm,1.3s
Q16A Castle Valley 85.53 51 eP P 01 08 56.6 +0.7
comp=Z,66nm,1.7s
BW06 Boulder Array 85.67 47 P P 01 08 55.9 -0.6
baz=286,SNR=8.2
BW06 Boulder Array 85.67 47 eP P 01 08 56.5 0.0
PD31 Pinedale Array 85.67 47 eP P 01 08 56.2 -0.3
PDAR Pinedale Array 85.67 47 P P 01 08 56.3 -0.2
comp=Z,5.9nm,0.6s,baz=239,slow=3.9,SNR=55
PDAR LR LR 01 44 12.2
comp=Z,176nm,18.4s,baz=294,slow=34
P17A Butcher Ranch, 85.71 50 eP P 01 08 57.4 +0.7
comp=Z,20nm,1.2s
SRU San Rafael Swe 85.97 51 eP P 01 08 58.2 +0.2
SRU pmax pmax
comp=Z,31nm,0.8s
SRU San Rafael Swe 85.97 51 eP P 01 08 58.2 +0.2
comp=Z,31nm,0.8s
214A Organ Pipe Nat 86.07 58 P P 01 08 58.9 +0.5
baz=285,SNR=26
WUAZ Wupatki 86.29 54 P P 01 09 00.4 +0.8
baz=286,SNR=36
WUAZ Wupatki 86.29 54 eP P 01 09 00.4 +0.8
comp=Z,39nm,0.8s
X16A Lo Mia Camp, P 86.53 55 eP P 01 09 01.6 +0.7
comp=Z,13nm,1.1s
FFC Flin Flon 86.62 34 eP P 01 09 00.4 -0.2
FFC pmax pmax
comp=Z,26nm,0.9s
FFC Flin Flon 86.62 34 eP P 01 09 00.4 -0.2
comp=Z,26nm,0.9s
LAO LASA Array 86.78 43 P P 01 09 02.2 +0.5
baz=288
LAO LASA Array 86.78 43 eP P 01 09 02.1 +0.5
comp=Z,58nm,0.9s
APA Apatity 86.81 340⇑ iP P 01 09 00.0 -1.3
APA pmax pmax
comp=Z,3.0nm,0.7s
APA pmax pmax
comp=Z,300nm,23.0s
PV10 Paradox Valley 87.29 51 eP P 01 09 05.0 +0.4
PV05 Paradox Valley 87.33 51 eP P 01 09 05.0 +0.3
O20A White River Ci 87.37 49 P P 01 09 04.8 -0.1
baz=287,SNR=26
O20A White River Ci 87.37 49 eP P 01 09 04.9 +0.1
comp=Z,34nm,0.8s
DGMT Dagmar 87.50 40 P P 01 09 04.8 -0.2
baz=290
TUC Tucson 87.63 57 P P 01 09 06.8 +0.7
baz=286
TUC Tucson 87.63 57 eP P 01 09 06.8 +0.7
TUC pmax pmax
comp=Z,15nm,0.9s
TUC Tucson 87.63 57 eP P 01 09 06.8 +0.7
comp=Z,15nm,0.9s
X18A Snowflake 87.68 55 eP P 01 09 07.2 +0.8
comp=Z,25nm,0.9s
W18A Petrified Fore 87.69 54 P P 01 09 07.2 +0.8
baz=287,SNR=8.0
W18A Petrified Fore 87.69 54 eP P 01 09 07.7 +1.2
comp=Z,41nm,1.0s
PV01 Paradox Valley 87.71 51 eP P 01 09 06.5 -0.1
KLMR Klimovskoe 87.83 333 eP P 01 09 03.9 -2.4
KLMR e 01 12 29.1
KLMR pmax pmax
comp=Z,11nm,0.9s
K22A Casper 87.83 46 P P 01 09 07.2 +0.2
baz=288,SNR=16
K22A Casper 87.83 46 eP P 01 09 07.2 +0.2
comp=Z,42nm,1.1s
ARA0 ARCESS Array S 88.01 344 eP P 01 09 07.3 +0.2
ARCES ARCESS Array B 88.01 344 P P 01 09 07.3 +0.3
comp=Z,16nm,0.9s,baz=42,slow=5.6,SNR=24
ARCES LR LR 01 53 56.8
comp=Z,122nm,19.1s,baz=52,slow=39
ARE0 ARCESS Array S 88.01 344 eP P 01 09 07.3 +0.3
comp=Z,35nm,1.1s
MVCO Mesa Verde 88.04 52 P P 01 09 08.7 +0.6
baz=287,SNR=14
MVCO Mesa Verde 88.04 52 eP P 01 09 08.7 +0.6
comp=Z,26nm,0.8s
DAG Danmarks Havn 88.34 358 iP P 01 09 07.7 -0.7
comp=Z,12nm,0.9s
DAG Danmarks Havn 88.34 358 iP P 01 09 07.7 -0.7
DAG pmax pmax
comp=Z,10.0nm,0.9s
HSIG 88.40 61 eP P 01 09 10.2 +0.5
comp=Z,40nm,0.9s
SMCO Snowmass 88.59 50 eP P 01 09 11.4 +0.5
comp=Z,37nm,0.8s
N23A Red Feather La 88.80 48 P P 01 09 12.4 +0.7
baz=289,SNR=24
N23A Red Feather La 88.80 48 eP P 01 09 12.6 +0.9
comp=Z,46nm,1.0s
FCC Fort Churchill 88.92 29 eP P 01 09 11.3 -0.2
FCC pmax pmax
comp=Z,17nm,1.0s
FCC Fort Churchill 88.92 29 eP P 01 09 11.2 -0.2
comp=Z,17nm,1.0s
PHWY Pilot Hill 89.02 47 eP P 01 09 13.3 +0.6
comp=Z,19nm,1.0s
RSSD Black Hills 89.07 44 P P 01 09 12.8 0.0
baz=290
RSSD Black Hills 89.07 44 eP P 01 09 12.7 -0.2
RSSD pmax pmax
comp=Z,13nm,1.0s
RSSD Black Hills 89.07 44 eP P 01 09 12.7 -0.2
comp=Z,13nm,1.0s
D26A Manning 89.11 41 P P 01 09 13.1 +0.4
baz=291
319A Douglas 89.12 58 eP P 01 09 14.4 +1.2
comp=Z,21nm,1.0s
S22A 4UR Ranch, Cre 89.14 51 P P 01 09 14.1 +0.6
baz=288,SNR=36
S22A 4UR Ranch, Cre 89.14 51 eP P 01 09 14.1 +0.6
comp=Z,23nm,1.0s
H25A Fruitdale 89.19 44 P P 01 09 13.6 +0.4
baz=290
ISCO Idaho Springs 89.39 49 P P 01 09 15.1 +0.5
baz=289,SNR=14
ISCO Idaho Springs 89.39 49 eP P 01 09 15.3 +0.7
ISCO pmax pmax
comp=Z,12nm,1.0s
ISCO Idaho Springs 89.39 49 eP P 01 09 15.2 +0.7
comp=Z,12nm,1.0s
LAZ Ladron 89.94 54 eP P 01 09 18.1 +1.0
121A Cookes Peak, D 90.00 56 P P 01 09 18.4 +1.0
baz=288,SNR=22
Q24A Divide 90.00 50 P P 01 09 18.0 +0.6
baz=289
Q24A Divide 90.00 50 eP P 01 09 18.4 +0.9
comp=Z,15nm,1.0s
SDCO Great Sand Dun 90.14 51 P P 01 09 18.3 +0.3
baz=289,SNR=33
SDCO Great Sand Dun 90.14 51 eP P 01 09 18.4 +0.3
comp=Z,16nm,1.0s
ANMO Albuquerque 90.30 54 P P 01 09 19.8 +1.0
baz=288
ANMO Albuquerque 90.30 54 eP P 01 09 19.6 +0.8
ANMO pmax pmax
comp=Z,18nm,0.9s
ANMO Albuquerque 90.30 54 eP P 01 09 19.6 +0.8
comp=Z,18nm,0.9s
LPM Los Pinos Moun 90.36 54 eP P 01 09 20.1 +1.1
BNM Barren Site 90.42 55 eP P 01 09 20.6 +1.2
MDND Maddock 90.59 40 P P 01 09 19.5 -0.1
baz=293
VRH Novokhopyorsk 91.00 324 eP P 01 09 19.7 -1.7
VRH pmax pmax
comp=Z,10.0nm,0.9s
T25A Trinidad 91.16 51 P P 01 09 23.5 +0.7
baz=290,SNR=16
T25A Trinidad 91.16 51 eP P 01 09 23.8 +1.0
comp=Z,31nm,1.1s
F29A Eureka 91.23 42 P P 01 09 22.5 -0.1
baz=293
B31A Greenbush Farm 91.55 39 P P 01 09 23.3 -0.7
baz=295,SNR=5.3
OGNE Ogallala 91.57 47 P P 01 09 24.8 +0.3
baz=291
C31A Landman Farms, 91.76 39 P P 01 09 24.3 -0.7
baz=295,SNR=7.5
ULM Lac du Bonnet 91.82 37 P P 01 09 24.8 -0.5
comp=Z,13nm,0.7s,baz=296,slow=5.3,SNR=26
ULM LR LR 01 45 51.0
comp=Z,188nm,20.3s,baz=314,slow=32
ULM Lac du Bonnet 91.82 37 eP P 01 09 24.6 -0.6
ULM pmax pmax
comp=Z,17nm,0.8s
ULM Lac du Bonnet 91.82 37 eP P 01 09 24.6 -0.6
comp=Z,17nm,0.8s
KSCO Kaye Shedlock' 91.84 49 P P 01 09 26.3 +0.5
baz=291
OBN Obninsk 91.95 329 P P 01 09 24.2 -1.5
comp=Z,7.1nm,0.5s,baz=265,slow=4.2,SNR=6.9
OBN Obninsk 91.95 329 eP P 01 09 23.7 -2.0
OBN i 01 09 36.6
OBN pmax pmax
comp=Z,12nm,0.9s
OBN MLR MLR
comp=Z,169nm,19.0s
OBN Obninsk 91.95 329 eP P 01 09 24.2 -1.5
comp=Z,20nm,1.0s
A32A Rocking H Ranc 92.04 38 P P 01 09 25.6 -0.7
baz=296,SNR=5.4
D31A Mcclaflin, Tow 92.08 40 P P 01 09 26.0 -0.5
baz=295
E31A Nome 92.17 41 P P 01 09 26.2 -0.7
baz=294
MNTX Cornudas Mount 92.19 57 P P 01 09 27.9 +0.5
baz=289,SNR=26
MNTX Cornudas Mount 92.19 57 eP P 01 09 27.9 +0.5
comp=Z,17nm,1.1s
F31A Hecla 92.23 41 P P 01 09 26.6 -0.7
baz=294
B32A Ashes, Strandq 92.24 39 P P 01 09 26.3 -0.9
baz=296,SNR=5.8
SUMG Summit 92.40 3 iP P 01 09 28.9 +0.9
comp=Z,23nm,1.2s
SUMG i 01 09 41.2
SUMG Summit 92.40 3 iP P 01 09 28.9 +0.9
SUMG i 01 09 41.2
SUMG pmax pmax
comp=Z,23nm,1.2s
SUMG Summit 92.40 3 eP P 01 09 28.8 +0.9
comp=Z,36nm,1.4s
VNDA Vanda 92.42 178 P P 01 09 27.9 +0.6
comp=Z,7.7nm,0.9s,baz=329,slow=4.4,SNR=34
VNDA LR LR 01 47 42.6
comp=Z,70nm,18.6s,baz=354,slow=33
VNDA Vanda 92.42 178 eP P 01 09 28.1 +0.9
comp=Z,12nm,1.0s
J30A Dallas 92.43 44 P P 01 09 27.9 -0.4
baz=293
VSR Storozhevoye 92.43 325 eP P 01 09 26.0 -2.0
VSR pmax pmax
comp=Z,10.0nm,1.1s
A33A Warroad 92.69 38 P P 01 09 28.7 -0.6
baz=296
AGMN Agassiz Nation 92.69 38 P P 01 09 28.4 -0.8
baz=296,SNR=8.4
AGMN Agassiz Nation 92.69 38 eP P 01 09 28.5 -0.8
comp=Z,17nm,1.0s
SBA Scott Base 92.96 177 eP P 01 09 32.0 +2.3
SBA pmax pmax
comp=Z,30nm,1.1s
SBA Scott Base 92.96 177 eP P 01 09 32.0 +2.3
comp=Z,30nm,1.1s
FIA1 FINESS Array S 92.97 337 eP P 01 09 29.0 -1.3
FIA0 FINESS Array S 92.97 337 eP P 01 09 29.1 -1.2
FIA0 FINESS Array S 92.97 337 eP P 01 09 29.1 -1.2
FIA0 ePKKPdf **PKKPdf** 01 26 39.2 0.0
FINES FINESS Array B 92.97 337 P P 01 09 29.1 -1.2
comp=Z,10nm,0.8s,baz=72,slow=6.2,SNR=32
FINES PKKPbc **PKKPdf** 01 26 39.2 0.0
comp=Z,1.0nm,0.8s,baz=174,slow=2.8,SNR=5.8
FINES LR LR 01 54 12.5
comp=Z,70nm,21.1s,baz=48,slow=37
FINES FINESS Array B 92.97 337 iP P 01 09 28.8 -1.5
FINES pmax pmax
comp=Z,10.0nm,0.8s
D33A AnnSam, Waubun 93.20 39 P P 01 09 30.9 -0.8
baz=296
B34A Aery, Baudette 93.33 38 P P 01 09 31.2 -1.0
baz=297,SNR=5.9
E33A Westby DABS, E 93.38 40 P P 01 09 31.9 -0.6
baz=296
KBZ Khabaz 93.42 317 P P 01 09 31.4 -1.3
comp=Z,4.3nm,0.9s,baz=128,slow=2.5,SNR=6.5
KBZ LR LR 01 53 26.9
comp=Z,138nm,21.7s,baz=57,slow=37
KIV Kislovodsk 93.46 317 eP P 01 09 31.5 -1.6
KIV pmax pmax
comp=Z,7.0nm,1.1s
KIV MLR MLR
comp=Z,137nm,20.0s
F33A 5 Mile Ranch, 93.48 41 P P 01 09 32.1 -0.9
baz=296,SNR=5.4
MSTX Muleshoe 93.50 54 P P 01 09 33.4 -0.1
baz=291,SNR=5.4
MSTX Muleshoe 93.50 54 eP P 01 09 33.9 +0.4
comp=Z,15nm,1.0s
C34A RKJ Ranch, Bem 93.54 39 P P 01 09 32.5 -0.8
baz=297
G33A Ortonville 93.67 41 P P 01 09 33.0 -0.9
baz=295
NEY Neytrino 93.73 316⇓ eP P 01 09 33.4 -1.0
NEY pmax pmax
comp=Z,1.0nm,0.7s
B35A Bob, Littlefor 93.93 38 P P 01 09 34.2 -0.8
baz=298,SNR=9.0
CBKS Cedar Bluff 94.00 48 P P 01 09 35.4 -0.2
baz=293
AMTX Amarillo 94.02 52 eP P 01 09 35.5 -0.3
comp=Z,27nm,0.9s
C35A Jirik Farms, M 94.08 38 P P 01 09 34.9 -0.9
baz=297
F34A Alexandria 94.15 41 P P 01 09 35.4 -0.7
baz=296
G34A Benson 94.16 41 P P 01 09 35.4 -0.7
baz=296
ECSD EROS Data Cent 94.17 43 P P 01 09 34.9 -1.3
baz=295,SNR=5.2
ECSD EROS Data Cent 94.17 43 eP P 01 09 35.5 -0.8
comp=Z,8.0nm,1.1s
N32A Stulken Farm, 94.26 46 P P 01 09 35.8 -0.9
baz=294
H34A Spellman Lake, 94.32 42 P P 01 09 36.1 -0.8
baz=296
D35A Remer 94.32 39 P P 01 09 36.0 -0.9
baz=297
E35A Pequot Lakes 94.34 40 P P 01 09 36.1 -0.9
baz=297
LTX Lajitas 94.37 58 eP P 01 09 37.8 +0.2
LTX Lajitas 94.37 58 eP P 01 09 37.8 +0.2
TX31 Lajitas Ar. Si 94.37 58 eP P 01 09 38.2 +0.6
TXAR Lajitas Array 94.37 58 P P 01 09 37.8 +0.2
comp=Z,4.3nm,0.9s,baz=278,slow=3.2,SNR=37
TXAR LR LR 01 44 54.6
comp=Z,135nm,20.6s,baz=0.0,slow=31
P32A Huiting Farm, 94.50 47 P P 01 09 37.2 -0.6
baz=294
F35A Swanville 94.55 40 P P 01 09 37.4 -0.6
baz=297
C36A Pine Crest Far 94.74 38 P P 01 09 37.7 -1.0
baz=298,SNR=6.9
Q32A Meitler Ranch, 94.78 48 P P 01 09 38.9 -0.2
baz=294
D36A Goodland 94.82 39 P P 01 09 38.1 -1.0
baz=298
R32A Long Quarter, 94.90 48 P P 01 09 39.5 -0.2
baz=293,SNR=6.2
H35A Sunnyside Ranc 94.91 41 P P 01 09 38.8 -0.8
baz=297
S32A Newby Ranch, P 95.02 49 P P 01 09 40.4 +0.1
baz=293,SNR=6.3
O33A Hebron 95.03 46 P P 01 09 39.6 -0.7
baz=294
E36A McGregor 95.07 39 P P 01 09 39.3 -1.0
baz=298,SNR=6.6
C37A Embarrass 95.14 38 P P 01 09 39.7 -0.9
baz=299
F36A Milaca 95.21 40 P P 01 09 39.8 -1.2
baz=298,SNR=11
P33A Williams Farm, 95.22 47 P P 01 09 40.7 -0.5
baz=294
T32A Huddler Ranch, 95.23 50 P P 01 09 41.4 +0.1
baz=293
J35A Milford 95.25 43 P P 01 09 40.5 -0.7
baz=296
D37A Cotton 95.27 38 P P 01 09 40.1 -1.1
baz=298
Q33A Connelly Farm, 95.30 47 P P 01 09 41.3 -0.2
baz=294
EYMN Ely 95.44 37 P P 01 09 41.0 -1.0
baz=299
R33A Olander Ranch, 95.47 48 P P 01 09 42.6 +0.3
baz=294
U32A Winter Ranch, 95.48 50 P P 01 09 43.1 +0.6
baz=293
K35A Storm Lake 95.52 43 P P 01 09 41.8 -0.6
baz=296
O34A Beatrice 95.61 46 P P 01 09 42.1 -0.8
baz=295
C38A Sawbill Land. 95.68 38 P P 01 09 42.2 -0.9
baz=300
V32A Arapaho 95.71 51 P P 01 09 44.2 +0.8
baz=293
S33A Kaszmaul Farm, 95.74 49 P P 01 09 43.8 +0.3
baz=294
P34A Walnut Farm, R 95.78 47 P P 01 09 43.2 -0.6
baz=296
W32A Sentinel 95.78 52 P P 01 09 44.1 +0.2
baz=293,SNR=5.5
J36A Seneca 1, Swea 95.84 42 P P 01 09 43.1 -0.8
baz=297
SPMN Marine on St. 95.95 40 P P 01 09 43.9 -0.4
baz=298
SPMN Marine on St. 95.95 40 eP P 01 09 43.4 -0.9
comp=Z,13nm,0.8s
Q34A Chapman 95.96 47 P P 01 09 44.6 0.0
baz=295
R34A Isabella, Hill 96.00 48 P P 01 09 44.7 -0.1
baz=294
X32A Elmer 96.02 52 P P 01 09 45.1 +0.2
baz=293
U33A Lingo Farm, Me 96.12 50 P P 01 09 45.4 +0.1

	baz=294							
KSU1	Kansas State U	96.12	47	P		P	01 09 45.0	-0.3
	baz=295							
KSU1	Kansas State U	96.12	47	*e*P		P	01 09 45.4	+0.1
	comp=Z,18nm,0.8s							
I37A	Lemond, Waseca	96.13	42	P		P	01 09 44.9	-0.3
	baz=298							
WMOK	Wichita Mounta	96.28	52	P		P	01 09 46.2	+0.1
	baz=293,SNR=15							
WMOK	Wichita Mounta	96.28	52	*e*P		P	01 09 46.1	0.0
WMOK					pmax	pmax		
	comp=Z,11nm,0.8s							
WMOK	Wichita Mounta	96.28	52	*e*P		P	01 09 46.1	0.0
	comp=Z,11nm,0.8s							
J37A	Redenius Farm,	96.36	42	P		P	01 09 45.4	-0.8
	baz=297							
P35A	Duane Minner,	96.36	46	P		P	01 09 45.9	-0.4
	baz=295							
W33A	Caddo, Fort Co	96.36	51	P		P	01 09 46.9	+0.4
	baz=293							
ABTX	Abilene, Hawle	96.43	54	P		P	01 09 46.9	+0.1
	baz=292							
ABTX	Abilene, Hawle	96.43	54	*e*P		P	01 09 47.1	+0.2
	comp=Z,17nm,1.3s							
U34A	Anderson Ranch	96.55	50	P		P	01 09 47.4	+0.1
	baz=294							
U34A	Anderson Ranch	96.55	50	*e*P		P	01 09 47.8	+0.6
	comp=Z,20nm,0.9s							
K37A	Belmond	96.55	43	P		P	01 09 46.1	-1.1
	baz=297							
T34A	McClaskey Farm	96.56	49	P		P	01 09 47.5	+0.2
	baz=294							
X33A	Lawton	96.57	52	P		P	01 09 47.6	+0.2
	baz=293							
Q35A	Mercer Eighty,	96.63	47	P		P	01 09 47.2	-0.4
	baz=295,SNR=5.2							
Y33A	Hilltop Ranch,	96.69	52	P		P	01 09 48.0	+0.1
	baz=293							
R35A	Emporia Munici	96.74	48	P		P	01 09 48.1	0.0
	baz=295							
V34A	Guthrie	96.80	50	P		P	01 09 48.6	+0.2
	baz=294							
I38A	Scanlan Farm,	96.81	41	P		P	01 09 47.4	-0.8
	baz=298							
W34A	Bridge Creek,	96.85	51	P		P	01 09 48.8	+0.1
	baz=294							
W34A	Bridge Creek,	96.85	51	*e*P		P	01 09 49.6	+1.0
	comp=Z,25nm,1.1s							
Z33A	Whitaker Ranch	96.86	53	P		P	01 09 48.7	0.0
	baz=293							
S35A	Otter Creek Ra	96.92	48	P		P	01 09 48.6	-0.3
	baz=295							
Q36A	Arnold C. Orve	96.99	47	P		P	01 09 48.5	-0.7
	baz=296							
J38A	Wedel Dairy, R	97.05	42	P		P	01 09 48.4	-1.0
	baz=298							
N37A	Lee Faris, Mou	97.07	45	P		P	01 09 48.4	-1.2
	baz=297							
T35A	Sooner Cattle	97.10	49	P		P	01 09 49.8	+0.1
	baz=295							
JCT	Junction City	97.10	56	P		P	01 09 49.8	-0.1
	baz=292							
JCT	Junction City	97.10	56	*e*P		Pdif	01 09 50.1	+0.1
JCT					pmax	pmax		
	comp=Z,12nm,0.7s							
JCT	Junction City	97.10	56	*e*P		Pdif	01 09 50.1	+0.1
	comp=Z,12nm,0.7s							
U35A	Pawnee	97.17	50	P		P	01 09 50.1	0.0
	baz=294							
R36A	Gordon, Harris	97.23	47	P		P	01 09 49.9	-0.4
	baz=296							
233A	Rising Star	97.24	54	P		Pdif	01 09 50.6	+0.1
	baz=293							
Y34A	Reagan Ranch,	97.37	52	P		Pdif	01 09 51.2	+0.1
	baz=294							
S36A	Lake Cedric, C	97.43	48	P		P	01 09 51.0	-0.2
	baz=295							
333A	Richland Sprin	97.44	55	P		P	01 09 51.2	-0.2
	baz=292							
M38A	Pleasantville	97.46	44	P		P	01 09 51.2	0.0
	baz=297							
Z34A	Collier Ranch,	97.48	53	P		P	01 09 51.5	-0.1
	baz=293							
P37A	Lathrop	97.50	46	P		Pdif	01 09 51.6	0.0
	baz=296							
T36A	Boggs Farm, Ca	97.50	49	P		P	01 09 51.3	-0.2
	baz=295							
J39A	Decorah	97.54	42	P		P	01 09 50.5	-1.1
	baz=299							
W35A	Tecumseh	97.56	51	P		P	01 09 51.7	-0.1
	baz=294							
433A	Art	97.57	56	P		P	01 09 51.8	-0.2
	baz=292							
134A	White-Moore Ra	97.67	53	P		Pdif	01 09 52.6	+0.2
	baz=293							
K39A	Oelwein	97.72	42	P		P	01 09 51.5	-1.0
	baz=298							
832A	Faith Ranch, C	97.77	58	P		P	01 09 52.4	-0.5
	baz=292							
X35A	Drake	97.79	51	P		P	01 09 52.5	-0.4
	baz=294							
S37A	Fort Scott	97.96	48	P		P	01 09 53.1	-0.5
	baz=296							
V36A	Jenks	97.99	50	P		P	01 09 53.6	-0.1
	baz=295							
334A	Lometa	98.02	55	P		P	01 09 53.3	-0.7
	baz=293							
P38A	Dawn	98.05	45	P		P	01 09 53.1	-0.8
	baz=297							
W36A	Wetumka	98.05	51	P		P	01 09 53.8	-0.3
	baz=295							
NC405	NORSAR Array S	98.06	342	*e*P		P	01 09 52.9	-0.6
AKASG	Malin Array Be	98.07	328	LR		LR	01 56 52.8	
	comp=Z,98nm,20.0s,baz=335,slow=37							
J40A	Soldiers Grove	98.12	41	P		P	01 09 52.6	-1.7
	baz=299							
T37A	Cheneyville 18	98.17	48	P		P	01 09 54.5	-0.1
	baz=296							
X36A	Centrahoma	98.19	51	P		P	01 09 54.0	-0.7
	baz=294							
K40A	Colesburg	98.21	42	P		P	01 09 53.6	-1.0
	baz=299							
NC204	NORSAR Array S	98.22	342	*e*P		P	01 09 53.5	-0.8
833A	Chaparral WMA,	98.23	58	P		Pdif	01 09 55.1	0.0
	baz=292							
NB201	NORSAR Array S	98.24	342	*e*P		P	01 09 53.8	-0.6
NB2	NORSAR Subarra	98.27	342	P		P	01 09 53.2	-1.3
	comp=Z,6.2nm,1.1s,baz=42,slow=4.6							
NB200	NORSAR Array S	98.27	342	*e*P		P	01 09 53.7	-0.8
NOA	NORSAR Array B	98.27	342	P		P	01 09 53.7	-0.8
	comp=Z,3.8nm,0.7s,baz=37,slow=4.5,SNR=21							
NOA					LR	LR	01 55 59.5	
	comp=Z,131nm,21.9s,baz=45,slow=36							
U37A	Salina	98.33	49	P		P	01 09 54.5	-0.8
	baz=296							
534A	Blanco	98.33	56	P		P	01 09 55.4	0.0
	baz=293							
NBO02	NORSAR Array S	98.37	342	*e*P		P	01 09 54.0	-0.9
R38A	Fenwick Farm,	98.43	47	P		P	01 09 54.9	-0.8
	baz=296							
L40A	Anamosa	98.46	42	P		P	01 09 55.0	-0.7
	baz=299							
J41A	Loganville	98.60	41	Pdiff		P	01 09 54.9	-1.4
	baz=300							
P39B	Salisbury	98.64	45	Pdiff		P	01 09 56.0	-0.6
	baz=298							
Z36A	Blue Ridge	98.66	52	Pdiff		P	01 09 56.2	-0.6
	baz=294							
T38A	Diamond	98.66	48	Pdiff		P	01 09 56.6	-0.2
	baz=296							
S38A	Stockton	98.67	47	Pdiff		P	01 09 56.0	-0.8
	baz=296							
U38A	Gravette	98.85	49	Pdiff		P	01 09 56.9	-0.7
	baz=296							
S39A	Bolivar	99.06	47	Pdiff		Pdif	01 09 57.7	-0.8
	baz=297							
HHAR	Hobbs	99.24	49	*e*P		Pdif	01 09 59.5	+0.1
	comp=Z,5.8nm,1.0s							
X38A	Whitesboro	99.29	50	Pdiff		Pdif	01 09 58.5	-1.1
	baz=295							
T39A	Clever	99.32	48	Pdiff		Pdif	01 09 58.7	-1.0
	baz=297							
Q40A	Laux Farm, Aux	99.34	46	Pdiff		Pdif	01 09 59.0	-0.7
	baz=298							
U39A	Green Forest	99.53	48	Pdiff		Pdif	01 09 59.7	-1.0
	baz=297							
S40A	Lebanon	99.68	47	Pdiff		Pdif	01 10 00.4	-0.9
	baz=297							
KLNR	Kaliningrad	99.83	334	⇑P		Pdif	01 10 01.0	-0.5
T40A	Mansfield	99.88	47	Pdiff		Pdif	01 10 01.6	-0.6
	baz=297							
U40A	Yellville	100.00	48	Pdiff		Pdif	01 10 02.0	-0.8
	baz=297							
S41A	Jillco Farms,	100.22	47	Pdiff		Pdif	01 10 02.6	-1.1
	baz=298							
V40A	Witts Springs	100.27	49	Pdiff		Pdif	01 10 02.5	-1.5
	baz=297							
MIAR	Mount Ida	100.27	50	Pdiff		Pdif	01 10 03.5	-0.5
	baz=296							
T41A	Mountain View	100.46	47	Pdiff		Pdif	01 10 03.0	-1.8
	baz=298							
BR101	Keskin Array S	101.40	316	*e*Pdif		Pdif	01 10 07.6	-1.5
BR101				*e*PP		PP	01 14 17.5	-0.7
BRTR	Keskin Array B	101.40	316	P		Pdif	01 10 07.6	-1.5
	comp=Z,1.1nm,0.7s,baz=59,slow=3.6,SNR=8.5							
BRTR				PP		PP	01 14 17.5	-0.7
	comp=Z,1.0nm,0.9s,baz=65,slow=7.1,SNR=5.9							
BRTR	Keskin Array B	101.40	316	*i* P		Pdif	01 10 07.8	-1.3
BRTR					pmax	pmax		
	comp=Z,1.0nm,0.7s							
DPC	Dobruska-Polom	104.52	333	*e*PP		PP	01 14 41.4	+0.5
UPC	Upice	104.55	333	AMS		AMS	02 02 40.0	
	comp=Z,200nm,19.5s							
VYHS	Vyhne	104.68	330	*e*P		Pdif	01 10 22.7	-0.6
VYHS	Vyhne	104.68	330	*e*PDIFF		Pdif	01 10 22.7	-0.6
PVCC	Panska Ves	105.16	334	AMS		AMS	02 01 40.0	
	comp=Z,200nm,15.8s							
CLL	Collm	105.22	335	*e*Pdif		Pdif	01 10 25.0	-0.6
CLL				*e*PP		PP	01 14 48.0	+2.0
CLL				*e*PS		PS	01 24 00.0	-1.5
CLL				*e*SS		SS	01 29 36.0	-3.5
CLL				*e*SSS		SSS	01 33 30.0	
CLL				Lm		MLR	02 00 00.0	
	comp=N,100nm,19.5s							
CLL				Lm		MLR	02 00 00.0	
	comp=E,100nm,21.6s							
CLL				Lm		MLR	02 00 00.0	
	comp=Z,100nm,19.2s							
CLL	Collm	105.22	335	*e*P		Pdif	01 10 25.0	-0.6
PRU	Pruhonice	105.57	333	*e*PP		PP	01 14 49.8	+1.2
PRU				AMS		AMS	02 01 40.0	
	comp=Z,100nm,16.8s							
TREC	Trest	105.66	332	*e*PP		PP	01 14 51.3	+1.9
TREC				AMS		AMS	02 03 00.0	
	comp=Z,200nm,21.1s							
GERES	GERESS Array B	106.79	333	Pdiff		Pdif	01 10 31.7	-1.1
	comp=Z,0.1nm,0.3s,baz=29,slow=6.1,SNR=3.5							
SNAA	Sanae	121.39	189	*e*PKIKP		PKPdf	01 15 09.3	-0.6
SNAA	Sanae	121.39	189	*e*PKPdf		PKPdf	01 15 09.2	-0.6
ESDC	Sonseca Array	121.44	339	PKP		PKPdf	01 15 11.0	0.0
	comp=Z,0.4nm,0.6s,baz=3.3,slow=4.2,SNR=3.0							
ESDC				PP		PP	01 16 41.5	+0.2
	comp=Z,1.1nm,0.8s,baz=15,slow=6.2,SNR=4.3							
ESDC				PKKPbc		PKKPbc	01 25 12.4	-0.1
	comp=Z,1.1nm,0.8s,baz=184,slow=3.0,SNR=7.6							
LSZ	Lusaka	126.43	262	*e*PKIKP		PKPdf	01 15 22.0	+0.8
LSZ	Lusaka	126.43	262	*e*PKPdf		PKPdf	01 15 22.0	+0.8
BOSA	Boshof	129.57	245	PKP		PKPdf	01 15 27.3	+0.4
	comp=Z,3.8nm,0.8s,baz=152,slow=1.4,SNR=4.6							
PLCA	Paso Flores	134.64	133	PKP		PKPdf	01 15 35.9	-0.2
	comp=Z,6.1nm,0.7s,baz=264,slow=3.1,SNR=14							
LPAZ	La Paz	140.82	98	PKhKP		PKPpre	01 15 44.6	
	comp=Z,3.8nm,0.8s,baz=263,slow=4.4,SNR=8.8							
LPAZ				PKP		PKPdf	01 15 48.6	-0.1
	comp=Z,3.8nm,0.8s,baz=226,slow=3.8,SNR=11							
LPAZ	La Paz	140.82	98	*e*PKPdf		PKPdf	01 15 46.3	-2.4
SAML	Samuel	144.56	84	*e*PKPdf		PKPdf	01 15 55.1	+0.4
PTGA	Pitinga	144.91	69	*e*PKPdf		PKPab	01 15 53.9	-0.6
DBIC	Dimbokro	148.99	312	PKPbc		PKPbc	01 16 05.8	-0.4
	comp=Z,22nm,0.6s,baz=26,slow=3.1,SNR=36							
DBIC	Dimbokro	148.99	312	*e*PKPdf		PKPdf	01 16 03.8	+1.6
KIC	Kosan Boka	149.12	312	*e*PKP1		PKPbc	01 16 06.1	-0.5
	comp=Z,50nm,0.7s							
TIC	Toumodi	149.13	312	*e*PKP1		PKPbc	01 16 05.8	-0.8
LIC	Lamto	149.42	312	*e*PKP1		PKPbc	01 16 06.7	-0.6
	comp=Z,78nm,0.7s							
CPUP	Villa Florida	149.88	117	PKP		PKPdf	01 16 03.5	+0.3
	comp=Z,17nm,1.0s,baz=24,slow=5.1,SNR=4.8							
CPUP				PKPbc		PKPbc	01 16 08.4	+0.3
	comp=Z,37nm,1.1s,baz=285,slow=1.2,SNR=39							
VMG	Vicchio	1.05	171	Pg		Pn	01 23 45.2	+0.2
PTF	Prato	1.06	190	Pg		Pn	01 23 45.4	+0.3
PTF	Prato	1.06	190	Pg		Pn	01 23 45.4	+0.3
RNI	Roncone	1.10	333	*e*Pg		Pg	01 23 45.2	-0.4
RNI				*e*Sg		Sn	01 24 00.8	-0.3
RNI	Roncone	1.10	333	*e*Pg		Pg	01 23 45.2	-0.4
RNI				*e*Sg		Sn	01 24 00.8	-0.3
SFI	Santa Sofia	1.16	161	Pg		Pg	01 23 46.3	-0.3
	25nm,0.5s							
SFI	Santa Sofia	1.16	161	Pg		Pg	01 23 46.3	-0.3
	25nm,0.5s							
CODM	Codolo	1.22	240	P		Pn	01 23 48.4	+1.1
MAIM	Mastiano	1.24	209	P		Pg	01 23 48.0	-0.2
T0502	Localit˜ San	1.24	152	Pg		Pg	01 23 48.8	+0.5
	604µm,38.0s							
AGOR	Agordo	1.38	21	Pg		Pb	01 23 50.6	+0.5
	24nm,0.3s							
MDI	Monti di Nese	1.38	305	Pg		Pn	01 23 49.6	0.0
	9.0nm,0.3s							
MDI	Monti di Nese	1.38	305	Pg		Pn	01 23 49.6	0.0
	9.0nm,0.3s							
SC2M	Scurtabo	1.41	246	P		Pg	01 23 51.1	-0.4
APPI	Appiano	1.48	357	Pg		Pg	01 23 52.4	-0.4
APPI				Sg		Sg	01 24 12.7	+0.7
	20µm,13.0s							
APPI	Appiano	1.48	357	Pg		Pg	01 23 52.4	-0.4
APPI				Sg		Sg	01 24 12.7	+0.7
	20µm,13.0s							
BRMO	Bormio	1.62	336	Pg		Pg	01 23 54.9	-0.6
BRMO				Sg		Sg	01 24 16.4	-0.1
	11nm,0.4s							
BRMO	Bormio	1.62	336	Pg		Pg	01 23 54.9	-0.6
BRMO				Sg		Sg	01 24 16.4	-0.1
	11nm,0.4s							
MOSI	Grossmontoni	1.71	342	Pg		Pg	01 23 56.5	-0.6
	87nm,0.7s							
MOSI	Grossmontoni	1.71	342	Pg		Pg	01 23 56.5	-0.6
	87nm,0.7s							
ABTA	Abfaltersbach	1.93	25	Pg		Pg	01 24 00.8	-0.7
	0.8nm,0.2s							
ABTA				Sn		Sn	01 24 22.3	+0.8
	1.8nm,0.2s							
PCP	Piancastagn	2.03	258	P		Pb	01 24 00.9	-0.4
FETA	Feichten	2.06	349	Sg		Sg	01 24 31.4	+0.7
WTTA	Wattenberg	2.27	5	Pg		Pg	01 24 07.4	-0.6
	0.3nm,0.1s							
WTTA				Sg		Sg	01 24 37.9	+0.4
	3.3nm,0.2s							
MYKA	Terra Mystica	2.30	44	Pg		Pg	01 24 08.8	+0.4
	1.6nm,0.2s							
MYKA				Sg		Sg	01 24 38.5	+0.3
	3µm,0.0s							
WATA	Walderalm	2.34	4	Pg		Pg	01 24 09.0	-0.3
	0.6nm,0.1s							
WATA				Sg		Sg	01 24 39.7	+0.1
	2.2nm,0.1s							
MOTA	Moosalm	2.35	356	Pg		Pg	01 24 08.7	-0.7
	2.7nm,0.3s							
MOTA				Sn		Sn	01 24 32.5	+0.6
	3.0nm,0.3s							
DAVA	Damuels	2.50	337	Pg		Pg	01 24 11.5	-0.8
	0.2nm,0.1s							
DAVA				Sn		Sb	01 24 38.2	-1.9
	1.8nm,0.3s							
KBA	Koelnbreinsper	2.51	33	Pn		Pn	01 24 04.8	-0.4
	0.2nm,0.1s							
KBA				Sg		Sg	01 24 45.7	+0.7
	2.5nm,0.3s							
NVLJ	Novalja	2.56	99	*e*Pn		Pn	01 24 06.0	+0.3
NVLJ				Sn		Sn	01 24 34.9	-1.9
NVLJ	Novalja	2.56	99	*e*Pn		Pn	01 24 06.0	+0.3
NVLJ				Sn		Sn	01 24 34.8	-1.9
OBKA	Obir	2.71	55	Pg		Pg	01 24 15.1	-1.3
	0.4nm,0.1s							
OBKA				Sg		Sg	01 24 52.2	+0.7
	6.1nm,0.3s							
SOKA	Soboth	3.09	56	Pg		Pg	01 24 21.9	-1.6
	0.1nm,0.1s							
KHC	Kasperske Hory	4.41	20	*e*PG		Pg	01 24 46.5	-2.3

MEX 27 01:12:17.4±0.5, 14°26N×92°36W, h20km±65km, MD3.6, 1D, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CCIG	Comitan	2.02	6	*i* P		Pn	01 12 48.6	-2.0
CCIG				*i* S		Sn	01 13 10.8	-4.6

*ISCJB **27** 01:23:23.6±0.3, 45°03N±0°01×11°42E±0°03, h4km±4km, Error ellipse: s-maj=3.7km s-min=2.2km az=10.2*
*VIE **27** 01:23:23.1±0.9, 44°96N×11°26E, h11km±2km, mb1.8/9, ML2.4/12, Error ellipse: s-maj=7.3km s-min=4.1km az=19.0*
*CSEM **27** 01:23:24.3±0.1, 45°01N×11°37E, h8km, ML2.8/10, Error ellipse: s-maj=3.1km s-min=1.8km az=102.0*
*ROM **27** 01:23:24.3±0.1, 45°00N×11°30E, h2km, Md2.6/16, Ml2.2/13, Error ellipse: s-maj=1.9km s-min=1.1km az=93.0*
*GEN **27** 01:23:26.5, 44°99N×11°30E, h3km, ML2.0*

ISC 27 01:23:24.4±1.0, 45°00N±0°02×11°33E±0°02, h12km±9km, n63, σ0°71/95, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
RAVA	Ravarino	0.29	211	Pg		Pg	01 23 29.6	-0.6
RAVA				Sg		Sb	01 23 35.2	-1.0
	670nm,0.5s							
RAVA	Ravarino	0.29	211	Pg		Pg	01 23 29.6	-0.6
RAVA				Sg		Sb	01 23 35.2	-1.0
	670nm,0.5s							
FIU	Minerbio Fiu	0.38	162	Pg		Pb	01 23 32.7	-0.3
FIU				Sg		Sb	01 23 39.6	+0.7
	167nm,0.2s							
FIU	Minerbio Fiu	0.38	162	Pg		Pb	01 23 32.7	-0.3
NOVE	Novellara	0.48	245	Pg		Pb	01 23 34.8	+0.1
NOVE				Sg		Sb	01 23 42.5	+0.7
NOVE	Novellara	0.48	245	Pg		Pb	01 23 34.8	+0.1
NOVE				Sg		Sb	01 23 42.5	+0.7
MARN	Marana (Italy)	0.64	353	*e*Pg		Pb	01 23 37.2	-0.4
MARN	Marana (Italy)	0.64	353	*e*P		Pb	01 23 37.2	-0.4
ZCCA	Zocca	0.70	201	Pg		Pb	01 23 38.5	0.0
	27nm,0.5s							
ZCCA	Zocca	0.70	201	Pg		Pb	01 23 38.5	0.0
	27nm,0.5s							
BALD	Monte Baldo	0.77	332	*e*Pg		Pb	01 23 39.8	-0.1
BALD				*e*Sg		Sb	01 23 50.9	+0.5
BALD	Monte Baldo	0.77	332	*e*Pg		Pb	01 23 39.8	-0.1
BALD				*e*Sg		Sb	01 23 50.9	+0.5
DDS	Dosso del Somm	0.89	354	*e*Pg		Pg	01 23 41.4	-0.1
DDS				*e*Sg		Sb	01 23 53.6	0.0
DDS	Dosso del Somm	0.89	354	*e*Pg		Pg	01 23 41.4	-0.1
DDS				*e*Sg		Sb	01 23 53.7	0.0
MAGA	Magasa	0.92	328	Pg		Pb	01 23 42.4	+0.1
MAGA				Sg		Sb	01 23 55.3	+0.7
	210nm,0.5s							
MAGA	Magasa	0.92	328	Pg		Pb	01 23 42.4	+0.1
MAGA				Sg		Sb	01 23 55.3	+0.7
	210nm,0.5s							
PZZT	Monte Pizzetto	0.93	201	Pg		Pg	01 23 41.8	-0.5
	20nm,0.3s							
PZZT	Monte Pizzetto	0.93	201	Pg		Pg	01 23 41.8	-0.5
	20nm,0.3s							
CGRP	Cima Grappa	0.94	21	Pg		Pg	01 23 42.8	+0.2
CGRP				Sg		Sb	01 23 56.4	+1.1
	32nm,0.5s							
CGRP	Cima Grappa	0.94	21	Pg		Pg	01 23 42.7	+0.2
CGRP				Sg		Sb	01 23 56.8	+1.5
CGRP	Cima Grappa	0.94	21	Pg		Pg	01 23 42.8	+0.2
CGRP				Sg		Sb	01 23 56.8	+1.5
SEI	Scarperia	0.95	179	Pg		Pb	01 23 43.2	+0.5
SEI				Sg		Sn	01 23 58.0	+1.0
SEI	Scarperia	0.95	179	Pg		Pb	01 23 43.2	+0.5
GRAM	Graiana	1.03	241	P		Pn	01 23 45.2	+0.4
POPM	Popiglio	1.04	203	P		Pb	01 23 44.5	+0.2
POPM				S		Sn	01 23 59.3	0.0
PANI	Panarotta	1.05	0	*e*Pg		Pb	01 23 44.7	+0.1
PANI	Panarotta	1.05	0	*e*P		Pb	01 23 44.7	+0.1
SARO	Sassorosso	1.05	219	P		Pg	01 23 44.4	-0.2
VMG	Vicchio	1.05	171	Pg		Pn	01 23 45.2	+0.2

SGS 27 01:47:16.1, 26°81N×35°05E, h8km, Red Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
BDAS	Al Bad'	1.61	2	P		Pn	01 47 43.1	-1.8
BIDS	Bi'r al Bayda'	1.71	88	P		Pn	01 47 44.6	-1.6
JLOS		1.96	12	P		Pn	01 47 47.6	-2.1
HAQS	Haql	2.23	357	S		Sn	01 48 18.2	-3.0
HAQS				P		Pn	01 47 51.8	-1.6
HQLS		2.48	0	S		Sn	01 48 25.6	-1.7
HQLS				P		Pn	01 47 55.8	-1.0
UMJS	Umm Lajj	2.58	127	P		Pn	01 47 57.0	-1.2
UMJS	Umm Lajj	2.58	127	P		Pn	01 47 57.0	-1.2
LNY09	LNY09	2.74	120	P		Pn	01 47 59.8	-0.7
LNY04	LNY04	2.80	123	P		Pn	01 48 00.6	-0.6
LNY07	LNY07	2.82	126	P		Pn	01 48 00.1	-1.4
LNY07	LNY07	2.82	126	S		Sn	01 48 33.3	-2.5
LNY07				P		Pn	01 48 00.2	-1.3
LNY05	LNY05	2.96	126	P		Pn	01 48 03.0	-0.5

*ISCJB **27** 01:51:14.3±0.7, 39°02N±0°04×42°14E±0°03, h9km±6km, Error ellipse: s-maj=6.5km s-min=4.5km az=175.4*
*DDA **27** 01:51:14.9, 38°98N×42°18E, h7km, Md2.6*
*ISK **27** 01:51:14.4, 39°04N×42°14E, h15km, ML2.1*
*CSEM **27** 01:51:14.1±0.2, 38°99N×42°13E, h15km, MD2.6, Error ellipse: s-maj=5.9km s-min=5.0km az=179.0*

ISC 27 01:51:14.5±1.2, 38°99N±0°03×42°13E±0°02, h19km±4km, n22, σ0°95/33, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
TATV	Tatvan	0.49	167	*i* P		Pg	01 51 23.7	-0.8
TATV	Tatvan	0.49	167	P		Pg	01 51 23.7	-0.8
VRTB	Varto-Mus	0.55	289	*e*PG		Pg	01 51 25.6	-0.1
VRTB				*e*SG		Sb	01 51 33.8	+0.7
VRTB	Varto-Mus	0.55	289	*e*Pg		Pg

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.68**	**120**	LR	LR	02 02 20.4	
	comp=Z,495nm,19.4s,baz=312,slow=38						
PMG	**Port Moresby**	**8.23**	**250**	P	**Pn**	**02 00 40.8**	**+0.3**
	12nm,0.3s,baz=51,slow=10,SNR=16						
PMG				S	**Sn**	**02 02 14.0**	**+1.9**
	5.1nm,0.3s,baz=80,slow=19,SNR=5.8						
PMG				LR	LR	02 03 51.4	
	comp=Z,286nm,18.5s,baz=44,slow=38						
CTA	**Charters Tower**	**15.88**	**211**	P	**Pn**	**02 02 23.6**	**0.0**
	0.2nm,0.3s,baz=27,slow=11,SNR=2.8						
CTAO	**Charters Tower**	**15.88**	**211**	*e*Pn	**Pn**	**02 02 22.6**	**-0.9**
DZM	**Mont Dzumac**	**18.97**	**145**	P	**Pn**	**02 03 01.8**	**+0.1**
	0.8nm,0.3s,baz=341,slow=12,SNR=5.8						
DZM	**Mont Dzumac**	**18.97**	**145**	*e*P	**P**	**02 03 01.6**	**+1.0**
	13nm,0.9s						
WRAB	**Tennant Creek**	**24.03**	**234**	*e*P	**P**	**02 03 53.3**	**-0.2**
	9.6nm,0.8s						
WRA	**Warramunga Arr**	**24.04**	**234**	P	**P**	**02 03 53.4**	**-0.2**
	5.2nm,0.6s,baz=59,slow=9.5,SNR=62						
WRA				PcP	**PcP**	**02 07 34.9**	**+0.5**
	4.3nm,0.5s,baz=59,slow=2.4,SNR=26						
ASAR	**Alice Springs**	**26.44**	**228**	P	**P**	**02 04 14.6**	**-0.8**
	0.8nm,0.4s,baz=57,slow=9.2,SNR=12						
ASAR				PcP	**PcP**	**02 07 40.2**	**+0.5**
	1.9nm,0.8s,baz=66,slow=2.7,SNR=9.0						
H11S3	**WAKE ISLAND Hy**	**27.46**	**25**	T	T	02 32 44.4	
	baz=204,slow=76,SNR=24						
H11S2	**WAKE ISLAND Hy**	**27.46**	**25**	T	T	02 32 41.3	
	baz=204,slow=76,SNR=30						
H11S1	**WAKE ISLAND Hy**	**27.48**	**25**	T	T	02 32 45.0	
	baz=204,slow=76,SNR=27						
STKA	**Stephens Creek**	**28.11**	**205**	P	**P**	**02 04 29.4**	**-0.8**
	1.6nm,0.7s,baz=30,slow=12,SNR=3.6						
STKA				PcP	**PcP**	**02 07 43.5**	**0.0**
	1.1nm,0.6s,baz=70,slow=4.0,SNR=3.4						
H11N1	**WAKE ISLAND Hy**	**28.64**	**24**	T	T	02 34 04.6	
	baz=204,slow=76,SNR=6.5						
H11N3	**WAKE ISLAND Hy**	**28.65**	**24**	T	T	02 34 01.0	
	baz=204,slow=76,SNR=8.3						
H11N2	**WAKE ISLAND Hy**	**28.66**	**24**	T	T	02 34 22.6	
	baz=204,slow=76,SNR=3.5						
FITZ	**Fitzroy Crossi**	**30.81**	**245**	P	**P**	**02 04 53.2**	**-1.1**
	3.4nm,0.6s,baz=88,slow=9.2,SNR=5.6						
FITZ				PcP	**PcP**	**02 07 51.5**	**+0.9**
	2.4nm,0.7s,baz=145,slow=5.7,SNR=4.3						
FITZ				LR	LR	02 17 16.4	
	comp=Z,118nm,19.2s,baz=86,slow=36						
FORT	**Forrest**	**34.88**	**223**	*e*P	**P**	**02 05 28.7**	**-1.0**
KAPI	**Kappang**	**35.07**	**271**	*e*P	**P**	**02 05 31.7**	**+0.1**
	6.2nm,0.6s						
MBWA	**Marble Bar**	**37.04**	**243**	*e*P	**P**	**02 05 47.8**	**-0.6**
	13nm,0.4s						
NWAO	**Narrogin (SRO)**	**43.76**	**228**	LR	LR	02 24 22.2	
	comp=Z,96nm,18.1s,baz=332,slow=35						
JNU	**Nakatsue**	**45.64**	**331**	P	**P**	**02 06 58.1**	**-0.5**
	1.7nm,0.5s,baz=132,slow=3.5,SNR=3.7						
MJAR	**Matsushiro Arr**	**45.68**	**341**	LR	LR	02 23 44.4	
	comp=Z,17nm,21.7s,baz=70,slow=33						
KSRS	**Korea Array**	**50.56**	**332**	P	**P**	**02 07 35.8**	**-0.7**
	2.6nm,0.8s,baz=156,slow=9.2,SNR=5.7						
KSAR	**Wonju Array Be**	**50.57**	**332**	P	**P**	**02 07 35.8**	**-0.8**
KULM	**Kulim**	**55.49**	**281**	*e*P	**P**	**02 08 12.4**	**-0.9**
	4.9nm,0.5s						
KLR	**Kul'dur**	**59.16**	**342**	LR	LR	02 29 02.7	
	comp=Z,31nm,21.9s,slow=31						
PETK	**Petropavlovsk-**	**59.50**	**2**	P	**P**	**02 08 41.5**	**+0.7**
	1.5nm,0.5s,baz=130,slow=10.0,SNR=4.7						
PETK				LR	LR	02 30 12.9	
	comp=Z,26nm,21.7s,baz=131,slow=32						
CMAR	**Chiang Mai Arr**	**60.59**	**295**	P	**P**	**02 08 50.1**	**+1.2**
	9.1nm,0.7s,baz=118,slow=4.9,SNR=32						
CHTO	**Chiang Mai**	**60.70**	**296**	*e*P	**P**	**02 08 50.5**	**+0.8**
	11nm,1.3s						
SONM	**Songino Array**	**68.97**	**327**	P	**P**	**02 09 43.1**	**0.0**
	1.3nm,0.6s,baz=146,slow=6.2,SNR=6.4						
VNDA	**Vanda**	**71.00**	**178**	P	**P**	**02 09 55.4**	**+0.5**
	2.0nm,0.7s,baz=338,slow=6.7,SNR=9.7						
JIRN	**Jiri**	**74.55**	**301**	*e*P	**P**	**02 10 18.1**	**+0.8**
GUN	**Gumba**	**74.89**	**301**	*e*P	**P**	**02 10 19.9**	**+0.7**
	55nm,0.7s						
PKIN	**Phulchoki**	**75.21**	**301**	*e*P	**P**	**02 10 21.3**	**+0.3**
	17nm,0.5s						
KKN	**Kakani**	**75.36**	**301**	*e*P	**P**	**02 10 22.1**	**+0.3**
	21nm,0.4s						
DMN	**Daman**	**75.46**	**301**	*e*P	**P**	**02 10 23.2**	**+0.7**
	58nm,0.6s						
GKN	**Gorkha**	**75.97**	**301**	*e*P	**P**	**02 10 25.5**	**+0.3**
KOLN	**Koldanda**	**76.80**	**300**	*e*P	**P**	**02 10 30.1**	**+0.1**
	22nm,0.7s						
PYUN	**Piuthan**	**77.40**	**301**	*e*P	**P**	**02 10 33.2**	**-0.2**
MCK	**McKinley**	**81.68**	**22**	*e*P	**P**	**02 10 55.5**	**0.0**
	2.4nm,0.3s						
ILAR	**Eielson Array**	**82.99**	**22**	P	**P**	**02 11 02.4**	**0.0**
	0.5nm,0.4s,baz=241,slow=5.2,SNR=13						
ILAR				LR	LR	02 44 39.2	
	comp=Z,38nm,19.1s,baz=256,slow=33						
MKAR	**Makanchi Array**	**83.08**	**319**	P	**P**	**02 11 03.5**	**+0.2**
	3.3nm,0.8s,baz=100,slow=5.5,SNR=17						
QSPA	**South Pole Qui**	**83.40**	**180**	*e*P	**P**	**02 11 04.8**	**+0.1**
	23nm,0.8s						
ZALV	**Zalesovo Beam**	**83.82**	**326**	P	**P**	**02 11 06.0**	**-0.9**
	1.7nm,0.5s,baz=116,slow=6.5,SNR=6.1						
MAW	**Mawson**	**84.77**	**203**	P	**P**	**02 11 11.6**	**+0.1**
	3.3nm,0.6s,baz=100,slow=7.0,SNR=13						
BVAR	**Borovoye Array**	**91.95**	**323**	P	**P**	**02 11 44.8**	**-1.2**
	0.2nm,0.3s,baz=115,slow=6.5,SNR=4.0						
YKA	**Yellowknife Ar**	**95.98**	**28**	P	**P**	**02 12 04.8**	**+0.6**
	1.1nm,0.5s,baz=267,slow=4.6,SNR=11						
BRTR	**Keskin Array B**	**118.09**	**312**	PKP	**PKPdf**	**02 17 23.9**	**-1.0**
	0.4nm,0.7s,baz=116,slow=2.9,SNR=3.7						
BOSA	**Boshof**	**120.27**	**232**	PKP	**PKPdf**	**02 17 29.3**	**0.0**
	2.9nm,0.7s,baz=146,slow=3.0,SNR=7.9						
GERES	**GERESS Array B**	**126.69**	**329**	PKP	**PKPdf**	**02 17 41.0**	**0.0**
	0.7nm,0.7s,baz=70,slow=1.6,SNR=7.6						
TSUM	**Tsumeb**	**130.83**	**238**	*e*PKPdf	**PKPdf**	**02 17 50.0**	**+0.3**

WEL 27 02:08:36.9±0.4, 39°66S×173°90E, h227km±3km, ML3.8/20, 6C, Error ellipse: s-maj=3.6km s-min=2.5km az=90.0, Off west coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAZ	**Wanganui**	**0.84**	**97**	⇑P	Pn	02 09 09.6	+1.0
WAZ				S	Sn	02 09 33.7	+0.4
VRZ	**Vera Road**	**0.85**	**51**	P	Pn	02 09 06.8	-1.9
VRZ				S	Sn	02 09 32.3	-1.1
OHWZ	**Ohakea**	**1.21**	**117**	P	Pn	02 09 11.6	+0.8
TWVZ	**Taurewa**	**1.33**	**64**	P	Pn	02 09 11.4	-0.5
FWVZ	**Far West T-bar**	**1.34**	**73**	P	Pn	02 09 12.0	-0.1
WNVZ	**Wahianoa**	**1.35**	**76**	⇑P	Pn	02 09 12.1	0.0
WNVZ				S	S	02 09 37.5	-1.9
NGZ	**Ngauruhoe**	**1.40**	**70**	P	Pn	02 09 11.8	-0.7
WTVZ	**West Tongariro**	**1.42**	**68**	P	Pn	02 09 12.3	-0.2
KIW	**Kapiti Island**	**1.42**	**148**	P	Pn	02 09 12.3	-0.1
KIW				AML	AML	02 09 40.2	
KIW				AML	AML	02 09 40.8	
MOVZ	**Moawhango**	**1.45**	**81**	P	Pn	02 09 12.3	-0.5
OGWZ	**Otaki Gorge**	**1.51**	**140**	P	Pn	02 09 13.2	+0.1
OGWZ				AML	AML	02 09 42.1	
OGWZ				AML	AML	02 09 42.2	
QRZ	**Quartz Range**	**1.57**	**222**	P	Pn	02 09 13.4	-0.2
TCW	**Tory Channel**	**1.57**	**170**	P	Pn	02 09 13.8	+0.2
TCW				AML	AML	02 09 41.5	
TCW				AML	AML	02 09 41.8	
NNZ	**Nelson**	**1.60**	**194**	⇑P	Pn	02 09 13.9	+0.1
NNZ				S	S	02 09 40.9	-1.9
POWZ	**Post Office Ro**	**1.61**	**118**	P	Pn	02 09 13.8	-0.1
POWZ				S	S	02 09 40.7	-2.1
POWZ				AML	AML	02 09 43.2	
MRZ	**Mangatainoka R**	**1.63**	**128**	P	Pn	02 09 13.9	-0.2
MRZ				AML	AML	02 09 43.7	
MRZ				AML	AML	02 09 43.8	
TSZ	**Takapari Road**	**1.63**	**105**	AML	AML	02 09 07.6	
TSZ				P	Pn	02 09 14.1	0.0
CAW	**Cannon Point**	**1.70**	**149**	P	Pn	02 09 14.5	-0.2
CAW				AML	AML	02 09 45.7	
CAW				AML	AML	02 09 47.5	
TUWZ	**Tuamarina**	**1.77**	**179**	P	Pn	02 09 15.4	+0.1
TUWZ				AML	AML	02 09 45.4	
TUWZ				AML	AML	02 09 45.9	
PNHZ	**Pukenui**	**1.79**	**99**	P	Pn	02 09 15.4	-0.1
PNHZ				AML	AML	02 09 46.5	
PRWZ	**Pori Road**	**1.82**	**120**	P	Pn	02 09 16.0	+0.2
PRWZ				AML	AML	02 09 47.0	
PRWZ				AML	AML	02 09 47.0	
DVHZ	**Dannevirke**	**1.85**	**111**	P	Pn	02 09 15.9	-0.2
DVHZ				SN	S	02 09 44.9	-1.7
DVHZ				AML	AML	02 09 46.5	
KRHZ	**Kereru**	**1.91**	**90**	P	Pn	02 09 16.4	-0.2
KRHZ				AML	AML	02 09 48.5	
KRHZ				AML	AML	02 09 49.0	
WPHZ	**Waipukurau**	**1.99**	**102**	P	Pn	02 09 17.5	+0.1
WPHZ				AML	AML	02 09 49.6	
BSWZ	**Blackbirch Sta**	**2.05**	**181**	P	Pn	02 09 18.0	+0.1
BSWZ				AML	AML	02 09 50.8	
BKZ	**Black Stump Fm**	**2.07**	**77**	P	Pn	02 09 17.3	-0.9
BKZ				AML	AML	02 09 48.3	
TMWZ	**Te Maipa**	**2.10**	**134**	P	Pn	02 09 18.1	-0.3
TMWZ				AML	AML	02 09 50.1	
TMWZ				AML	AML	02 09 51.7	
ANWZ	**Angora Road**	**2.13**	**113**	P	Pn	02 09 18.8	+0.2
ANWZ				SN	S	02 09 50.0	-1.3
ANWZ				AML	AML	02 09 52.2	
PLWZ	**Palliser**	**2.17**	**152**	P	Pn	02 09 18.7	-0.4
MCHZ	**McNeill Hill**	**2.17**	**85**	⇑P	Pn	02 09 19.5	+0.4
PRHZ	**Porangahau**	**2.19**	**107**	P	Pn	02 09 19.0	-0.2
PRHZ				AML	AML	02 09 29.1	
PRHZ				AML	AML	02 09 55.5	
THZ	**Tophouse**	**2.23**	**200**	⇑P	Pn	02 09 19.4	-0.3
KAHZ	**Kahuranaki**	**2.30**	**94**	P	Pn	02 09 20.7	+0.2
PXZ	**Pawanui**	**2.31**	**100**	⇑P	Pn	02 09 20.4	0.0
PXZ				AML	AML	02 09 41.2	
PXZ				AML	AML	02 09 41.3	
PXZ				AML	AML	02 09 55.8	
PXZ				AML	AML	02 09 55.8	
ARHZ	**Aropaoanui**	**2.43**	**82**	P	Pn	02 09 21.7	-0.1
ARHZ				AML	AML	02 09 57.0	
ARHZ				AML	AML	02 09 57.2	
DSZ	**Denniston Nort**	**2.62**	**217**	P	Pn	02 09 23.1	-0.7
KHZ	**Kahutara**	**2.77**	**186**	P	Pn	02 09 25.1	-0.2
LTZ	**Lake Taylor**	**3.35**	**201**	P	Pn	02 09 31.0	-1.0
RUGZ	**Raukumara Rang**	**3.40**	**61**	P	Pn	02 09 30.5	-2.2
INZ	**Inchbonnie**	**3.58**	**210**	P	Pn	02 09 33.1	-1.5
OXZ	**Oxford**	**3.92**	**200**	P	Pn	02 09 37.0	-1.6
MQZ	**McQueen's Vall**	**4.15**	**193**	P	Pn	02 09 39.3	-2.1

NEIC 27 02:09:30.7, 51°86N×171°24W, h42km, ML3.5(AEIC), **After AEIC., Fox Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**1.80**	**287**	P	Pn	02 10 00.1	+0.9
KOFP	**Korovin Flat P**	**1.81**	**284**	P	Pn	02 09 59.7	+0.3
KOFP				S	Sn	02 10 21.4	+0.3
NIKH	**Nikolski High**	**1.84**	**52**	P	Pn	02 09 59.4	-0.3
NIKH				S	Sn	02 10 21.8	+0.1
KONE	**Korovin Northe**	**1.85**	**288**	P	Pn	02 10 00.5	+0.6
KONE				S	Sn	02 10 23.7	+1.6
KOKL	**Mount Kliuchef**	**1.88**	**285**	P	Pn	02 10 01.8	+1.4
OKWE	**Okmok W'ng Wal**	**2.44**	**47**	P	Pn	02 10 08.8	+0.8
OKAK	**Okmok**	**2.46**	**44**	P	Pn	02 10 08.1	-0.1
OKAK				S	Sn	02 10 37.0	+0.1
OKTU	**Okmok Mt. Tuli**	**2.48**	**51**	P	Pn	02 10 09.6	+1.1
OKFG	**Magazine Ridge**	**2.55**	**51**	P	Pn	02 10 09.8	+0.2
OKFG				S	Sn	02 10 42.4	+3.0
GSMY	**Great Sitkin M**	**2.98**	**275**	P	Pn	02 10 16.3	+0.8
GSTD	**Great Sitkin T**	**3.04**	**276**	P	Pn	02 10 17.1	+0.8
GSTD				S	Sn	02 10 52.8	+1.3
GSCK	**Great Sitkin C**	**3.05**	**275**	P	Pn	02 10 17.2	+0.8
ADAG	**Mount Adagdak**	**3.32**	**274**	P	Pn	02 10 20.9	+0.8
KIKV	**Kanaga Island**	**3.67**	**273**	P	Pn	02 10 25.5	+0.5

IDC 27 02:20:59.9±1.4, 12°55N×143°56E, h0km, mb4.1/3, mb1 4.4/3, mb1mx3.4/40, mbtmp4.1/3, MS2.8/1, Ms1 3.0/1, ms1mx2.4/41, Error ellipse: s-maj=40.4km s-min=25.4km az=127.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.65**	**51**	Pn	Pn	02 21 30.1	0.0
	19nm,0.3s,baz=194,slow=12,SNR=6.0						
GUMO				LR	LR	02 22 10.7	
	comp=Z,90nm,20.6s,baz=236,slow=43						
WRA	**Warramunga Arr**	**33.53**	**196**	P	P	02 27 41.1	-0.5
	1.2nm,0.8s,baz=19,slow=9.7,SNR=11						
ASAR	**Alice Springs**	**37.21**	**195**	P	P	02 28 13.7	+0.5
	0.5nm,0.6s,baz=19,slow=13,SNR=4.3						
CMAR	**Chiang Mai Arr**	**43.31**	**284**	P	P	02 29 03.8	-0.2
	6.2nm,0.3s,baz=92,slow=6.7,SNR=4.3						
CMAR				LR	LR	02 46 11.2	
	comp=Z,12nm,20.3s,baz=280,slow=35						

MEX 27 02:28:01.6±0.4, 26°23N×101°69W, h8km±27km, MD4.3, Northern Mexico

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNIG	**Linares**	**2.41**	**123**	*e*P	Pn	02 28 37.9	-3.4
LNIG				*i* S	Sn	02 29 07.2	-3.7
ZAIG	**Zacatecas**	**3.54**	**193**	*e*P	Pn	02 28 54.8	-2.3
ZAIG				*e*S	Sn	02 29 35.5	-3.8

IDC 27 02:45:56.9±5.0, 35°92N×70°57E, h69km±33km, mb3.4/5, mb1 3.5/8, mb1mx3.2/50, mbtmp3.7/8, ML3.7/3, Error ellipse: s-maj=57.5km s-min=22.4km az=156.0
NNC 27 02:46:06.7±8.2, 36°71N×70°38E, h86km±223km, mb3.7, mpv3.8, Error ellipse: s-maj=87.7km s-min=61.4km az=110.0

ISC 27 02:46:00.5±1.8, 36°3N±0°2×70°5E±0°1, h100km, n13, σ1s50/17, mb3.6/4, 4C-4D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAS	**Manas**	**6.39**	**13**	⇑P	**Pn**	**02 47 33.2**	**+1.0**
	2.3nm,0.3s						
MNAS				⇓S	**Sn**	**02 48 42.1**	**-1.6**
	11nm,0.4s						
KK31	**Karatay Array**	**6.82**	**360**	⇓P	**Pn**	**02 47 38.5**	**+0.6**
	3.2nm,0.3s,baz=172,slow=12,SNR=105						
KK31				⇑S	Sn	02 48 48.5	-5.5
	6.6nm,0.4s						
AAK	**Ala-Archa**	**7.05**	**25**	P	**Pn**	**02 47 42.2**	**+1.0**
	2.4nm,0.3s,baz=182,slow=8.1,SNR=7.2						
AAK				S	**Sn**	**02 48 59.8**	**-0.1**
	1.0nm,0.3s,baz=331,slow=22,SNR=5.7						
AAK	**Ala-Archa**	**7.05**	**25**	⇑P	**Pn**	**02 47 41.8**	**+0.6**
	4.0nm,0.4s						
AAK				⇓S	**Sn**	**02 48 59.2**	**-0.8**
	12nm,1.0s						
GEYT	**Alibeck**	**10.05**	**283**	P	**Pn**	**02 48 19.9**	**-2.0**
	1.0nm,0.3s,baz=95,slow=16,SNR=8.3						
GEYT				S	**Sn**	**02 50 12.5**	**-0.3**
	0.4nm,0.3s,baz=120,slow=17,SNR=2.8						
MKAR	**Makanchi Array**	**13.69**	**36**	P	**P**	**02 49 13.1**	**-2.6**
	0.1nm,0.3s,baz=206,slow=13,SNR=4.9						
AB31	**Akbulak array**	**15.10**	**332**	P	**Pn**	**02 49 28.1**	**-0.3**
	4.4nm,0.4s,baz=159,slow=12,SNR=173						
AB31				⇑S	Sn	02 52 06.1	-8.8
	0.3nm,0.3s,baz=153,slow=23						
AKTO	**Aktyubinsk**	**16.79**	**331**	⇓P	**P**	**02 49 51.0**	**+1.1**
	5.6nm,0.8s						
ZALV	**Zalesovo Beam**	**20.28**	**25**	P	**P**	**02 50 28.8**	**+0.8**
	1.8nm,0.4s,baz=225,slow=11,SNR=7.8						
FINES	**FINESS Array B**	**37.46**	**326**	P	**P**	**02 53 05.6**	**+1.7**
	1.0nm,0.7s,baz=117,slow=7.1,SNR=4.7						
HFS	**Hagfors**	**43.01**	**322**	P	**P**	**02 53 52.2**	**+2.5**
	0.6nm,0.4s,baz=107,slow=9.5,SNR=7.1						
NOA	**NORSAR Array B**	**44.33**	**323**	P	**P**	**02 54 02.2**	**+1.9**
	0.4nm,0.6s,baz=89,slow=8.0,SNR=2.7						
TORD	**Torodi Ar. Bea**	**65.33**	**268**	P	**P**	**02 56 32.2**	**-0.2**
	0.1nm,0.3s,baz=48,slow=5.7,SNR=7.3						

IDC 27 02:47:07.4±3.1, 10°77S×166°24E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.7/24, mbtmp3.8/5, MS3.8/2, Ms1 3.8/2, ms1mx2.8/34, Error ellipse: s-maj=112.1km s-min=29.8km az=134.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.04**	**250**	P	P	02 53 36.6	+0.6
	0.7nm,0.8s,baz=84,slow=9.1,SNR=6.1						
ASAR	**Alice Springs**	**33.35**	**243**	P	P	02 53 47.5	-0.1
	0.6nm,0.5s,baz=70,slow=9.1,SNR=5.5						
RAR	**Rarotonga**	**34.21**	**112**	LR	LR	03 04 57.1	
	comp=Z,594nm,20.9s,baz=252,slow=31						
FITZ	**Fitzroy Crossi**	**39.92**	**255**	LR	LR	03 11 32.4	
	comp=Z,37nm,18.4s,baz=83,slow=37						
SONM	**Songino Array**	**78.73**	**324**	P	P	02 59 11.5	-0.5
	0.4nm,0.5s,baz=134,slow=4.2,SNR=3.3						
ILAR	**Eielson Array**	**83.10**	**18**	P	P	02 59 35.2	+0.5
	0.5nm,0.6s,baz=234,slow=5.4,SNR=12						
MKAR	**Makanchi Array**	**93.66**	**317**	P	P	03 00 25.3	-0.7
	1.0nm,0.8s,baz=94,slow=6.5,SNR=5.4						

IDC 27 02:55:24.4±2.9, 6°47S×147°79E, h0km, mb3.8/2, mb1 4.0/4, mb1mx3.4/31, mbtmp3.8/4, ML3.5/1, MS2.9/2, Ms1 2.9/2, ms1mx2.5/33, Error ellipse: s-maj=65.8km s-min=32.4km az=98.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.98**	**192**	Pn	Pn	02 56 13.9	+0.9
	6.6nm,0.3s,baz=10,slow=8.6,SNR=23						
PMG				Sn	Sn	02 56 52.1	+2.6
	2.9nm,0.3s,baz=338,slow=19,SNR=4.0						
PMG				LR	LR	02 57 42.5	
	comp=Z,289nm,21.9s,baz=322,slow=46						
WRA	**Warramunga Arr**	**18.71**	**223**	P	P	02 59 44.1	-0.5
	0.2nm,0.3s,baz=49,slow=11,SNR=9.2						
ASAR	**Alice Springs**	**21.69**	**217**	P	P	03 00 16.2	-0.9
	1.0nm,0.4s,baz=52,slow=9.1,SNR=14						
FITZ	**Fitzroy Crossi**	**24.50**	**240**	P	P	03 00 45.0	-0.6
	3.3nm,0.5s,baz=58,slow=8.5,SNR=16						
STKA	**Stephens Creek**	**25.93**	**192**	LR	LR	03 11 42.7	
	comp=Z,27nm,21.6s,baz=25,slow=38						
TORD	**Torodi Ar. Bea**	**145.97**	**284**	PKPbc	PKPbc	03 15 07.2	+0.1
	0.3nm,0.4s,baz=81,slow=3.5,SNR=6.9						

DJA 27 03:05:26.9±1.2, 1°S±6°×12°4E±1°1, h10km, M3.9/4, MLv3.9/4, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUWI	**Luwuk**	**1.28**	**256**	P	Pn	03 05 50.2	-0.7
MRSI	**Marisa**	**2.41**	**300**	P	Pn	03 06 06.3	-0.1
MRSI				S	Sn	03 06 36.9	+1.0
KDI	**Kendari**	**3.49**	**204**	P	Pn	03 06 21.3	0.0

ISCJB 27 03:06:38.9±1.0, 37°91N±0°04×27°27E±0°05, h12km±8km, Error ellipse: s-maj=7.4km s-min=6.0km az=34.6
ISK 27 03:06:38.8, 37°90N×27°28E, h6km, MD2.5
DDA 27 03:06:39.8, 37°87N×27°54E, h7km, Md2.2
CSEM 27 03:06:39.9±0.5, 37°87N×27°36E, h5km, MD2.5, Error ellipse: s-maj=11.3km s-min=9.3km az=119.0

ISC 27 03:06:39.0±1.2, 37°90N±0°03×27°32E±0°03, h3km±14km, n14, σ1s02/25, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AYDB	**Zeytinkoy-Aydi**	**0.45**	**84**	*e*PG	**Pg**	**03 06 48.8**	**+1.1**
AYDB				*e*SG	**Sb**	**03 06 55.4**	**-1.5**
AYDB	**Zeytinkoy-Aydi**	**0.45**	**84**	*e*Pg	**Pg**	**03 06 48.8**	**+1.1**
AYDB				*e*Sg	**Sg**	**03 06 55.4**	**-1.5**
URLA	**Izmir**	**0.73**	**309**	*i* P	**Pn**	**03 06 57.0**	**+0.7**
URLA				*i* S	**Sg**	**03 07 00.5**	**-2.0**
URLA	**Izmir**	**0.73**	**309**	P	**Pn**	**03 06 57.0**	**+0.7**
BODT	**Bodrum**	**0.84**	**181**	*e*PG	**Pg**	**03 06 55.2**	**+0.2**
BODT				*e*SG	**Sb**	**03 07 07.4**	**-0.4**
BODT	**Bodrum**	**0.84**	**181**	*e*Pg	**Pg**	**03 06 55.2**	**+0.2**
BODT				*e*Sg	**Sb**	**03 07 07.4**	**-0.4**
BDRM	**Kayabasi**	**0.84**	**173**	*i* P	**Pg**	**03 06 55.3**	**+0.2**
BDRM				*i* S	**Sg**	**03 07 05.7**	**-0.3**
BDRM	**Kayabasi**	**0.84**	**173**	P	**Pg**	**03 06 55.3**	**+0.2**
BDRM				S	**Sg**	**03 07 05.7**	**-0.3**
CHOS	**Chios island**	**1.11**	**296**	*e*PN	**Pg**	**03 07 00.5**	**+0.2**
CHOS				*e*SN	**Sg**	**03 07 14.9**	**+0.2**
CHOS	**Chios island**	**1.11**	**296**	*e*Pn	**Pg**	**03 07 00.5**	**+0.2**
CHOS				*e*Sn	**Sg**	**03 07 14.9**	**+0.2**
MANT	**Manisa**	**1.14**	**59**	*i* P	**Pg**	**03 07 01.7**	**+0.9**
MANT				*i* S	**Sg**	**03 07 13.9**	**-1.6**
MANT	**Manisa**	**1.14**	**59**	P	**Pg**	**03 07 01.7**	**+0.9**
MANT				S	**Sg**	**03 07 13.9**	**-1.6**
KULA	**Kula-Manisa**	**1.22**	**60**	*e*PN	**Pn**	**03 07 03.9**	**+0.9**
KULA	**Kula-Manisa**	**1.22**	**60**	*e*Pn	**Pn**	**03 07 03.9**	**+0.9**

NIED 27 03:08:00, 39°00N×142°20E, h8km, Mw3.5 Best double couple: Mo1.93000×10^14 NP1:φs193.00000°, δ37.00000°, λ134.00000°. NP2:φs322.00000°, δ64.00000°, λ63.00000°.
*IDC 27 03:08:44.4±2.7, 39°25N×143°02E, h0km, mb3.6/3, mb1 3.6/4, mb1mx3.3/59, mbtmp3.5/4, ML3.1/1, MS3.1/

az=109.0
*MEX **27** 03:13:51.6±0.4,25°.16N×109°.72W,h15km±6km,MD4.3*
ISC 27 03:13:51.2±0.6,**24°.90N**±0°.05×**109°.59W**±0°.06,**h17**km,**n76,**
σ1=**80**/69,**mb4.1**/10,**MS3.3**/8,**Gulf of California**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPIG	**La Paz**	**1.03**	**220**	Pg	**Pb**	**03 14 10.0**	**-0.5**
	273nm,0.3s,baz=20,slow=5.2,SNR=111						
LPIG				Lg	Lg	03 14 19.8	
	725nm,0.3s,baz=220,slow=17,SNR=31						
LPIG	**La Paz**	**1.03**	**220**	*e*P	**Pb**	**03 14 10.0**	**-0.5**
LPIG				*i* S	**Sg**	**03 14 24.1**	**-0.5**
LPIG	**La Paz**	**1.03**	**220**	Pg	**Pb**	**03 14 10.0**	**-0.5**
LPIG				Lg	Lg	03 14 19.8	
LPIG				*i* S	**Sg**	**03 14 24.1**	**-0.5**
SLBS	**Sierra La Lagu**	**1.25**	**195**	*e*Pn	**Pb**	**03 14 14.3**	**0.0**
GUYB	**Guaymas**	**3.21**	**339**	*e*P	Pn	03 14 34.1	-6.7
GUYB				*e*S	Sn	03 15 09.1	-9.4
MAIG	**Mazatlaan**	**3.35**	**120**	*i* P	**Pn**	**03 14 44.7**	**+1.8**
MAIG				*i* S	**Sn**	**03 15 24.5**	**+2.3**
SRIG	**Santa Rosalia**	**3.39**	**316**	*i* P	Pn	03 14 38.1	-5.2
SRIG				*i* S	Sn	03 15 14.0	-9.2
SRIG	**Santa Rosalia**	**3.39**	**316**	*e*Pn	**Pn**	**03 14 40.2**	**-3.2**
SRIG				*e*S	Sn	03 14 55.8	-27
HPIG		**4.08**	**59**	*e*P	**Pn**	**03 14 51.4**	**-1.5**
HPIG				*e*S	**Sn**	**03 15 37.8**	**-2.6**
HPIG		**4.08**	**59**	*e*Pn	**Pn**	**03 14 51.4**	**-1.5**
HPIG				*e*S	Sn	03 15 30.2	-10
HSIG		**4.28**	**344**	*e*Pn	**Pn**	**03 14 54.9**	**-0.8**
319A	**Douglas**	**6.46**	**2**	*e*Pn	**Pn**	**03 15 21.9**	**-3.8**
TXAR	**Lajitas Array**	**6.88**	**49**	Pn	**Pn**	**03 15 28.8**	**-2.6**
	1.2nm,0.3s,baz=226,slow=12,SNR=81						
TXAR				Lg	Lg	03 17 20.1	
	2.2nm,0.3s,baz=230,slow=28,SNR=4.0						
TXAR				LR	LR	03 17 56.4	
	comp=Z,125nm,20.3s,baz=0.0,slow=37						
TUC	**Tucson**	**7.46**	**352**	*e*Pn	**Pn**	**03 15 35.7**	**-3.6**
TUC				*e*S	**Sn**	**03 17 07.4**	**+3.8**
MNTX	**Cornudas Mount**	**7.72**	**28**	*e*Pn	**Pn**	**03 15 40.1**	**-2.8**
MNTX				*e*S	**Sb**	**03 17 36.2**	**-0.3**
121A	**Cookes Peak, D**	**7.77**	**11**	*e*Pn	**Pn**	**03 15 40.6**	**-3.1**
	12nm,0.8s						
121A				*e*S	Sb	03 17 53.3	+15
GDL2	**Guadalupe Moun**	**8.60**	**31**	*e*Pn	**Pn**	**03 15 52.7**	**-2.3**
113A	**Mohawk Valley,**	**8.66**	**336**	*e*Pn	**Pn**	**03 15 54.7**	**-0.9**
Y14A	**Wickenburg**	**9.49**	**343**	*e*Pn	**Pn**	**03 16 05.1**	**-2.0**
BNM	**Barren Site**	**9.57**	**15**	*e*Pn	**Pn**	**03 16 07.7**	**-0.8**
X16A	**Lo Mia Camp, P**	**9.62**	**351**	*e*Pn	**Pn**	**03 16 09.2**	**+0.1**
LAZ	**Ladron**	**9.71**	**12**	*e*Pn	**Pn**	**03 16 08.1**	**-2.2**
LPM	**Los Pinos Moun**	**9.73**	**15**	*e*Pn	**Pn**	**03 16 09.3**	**-1.3**
Y12C	**Blythe**	**9.82**	**335**	*e*Pn	**Pn**	**03 16 09.6**	**-1.9**
W18A	**Petrified Fore**	**10.19**	**359**	*e*Pn	**Pn**	**03 16 17.3**	**+0.5**
JCT	**Junction City**	**10.30**	**55**	*e*Pn	**Pn**	**03 16 15.2**	**-3.0**
ANMO	**Albuquerque**	**10.38**	**14**	*e*Pn	**Pn**	**03 16 19.1**	**-0.3**
PFO	**Pinyon Flats O**	**10.55**	**327**	Pn	Pn	03 16 27.6	+5.8
	0.1nm,0.3s,baz=144,slow=14,SNR=4.4						
WUAZ	**Wupatki**	**10.70**	**352**	*e*Pn	**Pn**	**03 16 24.3**	**+0.5**
MSTX	**Muleshoe**	**10.81**	**32**	*e*Pn	**Pn**	**03 16 24.6**	**-0.8**
W13A	**Hualapai Mount**	**10.83**	**341**	*e*Pn	**Pn**	**03 16 26.3**	**+0.7**
LDFC	**Landfair**	**11.22**	**336**	*e*Pn	**Pn**	**03 16 31.6**	**+0.8**
U15A	**North Rim**	**11.73**	**349**	*e*Pn	Pn	03 16 32.9	-5.1
MVCO	**Mesa Verde**	**12.31**	**4**	*e*Pn	**Pn**	**03 16 44.9**	**-1.0**
	14nm,1.4s						
MVCO				*e*S	Sn	03 19 43.7	+41
MTPU	**Mount Pierson**	**13.29**	**351**	*e*Pn	**Pn**	**03 17 01.9**	**+2.5**
WMOK	**Wichita Mounta**	**13.56**	**41**	*e*Pn	Pn	03 16 56.7	-6.1
SMCO	**Snowmass**	**14.41**	**8**	*e*Pn	**P**	**03 17 20.4**	**-1.2**
	6.0nm,0.9s						
ISCO	**Idaho Springs**	**15.23**	**12**	*e*P	**P**	**03 17 32.4**	**+1.7**
	3.6nm,0.8s						
O20A	**White River Ci**	**15.24**	**4**	*e*Pn	**Pn**	**03 17 25.1**	**-0.7**
	17nm,0.9s						
U34A	**Anderson Ranch**	**15.47**	**39**	*e*Pn	**Pn**	**03 17 29.6**	**+1.0**
	13nm,0.8s						
CMIG	**Matias Romero**	**15.77**	**117**	Pn	**Pn**	**03 17 31.8**	**-0.8**
	0.1nm,0.3s,baz=300,slow=20,SNR=2.5						
CMIG				LR	LR	03 23 43.1	
	comp=Z,150nm,20.9s,baz=272,slow=39						
YERR	**Yerington**	**16.25**	**332**	*e*Pn	**Pn**	**03 17 38.8**	**0.0**
	19nm,1.6s						
HWUT	**Hardware Ranch**	**16.75**	**355**	*e*Pn	**Pn**	**03 17 44.4**	**-0.7**
	4.9nm,0.9s						
MIAR	**Mount Ida**	**16.89**	**52**	*e*Pn	**Pn**	**03 17 47.1**	**+0.3**
	7.6nm,1.2s						
BW06	**Boulder Array**	**17.83**	**0**	*e*Pn	**Pn**	**03 17 59.0**	**+0.4**
	5.9nm,0.8s						
PD31	**Pinedale Array**	**17.83**	**0**	*e*Pn	**Pn**	**03 17 57.7**	**-0.9**
PDAR	**Pinedale Array**	**17.83**	**0**	P	**Pn**	**03 17 58.0**	**-0.6**
	0.1nm,0.3s,baz=171,slow=10,SNR=11						
PDAR				LR	LR	03 24 51.1	
	comp=Z,119nm,18.6s,baz=192,slow=37						
X301	**Greenbrier Sit**	**18.07**	**51**	*e*Pn	**Pn**	**03 18 01.0**	**-0.5**
	21nm,1.6s						
MOOW	**Moose Ponds**	**18.83**	**357**	*e*P	**Pn**	**03 18 11.7**	**+0.8**
	1.8nm,0.8s						
IMW	**Indian Meadow**	**18.99**	**357**	*e*P	**P**	**03 18 12.4**	**+0.2**
	5.6nm,1.0s						
WVOR	**Wild Horse Val**	**19.02**	**339**	*e*P	**P**	**03 18 12.6**	**+0.2**
	5.6nm,1.0s						
HLID	**Hailey**	**19.04**	**349**	*e*P	**P**	**03 18 12.6**	**+0.1**
	3.7nm,1.0s						
MOD	**Modoc Plateau**	**19.15**	**335**	*e*P	**Pn**	**03 18 14.8**	**+0.2**
	7.5nm,1.3s						
MCMT	**McKenzie Canyo**	**20.06**	**353**	*e*P	Pn	03 18 25.4	-0.2
BOZ	**Bozeman (W)**	**20.77**	**356**	*e*P	Pn	03 18 34.4	+0.5
	4.6nm,1.1s						
BMO	**Blue Mountains**	**20.87**	**344**	*e*P	**P**	**03 18 32.1**	**-0.4**
	5.3nm,1.0s						
ECSD	**EROS Data Cent**	**21.58**	**26**	*e*P	**P**	**03 18 41.2**	**+1.1**
	6.3nm,0.8s						
WVT	**Waverly**	**21.79**	**54**	*e*P	**P**	**03 18 43.3**	**+1.0**
	12nm,0.9s						
F10A	**Beach Ranch, E**	**21.91**	**346**	*e*P	**P**	**03 18 46.7**	**+3.1**
	7.8nm,1.0s						
MSO	**Missoula**	**22.16**	**352**	*e*P	**P**	**03 18 45.8**	**-0.6**
	11nm,1.4s						
CHMT	**Chamberlain Mo**	**22.17**	**353**	*e*P	**P**	**03 18 47.6**	**+1.1**
SLMT	**Seeley Lake**	**22.52**	**353**	*e*P	**P**	**03 18 55.0**	**+4.8**
SWMT	**Swartz Lake**	**22.84**	**352**	*e*P	**P**	**03 18 57.0**	**+3.5**
NEW	**Newport**	**24.07**	**348**	P	**P**	**03 19 06.3**	**+0.7**
	5.4nm,0.9s,baz=165,slow=11,SNR=7.0						
NEW				LR	LR	03 29 15.1	
	comp=Z,60nm,19.4s,baz=173,slow=38						
NEW	**Newport**	**24.07**	**348**	*e*P	**P**	**03 19 05.0**	**-0.6**
	3.8nm,0.8s						
SFIN	**Lafayette**	**24.34**	**45**	*e*P	**P**	**03 19 07.5**	**-0.6**
	4.4nm,0.8s						
TKL	**Tuckaleechee C**	**24.67**	**58**	LR	LR	03 28 58.8	
	comp=Z,106nm,18.8s,baz=236,slow=37						
EYMN	**Ely**	**27.09**	**27**	*e*P	**P**	**03 19 36.9**	**+4.0**
	4.5nm,1.0s						
ULM	**Lac du Bonnet**	**27.45**	**19**	P	**P**	**03 19 35.7**	**-0.5**
	2.3nm,0.9s,baz=194,slow=11,SNR=2.0						
BBB	**Bella Bella**	**30.68**	**337**	LR	LR	03 32 23.8	
	comp=Z,71nm,19.5s,baz=258,slow=36						
DLBC	**Dease Lake**	**36.52**	**342**	LR	LR	03 36 00.2	
	comp=Z,42nm,21.4s,baz=116,slow=36						
YKA	**Yellowknife Ar**	**37.74**	**356**	P	**P**	**03 21 04.6**	**-1.2**
	0.4nm,0.7s,baz=175,slow=8.0,SNR=3.0						
YKA				LR	LR	03 37 04.9	
	comp=Z,11nm,18.9s,baz=180,slow=37						
INK	**Inuvik**	**45.79**	**348**	LR	LR	03 42 49.1	
	comp=Z,56nm,18.4s,baz=161,slow=38						
ILAR	**Eielson Array**	**46.54**	**339**	P	**P**	**03 22 17.6**	**0.0**
	0.4nm,0.7s,baz=146,slow=5.5,SNR=9.6						
ARCES	**ARCESS Array B**	**80.46**	**15**	LR	LR	04 02 27.5	
	comp=Z,19nm,21.5s,baz=336,slow=36						
NOA	**NORSAR Array B**	**81.99**	**25**	LR	LR	04 02 47.5	
	comp=Z,15nm,18.3s,baz=330,slow=36						

*BJI **27** 03:17:14.4,36°.19N×69°.34E,h168km,mb4.7/28,mB4.7/20*
*MOS **27** 03:17:15.8±1.0,36°.30N×69°.54E,h165km,mb4.7/32,Error ellipse: s-maj=6.2km s-min=4.0km az=102.3*
*ISCJB **27** 03:17:15.2±0.3,36°.25N±0°.02×69°.56E±0°.02,h163km±3km, mb4.4/103,Error ellipse: s-maj=3.9km s-min=2.7km az=41.7*
*IDC **27** 03:17:16.8±0.4,36°.13N×69°.45E,h169km±3km,mb4.1/37, mb1 4.2/41,mb1mx4.0/65,mbtmp4.6/41,MS3.4/5, Ms1 3.4/5,ms1mx2.8/46,Error ellipse: s-maj=9.6km s-min=7.0km az=16.0*
*NEIC **27** 03:17:17.1±0.2,36°.23N×69°.50E,mb4.5/38,Error ellipse: s-maj=4.8km s-min=3.8km az=177.0*
NEIC Felt at Charikar and Kabul.
*NNC **27** 03:17:21.6±3.3,36°.74N×69°.42E,h188km±33km,mb4.1, mpv4.9,Error ellipse: s-maj=29.3km s-min=19.3km az=37.0*
ISC 27 03:17:16.4±0.3,**36°.20N**±0°.04×**69°.52E**±0°.03,**h165**km±2km,
h165km:**pP-P,n370,**σ2=**02**/487,**mb4.4**/109,**43C-11D,**
Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBL	**Kabul**	**1.70**	**193**	*e*PN	**Pn**	**03 17 49.3**	**-0.1**
KBL	**Kabul**	**1.70**	**193**	*e*Pn	**Pn**	**03 17 49.3**	**-0.1**
CEP	**Cherat**	**3.07**	**140**	P	**Pn**	**03 18 06.9**	**+1.5**
CEP				S	**Sn**	**03 18 45.0**	**+1.5**
THW	**Thamme Wali**	**3.86**	**151**	P	**Pn**	**03 18 16.1**	**+0.8**
CHCP	**Chirah Chowk**	**3.98**	**128**	P	**Pn**	**03 18 18.6**	**+1.7**
SRNI	**Srinagar**	**4.84**	**114**	*e*P	**Pn**	**03 18 27.0**	**-0.9**
SRNI				*ex*	x	03 19 32.5	
SARP	**Sargodha**	**5.00**	**148**	P	**Pn**	**03 18 30.2**	**+0.1**
KSH	**Kashi**	**6.08**	**55**	P	**Pn**	**03 18 40.3**	**-4.1**
KSH				*es*P		03 19 17.3	
KSH				S	Sn	03 19 41.0	-12
KSH				smax	smax		
	comp=N,2μm,0.8s						
KSH				smax	smax		
	comp=E,880nm,0.3s						
THN	**Thein Dam**	**6.35**	**124**	*e*P	**Pn**	**03 18 48.6**	**+0.7**
THN				*e*S	**Sn**	**03 19 55.0**	**-4.7**
MNAS	**Manas**	**6.69**	**19**	⇑P	**Pn**	**03 18 51.9**	**-0.5**
	87nm,0.5s						
MNAS				⇑S	**Sn**	**03 20 04.2**	**-3.8**
	550nm,1.0s						
MNAS	**Manas**	**6.69**	**19**	PN	**Pn**	**03 18 51.9**	**-0.5**
MNAS				pmax	pmax		
	comp=Z,87nm,0.5s						
PONG	**Pong**	**6.81**	**127**	*e*P	**Pn**	**03 18 55.0**	**+1.1**
PONG				*ex*	x	03 20 16.0	
KK31	**Karatay Array**	**6.94**	**6**	⇑P	**Pn**	**03 18 54.2**	**-1.4**
	comp=Z,7.0nm,0.2s,baz=202,slow=16,SNR=665						
KK31				⇑S	**Sn**	**03 20 06.9**	**-6.7**
	comp=Z,432nm,0.7s						
KK31	**Karatay Array**	**6.94**	**6**	*ce*PN	**Pn**	**03 18 54.1**	**-1.4**
KK31				pmax	pmax		
	comp=Z,7.0nm,0.2s						
KKAR	**Karatay Array**	**6.94**	**6**	*e*PN	**Pn**	**03 18 54.2**	**-1.4**
KKAR	**Karatay Array**	**6.94**	**6**	*e*Pn	**Pn**	**03 18 54.2**	**-1.4**
KKAR				*e*S	**Sn**	**03 20 07.7**	**-6.0**
BHK	**Bhakra**	**7.46**	**128**	*e*P	**Pn**	**03 19 02.1**	**-0.5**
BHK				*e*S	**Sn**	**03 20 22.4**	**-3.8**
AAK	**Ala-Archa**	**7.49**	**29**	P	**Pn**	**03 19 03.0**	**-0.1**
	comp=Z,35nm,0.3s,baz=206,slow=8.4,SNR=88						
AAK				S	**Sn**	**03 20 25.8**	**-1.3**
	comp=Z,53nm,0.3s,baz=142,slow=23,SNR=24						
AAK	**Ala-Archa**	**7.49**	**29**	⇑P	**Pn**	**03 19 02.7**	**-0.4**
	comp=Z,35nm,0.3s						
AAK				⇑S	**Sn**	**03 20 22.9**	**-4.2**
	comp=Z,519nm,0.7s						
AAK	**Ala-Archa**	**7.49**	**29**	*e*PN	**Pn**	**03 19 02.8**	**-0.2**
AAK	**Ala-Archa**	**7.49**	**29**	*e*Pn	**Pn**	**03 19 02.9**	**-0.2**
AAK				*e*S	**Sn**	**03 20 25.1**	**-2.0**
FRU	**Bishkek**	**7.71**	**29**	*i* PN	**Pn**	**03 19 06.0**	**+0.2**
FRU				pmax	pmax		
	comp=Z,140nm,1.8s						
SDNR	**Sundarnagar**	**7.77**	**125**	*e*P	**Pn**	**03 19 06.0**	**-0.7**
SDNR				*e*S	**Sn**	**03 20 29.0**	**-4.6**
SMLA	**Simla**	**8.13**	**126**	*e*P	**Pn**	**03 19 11.7**	**+0.2**
SMLA				*e*S	**Sn**	**03 20 38.4**	**-3.9**
SMLA				IAML		03 20 41.5	
	comp=N,628nm,0.1s						
SMLA				IAML		03 20 42.5	
	comp=E,570nm,0.5s						
TKM2	**Tokmak 2**	**8.19**	**33**	⇑P	**Pn**	**03 19 11.8**	**-0.5**
	comp=E,42nm,0.6s						
TKM2				⇑S	**Sn**	**03 20 37.6**	**-6.3**
	comp=E,88nm,0.6s						
TKM2	**Tokmak 2**	**8.19**	**33**	PN	**Pn**	**03 19 11.8**	**-0.5**
TKM2				pmax	pmax		
	comp=Z,42nm,0.6s						
KKR	**Kurukshetra**	**8.72**	**133**	*e*P	**Pn**	**03 19 19.8**	**+0.5**
KNDC	**Almaty**	**9.05**	**37**	⇓P	**Pn**	**03 19 24.2**	**+0.6**
DDI	**Dehra Dun**	**9.24**	**127**	*e*P	**Pn**	**03 19 26.5**	**+0.3**
DDI				*e*S	**Sn**	**03 21 04.1**	**-4.8**
DDI				IAML		03 21 56.0	
	comp=N,290nm,0.7s						
DDI				IAML		03 22 02.8	
	comp=E,492nm,0.4s						
GEYT	**Alibeck**	**9.28**	**284**	P	**Pn**	**03 19 23.1**	**-3.6**
	comp=E,10nm,0.3s,baz=106,slow=11,SNR=89						
GEYT				S	**Sn**	**03 21 03.7**	**-6.1**
	comp=E,9.5nm,0.3s,baz=106,slow=24,SNR=3.8						
NDI	**New Delhi**	**9.92**	**137**	*e*P	Pn	03 19 26.0	-9.1
NDI				*e*S	Sn	03 21 06.0	-19
KUDL	**Kundal**	**9.96**	**142**	*e*P	**Pn**	**03 19 34.0**	**-1.6**
KUDL				*e*S	**Sn**	**03 21 17.9**	**-8.3**
KUDL				IAML		03 21 25.0	
	comp=N,167nm,0.3s						
KUDL				IAML		03 21 26.3	
	comp=E,133nm,0.6s						
SONA	**Sohna**	**10.18**	**139**	*e*P	**Pn**	**03 19 37.3**	**-1.3**
SONA				*e*S	**Sn**	**03 21 23.6**	**-7.9**
SONA				IAML		03 21 31.1	
	comp=N,173nm,0.3s						
SONA				IAML		03 21 31.3	
	comp=E,174nm,0.3s						
PDGK	**Podgornoye**	**10.46**	**44**	⇓P	**Pn**	**03 19 41.2**	**-0.9**
	comp=E,16nm,0.9s						
PDGK	**Podgornoye**	**10.46**	**44**	P	**Pn**	**03 19 41.1**	**-0.9**
PDGK				pmax	pmax		
	comp=Z,16nm,0.9s						
PTH	**Pithoragarh**	**11.17**	**123**	*e*P	**Pn**	**03 19 50.2**	**-1.4**
PTH				*e*S	**Sn**	**03 21 47.9**	**-7.6**
OTUK	**Ortayu**	**12.22**	**9**	⇓P	**Pn**	**03 20 02.6**	**-2.3**
	comp=Z,30nm,0.9s						
OTUK	**Ortayu**	**12.22**	**9**	P	**Pn**	**03 20 02.5**	**-2.3**
OTUK				pmax	pmax		
	comp=Z,30nm,0.9s						
BHJ	**Bhuj**	**12.90**	**179**	*e*P	**Pn**	**03 20 12.5**	**-1.3**
PYUN	**Piuthan**	**13.97**	**122**	*e*P	**Pn**	**03 20 25.9**	**-1.6**
	comp=Z,190nm,0.4s						
PYUN				*e*S	Sn	03 22 53.8	-8.9
MAKZ	**Makanchi**	**14.10**	**37**	⇓P	**Pn**	**03 20 28.4**	**-0.4**
	comp=Z,37nm,0.7s						
MAKZ	**Makanchi**	**14.10**	**37**	*e*P	**Pn**	**03 20 29.0**	**+0.2**
MAKZ	**Makanchi**	**14.10**	**37**	*e*Pn	**Pn**	**03 20 29.0**	**+0.2**
MK01	**Makanchi Array**	**14.24**	**38**	*e*Pn	**Pn**	**03 20 29.5**	**-1.0**
MK31	**Makanchi Array**	**14.25**	**38**	P	**Pn**	**03 20 30.0**	**-0.7**
	comp=Z,20nm,0.8s,baz=210,slow=9.3,SNR=124						
MK31	**Makanchi Array**	**14.25**	**38**	*e*P	**Pn**	**03 20 29.0**	**-1.7**
MK31	**Makanchi Array**	**14.25**	**38**	*e*Pn	**Pn**	**03 20 29.0**	**-1.7**
MKAR	**Makanchi Array**	**14.25**	**38**	P	**Pn**	**03 20 30.1**	**-0.5**
	comp=Z,1.5nm,0.3s,baz=220,slow=11,SNR=59						
MKAR	**Makanchi Array**	**14.25**	**38**	*e*P	**Pn**	**03 20 29.2**	**-1.5**
KOLN	**Koldanda**	**14.59**	**121**	*e*P	**Pn**	**03 20 34.2**	**-1.1**
	comp=Z,82nm,0.3s						
KOLN				*e*S	**Sn**	**03 23 09.1**	**-8.7**
BHPL	**Bhopal**	**14.61**	**150**	*e*P	**Pn**	**03 20 34.8**	**-0.6**
BHPL				*ex*	x	03 23 03.7	
AB31	**Akbulak array**	**14.81**	**335**	P	**Pn**	**03 20 35.3**	**-2.2**
	comp=Z,4.6nm,0.3s,baz=149,slow=12,SNR=365						
AB31				⇑Pg	Pg	03 20 57.5	
	comp=Z,11nm,0.5s,baz=154,slow=13,SNR=6.3						
AB31				⇑S	Sn	03 23 07.3	-15
	comp=Z,48nm,0.8s						
AB31	**Akbulak array**	**14.81**	**335**	*ce*P	**Pn**	**03 20 35.3**	**-2.2**
AB31				pmax	pmax		
	comp=Z,5.0nm,0.3s						
ABKAR	**Akbulak array**	**14.81**	**335**	*e*Pn	**Pn**	**03 20 35.7**	**-1.9**
ABKAR				*e*S	Sn	03 23 10.8	-11
GKN	**Gorkha**	**15.18**	**118**	*e*P	**Pn**	**03 20 41.5**	**-1.0**
	comp=Z,165nm,0.2s						
GKN				*e*S	**Sn**	**03 23 22.5**	**-9.2**
DMN	**Daman**	**15.75**	**119**	*e*P	**Pn**	**03 20 48.7**	**-0.9**
	comp=Z,258nm,0.5s						
KKN	**Kakani**	**15.77**	**118**	*e*P	**Pn**	**03 20 49.2**	**-0.5**
KKN	**Kakani**	**15.77**	**118**	*e*Pn	**Pn**	**03 20 49.2**	**-0.5**
KURBB	**Kurchatov Arra**	**15.81**	**21**	P	**Pn**	**03 20 48.0**	**-1.9**
	comp=Z,0.8nm,0.3s,baz=211,slow=9.7,SNR=55						
KURBB	**Kurchatov Arra**	**15.81**	**21**	⇓P	**Pn**	**03 20 47.1**	**-2.8**
	comp=Z,49nm,0.8s						
WMQ	**Urumqi**	**15.85**	**56**	P	**P**	**03 20 51.3**	**+0.4**
WMQ				sP	sP	03 21 32.3	-7.3
WMQ				S	**S**	**03 23 44.8**	**-2.1**
WMQ				pmax	pmax		
	comp=Z,25nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,130nm,3.6s						
WMQ				LR	LR		
	comp=Z,190nm,6.8s						
WMQ				LR	LR		
	comp=Z,220nm,7.4s						
WMQ				LR	LR		
	comp=Z,250nm,10.2s						
KURK	**Kurchatov**	**15.92**	**21**	⇑P	**Pn**	**03 20 49.1**	**-2.2**
	comp=Z,44nm,0.8s						
KURK	**Kurchatov**	**15.92**	**21**	*ce*P	**Pn**	**03 20 49.0**	**-2.2**
KURK				pmax	pmax		
	comp=Z,44nm,0.8s						
KURK	**Kurchatov**	**15.92**	**21**	P	**Pn**	**03 20 48.0**	**-3.2**
PKIN	**Phulchoki**	**15.97**	**118**	*e*P	**P**	**03 20 52.6**	**0.0**
	comp=Z,103nm,0.3s						
PKIN				*e*S	**S**	**03 23 41.0**	**-8.9**
WSAR	**Wadi Sarin**	**15.99**	**219**	LR	LR	03 28 47.7	
	comp=Z,41nm,20.0s,baz=64,slow=43						
UOSS	**Minazif**	**16.02**	**229**	*e*Pn	**P**	**03 20 53.6**	**+0.7**
	comp=Z,13nm,0.8s						
GUN	**Gumba**	**16.13**	**116**	*e*P	**P**	**03 20 55.1**	**+0.7**
	comp=Z,832nm,0.8s						
GUN				*e*S	**S**	**03 23 45.6**	**-7.7**
AKTO	**Aktyubinsk**	**16.48**	**333**	P	**P**	**03 20 57.1**	**-0.5**
	comp=Z,4.8nm,0.3s,baz=142,slow=12,SNR=70						
AKTO				S	**S**	**03 23 52.9**	**-7.3**
	comp=Z,1.1nm,0.3s,baz=223,slow=20,SNR=6.4						
AKTO	**Aktyubinsk**	**16.48**	**333**	⇑P	**P**	**03 20 56.8**	**-0.9**
	comp=Z,96nm,1.5s						
AKTO				⇑S	**S**	**03 23 51.9**	**-8.3**
	comp=Z,72nm,1.1s						
JIRN	**Jiri**	**16.50**	**116**	*e*P	**Pn**	**03 20 59.0**	**+0.2**
JIRN				*e*S	**S**	**03 23 54.2**	**-7.4**
BVA0	**Borovoye Array**	**16.84**	**2**	P	**P**	**03 21 00.9**	**-0.7**
	comp=Z,23nm,0.6s,baz=171,slow=12,SNR=141						
BVA0	**Borovoye Array**	**16.84**	**2**	P	**P**	**03 21 00.9**	**-0.7**
BVA0				pmax	pmax		
	comp=Z,23nm,0.6s						
BVAR	**Borovoye Array**	**16.84**	**2**	P	**P**	**03 21 01.1**	**-0.5**
	comp=Z,9.0nm,0.3s,baz=170,slow=12,SNR=97						
BVAR				S	**S**	**03 24 02.7**	**-5.6**
	comp=Z,1.0nm,0.3s,baz=176,slow=24,SNR=3.0						
BRVK	**Borovoye**	**16.87**	**2**	⇑P	**P**	**03 21 01.2**	**-0.6**
	comp=Z,46nm,0.8s						
BRVK	**Borovoye**	**16.87**	**2**	*e*P	**P**	**03 21 01.3**	**-0.6**
BRVK	**Borovoye**	**16.87**	**2**	*e*P	**P**	**03 21 01.4**	**-0.5**
	comp=Z,43nm,0.6s						
BRVK				*e*S	**S**	**03 24 03.9**	**-5.1**
NGP	**Nagpur**	**17.15**	**148**	*e*P	**Pn**	**03 21 07.4**	**+1.1**
RAMN	**Ramite**	**17.21**	**118**	*e*P	**Pn**	**03 21 07.1**	**-0.1**
	comp=Z,281nm,0.7s						
BOK	**Bokaro**	**18.77**	**127**	*e*P	**Pn**	**03 21 24.4**	**-1.0**
LSA	**Lhasa**	**19.25**	**103**	*e*P	**Pn**	**03 21 31.6**	**+0.1**
LSA				pmax	pmax		
	comp=Z,60nm,0.9s						
LSA	**Lhasa**	**19.25**	**103**	*e*P	**Pn**	**03 21 31.6**	**+0.1**
	comp=Z,60nm,0.9s						
DGRG	**David-gareji**	**19.51**	**293**	P	**Pn**	**03 21 33.2**	**-0.7**
DGRG	**David-gareji**	**19.51**	**293**	P	**Pn**	**03 21 33.2**	**-0.7**
GNI	**Garni**	**19.86**	**289**	P	**Pn**	**03 21 37.3**	**-0.9**
	comp=Z,2.3nm,0.3s,baz=80,slow=2.9,SNR=35						
GNI	**Garni**	**19.86**	**289**	*e*P	**Pn**	**03 21 37.4**	**-0.8**
GNI	**Garni**	**19.86**	**289**	*e*P	**Pn**	**03 21 37.1**	**-1.1**
	comp=Z,81nm,0.9s						
TBLG	**Delisi**	**20.02**	**294**	P	**P**	**03 21 37.5**	**+1.2**
TBLG	**Delisi**	**20.02**	**294**	P	**P**	**03 21 37.5**	**+1.2**
GUDG	**Gudauri**	**20.32**	**296**	P	Pn	03 21 42.1	-1.7
HYB	**Hyderabad**	**20.35**	**154**	*i* P	**P**	**03 21 42.0**	**+2.0**
HYB				*e*S	**S**	**03 25 20.0**	**+0.9**
ZAA0	**Zalesovo Array**	**20.70**	**26**	*e*P	**P**	**03 21 43.4**	**0.0**
ZAA0				*e*PcP	**PcP**	**03 25 43.8**	**-2.2**
ZALV	**Zalesovo Be

CD2 pmax pmax
comp=Z,120nm,5.2s
BR231 Keskin MP Arra 29.05 288 *e*P **P** **03 22 56.8 -4.3**
BR231 *e*pP **pP** **03 23 32.5 -3.0**
OBN Obninsk 29.40 320 P **P** **03 23 04.2 +0.4**
comp=Z,22nm,0.4s,baz=49,slow=1.5,SNR=10.0
OBN LR LR 03 37 30.1
comp=Z,41nm,19.6s,baz=90,slow=41
OBN Obninsk 29.40 320*ce*P **P** **03 23 04.2 +0.4**
OBN *i* *PP **pP** **03 23 34.7 -3.6**
OBN *i* 03 23 57.7
OBN pmax pmax
comp=Z,31nm,1.5s
OBN Obninsk 29.40 320 *e*P **P** **03 23 03.2 -0.6**
comp=Z,23nm,0.5s
SONM Songino Array 29.49 55 P **P** **03 23 06.3 +1.3**
comp=Z,2.9nm,0.8s,baz=259,slow=9.9,SNR=12
SONM pP **pP** **03 23 44.0 +4.6**
comp=Z,2.0nm,0.8s,baz=254,slow=11,SNR=3.5
SONA1 Songino Array 29.50 55 *e*P **P** **03 23 07.2 +2.1**
KMI Kunming 30.49 102 P **P** **03 23 16.3 +2.1**
KMI pmax pmax
comp=Z,20nm,0.6s
KMI pmax pmax
comp=Z,120nm,7.2s
PALK Pallekele 30.55 158 LR LR 03 35 58.7
comp=Z,103nm,18.2s,baz=296,slow=37
KLMR Klimovskoe 31.17 332 *e*P **P** **03 23 17.7 -1.7**
KLMR *e**PP **pP** **03 23 54.9 +0.9**
KLMR *e* 03 26 08.6
KLMR pmax pmax
comp=Z,17nm,1.1s
CMAR Chiang Mai Arr 31.37 116 P **P** **03 23 23.0 +1.3**
comp=Z,4.0nm,0.7s,baz=276,slow=7.2,SNR=23
CMAR pP **pP** **03 23 59.5 +3.2**
comp=Z,0.9nm,0.3s,baz=316,slow=8.9,SNR=1.4
CMAR ScP **ScP** **03 29 38.1 -0.7**
comp=Z,0.4nm,0.3s,baz=278,slow=4.1,SNR=4.8
CMAR Chiang Mai Arr 31.37 116*ce*P **P** **03 23 24.1 +2.4**
CMAR pmax pmax
comp=Z,3.0nm,0.5s
AKASG Malin Array Be 32.21 310 P **P** **03 23 28.3 -0.3**
comp=Z,6.0nm,0.5s,baz=83,slow=8.1,SNR=7.3
AKASG pP **pP** **03 24 04.4 +1.1**
comp=Z,8.9nm,0.8s,baz=92,slow=5.4,SNR=3.9
AKBB Malin Array Si 32.21 310 *e*P **P** **03 23 28.5 -0.1**
AKBB *e**PP **pP** **03 24 06.9 +3.6**
AKBB pmax pmax
comp=Z,8.0nm,0.6s
AKBB Malin Array Si 32.21 310 *e*P **P** **03 23 28.5 -0.1**
comp=Z,8.2nm,0.6s
AKBB *ep*P **pP** **03 24 06.9 +3.6**
KIEV Kiev 32.22 309 *e*P **P** **03 23 28.4 -0.3**
KIEV *e**PP **pP** **03 24 05.5 +2.2**
KIEV pmax pmax
comp=Z,8.0nm,0.6s
KIEV Kiev 32.22 309 *e*P **P** **03 23 28.4 -0.3**
comp=Z,8.0nm,0.6s
KIEV *ep*P **pP** **03 24 05.5 +2.2**
HARR Harsova 32.48 298⇑ *i*P pP 03 24 02.4 -3.3
HHC Hu-ho-hao-te 32.98 69 *e*P **P** **03 23 36.0 +0.3**
HHC pmax pmax
comp=Z,16nm,0.6s
HHC pmax pmax
comp=Z,89nm,4.6s
GYA Guiyang 33.01 97 *e*P **P** **03 23 36.8 +0.8**
GYA pP pP 03 24 12.5 +1.7
GYA sP sP 03 24 33.0 +3.3
GYA PP **PP** **03 24 53.3 -0.7**
GYA S **S** **03 28 41.8 -0.6**
GYA sS ScP 03 29 45.0 +0.5
GYA pmax pmax
comp=Z,10.0nm,0.8s
PLOR Plostina 33.40 300⇓ *i*P **P** **03 23 40.8 +1.7**
ISR Istrita 33.47 299⇑ *i*P **P** **03 23 41.5 +1.8**
MICGM Minsk 33.88 316 *e* **P** **03 23 43.0 -0.1**
MNK Minsk 33.88 316 *e*P **P** **03 23 43.0 -0.1**
MLR Muntele Rosu 33.89 300 P **P** **03 23 44.6 +1.2**
comp=Z,3.5nm,0.8s,baz=107,slow=2.1,SNR=24
MLR pP **pP** **03 24 20.6 +2.3**
comp=Z,1.9nm,0.9s,baz=202,slow=11,SNR=3.3
MLR Muntele Rosu 33.89 300⇑ *i*P **P** **03 23 45.4 +2.0**
DOPR Dopca 34.28 300⇑ *i*P **P** **03 23 48.1 +1.4**
BURAR Bucovina Array 34.45 303⇑ *i*P **P** **03 23 48.7 +0.5**
BUR08 Bucovina Ar. S 34.46 303 *e*P **P** **03 23 49.0 +0.7**
NRIK Noril'sk 34.65 11 P **P** **03 23 50.6 +1.1**
comp=Z,19nm,0.7s,baz=196,slow=5.6,SNR=15
ARR Arges 34.81 299⇑ *i*P **P** **03 23 52.2 +0.9**
LVV L'vov 35.39 307 *e*P **P** **03 23 56.3 +0.2**
LOT Lotru 35.42 300⇑ *i*P **P** **03 23 58.2 +1.6**
LAST Lasithi 35.56 282 *e*P **P** **03 23 58.2 +0.3**
comp=Z,15nm,1.3s
IDI Anoyia 36.00 282 P **P** **03 24 00.7 -0.8**
comp=Z,2.3nm,0.7s,baz=44,slow=13,SNR=5.0
DRGR 36.14 302⇑ *i*P **P** **03 24 03.6 +1.0**
KWP Kalwaria Pacla 36.23 307 *e*P **P** **03 24 04.2 +0.9**
KWP Kalwaria Pacla 36.23 307 *e*P **P** **03 24 04.2 +0.9**
UZH Uzhgorod 36.45 305⇑ *i*P **P** **03 24 06.1 +1.0**
UZH *i* 03 24 58.5
SIRR Siria 36.87 301⇓ *i*P **P** **03 24 09.9 +1.1**
MDVR Moldovita 36.90 299⇑ *i*P **P** **03 24 09.8 +0.7**
BZS Buzias 36.93 300⇑ *i*P **P** **03 24 07.8 -1.4**
FIA1 FINESS Array S 37.07 327 *e*P **P** **03 24 10.4 +0.2**
FINES FINESS Array B 37.08 327 P **P** **03 24 10.3 +0.1**
comp=Z,4.3nm,0.5s,baz=120,slow=9.6,SNR=44
FINES pP **pP** **03 24 46.5 +1.0**
comp=Z,3.8nm,0.8s,baz=114,slow=13,SNR=3.2
FINES LR LR 03 39 43.0
comp=Z,31nm,18.2s,baz=108,slow=36
STHS Stebnicka Huta 37.17 306 *e*P **P** **03 24 11.8 +0.6**
STHS pmax pmax
comp=Z,2.0nm,0.8s
STHS Stebnicka Huta 37.17 306 *e*P **P** **03 24 11.8 +0.6**
STHS *ep*P **pP** **03 25 40.4 +1.1**
APA Apatity 37.47 338⇑ *i*P P 03 24 00.2 -13
APA MLR MLR
comp=Z,200nm,12.0s
KECS Kecovo 37.65 305 *e*P **P** **03 24 15.5 +0.3**
KECS pmax pmax
comp=Z,2.0nm,0.9s
KECS Kecovo 37.65 305 *e*P **P** **03 24 15.5 +0.3**
KECS *es*P **sP** **03 25 12.3 +2.9**
NIE Niedzica 37.79 306 *e*P **P** **03 24 17.8 +1.4**
NIE Niedzica 37.79 306 *e*P **P** **03 24 17.8 +1.4**
PSZ Piszkesteto 38.05 304⇓ *i*P **P** **03 24 19.9 +1.2**
OJC Ojcow 38.14 307 *e*P **P** **03 24 19.9 +0.5**
OJC Ojcow 38.14 307 *e*P **P** **03 24 19.8 +0.5**
OJC pmax pmax
comp=Z,39nm,1.6s
OJC Ojcow 38.14 307 *e*P **P** **03 24 19.8 +0.5**
comp=Z,39nm,1.6s
LANS Liptovska Anna 38.33 306 *e*P **P** **03 24 22.6 +1.6**
LANS *es*P 03 25 14.9
LANS Liptovska Anna 38.33 306 *e*P **P** **03 24 22.6 +1.6**
LANS *es*P **sP** **03 25 14.9 -0.3**
VYHS Vyhne 38.75 305 *e*P **P** **03 24 25.2 +0.8**
VYHS pmax pmax
comp=Z,5.0nm,1.5s
VYHS Vyhne 38.75 305 *e*P **P** **03 24 25.2 +0.8**
VYHS *es*P **sP** **03 25 17.5 -1.2**
MORC Moravsky Berou 39.59 307⇑ *i*P **P** **03 24 32.6 +1.2**
MORC Moravsky Berou 39.59 307 *e*P **P** **03 24 32.4 +1.0**
MORC pmax pmax
comp=Z,58nm,1.4s
MORC Moravsky Berou 39.59 307 *e*P **P** **03 24 32.4 +1.0**
comp=Z,58nm,1.4s
GKP Gorka Klasztor 39.89 312 *e*P **P** **03 24 34.4 +0.7**
GKP Gorka Klasztor 39.89 312 *e*P **P** **03 24 34.4 +0.7**
KRLC Kraliky 40.08 307 *e*P **P** **03 24 36.4 +1.0**
KRLC Kraliky 40.08 307 *e*P **P** **03 24 36.4 +1.0**
VRAC Vranov 40.21 306 P **P** **03 24 36.2 -0.3**
comp=Z,4.7nm,0.8s,baz=86,slow=8.7,SNR=11
DPC Dobruska-Polom 40.37 308 *e*P **P** **03 24 38.9 +1.0**
DPC *ep*P **pP** **03 25 16.5 +2.9**
DPC *es*P **sP** **03 25 32.2 -0.2**
DPC Dobruska-Polom 40.37 308 *e*P **P** **03 24 38.9 +1.0**
DPC *e**PP **pP** **03 25 16.5 +2.9**
DPC *e* 03 25 32.2
UPC Upice 40.57 308 *e*P **P** **03 24 40.4 +1.0**
UPC *es*P **sP** **03 25 33.5 -0.4**
UPC Upice 40.57 308 *e*P **P** **03 24 40.4 +1.0**
UPC *e* 03 25 33.5
KOGS Kog 40.60 302 *i*P **P** **03 24 40.3 +0.6**
CONA Conrad Observa 40.76 304 *i*P **P** **03 24 41.7 +0.6**
comp=Z,15nm,1.2s,SNR=13
TREC Trest 40.93 306 *e*P **P** **03 24 43.4 +0.9**
TREC Trest 40.93 306 *e*P **P** **03 24 43.4 +0.9**
ARA0 ARCESS Array S 40.97 338 *e*P **P** **03 24 42.9 +0.4**
ARCES ARCESS Array B 40.97 338 P **P** **03 24 42.7 +0.2**
comp=Z,7.9nm,0.5s,baz=126,slow=8.0,SNR=37
ARE0 ARCESS Array S 40.97 338⇑ *i*P **P** **03 24 42.9 +0.4**
ARE0 IAmb IAmb 03 24 43.6
comp=Z,69nm,1.7s
ARE0 ARCESS Array S 40.97 338 *e*P **P** **03 24 43.0 +0.6**
comp=Z,56nm,1.6s
HEF Hetta 41.00 336 *e*P **P** **03 24 43.0 +0.3**
ARSA Arzberg 41.03 303 *i*P **P** **03 24 44.2 +0.9**
comp=Z,5.3nm,1.2s
PERS Pernice 41.36 302 *i*P **P** **03 24 46.7 +0.7**
GOPC GO Pecny, Ondr 41.37 307 *e*P **P** **03 24 46.9 +0.9**
GOPC GO Pecny, Ondr 41.37 307 *e*P **P** **03 24 46.9 +0.9**
BSD Bornholm Skovb 41.37 315 *i*P **P** **03 24 44.8 -1.1**
comp=Z,11nm,0.9s
BSD Bornholm Skovb 41.37 315 *i*P **P** **03 24 44.8 -1.1**
BSD pmax pmax
comp=Z,11nm,0.9s
BOJS Bojanci 41.39 300 *i*P **P** **03 24 46.8 +0.6**
SOKA Soboth 41.42 302 *i*P **P** **03 24 47.4 +0.8**
comp=Z,9.0nm,0.9s,SNR=12
PRU Pruhonice 41.52 307 *e*P **P** **03 24 48.4 +1.2**
PRU *es*P **sP** **03 25 41.5 -0.3**
PRU Pruhonice 41.52 307 *e*P **P** **03 24 48.4 +1.2**
PRU *e* 03 25 41.5
OBKA Obir 41.77 302 *i*P **P** **03 24 49.0 -0.4**
comp=Z,8.7nm,1.6s
MOA Molln 41.83 304 *i*P **P** **03 24 50.2 +0.4**
comp=Z,10nm,1.2s,SNR=6.2
LJU Ljubljana 41.83 301 *i*P **P** **03 24 50.8 +0.9**
BRG Berggiesshubel 41.88 308 *i*P **P** **03 24 50.8 +0.7**
comp=Z,9.4nm,0.8s
BRG *ep*P **pP** **03 25 28.7 +2.6**
comp=Z,3.7nm,0.8s
BRG *i* sP **sP** **03 25 43.6 -1.1**
comp=Z,4.6nm,0.8s
BRG *e*PP **PP** **03 26 31.3 +1.1**
comp=N,110nm,18.8s
comp=E,109nm,22.5s
comp=Z,238nm,24.4s
BRG Berggiesshubel 41.88 308 *i*P **P** **03 24 50.8 +0.7**
BRG *e**PP **pP** **03 25 28.7 +2.6**
BRG *i* *SP **sP** **03 25 43.6 -1.1**
BRG *e* 03 26 31.3
BRG pmax pmax
comp=Z,9.0nm,0.8s
BRG MLR MLR
comp=N,110nm,18.8s
BRG MLR MLR
comp=E,109nm,22.5s
BRG MLR MLR
comp=Z,238nm,24.4s
CUC Castrocucco 41.91 292 *e*P **P** **03 24 51.4 +0.9**
comp=Z,9.7nm,0.8s
HAMF Hammerfest 42.08 339⇑ *i*P **P** **03 24 52.2 +0.8**
HAMF IAmb IAmb 03 24 52.5
comp=Z,33nm,0.9s
GEC2 GERESS Array S 42.13 305 *e*P **P** **03 24 53.2 +0.9**
GEC2 pmax pmax
comp=Z,12nm,1.5s
GEC2 GERESS Array S 42.13 305 *e*P **P** **03 24 53.1 +0.9**
comp=Z,12nm,1.5s
GERES GERESS Array B 42.13 305 P **P** **03 24 52.5 +0.1**
comp=Z,1.0nm,0.7s,baz=96,slow=8.2,SNR=13
GERES pP **pP** **03 25 28.5 +0.1**
comp=Z,0.8nm,0.7s,baz=92,slow=8.3,SNR=3.2
GEA0 GERESS Array S 42.13 305 *e*P **P** **03 24 52.5 +0.2**
KHC Kasperske Hory 42.19 306 *e*P **P** **03 24 53.4 +0.7**
KHC Kasperske Hory 42.19 306 *e*P **P** **03 24 53.4 +0.7**
KIF Kilpisjarvi 42.20 336 *e*P **P** **03 24 51.9 -0.5**
RGN Rugen 42.27 314 *e*P **P** **03 24 53.6 +0.5**
comp=Z,99nm,1.6s
RGN *ep*P **pP** **03 25 32.7 +3.5**
MYKA Terra Mystica 42.38 302 *i*P **P** **03 24 54.9 +0.6**
comp=Z,1.9nm,0.5s
CLL Collm 42.45 309 *i*P **P** **03 24 54.8 +0.1**
comp=Z,6.0nm,1.0s
CLL *ep*P **pP** **03 25 29.0 -1.8**
CLL *es*P **sP** **03 25 48.0 -1.5**
CLL *e**PP **PcP** **03 26 43.0 -1.5**
CLL *eSS SS 03 34 18.0 -1.4
CLL *eSSSS 03 36 48.0
CLL Collm 42.45 309 *i*P **P** **03 24 54.8 +0.1**
CLL *e**PP **pP** **03 25 29.0 -1.8**
CLL *e*SP **sP** **03 25 48.0 -1.5**
CLL pmax pmax
comp=Z,6.0nm,1.0s
CLL Collm 42.45 309 *e*P **P** **03 24 54.6 -0.1**
comp=Z,11nm,1.4s
KBA Koelnbreinsper 42.53 303 *i*P **P** **03 24 56.3 +0.7**
comp=Z,8.5nm,1.3s
PSI Prapat 42.91 134 P **P** **03 24 59.7 +0.7**
comp=Z,5.8nm,0.5s,baz=345,slow=12,SNR=4.9
PSI pP **pP** **03 25 38.0 +2.8**
comp=Z,11nm,0.6s,baz=288,slow=4.4,SNR=3.9
PSI Prapat 42.91 134 *e*P **P** **03 25 00.6 +1.6**
PSI *e**PP **pP** **03 25 38.0 +2.8**
PSI Prapat 42.91 134 *e*P **P** **03 25 00.6 +1.6**
PSI pP **pP** **03 25 38.0 +2.8**
LLD Lille Linde 42.93 315 *i*P **P** **03 24 59.4 +0.9**
LLD Lille Linde 42.93 315 *i*P **P** **03 24 59.4 +0.9**
TRO Tromso 43.07 337⇑ *i*P **P** **03 25 00.0 +0.6**
TRO IAmb IAmb 03 25 00.5
comp=Z,58nm,1.6s
ABTA Abfaltersbach 43.13 302 *i*P **P** **03 25 00.3 -0.1**
comp=Z,2.4nm,1.0s
WTTA Wattenberg 43.66 303 *i*P **P** **03 25 05.4 +0.7**
comp=Z,2.8nm,0.5s
NC405 NORSAR Array S 43.67 323 *e*P **P** **03 25 04.2 -0.2**
GRFO Grafenberg 43.69 307 *e*P **P** **03 25 05.8 +1.1**
GRFO pmax pmax
comp=Z,23nm,1.2s
GRFO Grafenberg 43.69 307 *e*P **P** **03 25 05.8 +1.1**
comp=Z,23nm,1.2s
WATA Walderalm 43.70 303 *i*P **P** **03 25 04.6 -0.3**
comp=Z,2.6nm,0.4s
NC602 NORSAR Array S 43.71 323⇑ *i*P **P** **03 25 04.0 -0.7**
NC602 IAmb IAmb 03 25 04.3
comp=Z,28nm,1.6s
NC602 NORSAR Array S 43.71 323 *e*P **P** **03 25 04.1 -0.6**
STEI Steigen 43.71 334 *e*P **P** **03 25 04.7 +0.2**
NC303 NORSAR Array S 43.85 324 *e*P **P** **03 25 05.8 0.0**
NB201 NORSAR Array S 43.87 323 *e*P **P** **03 25 05.6 -0.4**
NB2 NORSAR Subarra 43.91 323 P **P** **03 25 05.4 -0.9**
comp=Z,8.8nm,0.5s,baz=99,slow=8.6
NB2 NORSAR Subarra 43.91 323 P **P** **03 25 05.4 -0.9**
baz=99,slow=8.6
NOA NORSAR Array B 43.91 323 P **P** **03 25 05.7 -0.6**
comp=Z,10nm,0.6s,baz=98,slow=8.0,SNR=67
NOA pP **pP** **03 25 38.2 -4.4**
comp=Z,1.1nm,0.4s,baz=99,slow=7.9,SNR=1.7
MOTA Moosalm 44.01 304 *i*P **P** **03 25 06.9 -0.6**
comp=Z,1.4nm,0.5s
OSL Oslo 44.03 322 *e*P **P** **03 25 06.4 -0.8**
NBO02 NORSAR Array S 44.08 323 *e*P **P** **03 25 07.0 -0.6**
NBO00 NORSAR Array S 44.12 323 *e*P **P** **03 25 07.5 -0.5**
NC204 NORSAR Array S 44.15 324 *e*P **P** **03 25 07.5 -0.8**
RETA Reutte 44.23 304 *i*P **P** **03 25 09.0 -0.1**
comp=Z,2.9nm,0.7s
FETA Feichten 44.31 303 *i*P **P** **03 25 09.0 -0.9**
comp=Z,5.8nm,1.1s
LOF Lofoten 44.38 334 *e*P **P** **03 25 09.6 -0.3**
KONO Kongsberg 44.57 321 *e*P **P** **03 25 11.1 -0.4**
KONO IAmb IAmb 03 25 11.8
comp=Z,0.9nm,0.7s
DAVA Damuels 44.85 304 *i*P **P** **03 25 14.0 -0.2**
comp=Z,7.5nm,0.6s,SNR=8.1
YAK Yakutsk 44.90 35 P **P** **03 25 14.5 +0.4**
comp=Z,20nm,0.4s,baz=89,slow=0.4,SNR=5.1
YAK Yakutsk 44.90 35 *e*P **P** **03 25 14.2 +0.1**
YAK *e**PP **pP** **03 25 49.6 -0.9**
YAK *e* 03 26 52.9
YAK *e* 03 27 01.2
YAK *ePPP PPP 03 27 47.3
YAK *eS **S** **03 31 39.7 +0.6**
YAK *e**SS **sS** **03 32 41.8 -0.8**
YAK *e* 03 34 54.8
YAK pmax pmax
comp=Z,23nm,0.9s
YAK pmax pmax
comp=E,6.0nm,1.1s
YAK pmax pmax
comp=Z,88nm,3.3s
YAK pmax pmax
comp=N,43nm,3.9s
YAK pmax pmax
comp=E,40nm,3.0s
YAK smax smax
comp=N,18nm,1.4s
YAK smax smax
comp=E,13nm,1.5s
DAVOX Davos/Dischmat 44.92 303 P **P** **03 25 14.2 -0.5**
comp=E,2.4nm,0.5s,baz=118,slow=4.6,SNR=11
DOMB Dombas 45.05 325 *e*P **P** **03 25 15.7 +0.4**
DOMB *ep*P **pP** **03 25 55.0 +3.2**
HOMB Homborsund 45.06 319 *e*P **P** **03 25 15.4 -0.1**
BJO Bjornoya 45.16 343 *e*P **P** **03 25 16.9 +0.9**
BFO Black Forest 45.73 305*ce*P **P** **03 25 21.7 +0.8**
MOL Molde 45.80 325 *e*P **P** **03 25 21.5 +0.4**
AKN Aaknes 46.02 325 *e*P **P** **03 25 24.1 +1.2**
ODD1 Odda 46.09 321 *e*P **P** **03 25 24.1 +0.6**
BLS5 Blasjo 46.16 321 *e*P **P** **03 25 24.7 +0.6**
KLR Kul'dur 46.28 53 P **P** **03 25 26.0 +0.9**
comp=E,5.2nm,0.6s,baz=282,slow=7.6,SNR=21
TIXI Tiksi 46.50 22 P **P** **03 25 26.2 -0.3**
comp=E,21nm,0.7s,baz=268,slow=4.0,SNR=8.1
TIXI Tiksi 46.50 22 *e*P **P** **03 25 26.1 -0.4**
comp=E,25nm,0.8s
BER Bergen 46.74 322 *e*P **P** **03 25 28.8 +0.3**
SENIN Lac Senin/Sane 46.75 303 *e*P **P** **03 25 28.9 -0.2**
comp=E,4.7nm,0.8s
ASK Askoy 46.81 322 *e*P **P** **03 25 29.0 -0.1**
MEM Memba ch 46.92 309 P **P** **03 25 30.9 +0.8**
comp=Z,5.8nm,1.2s
WLF Walferdange 46.96 307 P **P** **03 25 31.7 +1.3**
comp=Z,7.9nm,1.3s
HSPB Hornsund (broa 47.13 346 *e*P **P** **03 25 31.9 +0.7**
USRK Ussuriysk Ar. 47.36 60 P **P** **03 25 33.9 +0.4**
comp=Z,2.0nm,0.7s,baz=322,slow=4.4,SNR=3.8
SPA0 Spitsbergen Ar 47.52 347⇑ *i*P **P** **03 25 35.3 +1.0**
SPA0 IAmb IAmb 03 25 35.4
comp=Z,18nm,0.8s
SPA0 *es*P **sP** **03 26 32.4 +2.8**
SPA0 Spitsbergen Ar 47.52 347 *e*P **P** **03 25 35.8 +1.4**
KEST Kesra 48.00 288 P **P** **03 25 39.4 +0.7**
comp=Z,4.9nm,0.7s,baz=30,slow=6.9,SNR=11
KEST pP **pP** **03 26 17.2 +1.6**
comp=Z,5.2nm,0.9s,baz=254,slow=1.5,SNR=2.9
SNF Seneffe 48.02 309 P **P** **03 25 39.9 +1.4**
KBS Kingsbay 48.64 347 *e*P **P** **03 25 43.8 +0.9**
KBS IAmb IAmb 03 25 44.5
comp=Z,56nm,0.8s
KBS *ep*P **pP** **03 26 21.5 +1.6**
KBS Kingsbay 48.64 347 *e*P **P** **03 25 44.3 +1.4**
KBS pmax pmax
comp=Z,36nm,0.8s
KBS Kingsbay 48.64 347 *e*P **P** **03 25 44.3 +1.4**
comp=Z,36nm,0.8s
NKL Nikolayevsk 51.19 47 P **P** **03 26 02.0 -0.4**
YSS Yuzh-Sakhalins 53.97 54⇓ *e*P **P** **03 26 24.0 +1.0**
YSS *e* 03 27 03.3
YSS pmax pmax
comp=Z,30nm,0.6s
DAG Danmarks Havn 54.68 344⇑ *i*P **P** **03 26 28.1 +0.4**
comp=Z,13nm,0.8s
DAG Danmarks Havn 54.68 344⇑ *i*P **P** **03 26 28.1 +0.4**
DAG pmax pmax
comp=Z,10.0nm,0.8s
SEY Seymchan 55.33 33 P **P** **03 26 33.1 +0.7**
comp=Z,6.3nm,0.6s,baz=281,slow=8.4,SNR=15
SEY pP **pP** **03 27 12.7 +2.4**
comp=Z,1.9nm,0.4s,baz=251,slow=6.4,SNR=2.8
ERM Erimo 55.81 60 *e*P **P** **03 26 37.0 +0.7**
ERM Erimo 55.81 60 *e*P **P** **03 26 37.0 +0.7**
TAM Tamanrasset 56.38 275 *e*P **P** **03 26 40.8 0.0**
TAM Tamanrasset 56.38 275 *e*P **P** **03 26 40.8 0.0**
comp=Z,0.5nm,0.3s
ES19 SONSECA Array 56.48 298 *e*P **P** **03 26 41.4 +0.2**
ES19 *ep*P **pP** **03 27 20.6 +1.4**
ESDC Sonseca Array 56.54 298 P **P** **03 26 41.2 -0.4**
comp=Z,1.3nm,0.6s,baz=58,slow=7.8,SNR=19
ESDC pP **pP** **03 27 14.0 -5.6**
comp=Z,0.9nm,0.7s,baz=61,slow=8.0,SNR=2.9
BILL Bilibino 59.40 26 *e*P **P** **03 27 02.1 +1.2**
BILL *i* *PP **pP** **03 27 40.2 +0.9**
BILL *i* 03 27 49.1
BILL pmax pmax
comp=Z,6.0nm,1.0s
SUMG Summit 60.96 341 *i*P **P** **03 27 12.1 +0.2**
comp=Z,14nm,1.1s
SUMG Summit 60.96 341 *i*P **P** **03 27 12.1 +0.2**
SUMG pmax pmax
comp=Z,14nm,1.1s
SUMG Summit 60.96 341 *e*P **P** **03 27 13.0 +1.1**
comp=Z,11nm,0.9s
TORD Torodi Ar. Bea 64.52 268 P **P** **03 27 34.3 -1.5**
comp=Z,2.4nm,0.6s,baz=48,slow=5.7,SNR=90
TORD pP **pP** **03 28 13.5 -1.3**
comp=Z,6.7nm,0.7s,baz=48,slow=6.0,SNR=12
COLD Coldfoot 72.58 15 *e*P **P** **03 28 25.2 +0.2**
comp=Z,7.0nm,0.8s
COLD *ep*P **pP** **03 29 02.7 -2.1**
DBIC Dimbokro 73.49 266 pP pP 03 29 10.4 -0.7
comp=Z,3.1nm,0.7s,baz=70,slow=6.6,SNR=2.6
KIC Kosan Boka 73.58 266 *e*P **P** **03 28 46.5 +1.0**
comp=Z,32nm,1.1s
TIC Toumodi 73.64 266 *e*P pP 03 29 10.7 -1.3
LIC Lamto 73.89 266 *e*P pP 03 29 12.0 -1.5
comp=Z,19nm,0.6s
FYU Fort Yukon 74.15 14 *e*P **P** **03 28 36.0 +1.8**
MLY Manley 74.31 17 *e*P **P** **03 28 36.0 +0.8**
INK Inuvik 74.39 9 P **P** **03 28 36.3 +0.8**
comp=Z,4.4nm,0.5s,baz=353,slow=5.9,SNR=14
INK pP **pP** **03 29 18.1 +2.6**
comp=Z,5.1nm,0.9s,baz=11,slow=8.4,SNR=3.9
INK Inuvik 74.39 9 *e*P **P** **03 28 36.4 +0.8**
comp=Z,4.0nm,0.5s
INK *ep*P **pP** **03 29 17.8 +2.3**
INK pP **pP** **03 29 18.1 +2.6**
TTA Tatalina 74.71 20 *e*P **P** **03 28 38.0 +0.4**
TTA pmax pmax
comp=Z,3.0nm,0.8s
TTA Tatalina 74.71 20 *e*P **P** **03 28 38.0 +0.4**
comp=Z,3.1nm,0.8s
TT01 Tatalina 74.73 20 *e*P **P** **03 28 38.2 +0.6**
TT01 *ep*P **pP** **03 29 20.5 +2.9**
MDM Murphy Dome 74.94 16 *e*P **P** **03 28 39.6 +0.8**
comp=Z,10nm,0.9s
MDM *ep*P **pP** **03 29 21.5 +2.7**
BPAW Bear Paw Mtn. 75.04 17 *e*P **P** **03 28 39.5 +0.1**
comp=Z,0.8nm,0.7s
BPAW *ep*P **pP** **03 29 20.1 +0.7**
COLA College 75.09 16 *e*P **P** **03 28 40.2 +0.6**
COLA *e**PP **pP** **03 29 20.9 +1.2**
COLA pmax pmax
comp=Z,15nm,0.8s
COLA College 75.09 16 *e*P **P** **03 28 40.2 +0.6**
comp=Z,15nm,0.8s
COLA *ep*P **pP** **03 29 20.9 +1.2**
CCB Clear Creek Bu 75.30 16 *e*P **P** **03 28 41.0 +0.2**
CAST Castle Rocks 75.34 18 *e*P **P** **03 28 41.4 +0.3**
IL1 Eielson Array 75.39 15 *e*P **P** **03 28 40.7 -0.7**
IL1 *ep*P **pP** **03 29 21.2 +0.3**
WRH Wood River Hil 75.39 16 *e*P **P** **03 28 41.4 +0.1**
ILAR Eielson Array 75.39 15 P **P** **03 28 41.5 +0.1**
comp=Z,3.5nm,0.9s,baz=315,slow=4.6,SNR=45
ILAR pP **pP** **03 29 21.9 +0.4**
comp=Z,3.5nm,1.0s,baz=320,slow=4.2,SNR=6.7
ILB Eielson Array 75.39 15 *e*P **P** **03 28 41.3 0.0**
KTH Kantishna Hill 75.52 17 *e*P **P** **03 28 42.0 -0.2**
comp=Z,9.9nm,1.0s
KTH *ep*P **pP** **03 29 22.9 +0.6**
FITZ Fitzroy Crossi 75.68 125 P **P** **03 28 43.9 +0.2**
comp=Z,0.8nm,0.5s,baz=338,slow=5.4,SNR=3.4
FITZ pP **pP** **03 29 24.9 +1.1**
comp=Z,8.5nm,1.1s,baz=0.6,slow=1.7,SNR=6.3
PPLA Purkeypile 75.75 18 *e*P **P** **03 28 43.2 -0.4**
comp=Z,6.4nm,0.7s
PPLA *ep*P **pP** **03 29 25.3 +1.6**
TRF Thorofare Moun 75.75 17 *e*P **P** **03 28 42.5 -1.2**
comp=Z,4.1nm,0.8s
MCK McKinley 75.83 17 *e*P **P** **03 28 44.3 +0.4**
MCK *e**PP **pP** **03 29 23.8 -0.3**
MCK pmax pmax
comp=Z,4.0nm,0.6s
MCK McKinley 75.83 17 *e*P **P** **03 28 44.3 +0.4**

comp=Z,4.1nm,0.6s
MCK ep P pP 03 29 23.8 -0.3
RND Reindeer 76.13 17 eP P 03 28 45.2 -0.5
RND Reindeer 76.13 17 eP P 03 28 45.2 -0.5
BOSA Boshof 76.75 219 P P 03 28 49.3 -0.3
comp=Z,2.2nm,0.5s,baz=18,slow=4.5,SNR=6.1
DHY Denali Highway 76.76 16 eP P 03 28 49.6 +0.3
DOT Dot Lake 76.97 15 eP P 03 28 50.1 -0.2
comp=Z,7.4nm,0.7s
DOT epP pP 03 29 32.2 +1.6
PAX Paxson 77.27 16 eP P 03 28 51.9 -0.2
PAX e*PP pP 03 29 33.6 +1.2
PAX pmax pmax
comp=Z,5.0nm,0.6s
PAX Paxson 77.27 16 eP P 03 28 51.9 -0.2
comp=Z,4.8nm,0.6s
PAX epP pP 03 29 33.6 +1.2
SUA Susitna One 77.33 19 eP P 03 28 52.5 0.0
DAWY Dawson 77.48 13 eP P 03 28 53.5 +0.3
comp=Z,4.7nm,0.9s
DAWY epP pP 03 29 36.0 +2.4
DAWY esP sP 03 29 52.4 +1.3
PMR Palmer 77.62 18 eP P 03 28 53.7 -0.2
PMR e*PP pP 03 29 34.5 +0.3
PMR pmax pmax
comp=Z,6.0nm,0.7s
PMR Palmer 77.62 18 eP P 03 28 53.7 -0.2
comp=Z,6.2nm,0.7s
PMR epP pP 03 29 34.5 +0.3
SML Sawmill 77.63 17 eP P 03 28 54.1 0.0
SML e*PP pP 03 29 36.6 +2.2
SML pmax pmax
comp=Z,4.0nm,0.7s
SML Sawmill 77.63 17 eP P 03 28 54.1 0.0
comp=Z,4.1nm,0.7s
SML epP pP 03 29 36.5 +2.2
SCM Sheep Creek Mo 77.85 17 eP P 03 28 55.9 +0.6
SCM Sheep Creek Mo 77.85 17 eP P 03 28 55.9 +0.6
RC01 Rabbit Creek A 77.90 18 eP P 03 28 55.7 +0.2
comp=Z,8.4nm,0.6s
KLU Klutina 78.48 16 eP P 03 28 59.8 +1.0
BRLK Bradley Lake 78.73 20 eP P 03 28 59.7 -0.4
DIV Divide 78.83 17 eP P 03 29 01.3 +0.6
CNPM China Poot 78.84 20 eP P 03 29 00.5 -0.2
FID Port Fidalgo 79.00 17 eP P 03 29 02.3 +0.8
BMRM Bremner River 79.24 16 eP P 03 29 03.8 +0.9
EYAK Cordova Ski Ar 79.35 17 eP P 03 29 04.6 +1.2
KDAK Kodiak Island 79.92 21 eP P 03 29 06.6 +0.1
KDAK Kodiak Island 79.92 21 eP P 03 29 07.0 +0.5
OHAK Old Harbor 80.18 22 eP P 03 29 07.9 0.0
comp=Z,10.0nm,0.7s
HYT Haines Junctio 80.82 13 eP P 03 29 13.3 +1.8
YKA Yellowknife Ar 81.59 2 P P 03 29 15.8 +0.5
comp=Z,2.9nm,0.7s,baz=349,slow=5.6,SNR=16
YKA pP pP 03 29 57.2 +1.2
comp=Z,4.0nm,0.9s,baz=351,slow=5.5,SNR=5.3
WRA Warramunga Arr 82.85 121 P P 03 29 21.5 -1.0
comp=Z,4.4nm,0.7s,baz=327,slow=4.7,SNR=45
WRA pP pP 03 30 03.0 -0.3
comp=Z,4.6nm,1.0s,baz=323,slow=5.0,SNR=5.8
WB2 Warramunga Arr 82.86 121 eP P 03 29 22.6 +0.1
WB2 epP pP 03 30 05.3 +1.9
DLBC Dease Lake 84.31 10 P P 03 29 29.9 +0.4
comp=Z,1.6nm,0.7s,baz=304,slow=10,SNR=4.1
DLBC pP pP 03 30 11.1 +0.7
comp=Z,2.4nm,0.8s,baz=264,slow=7.9,SNR=3.4
AS31 Alice Springs 85.07 124 eP P 03 29 33.2 -0.5
ASAR Alice Springs 85.07 124 P P 03 29 33.1 -0.5
comp=Z,4.5nm,0.6s,baz=310,slow=4.9,SNR=44
ASAR pP pP 03 30 15.3 +0.6
comp=Z,5.1nm,1.0s,baz=320,slow=5.5,SNR=6.6
AS01 Alice Springs 85.10 124 eP P 03 29 32.9 -0.9
AS01 epP pP 03 30 15.1 +0.3
FORT Forrest 86.33 133 eP P 03 29 40.1 +0.4
EDM Edmonton 90.91 2 eP P 03 30 02.3 +1.1
EDM Edmonton 90.91 2 eP P 03 30 02.3 +1.1
CTA Charters Tower 91.51 114 LR LR 04 17 49.1
comp=Z,142nm,21.4s,baz=36,slow=40
ULM Lac du Bonnet 92.96 351 P P 03 30 09.7 -0.9
comp=Z,2.2nm,0.9s,baz=48,slow=3.8,SNR=3.9
ULM pP pP 03 30 52.8 +0.7
comp=Z,2.7nm,0.9s,baz=341,slow=8.2,SNR=3.5
NEW Newport 95.70 4 P P 03 30 23.9 +0.6
comp=Z,1.1nm,0.4s,baz=66,slow=10.0,SNR=3.4
NEW pP pP 03 31 05.9 +1.1
comp=Z,2.4nm,0.7s,baz=335,slow=6.9,SNR=3.3
TXAR Lajitas Array 114.50 353 PKP PKPdf 03 35 36.5 -0.6
comp=Z,0.3nm,0.8s,baz=116,slow=2.1,SNR=3.7
PLCA Paso Flores 148.60 249 PKPbc **PKPdf** 03 36 41.5 +1.7
comp=Z,4.4nm,0.8s,baz=122,slow=2.3,SNR=5.4
PLCA pPKPbc **pPKPbc** 03 37 27.4 +0.6
comp=Z,2.7nm,0.7s,baz=124,slow=6.7,SNR=3.2

*CSEM **27** 03:18:44.3±0.2,35°.50N×54°.52E, h2km, ML3.3, Error ellipse: s-maj=6.3km s-min=5.0km az=20.0*

TEH 27 03:18:44.6, 35°.54N×54°.56E, h9km, ML3.3, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IANJ	**Anjilo**	**0.53**	**263**	*e*Pg	Pg	03 18 53.8	-1.2
IANJ				eAMB	AMB	03 19 02.2	
comp=Z,11μm,0.1s							
IANJ	**Anjilo**	**0.53**	**263**	*e*Pg	Pg	03 18 53.8	-1.2
IKIA	**Kiasar**	**0.98**	**313**	*e*Pg	Pg	03 19 02.3	-1.1
IKIA				eAMB	AMB	03 19 21.1	
comp=Z,4μm,0.1s							
IKIA	**Kiasar**	**0.98**	**313**	*e*Pg	Pg	03 19 02.3	-1.1
SHRO	**Shahrood**	**1.26**	**69**	*e*Pg	Pg	03 19 09.1	+0.3
ILAS	**Lasjerd**	**1.32**	**264**	eAMB	AMB	03 19 31.6	
comp=E,13μm,0.1s							
ILAS				*e*Pg	Pn	03 19 08.8	-0.6
IFIR	**Firoozkooh**	**1.48**	**275**	*e*Pn	Pn	03 19 11.0	-0.7
IFIR				eAMB	AMB	03 19 38.1	
comp=Z,6μm,0.2s							
IFIR	**Firoozkooh**	**1.48**	**275**	*e*Pn	Pn	03 19 11.0	-0.7
IALA	**Alasht**	**1.52**	**291**	*e*Pn	Pn	03 19 12.6	+0.3
IALA				eAMB	AMB	03 19 37.1	
comp=Z,4μm,0.1s							
IALA	**Alasht**	**1.52**	**291**	*e*Pn	Pn	03 19 12.6	+0.3
IPRN	**Peran**	**1.94**	**292**	*e*Pn	Pb	03 19 19.4	-0.8
IPRN				eAMB	AMB	03 19 22.8	
comp=Z,4μm,0.2s							
IDMV	**Damavand**	**2.06**	**272**	*e*Pn	Pn	03 19 19.8	+0.1
IDMV				*e*Sg	Sb	03 19 49.2	+0.9
IDMV				eAMB	AMB	03 19 56.7	
comp=Z,2μm,0.3s							
IDMV	**Damavand**	**2.06**	**272**	*e*Pn	Pn	03 19 19.8	+0.1
IDMV				*e*Sg	Sb	03 19 49.2	+0.9
DAMV	**Damavand**	**2.11**	**273**	*e*Pn	Pn	03 19 21.5	+1.1
MRVT	**Maraveh tapeh**	**2.45**	**30**	*e*Pn	Pb	03 19 27.3	-1.6
TABS	**Tabas**	**2.83**	**131**	*e*Pn	Pn	03 19 30.9	+0.8
NASN	**Na'in**	**3.09**	**209**	*e*Pn	Pn	03 19 34.5	+0.5
QAM	**Ghamsar**	**3.12**	**236**	*e*Pn	Pn	03 19 33.3	-1.0
QAM				eAMB	AMB	03 20 30.1	
comp=Z,1μm,0.2s							
IZEF	**Zefreh**	**3.22**	**216**	*e*Pn	Pn	03 19 35.7	+0.1
IZEF				eAMB	AMB	03 20 39.4	
comp=Z,677nm,0.2s							
IZEF	**Zefreh**	**3.22**	**216**	*e*Pn	Pn	03 19 35.7	+0.1
ICHK	**Chekchek**	**3.29**	**182**	*e*Pn	Pn	03 19 36.1	-0.4
ICHK				eAMB	AMB	03 20 41.0	
comp=Z,751nm,0.2s							
ICHK	**Chekchek**	**3.29**	**182**	*e*Pn	Pn	03 19 36.1	-0.4
IKLH	**Kolahrood**	**3.31**	**229**	*e*Pn	Pn	03 19 38.6	+1.7
IKLH				eAMB	AMB	03 20 29.7	
comp=Z,716nm,0.1s							
IKLH	**Kolahrood**	**3.31**	**229**	*e*Pn	Pn	03 19 38.6	+1.7
ISAD	**Sadrabad**	**3.69**	**192**	*e*Pn	Pn	03 19 41.6	-0.5
ISAD				eAMB	AMB	03 20 46.0	
comp=Z,476nm,0.2s							
ISAD	**Sadrabad**	**3.69**	**192**	*e*Pn	Pn	03 19 41.6	-0.5
ASAO	**Ashtian**	**3.85**	**256**	*e*Pn	Pn	03 19 45.4	+1.1
IBAF	**Bafgh**	**4.03**	**168**	*e*Pn	Pn	03 19 46.2	-0.4
IBAF				eAMB	AMB	03 20 17.8	
comp=Z,374nm,0.3s							
IBAF	**Bafgh**	**4.03**	**168**	*e*Pn	Pn	03 19 46.2	-0.4
IMEH	**Mehriz**	**4.14**	**179**	*e*Pn	Pn	03 19 47.7	-0.5
IMEH				eAMB	AMB	03 21 06.8	
comp=Z,212nm,0.3s							
IMEH	**Mehriz**	**4.14**	**179**	*e*Pn	Pn	03 19 47.7	-0.5

*IDC **27** 03:26:51.8±1.5, 18°.41N×145°.81E, h111km±13km, mb3.9/19, mb1 4.1/20, mb1mx3.9/52, mbtmp4.3/20, MS2.9/2, Ms1 2.9/2, ms1mx2.5/31, Error ellipse: s-maj=21.0km s-min=9.2km az=102.0*

*NEIC **27** 03:26:52.0±1.1, 18°.40N×145°.83E, h113km±10km, mb4.6/17, Error ellipse: s-maj=9.7km s-min=5.5km az=108.0*

*ISCJB **27** 03:26:53.6±0.3, 18°.37N±0°.06×145°.7E±0°.1, h145km, mb4.3/34, Error ellipse: s-maj=14.7km s-min=6.9km az=17.2*

ISC 27 03:26:55.2±0.5, 18°.30N±0°.07×145°.8E±0°.2, h145km, n57, σ1°13/54, mb4.3/34, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**4.77**	**191**	P	**Pn**	**03 28 03.0**	**-2.5**
GUMO	64nm,0.3s,baz=45,slow=4.3,SNR=8.4			LR	LR	03 28 56.7	
	comp=Z,61nm,18.6s,baz=62,slow=26						
GUMO				S	**Sn**	**03 28 58.2**	**-2.1**
	33nm,0.3s,baz=180,slow=20,SNR=3.5						
H11S3	**WAKE ISLAND Hy**	**19.81**	**86**	T	T	03 51 55.9	
	baz=273,slow=75,SNR=30						
H11S1	**WAKE ISLAND Hy**	**19.82**	**86**	T	T	03 51 55.8	
	baz=273,slow=75,SNR=49						
H11S2	**WAKE ISLAND Hy**	**19.82**	**86**	T	T	03 51 57.1	
	baz=273,slow=75,SNR=52						
H11N1	**WAKE ISLAND Hy**	**19.98**	**83**	T	T	03 52 22.1	
	baz=267,slow=74,SNR=30						
H11N2	**WAKE ISLAND Hy**	**19.98**	**83**	T	T	03 52 14.1	
	baz=267,slow=74,SNR=21						
H11N3	**WAKE ISLAND Hy**	**20.00**	**83**	T	T	03 52 24.9	
	baz=267,slow=74,SNR=25						
ASAJ	**Asahikawa**	**25.88**	**355**	P	**P**	**03 32 13.0**	**-0.4**
	3.0nm,0.6s,baz=170,slow=6.1,SNR=6.3						
HNR	**Honiara**	**30.88**	**152**	LR	LR	03 45 03.1	
	comp=Z,42nm,19.4s,baz=146,slow=35						
KLR	**Kul'dur**	**32.88**	**343**	P	**P**	**03 33 15.1**	**-0.1**
	1.5nm,0.6s,baz=162,slow=12,SNR=6.4						
PETK	**Petropavlovsk-**	**35.96**	**12**	P	**P**	**03 33 40.9**	**-0.8**
	2.8nm,0.5s,baz=175,slow=5.1,SNR=4.8						
WRAB	**Tennant Creek**	**39.62**	**197**	*e*P	**P**	**03 34 13.6**	**+0.8**
WRA	**Warramunga Arr**	**39.64**	**197**	P	**P**	**03 34 13.4**	**+0.5**
	4.2nm,0.7s,baz=21,slow=8.6,SNR=24						
WRA				ScP	**ScP**	**03 39 56.0**	**+3.6**
	1.2nm,0.8s,baz=16,slow=4.1,SNR=6.1						
FITZ	**Fitzroy Crossi**	**41.25**	**210**	P	**P**	**03 34 27.8**	**+1.6**
	3.6nm,0.5s,baz=19,slow=8.4,SNR=32						
ASAR	**Alice Springs**	**43.30**	**196**	P	**P**	**03 34 43.0**	**+0.3**
	1.1nm,0.5s,baz=14,slow=9.4,SNR=16						
ASAR				ScP	**ScP**	**03 40 10.7**	**+3.7**
	0.8nm,0.8s,baz=20,slow=4.8,SNR=6.0						
SEY	**Seymchan**	**44.83**	**4**	P	**P**	**03 34 53.8**	**-0.6**
	2.9nm,0.8s,baz=158,slow=8.5,SNR=7.3						
MBWA	**Marble Bar**	**46.80**	**214**	*e*P	**P**	**03 35 11.6**	**+1.1**
STKA	**Stepanka Creek**	**50.05**	**185**	P	**P**	**03 35 36.4**	**+1.3**
	1.5nm,0.5s,baz=18,slow=8.6,SNR=7.8						
MKAR	**Makanchi Array**	**58.82**	**314**	P	**P**	**03 36 38.1**	**-0.3**
	0.6nm,0.6s,baz=99,slow=6.8,SNR=3.6						
KDAK	**Kodiak Island**	**59.63**	**33**	*e*P	**P**	**03 36 42.6**	**-1.1**
	17nm,0.8s						
PPLA	**Purkeypile**	**61.20**	**27**	*e*P	**P**	**03 36 54.1**	**-0.4**
	9.8nm,0.7s						
KURK	**Kurchatov**	**61.64**	**318**	P	**P**	**03 36 57.0**	**-0.5**
KURBB	**Kurchatov Arra**	**61.69**	**318**	P	**P**	**03 36 57.0**	**-0.8**
	0.7nm,0.5s,baz=96,slow=7.1,SNR=11						
KTH	**Kantishna Hill**	**61.94**	**27**	*e*P	**P**	**03 36 58.9**	**-0.4**
	9.8nm,0.6s						
BPAW	**Bear Paw Mtn.**	**62.06**	**26**	*e*P	**P**	**03 37 00.1**	**-0.1**
	2.7nm,0.7s						
BPAW				*e*		03 37 26.1	
TRF	**Thorofare Moun**	**62.19**	**27**	*e*P	**P**	**03 36 59.9**	**-1.2**
	10.0nm,0.8s						
SML	**Sawmill**	**62.66**	**29**	*e*P	**P**	**03 37 03.6**	**-0.6**
	6.6nm,0.8s						
ILAR	**Eielson Array**	**63.95**	**26**	P	**P**	**03 37 10.9**	**-1.6**
	4.6nm,0.9s,baz=246,slow=6.0,SNR=43						
PAX	**Paxson**	**64.20**	**28**	*e*P	**P**	**03 37 14.0**	**-0.4**
	5.7nm,0.5s						
DOT	**Dot Lake**	**64.95**	**28**	*e*P	**P**	**03 37 18.4**	**-0.7**
	18nm,0.7s						
BVAR	**Borovoye Array**	**66.85**	**321**	P	**P**	**03 37 31.3**	**-0.1**
	1.2nm,0.4s,baz=94,slow=6.1,SNR=7.0						
DAWY	**Dawson**	**67.06**	**27**	*e*P	**P**	**03 37 32.5**	**0.0**
	4.0nm,0.7s						
INK	**Inuvik**	**69.70**	**23**	P	**P**	**03 37 48.1**	**-0.6**
	6.2nm,0.8s,baz=278,slow=7.3,SNR=10						
INK	**Inuvik**	**69.70**	**23**	*e*P	**P**	**03 37 48.5**	**-0.3**
	4.2nm,0.6s						
DLBC	**Dease Lake**	**71.56**	**33**	P	**P**	**03 38 00.6**	**+0.2**
	4.8nm,0.6s,baz=280,slow=4.6,SNR=13						
ABKAR	**Akbulak array**	**73.71**	**317**	*e*P	**P**	**03 38 13.2**	**+0.1**
HDW	**Hoodsport**	**77.45**	**44**	P	**P**	**03 38 35.9**	**+1.2**
JCW	**Jim Creek**	**78.06**	**43**	P	**P**	**03 38 38.7**	**+0.8**
YKA	**Yellowknife Ar**	**78.29**	**28**	P	**P**	**03 38 38.5**	**-0.3**
	3.2nm,0.5s,baz=285,slow=5.8,SNR=21						
TDL	**Tradedollar La**	**78.32**	**45**	P	**P**	**03 38 40.5**	**+0.9**
SAW	**Saint Andrews**	**79.83**	**43**	P	**P**	**03 38 47.7**	**+0.1**
MOD	**Modoc Plateau**	**80.81**	**49**	*e*P	**P**	**03 38 53.1**	**0.0**
	9.1nm,1.1s						
NEW	**Newport**	**81.13**	**42**	P	**P**	**03 38 54.6**	**+0.1**
	6.2nm,0.5s,baz=297,slow=5.3,SNR=14						
NEW	**Newport**	**81.13**	**42**	*e*P	**P**	**03 38 54.5**	**-0.1**
	11nm,1.0s						
CMB	**Columbia Colle**	**81.85**	**53**	*e*P	**P**	**03 38 58.4**	**-0.2**
	24nm,0.8s						
BMO	**Blue Mountains**	**82.04**	**45**	*e*P	**P**	**03 38 59.5**	**0.0**
	6.2nm,1.1s						
BSMT	**Bassoo Peak**	**82.75**	**42**	P	**P**	**03 39 03.8**	**+0.6**
ARCES	**ARCESS Array B**	**82.91**	**342**	P	**P**	**03 39 03.7**	**+0.4**
	3.2nm,0.9s,baz=61,slow=7.4,SNR=3.1						
MFID	**Camas Ranch**	**83.51**	**47**	*e*P	**P**	**03 39 07.2**	**+0.2**
	8.2nm,0.9s						
HLID	**Hailey**	**84.43**	**46**	*e*P	**P**	**03 39 11.7**	**-0.1**
	6.4nm,0.9s						
BOZ	**Bozeman (W)**	**85.55**	**43**	*e*P	**P**	**03 39 17.5**	**+0.1**
	4.0nm,0.6s						
FINES	**FINESS Array B**	**87.29**	**335**	P	**P**	**03 39 23.7**	**-1.6**
	0.6nm,0.3s,baz=77,slow=4.7,SNR=10.0						
PDAR	**Pinedale Array**	**88.03**	**45**	P	**P**	**03 39 29.4**	**-0.1**
	0.4nm,0.4s,baz=218,slow=3.9,SNR=5.0						
SDDR	**Presa de Saban**	**128.03**	**46**	PKPdf	**PKPdf**	**03 45 43.8**	**-1.1**
TORD	**Torodi Ar. Bea**	**132.79**	**309**	PKP	**PKPdf**	**03 45 55.4**	**+1.5**
	0.3nm,0.6s,baz=38,slow=2.6,SNR=5.5						
TORD				SKPbc	**SKPab**	**03 49 10.6**	**+0.8**
	0.5nm,0.8s,baz=42,slow=2.3,SNR=3.6						
LPAZ	**La Paz**	**147.55**	**92**	PKPbc	**PKPbc**	**03 46 25.0**	**+1.0**
	2.3nm,0.6s,baz=348,slow=3.3,SNR=11						
PTGA	**Pitinga**	**149.25**	**58**	PKPbc	**PKPbc**	**03 46 28.7**	**+1.0**
	4.9nm,0.4s,baz=1.1,slow=3.6,SNR=22						

*SJA **27** 03:27:39.7±0.7, 21°.36S×69°.06W, h354km±83km, ML4.4, MW3.6*

*ISCJB **27** 03:27:45.2±0.3, 21°.54S±0°.03×68°.58W±0°.05, h126km±2km, mb4.6/68, Error ellipse: s-maj=7.6km s-min=3.9km az=164.8*

*IDC **27** 03:27:46.2±0.8, 21°.39S×68°.47W, h109km±8km, mb4.1/11, mb1 4.2/15, mb1mx4.1/26, mbtmp4.4/15, MS3.3/2, Ms1 3.3/2, ms1mx2.8/22, Error ellipse: s-maj=15.5km s-min=11.7km az=121.0*

*SCB **27** 03:27:46.7±1.3, 21°.30S×68°.45W, h120km, Ml4.1/1, Error ellipse: s-maj=40.4km s-min=7.2km az=40.0*

*NEIC **27** 03:27:47.0, 21°.50S×68°.77W, h120km, mb4.6/59, After GUC.*

NEIC Felt [IV] at Quillagua, [III] at Oficina Maria Elena and [II] at Tocopilla.

*GUC **27** 03:27:47.2±0.5, 21°.50S×68°.77W, h120km±4km, ML4.6*

ISC 27 03:27:46.4±0.6, 21°.53S±0°.04×68°.65W±0°.05, h119km±5km, n304, σ1°28/318, mb4.5/68, 7C-1D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB09	**IPOC Station P**	**0.61**	**244**	*i* P	**Pn**	**03 28 06.2**	**+1.0**
PB09				*i* S	**Sn**	**03 28 20.3**	**+1.0**
PB01	**IPOC Station P**	**0.92**	**302**	⇓*i*P	**Pn**	**03 28 08.0**	**+0.4**
PB01				*i* S	**Sn**	**03 28 23.9**	**+0.3**
PB01				IAML		03 28 24.8	
comp=E,19μm,0.5s							
PB01	**IPOC Station P**	**0.92**	**302**	*e*Pn	**Pn**	**03 28 07.9**	**+0.3**
LVC	**Limon Verde**	**1.10**	**192**	P	**Pn**	**03 28 10.9**	**+1.1**
	comp=E,27μm,0.3s,baz=18,slow=9.1,SNR=5471						
LVC				S	**Sn**	**03 28 29.2**	**+1.7**
	comp=E,33μm,0.3s,baz=159,slow=19,SNR=109						
LVC				LR	LR	03 28 46.6	
	comp=E,4μm,19.9s,baz=281,slow=47						
LVC	**Limon Verde**	**1.10**	**192**	*i* P	**Pn**	**03 28 11.2**	**+1.4**
LVC				*i* S	**Sn**	**03 28 28.7**	**+1.2**
LVC	**Limon Verde**	**1.10**	**192**	*e*Pn	**Pn**	**03 28 11.0**	**+1.1**
LVC				*e*S	**Sn**	**03 28 27.1**	**-0.4**
PB07	**IPOC Station P**	**1.17**	**260**	⇑*i*P	**Pn**	**03 28 10.7**	**+0.5**
PB07				*i* S	**Sn**	**03 28 28.4**	**+0.2**
PB07				IAML		03 28 29.7	
comp=N,30μm,0.7s							
PB06	**IPOC Station P**	**1.45**	**216**	⇑*i*P	**Pn**	**03 28 14.4**	**+1.1**
PB06				*i* S	**Sn**	**03 28 35.0**	**+1.1**
PB06				IAML		03 28 37.0	
comp=N,9μm,0.1s							
PB08	**IPOC Station P**	**1.46**	**341**	⇑*i*P	**Pn**	**03 28 14.9**	**+1.2**
PB08				*i* S	**Sn**	**03 28 35.6**	**+1.3**
PB08				IAML		03 28 36.6	
comp=E,6μm,0.3s							
PB04	**IPOC Station P**	**1.60**	**240**	*e*Pn	**Pn**	**03 28 15.6**	**+0.4**
HMBC	**Humberstone**	**1.70**	**317**	*i* P	**Pn**	**03 28 16.2**	**-0.1**
HMBC				*i* S	**Sn**	**03 28 38.8**	**-0.1**
PSGC	**Pisagua**	**2.36**	**324**	⇑*i*P	**Pn**	**03 28 23.6**	**-0.9**
PSGC				*i* S	**Sn**	**03 28 52.1**	**-1.6**
PB10	**IPOC Station P**	**2.65**	**221**	*e*Pn	**Pn**	**03 28 27.6**	**-0.4**
MOCB	**Mochara**	**2.82**	**85**	⇑*e*Pn	**Pn**	**03 28 33.2**	**+2.4**
MOCB				*e*Sn	**Sn**	**03 29 07.7**	**+2.8**
comp=E,726nm,1.1s							
BBOJ	**La Paz, Jacaqu**	**4.55**	**6**	⇑*i*Pn	**Pn**	**03 28 56.0**	**+2.2**
BBOE	**La Paz, Chanca**	**4.73**	**8**	⇑*i*Pn	**Pn**	**03 28 58.5**	**+2.2**
BBOD	**La Paz, Gloria**	**4.86**	**1**	*e*Pn	**Pn**	**03 29 00.2**	**+2.1**
LPAZ	**La Paz**	**5.23**	**6**	P	**Pn**	**03 29 04.4**	**+1.3**
	comp=E,14nm,0.3s,baz=184,slow=6.9,SNR=524						
LPAZ	**La Paz**	**5.23**	**6**	*e*Pn	**Pn**	**03 29 04.9**	**+1.8**
BBOB	**La Paz, Bander**	**5.38**	**5**	*e*Pn	**Pn**	**03 29 06.3**	**+1.3**
VCA	**Vinchina**	**7.19**	**177**	*i* P	**Pn**	**03 29 28.5**	**-0.6**
VCA				*i* S	**Sn**	**03 30 49.3**	**-0.1**
VCA				IAML		03 30 55.5	
comp=Z,35nm,0.6s							
CYA	**Choya**	**7.36**	**160**	*e*P	**Pn**	**03 29 30.4**	**-0.8**
CYA				IAML		03 29 34.3	
comp=Z,7.2nm,0.6s							
CYA				*e*S	Sn	03 30 35.0	-18
LCO	**Las Campanas**	**7.68**	**194**	*e*P	**Pn**	**03 29 32.4**	**-3.4**
LCO	**Las Campanas**	**7.68**	**194**	*e*Pn	**Pn**	**03 29 32.2**	**-3.6**
LCO				*e*S	**Sn**	**03 30 55.6**	**-5.7**
AGUA	**GUANDACOL**	**7.93**	**179**	*e*P	**Pn**	**03 29 37.3**	**-1.7**
AGUA				*e*S	**Sn**	**03 31 03.1**	**-4.1**
SIV	**San Ignacio**	**9.05**	**54**	P	**Pn**	**03 29 51.5**	**-2.7**
	comp=Z,7.5nm,0.3s,baz=249,slow=13,SNR=227						
SIV				S	**Sn**	**03 31 27.5**	**-6.8**
	comp=Z,0.7nm,0.3s,baz=133,slow=19,SNR=3.6						
SIV	**San Ignacio**	**9.05**	**54**	*e*P	**Pn**	**03 29 51.4**	**-2.7**
AVFE	**Valle Fertil**	**9.16**	**174**	*e*P	**Pn**	**03 29 52.7**	**-2.9**
AVFE				IAML		03 30 15.2	
comp=Z,24nm,0.3s							
AMOG	**MOGNA**	**9.38**	**179**	*i* P	**Pn**	**03 29 54.9**	**-3.6**
ACHE	**Chepes**	**9.76**	**170**	*e*P	**Pn**	**03 30 01.6**	**-2.2**
RTLL	**Cerro Villicun**	**9.77**	**179**	*i* P	**Pn**	**03 30 00.1**	**-3.7**
RTLL				*i* S	Sn	03 31 42.0	-10
TCA	**Tanti**	**10.42**	**160**	*e*P	**Pn**	**03 30 09.5**	**-3.2**
TCA				IAML		03 30 23.8	
comp=Z,7.3nm,0.3s							
ACAN	**Cantantal**	**10.79**	**173**	*e*P	Pn	03 30 07.3	-10
CPUP	**Villa Florida**	**11.40**	**117**	P	**Pn**	**03 30 24.5**	**-1.3**
	comp=Z,0.7nm,0.3s,baz=295,slow=14,SNR=19						
AAGR	**Agrelo**	**11.52**	**181**	*e*P	Pn	03 30 22.8	-4.5
ROC1	**El Roble**	**11.60**	**190**	*e*Pn	Pn	03 30 23.6	-5.0
NNA	**Nana**	**12.30**	**319**	P	**Pn**	**03 30 38.0**	**+0.3**
	comp=Z,0.9nm,0.3s,baz=157,slow=12,SNR=2.2						
TRQA	**Tornquist**	**17.45**	**162**	*e*P	**Pn**	**03 31 42.1**	**-0.3**
	comp=Z,83nm,1.5s						
PLCA	**Paso Flores**	**19.21**	**184**	P	**Pn**	**03 32 03.0**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=24,slow=11,SNR=10						
PLCA	**Paso Flores**	**19.21**	**184**	*e*P	**Pn**	**03 32 03.0**	**-0.4**
	comp=Z,15nm,1.1s						
SPB	**Sao Paulo**	**19.71**	**100**	*e*P	**P**	**03 32 06.5**	**-0.1**
	comp=Z,10nm,0.5s						
PTGA	**Pitinga**	**22.34**	**23**	P	**P**	**03 32 33.1**	**-1.5**
	comp=Z,8.1nm,0.3s,baz=210,slow=16,SNR=44						
PTGA				LR	LR	03 42 46.7	
	comp=Z,51nm,19.6s,baz=244,slow=41						
PTGA	**Pitinga**	**22.34**	**23**	P	**P**	**03 32 33.1**	**-1.5**
	comp=Z,25nm,0.8s						
OTAV	**Otavalo**	**23.65**	**335**	*e*P	**P**	**03 32 48.3**	**+0.7**
	comp=Z,14nm,1.0s						
CHIC	**Chingaza**	**26.47**	**349**	*e*P	**P**	**03 33 15.4**	**+2.3**
BARC	**Barichara**	**28.30**	**350**	*e*P	**P**	**03 33 27.3**	**-1.9**
HELC	**Santa Helena**	**28.36**	**345**	*e*P	**P**	**03 33 26.8**	**-3.1**
HELC	**Santa Helena**	**28.36**	**345**	*e*P	**P**	**03 33 29.4**	**-0.5**
	comp=Z,16nm,0.7s						
CBRI	**Barrientos, No**	**29.34**	**352**	*e*P	**P**	**03 33 36.2**	**-2.2**
RCBR	**Riachuelo**	**35.33**	**69**	P	**P**	**03 34 30.1**	**-0.5**
	comp=Z,18nm,0.7s,baz=232,slow=9.8,SNR=9.6						
ZAIG	**Zacatecas**	**55.05**	**321**	*e*P	**P**	**03 37 07.3**	**+0.8**
	comp=Z,11nm,1.1s						
034A	**Hebbronville**	**56.38**	**328**	P	**P**	**03 37

baz=153,SNR=11
MIAR Mount Ida 60.59 336 eP P 03 37 44.5 0.0
comp=Z,23nm,1.4s
Z36A Blue Ridge 60.60 333 P P 03 37 45.2 +0.6
baz=150
233A Rising Star 60.61 331 P P 03 37 45.0 +0.3
baz=148,SNR=5.6
W41B Gary Mavity, V 60.67 338 P P 03 37 44.8 -0.2
baz=155
134A White-Moore Ra 60.71 332 P P 03 37 45.8 +0.4
baz=149
X39A Fountain Ranch 60.76 336 P P 03 37 46.5 +0.8
baz=153,SNR=6.8
X301 Greenbrier Sit 60.78 338 eP P 03 37 46.3 +0.5
comp=Z,5.2nm,0.7s
TXAR Lajitas Array 60.79 325 P P 03 37 47.0 +0.9
comp=Z,1.0nm,0.6s,baz=155,slow=8.6,SNR=22
TX31 Lajitas Ar. Si 60.79 325 eP P 03 37 46.0 -0.1
Y37A Hugo 60.88 334 P P 03 37 47.7 +1.2
baz=151
V42A Cord 60.95 339 P P 03 37 46.5 -0.4
baz=156
W40A Ferguson Farm, 60.98 337 P P 03 37 47.9 +0.7
baz=154,SNR=7.2
Z35A Perchaven, San 60.99 333 P P 03 37 48.0 +0.6
baz=150
X38A Whitesboro 61.17 335 P P 03 37 49.3 +0.8
baz=152,SNR=7.9
V41A Mountainview 61.19 338 P P 03 37 48.2 -0.4
baz=155,SNR=8.5
W39A Magazine 61.25 337 P P 03 37 49.7 +0.8
baz=153,SNR=10
X37A Clayton 61.31 335 P P 03 37 50.1 +0.6
baz=152,SNR=5.4
Z34A Collier Ranch, 61.31 332 P P 03 37 50.0 +0.5
baz=149
U42A Revenden 61.40 339 P P 03 37 49.4 -0.5
baz=156,SNR=6.2
Y35A Marietta 61.40 333 P P 03 37 51.0 +0.9
baz=150
W38A Poteau 61.41 336 P P 03 37 50.8 +0.8
baz=153
V40A Witts Springs 61.44 338 P P 03 37 50.2 -0.2
baz=154
ABTX Abilene, Hawle 61.46 330 eP P 03 37 51.5 +1.0
comp=Z,9.9nm,0.9s
PBMO Poplar Bluff 61.53 340 eP P 03 37 50.8 0.0
comp=Z,9.7nm,0.6s
Z33A Whitaker Ranch 61.62 331 P P 03 37 52.0 +0.5
baz=148,SNR=5.1
U41A Viola 61.62 339 P P 03 37 51.1 -0.4
baz=156,SNR=7.2
Y34A Reagan Ranch, 61.75 333 P P 03 37 52.7 +0.4
baz=149
V39A Pettigrew 61.77 337 P P 03 37 52.8 +0.3
baz=154,SNR=16
S45A Carrier Mills 61.80 342 P P 03 37 52.1 -0.5
baz=159
W37B Quinton 61.82 335 P P 03 37 53.5 +0.7
baz=152
U40A Yellville 61.95 338 P P 03 37 53.5 -0.2
baz=155,SNR=6.1
S44A Carbondale 62.01 342 P P 03 37 53.5 -0.5
baz=158
SIUC Southern Illin 62.02 342 eP P 03 37 54.2 +0.1
comp=Z,32nm,1.4s
V38A Canehill 62.07 336 P P 03 37 54.6 +0.1
baz=153,SNR=12
W36A Wetumka 62.13 335 P P 03 37 54.8 -0.2
baz=151,SNR=5.8
S43A Fulton Ridge, 62.15 341 P P 03 37 54.5 -0.5
baz=158,SNR=5.6
O56A Blue Knob Stat 62.16 351 P P 03 37 55.8 +0.7
baz=170
Y33A Hilltop Ranch, 62.17 332 P P 03 37 55.5 +0.4
baz=148
SNAA Sanae 62.18 161 eP P 03 37 55.9 +1.0
comp=Z,193nm,0.6s
U39A Green Forest 62.20 337 P P 03 37 55.2 -0.1
baz=154,SNR=6.9
T41A Mountain View 62.20 339 P P 03 37 54.9 -0.4
baz=156
HHAR Hobbs 62.27 337 eP P 03 37 55.5 -0.3
comp=Z,10.0nm,1.1s
X34A Smith Ranch, M 62.33 333 P P 03 37 56.8 +0.5
baz=149
V37A Hulbert 62.36 336 P P 03 37 56.8 +0.4
baz=152,SNR=5.8
R44A Waltonville 62.48 342 P P 03 37 56.4 -0.7
baz=159
T40A Mansfield 62.55 339 P P 03 37 57.4 -0.3
baz=155
U38A Gravette 62.57 337 P P 03 37 58.0 +0.2
baz=153
V36A Jenks 62.59 335 P P 03 37 58.2 +0.3
baz=152
TUL1 Leonard 62.64 335 P P 03 37 58.4 +0.2
baz=152
S41A Jillco Farms, 62.69 339 P P 03 37 58.4 -0.2
baz=156,SNR=9.4
T39A Clever 62.73 338 P P 03 37 58.7 -0.2
baz=154
U37A Salina 62.81 336 P P 03 37 59.7 +0.2
baz=152,SNR=6.2
V35A Meyer Ranch, C 62.92 334 P P 03 38 00.3 +0.1
baz=151
S40A Lebanon 62.95 339 P P 03 38 00.2 -0.1
baz=155,SNR=14
U36A Oologah 63.04 336 P P 03 38 01.0 +0.1
baz=152
N54A Moraine State 63.05 350 P P 03 38 01.7 +0.8
baz=168
Q44A Meyer Farm, Va 63.07 342 P P 03 38 00.4 -0.6
baz=159
T38A Diamond 63.07 337 P P 03 38 01.4 +0.2
baz=153,SNR=12
W33A Caddo, Fort Co 63.07 333 P P 03 38 02.0 +0.8
baz=149,SNR=6.3
V34A Guthrie 63.26 334 P P 03 38 02.5 +0.1
baz=150
S39A Bolivar 63.31 338 P P 03 38 02.7 0.0
baz=154,SNR=18
T37A Cheneyville 18 63.38 337 P P 03 38 03.5 +0.4
baz=153,SNR=13
W32A Sentinel 63.38 332 P P 03 38 03.6 +0.3
baz=148,SNR=7.5
U35A Pawnee 63.41 335 P P 03 38 03.7 +0.3
baz=151,SNR=6.5
S38A Stockton 63.46 338 P P 03 38 03.7 0.0
baz=154
R40A Maddies Statio 63.50 339 P P 03 38 03.7 -0.2
baz=156,SNR=8.2
Q42A Golden Eagle 63.52 341 P P 03 38 03.8 -0.2
baz=157
M54A Oil Creek Stat 63.54 351 P P 03 38 04.5 +0.4
baz=169
MNTX Cornudas Mount 63.55 325 P P 03 38 04.5 +0.1
baz=142
MNTX Cornudas Mount 63.55 325 eP P 03 38 03.8 -0.7
comp=Z,5.0nm,1.1s
V33A Lossen Ranch, 63.57 333 P P 03 38 04.8 +0.4
baz=149
T36A Boggs Farm, Ca 63.68 336 P P 03 38 05.3 +0.2
baz=152
R39A Chumby, Stover 63.78 339 P P 03 38 05.7 -0.1
baz=155,SNR=6.0
U34A Anderson Ranch 63.79 334 P P 03 38 06.0 +0.1
baz=150
T35A Sooner Cattle 63.80 335 P P 03 38 06.3 +0.4
baz=151
S37A Fort Scott 63.91 337 P P 03 38 06.9 +0.3
baz=153,SNR=7.1
R38A Fenwick Farm, 63.96 338 P P 03 38 06.9 0.0
baz=154,SNR=10
U33A Lingo Farm, Me 64.02 334 P P 03 38 07.2 -0.2
baz=150
MSTX Muleshoe 64.04 329 P P 03 38 07.9 +0.2
baz=145,SNR=9.0
MSTX Muleshoe 64.04 329 eP P 03 38 07.9 +0.2
comp=Z,14nm,1.0s
Q40A Laux Farm, Aux 64.08 340 P P 03 38 07.4 -0.3
baz=156
P42A Winchester 64.08 341 P P 03 38 07.5 -0.2
baz=158
S36A Lake Cedric, C 64.16 336 P P 03 38 08.4 +0.2
baz=152,SNR=8.5
AMTX Amarillo 64.27 330 P P 03 38 09.5 +0.3
baz=146

P41A Barry, Barry 64.38 341 P P 03 38 09.1 -0.6
baz=157
S35A Otter Creek Ra 64.39 336 P P 03 38 10.0 +0.2
baz=152
R37A Teagarden Farm 64.40 337 P P 03 38 09.9 +0.1
baz=153,SNR=6.6
Q39A Willow Grove F 64.42 339 P P 03 38 09.8 -0.1
baz=155,SNR=5.8
P40A Paris 64.56 340 P P 03 38 10.5 -0.2
baz=156
Q38A Cooks Store, C 64.56 339 P P 03 38 10.9 +0.1
baz=154,SNR=6.1
R36A Gordon, Harris 64.65 337 P P 03 38 11.2 -0.2
baz=152
P39B Salisbury 64.74 340 P P 03 38 11.8 -0.2
baz=155
Q37A Longview Farm, 64.77 338 P P 03 38 12.2 0.0
baz=154
O40A La Belle 65.04 341 P P 03 38 13.9 0.0
baz=156
P38A Dawn 65.12 339 P P 03 38 14.5 0.0
baz=155
Q35A Mercer Eighty, 65.32 337 P P 03 38 15.7 -0.1
baz=152
P37A Lathrop 65.37 338 P P 03 38 15.9 -0.2
baz=154
319A Douglas 65.45 322 eP P 03 38 19.2 +2.2
121A Cookes Peak, D 65.49 324 P P 03 38 19.0 +1.7
baz=140
121A Cookes Peak, D 65.49 324 eP P 03 38 18.1 +0.8
comp=Z,3.7nm,0.3s
O38A Galt 65.55 339 P P 03 38 17.1 -0.1
baz=155
P36A Good Intent, A 65.69 338 P P 03 38 17.7 -0.5
baz=153
Q34A Chapman 65.71 336 P P 03 38 18.3 0.0
baz=151
N39A Derby Farms, D 65.93 340 P P 03 38 19.7 +0.1
baz=156
R32A Long Quarter, 65.97 334 P P 03 38 20.3 +0.3
baz=150
P34A Walnut Farm, R 66.22 336 P P 03 38 21.6 0.0
baz=152
N37A Lee Faris, Mou 66.37 339 P P 03 38 22.5 0.0
baz=154
M39A Webster 66.37 341 P P 03 38 21.9 -0.6
baz=156
LAZ Ladron 66.58 326 eP P 03 38 25.4 +1.2
ANMO Albuquerque 66.65 327 P P 03 38 26.0 +1.4
baz=142
ANMO Albuquerque 66.65 327 eP P 03 38 25.0 +0.3
comp=Z,3.3nm,0.9s
N36A Muff Farm, Cla 66.67 339 P P 03 38 25.0 +0.6
baz=154
CBKS Cedar Bluff 66.72 334 P P 03 38 25.4 +0.6
baz=149
O34A Beatrice 66.73 337 P P 03 38 24.6 -0.2
baz=152
K41A Shullsburg 66.87 343 P P 03 38 25.0 -0.6
baz=158
M37A Trindle Farm, 66.90 339 P P 03 38 25.7 -0.1
baz=154
L39A Vinton 66.91 341 P P 03 38 25.2 -0.6
baz=156
O33A Hebron 66.96 336 P P 03 38 26.6 +0.3
baz=151
TUC Tucson 67.00 322 P P 03 38 28.1 +1.3
baz=138
TUC Tucson 67.00 322 eP P 03 38 28.9 +2.1
comp=Z,13nm,1.7s
K40A Colesburg 67.19 342 P P 03 38 27.0 -0.6
baz=157
M36A Felix, Anita 67.19 339 P P 03 38 27.8 +0.1
baz=154
L38A Oak Wood Farm, 67.22 341 P P 03 38 27.5 -0.2
baz=156
N34A Lincoln 67.23 337 P P 03 38 27.6 -0.4
baz=152
T25A Trinidad 67.39 330 P P 03 38 29.6 +0.3
baz=144
K39A Oelwein 67.41 342 P P 03 38 28.2 -0.8
baz=157
J41A Loganville 67.49 343 P P 03 38 29.2 -0.4
baz=159
J40A Soldiers Grove 67.72 343 P P 03 38 30.5 -0.4
baz=158
J39A Decorah 67.94 342 P P 03 38 31.8 -0.5
baz=157
K37A Belmond 68.00 340 P P 03 38 32.6 -0.1
baz=155
L34A Svendsen Farm, 68.18 338 P P 03 38 33.8 -0.1
baz=152
BGNE Belgrade 68.33 337 P P 03 38 35.2 +0.4
baz=151
BGNE Belgrade 68.33 337 eP P 03 38 35.5 +0.7
comp=Z,38nm,0.9s
SDCO Great Sand Dun 68.39 329 P P 03 38 36.9 +1.3
baz=143
SDCO Great Sand Dun 68.39 329 eP P 03 38 36.7 +1.1
comp=Z,8.4nm,1.3s
J37A Redenius Farm, 68.46 341 P P 03 38 35.1 -0.5
baz=155
DBIC Dimbokro 68.51 73 P P 03 38 36.3 -0.2
comp=Z,3.6nm,0.7s,baz=219,slow=8.5,SNR=4.9
QSPA South Pole Qui 68.67 180 eP P 03 38 38.5 +1.6
comp=Z,39nm,1.3s
I38A Scanlan Farm, 68.76 342 P P 03 38 37.4 0.0
baz=156
X16A Lo Mia Camp, P 68.92 323 eP P 03 38 41.4 +2.5
comp=Z,3.9nm,1.0s
Q24A Divide 69.20 330 P P 03 38 41.7 +1.1
baz=144
L31A Butterfield Fa 69.25 336 P P 03 38 41.3 +0.8
baz=150
MVCO Mesa Verde 69.45 327 P P 03 38 43.6 +1.5
baz=141
MVCO Mesa Verde 69.45 327 eP P 03 38 43.3 +1.2
comp=Z,5.0nm,0.7s
WUAZ Wupatki 69.69 324 P P 03 38 45.9 +2.3
baz=136
WUAZ Wupatki 69.69 324 eP P 03 38 45.2 +1.6
comp=Z,8.6nm,0.9s
VLDQ Val d'Or 69.77 354 eP P 03 38 44.4 +0.9
comp=Z,8.6nm,1.0s
ECSD EROS Data Cent 69.83 339 P P 03 38 44.1 +0.1
baz=152
ISCO Idaho Springs 70.09 330 P P 03 38 47.8 +1.7
baz=144
H35A Sunnyside Ranc 70.11 340 P P 03 38 45.1 -0.7
baz=154
PV01 Paradox Valley 70.20 327 eP P 03 38 48.5 +1.8
comp=Z,223nm,0.6s
SMCO Snowmass 70.23 329 eP P 03 38 48.5 +1.4
comp=Z,3.8nm,0.8s
F36A Milaca 70.77 342 P P 03 38 49.3 -0.4
baz=156
W13A Hualapai Mount 70.80 322 eP P 03 38 53.1 +2.7
U15A Nan Rim 70.87 324 eP P 03 38 53.5 +2.6
comp=Z,13nm,1.4s
N23A Red Feather La 71.12 331 P P 03 38 53.8 +1.5
baz=144
TPFO Pinon Flats 71.28 319 P P 03 38 54.6 +1.4
baz=134
PFO Pinyon Flats O 71.28 319 P P 03 38 54.8 +1.5
baz=133
O20A White River Ci 71.59 329 P P 03 38 56.6 +1.6
baz=142
O20A White River Ci 71.59 329 eP P 03 38 55.1 +0.1
comp=Z,5.8nm,0.8s
GMRC Granite Mounta 71.61 321 P P 03 38 57.2 +2.0
baz=134
D37A Cotton 71.65 343 P P 03 38 55.6 +0.7
baz=157
C39A Grand Marais 71.67 345 P P 03 38 55.0 -0.1
baz=159
LCMT Little Creek M 71.81 324 eP P 03 38 57.9 +1.5
comp=Z,5.8nm,1.2s
C38A Sawbill Land. 71.86 344 P P 03 38 56.5 +0.3
baz=158
SRU San Rafael Swe 71.93 327 eP P 03 38 59.1 +2.0
comp=Z,7.5nm,0.7s
MTPU Mount Pierson 71.99 325 eP P 03 38 58.9 +1.2
comp=Z,22nm,2.0s
C37A Embarrass 72.11 344 P P 03 38 58.2 +0.5
baz=157
EYMN Ely 72.13 344 P P 03 38 58.2 +0.4
baz=158
F31A Hecla 72.25 339 P P 03 38 58.7 +0.1
baz=151
CCUT Cedar City 72.27 324 eP P 03 39 01.3 +2.1
comp=Z,10nm,1.1s
C36A Pine Crest Far 72.31 343 P P 03 38 59.7 +0.8
baz=157
P17A Butcher Ranch, 72.31 327 eP P 03 39 01.5 +2.2
comp=Z,15nm,1.3s
MSU Marysvale 72.34 325 eP P 03 39 01.8 +2.2
SHPR Sheep Range 72.53 322 eP P 03 39 03.3 +2.6
comp=Z,3.4nm,1.0s
K22A Casper 72.78 332 P P 03 39 03.2 +1.2
baz=143
RSSD Black Hills 72.92 334 P P 03 39 03.9 +1.0
baz=146
NLU North Lily Min 73.35 327 eP P 03 39 08.1 +2.6
comp=Z,3.9nm,0.8s
TPNV Topopah Spring 73.46 322 eP P 03 39 08.6 +2.5
comp=Z,5.2nm,0.7s
JLU Jordanelle 73.52 327 eP P 03 39 08.3 +1.8
comp=Z,7.4nm,0.8s
R11A Troy Canyon, C 74.07 323 P P 03 39 11.8 +2.1
baz=135
R11A Troy Canyon, C 74.07 323 eP P 03 39 11.1 +1.4
comp=Z,9.3nm,1.5s
PD31 Pinedale Array 74.25 330 eP P 03 39 11.9 +1.2
PDAR Pinedale Array 74.25 330 P P 03 39 11.6 +0.9
comp=Z,0.6nm,0.5s,baz=126,slow=7.4,SNR=8.1
BW06 Boulder Array 74.25 330 P P 03 39 11.9 +1.1
baz=141
BW06 Boulder Array 74.25 330 eP P 03 39 11.4 +0.7
HWUT Hardware Ranch 74.33 328 eP P 03 39 12.6 +1.4
comp=Z,7.1nm,0.8s
REDW Red Top Meadow 75.32 330 eP P 03 39 18.1 +1.2
comp=Z,16nm,1.5s
LOHW Long Hollow 75.39 330 eP P 03 39 18.3 +1.1
comp=Z,2.7nm,0.7s
ULM Lac du Bonnet 75.41 342 P P 03 39 16.7 -0.2
comp=Z,1.8nm,0.7s,baz=164,slow=7.4,SNR=3.6
TPAW Teton Pass 75.46 330 eP P 03 39 19.3 +1.6
comp=Z,4.4nm,0.8s
MOOW Moose Ponds 75.56 330 eP P 03 39 18.5 +0.3
comp=Z,3.0nm,0.7s
IMW Indian Meadow 75.77 330 eP P 03 39 21.2 +1.8
comp=Z,6.5nm,0.8s
FLWY Flagg Ranch 75.80 330 eP P 03 39 20.7 +1.2
comp=Z,3.3nm,0.7s
RLMT Red Lodge 75.95 332 eP P 03 39 19.1 -1.3
comp=Z,4.5nm,0.7s
YMR Madison River 76.37 330 eP P 03 39 23.0 +0.2
comp=Z,12nm,0.8s
GCMT Greycliff 76.65 332 eP P 03 39 24.2 0.0
VNDA Vanda 76.86 190 P P 03 39 26.8 +1.9
comp=Z,1.2nm,0.9s,baz=87,slow=4.7,SNR=5.1
TORD Torodi Ar. Bea 77.14 70 P P 03 39 27.1 -0.4
comp=Z,2.2nm,0.4s,baz=254,slow=5.4,SNR=57
TORD LR LR 04 14 21.5
comp=Z,29nm,18.4s,baz=140,slow=36
PAHR Pah Rah Range 77.14 322 eP P 03 39 28.9 +1.7
comp=Z,9.0nm,1.0s
HLID Hailey 77.19 328 eP P 03 39 29.2 +1.8
comp=Z,5.8nm,0.8s
ORV Oroville 78.27 321 eP P 03 39 34.6 +1.4
comp=Z,18nm,1.4s
BMO Blue Mountains 79.57 327 eP P 03 39 40.1 -0.2
comp=Z,5.1nm,0.9s
F10A Beach Ranch, E 80.32 328 eP P 03 39 45.5 +1.2
comp=Z,6.3nm,1.2s
C09A Chrisman Ranch 82.11 329 eP P 03 39 55.5 +1.9
comp=Z,9.5nm,0.6s
BOSA Boshof 83.22 118 P P 03 40 00.6 +0.4
comp=Z,3.4nm,0.9s,baz=252,slow=4.1,SNR=3.7
MAW Mawson 84.24 163 P P 03 40 05.6 +1.2
comp=Z,3.4nm,0.6s,baz=248,slow=5.4,SNR=7.2
A04D Lummi Island 84.92 327 P P 03 40 08.4 +0.5
baz=131
YKA Yellowknife Ar 91.29 340 P P 03 40 38.7 +0.7
comp=Z,4.5nm,0.7s,baz=136,slow=4.4,SNR=40
STHS Stebnicka Huta 105.97 43 ePDIFF Pdif 03 41 48.3 +3.8
ASAR Alice Springs 130.00 207 PKP PKPdf 03 46 43.7 +0.7
comp=Z,0.9nm,0.5s,baz=142,slow=2.0,SNR=9.1
WRA Warramunga Arr 133.05 210 PKP PKPdf 03 46 49.6 +0.9
comp=Z,1.0nm,0.5s,baz=153,slow=1.7,SNR=18
ZALV Zalesovo Beam 141.88 25 PKP PKPdf 03 47 04.1 +0.2
comp=Z,0.8nm,0.5s,baz=315,slow=2.4,SNR=3.6
KSH Kashi 144.93 51 ePKP PKPdf 03 47 10.3 +0.4
KSH esPKP 03 47 48.5
KSH ePP PP 03 50 29.0 0.0
KSH SKS SKSdf 03 54 08.5 +0.1
KSH SKKS SKKSac 03 57 08.5 -1.6
KSH AMB AMB
comp=Z,19nm,2.4s
MKAR Makanchi Array 145.51 36 PKPbc PKPab 03 47 11.6 +0.4
comp=Z,2.9nm,0.6s,baz=316,slow=3.3,SNR=29
USRK Ussuriysk Ar. 151.66 328 PKPbc PKPbc 03 47 27.1 +0.3
comp=Z,3.2nm,0.8s,baz=56,slow=1.9,SNR=4.1
MJAR Matsshiro Arr 152.28 309 PKPbc PKPbc 03 47 29.4 +0.8
comp=Z,1.4nm,0.7s,baz=70,slow=1.8,SNR=5.0
SONM Songino Array 153.45 7 PKPab PKPab 03 47 43.4 -0.2
comp=Z,0.8nm,0.7s,baz=318,slow=3.9,SNR=3.8

ISCJB ***27*** *04:02:37.6±0.6,30.48S±0.07×121.75E±0.06,h11km, Error ellipse: s-maj=9.7km s-min=7.2km az=160.5*
IDC ***27*** *04:02:37.9±2.5,30.51S×121.71E,h0km,ML3.9/4, Error ellipse: s-maj=56.7km s-min=25.7km az=147.0*
AUST ***27*** *04:02:42.4±0.6,30.57S×121.53E,h0km, Error ellipse: s-maj=0.3km s-min=0.2km az=296.0*

ISC 27 04:02:37.6±1.0, 30.59S±0.07×121.84E±0.06, h11km, n16, σ2.65/19, Western Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KMBL	Kambalda	0.77	177	P	Pn	04 02 56.6	+2.1
	baz=0.8,SNR=100						
KLBR	Kellerberrin	3.64	253	P	Pn	04 03 34.9	+0.9
	baz=3.4,SNR=19						
BLDU	Ballidu	4.42	268	P	Pn	04 03 44.5	-0.2
	baz=4.1						
NWAO	Narrogin (SRO)	4.56	238	Pn	Pn	04 03 47.4	+0.8
	baz=346,slow=12						
NWAO				Sn	Sn	04 04 35.2	-4.3
	6.8nm,0.3s,baz=307,slow=9.3,SNR=7.7						
NWAO				Lg	Lg	04 04 53.4	
	16nm,0.3s,baz=212,slow=22,SNR=6.5						
NWAO	Narrogin (SRO)	4.56	238	P	Pn	04 03 47.5	+1.0
	baz=4.3						
NWAO				P	Pn	04 03 47.5	+1.0
	baz=4.3						
MEEK	Meekatharra	4.85	323	P	Pn	04 03 52.5	+1.9
	baz=4.7,SNR=5.9						
MORW	Morawa	5.26	285	P	Pn	04 03 56.2	0.0
	baz=5.0						
FORT	Forrest	5.36	94	P	Pn	04 04 05.1	+7.5
	baz=5.6						
RKGY	Rocky Gully	5.73	224	P	Pn	04 04 04.8	+2.2
	baz=5.6,SNR=14						
WRKA	Warakurna	7.96	47	P	Pn	04 04 40.1	+6.8
	baz=8.1,SNR=12						
GIRL	Giralia	10.43	318	P	Pn	04 05 08.0	+0.8
	baz=10						
ASAR	Alice Springs	12.76	60	Pn	Pn	04 05 42.2	+3.0
	0.6nm,0.3s,baz=237,slow=11,SNR=22						
ASAR				Sn	Sn	04 07 57.1	-4.2
	0.3nm,0.3s,baz=244,slow=23,SNR=4.7						
ASAR				Lg	Lg	04 09 25.3	
	baz=235,slow=26						
FITZ	Fitzroy Crossi	12.91	16	Pn	Pn	04 05 42.6	+1.5
	0.6nm,0.3s,baz=194,slow=9.9,SNR=33						
FITZ				Sn	Sn	04 07 57.6	-7.2
	baz=94,slow=19						
FITZ	Fitzroy Crossi	12.91	16	P	Pn	04 05 43.1	+2.1
	baz=13,SNR=6.3						
WRA	Warramunga Arr	15.49	50	Pn	Pn	04 06 17.2	+1.1
	0.5nm,0.3s,baz=226,slow=13,SNR=25						
WRA				Sn	Sn	04 09 02.3	-5.4
	baz=222,slow=25						
STKA	Stephens Creek	16.95	99	P	Pn	04 06 38.2	+3.4
	0.3nm,0.3s,baz=290,slow=13,SNR=4.3						
STKA				S	Sn	04 09 41.9	-1.2
	baz=124,slow=15						

IDC ***27*** *04:11:31.9±1.1,13.12N×145.75E,h0km,mb3.9/5, mb1 4.1/5,mb1mx3.5/38,mbtmp3.9/5,Error ellipse: s-maj=29.1km s-min=21.5km az=25.0*
ISCJB ***27*** *04:11:36.9±1.0,13.1N±0.2×145.7E±0.1,h50km,mb3.8/5,*

Error ellipse: s-maj=25.5km s-min=13.0km az=34.7

ISC 27 04:11:39.0±1.0, **13°1N**±0°2×**145°6E**±0°1, **h50**km, **n8,**
σ1§**07/9**, **mb3.7/5, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.84**	**304**	Pn	**Pn**	**04 11 53.8**	**-0.8**
	99nm,0.3s,baz=148,slow=16,SNR=17						
GUMO				Sn	**Sn**	**04 12 06.5**	**+0.5**
	154nm,0.3s,baz=198,slow=20,SNR=9.7						
WRA	**Warramunga Arr**	**34.67**	**199**	P	**P**	**04 18 23.6**	**-0.4**
	0.3nm,0.6s,baz=21,slow=9.5,SNR=5.9						
ILAR	**Eielson Array**	**68.69**	**25**	P	**P**	**04 22 36.9**	**-0.1**
	0.4nm,0.4s,baz=251,slow=6.0,SNR=7.5						
BVAR	**Borovoye Array**	**70.73**	**322**	P	**P**	**04 22 50.4**	**+0.6**
	1.7nm,0.3s,baz=106,slow=7.8,SNR=11						
YKA	**Yellowknife Ar**	**82.95**	**27**	P	**P**	**04 23 57.9**	**-0.4**
	0.3nm,0.4s,baz=285,slow=5.1,SNR=5.2						
FINES	**FINESS Array B**	**91.88**	**335**	P	**P**	**04 24 41.0**	**-0.6**
	0.2nm,0.5s,baz=73,slow=6.4,SNR=4.8						
TORD	**Torodi Ar. Bea**	**135.71**	**305**	PKP	**PKPdf**	**04 30 57.2**	**+2.2**
	0.2nm,0.5s,baz=27,slow=0.6,SNR=1.4						
DBIC	**Dimbokro**	**144.67**	**302**	PKP	**PKPdf**	**04 31 11.2**	**0.0**
	3.2nm,1.0s,baz=31,slow=4.0,SNR=7.2						

IDC ***27*** *04:15:06.7±0.9, 13°.15N×145°.74E, h0km, mb3.9/7, mb1 4.1/7, mb1mx3.6/37, mbtmp3.9/7, Error ellipse: s-maj=23.2km s-min=19.0km az=55.0*
ISCJB ***27*** *04:15:11.1±0.8, 13°.1N±0°.1×145°.7E±0°.1, h43km, mb3.9/7, Error ellipse: s-maj=20.1km s-min=11.3km az=39.9*

ISC 27 04:15:12.9±0.9, **13°1N**±0°2×**145°6E**±0°1, **h43**km, **n13,**
σ0§**49/14**, **mb3.9/7, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.88**	**302**	Pn	**Pn**	**04 15 28.6**	**-0.2**
	189nm,0.3s,baz=136,slow=11,SNR=20						
GUMO				Sn	**Sn**	**04 15 40.6**	**+0.2**
	252nm,0.3s,baz=216,slow=19,SNR=6.8						
WRA	**Warramunga Arr**	**34.69**	**199**	P	**P**	**04 21 58.4**	**-0.2**
	0.5nm,0.6s,baz=22,slow=9.7,SNR=8.2						
ASAR	**Alice Springs**	**38.32**	**197**	P	**P**	**04 22 29.9**	**+0.3**
	0.4nm,0.6s,baz=21,slow=10,SNR=6.0						
MKAR	**Makanchi Array**	**62.34**	**316**	P	**P**	**04 25 31.8**	**+0.7**
	0.5nm,0.3s,baz=94,slow=9.3,SNR=7.5						
ILAR	**Eielson Array**	**68.67**	**25**	P	**P**	**04 26 11.2**	**-0.3**
	0.5nm,0.4s,baz=252,slow=10,SNR=10						
BVAR	**Borovoye Array**	**70.75**	**322**	P	**P**	**04 26 24.5**	**-0.1**
	2.6nm,0.4s,baz=112,slow=7.6,SNR=15						
YKA	**Yellowknife Ar**	**82.93**	**27**	P	**P**	**04 27 33.5**	**+0.5**
	0.4nm,0.4s,baz=285,slow=5.0,SNR=7.1						
FINES	**FINESS Array B**	**91.90**	**335**	P	**P**	**04 28 15.8**	**-0.6**
	0.4nm,0.4s,baz=70,slow=4.6,SNR=5.9						
TORD	**Torodi Ar. Bea**	**135.74**	**305**	PKP	**PKPdf**	**04 34 30.4**	**+0.7**
	0.3nm,0.8s,baz=222,slow=1.9,SNR=3.8						
DBIC	**Dimbokro**	**144.70**	**302**	PKP	**PKPdf**	**04 34 45.8**	**-0.3**
	2.6nm,0.4s,baz=45,slow=5.0,SNR=9.7						
KIC	**Kosan Boka**	**144.78**	**302**	*e*PKP1	**PKPdf**	**04 34 45.5**	**-0.7**
	87nm,1.8s						
TIC	**Toumodi**	**144.85**	**302**	*e*PKP1	**PKPdf**	**04 34 46.0**	**-0.3**
LIC	**Lamto**	**145.09**	**302**	*e*PKP1	**PKPdf**	**04 34 46.5**	**-0.2**
	36nm,0.9s						

MEX 27 04:27:24.0±0.7, **13°89N×92°22W, h67**km±53km, **MD4.0,**
Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.38**	**2**	*e*P	Pn	04 28 00.4	-0.6
CCIG				*i* S	Sn	04 28 27.2	-2.0

MEX 27 04:29:01.8±0.4, **13°97N×92°26W, h83**km±23km, **MD3.8,**
Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.30**	**3**	*e*P	Pn	04 29 36.5	-1.5
CCIG				*i* S	Sn	04 30 04.0	-1.6

ISCJB ***27*** *04:29:16.3±0.3, 1°.93N±0°.03×127°.27E±0°.03, h112km, mb4.5/42, Error ellipse: s-maj=4.9km s-min=3.8km az=5.0*
DJA ***27*** *04:29:16.1±1.1, 2°N±3°×12°7E±°, h19km±10km, M5.0/7, mb5.2/4, mB5.4/3, MLv5.0/7, Mw(mB)4.8/3*
IDC ***27*** *04:29:16.4±2.5, 1°.91N×127°.36E, h100km±22km, mb4.1/19, mb1 4.2/19, mb1mx3.9/42, mbtmp4.4/19, MS3.2/1, Ms1 3.2/1, ms1mx2.5/40, Error ellipse: s-maj=26.2km s-min=9.0km az=78.0*
NEIC ***27*** *04:29:18.4±1.1, 1°.91N×127°.38E, h123km±10km, mb4.6/13, Error ellipse: s-maj=11.6km s-min=5.6km az=64.0*

ISC 27 04:29:17.8±0.4, **1°93N**±0°04×**127°32E**±0°06, **h112**km, **n79,**
σ1§**60/92**, **mb4.5/42, 1D, Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**2.50**	**314**	P	**Pn**	**04 29 54.0**	**-3.3**
SGSI				S	**Sn**	**04 30 22.3**	**-5.3**
LBMI	**Labuha**	**2.56**	**176**	P	**Pn**	**04 29 58.4**	**+0.3**
LBMI				S	**Sn**	**04 30 30.5**	**+1.5**
KMSI	**Cibinong**	**3.60**	**248**	P	**Pn**	**04 30 11.1**	**-0.7**
KMSI				S	**Sn**	**04 30 52.0**	**-1.6**
SANI	**Sanana**	**4.17**	**199**	P	**Pn**	**04 30 17.3**	**-2.2**
GTOI	**Gorontalo**	**4.50**	**253**	P	**Pn**	**04 30 23.7**	**-0.1**
GTOI				S	**Sn**	**04 31 13.5**	**-1.7**
NLAI	**Namlea**	**5.14**	**182**	P	**Pn**	**04 30 31.8**	**-0.7**
	81nm,0.5s,3µm0.6nm						
LUWI	**Luwuk**	**5.42**	**237**	P	**Pn**	**04 30 37.3**	**+0.9**
LUWI	**Luwuk**	**5.42**	**237**	*e*Pn	**Pn**	**04 30 36.8**	**+0.4**
LUWI				*e*S	**Sn**	**04 31 37.1**	**-0.5**
MRSI	**Marisa**	**5.57**	**255**	P	**Pn**	**04 30 40.5**	**+2.2**
MRSI				S	**Sn**	**04 31 38.7**	**-2.4**
CTBH	**Cotabato--PC H**	**6.08**	**330**	ǁ*i*P	**Pn**	**04 30 42.6**	**-2.7**
FAKI	**Fak Fak**	**6.89**	**134**	*e*Pn	**Pn**	**04 30 57.8**	**+1.5**
BNDI	**Bandanaira**	**6.91**	**158**	P	**Pn**	**04 30 58.1**	**+1.6**
KDI	**Kendari**	**7.50**	**219**	P	**Pn**	**04 31 02.8**	**-1.8**
	185nm,0.6s,4µm0.9nm						
TTSI	**Tana Toraja**	**8.98**	**237**	P	**Pn**	**04 31 23.2**	**-1.4**
MYLDM	**Lahad Datu**	**9.38**	**290**	*e*Pn	**Pn**	**04 31 30.3**	**+0.3**
SPSI	**Sidrap Palu**	**9.55**	**232**	P	**Pn**	**04 31 31.1**	**-1.2**
KAPI	**Kappang**	**10.24**	**228**	*e*Pn	**Pn**	**04 31 40.7**	**-0.9**
KAPI				*e*S	**Sn**	**04 33 32.8**	**-1.7**
KKM	**Kota Kinabalu**	**11.81**	**291**	*e*Pn	**Pn**	**04 32 04.6**	**+1.8**
SOEI	**Soe**	**12.00**	**195**	*e*Pn	**Pn**	**04 32 07.1**	**+1.7**
TWSI	**Taliwang, Sumb**	**14.85**	**224**	P	**P**	**04 32 47.7**	**+2.6**
SBUM	**Sibu**	**15.10**	**272**	*e*Pn	**P**	**04 32 48.5**	**+0.6**
	18nm,0.6s						
MTN	**Manton Dam**	**15.16**	**166**	*e*Pn	**Pn**	**04 32 39.2**	**-6.9**
	27nm,0.4s						
FITZ	**Fitzroy Crossi**	**19.98**	**185**	P	**P**	**04 33 40.3**	**-1.1**
	1.7nm,0.3s,baz=358,slow=9.5,SNR=59						
FITZ	**Fitzroy Crossi**	**19.98**	**185**	*e*P	**P**	**04 33 40.8**	**-0.6**
WRAB	**Tennant Creek**	**22.80**	**163**	*e*P	**P**	**04 34 10.4**	**-0.7**
	37nm,0.9s						
WRA	**Warramunga Arr**	**22.80**	**163**	P	**P**	**04 34 10.3**	**-1.0**
	30nm,0.6s,baz=343,slow=11,SNR=176						
WRA				S	**S**	**04 38 11.7**	**-0.3**
	2.1nm,0.9s,baz=352,slow=16,SNR=4.2						
WB2	**Warramunga Arr**	**22.81**	**163**	*e*P	**P**	**04 34 10.5**	**-0.8**
YHNB	**Yeheng**	**23.32**	**346**	*e*P	**P**	**04 34 15.5**	**-0.7**
	27nm,0.8s						
MBWA	**Marble Bar**	**24.12**	**198**	*e*P	**P**	**04 34 22.6**	**-0.7**
	13nm,0.7s						
QIZ	**Qiongzhong**	**24.12**	**316**	*e*P	**P**	**04 34 22.5**	**-0.8**
	15nm,0.9s						
UBPT	**Khong Chiam**	**25.31**	**303**	P	**P**	**04 34 34.1**	**-0.1**
	33nm,0.7s						
AS31	**Alice Springs**	**26.24**	**166**	*e*P	**P**	**04 34 41.1**	**-1.4**
	3.3nm,0.8s						
ASAR	**Alice Springs**	**26.24**	**166**	P	**P**	**04 34 41.9**	**-0.6**
	5.2nm,0.6s,baz=353,slow=7.5,SNR=79						
ASAR				PcP	**PcP**	**04 38 06.8**	**+0.3**
	0.8nm,0.6s,baz=345,slow=3.3,SNR=4.4						
ASAR				ScP	**ScP**	**04 41 37.1**	**+0.9**
	1.0nm,0.8s,baz=339,slow=2.1,SNR=5.0						
AS01	**Alice Springs**	**26.25**	**166**	*e*P	**P**	**04 34 41.2**	**-1.4**
SKNT	**Sakolnakorn**	**27.39**	**305**	P	**P**	**04 34 52.8**	**-0.1**
	16nm,0.8s						
GYA	**Guiyang**	**31.44**	**323**	*e*P	**P**	**04 35 31.3**	**+2.5**
GYA				pP	pP	04 35 58.5	+4.9
GYA				sP	sP	04 36 12.0	+5.5
GYA				PP	PP	04 36 57.0	+15
GYA				S	**S**	**04 40 31.3**	**+2.6**
GYA				sS	sS	04 41 17.5	+5.7
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CMAR	**Chiang Mai Arr**	**32.31**	**302**	P	**P**	**04 35 36.1**	**-0.3**
	comp=Z,0.8nm,0.4s,baz=116,slow=7.4,SNR=7.7						
CMMT	**Chiang Mai**	**32.47**	**303**	P	**P**	**04 35 38.4**	**+0.6**
	comp=Z,8.3nm,0.9s,comp=Z,342nm						
CHTO	**Chiang Mai**	**32.47**	**303**	P	**P**	**04 35 38.5**	**+0.7**
	comp=Z,32nm,1.2s						
CMAI	**Chiengmai2**	**32.92**	**305**	P	**P**	**04 35 42.2**	**+0.3**
	comp=Z,77nm,0.9s						
KMI	**Kunming**	**33.07**	**316**	P	**P**	**04 35 46.3**	**+3.1**
KMI				pmax	pmax		
	comp=Z,10.0nm,0.5s						
KMI				pmax	pmax		
	comp=Z,72nm,6.0s						
MJAR	**Matsushiro Arr**	**35.88**	**15**	P	**P**	**04 36 05.3**	**-1.7**
	comp=Z,0.9nm,0.3s,baz=197,slow=9.4,SNR=3.9						
NWAO	**Narrogin (SRO)**	**35.96**	**195**	P	**P**	**04 36 07.2**	**-0.5**
	comp=Z,10.0nm,0.7s,baz=238,slow=8.5,SNR=5.6						
NWAO	**Narrogin (SRO)**	**35.96**	**195**	*e*P	**P**	**04 36 07.8**	**+0.1**
STKA	**Stephens Creek**	**36.25**	**159**	P	**P**	**04 36 10.2**	**0.0**
	comp=Z,23nm,0.7s,baz=334,slow=8.1,SNR=46						
STKA	**Stephens Creek**	**36.25**	**159**	*e*P	**P**	**04 36 10.2**	**0.0**
	comp=Z,4.9nm,0.8s						
CD2	**Chengdu**	**36.44**	**325**	*e*P	**P**	**04 36 12.5**	**+0.6**
BJT	**Baijiatuao**	**39.24**	**346**	*e*P	**P**	**04 36 35.4**	**+0.1**
	comp=Z,13nm,0.8s						
BJI	**Beijing**	**39.26**	**346**	P	**P**	**04 36 35.5**	**+0.1**
BJI				pmax	pmax		
	comp=Z,19nm,0.8s						
HHC	**Hu-ho-hao-te**	**41.28**	**342**	*e*P	**P**	**04 36 54.5**	**+2.3**
HHC				pmax	pmax		
	comp=Z,18nm,1.0s						
HHC				pmax	pmax		
	comp=Z,120nm,5.5s						
USRK	**Ussuriysk Ar.**	**42.29**	**5**	P	**P**	**04 37 00.6**	**+0.3**
	comp=Z,3.6nm,0.7s,baz=200,slow=8.0,SNR=7.0						
LSA	**Lhasa**	**44.07**	**312**	*e*P	**P**	**04 37 17.0**	**+1.5**
	comp=Z,8.4nm,0.6s						
GTA	**Gaotai**	**44.94**	**330**	P	**P**	**04 37 22.5**	**+0.8**
GTA				pP	pP	04 37 49.5	+1.8
GTA				sP	sP	04 38 00.5	+0.2
GTA				pmax	pmax		
	comp=Z,8.0nm,0.8s						
KLR	**Kul'dur**	**47.27**	**4**	P	**P**	**04 37 38.5**	**-1.2**
	comp=Z,1.5nm,0.6s,baz=224,slow=6.6,SNR=6.3						
SONM	**Songino Array**	**49.18**	**341**	P	**P**	**04 37 54.6**	**+0.1**
	comp=Z,2.4nm,0.7s,baz=147,slow=7.5,SNR=8.8						
SONM				PcP	**PcP**	**04 39 17.1**	**+0.9**
	comp=Z,0.7nm,0.6s,baz=159,slow=4.5,SNR=2.4						
SONA1	**Songino Array**	**49.19**	**341**	*e*P	**P**	**04 37 54.9**	**+0.3**
TLY	**Talaya**	**53.41**	**342**	LR	LR	05 01 59.9	
	comp=Z,23nm,19.4s,baz=128,slow=37						
WMQ	**Urumqi**	**54.53**	**325**	P	**P**	**04 38 35.8**	**+1.5**
WMQ				pP	pP	04 38 58.3	-2.8
WMQ				pmax	pmax		
	comp=Z,22nm,0.9s						
WMQ				pmax	pmax		
	comp=Z,120nm,5.0s						
MK01	**Makanchi Array**	**59.34**	**326**	*e*P	**P**	**04 39 08.6**	**+0.4**
MK31	**Makanchi Array**	**59.36**	**326**	*e*P	**P**	**04 39 08.9**	**+0.6**
MKAR	**Makanchi Array**	**59.36**	**326**	P	**P**	**04 39 08.8**	**+0.6**
	comp=Z,6.2nm,0.6s,baz=121,slow=8.5,SNR=66						
MAKZ	**Makanchi**	**59.55**	**325**	*e*P	**P**	**04 39 10.0**	**+0.4**
	comp=Z,6.3nm,0.6s						
KSH	**Kashi**	**59.73**	**316**	*e*P	**P**	**04 39 12.3**	**+1.2**
KSH				*e*pP	pP	04 39 41.0	+2.7
KSH				*e*sP	sP	04 39 52.3	+1.7
KSH				*e*ScP	**ScP**	**04 43 48.5**	**+0.9**
KSH				S	**S**	**04 47 12.0**	**-1.5**
KSH				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KSH				pmax	pmax		
	comp=Z,86nm,2.9s						
KSH				LR	LR		
	comp=N,79nm,5.1s						
KSH				LR	LR		
	comp=E,110nm,6.7s						
KSH				LR	LR		
	comp=Z,110nm,5.4s						
BFZ	**Birch Farm**	**61.47**	**139**	*e*P	**P**	**04 39 18.9**	**-3.8**
	comp=Z,112nm,0.6s						
ZAA0	**Zalesovo Array**	**62.45**	**333**	*e*P	**P**	**04 39 27.9**	**-1.0**
ZALV	**Zalesovo Beam**	**62.45**	**333**	P	**P**	**04 39 27.9**	**-1.1**
	comp=Z,1.5nm,0.5s,baz=130,slow=5.2,SNR=6.6						
SEY	**Seymchan**	**63.65**	**12**	P	**P**	**04 39 38.0**	**+1.4**
	comp=Z,2.7nm,0.8s,baz=204,slow=12,SNR=6.3						
KKAR	**Karatay Array**	**64.94**	**317**	*e*P	**P**	**04 39 46.5**	**+0.9**
BRVK	**Borovoye**	**69.21**	**327**	*e*P	**P**	**04 40 12.5**	**+0.2**
	comp=Z,6.9nm,1.1s						
NRIK	**Noril'sk**	**72.31**	**346**	P	**P**	**04 40 30.8**	**0.0**
	comp=Z,2.9nm,0.6s,baz=138,slow=6.7,SNR=4.4						
GEYT	**Alibeck**	**72.48**	**309**	P	**P**	**04 40 33.5**	**+0.9**
	comp=Z,2.4nm,0.5s,baz=108,slow=4.7,SNR=4.7						
ABKAR	**Akbulak array**	**73.91**	**321**	*e*P	**P**	**04 40 40.1**	**-0.6**
	comp=Z,0.5nm,0.4s						
VNDA	**Vanda**	**81.58**	**173**	P	**P**	**04 41 22.8**	**+0.2**
	comp=Z,1.5nm,0.8s,baz=316,slow=6.8,SNR=6.2						
MAW	**Mawson**	**82.28**	**200**	P	**P**	**04 41 26.8**	**+0.3**
	comp=Z,4.7nm,0.8s,baz=110,slow=3.7,SNR=8.7						
BRTR	**Keskin Array B**	**91.61**	**310**	P	**P**	**04 42 12.3**	**-0.4**
	comp=Z,0.3nm,0.6s,baz=61,slow=6.8,SNR=2.7						
ARCES	**ARCESS Array B**	**92.33**	**340**	P	**P**	**04 42 13.5**	**-1.7**
	comp=Z,1.5nm,0.7s,baz=61,slow=7.3,SNR=3.4						
FINES	**FINESS Array B**	**93.69**	**332**	P	**P**	**04 42 20.7**	**-0.8**
	comp=Z,0.6nm,0.6s,baz=46,slow=12,SNR=3.5						
TXAR	**Lajitas Array**	**122.21**	**53**	PKP	**PKPdf**	**04 48 00.6**	**+0.3**
	comp=Z,0.2nm,0.6s,baz=215,slow=1.1,SNR=3.8						
TORD	**Torodi Ar. Bea**	**124.02**	**287**	PKP	**PKPdf**	**04 48 03.9**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=97,slow=1.7,SNR=9.9						

IDC ***27*** *04:30:16.5±1.3, 30°.04S×176°.36W, h0km, mb3.9/2, mb1 4.3/4, mb1mx3.8/33, mbtmp4.2/4, ML4.3/2, MS3.2/1, Ms1 3.2/1, ms1mx2.6/27, Error ellipse: s-maj=30.0km s-min=24.2km az=50.0*

ISC 27 04:30:19.5±1.2, **30°00S**±0°10×**176°3W**±0°1, **h24**km, **n15,**
σ1§**37/12**, **Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.56**	**298**	Pn	**Pb**	**04 30 47.5**	**-0.1**
	343nm,0.3s,baz=227,slow=23,SNR=7.3						
RAO				Sn	**Sb**	**04 31 07.4**	**+0.5**
	2µm,0.3s,baz=70,slow=20,SNR=11						
URZ	**Urewera**	**9.86**	**212**	Pn	**Pn**	**04 32 38.6**	**-1.2**
	2.7nm,0.3s,baz=270,slow=6.4,SNR=12						
URZ				Sn	**Sn**	**04 34 31.1**	**+1.4**
	4.1nm,0.3s,baz=250,slow=23,SNR=7.6						
RPZ	**Rata Peaks**	**16.98**	**213**	Pn	**Pn**	**04 34 13.4**	**-1.9**
	1.0nm,0.3s,baz=40,slow=16,SNR=1.7						
RPZ				Sn	Sn	04 37 11.8	-12
	0.5nm,0.3s,baz=217,slow=20,SNR=1.7						
DZM	**Mont Dzumac**	**17.35**	**293**	*e*P	P	04 34 28.6	+7.1
	3.8nm,0.2s						
DZM				*e*LR	LR	04 38 47.1	
	165nm,25.7s						
TBI	**Tubuai**	**24.88**	**81**	*e*LR	LR	04 41 18.1	
	153nm,27.0s						
PPT2	**Papeete2**	**27.35**	**69**	*e*LR	LR	04 42 31.6	
	153nm,25.5s						
PPT	**Papeete**	**27.36**	**69**	LR	LR	04 45 28.8	
	comp=Z,49nm,18.5s,baz=216,slow=33						
TAOE	**Nuku Hiva Isla**	**39.83**	**66**	*e*LR	LR	04 48 19.7	
	95nm,24.6s						
ASAR	**Alice Springs**	**44.56**	**266**	P	**P**	**04 38 29.5**	**-0.3**
	0.6nm,0.6s,baz=98,slow=6.6,SNR=4.3						
WRA	**Warramunga Arr**	**45.52**	**271**	P	**P**	**04 38 37.2**	**-0.3**
	2.1nm,0.7s,baz=110,slow=7.8,SNR=5.1						
FINES	**FINESS Array B**	**145.24**	**341**	PKPbc	**PKPab**	**04 49 53.4**	**-0.8**
	1.4nm,0.5s,baz=48,slow=2.1,SNR=11						
NB2	**NORSAR Subarra1**	**48.55**	**353**	PKP	**PKPbc**	**04 50 03.0**	**-0.7**
	comp=Z,0.5nm,0.7s,baz=10.0,slow=2.9						
NOA	**NORSAR Array B**	**48.55**	**353**	PKPbc	**PKPbc**	**04 50 03.0**	**-0.7**
	comp=Z,0.9nm,0.7s,baz=14,slow=4.4,SNR=4.0						
BRTR	**Keskin Array B**	**53.66**	**300**	PKPbc	**PKPbc**	**04 50 18.6**	**+2.1**
	comp=Z,0.3nm,0.5s,baz=134,slow=8.3,SNR=2.0						
TORD	**Torodi Ar. Bea**	**163.14**	**173**	PKPab	**PKPab**	**04 51 12.2**	**+1.8**
	comp=Z,3.4nm,0.8s,baz=194,slow=4.0,SNR=18						

IDC ***27*** *04:39:22.4±1.5, 35°.98N×141°.86E, h0km, mb3.5/3, mb1 3.6/5, mb1mx3.4/53, mbtmp3.6/5, ML3.5/2, Error ellipse: s-maj=34.0km s-min=26.1km az=74.0*
JMA ***27*** *04:39:24.1±0.3, 36°.18N×142°.00E, h59km, M3.2*

ISC 27 04:39:24.7±1.4, **36°12N**±0°05×**141°94E**±0°09, **h23**km, **n21,**
σ1§**16/21**, **mb3.5/3, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.98**	**245**	P	**Pb**	**04 39 42.9**	**-0.1**
CHOJ				*e*S	**Sn**	**04 39 57.4**	**+1.3**
JHO	**Hitachi**	**1.21**	**294**	P	**Pn**	**04 39 45.2**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.34**	**317**	P	**Pn**	**04 39 46.7**	**-1.4**
JFK	**Kawauchi**	**1.51**	**326**	P	**Pn**	**04 39 49.1**	**-1.3**
BSO1	**Boso 1**	**1.67**	**209**	P	**Pn**	**04 39 52.5**	**+0.5**
BSO3	**Boso 3**	**1.76**	**222**	P	**Pn**	**04 39 54.3**	**+0.7**
BSO3				*e*S	**Sb**	**04 40 17.5**	**-0.3**
JFT	**Otama**	**1.90**	**318**	P	**Pn**	**04 39 55.6**	**-0.1**
JFT				*e*S	**Sn**	**04 40 19.4**	**+0.5**
JAG	**Ashikaga**	**2.04**	**279**	P	**Pn**	**04 39 57.5**	**-0.1**
JFY	**Yanaizu**	**2.21**	**306**	P	**Pn**	**04 40 00.4**	**+0.4**
MJAR	**Matsushiro Arr**	**3.04**	**279**	Pn	**Pn**	**04 40 12.2**	**+0.7**
	4.6nm,0.3s,baz=258,slow=9.5,SNR=24						
MJAR				Sn	**Sb**	**04 40 53.7**	**-1.3**
	2.1nm,0.3s,baz=211,slow=22,SNR=6.6						
MAT	**Matsushiro**	**3.05**	**279**	P	**Pn**	**04 40 12.5**	**+1.0**
MAT				S	**Sb**	**04 40 53.2**	**-1.8**
JHJ	**Hachijo jima 2**	**3.49**	**211**	Pn	**Pn**	**04 40 15.7**	**-1.9**
	21nm,0.3s,baz=69,slow=17,SNR=3.0						
JHJ				Sn	**Sn**	**04 40 56.0**	**-2.2**
	32nm,0.3s,baz=73,slow=19,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**27.32**	**120**	T	T	05 13 46.9	
	baz=312,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**27.33**	**120**	T	T	05 13 44.3	
	baz=312,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy**	**27.34**	**120**	T	T	05 13 44.3	
	baz=312,slow=75,SNR=9.2						
H11S1	**WAKE ISLAND Hy**	**28.01**	**122**	T	T	05 14 30.1	
	baz=314,slow=75,SNR=12						
H11S3	**WAKE ISLAND Hy**	**28.01**	**122**	T	T	05 14 36.2	
	baz=314,slow=75,SNR=9.4						
H11S2	**WAKE ISLAND Hy**	**28.03**	**122**	T	T	05 14 33.6	
	baz=314,slow=75,SNR=10						
SONM	**Songino Array**	**28.65**	**305**	P	**P**	**04 45 21.0**	**+1.3**
	0.6nm,0.5s,baz=111,slow=7.9,SNR=4.2						
MKAR	**Makanchi Array**	**44.97**	**303**	P	**P**	**04 47 38.6**	**+0.6**
	0.4nm,0.6s,baz=88,slow=11,SNR=4.5						
WRA	**Warramunga Arr**	**56.22**	**189**	P	**P**	**04 49 03.1**	**0.0**
	0.1nm,0.4s,baz=5.1,slow=7.1,SNR=5.5						

IDC ***27*** *04:45:17.8±0.6, 3°.96N×128°.24E, h0km, mb4.2/21, mb1 4.3/21, mb1mx4.1/53, mbtmp4.2/21, MS3.5/6, Ms1 3.6/6, ms1mx3.2/46, Error ellipse: s-maj=27.7km s-min=12.9km az=75.0*
ISCJB ***27*** *04:45:25.5±0.3, 3°.88N±0°.03×128°.22E±0°.04, h71km, mb4.3/44, Error ellipse: s-maj=6.2km s-min=4.9km az=173.6*
DJA ***27*** *04:45:26.3±0.9, 4°N±9°×12°8E±°, h10km, M4.8/2, mb4.9/2, mB4.9/1, MLv4.7/2, Mw(mB)4.2/1*
NEIC ***27*** *04:45:27.2±1.3, 3°.90N×128°.26E, h73km±12km, mb4.5/18, Error ellipse: s-maj=11.3km s-min=6.6km az=62.0*

ISC 27 04:45:27.0±0.5, **3°86N**±0°06×**128°25E**±0°07, **h71**km, **n77,**
σ1§**45/77**, **mb4.4/44, 1D, North of Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**2.72**	**266**	P	**Pn**	**04 46 05.7**	**-2.7**
SGSI				S	**Sn**	**04 46 37.9**	**-2.4**
LBMI	**Labuha**	**4.53**	**190**	P	**Pn**	**04 46 34.5**	**+1.3**
CTBH	**Cotabato--PC H**	**5.20**	**310**	ǁ*i*P	**Pn**	**04 46 45.8**	**+3.6**
SIJI	**Sorong**	**5.58**	**147**	Pn	**Pn**	**04 46 46.5**	**-1.1**
	10nm,0.3s,baz=1.5,slow=4.2,SNR=2.5						
SIJI				Sn	**Sn**	**04 47 48.2**	**-2.2**
	30nm,0.3s,baz=274,slow=19,SNR=2.0						
GTOI	**Gorontalo**	**6.14**	**239**	P	**Pn**	**04 46 55.1**	**0.0**
	92nm,0.6s,1µm0.4nm						
SANI	**Sanana**	**6.29**	**201**	P	**Pn**	**04 46 57.2**	**0.0**
MRSI	**Marisa**	**7.14**	**242**	P	**Pn**	**04 47 09.3**	**+0.4**
LUWI	**Luwuk**	**7.33**	**228**	*e*Pn	**Pn**	**04 47 12.7

GTA					sP	sP	04 53 49.8	-1.9
GTA					S	**S**	**04 59 51.0**	**-0.5**
GTA					pmax	pmax		
	comp=Z,9.0nm,1.2s							
GTA					pmax	pmax		
	comp=Z,120nm,4.8s							
GTA					LR	LR		
	comp=N,110nm,20.9s							
GTA					LR	LR		
	comp=E,160nm,20.4s							
GTA					LR	LR		
	comp=Z,110nm,20.0s							
KLR	**Kulʲdur**	**45.30**	**3**	P	**P**	**04 53 35.1**	**-2.6**	
	comp=Z,0.7nm,0.5s,baz=174,slow=9.9,SNR=4.0							
PALK	**Pallekele**	**47.43**	**276**	LR	LR	05 18 15.1		
	comp=Z,37nm,18.3s,baz=116,slow=42							
SONM	**Songino Array**	**47.67**	**340**	P	**P**	**04 53 55.2**	**-1.2**	
	comp=Z,1.8nm,0.8s,baz=155,slow=8.6,SNR=8.6							
SONA1	**Songino Array**	**47.68**	**340**	*e*P	**P**	**04 53 55.8**	**-0.8**	
WMQ	**Urumqi**	**53.50**	**324**	*e*P	**P**	**04 54 41.8**	**+1.5**	
WMQ				pP	sP	04 55 05.8	-0.7	
WMQ				pmax	pmax			
	comp=Z,23nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,110nm,3.7s							
PETK	**Petropavlovsk-**	**54.75**	**21**	P	**P**	**04 54 49.4**	**+0.3**	
	comp=Z,1.0nm,0.4s,baz=267,slow=2.9,SNR=4.0							
MK01	**Makanchi Array**	**58.30**	**325**	*e*P	**P**	**04 55 14.2**	**-0.3**	
MK31	**Makanchi Array**	**58.32**	**325**	*e*P	**P**	**04 55 14.9**	**+0.2**	
MKAR	**Makanchi Array**	**58.32**	**325**	P	**P**	**04 55 14.6**	**-0.1**	
	comp=Z,1.7nm,0.3s,baz=122,slow=7.7,SNR=34							
MAKZ	**Makanchi**	**58.51**	**324**	*e*P	**P**	**04 55 16.2**	**+0.2**	
	comp=Z,14nm,1.2s							
KSH	**Kashi**	**59.03**	**314**	P	**P**	**04 55 21.8**	**+1.9**	
KSH				*e*pP	pP	04 55 40.5	+2.2	
KSH				*e*PcP	**PcP**	**04 56 10.0**	**+1.8**	
KSH				S	**S**	**05 03 20.3**	**-1.2**	
KSH				ScS	**ScS**	**05 05 00.0**	**-3.8**	
KSH	**Kashi**	**59.03**	**314**	SS	SS	05 07 16.3	-0.2	
KSH				pmax	pmax			
	comp=Z,6.0nm,0.5s							
KSH				pmax	pmax			
	comp=Z,15nm,1.1s							
KSH				LR	LR			
	comp=N,200nm,10.4s							
KSH				LR	LR			
	comp=E,130nm,6.3s							
KSH				LR	LR			
	comp=Z,190nm,5.8s							
ZAA0	**Zalesovo Array**	**61.17**	**332**	*e*P	**P**	**04 55 32.0**	**-2.0**	
ZALV	**Zalesovo Beam**	**61.17**	**332**	P	**P**	**04 55 32.1**	**-2.0**	
	comp=Z,0.5nm,0.3s,baz=132,slow=2.2,SNR=5.3							
AAK	**Ala-Archa**	**61.28**	**317**	P	**P**	**04 55 35.5**	**+0.2**	
	comp=Z,1.3nm,0.3s,baz=207,slow=14,SNR=4.0							
SEY	**Seymchan**	**61.57**	**12**	P	**P**	**04 55 37.0**	**+0.4**	
	comp=Z,1.1nm,0.5s,baz=193,slow=5.0,SNR=4.5							
KURK	**Kurchatov**	**62.45**	**327**	P	**P**	**04 55 42.2**	**-0.6**	
KURBB	**Kurchatov Arra**	**62.45**	**327**	P	**P**	**04 55 42.2**	**-0.6**	
	comp=Z,4.7nm,0.8s,baz=123,slow=5.8,SNR=32							
KKAR	**Karatay Array**	**64.17**	**317**	*e*P	**P**	**04 55 54.5**	**+0.1**	
BVAR	**Borovoye Array**	**68.04**	**327**	P	**P**	**04 56 17.7**	**-1.2**	
	comp=Z,1.1nm,1.0s,baz=116,slow=8.8,SNR=17							
BRVK	**Borovoye**	**68.11**	**327**	*e*P	**P**	**04 56 18.8**	**-0.5**	
	comp=Z,12nm,1.2s							
GEYT	**Alibeck**	**72.00**	**309**	P	**P**	**04 56 44.0**	**+0.5**	
	comp=Z,1.7nm,0.3s,baz=168,slow=7.6,SNR=3.7							
ABKAR	**Akbulak array**	**73.01**	**320**	*e*P	**P**	**04 56 48.6**	**-0.6**	
	comp=Z,0.9nm,0.7s							
AKTO	**Aktyubinsk**	**74.50**	**321**	P	**P**	**04 56 57.4**	**-0.5**	
	comp=Z,1.9nm,0.5s,baz=114,slow=6.9,SNR=10.0							
ARU	**Arti**	**75.54**		P	P	**04 57 03.1**	**-1.2**	
	comp=Z,2.9nm,0.2s,baz=134,slow=2.2,SNR=4.3							
TT01	**Tatalina**	**80.09**	**27**	*e*P	**P**	**04 57 30.1**	**+1.2**	
CAST	**Castle Rocks**	**81.94**	**27**	*e*P	**P**	**04 57 39.9**	**+1.1**	
	comp=Z,2.6nm,0.7s							
SUA	**Susitna One**	**82.32**	**29**	*e*P	**P**	**04 57 42.2**	**+1.3**	
	comp=Z,8.3nm,0.9s							
KTH	**Kantishna Hill**	**82.47**	**26**	*e*P	**P**	**04 57 42.3**	**+0.7**	
	comp=Z,5.3nm,1.0s							
BPAW	**Bear Paw Mtn.**	**82.51**	**26**	*e*P	**P**	**04 57 42.6**	**+0.8**	
	comp=Z,7.7nm,1.0s							
MLY	**Manley**	**82.72**	**25**	*e*P	**P**	**04 57 44.2**	**+1.4**	
	comp=Z,5.4nm,0.9s							
PMR	**Palmer**	**83.11**	**29**	*e*P	**P**	**04 57 45.1**	**+0.3**	
	comp=Z,1.8nm,0.5s							
COLD	**Coldfoot**	**83.18**	**23**	*e*P	**P**	**04 57 46.6**	**+1.5**	
	comp=Z,8.9nm,1.1s							
VNDA	**Vanda**	**83.37**	**173**	P	**P**	**04 57 47.1**	**+1.3**	
	comp=Z,0.8nm,1.0s,baz=338,slow=5.4,SNR=2.6							
MCK	**McKinley**	**83.37**	**26**	*e*P	**P**	**04 57 46.3**	**+0.1**	
	comp=Z,6.7nm,0.9s							
DHY	**Denali Highway**	**84.03**	**27**	*e*P	**P**	**04 57 52.8**	**+3.0**	
	comp=Z,3.9nm,1.1s							
ILAR	**Eielson Array**	**84.33**	**25**	P	**P**	**04 57 51.0**	**-0.1**	
	comp=Z,1.5nm,0.9s,baz=246,slow=5.8,SNR=14							
YKA	**Yellowknife Ar**	**98.75**	**25**	P	Pdif	04 58 59.0	+0.5	
	comp=Z,0.6nm,0.9s,baz=297,slow=5.5,SNR=3.4							
TORD	**Torodi Ar. Bea**	**124.32**	**289**	PKP	**PKPdf**	**05 04 18.1**	**-0.7**	
	comp=Z,0.6nm,1.1s,baz=84,slow=2.4,SNR=4.1							

ISCJB ***27*** *04:48:51.0±0.3,35°.89N±0°.02×7°.35W±0°.02,h10km, Error ellipse: s-maj=3.3km s-min=2.0km az=37.5*
CSEM ***27*** *04:48:54.5±0.1,35°.79N×7°.45W, h40km,ML4.0/6, Error ellipse: s-maj=3.1km s-min=2.4km az=39.0*
CNRM ***27*** *04:48:55.1,35°.70N×7°.43W,h31km,MD3.6*
INMG ***27*** *04:48:55.8±2.1,35°.76N×7°.47W, h31km±5km,ML3.3, Error ellipse: s-maj=3.0km s-min=2.3km az=46.0*
SFS ***27*** *04:48:55.0,35°.82N×7°.43W, h56km,ML4.6*
MDD ***27*** *04:48:56.2±0.1,35°.78N×7°.45W, h57km±2km,mb4.5/51, Error ellipse: s-maj=0.8km s-min=0.6km az=39.0,PRXIMO*
IGIL ***27*** *04:48:56.1,35°.89N×7°.48W,h18km, ML3.1*
LDG ***27*** *04:48:56.5±0.1,35°.85N×7°.42W, h25km, Md3.6/2, Ml3.8/10, Error ellipse: s-maj=2.9km s-min=1.6km az=26.0*

ISC 27 04:48:50.6±0.9,35°.80N±0°.03×7°.44W±0°.03,h10km,n277,
σ2s13/408,16C-22D,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFS	**San Fernando**	**1.20**	**56**	⇑P	**Pn**	**04 49 15.9**	**+2.4**
SFS				S	**Sb**	**04 49 31.9**	**+2.9**
SFS	**San Fernando**	**1.20**	**56**	*i* P	**Pn**	**04 49 15.9**	**+2.4**
SFS				*e*S	**Sb**	**04 49 31.9**	**+2.9**
CNIL	**Conil**	**1.26**	**62**	⇑P	**Pn**	**04 49 17.8**	**+3.6**
CNIL				S	**Sb**	**04 49 30.4**	**-0.3**
CNIL	**Conil**	**1.26**	**62**	*i* P	**Pn**	**04 49 17.8**	**+3.6**
CNIL				*e*S	**Sb**	**04 49 30.4**	**-0.3**
TSY	**Tnine Yamani**	**1.27**	**109**	P	**Pn**	**04 49 15.0**	**+0.7**
TSY				S	**Sb**	**04 49 29.0**	**-1.9**
TSY	**Tnine Yamani**	**1.27**	**109**	P	**Pn**	**04 49 15.0**	**+0.7**
TSY				S	**Sb**	**04 49 29.0**	**-1.9**
MOMI	**Momias**	**1.49**	**69**	P	**Pn**	**04 49 21.4**	**+4.0**
MOMI				S	**Sn**	**04 49 39.1**	**+2.1**
MOMI	**Momias**	**1.49**	**69**	*e*P	**Pn**	**04 49 21.4**	**+4.0**
MOMI				*e*S	**Sn**	**04 49 39.1**	**+2.1**
PBDV	**Barranco-do-Ve**	**1.50**	**345**	⇓*i*P	**Pn**	**04 49 19.2**	**+1.6**
PBDV				*e*S	**Sn**	**04 49 36.1**	**-1.1**
PBDV				A	A	04 49 43.3	
	199nm,0.3s						
PBDV	**Barranco-do-Ve**	**1.50**	**345**	P	**Pn**	**04 49 19.2**	**+1.6**
PBDV				S	**Sn**	**04 49 36.1**	**-1.1**
	199nm,0.3s						
PBDV	**Barranco-do-Ve**	**1.50**	**345**	P	**Pn**	**04 49 19.2**	**+1.6**
PBDV				*e*S	**Sn**	**04 49 36.1**	**-1.1**
	199nm,0.3s						
GIBL	**Gibalbin**	**1.57**	**49**	⇓P	**Pn**	**04 49 21.8**	**+3.2**
GIBL				S	**Sn**	**04 49 39.0**	**0.0**
GIBL	**Gibalbin**	**1.57**	**49**	*i* P	**Pn**	**04 49 21.8**	**+3.2**
GIBL				*e*S	**Sn**	**04 49 39.0**	**0.0**
PVAQ	**Vaqueiros**	**1.62**	**352**	⇓*i*P	**Pn**	**04 49 20.9**	**+1.7**
PVAQ				*e*S	**Sn**	**04 49 38.8**	**-1.4**
PVAQ				A	A	04 49 40.8	
	595nm,0.4s						
PVAQ	**Vaqueiros**	**1.62**	**352**	P	**Pn**	**04 49 20.9**	**+1.7**
PVAQ				S	**Sn**	**04 49 38.8**	**-1.4**
	595nm,0.4s						
PVAQ	**Vaqueiros**	**1.62**	**352**	P	**Pn**	**04 49 20.9**	**+1.7**
PVAQ				*e*S	**Sn**	**04 49 38.8**	**-1.4**
	595nm,0.4s						
ESPR	**Espera**	**1.67**	**50**	⇑P	**Pn**	**04 49 21.8**	**+1.9**
	82nm,0.2s,SNR=18						
ESPR				S	**Sn**	**04 49 40.9**	**-0.4**
	335nm,0.2s,SNR=7.9						
ESPR	**Espera**	**1.67**	**50**	P	**Pn**	**04 49 21.8**	**+1.9**
	82nm,0.2s,SNR=18						
ESPR				S	**Sn**	**04 49 40.9**	**-0.4**
	335nm,0.2s,SNR=7.9						
ECEU	**Ceuta**	**1.68**	**86**	⇑P	**Pn**	**04 49 22.7**	**+2.7**
	13nm,0.1s,SNR=18						
ECEU				S	**Sn**	**04 49 42.4**	**+0.8**
	20nm,0.2s,SNR=4.0						
ECEU	**Ceuta**	**1.68**	**86**	P	**Pn**	**04 49 22.7**	**+2.7**
	13nm,0.1s,SNR=18						
ECEU				S	**Sn**	**04 49 42.4**	**+0.8**
	20nm,0.2s,SNR=4.0						
EJIF	**Jimena Fronter**	**1.72**	**67**	⇑P	**Pn**	**04 49 23.5**	**+2.9**
	17nm,0.2s,SNR=18						
EJIF				S	**Sn**	**04 49 43.5**	**+0.8**
	19nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.72**	**67**	P	**Pn**	**04 49 23.5**	**+2.9**
	17nm,0.2s,SNR=18						
EJIF				S	**Sn**	**04 49 43.5**	**+0.8**
	19nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**1.74**	**359**	⇓P	**Pn**	**04 49 22.7**	**+1.9**
	21nm,0.1s,SNR=18						
EGRO				S	**Sn**	**04 49 41.8**	**-1.2**
	340nm,0.2s,SNR=40						
EGRO	**El Granado**	**1.74**	**359**	P	**Pn**	**04 49 22.7**	**+1.9**
	21nm,0.1s,SNR=18						
EGRO				S	**Sn**	**04 49 41.8**	**-1.2**
	340nm,0.2s,SNR=40						
PFVI	**Vila Bisbo**	**1.74**	**320**	⇓*i*Pn	**Pn**	**04 49 22.4**	**+1.5**
PFVI				*e*Sn	**Sn**	**04 49 42.4**	**-0.8**
PFVI				A	A	04 49 52.7	
	90nm,0.6s						
PFVI	**Vila Bisbo**	**1.74**	**320**	⇓P	**Pn**	**04 49 22.4**	**+1.5**
	12nm,0.1s,SNR=18						
PFVI				S	**Sn**	**04 49 42.3**	**-0.9**
	152nm,0.1s,SNR=9.9						
PFVI	**Vila Bisbo**	**1.74**	**320**	P	**Pn**	**04 49 22.4**	**+1.5**
	12nm,0.1s,SNR=18						
PFVI				*e*Sn	**Sn**	**04 49 42.4**	**-0.8**
	90nm,0.6s						
MORF	**Marmelete**	**1.80**	**327**	*e*P	**Pn**	**04 49 23.1**	**+1.4**
MORF				*e*S	**Sn**	**04 49 43.2**	**-1.4**
MORF				AML	AML	04 49 44.5	
	comp=N,181nm,0.3s						
MORF	**Marmelete**	**1.80**	**327**	⇓*i*Pn	**Pn**	**04 49 23.1**	**+1.4**
MORF				*e*Sn	**Sn**	**04 49 43.8**	**-0.8**
MORF				A	A	04 49 51.8	
	comp=N,160nm,0.1s						
MORF	**Marmelete**	**1.80**	**327**	P	**Pn**	**04 49 23.1**	**+1.4**
MORF				S	**Sn**	**04 49 43.8**	**-0.8**
	comp=N,160nm,0.1s						
MORF	**Marmelete**	**1.80**	**327**	P	**Pn**	**04 49 23.1**	**+1.4**
MORF				S	**Sn**	**04 49 43.8**	**-0.8**
	comp=N,160nm,0.1s						
RTC	**Rabat Centre**	**1.86**	**165**	P	**Pn**	**04 49 23.0**	**+0.5**
RTC				S	**Sn**	**04 49 43.0**	**-3.1**
RTC	**Rabat Centre**	**1.86**	**165**	P	**Pn**	**04 49 23.0**	**+0.5**
RTC				S	**Sn**	**04 49 43.0**	**-3.1**
PCVE	**Castro Verde**	**1.90**	**345**	⇓*i*Pn	**Pn**	**04 49 24.9**	**+1.9**
PCVE				*e*Sn	**Sn**	**04 49 45.9**	**-1.1**
PCVE				A	A	04 49 47.4	
	comp=N,197nm,0.2s						
PCVE	**Castro Verde**	**1.90**	**345**	P	**Pn**	**04 49 24.9**	**+1.9**
PCVE				S	**Sn**	**04 49 45.9**	**-1.1**
	comp=N,197nm,0.2s						
PCVE	**Castro Verde**	**1.90**	**345**	P	**Pn**	**04 49 24.9**	**+1.9**
PCVE				S	**Sn**	**04 49 45.9**	**-1.1**
	comp=N,197nm,0.2s						
REAL	**Reales**	**1.93**	**68**	⇓P	**Pn**	**04 49 27.0**	**+3.3**
REAL				S	**Sn**	**04 49 49.6**	**+1.6**
REAL	**Reales**	**1.93**	**68**	*i* P	**Pn**	**04 49 27.0**	**+3.3**
REAL				*e*S	**Sn**	**04 49 49.7**	**+1.6**
PTEO	**Sao Teotonio**	**2.03**	**330**	⇓*e*Pn	**Pn**	**04 49 26.5**	**+1.7**
PTEO				*e*Sn	**Sn**	**04 49 49.7**	**-0.6**
PTEO				A	A	04 49 54.2	
	comp=N,76nm,0.2s						
PTEO	**Sao Teotonio**	**2.03**	**330**	P	**Pn**	**04 49 26.5**	**+1.7**
PTEO				S	**Sn**	**04 49 49.7**	**-0.6**
	comp=N,38nm,0.2s						
PTEO	**Sao Teotonio**	**2.03**	**330**	P	**Pn**	**04 49 26.5**	**+1.7**
PTEO				S	**Sn**	**04 49 49.7**	**-0.6**
	comp=N,38nm,0.2s						
EMIN	**Mina Concepcio**	**2.06**	**17**	⇓P	**Pn**	**04 49 26.9**	**+1.6**
	comp=N,4.0nm,0.1s,SNR=18						
EMIN				S	**Sn**	**04 49 49.1**	**-2.0**
	comp=N,138nm,0.2s,SNR=9.3						
EMIN	**Mina Concepcio**	**2.06**	**17**	P	**Pn**	**04 49 26.9**	**+1.6**
	comp=N,4.0nm,0.1s,SNR=18						
EMIN				S	**Sn**	**04 49 49.1**	**-2.0**
	comp=N,138nm,0.2s,SNR=9.3						
MESJ	**Messejana**	**2.13**	**343**	*e*P	**Pn**	**04 49 28.1**	**+1.8**
MESJ				*e*S	**Sn**	**04 49 51.3**	**-1.6**
MESJ				AML	AML	04 49 53.4	
	comp=E,134nm,0.1s						
MESJ	**Messejana**	**2.13**	**343**	⇓*i*Pn	**Pn**	**04 49 28.1**	**+1.8**
MESJ				*e*Sn	**Sn**	**04 49 51.9**	**-1.0**
MESJ				A	A	04 49 53.5	
	comp=E,105nm,0.2s						
MESJ	**Messejana**	**2.13**	**343**	P	**Pn**	**04 49 28.1**	**+1.8**
MESJ				S	**Sn**	**04 49 51.9**	**-1.0**
	comp=E,105nm,0.2s						
MESJ	**Messejana**	**2.13**	**343**	P	**Pn**	**04 49 28.1**	**+1.8**
MESJ				S	**Sn**	**04 49 51.9**	**-1.0**
	comp=E,105nm,0.2s						
PBEJ	**Beja**	**2.25**	**351**	⇓*i*Pn	**Pn**	**04 49 29.6**	**+1.7**
PBEJ				*e*Sn	**Sn**	**04 49 54.6**	**-1.2**
PBEJ				A	A	04 49 55.6	
	comp=E,99nm,0.2s						
PBEJ	**Beja**	**2.25**	**351**	P	**Pn**	**04 49 29.6**	**+1.7**
PBEJ				S	**Sn**	**04 49 54.6**	**-1.2**
	comp=E,49nm,0.2s						
PBEJ	**Beja**	**2.25**	**351**	P	**Pn**	**04 49 29.6**	**+1.7**
PBEJ				S	**Sn**	**04 49 54.6**	**-1.2**
	comp=E,49nm,0.2s						
EMIJ	**Mijas**	**2.29**	**70**	⇑P	**Pn**	**04 49 30.0**	**+1.5**
	comp=E,72nm,0.5s,SNR=18						
EMIJ				S	**Sn**	**04 49 55.4**	**-1.3**
	comp=E,39nm,0.3s,SNR=7.9						
EMIJ	**Mijas**	**2.29**	**70**	P	**Pn**	**04 49 30.0**	**+1.5**
	comp=E,72nm,0.5s,SNR=18						
EMIJ				S	**Sn**	**04 49 55.4**	**-1.3**
	comp=E,39nm,0.3s,SNR=7.9						
PBAR	**Barrancos**	**2.40**	**8**	⇓*e*Pn	**Pn**	**04 49 31.7**	**+1.8**
PBAR				*e*Sn	**Sn**	**04 49 58.4**	**-0.9**
PBAR				A	A	04 50 04.5	
	comp=E,204nm,0.2s						
PBAR	**Barrancos**	**2.40**	**8**	P	**Pn**	**04 49 31.7**	**+1.8**
PBAR				S	**Sn**	**04 49 58.4**	**-0.9**
	comp=E,204nm,0.2s						
PBAR	**Barrancos**	**2.40**	**8**	P	**Pn**	**04 49 31.7**	**+1.8**
PBAR				S	**Sn**	**04 49 58.4**	**-0.9**
	comp=E,204nm,0.2s						
PNCL	**Nicolau / Gran**	**2.47**	**340**	⇓*i*Pn	**Pn**	**04 49 32.5**	**+1.6**
PNCL				*e*Sn	**Sn**	**04 50 00.1**	**-1.1**
PNCL				A	A	04 50 03.1	
	comp=E,83nm,0.3s						
PNCL	**Nicolau / Gran**	**2.47**	**340**	⇓*i*Pn	**Pn**	**04 49 32.5**	**+1.6**
PNCL				*e*Sn	**Sn**	**04 50 00.1**	**-1.1**
	comp=E,83nm,0.3s						
EMAL	**Malaga-Limoner**	**2.62**	**67**	⇓P	**Pn**	**04 49 34.8**	**+1.9**
EMAL				S	**Sn**	**04 50 04.8**	**+0.1**
EMAL	**Malaga-Limoner**	**2.62**	**67**	*i* P	**Pn**	**04 49 34.8**	**+1.9**
EMAL				*e*S	**Sn**	**04 50 04.8**	**+0.1**
PVLZ	**Peæn de**	**2.63**	**103**	*i* P	**Pn**	**04 49 35.1**	**+2.0**
PVLZ				*e*S	**Sn**	**04 50 06.4**	**+1.3**
EVO	**Evora**	**2.77**	**351**	⇓*e*Pn	**Pn**	**04 49 36.8**	**+1.8**
EVO				*e*Sn	**Sn**	**04 50 07.1**	**-1.4**
EVO				A	A	04 50 08.6	
	comp=E,83nm,0.2s						
EVO	**Evora**	**2.77**	**351**	P	**Pn**	**04 49 36.8**	**+1.8**
EVO				S	**Sn**	**04 50 07.1**	**-1.4**
	comp=E,83nm,0.2s						
EVO	**Evora**	**2.77**	**351**	P	**Pn**	**04 49 36.8**	**+1.8**
EVO				S	**Sn**	**04 50 07.1**	**-1.4**
	comp=E,83nm,0.2s						
ECAB	**El Cabril**	**2.79**	**35**	P	**Pn**	**04 49 36.7**	**+1.3**
	comp=E,18nm,0.1s,SNR=144						
ECAB				S	**Sn**	**04 50 06.4**	**-2.8**
	comp=E,80nm,0.3s,SNR=7.9						
ECAB	**El Cabril**	**2.79**	**35**	P	**Pn**	**04 49 36.7**	**+1.3**
	comp=E,18nm,0.1s,SNR=144						
ECAB				S	**Sn**	**04 50 06.4**	**-2.8**
	comp=E,80nm,0.3s,SNR=7.9						
EBAD	**Badajoz**	**2.98**	**6**	P	**Pn**	**04 49 39.4**	**+1.5**
	comp=E,11nm,0.1s,SNR=47						
EBAD				S	**Sn**	**04 50 11.7**	**-1.9**
	comp=E,30nm,0.4s,SNR=11						
EGOR	**Sierra Gorda,**	**2.99**	**63**	⇑P	**Pn**	**04 49 40.7**	**+2.6**
	comp=E,28nm,0.2s,SNR=18						
EGOR				S	**Sn**	**04 50 11.6**	**-2.5**
	comp=E,29nm,0.2s,SNR=7.9						
EGOR	**Sierra Gorda,**	**2.99**	**63**	P	**Pn**	**04 49 40.7**	**+2.6**
	comp=E,28nm,0.2s,SNR=18						
EGOR				S	**Sn**	**04 50 11.6**	**-2.5**
	comp=E,29nm,0.2s,SNR=7.9						
PESTR	**Estremoz**	**3.07**	**358**	*e*Pn	**Pn**	**04 49 40.7**	**+1.5**
PESTR				*e*Sn	**Sn**	**04 50 13.8**	**-2.1**
PESTR				A	A	04 50 17.2	
	comp=E,53nm,0.3s						
PESTR	**Estremoz**	**3.07**	**358**	*e*Pn	**Pn**	**04 49 40.7**	**+1.5**
PESTR				*e*Sn	**Sn**	**04 50 13.8**	**-2.1**
	comp=E,53nm,0.3s						
LIS	**Lisbon**	**3.22**	**335**	*e*Pn	**Pn**	**04 49 44.0**	**+2.8**
LIS				*e*Sn	**Sn**	**04 50 19.3**	**-0.3**
LIS	**Lisbon**	**3.22**	**335**	P	**Pn**	**04 49 44.0**	**+2.8**
LIS				S	**Sn**	**04 50 19.3**	**-0.3**
LIS	**Lisbon**	**3.22**	**335**	*e*Pn	**Pn**	**04 49 44.0**	**+2.8**
LIS				*e*Sn	**Sn**	**04 50 19.3**	**-0.3**
PMST	**Lisbon--Monsan**	**3.25**	**335**	*e*Pn	**Pn**	**04 49 43.6**	**+2.0**
PMST				*e*Sn	**Sn**	**04 50 20.0**	**-0.3**
PMST				A	A	04 50 22.8	
	comp=E,54nm,0.2s						
PMST	**Lisbon--Monsan**	**3.25**	**335**	*e*Pn	**Pn**	**04 49 43.6**	**+2.0**
PMST				*e*Sn	**Sn**	**04 50 20.0**	**-0.3**
	comp=E,54nm,0.2s						
EADA	**Adamuz**	**3.29**	**43**	⇑P	**Pn**	**04 49 44.2**	**+1.9**
	comp=E,18nm,0.1s,SNR=18						
EADA				S	**Sn**	**04 50 18.2**	**-3.4**
	comp=E,97nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**3.29**	**43**	P	**Pn**	**04 49 44.2**	**+1.9**
	comp=E,18nm,0.1s,SNR=18						
EADA				S	**Sn**	**04 50 18.2**	**-3.4**
	comp=E,97nm,0.1s,SNR=7.9						
SELV	**Sierra Elvira**	**3.32**	**63**	P	**Pn**	**04 49 44.2**	**+1.6**
	comp=E,21nm,0.2s,SNR=7.9						
SELV				S	**Sn**	**04 50 20.7**	**-1.4**
	comp=E,16nm,0.3s,SNR=7.9						
SELV	**Sierra Elvira**	**3.32**	**63**	P	**Pn**	**04 49 44.2**	**+1.6**
	comp=E,21nm,0.2s,SNR=7.9						
SELV				S	**Sn**	**04 50 20.7**	**-1.4**
	comp=E,16nm,0.3s,SNR=7.9						
CZD	**Col de Zad**	**3.39**	**144**	P	**Pn**	**04 49 45.0**	**+1.2**
CZD				S	**Sn**	**04 50 21.0**	**-3.3**
CZD	**Col de Zad**	**3.39**	**144**	P	**Pn**	**04 49 45.0**	**+1.2**
CZD				S	**Sn**	**04 50 21.0**	**-3.3**
PMAFR	**Mafra**	**3.48**	**336**	⇓*i*Pn	**Pn**	**04 49 46.8**	**+2.0**
PMAFR				*e*Sn	**Sn**	**04 50 25.0**	**-1.1**
PMAFR				A	A	04 50 26.1	
	comp=E,225nm,0.2s						
PMAFR	**Mafra**	**3.48**	**336**	⇓P	**Pn**	**04 49 46.7**	**+1.9**
	comp=E,57nm,0.2s,SNR=18						
PMAFR				S	**Sn**	**04 50 24.3**	**-1.8**
	comp=E,284nm,0.2s,SNR=28						
PMAFR	**Mafra**	**3.48**	**336**	P	**Pn**	**04 49 46.7**	**+1.9**
	comp=E,57nm,0.2s,SNR=18						
PMAFR				S	**Sn**	**04 50 24.3**	**-1.8**
	comp=E,284nm,0.2s,SNR=28						
PMAFR				*e*Sn	Sb	04 50 25.0	-10
	comp=E,225nm,0.2s						
EQUE	**Quentar**	**3.52**	**65**	P	**Pn**	**04 49 47.8**	**+2.4**
	comp=E,8.9nm,0.3s,SNR=11						
EQUE				S	**Sn**	**04 50 26.0**	**-1.1**
	comp=E,14nm,0.4s,SNR=7.9						
EQUE	**Quentar**	**3.52**	**65**	P	**Pn**	**04 49 47.8**	**+2.4**
	comp=E,8.9nm,0.3s,SNR=11						
EQUE				S	**Sn**	**04 50 26.0**	**-1.1**
	comp=E,14nm,0.4s,SNR=7.9						
EALB	**Alboran**	**3.58**	**86**	P	**Pn**	**04 49 47.5**	**+1.4**
	comp=E,6.2nm,0.2s,SNR=8.2						
EALB				S	**Sn**	**04 50 26.1**	**-2.5**
	comp=E,16nm,0.3s,SNR=7.9						
EALB	**Alboran**	**3.58**	**86**	P	**Pn**	**04 49 47.5**	**+1.4**
	comp=E,6.2nm,0.2s,SNR=8.2						
EALB				S	**Sn**	**04 50 26.0**	**-2.5**
	comp=E,16nm,0.3s,SNR=7.9						
PMRV	**Marv??o**	**3.63**		1⇓*e*Pn	**Pn**	**04 49 48.5**	**+1.7**
PMRV				*e*Sn	**Sn**	**04 50 27.7**	**-2.0**
PMRV				A	A	04 50 30.6	
	comp=E,46nm,0.3s						
PMRV	**Marv??o**	**3.63**	**1**	P	**Pn**	**04 49 48.5**	**+1.7**
PMRV				S	**Sn**	**04 50 27.7**	**-

comp=E,9.2nm,0.3s,SNR=7.9
EPLA Plasencia 4.40 14 P **Pn 04 49 59.2 +1.8**
comp=E,5.0nm,0.1s,SNR=7.7
EPLA S **Sn 04 50 45.9 -2.8**
comp=E,48nm,0.2s,SNR=35
EPLA Plasencia 4.40 14 P **Pn 04 49 59.2 +1.8**
comp=E,5.0nm,0.1s,SNR=7.7
EPLA S **Sn 04 50 45.9 -2.8**
comp=E,48nm,0.2s,SNR=35
COI Coimbra 4.47 350 P **Pn 04 50 00.2 +1.8**
COI S **Sn 04 50 47.6 -2.9**
comp=E,16nm,0.7s
COI Coimbra 4.47 350 P **Pn 04 50 00.2 +1.8**
COI S **Sn 04 50 47.6 -2.9**
comp=E,16nm,0.7s
SESP Santiago Espad 4.55 58 ⇑P **Pn 04 50 01.2 +1.5**
comp=E,19nm,0.3s,SNR=18
SESP S **Sn 04 50 49.1 -3.7**
comp=E,44nm,0.2s,SNR=7.9
SESP Santiago Espad 4.55 58 P **Pn 04 50 01.2 +1.5**
comp=E,19nm,0.3s,SNR=18
SESP S **Sn 04 50 49.1 -3.7**
comp=E,44nm,0.2s,SNR=7.9
OUK Oukaimeden 4.59 185 P **Pn 04 50 01.0 +0.7**
OUK S **Sn 04 50 49.0 -4.8**
OUK Oukaimeden 4.59 185 P **Pn 04 50 01.0 +0.7**
OUK S **Sn 04 50 49.0 -4.8**
MTE Manteigas 4.60 359 *e*Pn **Pn 04 50 01.9 +1.7**
MTE *e*Sn **Sn 04 50 50.8 -2.9**
MTE A A 04 50 55.0
comp=E,46nm,0.3s
MTE Manteigas 4.60 359 P **Pn 04 50 01.9 +1.7**
MTE S **Sn 04 50 50.8 -2.9**
comp=E,23nm,0.3s
MTE Manteigas 4.60 359 P **Pn 04 50 01.9 +1.7**
MTE S **Sn 04 50 50.8 -2.9**
comp=E,23nm,0.3s
ESDC Sonseca Array 4.75 34 ⇑P **Pn 04 50 04.0 +1.7**
comp=E,8.5nm,0.2s,baz=220,slow=13,SNR=18
ESDC S **Sn 04 50 53.2 -4.3**
comp=E,25nm,0.1s,baz=219,slow=24,SNR=20
ESDC Sonseca Array 4.75 34 P **Pn 04 50 04.0 +1.7**
comp=E,8.5nm,0.2s,SNR=18
ESDC S **Sn 04 50 53.2 -4.3**
comp=E,25nm,0.1s,SNR=20
EVIA Vianos 4.86 53 ⇑P **Pn 04 50 04.9 +1.1**
comp=E,32nm,0.2s,SNR=18
EVIA S **Sn 04 50 56.2 -3.9**
comp=E,27nm,0.2s,SNR=7.9
EVIA Vianos 4.86 53 P **Pn 04 50 04.9 +1.1**
comp=E,32nm,0.2s,SNR=18
EVIA S **Sn 04 50 56.2 -3.9**
comp=E,27nm,0.2s,SNR=7.9
PVIS Viseu 4.93 356 *e*Pn **Pn 04 50 06.4 +1.7**
PVIS *e*Sn **Sn 04 50 58.6 -3.2**
PVIS A A 04 51 02.3
comp=E,21nm,0.5s
PVIS Viseu 4.93 356 P **Pn 04 50 06.4 +1.7**
PVIS S **Sn 04 50 58.6 -3.2**
comp=E,11nm,0.5s
PVIS Viseu 4.93 356 P **Pn 04 50 06.4 +1.7**
PVIS S **Sn 04 50 58.6 -3.2**
comp=E,11nm,0.5s
MVO Moncorvo 5.37 3 *e*Pn **Pn 04 50 12.5 +1.6**
MVO *e*Sn **Sn 04 51 09.0 -3.8**
MVO A A 04 51 11.1
comp=E,34nm,0.2s
MVO Moncorvo 5.37 3 ⇑P **Pn 04 50 12.4 +1.6**
comp=E,11nm,0.3s,SNR=18
MVO S **Sn 04 51 08.6 -4.2**
comp=E,76nm,0.4s,SNR=7.9
MVO Moncorvo 5.37 3 P **Pn 04 50 12.4 +1.6**
comp=E,11nm,0.3s,SNR=18
MVO S **Sn 04 51 08.6 -4.2**
comp=E,76nm,0.4s,SNR=7.9
EMUR La Murta 5.38 66 P **Pn 04 50 12.0 +1.1**
comp=E,6.0nm,0.4s,SNR=4.9
EMUR S **Sn 04 51 09.2 -3.6**
comp=E,5.5nm,0.3s,SNR=7.9
EMUR La Murta 5.38 66 P **Pn 04 50 12.0 +1.1**
comp=E,6.0nm,0.4s,SNR=4.9
EMUR S **Sn 04 51 09.2 -3.6**
comp=E,5.5nm,0.3s,SNR=7.9
PTO Porto 5.41 351 *e*Sn **Sn 04 51 10.0 -3.7**
PTO A A 04 51 13.4
comp=E,42nm,0.3s
PTO Porto 5.41 351 S **Sn 04 51 10.0 -3.7**
comp=E,21nm,0.3s
PTO Porto 5.41 351 S **Sn 04 51 10.0 -3.7**
comp=E,21nm,0.3s
PVRL Vila Real 5.48 358 *e*Pn **Pn 04 50 13.9 +1.6**
PVRL *e*Sn **Sn 04 51 12.7 -2.6**
PVRL A A 04 51 14.4
comp=E,36nm,0.3s
PVRL Vila Real 5.48 358 P **Pn 04 50 13.9 +1.6**
PVRL S **Sn 04 51 12.7 -2.6**
comp=E,18nm,0.3s
PVRL Vila Real 5.48 358 P **Pn 04 50 13.9 +1.6**
PVRL S **Sn 04 51 12.7 -2.6**
comp=E,18nm,0.3s
GUD Guadarrama 5.49 27 ⇑P **Pn 04 50 14.7 +2.2**
comp=E,4.5nm,0.2s,SNR=18
GUD S **Sn 04 51 11.0 -4.7**
comp=E,16nm,0.3s,SNR=7.9
GUD Guadarrama 5.49 27 P **Pn 04 50 14.7 +2.2**
comp=E,4.5nm,0.2s,SNR=18
GUD S **Sn 04 51 11.0 -4.7**
comp=E,16nm,0.3s,SNR=7.9
ETOB Tobarra 5.49 57 ⇑P **Pn 04 50 13.8 +1.3**
comp=E,47nm,0.2s,SNR=18
ETOB S Sn 04 51 10.4 -5.4
comp=E,22nm,0.2s,SNR=7.9
ETOB Tobarra 5.49 57 P **Pn 04 50 13.8 +1.3**
comp=E,47nm,0.2s,SNR=18
ETOB S Sn 04 51 10.4 -5.4
comp=E,22nm,0.2s,SNR=7.9
POLO Lamas de Olo 5.58 357 *e*Pn **Pn 04 50 15.2 +1.5**
POLO *e*Sn **Sn 04 51 14.8 -3.1**
POLO A A 04 51 18.0
comp=E,12nm,0.3s
POLO Lamas de Olo 5.58 357 *e*Pn **Pn 04 50 15.2 +1.5**
PCAB Cabril 5.92 356 *e*Pn **Pn 04 50 18.1 -0.3**
PCAB *e*Sn Sn 04 51 19.7 -6.7
PCAB A A 04 51 23.7
comp=E,19nm,0.5s
PCAB Cabril 5.92 356 P **Pn 04 50 18.1 -0.3**
PCAB S Sn 04 51 19.7 -6.7
comp=E,9.5nm,0.5s
PCAB Cabril 5.92 356 P **Pn 04 50 18.1 -0.3**
PCAB S Sn 04 51 19.7 -6.7
comp=E,9.5nm,0.5s
PBRG Braganca 6.03 5 *e*Pn **Pn 04 50 21.4 +1.6**
PBRG *e*Sn **Sn 04 51 25.6 -3.3**
PBRG A A 04 51 27.2
comp=E,9.6nm,0.2s
PBRG Braganca 6.03 5 P **Pn 04 50 21.4 +1.6**
PBRG S **Sn 04 51 25.6 -3.3**
comp=E,4.8nm,0.2s
PBRG Braganca 6.03 5 P **Pn 04 50 21.4 +1.6**
PBRG S **Sn 04 51 25.6 -3.3**
comp=E,4.8nm,0.2s
ELOB Lobios 6.08 356 P **Pn 04 50 22.1 +1.5**
comp=E,2.7nm,0.2s,SNR=7.9
ELOB S **Sn 04 51 25.6 -4.8**
comp=E,31nm,0.3s,SNR=7.9
ELOB Lobios 6.08 356 P **Pn 04 50 22.1 +1.5**
comp=E,2.7nm,0.2s,SNR=7.9
ELOB S **Sn 04 51 25.5 -4.8**
comp=E,31nm,0.3s,SNR=7.9
ECAL Calabor 6.16 5 P **Pn 04 50 23.5 +1.8**
comp=E,18nm,0.5s,SNR=7.9
ECAL S **Sn 04 51 28.4 -3.9**
comp=E,43nm,0.4s,SNR=7.9
ECAL Calabor 6.16 5 P **Pn 04 50 23.5 +1.8**
comp=E,18nm,0.5s,SNR=7.9
ECAL S **Sn 04 51 28.4 -3.9**
comp=E,43nm,0.4s,SNR=7.9
YBT Youssef Ben Ta 6.18 197 P **Pn 04 50 22.0 +0.1**
YBT S Sn 04 51 25.0 -7.6
YBT Youssef Ben Ta 6.18 197 P **Pn 04 50 22.0 +0.1**
YBT S Sn 04 51 25.0 -7.6
PGAV Gavieira, Arco 6.20 354 *e*Pn **Pn 04 50 23.8 +1.6**
PGAV *e*Sn **Sn 04 51 29.1 -4.0**
PGAV A A 04 51 33.0
comp=E,15nm,0.5s
PGAV Gavieira, Arco 6.20 354 *e*Pn **Pn 04 50 23.8 +1.6**

AFON Font Roja 6.20 60 P **Pn 04 50 23.5 +1.2**
comp=E,2.6nm,0.2s,SNR=27
AFON S **Sn 04 51 28.9 -4.5**
comp=E,5.8nm,0.3s,SNR=7.9
AFON Font Roja 6.20 60 P **Pn 04 50 23.5 +1.2**
comp=E,2.6nm,0.2s,SNR=27
AFON S **Sn 04 51 28.9 -4.5**
comp=E,5.8nm,0.3s,SNR=7.9
ETOR Torete 6.56 39 P **Pn 04 50 29.4 +2.2**
comp=E,14nm,0.2s,SNR=30
ETOR S Sn 04 51 35.0 -7.1
comp=E,12nm,0.2s,SNR=7.9
ETOR Torete 6.56 39 P **Pn 04 50 29.4 +2.2**
comp=E,14nm,0.2s,SNR=30
ETOR S Sn 04 51 35.0 -7.2
comp=E,12nm,0.2s,SNR=7.9
EAGO Agolada(Pontev 7.02 356 P **Pn 04 50 34.7 +1.3**
comp=E,1.0nm,0.1s,SNR=7.9
EAGO S Sn 04 51 47.9 -5.3
comp=E,8.6nm,0.2s,SNR=7.9
EAGO Agolada(Pontev 7.02 356 P **Pn 04 50 34.7 +1.3**
comp=E,1.0nm,0.1s,SNR=7.9
EAGO S Sn 04 51 47.9 -5.3
comp=E,8.6nm,0.2s,SNR=7.9
EMOS Mosqueruela 7.14 48 P **Pn 04 50 37.0 +1.8**
comp=E,2.7nm,0.2s,SNR=7.9
EMOS S Sn 04 51 50.8 -5.7
comp=E,11nm,0.3s,SNR=7.9
EMOS Mosqueruela 7.14 48 P **Pn 04 50 37.0 +1.8**
comp=E,2.7nm,0.2s,SNR=7.9
EMOS S Sn 04 51 50.8 -5.7
comp=E,11nm,0.3s,SNR=7.9
EMAZ Mazaricos 7.24 351 S **Sn 04 51 54.1 -4.7**
comp=E,7.5nm,0.3s,SNR=7.9
EMAZ Mazaricos 7.24 351 S **Sn 04 51 54.1 -4.7**
comp=E,7.5nm,0.3s,SNR=7.9
EPON Pontenova 7.53 2 P **Pn 04 50 42.4 +2.0**
comp=E,0.1nm,0.1s,SNR=7.9
EPON S Sn 04 52 00.3 -5.5
comp=E,1.6nm,0.2s,SNR=7.9
EPON Pontenova 7.53 2 P **Pn 04 50 42.4 +2.0**
comp=E,0.1nm,0.1s,SNR=7.9
EPON S Sn 04 52 00.3 -5.4
comp=E,1.6nm,0.2s,SNR=7.9
EARI Arriondas 7.69 12 P **Pn 04 50 43.9 +1.2**
comp=E,0.2nm,0.2s,SNR=7.9
EARI S Sn 04 52 04.8 -5.0
comp=E,7.8nm,0.5s,SNR=9.8
EARI Arriondas 7.69 12 P **Pn 04 50 43.9 +1.2**
comp=E,0.2nm,0.2s,SNR=7.9
EARI S Sn 04 52 04.8 -5.1
comp=E,7.8nm,0.5s,SNR=9.8
EIBI Ibiza 7.70 63 P **Pn 04 50 42.9 +0.2**
comp=E,1.6nm,0.2s,SNR=7.9
EIBI S Sn 04 52 03.4 -6.6
comp=E,6.1nm,0.4s,SNR=38
EIBI Ibiza 7.70 63 P **Pn 04 50 42.9 +0.2**
comp=E,1.6nm,0.2s,SNR=7.9
EIBI S Sn 04 52 03.4 -6.5
comp=E,6.1nm,0.4s,SNR=38
PMPS Porto Santo 7.84 252 *e*Pn **Pn 04 50 46.9 +2.2**
PMPS *e*Sn Sn 04 52 03.4 -10
PMPS Porto Santo 7.84 252 P **Pn 04 50 46.9 +2.2**
PMPS S Sn 04 52 03.4 -10
PMPS Porto Santo 7.84 252 P **Pn 04 50 46.9 +2.2**
PMPS S Sn 04 52 03.4 -10
ERTA Horta de San J 7.99 47 P **Pn 04 50 47.4 +0.7**
comp=E,0.3nm,0.1s,SNR=6.2
ERTA S Sn 04 52 11.4 -5.7
comp=E,9.1nm,0.5s,SNR=5.9
ERTA Horta de San J 7.99 47 P **Pn 04 50 47.4 +0.7**
comp=E,0.3nm,0.1s,SNR=6.2
ERTA S Sn 04 52 11.4 -5.7
comp=E,9.1nm,0.5s,SNR=5.9
ESAC San Caprasio 8.04 41 P **Pn 04 50 50.3 +2.9**
comp=E,8.2nm,0.2s,SNR=7.9
ESAC S **Sn 04 52 15.2 -3.2**
comp=E,38nm,0.3s,SNR=5.4
ESAC San Caprasio 8.04 41 P **Pn 04 50 50.3 +2.9**
comp=E,8.2nm,0.2s,SNR=7.9
ESAC S **Sn 04 52 15.2 -3.2**
comp=E,38nm,0.3s,SNR=5.4
ELAN Lanestosa 8.04 21 P **Pn 04 50 49.0 +1.5**
comp=E,0.7nm,0.1s,SNR=7.9
ELAN S Sn 04 52 11.9 -6.7
comp=E,3.7nm,0.2s,SNR=10
ELAN Lanestosa 8.04 21 P **Pn 04 50 49.0 +1.5**
comp=E,0.7nm,0.1s,SNR=7.9
ELAN S Sn 04 52 11.9 -6.6
comp=E,3.7nm,0.2s,SNR=10
YSOS Sos del Rey Ca 8.25 34 P **Pn 04 50 51.4 +1.0**
comp=E,2.9nm,0.1s,SNR=7.9
YSOS S Sn 04 52 17.6 -6.1
comp=E,4.4nm,0.1s,SNR=7.9
YSOS Sos del Rey Ca 8.25 34 P **Pn 04 50 51.4 +1.0**
comp=E,2.9nm,0.1s,SNR=7.9
YSOS S Sn 04 52 17.6 -6.1
comp=E,4.4nm,0.1s,SNR=7.9
EARA Aranguren 8.32 31 S Sn 04 52 17.6 -7.6
comp=E,12nm,0.3s,SNR=7.9
EARA Aranguren 8.32 31 S Sn 04 52 17.6 -7.6
comp=E,12nm,0.3s,SNR=7.9
IUNC Unciti 8.34 32 S Sn 04 52 20.6 -5.1
comp=E,2.3nm,0.1s,SNR=7.9
IUNC Unciti 8.34 32 S Sn 04 52 20.6 -5.1
comp=E,2.3nm,0.1s,SNR=7.9
YUND Undues 8.35 34 P **Pn 04 50 54.2 +2.4**
comp=E,2.6nm,0.2s,SNR=7.9
YUND S Sn 04 52 20.9 -5.3
comp=E,3.5nm,0.2s,SNR=7.9
YUND Undues 8.35 34 P **Pn 04 50 54.2 +2.4**
comp=E,2.6nm,0.2s,SNR=7.9
YUND S Sn 04 52 20.9 -5.3
comp=E,3.5nm,0.2s,SNR=7.9
YARA Arangoiti 8.38 33 P **Pn 04 50 53.8 +1.6**
comp=E,1.9nm,0.1s,SNR=7.9
YARA S Sn 04 52 22.2 -4.8
comp=E,1.8nm,0.1s,SNR=7.9
YARA Arangoiti 8.38 33 P **Pn 04 50 53.8 +1.6**
comp=E,1.9nm,0.1s,SNR=7.9
YARA S Sn 04 52 22.2 -4.8
comp=E,1.8nm,0.1s,SNR=7.9
EFAM Famara 8.40 219 S Sn 04 52 16.7 -11
comp=E,11nm,0.3s,SNR=7.9
EFAM Famara 8.40 219 S Sn 04 52 16.7 -11
comp=E,11nm,0.3s,SNR=7.9
YMUS Pe˜a Musera 8.41 34 P **Pn 04 50 54.1 +1.6**
comp=E,4.7nm,0.2s,SNR=7.9
YMUS S Sn 04 52 22.2 -5.3
comp=E,2.0nm,0.1s,SNR=7.9
YMUS Pe˜a Musera 8.41 34 P **Pn 04 50 54.1 +1.6**
comp=E,4.7nm,0.2s,SNR=7.9
YMUS S Sn 04 52 22.2 -5.3
comp=E,2.0nm,0.1s,SNR=7.9
PMAR Madeira 8.42 251 *e*Pn **Pn 04 50 53.5 +0.7**
PMAR *e*Sn Sn 04 52 19.0 -9.0
PMAR Madeira 8.42 251 P **Pn 04 50 53.5 +0.7**
PMAR S Sn 04 52 19.0 -9.0
PMAR Madeira 8.42 251 P **Pn 04 50 53.5 +0.7**
PMAR S Sn 04 52 19.0 -9.0
FUL Funchal 8.43 251 *e*Pn Pn 04 50 50.9 -1.9
FUL *e*Sn Sn 04 52 20.0 -8.1
FUL Funchal 8.43 251 P Pn 04 50 50.9 -1.9
FUL S Sn 04 52 20.0 -8.1
FUL Funchal 8.43 251 P Pn 04 50 50.9 -1.9
FUL S Sn 04 52 20.0 -8.1
IPRE Itoiz 8.44 32 S Sn 04 52 22.9 -5.3
comp=E,3.1nm,0.3s,SNR=7.9
IPRE Itoiz 8.44 32 S Sn 04 52 22.9 -5.3
comp=E,3.1nm,0.3s,SNR=7.9
IZUN Zunzarren 8.44 31 P **Pn 04 50 54.8 +1.8**
comp=E,0.7nm,0.1s,SNR=7.9
IZUN S Sn 04 52 21.0 -7.3
comp=E,2.2nm,0.3s,SNR=7.9
IZUN Zunzarren 8.44 31 P **Pn 04 50 54.8 +1.8**
comp=E,0.7nm,0.1s,SNR=7.9
IZUN S Sn 04 52 21.0 -7.3
comp=E,2.2nm,0.3s,SNR=7.9
IEPA Eparoz 8.46 33 P **Pn 04 50 55.8 +2.6**
comp=E,2.3nm,0.2s,SNR=7.9
IEPA S Sn 04 52 23.4 -5.3
comp=E,3.7nm,0.2s,SNR=7.9
IEPA Eparoz 8.46 33 P **Pn 04 50 55.8 +2.6**
comp=E,2.3nm,0.2s,SNR=7.9
IEPA S Sn 04 52 23.4 -5.3
comp=E,3.7nm,0.2s,SNR=7.9
YBER Berdun 8.46 35 P **Pn 04 50 55.0 +1.8**
comp=E,2.1nm,0.2s,SNR=7.9
YBER S Sn 04 52 23.1 -5.5
comp=E,5.2nm,0.2s,SNR=7.9
YBER Berdun 8.46 35 P **Pn 04 50 55.0 +1.8**
comp=E,2.1nm,0.2s,SNR=7.9
YBER S Sn 04 52 23.1 -5.6
comp=E,5.2nm,0.2s,SNR=7.9
YASP Aspurt 8.46 33 P **Pn 04 50 55.5 +2.3**
comp=E,2.0nm,0.2s,SNR=7.9
YASP S Sn 04 52 22.9 -5.9
comp=E,4.8nm,0.3s,SNR=7.9
YASP Aspurt 8.46 33 P **Pn 04 50 55.5 +2.3**
comp=E,2.0nm,0.2s,SNR=7.9
YASP S Sn 04 52 22.9 -5.9
comp=E,4.8nm,0.3s,SNR=7.9
YSIG Sigues 8.47 34 P **Pn 04 50 55.1 +1.8**
comp=E,1.5nm,0.2s,SNR=7.9
YSIG S Sn 04 52 23.2 -5.7
comp=E,2.7nm,0.2s,SNR=7.9
YSIG Sigues 8.47 34 P **Pn 04 50 55.1 +1.8**
comp=E,1.5nm,0.2s,SNR=7.9
YSIG S Sn 04 52 23.2 -5.7
comp=E,2.7nm,0.2s,SNR=7.9
IELO Elcoad 8.52 32 P **Pn 04 50 56.4 +2.4**
comp=E,1.8nm,0.2s,SNR=7.9
IELO S Sn 04 52 24.6 -5.7
comp=E,21nm,0.5s,SNR=7.9
IELO Elcoad 8.52 32 P **Pn 04 50 56.4 +2.4**
comp=E,1.8nm,0.2s,SNR=7.9
IELO S Sn 04 52 24.6 -5.7
comp=E,21nm,0.5s,SNR=7.9
EORO Oroz-Betelu 8.53 32 P **Pn 04 50 57.0 +2.8**
comp=E,1.5nm,0.1s,SNR=16
EORO S Sn 04 52 24.5 -6.0
comp=E,6.7nm,0.2s,SNR=7.9
EORO Oroz-Betelu 8.53 32 P **Pn 04 50 57.0 +2.8**
comp=E,1.5nm,0.1s,SNR=16
EORO S Sn 04 52 24.5 -6.0
comp=E,6.7nm,0.2s,SNR=7.9
EPOB Poblet 8.67 48 P **Pn 04 50 58.3 +2.1**
comp=E,1.8nm,0.2s,SNR=7.9
EPOB S Sn 04 52 26.0 -8.1
comp=E,1.7nm,0.3s,SNR=7.9
EPOB Poblet 8.67 48 P **Pn 04 50 58.3 +2.1**
comp=E,1.8nm,0.2s,SNR=7.9
EPOB S Sn 04 52 26.0 -8.1
comp=E,1.7nm,0.3s,SNR=7.9
EALK Alkurruntz 8.71 30 P **Pn 04 50 58.8 +2.1**
comp=E,2.3nm,0.2s,SNR=7.9
EALK S Sn 04 52 28.4 -6.7
comp=E,37nm,0.4s,SNR=8.7
EALK Alkurruntz 8.71 30 P **Pn 04 50 58.8 +2.1**
comp=E,2.3nm,0.2s,SNR=7.9
EALK S Sn 04 52 28.4 -6.7
comp=E,37nm,0.4s,SNR=8.7
SJPF Ste Jean 8.74 31 *e*Pn **Pn 04 50 58.8 +1.7**
SJPF *e*Sn Sn 04 52 29.6 -6.1
comp=E,7.4nm,0.3s
SJPF Ste Jean 8.74 31 P **Pn 04 50 58.8 +1.7**
SJPF S Sn 04 52 29.6 -6.1
comp=E,3.7nm,0.3s
SJPF Ste Jean 8.74 31 P **Pn 04 50 58.8 +1.7**
SJPF S Sn 04 52 29.6 -6.1
comp=E,3.7nm,0.3s
ETSF Etsaut 8.87 35 *e*Pn **Pn 04 51 00.7 +1.9**
ETSF *e*Sn Sn 04 52 32.7 -6.2
comp=E,6.8nm,0.2s
ETSF Etsaut 8.87 35 P **Pn 04 51 00.7 +1.9**
ETSF S Sn 04 52 32.7 -6.2
comp=E,3.4nm,0.2s
ETSF Etsaut 8.87 35 P **Pn 04 51 00.7 +1.9**
ETSF S Sn 04 52 32.7 -6.2
comp=E,3.4nm,0.2s
ATE Arette 8.95 34 P **Pn 04 51 02.5 +2.6**
comp=E,1.2nm,0.1s,SNR=7.9
ATE S Sn 04 52 33.9 -6.9
comp=E,7.7nm,0.2s,SNR=7.9
ATE Arette 8.95 34 P **Pn 04 51 02.5 +2.6**
comp=E,1.2nm,0.1s,SNR=7.9
ATE S Sn 04 52 33.9 -6.9
comp=E,7.7nm,0.2s,SNR=7.9
CFUE Fuerteventura 9.00 219 S Sn 04 52 33.1 -9.0
comp=E,13nm,0.3s,SNR=7.9
CFUE Fuerteventura 9.00 219 S Sn 04 52 33.1 -9.0
comp=E,13nm,0.3s,SNR=7.9
ETOS Mallorca 9.03 61 P **Pn 04 51 01.9 +0.8**
comp=E,0.4nm,0.2s,SNR=7.9
ETOS S Sn 04 52 34.8 -8.0
comp=E,0.4nm,0.2s,SNR=7.9
ETOS Mallorca 9.03 61 P **Pn 04 51 01.9 +0.8**
comp=E,0.4nm,0.2s,SNR=7.9
ETOS S Sn 04 52 34.8 -8.0
comp=E,0.4nm,0.2s,SNR=7.9
ECHI Chisagues Biel 9.06 38 P **Pn 04 51 04.2 +2.7**
comp=E,2.4nm,0.1s,SNR=12
ECHI S Sn 04 52 36.6 -7.1
comp=E,8.4nm,0.1s,SNR=5.6
ECHI Chisagues Biel 9.06 38 P **Pn 04 51 04.2 +2.7**
comp=E,2.4nm,0.1s,SNR=12
ECHI S Sn 04 52 36.6 -7.0
comp=E,8.4nm,0.1s,SNR=5.6
CFTV Fuerteventura 9.27 219 P Pn 04 51 01.6 -2.7
comp=E,0.1nm,0.2s,SNR=4.0
CFTV S Sn 04 52 37.7 -11
comp=E,1.6nm,0.3s,SNR=4.0
CFTV Fuerteventura 9.27 219 P Pn 04 51 01.6 -2.7
comp=E,0.1nm,0.2s,SNR=4.0
CFTV S Sn 04 52 37.7 -11
comp=E,1.6nm,0.3s,SNR=4.0
CSOR Sort 9.36 43 P **Pn 04 51 07.2 +1.7**
comp=E,1.1nm,0.2s,SNR=7.9
CSOR S Sn 04 52 43.2 -7.7
comp=E,2.6nm,0.3s,SNR=11
CSOR Sort 9.36 43 P **Pn 04 51 07.2 +1.7**
comp=E,1.1nm,0.2s,SNR=7.9
CSOR S Sn 04 52 43.2 -7.7
comp=E,2.6nm,0.3s,SNR=11
EPF Esparros 9.40 37 *e*Pn **Pn 04 51 08.0 +1.9**
EPF *e*Sn Sn 04 52 44.7 -7.2
comp=E,9.9nm,0.2s
EPF Esparros 9.40 37 P **Pn 04 51 08.0 +1.9**
EPF S Sn 04 52 44.7 -7.2
comp=E,4.9nm,0.2s
EPF Esparros 9.40 37 P **Pn 04 51 08.0 +1.9**
EPF S Sn 04 52 44.7 -7.2
comp=E,4.9nm,0.2s
CFON Fontmartina 9.74 49 P **Pn 04 51 11.8 +1.0**
comp=E,1.6nm,0.2s,SNR=7.9
CFON Fontmartina 9.74 49 P **Pn 04 51 11.8 +1.0**
comp=E,1.6nm,0.2s,SNR=7.9
CLLI Llivia 9.89 45 P **Pn 04 51 14.7 +1.7**
comp=E,2.7nm,0.4s,SNR=7.0
CLLI S Sn 04 52 55.4 -8.8
comp=E,3.8nm,0.4s,SNR=7.9
CLLI Llivia 9.89 45 P **Pn 04 51 14.7 +1.7**
comp=E,2.7nm,0.4s,SNR=7.0
CLLI S Sn 04 52 55.3 -8.9
comp=E,3.8nm,0.4s,SNR=7.9
MTLF Montolieu 10.59 42 *e*Pn **Pn 04 51 23.6 +1.2**
MTLF *e*Sn Sn 04 53 13.0 -8.1
MTLF Montolieu 10.59 42 P **Pn 04 51 23.6 +1.2**
MTLF S Sn 04 53 13.0 -8.1
MTLF Montolieu 10.59 42 P **Pn 04 51 23.6 +1.2**
MTLF S Sn 04 53 13.0 -8.1
LFF La Frestale 11.05 32 *e*Pn **Pn 04 51 29.3 +0.6**
LFF *e*Sn Sn 04 53 23.7 -8.6
comp=E,2.8nm,0.3s
LFF La Frestale 11.05 32 P **Pn 04 51 29.3 +0.6**
LFF S Sn 04 53 23.7 -8.6
comp=E,1.4nm,0.3s
LFF La Frestale 11.05 32 P **Pn 04 51 29.3 +0.6**
LFF S Sn 04 53 23.7 -8.6
comp=E,1.4nm,0.3s
CAF Calviac 11.64 36 *e*Pn **Pn 04 51 37.8 +1.0**
CAF *e*Sn Sn 04 53 39.3 -7.5
comp=E,0.8nm,0.2s
CAF Calviac 11.64 36 P **Pn 04 51 37.8 +1.0**
CAF S Sn 04 53 39.3 -7.5
comp=E,0.4nm,0.2s
CAF Calviac 11.64 36 P **Pn 04 51 37.8 +1.0**
CAF S Sn 04 53 39.3 -7.5
comp=E,0.4nm,0.2s
RJF Les Rejaudoux 11.68 33 *e*Pn **Pn 04 51 38.2 +0.9**
RJF *e*Sn Sn 04 53 38.4 -9.3
comp=E,1.6nm,0.2s
RJF Les Rejaudoux 11.68 33 P **Pn 04 51 38.2 +0.9**
RJF S Sn 04 53 38.4 -9.3

comp=E,0.8nm,0.2s
RJF Les Rejaudoux 11.68 33 P **Pn 04 51 38.2 +0.9**
RJF S Sn 04 53 38.4 -9.3
comp=E,0.8nm,0.2s
MFF Saint Martin d 12.11 25 *e*Pn **Pn 04 51 43.8 +0.7**
MFF *e*Sn Sn 04 53 49.8 -8.3
comp=E,0.5nm,0.1s
MFF Saint Martin d 12.11 25 P **Pn 04 51 43.8 +0.7**
MFF S Sn 04 53 49.8 -8.3
comp=E,0.2nm,0.1s
MFF Saint Martin d 12.11 25 P **Pn 04 51 43.8 +0.7**
MFF S Sn 04 53 49.8 -8.3
comp=E,0.2nm,0.1s
QUIF Quistinic 12.52 13 *e*Sn Sn 04 53 59.6 -8.6
comp=E,1.7nm,0.2s
QUIF Quistinic 12.52 13 S Sn 04 53 59.6 -8.6
comp=E,0.9nm,0.2s
QUIF Quistinic 12.52 13 S Sn 04 53 59.6 -8.6
comp=E,0.9nm,0.2s
ROSF Rostrenen 12.91 13 *e*Sn Sn 04 54 07.9 -10
comp=E,0.8nm,0.2s
ROSF Rostrenen 12.91 13 S Sn 04 54 07.9 -10
comp=E,0.4nm,0.2s
ROSF Rostrenen 12.91 13 S Sn 04 54 07.9 -10
comp=E,0.4nm,0.2s
HYF Humbligny 13.71 30 *e*Sn Sn 04 54 28.3 -9.0
HYF Humbligny 13.71 30 S Sn 04 54 28.3 -9.0
HYF Humbligny 13.71 30 S Sn 04 54 28.3 -9.0

ISCJB ***27*** *05:02:18.9±1.4, 33°.19S×0°.08×70°.35W±0°.07, h106km±10km, Error ellipse: s-maj=13.5km s-min=9.1km az=152.3*
SJA ***27*** *05:02:18.7±0.7, 33°.17S×70°.32W, h99km±7km, ML2.0, MW2.8*
GUC ***27*** *05:02:18.8±0.5, 32°.95S×70°.21W, h86km±5km, ML2.8*
ISC 27 05:02:20.5±3.3, 33°.2S±0°.1×70°.34W±0°.07, h95km±23km, n12, σt²69/21, 3C-1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FCH	**Farellones**	**0.17**	**167**	⇑*i*P	**Pn**	**05 02 33.7**	**-0.7**
FCH				*i* S	**Sn**	**05 02 45.1**	**+0.4**
FCH				IAML		05 02 45.4	
	comp=N,431nm,0.1s						
CLCH	**Cerro Calan**	**0.29**	**215**	⇓*i*P	**Pn**	**05 02 34.2**	**-0.3**
CLCH				*i* S	**Sn**	**05 02 45.7**	**+0.7**
CLCH				IAML		05 02 46.5	
	comp=E,726nm,0.5s						
PEL	**Peldehue**	**0.29**	**272**	⇑*i*P	**Pn**	**05 02 33.6**	**-0.9**
PEL				*i* S	**Sn**	**05 02 44.6**	**-0.3**
PEL				IAML		05 02 46.5	
	comp=E,923nm,0.2s						
FSR	**Penalolen**	**0.36**	**206**	*i* P	**Pn**	**05 02 35.0**	**+0.1**
FSR				*i* S	**Sn**	**05 02 47.0**	**+1.4**
ANTU	**Antumapu**	**0.48**	**211**	*i* P	**Pn**	**05 02 35.5**	**-0.1**
ROCH	**El Roble**	**0.59**	**288**	⇑*i*P	**Pn**	**05 02 36.2**	**-0.5**
ROCH				*i* S	**Sn**	**05 02 49.1**	**+0.3**
ROCH				IAML		05 02 50.9	
	comp=N,571nm,0.1s						
ROC1	**El Roble**	**0.60**	**287**	*i* P	**Pn**	**05 02 36.2**	**-0.6**
ROC1				*i* S	**Sn**	**05 02 49.4**	**+0.5**
ARCO	**CERRO ARCO**	**1.22**	**75**	*i* P	**Pn**	**05 02 42.7**	**-0.6**
ARCO				*i* S	**Sn**	**05 03 00.5**	**+0.1**
ARCO				IAML		05 03 02.2	
	comp=Z,19nm,0.5s						
AUSP	**Uspallata**	**1.23**	**41**	*i* P	**Pn**	**05 02 43.1**	**-0.4**
AUSP				*i* S	**Sn**	**05 03 01.1**	**+0.4**
AAGR	**Agrelo**	**1.27**	**87**	*i* P	**Pn**	**05 02 43.2**	**-0.5**
ASAL	**Salagasta**	**1.38**	**66**	*i* P	**Pn**	**05 02 44.3**	**-0.8**
RTLS	**Leoncito**	**1.61**	**33**	*i* P	**Pn**	**05 02 48.4**	**+0.2**
RTLS				*i* S	**Sn**	**05 03 10.3**	**+1.2**

IDC 27 05:04:57.9±5.2, 5°.86S×150°.69E, h74km±45km, mb3.7/3, mb1 3.8/4, mb1mx3.5/33, mbtmp4.1/4, ML2.4/1, MS4.1/1, Ms1 4.1/1, ms1mx3.0/26, Error ellipse: s-maj=38.6km s-min=26.5km az=177.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**4.97**	**225**	P	Pn	05 06 11.2	+1.1
	11nm,0.3s,baz=28,slow=8.3,SNR=9.1						
PMG				S	Sn	05 07 07.1	+0.8
	40nm,0.3s,baz=80,slow=20,SNR=12						
DZM	**Mont Dzumac**	**22.18**	**138**	P	P	05 09 47.9	-0.2
	5.7nm,0.5s,baz=300,slow=8.9,SNR=7.0						
STKA	**Stephens Creek**	**27.25**	**197**	P	P	05 10 35.5	+0.2
	1.6nm,0.6s,baz=12,slow=14,SNR=3.8						
FITZ	**Fitzroy Crossi**	**27.32**	**241**	P	P	05 10 34.6	-1.4
	180nm,0.8s,baz=83,slow=8.1,SNR=7.9						
USRK	**Ussuriysk Ar.**	**52.60**	**343**	LR	LR	05 36 47.8	
	comp=Z,177nm,18.7s,baz=158,slow=36						
ILAR	**Eielson Array**	**83.92**	**22**	P	P	05 17 18.9	-0.6
	0.2nm,0.6s,baz=245,slow=5.3,SNR=5.4						
TORD	**Torodi Ar. Bea**	**148.60**	**286**	PKPbc	PKPbc	05 24 38.3	+0.7
	2.4nm,0.5s,baz=62,slow=2.6,SNR=26						

IDC ***27*** *05:05:52.6±0.4, 7°.55S×130°.38E, h0km, mb5.0/27, mb1 5.0/28, mb1mx5.0/34, mbtmp5.0/28, ML4.9/1, MS4.5/19, Ms1 4.5/19, ms1mx4.3/29, Error ellipse: s-maj=16.2km s-min=8.9km az=61.0*
GCMT ***27*** *05:05:53.2±0.1, 7°.56S×130°.28E, h18km, MW5.2/110, Moment Tensor Solution. s93,c157; s110,c192; Duration: 1s0 Moment tensor: Scale 10¹⁷Nm; Mrr0.78±.02; Mθθ-0.75±.01; Mφφ-0.03±.01; Mrθ-0.34±.03; Mθφ-0.22±.01; Mφr-0.23±.03; Best double couple: M₀0.89900×10¹⁷ NP1₀s246.00000°, δ59.00000°, λ81.00000°. NP2₀s83.00000°, δ33.00000°, λ104.00000°. Principal axes: T 0.8910, Plg75.0000°, Azm131.0000°; N 0.0160, Plg8.0000°, Azm250.0000°; P -0.9070, Plg13.0000°, Azm342.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***27*** *05:05:53.2±2.1, 7°.57S×130°.45E, h2km±13km, mb5.2/70 Error ellipse: s-maj=6.5km s-min=4.4km az=60.0*
ISCJB ***27*** *05:05:55.0±0.1, 7°.62S±0°.02×130°.43E±0°.03, h27km, mb5.1/124, MS4.4/33, Error ellipse: s-maj=4.7km s-min=3.1km az=157.4*
BJI ***27*** *05:05:55.2, 7°.58S×130°.61E, h34km, mb5.0/66, mB5.2/48, Ms4.7/49, MS7 4.4/46*
MOS ***27*** *05:05:56.7±1.4, 7°.52S×130°.39E, h33km, mb5.4/39, Error ellipse: s-maj=10.8km s-min=6.1km az=110.6*
DJA ***27*** *05:05:59.2±0.8, 8°.S±4°×13°.1E±°, h34km±9km, M5.4/28, mb5.2/28, mB5.7/20, MLv6.1/3, Mw(mB)5.3/20*
ISC 27 05:05:56.6±0.2, 7°.61S±0°.03×130°.45E±0°.04, h27km, n391, σt²97/426, mb5.2/124, MS4.4/34, 16C-7D, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAUI	**Saumlaki**	**0.92**	**114**	P	**Pb**	**05 06 17.1**	**+3.1**
SAUI	**Saumlaki**	**0.92**	**114**	*e*Pn	**Pb**	**05 06 16.3**	**+2.3**
SAUI				*e*Sn	**Sn**	**05 06 30.6**	**+4.5**
BNDI	**Bandanaira**	**3.11**	**350**	P	**Pn**	**05 06 42.8**	**-1.2**
MSAI	**Masohi**	**4.50**	**340**	P	**Pn**	**05 07 02.1**	**-1.0**
FAKI	**Fak Fak**	**4.99**	**21**	P	**Pn**	**05 07 09.6**	**-0.2**
FAKI	**Fak Fak**	**4.99**	**21**	*e*Pn	**Pn**	**05 07 09.2**	**-0.7**
MTN	**Manton Dam**	**5.25**	**173**	P	**Pn**	**05 07 12.3**	**-1.1**
	baz=5.2,SNR=72						
MTN	**Manton Dam**	**5.25**	**173**	*e*Pn	**Pn**	**05 07 12.1**	**-1.2**
KDU	**Kakadu**	**5.43**	**159**	P	**Pn**	**05 07 15.0**	**-0.8**
	baz=5.4,SNR=147						
NLAI	**Namlea**	**5.47**	**322**	P	**Pn**	**05 07 17.0**	**+0.5**
SOEI	**Soe**	**6.48**	**250**	P	**Pn**	**05 07 32.2**	**+1.8**
SOEI	**Soe**	**6.48**	**250**	*e*Pn	**Pn**	**05 07 31.7**	**+1.3**
SIJI	**Sorong**	**6.74**	**7**	Pn	**Pn**	**05 07 36.7**	**+2.7**
	18nm,0.3s,baz=89,slow=24,SNR=7.2						
SIJI				Sn	Sn	05 08 39.1	-11
	24nm,0.3s,baz=107,slow=19,SNR=2.2						
SANI	**Sanana**	**7.09**	**321**	P	**Pn**	**05 07 39.1**	**+0.4**
LBMI	**Labuha**	**7.52**	**337**	P	**Pn**	**05 07 47.8**	**+3.1**
MMRI	**Maumere**	**8.20**	**262**	*e*Pn	**Pn**	**05 07 54.0**	**0.0**
	105nm,0.5s						
KDI	**Kendari**	**8.60**	**295**	P	Pn	05 08 05.3	+5.9
LUWI	**Luwuk**	**10.06**	**310**	*e*Pn	Pn	05 08 26.4	+7.0
GENI	**Genyem**	**10.88**	**63**	P	**Pn**	**05 08 31.4**	**+0.7**
KAPI	**Kappang**	**10.94**	**283**	*e*Pn	Pn	05 08 37.7	+6.1
GTOI	**Gorontalo**	**11.05**	**317**	P	Pn	05 08 38.8	+5.7
SPSI	**Sidrap Palu**	**11.23**	**288**	P	Pn	05 08 41.6	+6.1

JAY	**Jayapura**	**11.39**	**64**	Pn	**Pn**	**05 08 34.5**	**-3.3**
	0.0nm,0.3s,baz=90,slow=20,SNR=2.6						
JAY				Sn	**Sn**	**05 10 41.4**	**-3.0**
	0.1nm,0.3s,baz=90,slow=20,SNR=2.5						
JAY	**Jayapura**	**11.39**	**64**	P	**Pn**	**05 08 39.7**	**+1.9**
FITZ	**Fitzroy Crossi**	**11.44**	**204**	Pn	Pn	05 08 33.8	-4.5
	15nm,0.3s,baz=36,slow=11,SNR=136						
FITZ				LR	LR	05 14 01.4	
	comp=Z,6µm,18.5s,baz=32,slow=43						
FITZ	**Fitzroy Crossi**	**11.44**	**204**	*e*Pn	Pn	05 08 33.6	-4.7
FITZ				*e*Sn	Sn	05 10 35.4	-10
MRSI	**Marisa**	**11.69**	**313**	P	**Pn**	**05 08 46.1**	**+4.4**
PCI	**Palu**	**12.50**	**302**	P	**P**	**05 09 04.9**	**+0.5**
PLAI	**Plampang**	**12.61**	**264**	P	**Pn**	**05 08 52.6**	**-1.8**
WRAB	**Tennant Creek**	**12.82**	**163**	*e*P	Pn	05 08 52.4	-4.9
WRAB	**Tennant Creek**	**12.82**	**163**	*e*Pn	Pn	05 08 52.4	-4.9
WRA	**Warramunga Arr**	**12.83**	**163**	Pn	Pn	05 08 52.3	-5.1
	6.2nm,0.3s,baz=348,slow=13,SNR=131						
WRA				Sn	Sn	05 11 09.4	-10
	12nm,0.3s,baz=345,slow=22,SNR=13						
WRA				Lg	Lg	05 12 40.0	
	baz=337,slow=27,SNR=4.8						
WRA				LR	LR	05 14 32.0	
	comp=Z,8µm,19.9s,baz=340,slow=40						
WB2	**Warramunga Arr**	**12.83**	**163**	*e*Pn	Pn	05 08 51.5	-5.9
WB2				*e*Pn	Pn	05 08 52.2	-5.2
TWSI	**Taliwang, Sumb**	**13.48**	**264**	P	**Pn**	**05 09 04.3**	**-2.0**
COEN	**Coen**	**14.00**	**118**	*e*Pn	**Pn**	**05 09 10.8**	**-2.5**
CTBH	**Cotabato--PC H**	**15.98**	**337**	⇑*i*P	**P**	**05 09 43.9**	**+0.9**
BBKI	**Banjar Baru**	**16.07**	**284**	P	**P**	**05 09 46.5**	**+2.4**
AS31	**Alice Springs**	**16.31**	**169**	*e*Pn	**Pn**	**05 09 40.4**	**-3.5**
	40nm,1.0s						
ASAR	**Alice Springs**	**16.31**	**169**	Pn	**Pn**	**05 09 38.7**	**-5.3**
	3.1nm,0.3s,baz=344,slow=11,SNR=65						
ASAR				Sn	**Sn**	**05 12 34.2**	**-10**
	3.2nm,0.3s,baz=351,slow=24,SNR=5.7						
ASAR				Lg	Lg	05 14 30.9	
	baz=353,slow=30,SNR=3.3						
ASAR				LR	LR	05 16 27.8	
	comp=Z,7µm,19.6s,baz=346,slow=39						
AS01	**Alice Springs**	**16.32**	**169**	*e*Pn	**Pn**	**05 09 38.9**	**-5.2**
PMG	**Port Moresby**	**16.62**	**97**	Pn	**P**	**05 09 52.4**	**+2.3**
	2.9nm,0.3s,baz=308,slow=6.9,SNR=7.4						
PMG				Sn	**Sn**	**05 12 41.8**	**-10**
	2.3nm,0.3s,baz=131,slow=20,SNR=2.0						
PMG				LR	LR	05 17 40.8	
	comp=Z,3µm,18.4s,baz=254,slow=42						
PMG	**Port Moresby**	**16.62**	**97**	*e*Pn	**P**	**05 09 51.9**	**+1.8**
	133nm,0.9s						
PMG				Sn	**Sn**	**05 12 41.8**	**-10**
BLJI	**Banyuglugur**	**16.71**	**268**	P	**P**	**05 09 52.7**	**+1.6**
MTKI	**Muara Teweh, K**	**16.86**	**292**	P	**P**	**05 09 55.2**	**+2.4**
MBWA	**Marble Bar**	**17.00**	**216**	*e*Pn	**Pn**	**05 09 47.1**	**-5.5**
	135nm,1.1s						
TSM	**Tawau**	**17.24**	**313**	⇑P	**P**	**05 09 59.7**	**+2.6**
MYLDM	**Lahad Datu**	**17.42**	**316**	*e*Pn	**P**	**05 09 58.5**	**-0.6**
	442nm,1.6s						
PWJI	**Pagerwojo**	**18.48**	**267**	P	**Pn**	**05 10 16.0**	**+5.0**
SDKM	**Sandakan**	**18.66**	**314**	⇑P	**Pn**	**05 10 15.6**	**+2.4**
PBKI	**Pangkalan Bun**	**19.33**	**284**	P	**Pn**	**05 10 23.7**	**+2.5**
	348nm,1.0s,6µm						
KKM	**Kota Kinabalu**	**19.64**	**313**	*e*P	**Pn**	**05 10 27.4**	**+2.3**
	193nm,1.2s						
CTA	**Charters Tower**	**19.71**	**131**	P	**Pn**	**05 10 25.7**	**0.0**
	2.3nm,0.3s,baz=313,slow=14,SNR=21						
CTA				S	**Sn**	**05 14 09.6**	**+3.1**
	0.3nm,0.3s,baz=252,slow=20,SNR=2.1						
CTA				Lg	Lg	05 16 24.7	
	0.5nm,0.3s,baz=229,slow=19,SNR=5.6						
CTA				LR	LR	05 18 49.4	
	comp=Z,5µm,19.2s,baz=314,slow=39						
CTA	**Charters Tower**	**19.71**	**131**	P	**Pn**	**05 10 25.9**	**+0.1**
	baz=20						
CTAO	**Charters Tower**	**19.71**	**131**	*e*P	**P**	**05 10 24.5**	**+0.3**
CTAO				pmax	pmax		
	comp=Z,108nm,1.1s						
CTAO	**Charters Tower**	**19.71**	**131**	*e*P	**P**	**05 10 24.5**	**+0.3**
	comp=Z,108nm,1.1s						
UGM	**Wanagama**	**19.75**	**268**	*e*P	**P**	**05 10 20.5**	**-4.2**
	comp=Z,286nm,1.4s						
KDM	**Kudat**	**19.82**	**316**	⇑P	**Pn**	**05 10 26.9**	**-0.1**
BTM	**Bintulu**	**20.39**	**301**	⇑P	Pn	05 10 33.0	-0.8
STKI	**Sintang**	**20.40**	**291**	P	Pn	05 10 35.2	+1.3
	comp=Z,65nm,1.2s						
SBUM	**Sibu**	**20.75**	**298**	⇑P	**P**	**05 10 36.6**	**+1.0**
SBUM	**Sibu**	**20.75**	**298**	*e*P	**P**	**05 10 36.5**	**+1.0**
	comp=Z,55nm,1.0s						
MEEK	**Meekatharra**	**22.02**	**209**	P	**P**	**05 10 48.1**	**-1.1**
	baz=22,SNR=12						
KSM	**Kuching**	**22.03**	**293**	⇓P	**P**	**05 10 50.4**	**+1.1**
KSM	**Kuching**	**22.03**	**293**	*e*P	**P**	**05 10 50.5**	**+1.1**
	comp=Z,50nm,1.0s						
CISI	**Cisompet, Garu**	**22.44**	**269**	*e*P	**P**	**05 10 50.2**	**-3.6**
	comp=Z,65nm,0.9s						
FORT	**Forest**	**23.16**	**185**	P	**P**	**05 10 60.0**	**-1.1**
	baz=23,SNR=32						
FORT	**Forrest**	**23.16**	**185**	*e*P	**P**	**05 11 00.0**	**-1.1**
	comp=Z,1µm,0.8s						
TGY	**Tagaytay City**	**23.55**	**336**	P	**P**	**05 11 05.4**	**+0.4**
	comp=Z,184nm,0.5s,baz=252,slow=3.3,SNR=6.3						
MORW	**Morawa**	**25.30**	**211**	P	**P**	**05 11 20.0**	**-1.1**
	baz=25,SNR=5.6						
RMQ	**Roma**	**25.60**	**139**	P	**P**	**05 11 24.0**	**+0.1**
	baz=26,SNR=6.4						
BBOO	**Buckleboo**	**25.61**	**169**	P	**P**	**05 11 23.4**	**-0.4**
	baz=26,SNR=30						
BBOO	**Buckleboo**	**25.61**	**169**	*e*P	**P**	**05 11 23.5**	**-0.4**
	comp=Z,118nm,0.9s						
BLDU	**Ballidu**	**26.26**	**208**	P	**P**	**05 11 29.3**	**-0.5**
	baz=26,SNR=21						
STKA	**Stephens Creek**	**26.29**	**158**	P	**P**	**05 11 30.1**	**+0.1**
	comp=Z,58nm,0.9s,baz=329,slow=9.3,SNR=51						
STKA				S	S	05 16 15.1	+14
	comp=Z,4.0nm,0.7s,baz=3.8,slow=15,SNR=2.2						
STKA				Lg	Lg	05 19 43.0	
	comp=Z,14nm,1.0s,baz=276,slow=19,SNR=1.8						
STKA				LR	LR	05 22 57.4	
	comp=Z,4µm,20.8s,baz=325,slow=39						
STKA	**Stephens Creek**	**26.29**	**158**	P	**P**	**05 11 30.2**	**+0.2**
	baz=26,SNR=34						
STKA	**Stephens Creek**	**26.29**	**158**	*e*P	**P**	**05 11 30.1**	**+0.1**
STKA				pmax	pmax		
	comp=Z,18nm,1.0s						
STKA	**Stephens Creek**	**26.29**	**158**	*e*P	**P**	**05 11 30.1**	**+0.1**
	comp=Z,18nm,1.0s						
STKA				S	S	05 16 15.1	+14
STKA				Lg	Lg	05 19 43.0	
EIDS	**Eidsvold**	**26.45**	**134**	P	**P**	**05 11 31.9**	**+0.4**
	baz=27						
EIDS	**Eidsvold**	**26.45**	**134**	*e*P	**P**	**05 11 31.5**	**0.0**
	comp=Z,38nm,1.1s						
KLBR	**Kellerberrin**	**26.64**	**205**	P	**P**	**05 11 32.4**	**-0.8**
	baz=27,SNR=23						
HTT	**Hallett**	**26.87**	**164**	P	**P**	**05 11 36.1**	**+0.8**
	baz=27,SNR=11						
MUN	**Mundaring**	**27.64**	**207**	P	**P**	**05 11 41.0**	**-1.2**
	baz=28						
CMSA	**Cobar Meteorol**	**27.73**	**151**	P	**P**	**05 11 44.1**	**+1.1**
	baz=28,SNR=46						
NWAO	**Narrogin (SRO)**	**28.02**	**204**	P	**P**	**05 11 45.2**	**-0.4**
	comp=Z,11nm,0.4s,baz=260,slow=9.4,SNR=8.6						
NWAO				LR	LR	05 24 00.9	
	comp=Z,3µm,18.7s,baz=256,slow=39						
NWAO	**Narrogin (SRO)**	**28.02**	**204**	P	**P**	**05 11 45.5**	**0.0**
	baz=28,SNR=6.4						
NWAO				P	**P**	**05 11 45.5**	**0.0**
	baz=28,SNR=6.4						
NWAO	**Narrogin (SRO)**	**28.02**	**204**	*e*P	**P**	**05 11 44.4**	**-1.2**
NWAO				pmax	pmax		
	comp=Z,61nm,1.2s						
NWAO	**Narrogin (SRO)**	**28.02**	**204**	*e*P	**P**	**05 11 44.4**	**-1.2**
	comp=Z,61nm,1.2s						
MYKOM	**Kota Tinggi**	**28.13**	**288**	⇑P	**P**	**05 11 46.2**	**-0.5**
HNR	**Honiara**	**29.22**	**96**	LR	LR	05 24 31.9	
	comp=Z,1µm,21.1s,baz=268,slow=38						
RKGY	**Rocky Gully**	**29.60**	**203**	P	**P**	**05 11 60.0**	**+0.4**
	baz=30						
ARPS	**Mount Arapiles**	**30.83**	**162**	P	**P**	**05 12 11.0**	**+0.6**
	baz=31,SNR=23						
YNG	**Young**	**31.29**	**151**	P	**P**	**05 12 16.6**	**+2.1**
	baz=31,SNR=18						
MNSI	**Mandailing Nat**	**31.90**	**284**	P	**P**	**05 12 23.4**	**+3.2**
	comp=Z,24nm,1.2s,comp=Z,4µm						
CAN	**Canberra**	**32.41**	**151**	P	**P**	**05 12 25.1**	**+0.7**
	baz=32						
CAN	**Canberra**	**32.41**	**151**	*e*P	**P**	**05 12 25.4**	**+0.9**
CAN				pmax	pmax		

	comp=Z,70nm,0.9s						
CAN	**Canberra**	**32.41**	**151**	*e*P	**P**	**05 12 25.4**	**+0.9**
	comp=Z,70nm,0.9s						
CNB	**Canberra Magne**	**32.58**	**151**	P	**P**	**05 12 27.0**	**+1.1**
	baz=33						
PSI	**Prapat**	**33.11**	**287**	P	**P**	**05 12 28.5**	**-2.4**
	comp=Z,8.9nm,0.7s,baz=123,slow=16,SNR=4.1						
PSI	**Prapat**	**33.11**	**287**	*e*P	**P**	**05 12 31.6**	**+0.6**
PSI				pmax	pmax		
	comp=Z,21nm,0.9s						
PSI	**Prapat**	**33.11**	**287**	*e*P	**P**	**05 12 31.6**	**+0.6**
	comp=Z,21nm,0.9s						
QIZ	**Qiongzhong**	**33.37**	**323**	P	**P**	**05 12 32.8**	**-0.1**
QIZ				PP	**PP**	**05 13 49.5**	**+0.8**
QIZ				S	**S**	**05 17 53.0**	**+0.6**
QIZ				LR	LR		
	comp=Z,440nm,16.7s						
QIZ				LR	LR		
	comp=Z,510nm,18.2s						
COCO	**West Island**	**33.41**	**259**	*e*P	**P**	**05 12 29.7**	**-3.6**
COCO	**West Island**	**33.41**	**259**	*e*P	**P**	**05 12 29.8**	**-3.6**
	comp=Z,316nm,1.4s						
UBPT	**Khong Chiam**	**33.62**	**313**	P	**P**	**05 12 38.1**	**+3.0**
	comp=Z,19nm,1.3s						
QZH	**Quanzhou**	**34.35**	**341**	⇑*i*P	P	05 12 48.3	+6.9
QZH				S	**S**	**05 18 04.5**	**-3.0**
QZH				LR	LR		
	comp=Z,880nm,21.2s						
SKNT	**Sakolnakorn**	**35.80**	**313**	P	**P**	**05 12 58.2**	**+4.2**
	comp=Z,24nm,1.1s,comp=Z,5µm						
NONG	**Nongkai**	**37.11**	**314**	P	**P**	**05 13 07.7**	**+2.5**
	comp=Z,20nm,0.9s,comp=Z,6µm						
DZM	**Mont Dzumac**	**37.52**	**116**	P	**P**	**05 13 09.1**	**+0.4**
	comp=Z,13nm,0.8s,baz=237,slow=6.4,SNR=5.2						
DZM				LR	LR	05 29 02.4	
	comp=Z,505nm,18.7s,baz=284,slow=37						
DZM	**Mont Dzumac**	**37.52**	**116**	*e*P	**P**	**05 13 08.5**	**-0.3**
	comp=Z,55nm,1.2s						
DZM				*e*S	**S**	**05 18 59.1**	**+2.6**
	comp=Z,630nm,32.8s						
DZM				*e*LR	LR	05 23 31.3	
	comp=Z,2µm,24.4s						
MOO	**Moorlands**	**37.71**	**160**	P	**P**	**05 13 11.4**	**+1.5**
	baz=38						
UTTA	**Uttaradit**	**38.82**	**311**	P	**P**	**05 13 19.7**	**+0.2**
	comp=Z,8.0nm,0.8s						
SUKH	**Sukhothai**	**39.36**	**310**	P	**P**	**05 13 24.6**	**+0.5**
	comp=Z,6.0nm,0.8s,comp=Z,66nm						
SSE	**Sheshan**	**39.49**	**347**	P	**P**	**05 13 25.5**	**+0.5**
SSE				S	**S**	**05 19 29.5**	**+3.8**
SSE				pmax	pmax		
	comp=Z,54nm,0.6s						
SSE				pmax	pmax		
	comp=Z,150nm,3.5s						
SSE				LR	LR		
	comp=Z,230nm,26.0s						
SSE				LR	LR		
	comp=Z,86nm,27.0s						
CMAR	**Chiang Mai Arr**	**40.46**	**310**	P	**P**	**05 13 32.2**	**-1.1**
	comp=Z,2.2nm,0.4s,baz=142,slow=7.7,SNR=20						
CMAR				PcP	**PcP**	**05 15 36.5**	**+0.6**
	comp=Z,3.5nm,0.8s,baz=132,slow=4.0,SNR=5.9						
CMAR				LR	LR	05 31 36.4	
	comp=Z,361nm,18.6s,baz=156,slow=38						
CMAR	**Chiang Mai Arr**	**40.46**	**310**	*ce*P	**P**	**05 13 33.0**	**-0.3**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.4s						
JNU	**Nakatsue**	**40.50**	**1**	*e*P	**P**	**05 13 33.2**	**-0.2**
	comp=Z,11nm,1.1s						
CMMT	**Chiang Mai**	**40.47**	**311**	P	**P**	**05 13 35.0**	**-0.1**
	comp=Z,17nm,0.9s,comp=Z,453nm						
CHTO	**Chiang Mai**	**40.68**	**311**	P	**P**	**05 13 35.0**	**-0.1**
	comp=Z,78nm,1.4s						
CHTO	**Chiang Mai**	**40.68**	**311**	*e*P	**P**	**05 13 35.4**	**+0.3**
CHTO				pmax	pmax		
	comp=Z,12nm,0.8s						
CHTO	**Chiang Mai**	**40.68**	**311**	*e*P	**P**	**05 13 35.4**	**+0.3**
	comp=Z,12nm,0.8s						
WHN	**Wuhan**	**40.96**	**339**	⇓P	**P**	**05 13 37.3**	**+0.1**
WHN				pP	**sP**	**05 13 48.8**	**+0.2**
WHN				S	**S**	**05 19 48.5**	**+0.9**
WHN				LR	LR		
	comp=Z,870nm,21.0s						
NJ2	**Nanjing**	**40.96**	**345**	*e*P	**P**	**05 13 37.8**	**+0.6**
NJ2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CMAI	**Chiengmai2**	**41.28**	**312**	P	**P**	**05 13 40.0**	**-0.3**
	comp=Z,120nm,0.8s,comp=Z,4µm						
KMI	**Kunming**	**42.27**	**321**	P	**P**	**05 13 50.5**	**+2.2**
KMI				pP	sP	05 14 00.8	+1.1
KMI				sP	pP	05 14 05.0	+8.6
KMI				PP	**PP**	**05 15 29.0**	**+2.5**
KMI				S	**S**	**05 20 06.3**	**-1.4**
KMI				sS	sS	05 20 26.5	+5.4
KMI				SS	**SS**	**05 23 12.3**	**-4.4**
KMI				pmax	pmax		
	comp=Z,13nm,0.5s						
KMI				pmax	pmax		
	comp=Z,220nm,5.4s						
KMI				LR	LR		
	comp=Z,240nm,21.0s						
KMI				LR	LR		
	comp=Z,360nm,18.5s						
KMI				LR	LR		
	comp=Z,350nm,22.1s						
ENH	**Enshi**	**42.70**	**333**	*e*P	**P**	**05 13 50.5**	**-1.1**
	comp=Z,24nm,0.9s						
MAJO	**Matsush

SNY	**Shenyang**	**49.59**	**353**	⇓P		**P**		**05 14 44.8**	**-0.7**
SNY				S		**S**		**05 21 49.0**	**-3.0**
SNY				pmax	pmax				
	comp=Z,5.0nm,0.2s								
SNY				pmax	pmax				
	comp=Z,94nm,4.0s								
SNY				LR	LR				
	comp=Z,240nm,16.4s								
SNY				LR	LR				
	comp=Z,410nm,15.2s								
SNY				LR	LR				
	comp=Z,530nm,19.0s								
MSHR	**Mys Shultsa**	**49.95**	**1**	*ce*P		**P**		**05 14 50.6**	**+2.4**
LZH	**Lanzhou**	**50.15**	**332**	⇑P		**P**		**05 14 50.5**	**+0.4**
LZH				pP		sP		05 15 01.5	-0.1
LZH				sP		pP		05 15 05.3	+7.0
LZH				*e*S		**S**		**05 21 56.0**	**-4.4**
LZH				SS		**SS**		**05 25 31.3**	**-2.9**
LZH				pmax	pmax				
	comp=Z,56nm,1.2s								
LZH				pmax	pmax				
	comp=Z,260nm,6.0s								
LZH				LR	LR				
	comp=Z,300nm,13.0s								
LZH				LR	LR				
	comp=Z,490nm,14.1s								
LZH				LR	LR				
	comp=Z,560nm,15.5s								
LBZ	**Lake Benmore**	**50.34**	**143**	*e*P		**P**		**05 14 51.5**	**+0.3**
	comp=Z,212nm,1.7s								
RPZ	**Rata Peaks**	**50.48**	**142**	P		**P**		**05 14 52.5**	**+0.2**
	comp=Z,41nm,0.6s,baz=274,slow=3.3,SNR=25								
RPZ	**Rata Peaks**	**50.48**	**142**	*e*P		**P**		**05 14 52.5**	**+0.2**
	comp=Z,55nm,0.7s								
THZ	**Tophouse**	**50.62**	**139**	*e*P		**P**		**05 14 55.3**	**+1.8**
	comp=Z,72nm,1.3s								
ERM	**Erimo**	**50.73**	**12**	*e*P		**P**		**05 14 55.7**	**+1.6**
ERM	**Erimo**	**50.73**	**12**	*e*P		**P**		**05 14 55.8**	**+1.6**
	comp=Z,26nm,1.1s								
OXZ	**Oxford**	**50.88**	**141**	*e*P		**P**		**05 14 55.8**	**+0.5**
	comp=Z,30nm,0.6s								
HHC	**Hu-ho-hao-te**	**51.26**	**342**	*e*P		**P**		**05 14 57.5**	**-0.8**
HHC				S		**S**		**05 22 12.5**	**-3.0**
HHC				ScS		**ScS**		**05 24 45.8**	**-1.4**
HHC				SS		**SS**		**05 25 45.3**	**-6.2**
HHC				pmax	pmax				
	comp=Z,13nm,1.2s								
HHC				pmax	pmax				
	comp=Z,210nm,5.8s								
HHC				LR	LR				
	comp=Z,240nm,16.6s								
HHC				LR	LR				
	comp=Z,220nm,16.4s								
HHC				LR	LR				
	comp=Z,190nm,16.5s								
KHZ	**Kahutara**	**51.35**	**140**	*e*P		**P**		**05 14 59.0**	**+0.1**
	comp=Z,37nm,0.8s								
CN2	**Changchun**	**51.37**	**355**	*e*P		**P**		**05 15 00.3**	**+1.4**
CN2				*e*pP		sP		05 15 12.8	+2.4
CN2				*e*S		**S**		**05 22 16.8**	**+0.2**
CN2				pmax	pmax				
	comp=Z,10.0nm,0.5s								
CN2				LR	LR				
	comp=Z,300nm,21.0s								
CN2				LR	LR				
	comp=Z,200nm,21.0s								
CN2				LR	LR				
	comp=Z,300nm,22.0s								
USRK	**Ussuriysk Ar.**	**51.58**	**1**	P		**P**		**05 15 00.3**	**-0.2**
	comp=Z,8.8nm,0.8s,baz=189,slow=6.6,SNR=20								
PALK	**Pallekele**	**51.77**	**285**	P		**P**		**05 15 03.6**	**+1.1**
	comp=Z,17nm,1.0s,baz=115,slow=8.6,SNR=2.8								
PALK	**Pallekele**	**51.77**	**285**	*ce*P		**P**		**05 15 04.7**	**+2.2**
BKZ	**Black Stump Fm**	**51.85**	**135**	*e*P		**P**		**05 15 03.6**	**+0.8**
	comp=Z,31nm,0.9s								
URZ	**Urewera**	**51.92**	**133**	P		**P**		**05 15 03.8**	**+0.6**
	comp=Z,11nm,0.5s,baz=236,slow=1.9,SNR=6.1								
URZ	**Urewera**	**51.92**	**133**	*e*P		**P**		**05 15 01.2**	**-2.0**
	comp=Z,60nm,1.5s								
MDJ	**Mudanjiang**	**51.99**	**359**	P		**P**		**05 15 03.8**	**+0.3**
MDJ				pP		pP		05 15 12.8	+1.0
MDJ				sP		sP		05 15 16.8	+1.8
MDJ				PP		**PP**		**05 17 01.8**	**-0.1**
MDJ				S		**S**		**05 22 25.0**	**-0.2**
MDJ				ScS		**ScS**		**05 24 49.8**	**-2.0**
MDJ				SS		**SS**		**05 25 59.8**	**-2.9**
MDJ				pmax	pmax				
	comp=Z,15nm,1.1s								
MDJ				pmax	pmax				
	comp=Z,100nm,4.3s								
MDJ				LR	LR				
	comp=Z,300nm,21.3s								
MDJ				LR	LR				
	comp=Z,170nm,23.2s								
MDJ				LR	LR				
	comp=Z,390nm,20.9s								
ASAJ	**Asahikawa**	**52.64**	**11**	P		**P**		**05 15 08.3**	**-0.1**
	comp=Z,24nm,0.6s,baz=214,slow=9.0								
ASAJ	**Asahikawa**	**52.64**	**11**	*e*P		**P**		**05 15 08.0**	**-0.4**
	comp=Z,30nm,0.8s								
RAMN	**Ramite**	**54.63**	**311**	*e*P		**P**		**05 15 22.3**	**-1.3**
	comp=Z,64nm,0.7s								
GTA	**Gaotai**	**54.72**	**331**	⇓P		**P**		**05 15 23.5**	**-0.4**
GTA				pP		sP		05 15 34.3	-1.1
GTA				sP		pP		05 15 39.0	+6.8
GTA				PP		**PP**		**05 17 31.0**	**+4.2**
GTA				S		**S**		**05 22 59.8**	**-3.0**
GTA				pmax	pmax				
	comp=Z,17nm,1.5s								
GTA				pmax	pmax				
	comp=Z,140nm,4.5s								
GTA				LR	LR				
	comp=Z,250nm,15.7s								
GTA				LR	LR				
	comp=Z,220nm,15.7s								
GTA				LR	LR				
	comp=Z,260nm,15.2s								
KUR	**Kuril'sk**	**54.88**	**15**	*e*P		P		05 15 15.1	-10
KUR				*e*S		**S**		**05 22 55.7**	**-8.7**
KUR				pmax	pmax				
	comp=Z,43nm,1.6s								
KUR				smax	smax				
	comp=N,130nm,21.0s								
KUR				MLR	MLR				
	comp=N,43nm,18.0s								
KUR				MLR	MLR				
	comp=E,125nm,18.0s								
KUR				MLR	MLR				
	comp=Z,83nm,18.0s								
JIRN	**Jiri**	**55.32**	**311**	*e*P		**P**		**05 15 27.3**	**-1.4**
YSS	**Yuzh-Sakhalins**	**55.41**	**10**	⇑*e*P		**P**		**05 15 28.5**	**0.0**
YSS				*e*				05 15 43.6	
YSS				pmax	pmax				
	comp=Z,40nm,1.1s								
YSS				MLR	MLR				
	comp=Z,290nm,18.0s								
YSS	**Yuzh-Sakhalins**	**55.41**	**10**	*e*P		**P**		**05 15 28.9**	**+0.4**
	comp=Z,22nm,0.6s								
GUN	**Gumba**	**55.69**	**311**	*e*P		**P**		**05 15 30.5**	**-0.9**
KKN	**Kakani**	**56.07**	**311**	*e*P		**P**		**05 15 33.3**	**-0.7**
DMN	**Daman**	**56.11**	**310**	*e*P		**P**		**05 15 32.6**	**-1.7**
GKN	**Gorkha**	**56.67**	**311**	*e*P		**P**		**05 15 37.4**	**-0.7**
	comp=Z,14nm,0.4s								
KOLN	**Koldanda**	**57.33**	**310**	*e*P		**P**		**05 15 41.2**	**-1.7**
	comp=Z,23nm,0.7s								
PYUN	**Piuthan**	**57.96**	**310**	*e*P		**P**		**05 15 46.9**	**-0.4**
	comp=Z,45nm,0.7s								
SONM	**Songino Array**	**59.16**	**341**	P		**P**		**05 15 55.1**	**-0.1**
	comp=Z,6.4nm,0.8s,baz=158,slow=7.3,SNR=16								
SONM				ScP		**ScP**		**05 20 44.1**	**+1.5**
	comp=Z,0.7nm,0.6s,baz=147,slow=3.4,SNR=3.7								
SONM				PKP2bc				05 45 40.2	
	comp=Z,4.0nm,1.2s,baz=342,slow=2.4,SNR=6.6								
SONA1	**Songino Array**	**59.16**	**341**	*e*P		**P**		**05 15 55.0**	**-0.2**
SONA1				*e*				05 15 55.3	
TYV	**Tymovskoe**	**59.18**	**9**	*e*P		**P**		**05 15 54.5**	**-0.6**
TYV				pmax	pmax				
	comp=Z,20nm,0.8s								
NKL	**Nikolayevsk**	**61.14**	**7**	*e*P		**P**		**05 16 07.8**	**-0.7**
NKL				*e*				05 24 28.0	
NKL				pmax	pmax				
	comp=Z,30nm,0.9s								
ZAK	**Zakamensk**	**62.38**	**341**	*e*P		**P**		**05 16 16.2**	**-0.8**
ZAK				pmax	pmax				
	comp=Z,8.0nm,1.8s								
WMQ	**Urumqi**	**64.14**	**327**	P		**P**		**05 16 29.0**	**+0.2**
WMQ				sP		sP		05 16 44.3	+3.8
WMQ				S		**S**		**05 25 02.3**	**-2.0**
WMQ				ScS		**SKSac**		**05 26 17.0**	**-4.1**
WMQ				pmax	pmax				
	comp=Z,28nm,0.9s								
WMQ				pmax	pmax				
	comp=Z,250nm,3.6s								
WMQ				LR	LR				
	comp=Z,430nm,24.3s								
WMQ				LR	LR				
	comp=Z,430nm,23.3s								
WMQ				LR	LR				
	comp=Z,520nm,26.7s								
MOY	**Mondy**	**64.23**	**340**	*e*P		**P**		**05 16 30.0**	**+0.7**
MOY				pmax	pmax				
	comp=Z,32nm,2.9s								
CLNS	**Chul'man**	**64.38**	**357**	*e*P		**P**		**05 16 28.8**	**-1.3**
CLNS				pmax	pmax				
	comp=Z,14nm,1.0s								
CLNS				pmax	pmax				
	comp=N,11nm,1.0s								
CLNS				pmax	pmax				
	comp=E,9.0nm,1.0s								
PEA0	**Petropavlovsk-**	**64.76**	**18**	*e*P		**P**		**05 16 33.1**	**+0.6**
PEA0B	**Petropavlovsk-**	**64.76**	**18**	*e*P		**P**		**05 16 34.4**	**+1.8**
	comp=E,80nm,1.3s								
PETK	**Petropavlovsk-**	**64.76**	**18**	P		**P**		**05 16 32.9**	**+0.4**
	comp=E,13nm,0.8s,baz=189,slow=5.6,SNR=10								
PET	**Petropavlovsk**	**64.98**	**18**	*e*P		**P**		**05 16 35.3**	**+1.4**
PET				*e*S		**S**		**05 25 14.6**	**+0.6**
PET				pmax	pmax				
	comp=Z,100nm,12.8s								
PET				pmax	pmax				
	comp=Z,67nm,1.0s								
PET				pmax	pmax				
	comp=Z,200nm,17.0s								
BOD	**Bodaibo**	**66.56**	**350**	*e*P		**P**		**05 16 43.3**	**-0.8**
BOD				pmax	pmax				
	comp=Z,27nm,1.3s								
PDGK	**Podgornoye**	**68.55**	**322**	P		**P**		**05 16 57.7**	**+0.8**
PDGK				pmax	pmax				
	comp=Z,23nm,1.0s								
KSH	**Kashi**	**68.77**	**318**	P		**P**		**05 17 00.5**	**+1.9**
KSH				*e*pP		sP		05 17 11.5	+1.2
KSH				*e*PP		**PP**		**05 19 35.0**	**+4.2**
KSH				PcS				05 21 29.0	
KSH				S		**S**		**05 26 00.0**	**-0.7**
KSH				ScS		**SKSac**		**05 26 54.3**	**-2.2**
KSH				pmax	pmax				
	comp=Z,7.0nm,0.6s								
KSH				pmax	pmax				
	comp=Z,170nm,3.8s								
KSH				LR	LR				
	comp=Z,150nm,10.0s								
KSH				LR	LR				
	comp=Z,110nm,7.9s								
KSH				LR	LR				
	comp=Z,210nm,6.9s								
MA2	**Magadan**	**68.90**	**11**	P		**P**		**05 16 58.4**	**-0.5**
	comp=Z,21nm,1.1s,baz=189,slow=7.7,SNR=6.0								
MK01	**Makanchi Array**	**68.96**	**327**	*e*P		**P**		**05 16 57.5**	**-2.0**
MK31	**Makanchi Array**	**68.98**	**327**	*e*P		**P**		**05 16 59.5**	**-0.1**
MK31	**Makanchi Array**	**68.98**	**327**	*e*P		**P**		**05 16 59.5**	**-0.1**
MKAR	**Makanchi Array**	**68.98**	**327**	P		**P**		**05 16 59.7**	**+0.1**
	comp=Z,29nm,0.6s,baz=124,slow=7.4,SNR=172								
MKAR	**Makanchi Array**	**68.98**	**327**	P		**P**		**05 16 59.7**	**+0.1**
MKAR				pmax	pmax				
	comp=Z,30nm,0.6s								
MKAR	**Makanchi Array**	**68.98**	**327**	*e*P		**P**		**05 16 59.5**	**-0.1**
MAKZ	**Makanchi**	**69.16**	**327**	*e*P		**P**		**05 17 01.0**	**+0.3**
MAKZ				pmax	pmax				
	comp=Z,26nm,0.8s								
MAKZ	**Makanchi**	**69.16**	**327**	*e*P		**P**		**05 17 01.0**	**+0.3**
	comp=Z,26nm,0.8s								
YAK	**Yakutsk**	**69.43**	**360**	*e*P		**P**		**05 17 02.2**	**+0.2**
YAK				*e**PP		**sP**		**05 17 15.0**	**+1.3**
YAK				*e*				05 17 25.0	
YAK				*e*				05 19 34.4	
YAK				*e*PPP		PPP		05 21 16.6	
YAK				*e*S		**S**		**05 26 07.4**	**+0.1**
YAK				*e**SS		**sS**		**05 26 28.5**	**+7.1**
YAK				*e*				05 27 00.4	
YAK				*e*SS		**SS**		**05 30 35.8**	**+0.6**
YAK				*e*SSS		SSS		05 33 39.8	
YAK				pmax	pmax				
	comp=Z,72nm,0.8s								
YAK				pmax	pmax				
	comp=N,47nm,1.1s								
YAK				pmax	pmax				
	comp=E,7.0nm,0.9s								
YAK				pmax	pmax				
	comp=Z,88nm,3.6s								
YAK				pmax	pmax				
	comp=N,48nm,2.8s								
YAK				pmax	pmax				
	comp=E,34nm,3.3s								
YAK				smax	smax				
	comp=N,119nm,2.2s								
YAK				smax	smax				
	comp=E,69nm,2.0s								
YAK	**Yakutsk**	**69.43**	**360**	*e*P		**P**		**05 17 02.1**	**+0.2**
	comp=E,132nm,0.9s								
TKM2	**Tokmak 2**	**70.73**	**320**	P		**P**		**05 17 11.6**	**+0.9**
TKM2				pmax	pmax				
	comp=Z,24nm,1.0s								
AAK	**Ala-Archa**	**71.29**	**320**	*e*P		**P**		**05 17 16.0**	**+1.9**
AAK				pmax	pmax				
	comp=Z,22nm,1.0s								
AAK	**Ala-Archa**	**71.29**	**320**	*e*P		**P**		**05 17 16.0**	**+1.9**
	comp=Z,22nm,1.0s								
VNDA	**Vanda**	**71.80**	**173**	P		**P**		**05 17 16.3**	**0.0**
	comp=Z,12nm,0.8s,baz=318,slow=6.7,SNR=48								
VNDA				LR	LR			05 49 10.7	
	comp=Z,944nm,18.1s,baz=348,slow=36								
VNDA	**Vanda**	**71.80**	**173**	*e*P		**P**		**05 17 16.7**	**+0.4**
VNDA				pmax	pmax				
	comp=Z,20nm,0.9s								
VNDA	**Vanda**	**71.80**	**173**	*e*P		**P**		**05 17 16.7**	**+0.4**
	comp=Z,20nm,0.9s								
SEY	**Seymchan**	**72.32**	**10**	P		**P**		**05 17 19.3**	**-0.2**
	comp=Z,31nm,1.0s,baz=196,slow=4.8,SNR=39								
ZAA0	**Zalesovo Array**	**72.32**	**334**	*e*P		**P**		**05 17 18.6**	**-1.2**
ZAA0				*e*P		**P**		**05 17 19.1**	**-0.7**
ZALV	**Zalesovo Beam**	**72.32**	**334**	P		**P**		**05 17 18.8**	**-1.0**
	comp=Z,7.0nm,0.7s,baz=121,slow=4.6,SNR=20								
ZALV				LR	LR			05 51 19.8	
	comp=Z,86nm,19.5s,baz=68,slow=38								
MNAS	**Manas**	**72.50**	**319**	P		**P**		**05 17 21.8**	**+0.5**
MNAS				pmax	pmax				
	comp=Z,21nm,1.0s								
SBA	**Scott Base**	**72.68**	**172**	*e*P		**P**		**05 17 23.5**	**+1.9**
SBA				pmax	pmax				
	comp=Z,77nm,1.7s								
SBA	**Scott Base**	**72.68**	**172**	*e*P		**P**		**05 17 23.5**	**+1.9**
	comp=Z,77nm,1.7s								
NVS	**Novosibirsk**	**73.61**	**334**	⇓*i*P		**P**		**05 17 27.3**	**-0.1**
NVS				*i*				05 17 41.7	
NVS				*e*PPP		PPP		05 22 03.4	
NVS				*i* S		**SKiKP**		**05 26 56.0**	**+0.1**
NVS				pmax	pmax				
	comp=N,30nm,1.7s								
NVS				pmax	pmax				
	comp=Z,37nm,1.7s								
NVS				pmax	pmax				
	comp=E,21nm,1.4s								
NVS				pmax	pmax				
	comp=Z,12nm,1.7s								
NVS				pmax	pmax				
	comp=N,6.0nm,1.4s								
NVS				pmax	pmax				
	comp=E,14nm,1.7s								
NVS				smax	smax				
	comp=N,52nm,2.1s								
NVS				smax	smax				
	comp=E,63nm,2.1s								
KK31	**Karatay Array**	**74.09**	**319**	*i* P		**P**		**05 17 31.9**	**+1.4**
KK31				pmax	pmax				
	comp=Z,6.0nm,0.8s								
KKAR	**Karatay Array**	**74.09**	**319**	*e*P		**P**		**05 17 33.0**	**+2.5**
KKAR	**Karatay Array**	**74.09**	**319**	*e*P		**P**		**05 17 33.0**	**+2.5**
MAW	**Mawson**	**74.56**	**202**	P		**P**		**05 17 32.4**	**-0.4**
	comp=Z,27nm,0.9s,baz=73,slow=6.7,SNR=32								
MAW				LR	LR			05 47 13.5	
	comp=Z,666nm,21.2s,baz=60,slow=33								
MAW	**Mawson**	**74.56**	**202**	P		**P**		**05 17 33.6**	**+0.9**
	baz=74,SNR=10								
MAW	**Mawson**	**74.56**	**202**	*e*P		**P**		**05 17 33.7**	**+0.9**
MAW				pmax	pmax				
	comp=Z,12nm,1.1s								
MAW	**Mawson**	**74.56**	**202**	*e*P		**P**		**05 17 33.7**	**+0.9**
	comp=Z,12nm,1.1s								
OTUK	**Ortayu**	**75.39**	**324**	P		**P**		**05 17 38.3**	**+0.3**
OTUK				pmax	pmax				
	comp=Z,26nm,1.0s								
KIP	**Kipapa**	**75.83**	**66**	*e*P		**P**		**05 17 43.7**	**+2.8**
KIP				pmax	pmax				
	comp=Z,144nm,1.3s								
KIP	**Kipapa**	**75.83**	**66**	*e*P		**P**		**05 17 43.7**	**+2.8**
	comp=Z,144nm,1.3s								
TBI	**Tubuai**	**77.95**	**112**	*e*LR		LR		05 42 15.1	
	comp=Z,438nm,27.8s								
PPT2	**Papeete2**	**78.22**	**106**	*e*LR		LR		05 42 26.9	
	comp=Z,410nm,26.5s								
PPT	**Papeete**	**78.22**	**106**	P		**P**		**05 17 56.8**	**+2.3**
	comp=Z,22nm,0.9s,baz=288,slow=12,SNR=2.8								
PPT				LR	LR			05 50 52.2	
	comp=Z,72nm,18.4s,baz=268,slow=34								
BVA0	**Borovoye Array**	**78.81**	**328**	P		**P**		**05 17 56.5**	**-0.5**
BVA0				pmax	pmax				
	comp=Z,28nm,1.2s								
BRVK	**Borovoye**	**78.89**	**328**	*e*P		**P**		**05 17 57.3**	**-0.1**
BRVK	**Borovoye**	**78.89**	**328**	*e*P		**P**		**05 17 57.4**	**-0.1**
	comp=Z,20nm,0.9s								
TIXI	**Tiksi**	**79.10**	**359**	P		**P**		**05 17 57.4**	**-0.8**
	baz=155,slow=3.8								
GEYT	**Alibeck**	**80.95**	**310**	P		**P**		**05 18 09.4**	**+0.4**
	comp=Z,2.9nm,0.4s,baz=116,slow=3.4,SNR=4.1								
GEYT				LR	LR			06 00 07.8	
	comp=Z,59nm,19.0s,baz=100,slow=40								
NRIK	**Noril'sk**	**82.25**	**346**	P		**P**		**05 18 15.3**	**+0.2**
	comp=Z,32nm,0.9s,baz=134,slow=5.2,SNR=21								
QSPA	**South Pole Qui**	**82.37**	**180**	*e*P		**P**		**05 18 16.3**	**+0.2**
AB31	**Akbulak array**	**83.26**	**322**	*i* P		**P**		**05 18 20.3**	**-0.5**
AB31				pmax	pmax				
	comp=Z,22nm,1.5s								
ABKAR	**Akbulak array**	**83.26**	**322**	*e*P		**P**		**05 18 19.6**	**-1.2**
SYO	**Syowa Base**	**83.26**	**201**	⇑*e*P		**P**		**05 18 19.9**	**-0.6**
SYO	**Syowa Base**	**83.26**	**201**	⇓*e*P		**P**		**05 18 22.8**	**+2.3**
SDPT	**Sand Point**	**84.59**	**32**	*e*P		**P**		**05 18 27.4**	**0.0**
	comp=Z,87nm,0.9s								
SVE	**Sverdlovsk**	**85.52**	**329**	*e*P		**P**		**05 18 32.3**	**+0.2**
SVE				pmax	pmax				
	comp=Z,63nm,1.6s								
ARU	**Arti**	**86.45**	**328**	*d i*P		**P**		**05 18 36.6**	**-0.1**
ARU								05 21 55.0	
ARU				PPP		PPP		05 23 54.8	
ARU				S		S		05 28 59.5	-12
ARU				SS		**SS**		**05 34 51.0**	**-0.7**
ARU				pmax	pmax				
	comp=Z,32nm,1.2s								
ARU	**Arti**	**86.45**	**328**	*e*P		**P**		**05 18 36.3**	**-0.4**
	comp=Z,34nm,1.3s								
TAOE	**Nuku Hiva Isla**	**88.26**	**99**	*e*LR		LR		05 47 01.6	
	comp=Z,260nm,27.2s								
SVW2	**Sparrevohn**	**88.96**	**28**	*e*P		**P**		**05 18 49.2**	**+0.5**
	comp=Z,16nm,1.5s								
OHAK	**Old Harbor**	**88.98**	**32**	*e*P		**P**		**05 18 50.6**	**+1.8**
	comp=Z,18nm,0.8s								
TT01	**Tatalina**	**89.32**	**26**	*e*P		**P**		**05 18 50.7**	**+0.4**
TTA	**Tatalina**	**89.33**	**26**	*e*P		**P**		**05 18 53.2**	**+2.8**
TTA				pmax	pmax				
	comp=Z,9.0nm,1.1s								
TTA	**Tatalina**	**89.33**	**26**	*e*P		**P**		**05 18 53.2**	**+2.8**
	comp=Z,8.9nm,1.1s								
KDAK	**Kodiak Island**	**89.50**	**31**	*ce*P		**P**		**05 18 53.1**	**+1.9**
KDAK	**Kodiak Island**	**89.50**	**31**	*e*P		**P**		**05 18 52.4**	**+1.2**
	comp=Z,14nm,0.9s								
CAST	**Castle Rocks**	**91.18**	**26**	*e*P		**P**		**05 18 59.2**	**+0.2**
	comp=Z,11nm,1.6s								
RKT	**Rikitea**	**91.23**	**113**	*e*LR		LR		05 48 25.5	
	comp=Z,362nm,27.0s								
KTH	**Kantishna Hill**	**91.72**	**26**	*e*P		**P**		**05 19 01.8**	**+0.2**
	comp=Z,8.3nm,1.2s								
BPAW	**Bear Paw Mtn.**	**91.82**	**26**	*e*P		**P**		**05 19 03.0**	**+1.1**
	comp=Z,11nm,1.6s								
NVL	**N'lazarevskaya**	**91.91**	**197**	*e*P		**P**		**05 19 01.8**	**-0.5**
NVL				MLR		MLR			
	comp=Z,2μm,29.0s								
TRF	**Thorofare Moun**	**91.97**	**26**	*e*P		**P**		**05 19 03.5**	**+0.7**
	comp=Z,10nm,1.4s								
PMR	**Palmer**	**92.09**	**28**	*e*P		**P**		**05 19 03.2**	**0.0**
PMR				pmax	pmax				
	comp=Z,4.0nm,0.9s								
PMR	**Palmer**	**92.09**	**28**	*e*P		**P**		**05 19 03.2**	**0.0**
	comp=Z,4.0nm,0.9s								
MLY	**Manley**	**92.14**	**25**	*e*P		**P**		**05 19 03.5**	**+0.1**
	comp=Z,4.9nm,0.7s								
SML	**Sawmill**	**92.51**	**28**	*e*P		**P**		**05 19 06.1**	**+0.9**
SML				pmax	pmax				
	comp=Z,10.0nm,1.0s								
SML	**Sawmill**	**92.51**	**28**	*e*P		**P**		**05 19 06.0**	**+0.9**
	comp=Z,10nm,1.0s								
ZEI	**Tsey**	**92.59**	**313**	*e*P		**P**		**05 19 07.2**	**+1.0**
RND	**Reindeer**	**92.59**	**26**	*e*P		**P**		**05 19 04.9**	**-0.7**
RND				pmax	pmax				
	comp=Z,13nm,1.0s								
RND	**Reindeer**	**92.59**	**26**	*e*P		**P**		**05 19 04.9**	**-0.7**
	comp=Z,13nm,1.0s								
MCK	**McKinley**	**92.62**	**26**	*e*P		**P**		**05 19 05.9**	**+0.2**
MCK				pmax	pmax				
	comp=Z,38nm,1.8s								
MCK	**McKinley**	**92.62**	**26**	*e*P		**P**		**05 19 05.8**	**+0.2**
	comp=Z,38nm,1.8s								
COLD	**Coldfoot**	**92.85**	**23**	*e*P		**P**		**05 19 07.1**	**+0.5**
	comp=Z,5.6nm,0.9s								
KMBO	**Kilima Mbogo**	**93.03**	**268**	P		**P**		**05 19 07.5**	**-1.5**
	comp=Z,0.5nm,0.4s,baz=59,slow=18,SNR=2.8								
KMBO	**Kilima Mbogo**	**93.03**	**268**	*ce*P		**P**		**05 19 12.5**	**+3.6**
KMBO				pmax	pmax				
	comp=Z,1.0nm,0.7s								
WRH	**Wood River Hil**	**93.14**	**25**	*e*P		**P**		**05 19 07.2**	**-0.7**
	comp=Z,10nm,1.0s								
MDM	**Murphy Dome**	**93.17**	**25**	*e*P		**P**		**05 19 08.1**	**-0.1**
	comp=Z,16nm,1.8s								
DHY	**Denali Highway**	**93.19**	**27**	*e*P		**P**		**05 19 09.3**	**+0.8**
	comp=Z,7.7nm,1.0s								
CCB	**Clear Creek Bu**	**93.29**	**25**	*

OBN					pmax	pmax		
	comp=Z,5.0nm,0.7s							
INK	**Inuvik**	**99.25**	**22**	LR	LR	06 03 33.7		
	comp=Z,50nm,18.7s,baz=257,slow=35							
BOSA	**Boshof**	**99.55**	**239**	PKKPbc	PKKPbc	05 35 59.8	-1.0	
	comp=Z,8.1nm,1.2s,baz=271,slow=4.4,SNR=2.7							
BOSA				LR	LR	06 01 20.4		
	comp=Z,104nm,19.4s,baz=108,slow=33							
BRTR	**Keskin Array B**	**100.05**	**309**	P		**Pdif**	**05 19 40.5**	**+0.4**
	comp=Z,0.6nm,0.7s,baz=134,slow=7.2,SNR=3.9							
BRTR				LR	LR	06 10 31.8		
	comp=Z,47nm,21.8s,baz=104,slow=39							
ARCES	**ARCESS Array B**	**102.30**	**340**	P		**Pdif**	**05 19 49.3**	**+0.1**
	comp=Z,1.9nm,0.6s,baz=36,slow=4.7,SNR=4.7							
FINES	**FINESS Array B**	**103.51**	**331**	Pdiff		**Pdif**	**05 19 53.5**	**-1.2**
	comp=Z,0.5nm,0.7s,baz=83,slow=12,SNR=2.6							
FINES				PKIKP		**PKiKP**	**05 24 13.9**	**+0.7**
	comp=Z,0.7nm,0.7s,baz=127,slow=3.7,SNR=4.0							
YKA	**Yellowknife Ar**	**108.09**	**26**	PKiKP		**PKiKP**	**05 24 21.7**	**0.0**
	comp=Z,0.4nm,0.6s,baz=288,slow=2.1,SNR=6.0							
YKA				PKKPbc		**PKKPbc**	**05 35 34.1**	**-2.1**
	comp=Z,1.7nm,1.0s,baz=87,slow=3.7,SNR=5.6							
YKA				PKKPab		**PKKPab**	**05 35 46.5**	**-0.9**
	comp=Z,0.6nm,0.9s,baz=106,slow=4.9,SNR=3.8							
HFS	**Hagfors**	**109.71**	**332**	PKKPab	PKKPab	05 35 43.5	+3.2	
	comp=Z,1.3nm,0.9s,baz=280,slow=10,SNR=2.8							
OKC	**Ostrava-Krasne**	**110.11**	**320**	*e*SP	SP	05 34 23.3	-2.0	
NOA	**NORSAR Array B**	**110.52**	**333**	Pdiff		**Pdif**	**05 20 25.8**	**-0.2**
	comp=Z,1.2nm,1.0s,baz=68,slow=4.7,SNR=2.8							
NOA				PKiKP		**PKiKP**	**05 24 26.5**	**0.0**
	comp=Z,0.2nm,0.5s,baz=92,slow=12,SNR=2.5							
DPC	**Dobruska-Polom**	**111.14**	**321**	*e*SP	SP	05 34 34.3	-0.5	
UPC	**Upice**	**111.29**	**321**	*e*SP	SP	05 34 32.5	-3.6	
TREC	**Trest**	**111.92**	**320**	*e*SP	SP	05 34 43.2	+1.1	
PVCC	**Panska Ves**	**112.17**	**322**	*e*SP	SP	05 34 43.3	-1.0	
PVCC				AMS	AMS	06 11 20.0		
	comp=Z,200nm,19.0s							
GOPC	**GO Pecny, Ondr**	**112.20**	**321**	*e*SP	SP	05 34 45.2	+0.6	
PRU	**Pruhonice**	**112.34**	**321**	*e*SP	SP	05 34 45.3	-0.5	
CLL	**Collm**	**112.91**	**323**	*e*PP	PP	05 25 27.0	+7.4	
CLL				*e*SKSac	**SKSac**	**05 31 15.0**	**+1.6**	
CLL				*e*SKKSac	**SKKSac**	**05 32 16.0**	**-4.1**	
CLL				*e*SP	**SP**	**05 34 47.0**	**-3.9**	
CLL				*e*PPS	PPS	05 36 07.0		
CLL				*e*SS	**SS**	**05 41 09.0**	**+8.0**	
CLL				*e*SSS	SSS	05 45 06.0		
CLL				LmV		06 25 00.0		
	comp=Z,100nm,18.2s							
GERES	**GERESS Array B**	**113.17**	**320**	PKiKP		**PKiKP**	**05 24 31.8**	**-0.1**
	comp=Z,0.5nm,0.4s,baz=53,slow=4.1,SNR=6.4							
KHC	**Kasperske Hory**	**113.17**	**320**	*e*SP	SP	05 34 55.7	+2.1	
HLID	**Hailey**	**113.35**	**46**	*e*PKPdf	**PKiKP**	**05 24 32.6**	**+0.1**	
SNOW	**Snow King Moun**	**115.96**	**45**	*e*PKPdf	**PKPdf**	**05 24 39.8**	**+2.1**	
PDAR	**Pinedale Array**	**116.99**	**46**	PKP	**PKPdf**	**05 24 39.4**	**-0.2**	
	comp=Z,0.7nm,0.6s,baz=226,slow=1.6,SNR=7.4							
PDAR				PP	**PP**	**05 25 48.0**	**-1.0**	
	comp=Z,0.4nm,0.9s,baz=251,slow=7.5,SNR=2.3							
WUAZ	**Wupatki**	**117.25**	**54**	P	**PKPdf**	**05 24 42.3**	**+2.0**	
	baz=281							
WUAZ	**Wupatki**	**117.25**	**54**	*e*PKPdf	**PKPdf**	**05 24 42.8**	**+2.6**	
LAO	**LASA Array**	**118.05**	**41**	*e*PKPdf	**PKPdf**	**05 24 43.5**	**+2.2**	
O20A	**White River Ci**	**118.64**	**48**	P	**PKPdf**	**05 24 44.2**	**+1.3**	
	baz=285							
O20A	**White River Ci**	**118.64**	**48**	*e*PKPdf	**PKPdf**	**05 24 43.9**	**+1.1**	
PV01	**Paradox Valley**	**118.89**	**51**	*e*PKPdf	**PKPdf**	**05 24 44.9**	**+1.5**	
MVCO	**Mesa Verde**	**119.17**	**52**	P	**PKPdf**	**05 24 44.9**	**+0.9**	
	baz=284							
MVCO	**Mesa Verde**	**119.17**	**52**	*e*PKPdf	**PKPdf**	**05 24 45.8**	**+1.8**	
EKA	**Eskdalemuir Ar**	**119.91**	**331**	PKP	**PKPdf**	**05 24 44.9**	**+0.4**	
	comp=Z,0.4nm,0.4s,baz=37,slow=3.0,SNR=5.8							
S22A	**4UR Ranch, Cre**	**120.32**	**51**	P	**PKPdf**	**05 24 47.7**	**+1.4**	
	baz=285							
S22A	**4UR Ranch, Cre**	**120.32**	**51**	*e*PKPdf	**PKPdf**	**05 24 48.3**	**+2.0**	
RSSD	**Black Hills**	**120.39**	**43**	P	**PKPdf**	**05 24 46.6**	**+0.4**	
	baz=291							
RSSD	**Black Hills**	**120.39**	**43**	*e*PKIKP	**PKPdf**	**05 24 47.7**	**+1.6**	
RSSD	**Black Hills**	**120.39**	**43**	*e*PKPdf	**PKPdf**	**05 24 47.7**	**+1.6**	
121A	**Cookes Peak, D**	**120.74**	**57**	P	**PKPdf**	**05 24 48.6**	**+1.5**	
	baz=281							
ANMO	**Albuquerque**	**121.30**	**54**	P	**PKPdf**	**05 24 49.4**	**+1.3**	
	baz=284							
ANMO	**Albuquerque**	**121.30**	**54**	*e*PKIKP	**PKPdf**	**05 24 49.4**	**+1.3**	
ANMO	**Albuquerque**	**121.30**	**54**	*e*PKPdf	**PKPdf**	**05 24 49.5**	**+1.3**	
SDCO	**Great Sand Dun**	**121.34**	**50**	P	**PKPdf**	**05 24 49.4**	**+1.2**	
	baz=286							
SDCO	**Great Sand Dun**	**121.34**	**50**	*e*PKPdf	**PKPdf**	**05 24 49.9**	**+1.7**	
BNM	**Barren Site**	**121.35**	**55**	*e*PKPdf	**PKPdf**	**05 24 50.5**	**+2.2**	
T25A	**Trinidad**	**122.34**	**51**	*e*PKPdf	**PKPdf**	**05 24 51.7**	**+1.6**	
B31A	**Greenbush Farm**	**122.62**	**36**	P	**PKPdf**	**05 24 49.5**	**-0.5**	
	baz=299							
ULM	**Lac du Bonnet**	**122.70**	**33**	PKP	**PKPdf**	**05 24 50.1**	**0.0**	
	comp=Z,1.8nm,0.5s,baz=342,slow=1.1,SNR=4.8							
C31A	**Landman Farms,**	**122.87**	**37**	P	**PKPdf**	**05 24 50.9**	**+0.4**	
	baz=298							
MNTX	**Cornudas Mount**	**122.91**	**57**	P	**PKPdf**	**05 24 52.3**	**+1.3**	
	baz=282							
MNTX	**Cornudas Mount**	**122.91**	**57**	*e*PKPdf	**PKPdf**	**05 24 51.8**	**+0.8**	
B32A	**Ashes, Strandq**	**123.28**	**36**	P	**PKPdf**	**05 24 51.1**	**-0.1**	
	baz=300							
MSTX	**Muleshoe**	**124.50**	**54**	*e*PKPdf	**PKPdf**	**05 24 54.2**	**0.0**	
TX31	**Lajitas Ar. Si**	**124.85**	**60**	*e*PKPdf	**PKPdf**	**05 24 57.0**	**+2.1**	
TXAR	**Lajitas Array**	**124.85**	**60**	PKP	**PKPdf**	**05 24 56.1**	**+1.2**	
	comp=Z,0.8nm,0.5s,baz=204,slow=3.1,SNR=12							
ECSD	**EROS Data Cent**	**125.45**	**41**	*e*PKPdf	**PKPdf**	**05 24 56.6**	**+1.0**	
H35A	**Sunnyside Ranc**	**126.13**	**39**	P	**PKPdf**	**05 24 57.4**	**+0.6**	
	baz=299							
F36A	**Milaca**	**126.34**	**37**	P	**PKPdf**	**05 24 57.4**	**+0.2**	
	baz=301							
T33A	**Patterson Ranc**	**127.03**	**49**	P	**PKPdf**	**05 24 59.0**	**+0.2**	
	baz=291							
P34A	**Walnut Farm, R**	**127.11**	**45**	P	**PKPdf**	**05 24 59.9**	**+1.0**	
	baz=294							
WMOK	**Wichita Mounta**	**127.42**	**52**	P	**PKPdf**	**05 25 00.9**	**+1.3**	
	baz=289							
P35A	**Duane Minner,**	**127.69**	**45**	P	**PKPdf**	**05 25 00.7**	**+0.8**	
	baz=295							
JCT	**Junction City**	**127.84**	**57**	P	**PKPdf**	**05 25 01.7**	**+1.2**	
	baz=285							
JCT	**Junction City**	**127.84**	**57**	*e*PKIKP	**PKPdf**	**05 25 01.8**	**+1.2**	
JCT	**Junction City**	**127.84**	**57**	*e*PKPdf	**PKPdf**	**05 25 01.8**	**+1.2**	
PLCA	**Paso Flores**	**128.16**	**160**	PKP	**PKPdf**	**05 25 02.6**	**+1.7**	
	comp=Z,9.4nm,0.7s,baz=230,slow=2.6,SNR=18							
832A	**Faith Ranch, C**	**128.24**	**60**	P	**PKPdf**	**05 25 03.5**	**+2.1**	
	baz=284							
333A	**Richland Sprin**	**128.29**	**56**	P	**PKPdf**	**05 25 02.7**	**+1.3**	
	baz=286							
433A	**Art**	**128.36**	**57**	P	**PKPdf**	**05 25 02.4**	**+0.8**	
	baz=286							
U35A	**Pawnee**	**128.42**	**49**	P	**PKPdf**	**05 25 02.7**	**+1.3**	
	baz=292							
W35A	**Tecumseh**	**128.75**	**51**	P	**PKPdf**	**05 25 03.2**	**+1.1**	
	baz=291							
J39A	**Decorah**	**128.76**	**39**	P	**PKPdf**	**05 25 02.0**	**+0.1**	
	baz=302							
434A	**Burnet**	**129.03**	**56**	P	**PKPdf**	**05 25 03.9**	**+1.1**	
	baz=287							
TORD	**Torodi Ar. Bea**	**129.37**	**281**	PKP	**PKPdf**	**05 25 04.8**	**+1.0**	
	comp=Z,2.7nm,0.7s,baz=81,slow=1.8,SNR=8.7							
TORD				SKPbc	SKPbc	05 28 24.7	+0.9	
	comp=Z,1.8nm,0.8s,baz=78,slow=3.8,SNR=5.5							
K40A	**Colesburg**	**129.45**	**39**	P	**PKPdf**	**05 25 03.3**	**+0.1**	
	baz=302							
R38A	**Fenwick Farm,**	**129.75**	**46**	P	**PKPdf**	**05 25 03.2**	**-0.7**	
	baz=296							
V37A	**Hulbert**	**129.79**	**49**	P	**PKPdf**	**05 25 04.3**	**+0.3**	
	baz=293							
R39A	**Chumby, Stover**	**130.31**	**45**	P	**PKPdf**	**05 25 05.5**	**+0.5**	
	baz=297							
V38A	**Canehill**	**130.35**	**49**	P	**PKPdf**	**05 25 05.9**	**+0.8**	
	baz=294							
S39A	**Bolivar**	**130.38**	**46**	P	**PKPdf**	**05 25 05.7**	**+0.6**	
	baz=296							
U39A	**Green Forest**	**130.82**	**48**	P	**PKPdf**	**05 25 06.7**	**+0.6**	
	baz=295							
R40A	**Maddies Statio**	**130.86**	**45**	P	**PKPdf**	**05 25 06.2**	**+0.2**	
	baz=297							
SCHQ	**Schefferville**	**130.91**	**13**	PKP	**PKPdf**	**05 25 06.9**	**+1.3**	
	comp=Z,1.0nm,0.3s,baz=47,slow=3.7,SNR=2.6							
SCHQ				SKPbc	**SKPab**	**05 28 29.1**	**+0.8**	
	comp=Z,4.5nm,0.7s,baz=328,slow=4.6,SNR=5.1							
X39A	**Fountain Ranch**	**131.10**	**50**	P	**PKPdf**	**05 25 07.9**	**+1.3**	
	baz=293							
T40A	**Mansfield**	**131.19**	**46**	P	**PKPdf**	**05 25 06.9**	**+0.2**	
	baz=296							
MIAR	**Mount Ida**	**131.50**	**50**	*e*PKIKP	**PKPdf**	**05 25 09.7**	**+2.4**	
MIAR	**Mount Ida**	**131.50**	**50**	*e*PKPdf	**PKPdf**	**05 25 09.7**	**+2.4**	
V40A	**Witts Springs**	**131.55**	**48**	P	**PKPdf**	**05 25 07.7**	**+0.3**	
	baz=295							
P42A	**Winchester**	**131.56**	**42**	P	**PKPdf**	**05 25 07.2**	**-0.1**	
	baz=300							
S43A	**Fulton Ridge,**	**132.73**	**45**	P	**PKPdf**	**05 25 09.5**	**-0.1**	
	baz=299							
TRQA	**Tornquist**	**133.12**	**167**	*e*PKPdf	**PKPdf**	**05 25 12.1**	**+1.7**	
DBIC	**Dimbokro**	**135.66**	**272**	PKP	**PKPdf**	**05 25 17.3**	**+1.6**	
	comp=Z,3.1nm,0.8s,baz=139,slow=9.3,SNR=3.5							
LVC	**Limon Verde**	**144.48**	**148**	*e*PKPdf	**PKPdf**	**05 25 32.4**	**+0.4**	
CPUP	**Villa Florida**	**145.43**	**168**	PKPbc	**PKPab**	**05 25 33.8**	**+0.7**	
	comp=Z,55nm,0.8s,baz=203,slow=3.2,SNR=76							
SPB	**Sao Paulo**	**148.92**	**184**	*e*PKPdf	**PKPdf**	**05 25 40.1**	**+1.2**	
SPB				*e*PKPbc	**PKPbc**	**05 25 43.4**	**+0.5**	
LPAZ	**La Paz**	**149.97**	**142**	PKP	**PKPdf**	**05 25 42.4**	**+0.9**	
	comp=Z,14nm,0.9s,baz=251,slow=3.9,SNR=14							
LPAZ				PKPbc	**PKiKP**	**05 25 48.0**	**+0.6**	
	comp=Z,50nm,0.9s,baz=281,slow=0.7,SNR=93							
OTAV	**Otavalo**	**150.27**	**103**	*e*P	**PKPdf**	**05 25 42.5**	**+0.5**	
OTAV	**Otavalo**	**150.27**	**103**	*e*PKPdf	**PKPdf**	**05 25 44.0**	**+2.1**	
CMBC	**Cumbal**	**151.05**	**102**	*e*P	**PKPbc**	**05 25 50.5**	**+1.5**	
POPC	**Popayan, Colom**	**152.52**	**99**	*e*P	**PKPbc**	**05 25 51.0**	**-1.0**	
HELC	**Santa Helena**	**154.17**	**91**	*e*P	**PKPbc**	**05 25 57.4**	**+1.6**	
PRAC	**Prado**	**154.49**	**97**	*e*P	**PKPbc**	**05 25 56.9**	**+0.8**	
ROSC	**El Rosal**	**155.22**	**95**	PKPab	**PKPab**	**05 26 14.8**	**+0.8**	
	comp=Z,6.1nm,0.8s,baz=339,slow=2.7,SNR=7.2							
CHIC	**Chingaza**	**155.77**	**96**	*e*P	**PKPdf**	**05 25 48.9**	**-1.0**	
BARC	**Barichara**	**156.52**	**91**	*e*P	PKPdf	05 25 59.0	+8.4	
SDV	**Santo Domingo**	**159.09**	**85**	*e*PKPdf	**PKPdf**	**05 25 54.5**	**+0.8**	

MAN 27 05:09:41,9.52N×122.42E,h8km,mb4.4,ML3.3,MS3.2, 1C-3D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res
SNPH	**Sibulan**	**0.83**	**102**	*i*P		Pg	05 09 56.9	0.0
SNPH				*i*S		Sn	05 10 11.2	-0.3
TBP	**Tagbilaran**	**1.43**	**83**	*i*P		Pn	05 10 07.4	+0.1
TBP				*i*S		Sn	05 10 23.5	-2.9
LLP	**Lapu-Lapu**	**1.72**	**63**	*e*P		Pn	05 10 10.6	-0.6
LLP				*e*S		Sb	05 10 34.2	-0.4
RCP	**Roxas**	**2.05**	**9**	*e*P		Pn	05 10 16.3	+0.5
RCP				*e*S		Sn	05 10 42.8	+1.2

JMA 27 05:14:02.3±0.3,37.44N×143.81E,h40km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res
JIO	**Ouri**	**2.19**	**298**	P		Pn	05 14 37.6	+1.4
JIO				S		Sn	05 15 03.6	+1.5
JFK	**Kawauchi**	**2.34**	**269**	P		Pn	05 14 39.9	+1.6
JFK				*e*S		Sn	05 15 07.7	+1.9
ONAJ	**Iwakimizuishiy**	**2.43**	**263**	S		Sn	05 15 09.9	+1.9
JMK	**Ichinoseki**	**2.54**	**307**	P		Pn	05 14 42.5	+1.5
JMK				S		Sn	05 15 12.2	+1.6
JFT	**Otama**	**2.76**	**273**	P		Pn	05 14 47.1	+3.0
JFT				*e*S		Sn	05 15 19.1	+2.9
JOM	**Ohasama**	**2.83**	**317**	P		Pn	05 14 47.7	+2.7
JOM				*e*S		Sn	05 15 19.0	+1.1
JYK	**Kaneyama**	**3.09**	**300**	P		Pn	05 14 51.1	+2.5
JANG	**Nango**	**3.43**	**329**	P		Pn	05 14 55.9	+2.6
BSO1	**Boso 1**	**3.60**	**220**	P		Pn	05 14 56.5	+1.4
JAG	**Ashikaga**	**3.63**	**255**	P		Pn	05 14 58.2	+2.2
JAG				*e*S		Sn	05 15 39.2	+1.5
JRY	**Ryogami san**	**4.19**	**252**	P		Pn	05 15 05.6	+1.9
JRY				*e*S		Sn	05 15 51.9	+0.4
JOD2	**Odawara 2**	**4.39**	**242**	P		Pn	05 15 07.9	+1.5
MAT	**Matsushiro**	**4.57**	**260**	P		Pn	05 15 12.9	+3.9
MAT				*e*S		Sn	05 16 01.6	+0.7

IDC 27 05:14:53.7±2.5,19.30S×175.97W,h0km,mb3.9/4, mb1 4.2/4,mb1mx3.9/33,mbtmp3.9/4,Error ellipse: s-maj=146.2km s-min=30.2km az=153.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res
ASAR	**Alice Springs**	**46.66**	**255**	P		P	05 23 23.6	-0.8
	3.4nm,0.9s,baz=95,slow=8.6,SNR=9.7							
WRA	**Warramunga Arr**	**46.67**	**260**	P		P	05 23 25.5	+1.0
	2.9nm,1.0s,baz=96,slow=8.3,SNR=26							
TXAR	**Lajitas Array**	**84.80**	**57**	P		P	05 27 30.9	+0.4
	0.5nm,0.9s,baz=238,slow=10,SNR=2.7							
ILAR	**Eielson Array**	**86.73**	**12**	P		P	05 27 39.6	+0.5
	0.3nm,0.8s,baz=220,slow=5.4,SNR=1.9							
BRTR	**Keskin Array B**	**147.40**	**315**	PKPbc	PKPdf		05 34 37.3	-0.2
	0.4nm,0.5s,baz=152,slow=6.4,SNR=2.8							

MEX 27 05:17:14.6±0.6,28.01N×112.11W,h11km±9km,MD3.6, Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res
SRIG	**Santa Rosalia**	**0.70**	**190**	*i*P		Pg	05 17 26.1	-2.0
SRIG				*e*S		Sg	05 17 35.8	-1.4
GUYB	**Guaymas**	**1.10**	**96**	*e*P		Pb	05 17 32.9	-2.7
GUYB				*e*S		Sb	05 17 45.4	-4.5
HSIG		**1.43**	**45**	*e*P		Pn	05 17 37.5	-3.0
HSIG				*e*S		Sn	05 17 53.8	-5.6

*KRSC **27** 05:18:44.5±1.8,53.83N×163.90E,h43km±15km,ML4.2*
*IDC **27** 05:18:44.2±0.8,53.77N×163.85E,h0km,mb3.8/11, mb1 4.1/12,mb1mx3.8/50,mbtmp3.8/12,ML3.0/1,MS2.9/1, Ms1 2.9/1,ms1mx2.5/26,Error ellipse: s-maj=23.6km s-min=16.5km az=142.0*
*MOS **27** 05:18:47.2±0.6,53.85N×163.92E,h34km,mb4.0/10,Error ellipse: s-maj=8.4km s-min=6.1km az=114.8*

ISC 27 05:18:44.4±3.4,53.82N±0.04×163.98E±0.04,h4km±21km, n76,σ1§84/113,mb3.9/11,Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res
MKZ	**Mys Kozlova**	**1.52**	**300**	PN		**Pb**	**05 19 11.7**	**-1.3**
MKZ				S		**Sn**	**05 19 29.9**	**-2.5**
MKZ	**Mys Kozlova**	**1.52**	**300**	*i*P		**Pb**	**05 19 11.7**	**-1.3**
MKZ				*e*S		**Sn**	**05 19 29.9**	**-2.5**
BKI	**Bering**	**1.81**	**39**	PN		**Pn**	**05 19 14.9**	**-1.4**
BKI	**Bering**	**1.81**	**39**	*e*P		**Pn**	**05 19 14.9**	**-1.4**
BKI				*e*S		**Sn**	**05 19 34.2**	**-5.4**
SPN	**Mys Shipunski**	**2.48**	**255**	PN		**Pn**	**05 19 25.3**	**-0.1**
SPN				S		**Sn**	**05 19 51.7**	**-4.3**
SPN	**Mys Shipunski**	**2.48**	**255**	*e*P		**Pn**	**05 19 25.3**	**-0.1**
SPN				*e*S		**Sn**	**05 19 51.7**	**-4.3**
TUMD	**Tumrok D**	**2.51**	**305**	P		**Pn**	**05 19 26.0**	**+0.1**
TUMD				*e*S		**Sn**	**05 19 54.5**	**-2.4**
KZV	**Kizimen**	**2.52**	**303**	PN		**Pn**	**05 19 26.6**	**+0.5**
KZV				S		**Sn**	**05 19 55.3**	**-2.0**
KZV	**Kizimen**	**2.52**	**303**	P		**Pn**	**05 19 26.6**	**+0.5**
KZV				S		**Sn**	**05 19 55.3**	**-2.0**
KBG	**Krutoberegovo**	**2.55**	**344**	*e*S		**Sn**	**05 19 54.1**	**-3.8**
TUMR	**Tumrok**	**2.68**	**305**	PN		**Pn**	**05 19 26.0**	**-2.3**
NLC	**Nalychevo**	**2.84**	**259**	*e*S		**Sn**	**05 20 01.2**	**-3.9**
ZLN	**Zelenaya**	**2.87**	**322**	PN		**Pn**	**05 19 31.6**	**+0.7**
ZLN				S		**Sn**	**05 20 04.7**	**-1.2**
ZLN	**Zelenaya**	**2.87**	**322**	P		**Pn**	**05 19 31.6**	**+0.7**
ZLN				S		**Sn**	**05 20 04.7**	**-1.2**
KMNR	**Kamenistaya**	**2.91**	**313**	PN		**Pn**	**05 19 31.5**	**0.0**
KMNR				S		**Sn**	**05 20 03.9**	**-3.1**
KMNR	**Kamenistaya**	**2.91**	**313**	*e*P		**Pn**	**05 19 31.5**	**0.0**
KMNR				*e*S		**Sn**	**05 20 03.9**	**-3.1**
BZMR	**Bezymyannaya**	**2.93**	**318**	PN		**Pn**	**05 19 31.7**	**-0.1**
BZMR	**Bezymyannaya**	**2.93**	**318**	P		**Pn**	**05 19 31.7**	**-0.1**
LGNR	**Loginova**	**2.96**	**321**	PN		**Pn**	**05 19 33.1**	**+0.7**
LGNR				S		**Sn**	**05 20 07.6**	**-0.8**
LGNR	**Loginova**	**2.96**	**321**	*e*P		**Pn**	**05 19 33.1**	**+0.7**
LGNR				*e*S		**Sn**	**05 20 07.6**	**-0.8**
CIRR	**Tsirk**	**2.97**	**322**	S		**Sn**	**05 20 07.7**	**-0.6**
KPT	**Kopyto**	**3.06**	**316**	PN		**Pn**	**05 19 33.8**	**+0.3**
KPT	**Kopyto**	**3.06**	**316**	P		**Pn**	**05 19 33.8**	**+0.3**
SDLR	**Sedlovina**	**3.09**	**262**	PN		**Pn**	**05 19 34.0**	**0.0**
SDLR	**Sedlovina**	**3.09**	**262**	*e*P		**Pn**	**05 19 34.0**	**0.0**
SDLR				S		**Sn**	**05 20 07.8**	**-3.5**
KRSR	**Krestovskiy**	**3.11**	**322**	PN		**Pn**	**05 19 34.4**	**+0.2**
KRSR				S		**Sn**	**05 20 10.2**	**-1.6**
KRSR	**Krestovskiy**	**3.11**	**322**	P		**Pn**	**05 19 34.4**	**+0.2**
KRSR				*e*S		**Sn**	**05 20 10.2**	**-1.6**
SMKR	**Semkarok**	**3.13**	**334**	PN		**Pn**	**05 19 34.2**	**-0.2**
SMKR				S		**Sn**	**05 20 10.5**	**-1.7**
SMKR	**Semkarok**	**3.13**	**334**	*e*P		**Pn**	**05 19 34.2**	**-0.2**
SMKR				*e*S		**Sn**	**05 20 10.5**	**-1.7**
UGLR	**Uglovaya**	**3.14**	**261**	PN		**Pn**	**05 19 34.9**	**+0.3**
UGLR				S		**Sn**	**05 20 09.7**	**-2.9**
UGLR	**Uglovaya**	**3.14**	**261**	*e*P		**Pn**	**05 19 34.9**	**+0.3**
UGLR				S		**Sn**	**05 20 09.7**	**-2.9**
KLY	**Klyuchi**	**3.15**	**324**	PN		**Pn**	**05 19 34.0**	**-0.7**
KLY				S		**Sn**	**05 20 09.9**	**-2.8**
KLY	**Klyuchi**	**3.15**	**324**	*e*P		**Pn**	**05 19 34.0**	**-0.7**
KLY				*e*S		**Sn**	**05 20 09.9**	**-2.8**
KRER	**Koryakskii**	**3.16**	**263**	PN		**Pn**	**05 19 35.6**	**+0.5**
KRER				S		**Sn**	**05 20 10.7**	**-2.6**
KRER	**Koryakskii**	**3.16**	**263**	*e*P		**Pn**	**05 19 35.6**	**+0.5**
KRER				*e*S		**Sn**	**05 20 10.7**	**-2.6**
AVH	**Avacha**	**3.18**	**262**	PN		**Pn**	**05 19 35.5**	**+0.4**
AVH				S		**Sn**	**05 20 10.6**	**-2.9**
AVH	**Avacha**	**3.18**	**262**	*e*P		**Pn**	**05 19 35.5**	**+0.4**
AVH				*e*S		**Sn**	**05 20 10.6**	**-2.9**
BDR	**Baidarnaya**	**3.19**	**331**	PN		**Pn**	**05 19 35.4**	**+0.2**
BDR				S		**Sn**	**05 20 10.7**	**-2.9**
BDR	**Baidarnaya**	**3.19**	**331**	*e*P		**Pn**	**05 19 35.4**	**+0.2**
BDR				*e*S		**Sn**	**05 20 10.7**	**-2.9**
KRX	**Arik**	**3.21**	**264**	PN		**Pn**	**05 19 35.9**	**+0.2**
KRX	**Arik**	**3.21**	**264**	P		**Pn**	**05 19 35.9**	**+0.2**
KRX				*e*S		**Sn**	**05 20 11.0**	**-3.4**
DALK	**Dalny**	**3.23**	**258**	PN		**Pn**	**05 19 36.6**	**+0.9**
DALK	**Dalny**	**3.23**	**258**	P		**Pn**	**05 19 36.6**	**+0.9**
DALK				*e*S		**Sn**	**05 20 11.4**	**-3.1**
KOZ	**Kozyrevsk**	**3.27**	**315**	PN		**Pn**	**05 19 37.2**	**+0.9**
KOZ				S		**Sn**	**05 20 14.2**	**-1.6**
KOZ	**Kozyrevsk**	**3.27**	**315**	P		**Pn**	**05 19 37.2**	**+0.9**
KOZ				S		**Sn**	**05 20 14.0**	**-1.6**
SRKR	**Sorokina**	**3.27**	**332**	PN		**Pn**	**05 19 36.5**	**+0.1**
SRKR				S		**Sn**	**05 20 14.0**	**-1.7**
SRKR	**Sorokina**	**3.27**	**332**	*e*P		**Pn**	**05 19 36.5**	**+0.1**
SRKR				*e*S		**Sn**	**05 20 14.0**	**-1.7**
PET	**Petropavlovsk**	**3.29**	**258**	*e*PN		**Pn**	**05 19 37.9**	**+1.4**
PET				*e*S		**Sn**	**05 20 13.3**	**-2.7**
PET				smax	smax			
	comp=N,77nm,0.7s							
PET				smax	smax			
	comp=E,126nm,0.6s							
RUS	**Russkaya**	**3.58**	**249**	PN		**Pn**	**05 19 40.6**	**+0.1**
RUS	**Russkaya**	**3.58**	**249**	P		**Pn**	**05 19 40.6**	**+0.1**
GNL	**Ganaly**	**3.59**	**271**	PN		**Pn**	**05 19 41.8**	**+1.0**
GNL				S		**Sn**	**05 20 22.5**	**

VHO	Vista Hermosa	5.39	300	eP		Pn	06 00 31.4	-0.2
VHO				i S		Sn	06 01 30.4	-2.1
VHO	Vista Hermosa	5.39	300	eP		Pn	06 00 33.4	+1.8
VHO				eS		Sn	06 01 31.4	-1.1
TLIG	Tlapa	7.18	296	ePn		Pn	06 00 59.2	+3.4
HDC	Heredia	8.74	120	ePn		Pn	06 01 19.0	+1.9
034A	Hebbronville baz=150	14.08	334	P		Pn	06 02 30.8	+2.7
933A	Laredo baz=149	14.81	333	P		P	06 02 40.1	-0.6
736A	Circle Diamond baz=159	15.22	342	P		Pn	06 02 44.3	+1.6
637A	Eagle Lake baz=162	15.48	345	P		P	06 02 47.7	-0.4
833A	Chaparral WMA, baz=150	15.48	334	P		P	06 02 48.5	+0.4
832A	Faith Ranch, C baz=148,SNR=7.0	15.70	333	P		P	06 02 51.8	+1.2
636A	Smothers Creek baz=160,SNR=5.3	15.71	343	P		P	06 02 50.7	0.0
733A	Divot King Ran baz=151	15.79	335	P		P	06 02 51.9	+0.4
539A	Cross D Ranch, baz=168	15.81	351	P		P	06 02 51.2	-0.5
441A	DeRidder baz=174	16.27	356	P		P	06 02 57.5	+0.7
440A	Kirbyville baz=172	16.33	353	P		P	06 02 58.4	+0.9
535A	Dale baz=159	16.38	342	P		P	06 02 59.3	+1.2
633A	Saathoff Ranch baz=153	16.40	337	P		P	06 02 59.8	+1.4
446A	Poplarville baz=187	16.42	8	P		Pn	06 02 57.8	+0.2
439A	Center Grove, baz=169	16.48	351	P		P	06 02 59.8	+0.6
447A	Lucedale baz=190	16.52	10	P		Pn	06 02 59.0	+0.2
534A	Blanco baz=156,SNR=8.7	16.67	340	P		P	06 03 03.3	+2.0
341A	Kurthwood baz=174,SNR=6.1	16.84	356	P		P	06 03 03.3	+0.1
342A	Flagon Creek P baz=177,SNR=7.2	16.85	359	P		P	06 03 04.2	+1.1
533A	Kerrville baz=154	16.90	338	P		P	06 03 05.9	+2.0
344A	Westbrook Farm baz=183	16.95	3	P		P	06 03 05.3	+1.0
339A	Huntington baz=170,SNR=7.6	16.98	352	P		P	06 03 04.9	+0.2
340A	Bronson baz=172	16.99	354	P		P	06 03 05.5	+0.8
346A	Big Creek Wild baz=187	16.99	7	P		P	06 03 05.4	+0.6
435B	Jarrell baz=160	17.09	343	P		P	06 03 07.2	+1.3
338A	Crockett baz=167,SNR=8.4	17.12	350	P		P	06 03 07.0	+0.8
347A	Saraland baz=190,SNR=9.9	17.14	10	P		P	06 03 07.1	+0.8
BRAL	Brewton comp=Z,111nm,1.4s	17.20	14	ePn		Pn	06 03 06.8	-0.4
348A	Jackson baz=192,SNR=5.4	17.26	11	P		Pn	06 03 08.6	+0.8
434A	Burnet baz=158,SNR=5.2	17.32	341	P		Pn	06 03 09.7	+1.0
243A	Waterproof baz=180	17.35	1	P		Pn	06 03 09.6	+0.7
NATX	Nacogdoches baz=170	17.42	352	P		Pn	06 03 10.3	+0.5
NATX	Nacogdoches comp=Z,31nm,0.8s	17.42	352	eP		Pn	06 03 10.2	+0.4
336A	Riesel baz=163	17.47	346	P		Pn	06 03 11.3	+1.0
241A	Mo Tay, Goldon baz=176,SNR=7.4	17.52	357	P		Pn	06 03 11.3	+0.4
335A	Moody baz=161,SNR=7.7	17.52	344	P		Pn	06 03 11.3	+0.3
242A	Grayson baz=178,SNR=15	17.53	359	P		Pn	06 03 11.2	+0.1
244A	Avery, Jackson baz=183,SNR=5.6	17.54	3	P		Pn	06 03 11.2	0.0
433A	Art baz=155,SNR=16	17.54	339	P		Pn	06 03 12.4	+1.1
JCT	Junction City baz=153	17.55	337	P		Pn	06 03 13.3	+1.8
JCT	Junction City comp=Z,5.7nm,0.6s	17.55	337	eP		Pn	06 03 12.6	+1.1
245A	Little AP, Sta baz=185	17.59	5	P		Pn	06 03 11.9	+0.1
239A	Gary baz=170	17.65	353	P		Pn	06 03 13.2	+0.6
238A	Jacksonville baz=168	17.73	351	P		P	06 03 12.8	0.0
334A	Lometa baz=158,SNR=26	17.80	342	P		P	06 03 14.4	+0.7
237A	Washetta, Mont baz=166	17.84	349	P		Pn	06 03 15.2	+0.3
333A	Richland Sprin baz=156,SNR=17	18.03	340	P		Pn	06 03 17.4	+0.2
141A	Papa Simpson, baz=176,SNR=5.2	18.09	357	P		P	06 03 17.3	+0.4
143A	Socs Landing, baz=180,SNR=6.8	18.17	1	P		P	06 03 17.6	-0.1
WHTX	Lake Whitney, baz=161,SNR=8.6	18.20	345	P		P	06 03 18.4	+0.3
WHTX	Lake Whitney, comp=Z,11nm,0.7s	18.20	345	eP		P	06 03 19.0	+1.0
139A	Bunkhouse Ranc baz=171	18.29	353	P		P	06 03 19.7	+0.6
138A	Matatall Enter baz=169	18.36	351	P		P	06 03 20.7	+0.8
234A	Clairette baz=159,SNR=30	18.39	343	P		P	06 03 21.3	+1.0
137A	Heron Place, G baz=167	18.41	349	P		P	06 03 21.3	+0.9
TXAR	Lajitas Array comp=Z,0.4nm,0.3s,baz=153,slow=12,SNR=74	18.41	325	P		Pn	06 03 23.5	+1.6
TXAR	comp=Z,0.1nm,0.3s,baz=151,slow=2.9,SNR=5.2			PcP		PcP	06 07 48.8	+1.6
TXAR	comp=Z,0.0nm,0.3s,baz=133,slow=5.0,SNR=4.2			ScP		ScP	06 11 18.1	+4.7
TX31	Lajitas Ar. Si	18.41	325	eP		Pn	06 03 23.3	+1.4
TX31				ePcP		PcP	06 07 49.4	+2.1
147A	Livingston baz=190	18.42	10	P		P	06 03 20.3	-0.2
136A	Ennis baz=164	18.44	347	P		P	06 03 21.4	+0.6
TIGA	Tifton baz=205,SNR=12	18.52	23	P		Pn	06 03 22.2	-0.7
TIGA	Tifton comp=Z,86nm,0.8s	18.52	23	eP		Pn	06 03 22.2	-0.7
233A	Rising Star baz=157,SNR=30	18.64	341	P		P	06 03 24.1	+1.1
Z43A	Armstrong Fami baz=181	18.68	2	P		P	06 03 23.1	-0.2
135A	Vickery Place, baz=162	18.73	345	P		P	06 03 24.6	+0.8
Z42A	Norrel Spur, H baz=179	18.73	360	P		P	06 03 23.8	-0.1
Z41A	Richland Creek baz=176,SNR=5.7	18.74	357	P		P	06 03 24.4	+0.5
Z40A	Long Farm, Mag baz=174,SNR=7.5	18.77	356	P		P	06 03 24.9	+0.5
Z44A	Pea Ridge, Bel baz=183	18.78	4	P		P	06 03 24.2	-0.2
Z39A	Irene McRaven, baz=172	18.82	354	P		P	06 03 25.3	+0.4
Z46A	Louisville baz=188,SNR=6.2	18.84	8	P		P	06 03 25.8	+0.7
134A	White-Moore Ra baz=160,SNR=20	18.91	344	P		P	06 03 26.3	+0.4
Z38A	Mt. Pleasant baz=170	18.93	352	P		P	06 03 26.6	+0.6
Z45A	Winona baz=186	18.93	6	P		P	06 03 26.6	+0.6
Z47A	Carrollton baz=190,SNR=25	18.97	10	P		P	06 03 26.5	0.0
Z37A	Pogue Cattle C baz=168,SNR=5.0	18.98	350	P		P	06 03 27.0	+0.5
LRAL	Lakeview Retre comp=Z,14nm,1.0s	19.01	13	eP		P	06 03 27.2	+0.3
WLAR	White Oak Lake comp=Z,33nm,0.9s	19.18	357	eP		P	06 03 29.3	+0.5
WLAR				eS		S	06 06 58.6	-2.0
133A	Hamilton Ranch baz=158,SNR=22	19.19	342	P		P	06 03 30.0	+1.0
Z36A	Blue Ridge	19.19	348	P		P	06 03 28.8	-0.2
Z48A	Northport baz=192,SNR=6.6	19.23	11	P		P	06 03 29.4	+0.1
Y42A	Garnett, Star baz=179	19.30	0	P		P	06 03 29.4	-0.6
Y41A	Eaglette Beard baz=177,SNR=10	19.35	358	P		P	06 03 30.3	-0.4
CCAR	Cane Creek comp=Z,26nm,0.9s	19.38	0	eP		P	06 03 31.5	+0.6
Z35A	Perchaven, San baz=163	19.43	346	P		P	06 03 31.5	+0.1
Y45A	Yeager Farm, C baz=186,SNR=15	19.44	6	P		P	06 03 31.5	-0.1
ABTX	Abilene, Hawle baz=156,SNR=8.4	19.44	340	P		P	06 03 32.1	+0.5
ABTX	Abilene, Hawle comp=Z,23nm,0.8s	19.44	340	eP		P	06 03 32.9	+1.3
Y44A	Strider, Charl baz=184,SNR=8.1	19.48	4	P		P	06 03 31.9	-0.1
Y39A	Lockesburg baz=172,SNR=16	19.50	354	P		P	06 03 32.1	-0.2
Y40A	Okolona baz=175,SNR=5.3	19.52	356	P		P	06 03 31.8	-0.6
Y46A	Houston baz=188,SNR=15	19.53	7	P		P	06 03 32.1	-0.5
Y38A	Idabel baz=171,SNR=31	19.56	353	P		P	06 03 32.7	-0.2
Z34A	Collier Ranch, baz=161,SNR=7.2	19.63	345	P		P	06 03 33.8	+0.1
Y47A	UCPARC, Winfie baz=191	19.70	10	P		P	06 03 33.5	-0.9
Y37A	Hugo baz=168,SNR=11	19.74	351	P		P	06 03 34.5	-0.3
Y36A	Durant baz=166	19.77	349	P		P	06 03 34.6	-0.7
Z33A	Whitaker Ranch baz=159,SNR=21	19.78	343	P		P	06 03 35.3	0.0
GRMC	Gramalote, San	19.82	108	eP		P	06 03 30.6	-5.6
PRAC	Prado	19.82	121	eP		P	06 03 35.4	-0.7
PRAC	Prado comp=Z,16nm,0.4s	19.82	121	eP		Pn	06 03 37.7	-0.8
CBRI	Barrientos, No	19.83	108	eP		P	06 03 29.6	-6.7
BARC	Barichara	19.92	111	eP		P	06 03 32.5	-4.7
Y35A	Marietta baz=164,SNR=24	19.93	347	P		P	06 03 37.3	+0.3
X41A	Kaden, Bauxite baz=177	19.96	358	P		P	06 03 36.9	-0.4
X40A	Basin Creek Fa baz=176	19.97	358	P		P	06 03 37.1	-0.2
X43A	Marvell baz=182	19.99	2	P		P	06 03 37.1	-0.5
X45A	UM Field Stati baz=186,SNR=9.1	20.00	6	P		P	06 03 37.1	-0.6
X44A	Crenshaw baz=184	20.02	4	P		P	06 03 37.3	-0.5
MIAR	Mount Ida baz=174,SNR=9.4	20.07	356	P		P	06 03 37.5	-0.9
MIAR	Mount Ida comp=Z,12nm,0.9s	20.07	356	eP		P	06 03 38.1	-0.3
X39A	Fountain Ranch baz=173	20.07	354	P		P	06 03 37.7	-0.8
OXF	Oxford comp=Z,26nm,0.6s	20.09	6	eP		P	06 03 37.8	-0.8
Y34A	Reagan Ranch, baz=162,SNR=5.6	20.14	346	P		P	06 03 38.4	-0.9
UALR	University of comp=Z,20nm,0.6s	20.24	359	eP		P	06 03 41.1	+0.9
X37A	Clayton baz=169,SNR=15	20.30	352	P		P	06 03 40.2	-0.7
X38A	Whitesboro baz=171,SNR=26	20.31	353	P		P	06 03 40.4	-0.6
CHIC	Chingaza	20.32	117	eP		P	06 03 38.7	-3.1
GOGA	Godfrey	20.34	20	eP		P	06 03 41.5	+0.1
X35A	Drake baz=165,SNR=17	20.39	348	P		P	06 03 41.6	-0.4
Y33A	Hilltop Ranch, baz=160,SNR=6.8	20.42	344	P		P	06 03 42.0	-0.2
X36A	Centrahoma baz=166,SNR=12	20.44	349	P		P	06 03 41.8	-0.7
W41B	Gary Mavity, V baz=178	20.63	359	P		P	06 03 43.8	-0.7
W38A	Poteau baz=172	20.67	354	P		P	06 03 44.7	-0.2
W40A	Ferguson Farm, baz=176	20.68	357	P		P	06 03 44.5	-0.5
X301	Greenbrier Sit comp=Z,8.7nm,0.7s	20.70	359	eP		P	06 03 44.6	-0.6
W39A	Magazine baz=174	20.73	355	P		P	06 03 45.0	-0.5
WHAR	Wooly Hollow comp=Z,9.7nm,0.8s	20.75	359	eP		P	06 03 45.2	-0.5
X201	Greenbrier Sit comp=Z,11nm,0.8s	20.75	359	eP		P	06 03 45.2	-0.5
X34A	Smith Ranch, M baz=163	20.78	346	P		P	06 03 47.1	+1.1
W37B	Quinton baz=169,SNR=8.7	20.85	352	P		P	06 03 45.8	-1.0
X33A	Lawton baz=161,SNR=21	20.89	344	P		P	06 03 46.0	-1.2
W36A	Wetumka baz=167,SNR=12	20.97	350	P		P	06 03 46.7	-1.5
X32A	Elmer baz=159	20.99	343	P		P	06 03 47.9	-0.5
HBAR	Harrisburg	21.04	3	eP		P	06 03 48.9	+0.1
W35A	Tecumseh baz=166,SNR=9.7	21.10	348	P		P	06 03 48.2	-1.4
WMOK	Wichita Mounta baz=160,SNR=9.3	21.15	344	P		P	06 03 48.9	-1.1
WMOK	Wichita Mounta comp=Z,10nm,0.9s	21.15	344	eP		P	06 03 49.7	-0.3
WMOK				eS		S	06 07 40.8	+1.3
MNTX	Cornudas Mount baz=140,SNR=50	21.18	326	P		P	06 03 51.2	+0.8
MNTX	Cornudas Mount comp=Z,23nm,0.8s	21.18	326	eP		P	06 03 51.5	+1.1
V41A	Mountainview baz=178,SNR=13	21.24	359	P		P	06 03 49.4	-1.6
V42A	Cord baz=180,SNR=14	21.26	1	P		P	06 03 49.4	-1.8
V40A	Witts Springs baz=176,SNR=13	21.28	358	P		P	06 03 49.8	-1.7
SWET	Senee comp=Z,7.7nm,0.7s	21.34	13	eP		P	06 03 51.8	-0.4
V39A	Pettigrew baz=174,SNR=11	21.36	356	P		P	06 03 51.0	-1.3
W34A	Bridge Creek, baz=163	21.37	347	P		P	06 03 51.5	-1.0
W34A	Bridge Creek, comp=Z,30nm,0.6s	21.37	347	eP		P	06 03 51.6	-0.8
V38A	Canehill baz=172	21.44	354	P		P	06 03 51.5	-1.6
W33A	Caddo, Fort Co baz=161,SNR=9.8	21.46	345	P		P	06 03 52.5	-0.8
SDV	Santo Domingo comp=Z,3.0nm,0.3s,baz=298,slow=7.1,SNR=4.1	21.48	103	P		P	06 03 53.2	-0.8
V37A	Hulbert baz=170,SNR=11	21.54	353	P		P	06 03 52.6	-1.6
V36A	Jenks baz=168	21.56	351	P		P	06 03 53.0	-1.4
W32A	Sentinel baz=159,SNR=19	21.64	343	P		P	06 03 53.6	-1.6
TUL1	Leonard baz=169	21.66	351	P		P	06 03 54.0	-1.4
TUL1	Leonard comp=Z,12nm,0.6s	21.66	351	eP		P	06 03 54.1	-1.4
U41A	Viola baz=179,SNR=5.4	21.80	360	P		P	06 03 53.8	-3.2
MSTX	Muleshoe baz=150,SNR=10	21.81	335	P		P	06 03 56.5	-0.7
MSTX	Muleshoe comp=Z,17nm,0.6s	21.81	335	eP		P	06 03 56.6	-0.6
U42A	Revenden baz=181,SNR=16	21.81	1	P		P	06 03 55.1	-1.9
HHAR	Hobbs comp=Z,6.3nm,0.8s	21.82	355	eP		P	06 03 55.8	-1.3
HHAR				eS		S	06 07 54.0	+1.8
U40A	Yellville baz=176,SNR=9.6	21.83	358	P		P	06 03 55.9	-1.4
WVT	Waverly comp=Z,20nm,0.5s	21.88	9	eP		P	06 03 56.7	-1.0
U39A	Green Forest baz=175	21.89	356	P		P	06 03 56.4	-1.5
V34A	Guthrie baz=164,SNR=11	21.89	348	P		P	06 03 55.9	-2.1
V34A	Guthrie comp=Z,22nm,0.8s	21.89	348	eP		P	06 03 56.4	-1.5
V34A				epP		pP	06 04 19.8	+1.9
CPCT	Cooper Cave	21.91	16	eP		P	06 03 57.9	-0.3
JSC	Jenkinsville comp=Z,20nm,0.9s	21.93	24	eP		P	06 03 57.8	-0.6
U38A	Gravette baz=173,SNR=6.9	22.01	354	P		P	06 03 58.2	-1.0
V33A	Lossen Ranch, baz=162	22.05	346	P		P	06 03 58.5	-1.1
U37A	Salina baz=171,SNR=9.9	22.06	353	P		P	06 03 57.6	-2.1
U36A	Oologah baz=169	22.12	352	P		P	06 03 58.8	-1.5
V32A	Arapaho baz=160	22.14	344	P		P	06 03 59.6	-1.0
PARMO	Parma	22.19	4	eP		P	06 04 00.5	-0.6
AMTX	Amarillo baz=153	22.20	338	P		P	06 04 01.1	-0.1
AMTX	Amarillo comp=Z,43nm,0.6s	22.20	338	eP		P	06 04 01.0	-0.3
U35A	Pawnee baz=167,SNR=5.9	22.26	350	P		P	06 03 59.9	-2.0
PBMO	Poplar Bluff comp=Z,45nm,0.8s	22.27	3	eP		P	06 04 00.2	-1.6
TKL	Tuckaleechee C comp=Z,11nm,0.6s,baz=184,slow=12,SNR=18	22.32	17	P		P	06 04 02.4	0.0
TKL	Tuckaleechee C comp=Z,21nm,0.9s	22.32	17	eP		P	06 04 02.3	-0.1
U34A	Anderson Ranch baz=165	22.48	348	P		P	06 04 03.2	-0.8
T41A	Mountain View baz=179,SNR=19	22.50	0	P		P	06 04 02.5	-1.7
T39A	Clever baz=175,SNR=18	22.52	357	P		P	06 04 02.3	-2.1
T38A	Diamond baz=173	22.59	355	P		P	06 04 03.4	-1.9
U33A	Lingo Farm, Me baz=163	22.60	347	P		P	06 04 03.9	-1.4
T40A	Mansfield baz=178,SNR=9.3	22.61	359	P		P	06 04 03.9	-1.5
KMSC	Kings Mountain baz=207,SNR=11	22.66	23	P		P	06 04 04.9	-1.0
KMSC	Kings Mountain comp=Z,24nm,0.8s	22.66	23	eP		P	06 04 05.5	-0.4
T37A	Cheneyville 18 baz=172,SNR=8.7	22.74	354	P		P	06 04 04.7	-2.0
T35A	Sooner Cattle baz=167	22.75	350	P		P	06 04 05.6	-1.3
T36A	Boggs Farm, Ca baz=169	22.80	352	P		P	06 04 05.4	-1.9
T34A	McClaskey Farm baz=166,SNR=6.7	22.98	349	P		P	06 04 07.3	-1.8
S41A	Jillco Farms, baz=179,SNR=14	23.04	0	P		P	06 04 07.4	-2.2
S40A	Lebanon baz=178,SNR=14	23.06	359	P		P	06 04 07.7	-2.1
S43A	Fulton Ridge, baz=184,SNR=14	23.08	4	P		P	06 04 07.6	-2.3
121A	Cookes Peak, D baz=137,SNR=18	23.14	324	P		P	06 04 13.1	+2.3
121A	Cookes Peak, D comp=Z,29nm,1.0s	23.14	324	eP		P	06 04 13.1	+2.3
S38A	Stockton baz=174,SNR=14	23.16	356	P		P	06 04 08.7	-2.0
S39A	Bolivar baz=176,SNR=23	23.18	357	P		P	06 04 09.1	-1.8
TZTN	Tazewell comp=Z,20nm,0.6s	23.21	17	eP		P	06 04 10.7	-0.5
319A	Douglas comp=Z,29nm,1.1s	23.22	319	eP		P	06 04 14.5	+3.0
T33A	Patterson Ranc baz=163	23.25	347	P		P	06 04 10.5	-1.1
S44A	Carbondale baz=186,SNR=18	23.26	5	P		P	06 04 10.3	-1.3
SIUC	Southern Illin comp=Z,146nm,1.1s	23.28	5	eP		P	06 04 10.7	-1.2
S45A	Carrier Mills baz=187	23.31	7	P		P	06 04 10.2	-1.9
S37A	Fort Scott baz=172	23.36	354	P		P	06 04 11.3	-1.3
S36A	Lake Cedric, C baz=170,SNR=7.7	23.41	352	P		P	06 04 11.2	-1.9
S35A	Otter Creek Ra baz=168	23.48	351	P		P	06 04 12.6	-1.1
T32A	Huddler Ranch, baz=162	23.50	346	P		P	06 04 13.1	-0.8
S34A	Willow Spring baz=166	23.62	350	P		P	06 04 14.2	-0.8
USIN	University of comp=Z,44nm,0.6s	23.70	8	eP		P	06 04 14.9	-0.8
R38A	Fenwick Farm, baz=174,SNR=11	23.71	356	P		P	06 04 13.8	-1.9
BNM	Barron Nite	23.74	328	eP		P	06 04 18.9	+2.6
R40A	Maddies Statio baz=178,SNR=17	23.74	359	P		P	06 04 14.3	-1.8
R44A	Waltonville baz=186,SNR=11	23.82	5	P		P	06 04 15.0	-1.7
LPM	Los Pinos Moun	23.87	328	eP		P	06 04 20.0	+2.5
R36A	Gordon, Harris baz=170	24.00	353	P		P	06 04 17.0	-1.3
WCI	Wyandotte Cave comp=Z,35nm,0.6s	24.18	11	eP		P	06 04 19.0	-1.0
LAZ	Ladron	24.20	328	eP		P	06 04 22.5	+2.0
ANMO	Albuquerque baz=143	24.29	330	P		P	06 04 22.3	+1.1
ANMO	Albuquerque comp=Z,3.4nm,1.0s	24.29	330	eP		P	06 04 23.4	+2.2
R33A	Olander Ranch, baz=165	24.38	348	P		P	06 04 21.3	-0.5
Q42A	Golden Eagle baz=182,SNR=9.8	24.39	2	P		P	06 04 20.2	-1.6
OLIL	Olney comp=Z,72nm,0.7s	24.41	7	eP		P	06 04 21.0	-1.0
Q40A	Laux Farm, Aux baz=179,SNR=6.9	24.45	360	P		P	06 04 20.9	-1.5
Q38A	Cooks Store, C baz=175,SNR=12	24.46	357	P		P	06 04 21.5	-1.0
Q43A	New Douglas baz=184,SNR=14	24.46	4	P		P	06 04 20.9	-1.6
Q44A	Meyer Farm, Va baz=186,SNR=13	24.48	5	P		P	06 04 21.2	-1.5
Q39A	Willowcrove F baz=177,SNR=7.0	24.52	358	P		P	06 04 21.9	-1.1
R32A	Long Quarter, baz=163	24.64	347	P		P	06 04 23.5	-0.7
Q34A	Chapman baz=167	24.78	350	P		P	06 04 24.7	-0.8
TUC	Tucson baz=131	24.80	319	P		P	06 04 27.1	+1.3
TUC	Tucson comp=Z,8.8nm,0.8s	24.80	319	eP		P	06 04 28.3	+2.5
KSU1	Kansas State U baz=168	24.91	351	P		P	06 04 25.9	-0.7
P39B	Salisbury baz=177	24.95	358	P		P	06 04 25.7	-1.2
P40A	Paris baz=179,SNR=12	24.98	360	P		P	06 04 25.8	-1.4
VWCC	Virginia Weste	25.03	23	eP		P	06 04 27.5	-0.3
BLO	Bloomington comp=Z,29nm,0.6s	25.06	10	eP		P	06 04 27.3	-0.7
P42A	Winchester baz=183,SNR=12	25.07	3	P		P	06 04 26.4	-1.7
P38A	Dawn baz=175	25.12	357	P		P	06 04 27.7	-0.8
P41A	Barry, Barry baz=181,SNR=13	25.13	1	P		P	06 04 27.0	-1.6
P37A	Lathrop baz=174	25.13	355	P		P	06 04 27.9	-0.7
Q32A	Meitler Ranch, baz=164	25.15	348	P		P	06 04 28.6	-0.3
T25A	Trinidad comp=Z,4.4nm,0.8s	25.22	336	eP		P	06 04 31.6	+1.9
P36A	Good Intent, A baz=172,SNR=7.8	25.24	354	P		P	06 04 28.9	-0.8
P34A	Walnut Farm, R baz=168	25.38	351	P		P	06 04 30.6	-0.3
O40A	La Belle baz=179,SNR=12	25.57	360	P		P	06 04 31.2	-1.4
O41A	Passleys Farm, baz=181	25.58	2	P		P	06 04 30.9	-1.7
O38A	Galt baz=176	25.61	357	P		P	06 04 32.0	-0.9
O42A	Bath baz=183	25.69	3	P		P	06 04 32.4	-1.2
O37A	Wolven Farm, M baz=174	25.69	356	P		P	06 04 32.6	-1.1
O39A	Kirksville baz=178	25.71	359	P		P	06 04 33.0	-0.8
214A	Organ Pipe Nat baz=127,SNR=5.5	25.90	316	P		P	06 04 38.0	+2.3

214A	**Organ Pipe Nat**	25.90	316	*e*P		P		06 04 37.9	+2.2	
	comp=Z,46nm,1.2s									
O34A	**Beatrice**	25.98	351	P		P		06 04 36.3	0.0	
	baz=168									
O33A	**Hebron**	26.02	350	P		P		06 04 36.5	-0.1	
	baz=166									
HDIL	**Hopedale**	26.10	4	P		P		06 04 35.7	-1.6	
	baz=185,SNR=8.2									
HDIL	**Hopedale**	26.10	4	*e*P		P		06 04 36.1	-1.2	
	comp=Z,26nm,0.7s									
SFIN	**Lafayette**	26.16	8	P		P		06 04 36.8	-1.0	
	baz=190									
SFIN	**Lafayette**	26.16	8	*e*P		P		06 04 36.3	-1.5	
	comp=Z,26nm,0.6s									
N38A	**Joes South For**	26.27	358	P		P		06 04 38.8	-0.1	
	baz=176									
N39A	**Derby Farms, D**	26.33	359	P		P		06 04 38.9	-0.6	
	baz=178									
X16A	**Lo Mia Camp, P**	26.62	322	*e*P		P		06 04 45.2	+2.8	
	comp=Z,9.2nm,0.8s									
S22A	**4UR Ranch, Cre**	26.75	333	P		P		06 04 44.8	+1.2	
	baz=146									
S22A	**4UR Ranch, Cre**	26.75	333	*e*P		P		06 04 44.8	+1.2	
	comp=Z,2.1nm,0.7s									
S22A				*e*PcP		PcP		06 08 06.4	+2.0	
ACSO	**Alum Creek Sta**	26.82	15	*e*P		P		06 04 42.6	-1.2	
	comp=Z,16nm,0.6s									
M38A	**Pleasantville**	26.89	358	P		P		06 04 44.7	+0.3	
	baz=176									
MVCO	**Mesa Verde**	27.09	330	P		P		06 04 48.4	+1.8	
	baz=142									
MVCO	**Mesa Verde**	27.09	330	*e*P		P		06 04 48.9	+2.3	
	comp=Z,3.9nm,0.7s									
Y14A	**Wickenburg**	27.27	319	*e*P		P		06 04 50.8	+2.7	
	comp=Z,21nm,0.8s									
Y14A				*e*PcP		PcP		06 08 07.8	+2.4	
WUAZ	**Wupatki**	27.35	324	P		P		06 04 51.0	+2.1	
	baz=135,SNR=8.3									
WUAZ	**Wupatki**	27.35	324	*e*P		P		06 04 51.5	+2.6	
	comp=Z,9.8nm,0.9s									
L40A	**Anamosa**	27.51	1	P		P		06 04 48.8	-1.2	
	baz=181									
L41A	**Preston**	27.55	2	P		P		06 04 49.3	-1.0	
	baz=182									
L39A	**Vinton**	27.57	360	P		P		06 04 49.5	-1.0	
	baz=179									
L38A	**Oak Wood Farm,**	27.60	358	P		P		06 04 49.2	-1.6	
	baz=177									
PV01	**Paradox Valley**	27.86	331	*e*P		P		06 04 55.0	+1.6	
	comp=Z,77nm,0.5s									
GLA	**Glamis**	27.92	316	P		P		06 04 55.6	+1.7	
	baz=126									
K41A	**Shullsburg**	28.08	2	P		P		06 04 54.0	-1.0	
	baz=182									
Y12C	**Blythe**	28.14	317	P		P		06 04 58.2	+2.6	
	baz=127									
SDMD	**Soldier's Deli**	28.14	25	*e*P		P		06 04 55.0	-0.6	
	comp=Z,6.6nm,0.8s									
K39A	**Oelwein**	28.15	360	P		P		06 04 54.4	-1.3	
	baz=179									
K40A	**Colesburg**	28.15	1	P		P		06 04 54.6	-1.1	
	baz=181									
O56A	**Blue Knob Stat**	28.21	22	P		P		06 04 54.6	-1.7	
	baz=207									
PDMCI	**Parker Dam,Lak**	28.23	318	P		P		06 04 59.2	+2.7	
	baz=128									
N54A	**Moraine State**	28.35	19	P		P		06 04 56.3	-1.2	
	baz=204									
JFWS	**Jewell Farm**	28.39	2	*e*P		P		06 04 56.5	-1.4	
	comp=Z,9.5nm,0.8s									
U15A	**North Rim**	28.52	324	*e*P		P		06 05 02.1	+2.8	
	comp=Z,17nm,1.4s									
W13A	**Hualapai Mount**	28.57	320	*e*P		P		06 05 03.1	+3.3	
	comp=Z,5.8nm,0.8s									
BC3	**Big Chuckawall**	28.70	316	P		P		06 05 03.5	+2.7	
	baz=126									
SSPA	**Standing Stone**	28.78	22	*e*P		P		06 05 00.2	-1.2	
	comp=Z,14nm,0.6s									
J36A	**Seneca 1, Swea**	28.86	356	P		P		06 05 03.1	+1.1	
	baz=174									
LDFC	**Landfair**	29.34	319	*e*P		P		06 05 10.1	+3.6	
	comp=Z,21nm,0.8s									
LCMT	**Little Creek M**	29.47	324	*e*P		P		06 05 10.4	+2.8	
	comp=Z,7.5nm,1.1s									
I38A	**Scanlan Farm,**	29.49	359	P		P		06 05 07.3	-0.2	
	baz=178									
I37A	**Lemond, Waseca**	29.49	358	P		P		06 05 07.5	0.0	
	baz=176									
GMRC	**Granite Mounta**	29.51	318	P		P		06 05 10.6	+2.6	
	baz=127,SNR=5.9									
MTPU	**Mount Pierson**	29.62	326	*e*P		P		06 05 12.1	+2.9	
	comp=Z,7.6nm,0.7s									
LUPA	**Lehigh Univers**	29.75	26	*e*P		P		06 05 09.5	-0.4	
	comp=Z,21nm,0.6s									
SZCU	**Shurtz Canyon**	29.79	325	*e*P		P		06 05 13.5	+2.9	
	comp=Z,13nm,0.9s									
SZCU				*e*PcP		PcP		06 08 14.6	+2.8	
N59A	**State Game Lan**	29.85	25	P		P		06 05 10.0	-0.8	
	baz=212									
CCUT	**Cedar City**	29.92	324	*e*P		P		06 05 15.2	+3.5	
	comp=Z,10nm,1.0s									
CCUT				*e*PcP		PcP		06 08 15.2	+3.1	
P17A	**Butcher Ranch,**	29.95	330	*e*P		P		06 05 14.4	+2.4	
	comp=Z,3.4nm,0.7s									
P17A				*e*pP		sP		06 05 46.4	-0.8	
MSU	**Marysvale**	29.96	327	*e*P		P		06 05 14.9	+2.9	
MSU				*e*PcP		PcP		06 08 14.6	+2.4	
TMUT	**Trail Mountain**	30.05	329	*e*P		P		06 05 15.4	+2.5	
	comp=Z,4.4nm,1.0s									
TMUT				*e*PcP		PcP		06 08 14.5	+1.9	
SHPR	**Sheep Range**	30.27	321	*e*P		P		06 05 17.9	+3.2	
	comp=Z,4.9nm,0.9s									
GSC	**Goldstone, Bar**	30.57	317	P		P		06 05 20.1	+2.7	
	baz=126									
SPMN	**Marine on St.**	30.68	359	*e*P		P		06 05 17.3	-0.7	
	comp=Z,7.0nm,0.5s									
K22A	**Casper**	30.82	339	P		P		06 05 19.8	+0.3	
	baz=151									
BINY	**Binghamton**	30.85	23	*e*P		P		06 05 18.9	-0.7	
	comp=Z,17nm,0.6s									
TPNV	**Topopah Spring**	31.23	320	P		P		06 05 25.3	+2.1	
	baz=129									
TPNV	**Topopah Spring**	31.23	320	*e*P		P		06 05 26.5	+3.3	
	comp=Z,4.5nm,1.0s									
TPNV				*e*PcP		PcP		06 08 18.2	+2.7	
FURC	**Furnace Creek,**	31.31	319	P		P		06 05 26.1	+2.5	
	baz=128									
N16A	**Rees Ranch, Co**	31.39	331	*e*pP		pP		06 05 57.6	+10	
MPMC	**Manual Prospec**	31.47	318	P		P		06 05 27.5	+2.1	
	baz=126,SNR=11									
COWI	**Conover**	31.63	4	*e*P		P		06 05 24.5	-1.9	
	comp=Z,5.7nm,0.7s									
DAC	**Darwin (Calif)**	31.67	318	*e*P		P		06 05 29.4	+2.3	
	comp=Z,3.6nm,0.9s									
R11A	**Troy Canyon, C**	31.74	323	P		P		06 05 30.0	+2.3	
	baz=132,SNR=9.7									
R11A	**Troy Canyon, C**	31.74	323	*e*P		P		06 05 30.7	+3.0	
	comp=Z,5.8nm,1.1s									
GRAC	**Grapevine Rang**	31.96	319	P		P		06 05 32.5	+3.1	
	baz=127									
HWUT	**Hardware Ranch**	32.02	331	*e*P		P		06 05 32.1	+2.0	
	comp=Z,3.2nm,0.9s									
HWUT				*e*PcP		PcP		06 08 18.9	+1.4	
BW06	**Boulder Array**	32.08	335	P		P		06 05 31.3	+0.7	
	baz=146									
PDAR	**Pinedale Array**	32.08	335	P		P		06 05 30.6	-0.1	
	comp=Z,0.4nm,0.4s,baz=141,slow=10,SNR=7.8									
PDAR				PcP		PcP		06 08 18.4	+0.6	
	comp=Z,0.9nm,0.5s,baz=144,slow=5.1,SNR=11									
VES	**Vestal, Richgr**	32.40	316	P		P		06 05 36.5	+3.2	
	baz=124,SNR=5.3									
NCB	**Newcomb**	33.04	24	*e*P		P		06 05 37.5	-1.3	
	comp=Z,0.1nm,0.6s									
REDW	**Red Top Meadow**	33.11	334	*e*P		P		06 05 40.6	+1.0	
	comp=Z,5.9nm,0.6s									
SNOW	**Snow King Moun**	33.15	334	*e*P		P		06 05 40.8	+0.8	
	comp=Z,12nm,0.5s									
C38A	**Sawbill Land.**	33.17	1	P		P		06 05 38.0	-1.9	
	baz=180									
C35A	**Jirik Farms, M**	33.19	357	P		P		06 05 39.4	-0.7	
	baz=176									
LOHW	**Long Hollow**	33.21	335	*e*P		P		06 05 41.2	+0.7	
	comp=Z,2.7nm,0.5s									
C36A	**Pine Crest Far**	33.21	359	P		P		06 05 39.2	-1.0	
	baz=178									
TPAW	**Teton Pass**	33.25	334	*e*P		P		06 05 41.9	+1.0	
	comp=Z,3.2nm,0.6s									
C39A	**Grand Marais**	33.29	2	P		P		06 05 38.8	-2.1	
	baz=182									
EYMN	**Ely**	33.39	0	P		P		06 05 40.4	-1.4	
	baz=180									
LONY	**Lake Ozonia**	33.45	23	*e*P		P		06 05 41.1	-1.3	
	comp=Z,12nm,0.9s									
B35A	**Bob, Littlefor**	33.84	358	P		P		06 05 44.4	-1.3	
	baz=176									
AGMN	**Agassiz Nation**	33.91	355	*e*P		P		06 05 45.0	-1.2	
	comp=Z,3.3nm,0.9s									
RLMT	**Red Lodge**	33.95	338	P		P		06 05 47.4	+0.5	
	baz=148									
B34A	**Aery, Baudette**	34.01	357	P		P		06 05 46.4	-0.8	
	baz=175									
BMN	**Battle Mountai**	34.08	324	*e*P		P		06 05 50.7	+2.7	
	comp=Z,9.5nm,0.8s									
WAKR	**Walker**	34.17	320	*e*P		P		06 05 52.6	+3.6	
	comp=Z,9.9nm,1.2s									
YERR	**Yerington**	34.34	321	*e*P		P		06 05 53.8	+3.4	
	comp=Z,6.2nm,0.7s									
CMB	**Columbia Colle**	34.50	318	*e*P		P		06 05 54.3	+2.7	
	comp=Z,3.9nm,1.1s									
A33A	**Warroad**	34.51	356	P		P		06 05 50.8	-0.6	
	baz=173									
PNTR	**Pine Nut**	34.63	320	*e*P		P		06 05 56.6	+3.7	
	comp=Z,8.8nm,0.8s									
HLID	**Hailey**	34.86	331	P		P		06 05 56.9	+2.2	
	baz=139,SNR=11									
HLID	**Hailey**	34.86	331	*e*P		P		06 05 56.1	+1.3	
	comp=Z,4.8nm,0.9s									
HLID				*e*PcP		PcP		06 08 27.7	+2.1	
PAHR	**Pah Rah Range**	34.88	321	*e*P		P		06 05 58.0	+3.2	
	comp=Z,6.9nm,0.9s									
MCMT	**McKenzie Canyo**	35.14	334	*e*P		P		06 05 59.1	+1.9	
BOZ	**Bozeman (W)**	35.30	336	P		P		06 05 59.0	+0.6	
	baz=145									
BOZ	**Bozeman (W)**	35.30	336	*e*P		P		06 05 58.8	+0.4	
	comp=Z,1.7nm,0.6s									
MFID	**Camas Ranch**	35.43	329	*e*P		P		06 06 01.6	+2.0	
	comp=Z,4.0nm,0.8s									
ULM	**Lac du Bonnet**	35.85	356	P		P		06 05 59.0	-3.9	
	comp=Z,2.2nm,0.7s,baz=175,slow=8.8,SNR=5.3									
WVOR	**Wild Horse Val**	36.21	326	*e*P		P		06 06 08.1	+1.8	
	comp=Z,8.6nm,0.9s									
WVOR				*e*PcP		PcP		06 08 31.7	+2.2	
GCRM	**Castle Rock Sp**	36.43	317	*e*P		P		06 06 11.9	+3.8	
EGMT	**Eagleton**	36.62	340	P		P		06 06 09.7	+0.1	
	baz=150									
O03D	**Paynes Creek**	36.71	320	P		P		06 06 12.2	+1.7	
	baz=126									
MOD	**Modoc Plateau**	36.80	324	*e*P		P		06 06 13.0	+1.7	
	comp=Z,18nm,1.5s									
MSO	**Missoula**	37.20	335	P		P		06 06 15.6	+1.1	
	baz=142									
MSO	**Missoula**	37.20	335	*e*P		P		06 06 16.3	+1.8	
	comp=Z,9.3nm,1.8s									
BMO	**Blue Mountains**	37.21	330	*e*P		P		06 06 15.8	+1.2	
	comp=Z,2.3nm,0.7s									
M04C	**Macdoel**	37.62	322	P		P		06 06 20.7	+2.4	
	baz=127									
F10A	**Beach Ranch, E**	37.99	331	*e*P		P		06 06 21.6	+0.4	
	comp=Z,19nm,0.6s									
LPAZ	**La Paz**	38.49	142	P		P		06 06 25.8	-0.5	
	comp=Z,1.0nm,1.0s,baz=270,slow=3.0,SNR=2.3									
J04D	**Umpqua Nationa**	38.68	324	P		P		06 06 29.2	+2.0	
	baz=128,SNR=5.3									
LMN	**Caledonia Moun**	38.69	31	*e*P		P		06 06 25.6	-1.3	
	comp=Z,11nm,0.8s									
I05D	**Terrebonne, OR**	38.95	326	P		P		06 06 30.9	+1.7	
	baz=130									
I04A	**Tendick Farm,**	39.19	324	P		P		06 06 33.0	+1.8	
	baz=128									
G05D	**Wamic, OR**	39.53	327	P		P		06 06 35.8	+1.8	
	baz=131									
H04A	**Detroit Lake**	39.63	326	*e*P		P		06 06 37.9	+3.0	
	comp=Z,25nm,0.7s									
NEW	**Newport**	39.66	333	P		P		06 06 35.3	+0.2	
	baz=139									
NEW	**Newport**	39.66	333	*e*P		P		06 06 34.8	-0.3	
	comp=Z,2.2nm,0.7s									
I03D	**Drain, OR**	39.67	324	P		P		06 06 36.9	+1.8	
	baz=127									
C09A	**Chrisman Ranch**	39.83	332	*e*P		P		06 06 37.8	+1.3	
	comp=Z,10nm,0.6s									
G03D	**McMinnville, O**	40.56	325	P		P		06 06 44.0	+1.6	
	baz=129									
LON	**Longmire**	40.79	328	*e*P		P		06 06 46.2	+1.8	
	comp=Z,9.4nm,0.9s									
B06A	**Marblemount**	41.84	330	*e*P		P		06 06 54.0	+1.1	
	comp=Z,12nm,0.7s									
B05A	**Bryant**	41.96	330	P		P		06 06 54.5	+0.6	
	baz=133									
NLWA	**Neilton Lookou**	42.27	328	*e*P		P		06 06 57.2	+0.7	
	comp=Z,13nm,1.0s									
A04D	**Lummi Island**	42.57	330	P		P		06 06 59.9	+1.1	
	baz=132									
SIV	**San Ignacio**	42.88	134	P		P		06 06 59.1	-2.7	
	comp=Z,3.5nm,0.7s,baz=309,slow=9.2,SNR=8.4									
DRLN	**Deer Lake**	44.64	32	*e*P		P		06 07 13.2	-2.2	
	comp=Z,11nm,0.7s									
SCHQ	**Schefferville**	44.74	20	P		P		06 07 13.4	-2.7	
	comp=Z,4.9nm,0.7s,baz=199,slow=4.2,SNR=7.1									
SCHQ	**Schefferville**	44.74	20	*e*P		P		06 07 13.8	-2.4	
	comp=Z,4.7nm,0.7s									
YKA	**Yellowknife Ar**	50.62	347	P		P		06 08 00.7	-0.7	
	comp=Z,6.0nm,0.6s,baz=148,slow=7.6,SNR=64									
YKA				PcP		PcP		06 09 17.3	-0.2	
	comp=Z,1.3nm,0.6s,baz=153,slow=3.6,SNR=10									
INK	**Inuvik**	60.05	343	P		P		06 09 08.8	-0.2	
	comp=Z,2.7nm,0.5s,baz=126,slow=7.4,SNR=6.5									
INK	**Inuvik**	60.05	343	*e*P		P		06 09 08.8	-0.2	
	comp=Z,4.3nm,0.8s									
DOT	**Dot Lake**	60.87	336	*e*P		P		06 09 15.4	+0.7	
	comp=Z,8.4nm,0.7s									
PAX	**Paxson**	61.12	335	*e*P		P		06 09 16.9	+0.4	
	comp=Z,3.7nm,0.7s									
PMR	**Palmer**	62.09	333	*e*P		P		06 09 23.5	+0.6	
	comp=Z,5.1nm,0.7s									
BRLK	**Bradley Lake**	62.22	331	*e*P		P		06 09 25.4	+1.6	
	comp=Z,17nm,0.8s									
CNPM	**Cha Poot**	62.31	330	*e*P		P		06 09 25.9	+1.5	
	comp=Z,9.1nm,0.8s									
KDAK	**Kodiak Island**	62.42	328	*e*P		P		06 09 26.5	+1.4	
	comp=Z,10nm,0.8s									
IL1	**Eielson Array**	62.49	337	*e*P		P		06 09 24.8	-0.6	
ILAR	**Eielson Array**	62.49	337	P		P		06 09 25.6	+0.1	
	comp=Z,2.4nm,0.6s,baz=103,slow=5.9,SNR=26									
ILB	**Eielson Array**	62.49	337	*e*P		P		06 09 25.9	+0.4	
SPU	**Mount Spurr**	63.25	332	*e*P		P		06 09 31.9	+1.3	
TRF	**Thorofare Moun**	63.30	335	*e*P		P		06 09 31.9	+0.9	
	comp=Z,8.1nm,0.6s									
KTH	**Kantishna Hill**	63.60	335	*e*P		P		06 09 33.6	+0.6	
	comp=Z,5.0nm,0.7s									
BPAW	**Bear Paw Mtn.**	63.83	335	*e*P		P		06 09 34.5	+0.1	
	comp=Z,5.0nm,0.8s									
PPLA	**Purkeypile**	63.90	334	*e*P		P		06 09 35.3	+0.3	
	comp=Z,4.6nm,0.4s									
CAST	**Castle Rocks**	64.04	334	*e*P		P		06 09 35.5	-0.3	
	comp=Z,4.8nm,0.7s									
MLY	**Manley**	64.09	336	*e*P		P		06 09 36.1	0.0	
	comp=Z,8.3nm,0.7s									
SVW2	**Sparrevohn**	64.85	331	*e*P		P		06 09 40.8	-0.2	
	comp=Z,5.9nm,0.6s									
TT01	**Tatalina**	65.57	333	*e*P		P		06 09 45.2	-0.4	
TTA	**Tatalina**	65.57	333	*e*P		P		06 09 45.4	-0.3	
	comp=Z,5.8nm,0.8s									
ESDC	**Sonseca Array**	79.31	52	P		P		06 11 03.6	-4.2	
	comp=Z,0.3nm,0.3s,baz=291,slow=7.6,SNR=4.0									
NOA	**NORSAR Array B**	83.67	28	P		P		06 11 27.4	-2.9	
	comp=Z,0.6nm,0.7s,baz=290,slow=5.3,SNR=3.4									
FINES	**FINESS Array B**	90.02	25	P		P		06 11 59.8	-1.2	
	comp=Z,1.0nm,0.8s,baz=271,slow=11,SNR=3.5									
TORD	**Torodi Ar. Bea**	90.11	76	P		P		06 11 58.8	-3.6	
	comp=Z,0.5nm,1.1s,baz=306,slow=6.2,SNR=2.5									
PETK	**Petropavlovsk-**	90.36	326	P		P		06 12 03.8	+1.0	
	comp=Z,2.7nm,0.8s,baz=70,slow=8.5,SNR=5.2									
MKAR	**Makanchi Array**	118.81	5	PKP		PKPdf		06 17 49.0	-0.6	
	comp=Z,0.6nm,0.7s,baz=333,slow=1.5,SNR=5.6									
BOSA	**Boshof**	120.40	115	PKP		PKPdf		06 17 51.8	-1.5	
	comp=Z,6.4nm,0.9s,baz=151,slow=4.9,SNR=4.4									
KSH	**Kashi**	125.11	12	*e*PKP		PKPdf		06 18 06.5	+4.4	
KSH				*es*PKP				06 18 44.5		
KSH				*e*PP		PP		06 19 59.5	+8.4	
KSH				PKS		PKSdf		06 21 42.0	+3.1	
KSH				SKS		SKSdf		06 25 07.0	+2.1	
KSH				SKKS		SKKSac		06 26 40.5	-0.5	
KSH	**Kashi**	125.11	12	SS		SS		06 36 43.8	+5.0	
KSH				AMB		AMB				
	comp=Z,27nm,3.7s									
WRA	**Warramunga Arr**	135.66	256	PKP		PKPdf		06 18 24.1	+1.7	
	comp=Z,1.2nm,0.6s,baz=88,slow=2.4,SNR=13									
ASAR	**Alice Springs**	135.97	251	PKP		PKPdf		06 18 25.4	+2.4	
	comp=Z,0.7nm,0.6s,baz=84,slow=1.5,SNR=6.5									
CMAR	**Chiang Mai Arr**	145.62	342	PKPbc		PKPdf		06 18 41.0	+0.6	
	comp=Z,10nm,0.6s,baz=335,slow=3.6,SNR=37									

IDC ***27*** *06:10:36.5±0.8,23°.61S×175°.27W,h0km,mb4.4/10, mb1 4.6/10,mb1mx4.4/19,mbtmp4.4/10,MS3.8/10, Ms1 3.8/10,ms1mx3.6/25,Error ellipse: s-maj=34.0km s-min=22.7km az=149.0*

ISCJB ***27*** *06:10:40.3±0.4,23°.58S±0°.09×175°.27W±0°.08,h28km, mb4.8/38,MS3.8/9,Error ellipse: s-maj=13.4km s-min=9.7km az=152.5*

BJI ***27*** *06:10:44.6,22°.91S×174°.84W,h56km,mb5.1/26, mB5.2/18,Ms5.1/5,Ms7 5.0/5*

NEIC ***27*** *06:10:46.7±2.5,23°.53S×175°.36W,h71km±20km,mb4.7/17, Error ellipse: s-maj=18.2km s-min=11.3km az=133.0*

ISC 27 06:10:41.5±0.5,23°.80S±0°.08×175°.2W±0°.1,h28km,n86, σ1§99/82,mb4.8/38,MS3.9/10,3C,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSVF	**Nonsavu**	8.71	313	*e*Pn	**Pn**	**06 12 47.0**	**+1.2**
AFI	**Afiamalu**	10.37	19	Pn	Pn	06 12 55.9	-13
	7.1nm,0.3s,baz=354,slow=5.1,SNR=7.8						
AFI				Sn	Sn	06 14 39.7	-24
	2.6nm,0.3s,baz=90,slow=19,SNR=2.9						
RAR	**Rarotonga**	14.52	83	Pn	Pn	06 13 57.4	-7.8
	6.0nm,0.3s,baz=269,slow=7.5,SNR=8.8						
RAR				LR	LR	06 20 00.1	
	comp=Z,482nm,18.2s,baz=278,slow=39						
URZ	**Urewera**	15.82	203	Pn	**Pn**	**06 14 20.4**	**-1.9**
	0.3nm,0.3s,baz=15,slow=19,SNR=2.5						
URZ				Sn	**Sn**	**06 17 09.9**	**-6.9**
	0.3nm,0.3s,baz=231,slow=18,SNR=3.8						
DZM	**Mont Dzumac**	16.96	272	*e*P	**P**	**06 14 39.4**	**+0.6**
	60nm,1.4s						
DZM				*e*LR	LR	06 18 32.0	
	321nm,21.2s						
RPZ	**Rata Peaks**	22.84	206	P	**P**	**06 15 46.7**	**+4.2**
	8.0nm,0.7s,baz=222,slow=16,SNR=4.0						
TBI	**Tubuai**	23.62	94	*e*LQ	LQ	06 20 17.4	
	383nm,25.8s						
TBI				*e*LR	LR	06 21 23.4	
	426nm,22.5s						
PAE	**Paea**	24.74	81	*e*T	T	06 41 44.8	
	0.6nm,0.2s						
PPT2	**Papeete2**	24.77	80	*e*LQ	LQ	06 20 52.5	
	290nm,23.2s						
PPT2				*e*LR	LR	06 21 47.9	
	370nm,21.5s						
PPT2	**Papeete2**	24.77	80	*e*T	T	06 41 48.4	
	1.2nm,0.3s						
PPT	**Papeete**	24.77	80	LR	LR	06 23 38.9	
	comp=Z,328nm,19.8s,baz=260,slow=32						
HNR	**Honiara**	27.68	297	LR	LR	06 27 14.7	
	comp=Z,144nm,18.6s,baz=154,slow=36						
TAOE	**Nuku Hiva Isla**	36.67	72	*e*LR	LR	06 27 13.1	
	231nm,23.6s						
RKT	**Rikitea**	36.85	97	*e*LR	LR	06 27 30.7	
	246nm,22.5s						
PMG	**Port Moresby**	38.63	285	P	**P**	**06 18 01.3**	**-1.4**
	15nm,0.8s,baz=101,slow=5.2,SNR=3.8						
STKA	**Stephens Creek**	38.81	248	LR	LR	06 33 29.3	
	comp=Z,282nm,18.8s,baz=38,slow=35						
AS01	**Alice Springs**	46.30	259	*e*P	**P**	**06 19 04.6**	**-0.6**
AS31	**Alice Springs**	46.35	259	*e*P	**P**	**06 19 06.5**	**+1.0**
	3.7nm,1.4s						
ASAR	**Alice Springs**	46.35	259	P	**P**	**06 19 03.7**	**-1.8**
	4.6nm,1.0s,baz=94,slow=7.8,SNR=19						
ASAR				PcP	**PcP**	**06 20 41.0**	**+0.6**
	1.1nm,0.9s,baz=106,slow=5.2,SNR=2.7						
ASAR				LR	LR	06 38 31.8	
	comp=Z,281nm,18.7s,baz=108,slow=36						
WB2	**Warramunga Arr**	46.75	264	*e*P	**

HHC				pmax	pmax			
	comp=Z,19nm,1.3s							
HHC				pmax	pmax			
	comp=Z,130nm,9.0s							
CM01	**Chiang Mai Arr**	**93.58**	**288**	*e*P	**P**	**06**	**23**	**56.9** **+1.4**
CMAR	**Chiang Mai Arr**	**93.61**	**288**	P	**P**	**06**	**23**	**57.3** **+1.6**
	8.0nm,0.8s,baz=122,slow=3.2,SNR=25							
CMAR				LR	LR	07	06	14.4
	comp=Z,23nm,19.1s,baz=325,slow=36							
CHTO	**Chiang Mai**	**93.75**	**289**	*e*P	**P**	**06**	**23**	**58.0** **+1.7**
	8.7nm,0.8s							
LZH	**Lanzhou**	**96.79**	**306**	*e*P	**P**	**06**	**24**	**12.5** **+2.5**
LZH				pP	sP	06	24	27.5 +5.1
LZH				sP	pP	06	24	33.8 +15
LZH				pmax	pmax			
	comp=Z,16nm,1.0s							
WMQ	**Urumqi**	**111.01**	**310**	*e*PKP	**PKiKP**	**06**	**29**	**07.3** **-5.0**
ZALV	**Zalesovo Beam**	**114.66**	**320**	PKP	PKPdf	06	29	16.7 -2.1
	0.7nm,0.4s,baz=146,slow=2.8,SNR=3.0							
MKAR	**Makanchi Array**	**115.31**	**312**	PKP	**PKPdf**	**06**	**29**	**19.4** **-1.0**
	0.5nm,0.7s,baz=78,slow=0.4,SNR=4.2							
KURK	**Kurchatov**	**118.14**	**316**	PKP	**PKPdf**	**06**	**29**	**24.2** **-1.4**
KURBB	**Kurchatov Arra**	**118.19**	**316**	PKP	**PKPdf**	**06**	**29**	**24.2** **-1.5**
	0.9nm,0.8s,baz=86,slow=1.6,SNR=8.9							
KSH	**Kashi**	**118.85**	**303**	*e*PKP	**PKPdf**	**06**	**29**	**30.5** **+2.9**
KSH				*es*PKP		06	29	46.0
KSH				*e*PP	**PP**	**06**	**30**	**53.3** **+6.5**
KSH				PKS	**PKSdf**	**06**	**33**	**06.0** **+1.7**
KSH				SS	SS	06	47	05.8 +0.9
KSH				AMB	AMB			
	comp=Z,81nm,3.4s							
BVAR	**Borovoye Array**	**123.24**	**319**	PKP	**PKPdf**	**06**	**29**	**33.9** **-1.5**
	1.3nm,0.8s,baz=256,slow=2.4,SNR=6.6							
AKTO	**Aktyubinsk**	**131.22**	**317**	PKP	**PKPdf**	**06**	**29**	**50.4** **-0.3**
	1.0nm,0.9s,baz=80,slow=6.1,SNR=3.6							
FINES	**FINESS Array B**	**139.64**	**344**	PKP	**PKPdf**	**06**	**30**	**04.0** **-2.0**
	1.1nm,0.7s,baz=119,slow=13,SNR=3.4							
AKASG	**Malin Array Be**	**147.13**	**331**	PKPbc	**PKPdf**	**06**	**30**	**19.8** **+0.3**
	3.6nm,0.6s,baz=40,slow=5.2,SNR=5.5							
ASF	**Jabal al Asfar**	**150.51**	**294**	PKPbc	**PKPbc**	**06**	**30**	**31.8** **+0.7**
	2.3nm,0.7s,baz=105,slow=1.9,SNR=3.1							
BRTR	**Keskin Array B**	**150.93**	**310**	PKPbc	**PKPbc**	**06**	**30**	**31.6** **-0.3**
	2.7nm,0.8s,baz=134,slow=3.6,SNR=13							
BRTR				PKPab	**PKPab**	**06**	**30**	**38.2** **-1.2**
	1.8nm,0.7s,baz=92,slow=6.7,SNR=5.9							
OJC	**Ojcow**	**151.14**	**340**	*e*PKP	**PKPbc**	**06**	**30**	**31.4** **-0.5**
MMAI	**Mount Meron Ar**	**151.61**	**296**	PKPbc	**PKPbc**	**06**	**30**	**34.2** **+0.5**
	0.7nm,0.3s,baz=62,slow=3.9,SNR=6.5							
MMAI				PKPab	**PKPab**	**06**	**30**	**41.9** **-0.4**
	0.6nm,0.3s,baz=76,slow=5.2,SNR=4.0							
NIE	**Niedzica**	**151.67**	**338**	*e*PKP	**PKPbc**	**06**	**30**	**33.1** **-0.1**
CLL	**Collm**	**151.81**	**349**	*e*P	**PKPbc**	**06**	**30**	**33.0** **-0.4**
	comp=Z,11nm,1.2s							
CLL				*e*		06	30	40.0
CLL				*e*		06	30	47.0
CLL				*e*		06	52	25.0
CLL				LmV		07	18	00.0
	comp=Z,100nm,21.4s							
CLL				Lm	MLR	07	32	00.0
	comp=Z,100nm,18.8s							
UPC	**Upice**	**151.94**	**345**⇑	*e*PKP	**PKPbc**	**06**	**30**	**34.5** **+0.8**
DPC	**Dobruska-Polom**	**152.01**	**344**⇑	*e*PKP	**PKPbc**	**06**	**30**	**34.1** **+0.2**
DPC				*ep*PKP	**PKPab**	**06**	**30**	**48.9** **+5.6**
BRG	**Berggiesshubel**	**152.05**	**348**	*i* PKP	**PKPbc**	**06**	**30**	**33.5** **-0.5**
	comp=Z,7.7nm,1.2s							
BRG				*i*		06	30	41.7
	comp=Z,4.7nm,0.8s							
MLR	**Muntele Rosu**	**152.38**	**327**	PKPbc	**PKPbc**	**06**	**30**	**33.3** **-1.7**
	comp=Z,0.9nm,1.0s,baz=32,slow=3.3,SNR=3.2							
EIL	**Elat**	**152.46**	**289**	PKPbc	**PKPbc**	**06**	**30**	**33.6** **-2.0**
	comp=Z,9.2nm,1.0s,baz=50,slow=14,SNR=2.2							
EIL				PKPab	**PKPab**	**06**	**30**	**45.8** **-0.1**
	comp=Z,9.2nm,1.1s,baz=4.5,slow=12,SNR=3.8							
KHC	**Kasperske Hory**	**153.78**	**347**	*e*PKPAB	**PKPab**	**06**	**30**	**50.3** **-0.5**
GERES	**GERESS Array B**	**154.03**	**346**	PKPbc	**PKPbc**	**06**	**30**	**38.1** **-0.4**
	comp=Z,0.2nm,0.3s,baz=81,slow=1.8,SNR=4.5							
GERES				PKPab	**PKPab**	**06**	**30**	**50.4** **-1.5**
	comp=Z,0.3nm,0.3s,baz=64,slow=4.7,SNR=3.7							

SJA 27 06:17:30.8±0.7, 31.47S×67.70W, h10km±6km, ML3.4, MW4.5, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.68**	**282**	*i* P	Pg	06 17 44.3	+0.4
SJA	**San Juan**	**0.74**	**265**	*i* P	Pb	06 17 45.6	-0.1
SJA				*i* S	Sb	06 17 56.1	+0.3
SJA				IAML		06 17 57.5	
	comp=Z,3μm,0.2s						
RTCV	**Cerro Valdivia**	**0.81**	**241**	*i* P	Pg	06 17 46.5	-0.1
AVFE	**Valle Fertil**	**0.84**	**15**	*i* P	Pb	06 17 47.4	-0.1
AVFE				*i* S	Sb	06 17 59.3	+0.5
AMOG	**MOGNA**	**0.86**	**308**	*i* P	Pb	06 17 47.8	-0.1
ACAN	**Cantantal**	**0.91**	**151**	*i* P	Pb	06 17 48.6	-0.1
ACHE	**Chepes**	**0.94**	**71**	*i* P	Pg	06 17 48.9	-0.1

*ISCJB **27** 06:48:20.7±0.3,21.10S±0.06×179.05W±0.06,h619km, mb4.6/55, Error ellipse: s-maj=7.8km s-min=5.9km az=142.4*
*IDC **27** 06:48:20.6±1.1,20.96S×179.04W,h595km±13km, mb3.9/14,mb1 4.0/17,mb1mx3.9/23,mbtmp4.8/17, Error ellipse: s-maj=13.1km s-min=10.5km az=160.0*
*NEIC **27** 06:48:21.1±0.6,21.03S×179.02W,h610km±7km,mb4.6/35, Error ellipse: s-maj=9.1km s-min=6.0km az=150.0*

ISC 27 06:48:21.9±0.4, 21.15S±0.07×179.03W±0.07, h619km, n123, σ1.521/135, mb4.6/55, 6C-4D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.37**	**320**	*e*P	**P**	**06**	**49**	**51.3** **-0.3**
RAO	**Raoul Island**	**8.13**	**173**	P	P	06	50	17.6 -5.4
	109nm,0.3s,baz=72,slow=20,SNR=3.5							
RAO				S	**S**	**06**	**51**	**60.0** **-2.4**
	163nm,0.3s,baz=107,slow=19,SNR=4.7							
AFI	**Afiamalu**	**9.98**	**45**	P	**P**	**06**	**50**	**37.0** **-4.1**
DZM	**Mont Dzumac**	**13.54**	**263**	P	**P**	**06**	**51**	**15.1** **-0.7**
	1.7nm,0.3s,baz=99,slow=18,SNR=14							
URZ	**Urewera**	**17.38**	**190**	P	**P**	**06**	**51**	**48.9** **-1.9**
	6.7nm,0.3s,baz=275,slow=3.2,SNR=40							
URZ				S	**S**	**06**	**54**	**35.1** **-5.3**
	0.2nm,0.3s,baz=36,slow=19,SNR=4.7							
RAR	**Rarotonga**	**17.96**	**94**	P	**P**	**06**	**51**	**56.1** **-0.3**
	1.2nm,0.3s,baz=239,slow=8.5,SNR=3.6							
RPZ	**Rata Peaks**	**23.97**	**198**	P	**P**	**06**	**52**	**50.4** **+0.5**
	17nm,1.0s,baz=61,slow=13,SNR=3.0							
EIDS	**Eidsvold**	**27.75**	**256**	*e*P	**P**	**06**	**53**	**23.5** **+0.2**
	9.4nm,0.6s							
PPT	**Papeete**	**28.00**	**88**	P	**P**	**06**	**53**	**26.0** **+0.4**
	18nm,0.8s,baz=80,slow=5.8,SNR=8.7							
CTA	**Charters Tower**	**32.47**	**266**	P	**P**	**06**	**54**	**04.1** **+0.3**
	31nm,0.4s,baz=90,slow=12,SNR=36							
CTAO	**Charters Tower**	**32.47**	**266**	*e*P	**P**	**06**	**54**	**04.1** **+0.3**
	38nm,0.4s							
PMG	**Port Moresby**	**34.56**	**285**	*e*P	**P**	**06**	**54**	**21.4** **+0.1**
	58nm,0.8s							
STKA	**Stephens Creek**	**36.64**	**245**	P	**P**	**06**	**54**	**38.9** **+0.7**
	11nm,0.7s,baz=94,slow=10,SNR=27							
STKA	**Stephens Creek**	**36.64**	**245**	*e*P	**P**	**06**	**54**	**39.1** **+0.9**
	2.2nm,0.6s							
COEN	**Coen**	**36.67**	**275**	*e*P	**P**	**06**	**54**	**39.1** **+0.5**
	16nm,0.8s							
BBOO	**Buckleboo**	**41.40**	**244**	*e*P	**P**	**06**	**55**	**16.5** **+0.3**
	20nm,0.6s							
AS01	**Alice Springs**	**43.39**	**258**	*e*P	**P**	**06**	**55**	**31.7** **-0.2**
AS31	**Alice Springs**	**43.43**	**258**	*e*P	**P**	**06**	**55**	**32.4** **+0.1**
	9.3nm,0.7s							
ASAR	**Alice Springs**	**43.43**	**258**	P	**P**	**06**	**55**	**32.3** **0.0**
	32nm,0.7s,baz=98,slow=7.6,SNR=395							
ASAR				PcP	**PcP**	**06**	**57**	**06.5** **+0.3**
	3.7nm,0.8s,baz=108,slow=4.0,SNR=6.4							
ASAR				ScP	**ScP**	**07**	**00**	**02.7** **+3.0**
	2.6nm,0.7s,baz=105,slow=4.2,SNR=11							
ASAR				S	**S**	**07**	**01**	**15.8** **-1.7**
	3.1nm,0.9s,baz=92,slow=16,SNR=14							
WB2	**Warramunga Arr**	**43.55**	**263**	*e*P	**P**	**06**	**55**	**32.4** **-0.8**
WB2				*e*P	P	06	55	32.5 -0.7
WRAB	**Tennant Creek**	**43.55**	**263**	*e*P	**P**	**06**	**55**	**32.5** **-0.7**
	33nm,1.0s							
WRA	**Warramunga Arr**	**43.56**	**263**	P	**P**	**06**	**55**	**32.8** **-0.4**
	14nm,0.3s,baz=96,slow=7.0,SNR=662							
WRA				ScP	**ScP**	**07**	**00**	**02.9** **+2.7**
	1.5nm,0.9s,baz=90,slow=3.8,SNR=5.1							
WRA				S	**S**	**07**	**01**	**15.8** **-3.5**
	3.8nm,1.0s,baz=98,slow=13,SNR=7.7							
FORT	**Forrest**	**48.15**	**247**	*e*P	**P**	**06**	**56**	**07.6** **-0.2**
	287nm,0.6s							
MTN	**Manton Dam**	**48.21**	**271**	*e*P	**P**	**06**	**56**	**07.8** **-0.6**
	40nm,0.7s							
FITZ	**Fitzroy Crossi**	**51.99**	**263**	*e*P	**P**	**06**	**56**	**36.0** **+0.2**
	30nm,1.4s							
SOEI	**Soe**	**55.56**	**273**	*e*P	**P**	**06**	**57**	**02.1** **+1.0**
	94nm,0.7s							
MBWA	**Marble Bar**	**56.77**	**258**	*e*P	**P**	**06**	**57**	**08.9** **-0.3**
	33nm,0.8s							
VNDA	**Vanda**	**57.19**	**185**	P	P	**06**	**57**	**13.3** **+2.3**
	1.4nm,0.4s,baz=5.5,slow=6.6,SNR=15							
VNDA	**Vanda**	**57.19**	**185**	*e*P	**P**	**06**	**57**	**13.4** **+2.3**
	13nm,1.5s							
QSPA	**South Pole Qui**	**68.92**	**180**	*e*P	**P**	**06**	**58**	**27.7** **+1.5**
MJAR	**Matsushiro Arr**	**70.16**	**324**	P	**P**	**06**	**58**	**33.3** **-0.6**
	8.6nm,0.7s,baz=156,slow=5.9,SNR=16							
KSM	**Kuching**	**72.55**	**279**	*e*P	**P**	**06**	**58**	**48.7** **+0.4**
TPUB	**Ta-pu**	**73.52**	**304**	*e*P	**P**	**06**	**58**	**52.3** **-1.3**
	43nm,0.7s							
SSLB	**Suanglung**	**73.53**	**304**	*e*P	**P**	**06**	**58**	**52.3** **-1.3**
	19nm,0.6s							
ASAJ	**Asahikawa**	**73.84**	**332**	*e*P	**P**	**06**	**58**	**55.5** **+0.6**
	18nm,1.1s							
PEA0	**Petropavlovsk-**	**76.65**	**346**	*e*P	**P**	**06**	**59**	**09.9** **-0.4**
PETK	**Petropavlovsk-**	**76.65**	**346**	P	**P**	**06**	**59**	**09.8** **-0.4**
	7.5nm,0.6s,baz=140,slow=5.1,SNR=11							
KS01	**Wonju Array Si**	**76.77**	**319**	*e*P	**P**	**06**	**59**	**11.5** **+0.2**
USRK	**Ussuriysk Ar.**	**78.96**	**326**	P	**P**	**06**	**59**	**23.8** **+1.0**
	12nm,0.8s,baz=96,slow=2.9,SNR=18							
NJ2	**Nanjing**	**79.55**	**310**	*e*P	**P**	**06**	**59**	**23.0** **-3.2**
NJ2				pmax	pmax			
	comp=Z,20nm,0.5s							
CN2	**Changchun**	**82.23**	**323**	*e*P	**P**	**06**	**59**	**39.8** **+0.1**
RSO	**Redoubt South**	**84.08**	**13**	*e*P	**P**	**06**	**59**	**48.4** **-0.3**
BJI	**Beijing**	**85.68**	**316**	P	**P**	**06**	**59**	**57.0** **+0.4**
BJI				pmax	pmax			
	comp=Z,12nm,0.8s							
G08A	**Pilot Rock**	**85.72**	**38**	*e*P	**P**	**06**	**59**	**57.4** **+0.5**
	comp=Z,9.0nm,1.7s							
TT01	**Tatalina**	**85.72**	**10**	*e*P	**P**	**06**	**59**	**56.7** **+0.4**
TTA	**Tatalina**	**85.75**	**10**	*e*P	**P**	**06**	**59**	**56.6** **+0.1**
	comp=Z,9.2nm,1.4s							
PMR	**Palmer**	**85.87**	**14**	*e*P	**P**	**06**	**59**	**55.7** **-1.4**
	comp=Z,6.5nm,1.1s							
GYA	**Guiyang**	**86.13**	**300**	*e*P	**P**	**07**	**00**	**00.0** **+0.7**
GYA				pP	pP	07	02	12.8 +1.8
GYA				sP	sP	07	03	14.0 +1.2
GYA				PP	**PP**	**07**	**03**	**33.5** **+1.4**
GYA				SKS	**SKSac**	**07**	**09**	**25.5** **-2.0**
GYA				S	**S**	**07**	**09**	**42.3** **-1.5**
GYA				pmax	pmax			
	comp=Z,10.0nm,1.0s							
GYA				pmax	pmax			
	comp=Z,110nm,6.2s							
CAST	**Castle Rocks**	**86.90**	**12**	*e*P	**P**	**06**	**59**	**59.5** **-2.4**
	comp=Z,8.1nm,0.7s							
F10A	**Beach Ranch, E**	**87.10**	**38**	*e*P	**P**	**07**	**00**	**04.1** **+0.7**
	comp=Z,2.9nm,0.8s							
KTH	**Kantishna Hill**	**87.25**	**12**	*e*P	**P**	**07**	**00**	**02.5** **-1.1**
	comp=Z,7.3nm,0.9s							
TRF	**Thorofare Moun**	**87.28**	**12**	*e*P	**P**	**07**	**00**	**02.8** **-1.1**
	comp=Z,14nm,0.8s							
SNAA	**Sanae**	**87.39**	**179**	P	**P**	**07**	**00**	**04.2** **-0.2**
RND	**Reindeer**	**87.54**	**13**	*e*P	**P**	**07**	**00**	**04.7** **-0.2**
	comp=Z,16nm,0.7s							
XAN	**Xi'an**	**87.76**	**308**	P	**P**	**07**	**00**	**07.5** **+0.8**
XAN				pP	pP	07	02	17.5 -1.5
XAN				sP	sP	07	03	16.0 -4.7
XAN				pmax	pmax			
	comp=Z,14nm,0.9s							
XAN				pmax	pmax			
	comp=Z,93nm,5.9s							
MCK	**McKinley**	**87.81**	**13**	*e*P	**P**	**07**	**00**	**05.6** **-0.5**
	comp=Z,7.3nm,0.9s							
TX31	**Lajitas Ar. Si**	**88.22**	**58**	*e*P	**P**	**07**	**00**	**10.0** **+1.0**
TXAR	**Lajitas Array**	**88.22**	**58**	P	**P**	**07**	**00**	**09.8** **+0.9**
	comp=Z,1.1nm,0.8s,baz=220,slow=5.9,SNR=15							
MLY	**Manley**	**88.62**	**12**	*e*P	**P**	**07**	**00**	**08.9** **-1.0**
	comp=Z,8.6nm,1.2s							
WRH	**Wood River Hil**	**88.64**	**13**	*e*P	**P**	**07**	**00**	**09.2** **-0.8**
	comp=Z,12nm,1.0s							
KMI	**Kunming**	**88.79**	**297**	P	**P**	**07**	**00**	**12.5** **+0.6**
KMI				pmax	pmax			
	comp=Z,17nm,0.5s							
KMI				pmax	pmax			
	comp=Z,65nm,5.6s							
HDA	**Harding Lake**	**88.83**	**13**	*e*P	**P**	**07**	**00**	**10.2** **-0.7**
	comp=Z,5.0nm,0.8s							
DOT	**Dot Lake**	**88.83**	**15**	*e*P	**P**	**07**	**00**	**10.9** **0.0**
	comp=Z,14nm,0.9s							
CCB	**Clear Creek Bu**	**88.86**	**13**	*e*P	**P**	**07**	**00**	**10.0** **-1.0**
	comp=Z,11nm,1.0s							
MDM	**Murphy Dome**	**89.04**	**13**	*e*P	**P**	**07**	**00**	**10.7** **-1.2**
	comp=Z,5.6nm,0.8s							
COLA	**College**	**89.05**	**13**	*e*P	**P**	**07**	**00**	**11.2** **-0.6**
	comp=Z,8.3nm,0.6s							
HHC	**Hu-ho-hao-te**	**89.12**	**315**	*e*P	**P**	**07**	**00**	**15.0** **+2.1**
HHC				pmax	pmax			
	comp=Z,20nm,1.2s							
HHC				pmax	pmax			
	comp=Z,40nm,8.0s							
IL1	**Eielson Array**	**89.16**	**13**	*e*P	**P**	**07**	**00**	**11.0** **-1.3**
ILAR	**Eielson Array**	**89.16**	**13**	P	**P**	**07**	**00**	**11.2** **-1.1**
	comp=Z,2.1nm,0.5s,baz=215,slow=5.2,SNR=40							
ILB	**Eielson Array**	**89.16**	**13**	*e*P	**P**	**07**	**00**	**11.2** **-1.1**
CM01	**Chiang Mai Arr**	**89.40**	**290**	*e*P	**P**	**07**	**00**	**15.7** **+1.2**
CMAR	**Chiang Mai Arr**	**89.42**	**290**	P	**P**	**07**	**00**	**16.2** **+1.6**
	comp=Z,5.6nm,0.8s,baz=130,slow=3.0,SNR=26							
PLCA	**Paso Flores**	**89.53**	**134**	P	**P**	**07**	**00**	**16.2** **+1.3**
	comp=Z,5.5nm,0.8s,baz=239,slow=6.5,SNR=5.6							
CHTO	**Chiang Mai**	**89.56**	**290**	*e*P	**P**	**07**	**00**	**16.7** **+1.4**
	comp=Z,21nm,1.5s							
PDAR	**Pinedale Array**	**90.09**	**44**	P	**P**	**07**	**00**	**17.7** **+0.2**
	comp=Z,0.1nm,0.4s,baz=248,slow=4.7,SNR=2.2							
DAWY	**Dawson**	**90.34**	**16**	*e*P	**P**	**07**	**00**	**18.0** **+0.1**
EGAK	**Eagle**	**90.48**	**15**	*e*P	**P**	**07**	**00**	**18.2** **-0.2**
	comp=Z,3.2nm,0.8s							
COLD	**Coldfoot**	**90.69**	**11**	*e*P	**P**	**07**	**00**	**19.9** **+0.5**
	comp=Z,3.9nm,1.1s							
GTA	**Gaotai**	**96.64**	**310**	*e*P	**P**	**07**	**00**	**47.8** **+0.5**
GTA				pP	pP	07	00	51.5 -130
GTA				sP	sP	07	00	53.8 -188
GTA				pmax	pmax			
	comp=Z,3.0nm,1.2s							
ZALV	**Zalesovo Beam**	**110.39**	**321**	PKiKP	**PKiKP**	**07**	**05**	**43.5** **-1.2**
	comp=Z,0.5nm,0.3s,baz=148,slow=2.9,SNR=3.7							
MKAR	**Makanchi Array**	**110.94**	**313**	PKiKP	**PKiKP**	**07**	**05**	**44.9** **-1.1**
	comp=Z,0.4nm,0.4s,baz=104,slow=1.2,SNR=6.4							
ARCES	**ARCESS Array B**	**129.39**	**349**	PKP	**PKPdf**	**07**	**06**	**20.1** **-0.5**
	comp=Z,3.2nm,0.5s,baz=17,slow=1.3,SNR=10							
FINES	**FINESS Array B**	**136.11**	**343**	PKhKP	PKPpre	07	06	31.4
	comp=Z,2.4nm,0.6s,baz=86,slow=3.7,SNR=9.7							
FINES				PKP	**PKPdf**	**07**	**06**	**34.4** **+1.0**
	comp=Z,2.4nm,0.6s,baz=64,slow=3.2,SNR=9.5							
FINES				SKPbc	**SKPbc**	**07**	**09**	**09.3** **+1.0**
	comp=Z,1.5nm,0.6s,baz=108,slow=4.5,SNR=7.6							
NB2	**NORSAR Subarra**	**139.50**	**352**	PKP	PKPpre	07	06	31.6
	comp=Z,0.8nm,0.5s,baz=13,slow=4.1							
NOA	**NORSAR Array B**	**139.50**	**352**	PKhKP	PKPpre	07	06	32.8
	comp=Z,0.7nm,0.6s,baz=71,slow=0.6,SNR=6.8							
NOA				PKP	**PKPdf**	**07**	**06**	**41.0** **+1.2**
	comp=Z,0.8nm,0.4s,baz=14,slow=3.9,SNR=3.8							
AKASG	**Malin Array Be**	**143.10**	**330**	PKhKP	PKPpre	07	06	43.6
	comp=Z,13nm,0.3s,baz=44,slow=4.3,SNR=32							
BRTR	**Keskin Array B**	**146.54**	**311**	PKPbc	**PKPbc**	**07**	**06**	**55.0** **-0.6**
	comp=Z,3.9nm,0.6s,baz=128,slow=3.5,SNR=20							
STHS	**Stebnicka Huta**	**147.51**	**335**	*e*PKP	**PKPbc**	**07**	**06**	**58.0** **+0.4**
LANS	**Liptovska Anna**	**148.40**	**337**	*e*PKP	**PKPbc**	**07**	**07**	**01.1** **+1.2**
LANS				*e*		07	07	05.8
DPC	**Dobruska-Polom**	**148.44**	**341**⇑	*e*PKP	**PKPbc**	**07**	**07**	**00.4** **+0.5**
DPC				*e*PKPAB	**PKPab**	**07**	**07**	**06.1** **+0.3**
CLL	**Collm**	**148.46**	**346**⇓	*i*PKPbc	**PKPbc**	**07**	**06**	**59.8** **-0.1**
	comp=Z,15nm,1.1s							
CLL				⇑*i*PKPab	**PKPab**	**07**	**07**	**05.4** **-0.3**
	comp=Z,8.0nm,1.0s							
BRG	**Berggiesshubel**	**148.63**	**344**	*i* PKP	**PKPbc**	**07**	**07**	**00.3** **0.0**
	comp=Z,8.1nm,0.7s							
BRG				*i*		07	07	06.2
	comp=Z,9.5nm,1.3s							
DRGR		**148.91**	**330**	⇓*i*P	**PKPbc**	**07**	**07**	**00.4** **-0.8**
VYHS	**Vyhne**	**149.18**	**337**	*e*PKP	**PKPbc**	**07**	**07**	**01.9** **+0.1**
VYHS				*e*		07	07	09.2
VYHS				*e*		07	09	22.1
VYHS				*e*		07	09	25.3
PRU	**Pruhonice**	**149.28**	**343**⇑	*e*PKP	**PKPbc**	**07**	**07**	**01.8** **-0.1**
SIRR	**Siria**	**149.78**	**331**	⇓*i*P	**PKPbc**	**07**	**07**	**03.6** **+0.3**
GZR	**Gura Zlata**	**149.90**	**329**⇑	*i*P	**PKPbc**	**07**	**07**	**03.5** **-0.1**
BZS	**Buzias**	**150.29**	**330**	⇓*i*P	**PKPbc**	**07**	**07**	**04.2** **-0.2**
KHC	**Kasperske Hory**	**150.32**	**343**⇑	*e*PKP	**PKPbc**	**07**	**07**	**04.7** **+0.3**
KHC				*e*PKPAB	**PKPab**	**07**	**07**	**14.1** **+0.5**
MEM	**Membach**	**150.33**	**354**	PKPbc	**PKPbc**	**07**	**07**	**04.5** **+0.2**
GERES	**GERESS Array B**	**150.54**	**343**	PKPbc	**PKPbc**	**07**	**07**	**04.9** **-0.2**
	comp=Z,3.8nm,0.7s,baz=48,slow=2.0,SNR=30							
GERES				PKPab	**PKPab**	**07**	**07**	**14.5** **-0.1**
	comp=Z,0.4nm,0.3s,baz=8.7,slow=1.8,SNR=4.3							
BCLA	**Clavier**	**150.59**	**354**	PKPab	**PKPab**	**07**	**07**	**13.9** **-0.7**
CONA	**Conrad Observa**	**150.71**	**339**	*i* PKiKP	**PKPbc**	**07**	**07**	**05.4** **0.0**
	comp=Z,9.0nm,0.6s							
MDVR	**Moldovita**	**150.86**	**329**⇑	*i*P	**PKPbc**	**07**	**07**	**05.8** **0.0**
DOU	**Dourbes**	**150.97**	**355**	PKPbc	**PKPbc**	**07**	**07**	**06.0** **+0.2**
WLF	**Walferdange**	**151.25**	**353**	PKPbc	**PKPbc**	**07**	**07**	**07.6** **+1.1**
MOA	**Molln**	**151.28**	**341**	*i* PKPbc	**PKPbc**	**07**	**07**	**06.3** **-0.3**
	comp=Z,2.8nm,0.5s							
SOKA	**Soboth**	**152.07**	**339**	*i* PKPbc	**PKPbc**	**07**	**07**	**07.6** **-0.9**
	comp=Z,4.7nm,1.0s							
PERS	**Pernice**	**152.08**	**339**	*i* PKPbc	**PKPbc**	**07**	**07**	**07.7** **-0.8**
KBA	**Koelnbreinsper**	**152.25**	**342**	*i* PKPbc	**PKPbc**	**07**	**07**	**08.0** **-1.0**
	comp=Z,2.8nm,0.6s							
OBKA	**Obir**	**152.38**	**340**	*i* PKPdf	**PKPdf**	**07**	**07**	**00.6** **-1.1**
	comp=Z,2.6nm,0.6s							
WATA	**Walderalm**	**152.50**	**344**	*i* PKPbc	**PKPbc**	**07**	**07**	**08.9** **-0.6**
	comp=Z,2.8nm,0.4s							
RETA	**Reutte**	**152.55**	**346**	*i* PKPab	**PKPab**	**07**	**07**	**21.9** **-1.2**
	comp=Z,2.3nm,0.5s							
MYKA	**Terra Mystica**	**152.56**	**341**	*i* PKPbc	**PKPbc**	**07**	**07**	**07.7** **-1.8**
	comp=Z,4.2nm,0.7s							
MOTA	**Moosalm**	**152.60**	**345**	*i* PKPbc	**PKPbc**	**07**	**07**	**08.7** **-1.0**
	comp=Z,1.9nm,0.4s							
PDKS	**Podkum**	**152.62**	**338**	*i* PKPbc	**PKPbc**	**07**	**07**	**09.1** **-0.6**
CRES	**Cresnjev**	**152.67**	**338**	*i* PKPbc	**PKPbc**	**07**	**07**	**09.4** **-0.3**
ABTA	**Abfaltersbach**	**152.79**	**342**	*i* PKPbc	**PKPbc**	**07**	**07**	**09.2** **-0.8**
	comp=Z,6.0nm,0.6s							
DAVA	**Damuels**	**152.94**	**347**	*i* PKPab	**PKPab**	**07**	**07**	**23.8** **-1.1**
	comp=Z,3.6nm,0.6s							
FETA	**Feichten**	**153.00**	**345**	*i* PKPbc	**PKPbc**	**07**	**07**	**09.6** **-1.0**
	comp=Z,4.3nm,1.1s							
KEST

KKAR **Karatay Array** 6.80 356 *e*Pn Pn 07 16 01.9 -0.1
comp=Z,0.8nm,0.2s
AAK **Ala-Archa** 6.81 21 P Pn 07 16 03.6 +1.3
comp=Z,75nm,0.3s,baz=191,slow=8.4,SNR=239
AAK S Sn 07 17 15.9 -2.5
comp=Z,16nm,0.3s,baz=355,slow=16,SNR=7.6
AAK **Ala-Archa** 6.81 21 ⇑P Pn 07 16 03.1 +0.8
comp=Z,244nm,0.6s
AAK ⇓S Sn 07 17 15.9 -2.5
comp=Z,673nm,0.8s
AAK **Ala-Archa** 6.81 21 *e*PN Pn 07 16 03.1 +0.8
FRU **Bishkek** 7.03 21 ⇓*i*PN Pn 07 16 06.0 +0.9
FRU pmax pmax
comp=Z,360nm,1.7s
SMLA **Simla** 7.18 134 *e*P Pn 07 16 08.7 +1.5
SMLA *e*S Sn 07 17 26.5 -0.8
SMLA IAML 07 17 30.0
comp=E,896nm,0.2s
SMLA IAML 07 17 30.2
comp=N,919nm,0.4s
KKR **Kurukshetra** 7.90 142 *e*P Pn 07 16 18.5 +1.4
KNDC **Almaty** 8.20 31 ⇑P Pn 07 16 22.4 +1.3
comp=N,261nm,0.8s
DDI **Dehra Dun** 8.29 134 *e*P Pn 07 16 24.4 +1.9
DDI IAmb IAmb 07 16 24.6
comp=Z,326nm,0.4s
DDI *e*S Sn 07 17 50.0 -4.4
KHET **Khetri** 9.10 153 *e*P Pn 07 16 32.8 -0.6
KHET *e*S Sn 07 18 08.6 -5.5
KHET IAML 07 18 11.7
comp=E,167nm,0.3s
KHET IAML 07 18 11.9
comp=N,109nm,0.3s
NDI **New Delhi** 9.16 145 *e*P Pn 07 16 25.0 -9.1
NDI *e*S Sn 07 17 58.0 -17
KUDL **Kundal** 9.30 150 *e*P Pn 07 16 35.9 -0.2
KUDL *e*S Sn 07 18 12.6 -6.3
KUDL IAML 07 18 17.9
comp=N,107nm,0.3s
KUDL IAML 07 18 19.5
comp=E,131nm,0.3s
JASL **Jaisalmer** 9.37 182 *e*P Pn 07 16 36.1 -0.9
PDGK **Podgornoye** 9.47 40 ⇑P Pn 07 16 38.6 +0.3
comp=E,120nm,0.9s
PDGK **Podgornoye** 9.47 40 *e*P Pn 07 16 38.6 +0.3
PTH **Pithoragarh** 10.15 129 *e*P Pn 07 16 47.2 -0.6
PTH *ex* x 07 18 33.9
GEYT **Alibeck** 10.56 283 P Pn 07 16 49.5 -3.6
comp=E,10nm,0.3s,baz=112,slow=11,SNR=34
GEYT S Sn 07 18 39.5 -10
comp=E,27nm,0.3s,baz=95,slow=16,SNR=14
GEYT LR LR 07 22 11.0
comp=E,109nm,19.2s,baz=90,slow=44
OTUK **Ortayu** 11.95 4 ⇓P Pn 07 17 09.6 -2.2
comp=E,112nm,0.7s
OTUK **Ortayu** 11.95 4 P Pn 07 17 09.6 -2.2
OTUK pmax pmax
comp=Z,112nm,0.7s
PYUN **Piuthan** 12.92 126 *e*P Pn 07 17 22.9 -2.0
comp=Z,100nm,0.2s
PYUN *e*S Sn 07 19 38.5 -8.5
BHJ **Bhuj** 13.09 186 *e*P Pn 07 17 24.6 -2.3
MAKZ **Makanchi** 13.22 34 ⇓P Pn 07 17 27.6 -1.0
comp=Z,75nm,0.9s
MK31 **Makanchi Array** 13.36 35 P Pn 07 17 29.3 -1.0
comp=Z,31nm,0.7s,baz=233,slow=7.7,SNR=231
MK31 **Makanchi Array** 13.36 35 *i* P Pn 07 17 29.3 -1.0
MK31 pmax pmax
comp=Z,31nm,0.7s
MKAR **Makanchi Array** 13.36 35 P Pn 07 17 27.4 -2.9
comp=Z,1.6nm,0.3s,baz=225,slow=12,SNR=74
MKAR ScP ScP 07 26 15.7 +0.7
comp=Z,0.0nm,0.3s,baz=286,slow=2.6,SNR=4.3
MKAR **Makanchi Array** 13.36 35 *i* P Pn 07 17 29.3 -1.0
MKAR pmax pmax
comp=Z,10.0nm,0.6s
KOLN **Koldanda** 13.54 126 *e*P Pn 07 17 31.3 -1.7
comp=Z,81nm,0.3s
GKN **Gorkha** 14.08 122 *e*P Pn 07 17 38.2 -1.8
comp=Z,228nm,0.5s
GKN *e*S Sn 07 20 06.0 -9.1
BHPL **Bhopal** 14.11 156 *e*P Pn 07 17 39.0 -1.3
DMN **Daman** 14.65 122 *e*P Pn 07 17 45.4 -2.0
KKN **Kakani** 14.66 121 *e*P Pn 07 17 45.3 -2.1
comp=Z,338nm,0.5s
KKN *e*S Sn 07 20 18.7 -10
WMQ **Urumqi** 14.68 54 P Pn 07 17 47.3 -0.2
WMQ pP P 07 17 58.5 +7.5
WMQ S Sn 07 20 30.0 +0.6
WMQ pmax pmax
comp=Z,31nm,0.7s
WMQ pmax pmax
comp=Z,110nm,4.9s
WMQ LR LR
comp=Z,160nm,4.8s
WMQ LR LR
comp=Z,220nm,4.7s
WMQ LR LR
comp=Z,220nm,10.0s
PKIN **Phulchoki** 14.87 122 *e*P Pn 07 17 48.5 -1.7
comp=Z,146nm,0.3s
PKIN *e*S Sn 07 20 24.6 -10
GUN **Gumba** 15.00 120 *e*P Pn 07 17 49.9 -2.0
comp=Z,293nm,0.5s
KURBB **Kurchatov Arra** 15.25 18 P Pn 07 17 51.7 -2.8
comp=Z,0.5nm,0.3s,baz=209,slow=12,SNR=67
KURBB S S 07 20 48.1 -4.6
comp=Z,0.0nm,0.3s,baz=207,slow=22,SNR=3.1
KURBB **Kurchatov Arra** 15.25 18 ⇑P Pn 07 17 50.6 -4.0
comp=Z,56nm,0.6s
AB31 **Akbulak array** 15.32 331 ⇑P Pn 07 17 51.9 -3.5
comp=Z,50nm,0.5s
AB31 ⇑S Sn 07 20 27.9 -17
comp=Z,27nm,0.5s
AB31 **Akbulak array** 15.32 331 *e*P Pn 07 17 51.9 -3.5
KURK **Kurchatov** 15.36 18 ⇑P Pn 07 17 51.3 -4.6
comp=Z,70nm,1.0s
KURK **Kurchatov** 15.36 18 P Pn 07 17 51.7 -4.2
KURK S Sn 07 20 48.1 +2.7
KURK **Kurchatov** 15.36 18 P Pn 07 17 51.7 -4.2
KURK S Sn 07 20 48.1 +2.7
JIRN **Jiri** 15.37 120 *e*P Pn 07 17 55.0 -1.6
RAMN **Ramite** 16.09 121 *e*P Pn 07 18 03.7 -1.8
comp=Z,189nm,0.4s
RAMN *e*S Sn 07 20 52.9 -11
NGP **Nagpur** 16.60 153 *e*P Pn 07 18 10.8 -0.8
BVA0 **Borovoye Array** 16.72 358 ⇓P Pn 07 18 10.0 -2.8
comp=Z,67nm,1.2s,baz=168,slow=13,SNR=218
BVA0 **Borovoye Array** 16.72 358 *i* P Pn 07 18 09.9 -2.8
BVA0 pmax pmax
comp=Z,67nm,1.2s
BVAR **Borovoye Array** 16.72 358 P Pn 07 18 11.2 -1.6
comp=Z,5.0nm,0.3s,baz=172,slow=12,SNR=86
BVAR S Sn 07 21 18.2 +0.1
comp=Z,0.7nm,0.3s,baz=166,slow=24,SNR=4.1
BRVK **Borovoye** 16.75 358 ⇓P Pn 07 18 11.1 -2.0
comp=Z,34nm,0.6s
BRVK **Borovoye** 16.75 358 *e*P Pn 07 18 11.0 -2.2
BRVK **Borovoye** 16.75 358 *e*Pn Pn 07 18 11.1 -2.0
comp=Z,107nm,0.6s
WSAR **Wadi Sarin** 16.96 223 P Pn 07 18 14.5 -1.5
comp=Z,0.2nm,0.3s,baz=80,slow=11,SNR=2.5
AKTO **Aktyubinsk** 17.01 330 P Pn 07 18 15.1 -1.3
comp=Z,6.4nm,0.3s,baz=138,slow=12,SNR=125
AKTO **Aktyubinsk** 17.01 330 ⇓P Pn 07 18 14.7 -1.7
comp=Z,151nm,0.8s
AKTO ⇑S Sn 07 21 04.4 -21
comp=Z,55nm,0.9s
AKTO **Aktyubinsk** 17.01 330 *e*P Pn 07 18 14.7 -1.7
HATD **Hatta, Dubai** 17.27 233 P Pn 07 18 23.2 +3.4
ASHO **Ashiyiah** 17.42 232 P Pn 07 18 22.9 +1.3
BOK **Bokaro** 17.80 130 *e*P Pn 07 18 26.6 +0.5
POO **Poona** 17.87 172 *e*P P 07 18 25.6 -0.7
POO IAmb IAmb 07 18 30.8
comp=Z,40nm,0.6s
LSA **Lhasa** 17.98 106 *e*P Pn 07 18 28.6 -0.2
LSA pmax pmax
comp=Z,47nm,0.8s
LSA **Lhasa** 17.98 106 *e*P Pn 07 18 28.6 -0.2
comp=Z,47nm,0.8s
SRSP **Sriramsagar** 18.43 158 *e*P Pn 07 18 35.2 +1.4
SRSP IAmb IAmb 07 18 38.0
comp=Z,30nm,0.7s
SRSP **Sriramsagar** 18.43 158 *e*P Pn 07 18 35.2 +1.4
SRSP IAmb IAmb 07 18 38.0
comp=Z,30nm,0.7s

KLRI **Killari** 18.80 164 *e*P Pn 07 18 38.4 +0.3
KLRI IAmb IAmb 07 18 44.6
comp=Z,47nm,0.6s
KLRI **Killari** 18.80 164 *e*P Pn 07 18 38.4 +0.3
KLRI IAmb IAmb 07 18 44.6
comp=Z,47nm,0.6s
RPR **Rampur** 18.80 156 *e*P Pn 07 18 40.4 +2.3
RPR IAmb IAmb 07 18 45.1
comp=Z,62nm,0.8s
RPR **Rampur** 18.80 156 *e*P Pn 07 18 40.5 +2.3
RPR IAmb IAmb 07 18 45.1
comp=Z,62nm,0.8s
HYBB **Hyderabad (bro** 19.92 159 *e*Pn Pn 07 18 50.8 -0.5
HYBB IAmb IAmb 07 18 55.1
comp=Z,56nm,0.7s
HYBB **Hyderabad (bro** 19.92 159 *e*P Pn 07 18 51.1 -0.2
HYBB IAmb IAmb 07 18 55.1
comp=Z,56nm,0.7s
HYB **Hyderabad** 19.93 159 *i* P Pn 07 18 51.0 -0.3
HYB *e*S S 07 22 24.0 -3.5
HYB **Hyderabad** 19.93 159 *e*P P 07 18 47.9 -0.9
ZALV **Zalesovo Beam** 20.02 24 P P 07 18 49.6 +0.1
comp=Z,216nm,0.7s,baz=219,slow=11,SNR=201
ZALV S S 07 22 27.0 -1.9
comp=Z,3.2nm,0.6s,baz=206,slow=19,SNR=2.4
NVS **Novosibirsk** 20.30 20 ⇑*i*P P 07 18 52.8 +0.3
NVS *e* 07 22 29.7
NVS pmax pmax
comp=N,165nm,1.1s
NVS pmax pmax
comp=E,46nm,1.1s
NVS pmax pmax
comp=Z,180nm,1.1s
BWNR **Bhubaneshwar** 20.46 137 *e*P P 07 18 54.6 +0.1
SHL **Shillong** 20.70 115 *e*P P 07 18 57.5 +0.3
SHL *ex* x 07 22 40.0
DGRG **David-gareji** 20.70 292 P Pn 07 19 00.1 -0.1
DGRG **David-gareji** 20.70 292 P Pn 07 19 00.1 -0.1
NJS **Nagarjunasagar** 20.96 158 *e*P P 07 19 01.5 +1.6
NJS IAmb IAmb 07 19 05.2
comp=Z,69nm,1.0s
NJS **Nagarjunasagar** 20.96 158 *e*P P 07 19 01.4 +1.6
NJS IAmb IAmb 07 19 05.2
comp=Z,69nm,1.0s
CHLP **Challavanipeta** 21.07 144 *e*P P 07 19 03.5 +2.5
CHLP IAmb IAmb 07 19 06.1
comp=Z,29nm,0.8s
CHLP **Challavanipeta** 21.07 144 *e*P P 07 19 03.5 +2.5
CHLP IAmb IAmb 07 19 06.1
comp=Z,29nm,0.8s
GNI **Garni** 21.09 288 P P 07 19 01.5 +0.2
comp=Z,38nm,0.5s,baz=117,slow=2.3,SNR=26
GNI **Garni** 21.09 288 *i* P P 07 19 02.8 +1.5
SNR=9.3
GNI **Garni** 21.09 288 *e*P P 07 19 04.3 +3.0
PVM **Polavaram** 21.13 151 *e*P P 07 19 05.9 +4.3
PVM IAmb IAmb 07 19 07.6
comp=Z,61nm,0.9s
PVM **Polavaram** 21.13 151 *e*P P 07 19 05.9 +4.3
PVM IAmb IAmb 07 19 07.6
comp=Z,61nm,0.9s
TBLG **Delisi** 21.20 293 P P 07 19 05.1 +2.7
TBLG **Delisi** 21.20 293 P P 07 19 05.1 +2.7
SRLM **Srisailam** 21.27 159 *e*P P 07 19 06.5 +3.3
SRLM IAmb IAmb 07 19 08.7
comp=Z,56nm,0.9s
SRLM **Srisailam** 21.27 159 *e*P P 07 19 07.1 +3.9
SRLM IAmb IAmb 07 19 08.7
comp=Z,56nm,0.9s
VIS **Vishakhapatnam** 21.41 147 *e*P P 07 19 04.0 -0.7
VIS IAmb IAmb 07 19 06.1
comp=Z,19nm,0.7s
SVE **Sverdlovsk** 21.71 344 ⇓*e*P P 07 19 07.7 +0.2
SVE *e*S S 07 22 57.2 -4.5
SVE pmax pmax
comp=Z,74nm,0.9s
ADKI **Addanki** 21.84 157 *e*P P 07 19 10.8 +1.6
ADKI IAmb IAmb 07 19 13.0
comp=Z,28nm,1.0s
ADKI **Addanki** 21.84 157 *e*P P 07 19 10.9 +1.6
ADKI IAmb IAmb 07 19 13.0
comp=Z,28nm,1.0s
ARU **Arti** 21.85 341 P P 07 19 10.1 +1.0
comp=Z,114nm,0.7s,baz=145,slow=6.4,SNR=60
ARU **Arti** 21.85 341 *d* iP P 07 19 09.6 +0.5
ARU 07 19 38.5
ARU S S 07 23 01.7 -2.6
ARU SS SnSn 07 23 41.3 +2.2
ARU pmax pmax
comp=Z,294nm,1.7s
RCLA **Racherla** 21.90 160 *e*P P 07 19 11.9 +2.1
RCLA IAmb IAmb 07 19 14.3
comp=Z,60nm,1.0s
RCLA **Racherla** 21.90 160 *e*P P 07 19 12.2 +2.3
RCLA IAmb IAmb 07 19 14.3
comp=Z,60nm,1.0s
ZEI **Tsey** 21.95 295 *e*P P 07 19 11.8 +1.3
ZEI pmax pmax
comp=Z,32nm,0.4s
URV **Uravakonda** 21.96 164 *e*P P 07 19 12.8 +2.2
URV IAmb IAmb 07 19 18.0
comp=Z,43nm,0.7s
URV **Uravakonda** 21.96 164 *e*P P 07 19 12.6 +2.0
URV IAmb IAmb 07 19 18.0
comp=Z,44nm,0.7s
AKH **Akhalkalaki** 22.11 292 ⇓*i*P P 07 19 14.1 +2.0
AKH **Akhalkalaki** 22.11 292 P P 07 19 16.4 +4.3
AKH **Akhalkalaki** 22.11 292 P P 07 19 16.4 +4.3
ONI **Oni** 22.25 295 P P 07 19 16.1 +2.6
ONI **Oni** 22.25 295 P P 07 19 16.1 +2.6
GTA **Gaotai** 22.77 74 *e*P P 07 19 20.5 +1.5
GTA pmax pmax
comp=Z,5.0nm,0.9s
GTA pmax pmax
comp=Z,90nm,4.1s
GTA LR LR
comp=Z,270nm,21.9s
GTA LR LR
comp=Z,330nm,21.8s
GTA LR LR
comp=Z,68nm,17.6s
KBZ **Khabaz** 22.82 298 P P 07 19 19.2 +0.1
comp=Z,6.8nm,0.9s,baz=153,slow=6.1,SNR=11
NEY **Neytrino** 22.87 296 *c* iP P 07 19 23.5 +3.6
NEY pmax pmax
comp=Z,26nm,2.8s
GOF **Gofitskoye** 22.96 301 ⇑*e*P P 07 19 22.9 +2.3
GOF *e**PP sP 07 19 56.9 +3.7
GOF *e*S S 07 23 28.9 +6.0
GOF pmax pmax
comp=Z,107nm,1.4s
GOF smax smax
comp=N,53nm,1.0s
KVAR **Kislovodsk Arr** 23.00 298 P P 07 19 21.4 +0.3
comp=N,7.5nm,0.5s,baz=202,slow=12,SNR=6.3
KIV **Kislovodsk** 23.00 298 *e*P P 07 19 22.8 +1.7
KIV *e**PP pP 07 19 46.3 +5.1
KIV *e*S S 07 23 22.6 -1.2
KIV pmax pmax
comp=Z,25nm,1.1s
KIV MLR MLR
comp=Z,58nm,15.0s
SKHT **Srikalahasti** 23.75 159 *e*P P 07 19 29.6 +1.7
SKHT IAmb IAmb 07 19 30.8
comp=Z,24nm,0.7s
SKHT **Srikalahasti** 23.75 159 *e*P P 07 19 29.7 +1.7
SKHT IAmb IAmb 07 19 32.6
comp=Z,41nm,1.1s
SOKR **Solikamsk** 25.10 343 *d* iP P 07 19 40.3 +0.5
SOKR pmax pmax
comp=Z,54nm,1.2s
VRH **Novokhopyorsk** 25.74 315 *e*P P 07 19 47.8 +2.0
VRH pmax pmax
comp=Z,40nm,0.8s
MOY **Mondy** 26.13 45 *e*P P 07 19 52.1 +2.6
MOY pmax pmax
comp=Z,23nm,1.7s
ANN **Anapa** 26.85 299 *e*P P 07 19 56.1 +0.3
ANN *e* 07 20 45.7
ANN *e* 07 23 16.4
ANN *e*S S 07 24 22.6 -2.2
ANN pmax pmax
comp=Z,34nm,1.0s
ZAK **Zakamensk** 27.00 49 *e*P P 07 19 58.4 +1.1
ZAK pmax pmax
comp=Z,9.0nm,1.5s
VSR **Storozhevoye** 27.24 313 *e*P P 07 19 59.6 +0.4
VSR pmax pmax
comp=Z,40nm,1.3s
TLY **Talaya** 27.66 46 P P 07 20 05.4 +2.3
comp=Z,4.1nm,0.7s,baz=224,slow=6.5,SNR=7.2
SONM **Songino Array** 28.32 55 P P 07 20 11.0 +1.9
comp=Z,3.4nm,0.7s,baz=257,slow=10,SNR=11
SONM **Songino Array** 28.32 55 P P 07 20 11.0 +1.9
BRTR **Keskin Array B** 29.63 288 P P 07 20 20.2 -0.6
comp=Z,1.3nm,0.6s,baz=93,slow=8.9,SNR=7.9
BRTR PcP PcP 07 23 22.6 -0.4
comp=Z,0.7nm,0.5s,baz=98,slow=2.9,SNR=2.4
MOS **Moscow** 29.89 321 *e*P P 07 20 23.3 +0.6
MOS pmax pmax
comp=Z,72nm,1.1s
OBN **Obninsk** 30.17 320 P P 07 20 26.1 +0.9
comp=Z,38nm,0.4s,baz=110,slow=22,SNR=14
OBN **Obninsk** 30.17 320 *c* iP P 07 20 26.0 +0.9
OBN *i* 07 21 22.1
OBN pmax pmax
comp=Z,46nm,0.9s
OBN MLR MLR
comp=Z,74nm,19.0s
CMAR **Chiang Mai Arr** 30.24 119 P P 07 20 25.4 -0.8
comp=Z,2.4nm,0.8s,baz=157,slow=11,SNR=2.7
HHC **Hu-ho-hao-te** 31.69 69 *e*P P 07 20 31.0 -7.9
HHC S S 07 25 28.5 -13
HHC sS sS 07 26 07.0 -13
HHC pmax pmax
comp=Z,11nm,1.1s
HHC pmax pmax
comp=Z,74nm,5.9s
HHC LR LR
comp=N,100nm,13.6s
HHC LR LR
comp=E,59nm,13.6s
HHC LR LR
comp=Z,62nm,11.1s
KLMR **Klimovskoe** 31.71 331 *e*P P 07 20 36.6 -2.1
KLMR *e**PP pP 07 21 03.2 +1.8
KLMR *e* 07 21 44.0
KLMR pmax pmax
comp=Z,54nm,1.2s
AKASG **Malin Array Be** 33.18 309 P P 07 20 51.4 -0.2
comp=Z,9.5nm,0.4s,baz=81,slow=7.7,SNR=17
KIEV **Kiev** 33.18 309 *e*P P 07 20 52.4 +0.7
KIEV **Kiev** 33.18 309 *e*P P 07 20 51.4 -0.2
comp=Z,11nm,0.6s
SORM **Soroca** 33.43 304 ⇑*i*P P 07 20 54.2 +0.4
CFR **Carcaliu** 33.46 299 ⇑*i*P P 07 20 55.7 +1.6
NRIK **Noril'sk** 34.28 10 P P 07 21 02.8 +1.8
comp=Z,13nm,0.6s,baz=204,slow=5.3,SNR=21
PLOR **Plostina** 34.50 300 ⇑*i*P P 07 21 05.3 +2.1
MICGM **Minsk** 34.73 315 *e*P P 07 21 06.0 +1.0
MNK **Minsk** 34.73 315 *e*P P 07 21 06.0 +1.0
MLR **Muntele Rosu** 35.00 299 P P 07 21 07.8 +0.2
comp=Z,1.4nm,0.7s,baz=56,slow=4.1,SNR=9.7
MLR **Muntele Rosu** 35.00 299 ⇓*i*P P 07 21 09.8 +2.2
DOPR **Dopca** 35.38 300 ⇓*i*P P 07 21 13.1 +2.4
BOD **Bodaibo** 35.40 39 *e*P P 07 21 11.4 +0.7
BOD pmax pmax
comp=Z,19nm,1.6s
BURAR **Bucovina Array** 35.51 303 ⇑*i*P P 07 21 12.9 +1.0
VOIR 35.63 299 ⇓*i*P P 07 21 14.9 +1.9
VSU **Vasula** 36.42 322 *e*P P 07 21 20.0 +0.6
LOT **Lotru** 36.53 299 ⇑*i*P P 07 21 22.1 +1.4
TIA **Tai'an** 36.77 76 *e*P P 07 21 25.8 +3.1
TIA pmax pmax
comp=Z,20nm,1.0s
IDI **Anoyia** 37.28 283 P P 07 21 26.4 -0.7
comp=Z,2.9nm,0.4s,baz=121,slow=10,SNR=5.9
LVZ **Lovozero** 37.68 338 *e*P P 07 21 29.9 -0.1
LVZ pmax pmax
comp=Z,17nm,0.7s
LVZ **Lovozero** 37.68 338 *e*P P 07 21 29.9 -0.1
comp=Z,17nm,0.7s
FINES **FINESS Array B** 37.72 326 P P 07 21 30.8 +0.4
comp=Z,37nm,0.8s,baz=109,slow=10,SNR=122
FINES LR LR 07 38 17.3
comp=Z,77nm,18.0s,baz=37,slow=38
FINES **FINESS Array B** 37.72 326 *e*P P 07 21 31.0 +0.7
MDVR **Moldovita** 38.03 299 ⇓*i*P P 07 21 34.3 +1.1
STHS **Stebnicka Huta** 38.19 306 *e*P P 07 21 35.8 +1.3
STHS pmax pmax
comp=Z,5.0nm,0.7s
STHS **Stebnicka Huta** 38.19 306 *e*P P 07 21 35.8 +1.3
STHS *es*P sP 07 22 04.6 -4.6
STHS *e*PP PP 07 23 02.1 -1.4
NIE **Niedzica** 38.80 306 *e*P P 07 21 41.5 +1.8
NIE **Niedzica** 38.80 306 *e*P P 07 21 41.5 +1.8
OJC **Ojcow** 39.13 307 *e*P P 07 21 43.0 +0.7
OJC **Ojcow** 39.13 307 *e*P P 07 21 43.0 +0.7
LANS **Liptovska Anna** 39.35 306 *e*P P 07 21 46.5 +2.3
LANS *e* 07 23 14.2
LANS **Liptovska Anna** 39.35 306 *e*P P 07 21 46.5 +2.3
LANS *e*PP PP 07 23 14.2 -2.1
VYHS **Vyhne** 39.78 305 *e*P P 07 21 49.9 +2.1
VYHS pmax pmax
comp=Z,6.0nm,1.4s
VYHS **Vyhne** 39.78 305 *e*P P 07 21 49.9 +2.1
VYHS *es*P sP 07 22 18.9 -3.8
VYHS *e*PP PP 07 23 23.0 +2.0
MORC **Moravsky Berou** 40.59 307 ⇑*i*P P 07 21 55.8 +1.3
GKP **Gorka Klasztor** 40.80 312 *e*P P 07 21 57.7 +1.6
GKP **Gorka Klasztor** 40.80 312 *e*P P 07 21 57.7 +1.6
VRAC **Vranov** 41.23 306 P P 07 21 59.7 0.0
comp=Z,7.6nm,0.7s,baz=97,slow=9.7,SNR=11
DPC **Dobruska-Polom** 41.36 308 *e*P P 07 22 02.1 +1.3
DPC *e*PP PP 07 23 39.8 +1.8
DPC **Dobruska-Polom** 41.36 308 *e*P P 07 22 02.1 +1.3
DPC *e* 07 23 39.8
ARCES **ARCESS Array B** 41.37 338 P P 07 22 01.0 +0.4
comp=Z,30nm,0.7s,baz=115,slow=8.2,SNR=77
ARCES LR LR 07 39 54.2
comp=Z,85nm,18.7s,baz=107,slow=37
ARCES **ARCESS Array B** 41.37 338 *e*P P 07 22 01.1 +0.5
UPC **Upice** 41.55 308 *e*P P 07 22 04.1 +1.8
UPC **Upice** 41.55 308 *e*P P 07 22 04.1 +1.8
CONA **Conrad Observa** 41.80 304 *i* P P 07 22 05.1 +0.7
comp=Z,10nm,1.0s
ARSA **Arzberg** 42.09 303 *i* P P 07 22 08.5 +1.7
comp=Z,4.8nm,1.2s
SOKA **Soboth** 42.49 302 *i* P P 07 22 10.0 -0.1
comp=Z,3.9nm,0.4s
PRU **Pruhonice** 42.52 307 *e*P P 07 22 11.5 +1.3
PRU **Pruhonice** 42.52 307 *e*P P 07 22 11.5 +1.3
OBKA **Obir** 42.84 302 *i* P P 07 22 14.3 +1.3
comp=Z,4.1nm,0.8s
BRG **Berggiesshubel** 42.85 308 *i* P P 07 22 14.3 +1.5
comp=Z,15nm,0.7s
BRG *i* 07 22 53.0
comp=Z,8.0nm,0.9s
BRG *e*PP PcP 07 24 01.5 -0.5
comp=Z,12nm,1.3s
BRG **Berggiesshubel** 42.85 308 *i* P P 07 22 14.3 +1.5
BRG *i* 07 22 53.0
BRG *e* 07 24 01.5
BRG pmax pmax
comp=Z,15nm,0.7s
MOA **Molln** 42.88 304 *i* P P 07 22 13.4 +0.3
comp=Z,6.9nm,0.8s
GERES **GERESS Array B** 43.16 305 P P 07 22 16.0 +0.5
comp=Z,1.5nm,0.6s,baz=89,slow=5.6,SNR=7.8
GERES PP PcP 07 24 02.0 -1.2
comp=Z,1.4nm,0.7s,baz=80,slow=9.6,SNR=3.9
GERES LR LR 07 45 02.9
comp=Z,66nm,19.6s,baz=41,slow=42
KHC **Kasperske Hory** 43.21 306 *e*P P 07 22 17.8 +2.0
KHC *ex* x 07 22 29.5
KHC **Kasperske Hory** 43.21 306 *e*P P 07 22 17.8 +2.0
HFS **Hagfors** 43.30 322 P P 07 22 16.6 +0.3
comp=Z,32nm,0.5s,baz=103,slow=11,SNR=268
CLL **Collm** 43.42 309 *i* P P 07 22 18.8 +1.4
comp=Z,38nm,1.8s
CLL *i* 07 22 57.2
CLL *e*PP PP 07 24 01.0 +1.0
CLL **Collm** 43.42 309 *i* P P 07 22 18.8 +1.4
CLL *i* 07 22 57.2
CLL pmax pmax
comp=Z,38nm,1.8s
MYKA **Terra Mystica** 43.45 302 *i* P P 07 22 17.2 -0.6
comp=Z,3.8nm,0.6s
KBA **Koelnbreinsper** 43.59 303 *i* P P 07 22 20.5 +1.4
comp=Z,3.6nm,0.8s

YAK	Yakutsk	44.03	35	P		P	07 22 22.4	+0.3
	comp=Z,25nm,0.5s,baz=170,slow=0.6,SNR=7.1							
YAK	Yakutsk	44.03	35	*e*P		P	07 22 23.0	+0.9
YAK				*e*PP		pP	07 22 46.4	+0.7
YAK				*e*			07 24 02.9	
YAK				*e*			07 24 07.0	
YAK				*e*PPP		PPP	07 24 47.2	
YAK				*e*S		S	07 28 47.3	+0.9
YAK				*e**SS		sS	07 29 28.1	+1.0
YAK				*e*SS		SS	07 32 04.7	-2.0
YAK				*e*			07 32 11.4	
YAK				*e*SSS		SSS	07 32 54.7	
YAK				pmax	pmax			
	comp=Z,14nm,0.7s							
YAK				pmax	pmax			
	comp=E,6.0nm,0.8s							
YAK				pmax	pmax			
	comp=Z,74nm,3.1s							
YAK				pmax	pmax			
	comp=N,69nm,4.1s							
YAK				pmax	pmax			
	comp=E,54nm,4.0s							
YAK				smax	smax			
	comp=N,15nm,1.3s							
YAK				smax	smax			
	comp=E,24nm,1.5s							
ABTA	Abfaltersbach	44.20	303	*i* P		P	07 22 25.1	+1.3
	comp=E,3.0nm,0.7s							
NB2	NORSAR Subarra	44.62	323	P		P	07 22 26.8	-0.1
	comp=Z,22nm,0.5s,baz=95,slow=7.9							
NB2	NORSAR Subarra	44.62	323	P		P	07 22 26.8	-0.1
	baz=95,slow=7.9							
NOA	NORSAR Array B	44.62	323	P		P	07 22 26.7	-0.1
	comp=Z,24nm,0.6s,baz=97,slow=7.8,SNR=157							
NOA				PP		PP	07 24 13.8	+1.2
	comp=Z,3.9nm,0.7s,baz=95,slow=9.5,SNR=3.6							
MOTA	Moosalm	45.07	304	*i* P		P	07 22 30.2	-0.5
	comp=Z,2.9nm,0.5s							
KLR	Kul'dur	45.13	54	P		P	07 22 32.3	+1.2
	comp=Z,2.5nm,0.5s,baz=276,slow=9.5,SNR=10							
RETA	Reutte	45.27	304	*i* P		P	07 22 33.6	+1.2
	comp=Z,2.0nm,0.7s							
KONO	Kongsberg	45.32	321	*e*P		P	07 22 32.4	0.0
KONO				pmax	pmax			
	comp=Z,10.0nm,0.7s							
KONO	Kongsberg	45.32	321	*e*P		P	07 22 32.4	0.0
	comp=Z,10nm,0.7s							
FETA	Feichten	45.37	303	*i* P		P	07 22 33.0	-0.2
	comp=Z,4.4nm,0.9s							
TIXI	Tiksi	45.89	22	P		P	07 22 37.3	+0.7
	comp=Z,7.1nm,0.3s,baz=288,slow=4.0,SNR=7.7							
DAVA	Damuels	45.90	304	*i* P		P	07 22 37.1	-0.2
	comp=Z,9.2nm,0.7s							
DAVOX	Davos/Dischmat	45.98	303	P		P	07 22 38.2	+0.1
	comp=Z,2.5nm,0.4s,baz=90,slow=13,SNR=4.2							
USRK	Ussuriysk Ar.	46.13	61	P		P	07 22 39.5	+0.5
	comp=Z,0.6nm,0.3s,baz=302,slow=8.3,SNR=2.9							
BFO	Black Forest	46.76	305	*e*P		P	07 22 48.0	+4.1
JNU	Nakatsue	48.50	75	*e*P		P	07 22 58.2	+0.7
	comp=Z,8.7nm,0.8s							
KMBO	Kilima Mbogo	48.82	228	P		P	07 22 59.8	-0.5
	comp=Z,1.3nm,0.4s,baz=35,slow=15,SNR=3.9							
KBS	Kingsbay	48.82	347	*e*P		P	07 22 59.9	+0.6
KBS				pmax	pmax			
	comp=Z,23nm,0.8s							
KBS	Kingsbay	48.82	347	*e*P		P	07 22 59.9	+0.6
	comp=Z,23nm,0.8s							
KEST	Kesra	49.23	289	P		P	07 23 04.3	+1.1
	comp=Z,2.5nm,0.6s,baz=48,slow=4.7,SNR=5.0							
NKL	Nikolayevsk	50.13	47	*e*P		P	07 23 10.8	+1.2
NKL				*e*			07 23 41.2	
NKL				pmax	pmax			
	comp=Z,30nm,0.6s							
YSS	Yuzh-Sakhalins	52.81	55⇑	*e*P		P	07 23 32.2	+2.5
YSS				*e*			07 24 02.8	
YSS				pmax	pmax			
	comp=Z,20nm,0.4s							
MJAR	Matsushiro Arr	52.88	68	P		P	07 23 31.2	+0.7
	comp=Z,3.2nm,0.6s,baz=292,slow=9.7,SNR=12							
DAG	Danmarks Havn	54.95	344	*i* P		P	07 23 45.7	+0.9
DAG				*i*			07 24 24.8	
DAG	Danmarks Havn	54.95	344	*i* P		P	07 23 45.7	+0.9
DAG				*i*			07 24 24.8	
ESDC	Sonseca Array	57.67	298	P		P	07 24 03.8	-1.1
	comp=Z,0.6nm,0.4s,baz=54,slow=8.4,SNR=5.0							
BILL	Bilibino	58.71	26	*e*P		P	07 24 12.4	+0.9
BILL				*i* *PP		pP	07 24 35.5	-0.8
BILL				pmax	pmax			
	comp=Z,4.0nm,0.7s							
SUMG	Summit	61.28	341⇑	*i*P		P	07 24 30.7	+1.2
	comp=Z,19nm,0.7s							
SUMG	Summit	61.28	341⇑	*i*P		P	07 24 30.7	+1.2
SUMG				pmax	pmax			
	comp=Z,19nm,0.7s							
SUMG	Summit	61.28	341	*e*P		P	07 24 30.0	+0.5
	comp=Z,41nm,1.0s							
TORD	Torodi Ar. Bea	65.86	269	P		P	07 24 57.6	-2.3
	comp=Z,13nm,0.5s,baz=51,slow=6.0,SNR=50							
COLD	Coldfoot	72.11	16	*e*P		P	07 25 38.4	+0.6
	comp=Z,12nm,1.0s							
INK	Inuvik	74.06	9	*e*P		P	07 25 49.8	+0.5
INK				pmax	pmax			
	comp=Z,9.0nm,0.6s							
INK	Inuvik	74.06	9	*e*P		P	07 25 49.8	+0.5
	comp=Z,9.0nm,0.6s							
BPAW	Bear Paw Mtn.	74.52	18	*e*P		P	07 25 52.2	+0.1
	comp=Z,2.0nm,0.9s							
COLA	College	74.61	16	*e*P		P	07 25 53.2	+0.7
COLA				pmax	pmax			
	comp=Z,18nm,0.9s							
COLA	College	74.61	16	*e*P		P	07 25 53.2	+0.7
	comp=Z,18nm,0.9s							
DBIC	Dimbokro	74.83	267	P		P	07 25 53.0	-1.7
	comp=Z,5.2nm,0.6s,baz=34,slow=7.3,SNR=13							
ILAR	Eielson Array	74.92	16	P		P	07 25 54.0	-0.3
	comp=Z,5.1nm,0.9s,baz=316,slow=4.5,SNR=35							
ILAR	Eielson Array	74.92	16	P		P	07 25 54.0	-0.3
KIC	Kosan Boka	74.92	267	*e*P		P	07 25 52.9	-2.3
	comp=Z,12nm,0.6s							
TIC	Toumodi	74.98	267	*e*P		P	07 25 53.4	-2.1
KTH	Kantishna Hill	74.99	18	*e*P		P	07 25 55.1	+0.2
	comp=Z,13nm,0.9s							
PPLA	Purkeypile	75.21	19	*e*P		P	07 25 55.9	-0.3
	comp=Z,5.6nm,0.7s							
LIC	Lamto	75.23	267	*e*P		P	07 25 54.8	-2.2
	comp=Z,43nm,1.2s							
TRF	Thorofare Moun	75.24	18	*e*P		P	07 25 56.5	+0.1
	comp=Z,3.6nm,0.9s							
EGAK	Eagle	76.09	14	*e*P		P	07 26 01.0	-0.1
	comp=Z,3.0nm,0.8s							
DOT	Dot Lake	76.51	15	*e*P		P	07 26 03.4	0.0
	comp=Z,7.2nm,0.7s							
PAX	Paxson	76.79	16	*e*P		P	07 26 05.3	+0.1
PAX				pmax	pmax			
	comp=Z,3.0nm,0.6s							
PAX	Paxson	76.79	16	*e*P		P	07 26 05.2	+0.1
	comp=Z,3.3nm,0.6s							
DAWY	Dawson	77.07	13	*e*P		P	07 26 06.7	0.0
	comp=Z,14nm,1.3s							
PMR	Palmer	77.09	19	*e*P		P	07 26 06.0	-0.7
PMR				pmax	pmax			
	comp=Z,7.0nm,1.0s							
PMR	Palmer	77.09	19	*e*P		P	07 26 06.0	-0.7
	comp=Z,7.4nm,1.0s							
SML	Sawmill	77.11	18	*e*P		P	07 26 07.0	+0.1
SML				pmax	pmax			
	comp=Z,4.0nm,0.9s							
SML	Sawmill	77.11	18	*e*P		P	07 26 07.0	+0.1
	comp=Z,3.7nm,0.9s							
BOSA	Boshof	77.70	220	P		P	07 26 08.8	-1.8
	comp=Z,13nm,0.7s,baz=43,slow=3.4,SNR=18							
KDAK	Kodiak Island	79.31	22	*e*P		P	07 26 20.0	+1.0
YKA	Yellowknife Ar	81.42	3	P		P	07 26 30.5	+0.3
	comp=Z,5.3nm,0.6s,baz=350,slow=5.4,SNR=97							
WRA	Warramunga Arr	81.77	122	P		P	07 26 32.3	-0.4
	comp=Z,3.9nm,0.7s,baz=324,slow=4.9,SNR=53							
WRAB	Tennant Creek	81.77	122	*e*P		P	07 26 32.2	-0.5
WRAB				pmax	pmax			
	comp=Z,7.0nm,0.8s							
WRAB	Tennant Creek	81.77	122	*e*P		P	07 26 32.2	-0.5
	comp=Z,6.8nm,0.8s							
SCHQ	Schefferville	82.32	337	P		P	07 26 35.7	+0.5
	comp=Z,2.1nm,0.5s,baz=330,slow=3.4,SNR=5.6							
ASAR	Alice Springs	84.03	125	P		P	07 26 43.9	-0.4
	comp=Z,4.6nm,0.7s,baz=309,slow=4.7,SNR=49							
FFC	Flin Flon	89.13	356	*e*P		P	07 27 08.8	+0.1
FFC				pmax	pmax			
	comp=Z,9.0nm,1.1s							
FFC	Flin Flon	89.13	356	*e*P		P	07 27 08.8	+0.1
	comp=Z,8.5nm,1.1s							
EDM	Edmonton	90.74	3	*e*P		P	07 27 16.9	+0.6
EDM				pmax	pmax			
	comp=Z,10.0nm,1.0s							
EDM	Edmonton	90.74	3	*e*P		P	07 27 16.9	+0.6
	comp=Z,10nm,1.0s							
ULM	Lac du Bonnet	93.05	352	P		P	07 27 26.6	-0.4
	comp=Z,2.9nm,0.7s,baz=309,slow=3.9,SNR=5.6							
PDAR	Pinedale Array	101.29	1	Pdiff		Pdif	07 28 06.4	+1.7
	comp=Z,0.1nm,0.3s,baz=359,slow=5.9,SNR=3.6							
TXAR	Lajitas Array	114.52	355	PKP	PKPdf		07 32 53.7	+0.2
	comp=Z,0.2nm,0.8s,baz=2.5,slow=2.1,SNR=2.5							
CPUP	Villa Florida	135.35	268	PKP		PKPdf	07 33 31.4	-1.7
	comp=Z,1.4nm,0.6s,baz=143,slow=1.7,SNR=6.0							
LPAZ	La Paz	138.81	288	PKP		PKPdf	07 33 38.7	-1.8
	comp=Z,0.6nm,0.7s,baz=17,slow=1.6,SNR=3.7							
PLCA	Paso Flores	149.90	250	PKPbc		PKPbc	07 34 02.0	-1.2
	comp=Z,6.2nm,0.9s,baz=358,slow=2.7,SNR=9.1							

IDC 27 07:17:02.8±42.0, 24°.83S×176°.72W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.7/23, mbtmp3.9/3, Error ellipse: s-maj=766.9km s-min=161.2km az=89.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	37.18	249	P	P	07 24 14.6	-1.2
	1.9nm,0.6s,baz=119,slow=10,SNR=3.4						
ASAR	Alice Springs	44.84	261	P	P	07 25 19.2	+0.2
	0.7nm,0.7s,baz=108,slow=7.9,SNR=7.4						
WRA	Warramunga Arr	45.33	266	P	P	07 25 23.2	+0.3
	1.1nm,0.6s,baz=104,slow=7.8,SNR=17						

ISCJB 27 07:22:58.4±0.5, 10°.94N±0°.03×62°.59W±0°.03, h101km±6km, Error ellipse: s-maj=6.1km s-min=3.3km az=138.4
FUNV 27 07:22:59.9, 10°.91N×62°.49W, h95km, MW3.1
TRN 27 07:23:00.1, 10°.95N×62°.42W, h119km, MD3.8

ISC 27 07:22:58.2±1.3, 10°.90N±0°.04×62°.56W±0°.03, h109km±9km, n26, σ1°27/48, 2D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	Guiria	0.42	127	*e*P	Pn	07 23 14.7	+0.2
GUIV				*e*S	Sn	07 23 24.6	-2.1
CRUV	Carupano	0.70	251	*e*P	Pn	07 23 17.0	+0.5
CRUV				*e*S	Sn	07 23 29.2	-1.1
GUNV	Guanoco	0.82	207	*e*P	Pn	07 23 18.4	+0.8
GUNV				*e*S	Sn	07 23 31.3	-0.9
TRN	Trinidad (W)	1.17	102⇓	*i*P	Pn	07 23 22.7	+1.5
TRN				*e*S	Sn	07 23 38.3	-0.2
TPP	Pointe-a-Pierr	1.24	118	*e*P	Pn	07 23 23.3	+1.4
TPP				*e*S	Sn	07 23 40.7	+0.8
GRGR	Grenville	1.52	36	*e*P	Pn	07 23 25.6	+0.4
GRGR				*e*S	Sn	07 23 45.7	0.0
GRGR	Grenville	1.52	36	*e*P	Pn	07 23 25.6	+0.4
GRGR				*e*S	Sn	07 23 43.0	-2.7
TBH	Brigand Hill	1.53	106	*e*P	Pn	07 23 27.2	+1.8
TBH				*e*S	Sn	07 23 45.9	0.0
GRW	Mount Saint Ca	1.53	35	*e*P	Pn	07 23 27.4	+1.9
GRW				*e*S	Sn	07 23 46.5	+0.3
GRHS	Sauteurs	1.60	34	*e*P	Pn	07 23 28.0	+1.9
GRHS				*e*S	Sn	07 23 47.5	+0.1
GRSS	Sisters	1.67	34	*e*P	Pn	07 23 29.1	+2.0
GRSS				*e*S	Sn	07 23 48.6	-0.5
BOT	Bacolet	1.83	82⇓	*i*P	Pn	07 23 30.6	+1.5
BOT				*e*S	Sn	07 23 51.9	-0.7
ORIV	Oritupano	2.00	205	*e*P	Pn	07 23 32.6	+1.3
ORIV				*e*S	Sn	07 23 56.9	+0.5
TOSP	Speyside	2.03	79	*e*P	Pn	07 23 31.7	+0.1
TOSP				*e*S	Sn	07 23 55.9	-1.1
PCRV	Puerto La Cruz	2.16	251	*e*P	Pn	07 23 34.4	+1.1
PCRV				*e*S	Sn	07 23 59.6	-0.5
FCV	Fort Charlotte	2.59	30	*e*P	Pn	07 23 39.7	+0.8
FCV				*e*S	Sn	07 24 08.6	-1.4
SVB	Belmont	2.68	28	*e*P	Pn	07 23 40.4	+0.3
SVB				*e*S	Sn	07 24 10.9	-1.3
SVV	Soufriere Volc	2.74	29	*e*P	Pn	07 23 41.5	+0.7
SVV				*e*S	Sn	07 24 12.0	-1.6
RIOV	Rio Grande	2.91	165	*e*P	Pn	07 23 44.1	+1.0
RIOV				*e*S	Sn	07 24 15.1	-2.5
PRGV	PARIAGUAN	2.96	224	*e*P	Pn	07 23 44.5	+0.8
MCLT	Moule a Chique	3.21	29	*e*P	Pn	07 23 47.7	+0.6
MCLT				*e*S	Sn	07 24 22.6	-2.2
CUPV	Cœpira	3.28	255	*e*P	Pn	07 23 49.5	+1.5
CUPV				*e*S	Sn	07 24 25.4	-1.0
BIRV	Birongo	3.67	264	*e*P	Pn	07 23 54.8	+1.7
MERV	Las Mercedes	4.03	246	*e*P	Pn	07 23 58.9	+1.0
MERV				*e*S	Sn	07 24 43.4	-0.8
LUEV	Luepa	5.14	168	*e*P	Pn	07 24 12.4	-0.8
BAUV	El Baul	5.74	251	*e*P	Pn	07 24 21.4	+0.4

IDC 27 07:28:37.7±2.4, 17°.56S×177°.79W, h0km, mb4.0/4, mb1 4.3/4, mb1mx3.9/21, mbtmp4.0/4, Error ellipse: s-maj=227.1km s-min=26.3km az=157.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	45.28	259	P	P	07 36 57.4	-0.2
	1.1nm,0.5s,baz=96,slow=7.1,SNR=30						
ASAR	Alice Springs	45.46	254	P	P	07 36 58.8	-0.1
	5.0nm,0.7s,baz=87,slow=8.5,SNR=71						
TXAR	Lajitas Array	85.31	57	P	P	07 41 17.7	+0.6
	0.6nm,0.8s,baz=216,slow=5.3,SNR=7.6						
PDAR	Pinedale Array	86.69	43	P	P	07 41 22.9	-0.9
	0.3nm,0.6s,baz=222,slow=2.4,SNR=3.5						

ISK 27 07:34:16.7, 40°.80N×27°.73E, h10km, ML2.6
DDA 27 07:34:16.2, 40°.86N×27°.76E, h3km, Md3.0
CSEM 27 07:34:17.1±0.2, 40°.82N×27°.73E, h8km, ML2.6, Error ellipse: s-maj=5.3km s-min=2.9km az=171.0

ISC 27 07:34:16.1±0.9, 40°.84N±0°.03×27°.74E±0°.02, h14km±8km, n71, σ0°62/92, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBT4	Kumbag-Tekirda	0.16	268	*e*PG	Pb	07 34 20.6	-0.2
SBT4	Kumbag-Tekirda	0.16	268	*e*Pg	Pb	07 34 20.6	-0.2
SBT3	Marmara-Eregli	0.18	74	*e*PG	Pb	07 34 21.4	+0.3
SBT3	Marmara-Eregli	0.18	74	*e*Pg	Pb	07 34 21.5	+0.3
TKR	Tekirdag	0.22	315	*e*PG	Pb	07 34 22.2	+0.3
TKR	Tekirdag	0.22	315	*e*Pg	Pb	07 34 22.3	+0.3
MRMT	Marmara Adasi	0.26	206	*e*PG	Pg	07 34 21.6	0.0
MRMT				*e*SG	Sg	07 34 25.6	+0.2
MRMT	Marmara Adasi	0.26	206	*e*Pg	Pg	07 34 21.6	0.0
MRMT				*e*Sg	Sg	07 34 25.6	+0.2
SART	Tekirdag	0.45	251	*i* P	Pb	07 34 25.7	-0.3
SART				*i* S	Sb	07 34 32.2	-0.4
SART	Tekirdag	0.45	251	P	Pb	07 34 25.7	-0.3
SART				S	Sb	07 34 32.2	-0.4
RKY	Sarkoy-Tekirda	0.46	251	*e*PG	Pb	07 34 25.6	-0.3
RKY				*e*SG	Sb	07 34 32.3	-0.4
RKY	Sarkoy-Tekirda	0.46	251	*e*Pg	Pb	07 34 25.7	-0.3
RKY				*e*Sg	Sb	07 34 32.3	-0.4
EDC	Edincik	0.50	169	*e*PG	Pg	07 34 26.2	+0.3
EDC	Edincik	0.50	169	*e*Pg	Pg	07 34 26.2	+0.3
KRBG	Karabiga-Canak	0.56	218	*e*PG	Pg	07 34 27.2	+0.1
KRBG	Karabiga-Canak	0.56	218	*e*Pg	Pg	07 34 27.2	+0.1
ELBA	Catalca	0.61	59	*i* P	Pg	07 34 27.7	-0.3
ELBA	Catalca	0.61	59	P	Pg	07 34 27.7	-0.3
KCTX	Karacabey (Bur	0.73	140	*e*PG	Pb	07 34 31.1	+0.3
KCTX	Karacabey (Bur	0.73	140	*e*Pg	Pb	07 34 31.1	+0.3
CTYL	Yalikoy Yolu	0.76	33	*e*PG	Pn	07 34 32.5	+0.1
CTYL	Yalikoy Yolu	0.76	33	*e*Pg	Pn	07 34 32.6	+0.1
KESN	Edirne-Kesan	0.81	270	*i* P	Pn	07 34 32.7	-0.8
KESN				*i* S	Sb	07 34 43.9	+0.8
KESN	Edirne-Kesan	0.81	270	P	Pn	07 34 32.7	-0.8
KESN				S	Sb	07 34 43.9	+0.8
LPK	Lapseki	0.88	239	*e*PG	Pg	07 34 33.1	-0.1
LPK	Lapseki	0.88	239	*e*Pg	Pg	07 34 33.1	-0.1
SBT5	Esenkoy-Cinarc	0.89	103	*e*PG	Pn	07 34 35.0	+0.8
SBT5	Esenkoy-Cinarc	0.89	103	*e*Pg	Pn	07 34 35.0	+0.8
ARMT	Armutlu	0.89	107	*e*PG	Pn	07 34 34.4	+0.1
ARMT				*e*SG	Sn	07 34 47.3	+0.2
ARMT	Armutlu	0.89	107	*e*Pg	Pn	07 34 34.4	+0.1
ARMT				*e*Sg	Sn	07 34 47.3	+0.2
ERIK	Erikli-Kesan	0.95	260	*e*PG	Pn	07 34 35.2	+0.1
ERIK	Erikli-Kesan	0.95	260	*e*Pg	Pn	07 34 35.2	+0.1
MDNY	Mudanya-Bursa	0.98	118	*e*PG	Pn	07 34 36.0	+0.4
MDNY	Mudanya-Bursa	0.98	118	*e*Pg	Pn	07 34 36.0	+0.4
GELI	Tayfur-Gelibol	1.06	246	*e*PG	Pn	07 34 36.4	-0.2
GELI	Tayfur-Gelibol	1.06	246	*e*Pg	Pn	07 34 36.4	-0.2
KLYT	Kilyos	1.07	67	*e*PN	Pg	07 34 37.3	+0.6
KLYT	Kilyos	1.07	67	*e*Pn	Pg	07 34 37.3	+0.6
GEMT	Gemlik	1.17	109	*e*PN	Pg	07 34 38.8	+0.2
GEMT	Gemlik	1.17	109	*e*Pn	Pg	07 34 38.8	+0.2
BALB	Balikesir	1.20	175	*e*PN	Pg	07 34 39.6	+0.4
BALB	Balikesir	1.20	175	*e*Pn	Pg	07 34 39.6	+0.4
ENEZ	Enez	1.21	266	*e*PN	Pg	07 34 40.2	+0.7
ENEZ	Enez	1.21	266	*e*Pn	Pg	07 34 40.2	+0.7
ALN	Alexandroupoli	1.29	273	*e*PN	Pg	07 34 41.7	+0.7
ALN	Alexandroupoli	1.29	273	*e*Pn	Pg	07 34 41.7	+0.7
IZI	Iznik	1.41	110	*e*PN	Pg	07 34 42.8	-0.4
IZI	Iznik	1.41	110	*e*Pn	Pg	07 34 42.8	-0.4
HRT	Hereke	1.46	90	*e*PN	Pb	07 34 43.2	+0.1
HRT	Hereke	1.46	90	*e*Pn	Pb	07 34 43.2	+0.1
EZN	Ezine	1.48	228	*e*PN	Pb	07 34 43.7	+0.3
EZN	Ezine	1.48	228	*e*Pn	Pb	07 34 43.7	+0.3
GADA	Gvkgeada	1.55	246	*e*PN	Pb	07 34 43.8	-0.8
GADA	Gvkgeada	1.55	246	*e*Pn	Pb	07 34 43.8	-0.8
ADVT	Abdulvahap	1.57	104	*e*PN	Pg	07 34 45.8	-0.5
ADVT	Abdulvahap	1.57	104	*e*Pn	Pg	07 34 45.8	-0.5
BOZC	Bozcaada	1.63	233	*i* P	Pb	07 34 45.4	-0.6
BOZC				*i* S	Sg	07 35 08.4	-0.2
AYVA	Ayvalik	1.73	208	*i* P	Pg	07 34 49.4	+0.1
AYVA				*i* S	Sg	07 35 11.3	-0.3
AYVA	Ayvalik	1.73	208	P	Pg	07 34 49.4	+0.1
AYVA				S	Sg	07 35 11.3	-0.3
KAND	Kocaeli-Kandir	1.87	81	*i* P	Pn	07 34 47.9	+0.1
KAND				*i* S	Sb	07 35 14.8	+1.4
KAND	Kocaeli-Kandir	1.87	81	P	Pn	07 34 47.9	+0.1
KAND				S	Sb	07 35 14.8	+1.4
DEMI	Demirci	1.94	157	*i* P	Pn	07 34 48.8	0.0
DEMI	Demirci	1.94	157	P	Pn	07 34 48.8	0.0
GDZ	Gediz	2.20	142	*i* P	Pg	07 34 57.1	-1.1
GDZ				*i* S	Sg	07 35 25.5	-1.2
GDZ	Gediz	2.20	142	P	Pg	07 34 57.2	-1.1
GDZ				S	Sg	07 35 25.5	-1.2
BORA	Eskisehir	2.28	114	*i* P	Pb	07 34 57.0	-0.1
BORA	Eskisehir	2.28	114	P	Pb	07 34 57.0	-0.1
SAHE	Sakarya_HENDEK	2.36	89	*i* P	Pb	07 34 58.3	-0.1
SAHE				*i* S	Sg	07 35 29.9	-2.1
SAHE	Sakarya_HENDEK	2.36	89	P	Pb	07 34 58.3	-0.1
SAHE				S	Sg	07 35 29.9	-2.1
URLA	Izmir	2.63	200	*i* P	Pb	07 35 04.2	+1.2
URLA				*i* S	Sg	07 35 40.4	-0.1
URLA	Izmir	2.63	200	P	Pb	07 35 04.2	+1.2
URLA				S	Sg	07 35 40.4	-0.1

IDC 27 07:36:08.4±1.8, 32°.48S×177°.89W, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.6/23, mbtmp3.5/4, ML3.2/1, Error ellipse: s-maj=61.3km s-min=34.3km az=152.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	7.07	214	Pn	Pn	07 37 52.9	-0.1
	0.4nm,0.3s,baz=296,slow=14,SNR=2.6						
URZ				Sn	Sn	07 39 09.2	-4.9
	1.2nm,0.3s,baz=230,slow=22,SNR=8.0						
ASAR	Alice Springs	43.13	269	P	P	07 44 10.6	-0.3
	0.4nm,0.5s,baz=111,slow=7.8,SNR=5.0						
WRA	Warramunga Arr	44.31	274	P	P	07 44 19.9	-0.3
	0.3nm,0.3s,baz=112,slow=8.1,SNR=16						
TXAR	Lajitas Array	93.42	57	P	P	07 49 25.0	-0.9
	0.1nm,0.4s,baz=233,slow=7.5,SNR=2.5						
FINES	FINESS Array B	147.12	339	PKPbc	PKPbc	07 55 53.1	+0.5
	1.1nm,0.8s,baz=29,slow=3.2,SNR=3.2						

ISCJB 27 07:37:34.5±0.7, 10°.94N±0°.03×62°.14W±0°.04, h108km±6km, Error ellipse: s-maj=6.7km s-min=4.2km az=32.3
TRN 27 07:37:35.7, 10°.93N×62°.13W, h105km, MD3.3
FUNV 27 07:37:36.5, 10°.94N×62°.10W, h99km, MW2.6

ISC 27 07:37:34.8±1.4, 10°.92N±0°.04×62°.14W±0°.04, h110km±9km, n21, σ0°98/36, 1C-1D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	Guiria	0.29	197	*e*P	Pn	07 37 51.0	+0.4
GUIV				*e*S	Sn	07 38 01.4	-1.0
TCE	Chacachacare	0.44	121	*e*P	Pn	07 37 50.5	-0.8
TCE				*e*S	Sn	07 38 03.5	-0.2
TRN	Trinidad (

comp=Z,20nm,21.9s,baz=0.0,slow=31

TXAR					Lg	Lg	07 56 38.4		
	0.4nm,0.3s,baz=221,slow=23,SNR=5.8								
PDAR	**Pinedale Array**	**18.53**	**359**	P		**Pn**	**07 57 17.8**	**+0.1**	
	0.1nm,0.3s,baz=176,slow=13,SNR=9.0								
YKA	**Yellowknife Ar**	**38.48**	**356**	P		**P**	**08 00 23.9**	**+1.4**	
	0.6nm,0.9s,baz=174,slow=8.5,SNR=4.4								

IDC 27 08:01:43.6±3.0, 27°71'S×176°41'W, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.6/34, mbtmp3.7/4, ML4.3/1, Error ellipse: s-maj=81.3km s-min=32.0km az=124.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
RAO	**Raoul Island**	**2.03**	**220**	Pn		Pn	08 02 18.6		-0.5
	114nm,0.3s,baz=47,slow=19,SNR=4.1								
RAO				Sn		Sn	08 02 44.6		-0.6
	200nm,0.3s,baz=54,slow=19,SNR=5.7								
STKA	**Stephens Creek**	**36.52**	**253**	P		P	08 08 51.9		+1.1
	1.5nm,0.8s,baz=105,slow=9.6,SNR=3.0								
ASAR	**Alice Springs**	**44.72**	**264**	P		P	08 09 58.8		0.0
	0.2nm,0.6s,baz=91,slow=7.4,SNR=3.3								
WRA	**Warramunga Arr**	**45.47**	**269**	P		P	08 10 04.3		-0.5
	0.2nm,0.3s,baz=107,slow=7.9,SNR=6.9								
FINES	**FINESS Array B**	**143.06**	**342**	PKP		PKPbc	08 21 16.2		+0.6
	0.4nm,0.4s,baz=64,slow=3.2,SNR=2.9								
AKASG	**Malin Array Be**	**149.91**	**327**	PKPbc		PKPbc	08 21 35.3		-0.2
	1.8nm,0.5s,baz=49,slow=3.5,SNR=4.3								

MAN ***27*** *08:01:51, 15°.09N×119°.82E, h24km, mb4.5, ML3.4, MS3.2*
ISCJB ***27*** *08:01:53.2±0.7, 15°.19N±0°.09×120°.0E±0°.1, h55km, mb3.8/6, MS3.1/2, Error ellipse: s-maj=19.3km s-min=7.1km az=142.6*
IDC ***27*** *08:01:57.4±1.1, 14°.84N×120°.09E, h98km±13km, mb3.5/7, mb1 3.7/7, mb1mx3.3/50, mbtmp3.8/7, MS3.1/2, Ms1 3.2/2, ms1mx2.5/32, Error ellipse: s-maj=48.2km s-min=15.9km az=58.0*
ISC 27 08:01:54.0±0.9, 15°.11N±0°.08×120°.0E±0°.1, h55km, n13, σ1§90/15, mb3.8/6, 1C-2D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
PCPH	**Palayan**	**1.14**	**67**	*e*P		**Pn**	**08 02 13.4**		**-0.3**
PCPH				*e*S		Sn	08 02 47.6		+19
TGY	**Tagaytay City**	**1.35**	**138**	P		**Pn**	**08 02 17.6**		**+1.0**
	202nm,0.3s,baz=293,slow=7.7,SNR=12								
TGY				S		**Sn**	**08 02 35.4**		**+2.0**
	321nm,0.3s,baz=221,slow=20,SNR=11								
TGY	**Tagaytay City**	**1.35**	**138**	*e*P		**Pn**	**08 02 16.9**		**+0.4**
TGY				*i* S		**Sn**	**08 02 35.6**		**+2.2**
PGP	**Puerto Galera**	**1.84**	**150**	*i*P		**Pn**	**08 02 22.3**		**-1.0**
PGP				*i* S		**Sn**	**08 02 47.7**		**+2.2**
CMAR	**Chiang Mai Arr**	**20.44**	**282**	P		**P**	**08 06 29.0**		**+2.0**
	0.7nm,0.3s,baz=102,slow=8.4,SNR=2.7								
CMAR				LR		LR	08 13 49.2		
	comp=Z,24nm,19.7s,baz=25,slow=35								
WRA	**Warramunga Arr**	**37.58**	**158**	P		**P**	**08 08 59.8**		**-3.6**
	1.8nm,0.7s,baz=331,slow=10.0,SNR=32								
ASAR	**Alice Springs**	**40.87**	**160**	P		**P**	**08 09 28.0**		**-2.8**
	0.8nm,0.6s,baz=338,slow=6.8,SNR=15								
KURBB	**Kurchatov Arra**	**48.65**	**326**	P		**P**	**08 10 33.3**		**+1.0**
	0.5nm,0.7s,baz=120,slow=8.4,SNR=4.9								
BVAR	**Borovoye Array**	**54.24**	**325**	P		**P**	**08 11 15.3**		**+1.2**
	0.4nm,0.4s,baz=107,slow=4.8,SNR=2.9								
ATD	**Arta Tunnel**	**74.83**	**278**	LR		LR	08 46 35.4		
	comp=Z,26nm,18.1s,slow=36								
FINES	**FINESS Array B**	**78.73**	**331**	P		**P**	**08 13 50.4**		**+0.1**
	0.7nm,0.5s,baz=69,slow=4.6,SNR=4.8								
NB2	**NORSAR Subarra**	**85.70**	**332**	P		**P**	**08 14 26.1**		**-0.8**
	comp=Z,0.7nm,0.7s,baz=66,slow=5.1								
NOA	**NORSAR Array B**	**85.70**	**332**	P		**P**	**08 14 26.1**		**-0.8**
	comp=Z,1.2nm,0.8s,baz=68,slow=5.0,SNR=4.3								

CASC ***27*** *08:04:36.0±1.3, 13°.22N×91°.02W, h0km±11km, ML3.4, mb4.1(NEIC)*
ISCJB ***27*** *08:04:42.0±0.5, 13°.77N±0°.06×90°.84W±0°.04, h29km, mb4.2/41, MS3.7/15, Error ellipse: s-maj=10.0km s-min=3.7km az=25.8*
NEIC ***27*** *08:04:44.8±1.5, 13°.79N×90°.66W, h38km±14km, mb4.1/41, Error ellipse: s-maj=18.0km s-min=9.5km az=217.0*
IDC ***27*** *08:04:47.5±3.1, 14°.13N×90°.74W, h59km±27km, mb3.8/9, mb1 4.0/11, mb1mx3.8/40, mbtmp4.0/11, ML3.7/2, MS3.7/14, Ms1 3.7/14, ms1mx3.5/28, Error ellipse: s-maj=33.2km s-min=17.4km az=39.0*
ISC 27 08:04:42.7±0.7, 13°.65N±0°.09×90°.90W±0°.05, h29km, n182, σ1§59/165, mb4.2/42, MS3.7/15, 1C, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
IXG	**Ixpaco**	**0.68**	**40**	*i*P		**Pn**	**08 04 57.7**		**+1.1**
CUS1	**Cusmapa**	**0.97**	**74**	*e*P		**Pb**	**08 05 00.1**		**-0.8**
CUS1				*e*S		**Sn**	**08 05 18.0**		**+4.9**
MONT	**Ecomontaæa**	**1.24**	**80**	*e*P		**Pb**	**08 05 03.3**		**-2.3**
RTR	**El Retiro**	**1.25**	**78**	*e*P		**Pn**	**08 05 03.0**		**-1.3**
SBLS	**San Blas**	**1.26**	**81**	*e*P		**Pn**	**08 05 03.1**		**-1.4**
RBDL	**Robledal**	**1.27**	**68**	*e*P		**Pb**	**08 05 04.5**		**-1.6**
SNJE	**San Jose**	**1.28**	**80**	*e*P		**Pb**	**08 05 04.7**		**-1.6**
BOQS	**Boqueron**	**1.58**	**87**	*e*P		**Pn**	**08 05 08.0**		**-1.0**
SNET	**Serv Nac Est T**	**1.63**	**88**	*e*P		**Pn**	**08 05 08.0**		**-1.5**
SNET				AML		AML	08 05 20.6		
	comp=Z,417nm,0.4s								
SNET				*e*S		**Sb**	**08 05 33.6**		**+1.4**
LFU	**La Fuente**	**1.74**	**86**	*e*P		**Pb**	**08 05 10.9**		**-3.1**
LFRS	**El Faro**	**1.79**	**91**	*e*P		**Pn**	**08 05 10.1**		**-1.6**
LBRS	**Las Brisas**	**1.81**	**87**	*e*P		**Pn**	**08 05 11.5**		**-0.5**
MRL	**Marmol**	**1.83**	**40**	*e*P		**Pb**	**08 05 14.5**		**-1.2**
CCIG	**Comitan**	**2.88**	**336**	*e*Pn		**Pb**	**08 05 30.9**		**-2.5**
CMIG	**Matias Romero**	**5.14**	**312**	P		**Pn**	**08 05 57.7**		**-0.1**
	comp=Z,0.7nm,0.3s,baz=128,slow=12,SNR=18								
CMIG				S		**Sn**	**08 06 57.2**		**+0.9**
	comp=Z,1.6nm,0.3s,baz=98,slow=16,SNR=3.3								
TLIG	**Tlapa**	**8.35**	**299**	*e*Pn		**Pn**	**08 06 43.1**		**+1.2**
TLIG				*e*Sn		Sb	08 08 48.0		+2.4
ZAIG	**Zacatecas**	**14.31**	**311**	*e*Pn		**P**	**08 08 13.7**		**+3.1**
034A	**Hebbronville**	**15.20**	**333**	P		**P**	**08 08 20.0**		**-0.1**
	baz=149								
HELC	**Santa Helena**	**16.85**	**115**	*e*Pn		**Pn**	**08 08 36.0**		**-1.0**
	comp=Z,18nm,1.1s								
438A	**Sam Houston St**	**17.54**	**347**	P		**P**	**08 08 48.4**		**+2.4**
	baz=164								
342A	**Flagon Creek P**	**17.69**	**356**	P		**P**	**08 08 49.8**		**+2.1**
	baz=175								
ROSC	**El Rosal**	**18.55**	**117**	P		**P**	**08 08 56.9**		**-0.8**
	comp=Z,0.3nm,0.3s,baz=302,slow=9.5,SNR=5.4								
ROSC	**El Rosal**	**18.55**	**117**	*e*P		**P**	**08 08 56.6**		**-1.0**
	comp=Z,14nm,1.3s								
433A	**Art**	**18.62**	**337**	P		**Pn**	**08 08 59.9**		**+1.5**
	baz=154								
334A	**Lometa**	**18.85**	**340**	P		**Pn**	**08 09 01.8**		**+0.6**
	baz=157								
333A	**Richland Sprin**	**19.10**	**338**	P		**Pn**	**08 09 04.5**		**+0.3**
	baz=155,SNR=10								
HPIG		**19.12**	**316**	*e*P		**Pn**	**08 09 07.6**		**+3.0**
	comp=Z,3.6nm,0.9s								
Z42A	**Norrel Spur, H**	**19.56**	**357**	P		**Pn**	**08 09 09.3**		**-0.4**
	baz=176								
TXAR	**Lajitas Array**	**19.59**	**325**	P		**P**	**08 09 08.0**		**-0.7**
	comp=Z,0.1nm,0.3s,baz=155,slow=11,SNR=26								
TXAR	**Lajitas Array**	**19.59**	**325**	P		**P**	**08 09 08.0**		**-0.7**
TX31	**Lajitas Ar. Si**	**19.59**	**325**	*e*P		**Pn**	**08 09 09.8**		**-0.3**
TX31				*e*P		**P**	**08 09 10.2**		**+1.5**
Z40A	**Long Farm, Mag**	**19.66**	**354**	P		**Pn**	**08 09 10.4**		**-0.4**
	baz=172								
233A	**Rising Star**	**19.70**	**339**	P		**Pn**	**08 09 11.3**		**0.0**
	baz=156								
WLAR	**White Oak Lake**	**20.05**	**355**	*e*P		**Pn**	**08 09 16.1**		**+0.7**
	comp=Z,16nm,1.0s								
Y41A	**Eaglette Beard**	**20.20**	**356**	P		Pn	08 09 16.5		-0.8
	baz=174								
133A	**Hamilton Ranch**	**20.25**	**340**	P		Pn	08 09 17.0		-0.8
	baz=156								
Y39A	**Lockesburg**	**20.41**	**352**	P		Pn	08 09 18.2		-1.4
	baz=170								
SDV	**Santo Domingo**	**20.43**	**101**	P		Pn	08 09 20.7		+0.4
	comp=Z,4.1nm,0.5s,baz=305,slow=12,SNR=4.4								
SDV	**Santo Domingo**	**20.43**	**101**	*e*P		**P**	**08 09 16.4**		**-1.7**
	comp=Z,5.6nm,0.6s								
ABTX	**Abilene, Hawle**	**20.51**	**339**	P		Pn	08 09 19.4		-1.5
	baz=154								
ABTX	**Abilene, Hawle**	**20.51**	**339**	*e*P		Pn	08 09 19.3		-1.6
	comp=Z,7.2nm,0.9s								
Z33A	**Whitaker Ranch**	**20.82**	**341**	P		Pn	08 09 23.9		-0.6
	baz=157								
Y35A	**Marietta**	**20.92**	**346**	P		Pn	08 09 24.7		-1.0
	baz=162								
MIAR	**Mount Ida**	**20.95**	**354**	P		Pn	08 09 24.5		-1.4
	baz=172								
MIAR	**Mount Ida**	**20.95**	**354**	*e*P		Pn	08 09 23.7		-2.2
	comp=Z,7.5nm,1.1s								
X39A	**Fountain Ranch**	**20.97**	**353**	P		Pn	08 09 24.5		-1.8
	baz=171								
LPIG	**La Paz**	**21.07**	**302**	LR		LR	08 18 28.6		
	comp=Z,100nm,18.3s,baz=123,slow=39								
UALR	**University of**	**21.08**	**357**	*e*P		**P**	**08 09 26.0**		**+1.4**
	comp=Z,8.8nm,0.8s								
X38A	**Whitesboro**	**21.23**	**351**	P		**P**	**08 09 27.2**		**+0.9**
	baz=169								
X37A	**Clayton**	**21.24**	**350**	P		**P**	**08 09 27.7**		**+1.3**
	baz=167								
X35A	**Drake**	**21.38**	**346**	P		**P**	**08 09 29.4**		**+1.5**
	baz=163								
W41B	**Gary Mavity, V**	**21.47**	**357**	P		**P**	**08 09 28.9**		**+0.1**
	baz=176								
X301	**Greenbrier Sit**	**21.54**	**357**	*e*P		**P**	**08 09 30.9**		**+1.3**
	comp=Z,4.1nm,0.8s								
W40A	**Ferguson Farm,**	**21.54**	**355**	P		**P**	**08 09 30.5**		**+0.9**
	baz=174								
WHAR	**Wooly Hollow**	**21.59**	**357**	*e*P		**P**	**08 09 30.9**		**+0.8**
	comp=Z,6.6nm,1.0s								
X201	**Greenbrier Sit**	**21.59**	**357**	*e*P		**P**	**08 09 31.0**		**+0.8**
	comp=Z,4.4nm,0.9s								
W39A	**Magazine**	**21.61**	**354**	P		**P**	**08 09 31.3**		**+0.9**
	baz=172,SNR=5.3								
X34A	**Smith Ranch, M**	**21.79**	**344**	P		**P**	**08 09 33.3**		**+1.0**
	baz=161								
W37B	**Quinton**	**21.79**	**350**	P		**P**	**08 09 32.8**		**+0.5**
	baz=167								
W36A	**Wetumka**	**21.93**	**348**	P		**P**	**08 09 34.3**		**+0.5**
	baz=165								
X32A	**Elmer**	**22.03**	**341**	P		**P**	**08 09 36.2**		**+1.3**
	baz=157								
V42A	**Cord**	**22.07**	**359**	P		**P**	**08 09 35.0**		**-0.3**
	baz=178								
V41A	**Mountainview**	**22.07**	**357**	P		**P**	**08 09 35.1**		**-0.3**
	baz=176								
W35A	**Tecumseh**	**22.08**	**347**	P		**P**	**08 09 36.1**		**+0.6**
	baz=164								
V40A	**Witts Springs**	**22.13**	**356**	P		**P**	**08 09 35.7**		**-0.4**
	baz=174,SNR=9.0								
WMOK	**Wichita Mounta**	**22.18**	**343**	P		**P**	**08 09 36.7**		**+0.2**
	baz=159								
WMOK	**Wichita Mounta**	**22.18**	**343**	*e*P		**P**	**08 09 36.3**		**-0.2**
V39A	**Pettigrew**	**22.23**	**354**	P		**P**	**08 09 36.6**		**-0.5**
	baz=172,SNR=8.9								
MNTX	**Cornudas Mount**	**22.34**	**326**	P		**P**	**08 09 37.9**		**-0.5**
	baz=140,SNR=13								
MNTX	**Cornudas Mount**	**22.34**	**326**	*e*P		**P**	**08 09 37.9**		**-0.5**
	comp=Z,7.0nm,0.8s								
V38A	**Canehill**	**22.34**	**352**	P		**P**	**08 09 38.0**		**-0.3**
	baz=170								
V37A	**Hulbert**	**22.47**	**351**	P		**P**	**08 09 39.4**		**-0.2**
	baz=169								
U42A	**Renenden**	**22.61**	**359**	P		**P**	**08 09 41.1**		**0.0**
	baz=178								
U41A	**Viola**	**22.62**	**358**	P		**P**	**08 09 40.7**		**-0.5**
	baz=177								
W32A	**Sentinel**	**22.67**	**342**	P		**P**	**08 09 42.0**		**+0.2**
	baz=158								
U40A	**Yellville**	**22.68**	**356**	P		**P**	**08 09 41.0**		**-0.9**
	baz=174,SNR=7.7								
HHAR	**Hobbs**	**22.70**	**354**	*e*P		**P**	**08 09 41.8**		**-0.3**
	comp=Z,3.4nm,0.9s								
U39A	**Green Forest**	**22.76**	**355**	P		**P**	**08 09 42.1**		**-0.6**
	baz=173								
TKL	**Tuckaleechee C**	**22.84**	**15**	P		**P**	**08 09 41.4**		**-2.1**
	comp=Z,2.7nm,0.8s,baz=192,slow=15,SNR=3.1								
TKL				LR		LR	08 19 43.2		
	comp=Z,371nm,19.3s,baz=206,slow=40								
MSTX	**Muleshoe**	**22.92**	**334**	*e*P		**P**	**08 09 45.6**		**+1.1**
	comp=Z,4.7nm,0.8s								
PBMO	**Poplar Bluff**	**23.04**	**1**	*e*P		**P**	**08 09 46.9**		**+1.3**
	comp=Z,5.8nm,1.0s								
U35A	**Pawnee**	**23.22**	**348**	P		**P**	**08 09 47.4**		**-0.1**
	baz=165								
AMTX	**Amarillo**	**23.28**	**337**	P		**P**	**08 09 48.4**		**+0.2**
	baz=152								
T41A	**Mountain View**	**23.31**	**358**	P		**P**	**08 09 48.2**		**-0.1**
	baz=177								
T39A	**Clever**	**23.39**	**355**	P		**P**	**08 09 48.2**		**-0.9**
	baz=173,SNR=6.1								
T40A	**Mansfield**	**23.45**	**357**	P		**P**	**08 09 48.7**		**-1.0**
	baz=176,SNR=6.2								
T38A	**Diamond**	**23.49**	**353**	P		**P**	**08 09 49.0**		**-1.1**
	baz=171,SNR=6.0								
T37A	**Cheneyville 18**	**23.65**	**352**	P		**P**	**08 09 51.0**		**-0.6**
	baz=170,SNR=7.0								
S41A	**Jillco Farms,**	**23.85**	**358**	P		**P**	**08 09 52.8**		**-0.7**
	baz=177								
S40A	**Lebanon**	**23.90**	**357**	P		**P**	**08 09 53.0**		**-0.9**
	baz=176,SNR=5.3								
S38A	**Stockton**	**24.04**	**354**	P		**P**	**08 09 54.4**		**-0.8**
	baz=172,SNR=11								
S39A	**Bolivar**	**24.04**	**355**	P		**P**	**08 09 54.1**		**-1.2**
	baz=174,SNR=13								
S37A	**Fort Scott**	**24.27**	**352**	P		**P**	**08 09 57.1**		**-0.3**
	baz=170								
121A	**Cookes Peak, D**	**24.32**	**323**	P		**P**	**08 09 58.5**		**+0.4**
	baz=136,SNR=10								
121A	**Cookes Peak, D**	**24.32**	**323**	*e*P		**P**	**08 09 59.5**		**+1.4**
	comp=Z,10.0nm,0.9s								
S36A	**Lake Cedric, C**	**24.34**	**351**	P		**P**	**08 09 57.1**		**-0.9**
	baz=168								
R40A	**Maddies Statio**	**24.57**	**357**	P		**P**	**08 09 59.9**		**-0.2**
	baz=176								
R38A	**Fenwick Farm,**	**24.59**	**354**	P		**P**	**08 09 59.6**		**-0.7**
	baz=172,SNR=7.0								
WCI	**Wyandotte Cave**	**24.82**	**9**	*e*P		**P**	**08 10 02.4**		**-0.1**
WCI				*e*pP		**sP**	**08 10 18.8**		**+4.3**
BNM	**Barren Site**	**24.90**	**328**	*e*P		**P**	**08 10 04.2**		**+0.7**
Q38A	**Cooks Store, C**	**25.33**	**355**	P		**P**	**08 10 06.6**		**-0.3**
	baz=173								
ANMO	**Albuquerque**	**25.44**	**329**	P		**P**	**08 10 09.0**		**+0.7**
	baz=142								
ANMO	**Albuquerque**	**25.44**	**329**	*e*P		**P**	**08 10 09.2**		**+0.9**
	comp=Z,3.9nm,1.4s								
P40A	**Paris**	**25.80**	**358**	P		**P**	**08 10 10.8**		**-0.5**
	baz=177								
PCRV	**Puerto La Cruz**	**25.93**	**95**	LR		LR	08 22 21.0		
	comp=Z,172nm,18.3s,baz=291,slow=41								
TUC	**Tucson**	**26.00**	**319**	P		**P**	**08 10 14.5**		**+1.2**
	baz=131								
TUC	**Tucson**	**26.00**	**319**	*e*P		**P**	**08 10 14.6**		**+1.4**
	comp=Z,3.2nm,1.0s								
O40A	**La Belle**	**26.39**	**358**	P		**P**	**08 10 15.8**		**-0.7**
	baz=177								
O33A	**Hebron**	**26.97**	**349**	P		**P**	**08 10 22.3**		**+0.4**
	baz=165								
M39A	**Webster**	**27.75**	**358**	P		**P**	**08 10 28.0**		**-0.9**
	baz=177								
X16A	**Lo Mia Camp, P**	**27.81**	**322**	*e*P		**P**	**08 10 31.1**		**+1.4**
	comp=Z,2.6nm,0.8s								
S22A	**4UR Ranch, Cre**	**27.88**	**332**	P		**P**	**08 10 30.4**		**+0.1**
	baz=145								
MVCO	**Mesa Verde**	**28.24**	**329**	P		**P**	**08 10 33.6**		**+0.1**
	baz=141								
WUAZ	**Wupatki**	**28.53**	**323**	P		**P**	**08 10 37.8**		**+1.7**
	baz=134								
WUAZ	**Wupatki**	**28.53**	**323**	*e*P		**P**	**08 10 38.3**		**+2.2**
	comp=Z,3.0nm,0.8s								
N54A	**Moraine State**	**28.84**	**17**	P		**P**	**08 10 37.0**		**-1.5**
	baz=202								
K39A	**Oelwein**	**28.97**	**359**	P		**P**	**08 10 38.7**		**-0.9**
	baz=178								
PDMCI	**Parker Dam,Lak**	**29.43**	**318**	P		**P**	**08 10 45.2**		**+1.4**
	baz=128								
J41A	**Loganville**	**29.62**	**1**	P		**P**	**08 10 44.1**		**-1.4**
	baz=181								
U15A	**North Rim**	**29.70**	**324**	*e*P		**P**	**08 10 49.9**		**+3.4**
	comp=Z,3.3nm,1.0s								
I38A	**Scanlan Farm,**	**30.31**	**358**	P		**P**	**08 10 50.3**		**-1.2**
	baz=177								
LDFC	**Landfair**	**30.53**	**319**	*e*P		**P**	**08 10 56.5**		**+2.8**
	comp=Z,9.1nm,1.0s								
LCMT	**Little Creek M**	**30.65**	**323**	*e*P		**P**	**08 10 57.8**		**+3.0**
	comp=Z,3.4nm,0.9s								
GMRC	**Granite Mounta**	**30.71**	**318**	P		**P**	**08 10 56.4**		**+1.1**
	baz=127								
MTPU	**Mount Pierson**	**30.79**	**326**	*e*P		**P**	**08 10 58.8**		**+2.6**
	comp=Z,3.9nm,0.8s								
H36A	**Jessenland, He**	**30.93**	**356**	P		**P**	**08 10 56.5**		**-0.5**
	baz=174								
CCUT	**Cedar City**	**31.09**	**324**	*e*P		**P**	**08 11 01.9**		**+3.1**
	comp=Z,4.3nm,1.0s								
MSU	**Marysvale**	**31.12**	**327**	*e*P		**P**	**08 11 01.1**		**+2.1**
SPMN	**Marine on St.**	**31.51**	**357**	*e*P		**P**	**08 11 00.2**		**-2.0**
	comp=Z,13nm,1.0s								
COWI	**Conover**	**32.38**	**2**	*e*P		**P**	**08 11 07.7**		**-2.1**
	comp=Z,6.8nm,0.8s								
TPNV	**Topopah Spring**	**32.42**	**320**	P		**P**	**08 11 11.6**		**+1.2**
	baz=129								
MPMC	**Manual Prospec**	**32.67**	**318**	P		**P**	**08 11 12.2**		**-0.5**
	baz=126								
E36A	**McGregor**	**32.83**	**357**	P		**P**	**08 11 11.9**		**-1.8**
	baz=175								
R11A	**Troy Canyon, C**	**32.92**	**323**	*e*P		**P**	**08 11 18.1**		**+3.3**
	comp=Z,2.3nm,0.9s								
HWUT	**Hardware Ranch**	**33.15**	**331**	*e*P		**P**	**08 11 18.1**		**+1.3**
	comp=Z,2.5nm,0.8s								
PDAR	**Pinedale Array**	**33.19**	**335**	P		**P**	**08 11 16.2**		**-1.0**
	comp=Z,0.9nm,1.1s,baz=134,slow=8.6,SNR=3.9								
D37A	**Cotton**	**33.43**	**358**	P		**P**	**08 11 16.6**		**-2.3**
	baz=177,SNR=6.7								
D35A	**Remer**	**33.43**	**356**	P		**P**	**08 11 16.2**		**-2.7**
	baz=174								
D36A	**Goodland**	**33.48**	**357**	P		**P**	**08 11 17.0**		**-2.3**
	baz=176								
PKM	**Mcpherson Peak**	**33.59**	**314**	P		**P**	**08 11 19.6**		**-1.1**
	baz=122								
VES	**Vestal, Richgr**	**33.60**	**316**	P		**P**	**08 11 20.6**		**0.0**
	baz=124								
C36A	**Pine Crest Far**	**34.05**	**358**	P		**P**	**08 11 21.3**		**-2.9**
	baz=176,SNR=7.4								
C35A	**Jirik Farms, M**	**34.05**	**356**	P		**P**	**08 11 21.5**		**-2.8**
	baz=174,SNR=9.0								
C39A	**Grand Marais**	**34.07**	**1**	P		**P**	**08 11 21.8**		**-2.7**
	baz=181								
REDW	**Red Top Meadow**	**34.22**	**334**	*e*P		**P**	**08 11 26.1**		**0.0**
	comp=Z,4.9nm,0.9s								
SNOW	**Snow King Moun**	**34.26**	**334**	*e*P		**P**	**08 11 27.4**		**+0.9**
	comp=Z,6.3nm,0.9s								
B33A	**Robert and Kas**	**34.74**	**355**	P		**P**	**08 11 28.8**		**-1.4**
	baz=172								
AGMN	**Agassiz Nation**	**34.79**	**354**	P		**P**	**08 11 29.1**		**-1.6**
	baz=171								
AGMN	**Agassiz Nation**	**34.79**	**354**	*e*P		**P**	**08 11 28.9**		**-1.8**
	comp=Z,4.8nm,1.0s								
MDND	**Maddock**	**34.86**	**350**	P		**P**	**08 11 30.3**		**-1.0**
	baz=165								
TVH2	**Borealis Mine**	**34.87**	**320**	*e*P		**P**	**08 11 33.6**		**+1.8**
	comp=Z,2.5nm,1.1s								
B34A	**Aery, Baudette**	**34.87**	**356**	P		**P**	**08 11 29.3**		**-2.1**
	baz=173,SNR=5.6								
B32A	**Ashes, Strandq**	**34.96**	**353**	P		**P**	**08 11 30.7**		**-1.4**
	baz=170								
A33A	**Warroad**	**35.38**	**355**	P		**P**	**08 11 33.3**		**-2.5**
	baz=172,SNR=10								
CMB	**Columbia Colle**	**35.70**	**318**	*e*P		**P**	**08 11 40.1**		**+1.4**
	comp=Z,3.8nm,1.0s								
PNTR	**Pine Nut**	**35.82**	**320**	*e*P		**P**	**08 11 42.1**		**+2.1**
	comp=Z,5.9nm,0.8s								
PAHR	**Pah Rah Range**	**36.06**	**321**	*e*P		**P**	**08 11 43.8**		**+1.9**
	comp=Z,3.3nm,1.0s								
DLMT	**Dillon**	**36.57**	**334**	*e*P		**P**	**08 11 47.6**		**+1.4**
	comp=Z,4.1nm,1.2s								
ULM	**Lac du Bonnet**	**36.73**	**355**	P		**P**	**08 11 44.3**		**-2.9**
	comp=Z,7.5nm,0.9s,baz=179,slow=8.4,SNR=9.0								
ULM				LR		LR	08 30 29.9		
	comp=Z,127nm,18.2s,baz=144,slow=42								
ULM	**Lac du Bonnet**	**36.73**	**355**	*e*P		**P**	**08 11 44.8**		**-2.5**
	comp=Z,6.5nm,0.9s								
LRM	**Limekiln Ridge**	**36.88**	**335**	*e*P		**P**	**08 11 50.4**		**+1.4**
WVOR	**Wild Horse Val**	**37.38**	**325**	*e*P		**P**	**08 11 54.6**		**+1.5**
	com

GVD					AML	AML	08 26 52.0		
	comp=E,2455μm,0.5s								
GVD	**Gavdhos**	**0.56**	**97**	P	**Pg**		**08 26 39.9**	**+0.2**	
GVD				S	**Sg**		**08 26 48.9**	**+1.7**	
GVD				AML	AML		08 26 51.6		
	comp=N,4144μm,0.3s								
GVD				AML	AML		08 26 52.0		
	comp=E,2455μm,0.5s								
IMMV	**Iera Moni Meta**	**0.72**	**40**	P	**Pg**		**08 26 42.1**	**-0.7**	
IMMV				S	**Sg**		**08 26 52.9**	**+0.7**	
IMMV	**Iera Moni Meta**	**0.72**	**40**	P	**Pg**		**08 26 42.1**	**-0.7**	
IMMV				S	**Sg**		**08 26 52.9**	**+0.7**	
IMMV	**Iera Moni Meta**	**0.72**	**40**	P	**Pg**		**08 26 41.9**	**-0.9**	
IMMV				AML	AML		08 26 55.4		
	comp=N,1357μm,0.5s								
IMMV				S	**Sn**		**08 26 58.0**	**+2.1**	
IMMV				AML	AML		08 26 58.5		
	comp=E,1327μm,0.5s								
IMMV	**Iera Moni Meta**	**0.72**	**40**	P	**Pg**		**08 26 42.1**	**-0.7**	
VAM	**Vamos**	**0.81**	**52**	P	**Pg**		**08 26 43.6**	**-0.9**	
VAM				S	**Sg**		**08 26 56.2**	**+1.0**	
VAM	**Vamos**	**0.81**	**52**	P	**Pg**		**08 26 43.8**	**-0.8**	
VAM				S	**Sb**		**08 26 57.8**	**+1.9**	
ANKY	**Antikythira Is**	**0.96**	**355**	P	**Pg**		**08 26 47.9**	**+0.6**	
ANKY	**Antikythira Is**	**0.96**	**355**	P	**Pg**		**08 26 47.9**	**+0.6**	
ANKY	**Antikythira Is**	**0.96**	**355**	P	**Pg**		**08 26 47.4**	**+0.2**	
SIVA	**Sivas**	**1.16**	**84**	P	**Pb**		**08 26 49.3**	**-1.4**	
SIVA				S	**Sb**		**08 27 07.1**	**+1.4**	
SIVA	**Sivas**	**1.16**	**84**	P	**Pb**		**08 26 49.5**	**-1.3**	
SIVA				S	**Sb**		**08 27 07.1**	**+1.4**	
SIVA	**Sivas**	**1.16**	**84**	P	**Pb**		**08 26 49.5**	**-1.3**	
SIVA				S	**Sb**		**08 27 07.2**	**+1.4**	
SIVA				AML	AML		08 27 14.4		
	comp=E,703μm,0.6s								
SIVA				AML	AML		08 27 15.9		
	comp=N,986μm,0.5s								
SIVA	**Sivas**	**1.16**	**84**	P	**Pb**		**08 26 49.0**	**-1.7**	
IDI	**Anoyia**	**1.27**	**72**	P	**Pn**		**08 26 50.9**	**-1.6**	
IDI				S	**Sb**		**08 27 09.9**	**+0.8**	
IDI	**Anoyia**	**1.27**	**72**	P	**Pn**		**08 26 50.9**	**-1.6**	
IDI				S	**Sb**		**08 27 09.9**	**+0.8**	
IDI	**Anoyia**	**1.27**	**72**	P	**Pn**		**08 26 50.7**	**-1.8**	
IDI				S	**Sb**		**08 27 10.7**	**+1.6**	
IDI				AML	AML		08 27 14.3		
	comp=N,243μm,0.7s								
IDI				AML	AML		08 27 16.4		
	comp=E,125μm,0.5s								
IDI	**Anoyia**	**1.27**	**72**	P	**Pn**		**08 26 51.1**	**-1.4**	
KYTH	**Kithira**	**1.38**	**348**	P	**Pn**		**08 26 53.9**	**-0.1**	
KYTH	**Kithira**	**1.38**	**348**	P	**Pn**		**08 26 53.9**	**-0.1**	
KYTH	**Kithira**	**1.38**	**348**	P	**Pn**		**08 26 53.4**	**-0.7**	
LAST	**Lasithi**	**1.72**	**81**	P	**Pn**		**08 26 57.3**	**-1.4**	
LAST	**Lasithi**	**1.72**	**81**	P	**Pn**		**08 26 57.3**	**-1.4**	
LAST	**Lasithi**	**1.72**	**81**	P	**Pn**		**08 26 58.1**	**-0.5**	
ZKR	**Zakros**	**2.31**	**84**	P	**Pn**		**08 27 06.1**	**-0.7**	
ZKR	**Zakros**	**2.31**	**84**	P	**Pn**		**08 27 06.1**	**-0.7**	
DID	**Didima**	**2.59**	**357**	P	**Pn**		**08 27 08.8**	**-1.9**	
DID	**Didima**	**2.59**	**357**	P	**Pn**		**08 27 08.8**	**-1.9**	

IDC 27 08:33:27.7±7.4, 1°.21N×126°.87E, h190km±74km, mb3.3/7, mb1 3.4/8, mb1mx3.1/49, mbtmp3.8/8, Error ellipse: s-maj=40.7km s-min=16.6km az=74.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
FITZ	**Fitzroy Crossi**	**19.23**	**184**	P	P	08 37 39.1		+1.5
	0.1nm,0.3s,baz=7.1,slow=8.1,SNR=3.6							
WRA	**Warramunga Arr**	**22.26**	**161**	P	P	08 38 08.3		-1.0
	2.0nm,0.5s,baz=343,slow=10.0,SNR=44							
ASAR	**Alice Springs**	**25.66**	**165**	P	P	08 38 40.0		-0.1
	0.3nm,0.3s,baz=343,slow=8.9,SNR=8.9							
STKA	**Stephens Creek**	**35.75**	**158**	P	P	08 40 08.1		-0.4
	2.9nm,0.6s,baz=328,slow=9.5,SNR=5.6							
PETK	**Petropavlovsk-**	**57.70**	**21**	P	P	08 42 58.6		+0.4
	1.2nm,0.4s,baz=226,slow=3.8,SNR=4.2							
MKAR	**Makanchi Array**	**59.70**	**326**	P	P	08 43 10.9		-1.4
	0.2nm,0.5s,baz=120,slow=8.5,SNR=4.4							
KURBB	**Kurchatov Arra**	**63.93**	**328**	P	P	08 43 41.2		+0.9
	0.5nm,0.5s,baz=123,slow=6.8,SNR=1.4							
VNDA	**Vanda**	**80.93**	**173**	P	P	08 45 20.5		+0.2
	0.4nm,0.4s,baz=329,slow=5.9,SNR=5.1							

IDC 27 08:53:29.0±2.3, 30°.00S×176°.12W, h0km, mb3.4/2, mb1 3.8/3, mb1mx3.6/19, mbtmp3.6/3, ML3.1/1, Error ellipse: s-maj=38.5km s-min=33.2km az=66.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
RAO	**Raoul Island**	**1.74**	**295**	Pn	Pn	08 54 00.5		0.0
	74nm,0.3s,baz=90,slow=17,SNR=2.1							
RAO				Sn	Sn	08 54 23.0		-0.3
	192nm,0.3s,baz=108,slow=20,SNR=3.8							
URZ	**Urewera**	**9.96**	**212**	Pn	Pn	08 55 52.1		-1.4
	0.2nm,0.3s,baz=41,slow=20,SNR=2.5							
URZ				Sn	Sn	08 57 47.4		+1.5
	0.4nm,0.3s,baz=278,slow=7.3,SNR=3.9							
ASAR	**Alice Springs**	**44.76**	**266**	P	P	09 01 45.6		+1.0
	0.2nm,0.5s,baz=111,slow=7.2,SNR=3.0							
WRA	**Warramunga Arr**	**45.72**	**271**	P	P	09 01 51.6		-0.5
	0.6nm,0.6s,baz=110,slow=8.1,SNR=10							
FINES	**FINESS Array B**	**145.31**	**341**	PKPbc	PKPbc	09 13 06.6		-1.2
	0.6nm,0.6s,baz=46,slow=4.0,SNR=3.8							

*SKHL **27** 09:17:48.7±0.7, 44°.11N×148°.13E, h73km±6km, mb4.6/3*
*JMA **27** 09:17:48.5±0.3, 44°.02N×147°.97E, h87km, M3.9*
ISC 27 09:17:44.5±2.8, 44°.0N±0°.1×148°.2E±0°.2, h104km±18km, n15, σ2s05/24, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
SHO	**Shikotan**	**1.01**	**261**	*i* P	**Pn**	**09 18 06.9**		**+1.6**
SHO				AMB	AMB	09 18 07.4		
	170nm,0.6s							
SHO				AMB	AMB	09 18 07.4		
	230nm,0.6s							
SHO				AMB	AMB	09 18 07.4		
	540nm,0.6s							
SHO				*i* S	**Sn**	**09 18 20.0**		**-1.0**
SHO				A	A	09 18 24.3		
	400nm,0.3s							
SHO				A	A	09 18 24.3		
	600nm,0.3s							
KUR	**Kuril'sk**	**1.23**	**348**	*i* P	**Pn**	**09 18 08.5**		**+0.8**
KUR				AMB	AMB	09 18 08.7		
	220nm,0.4s							
KUR				*i* S	**Sn**	**09 18 23.2**		**-2.0**
KUR				A	A	09 18 23.8		
	660nm,0.5s							
KUR				A	A	09 18 23.8		
	300nm,0.5s							
YUK	**Yuzh-Kuril'sk**	**1.70**	**271**	*i* P	**Pn**	**09 18 14.2**		**+0.9**
YUK				AMB	AMB	09 18 15.3		
	60nm,0.4s							
YUK				AMB	AMB	09 18 15.3		
	220nm,0.4s							
YUK				AMB	AMB	09 18 15.3		
	400nm,0.4s							
YUK				*i* S	**Sn**	**09 18 33.3**		**-2.0**
YUK				A	A	09 18 35.6		
	240nm,0.2s							
NEM2	**Nemuro 2**	**1.91**	**250**	P	**Pn**	**09 18 17.6**		**+1.5**
NEM2				*e*S	**Sn**	**09 18 39.4**		**-0.7**
JRA	**Rausu**	**2.23**	**269**	P	**Pn**	**09 18 21.7**		**+1.5**
JRA				*e*S	**Sn**	**09 18 47.4**		**-0.1**
JNK	**Nakash**	**2.57**	**261**	P	**Pn**	**09 18 26.1**		**+1.5**
JAK	**Akkeshi**	**2.76**	**249**	P	**Pn**	**09 18 28.8**		**+1.7**
JTKR	**Abashiri--Toko**	**3.11**	**270**	P	**Pn**	**09 18 33.2**		**+1.5**
JAR	**Ashorobuto**	**3.31**	**259**	P	**Pn**	**09 18 36.8**		**+2.4**
JAR				*e*S	**Sn**	**09 19 13.3**		**+0.3**
JCH	**Churui**	**3.81**	**250**	P	**Pn**	**09 18 43.0**		**+1.8**
JCH				*e*S	**Sn**	**09 19 24.0**		**-1.1**
JKK2	**Kamakawa 2**	**3.95**	**270**	P	**Pn**	**09 18 45.3**		**+2.3**
JNBK	**Urakawa-nobuka**	**4.36**	**248**	P	**Pn**	**09 18 50.1**		**+1.5**
JKB	**Kayabe**	**5.69**	**250**	P	**Pn**	**09 19 08.2**		**+1.7**
JKB				*e*S	**Sn**	**09 20 07.4**		**-3.0**
JOT	**Ohata**	**5.91**	**246**	P	**Pn**	**09 19 10.6**		**+1.1**
JOT				*e*S	**Sn**	**09 20 11.5**		**-4.2**
JANG	**Nango**	**6.17**	**236**	*e*S	**Sn**	**09 20 19.2**		**-3.1**

*ISCJB **27** 09:21:01.7±0.9, 13°.4N±0°.2×50°.9E±0°.1, h12km, mb3.8/5, MS3.1/7, Error ellipse: s-maj=37.4km s-min=14.3km az=162.3*
*IDC **27** 09:21:01.6±1.3, 13°.32N×51°.01E, h0km, mb3.7/5, mb1 4.0/6, mb1mx3.5/42, mbtmp3.8/6, ML4.0/1, MS3.3/9, Ms1 3.2/9, ms1mx3.0/36, Error ellipse: s-maj=44.7km s-min=23.9km az=164.0*
ISC 27 09:21:03.5±1.1, 13°.3N±0°.3×51°.0E±0°.1, h12km, n17, σ0s78/6, mb3.9/5, MS3.2/7, Eastern Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
ATD	**Arta Tunnel**	**8.16**	**258**	Pn	**Pn**	**09 23 01.9**		**+0.1**
	2.1nm,0.3s,baz=12,slow=8.0,SNR=9.7							
ATD				Sn	Sn	09 24 24.5		-10
	0.9nm,0.3s,baz=221,slow=19,SNR=2.1							
ATD				LR	LR	09 25 23.3		
	comp=Z,264nm,19.0s,baz=193,slow=32							
WSAR	**Wadi Sarin**	**12.23**	**35**	LR	LR	09 28 34.5		
	comp=Z,204nm,18.3s,baz=237,slow=37							
MMAI	**Mount Meron Ar**	**24.22**	**327**	LR	LR	09 36 40.1		
	comp=Z,36nm,21.8s,baz=200,slow=39							
GEYT	**Ailbeck**	**25.31**	**13**	LR	LR	09 38 23.5		
	comp=Z,126nm,19.0s,baz=160,slow=41							
GNI	**Garni**	**27.28**	**350**	LR	LR	09 39 59.2		
	comp=Z,64nm,18.7s,baz=164,slow=42							
H08N2	**Diego Garcia H**	**27.86**	**133**	T	T	09 55 23.1		
	baz=322,slow=75,SNR=1784							
H08N3	**Diego Garcia H**	**27.87**	**133**	T	T	09 55 23.0		
	baz=322,slow=75,SNR=1364							
H08N1	**Diego Garcia H**	**27.88**	**133**	T	T	09 55 24.8		
	baz=322,slow=75,SNR=1862							
BRTR	**Keskin Array B**	**30.42**	**333**	LR	LR	09 39 50.8		
	comp=Z,19nm,20.0s,baz=120,slow=37							
KBZ	**Khabaz**	**31.08**	**349**	LR	LR	09 42 03.6		
	comp=Z,73nm,21.1s,baz=138,slow=41							
AKTO	**Aktyubinsk**	**37.44**	**7**	LR	LR	09 46 59.6		
	comp=Z,59nm,19.4s,baz=182,slow=42							
MKAR	**Makanchi Array**	**42.44**	**32**	P	**P**	**09 28 58.9**		**+0.7**
	0.6nm,0.5s,baz=222,slow=7.8,SNR=7.0							
CMAR	**Chiang Mai Arr**	**46.29**	**77**	P	**P**	**09 29 29.9**		**+0.4**
	0.5nm,0.3s,baz=276,slow=9.0,SNR=2.9							
TORD	**Torodi Ar. Bea**	**47.92**	**276**	P	**P**	**09 29 42.3**		**+0.1**
	0.9nm,0.8s,baz=90,slow=7.4,SNR=4.7							
ZALV	**Zalesovo Beam**	**48.49**	**26**	P	**P**	**09 29 45.0**		**-1.0**
	0.6nm,0.4s,baz=207,slow=6.0,SNR=2.7							
BOSA	**Boshof**	**48.56**	**211**	LR	LR	09 51 04.8		
	comp=Z,17nm,21.2s,baz=36,slow=37							
WRA	**Warramunga Arr**	**88.37**	**111**	P	**P**	**09 33 55.5**		**-0.4**
	0.5nm,1.0s,baz=297,slow=4.1,SNR=3.8							

*ISCJB **27** 09:27:33.4±0.6, 6°.80N±0°.04×73°.09W±0°.04, h163km±5km, Error ellipse: s-maj=9.1km s-min=4.2km az=44.4*
*FUNV **27** 09:27:35.3, 6°.82N×73°.12W, h163km, MW2.6*
*RSNC **27** 09:27:35.9±0.7, 6°.75N×73°.13W, h149km±4km, ML2.7*
ISC 27 09:27:33.1±1.4, 6°.81N±0°.05×73°.09W±0°.05, h168km±8km, n24, σ1s30/38, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
BARC	**Barichara**	**0.23**	**204**	*i* P	**Pn**	**09 27 55.9**		**-0.1**
BARC				*e*S	**Sn**	**09 28 11.1**		**-2.4**
BARC				*i*		09 28 13.7		
	comp=Z,115nm,0.5s							
PAMC	**Pamplona, Colo**	**0.66**	**36**	*e*P	**Pn**	**09 27 58.9**		**+1.0**
PAMC				*e*S	**Sn**	**09 28 16.2**		**-0.7**
BRRC	**Barranca, Sant**	**0.69**	**296**	*i* P	**Pn**	**09 27 57.7**		**+0.2**
BRRC				*e*S	**Sn**	**09 28 15.2**		**-1.0**
BRRC				*i*		09 28 18.8		
	comp=Z,110nm,0.2s							
CBRI	**Barrientos, No**	**0.95**	**18**	*e*P	**Pn**	**09 28 00.4**		**+0.9**
CBRI				*e*S	**Sn**	**09 28 19.6**		**-0.2**
GRMC	**Gramalote, San**	**0.95**	**17**	*e*S	**Sn**	**09 28 22.2**		**+2.4**
GRMC				*i*		09 28 34.4		
	comp=Z,44nm,0.3s							
CAPV	**Capacho**	**1.30**	**36**	*e*P	**Pn**	**09 28 03.7**		**+1.3**
CAPV				*e*S	**Sn**	**09 28 24.3**		**-0.8**
OCAC	**Ocana**	**1.44**	**351**	*e*P	**Pn**	**09 28 04.8**		**+1.1**
OCAC				*e*S	**Sn**	**09 28 27.7**		**+0.3**
OCAC				*i*		09 28 30.6		
	comp=Z,74nm,0.1s							
CHIC	**Chingaza**	**2.25**	**197**	*e*P	**Pn**	**09 28 13.9**		**+1.2**
CHIC				*e*S	**Sn**	**09 28 42.3**		**-1.0**
CHIC				*i*		09 28 49.4		
	comp=Z,31nm,0.3s							
HELC	**Santa Helena**	**2.50**	**256**	*e*P	**Pn**	**09 28 17.0**		**+1.5**
HELC				*e*S	**Sn**	**09 28 47.5**		**-0.9**
VIGV	**El Vigia**	**2.65**	**40**	*e*P	**Pn**	**09 28 18.1**		**+1.2**
VIGV				*e*S	**Sn**	**09 28 50.1**		**-0.9**
SOCV	**Socops**	**2.66**	**56**	*e*P	**Pn**	**09 28 18.0**		**+1.0**
SOCV				*e*S	**Sn**	**09 28 49.3**		**-1.8**
DBBC	**Dabeiba**	**3.11**	**274**	*e*P	**Pn**	**09 28 23.2**		**+0.6**
DBBC				*e*S	**Sn**	**09 29 00.3**		**-0.8**
TOLC	**Tolima**	**3.13**	**225**	*e*P	**Pn**	**09 28 24.6**		**+1.4**
TOLC				*e*S	**Sn**	**09 29 01.2**		**-0.8**
SDV	**Santo Domingo**	**3.19**	**49**	*e*P	**Pn**	**09 28 25.8**		**+2.0**
SDV				*i*		09 29 04.8		
	comp=Z,14nm,0.5s							
PRAC	**Prado**	**3.56**	**210**	*e*P	**Pn**	**09 28 29.6**		**+1.4**
PRAC				*e*S	**Sn**	**09 29 10.0**		**-1.2**
ELOV	**Elorza**	**3.58**	**87**	*e*P	**Pn**	**09 28 29.6**		**+1.1**
SJAC	**San Juan de Ar**	**3.61**	**194**	*e*P	**Pn**	**09 28 29.9**		**+0.9**
VIRV	**Villa del Rosa**	**3.74**	**10**	*e*P	**Pn**	**09 28 30.6**		**+0.1**
VIRV				*e*S	**Sn**	**09 29 12.1**		**-3.2**
SANV	**Sanarito**	**4.42**	**52**	*e*P	**Pn**	**09 28 40.9**		**+1.5**
CURV	**Curarigua**	**4.44**	**44**	*e*P	**Pn**	**09 28 40.4**		**+0.7**
DABV	**Dabajuro**	**4.75**	**30**	*e*P	**Pn**	**09 28 44.4**		**+0.8**
BAUV	**El Baul**	**5.43**	**67**	*e*P	**Pn**	**09 28 52.4**		**-0.2**
MAPV	**Macapo**	**5.48**	**56**	*e*P	**Pn**	**09 28 53.8**		**+0.6**
MONV	**Montecano**	**5.97**	**31**	*e*P	**Pn**	**09 28 59.6**		**0.0**

*ISCJB **27** 09:33:54.1±0.5, 40°.17N±0°.03×21°.46E±0°.04, h9km±6km, Error ellipse: s-maj=5.6km s-min=4.4km az=15.3*
*CSEM **27** 09:33:54.1±0.2, 40°.15N×21°.47E, h8km, ML2.3, Error ellipse: s-maj=3.7km s-min=3.1km az=52.0*
*ATH **27** 09:33:54.3, 40°.15N×21°.49E, h11km±6km, ML2.3/6, Error ellipse: s-maj=6.3km s-min=1.1km az=282.0*
*THE **27** 09:33:54.3, 40°.17N×21°.48E, h0km±2km, ML2.5/7, Error ellipse: s-maj=2.6km s-min=0.7km az=334.0*
*SKO **27** 09:33:55.2, 40°.19N×21°.51E, h9km*
ISC 27 09:33:54.3±0.9, 40°.16N±0°.02×21°.48E±0°.02, h9km±8km, n30, σ0s69/53, Greece

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
KPRO	**Kipourio**	**0.22**	**204**	P	**Pg**	**09 33 58.7**		**-0.2**
KPRO				S	**Sg**	**09 34 02.3**		**+0.3**
KPRO	**Kipourio**	**0.22**	**204**	P	**Pg**	**09 33 58.8**		**-0.2**
KPRO				S	**Sg**	**09 34 02.3**		**+0.3**
KPRO	**Kipourio**	**0.22**	**204**	P	**Pg**	**09 33 58.8**		**-0.2**
KPRO				S	**Sg**	**09 34 02.4**		**+0.4**
KPRO				AML	AML	09 34 03.9		
	comp=N,5714μm,0.5s							
KPRO				AML	AML	09 34 04.9		
	comp=E,7907μm,0.3s							
PENT	**Pentalofos**	**0.27**	**278**	P	**Pg**	**09 33 59.5**		**-0.2**
PENT				S	**Sg**	**09 34 03.6**		**+0.3**
PENT	**Pentalofos**	**0.27**	**278**	P	**Pg**	**09 33 59.5**		**-0.2**
PENT				S	**Sg**	**09 34 03.6**		**+0.3**
PENT	**Pentalofos**	**0.27**	**278**	P	**Pg**	**09 33 59.2**		**-0.5**
PENT				S	**Sg**	**09 34 04.1**		**+0.7**
PENT				AML	AML	09 34 04.3		
	comp=N,5309μm,0.4s							
PENT				AML	AML	09 34 04.6		
	comp=E,2795μm,0.2s							
KZN	**Kozani**	**0.27**	**56**	P	**Pg**	**09 33 59.7**		**0.0**
KZN				S	**Sg**	**09 34 04.3**		**+1.0**
KZN	**Kozani**	**0.27**	**56**	P	**Pg**	**09 33 59.8**		**+0.1**
KZN				S	**Sg**	**09 34 04.3**		**+1.0**
FNA	**Florina**	**0.63**	**353**	P	**Pg**	**09 34 06.1**		**-0.4**
FNA				S	**Sg**	**09 34 14.5**		**-0.3**
FNA	**Florina**	**0.63**	**353**	P	**Pg**	**09 34 06.1**		**-0.4**
FNA				S	**Sg**	**09 34 14.5**		**-0.3**
FNA	**Florina**	**0.63**	**353**	P	**Pg**	**09 34 05.9**		**-0.6**
FNA				S	**Sg**	**09 34 14.8**		**0.0**
FNA				AML	AML	09 34 19.3		
	comp=N,562μm,0.4s							
FNA				AML	AML	09 34 22.8		
	comp=E,736μm,0.2s							

THL	**Klokotos Trika**	**0.72**	**145**	P	**Pg**		**09 34 07.4**	**-0.8**	
THL				S	**Sb**		**09 34 18.8**	**-0.2**	
THL	**Klokotos Trika**	**0.72**	**145**	P	**Pg**		**09 34 07.9**	**-0.3**	
THL				S	**Sg**		**09 34 16.8**	**-0.9**	
LIT	**Litokhoron**	**0.78**	**94**	P	**Pg**		**09 34 08.2**	**-1.1**	
LIT				S	**Sb**		**09 34 20.2**	**-0.4**	
LIT	**Litokhoron**	**0.78**	**94**	P	**Pg**		**09 34 08.2**	**-1.1**	
LIT				S	**Sg**		**09 34 19.9**	**+0.5**	
LIT	**Litokhoron**	**0.78**	**94**	P	**Pg**		**09 34 08.2**	**-1.1**	
LIT				S	**Sg**		**09 34 19.9**	**+0.5**	
LIT				AML	AML		09 34 25.1		
	comp=E,400μm,0.3s								
LIT				AML	AML		09 34 26.1		
	comp=N,563μm,0.4s								
GRG	**Griva**	**1.06**	**41**	P	**Pg**		**09 34 14.5**	**-0.2**	
GRG	**Griva**	**1.06**	**41**	P	**Pn**		**09 34 15.3**	**-0.1**	
GRG	**Griva**	**1.06**	**41**	P	**Pn**		**09 34 15.3**	**-0.1**	
OHR	**Ohrid**	**1.08**	**332**	*i* Pg	**Pg**		**09 34 14.8**	**-0.4**	
OHR				*i* Sg	**Sg**		**09 34 29.1**	**-0.2**	
OHR	**Ohrid**	**1.08**	**332**	*i* Pg	**Pg**		**09 34 14.7**	**-0.4**	
OHR				*i* Sg	**Sg**		**09 34 29.0**	**-0.2**	
SGD	**Sagiada**	**1.10**	**241**	P	**Pn**		**09 34 15.9**	**0.0**	
SGD	**Sagiada**	**1.10**	**241**	P	**Pn**		**09 34 15.9**	**0.0**	
HORT	**Hortiatis**	**1.31**	**70**	P	**Pg**		**09 34 19.7**	**+0.2**	
HORT				S	**Sn**		**09 34 37.8**	**+1.3**	
HORT	**Hortiatis**	**1.31**	**70**	P	**Pg**		**09 34 19.7**	**+0.2**	
HORT				S	**Sn**		**09 34 37.8**	**+1.3**	
HORT				AML	AML		09 34 42.6		
	comp=N,62μm,0.4s								
HORT				AML	AML		09 34 42.9		
	comp=E,31μm,0.2s								
AGG	**Agios Georgios**	**1.31**	**150**	P	**Pg**		**09 34 19.4**	**-0.1**	
AGG				S	**Sn**		**09 34 38.6**	**+2.1**	
AGG	**Agios Georgios**	**1.31**	**150**	P	**Pg**		**09 34 19.4**	**-0.1**	
AGG				S	**Sb**		**09 34 34.9**	**-1.2**	
AGG	**Agios Georgios**	**1.31**	**150**	P	**Pg**		**09 34 20.3**	**+0.8**	
AGG				S	**Sb**		**09 34 34.9**	**-1.2**	
AGG				AML	AML		09 34 47.6		
	comp=N,330μm,0.4s								
AGG				AML	AML		09 34 48.3		
	comp=E,362μm,0.6s								
XOR	**Xorichti**	**1.54**	**120**	P	**Pn**		**09 34 21.0**	**-0.9**	
XOR	**Xorichti**	**1.54**	**120**	P	**Pn**		**09 34 21.1**	**-0.9**	

IDC 27 09:37:10.2±2.8, 28°.09S×176°.55W, h0km, mb3.8/2, mb1 4.1/3, mb1mx3.8/17, mbtmp3.9/3, ML3.8/1, MS3.1/1, Ms1 3.1/1, ms1mx2.5/20, Error ellipse: s-maj=71.7km s-min=28.7km az=121.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
RAO	**Raoul Island**	**1.68**	**226**	Pn	Pn	09 37 41.0		+0.2
	52nm,0.3s,baz=253,slow=19,SNR=5.3							
RAO				Sn	Sg	09 38 04.3		+0.3
	168nm,0.3s,baz=107,slow=19,SNR=6.3							
URZ	**Urewera**	**11.45**	**206**	Pn	Pn	09 39 54.4		-0.5
	0.6nm,0.3s,baz=180,slow=20,SNR=5.2							
URZ				Sn	Sn	09 41 38.7		-25
	0.5nm,0.3s,baz=156,slow=20,SNR=5.0							
ASAR	**Alice Springs**	**44.56**	**264**	P	P	09 45 23.8		-0.4
	0.9nm,0.6s,baz=103,slow=7.4,SNR=13							
WRA	**Warramunga Arr**	**45.34**	**269**	P	P	09 45 30.4		0.0
	1.1nm,0.9s,baz=106,slow=8.2,SNR=4.8							
GUMO	**Guam**	**55.79**	**313**	LR	LR	10 11 20.5		
	comp=Z,17nm,18.5s,baz=200,slow=37							
NB2	**NORSAR Subarra1**	**46.64**	**353**	PKP	PKPab	09 56 54.0		-0.3
	comp=Z,0.4nm,0.5s,baz=10,slow=2.9							
NOA	**NORSAR Array B**	**146.64**	**353**	PKPbc	PKPbc	09 56 52.5		-0.7
	comp=Z,0.7nm,0.6s,baz=12,slow=4.5,SNR=3.6							

WEL 27 09:55:36.8±0.6, 38°.56S×175°.71E, h170km±5km, ML3.5/26, 6C-1D, Error ellipse: s-maj=2.6km s-min=2.6km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
WHVZ	**Whangaehu Hut**	**0.72**	**188**	⇑PN	Pn	09 56 01.9		0.0
WNVZ	**Wahianoa**	**0.77**	**187**	PN	Pn	09 56 02.1		0.0
PKVZ	**Pokaka**	**0.78**	**201**	⇑PN	Pn	09 56 02.0		0.0
MOVZ	**Moawhango**	**0.84**	**178**	PN	Pn	09 56 02.1		-0.4
BKZ	**Black Stump Fm**	**0.85**	**135**	⇑PN	Pn	09 56 02.4		-0.2
VRZ	**Vera Road**	**0.93**	**233**	PN	Pn	09 56 03.3		+0.3
URZ	**Urewera**	**1.14**	**75**	PN	Pn	09 56 04.3		-0.3
MCHZ	**McNeill Hill**	**1.17**	**139**	PN	Pn	09 56 05.5		+0.7
MCHZ				SN	Sn	09 56 26.0		-0.7
KRHZ	**Kere

THE 27 09:58:17.6,38.36N×31.87E,h13km±4km,ML4.7/4,Error ellipse: s-maj=5.2km s-min=1.8km az=59.0
HLW 27 09:58:21.9,37.72N×31.67E,h14km±7km,Md5.0,Ml5.0
ISC 27 09:58:14.8±0.9,38.31N±0.02×31.87E±0.02,h8km±5km, n1099,σ1.52/1168,mb4.9/90,MS3.8/26,56C-38D,Turkey

Code	Station Name	Δ°	AZ°	Op Phase	ISC Phase	Time h m s	Res ISC
KDHN	Kadinhani	0.29	42	⇑iP	Pg	09 58 19.9	-0.7
KDHN				iS	Sg	09 58 24.3	-0.2
KDHN	Kadinhani	0.29	42	P	Pg	09 58 19.9	-0.7
KDHN				S	Sg	09 58 24.3	-0.2
LADK	Ladik-KONYA	0.40	105	ePG	Pg	09 58 22.2	-0.5
LADK	Ladik-KONYA	0.40	105	ePg	Pg	09 58 22.2	-0.5
KONT	Konya--Tatoy	0.53	133	ePG	Pg	09 58 24.5	-0.5
KONT				eSG	Sb	09 58 33.3	-0.8
KONT	Konya--Tatoy	0.53	133	ePg	Pg	09 58 24.5	-0.5
KONT				eSg	Sb	09 58 33.3	-0.8
KIZT	Kizilcal	0.57	1	ePG	Pg	09 58 24.8	-1.1
KIZT	Kizilcal	0.57	1	ePg	Pg	09 58 24.8	-1.1
KMER	Konya-Meram	0.67	144	⇓iP	Pg	09 58 27.2	-0.4
KMER				iS	Sg	09 58 37.1	+0.8
KMER	Konya-Meram	0.67	144	P	Pg	09 58 27.2	-0.4
KMER				S	Sg	09 58 37.1	+0.8
BOLV	Bolvadin	0.83	300	⇑iP	Pg	09 58 30.1	-0.7
BOLV				iS	Sb	09 58 43.0	0.0
BOLV	Bolvadin	0.83	300	P	Pg	09 58 30.1	-0.7
BOLV				S	Sb	09 58 43.0	0.0
CHBY	Cihanbeyli	0.85	71	ePG	Pg	09 58 29.9	-1.2
CHBY	Cihanbeyli	0.85	71	ePg	Pg	09 58 29.9	-1.2
SHUT	Suhut-Afyon	1.06	284	ePG	Pg	09 58 34.3	-0.9
SHUT	Suhut-Afyon	1.06	284	ePg	Pg	09 58 34.3	-1.0
SUTC	Sutluce-Ispart	1.08	220	ePN	Pb	09 58 35.0	-0.5
SUTC	Sutluce-Ispart	1.08	220	ePn	Pb	09 58 35.0	-0.5
ISP	Isparta	1.17	246	ePN	Pb	09 58 36.0	-1.3
ISP	Isparta	1.17	246	P	Pb	09 58 36.1	-1.2
ISP				S	Sn	09 58 53.8	0.0
ISP		1.17	246	⇓iP	Pb	09 58 36.9	-0.4
ISP	Isparta	1.17	246	Pg	Pb	09 58 36.2	-1.1
ISP	Isparta	1.17	246	eP	Pb	09 58 35.9	-1.4
ISP	Isparta	1.17	246	P	Pb	09 58 36.1	-1.2
ISP	Isparta	1.17	246	ePg	Pb	09 58 36.5	-0.8
ISP				S	Sn	09 58 53.8	0.0
ISP				eSn	Sn	09 58 54.9	+1.2
ISP	Isparta	1.17	246	ePg	Pb	09 58 36.5	-0.8
ISP				eSn	Sn	09 58 54.9	+1.2
SVRH	Sivrihisar-ESK	1.17	347	ePN	Pb	09 58 35.9	-1.5
SVRH	Sivrihisar-ESK	1.17	347	ePn	Pb	09 58 35.9	-1.5
KKUL	Konya-Kulu	1.19	43	⇑iP	Pb	09 58 37.0	-0.7
KKUL				iS	Sn	09 58 56.2	+1.8
KKUL	Konya-Kulu	1.19	43	P	Pb	09 58 37.0	-0.7
SULT	Sultanhani-AKS	1.30	94	ePN	Pn	09 58 38.1	-1.3
SULT	Sultanhani-AKS	1.30	94	ePn	Pn	09 58 38.1	-1.3
BCK	Bucak	1.32	231	ePN	Pn	09 58 39.0	-0.6
BCK	Bucak	1.32	231	ePn	Pn	09 58 39.0	-0.6
ESKT	Eskisehir	1.45	327	ePN	Pn	09 58 40.9	-0.6
ESKT	Eskisehir	1.45	327	iP	Pn	09 58 40.7	-0.8
ESKT	Eskisehir	1.45	327	ePn	Pn	09 58 40.9	-0.6
SEYT	Eskypehyr	1.45	327	P	Pn	09 58 40.7	-0.8
SERE	Sereflikochisa	1.47	64	ePN	Pn	09 58 41.7	-0.1
SERE	Sereflikochisa	1.47	64	ePn	Pn	09 58 41.7	-0.1
AFSR	Af˘ar-Bala (A	1.48	39	ePN	Pn	09 58 42.1	+0.3
AFSR	Af˘ar-Bala (A	1.48	39	ePn	Pn	09 58 42.1	+0.3
AKSY	AKSARAY - Alti	1.52	76	⇑iP	Pn	09 58 42.2	-0.3
AKSY	AKSARAY - Alti	1.52	76	P	Pn	09 58 42.2	-0.3
BBAL	Bala	1.57	38	⇑iP	Pn	09 58 43.3	+0.1
BBAL				iS	Sg	09 59 06.1	+0.6
BBAL	Bala	1.57	38	P	Pn	09 58 43.3	+0.1
BR231	Keskin MP Arra	1.69	24	ePn	Pg	09 58 47.8	+0.6
BR231	Keskin MP Arra	1.69	24	ePn	Pg	09 58 47.8	+0.6
ANTB	Antalya	1.70	215	ePN	Pb	09 58 45.7	-0.6
ANTB	Antalya	1.70	215	ePn	Pb	09 58 45.7	-0.7
LOD	Lodumlu	1.73	23	ePN	Pn	09 58 45.0	-0.2
LOD	Lodumlu	1.73	23	ePn	Pn	09 58 45.0	-0.2
DAD	Ankara	1.74	23	iP	Pn	09 58 45.2	-0.2
DAD	Ankara	1.74	23	P	Pn	09 58 45.2	-0.2
KORT	Korkueli	1.77	223	⇓iP	Pn	09 58 46.8	+0.8
KORT	Korkueli	1.77	223	P	Pn	09 58 46.8	+0.8
KAMT	Kaman	1.79	53	ePN	Pn	09 58 45.7	-0.4
KAMT	Kaman	1.79	53	ePn	Pn	09 58 45.7	-0.4
BSTP	Nigde	1.80	101	iP	Pb	09 58 47.4	-0.8
KHL	Karahalli	1.85	271	ePN	Pn	09 58 47.4	+0.5
KHL	Karahalli	1.85	271	ePn	Pn	09 58 47.4	+0.5
ERMK	Ermenek	1.86	153	⇓iP	Pn	09 58 47.6	+0.5
ERMK	Ermenek	1.86	153	P	Pn	09 58 47.6	+0.5
GULA	Gulagac	1.86	88	ePN	Pn	09 58 47.8	+0.7
GULA	Gulagac	1.86	88	ePn	Pn	09 58 47.8	+0.7
BORA	Eskisehir	1.92	325	iP	Pn	09 58 47.6	-0.3
BORA	Eskisehir	1.92	325	P	Pn	09 58 47.6	-0.3
BR131	Keskin Array S	1.98	44	ePn	Pn	09 58 48.5	-0.2
BR131				eSn	Sb	09 59 15.0	-1.0
BR131	Keskin Array S	1.98	44	ePn	Pn	09 58 48.5	-0.2
BR131				eSn	Sb	09 59 15.0	-1.0
BRTR	Keskin Array B	1.98	44	Pn	Pn	09 58 48.2	-0.5
	591nm,0.3s,baz=216,slow=15,SNR=3688						
BRTR				Sn	Sn	09 59 12.3	-1.4
	163nm,0.3s,baz=208,slow=21,SNR=5.6						
BRTR	Keskin Array B	1.98	44	iP	Pn	09 58 48.2	-0.5
BRTR				pmax	pmax		
	comp=Z,5μm,0.7s						
KERG	Konya-Eregli	1.99	116	⇓iP	Pn	09 58 48.9	0.0
KERG	Konya-Eregli	1.99	116	P	Pn	09 58 48.9	0.0
GDZ	Gediz	2.03	293	⇓iP	Pn	09 58 49.4	0.0
GDZ	Gediz	2.03	293	P	Pn	09 58 49.4	0.0
GEDZ	Gediz	2.06	292	ePN	Pn	09 58 50.1	+0.2
GEDZ	Gediz	2.06	292	ePn	Pn	09 58 50.1	+0.3
GAZI	Gazipasa	2.10	170	iP	Pn	09 58 51.2	+0.9
GAZI	Gazipasa	2.10	170	P	Pn	09 58 51.2	+0.9
GOLH	Golhisar	2.12	240	⇓iP	Pb	09 58 52.3	-1.2
GOLH	Golhisar	2.12	240	P	Pb	09 58 52.3	-1.2
NIG	Nigde	2.17	94	ePN	Pn	09 58 52.0	+0.6
NIG	Nigde	2.17	94	ePn	Pn	09 58 52.1	+0.7
TVSB	Tavsanli	2.20	302	ePN	Pn	09 58 51.9	+0.2
TVSB	Tavsanli	2.20	302	ePn	Pn	09 58 51.9	+0.1
ELL	Elmali	2.20	226	ePN	Pn	09 58 52.5	+0.7
ELL	Elmali	2.20	226	ePn	Pn	09 58 52.5	+0.7
GLHS	Glhisar (BURDU	2.20	239	ePN	Pn	09 58 52.8	+1.0
GLHS	Glhisar (BURDU	2.20	239	ePn	Pn	09 58 52.8	+1.0
MDUB	Mudurnu	2.23	347	ePN	Pn	09 58 52.3	+0.2
MDUB	Mudurnu	2.23	347	ePn	Pn	09 58 52.3	+0.2
DENT	Denizli	2.31	257	ePN	Pn	09 58 54.1	+0.9
DENT	Denizli	2.31	257	ePn	Pn	09 58 54.1	+0.9
CDAG	Cicekdag	2.35	55	⇑iP	Pn	09 58 53.8	-0.1
CDAG	Cicekdag	2.35	55	P	Pn	09 58 53.8	-0.1
BTAS	Taskesti	2.36	344	⇑iP	Pn	09 58 53.9	0.0
BTAS	Taskesti	2.36	344	P	Pn	09 58 53.9	0.0
GULT	Gulveren	2.37	334	ePN	Pn	09 58 54.2	+0.2
GULT	Gulveren	2.37	334	ePn	Pn	09 58 54.2	+0.1
AVNS	Nevsehir-Avano	2.39	77	iP	Pn	09 58 54.4	0.0
AVNS	Nevsehir-Avano	2.39	77	P	Pn	09 58 54.3	0.0
CAVI	Cavuskoy	2.46	321	ePN	Pn	09 58 55.5	+0.2
CAVI	Cavuskoy	2.46	321	ePn	Pn	09 58 55.5	+0.2
ELDT	Eldivan	2.49	28	⇑iP	Pn	09 58 55.3	-0.5
ELDT	Eldivan	2.49	28	P	Pn	09 58 55.3	-0.5
BCAM	Yenicaga	2.51	3	⇑iP	Pn	09 58 55.7	-0.4
BCAM	Yenicaga	2.51	3	P	Pn	09 58 55.7	-0.4
IKL	Isikli	2.52	144	ePN	Pn	09 58 56.8	+0.7
IKL	Isikli	2.52	144	ePn	Pn	09 58 56.8	+0.8
AKKU	Akkuyu-Mersin	2.53	147	ePN	Pn	09 58 57.2	+1.0
AKKU	Akkuyu-Mersin	2.53	147	ePn	Pn	09 58 57.2	+1.0
KULA	Kula-Manisa	2.53	276	ePN	Pn	09 58 56.7	+0.4
KULA	Kula-Manisa	2.53	276	P	Pn	09 58 56.6	+0.3
KULA				S	Sn	09 59 26.0	-1.3
KULA	Kula-Manisa	2.53	276	ePn	Pn	09 58 56.7	+0.4
KULA				S	Sn	09 59 26.0	-1.3
KULA	Kula-Manisa	2.53	276	P	Pn	09 58 56.6	+0.3
KULA				S	Sn	09 59 26.0	-1.3
MERS	Mersin	2.55	123	ePN	Pn	09 58 57.5	+1.0
MERS	Mersin	2.55	123	ePn	Pn	09 58 57.5	+1.0
KIZK	Mersin	2.57	134	iP	Pn	09 58 57.7	+1.0
KIZK	Mersin	2.57	134	P	Pn	09 58 57.7	+1.0
DEMI	Demirci	2.58	288	⇓iP	Pn	09 58 57.2	+0.3
DEMI	Demirci	2.58	288	P	Pn	09 58 57.2	+0.3
MANT	Manisa	2.61	275	⇓iP	Pn	09 58 56.6	-0.9
MANT	Manisa	2.61	275	P	Pn	09 58 56.6	-0.9
SAHE	Sakarya_HENDEK	2.66	343	⇑iP	Pn	09 58 58.1	0.0
SAHE	Sakarya_HENDEK	2.66	343	P	Pn	09 58 58.1	0.0
CANT	Cankiri	2.67	30	ePN	Pn	09 58 58.1	-0.1
SPNC	Sapanca-Adapaz	2.67	334	ePN	Pn	09 58 58.4	+0.4
SPNC	Sapanca-Adapaz	2.67	334	ePn	Pn	09 58 58.4	+0.3
ADVT	Abdulvahap	2.69	323	ePN	Pn	09 58 58.7	+0.2
ADVT	Abdulvahap	2.69	323	ePn	Pn	09 58 58.7	+0.3
KARA	Karaisali	2.73	111	ePN	Pn	09 58 59.8	+0.8
KARA	Karaisali	2.73	111	ePn	Pn	09 58 59.8	+0.8
AKAS	Kas	2.75	222	iP	Pn	09 59 01.6	+2.3
AKAS	Kas	2.75	222	P	Pn	09 59 01.6	+2.3
IZI	Iznik	2.75	318	ePN	Pn	09 59 00.7	+1.3
IZI	Iznik	2.75	318	ePn	Pn	09 59 00.7	+1.4
YAHY	KAYSERI_Yahyal	2.76	93	iP	Pn	09 59 00.2	+0.7
YAHY	KAYSERI_Yahyal	2.76	93	P	Pn	09 59 00.2	+0.7
FETY	Fethiye	2.77	234	ePN	Pn	09 59 00.6	+1.0
FETY	Fethiye	2.77	234	P	Pn	09 59 01.9	+2.3
FETY				S	Sn	09 59 33.7	+0.4
FETY	Fethiye	2.77	234	ePn	Pn	09 59 00.5	+0.9
FETY	Fethiye	2.77	234	P	Pn	09 59 01.9	+2.3
FETY				S	Sn	09 59 33.7	+0.4
FETY	Fethiye	2.77	234	P	Pn	09 59 01.9	+2.3
FETY				S	Sn	09 59 33.7	+0.4
KSL	Kastellorizon	2.82	221	P	Pn	09 59 02.3	+2.1
KSL				S	Sn	09 59 36.2	+1.8
KSL	Kastellorizon	2.82	221	P	Pn	09 59 02.3	+2.1
KSL				S	Sn	09 59 36.2	+1.8
CORM	Corum	2.84	48	ePN	Pn	09 59 01.2	+0.5
CORM	Corum	2.84	48	ePn	Pn	09 59 01.2	+0.6
DST	Dursunbey	2.85	298	ePN	Pn	09 59 01.2	+0.6
DST	Dursunbey	2.85	298	ePn	Pn	09 59 01.2	+0.6
DALY	Dalyan (Mu˘la	2.96	241	ePN	Pn	09 59 04.0	+2.0
DALY	Dalyan (Mu˘la	2.96	241	ePn	Pn	09 59 04.0	+2.0
TURN	Turunc	2.96	242	iP	Pb	09 59 08.0	+0.2
GEMT	Gemlik	2.97	317	ePN	Pn	09 59 02.9	+0.6
GEMT	Gemlik	2.97	317	ePn	Pn	09 59 02.9	+0.6
SAFT	Safranbolu	3.00	12	ePN	Pn	09 59 02.8	+0.1
SAFT	Safranbolu	3.00	12	ePn	Pn	09 59 02.8	+0.2
YOZ	Yozgat	3.00	63	ePN	Pn	09 59 03.0	+0.1
YOZ	Yozgat	3.00	63	ePn	Pn	09 59 03.0	+0.2
KDZE	Karadeniz Ereo	3.02	354	ePN	Pn	09 59 03.9	+0.9
KDZE	Karadeniz Ereo	3.02	354	ePn	Pn	09 59 03.9	+0.9
HRT	Hereke	3.04	327	ePN	Pn	09 59 03.3	+0.1
HRT	Hereke	3.04	327	ePn	Pn	09 59 03.3	+0.1
KAND	Kocaeli-Kandir	3.07	336	⇑iP	Pn	09 59 03.6	0.0
KAND	Kocaeli-Kandir	3.07	336	P	Pn	09 59 03.6	0.0
ILGA	Ilgaz	3.09	27	iP	Pn	09 59 03.6	-0.5
ILGA	Ilgaz	3.09	27	P	Pn	09 59 03.6	-0.5
MDNY	Mudanya-Bursa	3.10	313	ePN	Pn	09 59 04.8	+0.8
MDNY	Mudanya-Bursa	3.10	313	ePn	Pn	09 59 04.8	+0.8
COAL	Corum-Alaca	3.10	50	⇑iP	Pn	09 59 03.9	-0.3
COAL	Corum-Alaca	3.10	50	P	Pn	09 59 03.9	-0.3
AYDB	Zeytinkoy-Aydi	3.16	265	ePN	Pn	09 59 05.5	+0.6
AYDB	Zeytinkoy-Aydi	3.16	265	ePn	Pn	09 59 05.5	+0.5
BNN	Bunyan	3.16	79	ePN	Pn	09 59 05.8	+0.8
BNN	Bunyan	3.16	79	ePn	Pn	09 59 05.8	+0.8
TOS	Tosya	3.19	31	ePN	Pn	09 59 05.2	-0.2
TOS	Tosya	3.19	31	ePn	Pn	09 59 05.2	-0.2
ALFC	Alefka	3.20	169	P	Pn	09 59 04.8	-0.6
	baz=350						
ALFC				S	Sn	09 59 44.6	+0.9
ALFC	Alefka	3.20	169	P	Pn	09 59 04.8	-0.6
ALFC				S	Sn	09 59 44.6	+0.9
KOZT	Kozan	3.24	104	ePN	Pn	09 59 07.1	+1.2
KOZT	Kozan	3.24	104	ePn	Pn	09 59 07.1	+1.2
ARMT	Armutlu	3.24	315	ePN	Pn	09 59 06.6	+0.6
ARMT	Armutlu	3.24	315	ePn	Pn	09 59 06.6	+0.6
CTAK	Corum_Osmancik	3.25	43	⇑iP	Pn	09 59 06.2	-0.1
CTAK	Corum_Osmancik	3.25	43	P	Pn	09 59 06.2	-0.1
KRTS	Karatas	3.28	121	ePN	Pn	09 59 08.1	+1.5
KRTS	Karatas	3.28	121	ePn	Pn	09 59 08.1	+1.6
LEF	Lefka	3.28	165	ePN	Pn	09 59 07.8	+1.3
LEF	Lefka	3.28	165	ePn	Pn	09 59 07.8	+1.3
AKMC	Akamas	3.29	173	P	Pn	09 59 06.0	-0.7
	baz=354						
AKMC	Akamas	3.29	173	P	Pn	09 59 06.0	-0.7
LFK	Lefkose	3.30	156	ePN	Pn	09 59 08.5	+1.7
LFK	Lefkose	3.30	156	ePn	Pn	09 59 08.5	+1.6
CEYT	Ceyhan	3.34	112	ePN	Pn	09 59 09.0	+1.7
CEYT	Ceyhan	3.34	112	ePn	Pn	09 59 09.0	+1.7
BTIN	Bart˘–n	3.34	5	⇑iP	Pn	09 59 06.9	-0.4
BTIN	Bart˘–n	3.34	5	P	Pn	09 59 06.9	-0.4
ISK	Istanbul-Kandi	3.51	323	P	Pn	09 59 09.5	-0.1
ISK				S	Sn	09 59 50.3	-1.0
ISK	Istanbul-Kandi	3.51	323	P	Pn	09 59 09.5	-0.1
ISK				S	Sn	09 59 50.3	-1.0
ISK	Istanbul-Kandi	3.51	323	P	Pn	09 59 09.5	-0.1
ISK				S	Sn	09 59 50.3	-1.0
ISK	Istanbul-Kandi	3.51	323	P	Pn	09 59 09.5	-0.1
ISK				S	Sn	09 59 50.3	-1.0
CSS	Mathiatis	3.54	160	P	Pn	09 59 09.2	-0.9
	baz=342						
CSS				S	Sn	09 59 52.9	+0.8
CSS	Mathiatis	3.54	160	P	Pn	09 59 09.1	-1.0
CSS				S	Sn	09 59 53.8	+1.7
CSS	Mathiatis	3.54	160	Pn	Pn	09 59 09.5	-0.6
CSS	Mathiatis	3.54	160	P	Pn	09 59 09.1	-1.0
CSS	Mathiatis	3.54	160	Pn	Pn	09 59 09.5	-0.6
CSS				S	Sn	09 59 52.9	+0.8
CSS	Mathiatis	3.54	160	ePn	Pn	09 59 09.0	-1.1
CSS				S	Sn	09 59 53.8	+1.7
SARI	SarD1z-Kayseri	3.58	87	ePN	Pn	09 59 11.9	+1.2
CUSAR	Sarkisla-SIVAS	3.59	71	⇑iP	Pn	09 59 11.8	+0.8
CUSAR	Sarkisla-SIVAS	3.59	71	P	Pn	09 59 11.8	+0.8
ANDN	Andirin	3.61	100	iP	Pn	09 59 13.5	+2.3
ANDN	Andirin	3.61	100	P	Pn	09 59 13.5	+2.3
ARG	Arkhangelos	3.64	236	P	Pn	09 59 13.1	+1.6
ARG				S	Sn	09 59 55.9	+1.2
ARG	Arkhangelos	3.64	236	P	Pn	09 59 13.1	+1.6
ARG				S	Sn	09 59 55.9	+1.2
ARG	Arkhangelos	3.64	236	P	Pn	09 59 13.1	+1.6
ARG				S	Sn	09 59 55.9	+1.2
ARG	Arkhangelos	3.64	236	P	Pn	09 59 13.1	+1.6
ARG				S	Sn	09 59 55.9	+1.2
BDRM	Kayabasi	3.72	252	iP	Pn	09 59 13.7	+1.1
BDRM	Kayabasi	3.72	252	P	Pn	09 59 13.7	+1.1
BODT	Bodrum	3.82	252	P	Pn	09 59 15.1	+1.1
BODT	Bodrum	3.82	252	P	Pn	09 59 15.1	+1.1
BODT	Bodrum	3.82	252	P	Pn	09 59 15.1	+1.1
ELBA	Catalca	3.88	318	iP	Pn	09 59 14.8	0.0
ELBA	Catalca	3.88	318	P	Pn	09 59 14.8	0.0
BOYT	Boyabat	3.89	36	iP	Pn	09 59 14.4	-0.5
BOYT	Boyabat	3.89	36	P	Pn	09 59 14.4	-0.5
CUALT	Altinyayla-SIV	3.94	74	iP	Pn	09 59 17.4	+1.7
CUALT	Altinyayla-SIV	3.94	74	P	Pn	09 59 17.4	+1.7
TAHT	Tahtakopru-Hat	3.94	118	ePN	Pn	09 59 17.3	+1.7
TAHT	Tahtakopru-Hat	3.94	118	ePn	Pn	09 59 17.3	+1.7
SMG	Samos	4.02	263	P	Pn	09 59 17.1	+0.4
SMG				S	Sn	10 00 03.5	-0.5
SMG	Samos	4.02	263	P	Pn	09 59 17.1	+0.4
SMG				S	Sn	10 00 03.5	-0.5
SMG	Samos	4.02	263	P	Pn	09 59 17.1	+0.4
HAVZ	Havza	4.06	46	iP	Pn	09 59 17.2	0.0
HAVZ	Havza	4.06	46	P	Pn	09 59 17.2	0.0
ARNB	Al Arnab	4.09	125	eP	Pn	09 59 20.0	+2.3
ARNB				eS	Sb	10 00 17.8	+1.1
ARNB				AML	AML	10 00 30.8	
	comp=E,358nm,0.8s						
ARNB				AML	AML	10 00 42.7	
	comp=N,671nm,0.7s						
NIS1	Nisyros Isl.	4.10	247	P	Pn	09 59 18.8	+1.0
NIS1	Nisyros Isl.	4.10	247	P	Pn	09 59 18.8	+1.0
NIS1	Nisyros Isl.	4.10	247	P	Pn	09 59 18.8	+1.0
TOKA	Tokat	4.10	59	iP	Pn	09 59 20.9	+3.1
URLA	Izmir	4.15	272	iP	Pn	09 59 19.1	+0.6
URLA	Izmir	4.15	272	P	Pn	09 59 19.1	+0.6
AYVA	Ayvalik	4.17	286	iP	Pn	09 59 19.6	+0.9
AYVA	Ayvalik	4.17	286	P	Pn	09 59 19.6	+0.9
DRWC	Darouich	4.17	112	eP	Pn	09 59 20.6	+1.8
DRWC				eS	Sb	10 00 21.8	+2.7
DRWC				AML	AML	10 00 36.2	
	comp=E,282nm,0.6s						
DRWC				AML	AML	10 00 36.3	
	comp=N,164nm,0.6s						
CUGUR	Gurin_S˘VAS	4.26	83	iP	Pn	09 59 22.7	+2.6
SCER	sogukcermik	4.38	68	iP	Pn	09 59 22.2	+0.5
SCER	sogukcermik	4.38	68	P	Pn	09 59 22.2	+0.5
KUZU	Kuzuini	4.41	109	iP	Pn	09 59 23.6	+1.5
KUZU	Kuzuini	4.41	109	P	Pn	09 59 23.6	+1.5
PRK	Paraskevi	4.47	284	P	Pn	09 59 23.8	+0.9
PRK	Paraskevi	4.47	284	P	Pn	09 59 23.8	+0.9
PRK	Paraskevi	4.47	284	P	Pn	09 59 23.8	+0.9
PRK	Paraskevi	4.47	284	P	Pn	09 59 23.8	+0.9
CUKAN	kangal_SIVAS	4.49	75	iP	Pn	09 59 24.8	+1.5
CUKAN	kangal_SIVAS	4.49	75	P	Pn	09 59 24.8	+1.5
SAMS	Samsun-Alacam	4.51	46	iP	Pn	09 59 24.5	+1.1
SAMS	Samsun-Alacam	4.51	46	P	Pn	09 59 24.5	+1.1
CHOS	Chios island	4.57	273	P	Pn	09 59 25.4	+1.1
CHOS	Chios island	4.57	273	P	Pn	09 59 25.4	+1.1
CHOS	Chios island	4.57	273	P	Pn	09 59 25.4	+1.1
EZN	Ezine	4.58	291	P	Pn	09 59 25.3	+1.0
EZN	Ezine	4.58	291	P	Pn	09 59 25.3	+1.0
EZN	Ezine	4.58	291	P	Pn	09 59 25.3	+1.0
EZN	Ezine	4.58	291	P	Pn	09 59 25.3	+1.0
GZT	Gaziantep	4.61	100	iP	Pn	09 59 26.8	+2.0
KARP	Karpathos	4.67	235	P	Pn	09 59 26.8	+1.1
KARP				S	Sn	10 00 20.6	+0.5
KARP	Karpathos	4.67	235	ePn	Pn	09 59 26.5	+0.9
KARP	Karpathos	4.67	235	P	Pn	09 59 26.8	+1.1
KARP				S	Sn	10 00 20.6	+0.5
KARP	Karpathos	4.67	235	ePn	Pn	09 59 26.6	+0.9
KARP				S	Sn	10 00 20.6	+0.5
KESN	Edirne-Kesan	4.74	304	iP	Pn	09 59 27.1	+0.2
KESN	Edirne-Kesan	4.74	304	P	Pn	09 59 27.0	+0.2
BOZC	Bozcaada	4.78	291	iP	Pn	09 59 28.0	+0.9
SIGR	SIGRI	4.79	283	P	Pn	09 59 28.2	+1.0
SIGR	SIGRI	4.79	283	P	Pn	09 59 28.2	+1.0
SIGR	SIGRI	4.79	283	P	Pn	09 59 28.2	+1.0
GADA	Gvkgeada	5.00	294	P	Pn	09 59 31.2	+1.0
GADA	Gvkgeada	5.00	294	P	Pn	09 59 31.2	+1.0
GADA	Gvkgeada	5.00	294	P	Pn	09 59 31.2	+1.0
ENEZ	Enez	5.04	301	P	Pn	09 59 31.4	+0.7
ENEZ	Enez	5.04	301	P	Pn	09 59 31.4	+0.7
APE	Apeiranthos	5.18	258	P	Pn	09 59 33.8	+1.2
APE	Apeiranthos	5.18	258	⇓iP	Pn	09 59 33.8	+1.2
APE	Apeiranthos	5.18	258	eP	Pn	09 59 34.2	+1.6
APE	Apeiranthos	5.18	258	P	Pn	09 59 33.8	+1.2
APE	Apeiranthos	5.18	258	P	Pn	09 59 33.8	+1.2
ALN	Alexandroupoli	5.19	302	P	Pn	09 59 33.2	+0.5
ALN	Alexandroupoli	5.19	302	P	Pn	09 59 33.2	+0.5
ALN	Alexandroupoli	5.19	302	P	Pn	09 59 33.2	+0.5
ALN	Alexandroupoli	5.19	302	P	Pn	09 59 33.2	+0.5
HWQ	Hawqa	5.20	139	eP	Pn	09 59 33.0	0.0
HWQ	Hawqa	5.20	139	eP	Pn	09 59 33.0	+0.1
KEMA	Kemaliye	5.26	77	iP	Pn	09 59 35.7	+1.9
KEMA	Kemaliye	5.26	77	P	Pn	09 59 35.7	+1.9
SLMH	Al Salmeh	5.26	112	eP	Pn	09 59 36.8	+2.9
SLMH				eS	Sb	10 00 47.6	-2.8
SLMH				AML	AML	10 00 48.5	
	comp=E,166nm,0.7s						
SLMH				AML	AML	10 01 04.8	
	comp=N,192nm,0.7s						
SUSE	Susehri	5.27	67	iP	Pn	09 59 35.5	+1.5
SUSE	Susehri	5.27	67	P	Pn	09 59 35.5	+1.5
EDRB	Edirne	5.29	314	P	Pn	09 59 33.9	-0.2
EDRB	Edirne	5.29	314	P	Pn	09 59 33.9	-0.2
EDRB	Edirne	5.29	314	P	Pn	09 59 33.9	-0.2
ORDU	Ordu-Boztepe	5.34	58	iP	Pn	09 59 35.3	+0.4
ORDU	Ordu-Boztepe	5.34	58	P	Pn	09 59 35.3	+0.4
SMTH	Samothraki Isl	5.37	296	P	Pn	09 59 35.9	+0.7
SMTH	Samothraki Isl	5.37	296	P	Pn	09 59 35.9	+0.7
SMTH	Samothraki Isl	5.37	296	P	Pn	09 59 35.9	+0.7
SANT	Santorini	5.46	251	ePn	Pn	09 59 38.4	+1.9
SANT	Santorini	5.46	251	ePn	Pn	09 59 38.4	+1.9
REFA	Refahiye_ERZ˘	5.49	76	iP	Pn	09 59 40.1	+3.0
SURC	SANLIURFA_SURC	5.54	103	iP	Pn	09 59 39.0	+1.4
SURC	SANLIURFA_SURC	5.54	103	P	Pn	09 59 39.0	+1.4
MARH	Ras Al Marh	5.67	137	eP	Pn	09 59 41.3	+1.7
MARH				eS	Sb	10 00 55.5	-6.9
MARH				AML	AML	10 01 10.0	
	comp=E,130nm,0.7s						
MARH				AML	AML	10 01 12.7	
	comp=N,92nm,0.7s						
RCY	Rachaya	5.78	145	eP	Pn	09 59 41.0	0.0
RCY	Rachaya	5.78	145	eP	Pn	09 59 41.0	0.0
BRBR	Barbar	5.90	145	eP	Pn	09 59 43.1	+0.4
BRBR				eS	Sn	10 00 57.5	+6.9
BRBR				AML	AML	10 01 12.8	
	comp=E,134nm,0.7s						
BRBR				AML	AML	10 01 14.9	
	comp=N,154nm,0.7s						
KSDI	Kefar Szold	5.96	148	Pn	Pn	09 59 44.5	+1.2
KSDI	Kefar Szold	5.96	148	Pn	Pn	09 59 44.5	+1.2
MMA0B	Mount Meron ar	6.01	150	Pn	Pn	09 59 44.8	+0.7
MMA0B	Mount Meron ar	6.01	150	Pn	Pn	09 59 44.8	+0.7
MMAI	Mount Meron Ar	6.01	150	Pn	Pn	09 59 44.4	+0.3
	comp=N,7.3nm,0.3s,baz=343,slow=11,SNR=19						
MMAI				Sn	Sn	10 00 57.3	+4.1
	baz=331,slow=35,SNR=2.1						
LAST	Lasithi	6.01	241	P	Pn	09 59 44.6	+0.4
LAST	Lasithi	6.01	241	P	Pn	09 59 44.6	+0.4
LAST	Lasithi	6.01	241	ePn	Pn	09 59 45.0	+0.8
LAST	Lasithi	6.01	241	ePn	Pn	09 59 45.0	+0.8
ROOS	tl_alroos	6.02	132	eP	Pn	09 59 46.7	+2.5
ROOS				eS	Sb	10 01 03.5	-8.7
ROOS				AML	AML	10 01 27.2	
	comp=N,176nm,0.7s						
ROOS				AML	AML	10 01 43.8	
	comp=E,177nm,0.7s						
KELT	Kelkit	6.02	70	iP	Pn	09 59 46.7	+2.3
MANR	Mangalia	6.04	337	⇑iP	Pn	09 59 44.5	+0.1
MANR	Mangalia	6.04	337	⇑iP	Pn	09 59 44.5	+0.1
TOTH	TOTAH	6.17	142	eP	Pn	09 59 47.8	+1.6
TOTH				eS	Sn	10 01 05.9	+8.9
TOTH				AML	AML	10 01 12.4	
	comp=E,94nm,0.6s						
TOTH				AML	AML	10 01 27.3	
	comp=N,108nm,0.6s						
BLGI	Bet Lehem HaGe	6.18	153	Pn	Pn	09 59 46.5	+0.1
BLGI	Bet Lehem HaGe	6.18	153	Pn	Pn	09 59 46.5	+0.1
KSRV	Kasrt alli	6.20	111	eP	Pn	09 59 54.1	+7.4
KSRV				eS	Sb	10 01 17.1	-0.2
KSRV				AML	AML	10 01 20.9	
	comp=E,33nm,0.7s						
KSRV				AML	AML	10 01 47.5	
	comp=N,51nm,0.7s						
KSHT	Keshet	6.21	148	Pn	Pn	09 59 48.4	+1.6
KSHT	Keshet	6.21	148	Pn	Pn	09 59 48.4	+1.6
EFOR	EFORIE	6.26	338	⇓iP	Pn	09 59 47.4	-0.1
EFOR	EFORIE	6.26	338	⇓iP	Pn	09 59 47.4	-0.1
KAVA	Kavala	6.28	298	P	Pn	09 59 48.3	+0.6
KAVA	Kavala	6.28	298	P	Pn	09 59 48.3	+0.6
KAVA	Kavala	6.28	298	P	Pn	09 59 48.3	+0.6
IDI	Anoyia	6.36	244	Pn	Pn	09 59 49.2	+0.3
	comp=N,11nm,0.3s,baz=54,slow=18,SNR=25						
IDI				Sn	Sn	10 01 01.1	-0.6
	comp=N,2.3nm,0.3s,baz=134,slow=18,SNR=2.0						
IDI	Anoyia	6.36	244	P	Pn	09 59 49.2	+0.3
SEV	Sevastopol'	6.38	12	iP	Pn	09 59 48.1	-0.9
SEV				eS	Sn	10 00 59.6	-2.4
SEV	Sevastopol'	6.38	12	iP	Pn	09 59 48.1	-0.9
YAL	Yalta	6.41	15	iP	Pn	09 59 49.5	0.0
YAL				eS	Sn	10 01 01.2	-1.6
YAL	Yalta	6.41	15	iP	Pn	09 59 49.5	0.0
MMLI	Mount Malkishu	6.53	153	Pn	Pn	09 59 52.1	+0.8
MMLI	Mount Malkishu	6.53	153	Pn	Pn	09 59 52.1	+0.8
SIVA	Sivas	6.55	242	P	Pn	09 59 53.8	+2.3
SIVA	Sivas	6.55	242	P	Pn	09 59 53.8	+2.3
SIVA	Sivas	6.55	242	P	Pn	09 59 53.8	+2.3
SLTI	Sal'it	6.58	156	Pn	Pn	09 59 52.5	+0.6
SLTI	Sal'it	6.58	156	Pn	Pn	09 59 52.5	+0.6
ALU	Alushta	6.65	16	iP	Pn	09 59 51.6	-1.1
ALU				eS	Sn	10 01 05.9	-2.8
ALU	Alushta	6.65	16	iP	Pn	09 59 51.6	-1.1
CVDA	Cernavoda	6.68	336	⇑iP	Pn	09 59 52.5	-0.6
CVDA	Cernavoda	6.68	336	⇑iP	Pn	09 59 52.5	-0.6
HMDT	Nahal Hemdat	6.74	153	Pn	Pn	09 59 55.0	+1.0
HMDT	Nahal Hemdat	6.74	153	Pn	Pn	09 59 55.0	+1.0
SALA	Sala	6.84	143	eP	Pn	09 59 57.1	+1.4
SALA				eS	Sn	10 01 21.4	+7.6
SALA				AML	AML	10 01 38.1	
	comp=E,6.5nm,0.6s						
SALA				AML	AML	10 01 51.3	
	comp=N,56nm,0.6s						
SIM	Simferopol'	6.85	13	eP	Pn	09 59 57.1	+1.6
SIM				eS	Sn	10 01 16.0	+2.4
SIM				pmax	pmax		
	comp=E,93nm,0.9s						
SIM				MLR	MLR		
	comp=Z,600nm,11.0s						
SIM	Simferopol'	6.85	13	eP	Pn	09 59 57.1	+1.6
PLG	Polygyros	6.85	290	P	Pn	09 59 56.9	+1.3
PLG	Polygyros	6.85	290	P	Pn	09 59 56.9	+1.3
PLG	Polygyros	6.85	290	P	Pn	09 59 56.9	+1.3
PLG	Polygyros	6.85	290	P	Pn	09 59 56.9	+1.3
NVR	Nevrokopi	6.87	299	P	Pn	09 59 57.0	+1.1

NVR	Nevrokopi	6.87	299		P		Pn	09 59 57.0	+1.1
NVR	Nevrokopi	6.87	299		P		Pn	09 59 57.0	+1.1
DID	Didima	6.87	266		P		Pn	09 59 56.6	+0.7
DID	Didima	6.87	266		P		Pn	09 59 56.6	+0.7
DID	Didima	6.87	266		P		Pn	09 59 56.6	+0.7
TLB	Topalu	6.90	337	⇑	iP		Pn	09 59 56.3	+0.1
TLB	Topalu	6.90	337	⇑	iP		Pn	09 59 56.3	+0.1
SRS	Serrai	6.97	296		P		Pn	09 59 58.0	+0.8
SRS	Serrai	6.97	296		P		Pn	09 59 58.0	+0.8
SRS	Serrai	6.97	296		P		Pn	09 59 58.0	+0.8
SRS	Serrai	6.97	296		P		Pn	09 59 58.0	+0.8
ZALF	Zalf	6.97	139		eP		Pn	09 59 59.4	+2.1
ZALF					eS		Sn	10 01 24.9	+8.0
ZALF					AML		AML	10 01 33.1	
	comp=E,41nm,0.6s								
ZALF					AML		AML	10 01 44.0	
	comp=N,46nm,0.7s								
SUDU	Sudak	6.98	19		iP		Pn	09 59 56.9	-0.5
SUDU					eS		Sn	10 01 14.6	-2.3
SUDU	Sudak	6.98	19		iP		Pn	09 59 56.9	-0.5
HARR	Harsova	7.03	336	⇑	iP		Pn	09 59 58.0	0.0
HARR	Harsova	7.03	336	⇑	iP		Pn	09 59 58.0	0.0
TLCR		7.24	343	⇓	iP		Pn	10 00 02.1	+1.2
TLCR		7.24	343	⇓	iP		Pn	10 00 02.1	+1.2
DSI	Dead Sea	7.31	156		Pn		Pn	10 00 02.3	+0.4
DSI	Dead Sea	7.31	156		Pn		Pn	10 00 02.3	+0.4
ASF	Jabal al Asfar	7.37	145		Pn		Pn	10 00 05.2	+2.4
	comp=N,0.4nm,0.3s,baz=291,slow=7.1,SNR=19								
ASF					Sn		Sn	10 01 25.8	-0.9
	baz=274,slow=16,SNR=1.3								
ASF					LR		LR	10 03 33.4	
	comp=N,573nm,20.3s,baz=286,slow=43								
CFR	Carcaliu	7.41	339	⇑	iP		Pn	10 00 03.2	0.0
CFR	Carcaliu	7.41	339	⇑	iP		Pn	10 00 03.2	0.0
KNT	Kendrikon	7.48	295		P		Pn	10 00 05.7	+1.5
KNT	Kendrikon	7.48	295		P		Pn	10 00 05.7	+1.5
KNT	Kendrikon	7.48	295		P		Pn	10 00 05.7	+1.5
KNT	Kendrikon	7.48	295		P		Pn	10 00 05.7	+1.5
RSH		7.49	168		P		Pn	10 00 03.6	-0.7
	baz=165								
RSH		7.49	168		P		Pn	10 00 03.6	-0.7
AGG	Agios Georgios	7.50	278		eP		Pn	10 00 06.4	+1.9
AGG	Agios Georgios	7.50	278		ePn		Pn	10 00 06.4	+1.9
AGG	Agios Georgios	7.50	278		ePn		Pn	10 00 06.4	+1.9
ANN	Anapa	7.71	31		eP		Pn	10 00 03.2	-4.1
ANN					eS		Sn	10 01 29.4	-5.4
ANN					pmax		pmax		
	comp=Z,12nm,0.8s								
ANN					MLR		MLR		
	comp=N,259nm,10.0s								
ANN					MLR		MLR		
	comp=Z,453nm,10.0s								
ANN					MLR		MLR		
	comp=E,310nm,10.0s								
ANN	Anapa	7.71	31		eP		Pn	10 00 03.2	-4.1
	comp=E,12nm,0.8s								
ANN					eS		Sn	10 01 29.4	-5.4
	comp=E,453nm,10.0s								
VAY	Valandovo	7.77	296		ePn		Pn	09 59 58.1	-10
ISR	Istrita	7.89	331	⇑	iP		Pn	10 00 11.3	+1.5
ISR	Istrita	7.89	331	⇑	iP		Pn	10 00 11.3	+1.5
MATC	Matruh	7.92	210		P		Pn	10 00 08.9	-1.4
	baz=212								
SOC	Sochi	7.94	46		eP		Pn	10 00 09.0	-1.5
SOC					e			10 01 39.8	
SOC					pmax		pmax		
	comp=Z,10.0nm,0.5s								
SOC					MLR		MLR		
	comp=Z,1μm,14.0s								
SOC	Sochi	7.94	46		eP		Pn	10 00 09.0	-1.5
	comp=Z,1μm,14.0s								
SOC					eS		Sn	10 01 39.8	-0.7
GRER		7.96	334	⇑	iP		Pn	10 00 12.3	+1.6
GRER		7.96	334	⇑	iP		Pn	10 00 12.3	+1.6
ZFRI	Zfri	8.20	160		Pn		Pn	10 00 14.3	+0.2
ZFRI	Zfri	8.20	160		Pn		Pn	10 00 14.3	+0.2
ODBI	Odobesti	8.27	336	⇑	iP		Pn	10 00 16.2	+1.2
ODBI	Odobesti	8.27	336	⇑	iP		Pn	10 00 16.2	+1.2
PRNI	Paran	8.35	161		Pn		Pn	10 00 15.5	-0.6
PRNI	Paran	8.35	161		Pn		Pn	10 00 15.5	-0.6
MLR	Muntele Rosu	8.43	330		Pn		Pn	10 00 19.0	+1.7
	comp=Z,0.7nm,0.3s,baz=178,slow=11,SNR=14								
MLR	Muntele Rosu	8.43	330	⇓	iP		Pn	10 00 18.7	+1.4
MLR	Muntele Rosu	8.43	330		eP		Pn	10 00 18.8	+1.4
MLR	Muntele Rosu	8.43	330	⇓	iP		Pn	10 00 18.7	+1.4
MLR	Muntele Rosu	8.43	330		ePn		Pn	10 00 18.8	+1.4
VRI	Vrincioaia	8.47	335	⇓	iP		Pn	10 00 18.5	+0.8
VRI	Vrincioaia	8.47	335	⇓	iP		Pn	10 00 18.5	+0.8
PLOR	Plostina	8.48	334	⇓	iP		Pn	10 00 18.7	+0.8
PLOR	Plostina	8.48	334	⇓	iP		Pn	10 00 18.7	+0.8
HMYD	Mayadein	8.53	186		P		Pn	10 00 17.3	-1.4
	baz=186								
HMYD	Mayadein	8.53	186		P		Pn	10 00 17.3	-1.4
HNKL	Nakhl	8.54	168		P		Pn	10 00 18.0	-0.7
	baz=165								
HNKL					AMP			10 02 00.0	
	comp=N,250μm,0.5s,logA/T=5.7,baz=165								
HNKL	Nakhl	8.54	168		P		Pn	10 00 18.0	-0.7
MTUR	Matau	8.58	326	⇑	iP		Pn	10 00 19.1	-0.3
MTUR	Matau	8.58	326	⇑	iP		Pn	10 00 19.1	-0.3
LEOM	Leova	8.59	343	⇓	iP		Pn	10 00 20.0	+0.6
LEOM	Leova	8.59	343	⇓	iP		Pn	10 00 20.0	+0.6
HRFI	Mount Harif	8.65	161		Pn		Pn	10 00 20.4	0.0
HRFI	Mount Harif	8.65	161		Pn		Pn	10 00 20.4	0.0
HSAF	As Saff	8.67	182		P		Pn	10 00 18.9	-1.7
	baz=181								
HSAF	As Saff	8.67	182		P		Pn	10 00 18.9	-1.7
GLL	Jalalah	8.71	181		P		Pn	10 00 19.6	-1.5
	baz=179								
GLL	Jalalah	8.71	181		P		Pn	10 00 19.6	-1.5
SLUM	Salum	8.72	221		P		Pn	10 00 20.7	-0.5
	baz=223								
SLUM					AMP			10 01 00.0	
	comp=E,1010μm,0.5s,logA/T=6.3,baz=223								
SLUM					S		Sn	10 01 47.4	-12
	baz=223								
SLUM	Salum	8.72	221		P		Pn	10 00 20.7	-0.5
VOIR		8.75	327	⇑	iP		Pn	10 00 23.2	+1.5
VOIR		8.75	327	⇑	iP		Pn	10 00 23.2	+1.5
MBRI	Mt Berech	8.86	163		Pn		Pn	10 00 22.2	-1.0
MBRI	Mt Berech	8.86	163		Pn		Pn	10 00 22.2	-1.0
ARR	Arges	8.88	325	⇑	iP		Pn	10 00 24.4	+0.9
ARR	Arges	8.88	325	⇑	iP		Pn	10 00 24.4	+0.9
CHVG	Ch'k'valeri	8.94	57		P		Pn	10 00 27.0	+2.8
KIS	Kishinev	8.97	346		eP		Pn	10 00 22.0	-2.6
KIS					iS		Sn	10 02 02.0	-3.8
KIS					LRM		MLR	10 04 36.0	
	comp=E,800nm,14.0s								
KIS	Kishinev	8.97	346		eP		Pn	10 00 22.0	-2.6
KIS					iS		Sn	10 02 02.0	-3.8
KIS					MLR		MLR		
	comp=Z,1μm,13.0s								
KIS					MLR		MLR		
	comp=N,900nm,12.0s								
KIS					MLR		MLR		
	comp=Z,800nm,14.0s								
KIS	Kishinev	8.97	346		eP		Pn	10 00 22.0	-2.6
KIS					iS		Sn	10 02 02.0	-3.8
	comp=Z,800nm,14.0s								
EIL	Elat	8.98	163		Pn		Pn	10 00 25.0	+0.1
	comp=Z,3.6nm,0.3s,baz=338,slow=17,SNR=18								
EIL					Sn		Sn	10 02 04.5	-1.8
	comp=Z,1.4nm,0.3s,baz=29,slow=18,SNR=2.4								
EIL					LR		LR	10 04 31.9	
	comp=Z,649nm,19.4s,baz=46,slow=42								
EIL	Elat	8.98	163		Pn		Pn	10 00 24.8	-0.1
DOPR	Dopca	9.04	330	⇑	iP		Pn	10 00 27.0	+1.4
DOPR	Dopca	9.04	330	⇑	iP		Pn	10 00 27.0	+1.4
TESR	Tescani	9.06	336	⇑	iP		Pn	10 00 26.4	+0.5
TESR	Tescani	9.06	336	⇑	iP		Pn	10 00 26.4	+0.5
ZAGS	Zajecar	9.12	310	⇑	iPn		Pn	10 00 26.8	+0.1
LOT	Lotru	9.35	322	⇑	iP		Pn	10 00 30.9	+1.0
LOT	Lotru	9.35	322	⇑	iP		Pn	10 00 30.9	+1.0
AKH	Akhalkalaki	9.46	67	⇑	iP		Pn	10 00 35.7	+4.2
AKH	Akhalkalaki	9.46	67		P		Pn	10 00 34.9	+3.3
AKH	Akhalkalaki	9.46	67		P		Pn	10 00 34.9	+3.4
AKH	Akhalkalaki	9.46	67		P		Pn	10 00 34.9	+3.4
BGD	Bogdanovka	9.50	68		P		Pn	10 00 40.6	+8.5
SELS	Selova	9.52	304	⇓	iPn		Pn	10 00 32.8	+0.6
NEY	Neytrino	9.60	56	⇓	eP		Pn	10 00 35.1	+1.7
NEY	Neytrino	9.60	56		eP		Pn	10 00 35.1	+1.7
TIR	Tirane	9.72	292	⇓	iP		Pn	10 00 34.5	-0.4
TIR	Tirane	9.72	292		eP		Pn	10 00 37.2	+2.3
TIR	Tirane	9.72	292	⇓	iP		Pn	10 00 34.5	-0.4
TIR	Tirane	9.72	292		ePn		Pn	10 00 37.2	+2.3
TIR	Tirane	9.72	292		ePn		Pn	10 00 37.2	+2.3
GZR	Gura Zlata	9.80	319	⇓	iP		Pn	10 00 36.8	+0.7
GZR	Gura Zlata	9.80	319	⇓	iP		Pn	10 00 36.8	+0.7
ONI	Oni	9.81	60		P		Pn	10 00 38.9	+2.7
ONI	Oni	9.81	60		P		Pn	10 00 38.9	+2.7
ONI	Oni	9.81	60		P		Pn	10 00 38.9	+2.7
KIV	Kislovodsk	9.92	52		eP		Pn	10 00 36.7	-1.0
KIV					eS		Sn	10 02 28.2	-1.0
KIV					pmax		pmax		
	comp=Z,39nm,1.0s								
KIV					MLR		MLR		
	comp=Z,75nm,9.0s								
KIV	Kislovodsk	9.92	52		eP		Pn	10 00 36.7	-1.0
	comp=Z,39nm,1.0s								
KIV					eS		Sn	10 02 28.2	-1.0
	comp=Z,75nm,9.0s								
KVAR	Kislovodsk Arr	9.92	52		Pn		Pn	10 00 39.9	+2.1
	baz=319,slow=11,SNR=18								
KBZ	Khabaz	9.94	53		Pn		Pn	10 00 38.8	+0.9
	comp=Z,0.3nm,0.3s,baz=236,slow=13,SNR=8.9								
KBZ					LR		LR	10 04 57.1	
	comp=Z,328nm,21.6s,baz=226,slow=41								
TR2	Tor 2	10.01	171		P		Pn	10 00 38.5	-0.6
	baz=169								
TR2	Tor 2	10.01	171		P		Pn	10 00 38.4	-0.6
GRUS	Gruza	10.10	307	⇑	iPn		Pn	10 00 41.0	+1.0
SORM	Soroca	10.15	347	⇑	iP		Pn	10 00 40.5	-0.3
SORM	Soroca	10.15	347	⇑	iP		Pn	10 00 40.5	-0.3
GNI	Garni	10.16	76		Pn		Pn	10 00 45.2	+4.2
	comp=Z,0.3nm,0.3s,baz=230,slow=2.0,SNR=21								
GNI	Garni	10.16	76		iP		Pn	10 00 45.9	+4.9
	SNR=10.0								
GNI	Garni	10.16	76		eP		Pn	10 00 46.4	+5.4
GNI	Garni	10.16	76		Pn		Pn	10 00 46.1	+5.1
	SNR=17								
GNI	Garni	10.16	76		P		Pn	10 00 46.1	+5.1
	SNR=17								
GNI	Garni	10.16	76		eP		Pn	10 00 46.4	+5.4
GNI	Garni	10.16	76		ePn		Pn	10 00 46.4	+5.3
ZEI	Tsey	10.19	60		eP		Pn	10 00 44.4	+2.9
ZEI					pmax		pmax		
	comp=Z,144nm,1.3s								
IVAS	Ivanjica	10.31	304		ePn		Pn	10 00 45.6	+2.6
TBLG	Delisi	10.45	67		P		Pn	10 00 48.5	+3.6
TBLG	Delisi	10.45	67		P		Pn	10 00 48.5	+3.6
TBLG	Delisi	10.45	67		P		Pn	10 00 48.5	+3.6
TRUS	Trudelj	10.46	308	⇑	iPn		Pn	10 00 45.7	+0.7
PDG	Podgorica	10.47	297	⇓	iP		Pn	10 00 48.8	+3.7
GUDG	Gudauri	10.47	63		P		Pn	10 00 47.2	+1.7
SWA2		10.49	212		P		Pn	10 00 43.3	-2.2
	baz=214								
SWA2					AMP			10 02 00.0	
	comp=E,1850μm,0.5s,logA/T=6.6,baz=214								
BURAR	Bucovina Array	10.50	335	⇓	iP		Pn	10 00 46.7	+1.0
BURAR	Bucovina Array	10.50	335	⇓	iP		Pn	10 00 46.7	+1.0
BUR08	Bucovina Ar. S	10.53	335		ePn		Pn	10 00 46.9	+0.8
BUR08	Bucovina Ar. S	10.53	335		ePn		Pn	10 00 46.9	+0.8
BZS	Buzias	10.56	317	⇓	iP		Pn	10 00 47.5	+1.1
BZS	Buzias	10.56	317	⇓	iP		Pn	10 00 47.5	+1.1
DIVS	Divibare	10.65	307	⇑	iPn		Pn	10 00 48.4	+0.6
GOF	Gofitskoye	10.73	48	⇑	eP		Pn	10 00 52.1	+3.3
GOF					eS		Sn	10 02 57.4	+8.3
GOF					pmax		pmax		
	comp=Z,97nm,1.0s								
GOF	Gofitskoye	10.73	48		eP		Pn	10 00 52.1	+3.3
	comp=Z,97nm,1.0s								
GOF					eS		Sn	10 02 57.4	+8.3
TEKS	Tekeris	11.16	308	⇑	iPn		Pn	10 00 55.8	+1.1
FGSL	Fruska Gora	11.31	311		ePn		Pn	10 00 59.4	+2.7
TIP	Timpagrande	11.84	279		ePn		Pn	10 01 05.0	+1.0
TIP	Timpagrande	11.84	279		ePn		Pn	10 01 05.0	+1.0
TRPA	Tarpa	11.94	328	⇓	eP		Pn	10 01 05.3	+0.1
TRPA	Tarpa	11.94	328	⇓	ePn		Pn	10 01 05.3	+0.1
UZH	Uzhgorod	12.44	329		eP		Pn	10 01 17.7	+5.7
UZH	Uzhgorod	12.44	329		eP		Pn	10 01 17.7	+5.7
AK11	Malin Array Si	12.52	352		ePn		Pn	10 01 09.4	-3.8
KIEV	Kiev	12.53	352		eP		Pn	10 01 12.0	-1.3
KIEV	Kiev	12.53	352		eP		Pn	10 01 12.0	-1.3
KIEV	Kiev	12.53	352		ePn		Pn	10 01 10.4	-2.9
AKASG	Malin Array Be	12.54	352		Pn		Pn	10 01 10.7	-2.7
	comp=Z,7.2nm,0.3s,baz=172,slow=12,SNR=11								
AKASG					Sn		Sn	10 03 25.6	-7.5
	comp=Z,1.3nm,0.3s,baz=212,slow=26,SNR=2.7								
AKASG					LR		LR	10 06 36.8	
	comp=Z,240nm,21.2s,baz=195,slow=40								
AKBB	Malin Array Si	12.54	352		eP		Pn	10 01 10.4	-3.0
AKBB	Malin Array Si	12.54	352		eP		Pn	10 01 10.4	-3.0
AKBB	Malin Array Si	12.54	352		ePn		Pn	10 01 10.4	-3.0
CEL	Celeste	12.56	275		ePn		Pn	10 01 15.8	+2.0
CEL	Celeste	12.56	275		ePn		Pn	10 01 15.8	+2.0
CUC	Castrocucco	12.58	283		ePn		Pn	10 01 14.8	+0.7
CUC	Castrocucco	12.58	283		ePn		Pn	10 01 14.8	+0.7
LVV	L'vov	12.81	337		eP		Pn	10 01 17.8	+0.7
LVV	L'vov	12.81	337		eP		Pn	10 01 17.8	+0.7
PSZ	Piszkesteto	12.98	322		eP		Pn	10 01 21.0	+1.5
PSZ	Piszkesteto	12.98	322		ePn		Pn	10 01 21.0	+1.5
PSZ	Piszkesteto	12.98	322		ePn		Pn	10 01 21.0	+1.5
PSZ	Piszkesteto	12.98	322	⇓	epPn		Pn	10 01 27.2	+7.7
STHS	Stebnicka Huta	13.48	329		eP		Pn	10 01 28.4	+2.1
STHS	Stebnicka Huta	13.48	329		ePn		Pn	10 01 28.4	+2.1
STHS	Stebnicka Huta	13.48	329		ePN		Pn	10 01 28.4	+2.1
BEHE	Becsehely	13.80	311		ePn		P	10 01 36.1	-3.2
VAE	Valguarnera	13.82	272		Pn		Pn	10 01 33.0	+2.1
	comp=Z,1.1nm,0.3s,baz=289,slow=13,SNR=2.1								
NIE	Niedzica	13.88	327		eP		Pn	10 01 34.4	+2.6
NIE	Niedzica	13.88	327		eP		Pn	10 01 34.4	+2.7
NIE	Niedzica	13.88	327		eP		Pn	10 01 34.4	+2.7
VYHS	Vyhne	13.89	321		eP		Pn	10 01 33.6	+1.7
VYHS	Vyhne	13.89	321		ePn		Pn	10 01 33.6	+1.7
VYHS	Vyhne	13.89	321		ePN		Pn	10 01 33.5	+1.6
VSR	Storozhevoye	13.90	19		eP		Pn	10 01 32.2	+0.2
VSR					pmax		pmax		
	comp=Z,90nm,0.9s								
VSR	Storozhevoye	13.90	19		eP		Pn	10 01 32.2	+0.2
	comp=Z,90nm,0.9s								
LANS	Liptovska Anna	14.05	324		eP		Pn	10 01 37.2	+3.1
LANS	Liptovska Anna	14.05	324		eP		Pn	10 01 37.2	+3.1
LANS	Liptovska Anna	14.05	324		ePN		Pn	10 01 37.2	+3.1
WDD	Wied Dalam	14.07	265		ePn		Pn	10 01 37.5	+3.1
WDD	Wied Dalam	14.07	265		ePn		Pn	10 01 37.5	+3.1
AQU	L'Aquila	14.65	292		eP		Pn	10 01 44.7	+2.3
AQU	L'Aquila	14.65	292		ePn		Pn	10 01 44.7	+2.3
AQU	L'Aquila	14.65	292		ePn		Pn	10 01 44.7	+2.3
VRH	Novokhopyorsk	14.65	25		eP		Pn	10 01 43.1	+0.8
VRH					pmax		pmax		
	comp=Z,70nm,0.9s								
OJC	Ojcow	14.70	328		eP		P	10 01 47.3	-1.8
OJC	Ojcow	14.70	328		eP		P	10 01 47.3	-1.9
OJC	Ojcow	14.70	328		eP		P	10 01 47.3	-1.9
CLTB	Caltabellotta	14.74	273		ePn		Pn	10 01 45.6	+1.9
CLTB	Caltabellotta	14.74	273		ePn		Pn	10 01 45.6	+1.9
SOKA	Soboth	14.95	309		iPn		Pn	10 01 43.5	-3.0
	comp=Z,12nm,0.8s,SNR=5.6								
OKC	Ostrava-Krasne	15.14	324		AMS		AMS	10 09 00.0	
	comp=Z,600nm,10.7s								
OBKA	Obir	15.17	308		iPn		Pn	10 01 46.8	-2.6
	comp=Z,28nm,0.9s,SNR=11								
MORC	Moravsky Berou	15.38	323		eP		Pn	10 01 53.4	+1.2
MORC					pmax		pmax		
	comp=Z,83nm,1.2s								
MORC	Moravsky Berou	15.38	323		ePn		Pn	10 01 53.4	+1.2
	comp=Z,83nm,1.2s								
MORC	Moravsky Berou	15.38	323		ePn		Pn	10 01 53.4	+1.2
	comp=Z,83nm,1.2s								
VRAC	Vranov	15.54	320		Pn		P	10 01 57.7	-0.9
	comp=Z,0.3nm,0.3s,baz=133,slow=11,SNR=7.5								
VRAC					LR		LR	10 08 33.7	
	comp=Z,219nm,20.9s,baz=129,slow=40								
MYKA	Terra Mystica	15.79	308		iPn		Pn	10 01 55.4	-2.1
	comp=Z,1.4nm,0.2s,SNR=24								
MYKA	Terra Mystica	15.79	308		Pn		Pn	10 01 55.4	-2.1
	comp=Z,1.4nm,0.2s,SNR=24								
KRLC	Kraliky	15.95	322		eP		P	10 02 04.0	+0.9
KRLC	Kraliky	15.95	322		eP		P	10 02 04.0	+0.9
KRLC	Kraliky	15.95	322		P		P	10 02 04.0	+0.9
MOA	Molln	15.98	312		iPn		Pn	10 01 58.7	-1.2
	comp=Z,29nm,0.9s,SNR=15								
MOA	Molln	15.98	312		Pn		Pn	10 01 58.7	-1.2
	comp=Z,29nm,0.9s,SNR=15								
TREC	Trest	16.10	318		eP		P	10 02 05.5	+0.7
TREC					AMS		AMS	10 10 00.0	
	comp=Z,500nm,9.4s								
TREC	Trest	16.10	318		eP		P	10 02 05.5	+0.7
TREC					MLR		MLR		
	comp=Z,500nm,9.4s								
TREC	Trest	16.10	318		P		P	10 02 05.5	+0.7
KBA	Koelnbreinsper	16.17	309		iPn		Pn	10 02 00.9	-1.6
	comp=Z,30nm,1.1s,SNR=15								
KBA	Koelnbreinsper	16.17	309		Pn		Pn	10 02 00.9	-1.6
	comp=Z,30nm,1.1s,SNR=15								
DPC	Dobruska-Polom	16.35	322		eP		P	10 02 08.5	+0.9
DPC					ex		x	10 02 16.4	
DPC					AMS		AMS	10 09 50.0	
	comp=Z,600nm,10.6s								
DPC	Dobruska-Polom	16.35	322		eP		P	10 02 08.5	+0.9
DPC					MLR		MLR		
	comp=Z,600nm,10.6s								
DPC	Dobruska-Polom	16.35	322		P		P	10 02 08.5	+0.9
MNK	Minsk	16.43	352		eP		Pn	10 02 02.0	-3.5
MNK	Minsk	16.43	352		eP		Pn	10 02 02.0	-3.5
UPC	Upice	16.61	322		eP		Pn	10 02 08.3	+0.5
UPC					AMS		AMS	10 10 00.0	
	comp=Z,500nm,11.0s								
UPC	Upice	16.61	322		eP		Pn	10 02 08.3	+0.5
UPC					MLR		MLR		
	comp=Z,500nm,11.0s								
UPC	Upice	16.61	322		P		Pn	10 02 08.3	+0.5
KSP	Ksiaz	16.70	324		eP		P	10 02 11.9	+0.6
KSP	Ksiaz	16.70	324		eP		P	10 02 11.9	+0.5
KSP	Ksiaz	16.70	324		eP		P	10 02 11.9	+0.5
GEA0	GERESS Array S	16.81	315		ePn		P	10 02 13.4	+0.7
GEA0	GERESS Array S	16.81	315		ePn		P	10 02 13.4	+0.7
GERES	GERESS Array B	16.82	315		Pn		P	10 02 14.1	+1.3
	baz=112,slow=14,SNR=6.5								
GERES					LR		LR	10 08 53.4	
	comp=Z,62nm,21.8s,baz=128,slow=38								
GOPC	GO Pecny, Ondr	16.84	319		eP		P	10 02 16.5	+3.5
GOPC					eS		S	10 05 31.2	+2.4
GOPC					AMS		AMS	10 10 00.0	
	comp=Z,700nm,12.7s								
GOPC	GO Pecny, Ondr	16.84	319		eP		P	10 02 16.5	+3.5
GOPC					MLR		MLR		
	comp=Z,700nm,12.7s								
PRU	Pruhonice	17.01	319		eP		P	10 02 16.0	+1.1
PRU					eS		S	10 05 33.8	+1.6
PRU					AMS		AMS	10 10 00.0	
	comp=Z,700nm,12.3s								
PRU	Pruhonice	17.01	319		eP		P	10 02 16.0	+1.1
PRU					MLR		MLR		
	comp=Z,700nm,12.3s								
PRU	Pruhonice	17.01	319		P		P	10 02 16.0	+1.1
PRU					S		S	10 05 33.8	+1.6
KHC	Kasperske Hory	17.04	315		eP		P	10 02 17.0	+1.8
KHC					eS		S	10 05 33.8	+0.9
KHC					AMS		AMS	10 10 00.0	
	comp=Z,700nm,10.7s								
KHC	Kasperske Hory	17.04	315		eP		P	10 02 17.0	+1.8
KHC					MLR		MLR		
	comp=Z,700nm,10.7s								
KHC	Kasperske Hory	17.04	315		P		P	10 02 17.0	+1.8
KHC					S		S	10 05 33.8	+0.9
OBN	Obninsk	17.11	9		P		Pn	10 02 12.6	-1.5
	comp=Z,6.1nm,0.3s,baz=24,slow=15,SNR=9.4								
OB

BFO	**Black Forest**	**19.77**	**308**	*e*P		**Pn**	**10 02 46.6**	**-0.1**
	comp=Z,80nm,1.2s								
BFO	**Black Forest**	**19.77**	**308**	*e*P		**Pn**	**10 02 46.6**	**-0.1**
	comp=Z,80nm,1.2s								
FELD	**Feldberg im Sc**	**19.81**	**307**	*e*P		**P**	**10 02 46.0**	**+0.2**
SENIN	**Lac Senin/Sane**	**19.81**	**302**	*e*P		**P**	**10 02 46.5**	**+0.6**
	comp=Z,22nm,0.8s								
SENIN	**Lac Senin/Sane**	**19.81**	**302**	*e*P		**P**	**10 02 46.5**	**+0.6**
	comp=Z,22nm,0.8s								
TOD	**Tromm**	**20.00**	**312**	*e*P		**P**	**10 02 47.2**	**-0.5**
CKFL	**Kef-Lekhel**	**20.07**	**272**	P		Pn	10 02 51.0	+0.5
CKFL	**Kef-Lekhel**	**20.07**	**272**	P		Pn	10 02 51.0	+0.5
OG01	**Vacheresse**	**20.22**	**301**	*e*P		**P**	**10 02 49.4**	**-0.8**
OG01	**Vacheresse**	**20.22**	**301**	*e*P		**P**	**10 02 49.4**	**-0.8**
KTD	**Kalmit**	**20.30**	**310**	*e*P		**P**	**10 02 50.6**	**-0.5**
LANF	**Langenberg**	**20.34**	**309**	*e*P		**P**	**10 02 51.6**	**+0.2**
LANF	**Langenberg**	**20.34**	**309**	*e*P		**P**	**10 02 51.6**	**+0.2**
BSD	**Bornholm Skovb**	**20.35**	**331**	*i* P		**P**	**10 02 49.5**	**-1.9**
BSD					pmax	pmax			
	comp=Z,24nm,1.1s								
BSD	**Bornholm Skovb**	**20.35**	**331**	*i* P		**P**	**10 02 49.5**	**-1.9**
	comp=Z,24nm,1.1s								
MOF	**Molkenrain**	**20.36**	**306**	*e*P		**P**	**10 02 51.3**	**-0.4**
MOF	**Molkenrain**	**20.36**	**306**	*e*P		**P**	**10 02 51.3**	**-0.4**
GDM	**Grand'Maison**	**20.36**	**298**	*e*P		**P**	**10 02 51.6**	**-0.2**
GDM	**Grand'Maison**	**20.36**	**298**	*e*P		**P**	**10 02 51.6**	**-0.2**
CTEI	**Djebel Teioual**	**20.39**	**272**	P		Pn	10 02 54.7	+0.4
CTEI	**Djebel Teioual**	**20.39**	**272**	P		Pn	10 02 54.7	+0.4
VSU	**Vasula**	**20.45**	**352**	*e*P		Pn	10 02 54.5	0.0
VSU	**Vasula**	**20.45**	**352**	*e*P		Pn	10 02 54.5	0.0
ECH	**Echery**	**20.46**	**307**	*e*P		**P**	**10 02 52.6**	**-0.2**
ECH	**Echery**	**20.46**	**307**	*e*P		**P**	**10 02 52.6**	**-0.2**
GRN	**Grenoble**	**20.62**	**298**	*e*P		**P**	**10 02 51.1**	**-3.5**
GEYT	**Alibeck**	**20.64**	**83**	P		**P**	**10 02 55.5**	**+0.7**
	comp=Z,47nm,0.9s,baz=284,slow=12,SNR=25								
DFRA	**Djebel Bou Aff**	**20.70**	**273**	P		Pn	10 02 58.4	+0.5
DFRA	**Djebel Bou Aff**	**20.70**	**273**	P		Pn	10 02 58.4	+0.5
OG26	**St.-Nazaire-De**	**20.83**	**296**	*e*P		**P**	**10 02 54.9**	**-1.9**
OG26	**St.-Nazaire-De**	**20.83**	**296**	*e*P		**P**	**10 02 54.9**	**-1.9**
ABH	**Alteburg**	**20.85**	**312**	*e*P		Pn	10 02 58.5	-1.0
RUP	**Ruppelstein**	**21.07**	**311**	*e*P		**P**	**10 02 59.1**	**-0.3**
THEF	**They Montfort**	**21.21**	**306**	*e*P		**P**	**10 03 02.2**	**+1.4**
THEF	**They Montfort**	**21.21**	**306**	*e*P		**P**	**10 03 02.2**	**+1.4**
WLF	**Walferdange**	**21.60**	**310**	*e*P		**P**	**10 03 06.6**	**+1.6**
WLF					pmax	pmax			
	comp=Z,45nm,1.5s								
WLF	**Walferdange**	**21.60**	**310**	*e*P		**P**	**10 03 06.6**	**+1.6**
	comp=Z,45nm,1.5s								
WLF	**Walferdange**	**21.60**	**310**	*e*P		**P**	**10 03 06.6**	**+1.6**
	comp=Z,45nm,1.5s								
MEM	**Membach**	**22.05**	**312**	P		**P**	**10 03 10.3**	**+0.5**
	comp=Z,22nm,1.1s								
MEM	**Membach**	**22.05**	**312**	P		**P**	**10 03 10.3**	**+0.4**
	comp=Z,22nm,1.1s								
AKTK	**Aktyubinsk**	**22.15**	**48**	P		**P**	**10 03 10.0**	**-0.9**
AKTO	**Aktyubinsk**	**22.15**	**48**	P		**P**	**10 03 10.0**	**-0.9**
	comp=Z,25nm,0.8s,baz=244,slow=11,SNR=56								
PLDF	**La Plantade**	**22.22**	**299**	*e*P		**P**	**10 03 12.1**	**+0.3**
PLDF	**La Plantade**	**22.22**	**299**	*e*P		**P**	**10 03 12.1**	**+0.3**
LBL	**Lubilhac**	**22.37**	**297**	*e*P		**P**	**10 03 14.9**	**+1.5**
LBL	**Lubilhac**	**22.37**	**297**	*e*P		**P**	**10 03 14.9**	**+1.5**
BCLA	**Clavier**	**22.39**	**311**	P		**P**	**10 03 13.9**	**+0.4**
	comp=Z,12nm,1.2s								
BCLA	**Clavier**	**22.39**	**311**	P		**P**	**10 03 13.8**	**+0.3**
	comp=Z,12nm,1.2s								
AGO	**Saint Agoulin**	**22.57**	**299**	*e*P		**P**	**10 03 14.6**	**-0.9**
AGO	**Saint Agoulin**	**22.57**	**299**	*e*P		**P**	**10 03 14.6**	**-0.9**
DOU	**Dourbes**	**22.70**	**310**	P		**P**	**10 03 17.5**	**+0.8**
	comp=Z,6.0nm,1.1s								
DOU	**Dourbes**	**22.70**	**310**	P		**P**	**10 03 17.4**	**+0.7**
	comp=Z,6.0nm,1.1s								
ABKAR	**Akbulak array**	**22.90**	**52**	*e*P		**P**	**10 03 18.2**	**-0.7**
ABKAR	**Akbulak array**	**22.90**	**52**	*e*P		**P**	**10 03 18.2**	**-0.7**
SNF	**Seneffe**	**23.03**	**311**	P		**P**	**10 03 22.8**	**+2.6**
SNF	**Seneffe**	**23.03**	**311**	P		**P**	**10 03 22.8**	**+2.6**
KLMR	**Klimovskoe**	**23.08**	**10**	*e*P		**P**	**10 03 18.9**	**-1.7**
KLMR					pmax	pmax			
	comp=Z,100nm,1.0s								
KLMR	**Klimovskoe**	**23.08**	**10**	*e*P		**P**	**10 03 18.9**	**-1.7**
	comp=Z,100nm,1.0s								
FINES	**FINESS Array B**	**23.44**	**353**	P		**P**	**10 03 23.9**	**-0.3**
	comp=Z,17nm,0.6s,baz=154,slow=11,SNR=40								
FINES					LR	LR	10 13 20.4		
	comp=Z,341nm,19.9s,baz=162,slow=39								
FIA1	**FINESS Array S**	**23.44**	**353**	*e*P		**P**	**10 03 23.9**	**-0.3**
BANOM	**Banah**	**24.01**	**114**	P		**P**	**10 03 30.4**	**+0.2**
BANOM	**Banah**	**24.01**	**114**	P		**P**	**10 03 30.4**	**+0.2**
NAZ	**Nazwa, Dubai**	**24.13**	**116**	*i* P		**P**	**10 03 31.5**	**+0.2**
	SNR=12								
NAZ	**Nazwa, Dubai**	**24.13**	**116**	P		**P**	**10 03 31.3**	**0.0**
	SNR=12								
NAZ	**Nazwa, Dubai**	**24.13**	**116**	P		**P**	**10 03 31.3**	**0.0**
	SNR=12								
FAQ	**Al Faqa, Dubai**	**24.24**	**117**	*i* P		**P**	**10 03 32.2**	**0.0**
	SNR=6.8								
FAQ	**Al Faqa, Dubai**	**24.24**	**117**	P		**P**	**10 03 32.2**	**0.0**
	SNR=6.8								
UOSS	**Minazif**	**24.54**	**116**	*e*P		**P**	**10 03 34.7**	**-0.3**
	comp=Z,28nm,0.8s								
UOSS	**Minazif**	**24.54**	**116**	*e*P		**P**	**10 03 34.7**	**-0.3**
	comp=Z,28nm,0.8s								
HATD	**Hatta, Dubai**	**24.57**	**116**	*i* P		**P**	**10 03 35.7**	**+0.5**
	SNR=9.3								
HATD	**Hatta, Dubai**	**24.57**	**116**	P		**P**	**10 03 35.2**	**-0.1**
	SNR=9.3								
HATD	**Hatta, Dubai**	**24.57**	**116**	P		**P**	**10 03 35.2**	**-0.1**
	SNR=9.3								
ASHO	**Ashiyiah**	**24.60**	**116**	*i* P		**P**	**10 03 35.9**	**+0.2**
	SNR=16								
ASHO	**Ashiyiah**	**24.60**	**116**	P		**P**	**10 03 35.5**	**-0.2**
	SNR=5.5								
ASHO	**Ashiyiah**	**24.60**	**116**	P		**P**	**10 03 35.5**	**-0.2**
	SNR=5.5								
ASHO	**Ashiyiah**	**24.60**	**116**	P		**P**	**10 03 35.5**	**-0.2**
	SNR=5.5								
HFS	**Hagfors**	**24.70**	**338**	P		**P**	**10 03 36.0**	**-0.1**
	comp=Z,15nm,0.8s,baz=152,slow=13,SNR=23								
HFS	**Hagfors**	**24.70**	**338**	P		**P**	**10 03 36.0**	**-0.1**
HFS	**Hagfors**	**24.70**	**338**	P		**P**	**10 03 36.0**	**-0.1**
ARU	**Arti**	**25.34**	**36**	P		**P**	**10 03 42.5**	**+0.5**
	comp=Z,30nm,0.6s,baz=232,slow=6.6,SNR=26								
ARU	**Arti**	**25.34**	**36**	*d* iP		**P**	**10 03 42.6**	**+0.6**
ARU							10 04 16.8		
ARU							10 07 10.1		
ARU					S	**S**	**10 08 11.4**	**+3.2**
ARU					SS	**SnSn**	**10 09 12.3**	**+13**
ARU					pmax	pmax			
	comp=Z,45nm,0.7s								
KONO	**Kongsberg**	**25.65**	**334**	*e*P		**P**	**10 03 47.9**	**+3.2**
KONO					pmax	pmax			
	comp=Z,8.0nm,0.8s								
KONO	**Kongsberg**	**25.65**	**334**	*e*P		**P**	**10 03 47.9**	**+3.2**
	comp=Z,8.5nm,0.8s								
ARQ	**Araqi**	**25.79**	**118**	P		**P**	**10 03 46.4**	**0.0**
	SNR=21								
ARQ	**Araqi**	**25.79**	**118**	P		**P**	**10 03 46.4**	**0.0**
	SNR=21								
ARQ	**Araqi**	**25.79**	**118**	P		**P**	**10 03 46.4**	**0.0**
	SNR=21								
NC602	**NORSAR Array S**	**25.83**	**337**	*e*P		**P**	**10 03 47.8**	**+1.5**
NC602	**NORSAR Array S**	**25.83**	**337**	*e*P		**P**	**10 03 47.8**	**+1.5**
NC405	**NORSAR Array S**	**26.07**	**338**	*e*P		**P**	**10 03 50.2**	**+1.7**
NC405	**NORSAR Array S**	**26.07**	**338**	*e*P		**P**	**10 03 50.2**	**+1.7**
DAMY	**Dhamar**	**26.11**	**152**	*e*P		**P**	**10 03 51.5**	**+1.9**
	comp=Z,27nm,1.1s								
DAMY	**Dhamar**	**26.11**	**152**	*e*P		**P**	**10 03 51.5**	**+1.9**
	comp=Z,27nm,1.1s								
NAO01	**NORSAR Array S**	**26.11**	**337**	*e*P		**P**	**10 03 49.2**	**+0.3**
NAO01	**NORSAR Array S**	**26.11**	**337**	*e*P		**P**	**10 03 49.2**	**+0.3**
NB201	**NORSAR Array S**	**26.15**	**337**	*e*P		**P**	**10 03 51.6**	**+2.3**
NB201	**NORSAR Array S**	**26.15**	**337**	*e*P		**P**	**10 03 51.6**	**+2.3**
NB2	**NORSAR Subarra**	**26.16**	**337**	P		**P**	**10 03 48.5**	**-0.9**
	comp=Z,6.3nm,0.8s,baz=140,slow=9.3								
NB2	**NORSAR Subarra**	**26.16**	**337**	P		**P**	**10 03 48.5**	**-0.9**
	comp=Z,6.3nm,0.8s,SNR=9.2								
NOA	**NORSAR Array B**	**26.16**	**337**	P		**P**	**10 03 48.9**	**-0.5**
	comp=Z,4.4nm,0.7s,baz=140,slow=8.9,SNR=20								
NOA					LR	LR	10 15 53.8		
	comp=Z,357nm,18.4s,baz=150,slow=40								
HOQ	**Hoqain**	**26.18**	**117**	P		**P**	**10 03 50.1**	**+0.2**
	SNR=5.5								
HOQ	**Hoqain**	**26.18**	**117**	P		**P**	**10 03 50.1**	**+0.2**
	SNR=5.5								
HOQ	**Hoqain**	**26.18**	**117**	P		**P**	**10 03 50.1**	**+0.2**
	SNR=5.5								
NC303	**NORSAR Array S**	**26.26**	**337**	*e*P		**P**	**10 03 51.1**	**+0.8**
NC303	**NORSAR Array S**	**26.26**	**337**	*e*P		**P**	**10 03 51.1**	**+0.8**
NBO02	**NORSAR Array S**	**26.28**	**337**	*e*P		**P**	**10 03 50.2**	**-0.3**
NBO02	**NORSAR Array S**	**26.28**	**337**	*e*P		**P**	**10 03 50.2**	**-0.3**
NBO00	**NORSAR Array S**	**26.29**	**337**	*e*P		**P**	**10 03 50.7**	**+0.2**
NBO00	**NORSAR Array S**	**26.29**	**337**	*e*P		**P**	**10 03 50.7**	**+0.2**
NC204	**NORSAR Array S**	**26.49**	**337**	*e*P		**P**	**10 03 52.2**	**-0.1**
NC204	**NORSAR Array S**	**26.49**	**337**	*e*P		**P**	**10 03 52.2**	**-0.1**
SVE	**Sverdlovsk**	**26.52**	**36**	*e*P		**P**	**10 03 54.4**	**+1.8**
SVE					pmax	pmax			
	comp=Z,28nm,0.9s								
SVE	**Sverdlovsk**	**26.52**	**36**	*e*P		**P**	**10 03 54.4**	**+1.8**
	comp=Z,28nm,0.9s								
SOKR	**Solikamsk**	**26.57**	**29**	*i* P		**P**	**10 03 53.7**	**+0.7**
SOKR					pmax	pmax			
	comp=Z,33nm,1.3s								
SOKR					MLR	MLR			
	comp=Z,139nm,13.0s								
SMDO	**Samad**	**27.04**	**117**	P		**P**	**10 03 57.3**	**-0.4**
	SNR=6.3								
SMDO	**Samad**	**27.04**	**117**	P		**P**	**10 03 57.3**	**-0.4**
	SNR=6.3								
SMDO	**Samad**	**27.04**	**117**	P		**P**	**10 03 57.3**	**-0.4**
	SNR=6.3								
TAM	**Tamanrasset**	**27.33**	**243**	*e*P		**P**	**10 04 01.8**	**+1.4**
TAM					pmax	pmax			
	comp=Z,23nm,1.1s								
TAM	**Tamanrasset**	**27.33**	**243**	*e*P		**P**	**10 04 01.8**	**+1.4**
	comp=Z,23nm,1.1s								
TAM	**Tamanrasset**	**27.33**	**243**	*e*P		**P**	**10 04 01.8**	**+1.4**
	comp=Z,23nm,1.1s								
WSAR	**Wadi Sarin**	**27.34**	**116**	P		**P**	**10 04 00.1**	**-0.2**
	comp=Z,10nm,0.9s,baz=285,slow=8.3,SNR=5.1								
WSAR					LR	LR	10 16 50.2		
	comp=Z,193nm,19.5s,baz=328,slow=41								
ES19	**SONSECA Array**	**27.72**	**284**	*e*P		**P**	**10 04 04.0**	**+0.3**
ES19	**SONSECA Array**	**27.72**	**284**	*e*P		**P**	**10 04 04.0**	**+0.3**
ESDC	**Sonseca Array**	**27.77**	**284**	P		**P**	**10 04 04.0**	**-0.2**
	comp=Z,4.1nm,0.8s,baz=77,slow=9.8,SNR=9.5								
ESDC	**Sonseca Array**	**27.77**	**284**	P		**P**	**10 04 04.0**	**-0.2**
ESLA	**Sonseca Array**	**27.77**	**284**	*e*P		**P**	**10 04 03.7**	**-0.5**
	comp=Z,21nm,1.4s								
ESLA	**Sonseca Array**	**27.77**	**284**	*e*P		**P**	**10 04 03.6**	**-0.5**
	comp=Z,21nm,1.4s								
PAB	**San Pablo**	**28.09**	**284**	*e*P		**P**	**10 04 06.5**	**-0.5**
PAB					pmax	pmax			
	comp=Z,13nm,1.1s								
PAB	**San Pablo**	**28.09**	**284**	*e*P		**P**	**10 04 06.5**	**-0.5**
	comp=Z,13nm,1.1s								
PAB	**San Pablo**	**28.09**	**284**	*e*P		**P**	**10 04 06.5**	**-0.5**
	comp=Z,13nm,1.1s								
ATD	**Arta Tunnel**	**28.41**	**157**	LR		LR	10 14 43.9		
	comp=Z,108nm,20.0s,baz=316,slow=35								
EKA	**Eskdalemuir Ar**	**28.99**	**317**	P		**P**	**10 04 14.0**	**-0.8**
	comp=Z,3.3nm,0.7s,baz=107,slow=9.0,SNR=13								
EKA	**Eskdalemuir Ar**	**28.99**	**317**	P		**P**	**10 04 14.0**	**-0.8**
EKA	**Eskdalemuir Ar**	**28.99**	**317**	P		**P**	**10 04 14.0**	**-0.8**
APA	**Apatity**	**29.33**	**1**	*i* P		**P**	**10 04 16.1**	**-1.5**
APA					pmax	pmax			
	comp=Z,6.0nm,0.9s								
APA					MLR	MLR			
	comp=Z,400nm,12.0s								
APA	**Apatity**	**29.33**	**1**	*i* P		**P**	**10 04 16.1**	**-1.5**
	comp=Z,400nm,12.0s								
KKAR	**Karatay Array**	**29.50**	**68**	*e*P		**P**	**10 04 19.7**	**+0.2**
KKAR	**Karatay Array**	**29.50**	**68**	*e*P		**P**	**10 04 19.7**	**+0.2**
KKAR	**Karatay Array**	**29.50**	**68**	*e*P		**P**	**10 04 19.7**	**+0.2**
MVO	**Moncorvo**	**29.88**	**288**	*e*LQ		LQ	10 11 13.8		
MVO					*e*LR	LR	10 12 48.7		
	comp=Z,101nm,18.0s								
MDT	**Midelt**	**30.05**	**271**	P		**P**	**10 04 24.9**	**+0.4**
	comp=Z,6.5nm,1.1s,baz=83,slow=10,SNR=3.5								
BRVK	**Borovoye**	**30.20**	**48**	*e*P		**P**	**10 04 24.7**	**-0.8**
BRVK					pmax	pmax			
	comp=Z,29nm,1.0s								
BRVK	**Borovoye**	**30.20**	**48**	*e*P		**P**	**10 04 24.7**	**-0.8**
	comp=Z,29nm,1.0s								
BRVK	**Borovoye**	**30.20**	**48**	*e*P		**P**	**10 04 24.7**	**-0.8**
	comp=Z,29nm,1.0s								
BVAR	**Borovoye Array**	**30.26**	**48**	P		**P**	**10 04 25.9**	**-0.1**
	comp=Z,3.1nm,0.8s,baz=247,slow=7.6,SNR=13								
BVAR					LR	LR	10 19 35.6		
	comp=Z,207nm,18.4s,baz=258,slow=42								
MTE	**Manteigas**	**30.38**	**287**	*e*P		**P**	**10 04 28.1**	**+0.8**
	comp=Z,34nm,1.3s								
MTE					*e*LQ	LQ	10 10 11.5		
MTE					*e*LR	LR	10 13 02.8		
	comp=Z,140nm,20.0s								
MTE	**Manteigas**	**30.38**	**287**	*e*P		**P**	**10 04 28.1**	**+0.8**
	comp=Z,34nm,1.3s								
PBAR	**Barrancos**	**30.41**	**282**	*e*P		**P**	**10 04 31.5**	**+4.0**
PCBR	**Castelo Branco**	**30.42**	**285**	*e*P		**P**	**10 04 27.8**	**+0.2**
	comp=Z,18nm,0.9s								
PCBR	**Castelo Branco**	**30.42**	**285**	*e*P		**P**	**10 04 27.8**	**+0.2**
	comp=Z,18nm,0.9s								
PMRV	**Marv??o**	**30.43**	**285**	*e*LR		LR	10 15 19.1		
	comp=Z,152nm,16.0s								
PGAV	**Gavieira, Arco**	**30.71**	**290**	*e*LR		LR	10 15 56.6		
	comp=Z,219nm,18.0s								
PBEJ	**Beja**	**31.08**	**282**	*e*P		**P**	**10 04 32.8**	**-0.6**
	comp=Z,28nm,1.6s								
PBEJ	**Beja**	**31.08**	**282**	*e*P		**P**	**10 04 32.8**	**-0.6**
	comp=Z,28nm,1.6s								
PVAQ	**Vaqueiros**	**31.11**	**281**	*e*P		**P**	**10 04 33.3**	**-0.4**
	comp=Z,37nm,1.5s								
PVAQ					*e*LR	LR	10 14 31.6		
	comp=Z,62nm,20.0s								
PVAQ	**Vaqueiros**	**31.11**	**281**	*e*P		**P**	**10 04 33.3**	**-0.4**
	comp=Z,37nm,1.5s								
PCVE	**Castro Verde**	**31.30**	**281**	*e*P		**P**	**10 04 35.4**	**0.0**
	comp=Z,31nm,1.0s								
PCVE	**Castro Verde**	**31.30**	**281**	*e*P		**P**	**10 04 35.4**	**0.0**
	comp=Z,31nm,1.0s								
PBDV	**Barranco-do-Ve**	**31.31**	**281**	*e*P		**P**	**10 04 36.0**	**+0.5**
	comp=Z,62nm,1.2s								
PBDV	**Barranco-do-Ve**	**31.31**	**281**	*e*P		**P**	**10 04 36.0**	**+0.5**
	comp=Z,62nm,1.2s								
ARA0	**ARCESS Array S**	**31.48**	**356**	*e*P		**P**	**10 04 36.3**	**-0.3**
ARA0	**ARCESS Array S**	**31.48**	**356**	*e*P		**P**	**10 04 36.3**	**-0.3**
ARCES	**ARCESS Array B**	**31.48**	**356**	P		**P**	**10 04 35.9**	**-0.7**
	comp=Z,10nm,0.6s,baz=161,slow=7.7,SNR=23								
ARCES					LR	LR	10 18 19.0		
	comp=Z,334nm,19.1s,baz=166,slow=38								
ARE0	**ARCESS Array S**	**31.48**	**356**	*e*P		**P**	**10 04 36.4**	**-0.2**
	comp=Z,41nm,1.5s								
ARE0	**ARCESS Array S**	**31.48**	**356**	*e*P		**P**	**10 04 36.4**	**-0.2**
	comp=Z,41nm,1.5s								
AAK	**Ala-Archa**	**32.46**	**69**	P		**P**	**10 04 45.6**	**-0.1**
	comp=Z,6.1nm,0.5s,baz=221,slow=5.5,SNR=9.7								
AAK	**Ala-Archa**	**32.46**	**69**	*e*P		**P**	**10 04 46.7**	**+1.0**
AAK					pmax	pmax			
	comp=Z,9.0nm,0.9s								
AAK	**Ala-Archa**	**32.46**	**69**	P		**P**	**10 04 46.7**	**+1.0**
	SNR=6.4								
AAK	**Ala-Archa**	**32.46**	**69**	P		**P**	**10 04 46.7**	**+1.0**
	SNR=6.4								
AAK	**Ala-Archa**	**32.46**	**69**	*e*P		**P**	**10 04 46.7**	**+1.0**
	comp=Z,8.8nm,0.9s								
AAK	**Ala-Archa**	**32.46**	**69**	*e*P		**P**	**10 04 46.7**	**+1.0**
	comp=Z,8.8nm,0.9s								
FRU	**Bishkek**	**32.52**	**68**	*e*P		**P**	**10 04 47.0**	**+0.9**
FRU					*i*		10 04 53.0		
FRU					pmax	pmax			
	comp=Z,40nm,1.6s								
FRU	**Bishkek**	**32.52**	**68**	*e*P		**P**	**10 04 47.0**	**+0.9**
	comp=Z,40nm,1.6s								
KSH	**Kashi**	**34.08**	**74**	*e*P		**P**	**10 04 58.8**	**-1.1**
KSH					*e*pP	pP	10 05 03.0	+0.7
KSH					S	**S**	**10 10 21.0**	**-4.9**
KSH					pmax	pmax			
	comp=Z,6.0nm,0.5s								
KSH					pmax	pmax			
	comp=Z,41nm,2.7s								
KSH					LR	LR			
	comp=Z,720nm,12.2s								
KSH					LR	LR			
	comp=Z,630nm,13.8s								
KSH					LR	LR			
	comp=Z,140nm,6.3s								
KURBB	**Kurchatov Arra**	**34.94**	**54**	P		**P**	**10 05 06.8**	**-0.2**
	comp=Z,14nm,0.7s,baz=274,slow=8.9,SNR=63								
KURBB					PcP	**PcP**	**10 07 38.5**	**-0.9**
	comp=Z,3.4nm,0.7s,baz=269,slow=3.7,SNR=6.1								
KURK	**Kurchatov**	**35.00**	**54**	P		**P**	**10 05 06.8**	**-0.7**
KURK							10 07 38.5		
KURK	**Kurchatov**	**35.00**	**54**	P		**P**	**10 05 06.8**	**-0.7**
KURK	**Kurchatov**	**35.00**	**54**	P		**P**	**10 05 06.8**	**-0.7**
KURK					PcP	**PcP**	**10 07 38.5**	**-1.0**
TOA0	**Torodi Ar. Sit**	**36.67**	**235**	*e*P		**P**	**10 05 21.9**	**-0.3**
TOA0	**Torodi Ar. Sit**	**36.67**	**235**	*e*P		**P**	**10 05 21.9**	**-0.3**
TORD	**Torodi Ar. Bea**	**36.67**	**235**	P		**P**	**10 05 21.8**	**-0.4**
	comp=Z,24nm,0.9s,baz=35,slow=9.1,SNR=137								
TORD					PcP	**PcP**	**10 07 44.2**	**-0.8**
	comp=Z,2.1nm,0.7s,baz=145,slow=1.2,SNR=4.1								
MK31	**Makanchi Array**	**37.54**	**60**	*e*P		**P**	**10 05 29.1**	**-0.2**
MK31	**Makanchi Array**	**37.54**	**60**	*e*P		**P**	**10 05 29.1**	**-0.2**
MK31	**Makanchi Array**	**37.54**	**60**	*e*P		**P**	**10 05 29.1**	**-0.2**
MKAR	**Makanchi Array**	**37.54**	**60**	P		**P**	**10 05 29.3**	**0.0**
	comp=Z,14nm,0.8s,baz=282,slow=6.1,SNR=53								
MKAR					PcP	**PcP**	**10 07 46.5**	**-0.8**
	comp=Z,3.4nm,0.9s,baz=273,slow=3.1,SNR=4.0								
MK01	**Makanchi Array**	**37.55**	**60**	*e*P		**P**	**10 05 29.4**	**0.0**
MK01	**Makanchi Array**	**37.55**	**60**	*e*P		**P**	**10 05 29.4**	**0.0**
MBAR	**Mbarara**	**38.73**	**182**	*e*P		**P**	**10 05 38.9**	**-0.8**
MBAR					pmax	pmax			
	comp=Z,19nm,1.4s								
MBAR	**Mbarara**	**38.73**	**182**	*e*P		**P**	**10 05 38.9**	**-0.8**
	comp=Z,19nm,1.4s								
MBAR	**Mbarara**	**38.73**	**182**	*e*P		**P**	**10 05 38.9**	**-0.8**
	comp=Z,19nm,1.4s								
ZAA0	**Zalesovo Array**	**38.91**	**49**	*e*P		**P**	**10 05 40.1**	**-0.6**
ZAA0	**Zalesovo Array**	**38.91**	**49**	*e*P		**P**	**10 05 40.1**	**-0.6**
ZALV	**Zalesovo Beam**	**38.91**	**49**	P		**P**	**10 05 39.8**	**-0.9**
	comp=Z,18nm,0.6s,baz=266,slow=9.0,SNR=34								
ZALV					LR	LR	10 24 42.3		
	comp=Z,95nm,19.3s,baz=250,slow=41								
KMBO	**Kilima Mbogo**	**39.55**	**172**	P		**P**	**10 05 47.0**	**+0.3**
	comp=Z,2.5nm,0.2s,baz=343,slow=10,SNR=4.8								
KMBO					PcP	**PcP**	**10 07 54.5**	**+0.3**
	comp=Z,7.3nm,0.2s,baz=357,slow=4.7,SNR=4.6								
KMBO	**Kilima Mbogo**	**39.55**	**172**	*i* P		**P**	**10 05 48.5**	**+1.8**
KMBO					pmax	pmax			
	comp=Z,3.0nm,0.2s								
KMBO	**Kilima Mbogo**	**39.55**	**172**	*e*P		**P**	**10 05 48.1**	**+1.4**
	comp=Z,25nm,0.1s								
KMBO	**Kilima Mbogo**	**39.55**	**172**	*e*P		**P**	**10 05 48.1**	**+1.4**
	comp=Z,25nm,0.1s								
KMBO					PcP	**PcP**	**10 07 54.5**	**+0.3**
SPA0	**Spitsbergen Ar**	**40.51**	**355**	*e*P		**P**	**10 05 54.8**	**+1.1**
SPA0	**Spitsbergen Ar**	**40.51**	**355**	*e*P		**P**	**10 05 54.8**	**+1.1**
WMQ	**Urumqi**	**41.77**	**64**	P		**P**	**10 06 05.3**	**+0.6**
WMQ					pP	sP	10 06 09.5	+1.4
WMQ					S	**S**	**10 12 19.8**	**-2.4**
WMQ					pmax	pmax			
	comp=Z,32nm,1.1s								

	comp=Z,90nm,6.0s								
CMAR	**Chiang Mai Arr**	**60.98**	**89**	P		**P**	**10 08 27.1**	**-1.7**
	comp=Z,3.8nm,0.8s,baz=301,slow=7.8,SNR=14								
CMAR				PP		**PP**	**10 10 42.4**	**-0.6**
	comp=Z,1.5nm,0.4s,baz=311,slow=9.3,SNR=6.1								
CMAR				LR		LR	10 37 54.6		
	comp=Z,51nm,18.8s,baz=290,slow=39								
CM01	**Chiang Mai Arr**	**61.01**	**89**	*eP*		**P**	**10 08 26.8**	**-2.2**
CM01	**Chiang Mai Arr**	**61.01**	**89**	*eP*		**P**	**10 08 26.8**	**-2.2**
DRLN	**Deer Lake**	**61.84**	**312**	*eP*		**P**	**10 08 33.6**	**-0.6**
DRLN	**Deer Lake**	**61.84**	**312**	*eP*		**P**	**10 08 33.6**	**-0.6**
GYA	**Guiyang**	**62.71**	**77**	*eP*		**P**	**10 08 41.0**	**+0.4**
GYA				pmax		pmax			
	comp=Z,10.0nm,1.0s								
ENH	**Enshi**	**62.90**	**72**	*eP*		**P**	**10 08 40.8**	**-0.9**
	comp=Z,30nm,0.8s								
ENH	**Enshi**	**62.90**	**72**	*eP*		**P**	**10 08 40.8**	**-0.9**
	comp=Z,30nm,0.8s								
BJI	**Beijing**	**62.90**	**59**	P		**P**	**10 08 41.3**	**-0.2**
BJI				pmax		pmax			
	comp=Z,17nm,0.9s								
BJI				pmax		pmax			
	comp=Z,120nm,4.3s								
LBTB	**Lobatse**	**63.26**	**186**	*eP*		**P**	**10 08 45.0**	**+1.0**
LBTB				pmax		pmax			
	comp=Z,13nm,0.7s								
LBTB	**Lobatse**	**63.26**	**186**	*eP*		**P**	**10 08 45.0**	**+1.0**
	comp=Z,13nm,0.7s								
LBTB	**Lobatse**	**63.26**	**186**	*eP*		**P**	**10 08 45.0**	**+1.0**
	comp=Z,13nm,0.7s								
SCHQ	**Schefferville**	**64.24**	**321**	P		**P**	**10 08 48.9**	**-1.3**
	comp=Z,5.6nm,0.8s,baz=71,slow=5.2,SNR=10.0								
SCHQ				LR		LR	10 36 25.1		
	comp=Z,42nm,19.4s,baz=68,slow=36								
SCHQ	**Schefferville**	**64.24**	**321**	*eP*		**P**	**10 08 49.4**	**-0.7**
SCHQ	**Schefferville**	**64.24**	**321**	*eP*		**P**	**10 08 49.4**	**-0.7**
TIA	**Tai'an**	**65.44**	**62**	*eP*		**P**	**10 08 56.3**	**-1.9**
TIA				pmax		pmax			
	comp=Z,20nm,1.1s								
WHN	**Wuhan**	**66.36**	**69**	⇑P		**P**	**10 09 03.8**	**-0.4**
BOSA	**Boshof**	**66.86**	**186**	P		**P**	**10 09 07.0**	**-0.3**
	comp=Z,16nm,0.7s,baz=1.6,slow=5.5,SNR=33								
BOSA				LR		LR	10 39 24.6		
	comp=Z,122nm,18.3s,baz=352,slow=37								
BOSA	**Boshof**	**66.86**	**186**	*eP*		**P**	**10 09 07.5**	**+0.2**
BOSA	**Boshof**	**66.86**	**186**	*eP*		**P**	**10 09 07.5**	**+0.2**
BOSA	**Boshof**	**66.86**	**186**	*eP*		**P**	**10 09 07.5**	**+0.2**
LMN	**Caledonia Moun**	**67.82**	**311**	*eP*		**P**	**10 09 13.0**	**-0.3**
LMN	**Caledonia Moun**	**67.82**	**311**	*eP*		**P**	**10 09 13.0**	**-0.3**
BILL	**Bilibino**	**68.60**	**17**	*eP*		**P**	**10 09 17.4**	**-0.4**
BILL				*i*			10 09 45.7		
BILL				pmax		pmax			
	comp=Z,11nm,1.1s								
BILL	**Bilibino**	**68.60**	**17**	*eP*		**P**	**10 09 17.4**	**-0.4**
	comp=Z,11nm,1.1s								
BILL	**Bilibino**	**68.60**	**17**	*i* PcP		**PcP**	**10 09 45.7**	**+2.9**
NJ2	**Nanjing**	**68.83**	**65**	*eP*		**P**	**10 09 21.8**	**+2.0**
KULM	**Kulim**	**70.12**	**99**	*eP*		**P**	**10 09 25.9**	**-2.1**
KULM	**Kulim**	**70.12**	**99**	*eP*		**P**	**10 09 25.9**	**-2.1**
PSI	**Prapat**	**70.35**	**102**	P		**P**	**10 09 27.2**	**-2.3**
	comp=Z,8.5nm,0.8s,baz=280,slow=7.9,SNR=5.8								
USRK	**Ussuriysk Ar.**	**70.77**	**49**	P		**P**	**10 09 29.8**	**-1.7**
	comp=Z,12nm,0.8s,baz=308,slow=4.8,SNR=17								
MSHR	**Mys Shultsa**	**71.19**	**50**	*eP*		**P**	**10 09 32.3**	**-1.8**
MSHR	**Mys Shultsa**	**71.19**	**50**	*eP*		**P**	**10 09 32.3**	**-1.8**
KSRS	**Korea Array**	**72.08**	**56**	LR		LR	10 45 15.6		
	comp=Z,48nm,18.5s,baz=300,slow=39								
INK	**Inuvik**	**73.14**	**354**	P		**P**	**10 09 44.9**	**-0.5**
	comp=Z,4.7nm,0.9s,baz=359,slow=7.4,SNR=5.7								
INK	**Inuvik**	**73.14**	**354**	*eP*		**P**	**10 09 45.3**	**0.0**
INK	**Inuvik**	**73.14**	**354**	*eP*		**P**	**10 09 45.3**	**0.0**
INK	**Inuvik**	**73.14**	**354**	*eP*		**P**	**10 09 45.3**	**0.0**
VLDQ	**Val d'Or**	**73.52**	**319**	*eP*		**P**	**10 09 48.4**	**+0.5**
VLDQ	**Val d'Or**	**73.52**	**319**	*eP*		**P**	**10 09 48.4**	**+0.5**
LONY	**Lake Ozonia**	**74.16**	**315**	*eP*		**P**	**10 09 52.1**	**+0.3**
LONY	**Lake Ozonia**	**74.16**	**315**	*eP*		**P**	**10 09 52.1**	**+0.3**
COLD	**Coldfoot**	**74.78**	**1**	*eP*		**P**	**10 09 55.6**	**+0.6**
COLD	**Coldfoot**	**74.78**	**1**	*eP*		**P**	**10 09 55.6**	**+0.6**
YSS	**Yuzh-Sakhalins**	**75.07**	**41**	*eP*		**P**	**10 09 59.3**	**+2.3**
YSS				pmax		pmax			
	comp=Z,10.0nm,0.7s								
YSS	**Yuzh-Sakhalins**	**75.07**	**41**	*eP*		**P**	**10 09 59.3**	**+2.3**
	comp=Z,10.0nm,0.7s								
FYU	**Fort Yukon**	**75.43**	**359**	*eP*		**P**	**10 10 00.0**	**+1.3**
FYU	**Fort Yukon**	**75.43**	**359**	*eP*		**P**	**10 09 60.0**	**+1.3**
YKA	**Yellowknife Ar**	**75.98**	**345**	P		**P**	**10 10 01.7**	**-0.2**
	comp=Z,6.0nm,0.8s,baz=27,slow=5.9,SNR=18								
YKA				LR		LR	10 46 12.1		
	comp=Z,4.9nm,18.1s,baz=0.0,slow=38								
JNU	**Nakatsue**	**76.56**	**58**	P		**P**	**10 10 04.8**	**-1.1**
	comp=Z,7.8nm,0.9s,baz=315,slow=1.4,SNR=3.7								
SADO	**Sadowa**	**76.57**	**317**	*eP*		**P**	**10 10 05.6**	**0.0**
SADO	**Sadowa**	**76.57**	**317**	*eP*		**P**	**10 10 05.6**	**0.0**
ASAJ	**Asahikawa**	**76.84**	**44**	*eP*		**P**	**10 10 09.1**	**+2.0**
ASAJ	**Asahikawa**	**76.84**	**44**	*eP*		**P**	**10 10 09.1**	**+2.0**
MLY	**Manley**	**76.98**	**1**	*eP*		**P**	**10 10 07.9**	**+0.2**
MLY	**Manley**	**76.98**	**1**	*eP*		**P**	**10 10 07.9**	**+0.2**
MDM	**Murphy Dome**	**77.07**	**0**	*eP*		**P**	**10 10 08.4**	**+0.2**
MDM	**Murphy Dome**	**77.07**	**0**	*eP*		**P**	**10 10 08.4**	**+0.2**
EGAK	**Eagle**	**77.11**	**357**	*eP*		**P**	**10 10 08.4**	**+0.1**
EGAK	**Eagle**	**77.11**	**357**	*eP*		**P**	**10 10 08.4**	**+0.1**
COLA	**College**	**77.16**	**360**	*eP*		**P**	**10 10 09.1**	**+0.6**
COLA	**College**	**77.16**	**360**	*eP*		**P**	**10 10 09.1**	**+0.6**
COLA	**College**	**77.16**	**360**	*eP*		**P**	**10 10 09.1**	**+0.6**
IL1	**Eielson Array**	**77.25**	**359**	*eP*		**P**	**10 10 08.4**	**-0.7**
IL1	**Eielson Array**	**77.25**	**359**	*eP*		**P**	**10 10 08.4**	**-0.7**
ILAR	**Eielson Array**	**77.25**	**359**	P		**P**	**10 10 08.4**	**-0.7**
	comp=Z,1.6nm,0.7s,baz=354,slow=5.2,SNR=23								
ILAR				PP		**PP**	**10 13 07.3**	**+5.0**
	comp=Z,0.5nm,0.9s,baz=356,slow=5.9,SNR=4.2								
ILAR				LR		LR	10 44 37.9		
	comp=Z,34nm,21.9s,baz=7.5,slow=36								
ILB	**Eielson Array**	**77.25**	**359**	*eP*		**P**	**10 10 09.1**	**-0.1**
ILB	**Eielson Array**	**77.25**	**359**	*eP*		**P**	**10 10 09.1**	**-0.1**
CCB	**Clear Creek Bu**	**77.38**	**360**	*eP*		**P**	**10 10 09.3**	**-0.5**
CCB	**Clear Creek Bu**	**77.38**	**360**	*eP*		**P**	**10 10 09.3**	**-0.5**
WRH	**Wood River Hil**	**77.56**	**360**	*eP*		**P**	**10 10 10.5**	**-0.4**
WRH	**Wood River Hil**	**77.56**	**360**	*eP*		**P**	**10 10 10.5**	**-0.4**
PETK	**Petropavlovsk-**	**77.59**	**30**	LR		LR	10 47 42.3		
	comp=Z,42nm,18.3s,baz=295,slow=38								
HDA	**Harding Lake**	**77.62**	**359**	*eP*		**P**	**10 10 11.0**	**-0.2**
HDA	**Harding Lake**	**77.62**	**359**	*eP*		**P**	**10 10 11.0**	**-0.2**
DAWY	**Dawson**	**77.73**	**356**	*eP*		**P**	**10 10 11.8**	**-0.1**
DAWY	**Dawson**	**77.73**	**356**	*eP*		**P**	**10 10 11.8**	**-0.1**
BPAW	**Bear Paw Mtn.**	**77.91**	**1**	*eP*		**P**	**10 10 12.6**	**-0.2**
BPAW	**Bear Paw Mtn.**	**77.91**	**1**	*eP*		**P**	**10 10 12.6**	**-0.2**
MCK	**McKinley**	**78.30**	**0**	*eP*		**P**	**10 10 14.3**	**-0.7**
MCK				pmax		pmax			
	comp=Z,13nm,1.1s								
MCK	**McKinley**	**78.30**	**0**	*eP*		**P**	**10 10 14.3**	**-0.7**
	comp=Z,13nm,1.1s								
MCK	**McKinley**	**78.30**	**0**	*eP*		**P**	**10 10 14.3**	**-0.7**
	comp=Z,13nm,1.1s								
DOT	**Dot Lake**	**78.33**	**358**	*eP*		**P**	**10 10 15.9**	**+0.7**
DOT	**Dot Lake**	**78.33**	**358**	*eP*		**P**	**10 10 15.9**	**+0.7**
KTH	**Kantishna Hill**	**78.46**	**1**	*eP*		**P**	**10 10 15.1**	**-0.8**
KTH	**Kantishna Hill**	**78.46**	**1**	*eP*		**P**	**10 10 15.1**	**-0.8**
ERM	**Erimo**	**78.53**	**45**	*eP*		**P**	**10 10 16.9**	**+0.3**
ERM	**Erimo**	**78.53**	**45**	*eP*		**P**	**10 10 16.9**	**+0.3**
ERM	**Erimo**	**78.53**	**45**	*eP*		**P**	**10 10 16.9**	**+0.3**
JOW	**Kunigami**	**78.54**	**65**	*eP*		**P**	**10 10 18.6**	**+1.7**
JOW	**Kunigami**	**78.54**	**65**	*eP*		**P**	**10 10 18.6**	**+1.7**
TRF	**Thorofare Moun**	**78.57**	**1**	*eP*		**P**	**10 10 16.5**	**-0.2**
TRF	**Thorofare Moun**	**78.57**	**1**	*eP*		**P**	**10 10 16.5**	**-0.2**
SSPA	**Standing Stone**	**78.58**	**313**	*eP*		**P**	**10 10 16.9**	**0.0**
	comp=Z,60nm,1.2s								
SSPA	**Standing Stone**	**78.58**	**313**	*eP*		**P**	**10 10 16.9**	**0.0**
	comp=Z,60nm,1.2s								
RND	**Reindeer**	**78.63**	**0**	*eP*		**P**	**10 10 17.3**	**+0.4**
RND	**Reindeer**	**78.63**	**0**	*eP*		**P**	**10 10 17.3**	**+0.4**
RND	**Reindeer**	**78.63**	**0**	*eP*		**P**	**10 10 17.3**	**+0.4**
TT01	**Tatalina**	**78.93**	**4**	*eP*		**P**	**10 10 18.0**	**-0.5**
TT01	**Tatalina**	**78.93**	**4**	*eP*		**P**	**10 10 18.0**	**-0.5**
MENT	**Mentasta**	**79.04**	**358**	*eP*		**P**	**10 10 19.6**	**+0.5**
MENT	**Mentasta**	**79.04**	**358**	*eP*		**P**	**10 10 19.6**	**+0.5**
PAX	**Paxson**	**79.05**	**359**	*eP*		**P**	**10 10 17.3**	**-1.9**
PAX	**Paxson**	**79.05**	**359**	*eP*		**P**	**10 10 17.3**	**-1.9**
PAX	**Paxson**	**79.05**	**359**	*eP*		**P**	**10 10 17.3**	**-1.9**
PPLA	**Purkeypile**	**79.09**	**2**	*eP*		**P**	**10 10 20.0**	**+0.5**
PPLA	**Purkeypile**	**79.09**	**2**	*eP*		**P**	**10 10 19.9**	**+0.5**
MJAR	**Matsushiro Arr**	**79.18**	**52**	P		**P**	**10 10 19.2**	**-1.1**
	comp=Z,6.7nm,0.9s,baz=308,slow=4.7,SNR=17								
MJAR				LR		LR	10 50 10.5		
	comp=Z,30nm,19.6s,baz=285,slow=39								
FFC	**Flin Flon**	**79.24**	**335**	*eP*		**P**	**10 10 20.1**	**-0.2**
FFC	**Flin Flon**	**79.24**	**335**	*eP*		**P**	**10 10 20.1**	**-0.2**
FFC	**Flin Flon**	**79.24**	**335**	*eP*		**P**	**10 10 20.1**	**-0.2**
SCM	**Sheep Creek Mo**	**80.21**	**360**	*eP*		**P**	**10 10 25.8**	**+0.3**
SCM	**Sheep Creek Mo**	**80.21**	**360**	*eP*		**P**	**10 10 25.8**	**+0.3**
SCM	**Sheep Creek Mo**	**80.21**	**360**	*eP*		**P**	**10 10 25.8**	**+0.3**
SML	**Sawmill**	**80.23**	**0**	*eP*		**P**	**10 10 25.5**	**-0.1**
SML	**Sawmill**	**80.23**	**0**	*eP*		**P**	**10 10 25.5**	**-0.1**
SML	**Sawmill**	**80.23**	**0**	*eP*		**P**	**10 10 25.5**	**-0.1**
PMR	**Palmer**	**80.45**	**0**	*eP*		**P**	**10 10 26.6**	**-0.1**
PMR	**Palmer**	**80.45**	**0**	*eP*		**P**	**10 10 26.6**	**-0.1**
PMR	**Palmer**	**80.45**	**0**	*eP*		**P**	**10 10 26.6**	**-0.1**
KLU	**Klutina**	**80.53**	**359**	*eP*		**P**	**10 10 27.2**	**-0.1**
KLU	**Klutina**	**80.53**	**359**	*eP*		**P**	**10 10 27.2**	**-0.1**
ULM	**Lac du Bonnet**	**80.56**	**329**	P		**P**	**10 10 26.4**	**-1.2**
	comp=Z,4.8nm,0.7s,baz=43,slow=3.7,SNR=7.2								
ULM				LR		LR	10 49 39.2		
	comp=Z,40nm,19.8s,baz=302,slow=38								
SUA	**Susitna One**	**80.56**	**1**	*eP*		**P**	**10 10 27.6**	**+0.1**
SUA	**Susitna One**	**80.56**	**1**	*eP*		**P**	**10 10 27.6**	**+0.1**
SVW2	**Sparrevohn**	**80.76**	**4**	*eP*		**P**	**10 10 28.6**	**+0.2**
SVW2	**Sparrevohn**	**80.76**	**4**	*eP*		**P**	**10 10 28.6**	**+0.2**
SPU	**Mount Spurr**	**80.81**	**2**	*eP*		**P**	**10 10 29.9**	**+1.2**
SPU	**Mount Spurr**	**80.81**	**2**	*eP*		**P**	**10 10 29.9**	**+1.2**
RC01	**Rabbit Creek A**	**80.95**	**1**	*eP*		**P**	**10 10 29.5**	**+0.1**
RC01	**Rabbit Creek A**	**80.95**	**1**	*eP*		**P**	**10 10 29.5**	**+0.1**
BMRM	**Bremner River**	**81.03**	**358**	*eP*		**P**	**10 10 29.9**	**0.0**
BMRM	**Bremner River**	**81.03**	**358**	*eP*		**P**	**10 10 29.9**	**0.0**
CRQM	**Cirque**	**81.20**	**358**	*eP*		**P**	**10 10 31.2**	**+0.2**
CRQM	**Cirque**	**81.20**	**358**	*eP*		**P**	**10 10 31.2**	**+0.2**
EYAK	**Cordova Ski Ar**	**81.48**	**359**	*eP*		**P**	**10 10 32.9**	**+0.7**
EYAK	**Cordova Ski Ar**	**81.48**	**359**	*eP*		**P**	**10 10 32.9**	**+0.7**
PCA	**Pinnacle**	**81.74**	**356**	*eP*		**P**	**10 10 34.5**	**+0.8**
PCA	**Pinnacle**	**81.74**	**356**	*eP*		**P**	**10 10 34.5**	**+0.8**
SEW	**Seward**	**81.94**	**1**	*eP*		**P**	**10 10 34.8**	**+0.1**
SEW	**Seward**	**81.94**	**1**	*eP*		**P**	**10 10 34.8**	**+0.1**
AGMN	**Agassiz Nation**	**82.07**	**328**	*eP*		**P**	**10 10 34.9**	**-0.7**
AGMN	**Agassiz Nation**	**82.07**	**328**	*eP*		**P**	**10 10 34.9**	**-0.7**
BRLK	**Bradley Lake**	**82.26**	**1**	*eP*		**P**	**10 10 36.1**	**-0.3**
BRLK	**Bradley Lake**	**82.26**	**1**	*eP*		**P**	**10 10 36.1**	**-0.3**
DLBC	**Dease Lake**	**82.43**	**351**	*eP*		**P**	**10 10 37.9**	**+0.5**
	comp=Z,6.1nm,1.0s								
DLBC	**Dease Lake**	**82.43**	**351**	*eP*		**P**	**10 10 37.9**	**+0.5**
	comp=Z,6.1nm,1.0s								
CNPM	**China Poot**	**82.49**	**2**	*eP*		**P**	**10 10 37.2**	**-0.4**
CNPM	**China Poot**	**82.49**	**2**	*eP*		**P**	**10 10 37.2**	**-0.4**
SPMN	**Marine on St.**	**83.08**	**324**	*eP*		**P**	**10 10 39.6**	**-1.3**
	comp=Z,11nm,1.3s								
SPMN	**Marine on St.**	**83.08**	**324**	*eP*		**P**	**10 10 39.6**	**-1.3**
	comp=Z,11nm,1.3s								
MDND	**Maddock**	**83.96**	**330**	*eP*		**P**	**10 10 44.7**	**-0.7**
	comp=Z,20nm,1.1s								
MDND	**Maddock**	**83.96**	**330**	*eP*		**P**	**10 10 44.7**	**-0.7**
	comp=Z,20nm,1.1s								
KDAK	**Kodiak Island**	**84.20**	**2**	*i* P		**P**	**10 10 46.1**	**-0.3**
KDAK	**Kodiak Island**	**84.20**	**2**	*eP*		**P**	**10 10 46.6**	**+0.2**
KDAK	**Kodiak Island**	**84.20**	**2**	*eP*		**P**	**10 10 46.6**	**+0.2**
OHAK	**Old Harbor**	**84.73**	**3**	*eP*		**P**	**10 10 49.3**	**+0.2**
OHAK	**Old Harbor**	**84.73**	**3**	*eP*		**P**	**10 10 49.3**	**+0.2**
HDIL	**Hopedale**	**84.86**	**319**	*eP*		**P**	**10 10 49.4**	**-0.7**
HDIL	**Hopedale**	**84.86**	**319**	*eP*		**P**	**10 10 49.4**	**-0.7**
OLIL	**Olney**	**85.57**	**317**	*eP*		**P**	**10 10 52.8**	**-0.8**
OLIL	**Olney**	**85.57**	**317**	*eP*		**P**	**10 10 52.8**	**-0.8**
CPCT	**Cooper Cave**	**85.94**	**313**	*eP*		**P**	**10 10 55.5**	**0.0**
CPCT	**Cooper Cave**	**85.94**	**313**	*eP*		**P**	**10 10 55.5**	**0.0**
ECSD	**EROS Data Cent**	**85.97**	**325**	*eP*		**P**	**10 10 54.4**	**-1.2**
ECSD	**EROS Data Cent**	**85.97**	**325**	*eP*		**P**	**10 10 54.4**	**-1.2**
GOGA	**Godfrey**	**86.75**	**311**	*eP*		**P**	**10 10 59.5**	**-0.1**
GOGA	**Godfrey**	**86.75**	**311**	*eP*		**P**	**10 10 59.5**	**-0.1**
GOGA	**Godfrey**	**86.75**	**311**	*eP*		**P**	**10 10 59.5**	**-0.1**
WVT	**Waverly**	**87.32**	**315**	*eP*		**P**	**10 11 00.3**	**-2.0**
WVT	**Waverly**	**87.32**	**315**	*eP*		**P**	**10 11 00.3**	**-2.0**
WVT	**Waverly**	**87.32**	**315**	*eP*		**P**	**10 11 00.3**	**-2.0**
LAO	**LASA Array**	**87.44**	**333**	*eP*		**P**	**10 11 03.2**	**+0.4**
LAO	**LASA Array**	**87.44**	**333**	*eP*		**P**	**10 11 03.2**	**+0.4**
PBMO	**Poplar Bluff**	**88.25**	**317**	*eP*		**P**	**10 11 05.9**	**-0.9**
PBMO	**Poplar Bluff**	**88.25**	**317**	*eP*		**P**	**10 11 05.9**	**-0.9**
BGNE	**Belgrade**	**88.50**	**325**	*eP*		**P**	**10 11 06.8**	**-1.1**
	comp=Z,31nm,0.9s								
BGNE	**Belgrade**	**88.50**	**325**	*eP*		**P**	**10 11 06.8**	**-1.1**
	comp=Z,31nm,0.9s								
YBMT	**Yellow Bay**	**88.98**	**338**	*eP*		**P**	**10 11 10.4**	**+0.2**
YBMT	**Yellow Bay**	**88.98**	**338**	*eP*		**P**	**10 11 10.4**	**+0.2**
LRAL	**Lakeview Retre**	**89.09**	**313**	*eP*		**P**	**10 11 09.5**	**-1.3**
LRAL	**Lakeview Retre**	**89.09**	**313**	*eP*		**P**	**10 11 09.5**	**-1.3**
JTMT	**Jette**	**89.17**	**338**	*eP*		**P**	**10 11 10.9**	**-0.2**
JTMT	**Jette**	**89.17**	**338**	*eP*		**P**	**10 11 10.9**	**-0.2**
BSMT	**Bassoo Peak**	**89.22**	**338**	*eP*		**P**	**10 11 11.0**	**-0.4**
BSMT	**Bassoo Peak**	**89.22**	**338**	*eP*		**P**	**10 11 11.0**	**-0.4**
SWMT	**Swartz Lake**	**89.30**	**338**	*eP*		**P**	**10 11 11.5**	**-0.2**
SWMT	**Swartz Lake**	**89.30**	**338**	*eP*		**P**	**10 11 11.5**	**-0.2**
SLMT	**Seeley Lake**	**89.38**	**337**	*eP*		**P**	**10 11 11.5**	**-0.6**
SLMT	**Seeley Lake**	**89.38**	**337**	*eP*		**P**	**10 11 11.5**	**-0.6**
GCMT	**Greycliff**	**89.43**	**334**	*eP*		**P**	**10 11 12.4**	**+0.1**
GCMT	**Greycliff**	**89.43**	**334**	*eP*		**P**	**10 11 12.4**	**+0.1**
NEW	**Newport**	**89.50**	**340**	*eP*		**P**	**10 11 12.5**	**0.0**
NEW	**Newport**	**89.50**	**340**	*eP*		**P**	**10 11 12.5**	**0.0**
NEW	**Newport**	**89.50**	**340**	*eP*		**P**	**10 11 12.5**	**0.0**
RLMT	**Red Lodge**	**89.87**	**334**	*eP*		**P**	**10 11 14.8**	**+0.3**
RLMT	**Red Lodge**	**89.87**	**334**	*eP*		**P**	**10 11 14.8**	**+0.3**
MSO	**Missoula**	**89.89**	**337**	*eP*		**P**	**10 11 13.7**	**-0.7**
MSO	**Missoula**	**89.89**	**337**	*eP*		**P**	**10 11 13.7**	**-0.7**
K22A	**Casper**	**90.99**	**331**	*eP*		**P**	**10 11 18.2**	**-1.5**
K22A	**Casper**	**90.99**	**331**	*eP*		**P**	**10 11 18.2**	**-1.5**
IMW	**Indian Meadow**	**91.52**	**334**	*eP*		**P**	**10 11 22.8**	**+0.5**
	comp=Z,2.1nm,0.9s								
IMW	**Indian Meadow**	**91.52**	**334**	*eP*		**P**	**10 11 22.8**	**+0.5**
	comp=Z,2.1nm,0.9s								
PHWY	**Pilot Hill**	**91.72**	**329**	*eP*		**P**	**10 11 22.3**	**-1.0**
	comp=Z,5.7nm,0.8s								
PHWY	**Pilot Hill**	**91.72**	**329**	*eP*		**P**	**10 11 22.3**	**-1.0**
	comp=Z,5.7nm,0.8s								
PDAR	**Pinedale Array**	**92.02**	**333**	P		**P**	**10 11 23.0**	**-1.6**
	comp=Z,0.9nm,0.8s,baz=46,slow=4.3,SNR=7.5								
PDAR				LR		LR	10 54 09.8		
	comp=Z,37nm,20.8s,baz=40,slow=36								
BMO	**Blue Mountains**	**92.67**	**339**	*eP*		**P**	**10 11 25.7**	**-1.7**
	comp=Z,4.8nm,0.9s								
BMO	**Blue Mountains**	**92.67**	**339**	*eP*		**P**	**10 11 25.7**	**-1.7**
	comp=Z,4.8nm,0.9s								
MFID	**Camas Ranch**	**93.55**	**337**	*eP*		**P**	**10 11 31.1**	**-0.4**
	comp=Z,4.4nm,1.0s								
MFID	**Camas Ranch**	**93.55**	**337**	*eP*		**P**	**10 11 31.1**	**-0.4**
	comp=Z,4.4nm,1.0s								
HWUT	**Hardware Ranch**	**93.76**	**333**	*eP*		**P**	**10 11 31.5**	**-1.0**
	comp=Z,3.7nm,0.8s								
HWUT	**Hardware Ranch**	**93.76**	**333**	*eP*		**P**	**10 11 31.5**	**-1.0**
	comp=Z,3.7nm,0.8s								
WVOR	**Wild Horse Val**	**95.28**	**339**	*eP*		**P**	**10 11 38.5**	**-0.9**
WVOR				pmax		pmax			
	comp=Z,4.0nm,1.1s								
WVOR	**Wild Horse Val**	**95.28**	**339**	*eP*		**P**	**10 11 38.5**	**-0.9**
	comp=Z,4.0nm,1.1s								
WVOR	**Wild Horse Val**	**95.28**	**339**	*eP*		**P**	**10 11 38.5**	**-0.9**
	comp=Z,4.0nm,1.1s								
DUG	**Dugway, Tooele**	**95.45**	**334**	*eP*		**P**	**10 11 40.2**	**0.0**
DUG				pmax		pmax			
	comp=Z,2.0nm,0.9s								
DUG	**Dugway, Tooele**	**95.45**	**334**	*eP*		**P**	**10 11 40.2**	**0.0**
	comp=Z,2.1nm,0.9s								
DUG	**Dugway, Tooele**	**95.45**	**334**	*eP*		**P**	**10 11 40.2**	**0.0**
	comp=Z,2.1nm,0.9s								
TXAR	**Lajitas Array**	**100.92**	**321**	PKKPbc	PKKPbc		10 28 14.6	-1.4	
	comp=Z,0.2nm,0.3s,baz=288,slow=6.4,SNR=12								
ASAR	**Alice Springs**	**113.38**	**102**	PKKPbc	PKKPbc		10 27 36.3	-0.9	
	comp=Z,0.4nm,0.7s,baz=122,slow=3.4,SNR=4.7								
QSPA	**South Pole Qui**	**128.15**	**180**	*e*PKPdf		**PKPdf**	**10 17 17.6**	**-3.0**	

CSEM ***27*** *09:59:21.1, 43°.34N×13°.21E, h6km, MD1.9/9*
ROM 27 09:59:21.1±0.2, 43°.34N×13°.21E, h6km±1km, Md1.9/9, Ml1.0/6, Error ellipse: s-maj=2.7km s-min=1.6km az=153.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CING	**Cingoli**	**0.03**	**343**	Pg	Pg	09 59 22.4	0.0
CING	**Cingoli**	**0.03**	**343**	Pg	Pg	09 59 22.4	0.0
SNTG	**Esanatoglia**	**0.21**	**246**	Pg	Pg	09 59 25.9	+0.5
SNTG				Sg	Sg	09 59 30.3	+2.1
	32nm,0.1s						
SNTG	**Esanatoglia**	**0.21**	**246**	Pg	Pg	09 59 25.9	+0.5
	32nm,0.1s						
ARVD	**Arcevia**	**0.25**	**309**	Pg	Pg	09 59 26.6	+0.6
ARVD				Sg	Sg	09 59 30.9	+1.6
	12nm,0.1s						
ARVD	**Arcevia**	**0.25**	**309**	Pg	Pg	09 59 26.6	+0.6
ARVD				Sg	Sg	09 59 30.9	+1.6
	12nm,0.1s						
AOI	**Ancona**	**0.35**	**54**	Pg	Pb	09 59 29.0	-0.8
AOI				Sg	Sb	09 59 35.7	0.0
	18nm,0.3s						
AOI	**Ancona**	**0.35**	**54**	Pg	Pb	09 59 29.0	-0.8
AOI				Sg	Sb	09 59 35.7	0.0
	18nm,0.3s						
FRON	**Frontone**	**0.39**	**297**	Pg	Pg	09 59 29.4	+0.7
FRON				Sg	Sb	09 59 36.6	-0.2
	12nm,0.2s						
FRON	**Frontone**	**0.39**	**297**	Pg	Pg	09 59 29.4	+0.7
FRON				Sg	Sb	09 59 36.6	-0.2
	12nm,0.2s						
**

DJA 27 11:21:51.4±1.1, 8°S±6″×11°8E±°, h10km, M3.6/4, MLv3.6/4, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	Plampang	0.79	168	P	Pb	11 22 07.8	+0.5
PLAI				S	Sg	11 22 17.5	+0.5
TWSI	Taliwang, Sumb	0.99	226	P	Pn	11 22 11.9	+0.5
TWSI				S	Sb	11 22 24.3	+0.4
IGBI	Denpasar	2.56	252	P	Pn	11 22 32.4	-0.5
IGBI	Denpasar	2.56	252	P	Pn	11 22 32.2	-0.7
JAGI	Jajag, Banyuwa	3.45	263	P	Pn	11 22 44.5	-0.7
JAGI	Jajag, Banyuwa	3.45	263	P	Pn	11 22 44.0	-1.2

MAN 27 11:24:02, 9.47N×122.16E, h20km, mb4.5, ML3.3, MS3.2, 1C-4D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	Sibulan	1.07	97	⇓*i*P	Pb	11 24 20.7	-1.1
SNPH				*i* S	Sn	11 24 36.5	+0.3
DCPH	Dipolog City	1.47	127	⇓*e*P	Pn	11 24 26.6	-0.8
LLP	Lapu-Lapu	1.97	65	⇓*e*P	Pn	11 24 35.5	+1.3
LLP				*e*S	Sn	11 24 59.6	+1.3
RCP	Roxas	2.15	15	⇓*e*P	Pn	11 24 37.4	+0.5
RCP				*e*S	Sn	11 25 04.1	+1.2
CGP	Cagayan de Oro	2.70	112	⇑*e*P	Pn	11 24 46.2	+1.9
CGP				*e*S	Sb	11 25 22.5	+0.2

BUC 27 11:48:08.4±0.2, 44°53N×28°19E, h24km±1km, MD1.9/2, 6C, Error ellipse: s-maj=2.7km s-min=1.1km az=76.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLB	Topalu	0.12	299	⇑*i*P	Pb	11 48 13.2	0.0
TLB	Topalu	0.12	299	*i* S	Sb	11 48 16.5	+0.1
TLB	Topalu	0.12	299	⇑*i*P	Pb	11 48 13.2	0.0
TLB				*i* S	Sb	11 48 16.5	+0.1
HARR	Harsova	0.25	311	⇑*i*P	Pb	11 48 15.0	+0.4
HARR				S	Sb	11 48 19.8	+0.9
HARR	Harsova	0.25	311	⇑*i*P	Pb	11 48 15.0	+0.4
HARR				*i* S	Sb	11 48 19.8	+0.9
CFR	Carcaliu	0.65	356	⇑*i*P	Pn	11 48 21.9	-0.2
CFR				S	Sn	11 48 30.9	-0.7
CFR	Carcaliu	0.65	356	⇑*i*P	Pn	11 48 21.9	-0.2
CFR				*i* S	Sn	11 48 30.9	-0.7

*ISCJB **27** 11:50:16.3±0.8, 6.82N±0.05×73.04W±0.06, h153km±6km, Error ellipse: s-maj=10.9km s-min=5.3km az=38.7*
*FUNV **27** 11:50:16.5, 6.69N×73.13W, h149km, MW2.4*
*RSNC **27** 11:50:18.5±0.7, 6.80N×73.07W, h140km±4km, ML2.6*

ISC 27 11:50:16.4±1.5, 6.80N±0.05×73.02W±0.06, h153km±9km, n15, σ0°92/28, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	Barichara	0.26	217	*e*P	Pn	11 50 37.6	0.0
BARC				*e*S	Sn	11 50 52.2	-1.4
BARC				*i*		11 50 53.6	
	comp=Z,83nm,0.3s						
PAMC	Pamplona, Colo	0.63	31	*e*P	Pn	11 50 40.4	+1.0
PAMC				*e*S	Sn	11 50 56.9	-0.1
BRRC	Barranca, Sant	0.75	294	*e*P	Pn	11 50 39.3	-0.3
BRRC				*e*S	Sn	11 50 56.1	-1.2
BRRC				*i*		11 50 57.0	
	comp=Z,129nm,0.1s						
RUSC	La Rusia	0.90	184	*e*P	Pn	11 50 41.6	+0.3
RUSC				*e*S	Sn	11 50 59.5	-0.9
RUSC				*i*		11 51 02.2	
	comp=Z,25nm,0.2s						
CBRI	Barrientos, No	0.94	14	*e*P	Pn	11 50 41.8	+0.6
CBRI				*e*S	Sn	11 50 59.6	-0.6
CBRI				*i*		11 51 05.6	
	comp=Z,65nm,0.4s						
GRMC	Gramalote, San	0.94	13	*e*P	Pn	11 50 43.1	+1.9
GRMC				*e*S	Sn	11 51 01.9	+1.7
GRMC				*i*		11 51 04.0	
	comp=Z,55nm,0.4s						
CAPV	Capacho	1.27	34	⇑*e*P	Pn	11 50 45.5	+1.2
CAPV				*e*S	Sn	11 51 05.0	-0.5
OCAC	Ocana	1.46	348	*e*P	Pn	11 50 46.2	+0.1
OCAC				*e*S	Sn	11 51 08.1	-0.7
OCAC				*i*		11 51 11.0	
	comp=Z,54nm,0.1s						
HELC	Santa Helena	2.56	256	*e*P	Pn	11 50 60.0	+1.2
HELC				*e*S	Sn	11 51 31.4	0.0
SOCV	Socops	2.61	55	*e*P	Pn	11 50 59.4	+0.3
SOCV				*e*S	Sn	11 51 32.1	+0.1
VIGV	El Vigia	2.61	39	*e*P	Pn	11 50 59.6	+0.4
VIGV				*e*S	Sn	11 51 31.8	-0.3
PRAC	Prado	3.58	211	*e*P	Pn	11 51 11.9	+0.5
PRAC				*e*S	Sn	11 51 54.1	-0.1
VIRV	Villa del Rosa	3.73	9	*e*P	Pn	11 51 13.4	+0.1
VIRV				*e*S	Sn	11 51 55.7	-1.8
CURV	Curarigua	4.40	43	*e*P	Pn	11 51 22.5	+0.4
BAUV	El Baul	5.38	66	*e*P	Pn	11 51 34.6	-0.3

*NEIC **27** 12:13:45.0, 41.95N×15.68E, h1km, ML3.5(ROM), After ROM.*
NEIC Felt at San Giovanni Rotondo.
*ROM **27** 12:13:46.3±0.2, 41.89N×15.67E, h2km, Ml3.3/38, Error ellipse: s-maj=2.9km s-min=1.8km az=42.0*
*CSEM **27** 12:13:47.6±0.1, 41.78N×15.55E, h2km, ML3.4/5, Error ellipse: s-maj=2.8km s-min=2.4km az=20.0*
*PDG **27** 12:13:49.0±0.4, 41.79N×15.67E, h11km, ML3.4/13, Error ellipse: s-maj=0.7km s-min=1.0km az=0.0*
*THE **27** 12:13:53.6, 41.61N×16.00E, h9km±5km, ML3.2/1, Error ellipse: s-maj=8.8km s-min=2.0km az=297.0*

ISC 27 12:13:48.4±1.1, 41.80N±0.02×15.57E±0.02, h6km±9km, n178, σ1°29/235, 8C-13D, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSAG	Monte S. Angel	0.27	109	Pg	Pg	12 13 53.0	-0.7
	9μm,0.6s						
MS1	Monte Sant'Ang	0.30	109	*i* Pn	Pg	12 13 53.2	-1.0
CIGN	Sant'Elia a Pi	0.52	254	Pg	Pg	12 13 58.3	0.0
CIGN				Sg	Sb	12 14 08.0	+0.4
	864nm,0.6s						
CIGN	Sant'Elia a Pi	0.52	254	Pg	Pg	12 13 58.3	0.0
CIGN				Sg	Sb	12 14 08.0	+0.4
	864nm,0.6s						
MOCO	Biccari - m.te	0.53	216	Pg	Pb	12 13 59.0	-1.1
	637nm,0.5s						
GATE	Gambatesa	0.57	240	Pg	Pn	12 14 01.5	-1.6
GATE				Sg	Sb	12 14 11.4	+2.2
	1μm,0.5s						
GATE	Gambatesa	0.57	240	Pg	Pn	12 14 01.5	-1.6
SGTA	Sant Agata di	0.68	193	Pg	Pb	12 14 01.7	-1.0
SGTA				Sg	Sn	12 14 14.9	-0.7
	1μm,0.4s						
SGTA	Sant Agata di	0.68	193	Pg	Pb	12 14 01.7	-1.0
FRES	Fresagrandinar	0.69	285	Pg	Pg	12 14 00.7	-1.0
	1μm,0.4s						
SACR	S. Croce Del S	0.76	238	Pg	Pb	12 14 03.3	-0.8
	980nm,0.7s						
SACR	S. Croce Del S	0.76	238	Pg	Pb	12 14 03.3	-0.8
	980nm,0.7s						
MRB1	Monte Rocchett	0.81	214	Pg	Pn	12 14 05.7	-0.7
MRB1				Sg	Sn	12 14 18.9	+0.2
	1μm,0.5s						
MRB1	Monte Rocchett	0.81	214	Pg	Pn	12 14 05.7	-0.7
CAFE	Carife	0.81	198	Pg	Pn	12 14 05.9	-0.6
CAFE				Sg	Sn	12 14 20.3	+1.5
CAFE	Carife	0.81	198	Pg	Pn	12 14 05.9	-0.6
MRVN	Minervino Murg	0.88	147	Pg	Pg	12 14 04.0	-1.2
	1μm,0.4s						
MRVN	Minervino Murg	0.88	147	Pg	Pg	12 14 04.0	-1.2
	1μm,0.4s						
CDT	Castel del Mon	0.89	143	*i* Pg	Pg	12 14 04.4	-1.1
CDT				Sg	Sb	12 14 18.5	0.0
PALZ	Palazzo San Ge	0.91	161	Pg	Pg	12 14 04.9	-0.8
	2μm,0.7s						
PALZ	Palazzo San Ge	0.91	161	Pg	Pg	12 14 04.9	-0.8
	2μm,0.7s						
SGG	Gregorio Mates	0.98	246	Pg	Pb	12 14 07.2	-0.7
	685nm,0.4s						
SGG	Gregorio Mates	0.98	246	Pg	Pb	12 14 07.2	-0.7
	685nm,0.4s						
VAGA	Valle Agricola	1.07	249	Pg	Pn	12 14 09.7	-0.3
	1μm,0.3s						
VAGA	Valle Agricola	1.07	249	Pg	Pn	12 14 09.7	-0.3
	1μm,0.3s						
PAOL	Paolisi	1.07	225	Pg	Pn	12 14 09.9	-0.1
PAOL				Sg	Sn	12 14 26.4	+1.1
	402nm,0.4s						
PAOL	Paolisi	1.07	225	Pg	Pn	12 14 09.9	-0.1
PZUN	Potenza	1.17	171	Pg	Pn	12 14 10.6	-0.6
	684nm,0.3s						
PZUN	Potenza	1.17	171	Pg	Pn	12 14 10.6	-0.6
	684nm,0.3s						
BAI	Bari	1.21	125	*i* Pg	Pb	12 14 10.3	-1.3
BAI				Sg	Sg	12 14 27.8	+0.7
INTR	Introdacqua	1.26	280	Pg	Pb	12 14 11.0	-1.6
INTR	Introdacqua	1.26	280	Pg	Pb	12 14 11.0	-1.6
SG1	Sgolgore (BA)	1.27	138	*i* Pg	Pn	12 14 11.4	-1.4
SG1				Sg	Sn	12 14 30.7	+0.5
MSC	Monte Massico	1.34	244	Pg	Pg	12 14 14.4	+0.3
MSC	Monte Massico	1.34	244	Pg	Pg	12 14 14.4	+0.3
SLCN	Sala Consilina	1.41	178	Pg	Pn	12 14 13.6	-1.1
SLCN				Sg	Sg	12 14 35.3	+1.6
	505nm,0.6s						
SLCN	Sala Consilina	1.41	178	Pg	Pn	12 14 13.6	-1.1
VCEL	Villa Celiera	1.42	295	Pg	Pn	12 14 14.5	-0.3
	836nm,0.8s						
VCEL	Villa Celiera	1.42	295	Pg	Pn	12 14 14.5	-0.3
	836nm,0.8s						
MATE	Matera	1.44	143	Pg	Pn	12 14 13.9	-1.0
MATE				Sg	Sg	12 14 35.2	+0.7
	863nm,0.5s						
MATE	Matera	1.44	143	Pg	Pn	12 14 13.9	-1.0
VVLD	Villa Vallelon	1.46	273	Pg	Pn	12 14 13.9	-1.4
VVLD				Sg	Sg	12 14 36.7	+1.6
	769nm,0.6s						
VVLD	Villa Vallelon	1.46	273	Pg	Pn	12 14 13.9	-1.4
LTRZ	Laterza	1.52	141	Pg	Pn	12 14 15.0	-1.2
	738nm,0.6s						
LTRZ	Laterza	1.52	141	Pg	Pn	12 14 15.0	-1.2
	738nm,0.6s						
FAGN	Fagnano	1.55	288	Pg	Pn	12 14 16.7	+0.1
	1μm,0.5s						
FAGN	Fagnano	1.55	288	Pg	Pn	12 14 16.7	+0.1
	1μm,0.5s						
CRAC	Craco	1.58	155	Pg	Pb	12 14 17.8	-0.2
CRAC				Sg	Sg	12 14 40.6	+1.6
	1μm,1.0s						
CRAC	Craco	1.58	155	Pg	Pb	12 14 17.8	-0.2
PTQR	Pietraquaria	1.63	279	Pg	Pn	12 14 17.8	+0.1
PTQR	Pietraquaria	1.63	279	Pg	Pn	12 14 17.8	+0.1
SCHR	S. Chirico Rap	1.65	166	Pg	Pn	12 14 17.0	-0.9
	165nm,0.6s						
MGR	Morigerati	1.66	180	Pg	Pn	12 14 17.6	-0.5
	266nm,0.8s						
MGR	Morigerati	1.66	180	Pg	Pn	12 14 17.6	-0.5
	266nm,0.8s						
GUAR	Guarcino	1.69	271	Pg	Pb	12 14 18.8	-1.0
	357nm,0.9s						
GUAR	Guarcino	1.69	271	Pg	Pb	12 14 18.8	-1.0
	357nm,0.9s						
AQU	L'Aquila	1.70	290	Pg	Pn	12 14 19.1	+0.4
	411nm,0.9s						
AQU	L'Aquila	1.70	290	*e*Pn	Pn	12 14 17.7	-1.0
AQU	L'Aquila	1.70	290	Pg	Pn	12 14 19.1	+0.4
	411nm,0.9s						
AQU				*e*Sn	Sg	12 14 44.5	+1.3
AQU	L'Aquila	1.70	290	*e*Pn	Pn	12 14 17.7	-1.0
AQU				*e*Sn	Sg	12 14 44.5	+1.3
CUC	Castrocucco	1.81	174	Pg	Pn	12 14 19.8	-0.4
	167nm,0.8s						
CUC	Castrocucco	1.81	174	Pg	Pn	12 14 19.8	-0.4
	167nm,0.8s						
CUC	Castrocucco	1.81	174	*e*Pn	Pn	12 14 19.9	-0.4
CUC				*e*Sn	Sg	12 14 47.5	+0.9
TAR1	Taranto	1.82	134	*e*Pn	Pn	12 14 19.5	-0.7
LNSS	Leonessa	2.04	294	Pg	Pn	12 14 23.4	0.0
LNSS	Leonessa	2.04	294	Pg	Pn	12 14 23.4	0.0
TREB	Trebinje	2.26	65	*e*Pn	Pn	12 14 24.7	-1.6
AOI	Ancona	2.27	321	Pg	Pn	12 14 25.9	-0.6
AOI	Ancona	2.27	321	Pg	Pn	12 14 25.9	-0.6
HCY	Herceg Novi	2.27	72	⇑*i*Pn	Pn	12 14 27.2	+0.7
HCY				*e*Sn	Sn	12 14 56.4	+1.6
HCY	Herceg Novi	2.27	72	⇑*i*Pn	Pn	12 14 27.2	+0.7
HCY				*e*Sn	Sn	12 14 56.4	+1.6
CESX	Cesi	2.36	291	Pg	Pb	12 14 29.7	-1.6
CESX	Cesi	2.36	291	Pg	Pb	12 14 29.7	-1.6
SNTG	Esanatoglia	2.42	308	Pg	Pn	12 14 28.6	0.0
	89nm,0.7s						
SNTG	Esanatoglia	2.42	308	Pg	Pn	12 14 28.6	0.0
	89nm,0.7s						
BRY	Bratogost	2.46	62	*e*Pn	Pn	12 14 29.8	+0.6
BRY				*e*Sn	Sn	12 15 01.1	+1.4
BRY	Bratogost	2.46	62	*e*Pn	Pn	12 14 29.8	+0.6
BRY				*e*Sn	Sn	12 15 01.1	+1.4
PIPA	Pietrapaola	2.50	157	Pg	Pn	12 14 30.5	+0.9
	73nm,0.5s						
PIPA	Pietrapaola	2.50	157	Pg	Pn	12 14 30.5	+0.9
	73nm,0.5s						
BUM	Brajici-Budva	2.53	77	⇓*i*Pn	Pn	12 14 30.2	+0.2
BUM				*e*Sn	Sn	12 15 02.0	+0.8
BUM	Brajici-Budva	2.53	77	⇓*i*Pn	Pn	12 14 30.2	+0.2
BUM				*e*Sn	Sn	12 15 02.0	+0.8
ATCC	AVT- Casa Cast	2.57	304	Pg	Pn	12 14 30.8	+0.2
	209nm,0.8s						
ATCC	AVT- Casa Cast	2.57	304	Pg	Pn	12 14 30.8	+0.2
	209nm,0.8s						
ARVD	Arcevia	2.58	312	Pg	Pn	12 14 29.5	-1.2
	100nm,0.9s						
ARVD	Arcevia	2.58	312	Pg	Pn	12 14 29.5	-1.2
	100nm,0.9s						
CEME	Cevo	2.60	72	⇑*i*Pn	Pn	12 14 30.5	-0.5
CEME				*e*Sn	Sn	12 15 03.9	+0.9
CEME	Cevo	2.60	72	⇑*i*Pn	Pn	12 14 30.5	-0.5
CEME				*e*Sn	Sn	12 15 03.9	+0.9
NKME	Niksic	2.69	68	⇓*i*Pn	Pn	12 14 32.5	+0.2
NKME				*e*Sn	Sn	12 15 06.3	+1.1
NKME	Niksic	2.69	68	⇓*i*Pn	Pn	12 14 32.5	+0.2
NKME				*e*Sn	Sn	12 15 06.3	+1.1
FRON	Frontone	2.71	310	Pg	Pn	12 14 32.1	-0.4
	258nm,1.5s						
FRON	Frontone	2.71	310	Pg	Pn	12 14 32.1	-0.4
	258nm,1.5s						
DRME	Dracevica, Mon	2.72	81	⇓*i*Pn	Pn	12 14 32.0	-0.7
DRME				*e*Sn	Sn	12 15 06.7	+0.8
DRME	Dracevica, Mon	2.72	81	⇓*i*Pn	Pn	12 14 32.0	-0.7
DRME				*e*Sn	Sn	12 15 06.7	+0.8
UDBI	Udbina	2.73	3	*e*Pn	Pn	12 14 33.6	+0.7
UDBI				Sn	Sn	12 15 05.9	-0.3
UDBI	Udbina	2.73	3	*e*Pn	Pn	12 14 33.5	+0.7
UDBI				Sn	Sn	12 15 05.9	-0.3
NKY	Niksic	2.74	67	⇓*i*Pn	Pn	12 14 33.3	+0.4
NKY				*e*Sn	Sn	12 15 07.4	+1.0
NKY	Niksic	2.74	67	⇓*i*Pn	Pn	12 14 33.3	+0.4
NKY				*e*Sn	Sn	12 15 07.4	+1.0
ULC	Ulcinj	2.75	85	⇓*i*Pn	Pn	12 14 33.0	-0.1
ULC				*e*Sn	Sn	12 15 07.0	+0.3
ULC	Ulcinj	2.75	85	⇓*i*Pn	Pn	12 14 33.0	-0.1
ULC				*e*Sn	Sn	12 15 07.0	+0.3
MPAG	Monte Paganucc	2.76	312	Pg	Pn	12 14 32.0	-1.3
	102nm,0.9s						
MPAG	Monte Paganucc	2.76	312	Pg	Pn	12 14 32.0	-1.3
	102nm,0.9s						
TIP	Timpagrande	2.77	160	P	Pn	12 14 33.5	+0.1
TIP				S	Sn	12 15 05.6	-1.6
TIP	Timpagrande	2.77	160	Pg	Pn	12 14 33.8	+0.4
TIP	Timpagrande	2.77	160	P	Pn	12 14 33.5	+0.1
TIP	Timpagrande	2.77	160	Pg	Pn	12 14 33.8	+0.4
TIP				S	Sn	12 15 05.6	-1.6
TIP	Timpagrande	2.77	160	*e*Pn	Pn	12 14 33.5	+0.1
TIP				*e*Sn	Sg	12 15 19.8	+2.4
FSSB	Fossombrone	2.79	314	Pg	Pn	12 14 32.5	-1.1
	111nm,0.4s						
FSSB	Fossombrone	2.79	314	Pg	Pn	12 14 32.5	-1.1
	111nm,0.4s						
NVLJ	Novalja	2.81	350	*e*Pn	Pn	12 14 31.7	-2.2
NVLJ				Sn	Sn	12 15 04.1	-3.9
NVLJ	Novalja	2.81	350	*e*Pn	Pn	12 14 31.6	-2.2
NVLJ				Sn	Sn	12 15 04.0	-3.9
PDG	Podgorica	2.82	76	P	Pn	12 14 35.0	+1.1
PDG				S	Sn	12 15 06.9	-1.3
PDG	Podgorica	2.82	76	⇑*i*Pn	Pn	12 14 33.9	0.0
PDG				*e*Sn	Sn	12 15 10.0	+1.8
TTG	Podgorica	2.82	76	⇑*i*Pn	Pn	12 14 33.9	0.0
TTG				*e*Sn	Sn	12 15 10.0	+1.8
PIEI	Pieia	2.83	309	Pg	Pn	12 14 33.4	-0.8
	34nm,0.6s						
PIEI	Pieia	2.83	309	Pg	Pn	12 14 33.4	-0.8
	34nm,0.6s						
UPM	Unac-Piva	2.84	59	*e*Pn	Pn	12 14 34.5	+0.1
UPM				*e*Sn	Sn	12 15 09.7	+0.6
UPM	Unac-Piva	2.84	59	*e*Pn	Pn	12 14 34.5	+0.1
UPM				*e*Sn	Sn	12 15 09.7	+0.6
ATMC	Monte Cedrone	2.98	305	Pg	Pn	12 14 37.5	+1.2
	86nm,0.9s						
ATMC	Monte Cedrone	2.98	305	Pg	Pn	12 14 37.5	+1.2
	86nm,0.9s						
BADI	Badiali	2.99	306	Pg	Pn	12 14 37.5	+1.2
	135nm,1.2s						
BADI	Badiali	2.99	306	Pg	Pn	12 14 37.5	+1.2
	135nm,1.2s						
PARC	Parchiule	3.07	308	Pg	Pn	12 14 38.3	+0.8
	56nm,0.8s						
PARC	Parchiule	3.07	308	Pg	Pn	12 14 38.3	+0.8
	56nm,0.8s						
PLE	Pljevlja	3.21	60	⇓*i*Pn	Pn	12 14 39.7	+0.2
PLE				*e*Sn	Sn	12 15 18.9	+0.8
PLE	Pljevlja	3.21	60	⇓*i*Pn	Pn	12 14 39.7	+0.2
PLE				*e*Sn	Sn	12 15 18.9	+0.8
TIR	Tirane	3.26	97	*e*Pn	Pn	12 14 35.9	-4.1
TIR	Tirane	3.26	97	*e*Pn	Pn	12 14 35.9	-4.1
T0502	Localit˜ San	3.28	311	Pg	Pn	12 14 40.6	+0.2
	376μm,29.0s						
PVY	Plav	3.36	75	⇓*i*Pn	Pn	12 14 41.4	-0.1
PVY				*e*Sn	Sn	12 15 21.3	-0.5
BEY	Berane	3.38	70	⇑*i*Pn	Pn	12 14 42.2	+0.4
BEY				*e*Sn	Sn	12 15 22.8	+0.5
IVA	Berane	3.38	70	⇑*i*Pn	Pn	12 14 42.2	+0.4
IVA				*e*Sn	Sn	12 15 22.8	+0.5
BBLS	Lazići	3.50	53	*e*Pn	Pn	12 14 44.8	+1.4
KEK	Kerkira	3.83	122	P	Pn	12 14 46.9	-1.0
KEK				S	Sn	12 15 29.1	-4.2
KEK	Kerkira	3.83	122	P	Pn	12 14 46.9	-1.0
KEK				S	Sn	12 15 29.1	-4.2
DIVS	Divibare	3.98	53	*e*Pn	Pn	12 14 50.1	+0.1
CEY	Cerknica	4.02	349	*e*Pn	Pn	12 14 50.0	-0.6
CRES	Cresnjev	4.03	359	*e*Pn	Pn	12 14 49.8	-0.8
TRI	Trieste	4.12	342	*e*Pn	Pn	12 14 45.7	-6.1
TRI				*e*Sn	Sn	12 15 34.9	-5.5
SGD	Sagiada	4.17	120	P	Pn	12 14 52.1	-0.4
SGD	Sagiada	4.17	120	P	Pn	12 14 52.1	-0.4
TRUS	Trudelj	4.30	54	*e*Pn	Pn	12 14 59.4	+5.1
GRUS	Gruza	4.32	59	*e*Pn	Pn	12 14 55.8	+1.1
SELS	Selova	4.34	69	*e*Pn	Pn	12 14 54.3	-0.7
VLC	Villacollemand	4.47	304	*e*Pn	Pn	12 14 53.0	-3.7
VLC	Villacollemand	4.47	304	*e*Pn	Pn	12 14 53.0	-3.7
BARS	Barje	4.74	76	*e*Pn	Pn	12 14 59.9	-0.6
KPRO	Kipourio	4.76	111	P	Pn	12 15 01.5	+0.7
KPRO	Kipourio	4.76	111	P	Pn	12 15 01.5	+0.7
OBKA	Obir	4.76	352	*i* Pn	Pn	12 15 02.2	+1.4
	3.2nm,0.3s						
OBKA				*i* Sn	Sn	12 16 00.6	+4.2
	13nm,0.4s						
OBKA	Obir	4.76	352	Pn	Pn	12 15 02.2	+1.4
	3.2nm,0.3s						
OBKA				Sn	Sn	12 16 00.6	+4.2
	13nm,0.4s						
SOKA	Soboth	4.89	356	*i* Pn	Pn	12 15 04.9	+2.4
	1.3nm,0.2s						
SOKA	Soboth	4.89	356	Pn	Pn	12 15 04.9	+2.4
	1.3nm,0.2s						
MYKA	Terra Mystica	5.02	345	*i* Pn	Pn	12 15 04.9	+0.6
	1.0nm,0.1s						
MYKA	Terra Mystica	5.02	345	Pn	Pn	12 15 04.9	+0.6
	1.0nm,0.1s						
VLS	Valsamata	5.29	132	P	Pn	12 15 07.1	-0.8
VLS	Valsamata	5.29	132	P	Pn	12 15 07.1	-0.8
PDO	Prodromos	5.36	125	P	Pn	12 15 08.3	-0.6
PDO	Prodromos	5.36	125	P	Pn	12 15 08.3	-0.6
ARSA	Arzberg	5.45	360	*i* Pn	Pb	12 15 19.8	-4.2
	1.9nm,0.2s						
ARSA				*e*Sn	Sn	12 16 14.7	+1.6
	0.8nm,0.2s						
EVR	Evrytania	5.57	119	P	Pn	12 15 12.7	+0.8
EVR	Evrytania	5.57	119	P	Pn	12 15 12.7	+0.8
ANX	Ano Chora	5.82	121	P	Pn	12 15 16.1	+0.7
ANX	Ano Chora	5.82	121	P	Pn	12 15 16.1	+0.7
MOA	Molln	6.12	352	*i* Pn	Pn	12 15 19.3	0.0
	1.1nm,0.2s						
MOA	Molln	6.12	352	Pn	Pn	12 15 19.3	0.0
	1.1nm,0.2s						
WATA	Walderalm	6.22	334	*i* Pn	Pn	12 15 21.5	+0.6
	4.4nm,0.3s						
WATA				*i* Sn	Sn	12 16 33.5	+1.1
WATA	Walderalm	6.22	334	Pn	Pn	12 15 21.5	+0.6
	4.4nm,0.3s						
WATA				Sn	Sn	12 16 33.5	+1.1
FETA	Feichten	6.26	328	*i* Pn	Pn	12 15 22.6	+1.1
	2.2nm,0.6s						
FETA				*i* Sn	Sn	12 16 33.8	+0.4
	2.6nm,0.3s						
FETA	Feichten	6.26	328	Pn	Pn	12 15 22.6	+1.1
	2.2nm,0.6s						
FETA				Sn	Sn	12 16 33.8	+0.4
	2.6nm,0.3s						
MOTA	Moosalm	6.39	332	*i* Sn	Sn	12 16 37.3	+0.7
	3.3nm,0.3s						
MOTA	Moosalm	6.39	332	Sn	Sn	12 16 37.3	+0.7
	3.3nm,0.3s						
RETA	Reutte	6

TATV				*i* S	**Sg**	12 33 29.1	-1.7
KARS	**Kars**	**1.21**	**355**	*e*PN	**Pn**	12 33 16.3	-0.9
KARS	**Kars**	**1.21**	**355**	*e*Pn	**Pn**	12 33 16.3	-0.9
ERZM	**Erzurum**	**1.50**	**290**	*i* P	**Pg**	12 33 23.3	+1.2
ERZM				*i* S	**Sg**	12 33 43.1	+1.5
ERZM	**Erzurum**	**1.50**	**290**	P	**Pg**	12 33 23.3	+1.2
ERZM				S	**Sg**	12 33 43.1	+1.5
EZM	**Erzurum**	**1.50**	**290**	*e*PN	Pn	12 33 15.7	-5.7
BNGL	**BINGOL**	**1.66**	**254**	*i* P	**Pn**	12 33 23.3	-0.2
BNGL				*i* S	**Sg**	12 33 46.3	-0.5
HAKT	**HAKKARI**	**1.90**	**168**	*i* P	**Pb**	12 33 28.7	+0.1
HAKT				*i* S	**Sg**	12 33 56.2	+2.0
HAKT	**HAKKARI**	**1.90**	**168**	P	**Pb**	12 33 28.7	+0.1
HAKT				S	**Sg**	12 33 56.2	+2.0
BNGB	**Bing℡**	**2.01**	**259**	*e*PN	Pn	12 33 20.5	-7.6
BTMN	**Batman**	**2.15**	**225**	*i* P	**Pb**	12 33 32.2	-0.6
BTMN				*i* S	**Sg**	12 34 00.7	-1.6
BTMN	**Batman**	**2.15**	**225**	P	**Pb**	12 33 32.2	-0.6
BTMN				S	**Sg**	12 34 00.7	-1.6

NIED ***27*** *12:33:00,36.70N×140.70E,h5km,Mw3.6 Best double couple: M₀3.32000×10¹⁴ NP1:φ₀326.00000°, δ27.00000°, λ-104.00000°. NP2:φ₀161.00000°, δ64.00000°, λ-83.00000°.*

ISCJB ***27*** *12:33:05.4±0.8,36.72N±0.04×140.74E±0.07,h13km±4km, mb3.7/6, Error ellipse: s-maj=10.4km s-min=5.8km az=25.9*

IDC ***27*** *12:33:05.3±1.0,36.84N×140.64E,h0km,mb3.7/6, mb1 3.8/8,mb1mx3.5/52,mbtmp3.7/8,ML2.8/1,MS2.4/1, Ms1 2.4/1,ms1mx2.0/37, Error ellipse: s-maj=24.5km s-min=18.3km az=92.0*

JMA ***27*** *12:33:06.5,36.70N×140.63E,h7km±1km,M3.2*

JMA Felt III J1.

ISC 27 12:33:05.4±1.5,36.78N±0.05×140.64E±0.06,h2km±11km, n19,σ0°73/18,mb3.8/6,2C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.17**	**198**	⇑P	**Pg**	**12 33 08.9**	**+0.1**
JHO				S	**Sg**	**12 33 10.5**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.35**	**22**	⇑P	**Pb**	**12 33 14.8**	**+0.4**
ONAJ				S	**Sb**	**12 33 20.5**	**+0.1**
MJAR	**Matsushiro Arr**	**1.97**	**264**	Pn	**Pn**	**12 33 40.2**	**+0.4**
	7.8nm,0.3s,baz=85,slow=10,SNR=148						
MJAR				Sn	**Sb**	**12 34 06.3**	**-0.6**
	11nm,0.3s,baz=99,slow=21,SNR=13						
MJAR				LR	LR	12 34 40.4	
	comp=Z,76nm,18.1s,baz=105,slow=49						
MAT	**Matsushiro**	**1.97**	**264**	P	**Pn**	**12 33 40.3**	**+0.5**
MAT				S	**Sb**	**12 34 06.6**	**-0.3**
JHJ	**Hachijo jima 2**	**3.72**	**191**	Pn	**Pn**	**12 34 04.7**	**+0.9**
	2.0nm,0.3s,baz=287,slow=19,SNR=5.3						
JHJ				Sn	**Sn**	**12 34 46.8**	**-1.3**
	5.7nm,0.3s,baz=74,slow=20,SNR=3.3						
ASAJ	**Asahikawa**	**7.48**	**11**	Pn	**Pn**	**12 34 54.3**	**-1.2**
	baz=349,slow=18						
ASAJ				Sn	**Sn**	**12 36 20.6**	**-0.2**
	baz=170,slow=11						
KSRS	**Korea Array**	**10.18**	**278**	LR	LR	12 39 02.5	
	comp=Z,22nm,20.3s,baz=152,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.56**	**119**	T	T	13 08 46.5	
	baz=312,slow=75,SNR=632						
H11N1	**WAKE ISLAND Hy**	**28.57**	**119**	T	T	13 08 47.0	
	baz=312,slow=75,SNR=608						
H11N3	**WAKE ISLAND Hy**	**28.58**	**119**	T	T	13 08 47.8	
	baz=312,slow=75,SNR=511						
H11S1	**WAKE ISLAND Hy**	**29.25**	**121**	T	T	13 09 37.6	
	baz=314,slow=76,SNR=1751						
H11S3	**WAKE ISLAND Hy**	**29.25**	**121**	T	T	13 09 36.8	
	baz=314,slow=76,SNR=1008						
H11S2	**WAKE ISLAND Hy**	**29.27**	**121**	T	T	13 09 39.3	
	baz=314,slow=76,SNR=1700						
ZALV	**Zalesovo Beam**	**41.63**	**313**	P	**P**	**12 40 55.1**	**+0.4**
	0.6nm,0.4s,baz=112,slow=7.5,SNR=4.0						
KURBB	**Kurchatov Arra**	**45.67**	**308**	P	**P**	**12 41 26.8**	**-0.5**
	1.8nm,0.8s,baz=84,slow=7.8,SNR=10						
WRA	**Warramunga Arr**	**56.73**	**187**	P	**P**	**12 42 50.8**	**+0.2**
	0.7nm,0.6s,baz=5.0,slow=7.3,SNR=10						
ASAR	**Alice Springs**	**60.45**	**187**	P	**P**	**12 43 17.5**	**+1.0**
	0.4nm,0.7s,baz=4.5,slow=6.6,SNR=5.4						
FINES	**FINESS Array B**	**68.75**	**332**	P	**P**	**12 44 10.0**	**-0.3**
	1.0nm,0.8s,baz=32,slow=11,SNR=4.6						
TXAR	**Lajitas Array**	**90.77**	**52**	P	**P**	**12 46 11.1**	**+0.7**
	0.1nm,0.4s,baz=326,slow=5.8,SNR=2.4						

JMA 27 12:33:05.6,36.70N×140.64E,h7km±1km,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.11**	**213**	P	Pg	12 33 08.0	0.0
ONAJ	**Iwakimizuishiy**	**0.42**	**18**	P	Pg	12 33 13.9	+0.1
JYT	**Yasato**	**0.59**	**217**	P	Pg	12 33 17.0	0.0

ISK ***27*** *12:38:18.5,39.74N×43.39E,h6km,ML2.9*

ISCJB ***27*** *12:38:21.9±0.7,39.43N±0.04×43.22E±0.04,h0km±8km, Error ellipse: s-maj=7.1km s-min=4.9km az=11.5*

DDA ***27*** *12:38:21.1,39.38N×43.22E,h3km,Md2.8*

CSEM ***27*** *12:38:22.0±0.3,39.43N×43.23E,h2km,MD2.8, Error ellipse: s-maj=8.0km s-min=6.4km az=14.0*

ISC 27 12:38:21.4±1.1,39.44N±0.03×43.25E±0.03,h5km±11km, n24,σ0°92/33,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGRB	**Hanur-Agry**	**0.24**	**305**	*e*PG	**Pg**	**12 38 26.7**	**+0.5**
AGRB				*e*SG	**Sg**	**12 38 30.7**	**+1.2**
AGRB	**Hanur-Agry**	**0.24**	**305**	*e*Pg	**Pg**	**12 38 26.7**	**+0.5**
AGRB				*e*Sg	**Sg**	**12 38 30.7**	**+1.2**
TUTA	**Tutak**	**0.34**	**265**	*i* P	**Pg**	**12 38 27.2**	**-0.9**
TUTA				*i* S	**Sg**	**12 38 31.9**	**-0.7**
TUTA	**Tutak**	**0.34**	**265**	P	**Pg**	**12 38 27.2**	**-0.9**
TUTA				S	**Sg**	**12 38 31.9**	**-0.7**
DYDN	**Diyadin**	**0.36**	**72**	*i* P	**Pg**	**12 38 28.9**	**+0.5**
DYDN				*i* S	**Sb**	**12 38 35.0**	**-1.4**
DYDN	**Diyadin**	**0.36**	**72**	P	**Pg**	**12 38 28.9**	**+0.5**
DYDN				S	**Sb**	**12 38 35.0**	**-1.4**
CLDR	**Caldiran**	**0.59**	**119**	*e*PG	**Pb**	**12 38 33.7**	**-0.7**
CLDR	**Caldiran**	**0.59**	**119**	*e*Pg	**Pb**	**12 38 33.7**	**-0.7**
VANB	**Van**	**0.85**	**173**	*e*PN	**Pn**	**12 38 41.1**	**+1.0**
VANB	**Van**	**0.85**	**173**	*e*Pn	**Pn**	**12 38 41.1**	**+1.0**
TVAN	**Van**	**0.91**	**172**	*i* P	**Pn**	**12 38 43.1**	**+2.0**
TVAN				*i* S	**Sn**	**12 38 56.1**	**+1.4**
DIGO	**Kars**	**0.98**	**6**	*i* P	**Pn**	**12 38 41.8**	**-0.3**
DIGO	**Kars**	**0.98**	**6**	P	**Pn**	**12 38 41.8**	**-0.3**
GEVA	**Gevas**	**1.13**	**188**	*i* P	**Pg**	**12 38 41.5**	**-1.6**
GEVA				*i* S	**Sg**	**12 38 58.0**	**+0.2**
GEVA	**Gevas**	**1.13**	**188**	S	**Sg**	**12 38 58.0**	**+0.2**
KARS	**Kars**	**1.20**	**354**	*e*PG	Pg	12 38 35.8	-8.6
ERZM	**Erzurum**	**1.53**	**289**	*i* P	**Pg**	**12 38 51.2**	**+0.5**
ERZM	**Erzurum**	**1.53**	**289**	P	**Pg**	**12 38 51.2**	**+0.5**
EZM	**Erzurum**	**1.53**	**288**	*e*PN	**Pn**	**12 38 48.5**	**-1.2**
BNGL	**BINGOL**	**1.70**	**254**	*i* P	**Pn**	**12 38 52.1**	**+0.2**
BNGL				*i* S	**Sb**	**12 39 15.1**	**+0.1**
YEDI	**Yedisu-Bingol**	**2.09**	**271**	*e*PN	**Pn**	**12 38 57.1**	**-0.1**
YEDI	**Yedisu-Bingol**	**2.09**	**271**	*e*Pn	**Pn**	**12 38 57.2**	**-0.1**
BTMN	**Batman**	**2.19**	**226**	*i* P	**Pb**	**12 39 01.2**	**-0.3**
BTMN				*i* S	**Sb**	**12 39 29.6**	**+0.7**
BTMN	**Batman**	**2.19**	**226**	P	**Pb**	**12 39 01.2**	**-0.3**

JMA 27 13:48:29.7±0.2,37.35N×143.93E,h45km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.32**	**299**	P	Pn	13 49 06.8	+1.4
JIO				*e*S	Sn	13 49 34.1	+1.4
JFK	**Kawauchi**	**2.44**	**271**	P	Pn	13 49 08.3	+1.3
JFK				*e*S	Sn	13 49 36.7	+1.1
OFUJ	**Ofunato**	**2.48**	**315**	P	Pn	13 49 08.6	+1.0
OFUJ				*e*S	Sn	13 49 37.4	+0.8
JFT	**Otama**	**2.87**	**274**	*e*S	Sn	13 49 48.6	+2.5
JOM	**Ohasama**	**2.96**	**316**	P	Pn	13 49 15.9	+1.7
JOM				*e*S	Sn	13 49 50.2	+1.7
JYK	**Kaneyama**	**3.22**	**300**	P	Pn	13 49 20.0	+2.2
JRY	**Ryogami san**	**4.25**	**253**	P	Pn	13 49 32.9	+0.9
JOT	**Ohata**	**4.60**	**332**	*e*S	Sn	13 50 27.2	-1.7
JCH	**Churui**	**5.28**	**355**	P	Pn	13 49 45.6	-0.3
JCH				*e*S	Sn	13 50 41.4	-4.0
JTKR	**Abashiri--Toko**	**6.61**	**360**	P	Pn	13 50 03.4	-0.9
JTKR				*e*S	Sn	13 51 14.7	-3.6

ISCJB ***27*** *14:00:16.2±1.5,36.84N±0.08×27.56E±0.06,h1km±12km, Error ellipse: s-maj=14.4km s-min=6.2km az=26.7*

ISK ***27*** *14:00:18.6,37.23N×27.31E,h9km,ML2.3*

CSEM ***27*** *14:00:20.4±0.5,37.07N×27.48E,h5km,ML2.3, Error ellipse: s-maj=14.3km s-min=8.8km az=137.0*

DDA ***27*** *14:00:20.2,37.06N×27.49E,h7km,Ml2.8*

ISC 27 14:00:19.5±1.2,37.02N±0.04×27.54E±0.04,h7km±9km, n11,σ1°47/19,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.09**	**303**	*i* P	**Pg**	**14 00 21.7**	**+0.1**
BDRM				*i* S	**Sg**	**14 00 23.4**	**+0.2**
BDRM	**Kayabasi**	**0.09**	**303**	P	**Pg**	**14 00 21.7**	**+0.1**
BDRM				S	**Sg**	**14 00 23.4**	**+0.2**
BODT	**Bodrum**	**0.19**	**284**	*e*PG	**Pg**	**14 00 22.9**	**-0.3**
BODT				*e*SG	**Sg**	**14 00 25.4**	**-0.5**
BODT	**Bodrum**	**0.19**	**284**	*e*Pg	**Pg**	**14 00 23.0**	**-0.3**
BODT				*e*Sg	**Sg**	**14 00 25.4**	**-0.5**
MLSB	**Milas**	**0.34**	**34**	*e*PG	**Pg**	**14 00 26.8**	**+0.7**
MLSB				*e*SG	**Sg**	**14 00 32.2**	**+1.7**
MLSB	**Milas**	**0.34**	**34**	*e*Pg	**Pg**	**14 00 26.8**	**+0.7**
MLSB				*e*Sg	**Sg**	**14 00 32.2**	**+1.7**
NIS1	**Nisyros Isl.**	**0.51**	**215**	*e*PG	**Pg**	**14 00 31.1**	**+1.9**
NIS1	**Nisyros Isl.**	**0.51**	**215**	*e*Pg	**Pg**	**14 00 31.1**	**+1.9**
TURN	**Turunc**	**0.86**	**99**	*i* P	Pg	14 00 32.2	-3.8
TURN				*i* S	**Sg**	**14 00 43.9**	**-3.4**
URLA	**Izmir**	**1.54**	**331**	*i* P	**Pn**	**14 00 46.2**	**-1.1**
URLA				*i* S	**Sg**	**14 01 10.3**	**+1.4**
URLA	**Izmir**	**1.54**	**331**	P	**Pn**	**14 00 46.2**	**-1.1**
URLA				S	**Sg**	**14 01 10.3**	**+1.4**

IDC 27 14:16:37.5±2.5,18.49S×177.78W,h642km±32km, mb3.3/8,mb1 3.5/9,mb1mx3.2/26,mbtmp4.3/9,Error ellipse: s-maj=22.7km s-min=16.4km az=179.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**15.22**	**254**	P	P	14 19 46.9	+0.7
	0.9nm,0.3s,baz=73,slow=11,SNR=10						
URZ	**Urewera**	**20.20**	**192**	P	P	14 20 30.3	-0.6
	5.0nm,0.3s,baz=346,slow=8.3,SNR=14						
CTA	**Charters Tower**	**33.95**	**261**	P	P	14 22 30.9	+0.4
	3.5nm,0.4s,baz=85,slow=11,SNR=11						
STKA	**Stephens Creek**	**38.88**	**242**	P	P	14 23 11.7	+1.1
	1.0nm,0.5s,baz=96,slow=5.9,SNR=5.3						
WRA	**Warramunga Ar**	**45.12**	**260**	P	P	14 23 59.2	-0.2
	4.2nm,0.4s,baz=97,slow=7.2,SNR=232						
ASAR	**Alice Springs**	**45.21**	**255**	P	P	14 24 00.3	+0.2
	4.2nm,0.5s,baz=87,slow=8.3,SNR=99						
ASAR				PcP	PcP	14 25 26.5	+0.5
	0.2nm,0.5s,baz=91,slow=5.6,SNR=2.3						
ASAR				S	S	14 29 55.2	-0.2
	0.7nm,0.7s,baz=91,slow=16,SNR=6.2						
VNDA	**Vanda**	**59.92**	**185**	P	P	14 25 43.6	+0.4
	2.0nm,0.4s,baz=22,slow=5.4,SNR=12						
TXAR	**Lajitas Array**	**85.80**	**57**	P	P	14 28 12.3	+1.0
	0.6nm,0.6s,baz=216,slow=6.6,SNR=9.7						
ILAR	**Eielson Array**	**86.32**	**13**	P	P	14 28 11.0	-1.8
	0.2nm,0.4s,baz=219,slow=4.8,SNR=5.6						

IDC ***27*** *14:25:26.7±0.9,72.22N×1.86E,h0km,mb3.9/13, mb1 4.0/19,mb1mx3.8/50,mbtmp3.9/19,ML3.5/6,MS3.6/28, Ms1 3.5/28,ms1mx3.4/49,Error ellipse: s-maj=19.3km s-min=14.3km az=63.0*

NAO ***27*** *14:25:26.5±2.8,72.25N×2.30E,ML3.3*

NEIC ***27*** *14:25:27.6±0.5,72.29N×1.90E,h10km,mb4.1/3,Error ellipse: s-maj=9.8km s-min=7.6km az=65.0*

CSEM ***27*** *14:25:27.6±0.2,72.30N×2.69E,h2km,mb4.3/13,Error ellipse: s-maj=7.6km s-min=5.2km az=99.0*

MOS ***27*** *14:25:28.2±1.1,72.36N×3.27E,h10km,mb4.3/8,Error ellipse: s-maj=24.8km s-min=5.2km az=99.3*

ISCJB ***27*** *14:25:28.3±0.4,72.36N±0.03×3.4E±0.1,h10km,mb4.0/24, MS3.6/31,Error ellipse: s-maj=5.2km s-min=4.5km az=171.9*

BER ***27*** *14:25:30.6±2.6,72.34N×2.29E,h10km,ML2.6, ML3.3(NAO)*

ISC 27 14:25:29.3±0.5,72.30N±0.05×2.79E±0.06,h10km,n198, σ1°51/203,mb4.0/25,MS3.6/31,3C-1D,Norwegian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BJO1	**Bjornoya**	**5.14**	**57**	Pn	**Pn**	**14 26 46.2**	**+0.2**
BJO	**Bjornoya**	**5.19**	**57**	*e*P	**Pn**	**14 26 46.0**	**-0.8**
BJO	**Bjornoya**	**5.19**	**57**	Pn	**Pn**	**14 26 46.2**	**-0.6**
LOF	**Lofoten**	**5.55**	**134**	*e*P	**Pn**	**14 26 52.8**	**+1.1**
LOF				*e*S	**Sn**	**14 27 53.6**	**-1.8**
LOF				IAML		14 28 07.5	
	comp=Z,5.8nm,0.5s						
LOF	**Lofoten**	**5.55**	**134**	*e*P	**Pn**	**14 26 52.8**	**+1.1**
	SNR=49						
HSPB	**Hornsund (broa**	**5.79**	**30**	*e*P	**Pn**	**14 26 53.0**	**-2.1**
HSPB	**Hornsund (broa**	**5.79**	**30**	*e*P	**Pn**	**14 26 53.0**	**-2.1**
	SNR=49						
HSP	**Hornsund**	**5.80**	**30**	Pn	**Pn**	**14 26 53.0**	**-2.2**
TRO	**Tromso**	**5.91**	**109**	*e*P	**Pn**	**14 26 57.9**	**+1.2**
TRO				*e*S	**Sn**	**14 28 01.7**	**-2.6**
TRO				IAML		14 28 04.4	
	comp=Z,10nm,0.4s						
TRO	**Tromso**	**5.91**	**109**	P	**Pn**	**14 26 58.2**	**+1.5**
TRO	**Tromso**	**5.91**	**109**	*e*P	**Pn**	**14 26 57.9**	**+1.2**
	SNR=49						
STEI	**Steigen**	**6.10**	**130**	*e*P	**Pn**	**14 26 59.8**	**+0.5**
STEI				*e*S	**Sn**	**14 28 06.3**	**-2.7**
STEI	**Steigen**	**6.10**	**130**	*e*P	**Pn**	**14 26 59.8**	**+0.5**
	SNR=49						
SPA0	**Spitsbergen Ar**	**6.82**	**24**	Pn	**Pn**	**14 27 08.2**	**-1.1**
	baz=218,slow=18						
SPA0				Sn	**Sn**	**14 28 24.7**	**-2.1**
	baz=216,slow=37						
SPA0	**Spitsbergen Ar**	**6.82**	**24**	Pn	**Pn**	**14 27 08.2**	**-1.1**
	baz=218,slow=18						
SPA0				Sn	**Sn**	**14 28 24.7**	**-2.1**
	baz=216,slow=37						
SPA0	**Spitsbergen Ar**	**6.82**	**24**	Pn	**Pn**	**14 27 08.1**	**-1.1**
	SNR=50						
SPA0				Sn	**Sn**	**14 28 24.7**	**-2.1**
	SNR=50						
SPITS	**Spitsbergen Ar**	**6.82**	**24**	Pn	**Pn**	**14 27 08.1**	**-1.1**
	baz=208,slow=18,SNR=40						
SPITS				Sn	**Sn**	**14 28 23.7**	**-3.1**
	baz=217,slow=22,SNR=1.8						
SPITS				LR	LR	14 28 53.1	
	comp=Z,89nm,21.7s,baz=160,slow=29						
HAMF	**Hammerfest**	**6.85**	**94**	*e*P	**Pn**	**14 27 10.9**	**+1.3**
HAMF	**Hammerfest**	**6.85**	**94**	*e*P	**Pn**	**14 27 10.9**	**+1.3**
	SNR=47						
KBS	**Kingsbay**	**7.03**	**15**	*e*P	**Pn**	**14 27 10.5**	**-1.5**
KBS	**Kingsbay**	**7.03**	**15**	*e*P	**Pn**	**14 27 10.5**	**-1.5**
KBS	**Kingsbay**	**7.03**	**15**	*e*P	**Pn**	**14 27 10.5**	**-1.5**
	SNR=47						
KBS	**Kingsbay**	**7.03**	**15**	*e*Pn	**Pn**	**14 27 10.5**	**-1.5**
DAG	**Danmarks Havn**	**7.23**	**318**	*i* P	Pn	14 27 06.2	-8.6
DAG				*i* S	Sn	14 28 17.2	-20
DAG	**Danmarks Havn**	**7.23**	**318**	*i* P	Pn	14 27 06.2	-8.6
DAG	**Danmarks Havn**	**7.23**	**318**	*i* P	Pn	14 27 06.2	-8.6
ARA0	**ARCESS Array S**	**7.91**	**99**	Pn	**Pn**	**14 27 24.2**	**0.0**
	baz=302,slow=12						
ARA0				Sn	**Sn**	**14 28 53.4**	**-0.3**
	baz=299,slow=22						
ARA0	**ARCESS Array S**	**7.91**	**99**	Pn	**Pn**	**14 27 24.2**	**0.0**
	baz=302,slow=12						
ARA0				Sn	**Sn**	**14 28 53.4**	**-0.3**
	baz=299,slow=22						
ARA0	**ARCESS Array S**	**7.91**	**99**	Pn	**Pn**	**14 27 24.2**	**0.0**
	SNR=50						
ARA0				Sn	**Sn**	**14 28 53.4**	**-0.3**
	SNR=50						
ARCES	**ARCESS Array B**	**7.91**	**99**	Pn	**Pn**	**14 27 25.3**	**+1.1**
	comp=Z,0.5nm,0.3s,baz=303,slow=12,SNR=7.3						
ARCES				Sn	**Sn**	**14 28 52.2**	**-1.4**
	comp=Z,0.5nm,0.3s,baz=304,slow=21,SNR=2.8						
ARCES				LR	LR	14 30 26.2	
	comp=Z,265nm,21.4s,baz=296,slow=37						
ARCES	**ARCESS Array B**	**7.91**	**99**	*e*P	**Pn**	**14 27 24.4**	**+0.2**
ARCES	**ARCESS Array B**	**7.91**	**99**	*e*P	**Pn**	**14 27 24.4**	**+0.2**
ARE0	**ARCESS Array S**	**7.91**	**99**	*e*P	**Pn**	**14 27 24.2**	**0.0**
ARE0				*e*P	**Pn**	**14 27 26.0**	**+1.8**
	comp=Z,2.8nm,0.8s						
ARE0				IAML		14 28 59.4	
	comp=Z,2.1nm,0.7s						
ARE0	**ARCESS Array S**	**7.91**	**99**	*e*P	**Pn**	**14 27 24.2**	**0.0**
	SNR=47						
AKN	**Aaknes**	**10.29**	**169**	Pn	**Pn**	**14 27 55.5**	**-1.3**
AKN	**Aaknes**	**10.29**	**169**	*e*P	**Pn**	**14 27 55.2**	**-1.6**
AKN				*e*S	Sn	14 29 39.2	-13
AKN				IAML		14 29 50.8	
	comp=Z,10.0nm,0.8s						
AKN	**Aaknes**	**10.29**	**169**	*e*P	**Pn**	**14 27 55.2**	**-1.6**
	SNR=47						
AKN	**Aaknes**	**10.29**	**169**	Pn	**Pn**	**14 27 55.5**	**-1.3**
DOMB	**Dombas**	**10.58**	**164**	*e*P	**Pn**	**14 27 59.0**	**-1.7**
DOMB				IAML		14 30 07.6	
	comp=Z,7.2nm,0.1s						
DOMB	**Dombas**	**10.58**	**164**	*e*P	**Pn**	**14 27 59.0**	**-1.7**
	SNR=47						
FOO	**Floro**	**10.79**	**174**	*e*P	**Pn**	**14 28 00.8**	**-2.6**
FOO				*e*S	Sn	14 29 51.5	-13
FOO				IAML		14 29 58.5	
	comp=Z,4.4nm,0.4s						
FOO	**Floro**	**10.79**	**174**	*e*P	**Pn**	**14 28 00.9**	**-2.6**
	SNR=47						
MSF	**Maaselka**	**11.25**	**112**	P	**Pn**	**14 28 09.4**	**-0.5**
MSF	**Maaselka**	**11.25**	**112**	P	**Pn**	**14 28 09.4**	**-0.5**
LVZ	**Lovozero**	**11.60**	**97**	*e*P	**Pn**	**14 28 15.9**	**+1.3**
LVZ	**Lovozero**	**11.60**	**97**	*e*Pn	**Pn**	**14 28 15.9**	**+1.3**
LVZ	**Lovozero**	**11.60**	**97**	*e*Pn	**Pn**	**14 28 15.9**	**+1.3**
NB2	**NORSAR Subarra**	**11.77**	**160**	Pn	**Pn**	**14 28 16.8**	**-0.3**
	baz=343,slow=14						
NB2	**NORSAR Subarra**	**11.77**	**160**	Pn	**Pn**	**14 28 16.8**	**-0.3**
	baz=343,slow=14						
NB2	**NORSAR Subarra**	**11.77**	**160**	Pn	**Pn**	**14 28 16.8**	**-0.3**
	SNR=50						
NOA	**NORSAR Array B**	**11.77**	**160**	Pn	**Pn**	**14 28 16.1**	**-0.9**
	comp=Z,0.3nm,0.3s,baz=342,slow=13,SNR=8.1						
NOA				Sn	**Sn**	**14 30 21.9**	**-6.3**
	comp=Z,0.2nm,0.3s,baz=326,slow=22,SNR=3.0						
NOA				LR	LR	14 32 49.0	
	comp=Z,249nm,19.2s,baz=345,slow=38						
NC602	**NORSAR Array S**	**12.10**	**159**	*e*P	**Pn**	**14 28 19.3**	**-2.2**
NC602				IAML		14 30 46.3	
	comp=Z,2.1nm,0.6s						
NC602	**NORSAR Array S**	**12.10**	**159**	*e*P	**Pn**	**14 28 19.3**	**-2.2**
	SNR=47						
SUMG	**Summit**	**12.28**	**291**	P	Pn	14 28 17.6	-6.6
SUMG				pmax	pmax		
	comp=Z,12nm,1.2s						
SUMG	**Summit**	**12.28**	**291**	P	Pn	14 28 17.6	-6.6
	comp=Z,12nm,1.2s						
HFS	**Hagfors**	**12.95**	**155**	Pn	**Pn**	**14 28 31.7**	**-1.3**
	baz=353,slow=12						
HFS	**Hagfors**	**12.95**	**155**	Pn	**Pn**	**14 28 31.9**	**-1.1**
	comp=Z,0.2nm,0.3s,baz=359,slow=13,SNR=14						
HFS				Sn	**Sn**	**14 30 49.6**	**-7.3**
	comp=Z,0.2nm,0.3s,baz=347,slow=25,SNR=4.3						
HFS				LR	LR	14 33 25.7	
	comp=Z,294nm,18.5s,baz=349,slow=37						
HFS	**Hagfors**	**12.95**	**155**	P	**Pn**	**14 28 31.7**	**-1.3**
	baz=353,slow=12						
SUF	**Sumiainen**	**13.00**	**126**	P	**Pn**	**14 28 32.7**	**-1.0**
SUF	**Sumiainen**	**13.00**	**126**	P	**Pn**	**14 28 32.7**	**-1.0**
FIA0	**FINESS Array S**	**14.08**	**129**	Pn	**Pn**	**14 28 47.9**	**-0.5**
	baz=338,slow=16						
FIA0	**FINESS Array S**	**14.08**	**129**	Pn	**Pn**	**14 28 47.9**	**-0.5**
	baz=338,slow=16						
FIA0	**FINESS Array S**	**14.08**	**129**	Pn	**Pn**	**14 28 47.9**	**-0.5**
	SNR=50						
FINES	**FINESS Array B**	**14.08**	**129**	Pn	**Pn**	**14 28 47.8**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=335,slow=13,SNR=16						
FINES				LR	LR	14 33 53.6	
	comp=Z,579nm,18.5s,baz=330,slow=36						
JOF	**Joensuu**	**14.19**	**117**	P	**Pn**	**14 28 49.0**	**-0.9**
VSU	**Vasula**	**16.89**	**133℡**	*e*P	**P**	**14 29 28.7**	**+1.4**
VSU				pmax	pmax		
	comp=Z,45nm,1.0s						
VSU	**Vasula**	**16.89**	**133**	*e*P	**P**	**14 29 28.7**	**+1.4**
	comp=Z,45nm,1.0s						
EKA	**Eskdalemuir Ar**	**17.22**	**192**	P	**Pn**	**14 29 26.6**	**-2.9**
	baz=4.8,slow=11,SNR=6.2						
KLMR	**Klimovskoe**	**18.16**	**110**	*e*P	**Pn**	**14 29 39.7**	**-1.4**
KLMR				pmax	pmax		
	comp=Z,17nm,1.1s						
KLMR	**Klimovskoe**	**18.16**	**110**	*e*P	**Pn**	**14 29 39.7**	**-1.4**
	comp=Z,17nm,1.1s						
SFJD	**Kangerlussuaq**	**18.72**	**280**	LR	LR	14 35 50.7	
	comp=Z,246nm,19.8s,

DPC **Dobruska-Polom** 22.84 157 P **P** **14 30 32.7 +0.4**
PRU **Pruhonice** 23.00 160 *e*P **P** **14 30 34.1 +0.2**
PRU *ep*P **sP** **14 30 39.7 +1.7**
PRU AMS AMS 14 40 20.0
comp=Z,200nm,14.3s
PRU **Pruhonice** **23.00 160** *e*P **P** **14 30 34.1 +0.2**
PRU *e* 14 30 39.7
PRU MLR MLR
comp=Z,200nm,14.3s
PRU **Pruhonice** **23.00 160** P **P** **14 30 34.1 +0.2**
GOPC **GO Pecny, Ondr** **23.10 160** AMS AMS 14 40 20.0
comp=Z,200nm,13.9s
OJC **Ojcow** **23.43 152** *e*P **P** **14 30 39.5 +1.2**
OJC **Ojcow** **23.43 152** *e*P **P** **14 30 39.4 +1.2**
OJC **Ojcow** **23.43 152** *e*P **P** **14 30 39.4 +1.2**
MORC **Moravsky Berou** **23.56 156** P **P** **14 30 39.6 +0.1**
MORC **Moravsky Berou** **23.56 156** P **P** **14 30 39.6 +0.1**
OKC **Ostrava-Krasne** **23.57 155** AMS AMS 14 40 30.0
comp=Z,200nm,12.2s
KHC **Kasperske Hory** **23.76 162** *e*P **P** **14 30 41.9 +0.4**
KHC **Kasperske Hory** **23.76 162** *e*P **P** **14 30 41.9 +0.4**
KHC **Kasperske Hory** **23.76 162** P **P** **14 30 41.9 +0.4**
TREC **Trest** **23.79 159** AMS AMS 14 40 40.0
comp=Z,200nm,14.1s
VRAC **Vranov** **23.90 157** P **P** **14 30 43.1 +0.3**
comp=Z,6.6nm,0.7s,baz=350,slow=11,SNR=8.3
VRAC LR LR 14 40 33.1
comp=Z,139nm,18.3s,baz=353,slow=38
VRAC **Vranov** **23.90 157** *e*P **P** **14 30 43.0 +0.2**
GERES **GERESS Array B** **24.05 162** P **P** **14 30 44.5 +0.2**
comp=Z,1.3nm,0.6s,baz=353,slow=9.4,SNR=13
GERES LR LR 14 40 07.6
comp=Z,106nm,21.5s,baz=347,slow=37
BFO **Black Forest** **24.18 171** *i* P **P** **14 30 46.5 +1.0**
BFO **Black Forest** **24.18 171** *i* P **P** **14 30 46.5 +1.0**
ECH **Echery** **24.25 173** P **P** **14 30 45.9 -0.1**
ECH **Echery** **24.25 173** P **P** **14 30 45.9 -0.1**
NIE **Niedzica** **24.28 151** *e*P **P** **14 30 47.0 +0.6**
NIE **Niedzica** **24.28 151** *e*P **P** **14 30 47.0 +0.6**
NIE **Niedzica** **24.28 151** *e*P **P** **14 30 47.0 +0.6**
LANS **Liptovska Anna** **24.43 153** *e*P **P** **14 30 47.9 +0.2**
LANS **Liptovska Anna** **24.43 153** *e*P **P** **14 30 47.9 +0.2**
LANS **Liptovska Anna** **24.43 153** *e*P **P** **14 30 47.9 +0.2**
AKASG **Malin Array Be** **24.64 137** P **P** **14 30 48.9 -0.5**
comp=Z,2.3nm,0.5s,baz=340,slow=9.9,SNR=11
AKASG LR LR 14 40 14.2
comp=Z,372nm,19.3s,baz=295,slow=36
AKASG **Malin Array Be** **24.64 137** *i* P **P** **14 30 49.0 -0.5**
AKASG pmax pmax
comp=Z,2.0nm,0.5s
AKASG **Malin Array Be** **24.64 137** *i* P **P** **14 30 49.0 -0.5**
comp=Z,2.0nm,0.5s
KIEV **Kiev** **24.64 137***d i*P **P** **14 30 49.4 -0.1**
KIEV pmax pmax
comp=Z,7.0nm,1.2s
KIEV **Kiev** **24.64 137** *i* P **P** **14 30 49.4 -0.1**
comp=Z,7.0nm,1.2s
KIEV **Kiev** **24.64 137** *e*P **P** **14 30 48.4 -1.2**
comp=Z,6.5nm,1.0s
SLE **Schleitheim** **24.75 171** P **P** **14 30 51.0 +0.3**
SLE **Schleitheim** **24.75 171** P **P** **14 30 51.0 +0.3**
RES **Resolute Bay** **24.91 321** LR LR 14 40 23.1
comp=Z,350nm,19.3s,baz=32,slow=36
VYHS **Vyhne** **24.98 154** *e*P **P** **14 30 52.6 -0.1**
VYHS pmax pmax
comp=Z,2.0nm,0.9s
VYHS **Vyhne** **24.98 154** *e*P **P** **14 30 52.6 -0.1**
comp=Z,1.5nm,0.9s
VYHS **Vyhne** **24.98 154** *e*P **P** **14 30 52.6 -0.1**
KECS **Kecovo** **25.22 152** *e*P **P** **14 30 54.8 0.0**
KECS pmax pmax
comp=Z,2.0nm,0.9s
KECS **Kecovo** **25.22 152** *e*P **P** **14 30 54.8 0.0**
comp=Z,2.2nm,0.9s
KECS **Kecovo** **25.22 152** *e*P **P** **14 30 54.8 0.0**
KBA **Koelnbreinsper** **25.77 163** P **P** **14 31 02.0 +2.0**
KBA **Koelnbreinsper** **25.77 163** P **P** **14 31 02.0 +2.0**
DAVOX **Davos/Dischmat** **25.81 169** LR LR 14 42 04.9
comp=Z,182nm,19.0s,baz=37,slow=39
FRB **Frobisher Bay** **26.33 288** LR LR 14 40 31.1
comp=Z,102nm,19.4s,baz=26,slow=35
VSR **Storozhevoye** **26.48 123** *e*P **P** **14 31 06.7 +0.5**
VSR pmax pmax
comp=Z,8.0nm,0.4s
VSR **Storozhevoye** **26.48 123** *e*P **P** **14 31 06.7 +0.5**
comp=Z,8.0nm,0.4s
DRGR **27.21 149** P **P** **14 31 13.3 +0.4**
DRGR **27.21 149** P **P** **14 31 13.3 +0.4**
ARU **Arti** **27.47 95** P **P** **14 31 16.0 +0.9**
comp=Z,1.0nm,0.4s,baz=298,slow=6.2,SNR=3.3
ARU LR LR 14 42 24.9
comp=Z,84nm,20.1s,baz=312,slow=37
ARU **Arti** **27.47 95***c i*P **P** **14 31 16.7 +1.6**
ARU 14 31 54.9
ARU S **S** **14 35 59.8 +4.5**
ARU pmax pmax
comp=Z,9.0nm,2.5s
ARU **Arti** **27.47 95** P **P** **14 31 15.6 +0.5**
comp=Z,4.6nm,0.9s
ARU S **S** **14 35 59.8 +4.5**
ARU **Arti** **27.47 95** P **P** **14 31 15.6 +0.5**
comp=Z,4.6nm,0.9s
BZS **Buzias** **28.19 151** P **P** **14 31 22.1 +0.5**
BZS **Buzias** **28.19 151** P **P** **14 31 22.1 +0.5**
MLR **Muntele Rosu** **29.01 145** LR LR 14 43 29.6
comp=Z,87nm,18.4s,baz=352,slow=37
ANN **Anapa** **32.03 130** *e*P **P** **14 31 54.5 -1.0**
ANN *e**PP **pP** **14 31 56.9 -1.7**
ANN *e* 14 32 56.0
ANN *e*S **S** **14 37 06.0 -0.9**
ANN pmax pmax
comp=Z,24nm,1.1s
ANN MLR MLR
comp=E,47nm,13.0s
ANN MLR MLR
comp=Z,294nm,13.0s
ANN MLR MLR
comp=N,84nm,13.0s
ANN **Anapa** **32.03 130** *e*P **P** **14 31 54.5 -1.0**
comp=N,24nm,1.1s
ANN *e*S **S** **14 37 06.0 -0.9**
comp=N,84nm,13.0s
AKTK **Aktyubinsk** **32.49 102** P **P** **14 31 59.6 +0.1**
AKTO **Aktyubinsk** **32.49 102** P **P** **14 31 59.5 +0.1**
comp=N,0.3nm,0.3s,baz=323,slow=7.7,SNR=2.4
GRG **Griva** **32.87 152** P **P** **14 32 03.3 +0.4**
GRG **Griva** **32.87 152** P **P** **14 32 03.3 +0.4**
FNA **Florina** **32.90 154** P **P** **14 32 02.7 -0.5**
FNA **Florina** **32.90 154** P **P** **14 32 02.7 -0.5**
SCHQ **Schefferville** **33.05 276** LR LR 14 44 10.9
comp=N,83nm,18.1s,baz=62,slow=34
GOF **Gofitskoye** **33.16 123**⇑*e*P **P** **14 32 06.8 +1.3**
GOF pmax pmax
comp=Z,38nm,1.0s
GOF **Gofitskoye** **33.16 123** *e*P **P** **14 32 06.8 +1.3**
KIV **Kislovodsk** **34.10 124** *e*P **P** **14 32 15.2 +1.4**
KIV *e*S **S** **14 37 41.9 +2.6**
KIV pmax pmax
comp=Z,6.0nm,0.9s
KIV MLR MLR
comp=Z,189nm,15.0s
KIV **Kislovodsk** **34.10 124** *e*P **P** **14 32 15.2 +1.4**
comp=Z,6.0nm,0.9s
KIV *e*S **S** **14 37 41.9 +2.6**
comp=Z,189nm,15.0s
ABKAR **Akbulak array** **34.11 101** *e*P **P** **14 32 13.8 +0.2**
comp=Z,0.5nm,0.6s
ABKAR **Akbulak array** **34.11 101** *e*P **P** **14 32 13.8 +0.2**
comp=Z,0.5nm,0.6s
KBZ **Khabaz** **34.37 124** P **P** **14 32 17.5 +1.6**
comp=Z,2.5nm,0.8s,baz=346,slow=1.3,SNR=5.1
KBZ LR LR 14 46 22.2
comp=Z,272nm,18.2s,baz=0.5,slow=36
BRTR **Keskin Array B** **36.04 138** P **P** **14 32 31.6 +1.1**
comp=Z,2.0nm,0.8s,baz=342,slow=7.8,SNR=10
BRTR LR LR 14 48 03.2
comp=Z,77nm,21.2s,baz=352,slow=38
BRTR **Keskin Array B** **36.04 138** *i* P **P** **14 32 32.5 +2.0**
BRTR pmax pmax
comp=Z,2.0nm,0.8s
KEST **Kesra** **36.79 171** LR LR 14 46 57.5
comp=Z,37nm,19.5s,baz=275,slow=35
ZALV **Zalesovo Beam** **37.53 74** P **P** **14 32 44.3 +1.4**
comp=Z,0.4nm,0.4s,baz=335,slow=6.7,SNR=3.7
ZALV LR LR 14 50 21.4
comp=Z,22nm,21.8s,baz=250,slow=40
YKA **Yellowknife Ar** **38.93 319** LR LR 14 48 40.9
comp=Z,16nm,19.0s,baz=0.0,slow=36
BILL **Bilibino** **39.48 10** *i* **PcP** **14 35 07.1 +0.6**
BILL pmax pmax
comp=Z,4.0nm,1.3s
BILL **Bilibino** **39.48 10** *i* PcP **PcP** **14 35 07.1 +0.6**
ILAR **Eielson Array** **41.67 341** P **P** **14 33 16.5 -0.7**
comp=Z,0.4nm,0.7s,baz=8.4,slow=7.2,SNR=6.1
ILAR LR LR 14 52 38.8
comp=Z,27nm,21.2s,baz=70,slow=39
FFC **Flin Flon** **43.09 305** P **P** **14 33 30.1 +1.2**
FFC **Flin Flon** **43.09 305** P **P** **14 33 30.1 +1.2**
MKAR **Makanchi Array** **43.11 81** P **P** **14 33 32.0 +2.8**
comp=Z,0.2nm,0.5s,baz=357,slow=7.2,SNR=3.6
MKAR **Makanchi Array** **43.11 81** P **P** **14 33 32.0 +2.8**
MKAR **Makanchi Array** **43.11 81** P **P** **14 33 32.0 +2.8**
GEYT **Alibeck** **43.91 110** LR LR 14 53 53.3
comp=Z,111nm,18.8s,baz=0.0,slow=39
HRV **Adam Dziewonsk** **45.42 271** P **P** **14 33 49.8 +2.2**
HRV **Adam Dziewonsk** **45.42 271** P **P** **14 33 49.8 +2.2**
ULM **Lac du Bonnet** **45.54 297** LR LR 14 52 26.9
comp=Z,138nm,18.8s,baz=54,slow=36
KDAK **Kodiak Island** **49.08 343** P P 14 34 21.1 +5.1
TAM **Tamanrasset** **49.56 177** P **P** **14 34 21.1 +0.9**
TAM **Tamanrasset** **49.56 177** P **P** **14 34 21.1 +0.9**
NEW **Newport** **52.67 313** P **P** **14 34 46.4 +3.2**
PDAR **Pinedale Array** **56.05 305** P **P** **14 35 04.7 -3.4**
comp=Z,0.2nm,0.3s,baz=19,slow=6.7,SNR=2.7
PDAR LR LR 14 58 19.1
comp=Z,36nm,19.1s,baz=54,slow=35
TORD **Torodi Ar. Bea** **59.13 181** P **P** **14 35 27.9 -1.8**
comp=Z,0.7nm,0.7s,baz=354,slow=6.4,SNR=5.2
TORD LR LR 15 00 52.8
comp=Z,33nm,21.9s,baz=255,slow=36
DBIC **Dimbokro** **65.73 188** LR LR 15 05 21.7
comp=Z,22nm,18.5s,baz=14,slow=36
TXAR **Lajitas Array** **67.15 295** LR LR 15 04 31.4
comp=Z,50nm,20.6s,baz=0.0,slow=35

IDC 27 14:37:06.6±2.0, 3°60N×127°34E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.5/29, mbtmp3.5/4, Error ellipse: s-maj=103.4km s-min=26.3km az=70.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**21.63**	**184**	P	P	14 41 58.7	+0.1
	1.7nm,1.1s,baz=3.4,slow=9.6,SNR=3.7						
WRA	**Warramunga Arr**	**24.39**	**164**	P	P	14 42 26.5	-0.3
	1.3nm,0.8s,baz=343,slow=10,SNR=16						
ASAR	**Alice Springs**	**27.85**	**167**	P	P	14 42 58.2	+0.1
	0.3nm,0.5s,baz=353,slow=7.6,SNR=9.8						
MKAR	**Makanchi Array**	**58.01**	**325**	P	P	14 47 01.3	0.0
	0.4nm,0.7s,baz=113,slow=9.0,SNR=3.7						

*NIED **27** 14:49:00, 40.˚10N×142.˚80E, h35km, Mw5.0 Best double couple: M0 3.16000×10^16 NP1:ϕs 161.00000°, δ23.00000°, λ45.00000°. NP2:ϕs 29.00000°, δ74.00000°, λ106.00000°.*
*JMA **27** 14:49:57.8±0.2, 40.˚10N×142.˚80E, h25km±2km, M4.9*
JMA Felt II J1.
*MOS **27** 14:49:57.5±0.9, 40.˚26N×142.˚72E, h27km, mb5.3/64, MS4.8/21, Error ellipse: s-maj=6.6km s-min=4.0km az=105.5*
*ISCJB **27** 14:49:58.0±0.8, 40.˚13N±0.˚02×142.˚79E±0.˚03, h33km±5km, mb5.0/219, MS4.5/60, Error ellipse: s-maj=4.4km s-min=2.6km az=142.9*
*BJI **27** 14:49:58.1, 40.˚07N×142.˚77E, h49km, mb5.0/75, mB5.1/52, Ms4.6/73, Ms7 4.5/69*
*IDC **27** 14:49:59.1±2.9, 40.˚09N×142.˚89E, h36km±22km, mb4.6/27, mb1 4.7/33, mb1mx4.7/36, mbtmp4.8/33, ML4.0/6, MS4.2/30, Ms1 4.2/30, ms1mx4.1/43, Error ellipse: s-maj=15.1km s-min=11.3km az=99.0*
*NEIC **27** 14:50:00.7±0.3, 40.˚10N×142.˚75E, h49km±2km, mb4.9/123, Error ellipse: s-maj=3.9km s-min=2.4km az=141.0*
NEIC Felt at Ichinoseki. Recorded [2 JMA] in Aomori, Iwate and Miyagi.
*GCMT **27** 14:50:00.7±0.3, 40.˚18N×142.˚80E, h32km±1km, MW5.0/76, Moment Tensor Solution. s35,c48; s76,c116; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr 2.46±.16; Mθθ 0.20±.10; Mϕϕ -2.67±.10; Mrθ 1.10±.12; Mrϕ -0.52±.06; Mθϕ 2.58±.14; Best double couple: M0 3.83600×10^16 NP1:ϕs 20.00000°, δ69.00000°, λ98.00000°. NP2: ϕs 178.00000°, δ23.00000°, λ70.00000°. Principal axes: T 3.7280, Plg65.0000°, Azm304.0000°; N 0.2090, Plg8.0000°, Azm197.0000°; P -3.9430, Plg23.0000°, Azm104.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 27 14:49:58.7±0.4, 40.˚14N±0.˚03×142.˚86E±0.˚03, h31km±2km, h31km:pP-P, n527, σ1s71/588, mb5.0/233, MS4.6/65, 59C-12D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.79**	**255**	P	**Pn**	**14 50 12.0**	**-1.6**
JTH				*e*S	**Sn**	**14 50 21.5**	**-2.8**
MIYJ	**Miyakonagasawa**	**0.98**	**235**	P	**Pn**	**14 50 14.5**	**-1.7**
MIYJ				*e*S	**Sn**	**14 50 26.8**	**-2.2**
JANG	**Nango**	**1.05**	**283**	P	**Pn**	**14 50 16.1**	**-1.2**
JKZ	**Kuzumaki**	**1.18**	**263**	P	**Pn**	**14 50 17.9**	**-1.2**
JOM	**Ohasama**	**1.38**	**242**	P	**Pn**	**14 50 21.0**	**-0.7**
JOM				*e*S	**Sn**	**14 50 38.1**	**-0.8**
OFUJ	**Ofunato**	**1.40**	**221**	P	**Pn**	**14 50 21.2**	**-0.9**
OFUJ				*e*S	**Sn**	**14 50 38.7**	**-0.8**
JTM	**Tenmabayashi**	**1.51**	**296**	P	**Pn**	**14 50 23.8**	**+0.3**
JAH	**Hinai**	**1.70**	**272**	P	**Pn**	**14 50 26.5**	**+0.3**
JMK	**Ichinoseki**	**1.74**	**227**	P	**Pn**	**14 50 26.8**	**+0.2**
JMK				*e*S	**Sn**	**14 50 48.2**	**+0.5**
ERM	**Erimo**	**1.89**	**7**	*e*P	**Pn**	**14 50 29.4**	**+0.7**
ERM	**Erimo**	**1.89**	**7**	*e*Pn	**Pn**	**14 50 29.4**	**+0.7**
ASAJ	**Asahikawa**	**3.98**	**357**	*e*Pn	**Pn**	**14 50 58.5**	**+1.1**
MAJO	**Matsushiro**	**5.12**	**227**	*e*P	**Pn**	**14 51 15.1**	**+1.8**
MAJO	**Matsushiro**	**5.12**	**227**	*e*Pn	**Pn**	**14 51 15.1**	**+1.8**
MAT	**Matsushiro**	**5.12**	**227**	P	**Pn**	**14 51 15.0**	**+1.7**
MAT				*e*S	**Sn**	**14 52 17.1**	**+5.7**
MJAR	**Matsushiro Arr**	**5.12**	**227**	Pn	**Pn**	**14 51 14.8**	**+1.5**
	11nm,0.3s,baz=32,slow=14,SNR=346						
MJAR				Sn	**Sn**	**14 52 14.9**	**+3.6**
	baz=49,slow=12,SNR=2.1						
MJAR				LR	LR	14 53 26.2	
	comp=Z,3μm,19.8s,baz=60,slow=41						
MJB9	**Matsu-Tunnel**	**5.12**	**227**	*e*Pn	**Pn**	**14 51 15.2**	**+2.0**
KUR	**Kuril'sk**	**6.29**	**34***d i*P		**Pn**	**14 51 29.0**	**-0.1**
KUR				*i* S	**Sn**	**14 52 37.1**	**-2.7**
KUR				pmax	pmax		
	comp=Z,138nm,0.7s						
KUR				pmax	pmax		
	comp=N,48nm,0.6s						
KUR				pmax	pmax		
	comp=E,86nm,0.6s						
KUR				smax	smax		
	comp=E,275nm,0.4s						
KUR				smax	smax		
	comp=N,1μm,2.4s						
KUR				smax	smax		
	comp=E,544nm,2.4s						
INU	**Inuyama**	**6.66**	**226**	*e*Pn	**Pn**	**14 51 35.3**	**+1.1**
YSS	**Yuzh-Sakhalins**	**6.81**	**359**α	*i*P	**Pn**	**14 51 37.8**	**+1.5**
YSS				*e*S	**Sn**	**14 52 49.3**	**-3.4**
YSS				pmax	pmax		
	comp=Z,50nm,1.0s						
YSS				pmax	pmax		
	comp=N,60nm,1.1s						
YSS				MLR	MLR		
	comp=Z,1μm,14.0s						
YSS				MLR	MLR		
	comp=E,900nm,13.0s						
JHJ2	**Mitsune**	**7.43**	**200**	*e*Pn	**Pn**	**14 51 43.1**	**-1.8**
JHJ	**Hachijo jima 2**	**7.43**	**200**	Pn	**Pn**	**14 51 43.2**	**-1.7**
	comp=E,43nm,0.3s,baz=92,slow=6.0,SNR=27						
JHJ				Sn	**Sn**	**14 53 00.0**	**-8.1**
	comp=E,48nm,0.3s,baz=302,slow=13,SNR=3.2						
USRK	**Ussuriysk Ar.**	**9.03**	**300**	Pn	**Pn**	**14 52 09.6**	**+2.8**
	comp=E,2.9nm,0.3s,baz=98,slow=14,SNR=89						
USRK				Sn	**Sn**	**14 53 52.2**	**+4.9**
	baz=112,slow=14,SNR=1.9						
USRK				LR	LR	14 55 31.8	
	comp=E,3μm,18.8s,baz=107,slow=37						
MSHR	**Mys Shultsa**	**9.13**	**289***ce*	P	**Pn**	**14 52 10.2**	**+2.1**
HABR	**Khabarovsk**	**10.03**	**329**	*e*P	**Pn**	**14 52 18.7**	**-1.7**
HABR				*e*S	**Sn**	**14 54 10.6**	**-1.2**
HABR				pmax	pmax		
	comp=N,22nm,1.4s						
HABR				pmax	pmax		
	comp=Z,56nm,1.4s						
HABR				pmax	pmax		
	comp=E,31nm,1.4s						
HABR				MLR	MLR		
	comp=Z,1μm,13.0s						
TYV	**Tymovskoe**	**10.72**	**359**	*e*P	**Pn**	**14 52 29.2**	**-0.7**
TYV				*e*		14 54 32.0	
TYV				pmax	pmax		
	comp=Z,53nm,1.0s						
TYV				MLR	MLR		
	comp=E,2μm,20.0s						
MDJ	**Mudanjiang**	**10.78**	**299**	P	**Pn**	**14 52 33.5**	**+2.7**
MDJ				S	**Sn**	**14 54 33.8**	**+3.5**
MDJ				PcP	**PcP**	**14 58 31.5**	**+1.0**
MDJ				ScS	**ScS**	**15 05 35.5**	**-0.1**
MDJ				pmax	pmax		
	comp=E,39nm,1.1s						
MDJ				pmax	pmax		
	comp=E,260nm,4.4s						
MDJ				LR	LR		
	comp=E,810nm,16.2s						
MDJ				LR	LR		
	comp=E,2μm,16.0s						
MDJ				LR	LR		
	comp=E,3μm,16.7s						
MDJ	**Mudanjiang**	**10.78**	**299**	*e*Pn	**Pn**	**14 52 33.9**	**+3.1**
JNU	**Nakatsue**	**11.90**	**238**	Pn	**Pn**	**14 52 46.3**	**+0.2**
	comp=E,0.5nm,0.3s,baz=111,slow=8.2,SNR=13						
JNU	**Nakatsue**	**11.90**	**238**	*e*Pn	**Pn**	**14 52 46.1**	**0.0**
KSRS	**Korea Array**	**11.96**	**262**	Pn	**Pn**	**14 52 48.8**	**+1.9**
	comp=E,0.9nm,0.3s,baz=73,slow=14,SNR=28						
KSRS				Sn	Sn	14 55 08.8	+10
	comp=E,0.3nm,0.3s,baz=74,slow=22,SNR=4.8						
KSRS				LR	LR	14 57 08.3	
	comp=E,2μm,19.3s,baz=76,slow=36						
KS15	**Wonju Array Si**	**11.99**	**262**	*e*Pn	**Pn**	**14 52 51.5**	**+4.2**
KSAR	**Wonju Array Be**	**11.99**	**262**	P	**Pn**	**14 52 48.8**	**+1.4**
KSAR						14 55 08.8	
KSAR	**Wonju Array Be**	**11.99**	**262**	Pn	**Pn**	**14 52 48.8**	**+1.4**
KSAR				Sn	**Sn**	**14 55 08.8**	**+8.8**
KLR	**Kul'dur**	**12.03**	**323**	Pn	**Pn**	**14 52 48.5**	**+0.7**
	comp=E,0.8nm,0.3s,baz=134,slow=13,SNR=19						
KLR				LR	LR	14 57 40.7	
	comp=E,2μm,18.3s,baz=138,slow=38						
NKL	**Nikolayevsk**	**13.10**	**354**	*e*P	**Pn**	**14 53 02.0**	**-0.3**
NKL				*e*		14 55 26.0	
NKL				pmax	pmax		
	comp=N,33nm,1.2s						
NKL				pmax	pmax		
	comp=Z,56nm,1.2s						
NKL				MLR	MLR		
	comp=N,1μm,20.0s						
NKL				MLR	MLR		
	comp=E,500nm,20.0s						
NKL				MLR	MLR		
	comp=Z,1μm,20.0s						
CN2	**Changchun**	**13.46**	**291**	*e*P	**Pn**	**14 53 10.0**	**+2.6**
CN2				*e*S	**Sn**	**14 55 32.3**	**-3.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				LR	LR		
	comp=Z,900nm,18.0s						
CN2				LR	LR		
	comp=Z,1μm,18.0s						
CN2				LR	LR		
	comp=Z,1μm,18.0s						
SKR	**Severo-Kuril's**	**14.04**	**37**	*e*P	**Pn**	**14 53 17.4**	**+2.2**
SKR				pmax	pmax		
	comp=Z,100nm,3.8s						
SKR				pmax	pmax		
	comp=Z,59nm,1.1s						
SNY	**Shenyang**	**14.66**	**283**	⇑P	**Pn**	**14 53 26.3**	**+2.6**
SNY				S	**Sn**	**14 56 13.0**	**+7.9**
SNY				pmax	pmax		
	comp=Z,15nm,0.7s						
SNY				pmax	pmax		
	comp=Z,430nm,6.7s						
SNY				LR	LR		
	comp=Z,620nm,14.2s						
SNY				LR	LR		
	comp=Z,2μm,17.1s						
SNY				LR	LR		
	comp=Z,2μm,18.2s						
DL2	**Dalian**	**16.43**	**273**	P	**Pn**	**14 53 46.3**	**-0.5**
DL2				*e*S	**Sn**	**14 56 45.3**	**-2.7**
DL2				pmax	pmax		
	comp=Z,63nm,0.8s						
DL2				pmax	pmax		
	comp=Z,190nm,6.7s						
DL2				LR	LR		
	comp=Z,890nm,20.4s						
DL2				LR	LR		
	comp=Z,1μm,17.5s						
PETK	**Petropavlovsk-**	**16.45**	**33**	Pn	**Pn**	**14 53 43.1**	**-3.9**
	comp=Z,0.3nm,0.3s,baz=214,slow=8.8,SNR=10						
PETK				LR	LR	15 00 56.9	
	comp=Z,430nm,20.0s,baz=219,slow=40						
PET	**Petropavlovsk**	**16.80**	**35**⇑*i*P		**P**	**14 53 55.3**	**+2.1**
PET				*e*S	**Sn**	**14 56 58.7**	**+1.9**
PET				pmax	pmax		
	comp=Z,19nm,1.1s						
PET				smax	smax		
	comp=Z,600nm,17.0s						
PET				smax	smax		
	comp=Z,500nm,18.0s						
HIA	**Hailar**	**18.73**	**307***c i*P		**P**	**14 54 12.3**	**-2.4**
HIA				pmax	pmax		
	comp=Z,36nm,0.8s						
HIA	**Hailar**	**18.73**	**307**	*e*P	**P**	**14 54 11.8**	**-2.9**
	comp=Z,45nm,0.9s						
SSE	**Sheshan**	**19.76**	**250**	P	**P**	**14 54 25.8**	**-0.1**
SSE				pmax	pmax		
	comp=Z,34nm,0.8s						
MA2	**Magadan**	**20.08**	**12**	P	**P**	**14 54 28.6**	**-0.7**
	comp=Z,23nm,0.7s,baz=198,slow=8.5,SNR=21						
BJI	**Beijing**	**20.39**	**278**	P	**P**	**14 54 31.0**	**-1.8**
BJI				sP	**sP**	**14 54 46.8**	**+1.7**
BJI				S	**S**	**14 58 10.0**	**-10**
BJI				pmax	pmax		
	comp=Z,30nm,1.7s						
BJI				pmax	pmax		
	comp=Z,190nm,3.7s						
BJI				LR	LR		
	comp=Z,580nm,14.5s						
BJI				LR	LR		
	comp=Z,1μm,18.4s						
BJI				LR	LR		
	comp=Z,890nm,21.7s						
BJT	**Baijiatuau**	**20.40**	**278**	*e*P	**P**	**14 54 30.5**	**-2.4**
BJT				pmax	pmax		
	comp=Z,42nm,0.8s						
BJT	**Baijiatuau**	**20.40**	**278**	*e*P	**P**	**14 54 30.5**	**-2.4**
	comp=Z,42nm,0.8s						
CLNS	**Chul'man**	**20.41**	**331**	*e*P	**P**	**14 54 32.4**	**-0.5**
CLNS				pmax	pmax		
	comp=Z,54nm,0.8s						
CLNS				pmax	pmax		
	comp=N,27nm,0.8s						
CLNS				pmax	pmax		
	comp=E,8.0nm,0.8s						
CLNS				pmax	pmax		
	comp=Z,1μm,16.0s						
CLNS				pmax	pmax		
	comp=N,1μm,15.0s						
CLNS				pmax	pmax		
	comp=E,489nm,14.0s						
TIA	**Tai'an**	**20.58**	**267**	*e*P	**P**	**14 54 33.0**	**-1.9**
TIA				pmax	pmax		
	comp=E,50nm,1.0s						
TIA				LR	LR		
	comp=E,450nm,15.2s						
TIA				LR	LR		
	comp=E,1μm,16.5s						
TIA				LR	LR		
	comp=E,8μm,17.0s						
NJ2	**Nanjing**	**20.96**	**255**	*e*P	**P**	**14 54 37.8**	**-1.3**
NJ2				sP	**sP**	**14 54 57.0**	**+5.6**
NJ2				pmax	pmax		
	comp=E,71nm,0.9s						
NJ2				LR	LR		
	comp=E,740nm,13.8s						

NJ2				LR	LR			
	comp=E,1μm,13.9s							
NJ2				LR	LR			
	comp=E,2μm,16.7s							
YAK	**Yakutsk**	**23.34**	**344**	P	**P**	**14 55 01.9**	**-1.9**	
	comp=E,145nm,0.8s,baz=177,slow=1.6,SNR=46							
YAK	**Yakutsk**	**23.34**	**344**	*c iP*	**P**	**14 55 01.6**	**-2.3**	
YAK				*e**PP	**pP**	**14 55 08.5**	**-4.0**	
YAK				*e*PPP	PPP	14 55 34.9		
YAK				*e*		14 58 50.6		
YAK				*e*S	**S**	**14 59 08.2**	**-6.0**	
YAK				*e**SS	**sS**	**14 59 24.4**	**-4.7**	
YAK				*e*SSS	SSS	14 59 54.1		
YAK				*e*		15 06 12.6		
YAK				pmax	pmax			
	comp=Z,32nm,0.8s							
YAK				pmax	pmax			
	comp=N,8.0nm,0.9s							
YAK				pmax	pmax			
	comp=E,11nm,0.8s							
YAK				pmax	pmax			
	comp=Z,30nm,1.0s							
YAK				pmax	pmax			
	comp=N,87nm,1.3s							
YAK				pmax	pmax			
	comp=E,40nm,1.1s							
YAK				smax	smax			
	comp=N,108nm,1.8s							
YAK				smax	smax			
	comp=E,112nm,1.9s							
YAK				pmax	pmax			
	comp=Z,628nm,16.0s							
YAK				pmax	pmax			
	comp=N,525nm,18.0s							
YAK				pmax	pmax			
	comp=E,275nm,20.0s							
YAK	**Yakutsk**	**23.34**	**344**	*e*P	**P**	**14 55 01.7**	**-2.1**	
	comp=E,136nm,0.8s							
CIT	**Chita**	**23.37**	**310**	*e*P	P	14 55 12.1	+7.7	
CIT				*e*		14 55 23.3		
CIT				*e*		14 55 31.3		
CIT				pmax	pmax			
	comp=Z,246nm,1.3s							
SEY	**Seymchan**	**23.53**	**11**	P	**P**	**14 55 04.8**	**-0.9**	
	comp=Z,52nm,0.9s,baz=190,slow=7.0,SNR=43							
YHNB	**Yeheng**	**23.72**	**236**	*e*P	**P**	**14 55 08.3**	**+0.3**	
	comp=Z,136nm,1.7s							
HHC	**Hu-ho-hao-te**	**23.75**	**282**	*e*P	**P**	**14 55 03.8**	**-4.4**	
HHC				PP	**PnPn**	**14 55 41.8**	**+5.5**	
HHC				S	S	14 59 09.8	-12	
HHC				sS	sS	14 59 33.8	-2.6	
HHC				pmax	pmax			
	comp=Z,20nm,0.9s							
HHC				pmax	pmax			
	comp=Z,160nm,4.5s							
HHC				LR	LR			
	comp=Z,360nm,12.5s							
HHC				LR	LR			
	comp=Z,1μm,12.9s							
HHC				LR	LR			
	comp=Z,1μm,11.5s							
SSLB	**Suanglung**	**24.62**	**235**	*e*P	**P**	**14 55 14.5**	**-1.8**	
	comp=Z,21nm,0.8s							
YULB	**Yu-li**	**24.70**	**234**	*e*P	**P**	**14 55 15.4**	**-1.5**	
	comp=Z,25nm,0.7s							
WHN	**Wuhan**	**25.06**	**256**	⇑P	**P**	**14 55 19.5**	**-0.6**	
WHN				pP	**sP**	**14 55 31.8**	**-1.1**	
WHN				S	**S**	**14 59 41.0**	**-1.5**	
WHN				pmax	pmax			
	comp=Z,150nm,0.8s							
WHN				LR	LR			
	comp=Z,2μm,17.6s							
WHN				LR	LR			
	comp=Z,2μm,19.0s							
WHN				LR	LR			
	comp=Z,2μm,19.1s							
TWG	**Pinlang**	**25.26**	**233**	*e*P	**P**	**14 55 21.3**	**-0.7**	
	comp=Z,349nm,1.0s							
QZH	**Quanzhou**	**25.35**	**241**	⇓*iP*	P	14 55 33.0	+10	
QZH				S	**S**	**14 59 45.0**	**-2.1**	
QZH				pmax	pmax			
	comp=Z,1μm,5.0s							
QZH				LR	LR			
	comp=N,3μm,23.2s							
QZH				LR	LR			
	comp=E,1μm,15.8s							
QZH				LR	LR			
	comp=Z,1μm,12.8s							
BOD	**Bodaibo**	**25.61**	**323**	⇑*iP*	**P**	**14 55 24.7**	**-0.2**	
BOD				pmax	pmax			
	comp=Z,134nm,0.9s							
SONA1	**Songino Array**	**27.13**	**299**	*e*P	**P**	**14 55 38.3**	**-0.7**	
SONM	**Songino Array**	**27.14**	**299**	P	**P**	**14 55 38.6**	**-0.4**	
	comp=Z,9.4nm,0.6s,baz=94,slow=7.8,SNR=40							
SONM				LR	LR	15 06 58.0		
	comp=Z,2μm,18.7s,baz=94,slow=38							
XAN	**Xi'an**	**27.63**	**268**	P	**P**	**14 55 41.8**	**-1.7**	
XAN				pP	pP	14 55 53.3	+0.8	
XAN				PP	**PnPn**	**14 56 28.5**	**-0.9**	
XAN				PcP	**PcP**	**14 59 02.0**	**+1.7**	
XAN				S	**S**	**15 00 14.0**	**-9.3**	
XAN				pmax	pmax			
	comp=Z,19nm,0.9s							
XAN				pmax	pmax			
	comp=Z,180nm,10.0s							
XAN				LR	LR			
	comp=Z,190nm,17.6s							
XAN				LR	LR			
	comp=Z,700nm,16.8s							
XAN				LR	LR			
	comp=Z,980nm,16.2s							
ENH	**Enshi**	**28.84**	**261**	*e*P	**P**	**14 55 53.3**	**-1.0**	
	comp=Z,46nm,1.0s							
H11N2	**WAKE ISLAND Hy**	**28.96**	**128**	T	T	15 26 43.3		
	baz=318,slow=75,SNR=3356							
H11N1	**WAKE ISLAND Hy**	**28.97**	**128**	T	T	15 26 48.3		
	baz=318,slow=75,SNR=3370							
IRK	**Irkutsk**	**28.97**	**308**	*e*P	**P**	**14 55 54.2**	**-1.0**	
IRK				pmax	pmax			
	comp=Z,49nm,1.4s							
H11N3	**WAKE ISLAND Hy**	**28.97**	**128**	T	T	15 26 42.8		
	baz=318,slow=75,SNR=2749							
TLY	**Talaya**	**29.27**	**306**	P	**P**	**14 55 57.8**	**0.0**	
	comp=Z,13nm,0.8s,baz=126,slow=5.7,SNR=7.0							
TLY	**Talaya**	**29.27**	**306**	*e*P	**P**	**14 55 59.2**	**+1.4**	
TLY				pmax	pmax			
	comp=Z,18nm,0.8s							
TLY				MLR	MLR			
	comp=Z,1μm,20.0s							
ZAK	**Zakamensk**	**29.36**	**304**	*e*P	**P**	**14 55 58.0**	**-0.7**	
ZAK				pmax	pmax			
	comp=Z,24nm,1.4s							
H11S1	**WAKE ISLAND Hy**	**29.78**	**129**	T	T	15 27 27.1		
	baz=316,slow=74							
H11S3	**WAKE ISLAND Hy**	**29.78**	**129**	T	T	15 27 25.1		
	baz=316							
H11S2	**WAKE ISLAND Hy**	**29.80**	**129**	T	T	15 27 24.7		
	baz=316,slow=74							
BILL	**Bilibino**	**30.73**	**17**	*c iP*	**P**	**14 56 10.9**	**+0.4**	
BILL				*i*		14 56 20.0		
BILL				*i* S	**S**	**15 01 09.4**	**-1.7**	
BILL				pmax	pmax			
	comp=Z,20nm,1.0s							
BILL				MLR	MLR			
	comp=Z,298nm,21.0s							
LZH	**Lanzhou**	**30.79**	**275**	*e*P	**P**	**14 56 13.8**	**+2.2**	
LZH				pP	sP	14 56 26.0	+1.5	
LZH				sP	pP	14 56 31.5	+11	
LZH				PP	**PnPn**	**14 57 11.3**	**-0.8**	
LZH				S	**S**	**15 01 13.0**	**-0.1**	
LZH				sS	sS	15 01 32.3	+4.2	
LZH				SS	**SnSn**	**15 02 53.5**	**+0.6**	
LZH				pmax	pmax			
	comp=Z,63nm,1.2s							
LZH				pmax	pmax			
	comp=Z,210nm,4.5s							
LZH				LR	LR			
	comp=Z,480nm,14.6s							
LZH				LR	LR			
	comp=Z,740nm,14.8s							
LZH				LR	LR			
	comp=Z,860nm,16.0s							
MOY	**Mondy**	**30.91**	**306**	*e*P	**P**	**14 56 12.4**	**0.0**	
MOY				pmax	pmax			
	comp=Z,23nm,1.2s							
TIXI	**Tiksi**	**32.36**	**352**	P	**P**	**14 56 24.7**	**-0.1**	
	comp=Z,3.6nm,0.5s,baz=136,slow=5.4,SNR=13							
GTA	**Gaotai**	**32.85**	**283**	P	**P**	**14 56 29.3**	**-0.3**	
GTA				pP	pP	14 56 39.0	+0.3	
GTA				sP	sP	14 56 43.5	+1.0	
GTA				PP	**PnPn**	**14 57 40.3**	**+1.6**	
GTA				PcP	**PcP**	**14 59 14.8**	**+0.9**	
GTA				S	**S**	**15 01 41.5**	**-3.6**	
GTA				PcS	**PcS**	**15 03 00.0**	**+0.7**	
GTA				SS	**SnSn**	**15 03 40.8**	**-2.0**	
GTA				pmax	pmax			
	comp=Z,30nm,1.2s							
GTA				pmax	pmax			
	comp=Z,100nm,4.8s							
GTA				LR	LR			
	comp=Z,410nm,17.6s							
GTA				LR	LR			
	comp=Z,1μm,18.1s							
GTA				LR	LR			
	comp=Z,2μm,18.5s							
CD2	**Chengdu**	**32.91**	**266**	P	**P**	**14 56 28.5**	**-1.6**	
CD2				pP	pP	14 56 41.3	+2.1	
CD2				sP	sP	14 56 47.3	+4.3	
CD2				S	**S**	**15 01 42.3**	**-3.6**	
CD2				sS	sS	15 02 04.5	+3.5	
CD2				pmax	pmax			
	comp=Z,10.0nm,0.5s							
CD2				pmax	pmax			
	comp=Z,160nm,5.0s							
CD2				LR	LR			
	comp=Z,580nm,16.7s							
CD2				LR	LR			
	comp=Z,450nm,16.7s							
CD2				LR	LR			
	comp=Z,640nm,14.2s							
GYA	**Guiyang**	**32.95**	**257**	⇑*iP*	**P**	**14 56 29.5**	**-1.1**	
GYA				pP	sP	14 56 44.0	+0.5	
GYA				PP	**PnPn**	**14 57 42.5**	**+2.4**	
GYA				PcP	**PcP**	**14 59 15.3**	**+1.0**	
GYA				S	**S**	**15 01 44.0**	**-2.8**	
GYA				sS	sS	15 02 05.5	+3.7	
GYA				ScP	**ScP**	**15 02 54.0**	**-2.1**	
GYA				SS	**SnSn**	**15 03 43.3**	**-2.2**	
GYA				pmax	pmax			
	comp=Z,110nm,0.7s							
GYA				pmax	pmax			
	comp=Z,180nm,5.2s							
GYA				LR	LR			
	comp=Z,620nm,17.3s							
GYA				LR	LR			
	comp=Z,540nm,17.5s							
GYA				LR	LR			
	comp=Z,600nm,17.8s							
QIZ	**Qiongzhong**	**35.29**	**243**	P	**P**	**14 56 51.8**	**+1.0**	
QIZ				S	**S**	**15 02 23.5**	**+0.7**	
QIZ				sS	**sS**	**15 02 41.0**	**+3.1**	
QIZ				LR	LR			
	comp=Z,350nm,20.4s							
QIZ				LR	LR			
	comp=Z,440nm,17.6s							
KRAR	**Krasnoyarsk**	**36.09**	**313**	⇓*eP*	**P**	**14 56 57.9**	**+0.7**	
KMI	**Kunming**	**36.63**	**258**	P	**P**	**14 57 02.3**	**-0.2**	
KMI				pP	sP	14 57 16.0	+0.6	
KMI				sP	pP	14 57 21.8	+10	
KMI				PP	**PnPn**	**14 58 26.8**	**+0.7**	
KMI				S	**S**	**15 02 39.0**	**-4.7**	
KMI				sS	sS	15 03 01.5	+2.7	
KMI				SS	**SnSn**	**15 05 07.8**	**-7.0**	
KMI				pmax	pmax			
	comp=Z,69nm,0.8s							
KMI				pmax	pmax			
	comp=Z,170nm,3.9s							
KMI				LR	LR			
	comp=Z,750nm,15.6s							
KMI				LR	LR			
	comp=Z,740nm,17.7s							
KMI				LR	LR			
	comp=Z,1μm,17.3s							
KWAJ	**Kwajalein Atol**	**38.22**	**138**	*i* P	**P**	**14 57 18.4**	**+2.7**	
WMQ	**Urumqi**	**40.53**	**294**	⇑*iP*	**P**	**14 57 35.5**	**+0.6**	
WMQ				pP	pP	14 57 45.5	+1.4	
WMQ				sP	sP	14 57 52.0	+4.1	
WMQ				PP	**PnPn**	**14 59 15.0**	**+2.6**	
WMQ				S	**S**	**15 03 45.0**	**+3.1**	
WMQ				pmax	pmax			
	comp=Z,59nm,1.0s							
WMQ				pmax	pmax			
	comp=Z,240nm,3.9s							
WMQ				LR	LR			
	comp=Z,610nm,13.6s							
WMQ				LR	LR			
	comp=Z,610nm,16.6s							
WMQ				LR	LR			
	comp=Z,780nm,21.2s							
NONG	**Nongkai**	**40.63**	**249**	P	**P**	**14 57 36.0**	**+0.1**	
	comp=Z,35nm,0.9s							
ZAA0	**Zalesovo Array**	**40.73**	**310**	*e*P	**P**	**14 57 36.0**	**-0.2**	
ZALV	**Zalesovo Beam**	**40.73**	**310**	P	**P**	**14 57 36.4**	**+0.1**	
	comp=Z,56nm,0.7s,baz=90,slow=7.7,SNR=189							
ZALV				PcP	**PcP**	**14 59 37.5**	**+0.3**	
	comp=Z,12nm,0.9s,baz=88,slow=4.6,SNR=4.5							
ZALV				LR	LR	15 15 18.9		
	comp=Z,938nm,18.9s,baz=70,slow=37							
SKNT	**Sakolnakorn**	**40.76**	**247**	P	**P**	**14 57 37.3**	**+0.4**	
	comp=Z,31nm,1.3s							
UBPT	**Khong Chiam**	**40.89**	**244**	P	**P**	**14 57 38.7**	**+0.7**	
	comp=Z,24nm,1.4s							
NRIK	**Noril'sk**	**40.96**	**334**	P	**P**	**14 57 37.9**	**0.0**	
	comp=Z,9.0nm,0.6s,baz=110,slow=7.9,SNR=12							
NRIK				LR	LR	15 15 41.7		
	comp=Z,1μm,19.5s,baz=110,slow=38							
MYLDM	**Lahad Datu**	**41.14**	**219**	*eP*	**P**	**14 57 38.5**	**-1.5**	
	comp=Z,82nm,1.2s							
NVS	**Novosibirsk**	**41.58**	**311**	⇓*iP*	**P**	**14 57 44.0**	**+0.8**	
NVS				pmax	pmax			
	comp=Z,40nm,1.0s							
NVS				pmax	pmax			
	comp=N,5.0nm,0.7s							
NVS				pmax	pmax			
	comp=E,28nm,0.9s							
TT01	**Tatalina**	**42.23**	**37**	*e*P	**P**	**14 57 49.4**	**+0.9**	
TTA	**Tatalina**	**42.24**	**37**	*e*P	**P**	**14 57 50.9**	**+2.2**	
TTA				pmax	pmax			
	comp=Z,8.0nm,0.9s							
TTA	**Tatalina**	**42.24**	**37**	*e*P	**P**	**14 57 50.9**	**+2.2**	
	comp=Z,7.6nm,0.9s							
CMAI	**Chiengmai2**	**42.43**	**255**	P	**P**	**14 57 51.1**	**+0.3**	
	comp=Z,252nm,1.0s,comp=Z,34μm							
UTTA	**Uttaradit**	**42.71**	**251**	P	**P**	**14 57 53.1**	**+0.3**	
	comp=Z,11nm,1.0s							
LAMP	**Lampang**	**42.88**	**253**	P	**P**	**14 57 54.7**	**+0.4**	
	comp=Z,12nm,0.8s,comp=Z,107nm							
LSA	**Lhasa**	**43.13**	**273**	*e*P	**P**	**14 57 56.8**	**+0.1**	
LSA				pmax	pmax			
	comp=Z,30nm,1.2s							
LSA	**Lhasa**	**43.13**	**273**	*e*P	**P**	**14 57 56.8**	**+0.1**	
	comp=Z,30nm,1.2s							
PBKT	**Sadao Pong**	**43.17**	**249**	P	**P**	**14 57 56.6**	**0.0**	
	comp=Z,24nm,1.1s							
CMMT	**Chiang Mai**	**43.20**	**254**	P	**P**	**14 57 56.8**	**-0.1**	
	comp=Z,26nm,1.1s							
CHTO	**Chiang Mai**	**43.20**	**254**	P	**P**	**14 57 56.8**	**-0.1**	
	comp=Z,89nm,0.8s							
CHTO	**Chiang Mai**	**43.20**	**254**	*e*P	**P**	**14 57 56.3**	**-0.6**	
CHTO				pmax	pmax			
	comp=Z,19nm,0.8s							
CHTO	**Chiang Mai**	**43.20**	**254**	*e*P	**P**	**14 57 56.3**	**-0.6**	
	comp=Z,19nm,0.8s							
CM31	**Chiang Mai Arr**	**43.43**	**253**	*e*P	**P**	**14 57 57.9**	**-0.8**	
CMAR	**Chiang Mai Arr**	**43.43**	**253**	P	**P**	**14 57 58.5**	**-0.2**	
	comp=Z,4.3nm,0.6s,baz=42,slow=7.7,SNR=35							
CMAR				LR	LR	15 15 46.1		
	comp=Z,142nm,18.9s,baz=62,slow=36							
CMAR	**Chiang Mai Arr**	**43.43**	**253**	*ce*P	**P**	**14 57 58.7**	**0.0**	
CMAR				pmax	pmax			
	comp=Z,5.0nm,0.6s							
CM01	**Chiang Mai Arr**	**43.44**	**253**	*e*P	**P**	**14 57 58.2**	**-0.6**	
MK01	**Makanchi Array**	**43.50**	**300**	*e*P	**P**	**14 57 58.6**	**-0.4**	
MK31	**Makanchi Array**	**43.50**	**300**	P	**P**	**14 57 58.9**	**-0.1**	
MK31				pmax	pmax			
	comp=Z,30nm,0.8s							
MKAR	**Makanchi Array**	**43.50**	**300**	P	**P**	**14 57 59.0**	**0.0**	
	comp=Z,21nm,0.8s,baz=84,slow=9.6,SNR=151							
MKAR				LR	LR	15 17 05.2		
	comp=Z,757nm,19.0s,baz=78,slow=37							
MKAR	**Makanchi Array**	**43.50**	**300**	P	**P**	**14 57 59.0**	**0.0**	
MKAR				pmax	pmax			
	comp=Z,21nm,0.8s							
MKAR				MLR	MLR			
	comp=Z,757nm,19.0s							
MKAR	**Makanchi Array**	**43.50**	**300**	*e*P	**P**	**14 57 58.8**	**-0.2**	
MAKZ	**Makanchi**	**43.70**	**300**	*e*P	**P**	**14 58 00.4**	**-0.2**	
MAKZ				pmax	pmax			
	comp=Z,29nm,0.9s							
MAKZ	**Makanchi**	**43.70**	**300**	*e*P	**P**	**14 58 00.4**	**-0.2**	
	comp=Z,29nm,0.9s							
OHAK	**Old Harbor**	**43.73**	**45**	*e*P	**P**	**14 58 01.5**	**+0.9**	
	comp=Z,20nm,1.0s							
RSO	**Redoubt South**	**43.78**	**40**	*e*P	**P**	**14 58 02.8**	**+1.5**	
MRSI	**Marisa**	**43.83**	**211**	P	**P**	**14 58 03.1**	**+1.2**	
	comp=Z,49nm,1.2s,comp=Z,4μm							
PPLA	**Purkeypile**	**43.99**	**37**	*e*P	**P**	**14 58 04.4**	**+1.6**	
	comp=Z,18nm,1.0s							
CAST	**Castle Rocks**	**44.03**	**36**	*e*P	**P**	**14 58 04.0**	**+1.0**	
	comp=Z,15nm,0.8s							
KDAK	**Kodiak Island**	**44.06**	**44**	*i* P	**P**	**14 58 05.0**	**+1.7**	
KDAK	**Kodiak Island**	**44.06**	**44**	*e*P	**P**	**14 58 03.7**	**+0.4**	
	comp=Z,43nm,1.1s							
MHMT	**Maesarieng**	**44.35**	**254**	P	**P**	**14 58 06.8**	**+0.7**	
	comp=Z,19nm,0.8s							
BPAW	**Bear Paw Mtn.**	**44.52**	**35**	*e*P	**P**	**14 58 07.8**	**+0.8**	
	comp=Z,11nm,0.9s							
KTH	**Kantishna Hill**	**44.55**	**36**	*e*P	**P**	**14 58 07.0**	**-0.3**	
	comp=Z,19nm,0.9s							
CNPM	**China Poot**	**44.60**	**41**	*e*P	**P**	**14 58 08.5**	**+0.9**	
	comp=Z,26nm,1.0s							
TRF	**Thorofare Moun**	**44.84**	**36**	*e*P	**P**	**14 58 11.2**	**+1.5**	
	comp=Z,8.1nm,0.8s							
COLD	**Coldfoot**	**44.90**	**30**	*e*P	**P**	**14 58 11.2**	**+1.3**	
	comp=Z,7.3nm,0.8s							
UMPA	**Umpang Tak**	**44.93**	**251**	P	**P**	**14 58 13.1**	**+2.3**	
	comp=Z,14nm,0.9s,comp=Z,197nm							
RC01	**Rabbit Creek A**	**45.22**	**39**	*e*P	**P**	**14 58 12.3**	**-0.2**	
	comp=Z,22nm,1.0s							
MCK	**McKinley**	**45.44**	**35**	*e*P	**P**	**14 58 15.3**	**+1.0**	
MCK				pmax	pmax			
	comp=Z,12nm,1.0s							
MCK	**McKinley**	**45.44**	**35**	*e*P	**P**	**14 58 15.2**	**+1.0**	
	comp=Z,12nm,1.0s							
PMR	**Palmer**	**45.48**	**38**	*e*P	**P**	**14 58 15.3**	**+0.8**	
PMR				pmax	pmax			
	comp=Z,11nm,0.8s							
PMR	**Palmer**	**45.48**	**38**	*e*P	**P**	**14 58 15.3**	**+0.8**	
	comp=Z,12nm,0.8s							
WRH	**Wood River Hil**	**45.77**	**34**	*e*P	**P**	**14 58 18.1**	**+1.3**	
	comp=Z,10nm,0.9s							
SML	**Sawmill**	**45.84**	**38**	*e*P	**P**	**14 58 17.9**	**+0.5**	
SML				pmax	pmax			
	comp=Z,21nm,1.0s							
SML	**Sawmill**	**45.84**	**38**	*e*P	**P**	**14 58 17.9**	**+0.5**	
	comp=Z,21nm,1.0s							
COLA	**College**	**45.86**	**34**	*e*P	**P**	**14 58 17.9**	**+0.4**	
COLA				pmax	pmax			
	comp=Z,12nm,0.8s							
COLA	**College**	**45.86**	**34**	*e*P	**P**	**14 58 17.9**	**+0.4**	
	comp=Z,12nm,0.8s							
CCB	**Clear Creek Bu**	**45.89**	**34**	*e*P	**P**	**14 58 18.7**	**+0.9**	
	comp=Z,5.5nm,1.0s							
DHY	**Denali Highway**	**46.18**	**36**	*e*P	**P**	**14 58 21.3**	**+1.1**	
	comp=Z,13nm,0.7s							
HDA	**Harding Lake**	**46.27**	**34**	*e*P	**P**	**14 58 21.9**	**+1.1**	
	comp=Z,11nm,0.8s							
ILAR	**Eielson Array**	**46.28**	**34**	P	**P**	**14 58 21.5**	**+0.7**	
	comp=Z,3.3nm,0.7s,baz=265,slow=6.3,SNR=48							
ILB	**Eielson Array**	**46.28**	**34**	*e*P	**P**	**14 58 21.5**	**+0.7**	
IL1	**Eielson Array**	**46.28**	**34**	*e*P	**P**	**14 58 20.8**	**0.0**	
SCM	**Sheep Creek Mo**	**46.31**	**38**	*e*P	**P**	**14 58 22.0**	**+0.8**	
SCM				pmax	pmax			
	comp=Z,21nm,0.8s							
SCM	**Sheep Creek Mo**	**46.31**	**38**	*e*P	**P**	**14 58 22.0**	**+0.8**	
	comp=Z,21nm,0.8s							
PDGK	**Podgornoye**	**46.39**	**296**	*i* P	**P**	**14 58 21.6**	**-0.3**	
PDGK				pmax	pmax			
	comp=Z,35nm,1.0s							
DIV	**Divide**	**47.13**	**39**	*e*P	**P**	**14 58 28.8**	**+1.1**	
	comp=Z,19nm,0.9s							
DOT	**Dot Lake**	**47.61**	**35**	*e*P	**P**	**14 58 31.6**	**+0.3**	
	comp=Z,16nm,0.7s							
BMRM	**Bremner River**	**47.72**	**39**	*e*P	**P**	**14 58 32.7**	**+0.5**	
	comp=Z,20nm,0.9s							
MENT	**Mentasta**	**47.85**	**36**	*e*P	**P**	**14 58 35.8**	**+2.7**	
	comp=Z,17nm,0.9s							
JIRN	**Jiri**	**47.92**	**273**	*e*P	**P**	**14 58 35.0**	**+0.4**	
	comp=Z,387nm,0.7s							
GUN	**Gumba**	**48.03**	**274**	*e*P	**P**	**14 58 35.5**	**+0.1**	
	comp=Z,139nm,0.7s							
KSM	**Kuching**	**48.52**	**226**	*e*P	**P**	**14 58 38.2**	**-0.6**	
	comp=Z,12nm,0.8s							
KKN	**Kakani**	**48.55**	**274**	*e*P	**P**	**14 58 39.4**	**+0.1**	
	comp=Z,88nm,0.8s							
PKIN	**Phulchoki**	**48.57**	**274**	*e*P	**P**	**14 58 39.6**	**+0.1**	
	comp=Z,50nm,0.6s							
EGAK	**Eagle**	**48.72**	**34**	*e*P	**P**	**14 58 40.2**	**+0.5**	
	comp=Z,12nm,0.9s							
DMN	**Daman**	**48.77**	**274**	*e*P	**P**	**14 58 41.1**	**+0.1**	
BALM	**Baldy**	**48.79**	**39**	*e*P	**P**	**14 58 41.4**	**+0.8**	
BALM				pmax	pmax			
	comp=Z,17nm,1.0s							
BALM	**Baldy**	**48.79**	**39**	*e*P	**P**	**14 58 41.4**	**+0.8**	
	comp=Z,17nm,1.0s							
GKN	**Gorkha**	**48.94**	**274**	*e*P	**P**	**14 58 42.0**	**-0.1**	
	comp=Z,48nm,0.6s							
TKM2	**Tokmak 2**	**49.20**	**297**	*i* P	**P**	**14 58 44.6**	**+0.5**	
TKM2				pmax	pmax			
	comp=Z,82nm,0.8s							
BVA0	**Borovoye Array**	**49.37**	**311**	P	**P**	**14 58 45.1**	**+0.2**	
BVA0				pmax	pmax			
	comp=Z,53nm,0.7s							
BRVK	**Borovoye**	**49.42**	**311**	*e*P	**P**	**14 58 45.2**	**-0.1**	
BRVK				pmax	pmax			
	comp=Z,114nm,0.8s							
BRVK	**Borovoye**	**49.42**	**311**	*e*P	**P**	**14 58 45.1**	**-0.1**	
	comp=Z,114nm,0.8s							
PMG	**Port Moresby**	**49.46**	**174**	LR	LR	15 17 01.0		
	comp=Z,87nm,20.1s,baz=352,slow=33							
PMG	**Port Moresby**	**49.46**	**174**	⇑*eP*	**P**	**14 58 44.6**	**-1.3**	
PMG				pmax	pmax			
	comp=Z,104nm,1.2s							
OTUK	**Ortayu**	**49.57**	**304**	P	**P**	**14 58 46.6**	**0.0**	
OTUK				pmax	pmax			
	comp=Z,20nm,0.7s							
DAWY	**Dawson**	**49.59**	**34**	*e*P	**P**	**14 58 47.1**	**+0.6**	
	comp=Z,18nm,1.8s							
KOLN	**Koldanda**	**49.84**	**275**	*e*P	**P**	**14 58 49.3**	**+0.1**	
	comp=Z,18nm,0.5s							
FRU	**Bishkek**	**49.91**	**297**	⇑*iP*	**P**	**14 58 49.0**	**-0.2**	
FRU				*e*		15 00 47.0		
FRU				pmax	pmax			
	comp=Z,50nm,1.8s							
FRU				MLR	MLR			
	comp=E,500nm,15.0s							
AAK	**Ala-Archa**	**50.06**	**297**	*e*P	**P**	**14 58 50.4**	**-0.2**	
AAK				pmax	pmax			
	comp=Z,23nm,1.0s							
AAK	**Ala-Archa**	**50.06**	**297**	*e*P	**P**	**14 58 50.4**	**-0.2**	
	comp=Z,23nm,1.0s							
PYUN	**Piuthan**	**50.15**	**276**	*e*P	**P**	**14 58 51.6**	**+0.2**	
	comp=Z,217nm,1.1s							
KRAB	**Krabi**	**50.20**	**243**	P	**P**	**14 58 52.7**	**+1.1**

IPM **Ipoh** 51.74 238 eP P **14 59 02.5 -0.8**
comp=Z,40nm,1.3s
SOEI **Soe** 52.55 203 P P **14 59 08.7 -0.6**
KK31 **Karatay Array** 52.59 299 ceP P **14 59 08.9 -0.4**
KK31 pmax pmax
comp=Z,18nm,0.7s
KKAR **Karatay Array** 52.59 299 eP P **14 59 09.0 -0.3**
KKAR **Karatay Array** 52.59 299 eP P **14 59 09.0 -0.3**
SVE **Sverdlovsk** 53.60 317 dP P **14 59 17.3 +0.8**
SVE pmax pmax
comp=Z,93nm,1.1s
SVE MLR MLR
comp=Z,2µm,16.0s
MTN **Manton Dam** 53.83 194 eP P **14 59 17.9 -0.6**
comp=Z,47nm,1.3s
NDI **New Delhi** 54.24 279 eP P 14 59 14.0 -7.6
PSI **Prapat** 54.37 238 LR LR 15 25 03.5
comp=Z,79nm,18.3s,slow=39
PSI **Prapat** 54.37 238 eP P **14 59 22.2 -0.6**
PSI pmax pmax
comp=Z,15nm,0.9s
PSI **Prapat** 54.37 238 eP P **14 59 22.2 -0.6**
comp=Z,15nm,0.9s
SOKR **Solikamsk** 54.58 321 cP P **14 59 22.0 -1.5**
SOKR pmax pmax
comp=Z,54nm,1.0s
ARU **Arti** 54.81 317 cP P **14 59 25.7 +0.4**
ARU 15 00 27.3
ARU 15 01 24.7
ARU S S **15 07 06.3 +2.4**
ARU SS SS **15 10 42.0 -4.7**
ARU pmax pmax
comp=Z,96nm,1.2s
ARU MLR MLR
comp=Z,1µm,17.0s
BKNI **Bangkinang** 54.91 235 P P **14 59 27.7 +1.2**
SDSI **Sungai Dareh** 55.65 233 P P **14 59 32.3 +0.5**
PWJI **Pagerwojo** 55.85 218 P P **14 59 32.4 -0.8**
GSI **Gunungsitoli** 56.38 239 P P **14 59 37.7 +0.6**
GSI **Gunungsitoli** 56.38 239 eP P **14 59 37.2 +0.1**
comp=Z,50nm,1.1s
LHSI **Lahat** 56.70 229 P P **14 59 39.7 +0.4**
KLSI 56.71 227 P P **14 59 39.4 0.0**
AB31 **Akbulak array** 56.83 309 ceP P **14 59 40.0 +0.1**
AB31 pmax pmax
comp=Z,15nm,0.5s
ABKAR **Akbulak array** 56.83 309 eP P **14 59 39.9 0.0**
HOPEN **Hopen** 57.31 346 IAmb IAmb 14 59 44.4
comp=Z,94nm,1.3s
KBL **Kabul** 57.40 290 eP P **14 59 43.6 -0.8**
KBL pmax pmax
comp=Z,97nm,0.9s
KBL **Kabul** 57.40 290 eP P **14 59 43.6 -0.8**
comp=Z,97nm,0.9s
SPA0 **Spitsbergen Ar** 57.70 349 IAmb IAmb 14 59 46.4
comp=Z,23nm,1.0s
SPA0 eP P **14 59 46.6 +1.0**
SPA0 eS S **15 07 40.9 -0.9**
SPA0 IAMs_20 IAMs_20 15 25 12.3
comp=Z,285nm,20.3s
SPA0 **Spitsbergen Ar** 57.70 349 eP P **14 59 44.5 -1.1**
KBS **Kingsbay** 57.79 350 IAmb IAmb 14 59 48.0
comp=Z,26nm,0.9s
KBS IAMs_20 IAMs_20 15 26 01.7
comp=Z,173nm,18.6s
HSPB **Hornsund (broa** 58.65 348 eP P **14 59 53.3 +1.1**
HSPB IAmb IAmb 14 59 54.1
comp=Z,39nm,1.1s
HSPB **Hornsund (broa** 58.65 348 eP P **14 59 53.2 +0.9**
HYB **Hyderabad** 59.44 267 iP P **14 59 59.0 +0.3**
BJO **Bjornoya** 59.72 345 eP P **15 00 00.6 +1.0**
FITZ **Fitzroy Crossi** 60.12 199 LR LR 15 23 20.9
comp=Z,63nm,19.8s,slow=33
FITZ **Fitzroy Crossi** 60.12 199 eP P **15 00 02.4 -0.7**
comp=Z,23nm,1.3s
WRAB **Tennant Creek** 60.29 189 ceP P **15 00 03.0 -1.2**
WRAB pmax pmax
comp=Z,30nm,1.2s
WRAB **Tennant Creek** 60.29 189 eP P **15 00 02.5 -1.7**
comp=Z,33nm,1.0s
WB2 **Warramunga Arr** 60.30 189 eP P **15 00 03.1 -1.1**
WRA **Warramunga Arr** 60.30 189 P P **15 00 03.1 -1.2**
comp=Z,6.1nm,0.6s,baz=8.2,slow=7.0,SNR=68
APA **Apatity** 60.33 335 ⇓iP P **15 00 03.8 -0.2**
APA pmax pmax
comp=Z,12nm,0.8s
APA MLR MLR
comp=Z,300nm,20.0s
YKA **Yellowknife Ar** 60.56 31 P P **15 00 05.5 -0.1**
comp=Z,2.0nm,0.7s,baz=302,slow=6.4,SNR=7.6
YKA **Yellowknife Ar** 60.56 31 ceP P **15 00 06.3 +0.7**
YKA pmax pmax
comp=Z,2.0nm,0.7s
ARCES **ARCESS Array B** 61.49 339 P P **15 00 12.2 +0.3**
comp=Z,5.1nm,0.7s,baz=52,slow=7.9,SNR=11
ARCES LR LR 15 32 46.2
comp=Z,153nm,18.6s,baz=51,slow=42
ARE0 **ARCESS Array S** 61.49 339 eP P **15 00 12.3 +0.5**
ARE0 epP sP **15 00 25.0 -0.2**
ARE0 esP pP 15 00 31.2 +10
KLMR **Klimovskoe** 61.75 327 eP P **15 00 11.1 -2.6**
KLMR e 15 02 26.4
KLMR pmax pmax
comp=Z,37nm,1.2s
DAG **Danmarks Havn** 62.78 355 ⇑iP P **15 00 20.7 +0.4**
comp=Z,25nm,0.9s
DAG **Danmarks Havn** 62.78 355 ⇑iP P **15 00 20.7 +0.4**
DAG pmax pmax
comp=Z,21nm,0.9s
TRO **Tromso** 63.15 341 ⇑iP P **15 00 23.7 +0.8**
TRO epP sP **15 00 36.3 +0.1**
TRO IAmb IAmb 15 00 36.5
comp=Z,34nm,1.1s
GEYT **Alibeck** 63.34 298 P P **15 00 24.5 -0.3**
comp=Z,23nm,0.8s,baz=29,slow=3.4,SNR=47
GEYT LR LR 15 29 58.1
comp=Z,306nm,18.2s,baz=100,slow=38
AS01 **Alice Springs** 64.02 189 eP P **15 00 28.3 -0.9**
AS31 **Alice Springs** 64.02 189 eP P **15 00 28.1 -1.2**
comp=Z,2.6nm,0.8s
ASAR **Alice Springs** 64.03 189 P P **15 00 28.6 -0.7**
comp=Z,2.8nm,0.8s,baz=0.6,slow=5.2,SNR=36
ASAR LR LR 15 27 29.3
comp=Z,117nm,22.0s,baz=14,slow=35
MBWA **Marble Bar** 64.69 204 eP P **15 00 32.5 -1.1**
comp=Z,13nm,0.9s
STEI **Steigen** 65.31 341 eP P **15 00 37.3 +0.3**
STEI epP sP **15 00 50.6 +0.1**
LVP **Lakeview Peak** 65.36 50 eP P **15 00 38.0 +0.1**
MOS **Moscow** 65.44 323 eP P **15 00 37.6 -0.5**
MOS e 15 00 49.6
MOS e 15 03 12.1
MOS pmax pmax
comp=Z,100nm,1.6s
MOS pmax pmax
comp=Z,77nm,1.2s
LOF **Lofoten** 65.58 341 eP P **15 00 38.7 -0.1**
EIDS **Eidsvold** 65.62 172 eP P **15 00 38.5 -1.0**
comp=Z,9.1nm,0.8s
DZM **Mont Dzumac** 65.68 156 eLR LR 15 20 22.0
comp=Z,334nm,21.9s
B08A **Colville Reser** 65.86 46 eP P **15 00 41.7 +0.6**
comp=Z,5.8nm,0.9s
VRH **Novokhopyorsk** 66.05 318 eP P **15 00 42.6 +0.5**
VRH pmax pmax
comp=Z,90nm,0.8s
OBN **Obninsk** 66.29 323 iP P **15 00 44.1 +0.5**
OBN i 15 00 56.1
OBN i 15 01 16.2
OBN iS S **15 09 33.9 +3.3**
OBN pmax pmax
comp=Z,32nm,1.1s
OBN MLR MLR
comp=Z,655nm,16.0s
FIA1 **FINESS Array S** 66.60 332 eP P **15 00 45.4 -0.1**
comp=Z,38nm,0.8s
FINES **FINESS Array B** 66.60 332 P P **15 00 45.6 +0.2**
comp=Z,28nm,0.7s,baz=46,slow=8.2,SNR=114
FINES LR LR 15 32 10.4
comp=Z,563nm,20.1s,baz=46,slow=38
D08A **Wollman Farm,** 66.82 47 epP pP 15 01 01.1 +4.2
VSR **Storozhevoye** 67.35 319 eP P **15 00 51.0 +0.6**
VSR pmax pmax
comp=Z,90nm,1.3s
VSR pmax pmax
comp=Z,40nm,0.6s
VSR MLR MLR
comp=Z,1µm,23.0s
E09A **Wood Farm, Sta** 67.57 48 epP pP 15 01 05.9 +4.3
SUMG **Summit** 67.58 0 ⇑iP P **15 00 53.4 +1.4**
comp=Z,25nm,0.7s
SUMG **Summit** 67.58 0 ⇑iP P **15 00 53.4 +1.4**
SUMG pmax pmax
comp=Z,25nm,0.7s
SUMG **Summit** 67.58 0 eP P **15 00 52.9 +0.8**
comp=Z,29nm,0.8s
K05A **Summer Lake** 68.12 52 eP P **15 00 57.1 +1.4**
comp=Z,13nm,0.9s
AFI **Afiamalu** 68.31 132 LR LR 15 24 09.5
comp=Z,184nm,21.9s,baz=133,slow=30
VSU **Vasula** 68.35 329 ceP P **15 00 57.2 +0.6**
VSU pmax pmax
comp=Z,71nm,1.2s
WALA **Waterton Lakes** 68.39 44 eP P **15 00 58.0 +0.8**
comp=Z,8.7nm,0.9s
GOF **Gofitskoye** 68.88 312 ⇑iP P **15 01 00.9 +0.8**
GOF pmax pmax
comp=Z,67nm,0.6s
MOD **Modoc Plateau** 68.95 53 eP P **15 01 01.6 +0.7**
comp=Z,4.8nm,0.8s
JTMT **Jette** 68.98 45 eP P **15 01 02.2 +1.3**
BMO **Blue Mountains** 69.01 49 eP P **15 01 02.2 +1.1**
comp=Z,5.1nm,1.0s
SWMT **Swartz Lake** 69.28 45 eP P **15 01 04.1 +1.4**
ZEI **Tsey** 69.71 309 eP P **15 01 04.4 -1.2**
ZEI pmax pmax
comp=Z,60nm,1.0s
SLMT **Seeley Lake** 69.71 45 eP P **15 01 06.5 +1.0**
KIV **Kislovodsk** 69.73 311 eP P **15 01 06.4 +0.8**
KIV pmax pmax
comp=Z,74nm,0.9s
KIV MLR MLR
comp=Z,368nm,17.0s
KBZ **Khabaz** 69.74 310 P P **15 01 06.3 +0.8**
comp=Z,24nm,0.8s,baz=50,slow=4.1,SNR=38
KBZ LR LR 15 34 21.9
comp=Z,329nm,19.9s,baz=36,slow=38
ONI **Oni** 70.09 309 P P **15 01 08.8 +1.0**
ONI **Oni** 70.09 309 P P **15 01 08.8 +1.0**
NEY **Neytrino** 70.13 310 ⇓iP P **15 01 10.1 +1.9**
NEY pmax pmax
comp=Z,4.0nm,0.8s
FFC **Flin Flon** 70.49 34 eP P **15 01 10.5 +0.6**
FFC pmax pmax
comp=Z,10.0nm,0.8s
FFC **Flin Flon** 70.49 34 eP P **15 01 10.5 +0.6**
comp=Z,10nm,0.8s
MICGM **Minsk** 70.56 326 eP P **15 01 11.0 +0.7**
MNK **Minsk** 70.56 326 eP P **15 01 11.0 +0.7**
MFID **Camas Ranch** 70.72 49 eP P **15 01 12.6 +1.0**
comp=Z,4.8nm,1.0s
NACGM **Naroch** 70.75 327 e P **15 01 12.0 +0.5**
NACGM eLR LR 15 32 18.0
GNI **Garni** 70.76 307 cP P **15 01 13.3 +1.3**
GNI pmax pmax
comp=Z,96nm,1.4s
GNI **Garni** 70.76 307 eP P **15 01 13.0 +0.9**
comp=Z,61nm,1.3s
AKH **Akhalkalaki** 70.77 308 ⇑iP P **15 01 13.6 +1.5**
HRY **Holter Researc** 70.93 45 eP P **15 01 14.0 +1.1**
LRM **Limekiln Ridge** 71.15 46 eP P **15 01 15.4 +0.9**
EGMT **Eagleton** 71.21 43 eP P **15 01 15.3 +0.8**
comp=Z,13nm,0.8s
BANOM **Banah** 71.30 288 P P **15 01 15.9 +0.6**
DLMT **Dillon** 71.36 46 eP P **15 01 16.6 +1.1**
comp=Z,12nm,0.9s
NC405 **NORSAR Array S** 71.55 337 eP P **15 01 16.4 +0.2**
DOMB **Dombas** 71.56 339 ⇑iP P **15 01 16.5 +0.2**
DOMB IAmb IAmb 15 01 17.3
comp=Z,19nm,0.9s
DOMB epP sP **15 01 29.8 0.0**
NC303 **NORSAR Array S** 71.56 338 eP P **15 01 16.5 +0.2**
STKA **Stephens Creek** 71.67 181 P P **15 01 16.9 -0.3**
comp=Z,1.0nm,0.6s,baz=357,slow=5.5,SNR=5.6
STKA LR LR 15 31 54.7
comp=Z,53nm,21.8s,baz=23,slow=35
SOC **Sochi** 71.67 312 cP P **15 01 17.0 -0.2**
SOC e 15 03 54.0
SOC ePPP PPP 15 05 40.8
SOC eS S **15 10 35.3 +0.6**
SOC eSS SS **15 15 11.8 +2.1**
SOC pmax pmax
comp=Z,22nm,0.7s
SOC MLR MLR
comp=Z,189nm,15.0s
NC204 **NORSAR Array S** 71.70 338 eP P **15 01 17.0 -0.2**
BOZ **Bozeman (W)** 71.71 45 eP P **15 01 19.0 +1.3**
BOZ pmax pmax
comp=Z,8.0nm,0.7s
BOZ **Bozeman (W)** 71.71 45 eP P **15 01 19.0 +1.3**
comp=Z,8.1nm,0.7s
NB201 **NORSAR Array S** 71.73 337 eP P **15 01 17.4 0.0**
NB2 **NORSAR Subarra** 71.76 337 P P **15 01 17.8 +0.3**
comp=Z,25nm,0.8s,baz=37,slow=6.2
NB2 **NORSAR Subarra** 71.76 337 P P **15 01 17.8 +0.3**
baz=37,slow=6.2
NOA **NORSAR Array B** 71.76 337 P P **15 01 17.8 +0.3**
comp=Z,23nm,0.8s,baz=39,slow=6.1,SNR=110
NOA LR LR 15 37 37.8
comp=Z,171nm,18.4s,baz=30,slow=40
NBO02 **NORSAR Array S** 71.85 338 eP P **15 01 18.1 0.0**
NBO00 **NORSAR Array S** 71.89 338 eP P **15 01 18.5 +0.2**
NC602 **NORSAR Array S** 71.90 337 eP P **15 01 18.2 -0.1**
NC602 epP sP **15 01 31.0 -0.7**
NC602 IAmb IAmb 15 01 31.1
comp=Z,16nm,1.1s
NC602 **NORSAR Array S** 71.90 337 eP P **15 01 18.0 -0.3**
UOSS **Minazif** 71.94 288 eP P **15 01 18.6 -0.6**
comp=Z,56nm,1.2s
TVH3 **East Aurora ar** 71.97 55 eP P **15 01 19.9 +0.4**
comp=Z,8.4nm,1.1s
NAO01 **NORSAR Array S** 72.01 337 eP P **15 01 18.9 -0.1**
HATD **Hatta, Dubai** 72.07 288 iP P **15 01 20.3 +0.3**
SNR=7.4
ANN **Anapa** 72.19 314 eP P **15 01 17.0 -3.3**
ANN e*PP pP **15 01 29.1 -1.0**
ANN eS S **15 10 36.1 -4.5**
ANN eSSS SSS 15 18 32.5
ANN pmax pmax
comp=Z,88nm,1.5s
ANN MLR MLR
comp=E,377nm,19.0s
ANN MLR MLR
comp=N,513nm,19.0s
ANN MLR MLR
comp=Z,359nm,19.0s
ASHO **Ashiyiah** 72.20 287 iP P **15 01 21.8 +1.0**
SNR=6.0
AKASG **Malin Array Be** 72.53 322 P P **15 01 21.9 -0.3**
comp=Z,15nm,0.6s,baz=45,slow=6.2,SNR=66
AKASG LR LR 15 36 50.8
comp=Z,222nm,19.3s,baz=50,slow=39
AKBB **Malin Array Si** 72.53 322 eP P **15 01 22.0 -0.3**
AKBB pmax pmax
comp=Z,36nm,1.1s
AKBB **Malin Array Si** 72.53 322 eP P **15 01 22.0 -0.3**
comp=Z,36nm,1.1s
KIEV **Kiev** 72.54 322 cP P **15 01 22.3 0.0**
KIEV pmax pmax
comp=Z,23nm,0.9s
KIEV MLR MLR
comp=Z,460nm,17.0s
KIEV **Kiev** 72.54 322 eP P **15 01 22.0 -0.3**
comp=Z,36nm,1.1s
SFJD **Kangerlussuaq** 72.69 6 iP P **15 01 23.6 +0.7**
comp=Z,19nm,1.0s
SFJD **Kangerlussuaq** 72.69 6 iP P **15 01 23.6 +0.7**
SFJD pmax pmax
comp=Z,19nm,1.0s
OSL **Oslo** 72.79 337 eP P **15 01 23.7 +0.1**
OSL IAmb IAmb 15 01 23.7
comp=Z,24nm,0.7s
OSL epP sP **15 01 37.0 0.0**
H17A **Grant Village** 73.08 46 eP P **15 01 28.2 +2.2**
comp=Z,8.4nm,0.9s
IMW **Indian Meadow** 73.20 46 eP P **15 01 27.4 +0.7**
comp=Z,6.8nm,1.1s
KONO **Kongsberg** 73.36 337 eP P **15 01 27.1 +0.1**
KONO IAmb IAmb 15 01 28.0
comp=Z,12nm,0.8s
KONO epP sP **15 01 40.5 +0.1**
KONO IAMs_20 IAMs_20 15 37 31.8
comp=Z,302nm,21.1s
KONO **Kongsberg** 73.36 337 cP P **15 01 27.4 +0.4**
KONO pmax pmax
comp=Z,73nm,1.7s
KONO **Kongsberg** 73.36 337 eP P **15 01 27.1 +0.1**
comp=Z,12nm,0.8s
MOOW **Moose Ponds** 73.40 47 P P **15 01 29.1 +1.2**
comp=Z,12nm,1.4s
TPAW **Teton Pass** 73.45 47 eP P **15 01 28.7 +0.5**
comp=Z,16nm,1.5s
REDW **Red Top Meadow** 73.59 47 eP P **15 01 28.6 -0.4**
comp=Z,13nm,1.4s
LAO **LASA Array** 73.90 42 eP P **15 01 30.8 +0.2**
comp=Z,12nm,1.0s
R11A **Troy Canyon, C** 73.98 53 eP P **15 01 31.0 -0.3**
comp=Z,11nm,1.5s
ODD1 **Odda** 73.99 339 eP P **15 01 29.9 -0.9**
ODD1 IAmb IAmb 15 01 32.3
comp=Z,19nm,1.0s
ODD1 epP sP **15 01 44.1 -0.1**
HWUT **Hardware Ranch** 74.31 49 eP P **15 01 33.0 -0.1**
comp=Z,6.2nm,1.0s
TPNV **Topopah Spring** 74.44 55 eP P **15 01 34.3 +0.3**
TPNV pmax pmax
comp=Z,6.0nm,0.9s
TPNV **Topopah Spring** 74.44 55 eP P **15 01 34.3 +0.3**
comp=Z,5.7nm,0.9s
DUG **Dugway, Tooele** 74.48 50 eP P **15 01 35.5 +1.3**
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG **Dugway, Tooele** 74.48 50 eP P **15 01 35.5 +1.3**
comp=Z,4.2nm,0.8s
BW06 **Boulder Array** 74.70 47 eP P **15 01 36.1 +0.6**
comp=Z,13nm,1.8s
PD31 **Pinedale Array** 74.70 47 eP P **15 01 36.4 +0.9**
PDAR **Pinedale Array** 74.70 47 P P **15 01 35.7 +0.2**
comp=Z,1.2nm,0.4s,baz=294,slow=1.5,SNR=11
PDAR LR LR 15 30 26.4
comp=Z,50nm,21.5s,baz=338,slow=32
SORM **Soroca** 74.70 321 ⇑iP P **15 01 34.7 -0.4**
STAV **Stavanger** 75.07 339 IAmb IAmb 15 01 49.7
comp=Z,31nm,1.2s
BSD **Bornholm Skovb** 75.24 332 ⇑iP P **15 01 38.0 0.0**
comp=Z,41nm,1.2s
BSD **Bornholm Skovb** 75.24 332 ⇑iP P **15 01 38.0 0.0**
BSD pmax pmax
comp=Z,41nm,1.2s
KIS **Kishinev** 75.26 320 eP P **15 01 37.0 -1.3**
KIS LRM MLR 15 37 52.0
comp=Z,600nm,16.0s
KIS **Kishinev** 75.26 320 eP P **15 01 37.0 -1.3**
KIS e 15 01 49.0
KIS e 15 04 30.0
KIS MLR MLR
comp=Z,500nm,15.0s
KIS MLR MLR
comp=N,300nm,17.0s
KIS MLR MLR
comp=E,200nm,15.0s
KIS MLR MLR
comp=Z,600nm,16.0s
SHPR **Sheep Range** 75.40 55 eP P **15 01 41.9 +2.4**
comp=Z,11nm,1.4s
BEL **Belsk** 75.46 327 eP P **15 01 40.4 +1.1**
BEL **Belsk** 75.46 327 eP P **15 01 40.4 +1.1**
LVV **L'vov** 75.53 324 eP P **15 01 40.3 +0.5**
LVV MLR MLR
comp=N,300nm,16.0s
LVV MLR MLR
comp=E,700nm,16.0s
LVV MLR MLR
comp=Z,500nm,15.0s
COP **Copenhagen** 75.66 334 ⇑iP P **15 01 41.2 +0.8**
comp=Z,19nm,0.6s
COP **Copenhagen** 75.66 334 ⇑iP P **15 01 41.2 +0.8**
COP pmax pmax
comp=Z,19nm,0.6s
GKP **Gorka Klasztor** 75.80 330 eP P **15 01 41.9 +0.6**
GKP **Gorka Klasztor** 75.80 330 eP P **15 01 41.9 +0.6**
CCUT **Cedar City** 75.84 53 eP P **15 01 43.5 +1.3**
comp=Z,16nm,1.8s
MSU **Marysvale** 75.94 51 eP P **15 01 43.7 +1.0**
MSU **Marysvale** 75.94 51 eP P **15 01 43.7 +1.0**
P17A **Butcher Ranch,** 76.17 50 eP P **15 01 44.1 +0.2**
comp=Z,6.0nm,0.9s
MTPU **Mount Pierson** 76.24 52 eP P **15 01 46.4 +1.9**
comp=Z,13nm,1.6s
KWP **Kalwaria Pacla** 76.26 325 eP P **15 01 45.1 +1.1**
KWP **Kalwaria Pacla** 76.26 325 eP P **15 01 45.1 +1.1**
LCMT **Little Creek M** 76.26 53 eP P **15 01 46.0 +1.6**
comp=Z,8.0nm,1.2s
ULM **Lac du Bonnet** 76.30 34 P P **15 01 44.3 +0.1**
comp=Z,4.5nm,0.8s,baz=318,slow=9.4,SNR=4.9
MDND **Maddock** 76.36 38 eP P **15 01 44.9 +0.4**
comp=Z,22nm,0.7s
SRU **San Rafael Swe** 76.53 50 eP P **15 01 46.6 +0.6**
SRU pmax pmax
comp=Z,10.0nm,1.0s
SRU **San Rafael Swe** 76.53 50 eP P **15 01 46.6 +0.6**
comp=Z,9.6nm,1.0s
BUR08 **Bucovina Ar. S** 76.56 322 eP P **15 01 46.1 +0.2**
BURAR **Bucovina Array** 76.57 322 ⇑iP P **15 01 46.6 +0.7**
TESR **Tescani** 76.67 320 ⇑iP P **15 01 46.9 +0.5**
RSSD **Black Hills** 76.77 43 eP P **15 01 47.5 +0.2**
RSSD pmax pmax
comp=Z,4.0nm,0.6s
RSSD **Black Hills** 76.77 43 eP P **15 01 47.5 +0.2**
comp=Z,4.1nm,0.6s
CFR **Carcaliu** 76.87 319 ⇑iP P **15 01 47.8 +0.3**
STHS **Stebnicka Huta** 77.06 325 eP P **15 01 49.7 +1.1**
STHS e 15 02 02.0
STHS **Stebnicka Huta** 77.06 325 eP P **15 01 49.7 +1.1**
STHS epP sP **15 02 02.0 0.0**
OJC **Ojcow** 77.08 326 eP P **15 01 49.5 +0.8**
OJC **Ojcow** 77.08 326 eP P **15 01 49.0 +0.3**
OJC pmax pmax
comp=Z,43nm,1.2s
OJC **Ojcow** 77.08 326 eP P **15 01 49.0 +0.3**
comp=Z,43nm,1.2s
VRI **Vrincioaia** 77.09 320 ⇑iP P **15 01 48.3 -0.4**
PLOR **Plostina** 77.14 320 ⇓iP P **15 01 48.8 -0.3**
UZH **Uzhgorod** 77.18 324 eP P **15 01 48.9 -0.3**
UZH e 15 01 55.7
UZH e 15 01 59.9
U15A **North Rim** 77.22 53 eP P **15 01 51.5 +1.5**
comp=Z,9.9nm,1.0s
TLB **Topalu** 77.33 318 ⇑iP P **15 01 50.6 +0.5**
TRPA **Tarpa** 77.44 324 ⇑eP P **15 01 51.7 +1.1**
NIE **Niedzica** 77.47 326 eP P **15 01 52.1 +1.2**
NIE **Niedzica** 77.47 326 eP P **15 01 52.1 +1.2**
BR131 **Keskin Array S** 77.63 312 eP P **15 01 52.4 +0.3**
BRTR **Keskin Array B** 77.63 312 P P **15 01 52.6 +0.5**
comp=Z,6.3nm,0.7s,baz=80,slow=4.1,SNR=31
BRTR LR LR 15 40 18.5
comp=Z,138nm,18.5s,baz=47,slow=39
DOPR **Dopca** 77.67 321 ⇓iP P **15 01 53.8 +1.8**
ISR **Istrita** 77.71 319 ⇓iP P **15 01 53.6 +1.3**
MLR **Muntele Rosu** 77.74 320 ⇑iP P **15 01 53.1 +0.5**
MLR **Muntele Rosu** 77.74 320 eP P **15 01 52.9 +0.4**
MLR pmax pmax
comp=Z,18nm,1.2s
MLR **Muntele Rosu** 77.74 320 eP P **15 01 52.9 +0.4**
comp=Z,18nm,1.2s
AGMN **Agassiz Nation** 77.75 36 eP P **15 01 52.4 0.0**
comp=Z,6.5nm,0.9s
PV10 **Paradox Valley** 77.89 50 eP P **15 01 55.3 +1.6**
LANS **Liptovska Anna** 78.03 326 eP P **15 01 55.7 +1.7**
LANS e 15 02 06.4
LANS e 15 04 50.4
LANS **Liptovska Anna** 78.03 326 eP P **15 01 55.7 +1.7**
LANS epP sP **15 02 06.4 -1.1**
LANS ePP PP **15 04 50.4 +0.7**
BR231 **Keskin MP Arra** 78.05 312 eP P **15 01 52.9 -1.4**
KSP **Ksiaz** 78.05 329 eP P **15 01 55.1 +1.1**
KSP **Ksiaz** 78.05 329 eP P **15 01 55.1 +1.1**
OKC **Ostrava-Krasne** 78.07 327 eP P **15 01 55.2 +1.1**
OKC AMS AMS 15 39 10.0
comp=Z,400nm,20.4s
OKC **Ostrava-Krasne** 78.07 327 eP P **15 01 55.2 +1.1**
OKC MLR MLR
comp=Z,400nm,20.4s
KECS **Kecovo** 78.09 325 eP P **15 01 55.0 +0.7**
KECS pmax pmax
comp=Z,4.0nm,1.2s

KECS	**Kecovo**	**78.09**	**325**	*e*P	**P**	**15 01 55.0**	**+0.7**
KECS				*e*pP	**pP**	**15 02 06.2**	**+2.0**
VOIR		**78.22**	**320**⇑	*i*P	**P**	**15 01 55.9**	**+0.8**
DRGR		**78.34**	**323**⇓	*i*P	**P**	**15 01 56.9**	**+1.1**
MORC	**Moravsky Berou**	**78.37**	**327**⇑	*i*P	**P**	**15 01 56.7**	**+0.9**
MORC	**Moravsky Berou**	**78.37**	**327**	*e*P	**P**	**15 01 56.2**	**+0.4**
MORC				pmax	pmax		
	comp=Z,75nm,0.8s						
MORC	**Moravsky Berou**	**78.37**	**327**	*e*P	**P**	**15 01 56.2**	**+0.4**
	comp=Z,74nm,0.8s						
WUAZ	**Wupatki**	**78.38**	**53**	*e*P	**P**	**15 01 56.7**	**+0.4**
	comp=Z,9.1nm,0.9s						
Y14A	**Wickenburg**	**78.39**	**55**	*e*P	**P**	**15 01 56.6**	**+0.4**
	comp=Z,34nm,1.0s						
DPC	**Dobruska-Polom**	**78.42**	**328**	*e*P	**P**	**15 01 57.5**	**+1.4**
DPC				*e*PCP	**pP**	**15 02 07.0**	**+1.0**
DPC				*e*pP	**sP**	**15 02 10.3**	**+0.7**
DPC				*e*sP	PcP	15 02 19.7	+14
DPC				*e*PP	**PP**	**15 04 46.5**	**-6.4**
DPC				AMS	AMS	15 39 30.0	
	comp=Z,400nm,16.8s						
DPC	**Dobruska-Polom**	**78.42**	**328**	*e*P	**P**	**15 01 57.5**	**+1.4**
DPC				*e*		15 02 07.0	
DPC				*e*		15 02 10.3	
DPC				MLR	MLR		
	comp=Z,400nm,16.8s						
UPC	**Upice**	**78.42**	**329**	*e*P	**P**	**15 01 57.2**	**+1.1**
UPC				*e*pP	**sP**	**15 02 09.2**	**-0.4**
UPC				AMS	AMS	15 39 30.0	
	comp=Z,400nm,16.7s						
UPC	**Upice**	**78.42**	**329**	*e*P	**P**	**15 01 57.2**	**+1.1**
UPC				*e*		15 02 09.2	
UPC				MLR	MLR		
	comp=Z,400nm,16.7s						
KRLC	**Kraliky**	**78.45**	**328**	*e*P	**P**	**15 01 57.3**	**+1.0**
KRLC	**Kraliky**	**78.45**	**328**	*e*P	**P**	**15 01 57.3**	**+1.0**
ARR	**Arges**	**78.47**	**321**⇓	*i*P	**P**	**15 01 58.1**	**+1.6**
PSZ	**Piszkesteto**	**78.78**	**325**⇑	*i*P	**P**	**15 01 59.2**	**+1.0**
PSZ	**Piszkesteto**	**78.78**	**325**	*e*P	**P**	**15 01 58.7**	**+0.5**
PSZ				pmax	pmax		
	comp=Z,29nm,1.2s						
PSZ	**Piszkesteto**	**78.78**	**325**	*e*P	**P**	**15 01 58.7**	**+0.5**
	comp=Z,29nm,1.2s						
PSZ	**Piszkesteto**	**78.78**	**325**⇑	*e*P	**P**	**15 01 59.2**	**+1.0**
VYHS	**Vyhne**	**78.80**	**326**	*e*P	**P**	**15 01 59.3**	**+1.1**
VYHS				pmax	pmax		
	comp=Z,7.0nm,0.9s						
VYHS	**Vyhne**	**78.80**	**326**	*e*P	**P**	**15 01 59.3**	**+1.1**
VYHS				*e*pP	**sP**	**15 02 10.6**	**-1.1**
VYHS				*e*PP	**PP**	**15 04 56.7**	**+0.6**
BRG	**Berggiesshubel**	**78.95**	**330**	*e*P	**P**	**15 01 59.4**	**+0.5**
	comp=Z,11nm,1.0s						
BRG	**Berggiesshubel**	**78.95**	**330**	*e*P	**P**	**15 01 59.4**	**+0.5**
BRG				pmax	pmax		
	comp=Z,11nm,1.0s						
CLL	**Collm**	**78.96**	**331**⇑	*i*P	**P**	**15 01 59.1**	**+0.1**
	comp=Z,19nm,0.7s						
CLL				*i*		15 02 03.6	
CLL				*e*		15 02 10.0	
CLL				*i*		15 02 22.2	
CLL				*e*PPP	PPP	15 06 48.0	
CLL				*e*S	**S**	**15 12 03.0**	**+7.7**
CLL				*e*PS	**PnS**	**15 12 39.0**	**-0.9**
CLL				*e*SS	SS	15 17 12.0	+12
CLL				*e*SSSS		15 23 36.0	
CLL	**Collm**	**78.96**	**331**⇑	*i*P	**P**	**15 01 59.1**	**+0.1**
CLL				*i*		15 02 03.6	
CLL				*e*		15 02 10.0	
CLL				*e*S	**S**	**15 12 03.0**	**+7.7**
CLL				pmax	pmax		
	comp=Z,19nm,0.7s						
PVCC	**Panska Ves**	**78.98**	**329**	AMS	AMS	15 40 00.0	
	comp=Z,500nm,20.1s						
VRAC	**Vranov**	**79.12**	**327**⇑	*i*P	**P**	**15 02 01.0**	**+1.0**
GZR	**Gura Zlata**	**79.34**	**322**⇑	*i*P	**P**	**15 02 01.8**	**+0.5**
GOPC	**GO Pecny, Ondr**	**79.38**	**329**	*e*P	**P**	**15 02 02.6**	**+1.2**
GOPC				*e*pP	**sP**	**15 02 15.3**	**+0.4**
GOPC				AMS	AMS	15 40 00.0	
	comp=Z,400nm,16.7s						
GOPC	**GO Pecny, Ondr**	**79.38**	**329**	*e*P	**P**	**15 02 02.6**	**+1.2**
GOPC				*e*		15 02 15.3	
GOPC				MLR	MLR		
	comp=Z,400nm,16.7s						
PRU	**Pruhonice**	**79.42**	**329**	*e*P	**P**	**15 02 02.6**	**+1.1**
PRU				AMS	AMS	15 40 10.0	
	comp=Z,400nm,14.9s						
PRU	**Pruhonice**	**79.42**	**329**	*e*P	**P**	**15 02 02.6**	**+1.1**
PRU				MLR	MLR		
	comp=Z,400nm,14.9s						
TREC	**Trest**	**79.58**	**328**	*e*P	**P**	**15 02 03.5**	**+1.0**
TREC				AMS	AMS	15 40 10.0	
	comp=Z,400nm,18.9s						
TREC	**Trest**	**79.58**	**328**	*e*P	**P**	**15 02 03.5**	**+1.0**
TREC				MLR	MLR		
	comp=Z,400nm,18.9s						
BZS	**Buzias**	**79.72**	**322**⇑	*i*P	**P**	**15 02 03.6**	**+0.3**
EYMN	**Ely**	**79.92**	**34**	*e*P	**P**	**15 02 04.4**	**0.0**
	comp=Z,8.4nm,0.8s						
NKC	**Novy Kostel**	**80.03**	**330**	*e*P	**P**	**15 02 05.7**	**+0.8**
NKC				*e*pP	**sP**	**15 02 18.5**	**+0.1**
NKC	**Novy Kostel**	**80.03**	**330**	*e*P	**P**	**15 02 05.7**	**+0.8**
NKC				*e*		15 02 18.5	
MDVR	**Moldovita**	**80.30**	**322**⇑	*i*P	**P**	**15 02 06.4**	**-0.1**
SDCO	**Great Sand Dun**	**80.37**	**48**	*e*P	**P**	**15 02 08.1**	**+0.8**
	comp=Z,3.3nm,1.1s						
SOP	**Sopron**	**80.40**	**326**⇑	*e*P	P	15 02 12.4	+5.5
KHC	**Kasperske Hory**	**80.48**	**329**	*e*P	**P**	**15 02 08.3**	**+0.9**
KHC				*e*pP	**sP**	**15 02 20.4**	**-0.5**
KHC				*e*PP	PP	15 05 02.0	-8.0
KHC				AMS	AMS	15 41 00.0	
	comp=Z,500nm,17.1s						
KHC	**Kasperske Hory**	**80.48**	**329**	*e*P	**P**	**15 02 08.3**	**+0.9**
KHC				*e*		15 02 20.4	
KHC				MLR	MLR		
	comp=Z,500nm,17.1s						
KHC	**Kasperske Hory**	**80.48**	**329**	*e*P	**P**	**15 02 07.8**	**+0.4**
	comp=Z,7.8nm,0.8s						
CONA	**Conrad Observa**	**80.50**	**327**	*i* P	**P**	**15 02 08.5**	**+1.0**
	comp=Z,16nm,1.0s,SNR=8.9						
ESK	**Eskdalemuir**	**80.60**	**341**	*e*P	**P**	**15 02 08.2**	**+0.4**
ESK				pmax	pmax		
	comp=Z,16nm,1.1s						
ESK	**Eskdalemuir**	**80.60**	**341**	*e*P	**P**	**15 02 08.2**	**+0.4**
	comp=Z,16nm,1.1s						
GEC2	**GERESS Array S**	**80.66**	**329**	*e*P	**P**	**15 02 08.3**	**-0.1**
GEC2				pmax	pmax		
	comp=Z,9.0nm,1.0s						
GEC2	**GERESS Array S**	**80.66**	**329**	*e*P	**P**	**15 02 08.3**	**-0.1**
	comp=Z,9.4nm,1.0s						
GERES	**GERESS Array B**	**80.66**	**329**	P	**P**	**15 02 08.7**	**+0.3**
	comp=Z,4.7nm,0.7s,baz=34,slow=5.0,SNR=36						
GERES				PP	**PP**	**15 05 14.7**	**+3.1**
	comp=Z,1.3nm,0.8s,baz=32,slow=5.2,SNR=3.6						
GERES				LR	LR	15 41 21.2	
	comp=Z,323nm,18.9s,baz=30,slow=38						
GEA0	**GERESS Array S**	**80.66**	**329**	*e*P	**P**	**15 02 08.5**	**+0.1**
ECSD	**EROS Data Cent**	**80.79**	**39**	*e*P	**P**	**15 02 09.0**	**-0.1**
	comp=Z,6.3nm,0.9s						
ARSA	**Arzberg**	**81.18**	**327**	*i* P	**P**	**15 02 12.2**	**+1.1**
	comp=Z,12nm,1.1s,SNR=5.1						
MOA	**Molln**	**81.22**	**328**	*i* PcP	**P**	**15 02 13.7**	**+2.3**
	comp=Z,5.7nm,0.9s						
T25A	**Trinidad**	**81.41**	**48**	*e*P	**P**	**15 02 12.9**	**+0.2**
	comp=Z,4.5nm,0.8s						
ANMO	**Albuquerque**	**81.74**	**51**⇑	*e*P	**P**	**15 02 17.0**	**+2.5**
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.3s						
PERS	**Pernice**	**81.83**	**327**	*i* P	**P**	**15 02 15.3**	**+0.6**
SOKA	**Soboth**	**81.84**	**327**	*i* P	**P**	**15 02 15.3**	**+0.6**
	comp=Z,22nm,0.8s,SNR=19						
MEM	**Membach**	**82.03**	**334**	P	**P**	**15 02 16.2**	**+0.7**
	comp=Z,5.7nm,1.1s						
SCHQ	**Schefferville**	**82.04**	**17**	P	**P**	**15 02 16.0**	**+0.5**
	comp=Z,7.2nm,0.6s,baz=352,slow=1.6,SNR=5.5						
SCHQ				LR	LR	15 41 14.0	
	comp=Z,106nm,20.8s,baz=318,slow=38						
SCHQ	**Schefferville**	**82.04**	**17**	*e*P	**P**	**15 02 15.7**	**+0.2**
	comp=Z,7.8nm,0.6s						
OBKA	**Obir**	**82.17**	**327**	*i* P	**P**	**15 02 16.8**	**+0.3**
KBA	**Koelnbreinsper**	**82.22**	**328**	*i* P	**P**	**15 02 17.4**	**+0.6**
	comp=Z,20nm,1.0s,SNR=13						
CWF	**Charnwood Fore**	**82.42**	**339**	*e*P	**P**	**15 02 17.7**	**+0.2**
	comp=Z,45nm,1.5s						
BCLA	**Clavier**	**82.43**	**334**	P	**P**	**15 02 17.8**	**+0.3**
	comp=Z,9.2nm,1.4s						
STU	**Stuttgart**	**82.45**	**331**	*e*P	**P**	**15 02 18.2**	**+0.4**
STU				pmax	pmax		
	comp=Z,15nm,0.3s						
STU	**Stuttgart**	**82.45**	**331**	*e*P	**P**	**15 02 18.1**	**+0.4**
	comp=Z,16nm,0.3s						
MYKA	**Terra Mystica**	**82.45**	**327**	*i* P	**P**	**15 02 18.0**	**+0.1**
	comp=Z,9.4nm,0.6s,SNR=6.4						
VAY	**Valandovo**	**82.46**	**319**	*e*P	**P**	**15 02 18.1**	**+0.2**
SKO	**Skopje**	**82.54**	**320**	*e*P	**P**	**15 02 19.3**	**+0.9**
LJU	**Ljubljana**	**82.55**	**327**	*i* P	**P**	**15 02 18.3**	**0.0**
SNF	**Seneffe**	**82.69**	**335**	P	**P**	**15 02 19.6**	**+0.6**
WATA	**Walderalm**	**82.72**	**329**	*i* PcP	**P**	**15 02 20.9**	**+1.6**
	comp=Z,6.4nm,0.6s						
WLF	**Walferdange**	**82.79**	**333**	P	**P**	**15 02 21.9**	**+2.4**
ABTA	**Abfaltersbach**	**82.82**	**328**	*i* P	**P**	**15 02 19.8**	**0.0**
	comp=Z,10nm,1.0s						
JAVS	**Javornik**	**82.87**	**327**	*i* P	**P**	**15 02 19.6**	**-0.5**
MOTA	**Moosalm**	**82.90**	**329**	*i* P	**P**	**15 02 20.8**	**+0.5**
	comp=Z,23nm,1.0s,SNR=8.1						
RETA	**Reutte**	**82.91**	**330**	*i* P	**P**	**15 02 20.9**	**+0.6**
	comp=Z,31nm,1.4s,SNR=11						
DOU	**Dourbes**	**82.94**	**334**	P	**P**	**15 02 20.2**	**0.0**
	comp=Z,5.2nm,1.4s						
BFO	**Black Forest**	**83.14**	**331**	*i* P	**P**	**15 02 22.0**	**+0.7**
BFO	**Black Forest**	**83.14**	**331**	*e*P	**P**	**15 02 21.3**	**0.0**
	comp=Z,9.8nm,0.8s						
PDG	**Podgorica**	**83.25**	**322**⇑	*i*P	**P**	**15 02 22.3**	**+0.3**
DSB	**Dublin**	**83.26**	**342**	*e*P	**P**	**15 02 22.2**	**+0.4**
	comp=Z,9.1nm,0.9s						
FETA	**Feichten**	**83.31**	**329**	*i* PcP	**P**	**15 02 23.1**	**+0.7**
	comp=Z,14nm,0.9s,SNR=6.0						
DAVA	**Damuels**	**83.42**	**330**	*i* PcP	**P**	**15 02 23.7**	**+0.7**
	comp=Z,24nm,1.2s,SNR=7.0						
OHR	**Ohrid**	**83.50**	**320**	*e*P	**P**	**15 02 23.5**	**+0.1**
FUORN	**Ofenpass-Fuorn**	**83.82**	**329**	*e*P	**P**	**15 02 25.7**	**+0.5**
	comp=Z,46nm,1.0s						
AGG	**Agios Georgios**	**84.30**	**318**	*e*P	**P**	**15 02 26.1**	**-1.4**
AGG				pmax	pmax		
	comp=Z,28nm,1.1s						
AGG	**Agios Georgios**	**84.30**	**318**	*e*P	**P**	**15 02 26.1**	**-1.4**
	comp=Z,28nm,1.1s						
TUE	**Stuetta**	**84.30**	**330**	*e*P	**P**	**15 02 27.7**	**+0.1**
	comp=Z,14nm,0.8s						
MNTX	**Cornudas Mount**	**84.63**	**53**	*e*P	**P**	**15 02 29.8**	**+0.5**
	comp=Z,4.8nm,1.0s						
PPT	**Papeete**	**85.04**	**118**	LR	LR	15 32 28.0	
	comp=Z,243nm,20.6s,baz=324,slow=30						
PPT2	**Papeete2**	**85.06**	**118**	*e*LR	LR	15 29 23.9	
	comp=Z,496nm,22.5s,baz=314						
PPT2	**Papeete2**	**85.06**	**118**	*e*T	T	16 36 16.0	
	comp=Z,7.8nm,0.3s						
VLDQ	**Val d'Or**	**85.13**	**26**	*e*P	**P**	**15 02 30.9**	**-0.6**
	comp=Z,10nm,0.8s						
SENIN	**Lac Senin/Sane**	**85.17**	**331**	*e*P	**P**	**15 02 31.8**	**-0.2**
	comp=Z,9.9nm,0.8s						
TIAR	**Tiarei**	**85.19**	**118**	*e*T	T	16 36 25.2	
	comp=Z,2.3nm,0.3s						
IDI	**Anyia**	**85.69**	**314**	*e*P	**P**	**15 02 33.6**	**-1.0**
	comp=Z,21nm,1.0s						
MEH	**Mehetia**	**86.28**	**117**	*e*T	T	16 37 48.0	
	comp=Z,40nm,0.3s						
WMOK	**Wichita Mounta**	**86.31**	**47**	*e*P	**P**	**15 02 37.6**	**0.0**
WMOK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
WMOK	**Wichita Mounta**	**86.31**	**47**	*e*P	**P**	**15 02 37.6**	**0.0**
	comp=Z,3.4nm,0.9s						
TX31	**Lajitas Ar. Si**	**87.34**	**53**	*e*P	**P**	**15 02 43.4**	**+0.6**
TXAR	**Lajitas Array**	**87.34**	**53**	P	**P**	**15 02 43.4**	**+0.5**
	comp=Z,0.7nm,0.5s,baz=297,slow=3.9,SNR=13						
TXAR				LR	LR	15 41 01.4	
	comp=Z,28nm,19.9s,baz=0.0,slow=35						
SIUC	**Southern Illin**	**89.00**	**39**	*e*P	**P**	**15 02 51.0**	**+0.6**
	comp=Z,22nm,0.6s						
PBMO	**Poplar Bluff**	**89.15**	**40**	*e*P	**P**	**15 02 51.7**	**+0.6**
	comp=Z,14nm,1.0s						
TBI	**Tubuai**	**89.17**	**122**	*e*LR	LR	15 31 00.4	
	comp=Z,268nm,26.5s,baz=322						
TBI	**Tubuai**	**89.17**	**122**	*e*T	T	16 41 19.6	
	comp=Z,20nm,0.3s						
MIAR	**Mount Ida**	**89.28**	**43**	*e*P	**P**	**15 02 52.0**	**+0.3**
MIAR				pmax	pmax		
	comp=Z,6.0nm,0.8s						
MIAR	**Mount Ida**	**89.28**	**43**	*e*P	**P**	**15 02 52.0**	**+0.3**
	comp=Z,6.1nm,0.8s						
X201	**Greenbrier Sit**	**89.33**	**42**	*e*P	**P**	**15 02 52.3**	**+0.3**
	comp=Z,33nm,1.7s						
WHAR	**Wooly Hollow**	**89.37**	**42**	*e*P	**P**	**15 02 52.3**	**+0.1**
	comp=Z,13nm,0.9s						
KEST	**Kesra**	**93.21**	**324**	LR	LR	15 49 55.1	
	comp=Z,213nm,19.1s,baz=295,slow=39						
ES19	**SONSECA Array**	**94.94**	**335**	*e*P	**P**	**15 03 17.7**	**-0.3**
ESDC	**Sonseca Array**	**94.98**	**335**	P	**P**	**15 03 18.2**	**+0.1**
	comp=Z,2.3nm,0.8s,baz=12,slow=4.4,SNR=7.8						
ESDC				LR	LR	15 51 14.0	
	comp=Z,111nm,18.6s,baz=330,slow=39						
RKT	**Rikitea**	**98.89**	**113**	*e*LR	LR	15 35 51.0	
	comp=Z,263nm,23.8s,baz=311						
KMBO	**Kilima Mbogo**	**102.63**	**279**	*i* P	**Pdif**	**15 03 54.2**	**+1.1**
KMBO				pmax	pmax		
	comp=Z,1.0nm,0.3s						
TORD	**Torodi Ar. Bea**	**115.88**	**317**	PKP	**PKPdf**	**15 08 37.6**	**-1.0**
	comp=Z,1.2nm,0.6s,baz=35,slow=1.7,SNR=11						
TORD				PP	**PP**	**15 09 38.5**	**-3.1**
	comp=Z,4.8nm,1.0s,baz=32,slow=5.5,SNR=7.8						
DBIC	**Dimbokro**	**124.72**	**320**	PKP	**PKPdf**	**15 08 55.6**	**-0.1**
	comp=Z,2.3nm,0.5s,baz=9.7,slow=3.1,SNR=7.3						
BOSA	**Boshof**	**128.19**	**262**	PKP	**PKPdf**	**15 09 02.4**	**+0.5**
	comp=Z,2.8nm,0.7s,baz=11,slow=5.2,SNR=4.3						
PTGA	**Pitinga**	**135.61**	**34**	PKP	**PKPdf**	**15 09 16.6**	**+0.3**
	comp=Z,1.0nm,0.3s,baz=48,slow=3.2,SNR=4.3						
SNAA	**Sanae**	**144.05**	**198**	PKP	**PKPab**	**15 09 27.6**	**+0.2**
SNAA	**Sanae**	**144.05**	**198**	*e*PKIKP	**PKPab**	**15 09 27.4**	**0.0**
SNAA	**Sanae**	**144.05**	**198**	*e*PKPdf	**PKPab**	**15 09 27.4**	**0.0**
LPAZ	**La Paz**	**144.11**	**57**	PKP	PKPbc	15 09 31.1	+0.7
	comp=Z,1.6nm,0.5s,baz=26,slow=6.7,SNR=8.5						
LPAZ	**La Paz**	**144.11**	**57**	*e*PKPdf	PKPbc	15 09 30.2	-0.2
PB11	**IPOC Station P**	**145.55**	**64**	*e*PKPdf	**PKPab**	**15 09 34.9**	**+0.3**
VNA1	**Neumayer--Stat**	**146.01**	**197**	PKP	**PKPbc**	**15 09 33.8**	**-0.3**
SIV	**San Ignacio**	**148.18**	**48**	PKPbc	**PKPdf**	**15 09 39.4**	**+0.9**
	comp=Z,5.6nm,0.9s,baz=311,slow=1.1,SNR=2.3						

ISCJB ***27*** *15:07:44.3±0.8, 8.77N±0.04×73.32W±0.06, h113km±8km, Error ellipse: s-maj=10.0km s-min=5.9km az=30.4*
RSNC ***27*** *15:07:46.6±0.6, 8.67N×73.43W, h111km±5km, ML2.9*
FUNV ***27*** *15:07:47.2, 8.88N×73.13W, h5km, MW2.5*
ISC 27 15:07:44.1±1.6, **8.77N**±0.05×**73.36W**±0.06, **h117**km±12km, **n18**, σ1**00**/28, **1C-1D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OCAC	**Ocana**	**0.53**	**176**	*e*P	**Pn**	**15 08 03.0**	**+0.8**
OCAC				*e*S	**Sn**	**15 08 15.6**	**0.0**
OCAC				*i*		15 08 18.0	
	comp=Z,167nm,0.2s						
GRMC	**Gramalote, San**	**1.18**	**152**	*e*P	**Pn**	**15 08 07.3**	**-0.6**
GRMC				*e*S	**Sn**	**15 08 24.1**	**-1.8**
GRMC				*i*		15 08 24.8	
	comp=Z,352nm,0.2s						
CBRI	**Barrientos, No**	**1.19**	**152**	*e*P	**Pn**	**15 08 09.2**	**+1.2**
CBRI				*e*S	**Sn**	**15 08 26.2**	**+0.1**
CBRI				*i*		15 08 30.2	
	comp=Z,192nm,0.4s						
CAPV	**Capacho**	**1.37**	**131**⇑	*e*P	**Pn**	**15 08 11.2**	**+1.1**
CAPV				*e*S	**Sn**	**15 08 29.1**	**-0.7**
PAMC	**Pamplona, Colo**	**1.56**	**155**	*e*S	**Sn**	**15 08 34.5**	**+0.3**
BRRC	**Barranca, Sant**	**1.69**	**192**⇓	*i*P	**Pn**	**15 08 14.0**	**+0.4**
BRRC				*e*S	**Sn**	**15 08 35.2**	**-0.9**
BRRC				*i*		15 08 39.9	
	comp=Z,69nm,0.2s						
VIRV	**Villa del Rosa**	**1.96**	**29**	*e*P	**Pn**	**15 08 17.7**	**+0.7**
VIRV				*e*S	**Sn**	**15 08 41.4**	**-0.8**
VIGV	**El Vigia**	**1.98**	**88**	*e*P	**Pn**	**15 08 17.9**	**+0.7**
VIGV				*e*S	**Sn**	**15 08 39.9**	**-2.5**
BARC	**Barichara**	**2.17**	**175**	*e*P	**Pn**	**15 08 20.0**	**+0.1**
BARC				*e*S	**Sn**	**15 08 46.4**	**-0.8**
BARC				*i*		15 08 49.0	

MEX 27 15:06:33.1±0.4, **14.03N×92.13W, h89**km±37km, **MD3.8, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.24**	**360**	*e*P	**Pn**	**15 07 07.7**	**-1.0**

	comp=Z,109nm,0.3s						
SOCV	**Socops**	**2.52**	**101**	*e*P	**Pn**	**15 08 25.1**	**+0.9**
SOCV				*e*S	**Sn**	**15 08 53.9**	**-1.0**
SDV	**Santo Domingo**	**2.70**	**87**	*e*P	**Pn**	**15 08 28.0**	**+1.4**
RUSC	**La Rusia**	**2.87**	**174**	*e*P	**Pn**	**15 08 30.1**	**+0.9**
RUSC				*e*S	**Sn**	**15 09 03.9**	**+0.2**
RUSC				*i*		15 09 09.7	
	comp=Z,15nm,0.2s						
DBBC	**Dabeiba**	**3.31**	**239**	*e*P	**Pn**	**15 08 34.6**	**0.0**
CURV	**Curarigua**	**3.58**	**69**	*e*P	**Pn**	**15 08 38.7**	**+0.6**
SANV	**Sanarito**	**3.85**	**79**	*e*P	**Pn**	**15 08 42.5**	**+0.8**
MONV	**Montecano**	**4.60**	**46**	*e*P	**Pn**	**15 08 52.6**	**+0.9**
MAPV	**Macapo**	**4.95**	**77**	*e*P	**Pn**	**15 08 56.9**	**+0.4**
BAUV	**El Baul**	**5.26**	**88**	*e*P	**Pn**	**15 09 00.7**	**+0.1**

NSSC ***27*** *15:09:03.1±1.5, 33.91N×35.66E, h34km±6km, ML1.7*
CSEM ***27*** *15:09:05.9, 33.88N×35.82E, h1km, ML2.8*
GRAL ***27*** *15:09:05.9±0.2, 33.88N×35.82E, h1km±1km, MD2.8*
ISC 27 15:09:04.7±1.0, **33.87N**±0.03×**35.85E**±0.03, **h18**km±3km, **n12**, σ0**61**/22, **Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.16**	**282**	*e*P	**Pb**	**15 09 09.2**	**+0.3**
BHL				*e*S	**Sb**	**15 09 11.6**	**0.0**
BHL	**Bhannes**	**0.16**	**282**	*e*P	**Pb**	**15 09 09.2**	**+0.3**
BHL				*e*S	**Sb**	**15 09 11.6**	**0.0**
DQRL	**Deir Qamar**	**0.28**	**235**	*e*P	**Pg**	**15 09 11.2**	**+0.2**
DQRL				*e*S	**Sg**	**15 09 15.1**	**-0.2**
DQRL	**Deir Qamar**	**0.28**	**235**	*e*P	**Pg**	**15 09 11.2**	**+0.2**
DQRL				*e*S	**Sg**	**15 09 15.1**	**-0.2**
RCY	**Rachaya**	**0.37**	**181**	*e*P	**Pg**	**15 09 13.0**	**+0.4**
RCY				*e*S	**Sg**	**15 09 18.3**	**+0.4**
HWQ	**Hawqa**	**0.42**	**12**	*e*P	**Pg**	**15 09 13.6**	**+0.3**
HWQ				*e*S	**Sg**	**15 09 19.3**	**+0.1**
HWQ	**Hawqa**	**0.42**	**12**	*e*P	**Pg**	**15 09 13.6**	**+0.3**
HWQ				*e*S	**Sg**	**15 09 19.3**	**+0.1**
BRBR	**Barbar**	**0.47**	**169**	*e*P	**Pb**	**15 09 14.9**	**+0.4**
BRBR				*e*S	**Sb**	**15 09 22.4**	**+1.3**
BRBR				AML	AML	15 09 23.9	
	comp=N,93nm,0.4s						
BRBR				AML	AML	15 09 31.4	
	comp=E,43nm,0.6s						
MARH	**Ras Al Marh**	**0.55**	**73**	*e*P	**Pn**	**15 09 17.8**	**-0.2**
MARH				*e*S	**Sn**	**15 09 26.2**	**-0.7**
MARH				AML	AML	15 09 28.3	
	comp=N,57nm,0.3s						
MARH				AML	AML	15 09 31.7	
	comp=E,76nm,0.4s						
ROOS	**tl_alroos**	**1.24**	**76**	AML	AML	15 10 01.1	
	comp=E,24nm,0.6s						
ROOS				AML	AML	15 10 03.3	
	comp=N,24nm,0.6s						
SALA	**Sala**	**1.37**	**147**	*e*P	**Pn**	**15 09 28.0**	**-1.1**
SALA				*e*S	**Sn**	**15 09 46.2**	**-0.7**
SALA				AML	AML	15 09 52.3	
	comp=E,1.6nm,0.6s						
SALA				AML	AML	15 09 54.7	
	comp=N,38nm,0.5s						
ZALF	**Zalf**	**1.56**	**127**	*e*P	**Pn**	**15 09 30.4**	**-1.3**
ZALF				*e*S	**Sn**	**15 09 51.8**	**+0.4**
ZALF				AML	AML	15 10 04.8	
	comp=N,8.1nm,0.4s						
ZALF				AML	AML	15 10 05.3	
	comp=E,9.3nm,0.4s						

ISCJB ***27*** *15:14:26.0±0.8, 24.84N±0.04×122.16E±0.03, h110km±6km, Error ellipse: s-maj=7.6km s-min=3.5km az=163.9*
JMA ***27*** *15:14:25.5±0.2, 24.85N×122.11E, h111km±3km, M2.4*
TAP ***27*** *15:14:25.5, 24.85N×122.14E, h115km, ML3.3, C*
ISC 27 15:14:26.5±1.8, **24.84N**±0.07×**122.16E**±0.03, **h108**km±10km, **n36**, σ0**73**/65, **1C-1D, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.23**	**317**	*e*P	**Pn**	**15 14 41.5**	**-0.2**
	baz=315						
TWC	**Suao**	**0.36**	**231**	P	**Pn**	**15 14 42.2**	**-0.1**
	baz=225						
TWC				*e*S	**Sn**	**15 14 54.2**	**0.0**
	baz=225						
NWF	**Wu-fen Shan**	**0.41**	**304**	P	**Pn**	**15 14 42.6**	**-0.1**
	baz=298						
NWF				*e*S	**Sn**	**15 14 54.8**	**0.0**
	baz=298						
**TW

CHN5	**Tsauling**	**1.83**	**228**	*eP*	**Pn**	15 14 57.3	-0.1
	baz=230						
CHN5				*eS*	**Sn**	15 15 21.3	+0.4
	baz=230						
JIJ	**Ishigaki jima**	**1.86**	**104**	P	**Pn**	15 14 57.3	-0.4
JIJ				S	**Sn**	15 15 21.2	-0.3
ELDTW	**Lidau**	**1.95**	**213**	*eP*	**Pn**	15 14 58.1	-0.7
	baz=200						
ELDTW				*eS*	**Sn**	15 15 23.4	-0.1
	baz=200						
JISG	**Ishigakijimahi**	**1.97**	**97**	P	**Pn**	15 14 58.9	-0.1
JISG				*eS*	**Sn**	15 15 23.3	-0.5
CHN4	**Tsaushan**	**2.06**	**224**	*eP*	**Pn**	15 15 01.2	+1.0
	baz=227						
CHN4				*eS*	**Sn**	15 15 27.0	+1.1
	baz=227						
STYT	**Tauyuan**	**2.10**	**218**	*eS*	**Sn**	15 15 29.9	+2.8
	baz=205						
WTP	**Ta-pu**	**2.12**	**222**	*eP*	**Pn**	15 15 01.2	+0.2
	baz=232						
WTP				*eS*	**Sn**	15 15 27.9	+0.4
	baz=232						
TWK	**Hsinying**	**2.19**	**225**	*eS*	**Sn**	15 15 28.6	-0.3
	baz=227						
CHN1	**Nanshi**	**2.22**	**223**	*eP*	**Pn**	15 15 03.0	+0.7
	baz=225						
CHN1				*eS*	**Sn**	15 15 29.6	0.0
	baz=225						
TWG	**Pinlang**	**2.24**	**207**	*eS*	**Sn**	15 15 27.6	-2.5
	baz=193						
JTJ	**Tarama**	**2.32**	**94**	*eS*	**Sn**	15 15 32.7	+0.9

*IDC **27** 15:16:28.4±1.5, 3.°66N×90.°52E, h0km, mb3.6/5, mb1 3.7/7, mb1mx3.5/39, mbtmp3.6/7, ML3.8/2, Error ellipse: s-maj=47.7km s-min=21.9km az=56.0*
*ISCJB **27** 15:16:30.8±1.0, 3.°7N±0.°1×90.°4E±0.°1, h33km, mb3.6/5, Error ellipse: s-maj=21.8km s-min=15.5km az=33.6*
ISC 27 15:16:33.1±1.2, 3.°7N±0.°2×90.°5E±0.°1, h35km, n14, σ0.98/8, mb3.6/5, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALK	**Pallekele**	**10.37**	**291**	Pn	**Pn**	**15 18 59.2**	**-0.3**
	0.7nm,0.3s,baz=119,slow=13,SNR=4.8						
PALK				Sn	Sn	15 20 43.7	-11
	2.0nm,0.3s,baz=116,slow=3.5,SNR=4.4						
CMAR	**Chiang Mai Arr**	**16.87**	**29**	Pn	**Pn**	**15 20 25.9**	**-0.8**
	0.1nm,0.3s,baz=225,slow=14,SNR=3.2						
H08S3	**Diego Garcia H**	**21.17**	**238**	T	T	15 43 01.3	
	baz=58,slow=75,SNR=125						
H08S2	**Diego Garcia H**	**21.17**	**238**	T	T	15 43 02.7	
	baz=58,slow=75,SNR=135						
H08S1	**Diego Garcia H**	**21.19**	**238**	T	T	15 43 05.7	
	baz=58,slow=75,SNR=110						
MKAR	**Makanchi Array**	**43.55**	**352**	P	**P**	**15 24 35.2**	**+1.7**
	0.2nm,0.5s,baz=175,slow=6.5,SNR=2.8						
H01W3	**Cape Leeuwin H**	**44.33**	**152**	T	T	16 11 53.9	
	baz=326,slow=75,SNR=20						
H01W2	**Cape Leeuwin H**	**44.34**	**152**	T	T	16 11 55.5	
	baz=326,slow=75,SNR=16						
H01W1	**Cape Leeuwin H**	**44.34**	**152**	T	T	16 11 55.1	
	baz=326,slow=75,SNR=17						
SONM	**Songino Array**	**46.09**	**15**	P	**P**	**15 24 54.1**	**+0.3**
	1.2nm,0.5s,baz=194,slow=9.0,SNR=7.1						
WRA	**Warramunga Arr**	**49.05**	**120**	P	**P**	**15 25 17.1**	**0.0**
	0.4nm,0.6s,baz=297,slow=8.8,SNR=11						
ASAR	**Alice Springs**	**50.27**	**125**	P	**P**	**15 25 26.8**	**+0.4**
	0.3nm,0.5s,baz=295,slow=7.2,SNR=12						
ZALV	**Zalesovo Beam**	**50.34**	**356**	P	**P**	**15 25 26.0**	**-0.3**
	0.2nm,0.3s,baz=151,slow=3.3,SNR=2.1						
TXAR	**Lajitas Array**	**144.49**	**22**	PKP	**PKPdf**	**15 36 05.8**	**-0.9**
	0.2nm,0.7s,baz=48,slow=1.3,SNR=3.8						

JMA 27 15:37:52.4±0.1, 37.°72N×141.°97E, h19km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.88**	**326**	P	Pb	15 38 09.0	-0.1
JIO				S	Sb	15 38 20.2	-0.3
JFK	**Kawauchi**	**0.94**	**248**	P	Pb	15 38 09.9	-0.2
JMM	**Marumori**	**0.94**	**279**	P	Pb	15 38 09.7	-0.4
JMM				S	Sb	15 38 21.7	-0.6
ONAJ	**Iwakimizuishiy**	**1.12**	**237**	P	Pn	15 38 12.7	-0.4
ONAJ				S	Sb	15 38 27.4	0.0
JOU	**Okura**	**1.22**	**302**	P	Pb	15 38 14.8	0.0
JOU				S	Sn	15 38 30.3	-0.1
JFT	**Otama**	**1.31**	**262**	P	Pb	15 38 16.3	-0.1
JFT				*eS*	Sb	15 38 33.3	+0.4
JMK	**Ichinoseki**	**1.36**	**335**	P	Pn	15 38 16.8	+0.4
JMK				S	Sb	15 38 34.2	-0.2
OFUJ	**Ofunato**	**1.38**	**350**	P	Pn	15 38 16.0	-0.6
JYS	**Shirataka**	**1.59**	**289**	P	Pb	15 38 21.0	-0.1
JYS				S	Sb	15 38 40.5	-0.3
JYK	**Kaneyama**	**1.74**	**314**	P	Pn	15 38 22.3	+0.7
JFY	**Yanaizu**	**1.83**	**261**	P	Pb	15 38 24.1	-1.1
JOM	**Ohasama**	**1.83**	**343**	P	Pn	15 38 23.4	+0.6
MAT	**Matsushiro**	**3.23**	**250**	P	Pn	15 38 44.6	+2.5
MAT				S	Sn	15 39 19.3	-0.7

GUC 27 15:39:38.6±0.3, 23.°98S×67.°55W, h216km±5km, ML3.8, 4C-2D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.85**	**317**↑	*eP*	Pn	15 40 18.6	+1.2
LVC				*eS*	S	15 40 49.0	+1.6
PB06	**IPOC Station P**	**2.25**	**304**↓	*eP*	Pn	15 40 22.8	+1.7
PB06				*eS*	S	15 40 56.3	+2.3
PB06				IAML		15 40 58.5	
	comp=N,220nm,0.3s						
PB09	**IPOC Station P**	**2.68**	**324**↑	*eP*	Pn	15 40 27.5	+1.8
PB09				*eS*	S	15 41 04.8	+2.5
PB10	**IPOC Station P**	**2.79**	**279**↓	*eP*	Pn	15 40 28.4	+1.6
PB04	**IPOC Station P**	**2.90**	**304**↑	*eP*	Pn	15 40 30.1	+1.9
PB04				*eS*	S	15 41 09.2	+2.4
PB04				IAML		15 41 13.7	
	comp=E,196nm,0.2s						
PB07	**IPOC Station P**	**3.11**	**316**↑	*eP*	Pn	15 40 32.8	+2.1
PB01	**IPOC Station P**	**3.43**	**328**	*eP*	Pn	15 40 36.4	+2.1
PB01				*eS*	S	15 41 20.3	+2.6
PB08	**IPOC Station P**	**4.10**	**338**	*eP*	Pn	15 40 45.7	+3.0
PB08				*eS*	S	15 41 36.7	+3.8

*IDC **27** 15:40:46.7±1.4, 29.°74S×176.°28W, h0km, mb4.0/4, mb1 4.1/5, mb1mx3.8/28, mbtmp4.0/5, ML3.3/1, MS3.1/1, Ms1 3.3/1, ms1mx2.5/30, Error ellipse: s-maj=39.9km s-min=29.3km az=16.0*
*ISCJB **27** 15:40:52.2±1.5, 29.°98S±0.°07×176.°8W±0.°2, h24km, mb4.0/5, MS3.2/1, Error ellipse: s-maj=21.5km s-min=9.2km az=164.0*
*NEIC **27** 15:41:01.6±1.7, 29.°58S×176.°57W, h114km±11km, mb4.0/1, Error ellipse: s-maj=29.9km s-min=21.2km az=211.0*
ISC 27 15:40:52.6±1.4, 29.°84S±0.°09×176.°7W±0.°1, h24km, n14, σ1.27/16, mb4.1/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.22**	**298**	Pn	**Pb**	**15 41 15.5**	**+0.6**
	48nm,0.3s,baz=75,slow=20,SNR=3.5						
RAO				Sn	**Sn**	15 41 28.3	-1.5
	590nm,0.3s,baz=110,slow=7.0,SNR=19						
RAO				LR	LR	15 41 42.6	
	comp=Z,154nm,19.1s,baz=10.0,slow=37						
RAO	**Raoul Island**	**1.22**	**298**	*ePn*	Pb	15 41 25.5	+11
RAO				Sn	**Sn**	**15 41 28.4**	**-1.5**
URZ	**Urewera**	**9.85**	**210**	Pn	**Pn**	**15 43 11.1**	**-1.5**
	0.3nm,0.3s,baz=78,slow=20,SNR=5.3						
URZ				Sn	**Sn**	**15 45 02.3**	**0.0**
	0.8nm,0.3s,baz=103,slow=12,SNR=3.2						
URZ	**Urewera**	**9.85**	**210**	Pn	**Pn**	**15 43 11.9**	**-0.7**
URZ				Sn	**Sn**	**15 45 02.3**	**0.0**
CTA	**Charters Tower**	**34.84**	**278**	P	**P**	**15 47 43.9**	**+1.9**
	4.4nm,0.9s,baz=124,slow=11,SNR=2.8						
STKA	**Stephens Creek**	**35.71**	**256**	P	**P**	**15 47 50.9**	**+1.6**
	1.3nm,0.6s,baz=93,slow=12,SNR=5.9						
ASAR	**Alice Springs**	**44.28**	**266**	P	**P**	**15 49 01.0**	**+0.4**
	0.5nm,0.7s,baz=103,slow=7.6,SNR=12						
ASAR				PcP	**PP**	**15 50 43.9**	**0.0**
	0.2nm,0.7s,baz=116,slow=4.2,SNR=4.0						

WRAB	**Tennant Creek**	**45.21**	**271**	*eP*	**P**	**15 49 07.8**	**-0.2**
	2.0nm,0.7s						
WRA	**Warramunga Arr**	**45.22**	**271**	P	**P**	**15 49 07.2**	**-0.8**
	1.7nm,0.7s,baz=110,slow=8.0,SNR=21						
QSPA	**South Pole Qui**	**60.27**	**180**	*eP*	**P**	**15 50 59.5**	**+0.7**
CMAR	**Chiang Mai Arr**	**94.29**	**289**	LR	LR	16 39 59.9	
	comp=Z,8.6nm,18.1s,baz=305,slow=38						
FINES	**FINESS Array B**	**145.00**	**341**	PKPbc	PKPbc	16 00 23.1	-3.2
	0.5nm,0.5s,baz=29,slow=4.4,SNR=5.0						
AKASG	**Malin Array Be**	**151.52**	**324**	PKPbc	**PKPbc**	**16 00 41.9**	**-2.3**
	0.6nm,0.5s,baz=299,slow=31,SNR=4.0						
TORD	**Torodi Ar. Bea**	**163.32**	**175**	PKPab	**PKPab**	**16 01 43.4**	**-0.8**
	0.5nm,0.6s,baz=164,slow=5.1,SNR=3.0						

*DDA **27** 16:05:21.8, 39.°93N×28.°72E, h7km, Md2.6*
*ISK **27** 16:05:21.0, 39.°96N×28.°74E, h5km, MD2.7*
*CSEM **27** 16:05:21.9±0.1, 39.°94N×28.°72E, h5km, MD2.7, Error ellipse: s-maj=3.2km s-min=2.4km az=58.0*
*ISCJB **27** 16:05:22.3±0.5, 39.°96N±0.°04×28.°76E±0.°06, h10km, Error ellipse: s-maj=7.4km s-min=4.8km az=140.7*
ISC 27 16:05:22.2±0.9, 39.°94N±0.°03×28.°73E±0.°03, h10km, n26, σ0.29/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCTX	**Karacabey (Bur**	**0.43**	**319**	*ePG*	**Pg**	**16 05 30.5**	**-0.3**
KCTX	**Karacabey (Bur**	**0.43**	**319**	*ePg*	**Pg**	**16 05 30.5**	**-0.3**
ARMT	**Armutlu**	**0.63**	**9**	*ePG*	**Pg**	**16 05 34.0**	**-0.5**
ARMT	**Armutlu**	**0.63**	**9**	*ePg*	**Pg**	**16 05 34.0**	**-0.5**
IZI	**Iznik**	**0.69**	**55**	*ePG*	**Pg**	**16 05 35.6**	**0.0**
IZI	**Iznik**	**0.69**	**55**	*ePg*	**Pg**	**16 05 35.6**	**0.0**
TVSB	**Tavsanli**	**0.75**	**131**	*ePG*	**Pg**	**16 05 36.5**	**-0.1**
TVSB	**Tavsanli**	**0.75**	**131**	*ePg*	**Pg**	**16 05 36.5**	**-0.1**
CAVI	**Cavuskoy**	**0.89**	**73**	*ePG*	**Pg**	**16 05 39.0**	**-0.4**
CAVI	**Cavuskoy**	**0.89**	**73**	*ePg*	**Pg**	**16 05 39.0**	**-0.4**
DEMI	**Demirci**	**0.90**	**181**	*i* P	**Pg**	**16 05 39.2**	**-0.3**
DEMI	**Demirci**	**0.90**	**181**	P	**Pg**	**16 05 39.2**	**-0.3**
GDZ	**Gediz**	**1.03**	**146**	*i* P	**Pb**	**16 05 42.2**	**0.0**
GDZ				*i* S	**Sb**	**16 05 56.0**	**+0.2**
GDZ	**Gediz**	**1.03**	**146**	P	**Pb**	**16 05 42.2**	**0.0**
GDZ				S	**Sb**	**16 05 56.0**	**+0.2**
MRMT	**Marmara Adasi**	**1.09**	**308**	*ePN*	**Pb**	**16 05 43.3**	**0.0**
MRMT				*eSN*	**Sn**	**16 05 59.5**	**+0.6**
MRMT	**Marmara Adasi**	**1.09**	**308**	*ePn*	**Pb**	**16 05 43.3**	**0.0**
MRMT				*eSn*	**Sn**	**16 05 59.5**	**+0.6**
BORA	**Eskisehir**	**1.32**	**92**	*i* P	**Pn**	**16 05 46.8**	**-0.1**
BORA	**Eskisehir**	**1.32**	**92**	P	**Pn**	**16 05 46.8**	**-0.1**
KLYT	**Kilyos**	**1.33**	**10**	*ePN*	**Pb**	**16 05 47.3**	**0.0**
KLYT	**Kilyos**	**1.33**	**10**	*ePn*	**Pb**	**16 05 47.3**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.40**	**303**	*ePN*	**Pg**	**16 05 49.0**	**-0.2**
RKY	**Sarkoy-Tekirda**	**1.40**	**303**	*ePn*	**Pg**	**16 05 49.0**	**-0.2**
GULT	**Gulveren**	**1.45**	**70**	*ePN*	**Pb**	**16 05 49.5**	**+0.1**
GULT	**Gulveren**	**1.45**	**70**	*ePn*	**Pb**	**16 05 49.5**	**+0.1**
MANT	**Manisa**	**1.45**	**185**	*i* P	**Pn**	**16 05 48.5**	**-0.3**
MANT	**Manisa**	**1.45**	**185**	P	**Pn**	**16 05 48.5**	**-0.3**

*IDC **27** 16:05:27.6±0.9, 31.°95N×89.°81E, h0km, mb3.5/11, mb1 3.7/13, mb1mx3.6/49, mbtmp3.5/13, ML3.7/2, MS3.1/8, Ms1 3.2/8, ms1mx2.9/33, Error ellipse: s-maj=28.6km s-min=16.7km az=52.0*
*BJI **27** 16:05:29.0, 32.°03N×89.°86E, h6km, mb3.9/1*
*ISCJB **27** 16:05:31.0±0.4, 32.°22N±0.°05×90.°09E±0.°07, h33km, mb3.5/9, MS3.1/5, Error ellipse: s-maj=9.3km s-min=6.0km az=37.6*
*DMN **27** 16:05:44.5±8.0, 31.°96N×88.°28E, h10km, Mb4.7/4, Error ellipse: s-maj=201.4km s-min=13.7km az=38.0*
ISC 27 16:05:33.3±0.6, 32.°32N±0.°06×89.°96E±0.°07, h35km, n29, σ2.01/25, mb3.6/9, MS3.0/5, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**2.80**	**158**	Pg	**Pn**	**16 06 15.8**	**-0.2**
LSA				Sg	**Sn**	**16 06 53.5**	**+4.7**
GUN	**Gumba**	**5.63**	**220**	*eP*	**Pn**	**16 06 55.5**	**+0.6**
	21nm,0.3s						
JIRN	**Jiri**	**5.67**	**216**	*eP*	**Pn**	**16 06 57.2**	**+1.8**
	168nm,0.4s						
KKN	**Kakani**	**6.06**	**223**	*eP*	**Pn**	**16 07 00.3**	**-0.3**
	15nm,0.5s						
PKIN	**Phulchoki**	**6.16**	**221**	*eP*	**Pn**	**16 07 02.0**	**0.0**
	20nm,0.6s						
GKN	**Gorkha**	**6.30**	**228**	*eP*	**Pn**	**16 07 02.6**	**-1.2**
	16nm,0.4s						
KOLN	**Koldanda**	**7.13**	**232**	*eP*	**Pn**	**16 07 13.6**	**-1.7**
	8.5nm,0.4s						
PYUN	**Piuthan**	**7.35**	**237**	*eP*	**Pn**	**16 07 15.5**	**-2.8**
	12nm,0.5s						
GTA	**Gaotai**	**10.68**	**46**	*eP*	**Pn**	**16 08 01.3**	**-2.5**
GTA				pP		16 08 04.5	
GTA				sP		16 08 07.5	
GTA				S	**Sn**	**16 10 02.3**	**+0.2**
GTA				SS	**SnSn**	**16 10 15.5**	**+1.4**
GTA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
GTA				pmax	pmax		
	comp=Z,58nm,4.3s						
GTA				LR	LR		
	comp=N,270nm,14.3s						
GTA				LR	LR		
	comp=E,250nm,14.7s						
GTA				LR	LR		
	comp=Z,140nm,12.8s						
WMQ	**Urumqi**	**11.62**	**352**	*eP*	Pn	16 08 05.0	-12
CD2	**Chengdu**	**11.85**	**93**	*eP*	**Pn**	**16 08 18.3**	**-1.5**
MKAR	**Makanchi Array**	**15.61**	**340**	Pn	**Pn**	**16 09 10.3**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=139,slow=13,SNR=2.1						
CMAR	**Chiang Mai Arr**	**16.00**	**147**	Pn	**Pn**	**16 09 11.7**	**-4.0**
	comp=Z,0.3nm,0.3s,baz=52,slow=31,SNR=5.4						
CMAR				LR	LR	16 15 33.3	
	comp=Z,36nm,20.7s,baz=270,slow=38						
AAK	**Ala-Archa**	**16.00**	**314**	LR	LR	16 16 39.9	
	comp=Z,33nm,19.3s,baz=279,slow=42						
SONM	**Songino Array**	**19.90**	**34**	P	**Pn**	**16 10 05.1**	**+1.5**
	comp=Z,0.8nm,0.7s,baz=224,slow=12,SNR=3.7						
SONM				LR	LR	16 18 40.8	
	comp=Z,72nm,19.2s,baz=237,slow=39						
KURBB	**Kurchatov Arra**	**20.15**	**339**	P	Pn	16 10 07.4	+1.1
	comp=Z,2.1nm,1.0s,baz=145,slow=12,SNR=12						
TLY	**Talaya**	**21.79**	**23**	LR	LR	16 20 04.4	
	comp=Z,52nm,21.5s,baz=206,slow=40						
ZALV	**Zalesovo Beam**	**21.93**	**352**	P	**P**	**16 10 25.0**	**+1.5**
	comp=Z,0.3nm,0.4s,baz=186,slow=13,SNR=3.3						
ZALV				LR	LR	16 19 51.4	
	comp=Z,66nm,19.6s,baz=252,slow=39						
BVAR	**Borovoye Array**	**25.05**	**331**	P	**P**	**16 10 56.7**	**+2.6**
	comp=Z,0.4nm,0.5s,baz=151,slow=13,SNR=3.4						
GEYT	**Alibeck**	**26.56**	**291**	LR	LR	16 24 15.1	
	comp=Z,30nm,21.0s,baz=75,slow=42						
PSI	**Prnpat**	**30.55**	**162**	LR	LR	16 27 09.5	
	comp=Z,95nm,18.2s,slow=43						
KSRS	**Korea Array**	**31.42**	**70**	P	**P**	**16 11 52.0**	**+0.9**
	comp=Z,1.0nm,0.8s,baz=275,slow=10.0,SNR=3.5						
NRIK	**Noril'sk**	**37.10**	**359**	LR	LR	16 29 05.4	
	comp=Z,58nm,21.0s,baz=128,slow=38						
FINES	**FINESS Array B**	**49.78**	**326**	P	**P**	**16 14 22.6**	**+0.5**
	comp=Z,0.7nm,0.8s,baz=41,slow=13,SNR=2.5						
GERES	**GERESS Array B**	**57.84**	**311**	P	**P**	**16 15 23.4**	**+2.1**
	comp=Z,0.4nm,0.5s,baz=72,slow=4.3,SNR=4.8						
WRA	**Warramunga Arr**	**67.11**	**134**	P	**P**	**16 16 22.5**	**-1.0**
	comp=Z,0.2nm,0.4s,baz=326,slow=6.6,SNR=6.2						
ASAR	**Alice Springs**	**69.72**	**137**	P	**P**	**16 16 38.9**	**-0.9**
	comp=Z,1.2nm,1.1s,baz=334,slow=6.5,SNR=6.0						
ILAR	**Eielson Array**	**73.61**	**22**	P	**P**	**16 17 04.0**	**+1.4**
	comp=Z,0.5nm,0.9s,baz=300,slow=5.2,SNR=4.5						
TORD	**Torodi Ar. Bea**	**81.65**	**280**	P	**P**	**16 17 46.4**	**-1.9**
	comp=Z,0.3nm,0.7s,baz=46,slow=4.2,SNR=2.6						

*ISCJB **27** 16:14:35.1±1.0, 13.°21N±0.°07×90.°59W±0.°05, h38km, Error ellipse: s-maj=11.5km s-min=5.6km az=30.4*
*CASC **27** 16:14:36.3±0.8, 13.°33N×90.°47W, h20km±5km, ML3.8*
*MEX **27** 16:14:41.6±0.4, 13.°14N×91.°33W, h50km±57km, MD4.0*
ISC 27 16:14:37.4±1.8, 13.°4N±0.°1×90.°52W±0.°07, h38km, n26, σ1.03/33, 1D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUS1	**Cusmapa**	**0.79**	**45**	*eP*	**Pn**	**16 14 50.7**	**-1.4**
IXG	**Ixpaco**	**0.82**	**5**	*eP*	**Pn**	**16 14 51.5**	**-1.1**
MONT	**Ecomontaæa**	**0.99**	**59**↓	*iP*	**Pn**	**16 14 54.5**	**-0.5**
SBLS	**San Blas**	**1.00**	**61**	*i* P	**Pn**	**16 14 54.4**	**-0.7**
RTR	**El Retiro**	**1.01**	**58**	*eP*	**Pn**	**16 14 54.6**	**-0.6**
SNJE	**San Jose**	**1.03**	**60**	*eP*	**Pn**	**16 14 54.7**	**-0.8**
RBDL	**Robledal**	**1.11**	**47**	*i* P	**Pn**	**16 14 56.1**	**-0.5**
COLS	**Colinas**	**1.23**	**75**	*eP*	**Pn**	**16 14 57.7**	**-0.5**
COLS				*eS*	**Sn**	**16 15 14.1**	**+0.4**
BOQS	**Boqueron**	**1.27**	**72**	*i* P	**Pn**	**16 14 58.4**	**-0.4**
BOQS				*eS*	**Sn**	**16 15 15.2**	**+0.5**
SNET	**Serv Nac Est T**	**1.30**	**75**	*i* P	**Pn**	**16 14 58.7**	**-0.4**
SNET				AML	AML	16 14 59.5	
	comp=Z,7μm,0.2s						
SNET				*eS*	**Sn**	**16 15 15.5**	**+0.2**
LFU	**La Fuente**	**1.43**	**74**	*eP*	**Pn**	**16 15 00.7**	**-0.2**
LFRS	**El Faro**	**1.45**	**79**	*eP*	**Pn**	**16 15 00.1**	**-1.0**
LBRS	**Las Brisas**	**1.49**	**75**	*eP*	**Pn**	**16 15 01.6**	**-0.1**
SNVI	**San Vicente**	**1.66**	**81**	*eP*	**Pn**	**16 15 04.1**	**0.0**
SNVI				*eS*	**Sn**	**16 15 26.9**	**+2.6**
MRL	**Marmol**	**1.88**	**25**	*eP*	**Pn**	**16 15 07.4**	**+0.2**
LCY	**Lacayo**	**2.17**	**88**	*eP*	**Pn**	**16 15 11.1**	**0.0**
VSM	**San Miguel**	**2.19**	**88**	*eP*	**Pn**	**16 15 11.7**	**+0.2**
CAHU	**Cacacuatique**	**2.29**	**79**	*eP*	**Pn**	**16 15 12.2**	**-0.6**
CNCH	**Conchagua**	**2.62**	**91**	*eP*	**Pn**	**16 15 17.0**	**-0.3**
CCIG	**Comitan**	**3.30**	**332**	*eP*	**Pn**	**16 15 28.3**	**+1.5**
CCIG				*eS*	**Sn**	**16 16 06.2**	**+1.3**
CNGN	**Cerro Negro**	**3.82**	**102**	*eP*	**Pn**	**16 15 33.5**	**-0.3**
CNGN				AML	AML	16 16 19.8	
	comp=N,84nm,0.3s						
MOMN	**Momotombo**	**4.00**	**103**	*eP*	**Pn**	**16 15 35.7**	**-0.4**
COPN	**Copaltepe**	**4.01**	**106**	*eP*	**Pn**	**16 15 35.6**	**-0.7**
COPN				*eP*	**Pn**	**16 15 35.8**	**-0.5**
TGIG		**4.23**	**324**	*eP*	**Pn**	**16 15 40.5**	**+1.1**
TGIG				*eS*	**Sn**	**16 16 24.5**	**-3.1**
BOAB	**BOACO BROADBAN**	**4.82**	**100**	*eP*	**Pn**	**16 15 46.5**	**-0.9**
ACON	**Acoyapa**	**5.40**	**104**	*eP*	**Pn**	**16 15 54.8**	**-0.6**

*ISCJB **27** 16:24:17.9±0.6, 20.°05S±0.°04×69.°16W±0.°10, h115km±6km, mb3.6/2, Error ellipse: s-maj=15.6km s-min=6.8km az=172.3*
*GUC **27** 16:24:18.8±0.3, 20.°04S×69.°11W, h98km±1km, ML3.7*
*IDC **27** 16:24:19.6±1.6, 20.°06S×68.°81W, h123km±16km, mb3.5/3, mb1 3.7/7, mb1mx3.4/27, mbtmp3.9/7, Error ellipse: s-maj=34.6km s-min=14.6km az=103.0*
ISC 27 16:24:17.9±0.8, 20.°03S±0.°05×69.°08W±0.°09, h103km±8km, n14, σ1.64/22, 4C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.13**	**213**↑	*eP*	**Pn**	**16 24 33.5**	**+0.6**
PB08				*eS*	**Sn**	**16 24 44.6**	**+0.6**
PB08				IAML		16 24 45.6	
	comp=N,8μm,0.2s						
PB11	**IPOC Station P**	**0.61**	**296**	*eP*	**Pn**	**16 24 35.5**	**+0.5**
PB11				*eS*	**Sn**	**16 24 48.2**	**+0.4**
HMBC	**Humberstone**	**0.80**	**252**↑	*eP*	**Pn**	**16 24 37.0**	**+0.3**
HMBC				*eS*	**Sn**	**16 24 51.2**	**+0.3**
HMBC				IAML		16 24 58.3	
	comp=N,3μm,0.4s						
MNMC	**Minye Minye**	**1.02**	**331**↓	*eP*	**Pn**	**16 24 39.9**	**+0.8**
MNMC				*eS*	**Sn**	**16 24 55.6**	**+0.6**
PSGC	**Pisagua**	**1.07**	**293**↑	*eP*	**Pn**	**16 24 40.1**	**+0.6**
PSGC				*eS*	**Sn**	**16 24 56.3**	**+0.5**
PSGC				IAML		16 24 58.1	
	comp=E,1μm,0.8s						
PB01	**IPOC Station P**	**1.08**	**201**↑	*eP*	**Pn**	**16 24 40.1**	**+0.6**
PB01				*eS*	**Sn**	**16 24 56.4**	**+0.5**
PB01				IAML		16 24 59.4	
	comp=N,3μm,0.3s						
PB13	**IPOC Station P**	**1.73**	**347**	*eP*	**Pn**	**16 24 49.9**	**+2.0**
PB13				*eS*	**Sn**	**16 25 13.4**	**+2.9**
LVC	**Limon Verde**	**2.57**	**177**	P	**Pn**	**16 25 01.0**	**+2.5**
	comp=N,1μm,0.3s,baz=2.8,slow=7.7,SNR=230						
LVC				S	**Sn**	**16 25 31.8**	**+2.3**
	comp=N,992nm,0.3s,baz=330,slow=6.1,SNR=8.0						
LPAZ	**La Paz**	**3.83**	**14**	P	**Pn**	**16 25 18.3**	**+2.8**
	comp=N,9.1nm,0.3s,baz=200,slow=8.0,SNR=123						
SIV	**San Ignacio**	**8.61**	**63**	P	**Pn**	**16 26 17.3**	**-2.5**
	comp=N,1.3nm,0.3s,baz=260,slow=12,SNR=13						
CPUP	**Villa Florida**	**12.49**	**122**	P	**Pn**	**16 27 10.4**	**-1.6**
	comp=N,0.2nm,0.3s,baz=304,slow=13,SNR=3.1						
PLCA	**Paso Flores**	**20.67**	**183**	P	**P**	**16 28 50.7**	**+1.1**
	comp=N,5.4nm,1.1s,baz=23,slow=8.8,SNR=3.1						
TORD	**Torodi Ar. Bea**	**77.02**	**71**	P	**P**	**16 35 58.6**	**-1.4**
	comp=N,0.3nm,0.3s,

	baz=321							
TWS1				*e*S		**Sn**	**16 53 17.1**	**-0.1**
	baz=321							
TWY	**Chenhua**	**0.56**	**343**	P		**Pn**	**16 53 07.6**	**-0.1**
	baz=348							
NCU	**National Centr**	**0.59**	**294**	*e*S		**Sn**	**16 53 18.6**	**-0.2**
	baz=293							
TWD	**Chiawan**	**0.67**	**195**	*e*P		**Pn**	**16 53 07.6**	**-1.2**
	baz=189							
TWD				*e*S		**Sn**	**16 53 19.1**	**-1.1**
	baz=189							
NSTT	**Nanjuang**	**0.72**	**262**	*i* P		**Pn**	**16 53 08.8**	**-0.5**
	baz=258							
NSTT				S		**Sn**	**16 53 20.1**	**-1.0**
	baz=258							
TWT	**Tachien**	**0.73**	**229**	P		**Pn**	**16 53 10.0**	**+0.4**
	baz=225							
TWT				*e*S		**Sn**	**16 53 21.9**	**+0.3**
	baz=225							
HSN	**Hsinchu**	**0.74**	**275**	*e*S		**Sn**	**16 53 20.4**	**-1.1**
	baz=276							
WHF	**Hehuan Shan**	**0.75**	**219**	*i* P		**Pn**	**16 53 09.9**	**-0.2**
	baz=213							
WHF				*e*S		**Sn**	**16 53 21.5**	**-1.0**
	baz=213							
ESL	**Shilin**	**0.97**	**199**	*e*P		**Pn**	**16 53 10.3**	**-1.8**
	baz=195							
NSY	**Sanyi**	**0.98**	**251**	P		**Pn**	**16 53 12.3**	**0.0**
	baz=248							
NSY				*e*S		**Sn**	**16 53 26.2**	**-0.2**
	baz=248							
TWQ1	**Liyutan**	**1.00**	**248**	P		**Pn**	**16 53 12.3**	**-0.2**
	baz=244							
TWQ1				*e*S		**Sn**	**16 53 26.0**	**-0.7**
	baz=244							
JYNG	**Yonagunijimaku**	**1.09**	**105**	P		**Pn**	**16 53 12.9**	**-0.7**
JYNG				S		**Sn**	**16 53 28.2**	**-0.5**
YOJ	**Yonaguni jima**	**1.15**	**103**	P		**Pn**	**16 53 13.7**	**-0.6**
TCU	**Taichung**	**1.17**	**240**	*e*P		**Pn**	**16 53 14.5**	**0.0**
	baz=237							
SMLT	**Sun Moon Lake**	**1.17**	**224**	P		**Pn**	**16 53 14.8**	**+0.1**
	baz=220							
SMLT				*e*S		**Sn**	**16 53 31.4**	**+0.8**
	baz=220							
TYC	**Yuchr**	**1.18**	**226**	P		**Pn**	**16 53 14.7**	**0.0**
	baz=222							
TYC				*e*S		**Sn**	**16 53 30.8**	**+0.1**
	baz=222							
EHY	**Hungye**	**1.29**	**199**	*e*P		**Pn**	**16 53 14.7**	**-1.4**
	baz=196							
WNT	**Mingjian**	**1.32**	**230**	*e*P		**Pn**	**16 53 16.4**	**0.0**
	baz=226							
WNT				*e*S		**Sn**	**16 53 33.6**	**0.0**
	baz=226							
TWF1	**Yuli**	**1.45**	**198**	*e*P		**Pn**	**16 53 17.2**	**-0.9**
	baz=195							
YUS	**Yu-Shan**	**1.45**	**212**	*e*P		**Pn**	**16 53 19.6**	**+1.0**
	baz=208							
YUS				*e*S		**Sn**	**16 53 38.5**	**+0.9**
	baz=208							
ALS	**Alishan**	**1.51**	**216**	P		**Pn**	**16 53 19.5**	**+0.3**
	baz=213							
ALS				*e*S		**Sn**	**16 53 39.7**	**+1.1**
	baz=213							
CHN5	**Tsauling**	**1.52**	**222**	P		**Pn**	**16 53 19.1**	**+0.1**
	baz=219							
CHN5				*e*S		**Sn**	**16 53 39.2**	**+0.8**
	baz=219							
WGK	**Gukeng**	**1.53**	**227**	P		**Pn**	**16 53 19.2**	**+0.1**
	baz=224							
WGK				*e*S		**Sn**	**16 53 38.9**	**+0.4**
	baz=224							
WTCT	**Ta-ch'eng**	**1.62**	**238**	*e*P		**Pn**	**16 53 20.2**	**-0.2**
	baz=235							
WTCT				*e*S		**Sn**	**16 53 40.0**	**-0.7**
	baz=235							
CHKT	**Chengkung**	**1.67**	**193**	*e*P		**Pn**	**16 53 20.4**	**-0.6**
	baz=191							
ELDTW	**Lidau**	**1.69**	**205**	P		**Pn**	**16 53 21.3**	**-0.1**
	baz=202							
CHN4	**Tsaushan**	**1.75**	**219**	P		**Pn**	**16 53 22.2**	**+0.1**
	baz=216							
CHN4				*e*S		**Sn**	**16 53 45.5**	**+1.6**
	baz=216							
WSF	**Szhu**	**1.80**	**233**	*e*S		**Sn**	**16 53 44.4**	**-0.4**
	baz=230							
IRIF	**Iriomote-Funau**	**1.82**	**102**	P		**Pn**	**16 53 22.2**	**-0.7**
IRIF				*e*S		**Sn**	**16 53 44.5**	**-0.8**
STYT	**Tauyuan**	**1.82**	**211**	P		**Pn**	**16 53 23.7**	**+0.6**
	baz=208							
STYT				*e*S		**Sn**	**16 53 46.0**	**+0.4**
	baz=208							
WTP	**Ta-pu**	**1.83**	**216**	P		**Pn**	**16 53 23.1**	**0.0**
	baz=213							
TWK	**Hsinying**	**1.88**	**219**	*e*P		**Pn**	**16 53 24.0**	**+0.1**
	baz=216							
TWK				*e*S		**Sn**	**16 53 47.0**	**+0.1**
	baz=216							
CHN1	**Nanshi**	**1.92**	**217**	P		**Pn**	**16 53 24.6**	**+0.2**
	baz=214							
CHN1				*e*S		**Sn**	**16 53 48.6**	**+0.7**
	baz=214							
SGST	**Jiashian**	**1.98**	**214**	*e*P		**Pn**	**16 53 26.1**	**+1.1**
	baz=211							
TWG	**Pinlang**	**2.01**	**199**	*e*P		**Pn**	**16 53 26.0**	**+0.4**
	baz=197							
JKRS	**Kuro-shima**	**2.09**	**103**	P		**Pn**	**16 53 26.6**	**+0.1**
JKRS				*e*S		**Sn**	**16 53 51.3**	**-0.4**
JIJ	**Ishigaki jima**	**2.18**	**99**	P		**Pn**	**16 53 27.3**	**-0.4**
ECL	**Taimali**	**2.26**	**200**	*e*P		**Pn**	**16 53 28.9**	**+0.1**
	baz=198							
JISG	**Ishigakijimahi**	**2.30**	**93**	P		**Pn**	**16 53 29.3**	**-0.1**
JISG				*e*S		**Sn**	**16 53 57.1**	**+0.2**
JTJ	**Tarama**	**2.66**	**91**	P		**Pn**	**16 53 34.6**	**+0.5**
JTJ				*e*S		**Sn**	**16 54 06.0**	**+0.6**

MEX 27 17:06:47.5±0.5, 15°51N×93°52W, h12km±8km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.54**	**60**	*e*P	Pn	17 07 11.2	-3.6
CCIG				*i* S	Sn	17 07 29.7	-5.1
HUIG	**Huatulco**	**2.51**	**276**	*i* P	Pn	17 07 25.8	-2.3
HUIG				*i* S	Sn	17 07 54.0	-4.6

GUC 27 17:16:06.1±0.3, 36°15S×71°17W, h140km±2km, ML3.8, Central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TALC	**Talca**	**0.84**	**333**	*e*P	Pn	17 16 28.7	+0.1
TALC				*e*S	Sn	17 16 46.0	+0.4
NICH	**Los Niches**	**1.14**	**357**	*e*P	Pn	17 16 31.5	+0.2
NICH				*e*S	Sn	17 16 50.9	+0.5
CHPI	**Pichilemu**	**1.88**	**338**	*e*P	Pn	17 16 39.5	+0.3
CHPI				*e*S	Sn	17 17 04.9	+0.3
CLCH	**Cerro Calan**	**2.79**	**11**	*e*P	Pn	17 16 51.2	+0.6
CLCH				*e*S	Sn	17 17 25.1	+0.3
CLCH				IAML		17 17 29.3	
	comp=N,220nm,0.5s						
PEL	**Peldehue**	**3.02**	**8**	*e*P	Pn	17 16 53.9	+0.4
PEL				*e*S	Sn	17 17 30.2	+0.3
PEL				IAML		17 17 37.0	
	comp=E,163nm,0.7s						
ROCH	**El Roble**	**3.17**	**2**	*e*P	Pn	17 16 56.2	+0.7
ROCH				*e*S	Sn	17 17 34.3	+0.7

*ISCJB **27** 17:19:41.0±0.6, 39°.11N±0°.05×29°.14E±0°.06, h14km±6km, Error ellipse: s-maj=10.5km s-min=6.2km az=137.4*
*CSEM **27** 17:19:40.9±0.2, 39°.10N×29°.15E, h12km, MD2.6, Error ellipse: s-maj=6.5km s-min=4.0km az=122.0*
*ISK **27** 17:19:41.1, 39°.20N×29°.08E, h7km, MD2.6*
*DDA **27** 17:19:41.0, 39°.04N×29°.13E, h7km, Md2.6*

ISC 27 17:19:40.8±1.0, 39°.10N±0°.03×29°.14E±0°.03, h14km±9km, n24, σ0°53/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIMA	**Simav-Kutahya**	**0.12**	**263**	*e*PG	**Pb**	**17 19 45.3**	**+0.3**
SIMA	**Simav-Kutahya**	**0.12**	**263**	*e*Pg	**Pb**	**17 19 45.3**	**+0.3**
GDZ	**Gediz**	**0.27**	**92**	*i* P	**Pg**	**17 19 47.0**	**+0.4**
GDZ				*i* S	**Sb**	**17 19 51.1**	**-0.9**
GDZ	**Gediz**	**0.27**	**92**	P	**Pg**	**17 19 47.0**	**+0.4**
GDZ				S	**Sb**	**17 19 51.1**	**-0.9**
DEMI	**Demirci**	**0.33**	**261**	*i* P	**Pg**	**17 19 47.8**	**+0.1**
DEMI	**Demirci**	**0.33**	**261**	P	**Pg**	**17 19 47.8**	**+0.1**
TVSB	**Tavsanli**	**0.43**	**36**	*e*PG	**Pg**	**17 19 49.3**	**-0.2**
TVSB				*e*SG	**Sg**	**17 19 54.9**	**-0.5**
TVSB	**Tavsanli**	**0.43**	**36**	*e*Pg	**Pg**	**17 19 49.3**	**-0.2**
TVSB				*e*Sg	**Sg**	**17 19 54.9**	**-0.5**
KULA	**Kula-Manisa**	**0.69**	**213**	*e*PG	**Pb**	**17 19 55.4**	**+0.7**
KULA	**Kula-Manisa**	**0.69**	**213**	*e*Pg	**Pb**	**17 19 55.4**	**+0.7**
MANT	**Manisa**	**0.76**	**217**	*i* P	**Pg**	**17 19 54.6**	**-1.0**
MANT	**Manisa**	**0.76**	**217**	P	**Pg**	**17 19 54.6**	**-1.0**
IZI	**Iznik**	**1.26**	**12**	*e*PN	**Pb**	**17 20 04.7**	**+0.2**
IZI	**Iznik**	**1.26**	**12**	*e*Pn	**Pb**	**17 20 04.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.31**	**333**	*e*PN	**Pn**	**17 20 04.7**	**0.0**
KCTX				*e*SN	**Sb**	**17 20 21.6**	**-0.3**
KCTX	**Karacabey (Bur**	**1.31**	**333**	*e*Pn	**Pn**	**17 20 04.7**	**0.0**
KCTX				*e*Sn	**Sb**	**17 20 21.6**	**-0.3**
ARMT	**Armutlu**	**1.48**	**352**	*e*PN	**Pb**	**17 20 08.0**	**-0.1**
ARMT				*e*SN	**Sn**	**17 20 26.7**	**+0.5**
ARMT	**Armutlu**	**1.48**	**352**	*e*Pn	**Pb**	**17 20 08.0**	**-0.1**
ARMT				*e*Sn	**Sn**	**17 20 26.7**	**+0.5**
SBT5	**Esenkoy-Cinarc**	**1.54**	**353**	*e*PN	**Pn**	**17 20 08.2**	**+0.4**
SBT5	**Esenkoy-Cinarc**	**1.54**	**353**	*e*Pn	**Pn**	**17 20 08.2**	**+0.4**
MRMT	**Marmara Adasi**	**1.92**	**322**	*e*PN	**Pn**	**17 20 13.2**	**+0.1**
MRMT	**Marmara Adasi**	**1.92**	**322**	*e*Pn	**Pn**	**17 20 13.2**	**+0.1**
SBT3	**Marmara-Eregli**	**2.00**	**334**	*e*PN	**Pn**	**17 20 14.7**	**+0.8**
SBT3	**Marmara-Eregli**	**2.00**	**334**	*e*Pn	**Pn**	**17 20 14.7**	**+0.8**

IDC 27 17:49:53.0±4.6, 18°.90S×169°.73E, h250km±26km, mb3.9/4, mb1 3.9/6, mb1mx3.4/31, mbtmp4.6/6, Error ellipse: s-maj=48.9km s-min=27.3km az=58.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.41**	**224**	P	Pn	17 51 01.7	-0.1
	4.9nm,0.3s,baz=112,slow=9.2,SNR=56						
DZM				S	S	17 51 56.9	+0.4
	0.4nm,0.3s,baz=120,slow=20,SNR=1.8						
HNR	**Honiara**	**13.35**	**313**	P	Pn	17 52 53.2	-0.1
	3.8nm,0.3s,baz=135,slow=5.7,SNR=4.1						
RPZ	**Rata Peaks**	**24.77**	**178**	P	P	17 54 52.2	+0.1
	17nm,1.0s,baz=22,slow=5.4,SNR=3.2						
STKA	**Stephens Creek**	**28.42**	**237**	P	P	17 55 23.9	-0.8
	1.5nm,0.6s,baz=70,slow=11,SNR=7.2						
WRA	**Warramunga Arr**	**33.36**	**262**	P	P	17 56 07.9	-0.2
	1.8nm,0.6s,baz=82,slow=6.7,SNR=85						
ASAR	**Alice Springs**	**33.66**	**256**	P	P	17 56 11.2	+0.5
	13nm,0.4s,baz=81,slow=8.8,SNR=725						

*IGQ **27** 17:50:00, 1°.52S×80°.35W, h12km±4km, Mb4.1, Error ellipse: s-maj=5.5km s-min=1.6km az=150.1*

ISC 27 17:50:00.8±1.1, 1°.49S±0°.04×80°.35W±0°.05, h11km, n53, σ1°24/56, 6C-8D, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AMANT	**Manta**	**0.67**	**325**	⇓P	**Pg**	**17 50 13.1**	**-0.8**
	baz=326						
AMANT				⇓S	**Sb**	**17 50 24.8**	**+0.8**
	baz=326						
AGUAY	**Guayaquil**	**0.68**	**145**	P	**Pg**	**17 50 12.4**	**-1.7**
	baz=143						
AGUAY				S	**Sg**	**17 50 22.5**	**-0.5**
	baz=143						
PECV	**Mancha de Ca P**	**0.77**	**23**	⇓P	**Pg**	**17 50 15.3**	**-0.4**
	baz=357						
AQUE	**Quevedo**	**0.96**	**63**	P	**Pn**	**17 50 21.9**	**+1.6**
	baz=63						
JAMA	**Jama**	**1.23**	**6**	P	**Pg**	**17 50 24.5**	**0.0**
	baz=6.0						
MAG1	**Magdalena**	**1.52**	**22**	⇑P	**Pb**	**17 50 28.8**	**-0.3**
	baz=21						
IGUA	**Igualata**	**1.71**	**90**	P	**Pn**	**17 50 32.2**	**+1.1**
	baz=88						
ASDO	**Santo Domingo**	**1.73**	**45**	P	**Pn**	**17 50 31.1**	**+0.2**
	baz=44						
BIL2	**Estacion Bilba**	**1.84**	**89**	P	**Pb**	**17 50 35.8**	**+1.0**
	baz=87						
BBIL	**Ulba Tungurahu**	**1.86**	**89**	⇓P	**Pb**	**17 50 35.9**	**+0.9**
	baz=87						
BMAS	**Trigal station**	**1.86**	**90**	⇑P	**Pb**	**17 50 35.6**	**+0.4**
	baz=89						
BMAS				⇑S	**Sg**	**17 51 01.9**	**+1.0**
	baz=89						
JUI6	**Juive**	**1.88**	**88**	P	**Pb**	**17 50 35.6**	**+0.3**
	baz=86						
PAST	**Pastocalle**	**1.88**	**65**	P	**Pg**	**17 50 37.1**	**+0.2**
	baz=64						
ARRY	**Arrayan**	**1.89**	**90**	⇑P	**Pb**	**17 50 35.6**	**0.0**
	baz=89						
POND	**Pondoa**	**1.89**	**88**	P	**Pb**	**17 50 35.1**	**-0.6**
	baz=86						
RETU	**Refugio**	**1.90**	**89**	⇓P	**Pb**	**17 50 35.2**	**-0.6**
	baz=87						
PAT1	**Patacocha**	**1.91**	**90**	⇑P	**Pn**	**17 50 35.2**	**+1.4**
	baz=89						
BPAT	**Tungurahua Vol**	**1.91**	**90**	⇑P	**Pn**	**17 50 35.3**	**+1.5**
	baz=89						
RUN5	**Runtun**	**1.92**	**88**	⇓P	**Pb**	**17 50 36.8**	**+0.7**
	baz=86						
BRUN	**Tungurahua Vol**	**1.93**	**88**	P	**Pb**	**17 50 36.8**	**+0.4**
	baz=86						
BULB	**Ulba Tungurahu**	**1.94**	**88**	P	**Pb**	**17 50 36.8**	**+0.4**
	baz=87						
PISA	**Pisayambo**	**2.01**	**78**	P	**Pb**	**17 50 37.4**	**-0.3**
	baz=76						
CAMI	**Rancho Maria**	**2.01**	**66**	P	**Pg**	**17 50 38.6**	**-0.9**
	baz=65						
BMOR	**Cotopaxi Volca**	**2.03**	**68**	P	**Pg**	**17 50 39.4**	**-0.5**
	baz=67						
BNAS	**Cotopaxi Volca**	**2.04**	**66**	P	**Pg**	**17 50 39.8**	**-0.1**
	baz=65						
MOV1	**Cotopaxi Vol s**	**2.06**	**68**	P	**Pb**	**17 50 39.0**	**+0.5**
	baz=66						
NAS2	**Nasa**	**2.06**	**66**	P	**Pg**	**17 50 40.0**	**-0.4**
	baz=64						
BVC2	**Cotopaxi Volca**	**2.10**	**67**	P	**Pg**	**17 50 41.0**	**-0.3**
	baz=65						
VC1	**Cotopaxi 1**	**2.12**	**66**	P	**Pg**	**17 50 40.6**	**-0.9**
	baz=65						
PITA	**Cotopaxi Volc**	**2.12**	**64**	P	**Pb**	**17 50 39.3**	**-0.3**
	baz=63						
JUA2	**San Juan 2**	**2.15**	**54**	P	**Pn**	**17 50 38.4**	**+1.2**
	baz=53						
COV1	**Cotopaxi Volc**	**2.16**	**68**	P	**Pb**	**17 50 40.1**	**-0.3**
	baz=65						
TERV	**Terraza Guagua**	**2.18**	**53**	P	**Pb**	**17 50 39.7**	**-0.9**
	baz=52						
PINO	**Pino**	**2.19**	**53**	⇓P	**Pn**	**17 50 38.5**	**+0.8**
	baz=51						
GGP	**Refugio Guagua**	**2.19**	**53**	P	**Pb**	**17 50 39.8**	**-0.9**
	baz=52						
YANA	**Yana**	**2.24**	**52**	P	**Pn**	**17 50 39.2**	**+0.9**
	baz=51						
ANTI	**Antisana**	**2.42**	**65**	P	**Pb**	**17 50 44.3**	**-0.4**
	baz=64						
OTAV	**Otavalo**	**2.56**	**48**	⇓P	**Pb**	**17 50 44.9**	**-2.1**
	baz=47						
OTAV	**Otavalo**	**2.56**	**48**	*e*P	**Pn**	**17 50 43.1**	**+0.4**
OTAV				*e*S	**Sb**	**17 51 17.1**	**-1.6**
CUIC	**Cuicocha-Domo**	**2.67**	**48**	P	**Pn**	**17 50 46.0**	**+1.9**
	baz=47						
COTA	**Cotacachi**	**2.71**	**48**	P	**Pb**	**17 50 47.6**	**-2.0**
	baz=47						
CAYA	**Cayambe**	**2.82**	**57**	P	**Pb**	**17 50 50.7**	**-0.9**
	baz=55						
URCU	**Urcuqui**	**2.84**	**47**	P	**Pb**	**17 50 49.4**	**-2.4**
	baz=46						
CHAR	**Charly**	**3.02**	**62**	P	**Pg**	**17 50 57.0**	**-1.7**
	baz=61						
CONE	**Cono NE Rev Vo**	**3.05**	**62**	P	**Pb**	**17 50 57.2**	**+1.9**
	baz=61						
LAV4	**Lava4-Reventad**	**3.05**	**63**	P	**Pg**	**17 50 57.5**	**-1.9**
	baz=62						
CMBC	**Cumbal**	**3.49**	**46**	*e*P	**Pn**	**17 50 58.5**	**+3.0**
CRUC	**La Cruz**	**4.56**	**48**	*e*P	**Pn**	**17 51 13.5**	**+3.4**
POPC	**Popayan, Colom**	**5.43**	**42**	*e*P	**Pn**	**17 51 21.6**	**-0.4**
MALC	**Bahia Malaga**	**6.24**	**29**	*e*P	Pn	17 51 40.6	+7.7
TOLC	**Tolima**	**7.85**	**40**	*e*P	**Pn**	**17 51 57.0**	**+1.6**
SJAC	**San Juan de Ar**	**7.95**	**53**	*e*P	**Pn**	**17 51 57.8**	**+1.2**
VILC	**Villavicencio,**	**8.67**	**50**	*e*P	**Pn**	**17 52 06.0**	**-0.4**

*DDA **27** 17:53:30.4, 39°.18N×29°.06E, h7km, Md2.6*
*ISK **27** 17:53:30.6, 39°.07N×29°.11E, h6km, MD2.4*
*ISCJB **27** 17:53:31.1±0.6, 39°.06N±0°.05×29°.08E±0°.05, h7km±7km, Error ellipse: s-maj=9.2km s-min=5.4km az=157.7*
*CSEM **27** 17:53:31.1±0.1, 39°.06N×29°.09E, h5km, MD2.4, Error ellipse: s-maj=5.1km s-min=2.8km az=129.0*

ISC 27 17:53:31.0±0.9, 39°.07N±0°.03×29°.07E±0°.03, h12km±6km, n18, σ0°44/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIMA	**Simav-Kutahya**	**0.07**	**283**	*e*PG	**Pg**	**17 53 33.2**	**-0.3**
SIMA	**Simav-Kutahya**	**0.07**	**283**	*e*Pg	**Pg**	**17 53 33.2**	**-0.3**
DEMI	**Demirci**	**0.27**	**265**	*i* P	**Pg**	**17 53 36.9**	**+0.2**
DEMI				*i* S	**Sg**	**17 53 41.0**	**+0.5**
DEMI	**Demirci**	**0.27**	**265**	P	**Pg**	**17 53 36.9**	**+0.2**
DEMI				S	**Sg**	**17 53 41.0**	**+0.5**
GDZ	**Gediz**	**0.32**	**86**	*i* P	**Pg**	**17 53 37.6**	**0.0**
GDZ				*i* S	**Sg**	**17 53 42.3**	**+0.3**
GDZ	**Gediz**	**0.32**	**86**	P	**Pg**	**17 53 37.6**	**0.0**
GDZ				S	**Sg**	**17 53 42.3**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**39**	*e*PG	**Pg**	**17 53 40.1**	**-0.5**
TVSB	**Tavsanli**	**0.49**	**39**	*e*Pg	**Pg**	**17 53 40.1**	**-0.5**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*PG	**Pb**	**17 53 44.1**	**0.0**
KULA				*e*SG	**Sb**	**17 53 52.7**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*Pg	**Pb**	**17 53 44.1**	**0.0**
KULA				*e*Sg	**Sb**	**17 53 52.7**	**-0.4**
MANT	**Manisa**	**0.70**	**215**	*i* P	**Pg**	**17 53 44.0**	**-0.6**
MANT	**Manisa**	**0.70**	**215**	P	**Pg**	**17 53 44.0**	**-0.6**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*PN	**Pg**	**17 53 55.6**	**0.0**
CAVI				*e*SN	**Sn**	**17 54 12.7**	**+0.8**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*Pn	**Pg**	**17 53 55.6**	**0.0**
CAVI				*e*Sn	**Sn**	**17 54 12.7**	**+0.8**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pg**	**17 53 59.3**	**-0.6**
ARMT				*e*SN	**Sg**	**17 54 19.3**	**-0.1**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pg**	**17 53 59.3**	**-0.6**
ARMT				*e*Sn	**Sg**	**17 54 19.3**	**-0.1**
SBT5	**Esenkoy-Cinarc**	**1.57**	**355**	*e*PN	**Pb**	**17 53 59.8**	**-0.1**
SBT5	**Esenkoy-Cinarc**	**1.57**	**355**	*e*Pn	**Pb**	**17 53 59.8**	**-0.1**

*KRSC **27** 18:01:51.2±2.4, 55°.38N×166°.53E, h45km±15km, ML4.7, FELT [IV] at Nikolskoe.*
*IDC **27** 18:01:51.8±0.7, 55°.49N×166°.52E, h0km, mb4.0/17, mb1 4.2/19, mb1mx4.0/39, mbtmp4.0/19, ML3.8/2, MS3.7/30, Ms1 3.7/30, ms1mx3.6/43, Error ellipse: s-maj=25.8km s-min=11.8km az=158.0*
*ISCJB **27** 18:01:52.5±0.3, 55°.36N±0°.04×166°.48E±0°.03, h20km, mb4.2/34, MS3.7/30, Error ellipse: s-maj=5.3km s-min=2.4km az=161.4*
*NEIC **27** 18:01:52.6±3.3, 55°.45N×166°.57E, h6km±21km, mb4.5/17, Error ellipse: s-maj=12.3km s-min=5.0km az=157.0*
*MOS **27** 18:01:54.4±1.0, 55°.42N×166°.47E, h39km, mb4.6/6, Error ellipse: s-maj=7.3km s-min=5.8km az=147.7*
MOS Felt (IV) at Nikol'skoe.

ISC 27 18:01:54.1±0.5, 55°.39N±0°.05×166°.48E±0°.04, h20km, n157, σ1°54/171, mb4.2/34, MS3.7/30, 1C-4D, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BKI	**Bering**	**0.34**	**238**	PN	**Pb**	**18 02 00.4**	**-1.1**
BKI	**Bering**	**0.34**	**238**	*i* P	**Pb**	**18 02 00.4**	**-1.1**
BKI				*i* S	**Sb**	**18 02 05.8**	**-0.7**
KBG	**Krutoberegovo**	**2.30**	**294**	PN	**Pn**	**18 02 29.4**	**-1.4**
KBG				S	**Sn**	**18 02 57.3**	**-1.2**
KBG	**Krutoberegovo**	**2.30**	**294**	P	**Pn**	**18 02 29.4**	**-1.4**
KBG				S	**Sn**	**18 02 57.3**	**-1.2**
MKZ	**Mys Kozlova**	**2.86**	**255**	PN	**Pn**	**18 02 38.3**	**-0.3**
MKZ				S	**Sn**	**18 03 10.6**	**-1.8**
MKZ	**Mys Kozlova**	**2.86**	**255**	*e*P	**Pn**	**18 02 38.3**	**-0.3**
MKZ				*e*S	**Sn**	**18 03 10.6**	**-1.8**
SMKR	**Semkarok**	**3.06**	**295**	PN	**Pn**	**18 02 41.1**	**-0.3**
SMKR	**Semkarok**	**3.06**	**295**	*i* P	**Pn**	**18 02 41.1**	**-0.3**
BDR	**Baidarnaya**	**3.19**	**294**	PN	**Pn**	**18 02 43.4**	**+0.2**
BDR				S	**Sn**	**18 03 18.7**	**-1.9**
BDR	**Baidarnaya**	**3.19**	**294**	*i* P	**Pn**	**18 02 43.4**	**+0.2**
BDR				S	**Sn**	**18 03 18.7**	**-1.9**
SRKR	**Sorokina**	**3.24**	**295**	PN	**Pn**	**18 02 43.4**	**-0.5**
SRKR	**Sorokina**	**3.24**	**295**	*i* P	**Pn**	**18 02 43.4**	**-0.5**
ZLN	**Zelenaya**	**3.27**	**283**	PN	**Pn**	**18 02 45.6**	**+1.3**
ZLN				S	**Sn**	**18 03 23.3**	**+0.6**
ZLN	**Zelenaya**	**3.27**	**283**	P	**Pn**	**18 02 45.6**	**+1.3**
ZLN				S	**Sn**	**18 03 23.3**	**+0.6**
CIRR	**Tsirk**	**3.32**	**285**	PN	**Pn**	**18 02 46.0**	**+1.0**
CIRR	**Tsirk**	**3.32**	**285**	P	**Pn**	**18 02 46.0**	**+1.0**
KLY	**Klyuchi**	**3.41**	**288**	PN	**Pn**	**18 02 44.9**	**-1.2**
KLY				S	**Sn**	**18 03 23.1**	**-2.9**
KLY	**Klyuchi**	**3.41**	**288**	*e*P	**Pn**	**18 02 44.9**	**-1.2**
KLY				S	**Sn**	**18 03 23.1**	**-2.9**
BZMR	**Bezymyannaya**	**3.44**	**282**	PN	**Pn**	**18 02 47.6**	**+1.0**
BZMR	**Bezymyannaya**	**3.44**	**282**	P	**Pn**	**18 02 47.6**	**+1.0**
KRSR	**Krestovskiy**	**3.44**	**286**	PN	**Pn**	**18 02 46.6**	**0.0**
KRSR	**Krestovskiy**	**3.44**	**286**	P	**Pn**	**18 02 46.6**	**0.0**
KZV	**Kizimen**	**3.55**	**268**	PN	**Pn**	**18 02 49.3**	**+1.1**
KZV				S	**Sn**	**18 03 31.3**	**+1.7**
KZV	**Kizimen**	**3.55**	**268**	P	**Pn**	**18 02 49.3**	**+1.1**
KZV				S	**Sn**	**18 03 31.3**	**+1.7**
**

GNL	Ganaly	5.25	255	*e*P		Pn		18 03 13.1	+1.6
KRMR	Karymshinskiy	5.54	246	PN		Pn		18 03 16.5	+1.1
KRMR	Karymshinskiy	5.54	246	*e*P		Pn		18 03 16.5	+1.1
KRMR				*e*S		Sn		18 04 18.0	-0.4
RUS	Russkaya	5.56	241	PN		Pn		18 03 15.9	+0.2
RUS	Russkaya	5.56	241	*e*P		Pn		18 03 15.9	+0.2
RUS				*e*S		Sn		18 04 16.7	-2.2
PETK	Petropavlovsk-	5.63	250	Pn		Pn		18 03 17.9	+1.3
	comp=Z,8.8nm,0.3s,baz=75,slow=18,SNR=37								
PETK				Sn		Sn		18 04 21.6	+0.9
	comp=Z,5.1nm,0.3s,baz=136,slow=28,SNR=6.3								
PETK				LR		LR		18 05 42.8	
	comp=Z,709nm,20.2s,baz=31,slow=41								
PETK	Petropavlovsk-	5.63	250	PN		Pn		18 03 18.0	+1.3
ASAK	Asacha	5.90	243	PN		Pn		18 03 22.1	+1.7
ASAK	Asacha	5.90	243	*e*P		Pn		18 03 22.1	+1.7
ASAK				*e*S		Sn		18 04 26.1	-1.3
KMSK	Kamenskaya	7.10	359	PN		Pn		18 03 36.0	-0.7
KMSK	Kamenskaya	7.10	359	P		Pn		18 03 36.0	-0.7
SKR	Severo-Kuril's	7.82	237	*e*PN		Pn		18 03 47.5	+0.8
SKR				pmax	pmax				
	comp=Z,35nm,1.2s								
SKR	Severo-Kuril's	7.82	237	P		Pn		18 03 48.1	+1.4
SKR				*e*S		Sn		18 05 09.0	-5.5
MA2	Magadan	9.44	303	LR		LR		18 07 45.8	
	comp=Z,302nm,19.3s,baz=111,slow=38								
BILL	Bilibino	12.70	360	*e*PN		Pn		18 04 50.7	-2.6
BILL				pmax	pmax				
	comp=Z,2.0nm,1.1s								
BILL				MLR	MLR				
	comp=Z,688nm,16.0s								
GAMB	Gambell	13.81	44	P		Pn		18 05 07.4	-1.1
UNV	Unalaska Valle	15.69	84	*e*P		P		18 05 38.6	+0.9
	comp=Z,104nm,1.1s								
YSS	Yuzh-Sakhalins	17.04	250	⇓*e*P		P		18 05 55.6	+3.0
YSS				pmax	pmax				
	comp=Z,10.0nm,0.9s								
YSS				MLR	MLR				
	comp=Z,300nm,17.0s								
YSS				MLR	MLR				
	comp=N,600nm,19.0s								
YSS	Yuzh-Sakhalins	17.04	250	*e*P		P		18 05 52.2	-0.4
	comp=N,17nm,1.0s								
ASAJ	Asahikawa	19.01	244	*e*P		Pn		18 06 16.2	+1.1
	comp=N,9.2nm,1.0s								
CHGN	Chignik	19.61	73	*e*P		P		18 06 19.8	-1.0
YAK	Yakutsk	20.01	304	P		P		18 06 24.5	-0.6
	comp=N,0.0nm,0.3s,baz=96,slow=4.2,SNR=9.9								
YAK				LR		LR		18 14 09.5	
	comp=N,183nm,18.6s,baz=103,slow=37								
YAK	Yakutsk	20.01	304	*e*P		P		18 06 24.5	-0.6
YAK				*e*S		S		18 10 05.2	-3.7
YAK				pmax	pmax				
	comp=Z,15nm,1.0s								
YAK				pmax	pmax				
	comp=E,11nm,1.3s								
YAK				pmax	pmax				
	comp=Z,64nm,2.3s								
YAK				pmax	pmax				
	comp=N,11nm,3.0s								
YAK				pmax	pmax				
	comp=E,46nm,1.9s								
YAK				smax	smax				
	comp=N,49nm,3.2s								
YAK				smax	smax				
	comp=E,64nm,4.8s								
YAK				pmax	pmax				
	comp=N,343nm,18.0s								
YAK				pmax	pmax				
	comp=E,83nm,19.0s								
YAK				pmax	pmax				
	comp=Z,201nm,17.0s								
YAK	Yakutsk	20.01	304	*e*P		P		18 06 24.8	-0.4
HABR	Khabarovsk	20.45	263	*e*P		P		18 06 28.8	-1.2
HABR				*e*				18 06 45.9	
HABR				*e*PPP		PPP		18 06 53.6	
HABR				*e*S		S		18 10 17.7	-0.1
HABR				*e*SS		SnSn		18 10 37.3	+1.1
HABR				*e*SSS		SSS		18 10 50.4	
HABR				*e*				18 17 59.1	
HABR				pmax	pmax				
	comp=Z,7.0nm,1.9s								
HABR				MLR	MLR				
	comp=Z,134nm,18.0s								
KLR	Kul'dur	21.94	268	P		P		18 06 46.8	+0.7
	comp=Z,1.2nm,0.8s,baz=329,slow=12,SNR=3.3								
KLR				LR		LR		18 16 22.7	
	comp=Z,247nm,18.1s,baz=66,slow=40								
PPLA	Purkeypile	22.14	53	*e*P		P		18 06 49.9	+1.6
	comp=Z,40nm,1.4s								
KDAK	Kodiak Island	22.43	67	*i* P		P		18 06 50.7	-0.5
BPAW	Bear Paw Mtn.	22.71	50	*e*P		P		18 06 54.4	+0.1
	comp=Z,3.0nm,1.1s								
KTH	Kantishna Hill	22.72	52	*e*P		P		18 06 54.9	+0.4
	comp=Z,20nm,1.2s								
TIXI	Tiksi	22.76	330	LR		LR		18 16 00.1	
	comp=Z,126nm,18.5s,baz=110,slow=37								
COLD	Coldfoot	23.36	42	*e*P		P		18 07 00.6	-0.2
	comp=Z,8.3nm,1.0s								
SML	Sawmill	23.98	56	*e*P		P		18 07 06.1	-0.8
SML				pmax	pmax				
	comp=Z,5.0nm,1.2s								
SML	Sawmill	23.98	56	*e*P		P		18 07 06.1	-0.8
	comp=Z,4.6nm,1.2s								
ILAR	Eielson Array	24.51	49	P		P		18 07 11.2	-0.5
	comp=Z,18nm,1.0s,baz=260,slow=8.3,SNR=88								
ILAR				LR		LR		18 18 15.6	
	comp=Z,159nm,18.3s,baz=282,slow=40								
USRK	Ussuriysk Ar.	24.66	257	LR		LR		18 16 47.3	
	comp=Z,176nm,20.7s,baz=53,slow=36								
DOT	Dot Lake	25.78	51	*e*P		P		18 07 21.9	-1.4
	comp=Z,37nm,1.1s								
BMRM	Bremner River	25.87	57	*e*P		P		18 07 23.8	-0.3
	comp=Z,20nm,1.1s								
MAJO	Matsushiro	26.93	237	⇓*e*P		P		18 07 37.3	+3.4
MAJO				pmax	pmax				
	comp=Z,75nm,0.9s								
MAJO	Matsushiro	26.93	237	*e*P		P		18 07 37.6	+3.7
	comp=Z,9.8nm,0.8s								
MJAR	Matsushiro Arr	26.93	237	P		P		18 07 36.0	+2.1
	comp=Z,3.6nm,0.8s,baz=26,slow=7.7,SNR=5.4								
MJAR				LR		LR		18 19 12.7	
	comp=Z,72nm,19.2s,baz=40,slow=39								
MJAR	Matsushiro Arr	26.93	237	P		P		18 07 36.0	+2.1
INK	Inuvik	29.72	40	P		P		18 07 58.5	+0.2
	comp=Z,1.9nm,0.5s,baz=286,slow=5.9,SNR=11								
KSRS	Korea Array	31.53	252	P		P		18 08 16.1	+1.4
	comp=Z,1.2nm,0.9s,baz=41,slow=8.5,SNR=2.8								
KSRS				LR		LR		18 20 25.6	
	comp=Z,91nm,19.9s,baz=42,slow=35								
KSAR	Wonju Array Be	31.56	252	P		P		18 08 16.1	+1.2
KSAR	Wonju Array Be	31.56	252	P		P		18 08 16.1	+1.2
DLBC	Dease Lake	33.65	58	*e*P		P		18 08 34.5	+1.3
	comp=Z,29nm,1.6s								
H11N2	WAKE ISLAND Hy	35.60	179	T		T		18 46 05.8	
	baz=0.3,slow=76,SNR=682								
H11N3	WAKE ISLAND Hy	35.61	179	T		T		18 46 06.8	
	baz=0.3,slow=76,SNR=785								
H11N1	WAKE ISLAND Hy	35.62	179	T		T		18 46 07.1	
	baz=0.3,slow=76,SNR=889								
NRIK	Noril'sk	36.23	324	LR		LR		18 24 27.1	
	comp=Z,117nm,18.7s,baz=76,slow=38								
H11S1	WAKE ISLAND Hy	36.82	180	T		T		18 47 38.6	
	baz=360,slow=76,SNR=73								
H11S3	WAKE ISLAND Hy	36.83	180	T		T		18 47 36.0	
	baz=360,slow=76,SNR=32								
H11S2	WAKE ISLAND Hy	36.83	180	T		T		18 47 41.4	
	baz=360,slow=76,SNR=97								
SONM	Songino Array	37.01	284	P		P		18 09 04.4	+2.2
	comp=Z,1.4nm,0.7s,baz=32,slow=6.7,SNR=5.5								
SONM				LR		LR		18 25 52.0	
	comp=Z,133nm,19.1s,baz=68,slow=39								
HHC	Hu-ho-hao-te	38.38	271	*e*P		P		18 09 12.5	-1.4
HHC				S		S		18 15 01.8	-5.7
HHC				pmax	pmax				
	comp=Z,14nm,0.9s								
HHC				pmax	pmax				
	comp=Z,88nm,4.9s								
HHC				LR	LR				
	comp=N,300nm,16.5s								
HHC				LR	LR				
	comp=E,240nm,15.1s								
HHC				LR	LR				
	comp=Z,170nm,13.5s								
YKA	Yellowknife Ar	38.90	47	P		P		18 09 18.1	+0.4
	comp=Z,6.4nm,1.1s,baz=302,slow=8.3,SNR=5.5								
YKA	Yellowknife Ar	38.90	47	*e*P		P		18 09 18.4	+0.7
YKA				pmax	pmax				
	comp=Z,6.0nm,1.1s								
ZALV	Zalesovo Beam	44.66	304	LR		LR		18 29 27.6	
	comp=Z,68nm,18.1s,baz=68,slow=37								
NEW	Newport	45.52	66	P		P		18 10 10.7	-1.3
	comp=Z,2.0nm,0.7s,baz=311,slow=7.1,SNR=4.2								
KURK	Kurchatov	49.65	304	*e*P		P		18 10 43.6	-0.3
KURK				pmax	pmax				
	comp=Z,28nm,0.9s								
KURK	Kurchatov	49.65	304	*e*P		P		18 10 43.6	-0.3
	comp=Z,28nm,0.9s								
MKAR	Makanchi Array	50.48	298	P		P		18 10 49.0	-1.3
	comp=Z,0.4nm,0.4s,baz=54,slow=6.5,SNR=8.1								
RLMT	Red Lodge	51.65	64	*e*P		P		18 11 00.3	+1.0
	comp=Z,6.6nm,0.9s								
BRVK	Borovoye	51.86	310	⇓*e*P		P		18 11 00.3	-0.2
BRVK				pmax	pmax				
	comp=Z,7.0nm,0.7s								
ARCES	ARCESS Array B	52.20	344	LR		LR		18 35 17.9	
	comp=Z,59nm,18.7s,baz=47,slow=38								
PDAR	Pinedale Array	53.14	66	P		P		18 11 11.0	+0.5
	comp=Z,1.5nm,0.9s,baz=316,slow=4.1,SNR=9.7								
PDAR				LR		LR		18 33 42.1	
	comp=Z,42nm,18.6s,baz=352,slow=36								
ULM	Lac du Bonnet	54.48	51	P		P		18 11 19.6	-0.2
	comp=Z,1.4nm,0.5s,baz=291,slow=6.6,SNR=3.1								
ULM				LR		LR		18 35 41.9	
	comp=Z,111nm,18.6s,baz=238,slow=37								
ULM	Lac du Bonnet	54.48	51	*e*P		P		18 11 22.2	+2.3
ULM				pmax	pmax				
	comp=Z,1.0nm,0.5s								
SFJD	Kangerlussuaq	54.81	17	LR		LR		18 35 40.1	
	comp=Z,55nm,18.2s,baz=337,slow=37								
AGMN	Agassiz Nation	55.91	53	*e*P		P		18 11 30.3	+0.2
	comp=Z,2.4nm,0.9s								
AAK	Ala-Archa	57.34	299	⇓*e*P		P		18 11 40.7	0.0
AAK				pmax	pmax				
	comp=Z,24nm,2.6s								
KSH	Kashi	58.90	295	*e*P		P		18 12 00.3	+8.7
ECSD	EROS Data Cent	58.94	57	*e*P		P		18 11 52.3	+0.7
	comp=Z,4.4nm,1.0s								
FINES	FINESS Array B	59.41	339	LR		LR		18 40 55.0	
	comp=Z,35nm,19.1s,baz=38,slow=40								
ANMO	Albuquerque	60.51	70	*i* P		P		18 12 04.4	+1.6
ANMO				pmax	pmax				
	comp=Z,4.0nm,1.2s								
SCHQ	Schefferville	61.80	32	LR		LR		18 40 32.3	
	comp=Z,34nm,20.8s,baz=296,slow=38								
CMAR	Chiang Mai Arr	62.27	262	P		P		18 12 15.3	+0.7
	comp=Z,0.4nm,0.4s,baz=19,slow=6.8,SNR=3.2								
CMAR				LR		LR		18 41 35.3	
	comp=Z,112nm,18.2s,baz=78,slow=38								
NB2	NORSAR Subarra	62.28	347	P		P		18 12 15.4	+1.2
	comp=Z,1.1nm,0.6s,baz=17,slow=6.9								
NOA	NORSAR Array B	62.28	347	P		P		18 12 15.4	+1.2
	comp=Z,0.4nm,0.5s,baz=17,slow=6.8,SNR=3.3								
NOA				LR		LR		18 39 17.2	
	comp=Z,21nm,20.7s,baz=350,slow=36								
MNTX	Cornudas Mount	63.56	72	*e*P		P		18 12 24.1	+1.0
	comp=Z,6.6nm,1.1s								
SADO	Sadowa	65.88	45	LR		LR		18 42 25.2	
	comp=Z,64nm,19.4s,baz=156,slow=37								
TXAR	Lajitas Array	66.33	72	P		P		18 12 42.1	+0.9
	comp=Z,2.7nm,0.6s,baz=302,slow=4.8,SNR=34								
TXAR				LR		LR		18 40 52.2	
	comp=Z,50nm,18.0s,baz=0.0,slow=35								
AKASG	Malin Array Be	68.45	332	LR		LR		18 46 58.2	
	comp=Z,64nm,18.1s,baz=45,slow=40								
GEYT	Alibeck	68.87	306	LR		LR		18 46 38.8	
	comp=Z,100nm,19.1s,baz=70,slow=39								
KBZ	Khabaz	70.31	320	LR		LR		18 46 49.7	
	comp=Z,57nm,20.7s,baz=33,slow=38								
TKL	Tuckaleechee C	71.36	54	LR		LR		18 46 26.3	
	comp=Z,89nm,18.4s,baz=348,slow=38								
GERES	GERESS Array B	73.66	342	LR		LR		18 51 10.9	
	comp=Z,33nm,18.2s,baz=350,slow=40								
BRTR	Keskin Array B	77.08	325	P		P		18 13 46.7	+0.9
	comp=Z,0.4nm,0.7s,baz=34,slow=11,SNR=2.7								
BRTR				LR		LR		18 51 08.8	
	comp=Z,21nm,19.0s,baz=38,slow=38								
WRA	Warramunga Arr	79.86	211	P		P		18 14 00.8	-0.3
	comp=Z,1.2nm,1.2s,baz=25,slow=6.1,SNR=3.0								
WSAR	Wadi Sarin	80.72	297	LR		LR		18 52 38.4	
	comp=Z,79nm,18.6s,slow=38								
PPT	Papeete	81.63	138	LR		LR		18 42 00.8	
	comp=Z,72nm,20.4s,baz=340,slow=30								
ASAR	Alice Springs	83.51	210	P		P		18 14 22.7	+2.5
	comp=Z,0.9nm,0.8s,baz=20,slow=5.3,SNR=8.0								
ASAR	Alice Springs	83.51	210	*e*P		P		18 14 25.8	+5.6
ASAR				pmax	pmax				
	comp=Z,1.0nm,0.9s								
QSPA	South Pole Qui	145.14	180	*e*PKPdf		PKPbc		18 21 27.1	-1.1

ISCJB ***27*** *18:18:32.0±0.7, 11.°04N±0.°03×62.°19W±0.°04, h116km±7km, Error ellipse: s-maj=6.9km s-min=4.5km az=41.3*
FUNV ***27*** *18:18:33.4, 11.°12N×62.°14W, h106km, MW2.9*
TRN ***27*** *18:18:33.9, 11.°03N×62.°06W, h116km, MD3.8*
ISC 27 18:18:31.9±1.4, 11.°04N±0.°04×62.°18W±0.°04, h120km±10km, n23, σ1§21/37, 3C-2D, Windward Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GUIV	Guiria	0.39	187	⇑*e*P		Pn	18 18 49.8	+0.5
GUIV				*e*S		Sn	18 19 00.8	-1.5
TCE	Chacachacare	0.54	129	*e*P		Pn	18 18 50.6	+0.5
TCE				*e*S		Sn	18 19 03.7	-0.2
TRN	Trinidad (W)	0.85	117	⇑*i*P		Pn	18 18 53.3	+0.7
TRN				*e*S		Sn	18 19 06.8	-1.3
TPP	Pointe-a-Pierr	1.01	135	*e*P		Pn	18 18 55.3	+1.2
TPP				*e*S		Sn	18 19 10.3	-0.5
CRUV	Carupano	1.10	251	⇓*e*P		Pn	18 18 55.4	+0.4
CRUV				*e*S		Sn	18 19 11.2	-1.2
GUNV	Guanoco	1.15	221	*e*S		Sn	18 19 14.0	+0.6
GRGR	Grenville	1.20	25	*e*P		Pn	18 18 57.6	+1.5
GRGR				*e*S		Sn	18 19 14.0	-0.3
GRGR	Grenville	1.20	25	*e*P		Pn	18 18 55.5	-0.5
GRGR				*e*S		Sn	18 19 10.8	-3.5
TBH	Brigand Hill	1.22	117	*e*P		Pn	18 18 57.2	+1.0
TBH				*e*S		Sn	18 19 14.6	0.0
GRW	Mount Saint Ca	1.22	24	*e*P		Pn	18 18 58.0	+1.6
GRW				*e*S		Sn	18 19 15.7	+0.8
GRSS	Sisters	1.37	24	⇓*i*P		Pn	18 18 59.7	+1.9
GRSS				*e*S		Sn	18 19 17.6	0.0
TPR	Prospect	1.38	84	*e*P		Pn	18 18 58.3	+0.4
BOT	Bacolet	1.44	85	*e*P		Pn	18 18 58.6	0.0
TOSP	Speyside	1.63	81	⇑*i*P		Pn	18 19 00.5	-0.3
TOSP				*e*S		Sn	18 19 21.9	-1.0
ORIV	Oritupano	2.30	212	*e*P		Pn	18 19 10.7	+1.5
ORIV				*e*S		Sn	18 19 38.2	+0.4
SVB	Belmont	2.40	22	*e*P		Pn	18 19 11.8	+1.4
SVB				*e*S		Sn	18 19 40.2	+0.2
PCRV	Puerto La Cruz	2.57	251	*e*P		Pn	18 19 13.6	+0.9
MCLT	Moule a Chique	2.92	24	*e*S		Sn	18 19 50.4	-1.6
RIOV	Rio Grande	2.97	173	*e*P		Pn	18 19 19.5	+1.6
CUPV	Cœpira	3.68	255	*e*P		Pn	18 19 28.2	+0.9
CUPV				*e*S		Sn	18 20 08.6	-1.6
BIRV	Birongo	4.06	262	*e*P		Pn	18 19 33.1	+0.8
LUEV	Luepa	5.21	172	*e*P		Pn	18 19 47.4	-0.5
BAUV	El Baul	6.14	251	*e*P		Pn	18 19 59.4	-0.9

ISCJB ***27*** *18:20:06.4±0.9, 49.°3S±0.°1×114.°0E±0.°4, h10km, mb3.9/5, MS3.5/4, Error ellipse: s-maj=40.9km s-min=14.6km az=10.7*
IDC ***27*** *18:20:07.1±1.1, 49.°32S×114.°10E, h0km, mb3.9/5, mb1 4.2/6, mb1mx3.9/24, mbtmp4.0/6, ML1.7/1, MS3.5/5, Ms1 3.5/5, ms1mx3.2/19, Error ellipse: s-maj=46.2km s-min=20.2km az=102.0*
ISC 27 18:20:08.4±1.1, 49.°3S±0.°1×114.°0E±0.°3, h10km, n19, σ1§19/7, mb4.0/5, MS3.4/4, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
H01W2	Cape Leeuwin H	14.37	0	T		T	18 38 53.6	
	baz=180,slow=75,SNR=57							
H01W1	Cape Leeuwin H	14.38	0	T		T	18 38 54.2	
	baz=180,slow=75,SNR=64							
H01W3	Cape Leeuwin H	14.38	0	T		T	18 38 55.0	
	baz=180,slow=75,SNR=64							
NWAO	Narrogin (SRO)	16.51	10	Pn		Pn	18 23 58.7	-1.3
	0.1nm,0.3s,baz=202,slow=19,SNR=3.0							
NWAO				LR		LR	18 28 58.0	
	comp=Z,116nm,19.3s,baz=14,slow=32							
STKA	Stephens Creek	26.99	60	LR		LR	18 34 59.4	
	comp=Z,59nm,19.4s,baz=203,slow=33							
ASAR	Alice Springs	29.96	39	P		P	18 26 17.1	+0.3
	0.7nm,0.8s,baz=205,slow=9.3,SNR=7.2							
WRA	Warramunga Arr	33.49	36	P		P	18 26 48.2	+0.4
	2.3nm,0.7s,baz=204,slow=8.6,SNR=16							
VNDA	Vanda	33.56	163	P		P	18 26 48.5	+0.6
	0.7nm,0.4s,baz=318,slow=14,SNR=4.1							
VNDA				LR		LR	18 39 15.6	
	comp=Z,71nm,18.8s,baz=308,slow=34							
SNAA	Sanae	51.45	201	P		P	18 29 12.4	-0.7
	1.7nm,0.9s,baz=136,slow=12,SNR=6.8							
H08S2	Diego Garcia H	54.14	306	T		T	19 28 22.8	
	baz=149,slow=76,SNR=12							
H08S1	Diego Garcia H	54.15	306	T		T	19 28 22.0	
	baz=149,slow=76,SNR=13							
H08S3	Diego Garcia H	54.16	306	T		T	19 28 25.2	
	baz=149,slow=76,SNR=11							
CMAR	Chiang Mai Arr	68.75	345	P		P	18 31 13.5	+1.2
	0.7nm,0.6s,baz=186,slow=5.9,SNR=6.6							
PLCA	Paso Flores	90.28	177	LR		LR	19 11 41.0	
	comp=Z,61nm,18.5s,baz=240,slow=34							
SONM	Songino Array	96.96	355	LR		LR	19 21 23.1	
	comp=Z,13nm,18.0s,baz=47,slow=38							
H10S2	ASCENSION HYDR	106.70	234	T		T	20 34 09.0	
	baz=146,slow=75,SNR=5.8							
H10S3	ASCENSION HYDR	106.72	234	T		T	20 34 11.9	
	baz=146,slow=75,SNR=5.5							
H10S1	ASCENSION HYDR	106.72	234	T		T	20 34 11.3	
	baz=146,slow=75,SNR=6.0							
TXAR	Lajitas Array	145.17	111	PKPbc		PKPbc	18 39 44.5	-1.1
	0.3nm,0.8s,baz=213,slow=4.3,SNR=3.5							

NIED ***27*** *18:35:00, 38.°70N×142.°30E, h32km, Mw3.5 Best double couple: M0 2.17000×10^14 NP1:φ§228.00000°, δ20.00000°, λ88.00000°. NP2:φ§50.00000°, δ70.00000°, λ91.00000°.*
IDC ***27*** *18:35:35.9±1.7, 38.°79N×142.°88E, h0km, mb3.6/6, mb1 3.6/8, mb1mx3.4/43, mbtmp3.6/8, ML3.4/2, MS3.1/2, Ms1 3.1/2, ms1mx2.4/37, Error ellipse: s-maj=42.8km s-min=20.1km az=75.0*
JMA ***27*** *18:35:44.2±0.1, 38.°69N×142.°24E, h40km±1km, M3.7*
JMA Felt I J1.
ISC 27 18:35:42.2±2.0, 38.°62N±0.°05×142.°36E±0.°09, h29km±12km, n19, σ1§50/26, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	Ofunato	0.71	311	P		Pb	18 35 56.3	+0.3
OFUJ				*e*S		Sb	18 36 04.7	-0.8
JIO	Ouri	0.81	259	P		Pn	18 35 57.8	+0.1
JIO				*e*S		Sb	18 36 07.4	-0.9
JMK	Ichinoseki	0.95	291	P		Pn	18 35 59.7	+0.1
JMK				*e*S		Sn	18 36 10.9	-1.3
JOM	Ohasama	1.19	316	P		Pn	18 36 03.3	+0.3
JOM				*e*S		Sn	18 36 17.2	-1.0
JOU	Okura	1.35	260	P		Pn	18 36 06.0	+0.8
JOU				*e*S		Sn	18 36 22.2	0.0
JTH	Tanohata	1.37	344	P		Pn	18 36 05.7	+0.2
JRG	Rokugo	1.55	301	P		Pn	18 36 08.5	+0.6
JYK	Kaneyama	1.59	281	P		Pn	18 36 09.0	+0.5
MJAR	Matsushiro Arr	3.89	239	Pn		Pn	18 36 42.8	+2.7
	1.5nm,0.3s,baz=35,slow=14,SNR=12							
MJAR				Sn		Sb	18 37 35.2	-1.6
	1.0nm,0.3s,baz=94,slow=30,SNR=4.3							
MJAR				LR		LR	18 38 28.2	
	comp=Z,38nm,18.6s,baz=50,slow=40							
MAT	Matsushiro	3.89	239	P		Pn	18 36 42.3	+2.2
MAT				*e*S		Sn	18 37 26.3	+1.4
JHJ	Hachijo jima 2	5.87	202	Pn		Pn	18 37 08.5	+1.2
	4.0nm,0.3s,baz=73,slow=20,SNR=5.1							
JHJ				Sn		Sn	18 38 11.8	-1.9
	6.3nm,0.3s,baz=59,slow=19,SNR=4.9							
USRK	Ussuriysk Ar.	9.58	309	Pn		Pn	18 38 02.6	+4.6
	0.3nm,0.3s,baz=109,slow=14,SNR=7.0							
ZALV	Zalesovo Beam	41.42	311	P		P	18 43 25.3	-0.6
	0.7nm,0.4s,baz=83,slow=8.2,SNR=4.7							
MKAR	Makanchi Array	43.93	301	P		P	18 43 46.0	-0.5
	0.3nm,0.5s,baz=85,slow=10,SNR=4.6							
KURBB	Kurchatov Arra	45.63	307	P		P	18 43 59.7	-0.2
	0.3nm,0.7s,baz=81,slow=8.2,SNR=18							
BVAR	Borovoye Array	50.07	311	P		P	18 44 33.7	-0.5
	0.3nm,0.3s,baz=65,slow=7.6,SNR=3.3							
WRA	Warramunga Arr	58.73	189	P		P	18 45 37.7	+0.3
	0.4nm,0.7s,baz=6.7,slow=7.1,SNR=3.4							
ASAR	Alice Springs	62.46	189	P		P	18 46 01.9	-0.9
	0.2nm,0.8s,baz=21,slow=8.0,SNR=3.1							
PPT	Papeete	84.68	117	LR		LR	19 17 26.0	
	comp=Z,53nm,21.8s,baz=180,slow=30							

SOME ***27*** *18:43:16.2, 40.°33N×77.°08E, h5km*
KRNET ***27*** *18:43:17.0±0.1, 40.°41N×77.

UZB				*e*S	**Sg**	**18 44 56.5**	**-0.6**
	24nm,0.6s							
KPKS	**Kokpek**	**3.19**	**21**	*e*P	**Pb**	**18 44 17.7**	**+0.3**
	20nm,0.3s							
KPKS				*e*S	**Sg**	**18 45 01.9**	**-1.1**
	103nm,0.5s							
KTBS	**Karatobe**	**3.22**	**355**	*e*P	**Pb**	**18 44 18.8**	**+0.8**
KTBS				*e*S	**Sg**	**18 45 03.6**	**-0.5**
PDGK	**Podgornoye**	**3.33**	**31⇑**	*e*P	**Pn**	**18 44 13.7**	**+0.9**
	baz=30							
PDGK				⇑*i*S	**Sn**	**18 44 54.7**	**+2.3**
	baz=30							
PDGK	**Podgornoye**	**3.33**	**31**	⇓Pn	**Pn**	**18 44 13.6**	**+0.9**
	1.3nm,0.4s							
PDGK				⇓Pg	**Pb**	**18 44 20.4**	**+0.6**
	16nm,0.6s							
PDGK				⇓Lg	Lg	18 45 05.4		
	40nm,0.6s							
SHLS	**Shalkode**	**3.37**	**37**	*e*P	**Pb**	**18 44 20.7**	**+0.1**
	11nm,0.4s							
SHLS				*e*S	**Sg**	**18 45 07.2**	**-1.6**
	47nm,0.6s							
MRKS	**Merke**	**3.67**	**309**	*e*P	**Pb**	**18 44 25.1**	**-0.5**
	7.0nm,0.4s							
MRKS				*e*S	**Sg**	**18 45 14.4**	**-4.0**
	15nm,0.5s							
MNBS	**Baschi**	**3.70**	**15**	*e*P	**Pb**	**18 44 25.3**	**-0.8**
	11nm,0.2s							
MNBS				*e*S	**Sg**	**18 45 15.4**	**-4.0**
	78nm,0.5s							
ARXS	**Arharly**	**3.74**	**8**	*e*P	**Pb**	**18 44 27.0**	**+0.1**
	11nm,0.5s							
ARXS				*e*S	**Sg**	**18 45 17.6**	**-3.3**
	30nm,0.8s							
KTMS	**Ketmen**	**3.81**	**38**	*e*P	**Pb**	**18 44 27.8**	**-0.3**
	6.0nm,0.9s							
KTMS				*e*S	**Sg**	**18 45 19.6**	**-3.3**
	32nm,1.0s							
MNAS	**Manas**	**3.98**	**301**	⇑Pn	**Pn**	**18 44 23.2**	**+1.3**
	0.8nm,0.4s							
MNAS				⇓Pg	**Pb**	**18 44 31.1**	**+0.1**
	5.4nm,0.7s							
MNAS				⇑Lg	Lg	18 45 23.9		
	14nm,0.9s							

NIED ***27*** *18:45:00,37˚.30N×142˚.00E,h8km,Mw3.9 Best double couple: M₀8.65000×10¹⁴ NP1:φs167.00000°,δ52.00000°, λ-165.00000°. NP2:φs68.00000°,δ78.00000°, λ-39.00000°.*

ISCJB ***27*** *18:45:34.8±1.6,37˚.36N±0˚.04×142˚.01E±0˚.05, h11km±10km,mb3.7/12,MS3.3/3,Error ellipse: s-maj=7.0km s-min=6.0km az=157.0*

IDC ***27*** *18:45:34.5±0.9,37˚.33N×142˚.10E,h0km,mb3.7/12, mb1 3.8/16,mb1mx3.7/45,mbtmp3.7/16,ML3.6/2,MS3.2/6, Ms1 3.2/6,ms1mx2.8/38,Error ellipse: s-maj=22.2km s-min=16.6km az=97.0*

JMA ***27*** *18:45:36.5±0.2,37˚.31N×141˚.94E,h38km±5km,M4.1*

JMA Felt I J1.

ISC 27 18:45:35.3±2.0,37˚.36N±0˚.04×141˚.90E±0˚.06,h3km±11km, n36,σ1ˢ66/38,mb3.7/12,MS3.3/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.82**	**271**	P	**Pb**	**18 45 52.1**	**0.0**
JFK				*e*S	**Sb**	**18 46 03.0**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.92**	**254**	P	**Pg**	**18 45 53.2**	**+0.4**
ONAJ				*e*S	**Sg**	**18 46 05.3**	**+0.6**
JMM	**Marumori**	**1.01**	**300**	P	**Pn**	**18 45 55.3**	**-1.1**
JMM				*e*S	**Sb**	**18 46 08.7**	**-0.5**
JIO	**Ouri**	**1.18**	**338**	P	**Pb**	**18 45 57.3**	**-0.9**
JIO				*e*S	**Sb**	**18 46 12.1**	**-1.7**
JFT	**Otama**	**1.25**	**278**	P	**Pb**	**18 45 59.4**	**-0.2**
JFT				*e*S	**Sn**	**18 46 16.0**	**-1.1**
JOU	**Okura**	**1.40**	**316**	P	**Pb**	**18 46 01.4**	**-0.7**
JOU				*e*S	**Sg**	**18 46 20.3**	**0.0**
JMK	**Ichinoseki**	**1.68**	**342**	P	**Pb**	**18 46 05.2**	**-1.6**
JYS	**Shirataka**	**1.69**	**301**	P	**Pg**	**18 46 07.2**	**-0.4**
JYS				*e*S	**Sg**	**18 46 28.4**	**-1.1**
JFY	**Yanaizu**	**1.75**	**272**	P	**Pb**	**18 46 06.9**	**-1.1**
JFY				*e*S	**Sb**	**18 46 29.1**	**-1.2**
JYK	**Kaneyama**	**1.97**	**322**	P	**Pn**	**18 46 09.5**	**-0.1**
MJAR	**Matsushiro Arr**	**3.07**	**256**	Pn	**Pn**	**18 46 26.6**	**+1.9**
	5.7nm,0.3s,baz=76,slow=16,SNR=37						
MJAR					Sn	**Sb**	**18 47 05.2**	**-3.1**
	9.0nm,0.3s,baz=70,slow=22,SNR=5.5						
MJAR					LR	LR	18 47 25.0	
	comp=Z,22nm,20.4s,baz=90,slow=35						
MAT	**Matsushiro**	**3.07**	**256**	P	**Pn**	**18 46 25.9**	**+1.3**
MAT				*e*S	**Sb**	**18 47 05.4**	**-2.9**
JHJ	**Hachijo jima 2**	**4.57**	**203**	Pn	**Pn**	**18 46 44.8**	**-0.5**
	11nm,0.3s,baz=142,slow=23,SNR=16						
JHJ					Sn	**Sn**	**18 47 35.4**	**-3.4**
	34nm,0.3s,baz=213,slow=22,SNR=7.0						
USRK	**Ussuriysk Ar.**	**10.15**	**315**	Pn	**Pn**	**18 48 05.1**	**+3.3**
	0.1nm,0.3s,baz=127,slow=12,SNR=3.6						
USRK					LR	LR	18 51 37.2	
	comp=Z,117nm,20.0s,baz=128,slow=35						
KSRS	**Korea Array**	**11.12**	**275**	Pn	**Pn**	**18 48 19.2**	**+4.1**
	baz=90,slow=13,SNR=2.4						
KSRS					LR	LR	18 51 55.7	
	comp=Z,62nm,20.2s,baz=88,slow=34						
KLR	**Kul'dur**	**13.96**	**331**	LR	LR	18 54 08.7	
	comp=Z,76nm,18.8s,baz=141,slow=36						
YAK	**Yakutsk**	**25.84**	**347**	P	**P**	**18 51 07.1**	**-0.4**
	4.4nm,0.5s,baz=290,slow=2.2,SNR=4.5						
SEY	**Seymchan**	**26.40**	**11**	P	**P**	**18 51 12.7**	**+0.1**
	1.7nm,0.8s,baz=208,slow=12,SNR=3.7						
SONM	**Songino Array**	**27.93**	**303**	P	**P**	**18 51 27.5**	**+0.8**
	0.5nm,0.5s,baz=98,slow=9.0,SNR=2.6						
H11N2	**WAKE ISLAND Hy 27.98**	**122**		T	T	19 20 39.9	
	baz=314,slow=75,SNR=474						
H11N1	**WAKE ISLAND Hy 27.99**	**122**		T	T	19 20 57.7	
	baz=314,slow=75,SNR=476						
H11N3	**WAKE ISLAND Hy 28.00**	**122**		T	T	19 20 52.7	
	baz=314,slow=75,SNR=453						
H11S1	**WAKE ISLAND Hy 28.71**	**124**		T	T	19 21 43.8	
	baz=316,slow=76,SNR=304						
H11S3	**WAKE ISLAND Hy 28.72**	**124**		T	T	19 21 52.8	
	baz=316,slow=76,SNR=243						
H11S2	**WAKE ISLAND Hy 28.73**	**124**		T	T	19 21 58.5	
	baz=316,slow=76,SNR=207						
CMAR	**Chiang Mai Arr**	**41.95**	**255**	LR	LR	19 10 57.7	
	comp=Z,14nm,19.6s,baz=45,slow=36						
ZALV	**Zalesovo Beam**	**41.98**	**312**	P	**P**	**18 53 27.9**	**+0.6**
	1.1nm,0.6s,baz=91,slow=8.9,SNR=3.6						
MKAR	**Makanchi Array**	**44.28**	**302**	P	**P**	**18 53 45.9**	**-0.2**
	0.5nm,0.6s,baz=88,slow=9.1,SNR=5.9						
ILAR	**Eielson Array**	**49.01**	**33**	P	**P**	**18 54 22.1**	**-0.8**
	0.9nm,0.7s,baz=270,slow=5.9,SNR=11						
BVAR	**Borovoye Array**	**50.64**	**312**	P	**P**	**18 54 34.4**	**-1.1**
	0.4nm,0.8s,baz=110,slow=12,SNR=2.3						
WRA	**Warramunga Arr**	**57.44**	**188**	P	**P**	**18 55 23.3**	**-2.0**
	0.5nm,0.7s,baz=4.4,slow=7.1,SNR=5.1						
AKTO	**Aktyubinsk**	**58.75**	**312**	P	**P**	**18 55 36.0**	**+1.8**
	0.3nm,0.3s,baz=52,slow=12,SNR=2.4						
ASAR	**Alice Springs**	**61.16**	**188**	P	**P**	**18 55 52.7**	**+1.6**
	0.4nm,0.7s,baz=13,slow=6.2,SNR=5.7						
FINES	**FINESS Array B**	**68.71**	**332**	P	**P**	**18 56 39.6**	**-0.2**
	0.8nm,0.6s,baz=30,slow=9.1,SNR=5.2						
NOA	**NORSAR Array B**	**74.04**	**337**	P	**P**	**18 57 13.8**	**+1.7**
	0.3nm,0.6s,baz=39,slow=5.8,SNR=3.4						
NOA					LR	LR	19 32 23.3	
	comp=Z,17nm,20.4s,baz=210,slow=38						
URZ	**Urewera**	**81.96**	**153**	LR	LR	19 30 43.7	
	comp=Z,38nm,20.8s,baz=184,slow=33						

IDC 27 18:59:17.0±4.7,55.72S×143.16W,h0km,mb3.8/2, mb1 4.0/2,mb1mx3.8/17,mbtmp3.8/2,MS3.3/1,Ms1 3.4/1, ms1mx2.8/19,Error ellipse: s-maj=558.6km s-min=75.5km az=163.0,Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VNDA	**Vanda**	**28.91**	**202**	LR	LR	19 14 38.3	
	comp=Z,60nm,20.1s,baz=24,slow=32						
ASAR	**Alice Springs**	**66.86**	**262**	P	P	19 10 10.9	+0.2
	0.6nm,0.6s,baz=140,slow=7.6,SNR=8.9						
WRA	**Warramunga Arr**	**69.57**	**264**	P	P	19 10 27.7	-0.1
	1.0nm,1.0s,baz=140,slow=5.7,SNR=9.0						
MKAR	**Makanchi Array**	**150.67**	**272**	PKPbc	PKPbc	19 19 09.1	-0.9
	0.9nm,0.9s,baz=127,slow=3.6,SNR=3.3						
ZALV	**Zalesovo Beam**	**152.74**	**287**	PKPbc	PKPbc	19 19 14.8	+0.4
	0.3nm,0.4s,baz=95,slow=3.5,SNR=2.9						

NIED ***27*** *19:06:00,37˚.30N×144˚.90E,h8km,Mw3.7 Best double couple: M₀3.62000×10¹⁴ NP1:φs182.00000°,δ46.00000°, λ-138.00000°. NP2:φs60.00000°,δ61.00000°, λ-52.00000°.*

IDC ***27*** *19:06:35.9±0.8,37˚.06N×145˚.37E,h0km,mb3.8/13, mb1 4.0/17,mb1mx3.9/40,mbtmp3.9/17,ML3.5/4,Error ellipse: s-maj=22.1km s-min=18.1km az=101.0*

NEIC ***27*** *19:06:37.4±0.5,37˚.11N×145˚.34E,h10km,mb4.2/2,Error ellipse: s-maj=10.3km s-min=8.6km az=119.0*

ISCJB ***27*** *19:06:40.5±0.5,37˚.21N±0˚.04×144˚.97E±0˚.05,h33km, mb4.0/16,Error ellipse: s-maj=6.2km s-min=5.1km az=8.7*

JMA ***27*** *19:06:41.8±0.2,37˚.34N×144˚.93E,h42km,M4.8*

ISC 27 19:06:41.8±0.8,37˚.24N±0˚.05×145˚.10E±0˚.07,h35km,n47, σ1ˢ90/58,mb4.0/16,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**3.21**	**293**	P	**Pn**	**19 07 29.3**	**-0.3**
JIO				S	**Sn**	**19 08 04.5**	**-2.1**
OFUJ	**Ofunato**	**3.27**	**305**	P	**Pn**	**19 07 29.8**	**-0.7**
OFUJ				S	**Sn**	**19 08 05.6**	**-2.6**
JFK	**Kawauchi**	**3.37**	**273**	P	**Pn**	**19 07 31.5**	**-0.4**
JFK				*e*S	**Sn**	**19 08 08.3**	**-2.4**
JMK	**Ichinoseki**	**3.50**	**300**	P	**Pn**	**19 07 33.5**	**-0.2**
JMK				*e*S	**Sn**	**19 08 12.1**	**-1.9**
JOU	**Okura**	**3.69**	**289**	P	**Pn**	**19 07 36.7**	**+0.4**
JOU				S	**Sn**	**19 08 18.0**	**-0.5**
JFT	**Otama**	**3.80**	**276**	P	**Pn**	**19 07 38.5**	**+0.6**
JFT				S	**Sn**	**19 08 20.0**	**-1.4**
JYK	**Kaneyama**	**4.10**	**296**	P	**Pn**	**19 07 42.2**	**+0.3**
JYK				*e*S	**Sn**	**19 08 27.8**	**-0.8**
JRG	**Rokugo**	**4.12**	**303**	P	**Pn**	**19 07 42.5**	**+0.3**
JRG				*e*S	**Sn**	**19 08 28.3**	**-0.8**
JAH	**Hinai**	**4.57**	**312**	P	**Pn**	**19 07 48.7**	**+0.4**
JAH				*e*S	**Sn**	**19 08 39.4**	**-0.7**
JTM	**Tenmabayashi**	**4.73**	**320**	P	**Pn**	**19 07 50.1**	**-0.5**
JTM				*e*S	**Sn**	**19 08 40.6**	**-3.6**
ERM	**Erimo**	**5.00**	**343**	*e*Pn	**Pn**	**19 07 52.3**	**-2.0**
	54nm,0.4s						
JRY	**Iryogami san**	**5.13**	**258**	P	**Pn**	**19 07 55.6**	**-0.5**
JOT	**Ohata**	**5.19**	**324**	P	**Pn**	**19 07 56.2**	**-0.7**
JOT				*e*S	**Sn**	**19 08 52.6**	**-3.0**
JOD2	**Odawara 2**	**5.24**	**250**	P	**Pn**	**19 07 57.4**	**-0.2**
JOD2				*e*S	**Sn**	**19 08 53.3**	**-3.6**
JCH	**Churui**	**5.53**	**347**	P	**Pn**	**19 07 59.6**	**-2.0**
JCH				*e*S	**Sn**	**19 08 57.3**	**-6.6**
MJAR	**Matsushiro Arr**	**5.57**	**265**	Pn	**Pn**	**19 08 02.0**	**-0.1**
	6.1nm,0.3s,baz=330,slow=14,SNR=46						
MJAR					Sn	**Sn**	**19 09 01.7**	**-3.1**
	2.0nm,0.3s,baz=79,slow=16,SNR=4.1						
MAJO	**Matsushiro**	**5.57**	**265**	*e*Pn	**Pn**	**19 08 03.0**	**+0.9**
	24nm,0.5s						
MAT	**Matsushiro**	**5.57**	**265**	P	**Pn**	**19 08 03.2**	**+1.1**
MAT				*e*S	**Sn**	**19 09 01.4**	**-3.5**
JKB	**Kayabe**	**5.61**	**327**	P	**Pn**	**19 08 02.5**	**-0.1**
JHJ2	**Mitsune**	**5.97**	**228**	*e*Pn	**Pn**	**19 08 06.4**	**-1.2**
JHJ	**Hachijo jima 2**	**5.99**	**228**	Pn	**Pn**	**19 08 06.5**	**-1.3**
	9.8nm,0.3s,baz=44,slow=22,SNR=14						
JHJ					Sn	**Sn**	**19 09 11.4**	**-3.7**
	31nm,0.3s,baz=81,slow=22,SNR=15						
USRK	**Ussuriysk Ar.**	**12.13**	**309**	Pn	**Pn**	**19 09 33.6**	**+1.7**
	0.5nm,0.3s,baz=122,slow=14,SNR=8.2						
KSRS	**Korea Array**	**13.67**	**276**	Pn	**Pn**	**19 09 55.6**	**+2.6**
	0.2nm,0.3s,baz=94,slow=13,SNR=5.8						
KSAR	**Wonju Array Be**	**13.70**	**276**	Pn	**Pn**	**19 09 55.6**	**+2.2**
MDJ	**Mudanjiang**	**13.84**	**307**	*e*P	**Pn**	**19 09 56.4**	**+1.2**
H11N2	**WAKE ISLAND Hy 25.81**	**127**		T	T	19 39 07.0	
	baz=317,slow=75,SNR=105						
H11N1	**WAKE ISLAND Hy 25.82**	**127**		T	T	19 38 59.3	
	baz=317,slow=75,SNR=80						
H11N3	**WAKE ISLAND Hy 25.83**	**127**		T	T	19 38 59.7	
	baz=317,slow=75,SNR=117						
SEY	**Seymchan**	**26.11**	**8**	P	**P**	**19 12 12.5**	**+0.5**
	2.0nm,0.8s,baz=168,slow=12,SNR=5.4						
H11S1	**WAKE ISLAND Hy 26.59**	**129**		T	T	19 39 48.0	
	baz=319,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy 26.59**	**129**		T	T	19 40 07.5	
	baz=319,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy 26.61**	**129**		T	T	19 39 49.6	
	baz=319,slow=76,SNR=15						
ZALV	**Zalesovo Beam**	**43.95**	**312**	P	**P**	**19 14 46.9**	**+1.7**
	2.1nm,0.7s,baz=87,slow=6.6,SNR=10						
ZALV					PcP	**PcP**	**19 16 30.6**	**+0.1**
	1.0nm,0.5s,baz=74,slow=3.5,SNR=4.9						
MKAR	**Makanchi Array**	**46.50**	**303**	P	**P**	**19 15 06.4**	**+0.9**
	0.8nm,0.7s,baz=84,slow=9.1,SNR=9.2						
ILAR	**Eielson Array**	**47.74**	**32**	P	**P**	**19 15 14.5**	**-0.4**
	1.3nm,0.8s,baz=260,slow=6.1,SNR=11						
KURK	**Kurchatov**	**48.12**	**308**	*e*P	**P**	**19 15 18.8**	**+0.8**
	34nm,0.6s						
BVAR	**Borovoye Array**	**52.60**	**313**	P	**P**	**19 15 53.5**	**+1.7**
	3.3nm,0.8s,baz=74,slow=7.9,SNR=8.2						
BRVK	**Borovoye**	**52.66**	**313**	*e*P	**P**	**19 15 53.5**	**+1.2**
	3.0nm,0.6s						
WRAB	**Tennant Creek**	**57.76**	**192**	*e*P	**P**	**19 16 27.1**	**-2.3**
	0.6nm,0.4s						
WRA	**Warramunga Arr**	**57.77**	**192**	P	**P**	**19 16 28.2**	**-1.1**
	0.7nm,0.8s,baz=10,slow=7.1,SNR=11						
AKTO	**Aktyubinsk**	**60.71**	**313**	P	**P**	**19 16 50.4**	**+0.9**
	1.1nm,0.6s,baz=74,slow=12,SNR=5.1						
ASAR	**Alice Springs**	**61.49**	**192**	P	**P**	**19 16 52.8**	**-2.2**
	0.2nm,0.7s,baz=6.9,slow=7.6,SNR=5.2						
FINES	**FINESS Array B**	**69.98**	**333**	P	**P**	**19 17 50.0**	**+0.8**
	1.2nm,0.7s,baz=39,slow=7.3,SNR=6.9						
KBZ	**Khabaz**	**72.98**	**312**	P	**P**	**19 18 09.4**	**+1.8**
	2.4nm,0.7s,baz=345,slow=2.2,SNR=5.2						
NOA	**NORSAR Array B**	**75.10**	**339**	P	**P**	**19 18 19.8**	**0.0**
	0.8nm,0.8s,baz=38,slow=5.9,SNR=3.3						
BRTR	**Keskin Array B**	**80.89**	**313**	P	**P**	**19 18 54.1**	**+1.6**
	0.4nm,0.7s,baz=100,slow=4.4,SNR=3.1						
TXAR	**Lajitas Array**	**87.63**	**55**	P	**P**	**19 19 26.6**	**-0.2**
	0.4nm,0.8s,baz=299,slow=2.6,SNR=5.2						

IDC ***27*** *19:08:57.9±1.0,37˚.61N×141˚.93E,h0km,mb3.5/5, mb1 3.8/7,mb1mx3.5/38,mbtmp3.6/7,ML3.8/2,MS3.0/5, Ms1 3.0/5,ms1mx2.5/41,Error ellipse: s-maj=29.5km s-min=20.4km az=123.0*

ISCJB ***27*** *19:08:59.4±1.1,37˚.61N±0˚.04×141˚.94E±0˚.06,h18km±7km, mb3.6/5,MS3.0/4,Error ellipse: s-maj=8.5km s-min=6.3km az=28.8*

NIED ***27*** *19:09:00,37˚.60N×141˚.80E,h44km,Mw3.7 Best double couple: M₀4.09000×10¹⁴ NP1:φs241.00000°,δ28.00000°, λ171.00000°. NP2:φs338.00000°,δ86.00000°,λ62.00000°.*

JMA ***27*** *19:09:01.9±0.1,37˚.64N×141˚.81E,h33km±3km,M4.0*

JMA Felt I J1.

ISC 27 19:08:59.6±1.9,37˚.60N±0˚.04×141˚.87E±0˚.06,h13km±11km, n28,σ1ˢ23/28,mb3.5/5,MS3.2/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.82**	**254**	P	**Pn**	**19 09 16.7**	**-0.3**
JFK				*e*S	**Sb**	**19 09 26.8**	**0.0**
JMM	**Marumori**	**0.89**	**288**	P	**Pg**	**19 09 17.4**	**+0.5**
JMM				*e*S	**Sb**	**19 09 28.1**	**-0.7**
JIO	**Ouri**	**0.95**	**335**	P	**Pg**	**19 09 18.0**	**+0.1**
JIO				*e*S	**Sb**	**19 09 28.8**	**-1.6**
ONAJ	**Iwakimizuishiy**	**0.98**	**240**	P	**Pn**	**19 09 19.1**	**-0.8**
ONAJ				*e*S	**Sb**	**19 09 30.8**	**-0.8**
JFT	**Otama**	**1.22**	**267**	P	**Pg**	**19 09 23.2**	**+0.1**
JFT				*e*S	**Sb**	**19 09 37.8**	**-0.4**
JOU	**Okura**	**1.22**	**309**	P	**Pb**	**19 09 22.7**	**+0.1**
JOU				*e*S	**Sb**	**19 09 37.6**	**-0.7**
JMK	**Ichinoseki**	**1.44**	**340**	P	**Pb**	**19 09 25.7**	**-0.7**
JYS	**Shirataka**	**1.55**	**294**	*e*S	**Sb**	**19 09 47.1**	**-0.8**
JFY	**Yanaizu**	**1.73**	**264**	P	**Pb**	**19 09 30.5**	**-0.8**
JFY				*e*S	**Sn**	**19 09 51.3**	**-0.1**
JYK	**Kaneyama**	**1.77**	**318**	P	**Pn**	**19 09 30.4**	**+0.4**
MJAR	**Matsushiro Arr**	**3.11**	**251**	Pn	**Pn**	**19 09 50.1**	**+1.6**
	3.9nm,0.3s,baz=80,slow=16,SNR=6.1						
MJAR					Sn	**Sb**	**19 10 29.4**	**-3.3**
	6.6nm,0.3s,baz=323,slow=30,SNR=4.5						
MJAR					LR	LR	19 11 28.0	
	comp=Z,124nm,18.3s,baz=80,slow=48						
MAT	**Matsushiro**	**3.11**	**251**	P	**Pn**	**19 09 50.5**	**+2.0**
MAT				*e*S	**Sn**	**19 10 28.1**	**+2.6**
JHJ	**Hachijo jima 2**	**4.78**	**201**	Pn	**Pn**	**19 10 12.6**	**+1.1**
	29nm,0.3s,baz=312,slow=14,SNR=6.9						
JHJ					Sn	**Sn**	**19 11 05.0**	**-1.7**
	18nm,0.3s,baz=289,slow=22,SNR=5.7						
MA2	**Magadan**	**22.73**	**12**	LR	LR	19 21 59.0	
	comp=Z,16nm,20.2s,baz=264,slow=34						
H11N2	**WAKE ISLAND Hy 28.14**	**122**		T	T	19 44 18.6	
	baz=315,slow=75,SNR=45						
H11N1	**WAKE ISLAND Hy 28.14**	**122**		T	T	19 44 17.6	
	baz=315,slow=75,SNR=46						
H11N3	**WAKE ISLAND Hy 28.15**	**122**		T	T	19 44 22.2	
	baz=315,slow=75,SNR=51						
H11S1	**WAKE ISLAND Hy 28.87**	**124**		T	T	19 45 20.6	
	baz=316,slow=76,SNR=48						
H11S3	**WAKE ISLAND Hy 28.87**	**124**		T	T	19 45 18.0	
	baz=316,slow=76,SNR=50						
H11S2	**WAKE ISLAND Hy 28.89**	**124**		T	T	19 45 19.2	
	baz=316,slow=76,SNR=47						
MKAR	**Makanchi Array**	**44.13**	**302**	P	**P**	**19 17 07.4**	**-0.4**
	0.3nm,0.5s,baz=80,slow=9.3,SNR=3.1						
PMG	**Port Moresby**	**47.02**	**173**	LR	LR	19 43 03.5	
	comp=Z,18nm,18.6s,baz=325,slow=44						
ILAR	**Eielson Array**	**48.82**	**33**	P	**P**	**19 17 44.2**	**-0.1**
	0.2nm,0.7s,baz=263,slow=7.1,SNR=3.1						
WRA	**Warramunga Arr**	**57.67**	**188**	P	**P**	**19 18 49.7**	**-0.1**
	0.9nm,0.6s,baz=6.8,slow=7.5,SNR=16						
ASAR	**Alice Springs**	**61.40**	**188**	P	**P**	**19 19 15.6**	**+0.1**
	0.7nm,0.8s,baz=11,slow=11,SNR=7.2						
OBN	**Obninsk**	**67.86**	**323**	LR	LR	19 50 36.7	
	comp=Z,16nm,18.1s,baz=288,slow=37						
FINES	**FINESS Array B**	**68.48**	**332**	LR	LR	19 50 56.7	
	comp=Z,15nm,18.4s,baz=81,slow=37						
TXAR	**Lajitas Array**	**89.49**	**53**	P	**P**	**19 21 57.8**	**+0.9**
	0.1nm,0.3s,baz=270,slow=1.8,SNR=2.7						

NIED ***27*** *19:10:00,36˚.70N×141˚.80E,h35km,Mw3.7 Best double couple: M₀3.66000×10¹⁴ NP1:φs203.00000°,δ22.00000°, λ93.00000°. NP2:φs20.00000°,δ68.00000°,λ89.00000°.*

JMA 27 19:10:30.7±0.3,36.74N×141.81E,h45km±5km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.89**	**294**	P	Pn	19 10 46.6	-0.2
JFK	**Kawauchi**	**0.97**	**310**	P	Pn	19 10 48.1	+0.1
JHO	**Hitachi**	**1.01**	**263**	P	Pn	19 10 48.3	-0.1
JHO				*e*S	Sn	19 11 01.5	+0.1
JMM	**Marumori**	**1.39**	**324**	P	Pn	19 10 54.1	+0.5
JFT	**Otama**	**1.41**	**304**	P	Pn	19 10 54.9	+1.0
JIO	**Ouri**	**1.75**	**348**	P	Pn	19 10 59.4	+0.8
JAG	**Ashikaga**	**1.92**	**261**	P	Pn	19 11 02.1	+1.2
JAG				S	Sn	19 11 24.9	+1.0
MAT	**Matsushiro**	**2.90**	**267**	P	Pn	19 11 16.9	+2.5
MAT				*e*S	Sn	19 11 50.8	+2.7

IDC ***27*** *19:13:30.7±1.1,36.68N×141.80E,h0km,mb3.5/7, mb1 3.7/9,mb1mx3.5/35,mbtmp3.5/9,ML3.4/2,Error ellipse: s-maj=28.9km s-min=19.3km az=80.0*

JMA ***27*** *19:13:36.2±0.1,36.69N×141.39E,h50km±2km,M3.4*

ISC 27 19:13:32.7±2.2,36.69N±0.05×141.62E±0.09,h11km±12km, n22,σ0ˢ87/22,mb3.5/7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.78**	**302**	P	**Pb**	**19 13 48.6**	**+0.3**
ONAJ				S	**Sg**	**19 13 58.2**	**+0.3**
JHO	**Hitachi**	**0.85**	**265**	P	**Pg**	**19 13 49.2**	**+0.1**
JHO				S	**Sg**	**19 13 58.6**	**-1.6**
JFK	**Kawauchi**	**0.90**	**319**	P	**Pb**	**19 13 50.7**	**+0.3**
JFK				S	**Sg**	**19 14 02.1**	**+0.2**
JFT	**Otama**	**1.32**	**309**	P	**Pb**	**19 13 57.6**	**+0.1**
JMM	**Marumori**	**1.35**	**331**	P	**Pn**	**19 13 57.3**	**-0.2**
JMM				*e*S	**Sb**	**19 14 14.0**	**-1.2**
JAG	**Ashikaga**	**1.76**	**262**	P	**Pn**	**19 14 02.7**	**-0.5**
MJAR	**Matsushiro Arr**	**2.75**	**268**	Pn	**Pn**	**19 14 17.5**	**+0.8**
	7.3nm,0.3s,baz=88,slow=14,SNR=18						
MAT	**Matsushiro**	**2.75**	**268**	P	**Pn**	**19 14 17.5**	**+0.7**
MAT				*e*S	**Sn**	**19 14 50.3**	**+0.3**
JHJ	**Hachijo jima 2**	**3.87**	**203**	Pn	**Pn**	**19 14 33.2**	**+1.0**
	6.2nm,0.3s,baz=314,slow=22,SNR=8.9						
JHJ					Sn	**Sn

MA2	**Magadan**	**23.66**	**12**	LR	LR	19 43 13.3			
	comp=Z,15nm,19.6s,baz=166,slow=37								
SEY	**Seymchan**	**27.09**	**11**	P	**P**	**19 34 21.4**	**+2.4**		
	2.2nm,0.9s,baz=201,slow=8.6,SNR=6.7								
SONM	**Songino Array**	**27.80**	**304**	P	**P**	**19 34 26.8**	**+1.1**		
	1.8nm,0.5s,baz=113,slow=8.2,SNR=6.4								
H11N2	**WAKE ISLAND Hy**	**28.15**	**120**	T	T	20 04 35.7			
	baz=313,slow=75,SNR=72								
H11N1	**WAKE ISLAND Hy**	**28.16**	**120**	T	T	20 04 36.1			
	baz=313,slow=75,SNR=72								
H11N3	**WAKE ISLAND Hy**	**28.17**	**120**	T	T	20 04 36.9			
	baz=313,slow=75,SNR=79								
H11S1	**WAKE ISLAND Hy**	**28.85**	**122**	T	T	20 05 27.0			
	baz=314,slow=75,SNR=45								
H11S3	**WAKE ISLAND Hy**	**28.85**	**122**	T	T	20 05 27.8			
	baz=314,slow=75,SNR=30								
H11S2	**WAKE ISLAND Hy**	**29.87**	**122**	T	T	20 05 24.7			
	baz=314,slow=75,SNR=26								
ZALV	**Zalesovo Beam**	**41.98**	**313**	P	**P**	**19 36 27.0**	**-0.2**		
	2.2nm,0.5s,baz=94,slow=7.5,SNR=12								
ZALV				PcP	**PcP**	**19 38 21.2**	**-0.5**		
	0.5nm,0.3s,baz=93,slow=7.2,SNR=3.8								
MKAR	**Makanchi Array**	**44.12**	**302**	P	**P**	**19 36 44.3**	**-0.4**		
	0.6nm,0.6s,baz=86,slow=10,SNR=8.5								
ILAR	**Eielson Array**	**49.82**	**32**	P	**P**	**19 37 29.2**	**+0.4**		
	0.6nm,0.7s,baz=264,slow=6.2,SNR=7.4								
BVAR	**Borovoye Array**	**50.63**	**312**	P	**P**	**19 37 34.6**	**-0.5**		
	0.5nm,0.4s,baz=78,slow=7.4,SNR=5.7								
BVAR				PcP	**PcP**	**19 38 51.5**	**-0.6**		
	0.9nm,0.7s,baz=90,slow=3.0,SNR=5.5								
WRA	**Warramunga Arr**	**56.76**	**188**	P	**P**	**19 38 19.6**	**-0.6**		
	0.3nm,0.4s,baz=5.5,slow=7.3,SNR=12								
ASAR	**Alice Springs**	**60.49**	**188**	P	**P**	**19 38 46.5**	**+0.3**		
	0.2nm,0.6s,baz=353,slow=5.1,SNR=3.4								
GEYT	**Alibeck**	**63.82**	**299**	P	**P**	**19 39 07.8**	**-0.7**		
	1.4nm,0.7s,baz=8.5,slow=3.0,SNR=4.0								
FINES	**FINESS Array B**	**68.98**	**332**	P	**P**	**19 39 40.5**	**-0.5**		
	1.8nm,0.8s,baz=46,slow=11,SNR=7.1								
KBZ	**Khabaz**	**70.95**	**311**	P	**P**	**19 39 53.1**	**-0.3**		
	2.1nm,0.8s,baz=251,slow=4.5,SNR=4.3								
HFS	**Hagfors**	**74.27**	**336**	P	**P**	**19 40 12.4**	**-0.4**		
	0.9nm,0.7s,baz=77,slow=6.5,SNR=4.3								
NB2	**NORSAR Subarra**	**74.38**	**337**	P	**P**	**19 40 13.0**	**-0.5**		
	comp=Z,1.2nm,0.8s,baz=40,slow=6.2								
NOA	**NORSAR Array B**	**74.38**	**337**	P	**P**	**19 40 13.3**	**-0.2**		
	comp=Z,1.3nm,1.0s,baz=40,slow=5.8,SNR=4.0								
AKASG	**Malin Array Be**	**74.41**	**322**	P	**P**	**19 40 12.9**	**-0.9**		
	comp=Z,1.6nm,0.4s,baz=46,slow=6.5,SNR=12								
BRTR	**Keskin Array B**	**78.91**	**311**	P	**P**	**19 40 39.4**	**-0.3**		
	comp=Z,0.6nm,0.7s,baz=68,slow=4.2,SNR=4.1								
GERES	**GERESS Array B**	**82.86**	**328**	P	**P**	**19 40 59.6**	**-0.8**		
	comp=Z,0.5nm,0.5s,baz=32,slow=5.3,SNR=5.8								
SCHQ	**Schefferville**	**85.65**	**16**	LR	LR	20 23 58.9			
	comp=Z,19nm,18.4s,baz=84,slow=39								

WEL 27 19:33:21.9±0.1, 43°58S×172°03E, h7km±1km, ML3.6/17, 5C-2D, Error ellipse: s-maj=0.8km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OXZ	**Oxford**	**0.26**	**2**	⇑PG		Pg	19 33 26.4	-0.5
OXZ				SG		Sg	19 33 30.1	-0.3
OXZ				AML		AML	19 33 30.3	
OXZ				AML		AML	19 33 31.2	
OXZ				AML		AML	19 33 31.2	
CRLZ	**Canterbury Las**	**0.43**	**89**	⇑PG		Pg	19 33 30.7	+0.4
CRLZ				SG		Sg	19 33 37.0	+1.0
CRLZ				AML		AML	19 33 37.5	
MQZ	**McQueen's Vall**	**0.47**	**105**	⇓PG		Pg	19 33 31.2	+0.1
MQZ				AML		AML	19 33 39.1	
MQZ				AML		AML	19 33 40.1	
RPZ	**Rata Peaks**	**0.72**	**259**	⇑P*		Pg	19 33 35.7	+0.1
RPZ				AML		AML	19 33 47.2	
RPZ				AML		AML	19 33 47.4	
LTZ	**Lake Taylor**	**0.82**	**13**	P*		Pg	19 33 37.5	-0.1
LTZ				S*		Sg	19 33 48.3	0.0
INZ	**Inchbonnie**	**0.96**	**333**	⇓P*		Pg	19 33 39.7	-0.5
WVZ	**Waitaha Valley**	**1.07**	**298**	P*		Pg	19 33 41.8	-0.6
WVZ				AML		AML	19 33 57.8	
WVZ				AML		AML	19 33 58.6	
LBZ	**Lake Benmore**	**1.55**	**238**	⇑PN		Pn	19 33 48.7	-1.2
LBZ				AML		AML	19 34 13.9	
LBZ				AML		AML	19 34 15.9	
LBZ				AML		AML	19 34 19.5	
LBZ				AML		AML	19 34 19.5	
FOZ	**Fox Glacier**	**1.61**	**271**	PN		Pn	19 33 50.3	-0.3
FOZ				AML		AML	19 34 15.2	
FOZ				AML		AML	19 34 15.2	
FOZ				AML		AML	19 34 16.6	
FOZ				AML		AML	19 34 16.7	
KHZ	**Kahutara**	**1.61**	**44**	PN		Pn	19 33 48.6	-2.0
ODZ	**Otahua Downs**	**1.77**	**214**	⇑PN		Pn	19 33 51.0	-1.8
ODZ				AML		AML	19 33 56.1	
ODZ				AML		AML	19 34 20.7	
ODZ				AML		AML	19 34 21.9	
ODZ				AML		AML	19 34 25.9	
DSZ	**Denniston Nort**	**1.84**	**355**	AML		AML	19 34 23.5	
DSZ				AML		AML	19 34 23.6	
DSZ				AML		AML	19 34 23.6	
THZ	**Tophouse**	**1.93**	**20**	PN		Pn	19 33 53.3	-1.8
THZ				AML		AML	19 34 31.3	
THZ				AML		AML	19 34 32.0	
JCZ	**Jackson Bay**	**2.40**	**257**	PN		Pn	19 34 00.5	-1.1
JCZ				AML		AML	19 34 41.0	
JCZ				AML		AML	19 34 46.0	
WKZ	**Wanaka**	**2.50**	**239**	PN		Pn	19 34 01.4	-1.5
WKZ				AML		AML	19 35 53.7	
WKZ				AML		AML	19 35 53.7	
EAZ	**Earnscleugh**	**2.55**	**229**	PN		Pn	19 34 02.1	-1.5
EAZ				AML		AML	19 34 46.2	
EAZ				AML		AML	19 34 48.9	
TUZ	**Tuapeka**	**2.92**	**215**	PN		Pn	19 34 07.0	-1.7
TUZ				AML		AML	19 34 57.2	
TUZ				AML		AML	19 34 57.2	
TUZ				AML		AML	19 35 00.6	
TUZ				AML		AML	19 35 00.6	
MSZ	**Milford Sound**	**3.15**	**248**	PN		Pn	19 34 10.2	-1.6
MSZ				AML		AML	19 34 21.5	
MSZ				AML		AML	19 35 11.0	
MLZ	**Mavora Lakes**	**3.32**	**236**	PN		Pn	19 34 12.4	-1.8
SYZ	**Scrubby Hill**	**3.59**	**214**	PN		Pn	19 34 16.5	-1.4
SYZ				AML		AML	19 35 25.0	

IDC 27 19:38:20.8±3.8, 58°17S×142°91W, h0km, mb4.1/2, mb1 4.3/2, mb1mx3.8/23, mbtmp4.1/2, MS4.3/3, Ms1 4.3/3, ms1mx3.4/21, Error ellipse: s-maj=604.5km s-min=78.9km az=168.0, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RAR	**Rarotonga**	**38.89**	**334**	LR		LR	19 56 06.5	
	comp=Z,313nm,21.4s,baz=298,slow=27							
PLCA	**Paso Flores**	**47.68**	**102**	LR		LR	20 01 53.9	
	comp=Z,74nm,18.1s,baz=188,slow=30							
ASAR	**Alice Springs**	**66.66**	**263**	P		P	19 49 13.8	+0.6
	1.8nm,0.8s,baz=139,slow=6.9,SNR=11							
WRA	**Warramunga Arr**	**69.48**	**265**	P		P	19 49 30.4	-0.6
	1.5nm,0.9s,baz=143,slow=5.4,SNR=8.2							
PMG	**Port Moresby**	**71.51**	**282**	LR		LR	20 18 27.6	
	comp=Z,1μm,18.2s,baz=150,slow=34							
MKAR	**Makanchi Array**	**150.78**	**267**	PKPbc		PKPbc	19 58 12.7	-1.2
	1.2nm,0.8s,baz=119,slow=4.3,SNR=9.4							
ZALV	**Zalesovo Beam**	**153.47**	**282**	PKPbc		PKPbc	19 58 21.0	+1.3
	0.4nm,0.6s,baz=105,slow=3.4,SNR=4.0							

NEIC 27 19:41:11.7, 60°20N×152°52W, h99km, mb4.6/2, After AEIC., Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ILIM	**Iliamna**	**0.25**	**241**	P		Pn	19 41 25.4	-0.5
RED	**Redoubt Volcan**	**0.25**	**330**	P		Pn	19 41 25.4	-0.6
REF	**Redoubt East F**	**0.30**	**343**	P		Pn	19 41 25.8	-0.6
REF				S		Sn	19 41 36.7	-0.6
INE	**Iliamna NE**	**0.30**	**243**	P		Pn	19 41 25.9	-0.4
IVE	**Iliamna Volcan**	**0.31**	**234**	P		Pn	19 41 25.7	-0.6
ILW	**Iliamna West**	**0.34**	**246**	P		Pn	19 41 25.9	-0.6
ILS	**Iliamna Low So**	**0.37**	**229**	P		Pn	19 41 25.9	-0.7
NCT	**North Crescent**	**0.42**	**331**	P		Pn	19 41 26.0	-0.8
BGRM	**Barrier Glacie**	**0.56**	**5**	P		Pn	19 41 27.2	-0.6
OPT	**Oil Point**	**0.66**	**213**	P		Pn	19 41 28.2	-0.3
HOM	**Homer**	**0.70**	**140**	P		Pn	19 41 29.0	+0.1
NKA	**Nikishka**	**0.84**	**49**	P		Pn	19 41 31.5	+1.3
BRLK	**Bradley Lake**	**0.93**	**117**	P		Pn	19 41 30.6	-0.6
BRLK				S		Sn	19 41 45.6	-0.4
CNPM	**China Poot**	**0.94**	**136**	P		Pn	19 41 30.9	-0.5
CNPM				S		Sn	19 41 46.1	0.0
AUL	**Augustine Lava**	**0.94**	**210**	P		Pn	19 41 30.9	-0.4
AUE	**Augustine Isla**	**0.95**	**207**	P		Pn	19 41 30.8	-0.5
AUSE	**Augustine SEas**	**0.97**	**208**	P		Pn	19 41 31.1	-0.5
AUI	**Augustine Isla**	**0.98**	**208**	P		Pn	19 41 31.1	-0.6
CKL	**Chakachamna La**	**1.00**	**5**	P		Pn	19 41 31.6	-0.6
CKL				S		Sn	19 41 47.3	-0.2
SPWE	**Spurr West**	**1.08**	**359**	P		Pn	19 41 32.7	-0.3
CRP	**Crater Peak**	**1.09**	**9**	P		Pn	19 41 32.7	-0.4
CRP				S		Sn	19 41 48.8	-0.4
CGLM	**Capps Glacier**	**1.14**	**13**	P		Pn	19 41 33.2	-0.4
SLKM	**Skilak Lake**	**1.18**	**74**	P		Pn	19 41 33.3	-0.8
VOGL	**Vogel Lake**	**1.30**	**51**	P		Pn	19 41 36.3	+0.9
STLK	**Strandline Lak**	**1.35**	**14**	P		Pn	19 41 35.5	-0.5
MCNL	**McNeil River**	**1.37**	**223**	P		Pn	19 41 35.5	-0.8
CDD	**Cape Douglas**	**1.40**	**205**	P		Pn	19 41 35.8	-0.8
FIB	**Fire Island**	**1.51**	**49**	P		Pn	19 41 38.7	+0.8
FOPK	**Fourpeaked Vol**	**1.53**	**199**	P		Pn	19 41 37.3	-0.8
SUA	**Susitna One**	**1.54**	**34**	P		Pn	19 41 38.2	-0.2
SUA				S		Sn	19 41 58.5	-0.1
SEW	**Seward**	**1.54**	**92**	P		Pn	19 41 37.1	-1.1
RC01	**Rabbit Creek A**	**1.64**	**56**	P		Pn	19 41 38.9	-0.6
RC01				S		Sn	19 41 59.9	-0.8
SVW2	**Sparrevohn**	**1.76**	**302**	P		Pn	19 41 39.6	-1.4
SVW2				S		Sn	19 42 01.8	-1.6
SKT	**Skwentna**	**1.85**	**15**	P		Pn	19 41 41.4	-0.9
KAPH	**Katmai Pasha**	**1.86**	**211**	P		Pn	19 41 42.0	-0.5
KAHC	**Katmai Hardscr**	**2.01**	**220**	P		Pn	19 41 43.6	-0.8
KAWH	**Katmai**	**2.17**	**214**	P		Pn	19 41 45.6	-0.7
PMR	**Palmer**	**2.17**	**48**	P		Pn	19 41 45.1	-1.2
PMR				S		Sn	19 42 09.8	-2.9
PWL	**Port Wells**	**2.17**	**70**	P		Pn	19 41 44.8	-1.6
PWL				S		Sn	19 42 11.0	-1.9
KAKN	**Katmai Knife C**	**2.31**	**215**	P		Pn	19 41 47.7	-0.6
KVTA	**Katmai Vly 10**	**2.31**	**219**	P		Pn	19 41 47.7	-0.6
KNK	**Knik Glacier**	**2.33**	**57**	P		Pn	19 41 47.3	-1.2
GHO	**Glory Hole Cre**	**2.36**	**46**	P		Pn	19 41 47.7	-1.1
KELA	**Mount Kelaz**	**2.42**	**224**	P		Pn	19 41 48.1	-1.6
KDAK	**Kodiak Island**	**2.42**	**181**	P		Pn	19 41 47.8	-1.8
KABR	**Katmai Barrier**	**2.43**	**212**	P		Pn	19 41 49.1	-0.7
SML	**Sawmill**	**2.60**	**50**	P		Pn	19 41 50.8	-1.2
PPLA	**Purkeypile**	**2.71**	**3**	P		Pn	19 41 53.5	-0.1
HIN	**Hinchinbrook I**	**3.00**	**84**	P		Pn	19 41 56.5	-0.9
OHAK	**Old Harbor**	**3.01**	**188**	P		Pn	19 41 55.2	-2.3
SCM	**Sheep Creek Mo**	**3.01**	**55**	P		Pn	19 41 56.5	-1.1
FID	**Port Fidalgo**	**3.04**	**77**	P		Pn	19 41 55.0	-2.9
JPK	**Jack Peak**	**3.04**	**71**	P		Pn	19 41 55.8	-2.1
VLZ	**Valdez**	**3.19**	**70**	P		Pn	19 41 58.0	-1.7
TT01	**Tatalina**	**3.19**	**330**	P		Pn	19 41 58.6	-1.2
EYAK	**Cordova Ski Ar**	**3.38**	**81**	P		Pn	19 42 01.7	-0.7
TRF	**Thorofare Moun**	**3.43**	**17**	P		Pn	19 42 02.1	-1.1
KTH	**Kantishna Hill**	**3.45**	**12**	P		Pn	19 42 02.1	-1.3
DIV	**Divide**	**3.45**	**71**	P		Pn	19 42 01.4	-2.0
KLU	**Klutina**	**3.48**	**65**	P		Pn	19 42 02.2	-1.6
RND	**Reindeer**	**3.66**	**27**	P		Pn	19 42 05.3	-0.9
DHY	**Denali Highway**	**3.79**	**38**	P		Pn	19 42 07.0	-1.0
RAGM	**Ragged Mountai**	**3.91**	**84**	P		Pn	19 42 08.6	-1.0
MCK	**McKinley**	**3.93**	**24**	P		Pn	19 42 09.5	-0.3
BMRM	**Bremner River**	**3.98**	**75**	P		Pn	19 42 08.2	-2.4
BPAW	**Bear Paw Mtn.**	**3.98**	**10**	P		Pn	19 42 08.8	-1.7
NICHA	**Nichawak Mount**	**4.27**	**86**	P		Pn	19 42 13.5	-0.8
PAX	**Paxson**	**4.37**	**47**	P		Pn	19 42 15.0	-0.8
PS10	**TAPS Pump St10**	**4.55**	**42**	P		Pn	19 42 18.2	0.0
VRDI	**Verde Repeater**	**4.57**	**73**	P		Pn	19 42 16.5	-2.1
CRQM	**Cirque**	**4.68**	**79**	P		Pn	19 42 19.5	-0.5
WRH	**Wood River Hil**	**4.76**	**24**	P		Pn	19 42 19.5	-1.4
KULT	**Kultieth River**	**4.89**	**85**	P		Pn	19 42 21.5	-1.3
MLY	**Manley**	**4.92**	**9**	P		Pn	19 42 22.5	-0.7
HDA	**Harding Lake**	**4.96**	**29**	P		Pn	19 42 22.6	-1.0
CCB	**Clear Creek Bu**	**4.97**	**24**	P		Pn	19 42 22.6	-1.2
PTPK	**Patty Peak**	**5.04**	**74**	P		Pn	19 42 23.5	-1.5
ISLE	**Juniper Island**	**5.07**	**81**	P		Pn	19 42 24.4	-0.8
KIAG	**Kiagna River**	**5.07**	**77**	P		Pn	19 42 24.5	-0.8
PS08	**TAPS Pump Stn8**	**5.10**	**29**	P		Pn	19 42 24.6	-1.0
COLA	**College**	**5.16**	**23**	*e*Pn		Pn	19 42 25.4	-1.1
	22nm,0.4s							
MDM	**Murphy Dome**	**5.17**	**21**	P		Pn	19 42 25.5	-1.1
BAGL	**Bagley Icefiel**	**5.19**	**82**	P		Pn	19 42 25.9	-0.9
MESA	**MESA**	**5.28**	**86**	P		Pn	19 42 27.2	-1.0
ILB	**Eielson Array**	**5.28**	**27**	P		Pn	19 42 26.7	-1.3
DOT	**Dot Lake**	**5.28**	**45**	P		Pn	19 42 26.9	-1.2
BARN	**Barnard Glacie**	**5.42**	**76**	P		Pn	19 42 28.2	-1.8
TABL	**Table Mountain**	**5.66**	**83**	P		Pn	19 42 32.3	-1.1
IM3	**Indian Mountai**	**5.83**	**355**	P		Pn	19 42 34.2	-1.3
BCA3	**Beaver Creek A**	**5.87**	**56**	P		Pn	19 42 35.0	-1.1
PCA	**Pinnacle**	**6.13**	**86**	P		Pn	19 42 38.8	-0.8
EGAK	**Eagle**	**6.98**	**44**	*e*Pn		Pn	19 42 48.4	-2.7
	5.5nm,0.4s							
COLD	**Coldfoot**	**7.13**	**7**	P		Pn	19 42 51.8	-1.3
DAWY	**Dawson**	**7.27**	**52**	*e*Pn		Pn	19 42 54.1	-1.0
	2.4nm,0.4s							
DHAK	**Deception Hill**	**7.34**	**92**	P		Pn	19 42 55.1	-0.8
BM3	**Burnt Mountain**	**8.04**	**22**	P		Pn	19 43 03.1	-2.4
MFID	**Camas Ranch**	**27.73**	**111**	*e*P		P	19 46 47.3	-3.4
	12nm,1.4s							

*ISCJB **27** 19:42:17.8±0.4, 51°44N±0°02×16°22E±0°02, h0km, mb3.1/1, MS2.6/1, Error ellipse: s-maj=3.2km s-min=1.9km az=13.9*
*CSEM **27** 19:42:19.9±0.2, 51°43N×16°19E, h2km, ML3.7/12, Error ellipse: s-maj=3.4km s-min=2.0km az=10.0*
*IDC **27** 19:42:20.4±0.6, 51°44N×16°03E, h0km, mb3.4/1, mb1 3.4/9, mb1mx3.2/51, mbtmp3.4/9, ML3.2/8, MS2.7/1, Ms1 2.7/1, ms1mx1.8/34, Error ellipse: s-maj=13.4km s-min=6.2km az=107.0*
*WAR **27** 19:42:20.6, 51°44N×16°19E, h1km, Mw3.1*
*PRU **27** 19:42:20.6, 51°43N×16°18E, h0km*
*BGR **27** 19:42:21.1±0.4, 51°40N×16°18E, h1km, ML3.2/15, Error ellipse: s-maj=4.4km s-min=2.2km az=17.0*
*VIE **27** 19:42:23.4±0.9, 51°20N×15°99E, h0km, mb2.5/11, ML2.8/11, Error ellipse: s-maj=5.8km s-min=4.3km az=2.0, Suspected Mining induced.*

ISC 27 19:42:18.2±0.7, 51°50N±0°03×16°22E±0°02, h0km, n93, σ1s22/172, 6D, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KSP	**Ksiaz**	**0.66**	**176**	*i* Pg		**Pb**	**19 42 31.9**	**-0.6**
KSP				*i* Sg		**Sg**	**19 42 39.9**	**+0.6**
KSP				*e*			19 42 43.8	
KSP	**Ksiaz**	**0.66**	**176**	*e*Pg		**Pb**	**19 42 32.0**	**-0.6**
KSP				*e*Sg		**Sg**	**19 42 40.1**	**+0.8**
KSP	**Ksiaz**	**0.66**	**176**	*i* Pg		**Pb**	**19 42 31.9**	**-0.6**
KSP				*i* Sg		**Sg**	**19 42 39.9**	**+0.6**
UPC	**Upice**	**1.00**	**188**	⇓*e*PG		**Pb**	**19 42 38.2**	**-0.2**
UPC				*e*SG		**Sg**	**19 42 51.1**	**+0.7**
	comp=Z,340nm,0.5s							
UPC	**Upice**	**1.00**	**188**	Pg		**Pb**	**19 42 38.2**	**-0.2**
UPC				Sg		**Sg**	**19 42 51.1**	**+0.7**
	340nm,0.5s							
DPC	**Dobruska-Polom**	**1.15**	**177**	*e*PG		**Pg**	**19 42 40.8**	**+0.5**
DPC				*e*SG		**Sg**	**19 42 55.0**	**-0.2**
	comp=Z,110nm,0.4s							
DPC	**Dobruska-Polom**	**1.15**	**177**	*e*Pg		**Pg**	**19 42 40.8**	**+0.5**
DPC				*e*Sg		**Sg**	**19 42 55.1**	**-0.2**
DPC	**Dobruska-Polom**	**1.15**	**177**	Pg		**Pg**	**19 42 40.8**	**+0.5**
DPC				Sg		**Sg**	**19 42 55.0**	**-0.2**
	110nm,0.4s							
PVCC	**Panska Ves**	**1.43**	**228**	⇓*e*PG		**Pb**	**19 42 46.2**	**+0.5**
PVCC				*e*SG		**Sn**	**19 43 05.2**	**+0.4**
	comp=Z,378nm,0.3s							
PVCC	**Panska Ves**	**1.43**	**228**	Pg		**Pb**	**19 42 46.2**	**+0.5**
PVCC				Sg		**Sn**	**19 43 05.2**	**+0.4**
	378nm,0.3s							
KRLC	**Kraliky**	**1.47**	**166**	*e*PG		**Pn**	**19 42 46.1**	**+0.1**
KRLC				*e*SG		**Sg**	**19 43 05.4**	**0.0**
KRLC	**Kraliky**	**1.47**	**166**	Pg		**Pn**	**19 42 46.1**	**+0.1**
KRLC				Sg		**Sg**	**19 43 05.4**	**0.0**
BRG	**Berggiesshubel**	**1.57**	**247**	PN		**Pn**	**19 42 47.3**	**+0.1**
BRG				PG		**Pg**	**19 42 49.2**	**+1.0**
BRG				SG		**Sg**	**19 43 09.6**	**+1.1**
	94nm,0.7s							
BRG	**Berggiesshubel**	**1.57**	**247**	*e*Pn		**Pn**	**19 42 47.5**	**+0.3**
BRG				*e*Sg		**Sg**	**19 43 09.6**	**+1.1**
BRG	**Berggiesshubel**	**1.57**	**247**	Pn		**Pn**	**19 42 47.5**	**+0.3**
BRG				Sg		**Sg**	**19 43 09.6**	**+1.1**
GOPC	**GO Pecny, Ondr**	**1.83**	**210**	*e*PN		**Pn**	**19 42 51.2**	**+0.3**
GOPC				*e*PG		**Pg**	**19 42 53.4**	**+0.1**
GOPC				*e*SG		**Sb**	**19 43 16.7**	**+0.7**
	comp=Z,57nm,0.4s							
GOPC	**GO Pecny, Ondr**	**1.83**	**210**	Pn		**Pn**	**19 42 51.2**	**+0.3**
PRU	**Pruhonice**	**1.85**	**216**	⇓*e*PN		**Pn**	**19 42 51.5**	**+0.3**
PRU				*e*PG		**Pb**	**19 42 53.4**	**+0.5**
PRU				*e*SG		**Sb**	**19 43 17.0**	**+0.4**
	comp=Z,113nm,0.5s							
PRU	**Pruhonice**	**1.85**	**216**	Pn		**Pn**	**19 42 51.5**	**+0.3**
RAC	**Raciborz**	**1.89**	**138**	*e*Sg		**Sg**	**19 43 20.0**	**+1.1**
FBE	**Freiberg**	**1.90**	**253**	*e*Pg		**Pg**	**19 42 55.4**	**+0.9**
FBE				*e*Sg		**Sg**	**19 43 19.5**	**+0.5**
FBE	**Freiberg**	**1.90**	**253**	Pg		**Pg**	**19 42 55.4**	**+0.9**
FBE				Sg		**Sg**	**19 43 19.5**	**+0.5**
MORC	**Moravsky Berou**	**1.92**	**154**	*e*Pn		**Pn**	**19 42 52.8**	**+0.6**
MORC				*e*Sg		**Sb**	**19 43 19.0**	**+0.4**
MORC	**Moravsky Berou**	**1.92**	**154**	Pn		**Pn**	**19 42 52.8**	**+0.6**
MORC				Sg		**Sb**	**19 43 19.0**	**+0.4**
CLL	**Collm**	**2.03**	**266**	*e*Pn		**Pn**	**19 42 54.0**	**+0.5**
CLL				*e*Pg		**Pg**	**19 42 57.0**	**0.0**
CLL				*e*Sg		**Sg**	**19 43 24.0**	**+0.8**
	comp=Z,48nm,0.5s							
CLL	**Collm**	**2.03**	**266**	*e*Pn		**Pn**	**19 42 54.1**	**+0.5**
CLL				*e*Sg		**Sg**	**19 43 24.4**	**+1.2**
CLL	**Collm**	**2.03**	**266**	Pn		**Pn**	**19 42 54.1**	**+0.5**
CLL				Sg		**Sg**	**19 43 24.4**	**+1.2**
OKC	**Ostrava-Krasne**	**2.07**	**143**	⇓*e*PN		**Pn**	**19 42 54.4**	**+0.3**
OKC				*e*PG		**Pg**	**19 42 58.2**	**+0.4**
OKC				*e*SG		**Sb**	**19 43 23.7**	**+1.0**
	comp=Z,91nm,0.6s							
OKC	**Ostrava-Krasne**	**2.07**	**143**	*e*Pn		**Pn**	**19 42 54.5**	**+0.4**
OKC				*e*Pg		**Pg**	**19 42 58.4**	**+0.6**
OKC				*e*Sg		**Sb**	**19 43 23.8**	**+1.1**
OKC	**Ostrava-Krasne**	**2.07**	**143**	Pn		**Pn**	**19 42 54.5**	**+0.4**
VRAC	**Vranov**	**2.21**	**174**	Pn		**Pn**	**19 42 57.2**	**+1.1**
	comp=Z,3.5nm,0.3s,baz=341,slow=13,SNR=17							
VRAC					Lg	Lg	19 43 28.3	
	comp=Z,11nm,0.3s,baz=262,slow=18,SNR=14							
VRAC	**Vranov**	**2.21**	**174**	*e*Pn		**Pn**	**19 42 57.2**	**+1.1**
VRAC				*e*Sg		**Sb**	**19 43 27.6**	**+0.8**
TREC	**Trest**	**2.26**	**192**	⇓*e*PN		**Pn**	**19 42 57.7**	**+0.9**
TREC				*e*PG		**Pg**	**19 43 01.0**	**-0.4**
TREC				*e*SG		**Sb**	**19 43 29.6**	**+1.3**
	comp=Z,41nm,0.4s							
TREC	**Trest**	**2.26**	**192**	Pn		**Pn**	**19 42 57.7**	**+0.9**
OJC	**Ojcow**	**2.60**	**118**	*e*Pn		**Pn**	**19 43 01.0**	**-0.5**
OJC				*e*Pg		**Pg**	**19 43 09.7**	**+1.7**
OJC				*e*Sn		**Sn**	**19 43 31.1**	**-2.7**
OJC				*e*Sg		**Sg**	**19 43 43.2**	**+1.4**
OJC	**Ojcow**	**2.60**	**118**	*e*Pn		**Pn**	**19 43 02.7**	**+1.2**
OJC				*e*Sg		**Sg**	**19 43 43.2**	**+1.4**
OJC	**Ojcow**	**2

comp=Z,1.4nm,0.3s
RETA Sg **Sg** **19 45 10.0 -0.4**
comp=Z,18nm,0.8s
FETA Feichten 5.75 221 Pn **Pn** **19 43 47.8 +3.0**
comp=Z,2.6nm,0.8s
FETA Sg **Sg** **19 45 22.1 -0.6**
comp=Z,5.9nm,0.6s
DAVOX Davos/Dischmat 6.29 224 Pn **Pn** **19 43 52.9 +0.6**
comp=Z,0.3nm,0.3s,baz=90,slow=14,SNR=3.2
AKASG Malin Array Be 8.22 91 Pn **Pn** **19 44 19.6 +1.0**
comp=Z,1.1nm,0.3s,baz=280,slow=12,SNR=4.1
HFS Hagfors 8.77 352 Pn **Pn** **19 44 26.6 +0.5**
comp=Z,0.4nm,0.3s,baz=168,slow=15,SNR=13
NOA NORSAR Array B 9.96 346 Pn **Pn** **19 44 42.4 +0.1**
comp=Z,0.3nm,0.3s,baz=151,slow=11,SNR=6.3
FINES FINESS Array B 11.34 25 Pn **Pn** **19 45 00.4 -0.9**
comp=Z,0.4nm,0.3s,baz=205,slow=11,SNR=12
FINES Sn **Sn** **19 47 02.0 -6.5**
comp=Z,0.2nm,0.3s,baz=204,slow=20,SNR=3.4
EKA Eskdalemuir Ar 12.17 296 Pn **Pn** **19 45 10.5 -2.2**
baz=102,slow=14,SNR=3.9
ARCES ARCESS Array B 18.62 10 Pn **P** **19 46 35.1 -1.7**
comp=Z,0.6nm,0.3s,baz=196,slow=13,SNR=7.1
EIL Elat 25.89 140 LR LR 19 58 58.9
comp=Z,19nm,20.8s,baz=66,slow=38
TORD Torodi Ar. Bea 40.02 202 P **P** **19 49 55.7 +1.0**
comp=Z,0.5nm,1.0s,baz=4.0,slow=10,SNR=2.6

ISCJB ***27*** *19:58:58.8±0.6, 39.07N±0.06×29.05E±0.04, h5km±7km, Error ellipse: s-maj=10.0km s-min=5.1km az=160.4*
DDA ***27*** *19:58:58.5, 39.04N×29.03E, h7km, Md2.7*
ISK ***27*** *19:58:58.2, 39.06N×29.16E, h6km, MD2.5*
CSEM ***27*** *19:58:58.7±0.2, 39.06N×29.06E, h5km, MD2.5, Error ellipse: s-maj=6.8km s-min=4.1km az=133.0*
ISC 27 19:58:58.3±1.0, 39.04N±0.04×29.10E±0.04, h11km±9km, n22, σ055/30, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIMA	**Simav-Kutahya**	**0.10**	**296**	*e*PG	**Pg**	**19 59 01.5**	**+0.4**
SIMA	**Simav-Kutahya**	**0.10**	**296**	*e*Pg	**Pg**	**19 59 01.5**	**+0.4**
DEMI	**Demirci**	**0.30**	**271**	*i* P	**Pg**	**19 59 04.0**	**-0.3**
DEMI				*i* S	**Sg**	**19 59 07.5**	**-0.9**
DEMI	**Demirci**	**0.30**	**271**	P	**Pg**	**19 59 04.0**	**-0.3**
DEMI				S	**Sg**	**19 59 07.4**	**-0.9**
GDZ	**Gediz**	**0.30**	**81**	*i* P	**Pb**	**19 59 06.0**	**+0.1**
GDZ				*i* S	**Sb**	**19 59 11.2**	**+0.2**
GDZ	**Gediz**	**0.30**	**81**	P	**Pb**	**19 59 06.0**	**+0.1**
GDZ				S	**Sb**	**19 59 11.2**	**+0.2**
TVSB	**Tavsanli**	**0.50**	**35**	*e*PG	**Pg**	**19 59 07.4**	**-0.7**
TVSB				*e*SG	**Sg**	**19 59 14.3**	**-0.4**
TVSB	**Tavsanli**	**0.50**	**35**	*e*Pg	**Pg**	**19 59 07.4**	**-0.7**
TVSB				*e*Sg	**Sg**	**19 59 14.3**	**-0.4**
KULA	**Kula-Manisa**	**0.63**	**213**	*e*PG	**Pb**	**19 59 11.4**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**213**	*e*Pg	**Pb**	**19 59 11.4**	**+0.1**
MANT	**Manisa**	**0.69**	**218**	*i* P	**Pg**	**19 59 11.4**	**-0.4**
MANT	**Manisa**	**0.69**	**218**	P	**Pg**	**19 59 11.4**	**-0.4**
IZI	**Iznik**	**1.33**	**13**	*e*PN	**Pn**	**19 59 23.5**	**+0.6**
IZI	**Iznik**	**1.33**	**13**	*e*Pn	**Pn**	**19 59 23.5**	**+0.6**
BORA	**Eskisehir**	**1.34**	**51**	*i* P	**Pn**	**19 59 23.8**	**+0.6**
BORA	**Eskisehir**	**1.34**	**51**	P	**Pn**	**19 59 23.8**	**+0.6**
KCTX	**Karacabey (Bur**	**1.35**	**335**	*e*PN	**Pg**	**19 59 24.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.35**	**335**	*e*Pn	**Pg**	**19 59 24.3**	**0.0**
ARMT	**Armutlu**	**1.53**	**353**	*e*PN	**Pn**	**19 59 26.6**	**+0.9**
ARMT				*e*SN	**Sg**	**19 59 47.0**	**-0.7**
ARMT	**Armutlu**	**1.53**	**353**	*e*Pn	**Pn**	**19 59 26.6**	**+0.9**
ARMT				*e*Sn	**Sg**	**19 59 47.0**	**-0.7**
SBT5	**Esenkoy-Cinarc**	**1.60**	**354**	*e*PN	**Pb**	**19 59 27.6**	**-0.2**
SBT5	**Esenkoy-Cinarc**	**1.60**	**354**	*e*Pn	**Pb**	**19 59 27.6**	**-0.2**

NEIC ***27*** *20:03:21.1±0.2, 22.04S×170.04E, h10km, mb5.1/43, Error ellipse: s-maj=6.7km s-min=5.6km az=95.0*
GCMT ***27*** *20:03:21.1±0.2, 22.26S×169.98E, h20km, MW5.1/79, Moment Tensor Solution. s58,c71; s79,c118; Duration: 0 Moment tensor: Scale 10^16 Nm; Mr=4.74±.17; Mθθ=2.27±.11; Mφφ=-2.47±.11; Mrθ=1.79±.20; Mrφ=2.08±.07; Mθφ=2.09±.20; Best double couple: Ms=5.35700×10^16 NP1:φs=138.00000°, δ60.00000°, λ91.00000°. NP2: φs=315.00000°, δ30.00000°, λ88.00000°. Principal axes: T 5.5020, Plg75.0000°, Azm52.0000°; N -0.2910, Plg1.0000°, Azm317.0000°; P -5.2110, Plg15.0000°, Azm227.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISCJB ***27*** *20:03:22.1±0.2, 22.11S±0.04×169.99E±0.04, h25km, mb5.0/80, MS4.3/19 Error ellipse: s-maj=5.6km s-min=5.0km az=138.3*
MOS ***27*** *20:03:24.1±1.5, 22.05S×169.90E, h33km, mb5.3/21, Error ellipse: s-maj=9.9km s-min=9.5km az=165.4*
BJI ***27*** *20:03:24.5, 21.76S×170.55E, h48km, mb4.9/50, mB5.2/38, Ms5.0/17, Ms7 4.7/15*
IDC ***27*** *20:03:25.1±2.8, 22.13S×170.00E, h36km±21km, mb4.6/15, mb1 4.7/18, mb1mx4.5/29, mbtmp4.8/18, ML4.2/3, MS4.2/16, Ms1 4.2/16, ms1mx4.0/24, Error ellipse: s-maj=16.9km s-min=14.5km az=142.0*
ISC 27 20:03:23.6±0.3, 22.11S±0.05×169.96E±0.05, h25km, n354, σ1°53/348, mb5.1/80, MS4.4/20, 15C-12D, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.27**	**270**	Pn	**Pn**	**20 04 13.5**	**+0.1**
	18nm,0.3s,baz=137,slow=10,SNR=117						
DZM				Sn	**Sn**	**20 04 51.1**	**-0.4**
	34nm,0.3s,baz=104,slow=16,SNR=6.5						
DZM	**Mont Dzumac**	**3.27**	**270**	*e*Pn	**Pn**	**20 04 12.3**	**-1.1**
	62nm,0.2s						
DZM				*e*Sn	**Sn**	**20 04 50.3**	**-1.2**
	78nm,0.3s						
DZM				*e*LR	LR	20 04 56.8	
	4μm,24.6s						
DZM	**Mont Dzumac**	**3.27**	**270**	*e*Pn	**Pn**	**20 04 12.2**	**-1.1**
DZM				Sn	**Sn**	**20 04 51.1**	**-0.4**
MSVF	**Nonsavu**	**8.76**	**62**	*e*P	**Pn**	**20 05 32.5**	**+3.6**
MSVF	**Nonsavu**	**8.76**	**62**	*e*Pn	**Pn**	**20 05 32.5**	**+3.6**
RAO	**Raoul Island**	**13.03**	**126**	LR	LR	20 10 35.7	
	comp=Z,1μm,18.3s,baz=299,slow=33						
HNR	**Honiara**	**15.86**	**321**	Pn	**P**	**20 07 07.7**	**-1.2**
	3.7nm,0.3s,baz=184,slow=16,SNR=2.8						
HNR	**Honiara**	**15.86**	**321**	*e*P	**Pn**	**20 07 05.8**	**+0.4**
HNR				pmax	pmax		
	comp=Z,282nm,1.1s						
HNR	**Honiara**	**15.86**	**321**	*e*Pn	**Pn**	**20 07 05.8**	**+0.4**
	comp=Z,282nm,1.1s						
URZ	**Urewera**	**17.23**	**161**	P	**P**	**20 07 24.2**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=297,slow=6.6,SNR=4.6						
URZ				LR	LR	20 12 42.9	
	comp=Z,1μm,18.3s,baz=347,slow=32						
EIDS	**Eidsvold**	**17.59**	**256**	*e*Pn	**P**	**20 07 28.6**	**+0.6**
	comp=Z,85nm,1.3s						
BKZ	**Black Stump Fm**	**17.89**	**163**	*e*Pn	**P**	**20 07 31.5**	**+0.2**
	comp=Z,57nm,1.0s						
ARMA	**Armidale**	**18.39**	**239**	P	**Pn**	**20 07 40.6**	**+3.5**
	baz=19						
ARMA	**Armidale**	**18.39**	**239**	*e*P	**Pn**	**20 07 37.9**	**+0.8**
	comp=Z,56nm,1.2s						
AFI	**Afiamalu**	**19.17**	**68**	*e*P	**Pn**	**20 07 47.8**	**+1.2**
AFI				pmax	pmax		
	comp=Z,170nm,1.2s						
AFI	**Afiamalu**	**19.17**	**68**	*e*P	**Pn**	**20 07 47.8**	**+1.2**
	comp=Z,170nm,1.2s						
THZ	**Tophouse**	**19.75**	**173**	*e*P	**Pn**	**20 07 53.3**	**0.0**
	comp=Z,98nm,1.1s						
RMQ	**Roma**	**19.81**	**253**	P	**Pn**	**20 07 56.1**	**+2.0**
	baz=20,SNR=31						
MGCD	**Mangrove Creek**	**19.99**	**232**	P	**Pn**	**20 07 60.0**	**+3.8**
	baz=20,SNR=5.7						
RIV	**Riverview**	**20.26**	**231**	P	Pn	20 08 02.8	+3.5
	baz=21						
KHZ	**Kahutara**	**20.47**	**172**	*e*P	Pn	20 08 00.8	-0.8
	comp=Z,98nm,1.0s						
LTZ	**Lake Taylor**	**20.70**	**175**	*e*P	**P**	**20 08 01.2**	**-0.8**
	comp=Z,219nm,1.6s						
OXZ	**Oxford**	**21.23**	**176**	*e*P	**P**	**20 08 06.2**	**-1.4**
	comp=Z,100nm,1.0s						
RPZ	**Rata Peaks**	**21.56**	**178**	P	**P**	**20 08 13.8**	**+2.6**
	comp=Z,37nm,0.9s,baz=106,slow=3.2,SNR=4.7						
RPZ				LR	LR	20 16 05.8	
	comp=Z,1μm,18.4s,baz=350,slow=35						
CTA	**Charters Tower**	**22.21**	**271**	P	**P**	**20 08 19.2**	**+0.8**
	comp=Z,20nm,0.9s,baz=86,slow=12,SNR=7.5						
CTA				LR	LR	20 17 03.1	
	comp=Z,925nm,18.4s,baz=88,slow=37						
CTAO	**Charters Tower**	**22.21**	**271**	*e*P	**P**	**20 08 20.8**	**+2.4**
CTAO				pmax	pmax		
	comp=Z,230nm,1.1s						
CTAO	**Charters Tower**	**22.21**	**271**	*e*P	**P**	**20 08 20.8**	**+2.4**
	comp=Z,230nm,1.1s						
CNB	**Canberra Magne**	**22.29**	**229**	P	**P**	**20 08 21.3**	**+2.1**
	baz=23,SNR=10						
YNG	**Young**	**22.50**	**233**	P	**P**	**20 08 25.9**	**+4.5**
	baz=23,SNR=6.8						
CAN	**Canberra**	**22.55**	**230**	*e*P	**P**	**20 08 23.1**	**+1.1**
CAN				pmax	pmax		
	comp=Z,48nm,1.3s						
CAN	**Canberra**	**22.55**	**230**	*e*P	**P**	**20 08 23.1**	**+1.1**
	comp=Z,48nm,1.3s						
MILA	**Mila**	**23.36**	**226**	P	**P**	**20 08 33.6**	**+3.3**
	baz=24,SNR=5.2						
DCZ	**Deep Cove**	**23.41**	**185**	*e*P	**P**	**20 08 32.2**	**+1.6**
	comp=Z,136nm,1.2s						
CMSA	**Cobar Meteorol**	**23.56**	**241**	P	**P**	**20 08 33.4**	**+1.1**
	baz=24,SNR=28						
MTSU	**Mount Surprise**	**24.39**	**275**	P	**P**	**20 08 42.3**	**+2.1**
	baz=25,SNR=12						
TOO	**Toolangi**	**26.12**	**228**	P	**P**	**20 08 59.9**	**+4.1**
	baz=26,SNR=4.3						
STKA	**Stephens Creek**	**27.02**	**243**	P	**P**	**20 09 04.3**	**+0.6**
	comp=Z,37nm,1.3s,baz=80,slow=9.7,SNR=12						
STKA				LR	LR	20 19 20.6	
	comp=Z,792nm,19.3s,baz=69,slow=35						
STKA	**Stephens Creek**	**27.02**	**243**	P	**P**	**20 09 05.0**	**+1.1**
	baz=27,SNR=9.3						
STKA	**Stephens Creek**	**27.02**	**243**	*e*P	**P**	**20 09 04.4**	**+0.6**
STKA				pmax	pmax		
	comp=Z,13nm,1.4s						
STKA	**Stephens Creek**	**27.02**	**243**	*e*P	**P**	**20 09 04.4**	**+0.6**
	comp=Z,13nm,1.4s						
QIS	**Mount Isa**	**28.30**	**267**	P	**P**	**20 09 15.1**	**-0.4**
	baz=28,SNR=5.5						
HTT	**Hallett**	**29.58**	**241**	P	**P**	**20 09 26.2**	**-0.5**
	baz=30,SNR=4.5						
BBOO	**Buckleboo**	**31.79**	**243**	P	**P**	**20 09 46.4**	**+0.1**
	baz=32,SNR=5.6						
BBOO	**Buckleboo**	**31.79**	**243**	*e*P	**P**	**20 09 46.4**	**+0.1**
	comp=Z,64nm,1.3s						
WR0	**Warramunga Arr**	**33.09**	**267**	P	**P**	**20 09 57.3**	**-0.4**
	baz=33						
AS01	**Alice Springs**	**33.16**	**260**	*e*P	**P**	**20 09 57.9**	**-0.5**
AS31	**Alice Springs**	**33.20**	**260**	*e*P	**P**	**20 09 58.9**	**+0.1**
	comp=Z,7.8nm,0.8s						
ASAR	**Alice Springs**	**33.20**	**260**	P	**P**	**20 09 58.8**	**0.0**
	comp=Z,19nm,0.8s,baz=89,slow=8.9,SNR=69						
ASAR				PcP	**PcP**	**20 12 40.9**	**-0.3**
	comp=Z,1.7nm,0.8s,baz=93,slow=2.8,SNR=4.2						
ASAR				LR	LR	20 23 50.3	
	comp=Z,512nm,18.2s,baz=96,slow=37						
WRAB	**Tennant Creek**	**33.27**	**267**	*i*P	**P**	**20 09 57.7**	**-1.6**
WRAB				pmax	pmax		
	comp=Z,61nm,1.1s						
WRAB	**Tennant Creek**	**33.27**	**267**	*e*P	**P**	**20 09 58.4**	**-0.9**
	comp=Z,31nm,1.3s						
WRA	**Warramunga Arr**	**33.28**	**267**	P	**P**	**20 09 58.6**	**-0.8**
	comp=Z,16nm,1.0s,baz=99,slow=8.1,SNR=44						
WRA				S	**S**	**20 15 18.6**	**+0.1**
	comp=Z,0.9nm,1.0s,baz=107,slow=13,SNR=3.5						
WRA				LR	LR	20 24 09.0	
	comp=Z,1μm,18.2s,baz=100,slow=37						
GENI	**Genyem**	**34.84**	**300**	P	**P**	**20 10 17.4**	**+4.4**
	comp=Z,36nm,1.3s						
TBI	**Tubuai**	**37.36**	**100**	*e*LQ	LQ	20 18 56.1	
	comp=Z,502nm,28.0s						
MTN	**Manton Dam**	**38.08**	**277**	P	**P**	**20 10 39.9**	**-0.6**
	baz=38,SNR=3.1						
WRKA	**Warakurna**	**38.20**	**257**	P	**P**	**20 10 41.8**	**+0.2**
	baz=38,SNR=15						
PPT2	**Papeete2**	**38.24**	**91**	*e*S	S	20 16 24.2	-11
	comp=Z,188nm,28.2s						
PPT2				*e*LQ	LQ	20 19 31.9	
	comp=Z,765nm,28.5s						
FORT	**Forrest**	**38.32**	**248**	P	**P**	**20 10 42.5**	**0.0**
	baz=39						
FORT	**Forrest**	**38.32**	**248**	*e*P	**P**	**20 10 41.1**	**-1.4**
	comp=Z,522nm,0.9s						
FITZ	**Fitzroy Crossi**	**41.71**	**267**	P	**P**	**20 11 11.2**	**+0.5**
	comp=Z,42nm,0.9s,baz=110,slow=8.6,SNR=25						
FITZ	**Fitzroy Crossi**	**41.71**	**267**	P	**P**	**20 11 11.2**	**+0.5**
	baz=42,SNR=22						
FITZ	**Fitzroy Crossi**	**41.71**	**267**	*e*P	**P**	**20 11 11.3**	**+0.5**
	comp=Z,55nm,1.0s						
KMBL	**Kambalda**	**43.63**	**247**	P	**P**	**20 11 26.4**	**+0.1**
	baz=44,SNR=5.2						
MBWA	**Mole Bar**	**46.53**	**261**	*e*P	**P**	**20 11 49.5**	**+0.1**
	comp=Z,36nm,0.9s						
KLBR	**Kellerberrin**	**47.15**	**247**	P	**P**	**20 11 53.4**	**-0.8**
	baz=47						
NWAO	**Narrogin (SRO)**	**47.56**	**245**	P	**P**	**20 11 57.1**	**-0.3**
	comp=Z,29nm,0.8s,baz=326,slow=9.2,SNR=6.2						
NWAO	**Narrogin (SRO)**	**47.56**	**245**	P	**P**	**20 11 57.0**	**-0.4**
	baz=48						
NWAO				P	**P**	**20 11 57.0**	**-0.4**
	baz=48						
VNDA	**Vanda**	**55.60**	**182**	P	**P**	**20 12 56.0**	**-0.7**
	comp=Z,1.8nm,0.8s,baz=9.1,slow=7.5,SNR=3.9						
VNDA				LR	LR	20 34 22.3	
	comp=Z,273nm,18.5s,baz=15,slow=33						
VNDA	**Vanda**	**55.60**	**182**	*e*P	**P**	**20 12 58.2**	**+1.5**
VNDA				pmax	pmax		
	comp=Z,36nm,1.9s						
VNDA	**Vanda**	**55.60**	**182**	*e*P	**P**	**20 12 58.2**	**+1.5**
	comp=Z,36nm,1.9s						
CASY	**Casey**	**57.79**	**204**	*e*P	**P**	**20 13 13.0**	**+0.5**
	comp=Z,13nm,1.2s						
KSM	**Kuching**	**62.69**	**284**	*e*P	**P**	**20 13 47.6**	**+0.7**
	comp=Z,19nm,1.1s						
MJAR	**Matsushiro Arr**	**65.60**	**332**	P	**P**	**20 14 05.0**	**-0.4**
	comp=Z,9.2nm,0.9s,baz=164,slow=6.9,SNR=19						
MJAR				LR	LR	20 38 46.5	
	comp=Z,50nm,21.9s,baz=125,slow=32						
MJAR	**Matsushiro Arr**	**65.60**	**332**	P	**P**	**20 14 05.0**	**-0.4**
MAJO	**Matsushiro**	**65.60**	**332**	*c i*P	**P**	**20 14 04.9**	**-0.5**
MAJO				pmax	pmax		
	comp=Z,134nm,1.0s						
MAT	**Matsushiro**	**65.60**	**332**	P	**P**	**20 14 05.3**	**-0.1**
MAT				*e*S	**S**	**20 22 49.0**	**-0.5**
SSLB	**Suanglung**	**65.98**	**311**	*e*P	**P**	**20 14 07.0**	**-1.1**
	comp=Z,15nm,1.0s						
JNU	**Nakatsue**	**66.39**	**325**	*e*P	**P**	**20 14 11.3**	**+0.7**
	comp=Z,13nm,0.9s						
QSPA	**South Pole Qui**	**67.96**	**180**	*e*P	**P**	**20 14 18.8**	**-1.6**
	comp=Z,149nm,1.0s						
KUR	**Kuril'sk**	**69.98**	**344**	*e*P	**P**	**20 14 34.1**	**+1.3**
ASAJ	**Asahikawa**	**70.52**	**339**	*e*P	**P**	**20 14 37.0**	**+0.9**
	comp=Z,50nm,1.4s						
KSRS	**Korea Array**	**71.25**	**326**	P	**P**	**20 14 41.5**	**+0.7**
	comp=Z,8.3nm,0.9s,baz=144,slow=6.3,SNR=15						
KSAR	**Wonju Array Be**	**71.26**	**326**	P	**P**	**20 14 41.5**	**+0.7**
KSAR	**Wonju Array Be**	**71.26**	**326**	P	**P**	**20 14 41.5**	**+0.7**
KS01	**Wonju Array Si**	**71.28**	**326**	*e*P	**P**	**20 14 41.6**	**+0.6**
QIZ	**Qiongzhong**	**71.59**	**300**	P	**P**	**20 14 44.5**	**+1.3**
QIZ				S	**S**	**20 24 03.3**	**+1.9**
QIZ				pmax	pmax		
	comp=Z,160nm,3.3s						
YSS	**Yuzh-Sakhalins**	**73.00**	**341**	*e*P	**P**	**20 14 52.0**	**+1.0**
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
YSS				MLR	MLR		
	comp=Z,220nm,15.0s						
YSS	**Yuzh-Sakhalins**	**73.00**	**341**	*e*P	**P**	**20 14 52.3**	**+1.3**
	comp=Z,21nm,0.9s						
MSHR	**Mys Shultsa**	**73.65**	**331**	*c i*P	**P**	**20 14 55.6**	**+0.6**
VLA	**Vladivostok**	**73.76**	**332**	*e*P	**P**	**20 14 56.2**	**+0.6**
VLA				pmax	pmax		
	comp=Z,33nm,1.4s						
GSI	**Gunungsitoli**	**74.21**	**278**	*e*P	**P**	**20 14 58.8**	**-0.2**
	comp=Z,43nm,1.3s						
USRK	**Ussuriysk Ar.**	**74.59**	**333**	P	**P**	**20 15 00.7**	**+0.3**
	comp=Z,7.5nm,0.9s,baz=151,slow=4.4,SNR=21						
SKNT	**Sakolnakorn**	**75.37**	**295**	P	**P**	**20 15 06.6**	**+1.1**
	comp=Z,36nm,0.8s						
PET	**Petropavlovsk**	**75.46**	**353**	*e*P	**P**	**20 15 04.8**	**-0.4**
PET				*e*S	**S**	**20 24 42.7**	**-1.0**
PET				*e*SS	**SS**	**20 29 37.7**	**+2.5**
PET				pmax	pmax		
	comp=Z,100nm,14.4s						
PET				pmax	pmax		
	comp=Z,100nm,20.0s						
PEA0	**Petropavlovsk-**	**75.66**	**352**	*e*P	**P**	**20 15 06.0**	**-0.4**
PEA0B	**Petropavlovsk-**	**75.66**	**352**	*e*P	**P**	**20 15 06.3**	**-0.1**
	comp=Z,34nm,1.2s						
PETK	**Petropavlovsk-**	**75.66**	**352**	P	**P**	**20 15 06.5**	**+0.1**
	comp=Z,12nm,0.9s,baz=140,slow=7.7,SNR=12						
PETK				LR	LR	20 45 37.2	
	comp=Z,110nm,19.1s,baz=153,slow=34						
DL2	**Dalian**	**75.71**	**323**	P	**P**	**20 15 08.0**	**+1.1**
DL2				pmax	pmax		
	comp=Z,57nm,0.7s						
MDJ	**Mudanjiang**	**75.96**	**332**	P	**P**	**20 15 08.5**	**+0.3**
MDJ				pmax	pmax		
	comp=Z,17nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,73nm,6.0s						
MDJ	**Mudanjiang**	**75.96**	**332**	*e*P	**P**	**20 15 08.6**	**+0.3**
	comp=Z,4.3nm,0.6s						
MAW	**Mawson**	**76.04**	**202**	P	**P**	**20 15 08.5**	**0.0**
	comp=Z,14nm,1.1s,baz=126,slow=7.0,SNR=9.8						
MAW				LR	LR	20 45 34.7	
	comp=Z,81nm,18.9s,baz=61,slow=33						
MAW	**Mawson**	**76.04**	**202**	P	**P**	**20 15 07.9**	**-0.6**
	baz=76,SNR=8.5						
MAW	**Mawson**	**76.04**	**202**	*e*P	**P**	**20 15 08.1**	**-0.4**
MAW				pmax	pmax		
	comp=Z,3.0nm,1.0s						
MAW	**Mawson**	**76.04**	**202**	*e*P	**P**	**20 15 08.1**	**-0.4**
	comp=Z,3.0nm,1.0s						
TIA	**Tai'an**	**76.53**	**318**	⇑P	**P**	**20 15 12.3**	**+0.5**
TIA				pmax	pmax		
	comp=Z,30nm,1.1s						
TYV	**Tymovskoe**	**76.55**	**343**	*e*P	**P**	**20 15 08.0**	**-3.4**
TYV				pmax	pmax		
	comp=Z,8.0nm,0.6s						
NONG	**Nongkai**	**76.59**	**296**	P	**P**	**20 15 14.1**	**+1.7**
	comp=Z,48nm,0.8s						
CN2	**Changchun**	**77.25**	**329**	⇑P	**P**	**20 15 15.8**	**+0.2**
CN2				pmax	pmax		
	comp=Z,30nm,1.0s						
PBKT	**Sadao Pong**	**77.72**	**294**	P	P	20 15 23.8	+5.0
	comp=Z,22nm,1.1s						
GYA	**Guiyang**	**78.01**	**305**	P	**P**	**20 15 22.0**	**+1.6**
GYA				pP	sP	20 15 36.5	+5.1
GYA				PP	**PP**	**20 18 21.3**	**+4.3**
GYA				SKS	**SKSac**	**20 25 27.5**	**-5.8**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,6.2s						
ENH	**Enshi**	**78.02**	**310**	*e*P	**P**	**20 15 20.3**	**+0.1**
	comp=Z,46nm,1.4s						
SRDT	**SRDT**	**78.30**	**291**	P	P	20 15 29.1	+7.0
	comp=Z,65nm,2.0s						
UTTA	**Uttaradit**	**78.61**	**294**	P	**P**	**20 15 26.1**	**+2.4**
	comp=Z,2.8nm,0.9s						
NKL	**Nikolayevsk**	**79.14**	**343**	*e*P	**P**	**20 15 25.0**	**-0.8**
NKL				pmax	pmax		
	comp=Z,34nm,1.0s						
UMPA	**Umpang Tak**	**79.35**	**292**	P	P	20 15 33.8	+5.9
	comp=Z,7.8nm,0.9s						
BJI	**Beijing**	**79.59**	**321**	P	**P**	**20 15 29.3**	**+0.7**
BJI				PP	**PP**	**20 18 34.8**	**+5.1**
BJI				S	**S**	**20 25 33.5**	**+4.6**
BJI				pmax	pmax		
	comp=Z,17nm,0.9s						
BJI				pmax	pmax		
	comp=Z,170nm,4.2s						
LAMP	**Lampang**	**79.75**	**295**	P	**P**	**20 15 32.3**	**+2.3**
	comp=Z,6.7nm,0.9s,comp=Z,81nm						
CM01	**Chiang Mai Arr**	**80.27**	**294**	*e*P	**P**	**20 15 34.6**	**+1.8**
CMAR	**Chiang Mai Arr**	**80.30**	**294**	P	**P**	**20 15 34.5**	**+1.5**
	comp=Z,7.4nm,0.9s,baz=136,slow=4.0,SNR=31						
CMAR				LR	LR	20 50 37.9	
	comp=Z,33nm,21.6s,baz=260,slow=35						
CMAR	**Chiang Mai Arr**	**80.30**	**294**	*i*P	**P**	**20 15 35.0**	**+2.0**
CMAR				pmax	pmax		
	comp=Z,7.0nm,0.9s						
KMI	**Kunming**	**80.36**	**302**	P	**P**	**20 15 35.0**	**+1.6**
KMI				pmax	pmax		
	comp=Z,30nm,1.0s						
KMI				pmax	pmax		
	comp=Z,210nm,4.4s						
CMMT	**Chiang Mai**	**80.46**	**295**	P	**P**	**20 15 35.6**	**+1.8**
	comp=Z,19nm,1.2s						
CHTO	**Chiang Mai**	**80.46**	**295**	P	**P**	**20 15 35.6**	**+1.8**
	comp=Z,85nm,1.2s,comp=Z,1μm						
CHTO	**Chiang Mai**	**80.46**	**295**	*e*P	**P**	**20 15 35.6**	**+1.8**
CHTO				pmax	pmax		
	comp=Z,15nm,1.0s						
CHTO	**Chiang Mai**	**80.46**	**295**	*e*P	**P**	**20 15 35.6**	**+1.8**
	comp=Z,15nm,1.0s						
XAN	**Xi'an**	**80.54**	**313**	P	**P**	**20 15 34.8**	**+0.8**
XAN				pP	sP	20 15 47.8	+2.8
XAN				pmax	pmax		
	comp=Z,22nm,1.3s						
XAN				pmax	pmax		
	comp=Z,170nm,7.2s						
CMAI	**Chiengmai2**	**80.89**	**296**	P	**P**	**20 15 38.5**	**+2.2**
	comp=Z,111nm,0.8s						
MHMT	**Maesariang**	**81.03**	**294**	P	**P**	**20 15 39.2**	**+2.3**
	comp=Z,9.2nm,1.4s						
SYO	**Syowa Base**	**82.38**	**196**	⇑*e*P	**P**	**20 15 40.4**	**-2.7**
CD2	**Chengdu**	**82.52**	**308**	*e*P	**P**	**20 15 44.5**	**0.0**
CD2				pP	sP	20 15 58.8	+3.3
CD2				PP	**PP**	**20 18 54.3**	**0.0**
CD2				S

comp=Z,6.0nm,1.0s
GTA pmax pmax
comp=Z,140nm,4.8s
GTA LR LR
comp=Z,80nm,17.1s
GTA LR LR
comp=Z,97nm,16.6s
GTA LR LR
comp=Z,110nm,17.6s
GSC Goldstone, Bar 89.80 52 *eP* **P 20 16 21.0 +0.6**
GSC pmax pmax
comp=Z,12nm,1.4s
GSC Goldstone, Bar 89.80 52 *eP* **P 20 16 21.0 +0.6**
comp=Z,12nm,1.4s
YAK Yakutsk 89.80 342 *eP* **P 20 16 18.1 -1.4**
YAK pmax pmax
comp=Z,17nm,1.1s
SONM Songino Array 89.91 323 P **P 20 16 20.6 0.0**
comp=Z,8.5nm,1.0s,baz=134,slow=4.9,SNR=29
SONM LR LR 20 56 01.4
comp=Z,33nm,19.8s,baz=110,slow=35
SONA1 Songino Array 89.91 323 *eP* **P 20 16 20.5 -0.1**
BILL Bilibino 89.92 359 *eP* **P 20 16 18.4 -1.6**
BILL pmax pmax
comp=Z,17nm,1.1s
TPNV Topopah Spring 90.95 50 *eP* **P 20 16 24.9 -0.9**
TPNV pmax pmax
comp=Z,8.0nm,1.1s
TPNV Topopah Spring 90.95 50 *eP* **P 20 16 24.9 -0.9**
comp=Z,8.3nm,1.1s
RND Reindeer 91.15 17 *eP* **P 20 16 25.7 -0.3**
RND pmax pmax
comp=Z,17nm,1.6s
RND Reindeer 91.15 17 *eP* **P 20 16 25.7 -0.3**
comp=Z,17nm,1.6s
W13A Hualapai Mount 91.85 53 *eP* **P 20 16 29.7 -0.4**
comp=Z,13nm,1.9s
BOD Bodaibo 92.20 334 *eP* P 20 16 22.6 -8.2
BOD pmax pmax
comp=Z,7.0nm,1.5s
WRH Wood River Hil 92.20 17 *eP* **P 20 16 29.2 -1.4**
comp=Z,15nm,1.8s
CCB Clear Creek Bu 92.42 17 *eP* **P 20 16 30.1 -1.6**
comp=Z,3.3nm,1.0s
MDM Murphy Dome 92.55 16 *eP* **P 20 16 30.0 -2.4**
comp=Z,13nm,1.4s
COLA College 92.58 17 *i P* **P 20 16 30.5 -1.9**
COLA pmax pmax
comp=Z,9.0nm,1.2s
ILAR Eielson Array 92.76 17 P **P 20 16 31.6 -1.7**
comp=Z,2.0nm,0.9s,baz=235,slow=5.8,SNR=18
ILAR LR LR 20 56 08.8
comp=Z,117nm,18.0s,baz=242,slow=34
ILB Eielson Array 92.76 17 *eP* **P 20 16 31.6 -1.7**
ZAK Zakamensk 93.01 324 *eP* **P 20 16 34.1 -0.8**
ZAK pmax pmax
comp=Z,10.0nm,1.4s
COLD Coldfoot 93.87 14 *eP* **P 20 16 37.6 -0.7**
comp=Z,2.9nm,0.8s
TXAR Lajitas Array 97.53 62 LR LR 20 54 33.9
comp=Z,176nm,18.2s,baz=0.0,slow=32
PDAR Pinedale Array 98.06 47 LR LR 20 58 01.3
comp=Z,37nm,18.5s,baz=232,slow=33
WMQ Urumqi 99.67 313 *eP* **Pdif 20 17 06.3 +1.0**
WMQ pP sP 20 17 19.5 +3.1
WMQ S **S 20 28 28.8 -8.4**
WMQ pmax pmax
comp=Z,9.0nm,0.6s
WMQ pmax pmax
comp=Z,75nm,4.6s
WMQ LR LR
comp=Z,240nm,18.8s
WMQ LR LR
comp=Z,260nm,20.0s
WMQ LR LR
comp=Z,290nm,21.4s
MKAR Makanchi Array 104.24 315 Pdiff **Pdif 20 17 25.9 +0.4**
comp=Z,0.6nm,0.8s,baz=101,slow=7.8,SNR=5.2
MKAR PP **PP 20 21 44.6 +0.4**
comp=Z,0.9nm,0.9s,baz=104,slow=8.9,SNR=6.8
KSH Kashi 106.69 306 *e*Pdif **Pdif 20 17 41.0 +4.4**
KSH *e*PP PP 20 22 11.5 +8.9
KSH S **Sdif 20 29 36.5 +0.5**
KSH AMB AMB
comp=Z,50nm,3.8s
KSH LR LR
comp=Z,70nm,5.4s
KSH LR LR
comp=Z,99nm,4.8s
KSH LR LR
comp=Z,160nm,5.5s
KURK Kurchatov 107.62 318 P **Pdif 20 17 41.1 +0.8**
KURK 20 22 05.5
KURK Kurchatov 107.62 318 Pdif **Pdif 20 17 41.1 +0.8**
KURK PP **PP 20 22 05.5 -3.4**
KURBB Kurchatov Arra 107.66 318 Pdiff **Pdif 20 17 41.1 +0.6**
comp=Z,0.2nm,0.6s,baz=101,slow=5.1,SNR=4.0
KURBB PP **PP 20 22 05.5 -3.7**
comp=Z,0.8nm,1.1s,baz=102,slow=4.6,SNR=4.2
BVAR Borovoye Array 113.04 320 PP PP 20 22 51.2 +3.2
comp=Z,0.5nm,0.8s,baz=69,slow=4.9,SNR=3.9
GEYT Alibeck 120.13 302 PKP **PKPdf 20 22 13.2 +0.6**
comp=Z,0.9nm,0.7s,baz=94,slow=9.2,SNR=3.8
PTGA Pitinga 126.31 108 PKP **PKPdf 20 22 24.3 -0.9**
comp=Z,0.9nm,0.3s,baz=224,slow=7.8,SNR=4.5
KLMR Klimovskoe 128.38 332 *e*PKIKP **PKPdf 20 22 29.6 +2.0**
KLMR pmax pmax
comp=Z,6.0nm,1.2s
GOF Gofitskoye 131.21 311⇑ *e*PKIKP PKPpre 20 22 25.7
KIV Kislovodsk 131.64 310 *i* PKIKP **PKPdf 20 22 33.5 -1.0**
KIV pmax pmax
comp=Z,4.0nm,1.0s
KIEV Kiev 138.21 323⇑ *i*PKIKP **PKPdf 20 22 46.1 -0.3**
NOA NORSAR Array B 138.38 345 PKhKP PKPpre 20 22 43.2
comp=Z,0.6nm,0.8s,baz=28,slow=2.6,SNR=3.8
BRTR Keskin Array B 139.07 306 PKP **PKPdf 20 22 48.0 -0.5**
comp=Z,1.6nm,1.0s,baz=137,slow=2.5,SNR=5.3
BR231 Keskin MP Arra 139.69 306 *e*PKPdf **PKPdf 20 22 51.9 +2.3**
VRI Vrincioaia 141.89 317⇓ *i*P **PKPdf 20 22 55.5 +2.2**
UZH Uzhgorod 143.12 324 *e*PKIKP PKPbc 20 22 51.9 -0.3
UZH *e* 20 23 00.5
STHS Stebnicka Huta 143.22 326 *e*PKIKP **PKPdf 20 22 57.0 +1.5**
STHS Stebnicka Huta 143.22 326 *e*PKP **PKPdf 20 22 57.0 +1.5**
TRPA Tarpa 143.26 323 *e*PKPdf PKPbc 20 22 52.6 0.0
CRVS Cervenica-Dubn 143.41 325 *e*PKIKP **PKPdf 20 22 56.7 +0.8**
CRVS Cervenica-Dubn 143.41 325 *e*PKP **PKPdf 20 22 56.7 +0.8**
ARR Arges 143.43 318⇓ *i*P PKPbc 20 22 53.5 +0.2
OJC Ojcow 143.47 328 *e*PKP **PKPdf 20 22 55.2 -0.7**
OJC Ojcow 143.47 328 *e*PKIKP **PKPdf 20 22 55.2 -0.7**
SZH Strazhica 143.50 314 *i* P PKPab 20 22 52.9 +0.4
HUMR Humele 143.59 316⇓ *i*P PKPbc 20 22 53.3 -0.4
NIE Niedzica 143.72 326 *e*PKP **PKPdf 20 22 56.1 -0.3**
NIE Niedzica 143.72 326 *e*PKIKP **PKPdf 20 22 56.1 -0.3**
DRGR 143.88 321⇓ *i*P PKPbc 20 22 54.8 +0.2
PVL Pavlikeni 143.92 314 *i* P PKPbc 20 22 54.8 +0.1
KECS Kecovo 144.18 325 *e*PKIKP PKPbc 20 22 55.8 +0.4
KECS Kecovo 144.18 325 *e*PKP PKPbc 20 22 55.8 +0.4
DIM Dimitrovgrad 144.25 312 *i* P **PKPab 20 22 55.5 +0.1**
LANS Liptovska Anna 144.31 326 *e*PKIKP **PKPdf 20 22 58.2 +0.7**
LANS Liptovska Anna 144.31 326 *e*PKP **PKPdf 20 22 58.2 +0.7**
ALN Alexandroupoli 144.31 310 P **PKPab 20 22 53.7 -2.0**
ALN Alexandroupoli 144.31 310 P **PKPab 20 22 53.7 -2.0**
ALN Alexandroupoli 144.31 310 P **PKPab 20 22 53.7 -2.0**
KDZ Kurdzhali 144.48 312 *i* P **PKPab 20 22 56.2 -0.1**
GZR Gura Zlata 144.56 319⇓ *i*P PKPbc 20 22 57.0 +0.3
GADA Gvkgeada 144.66 309 P **PKPab 20 22 54.8 -2.2**
GADA Gvkgeada 144.66 309 P **PKPab 20 22 54.8 -2.2**
GADA Gvkgeada 144.66 309 P **PKPab 20 22 54.8 -2.2**
PRK Paraskevi 144.69 307 P **PKPab 20 22 55.8 -1.3**
PRK Paraskevi 144.69 307 PKIKP **PKPab 20 22 55.8 -1.3**
PRK Paraskevi 144.69 307 P **PKPab 20 22 55.8 -1.3**
KSP Ksiaz 144.72 331 *e*PKP **PKPdf 20 22 57.6 -0.5**
KSP Ksiaz 144.72 331 *e*PKIKP **PKPdf 20 22 57.6 -0.5**
SIRR Siria 144.78 321⇓ *i*P **PKPdf 20 22 58.1 -0.2**
SMTH Samothraki Isl 144.83 310 P **PKPab 20 22 53.9 -3.7**
SMTH Samothraki Isl 144.83 310 P **PKPab 20 22 53.9 -3.7**
PSZ Piszkesteto 144.84 324⇓ *i*P PKPbc 20 22 58.0 +0.4
PSZ Piszkesteto 144.84 324 *e*PKIKP PKPbc 20 22 57.7 +0.1
PSZ Piszkesteto 144.84 324 *e*PKPdf PKPbc 20 22 57.7 +0.2
PSZ Piszkesteto 144.84 324⇑ *e*PKPbc PKPbc 20 22 57.6 0.0
MORC Moravsky Berou 144.87 329⇓ *i*P PKPbc 20 22 57.7 +0.1
MORC Moravsky Berou 144.87 329 *e*PKIKP PKPbc 20 22 57.8 +0.2
MORC Moravsky Berou 144.87 329 *e*PKPdf PKPbc 20 22 57.8 +0.2
MPEP Malo Peshtene 144.91 315 *i* P PKPbc 20 22 58.2 +0.4

RZN Rozhen 144.95 312 *i* P **PKPab 20 22 57.5 -0.8**
PGB Panagyurishte 144.97 314 *i* P PKPbc 20 22 58.4 +0.2
KARP Karpathos 144.98 301 *e*PKPbc **PKPdf 20 22 58.8 -0.3**
VYHS Vyhne 145.05 326 *e*PKIKP **PKPab 20 22 58.3 +0.1**
VYHS Vyhne 145.05 326 *e*PKP **PKPab 20 22 58.3 +0.1**
DPC Dobruska-Polom 145.05 330 *e*PKP **PKPab 20 22 58.4 +0.2**
DPC Dobruska-Polom 145.05 330 *e*PKIKP **PKPab 20 22 58.4 +0.2**
UPC Upice 145.08 331 *e*PKP **PKPab 20 22 58.3 +0.1**
UPC Upice 145.08 331 *e*PKIKP **PKPab 20 22 58.3 +0.1**
BZS Buzias 145.15 320⇓ *i*P **PKPab 20 22 58.7 +0.1**
LIA Limnos Island 145.28 309 P **PKPbc 20 22 57.5 -1.6**
LIA Limnos Island 145.28 309 P **PKPbc 20 22 57.5 -1.6**
MDVR Moldovita 145.52 319⇓ *i*P **PKPab 20 23 00.1 0.0**
VRAC Vranov 145.64 329⇑ *i*P **PKPab 20 23 00.6 +0.3**
MMB Musomiste 145.67 312 *i* P **PKPdf 20 23 00.0 -0.1**
NVR Nevrokopi 145.67 312 P **PKPdf 20 22 58.5 -1.6**
NVR Nevrokopi 145.67 312 P **PKPdf 20 22 58.5 -1.6**
PVCC Panska Ves 145.71 332 *e*PKP **PKPab 20 23 00.5 0.0**
PVCC Panska Ves 145.71 332 *e*PKP2 **PKPab 20 23 00.5 0.0**
BRG Berggiesshubel 145.73 333 *i* PKP **PKPdf 20 22 59.9 0.0**
comp=Z,71nm,1.3s
BRG Berggiesshubel 145.73 333 *i* PKP2 **PKPdf 20 22 59.8 0.0**
BRG pmax pmax
comp=Z,71nm,1.3s
SMOL Smolenice 145.75 327 *e*PKP2 **PKPab 20 23 01.3 +0.5**
SMOL Smolenice 145.75 327 *e*PKP **PKPab 20 23 01.3 +0.5**
CLL Collm 145.79 334⇑ *i*PKPbc **PKPdf 20 23 00.0 +0.1**
comp=Z,48nm,1.1s
CLL *i* 20 23 03.6
CLL *e* 20 23 09.0
CLL *e* 20 23 55.0
CLL *e*SS SS 20 45 06.0 -7.0
CLL Lm MLR 21 36 00.0
comp=Z,100nm,18.8s
CLL Collm 145.79 334⇑ *i*PKP2 **PKPdf 20 23 00.0 +0.1**
CLL pmax pmax
comp=Z,48nm,1.1s
CLL Collm 145.79 334 *e*PKPdf **PKPbc 20 23 00.5 +0.1**
SRS Serrai 145.95 312 P PKPpre 20 22 55.0
SRS Serrai 145.95 312 PKHKP PKPpre 20 22 55.0
SRS Serrai 145.95 312 P PKPpre 20 22 55.0
OUR Ouranopolis 145.98 310 P **PKPdf 20 22 58.7 -1.8**
OUR Ouranopolis 145.98 310 PKIKP **PKPdf 20 22 58.7 -1.8**
OUR Ouranopolis 145.98 310 P **PKPdf 20 22 58.7 -1.8**
KKB Krupnik 145.99 313 *i* P **PKPbc 20 23 01.3 0.0**
GOPC GO Pecny, Ondr 146.06 331 *e*PKP **PKPbc 20 23 01.1 -0.2**
GOPC GO Pecny, Ondr 146.06 331 *e*PKP2 **PKPbc 20 23 01.1 -0.2**
PRU Pruhonice 146.12 331 *e*PKP **PKPbc 20 23 01.0 -0.4**
PRU Pruhonice 146.12 331 *e*PKP2 **PKPbc 20 23 01.0 -0.4**
TREC Trest 146.18 330 *e*PKP **PKPbc 20 23 01.7 0.0**
TREC Trest 146.18 330 *e*PKP2 **PKPbc 20 23 01.7 0.0**
NPS Neapolis 146.28 301 P **PKPdf 20 23 01.4 +0.1**
NPS Neapolis 146.28 301 PKP2 **PKPdf 20 23 01.4 +0.1**
NPS Neapolis 146.28 301 P **PKPdf 20 23 01.4 +0.1**
PAIG Palilouri 146.35 310 P **PKPdf 20 23 00.2 -1.0**
PAIG Palilouri 146.35 310 PKIKP **PKPdf 20 23 00.2 -1.0**
PAIG Palilouri 146.35 310 P **PKPdf 20 23 00.2 -1.0**
LAST Lasithi 146.41 301 P **PKPdf 20 23 01.5 -0.1**
LAST Lasithi 146.41 301 P **PKPdf 20 23 01.5 -0.1**
KNT Kendrikon 146.41 312 P **PKPdf 20 22 59.0 -2.3**
KARY Karystos 146.44 306 P PKPpre 20 22 56.6
ESK Eskdalemuir 146.45 353 *e*PKIKP **PKPdf 20 23 00.4 -0.5**
ESK Eskdalemuir 146.45 353 *e*PKPdf **PKPdf 20 23 00.4 -0.5**
VAY Valandovo 146.57 313 *e*PKP **PKPbc 20 23 03.4 +0.3**
SOP Sopron 146.74 327⇑ *e*PKPdf **PKPab 20 23 07.3 +2.8**
GRG Griva 146.84 312 P **PKPdf 20 23 02.4 +0.3**
NKC Novy Kostel 146.84 333 *e*PKP **PKPbc 20 23 03.6 0.0**
NKC *ep*PKP **pPKPdf 20 23 08.9 -1.2**
NKC *ex* x 20 23 24.8
NKC Novy Kostel 146.84 333 *e*PKP2 **PKPbc 20 23 03.6 0.0**
IDI Anoyia 146.85 301 P **PKPdf 20 23 01.7 -0.6**
IDI Anoyia 146.85 301 *e*PKPdf **PKPbc 20 23 04.4 +0.3**
PTL Penteli 146.86 306 P **PKPdf 20 23 01.4 -0.8**
CONA Conrad Observa 146.93 327 *i* PKPab **PKPbc 20 23 04.0 +0.1**
comp=Z,14nm,1.5s,SNR=8.8
SKO Skopje 147.05 314 *i* PKP **PKPbc 20 23 04.2 -0.2**
LIT Litokhoron 147.12 311 P **PKPdf 20 23 01.0 -1.5**
KHC Kasperske Hory 147.17 331 *e*PKP **PKPdf 20 23 02.9 +0.5**
KHC *ep*PKP **pPKPdf 20 23 10.1 -0.7**
KHC *ex* x 20 23 25.7
KHC Kasperske Hory 147.17 331 *e*PKIKP **PKPdf 20 23 02.9 +0.5**
KHC *e* 20 23 10.1
KHC Kasperske Hory 147.17 331 *e*PKPdf **PKPbc 20 23 04.5 -0.1**
GEC2 GERESS Array S 147.32 330 *e*PKP2 **PKPbc 20 23 05.1 0.0**
GEC2 GERESS Array S 147.32 330 *e*PKPbc **PKPbc 20 23 05.1 0.0**
GERES GERESS Array B 147.32 330 PKPbc **PKPbc 20 23 04.7 -0.4**
comp=Z,6.6nm,0.8s,baz=33,slow=2.2,SNR=38
GEA0 GERESS Array S 147.33 330 *e*PKPdf **PKPbc 20 23 04.2 -0.9**
VAM Vamos 147.37 302 P **PKPdf 20 23 03.9 +0.8**
VAM Vamos 147.37 302 PKP2 **PKPdf 20 23 03.9 +0.8**
VAM Vamos 147.37 302 P **PKPdf 20 23 03.9 +0.8**
DID Didima 147.51 306 P **PKPdf 20 23 03.5 +0.2**
IMMV Iera Moni Meta 147.53 302 P **PKPdf 20 23 03.7 +0.4**
ARSA Arzberg 147.55 327 *i* PKiKP **PKPab 20 23 07.8 0.0**
comp=Z,5.5nm,1.1s
FNA Florina 147.62 312 P **PKPdf 20 23 03.2 -0.2**
AGG Agios Georgios 147.65 309 P **PKPdf 20 22 59.6 -3.9**
AGG Agios Georgios 147.65 309 *e*PKP2 **PKPbc 20 23 05.6 -0.6**
AGG Agios Georgios 147.65 309 *e*PKPbc **PKPbc 20 23 05.6 -0.6**
GRFO Grafenberg 147.76 334 *e*PKP2 **PKPbc 20 23 06.3 +0.2**
GRFO Grafenberg 147.76 334 *e*PKPbc **PKPbc 20 23 06.3 +0.2**
MOA Molln 147.77 329 *i* sPKPdf **PKPbc 20 23 07.1 +0.8**
comp=Z,7.8nm,1.1s
OHR Ohrid 147.87 313 *i* PKP **PKPbc 20 23 06.0 -0.8**
ANKY Antikythira Is 147.95 303 P **PKPdf 20 23 01.2 -2.8**
ANKY Antikythira Is 147.95 303 P **PKPdf 20 23 01.2 -2.8**
VLI Veliai 147.98 304 P **PKPdf 20 23 04.2 +0.2**
VLI Veliai 147.98 304 P **PKPdf 20 23 04.2 +0.2**
ANX Ano Chora 148.11 308 P **PKPbc 20 23 06.2 -1.3**
KLV Kalavryta, Ach 148.14 307 P **PKPbc 20 23 06.4 -1.2**
KLV Kalavryta, Ach 148.14 307 P **PKPbc 20 23 06.4 -1.2**
SOKA Soboth 148.19 326 *i* pPKPdf **PKPbc 20 23 06.8 -0.7**
comp=Z,7.9nm,1.3s
PDG Podgorica 148.25 317⇓ *i*P **PKPbc 20 23 06.3 -1.3**
PVO Paravola 148.39 309 P **PKPbc 20 23 06.6 -1.5**
DRO Drossia 148.50 307 P **PKPdf 20 23 06.2 +1.3**
CRES Cresnjev 148.52 325 *e*PKPdf **PKPbc 20 23 07.8 -0.4**
OBKA Obir 148.55 327 *i* PKPbc **PKPbc 20 23 07.6 -0.9**
comp=Z,7.6nm,1.1s
CWF Charnwood Fore 148.70 350 *e*PKPbc **PKPbc 20 23 07.8 -0.7**
KBA Koelnbreinsper 148.75 328 *i* PKPbc **PKPbc 20 23 07.9 -1.1**
comp=Z,5.5nm,1.2s
LJU Ljubljana 148.87 326 *e*PKPbc **PKPbc 20 23 08.6 -0.6**
IGT Igoumenitsa 148.87 311 P **PKPdf 20 23 07.1 +1.7**
MEM Membach 148.90 340 PKPbc **PKPbc 20 23 08.8 -0.2**
MYKA Terra Mystica 148.92 328 *e*PKPbc **PKPbc 20 23 08.3 -1.0**
comp=Z,1.9nm,0.6s
LKD2 Lefkada island 148.94 309 P **PKPdf 20 23 06.6 +1.0**
JAVS Javornik 149.21 326 *e*PKPbc **PKPbc 20 23 09.2 -0.9**
BCLA Clavier 149.29 341 PKP **PKPdf 20 23 04.8 -0.9**
ABTA Abfaltersbach 149.39 329 *i* pPKPdf **PKPbc 20 23 08.4 -2.1**
comp=Z,10.0nm,1.5s
MOTA Moosalm 149.61 331 *i* sPKPdf **PKPbc 20 23 10.0 -1.1**
comp=Z,4.4nm,0.8s,SNR=7.2
RETA Reutte 149.65 332 *i* PKiKP **PKiKP 20 23 12.0 -0.1**
comp=Z,3.8nm,0.9s
WLF Walferdange 149.67 339 PKPbc **PKPbc 20 23 11.4 +0.4**
WLF Walferdange 149.67 339 *e*PKP2 **PKPbc 20 23 11.5 +0.5**
WLF Walferdange 149.67 339 *e*PKPbc **PKPbc 20 23 11.5 +0.5**
DOU Dourbes 149.79 341 PKPbc **PKPbc 20 23 10.6 -0.6**
BFO Black Forest 150.00 335 *i* PKP2 **PKPbc 20 23 12.0 +0.1**
BFO Black Forest 150.00 335 *e*PKPbc **PKPbc 20 23 12.5 +0.6**
FETA Feshten 150.02 331 *i* PKPbc **PKPbc 20 23 11.8 -0.4**
comp=Z,13nm,1.0s
DAVA Damuels 150.19 332 *i* PKPbc **PKPbc 20 23 12.1 -0.4**
comp=Z,15nm,1.3s
FUORN Ofenpass-Fuorn 150.53 331 *e*PKPbc **PKPbc 20 23 13.5 0.0**
TUE Stuetta 151.05 332 *e*PKPbc **PKPbc 20 23 13.9 -0.8**
DYA Yadsworthy 151.33 352 *e*PKPbc **PKPbc 20 23 14.9 0.0**
SENIN Lac Senin/Sane 152.01 334 *e*PKPab **PKPab 20 23 25.9 -0.3**
ES19 SONSECA Array 161.70 345 *e*PKPab **PKPab 20 24 07.1 -0.8**
ESDC Sonseca Array 161.74 345 PKPab **PKPab 20 24 06.7 -1.3**
comp=Z,1.2nm,0.8s,baz=29,slow=2.9,SNR=5.9
LIC Lamto 163.48 198 *e*PKP1 **PKPab 20 24 15.2 -0.9**
comp=Z,49nm,1.3s
KIC Kosan Boka 163.53 199 *e*PKP1 **PKPab 20 24 14.9 -1.4**
comp=Z,76nm,1.5s
DBIC Dimbokro 163.85 199 PKPab **PKPab 20 24 17.5 -0.2**
comp=Z,6.0nm,0.8s,baz=150,slow=5.8,SNR=5.6
TIC Toumodi 163.88 198 *e*PKP1 **PKPab 20 24 15.8 -2.1**
TOA0 Torodi Ar. Sit 165.71 233 *e*PKPdf **PKPdf 20 23 26.7 -0.4**
TORD Torodi Ar. Bea 165.71 233 PKP **PKPdf 20 23 25.6 -1.4**
comp=Z,2.2nm,1.0s,baz=180,slow=1.0,SNR=10
TORD PKPab **PKPab 20 24 24.7 -1.4**
comp=Z,0.6nm,0.8s,baz=138,slow=3.4,SNR=2.5

IDC ***27*** *20:20:17.0±0.8, 19°.52N×64°.64W, h0km, mb3.8/7, mb1 4.0/9, mb1mx3.7/40, mbtmp3.8/9, ML3.1/2, MS3.2/3, Ms1 3.2/3, ms1mx2.6/33, Error ellipse: s-maj=21.4km s-min=18.1km az=141.0*
NEIC ***27*** *20:20:17.7, 19°.13N×64°.33W, h140km, MD3.9(RSPR), After RSPR.*
RSPR ***27*** *20:20:17.7, 19°.13N×64°.33W, h140km±2km, MD3.9/5*
ISC 27 20:20:18.4±0.8, 19°.48N±0°.08×64°.62W±0°.08, h10km, n31, σ1s03/30, mb3.8/6, 17C, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABV	**Anegada**	**0.80**	**160**⇑	*e*P	Pn	20 20 36.8	+1.1
ABV	**Anegada**	**0.80**	**160**	*e*S	Sb	20 20 52.4	+7.2
ABVI	**Anegada Island**	**0.80**	**160**⇑	*e*P	Pn	20 20 36.8	+1.1
ABVI				*e*S	Sb	20 20 52.4	+7.2
STVI	**Saint Thomas**	**1.17**	**196**⇑	*e*P	**Pn**	**20 20 41.2**	**+0.4**
STVI	**Saint Thomas**	**1.17**	**196**⇑	*e*P	**Pn**	**20 20 41.2**	**+0.4**
STVI				*e*S	Sn	20 20 59.0	+2.3
HUMP	**Col San Antoni**	**1.77**	**221**⇑	*e*P	**Pb**	**20 20 49.2**	**-1.8**
HUMP	**Col San Antoni**	**1.77**	**221**⇑	*e*P	**Pb**	**20 20 49.2**	**-1.8**
SJG	**San Juan**	**1.99**	**227**⇑	*e*P	**Pn**	**20 20 52.2**	**+0.1**
SJG	**San Juan**	**1.99**	**227**	Pn	**Pn**	**20 20 51.9**	**-0.2**
SJG	17nm,0.3s,baz=54,slow=7.8,SNR=18			Sn	**Sb**	**20 21 18.8**	**-0.7**
SJG	31nm,0.3s,baz=248,slow=22,SNR=6.0 **San Juan**	**1.99**	**227**	Pn	**Pn**	**20 20 51.9**	**-0.2**
SJG				Sn	**Sb**	**20 21 18.8**	**-0.7**
SJG				*e*S	**Sn**	**20 21 18.9**	**+1.9**
AOPR	**Arecibo Observ**	**2.31**	**241**⇑	*e*P	**Pn**	**20 20 57.2**	**+0.5**
AOPR	**Arecibo Observ**	**2.31**	**241**⇑	*e*P	**Pn**	**20 20 57.2**	**+0.5**
AOPR				*e*S	**Sn**	**20 21 28.3**	**+3.1**
CELP	**Cerrillos**	**2.32**	**233**⇑	*e*P	**Pn**	**20 20 56.6**	**-0.1**
CELP	**Cerrillos**	**2.32**	**233**⇑	*e*P	**Pn**	**20 20 56.6**	**-0.1**
OBIP	**Obispado Ponce**	**2.36**	**233**⇑	*e*P	**Pn**	**20 20 57.7**	**+0.4**
OBIP	**Obispado Ponce**	**2.36**	**233**⇑	*e*P	**Pn**	**20 20 57.7**	**+0.4**
LSP	**Las Mesas**	**2.67**	**241**⇑	*e*P	**Pn**	**20 21 02.2**	**+0.6**
LSP	**Las Mesas**	**2.67**	**241**⇑	*e*P	**Pn**	**20 21 02.2**	**+0.6**
CRPR	**Cabo Rojo, PR**	**2.78**	**239**⇑	*e*P	**Pn**	**20 21 03.5**	**+0.5**
CRPR	**Cabo Rojo, PR**	**2.78**	**239**⇑	*e*P	**Pn**	**20 21 03.5**	**+0.5**
CRPR				*e*S	**Sn**	**20 21 38.1**	**+1.6**
SDDR	**Presa de Saban**	**6.32**	**267**	*e*Pn	**Pn**	**20 21 51.6**	**-0.1**
	78nm,0.6s						
SDV	**Santo Domingo**	**12.03**	**210**	Pn	Pn	20 23 12.1	+1.8
	0.5nm,0.3s,baz=15,slow=14,SNR=2.4						
SDV				Sn	Sn	20 25 27.9	+3.1
	0.6nm,0.3s,baz=84,slow=24,SNR=1.9						
SDV				LR	LR	20 28 54.0	
	comp=Z,75nm,18.2s,baz=10,slow=43						
ROSC	**El Rosal**	**17.35**	**214**	LR	LR	20 31 14.1	
	comp=Z,56nm,20.4s,baz=140,slow=38						
PTGA	**Pitinga**	**20.60**	**167**	P	Pn	20 24 57.2	-2.9
	1.2nm,0.3s,baz=324,slow=18,SNR=5.0						
TXAR	**Lajitas Array**	**36.74**	**293**	P	**P**	**20 27 26.6**	**+0.3**
	1.1nm,0.7s,baz=116,slow=10,SNR=16						
PDAR	**Pinedale Array**	**44.27**	**312**	P	**P**	**20 28 28.7**	**+0.1**
	0.5nm,0.6s,baz=108,slow=9.5,SNR=4.5						
DBIC	**Dimbokro**	**59.33**	**94**	P	**P**	**20 30 22.2**	**+1.0**
	1.4nm,0.6s,baz=254,slow=10.0,SNR=3.7						
TORD	**Torodi Ar. Bea**	**63.63**	**85**	P	**P**	**20 30 50.6**	**+0.3**
	0.7nm,0.6s,baz=296,slow=7.9,SNR=5.4						
TORD				LR	LR	20 55 12.5	
	comp=Z,28nm,20.8s,baz=240,slow=33						
ILAR	**Eielson Array**	**69.27**	**333**	P	**P**	**20 31 24.5**	**-1.0**
	0.4nm,0.7s,baz=119,slow=4.9,SNR=5.7						
FINES	**FINESS Array B**	**73.43**	**30**	P	**P**	**20 31 50.6**	**-0.1**
	0.9nm,0.7s,baz=235,slow=4.4,SNR=5.0						
ASAR	**Alice Springs**	**162.28**	**253**	PKPab	**PKPab**	**20 41 07.5**	**-0.8**
	0.4nm,0.7s,baz=106,slow=4.7,SNR=4.4						

CSEM ***27*** *20:22:28.5±1.8, 40°.40N×27°.95E, h20km, MD2.1, Error ellipse: s-maj=39.8km s-min=22.1km az=121.0*
ISK 27 20:22:32.9, 40.70N×27.80E, h20km, MD2.1, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MRMT	**Marmara Adasi**	**0.18**	**239**	*e*Pg	Pb	20 22 38.4	+0.5
MRMT				*e*Sg	Sb	20 22 41.8	+0.6
MRMT	**Marmara Adasi**	**0.18**	**239**	*e*Pg	Pb	20 22 38.4	+0.5
MRMT				*e*Sg	Sb	20 22 41.8	+0.6
SBT3	**Marmara-Eregli**	**0.23**	**35**	*e*PG	Pb	20 22 38.7	+0.3
SBT3				*e*SG	Sb	20 22 43.3	+1.2
SBT3	**Marmara-Eregli**	**0.23**	**35**	*e*Pg	Pb	20 22 38.7	+0.3
SBT3				*e*Sg	Sb	20 22 43.3	+1.2
SBT4	**Kumbag-Tekirda**	**0.24**	**304**	*e*PG	Pb	20 22 38.8	+0.3
SBT4				*e*SG	Sb	20 22 43.5	+1.2
SBT4	**Kumbag-Tekirda**	**0.24**	**304**	*e*Pg	Pb	20 22 38.8	+0.3
SBT4				*e*Sg	Sb	20 22 43.5	+1.2

ISCJB ***27*** *20:22:59.4±1.5, 35°.80N±0°.04×141°.13E±0°.08, h18km±9km, mb4.2/14, Error ellipse: s-maj=11.6km s-min=7.3km az=179.0*
IDC ***27*** *20:22:59.2±0.8, 35°.74N×141°.02E, h0km, mb4.0/10, mb1 4.0/13, mb1mx3.8/43, mbtmp4.0/13, ML3.8/2, MS2.5/3, Ms1 2.5/3, ms1mx2.3/40, Error ellipse: s-maj=25.2km s-min=15.5km az=79.0*
NEIC ***27*** *20:23:00.5±0.4, 35°.76N×141°.00E, h10km, mb4.6/5, Error ellipse: s-maj=9.0km s-min=7.8km az=87.0*
NEIC Recorded [2 JMA] in Chiba..
NIED ***27*** *20:23:00, 35°.90N×141°.10E, h11km, Mw3.9 Best double couple: M0 6.90000×10^14 NP1: φs 185.00000°, δ 29.00000°, λ -98.00000°. NP2: φs 14.00000°, δ 61.00000°, λ -86.00000°.*
JMA ***27*** *20:23:00.9±0.2, 35°.79N×141°.02E, h20km±1km, M4.1*
JMA Felt II J1.
ISC 27 20:23:00.8±2.1, 35°.84N±0°.05×141°.02E±0°.08, h10km±11km, n36, σ0s84/34, mb4.1/14, 2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.78**	**300**	⇓P	**Pg**	**20 23 15.6**	**-0.1**
JYT				S	**Sg**	**20 23 26.0**	**+0.1**
JHO	**Hitachi**	**0.85**	**335**	⇓P	**Pg**	**20 23 17.1**	**-0.1**
JHO				S	**Sb**	**20 23 29.8**	**+0.6**
ONAJ	**Iwakimizuishiy**	**1.27**	**352**	P	**Pn**	**20 23 23.0**	**-1.7**
JAG

MKAR	**Makanchi Array**	**44.49**	**303**	P		**P**	**20 31 12.2**	**0.0**
	2.6nm,0.8s,baz=90,slow=9.7,SNR=27								
KURK	**Kurchatov**	**46.43**	**309**	*e*P		**P**	**20 31 27.4**	**-0.1**
	46nm,0.8s								
ILAR	**Eielson Array**	**50.67**	**32**	P		**P**	**20 32 00.2**	**+0.3**
	1.0nm,0.6s,baz=263,slow=6.4,SNR=12								
BVAR	**Borovoye Array**	**51.15**	**313**	P		**P**	**20 32 04.4**	**+0.7**
	1.2nm,0.7s,baz=78,slow=6.8,SNR=12								
BRVK	**Borovoye**	**51.20**	**313**	*e*P		**P**	**20 32 04.4**	**+0.2**
	6.4nm,0.9s								
WRAB	**Tennant Creek**	**55.83**	**188**	*e*P		**P**	**20 32 37.2**	**-1.2**
WRA	**Warramunga Arr**	**55.84**	**188**	P		**P**	**20 32 36.9**	**-1.6**
	1.1nm,0.6s,baz=5.5,slow=7.7,SNR=19								
ARU	**Arti**	**57.05**	**319**	P		**P**	**20 32 47.0**	**+0.3**
	4.3nm,0.7s,baz=56,slow=3.2,SNR=10.0								
ARU	**Arti**	**57.05**	**319**	*e*P		**P**	**20 32 46.8**	**+0.1**
	7.1nm,1.0s								
ABKAR	**Akbulak array**	**58.47**	**311**	*e*P		**P**	**20 32 56.6**	**-0.3**
	0.5nm,0.4s								
ASAR	**Alice Springs**	**59.56**	**188**	P		**P**	**20 33 03.8**	**-0.8**
	0.5nm,0.6s,baz=17,slow=13,SNR=7.3								
FINES	**FINESS Array B**	**69.72**	**332**	P		**P**	**20 34 11.2**	**+0.6**
	3.5nm,0.8s,baz=58,slow=7.6,SNR=12								
NB2	**NORSAR Subarra**	**75.16**	**337**	P		**P**	**20 34 43.1**	**+0.1**
	comp=Z,5.1nm,1.2s,baz=41,slow=5.9								
NOA	**NORSAR Array B**	**75.16**	**337**	P		**P**	**20 34 43.4**	**+0.3**
	comp=Z,0.8nm,0.6s,baz=40,slow=5.7,SNR=4.8								
LPAZ	**La Paz**	**147.56**	**61**	PKPbc		**PKPbc**	**20 42 47.0**	**+0.4**
	comp=Z,0.8nm,0.5s,baz=29,slow=5.5,SNR=4.7								

ATH ***27*** *21:00:39.6,41.˚76N×19.˚25E,h21km±2km, ML2.4/7, Error ellipse: s-maj=2.9km s-min=1.6km az=177.0*
ISCJB ***27*** *21:00:40.0±0.4,41.˚79N±0.˚02×19.˚34E±0.˚03,h11km±3km, Error ellipse: s-maj=4.1km s-min=2.5km az=161.0*
CSEM ***27*** *21:00:40.1±0.1,41.˚78N×19.˚33E,h5km, ML2.7, Error ellipse: s-maj=3.8km s-min=2.1km az=65.0*
PDG ***27*** *21:00:41.3±0.5,41.˚85N×19.˚40E,h11km±1km, MD2.9/2, ML2.7/13, Error ellipse: s-maj=0.7km s-min=1.2km az=0.0*
BEO ***27*** *21:00:42.3±0.3,41.˚87N×19.˚48E,h4km±2km, M2.5/1*
ISC 27 21:00:40.7±0.9**, 41.˚79N**±0.˚02×**19.˚32E**±0.˚02**, h14**km±6km**, n108,** σ**19°03/178, 17C-14D, Albania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULC	**Ulcinj**	**0.18**	**341**	⇓*i*Pg	**Pg**	**21 00 45.0**	**0.0**
ULC				*e*Sg	**Sg**	**21 00 48.1**	**+0.2**
ULC	**Ulcinj**	**0.18**	**341**	P	**Pg**	**21 00 45.0**	**0.0**
ULC				*e*Sg	**Sg**	**21 00 48.1**	**+0.2**
DRME	**Dracevica, Mon**	**0.41**	**345**	⇓*i*Pg	**Pg**	**21 00 48.4**	**-0.5**
DRME				*e*Sg	**Sb**	**21 00 55.3**	**-0.4**
DRME	**Dracevica, Mon**	**0.41**	**345**	⇓*i*Pg	**Pg**	**21 00 48.3**	**-0.6**
DRME				*e*Sg	**Sb**	**21 00 55.0**	**-0.7**
BUM	**Brajici-Budva**	**0.60**	**328**	⇓*i*Pg	**Pg**	**21 00 52.1**	**-0.4**
BUM				*e*Sg	**Sb**	**21 01 01.9**	**+0.6**
BUM	**Brajici-Budva**	**0.60**	**328**	⇓*i*Pg	**Pg**	**21 00 52.1**	**-0.4**
BUM				*e*Sg	**Sb**	**21 01 01.9**	**+0.6**
TIR	**Tirane**	**0.60**	**137**	⇓*i*P	**Pg**	**21 00 52.2**	**-0.3**
TIR	**Tirane**	**0.60**	**137**	*e*Pg	**Pg**	**21 00 52.1**	**-0.4**
TIR				*e*Sg	**Sb**	**21 01 02.8**	**+1.5**
TIR	**Tirane**	**0.60**	**137**	P	**Pg**	**21 00 51.6**	**-0.9**
TIR	**Tirane**	**0.60**	**137**	*e*Pg	**Pg**	**21 00 52.1**	**-0.4**
TIR				S	**Sg**	**21 01 00.5**	**0.0**
TIR				*e*Sg	**Sb**	**21 01 02.8**	**+1.5**
TIR	**Tirane**	**0.60**	**137**	P	**Pg**	**21 00 51.7**	**-0.9**
TIR				S	**Sg**	**21 01 00.5**	**0.0**
TIR				AML	AML	21 01 03.6	
	comp=E,1038μm,0.3s						
TIR				AML	AML	21 01 05.6	
	comp=N,1253μm,0.4s						
PDG	**Podgorica**	**0.64**	**356**	⇓*i*P	**Pg**	**21 00 52.4**	**-0.7**
PDG	**Podgorica**	**0.64**	**356**	*e*Pg	**Pg**	**21 00 52.5**	**-0.7**
PDG				*e*Sg	**Sb**	**21 01 02.1**	**-0.3**
PDG	**Podgorica**	**0.64**	**356**	⇓*i*P	**Pg**	**21 00 52.4**	**-0.7**
PDG	**Podgorica**	**0.64**	**356**	⇑*i*Pg	**Pg**	**21 00 52.7**	**-0.5**
PDG				*e*Sg	**Sb**	**21 01 02.0**	**-0.3**
TTG	**Podgorica**	**0.64**	**356**	⇑*i*Pg	**Pg**	**21 00 52.7**	**-0.5**
TTG				*e*Sg	**Sb**	**21 01 02.1**	**-0.3**
CEME	**Cevo**	**0.81**	**338**	*e*Pg	**Pg**	**21 00 55.3**	**-1.1**
CEME				*e*Sg	**Sb**	**21 01 08.4**	**+1.0**
CEME	**Cevo**	**0.81**	**338**	*e*Pg	**Pg**	**21 00 55.3**	**-1.1**
CEME				*e*Sg	**Sb**	**21 01 08.4**	**+1.0**
HCY	**Herceg Novi**	**0.90**	**317**	⇓*i*Pg	**Pb**	**21 00 57.6**	**-0.4**
HCY				*e*Sg	**Sn**	**21 01 12.0**	**+0.4**
HCY	**Herceg Novi**	**0.90**	**317**	⇓*i*Pg	**Pb**	**21 00 57.6**	**-0.4**
HCY				*e*Sg	**Sn**	**21 01 11.1**	**-0.5**
PVY	**Plav**	**0.93**	**30**	⇓*i*Pg	**Pb**	**21 00 57.1**	**-1.5**
PVY				*e*Sg	**Sg**	**21 01 10.9**	**0.0**
PVY	**Plav**	**0.93**	**30**	⇓*i*Pg	**Pb**	**21 00 57.1**	**-1.5**
PVY				*e*Sg	**Sg**	**21 01 10.9**	**0.0**
NKME	**Niksic**	**1.01**	**344**	⇑*i*Pg	**Pb**	**21 00 59.3**	**-0.7**
NKME				*e*Sg	**Sn**	**21 01 14.9**	**+0.4**
NKME	**Niksic**	**1.01**	**344**	⇑*i*Pg	**Pb**	**21 00 59.3**	**-0.7**
NKME				*e*Sg	**Sn**	**21 01 14.9**	**+0.4**
NKY	**Niksic**	**1.05**	**347**	⇑*i*Pg	**Pb**	**21 01 00.1**	**-0.5**
NKY				*e*Sg	**Sn**	**21 01 16.0**	**+0.5**
NKY	**Niksic**	**1.05**	**347**	⇑*i*Pg	**Pb**	**21 01 00.1**	**-0.5**
NKY				*e*Sg	**Sn**	**21 01 16.0**	**+0.5**
PEJK	**Peje**	**1.11**	**40**	P	**Pb**	**21 01 00.2**	**-1.4**
BEY	**Berane**	**1.16**	**21**	⇑*i*Pg	**Pb**	**21 01 01.4**	**-1.1**
BEY	**Berane**	**1.16**	**21**	P	**Pg**	**21 01 02.8**	**-0.2**
BEY				*e*Sg	**Sn**	**21 01 18.4**	**+0.2**
IVA	**Berane**	**1.16**	**21**	⇑*i*Pg	**Pb**	**21 01 01.4**	**-1.1**
IVA				*e*Sg	**Sn**	**21 01 18.4**	**+0.2**
TREB	**Trebinje**	**1.17**	**322**	*e*Pg	**Pn**	**21 01 02.2**	**-0.4**
TREB				*e*Sg	**Sg**	**21 01 21.7**	**+3.1**
TREB	**Trebinje**	**1.17**	**322**	*e*Pg	**Pn**	**21 01 02.2**	**-0.4**
TREB				*e*Sg	**Sg**	**21 01 19.3**	**+0.7**
BRY	**Bratogost**	**1.25**	**333**	⇑*i*Pg	**Pg**	**21 01 04.6**	**-0.2**
BRY				*e*Sg	**Sg**	**21 01 23.4**	**+2.3**
BRY	**Bratogost**	**1.25**	**333**	⇑*i*Pg	**Pg**	**21 01 04.6**	**-0.2**
BRY				*e*Sg	**Sg**	**21 01 21.0**	**-0.1**
OHR	**Ohrid**	**1.30**	**121**	*e*Pn	**Pn**	**21 01 02.7**	**-1.8**
OHR				*i* Sn	**Sg**	**21 01 24.5**	**+1.7**
OHR	**Ohrid**	**1.30**	**121**	*e*Pn	**Pn**	**21 01 02.6**	**-1.8**
OHR				*i* Sn	**Sg**	**21 01 24.4**	**+1.7**
UPM	**Unac-Piva**	**1.44**	**348**	⇑*i*Pg	**Pb**	**21 01 07.4**	**0.0**
UPM				*e*Sg	**Sg**	**21 01 28.2**	**+1.0**
UPM	**Unac-Piva**	**1.44**	**348**	⇑*i*Pg	**Pb**	**21 01 07.4**	**0.0**
UPM	**Unac-Piva**	**1.44**	**348**	P	**Pg**	**21 01 08.6**	**+0.2**
UPM				*e*Sg	**Sg**	**21 01 27.0**	**-0.2**
PLE	**Pljevlja**	**1.54**	**2**	⇑*i*Pg	**Pb**	**21 01 09.2**	**+0.2**
PLE				*e*Sg	**Sg**	**21 01 30.4**	**+0.2**
PLE	**Pljevlja**	**1.54**	**2**	⇑*i*Pg	**Pb**	**21 01 09.2**	**+0.2**
PLE				*e*Sg	**Sg**	**21 01 30.4**	**+0.2**
SKO	**Skopje**	**1.59**	**83**	*i* Pn	**Pb**	**21 01 09.6**	**-0.2**
SKO				*i* Sn	**Sg**	**21 01 32.2**	**+0.3**
SKO	**Skopje**	**1.59**	**83**	*i* Pn	**Pb**	**21 01 09.6**	**-0.2**
SKO				*i* Sn	**Sg**	**21 01 32.2**	**+0.3**
FNA	**Florina**	**1.85**	**122**	P	**Pb**	**21 01 14.0**	**-0.3**
FNA				S	**Sb**	**21 01 36.5**	**-0.7**
FNA	**Florina**	**1.85**	**122**	P	**Pb**	**21 01 14.0**	**-0.3**
FNA				S	**Sb**	**21 01 36.5**	**-0.7**
FNA				AML	AML	21 01 42.1	
	comp=N,288μm,0.4s						
FNA				AML	AML	21 01 42.5	
	comp=E,239μm,0.4s						
IVAS	**Ivanjica**	**1.88**	**19**	*e*Pn	**Pn**	**21 01 13.4**	**+0.9**
IVAS				*e*Sg	**Sg**	**21 01 40.0**	**-1.3**
IVAS	**Ivanjica**	**1.88**	**19**	*e*Pn	**Pn**	**21 01 13.4**	**+0.9**
IVAS				*e*Sg	**Sg**	**21 01 40.0**	**-1.3**
SELS	**Selova**	**1.95**	**42**	*e*Pn	**Pb**	**21 01 14.5**	**-1.4**
SELS				*e*Sg	**Sb**	**21 01 40.3**	**+0.2**
NOCI	**Noci**	**1.98**	**240**	P	**Pn**	**21 01 13.6**	**-0.1**
NOCI	**Noci**	**1.98**	**240**	P	**Pn**	**21 01 13.6**	**-0.1**
BBLS	**Lazići**	**2.07**	**2**	*e*Pn	**Pb**	**21 01 16.8**	**-1.3**
BBLS	**Lazići**	**2.07**	**2**	⇑*i*Pn	**Pb**	**21 01 16.4**	**+1.3**
BBLS				*e*Sn	**Sb**	**21 01 42.1**	**-1.6**
KEK	**Kerkira**	**2.11**	**170**	P	**Pn**	**21 01 15.9**	**+0.4**
KEK				S	**Sn**	**21 01 43.2**	**+1.7**
BARS	**Barje**	**2.11**	**60**	*e*Pn	**Pn**	**21 01 16.1**	**+0.5**
BARS				*e*Sg	**Sb**	**21 01 43.7**	**-1.1**
BARS	**Barje**	**2.11**	**60**	*e*Pn	**Pn**	**21 01 16.1**	**+0.5**
SGD	**Sagiada**	**2.29**	**162**	P	**Pn**	**21 01 19.5**	**+1.5**
SGD	**Sagiada**	**2.29**	**162**	P	**Pn**	**21 01 19.4**	**+1.5**
GRUS	**Gruza**	**2.33**	**26**	*e*Pn	**Pn**	**21 01 19.6**	**+1.0**
GRUS				*e*Sg	**Sb**	**21 01 51.5**	**+0.4**
GRUS	**Gruza**	**2.33**	**26**	*e*Pn	**Pn**	**21 01 19.6**	**+1.0**
GRUS				*e*Sg	**Sb**	**21 01 51.5**	**+0.4**
DIVS	**Divibare**	**2.35**	**12**	*e*Pn	**Pn**	**21 01 19.7**	**+0.7**
DIVS				*e*Sn	**Sn**	**21 01 48.1**	**+0.4**
DIVS	**Divibare**	**2.35**	**12**	*e*Pn	**Pn**	**21 01 19.7**	**+0.7**
DIVS				*e*Sn	**Sb**	**21 01 49.6**	**-2.3**
IGT	**Igoumenitsa**	**2.39**	**161**	P	**Pn**	**21 01 19.5**	**+0.2**
IGT				S	**Sn**	**21 01 48.9**	**+0.6**
IGT	**Igoumenitsa**	**2.39**	**161**	P	**Pn**	**21 01 19.5**	**+0.2**
IGT				S	**Sn**	**21 01 48.9**	**+0.6**
IGT				AML	AML	21 02 02.0	
	comp=E,81μm,0.5s						
IGT				AML	AML	21 02 04.7	
	comp=N,73μm,0.8s						
KPRO	**Kipourio**	**2.40**	**139**	P	**Pn**	**21 01 21.6**	**+2.0**
KPRO	**Kipourio**	**2.40**	**139**	P	**Pn**	**21 01 21.6**	**+2.0**
GRG	**Griva**	**2.46**	**109**	P	**Pn**	**21 01 21.8**	**+1.4**
GRG				S	**Sn**	**21 01 51.3**	**+1.0**
GRG	**Griva**	**2.46**	**109**	P	**Pn**	**21 01 21.8**	**+1.4**
GRG				S	**Sn**	**21 01 51.4**	**+1.0**
VAY	**Valandovo**	**2.48**	**100**	*i* Pn	**Pn**	**21 01 21.1**	**+0.4**
VAY	**Valandovo**	**2.48**	**100**	*i* Pn	**Pn**	**21 01 21.0**	**+0.4**
TRUS	**Trudelj**	**2.56**	**18**	*e*Pn	**Pn**	**21 01 22.4**	**+0.8**
TRUS	**Trudelj**	**2.56**	**18**	*e*Pn	**Pn**	**21 01 22.4**	**+0.8**
TEKS	**Tekeris**	**2.76**	**3**	*e*Pn	**Pn**	**21 01 26.9**	**+2.4**
TEKS	**Tekeris**	**2.76**	**3**	*e*Pn	**Pn**	**21 01 26.9**	**+2.4**
KNT	**Kendrikon**	**2.76**	**102**	P	**Pn**	**21 01 24.9**	**+0.4**
KNT				S	**Sn**	**21 01 59.8**	**+2.2**
KNT	**Kendrikon**	**2.76**	**102**	P	**Pn**	**21 01 24.9**	**+0.4**
KNT				S	**Sn**	**21 01 59.8**	**+2.2**
KNT				AML	AML	21 02 05.7	
	comp=E,12μm,0.4s						
KNT				AML	AML	21 02 14.7	
	comp=N,22μm,0.7s						
BOLS	**Boljevac**	**2.81**	**43**	*e*Pn	**Pn**	**21 01 25.1**	**0.0**
BOLS	**Boljevac**	**2.81**	**43**	*e*Pn	**Pn**	**21 01 25.1**	**0.0**
ZAPS	**Zavoj**	**2.86**	**58**	*e*Pn	**Pn**	**21 01 26.7**	**+0.8**
ZAPS				*e*Sn	**Sn**	**21 02 00.7**	**+0.6**
ZAPS	**Zavoj**	**2.86**	**58**	*e*Pn	**Pn**	**21 01 26.7**	**+0.8**
ZAPS				*e*Sn	**Sn**	**21 02 00.7**	**+0.6**
ZAGS	**Zajecar**	**2.94**	**46**	*e*Pn	**Pn**	**21 01 26.7**	**-0.2**
ZAGS				*e*Sn	**Sn**	**21 02 02.9**	**+0.9**
ZAGS	**Zajecar**	**2.94**	**46**	*e*Pn	**Pn**	**21 01 26.7**	**-0.2**
ZAGS				*e*Sn	**Sn**	**21 02 02.9**	**+0.9**
LKD2	**Lefkada island**	**3.17**	**161**	P	**Pn**	**21 01 29.1**	**-1.0**
LKD2				S	**Sn**	**21 02 07.0**	**-0.7**
LKD2	**Lefkada island**	**3.17**	**161**	P	**Pn**	**21 01 29.1**	**-1.0**
LKD2				S	**Sn**	**21 02 07.0**	**-0.7**
LKD2				AML	AML	21 02 09.8	
	comp=E,66μm,0.4s						
LKD2				AML	AML	21 02 13.2	
	comp=N,63μm,0.4s						
TIP	**Timpagrande**	**3.26**	**218**	P	**Pn**	**21 01 29.3**	**-2.1**
TIP	**Timpagrande**	**3.26**	**218**	P	**Pn**	**21 01 29.3**	**-2.1**
PLG	**Polygyros**	**3.42**	**113**	P	**Pn**	**21 01 34.8**	**+1.2**
PLG				S	**Sn**	**21 02 14.7**	**+0.7**
PLG	**Polygyros**	**3.42**	**113**	P	**Pn**	**21 01 34.8**	**+1.2**
PLG				S	**Sn**	**21 02 14.7**	**+0.7**
PLG				AML	AML	21 02 22.4	
	comp=E,11μm,0.3s						
PLG				AML	AML	21 02 27.1	
	comp=N,7μm,0.3s						
MDVR	**Moldovita**	**3.46**	**29**	⇓*i*P	**Pn**	**21 01 34.7**	**+0.6**
MDVR	**Moldovita**	**3.46**	**29**	⇓*i*P	**Pn**	**21 01 34.7**	**+0.6**
AGG	**Agios Georgios**	**3.60**	**139**	P	**Pn**	**21 01 37.2**	**+1.2**
AGG				S	**Sn**	**21 02 17.8**	**-0.5**
AGG	**Agios Georgios**	**3.60**	**139**	P	**Pn**	**21 01 37.2**	**+1.2**
AGG				S	**Sn**	**21 02 17.8**	**-0.5**
AGG				AML	AML	21 02 27.8	
	comp=E,48μm,0.4s						
AGG				AML	AML	21 02 30.6	
	comp=N,55μm,0.6s						
VLS	**Valsamata**	**3.74**	**165**	P	**Pn**	**21 01 37.4**	**-0.6**
VLS				S	**Sn**	**21 02 20.8**	**-1.0**
UDBI	**Udbina**	**3.77**	**318**	*e*Pn	**Pn**	**21 01 40.5**	**+2.0**
UDBI				Sn	**Sn**	**21 02 24.9**	**+2.3**
UDBI	**Udbina**	**3.77**	**318**	*e*Pn	**Pn**	**21 01 40.4**	**+2.0**
UDBI				Sn	**Sn**	**21 02 24.9**	**+2.3**
PAIG	**Paliouri**	**3.79**	**118**	P	**Pn**	**21 01 38.7**	**+0.1**
PAIG	**Paliouri**	**3.79**	**118**	P	**Pn**	**21 01 38.7**	**+0.1**
BZS	**Buzias**	**4.17**	**23**	⇑*i*P	**Pn**	**21 01 44.4**	**+0.6**
BZS	**Buzias**	**4.17**	**23**	*e*Pn	**Pn**	**21 01 43.3**	**-0.5**
BZS				*e*Sn	**Sn**	**21 02 32.0**	**-0.2**
BZS	**Buzias**	**4.17**	**23**	*e*Pn	**Pn**	**21 01 43.3**	**-0.5**
BZS	**Buzias**	**4.17**	**23**	⇑*i*P	**Pn**	**21 01 44.4**	**+0.6**
BZS				*e*Sn	**Sn**	**21 02 32.0**	**-0.2**
SISC	**Sisak**	**4.25**	**331**	*e*Pg	Pg	21 02 13.6	+11
SISC				Sg	Sn	21 02 16.5	-18
NVLJ	**Novalja**	**4.27**	**312**	*e*Pn	**Pn**	**21 01 45.6**	**+0.4**
NVLJ				Sn	**Sn**	**21 02 32.8**	**-2.0**
NVLJ	**Novalja**	**4.27**	**312**	*e*Pn	**Pn**	**21 01 45.6**	**+0.4**
NVLJ				Sn	**Sn**	**21 02 32.8**	**-2.0**
OZLJ	**Ozalj**	**4.73**	**325**	*e*Pg	Pg	21 02 19.2	+8.0
OZLJ				Sg	Sn	21 02 25.0	-21
BOJS	**Bojanci**	**4.74**	**323**	*i* Pn	**Pn**	**21 01 53.0**	**+1.3**
BOJS	**Bojanci**	**4.74**	**323**	Pn	**Pn**	**21 01 53.0**	**+1.3**
DRGR		**5.56**	**25**	*e*Sn	**Sn**	**21 03 06.2**	**-0.4**
DRGR		**5.56**	**25**	*e*Sn	**Sn**	**21 03 06.2**	**-0.4**

PRE ***27*** *21:11:56.5±2.1,21.˚52S×33.˚53E,h10km, ML4.4*
ISC 27 21:12:00.8±3.3**, 21.˚8S**±0.˚1×**33.˚3E**±0.˚2**, h10**km**, n11,** σ**2°07/21, Mozambique**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSNA	**Messina**	**3.05**	**258**	*e*P	**Pn**	**21 12 50.2**	**+1.0**
MSNA				*e*S	**Sn**	**21 13 30.8**	**+5.0**
MSNA				AML	AML	21 13 44.5	
	comp=Z,236nm,0.5s						
MATP	**Matopo**	**4.63**	**286**	*i* P	**Pn**	**21 13 09.9**	**-1.2**
MATP				*i*		21 13 10.2	
	baz=101,slow=18						
MATP				*i* S	**Sn**	**21 14 02.8**	**-2.2**
POGA	**Pongola**	**5.78**	**195**	*e*P	**Pn**	**21 13 27.4**	**+0.8**
POGA				*e*S	**Sn**	**21 14 31.4**	**-1.6**
POGA				AML	AML	21 15 22.0	
	comp=Z,36nm,0.5s						
ERPM	**east rand prop**	**6.46**	**224**	*e*S	**Sn**	**21 14 50.2**	**+0.1**
ERPM				AML	AML	21 15 33.2	
	comp=Z,42nm,0.5s						
PRYS	**Parys**	**7.43**	**225**	*e*P	**Pn**	**21 13 50.1**	**+0.6**
PRYS				*e*S	**Sn**	**21 15 14.0**	**0.0**
PRYS				AML	AML	21 16 07.6	
	comp=Z,26nm,0.5s						
SEK	**Senekal**	**8.28**	**217**	*e*P	**Pn**	**21 14 03.5**	**+2.3**
SEK				*e*S	**Sn**	**21 15 34.9**	**-0.1**
SEK				AML	AML	21 16 32.5	
	comp=Z,29nm,0.7s						
SWZ	**Schweizer**	**9.00**	**232**	*e*P	**Pn**	**21 14 11.3**	**+0.2**
SWZ				*e*S	**Sn**	**21 15 52.0**	**-0.7**
SWZ				AML	AML	21 17 04.8	
	comp=Z,32nm,0.6s						
KSD	**Kokstad**	**9.39**	**201**	*e*P	**Pn**	**21 14 18.4**	**+1.9**
KSD				*e*S	**Sn**	**21 16 01.1**	**-1.1**
KSD				AML	AML	21 17 20.8	
	comp=Z,5.3nm,0.7s						
BOSA	**Boshof**	**9.94**	**225**	*i* P	**Pn**	**21 14 23.7**	**-0.2**
BOSA				*i*		21 14 23.9	
	baz=39,slow=12						
BOSA				*i* S	**Sn**	**21 16 14.3**	**-1.4**
UPI	**Upington**	**12.70**	**236**	*e*P	**Pn**	**21 15 02.5**	**+0.8**
UPI				*e*S	**Sn**	**21 17 19.3**	**-3.9**
UPI				AML	AML	21 18 51.5	
	comp=Z,7.8nm,0.7s						
KEIM	**Keimoes**	**13.08**	**236**	*e*P	**Pn**	**21 15 08.9**	**+2.0**
KEIM				*e*S	**Sn**	**21 17 29.5**	**-3.0**
KEIM				AML	AML	21 19 06.2	
	comp=Z,7.6nm,0.7s						

IDC ***27*** *21:25:25.9±1.0,8.˚18S×80.˚03W,h0km,mb3.8/9, mb1 4.1/11,mb1mx4.0/30,mbtmp4.0/11, ML4.4/2, MS3.8/17, Ms1 3.8/17,ms1mx3.6/34, Error ellipse: s-maj=37.6km s-min=16.7km az=47.0*
ISCJB ***27*** *21:25:29.7±0.6,8.˚27S±0.˚07×80.˚0W±0.˚1,h39km,mb4.6/18, MS3.8/12, Error ellipse: s-maj=16.5km s-min=7.5km az=148.9*
NEIC ***27*** *21:25:32.6±1.3,8.˚36S×80.˚02W,h54km±10km,mb4.9/13, Error ellipse: s-maj=13.6km s-min=7.0km az=68.0*
ISC 27 21:25:30.5±0.6**, 8.˚34S**±0.˚06×**80.˚13W**±0.˚07**, h39**km**, n66,** σ**2°08/53, mb4.7/18, MS3.7/12, 1D, Off coast of northern Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAH	**Atahualpa**	**2.10**	**55**	P	**Pn**	**21 26 05.5**	**+2.1**
	44nm,0.3s,baz=232,slow=3.9,SNR=98						
ATAH				Sn	**Sn**	**21 26 34.3**	**+5.8**
	67nm,0.3s,baz=112,slow=19,SNR=7.6						
NNA	**Nana**	**4.86**	**139**	P	**Pn**	**21 26 39.5**	**-1.8**
	5.3nm,0.3s,baz=334,slow=10,SNR=6.7						
NNA				Sn	**Sn**	**21 27 40.2**	**+3.9**
	15nm,0.3s,baz=131,slow=16,SNR=3.6						
NNA				LR	LR	21 28 41.9	
	comp=Z,1μm,18.5s,baz=304,slow=40						
NNA	**Nana**	**4.86**	**139**	*e*Pn	**Pn**	**21 26 39.4**	**-1.8**
NNA				*e*Sn	**Sn**	**21 27 32.1**	**-4.2**
OTAV	**Otavalo**	**8.68**	**11**	*e*Pn	**Pn**	**21 27 37.4**	**+3.4**
OTAV				*e*Sn	**Sn**	**21 29 06.6**	**-4.4**
PAYG	**Puerto Ayora**	**12.66**	**306**	*e*Pn	**Pn**	**21 28 26.5**	**-1.6**
LPAZ	**La Paz**	**14.13**	**125**	Pn	**P**	**21 28 53.2**	**-2.5**
	0.4nm,0.3s,baz=319,slow=8.9,SNR=9.7						
LPAZ				LR	LR	21 34 48.2	
	comp=Z,459nm,21.3s,baz=298,slow=40						
LPAZ	**La Paz**	**14.13**	**125**	*e*P	**P**	**21 28 55.9**	**+0.2**
ROSC	**El Rosal**	**14.32**	**24**	LR	LR	21 34 28.6	
	comp=Z,294nm,19.8s,baz=226,slow=38						
SAML	**Samuel**	**16.77**	**93**	*e*Pn	**Pn**	**21 29 18.9**	**-3.7**
	12nm,0.8s						
LVC	**Limon Verde**	**17.82**	**144**	P	**P**	**21 29 37.8**	**+1.4**
	4.9nm,0.3s,baz=301,slow=11,SNR=4.2						
LVC				LR	LR	21 37 13.8	
	comp=Z,842nm,18.9s,baz=284,slow=40						
LVC	**Limon Verde**	**17.82**	**144**	*e*Pn	**P**	**21 29 37.8**	**+1.4**
LVC				*e*Sn	**S**	**21 33 04.8**	**+5.2**
SDV	**Santo Domingo**	**19.55**	**29**	P	**Pn**	**21 29 56.5**	**-0.3**
	0.3nm,0.3s,baz=235,slow=15,SNR=4.0						
SDV				LR	LR	21 38 18.8	
	comp=Z,269nm,21.6s,baz=215,slow=40						
SIV	**San Ignacio**	**20.11**	**114**	P	Pn	21 30 02.4	-0.9
	2.1nm,0.9s,baz=327,slow=3.8,SNR=3.5						
SIV				LR	LR	21 38 13.2	
	comp=Z,326nm,19.0s,baz=321,slow=38						
PTGA	**Pitinga**	**21.46**	**70**	P	**P**	**21 30 14.9**	**-0.9**
	6.8nm,0.7s,baz=245,slow=13,SNR=16						
PTGA				LR	LR	21 39 27.2	
	comp=Z,596nm,20.2s,baz=242,slow=40						
PTGA	**Pitinga**	**21.46**	**70**	*e*P	**P**	**21 30 14.8**	**-1.0**
	8.0nm,0.8s						
MTDJ	**Mount Denham**	**26.52**	**6**	*e*P	**P**	**21 31 04.8**	**+0.1**
	44nm,1.0s						
CPUP	**Villa Florida**	**28.09**	**132**	P	**P**	**21 31 21.4**	**+2.7**
	1.0nm,0.7s,baz=270,slow=7.1,SNR=2.4						
CPUP				LR	LR	21 44 31.2	
	comp=Z,181nm,19.3s,baz=319,slow=41						
CPUP	**Villa Florida**	**28.09**	**132**	*e*P	**P**	**21 31 18.6**	**-0.1**
SDDR	**Presa de Saban**	**28.51**	**18**	*e*P	**P**	**21 31 23.7**	**+1.2**
	42nm,1.5s						
AGP	**Aguadilla**	**29.51**	**26**	*e*P	**P**	**21 31 30.0**	**-1.3**
	426nm,1.8s						
SJG	**San Juan**	**29.69**	**28**	LR	LR	21 44 42.9	
	comp=Z,65nm,20.1s,baz=218,slow=39						
SEUS	**St. Eustatius**	**30.76**	**33**	*e*P	**P**	**21 31 42.6**	**+0.3**
	246nm,1.1s				

0.2nm,0.5s,baz=343,slow=7.1,SNR=5.6
STKA Stephens Creek 37.52 158 P P 21 42 33.5 +0.8
0.8nm,0.7s,baz=323,slow=10,SNR=1.3
MKAR Makanchi Array 57.90 326 P P 21 45 10.9 +0.1
0.2nm,0.3s,baz=127,slow=8.1,SNR=7.0

IDC 27 21:43:54.9±2.2, 34°.08N×141°.72E, h0km, mb3.3/3, mb1 3.4/4, mb1mx3.2/68, mbtmp3.3/4, ML3.1/1, Error ellipse: s-maj=39.0km s-min=27.3km az=83.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**1.88**	**240**	Pn	Pn	21 44 28.9	+0.6
	23nm,0.3s,baz=357,slow=21,SNR=34						
JHJ				Sn	Sn	21 44 51.6	-1.1
	103nm,0.3s,baz=350,slow=23,SNR=14						
MJAR	**Matsushiro Arr**	**3.78**	**311**	Pn	Pn	21 44 54.0	-0.4
	1.3nm,0.3s,baz=129,slow=7.7,SNR=5.9						
SONM	**Songino Array**	**29.73**	**308**	P	P	21 50 03.2	+0.3
	0.4nm,0.5s,baz=112,slow=10.0,SNR=2.5						
MKAR	**Makanchi Array**	**45.95**	**305**	P	P	21 52 18.9	-0.7
	0.1nm,0.5s,baz=86,slow=11,SNR=1.8						
WRA	**Warramunga Arr**	**54.18**	**189**	P	P	21 53 21.9	-0.2
	0.5nm,0.9s,baz=6.6,slow=7.5,SNR=6.3						

IDC 27 21:50:28.9±2.4, 7°.73S×130°.73E, h0km, mb3.5/1, mb1 3.6/4, mb1mx3.4/39, mbtmp3.4/4, ML3.3/3, Error ellipse: s-maj=79.8km s-min=30.7km az=79.0, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.44**	**205**	Pn	Pn	21 53 12.0	-1.7
	0.3nm,0.3s,baz=32,slow=9.9,SNR=18						
FITZ				Sn	Sn	21 55 13.5	-8.8
	0.2nm,0.3s,baz=121,slow=20,SNR=1.4						
WRA	**Warramunga Arr**	**12.64**	**164**	Pn	Pn	21 53 30.3	+0.2
	0.2nm,0.3s,baz=350,slow=13,SNR=9.2						
WRA				Sn	Sn	21 55 50.5	-1.1
	0.2nm,0.3s,baz=335,slow=20,SNR=4.8						
ASAR	**Alice Springs**	**16.14**	**169**	Pn	P	21 54 19.1	-1.7
	0.1nm,0.3s,baz=349,slow=9.5,SNR=5.9						
MKAR	**Makanchi Array**	**69.23**	**327**	P	P	22 01 37.8	+0.1
	0.2nm,0.4s,baz=141,slow=6.8,SNR=2.5						

IDC 27 22:06:35.0±4.2, 38°.03S×92°.22W, h0km, mb4.2/7, mb1 4.4/7, mb1mx4.2/27, mbtmp4.2/7, MS3.9/10, Ms1 3.9/10, ms1mx3.7/22, Error ellipse: s-maj=98.4km s-min=33.6km az=12.0, West Chile Rise

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**16.96**	**106**	Pn	P	22 10 40.0	+4.2
	0.1nm,0.3s,baz=339,slow=4.7,SNR=5.0						
PLCA				LR	LR	22 14 30.7	
	comp=Z,223nm,18.2s,baz=308,slow=28						
LVC	**Limon Verde**	**25.22**	**59**	P	P	22 12 05.7	+2.8
	65nm,0.9s,baz=227,slow=8.6,SNR=12						
LVC				LR	LR	22 19 39.7	
	comp=Z,2μm,20.6s,baz=228,slow=31						
NNA	**Nana**	**29.35**	**32**	LR	LR	22 21 50.0	
	comp=Z,286nm,19.3s,baz=202,slow=31						
LPAZ	**La Paz**	**30.30**	**51**	P	P	22 12 50.8	+1.9
	6.8nm,1.0s,baz=223,slow=3.8,SNR=13						
LPAZ				LR	LR	22 22 40.1	
	comp=Z,141nm,18.1s,baz=234,slow=32						
CPUP	**Villa Florida**	**31.57**	**79**	P	P	22 12 59.5	+0.2
	1.9nm,0.9s,baz=252,slow=9.5,SNR=3.6						
CPUP				LR	LR	22 23 49.4	
	comp=Z,116nm,20.4s,baz=246,slow=33						
ATAH	**Atahualpa**	**33.21**	**26**	P	P	22 13 13.4	-0.7
	8.8nm,0.8s,baz=120,slow=12,SNR=4.5						
ATAH				LR	LR	22 23 46.8	
	comp=Z,328nm,19.3s,baz=221,slow=31						
SIV	**San Ignacio**	**35.11**	**60**	P	P	22 13 29.4	-0.9
	3.2nm,0.8s,baz=238,slow=7.4,SNR=5.7						
SIV				LR	LR	22 26 29.1	
	comp=Z,140nm,20.0s,baz=199,slow=34						
ROSC	**El Rosal**	**45.78**	**25**	LR	LR	22 32 35.2	
	comp=Z,117nm,19.5s,baz=172,slow=34						
PTGA	**Pitinga**	**47.50**	**46**	P	P	22 15 10.7	-1.3
	3.1nm,0.8s,baz=227,slow=10,SNR=5.9						
VNDA	**Vanda**	**56.52**	**195**	LR	LR	22 35 03.1	
	comp=Z,50nm,20.2s,baz=124,slow=30						
TXAR	**Lajitas Array**	**67.86**	**349**	P	P	22 17 36.1	+1.0
	0.7nm,0.9s,baz=165,slow=9.9,SNR=5.1						
PDAR	**Pinedale Array**	**81.95**	**347**	P	P	22 18 56.0	-0.5
	1.2nm,0.8s,baz=171,slow=5.5,SNR=9.0						
STKA	**Stephens Creek**	**94.26**	**224**	LR	LR	22 54 47.0	
	comp=Z,68nm,18.2s,baz=207,slow=31						
H11S2	**WAKE ISLAND Hyl**	**109.72**	**278**	T	T	00 22 22.7	
	baz=122						
H11S1	**WAKE ISLAND Hyl**	**109.73**	**278**	T	T	00 22 25.4	
	baz=122						
H11S3	**WAKE ISLAND Hyl**	**109.73**	**278**	T	T	00 22 25.5	
	baz=122						

IDC 27 22:28:24.2±11.0, 2°.26S×124°.90E, h335km±134km, mb3.0/3, mb1 3.4/5, mb1mx2.9/38, mbtmp3.9/5, Error ellipse: s-maj=108.9km s-min=34.8km az=56.0, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**15.76**	**177**	P	P	22 31 48.3	+0.5
	0.5nm,0.3s,baz=353,slow=9.9,SNR=4.5						
WRA	**Warramunga Arr**	**19.84**	**153**	P	P	22 32 31.4	-0.2
	1.2nm,0.3s,baz=330,slow=11,SNR=41						
ASAR	**Alice Springs**	**22.99**	**158**	P	P	22 33 00.9	+0.2
	0.5nm,0.3s,baz=340,slow=8.1,SNR=6.5						
STKA	**Stephens Creek**	**33.39**	**154**	P	P	22 34 31.8	-0.6
	1.8nm,0.4s,baz=339,slow=8.6,SNR=3.9						
MKAR	**Makanchi Array**	**61.53**	**328**	P	P	22 38 06.5	-0.1
	0.2nm,0.5s,baz=119,slow=7.1,SNR=2.6						

NIED ***27*** *22:30:00, 38°.50N×142°.20E, h56km, Mw3.7 Best double couple: M₀3.82000×10¹⁴ NP1:φs82.00000°, δ32.00000°, λ2.00000°. NP2:φs350.00000°, δ89.00000°, λ122.00000°.*

JMA 27 22:30:49.7±0.1, 38°.49N×142°.20E, h33km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.67**	**267**	P	Pn	22 31 02.5	-0.3
JIO				eS	Sb	22 31 11.0	-1.1
OFUJ	**Ofunato**	**0.72**	**325**	P	Pn	22 31 03.4	-0.2
OFUJ				eS	Sn	22 31 12.9	-0.6
JMK	**Ichinoseki**	**0.90**	**301**	P	Pn	22 31 06.2	+0.3
JMK				eS	Sn	22 31 17.6	-0.1
JOM	**Ohasama**	**1.21**	**325**	P	Pn	22 31 11.1	+0.8
JOM				eS	Sb	22 31 26.6	-0.8
JOU	**Okura**	**1.21**	**265**	P	Pn	22 31 10.6	+0.2
JOU				eS	Sn	22 31 26.5	+0.8
JMM	**Marumori**	**1.27**	**241**	P	Pn	22 31 10.7	-0.4
JMM				eS	Sn	22 31 26.6	-0.5
JYK	**Kaneyama**	**1.50**	**287**	P	Pn	22 31 15.3	+1.0
JYK				eS	Sb	22 31 34.8	-0.9
JRG	**Rokugo**	**1.52**	**307**	P	Pb	22 31 16.0	-1.3
JRG				eS	Sb	22 31 35.6	-0.6
JFK	**Kawauchi**	**1.54**	**223**	P	Pn	22 31 14.0	-0.8
JFK				eS	Sn	22 31 32.0	-1.6

IDC 27 22:41:23.7±4.8, 4°.51S×152°.75E, h119km±40km, mb3.6/8, mb1 3.9/9, mb1mx3.6/34, mbtmp4.1/9, Error ellipse: s-maj=48.2km s-min=22.8km az=115.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.38**	**228**	P	Pn	22 43 10.7	+1.9
	7.1nm,0.3s,baz=43,slow=6.0,SNR=7.5						
PMG				S	Sn	22 44 30.1	-1.0
	6.4nm,0.3s,baz=216,slow=17,SNR=7.8						
WRA	**Warramunga Arr**	**23.60**	**228**	P	P	22 46 24.1	+0.1
	2.6nm,0.4s,baz=51,slow=10,SNR=48						
ASAR	**Alice Springs**	**26.33**	**222**	P	P	22 46 48.8	+0.1
	0.4nm,0.3s,baz=53,slow=8.6,SNR=7.5						
FITZ	**Fitzroy Crossi**	**29.76**	**241**	P	P	22 47 18.6	-0.6
	2.1nm,0.3s,baz=23,slow=8.7,SNR=14						

KLR Kul'dur 56.55 344 P P 22 50 53.3 -0.4
1.0nm,0.7s,baz=134,slow=1.8,SNR=6.2
CMAR Chiang Mai Arr 57.71 295 P P 22 51 02.9 +0.4
1.4nm,0.7s,baz=105,slow=6.9,SNR=5.9
MKAR Makanchi Array 80.07 319 P P 22 53 20.8 +0.4
0.7nm,0.5s,baz=98,slow=6.9,SNR=8.0
ZALV Zalesovo Beam 80.88 326 P P 22 53 24.3 -0.2
0.4nm,0.3s,baz=133,slow=6.6,SNR=3.2
ILAR Eielson Array 81.91 22 P P 22 53 29.2 -0.5
0.5nm,0.7s,baz=251,slow=5.6,SNR=3.9
GERES GERESS Array B 123.78 329 PKP PKPdf 23 00 08.5 +0.7
0.4nm,0.6s,baz=129,slow=1.9,SNR=4.7

IDC ***27*** *22:42:42.4±2.7, 21°.65S×169°.74E, h0km, mb4.2/6, mb1 4.3/7, mb1mx4.0/30, mbtmp4.2/7, ML3.7/1, Error ellipse: s-maj=93.7km s-min=30.5km az=150.0*

ISC 27 22:42:44.5±1.6, 21°.8S×170°.4×169°.9E±0°.2, h21km, n10, σ1§37/11, mb4.2/6, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.24**	**264**	Pn	Pn	22 43 34.1	-0.2
	9.6nm,0.3s,baz=142,slow=12,SNR=29						
DZM				Sn	Sn	22 44 12.6	+0.3
	11nm,0.3s,baz=96,slow=13,SNR=9.2						
STKA	**Stephens Creek**	**27.13**	**242**	P	P	22 48 28.1	+1.8
	2.3nm,0.8s,baz=99,slow=11,SNR=3.2						
ASAR	**Alice Springs**	**33.22**	**260**	P	P	22 49 18.2	-2.1
	2.8nm,0.8s,baz=78,slow=9.9,SNR=6.7						
WRA	**Warramunga Arr**	**33.26**	**267**	P	P	22 49 18.8	-1.9
	1.9nm,0.7s,baz=99,slow=8.2,SNR=8.6						
FITZ	**Fitzroy Crossi**	**41.69**	**267**	P	P	22 50 32.0	0.0
	3.8nm,0.8s,baz=155,slow=10.0,SNR=6.8						
CMAR	**Chiang Mai Arr**	**80.13**	**294**	P	P	22 54 55.0	+1.5
	0.9nm,0.3s,baz=137,slow=4.7,SNR=4.3						
SONM	**Songino Array**	**89.63**	**323**	P	P	22 55 41.2	+0.5
	1.1nm,0.9s,baz=148,slow=3.8,SNR=5.1						
DPC	**Dobruska-Polom**	**144.75**	**330**	*eP*	**PKPab**	**23 02 17.8**	**-0.7**
DPC				*ex*	x	23 02 22.4	
BRG	**Berggiesshubel**	**145.42**	**333**	*e*PKP	**PKPdf**	**23 02 19.9**	**-0.9**
	4.9nm,1.1s						
GERES	**GERESS Array B**	**147.02**	**331**	PKPbc	**PKPbc**	**23 02 25.6**	**-0.1**
	0.6nm,0.6s,baz=32,slow=3.8,SNR=7.1						

DJA 27 22:50:22.9±0.7, 5°.S±4°×110°.2E±°, h24km±4km, M4.3/5, MLv4.3/5, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MNAI	**Manna**	**0.56**	**70**	P	Pn	22 50 35.2	-0.2
MNAI				S	Sn	22 50 43.9	0.0
KSI	**Kapahiang**	**0.91**	**10**	P	Pb	22 50 39.5	-0.5
LHSI	**Lahat**	**1.31**	**57**	P	Pn	22 50 45.9	+0.2
LWLI	**Liwa**	**1.69**	**106**	P	Pn	22 50 50.2	-0.8
LWLI				S	Sn	22 51 11.8	-0.2
KASI	**Kota Agung**	**2.27**	**115**	P	Pn	22 50 59.4	+0.4
KASI				S	Sn	22 51 25.4	-0.9
KLSI		**2.30**	**94**	P	Pn	22 51 00.5	+1.2
KLSI				S	Sn	22 51 28.3	+1.5
PPSI	**Pulau Pagai**	**3.00**	**306**	P	Pn	22 51 09.9	+1.0
PPSI				S	Sn	22 51 43.6	-0.5
CGJI	**Cibinong**	**3.84**	**122**	P	Pn	22 51 21.9	+1.4
PDSI	**Padang**	**4.11**	**331**	P	Pn	22 51 25.4	+1.1

ISCJB ***27*** *23:00:28.1±0.1, 10°.82N±0°.03×43°.46W±0°.01, h7km, mb5.6/470, MS5.6/500, Error ellipse: s-maj=3.7km s-min=1.5km az=173.5*

IDC ***27*** *23:00:28.9±0.3, 10°.86N×43°.46W, h0km, mb5.3/34, mb1 5.5/35, mb1mx5.4/37, mbtmp5.3/35, ML4.7/1, MS5.4/27, Ms1 5.4/27, ms1mx5.4/30, Error ellipse: s-maj=11.8km s-min=9.9km az=139.0*

MOS ***27*** *23:00:29.0±1.1, 10°.87N×43°.43W, h10km, mb5.8/100, MS5.5/108, Error ellipse: s-maj=5.3km s-min=4.1km az=55.7*

NEIC ***27*** *23:00:29.0±0.0, 10°.73N×43°.44W, h15km, Moment Tensor Solution. s62 Moment tensor: Scale 10¹⁷Nm; Mrr-0.87; Mθθ-0.70; Mφφ 1.57; Mrθ4.62; Mθφ-7.75; Mφr-1.72; Best double couple: Mo9.30000×10¹⁷ NP1:φs95.00000°, δ89.00000°, λ149.00000°. NP2:φs186.00000°, δ59.00000°, λ1.00000°. Principal axes: T 10.0000, Plg22.0000°, Azm45.0000°; N -1.7000, Plg58.0000°, Azm273.0000°; P -8.3000, Plg20.0000°, Azm144.0000°;*

NEIC ***27*** *23:00:29.7±0.1, 10°.80N×43°.39W, h6km, mb5.6/298, ME6.3, MS5.6/299, MW5.9, MW5.9 Error ellipse: s-maj=3.8km s-min=2.2km az=181.0, Moment Tensor Solution. s71 Moment tensor: Scale 10¹⁷Nm; Mrr-2.51; Mθθ1.56; Mφφ0.95; Mrθ-2.15; Mθφ-7.52; Mφr4.57; Best double couple: Mo9.30000×10¹⁷ NP1:φs268.00000°, δ55.00000°, λ-174.00000°. NP2:φs174.00000°, δ85.00000°, λ-35.00000°. Principal axes: T 10.5000, Plg20.0000°, Azm226.0000°; N -3.3000, Plg54.0000°, Azm347.0000°; P -7.2000, Plg28.0000°, Azm125.0000°; Broadband fault plane solution: P waves. NP1: φs278.00000°, δ70.00000°, λ175.00000°. NP2: φs10.00000°, δ85.00000°, λ20.00000°. Principal axes: T Plg18.0000°, Azm236.0000°; N Plg0.0000°, Azm0.0000°; P Plg10.0000°, Azm142.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

GCMT ***27*** *23:00:30.3±0.1, 10°.90N×43°.34W, h15km, MW5.9/139, Moment Tensor Solution. s123,c245; s139,c458; Duration: 2s3 Moment tensor: Scale 10¹⁸Nm; Mrr-0.10±.01; Mθθ-0.11±.01; Mφφ0.20±.01; Mrθ0.01±.02; Mθφ-0.91±.01; Mφr0.36±.03; Best double couple: Mo0.99200×10¹⁸ NP1:φs184.00000°, δ88.00000°, λ-22.00000°. NP2:φs275.00000°, δ68.00000°, λ-178.00000°. Principal axes: T 1.0370, Plg14.0000°, Azm232.0000°; N -0.0890, Plg68.0000°, Azm359.0000°; P -0.9480, Plg17.0000°, Azm138.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

BJI ***27*** *23:00:30.6, 10°.70N×43°.40W, h6km, mB5.9/32, Ms6.1/35, Ms7 5.8/32*

NEIC ***27*** *23:00:47.9±0.0, 11°.20N×43°.40W, h21km Best double couple: NP1:φs96.00000°, δ68.00000°, λ-171.00000°. NP2:φs3.00000°, δ82.00000°, λ-22.00000°. Principal axes: T 1.0600, Plg9.0000°, Azm251.0000°; N -0.1000, Plg67.0000°, Azm164.0000°; P -0.9700, Plg21.0000°, Azm318.0000°;*

ISC 27 23:00:30.3±0.4, 10°.77N±0°.04×43°.46W±0°.04, h7km±2km, h7km:pP-P, n1825, σ1§43/1883, mb5.7/472, MS5.6/506, 31C-63D, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BBGH	**Gun Hill**	**15.93**	**280**	*e*Pn	**P**	**23 04 17.9**	**-0.9**
	1μm,1.1s						
H05S1	**Guadeloupe/Mar**	**17.34**	**284**	P	**P**	**23 04 34.9**	**+0.5**
	SNR=11						
H05S1				T	T	23 22 20.7	
	SNR=380						
FDF	**Fort de France**	**17.70**	**285**	*e*P	**Pn**	**23 04 35.9**	**-1.6**
FDF				pmax	pmax		
	comp=Z,906nm,1.1s						
FDF	**Fort de France**	**17.70**	**285**	*e*Pn	**Pn**	**23 04 35.9**	**-1.6**
	comp=Z,906nm,1.1s						
GRGR	**Grenville**	**17.89**	**276**	*e*Pn	**Pn**	**23 04 38.5**	**-1.3**
	comp=Z,530nm,0.8s						
GRGR				*e*Sn	**Sn**	**23 07 58.6**	**-0.9**
H05N1	**Guadeloupe/Mar**	**17.97**	**290**	P	**P**	**23 04 41.3**	**-0.1**
	SNR=57						
H05N1				T	T	23 22 58.0	
	SNR=136						
RCBR	**Riachuelo**	**18.12**	**155**	P	**P**	**23 04 43.0**	**0.0**
	comp=Z,2.6nm,0.3s,baz=337,slow=14,SNR=34						
RCBR				S	Sn	23 07 51.1	-14
	comp=Z,1.1nm,0.3s,baz=294,slow=2.6,SNR=2.1						
RCBR				LR	LR	23 10 01.8	
	comp=Z,18μm,19.0s,baz=333,slow=32						
RCBR	**Riachuelo**	**18.12**	**155**	*e*P	**Pn**	**23 04 42.6**	**-0.1**
	comp=Z,2μm,1.5s						
RCBR				*e*Sn	Sn	23 07 51.1	-14
GDHS	**Morne Mazeau,**	**18.61**	**289**	*e*P	**P**	**23 04 47.6**	**-0.9**
	comp=Z,543nm,1.0s						

ANWB Willy Bob 19.03 293 *e*P **P 23 04 51.3 -1.7**
comp=Z,523nm,0.9s
SACV Santiago Islan 19.80 76 *e*P **P 23 04 57.9 -3.6**
comp=Z,546nm,0.9s
PTGA Pitinga 20.00 236 P **P 23 05 03.6 -0.1**
comp=Z,1μm,0.8s,baz=61,slow=14,SNR=1313
PTGA LR LR 23 12 14.5
comp=Z,28μm,20.7s,baz=52,slow=35
PTGA Pitinga 20.00 236 *e*P **P 23 05 03.7 0.0**
comp=Z,4μm,0.8s
SEUS St. Eustatius 20.07 292 *e*P **P 23 05 04.9 +0.6**
comp=Z,346nm,0.9s
SMRT St. Maarten 20.32 293 *e*P **P 23 05 06.5 -0.6**
comp=Z,113nm,0.7s
SABA Saba 20.34 292 *e*P **P 23 05 07.6 +0.2**
comp=Z,256nm,1.0s
ABVI Anegada Island 21.66 294 *e*P **P 23 05 21.4 -0.3**
comp=Z,450nm,0.9s
STVI Saint Thomas 22.11 292 *e*P **P 23 05 25.9 -0.5**
comp=Z,569nm,0.9s
HUMP Col San Antoni 22.87 291 *e*P **P 23 05 34.5 0.0**
comp=Z,282nm,0.8s
SJG San Juan 23.14 291 P **P 23 05 36.6 -0.7**
comp=Z,139nm,0.7s,baz=81,slow=5.2,SNR=37
SJG LR LR 23 12 37.1
comp=Z,9μm,22.0s,baz=96,slow=32
SJG San Juan 23.14 291 *e*P **P 23 05 36.6 -0.7**
SJG pmax pmax
comp=Z,1μm,1.8s
SJG San Juan 23.14 291 *e*P **P 23 05 36.3 -1.0**
SJG San Juan 23.14 291 *e*P **P 23 05 36.6 -0.7**
comp=Z,1μm,1.8s
CELP Cerrillos 23.52 291 *e*P **P 23 05 40.4 -0.8**
MPR Mayaguez 24.07 291 *e*P **P 23 05 45.5 -1.0**
comp=Z,328nm,1.2s
MPR LR LR
comp=Z,8μm,22.0s
AGP Aguadilla 24.12 291 *e*P **P 23 05 46.2 -0.8**
comp=Z,413nm,1.0s
AGP LR LR
comp=Z,7μm,20.0s
IDE Isla Desecheo 24.42 291 *e*P **P 23 05 49.1 -0.7**
SDV Santo Domingo 26.84 268 P **P 23 06 11.6 -0.3**
comp=Z,176nm,0.8s,baz=84,slow=7.0,SNR=204
SDV LR LR 23 18 06.2
comp=Z,9μm,18.6s,baz=80,slow=39
SDV Santo Domingo 26.84 268 *e*P **P 23 06 11.6 -0.3**
SDV Santo Domingo 26.84 268 *e*P **P 23 06 11.6 -0.3**
comp=Z,200nm,0.8s
SDV LR LR
comp=Z,10μm,19.0s
BANI BANI 27.09 289 *e*P **P 23 06 12.2 -1.8**
SAML Samuel 27.72 226 *e*P **P 23 06 20.8 +1.2**
comp=Z,363nm,0.9s
SAML LR LR
comp=Z,7μm,18.0s
URIC Uribia, Colomb 28.00 275 *e*P **P 23 06 21.6 -0.5**
SDDR Presa de Saban 28.08 290 *e*P **P 23 06 23.3 +0.5**
comp=Z,145nm,0.9s
SDDR LR LR
comp=Z,12μm,21.0s
GRTK Grand Turk 28.60 295 *e*P **P 23 06 24.3 -3.0**
comp=Z,338nm,1.3s
BBSR BB Station 29.08 321 PFAKE 23 06 40.0 +8.5
BBSR LR LR
comp=Z,6μm,22.0s
CBRI Barrientos, No 29.11 267 *e*P **P 23 06 32.1 -0.1**
GRMC Gramalote, San 29.11 267 *e*P **P 23 06 29.5 -2.7**
OCAC Ocana 29.55 268 *e*P **P 23 06 35.6 -0.4**
BARC Barichara 29.66 264 *e*P **P 23 06 38.6 +1.4**
RUSC La Rusia 29.70 263 *e*P **P 23 06 39.7 +1.9**
GUVC San Jose del G 30.07 256 *e*P **P 23 06 40.0 -0.5**
BRRC Barranca, Sant 30.09 266 *e*P **P 23 06 39.0 -1.8**
H07S1 FLORES T-PHASE 30.52 19 *e*P **P 23 06 47.0 +2.8**
CHIC Chingaza 30.59 261 *e*P **P 23 06 46.4 +0.7**
VILC Villavicencio, 30.68 260 *e*P **P 23 06 46.4 +0.4**
CALA Caldeira 30.68 23 *e*P **P 23 06 48.9 +3.1**
PCED Cedros 30.73 23 *e*P **P 23 06 49.1 +3.1**
comp=Z,127nm,1.4s
PSMA Santa Maria 30.91 29 *e*P **P 23 06 50.7 +3.1**
comp=Z,124nm,1.4s
PSMN Pico do Norte, 30.95 29 *e*P **P 23 06 50.0 +2.0**
comp=Z,200nm,1.9s
PMAN Manadas 30.97 24 *e*P **P 23 06 51.3 +3.1**
comp=Z,139nm,1.3s
ROSA Rosais 30.98 24 *e*P **P 23 06 51.4 +3.1**
comp=Z,83nm,1.1s
ROSA Rosais 30.98 24 PFAKE 23 07 00.0 +12
ROSA LR LR
comp=Z,11μm,19.0s
ROSC El Rosal 31.12 262 P **P 23 06 51.8 +1.6**
comp=Z,90nm,0.7s,baz=102,slow=6.5,SNR=41
ROSC LR LR 23 20 20.6
comp=Z,24μm,18.4s,baz=92,slow=38
ROSC El Rosal 31.12 262 *e*P **P 23 06 51.7 +1.5**
ROSC El Rosal 31.12 262 *e*P **P 23 06 51.8 +1.6**
comp=Z,552nm,2.0s
PSET Sete Cidades 31.30 28 *e*P **P 23 06 53.7 +2.6**
comp=Z,449nm,2.0s
CMLA Cha da Macela 31.34 28 *i* P **P 23 06 52.0 +0.5**
CMLA Cha da Macela 31.34 28 PFAKE 23 07 00.0 +8.5
CMLA LR LR
comp=Z,9μm,19.0s
PGRA Graciosa 31.35 24 *e*P **P 23 06 53.7 +2.2**
comp=Z,158nm,1.5s
GTBY Guantanamo Bay 31.80 290 *e*P **P 23 06 56.1 +0.4**
comp=Z,119nm,0.9s
GTBY LR LR
comp=Z,4μm,21.0s
PRAC Prado 31.93 260 *e*P **P 23 06 57.6 +0.7**
HELC Santa Helena 32.03 264 *e*P **P 23 06 57.0 -1.2**
GUYC Cuyana, Colomb 32.08 263 *e*P **P 23 06 58.5 -0.2**
TOLC Tolima 32.15 261 *e*P **P 23 06 58.9 -0.4**
DBBC Dabeiba 32.56 266 *e*P **P 23 07 01.9 -0.6**
PMOZ Porto Moniz, M 32.64 44 *e*P **P 23 07 04.7 +1.6**
comp=Z,438nm,2.0s
PMOZ *e*S **S 23 12 17.6 -1.9**
PMOZ *e*LQ LQ 23 14 04.4
PMOZ *e*LR LR 23 15 00.6
comp=Z,8μm,20.0s
FUL Funchal 32.74 44 *e*P **P 23 07 03.7 -0.2**
comp=Z,517nm,1.8s
PMAR Madeira 32.77 44 *e*P **P 23 07 04.2 -0.1**
comp=Z,452nm,1.1s
FLOC Florencia 33.24 256 *e*P **P 23 07 08.0 -0.5**
PMPS Porto Santo 33.37 44 *e*P **P 23 07 10.6 +1.3**
comp=Z,358nm,1.9s
MTDJ Mount Denham 33.77 287 *e*P **P 23 07 13.7 +0.6**
comp=Z,121nm,0.9s
MTDJ LR LR
comp=Z,6μm,21.0s
POPC Popayan, Colom 33.96 258 *e*P **P 23 07 13.7 -1.3**
MALC Bahia Malaga 34.23 261 *e*P **P 23 07 17.2 +0.1**
H10N3 ASCENSION HYDR 34.24 122 T T 23 43 29.0
baz=302,slow=75,SNR=706
H10N2 ASCENSION HYDR 34.24 121 T T 23 43 34.8
baz=302,slow=75,SNR=628
H10N1 ASCENSION HYDR 34.26 121 T T 23 43 36.1
baz=302,slow=75,SNR=774
SPB Sao Paulo 34.37 186 *e*P **P 23 07 20.4 +2.4**
comp=Z,182nm,1.1s
SPB LR LR
comp=Z,13μm,19.0s
ASCN Ascension 34.41 122 *e*P P 23 07 13.0 -5.6
comp=Z,351nm,1.3s
ASCN LR LR
comp=Z,6μm,20.0s
CRUC La Cruz 34.49 257 *e*P **P 23 07 19.5 -0.2**
H10S3 ASCENSION HYDR 34.71 123 T T 23 43 47.3
baz=304,slow=75,SNR=686
H10S1 ASCENSION HYDR 34.71 123 T T 23 43 47.7
baz=304,slow=75,SNR=778
H10S2 ASCENSION HYDR 34.73 123 T T 23 43 48.7
baz=304,slow=75,SNR=723
CMBC Cumbal 35.51 256 *e*P **P 23 07 29.7 +1.1**
LPAZ La Paz 36.31 223 P **P 23 07 36.7 +1.1**
comp=Z,144nm,0.9s,baz=35,slow=7.9,SNR=497
LPAZ LR LR 23 23 15.9
comp=Z,10μm,19.6s,baz=40,slow=38
LPAZ La Paz 36.31 223 *e*P **P 23 07 36.7 +1.1**
LPAZ pmax pmax
comp=Z,187nm,0.9s
LPAZ La Paz 36.31 223 *e*P **P 23 07 36.7 +1.1**
comp=Z,187nm,0.9s
OTAV Otavalo 36.31 256 *e*P **P 23 07 36.2 +0.7**
OTAV Otavalo 36.31 256 *e*P **P 23 07 36.2 +0.7**

OTAV LR LR
comp=Z,419nm,1.6s

TIC Toumodi 38.20 93 *e*P **P 23 07 47.5 -3.5**
LIC Lamto 38.26 94 *e*P **P 23 07 48.0 -3.5**
comp=Z,2µm,1.2s

DBIC Dimbokro 38.35 93 P **P 23 07 51.1 -1.2**
comp=Z,721nm,1.0s,baz=264,slow=9.1,SNR=348

DBIC LR LR 23 20 46.1
comp=Z,3µm,18.7s,baz=256,slow=32

DBIC Dimbokro 38.35 93 *e*P **P 23 07 51.2 -1.2**
comp=Z,835nm,0.9s

KIC Kosan Boka 38.52 93 *e*P **P 23 07 50.5 -3.2**
comp=Z,2µm,1.2s

ATAH Atahualpa 39.06 244 LR LR 23 24 18.5
comp=Z,8µm,19.8s,baz=63,slow=37

CPUP Villa Florida 39.26 200 P **P 23 08 00.2 +0.5**
comp=Z,12nm,0.7s,baz=32,slow=7.8,SNR=32

CPUP LR LR 23 25 01.4
comp=Z,6µm,18.0s,baz=24,slow=37

LMN Caledonia Moun 39.43 336 *e*P **P 23 08 00.7 -0.3**
comp=Z,104nm,1.3s

LMN LR LR
comp=Z,9µm,20.0s

DWPF Disney Wildern 39.53 301 *e*P **P 23 08 02.9 +0.8**
comp=Z,140nm,0.9s

BRYW Bryant College 39.60 327 *e*P **P 23 08 02.3 0.0**
comp=Z,182nm,1.1s

BRYW LR LR
comp=Z,14µm,21.0s

EMMW East Machias 39.63 333 *e*P **P 23 08 04.4 +1.8**
comp=Z,246nm,1.5s

CNNC Cliffs of the 39.64 313 *e*P **P 23 08 03.4 +0.5**
comp=Z,64nm,1.3s

CNNC LR LR
comp=Z,10µm,20.0s

GGN Saint George 39.68 334 *e*P **P 23 08 02.9 0.0**
GGN LR LR
comp=Z,9µm,20.0s

BCX Boston College 39.69 327 *e*P **P 23 08 06.1 +3.0**
comp=Z,446nm,1.9s

WES Weston 39.80 327 *e*P **P 23 08 02.6 -1.5**
WES pmax pmax
comp=Z,103nm,1.5s

WES MLR MLR
comp=Z,16µm,21.0s

WES Weston 39.80 327 *e*P **P 23 08 02.6 -1.5**
comp=Z,103nm,1.5s

WES LR LR
comp=Z,16µm,21.0s

PB11 IPOC Station P 39.82 220 *e*P **P 23 08 02.6 -2.1**
comp=Z,135nm,0.8s

PB11 LR LR
comp=Z,4µm,20.0s

YLE Yale 39.97 325 *e*P **P 23 08 02.8 -2.7**
comp=Z,441nm,1.8s

YLE LR LR
comp=Z,6µm,20.0s

HDC Heredia 39.98 273 *e*P **P 23 08 07.4 +1.4**
comp=Z,138nm,0.8s

HDC LR LR
comp=Z,4µm,20.0s

HRV Adam Dziewonsk 40.01 327 *e*P **P 23 08 07.2 +1.4**
HRV pmax pmax
comp=Z,91nm,1.2s

HRV MLR MLR
comp=Z,15µm,21.0s

HRV Adam Dziewonsk 40.01 327 *e*P **P 23 08 07.2 +1.4**
comp=Z,91nm,1.2s

HRV LR LR
comp=Z,15µm,21.0s

DRLN Deer Lake 40.11 346 *e*P **P 23 08 04.0 -2.5**
comp=Z,84nm,1.0s

DRLN LR LR
comp=Z,4µm,18.0s

NNA Nana 40.13 237 *i* P **P 23 08 06.8 -0.4**
NNA Nana 40.13 237 *e*P **P 23 08 06.1 -1.1**
comp=Z,68nm,0.9s

NNA LR LR
comp=Z,8µm,21.0s

CPNY Central Park 40.22 323 *e*P **P 23 08 07.9 +0.3**
comp=Z,68nm,1.1s

CSU Charleston Sou 40.23 309 *e*P **P 23 08 05.8 -1.9**
QUA2 Belchertown 40.28 326 *e*P **P 23 08 06.3 -1.7**
comp=Z,99nm,1.3s

QUA2 LR LR
comp=Z,8µm,18.0s

PAL Palisades 40.32 324 *e*P **P 23 08 08.6 +0.2**
PAL pmax pmax
comp=Z,82nm,1.1s

PAL MLR MLR
comp=Z,6µm,22.0s

PAL Palisades 40.32 324 *e*P **P 23 08 08.6 +0.2**
comp=Z,82nm,1.1s

PAL LR LR
comp=Z,6µm,22.0s

NHSC New Hope 40.36 309 *e*P **P 23 08 09.7 +0.9**
comp=Z,132nm,1.0s

NHSC LR LR
comp=Z,8µm,20.0s

BRNJ Basking Ridge 40.51 323 *e*P **P 23 08 10.2 +0.3**
comp=Z,67nm,1.1s

BRNJ LR LR
comp=Z,5µm,20.0s

WVL Waterville 40.53 331 *e*P **P 23 08 10.1 0.0**
comp=Z,289nm,1.5s

WVL LR LR
comp=Z,17µm,22.0s

PSUB Penn St. - Bra 40.58 321 *e*P **P 23 08 10.8 +0.3**
comp=Z,200nm,1.9s

PSUB LR LR
comp=Z,5µm,18.0s

PB01 IPOC Station P 40.66 219 *e*P **P 23 08 10.7 -0.8**
comp=Z,67nm,0.9s

PB01 LR LR
comp=Z,6µm,19.0s

FFD Franklin Falls 40.73 328 *e*P **P 23 08 12.2 +0.4**
comp=Z,212nm,1.4s

FFD LR LR
comp=Z,16µm,22.0s

PFVI Vila Bisbo 40.74 44 *e*P **P 23 08 13.4 +1.5**
comp=Z,242nm,1.6s

PFVI *e*S **S 23 14 24.8 +2.0**
PFVI Vila Bisbo 40.74 44 PFAKE 23 08 20.0 +8.1
PFVI LR LR
comp=Z,10µm,22.0s

ODNJ Ogdensburg 40.78 323 *e*P **P 23 08 11.8 -0.4**
comp=Z,28nm,1.0s

ODNJ LR LR
comp=Z,5µm,20.0s

CBN Corbin Frederi 40.82 318 *e*P **P 23 08 12.9 +0.4**
comp=Z,81nm,1.1s

CBN LR LR
comp=Z,6µm,21.0s

PKME Peaks-Kenny Pk 40.89 332 *e*P **P 23 08 12.6 -0.4**
comp=Z,147nm,1.4s

PKME LR LR
comp=Z,7µm,21.0s

LUPA Lehigh Univers 40.94 322 *e*P **P 23 08 14.0 +0.5**
comp=Z,122nm,0.9s

LUPA LR LR
comp=Z,4µm,20.0s

MORF Marmelete 40.95 44 *e*P **P 23 08 13.8 0.0**
MORF AMb AMB 23 08 18.2
comp=Z,200nm,1.6s

MORF *e*PP **PP 23 09 48.4 +0.3**
MORF *e*S **S 23 14 26.8 +0.8**
MORF Marmelete 40.95 44 *e*P **P 23 08 15.4 +1.7**
comp=Z,228nm,1.0s

MORF Marmelete 40.95 44 *e*PP PP 23 09 47.8 -0.3
MORF *e*S **S 23 14 29.1 +3.1**
MORF Marmelete 40.95 44 *e*P **P 23 08 13.8 0.0**
MORF *e* 23 09 48.4
MORF *e*S **S 23 14 26.8 +0.8**
PTEO Sao Teotonio 41.02 44 *e*P **P 23 08 16.5 +2.2**
comp=Z,256nm,1.4s

SDMD Soldier's Deli 41.15 320 *e*P **P 23 08 15.8 +0.5**
comp=Z,31nm,0.9s

SDMD LR LR
comp=Z,2µm,20.0s

MVL Millersville 41.18 321 *e*P **P 23 08 15.8 +0.3**
comp=Z,117nm,1.3s

MVL LR LR
comp=Z,3µm,20.0s

HNH Hanover 41.23 328 *e*P **P 23 08 16.3 +0.5**
comp=Z,212nm,1.5s

HNH LR LR
comp=Z,14µm,22.0s

TRY Troy 41.31 326 *e*P **P 23 08 17.8 +1.3**
comp=Z,128nm,1.3s

TRY LR LR
comp=Z,11µm,21.0s

PMST Lisbon--Monsan 41.35 42 *e*P **P 23 08 18.9 +1.9**
comp=Z,424nm,1.7s

LIS Lisbon 41.36 42 *e*P **P 23 08 17.1 +0.1**
LIS AMb AMB 23 08 22.8
comp=Z,399nm,1.7s

LIS *e*PP **PP 23 09 52.9 +0.3**
LIS *e*S **S 23 14 33.2 +1.2**
LIS Lisbon 41.36 42 *e*P **P 23 08 19.5 +2.5**
comp=Z,410nm,1.8s

LIS Lisbon 41.36 42 *e*PP PP 23 09 58.2 +5.7
LIS Lisbon 41.36 42 *e*P **P 23 08 17.2 +0.1**
LIS *e* 23 09 52.9
LIS *e*S **S 23 14 33.2 +1.2**
N59A State Game Lan 41.37 322 P **P 23 08 17.0 -0.2**
baz=127,SNR=25

PMAFR Mafra 41.41 41 *e*P **P 23 08 19.1 +1.7**
comp=Z,410nm,1.7s

PMAFR Mafra 41.41 41 *e*PP PP 23 09 50.8 -2.2
PMAFR *e*S **S 23 14 32.6 -0.1**
PBDV Barranco-do-Ve 41.41 45 *e*P **P 23 08 19.3 +1.8**
comp=Z,134nm,1.1s

PBDV *e*S **S 23 14 33.6 +0.8**
LBNH Lisbon 41.42 329 *e*P **P 23 08 18.1 +0.7**
LBNH pmax pmax
comp=Z,99nm,1.4s

LBNH MLR MLR
comp=Z,9µm,20.0s

LBNH Lisbon 41.42 329 *e*P **P 23 08 18.1 +0.7**
comp=Z,99nm,1.4s

LBNH LR LR
comp=Z,9µm,20.0s

PNCL Nicolau / Gran 41.45 43 *e*P **P 23 08 18.5 +0.7**
comp=Z,255nm,1.5s

PNCL Nicolau / Gran 41.45 43 *e*PP PP 23 09 50.4 -3.1
PNCL *e*S **S 23 14 32.2 -1.1**
LVC Limon Verde 41.50 217 *e*P **P 23 08 17.6 -1.2**
comp=Z,212nm,1.5s

LVC LR LR
comp=Z,7µm,20.0s

MESJ Messejana 41.52 44 *e*P **P 23 08 18.4 +0.1**
MESJ AMb AMB 23 08 24.2
comp=Z,367nm,1.6s

MESJ *e*PP **PP 23 09 54.6 +0.4**
MESJ *e*S **S 23 14 35.2 +0.9**
MESJ Messejana 41.52 44 *e*P **P 23 08 20.4 +2.1**
comp=Z,373nm,1.6s

MESJ Messejana 41.52 44 *e*PP PP 23 09 53.4 -0.8
MESJ Messejana 41.52 44 *e*P **P 23 08 18.4 +0.1**
MESJ *e* 23 09 54.6
MESJ *e*S **S 23 14 35.2 +0.9**
PCVE Castro Verde 41.53 44 *e*P **P 23 08 20.4 +1.9**
comp=Z,148nm,1.5s

PCVE *e*S **S 23 14 34.2 -0.4**
PVAQ Vaqueiros 41.64 44 *e*P **P 23 08 21.1 +1.8**
comp=Z,84nm,0.9s

PVAQ *e*S **S 23 14 34.7 -1.4**
PVAQ *e*LQ LQ 23 17 34.5
PVAQ *e*LR LR 23 19 21.8
comp=Z,9µm,20.0s

JSC Jenkinsville 41.67 310 *e*P **P 23 08 20.1 +0.4**
JSC pmax pmax
comp=Z,64nm,0.8s

JSC MLR MLR
comp=Z,8µm,19.0s

JSC Jenkinsville 41.67 310 *e*P **P 23 08 20.1 +0.4**
comp=Z,64nm,0.8s

JSC LR LR
comp=Z,8µm,19.0s

ACCN Adirondack Com 41.74 327 *e*P **P 23 08 20.3 +0.2**
comp=Z,53nm,1.4s

ACCN LR LR
comp=Z,9µm,21.0s

KSPA Keystone Colle 41.76 323 *e*P **P 23 08 20.4 +0.1**
comp=Z,137nm,1.4s

KSPA LR LR
comp=Z,6µm,21.0s

PBEJ Beja 41.85 44 *e*P **P 23 08 23.2 +2.1**
comp=Z,239nm,1.7s

PBEJ Beja 41.85 44 *e*PP PP 23 09 53.9 -4.0
MDV Middlebury 41.90 328 *e*P **P 23 08 21.6 +0.2**
EVO Evora 42.02 43 *e*P **P 23 08 24.5 +2.1**
comp=Z,332nm,1.8s

EVO Evora 42.02 43 *e*PP PP 23 09 56.7 -2.9
PB04 IPOC Station P 42.03 218 *e*P **P 23 08 22.7 -0.2**
comp=Z,460nm,1.2s

PB04 LR LR
comp=Z,4µm,18.0s

KMSC Kings Mountain 42.10 311 P **P 23 08 23.1 0.0**
baz=116,SNR=18

KMSC Kings Mountain 42.10 311 *e*P **P 23 08 23.4 +0.2**
comp=Z,49nm,0.8s

KMSC LR LR
comp=Z,10µm,21.0s

BINY Binghamton 42.28 324 *e*P **P 23 08 24.8 +0.2**
comp=Z,250nm,1.6s

BINY LR LR
comp=Z,6µm,22.0s

BLA Blacksburg 42.39 315 *e*P **P 23 08 25.9 +0.4**
BLA pmax pmax
comp=Z,56nm,0.8s

BLA MLR MLR
comp=Z,10µm,20.0s

BLA Blacksburg 42.39 315 *e*P **P 23 08 25.9 +0.4**
comp=Z,56nm,0.8s

BLA LR LR
comp=Z,10µm,20.0s

TIGA Tifton 42.40 305 P **P 23 08 26.0 +0.4**
baz=110,SNR=13

TIGA Tifton 42.40 305 *e*P **P 23 08 26.5 +0.9**
comp=Z,197nm,0.8s

TIGA LR LR
comp=Z,5µm,21.0s

NCB Newcomb 42.44 327 *e*P **P 23 08 26.1 +0.3**
comp=Z,1.9nm,1.7s

NCB LR LR
comp=Z,100nm,21.0s

PESTR Estremoz 42.47 43 *e*P **P 23 08 28.0 +1.8**
comp=Z,176nm,1.5s

PESTR Estremoz 42.47 43 *e*PP PP 23 10 04.0 -0.6
PESTR *e*S **S 23 14 50.2 +1.7**
PBAR Barrancos 42.49 44 *e*P **P 23 08 28.2 +1.9**
comp=Z,402nm,1.7s

PBAR Barrancos 42.49 44 *e*PP PP 23 10 11.7 +7.0
PBAR *e*S **S 23 14 47.2 -1.5**
SSPA Standing Stone 42.51 320 *e*P **P 23 08 26.8 +0.4**
comp=Z,95nm,1.4s

SSPA LR LR
comp=Z,4µm,21.0s

PCAS Casmilo, Conde 42.52 41 *e*P **P 23 08 28.3 +1.8**
comp=Z,141nm,1.6s

PCAS *e*S **S 23 14 49.3 +0.2**
FRNY Flat Rock 42.69 328 *e*P **P 23 08 27.6 -0.2**
comp=Z,108nm,1.4s

FRNY LR LR
comp=Z,9µm,22.0s

O56A Blue Knob Stat 42.73 320 P **P 23 08 28.5 +0.3**
baz=124,SNR=17

O56A S **S 23 14 55.1 +2.8**
baz=124

PMRV Marv??o 42.90 42 *e*P **P 23 08 31.4 +1.8**
comp=Z,194nm,1.9s

PMRV *e*S **S 23 14 52.5 -2.3**
PMRV *e*LQ LQ 23 18 10.8
PMRV *e*LR LR 23 19 44.3
comp=Z,6µm,20.0s

GOGA Godfrey 43.01 308 *e*P **P 23 08 31.1 +0.6**
GOGA pmax pmax
comp=Z,78nm,0.8s

GOGA MLR MLR
comp=Z,8µm,19.0s

GOGA Godfrey 43.01 308 *e*P **P 23 08 31.1 +0.6**
comp=Z,78nm,0.8s

GOGA LR LR
comp=Z,8µm,19.0s

LONY Lake Ozonia 43.06 327 *e*P **P 23 08 31.6 +0.8**
comp=Z,34nm,1.3s

LONY LR LR
comp=Z,7µm,22.0s

PCBR Castelo Branco 43.06 41 *e*P **P 23 08 32.7 +1.8**
comp=Z,157nm,1.8s

PCBR Castelo Branco 43.06 41 *e*PP PP 23 10 08.1 -2.8
LMQ La Malbaie 43.09 333 *e*P **P 23 08 32.2 +1.2**

LMQ LR LR
comp=Z,6µm,22.0s

PB10 IPOC Station P 43.16 218 PFAKE 23 08 40.0 +8.1
PB10 LR LR
comp=Z,4µm,19.0s

MCWV Mont Chateau 43.23 318 *e*P **P 23 08 32.6 +0.4**
comp=Z,20nm,0.9s

MCWV LR LR
comp=Z,2µm,20.0s

PVIS Viseu 43.27 40 *e*P **P 23 08 33.0 +0.4**
comp=Z,222nm,1.7s

PVIS Viseu 43.27 40 *e*PP PP 23 10 14.3 +1.2
MTE Manteigas 43.32 41 *e*P **P 23 08 34.4 +1.3**
comp=Z,194nm,1.6s

MTE Manteigas 43.32 41 *e*PP PP 23 10 32.6 +19
MTE *e*S **S 23 14 57.8 -3.2**
MTE *e*LQ LQ 23 18 15.3
MTE *e*LR LR 23 20 00.7
comp=Z,10µm,20.0s

MTE Manteigas 43.32 41 *e*P **P 23 08 32.1 -0.9**
comp=Z,216nm,1.4s

MTE LR LR
comp=Z,9µm,19.0s

PVRL Vila Real 43.69 40 *e*P **P 23 08 37.8 +1.8**
comp=Z,168nm,1.8s

PVRL Vila Real 43.69 40 *e*PP PP 23 10 22.1 +4.4
POLO Lamas de Olo 43.70 39 *e*P **P 23 08 37.4 +1.3**
comp=Z,80nm,1.5s

POLO Lamas de Olo 43.70 39 *e*PP PP 23 10 28.8 +11
POLO *e*S **S 23 15 05.4 -1.2**
MMNY Mt. Morris Dam 43.74 323 *e*P **P 23 08 36.4 +0.1**
PGAV Gavieira, Arco 43.74 38 *e*P **P 23 08 37.6 +1.2**
comp=Z,177nm,1.7s

PGAV *e*S **S 23 15 05.9 -1.2**
PGAV *e*LQ LQ 23 18 33.5
PGAV *e*LR LR 23 20 07.8
comp=Z,6µm,20.0s

PCAB Cabril 43.74 39 *e*P **P 23 08 34.7 -1.7**
comp=Z,149nm,1.8s

N54A Moraine State 44.01 320 P **P 23 08 38.4 -0.2**
baz=123,SNR=16

MVO Moncorvo 44.06 40 *e*P **P 23 08 40.5 +1.5**
comp=Z,166nm,1.7s

MVO *e*S S 23 15 01.0 -11
MVO *e*LQ LQ 23 18 27.2
MVO *e*LR LR 23 20 30.7
comp=Z,9µm,20.0s

M54A Oil Creek Stat 44.11 320 P **P 23 08 39.0 -0.4**
baz=124,SNR=21

TKL Tuckaleechee C 44.12 311 PFAKE 23 08 50.0 +10
TKL LR LR
comp=Z,8µm,20.0s

TRQ Mont Tremblant 44.13 329 *e*P **P 23 08 38.7 -0.8**
TZTN Tazewell 44.32 312 *e*P **P 23 08 41.5 +0.3**
comp=Z,182nm,1.4s

TZTN LR LR
comp=Z,8µm,19.0s

BUF Buffalo 44.41 323 *e*P **P 23 08 42.0 +0.3**
ALLY Alegheny Colle 44.49 320 *e*P **P 23 08 42.6 +0.3**
comp=Z,252nm,1.6s

PBRG Braganca 44.59 40 *e*P **P 23 08 45.4 +2.1**
comp=Z,162nm,2.0s

PBRG *e*S **S 23 15 18.6 -0.9**
CPCT Cooper Cave 44.60 310 *e*P **P 23 08 43.7 +0.3**
comp=Z,37nm,0.9s

CPCT LR LR
comp=Z,5µm,20.0s

ERPA Erie 44.65 321 *e*P **P 23 08 43.9 +0.3**
comp=Z,126nm,1.3s

ERPA LR LR
comp=Z,5µm,20.0s

PLVO Plevna 44.68 326 *e*P **P 23 08 43.8 0.0**
comp=Z,50nm,1.1s

PLVO LR LR
comp=Z,8µm,21.0s

PAB San Pablo 44.99 44 *e*P **P 23 08 46.3 -0.2**
PAB pmax pmax
comp=Z,98nm,1.3s

PAB MLR MLR
comp=Z,7µm,22.0s

PAB San Pablo 44.99 44 *e*P **P 23 08 46.3 -0.2**
comp=Z,98nm,1.3s

PAB LR LR
comp=Z,7µm,22.0s

BRAL Brewton 45.12 303 *e*P **P 23 08 49.0 +1.5**
comp=Z,443nm,1.5s

BRAL LR LR
comp=Z,5µm,19.0s

ESDC Sonseca Array 45.31 44 P **P 23 08 47.8 -1.3**
comp=Z,23nm,0.9s,baz=242,slow=7.7,SNR=45

ESDC PcP **PcP 23 10 30.4 +1.6**
comp=Z,4.7nm,0.9s,baz=280,slow=2.4,SNR=3.3

ESDC LR LR 23 23 12.3
comp=Z,6µm,21.9s,baz=235,slow=30

ESLA Sonseca Array 45.31 44 *e*P **P 23 08 48.9 -0.2**
comp=Z,80nm,1.2s

ESLA LR LR
comp=Z,7µm,22.0s

ES19 SONSECA Array 45.37 44 *e*P **P 23 08 48.8 -0.7**
SWET Sewanee 45.57 309 *e*P **P 23 08 51.7 +0.6**
comp=Z,54nm,0.8s

SWET LR LR
comp=Z,2µm,20.0s

ACSO Alum Creek Sta 45.60 317 *e*P **P 23 08 51.2 0.0**
comp=Z,68nm,0.8s

ACSO LR LR
comp=Z,7µm,18.0s

LRAL Lakeview Retre 45.65 306 *e*P **P 23 08 52.2 +0.5**
comp=Z,63nm,0.9s

LRAL LR LR
comp=Z,4µm,19.0s

SADO Sadowa 45.67 324 *e*P **P 23 08 51.0 -0.7**
comp=Z,34nm,0.8s

SADO LR LR
comp=Z,5µm,21.0s

448A Bay Minette 45.72 303 P **P 23 08 53.1 +0.8**
baz=106

SHEL Horse Pasture 45.81 125 PFAKE 23 09 00.0 +6.8
SHEL LR LR
comp=Z,6µm,18.0s

348A Jackson 45.89 304 P **P 23 08 54.2 +0.6**
baz=107,SNR=8.3

248A Dixon Mills 45.95 304 P **P 23 08 54.6 +0.4**
baz=107,SNR=5.8

Z48A Northport 46.20 306 P **P 23 08 56.2 +0.1**
baz=109,SNR=23

ODJA Bouhanifia 46.25 51 P **P 23 08 58.0 +1.5**
447A Lucedale 46.34 302 P **P 23 08 58.3 +1.1**
baz=106

347A Saraland 46.41 303 P **P 23 08 58.5 +0.8**
baz=106,SNR=6.9

Z47A Carrollton 46.55 306 P **P 23 08 59.0 +0.1**
baz=108,SNR=18

147A Livingston 46.55 305 P **P 23 08 59.2 +0.3**
baz=108,SNR=5.7

Y47A UCPARC, Winfie 46.60 307 P **P 23 08 59.8 +0.5**
baz=109,SNR=79

247A Quitman 46.65 304 P **P 23 09 00.4 +0.8**
baz=107,SNR=11

VLDQ Val d'Or 46.87 329 *e*P **P 23 09 01.9 +0.9**
comp=Z,105nm,1.3s

VLDQ LR LR
comp=Z,9µm,20.0s

446A Poplarville 46.93 302 P **P 23 09 02.8 +1.0**
baz=105,SNR=6.3

WCI Wyandotte Cave 47.01 313 *e*P **P 23 09 02.7 +0.3**
WCI pmax pmax
comp=Z,52nm,0.7s

WCI MLR MLR
comp=Z,10µm,19.0s

WCI Wyandotte Cave 47.01 313 *e*P **P 23 09 02.7 +0.3**
comp=Z,52nm,0.7s

WCI LR LR
comp=Z,10µm,19.0s

646A Port Sulphur 47.02 300 P **P 23 09 04.1 +1.6**
baz=104

AAM Ann Arbor 47.06 319 *e*P **P 23 09 03.0 +0.4**
AAM pmax pmax
comp=Z,129nm,1.0s

AAM MLR MLR
comp=Z,4µm,20.0s

AAM Ann Arbor 47.06 319 *e*P **P 23 09 03.0 +0.4**
comp=Z,129nm,1.0s

AAM LR LR
comp=Z,4µm,20.0s

546A Slidell 47.08 301 P **P 23 09 04.4 +1.3**
baz=104

346A **Big Creek Wild** 47.16 303 P P 23 09 04.6 +1.0
baz=105
146A **Union** 47.18 305 P P 23 09 04.7 +0.9
baz=107,SNR=8.5
Z46A **Louisville** 47.25 305 P P 23 09 05.1 +0.8
baz=107,SNR=7.1
WVT **Waverly** 47.34 310 eP P 23 09 04.7 -0.3
WVT pmax pmax
comp=Z,110nm,0.8s
WVT MLR MLR
comp=Z,7μm,21.0s
WVT **Waverly** 47.34 310 eP P 23 09 04.7 -0.3
WVT LR LR
comp=Z,7μm,21.0s
Y46A **Houston** 47.39 306 P P 23 09 05.0 -0.4
baz=108,SNR=23
LCO **Las Campanas** 47.49 213 eP P 23 09 05.2 -1.2
comp=Z,80nm,1.1s
LCO LR LR
comp=Z,7μm,19.0s
CCIG **Comitan** 47.56 282 eP P 23 09 06.2 -0.9
comp=Z,174nm,0.9s
CCIG LR LR
comp=Z,3μm,21.0s
BLO **Bloomington** 47.56 314 eP P 23 09 07.3 +0.7
BLO pmax pmax
comp=Z,40nm,0.7s
BLO MLR MLR
comp=Z,7μm,20.0s
BLO **Bloomington** 47.56 314 eP P 23 09 07.3 +0.7
comp=Z,40nm,0.7s
BLO LR LR
comp=Z,7μm,20.0s
345A **Thompson Farm,** 47.61 303 P P 23 09 07.7 +0.6
baz=105
SCHQ **Schefferville** 47.68 342 P P 23 09 06.7 -0.6
comp=Z,84nm,0.8s,baz=146,slow=6.7,SNR=67
SCHQ LR LR 23 25 59.7
comp=Z,5μm,21.7s,baz=156,slow=32
SCHQ **Schefferville** 47.68 342 eP P 23 09 06.7 -0.6
comp=Z,151nm,1.1s
545A **Edgard** 47.69 301 P P 23 09 09.8 +2.1
baz=104
245A **Little AP, Sta** 47.69 304 P P 23 09 08.6 +0.9
baz=106
445A **Amite** 47.72 302 P P 23 09 09.2 +1.2
baz=104
145A **Houston Renfro** 47.87 304 P P 23 09 09.8 +0.6
baz=106,SNR=6.1
USIN **University of** 47.90 312 eP P 23 09 09.9 +0.6
comp=Z,92nm,0.8s
USIN LR LR
comp=Z,9μm,19.0s
Z45A **Winona** 47.90 305 P P 23 09 09.5 +0.2
baz=107
Y45A **Yeager Farm, C** 47.93 306 P P 23 09 09.7 +0.1
baz=108,SNR=19
X45A **UM Field Stati** 47.98 307 P P 23 09 09.5 -0.5
baz=108,SNR=14
OXF **Oxford** 48.02 307 eP P 23 09 09.7 -0.6
OXF pmax pmax
comp=Z,258nm,0.9s
OXF **Oxford** 48.02 307 eP P 23 09 09.7 -0.6
comp=Z,258nm,0.9s
W45A **Hickory Valley** 48.05 308 P P 23 09 10.1 -0.4
baz=109,SNR=11
444A **Pine Grove** 48.06 302 P P 23 09 11.6 +1.0
baz=104
V45A **Humboldt** 48.07 309 P P 23 09 10.3 -0.3
baz=110,SNR=8.9
TAM **Tamanrasset** 48.20 69 eP P 23 09 12.5 +0.5
TAM pmax pmax
comp=Z,310nm,1.4s
TAM MLR MLR
comp=Z,15μm,20.0s
TAM **Tamanrasset** 48.20 69 eP P 23 09 12.5 +0.5
comp=Z,310nm,1.4s
TAM LR LR
comp=Z,15μm,20.0s
UTMT **University of** 48.20 310 eP P 23 09 12.5 +0.9
comp=Z,113nm,0.8s
344A **Westbrook Farm** 48.23 303 P P 23 09 12.8 +0.9
baz=104
VBMS **Vicksburg** 48.25 304 P P 23 09 12.8 +0.7
baz=105
VBMS **Vicksburg** 48.25 304 PFAKE 23 09 20.0 +7.9
VBMS LR LR
comp=Z,5μm,18.0s
544A **White Castle** 48.27 301 P P 23 09 13.7 +1.4
baz=103
144A **Alexander Plac** 48.28 304 P P 23 09 12.9 +0.6
baz=106
244A **Avery, Jackson** 48.34 303 P P 23 09 13.5 +0.7
baz=105
HALT **Halls** 48.42 309 PFAKE 23 09 20.0 +6.7
HALT LR LR
comp=Z,6666μm,20.0s
S45A **Carrier Mills** 48.46 311 P P 23 09 13.5 -0.1
baz=112,SNR=28
Z44A **Pea Ridge, Bel** 48.47 305 P P 23 09 13.8 0.0
baz=106
SFIN **Lafayette** 48.47 315 P P 23 09 13.4 -0.2
baz=115,SNR=13
SFIN **Lafayette** 48.47 315 eP P 23 09 13.5 -0.2
comp=Z,126nm,1.4s
SFIN LR LR
comp=Z,8μm,21.0s
Y44A **Strider, Charl** 48.49 306 P P 23 09 13.6 -0.3
baz=107
GLAT **Glass** 48.50 309 eP P 23 09 12.5 -1.4
OLIL **Olney** 48.51 313 eP P 23 09 13.9 -0.1
comp=Z,118nm,0.8s
OLIL LR LR
comp=Z,9μm,20.0s
W44A **Shelby Farms P** 48.54 308 P P 23 09 13.4 -0.8
baz=108
X44A **Crenshaw** 48.60 307 P P 23 09 14.0 -0.7
baz=108
MET **Memphis--Engin** 48.62 308 PFAKE 23 09 20.0 +5.1
MET LR LR
comp=Z,6μm,19.0s
OSSF **Osses** 48.81 41 eP P 23 09 15.5 -0.7
V44A **Blytheville** 48.82 309 P P 23 09 16.0 -0.4
baz=109
543A **St. Martinvill** 48.85 301 P P 23 09 18.1 +1.4
baz=103
PVMO **Portageville** 48.86 309 PFAKE 23 09 30.0 +13
PVMO LR LR
comp=Z,6μm,21.0s
LARF **Larrau** 48.88 41 eP P 23 09 17.2 +0.3
343A **Vidalia** 48.92 302 P P 23 09 18.3 +1.1
baz=104
EMHD **Djebel Mahouad** 48.92 51 P P 23 09 17.8 +0.4
443A **Delano Plantat** 48.94 301 P P 23 09 18.0 +0.7
baz=103
GLMI **Grayling** 48.94 322 eP P 23 09 18.6 +1.4
GLMI LR LR
comp=Z,6μm,22.0s
SIUC **Southern Illin** 48.95 311 eP P 23 09 17.5 +0.2
comp=Z,206nm,1.0s
SIUC LR LR
comp=Z,8μm,19.0s
243A **Waterproof** 48.95 303 P P 23 09 18.2 +0.7
baz=104
S44A **Carbondale** 48.97 311 P P 23 09 17.5 0.0
baz=111,SNR=27
ORDF **Ordiarp** 49.00 41 eP P 23 09 17.1 -0.6
R44A **Waltonville** 49.04 312 P P 23 09 18.0 0.0
baz=112,SNR=47
Y43A **Makayla and Ka** 49.05 306 P P 23 09 18.1 -0.1
baz=106
ATE **Arette** 49.09 41 eP P 23 09 18.6 +0.2
143A **Socs Landing,** 49.10 304 P P 23 09 18.9 +0.3
baz=105
Z43A **Armstrong Fami** 49.10 305 P P 23 09 18.5 -0.1
baz=106
VAL **Valentia** 49.11 27 eP P 23 09 17.2 -1.1
VAL **Valentia** 49.11 27⇑ iS S 23 16 21.4 -2.2
X43A **Marvell** 49.18 307 P P 23 09 19.1 -0.1
baz=107
Q44A **Meyer Farm, Va** 49.24 313 P P 23 09 19.5 0.0
baz=112,SNR=27
REYF **Montagne du Re** 49.28 41 eP P 23 09 19.6 -0.4
HBAR **Harrisburg** 49.32 308 eP P 23 09 20.5 +0.2
542A **Morse** 49.45 300 P P 23 09 22.2 +0.9
baz=102

VIEF **Viey** 49.47 42 eP P 23 09 21.3 -0.1
442A **Mamou** 49.47 301 P P 23 09 21.9 +0.4
baz=103
142A **Monroe** 49.50 304 P P 23 09 22.0 +0.3
baz=105
342A **Flagon Creek P** 49.53 302 P P 23 09 22.3 +0.4
baz=103
PBMO **Poplar Bluff** 49.53 310 eP P 23 09 20.8 -1.1
comp=Z,64nm,1.1s
PBMO LR LR
comp=Z,6μm,20.0s
S43A **Fulton Ridge,** 49.53 311 P P 23 09 21.0 -0.9
baz=110,SNR=24
242A **Grayson** 49.55 303 P P 23 09 22.1 0.0
baz=104,SNR=9.3
RESF **Ens** 49.64 42 eP P 23 09 22.0 -0.8
Z42A **Norrel Spur, H** 49.69 305 P P 23 09 23.0 -0.1
baz=105,SNR=9.1
Y42A **Garnett, Star** 49.71 305 P P 23 09 23.3 0.0
baz=106
CCAR **Cane Creek** 49.72 306 PFAKE 23 09 30.0 +6.7
CCAR LR LR
comp=Z,5μm,19.0s
Q43A **New Douglas** 49.75 312 P P 23 09 23.1 -0.3
baz=112,SNR=24
MELF **Melles** 49.95 42 eP P 23 09 25.8 +0.8
V42A **Cord** 49.96 308 P P 23 09 24.6 -0.6
baz=108,SNR=48
541A **Lake Charles** 49.97 300 P P 23 09 26.1 +0.8
baz=102
U42A **Revenden** 50.01 309 P P 23 09 24.7 -0.8
baz=108,SNR=71
HDIL **Hopedale** 50.07 315 P P 23 09 24.9 -1.0
baz=113
HDIL **Hopedale** 50.07 315 eP P 23 09 25.5 -0.4
comp=Z,160nm,1.4s
HDIL LR LR
comp=Z,8μm,20.0s
441A **DeRidder** 50.12 301 P P 23 09 26.8 +0.4
baz=102
241A **Mo Tay, Goldon** 50.17 303 P P 23 09 26.5 -0.3
baz=104
341A **Kurthwood** 50.22 302 P P 23 09 26.8 -0.4
baz=103,SNR=6.8
141A **Papa Simpson,** 50.30 304 P P 23 09 27.3 -0.4
baz=104
NRS **Narsarsuaq** 50.32 359 i P P 23 09 27.7 +0.3
comp=Z,43nm,1.2s
NRS **Narsarsuaq** 50.32 359 i P P 23 09 27.7 +0.3
NRS pmax pmax
comp=Z,43nm,1.2s
CCA1 **Carnmenellis** 50.33 31 eP P 23 09 26.6 -1.1
CCA1 AMB AMB 23 09 30.4
comp=Z,105nm,2.5s
Q42A **Golden Eagle** 50.34 312 P P 23 09 27.1 -0.9
baz=111,SNR=23
Z41A **Richland Creek** 50.38 304 P P 23 09 28.0 -0.3
baz=105
Y41A **Eaglette Beard** 50.38 305 P P 23 09 28.4 0.0
baz=105,SNR=10
UALR **University of** 50.41 306 eP P 23 09 28.2 -0.4
comp=Z,60nm,0.8s
UALR LR LR
comp=Z,5μm,20.0s
W41B **Gary Mavity, V** 50.45 307 P P 23 09 28.2 -0.6
baz=106,SNR=80
P42A **Winchester** 50.45 313 P P 23 09 28.0 -0.8
baz=112,SNR=17
X41A **Kaden, Bauxite** 50.47 306 P P 23 09 28.3 -0.7
baz=106
O42A **Bath** 50.49 314 P P 23 09 27.9 -1.1
baz=112,SNR=7.4
WHAR **Wooly Hollow** 50.51 307 eP P 23 09 28.8 -0.6
comp=Z,100nm,0.9s
WHAR LR LR
comp=Z,6μm,19.0s
U41A **Viola** 50.54 308 P P 23 09 28.5 -1.0
baz=108,SNR=36
V41A **Mountainview** 50.55 308 P P 23 09 28.5 -1.1
baz=107,SNR=42
X201 **Greenbrier Sit** 50.57 307 eP P 23 09 29.1 -0.6
comp=Z,159nm,1.3s
X201 LR LR
comp=Z,6μm,20.0s
VALF **Valcebollere** 50.58 43 eP P 23 09 30.1 +0.2
X301 **Greenbrier Sit** 50.59 307 eP P 23 09 29.3 -0.6
comp=Z,156nm,1.3s
X301 LR LR
comp=Z,6μm,19.0s
T41A **Mountain View** 50.63 309 P P 23 09 29.3 -1.0
baz=108,SNR=152
540A **Vidor** 50.67 300 P P 23 09 30.3 -0.3
baz=101
X40A **Basin Creek Fa** 50.72 306 P P 23 09 30.0 -1.0
baz=106,SNR=18
WLAR **White Oak Lake** 50.74 305 eP P 23 09 31.6 +0.6
comp=Z,166nm,0.9s
WLAR LR LR
comp=Z,4μm,20.0s
440A **Kirbyville** 50.76 301 P P 23 09 31.3 0.0
baz=102
S41A **Jillco Farms,** 50.79 310 P P 23 09 30.4 -1.0
baz=109,SNR=89
SET **Setif** 50.80 52 P P 23 09 32.0 +0.4
ROC1 **El Roble** 50.82 210 eP P 23 09 31.0 -0.9
comp=Z,69nm,0.9s
CKHR **Kef el Ahmar** 50.83 52 P P 23 09 34.0 +2.1
340A **Bronson** 50.84 302 P P 23 09 31.6 -0.3
baz=102
140A **Cam and Jess,** 50.86 303 P P 23 09 31.9 -0.1
baz=104
Z40A **Long Farm, Mag** 50.86 304 P P 23 09 32.2 +0.2
baz=104,SNR=6.2
240A **Hunter Patters** 50.88 303 P P 23 09 31.9 -0.3
baz=103
Y40A **Okolona** 50.95 305 P P 23 09 32.4 -0.3
baz=105,SNR=6.3
P41A **Barry, Barry** 51.00 313 P P 23 09 31.9 -1.0
baz=111,SNR=30
FILF **Fillols** 51.01 43 eP P 23 09 31.0 -2.1
O41A **Passleys Farm,** 51.03 313 P P 23 09 31.9 -1.3
baz=111
V40A **Witts Springs** 51.08 308 P P 23 09 32.6 -1.0
baz=106,SNR=41
W40A **Ferguson Farm,** 51.10 307 P P 23 09 33.7 0.0
baz=106,SNR=64
DYA **Yadsworthy** 51.15 32 eP P 23 09 36.0 +2.2
LRDF **Laroque-de-Fa** 51.15 43 eP P 23 09 33.6 -0.5
SJAF **Saint Jean de** 51.20 43 eP P 23 09 34.1 -0.3
HTL **Hartland** 51.20 31 eP P 23 09 34.2 0.0
HTL AMB AMB 23 09 38.5
comp=Z,40nm,2.6s
T40A **Mansfield** 51.24 309 P P 23 09 34.1 -0.7
baz=108,SNR=101
U40A **Yellville** 51.26 308 P P 23 09 33.8 -1.2
baz=107,SNR=67
DFRA **Djebel Bou Aff** 51.27 52 P P 23 09 37.2 +2.0
539A **Cross D Ranch,** 51.29 300 P P 23 09 35.4 +0.2
baz=101
MIAR **Mount Ida** 51.33 306 P P 23 09 34.9 -0.6
baz=105,SNR=17
MIAR **Mount Ida** 51.33 306 eP P 23 09 35.0 -0.5
MIAR pmax pmax
comp=Z,52nm,1.1s
MIAR MLR MLR
comp=Z,5μm,22.0s
MIAR **Mount Ida** 51.33 306 eP P 23 09 35.0 -0.5
comp=Z,52nm,1.1s
MIAR LR LR
comp=Z,5μm,22.0s
JSA **Saint Aubin** 51.36 34 eP P 23 09 35.4 0.0
JSA AMB AMB 23 09 39.3
comp=Z,79nm,2.7s
S40A **Lebanon** 51.36 310 P P 23 09 34.9 -0.9
baz=108,SNR=84
339A **Huntington** 51.38 302 P P 23 09 35.9 0.0
baz=102
R40A **Maddies Statio** 51.41 311 P P 23 09 34.9 -1.1
baz=109,SNR=43
JQE **Queens East** 51.44 34 eP P 23 09 34.9 -1.1
439A **Center Grove,** 51.45 301 P P 23 09 36.3 -0.2
baz=101
239A **Gary** 51.46 302 P P 23 09 36.3 -0.1
baz=102
Z39A **Irene McRaven,** 51.49 304 P P 23 09 36.6 -0.2
baz=104
Q40A **Laux Farm, Aux** 51.50 312 P P 23 09 35.6 -1.1
baz=110,SNR=28
L41A **Preston** 51.50 316 P P 23 09 35.6 -1.0
baz=113,SNR=18
CTEI **Djebel Teioual** 51.54 52 P P 23 09 39.7 +2.5
NATX **Nacogdoches** 51.56 302 P P 23 09 37.2 -0.1
baz=102
NATX **Nacogdoches** 51.56 302 eP P 23 09 37.4 +0.1
comp=Z,227nm,1.4s
NATX LR LR
comp=Z,5μm,22.0s
TRQA **Tornquist** 51.57 199 eP P 23 09 37.6 +0.5
comp=Z,95nm,1.4s
TRQA LR LR
comp=Z,7μm,19.0s
K41A **Shullsburg** 51.58 317 P P 23 09 36.5 -0.8
baz=114,SNR=19
Y39A **Locksburg** 51.59 305 P P 23 09 36.8 -0.7
baz=104,SNR=8.1
P40A **Paris** 51.66 312 P P 23 09 37.0 -0.9
baz=110,SNR=29
CASM **Ain Smara** 51.66 52 P P 23 09 39.9 +1.9
W39A **Magazine** 51.66 307 P P 23 09 37.9 -0.1
baz=105,SNR=64
JFWS **Jewell Farm** 51.67 317 eP P 23 09 37.3 -0.6
JFWS pmax pmax
comp=Z,61nm,0.9s
JFWS MLR MLR
comp=Z,5μm,19.0s
JFWS **Jewell Farm** 51.67 317 eP P 23 09 37.3 -0.6
comp=Z,62nm,0.9s
JFWS LR LR
comp=Z,5μm,19.0s
J41A **Loganville** 51.70 318 P P 23 09 37.6 -0.5
baz=115,SNR=16
DSB **Dublin** 51.73 27 eP P 23 09 37.5 -0.6
comp=Z,51nm,1.3s
DSB LR LR
comp=Z,6μm,20.0s
V39A **Pettigrew** 51.73 307 P P 23 09 37.5 -1.1
baz=106,SNR=26
O40A **La Belle** 51.74 313 P P 23 09 37.5 -1.0
baz=111,SNR=47
X39A **Fountain Ranch** 51.75 306 P P 23 09 38.3 -0.4
baz=105,SNR=55
U39A **Green Forest** 51.75 308 P P 23 09 37.3 -1.3
baz=106,SNR=31
638A **Rosharon** 51.78 299 P P 23 09 39.3 +0.3
baz=100
T39A **Clever** 51.86 309 P P 23 09 38.6 -0.9
baz=107,SNR=36
738A **Farr-Stevens R** 51.86 298 P P 23 09 39.5 0.0
baz=99
CKFL **Kef-Lekhel** 51.88 52 P P 23 09 40.3 +0.5
538A **Harpers Horsep** 51.96 300 P P 23 09 40.6 +0.3
baz=100
R39A **Chumby, Stover** 51.99 311 P P 23 09 39.6 -0.8
baz=108,SNR=65
238A **Jacksonville** 51.99 302 P P 23 09 40.3 -0.2
baz=102,SNR=7.4
L40A **Anamosa** 51.99 316 P P 23 09 39.2 -1.2
baz=113,SNR=25
S39A **Bolivar** 52.01 310 P P 23 09 39.7 -0.9
baz=108,SNR=67
338A **Crockett** 52.02 301 P P 23 09 40.7 -0.1
baz=101
438A **Sam Houston St** 52.04 301 P P 23 09 40.7 -0.2
baz=101
HHAR **Hobbs** 52.08 308 eP P 23 09 39.8 -1.3
comp=Z,33nm,1.3s
HHAR LR LR
comp=Z,4μm,19.0s
CAEH **'Ain El Ouahch** 52.09 52 P P 23 09 42.9 +1.7
LPW **Lampeter** 52.09 30 eP P 23 09 40.9 0.0
LPW AMB AMB 23 09 43.4
comp=Z,86nm,1.9s
Y38A **Idabel** 52.10 305 P P 23 09 40.7 -0.6
baz=104,SNR=13
138A **Matatall Enter** 52.11 303 P P 23 09 41.2 -0.1
baz=102,SNR=12
Z38A **Mt. Pleasant** 52.15 304 P P 23 09 40.6 -1.1
baz=103
P39B **Salisbury** 52.16 312 P P 23 09 40.9 -0.7
baz=109,SNR=49
Q39A **Willow Grove F** 52.18 311 P P 23 09 41.1 -0.7
baz=109,SNR=65
K40A **Colesburg** 52.19 316 P P 23 09 40.8 -0.9
baz=113,SNR=28
J40A **Soldiers Grove** 52.20 317 P P 23 09 40.8 -1.0
baz=114,SNR=9.9
W38A **Poteau** 52.21 306 P P 23 09 42.0 -0.1
baz=105,SNR=30
FRNF **Fournols** 52.23 40 eP P 23 09 41.9 -0.2
O39A **Kirksville** 52.27 313 P P 23 09 41.4 -1.0
baz=110,SNR=7.4
V38A **Canehill** 52.33 307 P P 23 09 41.6 -1.4
baz=105,SNR=13
COWI **Conover** 52.34 321 eP P 23 09 42.3 -0.5
comp=Z,56nm,1.1s
COWI LR LR
comp=Z,6μm,22.0s
X38A **Whitesboro** 52.36 306 P P 23 09 42.9 -0.3
baz=104,SNR=39
HGH **Gray Hill** 52.43 31⇑ eP P 23 09 42.6 -0.8
ABSA **Djebel Ababsia** 52.43 52 P P 23 09 43.7 -0.1
M39A **Webster** 52.44 315 P P 23 09 42.2 -1.5
baz=111,SNR=19
S38A **Stockton** 52.44 309 P P 23 09 42.8 -0.9
baz=107,SNR=36
N39A **Derby Farms, D** 52.45 314 P P 23 09 42.3 -1.5
baz=111,SNR=14
U38A **Gravette** 52.47 308 P P 23 09 42.4 -1.6
baz=106,SNR=12
CMAH **Djebel Manchou** 52.48 52 P P 23 09 43.9 -0.3
337A **Centerville** 52.50 301 P P 23 09 44.1 -0.2
baz=101
737A **Port Lavaca** 52.53 298 P P 23 09 45.3 +0.7
baz=99
637A **Eagle Lake** 52.55 299 P P 23 09 45.0 +0.3
baz=99
MCH1 **Michaelchurch** 52.55 30 eP P 23 09 43.4 -0.9
MCH1 AMB AMB 23 09 46.7
comp=Z,100nm,1.6s
MONM **Monmouth** 52.55 31⇑ eP P 23 09 43.6 -0.7
MONM AMB AMB 23 09 46.7
comp=Z,192nm,1.8s
L39A **Vinton** 52.55 315 P P 23 09 43.3 -1.2
baz=112,SNR=25
T38A **Diamond** 52.56 309 P P 23 09 43.2 -1.5
baz=106,SNR=22
GMM **Mts of Mourne** 52.57 27 eP P 23 09 43.4 -1.0
LBL **Lubilhac** 52.60 40 eP P 23 09 45.8 +0.9
R38A **Fenwick Farm,** 52.60 310 P P 23 09 44.1 -0.8
baz=108,SNR=65
437A **Phantom Ranch,** 52.62 301 P P 23 09 45.1 -0.1
baz=100
Q38A **Cooks Store, C** 52.62 311 P P 23 09 44.1 -1.0
baz=108,SNR=34
537A **Green Hill Far** 52.64 300 P P 23 09 45.5 +0.2
baz=100,SNR=5.5
137A **Heron Place, G** 52.64 303 P P 23 09 44.6 -0.8
baz=102
Z37A **Pogue Cattle C** 52.66 304 P P 23 09 44.4 -1.1
baz=102
PYM **Petit Puy Mans** 52.67 40⇓ eP P 23 09 46.1 +0.7
YLL **Llanberis** 52.68 29 eP P 23 09 45.0 -0.2
K39A **Oelwein** 52.70 316 P P 23 09 44.2 -1.3
baz=112,SNR=20
LLW **Llanuwychllyn** 52.74 29 eP P 23 09 44.5 -1.2
P38A **Dawn** 52.77 312 P P 23 09 45.4 -0.8
baz=109,SNR=43
X37A **Clayton** 52.77 305 P P 23 09 45.5 -0.8
baz=104,SNR=18
WME **Mynydd Gilian** 52.78 28⇑ eP P 23 09 45.1 -0.8
J39A **Decorah** 52.82 317 P P 23 09 45.4 -1.1
baz=113,SNR=12
STRD **Stroud** 52.84 31 eP P 23 09 46.2 -0.2
SWN1 **Swindon** 52.87 31 eP P 23 09 46.5 -0.2
SWN1 AMB AMB 23 09 50.2
comp=Z,149nm,1.8s
WPM1 **Penmaenmawr** 52.88 29 eP P 23 09 45.7 -1.0
AGO **Saint Agoulin** 52.88 39⇓ eP P 23 09 47.6 +0.7
O38A **Galt** 52.89 313 P P 23 09 46.4 -0.6
baz=109,SNR=19
V37A **Hulbert** 52.91 307 P P 23 09 46.0 -1.3
baz=105,SNR=21
HLM1 **Long Mynd** 52.92 30⇑ eP P 23 09 45.9 -1.2
HLM1 AMB AMB 23 09 49.0

comp=Z,68nm,1.1s
N38A Joes South For 52.95 313 P **P** 23 09 46.3 -1.2
baz=110
W37B Quinton 52.95 306 P **P** 23 09 47.2 -0.4
baz=104,SNR=21
FOEL Foel Wylfa 52.99 29 *eP* **P** 23 09 46.8 -0.7
FOEL AMB AMB 23 09 49.9
comp=Z,114nm,1.1s
COLF Collangettes 53.00 40 *eP* **P** 23 09 47.5 -0.4
U37A Salina 53.03 308 P **P** 23 09 47.3 -0.9
baz=105,SNR=37
WOL Wolverton 53.05 32⇑ *eP* **P** 23 09 48.0 0.0
WOL AMB AMB 23 09 50.7
comp=Z,220nm,1.9s
T37A Cheneyville 18 53.06 309 P **P** 23 09 47.5 -0.9
baz=106,SNR=22
WIM Isle of Man 53.08 27 *eP* **P** 23 09 47.2 -1.0
736A Circle Diamond 53.11 298 P **P** 23 09 49.6 +0.8
baz=98,SNR=19
936A North Padre Is 53.11 296 P **P** 23 09 49.1 +0.2
baz=97
M38A Pleasantville 53.13 314 P **P** 23 09 47.9 -0.9
baz=110,SNR=36
PLDF La Plantade 53.15 40⇓ *eP* **P** 23 09 49.5 +0.5
436A Wall Ranch, Ga 53.17 300 P **P** 23 09 48.7 -0.5
baz=100,SNR=6.5
S37A Fort Scott 53.17 309 P **P** 23 09 48.1 -1.1
baz=106,SNR=35
636A Smothers Creek 53.18 299 P **P** 23 09 49.6 +0.3
baz=99,SNR=13
Q37A Longview Farm, 53.22 311 P **P** 23 09 48.7 -0.8
baz=108,SNR=10
L38A Oak Wood Farm, 53.22 315 P **P** 23 09 48.2 -1.3
baz=111,SNR=12
136A Ennis 53.26 303 P **P** 23 09 49.2 -0.6
baz=101,SNR=8.0
536A Bastrop 53.28 299 P **P** 23 09 49.3 -0.7
baz=99
K38A Parkersburg 53.28 316 P **P** 23 09 48.5 -1.4
baz=112,SNR=11
336A Riesel 53.31 301 P **P** 23 09 49.5 -0.8
baz=100
SCIA State Center 53.32 315 *eP* **P** 23 09 49.8 -0.3
comp=Z,68nm,0.9s
SCIA LR LR
comp=Z,7μm,19.0s
J38A Wedel Dairy, R 53.33 317 P **P** 23 09 48.7 -1.5
baz=112,SNR=21
R37A Teagarden Farm 53.33 310 P **P** 23 09 49.0 -1.4
baz=107,SNR=16
Z36A Blue Ridge 53.34 304 P **P** 23 09 49.5 -1.0
baz=102
Y36A Durant 53.35 304 P **P** 23 09 49.6 -1.0
baz=103
P37A Lathrop 53.36 312 P **P** 23 09 49.5 -1.0
baz=108,SNR=34
O37A Wolven Farm, M 53.40 312 P **P** 23 09 49.8 -0.9
baz=109
TUL1 Leonard 53.43 307 P **P** 23 09 50.0 -1.1
baz=104,SNR=26
TUL1 Leonard 53.43 307 *eP* **P** 23 09 50.2 -0.9
comp=Z,93nm,0.8s
TUL1 LR LR
comp=Z,4μm,18.0s
SSB Saint Sauveur 53.44 41 *eP* **P** 23 09 51.1 0.0
SSB Saint Sauveur 53.44 41 *eP* **P** 23 09 51.3 +0.2
SSB pmax pmax
comp=Z,108nm,1.5s
SSB MLR MLR
comp=Z,8μm,20.0s
SSB Saint Sauveur 53.44 41 *eP* **P** 23 09 51.3 +0.2
comp=Z,108nm,1.5s
SSB LR LR
comp=Z,8μm,20.0s
GMK Mull of Kintyr 53.46 26 *eP* **P** 23 09 49.9 -1.0
U36A Oologah 53.50 307 P **P** 23 09 50.5 -1.1
baz=105,SNR=16
LEPF PUYLOUBIER 53.51 43 *eP* **P** 23 09 51.0 -0.5
I38A Scanlan Farm, 53.51 317 P **P** 23 09 50.5 -1.1
baz=113,SNR=17
V36A Jenks 53.52 307 P **P** 23 09 50.9 -0.8
baz=104,SNR=21
GAL1 Galloway 53.53 27 *eP* **P** 23 09 50.0 -1.4
GAL1 AMB AMB 23 09 54.7
comp=Z,30nm,1.8s
X36A Centrahoma 53.56 305 P **P** 23 09 50.7 -1.3
baz=103,SNR=16
W36A Wetumka 53.59 306 P **P** 23 09 51.3 -1.0
baz=104,SNR=13
STNC Stoke 53.59 30 *eP* **P** 23 09 51.3 -0.6
STNC AMB AMB 23 09 54.6
comp=Z,142nm,2.7s
N37A Lee Faris, Mou 53.63 313 P **P** 23 09 51.6 -0.9
baz=109,SNR=15
KVTX Kingsville 53.64 296 *eP* **P** 23 09 54.5 +1.8
comp=Z,502nm,1.0s
KVTX LR LR
comp=Z,3μm,18.0s
OG26 St.-Nazaire-De 53.65 42 *eP* **P** 23 09 53.5 +0.8
035Z Hargill 53.67 295 P **P** 23 09 52.9 -0.1
baz=96
835A Beeville 53.68 297 P **P** 23 09 53.9 +0.9
baz=98,SNR=14
535A Dale 53.70 299 P **P** 23 09 52.3 -0.9
baz=99
TLIG Tlapa 53.71 284 *eP* **P** 23 09 54.0 +0.4
comp=Z,54nm,0.9s
TLIG LR LR
comp=Z,2μm,20.0s
C39A Grand Marais 53.73 323 P **P** 23 09 51.5 -1.6
baz=118
735A Kenedy 53.74 298 P **P** 23 09 53.4 0.0
baz=98
M37A Trindle Farm, 53.74 314 P **P** 23 09 52.4 -0.8
baz=110,SNR=7.8
S36A Lake Cedric, C 53.75 309 P **P** 23 09 51.8 -1.6
baz=106,SNR=7.6
035A Encino 53.75 295 P **P** 23 09 54.0 +0.4
baz=96,SNR=9.6
KEST Kesra 53.76 53 P **P** 23 09 53.2 -0.4
comp=Z,27nm,1.0s,baz=178,slow=6.4,SNR=17
KEST LR LR 23 29 27.2
comp=Z,5μm,21.9s,baz=214,slow=32
KEST Kesra 53.76 53 *eP* **P** 23 09 53.7 +0.1
comp=Z,117nm,1.4s
L37A Phoenix Point, 53.77 315 P **P** 23 09 51.7 -1.8
baz=110
635A Leesville 53.78 299 P **P** 23 09 53.2 -0.6
baz=98,SNR=8.9
335A Moody 53.79 301 P **P** 23 09 52.8 -1.0
baz=100,SNR=9.2
T36A Boggs Farm, Ca 53.79 308 P **P** 23 09 52.3 -1.4
baz=105,SNR=11
CWF Charnwood Fore 53.82 30 *eP* **P** 23 09 52.6 -1.1
CWF AMB AMB 23 09 56.8
comp=Z,102nm,1.8s
CWF Charnwood Fore 53.82 30 *eP* **P** 23 09 53.0 -0.7
comp=Z,359nm,1.8s
CWF LR LR
comp=Z,3μm,20.0s
435B Jarrell 53.84 300 P **P** 23 09 53.3 -0.9
baz=100,SNR=7.0
R36A Gordon, Harris 53.85 310 P **P** 23 09 52.9 -1.3
baz=106,SNR=14
K37A Belmond 53.92 316 P **P** 23 09 53.0 -1.5
baz=111,SNR=14
WHTX Lake Whitney, 53.94 302 P **P** 23 09 53.9 -1.0
baz=100,SNR=15
WHTX Lake Whitney, 53.94 302 *eP* **P** 23 09 54.2 -0.7
comp=Z,78nm,1.1s
WHTX LR LR
comp=Z,3μm,18.0s
Y35A Marietta 53.97 304 P **P** 23 09 54.3 -0.7
baz=102,SNR=6.7
O36A Bolckow 53.98 312 P **P** 23 09 53.7 -1.3
baz=108,SNR=17
Q36A Arnold C. Orve 53.99 311 P **P** 23 09 54.2 -1.0
baz=107,SNR=49
135A Vickery Place, 54.00 302 P **P** 23 09 54.9 -0.4
baz=101,SNR=5.9
X35A Drake 54.02 305 P **P** 23 09 53.9 -1.6
baz=102,SNR=16
Z35A Perchaven, San 54.02 303 P **P** 23 09 54.8 -0.7
baz=102,SNR=7.4
J37A Redenius Farm, 54.05 316 P **P** 23 09 54.0 -1.5
baz=111,SNR=16
KESW Keswick, Cumbr 54.08 28 *eP* **P** 23 09 54.6 -0.8
KESW AMB AMB 23 09 57.8
comp=Z,105nm,2.1s
W35A Tecumseh 54.11 306 P **P** 23 09 55.1 -1.0
baz=103,SNR=19
H37A Dierke Farm, C 54.11 318 P **P** 23 09 54.8 -1.1
baz=113
N36A Muff Farm, Cla 54.19 313 P **P** 23 09 55.6 -1.0
baz=108,SNR=27
934A Benavides 54.20 296 P **P** 23 09 57.8 +1.0
baz=97,SNR=33
GRN Grenoble 54.20 41 *eP* **P** 23 09 57.6 +0.9
I37A Lemond, Waseca 54.21 317 P **P** 23 09 55.3 -1.4
baz=112,SNR=13
V35A Meyer Ranch, C 54.22 306 P **P** 23 09 55.7 -1.2
baz=104,SNR=12
PGBU Glenifferbraes 54.24 26⇑ *eP* **P** 23 09 55.6 -1.1
PGBU AMB AMB 23 09 58.7
comp=Z,109nm,1.2s
T35A Sooner Cattle 54.24 308 P **P** 23 09 55.7 -1.3
baz=105,SNR=14
U35A Pawnee 54.28 307 P **P** 23 09 56.4 -0.9
baz=104,SNR=20
634A China Grove, S 54.28 298 P **P** 23 09 56.5 -0.9
baz=98
M36A Felix, Anita 54.28 314 P **P** 23 09 56.2 -1.1
baz=109
034A Hebbronville 54.28 296 P **P** 23 09 57.9 +0.4
baz=96,SNR=61
SPMN Marine on St. 54.29 319 P **P** 23 09 56.1 -1.1
baz=113,SNR=16
SPMN Marine on St. 54.29 319 *eP* **P** 23 09 56.3 -0.9
comp=Z,92nm,1.2s
SPMN LR LR
comp=Z,4μm,20.0s
UNM Universidad Na 54.29 286 PFAKE 23 10 10.0 +12
UNM LR LR
comp=Z,2μm,19.0s
834A Tilden 54.29 297 P **P** 23 09 57.6 +0.1
baz=97,SNR=13
S35A Otter Creek Ra 54.29 309 P **P** 23 09 56.0 -1.4
baz=105,SNR=12
BHH Howats Hill 54.34 27 *eP* **P** 23 09 56.4 -0.9
R35A Emporia Munici 54.37 310 P **P** 23 09 56.6 -1.4
baz=106,SNR=12
C38A Sawbill Land. 54.38 322 P **P** 23 09 56.1 -1.7
baz=116
734A La Parita Cree 54.39 298 P **P** 23 09 57.7 -0.5
baz=98
Q35A Mercer Eighty, 54.40 310 P **P** 23 09 56.5 -1.7
baz=106,SNR=7.5
L36A Harm Buss Farm 54.40 314 P **P** 23 09 56.6 -1.5
baz=110,SNR=8.5
434A Burnet 54.42 300 P **P** 23 09 57.0 -1.4
baz=99,SNR=20
GDM Grand'Maison 54.43 41 *eP* **P** 23 09 58.5 +0.1
ECK Cauldkaine Hil 54.43 27⇑ *eP* **P** 23 09 56.1 -2.0
MENF Mencas 54.46 34 *eP* **P** 23 09 55.8 -2.5
534A Blanco 54.48 299 P **P** 23 09 57.9 -1.1
baz=98,SNR=18
334A Lometa 54.48 301 P **P** 23 09 57.4 -1.5
baz=100,SNR=14
ESK Eskdalemuir 54.48 27 *eP* **P** 23 09 57.0 -1.4
ESK Eskdalemuir 54.48 27 *eP* **P** 23 09 57.3 -1.1
ESK pmax pmax
comp=Z,56nm,1.0s
ESK MLR MLR
comp=Z,4μm,20.0s
ESK Eskdalemuir 54.48 27 *eP* **P** 23 09 57.3 -1.1
comp=Z,56nm,1.0s
ESK LR LR
comp=Z,4μm,20.0s
234A Clairette 54.51 302 P **P** 23 09 57.8 -1.2
baz=100,SNR=5.5
134A White-Moore Ra 54.56 302 P **P** 23 09 58.2 -1.2
baz=100,SNR=8.3
Y34A Reagan Ranch, 54.56 304 P **P** 23 09 58.5 -0.9
baz=102,SNR=14
P35A Duane Minner, 54.57 311 P **P** 23 09 58.0 -1.5
baz=107,SNR=26
E37A Wrenshall 54.57 320 P **P** 23 09 57.9 -1.3
baz=115
Z34A Collier Ranch, 54.58 303 P **P** 23 09 58.7 -0.8
baz=101,SNR=6.4
J36A Seneca 1, Swea 54.60 316 P **P** 23 09 57.5 -2.1
baz=111
EYMN Ely 54.61 322 P **P** 23 09 57.8 -1.7
baz=116
EYMN Ely 54.61 322 *eP* **P** 23 09 58.2 -1.3
comp=Z,53nm,1.6s
EYMN LR LR
comp=Z,4μm,22.0s
MVIF Mont Vial 54.62 43 *eP* **P** 23 09 59.7 -0.1
I36A Fitzsimmons Fa 54.63 317 P **P** 23 09 57.7 -2.0
baz=112
N35A Tabor 54.70 313 P **P** 23 09 58.9 -1.4
baz=108,SNR=17
O35A Humboldt 54.71 312 P **P** 23 09 58.7 -1.7
baz=107,SNR=14
REVF Revere 54.71 44 *eP* **P** 23 09 59.7 -0.7
BNI Bardonecchia 54.74 42 PFAKE 23 10 10.0 +9.3
BNI LR LR
comp=Z,8μm,20.0s
LUCF Luceram 54.75 43 *eP* **P** 23 10 00.4 -0.3
X34A Smith Ranch, M 54.76 305 P **P** 23 09 59.8 -1.0
baz=102,SNR=19
RRH Rhenigidale 54.76 23 *eP* **P** 23 09 58.9 -1.5
KPL Plockton 54.77 24 *eP* **P** 23 09 58.6 -1.8
KPL AMB AMB 23 10 00.6
comp=Z,75nm,1.1s
V34A Guthrie 54.77 306 P **P** 23 10 00.1 -0.9
baz=103,SNR=22
V34A Guthrie 54.77 306 *eP* **P** 23 10 00.1 -0.9
comp=Z,127nm,0.8s
V34A LR LR
comp=Z,3μm,20.0s
VSL Villasalto 54.77 49 PFAKE 23 10 10.0 +9.2
VSL LR LR
comp=Z,4μm,22.0s
H36A Jessenland, He 54.77 318 P **P** 23 09 59.4 -1.4
baz=112
WACR West Acre 54.79 31 *eP* **P** 23 09 58.8 -1.9
T34A McClaskey Farm 54.79 308 P **P** 23 10 00.2 -0.8
baz=104,SNR=21
D37A Cotton 54.84 321 P **P** 23 10 00.1 -1.1
baz=115,SNR=17
W34A Bridge Creek, 54.84 306 P **P** 23 10 00.3 -1.2
baz=102,SNR=7.4
W34A Bridge Creek, 54.84 306 *eP* **P** 23 10 00.7 -0.8
comp=Z,70nm,0.8s
W34A LR LR
comp=Z,6μm,21.0s
933A Laredo 54.87 296 P **P** 23 10 01.4 -0.3
baz=96,SNR=32
EDI Edinburgh 54.87 26 *eP* **P** 23 10 00.3 -0.9
EDI AMB AMB 23 10 03.3
comp=Z,48nm,1.7s
KSU1 Kansas State U 54.89 310 P **P** 23 09 59.9 -1.8
baz=106,SNR=14
KSU1 Kansas State U 54.89 310 *eP* **P** 23 10 00.1 -1.6
comp=Z,58nm,0.8s
KSU1 LR LR
comp=Z,4μm,18.0s
S34A Willow Spring 54.90 309 P **P** 23 10 00.8 -1.0
baz=105,SNR=14
G36A St. Michael 54.91 318 P **P** 23 10 01.0 -0.7
baz=112
M35A Neola 54.92 313 P **P** 23 10 00.5 -1.4
baz=108
U34A Anderson Ranch 54.92 307 P **P** 23 10 01.1 -0.9
baz=104,SNR=5.2
U34A Anderson Ranch 54.92 307 *eP* **P** 23 10 01.3 -0.7
comp=Z,157nm,1.5s
U34A LR LR
comp=Z,3μm,19.0s
C37A Embarrass 54.93 322 P **P** 23 10 00.6 -1.3
baz=116,SNR=21
533A Kerrville 54.97 299 P **P** 23 10 01.2 -1.2
baz=98,SNR=19
F36A Milaca 55.00 319 P **P** 23 10 01.1 -1.3
baz=113,SNR=49
633A Saathoff Ranch 55.00 298 P **P** 23 10 01.9 -0.8
baz=98,SNR=30
K35A Storm Lake 55.00 315 P **P** 23 10 01.2 -1.2
baz=110,SNR=6.5
733A Divot King Ran 55.01 297 P **P** 23 10 02.1 -0.6
baz=97,SNR=8.8
L35A Bielow Farm, R 55.02 314 P **P** 23 10 01.2 -1.4
baz=109,SNR=14
833A Chaparral WMA, 55.05 297 P **P** 23 10 02.6 -0.4
baz=97,SNR=16
Q34A Chapman 55.09 310 P **P** 23 10 01.6 -1.6
baz=106,SNR=15
E36A McGregor 55.09 320 P **P** 23 10 01.8 -1.3
baz=114,SNR=17
333A Richland Sprin 55.11 301 P **P** 23 10 02.2 -1.3
baz=99,SNR=39
433A Art 55.11 300 P **P** 23 10 02.0 -1.4
baz=98,SNR=25
233A Rising Star 55.15 302 P **P** 23 10 02.5 -1.3
baz=100,SNR=12
R34A Isabella, Hill 55.16 309 P **P** 23 10 02.3 -1.4
baz=105,SNR=15
P34A Walnut Farm, R 55.18 311 P **P** 23 10 02.1 -1.7
baz=106,SNR=12
J35A Milford 55.20 316 P **P** 23 10 02.2 -1.7
baz=110
I35A Creekview Farm 55.22 316 P **P** 23 10 02.6 -1.5
baz=110,SNR=13
OG01 Vacheresse 55.24 40 *eP* **P** 23 10 04.3 +0.1
O34A Beatrice 55.26 312 P **P** 23 10 02.9 -1.5
baz=107,SNR=19
Z33A Whitaker Ranch 55.26 303 P **P** 23 10 03.2 -1.3
baz=100,SNR=18
133A Hamilton Ranch 55.26 302 P **P** 23 10 03.4 -1.1
baz=100,SNR=16
Y33A Hilltop Ranch, 55.28 304 P **P** 23 10 03.5 -1.2
baz=101,SNR=10
X33A Lawton 55.28 305 P **P** 23 10 02.9 -1.7
baz=102,SNR=7.3
D36A Goodland 55.30 321 P **P** 23 10 03.5 -1.1
baz=114,SNR=16
N34A Lincoln 55.31 312 P **P** 23 10 03.3 -1.4
baz=107,SNR=19
EDU Dundee 55.34 26 *eP* **P** 23 10 03.1 -1.5
C36A Pine Crest Far 55.34 321 P **P** 23 10 03.4 -1.4
baz=115,SNR=12
MDO Dochfour 55.36 24⇑ *eP* **P** 23 10 03.4 -1.4
U33A Lingo Farm, Me 55.38 307 P **P** 23 10 04.2 -1.1
baz=103,SNR=8.4
V33A Lossen Ranch, 55.38 306 P **P** 23 10 04.2 -1.1
baz=102,SNR=8.3
W33A Caddo, Fort Co 55.38 305 P **P** 23 10 04.4 -0.9
baz=102,SNR=12
G35A Watkins 55.38 318 P **P** 23 10 03.9 -1.3
baz=112,SNR=14
H35A Sunnyside Ranc 55.42 317 P **P** 23 10 04.0 -1.4
baz=111,SNR=40
WMOK Wichita Mounta 55.55 305 P **P** 23 10 05.0 -1.5
baz=102,SNR=38
WMOK Wichita Mounta 55.55 305 *eP* **P** 23 10 04.0 -2.6
WMOK pmax pmax
comp=Z,31nm,0.8s
WMOK MLR MLR
comp=Z,6μm,20.0s
WMOK Wichita Mounta 55.55 305 *eP* **P** 23 10 04.0 -2.6
comp=Z,31nm,0.8s
WMOK LR LR
comp=Z,6μm,20.0s
832A Faith Ranch, C 55.55 297 P **P** 23 10 06.1 -0.6
baz=96
S33A Kaszmaul Farm, 55.56 308 P **P** 23 10 05.7 -0.9
baz=104,SNR=14
L34A Svendsen Farm, 55.56 314 P **P** 23 10 05.1 -1.4
baz=108,SNR=22
M34A Aspy Farms, Fr 55.57 313 P **P** 23 10 05.3 -1.3
baz=108
THEF They Montfort 55.59 38⇓ *eP* **P** 23 10 05.5 -1.1
K34A Le Mars 55.59 315 P **P** 23 10 05.2 -1.5
baz=109
DOU Dourbes 55.60 35 P **P** 23 10 06.0 -0.6
comp=Z,34nm,2.0s
SNF Seneffe 55.62 35 P **P** 23 10 06.0 -0.7
T33A Patterson Ranc 55.63 308 P **P** 23 10 06.0 -1.1
baz=103,SNR=10.0
SENIN Lac Senin/Sane 55.65 41 *eP* **P** 23 10 07.4 +0.1
comp=Z,105nm,1.5s
SENIN LR LR
comp=Z,9μm,20.0s
F35A Swanville 55.68 319 P **P** 23 10 05.9 -1.4
baz=112,SNR=21
JCT Junction City 55.68 300 P **P** 23 10 06.3 -1.3
baz=98,SNR=27
JCT Junction City 55.68 300 *eP* **P** 23 10 06.6 -1.0
JCT pmax pmax
comp=Z,84nm,0.9s
JCT MLR MLR
comp=Z,2μm,20.0s
JCT Junction City 55.68 300 *eP* **P** 23 10 06.6 -1.0
comp=Z,84nm,0.9s
JCT LR LR
comp=Z,2μm,20.0s
J34A George 55.69 315 P **P** 23 10 06.2 -1.3
baz=109
R33A Olander Ranch, 55.72 309 P **P** 23 10 06.9 -0.8
baz=104,SNR=14
Q33A Connelly Farm, 55.78 310 P **P** 23 10 06.8 -1.4
baz=105,SNR=16
P33A Williams Farm, 55.79 311 P **P** 23 10 06.9 -1.4
baz=105
DRUM Mains of Drumt 55.80 26 *eP* **P** 23 10 07.4 -0.5
DRUM AMB AMB 23 10 09.7
comp=Z,95nm,2.1s
D35A Remer 55.82 320 P **P** 23 10 06.8 -1.5
baz=113,SNR=6.8
E35A Pequot Lakes 55.84 320 P **P** 23 10 06.6 -1.8
baz=113
H09N1 TRISTAN DA CUN 55.85 150 T T 00 10 34.8
SNR=36
TRIS Tristan da Cun 55.85 150 *eP* **P** 23 10 09.7 +1.1
comp=Z,423nm,1.1s
H09W1 TRISTAN DA CUN 55.87 150 T T 00 10 17.2
SNR=30
ABTX Abilene, Hawle 55.87 302 P **P** 23 10 07.7 -1.3
baz=100,SNR=21
ABTX Abilene, Hawle 55.87 302 *eP* **P** 23 10 07.5 -1.5
comp=Z,64nm,0.8s
ABTX LR LR
comp=Z,5μm,18.0s
I34A Hadley 55.88 316 P **P** 23 10 06.9 -1.9
baz=110
O33A Hebron 55.88 311 P **P** 23 10 07.1 -1.8
baz=106
X32A Elmer 55.90 304 P **P** 23 10 07.8 -1.2
baz=101,SNR=26
V32A Arapaho 55.96 306 P **P** 23 10 08.6 -0.9
baz=102,SNR=7.5
W32A Sentinel 56.00 305 P **P** 23 10 08.8 -1.0
baz=101,SNR=23
C35A Jirik Farms, M 56.02 321 P **P** 23 10 08.0 -1.7
baz=114,SNR=27
M33A Taylor Creek F 56.03 313 P **P** 23 10 08.3 -1.6
baz=107,SNR=8.0
H34A Spellman Lake, 56.04 317 P **P** 23 10 08.4 -1.4
baz=110,SNR=12
U32A Winter Ranch, 56.06 307 P **P** 23 10 09.3 -1.0
baz=102
BORG Borgarnes 56.08 11 *eP* **P** 23 10 13.9 +4.1
BORG pmax pmax
comp=Z,259nm,1.5s
BORG Borgarnes 56.08 11 *eP* **P** 23 10 13.9 +4.1
comp=Z,259nm,1.5s
F34A Alexandria 56.10 319 P **P** 23 10 09.0 -1.3
baz=112
MOF Molkenrain 56.13 39⇓ *eP* **P** 23 10 09.5 -1.1
B35A Bob, Littlefor 56.14 322 P **P** 23 10 08.9 -1.6
baz=114,SNR=12
G34A Benson 56.15 318 P **P** 23 10 09.5 -1.2
baz=111,SNR=10
BCLA Clavier 56.15 35 P **P** 23 10 09.9 -0.6
comp=Z,55nm,1.7s
MOIG Morelia 56.19 286 PFAKE 23 10 20.0 +8.4
MOIG LR LR
comp=Z,2μm,21.0s
BIGH Upper Bighouse 56.23 24 *eP* **P** 23 10 09.5 -1.5
BIGH AMB AMB 23 10 12.1
comp=Z,169nm,2.2s
L33A Hoskins 56.26 314 P **P** 23 10 10.0 -1.6
baz=108
ECSD EROS Data Cent 56.29 316 P **P** 23 10 10.2 -1.5
baz=109,SNR=21
ECSD EROS Data Cent 56.29 316 *eP* **P** 23 10 10.2 -1.5
comp=Z,157nm,2.0s
ECSD LR LR
comp=Z,4μm,18.0s
ECH Echery 56.29 38⇓ *eP* **P** 23 10 10.5 -1.2
R32A Long Quarter, 56.30 309 P **P** 23 10 11.1 -0.9

baz=104,SNR=11
WLF Walferdange 56.30 37 P **P** **23 10 10.8 -0.9**
comp=Z,54nm,1.6s
WLF Walferdange 56.30 37 *e*P **P** **23 10 10.3 -1.4**
WLF pmax pmax
comp=Z,111nm,1.4s
WLF MLR MLR
comp=Z,8µm,22.0s
WLF Walferdange 56.30 37 *e*P **P** **23 10 10.3 -1.4**
comp=Z,111nm,1.4s
WLF LR LR
comp=Z,8µm,22.0s
S32A Newby Ranch, P 56.31 308 P **P** **23 10 10.8 -1.2**
baz=103
E34A Wadena 56.31 319 P **P** **23 10 09.7 -2.1**
baz=112
MLA1 Latterton 56.33 24⇑ *e*P **P** **23 10 10.0 -1.7**
Q32A Meitler Ranch, 56.33 310 P **P** **23 10 11.1 -1.0**
baz=104,SNR=8.9
SFJD Kangerlussuaq 56.37 357 *i* P **P** **23 10 10.6 -1.2**
SFJD *i* S **S** **23 18 01.1 -1.3**
SFJD *i* 23 19 56.8
SFJD Kangerlussuaq 56.37 357 *i* P **P** **23 10 10.6 -1.2**
SFJD *i* S **S** **23 18 01.1 -1.3**
SFJD *i* 23 19 56.8
SFJD Kangerlussuaq 56.37 357 *e*P **P** **23 10 11.0 -0.8**
comp=Z,388nm,2.0s
J33A Davis 56.40 315 P **P** **23 10 10.8 -1.6**
baz=108
O32A Brockman Farm, 56.45 311 P **P** **23 10 11.5 -1.4**
baz=106,SNR=10
P32A Huiting Farm, 56.52 311 P **P** **23 10 12.2 -1.3**
baz=105
I33A Coleman 56.52 316 P **P** **23 10 12.1 -1.3**
baz=109,SNR=11
BEBN Eben Emael 56.54 35 P **P** **23 10 13.7 +0.5**
D34A Park Rapids 56.54 320 P **P** **23 10 11.5 -1.9**
baz=112
C34A RKJ Ranch, Bem 56.58 321 P **P** **23 10 11.8 -1.9**
baz=113
N32A Stulken Farm, 56.59 312 P **P** **23 10 12.4 -1.6**
baz=106
MEM Membach 56.64 35 P **P** **23 10 13.7 -0.3**
comp=Z,66nm,1.6s
G33A Ortonville 56.66 317 P **P** **23 10 13.1 -1.2**
baz=110,SNR=8.9
HGN Heimansgroeve 56.67 35 *e*P **P** **23 10 13.4 -0.8**
comp=Z,107nm,1.5s
HGN *e*S **S** **23 18 14.1 +7.3**
BGNE Belgrade 56.67 313 P **P** **23 10 13.3 -1.2**
baz=106,SNR=24
BGNE Belgrade 56.67 313 *e*P **P** **23 10 13.3 -1.2**
comp=Z,344nm,1.1s
BGNE LR LR
comp=Z,10µm,19.0s
H33A Prehn Over Nor 56.69 317 P **P** **23 10 13.3 -1.3**
baz=110,SNR=32
L32A Elgin 56.73 313 P **P** **23 10 13.3 -1.6**
baz=107
B34A Aery, Baudette 56.75 322 P **P** **23 10 13.1 -1.8**
baz=114,SNR=17
F33A 5 Mile Ranch, 56.79 318 P **P** **23 10 13.7 -1.5**
baz=111,SNR=5.1
E33A Westby DABS, E 56.84 319 P **P** **23 10 13.7 -1.9**
baz=111
K32A Verdigre 56.90 314 P **P** **23 10 14.1 -1.9**
baz=107
VLC Villacollemand 56.90 44 *e*P **P** **23 10 16.6 +0.5**
comp=Z,50nm,1.1s
VLC LR LR
comp=Z,3µm,21.0s
I32A Karley and Nic 56.97 316 P **P** **23 10 14.9 -1.7**
baz=108,SNR=5.6
D33A AnnSam, Waubun 56.97 320 P **P** **23 10 14.9 -1.6**
baz=112
LANF Langenberg 57.00 38 *e*P **P** **23 10 15.2 -1.4**
TUE Stuetta 57.00 41 *e*P **P** **23 10 15.9 -1.0**
comp=Z,48nm,1.1s
TUE LR LR
comp=Z,10µm,20.0s
J32A Parkston 57.03 315 P **P** **23 10 15.2 -1.8**
baz=108
PLCA Paso Flores 57.03 204 P **P** **23 10 16.6 -0.4**
comp=Z,27nm,0.9s,baz=61,slow=6.6,SNR=26
PLCA Paso Flores 57.03 204 *e*P **P** **23 10 17.2 +0.2**
PLCA pmax pmax
comp=Z,317nm,1.5s
PLCA Paso Flores 57.03 204 *e*P **P** **23 10 17.2 +0.2**
comp=Z,317nm,1.5s
BFO Black Forest 57.06 39 *i* P **P** **23 10 16.4 -0.7**
BFO Black Forest 57.06 39 *e*P **P** **23 10 16.3 -0.8**
comp=Z,99nm,1.1s
BFO LR LR
comp=Z,5µm,19.0s
N31A Bailey Ranch, 57.09 312 P **P** **23 10 16.2 -1.3**
baz=105
H32A Carlson Farm, 57.10 316 P **P** **23 10 16.1 -1.4**
baz=109,SNR=8.8
C33A Trail 57.16 321 P **P** **23 10 15.8 -2.0**
baz=112
CBKS Cedar Bluff 57.18 309 P **P** **23 10 17.2 -0.9**
baz=103,SNR=10
CBKS Cedar Bluff 57.18 309 *e*P **P** **23 10 17.4 -0.7**
CBKS pmax pmax
comp=Z,139nm,1.3s
CBKS MLR MLR
comp=Z,5µm,19.0s
CBKS Cedar Bluff 57.18 309 *e*P **P** **23 10 17.4 -0.7**
comp=Z,139nm,1.3s
CBKS LR LR
comp=Z,5µm,19.0s
O31A Woolen Ranch, 57.19 311 P **P** **23 10 17.2 -1.1**
baz=105
CLTB Caltabellotta 57.21 52 *e*P **P** **23 10 18.8 +0.4**
comp=Z,350nm,1.8s
CLTB LR LR
comp=Z,4µm,20.0s
B33A Robert and Kas 57.24 321 P **P** **23 10 16.6 -1.7**
baz=113
M31A Lambtecht Ranc 57.25 312 P **P** **23 10 17.1 -1.5**
baz=106
F32A Veblen 57.35 318 P **P** **23 10 17.7 -1.4**
baz=110
L31A Butterfield Fa 57.38 313 P **P** **23 10 18.4 -1.1**
baz=106,SNR=14
A33A Warroad 57.38 322 P **P** **23 10 17.5 -1.8**
baz=113,SNR=17
G32A Webster 57.39 317 P **P** **23 10 18.2 -1.3**
baz=109,SNR=9.3
AGMN Agassiz Nation 57.42 321 P **P** **23 10 17.9 -1.7**
baz=112,SNR=13
AGMN Agassiz Nation 57.42 321 *e*P **P** **23 10 17.8 -1.9**
comp=Z,58nm,1.3s
AGMN LR LR
comp=Z,3µm,22.0s
K31A O'Neill 57.44 314 P **P** **23 10 18.6 -1.3**
baz=106
ZAIG Zacatecas 57.52 290 *e*P **P** **23 10 21.6 +0.5**
comp=Z,59nm,1.2s
ZAIG LR LR
comp=Z,2µm,21.0s
E32A Braaten, Kindr 57.56 319 P **P** **23 10 18.9 -1.8**
baz=110
J31A Geddes 57.62 315 P **P** **23 10 19.2 -1.9**
baz=107
DAVA Damuels 57.63 40 *i* P **P** **23 10 20.7 -0.7**
comp=Z,82nm,1.5s,SNR=15
FUORN Ofenpass-Fuorn 57.64 41 *e*P **P** **23 10 20.6 -0.9**
comp=Z,253nm,1.8s
FUORN LR LR
comp=Z,9µm,20.0s
C32A Crookston 57.66 320 P **P** **23 10 19.5 -1.8**
baz=112
WTSB Winterswijk 57.69 34 *e*P **P** **23 10 20.7 -0.7**
comp=Z,179nm,1.7s
I31A Royce, Wessing 57.70 316 P **P** **23 10 20.0 -1.7**
baz=108,SNR=7.3
D32A Dogwood Acres, 57.72 319 P **P** **23 10 20.0 -1.7**
baz=111
STU Stuttgart 57.76 38 *e*P **P** **23 10 21.2 -0.8**
STU pmax pmax
comp=Z,60nm,1.0s
STU MLR MLR
comp=Z,6µm,19.0s
STU Stuttgart 57.76 38 *e*P **P** **23 10 21.2 -0.8**
comp=Z,60nm,1.0s
STU LR LR
comp=Z,6µm,19.0s

H31A Wolsey 57.80 316 P **P** **23 10 20.6 -1.8**
baz=108,SNR=5.7
G31A Conde 57.85 317 P **P** **23 10 21.0 -1.7**
baz=109
B32A Ashes, Strandq 57.87 321 P **P** **23 10 20.8 -2.0**
baz=112,SNR=14
WDD Wied Dalam 57.90 54 PFAKE 23 10 30.0 +6.8
WDD LR LR
comp=Z,8µm,20.0s
AMTX Amarillo 57.92 304 P **P** **23 10 22.1 -1.4**
baz=100
AMTX Amarillo 57.92 304 *e*P **P** **23 10 22.2 -1.3**
comp=Z,56nm,0.8s
AMTX LR LR
comp=Z,5µm,19.0s
A32A Rocking H Ranc 58.04 322 P **P** **23 10 22.0 -2.0**
baz=112
K30A Basset 58.06 314 P **P** **23 10 23.0 -1.4**
baz=106
E31A Nome 58.08 319 P **P** **23 10 22.7 -1.6**
baz=110
FETA Feichten 58.08 41 *i* P **P** **23 10 23.6 -0.9**
comp=Z,72nm,1.5s,SNR=31
F31A Hecla 58.09 318 P **P** **23 10 22.8 -1.6**
baz=109,SNR=7.4
SUSD Miller 58.12 316 P **P** **23 10 22.8 -1.8**
baz=108,SNR=11
D31A Mcclaflin, Tow 58.14 319 P **P** **23 10 22.9 -1.8**
baz=110,SNR=6.5
J30A Dallas 58.16 315 P **P** **23 10 23.5 -1.5**
baz=106
ULM Lac du Bonnet 58.19 323 P **P** **23 10 22.6 -2.3**
comp=Z,29nm,1.0s,baz=109,slow=7.4,SNR=13
ULM LR LR 23 31 14.8
comp=Z,5µm,21.9s,baz=108,slow=32
ULM PKP2bc 23 40 14.4
comp=Z,3.0nm,0.7s,baz=261,slow=11,SNR=3.3
ULM Lac du Bonnet 58.19 323 *e*P **P** **23 10 22.7 -2.3**
ULM pmax pmax
comp=Z,35nm,0.8s
ULM MLR MLR
comp=Z,6µm,22.0s
ULM Lac du Bonnet 58.19 323 *e*P **P** **23 10 22.7 -2.3**
comp=Z,35nm,0.8s
ULM LR LR
comp=Z,6µm,22.0s
RETA Reutte 58.27 40 *i* P **P** **23 10 24.7 -0.9**
comp=Z,96nm,1.4s,SNR=54
C31A Landman Farms, 58.40 320 P **P** **23 10 24.5 -2.1**
baz=110,SNR=14
MOTA Moosalm 58.43 41 *i* P **P** **23 10 25.6 -1.3**
comp=Z,41nm,0.9s,SNR=40
A31A Linda, St. Vin 58.48 321 P **P** **23 10 25.0 -2.0**
baz=112
AQU L'Aquila 58.48 47 *e*P **P** **23 10 27.3 0.0**
AQU pmax pmax
comp=Z,151nm,1.2s
AQU L'Aquila 58.48 47 *e*P **P** **23 10 27.3 0.0**
comp=Z,151nm,1.2s
B31A Greenbush Farm 58.58 321 P **P** **23 10 25.3 -2.4**
baz=111
MSTX Muleshoe 58.67 303 P **P** **23 10 27.8 -1.0**
baz=98,SNR=6.2
MSTX Muleshoe 58.67 303 *e*P **P** **23 10 24.6 -4.2**
comp=Z,110nm,0.9s
MSTX LR LR
comp=Z,3µm,20.0s
WATA Walderalm 58.73 41 *i* P **P** **23 10 27.6 -1.5**
comp=Z,76nm,1.3s,SNR=20
LTX Lajitas 58.88 298 *e*P **P** **23 10 29.7 -0.6**
LTX Lajitas 58.88 298 *e*P **P** **23 10 29.7 -0.6**
LTX ⇑*e* 23 40 15.9
TXAR Lajitas Array 58.88 298 P **P** **23 10 29.7 -0.6**
comp=Z,18nm,0.8s,baz=121,slow=7.2,SNR=156
TXAR LR LR 23 35 22.7
comp=Z,779nm,21.8s,baz=0.0,slow=36
TXAR PKP2bc 23 40 15.9
comp=Z,0.6nm,1.0s,baz=72,slow=0.4,SNR=3.9
TX31 Lajitas Ar. Si 58.88 298 *e*P **P** **23 10 29.8 -0.6**
F29A Eureka 59.12 317 P **P** **23 10 31.7 +0.1**
baz=108,SNR=8.3
ABTA Abfaltersbach 59.15 42 *i* P **P** **23 10 30.8 -1.0**
comp=Z,137nm,1.5s,SNR=40
GRFO Grafenberg 59.33 38 *e*P **P** **23 10 32.3 -0.7**
GRFO pmax pmax
comp=Z,99nm,1.2s
GRFO MLR MLR
comp=Z,4µm,18.0s
GRFO Grafenberg 59.33 38 *e*P **P** **23 10 32.2 -0.7**
comp=Z,98nm,1.2s
GRFO LR LR
comp=Z,4µm,18.0s
OGNE Ogallala 59.38 311 P **P** **23 10 32.8 -0.8**
baz=103,SNR=11
OGNE Ogalla 59.38 311 *e*P **P** **23 10 33.0 -0.7**
comp=Z,210nm,1.6s
OGNE LR LR
comp=Z,6µm,20.0s
KSCO Kaye Shedlock' 59.42 309 P **P** **23 10 33.4 -0.6**
baz=101,SNR=12
KSCO Kaye Shedlock' 59.42 309 *e*P **P** **23 10 33.7 -0.3**
comp=Z,136nm,1.3s
KSCO LR LR
comp=Z,5µm,18.0s
MDND Maddock 59.61 320 P **P** **23 10 33.1 -1.8**
baz=109
MDND Maddock 59.61 320 *e*P **P** **23 10 37.0 +2.1**
comp=Z,203nm,1.4s
MDND LR LR
comp=Z,4µm,19.0s
TRI Trieste 59.66 43 *e*P **P** **23 10 37.2 +1.9**
TRI pmax pmax
comp=Z,207nm,1.7s
TRI MLR MLR
comp=Z,3µm,20.0s
TRI Trieste 59.66 43 *e*P **P** **23 10 37.2 +1.9**
comp=Z,207nm,1.7s
TRI LR LR
comp=Z,3µm,20.0s
CUC Castrocucco 59.70 50 *e*P **P** **23 10 34.1 -1.7**
comp=Z,86nm,1.5s
CUC LR LR
comp=Z,3µm,19.0s
KBA Koelnbreinsper 59.79 41 *i* P **P** **23 10 35.3 -1.1**
comp=Z,87nm,1.4s,SNR=30
MYKA Terra Mystica 59.85 42 *i* P **P** **23 10 35.9 -0.8**
comp=Z,110nm,0.9s,SNR=52
TIP Timpagrande 60.26 51 *e*P **P** **23 10 37.1 -2.5**
comp=Z,148nm,2.0s
TIP LR LR
comp=Z,4µm,19.0s
LJU Ljubljana 60.27 43 *e*P **P** **23 10 39.0 -0.5**
LJU *e*S **S** **23 18 54.2 +0.2**
LJU *e* 23 22 43.9
NKC Novy Kostel 60.27 38 *e*P **P** **23 10 38.9 -0.5**
NKC *ex* x 23 10 47.7
NKC *ex* x 23 10 53.4
NKC *e*PP **PP** **23 12 52.0 -0.2**
NKC *e*S **S** **23 18 51.3 -2.6**
NKC *ex* x 23 20 39.3
NKC AMS AMS 23 32 20.0
comp=Z,5µm,20.6s
NKC Novy Kostel 60.27 38 *e*P **P** **23 10 38.9 -0.5**
NKC *e* 23 10 47.7
NKC *e* 23 12 52.0
NKC *e*S **S** **23 18 51.3 -2.6**
NKC MLR MLR
comp=Z,5µm,20.6s
OBKA Obir 60.41 42 *i* P **P** **23 10 40.0 -0.6**
comp=Z,147nm,1.5s,SNR=37
T25A Trinidad 60.47 307 P **P** **23 10 41.0 -0.2**
baz=99,SNR=23
T25A Trinidad 60.47 307 *e*P **P** **23 10 41.1 -0.2**
comp=Z,51nm,1.0s
T25A LR LR
comp=Z,2µm,19.0s
KMY Karmoy 60.48 26 *e*P **P** **23 10 40.9 +0.3**
HPIG 60.48 295 *e*P **P** **23 10 41.5 -0.1**
comp=Z,67nm,1.1s
STAV Stavanger 60.54 27 *e*P **P** **23 10 41.9 +0.9**
STAV IVmB_BB 23 10 42.5
comp=Z,1µm,3.3s
STAV *e*S **S** **23 18 53.7 -3.2**
STAV IVMs_BB IVMs_BB 23 29 28.0
comp=Z,1µm,24.6s
GEA0 GERESS Array S 60.57 40 *e*P **P** **23 10 39.9 -1.7**
GEC2 GERESS Array S 60.57 40 *e*P **P** **23 10 40.5 -1.1**

GEC2 pmax pmax
comp=Z,79nm,1.6s
GEC2 MLR MLR
comp=Z,5µm,19.0s
GEC2 GERESS Array S 60.57 40 *e*P **P** **23 10 40.5 -1.1**
comp=Z,78nm,1.6s
GEC2 LR LR
comp=Z,5µm,19.0s
GERES GERESS Array B 60.57 40 P **P** **23 10 39.9 -1.7**
comp=Z,5.1nm,0.8s,baz=251,slow=4.1,SNR=27
GERES LR LR 23 35 08.9
comp=Z,5µm,18.7s,baz=241,slow=34
GERES PKP2bc 23 40 13.2
comp=Z,0.2nm,0.5s,baz=98,slow=1.9,SNR=4.3
MNTX Cornudas Mount 60.58 300 P **P** **23 10 41.0 -0.9**
baz=96,SNR=60
MNTX Cornudas Mount 60.58 300 *e*P **P** **23 10 40.6 -1.3**
comp=Z,30nm,0.9s
MNTX LR LR
comp=Z,3µm,18.0s
KHC Kasperske Hory 60.59 39 *e*P **P** **23 10 40.9 -0.8**
KHC *ex* x 23 10 49.6
KHC *e*PP **PP** **23 12 53.4 -1.7**
KHC *ex* x 23 14 40.7
KHC *e*S **S** **23 18 59.0 +0.9**
KHC *ex* x 23 20 39.4
KHC AMS AMS 23 34 20.0
comp=Z,4µm,19.1s
KHC *e*PKPPKP **P'P'df** **23 40 07.4 +2.0**
KHC *ex* x 23 40 17.1
KHC Kasperske Hory 60.59 39 *e*P **P** **23 10 40.9 -0.8**
KHC *e* 23 10 49.6
KHC *e* 23 12 53.4
KHC *e*S **S** **23 18 59.0 +0.9**
KHC MLR MLR
comp=Z,4µm,19.1s
KHC Kasperske Hory 60.59 39 *e*P **P** **23 10 40.8 -0.9**
comp=Z,29nm,1.4s
KHC LR LR
comp=Z,2µm,19.0s
BOJS Bojanci 60.61 44 *i* P **P** **23 10 41.2 -0.6**
BOJS *e*S **S** **23 18 57.9 -0.4**
MOA Molln 60.62 41 *i* P **P** **23 10 40.6 -1.3**
comp=Z,40nm,1.1s,SNR=31
SOKA Soboth 60.78 42 *i* P **P** **23 10 41.8 -1.2**
comp=Z,48nm,1.3s,SNR=20
MUD Monsted U'grnd 60.96 30 *i* P **P** **23 10 44.6 +0.7**
comp=Z,182nm,1.3s
comp=Z,7µm,18.0s
MUD Monsted U'grnd 60.96 30 *i* P **P** **23 10 44.6 +0.7**
MUD pmax pmax
comp=Z,180nm,1.3s
MUD MLR MLR
comp=Z,7µm,18.0s
CLL Collm 60.97 37 *i* P **P** **23 10 43.5 -0.7**
comp=Z,85nm,1.3s
CLL *e*PcP **PcP** **23 11 26.0 -1.5**
CLL *e* 23 11 37.0
CLL *e* 23 11 54.0
CLL *e*PP **PP** **23 12 57.0 -1.4**
CLL *e*PPP PPP 23 14 22.0
CLL *e*S **S** **23 19 01.0 -1.8**
comp=N,2µm,26.1s
CLL *e*S **S** **23 19 01.0 -1.8**
comp=E,3µm,28.2s
CLL *e*SS **SS** **23 23 03.0 +0.9**
CLL *e*SSS SSS 23 25 53.0
CLL Lm MLR 23 32 00.0
comp=Z,7µm,21.5s
CLL *e*PKPPKP **P'P'df** **23 40 02.0 -2.6**
CLL *e* 23 40 17.0
CLL Collm 60.97 37 *e*P **P** **23 10 43.5 -0.7**
CLL pmax pmax
comp=Z,74nm,1.3s
CLL MLR MLR
comp=Z,7µm,21.0s
CLL Collm 60.97 37 *e*P **P** **23 10 43.5 -0.7**
comp=Z,74nm,1.3s
CLL LR LR
comp=Z,7µm,21.0s
FCC Fort Churchill 61.10 333 *e*P **P** **23 10 43.1 -1.8**
FCC pmax pmax
comp=Z,88nm,1.3s
FCC MLR MLR
comp=Z,7µm,20.0s
FCC Fort Churchill 61.10 333 *e*P **P** **23 10 43.1 -1.8**
comp=Z,88nm,1.3s
FCC LR LR
comp=Z,7µm,20.0s
ASK Askoy 61.14 25 *e*P **P** **23 10 45.1 0.0**
ASK IVmB_BB 23 10 52.7
comp=Z,1µm,4.3s
BER Bergen 61.15 25 *e*P **P** **23 10 46.4 +1.2**
BER IVmB_BB 23 10 51.9
comp=Z,926nm,5.6s
BER *e*S **S** **23 19 03.5 -1.1**
BER IVMs_BB IVMs_BB 23 34 58.6
comp=Z,2µm,16.4s
ARSA Arzberg 61.26 42 *i* P **P** **23 10 44.9 -1.4**
comp=Z,54nm,1.4s,SNR=28
Q24A Divide 61.34 309 P **P** **23 10 47.1 -0.3**
baz=100,SNR=12
Q24A Divide 61.34 309 *e*P **P** **23 10 46.7 -0.6**
comp=Z,27nm,0.9s
Q24A LR LR
comp=Z,4µm,20.0s
H25A Fruitdale 61.36 315 P **P** **23 10 45.9 -1.2**
baz=104,SNR=7.2
BRG Berggiesshubel 61.38 37 *i* P **P** **23 10 46.6 -0.4**
comp=Z,19nm,1.4s
BRG *i* PCP **PcP** **23 11 28.4 -0.7**
BRG comp=Z,42nm,1.4s S **S** **23 19 10.0 +2.0**
BRG SS **SS** **23 23 10.0 +1.5**
BRG *e*PKPPKP P'P'df 23 40 18.1 +14
comp=Z,38nm,1.9s
comp=N,1µm,17.3s
comp=E,4µm,18.2s
comp=Z,6µm,17.3s
BRG Berggiesshubel 61.38 37 *i* P **P** **23 10 46.6 -0.4**
BRG *i* 23 11 28.5
BRG S **S** **23 19 10.0 +2.0**
BRG SS **SS** **23 23 10.0 +1.5**
BRG pmax pmax
comp=Z,19nm,1.4s
BRG MLR MLR
comp=N,1µm,17.3s
BRG MLR MLR
comp=E,4µm,18.2s
BRG MLR MLR
comp=Z,6µm,17.3s
SDCO Great Sand Dun 61.42 307 P **P** **23 10 47.6 -0.3**
baz=99,SNR=80
SDCO Great Sand Dun 61.42 307 *e*P **P** **23 10 47.9 0.0**
comp=Z,45nm,1.1s
SDCO LR LR
comp=Z,3µm,20.0s
ODD1 Odda 61.45 26 *e*P **P** **23 10 47.1 -0.2**
ODD1 IVmB_BB 23 10 56.5
comp=Z,1µm,1.8s
ODD1 IVMs_BB IVMs_BB 23 35 22.0
comp=Z,3µm,48.2s
PRU Pruhonice 61.46 39 *e*P **P** **23 10 46.6 -0.9**
PRU *ex* x 23 10 54.6
PRU *e*S **S** **23 19 10.7 +1.7**
PRU *ex* x 23 20 47.8
PRU AMS AMS 23 34 20.0
comp=Z,3µm,17.1s
PRU *e*PKPPKP P'P'df 23 40 15.0 +11
PRU Pruhonice 61.46 39 *e*P **P** **23 10 46.6 -0.9**
PRU *e* 23 10 54.6
PRU *e*S **S** **23 19 10.7 +1.7**
PRU MLR MLR
comp=Z,3µm,17.1s
HOMB Homborsund 61.48 28 *e*P **P** **23 10 47.0 -0.4**
HOMB IVmB_BB 23 10 56.7
comp=Z,1µm,1.9s
HOMB *e*S **S** **23 19 08.8 -0.2**
HOMB IVMs_BB IVMs_BB 23 29 52.4
comp=Z,2µm,30.6s
KOGS Kog 61.53 43 *i* P **P** **23 10 47.0 -1.0**
RSSD Black Hills 61.55 314 P **P** **23 10 47.0 -1.5**
baz=103
RSSD Black Hills 61.55 314 *e*P **P** **23 10 47.5 -1.0**
RSSD pmax pmax
comp=Z,37nm,1.1s

RSSD MLR MLR
comp=Z,6µm,18.0s
RSSD Black Hills 61.55 314 *e*P **P 23 10 47.5 -1.0**
comp=Z,37nm,1.1s
RSSD LR LR
comp=Z,6µm,18.0s
GOPC GO Pecny, Ondr 61.58 39 *e*P **P 23 10 47.5 -0.9**
GOPC *ex* x 23 10 56.3
GOPC *e*PP **PP 23 13 07.6 +3.7**
GOPC *ex* x 23 14 54.3
GOPC *e*S **S 23 19 12.5 +1.8**
GOPC *ex* x 23 20 46.2
GOPC *e*SS **SS 23 23 08.5 -3.3**
GOPC AMS AMS 23 34 50.0
comp=Z,3µm,17.9s
GOPC GO Pecny, Ondr 61.58 39 *e*P **P 23 10 47.5 -0.9**
GOPC *e* 23 10 56.3
GOPC *e* 23 13 07.6
GOPC *e*S **S 23 19 12.5 +1.8**
GOPC *e*SS **SS 23 23 08.5 -3.3**
GOPC MLR MLR
comp=Z,3µm,17.9s
PVCC Panska Ves 61.65 38 *e*P **P 23 10 48.5 -0.2**
PVCC *ex* x 23 10 57.5
PVCC *e*S **S 23 19 12.5 +1.1**
PVCC *ex* x 23 20 50.1
PVCC AMS AMS 23 34 30.0
comp=Z,4µm,18.2s
PVCC Panska Ves 61.65 38 *e*P **P 23 10 48.5 -0.2**
PVCC *e* 23 10 57.5
PVCC *e*S **S 23 19 12.5 +1.1**
PVCC MLR MLR
comp=Z,4µm,18.2s
CONA Conrad Observa 61.67 41 *i* P **P 23 10 48.0 -1.1**
comp=Z,84nm,1.1s,SNR=53
FOO Floro 61.69 24 *e*P **P 23 10 50.4 +1.6**
FOO IVmB_BB 23 10 57.8
comp=Z,1µm,1.9s
FOO *e*S **S 23 19 12.6 +1.1**
FOO IVMs_BB IVMs_BB 23 29 46.1
comp=Z,1µm,31.8s
ANMO Albuquerque 61.81 304 P **P 23 10 50.7 +0.2**
baz=97
ANMO Albuquerque 61.81 304 *c i*P **P 23 10 50.1 -0.3**
ANMO pmax pmax
comp=Z,60nm,2.5s
ANMO MLR MLR
comp=Z,2µm,16.0s
ANMO Albuquerque 61.81 304 *e*P **P 23 10 50.3 -0.2**
comp=Z,42nm,1.3s
ANMO LR LR
comp=Z,5µm,19.0s
TREC Trest 61.83 40 *e*P **P 23 10 49.4 -0.6**
TREC *e*pP **sP 23 10 55.8 +2.4**
TREC *e*S **S 23 19 13.0 -0.8**
TREC *ex* x 23 20 50.5
TREC *e*SS **SS 23 23 14.9 -0.8**
TREC AMS AMS 23 35 20.0
comp=Z,4µm,18.7s
TREC Trest 61.83 40 *e*P **P 23 10 49.4 -0.6**
TREC *e* 23 10 55.8
TREC *e*S **S 23 19 13.0 -0.8**
TREC *e*SS **SS 23 23 14.9 -0.8**
TREC MLR MLR
comp=Z,4µm,18.7s
ISCO Idaho Springs 61.84 309 P **P 23 10 51.0 +0.3**
baz=100,SNR=90
ISCO Idaho Springs 61.84 309 *e*P **P 23 10 51.0 +0.3**
ISCO pmax pmax
comp=Z,84nm,0.8s
ISCO MLR MLR
comp=Z,6µm,20.0s
ISCO Idaho Springs 61.84 309 *e*P **P 23 10 51.0 +0.3**
comp=Z,84nm,0.8s
ISCO LR LR
comp=Z,6µm,20.0s
SUMG Summit 61.84 2 *i* P **P 23 10 48.9 -1.3**
comp=Z,148nm,1.3s
comp=Z,2µm,14.0s
SUMG Summit 61.84 2 *i* P **P 23 10 48.9 -1.3**
SUMG pmax pmax
comp=Z,150nm,1.3s
SUMG MLR MLR
comp=Z,2µm,14.0s
SUMG Summit 61.84 2 *e*P **P 23 10 49.0 -1.3**
comp=Z,157nm,1.3s
SUMG LR LR
comp=Z,4µm,20.0s
BNM Barren Site 61.87 303 *e*P **P 23 10 50.5 -0.3**
BEHE Becsehely 61.88 43‖ *e*P **P 23 10 49.5 -0.9**
LPM Los Pinos Moun 61.89 303 *e*P **P 23 10 51.3 +0.4**
C25A Freed Ranch, W 61.92 319 P **P 23 10 49.8 -0.9**
baz=106
PHWY Pilot Hill 61.99 311 *e*P **P 23 10 51.1 -0.5**
comp=Z,24nm,1.0s
PHWY LR LR
comp=Z,5µm,20.0s
LLD Lille Linde 62.04 32 *i* P **P 23 10 53.3 +2.1**
comp=Z,110nm,0.9s
LLD Lille Linde 62.04 32 *i* P **P 23 10 53.3 +2.1**
LLD pmax pmax
comp=Z,110nm,0.9s
SOP Sopron 62.06 41‖ *e*P **P 23 10 54.5 +2.9**
Y22D IRIS PASSCAL I 62.10 303 P **P 23 10 52.4 +0.1**
baz=96
Y22D IRIS PASSCAL I 62.10 303 PFAKE 23 11 00.0 +7.7
Y22D LR LR
comp=Z,4µm,18.0s
HCY Herceg Novi 62.18 48‖ *i*P **P 23 10 51.9 -0.6**
N23A Red Feather La 62.28 311 P **P 23 10 53.1 -0.4**
baz=100,SNR=25
N23A Red Feather La 62.28 311 *e*P **P 23 10 53.4 -0.1**
comp=Z,94nm,1.3s
N23A LR LR
comp=Z,4µm,20.0s
COP Copenhagen 62.29 32⇑ *i*P **P 23 10 55.0 +2.1**
comp=Z,49nm,1.0s
COP *i* S **S 23 19 19.2 -0.1**
COP *i* 23 20 44.7
comp=Z,2µm,17.0s
COP Copenhagen 62.29 32⇑ *i*P **P 23 10 55.0 +2.1**
COP *i* S **S 23 19 19.2 -0.1**
COP *i* 23 20 44.7
COP pmax pmax
comp=Z,49nm,1.0s
COP MLR MLR
comp=Z,2µm,17.0s
BRY Bratogost 62.30 47 *e*P **P 23 10 52.8 -0.7**
LAZ Ladron 62.31 303 *e*P **P 23 10 53.7 -0.1**
RGN Rugen 62.33 33 *e*P **P 23 10 55.7 +2.5**
comp=Z,109nm,0.8s
RGN LR LR
comp=Z,4µm,18.0s
BUM Brajici-Budva 62.44 48‖ *i*P **P 23 10 54.2 -0.1**
S22A 4UR Ranch, Cre 62.47 307 P **P 23 10 55.1 +0.2**
baz=98,SNR=72
S22A 4UR Ranch, Cre 62.47 307 *e*P **P 23 10 55.0 +0.2**
comp=Z,56nm,1.1s
S22A LR LR
comp=Z,3µm,20.0s
CEME Cevo 62.50 48‖ *i*P **P 23 10 54.3 -0.5**
UPC Upice 62.52 38 *e*P **P 23 10 54.3 -0.3**
UPC *ex* x 23 11 01.8
UPC *e*S **S 23 19 23.8 +1.4**
UPC *ex* x 23 20 54.5
UPC AMS AMS 23 34 50.0
comp=Z,4µm,18.6s
UPC Upice 62.52 38 *e*P **P 23 10 54.3 -0.3**
UPC *e* 23 11 01.8
UPC *e*S **S 23 19 23.8 +1.4**
UPC MLR MLR
comp=Z,4µm,18.6s
VRAC Vranov 62.53 40‖ *i*P **P 23 10 53.8 -0.9**
NKME Niksic 62.57 47‖ *i*P **P 23 10 54.6 -0.6**
NKY Niksic 62.61 47‖ *i*P **P 23 10 55.1 -0.4**
UPM Unac-Piva 62.62 47 *e*P **P 23 10 55.3 -0.4**
KONO Kongsberg 62.63 27 *e*P **P 23 10 55.5 +0.3**
KONO IVmB_BB 23 11 04.0
comp=Z,1µm,1.6s
KONO *e*S **S 23 19 22.1 -1.4**
KONO IVMs_BB IVMs_BB 23 31 43.0
comp=Z,1µm,22.8s
KONO Kongsberg 62.63 27 *c i*P **P 23 10 56.7 +1.5**
KONO pmax pmax
comp=Z,367nm,1.2s

KONO Kongsberg 62.63 27 *e*P **P 23 10 57.0 +1.8**
comp=Z,140nm,1.4s
KONO LR LR
comp=Z,5µm,22.0s
DRME Dracevica, Mon 62.63 48‖ *i*P **P 23 10 55.4 -0.1**
ULC Ulcinj 62.63 48‖ *i*P **P 23 10 55.1 -0.5**
DPC Dobruska-Polom 62.66 39 *e*P **P 23 10 55.0 -0.6**
DPC *e*S **S 23 19 25.3 +1.0**
DPC *ex* x 23 20 56.4
DPC AMS AMS 23 35 10.0
comp=Z,3µm,17.5s
DPC *e*PKPPKP **P'P'df 23 40 08.0 +6.0**
DPC *ex* x 23 40 15.6
DPC Dobruska-Polom 62.66 39 *e*P **P 23 10 55.0 -0.6**
DPC *e*S **S 23 19 25.3 +1.0**
DPC MLR MLR
comp=Z,3µm,17.5s
KEK Kerkira 62.67 51 P **P 23 10 54.9 -0.9**
KEK Kerkira 62.67 51 P **P 23 10 54.9 -0.9**
121A Cookes Peak, D 62.68 301 P **P 23 10 56.7 +0.4**
baz=94,SNR=27
PDG Podgorica 62.73 48 P **P 23 10 56.0 -0.1**
PDG Podgorica 62.73 48‖ *i*P **P 23 10 55.9 -0.2**
TTG Podgorica 62.73 48‖ *i*P **P 23 10 56.1 -0.1**
TTG Podgorica 62.73 48 P **P 23 10 56.0 -0.1**
TTG Podgorica 62.73 48 P **P 23 10 56.0 -0.1**
DGMT Dagmar 62.73 319 P **P 23 10 55.3 -0.8**
baz=105,SNR=9.7
DGMT Dagmar 62.73 319 *e*P **P 23 10 55.5 -0.7**
comp=Z,90nm,1.1s
DGMT LR LR
comp=Z,4µm,19.0s
SMCO Snowmass 62.78 309 *e*P **P 23 10 57.1 0.0**
comp=Z,30nm,0.9s
SMCO LR LR
comp=Z,5µm,20.0s
KSP Ksiaz 62.79 38 *e*P **P 23 10 56.4 0.0**
KSP *e*pP **pP 23 10 58.3 -0.5**
KSP *e*S **S 23 19 28.1 +2.3**
KSP *e*SS **SS 23 23 34.9 +4.4**
KSP LMZ LR 23 30 59.5
comp=Z,4µm,26.7s
KSP Ksiaz 62.79 38 *e*P **P 23 10 56.4 0.0**
KSP *e**PP **pP 23 10 58.3 -0.5**
KSP *e*S **S 23 19 28.1 +2.3**
KSP *e*SS **SS 23 23 34.9 +4.4**
KSP MLR MLR
comp=Z,4µm,26.7s
SMOL Smolenice 62.84 41 *e*P **P 23 10 56.4 -0.4**
SMOL Smolenice 62.84 41 *e*P **P 23 10 56.4 -0.4**
KRLC Kraliky 62.86 39 *e*P **P 23 10 56.6 -0.4**
KRLC *ex* x 23 11 12.1
KRLC Kraliky 62.86 39 *e*P **P 23 10 56.6 -0.4**
TIR Tirane 62.98 49‖ *i*P **P 23 10 58.1 +0.2**
TIR Tirane 62.98 49 *e*P **P 23 10 58.7 +0.8**
TIR pmax pmax
comp=Z,71nm,0.9s
TIR MLR MLR
comp=Z,3µm,21.0s
TIR Tirane 62.98 49 *e*P **P 23 10 58.7 +0.8**
comp=Z,71nm,0.9s
TIR LR LR
comp=Z,3µm,21.0s
SGD Sagiada 62.98 51 P **P 23 10 57.0 -0.9**
PLE Pljevlja 62.99 47‖ *i*P **P 23 10 57.0 -1.1**
K22A Casper 63.02 312 P **P 23 10 56.8 -1.6**
baz=100,SNR=12
K22A Casper 63.02 312 *e*P **P 23 10 57.0 -1.4**
comp=Z,33nm,1.1s
K22A LR LR
comp=Z,7µm,19.0s
IGT Igoumenitsa 63.05 51 P **P 23 10 57.4 -1.0**
IGT Igoumenitsa 63.05 51 *e*P **P 23 10 57.4 -1.0**
IGT Igoumenitsa 63.05 51 *e*P **P 23 10 57.4 -1.0**
VLS Valsamata 63.06 53 P **P 23 10 57.4 -1.1**
VLS Valsamata 63.06 53 P **P 23 10 57.4 -1.1**
VLS Valsamata 63.06 53 P **P 23 10 57.4 -1.1**
CSKK Cs˘tkako 63.09 42‖ *e*P **P 23 10 57.6 -0.9**
LKD2 Lefkada island 63.19 52 P **P 23 10 59.1 -0.3**
LKD2 Lefkada island 63.19 52 P **P 23 10 59.1 -0.3**
MOL Molde 63.20 24 *e*P **P 23 11 00.7 +1.8**
MOL IVmB_BB 23 11 08.1
comp=Z,1µm,1.6s
MOL *e*S **S 23 19 30.0 -0.6**
MOL IVMs_BB IVMs_BB 23 33 56.8
comp=Z,2µm,18.3s
MORC Moravsky Berou 63.25 39‖ *i*P **P 23 10 59.2 -0.4**
MORC Moravsky Berou 63.25 39 *e*P **P 23 10 59.1 -0.5**
MORC pmax pmax
comp=Z,439nm,1.6s
MORC MLR MLR
comp=Z,18µm,20.0s
MORC Moravsky Berou 63.25 39 *e*P **P 23 10 59.0 -0.5**
comp=Z,439nm,1.6s
MORC LR LR
comp=Z,18µm,20.0s
OSL Oslo 63.27 27 *e*P **P 23 10 59.0 -0.4**
OSL IVmB_BB 23 11 08.2
comp=Z,825nm,2.0s
OSL IVMs_BB IVMs_BB 23 32 57.0
comp=Z,1µm,27.5s
PVY Plav 63.27 48 *e*P **P 23 10 59.9 0.0**
IVA Berane 63.27 47 *e*P **P 23 10 59.7 -0.2**
CHRN Cochrane 63.33 202 *e*P **P 23 11 00.6 +0.7**
comp=Z,54nm,1.0s
FFC Flin Flon 63.33 326 *e*P **P 23 10 58.5 -1.4**
FFC pmax pmax
comp=Z,145nm,1.7s
FFC MLR MLR
comp=Z,5µm,18.0s
FFC Flin Flon 63.33 326 *e*P **P 23 10 58.5 -1.4**
comp=Z,145nm,1.7s
FFC LR LR
comp=Z,5µm,18.0s
BSD Bornholm Skovb 63.39 33 *i* P **P 23 10 59.8 -0.5**
comp=Z,52nm,1.3s
comp=Z,4µm,18.0s
BSD Bornholm Skovb 63.39 33 *i* P **P 23 10 59.8 -0.5**
BSD pmax pmax
comp=Z,52nm,1.3s
BSD MLR MLR
comp=Z,4µm,18.0s
EFI East Falkland 63.45 190 PFAKE 23 11 10.0 +9.4
EFI LR LR
comp=Z,4µm,19.0s
DOMB Dombas 63.55 25 *e*P **P 23 11 01.1 -0.2**
DOMB IVmB_BB 23 11 10.9
comp=Z,1µm,1.7s
DOMB *e*S **S 23 19 35.2 +0.1**
DOMB IVMs_BB IVMs_BB 23 35 30.2
comp=Z,2µm,15.2s
DIVS Divibare 63.57 46 P **P 23 11 00.2 -1.6**
PDO Prodromos 63.58 52 P **P 23 11 01.6 -0.3**
BUD Budapest 63.62 42‖ *e*P **P 23 11 01.5 -0.5**
LAO LASA Array 63.63 317 P **P 23 11 01.4 -0.7**
baz=103,SNR=18
LAO LASA Array 63.63 317 *e*P **P 23 11 01.5 -0.7**
comp=Z,118nm,1.4s
LAO LR LR
comp=Z,3µm,21.0s
OHR Ohrid 63.64 49 *e*P **P 23 11 02.5 +0.1**
OKC Ostrava-Krasne 63.64 39 *e*P **P 23 11 02.1 0.0**
OKC *e*S **S 23 19 38.3 +1.8**
OKC *ex* x 23 21 04.0
OKC AMS AMS 23 36 30.0
comp=Z,3µm,17.9s
OKC Ostrava-Krasne 63.64 39 *e*P **P 23 11 02.1 0.0**
OKC *e*S **S 23 19 38.3 +1.8**
OKC MLR MLR
comp=Z,3µm,17.9s
MVCO Mesa Verde 63.72 306 P **P 23 11 03.1 0.0**
baz=96,SNR=13
MVCO Mesa Verde 63.72 306 *e*P **P 23 11 03.2 +0.1**
comp=Z,43nm,1.1s
MVCO LR LR
comp=Z,3µm,20.0s
RAC Raciborz 63.74 39 *e*P **P 23 11 02.8 +0.1**
RAC *e*S **S 23 19 42.1 +4.4**
RAC MLR MLR
comp=Z,4µm,18.0s
VYHS Vyhne 63.74 41 *e*P **P 23 11 01.6 -1.2**
VYHS pmax pmax
comp=Z,73nm,1.7s
VYHS Vyhne 63.74 41 *e*P **P 23 11 01.6 -1.2**
VYHS *e*PP **PP 23 13 24.5 +1.6**

VYHS *e*S **S 23 19 36.1 -1.7**
VYHS *e*L L 23 32 28.8
NAO01 NORSAR Array S 63.75 26 *e*P **P 23 11 02.4 -0.3**
NBO00 NORSAR Array S 63.79 26 *e*P **P 23 11 02.9 0.0**
PYL PYLOS 63.81 54 P **P 23 11 01.3 -2.2**
PYL PYLOS 63.81 54 *e*P **P 23 11 01.3 -2.2**
NBO02 NORSAR Array S 63.83 26 *e*P **P 23 11 02.5 -0.6**
PVO Paravola 63.84 52 P **P 23 11 03.3 -0.3**
319A Douglas 63.87 300 *e*P **P 23 11 04.5 +0.4**
comp=Z,86nm,0.9s
319A LR LR
comp=Z,3µm,18.0s
PV01 Paradox Valley 63.88 307 *e*P **P 23 11 04.5 +0.3**
O20A White River Ci 63.89 309 P **P 23 11 03.9 -0.3**
baz=98,SNR=21
O20A White River Ci 63.89 309 *e*P **P 23 11 03.9 -0.3**
comp=Z,68nm,1.1s
O20A LR LR
comp=Z,5µm,19.0s
NC204 NORSAR Array S 63.90 26 *e*P **P 23 11 03.4 -0.2**
DRO Drossia 63.91 53 P **P 23 11 03.5 -0.6**
JMIC Jan Mayen 63.94 12 *e*P **P 23 11 03.4 -0.2**
JMIC IVmB_BB 23 11 21.4
comp=Z,3µm,3.0s
JMIC *e*S **S 23 19 43.9 +4.4**
JMIC IVMsBB 23 31 23.0
comp=Z,2µm,14.5s
NB2 NORSAR Subarra 63.98 26 P **P 23 11 03.7 -0.5**
comp=Z,174nm,1.4s,baz=243,slow=6.9
NB2 NORSAR Subarra 63.98 26 P **P 23 11 03.7 -0.5**
baz=243,slow=6.9
NB200 NORSAR Array S 63.98 26 *e*P **P 23 11 03.7 -0.5**
NOA NORSAR Array B 63.98 26 P **P 23 11 03.7 -0.5**
comp=Z,13nm,0.8s,baz=244,slow=6.6,SNR=38
NOA LR LR 23 33 23.5
comp=Z,3µm,21.1s,baz=235,slow=31
NC602 NORSAR Array S 63.99 27 *e*P **P 23 11 03.9 -0.3**
NC602 *e*sP **pP 23 11 05.9 -0.7**
NC602 IVmB_BB 23 11 13.1
comp=Z,1µm,1.9s
NC602 *e*S **S 23 19 41.6 +1.2**
NC602 IVMs_BB IVMs_BB 23 33 21.0
comp=Z,2µm,18.0s
NC602 NORSAR Array S 63.99 27 *e*P **P 23 11 04.0 -0.1**
ITM Ithomi 63.99 54 P **P 23 11 03.0 -1.7**
ITM Ithomi 63.99 54 P **P 23 11 03.0 -1.7**
NB201 NORSAR Array S 64.02 26 *e*P **P 23 11 04.3 -0.1**
FNA Florina 64.02 50 P **P 23 11 03.5 -1.4**
FNA Florina 64.02 50 P **P 23 11 03.5 -1.4**
FNA Florina 64.02 50 P **P 23 11 03.5 -1.4**
GKP Gorka Klasztor 64.07 36 *e*P **P 23 11 05.2 +0.4**
GKP *e*pP **pP 23 11 07.0 -0.2**
GKP *e*S **S 23 19 43.8 +2.1**
GKP *e*ScS **ScS 23 20 59.9 +0.8**
GKP LMZ LR 23 33 55.2
comp=Z,6µm,22.5s
GKP Gorka Klasztor 64.07 36 *e*P **P 23 11 05.2 +0.4**
GKP *e**PP **pP 23 11 07.0 -0.2**
GKP *e*S **S 23 19 43.8 +2.1**
GKP *e* 23 20 59.9
GKP MLR MLR
comp=Z,6µm,22.5s
EVR Evrytania 64.10 52 P **P 23 11 04.4 -1.1**
EVR Evrytania 64.10 52 P **P 23 11 04.4 -1.1**
NC303 NORSAR Array S 64.13 26 *e*P **P 23 11 05.0 -0.1**
ANX Ano Chora 64.15 52 P **P 23 11 05.5 -0.3**
LAKA Lakka 64.15 53 P **P 23 11 04.9 -0.8**
LAKA Lakka 64.15 53 *e*P **P 23 11 04.9 -0.8**
SERG Sergoula 64.23 53 P **P 23 11 08.0 +1.8**
NC405 NORSAR Array S 64.23 26 *e*P **P 23 11 05.8 0.0**
SKO Skopje 64.25 49 *e*P **P 23 11 05.6 -0.7**
KZN Kozani 64.25 50 P **P 23 11 04.9 -1.5**
KZN Kozani 64.25 50 P **P 23 11 04.9 -1.5**
KZN Kozani 64.25 50 P **P 23 11 04.9 -1.5**
KLV Kalavryta, Ach 64.26 53 P **P 23 11 05.8 -0.7**
KLV Kalavryta, Ach 64.26 53 *e*P **P 23 11 05.8 -0.7**
KULLO Kullorsuaq 64.27 356 *i* P **P 23 11 05.8 +0.1**
KULLO Kullorsuaq 64.27 356 *i* P **P 23 11 05.8 +0.1**
PV10 Paradox Valley 64.28 307 *e*P **P 23 11 07.1 +0.3**
PV05 Paradox Valley 64.29 307 *e*P **P 23 11 06.3 -0.5**
KALE Kalithea 64.29 53 P **P 23 11 06.6 -0.1**
KALE Kalithea 64.29 53 *e*P **P 23 11 06.6 -0.1**
PSZ Piszkesteto 64.30 42‖ *i*P **P 23 11 05.6 -1.0**
PSZ Piszkesteto 64.30 42 *e*P **P 23 11 06.3 -0.2**
PSZ pmax pmax
comp=Z,206nm,1.9s
PSZ MLR MLR
comp=Z,7µm,20.0s
PSZ Piszkesteto 64.30 42 *e*P **P 23 11 06.3 -0.2**
comp=Z,206nm,1.9s
PSZ LR LR
comp=Z,7µm,20.0s
PSZ Piszkesteto 64.30 42‖ *e*P **P 23 11 05.5 -1.0**
LANS Liptovska Anna 64.30 40 *e*P **P 23 11 07.4 +0.9**
LANS *e* 23 11 38.7
LANS Liptovska Anna 64.30 40 *e*P **P 23 11 07.4 +0.9**
LANS *e*PCP **PcP 23 11 38.7 -2.5**
SLBS Sierra La Lagu 64.31 291 *e*P **P 23 11 07.7 +0.6**
comp=Z,222nm,2.0s
THL Klokotos Trika 64.34 51 P **P 23 11 05.5 -1.4**
PV09 Paradox Valley 64.36 308 *e*P **P 23 11 07.5 +0.1**
VLX Vlachokerasia 64.37 54 P **P 23 11 06.3 -1.0**
VLX Vlachokerasia 64.37 54 *e*P **P 23 11 06.3 -1.0**
W18A Petrified Fore 64.51 304 P **P 23 11 07.9 -0.3**
baz=95,SNR=8.2
W18A Petrified Fore 64.51 304 *e*P **P 23 11 08.0 -0.3**
comp=Z,49nm,1.1s
W18A LR LR
comp=Z,4µm,22.0s
AGG Agios Georgios 64.52 52 P **P 23 11 06.3 -1.8**
AGG Agios Georgios 64.52 52 *e*P **P 23 11 08.3 +0.2**
AGG MLR MLR
comp=Z,4µm,20.0s
AGG Agios Georgios 64.52 52 *e*P **P 23 11 08.3 +0.2**
AGG LR LR
comp=Z,4µm,20.0s
DSF Desfina 64.60 53 P **P 23 11 06.6 -2.1**
DSF Desfina 64.60 53 *e*P **P 23 11 06.6 -2.1**
BANR Banloc 64.61 45‖ *i*P **P 23 11 08.6 +0.1**
X18A Snowflake 64.64 303 *e*P **P 23 11 09.4 +0.2**
comp=Z,33nm,0.8s
X18A LR LR
comp=Z,3µm,20.0s
THAL Thalero 64.66 53 P **P 23 11 07.2 -1.8**
TIM Timisoara 64.74 44⇑ *i*P **P 23 11 08.2 -1.1**
VLI Veliai 64.75 54 P **P 23 11 09.2 -0.4**
VLI Veliai 64.75 54 *e*P **P 23 11 09.2 -0.4**
OJC Ojcow 64.77 39 *e*P **P 23 11 09.4 -0.1**
OJC *e*pP **pP 23 11 12.0 +0.1**
OJC *e*S **S 23 19 51.9 +1.3**
OJC *e*ScS **ScS 23 21 07.7 +3.0**
OJC *e*SS **SS 23 23 59.5 -2.0**
OJC LMZ LR 23 33 56.3
comp=Z,3µm,22.9s
OJC Ojcow 64.77 39 *e*P **P 23 11 09.4 -0.1**
OJC *e**PP **pP 23 11 12.0 +0.1**
OJC *e*S **S 23 19 51.8 +1.3**
OJC *e*SS **SS 23 23 59.5 -2.0**
OJC MLR MLR
comp=Z,3µm,22.9s
OJC Ojcow 64.77 39 *e*P **P 23 11 09.8 +0.2**
comp=Z,164nm,1.4s
LIT Litokhoron 64.77 51 P **P 23 11 07.5 -2.2**
LIT Litokhoron 64.77 51 *e*P **P 23 11 07.5 -2.2**
LIT Litokhoron 64.77 51 *e*P **P 23 11 07.5 -2.2**
KYTH Kithira 64.80 55 P **P 23 11 08.0 -2.0**
KYTH Kithira 64.80 55 *e*P **P 23 11 08.0 -2.0**
KECS Kecovo 64.81 41 *e*P **P 23 11 09.6 -0.2**
KECS pmax pmax
comp=Z,26nm,1.5s
KECS Kecovo 64.81 41 *e*P **P 23 11 09.6 -0.2**
GRG Griva 64.82 50 P **P 23 11 08.3 -1.7**
GRG Griva 64.82 50 *e*P **P 23 11 08.3 -1.7**
GRG Griva 64.82 50 *e*P **P 23 11 08.3 -1.7**
NIE Niedzica 64.90 40 *e*P **P 23 11 10.6 +0.2**
NIE *e*pP **sP 23 11 13.3 -0.4**
NIE *e*PP **PP 23 13 31.7 -1.3**
NIE *e*S **S 23 19 53.6 +1.4**
NIE *e*ScS **ScS 23 21 13.6 +7.8**
NIE *e*SS SS 23 24 18.9 +15
NIE LMZ LR 23 32 55.2
comp=Z,4µm,27.3s
NIE Niedzica 64.90 40 *e*P **P 23 11 10.6 +0.2**

NIE e*PP **sP** **23 11 13.3 -0.4**
NIE e 23 13 31.7
NIE eS **S** **23 19 53.6 +1.4**
NIE MLR MLR
comp=Z,4µm,27.3s
LTK Loutraki 64.90 53 P **P** **23 11 08.6 -2.0**
LTK Loutraki 64.90 53 eP **P** **23 11 08.6 -2.0**
MDVR Moldovita 64.91 46⇓iP **P** **23 11 10.1 -0.5**
ANKY Antikythira Is 64.97 55 P **P** **23 11 10.2 -0.8**
ANKY Antikythira Is 64.97 55 eP **P** **23 11 10.2 -0.8**
BZS Buzias 64.99 45⇓iP **P** **23 11 10.7 -0.3**
VAY Valandovo 64.99 49 P **P** **23 11 09.7 -1.4**
VAY Valandovo 64.99 49 iP **P** **23 11 10.7 -0.4**
VAY Valandovo 64.99 49 eP **P** **23 11 09.7 -1.4**
VAY Valandovo 64.99 49 eP **P** **23 11 09.7 -1.4**
LKR Lokris 64.99 52 P **P** **23 11 09.1 -2.1**
LKR Lokris 64.99 52 P **P** **23 11 09.1 -2.1**
ATAL Atalanti 65.02 52 P **P** **23 11 09.4 -1.9**
ATAL Atalanti 65.02 52 eP **P** **23 11 09.4 -1.9**
FYTO Fytoko, Volos 65.03 52 P **P** **23 11 08.8 -2.6**
FYTO Fytoko, Volos 65.03 52 eP **P** **23 11 08.8 -2.6**
DID Didima 65.06 54 P **P** **23 11 09.7 -2.0**
DID Didima 65.06 54 eP **P** **23 11 09.7 -2.0**
HOPE Hope Point 65.06 175 PFAKE 23 11 20.0 +8.9
HOPE LR LR
comp=Z,3µm,19.0s
SIRR Siria 65.14 44⇓iP **P** **23 11 11.8 -0.2**
SMIA Simia 65.18 52 P **P** **23 11 10.8 -1.6**
VILL Villia 65.19 53 P **P** **23 11 09.7 -2.8**
TUC Tucson 65.20 301 P **P** **23 11 12.5 -0.3**
baz=93
TUC Tucson 65.20 301 eP **P** **23 11 12.7 0.0**
TUC pmax pmax
comp=Z,35nm,0.9s
TUC MLR MLR
comp=Z,3µm,19.0s
TUC Tucson 65.20 301 eP **P** **23 11 12.7 0.0**
comp=Z,35nm,0.9s
TUC LR LR
comp=Z,3µm,19.0s
KNT Kendrikon 65.22 50 P **P** **23 11 10.8 -1.8**
KNT Kendrikon 65.22 50 P **P** **23 11 10.8 -1.8**
KNT Kendrikon 65.22 50 P **P** **23 11 10.8 -1.8**
XOR Xorichti 65.22 52 P **P** **23 11 10.5 -2.2**
XOR Xorichti 65.22 52 P **P** **23 11 10.5 -2.2**
HSIG 65.22 297 eP **P** **23 11 12.8 -0.1**
comp=Z,36nm,1.0s
NEO Neokhori 65.24 52 P **P** **23 11 11.6 -1.2**
NEO Neokhori 65.24 52 P **P** **23 11 11.6 -1.2**
BW06 Boulder Array 65.25 312 P **P** **23 11 11.6 -1.5**
baz=98,SNR=22
BW06 Boulder Array 65.25 312 eP **P** **23 11 11.5 -1.5**
comp=Z,115nm,2.0s
BW06 LR LR
comp=Z,7µm,20.0s
PD31 Pinedale Array 65.25 312 eP **P** **23 11 11.9 -1.1**
PD31 ⇑e 23 40 04.6
PDAR Pinedale Array 65.25 312 P **P** **23 11 11.4 -1.6**
comp=Z,14nm,1.0s,baz=96,slow=6.0,SNR=38
PDAR LR LR 23 36 13.7
comp=Z,7µm,22.0s,baz=122,slow=33
PDAR PKP2bc 23 40 04.6
comp=Z,2.0nm,1.0s,baz=243,slow=1.3,SNR=8.1
P18A Preston Nutter 65.35 309 PFAKE 23 11 20.0 +6.1
P18A LR LR
comp=Z,5µm,20.0s
RLMT Red Lodge 65.41 315 P **P** **23 11 13.2 -0.8**
baz=100,SNR=17
RLMT Red Lodge 65.41 315 eP **P** **23 11 13.2 -0.8**
comp=Z,60nm,1.4s
RLMT LR LR
comp=Z,3µm,19.0s
SKIA Skiathos 65.41 52 P **P** **23 11 12.2 -1.7**
KKB Krupnik 65.45 49 P **P** **23 11 12.6 -1.5**
IMMV Iera Moni Meta 65.49 56 P **P** **23 11 11.9 -2.5**
STHS Stebnicka Huta 65.50 40 eP **P** **23 11 14.9 +0.6**
STHS pmax pmax
comp=Z,20nm,1.5s
STHS Stebnicka Huta 65.50 40 eP **P** **23 11 14.9 +0.6**
STHS ePCP **PcP** **23 11 45.1 -1.0**
SRU San Rafael Swe 65.51 308 eP **P** **23 11 14.5 -0.3**
SRU pmax pmax
comp=Z,43nm,0.8s
SRU MLR MLR
comp=Z,3µm,20.0s
SRU San Rafael Swe 65.51 308 eP **P** **23 11 14.5 -0.3**
comp=Z,43nm,0.8s
SRU LR LR
comp=Z,3µm,20.0s
SOH Sokhos 65.52 50 P **P** **23 11 13.0 -1.6**
SOH Sokhos 65.52 50 eP **P** **23 11 13.0 -1.6**
SOH Sokhos 65.52 50 eP **P** **23 11 13.0 -1.6**
CRVS Cervenica-Dubn 65.53 41 eP **P** **23 11 14.4 -0.1**
CRVS eS **S** **23 19 59.9 0.0**
CRVS Cervenica-Dubn 65.53 41 eP **P** **23 11 14.4 -0.1**
CRVS eS **S** **23 19 59.9 0.0**
PLG Polygyros 65.53 51 P **P** **23 11 12.2 -2.5**
PLG Polygyros 65.53 51 P **P** **23 11 12.2 -2.5**
PLG Polygyros 65.53 51 P **P** **23 11 12.2 -2.5**
VLY Voula,Athens 65.53 53 P **P** **23 11 12.8 -1.9**
VLY Voula,Athens 65.53 53 eP **P** **23 11 12.8 -1.9**
PTL Penteli 65.61 53 P **P** **23 11 13.6 -1.6**
PTL Penteli 65.61 53 eP **P** **23 11 13.6 -1.6**
PAIG Paliouri 65.66 51 P **P** **23 11 13.6 -1.8**
PAIG Paliouri 65.66 51 eP **P** **23 11 13.6 -1.8**
PAIG Paliouri 65.66 51 eP **P** **23 11 13.6 -1.8**
VAM Vamos 65.66 56 P **P** **23 11 12.5 -3.1**
EREA Eretria 65.70 53 P **P** **23 11 11.4 -4.4**
P17A Butcher Ranch, 65.72 308 eP **P** **23 11 16.1 0.0**
comp=Z,25nm,0.7s
P17A LR LR
comp=Z,4µm,20.0s
SRS Serrai 65.73 50 P **P** **23 11 14.7 -1.2**
SRS Serrai 65.73 50 eP **P** **23 11 14.7 -1.2**
SRS Serrai 65.73 50 eP **P** **23 11 14.7 -1.2**
AOS Alonnisos 65.73 52 P **P** **23 11 13.0 -2.9**
AOS Alonnisos 65.73 52 eP **P** **23 11 13.0 -2.9**
GZR Gura Zlata 65.75 45⇓iP **P** **23 11 15.5 -0.6**
BEL Belsk 65.77 38 eP **P** **23 11 16.9 +1.0**
BEL epP **pP** **23 11 18.6 +0.2**
BEL eS **S** **23 20 04.6 +2.0**
BEL LMZ LR 23 36 26.6
comp=Z,5µm,19.4s
BEL Belsk 65.77 38 eP **P** **23 11 16.9 +1.0**
BEL e*PP **pP** **23 11 18.6 +0.2**
BEL eS **S** **23 20 04.6 +2.0**
BEL MLR MLR
comp=Z,5µm,19.4s
GCMT Greycliff 65.80 315 eP **P** **23 11 15.8 -0.6**
X16A Lo Mia Camp, P 65.86 303 eP **P** **23 11 17.6 +0.4**
comp=Z,31nm,1.0s
X16A LR LR
comp=Z,3µm,20.0s
WUAZ Wupatki 65.88 304 P **P** **23 11 17.4 +0.3**
baz=94,SNR=41
WUAZ Wupatki 65.88 304 eP **P** **23 11 17.4 +0.3**
comp=Z,46nm,0.9s
WUAZ LR LR
comp=Z,4µm,19.0s
MMB Musomiste 65.89 49 P **P** **23 11 16.4 -0.6**
DEV Deva 65.92 45⇑iP **P** **23 11 16.6 -0.4**
OUR Ouranopolis 65.93 51 P **P** **23 11 14.4 -2.8**
OUR Ouranopolis 65.93 51 eP **P** **23 11 14.4 -2.8**
OUR Ouranopolis 65.93 51 eP **P** **23 11 14.4 -2.8**
SRE Strehaia 65.94 46⇓iP **P** **23 11 17.4 +0.2**
DRGR 65.95 43⇓iP **P** **23 11 16.8 -0.5**
NVR Nevrokopi 65.96 50 P **P** **23 11 15.6 -1.8**
NVR Nevrokopi 65.96 50 P **P** **23 11 15.6 -1.8**
Q16A Castle Valley 65.99 308 eP **P** **23 11 17.7 -0.2**
comp=Z,27nm,1.1s
Q16A LR LR
comp=Z,3µm,19.0s
UZH Uzhgorod 66.01 41⇑iP **P** **23 11 16.3 -1.2**
UZH e 23 11 47.1
UZH eS **S** **23 20 00.7 -5.0**
UZH e 23 21 04.7
UZH e 23 24 23.9
KARY Karystos 66.06 53 P **P** **23 11 15.6 -2.5**
TMUT Trail Mountain 66.06 308 eP **P** **23 11 18.3 -0.2**
comp=Z,33nm,1.1s
TMUT LR LR
comp=Z,3µm,21.0s
TRPA Tarpa 66.08 42⇓eP **P** **23 11 16.8 -1.2**

LKWY Lake 66.11 314 PFAKE 23 11 30.0 +11
LKWY LR LR
comp=Z,12µm,19.0s
LOHW Long Hollow 66.12 313 eP **P** **23 11 17.4 -1.3**
comp=Z,20nm,0.8s
LOHW LR LR
comp=Z,10µm,20.0s
MPEP Malo Peshtene 66.13 47 P **P** **23 11 16.9 -1.5**
SIVA Sivas 66.13 56 P **P** **23 11 16.9 -1.7**
KLNR Kaliningrad 66.14 35c iP **P** **23 11 19.7 +1.5**
KLNR pmax pmax
comp=Z,237nm,1.3s
KLNR MLR MLR
comp=Z,4µm,17.0s
SNOW Snow King Moun 66.21 313 eP **P** **23 11 19.0 -0.3**
comp=Z,21nm,0.9s
SNOW LR LR
comp=Z,9µm,20.0s
H17A Grant Village 66.22 314 P **P** **23 11 18.9 -0.4**
baz=98
H17A Grant Village 66.22 314 PFAKE 23 11 30.0 +11
H17A LR LR
comp=Z,10µm,19.0s
IDI Anoyia 66.22 56 P **P** **23 11 16.9 -2.3**
IDI Anoyia 66.22 56 eP **P** **23 11 16.9 -2.3**
comp=Z,412nm,1.4s
IDI LR LR
comp=Z,4µm,22.0s
MOOW Moose Ponds 66.24 313 eP **P** **23 11 18.6 -0.8**
comp=Z,25nm,1.2s
MOOW LR LR
comp=Z,12µm,20.0s
EGMT Eagleton 66.25 318 P **P** **23 11 17.9 -1.3**
baz=100,SNR=7.9
EGMT Eagleton 66.25 318 PFAKE 23 11 30.0 +11
EGMT LR LR
comp=Z,5µm,19.0s
FLWY Flagg Ranch 66.26 313 eP **P** **23 11 18.9 -0.6**
comp=Z,246nm,1.8s
FLWY LR LR
comp=Z,12µm,19.0s
REDW Red Top Meadow 66.27 313 eP **P** **23 11 18.4 -1.2**
comp=Z,50nm,1.1s
REDW LR LR
comp=Z,8µm,20.0s
PGB Panagyurishte 66.33 48 P **P** **23 11 19.3 -0.5**
YNR Norris Junctio 66.33 314 PFAKE 23 11 30.0 +10
YNR LR LR
comp=Z,9µm,18.0s
SRIG Santa Rosalia 66.35 295 PFAKE 23 11 30.0 +10
SRIG LR LR
comp=Z,1µm,19.0s
TPAW Teton Pass 66.36 313 eP **P** **23 11 19.5 -0.7**
comp=Z,35nm,0.9s
TPAW LR LR
comp=Z,8µm,20.0s
YPP Pitchstone Pla 66.36 314 eP **P** **23 11 22.1 +1.8**
comp=Z,89nm,1.7s
YPP LR LR
comp=Z,8µm,20.0s
AHID Auburn Hatcher 66.37 312 eP **P** **23 11 19.2 -1.1**
comp=Z,47nm,1.1s
AHID LR LR
comp=Z,9µm,20.0s
JLU Jordanelle 66.38 310 eP **P** **23 11 20.2 -0.3**
comp=Z,193nm,1.9s
JLU LR LR
comp=Z,6µm,20.0s
IMW Indian Meadow 66.40 313 eP **P** **23 11 19.7 -0.8**
comp=Z,41nm,0.9s
IMW LR LR
comp=Z,12µm,20.0s
TCUT Toone Canyon 66.40 310 eP **P** **23 11 19.8 -0.7**
comp=Z,52nm,0.8s
TCUT LR LR
comp=Z,3µm,21.0s
YFT Old Faithful 66.41 314 eP **P** **23 11 21.6 +1.1**
comp=Z,53nm,1.0s
YFT LR LR
comp=Z,14µm,19.0s
KAVA Kavala 66.41 50 P **P** **23 11 20.0 -0.3**
KAVA Kavala 66.41 50 eP **P** **23 11 20.0 -0.3**
YHH Holmes Hill 66.47 314 eP **P** **23 11 20.9 0.0**
comp=Z,76nm,1.7s
YHH LR LR
comp=Z,7µm,18.0s
KWP Kalwaria Pacla 66.47 40 eP **P** **23 11 20.6 +0.1**
KWP epP **sP** **23 11 23.5 -0.4**
KWP ePP **PP** **23 13 48.1 +1.3**
KWP eS **S** **23 20 12.3 +0.9**
KWP LMZ LR 23 33 54.7
comp=Z,7µm,28.1s
KWP Kalwaria Pacla 66.47 40 eP **P** **23 11 20.6 +0.1**
KWP e*PP **sP** **23 11 23.5 -0.4**
KWP e 23 13 48.1
KWP eS **S** **23 20 12.3 +0.9**
KWP MLR MLR
comp=Z,7µm,28.1s
YMR Madison River 66.53 314 eP **P** **23 11 21.7 +0.5**
comp=Z,136nm,1.5s
YMR LR LR
comp=Z,5µm,19.0s
CJR Cluj-Napoca 66.53 44⇑iP **P** **23 11 20.8 -0.2**
HWUT Hardware Ranch 66.58 311 eP **P** **23 11 20.6 -1.0**
comp=Z,81nm,1.0s
HWUT LR LR
comp=Z,6µm,19.0s
CTU Camp Tracy 66.61 310 eP **P** **23 11 21.5 -0.3**
comp=Z,55nm,0.8s
RZN Rozhen 66.64 49 P **P** **23 11 20.5 -1.5**
PLD Plovdiv 66.67 49 P **P** **23 11 22.3 +0.4**
U15A North Rim 66.68 305 eP **P** **23 11 23.1 +0.6**
comp=Z,46nm,0.9s
U15A LR LR
comp=Z,4µm,22.0s
LAST Lasithi 66.69 56 P **P** **23 11 20.0 -2.3**
YHB Horse Butte 66.70 314 eP **P** **23 11 22.8 +0.4**
comp=Z,79nm,0.9s
YHB LR LR
comp=Z,5µm,20.0s
MTPU Mount Pierson 66.71 307 eP **P** **23 11 23.0 +0.3**
comp=Z,75nm,1.4s
MSU Marysvale 66.74 307 eP **P** **23 11 22.9 +0.2**
MSU Marysvale 66.74 307 eP **P** **23 11 22.9 +0.2**
SANT Santorini 66.75 55 eP **P** **23 11 21.9 -0.7**
comp=Z,204nm,1.3s
SANT LR LR
comp=Z,2µm,18.0s
NLU North Lily Min 66.79 309 eP **P** **23 11 23.2 +0.2**
comp=Z,21nm,1.1s
NLU LR LR
comp=Z,4µm,19.0s
NPS Neapolis 66.81 56 P **P** **23 11 21.4 -1.5**
LIA Limnos Island 66.81 51 P **P** **23 11 20.6 -2.2**
LIA Limnos Island 66.81 51 P **P** **23 11 20.6 -2.2**
APE Apeiranthos 66.85 54 P **P** **23 11 21.1 -2.1**
APE Apeiranthos 66.85 54⇓iP **P** **23 11 22.2 -1.0**
APE Apeiranthos 66.85 54d iP **P** **23 11 22.1 -1.1**
APE pmax pmax
comp=Z,156nm,1.6s
APE MLR MLR
comp=Z,2µm,19.0s
APE Apeiranthos 66.85 54 eP **P** **23 11 21.1 -2.1**
QLMT Earthquake Lak 66.88 314 eP **P** **23 11 23.5 0.0**
214A Organ Pipe Nat 66.90 300 P **P** **23 11 24.1 +0.5**
baz=92,SNR=16
TCRU Three Creeks R 66.96 307 PFAKE 23 11 30.0 +5.8
TCRU LR LR
comp=Z,3µm,20.0s
ARR Arges 67.04 45⇓iP **P** **23 11 24.0 -0.3**
TSUM Tsumeb 67.11 116 eP **P** **23 11 25.0 -0.3**
comp=Z,203nm,1.5s
TSUM LR LR
comp=Z,7µm,20.0s
SMTH Samothraki Isl 67.12 51 P **P** **23 11 22.2 -2.7**
SMTH Samothraki Isl 67.12 51 eP **P** **23 11 22.2 -2.7**
BOZ Bozeman (W) 67.13 315 P **P** **23 11 23.8 -1.2**
baz=98,SNR=25
BOZ Bozeman (W) 67.13 315 eP **P** **23 11 24.0 -1.0**
BOZ pmax pmax
comp=Z,32nm,1.3s
BOZ MLR MLR
comp=Z,2µm,18.0s
BOZ Bozeman (W) 67.13 315 eP **P** **23 11 24.0 -1.0**
comp=Z,32nm,1.3s
BOZ LR LR

comp=Z,2µm,18.0s
Y14A Wickenburg 67.13 302 eP **P** **23 11 25.3 +0.2**
comp=Z,84nm,1.1s
Y14A LR LR
comp=Z,14µm,18.0s
KNB Kanab 67.14 306 eP **P** **23 11 25.0 -0.3**
KNB pmax pmax
comp=Z,31nm,1.1s
KNB MLR MLR
comp=Z,4µm,21.0s
KNB Kanab 67.14 306 eP **P** **23 11 24.9 -0.3**
comp=Z,31nm,1.1s
KNB LR LR
comp=Z,4µm,21.0s
KDZ Kurdzhali 67.16 49 P **P** **23 11 24.0 -1.0**
HUMR Humele 67.17 46⇓iP **P** **23 11 24.6 -0.5**
SIGR SIGRI 67.26 52 P **P** **23 11 22.5 -3.2**
SIGR SIGRI 67.26 52 eP **P** **23 11 22.5 -3.2**
PVL Pavlikeni 67.27 48 P **P** **23 11 23.6 -2.1**
DIM Dimitrovgrad 67.28 49 P **P** **23 11 25.7 -0.1**
DAG Danmarks Havn 67.29 6 iP **P** **23 11 25.1 -0.1**
comp=Z,123nm,1.4s
comp=Z,2µm,17.0s
DAG Danmarks Havn 67.29 6 iP **P** **23 11 25.1 -0.1**
DAG pmax pmax
comp=Z,290nm,1.4s
DAG MLR MLR
comp=Z,2µm,17.0s
VOIR 67.34 45⇓iP **P** **23 11 25.4 -0.8**
LVV L'vov 67.35 40 eP **P** **23 11 25.2 -0.9**
LVV e 23 13 51.5
LVV ePPP PPP 23 15 35.7
LVV eS **S** **23 20 17.2 -4.8**
LVV ePS **PnS** **23 20 34.9 -8.3**
LVV eSS **SS** **23 24 41.9 +0.2**
LVV MLR MLR
comp=E,2µm,17.0s
LVV MLR MLR
comp=N,800nm,16.0s
LVV MLR MLR
comp=Z,1µm,17.0s
CHOS Chios island 67.36 53 P **P** **23 11 25.3 -1.2**
CHOS Chios island 67.36 53 P **P** **23 11 25.3 -1.2**
DUG Dugway, Tooele 67.38 309 P **P** **23 11 26.1 -0.5**
baz=95,SNR=24
DUG Dugway, Tooele 67.38 309 eP **P** **23 11 26.0 -0.6**
DUG pmax pmax
comp=Z,23nm,0.9s
DUG MLR MLR
comp=Z,5µm,20.0s
DUG Dugway, Tooele 67.38 309 eP **P** **23 11 26.0 -0.6**
comp=Z,23nm,0.9s
DUG LR LR
comp=Z,5µm,20.0s
GADA Gvkgeada 67.38 51 P **P** **23 11 25.3 -1.2**
GADA Gvkgeada 67.38 51 eP **P** **23 11 25.3 -1.2**
SZCU Shurtz Canyon 67.39 306 PFAKE 23 11 40.0 +13
SZCU LR LR
comp=Z,3µm,21.0s
HRY Holter Researc 67.43 316 eP **P** **23 11 26.1 -0.7**
LCMT Little Creek M 67.48 306 eP **P** **23 11 27.0 -0.4**
comp=Z,13nm,1.0s
LCMT LR LR
comp=Z,4µm,22.0s
HVU Hansel Valley 67.49 311 eP **P** **23 11 26.4 -1.0**
HVU pmax pmax
comp=Z,35nm,1.1s
HVU MLR MLR
comp=Z,6µm,20.0s
HVU Hansel Valley 67.49 311 eP **P** **23 11 26.4 -1.0**
comp=Z,35nm,1.1s
HVU LR LR
comp=Z,6µm,20.0s
ALN Alexandroupoli 67.55 50 P **P** **23 11 26.1 -1.4**
ALN Alexandroupoli 67.55 50 P **P** **23 11 26.1 -1.4**
ALN Alexandroupoli 67.55 50 P **P** **23 11 26.1 -1.4**
PRK Paraskevi 67.59 52 P **P** **23 11 25.0 -2.8**
PRK Paraskevi 67.59 52 P **P** **23 11 25.0 -2.8**
PRK Paraskevi 67.59 52 P **P** **23 11 25.0 -2.8**
BGU Big Grassy Mou 67.60 310 eP **P** **23 11 27.7 -0.4**
comp=Z,75nm,1.0s
BGU LR LR
comp=Z,3µm,19.0s
CCUT Cedar City 67.61 306 eP **P** **23 11 28.6 +0.3**
comp=Z,44nm,1.2s
CCUT LR LR
comp=Z,3µm,21.0s
ENEZ Enez 67.62 50 P **P** **23 11 25.9 -2.1**
DOPR Dopca 67.65 45⇑iP **P** **23 11 27.5 -0.6**
LRM Limekiln Ridge 67.73 315 eP **P** **23 11 28.2 -0.7**
113A Mohawk Valley, 67.73 301 eP **P** **23 11 28.8 -0.1**
comp=Z,36nm,1.5s
113A LR LR
comp=Z,2µm,18.0s
BUR08 Bucovina Ar. S 67.76 43 eP **P** **23 11 28.7 -0.2**
BURAR Bucovina Array 67.77 43⇓iP **P** **23 11 28.7 -0.2**
DLMT Dillon 67.77 315 eP **P** **23 11 28.8 -0.2**
comp=Z,87nm,1.5s
DLMT LR LR
comp=Z,3µm,21.0s
MCMT McKenzie Canyo 67.88 314 eP **P** **23 11 29.5 -0.4**
W13A Hualapai Mount 67.90 304 eP **P** **23 11 30.8 +0.6**
comp=Z,29nm,0.9s
W13A LR LR
comp=Z,4µm,20.0s
MLR Muntele Rosu 67.97 45⇑iP **P** **23 11 29.9 -0.4**
MLR Muntele Rosu 67.97 45 eP **P** **23 11 29.1 -1.2**
MLR pmax pmax
comp=Z,470nm,1.6s
MLR MLR
comp=Z,4µm,21.0s
MLR Muntele Rosu 67.97 45 eP **P** **23 11 29.1 -1.2**
comp=Z,470nm,1.6s
MLR LR LR
comp=Z,4µm,21.0s
PSUT Pine Spring 68.06 307 eP **P** **23 11 32.0 +0.9**
PSUT LR LR
comp=Z,1µm,20.0s
KARP Karpathos 68.08 56 P **P** **23 11 28.4 -2.6**
KARP Karpathos 68.08 56 eP **P** **23 11 28.4 -2.6**
comp=Z,192nm,1.5s
KARP LR LR
comp=Z,800nm,20.0s
PDMCI Parker Dam,Lak 68.09 303 P **P** **23 11 31.1 0.0**
baz=92,SNR=22
JMB Yambol 68.10 49 P **P** **23 11 30.3 -0.7**
LOF Lofoten 68.13 20 eP **P** **23 11 30.7 +0.1**
LOF IVmB_BB 23 11 39.6
comp=Z,1µm,1.6s
LOF eS **S** **23 20 31.7 +1.2**
LOF eSS **SS** **23 24 54.4 +1.5**
LOF IVMs_BB IVMs_BB 23 33 03.4
comp=Z,2µm,25.4s
EDRB Edirne 68.16 49 P **P** **23 11 28.1 -3.3**
EDRB Edirne 68.16 49 P **P** **23 11 28.1 -3.3**
ISR Istrita 68.35 46⇓iP **P** **23 11 30.4 -2.2**
Y12C Blythe 68.39 302 P **P** **23 11 33.3 +0.4**
baz=91,SNR=9.8
Y12C Blythe 68.39 302 eP **P** **23 11 33.4 +0.4**
comp=Z,34nm,1.1s
Y12C LR LR
comp=Z,3µm,18.0s
CHMT Chamberlain Mo 68.42 316 eP **P** **23 11 32.2 -1.0**
NEE2 Needles Airpor 68.49 303 P **P** **23 11 33.7 +0.1**
baz=92
PLOR Plostina 68.51 45⇓iP **P** **23 11 32.2 -1.3**
VRI Vrincioaia 68.56 45⇓iP **P** **23 11 32.5 -1.3**
TESR Tescani 68.59 44⇓iP **P** **23 11 33.1 -0.9**
STEI Steigen 68.61 20 eP **P** **23 11 33.8 +0.2**
SLMT Seeley Lake 68.63 317 eP **P** **23 11 33.5 -0.9**
GLA Glamis 68.63 301 P **P** **23 11 34.5 0.0**
baz=91,SNR=5.7
GLA Glamis 68.63 301 eP **P** **23 11 34.9 +0.3**
GLA pmax pmax
comp=Z,41nm,1.4s
GLA MLR MLR
comp=Z,2µm,19.0s
GLA Glamis 68.63 301 eP **P** **23 11 34.9 +0.3**
comp=Z,41nm,1.4s
GLA LR LR
comp=Z,2µm,19.0s
PRD Provadia 68.77 48 P **P** **23 11 34.0 -1.1**
HLID Hailey 68.87 313 P **P** **23 11 35.5 -0.5**
baz=95,SNR=37
HLID Hailey 68.87 313 eP **P** **23 11 35.4 -0.6**

comp=Z,19nm,0.8s
HLID LR LR
comp=Z,7µm,20.0s
MSO Missoula 68.88 316 P P 23 11 34.8 -1.1
baz=97,SNR=7.8
MSO Missoula 68.88 316 eP P 23 11 35.4 -0.6
comp=Z,38nm,1.4s
MSO LR LR
comp=Z,4µm,19.0s
LDFC Landfair 68.91 303 eP P 23 11 37.7 +1.3
comp=Z,98nm,1.0s
LDFC LR LR
comp=Z,4µm,20.0s
IRM Iron Mountain 68.91 302 P P 23 11 36.7 +0.4
baz=91,SNR=21
SHPR Sheep Range 68.99 305 eP P 23 11 37.2 +0.4
comp=Z,18nm,1.1s
SWMT Swartz Lake 69.00 317 eP P 23 11 35.7 -0.9
YBMT Yellow Bay 69.05 317 eP P 23 11 36.2 -0.8
WALA Waterton Lakes 69.14 318 eP P 23 11 36.3 -1.2
comp=Z,38nm,1.1s
WALA LR LR
comp=Z,4µm,20.0s
BC3 Big Chuckawall 69.16 302 P P 23 11 38.0 +0.1
baz=91,SNR=9.1
JTMT Jette 69.22 317 eP P 23 11 37.2 -0.8
BLMT Blacktail Moun 69.31 317 eP P 23 11 37.5 -1.1
GMRC Granite Mounta 69.35 303 P P 23 11 38.9 -0.2
baz=91,SNR=42
TLB Topalu 69.36 46 ⇓ iP P 23 11 37.6 -1.1
PSN Preselentsi 69.38 47 P P 23 11 37.5 -1.4
R11A Troy Canyon, C 69.40 307 P P 23 11 39.3 -0.1
baz=92,SNR=24
R11A Troy Canyon, C 69.40 307 eP P 23 11 39.3 -0.1
comp=Z,16nm,0.9s
R11A LR LR
comp=Z,2µm,18.0s
KULA Kula-Manisa 69.41 53 P P 23 11 36.2 -3.1
KULA Kula-Manisa 69.41 53 P P 23 11 36.2 -3.1
SWSC Sam W. Stewart 69.44 301 P P 23 11 39.8 +0.2
baz=90,SNR=5.9
CFR Carcaliu 69.48 46 ⇑ iP P 23 11 37.3 -2.2
BSMT Bassoo Peak 69.57 317 eP P 23 11 39.5 -0.8
TUQ Turquoise Moun 69.58 304 P P 23 11 40.7 +0.1
baz=91,SNR=16
TIRR Tirgusor 69.61 47 eP P 23 11 39.9 -0.4
TIRR pmax pmax
comp=Z,233nm,1.6s
TIRR MLR MLR
comp=Z,2µm,19.0s
TIRR Tirgusor 69.61 47 eP P 23 11 39.9 -0.4
comp=Z,233nm,1.6s
TIRR LR LR
comp=Z,2µm,19.0s
BELC Belle Mtn. Jos 69.62 302 P P 23 11 41.1 +0.3
baz=90,SNR=21
ISAL Salakas 69.67 35 eP P 23 11 40.4 -0.1
ISAL IAmb IAmb 23 11 45.3
comp=Z,21nm,1.2s
LEOM Leova 69.68 44 ⇑ iP P 23 11 38.5 -2.2
IKP In-Ko-Pah, Jac 69.70 301 P P 23 11 41.8 +0.5
baz=90,SNR=8.2
ISK Istanbul-Kandi 69.84 50 P P 23 11 38.4 -3.4
ISK Istanbul-Kandi 69.84 50 P P 23 11 38.4 -3.4
ISK Istanbul-Kandi 69.84 50 P P 23 11 38.4 -3.4
SHOC Shoshone, Teco 69.88 304 P P 23 11 42.5 +0.3
baz=91
MFID Camas Ranch 69.88 312 eP P 23 11 41.2 -1.0
comp=Z,43nm,0.9s
MFID LR LR
comp=Z,6µm,21.0s
TPNV Topopah Spring 69.88 305 P P 23 11 42.9 +0.5
baz=92,SNR=37
TPNV Topopah Spring 69.88 305 eP P 23 11 42.9 +0.5
TPNV pmax pmax
comp=Z,43nm,1.0s
TPNV MLR MLR
comp=Z,3µm,20.0s
TPNV Topopah Spring 69.88 305 eP P 23 11 42.9 +0.5
comp=Z,43nm,1.0s
TPNV LR LR
comp=Z,3µm,20.0s
HEC Hector,Ludlow 69.91 303 P P 23 11 43.0 +0.5
baz=91,SNR=18
NACGM Naroch 69.92 35 eP P 23 11 41.0 -1.0
NACGM eP pP 23 11 42.0 -2.5
NACGM ePP PP 23 14 05.0 -12
NACGM ePPP PPP 23 16 11.0
NACGM ePsP 23 17 52.0
NACGM eS S 23 20 48.0 -4.3
NACGM ePS PnS 23 21 24.0 +6.1
NACGM eSS SS 23 25 08.0 -13
NACGM eSSS SSS 23 28 25.0
NACGM eLQ 23 33 18.0
NACGM eLR LR 23 39 06.0
NACGM LRM MLR 23 43 10.0
comp=Z,4.1nm,17.0s
SORM Soroca 69.93 43 ⇓ iP P 23 11 40.2 -2.0
IDID Didziasalis 69.97 35 eP P 23 11 42.2 -0.1
IDID IAmb IAmb 23 11 47.2
comp=Z,30nm,1.1s
MONP2 Monument Peak 69.97 301 P P 23 11 43.5 +0.5
baz=90,SNR=25
TPFO Pinon Flats 70.00 302 P P 23 11 43.6 +0.5
baz=90,SNR=27
PFO Pinyon Flats O 70.00 302 P P 23 11 43.5 +0.4
baz=90,SNR=20
PFO Pinyon Flats O 70.00 302 eP P 23 11 43.5 +0.4
PFO pmax pmax
comp=Z,32nm,1.0s
PFO MLR MLR
comp=Z,3µm,18.0s
PFO Pinyon Flats O 70.00 302 eP P 23 11 43.5 +0.4
comp=Z,32nm,1.0s
PFO LR LR
comp=Z,3µm,18.0s
RES Resolute Bay 70.02 347 eP P 23 11 44.4 +2.1
RES pmax pmax
comp=Z,50nm,1.3s
RES MLR MLR
comp=Z,2µm,19.0s
RES Resolute Bay 70.02 347 eP P 23 11 44.4 +2.1
comp=Z,50nm,1.3s
RES LR LR
comp=Z,2µm,19.0s
KIS Kishinev 70.12 44 ⇓ iP P 23 11 40.0 -3.4
comp=Z,600nm,2.0s
KIS Kishinev 70.12 44 *i* PcP P 23 11 54.0 +11
KIS Kishinev 70.12 44 ePP PP 23 14 18.0 -0.5
KIS Kishinev 70.12 44 ePS 23 21 10.0
KIS eScS SKiKP 23 21 44.0 +14
KIS LRM MLR 23 41 18.0
comp=Z,4µm,18.0s
KIS Kishinev 70.12 44 κ *iP* P 23 11 40.0 -3.4
KIS *e* 23 14 18.0
KIS ePPP PPP 23 16 00.0
KIS eS S 23 20 50.0 -4.9
KIS *e* 23 21 44.0
KIS pmax pmax
comp=Z,600nm,2.0s
KIS pmax pmax
comp=Z,1µm,6.0s
BAR Barrett 70.18 301 eP P 23 11 44.2 +0.1
comp=Z,31nm,1.0s
BAR LR LR
comp=Z,2µm,19.0s
GSC Goldstone, Bar 70.30 304 P P 23 11 45.0 +0.1
baz=90,SNR=32
GSC Goldstone, Bar 70.30 304 eP P 23 11 45.2 +0.3
GSC pmax pmax
comp=Z,39nm,0.9s
GSC MLR MLR
comp=Z,3µm,19.0s
GSC Goldstone, Bar 70.30 304 eP P 23 11 45.2 +0.3
comp=Z,39nm,0.9s
GSC LR LR
comp=Z,3µm,19.0s
FURC Furnace Creek, 70.36 305 P P 23 11 45.9 +0.8
baz=91,SNR=13
BBRC Big Bear Solar 70.39 303 P P 23 11 46.0 +0.4
baz=90
RRX Edison Barstow 70.45 303 P P 23 11 46.2 +0.5
baz=90
MICGM Minsk 70.48 36 eP P 23 11 44.0 -1.5
MICGM ePcP PcP 23 12 04.0 -2.8
MICGM ePP PP 23 14 26.0 +4.6
MICGM eS S 23 21 00.0 +1.1
MICGM eSS SS 23 25 20.0 -10
MICGM eLR LR 23 34 50.0
MICGM LRM MLR 23 41 00.0
comp=Z,5.8nm,16.0s
MNK Minsk 70.48 36 eP P 23 11 44.0 -1.5
MNK *e* 23 12 04.0
MNK *e* 23 14 26.0
MNK eS S 23 21 00.0 +1.1
TRO Tromso 70.53 19 eP P 23 11 45.3 -0.2
TRO esP pP 23 11 47.9 0.0
TRO IVmB_BB 23 11 55.1
comp=Z,1µm,1.5s
TRO eS S 23 20 59.5 +0.6
TRO IVMs_BB IVMs_BB 23 33 53.5
comp=Z,1µm,29.0s
109C Camp Elliot, M 70.54 301 P P 23 11 46.2 -0.1
baz=90
VSU Vasula 70.56 32 *c iP* P 23 11 47.1 +1.3
VSU pmax pmax
comp=Z,138nm,1.2s
MURC Murrieta 70.61 302 P P 23 11 47.4 +0.6
baz=90,SNR=7.1
BMN Battle Mountai 70.75 309 eP P 23 11 47.4 -0.3
BMN pmax pmax
comp=Z,33nm,1.0s
BMN MLR MLR
comp=Z,4µm,20.0s
BMN Battle Mountai 70.75 309 eP P 23 11 47.4 -0.3
comp=Z,33nm,1.0s
BMN LR LR
comp=Z,4µm,20.0s
KIEV Kiev 70.77 40 *d iP* P 23 11 45.9 -1.4
KIEV pmax pmax
comp=Z,74nm,1.7s
KIEV MLR MLR
comp=Z,3µm,18.0s
KIEV Kiev 70.77 40 eP P 23 11 46.0 -1.3
comp=Z,42nm,1.0s
KIEV LR LR
comp=Z,3µm,22.0s
GRAC Grapevine Rang 70.78 305 P P 23 11 48.3 +0.5
baz=91
AKASG Malin Array Be 70.78 40 P P 23 11 46.0 -1.3
comp=Z,6.3nm,0.6s,baz=271,slow=5.0,SNR=20
AKASG LR LR 23 39 32.0
comp=Z,3µm,21.9s,baz=275,slow=33
AKBB Malin Array Si 70.78 40 eP P 23 11 46.1 -1.3
AKBB pmax pmax
comp=Z,47nm,1.0s
AKBB Malin Array Si 70.78 40 eP P 23 11 46.1 -1.3
comp=Z,47nm,1.0s
ISP Isparta 70.85 54 ⇓ iP P 23 11 47.5 -0.7
ISP Isparta 70.85 54 *d iP* P 23 11 47.3 -0.9
ISP pmax pmax
comp=Z,85nm,1.3s
ISP MLR MLR
comp=Z,2µm,20.0s
MPMC Manual Prospec 70.86 304 P P 23 11 48.6 +0.2
baz=90,SNR=22
FIA0 FINESS Array S 70.86 28 eP P 23 11 46.8 -0.9
FIA0 FINESS Array S 70.86 28 eP P 23 11 46.8 -0.9
FIA0 eP'P'df **P'P'df 23 39 47.8 0.0**
FINES FINESS Array B 70.86 28 P P 23 11 46.8 -0.9
comp=Z,38nm,0.9s,baz=255,slow=3.7,SNR=52
FINES PKPPKP **P'P'df 23 39 47.8 0.0**
comp=Z,1.3nm,0.9s,baz=69,slow=11,SNR=3.8
FIA1 FINESS Array S 70.87 28 eP P 23 11 47.0 -0.7
DAC Darwin (Calif) 70.95 305 PFAKE 23 12 00.0 +11
DAC LR LR
comp=Z,4µm,21.0s
BFSC Mount Baldy Ra 71.00 303 P P 23 11 49.2 -0.1
baz=90,SNR=36
LRMC Laurel Mtn Rad 71.02 304 P P 23 11 49.6 +0.3
baz=90,SNR=17
BMO Blue Mountains 71.04 314 eP P 23 11 48.2 -1.0
BMO pmax pmax
comp=Z,33nm,1.1s
BMO MLR MLR
comp=Z,5µm,20.0s
BMO Blue Mountains 71.04 314 eP P 23 11 48.2 -1.0
comp=Z,33nm,1.1s
BMO LR LR
comp=Z,5µm,20.0s
F10A Beach Ranch, E 71.06 315 eP P 23 11 47.9 -1.4
comp=Z,17nm,0.8s
F10A LR LR
comp=Z,3µm,19.0s
NEW Newport 71.17 317 P P 23 11 48.6 -1.3
baz=95,SNR=24
NEW Newport 71.17 317 eP P 23 11 48.5 -1.4
NEW pmax pmax
comp=Z,72nm,1.1s
NEW MLR MLR
comp=Z,4µm,18.0s
NEW Newport 71.17 317 eP P 23 11 48.5 -1.4
comp=Z,72nm,1.1s
NEW LR LR
comp=Z,4µm,18.0s
EDW2 Edwards Air Fo 71.27 303 P P 23 11 50.9 +0.1
baz=90,SNR=35
MWC Mount Wilson 71.33 303 eP P 23 11 51.2 -0.1
MWC pmax pmax
comp=Z,30nm,0.9s
MWC MLR MLR
comp=Z,3µm,19.0s
MWC Mount Wilson 71.33 303 eP P 23 11 51.2 -0.1
comp=Z,30nm,0.9s
MWC LR LR
comp=Z,3µm,19.0s
CWC Cottonwood Cre 71.34 305 P P 23 11 51.5 +0.2
baz=90
PASC Pasadena Art C 71.44 302 eP P 23 11 52.1 +0.4
comp=Z,29nm,0.9s
PASC LR LR
comp=Z,2µm,19.0s
TIN Tinemaha, Big 71.47 305 P P 23 11 52.1 +0.1
baz=90
FMP Fort Macarthur 71.53 302 P P 23 11 52.5 +0.2
baz=89
CIS Catalina Islan 71.64 302 P P 23 11 53.2 +0.2
baz=89,SNR=6.7
ISA Isabella, Lake 71.66 304 P P 23 11 53.7 +0.5
baz=90,SNR=16
ISA Isabella, Lake 71.66 304 eP P 23 11 53.9 +0.7
ISA pmax pmax
comp=Z,45nm,1.1s
ISA MLR MLR
comp=Z,3µm,21.0s
ISA Isabella, Lake 71.66 304 eP P 23 11 53.9 +0.7
comp=Z,45nm,1.1s
ISA LR LR
comp=Z,3µm,21.0s
E09A Wood Farm, Sta 71.73 315 eP P 23 11 52.2 -1.0
comp=Z,71nm,1.3s
E09A LR LR
comp=Z,2µm,18.0s
SCI2 San Clemente I 71.75 301 P P 23 11 54.3 +0.7
baz=89
YKA Yellowknife Ar 71.83 332 P P 23 11 51.2 -2.3
comp=Z,18nm,1.0s,baz=103,slow=6.2,SNR=31
YKA LR LR 23 40 23.1
comp=Z,641nm,20.4s,baz=180,slow=33
YKB5 Yellowknife Ar 71.83 332 eP P 23 11 51.0 -2.5
YKW3 Yellowknife Ar 71.85 333 eP P 23 11 51.2 -2.4
YKW3 LR LR
comp=Z,6µm,21.0s
OSI Osito Audit: C 71.88 303 P P 23 11 54.2 -0.2
baz=89
OSI Osito Audit: C 71.88 303 PFAKE 23 12 00.0 +5.6
OSI LR LR
comp=Z,3µm,20.0s
WVOR Wild Horse Val 71.89 311 eP P 23 11 54.2 -0.3
WVOR pmax pmax
comp=Z,69nm,1.4s
WVOR MLR MLR
comp=Z,5µm,19.0s
WVOR Wild Horse Val 71.89 311 eP P 23 11 54.2 -0.3
comp=Z,69nm,1.4s
WVOR LR LR
comp=Z,5µm,19.0s
TVH2 Borealis Mine 71.89 307 eP P 23 11 55.3 +0.6
comp=Z,18nm,0.9s
TVH1 TV Hill, Hawth 71.90 307 eP P 23 11 54.9 0.0
comp=Z,181nm,2.0s
TVH1 LR LR
comp=Z,3µm,21.0s
C09A Chrisman Ranch 71.91 317 eP P 23 11 53.3 -1.0
comp=Z,60nm,1.5s
C09A LR LR
comp=Z,5µm,19.0s
TVH3 East Aurora ar 71.94 307 eP P 23 11 55.3 +0.3
comp=Z,40nm,1.0s
TVH3 LR LR
comp=Z,2µm,22.0s
MLAC Mammoth, Mammo 71.95 306 P P 23 11 55.4 +0.3
baz=90
ARVC Arvin 71.96 303 P P 23 11 55.5 +0.7
baz=89
VES Vestal, Richgr 72.16 304 P P 23 11 55.8 -0.2
baz=89
BLG Laguna Peak, P 72.17 302 P P 23 11 56.1 0.0
baz=89
G08A Pilot Rock 72.23 314 eP P 23 11 55.2 -1.3
comp=Z,57nm,1.6s
G08A LR LR
comp=Z,4µm,19.0s
YERR Yerington 72.28 308 eP P 23 11 56.5 -0.4
comp=Z,40nm,1.6s
YERR LR LR
comp=Z,4µm,19.0s
RCTC Rector, Farmer 72.28 305 P P 23 11 56.5 -0.2
baz=90,SNR=5.2
D08A Wollman Farm, 72.30 316 eP P 23 11 55.8 -0.8
comp=Z,93nm,1.6s
D08A LR LR
comp=Z,3µm,18.0s
AKMC Akamas 72.30 57 P P 23 11 56.4 -0.5
PPCY Paphos 72.32 57 P P 23 11 56.3 -0.7
E08A Dider Farm, El 72.36 315 P P 23 11 56.0 -1.0
PAHR Pah Rah Range 72.40 308 eP P 23 11 57.0 -0.5
comp=Z,23nm,1.2s
PAHR LR LR
comp=Z,4µm,20.0s
WAKR Walker 72.43 307 eP P 23 11 58.2 +0.3
comp=Z,47nm,1.3s
WAKR LR LR
comp=Z,3µm,21.0s
ALFC Alefka 72.52 56 P P 23 11 57.5 -0.8
BJO Bjornoya 72.54 14 eP P 23 11 57.6 +0.1
BJO IVmB_BB 23 12 07.7
comp=Z,2µm,1.3s
BJO eS S 23 21 25.5 +3.6
BJO IVMs_BB IVMs_BB 23 36 23.1
comp=Z,2µm,18.1s
PNTR Pine Nut 72.56 308 eP P 23 11 59.5 +0.8
comp=Z,20nm,0.7s
PNTR LR LR
comp=Z,4µm,19.0s
SNCC San Nicolas Is 72.57 302 P P 23 11 57.9 -0.6
baz=88
SNCC San Nicolas Is 72.57 302 PFAKE 23 12 10.0 +11
SNCC LR LR
comp=Z,2µm,19.0s
BR231 Keskin MP Arra 72.64 52 eP P 23 12 01.1 +2.2
SCZ2 Santa Cruz Isl 72.64 302 P P 23 11 58.4 -0.6
baz=88
GBL Gable Mountain 72.64 315 P P 23 11 58.1 -0.6
GBL Gable Mountain 72.64 315 P P 23 11 58.1 -0.6
B08A Colville Reser 72.65 317 eP P 23 11 58.1 -0.7
comp=Z,20nm,1.3s
B08A LR LR
comp=Z,4µm,20.0s
ANTO Ankara 72.65 52 PFAKE 23 12 10.0 +11
ANTO LR LR
comp=Z,2µm,22.0s
SAW Saint Andrews 72.66 317 P P 23 11 57.0 -1.9
ARA0 ARCESS Array S 72.68 20 eP P 23 11 58.1 -0.4
ARCES ARCESS Array B 72.68 20 P P 23 11 57.8 -0.6
comp=Z,39nm,1.0s,baz=249,slow=5.1,SNR=29
ARCES LR LR 23 38 33.3
comp=Z,4µm,20.0s,baz=248,slow=32
ARE0 ARCESS Array S 72.68 20 eP P 23 11 57.6 -0.8
ARE0 esP pP 23 12 00.6 -0.4
ARE0 IVmB_BB 23 12 07.2
comp=Z,1µm,1.4s
ARE0 eS S 23 21 23.4 -0.4
ARE0 IVMs_BB IVMs_BB 23 38 09.8
comp=Z,1µm,18.4s
ARE0 ARCESS Array S 72.68 20 eP P 23 11 59.0 +0.5
comp=Z,185nm,1.3s
ARE0 LR LR
comp=Z,4µm,20.0s
HAWA Hanford 72.68 315 eP P 23 11 58.3 -0.7
comp=Z,128nm,1.8s
HAWA LR LR
comp=Z,2µm,20.0s
SBC Santa Barbara 72.69 303 P P 23 11 59.0 -0.2
baz=89
SZAC Souni 72.76 57 P P 23 11 59.8 +0.1
PKM Mcpherson Peak 72.77 303 P P 23 12 00.5 +0.6
baz=89,SNR=23
HSPB Hornsund (broa 72.82 12 eP P 23 11 59.7 +0.5
HSPB IVmB_BB 23 12 09.6
comp=Z,814nm,1.5s
HSPB eS S 23 21 27.9 +2.8
HSPB eSS SS 23 26 07.0 +2.3
HSPB IVMs_BB IVMs_BB 23 36 09.7
comp=Z,2µm,19.3s
HSPB Hornsund (broa 72.82 12 eP P 23 12 01.9 +2.7
HSPB eS S 23 21 28.9 +3.8
HSPB eSS SS 23 26 07.8 +3.1
HSPB MLR MLR
comp=Z,5µm,20.5s
SMMC Simmler 72.91 304 P P 23 12 01.0 +0.4
baz=89
E07A Sunnyside 72.91 315 PFAKE 23 12 10.0 +10
E07A LR LR
comp=Z,2µm,18.0s
MAMC Mammari 73.03 56 P P 23 12 01.4 +0.2
PAGB Antelope Grade 73.11 304 eP P 23 12 01.5 -0.2
comp=Z,21nm,1.0s
PAGB LR LR
comp=Z,2µm,20.0s
MOD Modoc Plateau 73.11 311 eP P 23 12 01.8 0.0
comp=Z,59nm,0.9s
MOD LR LR
comp=Z,3µm,20.0s
CSS Mathiatis 73.13 57 eP P 23 12 01.4 -0.4
comp=Z,37nm,1.5s
CSS LR LR
comp=Z,800nm,21.0s
KBS Kingsbay 73.15 10 eP P 23 12 02.3 +1.3
KBS IVmB_BB 23 12 12.2
comp=Z,2µm,1.2s
KBS eS SKiKP 23 21 33.3 -0.5
KBS IVMs_BB IVMs_BB 23 35 06.7
comp=Z,874nm,19.9s
KBS Kingsbay 73.15 10 eP P 23 12 03.0 +1.9
KBS pmax pmax
comp=Z,207nm,1.1s
KBS MLR MLR
comp=Z,2µm,18.0s
KBS Kingsbay 73.15 10 eP P 23 12 03.0 +1.9
comp=Z,207nm,1.1s
KBS LR LR
comp=Z,2µm,18.0s
CMB Columbia Colle 73.18 307 eP P 23 12 00.6 -1.5
CMB pmax pmax
comp=Z,14nm,1.0s
CMB MLR MLR
comp=Z,4µm,21.0s
CMB Columbia Colle 73.18 307 eP P 23 12 00.6 -1.5
comp=Z,14nm,1.0s
CMB LR LR
comp=Z,4µm,21.0s
BR101 Keskin Array S 73.30 52 eP P 23 12 02.2 -0.7
BR131 Keskin Array S 73.30 52 eP P 23 12 02.2 -0.7
BRTR Keskin Array B 73.30 52 P P 23 12 02.2 -0.7
comp=Z,29nm,1.0s,baz=258,slow=4.9,SNR=100
BRTR LR LR 23 45 48.6
comp=Z,965nm,18.2s,baz=248,slow=37
VTHM Trough 73.36 314 P P 23 12 03.3 +0.2
TRW Toppenish Ridg 73.38 315 P P 23 12 03.1 -0.1
G06A Carlson Farm, 73.42 314 eP P 23 12 03.6 +0.3
comp=Z,99nm,1.2s
G06A LR LR
comp=Z,4µm,18.0s
LTY Liberty 73.50 316 PFAKE 23 12 10.0 +6.1
LTY LR LR
comp=Z,2µm,20.0s
SPA0 Spitsbergen Ar 73.54 11 eP P 23 12 04.1 +0.6
SPA0 IVmB_BB 23 12 13.2

comp=Z,1µm,1.5s
SPA0 eS SKiKP 23 21 35.4 +0.9
SPA0 IVMs_BB IVMs_BB 23 36 01.4
comp=Z,2µm,20.1s
SPA0 Spitsbergen Ar 73.54 11 eP P 23 12 04.9 +1.4
SPITS Spitsbergen Ar 73.54 11 LR LR 23 36 23.6
comp=Z,5µm,20.8s,baz=230,slow=29
PMPB Monarch Peak 73.54 305 eP P 23 12 04.8 +0.5
comp=Z,46nm,1.0s
PMPB LR LR
comp=Z,3µm,19.0s
K05A Summer Lake 73.56 311 eP P 23 12 04.9 +0.4
comp=Z,342nm,1.8s
K05A LR LR
comp=Z,5µm,20.0s
AFDM Forest Hills D 73.63 307 eP P 23 12 04.8 +0.1
comp=Z,14nm,1.0s
AFDM LR LR
comp=Z,3µm,19.0s
C06D Leavenworth 73.67 317 P P 23 12 03.3 -1.5
baz=92
SIM Simferopol' 73.69 46 eP P 23 12 03.8 -1.1
SIM e 23 14 55.0
SIM eS S 23 21 40.0 +3.9
SIM eSS SS 23 26 17.0 -2.3
SIM pmax pmax
comp=E,25nm,1.2s
SIM MLR MLR
comp=N,1µm,18.0s
J05D Fort Rock, OR 73.82 312 P P 23 12 06.3 +0.4
baz=90,SNR=14
G05D Wamic, OR 73.90 314 P P 23 12 05.1 -1.1
baz=91
I05D Terrebonne, OR 73.90 313 P P 23 12 06.5 +0.3
baz=91,SNR=10
ORV Oroville 74.03 308 eP P 23 12 06.6 -0.4
ORV pmax pmax
comp=Z,19nm,1.0s
ORV MLR MLR
comp=Z,3µm,18.0s
ORV Oroville 74.03 308 eP P 23 12 06.6 -0.4
comp=Z,19nm,1.0s
ORV LR LR
comp=Z,3µm,18.0s
SAO San Andreas Ge 74.05 305 PFAKE 23 12 20.0 +13
SAO LR LR
comp=Z,4µm,21.0s
B06A Marblemount 74.09 317 PFAKE 23 12 20.0 +13
B06A LR LR
comp=Z,4µm,20.0s
K04D Chiloquin, OR 74.19 311 P P 23 12 07.2 -0.9
baz=90
O03D Paynes Creek 74.25 309 P P 23 12 07.8 -0.7
baz=89,SNR=5.3
M04C Macdoel 74.26 310 P P 23 12 08.2 -0.3
baz=90,SNR=15
LON Longmire 74.27 316 PFAKE 23 12 20.0 +12
LON LR LR
comp=Z,3µm,18.0s
D05A Enumclaw 74.39 316 PFAKE 23 12 20.0 +11
D05A LR LR
comp=Z,3µm,18.0s
LLLB Lillooet 74.41 320 eP P 23 12 07.9 -1.2
comp=Z,28nm,1.0s
LLLB LR LR
comp=Z,5µm,20.0s
J04D Umpqua Nationa 74.45 312 P P 23 12 09.2 -0.5
baz=90,SNR=7.7
B05A Bryant 74.49 317 P P 23 12 07.3 -2.1
baz=91
MBAR Mbarara 74.60 94 eP P 23 12 10.5 -0.5
MBAR pmax pmax
comp=Z,83nm,1.3s
MBAR MLR MLR
comp=Z,1µm,22.0s
MBAR Mbarara 74.60 94 eP P 23 12 10.5 -0.5
comp=Z,83nm,1.3s
MBAR LR LR
comp=Z,1µm,22.0s
HOPEN Hopen 74.63 13 IVmB_BB 23 12 20.0
comp=Z,1µm,1.5s
HOPEN eS S 23 21 48.1 +2.6
HOPEN IVMs_BB IVMs_BB 23 36 04.8
comp=Z,535nm,10.5s
I04A Tendick Farm, 74.67 313 P P 23 12 09.5 -1.3
baz=90,SNR=8.2
F04A Amboy 74.68 315 PFAKE 23 12 20.0 +9.3
F04A LR LR
comp=Z,3µm,18.0s
SUR Sutherland 74.81 128 eP P 23 12 11.8 -0.1
comp=Z,202nm,1.3s
SUR LR LR
comp=Z,4µm,22.0s
WDC Whiskeytown Da 74.81 309 eP P 23 12 09.9 -1.6
WDC pmax pmax
comp=Z,32nm,1.5s
WDC MLR MLR
comp=Z,2µm,19.0s
WDC Whiskeytown Da 74.81 309 eP P 23 12 09.9 -1.6
comp=Z,32nm,1.5s
WDC LR LR
comp=Z,2µm,19.0s
A04D Lummi Island 74.90 318 P P 23 12 09.8 -2.1
baz=91
N02D Trinity Center 74.93 310 P P 23 12 10.7 -1.6
baz=89
MCW Mount Constitu 74.98 318 P P 23 12 10.1 -2.3
MCW Mount Constitu 74.98 318 P P 23 12 10.1 -2.3
M02C Callahan 75.03 310 P P 23 12 11.6 -1.3
baz=89
GDXM Geysers 75.05 307 PFAKE 23 12 20.0 +6.9
GDXM LR LR
comp=Z,2µm,19.0s
HUMO Hull Mountain 75.08 311 eP P 23 12 12.0 -1.1
comp=Z,31nm,1.4s
HUMO LR LR
comp=Z,4µm,20.0s
F04D Rainier, OR 75.09 315 P P 23 12 12.2 -0.8
baz=90
APA Apatity 75.11 23⇑ *i*P P 23 12 13.2 +0.5
APA *i* 23 12 20.2
APA *i* 23 15 09.0
APA *i* PPP PPP 23 16 44.0
APA *i* S S 23 21 48.0 -3.1
APA pmax pmax
comp=Z,42nm,0.9s
ARNB Al Arnab 75.25 56 eP P 23 12 12.8 -1.5
HOPS Hopland Field 75.26 308 eP P 23 12 15.4 +1.2
comp=Z,79nm,1.3s
HOPS LR LR
comp=Z,3µm,20.0s
G03D McMinnville, O 75.27 314 P P 23 12 13.7 -0.4
baz=89
COR Corvallis 75.31 313 PFAKE 23 12 20.0 +5.7
COR LR LR
comp=Z,4µm,21.0s
I03D Drain, OR 75.35 312 P P 23 12 14.0 -0.5
baz=89
BRBR Barbar 75.36 58 eP P 23 12 15.2 +0.1
PGC Sidney 75.39 318 eP P 23 12 15.6 +0.9
comp=Z,46nm,0.9s
PGC LR LR
comp=Z,4µm,18.0s
TCHB Talchebab 75.42 59 eP P 23 12 15.5 +0.2
E03A Lebam 75.47 315 eP P 23 12 14.5 -0.7
comp=Z,108nm,1.0s
E03A LR LR
comp=Z,3µm,18.0s
F03A Seaside 75.47 315 eP P 23 12 15.8 +0.6
comp=Z,82nm,0.9s
F03A LR LR
comp=Z,2µm,18.0s
LSZ Lusaka 75.52 109 eP P 23 12 16.3 +0.1
LSZ pmax pmax
comp=Z,184nm,1.8s
LSZ MLR MLR
comp=Z,2µm,20.0s
LSZ Lusaka 75.52 109 P P 23 12 16.7 +0.5
SNR=22
LSZ P P 23 12 16.7 +0.5
SNR=22
LSZ Lusaka 75.52 109 P P 23 12 16.7 +0.5
SNR=22
LSZ Lusaka 75.52 109 eP P 23 12 16.3 +0.1
comp=Z,184nm,1.8s
LSZ LR LR
comp=Z,2µm,20.0s

OBN Obninsk 75.54 36*d i*P P 23 12 14.5 -0.9
OBN *i* 23 12 23.6
OBN pmax pmax
comp=Z,58nm,1.2s
OBN MLR MLR
comp=Z,4µm,18.0s
OBN Obninsk 75.54 36 eP P 23 12 14.7 -0.7
comp=Z,174nm,1.4s
OBN LR LR
comp=Z,4µm,20.0s
L02D Cave Junction, 75.57 311 P P 23 12 15.6 -0.3
baz=88
LVZ Lovozero 75.62 22 eP P 23 12 17.5 +1.8
LVZ pmax pmax
comp=Z,73nm,1.1s
LVZ MLR MLR
comp=Z,3µm,18.0s
LVZ Lovozero 75.62 22 eP P 23 12 17.5 +1.8
comp=Z,72nm,1.1s
LVZ LR LR
comp=Z,3µm,18.0s
NLWA Neilton Lookou 75.68 316 eP P 23 12 16.4 0.0
comp=Z,80nm,1.3s
NLWA LR LR
comp=Z,4µm,18.0s
KHMM Horse Mountain 75.71 310 eP P 23 12 17.6 +0.7
comp=Z,83nm,1.1s
KHMM LR LR
comp=Z,4µm,20.0s
KMRM Mail Ridge 75.71 309 PFAKE 23 12 30.0 +13
KMRM LR LR
comp=Z,5µm,20.0s
TOTH TOTAH 75.76 58 eP P 23 12 16.5 -0.8
MARH Ras Al Marh 75.77 58 eP P 23 12 17.3 -0.3
DRWC Darouich 75.77 55 eP P 23 12 17.6 +0.3
KRMB Red Mountain 75.82 310 eP P 23 12 18.2 +0.7
comp=Z,133nm,1.3s
KRMB LR LR
comp=Z,4µm,18.0s
JCC Jacoby Creek, 75.93 309 PFAKE 23 12 30.0 +12
JCC LR LR
comp=Z,2µm,19.0s
ANN Anapa 76.05 46 eP P 23 12 16.2 -2.4
ANN *i* *PP pP 23 12 18.8 -2.2
ANN *i* 23 12 26.7
ANN *e* 23 15 03.6
ANN eS S 23 21 59.2 -3.2
ANN pmax pmax
comp=Z,156nm,1.9s
ANN MLR MLR
comp=E,541nm,19.0s
ANN MLR MLR
comp=Z,2µm,19.0s
ANN MLR MLR
comp=N,2µm,19.0s
SALA Sala 76.06 59 eP P 23 12 19.1 0.0
MOS Moscow 76.16 35 eP P 23 12 16.2 -2.8
MOS *e* 23 12 27.5
MOS *e* 23 15 07.8
MOS eS S 23 22 01.4 -1.8
MOS *e* 23 22 33.7
MOS eSS SS 23 26 54.1 -2.2
MOS pmax pmax
comp=Z,143nm,1.8s
MOS pmax pmax
comp=Z,800nm,3.5s
MOS smax smax
comp=N,900nm,5.7s
MOS smax smax
comp=E,1µm,6.7s
RABH Abou Rabah 76.34 57 eP P 23 12 35.6 +15
ROOS tl_alroos 76.42 57 eP P 23 12 21.2 +0.2
ZALF Zalf 76.55 59 eP P 23 12 18.9 -2.9
PMSA Palmer Station 76.91 189 P P 23 12 23.3 +0.5
comp=E,22nm,1.0s,baz=25,slow=6.6,SNR=7.4
BOSA Boshof 76.99 123 P P 23 12 23.7 -0.6
comp=E,130nm,1.2s,baz=288,slow=5.4,SNR=40
BOSA LR LR 23 40 36.7
comp=E,2µm,18.8s,baz=292,slow=31
BOSA Boshof 76.99 123 eP P 23 12 23.7 -0.6
BOSA pmax pmax
comp=Z,215nm,1.3s
BOSA Boshof 76.99 123 eP P 23 12 23.7 -0.6
comp=Z,215nm,1.3s
VSR Storozhevoye 77.08 40 eP P 23 12 23.7 -0.6
VSR *e* 23 12 23.8
VSR eS S 23 22 12.2 -1.2
VSR pmax pmax
comp=Z,160nm,1.8s
VSR pmax pmax
comp=Z,190nm,1.8s
VSR smax smax
comp=E,260nm,4.7s
KLMR Klimovskoe 77.25 30 eP P 23 12 23.6 -1.4
KLMR pmax pmax
comp=Z,296nm,1.3s
JHLN Al Jahlan 77.27 56 eP P 23 12 17.3 -8.4
KSRV Kasrt alli 77.71 56 eP P 23 12 21.7 -6.4
SOC Sochi 77.74 48*d i*P P 23 12 27.2 -0.9
SOC *e* 23 15 22.5
SOC ePPP PPP 23 17 11.1
SOC eS S 23 22 19.5 -1.4
SOC pmax pmax
comp=Z,80nm,0.9s
SOC MLR MLR
comp=Z,1µm,19.0s
BBB Bella Bella 78.31 321 PFAKE 23 12 40.0 +8.9
BBB LR LR
comp=Z,5µm,21.0s
SFNV Sufian 78.56 55 eP P 23 12 31.4 -1.5
VRH Novokhopyorsk 78.69 40 eP P 23 12 32.8 -0.4
VRH eS S 23 22 28.9 -1.9
VRH pmax pmax
comp=Z,20nm,0.6s
VRH smax smax
comp=N,20nm,1.0s
MZRK Al-Mazaregh 79.05 55 eP P 23 12 23.1 -12
DLBC Dease Lake 79.12 328 eP P 23 12 35.5 -0.1
comp=N,39nm,0.9s
DLBC LR LR
comp=Z,4µm,20.0s
KIV Kislovodsk 79.86 47 eP P 23 12 38.7 -1.2
KIV *e* 23 15 39.4
KIV eS S 23 22 42.6 -1.2
KIV eSS SS 23 27 52.2 -0.6
KIV pmax pmax
comp=Z,96nm,1.1s
KIV pmax pmax
comp=Z,229nm,4.9s
KIV Kislovodsk 79.86 47 eP P 23 12 39.9 -0.1
comp=Z,152nm,1.3s
KIV LR LR
comp=Z,1µm,22.0s
KVAR Kislovodsk Arr 79.87 47 P P 23 12 40.1 +0.1
comp=Z,121nm,1.2s,baz=232,slow=2.1,SNR=44
NEY Neytrino 79.95 48*de*P P 23 12 41.0 +0.5
NEY pmax pmax
comp=Z,20nm,1.3s
NEY MLR MLR
comp=Z,564nm,17.0s
GOF Gofitskoye 80.02 46⇓ *i*P P 23 12 40.5 -0.1
GOF eS S 23 22 45.8 +0.6
GOF pmax pmax
comp=Z,250nm,1.3s
GOF pmax pmax
comp=N,43nm,1.9s
KBZ Khabaz 80.03 47 P P 23 12 41.1 +0.4
comp=N,24nm,1.0s,baz=270,slow=4.7,SNR=42
KBZ LR LR 23 47 52.0
comp=N,1µm,20.4s,baz=297,slow=36
INK Inuvik 80.10 338 P P 23 12 39.5 -1.1
comp=N,30nm,1.0s,baz=75,slow=6.9,SNR=24
INK Inuvik 80.10 338 eP P 23 12 40.0 -0.6
INK pmax pmax
comp=Z,64nm,1.1s
INK MLR MLR
comp=Z,8µm,19.0s
INK Inuvik 80.10 338 eP P 23 12 40.0 -0.6
comp=Z,64nm,1.1s
INK LR LR
comp=Z,8µm,19.0s
WRAK Wrangell Islan 80.51 326 PFAKE 23 12 50.0 +7.0
WRAK LR LR
comp=Z,3µm,21.0s
ONI Oni 80.55 48 P P 23 12 43.2 -0.5
ONI Oni 80.55 48 P P 23 12 43.2 -0.5

AKH Akhalkalaki 80.70 50⇓ *i*P P 23 12 44.4 -0.2
AKH Akhalkalaki 80.70 50 P P 23 12 44.1 -0.5
AKH Akhalkalaki 80.70 50 P P 23 12 44.1 -0.5
FURI Furi 80.72 83 *i* P P 23 12 53.1 +7.8
FURI eS S 23 23 00.2 +6.0
FURI Furi 80.72 83 PFAKE 23 12 50.0 +4.6
FURI LR LR
comp=Z,5µm,19.0s
BGD Bogdanovka 80.80 50 P P 23 12 44.9 -0.3
ZEI Tsey 80.86 48 eP P 23 12 43.9 -1.6
ZEI pmax pmax
comp=Z,202nm,1.4s
DIB Dawson Inlet, 80.89 322 PFAKE 23 12 50.0 +4.9
DIB LR LR
comp=Z,2µm,20.0s
CRAG Craig 81.03 325 PFAKE 23 13 00.0 +14
CRAG LR LR
comp=Z,3µm,21.0s
KMBO Kilima Mbogo 81.09 93 P P 23 12 48.5 +1.3
comp=Z,20nm,1.1s,baz=297,slow=4.1,SNR=17
KMBO PP PP 23 15 52.0 -0.4
comp=Z,9.9nm,1.2s,baz=250,slow=8.2,SNR=5.0
KMBO LR LR 23 46 22.7
comp=Z,2µm,20.3s,baz=278,slow=34
KMBO Kilima Mbogo 81.09 93 eP P 23 12 49.0 +1.7
KMBO *e* 23 15 52.7
KMBO pmax pmax
comp=Z,35nm,1.3s
KMBO Kilima Mbogo 81.09 93 P P 23 12 49.3 +2.0
SNR=13
KMBO Kilima Mbogo 81.09 93 P P 23 12 49.3 +2.0
SNR=13
KMBO Kilima Mbogo 81.09 93 eP P 23 12 49.0 +1.7
comp=Z,35nm,1.3s
KMBO ePP PP 23 15 52.7 +0.3
GUDG Gudauri 81.32 48 P P 23 12 48.7 +0.8
TBLG Delisi 81.59 49 P P 23 12 48.9 -0.3
TBLG Delisi 81.59 49 P P 23 12 48.9 -0.3
SKAG Skagway 81.77 329 eP P 23 12 49.8 +0.1
comp=Z,94nm,1.4s
SKAG LR LR
comp=Z,3µm,19.0s
GNI Garni 81.79 51 P P 23 12 50.7 +0.3
comp=Z,51nm,1.1s,baz=165,slow=1.5,SNR=40
GNI Garni 81.79 51 *i*P P 23 12 50.7 +0.3
SNR=36
GNI Garni 81.79 51*d i*P P 23 12 50.5 +0.1
GNI pmax pmax
comp=Z,605nm,1.7s
GNI MLR MLR
comp=Z,3µm,18.0s
GNI Garni 81.79 51 P P 23 12 50.9 +0.5
SNR=78
GNI Garni 81.79 51 P P 23 12 50.9 +0.5
SNR=78
GNI Garni 81.79 51 eP P 23 12 50.7 +0.3
comp=Z,598nm,1.8s
GNI LR LR
comp=Z,1µm,20.0s
DGRG David-gareji 82.10 49 P P 23 12 52.1 +0.2
DGRG David-gareji 82.10 49 P P 23 12 52.1 +0.2
GROC Groznyy 82.19 48 eP P 23 12 52.0 -0.2
GROC pmax pmax
comp=Z,114nm,1.6s
HYT Haines Junctio 82.66 330 eP P 23 12 54.7 +0.2
comp=Z,33nm,1.2s
HYT LR LR
comp=Z,4µm,21.0s
DAWY Dawson 82.99 334 eP P 23 12 54.4 -1.7
comp=Z,70nm,1.3s
DAWY LR LR
comp=Z,7µm,21.0s
DHAK Deception Hill 83.29 329 PFAKE 23 13 10.0 +12
DHAK LR LR
comp=Z,4µm,20.0s
EGAK Eagle 83.61 335 eP P 23 12 58.4 -0.8
comp=Z,24nm,1.1s
EGAK LR LR
comp=Z,3µm,22.0s
YKU2 Yakutat 83.95 329 PFAKE 23 13 10.0 +9.1
YKU2 LR LR
comp=Z,4µm,19.0s
PCA Pinnacle 84.13 330 PFAKE 23 13 10.0 +8.0
PCA LR LR
comp=Z,6µm,20.0s
VNA1 Neumayer--Stat 84.68 169 P P 23 13 05.7 +1.4
FYU Fort Yukon 84.84 337 eP P 23 13 05.7 +0.3
comp=Z,198nm,1.6s
FYU LR LR
comp=Z,6µm,19.0s
BALM Baldy 84.94 331 eP P 23 13 06.1 0.0
BALM pmax pmax
comp=Z,162nm,1.8s
BALM MLR MLR
comp=Z,4µm,21.0s
BALM Baldy 84.94 331 eP P 23 13 06.1 0.0
comp=Z,162nm,1.8s
BALM LR LR
comp=Z,4µm,21.0s
DOT Dot Lake 85.10 334 eP P 23 13 06.5 -0.3
comp=Z,98nm,1.4s
DOT LR LR
comp=Z,13µm,21.0s
MENT Mentasta 85.12 333 eP P 23 13 06.5 -0.4
comp=Z,90nm,1.6s
MENT LR LR
comp=Z,4µm,21.0s
DAMY Dhamar 85.29 76 eP P 23 13 11.2 +2.2
comp=Z,88nm,1.6s
DAMY LR LR
comp=Z,7µm,18.0s
CRQM Cirque 85.38 331 eP P 23 13 08.6 +0.2
comp=Z,74nm,1.2s
CRQM LR LR
comp=Z,5µm,22.0s
PAX Paxson 85.89 333 eP P 23 13 10.1 -0.7
PAX pmax pmax
comp=Z,97nm,1.6s
PAX MLR MLR
comp=Z,5µm,21.0s
PAX Paxson 85.89 333 eP P 23 13 10.1 -0.7
comp=Z,97nm,1.6s
PAX LR LR
comp=Z,5µm,21.0s
IL1 Eielson Array 85.99 335 eP P 23 13 09.6 -1.6
ILAR Eielson Array 85.99 335 P P 23 13 10.8 -0.5
comp=Z,42nm,0.9s,baz=70,slow=4.0,SNR=139
ILAR PKKPbc PKKPbc 23 31 17.8 +4.2
comp=Z,1.1nm,1.0s,baz=333,slow=2.1,SNR=4.8
ILAR LR LR 23 50 10.5
comp=Z,2µm,18.9s,baz=76,slow=35
ILB Eielson Array 85.99 335 eP P 23 13 10.7 -0.5
ILB ePKKPbc PKKPbc 23 31 17.8 +4.2
BMRM Bremner River 86.02 331 eP P 23 13 11.2 -0.2
comp=Z,109nm,1.6s
BMRM LR LR
comp=Z,5µm,20.0s
RAGM Ragged Mountai 86.21 331 eP P 23 13 12.8 +0.4
comp=Z,65nm,1.1s
RAGM LR LR
comp=Z,5µm,20.0s
COLA College 86.36 336 eP P 23 13 12.7 -0.2
COLA pmax pmax
comp=Z,114nm,0.9s
COLA MLR MLR
comp=Z,2µm,20.0s
COLA College 86.36 336 eP P 23 13 12.7 -0.2
comp=Z,114nm,0.9s
COLA LR LR
comp=Z,2µm,20.0s
CCB Clear Creek Bu 86.41 335 eP P 23 13 12.6 -0.6
comp=Z,88nm,1.1s
CCB LR LR
comp=Z,2µm,19.0s
MDM Murphy Dome 86.48 336 eP P 23 13 13.1 -0.6
comp=Z,88nm,1.1s
MDM LR LR
comp=Z,3µm,19.0s
KLU Klutina 86.50 332 eP P 23 13 13.8 0.0
comp=Z,80nm,1.4s
COLD Coldfoot 86.52 338 eP P 23 13 13.4 -0.3
comp=Z,28nm,0.8s
COLD LR LR
comp=Z,6µm,22.0s
DIV Divide 86.53 332 eP P 23 13 13.6 -0.3
comp=Z,42nm,1.0s
DIV LR LR

comp=Z,5µm,20.0s
SNAA Sanae 86.56 168 P **P** **23 13 14.0 +0.2**
SNAA Sanae 86.56 168 P **P** **23 13 13.9 +0.2**
comp=Z,17nm,0.9s,baz=330,slow=5.5,SNR=74
SNAA Sanae 86.56 168 *d* *i*P **P** **23 13 13.7 -0.1**
SNAA Sanae 86.56 168 *e*P **P** **23 13 13.2 -0.5**
comp=Z,571nm,2.0s
WRH Wood River Hil 86.58 335 *e*P **P** **23 13 13.4 -0.6**
WRH comp=Z,125nm,1.1s LR LR
comp=Z,3µm,22.0s
EYAK Cordova Ski Ar 86.68 331 *e*P **P** **23 13 15.3 +0.7**
EYAK comp=Z,52nm,1.0s LR LR
comp=Z,8µm,21.0s
DHY Denali Highway 86.69 334 *e*P **P** **23 13 14.6 -0.2**
DHY comp=Z,69nm,1.0s LR LR
comp=Z,4µm,21.0s
FID Port Fidalgo 86.97 331 *e*P **P** **23 13 16.2 +0.2**
FID comp=Z,52nm,1.0s LR LR
comp=Z,6µm,20.0s
SCM Sheep Creek Mo 87.04 333 *e*P **P** **23 13 16.0 -0.5**
SCM pmax pmax
comp=Z,132nm,1.2s
SCM Sheep Creek Mo 87.04 333 *e*P **P** **23 13 16.0 -0.5**
comp=Z,132nm,1.2s
MCK McKinley 87.16 335 *e*P **P** **23 13 16.8 -0.2**
MCK pmax pmax
comp=Z,62nm,1.2s
MCK MLR MLR
comp=Z,4µm,19.0s
MCK McKinley 87.16 335 *e*P **P** **23 13 16.8 -0.2**
comp=Z,62nm,1.2s
MCK LR LR
comp=Z,4µm,19.0s
RND Reindeer 87.23 334 *e*P **P** **23 13 17.0 -0.4**
RND pmax pmax
comp=Z,62nm,1.0s
RND MLR MLR
comp=Z,5µm,22.0s
RND Reindeer 87.23 334 *e*P **P** **23 13 17.0 -0.4**
comp=Z,62nm,1.0s
RND LR LR
comp=Z,5µm,22.0s
BWN Browne 87.24 335 *e*P **P** **23 13 16.9 -0.4**
comp=Z,196nm,1.0s
BWN LR LR
comp=Z,4µm,18.0s
MID Middleton Isla 87.28 330 PFAKE 23 13 30.0 +12
MID LR LR
comp=Z,3µm,22.0s
MLY Manley 87.47 336 *e*P **P** **23 13 18.1 -0.3**
comp=Z,43nm,1.1s
MLY LR LR
comp=Z,2µm,20.0s
SML Sawmill 87.50 333 *e*P **P** **23 13 18.7 0.0**
SML pmax pmax
comp=Z,78nm,1.1s
SML MLR MLR
comp=Z,3µm,21.0s
SML Sawmill 87.50 333 *e*P **P** **23 13 18.7 0.0**
comp=Z,78nm,1.1s
SML LR LR
comp=Z,3µm,21.0s
ARU Arti 87.67 33 P **P** **23 13 19.3 -0.2**
comp=Z,37nm,1.0s,baz=266,slow=4.2,SNR=28
ARU Arti 87.67 33 *d* *i*P **P** **23 13 19.2 -0.3**
ARU 23 16 41.9
ARU PPP PPP 23 18 43.6
ARU S **SKSac** **23 23 46.5 -1.4**
ARU SSS SSS 23 33 15.9
ARU pmax pmax
comp=Z,139nm,1.7s
ARU Arti 87.67 33 *e*P **P** **23 13 19.3 -0.2**
comp=Z,207nm,1.5s
ARU LR LR
comp=Z,5µm,22.0s
TRF Thorofare Moun 87.83 335 *e*P **P** **23 13 19.3 -1.1**
comp=Z,72nm,1.0s
TRF LR LR
comp=Z,4µm,19.0s
BPAW Bear Paw Mtn. 87.89 335 *e*P **P** **23 13 19.3 -1.1**
comp=Z,53nm,1.2s
BPAW LR LR
comp=Z,2µm,22.0s
PMR Palmer 87.93 333 *e*P **P** **23 13 20.3 -0.4**
PMR pmax pmax
comp=Z,62nm,1.4s
PMR MLR MLR
comp=Z,4µm,20.0s
PMR Palmer 87.93 333 *e*P **P** **23 13 20.3 -0.4**
comp=Z,62nm,1.4s
PMR LR LR
comp=Z,4µm,20.0s
KTH Kantishna Hill 88.06 335 *e*P **P** **23 13 20.5 -0.8**
comp=Z,96nm,1.2s
KTH LR LR
comp=Z,4µm,18.0s
RC01 Rabbit Creek A 88.38 332 *e*P **P** **23 13 23.4 +0.6**
comp=Z,48nm,1.1s
RC01 LR LR
comp=Z,4µm,22.0s
SEW Seward 88.57 331 *e*P **P** **23 13 24.1 +0.5**
comp=Z,44nm,1.1s
SEW LR LR
comp=Z,6µm,20.0s
CAST Castle Rocks 88.59 335 PFAKE 23 13 30.0 +6.2
CAST LR LR
comp=Z,3µm,19.0s
SVE Sverdlovsk 88.66 32⇓ *i*P **P** **23 13 24.2 0.0**
SVE *e* 23 16 48.5
SVE *e*S **SKSac** **23 23 51.3 -2.6**
SVE pmax pmax
comp=Z,148nm,1.6s
SVE MLR MLR
comp=E,4µm,19.0s
SUA Susitna One 88.70 333 *e*P **P** **23 13 25.0 +0.5**
comp=E,33nm,1.2s
PPLA Purkeypile 88.83 334 *e*P **P** **23 13 24.3 -0.8**
comp=E,79nm,1.2s
PPLA LR LR
comp=Z,6µm,19.0s
AKTO Aktyubinsk 88.99 39 P **P** **23 13 25.5 -0.4**
comp=Z,26nm,1.0s,baz=284,slow=4.5,SNR=44
BRLK Bradley Lake 89.36 331 *e*P **P** **23 13 27.9 +0.4**
comp=Z,22nm,0.9s
BRLK LR LR
comp=Z,6µm,20.0s
SPU Mount Spurr 89.40 333 *e*P **P** **23 13 27.4 -0.3**
NVL N'lazarevskaya 89.41 164 *e*P **P** **23 13 28.4 +1.1**
NVL *e*S **SKSac** **23 23 55.7 -1.7**
NVL *e**SS **S** **23 24 15.3 -2.1**
NVL *e*SP **SP** **23 25 25.0 +3.0**
NVL *e*SS **SS** **23 30 11.2 -1.4**
NVL MLR MLR
comp=Z,2µm,22.0s
CNPM China Poot 89.61 331 *e*P **P** **23 13 29.1 +0.5**
comp=Z,56nm,1.3s
HOM Homer 89.76 331 PFAKE 23 13 40.0 +11
HOM LR LR
comp=Z,9µm,21.0s
RSO Redoubt South 89.98 332 *e*P **P** **23 13 30.5 -0.1**
TT01 Tatalina 90.44 335 *e*P **P** **23 13 32.8 +0.4**
AB31 Akbulak array 90.52 40 *i*P **P** **23 13 32.9 -0.2**
AB31 pmax pmax
comp=Z,184nm,1.7s
KDAK Kodiak Island 90.90 330 PFAKE 23 13 40.0 +5.4
KDAK LR LR
comp=Z,3µm,20.0s
SVW2 Sparrevohn 91.01 333 PFAKE 23 13 40.0 +4.9
SVW2 LR LR
comp=Z,3µm,20.0s
OHAK Old Harbor 91.47 329 *e*P **P** **23 13 37.9 +0.6**
comp=Z,27nm,1.1s
GEYT Alibeck 92.43 51 P **P** **23 13 42.6 +0.3**
comp=Z,8.6nm,0.8s,baz=284,slow=6.0,SNR=25
NRIK Noril'sk 93.17 16 P **P** **23 13 45.5 +0.5**
comp=Z,2.4nm,0.6s,baz=296,slow=1.3,SNR=7.3
NRIK LR LR 23 51 29.4
comp=Z,2µm,21.4s,baz=316,slow=33
FAQ Al Faqa, Dubai 93.63 64 *i*P **P** **23 13 48.0 0.0**
SNR=9.3
FAQ Al Faqa, Dubai 93.63 64 P **P** **23 13 48.2 +0.2**
SNR=10
FAQ P **P** **23 13 48.2 +0.2**
SNR=10
FAQ Al Faqa, Dubai 93.63 64 P **P** **23 13 48.2 +0.2**
SNR=10
NAZ Nazwa, Dubai 93.64 64 *i*P **P** **23 13 48.1 +0.1**
SNR=16
NAZ Nazwa, Dubai 93.64 64 P **P** **23 13 46.7 -1.3**
SNR=12
NAZ P **P** **23 13 46.7 -1.3**
SNR=12
NAZ Nazwa, Dubai 93.64 64 P **P** **23 13 46.7 -1.3**
SNR=12
ASHO Ashiyiah 94.06 64 *i*P **P** **23 13 50.0 0.0**
SNR=23
ASHO Ashiyiah 94.06 64 P **P** **23 13 50.0 0.0**
SNR=14
ASHO Ashiyiah 94.06 64 P **P** **23 13 50.0 0.0**
SNR=14
ABPO Ambohimpanom 94.09 108 PFAKE 23 14 00.0 +10
ABPO LR LR
comp=Z,2µm,21.0s
HATD Hatta, Dubai 94.09 64 *i*P **P** **23 13 50.3 +0.1**
SNR=21
HATD Hatta, Dubai 94.09 64 P **P** **23 13 50.2 0.0**
SNR=17
HATD P **P** **23 13 50.2 0.0**
SNR=17
HATD Hatta, Dubai 94.09 64 P **P** **23 13 50.2 0.0**
SNR=17
UOSS Minazif 94.12 64 *e*P **P** **23 13 50.3 0.0**
comp=Z,152nm,1.6s
UOSS LR LR
comp=Z,3µm,19.0s
ARQ Araqi 94.79 65 P **P** **23 13 53.3 -0.1**
SNR=9.2
ARQ Araqi 94.79 65 P **P** **23 13 53.3 -0.1**
SNR=9.2
BRVK Borovoye 95.21 34⇓ *e*P **P** **23 13 54.1 -0.6**
BRVK pmax pmax
comp=Z,15nm,1.2s
BRVK Borovoye 95.21 34 *e*P **P** **23 13 54.5 -0.2**
comp=Z,39nm,1.5s
BRVK LR LR
comp=Z,7µm,21.0s
BVA0 Borovoye Array 95.28 34 *i*P **P** **23 13 54.3 -0.7**
BVA0 pmax pmax
comp=Z,25nm,1.6s
BVAR Borovoye Array 95.28 34 P **P** **23 13 55.0 0.0**
comp=Z,4.1nm,0.9s,baz=298,slow=3.2,SNR=13
BVAR PP **PP** **23 17 48.9 +4.3**
comp=Z,2.4nm,1.0s,baz=273,slow=5.6,SNR=4.2
HOQ Hoqain 95.43 65 P **P** **23 13 55.2 -1.1**
SNR=7.6
HOQ Hoqain 95.43 65 P **P** **23 13 55.2 -1.1**
SNR=7.6
RKT Rikitea 95.53 248 *e*PS PS 23 26 29.7 -3.1
comp=Z,671nm,26.2s
RKT *e*SS SS 23 31 36.9 -5.8
comp=Z,1µm,29.5s
RKT Rikitea 95.53 248 *e*LR LR 23 44 53.2
comp=Z,3µm,26.2s
SDPT Sand Point 95.89 329 PFAKE 23 14 10.0 +12
SDPT LR LR
comp=Z,2µm,20.0s
GAMB Gambell 95.97 339 PFAKE 23 14 10.0 +12
GAMB LR LR
comp=Z,4µm,22.0s
SMDO Samad 96.22 65 P **P** **23 13 58.7 -1.3**
SNR=5.7
SMDO Samad 96.22 65 P **P** **23 13 58.7 -1.3**
SNR=5.7
SYO Syowa Base 97.48 159⇑ *e*P **P** **23 14 02.8 -1.7**
SYO Syowa Base 97.48 159⇓ *e*pP pP 23 14 08.0 +1.0
TIXI Tiksi 97.61 2 *e*P **P** **23 14 04.9 -0.2**
TIXI pmax pmax
comp=Z,43nm,1.5s
TIXI MLR MLR
comp=Z,800nm,20.0s
TIXI Tiksi 97.61 2 *e*P **P** **23 14 04.9 -0.2**
comp=Z,42nm,1.5s
TIXI LR LR
comp=Z,800nm,20.0s
TAOE Nuku Hiva Isla 98.13 263 *e*SS SS 23 32 02.9 -17
comp=Z,926nm,26.5s
TAOE Nuku Hiva Isla 98.13 263 *e*LR LR 23 46 20.9
comp=Z,4µm,37.3s
BILL Bilibino 98.57 349 *e*P **P** **23 14 09.1 -0.4**
BILL *i* 23 18 15.8
BILL *i*S S 23 25 23.8 -15
BILL pmax pmax
comp=Z,2.0nm,0.8s
BILL MLR MLR
comp=Z,2µm,21.0s
BILL Bilibino 98.57 349 PFAKE 23 14 20.0 +10
BILL LR LR
comp=Z,2µm,19.0s
AKUT Akutan 99.15 330 PFAKE 23 14 20.0 +7.6
AKUT LR LR
comp=Z,3µm,20.0s
SPIA Saint Paul Isl 99.49 334 PFAKE 23 14 20.0 +6.2
SPIA LR LR
comp=Z,3µm,20.0s
UNV Unalaska Valle 99.67 330 PFAKE 23 14 20.0 +5.3
UNV LR LR
comp=Z,3µm,19.0s
QSPA South Pole Qui 100.77 180 PFAKE 23 14 30.0 +11
QSPA LR LR
comp=Z,1µm,21.0s
NVS Novosibirsk 100.85 28⇓ *i*P **Pdif** **23 14 21.5 +1.5**
NVS *e* 23 24 59.0
NVS pmax pmax
comp=Z,32nm,2.0s
NVS pmax pmax
comp=N,4.0nm,1.4s
NVS pmax pmax
comp=E,10.0nm,1.8s
KURK Kurchatov 100.87 33 PFAKE 23 14 30.0 +10
KURK LR LR
comp=Z,6µm,22.0s
NIKH Nikolski High 101.33 330 PFAKE 23 14 30.0 +7.9
NIKH LR LR
comp=Z,3µm,20.0s
KBL Kabul 101.87 51 PFAKE 23 14 30.0 +4.7
KBL LR LR
comp=Z,1µm,20.0s
ZAA1 Zalesovo Array 102.13 28 *e*Pdif **Pdif** **23 14 26.2 +0.5**
ZAA1 *e*PP **PP** **23 18 33.6 -3.2**
ZALV Zalesovo Beam 102.13 28 P **Pdif** **23 14 26.2 +0.5**
comp=Z,1.5nm,0.7s,baz=294,slow=7.4,SNR=6.7
ZALV PP **PP** **23 18 33.6 -3.2**
comp=Z,3.0nm,0.8s,baz=298,slow=9.4,SNR=5.1
AAK Ala-Archa 102.40 42⇑ *e*P **Pdif** **23 14 28.9 +1.5**
AAK pmax pmax
comp=Z,11nm,1.1s
AAK Ala-Archa 102.40 42 PFAKE 23 14 40.0 +13
AAK LR LR
comp=Z,2µm,19.0s
MAKZ Makanchi 104.86 35 PFAKE 23 14 50.0 +12
MAKZ LR LR
comp=Z,5µm,21.0s
MK32 Makanchi Array 105.05 35 *e*Pdif **Pdif** **23 14 40.2 +1.4**
MK32 *e*PKKPbc **PKKPbc** **23 30 21.6 -0.3**
MKAR Makanchi Array 105.05 35 Pdiff **Pdif** **23 14 40.2 +1.4**
comp=Z,2.5nm,1.1s,baz=298,slow=3.3,SNR=8.7
MKAR PKKPbc **PKKPbc** **23 30 21.6 -0.3**
comp=Z,1.1nm,0.9s,baz=108,slow=4.0,SNR=6.7
BHJ Bhuj 106.38 62 *e*P **Pdif** **23 14 43.5 -1.7**
BHJ IAmb IAmb 23 18 34.4
comp=Z,51nm,1.2s
YAK Yakutsk 107.23 3 PFAKE 23 19 10.0
YAK LR LR
comp=Z,900nm,20.0s
PPT2 Papeete2 108.42 255 *e*PP PP 23 19 16.7 -8.4
comp=Z,142nm,26.5s
PPT2 Papeete2 108.42 255 *e*PS PS 23 28 46.7 -3.3
comp=Z,1µm,27.8s
PPT2 *e*SS SS 23 34 36.6 -5.1
comp=Z,1µm,27.0s
PPT2 Papeete2 108.42 255 *e*LQ LQ 23 45 52.0
comp=Z,4µm,31.2s
PPT2 *e*LR LR 23 50 47.9
comp=Z,6µm,33.5s
TBI Tubuai 108.79 249 *e*PS PS 23 28 49.7 -3.8
comp=Z,1µm,27.2s
TBI *e*SS SS 23 34 39.8 -6.6
comp=Z,1µm,30.5s
TBI Tubuai 108.79 249 *e*LQ LQ 23 46 03.5
comp=Z,2µm,36.2s
TBI *e*LR LR 23 51 00.0
comp=Z,2µm,38.2s
SMY Shemya 109.05 337 PFAKE 23 19 10.0
SMY LR LR
comp=Z,2µm,20.0s
SMLA Simla 109.50 52 *e*P **Pdif** **23 14 56.5 -2.4**
SMLA IAMs_20 IAMs_20 00 11 28.3
comp=Z,2µm,18.8s
WMQ Urumqi 109.88 35 *e*PKP 23 19 02.0
WMQ PP PP 23 19 43.0 +8.7
WMQ AMB AMB
comp=Z,400nm,8.6s
WMQ LR LR
comp=Z,4µm,18.8s
WMQ LR LR
comp=Z,4µm,20.0s
WMQ LR LR
comp=Z,4µm,18.9s
TLY Talaya 111.62 21 PFAKE 23 19 20.0
TLY LR LR
comp=Z,2µm,20.0s
POO Poona 111.66 65 *e*P **PKiKP** **23 19 06.4 -0.3**
POO IAMs_20 IAMs_20 00 05 17.6
comp=Z,3µm,22.8s
BHPL Bhopal 113.03 59 *e*P **PKiKP** **23 19 08.1 -1.1**
BHPL IAmb IAmb 23 20 00.4
comp=Z,234nm,3.1s
PET Petropavlovsk 113.70 346 PFAKE 23 19 20.0
PET LR LR
comp=Z,2µm,21.0s
PEA0B Petropavlovsk- 113.86 346 PFAKE 23 19 20.0
PEA0B LR LR
comp=Z,1µm,19.0s
NGP Nagpur 115.24 60 *e*P **PKPdf** **23 19 13.5 0.0**
NGP IAmb IAmb 23 20 12.6
comp=Z,17nm,1.3s
SONA1 Songino Array 115.80 22 *e*PKPdf **PKPdf** **23 19 14.8 +0.8**
SONA0 Songino Array 115.81 22 *e*PKPdf **PKPdf** **23 19 12.8 -1.2**
SONA0 *e*PP **PP** **23 20 18.3 +2.1**
SONA0 *e*PKKPbc **PKKPab** **23 29 52.0 -0.4**
SONM Songino Array 115.81 22 PKP **PKPdf** **23 19 12.8 -1.2**
comp=Z,0.8nm,0.6s,baz=307,slow=1.7,SNR=5.1
SONM PP **PP** **23 20 18.3 +2.1**
comp=Z,2.5nm,1.1s,baz=312,slow=5.1,SNR=3.7
SONM PKKPbc **PKKPab** **23 29 52.0 -0.4**
comp=Z,0.8nm,0.6s,baz=139,slow=3.9,SNR=4.1
HIA Hailar 118.42 12 PFAKE 23 19 30.0 +11
HIA LR LR
comp=Z,2µm,20.0s
GTA Gaotai 119.53 32 *e*PKP **PKPdf** **23 19 21.8 +0.4**
GTA PP **PP** **23 20 45.8 +3.4**
GTA SKS **SKSdf** **23 26 33.5 -0.7**
GTA SKKS **SKKSac** **23 27 37.8 -6.4**
GTA SS **SS** **23 37 03.0 -2.7**
GTA AMB AMB
comp=Z,230nm,7.7s
GTA LR LR
comp=Z,1µm,20.0s
GTA LR LR
comp=Z,2µm,20.0s
GTA LR LR
comp=Z,2µm,22.3s
BOK Bokaro 119.75 55 *e*P **PKPdf** **23 19 20.9 -1.1**
BOK IAmb IAmb 23 19 23.1
comp=Z,8.5nm,1.0s
LSA Lhasa 120.59 46 *e*PKIKP **PKPdf** **23 19 24.2 +0.1**
LSA MLR MLR
comp=Z,2µm,21.0s
LSA Lhasa 120.59 46 *e*PKPdf **PKPdf** **23 19 24.2 +0.1**
LSA LR LR
comp=Z,2µm,21.0s
BWNR Bhubaneshwar 121.32 58 *e*P **PKPdf** **23 19 20.8 -4.4**
PALK Pallekele 121.61 75 PFAKE 23 19 40.0 +14
PALK LR LR
comp=Z,2µm,20.0s
CASY Casey 121.80 168 PFAKE 23 19 30.0 +5.3
CASY LR LR
comp=Z,2µm,20.0s
YSS Yuzh-Sakhalins 122.28 355⇑ *e*PKIKP PKPdf 23 19 35.1 +8.9
YSS Yuzh-Sakhalins 122.28 355 PFAKE 23 19 40.0 +14
YSS LR LR
comp=Z,600nm,22.0s
SHL Shillong 123.48 50 *e*P **PKPdf** **23 19 28.0 -1.4**
SHL IAMs_20 IAMs_20 00 17 25.4
comp=Z,2µm,18.2s
HHC Hu-ho-hao-te 123.70 23 *e*PKP **PKPdf** **23 19 28.3 -1.1**
HHC PP **PP** **23 21 11.5 +1.0**
HHC SKKS 23 28 08.8
HHC SS **SS** **23 38 02.3 +3.9**
HHC AMB AMB
comp=Z,130nm,9.5s
HHC LR LR
comp=Z,2µm,18.3s
HHC LR LR
comp=Z,2µm,18.8s
HHC LR LR
comp=Z,3µm,18.7s
LZH Lanzhou 124.12 32 PKP **PKPdf** **23 19 25.3 -5.1**
LZH SKKS 23 28 07.8
LZH AMB AMB
comp=Z,400nm,7.8s
LZH LR LR
comp=Z,2µm,17.7s
LZH LR LR
comp=Z,2µm,18.8s
LZH LR LR
comp=Z,2µm,20.2s
MDJ Mudanjiang 124.52 6 PFAKE 23 19 40.0 +9.3
MDJ LR LR
comp=Z,1µm,20.0s
ASAJ Asahikawa 125.10 355 *e*PKPpre PKPpre 23 19 19.4
USRK Ussuriysk Ar. 125.14 4 PKP **PKPdf** **23 19 30.8 -1.1**
comp=Z,2.3nm,0.8s,baz=180,slow=1.9,SNR=4.2
BJI Beijing 126.04 19 PKP **PKPdf** **23 19 33.5 -0.2**
BJI PP **PP** **23 21 31.8 +5.9**
BJI SS SS 23 38 26.3 -1.1
BJI AMB AMB
comp=Z,180nm,6.1s
BJI LR LR
comp=Z,2µm,17.1s
BJI LR LR
comp=Z,670nm,20.8s
BJI LR LR
comp=Z,3µm,26.1s
BJT Baijiatuau 126.06 19 PFAKE 23 19 40.0 +6.3
BJT LR LR
comp=Z,3µm,19.0s
VLA Vladivostok 126.21 4⇑ *i*PKIKP **PKPdf** **23 19 34.3 +0.4**
ERM Erimo 127.13 354 PFAKE 23 19 50.0 +14
ERM LR LR
comp=Z,1µm,22.0s
CD2 Chengdu 127.97 36 PKP **PKPdf** **23 19 35.5 -2.2**
CD2 sPKP 23 19 39.5
CD2 PP **PP** **23 21 39.8 +0.5**
CD2 SKS **SKSdf** **23 26 47.5 -2.8**
CD2 SKKS **SKKSac** **23 28 34.0 -4.6**
CD2 SS **SS** **23 38 51.8 -0.9**
CD2 AMB AMB
comp=Z,500nm,6.1s
CD2 LR LR
comp=Z,2µm,19.4s
CD2 LR LR
comp=Z,2µm,18.6s
CD2 LR LR
comp=Z,2µm,20.0s
XAN Xi'an 128.29 29 PKP **PKPdf** **23 19 37.3 -0.9**
XAN SKS **SKSdf** **23 26 44.5 -6.2**
XAN AMB AMB
comp=Z,380nm,7.7s
XAN LR LR
comp=Z,2µm,22.0s
XAN LR LR
comp=Z,1µm,19.4s
XAN LR LR
comp=Z,3µm,20.3s
DL2 Dalian 128.67 15 PKP PKPdf 23 19 27.3 -11
DL2 *e*PP **PP** **23 21 41.8 -1.3**
DL2 Dalian 128.67 15 SS SS 23 38 58.8 -1.2
DL2 AMB AMB
comp=Z,230nm,5.6s
DL2 LR LR
comp=N,1µm,19.0s
DL2 LR LR
comp=E,1µm,17.6s
DL2 LR LR

comp=Z,2µm,19.8s
DGPR DIGLIPUR 130.61 62 *e*P **PKPdf 23 19 39.9 -3.1**
PBA Port Blair 131.12 64 *e*P PKPdf 23 19 42.5 -1.4
INCN Inchon 131.12 10 PFAKE 23 19 50.0 +6.5
INCN LR LR
comp=Z,1µm,20.0s
KMI Kunming 131.44 42 PKP **PKPdf 23 19 43.5 -1.2**
KMI sPKP 23 19 46.0
KMI PP **PP 23 22 04.5 +2.1**
KMI SKKS 23 28 55.5
KMI SS **SS 23 39 36.5 +0.2**
KMI AMB AMB
comp=Z,350nm,6.2s
KMI LR LR
comp=Z,1µm,22.6s
KMI LR LR
comp=Z,1µm,20.3s
KMI LR LR
comp=Z,2µm,21.6s
ENH Enshi 131.61 32 *e*PKPdf **PKPdf 23 19 44.1 -0.6**
ENH LR LR
comp=Z,2µm,22.0s
CHTO Chiang Mai 132.69 52 *e*PKIKP **PKPdf 23 19 46.8 -0.1**
CHTO MLR MLR
comp=Z,900nm,19.0s
CHTO Chiang Mai 132.69 52 *e*PKPdf **PKPdf 23 19 46.8 -0.1**
CHTO LR LR
comp=Z,900nm,19.0s
CM31 Chiang Mai Arr 132.89 52 *e*PKPdf **PKPdf 23 19 43.0 -4.3**
CMAR Chiang Mai Arr 132.89 52 PKhKP PKPpre 23 19 43.0
comp=Z,3.8nm,0.6s,baz=294,slow=3.7,SNR=9.0
MJB9 Matsu-Tunnel 132.92 358 PFAKE 23 20 00.0 +13
MJB9 LR LR
comp=Z,300nm,21.0s
MAJO Matsushiro 132.92 358 PFAKE 23 20 00.0 +13
MAJO LR LR
comp=Z,900nm,20.0s
MAT Matsushiro 132.92 358 PKP **PKPdf 23 19 47.6 +0.7**
MJAR Matsushiro Arr 132.92 358 PKP **PKPdf 23 19 47.7 +0.8**
comp=Z,2.9nm,0.8s,baz=311,slow=1.6,SNR=11
MJAR PP **PP 23 22 15.3 +4.7**
comp=Z,0.9nm,0.6s,baz=356,slow=6.8,SNR=4.4
CM01 Chiang Mai Arr 132.93 52 *e*PKPdf **PKPdf 23 19 46.2 -1.1**
WHN Wuhan 133.72 27 PKP **PKPdf 23 19 50.5 +2.0**
WHN PP **PP 23 22 18.5 +2.4**
WHN PKS **PKSdf 23 23 19.3 -5.7**
WHN LR LR
comp=Z,7µm,21.6s
WHN LR LR
comp=Z,2µm,17.5s
WHN LR LR
comp=Z,6µm,22.8s
INU Inuyama 134.14 359 PFAKE 23 20 00.0 +11
INU LR LR
comp=Z,900nm,22.0s
URZ Urewera 134.59 226 PFAKE 23 20 00.0 +10
URZ LR LR
comp=Z,2µm,21.0s
BKZ Black Stump Fm 134.61 225 PFAKE 23 20 00.0 +10
BKZ LR LR
comp=Z,1µm,21.0s
KHZ Kahutara 134.90 219 PFAKE 23 20 00.0 +10
KHZ LR LR
comp=Z,2µm,20.0s
OXZ Oxford 135.29 217 PFAKE 23 20 00.0 +8.9
OXZ LR LR
comp=Z,2µm,22.0s
SSE Sheshan 135.85 19 PKP **PKPdf 23 19 51.3 -1.2**
SSE PKS **PKSdf 23 23 26.0 -2.9**
SSE LR LR
comp=Z,160nm,33.5s
SSE LR LR
comp=Z,540nm,33.5s
SSE LR LR
comp=Z,220nm,24.4s
HIZ Hauiti 136.05 224 PFAKE 23 20 00.0 +7.4
HIZ LR LR
comp=Z,2µm,18.0s
LHMI Lhok Sumawe 137.50 70 PFAKE 23 20 10.0 +14
LHMI LR LR
comp=Z,1µm,20.0s
OUZ Omahuta 138.47 228 PFAKE 23 20 10.0 +13
OUZ LR LR
comp=Z,2µm,21.0s
GSI Gunungsitoli 139.43 75 *e*PKPdf **PKPdf 23 19 58.8 -0.8**
PSI Prapat 140.21 72 *e*PKIKP **PKPdf 23 20 02.4 +1.3**
PSI MLR MLR
comp=Z,2µm,21.0s
PSI Prapat 140.21 72 *e*PKPdf **PKPdf 23 20 02.4 +1.3**
PSI LR LR
comp=Z,2µm,21.0s
QIZ Qiongzhong 140.39 42 PKP **PKPdf 23 20 01.0 -0.2**
QIZ PP **PP 23 22 58.3 -0.2**
QIZ SS SS 23 41 21.3 -1.6
QIZ AMB AMB
comp=Z,240nm,7.4s
QIZ LR LR
comp=Z,1µm,18.2s
QIZ LR LR
comp=Z,2µm,19.7s
QIZ Qiongzhong 140.39 42 PFAKE 23 20 10.0 +8.8
QIZ LR LR
comp=Z,2µm,20.0s
QZH Quanzhou 140.43 26 PKP **PKPdf 23 20 00.8 -0.3**
QZH *e*PP **PP 23 22 59.5 +1.4**
QZH SS SS 23 41 25.0 +2.8
QZH LR LR
comp=Z,6µm,25.4s
QZH LR LR
comp=Z,1µm,12.6s
QZH LR LR
comp=Z,5µm,20.8s
KULM Kulim 140.87 68 *e*PKPdf **PKPdf 23 20 04.1 +1.9**
KULM LR LR
comp=Z,1µm,19.0s
IPM Ipoh 141.54 69 *e*PKPdf **PKPdf 23 20 05.3 +1.9**
IPM LR LR
comp=Z,1µm,20.0s
TATO Taipei 141.56 22 PFAKE 23 20 10.0 +6.9
TATO LR LR
comp=Z,2µm,20.0s
JOW Kunigami 141.78 12 PFAKE 23 20 10.0 +6.5
JOW LR LR
comp=Z,2µm,20.0s
YHNB Yeheng 141.80 23 PFAKE 23 20 10.0 +6.3
YHNB LR LR
comp=Z,2µm,20.0s
CBIJ Chichi jima 141.97 352 PFAKE 23 20 10.0 +6.2
CBIJ LR LR
comp=Z,100nm,22.0s
YOJ Yonaguni jima 142.58 21 PFAKE 23 20 10.0 +5.0
YOJ LR LR
comp=Z,2µm,21.0s
TPUB Ta-pu 142.74 25 PFAKE 23 20 10.0 +4.7
TPUB LR LR
comp=Z,2µm,22.0s
YULB Yu-li 142.92 24 PFAKE 23 20 20.0 +14
YULB LR LR
comp=Z,1µm,22.0s
BKNI Bangkinang 143.03 75 PFAKE 23 20 20.0 +14
BKNI LR LR
comp=Z,1µm,20.0s
TWG Pinlang 143.34 24 PFAKE 23 20 20.0 +14
TWG LR LR
comp=Z,6µm,20.0s
MYKOM Kota Tinggi 145.17 71 *e*PKPbc **PKPbc 23 20 07.8 -1.5**
MYKOM LR LR
comp=Z,2µm,21.0s
TAU Tasmania Unive 146.62 194 PFAKE 23 20 20.0 +6.1
TAU LR LR
comp=Z,2µm,19.0s
DZM Mont Dzumac 149.25 245 PKPbc **PKPbc 23 20 21.2 +0.4**
comp=Z,38nm,1.1s,baz=92,slow=13,SNR=9.9
DZM Mont Dzumac 149.25 245 *e*PP PP 23 23 45.8 -6.7
comp=Z,217nm,30.1s
DZM Mont Dzumac 149.25 245 *e*SS SS 23 43 00.1 -6.3
comp=Z,796nm,30.6s
DZM Mont Dzumac 149.25 245 *e*LR LR 00 09 44.5
comp=Z,2µm,24.7s
DZM Mont Dzumac 149.25 245 *e*PKPbc **PKPbc 23 20 20.7 0.0**
LHI Lord Howe Isla 150.66 222 PFAKE 23 20 30.0 -0.5
LHI LR LR
comp=Z,2µm,19.0s
KSM Kuching 151.21 67 *e*PKPbc **PKPbc 23 20 24.8 -0.8**
KSM LR LR
comp=Z,1µm,19.0s
CISI Cisompet, Garu 151.47 86 PFAKE 23 20 30.0 +3.8
CISI LR LR
comp=Z,1µm,21.0s
NWAO Narrogin (SRO) 151.68 144 PKPbc **PKPbc 23 20 25.2 -0.9**
comp=Z,35nm,1.1s,baz=86,slow=5.8,SNR=5.9
SBUM Sibu 152.47 63 *e*PKPbc **PKPbc 23 20 28.0 -0.5**
SBUM LR LR
comp=Z,1µm,20.0s
CAN Canberra 153.05 203 *e*PKIKP **PKPbc 23 20 31.4 +2.2**
CAN MLR MLR
comp=Z,900nm,18.0s
CAN Canberra 153.05 203 *e*PKPbc **PKPbc 23 20 31.4 +2.2**
CAN LR LR
comp=Z,900nm,18.0s
KKM Kota Kinabalu 153.76 51 PFAKE 23 20 30.0 -1.4
KKM LR LR
comp=Z,1µm,22.0s
ARMA Armidale 155.93 213 PFAKE 23 20 40.0 -13
ARMA LR LR
comp=Z,2µm,22.0s
MYLDM Lahad Datu 156.05 49 PFAKE 23 20 40.0 +13
MYLDM LR LR
comp=Z,2µm,20.0s
JAGI Jajag, Banyuwa 157.81 86 PFAKE 23 20 40.0 +11
JAGI LR LR
comp=Z,2µm,22.0s
BBOO Buckleboo 158.06 179 PFAKE 23 20 40.0 +11
BBOO LR LR
comp=Z,1µm,20.0s
STKA Stephens Creek 158.48 192 PKP **PKPdf 23 20 30.5 +1.3**
comp=Z,2.6nm,0.8s,baz=55,slow=9.6,SNR=3.4
STKA Stephens Creek 158.48 192 *e*PKIKP **PKPdf 23 20 33.1 +4.0**
STKA MLR MLR
comp=Z,400nm,20.0s
STKA Stephens Creek 158.48 192 *e*PKPdf **PKPdf 23 20 33.1 +4.0**
STKA LR LR
comp=Z,400nm,20.0s
FORT Forrest 158.58 160 PFAKE 23 20 40.0 +11
FORT LR LR
comp=Z,18µm,21.0s
DAV Davao City (W) 159.19 32 PFAKE 23 20 40.0 +10
DAV LR LR
comp=Z,900nm,21.0s
MBWA Marble Bar 160.84 125 *e*PKPdf **PKPdf 23 20 31.7 -0.4**
CTA Charters Tower 166.83 224 PKP **PKPdf 23 20 38.7 +1.0**
comp=Z,1.2nm,0.3s,baz=153,slow=2.3,SNR=2.2
ASAR Alice Springs 166.93 169 PKP **PKPdf 23 20 36.4 -1.3**
comp=Z,1.5nm,0.9s,baz=174,slow=0.6,SNR=6.6
ASAR PKPab **PKPab 23 21 38.9 -1.9**
comp=Z,5.1nm,0.7s,baz=181,slow=3.9,SNR=15
ASAR PP **PP 23 25 33.2 +5.9**
comp=Z,5.7nm,1.2s,baz=181,slow=5.4,SNR=5.8
AS31 Alice Springs 166.93 169 *e*PKPdf **PKPdf 23 20 36.4 -1.3**
AS31 *e*PKPab **PKPab 23 21 40.3 -0.6**
AS31 *e*PP **PP 23 25 33.2 +5.9**
AS01 Alice Springs 166.94 169 *e*PKPdf **PKPdf 23 20 37.9 +0.2**
FITZ Fitzroy Crossi 167.17 126 PKP **PKPdf 23 20 36.8 -1.2**
comp=Z,3.1nm,1.0s,baz=183,slow=2.9,SNR=3.9
FITZ PKPab **PKPab 23 21 40.6 -1.6**
comp=Z,10nm,1.1s,baz=258,slow=2.7,SNR=4.6
FITZ PP **PP 23 25 29.2 -0.9**
comp=Z,1.2nm,0.3s,baz=197,slow=5.1,SNR=5.4
FITZ Fitzroy Crossi 167.17 126 *e*PKPdf **PKPdf 23 20 39.0 +1.1**
FITZ *e*PKPab **PKPab 23 21 42.6 +0.3**
FITZ *e*PP **PP 23 25 29.2 -0.9**
WR1 Warramunga Arr 170.63 167 *e*PKPdf **PKPdf 23 20 38.3 -1.8**
WR1 *e*PKPab **PKPab 23 21 56.2 -1.0**
WR1 *e*PP **PP 23 25 50.1 +4.0**
WRA Warramunga Arr 170.63 167 PKP **PKPdf 23 20 38.3 -1.8**
comp=Z,2.9nm,0.8s,baz=220,slow=0.2,SNR=15
WRA PKPab **PKPab 23 21 56.2 -1.0**
comp=Z,4.9nm,0.8s,baz=193,slow=3.8,SNR=9.7
WRA PP **PP 23 25 50.1 +4.0**
comp=Z,3.4nm,1.1s,baz=197,slow=4.2,SNR=6.3
WB2 Warramunga Arr 170.63 167 *e*PKPdf **PKPdf 23 20 38.4 -1.8**
WB2 *e*PKPdf PKPdf 23 20 41.7 +1.6
WB2 *e*PKPab **PKPab 23 21 57.8 +0.5**

IDC 27 23:38:21.8±710.0, 29.02N×16.67E, h0km, Error ellipse: s-maj=324.1km s-min=172.8km az=113.0, Libya

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I48TN	**KESRA INFRASON** baz=134,slow=331,SNR=1.5	**9.18**	**319**	*i*		00 39 10.0	
I17CI	**DIMBOKRO INFRA** baz=36,slow=319,SNR=1.5	**30.11**	**227**	*i*		02 41 20.0	
I42PT	**GRACIOSA ISLAN** baz=92,slow=312,SNR=1.4	**38.02**	**297**	*i*		03 30 20.0	

*IDC **28** 00:10:34.1±0.9, 13.88N×90.47W, h0km, mb4.1/11, mb1 4.3/13, mb1mx4.1/29, mbtmp4.1/13, ML3.3/2, MS3.9/4, Ms1 3.9/4, ms1mx3.4/28, Error ellipse: s-maj=31.6km s-min=16.2km az=45.0*
*ISCJB **28** 00:10:37.6±0.4, 13.42N±0.05×90.91W±0.03, h38km, mb4.4/66, MS3.8/4, Error ellipse: s-maj=8.0km s-min=3.6km az=23.2*
*CASC **28** 00:10:37.5±1.0, 13.23N×90.81W, h3km±12km, ML3.7, mb4.3(NEIC)*
*NEIC **28** 00:10:39.3±1.8, 13.47N×90.60W, h36km±15km, mb4.3/59, MD4.3(MEX), MD3.8(SNET), Error ellipse: s-maj=13.9km s-min=8.7km az=217.0*
NEIC Felt [I] at Ahuachapan, El Salvador.
*MEX **28** 00:10:40.4±0.3, 13.14N×92.05W, h15km, MD4.3*
ISC 28 00:10:38.8±0.6, 13.36N±0.07×90.92W±0.05, h38km, n234, σ1867/239, mb4.3/66, MS3.9/4, 2C-2D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IXG	**Ixpaco**	**0.93**	**29**	*e*P	**Pn**	**00 10 56.2**	**+0.7**
CUS1	**Cusmapa**	**1.09**	**60**	*e*P	**Pn**	**00 10 58.0**	**+0.3**
CUS1				*e*S	**Sn**	**00 11 12.4**	**+0.8**
MONT	**Ecomontaæa**	**1.33**	**68**	*e*P	**Pn**	**00 11 01.6**	**+0.4**
MONT				*e*S	**Sn**	**00 11 20.8**	**+3.0**
SBLS	**San Blas**	**1.35**	**69**	*e*P	**Pn**	**00 11 01.6**	**+0.3**
RTR	**El Retiro**	**1.35**	**67**	*e*P	**Pn**	**00 11 01.9**	**+0.7**
SNJE	**San Jose**	**1.38**	**68**	*e*P	**Pn**	**00 11 01.9**	**+0.3**
RBDL	**Robledal**	**1.41**	**58**	*e*P	**Pn**	**00 11 03.2**	**+1.0**
BOQS	**Boqueron**	**1.64**	**77**	*e*P	**Pn**	**00 11 05.6**	**+0.3**
SNET	**Serv Nac Est T**	**1.68**	**79**	*e*P	**Pn**	**00 11 06.2**	**+0.5**
SNET				AML	AML	00 11 37.5	
	comp=Z,1µm,0.3s						
LFU	**La Fuente**	**1.80**	**77**	*e*P	**Pn**	**00 11 08.3**	**+0.9**
LFRS	**El Faro**	**1.83**	**82**	*e*P	**Pn**	**00 11 07.9**	**+0.1**
LBRS	**Las Brisas**	**1.86**	**78**	*e*P	**Pn**	**00 11 09.2**	**+0.9**
MRL	**Marmol**	**2.07**	**35**	*e*P	**Pn**	**00 11 14.1**	**+2.9**
PACA	**Pacayal**	**2.53**	**87**	*e*P	**Pn**	**00 11 17.8**	**+0.3**
LCY	**Lacayo**	**2.56**	**88**	*e*P	**Pn**	**00 11 18.1**	**+0.3**
CCIG	**Comitan**	**3.13**	**338**	*e*P	**Pn**	**00 11 26.9**	**+1.2**
CCIG				*i* S	**Sn**	**00 12 03.3**	**+1.3**
CCIG	**Comitan**	**3.13**	**338**	*e*Pn	**Pn**	**00 11 26.9**	**+1.2**
CCIG				*e*Sn	**Sn**	**00 12 02.8**	**+0.8**
TGIG		**4.00**	**328**	*e*P	**Pn**	**00 11 36.1**	**-1.6**
TGIG				*i* S	**Sn**	**00 12 18.4**	**-5.0**
TGIG		**4.00**	**328**	*e*Pn	**Pn**	**00 11 36.1**	**-1.6**
TGIG				*e*Sn	Sn	00 12 14.3	-9.1
CMIG	**Matias Romero**	**5.33**	**315**	Pn	**Pn**	**00 11 55.0**	**-0.8**
	comp=Z,2.1nm,0.3s,baz=107,slow=7.2,SNR=12						
CMIG				Sn	**Sn**	**00 12 57.3**	**+1.4**
	comp=Z,3.1nm,0.3s,baz=66,slow=20,SNR=2.7						
TLIG	**Tlapa**	**8.47**	**301**	*e*Pn	**Pn**	**00 12 39.5**	**+0.4**
TLIG				*e*Sn	**Sn**	**00 14 21.1**	**+7.6**
ZAIG	**Zacatecas**	**14.49**	**312**	*e*Pn	**P**	**00 14 08.3**	**+0.6**
934A	**Benavides** baz=151	**15.85**	**335**	P	**P**	**00 14 23.0**	**+0.6**
933A	**Laredo** baz=148	**16.18**	**332**	P	**P**	**00 14 27.6**	**+1.4**
834A	**Tilden** baz=152	**16.32**	**335**	P	**P**	**00 14 29.5**	**+1.8**
733A	**Divot King Ran** baz=150	**17.15**	**334**	P	**P**	**00 14 38.4**	**+1.5**
537A	**Green Hill Far** baz=161	**17.37**	**344**	P	**P**	**00 14 40.4**	**+1.1**
533A	**Kerrville** baz=153	**18.24**	**337**	P	**Pn**	**00 14 51.5**	**+2.4**
ROSC	**El Rosal**	**18.44**	**116**	P	**P**	**00 14 51.0**	**-0.6**
	comp=Z,1.0nm,0.3s,baz=108,slow=7.1,SNR=7.5						
ROSC	**El Rosal**	**18.44**	**116**	*e*P	**Pn**	**00 14 54.7**	**+2.8**
	comp=Z,16nm,1.1s						
434A	**Burnet** baz=156	**18.64**	**340**	P	**Pn**	**00 14 55.4**	**+1.5**
433A	**Art** baz=154	**18.88**	**338**	P	**P**	**00 14 56.9**	**+1.0**
JCT	**Junction City** comp=Z,8.2nm,1.0s	**18.91**	**336**	*e*P	**Pn**	**00 14 58.8**	**+1.7**
HPIG		**19.31**	**317**	*e*P	**Pn**	**00 15 07.5**	**+5.3**
	comp=Z,13nm,1.1s						
333A	**Richland Sprin** baz=155	**19.36**	**339**	P	**P**	**00 15 02.5**	**+1.4**
TXAR	**Lajitas Array** comp=Z,0.5nm,0.3s,baz=152,slow=13,SNR=40	**19.81**	**325**	P	**P**	**00 15 07.7**	**+1.4**
TXAR				PcP	**PcP**	**00 19 23.7**	**+0.3**
	comp=Z,0.1nm,0.3s,baz=145,slow=3.3,SNR=4.3						
LTX	**Lajitas**	**19.81**	**325**	*e*P	**P**	**00 15 07.7**	**+1.4**
LTX				*e*PcP	**PcP**	**00 19 23.6**	**+0.3**
TX31	**Lajitas Ar. Si**	**19.81**	**325**	*e*P	**Pn**	**00 15 08.2**	**+0.2**
LRAL	**Lakeview Retre**	**19.91**	**10**	*e*P	**Pn**	**00 15 13.5**	**+4.5**
134A	**White-Moore Ra** baz=159	**20.21**	**342**	P	Pn	00 15 12.5	-0.1
SDV	**Santo Domingo** comp=Z,11nm,0.8s,baz=282,slow=4.8,SNR=14	**20.39**	**100**	P	**P**	**00 15 09.7**	**-3.2**
SDV	**Santo Domingo** comp=Z,11nm,0.8s	**20.39**	**100**	*e*P	**P**	**00 15 11.2**	**-1.6**
133A	**Hamilton Ranch** baz=156	**20.50**	**340**	P	**P**	**00 15 14.0**	**+0.3**
ABTX	**Abilene, Hawle** baz=155,SNR=8.3	**20.77**	**339**	P	**P**	**00 15 16.3**	**-0.3**
ABTX	**Abilene, Hawle** comp=Z,19nm,1.1s	**20.77**	**339**	*e*P	**P**	**00 15 17.2**	**+0.7**
GOGA	**Godfrey** comp=Z,20nm,1.0s	**21.08**	**18**	*e*P	**P**	**00 15 18.2**	**-1.7**
OXF	**Oxford** comp=Z,33nm,1.0s	**21.10**	**3**	*e*P	**P**	**00 15 20.3**	**+0.2**
Y35A	**Marietta** baz=162	**21.19**	**346**	P	**P**	**00 15 20.4**	**-0.6**
MIAR	**Mount Ida** baz=172,SNR=5.7	**21.23**	**354**	P	**P**	**00 15 20.5**	**-0.9**
MIAR	**Mount Ida** comp=Z,29nm,1.6s	**21.23**	**354**	*e*P	**P**	**00 15 22.3**	**+0.9**
X39A	**Fountain Ranch** baz=170	**21.25**	**353**	P	**P**	**00 15 21.6**	**-0.1**
UALR	**University of** comp=Z,13nm,0.9s	**21.36**	**357**	*e*P	**P**	**00 15 23.9**	**+1.1**
X38A	**Whitesboro** baz=169	**21.51**	**351**	P	**P**	**00 15 25.1**	**+0.7**
X37A	**Clayton** baz=167	**21.51**	**350**	P	**P**	**00 15 24.8**	**+0.3**
X36A	**Centrahoma** baz=165	**21.68**	**348**	P	**P**	**00 15 26.1**	**-0.2**
W41B	**Gary Mavity, V** baz=176	**21.75**	**357**	P	**P**	**00 15 26.7**	**-0.3**
W40A	**Ferguson Farm,** baz=174	**21.82**	**355**	P	**P**	**00 15 27.5**	**-0.3**
X301	**Greenbrier Sit** comp=Z,9.6nm,1.0s	**21.82**	**357**	*e*P	**P**	**00 15 28.7**	**+0.9**
W38A	**Poteau** baz=170	**21.86**	**352**	P	**P**	**00 15 27.9**	**-0.3**
WHAR	**Wooly Hollow** comp=Z,12nm,1.0s	**21.87**	**357**	*e*P	**P**	**00 15 29.1**	**+0.8**
X201	**Greenbrier Sit** comp=Z,13nm,1.2s	**21.87**	**357**	*e*P	**P**	**00 15 27.5**	**-0.9**
W39A	**Magazine** baz=172	**21.89**	**354**	P	**P**	**00 15 29.2**	**+0.6**
W37B	**Quinton** baz=167	**22.06**	**350**	P	**P**	**00 15 31.3**	**+0.9**
X33A	**Lawton** baz=159	**22.18**	**343**	P	**P**	**00 15 31.8**	**+0.2**
SWET	**Sewanee** comp=Z,19nm,2.0s	**22.22**	**11**	*e*P	**P**	**00 15 32.1**	**-0.1**
X32A	**Elmer** baz=157	**22.30**	**342**	P	**P**	**00 15 33.1**	**+0.1**
V42A	**Cord** baz=178	**22.35**	**359**	P	**P**	**00 15 32.7**	**-0.8**
W35A	**Tecumseh** baz=164	**22.35**	**347**	P	**P**	**00 15 33.0**	**-0.5**
V41A	**Mountainview** baz=176,SNR=5.5	**22.35**	**357**	P	**P**	**00 15 32.1**	**-1.5**
V40A	**Witts Springs** baz=174,SNR=8.5	**22.41**	**356**	P	**P**	**00 15 32.5**	**-1.7**
WMOK	**Wichita Mounta** baz=159	**22.44**	**343**	P	**P**	**00 15 33.6**	**-0.8**
WMOK	**Wichita Mounta** comp=Z,17nm,1.6s	**22.44**	**343**	*e*P	**P**	**00 15 33.8**	**-0.7**
V39A	**Pettigrew** baz=172,SNR=9.5	**22.51**	**354**	P	**P**	**00 15 34.5**	**-0.8**
GNAR	**Gosnell**	**22.52**	**2**	*e*P	**P**	**00 15 31.4**	**-3.9**
MNTX	**Cornudas Mount** baz=140,SNR=33	**22.57**	**326**	P	**P**	**00 15 36.0**	**+0.1**
MNTX	**Cornudas Mount** comp=Z,30nm,1.1s	**22.57**	**326**	*e*P	**P**	**00 15 36.0**	**+0.1**
V38A	**Canehill** baz=170	**22.62**	**353**	P	**P**	**00 15 35.5**	**-0.9**
CPCT	**Cooper Cave** comp=Z,7.7nm,1.3s	**22.74**	**14**	*e*P	**P**	**00 15 36.9**	**-0.7**
V37A	**Hulbert** baz=168	**22.74**	**351**	P	**P**	**00 15 36.5**	**-1.2**
WVT	**Waverly** comp=Z,11nm,1.1s	**22.84**	**6**	*e*P	**P**	**00 15 39.0**	**+0.3**
U42A	**Revenden** baz=178	**22.89**	**359**	P	**P**	**00 15 38.6**	**-0.6**
W32A	**Sentinel** baz=158	**22.93**	**342**	P	**P**	**00 15 38.9**	**-0.8**
U40A	**Yellville** baz=174,SNR=7.4	**22.96**	**356**	P	**P**	**00 15 38.6**	**-1.3**
HHAR	**Hobbs** comp=Z,5.6nm,0.9s	**22.98**	**354**	*e*P	**P**	**00 15 40.0**	**-0.2**
TKL	**Tuckaleechee C** comp=Z,7.5nm,0.7s,baz=187,slow=9.9,SNR=12	**23.11**	**15**	P	**P**	**00 15 40.9**	**-0.6**
TKL				LR	LR	00 24 59.6	
	comp=Z,519nm,20.1s,baz=196,slow=38						
TKL	**Tuckaleechee C**	**23.11**	**15**	*e*P	**P**	**00 15 40.0**	**-1.5**
MSTX	**Muleshoe** comp=Z,5.9nm,0.9s	**23.17**	**334**	*e*P	**P**	**00 15 41.3**	**-0.9**
U38A	**Gravette** baz=171	**23.19**	**353**	P	**P**	**00 15 41.4**	**-0.8**
U37A	**Salina** baz=169,SNR=5.3	**23.25**	**351**	P	**P**	**00 15 41.4**	**-1.5**
PBMO	**Poplar Bluff** comp=Z,6.9nm,0.9s	**23.32**	**1**	*e*P	**P**	**00 15 44.9**	**+1.4**
KMSC	**Kings Mountain** baz=203	**23.35**	**20**	P	**P**	**00 15 43.3**	**-0.6**
AMTX	**Amarillo** baz=152	**23.53**	**337**	P	**P**	**00 15 45.0**	**-0.7**
AMTX	**Amarillo** comp=Z,11nm,1.0s	**23.53**	**337**	*e*P	**P**	**00 15 45.5**	**-0.2**
T41A	**Mountain View** baz=177	**23.59**	**358**	P	**P**	**00 15 45.0**	**-1.1**
T39A	**Clever** baz=173,SNR=6.9	**23.66**	**355**	P	**P**	**00 15 45.5**	**-1.4**
T40A	**Mansfield** baz=175,SNR=8.1	**23.73**	**357**	P	**P**	**00 15 46.4**	**-1.0**
T38A	**Diamond** baz=171	**23.77**	**353**	P	**P**	**00 15 46.9**	**-0.9**
U33A	**Lingo Farm, Me** baz=162	**23.86**	**346**	P	**P**	**00 15 47.4**	**-1.3**
T37A	**Cheneyville 18** baz=170,SNR=8.5	**23.93**	**352**	P	**P**	**00 15 48.1**	**-1.2**
T36A	**Boggs Farm, Ca** baz=167	**24.01**	**350**	P	**P**	**00 15 48.9**	**-1.2**
TZTN	**Tazewell** comp=Z,12nm,1.0s	**24.01**	**15**	*e*P	**P**	**00 15 49.2**	**-0.9**
S41A	**Jillco Farms,** baz=177,SNR=5.4	**24.14**	**358**	P	**P**	**00 15 49.8**	**-1.4**
S40A	**Lebanon** baz=176,SNR=9.4	**24.18**	**357**	P	**P**	**00 15 50.7**	**-0.9**
S38A	**Stockton** baz=172,SNR=7.4	**24.31**	**354**	P	**P**	**00 15 52.1**	**-0.7**
S39A	**Bolivar** baz=174,SNR=19	**24.32**	**355**	P	**P**	**00 15 51.6**	**-1.3**
121A	**Cookes Peak, D** baz=137,SNR=8.1	**24.54**	**324**	P	**P**	**00 15 56.8**	**+1.6**
S37A	**Fort Scott** baz=170	**24.55**	**353**	P	**P**	**00 15 54.5**	**-0.4**
S36A	**Lake Cedric, C** baz=168,SNR=8.4	**24.62**	**351**	P	**P**	**00 15 54.8**	**-0.8**
319A	**Douglas** comp=Z,11nm,1.0s	**24.62**	**320**	*e*P	**P**	**00 15 57.9**	**+2.0**
S35A	**Otter Creek Ra** baz=167	**24.69**	**350**	P	**P**	**00 15 55.6**	**-0.7**
R40A	**Maddies Statio** baz=176	**24.86**	**357**	P	**P**	**00 15 56.7**	**-1.1**
R38A	**Fenwick Farm,** baz=172,SNR=6.4	**24.86**	**354**	P	**P**	**00 15 56.8**	**-1.0**
R39A	**Chumby, Stover** baz=174	**24.92**	**356**	P	**P**	**00 15 57.5**	**-0.8**
S33A	**Kaszmaul Farm,** baz=163	**24.94**	**347**	P	**P**	**00 15 58.1**	**-0.5**

WCI	Wyandotte Cave	25.11	9	eP	P	00 16 00.3	+0.2	
	comp=Z,15nm,0.8s							
BNM	Barren Site	25.13	328	eP	P	00 16 02.7	+2.1	
LAZ	Ladron	25.59	328	eP	P	00 16 06.9	+2.2	
Q38A	Cooks Store, C	25.61	355	P	P	00 16 04.3	-0.3	
	baz=173							
ANMO	Albuquerque	25.67	329	P	P	00 16 06.1	+0.6	
	baz=142							
ANMO	Albuquerque	25.67	329	eP	P	00 16 07.4	+1.9	
	comp=Z,2.9nm,1.1s							
P40A	Paris	26.08	358	P	P	00 16 07.7	-1.2	
	baz=177							
TUC	Tucson	26.20	319	P	P	00 16 12.2	+2.1	
	baz=131							
TUC	Tucson	26.20	319	eP	P	00 16 12.4	+2.3	
	comp=Z,4.7nm,0.9s							
O40A	La Belle	26.67	358	P	P	00 16 13.4	-0.7	
	baz=177							
214A	Organ Pipe Nat	27.30	316	P	P	00 16 21.7	+1.7	
	baz=127							
X16A	Lo Mia Camp, P	28.02	322	eP	P	00 16 27.3	+0.7	
	comp=Z,3.7nm,0.8s							
M39A	Webster	28.03	358	P	P	00 16 25.9	-0.4	
	baz=177							
MVCO	Mesa Verde	28.47	330	eP	P	00 16 30.7	+0.1	
	comp=Z,7.5nm,1.1s							
L40A	Anamosa	28.60	360	P	P	00 16 30.5	-0.9	
	baz=179							
L41A	Preston	28.61	1	P	P	00 16 30.7	-0.8	
	baz=180							
Y14A	Wickenburg	28.67	319	eP	P	00 16 34.7	+2.5	
	comp=Z,12nm,1.0s							
WUAZ	Wupatki	28.75	324	eP	P	00 16 36.4	+3.4	
	comp=Z,6.4nm,0.9s							
NNA	Nana	28.80	150	LR	LR	00 27 00.2		
	comp=Z,128nm,21.5s,baz=344,slow=34							
O56A	Blue Knob Stat	28.92	20	P	P	00 16 34.6	+0.3	
	baz=205							
N54A	Moraine State	29.11	17	P	P	00 16 35.5	-0.5	
	baz=202							
K41A	Shullsburg	29.14	1	P	P	00 16 35.2	-1.0	
	baz=181							
K40A	Colesburg	29.23	360	P	P	00 16 36.5	-0.5	
	baz=179							
K39A	Oelwein	29.25	359	P	P	00 16 36.3	-0.9	
	baz=177							
PV05	Paradox Valley	29.45	330	eP	P	00 16 44.2	+4.9	
PDMCI	Parker Dam,Lak	29.63	319	P	P	00 16 42.6	+2.0	
	baz=129							
J38A	Wedel Dairy, R	29.88	358	P	P	00 16 41.8	-0.9	
	baz=176							
J41A	Loganville	29.91	1	P	P	00 16 41.5	-1.5	
	baz=181,SNR=7.4							
U15A	North Rim	29.92	324	eP	P	00 16 47.0	+3.4	
	comp=Z,6.9nm,1.0s							
J37A	Redenius Farm,	29.93	356	P	P	00 16 42.4	-0.8	
	baz=174							
I38A	Scanlan Farm,	30.59	358	P	P	00 16 47.6	-1.5	
	baz=177,SNR=6.0							
KNB	Kanab	30.63	324	eP	P	00 16 53.1	+3.4	
	comp=Z,13nm,1.3s							
ECSD	EROS Data Cent	30.66	352	P	P	00 16 48.9	-0.8	
	baz=168							
LCMT	Little Creek M	30.87	324	eP	P	00 16 55.7	+3.9	
	comp=Z,5.7nm,1.0s							
GMRC	Granite Mounta	30.91	318	P	P	00 16 53.7	+1.6	
	baz=127							
Q16A	Castle Valley	31.13	329	eP	P	00 17 00.1	+6.0	
	comp=Z,4.7nm,1.0s							
H37A	Dierke Farm, C	31.16	357	P	P	00 16 53.9	-0.1	
	baz=176							
H36A	Jessenland, He	31.21	356	P	P	00 16 53.7	-0.8	
	baz=174							
CCUT	Cedar City	31.31	324	eP	P	00 17 00.1	+4.4	
	comp=Z,8.9nm,1.1s							
MSU	Marysvale	31.35	327	eP	P	00 16 58.4	+2.3	
TMUT	Trail Mountain	31.43	329	eP	P	00 17 03.2	+6.3	
	comp=Z,7.4nm,1.5s							
TMUT				ePcP	PcP	00 19 48.1	-1.6	
SHPR	Sheep Range	31.67	321	eP	P	00 17 01.4	+2.6	
SPMN	Marine on St.	31.80	357	P	P	00 16 59.1	-0.5	
	baz=176							
SPMN	Marine on St.	31.80	357	eP	P	00 16 58.8	-0.8	
	comp=Z,25nm,1.0s							
K22A	Casper	32.15	338	P	P	00 17 02.8	-0.3	
	baz=150							
F36A	Milaca	32.47	357	P	P	00 17 03.9	-1.6	
	baz=175							
COWI	Conover	32.67	2	eP	P	00 17 06.0	-1.3	
MPMC	Manual Prospec	32.87	318	P	P	00 17 11.0	+1.6	
	baz=126							
DUG	Dugway, Tooele	32.92	328	eP	P	00 17 15.2	+5.4	
	comp=Z,2.6nm,0.9s							
E36A	McGregor	33.11	357	P	P	00 17 09.6	-1.5	
	baz=175,SNR=7.8							
R11A	Troy Canyon, C	33.14	323	eP	P	00 17 15.3	+3.6	
	comp=Z,6.9nm,1.4s							
E34A	Wadena	33.24	355	P	P	00 17 11.6	-0.7	
	baz=172							
HWUT	Hardware Ranch	33.39	331	eP	P	00 17 16.3	+2.4	
	comp=Z,4.7nm,1.1s							
PD31	Pinedale Array	33.44	335	eP	P	00 17 12.1	-2.2	
PD31				ePcP	PcP	00 19 55.2	+0.1	
PDAR	Pinedale Array	33.44	335	P	P	00 17 12.1	-2.2	
	comp=Z,0.2nm,0.5s,baz=114,slow=9.0,SNR=2.8							
PDAR				PcP	PcP	00 19 55.2	+0.1	
	comp=Z,0.2nm,0.4s,baz=123,slow=5.5,SNR=3.5							
BGU	Big Grassy Mou	33.58	329	eP	P	00 17 17.5	+2.0	
	comp=Z,4.4nm,1.1s							
D37A	Cotton	33.71	358	P	P	00 17 15.0	-1.4	
	baz=177,SNR=7.3							
D35A	Remer	33.72	356	P	P	00 17 14.7	-1.7	
	baz=174							
PTGA	Pitinga	33.73	112	eP	P	00 17 16.7	-0.2	
	comp=Z,17nm,1.5s							
D36A	Goodland	33.76	357	P	P	00 17 14.6	-2.2	
	baz=176							
HVU	Hansel Valley	34.10	330	eP	P	00 17 22.4	+2.4	
	comp=Z,17nm,1.5s							
C38A	Sawbill Land.	34.25	360	P	P	00 17 18.9	-2.1	
	baz=179							
C35A	Jirik Farms, M	34.33	356	P	P	00 17 19.9	-1.8	
	baz=174,SNR=18							
C36A	Pine Crest Far	34.33	358	P	P	00 17 20.1	-1.6	
	baz=176,SNR=8.9							
REDW	Red Top Meadow	34.47	334	eP	P	00 17 24.6	+1.3	
	comp=Z,8.1nm,0.9s							
EYMN	Ely	34.48	359	P	P	00 17 21.2	-1.9	
	baz=178							
TPAW	Teton Pass	34.61	334	eP	P	00 17 29.4	+4.8	
	comp=Z,5.5nm,0.9s							
B35A	Bob, Littlefor	34.97	357	P	P	00 17 25.7	-1.6	
	baz=175							
PANM	San Antonio Re	35.00	315	eP	P	00 17 25.8	-1.9	
AGMN	Agassiz Nation	35.07	354	P	P	00 17 26.7	-1.4	
	baz=171							
AGMN	Agassiz Nation	35.07	354	eP	P	00 17 27.4	-0.7	
B34A	Aery, Baudette	35.16	356	P	P	00 17 26.7	-2.1	
	baz=173,SNR=7.2							
B32A	Ashes, Strandq	35.24	354	P	P	00 17 28.2	-1.3	
	baz=170							
SAML	Samuel	35.35	127	eP	P	00 17 28.5	-2.5	
	comp=Z,11nm,0.7s							
A33A	Warroad	35.66	355	P	P	00 17 31.4	-1.8	
	baz=172,SNR=5.4							
CMB	Columbia Colle	35.90	319	eP	P	00 17 37.4	+2.0	
	comp=Z,3.0nm,0.8s							
PNTR	Pine Nut	36.03	321	eP	P	00 17 39.9	+3.2	
	comp=Z,6.9nm,0.9s							
HLID	Hailey	36.24	331	P	P	00 17 39.0	+0.6	
	baz=138							
HLID	Hailey	36.24	331	eP	P	00 17 39.9	+1.5	
	comp=Z,11nm,1.6s							
MCMT	McKenzie Canyo	36.50	333	eP	P	00 17 43.0	+2.3	
MFID	Camas Ranch	36.82	329	eP	P	00 17 46.4	+3.0	
	comp=Z,11nm,1.5s							
DLMT	Dillon	36.82	334	eP	P	00 17 44.9	+1.6	
	comp=Z,3.8nm,1.0s							
ULM	Lac du Bonnet	37.01	355	P	P	00 17 41.6	-3.0	
	comp=Z,10nm,0.9s,baz=165,slow=10,SNR=8.5							
LPAZ	La Paz	37.09	142	P	P	00 17 47.0	+0.6	
	comp=Z,1.0nm,0.8s,baz=324,slow=3.4,SNR=4.3							
LPAZ	La Paz	37.09	142	eP	P	00 17 46.9	+0.5	
	comp=Z,12nm,1.9s							
LRM	Limekiln Ridge	37.13	335	eP	P	00 17 47.5	+1.5	
WVOR	Wild Horse Val	37.60	326	eP	P	00 17 51.7	+1.7	
	comp=Z,4.6nm,0.9s							
O03D	Paynes Creek	38.11	320	P	P	00 17 55.0	+0.7	
	baz=126							
BMO	Blue Mountains	38.59	330	eP	P	00 17 58.7	+0.4	
	comp=Z,4.1nm,1.2s							
F10A	Beach Ranch, E	39.37	331	eP	P	00 18 05.4	+0.6	
	comp=Z,9.0nm,0.8s							
NEW	Newport	41.03	333	P	P	00 18 18.2	-0.2	
	baz=139							
FFC	Flin Flon	42.17	350	eP	P	00 18 27.3	-0.3	
	comp=Z,6.0nm,1.0s							
A04D	Lummi Island	43.95	330	P	P	00 18 42.6	+0.6	
	baz=132							
SCHQ	Schefferville	45.46	19	P	P	00 18 49.8	-4.2	
	comp=Z,8.3nm,0.8s,baz=191,slow=7.0,SNR=10							
SCHQ				LR	LR	00 38 42.4		
	comp=Z,228nm,19.8s,baz=232,slow=38							
SCHQ	Schefferville	45.46	19	eP	P	00 18 52.5	-1.5	
	comp=Z,13nm,1.0s							
YKA	Yellowknife Ar	51.89	346	P	P	00 19 40.8	-2.5	
	comp=Z,2.5nm,0.9s,baz=148,slow=7.9,SNR=6.8							
YKB5	Yellowknife Ar	51.89	346	eP	P	00 19 40.8	-2.5	
DLBC	Dease Lake	53.66	336	eP	P	00 19 58.4	+1.9	
	comp=Z,12nm,1.3s							
SEW	Seward	63.04	331	eP	P	00 21 02.8	+0.9	
	comp=Z,25nm,0.7s							
IL1	Eielson Array	63.84	337	eP	P	00 21 05.7	-1.3	
ILAR	Eielson Array	63.84	337	P	P	00 21 05.8	-1.3	
	comp=Z,2.0nm,0.9s,baz=128,slow=5.2,SNR=13							
ILB	Eielson Array	63.84	337	eP	P	00 21 05.8	-1.3	
SUMG	Summit	66.57	15	eP	P	00 21 25.3	+0.1	
	comp=Z,7.1nm,0.9s							
ESDC	Sonseca Array	79.29	52	P	P	00 22 37.4	-3.4	
	comp=Z,0.3nm,0.6s,baz=297,slow=6.5,SNR=4.2							
NB200	NORSAR Array S	84.20	29	eP	P	00 23 04.8	-1.3	
NOA	NORSAR Array B	84.20	29	P	P	00 23 04.8	-1.3	
	comp=Z,0.5nm,0.8s,baz=281,slow=4.7,SNR=2.5							
NOA				LR	LR	00 58 21.7		
	comp=Z,41nm,20.6s,baz=15,slow=34							
TIC	Toumodi	84.52	84	ePKP1	P	00 23 07.3	-1.3	
LIC	Lamto	84.61	85	ePKP1	P	00 23 08.1	-0.9	
	comp=Z,36nm,1.2s							
DBIC	Dimbokro	84.67	84	P	P	00 23 08.3	-1.1	
	comp=Z,4.4nm,0.7s,baz=256,slow=5.3,SNR=7.4							
DBIC	Dimbokro	84.67	84	eP	P	00 23 08.3	-1.1	
	comp=Z,54nm,2.0s							
KIC	Kosan Boka	84.85	85	ePKP1	P	00 23 08.4	-1.9	
	comp=Z,19nm,0.8s							
GERES	GERESS Array B	89.42	40	P	P	00 23 29.8	-2.1	
	comp=Z,0.1nm,0.4s,baz=310,slow=5.0,SNR=4.0							
BOSA	Boshof	119.14	115	PKP	PKPdf	00 29 25.9	+1.4	
	comp=Z,3.0nm,0.8s,baz=229,slow=2.6,SNR=4.4							
WR1	Warramunga Arr	136.25	255	ePKPdf	PKPdf	00 29 56.7	-0.4	
WRA	Warramunga Arr	136.25	255	PKP	PKPdf	00 29 56.7	-0.4	
	comp=Z,0.6nm,0.9s,baz=93,slow=2.3,SNR=3.8							
AS31	Alice Springs	136.43	250	ePKPdf	PKPdf	00 29 58.6	+1.1	
ASAR	Alice Springs	136.44	250	PKP	PKPdf	00 29 58.6	+1.1	
	comp=Z,0.3nm,0.4s,baz=59,slow=4.4,SNR=3.6							
FITZ	Fitzroy Crossi	224.83	229	PKPbc	PKPdf	00 30 15.3	+3.2	
	comp=Z,2.1nm,0.7s,baz=192,slow=1.7,SNR=3.7							
CM31	Chiang Mai Arr	146.92	343	ePKPdf	PKPbc	00 30 18.3	+0.2	
CMAR	Chiang Mai Arr	146.92	343	PKPbc	PKPbc	00 30 18.3	+0.2	
	comp=Z,2.7nm,0.6s,baz=342,slow=3.7,SNR=14							

IDC 28 00:20:18.4±2.2, 7.47S×150.77E, h0km, mb3.6/4, mb1 3.9/5, mb1mx3.6/23, mbtmp3.7/5, ML1.6/1, Error ellipse: s-maj=104.5km s-min=27.5km az=134.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	Port Moresby	4.06	241	Pn	Pn	00 21 22.9	+1.1
	2.6nm,0.3s,baz=84,slow=18,SNR=3.4						
PMG				Sn	Sn	00 22 07.3	-2.8
	3.3nm,0.3s,baz=245,slow=14,SNR=3.6						
WRA	Warramunga Arr	20.19	230	P	P	00 24 54.7	-0.1
	1.0nm,0.5s,baz=56,slow=11,SNR=16						
ASAR	Alice Springs	22.83	229	P	P	00 25 23.2	-0.1
	0.9nm,0.5s,baz=57,slow=8.8,SNR=10						
FITZ	Fitzroy Crossi	26.65	244	P	P	00 25 58.5	-0.7
	1.5nm,0.7s,baz=68,slow=11,SNR=4.7						
ILAR	Eielson Array	85.38	22	P	P	00 32 57.7	+0.4
	0.2nm,0.6s,baz=260,slow=5.2,SNR=4.7						

WEL 28 01:09:12.0±0.3, 40.38S×176.87E, h18km±2km, ML3.5/45, 4C-2D, Error ellipse: s-maj=2.7km s-min=1.7km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PRHZ	Porangahau	0.21	303	P*	Pg	01 09 16.2	-0.9
PRHZ				S*	Sg	01 09 19.6	-1.0
PRHZ				AML	AML	01 09 20.1	
ANWZ	Angora Road	0.31	256	P*	Pb	01 09 19.6	+0.6
ANWZ				AML	AML	01 09 26.5	
ANWZ				AML	AML	01 09 28.9	
PXZ	Pawanui	0.35	359	P*	Pg	01 09 19.4	0.0
PXZ				S*	Sb	01 09 25.2	+0.2
PXZ				AML	AML	01 09 27.1	
PXZ				AML	AML	01 09 27.7	
PXZ				AML	AML	01 09 27.7	
WPHZ	Waipukurau	0.46	314	P*	Pg	01 09 20.5	-0.7
WPHZ				S*	Sg	01 09 27.0	-0.5
WPHZ				AML	AML	01 09 28.8	
DVHZ	Dannevirke	0.54	279	P*	Pg	01 09 22.4	-0.4
DVHZ				S*	Sb	01 09 30.6	+0.2
DVHZ				AML	AML	01 09 31.7	
BFZ	Birch Farm	0.56	238	P*	Pn	01 09 24.5	-0.6
BFZ				S*	Sn	01 09 33.8	-0.1
BFZ				AML	AML	01 09 37.2	
BFZ				AML	AML	01 09 38.4	
BFZ				AML	AML	01 09 38.4	
KAHZ	Kahuranaki	0.59	1	P*	Pb	01 09 24.0	+0.2
KAHZ				S*	Sn	01 09 34.1	-0.6
KAHZ				AML	AML	01 09 36.3	
PNHZ	Pukenui	0.69	312	⇑P*	Pb	01 09 24.8	-0.8
PNHZ				S*	Sb	01 09 34.3	-0.6
PNHZ				AML	AML	01 09 35.8	
PRWZ	Pori Road	0.70	256	P*	Pg	01 09 26.4	+0.6
PRWZ				AML	AML	01 09 37.9	
PRWZ				AML	AML	01 09 39.5	
CPWZ	Castlepoint	0.73	224	P*	Pn	01 09 27.4	0.0
CPWZ				AML	AML	01 09 48.5	
CPWZ				AML	AML	01 09 53.7	
CKHZ	Cape Kidnapper	0.74	13	P*	Pb	01 09 26.4	0.0
CKHZ				AML	AML	01 09 42.7	
CKHZ				AML	AML	01 09 43.6	
TSZ	Takapari Road	0.77	295	P*	Pb	01 09 25.9	-0.9
TSZ				S*	Sb	01 09 36.4	-0.5
TSZ				AML	AML	01 09 37.8	
KRHZ	Kereru	0.83	333	⇓P*	Pb	01 09 27.0	-0.9
KRHZ				AML	AML	01 09 39.1	
KRHZ				AML	AML	01 09 39.1	
POWZ	Post Office Ro	0.84	269	P*	Pg	01 09 28.2	-0.2
POWZ				AML	AML	01 09 43.1	
POWZ				AML	AML	01 09 43.2	
TIWZ	Tintock	0.84	242	P*	Pg	01 09 28.4	0.0
TIWZ				AML	AML	01 09 44.4	
TIWZ				AML	AML	01 09 51.3	
MCHZ	McNeill Hill	0.95	352	P*	Pb	01 09 29.7	-0.2
MCHZ				AML	AML	01 09 51.9	
MCHZ				AML	AML	01 10 03.6	
KWHZ	Kaweka Forest	1.02	340	P*	Pb	01 09 30.3	-0.8
KWHZ				S*	Sb	01 09 44.5	+0.3
KWHZ				AML	AML	01 09 48.3	
MRZ	Mangatainoka R	1.02	254	⇑P*	Pb	01 09 30.3	-0.8
MRZ				AML	AML	01 09 48.1	
MRZ				AML	AML	01 09 48.4	
TMWZ	Te Maipa	1.04	226	P*	Pb	01 09 31.2	-0.2
TMWZ				AML	AML	01 09 55.8	
TMWZ				AML	AML	01 10 00.9	
ARHZ	Aropaoanui	1.12	5	PN	Pn	01 09 31.9	-0.9
ARHZ				AML	AML	01 09 54.4	
ARHZ				AML	AML	01 09 55.7	
HOWZ	Holdsworth Sta	1.15	243	P*	Pn	01 09 32.1	-1.1
HOWZ				AML	AML	01 09 57.1	
HOWZ				AML	AML	01 09 58.1	
OHWZ	Ohakea	1.20	278	⇓P*	Pb	01 09 34.6	+0.4
BKZ	Black Stump Fm	1.25	347	⇑PN	Pn	01 09 33.4	-1.3
BKZ				AML	AML	01 09 50.0	
BKZ				AML	AML	01 09 55.7	
NMHZ	Naumai	1.29	358	⇑PN	Pn	01 09 34.4	-0.8
NMHZ				AML	AML	01 10 10.4	
NMHZ				AML	AML	01 10 14.1	
MTW	Mount Morrison	1.29	233	P*	Pn	01 09 34.3	-0.8
MTW				AML	AML	01 10 03.3	
MTW				AML	AML	01 10 13.5	
MOVZ	Moawhango	1.30	318	PN	Pn	01 09 34.4	-1.0
MOVZ				AML	AML	01 09 54.7	
MOVZ				AML	AML	01 09 57.2	
WHHZ	Waihua	1.34	12	AML	AML	01 10 03.7	
WHHZ				AML	AML	01 10 11.6	
TRWZ	Traveller	1.35	221	P*	Pg	01 09 40.0	+2.0
TRWZ				AML	AML	01 10 16.2	
TRWZ				AML	AML	01 10 17.2	
OGWZ	Otaki Gorge	1.36	251	P*	Pn	01 09 35.0	-1.1
OGWZ				AML	AML	01 09 59.8	
OGWZ				AML	AML	01 10 01.3	
WNVZ	Wahianoa	1.44	317	PN	Pn	01 09 37.5	+0.2
MTVZ	Mangateitei	1.47	312	PN	Pb	01 09 38.3	-0.5
MTVZ				AML	AML	01 10 02.7	
MTVZ				AML	AML	01 10 03.7	
WHVZ	Whangaehu Hut	1.48	318	PN	Pn	01 09 38.0	+0.1
WHVZ				AML	AML	01 10 01.1	
WHVZ				AML	AML	01 10 03.8	
PAWZ	Paruwai Farm	1.48	227	PN	Pg	01 09 40.9	+0.5
PAWZ				AML	AML	01 10 15.3	
PAWZ				AML	AML	01 10 16.6	
KNZ	Kokohu	1.50	25	PN	Pn	01 09 36.4	-1.5
FWVZ	Far West T-bar	1.52	318	PN	Pn	01 09 38.7	+0.2
FWVZ				AML	AML	01 10 04.1	
FWVZ				AML	AML	01 10 04.6	
OTVZ	Oturere	1.53	322	PN	Pn	01 09 39.2	+0.6
OTVZ				AML	AML	01 10 03.8	
OTVZ				AML	AML	01 10 03.9	
CAW	Cannon Point	1.55	242	PN	Pn	01 09 37.9	-0.8
CAW				AML	AML	01 10 07.5	
CAW				AML	AML	01 10 08.7	
NGZ	Ngauruhoe	1.55	321	PN	Pn	01 09 39.2	+0.3
NGZ				AML	AML	01 10 06.7	
NGZ				AML	AML	01 10 08.2	
KIW	Kapiti Island	1.56	252	PN	Pn	01 09 38.1	-0.9
KIW				AML	AML	01 10 07.4	
KIW				AML	AML	01 10 13.3	
WAZ	Wanganui	1.58	293	PN	Pn	01 09 39.6	+0.6
WAZ				AML	AML	01 10 06.5	
WAZ				AML	AML	01 10 14.0	
MRHZ	Matea Rd	1.59	347	PN	Pn	01 09 38.7	-0.6
MRHZ				AML	AML	01 10 00.4	
MRHZ				AML	AML	01 10 00.5	
MSWZ	Moikau Station	1.60	229	PN	Pn	01 09 38.3	-1.2
MSWZ				AML	AML	01 10 22.3	
PKVZ	Pokaka	1.60	313	PN	Pn	01 09 40.0	+0.6
PKVZ				AML	AML	01 10 07.6	
PKVZ				AML	AML	01 10 08.6	
WTVZ	West Tongariro	1.61	322	PN	Pn	01 09 40.1	+0.5
WTVZ				AML	AML	01 10 06.9	
WTVZ				AML	AML	01 10 12.7	
SNGZ	Shannon Statio	1.64	13	PN	Pn	01 09 39.1	-0.9
SNGZ				AML	AML	01 10 24.9	
SNGZ				AML	AML	01 10 28.5	
PLWZ	Palliser	1.70	225	PN	Pn	01 09 40.2	-0.7
TWVZ	Taurewa	1.71	319	PN	Pn	01 09 41.8	+0.7
MWZ	Matawai	2.11	14	PN	Pn	01 09 44.5	-1.9
MWZ				AML	AML	01 10 35.6	
MWZ				AML	AML	01 10 35.6	
URZ	Urewera	2.13	5	PN	Pn	01 09 45.0	-1.6
TCW	Tory Channel	2.13	246	PN	Pn	01 09 45.1	-1.6
HIZ	Hauiti	2.43	320	PN	Pb	01 09 53.7	-1.5
HIZ				AML	AML	01 10 31.2	
RUGZ	Raukumara Rang	2.50	15	PN	Pn	01 09 49.2	-1.9
PKGZ	Pakihiroa	2.66	21	PN	Pn	01 09 52.0	-2.1
WMGZ	Waiomatatini S	2.83	26	PN	Pn	01 09 54.4	-1.8
WMGZ				AML	AML	01 10 28.6	

*IDC **28** 01:19:20.2±1.1, 13.41N×90.67W, h0km, mb4.3/10, mb1 4.5/12, mb1mx4.2/30, mbtmp4.3/12, ML4.3/2, MS4.2/15, Ms1 4.2/15, ms1mx4.0/30, Error ellipse: s-maj=35.0km s-min=16.9km az=46.0*

*MEX **28** 01:19:23.1±0.3, 12.96N×91.18W, h27km±588km, MD4.6*

*ISCJB **28** 01:19:23.5±0.3, 13.36N±0.03×90.71W±0.03, h33km, mb4.6/106, MS4.2/15, Error ellipse: s-maj=5.3km s-min=3.6km az=39.4*

*GCMT **28** 01:19:25.7±0.5, 13.06N×90.95W, h24km±1km, MW5.0/64, Moment Tensor Solution. s30,c35; s64,c78; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr=4.40±.32; Mθθ=-3.53±.21; Mφφ=-0.86±.21; Mrθ=0.30±.27; Mrφ=0.50±.14; Mθφ=0.67±.32; Best double couple: Mo=4.06200×10^16 NP1: φ=93.00000°, δ=47.00000°, λ=79.00000°. NP2: φ=288.00000°, δ=44.00000°, λ=101.00000°. Principal axes: T 4.4990, Plg=82.0000°, Azm=289.0000°; N -0.8720, Plg=8.0000°, Azm=100.0000°; P -3.6250, Plg=1.0000°, Azm=190.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **28** 01:19:25.7±0.4, 13.35N×90.69W, h35km, mb4.6/105, MD4.6(MEX) Error ellipse: s-maj=8.1km s-min=5.4km az=208.0*

NEIC Felt at Escuintla and Quetzaltenango. Also felt at Tapachula, Mexico and at San Salvador, El Salvador.

*CASC **28** 01:19:27.3±1.1, 13.31N×90.83W, h35km, ML3.9, mb4.6(NEIC)*

ISC 28 01:19:23.8±0.6, 13.10N±0.07×90.99W±0.04, h33km, n479, σ1.9 64/476, mb4.7/106, MS4.2/15, 3C-3D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IXG	Ixpaco	1.19	26	⇓eP	Pn	01 19 43.5	-0.7
CUS1	Cusmapa	1.29	51	eP	Pn	01 19 45.2	-0.4
MONT	Ecomontaæa	1.50	60	⇓iP	Pn	01 19 49.0	+0.2
SBLS	San Blas	1.52	61	⇑eP	Pn	01 19 49.0	+0.1
RTR	El Retiro	1.53	59	⇑eP	Pn	01 19 49.3	+0.3
SNJE	San Jose	1.55	60	eP	Pn	01 19 49.4	+0.2
RBDL	Robledal	1.62	51	⇑eP	Pn	01 19 50.5	+0.3
BOQS	Boqueron	1.78	69	eP	Pn	01 19 53.0	+0.5
SNET	Serv Nac Est T	1.81	71	eP	Pn	01 19 52.9	+0.2
SNET				eS	Sn	01 20 16.4	+1.9
SNET				AML	AML	01 20 29.1	
	comp=Z,2μm,0.3s						
LFU	La Fuente	1.93	70	eP	Pn	01 19

833A	Chaparral WMA, baz=150	17.05	334	P	P	01 23 21.8	+0.5
734A	La Parita Cree baz=153	17.18	337	P	P	01 23 22.4	-0.2
636A	Smothers Creek baz=159	17.24	342	P	P	01 23 22.6	-0.8
540A	Vidor baz=169	17.25	351	P	Pn	01 23 22.0	-0.2
832A	Faith Ranch, C baz=148	17.27	332	P	P	01 23 23.5	-0.2
733A	Divot King Ran baz=151	17.36	335	P	P	01 23 25.2	+0.6
DWPF	Disney Wildern comp=Z,120nm,1.2s	17.39	29	ePn	Pn	01 23 22.5	-1.5
538A	Harpers Horsep baz=164	17.54	347	P	Pn	01 23 25.6	-0.1
445A	Amite baz=181	17.55	2	P	Pn	01 23 25.9	-0.1
634A	China Grove, S baz=154	17.58	338	P	P	01 23 27.5	+0.4
537A	Green Hill Far baz=162	17.60	345	P	P	01 23 27.0	-0.3
446A	Poplarville baz=184	17.67	5	P	Pn	01 23 27.5	+0.1
441A	DeRidder baz=172	17.68	354	P	Pn	01 23 27.3	-0.2
447A	Lucedale baz=187	17.74	7	P	Pn	01 23 27.7	-0.5
440A	Kirbyville baz=169	17.77	352	P	Pn	01 23 28.0	-0.7
536A	Bastrop baz=159	17.80	343	P	Pn	01 23 29.0	0.0
535A	Dale baz=158	17.91	341	P	P	01 23 31.1	+0.4
439A	Center Grove, baz=167	17.95	349	P	P	01 23 31.0	-0.2
633A	Saathoff Ranch baz=152	17.96	336	P	P	01 23 31.2	-0.1
448A	Bay Minette baz=189	17.98	9	P	P	01 23 31.7	+0.3
438A	Sam Houston St baz=165	18.04	347	P	Pn	01 23 31.9	-0.1
343A	Vidalia baz=177	18.10	358	P	P	01 23 32.8	0.0
345A	Thompson Farm, baz=182	18.14	3	P	P	01 23 33.8	+0.5
534A	Blanco baz=155	18.21	339	P	P	01 23 34.3	+0.2
342A	Flagon Creek P baz=175	18.23	356	P	Pn	01 23 34.5	+0.3
346A	Big Creek Wild baz=184	18.25	4	P	Pn	01 23 34.9	+0.3
341A	Kurthwood baz=172	18.25	354	P	Pn	01 23 34.8	+0.2
344A	Westbrook Farm baz=180	18.27	1	P	P	01 23 34.3	-0.3
437A	Phantom Ranch, baz=163	18.27	346	P	Pn	01 23 35.2	+0.4
347A	Saraland baz=187	18.35	7	P	Pn	01 23 36.6	+0.8
436A	Wall Ranch, Ga baz=161	18.38	344	P	Pn	01 23 36.1	-0.1
ROSC	El Rosal baz=337,slow=18,SNR=12	18.39	115	P	Pn	01 23 40.5	+3.8
ROSC	El Rosal	18.39	115	eP	Pn	01 23 41.1	+4.4
340A	Bronson baz=170	18.42	352	P	Pn	01 23 36.7	0.0
339A	Huntington baz=168	18.44	350	P	Pn	01 23 36.5	-0.3
348A	Jackson baz=189	18.44	8	P	Pn	01 23 37.5	+0.6
PRAC	Prado	18.45	119	eP	Pn	01 23 38.3	+1.2
533A	Kerrville baz=153	18.46	337	P	Pn	01 23 37.2	+0.1
338A	Crockett baz=166	18.60	348	P	Pn	01 23 38.6	-0.2
435B	Jarrell baz=158	18.62	342	P	P	01 23 38.5	-0.1
337A	Centerville baz=164	18.68	347	P	Pn	01 23 39.5	-0.3
243A	Waterproof baz=178	18.70	359	P	Pn	01 23 39.5	-0.4
244A	Avery, Jackson baz=180	18.85	1	P	Pn	01 23 41.5	-0.4
434A	Burnet baz=156	18.86	340	P	Pn	01 23 41.6	-0.5
245A	Little AP, Sta baz=182	18.87	3	P	Pn	01 23 41.6	-0.4
NATX	Nacogdoches baz=188	18.87	350	P	P	01 23 41.5	+0.2
NATX	Nacogdoches comp=Z,4.1nm,0.5s	18.87	350	eP	P	01 23 41.0	-0.4
246A	Jackson Lee, B baz=185	18.90	5	P	Pn	01 23 42.1	-0.3
242A	Grayson baz=176	18.90	357	P	P	01 23 41.9	+0.3
241A	Mo Tay, Goldon baz=173	18.91	355	P	P	01 23 42.0	+0.2
336A	Riesel baz=161	18.98	344	P	P	01 23 42.5	0.0
247A	Quitman baz=186	18.99	6	P	P	01 23 42.9	+0.3
CHIC	Chingaza	19.00	115	eP	Pn	01 23 45.8	+1.6
FLOC	Florencia	19.02	126	eP	Pn	01 23 45.3	+1.3
240A	Hunter Patters baz=171	19.02	353	P	P	01 23 42.8	-0.2
VBMS	Vicksburg baz=180	19.03	1	P	P	01 23 43.4	+0.4
335A	Moody baz=159	19.04	343	P	Pn	01 23 43.8	-0.3
RUSC	La Rusia	19.05	110	eP	Pn	01 23 45.4	+0.5
433A	Art baz=154,SNR=13	19.09	338	P	Pn	01 23 44.4	-0.4
239A	Gary baz=169	19.10	351	P	P	01 23 43.1	-0.6
JCT	Junction City baz=152	19.11	336	P	P	01 23 44.3	+0.2
JCT	Junction City comp=Z,14nm,1.1s	19.11	336	eP	P	01 23 42.2	-1.8
248A	Dixon Mills baz=189	19.14	8	P	P	01 23 44.0	-0.2
238A	Jacksonville baz=167	19.19	349	P	P	01 23 45.0	+0.2
237A	Washetta, Mont baz=165	19.32	348	P	Pn	01 23 46.9	-0.6
334A	Lometa baz=157	19.33	341	P	Pn	01 23 46.9	-0.7
142A	Monroe baz=176	19.38	358	P	P	01 23 46.9	+0.1
145A	Houston Renfro baz=182	19.43	3	P	Pn	01 23 49.2	+0.4
144A	Alexander Plac baz=181	19.44	1	P	Pn	01 23 49.2	+0.2
HPIG	comp=Z,54nm,1.8s	19.45	317	eP	Pn	01 23 49.8	+0.5
TIGA	Tifton baz=201	19.48	19	P	Pn	01 23 50.0	+0.6
141A	Papa Simpson, baz=174	19.49	355	P	P	01 23 47.7	-0.4
143A	Socs Landing, baz=178	19.51	359	P	P	01 23 47.5	-0.9
146A	Union baz=185	19.52	5	P	P	01 23 48.2	-0.2
333A	Richland Sprin baz=155,SNR=12	19.57	339	P	P	01 23 49.1	0.0
140A	Cam and Jess, baz=172	19.59	353	P	P	01 23 48.7	-0.5
147A	Livingston baz=187	19.64	7	P	P	01 23 49.9	+0.2
WHTX	Lake Whitney, baz=160	19.71	344	P	P	01 23 50.9	+0.3
WHTX	Lake Whitney, comp=Z,47nm,1.4s	19.71	344	eP	P	01 23 50.3	-0.3
139A	Bunkhouse Ranc baz=169	19.73	351	P	P	01 23 50.5	-0.2
138A	Matatall Enter baz=167	19.83	350	P	P	01 23 51.7	-0.1
137A	Heron Place, G baz=165	19.89	348	P	P	01 23 52.3	-0.1
234A	Clairette baz=158	19.92	342	P	P	01 23 53.2	+0.3
136A	Ennis baz=163	19.94	346	P	Pn	01 23 54.0	-0.8
TXAR	Lajitas Array comp=Z,0.6nm,0.3s,baz=153,slow=13,SNR=70	19.98	326	P	Pn	01 23 55.0	-0.5
TXAR	comp=Z,232nm,18.9s,baz=0.0,slow=42			LR	LR	01 33 13.1	
TX31	Lajitas Ar. Si	19.98	326	eP	Pn	01 23 55.6	+0.1
Z43A	Armstrong Fami baz=178	20.02	359	P	P	01 23 53.4	-0.4
Z46A	Louisville baz=185	20.09	5	P	Pn	01 23 55.8	-0.8
Z44A	Pea Ridge, Bel baz=181	20.09	1	P	P	01 23 54.6	0.0
Z42A	Norrel Spur, H baz=176	20.10	358	P	P	01 23 54.5	-0.2
Z41A	Richland Creek baz=174	20.13	356	P	P	01 23 55.0	-0.1
LRAL	Lakeview Retre comp=Z,38nm,1.4s	20.17	10	eP	P	01 23 56.4	+0.9
233A	Rising Star baz=156	20.18	340	P	P	01 23 55.6	-0.1
Z47A	Carrollton baz=188	20.18	7	P	P	01 23 56.5	+0.9
Z40A	Long Farm, Mag baz=172	20.18	354	P	P	01 23 54.8	-0.9
Z45A	Winona baz=183	20.21	3	P	P	01 23 56.2	+0.3
135A	Vickery Place, baz=161	20.24	344	P	P	01 23 55.3	-0.9
Z39A	Irene McRaven, baz=170	20.26	352	P	P	01 23 56.1	-0.3
Z38A	Mt. Pleasant baz=168	20.38	350	P	P	01 23 57.2	-0.6
SDV	Santo Domingo comp=Z,13nm,0.8s,baz=283,slow=4.8,SNR=16	20.41	100	P	P	01 23 57.8	-0.7
SDV	Santo Domingo comp=Z,31nm,1.4s	20.41	100	eP	P	01 23 58.4	-0.2
Z48A	Northport baz=189,SNR=7.3	20.42	8	P	P	01 23 58.5	+0.3
134A	White-Moore Ra baz=159	20.44	343	P	P	01 23 58.6	+0.2
Z37A	Pogue Cattle C baz=166	20.45	349	P	P	01 23 58.2	-0.3
WLAR	White Oak Lake comp=Z,42nm,1.1s	20.58	355	eP	P	01 24 00.2	+0.3
Y42A	Garnett, Star baz=177	20.65	358	P	P	01 24 00.2	-0.5
Y45A	Yeager Farm, C baz=183	20.71	3	P	P	01 24 01.5	+0.1
Y43A	Makayla and Ka baz=179	20.72	0	P	P	01 24 01.3	-0.1
133A	Hamilton Ranch baz=157	20.73	341	P	P	01 24 01.0	-0.6
Y41A	Eaglette Beard baz=175	20.74	356	P	P	01 24 01.3	-0.3
Y44A	Strider, Charl baz=181	20.78	2	P	P	01 24 01.4	-0.6
Y46A	Houston baz=185,SNR=6.6	20.78	5	P	P	01 24 01.4	-0.7
Y47A	UCPARC, Winfie baz=188,SNR=9.2	20.90	7	P	P	01 24 02.8	-0.6
Y40A	Okolona baz=173	20.92	355	P	P	01 24 02.8	-0.9
Z35A	Perchaven, San baz=162	20.93	345	P	P	01 24 02.9	-0.9
Y39A	Lockesburg baz=171	20.93	353	P	P	01 24 02.9	-0.8
ABTX	Abilene, Hawle baz=155	20.98	339	P	P	01 24 04.0	-0.3
ABTX	Abilene, Hawle comp=Z,31nm,1.1s	20.98	339	eP	P	01 24 03.4	-1.0
Y38A	Idabel baz=169	21.01	351	P	P	01 24 03.8	-0.8
Z34A	Collier Ranch, baz=160	21.14	344	P	P	01 24 05.4	-0.7
Y36A	Durant baz=165	21.26	348	P	P	01 24 06.5	-0.7
X45A	UM Field Stati baz=184	21.28	4	P	P	01 24 06.3	-1.1
Z33A	Whitaker Ranch baz=158	21.31	342	P	P	01 24 07.5	-0.3
X44A	Crenshaw baz=181	21.32	2	P	P	01 24 07.1	-0.8
X43A	Marvell baz=180	21.32	0	P	P	01 24 06.9	-1.0
X41A	Kaden, Bauxite baz=175	21.34	357	P	P	01 24 07.2	-0.9
GOGA	Godfrey comp=Z,25nm,0.9s	21.35	18	eP	P	01 24 06.1	-2.1
X40A	Basin Creek Fa baz=174	21.36	356	P	P	01 24 07.3	-1.0
Y35A	Marietta baz=163	21.43	346	P	P	01 24 08.4	-0.6
MIAR	Mount Ida baz=172,SNR=10	21.48	354	P	P	01 24 08.8	-0.8
MIAR	Mount Ida comp=Z,20nm,1.1s	21.48	354	eP	P	01 24 09.5	-0.1
X39A	Fountain Ranch baz=171	21.50	353	P	P	01 24 09.0	-0.8
UALR	University of comp=Z,58nm,1.5s	21.61	357	eP	P	01 24 11.6	+0.6
Y34A	Reagan Ranch, baz=161	21.66	345	P	P	01 24 10.9	-0.6
X38A	Whitesboro baz=169	21.75	351	P	P	01 24 11.6	-0.9
X37A	Clayton baz=168,SNR=7.7	21.76	350	P	P	01 24 12.1	-0.5
X35A	Drake baz=163	21.89	347	P	P	01 24 13.2	-0.8
Y33A	Hilltop Ranch, baz=159	21.94	343	P	P	01 24 14.0	-0.6
W41B	Gary Mavity, V baz=176	22.00	357	P	P	01 24 14.0	-1.3
W45A	Hickory Valley baz=184	22.02	4	P	P	01 24 14.3	-1.1
W40A	Ferguson Farm, baz=174	22.07	355	P	P	01 24 14.7	-1.3
X301	Greenbrier Sit comp=Z,53nm,1.8s	22.08	357	eP	P	01 24 14.9	-1.1
W38A	Poteau baz=170,SNR=6.7	22.10	352	P	P	01 24 15.6	-0.8
WHAR	Wooly Hollow comp=Z,42nm,1.5s	22.12	357	eP	P	01 24 15.8	-0.7
X201	Greenbrier Sit comp=Z,79nm,1.6s	22.13	357	eP	P	01 24 15.8	-0.8
W39A	Magazine baz=172,SNR=8.1	22.14	354	P	P	01 24 15.7	-1.0
X34A	Smith Ranch, M baz=161	22.29	345	P	P	01 24 17.9	-0.4
W37B	Quinton baz=168	22.30	350	P	P	01 24 17.2	-1.3
X33A	Lawton baz=160	22.40	344	P	P	01 24 18.0	-1.6
W36A	Wetumka baz=166	22.45	349	P	P	01 24 18.2	-1.8
SWET	Sewanee comp=Z,16nm,1.6s	22.49	11	eP	P	01 24 20.2	-0.3
X32A	Elmer baz=158	22.52	342	P	P	01 24 20.0	-0.8
W35A	Tecumseh baz=164	22.59	347	P	P	01 24 19.6	-1.9
V42A	Cord baz=178	22.61	359	P	P	01 24 20.1	-1.7
V41A	Mountainview baz=176,SNR=8.2	22.61	358	P	P	01 24 20.2	-1.6
V40A	Witts Springs baz=175,SNR=9.8	22.66	356	P	P	01 24 21.0	-1.4
WMOK	Wichita Mounta baz=159	22.67	343	P	P	01 24 21.0	-1.4
WMOK	Wichita Mounta comp=Z,17nm,1.4s	22.67	343	eP	P	01 24 20.7	-1.7
MNTX	Cornudas Mount baz=140,SNR=98	22.75	327	P	P	01 24 23.3	0.0
MNTX	Cornudas Mount comp=Z,61nm,1.1s	22.75	327	eP	P	01 24 23.2	0.0
V39A	Pettigrew baz=172,SNR=9.3	22.76	354	P	P	01 24 21.4	-2.0
V38A	Canehill baz=171	22.87	353	P	P	01 24 22.3	-2.2
W34A	Bridge Creek, baz=162	22.87	346	P	P	01 24 23.1	-1.5
W34A	Bridge Creek, comp=Z,31nm,1.1s	22.87	346	eP	P	01 24 24.6	+0.1
W33A	Caddo, Fort Co baz=160	22.97	344	P	P	01 24 23.3	-2.2
V37A	Hulbert baz=169	22.99	351	P	P	01 24 23.3	-2.4
CPCT	Cooper Cave comp=Z,13nm,1.2s	23.00	14	eP	P	01 24 24.7	-1.2
V36A	Jenks baz=167	23.02	350	P	P	01 24 23.8	-2.3
WVT	Waverly comp=Z,15nm,1.1s	23.10	7	eP	P	01 24 26.3	-0.5
TUL1	Leonard baz=167	23.12	350	P	P	01 24 24.6	-2.4
TUL1	Leonard comp=Z,26nm,1.1s	23.12	350	eP	P	01 24 27.0	0.0
U42A	Revenden baz=179,SNR=7.7	23.15	359	P	P	01 24 24.9	-2.4
U41A	Viola baz=177	23.16	358	P	P	01 24 25.7	-1.7
W32A	Sentinel baz=158	23.16	343	P	P	01 24 25.8	-1.7
U40A	Yellville baz=175,SNR=10	23.21	356	P	P	01 24 26.4	-1.6
HHAR	Hobbs comp=Z,17nm,1.3s	23.23	354	eP	P	01 24 26.3	-1.9
U39A	Green Forest baz=173,SNR=5.6	23.29	355	P	P	01 24 26.6	-2.1
MSTX	Muleshoe baz=149	23.38	335	P	P	01 24 28.8	-1.0
MSTX	Muleshoe comp=Z,18nm,1.1s	23.38	335	eP	P	01 24 29.6	-0.1
TKL	Tuckaleechee C comp=Z,8.8nm,0.7s,baz=182,slow=11,SNR=15	23.38	15	P	P	01 24 28.4	-1.2
TKL	comp=Z,1μm,20.3s,baz=210,slow=39			LR	LR	01 34 18.8	
TKL	Tuckaleechee C	23.38	15	eP	P	01 24 28.8	-0.9
V34A	Guthrie baz=163	23.39	347	P	P	01 24 27.7	-2.0
V34A	Guthrie comp=Z,67nm,1.5s	23.39	347	eP	P	01 24 27.9	-1.8
U38A	Gravette baz=171	23.44	353	P	P	01 24 28.1	-2.1
U37A	Salina baz=169,SNR=10.0	23.50	352	P	P	01 24 28.7	-2.1
U36A	Oologah baz=168	23.58	350	P	P	01 24 29.6	-2.0
V32A	Arapaho baz=159	23.66	343	P	P	01 24 30.7	-1.7
U35A	Pawnee baz=165	23.74	348	P	P	01 24 31.1	-2.0
AMTX	Amarillo baz=152	23.75	338	P	P	01 24 32.2	-1.1
AMTX	Amarillo comp=Z,39nm,1.4s	23.75	338	eP	P	01 24 32.2	-1.1
T41A	Mountain View baz=177	23.85	358	P	P	01 24 32.2	-2.0
T39A	Clever baz=174,SNR=13	23.92	355	P	P	01 24 32.7	-2.1
U34A	Anderson Ranch baz=163	23.97	347	P	P	01 24 33.1	-2.1
T40A	Mansfield baz=176,SNR=11	23.99	357	P	P	01 24 33.4	-2.0
T38A	Diamond baz=171,SNR=8.1	24.02	353	P	P	01 24 33.7	-1.9
U33A	Lingo Farm, Me baz=162	24.10	346	P	P	01 24 34.6	-1.8
T37A	Cheneyville 18 baz=170,SNR=7.0	24.18	352	P	P	01 24 35.0	-2.2
T35A	Sooner Cattle baz=166	24.22	349	P	P	01 24 35.3	-2.3
T36A	Boggs Farm, Ca baz=168	24.26	350	P	P	01 24 35.9	-2.0
TZTN	Tazewell comp=Z,20nm,1.0s	24.28	15	eP	P	01 24 36.5	-1.6
S41A	Jillco Farms, baz=178,SNR=6.6	24.39	359	P	P	01 24 37.5	-1.7
S40A	Lebanon baz=176,SNR=11	24.43	357	P	P	01 24 37.7	-1.8
T34A	McClaskey Farm baz=164	24.46	348	P	P	01 24 37.9	-1.8
S44A	Carbondale baz=183	24.54	3	P	P	01 24 38.8	-1.7
SIUC	Southern Illin comp=Z,17nm,0.7s	24.56	3	eP	P	01 24 40.5	-0.2
S38A	Stockton baz=172,SNR=17	24.57	354	P	P	01 24 39.1	-1.6
S45A	Carrier Mills baz=185	24.57	5	P	P	01 24 39.2	-1.4
S39A	Bolivar baz=174,SNR=26	24.57	356	P	P	01 24 38.9	-1.9
121A	Cookes Peak, D baz=137,SNR=18	24.71	324	P	P	01 24 44.2	+2.0
121A	Cookes Peak, D comp=Z,85nm,1.5s	24.71	324	eP	P	01 24 44.2	+2.0
T33A	Patterson Ranc baz=162	24.75	346	P	P	01 24 40.8	-1.6
319A	Douglas comp=Z,22nm,1.0s	24.78	320	eP	P	01 24 47.7	+4.8
S37A	Fort Scott baz=170,SNR=5.9	24.79	353	P	P	01 24 40.5	-2.3
S36A	Lake Cedric, C baz=168,SNR=9.4	24.86	351	P	P	01 24 41.7	-1.6
S35A	Otter Creek Ra baz=167	24.94	350	P	P	01 24 42.5	-1.6
T32A	Huddler Ranch, baz=161	25.01	345	P	P	01 24 43.5	-1.3
R40A	Maddies Statio baz=176	25.11	358	P	P	01 24 43.6	-2.0
R38A	Fenwick Farm, baz=173,SNR=9.9	25.12	355	P	P	01 24 44.1	-1.6
R39A	Chumby, Stover baz=175,SNR=7.1	25.17	356	P	P	01 24 44.6	-1.6
BNM	Barren Elite	25.32	328	eP	P	01 24 49.7	+1.9
R37A	Teagarden Farm baz=170	25.34	353	P	P	01 24 45.9	-1.8
WCI	Wyandotte Cave comp=Z,18nm,0.9s	25.37	9	eP	P	01 24 47.0	-1.0
Y22D	IRIS PASSCAL I comp=Z,44nm,0.8s	25.41	328	eP	P	01 24 54.4	+5.8
R36A	Gordon, Harris baz=169	25.44	352	P	P	01 24 47.5	-1.1
LPM	Los Pinos Moun	25.45	329	eP	P	01 24 49.3	+0.4
R35A	Emporia Munici baz=167	25.54	350	P	P	01 24 48.6	-1.0
LAZ	Ladron	25.78	328	eP	P	01 24 53.2	+1.2
Q38A	Cooks Store, C baz=173,SNR=7.2	25.86	355	P	P	01 24 50.7	-1.7
ANMO	Albuquerque baz=143	25.86	330	P	P	01 24 53.0	+0.2
ANMO	Albuquerque comp=Z,3.2nm,0.8s	25.86	330	eP	P	01 24 53.2	+0.5
Q39A	Willow Grove F baz=175	25.90	356	P	P	01 24 51.0	-1.7
R32A	Long Quarter, baz=162	26.14	346	P	P	01 24 53.7	-1.2
P40A	Paris baz=177	26.34	358	P	P	01 24 55.3	-1.5
TUC	Tucson baz=131	26.35	320	P	P	01 24 58.9	+1.8
TUC	Tucson comp=Z,14nm,1.2s	26.35	320	eP	P	01 24 58.7	+1.7
KSU1	Kansas State U baz=167	26.37	350	P	P	01 24 55.8	-1.2
P42A	Winchester baz=181	26.38	1	P	P	01 24 55.9	-1.2
P38A	Dawn baz=174	26.51	356	P	P	01 24 57.3	-1.0
P37A	Lathrop baz=172	26.55	354	P	P	01 24 57.5	-1.1
P35A	Duane Minner, baz=168	26.69	351	P	P	01 24 59.2	-0.8
T25A	Trinidad comp=Z,9.3nm,1.2s	26.78	336	eP	P	01 25 02.6	+1.5
O40A	La Belle baz=177,SNR=5.0	26.92	359	P	P	01 25 00.2	-1.8
X18A	Snowflake comp=Z,14nm,1.1s	27.40	324	eP	P	01 25 09.1	+2.5
214A	Organ Pipe Nat baz=128	27.44	317	P	P	01 25 10.9	+4.1
214A	Organ Pipe Nat comp=Z,27nm,0.9s	27.44	317	eP	P	01 25 08.9	+2.1
W18A	Petrified Fore baz=137	27.71	325	P	P	01 25 11.1	+1.8
SDCO	Great Sand Dun baz=148	27.75	335	P	P	01 25 10.2	+0.5
SDCO	Great Sand Dun comp=Z,7.7nm,1.5s	27.75	335	eP	P	01 25 10.2	+0.5
ACSO	Alum Creek Sta comp=Z,16nm,1.0s	27.93	13	eP	P	01 25 10.2	-0.8
X16A	Lo Mia Camp, P comp=Z,9.0nm,1.1s	28.18	322	eP	P	01 25 16.3	+2.7
M39A	Webster baz=177	28.29	358	P	P	01 25 13.3	-0.9
N32A	Stulken Farm, baz=164	28.29	348	P	P	01 25 13.2	-1.1
S22A	4UR Ranch, Cre baz=145	28.32	333	P	P	01 25 15.3	+0.4
S22A	4UR Ranch, Cre comp=Z,8.7nm,1.4s	28.32	333	eP	P	01 25 16.0	+1.1
NNA	Nana comp=Z,134nm,19.2s,baz=284,slow=35	28.61	150	LR	LR	01 35 53.3	

MVCO	**Mesa Verde** baz=142	28.66	330	P	P	01 25 18.8	+0.9
MVCO	**Mesa Verde** comp=Z,24nm,1.5s	28.66	330	*e*P	P	01 25 19.2	+1.3
Y14A	**Wickenburg** comp=Z,81nm,1.8s	28.82	320	*e*P	P	01 25 21.6	+2.5
L40A	**Anamosa** baz=179	28.85	360	P	P	01 25 17.5	-1.7
L41A	**Preston** baz=180	28.87	1	P	P	01 25 17.7	-1.6
WUAZ	**Wupatki** comp=Z,24nm,1.3s	28.92	324	*e*P	P	01 25 22.3	+2.2
O56A	**Blue Knob Stat** baz=205	29.18	20	P	P	01 25 21.1	-1.1
N54A	**Moraine State** baz=202	29.38	17	P	P	01 25 22.4	-1.5
K41A	**Shullsburg** baz=181	29.40	1	P	P	01 25 22.3	-1.8
GLA	**Glamis** baz=126	29.46	316	P	P	01 25 27.5	+2.7
K38A	**Parkersburg** baz=176	29.48	357	P	P	01 25 23.0	-1.7
K40A	**Colesburg** baz=179	29.49	360	P	P	01 25 23.6	-1.3
K39A	**Oelwein** baz=178	29.50	359	P	P	01 25 23.3	-1.7
ISCO	**Idaho Springs** baz=149	29.55	337	P	P	01 25 26.8	+0.9
PV05	**Paradox Valley**	29.64	330	*e*P	P	01 25 27.3	+0.7
K37A	**Belmond** baz=174	29.65	356	P	P	01 25 25.6	-0.6
Y12C	**Blythe** baz=128	29.68	318	P	P	01 25 29.4	+2.7
PDMCI	**Parker Dam,Lak** baz=129	29.78	319	P	P	01 25 30.0	+2.4
PV10	**Paradox Valley**	29.85	331	*e*P	P	01 25 29.5	+1.1
M54A	**Oil Creek Stat** baz=202	29.98	17	P	P	01 25 28.0	-1.2
SWSC	**Sam W. Stewart** baz=125	30.05	315	P	P	01 25 31.5	+1.6
U15A	**North Rim** comp=Z,16nm,1.2s	30.09	324	*e*P	P	01 25 33.3	+2.7
W13A	**Hualapai Mount** comp=Z,9.4nm,1.1s	30.13	321	*e*P	P	01 25 33.9	+3.0
J39A	**Decorah** baz=178	30.13	359	P	P	01 25 28.6	-2.0
J38A	**Wedel Dairy, R** baz=176	30.14	358	P	P	01 25 29.1	-1.5
J41A	**Loganville** baz=181,SNR=6.4	30.17	1	P	P	01 25 28.6	-2.3
J37A	**Redenius Farm,** baz=174	30.18	356	P	P	01 25 29.8	-1.2
BC3	**Big Chuckawall** baz=126	30.24	317	P	P	01 25 33.4	+1.7
J36A	**Seneca 1, Swea** baz=173	30.26	355	P	P	01 25 29.8	-1.9
IRM	**Iron Mountain** baz=127	30.34	318	P	P	01 25 34.1	+1.6
KNB	**Kanab** comp=Z,21nm,1.2s	30.80	324	*e*P	P	01 25 39.7	+2.9
BELC	**Belle Mtn. Jos** baz=126	30.81	317	P	P	01 25 39.5	+2.7
PKCU	**Pink Cliffs**	30.82	326	*e*P	P	01 25 38.4	+1.3
I38A	**Scanlan Farm,** baz=177,SNR=5.9	30.85	358	P	P	01 25 34.9	-2.0
TPFO	**Pinon Flats** baz=125	30.88	316	P	P	01 25 39.3	+1.8
ECSD	**EROS Data Cent** baz=169	30.91	352	P	P	01 25 36.1	-1.3
LCMT	**Little Creek M** comp=Z,11nm,1.0s	31.04	324	*e*P	P	01 25 40.7	+1.9
GMRC	**Granite Mounta** baz=127	31.06	318	P	P	01 25 41.0	+2.0
SRU	**San Rafael Swe** comp=Z,17nm,1.7s	31.14	330	*e*P	P	01 25 41.0	+1.2
Q16A	**Castle Valley** comp=Z,17nm,1.4s	31.32	329	*e*P	P	01 25 43.1	+1.8
SZCU	**Shurtz Canyon** comp=Z,28nm,1.2s	31.36	325	*e*P	P	01 25 43.7	+1.9
H37A	**Dierke Farm, C** baz=176	31.41	357	P	P	01 25 40.6	-1.3
H36A	**Jessenland, He** baz=174	31.47	356	P	P	01 25 40.0	-2.3
CCUT	**Cedar City** comp=Z,18nm,1.1s	31.48	325	*e*P	P	01 25 46.5	+3.6
HEC	**Hector,Ludlow** baz=126	31.52	318	P	P	01 25 45.3	+2.3
P17A	**Butcher Ranch,** comp=Z,13nm,1.2s	31.53	330	*e*P	P	01 25 45.6	+2.4
MSU	**Marysvale**	31.53	327	*e*P	P	01 25 45.4	+2.2
TUQ	**Turquoise Moun** baz=128	31.63	319	P	P	01 25 45.8	+1.8
H35A	**Sunnyside Ranc** baz=172	31.66	355	P	P	01 25 42.0	-2.0
SHPR	**Sheep Range** comp=Z,10nm,1.2s	31.83	321	*e*P	P	01 25 46.7	+0.9
H33A	**Prehn Over Nor** baz=169	31.85	352	P	P	01 25 44.4	-1.3
SPMN	**Marine on St.** baz=176,SNR=9.5	32.05	358	P	P	01 25 45.0	-2.4
SPMN	**Marine on St.** comp=Z,20nm,0.7s	32.05	358	*e*P	P	01 25 46.0	-1.5
G36A	**St. Michael** baz=174	32.11	356	P	P	01 25 46.5	-1.4
GSC	**Goldstone, Bar** baz=126	32.12	318	P	P	01 25 50.7	+2.4
G33A	**Ortonville** baz=170	32.32	353	P	P	01 25 48.4	-1.4
F36A	**Milaca** baz=175	32.72	357	P	P	01 25 51.6	-1.7
JLU	**Jordanelle** comp=Z,16nm,1.7s	32.75	331	*e*P	P	01 25 55.2	+1.3
TPNV	**Topopah Spring** comp=Z,14nm,1.4s	32.78	321	*e*P	P	01 25 57.5	+3.3
F35A	**Swanville** baz=173	32.79	355	P	P	01 25 52.1	-1.8
LRMC	**Laurel Mtn Rad** baz=126	32.80	317	P	P	01 25 56.6	+2.3
FURC	**Furnace Creek,** baz=128	32.86	320	P	P	01 25 57.1	+2.4
COWI	**Conover** comp=Z,11nm,0.7s	32.93	2	*e*P	P	01 25 53.4	-1.7
F33A	**5 Mile Ranch,** baz=170	32.94	353	P	P	01 25 53.0	-2.2
CTU	**Camp Tracy** comp=Z,36nm,1.1s	32.96	330	*e*P	P	01 25 56.9	+1.2
MPMC	**Manual Prospec** baz=126	33.01	318	P	P	01 25 58.3	+2.0
DUG	**Dugway, Tooele** baz=138	33.11	329	P	P	01 25 57.0	0.0
DUG	**Dugway, Tooele** comp=Z,7.0nm,1.2s	33.11	329	*e*P	P	01 25 58.5	+1.5
TCUT	**Toone Canyon** comp=Z,17nm,1.0s	33.13	331	*e*P	P	01 25 57.0	-0.2
SADO	**Sadowa** comp=Z,5.8nm,0.8s	33.14	16	*e*P	P	01 25 54.9	-2.1
R11A	**Troy Canyon, C** baz=132	33.31	323	P	P	01 26 01.3	+2.5
R11A	**Troy Canyon, C** comp=Z,15nm,1.4s	33.31	323	*e*P	P	01 26 01.5	+2.8
ARVC	**Arvin** baz=124	33.36	316	P	P	01 26 01.6	+2.5
E36A	**McGregor** baz=175,SNR=7.0	33.36	357	P	P	01 25 56.6	-2.3
E35A	**Pequot Lakes** baz=173	33.47	356	P	P	01 25 58.1	-1.7
HWUT	**Hardware Ranch** comp=Z,9.6nm,1.0s	33.59	332	*e*P	P	01 26 02.1	+0.9
BW06	**Boulder Array**	33.64	335	*e*P	P	01 26 01.7	0.0
PDAR	**Pinedale Array** comp=Z,0.7nm,0.7s,baz=148,slow=7.0,SNR=6.4	33.64	335	P	P	01 26 01.4	-0.2
PDAR				PcP	PcP	01 28 43.0	+1.6
PTGA	**Pitinga** comp=Z,18nm,1.2s	33.69	112	*e*P	P	01 26 04.3	+2.1
BGU	**Big Grassy Mou** comp=Z,6.1nm,1.0s	33.77	329	*e*P	P	01 26 04.8	+2.1
PKM	**Mcpherson Peak** baz=122	33.91	315	P	P	01 26 06.5	+2.5
VES	**Vestal, Richgr** baz=124	33.94	317	P	P	01 26 06.8	+2.8
PLVO	**Plevna** comp=Z,7.6nm,1.0s	33.97	18	*e*P	P	01 26 03.4	-0.8
D35A	**Remer** baz=174,SNR=5.2	33.97	356	P	P	01 26 01.6	-2.5
D37A	**Cotton** baz=177,SNR=11	33.97	358	P	P	01 26 02.0	-2.2
D36A	**Goodland** baz=176	34.02	357	P	P	01 26 02.5	-2.1
D34A	**Park Rapids** baz=172	34.06	355	P	P	01 26 03.4	-1.6
D33A	**AnnSam, Waubun** baz=171	34.17	354	P	P	01 26 04.0	-2.0
HVU	**Hansel Valley** comp=Z,17nm,1.3s	34.29	330	*e*P	P	01 26 09.6	+2.4
RCTC	**Rector, Farmer** baz=124	34.31	317	P	P	01 26 09.8	+2.5
C38A	**Sawbill Land.** baz=179	34.51	360	P	P	01 26 06.2	-2.7
C35A	**Jirik Farms, M** baz=174,SNR=22	34.58	356	P	P	01 26 07.0	-2.4
C36A	**Pine Crest Far** baz=176,SNR=11	34.58	358	P	P	01 26 07.4	-2.1
C34A	**RKJ Ranch, Bem** baz=173	34.60	355	P	P	01 26 07.3	-2.4
REDW	**Red Top Meadow** comp=Z,10nm,0.8s	34.67	334	*e*P	P	01 26 11.8	+1.1
SNOW	**Snow King Moun** comp=Z,13nm,0.7s	34.71	334	*e*P	P	01 26 12.1	+1.1
EYMN	**Ely** baz=179,SNR=6.1	34.74	359	P	P	01 26 08.4	-2.5
EYMN	**Ely** comp=Z,8.0nm,0.7s	34.74	359	*e*P	P	01 26 08.9	-2.0
LOHW	**Long Hollow** comp=Z,4.1nm,0.8s	34.77	335	*e*P	P	01 26 11.5	+0.1
C33A	**Trail** baz=171	34.78	354	P	P	01 26 09.1	-2.1
TPAW	**Teton Pass** comp=Z,10nm,1.0s	34.82	334	*e*P	P	01 26 12.5	+0.6
MOOW	**Moose Ponds** comp=Z,2.4nm,0.9s	34.94	335	*e*P	P	01 26 13.4	+0.4
C31A	**Landman Farms,** baz=168	35.04	352	P	P	01 26 11.7	-1.7
B35A	**Bob, Littlefor** baz=175,SNR=5.1	35.22	357	P	P	01 26 12.5	-2.5
SAML	**Samuel** comp=Z,2.3nm,0.8s	35.25	127	*e*P	P	01 26 16.0	+0.3
TVH3	**East Aurora ar** comp=Z,9.8nm,1.3s	35.25	321	*e*P	P	01 26 18.2	+2.5
B33A	**Robert and Kas** baz=172	35.27	355	P	P	01 26 13.7	-1.7
TVH1	**TV Hill, Hawth** comp=Z,15nm,1.5s	35.28	321	*e*P	P	01 26 17.7	+1.6
AGMN	**Agassiz Nation** baz=171,SNR=5.8	35.32	354	P	P	01 26 13.7	-2.1
AGMN	**Agassiz Nation** comp=Z,6.6nm,0.9s	35.32	354	*e*P	P	01 26 14.4	-1.5
AGMN				*e*PcP	PcP	01 28 41.9	-3.8
MDND	**Maddock** baz=165	35.38	350	P	P	01 26 14.5	-1.8
B34A	**Aery, Baudette** baz=173,SNR=7.4	35.41	356	P	P	01 26 14.5	-2.1
B32A	**Ashes, Strandq** baz=170	35.49	354	P	P	01 26 15.4	-1.9
BMN	**Battle Mountai** comp=Z,17nm,1.3s	35.65	325	*e*P	P	01 26 21.2	+2.2
B31A	**Greenbush Farm** baz=168	35.65	352	P	P	01 26 17.2	-1.5
WAKR	**Walker** comp=Z,20nm,1.5s	35.73	320	*e*P	P	01 26 22.5	+2.7
YERR	**Yerington** comp=Z,6.3nm,0.8s	35.90	321	*e*P	P	01 26 22.3	+1.1
A33A	**Warrwad** baz=172,SNR=14	35.91	355	P	P	01 26 18.8	-2.1
A32A	**Rocking H Ranc** baz=170	36.00	354	P	P	01 26 19.8	-1.9
CMB	**Columbia Colle** comp=Z,4.4nm,0.9s	36.05	319	*e*P	P	01 26 21.8	-0.5
PNTR	**Pine Nut** comp=Z,9.1nm,0.7s	36.19	321	*e*P	P	01 26 24.7	+1.0
HLID	**Hailey** baz=139	36.43	331	P	P	01 26 26.1	+0.5
HLID	**Hailey** comp=Z,14nm,1.5s	36.43	331	*e*P	P	01 26 26.7	+1.0
PAHR	**Pah Rah Range** comp=Z,9.2nm,1.2s	36.44	322	*e*P	P	01 26 28.8	+3.1
VLDQ	**Val d'Or** comp=Z,7.1nm,1.0s	36.68	15	*e*P	P	01 26 25.8	-1.6
MCMT	**McKenzie Canyo**	36.70	334	*e*P	P	01 26 30.1	+2.1
BOZ	**Bozeman (W)** baz=144	36.86	336	P	P	01 26 28.8	-0.5
BOZ	**Bozeman (W)** comp=Z,2.0nm,0.6s	36.86	336	*e*P	P	01 26 30.6	+1.4
LPAZ	**La Paz** comp=Z,0.8nm,0.7s,baz=340,slow=3.7,SNR=3.6	36.93	142	P	P	01 26 31.9	+1.3
ULM	**Lac du Bonnet** comp=Z,11nm,0.8s,baz=162,slow=8.3,SNR=12	37.26	355	P	P	01 26 30.4	-2.0
ULM				LR	LR	01 45 06.2	
ULM	**Lac du Bonnet** comp=Z,13nm,0.8s	37.26	355	*e*P	P	01 26 30.4	-2.0
LRM	**Limekiln Ridge**	37.34	335	*e*P	P	01 26 34.5	+1.1
WVOR	**Wild Horse Val** comp=Z,11nm,1.1s	37.78	326	*e*P	P	01 26 38.5	+1.5
EGMT	**Eagleton** baz=149	38.16	340	P	P	01 26 39.8	-0.4
EGMT	**Eagleton** comp=Z,4.7nm,0.8s	38.16	340	*e*P	P	01 26 40.8	+0.7
O03D	**Paynes Creek** baz=126	38.27	321	P	P	01 26 41.9	+0.7
MOD	**Modoc Plateau** comp=Z,12nm,1.3s	38.37	324	*e*P	P	01 26 42.9	+0.8
MSO	**Missoula** baz=142	38.76	335	P	P	01 26 45.2	0.0
BMO	**Blue Mountains** comp=Z,9.2nm,1.3s	38.78	330	*e*P	P	01 26 46.0	+0.6
M04C	**Macdoel** baz=127	39.19	323	P	P	01 26 50.5	+1.6
F10A	**Beach Ranch, E** comp=Z,11nm,0.8s	39.56	331	*e*P	P	01 26 52.4	+0.4
J05D	**Fort Rock, OR** baz=129	39.78	325	P	P	01 26 55.8	+2.0
G08A	**Pilot Rock** comp=Z,11nm,1.4s	39.92	329	*e*P	P	01 26 56.1	+1.2
J04D	**Umpqua Nationa** baz=128	40.24	324	P	P	01 26 59.3	+1.5
I04A	**Tendick Farm,** baz=144	40.76	325	P	P	01 27 03.0	+1.1
NEW	**Newport** baz=139	41.23	333	P	P	01 27 05.3	-0.3
I03D	**Drain, OR** baz=127	41.24	324	P	P	01 27 07.4	+1.8
C09A	**Chrisman Ranch** comp=Z,7.1nm,0.6s	41.40	332	*e*P	P	01 27 07.6	+0.6
G03D	**McMinnville, O** baz=129	42.13	326	P	P	01 27 13.5	+0.5
TDL	**Tradedollar La**	42.31	328	*e*P	P	01 27 20.0	+5.4
B05A	**Bryant** baz=133	43.53	330	P	P	01 27 23.9	-0.3
NLWA	**Neilton Lookou** comp=Z,42nm,1.5s	43.84	328	*e*P	P	01 27 28.9	+2.0
A04D	**Lummi Island** baz=132	44.14	330	P	P	01 27 29.3	+0.2
LLLB	**Lillooet** comp=Z,8.2nm,1.0s	45.06	332	*e*P	P	01 27 38.0	+1.4
SCHQ	**Schefferville** comp=Z,9.6nm,0.8s,baz=226,slow=5.3,SNR=9.6	45.73	19	P	P	01 27 39.6	-2.1
SCHQ				LR	LR	01 47 58.5	
SCHQ	**Schefferville** comp=Z,708nm,18.4s,baz=237,slow=38	45.73	19	*e*P	P	01 27 39.9	-1.9
YKA	**Yellowknife Ar** comp=Z,2.3nm,0.8s,baz=142,slow=8.0,SNR=8.6	52.12	346	P	P	01 28 29.7	-0.9
YKA				LR	LR	01 53 36.0	
TAOE	**Nuku Hiva Isla** comp=Z,159nm,25.9s	53.47	248	*e*LR	LR	01 44 01.0	
DLBC	**Dease Lake** comp=Z,7.2nm,0.9s	53.87	336	*e*P	P	01 28 45.7	+2.0
RKT	**Rikitea** comp=Z,8.4nm,0.3s	56.12	230	*e*T	T	02 29 31.9	
PLCA	**Paso Flores** comp=Z,262nm,18.7s,baz=238,slow=31	56.81	162	LR	LR	01 49 12.4	
IL1	**Eielson Array**	64.05	337	*e*P	P	01 29 53.7	-0.3
ILAR	**Eielson Array** comp=Z,3.3nm,1.0s,baz=133,slow=4.3,SNR=19	64.05	337	P	P	01 29 54.2	+0.2
ILAR				LR	LR	02 01 11.9	
ILAR	comp=Z,154nm,19.4s,baz=136,slow=39						
ILB	**Eielson Array**	64.05	337	*e*P	P	01 29 54.4	+0.3
RND	**Reindeer** comp=Z,17nm,1.4s	64.25	335	*e*P	P	01 29 56.6	+1.0
SUA	**Susitna One** comp=Z,41nm,1.9s	64.33	333	*e*P	P	01 29 57.3	+1.2
TRF	**Thorofare Moun** comp=Z,8.3nm,1.1s	64.86	335	*e*P	P	01 30 00.2	+0.6
RSO	**Redoubt South**	64.91	331	*e*P	P	01 30 01.1	+1.1
PPT	**Papeete**	65.36	244	LR	LR	01 50 49.4	
	comp=Z,140nm,19.6s,baz=14,slow=29						
PPT2	**Papeete2** comp=Z,210nm,25.0s	65.37	244	*e*LR	LR	01 49 36.9	
BPAW	**Bear Paw Mtn.** comp=Z,4.1nm,0.9s	65.40	335	*e*P	P	01 30 03.2	+0.3
MLY	**Manley** comp=Z,5.5nm,0.7s	65.65	336	*e*P	P	01 30 05.1	+0.5
SVW2	**Sparrevohn** comp=Z,4.0nm,0.8s	66.42	331	*e*P	P	01 30 09.2	-0.4
SUMG	**Summit** comp=Z,11nm,1.2s	66.84	15	*e*P	P	01 30 10.8	-1.7
ESDC	**Sonseca Array** comp=Z,1.3nm,0.9s,baz=289,slow=5.0,SNR=6.2	79.50	52	P	P	01 31 25.2	-2.2
NOA	**NORSAR Array B** comp=Z,79nm,21.4s,baz=275,slow=34	84.46	29	LR	LR	02 06 59.1	
TIC	**Toumodi**	84.61	84	*e*P	P	01 31 54.9	+0.2
LIC	**Lamto** comp=Z,49nm,1.5s	84.69	85	*e*P	P	01 31 55.3	+0.2
DBIC	**Dimbokro** comp=Z,5.8nm,0.8s,baz=284,slow=4.1,SNR=7.3	84.76	84	P	P	01 31 55.6	+0.1
DBIC				LR	LR	02 05 01.4	
KIC	**Kosan Boka** comp=Z,21nm,1.0s	84.94	85	*e*P	P	01 31 56.5	+0.1
ARCES	**ARCESS Array B** comp=Z,150nm,19.0s,baz=277,slow=36	86.67	18	LR	LR	02 11 06.4	
GERES	**GERESS Array B** comp=Z,110nm,19.5s,baz=314,slow=33	89.66	40	LR	LR	02 08 22.3	
FINES	**FINESS Array B** comp=Z,147nm,19.3s,baz=308,slow=36	90.89	25	LR	LR	02 13 32.5	
NRIK	**Noril'sk** comp=Z,269nm,20.2s,baz=360,slow=37	97.76	1	LR	LR	02 20 08.9	
AKASG	**Malin Array Be** comp=Z,78nm,18.1s,baz=40,slow=37	97.93	34	LR	LR	02 20 01.9	
KSH	**Kashi**	126.26	12	*e*PKP	PKPdf	01 38 21.5	-2.1
KSH				*es*PKP		01 38 58.8	
KSH				*e*PP	PP	01 40 21.8	+4.8
KSH				PKS	PKSdf	01 41 56.8	-3.6
KSH				SKS	SKSdf	01 45 21.3	-12
KSH				SKKS	SKKSac	01 47 04.0	-10
KSH	**Kashi** comp=Z,52nm,4.7s	126.26	12	SS	SS	01 57 15.3	-2.0
KSH				AMB	AMB		
WRA	**Warramunga Arr** comp=Z,0.8nm,0.8s,baz=101,slow=2.4,SNR=5.6	136.12	255	PKP	PKPdf	01 38 43.9	+1.3
CHTO	**Chiang Mai**	146.81	343	*e*PKPdf	PKPbc	01 39 03.8	+0.3
CMAR	**Chiang Mai Arr** comp=Z,4.0nm,0.7s,baz=341,slow=3.9,SNR=17	147.15	342	PKPbc	PKPab	01 39 06.0	0.0

CASC 28 01:23:20.2±1.7, 11°27N×85°80W, h113km±21km, MD3.9, ML3.0, Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time (h m s)	Res ISC
CONN	**Concepcion**	0.34	31	*e*P		Pn	01 23 37.3	+0.8
ACON	**Acoyapa**	0.93	42	*e*P		Pn	01 23 40.8	-0.1
ACON				*e*S		Sn	01 23 57.5	+0.9
COPN	**Copaltepe**	1.19	319	*e*P		Pn	01 23 43.5	-0.1
MOMN	**Momotombo**	1.34	327	*e*P		Pn	01 23 45.0	-0.4
CNGN	**Cerro Negro**	1.50	324	*e*P		Pn	01 23 47.1	-0.2
CNGN	comp=N,169nm,0.2s				AML	AML	01 24 17.0	
JCR	**Jicaral**	1.57	154	*e*P		Pn	01 23 49.0	+0.9
JCR				*e*S		Sn	01 24 10.5	+1.2
CGA2	**Cerro Gallo 2**	1.81	133	*e*P		Pn	01 23 52.6	+1.4
CGA2				*e*S		Sn	01 24 15.4	+0.7
QCR	**Quepos**	2.44	139	*e*P		Pn	01 24 00.2	+1.1
QCR				*e*S		Sn	01 24 28.5	-0.4

IDC ***28*** *01:36:56.7±0.8, 33.99N×141.67E, h0km, mb3.9/12, mb1 4.0/16, mb1mx3.9/39, mbtmp3.9/16, ML3.3/4, MS3.2/3, Ms1 3.3/3, ms1mx2.8/34, Error ellipse: s-maj=19.0km s-min=16.5km az=105.0*

ISCJB ***28*** *01:36:58.4±0.6, 33.99N±0.05×141.72E±0.06, h24km, mb3.9/15, MS2.9/1, Error ellipse: s-maj=7.7km s-min=6.5km az=144.3*

NEIC ***28*** *01:36:59.0±4.4, 33.99N×141.69E, h15km±26km, mb4.0/2, Error ellipse: s-maj=14.6km s-min=9.5km az=105.0*

NIED ***28*** *01:37:00, 34.00N×141.50E, h5km, Mw4.0 Best double couple: M0 1.18000×10^15 NP1:φs190.00000°, δ38.00000°, λ126.00000°. NP2:φs328.00000°, δ60.00000°, λ65.00000°.*

JMA ***28*** *01:37:01.7±0.6, 33.99N×141.50E, h38km±4km, M3.5*

ISC 28 01:36:59.8±0.8, 33.99N±0.06×141.68E±0.08, h24km, n34, σ1s52/40, mb3.9/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time (h m s)	Res ISC
BSO1	**Boso 1**	0.88	319	P		Pn	01 37 16.4	+0.2
BSO3	**Boso 3**	1.26	310	P		Pn	01 37 22.1	+0.4
BSO4	**Boso 4**	1.49	312	P		Pb	01 37 25.9	-0.8
JHJ2	**Mitsune**	1.79	241	P		Pn	01 37 29.7	+0.6
JHJ2	**Mitsune**	1.79	241	*e*Pn		Pn	01 37 29.4	+0.3
JHJ2				*e*S		Sn	01 37 45.8	-5.2
JHJ	**Hachijo jima 2** 112nm,0.3s,baz=70,slow=1.6,SNR=19	1.81	242	Pn		Pn	01 37 29.8	+0.4
JHJ				Sn		Sn	01 37 52.1	+0.5
JIM2	**Oshima 3** 158nm,0.3s,baz=221,slow=23,SNR=11	2.00	292	P		Pn	01 37 31.7	-0.4
JKO	**Kozu shima**	2.12	276	P		Pn	01 37 33.9	+0.2
KTJJ	**Kamata 2**	2.36	294	P		Pn	01 37 36.7	-0.2
KTJJ				*e*S		Sn	01 38 03.7	-1.4
JIZS	**Izushimoda**	2.43	288	P		Pn	01 37 38.1	+0.1
JOD2	**Odawara 2**	2.49	301	P		Pn	01 37 38.6	-0.2
MJAR	**Matsushiro Arr** 10nm,0.3s,baz=149,slow=9.6,SNR=45	3.82	313	Pn		Pn	01 37 57.5	+0.5
MJAR				Sn		Sn	01 38 43.2	+2.0
MAJO	**Matsushiro** 3.5nm,0.3s,baz=138,slow=15,SNR=4.6	3.82	313	*e*Pn		Pn	01 37 58.6	+1.6
MAT	**Matsushiro**	3.82	313	P		Pn	01 37 58.8	+1.7
MAT				*e*S		Sn	01 38 41.8	+0.6
ERM	**Erimo**	8.10	8	*e*Pn		Pn	01 38 54.4	-1.4
ERM				*e*S		Sn	01 40 21.5	-5.0
KSRS	**Korea Array** 0.2nm,0.3s,baz=87,slow=13,SNR=2.7	11.70	291	Pn		Pn	01 39 44.8	-0.4
KSRS				LR		LR	01 44 40.1	
KSAR	**Wonju Array Be** comp=Z,123nm,18.2s,baz=94,slow=40	11.73	291	Pn		Pn	01 39 44.8	-0.8
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=121,slow=12,SNR=6.5	12.66	326	Pn		Pn	01 39 56.9	-1.4
KLR	**Kul'dur** 0.2nm,0.3s,baz=150,slow=9.4,SNR=4.1	16.92	337	Pn		P	01 40 56.3	-0.3
KLR				LR		LR	01 48 06.3	
SONM	**Songino Array** 1.2nm,0.7s,baz=108,slow=9.0,SNR=6.4	29.76	308	P		P	01 43 05.1	+0.7
CMAR	**Chiang Mai Arr** 1.1nm,0.3s,baz=45,slow=9.0,SNR=3.4	41.03	259	P		P	01 44 40.5	-0.8
CMAR	comp=Z,18nm,21.6s,baz=195,slow=36				LR	LR	02 01 12.8	
ZALV	**Zalesovo Beam** 1.7nm,0.6s,baz=101,slow=7.7,SNR=4.0	44.17	315	P		P	01 45 07.1	+0.7
MKAR	**Makanchi Array** 1.2nm,0.6s,baz=90,slow=9.6,SNR=12	45.97	305	P		P	01 45 22.0	+1.1
KURK	**Kurchatov** 12nm,0.8s	48.02	310	P		P	01 45 36.4	-0.4
ILAR	**Eielson Array** 0.7nm,0.8s,baz=257,slow=5.5,SNR=7.9	51.97	31	P		P	01 46 06.8	+0.3
WRAB	**Tennant Creek** 2.6nm,1.1s	54.07	189	*e*P		P	01 46 23.3	+0.8
WRA	**Warramunga Arr** 0.4nm,0.4s,baz=2.8,slow=7.4,SNR=9.9	54.08	189	P		P	01 46 23.1	+0.5
ASAR	**Alice Springs** 0.4nm,0.6s,baz=360,slow=6.7,SNR=4.9	57.81	188	P		P	01 46 50.5	+1.3
ABKAR	**Akbulak array** 0.5nm,0.6s	60.09	312	*e*P		P	01 47 05.3	+0.5
FINES	**FINESS Array B** 1.5nm,0.8s,baz=46,slow=8.2,SNR=6.2	71.61	333	P		P	01 48 19.8	+1.0
KBZ	**Khabaz** 2.0nm,0.8s,baz=284,slow=4.3,SNR=5.1	73.06	312	P		P	01 48 29.5	+1.7
NOA	**NORSAR Array B** 0.8nm,0.8s,baz=38,slow=5.6,SNR=2.9	77.08	338	P		P	01 48 49.6	-1.1
PDAR	**Pinedale Array** 0.3nm,0.5s,baz=304,slow=1.8,SNR=3.4	79.65	45	P		P	01 49 07.1	+1.6
BRTR	**Keskin Array B** 1.2nm,0.9s,baz=97,slow=5.1,SNR=6.6	81.04	312	P		P	01 49 13.2	+0.3

NIED ***28*** *01:52:00, 37.30N×141.90E, h5km, Mw3.7 Best double couple: M0 3.73000×10^14 NP1:φs175.00000°, δ36.00000°, λ-160.00000°. NP2:φs69.00000°, δ78.00000°, λ-56.00000°.*

*IDC **28** 01:52:40.6±1.2,37°.31N×142°.28E,h0km,mb3.6/7, mb1 3.7/9,mb1mx3.5/35,mbtmp3.5/9,ML2.4/2,Error ellipse: s-maj=26.4km s-min=24.8km az=121.0*
*JMA **28** 01:52:44.1±0.3,37°.30N×141°.92E,h35km,M3.7*
ISC 28 01:52:41.6±2.3,37°29N±0°.06×142°00E±0°.08,h4km±13km, n20,σ1§32/27,mb3.5/7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.90**	**275**	P	**Pg**	**01 52 59.5**	**+0.6**
JFK				S	**Sg**	**01 53 10.4**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.98**	**259**	P	**Sg**	**01 53 00.6**	**+0.2**
ONAJ				S	**Sg**	**01 53 12.9**	**-0.2**
JMM	**Marumori**	**1.12**	**301**	P	**Pb**	**01 53 02.5**	**-1.0**
JIO	**Ouri**	**1.27**	**336**	P	**Pn**	**01 53 04.6**	**-1.5**
JIO				S	**Sb**	**01 53 21.1**	**-1.6**
JHO	**Hitachi**	**1.33**	**240**	P	**Pn**	**01 53 05.6**	**-1.3**
JHO				S	**Sb**	**01 53 21.0**	**-3.5**
JFT	**Otama**	**1.34**	**280**	P	**Pn**	**01 53 06.9**	**-0.2**
JFT				S	**Sb**	**01 53 23.6**	**-1.3**
JOU	**Okura**	**1.51**	**316**	P	**Pn**	**01 53 09.3**	**-0.1**
JMK	**Ichinoseki**	**1.77**	**340**	P	**Pb**	**01 53 14.1**	**-0.5**
JYS	**Shirataka**	**1.79**	**302**	P	**Pb**	**01 53 14.7**	**-0.3**
JYK	**Kaneyama**	**2.08**	**322**	P	**Pn**	**01 53 17.6**	**+0.4**
MJAR	**Matsushiro Arr**	**3.13**	**257**	Pn	**Pn**	**01 53 34.2**	**+2.5**
	1.3nm,0.3s,baz=68,slow=10,SNR=5.4						
MJAR				Sn	**Sb**	**01 54 15.3**	**-1.0**
	2.9nm,0.3s,baz=332,slow=41,SNR=5.7						
MAT	**Matsushiro**	**3.13**	**257**	P	**Pn**	**01 53 32.5**	**+0.8**
MAT				eS	**Sn**	**01 54 09.0**	**-0.5**
USRK	**Ussuriysk Ar.**	**10.26**	**315**	Pn	**Pn**	**01 55 11.3**	**+1.8**
	0.1nm,0.3s,baz=122,slow=14,SNR=2.4						
SONM	**Songino Array**	**28.03**	**303**	P	**P**	**01 58 35.0**	**+1.2**
	0.3nm,0.4s,baz=98,slow=8.4,SNR=2.2						
ZALV	**Zalesovo Beam**	**42.09**	**312**	P	**P**	**02 00 35.7**	**+1.4**
	0.8nm,0.5s,baz=113,slow=6.6,SNR=2.5						
MKAR	**Makanchi Array**	**44.38**	**302**	P	**P**	**02 00 53.9**	**+0.8**
	0.4nm,0.8s,baz=91,slow=7.2,SNR=3.3						
ILAR	**Eielson Array**	**49.03**	**32**	P	**P**	**02 01 28.1**	**-1.1**
	0.5nm,0.7s,baz=265,slow=7.1,SNR=6.6						
WRA	**Warramunga Arr**	**57.38**	**189**	P	**P**	**02 02 31.1**	**0.0**
	0.2nm,0.8s,baz=4.6,slow=7.3,SNR=3.0						
FINES	**FINESS Array B**	**68.80**	**332**	P	**P**	**02 03 47.1**	**+0.6**
	0.3nm,0.4s,baz=332,slow=39,SNR=2.7						
NOA	**NORSAR Array B**	**74.13**	**337**	P	**P**	**02 04 18.2**	**-0.6**
	0.4nm,0.7s,baz=42,slow=5.4,SNR=3.0						

*ISCJB **28** 01:53:42.9±0.6,38°.41N±0°.03×30°.50E±0°.06,h13km±5km, Error ellipse: s-maj=7.9km s-min=5.4km az=18.0*
*CSEM **28** 01:53:42.6±0.3,38°.42N×30°.51E,h15km,MD2.6,Error ellipse: s-maj=6.6km s-min=6.0km az=105.0*
*ISK **28** 01:53:42.6,38°.42N×30°.46E,h11km,MD2.6*
*DDA **28** 01:53:44.6,38°.59N×30°.43E,h7km,Md2.4*
ISC 28 01:53:42.3±0.9,38°43N±0°.03×30°47E±0°.03,h17km±6km, n16,σ0§68/30,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHUT	**Suhut-Afyon**	**0.14**	**29**	*e*PG	**Pg**	**01 53 46.4**	**-0.1**
SHUT				*e*SG	**Sg**	**01 53 49.2**	**-0.1**
SHUT	**Suhut-Afyon**	**0.14**	**29**	*e*Pg	**Pg**	**01 53 46.4**	**-0.1**
SHUT				*e*Sg	**Sg**	**01 53 49.2**	**-0.1**
BOLV	**Bolvadin**	**0.47**	**53**	*i* P	**Pb**	**01 53 52.8**	**+0.5**
BOLV				*i* S	**Sb**	**01 53 59.6**	**+0.5**
BOLV	**Bolvadin**	**0.47**	**53**	P	**Pb**	**01 53 52.8**	**+0.5**
BOLV				S	**Sb**	**01 53 59.6**	**+0.5**
ISP	**Isparta**	**0.61**	**176**	*e*PG	**Pg**	**01 53 54.6**	**+0.2**
ISP				*e*SG	**Sb**	**01 54 03.6**	**+0.7**
ISP	**Isparta**	**0.61**	**176**	*e*Pg	**Pg**	**01 53 54.6**	**+0.2**
ISP				*e*Sg	**Sb**	**01 54 03.6**	**+0.7**
GDZ	**Gediz**	**1.01**	**311**	*i* P	**Pg**	**01 54 01.5**	**-0.5**
GDZ				*i* S	**Sg**	**01 54 14.8**	**-0.5**
GDZ	**Gediz**	**1.01**	**311**	P	**Pg**	**01 54 01.5**	**-0.5**
GDZ				S	**Sg**	**01 54 14.8**	**-0.5**
ESKT	**Eskisehir**	**1.13**	**15**	*i* P	**Pb**	**01 54 03.9**	**+0.5**
ESKT				*i* S	**Sg**	**01 54 19.7**	**+0.7**
SEYT	**Eskypehyr**	**1.13**	**15**	P	**Pb**	**01 54 03.9**	**+0.5**
SEYT				S	**Sg**	**01 54 19.7**	**+0.7**
TVSB	**Tavsanli**	**1.28**	**323**	*e*PN	**Pg**	**01 54 07.3**	**+0.2**
TVSB				*e*SN	**Sg**	**01 54 25.1**	**+1.2**
TVSB	**Tavsanli**	**1.28**	**323**	*e*Pn	**Pg**	**01 54 07.3**	**+0.2**
TVSB				*e*Sn	**Sg**	**01 54 25.1**	**+1.2**
KDHN	**Kadinhani**	**1.30**	**86**	*i* P	**Pn**	**01 54 04.3**	**-1.4**
KDHN	**Kadinhani**	**1.30**	**86**	P	**Pn**	**01 54 04.3**	**-1.4**
KULA	**Kula-Manisa**	**1.42**	**274**	*e*PN	**Pb**	**01 54 08.9**	**+0.5**
KULA				*e*SN	**Sg**	**01 54 28.3**	**0.0**
KULA	**Kula-Manisa**	**1.42**	**274**	*e*Pn	**Pb**	**01 54 08.9**	**+0.5**
KULA				*e*Sn	**Sg**	**01 54 28.3**	**0.0**

*ISCJB **28** 01:58:12.2±0.4,6°.82N±0°.03×73°.03W±0°.04,h164km±3km, mb3.5/4,Error ellipse: s-maj=7.7km s-min=3.4km az=39.8*
*FUNV **28** 01:58:13.3,6°.75N×73°.14W,h167km,MW4.0*
*IDC **28** 01:58:13.5±1.2,6°.75N×72°.90W,h170km±14km,mb3.3/4, mb1 3.6/6,mb1mx3.2/30,mbtmp3.8/6,Error ellipse: s-maj=32.7km s-min=14.1km az=127.0*
*RSNC **28** 01:58:14.7±0.5,6°.78N×73°.09W,h150km±2km,ML3.8*
ISC 28 01:58:12.9±0.8,6°80N±0°.04×73°03W±0°.04,h162km±5km, n41,σ1§20/62,mb3.6/4,2D,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.26**	**217**	*i* P	**Pn**	**01 58 34.8**	**-0.3**
BARC				*i*		01 58 35.4	
	comp=Z,970nm,0.2s						
BARC				eS	**Sn**	**01 58 50.4**	**-1.7**
BTLC	**Betulia, Santa**	**0.27**	**297**	*e*P	**Pn**	**01 58 35.5**	**+0.4**
GIRC	**Giron, Santand**	**0.33**	**329**	*i* P	**Pn**	**01 58 35.0**	**-0.2**
GIRC				eS	**Sn**	**01 58 50.8**	**-1.5**
PAMC	**Pamplona, Colo**	**0.63**	**31**	*e*P	**Pn**	**01 58 37.6**	**+0.7**
PAMC				eS	**Sn**	**01 58 55.2**	**-0.1**
BRRC	**Barranca, Sant**	**0.75**	**294**	*e*P	**Pn**	**01 58 36.8**	**-0.3**
BRRC				eS	**Sn**	**01 58 54.0**	**-1.5**
BRRC				*i*		01 58 54.8	
	comp=N,6μm,0.2s						
RUSC	**La Rusia**	**0.90**	**184**	*i* P	**Pn**	**01 58 38.8**	**+0.1**
RUSC				eS	**Sn**	**01 58 57.4**	**-1.0**
RUSC				*i*		01 59 00.4	
	comp=Z,415nm,0.4s						
CBRI	**Barrientos, No**	**0.94**	**14**	*e*P	**Pn**	**01 58 39.1**	**+0.5**
CBRI				eS	**Sn**	**01 58 57.7**	**-0.7**
GRMC	**Gramalote, San**	**0.94**	**14**	eS	**Sn**	**01 58 59.6**	**+1.3**
GRMC				*i*		01 58 59.9	
	comp=Z,923nm,0.5s						
CAPV	**Capacho**	**1.27**	**34**	*e*P	**Pn**	**01 58 42.8**	**+1.3**
CAPV				eS	**Sn**	**01 59 04.2**	**+0.7**
OCAC	**Ocana**	**1.46**	**349**	*e*P	**Pn**	**01 58 43.4**	**+0.2**
OCAC				eS	**Sn**	**01 59 06.3**	**-0.3**
OCAC				*i*		01 59 10.0	
	comp=Z,593nm,0.3s						
CHIC	**Chingaza**	**2.27**	**198**	*e*P	**Pn**	**01 58 52.8**	**+0.5**
CHIC				eS	**Sn**	**01 59 22.0**	**-0.7**
CHIC				*i*		01 59 31.8	
	comp=Z,247nm,0.5s						
ROSC	**El Rosal**	**2.33**	**214**	P	**Pn**	**01 58 54.3**	**+1.3**
	comp=Z,38nm,0.3s,baz=354,slow=1.8,SNR=92						
ROSC				S	**Sn**	**01 59 21.5**	**-2.5**
	comp=Z,87nm,0.3s,baz=111,slow=14,SNR=19						
ROSC	**El Rosal**	**2.33**	**214**	eS	**Sn**	**01 59 23.1**	**-0.9**
ROSC				*i*		01 59 29.5	
	comp=Z,460nm,0.4s						
HELC	**Santa Helena**	**2.56**	**257**	*e*P	**Pn**	**01 58 55.8**	**+0.1**
HELC				eS	**Sn**	**01 59 27.8**	**-0.9**
SOCV	**Socops**	**2.61**	**55**	*e*P	**Pn**	**01 58 57.1**	**+1.1**
SOCV				eS	**Sn**	**01 59 28.9**	**-0.5**
VIGV	**El Vigia**	**2.61**	**39**	*e*P	**Pn**	**01 58 57.0**	**+1.0**
VIGV				eS	**Sn**	**01 59 28.6**	**-0.9**
VILC	**Villavicencio,**	**2.75**	**194**	*e*P	**Pn**	**01 58 57.9**	**+0.1**
VILC				eS	**Sn**	**01 59 31.6**	**-1.0**
VILC				*i*		01 59 35.2	
	comp=Z,189nm,0.4s						
GUYC	**Guyana, Colomb**	**2.82**	**237**	*e*P	**Pn**	**01 58 58.8**	**-0.2**
GUYC				eS	**Sn**	**01 59 34.0**	**-0.7**
GUYC				*i*		01 59 41.4	
	comp=Z,561nm,0.4s						
SDV	**Santo Domingo**	**3.15**	**49**	P	**Pn**	**01 59 04.3**	**+1.5**
	comp=Z,13nm,0.3s,baz=217,slow=3.6,SNR=59						
SDV				S	**Sn**	**01 59 41.5**	**-0.1**
	comp=Z,25nm,0.3s,baz=225,slow=12,SNR=25						
SDV	**Santo Domingo**	**3.15**	**49**	*e*P	**Pn**	**01 59 04.3**	**+1.5**

DBBC	**Dabeiba**	**3.17**	**274**	*e*P	**Pn**	**01 59 03.0**	**0.0**
TOLC	**Tolima**	**3.17**	**226**	*e*P	**Pn**	**01 59 03.4**	**+0.2**
PRAC	**Prado**	**3.58**	**211**	*e*P	**Pn**	**01 59 08.3**	**+0.2**
SJAC	**San Juan de Ar**	**3.62**	**195**	*e*P	**Pn**	**01 59 09.3**	**+0.6**
VIRV	**Villa del Rosa**	**3.73**	**9**	*e*P	**Pn**	**01 59 09.6**	**-0.5**
VIRV				eS	**Sn**	**01 59 52.5**	**-2.1**
QARV	**Quebrada Arrib**	**4.20**	**36**	eS	**Sn**	**02 00 03.2**	**-2.1**
SANV	**Sanarito**	**4.38**	**52**	*e*P	**Pn**	**01 59 19.3**	**+0.8**
CURV	**Curarigua**	**4.41**	**43**	*e*P	**Pn**	**01 59 19.4**	**+0.6**
CURV				eS	**Sn**	**02 00 08.4**	**-1.9**
DABV	**Dabajuro**	**4.73**	**30**	*e*P	**Pn**	**01 59 23.8**	**+0.8**
DABV				eS	**Sn**	**02 00 14.3**	**-3.5**
TEPV	**Terepaima**	**4.93**	**50**	*e*P	**Pn**	**01 59 26.2**	**+0.5**
SIQV	**Siquisique**	**4.98**	**40**	*e*P	**Pn**	**01 59 25.7**	**-0.5**
BAUV	**El Baul**	**5.38**	**66**	*e*P	**Pn**	**01 59 31.1**	**-0.4**
BAUV				eS	**Sn**	**02 00 30.0**	**-3.1**
MAPV	**Macapo**	**5.43**	**56**	⇓*i* P	**Pn**	**01 59 33.0**	**+0.7**
MAPV				eS	**Sn**	**02 00 31.6**	**-2.8**
MONV	**Montecano**	**5.95**	**30**	*e*P	**Pn**	**01 59 38.9**	**-0.1**
TURV	**Turiamo**	**6.28**	**54**	*e*P	**Pn**	**01 59 42.5**	**-1.0**
TXAR	**Lajitas Array**	**36.55**	**312**	P	**P**	**02 05 03.9**	**+0.7**
	comp=Z,0.5nm,0.6s,baz=131,slow=9.4,SNR=7.4						
ULM	**Lac du Bonnet**	**47.34**	**340**	P	**P**	**02 06 30.4**	**+0.2**
	comp=Z,1.3nm,0.5s,baz=145,slow=12,SNR=3.1						
PDAR	**Pinedale Array**	**48.15**	**324**	P	**P**	**02 06 37.7**	**+0.8**
	comp=Z,0.2nm,0.4s,baz=106,slow=8.6,SNR=3.1						
YKA	**Yellowknife Ar**	**63.32**	**340**	P	**P**	**02 08 24.9**	**+0.7**
	comp=Z,0.8nm,0.6s,baz=132,slow=6.8,SNR=7.3						
ASAR	**Alice Springs**	**149.17**	**234**	PKPbc	**PKPbc**	**02 17 42.1**	**-0.9**
	comp=Z,0.4nm,0.5s,baz=113,slow=3.4,SNR=4.1						
WRA	**Warramunga Arr**	**150.41**	**241**	PKPbc	**PKPbc**	**02 17 45.8**	**-0.3**
	comp=Z,0.6nm,0.5s,baz=107,slow=2.6,SNR=7.8						

*DDA **28** 02:01:40.0,38°.79N×40°.09E,h7km,Ml2.7*
*ISK **28** 02:01:41.1,38°.94N×40°.15E,h21km,MD2.7*
*ISCJB **28** 02:01:42.5±0.5,38°.88N±0°.04×40°.15E±0°.04,h20km±7km, Error ellipse: s-maj=6.3km s-min=5.1km az=28.8*
*CSEM **28** 02:01:42.1±0.3,38°.89N×40°.13E,h20km,MD2.7,Error ellipse: s-maj=9.5km s-min=8.1km az=174.0*
ISC 28 02:01:41.5±1.0,38°87N±0°.03×40°16E±0°.03,h17km±9km, n19,σ0§76/33,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BINT	**Bingol**	**0.26**	**89**	*e*Pg	**Pn**	**02 01 50.2**	**-0.4**
BINT				*e*Sg	**Sn**	**02 01 56.8**	**+0.5**
BNGB	**Bing¶‖**	**0.42**	**74**	*e*PG	**Pg**	**02 01 50.2**	**0.0**
BNGB				*e*SG	**Sg**	**02 01 56.8**	**+0.7**
PTK	**Pertek**	**0.60**	**272**	*e*PG	**Pb**	**02 01 52.9**	**-0.7**
PTK				*e*SG	**Sg**	**02 02 02.2**	**+0.7**
PTK	**Pertek**	**0.60**	**272**	*e*Pg	**Pb**	**02 01 52.9**	**-0.7**
PTK				*e*Sg	**Sg**	**02 02 02.2**	**+0.7**
YEDI	**Yedisu-Bingol**	**0.64**	**28**	*e*PG	**Pb**	**02 01 53.4**	**-0.9**
YEDI	**Yedisu-Bingol**	**0.64**	**28**	*e*Pg	**Pb**	**02 01 53.4**	**-0.9**
SVRC	**Sivrice-ELAZID**	**0.83**	**234**	*e*PG	**Pn**	**02 01 58.8**	**+0.3**
SVRC	**Sivrice-ELAZID**	**0.83**	**234**	*e*Pg	**Pn**	**02 01 58.8**	**+0.3**
ECAT	**Cat-ERZURUM**	**0.97**	**41**	*i* P	**Pn**	**02 02 00.9**	**+0.4**
ECAT				*i* S	**Sg**	**02 02 13.4**	**+0.2**
ECAT	**Cat-ERZURUM**	**0.97**	**41**	P	**Pn**	**02 02 00.9**	**+0.4**
ECAT				S	**Sg**	**02 02 13.4**	**+0.2**
BTMN	**Batman**	**1.31**	**138**	*i* P	**Pn**	**02 02 03.8**	**-1.3**
BTMN				*i* S	**Sg**	**02 02 23.4**	**-0.5**
BTMN	**Batman**	**1.31**	**138**	P	**Pn**	**02 02 03.8**	**-1.3**
BTMN				S	**Sg**	**02 02 23.5**	**-0.5**
KEMA	**Kemaliye**	**1.35**	**288**	*i* P	**Pn**	**02 02 04.5**	**-1.2**
KEMA				*i* S	**Sg**	**02 02 24.8**	**-0.5**
KEMA	**Kemaliye**	**1.35**	**288**	P	**Pn**	**02 02 04.5**	**-1.2**
KEMA				S	**Sg**	**02 02 24.8**	**-0.5**
MAZI	**Mazidag**	**1.43**	**171**	*e*PN	**Pn**	**02 02 07.4**	**+0.7**
MAZI				*e*SN	**Sb**	**02 02 26.6**	**+1.0**
MAZI	**Mazidag**	**1.43**	**171**	*e*Pn	**Pn**	**02 02 07.4**	**+0.7**
MAZI				*e*Sn	**Sb**	**02 02 26.6**	**+1.0**
KELT	**Kelkit**	**1.45**	**332**	*i* P	**Pb**	**02 02 08.2**	**0.0**
KELT				*i* S	**Sg**	**02 02 29.4**	**+0.9**
KELT	**Kelkit**	**1.45**	**332**	P	**Pb**	**02 02 08.2**	**0.0**
MARD	**Mardin**	**1.63**	**162**	*i* P	**Pn**	**02 02 09.5**	**0.0**
MARD				*i* S	**Sb**	**02 02 32.3**	**+0.8**

*ISCJB **28** 02:18:09.8±0.5,33°.86N±0°.03×35°.80E±0°.04,h2km±8km, Error ellipse: s-maj=5.2km s-min=4.5km az=6.4*
*NSSC **28** 02:18:09.4±0.3,33°.84N×35°.79E,h0km±1km,ML2.1*
*CSEM **28** 02:18:10.0,33°.86N×35°.83E,h5km,ML3.0*
*GRAL **28** 02:18:10.0±0.2,33°.86N×35°.83E,h5km±5km,MD3.0*
ISC 28 02:18:09.9±1.0,33°86N±0°.03×35°81E±0°.03,h8km±11km, n16,σ0§45/28,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.13**	**287**	*e*P	**Pg**	**02 18 13.0**	**+0.1**
BHL	**Bhannes**	**0.13**	**287**	*e*P	**Pg**	**02 18 13.0**	**+0.1**
DQRL	**Deir Qamar**	**0.25**	**231**	*e*P	**Pg**	**02 18 14.9**	**-0.1**
DQRL				eS	**Sg**	**02 18 18.5**	**+0.1**
DQRL	**Deir Qamar**	**0.25**	**231**	*e*P	**Pg**	**02 18 14.9**	**-0.1**
DQRL				eS	**Sg**	**02 18 18.5**	**+0.1**
BEYL	**Beirut**	**0.26**	**272**	*e*P	**Pg**	**02 18 15.2**	**+0.1**
BEYL	**Beirut**	**0.26**	**272**	*e*P	**Pg**	**02 18 15.2**	**+0.1**
RCY	**Rachaya**	**0.37**	**176**	*e*P	**Pg**	**02 18 16.6**	**-0.5**
RCY				eS	**Sg**	**02 18 21.4**	**-0.6**
RCY	**Rachaya**	**0.37**	**176**	*e*P	**Pg**	**02 18 16.6**	**-0.5**
RCY				eS	**Sg**	**02 18 21.4**	**-0.6**
HWQ	**Hawqa**	**0.43**	**15**	*e*P	**Pg**	**02 18 17.8**	**-0.5**
HWQ				eS	**Sg**	**02 18 23.6**	**-0.3**
HWQ	**Hawqa**	**0.43**	**15**	*e*P	**Pg**	**02 18 17.8**	**-0.5**
HWQ				eS	**Sg**	**02 18 23.6**	**-0.3**
BRBR	**Barbar**	**0.47**	**165**	*e*P	**Pg**	**02 18 18.5**	**-0.5**
BRBR				eS	**Sg**	**02 18 25.7**	**+0.5**
BRBR				AML	AML	02 18 27.5	
	comp=N,300nm,0.4s						
BRBR				AML	AML	02 18 29.6	
	comp=E,86nm,0.3s						
QASN	**Qassioun**	**0.51**	**130**	*e*P	**Pg**	**02 18 19.9**	**+0.1**
QASN				eS	**Sg**	**02 18 27.3**	**+0.8**
QASN				AML	AML	02 18 33.0	
	comp=E,477nm,0.4s						
QASN				AML	AML	02 18 33.4	
	comp=N,314nm,0.7s						
MARH	**Ras Al Marh**	**0.58**	**74**	*e*P	**Pg**	**02 18 21.6**	**+0.4**
MARH				eS	**Sb**	**02 18 30.7**	**-0.5**
MARH				AML	AML	02 18 35.8	
	comp=E,238nm,0.6s						
MARH				AML	AML	02 18 38.7	
	comp=N,144nm,0.3s						
TOTH	**TOTAH**	**0.72**	**134**	*e*P	**Pg**	**02 18 24.1**	**+0.3**
TOTH				eS	**Sb**	**02 18 34.0**	**-0.9**
TOTH				AML	AML	02 18 42.5	
	comp=N,65nm,0.7s						
TOTH				AML	AML	02 18 46.1	
	comp=E,38nm,0.6s						
ROOS	**tl_alroos**	**1.27**	**76**	*e*P	**Pb**	**02 18 34.1**	**0.0**
ROOS				eS	**Sn**	**02 18 51.6**	**+0.3**
ROOS				AML	AML	02 18 56.7	
	comp=N,56nm,0.5s						
ROOS				AML	AML	02 19 02.6	
	comp=E,40nm,0.5s						
ZALF	**Zalf**	**1.58**	**126**	*e*P	**Pn**	**02 18 38.8**	**+0.5**
ZALF				eS	**Sb**	**02 18 59.9**	**+0.1**
ZALF				AML	AML	02 19 02.9	
	comp=E,26nm,0.5s						
ZALF				AML	AML	02 19 04.7	
	comp=N,22nm,0.4s						

*NEIC **28** 02:22:50.9,19°.00N×67°.77W,h25km,MD3.4(RSPR), After RSPR.*
RSPR 28 02:22:50.9,19°00N×67°77W,h25km±13km,MD3.4/9, 17C-2D,Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**0.67**	**155**	⇑*e*P	**Pb**	**02 23 02.8**	**-1.2**
IDE	**Isla Desecheo**	**0.67**	**155**	⇑eP	**Pb**	**02 23 02.8**	**-1.2**
IDE				eS	**Sb**	**02 23 11.2**	**-1.7**
AGPR	**Aguadilla, PR**	**0.82**	**130**	⇑eP	**Pb**	**02 23 04.4**	**-2.1**
AGPR	**Aguadilla, PR**	**0.82**	**130**	⇑eP	**Pb**	**02 23 04.4**	**-2.1**
AGPR				eS	**Sb**	**02 23 14.3**	**-2.8**
LSP	**Las Mesas**	**1.04**	**141**	⇓*e*P	**Pn**	**02 23 07.7**	**-2.4**
LSP	**Las Mesas**	**1.04**	**141**	⇓eP	**Pn**	**02 23 07.7**	**-2.4**
AOPR	**Arecibo Observ**	**1.16**	**124**	⇑*e*P	**Pn**	**02 23 09.2**	**-2.5**
AOPR	**Arecibo Observ**	**1.16**	**124**	⇑eP	**Pn**	**02 23 09.2**	**-2.5**
AOPR				eS	Sn	02 23 23.8	-3.0
CRPR	**Cabo Rojo, PR**	**1.17**	**147**	⇑eP	Pn	02 23 09.2	-2.5
CRPR	**Cabo Rojo, PR**	**1.17**	**147**	⇑eP	Pn	02 23 09.2	-2.5
CRPR				eS	Sn	02 23 24.2	-2.7
GBPR	**Guanica, Bosqu**	**1.32**	**140**	⇑eP	Pn	02 23 11.5	-2.4
GBPR	**Guanica, Bosqu**	**1.32**	**140**	⇑eP	Pn	02 23 11.5	-2.4
GBPR				eS	Sn	02 23 27.9	-2.8
OBIP	**Obispado Ponce**	**1.46**	**130**	⇑eP	Pn	02 23 13.4	-2.3
OBIP	**Obispado Ponce**	**1.46**	**130**	⇑eP	Pn	02 23 13.4	-2.3
OBIP				eS	Sn	02 23 31.3	-2.7
SJG	**San Juan**	**1.77**	**119**	⇑eP	Pn	02 23 18.1	-1.9
SJG	**San Juan**	**1.77**	**119**	eS	Sn	02 23 39.0	-2.9
SJG	**San Juan**	**1.77**	**119**	ePn	Pn	02 23 18.6	-1.4
SJG				eS	Sn	02 23 40.9	-1.0
HUMP	**Col San Antoni**	**2.01**	**115**	⇑eP	Pn	02 23 21.5	-1.8
HUMP	**Col San Antoni**	**2.01**	**115**	⇑eP	Pn	02 23 21.5	-1.8
HUMP				eS	Sn	02 23 45.1	-2.6
STVI	**Saint Thomas**	**2.75**	**103**	⇑eP	Pn	02 23 32.1	-1.4
STVI	**Saint Thomas**	**2.75**	**103**	⇑eP	Pn	02 23 32.1	-1.4
SDDR	**Presa de Saban**	**3.33**	**270**	ePn	Pn	02 23 44.3	+2.8
SDDR				eS	Sb	02 24 31.5	+2.1
GRTK	**Grand Turk**	**4.03**	**309**	ePn	Pn	02 23 51.6	+0.6
GRTK				eS	Sn	02 24 39.3	+1.8

*NSSC **28** 02:24:46.4±1.8,33°.80N×35°.67E,h7km±13km,ML1.3*
*ISCJB **28** 02:24:48.4±1.1,33°.82N±0°.04×35°.74E±0°.08,h21km±9km, Error ellipse: s-maj=11.8km s-min=6.6km az=173.6*
*CSEM **28** 02:24:49.8,33°.86N×35°.83E,h6km,ML2.6*
*GRAL **28** 02:24:49.8±0.3,33°.86N×35°.83E,h7km±4km,MD2.6*
ISC 28 02:24:48.4±1.4,33°83N±0°.03×35°81E±0°.06,h17km±14km, n11,σ1§17/18,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.14**	**301**	*e*P	**Pg**	**02 24 52.8**	**+0.2**
BHL				eS	**Sg**	**02 24 55.0**	**-0.4**
BHL	**Bhannes**	**0.14**	**301**	*e*P	**Pg**	**02 24 52.8**	**+0.2**
BHL				eS	**Sg**	**02 24 55.0**	**-0.4**
DQRL	**Deir Qamar**	**0.23**	**238**	*e*P	**Pg**	**02 24 54.7**	**+0.9**
DQRL	**Deir Qamar**	**0.23**	**238**	*e*P	**Pg**	**02 24 54.7**	**+0.9**
RCY	**Rachaya**	**0.33**	**176**	*e*P	**Pg**	**02 24 56.5**	**+1.0**
RCY				eS	**Sg**	**02 25 01.4**	**+1.0**
BRBR	**Barbar**	**0.43**	**164**	*e*P	**Pg**	**02 24 54.8**	**-2.5**
BRBR				eS	**Sg**	**02 25 01.2**	**-2.1**
BRBR				AML	AML	02 25 04.6	
	comp=E,20nm,0.3s						
BRBR				AML	AML	02 25 07.1	
	comp=N,23nm,0.4s						
HWQ	**Hawqa**	**0.46**	**15**	*e*P	**Pg**	**02 24 57.4**	**-0.4**
HWQ	**Hawqa**	**0.46**	**15**	*e*P	**Pg**	**02 24 57.4**	**-0.4**
MARH	**Ras Al Marh**	**0.60**	**71**	*e*P	**Pg**	**02 25 01.3**	**+1.0**
MARH				eS	**Sb**	**02 25 10.0**	**+1.1**
MARH				AML	AML	02 25 13.6	
	comp=N,18nm,0.2s						
MARH				AML	AML	02 25 14.3	
	comp=E,31nm,0.2s						
TOTH	**TOTAH**	**0.70**	**132**	*e*P	**Pg**	**02 25 03.0**	**+0.9**
TOTH				eS	**Sg**	**02 25 12.2**	**+0.8**
TOTH				AML	AML	02 25 25.4	
	comp=E,8.9nm,0.4s						
TOTH				AML	AML	02 25 25.6	
	comp=N,7.0nm,0.3s						
ROOS	**tl_alroos**	**1.28**	**74**	*e*P	**Pb**	**02 25 11.4**	**-0.7**
ROOS				eS	**Sg**	**02 25 29.9**	**+0.1**
ROOS				AML	AML	02 25 36.3	
	comp=N,5.7nm,0.2s						
ROOS				AML	AML	02 25 37.6	
	comp=E,5.6nm,0.4s						

*NIED **28** 02:25:00,39°.40N×144°.30E,h8km,Mw3.9 Best double couple: M0 9.18000×10^14 NP1:φs15.00000°,δ20.00000°, λ-105.00000°. NP2:φs211.00000°,δ70.00000°, λ-85.00000°.*
*IDC **28** 02:25:26.8±0.8,39°.22N×144°.53E,h0km,mb3.7/10, mb1 4.0/13,mb1mx3.8/35,mbtmp3

YAK	**Yakutsk**	**24.42 343**	*e*P	**P**	**02 30 48.2**	**+1.4**
SONM	**Songino Array**	**28.56 300**	P	**P**	**02 31 26.0**	**+1.6**
	comp=Z,1.0nm,0.8s,baz=90,slow=8.9,SNR=6.7					
SONM	**Songino Array**	**28.56 300**	*e*P	P	02 31 29.6	+5.2
SONM			pmax	pmax		
	comp=Z,1.0nm,0.8s					
ZALV	**Zalesovo Beam**	**42.14 311**	P	**P**	**02 33 22.2**	**+1.6**
	comp=Z,1.0nm,0.5s,baz=69,slow=9.7,SNR=3.9					
ZALV	**Zalesovo Beam**	**42.14 311**	P	**P**	**02 33 22.2**	**+1.6**
ZALV			pmax	pmax		
	comp=Z,3.0nm,0.6s					
NRIK	**Noril'sk**	**42.19 334**	LR	LR	02 51 29.1	
	comp=Z,34nm,20.2s,baz=132,slow=37					
MKAR	**Makanchi Array**	**44.92 301**	P	**P**	**02 33 44.0**	**+0.9**
	comp=Z,1.0nm,0.8s,baz=80,slow=10.0,SNR=5.7					
ILAR	**Eielson Array**	**46.27 34**	P	**P**	**02 33 52.8**	**-0.8**
	comp=Z,0.8nm,0.8s,baz=268,slow=5.7,SNR=11					
ILAR	**Eielson Array**	**46.27 34**	*e*P	**P**	**02 33 54.3**	**+0.7**
ILAR			pmax	pmax		
	comp=Z,1.0nm,0.8s					
BRVK	**Borovoye**	**50.83 312**⇑	*e*P	**P**	**02 34 30.6**	**+1.8**
BRVK			pmax	pmax		
	comp=Z,14nm,2.5s					
WRAB	**Tennant Creek**	**59.72 191**⇑	*e*P	**P**	**02 35 30.5**	**-2.6**
WRAB			pmax	pmax		
	comp=Z,22nm,1.7s					
WRA	**Warramunga Arr**	**59.73 191**	P	**P**	**02 35 32.4**	**-0.8**
	comp=Z,1.2nm,0.8s,baz=11,slow=6.9,SNR=4.6					
ASAR	**Alice Springs**	**63.45 191**	P	**P**	**02 35 57.8**	**-0.5**
	comp=Z,0.4nm,0.7s,baz=7,3,slow=9.0,SNR=2.8					
FINES	**FINESS Array B**	**67.84 333**	P	**P**	**02 36 27.6**	**+1.4**
	comp=Z,0.2nm,0.4s,baz=283,slow=35,SNR=2.1					
VSR	**Storozhevoye**	**68.72 319**	*e*P	P	02 36 41.0	+9.1
VSR			pmax	pmax		
	comp=Z,10.0nm,0.8s					
KIV	**Kislovodsk**	**71.14 312**	*e*P	**P**	**02 36 46.2**	**-0.9**
KIV			pmax	pmax		
	comp=Z,6.0nm,1.1s					
NB2	**NORSAR Subarra**	**72.93 338**	P	P	02 37 08.5	+11
	comp=Z,0.9nm,0.8s,baz=67,slow=4.1					
PDAR	**Pinedale Array**	**74.37 47**	P	**P**	**02 37 07.3**	**+0.8**
	comp=Z,0.2nm,0.6s,baz=329,slow=1.1,SNR=3.1					
PFO	**Pinyon Flats O**	**75.81 58**	*i* P	**P**	**02 37 13.5**	**-1.2**
TXAR	**Lajitas Array**	**86.85 54**	P	**P**	**02 38 13.7**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=345,slow=4.3,SNR=3.8					
TXAR	**Lajitas Array**	**86.85 54**	*e*P	**P**	**02 38 14.4**	**+1.1**

DJA 28 02:38:10.0±1.6, 9°S±14°×12°0E±1°0, h10km, M3.8/3, MLv3.8/3, Flores region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WSI	**Waingapu**	**0.94**	**149**	P	Pg	02 38 28.0	-0.2
WSI				S	Sb	02 38 41.4	+0.3
PLAI	**Plampang**	**2.01**	**270**	P	Pn	02 38 43.7	-0.3
PLAI				S	Sn	02 39 10.1	+0.9
TWSI	**Taliwang, Sumb**	**2.90**	**272**	P	Pn	02 38 56.7	+0.5

*ISCJB **28** 03:19:53.5±0.5, 50.08°N±0.03°×18.35°E±0.03°, h0km, Error ellipse: s-maj=4.8km s-min=2.5km az=9.8*
*CSEM **28** 03:19:54.3±0.2, 50.08°N×18.37°E, h1km, ML2.6/7, Error ellipse: s-maj=5.5km s-min=2.8km az=10.0*
*IPEC **28** 03:19:54.1±0.2, 50.06°N×18.45°E, h0km±2km, ML1.6/3, Error ellipse: s-maj=2.0km s-min=1.1km az=160.0*
*PRU **28** 03:19:55.4, 50.07°N×18.35°E, h0km*
ISC 28 03:19:54.3±0.8, 50.09°N±0.04°×18.39°E±0.02, h0km, n31, σ0§77/55, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAC	**Raciborz**	**0.13**	**267**	*e*Pg	**Pg**	**03 19 58.1**	**+1.4**
RAC				*e*Sg	**Sg**	**03 20 01.3**	**+2.9**
OKC	**Ostrava-Krasne**	**0.30**	**212**	*e*PG	**Pg**	**03 20 00.5**	**+0.5**
OKC				*e*SG	**Sg**	**03 20 05.0**	**+1.1**
	comp=Z,20nm,0.4s						
OKC	**Ostrava-Krasne**	**0.30**	**212**	Pg	**Pg**	**03 20 00.5**	**+0.5**
OKC				Sg	**Sg**	**03 20 05.0**	**+1.1**
	20nm,0.4s						
MORC	**Moravsky Berou**	**0.63**	**241**	*e*Pg	**Pg**	**03 20 06.5**	**+0.1**
MORC				*e*Sg	**Sg**	**03 20 14.4**	**-0.2**
	8.4nm,0.2s						
OJC	**Ojcow**	**0.91**	**81**	*e*Pg	**Pg**	**03 20 11.6**	**-0.1**
OJC				*e*Sg	**Sg**	**03 20 24.0**	**+0.4**
OJC	**Ojcow**	**0.91**	**81**	*e*PG	**Pg**	**03 20 11.6**	**-0.1**
OJC				*e*SG	**Sg**	**03 20 24.0**	**+0.4**
KRLC	**Kraliky**	**1.04**	**270**	*e*PG	**Pg**	**03 20 13.6**	**-0.6**
KRLC				*e*SG	**Sg**	**03 20 28.1**	**+0.5**
KRLC	**Kraliky**	**1.04**	**270**	Pg	**Pg**	**03 20 13.6**	**-0.6**
KRLC				Sg	**Sg**	**03 20 28.1**	**+0.5**
LANS	**Liptovska Anna**	**1.17**	**143**	*e*PG	**Pg**	**03 20 16.8**	**+0.1**
LANS				*e*SG	**Sn**	**03 20 34.7**	**0.0**
LANS	**Liptovska Anna**	**1.17**	**143**	*e*PG	**Pg**	**03 20 16.8**	**+0.1**
LANS				*e*SG	**Sn**	**03 20 34.7**	**0.0**
DPC	**Dobruska-Polom**	**1.36**	**282**	*e*PG	**Pg**	**03 20 20.1**	**-0.2**
DPC				*e*SG	**Sb**	**03 20 38.5**	**0.0**
	comp=Z,5.4nm,0.4s						
DPC	**Dobruska-Polom**	**1.36**	**282**	Pg	**Pg**	**03 20 20.1**	**-0.2**
DPC				Sg	**Sb**	**03 20 38.5**	**0.0**
	5.4nm,0.4s						
NIE	**Niedzica**	**1.41**	**118**	*e*Pg	**Pb**	**03 20 21.7**	**+0.3**
NIE				*e*Sg	**Sn**	**03 20 40.9**	**+0.4**
NIE	**Niedzica**	**1.41**	**118**	*e*Pg	**Pb**	**03 20 21.7**	**+0.3**
NIE				*e*Sg	**Sn**	**03 20 40.9**	**+0.4**
VRAC	**Vranov**	**1.41**	**237**	*e*Pg	**Pn**	**03 20 20.3**	**-0.9**
VRAC				*e*Sg	**Sg**	**03 20 38.6**	**-0.9**
	9.3nm,0.3s						
UPC	**Upice**	**1.58**	**286**	*e*SG	**Sg**	**03 20 45.8**	**+0.7**
	comp=Z,3.3nm,0.2s						
UPC	**Upice**	**1.58**	**286**	Sg	**Sg**	**03 20 45.8**	**+0.7**
	3.3nm,0.2s						
VYHS	**Vyhne**	**1.62**	**170**	*e*Pg	**Pn**	**03 20 23.9**	**-0.3**
VYHS				*e*Sg	**Sn**	**03 20 45.4**	**-0.4**
VYHS	**Vyhne**	**1.62**	**170**	*e*PG	**Pn**	**03 20 23.9**	**-0.3**
VYHS				*e*SG	**Sn**	**03 20 45.4**	**-0.4**
VYHS				*e*LG	Lg	03 20 47.5	
KRUC	**Moravsky**	**1.66**	**232**	*e*Pn	**Pn**	**03 20 24.5**	**-0.1**
KRUC				*e*Sg	**Sn**	**03 20 46.2**	**-0.4**
	6.8nm,0.3s						
SMOL	**Smolenice**	**1.70**	**202**	*e*Pn	**Pn**	**03 20 25.2**	**0.0**
SMOL				*e*Sn	**Sn**	**03 20 46.2**	**-1.5**
SMOL	**Smolenice**	**1.70**	**202**	*e*PN	**Pn**	**03 20 25.2**	**0.0**
SMOL				*e*SN	**Sn**	**03 20 46.2**	**-1.5**
STHS	**Stebnicka Huta**	**1.97**	**109**	*e*Pn	**Pg**	**03 20 31.9**	**-0.1**
STHS				*e*Sn	**Sb**	**03 20 55.8**	**-0.2**
STHS	**Stebnicka Huta**	**1.97**	**109**	*e*PN	**Pg**	**03 20 31.9**	**-0.1**
STHS				*e*SN	**Sb**	**03 20 55.8**	**-0.2**
STHS				*e*LG	Lg	03 21 02.9	
GOPC	**GO Pecny, Ondr**	**2.33**	**267**	*e*PG	**Pg**	**03 20 38.3**	**-0.7**
GOPC				*e*SG	**Sb**	**03 21 07.3**	**+0.7**
GOPC	**GO Pecny, Ondr**	**2.33**	**267**	Pg	**Pg**	**03 20 38.3**	**-0.7**
GOPC				Sg	**Sb**	**03 21 07.3**	**+0.7**
PRU	**Pruhonice**	**2.49**	**269**	*e*SG	**Sb**	**03 21 11.7**	**+0.8**
PRU	**Pruhonice**	**2.49**	**269**	Sg	**Sb**	**03 21 11.7**	**+0.8**
PVCC	**Panska Ves**	**2.49**	**282**	*e*SG	**Sg**	**03 21 14.0**	**-0.3**
	comp=Z,4.3nm,0.2s						
PVCC	**Panska Ves**	**2.49**	**282**	Sg	**Sg**	**03 21 14.0**	**-0.3**
	4.3nm,0.2s						
KHC	**Kasperske Hory**	**3.28**	**255**	*ex*	x	03 21 33.4	
KHC				*e*SG	**Sg**	**03 21 37.4**	**-2.1**
	comp=Z,1.5nm,0.3s						

*ISCJB **28** 03:24:35.9±0.9, 31.59°N±0.06°×115.59°W±0.05, h9km±13km, Error ellipse: s-maj=9.7km s-min=7.0km az=177.2*
*ECX **28** 03:24:36.9±0.5, 31.58°N×115.58W, h6km, MD1.8, ML2.0*
*MEX **28** 03:24:38.6±0.5, 31.49°N×115.55W, h42km±90km, MD3.5*
ISC 28 03:24:35.7±1.5, 31.58°N±0.05°×115.57W±0.05, h17km±14km, n9, σ0§35/15, 1C-2D, Baja California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ECBX	**El Chinero**	**0.45**	**104**⇑	*e*P	**Pb**	**03 24 45.4**	**+0.1**
ECBX				*e*S	**Sb**	**03 24 51.4**	**-0.3**
ECBX				⇓*e*		03 24 54.8	
ECBX				*e*		03 24 54.8	
ECBX				IAML		03 24 54.8	
	comp=E,201nm,0.2s						
SPIG	**San Pedro Mart**	**0.54**	**171**	*e*P	**Pb**	**03 24 47.6**	**+0.6**
SPIG				*e*S	**Sb**	**03 24 55.0**	**+0.4**
SPX	**San Pedro Mart**	**0.54**	**171**	*e*P	**Pb**	**03 24 47.0**	**0.0**
SPX				*e*S	**Sb**	**03 24 54.1**	**-0.5**
SPX				IAML		03 24 54.4	
	comp=N,51nm,0.1s						
ZAX	**El Zacaton**	**0.61**	**264**	*e*S	**Sg**	**03 24 55.6**	**-0.3**
ZAX				IAML		03 24 56.0	
	comp=N,69nm,0.3s						
ECNX	**Esteban Cantu**	**0.88**	**275**	*e*S	**Sb**	**03 25 03.9**	**-0.4**
PBX	**Punta Banda**	**1.00**	**280**	*e*S	**Sb**	**03 25 07.4**	**-0.2**
CBX	**Cerro Bola**	**1.19**	**308**	*e*P	**Pg**	**03 24 58.7**	**+0.1**
CBX				*e*S	**Sb**	**03 25 13.0**	**0.0**
CBX	**Cerro Bola**	**1.19**	**308**	*e*P	**Pn**	**03 24 57.6**	**-0.1**
CBX				*e*S	**Sb**	**03 25 13.3**	**+0.3**
CBX				⇓*e*		03 25 15.6	
CBX				IAML		03 25 15.6	
	comp=N,33nm,0.6s						
TJIG	**Tijuana**	**1.27**	**312**	*i* P	**Pb**	**03 24 59.4**	**+0.2**
TJIG				*e*S	**Sb**	**03 25 15.2**	**-0.1**

*CSEM **28** 03:30:07.1, 38.30°N×22.45E, h10km±3km, ML1.2/8, Error ellipse: s-maj=3.9km s-min=0.6km az=352.0, Greece*

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DSF	**Desfina**	**0.13**	**29**	P	Pg	03 30 10.1	-0.2
DSF				S	Sg	03 30 12.5	+0.1
DSF	**Desfina**	**0.13**	**29**	P	Pg	03 30 10.2	-0.1
DSF				S	Sg	03 30 12.2	-0.2
DSF				AML	AML	03 30 12.7	
	comp=E,1086μm,0.1s						
DSF				AML	AML	03 30 12.8	
	comp=N,961μm,0.1s						
DSF	**Desfina**	**0.13**	**29**	P	Pg	03 30 10.1	-0.2
DSF				S	Sg	03 30 12.5	0.0
DSF				AML	AML	03 30 12.7	
	comp=E,1086μm,0.1s						
DSF				AML	AML	03 30 12.8	
	comp=N,961μm,0.1s						
KALE	**Kalithea**	**0.26**	**292**	P	Pg	03 30 12.3	-0.1
KALE				S	Sg	03 30 16.4	+0.5
KALE	**Kalithea**	**0.26**	**292**	P	Pg	03 30 12.2	-0.2
KALE				S	Sg	03 30 16.4	+0.4
KALE				AML	AML	03 30 17.2	
	comp=N,192μm,0.4s						
KALE				AML	AML	03 30 17.2	
	comp=E,120μm,0.2s						
KALE	**Kalithea**	**0.26**	**292**	P	Pg	03 30 12.3	-0.1
KALE				S	Sg	03 30 16.4	+0.4
KALE				AML	AML	03 30 17.2	
	comp=N,192μm,0.4s						
KALE				AML	AML	03 30 17.2	
	comp=E,120μm,0.2s						
TRIZ	**Trizonia**	**0.30**	**284**	P	Pg	03 30 13.8	+0.6
TRIZ				S	Sg	03 30 17.8	+0.6
TRIZ	**Trizonia**	**0.30**	**284**	S	Sb	03 30 18.4	-1.2
THAL	**Thalero**	**0.31**	**146**	P	Pg	03 30 13.3	0.0
THAL				S	Sg	03 30 17.6	+0.2
THAL	**Thalero**	**0.31**	**146**	P	Pg	03 30 13.3	0.0
THAL				S	Sg	03 30 17.6	+0.2
THAL				AML	AML	03 30 18.9	
	comp=N,256μm,0.2s						
THAL				AML	AML	03 30 20.5	
	comp=E,284μm,0.3s						
SERG	**Sergoula**	**0.33**	**291**	P	Pg	03 30 13.6	-0.1
SERG				S	Sg	03 30 19.0	+1.0
KLV	**Kalavryta, Ach**	**0.34**	**223**	P	Pg	03 30 13.5	-0.4
KLV				S	Sg	03 30 17.8	-0.7
KLV	**Kalavryta, Ach**	**0.34**	**223**	P	Pn	03 30 13.9	0.0
KLV				S	Sg	03 30 18.3	-0.2
KLV				AML	AML	03 30 19.1	
	comp=N,18μm,0.1s						
KLV				AML	AML	03 30 20.0	
	comp=E,21μm,0.1s						
KLV	**Kalavryta, Ach**	**0.34**	**223**	P	Pg	03 30 13.5	-0.4
KLV				S	Sg	03 30 17.8	-0.7
KLV				AML	AML	03 30 19.1	
	comp=N,19μm,0.1s						
KLV				AML	AML	03 30 20.0	
	comp=E,21μm,0.1s						
PROD	**Prodromos**	**0.36**	**96**	P	Pg	03 30 13.6	-0.7
PROD	**Prodromos**	**0.36**	**96**	P	Pg	03 30 13.6	-0.6
LAKA	**Lakka**	**0.37**	**262**	P	Pb	03 30 15.5	-0.4
LTK	**Loutraki**	**0.49**	**123**	P	Pg	03 30 17.0	+0.3
LTK				S	Sg	03 30 24.1	+0.9
LTK	**Loutraki**	**0.49**	**123**	P	Pg	03 30 16.0	-0.7
LTK				S	Sg	03 30 23.4	+0.2
LTK	**Loutraki**	**0.49**	**123**	P	Pg	03 30 17.0	+0.2
LTK				S	Sg	03 30 24.1	+0.9
ANX	**Ano Chora**	**0.51**	**306**	P	Pg	03 30 16.9	-0.1
ANX				S	Sg	03 30 24.7	+0.9
ANX	**Ano Chora**	**0.51**	**306**	S	Sg	03 30 24.7	+0.9
ANX				AML	AML	03 30 26.9	
	comp=N,58μm,0.2s						
ANX				AML	AML	03 30 28.0	
	comp=E,66μm,0.2s						
LKR	**Lokris**	**0.56**	**51**	P	Pg	03 30 17.1	-0.9
LKR				S	Sg	03 30 25.5	0.0
LKR	**Lokris**	**0.56**	**51**	P	Pg	03 30 16.9	-1.2
LKR				S	Sb	03 30 26.9	-0.3
LKR				AML	AML	03 30 28.5	
	comp=N,117μm,0.3s						
LKR				AML	AML	03 30 29.0	
	comp=E,122μm,0.3s						
ATAL	**Atalanti**	**0.60**	**49**	P	Pg	03 30 18.2	-0.6
ATAL				S	Sg	03 30 27.4	+0.7
ATAL	**Atalanti**	**0.60**	**49**	P	Pg	03 30 19.0	+0.2
ATAL				S	Sb	03 30 28.4	+0.1
ATAL				AML	AML	03 30 30.2	
	comp=N,44μm,0.4s						
ATAL				AML	AML	03 30 30.6	
	comp=E,45μm,0.4s						
ATAL	**Atalanti**	**0.60**	**49**	P	Pg	03 30 18.2	-0.7
ATAL				S	Sg	03 30 27.4	+0.7
ATAL				AML	AML	03 30 30.2	
	comp=N,44μm,0.4s						
ATAL				AML	AML	03 30 30.6	
	comp=E,45μm,0.4s						
VIL2	**Platees**	**0.65**	**97**	P	Pg	03 30 19.3	-0.4
VIL2				S	Sg	03 30 28.9	+0.6
VIL2				AML	AML	03 30 33.0	
	comp=E,43μm,0.4s						
VIL2				AML	AML	03 30 38.0	
	comp=N,35μm,0.5s						
VIL2	**Platees**	**0.65**	**97**	P	Pb	03 30 20.6	0.0
VIL2				S	Sb	03 30 31.1	+1.2
VIL2				AML	AML	03 30 33.0	
	comp=E,43μm,0.4s						
VIL2				AML	AML	03 30 34.1	
	comp=N,30μm,0.4s						
VILL	**Villia**	**0.70**	**101**	P	Pg	03 30 20.6	0.0
VILL				S	Sb	03 30 31.1	0.0
AGG	**Agios Georgios**	**0.73**	**353**	P	Pg	03 30 20.7	-0.6
AGG				S	Sb	03 30 32.1	-0.1
AGG	**Agios Georgios**	**0.73**	**353**	P	Pg	03 30 20.8	-0.4
AGG				S	Sb	03 30 31.6	-0.6
AGG	**Agios Georgios**	**0.73**	**353**	P	Pg	03 30 20.7	-0.6
AGG				S	Sb	03 30 32.1	0.0
EVR	**Evrytania**	**0.80**	**321**	P	Pg	03 30 22.5	0.0
EVR	**Evrytania**	**0.80**	**321**	P	Pn	03 30 21.9	-0.6
EVR				S	Sb	03 30 34.0	0.0
EVR	**Evrytania**	**0.80**	**321**	P	Pg	03 30 22.4	-0.1
VLX	**Vlachokerasia**	**0.92**	**183**	P	Pg	03 30 24.4	-0.5
DID	**Didima**	**1.01**	**141**	P	Pg	03 30 21.9	-4.6
DID	**Didima**	**1.01**	**141**	P	Pg	03 30 23.7	-2.8
DID				S	Sg	03 30 39.7	+0.1
DID	**Didima**	**1.01**	**141**	P	Pg	03 30 21.9	-4.6

*ISCJB **28** 03:51:25.3±1.1, 37.37°N±0.05°×141.96E±0.08, h24km, mb3.4/2, Error ellipse: s-maj=9.5km s-min=6.6km az=28.7*
*JMA **28** 03:51:25.1±0.3, 37.32°N×141.94E, h24km±4km, MJ3.4*
*IDC **28** 03:51:25.3±1.6, 37.93°N×141.63E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.2/30, mbtmp3.1/3, ML2.5/1, Error ellipse: s-maj=54.7km s-min=26.2km az=135.0*
ISC 28 03:51:25.8±1.6, 37.39°N±0.06°×141.95E±0.09, h24km, n18, σ1§43/17, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.86**	**269**	P	**Pb**	**03 51 41.0**	**-1.0**
JFK				S	**Sb**	**03 51 51.6**	**-1.5**
ONAJ	**Iwakimizuishiy**	**0.96**	**253**	P	**Pb**	**03 51 42.1**	**-1.7**
JMM	**Marumori**	**1.04**	**298**	P	**Pn**	**03 51 44.1**	**-0.7**
JMM				S	**Sb**	**03 51 57.7**	**-0.5**
JIO	**Ouri**	**1.17**	**336**	P	**Pn**	**03 51 46.5**	**-0.1**
JIO				S	**Sn**	**03 52 00.6**	**-1.2**
JFT	**Otama**	**1.29**	**276**	P	**Pn**	**03 51 48.5**	**+0.2**
JHO	**Hitachi**	**1.35**	**235**	P	**Pn**	**03 51 47.5**	**-1.6**
JOU	**Okura**	**1.41**	**314**	P	**Pb**	**03 51 51.1**	**-0.4**
JOU				S	**Sb**	**03 52 09.1**	**+0.1**
JMK	**Ichinoseki**	**1.67**	**340**	P	**Pb**	**03 51 55.7**	**-0.1**
MJAR	**Matsushiro Arr**	**3.11**	**255**	Pn	**Pn**	**03 52 14.8**	**+1.4**
	0.6nm,0.3s,baz=63,slow=12,SNR=5.9						
MJAR				Sn	**Sn**	**03 52 52.6**	**+2.8**
	1.0nm,0.3s,baz=230,slow=48,SNR=3.4						
MAT	**Matsushiro**	**3.11**	**255**	P	**Pn**	**03 52 15.6**	**+2.2**
MAT				*e*S	**Sn**	**03 52 51.4**	**+1.6**
H11N2	**WAKE ISLAND Hy**	**27.97**	**122**	T	T	04 26 31.1	
	baz=314,slow=75,SNR=62						
H11N1	**WAKE ISLAND Hy**	**27.97**	**122**	T	T	04 26 38.1	
	baz=314,slow=75,SNR=50						
H11N3	**WAKE ISLAND Hy**	**27.98**	**122**	T	T	04 26 38.7	
	baz=314,slow=75,SNR=39						
H11S1	**WAKE ISLAND Hy**	**28.70**	**124**	T	T	04 27 26.5	
	baz=316,slow=76,SNR=35						
H11S3	**WAKE ISLAND Hy**	**28.70**	**124**	T	T	04 27 31.1	
	baz=316,slow=76,SNR=34						
H11S2	**WAKE ISLAND Hy**	**28.71**	**124**	T	T	04 27 30.8	
	baz=316,slow=76,SNR=26						
ILAR	**Eielson Array**	**48.97**	**33**	P	**P**	**04 00 10.4**	**+0.5**
	0.2nm,0.7s,baz=282,slow=5.2,SNR=4.3						
WRA	**Warramunga Arr**	**57.47**	**188**	P	P	04 01 19.5	+6.7
	0.4nm,0.8s,baz=5.7,slow=7.5,SNR=2.8						

*ISCJB **28** 04:25:43.8±0.8, 29.05°S±0.1×176.01°W±0.09, h29km, mb4.4/10, Error ellipse: s-maj=19.5km s-min=11.3km az=170.0*
*NEIC **28** 04:25:43.1±0.6, 28.90°S×176.14W, h10km, mb4.2/3, Error ellipse: s-maj=21.2km s-min=14.0km az=144.0*
*IDC **28** 04:25:43.1±1.1, 28.23°S×176.58W, h0km, mb4.3/5, mb1 4.6/5, mb1mx4.2/25, mbtmp4.3/5, Error ellipse: s-maj=60.0km s-min=18.3km az=144.0*
ISC 28 04:25:46.1±0.7, 29.05°S±0.1×176.1°W±0.1, h29km, n25, σ1§15/26, mb4.4/10, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.62**	**260**	Pn	**Pn**	**04 26 13.2**	**+0.5**
	553nm,0.3s,baz=92,slow=5.2,SNR=40						
RAO				Sn	**Sn**	**04 26 34.1**	**+1.4**
	768nm,0.3s,baz=107,slow=19,SNR=16						
SNZO	**South Karori**	**14.40**	**209**	Pn	**Pn**	**04 29 08.0**	**+0.1**
EIDS	**Eidsvold**	**29.37**	**269**	*e*P	**P**	**04 31 47.9**	**+1.1**
	3.7nm,0.8s						
STKA	**Stephens Creek**	**36.43**	**255**	P	**P**	**04 32 47.3**	**-1.1**
	6.0nm,0.8s,baz=78,slow=5.5,SNR=7.6						
ASAR	**Alice Springs**	**44.87**	**265**	P	**P**	**04 33 56.5**	**-1.7**
	3.6nm,0.6s,baz=103,slow=7.0,SNR=32						
WRAB	**Tennant Creek**	**45.73**	**270**	*e*P	**P**	**04 34 03.3**	**-1.7**
	3.0nm,0.8s						
WRA	**Warramunga Arr**	**45.74**	**270**	P	P	**04 34 02.5**	**-2.5**
	8.9nm,0.8s,baz=108,slow=7.7,SNR=23						
CASY	**Casey**	**57.15**	**207**	*e*P	**P**	**04 35 29.5**	**-0.3**
	1.3nm,0.7s						
MBWA	**Marble Bar**	**58.05**	**262**	*e*P	**P**	**04 35 35.7**	**-1.2**
QSPA	**South Pole Qui**	**61.12**	**180**	*e*P	**P**	**04 35 58.3**	**+0.8**
	10nm,1.0s						
TXAR	**Lajitas Array**	**90.23**	**56**	P	**P**	**04 38 45.1**	**+0.8**
	0.4nm,0.8s,baz=213,slow=6.0,SNR=5.5						
ENH	**Enshi**	**92.20**	**303**	*e*P	**P**	**04 38 55.6**	**+2.3**
	3.7nm,0.5s						
ILAR	**Eielson Array**	**96.20**	**12**	P	**P**	**04 39 10.1**	**-0.7**
	0.6nm,0.8s,baz=212,slow=5.3,SNR=7.6						
ZALV	**Zalesovo Beam**	**118.08**	**319**	PKP	**PKPdf**	**04 44 28.3**	**-1.4**
	0.5nm,0.4s,baz=92,slow=4.3,SNR=3.5						
MKAR	**Makanchi Array**	**118.14**	**310**	PKP	**PKPdf**	**04 44 29.8**	**-0.3**
	0.3nm,0.4s,baz=67,slow=2.6,SNR=4.1						
KURK	**Kurchatov**	**121.27**	**314**	PKP	**PKPdf**	**04 44 35.9**	**-0.1**
KURBB	**Kurchatov Arra**	**121.31**	**314**	PKP	**PKPdf**	**04 44 35.9**	**-0.2**
	0.3nm,0.3s,baz=104,slow=2.1,SNR=5.3						
BVAR	**Borovoye Array**	**126.55**	**316**	PKP	**PKPdf**	**04 44 46.3**	**+0.2**
	0.6nm,0.6s,baz=220,slow=27,SNR=4.3						
FINES	**FINESS Array B**	**144.36**	**342**	PKP	**PKPab**	**04 45 16.9**	**0.0**
	3.2nm,0.8s,baz=83,slow=4.3,SNR=13						
KBZ	**Khabaz**	**145.67**	**306**	PKP	**PKPab**	**04 45 23.1**	**+0.9**
	1.5nm,0.6s,baz=184,slow=6.9,SNR=4.6						
NB2	**NORSAR Subarra**	**147.58**	**353**	PKP	**PKPbc**	**04 45 27.1**	**+0.1**
	comp=Z,4.4nm,0.7s,baz=9.8,slow=2.9						
NOA	**NORSAR Array B**	**147.58**	**353**	PKPbc	**PKPbc**	**04 45 27.3**	**+0.3**
	comp=Z,4.7nm,0.8s,baz=14,slow=4.4,SNR=18						
AKASG	**Malin Array Be**	**151.13**	**326**	PKPbc	**PKPbc**	**04 45 35.1**	**-1.0**
	comp=Z,2.1nm,0.7s,baz=45,slow=4.5,SNR=5.9						
KIEV	**Kiev**	**151.15**	**326**	*e*PKPdf	**PKPbc**	**04 45 35.3**	**-0.8**
TORD	**Torodi Ar. Bea**	**164.10**	**172**	PKP	**PKPdf**	**04 45 48.0**	**+0.7**
	comp=Z,0.7nm,0.9s,baz=226,slow=0.5,SNR=3.9						

*IDC **28** 04:26:10.5±0.5, 29.15°S×176.21W, h0km, mb4.7/18, mb1 4.9/20, mb1mx4.8/28, mbtmp4.7/20, ML4.5/2, MS4.3/5, Ms1 4.3/5, ms1mx4.2/9, Error ellipse: s-maj=18.2km s-min=15.6km az=175.0*
*NEIC **28** 04:26:12.3±

DZM Mont Dzumac 17.30 291 eP P 04 30 17.8 +1.9
172nm,1.3s
DZM eLR LR 04 34 20.5
6µm,26.9s
DZM Mont Dzumac 17.30 291 ePn Pn 04 30 14.9 +0.2
136nm,1.4s
DZM eS Sn 04 33 03.1 -23
RPZ Rata Peaks 17.54 212 P P 04 30 18.7 +0.3
4.4nm,0.3s,baz=231,slow=7.0,SNR=16
RPZ LR LR 04 37 45.4
comp=Z,859nm,19.7s,baz=31,slow=39
RPZ Rata Peaks 17.54 212 ePn Pn 04 30 16.1 -1.4
88nm,0.9s
RPZ eS Sn 04 33 19.4 -13
FOZ Fox Glacier 18.00 215 ePn P 04 30 23.5 +0.1
70nm,0.9s
ODZ Otahua Downs 18.76 210 eP Pn 04 30 33.4 +1.1
74nm,1.1s
LHI Lord Howe Isla 21.46 258 P P 04 31 04.0 +2.8
baz=21,SNR=8.7
TBI Tubuai 24.63 82 eS S 04 35 52.6 -0.4
1µm,30.2s
TBI eLR LR 04 37 25.1
3µm,28.0s,baz=249
PAE Paea 26.96 70 eP P 04 31 55.4 +1.1
11nm,1.1s
PPT2 Papeete2 27.00 70 eP P 04 31 56.2 +1.4
64nm,1.5s
PPT2 eLQ LQ 04 37 03.0
2µm,25.0s
PPT2 eLR LR 04 38 23.9
3µm,27.8s,baz=237
PPT Papeete 27.01 70 P P 04 31 55.3 +0.4
30nm,0.9s,baz=298,slow=6.6,SNR=5.8
TVO Taravao 27.17 71 eP P 04 31 57.7 +1.4
17nm,1.3s
TIAR Tiarei 27.20 70 eP P 04 31 58.0 +1.4
22nm,0.9s
ARMA Armidale 27.90 260 P P 04 32 03.9 +1.1
baz=28,SNR=3.7
ARMA Armidale 27.90 260 eP P 04 32 01.8 -1.0
27nm,1.1s
MGCD Mangrove Creek 28.16 254 P P 04 32 06.9 +1.9
baz=28,SNR=5.1
EIDS Eidsvold 29.32 270 P P 04 32 16.1 +0.7
baz=29,SNR=3.7
EIDS Eidsvold 29.32 270 eP P 04 32 16.1 +0.7
41nm,1.3s
CNB Canberra Magne 29.61 250 P P 04 32 20.7 +2.7
baz=30,SNR=5.8
CAN Canberra 29.91 250 eP P 04 32 21.3 +0.7
CAN pmax pmax
comp=Z,37nm,1.0s
CAN Canberra 29.91 250 eP P 04 32 21.3 +0.7
comp=Z,37nm,1.0s
RMQ Roma 31.07 267 P P 04 32 32.0 +1.2
baz=31,SNR=7.3
CMSA Cobar Meteorol 32.84 257 P P 04 32 47.3 +0.9
baz=33,SNR=16
CTA Charters Tower 35.26 277 P P 04 33 07.0 -0.5
comp=Z,8.1nm,0.5s,baz=100,slow=11,SNR=8.5
CTAO Charters Tower 35.26 277 eP P 04 33 06.7 -0.8
CTAO pmax pmax
comp=Z,36nm,0.6s
CTAO Charters Tower 35.26 277 eP P 04 33 06.7 -0.8
comp=Z,36nm,0.6s
STKA Stephens Creek 36.27 255 P P 04 33 16.5 +0.5
comp=Z,43nm,1.0s,baz=91,slow=8.9,SNR=19
STKA Stephens Creek 36.27 255 P P 04 33 16.6 +0.5
baz=36,SNR=12
STKA Stephens Creek 36.27 255 eP P 04 33 16.6 +0.5
RKT Rikitea 37.31 90 eLR LR 04 43 18.6
comp=Z,2µm,28.0s,baz=255
MTSU Mount Surprise 37.72 278 P P 04 33 28.5 0.0
baz=38,SNR=5.1
HTT Hallett 38.32 252 P P 04 33 34.8 +1.3
baz=38,SNR=7.6
TAOE Nuku Hiva Isla 39.45 66 eLR LR 04 44 05.4
comp=Z,1µm,27.4s,baz=239
BBOO Buckleboo 40.78 253 P P 04 33 53.6 -0.3
baz=41,SNR=8.4
BBOO Buckleboo 40.78 253 eP P 04 33 53.7 -0.3
comp=Z,109nm,1.4s
AS01 Alice Springs 44.74 265 eP P 04 34 23.9 -2.3
AS31 Alice Springs 44.78 265 eP P 04 34 25.2 -1.3
comp=Z,7.9nm,1.1s
ASAR Alice Springs 44.78 265 P P 04 34 25.0 -1.5
comp=Z,8.5nm,0.4s,baz=104,slow=7.1,SNR=36
WRAB Tennant Creek 45.68 270⇑ iP P 04 34 32.8 -0.9
WRAB pmax pmax
comp=Z,120nm,1.1s
WRAB Tennant Creek 45.68 270 eP P 04 34 32.1 -1.5
comp=Z,50nm,1.1s
WRA Warramunga Arr 45.69 270 P P 04 34 32.0 -1.7
comp=Z,26nm,0.7s,baz=109,slow=7.9,SNR=37
WRKA Warakurna 49.21 261 P P 04 34 59.7 -1.4
baz=49,SNR=5.2
WAKE Wake Island 51.20 339 eP P 04 35 13.9 -2.0
comp=Z,136nm,1.1s
FITZ Fitzroy Crossi 53.98 268 P P 04 35 35.6 -1.2
baz=54,SNR=13
FITZ Fitzroy Crossi 53.98 268 eP P 04 35 35.2 -1.6
comp=Z,39nm,1.0s
KLBR Kellerberrin 56.19 250 P P 04 35 52.0 -0.6
baz=56,SNR=5.8
CASY Casey 56.74 208 eP P 04 35 57.7 +1.8
comp=Z,63nm,1.0s
MBWA Marble Bar 57.94 262 eP P 04 36 03.0 -2.1
comp=Z,44nm,1.0s
SOEI Soe 58.83 277 P P 04 36 13.8 +2.3
SOEI Soe 58.83 277 eP P 04 36 11.6 +0.1
comp=Z,64nm,1.1s
QSPA South Pole Qui 60.68 180 eP P 04 36 25.9 +2.4
comp=Z,189nm,1.2s
PMSA Palmer Station 72.48 155 P P 04 37 40.0 +1.4
comp=Z,3.2nm,0.6s,baz=326,slow=7.3,SNR=4.9
PMSA Palmer Station 72.48 155 eP P 04 37 40.1 +1.4
comp=Z,2.2nm,0.5s
MAW Mawson 73.77 200 P P 04 37 48.6 +2.4
comp=Z,21nm,1.0s,baz=117,slow=6.1,SNR=17
MAW Mawson 73.77 200 P P 04 37 48.8 +2.6
baz=74,SNR=9.6
KKM Kota Kinabalu 73.80 287 eP P 04 37 47.1 -0.4
comp=Z,25nm,0.8s
KSM Kuching 76.44 280 eP P 04 38 00.7 -1.8
comp=Z,32nm,1.1s
MJAR Matsushiro Arr 78.39 324 P P 04 38 11.1 -1.8
comp=Z,0.8nm,0.3s,baz=164,slow=6.0,SNR=4.5
MAJO Matsushiro 78.39 324‖ eP P 04 38 11.0 -1.9
MAJO pmax pmax
comp=Z,18nm,1.2s
SYO Syowa Base 78.41 192⇑ eP P 04 38 13.8 +1.2
SYO Syowa Base 78.41 192‖ epP P 04 38 16.0 +3.4
SNAA Sanae 79.07 178 PKP P 04 38 14.6 -1.8
SNAA Sanae 79.07 178‖ eP P 04 38 17.6 +1.3
SNAA Sanae 79.07 178 eP P 04 38 17.1 +0.8
comp=Z,33nm,1.5s
VNA1 Neumayer--Stat 79.83 176 PKP P 04 38 18.4 -1.9
NVL N'lazarevskaya 79.92 183 eP P 04 38 16.7 -4.2
JNU Nakatsue 79.92 317 P P 04 38 20.9 -0.6
comp=Z,3.1nm,0.5s,baz=195,slow=12,SNR=3.6
KUR Kuril'sk 81.21 335 eP P 04 38 28.7 +0.8
PLCA Paso Flores 81.98 132 P P 04 38 33.5 +0.9
comp=Z,7.4nm,0.9s,baz=232,slow=4.6,SNR=7.4
ASAJ Asahikawa 82.34 331 eP P 04 38 33.8 -0.2
comp=Z,3.7nm,0.9s
PDSI Padang 83.79 272 P P 04 38 41.6 -0.7
MONP2 Monument Peak 83.93 47 P P 04 38 42.2 -0.6
baz=229
IKP In-Ko-Pah, Jac 83.97 47 P P 04 38 42.6 -0.2
baz=230
VES Vestal, Richgr 84.24 43 P P 04 38 44.3 +0.4
baz=228
EDW2 Edwards Air Fo 84.26 45 P P 04 38 44.1 -0.1
baz=228
PFO Pinyon Flats O 84.37 46 P P 04 38 44.7 -0.2
baz=229
PFO Pinyon Flats O 84.37 46 eP P 04 38 44.5 -0.4
PFO pmax pmax
comp=Z,23nm,1.5s
PFO Pinyon Flats O 84.37 46 eP P 04 38 44.5 -0.4
comp=Z,23nm,1.5s
YSS Yuzh-Sakhalins 84.60 333 eP P 04 38 45.7 +0.2
YSS eS S 04 49 13.0 +2.5
YSS e 04 49 57.0
YSS pmax pmax
comp=Z,20nm,0.8s

KSRS Korea Array 84.67 319 P P 04 38 45.5 -0.6
comp=Z,3.1nm,0.9s,baz=146,slow=5.5,SNR=5.3
KSRS Korea Array 84.67 319 P P 04 38 45.5 -0.6
KSRS pmax pmax
comp=Z,5.0nm,1.1s
KSAR Wonju Array Be 84.69 319 P P 04 38 45.5 -0.7
KSAR Wonju Array Be 84.69 319 P P 04 38 45.5 -0.7
KS01 Wonju Array Si 84.70 319 eP P 04 38 45.9 -0.3
BELC Belle Mtn. Jos 84.92 46 P P 04 38 47.9 +0.2
baz=230
CMB Columbia Colle 84.97 41 eP P 04 38 47.3 -0.4
CMB pmax pmax
comp=Z,13nm,1.3s
CMB Columbia Colle 84.97 41 eP P 04 38 47.3 -0.4
comp=Z,13nm,1.3s
PET Petropavlovsk 85.00 345 eP P 04 38 49.4 +2.1
PET eS S 04 49 15.1 +0.9
PET MLR MLR
comp=Z,300nm,21.0s
PET MLR MLR
comp=Z,200nm,19.0s
BC3 Big Chuckawall 85.04 47 P P 04 38 47.9 -0.4
baz=230
GLA Glamis 85.05 48 P P 04 38 48.7 +0.5
baz=230
CWC Cottonwood Cre 85.24 43 P P 04 38 49.0 -0.3
baz=228
HEC Hector,Ludlow 85.25 46 P P 04 38 48.9 -0.3
baz=229
GSC Goldstone, Bar 85.26 45 P P 04 38 48.7 -0.5
baz=229
GSC Goldstone, Bar 85.26 45 eP P 04 38 49.6 +0.3
GSC pmax pmax
comp=Z,38nm,1.7s
GSC Goldstone, Bar 85.26 45 eP P 04 38 49.6 +0.3
comp=Z,38nm,1.7s
AFDM Forest Hills D 85.28 40 eP P 04 38 49.6 +0.5
PETK Petropavlovsk- 85.30 345 P P 04 38 46.1 -2.7
comp=Z,4.1nm,0.6s,baz=89,slow=7.0,SNR=5.5
MPMC Manual Prospec 85.34 44 P P 04 38 49.8 0.0
baz=228
IRM Iron Mountain 85.56 47 P P 04 38 51.1 +0.4
baz=230
WDC Whiskeytown Da 85.56 38 eP P 04 38 50.6 +0.1
WDC pmax pmax
comp=Z,28nm,1.4s
WDC Whiskeytown Da 85.56 38 eP P 04 38 50.6 +0.1
comp=Z,28nm,1.4s
GMRC Granite Mounta 85.64 46 P P 04 38 51.5 +0.3
baz=230
214A Organ Pipe Nat 85.68 50 P P 04 38 51.3 -0.1
baz=232
WAKR Walker 85.84 41 eP P 04 38 52.6 +0.3
comp=Z,36nm,1.5s
IPM Ipoh 85.95 277 eP P 04 38 53.0 -0.1
comp=Z,15nm,0.3s
M02C Callahan 85.97 37 P P 04 38 52.4 -0.2
baz=225
FURC Furnace Creek, 85.99 44 P P 04 38 52.4 -0.3
baz=229
GRAC Grapevine Rang 86.04 43 P P 04 38 53.1 0.0
baz=228
QIZ Qiongzhong 86.05 294 P P 04 38 58.3 +4.9
QIZ S S 04 49 29.3 +3.2
QIZ SS SS 04 55 00.8 -4.3
TVH3 East Aurora ar 86.09 42 eP P 04 38 53.7 +0.2
comp=Z,16nm,1.5s
PNTR Pine Nut 86.15 41 eP P 04 38 53.9 +0.1
TVH2 Borealis Mine 86.15 42 eP P 04 38 53.9 +0.1
LDFC Landfair 86.17 46 eP P 04 38 54.8 +0.9
comp=Z,73nm,1.5s
YERR Yerington 86.28 41 eP P 04 38 54.3 -0.1
comp=Z,16nm,1.3s
KULM Kulim 86.67 278 eP P 04 38 56.5 -0.2
TPNV Topopah Spring 86.68 44 P P 04 38 56.4 +0.1
baz=229
TPNV Topopah Spring 86.68 44 eP P 04 38 56.7 +0.3
TPNV pmax pmax
comp=Z,35nm,1.8s
TPNV Topopah Spring 86.68 44 eP P 04 38 56.7 +0.3
comp=Z,35nm,1.8s
PAHR Pah Rah Range 86.69 40 eP P 04 38 56.2 -0.1
comp=Z,8.7nm,1.1s
HUMO Hull Mountain 86.78 36 eP P 04 38 57.8 +1.3
NJ2 Nanjing 86.85 310 eP P 04 38 58.5 +1.4
NJ2 pmax pmax
comp=Z,14nm,0.5s
PSI Prapat 86.94 275 LR LR 05 20 00.3
comp=Z,93nm,18.3s,slow=37
PSI Prapat 86.94 275 eP P 04 38 57.3 -0.9
PSI Prapat 86.94 275 eP P 04 38 57.3 -0.9
SHPR Shep Range 87.06 45 eP P 04 38 59.1 +0.9
TUC Tucson 87.26 50 P P 04 38 59.5 +0.4
baz=233
TUC Tucson 87.26 50 eP P 04 38 59.7 +0.5
TUC pmax pmax
comp=Z,5.0nm,0.9s
TUC Tucson 87.26 50 eP P 04 38 59.7 +0.5
comp=Z,5.4nm,0.9s
USRK Ussuriysk Ar. 87.26 326 P P 04 38 58.2 -0.5
comp=Z,4.5nm,0.9s,baz=132,slow=2.8,SNR=9.5
GSI Gunungsitoli 87.39 273 P P 04 39 01.2 +1.0
GSI Gunungsitoli 87.39 273 eP P 04 39 01.0 +0.8
comp=Z,323nm,1.7s
UBPT Khong Chiam 87.62 289 P P 04 39 02.3 +1.2
comp=Z,46nm,1.6s
MOD Modoc Plateau 87.69 38 eP P 04 39 00.0 -1.1
I04A Tendick Farm, 87.91 36 P P 04 39 01.2 -0.8
baz=225
R11A Troy Canyon, C 87.99 43 eP P 04 39 03.4 +0.7
X16A Lo Mia Camp, P 88.11 48 eP P 04 39 04.3 +0.9
BMN Battle Mountai 88.40 41 eP P 04 39 04.0 -0.6
BMN pmax pmax
comp=Z,20nm,1.7s
BMN Battle Mountai 88.40 41 eP P 04 39 04.0 -0.6
comp=Z,20nm,1.7s
LCMT Little Creek M 88.57 45 eP P 04 39 06.0 +0.6
TPTI 88.69 274 P P 04 39 08.2 +1.9
TRTT Trang 88.76 280 P P 04 39 08.2 +1.6
comp=Z,38nm,1.1s
MDJ Mudanjiang 88.76 325 P P 04 39 05.8 -0.1
MDJ pmax pmax
comp=Z,8.0nm,1.1s
U15A North Rim 88.80 46 eP P 04 39 07.1 +0.5
WUAZ Wupatki 88.82 48 eP P 04 39 06.8 +0.2
CCUT Cedar City 88.83 45 eP P 04 39 07.6 +0.9
KNB Kanab 88.83 46 eP P 04 39 07.2 +0.5
KNB Kanab 88.83 46 eP P 04 39 07.2 +0.5
WVOR Wild Horse Val 88.96 39 eP P 04 39 07.1 0.0
WVOR pmax pmax
comp=Z,6.0nm,1.2s
WVOR Wild Horse Val 88.96 39 eP P 04 39 07.1 0.0
comp=Z,5.5nm,1.2s
TRQA Tornquist 88.96 134 eP P 04 39 08.0 +0.7
comp=Z,12nm,1.3s
SZCU Shurtz Canyon 89.03 45 eP P 04 39 08.5 +0.9
WHN Wuhan 89.06 306 P P 04 39 08.5 +0.8
PKCU Pink Cliffs 89.42 46 eP P 04 39 11.6 +2.0
SURA Surathani 89.47 281 P P 04 39 13.4 +3.5
comp=Z,23nm,1.4s
G06A Carlson Farm, 89.83 36 eP P 04 39 10.8 -0.1
MSU Marysvale 90.16 45 eP P 04 39 13.9 +0.9
MSU Marysvale 90.16 45 eP P 04 39 13.9 +0.9
CN2 Changchun 90.36 322 eP P 04 39 12.5 -0.9
CN2 pmax pmax
comp=Z,20nm,1.3s
TX31 Lajitas Ar. Si 90.52 56 eP P 04 39 14.6 -0.1
TXAR Lajitas Array 90.52 56 P P 04 39 14.3 -0.3
comp=Z,17nm,1.0s,baz=216,slow=6.2,SNR=14
D05A Emmaclaw 90.52 34 eP P 04 39 15.3 +1.2
MNTX Cornudas Mount 90.61 54 P P 04 39 14.5 -0.4
baz=236
MNTX Cornudas Mount 90.61 54 eP P 04 39 14.4 -0.5
G08A Pilot Rock 90.72 36 eP P 04 39 14.9 -0.4
CHAI Chaiyaphum 90.82 288 P P 04 39 17.4 +1.2
LAZ Ladron 90.95 51 eP P 04 39 17.3 +0.6
CNPM China Poot 91.00 12 eP P 04 39 16.0 0.0
KLR Kul'dur 91.03 329 P P 04 39 15.8 -0.5
comp=Z,1.8nm,0.8s,baz=106,slow=5.7,SNR=7.4
MFID Camas Ranch 91.15 39 eP P 04 39 16.6 -0.7
comp=Z,6.7nm,1.3s
BNM Barren Site 91.15 51 eP P 04 39 19.0 +1.3
HAWA Hanford 91.18 35 eP P 04 39 17.1 -0.1
comp=Z,9.3nm,0.9s
TMUT Trail Mountain 91.24 45 eP P 04 39 18.8 +0.8

BMO Blue Mountains 91.30 38 eP P 04 39 16.8 -1.1
BMO pmax pmax
comp=Z,15nm,1.5s
BMO Blue Mountains 91.30 38 eP P 04 39 16.8 -1.1
comp=Z,15nm,1.5s
SRU San Rafael Swe 91.55 45 eP P 04 39 19.5 +0.2
SRU San Rafael Swe 91.55 45 eP P 04 39 19.5 +0.2
ANMO Albuquerque 91.72 50 P P 04 39 19.9 -0.3
baz=235
ANMO Albuquerque 91.72 50‖ eP P 04 39 19.8 -0.4
ANMO pmax pmax
comp=Z,6.0nm,1.2s
ANMO Albuquerque 91.72 50 eP P 04 39 19.9 -0.3
comp=Z,1.4nm,0.8s
PV05 Paradox Valley 91.82 47 eP P 04 39 21.7 +1.0
D08A Wollman Farm, 91.94 35 eP P 04 39 20.8 +0.1
E09A Wood Farm, Sta 91.97 36 eP P 04 39 20.6 -0.2
HLID Hailey 92.03 40 P P 04 39 21.1 -0.3
baz=230
HLID Hailey 92.03 40 eP P 04 39 20.8 -0.7
comp=Z,3.3nm,0.9s
F10A Beach Ranch, E 92.08 37 eP P 04 39 20.2 -1.3
NNA Nana 92.13 105 LR LR 05 13 09.4
comp=Z,103nm,18.4s,baz=216,slow=31
PV01 Paradox Valley 92.19 47 eP P 04 39 21.9 -0.5
comp=Z,504nm,1.3s
ENH Enshi 92.40 304 eP P 04 39 23.1 -0.2
comp=Z,256nm,1.9s
GYA Guiyang 92.48 299 P P 04 39 25.3 +1.5
GYA pmax pmax
comp=Z,10.0nm,1.0s
RC01 Rabbit Creek A 92.73 12 eP P 04 39 22.8 -1.2
comp=Z,23nm,1.4s
SUA Susitna One 92.89 12 eP P 04 39 24.1 -0.8
S22A 4UR Ranch, Cre 93.08 48 P P 04 39 25.9 -0.7
baz=235
S22A 4UR Ranch, Cre 93.08 48 eP P 04 39 26.5 -0.1
PMR Palmer 93.31 13 eP P 04 39 26.0 -0.6
PMR pmax pmax
comp=Z,1.0nm,0.4s
PMR Palmer 93.31 13 eP P 04 39 26.0 -0.6
comp=Z,1.1nm,0.4s
BJI Beijing 93.38 315 P P 04 39 27.3 -0.2
BJI S S 04 50 37.8 +4.5
BJI SS SS 04 56 53.5 +2.7
BJI pmax pmax
comp=Z,7.0nm,1.1s
BJI pmax pmax
comp=Z,130nm,5.5s
BJI LR LR
comp=Z,120nm,23.8s
BJI LR LR
comp=Z,120nm,27.2s
BJI LR LR
comp=Z,210nm,27.0s
TT01 Tatalina 93.42 9 eP P 04 39 26.6 -0.5
AHID Auburn Hatcher 93.42 42 eP P 04 39 27.6 -0.3
comp=Z,4.9nm,0.9s
TTA Tatalina 93.44 9 eP P 04 39 27.0 -0.3
TTA Tatalina 93.44 9 eP P 04 39 27.0 -0.3
MSTX Muleshoe 93.70 53 eP P 04 39 28.2 -1.1
comp=Z,1.7nm,0.7s
MCMT McKenzie Canyo 93.70 40 eP P 04 39 29.4 +0.2
SMCO Snowmass 93.81 47 eP P 04 39 29.5 -0.6
comp=Z,3.6nm,1.1s
REDW Red Top Meadow 93.93 42 eP P 04 39 29.2 -1.0
comp=Z,3.1nm,1.0s
SDCO Great Sand Dun 93.95 49 eP P 04 39 30.4 -0.2
comp=Z,1.6nm,1.1s
TPAW Teton Pass 93.95 41 eP P 04 39 30.5 +0.1
SNOW Snow King Moun 94.05 42 eP P 04 39 30.2 -0.6
comp=Z,7.5nm,1.0s
DLMT Dillon 94.17 39 eP P 04 39 31.2 0.0
IMW Indian Meadow 94.21 41 eP P 04 39 31.5 -0.1
comp=Z,1.3nm,0.4s
LOHW Long Hollow 94.23 42 eP P 04 39 30.2 -1.5
comp=Z,0.7nm,0.6s
MOOW Moose Ponds 94.23 41 eP P 04 39 31.2 -0.5
comp=Z,0.9nm,0.7s
PDAR Pinedale Array 94.33 43 P P 04 39 30.4 -1.8
comp=Z,0.4nm,0.6s,baz=199,slow=7.7,SNR=4.6
FLWY Flagg Ranch 94.46 41 eP P 04 39 32.1 -0.5
QLMT Earthquake Lak 94.50 40 eP P 04 39 33.4 +0.6
LRM Limekiln Ridge 94.54 39 eP P 04 39 31.3 -1.8
CMAR Chiang Mai Arr 94.61 288 P P 04 39 33.2 -0.4
comp=Z,2.9nm,0.8s,baz=137,slow=2.9,SNR=12
433A Art 94.62 57 P P 04 39 32.1 -1.3
baz=239
CHTO Chiang Mai 94.78 289 eP P 04 39 36.1 +1.6
CHTO Chiang Mai 94.78 289 eP P 04 39 36.1 +1.6
CHMT Chamberlain Mo 94.79 38 eP P 04 39 33.0 -1.1
KTH Kantishna Hill 94.81 11 eP P 04 39 32.7 -0.9
TRF Thorofare Moun 94.82 11 eP P 04 39 32.2 -1.6
KMI Kunming 94.83 296 P P 04 39 36.5 +1.7
KMI pmax pmax
comp=Z,8.0nm,0.5s
KMI pmax pmax
comp=Z,140nm,4.7s
BOZ Bozeman (W) 94.89 39 P P 04 39 33.7 -0.8
baz=232
BOZ Bozeman (W) 94.89 39 eP P 04 39 33.5 -1.0
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 94.89 39 eP P 04 39 33.5 -1.0
comp=Z,3.0nm,0.8s
RND Reindeer 95.03 12 eP P 04 39 33.9 -0.7
RND Reindeer 95.03 12 eP P 04 39 33.9 -0.7
BPAW Bear Paw Mtn. 95.31 11 eP P 04 39 34.7 -1.1
MCK McKinley 95.31 12 eP P 04 39 35.7 -0.2
MCK McKinley 95.31 12 eP P 04 39 35.7 -0.2
SEY Seymchan 95.42 346‖ eP P 04 39 35.2 -1.0
WRH Wood River Hil 96.14 12 eP P 04 39 38.6 -1.0
CCB Clear Creek Bu 96.36 12 eP P 04 39 39.3 -1.2
MDM Murphy Dome 96.56 12 eP P 04 39 40.3 -1.2
IL1 Eielson Array 96.64 12 eP P 04 39 40.1 -1.7
ILAR Eielson Array 96.64 12 P P 04 39 40.2 -1.6
comp=Z,1.0nm,0.7s,baz=221,slow=5.6,SNR=13
ILB Eielson Array 96.64 12 eP P 04 39 40.5 -1.2
HHC Hu-ho-hao-te 96.73 313 eP P 04 39 42.5 -0.5
HHC PP PP 04 43 40.3 +1.9
HHC S S 04 51 06.3 +3.5
HHC pmax pmax
comp=Z,21nm,1.3s
HHC pmax pmax
comp=Z,130nm,8.1s
HHC LR LR
comp=Z,160nm,19.0s
HHC LR LR
comp=Z,150nm,19.4s
HHC LR LR
comp=Z,170nm,18.9s
WMOK Wichita Mounta 96.90 54 eP P 04 39 42.9 -0.9
WMOK Wichita Mounta 96.90 54 eP P 04 39 42.9 -0.9
CD2 Chengdu 96.94 301 eP P 04 39 44.0 -0.1
CD2 pP PcP 04 39 47.5 +3.3
CD2 PP PP 04 43 39.5 -0.7
CD2 SKS SKSac 04 50 21.0 +1.6
CD2 S ScS 04 51 06.5 +1.2
CD2 sS S 04 51 12.5 +7.6
CD2 SS SS 04 57 44.3 +2.3
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.6s
BILL Bilibino 98.06 353⇑ eP P 04 39 47.3 -0.8
BILL e 04 39 56.2
BILL e 04 50 59.3
BILL pmax pmax
comp=Z,3.0nm,0.4s
RSSD Black Hills 98.41 44 eP P 04 39 49.6 -1.0
RSSD pmax pmax
comp=Z,7.0nm,1.3s
RSSD Black Hills 98.41 44 eP P 04 39 49.6 -1.0
comp=Z,6.5nm,1.3s
CPUP Villa Florida 99.31 127 LR LR 05 17 18.9
comp=Z,144nm,21.2s,baz=246,slow=31
LZH Lanzhou 99.44 306 eP Pdif 04 39 58.5 +3.1
LZH pP pP 04 40 02.0 -2.5
LZH sP sP 04 40 04.0 -3.7
LZH pmax pmax
comp=Z,13nm,1.0s
SONM Songino Array 103.51 317 PKKPbc PKKPbc 04 56 07.8 +0.5
comp=Z,0.4nm,0.4s,baz=264,slow=2.9,SNR=3.7
WMQ Urumqi 113.89 308 ePKP 04 44 52.5
WMQ PP PP 04 45 50.0 +4.6

WMQ				SKS	**SKSdf**	**04 51 57.0**	**-4.3**	
WMQ				SKKS	**SKKSac**	**04 52 44.5**	**-0.3**	
WMQ				AMB	AMB			
	comp=Z,150nm,4.7s							
WMQ				LR	LR			
	comp=Z,190nm,20.7s							
WMQ				LR	LR			
	comp=Z,250nm,23.9s							
WMQ				LR	LR			
	comp=Z,310nm,25.4s							
ZALV	**Zalesovo Beam**	**118.38 318**		PKP	**PKPdf**	**04 44 57.5**	**-1.9**	
	comp=Z,0.3nm,0.3s,baz=219,slow=1.9,SNR=4.1							
MKAR	**Makanchi Array**	**118.38 310**		PKP	**PKPdf**	**04 44 57.5**	**-2.1**	
	comp=Z,3.7nm,1.1s,baz=169,slow=0.6,SNR=11							
MKAR				PKKPbc	**PKKPab**	**04 55 19.4**	**+0.8**	
	comp=Z,1.0nm,0.8s,baz=286,slow=4.4,SNR=6.2							
KSH	**Kashi**	**121.13 301**	*e*	PKP	**PKPdf**	**04 45 06.5**	**+1.2**	
KSH			*e*	PP	**PP**	**04 46 37.0**	**+1.0**	
KSH				PKS	**PKSdf**	**04 48 42.3**	**+0.3**	
KSH				SKS	**SKSdf**	**04 52 17.3**	**+1.8**	
KSH				SKKS	**SKKSac**	**04 53 29.3**	**-4.0**	
KSH				AMB	AMB			
	comp=Z,33nm,5.3s							
KSH				LR	LR			
	comp=Z,130nm,10.4s							
KSH				LR	LR			
	comp=Z,130nm,6.5s							
KSH				LR	LR			
	comp=Z,81nm,6.5s							
KURK	**Kurchatov**	**121.54 314**		PKIKP	**PKPdf**	**04 45 04.2**	**-1.3**	
KURK				pmax	pmax			
	comp=Z,2.0nm,0.8s							
KURK	**Kurchatov**	**121.54 314**	*e*	PKPdf	**PKPdf**	**04 45 04.6**	**-0.9**	
KURBB	**Kurchatov Arra**	**121.58 314**		PKP	**PKPdf**	**04 45 04.2**	**-1.4**	
	comp=Z,2.4nm,0.8s,baz=109,slow=1.8,SNR=10							
AAK	**Ala-Archa**	**122.91 304**	⇑*e*	PKIKP	**PKPdf**	**04 45 08.6**	**-0.1**	
BVAR	**Borovoye Array**	**126.83 316**		PKP	**PKPdf**	**04 45 14.8**	**-0.9**	
	comp=Z,1.4nm,0.5s,baz=87,slow=3.1,SNR=13							
BRVK	**Borovoye**	**126.89 316**	⇑*e*	PKIKP	**PKPdf**	**04 45 15.4**	**-0.3**	
BRVK	**Borovoye**	**126.89 316**	*e*	PKPdf	**PKPdf**	**04 45 14.9**	**-0.8**	
SPITS	**Spitsbergen Ar**	**130.84 357**		PKP	**PKPdf**	**04 45 22.1**	**-0.5**	
	comp=Z,2.3nm,0.6s,baz=129,slow=2.3,SNR=5.3							
ARU	**Arti**	**133.35 321**		PKP	**PKPdf**	**04 45 27.8**	**0.0**	
	comp=Z,5.2nm,0.2s,baz=121,slow=2.0,SNR=5.1							
ARU	**Arti**	**133.35 321**	*i*	PKIKP	**PKPdf**	**04 45 27.3**	**-0.6**	
AKTO	**Aktyubinsk**	**134.62 313**		PKP	**PKPdf**	**04 45 30.1**	**-0.4**	
	comp=Z,2.6nm,1.0s,baz=19,slow=5.9,SNR=4.3							
ARCES	**ARCESS Array B**	**137.97 349**		PKP	**PKPdf**	**04 45 36.1**	**0.0**	
	comp=Z,4.2nm,0.7s,baz=52,slow=2.0,SNR=7.2							
KLMR	**Klimovskoe**	**140.65 333**	*e*	PKHKP	PKPpre	04 45 33.0		
KLMR				pmax	pmax			
	comp=Z,15nm,1.5s							
MOS	**Moscow**	**144.42 327**	*e*	PKIKP	**PKPab**	**04 45 44.4**	**-1.9**	
FINES	**FINESS Array B**	**144.76 342**		PKP	**PKPab**	**04 45 46.0**	**-1.4**	
	comp=Z,16nm,0.9s,baz=72,slow=6.2,SNR=17							
TBLG	**Delisi**	**144.87 302**		P	**PKPab**	**04 45 48.4**	**-0.1**	
TBLG	**Delisi**	**144.87 302**		PKIKP	**PKPab**	**04 45 48.4**	**-0.1**	
GNI	**Garni**	**145.03 299**	*de*	PKIKP	**PKPab**	**04 45 49.6**	**+0.3**	
GNI	**Garni**	**145.03 299**	*e*	PKPdf	**PKPbc**	**04 45 49.2**	**-0.1**	
OBN	**Obninsk**	**145.27 327**	⇑*e*	PKIKP	**PKPbc**	**04 45 48.8**	**-0.5**	
OBN			*i*			04 46 00.5		
OBN				pmax	pmax			
	comp=Z,69nm,1.2s							
ZEI	**Tsey**	**145.33 304**	*i*	PKP2	**PKPbc**	**04 45 47.5**	**-2.8**	
ZEI				pmax	pmax			
	comp=Z,71nm,1.1s							
GOF	**Gofitskoye**	**145.50 308**	⇑*e*	PKIKP	**PKPdf**	**04 45 50.0**	**-0.3**	
GOF				pmax	pmax			
	comp=Z,31nm,1.0s							
ONI	**Oni**	**145.69 303**		P	**PKPab**	**04 45 51.5**	**-0.1**	
ONI	**Oni**	**145.69 303**		PKIKP	**PKPab**	**04 45 51.5**	**-0.1**	
AKH	**Akhalkalaki**	**145.84 301**		P	**PKPbc**	**04 45 52.1**	**+0.2**	
AKH	**Akhalkalaki**	**145.84 301**		PKP2	**PKPbc**	**04 45 52.1**	**+0.2**	
VSR	**Storozhevoye**	**145.87 320**	*e*	PKIKP	**PKPdf**	**04 45 49.4**	**-1.3**	
VSR				pmax	pmax			
	comp=Z,70nm,1.5s							
KBZ	**Khabaz**	**145.88 305**		PKPbc	**PKPdf**	**04 45 50.3**	**-0.7**	
	comp=Z,7.1nm,1.1s,baz=23,slow=2.0,SNR=11							
KIV	**Kislovodsk**	**145.99 306**	*i*	PKP2	**PKPbc**	**04 45 52.1**	**0.0**	
KIV				pmax	pmax			
	comp=Z,21nm,1.0s							
KIV	**Kislovodsk**	**145.99 306**	*e*	PKPbc	**PKPbc**	**04 45 52.2**	**0.0**	
NEY	**Neytrino**	**146.10 305**	*c i*	PKP2	**PKPab**	**04 45 53.8**	**+0.5**	
VSU	**Vasula**	**146.97 338**	*d i*	PKP2	**PKPdf**	**04 45 53.3**	**+1.0**	
NOA	**NORSAR Array B**	**148.01 353**		PKPbc	**PKPdf**	**04 45 55.6**	**+1.5**	
	comp=Z,10nm,0.7s,baz=13,slow=4.4,SNR=18							
KONO	**Kongsberg**	**149.53 354**	*c i*	PKP2	**PKPbc**	**04 45 59.6**	**-1.5**	
KONO	**Kongsberg**	**149.53 354**	*e*	PKIKP	**PKPdf**	**04 45 54.9**	**-1.6**	
KONO				ePKPbc	**PKPbc**	**04 45 59.5**	**-1.6**	
AKASG	**Malin Array Be**	**151.47 325**		PKPbc	**PKPbc**	**04 46 04.8**	**-1.1**	
	comp=Z,6.7nm,0.7s,baz=45,slow=3.6,SNR=13							
AKASG				PKPab	**PKPab**	**04 46 13.1**	**-1.3**	
	comp=Z,1.8nm,0.4s,baz=48,slow=4.7,SNR=7.8							
KIEV	**Kiev**	**151.48 325**	*e*	PKIKP	**PKPbc**	**04 46 05.0**	**-1.0**	
KIEV	**Kiev**	**151.48 325**	*e*	PKPbc	**PKPbc**	**04 46 05.0**	**-1.0**	
BRTR	**Keskin Array B**	**153.52 301**		PKPbc	**PKPbc**	**04 46 10.3**	**-0.8**	
	comp=Z,4.8nm,1.1s,baz=132,slow=1.8,SNR=14							
STHS	**Stebnicka Huta**	**156.05 331**	*e*	PKIKP	**PKPdf**	**04 46 07.4**	**+1.0**	
STHS			*e*			04 46 32.8		
STHS	**Stebnicka Huta**	**156.05 331**	*e*	PKP	**PKPdf**	**04 46 07.4**	**+1.0**	
STHS			*e*			04 46 32.8		
CRVS	**Cervenica-Dubn**	**156.35 330**	*e*	PKIKP	**PKPdf**	**04 46 06.5**	**-0.3**	
CRVS			*e*			04 46 34.8		
CRVS	**Cervenica-Dubn**	**156.35 330**	*e*	PKP	**PKPdf**	**04 46 06.5**	**-0.3**	
CRVS			*e*			04 46 34.8		
LANS	**Liptovska Anna**	**156.98 333**	*e*	PKIKP	**PKPdf**	**04 46 08.4**	**+0.7**	
LANS	**Liptovska Anna**	**156.98 333**	*e*	PKP	**PKPdf**	**04 46 08.4**	**+0.7**	
LANS			*e*			04 46 36.6		
UPC	**Upice**	**157.04 340**		AMS	AMS	06 00 10.0		
	comp=Z,200nm,14.9s							
DPC	**Dobruska-Polom**	**157.08 339**	*e*	PKPDF	**PKPdf**	**04 46 08.2**	**+0.4**	
DPC			*e*	PKPAB	**PKPab**	**04 46 38.1**	**-0.2**	
DPC			*ex*		x	04 46 49.4		
DPC	**Dobruska-Polom**	**157.08 339**	*e*	PKIKP	**PKPdf**	**04 46 08.2**	**+0.4**	
CLL	**Collm**	**157.10 345**	*e*	PKPdf	**PKPdf**	**04 46 07.0**	**-0.7**	
CLL			*i*	PKPdiff	PKPab	04 46 20.2	-18	
	comp=Z,25nm,1.8s							
CLL			*i*	PKPab	PKPab	04 46 36.5	-1.7	
	comp=Z,17nm,1.4s							
CLL			*i*	pPKPab	**pPKPab**	**04 46 41.2**	**-6.1**	
CLL			*i*			04 46 49.0		
CLL			*e*	PP	**PP**	**04 50 18.0**	**+1.6**	
CLL			*e*	SS	SS	05 10 12.0	+3.9	
CLL			*e*			05 13 06.0		
CLL			*e*	SSS	SSS	05 16 00.0		
CLL			*e*	SSSS		05 20 42.0		
CLL				LmV		06 06 00.0		
	comp=Z,100nm,19.8s							
CLL	**Collm**	**157.10 345**	*e*	PKIKP	**PKPdf**	**04 46 07.0**	**-0.7**	
CLL				pmax	pmax			
	comp=Z,17nm,1.4s							
BRG	**Berggiesshubel**	**157.28 343**	*e*	PKP	**PKPdf**	**04 46 07.7**	**-0.2**	
	comp=Z,22nm,1.8s							
BRG			*e*			04 46 38.0		
	comp=Z,22nm,1.6s							
BRG	**Berggiesshubel**	**157.28 343**	*e*	PKIKP	**PKPdf**	**04 46 07.7**	**-0.2**	
BRG				pmax	pmax			
	comp=Z,22nm,1.6s							
VYHS	**Vyhne**	**157.76 333**	*e*	PKIKP	**PKPdf**	**04 46 09.3**	**+0.7**	
VYHS	**Vyhne**	**157.76 333**	*e*	PKP	**PKPdf**	**04 46 09.3**	**+0.7**	
VYHS			*e*			04 46 40.6		
GOPC	**GO Pecny, Ondr**	**157.93 341**		AMS	AMS	06 02 30.0		
	comp=Z,200nm,16.7s							
NKC	**Novy Kostel**	**158.23 345**	*e*	PKPAB	**PKPab**	**04 46 42.4**	**-0.8**	
NKC			*ex*		x	04 46 55.3		
NKC	**Novy Kostel**	**158.23 345**	*e*	PKP2	**PKPab**	**04 46 42.4**	**-0.8**	
TREC	**Trest**	**158.27 339**		AMS	AMS	06 04 10.0		
	comp=Z,200nm,17.9s							
MEM	**Membach**	**158.78 356**		PKPab	**PKPab**	**04 46 44.9**	**-0.6**	
SNF	**Seneffe**	**158.95 359**		PKPab	**PKPab**	**04 46 45.3**	**-0.8**	
KHC	**Kasperske Hory**	**158.97 342**	*e*	PKPDF	**PKPdf**	**04 46 10.6**	**+0.5**	
KHC			*e*	PKPAB	**PKPab**	**04 46 46.0**	**-0.4**	
KHC			*ex*		x	04 46 57.8		
KHC				AMS	AMS	06 07 20.0		
	comp=Z,100nm,16.5s							
KHC	**Kasperske Hory**	**158.97 342**	*e*	PKIKP	**PKPdf**	**04 46 10.6**	**+0.5**	
KHC			*e*			04 46 46.0		
KHC				MLR	MLR			
	comp=Z,100nm,16.5s							
BCLA	**Clavier**	**159.01 357**		PKPab	**PKPab**	**04 46 45.1**	**-1.4**	
GERES	**GERESS Array B**	**159.20 341**		PKP	**PKPdf**	**04 46 10.1**	**-0.3**	
	comp=Z,0.2nm,0.5s,baz=72,slow=4.3,SNR=3.7							
GERES				PKPab	**PKPab**	**04 46 46.5**	**-1.0**	
	comp=Z,0.3nm,0.4s,baz=87,slow=2.8,SNR=4.9							

TORD	**Torodi Ar. Bea**	**163.67 173**		PKP	**PKPdf**	**04 46 16.1**	**+0.1**	
	comp=Z,3.3nm,1.0s,baz=248,slow=0.1,SNR=11							
TORD				PKPab	**PKPab**	**04 47 08.4**	**+0.7**	
	comp=Z,5.6nm,0.9s,baz=201,slow=4.2,SNR=11							
ESDC	**Sonseca Array**	**167.93 30**		PKP	**PKPdf**	**04 46 19.1**	**+0.2**	
	comp=Z,0.3nm,0.4s,baz=341,slow=3.6,SNR=6.7							
ESDC				PKPab	**PKPab**	**04 47 24.7**	**-1.4**	
	comp=Z,0.6nm,0.7s,baz=314,slow=6.9,SNR=3.6							

ISCJB ***28*** *04:27:53.0±1.1, 10.4S±0.1×161.9E±0.1, h54km, mb4.2/5, MS3.5/1, Error ellipse: s-maj=20.8km s-min=17.0km az=179.6*

IDC ***28*** *04:27:55.0±6.1, 10.38S×161.87E, h56km±46km, mb3.9/5, mb1 4.1/7, mb1mx3.7/39, mbtmp4.3/7, ML4.6/2, MS3.2/2, Ms1 3.2/2, ms1mx2.8/29, Error ellipse: s-maj=42.3km s-min=27.3km az=104.0*

ISC 28 04:27:55.4±1.2, 10.3S±0.2×161.8E±0.1, h54km, n9, σ1s83/10, mb4.2/5, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**2.01**	**295**	P		**Pn**	**04 28 27.4**	**+0.5**
	641nm,0.3s,baz=182,slow=9.2,SNR=60							
HNR				S		**Sn**	**04 28 53.9**	**+3.1**
	738nm,0.3s,baz=5.7,slow=23,SNR=12							
HNR				LR		LR	04 29 29.3	
	comp=Z,347nm,20.2s,baz=142,slow=44							
HNR	**Honiara**	**2.01**	**295**	*i* P		**Pn**	**04 28 26.5**	**-0.3**
HNR				*i* S		**Sn**	**04 28 47.5**	**-3.3**
CTA	**Charters Tower**	**17.87**	**235**	P		**P**	**04 32 01.2**	**+0.9**
	0.6nm,0.3s,baz=61,slow=10,SNR=6.0							
WRA	**Warramunga Arr**	**28.15**	**247**	P		**P**	**04 33 42.2**	**-0.6**
	2.7nm,0.8s,baz=76,slow=9.2,SNR=22							
USRK	**Ussuriysk Ar.**	**60.59**	**336**	P		**P**	**04 38 01.1**	**+0.7**
	3.5nm,0.8s,baz=165,slow=6.8,SNR=5.2							
SONM	**Songino Array**	**75.79**	**325**	P		**P**	**04 39 36.1**	**+0.3**
	2.3nm,0.7s,baz=143,slow=5.6,SNR=11							
ILAR	**Eielson Array**	**84.07**	**20**	P		**P**	**04 40 19.8**	**-0.1**
	0.4nm,0.5s,baz=229,slow=5.5,SNR=2.6							
MKAR	**Makanchi Array**	**90.32**	**318**	P		**P**	**04 40 49.7**	**-1.0**
	0.6nm,0.4s,baz=94,slow=6.6,SNR=6.5							
YKA	**Yellowknife Ar**	**96.09**	**28**	LR		LR	05 23 22.7	
	comp=Z,14nm,18.3s,baz=180,slow=35							

SCB ***28*** *05:07:11.6±0.7, 16.92S×69.58W, h170km, Ml3.7/1, Error ellipse: s-maj=20.5km s-min=9.3km az=99.0*

GUC ***28*** *05:07:13.7±0.5, 16.98S×69.57W, h182km±5km, ML4.6*

ISCJB ***28*** *05:07:14.4±0.3, 16.90S±0.04×69.62W±0.05, h184km±3km, mb4.3/21, Error ellipse: s-maj=8.2km s-min=6.0km az=20.6*

IDC ***28*** *05:07:14.0±1.3, 16.77S×69.42W, h161km±11km, mb4.0/12, mb1 4.1/18, mb1mx3.9/40, mbtmp4.5/18, MS4.4/1, Ms1 4.4/1, ms1mx3.0/23, Error ellipse: s-maj=17.3km s-min=11.5km az=41.0*

NEIC ***28*** *05:07:15.0±0.6, 16.81S×69.46W, h172km±5km, mb4.3/7, Error ellipse: s-maj=9.4km s-min=6.5km az=49.0*

ISC 28 05:07:15.1±0.6, 16.91S±0.05×69.53W±0.06, h178km±5km, n53, σ1s42/63, mb4.3/21, 9C-5D, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BBOD	**La Paz, Gloria**	**0.94**	**73**	⇓*i* P		**Pn**	**05 07 42.9**	**+0.1**
BBOD				*e* S		**Sn**	**05 08 04.7**	**+0.7**
	537nm,0.6s							
I08BO	**LAS PENAS INFR**	**1.25**	**56**	P		**Pn**	**05 07 46.5**	**+1.3**
	baz=256,slow=16,SNR=0.5							
BBOJ	**La Paz, Jacaqu**	**1.28**	**93**	⇓*i* P		**Pn**	**05 07 46.8**	**+1.3**
PB13	**IPOC Station P**	**1.42**	**179**	*i* P		**Pn**	**05 07 48.3**	**+1.5**
PB13				*i* S		**Sn**	**05 08 13.5**	**+2.2**
LPAZ	**La Paz**	**1.48**	**65**	P		**Pn**	**05 07 48.2**	**+0.8**
	584nm,0.3s,baz=279,slow=6.9							
LPAZ				LR		LR	05 08 03.5	
	comp=Z,198nm,19.0s,baz=271,slow=37							
LPAZ	**La Paz**	**1.48**	**65**	⇓*i* P		**Pn**	**05 07 48.3**	**+0.8**
LPAZ	**La Paz**	**1.48**	**65**	⇑*i* Pn		**Pn**	**05 07 47.8**	**+0.4**
BBOE	**La Paz, Chanca**	**1.49**	**86**	⇓*i* Pn		**Pn**	**05 07 48.6**	**+1.2**
BBOE				*e* Sn		**Sn**	**05 08 14.1**	**+1.9**
BBOB	**La Paz, Bander**	**1.55**	**60**	⇑*i* Pn		**Pn**	**05 07 48.5**	**+0.6**
ARCH	**Arica**	**1.73**	**205**	*e* P		**Pn**	**05 07 48.3**	**-0.8**
ARCH				*i* S		**Sn**	**05 08 14.1**	**-1.5**
ARCH				IAML			05 08 14.4	
	comp=E,5μm,0.6s							
PB12	**IPOC Station P**	**1.85**	**204**	⇑*i* P		**Pn**	**05 07 49.7**	**-0.8**
PB12				*i* S		**Sn**	**05 08 15.9**	**-2.3**
MNMC	**Minye Minye**	**2.21**	**182**	⇑*i* P		**Pn**	**05 07 55.1**	**+0.5**
MNMC				*i* S		**Sn**	**05 08 25.5**	**+0.1**
MNMC				IAML			05 08 26.8	
	comp=E,2μm,0.4s							
PSGC	**Pisagua**	**2.73**	**192**	⇑*i* P		**Pn**	**05 07 59.8**	**-0.7**
PSGC				IAML			05 08 38.4	
	comp=E,767nm,0.4s							
PB08	**IPOC Station P**	**3.23**	**174**	⇑*i* P		**Pn**	**05 08 07.6**	**+0.7**
PB08				*i* S		**Sn**	**05 08 47.3**	**0.0**
PB08				IAML			05 08 48.5	
	comp=E,1μm,0.5s							
HMBC	**Humberstone**	**3.36**	**186**	⇓*i* P		**Pn**	**05 08 07.6**	**-0.6**
PB01	**IPOC Station P**	**4.11**	**179**	⇑*i* P		**Pn**	**05 08 17.1**	**-0.5**
MOCB	**Mochara**	**5.67**	**140**	⇑*i* Pn		**Pn**	**05 08 40.4**	**+2.2**
LVC	**Limon Verde**	**5.70**	**174**	P		**Pn**	**05 08 38.4**	**0.0**
	comp=E,428nm,0.3s,baz=33,slow=9.3,SNR=107							
LVC				S		**Sn**	**05 09 40.1**	**-3.9**
	comp=E,1μm,0.3s,baz=126,slow=19,SNR=27							
SIV	**San Ignacio**	**8.17**	**85**	P		**Pn**	**05 09 08.4**	**-2.3**
	comp=E,8.2nm,0.3s,baz=281,slow=11,SNR=54							
SIV				S		**Sn**	**05 10 38.3**	**-4.0**
	comp=E,1.8nm,0.3s,baz=358,slow=22,SNR=9.8							
SIV	**San Ignacio**	**8.17**	**85**	⇑*i* P		**Pn**	**05 09 08.9**	**-1.8**
NNA	**Nana**	**8.61**	**304**	P		**Pn**	**05 09 15.0**	**-1.6**
	comp=E,70nm,0.3s,baz=134,slow=11,SNR=120							
NNA				S		Sn	05 10 43.7	-9.2
	comp=E,6.0nm,0.3s,baz=162,slow=7.3,SNR=5.1							
SAML	**Samuel**	**10.05**	**39**	*e* Pn		**Pn**	**05 09 32.5**	**-2.9**
	comp=E,14nm,0.6s							
ATAH	**Atahualpa**	**13.02**	**317**	P		**Pn**	**05 10 13.3**	**-0.7**
	comp=E,0.3nm,0.3s,baz=128,slow=13,SNR=4.4							
CPUP	**Villa Florida**	**14.71**	**132**	P		**Pn**	**05 10 33.5**	**-1.1**
	comp=E,0.6nm,0.3s,baz=298,slow=10,SNR=14							
PTGA	**Pitinga**	**18.64**	**31**	P		**P**	**05 11 18.8**	**-0.8**
	comp=E,0.8nm,0.3s,baz=202,slow=13,SNR=12							
SPB	**Sao Paulo**	**21.76**	**111**	P		**P**	**05 11 53.3**	**+0.5**
	comp=E,28nm,1.0s							
TRQA	**Tornquist**	**22.09**	**164**	*e* P		**P**	**05 11 57.0**	**+1.0**
	comp=E,11nm,0.7s							
PLCA	**Paso Flores**	**23.75**	**182**	P		**P**	**05 12 13.5**	**+2.2**
	comp=E,3.6nm,0.7s,baz=25,slow=12,SNR=9.4							
RCBR	**Riachuelo**	**34.70**	**75**	P		**P**	**05 13 47.7**	**-0.6**
	comp=E,6.1nm,0.6s,baz=233,slow=15,SNR=6.3							
CMIG	**Matias Romero**	**42.02**	**322**	P		**P**	**05 14 49.3**	**0.0**
	comp=E,2.6nm,0.7s,baz=96,slow=4.7,SNR=4.1							
TXAR	**Lajitas Array**	**56.57**	**324**	P		**P**	**05 16 39.5**	**+0.1**
	comp=E,0.9nm,0.7s,baz=152,slow=9.2,SNR=13							
MSTX	**Muleshoe**	**59.70**	**328**	*e* P		**P**	**05 17 01.0**	**-0.1**
	comp=E,4.1nm,0.8s							
SMCO	**Snowmass**	**65.87**	**329**	*e* P		**P**	**05 17 43.1**	**+0.9**
	comp=E,1.4nm,0.6s							
SNAA	**Sanae**	**66.79**	**162**	*e* P		**P**	**05 17 48.6**	**+1.4**
	comp=E,256nm,0.8s							
LIC	**Lamto**	**67.76**	**76**	*e* P		**P**	**05 17 54.3**	**+0.1**
	comp=E,69nm,1.8s							
TIC	**Toumodi**	**67.92**	**75**	*e* P		**P**	**05 17 56.4**	**+1.2**
KIC	**Kosan Boka**	**68.07**	**76**	*e* P		**P**	**05 17 55.4**	**-0.8**
	comp=E,5.9nm,0.3s							
DBIC	**Dimbokro**	**68.08**	**75**	P		**P**	**05 17 55.6**	**-0.6**
	comp=E,6.5nm,0.7s,baz=234,slow=6.7,SNR=12							
PDAR	**Pinedale Array**	**69.87**	**330**	P		**P**	**05 18 07.2**	**+0.3**
	comp=E,0.8nm,0.4s,baz=124,slow=8.7,SNR=16							
ULM	**Lac du Bonnet**	**70.79**	**342**	P		**P**	**05 18 11.2**	**-0.8**
	comp=E,2.0nm,0.5s,baz=150,slow=7.3,SNR=4.2							
IMW	**Indian Meadow**	**71.38**	**330**	*e* P		**P**	**05 18 16.9**	**+0.8**
	comp=E,1.7nm,0.6s							
MFID	**Camas Ranch**	**73.50**	**327**	*e* P		**P**	**05 18 30.0**	**+1.5**
	comp=E,2.2nm,0.8s							
TORD	**Torodi Ar. Bea**	**76.42**	**72**	P		**P**	**05 18 44.9**	**-0.7**
	comp=E,7.0nm,0.6s,baz=263,slow=5.1,SNR=138							
TSUM	**Tsumeb**	**81.95**	**108**	P		**P**	**05 19 16.4**	**+0.6**
	comp=E,3.4nm,0.6s,baz=250,slow=5.4,SNR=7.9							
BOSA	**Boshof**	**86.13**	**119**	P		**P**	**05 19 37.3**	**+0.6**
	comp=E,3.4nm,0.8s,baz=234,slow=2.6,SNR=6.7							
YKA	**Yellowknife Ar**	**86.69**	**341**	P		**P**	**05 19 38.5**	**+0.2**
	comp=E,0.9nm,0.5s,baz=133,slow=4.8,SNR=8.4							
MATP	**Matopo**	**91.44**	**112**	P		**P**	**05 20 03.3**	**+1.4**
	comp=E,3.8nm,0.9s,baz=221,slow=3.4,SNR=5.7							
RPZ	**Rata Peaks**	**98.15**	**220**	LR		LR	05 54 36.8	
	comp=E,174nm,21.6s,baz=62,slow=29							
WRA	**Warramunga Arr**	**136.51**	**214**	PKP		**PKPdf**	**05 26 17.7**	**+0.9**
	comp=E,0.3nm,0.4s,baz=139,slow=1.8,SNR=5.0							
WRA				SKPbc		**SKPbc**	**05 29 33.7**	**+0.9**
	comp=E,1.4nm,1.0s,baz=152,slow=2.8,SNR=4.6							
ZALV	**Zalesovo Beam**	**138.01**	**22**	PKP		**PKPdf**	**05 26 19.4**	**+0.9**
	comp=E,0.7nm,0.4s,baz=339,slow=3.6,SNR=2.4							
ZALV				SKPbc		**SKiKP**	**05 29 37.3**	**-2.6**
	comp=E,1.8nm,0.8s,baz=302,slow=2.8,SNR=5.5							
MKAR	**Makanchi Array**	**142.17**	**32**	SKPbc		**SKPbc**	**05 29 46.6**	**-0.7**
	comp=E,0.7nm,0.7s,baz=347,slow=3.7,SNR=5.3							
MJAR	**Matsushiro Arr**	**148.62**	**314**	PKPbc		**PKPbc**	**05 26 42.2**	**+0.6**
	comp=E,0.7nm,0.3s,baz=93,slow=2.8,SNR=4.3							
SONM	**Songino Array**	**148.98**	**5**	PKPbc		**PKPbc**	**05 26 43.9**	**+1.6**
	comp=E,1.0nm,0.5s,baz=347,slow=5.2,SNR=6.0							

IDC 28 05:10:57.4±2.0, 6.88S×155.56E, h0km, mb3.6/5, mb1 3.9/5, mb1mx3.6/43, mbtmp3.6/5, Error ellipse: s-maj=68.2km s-min=28.7km az=125.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.34**	**236**	P		P	05 16 17.3	+0.1
	0.8nm,0.6s,baz=58,slow=9.5,SNR=4.9							
ASAR	**Alice Springs**	**26.67**	**229**	P		P	05 16 38.2	0.0
	0.5nm,0.8s,baz=64,slow=9.0,SNR=3.3							
H11S3	**WAKE ISLAND Hy**	**27.50**	**23**	T		T	05 44 59.7	
	baz=204,slow=76,SNR=23							
H11S2	**WAKE ISLAND Hy**	**27.50**	**23**	T		T	05 44 59.6	
	baz=204,slow=76,SNR=28							
H11S1	**WAKE ISLAND Hy**	**27.52**	**23**	T		T	05 45 01.1	
	baz=204,slow=76,SNR=22							
CMAR	**Chiang Mai Arr**	**61.24**	**295**	P		P	05 21 15.1	+0.3
	3.1nm,0.9s,baz=123,slow=5.3,SNR=9.2							
ILAR	**Eielson Array**	**83.06**	**21**	P		P	05 23 24.9	+0.3
	0.2nm,0.3s,baz=248,slow=4.8,SNR=5.7							
MKAR	**Makanchi Array**	**83.69**	**319**	P		P	05 23 27.7	-0.5
	0.2nm,0.3s,baz=114,slow=3.5,SNR=3.5							
TORD	**Torodi Ar. Bea**	**153.54**	**286**	PKPbc		PKPbc	05 30 58.8	-0.2
	0.4nm,0.7s,baz=69,slow=2.8,SNR=3.2							

ISCJB ***28*** *05:13:04.2±0.7, 45.69N±0.04×26.52E±0.05, h146km±5km, Error ellipse: s-maj=7.1km s-min=4.8km az=147.0*

BUC ***28*** *05:13:04.8±0.9, 45.70N×26.50E, h149km±8km, MD3.5/6, Error ellipse: s-maj=5.6km s-min=4.8km az=320.0*

CSEM ***28*** *05:13:04.5±0.3, 45.68N×26.50E, h147km±2km, MD3.5, Error ellipse: s-maj=5.7km s-min=4.4km az=151.0*

**ISC 28 05:13:04.1±1.5, 45.69N±0.04×26.52E±0.03, h152

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H11S3	**WAKE ISLAND Hy**	**18.62**	**86**	T	T	05 39 59.3	
	baz=272,slow=74,SNR=14						
H11S1	**WAKE ISLAND Hy**	**18.63**	**86**	T	T	05 39 60.0	
	baz=272,slow=74,SNR=9.5						
H11S2	**WAKE ISLAND Hy**	**18.64**	**86**	T	T	05 40 00.3	
	baz=272,slow=74,SNR=12						
H11N1	**WAKE ISLAND Hy**	**18.81**	**82**	T	T	05 40 14.1	
	baz=267,slow=74,SNR=7.7						
H11N2	**WAKE ISLAND Hy**	**18.82**	**82**	T	T	05 40 13.7	
	baz=267,slow=74,SNR=5.7						
H11N3	**WAKE ISLAND Hy**	**18.83**	**82**	T	T	05 40 16.1	
	baz=267,slow=74,SNR=5.9						
KLR	**Kul'dur**	**33.48**	**342**	P	P	05 22 53.9	-0.4
	2.2nm,0.7s,baz=133,slow=9.9,SNR=8.4						
WRA	**Warramunga Arr**	**39.79**	**199**	P	P	05 23 48.4	0.0
	0.6nm,0.9s,baz=19,slow=8.6,SNR=4.6						
SONM	**Songino Array**	**44.46**	**321**	P	P	05 24 27.5	+1.0
	0.4nm,0.4s,baz=119,slow=6.1,SNR=2.4						
ILAR	**Eielson Array**	**63.63**	**26**	P	P	05 26 46.5	+0.5
	0.4nm,0.8s,baz=265,slow=5.1,SNR=6.6						
BVAR	**Borovoye Array**	**67.80**	**321**	P	P	05 27 13.3	+0.1
	0.8nm,0.4s,baz=101,slow=8.7,SNR=5.6						
FINES	**FINESS Array B**	**88.01**	**336**	P	P	05 29 03.5	-1.9
	0.3nm,0.4s,baz=72,slow=6.2,SNR=3.8						

*ISCJB **28** 05:18:26.9±0.8,36°.99N±0°.02×20°.63E±0°.03,h4km±6km, mb3.6/5, Error ellipse: s-maj=4.9km s-min=3.4km az=135.6*

*ATH **28** 05:18:28.0,37°.02N×20°.69E,h16km,ML3.3/26, Error ellipse: s-maj=1.6km s-min=0.8km az=45.0*

*CSEM **28** 05:18:28.4±0.2,37°.04N×20°.71E,h2km,ML3.4, Error ellipse: s-maj=5.4km s-min=3.2km az=36.0*

*IDC **28** 05:18:28.0±1.2,37°.21N×20°.77E,h0km,mb3.6/5, mb1 3.6/6,mb1mx3.4/49,mbtmp3.6/6,ML2.3/1, Error ellipse: s-maj=26.8km s-min=23.9km az=105.0*

*THE **28** 05:18:30.0,37°.11N×20°.77E,h0km±3km,ML3.4/8, Error ellipse: s-maj=3.5km s-min=1.0km az=236.0*

ISC 28 05:18:28.7±1.3**,37°.08N**±0°.03×**20°.74E**±0°.03**,h8km**±8km**, n182,σ1°08/231,mb3.6/5,3C-3D,Ionian Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKS	**Zakynthos**	**0.62**	**4**	P	**Pb**	**05 18 41.6**	**-0.2**
ZKS				S	**Sg**	**05 18 49.0**	**+0.1**
ZKS	**Zakynthos**	**0.62**	**4**	P	**Pb**	**05 18 41.6**	**-0.2**
ZKS				S	**Sg**	**05 18 49.0**	**+0.1**
ZKS	**Zakynthos**	**0.62**	**4**	P	**Pb**	**05 18 42.2**	**+0.3**
ZKS				AML	AML	05 18 52.2	
	comp=N,23810μm,0.3s						
ZKS				S	**Sn**	**05 18 52.6**	**-1.4**
ZKS				AML	AML	05 18 57.5	
	comp=E,12964μm,0.3s						
PYL	**PYLOS**	**0.82**	**102**	P	**Pb**	**05 18 44.7**	**-0.6**
PYL				S	**Sb**	**05 18 56.6**	**+0.1**
PYL	**PYLOS**	**0.82**	**102**	P	**Pb**	**05 18 44.7**	**-0.6**
PYL				S	**Sb**	**05 18 55.7**	**-0.8**
PYL	**PYLOS**	**0.82**	**102**	P	**Pb**	**05 18 45.3**	**0.0**
PYL				S	**Sb**	**05 18 55.7**	**-0.8**
PYL				AML	AML	05 19 01.4	
	comp=E,4878μm,0.5s						
PYL				AML	AML	05 19 02.4	
	comp=N,2935μm,0.6s						
AMT	**Artemida-Makis**	**0.90**	**59**	P	**Pb**	**05 18 46.4**	**-0.2**
AMT				S	**Sn**	**05 19 00.1**	**-0.8**
AMT	**Artemida-Makis**	**0.90**	**59**	P	**Pb**	**05 18 46.8**	**+0.2**
AMT				S	**Sn**	**05 19 00.1**	**-0.8**
AMT	**Artemida-Makis**	**0.90**	**59**	P	**Pb**	**05 18 46.8**	**+0.2**
AMT				S	**Sn**	**05 19 00.9**	**0.0**
AMT				AML	AML	05 19 05.1	
	comp=E,11058μm,0.5s						
AMT				AML	AML	05 19 05.6	
	comp=N,18687μm,0.7s						
VTN	**Vitineika**	**0.91**	**23**	P	**Pn**	**05 18 47.1**	**-0.7**
VTN				S	**Sn**	**05 19 01.4**	**+0.3**
VTN	**Vitineika**	**0.91**	**23**	P	**Pn**	**05 18 47.1**	**-0.7**
VTN				S	**Sn**	**05 19 01.4**	**+0.3**
ITM	**Ithomi**	**0.96**	**83**	P	**Pg**	**05 18 46.8**	**-0.3**
ITM				S	**Sb**	**05 19 00.6**	**+0.3**
ITM	**Ithomi**	**0.96**	**83**	P	**Pg**	**05 18 46.8**	**-0.3**
ITM				S	**Sb**	**05 19 00.6**	**+0.3**
ITM	**Ithomi**	**0.96**	**83**	P	**Pg**	**05 18 46.4**	**-0.7**
ITM				S	**Sn**	**05 19 02.5**	**+0.3**
ITM				AML	AML	05 19 04.8	
	comp=E,3955μm,0.3s						
ITM				AML	AML	05 19 05.1	
	comp=N,2795μm,0.3s						
KFL	**Anninata**	**1.03**	**2**	P	**Pg**	**05 18 48.2**	**-0.3**
KFL	**Anninata**	**1.03**	**2**	P	**Pg**	**05 18 48.2**	**-0.3**
KFL				S	**Sn**	**05 19 03.9**	**-0.2**
KFL	**Anninata**	**1.03**	**2**	P	**Pg**	**05 18 48.0**	**-0.5**
KFL				S	**Sn**	**05 19 03.9**	**-0.2**
VLS	**Valsamata**	**1.10**	**354**	P	**Pb**	**05 18 49.6**	**-0.5**
VLS				S	**Sn**	**05 19 06.2**	**+0.3**
VLS	**Valsamata**	**1.10**	**354**	P	**Pb**	**05 18 49.6**	**-0.5**
VLS				S	**Sn**	**05 19 06.2**	**+0.3**
RLS	**Riolos of Patr**	**1.14**	**30**	P	**Pb**	**05 18 50.1**	**-0.5**
RLS	**Riolos of Patr**	**1.14**	**30**	P	**Pb**	**05 18 50.1**	**-0.5**
RLS				S	**Sn**	**05 19 07.5**	**+0.8**
RLS	**Riolos of Patr**	**1.14**	**30**	S	**Sn**	**05 19 07.5**	**+0.8**
RLS				AML	AML	05 19 10.8	
	comp=E,1554μm,0.7s						
RLS				AML	AML	05 19 15.1	
	comp=N,1598μm,0.6s						
DRO	**Drossia**	**1.17**	**41**	P	**Pg**	**05 18 50.5**	**-0.6**
DRO				S	**Sn**	**05 19 08.0**	**+0.5**
DRO	**Drossia**	**1.17**	**41**	P	**Pg**	**05 18 50.5**	**-0.6**
DRO				S	**Sn**	**05 19 08.0**	**+0.5**
DRO	**Drossia**	**1.17**	**41**	P	**Pg**	**05 18 50.2**	**-1.0**
DRO				S	**Sn**	**05 19 07.6**	**+0.1**
DRO				AML	AML	05 19 14.8	
	comp=E,4889μm,0.4s						
DRO				AML	AML	05 19 17.7	
	comp=N,4824μm,0.4s						
AXS	**Araxos**	**1.23**	**24**	P	**Pg**	**05 18 51.6**	**-0.7**
AXS	**Araxos**	**1.23**	**24**	P	**Pg**	**05 18 51.6**	**-0.7**
AXS	**Araxos**	**1.23**	**24**	P	**Pg**	**05 18 51.0**	**-1.3**
TRIP	**Tripoli**	**1.30**	**69**	P	**Pg**	**05 18 53.1**	**-0.6**
TRIP				S	**Sn**	**05 19 12.9**	**+2.0**
TRIP	**Tripoli**	**1.30**	**69**	P	**Pg**	**05 18 53.1**	**-0.6**
TRIP				S	**Sn**	**05 19 12.8**	**+2.0**
TRIP				AML	AML	05 19 19.8	
	comp=N,1522μm,0.7s						
TRIP				AML	AML	05 19 20.3	
	comp=E,1607μm,0.7s						
VLX	**Vlachokerasia**	**1.34**	**77**	P	**Pb**	**05 18 54.2**	**0.0**
VLX				S	**Sn**	**05 19 14.8**	**+2.9**
VLX	**Vlachokerasia**	**1.34**	**77**	P	**Pb**	**05 18 54.2**	**0.0**
VLX				S	**Sn**	**05 19 11.8**	**-0.1**
VLX	**Vlachokerasia**	**1.34**	**77**	P	**Pb**	**05 18 54.0**	**-0.2**
VLX				S	**Sn**	**05 19 11.8**	**-0.1**
VLX				AML	AML	05 19 18.9	
	comp=N,3564μm,0.6s						
VLX				AML	AML	05 19 21.3	
	comp=E,5042μm,0.8s						
UPR	**University Cam**	**1.47**	**34**	P	**Pg**	**05 18 59.3**	**+2.5**
UPR	**University Cam**	**1.47**	**34**	P	**Pg**	**05 18 59.3**	**+2.5**
KLV	**Kalavryta, Ach**	**1.48**	**49**	P	**Pn**	**05 18 55.8**	**+0.1**
KLV	**Kalavryta, Ach**	**1.48**	**49**	P	**Pb**	**05 18 56.3**	**-0.2**
KLV				S	**Sg**	**05 19 20.6**	**+4.3**
KLV	**Kalavryta, Ach**	**1.48**	**49**	P	**Pb**	**05 18 56.3**	**-0.2**
KLV				S	**Sg**	**05 19 20.6**	**+4.3**
KLV				AML	AML	05 19 27.7	
	comp=E,790μm,0.6s						
KLV				AML	AML	05 19 41.5	
	comp=N,807μm,0.8s						
LAKA	**Lakka**	**1.52**	**40**	P	**Pb**	**05 18 57.0**	**-0.2**
LAKA	**Lakka**	**1.52**	**40**	P	**Pb**	**05 18 57.0**	**-0.2**
PDO	**Prodromos**	**1.56**	**13**	P	**Pb**	**05 18 57.4**	**-0.4**
PDO	**Prodromos**	**1.56**	**13**	P	**Pb**	**05 18 57.4**	**-0.4**
PDO				S	**Sg**	**05 19 19.7**	**+0.8**
PDO	**Prodromos**	**1.56**	**13**	P	**Pn**	**05 18 56.9**	**+0.1**
PDO				S	**Sg**	**05 19 19.7**	**+0.8**
PDO				AML	AML	05 19 25.7	
	comp=N,2984μm,0.4s						
PDO				AML	AML	05 19 26.1	
	comp=E,2388μm,0.5s						
PVO	**Paravola**	**1.66**	**22**	P	**Pb**	**05 18 59.1**	**-0.4**
PVO	**Paravola**	**1.66**	**22**	P	**Pb**	**05 18 59.3**	**-0.2**
PVO	**Paravola**	**1.66**	**22**	P	**Pb**	**05 18 59.3**	**-0.2**
TRIZ	**Trizonia**	**1.67**	**39**	P	**Pb**	**05 18 59.3**	**-0.3**
TRIZ				S	**Sg**	**05 19 22.6**	**+0.3**
SERG	**Sergoula**	**1.70**	**38**	P	**Pb**	**05 18 59.5**	**-0.7**
LKD2	**Lefkada island**	**1.71**	**358**	P	**Pb**	**05 19 00.2**	**-0.2**
LKD2	**Lefkada island**	**1.71**	**358**	P	**Pb**	**05 19 00.2**	**-0.2**
LKD2				S	**Sg**	**05 19 22.9**	**-0.8**
LKD2	**Lefkada island**	**1.71**	**358**	P	**Pb**	**05 19 00.3**	**-0.2**
LKD2				S	**Sg**	**05 19 22.9**	**-0.8**
LKD2				AML	AML	05 19 32.1	
	comp=E,963μm,0.8s						
LKD2				AML	AML	05 19 37.6	
	comp=N,1194μm,0.5s						
KALE	**Kalithea**	**1.72**	**40**	P	**Pg**	**05 19 00.7**	**-1.0**
KALE	**Kalithea**	**1.72**	**40**	P	**Pg**	**05 19 00.7**	**-1.0**
KALE				AML	AML	05 19 34.6	
	comp=N,1118μm,0.4s						
KALE				AML	AML	05 19 37.2	
	comp=E,1142μm,0.4s						
ANX	**Ano Chora**	**1.78**	**31**	P	**Pb**	**05 19 01.3**	**-0.4**
ANX	**Ano Chora**	**1.78**	**31**	P	**Pb**	**05 19 01.3**	**-0.4**
ANX	**Ano Chora**	**1.78**	**31**	AML	AML	05 19 33.3	
	comp=N,1590μm,0.5s						
ANX				AML	AML	05 19 42.7	
	comp=E,1533μm,0.6s						
VLI	**Veliai**	**1.80**	**101**	P	**Pg**	**05 19 02.5**	**-0.7**
VLI				S	**Sb**	**05 19 25.2**	**+0.6**
VLI	**Veliai**	**1.80**	**101**	P	**Pg**	**05 19 02.5**	**-0.7**
VLI				S	**Sb**	**05 19 24.3**	**-0.3**
VLI	**Veliai**	**1.80**	**101**	P	**Pg**	**05 19 04.0**	**+0.8**
VLI				S	**Sb**	**05 19 24.3**	**-0.3**
VLI				AML	AML	05 19 27.9	
	comp=N,682μm,0.5s						
VLI				AML	AML	05 19 41.5	
	comp=E,732μm,0.6s						
THAL	**Thalero**	**1.81**	**57**	P	**Pb**	**05 19 01.7**	**-0.3**
THAL	**Thalero**	**1.81**	**57**	P	**Pb**	**05 19 01.7**	**-0.3**
THAL	**Thalero**	**1.81**	**57**	P	**Pg**	**05 19 03.2**	**-0.1**
THAL				AML	AML	05 19 46.7	
	comp=N,2853μm,0.5s						
THAL				AML	AML	05 19 48.1	
	comp=E,3598μm,0.8s						
DSF	**Desfina**	**1.95**	**46**	P	**Pb**	**05 19 04.2**	**-0.2**
DSF	**Desfina**	**1.95**	**46**	P	**Pb**	**05 19 04.2**	**-0.2**
DSF	**Desfina**	**1.95**	**46**	P	**Pg**	**05 19 05.1**	**-0.9**
DSF				AML	AML	05 19 38.9	
	comp=E,432μm,0.3s						
DSF				AML	AML	05 19 41.2	
	comp=N,400μm,0.5s						
LOUT	**Loutraki**	**2.00**	**62**	P	**Pb**	**05 19 04.3**	**-1.0**
LOUT	**Loutraki**	**2.00**	**62**	P	**Pb**	**05 19 04.3**	**-1.0**
LTK	**Loutraki**	**2.01**	**61**	P	**Pb**	**05 19 04.3**	**-1.2**
LTK	**Loutraki**	**2.01**	**61**	P	**Pb**	**05 19 04.3**	**-1.2**
LTK	**Loutraki**	**2.01**	**61**	P	**Pb**	**05 19 04.7**	**-0.8**
EVR	**Evrytania**	**2.02**	**24**	P	**Pb**	**05 19 05.2**	**-0.6**
EVR	**Evrytania**	**2.02**	**24**	P	**Pb**	**05 19 05.2**	**-0.6**
EVR				AML	AML	05 19 41.7	
	comp=N,1130μm,1.1s						
KYTH	**Kithira**	**2.03**	**113**	P	**Pg**	**05 19 06.5**	**-1.0**
KYTH				S	**Sb**	**05 19 31.4**	**+0.3**
KYTH	**Kithira**	**2.03**	**113**	P	**Pg**	**05 19 06.5**	**-1.0**
DID	**Didima**	**2.04**	**77**	P	**Pb**	**05 19 05.3**	**-0.7**
DID				S	**Sb**	**05 19 30.6**	**-0.9**
DID	**Didima**	**2.04**	**77**	P	**Pb**	**05 19 04.8**	**-1.2**
DID				S	**Sb**	**05 19 30.6**	**-0.9**
DID	**Didima**	**2.04**	**77**	P	**Pb**	**05 19 04.8**	**-1.2**
DID				AML	AML	05 19 45.9	
	comp=N,718μm,0.5s						
DID				AML	AML	05 19 48.5	
	comp=E,853μm,0.7s						
DSL	**Palaion Diasel**	**2.07**	**8**	P	**Pb**	**05 19 06.0**	**-0.6**
DSL	**Palaion Diasel**	**2.07**	**8**	P	**Pb**	**05 19 06.0**	**-0.6**
DSL	**Palaion Diasel**	**2.07**	**8**	P	**Pb**	**05 19 07.0**	**+0.4**
PROD	**Prodromos**	**2.08**	**55**	P	**Pb**	**05 19 05.7**	**-1.1**
PROD	**Prodromos**	**2.08**	**55**	P	**Pb**	**05 19 05.7**	**-1.1**
VIL2	**Platees**	**2.31**	**60**	P	**Pn**	**05 19 07.9**	**+0.9**
VIL2				AML	AML	05 19 51.1	
	comp=E,596μm,0.7s						
VIL2				AML	AML	05 19 56.3	
	comp=N,919μm,0.7s						
AGG	**Agios Georgios**	**2.31**	**32**	P	**Pb**	**05 19 11.1**	**+0.4**
AGG	**Agios Georgios**	**2.31**	**32**	P	**Pb**	**05 19 11.1**	**+0.4**
AGG				AML	AML	05 19 48.9	
	comp=E,780μm,0.7s						
AGG				AML	AML	05 19 51.6	
	comp=N,719μm,0.5s						
VILL	**Villia**	**2.31**	**61**	P	**Pn**	**05 19 07.9**	**+0.7**
LKR	**Lokris**	**2.38**	**48**	P	**Pb**	**05 19 09.7**	**-2.1**
LKR	**Lokris**	**2.38**	**48**	P	**Pb**	**05 19 09.7**	**-2.1**
LKR				S	**Sb**	**05 19 41.6**	**+0.2**
LKR	**Lokris**	**2.38**	**48**	P	**Pb**	**05 19 09.9**	**-1.9**
LKR				S	**Sb**	**05 19 41.6**	**+0.2**
ANKY	**Antikythira Is**	**2.39**	**120**	P	**Pb**	**05 19 10.6**	**-1.4**
ANKY	**Antikythira Is**	**2.39**	**120**	P	**Pb**	**05 19 10.6**	**-1.4**
ATAL	**Atalanti**	**2.42**	**48**	P	**Pn**	**05 19 10.3**	**+1.7**
ATAL	**Atalanti**	**2.42**	**48**	P	**Pn**	**05 19 10.3**	**+1.7**
ATAL	**Atalanti**	**2.42**	**48**	P	**Pb**	**05 19 10.4**	**-2.1**
ATAL				AML	AML	05 19 57.0	
	comp=N,360μm,0.8s						
ATAL				AML	AML	05 19 58.5	
	comp=E,246μm,1.0s						
IGT	**Igoumenitsa**	**2.47**	**353**	P	**Pn**	**05 19 10.9**	**+1.6**
IGT	**Igoumenitsa**	**2.47**	**353**	P	**Pn**	**05 19 10.9**	**+1.6**
VLY	**Voula,Athens**	**2.55**	**71**	P	**Pn**	**05 19 09.9**	**-0.5**
VLY	**Voula,Athens**	**2.55**	**71**	P	**Pn**	**05 19 09.9**	**-0.5**
VLY				AML	AML	05 20 02.5	
	comp=N,453μm,0.8s						
VLY				AML	AML	05 20 06.5	
	comp=E,359μm,0.8s						
SGD	**Sagiada**	**2.56**	**351**	P	**Pn**	**05 19 12.4**	**+1.9**
SGD	**Sagiada**	**2.56**	**351**	P	**Pn**	**05 19 12.4**	**+1.9**
ATHU	**Athens Univers**	**2.58**	**69**	P	**Pn**	**05 19 11.8**	**+1.0**
ATHU	**Athens Univers**	**2.58**	**69**	P	**Pn**	**05 19 11.8**	**+1.0**
ATHU				AML	AML	05 20 00.5	
	comp=N,167μm,0.7s						
ATHU				AML	AML	05 20 05.8	
	comp=E,98μm,0.9s						
PTL	**Penteli**	**2.67**	**68**	P	**Pn**	**05 19 12.4**	**+0.4**
PTL	**Penteli**	**2.67**	**68**	P	**Pn**	**05 19 12.4**	**+0.4**
PTL				AML	AML	05 20 01.8	
	comp=N,333μm,1.0s						
PTL				AML	AML	05 20 10.2	
	comp=E,284μm,0.6s						
THL	**Klokotos Trika**	**2.68**	**22**	P	**Pb**	**05 19 14.9**	**-2.0**
THL				S	**Sn**	**05 19 46.8**	**+2.1**
KEK	**Kerkira**	**2.73**	**345**	P	**Pn**	**05 19 12.5**	**-0.4**
EREA	**Eretria**	**2.87**	**61**	P	**Pn**	**05 19 15.3**	**+0.6**
EREA	**Eretria**	**2.87**	**61**	P	**Pn**	**05 19 15.3**	**+0.6**
KPRO	**Kipourio**	**2.92**	**10**	P	**Pb**	**05 19 20.0**	**-1.0**
KPRO	**Kipourio**	**2.92**	**10**	P	**Pb**	**05 19 20.0**	**-1.0**
MHLO	**Agia Marina, M**	**2.96**	**96**	P	**Pn**	**05 19 16.3**	**+0.3**
MHLO				S	**Sn**	**05 19 51.3**	**-0.5**
MHLO	**Agia Marina, M**	**2.96**	**96**	P	**Pn**	**05 19 16.3**	**+0.3**
MHLO				S	**Sn**	**05 19 51.3**	**-0.5**
NEO	**Neokhori**	**2.97**	**41**	P	**Pn**	**05 19 17.3**	**+1.2**
NEO				S	**Sn**	**05 19 53.1**	**+1.2**
NEO	**Neokhori**	**2.97**	**41**	P	**Pn**	**05 19 17.3**	**+1.2**
NEO				S	**Sn**	**05 19 53.1**	**+1.2**
NEO				AML	AML	05 20 01.2	
	comp=E,242μm,0.6s						
NEO				AML	AML	05 20 03.8	
	comp=N,354μm,0.5s						
XOR	**Xorichti**	**2.99**	**39**	P	**Pn**	**05 19 17.1**	**+0.6**
XOR	**Xorichti**	**2.99**	**39**	P	**Pn**	**05 19 17.1**	**+0.6**
SKIA	**Skiathos**	**3.00**	**45**	P	**Pn**	**05 19 17.6**	**+1.1**
SKIA	**Skiathos**	**3.00**	**45**	P	**Pn**	**05 19 17.6**	**+1.1**
SKIA				AML	AML	05 19 59.0	
	comp=E,134μm,0.8s						
SKIA				AML	AML	05 20 14.6	
	comp=N,149μm,1.1s						
PENT	**Pentalofos**	**3.13**	**6**	P	**Pb**	**05 19 22.9**	**-1.8**
PENT	**Pentalofos**	**3.13**	**6**	P	**Pb**	**05 19 22.9**	**-1.8**
AOS	**Alonnisos**	**3.24**	**49**	P	**Pn**	**05 19 20.2**	**+0.3**
AOS	**Alonnisos**	**3.24**	**49**	P	**Pn**	**05 19 20.2**	**+0.3**
LIT	**Litokhoron**	**3.32**	**24**	P	**Pn**	**05 19 21.9**	**+1.0**
LIT	**Litokhoron**	**3.32**	**24**	P	**Pn**	**05 19 21.9**	**+1.0**
KZN	**Kozani**	**3.33**	**14**	P	**Pn**	**05 19 22.0**	**+0.9**
GVD	**Gavdhos**	**3.52**	**128**	P	**Pn**	**05 19 23.1**	**-0.5**
GVD	**Gavdhos**	**3.52**	**128**	P	**Pn**	**05 19 23.1**	**-0.5**
PAIG	**Paliouri**	**3.67**	**38**	P	**Pn**	**05 19 24.7**	**-1.0**
PAIG	**Paliouri**	**3.67**	**38**	P	**Pn**	**05 19 24.7**	**-1.0**
FNA	**Florina**	**3.74**	**7**	P	**Pn**	**05 19 28.4**	**+1.7**
FNA	**Florina**	**3.74**	**7**	P	**Pn**	**05 19 28.4**	**+1.7**
TIP	**Timpagrande**	**3.77**	**305**	P	**Pn**	**05 19 30.0**	**+2.8**
TIP	**Timpagrande**	**3.77**	**305**	P	**Pn**	**05 19 30.0**	**+2.8**
IDI	**Anoyia**	**3.80**	**117**	Pn	**Pn**	**05 19 30.6**	**+3.0**
	comp=N,0.2nm,0.3s,baz=336,slow=18,SNR=2.1						
IDI				Sn	**Sn**	**05 20 14.4**	**+1.8**
	comp=N,3.0nm,0.3s,baz=298,slow=18,SNR=6.5						
IDI	**Anoyia**	**3.80**	**117**	P	**Pn**	**05 19 29.3**	**+1.7**
IDI	**Anoyia**	**3.80**	**117**	P	**Pn**	**05 19 29.3**	**+1.7**
APE	**Apeiranthos**	**3.83**	**89**	P	**Pn**	**05 19 27.8**	**-0.2**
APE	**Apeiranthos**	**3.83**	**89**	P	**Pn**	**05 19 27.8**	**-0.2**
PLG	**Polygyros**	**3.92**	**32**	P	**Pn**	**05 19 29.0**	**-0.2**
PLG	**Polygyros**	**3.92**	**32**	P	**Pn**	**05 19 29.0**	**-0.2**
HORT	**Hortiatis**	**3.97**	**27**	P	**Pn**	**05 19 30.2**	**+0.2**
HORT	**Hortiatis**	**3.97**	**27**	P	**Pn**	**05 19 30.2**	**+0.2**
OHR	**Ohrid**	**4.03**	**1**	*e*Pn	**Pn**	**05 19 31.9**	**+1.2**
OHR				*e*Sn	**Sn**	**05 20 17.3**	**-0.9**
OHR	**Ohrid**	**4.03**	**1**	*e*Pn	**Pn**	**05 19 31.9**	**+1.2**
OHR				*e*Sn	**Sn**	**05 20 17.2**	**-0.9**
GRG	**Griva**	**4.09**	**18**	P	**Pn**	**05 19 31.8**	**+0.3**
GRG	**Griva**	**4.09**	**18**	P	**Pn**	**05 19 31.8**	**+0.3**
SOH	**Sokhos**	**4.26**	**28**	P	**Pn**	**05 19 34.8**	**+0.9**
SOH	**Sokhos**	**4.26**	**28**	P	**Pn**	**05 19 34.8**	**+0.9**
LAST	**Lasithi**	**4.29**	**115**	P	**Pn**	**05 19 32.9**	**-1.4**
LAST	**Lasithi**	**4.29**	**115**	P	**Pn**	**05 19 32.9**	**-1.4**
TAR1	**Taranto**	**4.38**	**323**	*e*Pn	**Pn**	**05 19 36.8**	**+1.4**
KNT	**Kendrikon**	**4.41**	**22**	P	**Pn**	**05 19 36.6**	**+0.7**
KNT	**Kendrikon**	**4.41**	**22**	P	**Pn**	**05 19 36.6**	**+0.7**
CHOS	**Chios island**	**4.41**	**71**	P	**Pn**	**05 19 35.5**	**-0.5**
CHOS	**Chios island**	**4.41**	**71**	P	**Pn**	**05 19 35.5**	**-0.5**
SRS	**Serrai**	**4.61**	**28**	P	**Pn**	**05 19 38.3**	**-0.3**
SRS	**Serrai**	**4.61**	**28**	P	**Pn**	**05 19 38.3**	**-0.3**
NOCI	**Noci**	**4.68**	**323**	P	**Pn**	**05 19 40.6**	**+0.9**
NOCI	**Noci**	**4.68**	**323**	P	**Pn**	**05 19 40.6**	**+0.9**
CUC	**Castrocucco**	**4.83**	**309**	P	**Pn**	**05 19 41.0**	**-0.8**
CUC	**Castrocucco**	**4.83**	**309**	P	**Pn**	**05 19 41.0**	**-0.8**
KAVA	**Kavala**	**4.90**	**36**	P	**Pn**	**05 19 41.9**	**-0.7**
KAVA	**Kavala**	**4.90**	**36**	P	**Pn**	**05 19 41.9**	**-0.7**
NVR	**Nevrokopi**	**4.91**	**29**	P	**Pn**	**05 19 43.5**	**+0.7**
SG1	**Sgolgore (BA)**	**4.91**	**321**	*e*Pn	**Pn**	**05 19 44.1**	**+1.3**
SMTH	**Samothraki Isl**	**5.05**	**46**	P	**Pn**	**05 19 43.5**	**-1.2**
SMTH	**Samothraki Isl**	**5.05**	**46**	P	**Pn**	**05 19 43.5**	**-1.2**
CDT	**Castel del Mon**	**5.30**	**320**	*e*Pn	**Pn**	**05 19 49.6**	**+1.5**
BARS	**Barje**	**5.79**	**8**	⇑*i*Pn	**Pn**	**05 19 55.4**	**+0.5**
IVAS	**Ivanjica**	**6.51**	**356**	⇑*i*Pn	**Pn**	**05 20 05.2**	**+0.4**
GRUS	**Gruza**	**6.80**	**360**	⇓*i*Pn	**Pn**	**05 20 08.7**	**-0.1**
ZAGS	**Zajecar**	**6.83**	**9**	⇓*i*Pn	**Pn**	**05 20 10.5**	**+1.4**
DIVS	**Divibare**	**7.04**	**356**	⇑*i*Pn	**Pn**	**05 20 11.9**	**-0.2**
TEKS	**Tekeris**	**7.52**	**353**	⇓*i*Pn	**Pn**	**05 20 17.9**	**-0.7**
NVLJ	**Novalja**	**8.70**	**331**	Sn	**Sn**	**05 22 09.4**	**-3.5**
FINES	**FINESS Array B**	**24.62**	**6**	P	**P**	**05 23 49.1**	**-0.1**
	comp=N,1.2nm,0.5s,baz=176,slow=8.8,SNR=9.9						
NB2	**NORSAR Subarra**	**24.73**	**349**	P	**P**	**05 23 50.1**	**-0.2**
	comp=Z,0.5nm,0.5s,baz=157,slow=10						
NB2	**NORSAR Subarra**	**24.73**	**349**	P	**P**	**05 23 50.1**	**-0.2**
	comp=Z,0.5nm,0.5s,SNR=5.6						
NOA	**NORSAR Array B**	**24.73**	**349**	P	**P**	**05 23 50.1**	**-0.2**
	comp=Z,0.5nm,0.5s,baz=157,slow=9.1,SNR=6.3						
TORD	**Torodi Ar. Bea**	**29.29**	**221**	P	**P**	**05 24 32.9**	**+1.3**
	comp=Z,0.5nm,0.9s,baz=39,slow=9.4,SNR=3.3						
MKAR	**Makanchi Array**	**45.74**	**58**	P	**P**	**05 26 49.5**	**-0.9**
	comp=Z,0.4nm,0.5s,baz=268,slow=8.7,SNR=1.6						
ZALV	**Zalesovo Beam**	**46.30**	**47**	P	**P**	**05 26 53.8**	**-0.8**
	comp=Z,0.9nm,0.4s,baz=266,slow=6.9,SNR=2.7						

*ISCJB **28** 05:28:32.9±1.7,32°.55S±0°.1×69°.93W±0°.08,h119km±18km, Error ellipse: s-maj=24.0km s-min=8.8km az=162.1*

*SJA **28** 05:28:32.6±0.4,32°.58S×69°.93W,h116km±8km, ML2.7, MW3.2*

*GUC **28** 05:28:33.1±0.5,32°.45S×69°.91W,h104km±11km,ML2.9*

ISC 28 05:28:33.5±3.7**,32°.5S**±0°.1×**69°.93

IDC 28 05:42:27.6±1.8, 8°17S×158°98E, h0km, mb4.1/4, mb1 4.3/4, mb1mx3.8/33, mbtmp4.1/4, MS3.3/1, Ms1 3.3/1, ms1mx2.5/25, Error ellipse: s-maj=37.4km s-min=26.8km az=48.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**1.58**	**143**	Pn	Pn	05 42 56.9	0.0
	226nm,0.3s,baz=195,slow=6.2,SNR=19						
HNR				Sn	Sn	05 43 15.3	-2.9
	548nm,0.3s,baz=337,slow=23,SNR=15						
HNR				LR	LR	05 43 32.0	
	comp=Z,234nm,20.0s,baz=334,slow=41						
HNR	**Honiara**	**1.58**	**143**	*e*P	Pn	05 42 54.0	-3.0
HNR				*e*S	Sn	05 43 06.0	-12
WRA	**Warramunga Arr**	**26.57**	**241**	P	P	05 48 08.4	+0.7
	0.9nm,0.5s,baz=66,slow=9.2,SNR=15						
ASAR	**Alice Springs**	**28.54**	**234**	P	P	05 48 25.1	-0.2
	1.2nm,0.5s,baz=61,slow=10.0,SNR=14						
STKA	**Stephens Creek**	**28.60**	**212**	P	P	05 48 25.1	-0.7
	2.6nm,0.4s,baz=48,slow=14,SNR=12						
SONM	**Songino Array**	**72.48**	**326**	P	P	05 53 56.5	+0.1
	0.2nm,0.3s,baz=134,slow=4.3,SNR=4.1						
MKAR	**Makanchi Array**	**86.90**	**318**	LR	LR	06 33 20.5	
	comp=Z,19nm,22.0s,baz=326,slow=35						

*NNC **28** 05:49:24.0±2.2, 45°.73N×80°.32E, h0km, mb2.5, mpv2.3, Error ellipse: s-maj=47.7km s-min=7.0km az=124.0*
*SOME **28** 05:49:26.5, 45°.80N×80°.20E, h15km*
ISC 28 05:49:24.5±1.4, 45°.80N±0°.05×80°.33E±0°.06, h1km±18km, n11, σ0°68/21, 3C-1D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPS	**Kapalarasan**	**0.85**	**233**	*e*P	**Pg**	**05 49 41.1**	**+0.2**
	22nm,0.1s						
KAPS				*e*S	**Sg**	**05 49 51.6**	**-0.3**
	38nm,0.1s						
DJR	**Jarkent**	**1.52**	**195**	*e*P	**Pg**	**05 49 53.6**	**0.0**
	7.8nm,0.1s						
DJR				*e*S	**Sb**	**05 50 12.9**	**-0.4**
	60nm,0.2s						
MAKZ	**Makanchi**	**1.52**	**48**	⇑P	**Pb**	**05 49 53.0**	**-0.5**
	1.3nm,0.3s						
MAKZ				⇓S	**Sg**	**05 50 13.8**	**+0.4**
	7.2nm,0.4s						
MK31	**Makanchi Array**	**1.69**	**53**	P	**Pb**	**05 49 55.8**	**-0.5**
	0.5nm,0.3s,baz=267,slow=4.8,SNR=24						
MK31				S	**Sg**	**05 50 19.1**	**+0.5**
	2.1nm,0.5s,baz=238,slow=25,SNR=11						
MNBS	**Baschi**	**2.20**	**219**	*e*P	**Pg**	**05 50 06.4**	**-0.2**
	5.7nm,0.2s						
MNBS				*e*S	**Sg**	**05 50 34.7**	**-0.4**
	17nm,0.3s						
KTMS	**Ketmen**	**2.36**	**180**	*e*P	**Pg**	**05 50 09.7**	**+0.1**
	2.0nm,0.1s						
KTMS				*e*S	**Sg**	**05 50 40.4**	**+0.3**
	12nm,0.1s						
ARXS	**Arharly**	**2.38**	**229**	*e*P	**Pb**	**05 50 08.3**	**+0.2**
	2.7nm,0.2s						
ARXS				*e*S	**Sb**	**05 50 38.2**	**+0.1**
	17nm,0.3s						
PDGK	**Podgornoye**	**2.55**	**194**	⇑Pg	**Pb**	**05 50 08.7**	**-2.2**
	1.0nm,0.5s						
PDGK				⇑Lg	Lg	05 50 41.9	
	6.1nm,0.5s						
KPKS	**Kokpek**	**2.61**	**207**	*e*P	**Pb**	**05 50 12.6**	**+0.4**
	5.1nm,0.2s						
KPKS				*e*S	**Sb**	**05 50 45.2**	**+0.4**
	15nm,0.2s						
SHLS	**Shalkode**	**2.66**	**187**	*e*P	**Pb**	**05 50 13.6**	**+0.5**
	0.8nm,0.1s						
SHLS				*e*S	**Sb**	**05 50 47.0**	**+0.6**
	4.4nm,0.1s						
UZB	**Uzymbulak**	**2.81**	**200**	*e*P	**Pb**	**05 50 15.5**	**-0.1**
	0.4nm,0.0s						
UZB				*e*S	**Sb**	**05 50 51.3**	**+0.6**
	9.8nm,0.3s						

IDC 28 05:53:57.9±3.4, 53°.72N×90°.88E, h0km, mb1 3.0/3, mb1mx2.9/36, mbtmp3.0/3, ML2.8/2, Error ellipse: s-maj=28.1km s-min=24.4km az=49.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**3.60**	**276**	*i*		06 15 33.7	
	baz=92,slow=319,SNR=27						
ZALV	**Zalesovo Beam**	**3.60**	**276**	Pn	Pn	05 54 54.5	-0.4
	0.1nm,0.3s,baz=85,slow=9.1,SNR=3.5						
ZALV				Lg	Lg	05 55 51.7	
	1.0nm,0.3s,baz=93,slow=27,SNR=7.5						
KURBB	**Kurchatov Arra**	**8.20**	**253**	Pn	Pn	05 55 58.0	-0.1
	0.1nm,0.3s,baz=65,slow=14,SNR=6.2						
KURBB				Sn	Sn	05 57 30.2	-1.1
	0.0nm,0.3s,baz=66,slow=23,SNR=7.9						
KURBB				Lg	Lg	05 58 15.8	
	baz=70,slow=30,SNR=4.8						
MKAR	**Makanchi Array**	**8.85**	**222**	Pn	Pn	05 56 07.3	+0.4
	0.1nm,0.3s,baz=38,slow=14,SNR=5.8						
MKAR				Sn	Sn	05 57 47.6	+0.3
	0.1nm,0.3s,baz=35,slow=18,SNR=2.9						
MKAR				Lg	Lg	05 58 36.0	
	0.3nm,0.3s,baz=45,slow=26,SNR=3.6						

*SOME **28** 06:00:59.2, 40°.47N×77°.62E, h10km*
*KRNET **28** 06:01:02.4±0.1, 40°.68N×77°.66E, h12km, mb3.0*
*NNC **28** 06:01:12.0±5.0, 41°.30N×77°.99E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=51.7km s-min=21.5km az=168.0*
ISC 28 06:00:55.7±2.1, 40°.30N±0°.09×77°.57E±0°.04, h10km, n36, σ1°66/70, 24C-16D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KDJ	**Kajisay**	**1.85**	**351**	⇓*e*P	**Pg**	**06 01 30.2**	**-1.1**
	baz=346						
KDJ				⇓*e*S	**Sb**	**06 01 52.7**	**-0.5**
	baz=346						
ULHL	**Ulahol**	**2.19**	**333**	⇑*i*P	**Pg**	**06 01 37.3**	**-0.4**
	baz=326						
ULHL				⇑*i*S	**Sb**	**06 02 02.7**	**-0.1**
	baz=326						
PRZ	**Przheval'sk**	**2.27**	**16**	⇓*e*P	**Pb**	**06 01 37.5**	**+0.6**
	baz=17						
PRZ				⇓*i*S	**Sb**	**06 02 03.6**	**-1.5**
	baz=17						
ANVS	**Anan'yevo**	**2.48**	**2**	⇑*e*P	**Pb**	**06 01 41.3**	**+0.7**
	baz=0.0						
ANVS				⇑*e*S	**Sb**	**06 02 09.9**	**-1.4**
	baz=0.0						
KZA	**Kyzart**	**2.50**	**316**	⇑*i*P	**Pg**	**06 01 44.1**	**+0.5**
	baz=308						
KZA				⇑*i*S	**Sg**	**06 02 14.3**	**-1.7**
	baz=308						
BOOM	**Boomskoye usch**	**2.51**	**331**	⇓*e*P	**Pg**	**06 01 42.2**	**-1.7**
	baz=325						
BOOM				⇓*i*S	**Sb**	**06 02 11.9**	**-0.2**
	baz=325						
TNSS	**Tian-Shan**	**2.78**	**350**	*e*P	**Pg**	**06 01 47.8**	**-1.3**
	89nm,0.4s						
TNSS				*e*S	**Sb**	**06 02 22.0**	**+1.9**
	79nm,0.5s						
IZV	**Izvestkoviy**	**2.83**	**346**	*e*P	**Pg**	**06 01 48.2**	**-1.7**
	37nm,0.5s						
IZV				*e*S	**Sb**	**06 02 22.9**	**+1.7**
	135nm,0.4s						
SATY	**Saty**	**2.83**	**12**	*e*P	**Pg**	**06 01 47.7**	**-2.2**
	58nm,0.2s						
SATY				*e*S	**Sb**	**06 02 21.6**	**+0.4**
	51nm,0.3s						
MDOK	**Medeo**	**2.89**	**352**	*e*P	**Pb**	**06 01 48.9**	**+1.4**
	58nm,0.3s						
MDOK				*e*S	**Sb**	**06 02 23.8**	**+0.9**
	100nm,0.6s						
ARLS	**Aral**	**2.91**	**304**	⇑*e*P	**Pg**	**06 01 49.7**	**-1.8**
	baz=296						
ARLS				⇑*e*S	**Sb**	**06 02 24.7**	**+1.2**
	baz=296						
KOTS	**Kotyrbulak**	**2.96**	**353**	*e*P	**Pb**	**06 01 50.0**	**+1.4**
KOTS				*e*S	**Sb**	**06 02 25.4**	**+0.6**
MTBS	**Maitube**	**2.96**	**344**	*e*P	**Pg**	**06 01 50.3**	**-2.1**
	28nm,0.2s						
MTBS				*e*S	**Sb**	**06 02 26.1**	**+1.3**
	58nm,0.4s						
KST	**Kastek**	**3.00**	**337**	*e*P	**Pg**	**06 01 51.5**	**-1.7**
	5.1nm,0.2s						
KST				*e*S	**Sb**	**06 02 27.7**	**+1.7**
	20nm,0.5s						
UCH	**Uchtor**	**3.01**	**311**	⇑*i*P	**Pg**	**06 01 51.8**	**-1.5**
	baz=304						
UCH				⇑*i*S	**Sb**	**06 02 27.6**	**+1.1**
	baz=304						
AAA	**Alma-Ata**	**3.01**	**351**	*e*P	**Pb**	**06 01 50.5**	**+1.1**
	231nm,0.2s						
AAA				*e*S	**Sb**	**06 02 26.3**	**0.0**
	237nm,0.3s						
TKM2	**Tokmak 2**	**3.01**	**331**	⇑*i*P	**Pb**	**06 01 49.2**	**-0.3**
	baz=326						
TKM2				⇑*i*S	**Sn**	**06 02 22.8**	**+2.9**
	baz=326						
TKM2	**Tokmak 2**	**3.01**	**331**	⇓Pn	**Pg**	**06 01 51.3**	**-2.1**
	3.9nm,0.3s						
TKM2				⇓Lg	Lg	06 02 28.4	
	14nm,0.5s						
UZB	**Uzynbulak**	**3.05**	**20**	*e*P	**Pg**	**06 01 51.9**	**-2.2**
	16nm,0.5s						
UZB				*e*S	**Sb**	**06 02 28.8**	**+1.3**
	46nm,0.6s						
KBK	**Karagaybulak**	**3.07**	**321**	⇓*i*P	**Pb**	**06 01 51.3**	**+0.7**
	baz=315						
KBK				⇓*i*S	**Sb**	**06 02 26.3**	**-1.9**
	baz=315						
DGS	**Degeres**	**3.24**	**336**	*e*P	**Pg**	**06 01 55.6**	**-2.1**
	16nm,0.4s						
DGS				*e*S	**Sb**	**06 02 35.3**	**+2.4**
	37nm,0.7s						
KPKS	**Kokpek**	**3.27**	**14**	*e*P	**Pb**	**06 01 55.2**	**+1.3**
	42nm,0.3s						
KPKS				*e*S	**Sb**	**06 02 34.7**	**+0.8**
	110nm,0.5s						
AAK	**Ala-Archa**	**3.29**	**316**	⇓*i*P	**Pb**	**06 01 54.7**	**+0.5**
	baz=311						
AAK				⇓*i*S	**Sb**	**06 02 32.5**	**-1.9**
	baz=311						
AAK	**Ala-Archa**	**3.29**	**316**	⇓Pn	**Pg**	**06 01 57.3**	**-1.4**
	6.4nm,0.3s						
AAK				⇑Sn	**Sg**	**06 02 38.4**	**-2.9**
	48nm,0.9s						
SHLS	**Shalkode**	**3.34**	**30**	*e*P	**Pb**	**06 01 56.7**	**+1.6**
	20nm,0.3s						
SHLS				*e*S	**Sb**	**06 02 36.8**	**+0.8**
	100nm,0.6s						
PDGK	**Podgornoye**	**3.35**	**25**	⇑*e*P	**Pb**	**06 01 52.4**	**-2.7**
	baz=27						
PDGK				⇑*e*S	**Sn**	**06 02 30.0**	**+2.1**
	baz=27						
PDGK	**Podgornoye**	**3.35**	**25**	⇑Pn	**Pb**	**06 01 52.0**	**-3.1**
	9.4nm,0.4s						
PDGK				⇓Lg	Lg	06 02 28.0	
	117nm,0.8s						
AML	**Almayashu**	**3.45**	**303**	⇑*e*P	**Pb**	**06 01 59.0**	**+1.8**
	baz=297						
AML				⇑*i*S	**Sb**	**06 02 39.6**	**+0.3**
	baz=297						
KTBS	**Karatobe**	**3.48**	**349**	*e*P	**Pb**	**06 01 59.0**	**+1.6**
KTBS				*e*S	**Sb**	**06 02 40.7**	**+1.0**
EKS2	**Erkin-Say**	**3.70**	**311**	⇑*i*P	**Pb**	**06 02 01.1**	**-0.2**
	baz=306						
EKS2				⇑*i*S	**Sb**	**06 02 43.4**	**-2.9**
	baz=306						
USP	**Ospenovka**	**3.75**	**323**	⇓*i*P	**Pb**	**06 01 59.7**	**-2.4**
	baz=319						
USP				⇓*i*S	**Sn**	**06 02 41.6**	**+3.6**
	baz=319						
KTMS	**Ketmen**	**3.77**	**33**	*e*P	**Pb**	**06 02 04.1**	**+1.6**
	9.5nm,0.3s						
KTMS				*e*S	**Sb**	**06 02 49.6**	**+1.4**
	31nm,0.6s						
MNBS	**Baschi**	**3.83**	**9**	*e*P	**Pb**	**06 02 04.1**	**+0.7**
	17nm,0.3s						
MNBS				*e*S	**Sb**	**06 02 49.5**	**-0.4**
	40nm,0.4s						
ARXS	**Arharly**	**3.92**	**3**	*e*P	**Pb**	**06 02 06.8**	**+1.9**
	10nm,0.4s						
ARXS				*e*S	**Sb**	**06 02 54.2**	**+1.8**
	30nm,0.4s						
MNAS	**Manas**	**4.39**	**302**	⇑Pn	**Pg**	**06 02 19.4**	**-0.5**
	1.6nm,0.4s						
MNAS				⇑Sn	**Sb**	**06 03 08.7**	**+2.5**
	3.4nm,0.6s						
KK31	**Karatay Array**	**5.98**	**300**	⇑Pn	**Pb**	**06 02 40.6**	**+0.5**
	1.1nm,0.6s,baz=96,slow=16,SNR=4.0						
KK31				⇑Sn	**Sb**	**06 03 50.6**	**-1.1**
	0.8nm,0.5s,baz=98,slow=27						

*ISCJB **28** 06:26:12.4±0.6, 18°.96N±0°.05×145°.6E±0°.2, h214km, mb3.8/16, Error ellipse: s-maj=22.1km s-min=7.4km az=177.9*
*IDC **28** 06:26:15.7±0.8, 18°.95N×145°.55E, h230km±7km, mb3.6/16, mb1 3.7/18, mb1mx3.5/53, mbtmp4.2/18, Error ellipse: s-maj=18.1km s-min=9.5km az=84.0*
ISC 28 06:26:14.4±0.6, 18°.91N±0°.07×145°.6E±0°.2, h214km, n26, σ1°53/25, mb3.8/16, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**5.33**	**187**	P	**Pn**	**06 27 35.1**	**+1.6**
	3.4nm,0.3s,baz=2.0,slow=23,SNR=2.6						
GUMO				S	**S**	**06 28 34.4**	**-1.4**
	9.5nm,0.3s,baz=30,slow=20,SNR=4.0						
MJAR	**Matsushiro Arr**	**18.72**	**341**	P	**Pn**	**06 30 18.1**	**-2.0**
	1.0nm,0.3s,baz=164,slow=9.4,SNR=4.4						
H11S3	**WAKE ISLAND Hy**	**20.02**	**88**	T	T	06 52 02.4	
	baz=275,slow=74,SNR=3.4						
H11S1	**WAKE ISLAND Hy**	**20.03**	**88**	T	T	06 52 10.1	
	baz=275,slow=74,SNR=11						
H11S2	**WAKE ISLAND Hy**	**20.04**	**88**	T	T	06 52 02.9	
	baz=275,slow=74,SNR=4.1						
H11N1	**WAKE ISLAND Hy**	**20.15**	**84**	T	T	06 49 48.4	
	baz=276,slow=74,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**20.15**	**84**	T	T	06 49 51.8	
	baz=276,slow=74,SNR=4.2						
H11N3	**WAKE ISLAND Hy**	**20.16**	**84**	T	T	06 49 53.1	
	baz=276,slow=74,SNR=3.8						
KLR	**Kul'dur**	**32.23**	**343**	P	**P**	**06 32 22.2**	**-0.2**
	1.3nm,0.5s,baz=152,slow=6.9,SNR=7.3						
KLR				pP	**pP**	**06 33 09.9**	**+3.9**
	2.3nm,0.6s,baz=136,slow=8.7,SNR=2.9						
WRA	**Warramunga Arr**	**40.15**	**196**	P	**P**	**06 33 29.9**	**+0.2**
	15nm,0.7s,baz=15,slow=8.9,SNR=96						
SONM	**Songino Array**	**42.90**	**321**	P	**P**	**06 33 50.5**	**-1.5**
	0.4nm,0.4s,baz=132,slow=8.6,SNR=2.0						
SONM				pP	**pP**	**06 34 39.6**	**+2.2**
	0.4nm,0.4s,baz=117,slow=42,SNR=2.0						
ASAR	**Alice Springs**	**43.82**	**196**	P	**P**	**06 33 59.4**	**0.0**
	3.4nm,0.8s,baz=15,slow=7.5,SNR=26						
CMAR	**Chiang Mai Arr**	**44.06**	**277**	P	**P**	**06 34 02.4**	**+0.9**
	1.6nm,0.7s,baz=67,slow=7.0,SNR=8.3						
SEY	**Seymchan**	**44.23**	**4**	P	**P**	**06 34 02.6**	**+0.4**
	0.8nm,0.5s,baz=38,slow=17,SNR=3.6						
DZM	**Mont Dzumac**	**45.57**	**152**	P	**P**	**06 34 13.3**	**0.0**
	7.8nm,0.7s,baz=220,slow=4.4,SNR=13						
STKA	**Stephens Creek**	**50.64**	**184**	P	**P**	**06 34 51.0**	**-0.8**
	2.4nm,0.7s,baz=25,slow=5.1,SNR=3.7						
ZALV	**Zalesovo Beam**	**57.77**	**322**	P	**P**	**06 35 41.5**	**-1.5**
	0.6nm,0.3s,baz=113,slow=8.1,SNR=1.2						
KURBB	**Kurchatov Arra**	**61.07**	**318**	P	**P**	**06 36 04.5**	**-1.1**
	1.1nm,0.2s,baz=94,slow=6.8,SNR=4.3						
KURBB				pP	**pP**	**06 36 56.4**	**+2.0**
	0.8nm,0.3s,baz=91,slow=7.9,SNR=2.0						
ILAR	**Eielson Array**	**63.51**	**26**	P	**P**	**06 36 20.4**	**-1.1**
	0.9nm,0.6s,baz=256,slow=5.2,SNR=14						
ILAR				pP	**pP**	**06 37 12.9**	**+2.2**
	0.7nm,1.0s,baz=266,slow=5.0,SNR=3.0						
BVAR	**Borovoye Array**	**66.23**	**320**	P	**P**	**06 36 38.5**	**-0.8**
	2.8nm,0.6s,baz=90,slow=7.4,SNR=6.3						
AKTO	**Aktyubinsk**	**74.12**	**318**	P	**P**	**06 37 26.2**	**-0.9**
	1.4nm,0.7s,baz=109,slow=6.8,SNR=5.1						
YKA	**Yellowknife Ar**	**77.86**	**28**	P	**P**	**06 37 48.0**	**0.0**
	0.9nm,0.6s,baz=290,slow=4.5,SNR=3.4						
ARCES	**ARCESS Array B**	**82.25**	**342**	P	**P**	**06 38 10.5**	**-0.9**
	1.2nm,0.6s,baz=45,slow=6.5,SNR=3.1						
FINES	**FINESS Array B**	**86.64**	**335**	P	**P**	**06 38 31.8**	**-1.7**
	0.7nm,0.4s,baz=57,slow=5.1,SNR=8.1						
TORD	**Torodi Ar. Bea**	**132.22**	**309**	PKP	**PKPdf**	**06 45 03.3**	**-0.4**
	0.2nm,0.6s,baz=28,slow=2.6,SNR=3.3						
LPAZ	**La Paz**	**147.81**	**91**	PKPbc	**PKPbc**	**06 45 35.8**	**+0.2**
	1.3nm,0.6s,baz=298,slow=2.9,SNR=7.1						

*IDC **28** 06:26:36.3±2.0, 38°.39S×75°.37W, h0km, mb3.5/2, mb1 3.9/4, mb1mx3.7/19, mbtmp3.5/4, ML3.5/2, MS3.1/2, Ms1 3.1/2, ms1mx2.8/16, Error ellipse: s-maj=50.2km s-min=27.3km az=43.0*
*GUC **28** 06:26:38.4±0.6, 38°.24S×75°.16W, h34km±7km, ML3.6*
*ISCJB **28** 06:26:39.2±1.3, 38°.18S±0°.06×75°.1W±0°.1, h33km, mb3.4/2, MS3.0/1, Error ellipse: s-maj=12.8km s-min=9.0km az=3.2*
ISC 28 06:26:42.4±1.4, 38°.14S±0°.06×75°.0W±0°.1, h35km, n11, σ2°36/13, 1C-1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PSCH	**Puerto Saavedr**	**1.42**	**118**	⇓*i*P	**Pn**	**06 27 03.5**	**-2.3**
PSCH				*i*S	**Sn**	**06 27 22.0**	**-1.2**
CCSP	**San Pedro de C**	**1.98**	**50**	*e*P	**Pn**	**06 27 10.5**	**-3.0**
CCSP				*i*S	**Sn**	**06 27 36.0**	**-1.0**
CCSP				IAML		06 27 36.5	
	comp=N,767nm,0.3s						
VLCH	**Valdivia**	**2.15**	**141**	⇑*i*P	**Pn**	**06 27 12.6**	**-3.2**
COCH	**Cobquecura**	**2.67**	**42**	IAML		06 27 55.4	
	comp=N,544nm,0.3s						
CCHI	**Chillan**	**2.79**	**57**	*e*P	**Pn**	**06 27 23.4**	**-1.1**
CCHI				*i*S	**Sn**	**06 27 58.4**	**+1.5**
CCHI				IAML		06 28 03.0	
	comp=E,323nm,0.3s						
PLCA	**Paso Flores**	**4.31**	**128**	Pn	**Pn**	**06 27 44.8**	**-0.7**
	comp=E,0.3nm,0.3s,baz=325,slow=16,SNR=14						
PLCA				Sn	**Sn**	**06 28 38.5**	**+4.0**
	comp=E,2.1nm,0.3s,baz=290,slow=13,SNR=6.6						
CPUP	**Villa Florida**	**18.99**	**57**	P	**Pn**	**06 31 02.1**	**+0.3**
	comp=E,0.1nm,0.3s,baz=225,slow=13,SNR=4.3						
CPUP				LR	LR	06 38 17.3	
	comp=E,53nm,19.0s,baz=220,slow=36						
LPAZ	**La Paz**	**22.59**	**17**	P	**P**	**06 31 43.6**	**+3.0**
	comp=E,0.3nm,0.5s,baz=187,slow=7.7,SNR=2.9						
SIV	**San Ignacio**	**25.25**	**33**	LR	LR	06 42 05.7	
	comp=E,38nm,18.4s,baz=58,slow=36						
TXAR	**Lajitas Array**	**72.28**	**334**	P	**P**	**06 38 04.1**	**-0.2**
	comp=E,0.7nm,0.7s,baz=165,slow=8.0,SNR=10						
BVAR	**Borovoye Array**	**151.90**	**47**	PKPbc	**PKPbc**	**06 46 33.2**	**+0.3**
	comp=E,0.5nm,0.5s,baz=285,slow=2.8,SNR=3.9						

*ISCJB **28** 06:26:47.9±0.8, 33°.33S±0°.06×68°.85W±0°.04, h10km, Error ellipse: s-maj=9.2km s-min=4.1km az=154.5*
*SJA **28** 06:26:47.7±1.1, 33°.28S×68°.98W, h28km±4km, ML3.0, MW3.8*
*GUC **28** 06:26:49.4±0.6, 33°.14S×68°.99W, h12km±11km, ML2.3*
ISC 28 06:26:48.3±1.2, 33°.30S±0°.07×68°.92W±0°.04, h10km, n19, σ0°87/23, 2D, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AAGR	**Agrelo**	**0.23**	**20**	*i*P	**Pg**	**06 26 55.4**	**+2.2**
ARCO	**CERRO ARCO**	**0.46**	**359**	*i*P	**Pb**	**06 26 57.5**	**-1.2**
ARCO				*i*S	**Sb**	**06 27 04.6**	**-1.0**
ARCO				IAML		06 27 05.4	
	comp=Z,1μm,0.4s						
ASAL	**Salagasta**	**0.71**	**6**	*i*P	**Pg**	**06 27 01.6**	**-0.6**
FCH	**Farellones**	**1.15**	**268**	*e*P	**Pg**	**06 27 10.1**	**-0.3**
FCH				*i*S	**Sb**	**06 27 25.6**	**+0.1**
FCH				IAML		06 27 26.6	
	comp=N,161nm,0.4s						
CLCH	**Cerro Calan**	**1.35**	**266**	⇓*i*P	**Pb**	**06 27 13.8**	**-0.1**
CLCH				*i*S	**Sg**	**06 27 32.4**	**+0.4**
CLCH				IAML		06 27 33.2	
	comp=N,131nm,0.7s						
ANTU	**Antumapu**	**1.45**	**259**	*e*S	**Sg**	**06 27 35.7**	**+0.5**
ANTU				IAML		06 27 37.4	
	comp=E,81nm,0.3s						
RTCV	**Cerro Valdivia**	**1.47**	**13**	*i*P	**Pn**	**06 27 14.1**	**-0.9**
PEL	**Peldehue**	**1.48**	**276**	⇓*i*P	**Pn**	**06 27 15.4**	**+0.3**
PEL				*i*S	**Sb**	**06 27 35.2**	**+0.2**
PEL				IAML		06 27 39.0	
	comp=N,53nm,1.3s						
ROCH	**El Roble**	**1.78**	**280**	*i*S	**Sb**	**06 27 44.6**	**+0.8**
ROCH				IAML		06 27 46.4	
	comp=N,37nm,0.4s						
ACAN	**Cantantal**	**1.79**	**55**	*e*P	**Pb**	**06 27 21.0**	**-0.2**
ROC1	**El Roble**	**1.79**	**280**	*e*P	**Pn**	**06 27 18.2**	**-1.2**
SJA	**San Juan**	**1.80**	**10**	*e*P	**Pn**	**06 27 19.4**	**-0.1**
AMOG	**MOGNA**	**2.39**	**9**	*e*P	**Pn**	**06 27 27.5**	**-0.1**
ACCO	**Cerro Coronel**	**2.71**	**357**	*e*P	**Pn**	**06 27 32.7**	**+0.4**
MRA	**San Martin**	**2.84**	**73**	*e*P	**Pn**	**06 27 33.9**	**+0.1**
ACHE	**Chepes**	**2.87**	**42**	*e*P	**Pb**	**06 27 39.3**	**-0.4**
ACDV	**Cuesta del Vie**	**3.13**	**357**	*e*P	**Pn**	**06 27 39.4**	**+1.5**
TCA	**Tanti**	**4.16**	**63**	*e*P	**Pn**	**06 27 50.9**	**-1.1**
VCA	**Vinchina**	**4.59**	**8**	*e*P	**Pb**	**06 28 08.8**	**-0.3**

NNC 28 06:30:28.4±3.7, 50°.37N×82°.22E, h8km±19km, mb3.9, mpv3.5, 14C-9D, Error ellipse: s-maj=27.5km s-min=12.2km az=42.0, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KURK	**Kurchatov**	**2.32**	**280**	⇓Pn	**Pb**	**06 31 09.1**	**-1.4**
	27nm,0.6s						
KURK				⇑Lg	Lg	06 31 41.1	
	108nm,0.4s						
KURBB	**Kurchatov Arra**	**2.37**	**277**	⇓Pn	**Pn**	**06 31 08.2**	**+0.6**
	47nm,0.5s						
KURBB				⇑Lg	Lg	06 31 42.2	
	424nm,0.6s						
MAKZ	**Makanchi**	**3.57**	**183**	⇑Pn	**Pn**	**06 31 25.4**	**+1.2**
	1.8nm,0.3s						
MAKZ				⇓Lg	Lg	06 32 20.2	
	40nm,0.5s						
MK31	**Makanchi Array**	**3.58**	**179**	⇓Pn	**Pn**	**06 31 25.8**	**+1.4**
	4.0nm,0.7s,baz=8.3,slow=13,SNR=121						
MK31				Pg	Pb	**06 31 32.5**	**+0.4**
	5.5nm,0.4s,baz=359,slow=16,SNR=32						
MK31				⇑Lg	Lg	06 32 21.1	

	2.3nm,0.3s,baz=97,slow=7.9,SNR=77								
TXAR	**Lajitas Array**	**86.22**	**57**	P	P	07 05 24.4	+1.7		
	0.3nm,0.7s,baz=224,slow=8.6,SNR=5.2								
ILAR	**Eielson Array**	**87.30**	**13**	P	P	07 05 27.8	+0.8		
	0.3nm,0.6s,baz=219,slow=7.0,SNR=3.6								
CMAR	**Chiang Mai Arr**	**90.16**	**289**	P	P	07 05 42.1	+0.7		
	1.6nm,0.7s,baz=140,slow=2.5,SNR=6.6								
MKAR	**Makanchi Array**	**110.83**	**314**	PKiKP	PKiKP	07 11 08.4	-3.2		
	0.2nm,0.5s,baz=107,slow=1.5,SNR=2.4								
BRTR	**Keskin Array B**	**146.48**	**314**	PKPbc	PKPdf	07 12 18.9	+0.2		
	0.7nm,0.5s,baz=135,slow=5.1,SNR=3.5								
MMAI	**Mount Meron Ar**	**147.67**	**301**	PKPbc	PKPbc	07 12 22.5	-1.5		
	1.3nm,0.4s,baz=88,slow=8.4,SNR=3.1								
GERES	**GERESS Array B**	**149.38**	**345**	PKPbc	PKPbc	07 12 26.8	-1.1		
	0.2nm,0.2s,baz=25,slow=2.6,SNR=4.9								

NNC ***28*** *06:59:35.7±4.2,37.5°N×71.1°E,h0km,mb4.1,mpv3.7, Error ellipse: s-maj=34.4km s-min=14.9km az=170.0*
IDC ***28*** *06:59:36.2±5.3,36.65°N×71.64°E,h103km±54km,mb1 3.6/6, mb1mx3.1/54,mbtmp4.0/6,Error ellipse: s-maj=63.0km s-min=26.6km az=140.0*

ISC 28 06:59:35.2±2.8,36.8N±0.2×71.13E±0.09,h100km,n11, σ1§19/17,5C-4D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.71**	**318**	⇓P		**Pn**	**07 00 16.7**	**-0.5**
	4.8nm,0.3s							
DZET				⇑S		**Sn**	**07 00 49.1**	**-0.3**
	59nm,0.4s							
MNAS	**Manas**	**5.78**	**10**	⇓P		**Pn**	**07 00 59.1**	**+0.5**
	5.5nm,0.5s							
MNAS				⇑S		**Sn**	**07 02 03.0**	**-0.6**
	9.9nm,0.6s							
KK31	**Karatay Array**	**6.32**	**356**	P		**Pn**	**07 01 06.3**	**+0.5**
	2.2nm,0.4s,baz=173,slow=12,SNR=37							
KK31				⇑S		**Sn**	**07 02 15.8**	**-0.6**
	6.0nm,0.6s,baz=166,slow=16							
AAK	**Ala-Archa**	**6.38**	**23**	P		**Pn**	**07 01 07.9**	**+1.0**
	6.0nm,0.3s,baz=194,slow=8.3,SNR=9.1							
AAK				S		**Sn**	**07 02 19.0**	**+0.7**
	0.7nm,0.3s,baz=138,slow=24,SNR=6.4							
AAK	**Ala-Archa**	**6.38**	**23**	⇑P		**Pn**	**07 01 07.9**	**+1.0**
	8.3nm,0.4s							
AAK				⇓S		**Sn**	**07 02 19.9**	**+1.5**
	5.0nm,0.6s							
TKM2	**Tokmak 2**	**7.02**	**28**	⇑P		**Pn**	**07 01 16.1**	**+0.6**
	6.4nm,0.6s							
TKM2				⇓S		**Sn**	**07 02 30.4**	**-3.3**
	1.6nm,0.7s							
GEYT	**Alibeck**	**10.42**	**280**	P		Pn	07 02 08.0	+6.4
	1.6nm,0.3s,baz=92,slow=14,SNR=4.1							
MKAR	**Makanchi Array**	**12.99**	**36**	P		**Pn**	**07 02 35.1**	**-0.8**
	0.1nm,0.3s,baz=226,slow=15,SNR=6.1							
KURBB	**Kurchatov Arra**	**14.81**	**19**	P		**P**	**07 03 02.1**	**-0.5**
	0.1nm,0.3s,baz=207,slow=10,SNR=6.0							
BVAR	**Borovoye Array**	**16.24**	**358**	P		**P**	**07 03 19.3**	**+0.9**
	0.2nm,0.3s,baz=170,slow=13,SNR=4.2							
BVAR				S		**S**	**07 06 23.6**	**+0.3**
	0.4nm,0.3s,baz=164,slow=27,SNR=4.7							
ZALV	**Zalesovo Beam**	**19.60**	**25**	P		**P**	**07 03 55.4**	**+0.1**
	1.3nm,0.3s,baz=214,slow=10,SNR=12							

DDA ***28*** *07:06:21.0,39.06°N×29.01°E,h7km,Md2.6*
ISK ***28*** *07:06:20.9,39.13°N×29.01°E,h8km,ML2.4*
ISCJB ***28*** *07:06:21.1±0.4,39.10N±0.03×29.01E±0.03,h11km±4km, Error ellipse: s-maj=5.0km s-min=3.9km az=171.9*
CSEM ***28*** *07:06:21.2±0.1,39.10N×29.03E,h10km,MD2.6, Error ellipse: s-maj=3.4km s-min=3.0km az=147.0*

ISC 28 07:06:21.2±0.9,39.10N±0.02×29.02E±0.02,h13km±7km, n38,σ0§61/52,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**256**	*i* P		**Pg**	**07 06 26.5**	**+0.1**
DEMI				*i* S		**Sg**	**07 06 29.3**	**-0.6**
DEMI	**Demirci**	**0.24**	**256**	P		**Pg**	**07 06 26.5**	**+0.1**
DEMI				S		**Sg**	**07 06 29.3**	**-0.6**
GEDZ	**Gediz**	**0.31**	**100**	*e*PG		**Pg**	**07 06 27.9**	**+0.2**
GEDZ	**Gediz**	**0.31**	**100**	*e*Pg		**Pg**	**07 06 27.9**	**+0.2**
GDZ	**Gediz**	**0.36**	**92**	*i* P		**Pg**	**07 06 28.9**	**+0.3**
GDZ				*i* S		**Sg**	**07 06 33.9**	**+0.4**
GDZ	**Gediz**	**0.36**	**92**	P		**Pg**	**07 06 28.9**	**+0.3**
GDZ				S		**Sg**	**07 06 33.9**	**+0.4**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG		**Pg**	**07 06 30.6**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg		**Pg**	**07 06 30.6**	**-0.3**
DST	**Dursunbey**	**0.59**	**329**	*e*PG		**Pg**	**07 06 32.8**	**0.0**
DST	**Dursunbey**	**0.59**	**329**	*e*Pg		**Pg**	**07 06 32.8**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG		**Pb**	**07 06 34.3**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*Pg		**Pb**	**07 06 34.3**	**-0.1**
MANT	**Manisa**	**0.70**	**211**	*i* P		**Pg**	**07 06 34.2**	**-0.7**
MANT				*i* S		**Sg**	**07 06 43.7**	**-0.6**
MANT	**Manisa**	**0.70**	**211**	P		**Pg**	**07 06 34.2**	**-0.7**
MANT				S		**Sg**	**07 06 43.7**	**-0.6**
KHL	**Karahalli**	**0.87**	**153**	*e*PG		**Pb**	**07 06 38.5**	**+0.3**
KHL				*e*SG		**Sb**	**07 06 51.3**	**+1.5**
KHL	**Karahalli**	**0.87**	**153**	*e*Pg		**Pb**	**07 06 38.5**	**+0.3**
KHL				*e*Sg		**Sb**	**07 06 51.3**	**+1.5**
AKS	**Akhisar**	**0.96**	**257**	*e*PG		**Pb**	**07 06 39.9**	**+0.2**
AKS				*e*SG		**Sn**	**07 06 54.0**	**0.0**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg		**Pb**	**07 06 39.9**	**+0.2**
AKS				*e*Sg		**Sn**	**07 06 54.0**	**0.0**
BALB	**Balikesir**	**1.03**	**302**	*e*PG		**Pb**	**07 06 41.0**	**+0.1**
BALB				*e*SG		**Sn**	**07 06 55.7**	**+0.1**
BALB	**Balikesir**	**1.03**	**302**	*e*Pg		**Pb**	**07 06 41.0**	**+0.1**
BALB				*e*Sg		**Sn**	**07 06 55.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN		**Pg**	**07 06 45.3**	**-0.4**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn		**Pg**	**07 06 45.3**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN		**Pn**	**07 06 45.0**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn		**Pn**	**07 06 45.0**	**+0.4**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN		**Pb**	**07 06 45.1**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn		**Pb**	**07 06 45.2**	**+0.1**
IZI	**Iznik**	**1.28**	**16**	*e*PN		**Pn**	**07 06 45.1**	**+0.2**
IZI	**Iznik**	**1.28**	**16**	*e*Pn		**Pn**	**07 06 45.2**	**+0.2**
BORA	**Eskisehir**	**1.36**	**55**	*i* P		**Pb**	**07 06 46.7**	**+0.2**
BORA				*i* S		**Sb**	**07 07 02.9**	**-1.0**
BORA	**Eskisehir**	**1.36**	**55**	P		**Pb**	**07 06 46.7**	**+0.2**
BORA				S		**Sb**	**07 07 02.9**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*PN		**Pb**	**07 06 48.3**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*Pn		**Pb**	**07 06 48.3**	**+0.2**
ESKT	**Eskisehir**	**1.48**	**73**	*i* P		**Pn**	**07 06 46.1**	**-1.6**
SEYT	**Eskypehyr**	**1.48**	**73**	P		**Pn**	**07 06 46.1**	**-1.6**
EDC	**Edincik**	**1.53**	**325**	*e*PN		**Pn**	**07 06 48.9**	**+0.7**
EDC	**Edincik**	**1.53**	**325**	*e*Pn		**Pn**	**07 06 48.9**	**+0.7**
HRT	**Hereke**	**1.79**	**16**	*e*PN		**Pn**	**07 06 52.6**	**+0.7**
HRT	**Hereke**	**1.79**	**16**	*e*Pn		**Pn**	**07 06 52.6**	**+0.7**

NIED ***28*** *07:11:00,43.90N×148.20E,h20km,Mw3.5 Best double couple: M₀2.09000×10¹⁴ NP1:φ202.00000°,δ19.00000°, λ70.00000°. NP2:φ43.00000°,δ72.00000°,λ97.00000°.*
JMA ***28*** *07:11:26.1±0.4,43.90N×148.24E,h0km,M4.0*
SKHL ***28*** *07:11:28.2±0.1,43.84N×148.43E,h50km±9km,mb3.9/3*

ISC 28 07:11:29.5±3.7,44.0N±0.1×148.3E±0.2,h22km±21km,n11, σ1§15/18,East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**1.04**	**264**	*i* P		**Pn**	**07 11 47.4**	**-1.3**
SHO					AMB	AMB	07 11 48.3	
	90nm,0.7s							
SHO				*i* S		**Sb**	**07 12 01.9**	**-0.1**
SHO					A	A	07 12 03.9	
	430nm,0.4s							
SHO					A	A	07 12 03.9	
	700nm,0.4s							
KUR	**Kuril'sk**	**1.27**	**347**	*i* P		**Pn**	**07 11 51.4**	**-0.4**
KUR					AMB	AMB	07 11 51.7	
	20nm,0.2s							
KUR				*i* S		**Sb**	**07 12 08.7**	**+0.1**
KUR					A	A	07 12 10.2	
	300nm,0.4s							
KUR					A	A	07 12 10.2	
	290nm,0.4s							
YUK	**Yuzh-Kuril'sk**	**1.73**	**272**	*i* P		**Pn**	**07 11 57.0**	**-1.2**
YUK					AMB	AMB	07 11 59.8	
	30nm,0.2s							
YUK				*i* S		**Sn**	**07 12 19.0**	**-0.6**
YUK					A	A	07 12 20.6	
	670nm,0.4s							
YUK					A	A	07 12 20.6	
	340nm,0.4s							
NEM2	**Nemuro 2**	**1.93**	**252**	P		**Pn**	**07 12 00.5**	**-0.5**
NEM2				*e*S		**Sn**	**07 12 25.7**	**+1.1**
JRA	**Rausu**	**2.27**	**270**	P		**Pn**	**07 12 05.4**	**-0.2**
JRA				*e*S		**Sn**	**07 12 34.3**	**+1.5**
JAK	**Akkeshi**	**2.78**	**250**	P		**Pn**	**07 12 12.7**	**+0.1**
JAK				*e*S		**Sn**	**07 12 46.6**	**+1.1**
JTKR	**Abashiri--Toko**	**3.14**	**271**	P		**Pn**	**07 12 18.5**	**+0.9**
JAR	**Ashorobuto**	**3.33**	**259**	P		**Pn**	**07 12 20.8**	**+0.5**
JNBK	**Urakawa-nobuka**	**4.38**	**249**	P		**Pn**	**07 12 35.2**	**+0.6**
YSS	**Yuzh-Sakhalins**	**4.87**	**309**	*e*P		**Pn**	**07 12 41.7**	**+0.3**
JKB	**Kayabe**	**5.71**	**251**	P		**Pn**	**07 12 53.4**	**+0.5**
JKB				*e*S		**Sn**	**07 13 54.9**	**-2.8**

BYKL ***28*** *07:13:51.3±0.4,51.70N×101.38E*

MOS 28 07:13:50.9±0.7,51.69N×101.27E,h8km,mb4.4/1,7C-1D, Error ellipse: s-maj=23.4km s-min=19.2km az=178.9, Tuva-Buryatia-Mongolia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MOY	**Mondy**	**0.17**	**263**	⇑*i*Pg		Pg	07 13 56.1	+1.6
MOY				*e*Sg		Sg	07 13 59.5	+2.5
MOY				Pmax				
	2μm,0.2s							
MOY				Smax				
	4μm,0.2s							
MOY	**Mondy**	**0.17**	**263**	⇑*i*PG		Pg	07 13 56.1	+1.6
MOY				*e*			07 13 59.5	
MOY				pmax	pmax			
	comp=Z,2μm,0.1s							
MOY				smax	smax			
	comp=N,4μm,0.2s							
ORL	**Orlik**	**1.24**	**314**	⇑*i*Pg		Pb	07 14 14.1	-0.5
ORL				*e*Sg		Sb	07 14 30.9	+0.1
ORL				*e*Sb		Sn	07 14 32.7	+1.1
ORL				Pmax				
	comp=N,179nm,0.3s							
ORL				max				
	comp=N,485nm,0.3s							
ORL	**Orlik**	**1.24**	**314**	⇑*i*PG		Pb	07 14 14.1	-0.5
ORL				*e*			07 14 30.9	
ORL				pmax	pmax			
	comp=Z,194nm,0.2s							
ORL				smax	smax			
	comp=E,491nm,0.3s							
TLY	**Talaya**	**1.48**	**89**	*e*Pg		Pn	07 14 16.7	-1.1
TLY				*e*			07 14 19.1	
TLY				*e*Sg		Sn	07 14 36.3	-1.1
TLY				max				
	comp=E,44nm,0.2s							
TLY				Smax				
	comp=E,795nm,0.3s							
TLY	**Talaya**	**1.48**	**89**	*e*PG		Pn	07 14 16.8	-1.0
TLY				*e*			07 14 36.0	
TLY				pmax	pmax			
	comp=Z,42nm,0.4s							
TLY				smax	smax			
	comp=N,1.0nm,0.6s							
ZAK	**Zakamensk**	**1.82**	**135**	⇓*i*Pg		Pb	07 14 23.8	-0.8
	comp=N,110nm,0.8s							
ZAK				⇑*i*Pg		Pb	07 14 23.8	-0.8
	comp=N,132nm,0.8s							
ZAK				⇑*i*Pg		Pb	07 14 23.8	-0.8
	comp=N,128nm,0.8s							
ZAK				*e*Sg		Sb	07 14 48.5	+0.9
ZAK				Pmax				
	comp=N,152nm,0.8s							
ZAK				Smax				
	comp=N,955nm,0.6s							
ZAK	**Zakamensk**	**1.82**	**135**	⇑*i*PN		Pb	07 14 23.8	-0.8
ZAK				*e*			07 14 48.3	
ZAK				pmax	pmax			
	comp=Z,106nm,0.2s							
ZAK				smax	smax			
	comp=N,953nm,0.3s							
IRK	**Irkutsk**	**1.94**	**72**	*e*Pg		Pb	07 14 25.6	-0.9
IRK				*e*Sg		Sb	07 14 50.3	-0.5
IRK				Pmax				
	comp=N,205nm,0.1s							
IRK				Smax				
	comp=N,1μm,0.5s							
IRK	**Irkutsk**	**1.94**	**72**	*e*PN		Pb	07 14 25.8	-0.7
IRK				*e*			07 14 49.4	
IRK				pmax	pmax			
	comp=Z,207nm,0.1s							
IRK				smax	smax			
	comp=N,1μm,0.5s							
IVK	**Ivanovka**	**1.96**	**85**	*i* Pg		Pn	07 14 25.5	+1.1
IVK				*e*Sg		Sn	07 14 50.2	+1.0
IVK				*e*			07 14 52.8	
IVK				Pmax				
	comp=N,56nm,0.4s							
IVK				Smax				
	comp=N,334nm,0.6s							
LSTR	**Listvyanka**	**2.22**	**84**	*e*Pn		Pn	07 14 27.7	-0.3
LSTR				*e*Pg		Pb	07 14 30.2	-1.1
LSTR				*e*Sg		Sb	07 14 58.1	-0.8
LSTR				Pmax				
	comp=N,27nm,0.5s							
LSTR				Smax				
	comp=N,141nm,0.6s							
BGT	**Bolshoye Golou**	**2.59**	**80**	*e*Pg		Pb	07 14 36.3	-1.3
BGT				*e*Sg		Sb	07 15 09.2	-0.4
BGT				Pmax				
	comp=N,85nm,0.5s							
BGT				Smax				
	comp=N,524nm,0.5s							
STDB	**Stepnoy Dvoret**	**3.19**	**79**	*e*Sg		Sb	07 15 28.8	+1.9
STDB				*e*			07 15 35.5	
TRG	**Tyrgan**	**3.30**	**69**	*e*Pn		Pn	07 14 44.8	+1.9
TRG				*e*Pg		Pb	07 14 48.2	-1.5
TRG				*e*			07 15 24.2	
TRG				*e*Sg		Sb	07 15 30.0	-0.1
TRG				Pmax				
	comp=N,35nm,0.2s							
TRG				Smax				
	comp=N,142nm,0.5s							
TRG	**Tyrgan**	**3.30**	**69**	*e*PN		Pn	07 14 44.9	+2.0
TRG				*e*			07 14 51.5	
TRG				*e*S		Sn	07 15 21.7	-0.7
TRG				*e*			07 15 29.7	
TRG				pmax	pmax			
	comp=Z,35nm,0.1s							
TRG				smax	smax			
	comp=N,176nm,0.5s							
KAB	**Kabansk**	**3.36**	**82**	*e*Sg		Sb	07 15 32.8	+1.2
HRMR	**Khuramsha**	**3.54**	**89**	*e*Pg		Pb	07 14 53.1	-0.7
HRMR				*e*Sg		Sb	07 15 37.1	+0.1
HRMR				Pmax				
	comp=N,41nm,0.4s							
HRMR				Smax				
	comp=N,636nm,0.6s							
ZRHB	**Zarechye**	**3.73**	**74**	*e*		Pb	07 14 54.0	-3.0
ZRHB				*e*Pg		Pg	07 14 57.1	-5.2
ZRHB				*e*Sg		Sb	07 15 45.5	+3.2
ZRHB				Smax				
	comp=N,445nm,0.8s							
UUDB	**Ulan-Yde**	**3.98**	**85**	*e*Pg		Pb	07 14 58.9	-2.3
UUDB				*e*Sg		Sb	07 15 49.0	-0.4
UUDB				Pmax				
	comp=N,28nm,0.7s							
UUDB				Smax				
	comp=N,104nm,0.8s							
OGRR	**Ongureny**	**4.32**	**61**	*e*Pn		Pn	07 14 58.6	+1.7
OGRR				*e*Pg		Pb	07 15 06.9	-0.1
OGRR				*e*Sn		Sn	07 15 47.7	+0.3
OGRR				*e*Sg		Sb	07 16 02.5	+3.2
OGRR				*e*			07 16 07.0	
OGRR				Pmax				
	comp=N,39nm,0.3s							
OGRR				Smax				
	comp=N,243nm,0.8s							
OGRR	**Ongureny**	**4.32**	**61**	*e*PN		Pn	07 14 58.6	+1.7
OGRR				*e*			07 15 09.0	
OGRR				*e*S		Sn	07 15 47.5	+0.1
OGRR				*e*			07 16 01.7	
OGRR				pmax	pmax			
	comp=Z,39nm,0.5s							
OGRR				smax	smax			
	comp=E,242nm,1.2s							
KELR	**Kotokel**	**4.33**	**73**	*e*Sg		Sb	07 16 01.4	+2.0
KELR				*e*			07 16 06.7	

MXMB	**Maximikha**	**4.84**	**68**	*e*		Pg	07 15 24.6	+1.1	
MXMB				*e*Sg		Sb	07 16 20.0	+5.9	
SYVR	**Suvo**	**5.67**	**66**	*e*			07 16 41.9		
SYVR				*e*Sg		Sb	07 16 45.3	+7.3	
SYVR				Smax					
	comp=E,56nm,1.7s								
NIZ	**Nizh Angarsk**	**6.39**	**47**	*e*Pn		Pn	07 15 27.1	+1.8	
NIZ				*e*			07 15 30.8		
NIZ				*e*Sn		Sn	07 16 36.3	-2.1	
NIZ				*e*Sg		Sb	07 17 07.1	+8.3	
NIZ				max					
	comp=E,8.0nm,0.1s								
NIZ				Smax					
	comp=E,176nm,1.2s								
YLYR	**Ulyunkhan**	**6.74**	**58**	*e*Pn		Pn	07 15 31.5	+1.5	
YLYR				*e*Pg		Pb	07 15 51.5	+3.3	
YLYR				*e*Sn		Sn	07 16 46.8	-0.1	
YLYR				*e*Sg		Sg	07 17 18.0	-9.0	
YLYR				Pmax					
	comp=E,5.0nm,0.6s								
YLYR				Smax					
	comp=E,75nm,1.2s								
KMO	**Kumora**	**7.23**	**51**	*e*Pn		Pn	07 15 38.5	+1.7	
KMO				*e*Sn		Sn	07 16 57.3	-1.7	
KMO				*e*Sg		Sb	07 17 32.0	+9.1	
KMO				*e*			07 17 43.3		
KMO				max					
	comp=E,115nm,1.1s								
KPC	**Khapcheranga**	**7.33**	**101**	*e*Pn		Pn	07 15 39.1	+0.8	
KPC				*e*Pg		Pb	07 16 02.6	+4.2	
KPC				*e*Sg		Sg	07 17 36.6	-10	
KPC				Pmax					
	comp=E,3.0nm,0.8s								
KPC				Smax					
	comp=E,67nm,2.1s								
SVKR	**Severomuysk**	**8.50**	**54**	*e*			07 17 52.7		
SVKR				*e*Sg		Sg	07 18 12.9	-11	
SVKR				Smax					
	comp=E,113nm,0.9s								
BOD	**Bodaibo**	**9.58**	**45**	*e*Sg		Sn	07 18 47.4	+51	
BOD				Smax					
	comp=E,34nm,1.3s								
NLYR	**Nelyaty**	**9.74**	**55**	*e*Sg		Sn	07 18 51.8	+51	
NLYR				Smax					
	comp=E,64nm,0.7s								
TUP	**Tupik**	**11.57**	**69**	*e*			07 19 17.5		
TUP				*e*Sg			07 19 48.6		
TUP				Smax					
	comp=E,21nm,1.9s								

IDC ***28*** *07:17:35.3±2.9,21.53S×169.74E,h0km,mb4.2/5, mb1 4.3/6,mb1mx4.0/32,mbtmp4.2/6,ML3.9/1,MS3.7/10, Ms1 3.7/10,ms1mx3.3/34,Error ellipse: s-maj=96.7km s-min=30.6km az=148.0*
ISCJB ***28*** *07:17:36.9±0.9,21.6S±0.3×169.8E±0.1,h30km,mb4.2/9, MS3.9/9,Error ellipse: s-maj=46.7km s-min=10.0km az=164.2*
NEIC ***28*** *07:17:36.9±0.8,21.04S×169.57E,h10km,mb4.4/5,Error ellipse: s-maj=17.1km s-min=11.6km az=208.0*

ISC 28 07:17:38.9±1.2,21.5S±0.4×169.8E±0.1,h30km,n23, σ1§35/18,mb4.3/9,MS3.7/9,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.16**	**260**	P		**Pn**	**07 18 26.5**	**-0.2**
	16nm,0.3s,baz=119,slow=11,SNR=310							
DZM				S		**Sn**	**07 19 05.0**	**+1.5**
	28nm,0.3s,baz=320,slow=14,SNR=9.6							
DZM	**Mont Dzumac**	**3.16**	**260**	*e*Pn		**Pn**	**07 18 25.0**	**-1.8**
DZM				*e*Sn		**Sn**	**07 19 02.2**	**-1.4**
RAO	**Raoul Island**	**13.50**	**127**	LR		LR	07 24 50.4	
	comp=Z,163nm,18.7s,baz=220,slow=32							
URZ	**Urewera**	**17.83**	**161**	LR		LR	07 26 56.1	
	comp=Z,130nm,19.1s,baz=334,slow=31							
AFI	**Afiamalu**	**19.11**	**70**	*e*P		**P**	**07 21 59.1**	**-0.4**
	21nm,1.0s							
STKA	**Stephens Creek**	**27.15**	**242**	P		**P**	**07 23 20.5**	**+0.9**
	3.6nm,0.9s,baz=106,slow=7.4,SNR=3.5							
STKA				LR		LR	07 33 02.8	
	comp=Z,125nm,19.7s,baz=28,slow=34							
BBOO	**Buckleboo**	**31.92**	**242**	*e*P		**P**	**07 24 03.9**	**+1.9**
	9.2nm,1.3s							
WRAB	**Tennant Creek**	**33.15**	**266**	*e*P		**P**	**07 24 11.9**	**-0.9**
	4.3nm,0.9s							
ASAR	**Alice Springs**	**33.15**	**259**	P		**P**	**07 24 13.1**	**+0.2**
	2.1nm,0.8s,baz=84,slow=9.0,SNR=18							
ASAR				LR		LR	07 36 56.7	
	comp=Z,90nm,18.9s,baz=98,slow=35							
WRA	**Warramunga Arr**	**33.16**	**266**	P		**P**	**07 24 11.8**	**-1.1**
	1.3nm,0.5s,baz=101,slow=8.3,SNR=19							
WRA				LR		LR	07 38 21.4	
	comp=Z,156nm,18.1s,baz=60,slow=38							
FITZ	**Fitzroy Crossi**	**41.58**	**267**	LR		LR	07 43 42.3	
	comp=Z,74nm,18.8s,baz=104,slow=38							
FITZ	**Fitzroy Crossi**	**41.58**	**267**	*e*P		**P**	**07 25 24.6**	**+0.3**
	9.9nm,0.8s							
MBWA	**Marble Bar**	**46.47**	**261**	*e*P		**P**	**07 26 01.9**	**-1.6**
	2.2nm,0.5s							
VNDA	**Vanda**	**56.17**	**182**	LR		LR	07 49 05.3	
	comp=Z,67nm,18.1s,baz=18,slow=34							
TGY	**Tagaytay City**	**59.60**	**302**	LR		LR	07 53 54.8	
	comp=Z,952nm,18.3s,baz=320,slow=37							
PETK	**Petropavlovsk-**	**75.06**	**352**	LR		LR	07 59 41.4	
	comp=Z,20nm,18.3s,baz=115,slow=34							
CMAR	**Chiang Mai Arr**	**79.92**	**294**	P		**P**	**07 29 47.6**	**+2.2**
	0.9nm,0.4s,baz=137,slow=4.5,SNR=5.3							
MA2	**Magadan**	**82.31**	**350**	LR		LR	07 58 59.6	
	comp=Z,310nm,21.2s,baz=179,slow=30							
SONM	**Songino Array**	**89.36**	**323**	P		**P**	**07 30 33.5**	**+1.0**
	1.8nm,1.0s,baz=130,slow=4.6,SNR=6.5							
TXAR	**Lajitas Array**	**97.39**	**62**	LR		LR	08 07 22.7	
	comp=Z,26nm,18.9s,baz=0.0,slow=31							
DPC	**Dobruska-Polom**	**144.47**	**331**	*e*PKP		**PKPdf**	**07 37 11.6**	**-0.6**
DPC				*e*pPKP		**pPKPdf**	**07 37 20.3**	**-1.8**
BRG	**Berggiesshubel**	**145.14**	**333**	*e*P		**PKPdf**	**07 37 13.1**	**-0.2

TRWZ	**Traveller**	**1.12**	**44**	⇓P*	Pn	07 21 07.8	-0.4		
TRWZ				AML	AML	07 21 23.2			
TRWZ				AML	AML	07 21 24.0			
CAW	**Cannon Point**	**1.14**	**16**	P*	Pn	07 21 08.5	0.0		
CAW				AML	AML	07 21 21.9			
CAW				AML	AML	07 21 22.2			
MTW	**Mount Morrison**	**1.23**	**31**	⇓P*	Pn	07 21 09.2	-0.5		
MTW				AML	AML	07 21 24.3			
MTW				AML	AML	07 21 24.8			
KIW	**Kapiti Island**	**1.36**	**8**	PN	Pn	07 21 11.6	+0.1		
KIW				AML	AML	07 21 27.6			
KIW				AML	AML	07 21 27.7			
NNZ	**Nelson**	**1.38**	**316**	⇑PN	Pn	07 21 11.1	-0.6		
THZ	**Tophouse**	**1.38**	**288**	⇑PN	Pn	07 21 11.4	-0.5		
TMWZ	**Te Maipa**	**1.44**	**40**	PN	Pn	07 21 11.8	-0.8		
TMWZ				AML	AML	07 21 29.9			
TMWZ				AML	AML	07 21 30.2			
OGWZ	**Otaki Gorge**	**1.44**	**16**	PN	Pn	07 21 12.6	-0.1		
OGWZ				AML	AML	07 21 29.2			
OGWZ				AML	AML	07 21 29.9			
HOWZ	**Holdsworth Sta**	**1.46**	**26**	PN	Pn	07 21 12.7	-0.3		
HOWZ				AML	AML	07 21 30.7			
HOWZ				AML	AML	07 21 30.8			
MRZ	**Mangatainoka R**	**1.69**	**24**	PN	Pn	07 21 15.9	-0.2		
MRZ				AML	AML	07 21 36.0			
MRZ				AML	AML	07 21 36.3			
TIWZ	**Tintock**	**1.70**	**33**	AML	AML	07 21 36.9			
TIWZ				AML	AML	07 21 37.8			
LTZ	**Lake Taylor**	**1.86**	**251**	PN	Pn	07 21 18.5	+0.1		
PRWZ	**Pori Road**	**1.93**	**31**	AML	AML	07 21 42.8			
PRWZ				AML	AML	07 21 43.2			
BFZ	**Birch Farm**	**1.94**	**39**	PN	Pn	07 21 18.6	-0.9		
BFZ				AML	AML	07 21 41.5			
BFZ				AML	AML	07 21 41.9			
BFZ				AML	AML	07 21 41.9			
BFZ				AML	AML	07 21 42.0			
POWZ	**Post Office Ro**	**2.00**	**25**	AML	AML	07 21 45.6			
POWZ				AML	AML	07 21 45.9			
CRLZ	**Canterbury Las**	**2.02**	**227**	PN	Pn	07 21 19.6	-1.1		
MQZ	**McQueen's Vall**	**2.10**	**224**	PN	Pn	07 21 20.1	-1.5		
QRZ	**Quartz Range**	**2.11**	**310**	PN	Pn	07 21 22.1	+0.2		
DSZ	**Denniston Nort**	**2.18**	**281**	⇓PN	Pn	07 21 23.0	+0.2		
ANWZ	**Angora Road**	**2.22**	**39**	PN	Pn	07 21 22.3	-1.0		
ANWZ				AML	AML	07 21 49.1			
ANWZ				AML	AML	07 21 50.1			
DVHZ	**Dannevirke**	**2.22**	**31**	AML	AML	07 21 49.0			
DVHZ				AML	AML	07 21 50.3			
OXZ	**Oxford**	**2.23**	**239**	PN	Pn	07 21 22.8	-0.6		
TSZ	**Takapari Road**	**2.36**	**25**	PN	Pn	07 21 24.8	-0.5		
TSZ				AML	AML	07 21 52.9			
TSZ				AML	AML	07 21 53.2			
INZ	**Inchbonnie**	**2.43**	**257**	PN	Pn	07 21 26.4	+0.1		
WAZ	**Wanganui**	**2.46**	**6**	⇑PN	Pn	07 21 28.5	+1.8		
WPHZ	**Waipukurau**	**2.53**	**33**	AML	AML	07 22 00.3			
WPHZ				AML	AML	07 22 02.1			
PNHZ	**Pukenui**	**2.57**	**27**	PN	Pn	07 21 27.5	-0.7		
PNHZ				AML	AML	07 21 58.9			
PNHZ				AML	AML	07 21 59.2			
PXZ	**Pawanui**	**2.74**	**38**	PN	Pn	07 21 28.9	-1.6		
LREZ	**Lake Rotokare**	**2.75**	**356**	PN	Pn	07 21 33.0	+2.3		
NMEZ	**Namu Road**	**2.85**	**348**	PN	Pn	07 21 34.2	+2.2		
KRHZ	**Kereru**	**2.87**	**27**	PN	Pn	07 21 31.3	-1.1		
KRHZ				AML	AML	07 22 05.8			
KRHZ				AML	AML	07 22 09.0			
MTVZ	**Mangateitei**	**2.89**	**13**	PN	Pn	07 21 34.0	+1.4		
PREZ	**Palmer Road**	**2.89**	**352**	PN	Pn	07 21 35.0	+2.4		
MOVZ	**Moawhango**	**2.92**	**17**	PN	Pn	07 21 33.2	+0.1		
KAHZ	**Kahuranaki**	**2.94**	**36**	PN	Pn	07 21 32.2	-1.1		
KHEZ	**Kahui Hut**	**2.95**	**350**	PN	Pn	07 21 35.4	+1.9		
PKVZ	**Pokaka**	**2.96**	**10**	PN	Pn	07 21 34.7	+1.1		
WNVZ	**Wahianoa**	**2.97**	**14**	PN	Pn	07 21 35.1	+1.3		
WHVZ	**Whangaehu Hut**	**3.01**	**14**	PN	Pn	07 21 35.1	+0.7		
WVZ	**Waitaha Valley**	**3.02**	**252**	PN	Pn	07 21 34.6	+0.3		
FWVZ	**Far West T-bar**	**3.03**	**13**	PN	Pn	07 21 35.6	+0.9		
TUVZ	**Tukino**	**3.03**	**15**	PN	Pn	07 21 35.4	+0.7		
RPZ	**Rata Peaks**	**3.04**	**239**	⇑PN	Pn	07 21 34.1	-0.6		
PKE	**Pukeiti**	**3.06**	**350**	PN	Pn	07 21 36.8	+1.9		
VRZ	**Vera Road**	**3.08**	**1**	⇓PN	Pn	07 21 36.9	+1.7		
NGZ	**Ngauruhoe**	**3.11**	**14**	PN	Pn	07 21 37.3	+1.5		
OTVZ	**Oturere**	**3.14**	**14**	PN	Pn	07 21 36.9	+0.8		
MHEZ	**Mangahewa**	**3.14**	**355**	PN	Pn	07 21 38.4	+2.4		
MCHZ	**McNeill Hill**	**3.17**	**30**	PN	Pn	07 21 36.5	+0.1		
MCHZ				AML	AML	07 22 24.7			
WTVZ	**West Tongariro**	**3.17**	**13**	PN	Pn	07 21 37.5	+1.0		
TWVZ	**Taurewa**	**3.19**	**11**	PN	Pn	07 21 37.5	+0.7		
BKZ	**Black Stump Fm**	**3.34**	**25**	PN	Pn	07 21 37.1	-1.8		
ARHZ	**Aropaoanui**	**3.44**	**32**	PN	Pn	07 21 39.3	-0.8		
ARHZ				AML	AML	07 22 21.9			
ARHZ				AML	AML	07 22 23.2			
MRHZ	**Matea Rd**	**3.63**	**22**	PN	Pn	07 21 42.4	-0.4		
MRHZ				AML	AML	07 22 21.7			
MRHZ				AML	AML	07 22 25.6			
WHHZ	**Waihua**	**3.69**	**33**	AML	AML	07 22 26.0			
WHHZ				AML	AML	07 22 30.8			
HIZ	**Hauiti**	**3.69**	**2**	PN	Pn	07 21 45.1	+1.4		
FOZ	**Fox Glacier**	**3.80**	**248**	PN	Pn	07 21 45.4	+0.4		
LBZ	**Lake Benmore**	**3.92**	**235**	PN	Pn	07 21 46.5	-0.3		
TLZ	**Tolley Road**	**3.93**	**10**	Pn	Pn	07 21 47.8	+0.8		
TLZ	**Tolley Road**	**3.93**	**10**	PN	Pn	07 21 47.8	+0.8		
SNGZ	**Shannon Statio**	**3.99**	**32**	PN	Pn	07 21 46.7	-0.9		
SNGZ				AML	AML	07 22 33.5			
SNGZ				AML	AML	07 22 34.5			
ODZ	**Otahua Downs**	**4.06**	**224**	PN	Pn	07 21 47.9	-0.8		
URZ	**Urewera**	**4.37**	**26**	Pn	Pn	07 21 51.0	-1.9		
URZ	**Urewera**	**4.37**	**26**	PN	Pn	07 21 51.0	-1.9		
MWZ	**Matawai**	**4.45**	**30**	Pn	Pn	07 21 52.3	-1.7		
MWZ	**Matawai**	**4.45**	**30**	PN	Pn	07 21 52.3	-1.7		
MWZ				AML	AML	07 22 44.9			
TKGZ	**Te Karaka**	**4.49**	**34**	AML	AML	07 22 43.4			
TKGZ				AML	AML	07 22 44.9			
TOZ	**Tahuroa Road**	**4.52**	**9**	PN	Pn	07 21 55.6	+0.6		
JCZ	**Jackson Bay**	**4.68**	**245**	PN	Pn	07 21 57.3	0.0		
TWGZ	**Tauwhareparae**	**4.76**	**33**	Pn	Pn	07 21 57.0	-1.4		
TWGZ	**Tauwhareparae**	**4.76**	**33**	AML	AML	07 22 53.1			
TWGZ				AML	AML	07 22 55.6			
EAZ	**Earnscleugh**	**4.92**	**230**	PN	Pn	07 21 59.8	-0.6		
MKAZ	**Moumakai**	**5.11**	**5**	PN	Pn	07 22 03.5	+0.4		
AWAZ	**Awhitu Peninsu**	**5.14**	**360**	PN	Pn	07 22 04.7	+1.2		
TUZ	**Tuapeka**	**5.21**	**222**	PN	Pn	07 22 03.9	-0.5		
WMGZ	**Waiomatatini S**	**5.25**	**35**	AML	AML	07 23 01.7			
WMGZ				AML	AML	07 23 02.2			
ETAZ	**East Tamaki Re**	**5.25**	**2**	PN	Pn	07 22 06.3	+1.2		
WIAZ	**Waiheke Island**	**5.42**	**4**	PN	Pn	07 22 08.0	+0.6		
KUZ	**Kuaotunu**	**5.52**	**9**	PN	Pn	07 22 08.9	+0.2		

MEX 28 07:23:38.5±0.4, 14°.14N×92°.47W, h15km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**2.15**	**8**	*e*P	Pn	07 24 10.6	-3.4
CCIG				*i* S	Sn	07 24 36.4	-4.3
TGIG		**2.70**	**347**	*e*P	Pn	07 24 19.1	-2.3
TGIG				*i* S	Sn	07 24 49.1	-4.8

*IDC **28** 07:37:03.7±2.5, 5°.77N×126°.03E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.4/31, mbtmp3.4/3, Error ellipse: s-maj=205.9km s-min=27.3km az=65.0*

ISC 28 07:37:17.7±5.4, 6°N±2°×12°6E±°, h127km, n4, σ0°62/4, mb3.4/3, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DMPH	**Davao City--Mi**	**1.47**	**332**	*e*P	**Pn**	**07 37 45.0**	**-0.3**
DMPH				*e*S	Sn	07 37 56.4	-10
WRA	**Warramunga Arr**	**26.78**	**163**	P	**P**	**07 42 46.2**	**+0.3**
	0.4nm,0.3s,baz=342,slow=8.8,SNR=11						
ASAR	**Alice Springs**	**30.21**	**166**	P	**P**	**07 43 16.1**	**-0.3**
	0.2nm,0.5s,baz=346,slow=7.3,SNR=3.7						
MKAR	**Makanchi Array**	**55.59**	**325**	P	**P**	**07 46 40.5**	**+0.4**
	0.2nm,0.3s,baz=126,slow=7.3,SNR=4.4						

*ATH **28** 07:57:01.8, 38°.32N×21°.75E, h15km±2km, ML3.0/8, Error ellipse: s-maj=2.1km s-min=0.8km az=217.0*
*IASPEI **28** 07:57:01.8±0.8, 38°.33N±0°.02×21°.75E±0°.02, h10km±4km, mb3.9/4, Error ellipse: s-maj=2.6km s-min=2.5km*

az=154.9, GT5 selection from ISC bulletin GT5 identified by Bond¨ir and McLaughlin (2009) selection criteria Bond¨ir and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009
*CSEM **28** 07:57:01.8±0.1, 38°.33N×21°.75E, h8km, ML3.2, Error ellipse: s-maj=2.1km s-min=2.0km az=158.0*
*ISCJB **28** 07:57:02.0±0.3, 38°.33N±0°.02×21°.74E±0°.02, h9km±2km, mb3.7/4, MS1.8/1, Error ellipse: s-maj=2.7km s-min=2.5km az=168.2*
*THE **28** 07:57:02.0, 38°.33N×21°.75E, h1km±1km, ML3.2/16, Error ellipse: s-maj=1.4km s-min=0.5km az=209.0*
*IDC **28** 07:57:03.4±3.2, 38°.53N×22°.00E, h0km, mb3.7/4, mb1 3.6/6, mb1mx3.3/55, mbtmp3.6/6, ML2.9/2, MS2.4/2, Ms1 2.4/2, ms1mx2.0/39, Error ellipse: s-maj=59.7km s-min=31.3km az=56.0*

ISC 28 07:57:02.2±0.7, 38°.33N±0°.01×21°.75E±0°.02, h9km±4km, n99, σ0°94/147, mb3.9/4, Greece

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
UPR	**University Cam**	**0.06**	**151**	P	**Pg**	**07 57 03.9**	**-0.2**
UPR				S	**Sg**	**07 57 04.8**	**-0.7**
UPR	**University Cam**	**0.06**	**151**	P	**Pg**	**07 57 03.9**	**-0.2**
UPR				S	**Sg**	**07 57 05.2**	**-0.3**
UPR	**University Cam**	**0.06**	**151**	P	**Pg**	**07 57 03.3**	**-0.8**
UPR				S	**Sg**	**07 57 04.8**	**-0.7**
VVK	**Vomvokou**	**0.10**	**28**	P	**Pg**	**07 57 04.9**	**+0.2**
VVK				S	**Sg**	**07 57 07.1**	**+0.6**
LAKA	**Lakka**	**0.20**	**118**	P	**Pg**	**07 57 06.2**	**-0.1**
LAKA				S	**Sg**	**07 57 09.2**	**+0.1**
LAKA	**Lakka**	**0.20**	**118**	P	**Pg**	**07 57 06.3**	**-0.1**
LAKA				S	**Sg**	**07 57 09.3**	**+0.1**
SERG	**Sergoula**	**0.25**	**72**	P	**Pg**	**07 57 07.5**	**+0.2**
SERG				S	**Sg**	**07 57 11.7**	**+1.0**
SERG	**Sergoula**	**0.25**	**72**	P	**Pg**	**07 57 07.5**	**+0.2**
TRIZ	**Trizonia**	**0.25**	**83**	P	**Pg**	**07 57 07.5**	**+0.2**
TRIZ				S	**Sg**	**07 57 11.2**	**+0.4**
ANX	**Ano Chora**	**0.29**	**27**	P	**Pg**	**07 57 08.2**	**+0.1**
ANX				S	**Sg**	**07 57 12.9**	**+0.9**
ANX	**Ano Chora**	**0.29**	**27**	P	**Pg**	**07 57 08.2**	**+0.1**
ANX				S	**Sg**	**07 57 12.9**	**+0.9**
KALE	**Kalithea**	**0.31**	**79**	P	**Pg**	**07 57 08.4**	**0.0**
KALE				S	**Sg**	**07 57 13.2**	**+0.6**
KALE	**Kalithea**	**0.31**	**79**	P	**Pg**	**07 57 08.4**	**0.0**
KALE				S	**Sg**	**07 57 13.4**	**+0.8**
KALE	**Kalithea**	**0.31**	**79**	P	**Pg**	**07 57 08.7**	**+0.3**
KALE				S	**Sb**	**07 57 13.8**	**-1.4**
KALE				AML	AML	07 57 18.7	
	comp=E,9235μm,0.2s						
KALE				AML	AML	07 57 19.6	
	comp=N,8437μm,0.4s						
AXS	**Araxos**	**0.33**	**245**	P	**Pg**	**07 57 08.3**	**-0.4**
AXS	**Araxos**	**0.33**	**245**	P	**Pg**	**07 57 08.2**	**-0.4**
AXS	**Araxos**	**0.33**	**245**	P	**Pg**	**07 57 08.2**	**-0.4**
PVO	**Paravola**	**0.33**	**328**	P	**Pg**	**07 57 08.7**	**-0.1**
PVO				S	**Sb**	**07 57 14.5**	**-1.3**
PVO	**Paravola**	**0.33**	**328**	P	**Pg**	**07 57 08.7**	**-0.1**
PVO				S	**Sb**	**07 57 14.5**	**-1.3**
PVO	**Paravola**	**0.33**	**328**	P	**Pg**	**07 57 08.7**	**-0.1**
PVO				S	**Sb**	**07 57 15.0**	**-0.8**
RLS	**Riolos of Patr**	**0.35**	**219**	P	**Pg**	**07 57 08.9**	**-0.3**
RLS				S	**Sg**	**07 57 14.0**	**+0.1**
RLS	**Riolos of Patr**	**0.35**	**219**	P	**Pg**	**07 57 08.9**	**-0.3**
RLS				S	**Sg**	**07 57 14.6**	**+0.7**
RLS	**Riolos of Patr**	**0.35**	**219**	S	**Sg**	**07 57 14.6**	**+0.7**
RLS				AML	AML	07 57 14.7	
	comp=E,3807μm,0.3s						
RLS				AML	AML	07 57 16.2	
	comp=N,5338μm,0.4s						
DRO	**Drossia**	**0.38**	**185**	P	**Pg**	**07 57 09.2**	**-0.5**
DRO	**Drossia**	**0.38**	**185**	P	**Pg**	**07 57 09.2**	**-0.5**
DRO				S	**Sg**	**07 57 15.3**	**+0.5**
DRO	**Drossia**	**0.38**	**185**	P	**Pg**	**07 57 09.2**	**-0.5**
DRO				S	**Sg**	**07 57 15.7**	**+0.9**
DRO				AML	AML	07 57 22.9	
	comp=E,16490μm,0.6s						
DRO				AML	AML	07 57 24.9	
	comp=N,9017μm,0.5s						
KLV	**Kalavryta, Ach**	**0.43**	**133**	P	**Pg**	**07 57 10.1**	**-0.5**
KLV				S	**Sg**	**07 57 15.8**	**-0.4**
KLV	**Kalavryta, Ach**	**0.43**	**133**	P	**Pg**	**07 57 10.1**	**-0.5**
KLV				S	**Sg**	**07 57 15.8**	**-0.4**
KLV	**Kalavryta, Ach**	**0.43**	**133**	P	**Pg**	**07 57 10.0**	**-0.5**
KLV				S	**Sb**	**07 57 17.4**	**-1.2**
KLV				AML	AML	07 57 18.9	
	comp=N,2477μm,0.3s						
KLV				AML	AML	07 57 19.4	
	comp=E,3442μm,0.6s						
PDO	**Prodromos**	**0.52**	**301**	P	**Pg**	**07 57 11.3**	**-1.0**
PDO	**Prodromos**	**0.52**	**301**	P	**Pg**	**07 57 11.7**	**-0.6**
PDO				S	**Sb**	**07 57 20.4**	**-0.8**
PDO	**Prodromos**	**0.52**	**301**	P	**Pg**	**07 57 11.7**	**-0.6**
PDO				S	**Sb**	**07 57 20.4**	**-0.8**
PDO				AML	AML	07 57 26.2	
	comp=E,3334μm,0.3s						
PDO				AML	AML	07 57 30.2	
	comp=N,6846μm,0.4s						
EVR	**Evrytania**	**0.58**	**4**	P	**Pg**	**07 57 12.8**	**-0.8**
EVR				S	**Sb**	**07 57 22.5**	**-0.7**
EVR	**Evrytania**	**0.58**	**4**	P	**Pg**	**07 57 13.1**	**-0.4**
EVR				S	**Sb**	**07 57 22.5**	**-0.7**
EVR	**Evrytania**	**0.58**	**4**	P	**Pg**	**07 57 13.1**	**-0.4**
EVR				AML	AML	07 57 33.0	
	comp=N,3200μm,0.6s						
VTN	**Vitineika**	**0.61**	**227**	P	**Pg**	**07 57 14.1**	**+0.1**
VTN	**Vitineika**	**0.61**	**227**	P	**Pg**	**07 57 14.1**	**+0.1**
DSF	**Desfina**	**0.61**	**83**	P	**Pg**	**07 57 13.2**	**-0.8**
DSF	**Desfina**	**0.61**	**83**	P	**Pg**	**07 57 13.3**	**-0.8**
DSF				S	**Sg**	**07 57 22.8**	**+0.6**
DSF	**Desfina**	**0.61**	**83**	P	**Pg**	**07 57 13.3**	**-0.8**
DSF				S	**Sb**	**07 57 23.3**	**-0.7**
DSF				AML	AML	07 57 25.8	
	comp=E,2525μm,0.3s						
DSF				AML	AML	07 57 28.9	
	comp=N,2291μm,0.5s						
THAL	**Thalero**	**0.78**	**112**	P	**Pg**	**07 57 16.5**	**-0.7**
THAL	**Thalero**	**0.78**	**112**	P	**Pg**	**07 57 16.5**	**-0.7**
THAL	**Thalero**	**0.78**	**112**	P	**Pg**	**07 57 16.5**	**-0.7**
KFL	**Anninata**	**0.79**	**254**	P	**Pg**	**07 57 17.3**	**-0.2**
KFL	**Anninata**	**0.79**	**254**	P	**Pg**	**07 57 17.3**	**-0.2**
AMT	**Artemida-Makis**	**0.80**	**182**	P	**Pg**	**07 57 16.6**	**-1.0**
AMT				S	**Sb**	**07 57 29.3**	**0.0**
AMT	**Artemida-Makis**	**0.80**	**182**	P	**Pg**	**07 57 16.9**	**-0.7**
AGG	**Agios Georgios**	**0.82**	**33**	P	**Pg**	**07 57 17.1**	**-1.0**
AGG				S	**Sb**	**07 57 29.5**	**-0.5**
AGG	**Agios Georgios**	**0.82**	**33**	P	**Pg**	**07 57 17.5**	**-0.6**
AGG				S	**Sg**	**07 57 29.3**	**+0.5**
AGG	**Agios Georgios**	**0.82**	**33**	P	**Pg**	**07 57 17.1**	**-1.0**
AGG				S	**Sg**	**07 57 29.3**	**+0.5**
AGG				AML	AML	07 57 31.8	
	comp=E,6506μm,0.3s						
AGG				AML	AML	07 57 32.4	
	comp=N,6792μm,0.7s						
VLS	**Valsamata**	**0.93**	**261**	P	**Pg**	**07 57 18.9**	**-1.2**
VLS				S	**Sb**	**07 57 32.8**	**-0.1**
VLS	**Valsamata**	**0.93**	**261**	P	**Pg**	**07 57 18.9**	**-1.2**
VLS				S	**Sb**	**07 57 32.8**	**-0.1**
DSL	**Palaion Diasel**	**0.95**	**328**	P	**Pg**	**07 57 19.0**	**-1.5**
DSL	**Palaion Diasel**	**0.95**	**328**	P	**Pg**	**07 57 19.0**	**-1.5**
LKD2	**Lefkada island**	**0.97**	**298**	P	**Pg**	**07 57 20.2**	**-0.7**
LKD2	**Lefkada island**	**0.97**	**298**	P	**Pg**	**07 57 20.2**	**-0.7**
ZKS	**Zakynthos**	**0.99**	**231**	P	**Pg**	**07 57 19.9**	**-1.4**
ZKS	**Zakynthos**	**0.99**	**231**	P	**Pg**	**07 57 20.3**	**-1.0**
ZKS	**Zakynthos**	**0.99**	**231**	P	**Pg**	**07 57 20.3**	**-1.0**
LTK	**Loutraki**	**1.01**	**108**	P	**Pb**	**07 57 21.5**	**-0.3**
LTK	**Loutraki**	**1.01**	**108**	P	**Pb**	**07 57 21.5**	**-0.3**
LOUT	**Loutraki**	**1.02**	**109**	P	**Pg**	**07 57 21.2**	**-0.7**
LOUT	**Loutraki**	**1.02**	**109**	P	**Pg**	**07 57 21.2**	**-0.7**
LKR	**Lokris**	**1.03**	**72**	P	**Pg**	**07 57 20.7**	**-1.3**
LKR	**Lokris**	**1.03**	**72**	P	**Pg**	**07 57 20.7**	**-1.3**
ATAL	**Atalanti**	**1.06**	**70**	P	**Pg**	**07 57 21.3**	**-1.2**
ATAL	**Atalanti**	**1.06**	**70**	P	**Pg**	**07 57 21.3**	**-1.2**
VLX	**Vlachokerasia**	**1.08**	**152**	P	**Pg**	**07 57 21.6**	**-1.4**
VLX				S	**Sn**	**07 57 38.1**	**-0.7**
VLX	**Vlachokerasia**	**1.08**	**152**	P	**Pg**	**07 57 21.6**	**-1.4**
ITM	**Ithomi**	**1.16**	**173**	P	**Pg**	**07 57 23.2**	**-1.3**
ITM				S	**Sn**	**07 57 41.5**	**+0.9**
ITM	**Ithomi**	**1.16**	**173**	P	**Pg**	**07 57 23.2**	**-1.3**
ITM				S	**Sn**	**07 57 41.5**	**+0.9**
VIL2	**Platees**	**1.20**	**95**	P	**Pn**	**07 57 26.4**	**+1.2**
VILL	**Villia**	**1.24**	**97**	P	**Pn**	**07 57 25.0**	**-0.8**
VILL				S	**Sn**	**07 57 42.7**	**0.0**
VILL	**Villia**	**1.24**	**97**	P	**Pn**	**07 57 25.0**	**-0.8**
VILL				S	**Sn**	**07 57 42.7**	**0.0**
THL	**Klokotos Trika**	**1.25**	**9**	P	**Pb**	**07 57 25.8**	**-0.1**
THL				S	**Sn**	**07 57 42.9**	**+0.1**
THL	**Klokotos Trika**	**1.25**	**9**	P	**Pb**	**07 57 25.8**	**-0.1**
THL				S	**Sn**	**07 57 42.9**	**+0.1**
SMIA	**Simia**	**1.27**	**64**	P	**Pn**	**07 57 25.6**	**-0.5**
SMIA	**Simia**	**1.27**	**64**	P	**Pn**	**07 57 25.6**	**-0.5**
DID	**Didima**	**1.44**	**125**	P	**Pb**	**07 57 28.9**	**-0.3**
DID				S	**Sg**	**07 57 48.4**	**0.0**
DID	**Didima**	**1.44**	**125**	P	**Pb**	**07 57 28.9**	**-0.3**
DID				S	**Sg**	**07 57 48.4**	**0.0**
PYL	**PYLOS**	**1.44**	**180**	P	**Pn**	**07 57 28.3**	**-0.1**
PYL	**PYLOS**	**1.44**	**180**	P	**Pn**	**07 57 28.3**	**-0.1**
XOR	**Xorichti**	**1.53**	**47**	P	**Pn**	**07 57 29.6**	**-0.1**
XOR	**Xorichti**	**1.53**	**47**	P	**Pn**	**07 57 29.6**	**-0.1**
EREA	**Eretria**	**1.71**	**86**	P	**Pn**	**07 57 32.1**	**-0.2**
EREA	**Eretria**	**1.71**	**86**	P	**Pn**	**07 57 32.1**	**-0.2**
OHR	**Ohrid**	**2.87**	**345**	*e*Pn	**Pn**	**07 57 49.7**	**+1.5**
OHR				*e*Sn	**Sb**	**07 58 26.6**	**-2.4**
OHR	**Ohrid**	**2.87**	**345**	*e*Pn	**Pn**	**07 57 49.7**	**+1.5**
OHR				*e*Sn	**Sb**	**07 58 26.5**	**-2.4**
VAY	**Valandovo**	**3.05**	**12**	*i* Pn	**Pn**	**07 57 49.0**	**-1.7**
VAY				*e*Sn	**Sn**	**07 58 25.8**	**-1.5**
VAY	**Valandovo**	**3.05**	**12**	*i* Pn	**Pn**	**07 57 48.9**	**-1.7**
VAY				*e*Sn	**Sn**	**07 58 25.7**	**-1.5**
IDI	**Anoyia**	**3.95**	**139**	Pn	**Pn**	**07 58 06.3**	**+3.3**
	comp=N,0.8nm,0.3s,baz=337,slow=13,SNR=7.8						
IDI				Sn	**Sn**	**07 58 50.7**	**+1.2**
	comp=N,1.4nm,0.3s,baz=52,slow=19,SNR=2.8						
BRTR	**Keskin Array B**	**9.36**	**78**	Pn	**Pn**	**07 59 19.7**	**+2.4**
	comp=N,0.1nm,0.3s,baz=262,slow=12,SNR=3.8						
KECS	**Kecovo**	**10.19**	**355**	*e*PN	**Pn**	**07 59 30.3**	**+1.7**
VYHS	**Vyhne**	**10.37**	**349**	*e*PN	**Pn**	**07 59 35.0**	**+3.8**
GERES	**GERESS Array B**	**12.01**	**334**	LR	LR	08 05 30.7	
	comp=N,52nm,18.2s,baz=110,slow=43						
NOA	**NORSAR Array B**	**23.67**	**347**	P	**P**	**08 02 15.0**	**+1.2**
	comp=N,0.9nm,0.9s,baz=154,slow=9.2,SNR=3.2						
NOA				LR	LR	08 12 26.9	
	comp=N,3.2nm,20.4s,baz=275,slow=39						
KURBB	**Kurchatov Arra**	**41.36**	**54**	P	**P**	**08 04 48.5**	**+0.2**
	comp=N,0.6nm,0.5s,baz=280,slow=8.7,SNR=7.4						
MKAR	**Makanchi Array**	**44.39**	**59**	P	**P**	**08 05 13.3**	**+0.3**
	comp=N,1.9nm,0.6s,baz=280,slow=6.6,SNR=26						
ZALV	**Zalesovo Beam**	**44.87**	**48**	P	**P**	**08 05 16.3**	**-0.3**
	comp=N,1.8nm,0.6s,baz=269,slow=7.1,SNR=6.9						

*ISCJB **28** 08:04:46.2±1.6, 4°.7S±0°.3×152°.6E±0°.3, h58km, mb3.9/6, Error ellipse: s-maj=57.3km s-min=11.3km az=37.4*
*IDC **28** 08:04:51.8±5.5, 4°.85S×152°.51E, h94km±44km, mb3.7/6, mb1 3.9/7, mb1mx3.5/44, mbtmp4.1/7, MS2.7/2, Ms1 2.7/2, ms1mx2.4/27, Error ellipse: s-maj=66.8km s-min=25.7km az=120.0*

ISC 28 08:04:47.7±1.9, 4°.7S±0°.3×152°.7E±0°.4, h58km, n10, σ1§28/9, mb3.8/6, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.18**	**229**	P	**Pn**	**08 06 32.0**	**+1.9**
	3.5nm,0.3s,baz=98,slow=20,SNR=2.1						
PMG				S	**Sn**	**08 07 50.2**	**-0.1**
	2.6nm,0.3s,baz=30,slow=20,SNR=3.6						
HNR	**Honiara**	**8.59**	**123**	LR	LR	08 10 29.4	
	comp=Z,67nm,18.4s,baz=283,slow=39						
GUMO	**Guam**	**19.79**	**337**	LR	LR	08 17 16.5	
	comp=Z,15nm,19.0s,baz=144,sl

WHY	**Whitehorse**	**2.42 26**	Pn	**Pn**	**08 31 51.2 +1.6**		
WHY			Pg	**Pb**	**08 31 54.4 +1.2**		
WHY			Sg	**Sg**	**08 32 26.0 -0.8**		
WHY	**Whitehorse**	**2.42 26**	P	**Pn**	**08 31 50.8 +1.2**		
SAMH	**Samovar Hills**	**2.52 312**	P	**Pn**	**08 31 52.0 +1.2**		
YUK6	**Outpost Mounta**	**2.54 345**	Pn	**Pn**	**08 31 51.4 +0.2**		
YUK6			Sg	**Sg**	**08 32 28.8 -1.5**		
YUK5	**Granite Creek**	**2.67 351**	Pn	**Pn**	**08 31 53.1 +0.2**		
YUK5			Sg	**Sg**	**08 32 33.6 -1.0**		
RKAV	**Rock Avalanche**	**2.84 311**	P	**Pn**	**08 31 56.3 +0.9**		
RKAV			S	**Sn**	**08 32 32.1 +1.9**		
TABL	**Table Mountain**	**2.85 315**	P	**Pn**	**08 31 57.2 +1.6**		
MESA	**MESA**	**3.02 306**	P	**Pn**	**08 31 58.6 +0.8**		
BAGL	**Bagley Icefiel**	**3.25 310**	P	**Pn**	**08 32 02.7 +1.9**		
GRNC	**Granite Creek**	**3.27 315**	P	**Pn**	**08 32 01.9 +0.6**		
CTGM	**Chitina Glacie**	**3.29 320**	Pn	**Pn**	**08 32 02.2 +0.8**		
CTGM			Pg	**Pb**	**08 32 07.9 -0.1**		
CTGM			Sn	**Sn**	**08 32 40.9 -0.1**		
CTGM			Sg	**Sb**	**08 32 48.1 -0.3**		
CTGM	**Chitina Glacie**	**3.29 320**	P	**Pn**	**08 32 02.0 +0.5**		
WRAK	**Wrangell Islan**	**3.29 128**	P	**Pn**	**08 32 02.8 +1.5**		
BARN	**Barnard Glacie**	**3.47 320**	P	**Pn**	**08 32 04.9 +0.9**		
WAX	**Waxell Ridge**	**3.55 306**	P	**Pn**	**08 32 06.3 +1.4**		
DLBC	**Dease Lake**	**3.69 88**	Pn	**Pn**	**08 32 07.4 +0.5**		
DLBC			Pg	**Pb**	**08 32 17.1 +2.4**		
DLBC			Sg	**Sg**	**08 33 04.5 -2.8**		
DLBC	**Dease Lake**	**3.69 88**	P	**Pn**	**08 32 07.7 +0.8**		
BALM	**Baldy**	**3.69 316**	Pn	**Pn**	**08 32 06.9 -0.1**		
BALM			Sg	**Sb**	**08 33 00.1 +0.1**		
YUK3	**Moose Creek**	**3.70 334**	Pn	**Pn**	**08 32 09.1 +1.9**		
YUK3			Sg	**Sg**	**08 33 07.2 -0.5**		
KHIT	**Khitrov Hills**	**3.71 304**	P	**Pn**	**08 32 08.8 +1.5**		
YUK2	**White River**	**3.80 332**	Pn	**Pn**	**08 32 10.0 +1.6**		
YUK2			Sg	**Sg**	**08 33 11.1 +0.2**		
BERG	**Berg Lake**	**3.89 302**	P	**Pn**	**08 32 10.8 +1.2**		
KAIM	**Kayak Island**	**4.05 294**	P	**Pn**	**08 32 12.9 +1.2**		
HMT	**Hamilton**	**4.12 300**	P	**Pn**	**08 32 13.6 +0.8**		
BVCY	**Beaver Creek**	**4.35 336**	Pn	**Pn**	**08 32 18.9 +2.9**		
BVCY			Sg	**Sg**	**08 33 26.2 -2.4**		
BMRM	**Bremner River**	**4.55 306**	P	**Pn**	**08 32 19.9 +1.1**		
BCA3	**Beaver Creek A**	**5.13 335**	P	**Pn**	**08 32 28.3 +1.6**		
DIV	**Divide**	**5.13 305**	Pn	**Pn**	**08 32 27.8 +1.1**		
DIV			Sg	**Sb**	**08 33 40.6 -0.7**		
HIN	**Hinchinbrook I**	**5.18 295**	P	**Pn**	**08 32 28.6 +1.2**		
FID	**Port Fidalgo**	**5.29 299**	P	**Pn**	**08 32 30.8 +1.9**		
KLU	**Klutina**	**5.37 308**	P	**Pn**	**08 32 31.4 +1.4**		
DAWY	**Dawson**	**5.69 350**	Pn	**Pn**	**08 32 35.4 +1.0**		
DAWY			Sg	**Sg**	**08 34 12.3 +0.7**		
DAWY	**Dawson**	**5.69 350**	P	**Pn**	**08 32 35.1 +0.7**		
EGAK	**Eagle** 4.6nm,0.7s	**6.59 344**	*e*Pn	**Pn**	**08 32 48.0 +1.4**		
EGAK			*e*Sn	**Sn**	**08 34 05.0 +2.8**		
FNBB	**Fort Nelson**	**7.32 81**	Pn	**Pn**	**08 32 57.9 +1.2**		
FNBB			Sg	**Sg**	**08 34 58.0 -5.9**		
CNPM	**China Poot**	**7.40 284**	P	**Pn**	**08 32 58.0 +0.3**		
RND	**Reindeer**	**7.56 316**	P	**Pn**	**08 33 01.2 +1.2**		
TRF	**Thorofare Moun** 5.9nm,0.5s	**8.12 313**	*e*Pn	**Pn**	**08 33 09.5 +1.7**		
TRF			*e*Sn	**Sn**	**08 34 37.6 -2.4**		
KTH	**Kantishna Hill** 5.4nm,0.7s	**8.42 313**	*e*Pn	**Pn**	**08 33 13.7 +1.9**		
KTH			*e*Sn	**Sn**	**08 34 41.2 -6.0**		
COLD	**Coldfoot** 3.4nm,0.3s	**10.59 331**	*e*Pn	**Pn**	**08 33 38.5 -2.8**		
COLD			*e*Sn	**Sn**	**08 35 33.9 -6.3**		

*ISCJB **28** 08:32:34.3±0.4,51˚.52N±0˚.02×16˚.08E±0˚.03, h0km, Error ellipse: s-maj=2.8km s-min=2.2km az=15.5*
*CSEM **28** 08:32:36.1±0.2,51˚.53N×16˚.07E, h2km, ML3.6/10, Error ellipse: s-maj=3.0km s-min=2.6km az=25.0*
*BGR **28** 08:32:37.2±0.5,51˚.50N×16˚.08E, h1km, ML3.0/14, Error ellipse: s-maj=4.4km s-min=2.2km az=14.0*
*WAR **28** 08:32:37.4,51˚.52N×16˚.07E, h1km, Mw2.8*
*UPP **28** 08:32:39.6±2.7,51˚.74N×15˚.60E, h0km, ML2.0, Suspected explosion*
*VIE **28** 08:32:39.7±2.2,51˚.29N×15˚.98E, h0km, mb2.5/4, ML2.9/6, Error ellipse: s-maj=12.3km s-min=8.1km az=166.0, Suspected Mining induced.*

ISC 28 08:32:35.3±0.7, 51˚.59N±0˚.02×16˚.10E±0˚.02, h0km, n79, σ1§17/146, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.76**	**171**	*e*Pg	**Pg**	**08 32 50.3**	**+0.5**
KSP				*e*Sg	**Sg**	**08 32 59.4**	**-0.1**
KSP	**Ksiaz**	**0.76**	**171**	*e*Pg	**Pg**	**08 32 50.3**	**+0.5**
KSP				*e*Sg	**Sg**	**08 32 59.6**	**0.0**
KSP	**Ksiaz**	**0.76**	**171**	Pg	**Pg**	**08 32 50.3**	**+0.5**
KSP				*e*Sg	**Sg**	**08 32 59.4**	**-0.1**
KSP	**Ksiaz**	**0.76**	**171**	*e*Pg	**Pg**	**08 32 50.3**	**+0.6**
KSP				*e*Sg	**Sg**	**08 32 59.4**	**-0.1**
UPC	**Upice**	**1.08**	**183**	*e*PG	**Pg**	**08 32 56.2**	**+0.2**
UPC				*e*SG	**Sg**	**08 33 09.5**	**-0.5**
	comp=Z,195nm,0.3s						
UPC	**Upice**	**1.08**	**183**	Pg	**Pg**	**08 32 56.2**	**+0.2**
UPC				Sg	**Sg**	**08 33 09.5**	**-0.5**
	195nm,0.3s						
DPC	**Dobruska-Polom**	**1.25**	**173**	*e*PG	**Pg**	**08 32 59.1**	**0.0**
DPC				*e*SG	**Sg**	**08 33 14.2**	**-1.1**
	comp=Z,71nm,0.4s						
DPC	**Dobruska-Polom**	**1.25**	**173**	*e*Pg	**Pg**	**08 32 59.2**	**0.0**
DPC				*e*Sg	**Sg**	**08 33 14.3**	**-1.0**
DPC	**Dobruska-Polom**	**1.25**	**173**	Pg	**Pg**	**08 32 59.2**	**0.0**
DPC				Sg	**Sg**	**08 33 14.3**	**-1.0**
PVCC	**Panska Ves**	**1.43**	**223**	*e*PG	**Pb**	**08 33 03.1**	**+0.2**
PVCC				*e*SG	**Sn**	**08 33 21.8**	**-0.3**
	comp=Z,402nm,0.2s						
PVCC	**Panska Ves**	**1.43**	**223**	Pg	**Pb**	**08 33 03.1**	**+0.2**
PVCC				Sg	**Sn**	**08 33 21.8**	**-0.3**
	402nm,0.2s						
BRG	**Berggiesshubel**	**1.53**	**243**	PN	**Pg**	**08 33 04.8**	**+0.2**
BRG				PG	**Pb**	**08 33 05.2**	**+0.7**
BRG				SG	**Sn**	**08 33 25.3**	**+0.8**
	110nm,0.3s						
BRG	**Berggiesshubel**	**1.53**	**243**	*e*Pg	**Pg**	**08 33 04.7**	**+0.1**
BRG				*e*Sg	**Sn**	**08 33 25.1**	**+0.6**
BRG	**Berggiesshubel**	**1.53**	**243**	Pg	**Pg**	**08 33 04.7**	**+0.1**
BRG				Sg	**Sn**	**08 33 25.1**	**+0.6**
KRLC	**Kraliky**	**1.57**	**164**	*e*PG	**Pn**	**08 33 04.8**	**+0.3**
KRLC				*e*SG	**Sn**	**08 33 24.1**	**-1.5**
KRLC	**Kraliky**	**1.57**	**164**	Pg	**Pn**	**08 33 04.8**	**+0.3**
KRLC				Sg	**Sn**	**08 33 24.1**	**-1.5**
FBE	**Freiberg**	**1.85**	**250**	*e*Pg	**Pg**	**08 33 10.5**	**-0.2**
FBE				*e*Sg	**Sg**	**08 33 35.0**	**+0.4**
FBE	**Freiberg**	**1.85**	**250**	Pg	**Pg**	**08 33 10.5**	**-0.2**
FBE				Sg	**Sg**	**08 33 35.0**	**+0.4**
GOPC	**GO Pecny, Ondr**	**1.87**	**207**	*e*PN	**Pn**	**08 33 09.1**	**+0.5**
GOPC				*e*PG	**Pg**	**08 33 10.8**	**-0.3**
GOPC				*e*SG	**Sb**	**08 33 33.8**	**-0.5**
	comp=Z,36nm,0.2s						
GOPC	**GO Pecny, Ondr**	**1.87**	**207**	Pn	**Pn**	**08 33 09.1**	**+0.5**
PRU	**Pruhonice**	**1.88**	**212**	*e*PN	**Pb**	**08 33 09.7**	**-0.8**
PRU				*e*PG	**Pg**	**08 33 11.1**	**-0.2**
PRU				*e*SG	**Sb**	**08 33 34.1**	**-0.4**
	comp=Z,60nm,0.4s						
PRU	**Pruhonice**	**1.88**	**212**	Pn	**Pb**	**08 33 09.7**	**-0.8**
CLL	**Collm**	**1.96**	**263**	*e*Pn	**Pn**	**08 33 10.0**	**+0.3**
CLL				*e*Pg	**Pg**	**08 33 13.0**	**+0.2**
CLL				*e*Sg	**Sg**	**08 33 39.0**	**+0.9**
	comp=Z,40nm,0.4s						
CLL	**Collm**	**1.96**	**263**	*e*Pn	**Pn**	**08 33 10.0**	**+0.3**
CLL				*e*Sg	**Sg**	**08 33 37.8**	**-0.3**
CLL	**Collm**	**1.96**	**263**	Pn	**Pn**	**08 33 10.0**	**+0.3**
CLL				Sg	**Sg**	**08 33 37.8**	**-0.3**
MORC	**Moravsky Berou**	**2.03**	**153**	*e*Pn	**Pn**	**08 33 10.8**	**0.0**
MORC				*e*Sg	**Sg**	**08 33 39.9**	**-0.6**
MORC	**Moravsky Berou**	**2.03**	**153**	Pn	**Pn**	**08 33 10.8**	**0.0**
MORC				Sg	**Sg**	**08 33 39.9**	**-0.6**
OKC	**Ostrava-Krasne**	**2.18**	**143**	*e*PG	**Pg**	**08 33 16.7**	**-0.4**
OKC				*e*SG	**Sb**	**08 33 44.1**	**+0.9**
	comp=Z,26nm,0.5s						
OKC	**Ostrava-Krasne**	**2.18**	**143**	*e*Pg	**Pg**	**08 33 16.7**	**-0.4**
OKC				*e*Sg	**Sb**	**08 33 43.8**	**+0.6**
OKC	**Ostrava-Krasne**	**2.18**	**143**	Pg	**Pg**	**08 33 16.7**	**-0.4**
OKC				Sg	**Sb**	**08 33 43.8**	**+0.6**
VRAC	**Vranov**	**2.30**	**172**	*e*Pn	**Pn**	**08 33 15.4**	**+0.9**
VRAC				*e*Sg	**Sg**	**08 33 48.2**	**-1.1**
TREC	**Trest**	**2.33**	**190**	*e*PN	**Pn**	**08 33 16.3**	**+1.4**
TREC				*e*PG	**Pg**	**08 33 18.9**	**-1.0**
TREC				*e*SG	**Sb**	**08 33 48.5**	**+1.1**
	comp=Z,27nm,0.2s						
TREC	**Trest**	**2.33**	**190**	Pn	**Pn**	**08 33 16.3**	**+1.4**
WERD	**Werda**	**2.65**	**246**	*e*Pn	**Pn**	**08 33 18.9**	**-0.4**
WERD				*e*Pg	**Pg**	**08 33 26.0**	**-0.1**
WERD				*e*Sg	**Sg**	**08 34 01.1**	**+0.7**
WERD	**Werda**	**2.65**	**246**	Pn	**Pn**	**08 33 18.9**	**-0.4**
NKC	**Novy Kostel**	**2.68**	**241**	*e*PN	**Pn**	**08 33 20.8**	**+1.1**
NKC				*e*PG	**Pg**	**08 33 27.7**	**+1.1**
NKC				*e*SG	**Sg**	**08 34 01.1**	**-0.2**
	comp=Z,87nm,0.3s						
NKC	**Novy Kostel**	**2.68**	**241**	Pn	**Pn**	**08 33 20.8**	**+1.1**
OJC	**Ojcow**	**2.71**	**119**	*e*Pg	**Pg**	**08 33 28.0**	**+0.7**
OJC				*e*Sg	**Sg**	**08 34 03.2**	**+0.8**
OJC	**Ojcow**	**2.71**	**119**	*e*Pg	**Pg**	**08 33 27.5**	**+0.2**
OJC				*e*Sg	**Sg**	**08 34 03.3**	**+0.9**
OJC	**Ojcow**	**2.71**	**119**	Pg	**Pg**	**08 33 27.5**	**+0.2**
OJC				*e*Sg	**Sg**	**08 34 03.2**	**+0.8**
OJC	**Ojcow**	**2.71**	**119**	*e*Pg	**Pg**	**08 33 28.0**	**+0.7**
OJC				*e*Sg	**Sg**	**08 34 03.2**	**+0.8**
KHC	**Kasperske Hory**	**2.94**	**214**	*e*PN	**Pn**	**08 33 23.8**	**+0.5**
KHC				*e*PG	**Pb**	**08 33 29.2**	**+0.6**
KHC				*e*SN	**Sn**	**08 33 58.0**	**-1.3**
KHC				*e*SG	**Sg**	**08 34 07.6**	**-2.1**
	comp=Z,15nm,0.3s						
KHC	**Kasperske Hory**	**2.94**	**214**	Pn	**Pn**	**08 33 23.8**	**+0.5**
MOX	**Moxa**	**2.98**	**253**	*e*Pg	**Pg**	**08 33 32.6**	**+0.3**
MOX				*e*Sg	**Sg**	**08 34 11.3**	**+0.4**
MOX	**Moxa**	**2.98**	**253**	Pg	**Pg**	**08 33 32.6**	**+0.3**
MOX				Sg	**Sg**	**08 34 11.3**	**+0.4**
ROTZ	**Rotzenmuhle**	**3.07**	**235**	*e*Pn	**Pn**	**08 33 26.1**	**+1.0**
ROTZ				*e*Sg	**Sg**	**08 34 12.5**	**-1.5**
ROTZ	**Rotzenmuhle**	**3.07**	**235**	Pn	**Pn**	**08 33 26.1**	**+1.0**
ROTZ				Sg	**Sg**	**08 34 12.5**	**-1.5**
GEC2	**GERESS Array S**	**3.15**	**210**	*e*Sg	**Sb**	**08 34 13.3**	**+2.2**
GEC2	**GERESS Array S**	**3.15**	**210**	Sg	**Sb**	**08 34 13.3**	**+2.2**
SMOL	**Smolenice**	**3.19**	**164**	*e*Sg	**Sb**	**08 34 12.5**	**+0.2**
SMOL	**Smolenice**	**3.19**	**164**	*e*SG	**Sb**	**08 34 12.5**	**+0.2**
WET	**Wettzell**	**3.20**	**221**	*e*Sg	**Sg**	**08 34 15.9**	**-2.1**
WET	**Wettzell**	**3.20**	**221**	Sg	**Sg**	**08 34 15.9**	**-2.1**
LANS	**Liptovska Anna**	**3.26**	**137**	*e*Pg	**Pg**	**08 33 37.5**	**-0.2**
LANS				*e*Sg	**Sg**	**08 34 18.9**	**-1.0**
LANS	**Liptovska Anna**	**3.26**	**137**	*e*PG	**Pg**	**08 33 37.5**	**-0.2**
LANS				*e*SG	**Sg**	**08 34 18.9**	**-1.0**
VYHS	**Vyhne**	**3.56**	**149**	*e*Pn	**Pn**	**08 33 31.2**	**-0.6**
VYHS	**Vyhne**	**3.56**	**149**	*e*PN	**Pn**	**08 33 31.2**	**-0.6**
VYHS				*e*PG	**Pg**	**08 33 43.1**	**-0.5**
VYHS				*e*SG	**Sg**	**08 34 26.7**	**-3.0**
VYHS				eLG	Lg	08 34 41.9	
GRA1	**Grafenberg Arr**	**3.64**	**240**	Sg	**Sg**	**08 34 31.2**	**-0.9**
GRF	**Grafenberg Arr**	**3.64**	**240**	*e*Sg	**Sg**	**08 34 31.2**	**-0.9**
CONA	**Conrad Observa** comp=Z,0.8nm,0.2s	**3.67**	**182**	Pn	**Pn**	**08 33 35.1**	**+1.8**
CONA				Sg	**Sb**	**08 34 29.1**	**+3.1**
	comp=Z,11nm,0.4s						
MOA	**Moiln** comp=Z,8.4nm,0.6s	**3.93**	**198**	Sg	**Sg**	**08 34 41.1**	**-0.2**
STHS	**Stebnicka Huta**	**3.94**	**121**	*e*Pn	**Pn**	**08 33 37.0**	**0.0**
STHS	**Stebnicka Huta**	**3.94**	**121**	*e*PN	**Pn**	**08 33 37.0**	**0.0**
STHS				*e*PG	**Pg**	**08 33 53.4**	**+2.7**
STHS				*e*SG	**Sg**	**08 34 44.4**	**+2.7**
STHS				eLG	Lg	08 34 52.2	
KECS	**Kecovo**	**4.20**	**136**	*e*Pg	**Pg**	**08 33 57.2**	**+1.4**
KECS				*e*Sg	**Sg**	**08 34 48.4**	**-1.8**
KECS	**Kecovo**	**4.20**	**136**	*e*PG	**Pg**	**08 33 57.2**	**+1.4**
KECS				*e*SG	**Sg**	**08 34 48.4**	**-1.8**
KECS				eLG	Lg	08 35 06.9	
LUNU	**Lund**	**4.35**	**340**	P	**Pn**	**08 33 43.2**	**+0.6**
LUNU				S	**Sn**	**08 34 32.4**	**-1.5**
LUNU	**Lund**	**4.35**	**340**	P	**Pn**	**08 33 43.2**	**+0.6**
LUNU				S	**Sn**	**08 34 32.4**	**-1.5**
ARSA	**Arzberg** comp=Z,7.2nm,0.6s	**4.36**	**185**	Sg	**Sg**	**08 34 51.6**	**-3.6**
BLEU	**Blekinge**	**4.73**	**358**	P	**Pn**	**08 33 48.9**	**+1.1**
BLEU				S	**Sn**	**08 34 41.0**	**-2.2**
BLEU	**Blekinge**	**4.73**	**358**	P	**Pn**	**08 33 48.9**	**+1.1**
BLEU				S	**Sn**	**08 34 41.0**	**-2.2**
BJUU	**Bjuv**	**4.85**	**339**	P	**Pn**	**08 33 49.5**	**+0.1**
BJUU				S	**Sn**	**08 34 42.9**	**-3.3**
BJUU	**Bjuv**	**4.85**	**339**	P	**Pn**	**08 33 49.5**	**+0.1**
BJUU				S	**Sn**	**08 34 42.9**	**-3.3**
KBA	**Koelnbreinsper** comp=Z,8.1nm,0.6s	**4.86**	**203**	Sg	**Sg**	**08 35 11.3**	**0.0**
DEL	**Delary**	**5.07**	**346**	P	**Pn**	**08 33 52.8**	**+0.4**
DEL				S	**Sn**	**08 34 48.7**	**-2.8**
DEL	**Delary**	**5.07**	**346**	P	**Pn**	**08 33 52.8**	**+0.4**
DEL				S	**Sn**	**08 34 48.7**	**-2.8**
VXJU	**Vaexsjoe**	**5.39**	**353**	P	**Pn**	**08 33 58.2**	**+1.4**
VXJU	**Vaexsjoe**	**5.39**	**353**	P	**Pn**	**08 33 58.2**	**+1.4**
EKSU	**Eksjoe**	**6.02**	**356**	P	**Pn**	**08 34 06.8**	**+1.4**
EKSU	**Eksjoe**	**6.02**	**356**	P	**Pn**	**08 34 06.8**	**+1.4**

*DDA **28** 08:38:02.9,38˚.72N×26˚.39E, h8km, Md2.7*
*ISK **28** 08:38:02.8,38˚.73N×26˚.53E, h22km, ML2.2*
*ISCJB **28** 08:38:03.9±0.5,38˚.71N±0˚.03×26˚.53E±0˚.04, h26km±6km, Error ellipse: s-maj=5.7km s-min=5.1km az=156.2*
*CSEM **28** 08:38:03.3±0.2,38˚.71N×26˚.54E, h19km, ML2.2, Error ellipse: s-maj=3.4km s-min=2.9km az=61.0*

ISC 28 08:38:03.2±1.2, 38.72N±0˚.03×26.54E±0˚.03, h19km±3km, n18, σ0§59/34, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URLA	**Izmir**	**0.36**	**173**	*i* P	**Pb**	**08 38 10.9**	**-0.3**
URLA				*i* S	**Sb**	**08 38 17.1**	**+0.6**
URLA	**Izmir**	**0.36**	**173**	P	**Pb**	**08 38 10.9**	**-0.3**
URLA				S	**Sb**	**08 38 17.1**	**+0.6**
DKL	**Dikili**	**0.45**	**39**	*e*PG	**Pb**	**08 38 12.3**	**-0.2**
DKL				*e*SG	**Sb**	**08 38 19.9**	**+0.9**
DKL	**Dikili**	**0.45**	**39**	*e*Pg	**Pb**	**08 38 12.4**	**-0.2**
DKL				*e*Sg	**Sb**	**08 38 19.9**	**+0.9**
CHOS	**Chios island**	**0.51**	**229**	*e*PG	**Pb**	**08 38 13.6**	**+0.1**
CHOS				*e*SG	**Sb**	**08 38 21.4**	**+0.9**
CHOS	**Chios island**	**0.51**	**229**	*e*Pg	**Pb**	**08 38 13.6**	**+0.1**
CHOS				*e*Sg	**Sb**	**08 38 21.4**	**+0.9**
AYVA	**Ayvalik**	**0.60**	**11**	*i* P	**Pg**	**08 38 15.4**	**+0.3**
AYVA				*i* S	**Sn**	**08 38 24.4**	**-1.4**
IZM	**Izmir**	**0.65**	**119**	*e*PG	**Pg**	**08 38 16.3**	**+0.2**
IZM				*e*SG	**Sn**	**08 38 26.4**	**-0.9**
IZM	**Izmir**	**0.65**	**119**	*e*Pg	**Pg**	**08 38 16.3**	**+0.2**
IZM				*e*Sg	**Sn**	**08 38 26.4**	**-0.9**
SIGR	**SIGRI**	**0.72**	**313**	*e*PG	**Pg**	**08 38 17.5**	**+0.1**
SIGR				*e*SG	**Sn**	**08 38 28.1**	**-0.8**
SIGR	**SIGRI**	**0.72**	**313**	*e*Pg	**Pg**	**08 38 17.5**	**+0.1**
SIGR				*e*Sg	**Sn**	**08 38 28.1**	**-0.8**
AKS	**Akhisar**	**1.01**	**81**	*e*PG	**Pn**	**08 38 22.3**	**0.0**
AKS				*e*SG	**Sg**	**08 38 36.6**	**+0.5**
AKS	**Akhisar**	**1.01**	**81**	*e*Pg	**Pn**	**08 38 22.3**	**0.0**
AKS				*e*Sg	**Sg**	**08 38 36.6**	**+0.5**
EZN	**Ezine**	**1.11**	**352**	*e*PN	**Pb**	**08 38 23.8**	**-0.1**
EZN				*e*SN	**Sn**	**08 38 38.5**	**-0.1**
EZN	**Ezine**	**1.11**	**352**	*e*Pn	**Pb**	**08 38 23.8**	**-0.1**
EZN				*e*Sn	**Sn**	**08 38 38.5**	**-0.1**
BOZC	**Bozcaada**	**1.18**	**342**	*i* P	**Pg**	**08 38 26.2**	**+0.2**
BOZC				*i* S	**Sg**	**08 38 41.1**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.31**	**126**	*e*PN	**Pn**	**08 38 26.4**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.31**	**126**	*e*Pn	**Pn**	**08 38 26.4**	**-0.2**

GUC 28 08:41:56.0±0.6, 34.83S×71.01W, h98km±4km, ML3.5, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NICH	**Los Niches**	**0.25**	**226**	*i* P	Pn	08 42 09.6	-0.5
NICH				*i* S	Sn	08 42 19.8	-1.0
TALC	**Talca**	**0.77**	**222**	↓*i* P	Pn	08 42 13.3	-0.6
TALC				*i* S	Sn	08 42 26.5	-0.7
CHPI	**Pichilemu**	**0.93**	**298**	*i* P	Pn	08 42 15.4	0.0
CHPI				*i* S	Sn	08 42 29.8	-0.3
ANTU	**Antumapu**	**1.29**	**14**	*i* P	Pn	08 42 19.6	0.0
ANTU				*e*S	Sn	08 42 37.9	+0.4
RCDM	**Rinconada Maip**	**1.34**	**7**	*i* P	Pn	08 42 19.9	-0.4
RCDM				*i* S	Sn	08 42 38.2	-0.4
FSR	**Penalolen**	**1.40**	**17**	*i* P	Pn	08 42 21.0	0.0
FSR				*i* P	Pn	08 42 21.1	0.0
FSR				*i* S	Sn	08 42 39.6	-0.3
FSR				*i* S	Sn	08 42 40.1	+0.2
CLCH	**Cerro Calan**	**1.48**	**15**	*i* P	Pn	08 42 22.1	+0.1
CLCH				*i* S	Sn	08 42 41.9	+0.3
CLCH				IAML		08 42 43.9	
	comp=E,764nm,0.5s						
FCH	**Farellones**	**1.61**	**22**	*i* P	Pn	08 42 24.4	+0.5
FCH				*i* S	Sn	08 42 45.9	+1.0
FCH				IAML		08 42 47.8	
	comp=N,571nm,0.3s						
PEL	**Peldehue**	**1.70**	**9**	*i* P	Pn	08 42 24.5	-0.2
PEL				*i* S	Sn	08 42 46.3	-0.2
PEL				IAML		08 42 49.5	
	comp=N,750nm,0.3s						
ROCH	**El Roble**	**1.85**	**360**	*i* P	Pn	08 42 26.9	+0.1
ROCH				*i* S	Sn	08 42 50.3	+0.2
ROCH				IAML		08 42 53.9	
	comp=N,520nm,0.5s						

*NIED **28** 09:01:00,40˚.30N×143˚.50E, h20km, Mw5.6 Best double couple: M0 2.91000×10^17 NP1:φs170.00000°, δ27.00000°, λ53.00000°. NP2:φs30.00000°, δ69.00000°, λ107.00000°.*
*JMA **28** 09:01:32.9±0.3,40˚.30N×143˚.52E, h3km±3km, M5.7*
JMA Felt II J1.
*IDC **28** 09:01:33.1±0.5,40˚.30N×143˚.44E, h0km, mb4.8/39, mb1 4.9/45, mb1mx4.8/55, mbtmp4.8/45, ML4.3/4, MS5.4/46, Ms1 5.4/46, ms1mx5.3/60, Error ellipse: s-maj=12.8km s-min=11.2km az=128.0*
*ISCJB **28** 09:01:35.4±0.5,40˚.37N±0˚.02×143˚.32E±0˚.02, h20km±3km, mb5.3/250, MS5.4/240, Error ellipse: s-maj=3.4km s-min=2.0km az=159.2*
*BJI **28** 09:01:36.2,40˚.27N×143˚.18E, h25km, mb5.4/77, mB5.7/71, Ms5.9/93, Ms7 5.7/89*
*MOS **28** 09:01:38.3±0.9,40˚.54N×143˚.23E, h33km, mb5.8/76, MS5.5/53, Error ellipse: s-maj=5.9km s-min=3.7km az=106.3*
*NEIC **28** 09:01:38.0±0.0,40˚.27N×143˚.91E, h17km, Moment Tensor Solution. s20 Moment tensor: Scale 10^17Nm; Mrr 1.85±.04; Mθθ-0.25; Mφφ-1.55; Mrθ 1.06; Mrφ-0.36; Mθφ 2.15; Best double couple: M0 3.00000×10^17 NP1:φs24.00000°, δ72.00000°, λ95.00000°. NP2:φs188.00000°, δ18.00000°, λ75.00000°. Principal axes: T 3.0500, Plg62.0000°, Azm301.0000°; N -0.2000, Plg4.0000°, Azm202.0000°; P -2.8500, Plg27.0000°, Azm109.0000°;*
*GCMT **28** 09:01:39.0±0.1,40˚.31N×143˚.60E, h19km, MW5.6/132, Moment Tensor Solution. s105,c192; s132,c315; Duration: 1s6 Moment tensor: Scale 10^17Nm; Mrr 1.85±.04; Mθθ-0.04±.02; Mφφ-1.81±.03; Mrθ 1.08±.07; Mrφ-0.39±.02; Mθφ 2.83±.10; Best double couple: M0 3.56100×10^17 NP1:φs20.00000°, δ74.00000°, λ94.00000°. NP2:φs184.00000°, δ16.00000°, λ75.00000°. Principal axes: T 3.5570, Plg61.0000°, Azm296.0000°; N 0.0130, Plg4.0000°, Azm198.0000°; P -3.5640, Plg29.0000°, Azm106.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **28** 09:01:39.0±1.2,40˚.34N×143˚.24E, h31km±8km, mb5.4/134, MS5.3/151, MW5.6 Error ellipse: s-maj=4.8km s-min=2.8km az=141.0*
NEIC Felt at Misawa. Recorded [2 JMA] in Aomori, Iwate and Miyagi. Also recorded [2 JMA] in southwestern Hokkaido.

ISC 28 09:01:36.3±0.4, 40.33N±0˚.03×143.44E±0˚.03, h20km±1km, h20km:pP-P, n1296, σ1§87/1370, mb5.4/256, MS5.4/248, 121C-20D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.27**	**253**	⇑P	**Pn**	**09 01 58.0**	**-0.9**
JTH				*e*S	**Sb**	**09 02 15.3**	**-0.2**
MIYJ	**Miyakonagasawa**	**1.45**	**239**	⇑P	**Pn**	**09 02 00.4**	**-1.1**
JANG	**Nango**	**1.47**	**272**	⇑P	**Pn**	**09 02 01.3**	**-0.4**
JKZ	**Kuzumaki**	**1.65**	**259**	⇑P	**Pn**	**09 02 03.9**	**

comp=E,18nm,0.3s,baz=90,slow=20,SNR=3.8
UGL Uglegorsk 8.80 354 *e*P **Pn 09 03 43.0 +0.6**
UGL *e*S **Sn 09 05 20.0 -0.9**
UGL pmax pmax
comp=Z,67nm,1.0s
UGL pmax pmax
comp=Z,2μm,9.0s
UGL pmax pmax
comp=N,2μm,11.0s
UGL smax smax
comp=E,6μm,10.0s
UGL smax smax
comp=N,4μm,8.0s
UGL MLR MLR
comp=N,68μm,16.0s
UGL MLR MLR
comp=E,50μm,16.0s
UGL MLR MLR
comp=Z,48μm,16.0s
VLA Vladivostok 9.08 292*c i*P **Pn 09 03 47.6 +1.4**
USRK Ussuriysk Ar. 9.33 298 Pn **Pn 09 03 52.2 +2.6**
comp=Z,2.9nm,0.3s,baz=103,slow=12,SNR=169
USRK LR LR 09 07 31.8
comp=Z,35μm,18.9s,baz=89,slow=38
MSHR Mys Shultsa 9.49 288*ce*P **Pn 09 03 53.4 +1.5**
HABR Khabarovsk 10.11 326*c i*P **Pn 09 03 58.4 -1.9**
HABR *e*S **Sn 09 05 50.4 -2.6**
HABR pmax pmax
comp=N,58nm,2.1s
HABR pmax pmax
comp=E,90nm,2.1s
HABR pmax pmax
comp=Z,126nm,2.1s
HABR MLR MLR
comp=Z,26μm,14.0s
TYV Tymovskoe 10.55 357 *e*P **Pn 09 04 03.8 -2.5**
TYV *e*S Sn 09 05 53.0 -11
TYV pmax pmax
comp=E,1μm,6.0s
TYV pmax pmax
comp=Z,121nm,0.8s
TYV smax smax
comp=E,8μm,10.0s
TYV MLR MLR
comp=N,38μm,15.0s
MDJ Mudanjiang 11.09 297 P **Pn 09 04 16.0 +2.3**
MDJ S **Sn 09 06 21.0 +4.0**
MDJ ScP **ScP 09 13 42.5 +0.9**
MDJ ScS **ScS 09 17 18.5 +1.7**
MDJ pmax pmax
comp=N,39nm,1.2s
MDJ pmax pmax
comp=N,4μm,5.6s
MDJ LR LR
comp=N,17μm,14.1s
MDJ LR LR
comp=N,30μm,16.7s
MDJ LR LR
comp=N,53μm,15.6s
MDJ Mudanjiang 11.09 297 *e*Pn **Pn 09 04 15.9 +2.2**
comp=N,575nm,1.4s
KLR Kul'dur 12.16 321 Pn **Pn 09 04 28.8 +0.5**
comp=N,0.3nm,0.3s,baz=136,slow=15,SNR=86
KLR LR LR 09 09 36.8
comp=N,22μm,18.8s,baz=136,slow=40
JNU Nakatsue 12.37 238 Pn **Pn 09 04 30.2 -1.2**
comp=N,1.4nm,0.3s,baz=54,slow=13,SNR=14
JNU LR LR 09 09 36.5
comp=N,138nm,18.7s,baz=47,slow=39
JNU Nakatsue 12.37 238 *e*Pn **Pn 09 04 31.0 -0.4**
KSRS Korea Array 12.43 262 Pn **Pn 09 04 33.4 +1.3**
baz=69,slow=12,SNR=5.9
KSRS LR LR 09 09 03.0
comp=N,32μm,18.4s,baz=72,slow=36
KS01 Wonju Array Si 12.44 262 *e*Pn **Pn 09 04 33.1 +0.9**
KS15 Wonju Array Si 12.46 262 *e*Pn **Pn 09 04 34.0 +1.5**
KSAR Wonju Array Be 12.46 262 P **Pn 09 04 33.4 +0.9**
KSAR Wonju Array Be 12.46 262 Pn **Pn 09 04 33.4 +0.9**
NKL Nikolayevsk 12.96 353 *i* P **Pn 09 04 38.0 -1.2**
NKL *i* S **Sn 09 07 02.0 -0.8**
NKL pmax pmax
comp=N,65nm,1.2s
NKL pmax pmax
comp=E,15nm,1.2s
NKL pmax pmax
comp=Z,80nm,1.2s
NKL pmax pmax
comp=N,2μm,8.0s
NKL pmax pmax
comp=E,400nm,8.0s
NKL pmax pmax
comp=Z,2μm,7.5s
NKL smax smax
comp=E,5μm,11.0s
NKL MLR MLR
comp=E,11μm,20.0s
NKL MLR MLR
comp=N,12μm,16.0s
NKL MLR MLR
comp=Z,25μm,16.0s
OKH Okha 13.23 359 *e*P **Pn 09 04 42.2 -0.7**
OKH *e*S **Sn 09 07 04.2 -5.1**
OKH pmax pmax
comp=Z,2μm,8.0s
OKH smax smax
comp=Z,18μm,18.0s
SKR Severo-Kuril's 13.63 36*d i*P P 09 05 05.8 +8.8
SKR pmax pmax
comp=Z,1μm,4.6s
SKR pmax pmax
comp=Z,210nm,1.0s
SNY Shenyang 15.06 282 ⇑P **Pn 09 05 08.0 +0.2**
SNY S **Sn 09 07 59.5 +5.6**
SNY pmax pmax
comp=Z,81nm,1.6s
SNY pmax pmax
comp=Z,6μm,11.0s
SNY LR LR
comp=Z,14μm,13.1s
SNY LR LR
comp=Z,22μm,17.1s
SNY LR LR
comp=Z,33μm,17.8s
PEA0 Petropavlovsk- 16.05 32 *e*Pn **Pn 09 05 19.8 -0.9**
PEA0B Petropavlovsk- 16.05 32 *e*Pn **Pn 09 05 21.5 +0.8**
comp=Z,113nm,1.2s
PETK Petropavlovsk- 16.05 32 Pn **Pn 09 05 15.4 -5.3**
comp=Z,0.4nm,0.3s,baz=212,slow=9.3,SNR=3.8
PETK LR LR 09 12 19.3
comp=Z,6μm,18.9s,baz=220,slow=40
PET Petropavlovsk 16.39 34 *e*P **P 09 05 30.5 +2.7**
PET *e*S **Sn 09 08 30.5 +4.2**
PET pmax pmax
comp=Z,700nm,11.1s
PET MLR MLR
comp=Z,12μm,17.0s
PET MLR MLR
comp=Z,12μm,16.0s
PET Petropavlovsk 16.39 34 *e*Pn **Pn 09 05 25.5 +0.4**
comp=Z,100nm,1.1s
DL2 Dalian 16.87 272⇑*i*P **Pn 09 05 31.0 -0.1**
DL2 S **Sn 09 08 37.3 -0.6**
DL2 pmax pmax
comp=Z,230nm,1.5s
DL2 pmax pmax
comp=Z,5μm,8.6s
DL2 LR LR
comp=Z,6μm,16.2s
DL2 LR LR
comp=Z,9μm,19.1s
DL2 LR LR
comp=Z,10μm,20.4s
JOW Kunigami 18.43 228 *e*P **P 09 05 49.5 -0.9**
comp=Z,92nm,1.1s
HIA Hailar 18.98 306 *e*P **P 09 05 55.1 -1.3**
HIA pmax pmax
comp=Z,287nm,1.3s
HIA Hailar 18.98 306 *e*P **P 09 05 55.1 -1.3**
comp=Z,287nm,1.3s
MA2 Magadan 19.81 11 P **P 09 06 03.4 -2.0**
comp=Z,2.2nm,0.3s,baz=193,slow=12,SNR=16
MA2 LR LR 09 15 23.3
comp=Z,7μm,18.3s,baz=195,slow=42
SSE Sheshan 20.24 250 P **P 09 06 11.3 +1.1**
SSE S **S 09 09 54.5 -1.9**
SSE pmax pmax
comp=Z,58nm,0.6s
SSE pmax pmax
comp=Z,1μm,4.5s
SSE LR LR
comp=Z,12μm,14.1s
SSE LR LR
comp=Z,7μm,14.1s
SSE LR LR
comp=Z,10μm,12.9s
CLNS Chul'man 20.46 330 *e*P **P 09 06 11.2 -1.3**
CLNS *e**PP **sP 09 06 22.4 +1.7**
CLNS *e* 09 06 28.0
CLNS *e*S **S 09 09 54.4 -6.2**
CLNS *e* 09 10 26.8
CLNS pmax pmax
comp=E,86nm,1.1s
CLNS pmax pmax
comp=Z,207nm,1.2s
CLNS pmax pmax
comp=N,91nm,1.2s
CLNS pmax pmax
comp=Z,122nm,1.1s
CLNS pmax pmax
comp=E,92nm,0.9s
CLNS pmax pmax
comp=N,203nm,1.0s
CLNS smax smax
comp=E,2μm,13.7s
CLNS smax smax
comp=N,1μm,12.5s
CLNS MLR MLR
comp=E,13μm,14.0s
CLNS MLR MLR
comp=Z,9μm,15.0s
CLNS MLR MLR
comp=N,10μm,16.0s
BJI Beijing 20.81 278 P **P 09 06 14.0 -2.3**
BJI pP **pP 09 06 21.0 -0.9**
BJI S **S 09 10 09.5 +1.9**
BJI pmax pmax
comp=N,1μm,4.1s
BJI LR LR
comp=N,14μm,16.0s
BJI LR LR
comp=N,14μm,21.8s
BJI LR LR
comp=N,14μm,20.4s
BJT Baijiatuao 20.82 278 *e*P **P 09 06 14.4 -2.1**
BJT pmax pmax
comp=Z,319nm,1.3s
BJT MLR MLR
comp=Z,20μm,20.0s
BJT Baijiatuao 20.82 278 *e*P **P 09 06 14.4 -2.1**
comp=Z,319nm,1.3s
BJT LR LR
comp=Z,20μm,20.0s
TIA Tai'an 21.04 267 ⇑P **P 09 06 16.3 -2.6**
TIA S **S 09 10 09.8 -2.4**
TIA PcP **PcP 09 10 28.0 +2.8**
TIA pmax pmax
comp=Z,3μm,11.0s
TIA LR LR
comp=Z,6μm,14.0s
TIA LR LR
comp=Z,23μm,14.0s
TIA LR LR
comp=Z,29μm,16.0s
NJ2 Nanjing 21.45 255 *e*P **P 09 06 23.8 +0.6**
NJ2 pP **sP 09 06 30.3 -1.1**
NJ2 PP **PnPn 09 06 50.0 +6.5**
NJ2 pmax pmax
comp=Z,81nm,1.0s
NJ2 pmax pmax
comp=Z,1μm,3.6s
NJ2 LR LR
comp=Z,10μm,14.1s
NJ2 LR LR
comp=Z,19μm,17.9s
NJ2 LR LR
comp=Z,23μm,18.4s
SEY Seymchan 23.26 10 P **P 09 06 41.2 -1.0**
comp=Z,40nm,0.9s,baz=194,slow=9.1,SNR=74
SEY LR LR 09 17 33.9
comp=Z,10μm,18.1s,baz=163,slow=41
YAK Yakutsk 23.28 344 P **P 09 06 39.0 -3.4**
comp=Z,59nm,0.3s,baz=300,slow=5.0,SNR=8.3
YAK LR LR 09 17 02.0
comp=Z,12μm,18.4s,baz=154,slow=40
YAK Yakutsk 23.28 344 *e*P **P 09 06 39.1 -3.3**
YAK *e**PP **pP 09 06 47.8 -0.4**
YAK *e*S **S 09 10 44.9 -8.6**
YAK *e**SS **sS 09 11 01.5 -1.9**
YAK *e*SSS SSS 09 11 27.9
YAK pmax pmax
comp=N,30nm,1.2s
YAK pmax pmax
comp=Z,50nm,0.8s
YAK pmax pmax
comp=Z,124nm,0.6s
YAK pmax pmax
comp=E,64nm,0.8s
YAK pmax pmax
comp=N,65nm,0.8s
YAK smax smax
comp=N,1μm,2.0s
YAK smax smax
comp=E,1μm,2.8s
YAK MLR MLR
comp=E,10μm,18.0s
YAK MLR MLR
comp=N,10μm,18.0s
YAK MLR MLR
comp=Z,13μm,19.0s
YAK Yakutsk 23.28 344 *e*P **P 09 06 40.8 -1.6**
comp=Z,147nm,0.8s
YAK *e*S **S 09 10 50.2 -3.3**
CIT Chita 23.59 310 *e*P **P 09 06 43.8 -1.9**
CIT *e* 09 06 55.5
CIT *e* 09 07 16.3
CIT *e* 09 07 28.3
CIT pmax pmax
comp=Z,734nm,1.8s
TATO Taipei 23.91 237 PFAKE 09 07 00.0 +11
TATO LR LR
comp=Z,18μm,19.0s
HHC Hu-ho-hao-te 24.15 282 *e*P **P 09 06 48.5 -2.6**
HHC PP **PnPn 09 07 22.0 +1.5**
HHC S **S 09 11 01.0 -7.0**
HHC pmax pmax
comp=Z,58nm,1.1s
HHC pmax pmax
comp=Z,2μm,6.1s
HHC LR LR
comp=Z,7μm,13.6s
HHC LR LR
comp=Z,18μm,12.7s
HHC LR LR
comp=Z,27μm,13.2s
TIY Taiyuan 24.17 274 *e*P **P 09 06 50.0 -1.3**
TIY S S 09 10 54.0 -14
TIY pmax pmax
comp=Z,80nm,1.4s
TIY pmax pmax
comp=Z,1μm,8.9s
TIY LR LR
comp=Z,5μm,16.3s
TIY LR LR
comp=Z,6μm,16.0s
TIY LR LR
comp=Z,5μm,15.9s
YHNB Yeheng 24.20 237 *e*P **P 09 06 51.9 +0.3**
comp=Z,58nm,0.9s
YHNB LR LR
comp=Z,14μm,19.0s
SMY Shemya 24.26 49 *e*P **P 09 06 53.8 +1.9**
SMY pmax pmax
comp=Z,437nm,1.3s
SMY Shemya 24.26 49 *e*P **P 09 06 53.8 +1.9**
comp=Z,437nm,1.3s
SSLB Suanglung 25.09 236 *e*P **P 09 06 59.5 -0.2**
comp=Z,58nm,1.3s
YULB Yu-li 25.17 235 *e*P **P 09 07 01.7 +1.3**
comp=Z,85nm,1.4s
BTO Baotou 25.34 282 *e*P **P 09 07 00.0 -2.0**
WHN Wuhan 25.54 257 ⇓P **P 09 07 01.5 -2.1**
WHN S **S 09 11 21.3 -8.9**
WHN pmax pmax
comp=Z,760nm,1.8s
WHN pmax pmax
comp=Z,4μm,11.8s
WHN LR LR
comp=Z,33μm,13.9s
WHN LR LR
comp=Z,46μm,16.4s
WHN LR LR
comp=Z,59μm,16.6s
TPUB Ta-pu 25.65 235 *e*P **P 09 07 06.2 +1.5**
comp=Z,145nm,1.5s
TWG Pinlang 25.73 234 *e*P **P 09 07 07.1 +1.7**
comp=Z,485nm,1.2s
QZH Quanzhou 25.83 241⇑*i*P **P 09 07 05.3 -1.0**
QZH S **S 09 11 32.8 -2.0**
QZH pmax pmax
comp=Z,4μm,3.4s
QZH LR LR
comp=Z,8μm,12.9s
QZH LR LR
comp=Z,14μm,13.2s
QZH LR LR
comp=Z,22μm,13.0s
GUMO Guam 26.67 177 LR LR 09 16 21.3
comp=Z,3μm,21.7s,baz=8.0,slow=33
SONA1 Songino Array 27.44 298 *e*P **P 09 07 20.4 -0.5**
SONM Songino Array 27.44 298 P **P 09 07 21.1 +0.2**
comp=Z,17nm,0.6s,baz=90,slow=11,SNR=112
SONM LR LR 09 19 07.4
comp=Z,22μm,18.1s,baz=96,slow=38
XAN Xi'an 28.09 268 P **P 09 07 25.3 -1.4**
XAN sP sP 09 07 35.5 +0.3
XAN pmax pmax
comp=Z,2μm,12.3s
XAN LR LR
comp=Z,7μm,17.2s
XAN LR LR
comp=Z,12μm,16.3s
XAN LR LR
comp=Z,14μm,16.0s
H11N2 WAKE ISLAND Hy 28.72 129 T T 09 37 36.9
baz=321,slow=75
H11N1 WAKE ISLAND Hy 28.73 129 T T 09 37 35.0
baz=321,slow=75
H11N3 WAKE ISLAND Hy 28.74 129 T T 09 37 38.5
baz=321,slow=75
WAKE Wake Island 28.92 130 PFAKE 09 07 50.0 +16
WAKE LR LR
comp=Z,5μm,19.0s
IRK Irkutsk 29.21 307 *e*P **P 09 07 36.3 -0.2**
IRK pmax pmax
comp=Z,374nm,2.2s
ENH Enshi 29.32 261 *e*P **P 09 07 36.7 -0.9**
comp=Z,70nm,0.8s
ENH LR LR
comp=Z,8μm,19.0s
TLY Talaya 29.52 306 P **P 09 07 39.4 +0.2**
comp=Z,7.5nm,0.7s,baz=118,slow=10,SNR=17
TLY LR LR 09 20 16.0
comp=Z,5μm,22.0s,baz=88,slow=38
TLY Talaya 29.52 306*c i*P **P 09 07 39.1 -0.1**
TLY *e* 09 08 44.0
TLY *e*S **S 09 12 34.3 +1.5**
TLY pmax pmax
comp=Z,84nm,1.4s
TLY MLR MLR
comp=Z,8μm,14.0s
H11S1 WAKE ISLAND Hy 29.55 131 T T 09 38 46.1
baz=322
H11S3 WAKE ISLAND Hy 29.56 131 T T 09 38 41.8
baz=322
H11S2 WAKE ISLAND Hy 29.57 131 T T 09 38 45.4
baz=322
ZAK Zakamensk 29.63 303 *e*P **P 09 07 39.7 -0.6**
ZAK pmax pmax
comp=Z,49nm,1.5s
BILL Bilibino 30.42 17*c i*P **P 09 07 47.0 +0.1**
BILL *e**PP **sP 09 07 55.3 -0.2**
BILL *i* *SP pP 09 08 00.4 +7.4
BILL *e* 09 08 44.4
BILL *i* S **S 09 12 45.7 -0.8**
BILL pmax pmax
comp=Z,76nm,1.5s
BILL MLR MLR
comp=Z,5μm,16.0s
BILL Bilibino 30.42 17 *e*P **P 09 07 47.5 +0.5**
comp=Z,137nm,1.3s
BILL LR LR
comp=Z,5μm,21.0s
GZH Guangzhou 30.64 245 P **P 09 07 45.0 -4.3**
GZH S **S 09 12 42.3 -8.3**
GZH pmax pmax
comp=Z,3μm,8.3s
MOY Mondy 31.16 306 *e*P **P 09 07 53.8 0.0**
MOY pmax pmax
comp=Z,302nm,3.1s
LZH Lanzhou 31.22 275 ⇑P **P 09 07 54.5 0.0**
LZH pP sP 09 08 03.5 +0.4
LZH sP pP 09 08 06.3 +5.7
LZH S **S 09 12 59.5 -0.4**
LZH sS sS 09 13 12.3 +2.4
LZH pmax pmax
comp=Z,100nm,1.4s
LZH pmax pmax
comp=Z,360nm,6.0s
LZH LR LR
comp=Z,6μm,13.2s
LZH LR LR
comp=Z,6μm,13.0s
LZH LR LR
comp=Z,8μm,14.4s
TIXI Tiksi 32.24 351 P **P 09 08 02.5 -0.4**
comp=Z,20nm,1.0s,baz=164,slow=9.0,SNR=18
TIXI Tiksi 32.24 351 P **P 09 08 02.5 -0.4**
TIXI MLR MLR
comp=Z,4μm,20.0s
TIXI Tiksi 32.24 351 P **P 09 08 02.5 -0.4**
TIXI LR LR
comp=Z,4μm,20.0s
GTA Gaotai 33.25 283 ⇑P **P 09 08 12.5 +0.2**
GTA pP sP 09 08 20.0 -0.8
GTA sP pP 09 08 23.3 +5.0
GTA PP **PnPn 09 09 23.5 +1.0**
GTA PcP **PcP 09 10 55.5 +1.1**
GTA S **S 09 13 27.5 -3.9**
GTA sS sS 09 13 39.5 -1.9
GTA PcS **PcS 09 14 41.5 +1.5**
GTA SS **SnSn 09 15 28.0 -3.6**
GTA ScS **ScS 09 18 38.0 -0.3**
GTA pmax pmax
comp=Z,72nm,1.3s
GTA pmax pmax
comp=Z,1μm,6.8s
GTA LR LR
comp=Z,7μm,18.1s
GTA LR LR
comp=Z,17μm,18.1s
GTA LR LR
comp=Z,19μm,18.5s
CD2 Chengdu 33.37 266 P **P 09 08 12.3 -1.0**
CD2 pP sP 09 08 19.8 -2.0
CD2 sP pP 09 08 23.0 +3.7
CD2 S **S 09 13 31.0 -2.2**
CD2 sS sS 09 13 43.8 +0.6
CD2 pmax pmax
comp=Z,30nm,0.5s
CD2 pmax pmax
comp=Z,2μm,8.3s
CD2 LR LR
comp=Z,19μm,12.3s
CD2 LR LR
comp=Z,7μm,16.2s
CD2 LR LR
comp=Z,14μm,16.2s
GYA Guiyang 33.43 257⇑*i*P **P 09 08 13.3 -0.6**
GYA pP sP 09 08 22.0 -0.4
GYA PP **PnPn 09 09 25.5 +0.6**
GYA PcP **PcP 09 10 57.3 +2.2**
GYA S **S 09 13 35.5 +1.1**
GYA ScP **ScP 09 14 39.8 +1.5**
GYA SS **SnSn 09 15 35.0 -1.3**
GYA ScS **ScS 09 18 38.0 -1.5**
GYA pmax pmax
comp=Z,80nm,1.0s
GYA pmax pmax
comp=Z,1μm,8.7s

GYA LR LR
comp=Z,10µm,18.4s
GYA LR LR
comp=Z,15µm,18.2s
GYA LR LR
comp=Z,19µm,17.2s
MIDW Midway 34.30 98 PFAKE 09 08 40.0 +19
MIDW LR LR
comp=Z,4µm,22.0s
QIZ Qiongzhong 35.77 244 P **P** **09 08 34.8 +0.7**
QIZ PP **PP** **09 09 57.0 +1.5**
QIZ S **S** **09 14 10.5 +0.1**
QIZ LR LR
comp=Z,9µm,15.1s
QIZ LR LR
comp=Z,9µm,15.6s
QIZ Qiongzhong 35.77 244 PFAKE 09 08 50.0 +16
QIZ LR LR
comp=Z,5µm,21.0s
KRAR Krasnoyarsk 36.29 313 *i* P **P** **09 08 37.0 -1.1**
DAV Davao City (W) 36.77 211 PFAKE 09 09 00.0 +17
DAV LR LR
comp=Z,2µm,21.0s
KMI Kunming 37.10 259 P **P** **09 08 45.8 +0.1**
KMI pP sP 09 08 53.3 -1.0
KMI sP pP 09 08 56.5 +4.7
KMI PP **PnPn** **09 10 12.5 +1.8**
KMI S **S** **09 14 29.5 -1.6**
KMI sS ScP 09 14 46.8 -5.0
KMI SS **SnSn** **09 16 58.5 -7.0**
KMI pmax pmax
comp=Z,89nm,1.1s
KMI pmax pmax
comp=Z,2µm,4.0s
KMI LR LR
comp=Z,15µm,15.5s
KMI LR LR
comp=Z,14µm,16.5s
KMI LR LR
comp=Z,21µm,16.6s
WMQ Urumqi 40.87 294 ⇑ *i* P **P** **09 09 17.5 +0.7**
WMQ pP sP 09 09 31.0 +5.6
WMQ PcP **PcP** **09 11 21.0 +3.7**
WMQ PcS **PcS** **09 15 09.0 +0.8**
WMQ SS SS 09 18 24.3 -4.1
WMQ pmax pmax
comp=Z,57nm,1.8s
WMQ pmax pmax
comp=Z,2µm,4.3s
WMQ LR LR
comp=Z,10µm,14.6s
WMQ LR LR
comp=Z,7µm,13.4s
WMQ LR LR
comp=Z,6µm,20.6s
ZALV Zalesovo Beam 40.95 310 P **P** **09 09 17.1 -0.2**
comp=Z,11nm,0.5s,baz=88,slow=7.2,SNR=30
ZALV PcP **PcP** **09 11 18.9 +1.6**
comp=Z,6.0nm,0.7s,baz=104,slow=4.1,SNR=2.4
ZALV LR LR 09 27 17.7
comp=Z,8µm,19.1s,baz=72,slow=38
NRIK Noril'sk 40.99 333 P **P** **09 09 16.9 -0.5**
comp=Z,34nm,1.2s,baz=116,slow=7.6,SNR=22
NRIK LR LR 09 27 38.0
comp=Z,5µm,19.0s,baz=102,slow=38
SKNT Sakolnakorn 41.24 247 P **P** **09 09 20.4 +0.3**
comp=Z,68nm,1.1s
UBPT Khong Chiam 41.37 244 P **P** **09 09 21.8 +0.7**
comp=Z,63nm,2.2s,comp=Z,2µm
MYLDM Lahad Datu 41.56 219 ⇓ *i* P **P** **09 09 23.3 +0.6**
MYLDM Lahad Datu 41.56 219 *eP* **P** **09 09 24.9 +2.3**
comp=Z,164nm,1.4s
NVS Novosibirsk 41.79 311 ⇓ *i* P **P** **09 09 25.0 +0.8**
NVS 09 09 42.1
NVS pmax pmax
comp=Z,96nm,1.7s
NVS pmax pmax
comp=N,9.0nm,0.6s
NVS pmax pmax
comp=E,61nm,1.5s
SDKM Sandakan 41.81 221 ⇓ P **P** **09 09 25.6 +0.8**
TT01 Tatalina 41.82 37 *eP* **P** **09 09 26.2 +1.9**
TTA Tatalina 41.83 37 *eP* **P** **09 09 26.6 +2.1**
TTA pmax pmax
comp=Z,43nm,1.3s
TTA Tatalina 41.83 37 *eP* **P** **09 09 26.6 +2.1**
comp=Z,43nm,1.3s
SVW2 Sparrevohn 41.96 39 *eP* **P** **09 09 27.3 +1.8**
comp=Z,92nm,1.4s
KKM Kota Kinabalu 41.97 223 PFAKE 09 09 40.0 +14
KKM LR LR
comp=Z,4µm,22.0s
ZSN Zaisan 42.24 300 *i* P **P** **09 09 25.0 -3.0**
comp=Z,665nm,1.8s
ZSN *i* PP **PP** **09 11 03.4 -2.4**
ZSN *eS* **S** **09 15 44.3 -2.9**
ZSN LR LR 09 27 11.3
comp=Z,6µm,13.2s
TSM Tawau 42.64 219 ⇑ P **P** **09 09 32.5 +1.1**
CMAI Chiengmai2 42.91 255 P **P** **09 09 34.6 +0.7**
comp=Z,452nm,1.1s,comp=Z,10µm
UTTA Uttaradit 43.19 251 P P 09 09 46.0 +10
OHAK Old Harbor 43.28 45 *eP* **P** **09 09 37.9 +1.6**
comp=Z,95nm,1.3s
RSO Redoubt South 43.35 40 *eP* **P** **09 09 39.5 +2.4**
LAMP Lampang 43.36 253 P **P** **09 09 38.2 +0.8**
comp=Z,8.5nm,0.9s,comp=Z,132nm
LSA Lhasa 43.56 273 P **P** **09 09 40.5 +1.0**
LSA S **S** **09 16 13.3 +5.3**
LSA pmax pmax
comp=Z,22nm,0.8s
LSA pmax pmax
comp=Z,2µm,8.3s
LSA LR LR
comp=Z,2µm,19.2s
LSA LR LR
comp=Z,4µm,20.3s
LSA LR LR
comp=Z,9µm,20.3s
LSA Lhasa 43.56 273 *eP* **P** **09 09 40.5 +1.0**
LSA pmax pmax
comp=Z,100nm,1.3s
LSA MLR MLR
comp=Z,9µm,19.0s
LSA Lhasa 43.56 273 *eP* **P** **09 09 40.5 +1.0**
comp=Z,100nm,1.3s
LSA LR LR
comp=Z,9µm,19.0s
PPLA Purkeypile 43.57 37 *eP* **P** **09 09 40.9 +2.2**
comp=Z,246nm,1.6s
KDAK Kodiak Island 43.61 44 *i* P **P** **09 09 39.7 +0.8**
KDAK Kodiak Island 43.61 44 *eP* **P** **09 09 39.5 +0.6**
comp=Z,104nm,1.1s
KDAK LR LR
comp=Z,2µm,21.0s
CAST Castle Rocks 43.62 36 *eP* **P** **09 09 42.4 +3.4**
comp=Z,95nm,1.4s
PBKT Sadao Pong 43.66 250 P **P** **09 09 40.0 +0.3**
comp=Z,30nm,2.1s
SPU Mount Spurr 43.67 39 *eP* **P** **09 09 41.1 +1.7**
CMMT Chiang Mai 43.68 254 P **P** **09 09 40.1 +0.1**
comp=Z,35nm,0.9s,comp=Z,1µm
CHTO Chiang Mai 43.68 254 P **P** **09 09 40.2 +0.2**
comp=Z,182nm,1.1s,comp=Z,5µm
CHTO Chiang Mai 43.68 254 *eP* **P** **09 09 40.2 +0.2**
CHTO pmax pmax
comp=Z,35nm,0.9s
CHTO MLR MLR
comp=Z,3µm,20.0s
CHTO Chiang Mai 43.68 254 P **P** **09 09 40.5 +0.5**
SNR=12
CHTO Chiang Mai 43.68 254 P **P** **09 09 40.5 +0.5**
SNR=12
CHTO Chiang Mai 43.68 254 *eP* **P** **09 09 40.2 +0.2**
comp=Z,35nm,0.9s
CHTO LR LR
comp=Z,3µm,20.0s
MK01 Makanchi Array 43.79 300 *eP* **P** **09 09 40.3 -0.3**
MK31 Makanchi Array 43.79 300 *i* P **P** **09 09 38.4 -2.2**
MK31 pmax pmax
comp=Z,194nm,1.4s
MK31 Makanchi Array 43.79 300 *eP* **P** **09 09 40.9 +0.3**
MKAR Makanchi Array 43.79 300 P **P** **09 09 40.7 +0.1**
comp=Z,20nm,0.7s,baz=82,slow=9.9,SNR=78
MKAR PcP **PcP** **09 11 28.7 +1.8**
comp=Z,9.3nm,0.9s,baz=80,slow=2.6,SNR=1.7
MKAR LR LR 09 28 55.5
comp=Z,9µm,18.5s,baz=81,slow=38
CMAR Chiang Mai Arr 43.91 254 P **P** **09 09 41.9 +0.1**
comp=Z,6.7nm,1.0s,baz=48,slow=6.2,SNR=17
CMAR LR LR 09 30 07.4
comp=Z,3µm,19.2s,baz=70,slow=39
CMAR Chiang Mai Arr 43.91 254 *i* P **P** **09 09 42.2 +0.4**
CMAR pmax pmax
comp=Z,6.0nm,0.8s
CM01 Chiang Mai Arr 43.92 254 *eP* **P** **09 09 41.7 -0.2**
MAKZ Makanchi 44.00 300 *i* P **P** **09 09 41.8 -0.4**
MAKZ pmax pmax
comp=Z,201nm,1.2s
MAKZ Makanchi 44.00 300 *eP* **P** **09 09 42.0 -0.2**
comp=Z,221nm,1.3s
BPAW Bear Paw Mtn. 44.11 35 *eP* **P** **09 09 45.7 +2.8**
comp=Z,50nm,1.1s
CNPM China Poot 44.17 42 *eP* **P** **09 09 45.1 +1.7**
comp=Z,56nm,1.2s
MLY Manley 44.23 34 *eP* **P** **09 09 45.8 +2.0**
comp=Z,63nm,1.2s
SUA Susitna One 44.29 39 *eP* **P** **09 09 47.6 +3.1**
comp=Z,53nm,1.0s
BRLK Bradley Lake 44.33 41 *eP* **P** **09 09 47.5 +2.8**
comp=Z,42nm,1.1s
TRF Thorofare Moun 44.43 36 *eP* **P** **09 09 48.6 +2.9**
comp=Z,40nm,1.1s
COLD Coldfoot 44.51 31 *eP* **P** **09 09 48.8 +2.8**
comp=Z,36nm,1.1s
RC01 Rabbit Creek A 44.80 39 *eP* **P** **09 09 49.4 +1.0**
comp=Z,86nm,1.2s
MHMT Maesarieng 44.83 254 P **P** **09 09 49.8 +0.7**
comp=Z,22nm,0.7s
SEW Seward 45.02 41 *eP* **P** **09 09 51.8 +1.7**
comp=Z,60nm,1.1s
MCK McKinley 45.02 36 *eP* **P** **09 09 51.3 +1.1**
MCK pmax pmax
comp=Z,64nm,1.2s
MCK McKinley 45.02 36 *eP* **P** **09 09 51.3 +1.1**
comp=Z,64nm,1.2s
PMR Palmer 45.05 39 *eP* **P** **09 09 50.8 +0.5**
PMR pmax pmax
comp=Z,38nm,1.0s
PMR Palmer 45.05 39 *eP* **P** **09 09 50.8 +0.5**
comp=Z,38nm,1.0s
RND Reindeer 45.08 36 *eP* **P** **09 09 51.5 +0.9**
RND pmax pmax
comp=Z,100nm,1.1s
RND Reindeer 45.08 36 *eP* **P** **09 09 51.5 +0.9**
comp=Z,100nm,1.1s
SHL Shillong 45.09 267 *eP* **P** **09 09 51.0 -0.4**
SHL *eS* **S** **09 16 32.0 +2.3**
KURK Kurchatov 45.22 306 *eP* **P** **09 09 52.1 +0.2**
KURK pmax pmax
comp=Z,381nm,1.4s
KURK MLR MLR
comp=Z,3µm,19.0s
KURK Kurchatov 45.22 306 *eP* **P** **09 09 52.1 +0.2**
comp=Z,381nm,1.4s
KURK LR LR
comp=Z,3µm,19.0s
MDM Murphy Dome 45.29 34 *eP* **P** **09 09 54.0 +1.7**
comp=Z,126nm,1.3s
KURBB Kurchatov Arra 45.30 306 P **P** **09 09 52.3 -0.2**
comp=Z,32nm,0.5s,baz=79,slow=8.5,SNR=188
CHBT CHBT 45.30 244 P **P** **09 09 55.3 +2.4**
comp=Z,142nm,1.2s,comp=Z,3µm
WRH Wood River Hil 45.37 35 *eP* **P** **09 09 55.8 +2.9**
comp=Z,95nm,1.4s
SML Sawmill 45.41 38 *eP* **P** **09 09 54.9 +1.6**
SML pmax pmax
comp=Z,182nm,1.4s
SML Sawmill 45.41 38 *eP* **P** **09 09 54.9 +1.6**
comp=Z,182nm,1.4s
UMPA Umpang Tak 45.42 251 P **P** **09 09 58.3 +4.5**
comp=Z,9.1nm,1.3s,comp=Z,752nm
COLA College 45.46 34 *eP* **P** **09 09 56.9 +3.4**
COLA pmax pmax
comp=Z,186nm,1.5s
COLA MLR MLR
comp=Z,2µm,20.0s
COLA College 45.46 34 *eP* **P** **09 09 56.9 +3.4**
comp=Z,186nm,1.5s
COLA LR LR
comp=Z,2µm,20.0s
CCB Clear Creek Bu 45.48 34 *eP* **P** **09 09 55.5 +1.7**
comp=Z,89nm,1.6s
DHY Denali Highway 45.76 36 *eP* **P** **09 09 57.7 +1.5**
comp=Z,92nm,1.3s
HDA Harding Lake 45.87 35 *eP* **P** **09 09 59.3 +2.5**
comp=Z,62nm,1.1s
IL1 Eielson Array 45.87 34 *eP* **P** **09 09 57.3 +0.4**
ILAR Eielson Array 45.87 34 P **P** **09 09 57.4 +0.5**
comp=Z,9.3nm,0.8s,baz=258,slow=5.6,SNR=55
ILAR LR LR 09 31 35.1
comp=Z,1µm,19.5s,baz=300,slow=39
ILB Eielson Array 45.87 34 *eP* **P** **09 09 57.5 +0.6**
SCM Sheep Creek Mo 45.89 38 *eP* **P** **09 09 58.2 +1.1**
SCM pmax pmax
comp=Z,103nm,1.2s
SCM Sheep Creek Mo 45.89 38 *eP* **P** **09 09 58.2 +1.1**
comp=Z,103nm,1.2s
FID Port Fidalgo 46.41 40 *eP* **P** **09 10 03.4 +2.2**
comp=Z,89nm,1.3s
SRDT SRDT 46.46 249 P P 09 10 13.5 +11
FYU Fort Yukon 46.47 32 *eP* **P** **09 10 05.3 +3.8**
comp=Z,240nm,1.4s
SHLS Shalkode 46.49 295 *eP* **P** **09 10 00.3 -2.0**
comp=Z,313nm,1.5s
SHLS *eS* **S** **09 16 45.3 -4.4**
SHLS LR LR 09 29 33.2
comp=Z,5µm,14.8s
KLU Klutina 46.59 39 *eP* **P** **09 10 04.0 +1.4**
comp=Z,71nm,1.0s
DIV Divide 46.71 39 *eP* **P** **09 10 05.5 +2.0**
comp=Z,120nm,1.1s
PDGK Podgornoye 46.71 296 *i* P **P** **09 10 03.8 +0.1**
PDGK pmax pmax
comp=Z,153nm,1.5s
EYAK Cordova Ski Ar 46.80 40 *eP* **P** **09 10 06.7 +2.6**
comp=Z,70nm,1.1s
JOHN Johnston Islan 46.86 106 PFAKE 09 10 20.0 +15
JOHN LR LR
comp=Z,375nm,20.0s
TDK Taldyqorghan 46.90 298 *eP* **P** **09 10 03.5 -1.8**
comp=Z,590nm,1.7s
TDK *eS* **S** **09 16 51.4 -3.7**
TDK LR LR 09 29 50.6
comp=Z,3µm,13.7s
UZB Uzynbulak 47.09 296 *eP* **P** **09 10 04.6 -2.3**
comp=Z,380nm,1.9s
UZB *eS* **S** **09 16 53.8 -4.2**
SBUM Sibu 47.11 225 ⇓ P **P** **09 10 07.5 +0.4**
TARA Tarawa 47.12 138 PFAKE 09 10 20.0 +13
TARA LR LR
comp=Z,284nm,20.0s
DOT Dot Lake 47.20 35 *eP* **P** **09 10 09.3 +2.0**
comp=Z,24nm,0.8s
KPKS Kokpek 47.21 296 *i* P **P** **09 10 05.9 -1.9**
comp=Z,807nm,1.8s
KPKS *i* PP **PP** **09 11 57.2 -1.5**
KPKS *eS* **S** **09 16 56.0 -3.7**
KPKS LR LR 09 30 05.0
comp=Z,10µm,14.1s
BMRM Bremner River 47.29 39 *eP* **P** **09 10 09.5 +1.4**
comp=Z,88nm,1.1s
RAGM Ragged Mountai 47.35 40 *eP* **P** **09 10 12.7 +4.2**
comp=Z,89nm,1.1s
MENT Mentasta 47.44 36 *eP* **P** **09 10 11.1 +1.9**
comp=Z,98nm,1.2s
SATY Saty 47.54 296 *eP* **P** **09 10 08.7 -1.7**
comp=Z,640nm,1.1s
SATY *i* PP **PP** **09 12 00.0 -1.7**
SATY *eS* **S** **09 17 00.6 -3.9**
SATY LR LR 09 30 18.2
comp=Z,5µm,13.0s
CRQM Cirque 48.03 39 *eP* **P** **09 10 16.3 +2.3**
comp=Z,174nm,1.1s
EGAK Eagle 48.32 34 *eP* **P** **09 10 18.4 +2.5**
comp=Z,99nm,1.4s
EGAK LR LR
comp=Z,2µm,22.0s
JIRN Jiri 48.35 273 *eP* **P** **09 10 17.5 +0.3**
BALM Baldy 48.37 39 *eP* **P** **09 10 18.4 +1.9**
BALM pmax pmax
comp=Z,62nm,1.1s
BALM Baldy 48.37 39 *eP* **P** **09 10 18.4 +1.9**
comp=Z,62nm,1.1s
RAMN Ramite 48.41 272 *eP* **P** **09 10 17.7 +0.3**
comp=Z,145nm,1.0s
MDOK Medeo 48.44 296 *i* P **P** **09 10 15.4 -1.9**
comp=Z,427nm,1.9s
MDOK *i* PP **PP** **09 12 08.2 -1.7**
MDOK *eS* **S** **09 17 13.1 -4.1**
MDOK *i* SS **SS** **09 20 44.4 -2.2**
MDOK LR LR 09 30 53.9
comp=Z,5µm,14.1s
AAA Alma-Ata 48.47 297 *eP* **P** **09 10 18.9 +1.4**
AAA *eS* **S** **09 17 24.7 +7.3**
AAA pmax pmax
comp=Z,2µm,3.8s
AAA smax smax
comp=E,1µm,6.6s
AAA MLR MLR
comp=Z,13µm,16.0s
AAA Alma-Ata 48.47 297 *eP* **P** **09 10 15.7 -1.8**
comp=Z,330nm,0.9s
AAA *i* PP **PP** **09 12 09.1 -1.0**
AAA *eS* **S** **09 17 13.8 -3.6**
AAA LQ LQ 09 27 14.6
AAA LR LR 09 31 01.2
comp=Z,4µm,14.3s
KUU Kurty 48.67 298 *i* P **P** **09 10 16.6 -2.3**
comp=Z,806nm,1.5s
KUU *i* PP **PP** **09 12 09.1 -2.7**
KUU *eS* **S** **09 17 15.9 -4.2**
KUU *i* SS **SS** **09 20 47.8 -2.2**
KUU LR LR 09 31 11.1
comp=Z,3µm,14.6s
KSM Kuching 48.97 226 ⇓ P **P** **09 10 22.5 +1.0**
KSM Kuching 48.97 226 *eP* **P** **09 10 22.0 +0.5**
comp=Z,31nm,0.9s
KSM LR LR
comp=Z,1µm,19.0s
KKN Kakani 48.98 274 *eP* **P** **09 10 22.1 +0.3**
comp=Z,139nm,0.7s
PKIN Phulchoki 49.00 274 *eP* **P** **09 10 22.3 +0.3**
BRZS Berezniki 49.09 306 *i* P **P** **09 10 20.4 -1.7**
comp=Z,125nm,0.9s
BRZS *i* PP **PP** **09 12 13.6 -1.9**
BRZS *eS* **S** **09 17 21.9 -3.9**
BRZS LR LR 09 31 05.8
comp=Z,208nm,14.6s
DAWY Dawson 49.19 35 *eP* **P** **09 10 25.4 +2.8**
comp=Z,26nm,1.3s
GKN Gorkha 49.37 275 *eP* **P** **09 10 24.7 0.0**
TKM2 Tokmak 2 49.52 297 *i* P **P** **09 10 26.3 +0.6**
TKM2 pmax pmax
comp=Z,308nm,1.9s
PCA Pinnacle 49.56 40 *eP* **P** **09 10 28.9 +3.2**
comp=Z,106nm,1.4s
BVA0 Borovoye Array 49.58 311 *i* P **P** **09 10 25.7 -0.1**
BVA0 pmax pmax
comp=Z,249nm,2.3s
BVAR Borovoye Array 49.58 311 P **P** **09 10 26.0 +0.2**
comp=Z,19nm,0.9s,baz=77,slow=6.4,SNR=45
BVAR LR LR 09 34 05.9
comp=Z,452nm,21.5s,baz=78,slow=39
PMG Port Moresby 49.60 175 *eP* **P** **09 10 26.3 +0.1**
PMG pmax pmax
comp=Z,58nm,1.0s
PMG MLR MLR
comp=Z,757nm,15.0s
PMG Port Moresby 49.60 175 PFAKE 09 10 40.0 +14
PMG LR LR
comp=Z,1µm,19.0s
BRVK Borovoye 49.63 311 *ceP* **P** **09 10 26.7 +0.6**
BRVK pmax pmax
comp=Z,250nm,1.7s
BRVK MLR MLR
comp=Z,17µm,15.0s
BRVK Borovoye 49.63 311 *eP* **P** **09 10 26.8 +0.6**
comp=Z,152nm,1.4s
BRVK LR LR
comp=Z,4µm,20.0s
OTUK Ortayu 49.84 304 P **P** **09 10 28.3 +0.5**
OTUK pmax pmax
comp=Z,159nm,1.8s
KAPI Kappang 50.10 211 *eP* **P** **09 10 31.6 +1.6**
comp=Z,90nm,1.4s
KAPI LR LR
comp=Z,1µm,19.0s
KTGM Kuala Trenggan 50.21 237 ⇑ P **P** **09 10 32.0 +1.1**
FRU Bishkek 50.22 297 ⇑ *i* P **P** **09 10 31.0 +0.2**
FRU *e* 09 11 46.0
FRU *e* 09 12 30.0
FRU *eS* S 09 17 57.0 +15
FRU pmax pmax
comp=Z,260nm,2.0s
FRU smax smax
comp=E,240nm,2.5s
FRU pmax pmax
comp=E,9µm,14.0s
KOLN Koldanda 50.27 275 *eP* **P** **09 10 31.9 +0.3**
AAK Ala-Archa 50.38 297 P **P** **09 10 32.1 -0.1**
comp=E,7.4nm,0.7s,baz=78,slow=9.4,SNR=33
AAK Ala-Archa 50.38 297 P **P** **09 10 32.1 -0.1**
AAK MLR MLR
comp=Z,7µm,21.0s
AAK Ala-Archa 50.38 297 P **P** **09 10 32.1 -0.1**
AAK LR LR
comp=Z,7µm,21.0s
KSH Kashi 50.57 292 P **P** **09 10 37.8 +4.2**
KSH *es*P sP 09 10 48.8 +6.5
KSH *e*PP **PP** **09 12 35.0 +5.7**
KSH *e*ScP **ScP** **09 15 48.5 +2.4**
KSH PcS **PcS** **09 15 51.5 +2.9**
KSH S **S** **09 17 49.5 +2.5**
KSH SS **SS** **09 21 22.0 +1.1**
KSH pmax pmax
comp=Z,56nm,1.4s
KSH pmax pmax
comp=Z,810nm,4.6s
KSH LR LR
comp=Z,13µm,15.9s
KSH LR LR
comp=Z,8µm,13.9s
KSH LR LR
comp=Z,19µm,16.2s
PYUN Piuthan 50.57 276 *eP* **P** **09 10 34.2 +0.3**
comp=Z,536nm,1.3s
HYT Haines Junctio 50.72 38 *eP* **P** **09 10 37.0 +2.5**
comp=Z,177nm,1.1s
INK Inuvik 50.74 28 P **P** **09 10 34.4 +0.1**
comp=Z,9.0nm,0.5s,baz=303,slow=7.5,SNR=36
INK Inuvik 50.74 28 *eP* **P** **09 10 35.2 +0.9**
INK pmax pmax
comp=Z,60nm,1.3s
INK Inuvik 50.74 28 *eP* **P** **09 10 35.2 +0.9**
comp=Z,60nm,1.3s
MNAS Manas 51.79 297 *i* P **P** **09 10 43.1 +0.3**
MNAS pmax pmax
comp=Z,137nm,1.5s
HNR Honiara 51.81 159 PFAKE 09 11 00.0 +17
HNR LR LR
comp=Z,2µm,19.0s
KULM Kulim 51.85 239 ⇑ P **P** **09 10 45.0 +1.6**
KULM Kulim 51.85 239 *eP* **P** **09 10 44.5 +1.2**
comp=Z,53nm,1.2s
KULM LR LR
comp=Z,2µm,19.0s
WHY Whitehorse 52.01 38 *eP* **P** **09 10 46.7 +2.6**
SKAG Skagway 52.14 40 *eP* **P** **09 10 48.9 +4.0**
comp=Z,42nm,1.2s
IPM Ipoh 52.21 238 ⇑ P **P** **09 10 46.4 +0.3**
KGM Kluang 52.65 234 ⇑ P **P** **09 10 50.6 +1.4**
KIP Kipapa 52.72 93 PFAKE 09 11 00.0 +10
KIP LR LR
comp=Z,3µm,19.0s
FRIM Kepong 52.77 237 ⇓ P **P** **09 10 50.6 +0.5**
KK31 Karatay Array 52.90 299 *i* P **P** **09 10 50.3 -0.5**
KK31 pmax pmax
comp=Z,38nm,1.0s
KKAR Karatay Array 52.90 299 *eP* **P** **09 10 50.7 -0.1**
KKAR Karatay Array 52.90 299 *eP* **P** **09 10 50.7 -0.1**
SVE Sverdlovsk 53.76 317 *d* *i* P **P** **09 10 57.8 +0.9**
SVE *e* 09 13 00.9
SVE *eS* **S** **09 18 30.4 +0.3**
SVE *eSSS* SSS 09 23 59.3
SVE pmax pmax
comp=Z,244nm,1.5s
SVE pmax pmax

comp=Z,700nm,14.8s
SVE MLR MLR
comp=Z,21µm,15.0s
SVE MLR MLR
comp=E,16µm,14.0s
THN Thein Dam 53.90 284 *eP* **P 09 10 56.0 -2.3**
MTN Manton Dam 54.12 195 *eP* **P 09 10 59.4 -0.5**
comp=E,34nm,0.9s
WRAK Wrangell Islan 54.64 43 PFAKE 09 11 20.0 +17
WRAK LR LR
comp=Z,1µm,19.0s
PSI Prapat 54.85 239 LR LR 09 34 04.9
comp=Z,2µm,21.8s,baz=58,slow=36
ARU Arti 54.98 317 *P* **P 09 11 06.1 +0.3**
comp=Z,4.5nm,0.3s,baz=74,slow=6.5,SNR=4.0
ARU LR LR 09 37 27.1
comp=Z,15µm,18.3s,baz=66,slow=39
ARU Arti 54.98 317 *c iP* **P 09 11 06.2 +0.4**
ARU 09 12 06.3
ARU 09 13 08.8
ARU PPP PPP 09 14 21.5
ARU S **S 09 18 48.3 +1.9**
ARU 09 20 50.4
ARU pmax pmax
comp=Z,249nm,1.7s
ARU MLR MLR
comp=Z,18µm,16.0s
DLBC Dease Lake 55.07 40 P **P 09 11 06.2 -0.4**
comp=Z,5.8nm,1.0s,baz=298,slow=7.4,SNR=3.6
DLBC Dease Lake 55.07 40 *eP* **P 09 11 10.1 +3.5**
POHA Pohakuloa 55.57 93 PFAKE 09 11 30.0 +19
POHA LR LR
comp=Z,2µm,21.0s
DZET Dzherino 55.89 295 P **P 09 11 12.3 -0.5**
DZET pmax pmax
comp=Z,109nm,1.6s
GSI Gunungsitoli 56.85 239 *eP* **P 09 11 20.4 +0.6**
comp=Z,170nm,1.5s
AB31 Akbulak array 57.06 309 *i P* **P 09 11 20.9 +0.1**
AB31 pmax pmax
comp=Z,32nm,0.6s
ABKAR Akbulak array 57.06 309 *eP* **P 09 11 21.0 +0.2**
HOPEN Hopen 57.24 346⇑ *iP* **P 09 11 22.3 +0.6**
HOPEN IVmB_BB 09 11 23.1
comp=Z,1µm,1.7s
HOPEN *eS* **S 09 19 17.2 +1.3**
HOPEN IVMs_BB IVMs_BB 09 41 54.1
comp=Z,2µm,14.8s
SPA0 Spitsbergen Ar 57.60 349⇑ *iP* **P 09 11 24.5 +0.2**
SPA0 IVmB_BB 09 11 49.0
comp=Z,1µm,4.1s
SPA0 *eS* **S 09 19 21.8 +1.0**
SPA0 IVMs_BB IVMs_BB 09 38 14.5
comp=Z,1µm,19.3s
SPITS Spitsbergen Ar 57.60 349 P **P 09 11 23.9 -0.3**
comp=Z,4.0nm,0.7s,baz=61,slow=6.8,SNR=4.1
AKTO Aktyubinsk 57.68 311 P **P 09 11 24.9 -0.3**
comp=Z,17nm,0.8s,baz=75,slow=8.2,SNR=44
AKTO Aktyubinsk 57.68 311 *i P* **P 09 11 25.5 +0.3**
AKTO pmax pmax
comp=Z,134nm,1.6s
KBS Kingsbay 57.69 350⇑ *iP* **P 09 11 25.6 +0.8**
KBS IVmB_BB 09 11 53.4
comp=Z,2µm,3.3s
KBS *eS* **S 09 19 23.2 +1.4**
KBS IVMs_BB IVMs_BB 09 42 26.7
comp=Z,1µm,18.1s
KBS Kingsbay 57.69 350 *eP* **P 09 11 26.4 +1.6**
KBS pmax pmax
comp=Z,86nm,1.3s
KBS MLR MLR
comp=Z,2µm,22.0s
KBS Kingsbay 57.69 350 *eP* **P 09 11 26.4 +1.6**
comp=Z,86nm,1.3s
KBS LR LR
comp=Z,2µm,22.0s
KBL Kabul 57.75 290 *eP* **P 09 11 25.7 -0.5**
KBL Kabul 57.75 290 *eP* **P 09 11 25.7 -0.5**
HSPB Hornsund (broa 58.56 348 *eP* **P 09 11 31.8 +0.9**
HSPB *eS* **S 09 19 33.9 +0.7**
FUNA Funafuti 58.76 137 PFAKE 09 11 50.0 +17
FUNA LR LR
comp=Z,6µm,21.0s
RES Resolute Bay 59.02 15 *eP* **P 09 11 35.4 +1.3**
RES Resolute Bay 59.02 15 *eP* **P 09 11 35.4 +1.3**
BJO Bjornoya 59.65 345⇑ *iP* **P 09 11 38.7 +0.2**
BJO IVmB_BB 09 12 06.7
comp=Z,845nm,3.0s
BJO *eS* **S 09 19 48.8 +1.4**
BJO IVMs_BB IVMs_BB 09 43 06.1
comp=Z,2µm,16.9s
LVZ Lovozero 59.77 336 *eP* **P 09 11 38.8 -0.7**
LVZ pmax pmax
comp=Z,38nm,1.6s
LVZ MLR MLR
comp=Z,3µm,20.0s
LVZ Lovozero 59.77 336 PFAKE 09 11 50.0 +11
LVZ LR LR
comp=Z,4µm,21.0s
HYB Hyderabad 59.90 268 *i P* **P 09 11 41.0 -0.1**
HYB *e* 09 11 51.0
HYB *e*PP **PP 09 13 54.0 +0.8**
HYB *e*S **S 09 19 52.0 -0.2**
CTAO Charters Tower 60.16 177 PFAKE 09 12 00.0 +17
CTAO LR LR
comp=Z,1µm,21.0s
YKA Yellowknife Ar 60.17 32 P **P 09 11 44.0 +1.8**
comp=Z,3.2nm,0.6s,baz=298,slow=6.9,SNR=6.6
YKA LR LR 09 40 59.2
comp=Z,147nm,20.7s,baz=0.0,slow=39
YKA Yellowknife Ar 60.17 32 P **P 09 11 44.0 +1.8**
YKA Yellowknife Ar 60.17 32 P **P 09 11 44.0 +1.8**
APA Apatity 60.35 335⇓ *iP* **P 09 11 41.9 -1.4**
APA *i* 09 13 55.0
APA *i* PPP PPP 09 15 25.0
APA *i* S **S 09 19 48.0 -8.5**
APA *i* 09 21 36.0
APA *i* SS **SS 09 23 45.0 -8.3**
APA pmax pmax
comp=Z,6.0nm,0.8s
APA MLR MLR
comp=Z,4µm,22.0s
FITZ Fitzroy Crossi 60.45 200 *eP* **P 09 11 44.5 -0.1**
WRAB Tennant Creek 60.54 190 *i P* **P 09 11 45.0 -0.2**
WRAB pmax pmax
comp=Z,139nm,1.8s
WRAB MLR MLR
comp=Z,2µm,18.0s
WRAB Tennant Creek 60.54 190 *eP* **P 09 11 45.1 -0.1**
WRAB LR LR
comp=Z,1µm,20.0s
WB2 Warramunga Arr 60.55 190 *eP* **P 09 11 44.2 -1.1**
WB2 *eP* **pP 09 11 44.8 -6.8**
WRA Warramunga Arr 60.55 190 P **P 09 11 44.0 -1.3**
comp=Z,5.3nm,0.7s,baz=7.7,slow=6.9,SNR=46
WRA Warramunga Arr 60.55 190 P **P 09 11 44.0 -1.3**
KEV Kevo 60.93 339 PFAKE 09 12 00.0 +13
KEV LR LR
comp=Z,3µm,20.0s
HAMF Hammerfest 61.23 341 *eP* **P 09 11 49.5 +0.1**
HAMF IVmB_BB 09 11 50.0
comp=Z,1µm,2.6s
HAMF *eS* **S 09 20 08.4 +0.6**
HAMF IVMs_BB IVMs_BB 09 44 00.5
comp=Z,1µm,16.9s
ARA0 ARCESS Array S 61.48 339 *eP* **P 09 11 51.3 +0.2**
ARCES ARCESS Array B 61.48 339 P **P 09 11 51.1 0.0**
comp=Z,6.5nm,1.0s,baz=64,slow=8.2,SNR=9.1
ARCES LR LR 09 43 52.8
comp=Z,4µm,18.4s,baz=36,slow=41
ARE0 ARCESS Array S 61.48 339⇑ *iP* **P 09 11 51.7 +0.7**
ARE0 IVmB_BB 09 11 54.0
comp=Z,760nm,5.2s
ARE0 *eS* **S 09 20 11.5 +0.6**
ARE0 IVMs_BB IVMs_BB 09 43 38.9
comp=Z,2µm,16.8s
ARE0 ARCESS Array S 61.48 339 *eP* **P 09 11 52.0 +0.9**
KLMR Klimovskoe 61.83 327 *eP* **P 09 11 51.5 -2.0**
KLMR *e* 09 14 07.3
KLMR pmax pmax
comp=Z,112nm,1.5s
DAG Danmarks Havn 62.63 355⇑ *iP* **P 09 11 58.6 0.0**
comp=Z,45nm,1.1s
DAG Danmarks Havn 62.63 355⇑ *iP* **P 09 11 58.6 0.0**
DAG pmax pmax
comp=Z,57nm,1.1s
LLLB Lillooet 62.80 46 *eP* **P 09 12 01.4 +1.1**
PGC Sidney 62.94 48 *eP* P 09 12 06.7 +5.6
TRO Tromso 63.12 341⇑ *iP* **P 09 12 02.7 +0.8**
TRO IVmB_BB 09 12 29.1
comp=Z,636nm,3.1s
TRO *e*PP **PP 09 14 20.8 +0.5**
TRO *e*S **S 09 20 33.4 +1.9**
TRO IVMs_BB IVMs_BB 09 46 11.3
comp=Z,2µm,15.8s
NLWA Neilton Lookou 63.35 49 *eP* **P 09 12 06.4 +2.4**
NLWA LR LR
comp=Z,1µm,20.0s
GEYT Alibeck 63.65 298 P **P 09 12 06.0 -0.1**
comp=Z,17nm,0.9s,baz=50,slow=4.6,SNR=13
GEYT PcP **PcP 09 12 44.2 +1.9**
comp=Z,12nm,0.6s,baz=46,slow=6.4,SNR=3.8
GEYT LR LR 09 41 58.3
comp=Z,7µm,18.4s,baz=50,slow=38
B05A Bryant 63.91 48 P **P 09 12 08.0 +0.5**
baz=302
E03A Lebam 63.97 50 *eP* **P 09 12 12.2 +4.2**
AS01 Alice Springs 64.27 190 *eP* **P 09 12 08.6 -1.6**
AS31 Alice Springs 64.28 190 *eP* **P 09 12 14.1 +3.9**
ASAR Alice Springs 64.28 190 P **P 09 12 09.1 -1.1**
comp=Z,3.7nm,0.9s,baz=12,slow=4.9,SNR=15
ASAR LR LR 09 38 30.2
comp=Z,964nm,21.9s,baz=0.5,slow=34
F04D Rainier, OR 64.54 50 P **P 09 12 11.3 -0.4**
baz=302
D05A Enumclaw 64.54 49 *eP* **P 09 12 16.2 +4.5**
KULLO Kullorsuaq 64.55 6 *i P* **P 09 12 11.2 -0.1**
comp=Z,4µm,17.0s
KULLO Kullorsuaq 64.55 6 *i P* **P 09 12 11.2 -0.1**
KULLO MLR MLR
comp=Z,4µm,17.0s
G03D McMinnville, O 64.86 51 P **P 09 12 14.6 +0.8**
baz=303
FMW Mount Fremont 64.86 49 P **P 09 12 16.6 +2.5**
LON Longmire 64.88 49 *eP* **P 09 12 17.1 +3.1**
LON Longmire 64.88 49 *eP* **P 09 12 17.1 +3.1**
LVP Lakeview Peak 64.90 50 P **P 09 12 17.6 +3.4**
MBWA Marble Bar 65.04 204 PFAKE 09 12 30.0 +15
MBWA LR LR
comp=Z,925nm,19.0s
B08A Colville Reser 65.41 47 *eP* **P 09 12 18.4 +1.0**
WTV Waterville 65.42 48 P **P 09 12 20.0 +2.4**
LOF Lofoten 65.55 342 *eP* **P 09 12 17.4 -0.5**
LOF IVmB_BB 09 12 44.7
comp=Z,626nm,6.1s
LOF *e*PP **PP 09 14 40.9 -0.7**
LOF *e*S **S 09 21 02.0 +0.4**
LOF IVMs_BB IVMs_BB 09 48 15.8
comp=Z,1µm,14.3s
MOS Moscow 65.56 323 *eP* **P 09 12 17.5 -0.7**
MOS *e* 09 12 30.7
MOS *e* 09 12 51.4
MOS *e* 09 14 42.1
MOS *e*S **S 09 21 01.9 -0.1**
MOS *e* 09 21 16.9
MOS *e* 09 22 10.0
MOS pmax pmax
comp=Z,800nm,3.0s
MOS pmax pmax
comp=Z,171nm,1.5s
MOS MLR MLR
comp=N,10µm,15.0s
MOS MLR MLR
comp=E,7µm,15.0s
MOS MLR MLR
comp=Z,10µm,15.0s
I03D Drain, OR 65.62 53 P **P 09 12 19.6 +0.8**
baz=303
DZM Mont Dzumac 65.67 157 *eS* S 09 20 51.0 -13
comp=Z,3µm,28.2s
DZM *e*LQ LQ 09 28 57.5
comp=Z,3µm,29.0s
DZM *e*LR LR 09 31 45.5
comp=Z,3µm,22.5s
G05D Wamic, OR 65.99 50 P **P 09 12 21.9 +0.7**
baz=304
MSVF Nonsavu 66.14 144 PFAKE 09 12 40.0 +18
MSVF LR LR
comp=Z,3µm,20.0s
I04A Tendick Farm, 66.14 52 P **P 09 12 23.5 +1.3**
baz=304,SNR=6.1
VRH Novokhopyorsk 66.21 318 *eP* P 09 12 32.9 +10
VRH pmax pmax
comp=Z,40nm,0.6s
VRH MLR MLR
comp=Z,320nm,14.0s
C09A Chrisman Ranch 66.31 47 *eP* **P 09 12 24.2 +1.0**
D08A Wollman Farm, 66.36 48 *eP* **P 09 12 25.2 +1.7**
HAWA Hanford 66.39 49 *eP* **P 09 12 25.9 +2.1**
HAWA LR LR
comp=Z,1µm,21.0s
G06A Carlson Farm, 66.40 50 *eP* **P 09 12 27.1 +3.2**
OBN Obninsk 66.41 323 P **P 09 12 23.6 -0.1**
comp=Z,28nm,0.4s,baz=57,slow=4.7,SNR=16
OBN LR LR 09 44 14.9
comp=Z,5µm,18.6s,baz=52,slow=39
OBN Obninsk 66.41 323 *c iP* **P 09 12 23.8 +0.1**
OBN *e**PP **sP 09 12 33.0 +0.5**
OBN *i* *SP pP 09 12 38.1 +8.0
OBN *e* 09 12 58.5
OBN *e* 09 14 57.1
OBN *e*PPP PPP 09 16 23.4
OBN *e*S **S 09 21 12.0 -0.5**
OBN *e*SS **SS 09 25 31.4 +3.1**
OBN pmax pmax
comp=Z,210nm,2.5s
OBN MLR MLR
comp=Z,11µm,16.0s
I05D Terrebonne, OR 66.48 51 P **P 09 12 25.1 +0.7**
baz=304
J04D Umpqua Nationa 66.63 53 P **P 09 12 25.9 +0.4**
baz=304
FINES FINESS Array B 66.64 332 P **P 09 12 25.1 0.0**
comp=Z,12nm,0.7s,baz=57,slow=7.0,SNR=30
FINES LR LR 09 44 50.6
comp=Z,6µm,19.3s,baz=32,slow=39
NEW Newport 66.68 46 P **P 09 12 26.4 +0.8**
baz=305,SNR=9.5
NEW Newport 66.68 46 *eP* **P 09 12 26.5 +0.8**
NEW MLR MLR
comp=Z,1µm,21.0s
NEW Newport 66.68 46 *eP* **P 09 12 26.5 +0.9**
NEW LR LR
comp=Z,1µm,21.0s
YBH Yreka Blue Hor 67.10 54 *eP* **P 09 12 30.1 +1.6**
YBH Yreka Blue Hor 67.10 54 *eP* **P 09 12 30.1 +1.6**
E09A Wood Farm, Sta 67.11 48 *eP* **P 09 12 29.6 +1.3**
J05D Fort Rock, OR 67.13 52 P **P 09 12 29.5 +0.8**
baz=304,SNR=8.0
JMIC Jan Mayen 67.18 350 *eP* **P 09 12 30.1 +1.8**
JMIC *e*PP **PP 09 14 58.3 +2.5**
K04D Chiloquin, OR 67.19 53 P **P 09 12 29.1 +0.1**
baz=304
M02C Callahan 67.20 55 P **P 09 12 29.4 +0.3**
baz=304
G08A Pilot Rock 67.34 49 *eP* **P 09 12 31.9 +1.9**
SUMG Summit 67.39 1 *i P* **P 09 12 29.4 -0.7**
SUMG *i* 09 12 45.3
SUMG Summit 67.39 1 *i P* **P 09 12 29.4 -0.7**
SUMG *i* 09 12 45.3
SUMG Summit 67.39 1 *eP* **P 09 12 30.7 +0.6**
VSR Storozhevoye 67.50 319 *eP* **P 09 12 30.3 -0.4**
VSR *e*S **S 09 21 20.2 -5.6**
VSR pmax pmax
comp=Z,80nm,1.3s
VSR smax smax
comp=N,440nm,4.0s
VSR MLR MLR
comp=Z,8µm,16.0s
N02D Trinity Center 67.53 55 P **P 09 12 30.4 -0.8**
baz=305
M04C Macdoel 67.61 54 P **P 09 12 32.0 +0.2**
baz=305
K05A Summer Lake 67.66 52 *eP* **P 09 12 34.0 +1.9**
COCO West Island 67.77 230 PFAKE 09 12 50.0 +17
COCO LR LR
comp=Z,1µm,20.0s
WDC Whiskeytown Da 67.86 55 *eP* **P 09 12 35.2 +2.0**
WDC Whiskeytown Da 67.86 55 *eP* **P 09 12 35.2 +2.0**
LASM Arnica Sink 67.88 54 P **P 09 12 35.5 +1.9**
F10A Beach Ranch, E 67.94 48 *eP* **P 09 12 36.5 +2.8**
WALA Waterton Lakes 67.95 44 *eP* **P 09 12 35.0 +1.3**
comp=Z,52nm,1.4s
AFI Afiamalu 68.10 133 LR LR 09 38 03.5
comp=Z,1µm,19.2s,baz=326,slow=32
LTIM Timbered Crate 68.17 54 P **P 09 12 36.7 +1.5**
BSMT Bassoo Peak 68.20 45 P **P 09 12 36.6 +1.2**
BLMT Blacktail Moun 68.33 45 *eP* **P 09 12 38.0 +1.7**
VSU Vasula 68.42 330 *cePP* **P 09 12 36.5 +0.2**
VSU pmax pmax
comp=Z,182nm,1.2s
VSU MLR MLR
comp=Z,11µm,17.0s
O03D Paynes Creek 68.48 55 P **P 09 12 37.1 -0.1**
baz=305
JTMT Jette 68.53 45 *eP* **P 09 12 38.9 +1.4**
BMO Blue Mountains 68.55 49 *eP* **P 09 12 38.7 +1.1**
BMO MLR MLR
comp=Z,906nm,21.0s
BMO Blue Mountains 68.55 49 *eP* **P 09 12 38.7 +1.1**
BMO LR LR
comp=Z,906nm,21.0s
GROC Groznyy 68.57 309 *eP* **P 09 12 37.3 -0.2**
GROC pmax pmax
comp=Z,265nm,2.5s
YBMT Yellow Bay 68.61 45 *eP* **P 09 12 41.2 +3.3**
SWMT Swartz Lake 68.83 45 *eP* **P 09 12 40.5 +1.2**
SCO Scoresbysund 68.99 355 *i P* **P 09 12 40.4 +0.7**
SCO Scoresbysund 68.99 355 *eP* **P 09 12 40.4 +0.7**
GOF Gofitskoye 69.09 312⇑ *iP* **P 09 12 41.6 +0.9**
GOF *e*S **S 09 21 45.0 +0.1**
GOF pmax pmax
comp=Z,146nm,1.1s
WVOR Wild Horse Val 69.19 52 *eP* **P 09 12 42.8 +1.3**
WVOR MLR MLR
comp=Z,976nm,20.0s
WVOR Wild Horse Val 69.19 52 *eP* **P 09 12 42.8 +1.3**
WVOR LR LR
comp=Z,976nm,20.0s
SLMT Seeley Lake 69.26 45 *eP* **P 09 12 42.9 +0.9**
MSO Missoula 69.27 46 P **P 09 12 42.1 +0.1**
baz=307,SNR=12
MSO Missoula 69.27 46 *eP* **P 09 12 42.8 +0.8**
CHMT Chamberlain Mo 69.59 45 *eP* **P 09 12 45.9 +1.7**
GUDG Gudauri 69.79 309 P **P 09 12 46.4 +1.0**
ZEI Tsey 69.94 309 *eP* **P 09 12 45.3 -1.0**
ZEI pmax pmax
comp=Z,172nm,1.6s
KVAR Kislovodsk Arr 69.94 311 LR LR 09 48 54.7
comp=Z,8µm,18.4s,baz=26,slow=41
KIV Kislovodsk 69.95 311 *eP* **P 09 12 47.2 +1.0**
KIV *e* 09 13 11.0
KIV *e* 09 15 22.3
KIV *e*S **S 09 21 55.5 +0.2**
KIV *e*SS **SS 09 26 25.2 +1.5**
KIV pmax pmax
comp=Z,83nm,1.0s
KIV pmax pmax
comp=Z,305nm,3.6s
KIV Kislovodsk 69.95 311 *eP* **P 09 12 47.4 +1.2**
comp=Z,234nm,1.3s
KIV LR LR
comp=Z,7µm,19.0s
KBZ Khabaz 69.96 311 P **P 09 12 47.2 +1.0**
comp=Z,20nm,0.8s,baz=68,slow=6.4,SNR=48
KBZ LR LR 09 49 06.9
comp=Z,6µm,18.0s,baz=29,slow=41
TBLG Delisi 70.07 308 P **P 09 12 47.6 +0.7**
TBLG Delisi 70.07 308 P **P 09 12 47.6 +0.7**
FFC Flin Flon 70.09 34 *eP* **P 09 12 48.7 +2.0**
FFC MLR MLR
comp=Z,2µm,20.0s
FFC Flin Flon 70.09 34 *eP* **P 09 12 48.7 +2.0**
FFC LR LR
comp=Z,2µm,20.0s
MFID Camas Ranch 70.26 50 *eP* **P 09 12 49.3 +1.2**
ONI Oni 70.32 309 P **P 09 12 49.8 +1.3**
ONI Oni 70.32 309 P **P 09 12 49.8 +1.3**
PAHR Pah Rah Range 70.33 54 *eP* **P 09 12 49.8 +1.1**
NEY Neytrino 70.35 310 *c iP* **P 09 12 50.2 +1.4**
NEY pmax pmax
comp=Z,8.0nm,0.8s
IZAR Zarasai 70.48 328 *eP* **P 09 12 49.2 +0.1**
IZAR IAmb IAmb 09 13 03.0
comp=Z,11nm,0.7s
HRY Holter Researc 70.49 45 *eP* **P 09 12 50.7 +1.2**
PNTR Pine Nut 70.57 55 *eP* **P 09 12 51.8 +1.5**
IDID Didziasalis 70.58 327 *eP* **P 09 12 49.8 +0.1**
IDID IAmb IAmb 09 13 02.3
comp=Z,23nm,1.1s
ISAL Salakas 70.65 328 *eP* **P 09 12 50.2 0.0**
ISAL IAmb IAmb 09 13 02.9
comp=Z,42nm,1.1s
MICGM Minsk 70.66 326⇓ *eP* **P 09 12 50.0 -0.2**
MICGM PM 09 12 51.0
comp=Z,0.2nm,1.2s
MICGM *e*PcP **PcP 09 13 06.0 -5.1**
MICGM *e*PP **PP 09 15 26.0 -0.2**
MICGM *e*PPP PPP 09 17 11.0
MICGM *e*S **S 09 22 00.0 -2.9**
MICGM *e*ScS **SKiKP 09 22 22.0 -10**
MICGM *e*PS PnS 09 22 48.0 +17
MICGM *e*SS **SS 09 26 24.0 -10**
MICGM *e*SSS SSS 09 29 10.0
MICGM *e*LR LR 09 40 14.0
MICGM LRM MLR 09 46 56.0
comp=Z,7.3nm,14.0s
MICGM LRM MLR 09 46 58.0
comp=E,5.0nm,14.0s
MICGM LRM MLR 09 46 58.0
comp=Z,15nm,14.0s
MNK Minsk 70.66 326⇓ *eP* **P 09 12 50.0 -0.2**
MNK *e* 09 13 06.0
MNK *e* 09 15 26.0
MNK *e*PPP PPP 09 17 11.0
MNK *e*S **S 09 22 00.0 -2.9**
MNK *e* 09 22 22.0
MNK *e*PS PnS 09 22 48.0 +17
MNK pmax pmax
comp=Z,220nm,1.2s
MNK MLR MLR
comp=Z,7µm,14.0s
MNK MLR MLR
comp=Z,15µm,14.0s
MNK MLR MLR
comp=E,5µm,14.0s
CMB Columbia Colle 70.69 56 *eP* **P 09 12 52.0 +1.2**
CMB Columbia Colle 70.69 56 *eP* **P 09 12 52.0 +1.2**
EGMT Eagleton 70.77 43 P **P 09 12 51.4 +0.3**
baz=309,SNR=15
EGMT Eagleton 70.77 43 *eP* **P 09 12 52.1 +1.0**
EGMT LR LR
comp=Z,1µm,20.0s
NACGM Naroch 70.84 327 *eP* **P 09 12 50.0 -1.3**
NACGM *eP* **P 09 12 50.0 -1.3**
NACGM *e*PP **PP 09 15 28.0 +0.2**
NACGM *e*S **S 09 22 04.0 -1.1**
NACGM *e*SSS SSS 09 29 10.0
NACGM *e*LQ LQ 09 37 46.0
NACGM *e*LR LR 09 40 48.0
NACGM LRM MLR 09 46 44.0
comp=Z,5.5nm,20.0s
YERR Yerington 70.85 55 *eP* **P 09 12 53.3 +1.3**
HLID Hailey 70.99 49 P **P 09 12 52.8 +0.2**
baz=308,SNR=12
HLID Hailey 70.99 49 *eP* **P 09 12 54.0 +1.3**
HLID LR LR
comp=Z,1µm,20.0s
AKH Akhalkalaki 71.01 308⇑ *iP* **P 09 12 54.4 +1.6**
AKH Akhalkalaki 71.01 308 P **P 09 12 53.9 +1.1**
AKH Akhalkalaki 71.01 308 P **P 09 12 53.9 +1.1**
GNI Garni 71.01 307 LR LR 09 47 12.2
comp=Z,3µm,18.8s,baz=50,slow=39
GNI Garni 71.01 307 *i P* **P 09 12 54.5 +1.6**
SNR=14
GNI Garni 71.01 307 *ceP* **P 09 12 54.1 +1.3**
GNI pmax pmax
comp=Z,244nm,1.2s
GNI MLR MLR
comp=Z,9µm,18.0s
GNI Garni 71.01 307 P **P 09 12 54.6 +1.8**
SNR=23
GNI Garni 71.01 307 P **P 09 12 54.6 +1.8**
SNR=23

GNI Garni 71.01 307 eP P 09 12 54.2 +1.3
comp=Z,955nm,1.4s
WAKR Walker 71.02 55 eP P 09 12 55.1 +2.2
BGD Bogdanovka 71.03 308 P P 09 12 54.8 +1.7
MCMT McKenzie Canyo 71.10 47 eP P 09 12 56.1 +2.7
BMN Battle Mountai 71.23 53 eP P 09 12 55.5 +1.3
BMN pmax pmax
comp=Z,31nm,1.1s
BMN Battle Mountai 71.23 53 eP P 09 12 55.5 +1.3
comp=Z,31nm,1.1s
BOZ Bozeman (W) 71.26 46 P P 09 12 54.3 0.0
baz=309,SNR=30
BOZ Bozeman (W) 71.26 46 eP P 09 12 55.3 +1.0
BOZ MLR MLR
comp=Z,1µm,20.0s
BOZ Bozeman (W) 71.26 46 eP P 09 12 55.3 +1.0
BOZ LR LR
comp=Z,1µm,20.0s
TVH3 East Aurora ar 71.49 55 eP P 09 12 57.4 +1.6
PMPB Monarch Peak 71.51 58 eP P 09 13 01.3 +5.5
MOL Molde 71.51 340 ⇑iP P 09 12 55.6 +0.4
MOL eqP sP 09 13 04.7 +0.6
MOL IVmB_BB 09 13 10.4
comp=Z,529nm,3.1s
MOL eS S 09 22 13.8 +1.2
MOL IVMs_BB IVMs_BB 09 51 07.8
comp=Z,1µm,14.0s
TVH2 Borealis Mine 71.52 55 eP P 09 12 57.6 +1.5
DOMB Dombas 71.54 339 ⇑iP P 09 12 55.7 +0.2
DOMB IVmB_BB 09 12 56.4
comp=Z,671nm,2.3s
DOMB eS S 09 22 12.9 -0.2
DOMB IVMs_BB IVMs_BB 09 50 36.0
comp=Z,2µm,16.8s
WSAR Wadi Sarin 71.55 285 LR LR 09 48 15.9
comp=Z,2µm,20.3s,baz=32,slow=39
BANOM Banah 71.66 289 P P 09 12 57.1 +0.3
HFS Hagfors 71.73 336 LR LR 09 46 51.7
comp=Z,4µm,20.4s,baz=28,slow=38
NB2 NORSAR Subarra 71.75 338 P P 09 12 56.9 +0.1
comp=Z,58nm,1.2s,baz=39,slow=6.2
NB2 NORSAR Subarra 71.75 338 P P 09 12 56.9 +0.1
baz=39,slow=6.2
NOA NORSAR Array B 71.75 338 P P 09 12 56.7 -0.2
comp=Z,15nm,1.0s,baz=39,slow=6.0,SNR=30
NOA LR LR 09 47 48.9
comp=Z,4µm,21.9s,baz=30,slow=39
STKA Stephens Creek 71.86 182 P P 09 12 57.0 -0.5
comp=Z,1.8nm,0.9s,baz=348,slow=9.3,SNR=2.2
STKA LR LR 09 44 36.5
comp=Z,832nm,21.0s,baz=7.7,slow=36
SOC Sochi 71.88 312 cP P 09 12 58.1 +0.3
SOC ePPP PPP 09 17 23.2
SOC eS S 09 22 16.3 -1.2
SOC eSS SS 09 26 57.3 +4.2
SOC eSSS SSS 09 29 53.3
SOC pmax pmax
comp=Z,41nm,0.9s
QLMT Earthquake Lak 71.88 46 eP P 09 13 00.2 +2.1
NC602 NORSAR Array S 71.91 337 ⇑iP P 09 12 57.0 -0.6
NC602 IVmB_BB 09 13 13.9
comp=Z,568nm,9.5s
NC602 ePP PP 09 15 34.7 -2.0
NC602 eS S 09 22 16.7 -0.6
NC602 IVMs_BB IVMs_BB 09 46 56.2
comp=Z,2µm,23.1s
MLAC Mammoth, Mammo 71.92 56 P P 09 12 58.5 0.0
baz=307
AKN Aaknes 71.98 340 ⇑iP P 09 12 58.6 +0.5
AKN IVmB_BB 09 13 39.6
comp=Z,735nm,3.9s
AKN eS S 09 22 20.2 +2.1
AKN IVMs_BB IVMs_BB 09 53 52.7
comp=Z,1µm,12.1s
YHB Horse Butte 72.06 46 eP P 09 13 00.7 +1.5
PAGB Antelope Grade 72.16 58 eP P 09 13 01.8 +2.2
YHH Holmes Hill 72.23 46 eP P 09 13 04.3 +4.0
GCMT Greycliff 72.23 45 eP P 09 13 03.5 +3.4
YMR Madison River 72.24 46 eP P 09 13 04.3 +4.0
UOSS Minazif 72.31 288 eP P 09 13 00.9 +0.2
HOQ Hoqain 72.31 286 P P 09 13 01.6 +0.8
SNR=5.6
HOQ Hoqain 72.31 286 P P 09 13 01.6 +0.8
SNR=5.6
ANN Anapa 72.39 314 eP P 09 12 59.8 -1.0
ANN e 09 15 39.1
ANN ePPP PPP 09 17 28.2
ANN eS S 09 22 22.6 -0.6
ANN eSS SS 09 26 55.0 -5.7
ANN pmax pmax
comp=Z,146nm,1.3s
ANN MLR MLR
comp=Z,3µm,15.0s
HATD Hatta, Dubai 72.44 288 iP P 09 13 02.0 +0.5
SNR=7.3
YFT Old Faithful 72.45 46 eP P 09 13 05.8 +4.3
RCTC Rector, Farmer 72.46 57 P P 09 13 02.0 +0.6
baz=308
SFJD Kangerlussuaq 72.47 6 PFAKE 09 13 10.0 +9.1
SFJD LR LR
comp=Z,2µm,20.0s
SMMC Simmler 72.57 58 P P 09 13 02.0 -0.2
baz=308
ASHO Ashiyiah 72.57 288 iP P 09 13 02.5 +0.2
SNR=8.9
ASHO Ashiyiah 72.57 288 P P 09 13 02.4 0.0
SNR=6.2
ASHO Ashiyiah 72.57 288 P P 09 13 02.4 0.0
SNR=6.2
ASHO P P 09 13 02.4 0.0
SNR=6.2
YPP Pitchstone Pla 72.58 46 eP P 09 13 06.8 +4.3
LKWY Lake 72.62 46 PFAKE 09 13 20.0 +17
LKWY LR LR
comp=Z,2µm,20.0s
H17A Grant Village 72.63 46 P P 09 13 02.7 +0.1
baz=310,SNR=13
H17A Grant Village 72.63 46 eP P 09 13 05.1 +2.5
comp=Z,98nm,1.4s
AKASG Malin Array Be 72.66 323 P P 09 13 02.0 -0.3
comp=Z,9.9nm,0.6s,baz=43,slow=6.0,SNR=19
AKASG LR LR 09 47 59.5
comp=Z,4µm,18.1s,baz=35,slow=38
AKASG Malin Array Be 72.66 323 P P 09 13 02.0 -0.3
KIEV Kiev 72.67 323 ciP P 09 13 02.2 -0.1
KIEV pmax pmax
comp=Z,53nm,1.1s
KIEV MLR MLR
comp=Z,6µm,16.0s
KIEV Kiev 72.67 323 eP P 09 13 02.3 -0.1
KIEV comp=Z,83nm,1.3s LR LR
comp=Z,5µm,19.0s
NAZ Nazwa, Dubai 72.68 288 P P 09 13 02.8 -0.1
IMW Indian Meadow 72.75 47 eP P 09 13 05.2 +1.9
comp=Z,86nm,1.4s
FLWY Flagg Ranch 72.76 47 eP P 09 13 06.5 +3.1
OSL Oslo 72.79 337 eP P 09 13 03.3 +0.3
OSL IVmB_BB 09 13 18.0
comp=Z,659nm,2.8s
OSL eS S 09 22 27.5 +0.2
OSL IVMs_BB IVMs_BB 09 47 42.8
comp=Z,2µm,24.0s
VES Vestal, Richgr 72.84 57 P P 09 13 02.7 -1.0
baz=308,SNR=12
FAQ Al Faqa, Dubai 72.88 288 P P 09 13 03.8 -0.2
RLMT Red Lodge 72.88 45 P P 09 13 03.7 -0.3
baz=310
RLMT Red Lodge 72.88 45 eP P 09 13 07.4 +3.3
RLMT LR LR
comp=Z,1µm,19.0s
PKM Mcpherson Peak 72.95 59 P P 09 13 05.1 +0.5
baz=308
MOOW Moose Ponds 72.95 47 eP P 09 13 06.3 +1.8
FOO Floro 72.97 341 ⇑iP P 09 13 04.4 +0.5
FOO eqP sP 09 13 12.7 -0.1
FOO IVmB_BB 09 13 15.3
comp=Z,610nm,3.3s
FOO eS S 09 22 31.0 +1.7
FOO IVMs_BB IVMs_BB 09 52 02.9
comp=Z,1µm,16.1s
TPAW Teton Pass 73.00 47 eP P 09 13 06.7 +1.9
comp=Z,66nm,1.4s
ARQ Araqi 73.04 286 P P 09 13 05.1 0.0
SNR=7.3
ARQ Araqi 73.04 286 P P 09 13 05.1 0.0
SNR=7.3
LOHW Long Hollow 73.11 47 eP P 09 13 07.8 +2.3
comp=Z,67nm,1.6s
SNOW Snow King Moun 73.13 47 eP P 09 13 06.9 +1.3
comp=Z,19nm,1.0s
REDW Red Top Meadow 73.14 47 eP P 09 13 08.0 +2.3
GRAC Grapevine Rang 73.23 56 P P 09 13 06.0 -0.1
baz=308,SNR=6.0
SBC Santa Barbara 73.29 59 P P 09 13 06.6 +0.3
baz=308
DGMT Dagmar 73.29 40 P P 09 13 05.4 -0.7
baz=313,SNR=7.8
DGMT Dagmar 73.29 40 eP P 09 13 08.9 +2.8
DGMT LR LR
comp=Z,1µm,21.0s
ISA Isabella, Lake 73.34 57 P P 09 13 07.1 +0.4
baz=308
KONO Kongsberg 73.36 338 ⇑iP P 09 13 06.5 +0.2
KONO IVmB_BB 09 13 07.4
comp=Z,99nm,2.3s
KONO eS S 09 22 34.9 +1.0
KONO IVMs_BB IVMs_BB 09 48 57.0
comp=Z,274nm,22.6s
KONO Kongsberg 73.36 338 cP P 09 13 05.6 -0.7
KONO pmax pmax
comp=Z,163nm,1.7s
KONO MLR MLR
comp=Z,32µm,22.0s
KONO Kongsberg 73.36 338 eP P 09 13 07.1 +0.8
KONO LR LR
comp=Z,5µm,22.0s
AHID Auburn Hatcher 73.38 48 eP P 09 13 10.6 +3.6
AHID LR LR
comp=Z,1µm,21.0s
BGU Big Grassy Mou 73.43 50 eP P 09 13 10.8 +3.5
ARVC Arvin 73.44 58 P P 09 13 07.5 +0.2
baz=308
LAO LASA Array 73.46 42 P P 09 13 07.8 +0.6
baz=312,SNR=8.5
LAO LASA Array 73.46 42 eP P 09 13 10.3 +3.0
LAO LR LR
comp=Z,1µm,19.0s
SUE Sulen 73.50 340 ⇑iP P 09 13 07.5 +0.4
SUE IVmB_BB 09 13 44.8
comp=Z,647nm,3.7s
SUE eS SKiKP 09 22 36.8 +0.6
SUE IVMs_BB IVMs_BB 09 52 00.7
comp=Z,1µm,15.8s
R11A Troy Canyon, C 73.51 54 P P 09 13 08.5 +0.6
baz=309,SNR=22
R11A Troy Canyon, C 73.51 54 eP P 09 13 08.6 +0.7
comp=Z,56nm,1.5s
DAC Darwin (Calif) 73.53 56 eP P 09 13 09.2 +1.2
DAC pmax pmax
comp=Z,33nn,1.4s
DAC Darwin (Calif) 73.53 56 eP P 09 13 09.2 +1.2
comp=Z,33nn,1.4s
SCZ2 Santa Cruz Isl 73.61 59 P P 09 13 08.8 +0.5
baz=308
KLNR Kaliningrad 73.71 330 eP P 09 13 07.9 -0.5
KLNR pmax pmax
comp=Z,158nm,1.6s
KLNR MLR MLR
comp=Z,3µm,17.0s
MPMC Manual Prospec 73.73 56 P P 09 13 09.6 +0.4
baz=308,SNR=14
OSI Osito Audit: C 73.83 58 P P 09 13 10.1 +0.5
baz=308
HWUT Hardware Ranch 73.85 49 eP P 09 13 11.2 +1.4
HWUT LR LR
comp=Z,1µm,19.0s
FURC Furnace Creek, 73.88 56 P P 09 13 10.2 +0.5
baz=309,SNR=19
ASK Askoy 73.88 340 eP P 09 13 10.3 +0.9
BLG Laguna Peak, P 73.91 59 P P 09 13 10.2 +0.1
baz=308
BER Bergen 73.93 340 ⇑iP P 09 13 10.1 +0.5
BER IVmB_BB 09 13 25.5
comp=Z,444nm,2.3s
BER IVMs_BB IVMs_BB 09 52 11.8
comp=Z,2µm,15.4s
TPNV Topopah Spring 73.97 55 P P 09 13 10.7 +0.2
baz=309,SNR=21
TPNV Topopah Spring 73.97 55 eP P 09 13 11.6 +1.1
TPNV Topopah Spring 73.97 55 eP P 09 13 11.6 +1.1
LRMC Laurel Mtn Rad 73.97 57 P P 09 13 11.0 +0.5
baz=308
ODD1 Odda 73.98 339 ⇑iP P 09 13 10.3 +0.3
DUG Dugway, Tooele 74.02 51 P P 09 13 10.8 0.0
baz=310,SNR=29
DUG Dugway, Tooele 74.02 51 eP P 09 13 12.3 +1.5
DUG Dugway, Tooele 74.02 51 PFAKE 09 13 20.0 +9.2
DUG LR LR
comp=Z,734nm,20.0s
SIM Simferopol' 74.08 316 eP P 09 13 12.2 +1.4
SIM ePPP PPP 09 17 38.0
SIM eS S 09 22 43.0 +0.5
SIM ePS PnS 09 23 33.0 +16
SIM eSS SS 09 27 27.0 +0.3
SIM pmax pmax
comp=E,80nm,9.9s
SIM MLR MLR
comp=N,2µm,18.3s
EDW2 Edwards Air Fo 74.14 58 P P 09 13 11.7 +0.2
baz=308,SNR=32
SNCC San Nicolas Is 74.14 60 P P 09 13 11.6 +0.3
baz=308
BW06 Boulder Array 74.25 47 P P 09 13 10.3 -1.8
baz=311,SNR=14
BW06 Boulder Array 74.25 47 eP P 09 13 12.8 +0.7
BW06 LR LR
comp=Z,1µm,22.0s
PDAR Pinedale Array 74.25 47 P P 09 13 12.4 +0.3
comp=Z,2.8nm,0.6s,baz=282,slow=2.9,SNR=20
TCUT Toone Canyon 74.26 49 eP P 09 13 15.9 +3.7
C25A Freed Ranch, W 74.27 40 P P 09 13 10.5 -1.4
baz=313
BLS5 Blasjo 74.44 339 ⇑iP P 09 13 13.5 +0.8
BLS5 IVmB_BB 09 13 47.2
comp=Z,452nm,6.8s
BLS5 eS S 09 22 48.3 +2.2
BLS5 IVMs_BB IVMs_BB 09 51 01.6
comp=Z,969nm,16.7s
PASC Pasadena Art C 74.45 58 eP P 09 13 13.9 +0.7
comp=Z,62nm,1.5s
MWC Mount Wilson 74.50 58 eP P 09 13 14.6 +0.9
MWC Mount Wilson 74.50 58 eP P 09 13 14.6 +0.9
SHOC Shoshone, Teco 74.60 56 P P 09 13 14.3 +0.3
baz=309
GSC Goldstone, Bar 74.64 57 P P 09 13 14.9 +0.5
baz=309
GSC Goldstone, Bar 74.64 57 eP P 09 13 14.9 +0.5
GSC Goldstone, Bar 74.64 57 eP P 09 13 14.9 +0.5
FMP Fort Macarthur 74.66 59 P P 09 13 14.1 -0.3
baz=309
BFSC Mount Baldy Ra 74.75 58 P P 09 13 15.9 +0.8
baz=309
CIS Catalina Islan 74.78 59 P P 09 13 16.6 +1.4
baz=309
HOMB Homborsund 74.82 337 ⇑iP P 09 13 14.8 0.0
HOMB IVmB_BB 09 13 31.4
comp=Z,568nm,8.0s
HOMB eS S 09 22 52.5 +2.2
HOMB IVMs_BB IVMs_BB 09 48 43.7
comp=Z,2µm,21.5s
SORM Soroca 74.84 321 ⇑iP P 09 13 15.0 -0.2
SORM Soroca 74.84 321 ⇑P P 09 13 15.0 -0.2
SCI2 San Clemente I 74.95 60 P P 09 13 17.8 +1.8
baz=309
KMY Karmoy 74.95 339 eS S 09 22 52.9 +1.2
STAV Stavanger 75.06 339 eP P 09 13 16.5 +0.3
STAV IVmB_BB 09 13 33.1
comp=Z,642nm,5.5s
STAV IVMs_BB IVMs_BB 09 48 24.7
comp=Z,989nm,20.6s
TUQ Turquoise Moun 75.12 56 P P 09 13 17.7 +0.5
baz=309
SNART Snartemo 75.14 338 eP P 09 13 17.5 +0.9
SNART IVmBBB 09 13 27.7
comp=Z,357nm,2.7s
BBRC Big Bear Solar 75.21 58 P P 09 13 17.9 0.0
baz=309
HEC Hector,Ludlow 75.23 57 P P 09 13 18.0 +0.2
baz=309
BSD Bornholm Skovb 75.28 332 ⇑iP P 09 13 17.6 0.0
comp=Z,190nm,1.6s
comp=Z,4µm,18.0s
BSD Bornholm Skovb 75.28 332 ⇑iP P 09 13 17.6 0.0
BSD pmax pmax
comp=Z,190nm,1.6s
BSD MLR MLR
comp=Z,4µm,18.0s
KIS Kishinev 75.41 320 eP P 09 13 18.0 -0.5
comp=Z,200nm,2.0s
KIS Kishinev 75.41 320 ePP PP 09 16 08.0 +1.1
comp=Z,700nm,9.0s
KIS Kishinev 75.41 320 ePS 09 23 26.0
KIS eSS SS 09 27 42.0 -4.6
KIS eSSS SSS 09 30 45.0
KIS eL L 09 40 30.0
KIS LRM MLR 09 50 00.0
comp=Z,7µm,15.0s
KIS Kishinev 75.41 320 eP P 09 13 18.0 -0.5
KIS e 09 13 28.0
KIS i 09 13 32.0
KIS e 09 16 08.0
KIS ePPP PPP 09 17 55.0
KIS eS S 09 22 54.0 -3.2
KIS ePS PnS 09 23 26.0 -7.6
KIS eSS SS 09 27 42.0 -4.6
KIS pmax pmax
comp=Z,210nm,2.0s
KIS pmax pmax
comp=Z,600nm,8.0s
KIS pmax pmax
comp=Z,800nm,14.0s
KIS MLR MLR
comp=N,4µm,15.0s
KIS MLR MLR
comp=E,2µm,15.0s
KIS MLR MLR
comp=Z,7µm,15.0s
KIS MLR MLR
comp=Z,7µm,15.0s
MURC Murrieta 75.45 58 P P 09 13 18.9 -0.1
baz=309
CAN Canberra 75.45 175 PFAKE 09 13 30.0 +11
CAN LR LR
comp=Z,1µm,19.0s
MSU Marysvale 75.48 52 eP P 09 13 21.2 +1.9
MSU Marysvale 75.48 52 eP P 09 13 21.2 +1.9
BEL Belsk 75.55 327 eP P 09 13 20.4 +1.2
BEL LMZ LR 09 50 28.7
comp=Z,7µm,16.4s
BEL Belsk 75.55 327 eP P 09 13 20.4 +1.2
BEL MLR MLR
comp=Z,7µm,16.4s
LVV L'vov 75.64 324 iP P 09 13 19.4 -0.4
LVV e 09 16 10.2
LVV ePPP PPP 09 18 03.2
LVV iS S 09 22 59.9 +0.1
LVV ePS PnS 09 23 41.6 +5.0
LVV pmax pmax
comp=Z,200nm,1.6s
LVV MLR MLR
comp=N,6µm,15.0s
LVV MLR MLR
comp=E,7µm,15.0s
LVV MLR MLR
comp=Z,9µm,15.0s
COP Copenhagen 75.69 334 ⇑iP P 09 13 20.4 +0.5
comp=Z,2µm,18.0s
COP Copenhagen 75.69 334 ⇑iP P 09 13 20.4 +0.5
COP MLR MLR
comp=Z,2µm,18.0s
GMRC Granite Mounta 75.69 57 P P 09 13 21.4 +0.9
baz=309,SNR=5.4
GKP Gorka Klasztor 75.87 330 eP P 09 13 21.6 +0.6
GKP LMZ LR 09 54 23.9
comp=Z,6µm,17.5s
GKP Gorka Klasztor 75.87 330 eP P 09 13 21.6 +0.6
ULM Lac du Bonnet 75.89 35 P P 09 13 22.4 +1.2
comp=Z,4.7nm,0.9s,baz=313,slow=6.1,SNR=5.6
PFO Pinyon Flats O 75.92 58 P P 09 13 22.0 +0.2
baz=309
PFO Pinyon Flats O 75.92 58 eP P 09 13 23.5 +1.7
PFO pmax pmax
comp=Z,24nm,1.2s
PFO MLR MLR
comp=Z,2µm,20.0s
PFO Pinyon Flats O 75.92 58 eP P 09 13 23.5 +1.7
comp=Z,24nm,1.2s
PFO LR LR
comp=Z,2µm,20.0s
TPFO Pinon Flats 75.92 58 P P 09 13 22.3 +0.4
baz=309
MDND Maddock 75.94 38 P P 09 13 21.5 0.0
baz=316
MDND Maddock 75.94 38 eP P 09 13 23.8 +2.3
comp=Z,57nm,0.9s
109C Camp Elliot, M 75.95 59 P P 09 13 21.8 0.0
baz=309
BELC Belle Mtn. Jos 75.97 57 P P 09 13 22.3 +0.1
baz=310
K22A Casper 76.00 46 P P 09 13 23.1 +1.0
baz=312,SNR=9.5
K22A Casper 76.00 46 eP P 09 13 22.1 -0.1
comp=Z,81nm,1.5s
MUD Monsted U'grnd 76.12 336 ⇑iP P 09 13 22.9 +0.6
comp=Z,127nm,1.6s
MUD Monsted U'grnd 76.12 336 ⇑iP P 09 13 22.9 +0.6
MUD pmax pmax
comp=Z,130nm,1.6s
H25A Fruitdale 76.22 43 P P 09 13 23.9 +0.6
baz=314
A31A Linda, St. Vin 76.27 36 P P 09 13 23.9 +0.5
baz=317
RSSD Black Hills 76.33 43 eP P 09 13 26.3 +2.2
RSSD pmax pmax
comp=Z,27nm,1.1s
RSSD Black Hills 76.33 43 eP P 09 13 26.3 +2.2
comp=Z,27nm,1.1s
KWP Kalwaria Pacla 76.37 325 eP P 09 13 25.2 +1.3
KWP Kalwaria Pacla 76.37 325 eP P 09 13 25.2 +1.3
NEE2 Needles Airpor 76.37 56 P P 09 13 24.2 0.0
baz=310
MONP2 Monument Peak 76.40 58 P P 09 13 25.2 +0.6
baz=310
IRM Iron Mountain 76.42 57 P P 09 13 25.0 +0.5
baz=310
B31A Greenbush Farm 76.43 37 P P 09 13 25.3 +1.0
baz=317
A32A Rocking H Ranc 76.59 36 P P 09 13 26.0 +0.7
baz=317
BURAR Bucovina Array 76.70 322 ⇑iP P 09 13 26.5 +0.5
BURAR Bucovina Array 76.70 322 ⇑P P 09 13 26.5 +0.5
O20A White River Ci 76.72 48 P P 09 13 27.4 +1.1
baz=312,SNR=6.7
O20A White River Ci 76.72 48 eP P 09 13 28.5 +2.1
comp=Z,35nm,1.3s
IKP In-Ko-Pah, Jac 76.75 58 P P 09 13 27.1 +0.6
baz=310
SWSC Sam W. Stewart 76.77 58 P P 09 13 27.4 +1.0
baz=310
TESR Tescani 76.81 321 ⇑iP P 09 13 27.0 +0.5
C31A Landman Farms, 76.85 37 P P 09 13 27.1 +0.4
baz=317,SNR=12
B32A Ashes, Strandq 76.96 36 P P 09 13 27.8 +0.5
baz=317
PDMCI Parker Dam,Lak 76.97 56 P P 09 13 28.4 +0.8
baz=310
A33A Warroad 77.07 35 P P 09 13 28.8 +0.9
baz=318
Y12C Blythe 77.08 57 P P 09 13 28.9 +0.7
baz=310
STHS Stebnicka Huta 77.17 325 eP P 09 13 29.6 +1.2
STHS pmax pmax
comp=Z,22nm,1.3s
STHS Stebnicka Huta 77.17 325 eP P 09 13 29.6 +1.2
STHS ePCP PcP 09 13 38.3 -0.9
STHS ePP PP 09 16 25.9 +4.3
OJC Ojcow 77.18 327 eP P 09 13 29.4 +1.0
OJC LMZ LR 09 50 30.2
comp=Z,4µm,19.6s
OJC Ojcow 77.18 327 ⇑eP P 09 13 29.5 +1.0
OJC MLR MLR
comp=Z,4µm,19.6s
VRI Vrincioaia 77.23 320 ⇓iP P 09 13 29.9 +1.0
VRI Vrincioaia 77.23 320 ⇓P P 09 13 29.9 +1.0
F29A Eureka 77.26 40 P P 09 13 30.1 +1.0
baz=316

PLOR **Plostina** 77.28 320⇑ *i*P P 09 13 30.2 +1.0
PLOR **Plostina** 77.28 320 ⇑P P 09 13 30.2 +1.0
UZH **Uzhgorod** 77.29 324 *e*P P 09 13 27.4 -1.7
UZH *e* 09 13 44.2
UZH *e* 09 16 17.8
UZH *e*S S 09 23 11.2 -6.6
UZH MLR MLR
comp=N,5µm,15.0s
UZH MLR MLR
comp=E,6µm,15.0s
UZH MLR MLR
comp=Z,850nm,15.0s
GLA **Glamis** 77.33 57 P P 09 13 29.9 +0.3
baz=310
AGMN **Agassiz Nation** 77.33 36 P P 09 13 30.0 +0.6
baz=318
AGMN **Agassiz Nation** 77.33 36 *e*P P 09 13 30.2 +0.9
comp=Z,29nm,1.2s
AGMN LR LR
comp=Z,1µm,19.0s
C32A **Crookston** 77.38 37 P P 09 13 30.4 +0.8
baz=318
TIRR **Tirgusor** 77.39 318 *e*P P 09 13 30.0 +0.3
TIRR pmax pmax
comp=Z,28nm,1.4s
TIRR **Tirgusor** 77.39 318 *e*P P 09 13 30.0 +0.3
comp=Z,28nm,1.4s
D31A **Mcclaflin, Tow** 77.40 38 P P 09 13 30.3 +0.5
baz=317
B33A **Robert and Kas** 77.48 36 P P 09 13 30.8 +0.6
baz=318
TLB **Topalu** 77.49 319 *i*P P 09 13 30.9 +0.6
TLB **Topalu** 77.49 319 ⇑P P 09 13 30.9 +0.6
PV04 **Paradox Valley** 77.50 50 *e*P P 09 13 32.8 +2.0
PHWY **Pilot Hill** 77.50 46 *e*P P 09 13 33.0 +2.2
comp=Z,37nm,1.5s
N23A **Red Feather La** 77.51 47 P P 09 13 32.0 +1.2
baz=313,SNR=7.5
NIE **Niedzica** 77.57 326 *e*P P 09 13 32.1 +1.4
NIE *e*S S 09 23 23.0 +2.1
NIE LMZ LR 09 51 06.5
comp=Z,4µm,18.5s
NIE **Niedzica** 77.57 326⇑*e*P P 09 13 32.1 +1.4
F30A **Leola** 77.65 39 P P 09 13 31.8 +0.5
baz=316
D32A **Dogwood Acres,** 77.66 37 P P 09 13 31.6 +0.4
baz=317
E31A **Nome** 77.67 38 P P 09 13 30.7 -0.6
baz=317,SNR=13
B34A **Aery, Baudette** 77.73 35 P P 09 13 31.7 +0.1
baz=319
C33A **Trail** 77.78 36 P P 09 13 31.9 0.0
baz=318
DOPR **Dopca** 77.81 321⇑ *i*P P 09 13 33.7 +1.6
BRTR **Keskin Array B** 77.84 312 P P 09 13 32.9 +0.3
comp=Z,4.7nm,0.8s,baz=64,slow=2.9,SNR=25
BRTR LR LR 09 55 03.8
comp=Z,1µm,19.5s,baz=21,slow=41
BRTR **Keskin Array B** 77.84 312 *i* P P 09 13 33.0 +0.4
BRTR pmax pmax
comp=Z,5.0nm,0.7s
PV01 **Paradox Valley** 77.86 50 *e*P P 09 13 34.1 +1.3
MLR **Muntele Rosu** 77.88 320 LR LR 09 52 19.0
comp=Z,740nm,18.3s,baz=30,slow=39
MLR **Muntele Rosu** 77.88 320⇑ *i*P P 09 13 33.3 +0.6
MLR **Muntele Rosu** 77.88 320 ⇑P P 09 13 33.3 +0.6
WUAZ **Wupatki** 77.91 54 P P 09 13 33.8 +0.8
baz=311,SNR=5.3
WUAZ **Wupatki** 77.91 54 *e*P P 09 13 34.1 +1.0
comp=Z,41nm,1.3s
WUAZ LR LR
comp=Z,845nm,20.0s
RAC **Raciborz** 77.95 327 *e*P P 09 13 34.1 +1.4
RAC *e*S S 09 23 25.6 +0.7
RAC MLR MLR
comp=Z,4µm,19.0s
RAO **Raoul Island** 77.97 146 PFAKE 09 13 50.0 +17
RAO LR LR
comp=Z,2µm,20.0s
F31A **Hecla** 78.01 39 P P 09 13 33.5 +0.3
baz=317
E32A **Braaten, Kindr** 78.04 38 P P 09 13 33.5 +0.2
baz=317
SMCO **Snowmass** 78.09 48 *e*P P 09 13 34.8 +0.5
comp=Z,31nm,1.4s
KSP **Ksiaz** 78.12 329 *e*P P 09 13 34.6 +0.9
KSP *e*S S 09 23 27.0 +0.2
KSP LMZ LR 09 55 56.6
comp=Z,3µm,18.5s
KSP **Ksiaz** 78.12 329⇑*e*P P 09 13 34.6 +0.9
KSP *e*S S 09 23 27.0 +0.2
LANS **Liptovska Anna** 78.13 326 *e*P P 09 13 36.1 +2.2
LANS *e* 09 16 30.8
LANS **Liptovska Anna** 78.13 326 *e*P P 09 13 36.0 +2.2
LANS *e*PP PP 09 16 30.8 +1.1
OKC **Ostrava-Krasne** 78.16 327 *e*P P 09 13 34.9 +1.0
OKC *e*pP PcP 09 13 47.7 +4.3
OKC *e*PP PP 09 16 30.7 +0.9
OKC *e*S S 09 23 28.9 +1.8
OKC AMS AMS 09 52 20.0
comp=Z,4µm,14.7s
OKC **Ostrava-Krasne** 78.16 327 *e*P P 09 13 34.9 +1.0
OKC *e* 09 13 47.7
OKC *e* 09 16 30.7
OKC *e*S S 09 23 28.9 +1.8
OKC MLR MLR
comp=Z,4µm,14.7s
KECS **Kecovo** 78.20 325 *e*P P 09 13 34.8 +0.6
KECS pmax pmax
comp=Z,9.0nm,1.3s
KECS **Kecovo** 78.20 325 *e*P P 09 13 34.8 +0.6
KECS *e*PCP PcP 09 13 45.3 +1.7
KECS *e*PP PP 09 16 32.8 +2.6
D33A **AnnSam, Waubun** 78.20 37 P P 09 13 34.9 +0.6
baz=318
ANTO **Ankara** 78.22 313 *e*P P 09 13 35.3 +0.7
ANTO pmax pmax
comp=Z,232nm,1.3s
ANTO MLR MLR
comp=Z,2µm,19.0s
ANTO **Ankara** 78.22 313 *e*P P 09 13 35.3 +0.7
comp=Z,232nm,1.3s
ANTO LR LR
comp=Z,2µm,19.0s
B35A **Bob, Littlefor** 78.24 35 P P 09 13 34.7 +0.3
baz=319
C34A **RKJ Ranch, Bem** 78.24 36 P P 09 13 35.0 +0.5
baz=319
VOIR 78.36 321⇑ *i*P P 09 13 36.1 +0.9
VOIR 78.36 321 ⇑P P 09 13 36.1 +0.9
ISCO **Idaho Springs** 78.44 47 P P 09 13 34.8 -1.3
baz=313
ISCO **Idaho Springs** 78.44 47 *e*P P 09 13 38.7 +2.6
ISCO pmax pmax
comp=Z,34nm,1.4s
ISCO MLR MLR
comp=Z,1µm,19.0s
ISCO **Idaho Springs** 78.44 47 *e*P P 09 13 38.7 +2.6
comp=Z,34nm,1.4s
ISCO LR LR
comp=Z,1µm,19.0s
MORC **Moravsky Berou** 78.45 328⇑ *i*P P 09 13 36.6 +1.0
MORC **Moravsky Berou** 78.45 328 ⇑P P 09 13 36.6 +1.0
DRGR 78.47 323⇑ *i*P P 09 13 36.5 +0.7
DRGR 78.47 323 ⇑P P 09 13 36.5 +0.7
G31A **Conde** 78.49 39 P P 09 13 36.3 +0.4
baz=317
UPC **Upice** 78.50 329 *e*P P 09 13 36.9 +1.1
UPC *e*PP PP 09 16 34.5 +1.8
UPC *e*S S 09 23 32.4 +1.6
UPC AMS AMS 09 56 30.0
comp=Z,3µm,14.9s
UPC **Upice** 78.50 329 *e*P P 09 13 36.9 +1.1
UPC *e* 09 16 34.5
UPC *e*S S 09 23 32.4 +1.6
UPC MLR MLR
comp=Z,3µm,14.9s
DPC **Dobruska-Polom** 78.50 329 *e*P P 09 13 37.2 +1.3
DPC *ex* x 09 16 22.8
DPC *e*PP PP 09 16 34.9 +2.2
DPC *e*S S 09 23 32.7 +1.8
DPC AMS AMS 09 53 30.0
comp=Z,3µm,14.2s
DPC **Dobruska-Polom** 78.50 329 *e*P P 09 13 37.2 +1.3
DPC *e* 09 16 34.9
DPC *e*S S 09 23 32.7 +1.8
DPC MLR MLR
comp=Z,3µm,14.2s
MVCO **Mesa Verde** 78.52 51 P P 09 13 36.4 -0.2
baz=312
MVCO **Mesa Verde** 78.52 51 *e*P P 09 13 38.3 +1.8
comp=Z,27nm,1.2s
MVCO LR LR
comp=Z,937nm,19.0s
KRLC **Kraliky** 78.53 328 *e*P P 09 13 36.9 +0.8
KRLC **Kraliky** 78.53 328 *e*P P 09 13 36.9 +0.8
D34A **Park Rapids** 78.54 37 P P 09 13 36.7 +0.6
baz=318
F32A **Veblen** 78.54 38 P P 09 13 36.0 -0.1
baz=317
E33A **Westby DABS, E** 78.60 37 P P 09 13 36.4 0.0
baz=318
ARR **Arges** 78.61 321⇑ *i*P P 09 13 38.4 +1.8
C35A **Jirik Farms, M** 78.62 35 P P 09 13 36.4 -0.2
baz=319,SNR=8.0
SUSD **Miller** 78.69 40 P P 09 13 36.7 -0.3
baz=316
G32A **Webster** 78.81 39 P P 09 13 37.7 0.0
baz=317,SNR=7.6
PSZ **Piszkesteto** 78.88 325⇑ *i*P P 09 13 39.2 +1.2
PSZ **Piszkesteto** 78.88 325 ⇑P P 09 13 39.2 +1.2
PSZ **Piszkesteto** 78.88 325 *e*P P 09 13 38.6 +0.5
comp=Z,118nm,1.5s
PSZ LR LR
comp=Z,6µm,20.0s
PSZ **Piszkesteto** 78.88 325⇑*e*P P 09 13 39.3 +1.2
VYHS **Vyhne** 78.90 326 *e*P P 09 13 39.0 +0.9
VYHS pmax pmax
comp=Z,37nm,1.5s
VYHS **Vyhne** 78.90 326 *e*P P 09 13 39.0 +0.9
VYHS *e*PCP PcP 09 13 47.9 +1.2
VYHS *e*PP PP 09 16 35.2 -0.9
VYHS *e*S S 09 23 35.7 +0.5
VYHS *e*L L 09 50 58.3
H31A **Wolsey** 78.90 40 P P 09 13 38.2 0.0
baz=317
F33A **5 Mile Ranch,** 78.95 38 P P 09 13 38.1 -0.4
baz=318,SNR=11
E34A **Wadena** 78.98 37 P P 09 13 38.6 +0.1
baz=319
BRG **Berggiesshubel** 79.01 330 *e*P P 09 13 39.0 +0.4
comp=Z,100nm,1.9s
BRG *e*PCP PcP 09 13 47.4 +0.3
comp=Z,47nm,1.5s
BRG PP PP 09 16 34.0 -2.9
BRG S S 09 23 37.0 +0.7
comp=N,3µm,15.4s
comp=E,4µm,15.7s
comp=Z,5µm,16.7s
BRG **Berggiesshubel** 79.01 330 *e*P P 09 13 39.0 +0.4
BRG *e* 09 13 47.4
BRG 09 16 34.0
BRG S S 09 23 37.0 +0.7
BRG pmax pmax
comp=Z,100nm,1.9s
BRG MLR MLR
comp=N,3µm,15.4s
BRG MLR MLR
comp=E,4µm,15.7s
BRG MLR MLR
comp=Z,5µm,16.7s
CLL **Collm** 79.01 331⇑ *i*P P 09 13 38.8 +0.2
comp=Z,78nm,1.4s
CLL *i* 09 13 47.9
CLL *i* 09 13 53.6
comp=Z,62nm,1.2s
CLL *e*PP PP 09 16 37.0 +0.1
comp=Z,42nm,1.7s
CLL *e*PPP PPP 09 18 22.0
CLL *e*S S 09 23 34.0 -2.3
CLL *e*PS PnS 09 24 18.0 -1.4
CLL LmH 09 46 00.0
comp=N,3µm,18.7s
CLL LmH 09 46 00.0
comp=E,7µm,21.8s
CLL LmV 09 53 00.0
comp=Z,3µm,18.5s
CLL Lmax 09 56 00.0
CLL **Collm** 79.01 331⇑ *i*P P 09 13 38.8 +0.2
CLL *i* 09 13 47.9
CLL *i* 09 13 53.6
CLL *e*S S 09 23 34.0 -2.3
CLL pmax pmax
comp=Z,78nm,1.4s
CLL MLR MLR
comp=Z,3µm,18.5s
PVCC **Panska Ves** 79.05 330 *e*P P 09 13 40.1 +1.3
PVCC *e*pP PcP 09 13 51.3 +4.0
PVCC *e*PP PP 09 16 37.3 +0.1
PVCC AMS AMS 09 52 00.0
comp=Z,5µm,17.9s
PVCC **Panska Ves** 79.05 330 *e*P P 09 13 40.1 +1.3
PVCC *e* 09 13 51.3
PVCC *e* 09 16 37.3
PVCC MLR MLR
comp=Z,5µm,17.9s
D35A **Remer** 79.06 36 P P 09 13 37.9 -1.1
baz=319
C36A **Pine Crest Far** 79.08 35 P P 09 13 38.0 -1.0
baz=320
S22A **4UR Ranch, Cre** 79.14 49 P P 09 13 39.7 -0.3
baz=313,SNR=13
W18A **Petrified Fore** 79.18 53 P P 09 13 40.2 +0.1
baz=312
I31A **Royce, Wessing** 79.20 40 P P 09 13 40.6 +0.8
baz=317
VRAC **Vranov** 79.20 328⇑ *i*P P 09 13 40.8 +1.1
VRAC **Vranov** 79.20 328 ⇑P P 09 13 40.8 +1.1
J30A **Dallas** 79.23 41 P P 09 13 40.3 +0.3
baz=316
Q24A **Divide** 79.27 48 P P 09 13 39.6 -1.1
baz=314
E35A **Pequot Lakes** 79.29 36 P P 09 13 40.2 0.0
baz=319
214A **Organ Pipe Nat** 79.33 57 P P 09 13 40.5 -0.3
baz=311
214A **Organ Pipe Nat** 79.33 57 *e*P P 09 13 42.5 +1.7
comp=Z,161nm,1.4s
SIRR **Siria** 79.34 323⇑ *i*P P 09 13 41.3 +0.8
G33A **Ortonville** 79.36 38 P P 09 13 40.6 -0.1
baz=318,SNR=10
D36A **Goodland** 79.38 35 P P 09 13 39.2 -1.6
baz=320
C37A **Embarrass** 79.39 35 P P 09 13 40.5 -0.3
baz=320
H32A **Carlson Farm,** 79.39 39 P P 09 13 40.7 -0.2
baz=317
ISK **Istanbul-Kandi** 79.44 316 P P 09 13 39.4 -1.7
GOPC **GO Pecny, Ondr** 79.45 329 *e*P P 09 13 42.2 +1.1
GOPC *e*PP PP 09 16 40.9 +0.3
GOPC *e*S S 09 23 43.0 +2.0
GOPC AMS AMS 09 53 50.0
comp=Z,5µm,15.5s
GOPC **GO Pecny, Ondr** 79.45 329 *e*P P 09 13 42.2 +1.1
GOPC *e* 09 16 40.9
GOPC *e*S S 09 23 43.0 +2.0
GOPC MLR MLR
comp=Z,5µm,15.5s
PRA **Prague** 79.46 329 *e*S S 09 23 43.1 +2.0
F34A **Alexandria** 79.47 37 P P 09 13 41.6 +0.4
baz=319
GZR **Gura Zlata** 79.47 322⇑ *i*P P 09 13 41.8 +0.5
GZR **Gura Zlata** 79.47 322 ⇑P P 09 13 41.8 +0.5
PRU **Pruhonice** 79.48 329 *e*P P 09 13 42.0 +0.8
PRU *e*pP PcP 09 13 51.9 +2.7
PRU *e*PP PP 09 16 41.1 +0.2
PRU *e*S S 09 23 43.0 +1.7
PRU AMS AMS 09 54 10.0
comp=Z,6µm,15.9s
PRU **Pruhonice** 79.48 329 *e*P P 09 13 42.0 +0.8
PRU *e* 09 13 51.9
PRU *e* 09 16 41.1
PRU *e*S S 09 23 43.0 +1.7
PRU MLR MLR
comp=Z,6µm,15.9s
SZH **Strazhica** 79.49 319 P P 09 13 40.0 -1.4
EYMN **Ely** 79.52 34 P P 09 13 40.3 -1.2
baz=321,SNR=18
EYMN **Ely** 79.52 34 *e*P P 09 13 42.0 +0.6
comp=Z,48nm,1.3s
EYMN LR LR
comp=Z,1µm,19.0s
BUD **Budapest** 79.59 325⇑ *e*P P 09 13 42.6 +0.7
H33A **Prehn Over Nor** 79.60 39 P P 09 13 40.9 -1.1
baz=318,SNR=11
OGNE **Ogallala** 79.61 44 P P 09 13 42.7 +0.5
baz=315
OGNE **Ogallala** 79.61 44 *e*P P 09 13 43.3 +1.1
comp=Z,103nm,1.4s
OGNE LR LR
comp=Z,1µm,19.0s
J31A **Geddes** 79.63 41 P P 09 13 42.4 +0.2
baz=317
K30A **Basset** 79.64 42 P P 09 13 43.0 +0.8
baz=316
G34A **Benson** 79.71 38 P P 09 13 42.8 +0.3
baz=318
D37A **Cotton** 79.72 35 P P 09 13 42.9 +0.3
baz=320
I32A **Karley and Nic** 79.73 40 P P 09 13 42.3 -0.4
baz=318
F35A **Swanville** 79.74 37 P P 09 13 43.3 +0.6
baz=319
C38A **Sawbill Land.** 79.79 34 P P 09 13 42.5 -0.5
baz=321,SNR=13
E36A **McGregor** 79.84 36 P P 09 13 43.2 0.0
baz=320,SNR=9.6
BZS **Buzias** 79.85 323⇓ *i*P P 09 13 43.6 +0.3
BZS **Buzias** 79.85 323 ⇓P P 09 13 43.6 +0.3
SDCO **Great Sand Dun** 79.91 49 P P 09 13 44.1 0.0
baz=314
SDCO **Great Sand Dun** 79.91 49 *e*P P 09 13 46.1 +1.9
comp=Z,15nm,1.4s
SDCO LR LR
comp=Z,871nm,19.0s
J32A **Parkston** 80.02 40 P P 09 13 44.8 +0.5
baz=317
I33A **Coleman** 80.04 39 P P 09 13 44.6 +0.2
baz=318
H34A **Spellman Lake,** 80.07 38 P P 09 13 44.8 +0.3
baz=318
NKC **Novy Kostel** 80.09 331 *e*P P 09 13 45.4 +0.8
NKC *e*PP PP 09 16 47.3 +1.3
NKC *e*S S 09 23 49.4 +1.6
NKC AMS AMS 09 52 50.0
comp=Z,4µm,16.3s
NKC **Novy Kostel** 80.09 331 *e*P P 09 13 45.4 +0.8
NKC *e* 09 16 47.3
NKC *e*S S 09 23 49.4 +1.6
NKC MLR MLR
comp=Z,4µm,16.3s
EDRB **Edirne** 80.11 317 P P 09 13 45.0 +0.3
K31A **O'Neill** 80.11 42 P P 09 13 45.0 +0.1
baz=317
E37A **Wrenshall** 80.19 35 P P 09 13 45.8 +0.7
baz=320
C39A **Grand Marais** 80.20 33 P P 09 13 44.7 -0.5
baz=322
F36A **Milaca** 80.22 36 P P 09 13 45.8 +0.5
baz=320
G35A **Watkins** 80.26 37 P P 09 13 44.9 -0.6
baz=319
ECSD **EROS Data Cent** 80.36 40 P P 09 13 46.2 +0.1
baz=318,SNR=14
ECSD **EROS Data Cent** 80.36 40 *e*P P 09 13 47.3 +1.2
comp=Z,21nm,1.0s
ECSD LR LR
comp=Z,2µm,21.0s
TUC **Tucson** 80.39 56 P P 09 13 46.7 +0.1
baz=312
TUC **Tucson** 80.39 56 *e*P P 09 13 46.6 0.0
TUC pmax pmax
comp=Z,44nm,1.4s
TUC MLR MLR
comp=Z,1µm,20.0s
TUC **Tucson** 80.39 56 *e*P P 09 13 46.6 0.0
comp=Z,44nm,1.4s
TUC LR LR
comp=Z,1µm,20.0s
L31A **Butterfield Fa** 80.39 42 P P 09 13 45.9 -0.5
baz=317
MDVR **Moldovita** 80.43 322⇓ *i*P P 09 13 46.9 +0.4
K32A **Verdigre** 80.48 41 P P 09 13 46.4 -0.3
baz=317
SOP **Sopron** 80.49 327⇑ *e*P P 09 13 52.2 +5.5
H35A **Sunnyside Ranc** 80.49 38 P P 09 13 46.9 +0.1
baz=319,SNR=11
I34A **Hadley** 80.50 39 P P 09 13 47.1 +0.2
baz=318
MPEP **Malo Peshtene** 80.52 320 P P 09 13 46.8 -0.2
DGAR **Diego Garcia** 80.54 252 PFAKE 09 14 00.0 +13
DGAR LR LR
comp=Z,1µm,20.0s
EKA **Eskdalemuir Ar** 80.54 341 LR LR 09 53 33.4
comp=Z,2µm,18.5s,baz=35,slow=39
KHC **Kasperske Hory** 80.55 329 *e*P P 09 13 48.0 +0.9
KHC *e*pP sP 09 13 59.5 +3.5
KHC *e*PP PP 09 16 49.8 0.0
KHC *e*S S 09 23 54.1 +1.4
KHC AMS AMS 09 54 40.0
comp=Z,5µm,14.4s
KHC **Kasperske Hory** 80.55 329 *e*P P 09 13 48.0 +0.9
KHC *e* 09 13 59.5
KHC *e* 09 16 49.8
KHC *e*S S 09 23 54.1 +1.4
KHC MLR MLR
comp=Z,5µm,14.4s
KHC **Kasperske Hory** 80.55 329 *e*P P 09 13 47.8 +0.7
comp=Z,19nm,1.1s
ESK **Eskdalemuir** 80.57 341 PFAKE 09 14 00.0 +13
ESK LR LR
comp=Z,2µm,20.0s
CONA **Conrad Observa** 80.59 327 *i* P P 09 13 48.5 +1.2
SNR=24
CONA *i* P pP 09 13 48.7 -5.2
comp=Z,65nm,1.5s
CONA *i* PP PP 09 16 44.1 -6.2
comp=Z,17nm,1.7s
G36A **St. Michael** 80.59 37 P P 09 13 48.0 +0.7
baz=320
KSCO **Kaye Shedlock'** 80.65 46 P P 09 13 47.0 -0.9
baz=315
KSCO **Kaye Shedlock'** 80.65 46 *e*P P 09 13 49.9 +2.0
comp=Z,54nm,1.4s
GERES **GERESS Array B** 80.73 329 P P 09 13 48.3 +0.1
comp=Z,4.0nm,0.7s,baz=29,slow=3.0,SNR=18
GERES LR LR 09 53 27.3
comp=Z,3µm,18.6s,baz=15,slow=39
ISP **Isparta** 80.92 312 P P 09 13 47.0 -2.3
ISP **Isparta** 80.92 312 *c i*P P 09 13 48.2 -1.1
ISP pmax pmax
comp=Z,13nm,0.8s
ISP **Isparta** 80.92 312 PFAKE 09 14 00.0 +11
ISP LR LR
comp=Z,2µm,19.0s
L32A **Elgin** 80.94 42 P P 09 13 49.8 +0.5
baz=317
T25A **Trinidad** 80.95 49 P P 09 13 49.9 +0.2
baz=314,SNR=11
ASF **Jabal al Asfar** 80.97 305 P P 09 13 49.7 0.0
comp=Z,3.7nm,1.0s,baz=90,slow=7.1
GRFO **Grafenberg** 80.99 331 *e*P P 09 13 50.1 +0.7
GRFO pmax pmax
comp=Z,201nm,1.6s
GRFO **Grafenberg** 80.99 331 *e*P P 09 13 50.1 +0.7
comp=Z,201nm,1.6s
H36A **Jessenland, He** 81.01 38 P P 09 13 49.7 +0.1
baz=320
J34A **George** 81.01 40 P P 09 13 49.2 -0.4
baz=318
SPMN **Marine on St.** 81.03 37 *e*P P 09 13 51.5 +1.9
comp=Z,23nm,1.3s
I35A **Creekview Farm** 81.06 39 P P 09 13 48.8 -1.0
baz=319
ALN **Alexandroupoli** 81.16 317 P P 09 13 48.3 -2.1
ENEZ **Enez** 81.22 317 P P 09 13 49.0 -1.7
RZN **Rozhen** 81.26 318 P P 09 13 50.7 -0.5
ARSA **Arzberg** 81.27 327 *i* P P 09 13 51.9 +1.0
comp=Z,45nm,1.7s
ARSA *i* P pP 09 13 52.1 -5.4
SNR=9.5
CSS **Mathiatis** 81.27 309 P P 09 13 50.0 -1.1
CSS **Mathiatis** 81.27 309 PFAKE 09 14 00.0 +8.9
CSS LR LR
comp=Z,316nm,21.0s
ANMO **Albuquerque** 81.27 51 P P 09 13 51.3 -0.1
baz=314

ANMO Albuquerque 81.27 51 *i* P **P** **09 13 53.1 +1.7**
ANMO pmax pmax
comp=Z,24nm,1.5s
ANMO Albuquerque 81.27 51 *e*P **P** **09 13 53.0 +1.7**
comp=Z,37nm,1.3s
ANMO LR LR
comp=Z,647nm,20.0s
MOA Molln 81.30 328 *i* P **P** **09 13 52.0 +0.9**
comp=Z,42nm,1.9s
MOA *i* P **P** **09 13 52.0 +0.9**
SNR=8.7
BGNE Belgrade 81.31 42 P **P** **09 13 51.5 +0.3**
baz=317
BGNE Belgrade 81.31 42 *e*P **P** **09 13 53.1 +1.9**
comp=Z,74nm,1.1s
J35A Milford 81.32 39 P **P** **09 13 51.5 +0.2**
baz=319
MMAI Mount Meron Ar 81.33 306 P **P** **09 13 52.1 +0.6**
comp=Z,14nm,1.0s,baz=48,slow=8.7,SNR=4.2
MMAI LR LR 09 54 04.4
comp=Z,3µm,19.4s,baz=50,slow=39
I36A Fitzsimmons Fa 81.39 38 P **P** **09 13 52.0 +0.5**
baz=320
KULA Kula-Manisa 81.47 314 P **P** **09 13 49.5 -2.7**
H37A Dierke Farm, C 81.47 37 P **P** **09 13 53.6 +1.5**
baz=320
Y22D IRIS PASSCAL I 81.59 52 P **P** **09 13 52.9 -0.1**
baz=314
O31A Woolen Ranch, 81.61 44 P **P** **09 13 53.2 +0.3**
baz=317
M33A Taylor Creek F 81.67 41 P **P** **09 13 53.4 +0.3**
baz=318
I37A Lemond, Waseca 81.68 38 P **P** **09 13 53.4 +0.2**
baz=320
SCHQ Schefferville 81.73 17 P **P** **09 13 53.8 +0.6**
comp=Z,3.5nm,0.7s,baz=343,slow=6.8,SNR=6.9
SCHQ LR LR 09 55 21.0
comp=Z,956nm,18.4s,baz=347,slow=40
SMTH Samothraki Isl 81.73 317 P **P** **09 13 51.8 -1.7**
DIVS Divibare 81.75 323 P **P** **09 13 51.8 -1.8**
J36A Seneca 1, Swea 81.76 39 P **P** **09 13 54.2 +0.6**
baz=319
K35A Storm Lake 81.79 39 P **P** **09 13 52.0 -1.7**
baz=319
L34A Svendsen Farm, 81.79 41 P **P** **09 13 53.9 +0.1**
baz=318
MMB Musomiste 81.83 319 P **P** **09 13 53.5 -0.5**
KAVA Kavala 81.87 318 P **P** **09 13 53.3 -0.9**
PERS Pernice 81.92 327 *i* P **P** **09 13 55.0 +0.6**
SOKA Soboth 81.92 327 *i* P **P** **09 13 55.2 +0.7**
comp=Z,81nm,1.3s
SOKA *i* P **P** **09 13 55.2 +0.7**
SNR=18
NVR Nevrokopi 81.94 319 P **P** **09 13 52.8 -1.8**
KKB Krupnik 81.95 319 P **P** **09 13 54.5 -0.1**
COWI Conover 81.97 34 *e*P **P** **09 13 56.4 +1.8**
comp=Z,25nm,1.4s
COWI LR LR
comp=Z,1µm,19.0s
O32A Brockman Farm, 82.08 43 P **P** **09 13 53.7 -1.6**
baz=317
L35A Bielow Farm, R 82.09 40 P **P** **09 13 55.8 +0.5**
baz=319
121A Cookes Peak, D 82.12 54 P **P** **09 13 54.9 -1.0**
baz=313
121A Cookes Peak, D 82.12 54 *e*P **P** **09 13 58.3 +2.5**
comp=Z,44nm,1.4s
J37A Redenius Farm, 82.15 38 P **P** **09 13 56.0 +0.4**
baz=320
N33A J Bar K, Exete 82.16 42 P **P** **09 13 56.0 +0.3**
baz=318
I38A Scanlan Farm, 82.16 37 P **P** **09 13 54.6 -1.0**
baz=321
PRK Paraskevi 82.23 316 P **P** **09 13 54.6 -1.5**
SRS Serrai 82.25 319 P **P** **09 13 53.8 -2.4**
OBKA Obir 82.26 327 *i* P **P** **09 13 56.1 -0.2**
comp=Z,32nm,0.8s
KBA Koelnbreinsper 82.30 328 *i* P **P** **09 13 57.6 +1.0**
comp=Z,47nm,1.6s
KBA *i* P **P** **09 13 57.9 +1.4**
SNR=11
KBA *i* PP **PP** **09 16 58.6 -5.8**
comp=Z,24nm,1.4s
LIA Limnos Island 82.33 317 P **P** **09 13 54.3 -2.3**
CBKS Cedar Bluff 82.36 45 P **P** **09 13 58.0 +1.2**
baz=317
CBKS Cedar Bluff 82.36 45 PFAKE 09 14 10.0 +13
CBKS LR LR
comp=Z,1µm,19.0s
P32A Huiting Farm, 82.38 43 P **P** **09 13 57.7 +0.7**
baz=317
SIGR SIGRI 82.48 316 P **P** **09 13 56.6 -0.8**
K37A Belmond 82.52 39 P **P** **09 13 57.4 -0.1**
baz=320,SNR=8.3
L36A Harm Buss Farm 82.53 40 P **P** **09 13 58.8 +1.2**
baz=319
MYKA Terra Mystica 82.54 328 *i* P **P** **09 13 57.7 0.0**
comp=Z,42nm,1.4s
MYKA *i* P **P** **09 13 58.3 +0.6**
SNR=7.0
KNT Kendrikon 82.57 319 P **P** **09 13 55.6 -2.2**
O33A Hebron 82.58 43 P **P** **09 13 58.4 +0.5**
baz=318
VAY Valandovo 82.61 319 P **P** **09 13 55.9 -2.1**
VAY Valandovo 82.61 319 *i* P **P** **09 13 58.8 +0.7**
OUR Ouranopolis 82.63 318 P **P** **09 13 58.4 +0.2**
J38A Wedel Dairy, R 82.65 38 P **P** **09 13 58.6 +0.4**
baz=321
SKO Skopje 82.68 320 P **P** **09 13 58.0 -0.4**
SKO Skopje 82.68 320 *i* P **P** **09 13 59.7 +1.3**
VISS Visnje 82.70 327 *i* P **P** **09 13 58.6 +0.1**
BOJS Bojanci 82.77 326 *i* P **P** **09 14 00.6 +1.9**
WATA Walderalm 82.79 329 *i* PcP **P** **09 14 00.8 +1.8**
comp=Z,8.9nm,0.7s
WLF Walferdange 82.82 334 *e*P **P** **09 13 59.7 +0.7**
WLF pmax pmax
comp=Z,10.0nm,0.9s
WLF MLR MLR
comp=Z,5µm,20.0s
WLF Walferdange 82.82 334 *e*P **P** **09 13 59.7 +0.7**
comp=Z,10nm,0.9s
WLF LR LR
comp=Z,5µm,20.0s
LANF Langenberg 82.83 332‖ *e*P **P** **09 13 59.6 +0.6**
Q32A Meitler Ranch, 82.86 44 P **P** **09 13 58.5 -0.9**
baz=317
PLG Polygyros 82.88 318 P **P** **09 13 57.9 -1.6**
ABTA Abfaltersbach 82.90 328 *i* P **P** **09 13 59.5 0.0**
comp=Z,29nm,1.4s
ABTA *i* P **PcP** **09 13 59.9 -4.4**
SNR=6.4
TAU Tasmania Unive 82.93 177 PFAKE 09 14 10.0 +11
TAU LR LR
comp=Z,1µm,19.0s
M36A Felix, Anita 82.95 40 P **P** **09 14 00.3 +0.5**
baz=319
L37A Phoenix Point, 82.95 39 P **P** **09 14 01.0 +1.2**
baz=320
O34A Beatrice 82.95 42 P **P** **09 14 01.1 +1.2**
baz=318
JAVS Javornik 82.96 327 *i* P **P** **09 13 59.5 -0.4**
MOTA Moosalm 82.96 330 *i* P **P** **09 13 59.1 -0.9**
comp=Z,12nm,0.8s
CHOS Chios island 82.98 315 P **P** **09 13 58.6 -1.5**
RETA Reutte 82.98 330 *i* P **P** **09 14 00.7 +0.8**
SNR=14
RETA *i* P **P** **09 14 01.0 +1.1**
comp=Z,62nm,1.3s
N35A Tabor 82.98 41 P **P** **09 13 59.8 -0.2**
baz=319
J39A Decorah 82.99 37 P **P** **09 13 58.9 -1.1**
baz=321
P33A Williams Farm, 82.99 43 P **P** **09 14 00.6 +0.5**
baz=318
K38A Parkersburg 83.02 38 P **P** **09 13 59.2 -1.0**
baz=320
SMG Samos 83.04 314 P **P** **09 13 59.1 -1.3**
PAIG Paliouri 83.09 318 P **P** **09 13 58.1 -2.4**
BFO Black Forest 83.19 332 *i* P **P** **09 14 01.8 +0.9**
BFO Black Forest 83.19 332 *e*P **P** **09 14 01.4 +0.5**
comp=Z,111nm,1.8s
BFO LR LR
comp=Z,2µm,21.0s
R32A Long Quarter, 83.20 44 P **P** **09 14 00.3 -0.9**
baz=317
DSB Dublin 83.22 342 *e*P **P** **09 14 01.1 +0.2**
comp=Z,202nm,2.1s

Q33A Connelly Farm, 83.24 43 P **P** **09 14 00.5 -0.9**
baz=318
BODT Bodrum 83.25 314 P **P** **09 14 00.7 -0.8**
O35A Humboldt 83.29 42 P **P** **09 14 02.1 +0.5**
baz=319
L38A Oak Wood Farm, 83.32 39 P **P** **09 14 01.5 -0.3**
baz=320
N36A Muff Farm, Cla 83.36 41 P **P** **09 14 01.0 -1.0**
baz=319
P34A Walnut Farm, R 83.36 43 P **P** **09 14 00.3 -1.6**
baz=318
FETA Feichten 83.38 330 *i* P **P** **09 14 02.8 +0.7**
SNR=9.5
FETA *i* P **P** **09 14 02.8 +0.7**
comp=Z,38nm,1.5s
PDG Podgorica 83.38 322 P **P** **09 14 00.4 -1.6**
PDG Podgorica 83.38 322‖ *i*P **P** **09 14 02.2 +0.2**
SCIA State Center 83.38 39 *e*P **P** **09 14 04.5 +2.5**
comp=Z,43nm,1.1s
SCIA LR LR
comp=Z,1µm,22.0s
DAVA Damuels 83.48 330 *i* P **P** **09 14 03.3 +0.7**
comp=Z,57nm,1.4s
DAVA *i* P **P** **09 14 03.4 +0.7**
SNR=10
AOS Alonnisos 83.55 317 P **P** **09 14 01.7 -1.2**
LIT Litokhoron 83.57 319 P **P** **09 14 00.1 -3.0**
S32A Newby Ranch, P 83.60 45 P **P** **09 14 02.4 -0.9**
baz=317
OHR Ohrid 83.65 320 *i* P **P** **09 14 03.6 +0.1**
R33A Olander Ranch, 83.67 44 P **P** **09 14 04.1 +0.5**
baz=318
ECH Echery 83.70 332‖ *e*P **P** **09 14 03.9 +0.3**
J41A Loganville 83.74 36 P **P** **09 14 03.1 -0.7**
baz=322
XOR Xorichti 83.76 318 P **P** **09 14 00.9 -3.2**
M38A Pleasantville 83.76 39 P **P** **09 14 04.7 +0.7**
baz=320
Q34A Chapman 83.77 43 P **P** **09 14 03.2 -0.9**
baz=318
N37A Lee Faris, Mou 83.77 40 P **P** **09 14 05.2 +1.1**
baz=320
NEO Neokhori 83.79 318 P **P** **09 14 02.4 -1.8**
P35A Duane Minner, 83.79 42 P **P** **09 14 02.5 -1.7**
baz=319
L39A Vinton 83.79 38 P **P** **09 14 03.1 -1.0**
baz=321
KSU1 Kansas State U 83.80 43 P **P** **09 14 03.3 -0.9**
baz=318
KSU1 Kansas State U 83.80 43 *e*P **P** **09 14 05.9 +1.7**
comp=Z,13nm,0.7s
KSU1 LR LR
comp=Z,1µm,21.0s
O36A Bolckow 83.87 41 P **P** **09 14 05.1 +0.5**
baz=319
EIL Elat 83.89 304 P **P** **09 14 04.7 -0.1**
comp=Z,15nm,1.0s,baz=180,slow=0.6,SNR=14
EIL LR LR 09 55 38.0
comp=Z,1µm,19.3s,baz=44,slow=39
DAVOX Davos/Dischmat 83.90 330 LR LR 09 55 37.1
comp=Z,5µm,18.5s,baz=22,slow=39
TIR Tirane 83.92 321 PFAKE 09 14 20.0 +15
TIR LR LR
comp=Z,4µm,19.0s
JFWS Jewell Farm 83.99 37 PFAKE 09 14 20.0 +15
JFWS LR LR
comp=Z,1µm,20.0s
T32A Hidler Ranch, 83.99 45 P **P** **09 14 05.8 +0.5**
baz=317
MOF Molkenrain 84.02 332‖ *e*P **P** **09 14 05.7 +0.4**
R34A Isabella, Hill 84.06 44 P **P** **09 14 05.4 -0.2**
baz=318
THEF They Montfort 84.11 333‖ *e*P **P** **09 14 06.0 +0.4**
AMTX Amarillo 84.11 49 P **P** **09 14 07.3 +1.2**
baz=316
AMTX Amarillo 84.11 49 *e*P **P** **09 14 07.6 +1.6**
comp=Z,23nm,1.2s
MSTX Muleshoe 84.13 50 P **P** **09 14 06.0 -0.2**
baz=316
MSTX Muleshoe 84.13 50 *e*P **P** **09 14 07.9 +1.8**
comp=Z,32nm,1.3s
P36A Good Intent, A 84.13 42 P **P** **09 14 07.1 +1.2**
baz=319
MNTX Cornudas Mount 84.17 53 P **P** **09 14 06.6 +0.4**
baz=314,SNR=15
MNTX Cornudas Mount 84.17 53 *e*P **P** **09 14 08.3 +2.0**
comp=Z,28nm,1.4s
MNTX LR LR
comp=Z,726nm,19.0s
S33A Kaszmaul Farm, 84.19 45 P **P** **09 14 07.5 +1.2**
baz=318
K41A Shullsburg 84.20 37 P **P** **09 14 06.6 +0.4**
baz=322
L40A Anamosa 84.20 38 P **P** **09 14 05.9 -0.3**
baz=321
M39A Webster 84.21 39 P **P** **09 14 07.4 +1.2**
baz=321
N38A Joes South For 84.22 40 P **P** **09 14 06.8 +0.4**
baz=320
Q35A Mercer Eighty, 84.28 43 P **P** **09 14 05.7 -1.0**
baz=319
ATAL Atalanti 84.35 317 P **P** **09 14 04.2 -2.9**
TUE Stuetta 84.36 330 *e*P **P** **09 14 07.7 +0.5**
comp=Z,87nm,1.4s
TUE LR LR
comp=Z,5µm,19.0s
LKR Lokris 84.39 317 P **P** **09 14 03.9 -3.4**
T33A Patterson Ranc 84.43 45 P **P** **09 14 07.4 -0.1**
baz=318
AGG Agios Georgios 84.46 318 P **P** **09 14 03.9 -3.7**
Q36A Arnold C. Orve 84.50 42 P **P** **09 14 08.3 +0.5**
baz=319
N39A Derby Farms, D 84.51 39 P **P** **09 14 06.1 -1.7**
baz=321
L41A Preston 84.53 37 P **P** **09 14 09.0 +1.1**
baz=322
U32A Winter Ranch, 84.53 46 P **P** **09 14 09.3 +1.2**
baz=317
S34A Willow Spring 84.58 44 P **P** **09 14 08.8 +0.5**
baz=318
P37A Lathrop 84.59 41 P **P** **09 14 08.7 +0.5**
baz=320
R35A Emporia Munici 84.60 43 P **P** **09 14 09.5 +1.2**
baz=319
O38A Galt 84.62 40 P **P** **09 14 09.6 +1.2**
baz=320
PPT Papeete 84.73 118 LR LR 09 46 12.5
comp=Z,3µm,19.3s,baz=286,slow=32
PPT2 Papeete2 84.75 118 *e*S **S** **09 24 29.8 -6.5**
comp=Z,438nm,24.8s
PPT2 *e*SS **SS** **09 30 01.3 -7.5**
comp=Z,383nm,23.5s
PPT2 Papeete2 84.75 118 *e*LR LR 09 40 42.4
comp=Z,5µm,22.5s,baz=318
PPT2 Papeete2 84.75 118 *e*T T 10 47 31.4
comp=Z,4.2nm,0.3s
SANT Santorini 84.77 314 PFAKE 09 14 20.0 +11
SANT LR LR
comp=Z,2µm,19.0s
TIAR Tiarei 84.88 118 *e*T T 10 47 41.3
comp=Z,2.0nm,0.3s
R36A Gordon, Harris 84.96 43 P **P** **09 14 10.2 0.0**
baz=319,SNR=11
P38A Dawn 84.97 41 P **P** **09 14 10.6 +0.5**
baz=320
O39A Kirksville 84.97 40 P **P** **09 14 11.3 +1.2**
baz=321
U33A Lingo Farm, Me 84.98 45 P **P** **09 14 10.2 -0.1**
baz=318
V32A Arapaho 84.99 46 P **P** **09 14 11.6 +1.3**
baz=317
S35A Otter Creek Ra 85.01 43 P **P** **09 14 10.7 +0.3**
baz=319,SNR=12
T34A McClaskey Farm 85.04 44 P **P** **09 14 11.1 +0.5**
baz=318
Q37A Longview Farm, 85.08 42 P **P** **09 14 11.9 +1.2**
baz=320
KEK Kerkira 85.21 320 P **P** **09 14 08.0 -3.3**
KLV Kalavryta, Ach 85.29 317 P **P** **09 14 08.0 -3.9**
U34A Anderson Ranch 85.29 45 P **P** **09 14 13.1 +1.3**
baz=318
U34A Anderson Ranch 85.29 45 *e*P **P** **09 14 14.0 +2.2**
comp=Z,45nm,1.1s
VAL Valentia 85.30 344 *e*P **P** **09 14 15.0 +3.5**
VAL Valentia 85.30 344‖ *i*/S **S** **09 24 39.2 -1.5**
R37A Teagarden Farm 85.31 42 P **P** **09 14 12.4 +0.5**
baz=320

W32A Sentinel 85.32 47 P **P** **09 14 12.6 +0.6**
baz=317
V33A Lossen Ranch, 85.34 46 P **P** **09 14 13.3 +1.3**
baz=318
S36A Lake Cedric, C 85.36 43 P **P** **09 14 11.2 -0.9**
baz=319
O40A La Belle 85.40 39 P **P** **09 14 12.5 +0.2**
baz=321
Q38A Cooks Store, C 85.44 41 P **P** **09 14 11.5 -1.0**
baz=320
P39B Salisbury 85.46 40 P **P** **09 14 13.1 +0.5**
baz=321
TAOE Nuku Hiva Isla 85.47 106 *e*S S 09 24 34.2 -10
comp=Z,487nm,26.5s
TAOE Nuku Hiva Isla 85.47 106 *e*LR LR 09 41 10.9
comp=Z,4µm,20.6s,baz=311
T35A Sooner Cattle 85.48 44 P **P** **09 14 13.0 +0.2**
baz=319,SNR=8.8
LKD2 Lefkada island 85.49 319 P **P** **09 14 10.3 -2.5**
LAST Lasithi 85.65 313 P **P** **09 14 12.3 -1.4**
VLX Vlachokerasia 85.68 317 P **P** **09 14 10.3 -3.6**
Q39A Willow Grove F 85.69 41 P **P** **09 14 13.8 0.0**
baz=321,SNR=11
T36A Boggs Farm, Ca 85.71 44 P **P** **09 14 14.4 +0.5**
baz=319
W33A Caddo, Fort Co 85.73 46 P **P** **09 14 16.0 +2.0**
baz=318
S37A Fort Scott 85.73 43 P **P** **09 14 14.5 +0.5**
baz=320
V34A Guthrie 85.75 45 P **P** **09 14 15.4 +1.3**
baz=318
V34A Guthrie 85.75 45 *e*P **P** **09 14 16.0 +1.9**
comp=Z,30nm,1.1s
U35A Pawnee 85.77 45 P **P** **09 14 16.9 +2.7**
baz=319
P40A Paris 85.78 40 P **P** **09 14 15.3 +1.2**
baz=321
X32A Elmer 85.81 47 P **P** **09 14 16.5 +2.0**
baz=317
WMOK Wichita Mounta 85.86 47 P **P** **09 14 16.0 +1.3**
baz=318
WMOK Wichita Mounta 85.86 47 *e*P **P** **09 14 15.1 +0.4**
WMOK pmax pmax
comp=Z,13nm,1.1s
WMOK MLR MLR
comp=Z,1µm,20.0s
WMOK Wichita Mounta 85.86 47 *e*P **P** **09 14 15.1 +0.4**
comp=Z,13nm,1.1s
WMOK LR LR
comp=Z,1µm,20.0s
VLI Veliai 85.87 316 P **P** **09 14 11.5 -3.2**
VLC Villacollemand 85.88 328 PFAKE 09 14 30.0 +15
VLC LR LR
comp=Z,4µm,20.0s
R38A Fenwick Farm, 85.88 42 P **P** **09 14 15.9 +1.2**
baz=320
IDI Anoyia 85.88 314 P **P** **09 14 15.1 +0.3**
comp=Z,10nm,1.0s,baz=58,slow=3.7,SNR=5.0
IDI LR LR 09 58 02.3
comp=Z,1µm,18.1s,baz=1.5,slow=40
O41A Passleys Farm, 85.88 39 P **P** **09 14 15.8 +1.1**
baz=322
VLS Valsamata 85.99 318 P **P** **09 14 12.8 -2.5**
RSL Roselend 86.04 331 *e*P **P** **09 14 15.7 +0.1**
W34A Bridge Creek, 86.05 46 *e*P **P** **09 14 18.0 +2.3**
comp=Z,34nm,1.1s
ITM Ithomi 86.06 317 P **P** **09 14 13.0 -2.6**
SNZO South Karori 86.08 157 PFAKE 09 14 30.0 +15
SNZO LR LR
comp=Z,2µm,19.0s
AQU L'Aquila 86.09 325 PFAKE 09 14 30.0 +14
AQU LR LR
comp=Z,4µm,19.0s
P41A Barry, Barry 86.14 39 P **P** **09 14 15.8 -0.2**
baz=322
X33A Lawton 86.16 47 P **P** **09 14 16.7 +0.6**
baz=318
T37A Cheneyville 18 86.17 43 P **P** **09 14 16.7 +0.5**
baz=320
V35A Meyer Ranch, C 86.17 45 P **P** **09 14 17.5 +1.3**
baz=318
Q40A Laux Farm, Aux 86.18 40 P **P** **09 14 18.0 +1.9**
baz=321
R39A Chumby, Stover 86.22 41 P **P** **09 14 16.5 +0.1**
baz=321,SNR=9.3
HDIL Hopedale 86.28 37 P **P** **09 14 16.4 -0.2**
baz=323
HDIL Hopedale 86.28 37 PFAKE 09 14 30.0 +13
HDIL LR LR
comp=Z,1µm,19.0s
U36A Oologah 86.29 44 P **P** **09 14 16.2 -0.6**
baz=319
S38A Stockton 86.30 42 P **P** **09 14 17.3 +0.5**
baz=320
PYL PYLOS 86.37 317 P **P** **09 14 13.8 -3.4**
Y33A Hilltop Ranch, 86.48 47 P **P** **09 14 17.3 -0.5**
baz=318
X34A Smith Ranch, M 86.49 46 P **P** **09 14 19.0 +1.2**
baz=318
P42A Winchester 86.56 39 P **P** **09 14 17.8 -0.2**
baz=322
S39A Bolivar 86.56 42 P **P** **09 14 17.9 -0.2**
baz=320
T38A Diamond 86.56 43 P **P** **09 14 18.5 +0.4**
baz=320,SNR=12
BNI Bardonecchia 86.56 331 PFAKE 09 14 30.0 +12
BNI LR LR
comp=Z,5µm,19.0s
W35A Tecumseh 86.60 45 P **P** **09 14 19.6 +1.3**
baz=318
U37A Salina 86.61 44 P **P** **09 14 19.6 +1.2**
baz=319
TUL1 Leonard 86.62 44 P **P** **09 14 19.7 +1.2**
baz=319
TUL1 Leonard 86.62 44 *e*P **P** **09 14 20.1 +1.7**
comp=Z,115nm,1.9s
R40A Maddies Statio 86.62 41 P **P** **09 14 18.1 -0.3**
baz=321
V36A Jenks 86.63 45 P **P** **09 14 19.7 +1.2**
baz=319
PLDF La Plantade 86.87 333‖ *e*P **P** **09 14 21.5 +2.0**
TXAR Lajitas Array 86.88 54 P **P** **09 14 20.1 +0.2**
comp=Z,5.2nm,1.0s,baz=293,slow=3.5,SNR=28
TXAR LR LR 09 48 01.9
comp=Z,528nm,22.0s,baz=0.0,slow=32
CUC Castrocucco 86.90 322 PFAKE 09 14 30.0 +10
CUC LR LR
comp=Z,2µm,20.0s
ABTX Abilene, Hawle 86.91 49 P **P** **09 14 20.3 +0.4**
baz=317
ABTX Abilene, Hawle 86.91 49 *e*P **P** **09 14 21.4 +1.4**
comp=Z,37nm,1.4s
Z33A Whitaker Ranch 86.93 48 P **P** **09 14 19.5 -0.5**
baz=318
AGO Saint Agoulin 86.97 334‖ *e*P **P** **09 14 21.8 +1.9**
W36A Wetumka 86.97 45 P **P** **09 14 21.4 +1.3**
baz=319
V37A Hulbert 86.99 44 P **P** **09 14 20.7 +0.5**
baz=320
Y34A Reagan Ranch, 87.00 47 P **P** **09 14 21.1 +0.8**
baz=318
T39A Clever 87.04 42 P **P** **09 14 21.6 +1.2**
baz=320
S40A Lebanon 87.04 41 P **P** **09 14 20.2 -0.3**
baz=321
TIP Timpagrande 87.10 321 *e*P **P** **09 14 20.8 0.0**
comp=Z,36nm,1.3s
TIP LR LR
comp=Z,4µm,21.0s
X35A Drake 87.11 46 P **P** **09 14 21.4 +0.6**
baz=318
SSB Saint Sauveur 87.15 332 *e*P **P** **09 14 21.4 +0.5**
SSB Saint Sauveur 87.15 332 *e*P **P** **09 14 21.2 +0.3**
SSB pmax pmax
comp=Z,19nm,0.9s
SSB MLR MLR
comp=Z,2µm,20.0s
SSB Saint Sauveur 87.15 332 *e*P **P** **09 14 21.2 +0.3**
comp=Z,18nm,0.9s
SSB LR LR
comp=Z,2µm,20.0s
COLF Collangettes 87.24 333 *e*P **P** **09 14 22.2 +0.9**
PYM Petit Puy Mans 87.27 333‖ *e*P **P** **09 14 23.4 +1.9**
X36A Centrahoma 87.32 46 P **P** **09 14 23.1 +1.2**
baz=319
133A Hamilton Ranch 87.34 48 P **P** **09 14 22.6 +0.6**
baz=318

Z34A **Collier Ranch,** 87.35 47 P P 09 14 21.9 -0.1
baz=318
AAM **Ann Arbor** 87.35 33 PFAKE 09 14 30.0 +8.2
AAM LR LR
comp=Z,1µm,20.0s
Q43A **New Douglas** 87.37 39 P P 09 14 23.1 +1.1
baz=322
T40A **Mansfield** 87.38 42 P P 09 14 23.3 +1.2
baz=321
V38A **Canehill** 87.39 44 P P 09 14 22.3 +0.1
baz=320,SNR=11
W37B **Quinton** 87.39 45 P P 09 14 21.3 -0.9
baz=319
S41A **Jillco Farms,** 87.43 41 P P 09 14 23.4 +1.1
baz=321
SFIN **Lafayette** 87.43 36 P P 09 14 22.6 +0.4
baz=324
DAMY **Dhamar** 87.44 287 eP P 09 14 24.0 +1.0
comp=Z,18nm,1.1s
Y35A **Marietta** 87.44 46 P P 09 14 22.4 -0.1
baz=318
OG26 **St.-Nazaire-De** 87.48 331 eP P 09 14 23.4 +0.9
U39A **Green Forest** 87.48 43 P P 09 14 22.2 -0.4
baz=320,SNR=9.5
LMQ **La Malbaie** 87.50 22 eP P 09 14 24.5 +2.0
LBL **Lubilhac** 87.64 333 eP P 09 14 25.3 +2.0
Q44A **Meyer Farm, Va** 87.72 38 P P 09 14 22.7 -1.0
baz=323
Z35A **Perchaven, San** 87.75 47 P P 09 14 23.1 -0.9
baz=318
233A **Rising Star** 87.78 49 P P 09 14 23.3 -0.9
baz=318
V39A **Pettigrew** 87.81 43 P P 09 14 23.2 -1.0
baz=320
U40A **Yellville** 87.82 42 P P 09 14 23.9 -0.4
baz=321,SNR=12
X37A **Clayton** 87.84 45 P P 09 14 25.6 +1.3
baz=319
T41A **Mountain View** 87.84 41 P P 09 14 25.3 +1.0
baz=321,SNR=9.7
134A **White-Moore Ra** 87.85 48 P P 09 14 25.7 +1.3
baz=318
Y36A **Durant** 87.86 46 P P 09 14 26.1 +1.7
baz=319
W38A **Poteau** 87.93 44 P P 09 14 25.5 +0.8
baz=320
X38A **Whitesboro** 88.07 45 P P 09 14 24.9 -0.6
baz=320
R44A **Waltonville** 88.22 39 P P 09 14 26.4 +0.4
baz=323
W39A **Magazine** 88.23 44 P P 09 14 26.5 +0.3
baz=320
234A **Clairette** 88.23 48 P P 09 14 27.6 +1.3
baz=318
135A **Vickery Place,** 88.24 48 P P 09 14 26.1 -0.1
baz=318
CEL **Celeste** 88.24 321 PFAKE 09 14 40.0 +14
CEL LR LR
comp=Z,3µm,21.0s
333A **Richland Sprin** 88.24 49 P P 09 14 25.4 -0.9
baz=318,SNR=10
Z36A **Blue Ridge** 88.25 46 P P 09 14 27.6 +1.3
baz=319
V40A **Witts Springs** 88.26 43 P P 09 14 26.8 +0.4
baz=321
S43A **Fulton Ridge,** 88.27 40 P P 09 14 26.1 -0.2
baz=322
U41A **Viola** 88.31 42 P P 09 14 24.6 -2.0
baz=321
JCT **Junction City** 88.38 50 P P 09 14 26.1 -1.0
baz=317
JCT **Junction City** 88.38 50 eP P 09 14 28.5 +1.5
JCT pmax pmax
comp=Z,45nm,1.7s
JCT MLR MLR
comp=Z,1µm,21.0s
JCT **Junction City** 88.38 50 eP P 09 14 28.5 +1.5
comp=Z,45nm,1.7s
JCT LR LR
comp=Z,1µm,21.0s
S44A **Carbondale** 88.57 39 P P 09 14 27.9 +0.2
baz=323,SNR=9.9
X39A **Fountain Ranch** 88.58 44 P P 09 14 28.3 +0.5
baz=320
433A **Art** 88.60 50 P P 09 14 28.0 -0.1
baz=318
W40A **Ferguson Farm,** 88.61 43 P P 09 14 28.4 +0.5
baz=321
V41A **Mountainview** 88.62 42 P P 09 14 29.2 +1.1
baz=321
WHTX **Lake Whitney,** 88.63 48 P P 09 14 27.2 -0.9
baz=318
WHTX **Lake Whitney,** 88.63 48 eP P 09 14 30.4 +2.3
comp=Z,36nm,1.4s
U42A **Revenden** 88.65 41 P P 09 14 28.6 +0.5
baz=322
334A **Lometa** 88.67 49 P P 09 14 29.6 +1.2
baz=318
Y38A **Idabel** 88.69 45 P P 09 14 30.3 +2.0
baz=320
Z37A **Pogue Cattle C** 88.75 46 P P 09 14 29.9 +1.2
baz=319
LONY **Lake Ozonia** 88.79 26 PFAKE 09 14 40.0 +11
LONY LR LR
comp=Z,2µm,20.0s
136A **Ennis** 88.79 47 P P 09 14 30.2 +1.3
baz=319
MIAR **Mount Ida** 88.83 44 P P 09 14 30.3 +1.2
baz=320
MIAR **Mount Ida** 88.83 44 eP P 09 14 31.3 +2.3
MIAR pmax pmax
comp=Z,19nm,1.1s
MIAR MLR MLR
comp=Z,1µm,20.0s
MIAR **Mount Ida** 88.83 44 eP P 09 14 31.3 +2.3
comp=Z,19nm,1.1s
MIAR LR LR
comp=Z,1µm,20.0s
TBI **Tubuai** 88.89 122 eS S 09 25 06.7 -9.3
comp=Z,1µm,25.2s
TBI eSS SS 09 31 01.3 -7.9
comp=Z,320nm,27.5s
TBI **Tubuai** 88.89 122 eLR LR 09 42 26.6
comp=Z,2µm,24.2s,baz=325
TBI **Tubuai** 88.89 122 eT T 10 52 37.8
comp=Z,8.9nm,0.3s
S45A **Carrier Mills** 88.91 39 P P 09 14 30.4 +1.1
baz=323
V42A **Cord** 89.00 42 P P 09 14 29.6 -0.2
baz=322
Y39A **Lockesburg** 89.02 45 P P 09 14 29.8 -0.1
baz=320
434A **Burnet** 89.03 49 P P 09 14 29.6 -0.5
baz=318
W41B **Gary Mavity, V** 89.05 43 P P 09 14 28.5 -1.5
baz=321
Z38A **Mt. Pleasant** 89.06 46 P P 09 14 30.0 -0.1
baz=320
533A **Kerrville** 89.13 50 P P 09 14 29.2 -1.4
baz=318
335A **Moody** 89.17 48 P P 09 14 28.4 -2.3
baz=318
X40A **Basin Creek Fa** 89.27 43 P P 09 14 30.1 -0.9
baz=321
ACSO **Alum Creek Sta** 89.35 34 PFAKE 09 14 40.0 +8.6
ACSO LR LR
comp=Z,1µm,19.0s
Y40A **Okolona** 89.40 44 P P 09 14 29.3 -2.3
baz=320
336A **Riesel** 89.43 48 P P 09 14 31.7 -0.1
baz=319
X41A **Kaden, Bauxite** 89.43 43 P P 09 14 30.8 -1.0
baz=321
138A **Matatall Enter** 89.45 46 P P 09 14 33.2 +1.3
baz=320
534A **Blanco** 89.49 50 P P 09 14 32.1 -0.1
baz=318
633A **Saathoff Ranch** 89.50 51 P P 09 14 32.9 +0.6
baz=318
WCI **Wyandotte Cave** 89.54 37 eP P 09 14 33.5 +1.2
WCI pmax pmax
comp=Z,47nm,0.9s
WCI **Wyandotte Cave** 89.54 37 eP P 09 14 33.5 +1.2
comp=Z,47nm,0.9s
237A **Washetta, Mont** 89.55 47 P P 09 14 34.6 +2.1
baz=319
M54A **Oil Creek Stat** 89.63 31 P P 09 14 34.3 +1.6
baz=329

Y41A **Eaglette Beard** 89.86 44 P P 09 14 34.1 +0.3
baz=321
PKME **Peaks-Kenny Pk** 89.87 22 PFAKE 09 14 50.0 +16
PKME LR LR
comp=Z,2µm,19.0s
436A **Wall Ranch, Ga** 89.91 48 P P 09 14 34.0 -0.1
baz=319
238A **Jacksonville** 89.93 46 P P 09 14 35.5 +1.3
baz=320
733A **Divot King Ran** 89.97 51 P P 09 14 35.8 +1.4
baz=317
N54A **Moraine State** 89.97 31 P P 09 14 35.2 +0.9
baz=328
337A **Centerville** 90.02 47 P P 09 14 35.9 +1.3
baz=319
CLTB **Caltabellotta** 90.04 323 PFAKE 09 14 50.0 +15
CLTB LR LR
comp=Z,2µm,19.0s
VSL **Villasalto** 90.17 326 PFAKE 09 14 50.0 +15
VSL LR LR
comp=Z,2µm,20.0s
833A **Chaparral WMA,** 90.20 52 P P 09 14 38.3 +2.8
baz=317
Z41A **Richland Creek** 90.23 44 P P 09 14 36.8 +1.2
baz=321
X43A **Marvell** 90.26 42 P P 09 14 38.3 +2.6
baz=322
536A **Bastrop** 90.28 49 P P 09 14 37.6 +1.7
baz=318
239A **Gary** 90.28 46 P P 09 14 37.1 +1.3
baz=320
Y42A **Garnett, Star** 90.32 43 P P 09 14 37.6 +1.6
baz=321
NATX **Nacogdoches** 90.37 46 P P 09 14 37.0 +0.8
baz=320
NATX **Nacogdoches** 90.37 46 PFAKE 09 14 50.0 +14
NATX LR LR
comp=Z,1µm,20.0s
635A **Leesville** 90.38 50 P P 09 14 37.7 +1.3
baz=318
BINY **Binghamton** 90.42 28 eP P 09 14 38.4 +2.0
comp=Z,16nm,1.1s
BINY LR LR
comp=Z,2µm,22.0s
W45A **Hickory Valley** 90.61 41 P P 09 14 38.5 +1.1
baz=323
636A **Smothers Creek** 90.72 49 P P 09 14 39.0 +1.1
baz=318
WDD **Wied Dalam** 90.83 321 PFAKE 09 14 50.0 +12
WDD LR LR
comp=Z,2µm,21.0s
OXF **Oxford** 91.01 41 eP P 09 14 40.9 +1.7
OXF pmax pmax
comp=Z,29nm,1.0s
OXF **Oxford** 91.01 41 eP P 09 14 40.9 +1.7
comp=Z,29nm,1.0s
439A **Center Grove,** 91.04 47 P P 09 14 40.6 +1.2
baz=320
340A **Bronson** 91.06 46 P P 09 14 40.5 +1.1
baz=320
SSPA **Standing Stone** 91.07 30 eP P 09 14 40.0 +0.7
comp=Z,143nm,1.5s
X45A **UM Field Stati** 91.09 41 P P 09 14 40.7 +1.1
baz=323
736A **Circle Diamond** 91.11 50 P P 09 14 42.5 +2.8
baz=318
O56A **Blue Knob Stat** 91.12 31 P P 09 14 40.2 +0.5
baz=330
835A **Beeville** 91.16 51 P P 09 14 42.8 +2.8
baz=318
143A **Socs Landing,** 91.40 44 P P 09 14 41.0 -0.1
baz=322
Y45A **Yeager Farm, C** 91.46 42 P P 09 14 42.0 +0.8
baz=323
Z44A **Pea Ridge, Bel** 91.46 43 P P 09 14 42.1 +0.8
baz=322
341A **Kurthwood** 91.52 46 P P 09 14 42.8 +1.2
baz=321
N59A **State Game Lan** 91.62 29 P P 09 14 42.8 +0.8
baz=331
KVTX **Kingsville** 91.67 51 PFAKE 09 15 00.0 +18
KVTX LR LR
comp=Z,866nm,21.0s
Y46A **Houston** 91.79 41 P P 09 14 43.2 +0.4
baz=323
244A **Avery, Jackson** 92.30 44 P P 09 14 46.8 +1.6
baz=322
146A **Union** 92.68 42 P P 09 14 49.5 +2.5
baz=323
245A **Little AP, Sta** 92.72 43 P P 09 14 49.7 +2.6
baz=322
BLA **Blacksburg** 92.97 34 PFAKE 09 15 00.0 +12
BLA LR LR
comp=Z,1µm,20.0s
147A **Livingston** 93.05 42 P P 09 14 49.8 +1.1
baz=323
KEST **Kesra** 93.33 324 LR LR 10 02 00.5
comp=Z,3µm,18.0s,baz=330,slow=39
CBN **Corbin Frederi** 93.37 31 PFAKE 09 15 00.0 +10
CBN LR LR
comp=Z,1µm,20.0s
PBRG **Braganca** 93.89 338 eP P 09 14 54.2 +1.8
PBRG **Braganca** 93.89 338 ePP PP 09 18 40.6 +3.5
PGAV **Gavieira, Arco** 94.16 339 eP P 09 14 58.0 +4.2
PGAV **Gavieira, Arco** 94.16 339 ePP PP 09 18 42.5 +3.2
PGAV eSKS S 09 26 01.9 -1.9
PGAV eSS SS 09 32 28.8 +6.2
PGAV **Gavieira, Arco** 94.16 339 eLQ LQ 09 46 32.8
PGAV eLR LR 09 50 31.9
comp=Z,2µm,18.0s
MVO **Moncorvo** 94.56 338 eP P 09 14 59.1 +3.5
MVO **Moncorvo** 94.56 338 ePP PP 09 18 45.2 +2.8
MVO eSKS SKSac 09 25 31.1 +1.2
MVO eSS SS 09 32 32.1 +3.9
MVO **Moncorvo** 94.56 338 eLQ LQ 09 46 07.2
MVO eLR LR 09 51 29.8
comp=Z,2µm,16.0s
POLO **Lamas de Olo** 94.58 339 eP P 09 15 00.3 +4.6
POLO **Lamas de Olo** 94.58 339 ePP PP 09 18 45.2 +2.6
GOGA **Godfrey** 94.79 38 PFAKE 09 15 10.0 +13
GOGA LR LR
comp=Z,1µm,19.0s
BRAL **Brewton** 94.87 42 PFAKE 09 15 10.0 +13
BRAL LR LR
comp=Z,1µm,19.0s
ESDC **Sonseca Array** 95.00 335 P P 09 14 57.9 +0.3
comp=Z,0.3nm,0.3s,baz=14,slow=3.1,SNR=5.4
ESDC LR LR 10 04 39.6
comp=Z,2µm,18.0s,baz=25,slow=40
PAB **San Pablo** 95.24 336 PFAKE 09 15 10.0 +11
PAB LR LR
comp=Z,4µm,22.0s
MTE **Manteigas** 95.42 338 eP P 09 14 58.1 -1.4
MTE **Manteigas** 95.42 338 ePP PP 09 18 52.5 +3.4
MTE eSKS S 09 26 16.6 +1.9
MTE eSS SS 09 32 45.1 +4.7
MTE **Manteigas** 95.42 338 eLQ LQ 09 49 11.2
MTE eLR LR 09 51 55.7
comp=Z,2µm,20.0s
MTE **Manteigas** 95.42 338 PFAKE 09 15 10.0 +11
MTE LR LR
comp=Z,2µm,20.0s
CNNC **Cliffs of the** 95.72 33 PFAKE 09 15 10.0 +9.2
CNNC LR LR
comp=Z,1µm,20.0s
PCAS **Casmilo, Conde** 96.01 339 eP P 09 15 06.9 +4.8
PCAS **Casmilo, Conde** 96.01 339 ePP PP 09 18 56.4 +2.9
PCAS eSKS S 09 26 24.3 +4.6
PCAS eSS SS 09 32 52.7 +4.1
PMRV **Marv??o** 96.27 338 eP P 09 15 04.5 +1.2
PMRV **Marv??o** 96.27 338 ePP PP 09 18 59.2 +3.6
PMRV eSKS SKSac 09 25 41.5 +2.6
PMRV eSS SS 09 32 35.7 -17
PMRV **Marv??o** 96.27 338 eLQ LQ 09 46 38.4
PMRV eLR LR 09 52 13.9
comp=Z,3µm,18.0s
NHSC **New Hope** 96.55 36 PFAKE 09 15 20.0 +15
NHSC LR LR
comp=Z,2µm,21.0s
PESTR **Estremoz** 96.85 338 eP P 09 15 10.2 +4.2
PESTR **Estremoz** 96.85 338 ePP PP 09 19 07.5 +7.4
PESTR eSKS SKSac 09 25 45.8 +3.8
PESTR eSS SS 09 32 54.5 -6.1
PMAFR **Mafra** 97.25 339 eP Pdif 09 15 13.0 +5.2
PMAFR **Mafra** 97.25 339 ePP PP 09 19 05.2 +2.1
PMAFR eSKS SKSac 09 25 46.6 +2.6

PMAFR eSS SS 09 33 07.3 +1.1
PBAR **Barrancos** 97.33 337 ePP PP 09 19 12.0 +8.2
PBAR eSKS S 09 26 35.3 +4.2
PBAR eSS SS 09 33 13.1 +5.8
LIS **Lisbon** 97.43 339 ePP PP 09 19 05.5 +1.0
LIS AMS AMS 10 04 17.8
comp=N,2µm,18.2s
PNCL **Nicolau / Gran** 97.82 338 eP Pdif 09 15 14.9 +4.5
PNCL **Nicolau / Gran** 97.82 338 ePP PP 09 19 11.0 +3.5
PNCL eSKS S 09 26 39.4 +4.1
PNCL eSS SS 09 33 27.8 +14
MESJ **Messejana** 97.99 338 eP Pdif 09 15 11.3 +0.2
MESJ ePP PP 09 19 09.9 +1.1
MESJ eS SKSac 09 25 47.1 -0.6
MESJ eSS SS 09 33 19.1 +2.6
MESJ AMS AMS 10 04 13.8
comp=Z,3µm,33.1s
MESJ **Messejana** 97.99 338 eP Pdif 09 15 11.3 +0.2
MESJ e 09 19 09.9
MESJ eS SKSac 09 25 47.2 -0.6
MESJ eSS SS 09 33 19.2 +2.6
PCVE **Castro Verde** 98.13 337 eP Pdif 09 15 17.4 +5.7
PCVE **Castro Verde** 98.13 337 ePP PP 09 19 14.6 +4.7
PCVE eSKS S 09 26 43.0 +5.1
PCVE eSS SS 09 33 23.8 +5.2
PVAQ **Vaqueiros** 98.24 337 eP Pdif 09 15 12.8 +0.5
PVAQ **Vaqueiros** 98.24 337 ePP PP 09 19 14.8 +4.0
PVAQ **Vaqueiros** 98.24 337 eLQ LQ 09 53 22.6
PVAQ eLR LR 09 56 48.8
comp=Z,3µm,20.0s
PBDV **Barranco-do-Ve** 98.45 337 eP Pdif 09 15 20.6 +7.4
PBDV **Barranco-do-Ve** 98.45 337 ePP PP 09 19 16.2 +3.7
RKT **Rikitea** 98.55 113 eSKSac SKSac 09 25 42.6 -8.0
comp=Z,801nm,28.8s
RKT **Rikitea** 98.55 113 ePS PS 09 28 02.7 -6.3
comp=Z,493nm,27.8s
RKT eSS SS 09 33 23.3 -4.1
comp=Z,603nm,26.8s
RKT **Rikitea** 98.55 113 eLR LR 09 46 59.7
comp=Z,2µm,23.0s,baz=307
MORF **Marmelete** 98.61 338 ePP PP 09 19 14.6 +1.0
MORF AMS AMS 09 59 28.2
comp=E,3µm,15.7s
PFVI **Vila Bisbo** 98.82 338 eP Pdif 09 15 21.4 +6.6
PFVI **Vila Bisbo** 98.82 338 ePP PP 09 19 21.3 +6.1
KMBO **Kilima Mbogo** 103.04 280 PFAKE 09 15 50.0 +16
KMBO LR LR
comp=Z,1µm,19.0s
BBSR **BB Station** 103.12 24 PFAKE 09 15 50.0 +16
BBSR LR LR
comp=Z,1µm,20.0s
PMOZ **Porto Moniz, M** 105.04 343 ePP PP 09 20 09.1 +7.0
PMOZ **Porto Moniz, M** 105.04 343 eLR LR 09 56 57.6
comp=Z,925nm,18.0s
TAM **Tamanrasset** 105.98 320 PFAKE 09 20 10.0
TAM LR LR
comp=Z,1µm,22.0s
ABPO **Ambohimpanom** 106.68 259 PFAKE 09 20 10.0
ABPO LR LR
comp=Z,716nm,22.0s
MBAR **Mbarara** 107.56 285 PFAKE 09 20 10.0
MBAR LR LR
comp=Z,1µm,21.0s
CASY **Casey** 109.26 193 PFAKE 09 20 20.0
CASY LR LR
comp=Z,99nm,22.0s
GTBY **Guantanamo Bay** 110.13 39 PFAKE 09 20 20.0
GTBY LR LR
comp=Z,1µm,19.0s
MTDJ **Mount Denham** 110.38 42 PFAKE 09 20 20.0
MTDJ LR LR
comp=Z,760nm,20.0s
GRTK **Grand Turk** 110.56 34 PFAKE 09 20 20.0
GRTK LR LR
comp=Z,1µm,20.0s
SDDR **Presa de Saban** 112.71 36 PFAKE 09 20 20.0
SDDR LR LR
comp=Z,2µm,20.0s
SJG **San Juan** 115.66 31 PFAKE 09 20 30.0 +12
SJG LR LR
comp=Z,773nm,20.0s
TORD **Torodi Ar. Bea** 116.05 318 PKP PKPdf 09 20 18.8 +0.5
comp=Z,0.6nm,0.7s,baz=8.5,slow=2.9,SNR=3.5
PAYG **Puerto Ayora** 117.38 65 PFAKE 09 20 30.0 +9.1
PAYG LR LR
comp=Z,1µm,20.0s
ANWB **Willy Bob** 117.70 27 PFAKE 09 20 30.0 +8.6
ANWB LR LR
comp=Z,552nm,19.0s
SBA **Scott Base** 118.77 175 PFAKE 09 20 30.0 +8.4
SBA LR LR
comp=Z,531nm,20.0s
LSZ **Lusaka** 118.92 274 PFAKE 09 20 40.0 +16
LSZ LR LR
comp=Z,1µm,20.0s
FDF **Fort de France** 120.64 28 PFAKE 09 20 40.0 +13
FDF LR LR
comp=Z,932nm,21.0s
MATP **Matopo** 121.74 269 PKP PKPdf 09 20 29.4 +0.2
comp=Z,0.8nm,0.4s,baz=27,slow=2.4,SNR=6.4
SDV **Santo Domingo** 121.79 41 PFAKE 09 20 40.0 +10
SDV LR LR
comp=Z,909nm,20.0s
BBGH **Gun Hill** 122.67 27 PFAKE 09 20 40.0 +8.9
BBGH LR LR
comp=Z,1µm,21.0s
GRGR **Grenville** 122.85 30 PFAKE 09 20 40.0 +8.6
GRGR LR LR
comp=Z,837nm,20.0s
SACV **Santiago Islan** 123.68 345 PFAKE 09 20 50.0 +17
SACV LR LR
comp=Z,470nm,21.0s
OTAV **Otavalo** 124.50 54 PFAKE 09 20 50.0 +15
OTAV LR LR
comp=Z,464nm,20.0s
TSUM **Tsumeb** 129.34 278 PFAKE 09 21 00.0 +16
TSUM LR LR
comp=Z,938nm,19.0s
QSPA **South Pole Qui** 130.06 180 ePKPdf PKPdf 09 20 44.0 +0.4
QSPA LR LR
comp=Z,800nm,22.0s
SUR **Sutherland** 133.82 261 PFAKE 09 21 00.0 +8.0
SUR LR LR
comp=Z,2µm,20.0s
NNA **Nana** 134.72 63 PFAKE 09 21 10.0 +16
NNA LR LR
comp=Z,574nm,19.0s
SAML **Samuel** 140.79 44 PFAKE 09 21 20.0 +15
SAML LR LR
comp=Z,988nm,20.0s
NVL **N'lazarevskaya** 140.94 203 ePKHKP PKPpre 09 20 56.6
ASCN **Ascension** 142.14 322 PFAKE 09 21 20.0 +12
ASCN LR LR
comp=Z,634nm,20.0s
LPAZ **La Paz** 143.63 58 PKP PKPdf 09 21 09.9 -1.0
comp=Z,0.8nm,0.5s,baz=24,slow=3.4,SNR=5.6
SHEL **Horse Pasture** 143.88 303 PFAKE 09 21 20.0 +9.4
SHEL LR LR
comp=Z,435nm,19.0s
SNAA **Sanae** 144.36 198 PKP PKPab 09 21 08.3 +0.3
SNAA **Sanae** 144.36 198 i PKIKP PKPbc 09 21 08.8 +0.5
SNAA **Sanae** 144.36 198 ePKPdf PKPab 09 21 08.0 0.0
RCBR **Riachuelo** 145.65 359 PFAKE 09 21 30.0 +16
RCBR LR LR
comp=Z,717nm,19.0s
VNA1 **Neumayer--Stat** 146.32 197 PKP PKPab 09 21 15.3 +0.1
LVC **Limon Verde** 147.48 67 ePKPdf PKPbc 09 21 19.3 -0.2
LVC LR LR
comp=Z,1µm,21.0s
LCO **Las Campanas** 149.91 79 ePKPbc PKPbc 09 21 25.6 0.0
LCO LR LR
comp=Z,1µm,20.0s
PMSA **Palmer Station** 150.82 156 PFAKE 09 21 30.0 -3.4
PMSA LR LR
comp=Z,802nm,19.0s
PLCA **Paso Flores** 154.25 102 PKPbc PKPbc 09 21 35.1 +0.3
comp=Z,2.7nm,0.9s,baz=350,slow=3.9,SNR=5.5
CPUP **Villa Florida** 157.80 57 PKPab PKPab 09 22 04.9 +0.6
comp=Z,1.4nm,0.6s,baz=312,slow=3.1,SNR=4.0
TRQA **Tornquist** 160.18 92 PFAKE 09 21 50.0 +16
TRQA LR LR
comp=Z,1µm,20.0s
SPB **Sao Paulo** 160.96 32 PFAKE 09 21 50.0 +15
SPB LR LR

	comp=Z,827nm,19.0s							
EFI	**East Falkland**	**161.32**	**135**	PFAKE		09 21 50.0	+15	
EFI				LR	LR			
	comp=Z,1μm,19.0s							
HOPE	**Hope Point**	**166.04**	**180**	PFAKE		09 21 50.0	+11	
HOPE				LR	LR			
	comp=Z,863nm,21.0s							

*ISCJB **28** 09:06:37.7±0.5, 39°.11N±0'.04×29°.08E±0'.03, h5km±6km, Error ellipse: s-maj=6.3km s-min=4.3km az=164.1*
*DDA **28** 09:06:37.3, 39°.17N×29°.08E, h7km, Md2.7*
*ISK **28** 09:06:37.3, 39°.12N×29°.06E, h5km, ML2.4*
*CSEM **28** 09:06:37.7±0.1, 39°.11N×29°.08E, h5km, ML2.4, Error ellipse: s-maj=3.0km s-min=2.2km az=132.0*

ISC 28 09:06:37.5±0.9, 39°.11N±0'.02×29°.09E±0'.02, h8km±7km, n24, σ0§61/42, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIMA	**Simav-Kutahya**	**0.08**	**254**	*e*PG	**Pg**	**09 06 39.3**	**-0.4**
SIMA	**Simav-Kutahya**	**0.08**	**254**	*e*Pg	**Pg**	**09 06 39.3**	**-0.4**
DEMI	**Demirci**	**0.29**	**258**	*i* P	**Pb**	**09 06 44.4**	**-0.7**
DEMI				*i* S	**Sg**	**09 06 48.3**	**+1.0**
DEMI	**Demirci**	**0.29**	**258**	P	**Pb**	**09 06 44.4**	**-0.7**
DEMI				S	**Sg**	**09 06 48.3**	**+1.0**
GDZ	**Gediz**	**0.31**	**93**	*i* P	**Pb**	**09 06 44.6**	**-0.7**
GDZ				*i* S	**Sg**	**09 06 49.1**	**+1.4**
GDZ	**Gediz**	**0.31**	**93**	P	**Pb**	**09 06 44.6**	**-0.7**
GDZ				S	**Sg**	**09 06 49.1**	**+1.4**
TVSB	**Tavsanli**	**0.45**	**40**	*e*PG	**Pg**	**09 06 46.4**	**+0.2**
TVSB	**Tavsanli**	**0.45**	**40**	*e*Pg	**Pg**	**09 06 46.4**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	**Pb**	**09 06 51.2**	**-0.4**
KULA				*e*SG	**Sb**	**09 07 01.0**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*Pg	**Pb**	**09 06 51.2**	**-0.4**
KULA				*e*Sg	**Sb**	**09 07 01.0**	**-0.2**
MANT	**Manisa**	**0.74**	**214**	*i* P	**Pg**	**09 06 51.7**	**-0.1**
MANT				*i* S	**Sg**	**09 07 01.4**	**-0.1**
MANT	**Manisa**	**0.74**	**214**	P	**Pg**	**09 06 51.7**	**-0.1**
MANT				S	**Sg**	**09 07 01.4**	**-0.1**
BALB	**Balikesir**	**1.08**	**300**	*e*PG	**Pb**	**09 06 58.0**	**-0.3**
BALB				*e*SG	**Sn**	**09 07 13.4**	**-0.6**
BALB	**Balikesir**	**1.08**	**300**	*e*Pg	**Pb**	**09 06 58.0**	**-0.3**
BALB				*e*Sg	**Sn**	**09 07 13.4**	**-0.6**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pn**	**09 07 02.1**	**+0.4**
KCTX				*e*SN	**Sn**	**09 07 20.2**	**+1.0**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pn**	**09 07 02.2**	**+0.4**
KCTX				*e*Sn	**Sn**	**09 07 20.2**	**+1.0**
BORA	**Eskisehir**	**1.31**	**53**	*i* P	**Pn**	**09 07 02.3**	**+0.1**
BORA				*i* S	**Sg**	**09 07 19.0**	**-0.6**
BORA	**Eskisehir**	**1.31**	**53**	P	**Pn**	**09 07 02.3**	**+0.1**
BORA				S	**Sg**	**09 07 19.0**	**-0.6**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*PN	**Pb**	**09 07 04.2**	**-0.2**
GONE				*e*SN	**Sg**	**09 07 24.0**	**+0.5**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*Pn	**Pb**	**09 07 04.2**	**-0.2**
GONE				*e*Sn	**Sg**	**09 07 24.0**	**+0.5**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pg**	**09 07 05.1**	**-0.5**
ARMT				*e*SN	**Sg**	**09 07 24.9**	**+0.2**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pg**	**09 07 05.1**	**-0.5**
ARMT				*e*Sn	**Sg**	**09 07 24.9**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**219**	*e*PN	**Pn**	**09 07 05.1**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**219**	*e*Pn	**Pn**	**09 07 05.1**	**+0.4**

BUC 28 09:06:56.4±0.9, 46°.06N×25°.79E, h13km±7km, MD1.9/2, 6C-2D, Error ellipse: s-maj=8.7km s-min=3.3km az=0.0, Romania

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DOPR	**Dopca**	**0.29**	**252**	↑*i* P	Pg	09 07 02.8	+0.4
DOPR				S	Sb	09 07 07.6	-0.6
DOPR	**Dopca**	**0.29**	**252**	↑*i* P	Pg	09 07 02.8	+0.4
DOPR				*i* S	Sb	09 07 07.6	-0.6
MLR	**Muntele Rosu**	**0.58**	**169**	↑*i* P	Pb	09 07 08.5	+0.1
MLR	**Muntele Rosu**	**0.58**	**169**	↑*i* P	Pb	09 07 08.5	+0.1
MLR				*i* S	Sb	09 07 18.1	+1.5
VRI	**Vrincioaia**	**0.68**	**106**	↑*i* P	Pb	09 07 10.6	+0.4
VRI	**Vrincioaia**	**0.68**	**106**	↑*i* P	Pb	09 07 10.6	+0.4
VRI				*i* S	Sb	09 07 20.2	+0.7
VOIR		**0.81**	**220**	↓*i* P	Pb	09 07 12.4	+0.1
VOIR		**0.81**	**220**	↓*i* P	Pb	09 07 12.4	+0.1
VOIR				*i* S	Sn	09 07 24.5	-0.9

*ISCJB **28** 09:11:32.3±0.3, 38°.33N±0'.02×21°.74E±0'.02, h7km±3km, Error ellipse: s-maj=3.3km s-min=3.1km az=138.4*
*CSEM **28** 09:11:32.3±0.1, 38°.33N×21°.74E, h5km, ML2.3, Error ellipse: s-maj=2.7km s-min=2.5km az=175.0*
*ATH **28** 09:11:32.4, 38°.32N×21°.75E, h10km±2km, ML2.3/8, Error ellipse: s-maj=2.1km s-min=0.7km az=105.0*
*THE **28** 09:11:32.6, 38°.32N×21°.74E, h4km±2km, ML2.4/6, Error ellipse: s-maj=2.0km s-min=0.6km az=121.0*

ISC 28 09:11:32.5±0.8, 38°.33N±0°.02×21°.75E±0°.02, h8km±5km, n86, σ0§69/116, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UPR	**University Cam**	**0.05**	**143**	P	**Pg**	**09 11 34.0**	**-0.2**
UPR				S	**Sg**	**09 11 35.4**	**0.0**
UPR	**University Cam**	**0.05**	**143**	P	**Pg**	**09 11 33.8**	**-0.4**
UPR				S	**Sg**	**09 11 35.4**	**0.0**
UPR	**University Cam**	**0.05**	**143**	P	**Pg**	**09 11 33.8**	**-0.4**
UPR				S	**Sg**	**09 11 35.4**	**0.0**
LAKA	**Lakka**	**0.20**	**115**	P	**Pg**	**09 11 36.5**	**-0.1**
LAKA				S	**Sg**	**09 11 39.7**	**+0.3**
LAKA	**Lakka**	**0.20**	**115**	P	**Pg**	**09 11 36.5**	**-0.1**
LAKA				S	**Sg**	**09 11 39.1**	**-0.3**
LAKA	**Lakka**	**0.20**	**115**	P	**Pg**	**09 11 36.2**	**-0.4**
LAKA				S	**Sg**	**09 11 39.1**	**-0.3**
LAKA				AML	AML	09 11 40.0	
	comp=N,1278μm,0.5s						
LAKA				AML	AML	09 11 40.1	
	comp=E,2913μm,0.3s						
SERG	**Sergoula**	**0.26**	**70**	P	**Pg**	**09 11 37.6**	**-0.1**
SERG				S	**Sg**	**09 11 41.9**	**+0.7**
SERG	**Sergoula**	**0.26**	**70**	P	**Pg**	**09 11 37.7**	**0.0**
SERG				S	**Sg**	**09 11 41.9**	**+0.7**
TRIZ	**Trizonia**	**0.26**	**81**	P	**Pg**	**09 11 37.8**	**+0.1**
ANX	**Ano Chora**	**0.30**	**27**	P	**Pg**	**09 11 38.4**	**-0.1**
ANX				S	**Sg**	**09 11 43.2**	**+0.7**
ANX	**Ano Chora**	**0.30**	**27**	P	**Pg**	**09 11 38.8**	**+0.3**
ANX				S	**Sg**	**09 11 43.2**	**+0.7**
ANX	**Ano Chora**	**0.30**	**27**	S	**Sg**	**09 11 43.4**	**+0.9**
ANX				AML	AML	09 11 44.8	
	comp=N,2018μm,0.2s						
ANX				AML	AML	09 11 45.7	
	comp=E,2242μm,0.2s						
KALE	**Kalithea**	**0.32**	**78**	P	**Pg**	**09 11 38.6**	**-0.2**
KALE				S	**Sg**	**09 11 43.7**	**+0.7**
KALE	**Kalithea**	**0.32**	**78**	P	**Pg**	**09 11 38.6**	**-0.2**
KALE				S	**Sg**	**09 11 43.7**	**+0.7**
KALE	**Kalithea**	**0.32**	**78**	P	**Pg**	**09 11 38.5**	**-0.2**
KALE				S	**Sg**	**09 11 43.7**	**+0.7**
KALE				AML	AML	09 11 44.7	
	comp=N,2069μm,0.2s						
KALE				AML	AML	09 11 45.7	
	comp=E,1194μm,0.3s						
AXS	**Araxos**	**0.32**	**246**	P	**Pg**	**09 11 38.4**	**-0.4**
AXS	**Araxos**	**0.32**	**246**	P	**Pg**	**09 11 38.6**	**-0.2**
AXS	**Araxos**	**0.32**	**246**	P	**Pg**	**09 11 38.6**	**-0.2**
PVO	**Paravola**	**0.34**	**329**	P	**Pg**	**09 11 39.0**	**-0.2**
PVO				S	**Sg**	**09 11 44.5**	**+0.8**
PVO	**Paravola**	**0.34**	**329**	P	**Pg**	**09 11 39.3**	**+0.1**
PVO				S	**Sg**	**09 11 44.5**	**+0.8**
PVO	**Paravola**	**0.34**	**329**	P	**Pg**	**09 11 39.3**	**+0.1**
RLS	**Riolos of Patr**	**0.35**	**220**	P	**Pg**	**09 11 39.0**	**-0.3**
RLS	**Riolos of Patr**	**0.35**	**220**	P	**Pg**	**09 11 39.0**	**-0.3**
RLS				S	**Sg**	**09 11 44.3**	**+0.4**
RLS	**Riolos of Patr**	**0.35**	**220**	S	**Sg**	**09 11 44.3**	**+0.4**
RLS				AML	AML	09 11 45.1	
	comp=E,907μm,0.4s						
RLS				AML	AML	09 11 46.7	
	comp=N,945μm,0.3s						
DRO	**Drossia**	**0.37**	**184**	P	**Pg**	**09 11 39.4**	**-0.4**
DRO				S	**Sg**	**09 11 45.5**	**+0.8**
DRO	**Drossia**	**0.37**	**184**	P	**Pg**	**09 11 39.4**	**-0.4**
DRO				S	**Sg**	**09 11 45.5**	**+0.8**
DRO	**Drossia**	**0.37**	**184**	P	**Pg**	**09 11 39.1**	**-0.8**
DRO				S	**Sg**	**09 11 45.9**	**+1.2**
DRO				AML	AML	09 11 45.9	
	comp=N,2444μm,0.3s						
DRO				AML	AML	09 11 46.0	
	comp=E,4578μm,0.2s						
KLV	**Kalavryta, Ach**	**0.42**	**131**	P	**Pg**	**09 11 40.2**	**-0.6**
KLV				S	**Sg**	**09 11 46.5**	**+0.1**
KLV	**Kalavryta, Ach**	**0.42**	**131**	P	**Pg**	**09 11 40.2**	**-0.6**
KLV				S	**Sg**	**09 11 46.5**	**+0.1**
KLV	**Kalavryta, Ach**	**0.42**	**131**	P	**Pg**	**09 11 39.9**	**-0.9**
KLV				S	**Sb**	**09 11 47.9**	**-1.0**
KLV				AML	AML	09 11 48.8	
	comp=E,569μm,0.3s						
KLV				AML	AML	09 11 50.4	
	comp=N,396μm,0.3s						
PDO	**Prodromos**	**0.52**	**302**	P	**Pg**	**09 11 41.8**	**-0.8**
PDO	**Prodromos**	**0.52**	**302**	P	**Pg**	**09 11 41.8**	**-0.8**
PDO	**Prodromos**	**0.52**	**302**	P	**Pg**	**09 11 41.0**	**-1.5**
EVR	**Evrytania**	**0.59**	**5**	P	**Pg**	**09 11 43.7**	**-0.3**
EVR				S	**Sg**	**09 11 52.8**	**+1.0**
EVR	**Evrytania**	**0.59**	**5**	P	**Pg**	**09 11 43.7**	**-0.3**
EVR				S	**Sg**	**09 11 52.8**	**+1.0**
EVR	**Evrytania**	**0.59**	**5**	P	**Pg**	**09 11 43.6**	**-0.4**
EVR				S	**Sb**	**09 11 53.8**	**0.0**
EVR				AML	AML	09 11 58.4	
	comp=N,459μm,0.4s						
DSF	**Desfina**	**0.62**	**82**	P	**Pg**	**09 11 43.6**	**-0.9**
DSF				S	**Sb**	**09 11 54.2**	**-0.4**
DSF	**Desfina**	**0.62**	**82**	P	**Pg**	**09 11 43.6**	**-0.9**
DSF				S	**Sb**	**09 11 54.2**	**-0.4**
DSF	**Desfina**	**0.62**	**82**	P	**Pg**	**09 11 43.3**	**-1.2**
THAL	**Thalero**	**0.78**	**111**	P	**Pb**	**09 11 49.1**	**+0.8**
THAL	**Thalero**	**0.78**	**111**	P	**Pb**	**09 11 49.1**	**+0.8**
KFL	**Anninata**	**0.79**	**254**	P	**Pg**	**09 11 47.8**	**+0.2**
KFL	**Anninata**	**0.79**	**254**	P	**Pg**	**09 11 47.8**	**+0.2**
KFL	**Anninata**	**0.79**	**254**	P	**Pb**	**09 11 48.2**	**-0.2**
AMT	**Artemida-Makis**	**0.79**	**182**	P	**Pg**	**09 11 47.7**	**-0.1**
AMT	**Artemida-Makis**	**0.79**	**182**	P	**Pg**	**09 11 47.7**	**-0.1**
AMT				S	**Sb**	**09 11 59.4**	**-0.1**
AMT	**Artemida-Makis**	**0.79**	**182**	P	**Pg**	**09 11 48.0**	**+0.3**
AMT				S	**Sb**	**09 11 59.4**	**-0.1**
AMT				AML	AML	09 12 08.1	
	comp=N,1071μm,0.4s						
AMT				AML	AML	09 12 08.2	
	comp=E,636μm,0.3s						
TRIP	**Tripoli**	**0.90**	**152**	P	**Pg**	**09 11 48.4**	**-1.4**
TRIP	**Tripoli**	**0.90**	**152**	P	**Pg**	**09 11 48.4**	**-1.4**
PROD	**Prodromos**	**0.91**	**94**	P	**Pg**	**09 11 49.2**	**-0.8**
PROD	**Prodromos**	**0.91**	**94**	P	**Pg**	**09 11 49.2**	**-0.8**
VLS	**Valsamata**	**0.92**	**261**	P	**Pg**	**09 11 50.0**	**-0.2**
VLS				S	**Sb**	**09 12 03.6**	**+0.4**
DSL	**Palaion Diasel**	**0.95**	**328**	P	**Pg**	**09 11 48.9**	**-2.0**
DSL	**Palaion Diasel**	**0.95**	**328**	P	**Pg**	**09 11 48.9**	**-2.0**
LKD2	**Lefkada island**	**0.97**	**299**	P	**Pg**	**09 11 50.3**	**-0.9**
LKD2	**Lefkada island**	**0.97**	**299**	P	**Pg**	**09 11 50.3**	**-0.9**
LKD2	**Lefkada island**	**0.97**	**299**	P	**Pg**	**09 11 49.6**	**-1.6**
ZKS	**Zakynthos**	**0.98**	**231**	P	**Pg**	**09 11 51.2**	**-0.2**
ZKS	**Zakynthos**	**0.98**	**231**	P	**Pg**	**09 11 51.2**	**-0.2**
LTK	**Loutraki**	**1.01**	**107**	P	**Pb**	**09 11 52.4**	**+0.1**
LTK	**Loutraki**	**1.01**	**107**	P	**Pb**	**09 11 52.4**	**+0.1**
LOUT	**Loutraki**	**1.02**	**109**	P	**Pg**	**09 11 51.9**	**-0.3**
LOUT	**Loutraki**	**1.02**	**109**	P	**Pg**	**09 11 51.9**	**-0.3**
LKR	**Lokris**	**1.04**	**71**	P	**Pg**	**09 11 51.5**	**-0.9**
LKR	**Lokris**	**1.04**	**71**	P	**Pg**	**09 11 52.3**	**-0.1**
LKR	**Lokris**	**1.04**	**71**	P	**Pg**	**09 11 52.3**	**-0.1**
ATAL	**Atalanti**	**1.06**	**69**	P	**Pg**	**09 11 51.8**	**-1.2**
ATAL	**Atalanti**	**1.06**	**69**	P	**Pg**	**09 11 51.8**	**-1.2**
ITM	**Ithomi**	**1.15**	**173**	P	**Pg**	**09 11 54.0**	**-0.6**
ITM	**Ithomi**	**1.15**	**173**	P	**Pg**	**09 11 54.0**	**-0.6**
ITM	**Ithomi**	**1.15**	**173**	P	**Pg**	**09 11 53.8**	**-0.8**
VIL2	**Platees**	**1.20**	**95**	P	**Pn**	**09 11 56.3**	**+0.5**
VILL	**Villia**	**1.24**	**97**	P	**Pg**	**09 11 55.8**	**-0.6**
VILL	**Villia**	**1.24**	**97**	P	**Pg**	**09 11 56.3**	**-0.1**
THL	**Klokotos Trika**	**1.25**	**10**	P	**Pn**	**09 11 57.3**	**+0.9**
PYL	**PYLOS**	**1.43**	**180**	P	**Pn**	**09 11 58.5**	**-0.3**
PYL	**PYLOS**	**1.43**	**180**	P	**Pn**	**09 11 58.5**	**-0.3**
DID	**Didima**	**1.44**	**124**	P	**Pg**	**09 12 00.5**	**+0.5**
DID	**Didima**	**1.44**	**124**	P	**Pg**	**09 12 00.5**	**+0.5**
XOR	**Xorichti**	**1.53**	**47**	P	**Pn**	**09 11 59.8**	**-0.5**
XOR	**Xorichti**	**1.53**	**47**	P	**Pn**	**09 11 59.8**	**-0.5**
SKIA	**Skiathos**	**1.58**	**57**	P	**Pn**	**09 11 59.8**	**-1.2**
SKIA	**Skiathos**	**1.58**	**57**	P	**Pn**	**09 11 59.8**	**-1.2**
VLI	**Veliai**	**1.86**	**149**	P	**Pn**	**09 12 05.7**	**+0.9**
VLI	**Veliai**	**1.86**	**149**	P	**Pn**	**09 12 05.2**	**+0.4**
VLI	**Veliai**	**1.86**	**149**	P	**Pn**	**09 12 05.2**	**+0.4**

*ATH **28** 09:18:09.9, 38°.31N×21°.79E, h18km, ML4.2/25, Error ellipse: s-maj=0.8km s-min=0.5km az=214.0*
*NEIC **28** 09:18:09.8, 38°.30N×21°.78E, h10km, mb4.5/8, ML4.3(ATH), ML4.3(THE), After ATH.*
NEIC Felt at Patrai and Rion.
*CSEM **28** 09:18:10.5±0.1, 38°.33N×21°.79E, h5km, mb4.7/17, Error ellipse: s-maj=2.3km s-min=1.6km az=33.0*
*IASPEI **28** 09:18:10.2±0.8, 38°.33N±0°.01×21°.76E±0°.01, h9km±4km, mb4.6/48, MS4.2/3, Error ellipse: s-maj=2.2km s-min=2.1km az=127.5, GT5 selection from ISC bulletin GT5 identified by Bond˙jr and McLaughlin (2009) selection criteria Bond˙jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **28** 09:18:10.1±0.2, 38°.35N±0°.01×21°.75E±0°.01, h12km±1km, mb4.5/48, MS4.2/3, Error ellipse: s-maj=1.9km s-min=1.4km az=36.4*
*THE **28** 09:18:10.3, 38°.32N×21°.78E, h0km±1km, ML4.3/15, Error ellipse: s-maj=1.5km s-min=0.5km az=239.0*
*PDG **28** 09:18:10.1±0.4, 38°.32N×21°.78E, h11km, ML4.3/13, Error ellipse: s-maj=0.4km s-min=0.4km az=0.0*
*MOS **28** 09:18:13.0±1.0, 38°.34N×21°.76E, h35km, mb4.8/11, Error ellipse: s-maj=6.4km s-min=3.4km az=79.9*
*IDC **28** 09:18:14.5±1.7, 38°.41N×21°.80E, h36km±13km, mb4.2/27, mb1 4.3/39, mb1mx4.2/61, mbtmp4.4/39, ML3.9/12, MS3.8/7, Ms1 3.8/7, ms1mx3.5/52, Error ellipse: s-maj=11.5km s-min=10.1km az=177.0*
*DDA **28** 09:18:47.2, 38°.70N×25°.51E, h8km, Ml3.5*

ISC 28 09:18:10.9±0.6, 38°.33N±0°.01×21°.79E±0°.01, h10km±3km, n724, σ1§51/862, mb4.6/48, MS4.2/3, 46C-28D, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UPR	**University Cam**	**0.04**	**179**	P	**Pg**	**09 18 11.8**	**-1.0**
UPR				S	**Sg**	**09 18 12.5**	**-1.6**
UPR	**University Cam**	**0.04**	**179**	P	**Pg**	**09 18 11.8**	**-1.0**
UPR				S	**Sg**	**09 18 13.3**	**-0.8**
UPR	**University Cam**	**0.04**	**179**	P	**Pg**	**09 18 10.8**	**-2.0**
UPR				S	**Sg**	**09 18 11.7**	**-2.4**
VVK	**Vomvokou**	**0.10**	**12**	P	**Pg**	**09 18 13.0**	**-0.5**
VVK				S	**Sg**	**09 18 14.8**	**-0.6**
LAKA	**Lakka**	**0.17**	**119**	P	**Pg**	**09 18 14.4**	**-0.2**
LAKA				S	**Sg**	**09 18 17.1**	**-0.1**
LAKA	**Lakka**	**0.17**	**119**	P	**Pg**	**09 18 14.2**	**-0.4**
LAKA				S	**Sg**	**09 18 17.1**	**-0.1**
LAKA	**Lakka**	**0.17**	**119**	P	**Pg**	**09 18 14.2**	**-0.4**
LAKA				S	**Sg**	**09 18 17.4**	**+0.2**
LAKA				AML	AML	09 18 17.9	
LAKA				AML	AML	09 18 18.1	
TRIZ	**Trizonia**	**0.23**	**80**	P	**Pg**	**09 18 15.5**	**-0.1**
TRIZ				S	**Sg**	**09 18 19.5**	**+0.7**
TRIZ	**Trizonia**	**0.23**	**80**	S	**Sg**	**09 18 21.1**	**+2.3**
SERG	**Sergoula**	**0.23**	**68**	P	**Pg**	**09 18 15.6**	**-0.1**
SERG				S	**Sg**	**09 18 19.5**	**+0.6**
SERG	**Sergoula**	**0.23**	**68**	P	**Pg**	**09 18 15.5**	**-0.1**
SERG				S	**Sg**	**09 18 19.5**	**+0.6**
KALE	**Kalithea**	**0.29**	**77**	P	**Pg**	**09 18 16.4**	**-0.3**
KALE	**Kalithea**	**0.29**	**77**	P	**Pg**	**09 18 16.4**	**-0.3**
KALE				S	**Sg**	**09 18 21.6**	**+1.0**
KALE	**Kalithea**	**0.29**	**77**	P	**Pg**	**09 18 16.4**	**-0.3**
KALE	**Kalithea**	**0.29**	**77**	P	**Pg**	**09 18 16.9**	**+0.2**
KALE				S	**Sb**	**09 18 23.3**	**+0.3**
KALE				AML	AML	09 18 27.5	
	comp=N,99740μm,0.3s						
KALE				AML	AML	09 18 27.5	
ANX	**Ano Chora**	**0.29**	**22**	P	**Pg**	**09 18 16.4**	**-0.3**
ANX				S	**Sg**	**09 18 19.7**	**-0.9**
ANX	**Ano Chora**	**0.29**	**22**	P	**Pg**	**09 18 16.4**	**-0.3**
ANX				S	**Sg**	**09 18 20.4**	**-0.2**
ANX	**Ano Chora**	**0.29**	**22**	S	**Sg**	**09 18 21.3**	**+0.7**
ANX				AML	AML	09 18 22.8	
ANX				AML	AML	09 18 25.3	
AXS	**Araxos**	**0.35**	**248**	P	**Pg**	**09 18 16.6**	**-1.1**
AXS	**Araxos**	**0.35**	**248**	P	**Pg**	**09 18 16.6**	**-1.1**
AXS				S	**Sg**	**09 18 21.4**	**-1.0**
AXS	**Araxos**	**0.35**	**248**	P	**Pg**	**09 18 16.3**	**-1.4**
AXS				S	**Sg**	**09 18 21.4**	**-1.0**
PVO	**Paravola**	**0.35**	**325**	P	**Pg**	**09 18 16.9**	**-1.0**
PVO				S	**Sg**	**09 18 22.7**	**+0.1**
PVO	**Paravola**	**0.35**	**325**	P	**Pg**	**09 18 17.0**	**-1.0**
PVO				S	**Sg**	**09 18 22.5**	**-0.1**
PVO	**Paravola**	**0.35**	**325**	P	**Pg**	**09 18 16.6**	**-1.4**
PVO				S	**Sg**	**09 18 24.1**	**+1.4**
RLS	**Riolos of Patr**	**0.37**	**223**	P	**Pg**	**09 18 17.1**	**-1.0**
RLS				S	**Sg**	**09 18 22.4**	**-0.6**
RLS	**Riolos of Patr**	**0.37**	**223**	P	**Pg**	**09 18 17.2**	**-0.9**
RLS				S	**Sg**	**09 18 22.4**	**-0.6**
RLS	**Riolos of Patr**	**0.37**	**223**	P	**Pg**	**09 18 17.1**	**-1.0**
RLS				S	**Sg**	**09 18 22.4**	**-0.6**
RLS	**Riolos of Patr**	**0.37**	**223**	S	**Sg**	**09 18 22.7**	**-0.3**
RLS				AML	AML	09 18 23.4	
RLS				AML	AML	09 18 24.8	
	comp=N,81185μm,0.4s						
DRO	**Drossia**	**0.38**	**189**	P	**Pg**	**09 18 17.3**	**-1.0**
DRO				S	**Sg**	**09 18 22.8**	**-0.5**
DRO	**Drossia**	**0.38**	**189**	P	**Pg**	**09 18 17.4**	**-0.9**
DRO				S	**Sg**	**09 18 22.8**	**-0.5**
DRO	**Drossia**	**0.38**	**189**	P	**Pg**	**09 18 17.4**	**-0.9**
DRO				S	**Sg**	**09 18 24.1**	**+0.8**
DRO				AML	AML	09 18 24.1	
DRO				AML	AML	09 18 27.1	
KLV	**Kalavryta, Ach**	**0.40**	**134**	P	**Pg**	**09 18 18.1**	**-0.7**
KLV				S	**Sg**	**09 18 24.1**	**0.0**
KLV	**Kalavryta, Ach**	**0.40**	**134**	P	**Pg**	**09 18 18.1**	**-0.7**
KLV				S	**Sg**	**09 18 24.1**	**0.0**
KLV	**Kalavryta, Ach**	**0.40**	**134**	P	**Pg**	**09 18 18.1**	**-0.7**
KLV				S	**Sg**	**09 18 24.1**	**0.0**
KLV	**Kalavryta, Ach**	**0.40**	**134**	P	**Pg**	**09 18 18.6**	**-0.2**
KLV				S	**Sg**	**09 18 24.5**	**+0.4**
KLV				AML	AML	09 18 29.5	
	comp=E,27434μm,0.5s						
KLV				AML	AML	09 18 31.3	
	comp=N,33849μm,0.5s						
PDO	**Prodromos**	**0.55**	**300**	P	**Pg**	**09 18 20.3**	**-1.2**
PDO	**Prodromos**	**0.55**	**300**	P	**Pg**	**09 18 20.3**	**-1.2**
PDO				S	**Sg**	**09 18 28.2**	**-0.5**
PDO	**Prodromos**	**0.55**	**300**	P	**Pg**	**09 18 19.8**	**-1.7**
PDO				S	**Sg**	**09 18 28.0**	**-0.7**
PDO				AML	AML	09 18 31.4	
	comp=N,70253μm,0.3s						
PDO				AML	AML	09 18 32.5	
	comp=E,53112μm,0.2s						
DSF	**Desfina**	**0.59**	**81**	P	**Pg**	**09 18 21.2**	**-1.1**
DSF	**Desfina**	**0.59**	**81**	P	**Pg**	**09 18 21.8**	**-0.6**
DSF	**Desfina**	**0.59**	**81**	P	**Pg**	**09 18 21.2**	**-1.1**
DSF	**Desfina**	**0.59**	**81**	P	**Pg**	**09 18 21.8**	**-0.6**
DSF				AML	AML	09 18 33.9	
	comp=E,26158μm,0.4s						
DSF				AML	AML	09 18 34.1	
	comp=N,37008μm,0.3s						
EVR	**Evrytania**	**0.59**	**2**	P	**Pg**	**09 18 21.2**	**-1.2**
EVR	**Evrytania**	**0.59**	**2**	P	**Pg**	**09 18 21.6**	**-0.7**
EVR	**Evrytania**	**0.59**	**2**	P	**Pg**	**09 18 21.2**	**-1.2**
EVR	**Evrytania**	**0.59**	**2**	P	**Pg**	**09 18 21.6**	**-0.7**
EVR				AML	AML	09 18 38.0	
	comp=N,42020μm,0.5s						
THAL	**Thalero**	**0.75**	**112**	P	**Pg**	**09 18 24.4**	**-0.9**
THAL	**Thalero**	**0.75**	**112**	P	**Pg**	**09 18 24.8**	**-0.5**
THAL				S	**Sg**	**09 18 33.3**	**-1.8**
THAL	**Thalero**	**0.75**	**112**	P	**Pg**	**09 18 24.8**	**-0.5**
THAL				S	**Sg**	**09 18 33.3**	**-1.8**
THAL				AML	AML	09 18 42.6	
	comp=E,60784μm,0.5s						
THAL				AML	AML	09 18 46.3	
	comp=N,62301μm,0.4s						
AMT	**Artemida-Makis**	**0.79**	**184**	P	**Pg**	**09 18 26.1**	**-0.1**
AMT				S	**Sb**	**09 18 37.8**	**+0.2**
AMT	**Artemida-Makis**	**0.79**	**184**	P	**Pg**	**09 18 25.9**	**-0.3**
AMT				S	**Sb**	**09 18 37.8**	**+0.2**
AMT	**Artemida-Makis**	**0.79**	**184**	P	**Pg**	**09 18 25.9**	**-0.3**
AMT				AML	AML	09 18 43.4	
	comp=N,73673μm,0.7s						
AMT				AML	AML	09 18 48.3	
	comp=E,63496μm,0.7s						
KFL	**Anninata**	**0.81**	**255**	P	**Pg**	**09 18 25.4**	**-1.2**
**K

VLX				S	Sg	09 18 44.5	-0.7		
VLX	**Vlachokerasia**	**1.06**	**154**	P	Pb	09 18 29.7	-1.7		
VLX				S	Sg	09 18 44.5	-0.7		
VLX	**Vlachokerasia**	**1.06**	**154**	P	Pb	09 18 29.7	-1.7		
VLX				S	Sg	09 18 44.5	-0.7		
VLX	**Vlachokerasia**	**1.06**	**154**	P	Pb	09 18 29.2	-2.2		
VLX				S	Sg	09 18 44.5	-0.7		
VLX				AML	AML	09 18 59.7			
	comp=E,37549µm,0.7s								
VLX				AML	AML	09 19 00.8			
	comp=N,23411µm,0.8s								
ITM	**Ithomi**	**1.15**	**174**	P	Pb	09 18 30.9	-1.9		
ITM	**Ithomi**	**1.15**	**174**	P	Pb	09 18 32.4	-0.4		
ITM				S	Sg	09 18 47.9	0.0		
ITM	**Ithomi**	**1.15**	**174**	P	Pb	09 18 30.9	-1.9		
ITM	**Ithomi**	**1.15**	**174**	P	Pb	09 18 32.4	-0.4		
ITM				S	Sg	09 18 47.9	0.0		
ITM				AML	AML	09 18 52.6			
	comp=N,21527µm,0.7s								
ITM				AML	AML	09 18 56.8			
	comp=E,29945µm,0.8s								
VIL2	**Platees**	**1.17**	**95**	P	Pg	09 18 35.0	+1.6		
VIL2				S	Sn	09 18 49.0	-0.4		
VIL2				AML	AML	09 18 55.3			
	comp=E,21435µm,0.6s								
VIL2				AML	AML	09 18 55.8			
	comp=N,25254µm,0.5s								
VILL	**Villia**	**1.21**	**97**	P	Pn	09 18 33.0	-1.0		
VILL	**Villia**	**1.21**	**97**	P	Pn	09 18 33.0	-1.0		
VILL				S	Sb	09 18 49.0	-0.7		
SMIA	**Simia**	**1.25**	**63**	P	Pn	09 18 33.8	-0.6		
SMIA	**Simia**	**1.25**	**63**	P	Pn	09 18 33.8	-0.6		
SMIA				S	Sg	09 18 50.9	-0.1		
SMIA	**Simia**	**1.25**	**63**	P	Pn	09 18 33.7	-0.6		
SMIA				S	Sg	09 18 50.9	-0.1		
THL	**Klokotos Trika**	**1.25**	**8**	P	Pn	09 18 34.4	0.0		
THL				S	Sg	09 18 51.7	+0.6		
THL	**Klokotos Trika**	**1.25**	**8**	P	Pn	09 18 34.4	0.0		
THL				S	Sg	09 18 51.7	+0.6		
FYTO	**Fytoko, Volos**	**1.41**	**39**	P	Pn	09 18 36.6	0.0		
FYTO	**Fytoko, Volos**	**1.41**	**39**	P	Pn	09 18 36.6	0.0		
FYTO	**Fytoko, Volos**	**1.41**	**39**	P	Pn	09 18 36.6	0.0		
DID	**Didima**	**1.41**	**125**	P	Pb	09 18 37.0	-0.3		
DID				S	Sg	09 18 56.2	0.0		
DID	**Didima**	**1.41**	**125**	P	Pn	09 18 36.7	0.0		
DID				S	Sb	09 18 55.4	0.0		
DID	**Didima**	**1.41**	**125**	P	Pb	09 18 37.0	-0.3		
DID				S	Sg	09 18 56.2	0.0		
DID	**Didima**	**1.41**	**125**	P	Pn	09 18 36.7	0.0		
DID				S	Sb	09 18 55.4	0.0		
PYL	**PYLOS**	**1.43**	**181**	P	Pn	09 18 35.6	-1.3		
PYL				S	Sg	09 18 58.2	+1.4		
PYL	**PYLOS**	**1.43**	**181**	P	Pn	09 18 36.4	-0.5		
PYL				S	Sb	09 18 56.1	+0.3		
PYL	**PYLOS**	**1.43**	**181**	P	Pn	09 18 35.6	-1.3		
PYL				S	Sg	09 18 58.2	+1.4		
PYL	**PYLOS**	**1.43**	**181**	P	Pn	09 18 36.4	-0.5		
PYL				S	Sb	09 18 56.1	+0.3		
PYL				AML	AML	09 19 06.4			
	comp=E,13684µm,1.0s								
PYL				AML	AML	09 19 15.0			
	comp=N,10187µm,1.0s								
NEO	**Neokhori**	**1.49**	**48**	P	Pn	09 18 37.7	-0.1		
NEO	**Neokhori**	**1.49**	**48**	P	Pn	09 18 37.7	-0.1		
NEO				S	Sn	09 18 57.2	-0.1		
NEO	**Neokhori**	**1.49**	**48**	P	Pn	09 18 37.7	-0.1		
NEO	**Neokhori**	**1.49**	**48**	P	Pn	09 18 37.6	-0.2		
NEO				S	Sn	09 18 57.2	-0.1		
NEO				AML	AML	09 19 04.7			
	comp=E,9866µm,0.5s								
NEO				AML	AML	09 19 08.3			
	comp=N,11212µm,0.4s								
XOR	**Xorichti**	**1.51**	**46**	P	Pn	09 18 37.8	-0.3		
XOR	**Xorichti**	**1.51**	**46**	P	Pn	09 18 38.1	0.0		
XOR	**Xorichti**	**1.51**	**46**	P	Pn	09 18 37.8	-0.3		
XOR	**Xorichti**	**1.51**	**46**	P	Pn	09 18 38.1	0.0		
SKIA	**Skiathos**	**1.56**	**57**	P	Pn	09 18 38.7	0.0		
SKIA	**Skiathos**	**1.56**	**57**	P	Pn	09 18 38.7	0.0		
SKIA				S	Sn	09 18 58.3	-0.7		
SKIA	**Skiathos**	**1.56**	**57**	P	Pn	09 18 38.6	-0.1		
SKIA				S	Sn	09 18 58.3	-0.7		
ATH	**Athens Observa**	**1.56**	**102**	P	Pn	09 18 38.6	-0.1		
ATH				S	Sg	09 19 00.3	-0.8		
ATH	**Athens Observa**	**1.56**	**102**	P	Pn	09 18 38.6	-0.1		
ATH	**Athens Observa**	**1.56**	**102**	P	Pn	09 18 38.6	-0.1		
ATH				S	Sg	09 19 00.3	-0.8		
ATH	**Athens Observa**	**1.56**	**102**	P	Pn	09 18 38.6	-0.1		
ATHU	**Athens Univers**	**1.62**	**102**	P	Pn	09 18 39.1	-0.4		
ATHU	**Athens Univers**	**1.62**	**102**	P	Pn	09 18 39.1	-0.4		
ATHU				S	Sb	09 19 00.6	-0.7		
ATHU	**Athens Univers**	**1.62**	**102**	P	Pn	09 18 39.1	-0.4		
ATHU	**Athens Univers**	**1.62**	**102**	P	Pn	09 18 38.9	-0.5		
ATHU				S	Sb	09 19 00.6	-0.7		
IGT	**Igoumenitsa**	**1.65**	**317**	P	Pb	09 18 41.1	-0.4		
IGT				S	Sb	09 19 03.2	+0.8		
IGT	**Igoumenitsa**	**1.65**	**317**	P	Pb	09 18 41.1	-0.4		
IGT	**Igoumenitsa**	**1.65**	**317**	P	Pb	09 18 41.1	-0.4		
IGT				S	Sb	09 19 03.2	+0.8		
IGT	**Igoumenitsa**	**1.65**	**317**	P	Pb	09 18 41.1	-0.4		
IGT	**Igoumenitsa**	**1.65**	**317**	P	Pb	09 18 42.0	+0.6		
VLY	**Voula,Athens**	**1.65**	**106**	P	Pn	09 18 39.7	-0.3		
VLY	**Voula,Athens**	**1.65**	**106**	P	Pn	09 18 40.0	0.0		
VLY	**Voula,Athens**	**1.65**	**106**	P	Pn	09 18 39.7	-0.3		
VLY	**Voula,Athens**	**1.65**	**106**	P	Pn	09 18 40.0	0.0		
VLY				AML	AML	09 19 09.1			
	comp=E,6688µm,0.5s								
VLY				AML	AML	09 19 12.2			
	comp=N,14321µm,0.8s								
KPRO	**Kipourio**	**1.66**	**349**	P	Pg	09 18 43.8	+1.0		
PTL	**Penteli**	**1.66**	**99**	P	Pn	09 18 40.1	0.0		
PTL	**Penteli**	**1.66**	**99**	P	Pn	09 18 40.1	0.0		
PTL				S	Sb	09 19 01.8	-0.8		
PTL	**Penteli**	**1.66**	**99**	P	Pn	09 18 40.1	0.0		
PTL	**Penteli**	**1.66**	**99**	P	Pn	09 18 40.4	+0.3		
PTL				S	Sb	09 19 01.8	-0.8		
PTL				AML	AML	09 19 04.7			
	comp=E,6275µm,0.5s								
PTL				AML	AML	09 19 16.0			
	comp=N,6504µm,0.7s								
EREA	**Eretria**	**1.69**	**86**	P	Pn	09 18 40.7	+0.2		
EREA	**Eretria**	**1.69**	**86**	P	Pn	09 18 40.7	+0.2		
EREA				S	Sb	09 19 02.8	-0.6		
EREA	**Eretria**	**1.69**	**86**	P	Pn	09 18 41.1	+0.6		
EREA				S	Sb	09 19 02.8	-0.6		
SGD	**Sagiada**	**1.76**	**317**	P	Pb	09 18 42.9	-0.4		
SGD	**Sagiada**	**1.76**	**317**	P	Pb	09 18 42.9	-0.4		
SGD	**Sagiada**	**1.76**	**317**	P	Pb	09 18 44.0	+0.6		
AOS	**Alonnisos**	**1.84**	**62**	P	Pn	09 18 41.9	-0.7		
AOS	**Alonnisos**	**1.84**	**62**	P	Pn	09 18 41.9	-0.7		
AOS	**Alonnisos**	**1.84**	**62**	P	Pn	09 18 41.9	-0.7		
AOS	**Alonnisos**	**1.84**	**62**	P	Pn	09 18 40.6	-1.9		
VLI	**Veliai**	**1.85**	**150**	P	Pn	09 18 42.4	-0.2		
VLI				S	Sb	09 19 08.6	+0.7		
VLI	**Veliai**	**1.85**	**150**	P	Pn	09 18 42.7	+0.1		
VLI				S	Sb	09 19 08.6	+0.7		
VLI	**Veliai**	**1.85**	**150**	P	Pn	09 18 42.4	-0.2		
VLI	**Veliai**	**1.85**	**150**	P	Pn	09 18 42.7	+0.1		
VLI				AML	AML	09 19 18.8			
	comp=N,11750µm,0.9s								
VLI				AML	AML	09 19 22.4			
	comp=E,12914µm,1.5s								
LIT	**Litokhoron**	**1.86**	**17**	P	Pn	09 18 43.2	+0.4		
LIT	**Litokhoron**	**1.86**	**17**	P	Pn	09 18 43.2	+0.4		
LIT	**Litokhoron**	**1.86**	**17**	P	Pn	09 18 43.2	+0.4		
LIT	**Litokhoron**	**1.86**	**17**	P	Pn	09 18 43.2	+0.4		
LIT	**Litokhoron**	**1.86**	**17**	P	Pn	09 18 43.5	+0.7		
PENT	**Pentalofos**	**1.93**	**345**	P	Pg	09 18 47.4	-0.6		
KZN	**Kozani**	**1.98**	**360**	P	Pn	09 18 45.6	+1.1		
KZN				S	Sb	09 19 11.7	-0.1		
KZN	**Kozani**	**1.98**	**360**	P	Pn	09 18 45.6	+1.1		
KZN				S	Sb	09 19 11.7	-0.1		
KZN	**Kozani**	**1.98**	**360**	P	Pn	09 18 45.6	+1.1		
KZN				S	Sn	09 19 09.9	+0.5		
KZN	**Kozani**	**1.98**	**360**	P	Pn	09 18 45.6	+1.1		
KZN				S	Sb	09 19 11.7	-0.1		
KEK	**Kerkira**	**2.08**	**312**	P	Pn	09 18 46.8	+1.0		
KEK	**Kerkira**	**2.08**	**312**	P	Pn	09 18 46.8	+1.0		
KEK	**Kerkira**	**2.08**	**312**	P	Pn	09 18 46.8	+1.0		
KARY	**Karystos**	**2.11**	**97**	P	Pn	09 18 46.4	+0.2		
KARY	**Karystos**	**2.11**	**97**	P	Pn	09 18 46.4	+0.2		
KARY	**Karystos**	**2.11**	**97**	P	Pn	09 18 46.6	+0.4		
PAIG	**Paliouri**	**2.17**	**42**	P	Pn	09 18 46.5	-0.6		
PAIG	**Paliouri**	**2.17**	**42**	P	Pn	09 18 46.5	-0.6		
PAIG	**Paliouri**	**2.17**	**42**	P	Pn	09 18 46.5	-0.6		
PAIG	**Paliouri**	**2.17**	**42**	P	Pn	09 18 46.5	-0.6		
PAIG	**Paliouri**	**2.17**	**42**	P	Pn	09 18 45.7	-1.4		
SKY	**Skiros Island**	**2.23**	**75**	P	Pn	09 18 47.2	-0.8		
SKY	**Skiros Island**	**2.23**	**75**	P	Pn	09 18 47.2	-0.8		
KYTH	**Kithira**	**2.29**	**154**	P	Pb	09 18 51.1	-1.2		
KYTH	**Kithira**	**2.29**	**154**	P	Pb	09 18 51.1	-1.2		
PLG	**Polygyros**	**2.42**	**32**	P	Pn	09 18 50.6	+0.1		
PLG	**Polygyros**	**2.42**	**32**	P	Pn	09 18 50.6	+0.1		
PLG	**Polygyros**	**2.42**	**32**	P	Pn	09 18 50.6	+0.1		
PLG	**Polygyros**	**2.42**	**32**	P	Pn	09 18 50.6	+0.1		
PLG	**Polygyros**	**2.42**	**32**	P	Pn	09 18 50.0	-0.5		
FNA	**Florina**	**2.48**	**353**	P	Pb	09 18 55.1	-0.4		
THE	**Thessaloniki**	**2.48**	**21**	P	Pn	09 18 51.5	+0.2		
THE	**Thessaloniki**	**2.48**	**21**	P	Pn	09 18 51.5	+0.2		
THE	**Thessaloniki**	**2.48**	**21**	P	Pn	09 18 51.5	+0.2		
THE	**Thessaloniki**	**2.48**	**21**	P	Pn	09 18 51.5	+0.2		
THE	**Thessaloniki**	**2.48**	**21**	P	Pn	09 18 51.1	-0.2		
HORT	**Hortiatis**	**2.49**	**24**	P	Pn	09 18 51.6	+0.1		
HORT	**Hortiatis**	**2.49**	**24**	P	Pn	09 18 51.6	+0.1		
HORT	**Hortiatis**	**2.49**	**24**	P	Pn	09 18 51.6	+0.1		
HORT	**Hortiatis**	**2.49**	**24**	P	Pn	09 18 50.5	-1.0		
OUR	**Ouranopolis**	**2.63**	**40**	P	Pn	09 18 53.2	-0.2		
OUR	**Ouranopolis**	**2.63**	**40**	P	Pn	09 18 53.2	-0.2		
OUR	**Ouranopolis**	**2.63**	**40**	P	Pn	09 18 53.2	-0.2		
OUR	**Ouranopolis**	**2.63**	**40**	P	Pn	09 18 53.2	-0.2		
OUR	**Ouranopolis**	**2.63**	**40**	P	Pn	09 18 52.8	-0.6		
MHLO	**Agia Marina, M**	**2.65**	**127**	P	Pn	09 18 54.7	+1.1		
MHLO	**Agia Marina, M**	**2.65**	**127**	P	Pn	09 18 54.7	+1.1		
MHLO	**Agia Marina, M**	**2.65**	**127**	P	Pn	09 18 55.1	+1.5		
GRG	**Griva**	**2.67**	**10**	P	Pn	09 18 54.9	+0.9		
GRG	**Griva**	**2.67**	**10**	P	Pn	09 18 54.9	+0.9		
GRG	**Griva**	**2.67**	**10**	P	Pn	09 18 54.9	+0.9		
GRG	**Griva**	**2.67**	**10**	P	Pn	09 18 54.9	+0.9		
ANKY	**Antikythira Is**	**2.74**	**153**	P	Pn	09 18 56.5	+1.6		
ANKY	**Antikythira Is**	**2.74**	**153**	P	Pn	09 18 56.5	+1.6		
SOH	**Sokhos**	**2.77**	**25**	P	Pn	09 18 56.5	+1.1		
SOH	**Sokhos**	**2.77**	**25**	P	Pn	09 18 56.5	+1.1		
SOH	**Sokhos**	**2.77**	**25**	P	Pn	09 18 56.5	+1.1		
SOH	**Sokhos**	**2.77**	**25**	P	Pn	09 18 56.5	+1.1		
SOH	**Sokhos**	**2.77**	**25**	P	Pn	09 18 56.5	+1.1		
OHR	**Ohrid**	**2.88**	**345**	*e*Pn	Pb	09 19 00.0	-2.5		
OHR				*e*Sn	Sb	09 19 36.9	-0.9		
OHR	**Ohrid**	**2.88**	**345**	*e*Pn	Pb	09 19 00.0	-2.5		
OHR				*e*Sn	Sb	09 19 36.9	-0.9		
KNT	**Kendrikon**	**2.96**	**17**	P	Pn	09 18 59.0	+1.1		
KNT	**Kendrikon**	**2.96**	**17**	P	Pn	09 18 59.0	+1.1		
VAY	**Valandovo**	**3.05**	**11**	*e*Pn	Pn	09 18 59.0	-0.3		
VAY				*e*Sn	Sn	09 19 33.3	-2.5		
VAY	**Valandovo**	**3.05**	**11**	*e*Pn	Pn	09 18 58.9	-0.3		
VAY				*e*Sn	Sn	09 19 33.3	-2.5		
LIA	**Limnos Island**	**3.08**	**58**	P	Pn	09 18 59.1	-0.4		
LIA	**Limnos Island**	**3.08**	**58**	P	Pn	09 18 59.1	-0.4		
LIA	**Limnos Island**	**3.08**	**58**	P	Pn	09 18 59.1	-0.4		
APE	**Apeiranthos**	**3.23**	**112**	⇑*i*P	Pn	09 19 02.1	+0.5		
APE	**Apeiranthos**	**3.23**	**112**	*ce*P	Pn	09 19 02.5	+0.9		
APE	**Apeiranthos**	**3.23**	**112**	P	Pn	09 19 01.5	-0.1		
APE				S	Sn	09 19 40.4	+0.3		
APE	**Apeiranthos**	**3.23**	**112**	P	Pn	09 19 01.5	-0.1		
APE				S	Sn	09 19 40.4	+0.3		
APE				AML	AML	09 19 49.2			
	comp=E,698µm,0.7s								
APE				AML	AML	09 19 50.0			
	comp=N,887µm,0.7s								
SIGR	**SIGRI**	**3.30**	**73**	P	Pn	09 19 01.8	-0.8		
SIGR	**SIGRI**	**3.30**	**73**	P	Pn	09 19 01.8	-0.8		
CHOS	**Chios island**	**3.36**	**88**	P	Pn	09 19 04.4	+0.9		
CHOS	**Chios island**	**3.36**	**88**	P	Pn	09 19 04.4	+0.9		
IMMV	**Iera Moni Meta**	**3.36**	**148**	P	Pn	09 19 03.8	+0.4		
IMMV	**Iera Moni Meta**	**3.36**	**148**	P	Pn	09 19 03.8	+0.4		
TIR	**Tirane**	**3.36**	**335**	*e*P	Pn	09 19 04.8	+1.4		
TIR	**Tirane**	**3.36**	**335**	*e*Pn	Pn	09 19 04.8	+1.4		
TIR	**Tirane**	**3.36**	**335**	*e*Pn	Pn	09 19 04.8	+1.4		
KAVA	**Kavala**	**3.40**	**37**	P	Pn	09 19 01.6	-2.4		
KAVA	**Kavala**	**3.40**	**37**	P	Pn	09 19 01.6	-2.4		
NVR	**Nevrokopi**	**3.42**	**27**	P	Pn	09 19 05.5	+1.2		
VAM	**Vamos**	**3.50**	**146**	P	Pn	09 19 06.4	+1.1		
VAM				S	Sn	09 19 49.1	+2.3		
SANT	**Santorini**	**3.52**	**123**	*e*Pn	Pn	09 19 07.0	+1.3		
SANT	**Santorini**	**3.52**	**123**	*e*Pn	Pn	09 19 07.0	+1.3		
SMTH	**Samothraki Isl**	**3.61**	**52**	P	Pn	09 19 05.2	-1.6		
SMTH	**Samothraki Isl**	**3.61**	**52**	P	Pn	09 19 05.2	-1.6		
PRK	**Paraskevi**	**3.62**	**74**	P	Pn	09 19 06.6	-0.5		
PRK	**Paraskevi**	**3.62**	**74**	P	Pn	09 19 06.6	-0.5		
BOZC	**Bozcaada**	**3.65**	**64**	*i* P	Pn	09 19 06.8	-0.6		
SKO	**Skopje**	**3.65**	**356**	*e*Pn	Pn	09 19 06.0	-1.5		
SKO				*e*Sn	Sn	09 19 53.1	+2.4		
SKO	**Skopje**	**3.65**	**356**	*e*Pn	Pn	09 19 06.0	-1.5		
SKO				*e*Sn	Sn	09 19 53.0	+2.4		
GADA	**Gvkgeada**	**3.70**	**58**	*e*PN	Pn	09 19 08.0	-0.1		
GADA	**Gvkgeada**	**3.70**	**58**	*e*Pn	Pn	09 19 08.0	-0.1		
URLA	**Izmir**	**3.78**	**88**	*i* P	Pn	09 19 10.6	+1.4		
URLA	**Izmir**	**3.78**	**88**	P	Pn	09 19 10.6	+1.4		
EZN	**Ezine**	**3.84**	**66**	*e*PN	Pn	09 19 09.6	-0.4		
EZN	**Ezine**	**3.84**	**66**	*e*Pn	Pn	09 19 09.6	-0.4		
IDI	**Anoyia**	**3.92**	**140**	Pn	Pn	09 19 12.7	+1.5		
	comp=N,4.9nm,0.3s,baz=346,slow=12,SNR=29								
IDI				Sn	Sn	09 19 57.4	0.0		
	comp=N,18nm,0.3s,baz=252,slow=20,SNR=5.2								
IDI				Lg	Lg	09 20 25.0			
	comp=N,8.7nm,0.3s,baz=212,slow=19,SNR=3.5								
IDI				LR	LR	09 21 04.1			
	comp=N,806nm,20.1s,baz=288,slow=42								
IDI	**Anoyia**	**3.92**	**140**	P	Pn	09 19 09.8	-1.4		
IDI	**Anoyia**	**3.92**	**140**	*e*Pn	Pn	09 19 13.2	+1.9		
IDI				Sn	Sn	09 19 57.4	0.0		
IDI	**Anoyia**	**3.92**	**140**	*e*Pn	Pn	09 19 13.2	+1.9		
IDI				Sn	Sn	09 19 57.4	0.0		
IDI				Lg	Lg	09 20 25.0			
IDI	**Anoyia**	**3.92**	**140**	P	Pn	09 19 09.8	-1.4		
TIP	**Timpagrande**	**4.02**	**284**	*e*Pn	Pn	09 19 13.0	+0.4		
TIP	**Timpagrande**	**4.02**	**284**	*e*Pn	Pn	09 19 13.0	+0.4		
TIP	**Timpagrande**	**4.02**	**284**	P	Pn	09 19 13.2	+0.7		
SMG	**Samos**	**4.04**	**97**	P	Pn	09 19 13.2	+0.5		
SMG	**Samos**	**4.04**	**97**	P	Pn	09 19 13.2	+0.5		
DKL	**Dikili**	**4.08**	**78**	*e*PN	Pn	09 19 12.2	-1.0		
DKL	**Dikili**	**4.08**	**78**	*e*Pn	Pn	09 19 12.2	-1.0		
TAR1	**Taranto**	**4.12**	**304**	*e*Pn	Pn	09 19 14.2	+0.3		
ULC	**Ulcinj**	**4.12**	**333**	⇑*i*Pn	Pn	09 19 14.9	+1.0		
ULC				*e*Sn	Sn	09 20 03.0	+0.8		
ULC	**Ulcinj**	**4.12**	**333**	⇑*i*Pn	Pn	09 19 14.9	+1.0		
ULC				*e*Sn	Sn	09 20 03.0	+0.8		
ENEZ	**Enez**	**4.15**	**53**	*e*PN	Pn	09 19 16.4	+2.1		
ENEZ	**Enez**	**4.15**	**53**	*e*Pn	Pn	09 19 16.4	+2.2		
ALN	**Alexandroupoli**	**4.17**	**51**	P	Pn	09 19 16.0	+1.4		
ALN	**Alexandroupoli**	**4.17**	**51**	P	Pn	09 19 16.1	+1.4		
GELI	**Tayfur-Gelibol**	**4.18**	**59**	*e*PN	Pn	09 19 14.9	+0.2		
GELI	**Tayfur-Gelibol**	**4.18**	**59**	*e*Pn	Pn	09 19 14.9	+0.2		
LAST	**Lasithi**	**4.33**	**136**	P	Pn	09 19 15.5	-1.4		
LAST	**Lasithi**	**4.33**	**136**	P	Pn	09 19 15.5	-1.4		
DRME	**Dracevica, Mon**	**4.34**	**334**	⇓*i*Pn	Pn	09 19 18.1	+1.2		
DRME				*e*Sn	Sn	09 20 08.9	+1.4		
DRME	**Dracevica, Mon**	**4.34**	**334**	⇓*i*Pn	Pn	09 19 18.1	+1.2		
DRME				*e*Sn	Sn	09 20 08.9	+1.4		
ERIK	**Erikli-Kesan**	**4.34**	**56**	*e*PN	Pn	09 19 18.4	+1.5		
ERIK	**Erikli-Kesan**	**4.34**	**56**	*e*Pn	Pn	09 19 18.4	+1.5		
LPK	**Lapseki**	**4.37**	**61**	*e*PN	Pn	09 19 18.0	+0.7		
LPK	**Lapseki**	**4.37**	**61**	*e*Pn	Pn	09 19 18.0	+0.7		
PVY	**Plav**	**4.49**	**342**	⇑*i*Pn	Pn	09 19 20.2	+1.2		
PVY				*e*Sn	Sn	09 20 11.9	+0.6		
PVY	**Plav**	**4.49**	**342**	⇑*i*Pn	Pn	09 19 20.2	+1.2		
PVY				*e*Sn	Sn	09 20 11.9	+0.6		
PDG	**Podgorica**	**4.53**	**336**	⇓*i*P	Pn	09 19 21.3	+1.8		
PDG	**Podgorica**	**4.53**	**336**	⇓*i*Pn	Pn	09 19 20.2	+0.7		
PDG	**Podgorica**	**4.53**	**336**	⇓*i*P	Pn	09 19 21.3	+1.8		
PDG				*e*Sn	Sn	09 20 13.3	+1.0		
TTG	**Podgorica**	**4.53**	**336**	⇓*i*Pn	Pn	09 19 20.2	+0.7		
TTG				*e*Sn	Sn	09 20 13.3	+1.0		
BUM	**Brajici-Budva**	**4.54**	**332**	⇑*i*Pn	Pn	09 19 19.7	-0.1		
BUM				*e*Sn	Sn	09 20 12.7	0.0		
BUM	**Brajici-Budva**	**4.54**	**332**	⇑*i*Pn	Pn	09 19 19.7	-0.1		
BUM				*e*Sn	Sn	09 20 12.7	0.0		
BODT	**Bodrum**	**4.56**	**104**	*e*PN	Pn	09 19 21.7	+1.7		
BODT	**Bodrum**	**4.56**	**104**	*e*Pn	Pn	09 19 21.7	+1.8		
CEL	**Celeste**	**4.63**	**271**	*e*Pn	Pn	09 19 21.4	+0.4		
CEL	**Celeste**	**4.63**	**271**	*e*Pn	Pn	09 19 21.4	+0.4		
BDRM	**Kayabasi**	**4.66**	**104**	*i* P	Pn	09 19 23.1	+1.8		
BDRM	**Kayabasi**	**4.66**	**104**	P	Pn	09 19 23.1	+1.8		
SG1	**Sgolgore (BA)**	**4.68**	**304**	*i* Pn	Pn	09 19 21.9	+0.3		
BAI	**Bari**	**4.69**	**308**	*e*Pn	Pn	09 19 22.2	+0.5		
KRBG	**Karabiga-Canak**	**4.75**	**62**	*e*PN	Pn	09 19 22.9	+0.5		
KRBG	**Karabiga-Canak**	**4.75**	**62**	*e*Pn	Pn	09 19 22.9	+0.5		
CEME	**Cevo**	**4.75**	**333**	⇑*i*Pn	Pn	09 19 22.7	+0.1		
CEME				*e*Sn	Sn	09 20 18.0	+0.2		
CEME	**Cevo**	**4.75**	**333**	⇑*i*Pn	Pn	09 19 22.7	+0.1		
CEME				*e*Sn	Sn	09 20 18.0	+0.2		
BEY	**Berane**	**4.76**	**343**	⇑*i*Pn	Pn	09 19 24.2	+1.4		
BEY				*e*Sn	Sn	09 20 18.6	+0.5		
IVA	**Berane**	**4.76**	**343**	⇑*i*Pn	Pn	09 19 24.2	+1.4		
IVA				*e*Sn	Sn	09 20 18.6	+0.5		
RKY	**Sarkoy-Tekirda**	**4.79**	**59**	*e*PN	Pn	09 19 23.6	+0.4		
RKY	**Sarkoy-Tekirda**	**4.79**	**59**	*e*Pn	Pn	09 19 23.6	+0.4		
HCY	**Herceg Novi**	**4.82**	**330**	⇓*i*Pn	Pn	09 19 23.3	-0.2		
HCY				*e*Sn	Sn	09 20 20.2	+0.7		
HCY	**Herceg Novi**	**4.82**	**330**	⇓*i*Pn	Pn	09 19 23.3	-0.2		
HCY				*e*Sn	Sn	09 20 20.2	+0.7		
AYDB	**Zeytinkoy-Aydi**	**4.83**	**93**	*e*PN	Pn	09 19 24.4	+0.6		
AYDB	**Zeytinkoy-Aydi**	**4.83**	**93**	*e*Pn	Pn	09 19 24.4	+0.6		
BALB	**Balikesir**	**4.93**	**73**	*e*PN	Pn	09 19 24.7	-0.3		
BALB	**Balikesir**	**4.93**	**73**	*e*Pn	Pn	09 19 24.7	-0.3		
CUC	**Castrocucco**	**4.93**	**292**	*e*Pn	Pn	09 19 26.7	+1.7		
CUC	**Castrocucco**	**4.93**	**292**	*e*Pn	Pn	09 19 26.7	+1.7		
NKME	**Niksic**	**4.93**	**335**	*e*Pn	Pn	09 19 25.5

PLOR	Plostina	8.34	24⇑	*i*P		Pn	09 20 15.3	+3.4	
PLOR	Plostina	8.34	24	⇑P		Pn	09 20 15.3	+3.4	
PLOR	Plostina	8.34	24	P		Pn	09 20 15.3	+3.4	
VRI	Vrincioaia	8.38	24⇓	*i*P		Pn	09 20 16.4	+4.0	
VRI	Vrincioaia	8.38	24	⇓P		Pn	09 20 16.4	+4.0	
VRI	Vrincioaia	8.38	24	P		Pn	09 20 16.4	+4.0	
DRGR		8.49	4⇑	*i*P		Pn	09 20 17.8	+3.9	
DRGR		8.49	4	⇑P		Pn	09 20 17.8	+3.9	
DRGR		8.49	4	P		Pn	09 20 17.8	+3.9	
BOJS	Bojanci	8.67	328	*i* Pn		Pn	09 20 16.0	-0.3	
BOJS				*i* Sn		Sn	09 21 50.4	-3.7	
BOJS	Bojanci	8.67	328	*i* Pn		Pn	09 20 16.0	-0.3	
BR231	Keskin MP Arra	8.68	77	*e*Pn		Pn	09 20 21.7	+5.1	
CRES	Cresnjev	8.85	330	*e*Pn		Pn	09 20 17.5	-1.3	
GBRS	Gornja Briga	8.88	326	*e*Pn		Pn	09 20 18.7	-0.5	
VISS	Visnje	9.08	328	*e*Pn		Pn	09 20 21.3	-0.7	
VISS				*i* Sn		Sn	09 22 00.1	-4.1	
VISS	Visnje	9.08	328	*e*Pn		Pn	09 20 21.3	-0.7	
CEY	Cerknica	9.21	326	*e*Pn		Pn	09 20 22.6	-1.1	
SKDS	Skadanscina	9.25	324	*e*Pn		Pn	09 20 22.8	-1.5	
SKDS				*e*Sn		Sn	09 22 02.2	-6.2	
SKDS	Skadanscina	9.25	324	*e*Pn		Pn	09 20 22.8	-1.5	
BR131	Keskin Array S	9.33	78	*e*Pn		Pn	09 20 27.7	+2.2	
BR131	Keskin Array S	9.33	78	*e*Pn		Pn	09 20 27.7	+2.2	
BRTR	Keskin Array B	9.33	78	Pn		Pn	09 20 27.9	+2.3	
	comp=Z,1.7nm,0.3s,baz=260,slow=12,SNR=33								
BRTR				LR		LR	09 23 53.9		
	comp=Z,239nm,19.1s,baz=225,slow=36								
BRTR	Keskin Array B	9.33	78	*i* P		Pn	09 20 27.8	+2.3	
BRTR				pmax		pmax			
	comp=Z,6.0nm,0.5s								
BRTR	Keskin Array B	9.33	78	*i* P		Pn	09 20 27.8	+2.3	
	comp=Z,6.0nm,0.5s								
LJU	Ljubljana	9.40	327	*e*Pn		Pn	09 20 24.8	-1.6	
TRI	Trieste	9.48	324	*e*P		Pn	09 20 26.3	-1.2	
TRI	Trieste	9.48	324	*e*Pn		Pn	09 20 26.3	-1.2	
TRI	Trieste	9.48	324	*e*Pn		Pn	09 20 26.3	-1.2	
JAVS	Javornik	9.49	325	*i* Pn		Pn	09 20 26.4	-1.2	
JAVS				*e*Sn		Sn	09 22 11.1	-3.3	
JAVS	Javornik	9.49	325	*i* Pn		Pn	09 20 26.4	-1.2	
BURAR	Bucovina Array	9.62	14	⇓*i*P		Pn	09 20 34.1	+4.7	
BURAR	Bucovina Array	9.62	14	⇓P		Pn	09 20 34.1	+4.7	
BUR08	Bucovina Ar. S	9.64	14	*e*Pn		Pn	09 20 29.5	-0.3	
BUR08	Bucovina Ar. S	9.64	14	*e*Pn		Pn	09 20 29.5	-0.3	
PERS	Pernice	9.65	331	*i* Pn		Pn	09 20 28.8	-1.1	
PERS				*i* Sn		Sn	09 22 13.5	-4.8	
PERS	Pernice	9.65	331	*i* Pn		Pn	09 20 28.8	-1.1	
PSZ	Piszkesteto	9.69	352	⇓*i*P		Pn	09 20 32.9	+2.6	
PSZ	Piszkesteto	9.69	352	⇓P		Pn	09 20 32.9	+2.6	
PSZ	Piszkesteto	9.69	352	*e*Pn		Pn	09 20 32.2	+1.9	
PSZ	Piszkesteto	9.69	352	⇓*i*P		Pn	09 20 32.9	+2.6	
PSZ	Piszkesteto	9.69	352	*e*Pn		Pn	09 20 32.2	+1.9	
SOKA	Soboth	9.72	331	*e*Pn		Pn	09 20 30.4	-0.4	
	comp=Z,11nm,0.5s								
SOKA				*i* Sn		Sn	09 22 15.4	-4.6	
	comp=Z,11nm,0.7s								
SOKA	Soboth	9.72	331	Pn		Pn	09 20 30.4	-0.4	
	comp=Z,11nm,0.5s								
OBKA	Obir	9.77	329	*e*Pn		Pn	09 20 31.5	+0.1	
	comp=Z,6.5nm,0.6s								
OBKA				*e*Sn		Sn	09 22 18.5	-2.7	
	comp=Z,24nm,0.6s								
OBKA	Obir	9.77	329	Pn		Pn	09 20 31.5	+0.1	
	comp=Z,6.5nm,0.6s								
ARSA	Arzberg	10.03	335	Pn		Pn	09 20 35.6	+0.6	
	comp=Z,3.8nm,0.6s								
ARSA	Arzberg	10.03	335	Pn		Pn	09 20 35.6	+0.6	
	comp=Z,3.8nm,0.6s								
KECS	Kecovo	10.20	355	*e*P		Pn	09 20 43.2	+6.0	
KECS				*e*			09 22 31.1		
KECS	Kecovo	10.20	355	*e*P		Pn	09 20 43.2	+6.0	
KECS				*e*Sn		Sn	09 22 31.1	-0.5	
KECS	Kecovo	10.20	355	*e*PN		Pn	09 20 43.1	+5.9	
KECS				*e*SN		Sn	09 22 31.1	-0.5	
KEST	Kesra	10.28	259	Pn		Pn	09 20 40.9	+2.4	
	comp=Z,0.3nm,0.3s,baz=219,slow=5.0,SNR=4.9								
UZH	Uzhgorod	10.31	2	*e*P		Pn	09 20 43.2	+4.5	
UZH	Uzhgorod	10.31	2	*e*P		Pn	09 20 43.2	+4.5	
VYHS	Vyhne	10.39	349	*e*P		Pn	09 22 42.2	+2.3	
VYHS				*e*			09 22 34.6		
VYHS	Vyhne	10.39	349	*e*Pn		Pn	09 20 42.2	+2.3	
VYHS				*e*Sn		Sn	09 22 34.6	-1.7	
VYHS	Vyhne	10.39	349	*e*PN		Pn	09 20 42.2	+2.3	
VYHS				*e*SN		Sn	09 22 34.6	-1.7	
KBA	Koelnbreinsper	10.72	327	*i* Pn		Pn	09 20 45.0	+0.4	
	comp=Z,5.4nm,0.5s								
KBA				*i* Sn		Sn	09 22 40.7	-4.0	
	comp=Z,15nm,0.9s								
KBA	Koelnbreinsper	10.72	327	Pn		Pn	09 20 45.0	+0.4	
	comp=Z,5.4nm,0.5s								
LANS	Liptovska Anna	10.95	352	*e*P		Pn	09 20 53.2	+5.6	
LANS	Liptovska Anna	10.95	352	*e*P		Pn	09 20 53.2	+5.6	
LANS	Liptovska Anna	10.95	352	*e*PN		Pn	09 20 53.1	+5.5	
MOA	Molln	10.99	332	*e*Pn		Pn	09 20 49.2	+1.1	
	comp=Z,3.8nm,0.4s								
MOA				*i* Sn		Sn	09 22 48.5	-2.5	
	comp=Z,8.6nm,0.7s								
MOA	Molln	10.99	332	Pn		Pn	09 20 49.2	+1.1	
	comp=Z,3.8nm,0.4s								
STHS	Stebnicka Huta	11.10	358	*e*P		Pn	09 20 49.9	+0.4	
STHS				*e*			09 22 50.4		
STHS	Stebnicka Huta	11.10	358	*e*Pn		Pn	09 20 49.9	+0.4	
STHS				*e*S		Sn	09 22 50.4	-3.2	
STHS	Stebnicka Huta	11.10	358	*e*PN		Pn	09 20 49.9	+0.4	
STHS				*e*PG			09 21 41.6		
STHS				*e*SN		Sn	09 22 50.4	-3.2	
NIE	Niedzica	11.14	355	*e*P		Pn	09 20 57.7	+7.5	
NIE	Niedzica	11.14	355	*e*P		Pn	09 20 57.7	+7.5	
NIE	Niedzica	11.14	355	*e*P		Pn	09 20 57.7	+7.5	
VRAC	Vranov	11.60	343	Pn		Pn	09 20 57.6	+1.2	
	comp=Z,0.7nm,0.3s,baz=159,slow=14,SNR=3.1								
VRAC				LR		LR	09 26 23.4		
	comp=Z,876nm,18.0s,baz=186,slow=42								
OKC	Ostrava-Krasne	11.80	348	AMS		AMS	09 27 30.0		
	comp=Z,700nm,13.1s								
TREC	Trest	11.87	340	AMS		AMS	09 26 00.0		
	comp=Z,2µm,12.2s								
FETA	Feichten	11.89	320	*e*Pn		Pn	09 21 01.4	+0.8	
	comp=Z,8.3nm,0.8s								
FETA				*e*Sn		Sn	09 23 09.2	-4.2	
	comp=Z,7.7nm,0.7s								
FETA	Feichten	11.89	320	Pn		Pn	09 21 01.4	+0.8	
	comp=Z,8.3nm,0.8s								
MOTA	Moosalm	11.94	322	*i* Pn		Pn	09 21 01.0	-0.2	
	comp=Z,12nm,0.6s								
MOTA				*i* Sn		Sn	09 23 10.9	-3.6	
	comp=Z,9.7nm,0.6s								
MOTA	Moosalm	11.94	322	Pn		Pn	09 21 01.0	-0.2	
	comp=Z,12nm,0.6s								
OJC	Ojcow	11.98	354	*e*S		Sn	09 23 16.6	+1.4	
OJC	Ojcow	11.98	354	*e*S		Sn	09 23 16.6	+1.5	
OJC	Ojcow	11.98	354	*e*S		Sn	09 23 16.6	+1.5	
GERES	GERESS Array B	12.03	334	Pn		Pn	09 21 02.4	0.0	
	comp=Z,0.7nm,0.3s,baz=158,slow=14,SNR=7.0								
GERES				Sn		Sn	09 23 14.3	-2.4	
	comp=Z,0.3nm,0.3s,baz=158,slow=24,SNR=8.3								
GERES				LR		LR	09 26 39.3		
	comp=Z,2µm,19.2s,baz=162,slow=42								
DAVOX	Davos/Dischmat	12.17	318	Pn		Pn	09 21 05.2	+0.7	
	comp=Z,0.9nm,0.3s,baz=135,slow=13,SNR=6.7								
DAVOX				Sn		Sn	09 23 15.6	-4.7	
	comp=Z,0.5nm,0.3s,baz=336,slow=19,SNR=3.4								
RETA	Reutte	12.20	322	*i* Sn		Sn	09 23 17.9	-2.9	
	comp=Z,20nm,0.7s								
MMAI	Mount Meron Ar	12.27	111	Pn		Pn	09 21 05.1	-0.7	
	comp=Z,1.1nm,0.3s,baz=321,slow=11,SNR=4.6								
KHC	Kasperske Hory	12.31	334	*e*P		Pn	09 21 06.5	+0.3	
KHC				*ex*		x	09 21 17.2		
KHC				*ex*		x	09 21 45.6		
KHC				*e*S		Sn	09 23 20.6	-2.9	
KHC				AMS		AMS	09 26 30.0		
	comp=Z,2µm,13.1s								
KHC	Kasperske Hory	12.31	334	*e*P		Pn	09 21 06.5	+0.3	
KHC				*e*S		Sn	09 23 20.6	-2.9	
KHC				MLR		MLR			
	comp=Z,2µm,13.1s								
KHC	Kasperske Hory	12.31	334	P		Pn	09 21 06.5	+0.3	
KHC	Kasperske Hory	12.31	334	*e*Pn		Pn	09 21 06.8	+0.5	
KHC				*e*S		Sn	09 23 20.6	-2.9	
KHC	Kasperske Hory	12.31	334	*e*Pn		Pn	09 21 06.8	+0.5	
DAVA	Damuels	12.50	320	*i* Sn		Sn	09 23 28.3	0.0	
	comp=Z,8.9nm,0.5s								
DAVA	Damuels	12.50	320	Sn		Sn	09 23 28.3	0.0	
	comp=Z,8.9nm,0.5s								

GOPC	GO Pecny, Ondr	12.62	339	AMS		AMS	09 27 20.0		
	comp=Z,1µm,11.2s								
DPC	Dobruska-Polom	12.64	344	*e*P		Pn	09 21 12.6	+2.0	
DPC				*ex*		x	09 21 21.3		
DPC				AMS		AMS	09 27 20.0		
	comp=Z,900nm,15.9s								
DPC	Dobruska-Polom	12.64	344	*e*P		Pn	09 21 12.6	+2.0	
DPC				MLR		MLR			
	comp=Z,900nm,15.9s								
DPC	Dobruska-Polom	12.64	344	P		Pn	09 21 12.6	+2.0	
PRU	Pruhonice	12.76	338	AMS		AMS	09 26 40.0		
	comp=Z,1µm,16.3s								
UPC	Upice	12.85	343	AMS		AMS	09 27 30.0		
	comp=Z,1µm,11.4s								
PRA	Prague	12.86	338	AMS		AMS	09 26 40.0		
	comp=Z,2µm,13.4s								
PVCC	Panska Ves	13.24	340	AMS		AMS	09 27 00.0		
	comp=Z,1µm,12.4s								
SENIN	Lac Senin/Sane	13.38	312	*e*Pn		Pn	09 21 23.0	+2.1	
SENIN	Lac Senin/Sane	13.38	312	*e*Pn		Pn	09 21 23.0	+2.1	
SENIN				*e*Sn		Sn	09 23 43.4	-6.3	
KIEV	Kiev	13.44	21	⇑*i*P		Pn	09 21 23.0	+1.4	
KIEV				pmax		pmax			
	comp=Z,4.0nm,0.7s								
KIEV	Kiev	13.44	21	*i* P		Pn	09 21 23.0	+1.4	
	comp=Z,4.0nm,0.7s								
AKASG	Malin Array Be	13.45	21	Pn		Pn	09 21 22.2	+0.5	
	comp=Z,1.0nm,0.3s,baz=208,slow=12,SNR=2.1								
NKC	Novy Kostel	13.64	334	AMS		AMS	09 27 20.0		
	comp=Z,1µm,13.3s								
ASF	Jabal al Asfar	13.79	112	Pn		Pn	09 21 29.9	+3.4	
	comp=Z,0.2nm,0.3s,baz=63,slow=6.8,SNR=3.2								
ASF				Sn		Sn	09 23 57.5	-2.1	
	baz=332,slow=18,SNR=1.6								
EIL	Elat	13.91	124	Pn		Pn	09 21 29.5	+1.4	
	comp=Z,0.3nm,0.3s,baz=339,slow=18,SNR=4.9								
EIL				Sn		Sn	09 23 56.2	-6.4	
	comp=Z,0.4nm,0.3s,baz=319,slow=20,SNR=2.7								
CLL	Collm	14.38	337	*e*(P)		P	09 21 42.0	+0.5	
CLL				Lm		MLR	09 27 00.0		
	comp=N,1µm,18.3s								
CLL				Lm		MLR	09 27 00.0		
	comp=E,600nm,21.2s								
CLL				Lmax			09 27 00.0		
CLL	Collm	14.38	337	*e*P		P	09 21 42.0	+0.5	
CLL	Collm	14.38	337	*e*P		P	09 21 42.0	+0.5	
KLNR	Kaliningrad	16.32	357	*c i*P		P	09 22 01.9	-1.0	
KLNR				pmax		pmax			
	comp=Z,27nm,0.6s								
KLNR	Kaliningrad	16.32	357	*i* P		P	09 22 01.9	-1.0	
	comp=Z,27nm,0.6s								
NEY	Neytrino	16.59	66	*i* P		P	09 22 05.3	-0.9	
NEY				pmax		pmax			
	comp=Z,4.0nm,1.4s								
NEY	Neytrino	16.59	66	*i* P		P	09 22 05.3	-0.9	
	comp=Z,4.0nm,1.4s								
KIV	Kislovodsk	16.70	64	*e*P		P	09 22 07.9	+0.5	
KIV				pmax		pmax			
	comp=Z,11nm,0.9s								
KIV				MLR		MLR			
	comp=Z,158nm,12.0s								
KIV	Kislovodsk	16.70	64	*e*P		P	09 22 07.9	+0.5	
	comp=Z,158nm,12.0s								
KBZ	Khabaz	16.80	65	Pn		P	09 22 10.8	+2.4	
	comp=Z,0.2nm,0.3s,baz=270,slow=7.8,SNR=7.7								
GNI	Garni	17.87	77	*c i*P		P	09 22 22.4	+2.0	
GNI				pmax		pmax			
	comp=Z,105nm,2.0s								
GNI	Garni	17.87	77	*i* P		P	09 22 22.4	+2.0	
	comp=Z,105nm,2.0s								
OBN	Obninsk	19.54	26	⇑*e*P		Pn	09 22 40.0	+0.3	
OBN				*e*S		Sn	09 26 17.9	-1.0	
OBN				pmax		pmax			
	comp=Z,18nm,0.6s								
OBN				MLR		MLR			
	comp=Z,364nm,17.0s								
OBN	Obninsk	19.54	26	*e*P		Pn	09 22 40.0	+0.3	
	comp=Z,18nm,0.6s								
OBN				*e*S		Sn	09 26 17.9	-1.0	
	comp=Z,364nm,17.0s								
ES19	SONSECA Array	19.99	282	*e*P		Pn	09 22 45.0	-0.2	
ES19	SONSECA Array	19.99	282	*e*P		Pn	09 22 45.0	-0.2	
ESDC	Sonseca Array	20.04	282	P		P	09 22 44.9	+0.8	
	comp=Z,7.4nm,0.7s,baz=76,slow=11,SNR=19								
ESLA	Sonseca Array	20.04	282	*e*P		Pn	09 22 46.0	+0.2	
	comp=Z,24nm,1.3s								
ESLA	Sonseca Array	20.04	282	*e*P		Pn	09 22 46.0	+0.1	
	comp=Z,24nm,1.3s								
PAB	San Pablo	20.35	282	*e*P		Pn	09 22 49.4	-0.1	
PAB				pmax		pmax			
	comp=Z,17nm,1.2s								
PAB	San Pablo	20.35	282	*e*P		Pn	09 22 49.4	-0.1	
	comp=Z,17nm,1.2s								
PAB	San Pablo	20.35	282	*e*P		Pn	09 22 49.4	-0.1	
	comp=Z,17nm,1.2s								
MOS	Moscow	20.41	26	*e*P		P	09 22 47.3	-0.5	
MOS	Moscow	20.41	26	*e*P		P	09 22 47.3	-0.5	
VSU	Vasula	20.41	7	*c i*P		P	09 22 48.1	+0.3	
VSU	Vasula	20.41	7	*i* P		P	09 22 48.1	+0.3	
TAM	Tamanrasset	20.83	227	*e*P		Pn	09 22 56.2	+1.0	
TAM				pmax		pmax			
	comp=Z,13nm,1.2s								
TAM	Tamanrasset	20.83	227	*e*P		Pn	09 22 56.2	+1.0	
	comp=Z,13nm,1.2s								
TAM	Tamanrasset	20.83	227	*e*P		Pn	09 22 56.2	+1.0	
	comp=Z,13nm,1.2s								
CWF	Charnwood Fore	21.53	319	*e*P		P	09 23 01.5	+1.5	
	comp=Z,15nm,1.0s								
CWF	Charnwood Fore	21.53	319	*e*P		P	09 23 01.5	+1.5	
	comp=Z,15nm,1.0s								
PBRG	Braganca	22.06	288	*e*P		P	09 23 07.2	+1.3	
	comp=Z,26nm,1.4s								
PBRG	Braganca	22.06	288	*e*P		P	09 23 07.2	+1.3	
	comp=Z,26nm,1.4s								
MDT	Midelt	22.13	264	P		P	09 23 07.4	+0.6	
	comp=Z,2.0nm,0.7s,baz=76,slow=14,SNR=4.0								
HFS	Hagfors	22.43	349	P		P	09 23 07.6	-1.9	
	comp=Z,5.2nm,0.5s,baz=140,slow=11,SNR=38								
PMRV	Marv??o	22.70	282	*e*P		P	09 23 10.2	-2.5	
	comp=Z,20nm,2.5s								
KONO	Kongsberg	22.72	344	*e*P		P	09 23 12.9	+0.3	
KONO				pmax		pmax			
	comp=Z,18nm,1.1s								
KONO	Kongsberg	22.72	344	*e*P		P	09 23 12.9	+0.3	
	comp=Z,18nm,1.1s								
KONO	Kongsberg	22.72	344	*e*P		P	09 23 12.9	+0.3	
	comp=Z,18nm,1.1s								
PVIS	Viseu	22.97	285	*e*P		P	09 23 15.0	-0.6	
	comp=Z,37nm,1.4s								
PVIS	Viseu	22.97	285	*e*P		P	09 23 15.0	-0.6	
	comp=Z,37nm,1.4s								
PGAV	Gavieira, Arco	23.20	289	*e*P		P	09 23 18.8	+0.8	
	comp=Z,31nm,1.3s								
PGAV	Gavieira, Arco	23.20	289	*e*P		P	09 23 18.8	+0.8	
	comp=Z,31nm,1.3s								
FINES	FINESS Array B	23.30	5	P		P	09 23 16.5	-2.1	
	comp=Z,4.2nm,0.5s,baz=165,slow=9.7,SNR=15								
FINES				PcP		PcP	09 27 05.0	-0.5	
	comp=Z,1.2nm,0.7s,baz=130,slow=3.0,SNR=5.1								
FIA1	FINESS Array S	23.30	5	*e*P		P	09 23 17.5	-1.1	
FIA1	FINESS Array S	23.30	5	*e*P		P	09 23 17.0	-1.6	
FIA1				*e*P		P	09 23 17.5	-1.1	
NC602	NORSAR Array S	23.34	347	*e*P		P	09 23 18.0	-1.0	
NC602	NORSAR Array S	23.34	347	*e*P		P	09 23 18.1	-1.0	
PBDV	Barranco-do-Ve	23.47	277	*e*P		P	09 23 22.3	+1.7	
	comp=Z,87nm,1.6s								
PBDV	Barranco-do-Ve	23.47	277	*e*P		P	09 23 22.3	+1.7	
	comp=Z,87nm,1.6s								
NAO01	NORSAR Array S	23.56	347	*e*P		P	09 23 20.6	-0.6	
NAO01	NORSAR Array S	23.56	347	*e*P		P	09 23 20.6	-0.6	
NC405	NORSAR Array S	23.67	348	*e*P		P	09 23 21.7	-0.6	
NC405	NORSAR Array S	23.67	348	*e*P		P	09 23 21.7	-0.6	
NB201	NORSAR Array S	23.68	347	*e*P		P	09 23 21.7	-0.7	
NB201	NORSAR Array S	23.68	347	*e*P		P	09 23 21.7	-0.7	
NB2	NORSAR Subarra	23.68	347	P		P	09 23 22.0	-0.5	
	comp=Z,12nm,0.8s,baz=153,slow=10								
NB2	NORSAR Subarra	23.68	347	P		P	09 23 22.0	-0.5	
	comp=Z,12nm,0.8s,SNR=8.3								
NOA	NORSAR Array B	23.68	347	P		P	09 23 20.8	-1.7	
	comp=Z,5.5nm,1.0s,baz=151,slow=9.2,SNR=34								
NBO00	NORSAR Array S	23.75	347	*e*P		P	09 23 22.5	-0.6	
NBO00	NORSAR Array S	23.75	347	*e*P		P	09 23 22.5	-0.6	
NBO02	NORSAR Array S	23.75	347	*e*P		P	09 23 23.3	+0.1	
NBO02	NORSAR Array S	23.75	347	*e*P		P	09 23 23.3	+0.1	
NC303	NORSAR Array S	23.83	347	*e*P		P	09 23 23.2	-0.7	
NC303	NORSAR Array S	23.83	347	*e*P		P	09 23 23.2	-0.7	

EKA	Eskdalemuir Ar	23.89	323	P		P	09 23 23.8	-0.7	
	comp=Z,13nm,0.8s,baz=124,slow=10,SNR=17								
EKA				LR		LR	09 34 11.8		
	comp=Z,398nm,21.2s,baz=240,slow=40								
ESK	Eskdalemuir	23.90	323	*e*P		P	09 23 25.1	+0.5	
ESK				pmax		pmax			
	comp=Z,16nm,0.8s								
ESK	Eskdalemuir	23.90	323	*e*P		P	09 23 25.1	+0.5	
	comp=Z,16nm,0.8s								
ESK	Eskdalemuir	23.90	323	*e*P		P	09 23 25.1	+0.5	
	comp=Z,16nm,0.8s								
NC204	NORSAR Array S	23.98	347	*e*P		P	09 23 25.0	-0.4	
NC204	NORSAR Array S	23.98	347	*e*P		P	09 23 25.0	-0.4	
KLMR	Klimovskoe	25.14	21	*e*P		P	09 23 34.1	-1.8	
KLMR				pmax		pmax			
	comp=Z,19nm,0.8s								
KLMR	Klimovskoe	25.14	21	*e*P		P	09 23 34.1	-1.8	
	comp=Z,19nm,0.8s								
AKTK	Aktyubinsk	28.30	53	P		P	09 24 03.5	-0.9	
AKTO	Aktyubinsk	28.30	53	P		P	09 24 03.5	-0.9	
	comp=Z,2.4nm,0.3s,baz=270,slow=7.0,SNR=16								
ABKAR	Akbulak array	29.34	56	*e*P		P	09 24 13.8	+0.1	
ABKAR	Akbulak array	29.34	56	*e*P		P	09 24 13.8	+0.1	
TORD	Torodi Ar. Bea	30.78	221	P		P	09 24 26.7	0.0	
	comp=Z,7.8nm,0.8s,baz=32,slow=9.3,SNR=26								
ARCES	ARCESS Array B	31.33	3	P		P	09 24 29.1	-2.0	
	comp=Z,3.1nm,0.5s,baz=187,slow=8.4,SNR=14								
BRVK	Borovoye	36.20	50	*ce*P		P	09 25 13.8	+0.3	
BRVK				pmax		pmax			
	comp=Z,23nm,1.0s								
BRVK	Borovoye	36.20	50	*e*P		P	09 25 13.8	+0.3	
	comp=Z,23nm,1.0s								
BVAR	Borovoye Array	36.26	50	P		P	09 25 14.0	-0.1	
	comp=Z,3.1nm,0.6s,baz=297,slow=6.3,SNR=12								
BVAR	Borovoye Array	36.26	50	P		P	09 25 14.0	-0.1	
BVAR	Borovoye Array	36.26	50	P		P	09 25 14.0	-0.1	
KKAR	Karatay Array	36.83	67	*e*P		P	09 25 19.6	+0.5	
KKAR	Karatay Array	36.83	67	*e*P		P	09 25 19.5	+0.5	
KKAR	Karatay Array	36.83	67	*e*P		P	09 25 19.6	+0.5	
DBIC	Dimbokro	39.68	224	P		P	09 25 44.0	+0.7	
	comp=Z,2.4nm,0.5s,baz=16,slow=12,SNR=4.6								
DBIC	Dimbokro	39.68	224	P		P	09 25 44.0	+0.7	
DBIC	Dimbokro	39.68	224	P		P	09 25 44.0	+0.7	
AAK	Ala-Archa	39.79	67	P		P	09 25 44.6	+0.4	
	comp=Z,12nm,1.0s,baz=241,slow=7.8,SNR=11								
TIC	Toumodi	39.80	224	*e*P		P	09 25 47.6	+3.3	
FRU	Bishkek	39.84	66	*e*P		P	09 25 45.0	+0.6	
FRU	Bishkek	39.84	66	*e*P		P	09 25 45.0	+0.6	
KIC	Kosan Boka	39.88	224	*e*P		P	09 25 44.5	-0.4	
	comp=Z,44nm,1.3s								
LIC	Lamto	40.15	224	*e*P		P	09 25 47.9	+0.7	
	comp=Z,55nm,1.2s								
KURK	Kurchatov	41.39	54	*e*P		P	09 25 57.1	0.0	
KURK				pmax		pmax			
	comp=Z,19nm,1.1s								
KURK	Kurchatov	41.39	54	*e*P		P	09 25 57.1	0.0	
	comp=Z,19n

RND	**Reindeer**	**78.33**	**356**	*e*P		**P**	**09 30 10.7**	**-0.3**	
RND	**Reindeer**	**78.33**	**356**	*e*P		**P**	**09 30 10.7**	**-0.3**	
RND	**Reindeer**	**78.33**	**356**	*e*P		**P**	**09 30 10.7**	**-0.3**	
KSAR	**Wonju Array Be**	**78.45**	**51**	P		**P**	**09 30 11.0**	**-1.0**	
KSAR	**Wonju Array Be**	**78.45**	**51**	P		**P**	**09 30 11.0**	**-1.0**	
KSAR	**Wonju Array Be**	**78.45**	**51**	P		**P**	**09 30 10.9**	**-1.0**	
KSRS	**Korea Array**	**78.46**	**51**	P		**P**	**09 30 10.9**	**-1.1**	
	comp=Z,3.9nm,0.7s,baz=311,slow=4.9,SNR=13								
KSRS	**Korea Array**	**78.46**	**51**	P		**P**	**09 30 11.0**	**-1.1**	
KSRS				pmax		pmax			
	comp=Z,4.0nm,0.7s								
KSRS	**Korea Array**	**78.46**	**51**	P		**P**	**09 30 11.0**	**-1.1**	
	comp=Z,4.0nm,0.7s								
BLO	**Bloomington**	**78.67**	**311**	*e*P		**P**	**09 30 14.1**	**+0.9**	
BLO	**Bloomington**	**78.67**	**311**	*e*P		**P**	**09 30 14.1**	**+0.9**	
BLO	**Bloomington**	**78.67**	**311**	*e*P		**P**	**09 30 14.1**	**+0.9**	
CPCT	**Cooper Cave**	**79.85**	**307**	*e*P		**P**	**09 30 21.1**	**+1.4**	
CPCT	**Cooper Cave**	**79.85**	**307**	*e*P		**P**	**09 30 21.1**	**+1.4**	
YSS	**Yuzh-Sakhalins**	**80.06**	**37**⇑	*e*P		**P**	**09 30 20.7**	**+0.1**	
YSS				pmax		pmax			
	comp=Z,20nm,0.5s								
YSS	**Yuzh-Sakhalins**	**80.06**	**37**	*e*P		**P**	**09 30 20.7**	**+0.1**	
	comp=Z,20nm,0.5s								
ECSD	**EROS Data Cent**	**81.13**	**320**	*e*P		**P**	**09 30 27.2**	**+0.8**	
ECSD	**EROS Data Cent**	**81.13**	**320**	*e*P		**P**	**09 30 27.2**	**+0.8**	
WVT	**Waverly**	**81.44**	**310**	*e*P		**P**	**09 30 28.5**	**+0.3**	
WVT	**Waverly**	**81.44**	**310**	*e*P		**P**	**09 30 28.5**	**+0.3**	
WVT	**Waverly**	**81.44**	**310**	*e*P		**P**	**09 30 28.5**	**+0.3**	
LRAL	**Lakeview Retre**	**82.97**	**307**	*e*P		**P**	**09 30 37.5**	**+1.2**	
LRAL	**Lakeview Retre**	**82.97**	**307**	*e*P		**P**	**09 30 37.5**	**+1.2**	
KDAK	**Kodiak Island**	**84.14**	**357**	*i* P		**P**	**09 30 42.6**	**+0.8**	
KDAK	**Kodiak Island**	**84.14**	**357**	*i* P		**P**	**09 30 42.6**	**+0.8**	
PDAR	**Pinedale Array**	**87.98**	**326**	P		**P**	**09 31 00.7**	**-0.7**	
	comp=Z,0.7nm,0.7s,baz=56,slow=5.6,SNR=7.9								
TXAR	**Lajitas Array**	**95.59**	**314**	P		**P**	**09 31 37.0**	**+0.3**	
	comp=Z,1.2nm,0.9s,baz=66,slow=3.4,SNR=9.5								
WRA	**Warramunga Arr**	**119.55**	**93**	PKP		**PKPdf**	**09 36 59.4**	**-1.8**	
	comp=Z,0.5nm,0.8s,baz=322,slow=2.0,SNR=4.9								
ASAR	**Alice Springs**	**121.20**	**97**	PKP		**PKPdf**	**09 37 02.5**	**-1.8**	
	comp=Z,0.6nm,0.8s,baz=330,slow=2.0,SNR=6.3								
DZM	**Mont Dzumac**	**145.67**	**72**	PKPbc		**PKPab**	**09 37 50.8**	**+0.2**	
	comp=Z,6.0nm,0.6s,baz=253,slow=11,SNR=7.1								

*IDC **28** 09:29:38.5±0.8, 35°.24N×141°.23E, h0km, mb3.8/11, mb1 3.9/14, mb1mx3.7/61, mbtmp3.8/14, ML3.6/2, Error ellipse: s-maj=23.9km s-min=15.8km az=82.0*
*ISCJB **28** 09:29:41.4±0.7, 35°.27N±0°.04×141°.28E±0°.08, h33km, mb3.8/11, Error ellipse: s-maj=9.8km s-min=5.9km az=171.6*
*JMA **28** 09:29:41.7±0.1, 35°.28N×141°.21E, h33km±2km, M3.4*
ISC 28 09:29:43.4±0.8, 35°.25N±0°.04×141°.16E±0°.09, h33km, n28, σ1§10/25, mb3.8/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.51**	**331**	P	**Pb**	**09 29 52.2**	**-1.9**
CHOJ				*e*S	**Sb**	**09 29 59.8**	**-1.7**
BSO1	**Boso 1**	**0.62**	**194**	P	**Pb**	**09 29 54.2**	**-1.2**
BSO3	**Boso 3**	**0.70**	**230**	P	**Pn**	**09 29 55.7**	**-1.0**
KTR	**Katsuura**	**0.70**	**262**	P	**Pn**	**09 29 55.7**	**-1.2**
BSO4	**Boso 4**	**0.72**	**249**	P	**Pn**	**09 29 56.3**	**-0.9**
JCN	**Nagara**	**0.80**	**282**	P	**Pb**	**09 29 57.8**	**-1.1**
JYT	**Yasato**	**1.25**	**321**	P	**Pn**	**09 30 03.2**	**-1.3**
JHJ	**Hachijo jima 2**	**2.42**	**209**	Pn	**Pn**	**09 30 20.2**	**-0.3**
	42nm,0.3s,baz=230,slow=8.2,SNR=8.5						
JHJ				Sn	**Sn**	**09 30 49.9**	**+1.0**
	46nm,0.3s,baz=72,slow=24,SNR=5.6						
MJAR	**Matsushiro Arr**	**2.72**	**299**	Pn	**Pn**	**09 30 25.9**	**+1.2**
	6.5nm,0.3s,baz=293,slow=23,SNR=20						
MAT	**Matsushiro**	**2.72**	**299**	P	**Pn**	**09 30 26.3**	**+1.5**
MAT				*e*S	**Sn**	**09 30 58.2**	**+1.6**
USRK	**Ussuriysk Ar.**	**11.38**	**324**	Pn	**Pn**	**09 32 23.9**	**+0.4**
	0.1nm,0.3s,baz=149,slow=15,SNR=5.0						
H11N2	**WAKE ISLAND Hy**	**27.46**	**117**	T	T	10 04 04.7	
	baz=309,slow=75,SNR=34						
H11N1	**WAKE ISLAND Hy**	**27.47**	**118**	T	T	10 04 25.4	
	baz=309,slow=75,SNR=51						
H11N3	**WAKE ISLAND Hy**	**27.48**	**118**	T	T	10 04 06.4	
	baz=309,slow=75,SNR=54						
H11S1	**WAKE ISLAND Hy**	**28.11**	**120**	T	T	10 04 52.7	
	baz=312,slow=75,SNR=206						
H11S3	**WAKE ISLAND Hy**	**28.11**	**120**	T	T	10 05 12.0	
	baz=312,slow=75,SNR=172						
H11S2	**WAKE ISLAND Hy**	**28.13**	**120**	T	T	10 05 03.1	
	baz=312,slow=75,SNR=165						
SONM	**Songino Array**	**28.65**	**307**	P	**P**	**09 35 37.2**	**+0.2**
	0.4nm,0.5s,baz=100,slow=8.1,SNR=3.5						
ZALV	**Zalesovo Beam**	**42.98**	**314**	P	**P**	**09 37 39.4**	**+0.2**
	1.7nm,0.5s,baz=96,slow=5.7,SNR=7.3						
MKAR	**Makanchi Array**	**44.91**	**304**	P	**P**	**09 37 54.9**	**+0.1**
	1.2nm,0.8s,baz=84,slow=9.9,SNR=7.7						
KURBB	**Kurchatov Arra**	**46.95**	**309**	P	**P**	**09 38 10.7**	**-0.1**
	3.9nm,0.8s,baz=85,slow=8.0,SNR=23						
ILAR	**Eielson Array**	**51.11**	**32**	P	**P**	**09 38 41.7**	**-0.8**
	0.2nm,0.6s,baz=254,slow=6.5,SNR=4.1						
BVAR	**Borovoye Array**	**51.63**	**313**	P	**P**	**09 38 46.9**	**+0.3**
	0.6nm,0.4s,baz=95,slow=10,SNR=3.4						
WRA	**Warramunga Arr**	**55.27**	**188**	P	**P**	**09 39 12.9**	**-0.6**
	2.1nm,0.6s,baz=5.3,slow=7.8,SNR=19						
ASAR	**Alice Springs**	**59.00**	**188**	P	**P**	**09 39 40.2**	**+0.4**
	0.6nm,0.7s,baz=19,slow=11,SNR=8.9						
HFS	**Hagfors**	**75.62**	**336**	P	**P**	**09 41 25.3**	**+0.7**
	0.6nm,0.6s,baz=32,slow=9.4,SNR=3.2						
NOA	**NORSAR Array B**	**75.75**	**337**	P	**P**	**09 41 25.8**	**+0.3**
	0.8nm,0.8s,baz=43,slow=5.5,SNR=4.3						
TXAR	**Lajitas Array**	**91.37**	**52**	P	**P**	**09 42 48.0**	**+1.7**
	0.1nm,0.6s,baz=290,slow=2.6,SNR=3.1						

*ISCJB **28** 09:33:45.7±0.3, 40°.81N±0°.02×27°.76E±0°.03, h9km±3km, Error ellipse: s-maj=3.7km s-min=3.1km az=150.3*
*ISK **28** 09:33:45.6, 40°.80N×27°.74E, h12km, ML3.3*
*DDA **28** 09:33:45.2, 40°.84N×27°.73E, h33km, MI3.5*
*CSEM **28** 09:33:46.8±0.1, 40°.80N×27°.73E, h20km, ML3.3, Error ellipse: s-maj=3.5km s-min=3.2km az=159.0*
ISC 28 09:33:46.2±0.9, 40°.80N±0°.02×27°.75E±0°.02, h12km±7km, n101, σ0§63/116, 8C-3D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRMT	**Marmara Adasi**	**0.23**	**210**	*e*PG	**Pg**	**09 33 51.0**	**-0.2**
MRMT				*e*SG	**Sg**	**09 33 54.8**	**+0.3**
MRMT	**Marmara Adasi**	**0.23**	**210**	*e*Pg	**Pg**	**09 33 51.0**	**-0.2**
MRMT				*e*Sg	**Sg**	**09 33 54.8**	**+0.3**
TKR	**Tekirdag**	**0.25**	**319**	*e*PG	**Pg**	**09 33 51.1**	**-0.3**
TKR				*e*SG	**Sg**	**09 33 55.1**	**+0.2**
TKR	**Tekirdag**	**0.25**	**319**	*e*Pg	**Pg**	**09 33 51.1**	**-0.3**
TKR				*e*Sg	**Sg**	**09 33 55.1**	**+0.2**
CRLT	**Corlu**	**0.32**	**358**	*e*PG	**Pb**	**09 33 53.3**	**-0.7**
CRLT				*e*SG	**Sg**	**09 33 57.8**	**+0.6**
CRLT	**Corlu**	**0.32**	**358**	*e*Pg	**Pb**	**09 33 53.3**	**-0.7**
CRLT				*e*Sg	**Sg**	**09 33 57.8**	**+0.6**
SART	**Tekirdag**	**0.45**	**255**	*i* P	**Pg**	**09 33 54.9**	**-0.2**
SART				*i* S	**Sg**	**09 34 01.4**	**+0.3**
SART	**Tekirdag**	**0.45**	**255**	P	**Pg**	**09 33 54.9**	**-0.2**
SART				S	**Sg**	**09 34 01.4**	**+0.3**
RKY	**Sarkoy-Tekirda**	**0.45**	**255**	*e*PG	**Pg**	**09 33 54.9**	**-0.2**
RKY	**Sarkoy-Tekirda**	**0.45**	**255**	*e*Pg	**Pg**	**09 33 54.9**	**-0.2**
EDC	**Edincik**	**0.47**	**169**	*e*PG	**Pg**	**09 33 55.3**	**-0.1**
EDC	**Edincik**	**0.47**	**169**	*e*Pg	**Pg**	**09 33 55.3**	**-0.1**
KRBG	**Karabiga-Canak**	**0.54**	**220**	*e*PG	**Pg**	**09 33 56.5**	**-0.2**
KRBG	**Karabiga-Canak**	**0.54**	**220**	*e*Pg	**Pg**	**09 33 56.5**	**-0.2**
ELBA	**Catalca**	**0.62**	**56**	*i* P	**Pg**	**09 33 57.5**	**-0.8**
ELBA	**Catalca**	**0.62**	**56**	P	**Pg**	**09 33 57.5**	**-0.8**
KCTX	**Karacabey (Bur**	**0.71**	**139**	*e*PG	**Pg**	**09 33 59.9**	**-0.1**
KCTX	**Karacabey (Bur**	**0.71**	**139**	*e*Pg	**Pg**	**09 33 59.9**	**-0.1**
CTKS	**Kestanelik-??a**	**0.72**	**53**	*e*PG	**Pg**	**09 34 00.1**	**-0.1**
CTKS	**Kestanelik-??a**	**0.72**	**53**	*e*Pg	**Pg**	**09 34 00.0**	**-0.1**
CTYL	**Yalikoy Yolu**	**0.78**	**31**	*e*PG	**Pg**	**09 34 01.3**	**-0.1**
CTYL	**Yalikoy Yolu**	**0.78**	**31**	*e*Pg	**Pg**	**09 34 01.3**	**-0.1**
KESN	**Edirne-Kesan**	**0.81**	**272**	*i* P	**Pg**	**09 34 01.9**	**-0.1**
KESN				*i* S	**Sg**	**09 34 13.0**	**+0.3**
KESN	**Edirne-Kesan**	**0.81**	**272**	P	**Pg**	**09 34 01.9**	**-0.1**
KESN				S	**Sg**	**09 34 13.0**	**+0.3**
PHSR	**Pinarhisar**	**0.84**	**348**	*e*PG	**Pg**	**09 34 02.3**	**-0.2**
PHSR	**Pinarhisar**	**0.84**	**348**	*e*Pg	**Pg**	**09 34 02.3**	**-0.2**
LPK	**Lapseki**	**0.87**	**241**	*e*PG	**Pg**	**09 34 02.4**	**-0.6**
LPK	**Lapseki**	**0.87**	**241**	*e*Pg	**Pg**	**09 34 02.4**	**-0.6**
ARMT	**Armutlu**	**0.88**	**105**	*e*PG	**Pg**	**09 34 03.1**	**-0.1**
ARMT	**Armutlu**	**0.88**	**105**	*e*Pg	**Pg**	**09 34 03.1**	**-0.1**
ERIK	**Erikli-Kesan**	**0.95**	**262**	*e*PG	**Pg**	**09 34 04.2**	**-0.3**
ERIK	**Erikli-Kesan**	**0.95**	**262**	*e*Pg	**Pg**	**09 34 04.2**	**-0.3**
MDNY	**Mudanya-Bursa**	**0.97**	**116**	*e*PG	**Pg**	**09 34 04.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**0.97**	**116**	*e*Pg	**Pg**	**09 34 04.7**	**-0.1**
ISK	**Istanbul-Kandi**	**1.02**	**75**	*e*PG	**Pg**	**09 34 05.2**	**-0.8**
ISK	**Istanbul-Kandi**	**1.02**	**75**	*e*Pg	**Pg**	**09 34 05.2**	**-0.8**
GELI	**Tayfur-Gelibol**	**1.05**	**248**	*e*PG	**Pb**	**09 34 05.7**	**-0.7**
GELI	**Tayfur-Gelibol**	**1.05**	**248**	*e*Pg	**Pb**	**09 34 05.7**	**-0.7**
KLYT	**Kilyos**	**1.07**	**65**	*e*PN	**Pg**	**09 34 06.8**	**-0.1**
KLYT	**Kilyos**	**1.07**	**65**	*e*Pn	**Pg**	**09 34 06.8**	**-0.1**
GEMT	**Gemlik**	**1.16**	**108**	*e*PN	**Pb**	**09 34 07.8**	**-0.3**
GEMT	**Gemlik**	**1.16**	**108**	*e*Pn	**Pb**	**09 34 07.8**	**-0.3**
BALB	**Balikesir**	**1.17**	**175**	*e*PN	**Pb**	**09 34 08.5**	**+0.2**
BALB	**Balikesir**	**1.17**	**175**	*e*Pn	**Pb**	**09 34 08.5**	**+0.2**
ENEZ	**Enez**	**1.22**	**267**	*e*PN	**Pn**	**09 34 09.0**	**0.0**
ENEZ	**Enez**	**1.22**	**267**	*e*Pn	**Pn**	**09 34 09.0**	**0.0**
EDRB	**Edirne**	**1.29**	**324**	*e*PN	**Pn**	**09 34 09.9**	**-0.2**
EDRB	**Edirne**	**1.29**	**324**	*e*Pn	**Pn**	**09 34 09.9**	**-0.2**
IZI	**Iznik**	**1.39**	**109**	*e*PN	**Pn**	**09 34 11.1**	**-0.5**
IZI	**Iznik**	**1.39**	**109**	*e*Pn	**Pn**	**09 34 11.1**	**-0.5**
HRT	**Hereke**	**1.46**	**89**	*e*PN	**Pn**	**09 34 11.7**	**-0.7**
HRT	**Hereke**	**1.46**	**89**	*e*Pn	**Pn**	**09 34 11.7**	**-0.7**
EZN	**Ezine**	**1.46**	**229**	*e*PN	**Pn**	**09 34 12.6**	**+0.1**
EZN	**Ezine**	**1.46**	**229**	*e*Pn	**Pn**	**09 34 12.6**	**+0.1**
SILT	**Sile**	**1.48**	**76**	*e*PN	**Pb**	**09 34 13.0**	**-0.6**
SILT	**Sile**	**1.48**	**76**	*e*Pn	**Pb**	**09 34 13.0**	**-0.6**
GADA	**Gvkgeada**	**1.54**	**247**	*e*PN	**Pn**	**09 34 13.1**	**-0.4**
GADA	**Gvkgeada**	**1.54**	**247**	*e*Pn	**Pn**	**09 34 13.1**	**-0.4**
ADVT	**Abdulvahap**	**1.56**	**103**	*e*PN	**Pn**	**09 34 14.2**	**+0.5**
ADVT	**Abdulvahap**	**1.56**	**103**	*e*Pn	**Pn**	**09 34 14.2**	**+0.5**
BOZC	**Bozcaada**	**1.61**	**234**	*i* P	**Pn**	**09 34 15.0**	**+0.5**
BOZC				*i* S	**Sn**	**09 34 35.6**	**+0.3**
AYVA	**Ayvalik**	**1.70**	**209**	*i* P	**Pn**	**09 34 15.7**	**0.0**
AYVA				*i* S	**Sg**	**09 34 40.5**	**-0.4**
AYVA	**Ayvalik**	**1.70**	**209**	P	**Pn**	**09 34 15.7**	**0.0**
AYVA				S	**Sg**	**09 34 40.5**	**-0.4**
DKL	**Dikili**	**1.85**	**201**	*e*PN	**Pn**	**09 34 18.1**	**+0.3**
DKL	**Dikili**	**1.85**	**201**	*e*Pn	**Pn**	**09 34 18.1**	**+0.3**
KAND	**Kocaeli-Kandir**	**1.87**	**80**	*i* P	**Pn**	**09 34 18.3**	**+0.3**
KAND				*i* S	**Sn**	**09 34 42.2**	**+0.6**
KAND	**Kocaeli-Kandir**	**1.87**	**80**	P	**Pn**	**09 34 18.3**	**+0.3**
KAND				S	**Sn**	**09 34 42.2**	**+0.6**
TVSB	**Tavsanli**	**1.89**	**135**	*e*PN	**Pn**	**09 34 18.8**	**+0.4**
TVSB	**Tavsanli**	**1.89**	**135**	*e*Pn	**Pn**	**09 34 18.8**	**+0.4**
DEMI	**Demirci**	**1.91**	**157**	*i* P	**Pn**	**09 34 19.1**	**+0.4**
DEMI	**Demirci**	**1.91**	**157**	P	**Pn**	**09 34 19.1**	**+0.4**
AKS	**Akhisar**	**1.92**	**179**	*e*PN	**Pn**	**09 34 19.1**	**+0.3**
AKS	**Akhisar**	**1.92**	**179**	*e*Pn	**Pn**	**09 34 19.1**	**+0.3**
GDZ	**Gediz**	**2.17**	**142**	*i* P	**Pn**	**09 34 23.8**	**+1.5**
GDZ	**Gediz**	**2.17**	**142**	P	**Pn**	**09 34 23.8**	**+1.5**
BORA	**Eskisehir**	**2.26**	**113**	*i* P	**Pn**	**09 34 22.9**	**-0.6**
BORA	**Eskisehir**	**2.26**	**113**	P	**Pn**	**09 34 22.9**	**-0.6**
SAHE	**Sakarya_HENDEK**	**2.35**	**88**	*i* P	**Pn**	**09 34 25.9**	**+1.2**
SAHE	**Sakarya_HENDEK**	**2.35**	**88**	P	**Pn**	**09 34 25.9**	**+1.2**
KULA	**Kula-Manisa**	**2.39**	**163**	*e*PN	**Pn**	**09 34 26.0**	**+0.7**
KULA	**Kula-Manisa**	**2.39**	**163**	*e*Pn	**Pn**	**09 34 26.0**	**+0.7**
MANT	**Manisa**	**2.39**	**165**	*i* P	**Pn**	**09 34 24.6**	**-0.8**
MANT	**Manisa**	**2.39**	**165**	P	**Pn**	**09 34 24.6**	**-0.8**
URLA	**Izmir**	**2.60**	**200**	*i* P	**Pn**	**09 34 28.1**	**0.0**
URLA	**Izmir**	**2.60**	**200**	P	**Pn**	**09 34 28.1**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**2.86**	**178**	*e*PN	**Pn**	**09 34 31.5**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**2.86**	**178**	*e*Pn	**Pn**	**09 34 31.5**	**-0.2**
BOLV	**Bolvadin**	**3.23**	**129**	*i* P	**Pb**	**09 34 42.8**	**-0.8**
BTIN	**Bart¨–n**	**3.50**	**75**	*i* P	**Pn**	**09 34 40.4**	**-0.1**
BTIN	**Bart¨–n**	**3.50**	**75**	P	**Pn**	**09 34 40.3**	**-0.1**
TLB	**Topalu**	**3.79**	**3**⇓	*i* P	**Pg**	**09 34 57.6**	**-1.1**
CFR	**Carcaliu**	**4.38**	**4**⇑	*i* P	**Pn**	**09 34 52.3**	**-0.2**
CFR	**Carcaliu**	**4.38**	**4**⇑	P	**Pn**	**09 34 52.3**	**-0.2**
MLR	**Muntele Rosu**	**4.87**	**345**⇑	*i* P	**Pn**	**09 35 01.4**	**+2.0**
MLR	**Muntele Rosu**	**4.87**	**345**⇑	P	**Pn**	**09 35 01.4**	**+2.0**
VOIR		**5.03**	**338**⇓	*i* P	**Pn**	**09 35 02.3**	**+0.7**
VOIR		**5.03**	**338**⇓	P	**Pn**	**09 35 02.3**	**+0.7**
PLOR	**Plostina**	**5.11**	**351**⇑	*i* P	**Pn**	**09 35 04.2**	**+1.6**
PLOR	**Plostina**	**5.11**	**351**⇑	P	**Pn**	**09 35 04.2**	**+1.6**
VRI	**Vrincioaia**	**5.11**	**352**⇑	*i* P	**Pn**	**09 35 04.1**	**+1.4**
VRI	**Vrincioaia**	**5.11**	**352**⇑	P	**Pn**	**09 35 04.1**	**+1.4**

*IDC **28** 09:40:40.8±1.8, 38°.45N×142°.55E, h0km, mb3.7/6, mb1 3.7/9, mb1mx3.5/57, mbtmp3.7/9, ML2.9/3, Error ellipse: s-maj=42.6km s-min=20.1km az=71.0*
*JMA **28** 09:40:50.2±0.1, 38°.35N×141°.78E, h50km±1km, M3.9*
JMA Felt II J1.
ISC 28 09:40:47.6±1.7, 38°.28N±0°.04×141°.90E±0°.08, h27km±11km, n22, σ1§45/31, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.47**	**292**	P	**Pn**	**09 40 59.9**	**+1.4**
JIO				S	**Sn**	**09 41 06.4**	**+0.6**
OFUJ	**Ofunato**	**0.82**	**347**	P	**Pn**	**09 41 04.3**	**+1.0**
OFUJ				S	**Sb**	**09 41 14.1**	**+0.1**
JMK	**Ichinoseki**	**0.86**	**322**	P	**Pn**	**09 41 04.7**	**+0.9**
JMK				S	**Sb**	**09 41 14.8**	**-0.2**
JMM	**Marumori**	**0.97**	**245**	P	**Pn**	**09 41 06.4**	**+1.1**
JMM				S	**Sb**	**09 41 17.7**	**-0.3**
JOU	**Okura**	**0.98**	**276**	P	**Pn**	**09 41 06.4**	**+0.9**
JOU				S	**Sb**	**09 41 18.4**	**0.0**
JFK	**Kawauchi**	**1.22**	**222**	P	**Pb**	**09 41 10.5**	**+0.5**
JOM	**Ohasama**	**1.28**	**338**	P	**Pb**	**09 41 10.7**	**-0.4**
JOM				S	**Sn**	**09 41 25.9**	**-0.1**
JYK	**Kaneyama**	**1.37**	**298**	P	**Pb**	**09 41 11.6**	**-0.9**
JYS	**Shirataka**	**1.45**	**268**	P	**Pb**	**09 41 13.1**	**-0.7**
JFT	**Otama**	**1.45**	**319**	P	**Pb**	**09 41 13.8**	**-0.1**
JRG	**Rokugo**	**1.49**	**319**	P	**Pb**	**09 41 13.5**	**-1.1**
JYA	**Atsumi**	**1.75**	**281**	P	**Pn**	**09 41 17.1**	**+1.1**
MJAR	**Matsushiro Arr**	**3.41**	**241**	P	**Pn**	**09 41 41.8**	**+2.9**
	1.7nm,0.3s,baz=62,slow=8.9,SNR=13						
MJAR				Sn	**Sb**	**09 42 29.0**	**+0.7**
	0.8nm,0.3s,baz=64,slow=20,SNR=4.5						
MAT	**Matsushiro**	**3.41**	**241**	P	**Pn**	**09 41 42.0**	**+3.0**
MAT				*e*S	**Sb**	**09 42 25.8**	**-2.6**
JHJ	**Hachijo jima 2**	**5.43**	**199**	Pn	**Pn**	**09 42 08.8**	**+2.2**
	3.3nm,0.3s,baz=67,slow=17,SNR=1.3						
JHJ				Sn	**Sn**	**09 43 05.4**	**-2.8**
	6.8nm,0.3s,baz=35,slow=11,SNR=2.5						
USRK	**Ussuriysk Ar.**	**9.52**	**312**	Pn	**Pn**	**09 43 04.2**	**+1.4**
	0.2nm,0.3s,baz=123,slow=16,SNR=4.0						
SONM	**Songino Array**	**27.43**	**302**	P	**P**	**09 46 33.0**	**+1.9**
	0.3nm,0.6s,baz=109,slow=12,SNR=2.7						
ZALV	**Zalesovo Beam**	**41.37**	**311**	P	**P**	**09 48 30.3**	**-0.7**
	0.8nm,0.3s,baz=86,slow=6.4,SNR=3.7						
MKAR	**Makanchi Array**	**43.80**	**301**	P	**P**	**09 48 50.1**	**-0.7**
	0.5nm,0.6s,baz=88,slow=8.9,SNR=4.9						
KURBB	**Kurchatov Arra**	**45.55**	**307**	P	**P**	**09 49 03.7**	**-1.0**
	1.8nm,0.7s,baz=83,slow=8.1,SNR=15						
WRA	**Warramunga Arr**	**58.34**	**188**	P	**P**	**09 50 39.7**	**-0.5**
	0.4nm,0.6s,baz=5.9,slow=6.9,SNR=5.9						
ASAR	**Alice Springs**	**62.07**	**188**	P	**P**	**09 51 04.6**	**-1.1**
	0.3nm,0.7s,baz=350,slow=5.1,SNR=4.2						

*CSEM **28** 09:42:35.5, 38°.50N×21°.64E, h28km, ML2.6/4*
ATH 28 09:42:35.5, 38°.50N×21°.64E, h28km±1km, ML2.6/4, Error ellipse: s-maj=3.0km s-min=1.4km az=140.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.24**	**150**	P	Pb	09 42 41.1	-0.9
UPR	**University Cam**	**0.24**	**150**	P	Pb	09 42 41.1	-0.9
ANX	**Ano Chora**	**0.24**	**66**	P	Pb	09 42 41.5	-0.6
SERG	**Sergoula**	**0.34**	**104**	P	Pb	09 42 43.2	-0.2
AXS	**Araxos**	**0.36**	**214**	P	Pn	09 42 44.5	-0.3
AXS	**Araxos**	**0.36**	**214**	P	Pn	09 42 44.5	-0.3
TRIZ	**Trizonia**	**0.37**	**110**	P	Pn	09 42 45.0	+0.1
KALE	**Kalithea**	**0.41**	**104**	P	Pb	09 42 44.7	+0.3
KALE				S	Sn	09 42 51.6	-0.7
KALE	**Kalithea**	**0.41**	**104**	P	Pb	09 42 44.7	+0.2
KALE				S	Sn	09 42 51.6	-0.6
KALE				AML	AML	09 42 52.9	
	comp=E,2733μm,0.3s						
KALE				AML	AML	09 42 53.5	
	comp=N,3009μm,0.2s						
RLS	**Riolos of Patr**	**0.46**	**197**	P	Pn	09 42 46.6	+0.5
DRO	**Drossia**	**0.55**	**174**	P	Pn	09 42 47.0	-0.3
DRO	**Drossia**	**0.55**	**174**	P	Pn	09 42 47.0	-0.4
KLV	**Kalavryta, Ach**	**0.61**	**138**	P	Pb	09 42 47.8	+0.2
KLV				S	Sb	09 42 56.4	+0.5
KLV	**Kalavryta, Ach**	**0.61**	**138**	P	Pb	09 42 47.8	+0.2
KLV				S	Sb	09 42 56.4	+0.6
KLV				AML	AML	09 42 59.1	
	comp=E,679μm,0.3s						
KLV				AML	AML	09 43 00.2	
	comp=N,708μm,0.4s						
THAL	**Thalero**	**0.93**	**119**	P	Pn	09 42 52.2	-0.4
THAL	**Thalero**	**0.93**	**119**	P	Pn	09 42 52.2	-0.3
LKR	**Lokris**	**1.08**	**81**	P	Pb	09 42 56.3	+0.8
LKR				S	Sb	09 43 12.1	+2.8
LKR	**Lokris**	**1.08**	**81**	P	Pb	09 42 56.3	+0.8
LKR				S	Sb	09 43 12.1	+2.9
LKR				AML	AML	09 43 17.0	
	comp=N,645μm,0.3s						
LKR				AML	AML	09 43 20.0	
	comp=E,360μm,0.3s						
ATAL	**Atalanti**	**1.10**	**79**	P	Pb	09 42 56.5	+0.6
ATAL	**Atalanti**	**1.10**	**79**	P	Pb	09 42 56.5	+0.6
VLX	**Vlachokerasia**	**1.27**	**152**	P	Pb	09 43 00.1	+1.4
VLX	**Vlachokerasia**	**1.27**	**152**	P	Pb	09 43 00.1	+1.4
VIL2	**Platees**	**1.31**	**102**	P	Pb	09 43 00.1	+0.6
ITM	**Ithomi**	**1.33**	**170**	P	Pb	09 43 00.0	+0.2
ITM				S	Sb	09 43 18.9	+2.4
ITM	**Ithomi**	**1.33**	**170**	P	Pb	09 42 60.0	+0.2
ITM				S	Sb	09 43 18.9	+2.4
ITM				AML	AML	09 43 25.6	
	comp=E,435μm,0.6s						
ITM				AML	AML	09 43 26.3	
	comp=N,503μm,0.5s						
VILL	**Villia**	**1.36**	**104**	P	Pb	09 43 00.1	-0.2
DID	**Didima**	**1.60**	**127**	P	Pn	09 43 02.3	+0.4
DID	**Didima**	**1.60**	**127**	P	Pn	09 43 02.3	+0.4
VLY	**Voula

AGG	**Agios Georgios**	**0.84**	**33**	P	**Pg**	**09 55 34.5**	**-0.4**
AGG				S	**Sb**	**09 55 46.7**	**-0.2**
AGG	**Agios Georgios**	**0.84**	**33**	P	**Pg**	**09 55 34.5**	**-0.4**
AGG				S	**Sb**	**09 55 46.2**	**-0.7**
AGG	**Agios Georgios**	**0.84**	**33**	P	**Pg**	**09 55 33.7**	**-1.3**
AGG				S	**Sb**	**09 55 46.1**	**-0.7**
AGG				AML	AML	09 55 48.1	
	comp=E,3928μm,0.3s						
AGG				AML	AML	09 55 52.6	
	comp=N,3648μm,0.4s						
PROD	**Prodromos**	**0.91**	**93**	P	**Pg**	**09 55 35.9**	**-0.4**
PROD	**Prodromos**	**0.91**	**93**	P	**Pg**	**09 55 35.9**	**-0.4**
VLS	**Valsamata**	**0.92**	**262**	P	**Pg**	**09 55 35.3**	**-1.1**
VLS	**Valsamata**	**0.92**	**262**	P	**Pg**	**09 55 35.3**	**-1.1**
VLS				S	**Sg**	**09 55 47.4**	**-1.0**
DSL	**Palaion Diasel**	**0.96**	**328**	P	**Pg**	**09 55 36.2**	**-0.9**
DSL	**Palaion Diasel**	**0.96**	**328**	P	**Pg**	**09 55 36.3**	**-0.9**
DSL				S	**Sg**	**09 55 49.2**	**-0.5**
DSL	**Palaion Diasel**	**0.96**	**328**	P	**Pg**	**09 55 36.3**	**-0.9**
DSL				S	**Sg**	**09 55 49.2**	**-0.5**
DSL				AML	AML	09 55 59.9	
	comp=E,1396μm,0.4s						
DSL				AML	AML	09 56 02.8	
	comp=N,1241μm,0.5s						
LKD2	**Lefkada island**	**0.97**	**299**	P	**Pg**	**09 55 36.4**	**-1.1**
LKD2	**Lefkada island**	**0.97**	**299**	P	**Pg**	**09 55 36.4**	**-1.1**
LKD2	**Lefkada island**	**0.97**	**299**	P	**Pg**	**09 55 36.2**	**-1.2**
ZKS	**Zakynthos**	**0.98**	**231**	P	**Pg**	**09 55 36.2**	**-1.4**
ZKS	**Zakynthos**	**0.98**	**231**	P	**Pg**	**09 55 36.5**	**-1.1**
ZKS	**Zakynthos**	**0.98**	**231**	P	**Pg**	**09 55 36.5**	**-1.1**
LTK	**Loutraki**	**1.01**	**107**	P	**Pg**	**09 55 38.0**	**-0.1**
LTK	**Loutraki**	**1.01**	**107**	P	**Pg**	**09 55 38.0**	**-0.1**
LTK	**Loutraki**	**1.01**	**107**	P	**Pb**	**09 55 38.2**	**-0.2**
LOUT	**Loutraki**	**1.02**	**108**	P	**Pg**	**09 55 37.5**	**-0.9**
LOUT	**Loutraki**	**1.02**	**108**	P	**Pg**	**09 55 37.5**	**-0.9**
LKR	**Lokris**	**1.04**	**71**	P	**Pg**	**09 55 37.9**	**-0.8**
LKR	**Lokris**	**1.04**	**71**	P	**Pg**	**09 55 38.2**	**-0.5**
LKR	**Lokris**	**1.04**	**71**	P	**Pg**	**09 55 38.2**	**-0.5**
ATAL	**Atalanti**	**1.07**	**69**	P	**Pg**	**09 55 38.0**	**-1.3**
ATAL	**Atalanti**	**1.07**	**69**	P	**Pg**	**09 55 38.3**	**-1.0**
ATAL	**Atalanti**	**1.07**	**69**	P	**Pg**	**09 55 38.3**	**-1.0**
VLX	**Vlachokerasia**	**1.07**	**152**	P	**Pg**	**09 55 38.4**	**-0.9**
VLX				S	**Sn**	**09 55 55.3**	**+0.3**
VLX	**Vlachokerasia**	**1.07**	**152**	P	**Pg**	**09 55 38.5**	**-0.9**
VLX				S	**Sg**	**09 55 52.9**	**-0.3**
VLX	**Vlachokerasia**	**1.07**	**152**	P	**Pg**	**09 55 38.5**	**-0.9**
VLX				S	**Sg**	**09 55 52.9**	**-0.3**
VLX				AML	AML	09 56 01.1	
	comp=N,3700μm,0.4s						
VLX				AML	AML	09 56 01.4	
	comp=E,2763μm,0.5s						
ITM	**Ithomi**	**1.15**	**173**	P	**Pg**	**09 55 39.5**	**-1.2**
ITM	**Ithomi**	**1.15**	**173**	P	**Pg**	**09 55 39.5**	**-1.2**
ITM				S	**Sg**	**09 55 53.7**	**-1.9**
ITM	**Ithomi**	**1.15**	**173**	P	**Pg**	**09 55 39.5**	**-1.2**
ITM				S	**Sg**	**09 55 53.7**	**-1.9**
ITM				AML	AML	09 56 01.0	
	comp=E,1110μm,0.5s						
ITM				AML	AML	09 56 05.3	
	comp=N,1533μm,0.4s						
VIL2	**Platees**	**1.20**	**95**	P	**Pn**	**09 55 42.0**	**+0.2**
VILL	**Villia**	**1.24**	**97**	P	**Pg**	**09 55 41.7**	**-0.9**
VILL	**Villia**	**1.24**	**97**	P	**Pg**	**09 55 42.0**	**-0.6**
THL	**Klokotos Trika**	**1.26**	**10**	P	**Pn**	**09 55 42.8**	**+0.2**
THL	**Klokotos Trika**	**1.26**	**10**	P	**Pn**	**09 55 42.7**	**+0.2**
THL				S	**Sg**	**09 55 58.4**	**-1.0**
SMIA	**Simia**	**1.28**	**64**	P	**Pg**	**09 55 42.2**	**-1.1**
SMIA	**Simia**	**1.28**	**64**	P	**Pg**	**09 55 42.1**	**-1.1**
PYL	**PYLOS**	**1.42**	**180**	P	**Pn**	**09 55 44.1**	**-0.6**
PYL	**PYLOS**	**1.42**	**180**	P	**Pn**	**09 55 44.0**	**-0.1**
PYL	**PYLOS**	**1.42**	**180**	P	**Pn**	**09 55 44.6**	**-0.1**
DID	**Didima**	**1.43**	**124**	P	**Pn**	**09 55 44.4**	**-0.5**
DID	**Didima**	**1.43**	**124**	P	**Pn**	**09 55 44.4**	**-0.5**
DID	**Didima**	**1.43**	**124**	P	**Pg**	**09 55 45.9**	**-0.3**
FYTO	**Fytoko, Volos**	**1.43**	**40**	P	**Pg**	**09 55 45.8**	**-0.4**
FYTO	**Fytoko, Volos**	**1.43**	**40**	P	**Pg**	**09 55 45.8**	**-0.4**
NEO	**Neokhori**	**1.52**	**49**	P	**Pn**	**09 55 46.2**	**+0.2**
NEO	**Neokhori**	**1.52**	**49**	P	**Pn**	**09 55 46.3**	**+0.2**
NEO	**Neokhori**	**1.52**	**49**	P	**Pn**	**09 55 46.3**	**+0.2**
XOR	**Xorichti**	**1.54**	**47**	P	**Pn**	**09 55 46.7**	**+0.3**
XOR	**Xorichti**	**1.54**	**47**	P	**Pn**	**09 55 46.7**	**+0.3**
XOR	**Xorichti**	**1.54**	**47**	P	**Pn**	**09 55 46.2**	**-0.2**
SKIA	**Skiathos**	**1.59**	**57**	P	**Pn**	**09 55 46.9**	**-0.2**
SKIA	**Skiathos**	**1.59**	**57**	P	**Pn**	**09 55 46.9**	**-0.2**
ATH	**Athens Observa**	**1.59**	**102**	P	**Pg**	**09 55 48.8**	**-0.5**
ATHU	**Athens Univers**	**1.65**	**102**	P	**Pn**	**09 55 47.9**	**+0.1**
ATHU	**Athens Univers**	**1.65**	**102**	P	**Pn**	**09 55 47.9**	**+0.1**
VLY	**Voula,Athens**	**1.68**	**105**	P	**Pn**	**09 55 48.8**	**+0.2**
VLY	**Voula,Athens**	**1.68**	**105**	P	**Pn**	**09 55 48.8**	**+0.5**
VLY	**Voula,Athens**	**1.68**	**105**	P	**Pn**	**09 55 48.8**	**+0.5**
PTL	**Penteli**	**1.69**	**98**	P	**Pb**	**09 55 49.5**	**-0.6**
PTL	**Penteli**	**1.69**	**98**	P	**Pb**	**09 55 49.5**	**-0.6**
EREA	**Eretria**	**1.72**	**86**	P	**Pb**	**09 55 49.9**	**-0.6**
EREA	**Eretria**	**1.72**	**86**	P	**Pb**	**09 55 49.9**	**-0.6**
SGD	**Sagiada**	**1.75**	**318**	P	**Pg**	**09 55 52.2**	**-0.1**
VLI	**Veliai**	**1.86**	**149**	P	**Pb**	**09 55 52.2**	**-0.6**
VLI	**Veliai**	**1.86**	**149**	P	**Pb**	**09 55 52.2**	**-0.6**
LIT	**Litokhoron**	**1.87**	**18**	P	**Pn**	**09 55 51.1**	**+0.2**
LIT	**Litokhoron**	**1.87**	**18**	P	**Pn**	**09 55 51.1**	**+0.2**
AOS	**Alonnisos**	**1.87**	**62**	P	**Pn**	**09 55 49.7**	**-1.3**
AOS	**Alonnisos**	**1.87**	**62**	P	**Pn**	**09 55 49.7**	**-1.3**
PENT	**Pentalofos**	**1.93**	**346**	P	**Pn**	**09 55 52.9**	**+1.0**
PENT	**Pentalofos**	**1.93**	**346**	P	**Pn**	**09 55 52.9**	**+1.0**
KZN	**Kozani**	**1.99**	**1**	P	**Pn**	**09 55 53.6**	**+1.0**
KEK	**Kerkira**	**2.06**	**313**	P	**Pb**	**09 55 55.6**	**-0.7**
KARY	**Karystos**	**2.14**	**97**	P	**Pn**	**09 55 55.2**	**+0.6**
KARY	**Karystos**	**2.14**	**97**	P	**Pn**	**09 55 55.2**	**+0.6**
PAIG	**Paliouri**	**2.20**	**43**	P	**Pn**	**09 55 54.4**	**-1.0**
PAIG	**Paliouri**	**2.20**	**43**	P	**Pn**	**09 55 54.4**	**-1.0**
KYTH	**Kithira**	**2.30**	**153**	P	**Pb**	**09 55 59.4**	**-1.0**
FNA	**Florina**	**2.48**	**354**	P	**Pn**	**09 55 58.9**	**-0.4**
FNA	**Florina**	**2.48**	**354**	P	**Pn**	**09 55 58.9**	**-0.4**
HORT	**Hortiatis**	**2.51**	**24**	P	**Pn**	**09 56 00.6**	**+0.9**
HORT	**Hortiatis**	**2.51**	**24**	P	**Pn**	**09 56 00.6**	**+0.9**
GRG	**Griva**	**2.68**	**11**	P	**Pn**	**09 56 03.4**	**+1.3**
GRG	**Griva**	**2.68**	**11**	P	**Pn**	**09 56 03.4**	**+1.3**
ANKY	**Antikythira Is**	**2.75**	**153**	P	**Pn**	**09 56 02.7**	**-0.2**
ANKY	**Antikythira Is**	**2.75**	**153**	P	**Pn**	**09 56 02.7**	**-0.2**
KNT	**Kendrikon**	**2.98**	**17**	P	**Pn**	**09 56 07.7**	**+1.6**
KNT	**Kendrikon**	**2.98**	**17**	P	**Pn**	**09 56 07.7**	**+1.6**
APE	**Apeiranthos**	**3.25**	**111**	P	**Pn**	**09 56 10.6**	**+0.7**
APE	**Apeiranthos**	**3.25**	**111**	P	**Pn**	**09 56 10.6**	**+0.7**
CHOS	**Chios island**	**3.39**	**88**	P	**Pn**	**09 56 12.6**	**+0.7**
CHOS	**Chios island**	**3.39**	**88**	P	**Pn**	**09 56 12.6**	**+0.7**
IDI	**Anoyia**	**3.94**	**139**	Pn	**Pn**	**09 56 22.5**	**+3.0**
	comp=N,1.2nm,0.3s,baz=324,slow=16,SNR=7.8						
IDI				Sn	**Sn**	**09 57 09.3**	**+3.5**
	comp=N,0.8nm,0.3s,baz=333,slow=18,SNR=2.5						
GZR	**Gura Zlata**	**7.11**	**6**	S	Sg	09 59 25.0	+18
BZS	**Buzias**	**7.29**	**359**	S	Sg	09 59 22.5	+10
MLR	**Muntele Rosu**	**7.82**	**22**	Pn	Pn	09 57 18.7	+6.0
	comp=N,0.1nm,0.3s,baz=180,slow=12,SNR=3.2						
NVLJ	**Novalja**	**8.10**	**323**	*e*Pn	**Pn**	**09 57 17.1**	**+0.7**
NVLJ				Sn	**Sn**	**09 58 45.2**	**-2.8**
BRTR	**Keskin Array B**	**9.36**	**78**	Pn	**Pn**	**09 57 36.4**	**+2.4**
	comp=N,0.2nm,0.3s,baz=269,slow=12,SNR=4.8						
EKA	**Eskdalemuir Ar**	**23.88**	**324**	P	**P**	**10 00 34.2**	**+1.9**
	comp=N,0.9nm,0.7s,baz=119,slow=9.8,SNR=4.5						
TORD	**Torodi Ar. Bea**	**30.75**	**221**	P	**P**	**10 01 34.8**	**+0.3**
	comp=N,0.9nm,0.7s,baz=29,slow=9.4,SNR=6.9						
BORG	**Borgarnes**	**36.46**	**330**	LR	LR	10 19 38.4	
	comp=N,413nm,18.7s,baz=91,slow=40						
MKAR	**Makanchi Array**	**44.41**	**59**	P	**P**	**10 03 30.0**	**+0.4**
	comp=N,1.0nm,0.5s,baz=278,slow=7.5,SNR=10						
ZALV	**Zalesovo Beam**	**44.88**	**48**	P	**P**	**10 03 32.8**	**-0.4**
	comp=N,0.7nm,0.3s,baz=265,slow=9.8,SNR=3.0						

IDC 28 09:56:19.9±2.6, 53°61N×86°90E, h0km, mb1 2.9/2, mb1mx2.8/48, mbtmp2.9/2, ML2.4/2, Error ellipse: s-maj=23.9km s-min=14.6km az=71.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.28**	**286**	*i*		10 04 30.0	
	baz=104,slow=312,SNR=4.8						
ZALV	**Zalesovo Beam**	**1.28**	**286**	Pg	Pg	09 56 43.1	-1.2
	1.1nm,0.3s,baz=107,slow=17,SNR=14						
ZALV				Lg	Lg	09 57 01.2	
	2.7nm,0.3s,baz=107,slow=28,SNR=11						
KURBB	**Kurchatov Arra**	**5.96**	**243**	Pn	Pn	09 57 50.3	+1.0
	0.0nm,0.3s,baz=59,slow=14,SNR=5.5						
KURBB				Lg	Lg	09 59 29.6	
	0.0nm,0.3s,baz=66,slow=34,SNR=6.4						
MKAR	**Makanchi Array**	**7.43**	**205**	Pn	Pn	09 58 10.9	+1.4
	0.2nm,0.3s,baz=27,slow=12,SNR=6.2						
MKAR				Lg	Lg	10 00 14.3	
	baz=26,slow=30,SNR=4.2						

*ISCJB **28** 10:19:34.5±0.8, 39°.00N±0°.06×41°.88E±0°.05, h2km±10km, Error ellipse: s-maj=11.1km s-min=5.3km az=152.9*
*CSEM **28** 10:19:35.1±0.6, 39°.03N×41°.80E, h2km, ML2.1, Error ellipse: s-maj=16.3km s-min=9.2km az=153.0*
*ISK **28** 10:19:36.9, 38°.93N×41°.98E, h31km, ML2.1*
*DDA **28** 10:19:46.6, 37°.95N×41°.86E, h6km, Ml2.8*

ISC 28 10:19:33.8±1.2, 38°.88N±0°.04×41°.84E±0°.04, h1km±12km, n16, σ1°73/25, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BNGL	**BINGOL**	**0.54**	**278**	*i* P	Pn	10 20 09.3	+20
BNGL				*i* S	Sn	10 20 30.7	+32
SVAN	**Silvan-Diyarba**	**0.88**	**215**	*e*PG	**Pn**	**10 19 54.7**	**+1.2**
SVAN				*e*SG	**Sn**	**10 20 08.1**	**+1.1**
SVAN	**Silvan-Diyarba**	**0.88**	**215**	*e*Pg	**Pn**	**10 19 54.7**	**+1.2**
SVAN				*e*Sg	**Sn**	**10 20 08.1**	**+1.1**
BNGB	**Bingˆ¶l**	**0.91**	**277**	*e*PG	**Pn**	**10 19 55.3**	**+1.4**
BNGB				*e*SG	**Sn**	**10 20 08.7**	**+0.9**
BINT	**Bingol**	**1.05**	**270**	*e*Pg	**Pb**	**10 19 55.3**	**+0.3**
BINT				*e*Sg	**Sg**	**10 20 08.7**	**+1.0**
BTMN	**Batman**	**1.08**	**205**	*i* P	**Pn**	**10 19 55.8**	**-0.5**
BTMN				*i* S	**Sg**	**10 20 05.1**	**-3.6**
BTMN	**Batman**	**1.08**	**205**	P	**Pn**	**10 19 55.8**	**-0.5**
AGRB	**Hanur-Agry**	**1.13**	**52**	*e*PG	**Pg**	**10 19 55.3**	**-0.3**
AGRB				*e*SG	**Sg**	**10 20 08.7**	**-1.6**
AGRB	**Hanur-Agry**	**1.13**	**52**	*e*Pg	**Pg**	**10 19 55.3**	**-0.3**
AGRB				*e*Sg	**Sg**	**10 20 08.7**	**-1.6**
MARD	**Mardin**	**1.77**	**208**	*i* P	**Pb**	**10 20 06.6**	**-0.7**
MARD				*i* S	**Sn**	**10 20 24.0**	**-5.1**
MAZI	**Mazidag**	**1.79**	**218**	*e*PN	**Pg**	**10 20 08.4**	**+0.2**
MAZI	**Mazidag**	**1.79**	**218**	*e*Pn	**Pg**	**10 20 08.4**	**+0.2**
HAKT	**HAKKARI**	**1.98**	**131**	*i* P	**Pg**	**10 20 13.6**	**+1.9**
HAKT				*i* S	**Sg**	**10 20 38.3**	**+0.9**
HAKT	**HAKKARI**	**1.98**	**131**	P	**Pg**	**10 20 13.6**	**+1.9**
HAKT				S	**Sg**	**10 20 38.3**	**+0.9**
SVRC	**Sivrice-ELAZID**	**2.04**	**257**	*e*PN	**Pb**	**10 20 11.6**	**-0.3**
SVRC	**Sivrice-ELAZID**	**2.04**	**257**	*e*Pn	**Pb**	**10 20 11.6**	**-0.3**

*ISCJB **28** 10:28:12.8±0.6, 32°.21N±0°.02×115°.22W±0°.03, h12km±4km, Error ellipse: s-maj=4.6km s-min=3.3km az=157.6*
*NEIC **28** 10:28:14.5, 32°.20N×115°.29W, h6km, MD4.0(MEX), ML3.6(ECX), ML3.5(PAS), After ECX.*
*ECX **28** 10:28:14.5±0.7, 32°.20N×115°.27W, h6km, MD3.5, ML3.6*
*MEX **28** 10:28:15.4±0.4, 32°.30N×115°.13W, h14km±8km, MD4.0*

ISC 28 10:28:12.8±0.9, 32°.22N±0°.02×115°.27W±0°.02, h15km±7km, n49, σ0°96/68, 4C-8D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.20**	**18**	*e*P	**Pb**	**10 28 18.3**	**+0.1**
MBIG				*e*S	**Sg**	**10 28 20.6**	**+0.1**
MBIG	**Mexicali**	**0.20**	**18**	*e*P	**Pb**	**10 28 18.3**	**+0.1**
CPBX	**Cerro Prieto**	**0.20**	**352**	⇓*e*P	**Pb**	**10 28 18.3**	**+0.1**
CPBX				*e*S	**Sg**	**10 28 21.6**	**+1.0**
CPBX				⇑*e*		10 28 22.9	
CPBX				IAML		10 28 22.9	
	comp=N,30μm,0.3s						
CPBX	**Cerro Prieto**	**0.20**	**352**	*e*P	**Pb**	**10 28 18.3**	**+0.1**
CPBX				*i* S	**Sg**	**10 28 20.0**	**-0.6**
EMSC	**East Mesa**	**0.57**	**25**	⇓*i*P	**Pb**	**10 28 25.3**	**+0.7**
SGL	**Mount Signal**	**0.58**	**318**	⇓*i*P	**Pb**	**10 28 25.1**	**+0.4**
DREC	**Desert Rsrch C**	**0.60**	**346**	*e*P	**Pn**	**10 28 26.1**	**-0.8**
ERPC	**Ernies Place**	**0.62**	**328**	⇓*i*P	**Pn**	**10 28 26.2**	**-0.9**
COA	**Coachella**	**0.66**	**11**	⇓*i*P	**Pb**	**10 28 26.4**	**+0.4**
WESC	**Westside Schoo**	**0.67**	**324**	*e*P	**Pb**	**10 28 26.8**	**+0.7**
YMD	**Yuma Desert**	**0.70**	**61**	⇑*i*P	**Pb**	**10 28 26.9**	**+0.2**
YUH	**Yuha Desert**	**0.70**	**308**	⇓*i*P	**Pb**	**10 28 27.0**	**+0.3**
COK	**Cook Ranch**	**0.74**	**329**	⇓*i*P	**Pb**	**10 28 27.9**	**+0.5**
ECBX	**El Chinero**	**0.77**	**166**	*e*P	**Pg**	**10 28 27.9**	**+0.1**
ECBX				*e*S	**Sg**	**10 28 37.5**	**-0.4**
ECBX				⇑*e*		10 28 42.2	
ECBX				IAML		10 28 42.2	
	comp=E,3μm,0.6s						
RMX	**La Rumorosa**	**0.79**	**299**	*e*P	**Pb**	**10 28 28.1**	**-0.2**
RMX				*e*S	**Sb**	**10 28 38.9**	**+0.1**
RMX				*e*		10 28 39.2	
RMX				IAML		10 28 39.2	
	comp=E,2μm,0.2s						
IKP	**In-Ko-Pah, Jac**	**0.83**	**301**	P	**Pb**	**10 28 29.4**	**+0.4**
	baz=123,SNR=228						
IKP				S	**Sb**	**10 28 40.5**	**+0.4**
	baz=123						
IKP	**In-Ko-Pah, Jac**	**0.83**	**301**	⇑*e*P	**Pb**	**10 28 29.5**	**+0.4**
SWSC	**Sam W. Stewart**	**0.85**	**328**	P	**Pg**	**10 28 29.1**	**-0.3**
	baz=150,SNR=46						
GLA	**Glamis**	**0.91**	**24**	P	**Pg**	**10 28 29.8**	**-0.6**
	baz=205,SNR=142						
GLA				S	**Sg**	**10 28 41.7**	**-0.7**
	baz=205						
ZAX	**El Zacaton**	**1.11**	**231**	*e*P	**Pb**	**10 28 33.8**	**+0.1**
SPIG	**San Pedro Mart**	**1.18**	**188**	*e*P	**Pb**	**10 28 35.4**	**+0.2**
SPIG				*e*S	**Sn**	**10 28 51.6**	**+0.4**
SPIG	**San Pedro Mart**	**1.18**	**188**	*e*P	**Pb**	**10 28 35.3**	**+0.2**
SPIG	**San Pedro Mart**	**1.18**	**188**	*e*P	**Pb**	**10 28 35.4**	**+0.2**
SPIG				*e*S	**Sn**	**10 28 51.6**	**+0.4**
SPX	**San Pedro Mart**	**1.18**	**188**	*e*P	**Pb**	**10 28 34.3**	**-0.8**
SPX	**San Pedro Mart**	**1.18**	**188**	*e*S	**Sb**	**10 28 50.7**	**+0.3**
MONP2	**Monument Peak**	**1.18**	**305**	P	**Pb**	**10 28 34.7**	**-0.4**
	baz=126,SNR=240						
MONP2				S	**Sg**	**10 28 50.4**	**-0.7**
	baz=126						
CBX	**Cerro Bola**	**1.19**	**275**	*e*P	**Pg**	**10 28 35.5**	**-0.2**
CBX				*i* S	**Sn**	**10 28 51.3**	**+0.3**
CBX	**Cerro Bola**	**1.19**	**275**	*e*P	**Pg**	**10 28 35.4**	**-0.2**
CBX				*e*S	**Sg**	**10 28 51.8**	**-0.4**
CBX				⇓*e*		10 28 52.7	
CBX				IAML		10 28 52.7	
	comp=N,1μm,0.5s						
CBX	**Cerro Bola**	**1.19**	**275**	*e*P	**Pg**	**10 28 35.5**	**-0.2**
CBX				*i* S	**Sn**	**10 28 51.3**	**+0.3**
TJIG	**Tijuana**	**1.21**	**281**	*e*P	**Pg**	**10 28 35.6**	**-0.6**
TJIG				*e*S	**Sg**	**10 28 51.3**	**-0.6**
TJIG	**Tijuana**	**1.21**	**281**	*e*P	**Pn**	**10 28 35.3**	**+0.1**
ECNX	**Esteban Cantu**	**1.26**	**244**	*e*P	**Pb**	**10 28 36.3**	**-0.1**
ECNX				*e*P	**Pn**	**10 28 35.5**	**-0.5**
BAR	**Barrett**	**1.27**	**292**	*e*P	**Pb**	**10 28 36.4**	**-0.1**
PBX	**Punta Banda**	**1.33**	**249**	*e*P	**Pb**	**10 28 37.3**	**-0.2**
BC3	**Big Chuckawall**	**1.44**	**354**	P	**Pn**	**10 28 37.9**	**-0.7**
	baz=175,SNR=50						
SDRC	**San Diego Road**	**1.51**	**290**	*e*P	**Pb**	**10 28 40.1**	**-0.4**
109C	**Camp Elliot, M**	**1.69**	**294**	P	**Pn**	**10 28 42.3**	**+0.5**
	baz=114						
109C				Sb	**Sg**	**10 29 06.1**	**-1.1**
	baz=114						
TPFO	**Pinon Flats**	**1.71**	**325**	P	**Pn**	**10 28 41.6**	**-0.5**
	baz=145,SNR=17						
TPFO				Sb	**Sg**	**10 29 06.9**	**-0.9**
	baz=145						
PFO	**Pinyon Flats O**	**1.71**	**325**	P	**Pn**	**10 28 41.7**	**-0.6**
	baz=145,SNR=30						
PFO				Sb	**Sg**	**10 29 06.9**	**-1.1**
	baz=145						
IRM	**Iron Mountain**	**1.94**	**3**	P	**Pn**	**10 28 44.7**	**-0.6**
	baz=184,SNR=97						
214A	**Organ Pipe Nat**	**2.10**	**97**	P	**Pn**	**10 28 46.7**	**-0.9**
	baz=277,SNR=15						
MURC	**Murrieta**	**2.13**	**311**	Sb	**Sg**	**10 29 19.8**	**-1.5**
	baz=131						
BBRC	**Big Bear Solar**	**2.46**	**326**	P	**Pn**	**10 28 52.8**	**+0.1**
	baz=146						
GMRC	**Granite Mounta**	**2.58**	**353**	P	**Pn**	**10 28 54.0**	**-0.3**
	baz=173						
BFSC	**Mount Baldy Ra**	**2.84**	**316**	Sb	**Sb**	**10 29 40.5**	**+2.5**
	baz=135						
SCI2	**San Clemente I**	**2.87**	**286**	P	**Pn**	**10 28 58.3**	**+0.2**
	baz=105						
CIS	**Catalina Islan**	**2.90**	**295**	P	**Pn**	**10 28 58.7**	**+0.2**
	baz=114,SNR=10.0						
CIS				Sb	**Sb**	**10 29 42.4**	**+2.8**
	baz=114						
FMP	**Fort Macarthur**	**2.95**	**301**	Sb	**Sb**	**10 29 43.7**	**+2.8**
	baz=120						
EDW2	**Edwards Air Fo**	**3.50**	**320**	Sb	**Sg**	**10 30 00.7**	**-4.4**
	baz=139						

*ISK **28** 10:34:01.9, 40°.30N×29°.10E, h3km, ML2.2*
*DDA **28** 10:34:01.6, 40°.32N×29°.03E, h7km, Ml2.6*
*CSEM **28** 10:34:02.6±0.1, 40°.29N×29°.12E, h5km, ML2.2, Error ellipse: s-maj=2.5km s-min=2.3km az=176.0*

ISC 28 10:34:02.6±0.9, 40°.29N±0°.02×29°.11E±0°.02, h10km±6km, n62, σ0°71/80, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GEMT	**Gemlik**	**0.16**	**24**	*e*PG	**Pg**	**10 34 05.8**	**-0.3**
GEMT				*e*SG	**Sg**	**10 34 08.8**	**+0.3**
GEMT	**Gemlik**	**0.16**	**24**	*e*Pg	**Pg**	**10 34 05.8**	**-0.3**
GEMT				*e*Sg	**Sg**	**10 34 08.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**0.19**	**295**	*e*PG	**Pg**	**10 34 06.4**	**-0.2**
MDNY				*e*SG	**Sg**	**10 34 09.8**	**+0.5**
MDNY	**Mudanya-Bursa**	**0.19**	**295**	*e*Pg	**Pg**	**10 34 06.4**	**-0.2**
MDNY				*e*Sg	**Sg**	**10 34 09.8**	**+0.5**
IZI	**Iznik**	**0.28**	**81**	*e*PG	**Pg**	**10 34 08.3**	**-0.1**
IZI	**Iznik**	**0.28**	**81**	*e*Pg	**Pg**	**10 34 08.3**	**-0.1**
ARMT	**Armutlu**	**0.33**	**326**	*e*PG	**Pg**	**10 34 09.1**	**-0.1**
ARMT				*e*SG	**Sb**	**10 34 14.5**	**-1.6**
ARMT	**Armutlu**	**0.33**	**326**	*e*Pg	**Pg**	**10 34 09.1**	**-0.1**
ARMT				*e*Sg	**Sb**	**10 34 14.5**	**-1.6**
ADVT	**Abdulvahap**	**0.50**	**73**	*e*PG	**Pb**	**10 34 12.4**	**-1.2**
ADVT	**Abdulvahap**	**0.50**	**73**	*e*Pg	**Pb**	**10 34 12.4**	**-1.2**
CAVI	**Cavuskoy**	**0.57**	**99**	*e*PG	**Pg**	**10 34 13.0**	**-0.7**
CAVI	**Cavuskoy**	**0.57**	**99**	*e*Pg	**Pg**	**10 34 13.0**	**-0.7**
KCTX	**Karacabey (Bur**	**0.57**	**268**	*e*PG	**Pb**	**10 34 14.1**	**-0.7**
KCTX				*e*SG	**Sb**	**10 34 23.0**	**-0.1**
KCTX	**Karacabey (Bur**	**0.57**	**268**	*e*Pg	**Pb**	**10 34 14.1**	**-0.7**
KCTX				*e*Sg	**Sb**	**10 34 23.0**	**-0.1**
HRT	**Hereke**	**0.68**	**39**	*e*PG	**Pg**	**10 34 15.5**	**-0.3**
HRT	**Hereke**	**0.68**	**39**	*e*Pg	**Pg**	**10 34 15.5**	**-0.3**
ISK	**Istanbul-Kandi**	**0.78**	**357**	*e*PG	**Pg**	**10 34 17.1**	**-0.5**
ISK	**Istanbul-Kandi**	**0.78**	**357**	*e*Pg	**Pg**	**10 34 17.1**	**-0.5**
DST	**Dursunbey**	**0.78**	**209**	*e*PG	**Pb**	**10 34 18.0**	**-0.3**
DST	**Dursunbey**	**0.78**	**209**	*e*Pg	**Pb**	**10 34 18.0**	**-0.3**
TVSB	**Tavsanli**	**0.88**	**162**	*e*PG	**Pb**	**10 34 19.9**	**-0.2**
TVSB	**Tavsanli**	**0.88**	**162**	*e*Pg	**Pb**	**10 34 19.9**	**-0.2**
EDC	**Edincik**	**0.95**	**274**	*e*PG	**Pb**	**10 34 20.9**	**-0.3**
EDC	**Edincik**	**0.95**	**274**	*e*Pg	**Pb**	**10 34 20.9**	**-0.3**
SILT	**Sile**	**0.95**	**25**	*e*PG	**Pb**	**10 34 21.0**	**-0.2**
SILT	**Sile**	**0.95**	**25**	*e*Pg	**Pb

IZM	**Izmir**	**0.95**	**214**	*e*PG	**Pg**	**10 49 19.1**	**-0.5**
IZM				*e*SG	**Sb**	**10 49 32.9**	**+0.5**
IZM	**Izmir**	**0.95**	**214**	*e*Pg	**Pg**	**10 49 19.1**	**-0.5**
IZM				*e*Sg	**Sb**	**10 49 32.9**	**+0.5**
AYVA	**Ayvalik**	**0.98**	**277**	*i* P	**Pg**	**10 49 19.6**	**-0.4**
AYVA				*i* S	**Sn**	**10 49 34.2**	**-0.4**
AYVA	**Ayvalik**	**0.98**	**277**	P	**Pg**	**10 49 19.6**	**-0.4**
AYVA				S	**Sn**	**10 49 34.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.12**	**17**	*e*PN	**Pb**	**10 49 22.2**	**-0.4**
KCTX				*e*SN	**Sn**	**10 49 38.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.12**	**17**	*e*Pn	**Pb**	**10 49 22.2**	**-0.4**
KCTX				*e*Sn	**Sn**	**10 49 38.4**	**+0.2**
EDC	**Edincik**	**1.15**	**357**	*e*PN	**Pn**	**10 49 23.1**	**-0.2**
EDC	**Edincik**	**1.15**	**357**	*e*Pn	**Pn**	**10 49 23.1**	**-0.2**
GEDZ	**Gediz**	**1.15**	**97**	*e*PN	**Pb**	**10 49 22.8**	**-0.4**
GEDZ				*e*SN	**Sn**	**10 49 39.4**	**+0.2**
GEDZ	**Gediz**	**1.15**	**97**	*e*Pn	**Pb**	**10 49 22.8**	**-0.4**
GEDZ				*e*Sn	**Sn**	**10 49 39.4**	**+0.2**
GDZ	**Gediz**	**1.20**	**94**	*i* P	**Pb**	**10 49 23.6**	**-0.5**
GDZ				*i* S	**Sn**	**10 49 40.2**	**-0.3**
GDZ	**Gediz**	**1.20**	**94**	P	**Pb**	**10 49 23.6**	**-0.5**
GDZ				S	**Sn**	**10 49 40.2**	**-0.3**
TVSB	**Tavsanli**	**1.21**	**77**	*e*PN	**Pn**	**10 49 24.0**	**-0.1**
TVSB	**Tavsanli**	**1.21**	**77**	*e*Pn	**Pn**	**10 49 24.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.25**	**182**	*e*PN	**Pn**	**10 49 24.1**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.25**	**182**	*e*Pn	**Pn**	**10 49 24.1**	**-0.5**
KRBG	**Karabiga-Canak**	**1.30**	**338**	*e*PN	**Pb**	**10 49 25.2**	**-0.4**
KRBG	**Karabiga-Canak**	**1.30**	**338**	*e*Pn	**Pb**	**10 49 25.2**	**-0.4**
PRK	**Paraskevi**	**1.30**	**273**	P	**Pn**	**10 49 25.0**	**-0.2**
PRK				S	**Sg**	**10 49 42.9**	**0.0**
PRK	**Paraskevi**	**1.30**	**273**	P	**Pb**	**10 49 25.3**	**-0.3**
PRK				S	**Sg**	**10 49 42.9**	**0.0**
PRK	**Paraskevi**	**1.30**	**273**	P	**Pb**	**10 49 25.3**	**-0.3**
PRK				S	**Sg**	**10 49 44.9**	**+1.9**
PRK				AML	AML	10 49 49.9	
	comp=N,2638µm,0.6s						
PRK				AML	AML	10 49 51.0	
	comp=E,2960µm,0.7s						
URLA	**Izmir**	**1.34**	**232**	*i* P	**Pn**	**10 49 25.8**	**0.0**
URLA				*i* S	**Sn**	**10 49 44.0**	**+0.3**
URLA	**Izmir**	**1.34**	**232**	P	**Pn**	**10 49 25.8**	**0.0**
URLA				S	**Sn**	**10 49 44.0**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.38**	**32**	*e*PN	**Pb**	**10 49 26.6**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.38**	**32**	*e*Pn	**Pb**	**10 49 26.6**	**-0.5**
EZN	**Ezine**	**1.40**	**297**	*e*PN	**Pn**	**10 49 26.3**	**-0.3**
EZN	**Ezine**	**1.40**	**297**	P	**Pn**	**10 49 26.1**	**-0.5**
EZN				S	**Sg**	**10 49 46.2**	**0.0**
EZN	**Ezine**	**1.40**	**297**	*e*Pn	**Pn**	**10 49 26.3**	**-0.3**
EZN				S	**Sg**	**10 49 46.2**	**0.0**
MRMT	**Marmara Adasi**	**1.43**	**349**	*e*PN	**Pb**	**10 49 27.7**	**-0.2**
MRMT	**Marmara Adasi**	**1.43**	**349**	*e*Pn	**Pb**	**10 49 27.7**	**-0.2**
LPK	**Lapseki**	**1.49**	**323**	*e*PN	**Pb**	**10 49 28.1**	**-0.7**
LPK	**Lapseki**	**1.49**	**323**	*e*Pn	**Pb**	**10 49 28.2**	**-0.7**
KHL	**Karahalli**	**1.51**	**125**	*e*PN	**Pn**	**10 49 28.4**	**+0.1**
KHL	**Karahalli**	**1.51**	**125**	*e*Pn	**Pn**	**10 49 28.4**	**+0.1**
ARMT	**Armutlu**	**1.54**	**27**	*e*PN	**Pn**	**10 49 28.6**	**-0.1**
ARMT	**Armutlu**	**1.54**	**27**	*e*Pn	**Pn**	**10 49 28.6**	**-0.1**
GEMT	**Gemlik**	**1.57**	**37**	*e*PN	**Pn**	**10 49 29.0**	**0.0**
GEMT	**Gemlik**	**1.57**	**37**	*e*Pn	**Pn**	**10 49 29.0**	**0.0**
BOZC	**Bozcaada**	**1.60**	**295**	*i* P	**Pn**	**10 49 29.3**	**-0.1**
BOZC				*i* S	**Sg**	**10 49 53.3**	**+0.8**
RKY	**Sarkoy-Tekirda**	**1.60**	**339**	*e*PN	**Pb**	**10 49 29.9**	**-0.9**
RKY	**Sarkoy-Tekirda**	**1.60**	**339**	*e*Pn	**Pb**	**10 49 29.9**	**-0.9**
SART	**Tekirdag**	**1.60**	**339**	*i* P	**Pn**	**10 49 29.6**	**+0.1**
SART				*i* S	**Sb**	**10 49 51.1**	**0.0**
SART	**Tekirdag**	**1.60**	**339**	P	**Pn**	**10 49 29.6**	**+0.1**
SART				S	**Sb**	**10 49 51.1**	**0.0**
SIGR	**SIGRI**	**1.62**	**271**	*e*PN	**Pn**	**10 49 29.9**	**+0.2**
SIGR	**SIGRI**	**1.62**	**271**	P	**Pn**	**10 49 29.2**	**-0.5**
SIGR				S	**Sg**	**10 52.4**	**-0.9**
SIGR	**SIGRI**	**1.62**	**271**	*e*Pn	**Pn**	**10 49 29.2**	**-0.5**
SIGR	**SIGRI**	**1.62**	**271**	*e*Pn	**Pn**	**10 49 29.9**	**+0.2**
SIGR				S	**Sg**	**10 52.4**	**-0.9**
SIGR	**SIGRI**	**1.62**	**271**	P	**Pn**	**10 49 28.8**	**-0.9**
SIGR				S	**Sg**	**10 49 53.5**	**+0.3**
SIGR				AML	AML	10 49 56.2	
	comp=E,2630µm,0.4s						
SIGR				AML	AML	10 49 56.2	
	comp=N,2539µm,0.4s						
IZI	**Iznik**	**1.64**	**46**	*e*PN	**Pn**	**10 49 30.2**	**+0.1**
IZI	**Iznik**	**1.64**	**46**	*e*Pn	**Pn**	**10 49 30.2**	**+0.1**
GELI	**Tayfur-Gelibol**	**1.65**	**317**	*e*PN	**Pn**	**10 49 30.5**	**+0.4**
GELI	**Tayfur-Gelibol**	**1.65**	**317**	*e*Pn	**Pn**	**10 49 30.5**	**+0.4**
DENT	**Denizli**	**1.67**	**149**	*e*PN	**Pn**	**10 49 30.2**	**-0.3**
DENT	**Denizli**	**1.67**	**149**	*e*Pn	**Pn**	**10 49 30.2**	**-0.3**
CHOS	**Chios island**	**1.68**	**242**	*e*PN	**Pn**	**10 49 30.7**	**+0.1**
CHOS	**Chios island**	**1.68**	**242**	P	**Pn**	**10 49 30.4**	**-0.2**
CHOS				S	**Sb**	**10 49 54.1**	**+0.8**
CHOS	**Chios island**	**1.68**	**242**	P	**Pn**	**10 49 30.4**	**-0.2**
CHOS	**Chios island**	**1.68**	**242**	*e*Pn	**Pn**	**10 49 30.7**	**+0.1**
CHOS				S	**Sb**	**10 49 54.1**	**+0.8**
CHOS	**Chios island**	**1.68**	**242**	P	**Pb**	**10 49 31.8**	**-0.3**
CHOS				S	**Sg**	**10 49 56.2**	**+1.0**
CHOS				AML	AML	10 49 58.3	
	comp=E,1560µm,0.4s						
CHOS				AML	AML	10 49 58.4	
	comp=N,1665µm,0.4s						
SMG	**Samos**	**1.72**	**211**	P	**Pb**	**10 49 32.3**	**-0.4**
SMG	**Samos**	**1.72**	**211**	P	**Pb**	**10 49 32.3**	**-0.4**
SMG				S	**Sg**	**10 49 59.1**	**+2.7**
SMG				AML	AML	10 49 60.0	
	comp=E,1310µm,0.6s						
SMG				AML	AML	10 50 03.2	
	comp=N,1536µm,0.5s						
CAVI	**Cavuskoy**	**1.78**	**55**	*e*PN	**Pn**	**10 49 31.9**	**0.0**
CAVI	**Cavuskoy**	**1.78**	**55**	*e*Pn	**Pn**	**10 49 31.9**	**0.0**
TKR	**Tekirdag**	**1.82**	**350**	*e*PN	**Pn**	**10 49 32.9**	**+0.4**
TKR	**Tekirdag**	**1.82**	**350**	*e*Pn	**Pn**	**10 49 32.9**	**+0.4**
ERIK	**Erikli-Kesan**	**1.84**	**324**	*e*PN	**Pn**	**10 49 33.2**	**+0.5**
ERIK	**Erikli-Kesan**	**1.84**	**324**	*e*Pn	**Pn**	**10 49 33.2**	**+0.5**
ADVT	**Abdulvahap**	**1.86**	**48**	*e*PN	**Pn**	**10 49 33.5**	**+0.6**
ADVT	**Abdulvahap**	**1.86**	**48**	*e*Pn	**Pn**	**10 49 33.6**	**+0.6**
GADA	**Gvkgeada**	**1.86**	**303**	*e*PN	**Pn**	**10 49 33.3**	**+0.3**
GADA	**Gvkgeada**	**1.86**	**303**	P	**Pn**	**10 49 33.0**	**0.0**
GADA				S	**Sb**	**10 49 57.4**	**-1.1**
GADA	**Gvkgeada**	**1.86**	**303**	P	**Pn**	**10 49 33.0**	**0.0**
GADA	**Gvkgeada**	**1.86**	**303**	*e*Pn	**Pn**	**10 49 33.3**	**+0.3**
GADA				S	**Sb**	**10 49 57.4**	**-1.1**
KESN	**Edirne-Kesan**	**1.90**	**330**	*i* P	**Pn**	**10 49 32.9**	**-1.0**
KESN				*i* S	**Sn**	**10 49 58.1**	**+0.2**
KESN	**Edirne-Kesan**	**1.90**	**330**	P	**Pn**	**10 49 32.8**	**-1.0**
KESN				S	**Sn**	**10 49 58.1**	**+0.2**
MLSB	**Milas**	**1.90**	**184**	*e*PN	**Pn**	**10 49 33.8**	**+0.2**
MLSB	**Milas**	**1.90**	**184**	*e*Pn	**Pn**	**10 49 33.8**	**+0.2**
CRLT	**Corlu**	**1.94**	**355**	*e*PN	**Pn**	**10 49 34.4**	**+0.3**
CRLT	**Corlu**	**1.94**	**355**	*e*Pn	**Pn**	**10 49 34.4**	**+0.3**
ISK	**Istanbul-Kandi**	**2.06**	**24**	*e*PN	**Pn**	**10 49 36.0**	**+0.4**
ISK	**Istanbul-Kandi**	**2.06**	**24**	P	**Pn**	**10 49 35.0**	**-0.7**
ISK	**Istanbul-Kandi**	**2.06**	**24**	P	**Pn**	**10 49 35.0**	**-0.7**
ISK	**Istanbul-Kandi**	**2.06**	**24**	*e*Pn	**Pn**	**10 49 36.1**	**+0.4**
BORA	**Eskisehir**	**2.06**	**70**	*i* P	**Pn**	**10 49 36.1**	**+0.2**
BORA				*i* S	**Sg**	**10 50 07.1**	**-0.3**
BORA	**Eskisehir**	**2.06**	**70**	P	**Pn**	**10 49 36.1**	**+0.2**
ENEZ	**Enez**	**2.06**	**319**	*e*PN	**Pn**	**10 49 36.2**	**+0.4**
ENEZ	**Enez**	**2.06**	**319**	P	**Pn**	**10 49 36.0**	**+0.2**
ENEZ				S	**Sn**	**10 50 01.6**	**+0.1**
ENEZ	**Enez**	**2.06**	**319**	*e*Pn	**Pn**	**10 49 36.2**	**+0.4**
ENEZ				S	**Sn**	**10 50 01.6**	**+0.1**
CTKS	**Kestanelik-??a**	**2.09**	**12**	*e*PN	**Pn**	**10 49 36.7**	**+0.6**
CTKS	**Kestanelik-??a**	**2.09**	**12**	*e*Pn	**Pn**	**10 49 36.7**	**+0.6**
HRT	**Hereke**	**2.10**	**39**	*e*PN	**Pn**	**10 49 36.5**	**+0.1**
HRT	**Hereke**	**2.10**	**39**	*e*Pn	**Pn**	**10 49 36.5**	**+0.1**
SHUT	**Suhut-Afyon**	**2.14**	**107**	*e*PN	**Pn**	**10 49 36.9**	**0.0**
SHUT	**Suhut-Afyon**	**2.14**	**107**	*e*Pn	**Pn**	**10 49 36.9**	**0.0**
BODT	**Bodrum**	**2.19**	**193**	*e*PN	**Pn**	**10 49 37.6**	**+0.1**
BODT	**Bodrum**	**2.19**	**193**	P	**Pn**	**10 49 36.9**	**-0.6**
BODT	**Bodrum**	**2.19**	**193**	P	**Pn**	**10 49 36.9**	**-0.6**
BODT	**Bodrum**	**2.19**	**193**	*e*Pn	**Pn**	**10 49 37.6**	**+0.1**
KLYT	**Kilyos**	**2.22**	**22**	*e*PN	**Pn**	**10 49 38.4**	**+0.4**
KLYT	**Kilyos**	**2.22**	**22**	*e*Pn	**Pn**	**10 49 38.4**	**+0.4**
ALN	**Alexandroupoli**	**2.24**	**320**	*e*PN	**Pn**	**10 49 38.6**	**+0.4**
ALN	**Alexandroupoli**	**2.24**	**320**	P	**Pn**	**10 49 38.5**	**+0.4**
ALN	**Alexandroupoli**	**2.24**	**320**	P	**Pn**	**10 49 38.5**	**+0.4**
LIA	**Limnos Island**	**2.24**	**289**	P	**Pn**	**10 49 38.8**	**+0.5**
SMTH	**Samothraki Isl**	**2.25**	**305**	P	**Pn**	**10 49 37.8**	**-0.6**
SMTH				S	**Sn**	**10 50 05.5**	**-0.7**
SMTH	**Samothraki Isl**	**2.25**	**305**	P	**Pn**	**10 49 39.4**	**+1.0**
SMTH				S	**Sn**	**10 50 05.5**	**-0.7**
SMTH	**Samothraki Isl**	**2.25**	**305**	P	**Pn**	**10 49 39.4**	**+1.0**
ESKT	**Eskisehir**	**2.28**	**81**	*e*PN	**Pn**	**10 49 39.6**	**+0.7**
ESKT	**Eskisehir**	**2.28**	**81**	*e*Pn	**Pn**	**10 49 39.6**	**+0.7**
GOLH	**Golhisar**	**2.33**	**146**	*i* P	**Pn**	**10 49 40.5**	**+0.9**
GOLH				*i* S	**Sb**	**10 50 11.6**	**-0.6**
GOLH	**Golhisar**	**2.33**	**146**	P	**Pn**	**10 49 40.5**	**+0.9**
GOLH				S	**Sb**	**10 50 11.6**	**-0.6**
GULT	**Gulveren**	**2.34**	**57**	*e*PN	**Pn**	**10 49 40.2**	**+0.6**
GULT	**Gulveren**	**2.34**	**57**	*e*Pn	**Pn**	**10 49 40.2**	**+0.6**
SILT	**Sile**	**2.35**	**33**	*e*PN	**Pn**	**10 49 40.5**	**+0.8**
SILT	**Sile**	**2.35**	**33**	*e*Pn	**Pn**	**10 49 40.5**	**+0.8**
SPNC	**Sapanca-Adapaz**	**2.35**	**50**	*e*PN	**Pn**	**10 49 40.5**	**+0.7**
SPNC	**Sapanca-Adapaz**	**2.35**	**50**	*e*Pn	**Pn**	**10 49 40.5**	**+0.7**
GLHS	**Glhisar (BURDU**	**2.38**	**148**	*e*PN	**Pn**	**10 49 40.2**	**0.0**
GLHS	**Glhisar (BURDU**	**2.38**	**148**	*e*Pn	**Pn**	**10 49 40.2**	**0.0**
BOLV	**Bolvadin**	**2.40**	**100**	*i* P	**Pb**	**10 49 43.1**	**-1.3**
BOLV				*i* S	**Sg**	**10 50 21.0**	**+2.9**
BOLV	**Bolvadin**	**2.40**	**100**	P	**Pb**	**10 49 43.1**	**-1.3**
DALY	**Dalyan (Mu˘la**	**2.44**	**166**	*e*PN	**Pn**	**10 49 41.3**	**+0.4**
DALY	**Dalyan (Mu˘la**	**2.44**	**166**	*e*Pn	**Pn**	**10 49 41.3**	**+0.4**
ISP	**Isparta**	**2.44**	**123**	*e*PN	**Pn**	**10 49 41.6**	**+0.5**
ISP	**Isparta**	**2.44**	**123**	*e*Pn	**Pn**	**10 49 41.6**	**+0.5**
PHSR	**Pinarhisar**	**2.46**	**353**	*e*PN	**Pn**	**10 49 41.9**	**+0.7**
PHSR	**Pinarhisar**	**2.46**	**353**	*e*Pn	**Pn**	**10 49 41.9**	**+0.7**
KAND	**Kocaeli-Kandir**	**2.57**	**42**	*i* P	**Pg**	**10 49 48.6**	**-1.7**
KAND				*i* S	**Sb**	**10 50 19.8**	**+1.0**
FETY	**Fethiye**	**2.71**	**160**	*e*PN	**Pn**	**10 49 45.2**	**+0.5**
FETY	**Fethiye**	**2.71**	**160**	*e*Pn	**Pn**	**10 49 45.2**	**+0.5**
SVRH	**Sivrihisar-ESK**	**2.79**	**84**	*e*PN	**Pn**	**10 49 46.4**	**+0.5**
SVRH	**Sivrihisar-ESK**	**2.79**	**84**	*e*Pn	**Pn**	**10 49 46.4**	**+0.5**
EDRB	**Edirne**	**2.80**	**341**	*e*PN	**Pn**	**10 49 46.8**	**+0.8**
EDRB	**Edirne**	**2.80**	**341**	*e*Pn	**Pn**	**10 49 46.8**	**+0.8**
MDUB	**Mudurnu**	**2.81**	**62**	*e*PN	**Pn**	**10 49 46.9**	**+0.7**
MDUB	**Mudurnu**	**2.81**	**62**	*e*Pn	**Pn**	**10 49 46.9**	**+0.7**
APE	**Apeiranthos**	**2.85**	**223**	*e*PN	**Pn**	**10 49 47.2**	**+0.6**
APE	**Apeiranthos**	**2.85**	**223**	ǁ *i* P	Pg	10 50 01.5	+5.7
APE	**Apeiranthos**	**2.85**	**223**	*e*Pn	**Pn**	**10 49 47.2**	**+0.6**
ELL	**Elmali**	**2.90**	**147**	*e*PN	**Pn**	**10 49 47.6**	**+0.3**
ELL	**Elmali**	**2.90**	**147**	*e*Pn	**Pn**	**10 49 47.6**	**+0.3**
SUTC	**Sutluce-Ispart**	**2.96**	**125**	*e*PN	**Pn**	**10 49 48.7**	**+0.5**
SUTC	**Sutluce-Ispart**	**2.96**	**125**	*e*Pn	**Pn**	**10 49 48.7**	**+0.5**
KIZT	**Kizilcal**	**3.08**	**95**	*e*PN	**Pn**	**10 49 50.7**	**+0.7**
KIZT	**Kizilcal**	**3.08**	**95**	*e*Pn	**Pn**	**10 49 50.7**	**+0.7**
BCAM	**Yenicaga**	**3.56**	**62**	*i* P	**Pg**	**10 50 07.6**	**-1.8**
BCAM				*i* S	**Sg**	**10 50 58.5**	**+3.0**
CFR	**Carcaliu**	**5.98**	**1**	ǁ *i* P	**Pn**	**10 50 30.0**	**+0.4**
CFR	**Carcaliu**	**5.98**	**1**	ǁ *i* P	**Pn**	**10 50 30.0**	**+0.4**
MLR	**Muntele Rosu**	**6.46**	**347**	ǁ *i* P	**Pn**	**10 50 39.3**	**+2.9**
MLR	**Muntele Rosu**	**6.46**	**347**	ǁ *i* P	**Pn**	**10 50 39.3**	**+2.9**
PLOR	**Plostina**	**6.72**	**352**	ǁ *i* P	**Pn**	**10 50 44.0**	**+4.2**
BURAR	**Bucovina Array**	**8.65**	**348**	ǁ *i* P	**Pn**	**10 51 09.2**	**+2.9**
BURAR	**Bucovina Array**	**8.65**	**348**	ǁ *i* P	**Pn**	**10 51 09.2**	**+2.9**

*IDC **28** 11:06:12.1±1.9,34.°52N×25.°13E,h0km, mb3.6/5, mb1 3.7/6,mb1mx3.5/38,mbtmp3.6/6,ML3.8/1, Error ellipse: s-maj=40.5km s-min=13.5km az=62.0*
*ISCJB **28** 11:06:13.8±0.7,35.°07N±0.°04×23.°98E±0.°05,h24km±4km, mb3.3/5, Error ellipse: s-maj=8.2km s-min=4.9km az=41.0*
*ATH **28** 11:06:13.2,35.°10N×24.°02E,h25km±1km,ML3.2/9, Error ellipse: s-maj=1.5km s-min=0.8km az=215.0*
*CSEM **28** 11:06:13.7±0.3,35.°08N×24.°01E,h15km,ML3.2, Error ellipse: s-maj=6.6km s-min=3.7km az=33.0*
*THE **28** 11:06:14.4,35.°07N×23.°95E,h10km±3km,ML3.1/3, Error ellipse: s-maj=3.1km s-min=1.2km az=92.0*

ISC 28 11:06:13.9±1.0,35.°10N±0.°03×24.°03E±0.°03,h15km±7km, n45,σ1°§14/61,mb3.4/5,Crete

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GVD	**Gavdhos**	**0.26**	**170**	P	**Pg**	**11 06 19.5**	**-0.1**
GVD				S	**Sb**	**11 06 24.4**	**-0.3**
GVD	**Gavdhos**	**0.26**	**170**	P	**Pg**	**11 06 19.5**	**-0.1**
GVD				S	**Sb**	**11 06 24.4**	**-0.3**
GVD	**Gavdhos**	**0.26**	**170**	P	**Pg**	**11 06 19.5**	**-0.1**
GVD				S	**Sb**	**11 06 25.6**	**+0.9**
GVD				AML	AML	11 06 46.0	
	comp=E,24225µm,0.4s						
GVD				AML	AML	11 06 47.6	
	comp=N,27120µm,0.4s						
VAM	**Vamos**	**0.34**	**24**	P	**Pg**	**11 06 20.8**	**-0.1**
VAM				S	**Sn**	**11 06 29.2**	**-1.8**
VAM	**Vamos**	**0.34**	**24**	P	**Pg**	**11 06 20.9**	**0.0**
VAM				S	**Sb**	**11 06 27.5**	**+0.6**
IMMV	**Iera Moni Meta**	**0.36**	**354**	P	**Pg**	**11 06 21.1**	**-0.3**
IMMV				S	**Sb**	**11 06 28.8**	**+1.1**
IMMV	**Iera Moni Meta**	**0.36**	**354**	P	**Pg**	**11 06 21.1**	**-0.3**
IMMV				S	**Sb**	**11 06 27.9**	**+0.2**
IMMV	**Iera Moni Meta**	**0.36**	**354**	P	**Pg**	**11 06 20.9**	**-0.5**
IMMV				S	**Sb**	**11 06 27.9**	**+0.2**
IMMV				AML	AML	11 06 44.0	
	comp=E,17858µm,0.3s						
IMMV				AML	AML	11 06 45.1	
	comp=N,18573µm,0.3s						
SIVA	**Sivas**	**0.64**	**97**	P	**Pn**	**11 06 27.8**	**-0.7**
SIVA				S	**Sn**	**11 06 38.7**	**+0.2**
SIVA	**Sivas**	**0.64**	**97**	P	**Pg**	**11 06 25.9**	**-0.6**
SIVA				S	**Sb**	**11 06 36.2**	**+0.5**
SIVA	**Sivas**	**0.64**	**97**	P	**Pg**	**11 06 25.9**	**-0.6**
SIVA				S	**Sb**	**11 06 36.1**	**+0.5**
SIVA				AML	AML	11 06 55.4	
	comp=N,10642µm,0.7s						
SIVA				AML	AML	11 07 04.7	
	comp=E,7771µm,0.5s						
IDI	**Anoyia**	**0.73**	**75**	Pg	**Pg**	**11 06 27.6**	**-0.6**
	comp=E,18nm,0.3s,baz=223,slow=19,SNR=52						
IDI				Lg	Lg	11 06 38.3	
	comp=E,70nm,0.3s,baz=141,slow=19,SNR=22						
IDI	**Anoyia**	**0.73**	**75**	P	**Pb**	**11 06 28.9**	**+0.5**
IDI				S	**Sn**	**11 06 41.6**	**+0.9**
IDI	**Anoyia**	**0.73**	**75**	P	**Pg**	**11 06 27.8**	**-0.4**
IDI				S	**Sg**	**11 06 37.8**	**0.0**
IDI	**Anoyia**	**0.73**	**75**	P	**Pg**	**11 06 27.8**	**-0.4**
IDI				S	**Sg**	**11 06 37.8**	**0.0**
IDI				AML	AML	11 06 55.7	
	comp=N,4126µm,0.5s						
IDI				AML	AML	11 06 57.9	
	comp=E,3127µm,0.4s						
ANKY	**Antikythira Is**	**0.97**	**322**	P	**Pb**	**11 06 32.0**	**-0.5**
ANKY	**Antikythira Is**	**0.97**	**322**	P	**Pb**	**11 06 32.0**	**-0.5**
ANKY				S	**Sg**	**11 06 45.6**	**+0.1**
ANKY	**Antikythira Is**	**0.97**	**322**	P	**Pb**	**11 06 31.6**	**-0.8**
ANKY				S	**Sg**	**11 06 45.6**	**+0.1**
ANKY				AML	AML	11 07 05.1	
	comp=E,2913µm,0.5s						
ANKY				AML	AML	11 07 05.9	
	comp=N,1886µm,0.6s						
LAST	**Lasithi**	**1.19**	**87**	P	**Pn**	**11 06 36.1**	**0.0**
LAST	**Lasithi**	**1.19**	**87**	P	**Pn**	**11 06 36.1**	**0.0**
LAST				S	**Sn**	**11 06 52.0**	**0.0**
LAST	**Lasithi**	**1.19**	**87**	P	**Pn**	**11 06 35.7**	**-0.4**
NPS	**Neapolis**	**1.31**	**82**	P	**Pb**	**11 06 38.5**	**+0.3**
NPS	**Neapolis**	**1.31**	**82**	P	**Pb**	**11 06 38.5**	**+0.3**
NPS				S	**Sg**	**11 06 56.5**	**+0.4**
NPS	**Neapolis**	**1.31**	**82**	P	**Pg**	**11 06 38.8**	**-0.2**
NPS				S	**Sg**	**11 06 56.5**	**+0.4**
NPS				AML	AML	11 07 17.4	
	comp=N,1388µm,0.6s						
NPS				AML	AML	11 07 23.4	
	comp=E,1485µm,0.6s						
KYTH	**Kithira**	**1.41**	**326**	P	**Pb**	**11 06 39.8**	**-0.3**
KYTH	**Kithira**	**1.41**	**326**	P	**Pb**	**11 06 39.7**	**-0.3**
KYTH	**Kithira**	**1.41**	**326**	P	**Pb**	**11 06 39.7**	**-0.3**
SANT	**Santorini**	**1.72**	**42**	P	**Pn**	**11 06 42.7**	**-0.7**
SANT	**Santorini**	**1.72**	**42**	P	**Pn**	**11 06 42.7**	**-0.7**
SANT				AML	AML	11 07 25.4	
	comp=E,848µm,0.4s						
SANT				AML	AML	11 07 33.6	
	comp=N,644µm,0.4s						
ZKR	**Zakros**	**1.79**	**89**	P	**Pb**	**11 06 45.6**	**-0.9**
ZKR	**Zakros**	**1.79**	**89**	P	**Pb**	**11 06 45.6**	**-0.9**
ZKR				AML	AML	11 07 26.7	
	comp=N,258µm,0.6s						
ZKR				AML	AML	11 07 33.5	
	comp=E,704µm,1.1s						
VLI	**Veliai**	**1.84**	**332**	P	**Pn**	**11 06 45.4**	**+0.3**
VLI	**Veliai**	**1.84**	**332**	P	**Pn**	**11 06 45.4**	**+0.3**
VLI	**Veliai**	**1.84**	**332**	P	**Pn**	**11 06 45.4**	**+0.3**
VLI				AML	AML	11 07 27.4	
	comp=N,574µm,0.6s						
VLI				AML	AML	11 07 31.9	
	comp=E,450µm,0.5s						
DID	**Didima**	**2.49**	**345**	P	**Pn**	**11 06 53.0**	**-0.9**
DID	**Didima**	**2.49**	**345**	P	**Pn**	**11 06 53.0**	**-0.9**
KARP	**Karpathos**	**2.60**	**79**	P	**Pn**	**11 06 55.1**	**-0.3**
KARP	**Karpathos**	**2.60**	**79**	P	**Pn**	**11 06 55.1**	**-0.3**
BRTR	**Keskin Array B**	**8.93**	**56**	Pn	**Pn**	**11 08 23.9**	**+1.4**
	comp=E,0.1nm,0.3s,baz=226,slow=14,SNR=2.7						
GERES	**GERESS Array B**	**15.72**	**334**	Pn	P	11 10 07.0	+8.3
	comp=E,0.1nm,0.3s,baz=145,slow=11,SNR=5.2						
HFS	**Hagfors**	**25.94**	**348**	P	**P**	**11 11 51.6**	**+6.2**
	comp=E,0.8nm,0.7s,baz=167,slow=13,SNR=3.2						
EKA	**Eskdalemuir Ar**	**27.56**	**326**	P	P	11 12 09.7	+10
	comp=E,0.5nm,0.6s,baz=126,slow=9.8,SNR=2.8						
ARCES	**ARCESS Array B**	**34.50**	**1**	P	P	11 13 07.3	+6.3
	comp=E,0.4nm,0.4s,baz=174,slow=9.1,SNR=2.4						
KURBB	**Kurchatov Arra**	**41.88**	**51**	P	**P**	**11 14 01.2**	**-2.1**
	comp=E,0.2nm,0.3s,baz=276,slow=10.0,SNR=3.8						
MKAR	**Makanchi Array**	**44.58**	**56**	P	**P**	**11 14 21.9**	**-3.5**
	comp=E,0.1nm,0.4s,baz=282,slow=6.6,SNR=2.0						

IDC 28 11:12:14.6±4.8,18.°99S×169.°41E,h246km±84km,mb3.2/3, mb1 3.4/4,mb1mx3.1/27,mbtmp3.7/4,Error ellipse: s-maj=201.7km s-min=31.1km az=153.0,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.14**	**222**	P	Pn	11 13 20.7	+0.7
	1.1nm,0.3s,baz=110,slow=19,SNR=23						
DZM				S		11 14 11.8	-0.1
	0.3nm,0.3s,baz=330,slow=20,SNR=1.7						
WRA	**Warramunga Arr**	**33.05**	**262**	P	P	11 18 26.6	-0.9
	0.3nm,0.4s,baz=96,slow=8.2,SNR=9.1						
ASAR	**Alice Springs**	**33.35**	**256**	P	P	11 18 30.6	+0.6
	3.1nm,0.5s,baz=83,slow=8.7,SNR=92						
ILAR	**Eielson Array**	**89.94**	**

baz=314,slow=75,SNR=12
MKAR **Makanchi Array** 43.57 302 P P 12 01 25.7 +0.4
0.2nm,0.5s,baz=89,slow=8.5,SNR=2.9
ILAR **Eielson Array** 49.73 32 P P 12 02 13.1 -0.2
0.4nm,0.8s,baz=265,slow=6.3,SNR=7.0
WRA **Warramunga Arr** 57.08 187 P P 12 03 06.3 -1.3
0.7nm,0.6s,baz=2.3,slow=7.5,SNR=7.7

NIED ***28*** *11:57:00, 40.30N× 143.50E, h20km, Mw3.6 Best double couple: M₀3.00000×10¹⁴ NP1:φs191.00000°, δ22.00000°, λ78.00000°. NP2:φs24.00000°, δ68.00000°, λ95.00000°.*
IDC ***28*** *11:57:06.1±8.1, 40.39N× 143.87E, h0km, mb3.7/2, mb1 3.7/4, mb1mx3.4/45, mbtmp3.7/4, ML2.7/2, Error ellipse: s-maj=132.4km s-min=51.0km az=98.0*
JMA ***28*** *11:57:07.7±0.1, 40.34N× 143.46E, h0km, M3.7*
ISCJB ***28*** *11:57:08.4±1.4, 40.32N±0.07× 143.6E±0.1, h16km, mb3.4/2, Error ellipse: s-maj=16.8km s-min=7.8km az=23.7*
ISC 28 11:57:08.8±2.0, 40.35N±0.09× 143.6E±0.2, h16km, n19, σ1s14/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JTH	**Tanohata**	1.41	254	P		Pn	11 57 32.4	-1.4
MIYJ	**Miyakonagasawa**	1.58	242	P		Pn	11 57 35.6	-0.6
JANG	**Nango**	1.61	272	P		Pn	11 57 35.5	-1.0
JEM	**Erimo**	1.71	348	P		Pb	11 57 38.5	-1.2
JOM	**Ohasama**	1.99	245	P		Pn	11 57 41.8	0.0
JTM	**Tenmabayashi**	2.00	284	P		Pn	11 57 41.8	0.0
JTM				*e*S		Sn	11 58 06.5	0.0
JNBK	**Urakawa-nobuka**	2.04	342	P		Pb	11 57 43.9	-1.5
JOT	**Ohata**	2.21	299	P		Pn	11 57 45.0	+0.2
JCH	**Churui**	2.27	355	*e*S		Sn	11 58 13.7	+0.4
MJAR	**Matsushiro Arr**	5.70	230	Pn		Pn	11 58 34.2	+1.4
	0.9nm,0.3s,baz=40,slow=11,SNR=8.0							
USRK	**Ussuriysk Ar.**	9.44	298	Pn		Pn	11 59 25.8	+1.8
	0.2nm,0.3s,baz=100,slow=14,SNR=6.8							
SONM	**Songino Array**	27.56	298	P		P	12 02 56.1	+1.2
	0.6nm,0.6s,baz=98,slow=7.4,SNR=2.9							
H11N2	**WAKE ISLAND Hy**	28.62	129	T		T	12 33 12.5	
	baz=321,slow=75,SNR=20							
H11N1	**WAKE ISLAND Hy**	28.63	129	T		T	12 33 16.8	
	baz=321,slow=75,SNR=16							
H11N3	**WAKE ISLAND Hy**	28.64	129	T		T	12 33 08.3	
	baz=321,slow=75,SNR=16							
H11S1	**WAKE ISLAND Hy**	29.46	131	T		T	12 34 17.8	
	baz=322,slow=76,SNR=9.4							
H11S3	**WAKE ISLAND Hy**	29.46	131	T		T	12 34 19.4	
	baz=322,slow=76,SNR=13							
H11S2	**WAKE ISLAND Hy**	29.48	131	T		T	12 34 20.1	
	baz=322,slow=76,SNR=13							
MKAR	**Makanchi Array**	43.91	300	P		P	12 05 15.2	+0.7
	0.6nm,0.7s,baz=88,slow=8.1,SNR=4.6							

ISCJB ***28*** *12:03:14.0±0.7, 4.12S±0.06× 141.93E±0.08, h109km, mb3.7/5, Error ellipse: s-maj=12.2km s-min=6.5km az=152.5*
IDC ***28*** *12:03:16.1±0.9, 4.04S× 141.99E, h114km±7km, mb3.7/6, mb1 3.9/8, mb1mx3.6/33, mbtmp4.2/8, Error ellipse: s-maj=25.6km s-min=13.8km az=89.0*
ISC 28 12:03:15.8±0.7, 4.12S±0.07× 141.89E±0.09, h109km, n11, σ2s24/19, mb3.7/5, New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JAY	**Jayapura**	1.98	324	P		Pn	12 03 48.3	-0.3
	3.4nm,0.3s,baz=102,slow=21,SNR=179							
JAY				S		Sn	12 04 11.9	-1.7
	2.2nm,0.3s,baz=90,slow=20,SNR=6.6							
JAY				LR		LR	12 04 51.6	
	comp=Z,6.5nm,20.2s,baz=177,slow=48							
PMG	**Port Moresby**	7.42	135	P		Pn	12 05 02.0	+0.6
	3.3nm,0.3s,baz=53,slow=3.8,SNR=9.5							
PMG				S		Sn	12 06 22.6	-1.4
	0.3nm,0.3s,baz=285,slow=20,SNR=2.9							
WRA	**Warramunga Arr**	17.36	204	P		P	12 07 10.9	-0.2
	0.5nm,0.3s,baz=26,slow=12,SNR=50							
WRA				S		Sn	12 10 17.8	-7.2
	0.1nm,0.3s,baz=19,slow=21,SNR=2.6							
ASAR	**Alice Springs**	20.90	201	P		P	12 07 50.8	+1.1
	8.5nm,0.6s,baz=30,slow=11,SNR=84							
ASAR				pP		pP	12 08 12.8	+2.6
	12nm,0.8s,baz=30,slow=10.0,SNR=11							
ASAR				sP		sP	12 08 25.9	+1.9
	11nm,0.8s,baz=29,slow=10,SNR=6.7							
FITZ	**Fitzroy Crossi**	21.12	228	P		P	12 07 52.7	+0.7
	5.5nm,0.6s,baz=35,slow=8.6,SNR=27							
FITZ				S		S	12 11 42.8	+1.9
	2.6nm,0.7s,baz=149,slow=12,SNR=4.6							
STKA	**Stephens Creek**	27.61	181	P		P	12 08 53.5	+0.5
	1.7nm,0.8s,baz=4.5,slow=11,SNR=4.3							
MKAR	**Makanchi Array**	72.84	322	P		P	12 14 33.5	+0.7
	0.5nm,0.6s,baz=112,slow=7.1,SNR=5.9							
MKAR				pP		pP	12 15 02.0	+1.7
	0.7nm,0.7s,baz=107,slow=8.1,SNR=4.3							
ZALV	**Zalesovo Beam**	74.75	329	P		P	12 14 43.3	-0.5
	0.9nm,0.7s,baz=120,slow=6.5,SNR=3.3							
ILAR	**Eielson Array**	85.81	24	P		P	12 15 40.9	-1.9
	0.8nm,0.6s,baz=256,slow=4.6,SNR=14							
ILAR				pP		pP	12 16 11.5	+0.4
	0.5nm,0.8s,baz=263,slow=4.3,SNR=3.5							
LPAZ	**La Paz**	144.05	125	PKP		PKPdf	12 22 39.9	-0.6
	1.8nm,0.5s,baz=16,slow=7.4,SNR=8.8							
DBIC	**Dimbokro**	146.80	276	PKPbc		PKPbc	12 22 46.8	+0.4
	3.4nm,0.9s,baz=96,slow=4.7,SNR=3.2							

ISK ***28*** *12:03:51.9, 36.38N× 33.58E, h5km, ML2.2*
CSEM ***28*** *12:03:52.7±0.4, 36.36N× 33.55E, h8km, ML2.2, Error ellipse: s-maj=9.0km s-min=6.4km az=148.0*
DDA ***28*** *12:03:53.3, 36.36N× 33.57E, h7km, Md2.6*
ISC 28 12:03:52.5±1.3, 36.38N±0.05× 33.54E±0.04, h6km±11km, n13, σ0s52/22, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
IKL	**Isikli**	0.18	140	PG		Pg	12 03 55.9	-0.3
IKL				*e*SG		Sg	12 03 58.6	0.0
IKL	**Isikli**	0.18	140	*i* Pg		Pg	12 03 55.9	-0.3
IKL				*e*Sg		Sg	12 03 58.6	0.0
AKKU	**Akkuyu-Mersin**	0.22	178	PG		Pg	12 03 56.9	0.0
AKKU				*e*SG		Sg	12 04 00.4	+0.6
AKKU	**Akkuyu-Mersin**	0.22	178	*i* Pg		Pg	12 03 56.9	0.0
AKKU				*e*Sg		Sg	12 04 00.4	+0.6
KIZK	**Mersin**	0.50	78	*i* P		Pg	12 04 02.5	+0.4
KIZK				*i* S		Sb	12 04 10.5	-0.7
KIZK	**Mersin**	0.50	78	P		Pg	12 04 02.5	+0.4
KIZK				S		Sb	12 04 10.5	-0.7
MERS	**Mersin**	0.93	58	*e*PG		Pg	12 04 09.5	-0.8
MERS	**Mersin**	0.93	58	*e*Pg		Pg	12 04 09.5	-0.8
GAZI	**Gazipasa**	1.00	262	*i* P		Pg	12 04 11.3	-0.4
GAZI				*i* S		Sn	12 04 27.8	+0.2
GAZI	**Gazipasa**	1.00	262	P		Pg	12 04 11.3	-0.4
GAZI				S		Sn	12 04 27.8	+0.2
KERG	**Konya-Eregli**	1.13	24	*i* P		Pg	12 04 14.7	+0.4
KERG				*i* S		Sn	12 04 31.8	+0.8
TAHT	**Tahtakopru-Hat**	2.13	89	*e*PN		Pn	12 04 28.8	+0.1
TAHT	**Tahtakopru-Hat**	2.13	89	*e*Pn		Pn	12 04 28.8	+0.1

IDC ***28*** *12:10:45.9±2.3, 9.96N× 126.22E, h0km, mb3.6/4, mb1 3.7/4, mb1mx3.4/34, mbtmp3.6/4, Error ellipse: s-maj=229.0km s-min=23.3km az=68.0*
MAN ***28*** *12:10:52, 10.15N× 126.23E, h110km, mb4.4, ML3.3, MS3.1*
ISC 28 12:10:49.0±1.3, 10.06N±0.06× 126.29E±0.09, h18km±5km, n16, σ1s08/15, mb3.5/4, 2C-3D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PLP	**Palo**	1.69	311	↓*e*P		Pg	12 11 21.4	-0.1
PLP				*e*S		Sg	12 11 42.7	-0.8
BIPH	**Bislig**	1.87	178	↓*e*P		Pg	12 11 25.3	+0.4
BIPH				*e*S		Sg	12 11 49.6	+0.4
CGP	**Cagayan de Oro**	2.24	225	↑*e*P		Pb	12 11 28.0	-0.9
CGP				*i* S		Sn	12 11 53.7	+1.4
LLP	**Lapu-Lapu**	2.30	277	↓*e*P		Pb	12 11 29.2	-0.7
LLP				*i* S		Sb	12 11 57.0	-0.9
TBP	**Tagbilaran**	2.42	261	*i* P		Pb	12 11 32.7	+0.9
TBP				*i* S		Sb	12 12 01.3	0.0
RCP	**Roxas**	3.78	294	↑*e*P		Pb	12 11 57.2	+2.0
WRA	**Warramunga Arr**	30.85	165	P		P	12 17 04.1	-0.2
	0.2nm,0.7s,baz=346,slow=8.9,SNR=4.1							
ASAR	**Alice Springs**	34.34	168	P		P	12 17 33.1	-1.7
	0.1nm,0.3s,baz=345,slow=6.6,SNR=3.0							
H11S3	**WAKE ISLAND Hy**	39.97	73	T		T	13 01 17.2	
	baz=262,slow=70,SNR=26							
H11S1	**WAKE ISLAND Hy**	39.98	73	T		T	13 01 23.5	
	baz=262,slow=70,SNR=22							
H11S2	**WAKE ISLAND Hy**	39.98	73	T		T	13 01 21.1	
	baz=262,slow=70,SNR=20							
H11N1	**WAKE ISLAND Hy**	40.31	71	T		T	13 01 47.1	
	baz=264,slow=74,SNR=55							
H11N2	**WAKE ISLAND Hy**	40.31	71	T		T	13 01 45.8	
	baz=264,slow=74,SNR=12							
H11N3	**WAKE ISLAND Hy**	40.33	71	T		T	13 01 48.5	
	baz=264,slow=74,SNR=40							
MKAR	**Makanchi Array**	52.20	323	P		P	12 19 59.0	+0.3
	0.6nm,0.5s,baz=123,slow=7.9,SNR=6.9							
FINES	**FINESS Array B**	86.08	332	P		P	12 23 28.6	+0.1
	0.6nm,0.4s,baz=64,slow=6.3,SNR=7.4							

ISCJB ***28*** *12:23:59.8±0.6, 43.02N±0.07× 71.18E±0.04, h0km, Error ellipse: s-maj=10.1km s-min=3.1km az=13.9*
NNC ***28*** *12:24:00.2±0.8, 42.79N× 71.00E, h0km, mb2.7, mpv2.4, Error ellipse: s-maj=18.6km s-min=1.5km az=28.0, Suspected Mining explosion.*
SOME ***28*** *12:24:02.6, 42.98N× 70.97E, h5km*
ISC 28 12:24:01.3±0.9, 42.83N±0.08× 71.03E±0.03, h0km, n15, σ0s81/28, 15C-8D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KK06	**Karatay Array**	0.46	305	↑P		Pg	12 24 09.8	-0.2
KK06				↑S		Sg	12 24 15.6	-0.3
KK07	**Karatay Array**	0.47	303	↑P		Pg	12 24 10.0	-0.3
KK07				↑S		Sg	12 24 16.1	-0.2
KK02	**Karatay Array**	0.47	305	↑P		Pg	12 24 09.9	-0.3
KK02				↑S		Sg	12 24 16.1	-0.2
KK31	**Karatay Array**	0.47	305	↑P		Pg	12 24 09.7	-0.6
	1.8nm,0.5s							
KK31				S		Sg	12 24 16.2	-0.2
	4.1nm,0.3s,baz=136,slow=18,SNR=25							
KK05	**Karatay Array**	0.47	307	↑P		Pg	12 24 09.9	-0.3
KK05				↑S		Sg	12 24 16.0	-0.3
KK01	**Karatay Array**	0.47	305	↑P		Pg	12 24 10.1	-0.2
KK01				↑S		Sg	12 24 16.2	-0.3
KK03	**Karatay Array**	0.47	305	↓P		Pg	12 24 10.0	-0.4
KK03				↓S		Sg	12 24 16.4	-0.1
KK04	**Karatay Array**	0.47	306	↓P		Pg	12 24 10.1	-0.3
KK04				↓S		Sg	12 24 16.2	-0.4
KK08	**Karatay Array**	0.48	304	↓P		Pg	12 24 10.2	-0.4
KK08				↓S		Sg	12 24 16.5	-0.4
BRLS	**Borolday**	0.99	268	*e*P		Pb	12 24 21.2	-0.2
	0.7nm,0.2s							
BRLS				*e*S		Sb	12 24 34.8	-0.3
	6.9nm,0.2s							
IUG	**Iuzhnay**	1.01	228	*e*P		Pn	12 24 23.8	+0.9
	6.9nm,0.3s							
IUG				*e*S		Sn	12 24 38.5	+0.7
	25nm,0.3s							
MNAS	**Manas**	1.14	107	↑P		Pg	12 24 20.4	-2.7
	1.5nm,0.4s							
MNAS				↑S		Sg	12 24 38.1	+0.3
	2.8nm,0.4s							
MRKS	**Merke**	1.62	92	*e*P		Pg	12 24 33.6	+1.3
	4.6nm,0.5s							
MRKS				*e*S		Sg	12 24 54.5	+1.3
	5.7nm,0.5s							
AAK	**Ala-Archa**	2.56	93	↑Pg		Pb	12 24 48.2	0.0
	2.0nm,0.4s							
AAK				↓Lg		Lg	12 25 22.8	
	1.6nm,0.3s							
TKM2	**Tokmak 2**	3.35	87	↓Pg		Pg	12 25 04.2	-1.4
	1.4nm,0.7s							
TKM2				↑Lg		Lg	12 25 44.9	
	1.4nm,0.7s							

NIED ***28*** *12:24:00, 36.60N× 141.80E, h26km, Mw3.6 Best double couple: M₀3.08000×10¹⁴ NP1:φs221.00000°, δ42.00000°, λ-82.00000°. NP2:φs31.00000°, δ49.00000°, λ-97.00000°.*
IDC ***28*** *12:24:37.5±1.1, 36.63N× 141.98E, h0km, mb3.7/7, mb1 3.8/9, mb1mx3.6/45, mbtmp3.7/9, ML3.7/2, Error ellipse: s-maj=32.7km s-min=18.2km az=79.0*
ISCJB ***28*** *12:24:39.5±1.5, 36.57N±0.04× 141.93E±0.07, h26km±9km, mb3.6/7, Error ellipse: s-maj=9.1km s-min=7.2km az=8.3*
JMA ***28*** *12:24:41.6±0.2, 36.65N× 141.84E, h56km±4km, M3.8*
ISC 28 12:24:41.6±3.0, 36.61N±0.05× 141.87E±0.10, h24km±19km, n22, σ1s31/28, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	0.99	300	P		Pn	12 24 58.6	-1.4
ONAJ				*e*S		Sb	12 25 12.1	-0.5
JHO	**Hitachi**	1.04	270	P		Pn	12 24 59.6	-1.1
JHO				S		Sb	12 25 13.2	-1.0
JFK	**Kawauchi**	1.09	314	P		Pn	12 25 00.1	-1.4
JFK				*e*S		Sb	12 25 14.4	-1.3
JYT	**Yasato**	1.40	255	P		Pn	12 25 04.9	-0.7
JYT				S		Sn	12 25 21.4	-1.9
JMM	**Marumori**	1.52	326	P		Pn	12 25 06.4	-0.8
JMM				S		Sn	12 25 25.0	-1.2
JFT	**Otama**	1.52	307	P		Pn	12 25 07.4	+0.1
JFT				S		Sn	12 25 26.5	+0.1
MJAR	**Matsushiro Arr**	2.94	270	Pn		Pn	12 25 27.9	+1.1
	9.2nm,0.3s,baz=88,slow=15,SNR=67							
MJAR					Sn	Sn	12 26 02.7	+1.2
	7.2nm,0.3s,baz=65,slow=25,SNR=8.6							
MAT	**Matsushiro**	2.95	270	P		Pn	12 25 28.1	+1.2
MAT				S		Sn	12 26 01.7	+0.2
JHJ	**Hachijo jima 2**	3.88	207	Pn		Pn	12 25 39.8	0.0
	15nm,0.3s,baz=120,slow=24,SNR=12							
JHJ					Sn	Sn	12 26 22.3	-2.3
	35nm,0.3s,baz=107,slow=19,SNR=10							
ASAJ	**Asahikawa**	7.52	4	Pn		Pn	12 26 29.2	-0.5
	baz=187,slow=8.1							
USRK	**Ussuriysk Ar.**	10.68	318	Pn		Pn	12 27 17.0	+4.0
	0.2nm,0.3s,baz=140,slow=11,SNR=4.6							
H11N2	**WAKE ISLAND Hy**	27.62	121	T		T	12 59 46.9	
	baz=314							
H11N1	**WAKE ISLAND Hy**	27.63	121	T		T	12 59 49.0	
	baz=314							
H11N3	**WAKE ISLAND Hy**	27.64	121	T		T	12 59 54.7	
	baz=314							
SONM	**Songino Array**	28.32	305	P		P	12 30 33.7	+0.3
	0.7nm,0.7s,baz=110,slow=8.7,SNR=3.9							
ZALV	**Zalesovo Beam**	42.47	313	P		P	12 32 34.7	+0.3
	0.7nm,0.5s,baz=77,slow=6.5,SNR=3.1							
MKAR	**Makanchi Array**	44.65	303	P		P	12 32 51.4	-0.8
	0.2nm,0.4s,baz=87,slow=8.7,SNR=3.1							
WRA	**Warramunga Arr**	56.70	188	P		P	12 34 22.7	-0.4
	0.2nm,0.4s,baz=7.3,slow=7.5,SNR=12							
ASAR	**Alice Springs**	60.42	188	P		P	12 34 49.0	-0.1
	0.4nm,0.7s,baz=4.8,slow=6.7,SNR=9.5							
NOA	**NORSAR Array B**	74.72	337	P		P	12 36 18.8	-0.2
	0.8nm,0.8s,baz=41,slow=5.9,SNR=4.3							
AKASG	**Malin Array Be**	74.85	323	P		P	12 36 19.5	-0.4
	0.7nm,0.4s,baz=51,slow=7.3,SNR=3.9							
LPAZ	**La Paz**	146.59	61	PKPbc		PKPbc	12 44 22.0	-0.2
	0.6nm,0.6s,baz=349,slow=5.2,SNR=3.8							

IDC ***28*** *12:27:48.2±1.1, 52.01N× 169.69W, h0km, mb3.7/9, mb1 3.9/11, mb1mx3.7/52, mbtmp3.7/11, ML3.8/2, Error ellipse: s-maj=33.4km s-min=18.1km az=169.0*
ISCJB ***28*** *12:27:53.3±0.9, 52.0N±0.1× 169.67W±0.09, h50km±8km, mb3.6/9, Error ellipse: s-maj=18.7km s-min=4.4km az=154.0*
NEIC ***28*** *12:27:53.3, 51.92N× 169.52W, h42km, ML3.4(AEIC), After AEIC.*
ISC 28 12:27:54.9±1.8, 52.0N±0.1× 169.64W±0.07, h48km±16km, n46, σ0s93/45, mb3.6/9, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	1.06	27	P		Pn	12 28 12.0	-1.3
NIKH				S		Sn	12 28 27.9	+0.9
OKSO	**Okmok South**	1.60	33	P		Pn	12 28 20.2	-0.6
OKSO				S		Sn	12 28 41.3	+1.0
OKWR	**Okmok West Rim**	1.66	31	P		Pn	12 28 21.7	+0.1
OKTU	**Okmok Mt. Tuli**	1.67	35	P		Pn	12 28 21.6	-0.1
OKER	**Okmok East Rim**	1.72	33	P		Pn	12 28 22.6	+0.2
OKAK	**Okmok**	1.73	26	P		Pn	12 28 20.6	-1.9
OKFG	**Magazine Ridge**	1.74	36	P		Pn	12 28 21.9	-0.7
OKFG				S		Sn	12 28 42.9	-0.6
MSOM	**Makushin Julie**	2.42	41	P		Pn	12 28 31.4	-0.5
MSOM				S		Sn	12 29 01.8	+1.6
MGOD	**Makushin Gods**	2.43	42	P		Pn	12 28 31.7	-0.5
MCIR	**Makushin Cirqu**	2.54	40	P		Pn	12 28 33.6	-0.1
UNV	**Unalaska Valle**	2.63	45	P		Pn	12 28 34.0	-0.7
UNV				S		Sn	12 29 06.4	+1.1
MTBL	**Makushin Table**	2.64	41	P		Pn	12 28 35.1	+0.1
KOFP	**Korovin Flat P**	2.76	277	P		Pn	12 28 37.2	+0.6
KOKL	**Mount Kliuchef**	2.83	278	P		Pn	12 28 37.6	+0.1
AKMO	**Akutan Morgan**	3.01	45	P		Pn	12 28 40.6	+0.6
AKMO				S		Sn	12 29 17.2	+2.4
AKRB	**Akutan Reef Bi**	3.01	44	P		Pn	12 28 40.6	+0.6
AKGG	**Akutan Green G**	3.09	44	P		Pn	12 28 41.5	+0.5
AKUT	**Akutan**	3.14	46	*e*Pn		Pn	12 28 42.9	+1.1
GSMY	**Great Sitkin M**	3.96	273	P		Pn	12 28 52.9	-0.2
GSTD	**Great Sitkin T**	4.02	273	P		Pn	12 28 53.5	-0.4
GSCK	**Great Sitkin C**	4.03	272	P		Pn	12 28 53.5	-0.6
SSLW	**Shishaldin Wes**	4.29	48	P		Pn	12 28 57.6	0.0
ADAG	**Mount Adagdak**	4.30	272	P		Pn	12 28 57.9	+0.2
KIKV	**Kanaga Island**	4.66	271	P		Pn	12 29 02.3	-0.4
TAFP	**Tanaga Falls P**	5.16	272	P		Pn	12 29 10.1	+0.5
SPIA	**Saint Paul Isl**	5.17	356	P		Pn	12 29 10.9	+1.3
TASE	**Tanaga Southea**	5.20	271	P		Pn	12 29 11.0	+0.9
ILAR	**Eielson Array**	17.33	34	P		Pn	12 31 50.6	-2.3
	0.1nm,0.3s,baz=224,slow=10,SNR=8.7							
PETK	**Petropavlovsk-**	19.80	286	P		P	12 32 20.9	0.0
	1.5nm,0.3s,baz=83,slow=14,SNR=9.6							
SKAG	**Skagway**	20.50	55	P		Pn	12 32 30.9	-0.2
	4.3nm,0.5s							
INK	**Inuvik**	23.72	33	P		P	12 33 01.6	-0.4
	0.8nm,0.3s,baz=217,slow=7.1,SNR=4.0							
YKA	**Yellowknife Ar**	30.59	48	P		P	12 34 05.1	+1.4
	0.6nm,0.6s,baz=276,slow=7.1,SNR=6.3							
KLR	**Kul'dur**	36.42	289	P		P	12 34 53.1	-1.4
	0.8nm,0.8s,baz=23,slow=5.9,SNR=4.4							
H11N2	**WAKE ISLAND Hy**	37.09	218	T		T	13 14 34.0	
	baz=27,slow=76,SNR=6.4							
H11N3	**WAKE ISLAND Hy**	37.09	218	T		T	13 14 34.5	
	baz=27,slow=76,SNR=6.8							
H11N1	**WAKE ISLAND Hy**	37.10	218	T		T	13 14 35.5	
	baz=27,slow=76,SNR=5.4							
H11S1	**WAKE ISLAND Hy**	38.27	218	T		T	13 16 18.1	
	baz=23,slow=76,SNR=36							
H11S2	**WAKE ISLAND Hy**	38.29	218	T		T	13 16 20.2	
	baz=23,slow=76,SNR=21							
H11S3	**WAKE ISLAND Hy**	38.29	218	T		T	13 16 19.2	
	baz=23,slow=76,SNR=18							
PDAR	**Pinedale Array**	40.63	79	P		P	12 35 29.6	-0.6
	0.1nm,0.3s,baz=295,slow=4.8,SNR=2.5							
TXAR	**Lajitas Array**	52.92	88	P		P	12 37 06.2	0.0
	0.4nm,0.8s,baz=280,slow=4.4,SNR=5.2							
FINES	**FINESS Array B**	66.18	352	P		P	12 38 37.1	+0.2
	1.0nm,0.6s,baz=2.4,slow=8.5,SNR=5.0							
NB2	**NORSAR Subarra**	67.28	360	P		P	12 38 44.5	+0.5
	comp=Z,0.5nm,0.6s,baz=0.9,slow=6.9							
NOA	**NORSAR Array B**	67.28	360	P		P	12 38 44.0	+0.1
	comp=Z,0.7nm,0.6s,baz=2.0,slow=6.4,SNR=4.9							
CMAR	**Chiang Mai Arr**	76.53	283	P		P	12 39 40.0	0.0
	comp=Z,0.3nm,0.4s,baz=28,slow=6.1,SNR=2.9							
ASAR	**Alice Springs**	90.05	230	P		P	12 40 49.8	+0.5
	comp=Z,0.5nm,0.6s,baz=28,slow=4.8,SNR=8.6							

IDC ***28*** *12:27:58.7±1.3, 37.48N× 144.60E, h0km, mb3.5/3, mb1 3.8/5, mb1mx3.5/42, mbtmp3.7/5, ML3.4/2, MS2.7/1, Ms1 2.7/1, ms1mx2.2/35, Error ellipse: s-maj=49.5km s-min=24.8km az=125.0*
ISCJB ***28*** *12:28:01.4±0.8, 37.65N±0.05× 144.36E±0.06, h33km, mb3.6/3, Error ellipse: s-maj=7.3km s-min=6.3km az=149.4*
JMA ***28*** *12:28:03.0±0.2, 37.71N× 144.28E, h43km, M3.5*
ISC 28 12:28:02.9±1.2, 37.63N±0.05× 144.38E±0.09, h35km, n18, σ1s52/28, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	2.53	290	P		Pn	12 28 41.5	0.0
JIO				S		Sn	12 29 10.4	-0.7
OFUJ	**Ofunato**	2.58	305	P		Pn	12 28 42.0	-0.1
OFUJ				S		Sn	12 29 10.8	-1.5
MIYJ	**Miyakonagasawa**	2.79	315	P		Pn	12 28 44.6	-0.5
MIYJ				S		Sn	12 29 15.9	-1.7
JMK	**Ichinoseki**	2.82	299	P		Pn	12 28 45.6	+0.2
JMK				S		Sn	12 29 17.3	-0.8
JOM	**Ohasama**	3.04	308	P		Pn	12 28 49.1	+0.6
JOM				S		Sn	12 29 23.0	-0.7
JFT	**Otama**	3.22	269	P		Pn	12 28 52.3	+1.3
JFT				S		Sn	12 29 28.8	+0.7
JYK	**Kaneyama**	3.42

baz=318,slow=75,SNR=4.4
H11N1 WAKE ISLAND Hy 26.45 126 T T 13 12 41.6
baz=318,slow=75,SNR=3.3
H11N3 WAKE ISLAND Hy 26.46 126 T T 13 12 35.4
baz=318,slow=75,SNR=4.5
WRA Warramunga Arr 57.99 191 P **P** **12 49 17.2 +1.1**
0.4nm,0.5s,baz=11,slow=7.3,SNR=4.6
ASAR Alice Springs 61.71 191 P **P** **12 49 43.1 +1.5**
0.4nm,0.9s,baz=6.8,slow=7.1,SNR=3.1

IDC 28 12:39:58.7±2.2,5°17N×126°35E,h0km,mb3.4/3, mb1 3.6/3,mb1mx3.3/28,mbtmp3.4/3,Error ellipse: s-maj=165.9km s-min=28.2km az=65.0,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.16**	**163**	P	P	12 45 35.7	+0.7
	0.5nm,0.7s,baz=343,slow=10,SNR=7.4						
ASAR	**Alice Springs**	**29.59**	**166**	P	P	12 46 05.0	-0.7
	0.1nm,0.3s,baz=346,slow=7.3,SNR=4.6						
MKAR	**Makanchi Array**	**56.16**	**325**	P	P	12 49 40.3	-0.1
	0.3nm,0.4s,baz=115,slow=7.0,SNR=3.6						

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*KRNET **28** 12:59:34.6±0.1,41°.04N×69°.48E,mb2.4*
*NNC **28** 12:59:36.2±1.5,41°.02N×69°.68E,h0km,mb3.2,mpv2.8, Error ellipse: s-maj=19.9km s-min=9.7km az=118.0*

ISC 28 12:59:34.9±1.8,41°.05N±0°.04×69°.52E±0°.09,h14km±17km, n10,σ0s80/15,14C-5D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**1.40**	**135**	⇓*e*P	**Pg**	**13 00 01.5**	**-0.4**
BTK	baz=133			⇓*e*S	**Sg**	**13 00 21.3**	**+1.2**
ARK	**Arkit**	**1.98**	**67**	⇑*e*P	**Pb**	**13 00 11.2**	**+0.4**
ARK	baz=68			⇑*i*S	**Sg**	**13 00 38.2**	**-0.5**
KK31	**Karatay Array**	**2.18**	**20**	⇑Pg	**Pg**	**13 00 16.9**	**+0.2**
KK31	2.0nm,0.3s,baz=199,slow=15,SNR=52			Lg	Lg	13 00 46.3	
DZET	**Dzherino**	**2.31**	**194**	⇑Pg	**Pg**	**13 00 18.9**	**-0.2**
DZET	11nm,0.4s,baz=202,slow=24,SNR=24 2.1nm,0.3s			⇓Lg	Lg	13 00 49.2	
DRK	**Karamyk**	**2.35**	**131**	⇓*e*P	**Pb**	**13 00 16.5**	**-0.6**
DRK	14nm,0.4s baz=130			⇓*i*S	**Sb**	**13 00 47.1**	**+1.0**
ARSB	**Arslanbob**	**2.63**	**83**	⇑*i*P	**Pb**	**13 00 20.9**	**-0.9**
ARSB	baz=83			⇑*e*S	**Sb**	**13 00 54.2**	**+0.2**
MNAS	**Manas**	**2.65**	**56**	⇑*e*P	**Pb**	**13 00 21.0**	**-1.2**
MNAS	baz=56			⇑*e*S	**Sb**	**13 00 54.6**	**-0.1**
MNAS	**Manas**	**2.65**	**56**	⇑Pg	**Pb**	**13 00 23.1**	**+0.9**
MNAS	1.1nm,0.4s 4.2nm,0.4s			⇑Lg	Lg	13 00 59.3	
AAK	**Ala-Archa**	**4.04**	**65**	⇑Pg	**Pb**	**13 00 45.3**	**-0.6**
AAK	1.5nm,0.3s 2.1nm,0.6s			⇑Lg	Lg	13 01 41.2	
TKM2	**Tokmak 2**	**4.90**	**66**	⇑Pg	**Pb**	**13 01 00.6**	**+0.1**
TKM2	0.7nm,0.5s 1.5nm,0.6s			⇑Lg	Lg	13 02 05.9	

MAN 28 13:03:52,16°.72N×122°.24E,h13km,mb4.5,ML3.4,MS3.3, 1C,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CVP	**Callao Caves**	**1.06**	**338**	*i* P	Pb	13 04 11.6	-0.6
CVP				*i* S	Sn	13 04 26.7	-0.4
PCPH	**Palayan**	**1.59**	**224**	⇑*e*P	Pn	13 04 18.0	-1.8
PCPH				*e*S	Sg	13 04 43.0	-0.3

DJA 28 13:06:07.9±2.1,9°S±15°×12°0E±1°5,h19km±9km,M3.9/4, MLv3.9/4,Sumba region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WSI	**Waingapu**	**0.25**	**187**	P	Pg	13 06 15.5	+1.8
WSI				S	Sg	13 06 19.8	+2.1
BASI	**Baing, Sumba**	**0.83**	**163**	P	Pb	13 06 23.4	-0.3
BASI				S	Sn	13 06 36.2	-0.1
PLAI	**Plampang**	**2.59**	**283**	P	Pn	13 06 48.4	-0.4
PLAI				S	Sn	13 07 16.5	-3.3
TWSI	**Taliwang, Sumb**	**3.47**	**281**	P	Pn	13 07 01.3	+0.3

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*IDC **28** 13:06:18.9±5.1,15°.04N×97°.81W,h0km,mb3.5/2, mb1 3.9/4,mb1mx3.6/28,mbtmp3.5/4,ML3.6/2,MS2.9/2, Ms1 2.9/2,ms1mx2.5/25,Error ellipse: s-maj=87.6km s-min=24.5km az=163.0*
*ISCJB **28** 13:06:25.9±1.2,16°.01N±0°.06×98°.11W±0°.03,h22km±7km, mb3.6/5,Error ellipse: s-maj=10.2km s-min=4.3km az=19.1*
*MEX **28** 13:06:27.8±0.5,16°.03N×98°.12W,h4km±3km,MD4.3*
*NEIC **28** 13:06:28.0,16°.03N×98°.06W,h5km,MD4.3(MEX),After MEX.*

ISC 28 13:06:24.3±1.4,15°.98N±0°.05×98°.08W±0°.03,h7km±10km, n28,σ1s87/46,mb3.6/5,Off coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.41**	**354**	*e*P	**Pb**	**13 06 34.4**	**+0.4**
PNIG				*e*S	**Sb**	**13 06 40.1**	**-0.3**
PNIG	**Pinotepa**	**0.41**	**354**	*e*P	**Pb**	**13 06 34.4**	**+0.4**
PNIG				*e*S	**Sb**	**13 06 40.1**	**-0.3**
PANG	**Puerto Angel**	**1.58**	**101**	*e*P	**Pn**	**13 06 52.6**	**-0.1**
PANG				*i*S	**Sg**	**13 07 14.9**	**-0.3**
TLIG	**Tlapa**	**1.64**	**344**	*e*P	**Pb**	**13 06 53.7**	**-1.3**
TLIG				*i*S	**Sn**	**13 07 12.7**	**-2.4**
VHO	**Vista Hermosa**	**1.69**	**50**	*e*P	**Pn**	**13 06 54.1**	**-0.3**
VHO				*i*S	**Sb**	**13 07 16.2**	**-1.3**
VHO	**Vista Hermosa**	**1.69**	**50**	*e*P	**Pn**	**13 06 54.1**	**-0.3**
VHO				*e*S	**Sg**	**13 07 17.2**	**-1.5**
OXBJ	**Oaxaca**	**1.69**	**50**	*e*P	**Pn**	**13 06 54.1**	**-0.4**
OXBJ				*e*S	**Sn**	**13 07 15.2**	**-1.3**
HUIG	**Huatulco**	**1.91**	**96**	*e*P	**Pb**	**13 06 59.3**	**-0.3**
HUIG				*i*S	**Sb**	**13 07 22.3**	**-1.3**
HUIG	**Huatulco**	**1.91**	**96**	*e*P	**Pn**	**13 06 55.9**	**-1.4**
HUIG				*i*S	**Sb**	**13 07 23.9**	**+0.3**
ACX	**Acapulco**	**1.92**	**298**	*e*P	**Pn**	**13 06 54.3**	**-3.2**
ACX				*i*S	**Sn**	**13 07 17.6**	**-4.2**
ACX	**Acapulco**	**1.92**	**298**	*e*P	**Pn**	**13 06 54.3**	**-3.2**
ACX				*e*S	**Sn**	**13 07 21.1**	**-0.7**
CAIG	**El Cayaco**	**2.35**	**297**	*i*P	**Pn**	**13 07 03.1**	**-0.2**
CAIG				*i*S	**Sn**	**13 07 31.0**	**-1.4**
CAIG	**El Cayaco**	**2.35**	**297**	*e*P	**Pg**	**13 07 09.1**	**-0.3**
CAIG				*e*S	**Sg**	**13 07 45.5**	**+5.7**
MEIG	**Mezcala**	**2.43**	**323**	*e*P	**Pn**	**13 07 04.1**	**-0.4**
MEIG				*i*S	**Sn**	**13 07 33.5**	**-1.1**
MEIG	**Mezcala**	**2.43**	**323**	*e*P	**Pn**	**13 07 03.5**	**-1.0**
PLIG	**Platanillo**	**2.75**	**331**	*e*P	**Pn**	**13 07 10.1**	**+1.1**
PLIG				*i*S	**Sn**	**13 07 41.0**	**-1.6**
PLIG	**Platanillo**	**2.75**	**331**	*e*P	**Pb**	**13 07 13.6**	**-0.4**
PLIG				*e*S	**Sb**	**13 07 44.5**	**-3.5**
ARIG	**Puente Sto Nin**	**3.15**	**317**	*e*P	**Pn**	**13 07 15.3**	**+0.9**
ARIG				*i*S	**Sn**	**13 07 52.0**	**-0.2**
CMIG	**Matias Romero**	**3.26**	**70**	Pn	**Pn**	**13 07 15.2**	**-0.7**
CMIG	5.7nm,0.3s,baz=228,slow=12,SNR=55 12nm,0.3s,baz=205,slow=19,SNR=5.3			Sn	**Sn**	**13 07 53.8**	**-1.1**
CMIG	73nm,0.3s,baz=217,slow=22,SNR=19			Lg	Lg	13 08 08.3	
CMIG	comp=Z,108nm,21.7s,baz=132,slow=38			LR	LR	13 08 30.9	
ZIIG	**Zihuatanejo**	**3.62**	**297**	*e*P	**Pn**	**13 07 21.9**	**+1.0**
ZIIG				*i*S	**Sn**	**13 08 02.7**	**-1.1**
ZIIG	**Zihuatanejo**	**3.62**	**297**	*e*P	**Pn**	**13 07 18.4**	**-2.4**
ZIIG				*i*S	**Sg**	**13 08 18.0**	**-2.7**
TXAR	**Lajitas Array**	**14.25**	**340**	Pn	**P**	**13 09 57.0**	**+2.9**
	0.1nm,0.3s,baz=164,slow=10,SNR=6.4						
TXAR	comp=Z,81nm,20.5s,baz=0.0,slow=38			LR	LR	13 15 49.2	
ANMO	**Albuquerque**	**20.32**	**340**	*e*P	Pn	13 11 03.6	+0.3
	2.3nm,1.0s						
SDCO	**Great Sand Dun**	**22.65**	**345**	*e*P	**P**	**13 11 28.9**	**+2.5**
	1.1nm,0.7s						
WUAZ	**Wupatki**	**22.80**	**331**	*e*P	**P**	**13 11 29.1**	**+1.3**
	4.2nm,0.9s						
ISCO	**Idaho Springs**	**24.62**	**346**	*e*P	**P**	**13 11 46.1**	**+0.3**
	3.9nm,0.8s						
PDAR	**Pinedale Array**	**28.45**	**342**	P	P	13 12 24.5	+4.4
	0.2nm,0.4s,baz=150,slow=10.0,SNR=3.5						
ILAR	**Eielson Array**	**58.75**	**338**	P	**P**	**13 16 24.8**	**+2.1**
	0.5nm,1.0s,baz=147,slow=6.2,SNR=4.4						

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*ISCJB **28** 13:22:25.6±0.3,20°.37S±0°.02×69°.01W±0°.05,h111km±3km, mb4.3/20,Error ellipse: s-maj=8.1km s-min=3.8km az=171.7*
*IDC **28** 13:22:26.7±0.6,20°.30S×68°.86W,h101km±4km,mb4.2/13, mb1 4.4/15,mb1mx4.1/35,mbtmp4.6/15,MS3.4/5, Ms1 3.4/5,ms1mx3.1/27,Error ellipse: s-maj=17.6km s-min=12.1km az=73.0*
*GUC **28** 13:22:26.9±0.4,20°.37S×69°.08W,h95km±2km,ML4.6*
*NEIC **28** 13:22:27.0,20°.39S×69°.07W,h94km,mb4.3/6,After GUC.*
NEIC Felt [III] at Alto Hospicio, Camina, Huara, Iquique and Pica; [II] at Cuya and Tocopilla.
*SCB **28** 13:22:27.0±0.5,20°.21S×68°.77W,h120km,Ml4.1/2,Error ellipse: s-maj=13.3km s-min=4.7km az=51.0*

ISC 28 13:22:26.0±0.4,20°.35S±0°.03×69°.01W±0°.04,h98km±3km, n97,σ1s68/144,mb4.4/20,10C-12D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.25**	**326**	*e*P	Pn	**13 22 41.6**	**+1.1**
PB08				*e*S	**Sn**	**13 22 52.8**	**+1.4**
PB08				IAML		13 22 54.0	
	comp=E,49μm,0.1s						
PB08	**IPOC Station P**	**0.25**	**326**	⇑*e*P	Pn	**13 22 41.6**	**+1.1**
PB08				*e*S	**Sn**	**13 22 52.7**	**+1.3**
PB08				IAML		13 22 54.0	
	comp=E,49μm,0.2s						
PB01	**IPOC Station P**	**0.82**	**213**	⇑*e*P	Pn	**13 22 45.0**	**+0.5**
PB01				*e*S	**Sn**	**13 22 58.3**	**-0.1**
PB01				IAML		13 23 00.1	
	comp=E,25μm,0.3s						
PB01	**IPOC Station P**	**0.82**	**213**	⇑*e*P	Pn	**13 22 45.0**	**+0.5**
PB01				*e*S	**Sn**	**13 22 58.6**	**+0.2**
PB01				IAML		13 23 00.1	
	comp=E,24μm,0.3s						
HMBC	**Humberstone**	**0.83**	**275**	⇑*e*P	Pn	**13 22 44.9**	**+0.3**
HMBC				*e*S	**Sn**	**13 22 59.1**	**+0.5**
HMBC				IAML		13 23 01.4	
	comp=E,32μm,0.4s						
HMBC	**Humberstone**	**0.83**	**275**	⇑*e*P	Pn	**13 22 44.9**	**+0.3**
HMBC				*e*S	**Sn**	**13 22 58.8**	**+0.2**
HMBC				IAML		13 23 01.4	
	comp=E,32μm,0.4s						
PB11	**IPOC Station P**	**0.85**	**314**	⇑*e*P	Pn	**13 22 45.7**	**+0.9**
PB11				*e*S	**Sn**	**13 23 00.1**	**+1.2**
PB11	**IPOC Station P**	**0.85**	**314**	*e*P	Pn	**13 22 45.7**	**+0.9**
PB11				*e*S	**Sn**	**13 22 59.7**	**+0.8**
PSGC	**Pisagua**	**1.29**	**305**	⇑*e*P	Pn	**13 22 50.3**	**+0.7**
PSGC				*e*S	**Sn**	**13 23 08.0**	**+0.4**
PSGC				IAML		13 23 09.4	
	comp=N,16μm,0.7s						
MNMC	**Minye Minye**	**1.33**	**335**	⇓*e*P	Pn	**13 22 52.0**	**+1.6**
MNMC				*e*S	**Sn**	**13 23 10.7**	**+1.9**
MNMC	**Minye Minye**	**1.33**	**335**	*e*P	Pn	**13 22 51.5**	**+1.2**
MNMC				*e*S	**Sn**	**13 23 10.2**	**+1.5**
PB09	**IPOC Station P**	**1.46**	**189**	⇓*e*P	Pn	**13 22 52.8**	**+1.0**
PB09				*e*S	**Sn**	**13 23 12.3**	**+1.0**
PB09				IAML		13 23 15.8	
	comp=E,21μm,0.5s						
PB09	**IPOC Station P**	**1.46**	**189**	*e*P	Pn	**13 22 52.7**	**+1.0**
PB09				*e*S	**Sn**	**13 23 12.5**	**+1.2**
PB07	**IPOC Station P**	**1.60**	**211**	⇓*e*P	Pn	**13 22 53.9**	**+0.4**
PB07				*e*S	**Sn**	**13 23 14.7**	**+0.3**
PB07	**IPOC Station P**	**1.60**	**211**	⇓*e*P	Pn	**13 22 53.9**	**+0.4**
PB07				*e*S	**Sn**	**13 23 14.4**	**0.0**
PB07				IAML		13 23 19.6	
	comp=E,11μm,0.3s						
PB12	**IPOC Station P**	**2.13**	**324**	*e*P	Pn	**13 23 01.3**	**+1.0**
PB12				*e*S	**Sn**	**13 23 28.3**	**+1.9**
PB04	**IPOC Station P**	**2.25**	**208**	⇓*e*P	Pn	**13 23 01.4**	**-0.4**
PB04				*e*S	**Sn**	**13 23 32.0**	**+2.8**
LVC	**Limon Verde**	**2.25**	**178**	P	Pn	**13 23 03.3**	**+1.2**
	comp=E,10μm,0.3s,baz=7.8,slow=8.5,SNR=867						
LVC				S	**Sn**	**13 23 31.5**	**+1.8**
	comp=E,12μm,0.3s,baz=300,slow=20,SNR=30						
LVC	**Limon Verde**	**2.25**	**178**	*e*Pn	Pn	**13 23 03.6**	**+1.5**
LVC				*e*Sn	**Sn**	**13 23 29.8**	**+0.1**
PB06	**IPOC Station P**	**2.40**	**193**	⇓*e*P	Pn	**13 23 04.0**	**+0.1**
PB06				*e*S	**Sn**	**13 23 35.0**	**+2.0**
MOCB	**Mochara**	**3.28**	**106**	⇑*i*Pn	Pn	**13 23 19.7**	**+3.9**
MOCB				⇑*i*Sn	**Sn**	**13 23 58.9**	**+4.7**
	comp=E,126nm,0.7s						
BBOJ	**La Paz, Jacaqu**	**3.44**	**13**	⇓*i*Pn	Pn	**13 23 22.4**	**+4.3**
BBOE	**La Paz, Chanca**	**3.65**	**16**	⇓*i*Pn	Pn	**13 23 25.1**	**+4.2**
BBOD	**La Paz, Gloria**	**3.71**	**6**	⇑*i*Pn	Pn	**13 23 25.8**	**+4.0**
BBOD				⇓*i*Sn	**Sn**	**13 24 08.7**	**+3.9**
	comp=E,717nm,0.9s						
LPAZ	**La Paz**	**4.12**	**12**	P	Pn	**13 23 30.9**	**+3.5**
	comp=E,26nm,0.3s,baz=189,slow=7.2,SNR=826						
LPAZ				S	**Sn**	**13 24 11.7**	**-3.2**
	comp=E,5.4nm,0.3s,baz=202,slow=14,SNR=1.3						
LPAZ				LR	LR	13 25 42.3	
	comp=E,372nm,20.6s,baz=181,slow=48						
LPAZ	**La Paz**	**4.12**	**12**	P	Pn	**13 23 30.9**	**+3.5**
LPAZ				S	**Sn**	**13 24 11.7**	**-3.2**
LPAZ	**La Paz**	**4.12**	**12**	⇓*i*Pn	Pn	**13 23 30.8**	**+3.4**
BBOB	**La Paz, Bander**	**4.27**	**11**	⇓*i*Pn	Pn	**13 23 32.7**	**+3.5**
SIV	**San Ignacio**	**8.70**	**61**	P	Pn	**13 24 27.8**	**-1.2**
	comp=E,4.0nm,0.3s,baz=258,slow=12,SNR=81						
SIV				S	**Sn**	**13 26 00.1**	**-5.4**
	baz=172,slow=19,SNR=3.4						
SIV	**San Ignacio**	**8.70**	**61**	P	Pn	**13 24 27.8**	**-1.2**
SIV				S	**Sn**	**13 26 00.1**	**-5.4**
SIV	**San Ignacio**	**8.70**	**61**	*e*P	Pn	**13 24 27.6**	**-1.4**
SIV				*e*S	**Sn**	**13 26 01.6**	**-3.8**
LCO	**Las Campanas**	**8.76**	**190**	*e*Pn	Pn	**13 24 26.8**	**-3.2**
	comp=E,89nm,0.8s						
LCO				*e*Sn	**Sn**	**13 26 07.0**	**-0.2**
NNA	**Nana**	**11.21**	**317**	P	Pn	13 25 10.6	+7.4
	comp=E,1.0nm,0.3s,baz=156,slow=8.3,SNR=3.3						
NNA				S	**Sn**	**13 27 07.6**	**+0.9**
	comp=E,1.7nm,0.3s,baz=214,slow=15,SNR=2.0						
NNA	**Nana**	**11.21**	**317**	P	Pn	13 25 10.6	+7.4
	comp=E,15nm,0.7s						
NNA				S	**Sn**	**13 27 07.6**	**+0.9**
CPUP	**Villa Florida**	**12.26**	**121**	P	Pn	**13 25 15.7**	**-1.5**
	comp=E,0.6nm,0.3s,baz=304,slow=12,SNR=57						
CPUP	**Villa Florida**	**12.26**	**121**	P	**Pn**	**13 25 15.7**	**-1.5**
SAML	**Samuel**	**12.65**	**27**	*e*Pn	Pn	**13 25 18.5**	**-4.0**
	comp=E,15nm,0.8s						
SAML				*e*Sn	**Sn**	**13 27 37.0**	**-4.6**
TRQA	**Tornquist**	**18.67**	**162**	*e*P	**P**	**13 26 36.3**	**0.0**
	comp=E,12nm,0.8s						
SPB	**Sao Paulo**	**20.26**	**103**	*e*P	**P**	**13 26 53.4**	**-0.3**
	comp=E,24nm,0.9s						
PLCA	**Paso Flores**	**20.36**	**183**	P	**P**	**13 26 54.7**	**-0.1**
	comp=E,18nm,0.9s,baz=30,slow=13,SNR=19						
PLCA	**Paso Flores**	**20.36**	**183**	P	**P**	**13 26 54.7**	**-0.1**
PTGA	**Pitinga**	**21.41**	**25**	P	**P**	**13 27 05.1**	**-0.9**
	comp=E,3.8nm,0.2s,baz=206,slow=12,SNR=12						
PTGA				LR	LR	13 36 14.9	
	comp=E,123nm,20.1s,baz=188,slow=39						
PTGA	**Pitinga**	**21.41**	**25**	P	**P**	**13 27 05.1**	**-0.9**
SDV	**Santo Domingo**	**29.09**	**357**	P	**P**	**13 28 17.5**	**-0.2**
	comp=E,1.2nm,0.3s,baz=180,slow=14,SNR=2.4						
SDV				LR	LR	13 42 21.9	
	comp=E,40nm,19.1s,baz=132,slow=41						
SDV	**Santo Domingo**	**29.09**	**357**	P	**P**	**13 28 17.5**	**-0.2**
RCBR	**Riachuelo**	**35.23**	**70**	P	**P**	**13 29 11.3**	**+0.1**
	comp=E,17nm,1.0s,baz=203,slow=7.7,SNR=3.6						
RCBR	**Riachuelo**	**35.23**	**70**	P	**P**	**13 29 11.3**	**+0.1**
TXAR	**Lajitas Array**	**59.64**	**325**	P	**P**	**13 32 21.3**	**+1.2**
	comp=E,0.2nm,0.6s,baz=148,slow=7.3,SNR=3.6						
TXAR				pP	**pP**	**13 32 45.1**	**+0.9**
	comp=E,0.4nm,0.6s,baz=149,slow=7.4,SNR=5.1						
TXAR	**Lajitas Array**	**59.64**	**325**	P	**P**	**13 32 21.3**	**+1.2**
TXAR				pP	**pP**	**13 32 45.1**	**+0.9**
SNAA	**Sanae**	**63.39**	**161**	P	**P**	**13 32 45.4**	**+0.6**
	comp=E,4.3nm,0.8s,baz=281,slow=6.4,SNR=25						
SNAA	**Sanae**	**63.39**	**161**	P	**P**	**13 32 45.4**	**+0.6**
SDCO	**Great Sand Dun**	**67.22**	**329**	*e*P	**P**	**13 33 11.6**	**+1.5**
	comp=E,4.3nm,1.4s						
LIC	**Lamto**	**68.16**	**74**	*e*P	**P**	**13 33 15.2**	**-1.0**
	comp=E,78nm,1.3s						
TIC	**Toumodi**	**68.34**	**74**	*e*P	**P**	**13 33 16.4**	**-1.0**
KIC	**Kosan Boka**	**68.47**	**74**	*e*P	**P**	**13 33 17.4**	**-0.8**
	comp=E,66nm,0.8s						
WUAZ	**Wupatki**	**68.55**	**324**	*e*P	**P**	**13 33 17.8**	**-0.6**
	comp=E,9.0nm,1.1s						
QSPA	**South Pole Qui**	**69.84**	**180**	*e*P	**P**	**13 33 27.5**	**+1.6**
AGMN	**Agassiz Nation**	**72.44**	**342**	*e*P	**P**	**13 33 41.3**	**-0.3**
DUG	**Dugway, Tooele**	**72.75**	**326**	*e*P	**P**	**13 33 43.4**	**-0.4**
	comp=E,6.1nm,1.1s						
PDAR	**Pinedale Array**	**73.07**	**330**	P	**P**	**13 33 46.2**	**+0.5**
	comp=E,0.1nm,0.3s,baz=131,slow=4.1,SNR=3.7						
PDAR	**Pinedale Array**	**73.07**	**330**	P	**P**	**13 33 46.2**	**+0.5**
ULM	**Lac du Bonnet**	**74.20**	**342**	P	**P**	**13 33 51.4**	**-0.4**
	comp=E,2.9nm,0.6s,baz=300,slow=5.7,SNR=4.4						
ULM				pP	**pP**	**13 34 16.9**	**0.0**
	comp=E,2.3nm,0.5s,baz=155,slow=5.9,SNR=3.0						
ULM	**Lac du Bonnet**	**74.20**	**342**	P	**P**	**13 33 51.4**	**-0.4**
ULM				pP	**pP**	**13 34 16.9**	**0.0**
SCHQ	**Schefferville**	**74.90**	**1**	P	**P**	**13 33 54.9**	**-0.9**
	comp=E,6.9nm,0.8s,baz=176,slow=3.5,SNR=5.8						
SCHQ	**Schefferville**	**74.90**	**1**	P	**P**	**13 33 54.9**	**-0.9**
TORD	**Torodi Ar. Bea**	**77.06**	**71**	P	**P**	**13 34 07.9**	**-1.0**
	comp=E,3.8nm,0.5s,baz=255,slow=4.9,SNR=30						
TORD				pP	**pP**	**13 34 35.0**	**+0.9**
	comp=E,3.5nm,0.7s,baz=248,slow=5.6,SNR=3.6						
TORD				LR	LR	14 06 47.0	
	comp=E,16nm,18.9s,baz=170,slow=35						
TORD	**Torodi Ar. Bea**	**77.06**	**71**	P	**P**	**13 34 07.9**	**-1.0**
TORD				pP	**pP**	**13 34 35.0**	**+0.9**
SYO	**Syowa Base**	**77.61**	**160**	⇓*e*P	**P**	**13 34 10.5**	**-0.5**
BMO	**Blue Mountains**	**78.40**	**327**	*e*P	**P**	**13 34 15.5**	**-0.4**
	comp=E,5.3nm,1.6s						
TSUM	**Tsumeb**	**80.46**	**107**	P	**P**	**13 34 27.6**	**-0.1**
	comp=E,11nm,1.1s,baz=252,slow=6.0,SNR=9.2						
TSUM	**Tsumeb**	**80.46**	**107**	*e*P	**P**	**13 34 27.9**	**+0.1**
BOSA	**Boshof**	**84.07**	**118**	P	**P**	**13 34 46.1**	**-0.3**
	comp=E,3.5nm,0.9s,baz=184,slow=8.0,SNR=3.2						
BOSA	**Boshof**	**84.07**	**118**	P	**P**	**13 34 46.1**	**-0.3**
ESDC	**Sonseca Array**	**85.08**	**45**	P	**P**	**13 34 50.9**	**-0.1**
	comp=E,1.6nm,0.8s,baz=231,slow=3.2,SNR=6.2						
ESDC	**Sonseca Array**	**85.08**	**45**	P	**P**	**13 34 50.9**	**-0.1**
LBTB	**Lobatse**	**85.58**	**115**	P	**P**	**13 34 53.9**	**-0.1**
	comp=E,3.8nm,0.8s,baz=272,slow=5.4,SNR=4.5						
LBTB	**Lobatse**	**85.58**	**115**	P	**P**	**13 34 53.9**	**-0.1**
YKA	**Yellowknife Ar**	**90.08**	**341**	P	**P**	**13 35 14.9**	**+0.6**
	comp=E,4.7nm,0.9s,baz=134,slow=5.1,SNR=12						
YKA				pP	**pP**	**13 35 41.4**	**+1.2**
	comp=E,3.4nm,0.8s,baz=134,slow=4.4,SNR=6.2						
YKA	**Yellowknife Ar**	**90.08**	**341**	P	**P**	**13 35 14.9**	**+0.6**
YKA				pP	**pP**	**13 35 41.5**	**+1.2**
LSZ	**Lusaka**	**91.31**	**107**	LR	LR	14 14 03.3	
	comp=E,29nm,18.0s,baz=124,slow=34						
ASAR	**Alice Springs**	**130.88**	**208**	PKP	**PKPdf**	**13 41 26.4**	**-0.3**
	comp=E,0.6nm,0.9s,baz=127,slow=1.5,SNR=5.8						
ASAR	**Alice Springs**	**130.88**	**208**	PKP	**PKPdf**	**13 41 26.4**	**-0.3**
WRA	**Warramunga Arr**	**133.89**	**211**	PKP	**PKPdf**	**13 41 32.8**	**+0.3**
	comp=E,0.6nm,0.9s,baz=145,slow=1.8,SNR=5.6						
WRA				pPKP	**pPKPdf**	**13 42 00.8**	**+1.3**
	comp=E,0.8nm,0.8s,baz=142,slow=1.5,SNR=3.7						
WRA	**Warramunga Arr**	**133.89**	**211**	PKP	**PKPdf**	**13 41 32.8**	**+0.3**
WRA				pPKP	**pPKPdf**	**13 42 00.8**	**+1.3**
BVAR	**Borovoye Array**	**134.90**	**34**	PKP	**PKPdf**	**13 41 33.8**	**+0.5**
	comp=E,1.1nm,0.8s,baz=264,slow=6.0,SNR=5.4						
BVAR	**Borovoye Array**	**134.90**	**34**	PKP	**PKPdf**	**13 41 33.8**	**+0.5**
ZALV	**Zalesovo Beam**	**140.95**	**24**	PKhKP	PKPpre	13 41 40.1	
	comp=E,2.2nm,0.7s,baz=350,slow=0.4,SNR=6.2						
ZALV				PKP	**PKPdf**	**13 41 44.4**	**+0.1**
	comp=E,2.4nm,0.7s,baz=282,slow=2.8,SNR=9.7						
ZALV	**Zalesovo Beam**	**140.95**	**24**	PKPpre	PKPpre	13 41 40.1	
ZALV				PKP	**PKPdf**	**13 41 44.4**	**+0.1**
MKAR	**Makanchi Array**	**144.75**	**35**	PKP	**PKPdf**	**13 41 51.0**	**-0.4**
	comp=E,8.1nm,1.0s,baz=315,slow=2.6,SNR=42						
MKAR				pPKP	**pPKPdf**	**13 42 19.1**	**+0.8**
	comp=E,2.4nm,0.9s,baz=336,slow=2.7,SNR=4.8						
MKAR	**Makanchi Array**	**144.75**	**35**	PKP	**PKPdf**	**13 41 51.0**	**-0.4**
MKAR				pPKP	**pPKPdf**	**13 42 19.1**	**+0.8**
USRK	**Ussuriysk Ar.**	**150.49**	**328**	PKPbc	**PKPbc**	**13 42 07.1**	**+0.8**
	comp=E,3.5nm,0.7s,baz=329,slow=1.0,SNR=6.8						
USRK				pPKPbc	**pPKPbc**	**13 42 34.5**	**+1.4**
	comp=E,3.4nm,0.7s,baz=64,slow=0.6,SNR=4.8

THZ	**Tophouse**	**13.33**	**206**	*e*PN	**P**	**13 31 38.8**	**+0.6**
RPZ	**Rata Peaks**	**15.70**	**206**	P	**P**	**13 32 05.1**	**+0.9**
	0.2nm,0.3s,baz=56,slow=3.6,SNR=2.3						
RPZ				S	**S**	**13 34 51.1**	**-0.7**
	0.9nm,0.3s,baz=327,slow=19,SNR=6.3						
ASAR	**Alice Springs**	**41.95**	**267**	P	**P**	**13 36 00.0**	**-0.1**
	0.5nm,0.6s,baz=106,slow=7.8,SNR=21						
ASAR				PcP	**PP**	**13 37 47.1**	**+1.4**
	0.4nm,0.6s,baz=112,slow=3.4,SNR=3.9						
WRA	**Warramunga Arr**	**42.90**	**272**	P	**P**	**13 36 07.3**	**-0.3**
	2.5nm,0.4s,baz=111,slow=7.6,SNR=72						
PETK	**Petropavlovsk-**	**85.11**	**346**	P	**P**	**13 40 38.2**	**-0.7**
	1.3nm,0.5s,baz=163,slow=5.3,SNR=2.8						
FINES	**FINESS Array B**	**144.33**	**339**	PKP	**PKPab**	**13 47 33.8**	**-1.5**
	2.6nm,0.3s,baz=51,slow=4.3,SNR=25						
NB2	**NORSAR Subarra**	**148.14**	**350**	PKP	**PKPdf**	**13 47 44.9**	**+2.3**
	comp=Z,0.6nm,0.6s,baz=12,slow=2.7						
NOA	**NORSAR Array B**	**148.14**	**350**	PKPbc	**PKPdf**	**13 47 45.1**	**+2.5**
	comp=Z,1.1nm,0.7s,baz=15,slow=4.2,SNR=4.9						
AKASG	**Malin Array Be**	**150.24**	**322**	PKPbc	**PKPbc**	**13 47 50.4**	**-1.2**
	comp=Z,0.4nm,0.3s,baz=47,slow=3.3,SNR=4.0						
BRTR	**Keskin Array B**	**151.35**	**299**	PKPbc	**PKPbc**	**13 47 53.7**	**-1.2**
	comp=Z,0.4nm,0.4s,baz=118,slow=5.1,SNR=2.9						
TORD	**Torodi Ar. Bea**	**163.23**	**184**	PKPab	**PKPab**	**13 48 56.9**	**+0.9**
	comp=Z,0.5nm,0.6s,baz=194,slow=3.3,SNR=3.0						

ISCJB ***28*** *13:46:46.5±0.8, 37.°57N±0.°05×144.°58E±0.°06, h33^{km}, mb3.5/2, Error ellipse: s-maj=7.2km s-min=7.0km az=42.5*
JMA ***28*** *13:46:48.9±0.2, 37.°62N×144.°37E, h26^{km}, M3.4*
IDC ***28*** *13:46:53.7±5.5, 36.°04N×143.°92E, h0^{km}, mb3.4/2, mb1 3.5/3, mb1mx3.2/55, mbtmp3.3/3, ML2.9/1, Error ellipse: s-maj=117.7km s-min=34.6km az=32.0*
ISC 28 13:46:47.6±1.4**, 37.°56N**±0.°07×**144.°63E**±0.°08**, h35^{km}, n19, σ1^{s}64**/28**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.74**	**290**	P	**Pn**	**13 47 29.8**	**+0.7**
JIO				S	**Sn**	**13 47 59.9**	**-1.1**
OFUJ	**Ofunato**	**2.78**	**304**	P	**Pn**	**13 47 30.7**	**+1.1**
OFUJ				S	**Sn**	**13 48 01.2**	**-0.7**
MIYJ	**Miyakonagasawa**	**2.98**	**313**	P	**Pn**	**13 47 33.0**	**+0.6**
MIYJ				*e*S	**Sn**	**13 48 06.3**	**-0.7**
JMK	**Ichinoseki**	**3.02**	**298**	P	**Pn**	**13 47 34.2**	**+1.2**
JMK				S	**Sn**	**13 48 07.2**	**-0.7**
JOM	**Ohasama**	**3.24**	**307**	P	**Pn**	**13 47 37.9**	**+1.9**
JOM				S	**Sn**	**13 48 13.4**	**+0.1**
JFT	**Otama**	**3.41**	**271**	P	**Pn**	**13 47 39.6**	**+1.2**
JFT				S	**Sn**	**13 48 16.4**	**-1.2**
JYK	**Kaneyama**	**3.63**	**293**	P	**Pn**	**13 47 42.7**	**+1.4**
JYK				*e*S	**Sn**	**13 48 22.9**	**+0.1**
JANG	**Nango**	**3.71**	**320**	S	**Sn**	**13 48 24.1**	**-0.9**
JOT	**Ohata**	**4.72**	**325**	P	**Pn**	**13 47 58.9**	**+2.7**
JRY	**Ryogami san**	**4.85**	**253**	P	**Pn**	**13 47 58.1**	**0.0**
JRY				*e*S	**Sn**	**13 48 48.6**	**-4.5**
JCH	**Churui**	**5.14**	**349**	P	**Pn**	**13 48 03.4**	**+1.4**
JCH				S	**Sn**	**13 48 58.6**	**-1.5**
MJAR	**Matsushiro Arr**	**5.24**	**261**	Pn	**Pn**	**13 48 04.4**	**+0.9**
	0.5nm,0.3s,baz=93,slow=14,SNR=6.1						
MJAR				Sn	**Sn**	**13 49 01.5**	**-1.1**
	0.4nm,0.3s,baz=95,slow=26,SNR=4.0						
NEM2	**Nemuro 2**	**5.86**	**8**	P	**Pn**	**13 48 11.3**	**-0.6**
NEM2				S	**Sn**	**13 49 15.0**	**-2.8**
JTKR	**Abashiri--Toko**	**6.43**	**355**	P	**Pn**	**13 48 21.0**	**+1.3**
JTKR				S	**Sn**	**13 49 29.0**	**-2.8**
H11N2	**WAKE ISLAND Hy**	**26.30**	**126**	T	T	14 19 45.3	
	baz=318						
H11N1	**WAKE ISLAND Hy**	**26.31**	**126**	T	T	14 19 43.7	
	baz=318						
H11N3	**WAKE ISLAND Hy**	**26.32**	**126**	T	T	14 19 41.2	
	baz=318						
WRA	**Warramunga Arr**	**58.01**	**191**	P	**P**	**13 56 37.3**	**+0.3**
	0.5nm,0.6s,baz=10,slow=7.2,SNR=5.0						
ASAR	**Alice Springs**	**61.73**	**191**	P	**P**	**13 57 02.7**	**+0.2**
	0.2nm,0.9s,baz=1.2,slow=6.8,SNR=2.6						

CSEM ***28*** *13:50:52.2, 38.°31N×21.°76E, h9^{km}, ML1.4/5*
ATH 28 13:50:52.2, 38.°31N×21.°76E, h9^{km}±2^{km}**, ML1.4**/5**, Error ellipse: s-maj=2.5km s-min=0.6km az=124.0, Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.04**	**147**	P	Pg	13 50 53.2	-0.6
UPR				S	Sg	13 50 55.1	+0.1
UPR	**University Cam**	**0.04**	**147**	P	Pg	13 50 53.2	-0.6
UPR				S	Sg	13 50 55.1	+0.1
LAKA	**Lakka**	**0.18**	**113**	P	Pg	13 50 56.0	0.0
LAKA				S	Sg	13 50 59.6	+1.0
LAKA	**Lakka**	**0.18**	**113**	P	Pg	13 50 56.0	0.0
LAKA				S	Sg	13 50 59.6	+1.0
TRIZ	**Trizonia**	**0.25**	**78**	P	Pg	13 50 57.7	+0.5
TRIZ				S	Sg	13 51 01.2	+0.6
SERG	**Sergoula**	**0.25**	**66**	P	Pg	13 50 57.3	+0.1
SERG				S	Sg	13 51 01.6	+0.9
ANX	**Ano Chora**	**0.31**	**24**	P	Pg	13 50 58.3	0.0
ANX	**Ano Chora**	**0.31**	**24**	P	Pg	13 50 58.3	0.0
KALE	**Kalithea**	**0.31**	**75**	P	Pg	13 50 58.3	0.0
KALE				S	Sg	13 51 02.9	+0.5
KALE	**Kalithea**	**0.31**	**75**	P	Pg	13 50 58.3	0.0
KALE				S	Sg	13 51 02.9	+0.5
KALE				AML	AML	13 51 04.7	
	comp=E,165μm,0.2s						
KALE				AML	AML	13 51 05.3	
	comp=N,176μm,0.2s						
AXS	**Araxos**	**0.33**	**249**	P	Pg	13 50 59.2	+0.6
AXS	**Araxos**	**0.33**	**249**	P	Pg	13 50 59.2	+0.6
RLS	**Riolos of Patr**	**0.34**	**223**	P	Pg	13 50 59.2	+0.2
RLS				S	Sg	13 51 04.4	+0.9
PVO	**Paravola**	**0.36**	**329**	P	Pg	13 50 59.0	-0.2
PVO				S	Sg	13 51 04.2	+0.3
PVO	**Paravola**	**0.36**	**329**	P	Pg	13 50 59.0	-0.2
PVO				S	Sg	13 51 04.2	+0.3
DRO	**Drossia**	**0.36**	**186**	P	Pg	13 50 59.4	+0.1
DRO				S	Sg	13 51 05.1	+1.0
DRO	**Drossia**	**0.36**	**186**	P	Pg	13 50 59.4	+0.1
DRO				S	Sg	13 51 05.1	+1.0
DRO				AML	AML	13 51 07.3	
	comp=N,274μm,0.2s						
DRO				AML	AML	13 51 07.8	
	comp=E,326μm,0.3s						
KLV	**Kalavryta, Ach**	**0.41**	**131**	P	Pg	13 50 59.8	-0.3
KLV				S	Sg	13 51 05.3	-0.2
KLV	**Kalavryta, Ach**	**0.41**	**131**	P	Pg	13 50 59.8	-0.3
KLV				S	Sg	13 51 05.3	-0.2
KLV				AML	AML	13 51 06.5	
	comp=E,49μm,0.2s						
KLV				AML	AML	13 51 07.3	
	comp=N,46μm,0.2s						
PDO	**Prodromos**	**0.54**	**302**	P	Pg	13 51 01.6	-1.0
PDO				S	Sg	13 51 10.3	+0.7
PDO	**Prodromos**	**0.54**	**302**	P	Pg	13 51 01.6	-1.0
PDO				S	Sg	13 51 10.3	+0.7
PDO				AML	AML	13 51 14.2	
	comp=E,116μm,0.2s						
PDO				AML	AML	13 51 14.8	
	comp=N,176μm,0.2s						
DSF	**Desfina**	**0.61**	**80**	P	Pg	13 51 02.9	-1.1
DSF				S	Sg	13 51 11.8	-0.2
DSF	**Desfina**	**0.61**	**80**	P	Pg	13 51 02.9	-1.1
DSF				S	Sg	13 51 11.8	-0.1
DSF				AML	AML	13 51 15.6	
	comp=N,77μm,0.1s						
DSF				AML	AML	13 51 15.7	
	comp=E,60μm,0.3s						
VLS	**Valsamata**	**0.93**	**262**	P	Pg	13 51 09.5	-0.6
VLS				S	Sg	13 51 22.4	+0.2
ZKS	**Zakynthos**	**0.99**	**232**	P	Pg	13 51 10.9	-0.2
ZKS	**Zakynthos**	**0.99**	**232**	P	Pg	13 51 10.9	-0.2
LKD2	**Lefkada island**	**0.99**	**299**	P	Pg	13 51 09.8	-1.4
LKD2	**Lefkada island**	**0.99**	**299**	P	Pg	13 51 09.8	-1.3

IDC 28 13:54:10.5±3.0**, 7.°69S**×**127.°69E, h0^{km}, mb3.6**/1**, mb1 4.0**/4**, mb1mx3.6**/58**, mbtmp3.8**/4**, ML3.9**/3**, MS4.0**/1**, Ms1 4.0**/1**, ms1mx2.6**/43**, Error ellipse: s-maj=101.4km s-min=27.7km az=64.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.54**	**191**	Pn	Pn	13 56 43.4	+0.4
	0.7nm,0.3s,baz=9.4,slow=10,SNR=27						
FITZ				Sn	Sn	13 58 31.4	-10
	2.3nm,0.3s,baz=117,slow=18,SNR=9.2						
WRA	**Warramunga Arr**	**13.78**	**153**	Pn	Pn	13 57 27.1	-0.2
	0.7nm,0.3s,baz=330,slow=12,SNR=51						
WRA				Sn	Sn	13 59 49.8	-12
	0.9nm,0.3s,baz=331,slow=23,SNR=7.5						
ASAR	**Alice Springs**	**16.97**	**160**	Pn	Pn	13 58 09.2	-0.3
	0.2nm,0.3s,baz=335,slow=11,SNR=30						
ASAR				Sn	Sn	14 01 06.5	-12
	0.1nm,0.3s,baz=326,slow=24,SNR=3.9						
CMAR	**Chiang Mai Arr**	**38.47**	**313**	P	P	14 01 34.4	-0.1
	0.6nm,0.6s,baz=147,slow=6.5,SNR=4.7						
RPZ	**Rata Peaks**	**52.12**	**141**	LR	LR	14 25 17.6	
	comp=Z,143nm,18.3s,baz=156,slow=36						

BUC 28 13:54:24.6±0.6**, 45.°75N**×**27.°15E, h16^{km}**±4^{km}**, MD2.6**/3**, 18C-4D, Error ellipse: s-maj=8.3km s-min=5.9km az=33.0, Romania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ODBI	**Odobesti**	**0.07**	**281**	⇑*i*P	Pg	13 54 28.5	+0.7
ODBI	**Odobesti**	**0.07**	**281**	⇑*i*P	Pg	13 54 28.5	+0.7
ODBI				*i* S	Sg	13 54 31.1	+1.2
VRI	**Vrincioaia**	**0.32**	**292**	⇓*i*P	Pg	13 54 31.4	0.0
VRI	**Vrincioaia**	**0.32**	**292**	⇓*i*P	Pg	13 54 31.4	0.0
VRI				*i* S	Sg	13 54 36.2	+0.2
PLOR	**Plostina**	**0.37**	**286**	⇓*i*P	Pg	13 54 32.3	+0.1
PLOR	**Plostina**	**0.37**	**286**	⇓*i*P	Pg	13 54 32.3	+0.1
PLOR				*i* S	Sb	13 54 38.0	-0.2
TESR	**Tescani**	**0.84**	**335**	⇑*i*P	Pg	13 54 41.0	+0.1
TESR	**Tescani**	**0.84**	**335**	⇑*i*P	Pg	13 54 41.0	+0.1
TESR				*i* S	Sg	13 54 52.7	+0.7
MLR	**Muntele Rosu**	**0.89**	**253**	⇑*i*P	Pn	13 54 42.6	+0.1
MLR	**Muntele Rosu**	**0.89**	**253**	⇑*i*P	Pn	13 54 42.6	+0.1
MLR				*i* S	Sn	13 54 54.4	-0.7
CFR	**Carcaliu**	**0.90**	**129**	⇑*i*P	Pg	13 54 41.9	-0.1
CFR	**Carcaliu**	**0.90**	**129**	⇑*i*P	Pg	13 54 41.9	-0.1
CFR				*i* S	Sb	13 54 53.4	0.0
LEOM	**Leova**	**1.05**	**46**	⇑*i*P	Pn	13 54 44.7	+0.1
LEOM	**Leova**	**1.05**	**46**	⇑*i*P	Pn	13 54 44.7	+0.1
LEOM				*i* S	Sg	13 54 58.4	-0.3
DOPR	**Dopca**	**1.25**	**281**	⇑*i*P	Pg	13 54 48.4	-0.3
DOPR	**Dopca**	**1.25**	**281**	⇑*i*P	Pg	13 54 48.4	-0.3
DOPR				*i* S	Sg	13 55 04.7	-0.4
TLCR		**1.30**	**115**	S	Sg	13 55 06.0	-0.5
TLCR		**1.30**	**115**	*i* S	Sg	13 55 06.0	-0.5
TLB	**Topalu**	**1.32**	**151**	⇑*i*P	Pn	13 54 48.2	-0.1
TLB	**Topalu**	**1.32**	**151**	⇑*i*P	Pn	13 54 48.2	-0.1
TLB				*i* S	Sb	13 55 06.1	+0.4
VOIR		**1.51**	**259**	⇑*i*P	Pb	13 54 52.2	0.0
VOIR		**1.51**	**259**	⇑*i*P	Pb	13 54 52.2	0.0
VOIR				*i* S	Sb	13 55 12.1	+0.9
MILM	**Milestii Mici**	**1.64**	**44**	⇑*i*P	Pn	13 54 53.0	+0.3
MILM	**Milestii Mici**	**1.64**	**44**	⇑*i*P	Pn	13 54 53.0	+0.3
MILM				*i* S	Sb	13 55 14.2	-0.6
SORM	**Soroca**	**2.52**	**19**	S	Sn	13 55 34.8	-0.4
SORM	**Soroca**	**2.52**	**19**	*i* S	Sn	13 55 34.8	-0.4

IDC ***28*** *13:58:49.2±1.8, 40.°20N×52.°85E, h0^{km}, mb3.9/7, mb1 3.9/12, mb1mx3.7/67, mbtmp3.9/12, ML3.9/5, MS3.3/2, Ms1 3.3/2, ms1mx2.2/51, Error ellipse: s-maj=33.5km s-min=14.8km az=2.0*
ISCJB ***28*** *13:58:53.4±0.4, 40.°29N±0.°05×53.°06E±0.°03, h49^{km}, mb3.8/6, MS3.8/1, Error ellipse: s-maj=7.4km s-min=3.0km az=177.9*
CSEM ***28*** *13:58:55.2±0.3, 40.°11N×53.°02E, h60^{km}, mb4.2, Error ellipse: s-maj=11.4km s-min=4.8km az=166.0*
AZER ***28*** *13:58:55.1±19.0, 40.°01N×52.°85E, h75^{km}, Error ellipse: s-maj=9.9km s-min=7.3km az=259.0*
NEIC ***28*** *13:58:58.5±2.3, 40.°70N×52.°87E, h55^{km}±14^{km}, mb4.2/1, Error ellipse: s-maj=30.7km s-min=7.8km az=171.0*
ISC 28 13:58:54.1±0.8**, 40.°14N**±0.°06×**53.°01E**±0.°06**, h49^{km}, n73, σ2^{s}12**/102**, mb3.7**/6**, 20C-27D, Turkmenistan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALA	**Gala**	**2.20**	**278**	⇑S	**Sn**	**13 59 56.3**	**+2.3**
GALA	**Gala**	**2.20**	**278**	S	**Sn**	**13 59 56.3**	**+2.3**
NDR	**Nardaran**	**2.35**	**282**	⇓P	**Pn**	**13 59 32.1**	**+2.0**
NDR				⇑S	**Sn**	**14 00 01.1**	**+3.4**
NDR	**Nardaran**	**2.35**	**282**	P	**Pn**	**13 59 32.1**	**+2.0**
NDR				S	**Sn**	**14 00 01.1**	**+3.4**
GOBA	**Gobu**	**2.52**	**277**	⇓S	**Sn**	**14 00 05.5**	**+3.6**
GOBA	**Gobu**	**2.52**	**277**	S	**Sn**	**14 00 05.5**	**+3.6**
ALIB	**Äli-Bayra**	**3.08**	**268**	⇓P	**Pn**	**13 59 41.7**	**+1.6**
ALIB				⇑S	**Sn**	**14 00 18.4**	**+2.8**
ALIB	**Äli-Bayra**	**3.08**	**268**	P	**Pn**	**13 59 41.7**	**+1.6**
ALIB				S	**Sn**	**14 00 18.4**	**+2.8**
GBS	**Qobustan**	**3.13**	**279**	⇓P	**Pn**	**13 59 43.2**	**+2.3**
GBS				⇑S	**Sn**	**14 00 19.6**	**+2.5**
GBS	**Qobustan**	**3.13**	**279**	P	**Pn**	**13 59 43.2**	**+2.3**
GBS				S	**Sn**	**14 00 19.6**	**+2.5**
ATGJ	**Altiaghaj**	**3.18**	**284**	⇓P	**Pn**	**13 59 44.2**	**+2.5**
ATGJ				⇓S	**Sn**	**14 00 21.4**	**+2.9**
ATGJ	**Altiaghaj**	**3.18**	**284**	P	**Pn**	**13 59 44.2**	**+2.5**
ATGJ				S	**Sn**	**14 00 21.4**	**+2.9**
SIZA	**Siyzn**	**3.26**	**288**	⇓P	**Pn**	**13 59 46.1**	**+3.3**
SIZA				⇓S	**Sn**	**14 00 24.4**	**+4.0**
SIZA	**Siyzn**	**3.26**	**288**	P	**Pn**	**13 59 46.1**	**+3.3**
SIZA				S	**Sn**	**14 00 24.4**	**+4.0**
PQL	**Pirkuli**	**3.43**	**282**	⇓S	**Sn**	**14 00 26.6**	**+2.1**
PQL	**Pirkuli**	**3.43**	**282**	S	**Sn**	**14 00 26.6**	**+2.1**
LKRN	**Lenkeran, Azer**	**3.57**	**248**	⇓P	**Pn**	**13 59 48.3**	**+1.4**
LKRN				⇓S	**Sn**	**14 00 27.8**	**-0.1**
LKRN	**Lenkeran, Azer**	**3.57**	**248**	P	**Pn**	**13 59 48.3**	**+1.4**
LKRN				S	**Sn**	**14 00 27.8**	**-0.1**
ASTR	**Astara**	**3.63**	**246**	⇑P	**Pn**	**13 59 48.8**	**+1.1**
ASTR				⇓S	**Sn**	**14 00 28.7**	**-0.6**
ASTR	**Astara**	**3.63**	**246**	P	**Pn**	**13 59 48.8**	**+1.1**
ASTR				S	**Sn**	**14 00 28.7**	**-0.6**
QUBA	**Quba, Azerbaij**	**3.64**	**291**	⇑P	**Pn**	**13 59 50.2**	**+2.3**
QUBA				⇓S	**Sn**	**14 00 32.5**	**+3.0**
QUBA	**Quba, Azerbaij**	**3.64**	**291**	P	**Pn**	**13 59 50.2**	**+2.3**
QUBA				S	**Sn**	**14 00 32.5**	**+3.0**
GLBA	**Clilabad**	**3.67**	**257**	⇓P	**Pn**	**13 59 49.7**	**+1.4**
GLBA				⇓S	**Sn**	**14 00 30.8**	**+0.5**
GLBA	**Clilabad**	**3.67**	**257**	P	**Pn**	**13 59 49.7**	**+1.4**
GLBA				S	**Sn**	**14 00 30.8**	**+0.5**
KDMR	**Kurdemir**	**3.70**	**275**	⇓S	**Sn**	**14 00 33.0**	**+2.1**
KDMR	**Kurdemir**	**3.70**	**275**	S	**Sn**	**14 00 33.0**	**+2.1**
IML	**Ismayilli**	**3.74**	**282**	⇓P	**Pn**	**13 59 50.9**	**+1.7**
IML				⇑S	**Sn**	**14 00 33.5**	**+1.5**
IML	**Ismayilli**	**3.74**	**282**	P	**Pn**	**13 59 50.9**	**+1.7**
IML				S	**Sn**	**14 00 33.5**	**+1.5**
XNQ	**Khinaliq**	**3.84**	**287**	⇓P	**Pn**	**13 59 52.5**	**+1.6**
XNQ				⇓S	**Sn**	**14 00 36.2**	**+1.4**
XNQ	**Khinaliq**	**3.84**	**287**	P	**Pn**	**13 59 52.5**	**+1.6**
XNQ				S	**Sn**	**14 00 36.2**	**+1.4**
QSAR	**Qusar**	**3.85**	**292**	⇑P	**Pn**	**13 59 53.0**	**+2.2**
QSAR				⇑S	**Sn**	**14 00 36.0**	**+1.2**
LRK	**Lerik**	**3.91**	**249**	⇑P	**Pn**	**13 59 52.7**	**+0.9**
LRK				⇑S	**Sn**	**14 00 35.2**	**-1.3**
LRK	**Lerik**	**3.91**	**249**	P	**Pn**	**13 59 52.7**	**+0.9**
LRK				S	**Sn**	**14 00 35.2**	**-1.3**
QBL	**Gabala**	**4.02**	**283**	⇑S	**Sn**	**14 00 38.9**	**-0.1**
QBL	**Gabala**	**4.02**	**283**	S	**Sn**	**14 00 38.9**	**-0.1**
ZRD	**Zardab**	**4.08**	**274**	⇓S	**Sn**	**14 00 42.0**	**+1.7**
ZRD	**Zardab**	**4.08**	**274**	S	**Sn**	**14 00 42.0**	**+1.7**
BRDA	**Brd**	**4.46**	**273**	⇓S	**Sn**	**14 00 51.7**	**+1.9**
BRDA	**Brd**	**4.46**	**273**	S	**Sn**	**14 00 51.7**	**+1.9**
SEKA	**Sheki**	**4.54**	**285**	⇑S	**Sn**	**14 00 52.3**	**+0.4**
SEKA	**Sheki**	**4.54**	**285**	S	**Sn**	**14 00 52.3**	**+0.4**
GEYT	**Alibeck**	**4.55**	**117**	Pn	**Pn**	**14 00 03.1**	**+2.6**
	5.3nm,0.3s,baz=310,slow=16,SNR=42						
GEYT				Sn	**Sn**	**14 00 54.5**	**+2.4**
	5.0nm,0.3s,baz=287,slow=24,SNR=5.2						
GEYT				Lg	Lg	14 01 19.4	
	2.4nm,0.3s,baz=302,slow=32,SNR=2.6						
MNGR	**Mingechevir, A**	**4.56**	**280**	⇓S	**Sn**	**14 00 53.0**	**+0.8**
MNGR	**Mingechevir, A**	**4.56**	**280**	S	**Sn**	**14 00 53.0**	**+0.8**
ZKTA	**Zakatala**	**5.06**	**289**	⇓S	**Sn**	**14 01 05.1**	**+0.5**
GANJ	**Ganja**	**5.13**	**278**	⇑S	**Sn**	**14 01 03.9**	**-2.3**
GDB	**GEDABAY**	**5.56**	**278**	⇑P	**Pn**	**14 00 14.4**	**0.0**
GDB				⇑S	**Sn**	**14 01 14.3**	**-2.8**
GDB	**GEDABAY**	**5.56**	**278**	P	**Pn**	**14 00 14.4**	**0.0**
NAX	**Nakhchivan**	**5.88**	**263**	⇓S	**Sn**	**14 01 25.3**	**+0.6**
NAX	**Nakhchivan**	**5.88**	**263**	S	**Sn**	**14 01 25.3**	**+0.6**
QZX	**Qazax, Azerbai**	**5.88**	**281**	⇓P	**Pn**	**14 00 20.5**	**+1.8**
QZX				⇑S	**Sn**	**14 01 23.1**	**-1.6**
QZX	**Qazax, Azerbai**	**5.88**	**281**	P	**Pn**	**14 00 20.5**	**+1.8**
KBZ	**Khabaz**	**8.34**	**299**	Pn	**Pn**	**14 00 51.7**	**-0.6**
	0.3nm,0.3s,baz=93,slow=8.6,SNR=6.2						
KBZ				Sn	**Sn**	**14 02 18.7**	**-6.3**
	1.6nm,0.3s,baz=188,slow=20,SNR=5.6						
KVAR	**Kislovodsk Arr**	**8.56**	**300**	Pn	**Pn**	**14 00 55.4**	**-0.1**
	baz=153,slow=16,SNR=4.5						
KVAR				Sn	**Sn**	**14 02 27.1**	**-3.6**
	baz=210,slow=20,SNR=7.5						
AB31	**Akbulak array**	**10.36**	**26**	⇑Pn	**Pn**	**14 01 16.9**	**-3.0**
	0.2nm,0.4s,baz=208,slow=13						
AB31				⇑Pg		14 01 33.4	
	0.8nm,0.3s,baz=202,slow=13						
AB31				⇓Lg	Lg	14 02 58.0	
	3.0nm,0.3s,baz=202,slow=23						
ABKAR	**Akbulak array**	**10.36**	**26**	*e*Pn	**Pn**	**14 01 18.8**	**-1.0**
	2.7nm,0.3s						
ABKAR				*e*Sn	Sn	14 03 03.7	-11
AKTO	**Aktyubinsk**	**10.88**	**17**	Pn	**Pn**	**14 01 23.7**	**-3.2**
	0.5nm,0.3s,baz=204,slow=13,SNR=6.0						
AKTO				Sn	Sn	14 03 17.1	-10
	4.8nm,0.3s,baz=228,slow=23,SNR=14						
AKTO	**Aktyubinsk**	**10.88**	**17**	⇑Pn	**Pn**	**14 01 23.8**	**-3.2**
	1.8nm,0.3s						
AKTO				⇓Lg	Lg	14 03 20.2	
	13nm,0.5s						
ARU	**Arti**	**16.70**	**11**	Pn	**Pn**	**14 02 41.6**	**-2.8**
	0.0nm,0.3s,baz=169,slow=5.2,SNR=3.4						
ARU				Sn	Sn	14 05 33.3	-15
	0.0nm,0.3s,baz=299,slow=20,SNR=7.5						
ARU				LR	LR	14 10 17.4	
	comp=Z,39nm,20.4s,baz=201,slow=41						
BRVK	**Borovoye**	**17.48**	**37**	*e*Pn	**Pn**	**14 02 52.0**	**-2.1**
	14nm,0.8s						
BVAR	**Borovoye Array**	**17.51**	**37**	P	**P**	**14 02 55.4**	**+0.3**
	0.5nm,0.3s,baz=230,slow=8.8,SNR=11						
BVAR				S	Sn	14 05 54.3	-14
	0.9nm,0.3s,baz=215,slow=25,SNR=4.8						
AKASG	**Malin Array Be**	**19.66**	**310**	P	**P**	**14 03 17.2**	**-1.5**
	2.0nm,0.3s,baz=111,slow=9.7,SNR=5.4						
KURBB	**Kurchatov Arra**	**20.66**	**51**	P	**P**	**14 03 31.1**	**+1.5**
	1.5nm,0.7s,baz=253,slow=11,SNR=6.9						
KURK	**Kurchatov**	**20.75**	**51**	*e*P	**P**	**14 03 31.9**	**+1.4**
KURK	**Kurchatov**	**20.75**	**51**	*e*P	**P**	**14 03 31.9**	**+1.4**
MKAR	**Makanchi Array**	**22.19**	**63**	P	**P**	**14 03 47.7**	**+1.7**
	1.4nm,0.6s,baz=254,slow=11,SNR=9.8						
ZALV	**Zalesovo Beam**	**25.44**	**46**	P	**P**	**14 04 18.2**	**+1.2**
	1.5nm,0.7s,baz=262,slow=12,SNR=8.3						
FINES	**FINESS Array B**	**26.93**	**331**	P	**P**	**14 04 30.2**	**-0.1**
	1.1nm,0.5s,baz=133,slow=13,SNR=6.3						
HFS	**Hagfors**	**31.48**	**323**	P	**P**	**14 05 10.5**	**-0.3**
	1.3nm,0.3s,baz=113,slow=9.1,SNR=20						
NB2	**NORSAR Subarra**	**32.95**	**323**	P	**P**	**14 05 23.0**	**-0.7**
	comp=Z,0.6nm,0.5s,baz=113,slow=8.6						
NOA	**NORSAR Array B**	**32.95**	**323**	P	**P**	**14 05 22.7**	**-1.0**
	comp=Z,1.1nm,0.7s,baz=113,slow=8.4,SNR=4.6						
EKA	**Eskdalemuir Ar**	**39.57**	**312**	P	**P**	**14 06 19.9**	**-0.2**
	comp=Z,0.6nm,0.4s,baz=98,slow=8.8,SNR=5.5						
ASAR	**Alice Springs**	**98.34**	**114**	LR	LR	15 01 37.2	
	comp=Z,28nm,20.1s,baz=32,slow=38						

MOS ***28*** *13:59:49.0±0.8, 62.°27N×151.°62W, h10^{km}, mb5.5/84, MS4.0/9, Error ellipse: s-maj=9.2km s-min=4.2km az=100.1*
ISCJB ***28*** *13:59:57.7±0.1, 62.°17N±0.°01×151.°46W±0.°02, h82^{km}±1^{km}, mb5.1/347, Error ellipse: s-maj=2.2km s-min=1.7km az=26.8*
BJI ***28*** *13:59:57.2, 62.°34N×152.°00W, h73^{km}, mb5.2/66, mB5.3/48, Ms4.7/39, Ms7 4.4/42*
IDC ***28*** *13:59:59.7±0.4, 62.°18N×151.°48W, h88^{km}±2^{km}, mb4.6/48, mb1 4.6/49, mb1mx4.6/63, mbtmp4.9/49, MS3.9/37, Ms1 3.9/37, ms1mx3.8/50, Error ellipse: s-maj=9.5km s-min=7.1km az=172.0*
NEIC ***28*** *14:00:00.3, 62.°05N×151.°30W, h86^{km}, mb5.3/216, MW5.2, Moment Tensor Solution. s83 Moment tensor: Scale 10^{16}Nm; M_{rr}5.06; $M_{\theta\theta}$-1.48; $M_{\phi\phi}$-3.59; $M_{r\theta}$-0.31; $M_{\theta\phi}$2.54; $M_{\phi r}$6.27; Best double couple: $M_0$8.10000×10^{16} NP1: ϕ_s129.00000°, δ24.00000°, λ52.00000°. NP2: ϕ_s349.00000°, δ71.00000°, λ105.00000°. Principal axes: T 8.4400, Plg61.0000°, Azm281.0000°; N -0.6500, Plg14.0000°, Azm164.0000°; P -7.7900, Plg25.0000°, Azm67.0000°; After AEIC.*
NEIC Felt [IV] at Chugiak, Talkeetna and Willow; [III] at Anchorage, Eagle River, Fort Richardson, Girdwood, Palmer and Wasilla; [II] at Denali National Park, Elmendorf AFB, Fairbanks, Kenai, Soldotna and Valdez. Felt in much of southcentral Alaska.
GCMT ***28*** *14:00:00.3±0.1, 62.°17N×151.°30W, h107^{km}±1^{km}, MW5.3/128, Moment Tensor Solution. s100,c164; s128,c229; Duration: 1^{s}1 Moment tensor: Scale 10^{17} Nm; M_{rr}0.58±.02; $M_{\theta\theta}$-0.12±.02; $M_{\phi\phi}$-0.45±.02; $M_{r\theta}$-0.11±.01; $M_{\theta\phi}$0.36±.02; $M_{\phi r}$0.90±.01; Best double couple: $M_0$1.11500×10^{17} NP1: ϕ_s348.00000°, δ74.00000°, λ105.00000°. NP2: ϕ_s126.00000°, δ22.00000°, λ50.00000°. Principal axes: T 1.1120, Plg59.0000°, Azm278.0000°; N 0.0070, Plg14.0000°, Azm164.0000°; P -1.1190, Plg27.0000°, Azm67.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 28 13:59:59.4±0.3**, 62.°08N**±0.°03×**151.°40W**±0.°02**, h88^{km}**±2^{km}**, h87^{km}:pP-P, n1267, σ1^{s}38**/1351**, mb5.2**/347**, 59C-11D, Central Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKT	**Skwentna**	**0.11**	**213**	P	**Pn**	**14 00 11.6**	**-0.3**
SKT				S	**Sn**	**14 00 21.2**	**+0.1**
STLK	**Strandline Lak**	**0.61**	**200**	P	**Pn**	**14 00 14.9**	**0.0**
CUT	**Chulitna**	**0.62**	**58**	P	**Pn**	**14 00 15.0**	**+0.2**
SUA	**Susitna One**	**0.69**	**153**	*e*Pn	**Pn**	**14 00 15.8**	**+0.1**
SUA				*e*Sn	**Sn**	**14 00 28.5**	**+0.7**
PPLA	**Purkeypile**	**0.90**	**336**	*e*Pn	**Pn**	**14 00 18.4**	**+0.5**
PPLA				*e*Sn	**Sn**	**14 00 32.3**	**+0.5**
SPU	**Mount Spurr**	**0.95**	**200**	P	**Pn**	**14 00 18.2**	**-0.2**
SPWE	**Spurr West**	**0.98**	**215**	P	**Pn**	**14 00 19.0**	**+0.3**
CKL	**Chakachamna La**	**0.99**	**207**	P	**Pn**	**14 00 18.9**	**0.0**
FIB	**Fire Island**	**1.08**	**147**	P	**Pn**	**14 00 20.9**	**+1.1**
FIB	**Fire Island**	**1.08**	**147**	P	**Pn**	**14 00 20.9**	**+1.1**
VOGL	**Vogel Lake**	**1.18**	**156**	P	**Pn**	**14 00 22.2**	**+1.3**
PMR	**Palmer**	**1.18**	**113**	*e*P	**Pn**	**14 00 20.6**	**-0.4**
PMR				*e*		14 00 36.8	
PMR	**Palmer**	**1.18**	**113**	*e*Pn	**Pn**	**14 00 20.6**	**-0.4**
PMR				*e*Sn	**Sn**	**14 00 36.8**	**-0.4**
GHO	**Glory Hole Cre**	**1.21**	**103**	P	**Pn**	**14 00 21.2**	**-0.3**
GHO				S	**Sn**	**14 00 37.9**	**-0.1**
HUR	**Hurricane**	**1.22**	**41**	P	**Pn**	**14 00 21.9**	**+0.4**
RC01	**Rabbit Creek A**	**1.27**	**140**	*e*Pn	**Pn**	**14 00 21.7**	**-0.4**
RC01				*e*Sn	**Sn**	**14 00 38.7**	**-0.5**
NKA	**Nikishka**	**1.34**	**177**	P	**Pn**	**14 00 25.2**	**+2.3**
CAST	**Castle Rocks**	**1.39**	**347**	*e*Pn	**Pn**	**14 00 24.4**	**+0.8**
BGRM	**Barrier Glacie**	**1.41**	**201**	P	**Pn**	**14 00 23.6**	**-0.3**
TRF	**Thorofare Moun**	**1.47**	**20**	*e*Pn	**Pn**	**14 00 24.8**	**0.0**
TRF				*e*Sn	**Sn**	**14 00 45.2**	**+1.2**
SML	**Sawmill**	**1.47**	**99**	*e*P	**Pn**	**14 00 24.3**	**-0.4**
SML				*e*		14 00 43.1	
SML	**Sawmill**	**1.47**	**99**	*e*Pn	**Pn**	**14 00 24.3**	**-0.4**
SML				*e*Sn	**Sn**	**14 00 43.1**	**-0.7**
KTH	**Kantishna Hill**	**1.50**	**8**	*e*Pn	**Pn**	**14 00 25.8**	**+0.7**
KTH				*e*Sn	**Sn**	**14 00 46.2**	**+1.8**
KNK	**Knik Glacier**	**1.55**	**114**	P	**Pn**	**14 00 25.0**	**-0.6**
KNK				S	**Sn**	**14 00 45.1**	**-0.4**
SLKM	**Skilak Lake**	**1.67**	**160**	P	**Pn**	**14 00 26.6**	**-0.6**
SLKM	**Skilak Lake**	**1.67**	**160**	P	**Pn**	**14 00 26.6**	**-0.6**
NCT	**North Crescent**	**1.69**	**207**	P	**Pn**	**14 00 27.9**	**+0.4**
RND	**Reindeer**	**1.78**	**40**	*e*P	**Pn**	**14 00 28.6**	**0.0**
RND	**Reindeer**	**1.78**	**40**	*e*Pn	**Pn**	**14 00 28.6**	**0.0**
CHUM	**Lake Minchumin**	**1.86**	**347**	P	**Pn**	**14 00 30.6**	**+1.0**
CHUM				S	**Sn**	**14 00 53.2**	**+0.7**
PWL	**Port Wells**	**1.91**	**128**	P	**Pn**	**14 00 29.1**	**-1.2**
SCM	**Sheep Creek Mo**	**1.94**	**95**	*e*P	**Pn**	**14 00 30.2**	**-0.5**
SCM	**Sheep Creek Mo**	**1.94**	**95**	*e*Pn	**Pn**	**14 00 30.2**	**-0.5**
MCK	**McKinley**	**2.01**	**33**	*e*P	**Pn**	**14 00 32.1**	**+0.5**
MCK				*e*		14 00 54.4	
MCK	**McKinley**	**2.01**	**33**	*e*Pn	**Pn**	**14 00 32.1**	**+0.5**
MCK				*e*Sn	**Sn**	**14 00 54.4**	**-1.8**
BPAW	**Bear Paw Mtn.**	**2.04**	**5**	*e*Pn	**Pn**	**14 00 32.2**	**+0.2**
BPAW				*e*Sn	**Sn**	**14 00 54.2**	**-2.7**

DHY Denali Highway 2.12 60 ePn Pn 14 00 32.5 -0.6
DHY eSn Sn 14 00 55.1 -3.8
ILIM Iliamna 2.14 201 P Pn 14 00 33.4 +0.1
SEW Seward 2.19 154 ePn Pn 14 00 32.9 -1.1
SVW2 Sparrevohn 2.23 246 ePn Pn 14 00 34.8 +0.4
SVW2 eSn Sn 14 00 57.7 -3.6
ILS Iliamna Low So 2.27 202 P Pn 14 00 35.7 +0.5
TT01 Tatalina 2.30 293 ePn Pn 14 00 36.2 +0.8
TTA Tatalina 2.31 294 eP Pn 14 00 36.1 +0.6
TTA Tatalina 2.31 294 ePn Pn 14 00 36.1 +0.6
BRLK Bradley Lake 2.33 174 ePn Pn 14 00 35.7 -0.2
HOM Homer 2.43 183 ePn Pn 14 00 36.9 -0.2
JPK Jack Peak 2.52 112 P Pn 14 00 36.9 -1.5
CNPM China Poot 2.56 178 ePn Pn 14 00 38.5 -0.4
OPT Oil Point 2.59 201 P Pn 14 00 39.8 +0.4
VLZ Valdez 2.60 109 P Pn 14 00 37.8 -1.5
VMT TAPS Tl Valdez 2.60 110 P Pn 14 00 38.0 -1.4
KLU Klutina 2.67 100 ePn Pn 14 00 39.4 -0.9
KLU eSn Sn 14 01 10.6 -1.3
FID Port Fidalgo 2.71 117 ePn Pn 14 00 38.9 -2.0
FID eSn Sn 14 01 11.0 -1.9
PS11 TAPS Pump St11 2.79 87 P Pn 14 00 42.1 +0.1
WRH Wood River Hil 2.83 30 ePn Pn 14 00 42.4 -0.1
WRH eSn Sn 14 01 09.2 -6.5
DIV Divide 2.85 107 ePn Pn 14 00 41.3 -1.5
DIV eSn Sn 14 01 14.3 -2.0
AUE Augustine Isla 2.89 200 P Pn 14 00 43.7 +0.4
PAX Paxson 2.89 69 eP Pn 14 00 43.5 +0.1
PAX e 14 01 16.2
PAX Paxson 2.89 69 ePn Pn 14 00 43.5 +0.1
PAX eSn Sn 14 01 16.1 -1.2
HIN Hinchinbrook I 2.91 123 P Pn 14 00 41.8 -1.8
AUI Augustine Isla 2.92 201 P Pn 14 00 44.0 +0.2
MLY Manley 2.98 5 ePn Pn 14 00 44.7 +0.1
MLY eSn Sn 14 01 17.8 -1.6
CCB Clear Creek Bu 3.05 31 ePn Pn 14 00 45.2 -0.1
HDA Harding Lake 3.09 39 ePn Pn 14 00 45.9 -0.1
EYAK Cordova Ski Ar 3.13 117 ePn Pn 14 00 45.0 -1.4
MDM Murphy Dome 3.22 25 ePn Pn 14 00 47.9 +0.1
PS08 TAPS Pump Stn8 3.23 38 P Pn 14 00 47.8 0.0
COLA College 3.23 28 eP Pn 14 00 47.8 0.0
COLA College 3.23 28 ePn Pn 14 00 47.8 0.0
MCNL McNeil River 3.24 208 P Pn 14 00 48.4 +0.3
CDD Cape Douglas 3.35 200 P Pn 14 00 49.5 0.0
IL1 Eielson Array 3.38 35 ePn Pn 14 00 48.3 -1.6
ILAR Eielson Array 3.38 35 P Pn 14 00 50.1 +0.2
166nm,0.3s,baz=220,slow=14,SNR=9514
ILAR S Sn 14 01 27.1 -1.8
1µm,0.3s,baz=218,slow=17,SNR=17
ILAR LR LR 14 01 52.4
comp=Z,7µm,18.7s,baz=226,slow=34
ILB Eielson Array 3.38 35 ePn Pn 14 00 49.6 -0.3
BMRM Bremner River 3.44 106 ePn Pn 14 00 48.8 -2.0
FOPK Fourpeaked Vol 3.48 198 P Pn 14 00 50.9 -0.4
MID Middleton Isla 3.64 135 eP Pn 14 00 53.5 +0.2
MID e 14 01 36.5
MID Middleton Isla 3.64 135 ePn Pn 14 00 53.5 +0.2
MID eSn Sn 14 01 36.5 +1.4
MENT Mentasta 3.67 73 ePn Pn 14 00 53.1 -0.7
RAGM Ragged Mountai 3.67 115 ePn Pn 14 00 52.0 -1.8
DOT Dot Lake 3.71 62 ePn Pn 14 00 54.2 -0.3
PS06 TAPS Pump Stn6 3.87 10 P Pn 14 00 56.8 +0.4
KAHC Katmai Hardscr 3.88 209 P Pn 14 00 57.0 +0.3
VRDI Verde Repeater 3.88 99 P Pn 14 00 55.3 -1.6
MCARA McCarthy VSAT 4.04 96 P Pn 14 00 58.1 -0.8
IM3 Indian Mountai 4.06 346 P Pn 14 00 59.8 +0.8
KAWH Katmai 4.07 206 P Pn 14 00 59.4 +0.1
BERG Berg Lake 4.08 111 P Pn 14 00 57.8 -1.6
KVTA Katmai Vly 10 4.18 209 P Pn 14 01 01.3 +0.5
CRQM Cirque 4.18 105 ePn Pn 14 00 59.6 -1.4
KAKN Katmai Knife C 4.21 207 P Pn 14 01 01.4 +0.2
SUCK Suckling Hills 4.21 115 P Pn 14 00 59.9 -1.2
KELA Mount Kelaz 4.24 213 P Pn 14 01 02.0 +0.3
KHIT Khitrov Hills 4.26 109 P Pn 14 00 60.0 -2.0
KABU Katmai Buttres 4.28 209 P Pn 14 01 02.8 +0.6
GRIN Grindle Hills 4.31 111 P Pn 14 01 01.1 -1.4
TGL Tana Glacier 4.33 104 P Pn 14 01 01.5 -1.3
KABR Katmai Barrier 4.34 206 P Pn 14 01 03.0 0.0
KDAK Kodiak Island 4.35 188 iP Pn 14 01 01.8 -1.9
KDAK Kodiak Island 4.35 188 ePn Pn 14 01 01.4 -1.6
PTPK Patty Peak 4.36 98 P Pn 14 01 02.2 -1.1
BALM Baldy 4.46 100 eP Pn 14 01 03.1 -1.5
BALM Baldy 4.46 100 ePn Pn 14 01 03.1 -1.5
KIAG Kiagna River 4.48 101 P Pn 14 01 03.5 -1.5
BCA3 Beaver Creek A 4.56 73 P Pn 14 01 05.2 -0.7
KULT Kultieth River 4.58 110 P Pn 14 01 04.9 -1.4
ISLE Juniper Island 4.61 105 P Pn 14 01 05.5 -1.1
BAGL Bagley Icefiel 4.76 105 P Pn 14 01 07.6 -1.0
BARN Barnard Glacie 4.77 98 P Pn 14 01 08.0 -0.9
GRNC Granite Creek 4.83 102 P Pn 14 01 08.2 -1.5
CTGM Chitina Glacie 4.95 99 P Pn 14 01 10.2 -1.1
MESA MESA 4.96 108 P Pn 14 01 11.0 -0.5
OHAK Old Harbor 4.96 192 ePn Pn 14 01 10.0 -1.3
PLK1 Peulik 1 5.02 214 P Pn 14 01 10.7 -1.4
LOGN Logan Glacier 5.14 100 P Pn 14 01 12.9 -1.1
COLD Coldfoot 5.20 5 ePn Pn 14 01 15.1 +0.6
TABL Table Mountain 5.22 104 P Pn 14 01 13.8 -1.2
FYU Fort Yukon 5.24 28 ePn Pn 14 01 15.0 -0.1
EGAK Eagle 5.34 55 ePn Pn 14 01 15.8 -0.6
SAMH Samovar Hills 5.51 106 P Pn 14 01 18.4 -0.5
PCA Pinnacle 5.76 105 ePn Pn 14 01 21.6 -0.7
DAWY Dawson 5.81 65 ePn Pn 14 01 22.3 -0.6
BM3 Burnt Mountain 6.10 25 P Pn 14 01 26.5 -0.3
ANNW Aniakchak Nort 6.18 217 P Pn 14 01 28.3 +0.2
AZAC Aniakchak 6.25 217 P Pn 14 01 29.0 0.0
HYT Haines Junctio 6.78 94 ePn Pn 14 01 34.7 -1.4
CHGN Chignik 6.82 215 ePn Pn 14 01 36.3 -0.2
DHAK Deception Hill 7.15 109 ePn Pn 14 01 40.1 -1.0
VNWF Veniaminof 8 7.27 219 P Pn 14 01 42.7 -0.2
PLBC Pleasant Camp 7.81 103 P Pn 14 01 48.5 -1.7
WHY Whitehorse 8.06 93 ePn Pn 14 01 51.5 -2.1
SDPT Sand Point 8.23 219 ePn Pn 14 01 57.8 +2.0
SKAG Skagway 8.29 101 ePn Pn 14 01 55.2 -1.3
GAMB Gambell 9.40 289 ePn Pn 14 02 13.7 +2.0
INK Inuvik 9.74 42 P Pn 14 02 15.2 -1.1
29nm,0.3s,baz=229,slow=17,SNR=653
INK S Sn 14 03 57.2 -6.4
baz=216,slow=19,SNR=1.9
INK LR LR 14 06 51.3
comp=Z,631nm,18.6s,baz=236,slow=42
AKUT Akutan 10.98 230 ePn Pn 14 02 34.7 +1.4
545nm,1.3s
DLBC Dease Lake 11.20 99 P Pn 14 02 34.7 -1.7
11nm,0.3s,baz=293,slow=12,SNR=96
DLBC S Sn 14 04 37.2 -2.3
8.0nm,0.3s,baz=273,slow=18,SNR=4.2
DLBC Dease Lake 11.20 99 ePn Pn 14 02 34.2 -2.2
DLBC S Sn 14 04 37.2 -2.3
WRAK Wrangell Islan 11.26 112 ePn Pn 14 02 35.2 -1.8
1µm,0.5s
UNV Unalaska Valle 11.48 231 ePn Pn 14 02 40.9 +0.9
CRAG Craig 11.54 117 ePn Pn 14 02 39.9 -0.8
NIKH Nikolski High 13.04 234 ePn Pn 14 03 03.7 +2.8
DIB Dawson Inlet, 13.43 123 ePn Pn 14 03 05.8 -0.3
BBB Bella Bella 15.96 118 P Pn 14 03 38.6 +0.2
1.9nm,0.3s,baz=310,slow=12,SNR=19
BBB S Sn 14 06 29.7 -4.9
3.6nm,0.3s,baz=90,slow=18,SNR=11
YKA Yellowknife Ar 16.98 72 P Pn 14 03 49.3 -1.6
6.7nm,0.3s,baz=281,slow=11,SNR=304
YKA LR LR 14 10 16.2
comp=Z,141nm,19.8s,baz=0.0,slow=36
YKA ScP ScP 14 11 58.0 +0.1
0.4nm,0.3s,baz=286,slow=2.4,SNR=6.3
BILL Bilibino 18.49 307c iP P 14 04 08.4 +0.3
BILL pmax pmax
comp=Z,84nm,1.2s
BILL MLR MLR
comp=Z,135nm,13.0s
LLLB Lillooet 19.78 112 eP Pn 14 04 24.4 -0.2
comp=Z,156nm,1.3s
SMY Shemya 20.56 259 eP P 14 04 30.4 -0.2
SMY pmax pmax
comp=Z,130nm,1.2s
SMY Shemya 20.56 259 eP P 14 04 30.4 -0.2
comp=Z,130nm,1.2s
PGC Sidney 20.59 118 eP Pn 14 04 32.8 -1.1
comp=Z,292nm,1.4s
A04D Lummi Island 20.84 117 P Pn 14 04 35.9 -1.1
baz=321,SNR=15
NLWA Neilton Lookou 21.41 121 eP P 14 04 42.1 +2.3
comp=Z,172nm,1.3s
B05A Bryant 21.45 117 P P 14 04 42.2 +1.9
baz=321,SNR=13
B05A S S 14 08 38.5 +5.4
baz=321
B06A Marblemount 21.52 115 eP P 14 04 42.0 +1.1
comp=Z,302nm,1.5s
PNT Penticton 21.72 111 eP P 14 04 44.9 +1.8
PNT Penticton 21.72 111 eP P 14 04 44.9 +1.8
E03A Lebam 22.22 122 eP P 14 04 50.2 +1.8
comp=Z,195nm,1.1s
C06D Leavenworth 22.23 116 P P 14 04 50.0 +1.5
baz=321
D05A Enumclaw 22.35 118 eP P 14 04 51.9 +2.2
comp=Z,266nm,1.3s
B08A Colville Reser 22.57 113 eP P 14 04 53.4 +1.3
comp=Z,68nm,1.1s
ETW Entiat 22.71 115 eP P 14 04 55.2 +1.4
LON Longmire 22.77 119 eP P 14 04 56.0 +1.7
LON pmax pmax
comp=Z,63nm,1.1s
LON Longmire 22.77 119 eP P 14 04 56.0 +1.7
comp=Z,63nm,1.1s
F04D Rainier, OR 22.82 121 P P 14 04 56.3 +1.7
baz=325
LTY Liberty 22.84 116 eP P 14 04 56.0 +1.0
comp=Z,106nm,1.1s
RES Resolute Bay 23.13 34 P P 14 04 56.5 -1.0
comp=Z,38nm,0.9s,baz=258,slow=14,SNR=27
RES LR LR 14 14 43.9
comp=Z,398nm,19.8s,baz=290,slow=38
RES Resolute Bay 23.13 34 eP P 14 04 57.0 -0.5
RES pmax pmax
comp=Z,65nm,0.8s
RES Resolute Bay 23.13 34 eP P 14 04 57.0 -0.5
comp=Z,65nm,0.8s
F04A Amboy 23.18 121 eP P 14 05 00.0 +1.8
comp=Z,150nm,1.1s
G03D McMinnville, O 23.43 123 P P 14 05 02.5 +1.9
baz=326,SNR=6.4
C09A Chrisman Ranch 23.45 112 eP P 14 05 01.9 +1.2
comp=Z,60nm,1.2s
NEW Newport 23.61 110 P P 14 05 03.2 +1.1
comp=Z,64nm,1.1s,baz=322,slow=8.3,SNR=54
NEW ScP ScP 14 12 14.5 +0.4
comp=Z,2.2nm,0.7s,baz=307,slow=3.0,SNR=3.4
NEW Newport 23.61 110 P P 14 05 03.1 +1.0
baz=319,SNR=47
NEW Newport 23.61 110 eP P 14 05 03.2 +1.1
NEW pmax pmax
comp=Z,234nm,1.6s
NEW Newport 23.61 110 eP P 14 05 03.2 +1.1
comp=Z,234nm,1.6s
NEW ScP ScP 14 12 14.5 +0.4
D08A Wollman Farm, 23.74 114 eP P 14 05 04.2 +0.9
comp=Z,56nm,0.8s
COR Corvallis 23.94 124 P P 14 05 06.3 +1.2
COR pmax pmax
comp=Z,37nm,0.8s
COR Corvallis 23.94 124 P P 14 05 06.3 +1.2
comp=Z,37nm,0.8s
HAWA Hanford 24.00 116 eP P 14 05 06.7 +1.0
comp=Z,33nm,1.0s
G05D Wamic, OR 24.19 120 P P 14 05 09.0 +1.6
baz=325
WALA Waterton Lakes 24.46 105 eP P 14 05 11.1 +1.2
comp=Z,142nm,1.1s
G06A Carson Farm, 24.48 119 eP P 14 05 11.8 +1.8
comp=Z,39nm,1.1s
E09A Wood Farm, Sta 24.50 114 eP P 14 05 11.0 +0.9
comp=Z,155nm,1.5s
I03D Drain, OR 24.67 125 P P 14 05 13.8 +2.1
baz=328,SNR=9.6
I05D Terrebonne, OR 24.93 121 P P 14 05 15.8 +1.7
baz=326,SNR=15
BSMT Bassoo Peak 24.95 108 eP P 14 05 15.3 +0.8
I04A Tendick Farm, 24.95 124 P P 14 05 16.2 +1.9
baz=327,SNR=18
BLMT Blacktail Moun 25.03 107 eP P 14 05 16.0 +0.9
G08A Pilot Rock 25.13 117 eP P 14 05 17.1 +1.1
comp=Z,53nm,1.0s
JTMT Jette 25.26 107 eP P 14 05 18.1 +0.9
SEY Seymchan 25.27 297 P P 14 05 15.8 -1.2
comp=Z,30nm,0.9s,baz=88,slow=8.1,SNR=52
YBMT Yellow Bay 25.29 107 eP P 14 05 18.8 +1.3
F10A Beach Ranch, E 25.32 114 eP P 14 05 18.2 +0.5
comp=Z,67nm,0.9s
J04D Umpqua Nationa 25.54 124 P P 14 05 22.1 +2.2
comp=Z,67nm,0.9s
SWMT Swartz Lake 25.56 107 eP P 14 05 20.8 +0.9
HUMO Hull Mountain 25.75 126 eP P 14 05 24.3 +2.8
comp=Z,61nm,1.0s
J05D Fort Rock, OR 25.85 123 P P 14 05 25.0 +2.5
baz=327
L02D Cave Junction, 25.89 127 P P 14 05 25.3 +2.5
baz=330
SLMT Seeley Lake 25.99 107 eP P 14 05 24.9 +1.1
MSO Missoula 26.10 108 P P 14 05 25.4 +0.6
baz=320,SNR=17
MSO Missoula 26.10 108 eP P 14 05 25.4 +0.6
comp=Z,94nm,1.1s
BMO Blue Mountains 26.18 115 eP P 14 05 26.2 +0.8
comp=Z,63nm,1.2s
K04D Chiloquin, OR 26.20 124 P P 14 05 27.9 +2.2
baz=328
FFC Flin Flon 26.33 83 eP P 14 05 27.0 +0.4
FFC pmax pmax
comp=Z,91nm,0.9s
FFC Flin Flon 26.33 83 eP P 14 05 27.0 +0.4
comp=Z,90nm,0.9s
CHMT Chamberlain Mo 26.35 107 eP P 14 05 27.5 +0.4
K05A Summer Lake 26.45 123 eP P 14 05 30.4 +2.3
comp=Z,78nm,1.0s
YBH Yreka Blue Hor 26.60 127 eP P 14 05 32.0 +2.8
YBH pmax pmax
comp=Z,46nm,0.9s
YBH Yreka Blue Hor 26.60 127 eP P 14 05 32.0 +2.8
comp=Z,46nm,0.9s
M02C Callahan 26.84 127 P P 14 05 34.0 +2.7
baz=330
M04C Macdoel 26.89 125 P P 14 05 33.3 +1.4
baz=329
EGMT Eagleton 27.12 102 P P 14 05 34.7 +0.8
baz=317,SNR=66
EGMT Eagleton 27.12 102 eP P 14 05 34.6 +0.8
comp=Z,174nm,0.9s
HRY Holter Researc 27.14 106 eP P 14 05 34.2 +0.1
N02D Trinity Center 27.25 127 P P 14 05 38.1 +3.0
baz=330,SNR=10
MOD Modoc Plateau 27.38 123 eP P 14 05 38.3 +2.0
comp=Z,51nm,1.3s
MA2 Magadan 27.50 291 P P 14 05 35.3 -1.7
comp=Z,14nm,1.1s,baz=70,slow=10,SNR=10
MA2 LR LR 14 17 08.9
comp=Z,215nm,19.8s,baz=74,slow=38
LRM Limekiln Ridge 27.54 108 eP P 14 05 38.9 +1.0
WVOR Wild Horse Val 27.60 120 eP P 14 05 40.1 +1.8
WVOR pmax pmax
comp=Z,40nm,1.0s
WVOR Wild Horse Val 27.60 120 eP P 14 05 40.1 +1.8
comp=Z,40nm,1.0s
PET Petropavlovsk 27.61 274c iP P 14 05 38.2 +0.1
PET eS S 14 10 10.8 -2.2
PET pmax pmax
comp=Z,200nm,11.0s
PET MLR MLR
comp=Z,300nm,20.0s
PET MLR MLR
comp=Z,500nm,18.0s
WDC Whiskeytown Da 27.66 128 eP P 14 05 41.3 +2.7
WDC pmax pmax
comp=Z,65nm,1.2s
WDC Whiskeytown Da 27.66 128 eP P 14 05 41.3 +2.7
comp=Z,64nm,1.2s
FCC Fort Churchill 27.69 71 eP P 14 05 39.8 +1.1
FCC pmax pmax
comp=Z,437nm,1.5s
FCC Fort Churchill 27.69 71 eP P 14 05 39.8 +1.1
comp=Z,437nm,1.5s
DLMT Dillon 27.83 109 eP P 14 05 41.5 +1.2
comp=Z,54nm,1.2s
MFID Camas Ranch 27.96 115 eP P 14 05 42.1 +0.6
comp=Z,40nm,0.9s
PETK Petropavlovsk- 28.01 275 P P 14 05 41.2 -0.4
comp=Z,4.6nm,0.5s,baz=71,slow=14,SNR=8.8
PETK LR LR 14 17 59.6
comp=Z,91nm,19.5s,baz=47,slow=39
BOZ Bozeman (W) 28.04 107 P P 14 05 43.5 +1.3
baz=320,SNR=29
BOZ Bozeman (W) 28.04 107 eP P 14 05 42.8 +0.6
BOZ pmax pmax
comp=Z,81nm,1.5s
BOZ Bozeman (W) 28.04 107 eP P 14 05 42.8 +0.6
comp=Z,81nm,1.5s
MCMT McKenzie Canyo 28.13 110 eP P 14 05 44.1 +1.0
O03D Paynes Creek 28.18 127 P P 14 05 45.0 +1.6
baz=331,SNR=8.8
HLID Hailey 28.45 113 P P 14 05 47.1 +1.2
baz=324,SNR=17
HLID Hailey 28.45 113 eP P 14 05 47.0 +1.2
comp=Z,20nm,0.8s
QLMT Earthquake Lak 28.76 108 eP P 14 05 50.4 +1.8
GCMT Greycliff 28.82 105 eP P 14 05 50.9 +1.8
YHB Horse Butte 28.93 108 eP P 14 05 52.0 +1.8
comp=Z,76nm,1.3s
ORV Oroville 28.94 127 eP P 14 05 51.7 +1.6
ORV pmax pmax
comp=Z,13nm,0.8s
ORV Oroville 28.94 127 eP P 14 05 51.7 +1.6
comp=Z,13nm,0.8s
YHH Holmes Hill 29.05 108 eP P 14 05 53.5 +2.1
comp=Z,48nm,1.0s
YMR Madison River 29.10 108 eP P 14 05 54.0 +2.3
MCID Moose Creek 29.37 109 eP P 14 05 56.2 +2.2
DGMT Dagmar 29.38 96 P P 14 05 54.5 +0.6
baz=315
DGMT Dagmar 29.38 96 eP P 14 05 55.1 +1.2
comp=Z,128nm,1.2s
LKWY Lake 29.43 107 eP P 14 05 58.1 +3.4
LKWY pmax pmax
comp=Z,151nm,1.5s
LKWY Lake 29.43 107 eP P 14 05 58.1 +3.4
comp=Z,151nm,1.5s
YPP Pitchstone Pla 29.48 108 eP P 14 05 58.1 +3.0
comp=Z,32nm,1.1s
H17A Grant Village 29.48 108 P P 14 05 58.2 +3.1
baz=321,SNR=5.8
H17A Grant Village 29.48 108 eP P 14 05 58.6 +3.5
comp=Z,25nm,0.9s
RLMT Red Lodge 29.51 105 P P 14 05 57.2 +1.8
baz=320,SNR=46
RLMT Red Lodge 29.51 105 eP P 14 05 57.1 +1.8
comp=Z,139nm,1.0s
PAHR Pah Rah Range 29.62 124 eP P 14 05 58.2 +2.0
comp=Z,29nm,1.2s
AFDM Forest Hills D 29.67 127 eP P 14 05 58.4 +1.9
comp=Z,45nm,1.4s
FLWY Flagg Ranch 29.67 108 eP P 14 05 59.2 +2.4
comp=Z,67nm,1.4s
IMW Indian Meadow 29.71 109 eP P 14 05 58.7 +1.6
comp=Z,88nm,1.1s
LAO LASA Array 29.73 100 P P 14 05 58.5 +1.5
baz=318,SNR=10
LAO LASA Array 29.73 100 eP P 14 05 58.6 +1.5
comp=Z,179nm,1.4s
BMN Battle Mountai 29.86 121 eP P 14 05 57.9 -0.4
BMN pmax pmax
comp=Z,44nm,1.8s
BMN Battle Mountai 29.86 121 eP P 14 05 57.9 -0.4
comp=Z,44nm,1.8s
MOOW Moose Ponds 29.92 109 eP P 14 06 01.2 +2.3
comp=Z,36nm,1.4s
TPAW Teton Pass 30.03 109 eP P 14 06 02.1 +2.1
comp=Z,83nm,1.2s
PNTR Pine Nut 30.07 125 eP P 14 06 02.7 +2.4
comp=Z,42nm,0.8s
LOHW Long Hollow 30.09 109 eP P 14 06 02.5 +2.1
comp=Z,35nm,1.1s
SNOW Snow King Moun 30.14 109 eP P 14 06 03.6 +2.7
comp=Z,30nm,0.9s
REDW Red Top Meadow 30.17 109 eP P 14 06 03.1 +1.9
comp=Z,70nm,1.3s
TIXI Tiksi 30.30 322 P P 14 06 00.4 -1.3
comp=Z,7.8nm,0.8s,baz=57,slow=8.5,SNR=7.0
TIXI PcP PcP 14 08 58.9 -0.7
comp=Z,8.4nm,0.5s,baz=62,slow=3.9,SNR=7.2
TIXI ScP ScP 14 12 31.6 -2.0
comp=Z,3.7nm,0.9s,baz=49,slow=3.3,SNR=5.3
TIXI LR LR 14 18 47.5
comp=Z,164nm,21.2s,baz=35,slow=37
TIXI Tiksi 30.30 322ceP P 14 06 01.0 -0.7
TIXI pmax pmax
comp=Z,11nm,1.0s
TIXI Tiksi 30.30 322 eP P 14 06 01.2 -0.4
comp=Z,12nm,0.9s
TIXI PcP PcP 14 08 58.9 -0.7
TIXI ScP ScP 14 12 31.6 -2.0
YERR Yerington 30.30 125 eP P 14 06 04.5 +2.2
comp=Z,24nm,1.0s
C25A Freed Ranch, W 30.36 96 P P 14 06 04.0 +1.4
baz=316
AHID Auburn Hatcher 30.54 110 eP P 14 06 06.8 +2.4
comp=Z,36nm,1.1s
HVU Hansel Valley 30.60 114 eP P 14 06 06.9 +2.0
HVU pmax pmax
comp=Z,69nm,1.3s
HVU Hansel Valley 30.60 114 eP P 14 06 06.9 +2.0
comp=Z,69nm,1.3s
WAKR Walker 30.64 125 eP P 14 06 07.8 +2.6
comp=Z,30nm,1.0s
CMB Columbia Colle 30.69 127 eP P 14 06 07.3 +1.8
CMB pmax pmax
comp=Z,20nm,1.3s
CMB Columbia Colle 30.69 127 eP P 14 06 07.3 +1.8
comp=Z,20nm,1.3s
TVH3 East Aurora ar 31.01 125 eP P 14 06 11.1 +2.5
comp=Z,23nm,0.8s
BGU Big Grassy Mou 31.20 115 eP P 14 06 12.6 +2.4
comp=Z,12nm,0.9s
BW06 Boulder Array 31.22 109 P P 14 06 11.7 +1.4
baz=323,SNR=23
BW06 Boulder Array 31.22 109 eP P 14 06 11.8 +1.4
PD31 Pinedale Array 31.22 109 eP P 14 06 11.8 +1.4
PDAR Pinedale Array 31.22 109 P P 14 06 11.8 +1.4
comp=Z,6.9nm,0.8s,baz=308,slow=7.2,SNR=56
PDAR PcP PcP 14 09 01.9 -1.0
comp=Z,2.2nm,0.7s,baz=332,slow=1.5,SNR=3.2
PDAR LR LR 14 19 29.9
comp=Z,927nm,21.5s,baz=346,slow=37
HWUT Hardware Ranch 31.27 112 eP P 14 06 12.2 +1.5
comp=Z,18nm,0.9s
MLAC Mammoth, Mammo 31.64 125 P P 14 06 16.3 +2.2
baz=331
TCUT Toon Canyon 31.74 113 eP P 14 06 17.3 +2.3
comp=Z,74nm,0.9s
DUG Dugway, Tooele 31.89 115 P P 14 06 17.7 +1.4
baz=326,SNR=12
DUG Dugway, Tooele 31.89 115 eP P 14 06 17.8 +1.6
DUG pmax pmax
comp=Z,20nm,0.8s
DUG Dugway, Tooele 31.89 115 eP P 14 06 17.8 +1.6
comp=Z,20nm,0.8s
CTU Camp Tracy 31.94 113 eP P 14 06 18.5 +1.9
comp=Z,126nm,1.0s
MDND Maddock 31.98 92 P P 14 06 17.9 +1.1
baz=316,SNR=6.8
MDND Maddock 31.98 92 eP P 14 06 18.1 +1.3
comp=Z,195nm,1.2s
ULM Lac du Bonnet 32.06 86 P P 14 06 16.9 -0.4
comp=Z,52nm,0.8s,baz=323,slow=9.1,SNR=2.9
ULM PcP PcP 14 09 04.3 -0.3
comp=Z,12nm,0.8s,baz=12,slow=9.3,SNR=3.7
ULM LR LR 14 18 48.5
comp=Z,312nm,18.5s,baz=316,slow=35
ULM Lac du Bonnet 32.06 86 eP P 14 06 18.2 +0.8
ULM 14 09 04.3
ULM pmax pmax
comp=Z,105nm,1.1s
ULM Lac du Bonnet 32.06 86 eP P 14 06 18.1 +0.8
comp=Z,105nm,1.1s
ULM PcP PcP 14 09 04.3 -0.3
JLU Jordanelle 32.14 113 eP P 14 06 20.4 +1.9
comp=Z,24nm,1.1s
PMPB Monarch Peak 32.15 129 eP P 14 06 22.1 +3.7
comp=Z,203nm,2.0s
R11A Troy Canyon, C 32.30 121 P P 14 06 21.5 +1.7
baz=329,SNR=33
R11A Troy Canyon, C 32.30 121 eP P 14 06 21.5 +1.7
comp=Z,27nm,0.9s
A31A Linda, St. Vin 32.35 89 P P 14 06 21.1 +1.1
baz=314
TIN Tinemaha, Big 32.37 125 P P 14 06 23.3 +2.9
baz=331
NLU North Lily Min 32.41 115 eP P 14 06 22.6 +1.8
comp=Z,15nm,0.9s

B31A	Greenbush Farm	32.49	90	P		P		14 06 22.3	+1.1
	baz=315,SNR=9.5									
H25A	Fruitdale	32.50	100	P		P		14 06 22.6	+1.2
	baz=320,SNR=9.5									
RCTC	Rector, Farmer	32.65	127	P		P		14 06 24.2	+1.6
	baz=332									
RSSD	Black Hills	32.68	101	P		P		14 06 24.6	+1.5
	baz=320									
RSSD	Black Hills	32.68	101	*e*P		P		14 06 24.6	+1.5
RSSD				pmax		pmax				
	comp=Z,70nm,0.8s									
RSSD	Black Hills	32.68	101	*e*P		P		14 06 24.6	+1.5
	comp=Z,70nm,0.8s									
K22A	Casper	32.68	105	P		P		14 06 24.1	+1.0
	baz=322,SNR=9.8									
K22A	Casper	32.68	105	*e*P		P		14 06 24.2	+1.1
	comp=Z,65nm,1.0s									
A32A	Rocking H Ranc	32.69	88	P		P		14 06 23.9	+0.9
	baz=314,SNR=26									
GRAC	Grapevine Rang	32.76	124	P		P		14 06 26.1	+2.4
	baz=331									
KULLO	Kullorsuaq	32.76	30⇓	*i*P		P		14 06 23.9	+0.6
	comp=Z,73nm,1.0s									
KULLO	Kullorsuaq	32.76	30⇓	*i*P		P		14 06 23.9	+0.6
KULLO				pmax		pmax				
	comp=Z,73nm,1.0s									
PAGB	Antelope Grade	32.78	129	*e*P		P		14 06 26.7	+2.9
	comp=Z,28nm,0.8s									
C31A	Landman Farms,	32.90	91	P		P		14 06 25.7	+0.9
	baz=316,SNR=23									
CWC	Cottonwood Cre	32.97	126	P		P		14 06 28.2	+2.6
	baz=332									
B32A	Ashes, Strandq	33.04	89	P		P		14 06 26.7	+0.7
	baz=315,SNR=15									
VES	Vestal, Richgr	33.12	127	P		P		14 06 28.1	+1.4
	baz=333									
A33A	Warroad	33.19	87	P		P		14 06 28.2	+0.9
	baz=315,SNR=17									
TPNV	Topopah Spring	33.24	123	P		P		14 06 29.7	+1.7
	baz=330,SNR=19									
TPNV	Topopah Spring	33.24	123	*e*P		P		14 06 29.9	+1.9
TPNV				pmax		pmax				
	comp=Z,182nm,2.0s									
TPNV	Topopah Spring	33.24	123	*e*P		P		14 06 29.9	+1.9
	comp=Z,182nm,2.0s									
DAC	Darwin (Calif)	33.30	125	*e*P		P		14 06 29.3	+0.7
DAC				pmax		pmax				
	comp=Z,29nm,0.9s									
DAC	Darwin (Calif)	33.30	125	*e*P		P		14 06 29.3	+0.7
	comp=Z,30nm,0.9s									
TMUT	Trail Mountain	33.33	114	*e*P		P		14 06 30.9	+2.0
	comp=Z,21nm,0.9s									
F29A	Eureka	33.35	95	P		P		14 06 29.8	+1.1
	baz=318,SNR=15									
P17A	Butcher Ranch,	33.38	114	*e*P		P		14 06 31.3	+2.1
	comp=Z,16nm,0.9s									
FURC	Furnace Creek,	33.41	124	P		P		14 06 31.5	+2.2
	baz=331,SNR=13									
AGMN	Agassiz Nation	33.42	88	P		P		14 06 30.0	+0.7
	baz=315,SNR=41									
AGMN	Agassiz Nation	33.42	88	*e*P		P		14 06 30.0	+0.7
	comp=Z,130nm,1.3s									
D31A	Mcclaflin, Tow	33.45	91	P		P		14 06 30.2	+0.6
	baz=317									
C32A	Crookston	33.45	89	P		P		14 06 30.4	+0.9
	baz=316,SNR=5.9									
ISA	Isabella, Lake	33.50	127	P		P		14 06 31.8	+1.6
	baz=332,SNR=7.3									
ISA	Isabella, Lake	33.50	127	*e*P		P		14 06 32.0	+1.8
ISA				pmax		pmax				
	comp=Z,24nm,0.9s									
ISA	Isabella, Lake	33.50	127	*e*P		P		14 06 32.0	+1.8
	comp=Z,24nm,0.9s									
MPMC	Manual Prospec	33.53	125	P		P		14 06 32.8	+2.2
	baz=332,SNR=24									
MSU	Marysvale	33.57	116	*e*P		P		14 06 33.2	+2.2
MSU	Marysvale	33.57	116	*e*P		P		14 06 33.2	+2.2
B33A	Robert and Kas	33.57	88	P		P		14 06 31.5	+0.9
	baz=315,SNR=11									
PKM	Mcpherson Peak	33.69	129	P		P		14 06 34.5	+2.5
	baz=334,SNR=21									
D32A	Dogwood Acres,	33.71	91	P		P		14 06 32.4	+0.6
	baz=316,SNR=5.8									
F30A	Leola	33.72	94	P		P		14 06 32.8	+0.9
	baz=318,SNR=6.1									
E31A	Nome	33.72	92	P		P		14 06 32.6	+0.6
	baz=317,SNR=14									
SRU	San Rafael Swe	33.77	114	*e*P		P		14 06 34.6	+1.9
SRU	San Rafael Swe	33.77	114	*e*P		P		14 06 34.6	+1.9
C33A	Trail	33.85	89	P		P		14 06 33.8	+0.8
	baz=316,SNR=8.2									
B34A	Aery, Baudette	33.86	87	P		P		14 06 33.9	+0.8
	baz=315,SNR=35									
CCUT	Cedar City	33.89	119	*e*P		P		14 06 35.8	+2.1
	comp=Z,25nm,0.8s									
O20A	White River Ci	33.93	110	P		P		14 06 35.0	+1.0
	baz=325,SNR=10									
O20A	White River Ci	33.93	110	*e*P		P		14 06 35.2	+1.2
	comp=Z,31nm,0.8s									
SZCU	Shurtz Canyon	33.96	118	*e*P		P		14 06 36.2	+1.8
	comp=Z,84nm,1.2s									
LRMC	Laurel Mtn Rad	33.97	126	P		P		14 06 36.1	+1.8
	baz=332,SNR=17									
SHPR	Sheep Range	34.05	122	*e*P		P		14 06 36.8	+1.7
	comp=Z,19nm,1.0s									
F31A	Hecla	34.07	93	P		P		14 06 35.8	+0.8
	baz=318									
E32A	Braaten, Kindr	34.08	91	P		P		14 06 35.6	+0.6
	baz=317									
SHOC	Shoshone, Teco	34.14	124	P		P		14 06 37.9	+2.2
	baz=331									
MMU	Miners Mountai	34.21	115	*e*P		P		14 06 38.4	+1.9
PHWY	Pilot Hill	34.23	106	*e*P		P		14 06 38.0	+1.3
	comp=Z,61nm,1.7s									
D33A	AnnSam, Waubun	34.26	90	P		P		14 06 37.4	+0.8
	baz=316									
C34A	RKJ Ranch, Bem	34.33	88	P		P		14 06 37.6	+0.4
	baz=316									
N23A	Red Feather La	34.34	107	P		P		14 06 38.8	+1.1
	baz=324,SNR=9.8									
N23A	Red Feather La	34.34	107	*e*P		P		14 06 38.9	+1.3
	comp=Z,21nm,0.9s									
B35A	Bob, Littlefor	34.38	86	P		P		14 06 38.3	+0.7
	baz=315,SNR=40									
LCMT	Little Creek M	34.40	119	*e*P		P		14 06 40.1	+2.1
	comp=Z,48nm,1.1s									
GSC	Goldstone, Bar	34.46	125	P		P		14 06 40.6	+2.1
	baz=332,SNR=26									
GSC	Goldstone, Bar	34.46	125	*e*P		P		14 06 40.8	+2.3
GSC				pmax		pmax				
	comp=Z,52nm,1.0s									
GSC	Goldstone, Bar	34.46	125	*e*P		P		14 06 40.8	+2.3
	comp=Z,52nm,1.0s									
G31A	Conde	34.56	94	P		P		14 06 40.0	+0.8
	baz=318									
SCZ2	Santa Cruz Isl	34.56	130	P		P		14 06 41.0	+1.7
	baz=334									
F32A	Veblen	34.59	92	P		P		14 06 39.9	+0.4
	baz=318									
E33A	Westby DABS, E	34.65	91	P		P		14 06 40.8	+0.8
	baz=317,SNR=9.7									
BLG	Laguna Peak, P	34.66	129	P		P		14 06 41.7	+1.5
	baz=334									
TUQ	Turquoise Moun	34.68	124	P		P		14 06 42.8	+2.3
	baz=331,SNR=16									
C35A	Jirik Farms, M	34.74	87	P		P		14 06 41.0	+0.3
	baz=316,SNR=45									
RRX	Edison Barstow	34.76	125	P		P		14 06 43.2	+2.1
	baz=332									
SUSD	Miller	34.80	96	P		P		14 06 42.1	+0.8
	baz=319,SNR=10									
YAK	Yakutsk	34.84	306	P		P		14 06 40.9	-0.4
	comp=Z,132nm,0.9s,baz=29,slow=0.3,SNR=29									
YAK				LR		LR		14 21 50.6		
	comp=Z,322nm,19.5s,baz=62,slow=38									
YAK	Yakutsk	34.84	306	*c i*P		P		14 06 41.1	-0.3
YAK				*e*				14 08 03.8		
YAK				*e*				14 09 10.8		
YAK				*e*S		S		14 12 02.1	-3.4
YAK				*e*SS		SnSn		14 14 18.5	-9.4
YAK				pmax		pmax				
	comp=Z,132nm,0.9s									
YAK				pmax		pmax				
	comp=N,37nm,1.2s									
YAK				pmax		pmax				
	comp=E,78nm,1.2s									
YAK				pmax		pmax				
	comp=Z,12nm,0.4s									
YAK				pmax		pmax				
	comp=E,59nm,1.4s									
YAK				pmax		pmax				
	comp=N,41nm,1.3s									
YAK				smax		smax				
	comp=N,65nm,1.9s									
YAK				smax		smax				
	comp=E,45nm,1.9s									
G32A	Webster	34.87	93	P		P		14 06 42.6	+0.7
	baz=318,SNR=7.9									
PV09	Paradox Valley	34.88	113	*e*P		P		14 06 44.2	+1.8
MWC	Mount Wilson	34.94	127	*e*P		P		14 06 45.3	+2.6
MWC				pmax		pmax				
	comp=Z,21nm,1.0s									
MWC	Mount Wilson	34.94	127	*e*P		P		14 06 45.3	+2.6
	comp=Z,21nm,1.0s									
H31A	Wolsey	34.99	95	P		P		14 06 43.8	+0.9
	baz=319									
F33A	5 Mile Ranch,	35.00	92	P		P		14 06 43.7	+0.7
	baz=318,SNR=24									
PV10	Paradox Valley	35.03	113	*e*P		P		14 06 45.9	+2.3
E34A	Wadena	35.04	90	P		P		14 06 44.1	+0.9
	baz=317,SNR=7.6									
HEC	Hector,Ludlow	35.05	125	P		P		14 06 45.6	+1.9
	baz=332									
BFSC	Mount Baldy Ra	35.07	127	P		P		14 06 45.9	+2.1
	baz=333,SNR=14									
PV04	Paradox Valley	35.07	113	*e*P		P		14 06 44.3	+0.5
D35A	Remer	35.15	88	P		P		14 06 45.1	+0.9
	baz=316,SNR=37									
C36A	Pine Crest Far	35.23	86	P		P		14 06 45.7	+0.7
	baz=316,SNR=20									
PV05	Paradox Valley	35.25	113	*e*P		P		14 06 46.8	+1.4
SNCC	San Nicolas Is	35.27	130	P		P		14 06 47.3	+1.9
	baz=335									
U15A	North Rim	35.29	118	*e*P		P		14 06 47.7	+1.8
	comp=Z,29nm,0.9s									
FMP	Fort Macarthur	35.30	128	P		P		14 06 47.3	+1.6
	baz=334									
I31A	Royce, Wessing	35.31	96	P		P		14 06 46.4	+0.8
	baz=320									
LDFC	Landfair	35.32	123	*e*P		P		14 06 47.7	+1.8
	comp=Z,66nm,1.0s									
BBRC	Big Bear Solar	35.33	126	P		P		14 06 48.2	+2.1
	baz=333									
GMRC	Granite Mounta	35.36	124	P		P		14 06 48.2	+1.9
	baz=332,SNR=15									
E35A	Pequot Lakes	35.36	89	P		P		14 06 47.2	+1.1
	baz=317,SNR=16									
ISCO	Idaho Springs	35.37	107	P		P		14 06 47.8	+1.2
	baz=324,SNR=7.9									
ISCO	Idaho Springs	35.37	107	*e*P		P		14 06 48.5	+1.9
ISCO				pmax		pmax				
	comp=Z,13nm,1.0s									
ISCO	Idaho Springs	35.37	107	*e*P		P		14 06 48.5	+1.9
	comp=Z,13nm,1.0s									
J30A	Dallas	35.40	97	P		P		14 06 47.1	+0.7
	baz=320,SNR=11									
G33A	Ortonville	35.41	92	P		P		14 06 47.1	+0.6
	baz=318,SNR=8.2									
PV01	Paradox Valley	35.43	112	*e*P		P		14 06 48.3	+1.3
H32A	Carlson Farm,	35.46	94	P		P		14 06 47.9	+1.0
	baz=319,SNR=40									
D36A	Goodland	35.50	87	P		P		14 06 47.9	+0.7
	baz=316,SNR=22									
F34A	Alexandria	35.52	91	P		P		14 06 48.3	+0.8
	baz=318,SNR=8.2									
CIS	Catalina Islan	35.54	128	P		P		14 06 49.2	+1.5
	baz=334									
C37A	Embarrass	35.56	86	P		P		14 06 48.5	+0.8
	baz=316,SNR=25									
H33A	Prehn Over Nor	35.66	93	P		P		14 06 49.4	+0.8
	baz=319,SNR=8.3									
EYMN	Ely	35.73	85	P		P		14 06 50.0	+0.8
	baz=316,SNR=69									
EYMN	Ely	35.73	85	*e*P		P		14 06 50.0	+0.8
	comp=Z,145nm,0.9s									
G34A	Benson	35.76	92	P		P		14 06 50.0	+0.6
	baz=318									
J31A	Geddes	35.78	97	P		P		14 06 50.1	+0.4
	baz=320									
NEE2	Needles Airpor	35.78	123	P		P		14 06 51.7	+2.0
	baz=331									
W13A	Hualapai Mount	35.79	121	*e*P		P		14 06 52.1	+2.1
	comp=Z,23nm,1.1s									
F35A	Swnville	35.80	90	P		P		14 06 51.0	+1.2
	baz=318,SNR=6.1									
I32A	Karley and Nic	35.81	95	P		P		14 06 50.6	+0.7
	baz=320,SNR=9.1									
NKL	Nikolayevsk	35.82	288	*i* P		P		14 06 49.0	-0.8
NKL				pmax		pmax				
	comp=E,90nm,1.6s									
NKL				pmax		pmax				
	comp=Z,220nm,1.6s									
NKL				pmax		pmax				
	comp=E,250nm,3.0s									
NKL				pmax		pmax				
	comp=Z,400nm,3.0s									
K30A	Basset	35.84	98	P		P		14 06 51.4	+1.1
	baz=321,SNR=14									
D37A	Cotton	35.86	87	P		P		14 06 50.9	+0.6
	baz=316,SNR=48									
BELC	Belle Mtn. Jos	35.92	125	P		P		14 06 52.8	+1.7
	baz=332,SNR=11									
E36A	McGregor	35.93	88	P		P		14 06 52.0	+1.0
	baz=317,SNR=44									
C38A	Sawbill Land.	35.99	85	P		P		14 06 52.1	+0.6
	baz=316,SNR=40									
OGNE	Ogallala	36.08	103	P		P		14 06 53.5	+1.1
	baz=323,SNR=6.0									
OGNE	Ogallala	36.08	103	*e*P		P		14 06 54.0	+1.6
	comp=Z,89nm,1.2s									
PFO	Pinyon Flats O	36.08	126	P		P		14 06 53.0	+0.6
	comp=Z,6.1nm,0.8s,baz=340,slow=7.8,SNR=17									
PFO	Pinyon Flats O	36.08	126	P		P		14 06 54.0	+1.5
	baz=333,SNR=9.9									
PFO	Pinyon Flats O	36.08	126	*e*P		P		14 06 54.4	+1.9
PFO				pmax		pmax				
	comp=Z,24nm,0.8s									
PFO	Pinyon Flats O	36.08	126	*e*P		P		14 06 54.4	+1.9
	comp=Z,24nm,0.8s									
TPFO	Pinon Flats	36.09	126	P		P		14 06 54.1	+1.5
	baz=333,SNR=8.1									
I33A	Coleman	36.11	94	P		P		14 06 53.1	+0.6
	baz=319,SNR=7.8									
IRM	Iron Mountain	36.11	124	P		P		14 06 54.8	+2.2
	baz=332,SNR=18									
H34A	Spellman Lake,	36.12	92	P		P		14 06 53.4	+0.9
	baz=319,SNR=28									
J32A	Parkston	36.13	96	P		P		14 06 52.9	+0.3
	baz=320									
MVCO	Mesa Verde	36.24	113	P		P		14 06 55.1	+1.2
	baz=327									
MVCO	Mesa Verde	36.24	113	*e*P		P		14 06 55.4	+1.5
	comp=Z,18nm,0.7s									
Q24A	Divide	36.26	108	P		P		14 06 55.7	+1.5
	baz=325,SNR=16									
Q24A	Divide	36.26	108	*e*P		P		14 06 55.1	+0.9
	comp=Z,25nm,0.9s									
K31A	O'Neill	36.28	98	P		P		14 06 54.6	+0.6
	baz=321									
F36A	Milaca	36.29	89	P		P		14 06 55.0	+1.0
	baz=318,SNR=52									
E37A	Wrenshall	36.30	87	P		P		14 06 55.3	+1.2
	baz=317,SNR=11									
G35A	Watkins	36.31	91	P		P		14 06 55.2	+1.0
	baz=318									
PDMCI	Parker Dam,Lak	36.38	122	P		P		14 06 56.5	+1.6
	baz=331,SNR=9.9									
BC3	Big Chuckawall	36.43	124	P		P		14 06 57.1	+1.7
	baz=332,SNR=6.5									
ECSD	EROS Data Cent	36.43	94	P		P		14 06 55.7	+0.4
	baz=320,SNR=46									
ECSD	EROS Data Cent	36.43	94	*e*P		P		14 06 55.5	+0.3
	comp=Z,82nm,1.1s									
WUAZ	Wupatki	36.45	118	P		P		14 06 57.7	+2.1
	baz=330,SNR=29									
WUAZ	Wupatki	36.45	118	*e*P		P		14 06 57.8	+2.1
	comp=Z,75nm,1.0s									
TYV	Tymovskoe	36.48	283	*e*P		P		14 06 51.0	-4.5
TYV				pmax		pmax				
	comp=Z,29nm,0.8s									
TYV				MLR		MLR				
	comp=Z,500nm,12.0s									
109C	Camp Elliot, M	36.48	127	P		P		14 06 57.7	+2.0
	baz=334									
S22A	4UR Ranch, Cre	36.52	111	P		P		14 06 58.4	+2.0
	baz=326,SNR=8.2									
S22A	4UR Ranch, Cre	36.52	111	*e*P		P		14 06 58.3	+1.9
	comp=Z,27nm,0.9s									
H35A	Sunnyside Ranc	36.54	92	P		P		14 06 57.2	+1.0
	baz=319,SNR=17									
I34A	Hadley	36.55	93	P		P		14 06 56.7	+0.4
	baz=319									
J33A	Davis	36.59	95	P		P		14 06 56.8	+0.3
	baz=320									
L31A	Butterfield Fa	36.59	98	P		P		14 06 57.8	+1.2
	baz=321,SNR=6.4									
K32A	Verdigre	36.62	97	P		P		14 06 57.2	+0.4
	baz=321									
G36A	St. Michael	36.65	90	P		P		14 06 58.1	+1.0
	baz=318,SNR=9.1									
Y12C	Blythe	36.71	123	P		P		14 06 59.8	+2.2
	baz=332,SNR=10									
Y12C	Blythe	36.71	123	*e*P		P		14 06 60.0	+2.3
	comp=Z,64nm,1.1s									
MONP2	Monument Peak	36.74	126	P		P		14 07 00.3	+2.2
	baz=333,SNR=15									
BAR	Barrett	36.83	127	*e*P		P		14 07 01.1	+2.4
	comp=Z,18nm,0.8s									
SWSC	Sam W. Stewart	36.93	125	P		P		14 07 01.2	+1.7
	baz=333									
H36A	Jessenland, He	37.06	91	P		P		14 07 02.1	+1.6
	baz=319,SNR=7.8									
IKP	In-Ko-Pah, Jac	37.07	126	P		P		14 07 02.9	+2.1
	baz=333,SNR=8.2									
J34A	George	37.09	94	P		P		14 07 01.2	+0.4
	baz=320									
SPMN	Marine on St.	37.10	89	P		P		14 07 02.0	+1.2
	baz=318,SNR=21									
SPMN	Marine on St.	37.10	89	*e*P		P		14 07 01.9	+1.0
	comp=Z,157nm,1.1s									
I35A	Creekview Farm	37.11	93	P		P		14 07 01.5	+0.5
	baz=320,SNR=14									
SDCO	Great Sand Dun	37.11	109	P		P		14 07 03.1	+1.8
	baz=326,SNR=37									
SDCO	Great Sand Dun	37.11	109	*e*P		P		14 07 03.1	+1.8
	comp=Z,34nm,1.3s									
L32A	Elgin	37.11	97	P		P		14 07 01.3	+0.3
	baz=321									
K33A	Hardington	37.12	96	P		P		14 07 01.6	+0.6
	baz=321									
M31A	Lambtecht Ranc	37.18	99	P		P		14 07 02.6	+1.0
	baz=322									
GLA	Glamis	37.21	124	P		P		14 07 03.9	+2.0
	baz=332,SNR=9.0									
GLA	Glamis	37.21	124	*e*P		P		14 07 04.0	+2.0
GLA				pmax		pmax				
	comp=Z,46nm,1.0s									
GLA	Glamis	37.21	124	*e*P		P		14 07 04.0	+2.0
	comp=Z,46nm,1.0s									
L33A	Hoskins	37.33	97	P		P		14 07 03.1	+0.3
	baz=321,SNR=6.0									
KSCO	Kaye Shedlock'	37.36	105	P		P		14 07 04.7	+1.4
	baz=324									
KSCO	Kaye Shedlock'	37.36	105	*e*P		P		14 07 04.9	+1.6
	comp=Z,47nm,0.9s									
X16A	Lo Mia Camp, P	37.37	119	*e*P		P		14 07 05.8	+2.3
	comp=Z,21nm,0.8s									
J35A	Milford	37.38	93	P		P		14 07 03.8	+0.5
	baz=320,SNR=5.2									
I36A	Fitzsimmons Fa	37.44	92	P		P		14 07 04.4	+0.6
	baz=319									
K34A	Le Mars	37.48	95	P		P		14 07 04.8	+0.7
	baz=321,SNR=12									
W18A	Petrified Fore	37.48	116	P		P		14 07 06.2	+1.8
	baz=329									
W18A	Petrified Fore	37.48	116	*e*P		P		14 07 07.5	+3.1
	comp=Z,50nm,1.0s									
BGNE	Belgrade	37.51	98	P		P		14 07 05.3	+0.9
	baz=322,SNR=11									
BGNE	Belgrade	37.51	98	*e*P		P		14 07 05.5	+1.0
	comp=Z,332nm,1.4s									
H37A	Dierke Farm, C	37.53	90	P		P		14 07 06.1	+1.6
	baz=319,SNR=8.2									
N31A	Bailey Ranch,	37.60	100	P		P		14 07 05.8	+0.6
	baz=322									
I37A	Lemond, Waseca	37.73	91	P		P		14 07 07.6	+1.4
	baz=319,SNR=32									
J36A	Seneca 1, Swea	37.81	93	P		P		14 07 07.6	+0.7
	baz=320,SNR=21									
M33A	Taylor Creek F	37.83	97	P		P		14 07 07.4	+0.3
	baz=322,SNR=6.5									
K35A	Storm Lake	37.86	94	P		P		14 07 07.8	+0.5
	baz=320									
113A	Mohawk Valley,	37.88	123	*e*P		P		14 07 09.7	+2.2
X18A	Snowflake	37.90	117	*e*P		P		14 07 10.2	+2.3
	comp=Z,33nm,0.9s									
L34A	Svendsen Farm,	37.91	96	P		P		14 07 08.0	+0.3
	baz=321,SNR=11									
N32A	Stulken Farm,	37.95	99	P		P		14 07 08.8	+0.6
	baz=322									
O31A	Woolen Ranch,	37.96	101	P		P		14 07 09.1	+0.9
	baz=323,SNR=8.0									
T25A	Trinidad	38.09	109	P		P		14 07 11.0	+1.4
	baz=326,SNR=8.6									
T25A	Trinidad	38.09	109	*e*P		P		14 07 11.1	+1.5
	comp=Z,25nm,1.0s									
KUR	Kuril'sk	38.10	273	*e*P		P		14 07 01.2	-8.1
KUR				pmax		pmax				
	comp=Z,35nm,1.6s									
M34A	Aspy Farms, Fr	38.17	97	P		P		14 07 10.1	+0.2
	baz=322									
COWI	Conover	38.18	85	*e*P		P		14 07 10.5	+0.5
	comp=Z,71nm,1.0s									
L35A	Bielow Farm, R	38.18	95	P		P		14 07 10.2	+0.2
	baz=321,SNR=13									
SUMG	Summit	38.19	27⇓	*i*P		P		14 07 10.8	+0.6
	comp=Z,51nm,0.7s									
SUMG	Summit	38.19	27⇓	*i*P		P		14 07 10.8	+0.6
SUMG				pmax		pmax				
	comp=Z,51nm,0.7s									
SUMG	Summit	38.19	27	*e*P		P		14 07 10.7	+0.5
	comp=Z,56nm,0.8s									
J37A	Redenius Farm,	38.20	92	P		P		14 07 11.1	+0.9
	baz=320,SNR=44									
I38A	Scanlan Farm,	38.22	90	P		P		14 07 11.3	+1.0
	baz=319,SNR=28									
DAG	Danmarks

J39A	**Decorah** baz=320,SNR=32	39.05	90	P		P	14 07 17.7	+0.5
K38A	**Parkersburg** baz=320,SNR=5.3	39.07	92	P		P	14 07 18.4	+0.9
N35A	**Tabor** baz=322,SNR=14	39.11	96	P		P	14 07 18.8	+1.0
O34A	**Beatrice** baz=323,SNR=9.9	39.16	98	P		P	14 07 18.5	+0.3
LAZ	**Ladron**	39.20	114	*e*P		P	14 07 21.1	+2.3
YSS	**Yuzh-Sakhalins**	39.22	279	*c i*P		P	14 07 18.5	-0.1
YSS				*e*PPP		PPP	14 08 57.0	
YSS				*e*S		**S**	**14 13 09.3**	**-2.9**
YSS				*e*SSS		SSS	14 16 07.0	
YSS				pmax		pmax		
	comp=Z,20nm,0.9s							
YSS				pmax		pmax		
	comp=Z,400nm,3.4s							
YSS				MLR		MLR		
	comp=Z,200nm,15.0s							
YSS				MLR		MLR		
	comp=N,200nm,18.0s							
YSS				MLR		MLR		
	comp=E,200nm,14.0s							
YSS	**Yuzh-Sakhalins**	39.22	279	*e*P		P	14 07 18.6	-0.1
	comp=E,43nm,1.0s							
Q32A	**Meitler Ranch,** baz=324,SNR=5.7	39.24	101	P		P	14 07 19.7	+0.7
P33A	**Williams Farm,** baz=323,SNR=16	39.29	100	P		P	14 07 19.9	+0.6
L38A	**Oak Wood Farm,** baz=321,SNR=14	39.37	93	P		P	14 07 20.4	+0.4
M37A	**Trindle Farm,** baz=322,SNR=12	39.43	94	P		P	14 07 21.3	+0.8
SCIA	**State Center** comp=E,32nm,0.5s	39.44	93	*e*P		P	14 07 21.1	+0.7
K39A	**Oelwein** baz=320,SNR=44	39.44	91	P		P	14 07 21.0	+0.5
J40A	**Soldiers Grove** baz=320,SNR=27	39.45	89	P		P	14 07 21.3	+0.7
O35A	**Humboldt** baz=322	39.46	97	P		P	14 07 21.0	+0.3
N36A	**Muff Farm, Cla** baz=322,SNR=39	39.47	96	P		P	14 07 21.6	+0.9
TUC	**Tucson**	39.47	120	*e*P		P	14 07 23.2	+2.2
TUC				pmax		pmax		
	comp=Z,20nm,1.0s							
TUC	**Tucson** comp=Z,20nm,1.0s	39.47	120	*e*P		P	14 07 23.2	+2.2
Q33A	**Connelly Farm,** baz=324,SNR=31	39.57	100	P		P	14 07 22.4	+0.8
P34A	**Walnut Farm, R** baz=323,SNR=12	39.60	99	P		P	14 07 22.1	+0.2
R32A	**Long Quarter,** baz=324,SNR=13	39.63	102	P		P	14 07 23.2	+1.0
BNM	**Barren Site**	39.63	114	*e*P		P	14 07 24.5	+2.0
SPA0	**Spitsbergen Ar**	39.79	4	*e*P		P	14 07 23.2	+0.2
SPITS	**Spitsbergen Ar**	39.79	4	P		P	14 07 22.4	-0.6
	comp=Z,5.2nm,0.5s,baz=17,slow=3.5,SNR=27							
K40A	**Colesburg** baz=320	39.80	90	P		P	14 07 24.2	+0.7
J41A	**Loganville** baz=320,SNR=38	39.82	89	P		P	14 07 24.5	+0.8
M38A	**Pleasantville** baz=321,SNR=13	39.83	94	P		P	14 07 24.2	+0.5
L39A	**Vinton** baz=321,SNR=20	39.84	92	P		P	14 07 24.3	+0.5
N37A	**Lee Faris, Mcu** baz=322,SNR=13	39.87	95	P		P	14 07 24.5	+0.5
P35A	**Duane Minner,** baz=323,SNR=15	39.99	98	P		P	14 07 25.7	+0.5
O36A	**Bolckow** baz=322,SNR=10	40.01	96	P		P	14 07 26.0	+0.8
Q34A	**Chapman** baz=324,SNR=10	40.05	99	P		P	14 07 26.4	+0.8
JFWS	**Jewell Farm**	40.05	89	*e*P		P	14 07 25.3	-0.3
JFWS				pmax		pmax		
	comp=Z,75nm,0.6s							
JFWS	**Jewell Farm** comp=Z,75nm,0.6s	40.05	89	*e*P		P	14 07 25.3	-0.3
CLNS	**Chul'man**	40.06	302	*e*P		P	14 07 23.6	-1.9
CLNS				pmax		pmax		
	comp=Z,57nm,0.9s							
CLNS				pmax		pmax		
	comp=E,46nm,1.1s							
CLNS				pmax		pmax		
	comp=N,34nm,0.7s							
KSU1	**Kansas State U** baz=323,SNR=11	40.06	99	P		P	14 07 26.4	+0.7
KSU1	**Kansas State U** comp=N,195nm,1.2s	40.06	99	*e*P		P	14 07 26.4	+0.7
R33A	**Olander Ranch,** baz=324,SNR=9.0	40.06	101	P		P	14 07 26.3	+0.6
S32A	**Newby Ranch, P** baz=325,SNR=14	40.11	103	P		P	14 07 27.2	+1.0
L40A	**Anamosa** baz=321,SNR=45	40.25	91	P		P	14 07 27.6	+0.4
M39A	**Webster** baz=321,SNR=26	40.26	93	P		P	14 07 27.9	+0.6
K41A	**Shullsburg** baz=320,SNR=40	40.26	90	P		P	14 07 27.9	+0.6
N38A	**Joes South For** baz=322,SNR=5.5	40.30	94	P		P	14 07 27.9	+0.3
P36A	**Good Intent, A** baz=323,SNR=18	40.30	97	P		P	14 07 28.2	+0.5
O37A	**Wolven Farm, M** baz=322,SNR=8.0	40.36	96	P		P	14 07 28.9	+0.7
R34A	**Isabella, Hill** baz=324,SNR=18	40.41	100	P		P	14 07 29.2	+0.6
Q35A	**Mercer Eighty,** baz=324,SNR=32	40.52	99	P		P	14 07 30.0	+0.5
121A	**Cookes Peak, D** baz=330,SNR=7.7	40.53	116	P		P	14 07 32.1	+2.3
121A	**Cookes Peak, D** comp=N,37nm,1.1s	40.53	116	*e*P		P	14 07 30.4	+0.5
T32A	**Huddler Ranch,** baz=325,SNR=7.9	40.54	103	P		P	14 07 30.4	+0.7
N39A	**Derby Farms, D** baz=322,SNR=31	40.57	93	P		P	14 07 30.3	+0.4
L41A	**Preston** baz=321,SNR=52	40.58	90	P		P	14 07 30.3	+0.3
S33A	**Kaszmaul Farm,** baz=325,SNR=8.9	40.63	102	P		P	14 07 31.1	+0.7
Q36A	**Arnold C. Orve** baz=323,SNR=9.3	40.71	98	P		P	14 07 31.5	+0.5
O38A	**Galt** baz=322,SNR=12	40.71	95	P		P	14 07 31.4	+0.4
P37A	**Lathrop** baz=323,SNR=18	40.73	96	P		P	14 07 31.8	+0.6
R35A	**Emporia Munici** baz=324	40.88	99	P		P	14 07 32.8	+0.4
319A	**Douglas** comp=N,28nm,0.9s	40.91	119	*e*P		P	14 07 35.2	+2.4
T33A	**Patterson Ranc** baz=325,SNR=5.7	40.94	102	P		P	14 07 33.6	+0.7
S34A	**Willow Spring** baz=324	40.95	101	P		P	14 07 33.4	+0.4
O39A	**Kirksville** baz=322,SNR=9.8	41.04	94	P		P	14 07 33.9	+0.2
P38A	**Dawn** baz=323,SNR=18	41.08	96	P		P	14 07 34.4	+0.3
U32A	**Winter Ranch,** baz=326	41.16	104	P		P	14 07 35.9	+1.1
AMTX	**Amarillo** baz=327	41.19	108	P		P	14 07 36.4	+1.2
AMTX	**Amarillo** comp=N,142nm,1.8s	41.19	108	*e*P		P	14 07 36.9	+1.7
R36A	**Gordon, Harris** baz=324,SNR=33	41.20	99	P		P	14 07 35.4	+0.4
GLMI	**Grayling** comp=N,299nm,1.0s	41.24	83	*e*P		P	14 07 36.8	+1.4
Q37A	**Longview Farm,** baz=323	41.24	97	P		P	14 07 35.7	+0.3
S35A	**Otter Creek Ra** baz=324,SNR=16	41.34	100	P		P	14 07 36.7	+0.5
ASAJ	**Asahikawa** baz=64,slow=0.3	41.42	276	P		P	14 07 35.1	-1.6
ASAJ	**Asahikawa** comp=N,2.5nm,0.6s	41.42	276	*e*P		P	14 07 35.1	-1.6
O40A	**La Belle** baz=322,SNR=29	41.46	94	P		P	14 07 37.5	+0.3
T34A	**McClaskey Farm** baz=325,SNR=19	41.47	101	P		P	14 07 37.9	+0.6
MSTX	**Muleshoe** baz=328,SNR=11	41.47	110	P		P	14 07 38.8	+1.4
MSTX	**Muleshoe** comp=N,122nm,0.9s	41.47	110	*e*P		P	14 07 39.0	+1.5
R37A	**Teagarden Farm** baz=324,SNR=15	41.52	98	P		P	14 07 37.6	-0.1
U33A	**Lingo Farm, Me** baz=325	41.53	103	P		P	14 07 38.3	+0.6
P39B	**Salisbury** baz=323,SNR=14	41.55	95	P		P	14 07 38.0	+0.1
Q38A	**Cooks Store, C** baz=323,SNR=22	41.57	96	P		P	14 07 38.2	+0.2
S36A	**Lake Cedric, C** baz=324,SNR=11	41.64	99	P		P	14 07 38.7	+0.1
HABR	**Khabarovsk**	41.65	286	*c e*P		P	14 07 36.0	-2.6
HABR				*e*			14 09 12.0	
HABR				*e*			14 09 33.0	
HABR				*e*PPP		PPP	14 09 40.9	
HABR				*e*S		**S**	**14 13 50.0**	**+1.8**
HABR				*e*SS		**SS**	**14 16 55.8**	**-0.3**
HABR				*e*			14 17 36.9	
HABR				pmax		pmax		
	comp=E,25nm,1.7s							
HABR				pmax		pmax		
	comp=N,16nm,1.7s							
HABR				pmax		pmax		
	comp=Z,45nm,1.7s							
HABR				MLR		MLR		
	comp=Z,82nm,18.0s							
V32A	**Arapaho** baz=326	41.69	104	P		P	14 07 40.2	+1.1
U34A	**Anderson Ranch** baz=325,SNR=15	41.79	102	P		P	14 07 40.7	+0.8
U34A	**Anderson Ranch** comp=Z,93nm,0.7s	41.79	102	*e*P		P	14 07 40.3	+0.4
Q39A	**Willow Grove F** baz=323,SNR=32	41.80	96	P		P	14 07 40.2	+0.2
SCHQ	**Schefferville**	41.81	60	P		P	14 07 39.3	-0.6
	comp=Z,34nm,0.8s,baz=322,slow=8.7,SNR=26							
SCHQ				LR		LR	14 25 43.9	
	comp=Z,138nm,20.3s,baz=317,slow=37							
SCHQ	**Schefferville** comp=Z,101nm,1.1s	41.81	60	*e*P		P	14 07 40.3	+0.4
P40A	**Paris** baz=323,SNR=37	41.85	94	P		P	14 07 40.6	+0.2
T35A	**Sooner Cattle** baz=325,SNR=24	41.87	101	P		P	14 07 40.9	+0.3
O41A	**Passleys Farm,** baz=322,SNR=24	41.93	93	P		P	14 07 41.3	+0.2
V33A	**Lossen Ranch,** baz=326,SNR=6.2	41.95	104	P		P	14 07 41.6	+0.4
S37A	**Fort Scott** baz=324,SNR=13	41.97	98	P		P	14 07 41.1	-0.2
T36A	**Boggs Farm, Ca** baz=325,SNR=19	42.05	100	P		P	14 07 42.3	+0.3
R38A	**Fenwick Farm,** baz=324,SNR=28	42.05	97	P		P	14 07 41.6	-0.4
W32A	**Sentinel** baz=326,SNR=10	42.09	105	P		P	14 07 43.4	+1.0
VLDQ	**Val d'Or** comp=Z,156nm,1.1s	42.09	74	*e*P		P	14 07 41.0	-1.1
P41A	**Barry, Barry** baz=323,SNR=19	42.20	93	P		P	14 07 43.3	+0.1
U35A	**Pawnee** baz=325,SNR=5.4	42.21	101	P		P	14 07 43.6	+0.2
O42A	**Bath** baz=322	42.25	92	P		P	14 07 43.6	0.0
Q40A	**Laux Farm, Aux** baz=323,SNR=20	42.26	95	P		P	14 07 43.8	+0.1
MNTX	**Cornudas Mount** baz=330,SNR=20	42.27	114	P		P	14 07 45.7	+1.8
MNTX	**Cornudas Mount** comp=Z,71nm,2.0s	42.27	114	*e*P		P	14 07 45.7	+1.8
V34A	**Guthrie** baz=326,SNR=8.4	42.29	103	P		P	14 07 44.5	+0.5
V34A	**Guthrie** comp=Z,128nm,1.2s	42.29	103	*e*P		P	14 07 44.7	+0.7
HDIL	**Hopedale** baz=322,SNR=6.7	42.34	91	P		P	14 07 44.7	+0.4
HDIL	**Hopedale** comp=Z,335nm,1.4s	42.34	91	*e*P		P	14 07 44.7	+0.4
R39A	**Chumby, Stover** baz=324,SNR=69	42.36	96	P		P	14 07 44.4	-0.1
NRIK	**Noril'sk**	42.38	333	P		P	14 07 44.1	-0.2
	comp=Z,29nm,0.7s,baz=41,slow=7.8,SNR=27							
NRIK				LR		LR	14 28 36.5	
	comp=Z,185nm,19.5s,baz=50,slow=41							
W33A	**Caddo, Fort Co** baz=326	42.42	104	P		P	14 07 46.2	+1.1
T37A	**Cheneyville 18** baz=324,SNR=21	42.44	99	P		P	14 07 45.1	-0.1
S38A	**Stockton** baz=324,SNR=33	42.50	98	P		P	14 07 45.1	-0.6
KLR	**Kul'dur**	42.57	289	P		P	14 07 45.3	-0.8
	comp=Z,12nm,0.7s,baz=39,slow=8.7,SNR=33							
P42A	**Winchester** baz=323,SNR=24	42.61	93	P		P	14 07 46.5	0.0
WMOK	**Wichita Mounta** baz=327,SNR=41	42.62	105	P		P	14 07 47.6	+0.8
WMOK	**Wichita Mounta** comp=Z,61nm,1.1s	42.62	105	*e*P		P	14 07 47.5	+0.8
WMOK				pmax		pmax		
	comp=Z,61nm,1.1s							
WMOK	**Wichita Mounta** comp=Z,61nm,1.1s	42.62	105	*e*P		P	14 07 47.5	+0.8
X32A	**Elmer** baz=327	42.66	106	P		P	14 07 48.0	+1.0
U36A	**Oologah** baz=325,SNR=7.3	42.66	100	P		P	14 07 47.2	+0.3
V35A	**Meyer Ranch, C** baz=326,SNR=6.0	42.66	102	P		P	14 07 47.3	+0.2
W34A	**Bridge Creek,** baz=326,SNR=7.2	42.67	103	P		P	14 07 47.7	+0.6
W34A	**Bridge Creek,** comp=Z,85nm,1.1s	42.67	103	*e*P		P	14 07 47.9	+0.8
S39A	**Bolivar** baz=324,SNR=22	42.72	97	P		P	14 07 46.9	-0.6
R40A	**Maddies Statio** baz=324,SNR=39	42.73	96	P		P	14 07 47.3	-0.3
ERM	**Erimo**	42.77	273	*e*P		P	14 07 47.5	-0.2
ERM				pmax		pmax		
	comp=Z,31nm,1.3s							
ERM	**Erimo** comp=Z,31nm,1.3s	42.77	273	*e*P		P	14 07 47.5	-0.2
T38A	**Diamond** baz=324,SNR=7.9	42.80	99	P		P	14 07 47.6	-0.6
X33A	**Lawton** baz=327	42.91	105	P		P	14 07 49.9	+0.9
U37A	**Salina** baz=325,SNR=24	42.93	100	P		P	14 07 49.3	+0.2
TUL1	**Leonard** baz=325	43.02	101	P		P	14 07 50.4	+0.4
TUL1	**Leonard** comp=Z,72nm,1.2s	43.02	101	*e*P		P	14 07 50.2	+0.3
Q42A	**Golden Eagle** baz=323,SNR=15	43.05	93	P		P	14 07 50.5	+0.4
V36A	**Jenks** baz=326,SNR=12	43.06	101	P		P	14 07 50.5	+0.3
W35A	**Tecumseh** baz=326,SNR=12	43.15	103	P		P	14 07 51.5	+0.5
X34A	**Smith Ranch, M** baz=326	43.17	104	P		P	14 07 52.2	+1.1
S40A	**Lebanon** baz=324,SNR=28	43.18	96	P		P	14 07 50.8	-0.3
T39A	**Clever** baz=324,SNR=21	43.24	98	P		P	14 07 51.0	-0.7
U38A	**Gravette** baz=325,SNR=30	43.24	99	P		P	14 07 51.4	-0.3
Y33A	**Hilltop Ranch,** baz=327	43.30	105	P		P	14 07 53.2	+1.1
V37A	**Hulbert** baz=325,SNR=14	43.35	100	P		P	14 07 52.5	-0.1
Q43A	**New Douglas** baz=323,SNR=17	43.42	93	P		P	14 07 53.6	+0.6
W36A	**Wetumka** baz=326,SNR=15	43.46	102	P		P	14 07 53.9	+0.5
SFIN	**Lafayette** baz=322	43.51	89	P		P	14 07 54.4	+0.7
SFIN	**Lafayette** comp=Z,118nm,1.1s	43.51	89	*e*P		P	14 07 54.5	+0.7
T40A	**Mansfield** baz=324,SNR=27	43.54	97	P		P	14 07 53.6	-0.5
S41A	**Jillco Farms,** baz=324,SNR=52	43.55	96	P		P	14 07 54.0	-0.1
HHAR	**Hobbs** comp=Z,24nm,0.7s	43.58	99	*e*P		P	14 07 53.8	-0.6
AAM	**Ann Arbor**	43.62	84	*e*P		P	14 07 55.8	+1.2
AAM				pmax		pmax		
	comp=Z,51nm,0.6s							
AAM	**Ann Arbor** comp=Z,52nm,0.6s	43.62	84	*e*P		P	14 07 55.8	+1.2
V38A	**Canehill** baz=325,SNR=27	43.71	100	P		P	14 07 55.3	-0.1
U39A	**Green Forest** baz=325,SNR=15	43.71	98	P		P	14 07 54.8	-0.7
X35A	**Drake** baz=326,SNR=9.3	43.73	103	P		P	14 07 55.9	+0.3
Y34A	**Reagan Ranch,** baz=327,SNR=11	43.74	104	P		P	14 07 56.5	+0.8
Q44A	**Meyer Farm, Va** baz=323,SNR=16	43.77	92	P		P	14 07 56.1	+0.2
W37B	**Quinton** baz=326,SNR=19	43.83	101	P		P	14 07 57.0	+0.6
SADO	**Sadowa** comp=Z,134nm,1.2s	43.83	78	*e*P		P	14 07 56.4	+0.1
Z33A	**Whitaker Ranch** baz=327	43.84	106	P		P	14 07 57.0	+0.5
X36A	**Centrahoma** baz=326,SNR=11	43.87	103	P		P	14 07 57.4	+0.6
T41A	**Mountain View** baz=324,SNR=47	43.98	96	P		P	14 07 57.0	-0.5
ABTX	**Abilene, Hawle** baz=328,SNR=9.7	44.00	107	P		P	14 07 58.3	+0.5
ABTX	**Abilene, Hawle** comp=Z,50nm,1.1s	44.00	107	*e*P		P	14 07 58.5	+0.6
U40A	**Yellville** baz=325,SNR=20	44.03	98	P		P	14 07 57.2	-0.8
V39A	**Pettigrew** baz=325,SNR=15	44.08	99	P		P	14 07 58.0	-0.4
Y35A	**Marietta** baz=327,SNR=8.1	44.11	104	P		P	14 07 59.5	+0.8
Z34A	**Collier Ranch,** baz=327	44.16	105	P		P	14 07 59.7	+0.7
R44A	**Waltonville** baz=323,SNR=14	44.27	93	P		P	14 07 59.9	+0.1
W38A	**Poteau** baz=326	44.30	100	P		P	14 08 00.7	+0.5
X37A	**Clayton** baz=326,SNR=17	44.31	102	P		P	14 08 00.9	+0.7
OLIL	**Olney** comp=Z,158nm,1.0s	44.34	91	*e*P		P	14 08 00.7	+0.3
S43A	**Fulton Ridge,** baz=324,SNR=30	44.34	94	P		P	14 08 00.7	+0.2
133A	**Hamilton Ranch** baz=328,SNR=6.8	44.34	107	P		P	14 08 01.1	+0.5
Y36A	**Durant** baz=327,SNR=8.0	44.46	103	P		P	14 08 02.2	+0.8
U41A	**Viola** baz=325	44.47	97	P		P	14 08 00.8	-0.7
V40A	**Witts Springs** baz=325,SNR=25	44.49	98	P		P	14 08 01.0	-0.7
X38A	**Whitesboro** baz=326,SNR=22	44.49	101	P		P	14 08 02.3	+0.6
Z35A	**Perchaven, San** baz=327	44.49	104	P		P	14 08 02.4	+0.7
W39A	**Magazine** baz=326,SNR=14	44.54	100	P		P	14 08 02.0	0.0
PLVO	**Plevna** comp=Z,42nm,1.0s	44.57	77	*e*P		P	14 08 02.5	+0.3
S44A	**Carbondale** baz=324,SNR=8.5	44.63	93	P		P	14 08 02.9	+0.2
SIUC	**Southern Illin** comp=Z,169nm,1.1s	44.63	93	*e*P		P	14 08 03.0	+0.3
JMIC	**Jan Mayen** comp=Z,44nm,20.6s,baz=42,slow=39	44.73	16	LR		LR	14 28 41.0	
BLO	**Bloomington**	44.73	90	*e*P		P	14 08 04.0	+0.5
BLO				pmax		pmax		
	comp=Z,111nm,1.2s							
BLO	**Bloomington** comp=Z,111nm,1.2s	44.73	90	*e*P		P	14 08 04.0	+0.5
134A	**White-Moore Ra** baz=328,SNR=8.3	44.75	106	P		P	14 08 04.4	+0.6
U42A	**Revenden** baz=325,SNR=16	44.78	96	P		P	14 08 03.2	-0.7
PBMO	**Poplar Bluff** comp=Z,163nm,0.9s	44.82	95	*e*P		P	14 08 04.3	+0.1
TRQ	**Mont Tremblant**	44.82	74	*e*P		P	14 08 04.2	0.0
V41A	**Mountainview** baz=325,SNR=21	44.82	98	P		P	14 08 03.4	-0.9
233A	**Rising Star** baz=328,SNR=11	44.85	107	P		P	14 08 05.3	+0.7
NRS	**Narsarsuaq** comp=Z,37nm,1.0s	44.87	41	*i* P		P	14 08 05.0	+0.7
NRS	**Narsarsuaq**	44.87	41	*i* P		P	14 08 05.0	+0.7
NRS				pmax		pmax		
	comp=Z,37nm,1.0s							
W40A	**Ferguson Farm,** baz=326	44.88	99	P		P	14 08 04.5	-0.2
Z36A	**Blue Ridge** baz=327,SNR=6.6	44.92	104	P		P	14 08 05.7	+0.6
X39A	**Fountain Ranch** baz=326,SNR=11	44.95	100	P		P	14 08 05.5	+0.1
S45A	**Carrier Mills** baz=324,SNR=14	44.96	93	P		P	14 08 05.6	+0.3
TX31	**Lajitas Ar. Si**	45.05	114	*e*P		P	14 08 08.0	+1.7
TXAR	**Lajitas Array**	45.05	114	P		P	14 08 08.0	+1.7
	comp=Z,5.7nm,0.6s,baz=324,slow=6.1,SNR=93							
TXAR				ScP		**ScP**	**14 13 30.4**	**+0.6**
	comp=Z,0.9nm,0.8s,baz=308,slow=3.3,SNR=4.0							
TXAR				LR		LR	14 29 05.1	
	comp=Z,328nm,20.0s,baz=0.0,slow=39							
135A	**Vickery Place,** baz=328	45.07	105	P		P	14 08 07.1	+0.8
X201	**Greenbrier Sit** comp=Z,21nm,1.0s	45.12	98	*e*P		P	14 08 06.3	-0.4
X301	**Greenbrier Sit** comp=Z,15nm,0.9s	45.15	98	*e*P		P	14 08 06.5	-0.4
Y38A	**Idabel** baz=326	45.15	102	P		P	14 08 07.4	+0.5
USIN	**University of** comp=Z,255nm,1.2s	45.16	92	*e*P		P	14 08 07.4	+0.5
V42A	**Cord** baz=325,SNR=11	45.16	97	P		P	14 08 05.9	-1.0
WHAR	**Wooly Hollow** comp=Z,16nm,0.8s	45.16	98	*e*P		P	14 08 06.5	-0.5
MIAR	**Mount Ida** baz=326,SNR=26	45.17	100	P		P	14 08 07.4	+0.3
MIAR	**Mount Ida**	45.17	100	*e*P		P	14 08 07.3	+0.2
MIAR				pmax		pmax		
	comp=Z,48nm,1.0s							
MIAR	**Mount Ida** comp=Z,48nm,1.0s	45.17	100	*e*P		P	14 08 07.2	+0.2
234A	**Clairette** baz=328,SNR=11	45.21	106	P		P	14 08 08.0	+0.6
W41B	**Gary Mavity, V** baz=325,SNR=8.2	45.27	98	P		P	14 08 07.1	-0.7
Z37A	**Pogue Cattle C** baz=327	45.35	103	P		P	14 08 08.9	+0.5
BUF	**Buffalo**	45.38	80	*e*P		P	14 08 09.8	+1.2
333A	**Richland Sprin** baz=328,SNR=26	45.40	108	P		P	14 08 09.5	+0.6
Y39A	**Lockesburg** baz=326,SNR=5.8	45.44	101	P		P	14 08 09.5	+0.4
ERPA	**Erie** comp=Z,251nm,1.3s	45.48	82	*e*P		P	14 08 10.3	+0.9
WHTX	**Lake Whitney,** baz=328,SNR=7.4	45.52	106	P		P	14 08 10.6	+0.8
WHTX	**Lake Whitney,** comp=Z,41nm,0.9s	45.52	106	*e*P		P	14 08 10.7	+0.8
136A	**Ennis** baz=328	45.54	104	P		P	14 08 10.5	+0.5
UALR	**University of** comp=Z,42nm,1.1s	45.56	99	*e*P		P	14 08 10.1	0.0
ACSO	**Alum Creek Sta** comp=Z,152nm,1.2s	45.56	86	*e*P		P	14 08 10.4	+0.4
X40A	**Basin Creek Fa** baz=326	45.57	99	P		P	14 08 10.0	-0.2
WCI	**Wyandotte Cave**	45.59	90	*e*P		P	14 08 10.8	+0.4
WCI				pmax		pmax		
	comp=Z,65nm,0.8s							
WCI	**Wyandotte Cave** comp=Z,65nm,0.8s	45.59	90	*e*P		P	14 08 10.8	+0.4
Z38A	**Mt. Pleasant** baz=327	45.60	102	P		P	14 08 10.9	+0.5
LMQ	**La Malbaie**	45.70	69	*e*P		P	14 08 11.1	0.0
X41A	**Kaden, Bauxite** baz=326	45.71	99	P		P	14 08 11.1	-0.2
334A	**Lometa** baz=328,SNR=19	45.73	107	P		P	14 08 12.3	+0.8
Y40A	**Okolona** baz=326	45.75	100	P		P	14 08 11.8	+0.2
JCT	**Junction City** baz=329,SNR=30	45.76	109	P		P	14 08 12.9	+1.2
JCT	**Junction City**	45.76	109	*e*P		P	14 08 13.0	+1.2
JCT				pmax		pmax		
	comp=Z,117nm,1.1s							
JCT	**Junction City** comp=Z,117nm,1.1s	45.76	109	*e*P		P	14 08 13.0	+1.2
ALLY	**Alegheny Colle** comp=Z,286nm,1.1s	45.77	82	*e*P		P	14 08 12.9	+1.1
137A	**Heron Place, G** baz=327	45.79	104	P		P	14 08 12.7	+0.8
433A	**Art**	45.84	108	P		P	14 08 13.0	+0.6

baz=329,SNR=13
V44A Blytheville 45.84 95 P **P** 14 08 12.8 +0.5
baz=325
MMNY Mt. Morris Dam 45.97 79 *e*P **P** 14 08 13.8 +0.6
Z39A Irene McRaven, 45.98 102 P **P** 14 08 14.2 +0.8
baz=327
LONY Lake Ozonia 46.03 75 *e*P **P** 14 08 13.4 -0.4
comp=Z,70nm,1.3s
138A Matatall Enter 46.04 103 P **P** 14 08 15.0 +1.1
baz=327
WLAR White Oak Lake 46.10 100 *e*P **P** 14 08 15.6 +1.2
comp=Z,69nm,1.0s
M54A Oil Creek Stat 46.11 82 P **P** 14 08 15.0 +0.6
baz=322,SNR=25
335A Moody 46.14 106 P **P** 14 08 15.6 +0.8
baz=328,SNR=5.3
434A Burnet 46.16 107 P **P** 14 08 15.8 +0.9
baz=329,SNR=20
Y41A Eaglette Beard 46.17 100 P **P** 14 08 15.8 +0.9
baz=326
USRK Ussuriysk Ar. 46.26 284 P **P** 14 08 14.4 -1.1
comp=Z,3.7nm,0.7s,baz=46,slow=8.3,SNR=11
USRK PP **PP** 14 10 07.7 +2.5
comp=Z,1.0nm,0.6s,baz=48,slow=8.5,SNR=4.3
USRK LR LR 14 28 40.8
comp=Z,122nm,19.4s,baz=37,slow=37
237A Washetta, Mont 46.27 104 P **P** 14 08 16.4 +0.7
baz=326
336A Riesel 46.31 106 P **P** 14 08 16.8 +0.7
baz=328
FRNY Flat Rock 46.32 74 *e*P **P** 14 08 15.4 -0.5
comp=Z,50nm,1.0s
Z40A Long Farm, Mag 46.32 101 P **P** 14 08 17.5 +1.4
baz=327
139A Bunkhouse Ranc 46.35 102 P **P** 14 08 17.4 +1.1
baz=327
V45A Humboldt 46.35 95 P **P** 14 08 16.7 +0.4
baz=325
N54A Moraine State 46.38 83 P **P** 14 08 17.3 +0.7
baz=322,SNR=33
W44A Shelby Farms P 46.44 96 P **P** 14 08 17.5 +0.5
baz=325
533A Kerrville 46.44 109 P **P** 14 08 18.1 +1.0
baz=329,SNR=12
X43A Marvell 46.45 97 P **P** 14 08 17.5 +0.4
baz=326
435B Jarrell 46.49 107 P **P** 14 08 18.7 +1.3
baz=328
CCAR Cane Creek 46.53 99 *e*P **P** 14 08 19.2 +1.4
comp=Z,186nm,1.3s
WVT Waverly 46.56 93 *e*P **P** 14 08 18.3 +0.3
WVT pmax pmax
comp=Z,62nm,1.1s
WVT Waverly 46.56 93 *e*P **P** 14 08 18.3 +0.3
comp=Z,62nm,1.1s
238A Jacksonville 46.58 103 P **P** 14 08 19.3 +1.2
baz=328
Y42A Garnett, Star 46.59 99 P **P** 14 08 19.2 +1.0
baz=326
Z41A Richland Creek 46.60 100 P **P** 14 08 19.0 +0.8
baz=326
NCB Newcomb 46.70 75 *e*P **P** 14 08 18.9 -0.1
comp=Z,0.4nm,1.1s
W45A Hickory Valley 46.72 95 P **P** 14 08 20.0 +0.8
baz=325,SNR=6.2
534A Blanco 46.73 108 P **P** 14 08 20.3 +0.9
baz=329,SNR=10.0
140A Cam and Jess, 46.76 101 P **P** 14 08 20.9 +1.4
baz=327
337A Centerville 46.81 105 P **P** 14 08 21.0 +1.0
baz=328
X44A Crenshaw 46.81 97 P **P** 14 08 20.6 +0.6
baz=326
436A Wall Ranch, Ga 46.86 106 P **P** 14 08 21.6 +1.3
baz=328
239A Gary 46.87 103 P **P** 14 08 21.2 +0.9
baz=327
633A Saathoff Ranch 46.91 109 P **P** 14 08 21.7 +1.0
baz=330,SNR=8.2
Y43A Makayla and Ka 46.93 98 P **P** 14 08 21.8 +0.9
baz=326
Z42A Norrel Spur, H 46.98 99 P **P** 14 08 22.2 +1.0
baz=326
NATX Nacogdoches 46.99 103 P **P** 14 08 22.4 +1.0
baz=328
NATX Nacogdoches 46.99 103 *e*P **P** 14 08 22.8 +1.4
comp=Z,101nm,1.3s
MDJ Mudanjiang 47.03 287 P **P** 14 08 21.0 -0.5
MDJ pP pP 14 08 40.5 -2.1
MDJ sP sP 14 08 49.8 -2.7
MDJ PcS **PcS** **14 13 48.3 +1.0**
MDJ S **S** **14 15 09.0 +2.7**
MDJ sS sS 14 15 39.0 -3.4
MDJ ScS **ScS** **14 18 07.0 +0.4**
MDJ pmax pmax
comp=Z,16nm,1.3s
MDJ pmax pmax
comp=Z,130nm,4.7s
MDJ LR LR
comp=Z,180nm,24.2s
MDJ LR LR
comp=Z,200nm,25.6s
MDJ LR LR
comp=Z,360nm,26.0s
338A Crockett 47.04 104 P **P** 14 08 22.8 +1.0
baz=328
141A Papa Simpson, 47.10 101 P **P** 14 08 23.4 +1.2
baz=327
437A Phantom Ranch, 47.10 105 P **P** 14 08 23.6 +1.4
baz=328
535A Dale 47.14 107 P **P** 14 08 24.0 +1.5
baz=329
OXF Oxford 47.14 96 *e*P **P** 14 08 23.4 +0.9
OXF pmax pmax
comp=Z,441nm,1.2s
OXF Oxford 47.14 96 *e*P **P** 14 08 23.4 +0.9
comp=Z,441nm,1.2s
VLA Vladivostok 47.15 284 *c i*P **P** 14 08 20.9 -1.5
VLA pmax pmax
comp=Z,16nm,0.9s
240A Hunter Patters 47.17 102 P **P** 14 08 23.9 +1.1
baz=327
Y44A Strider, Charl 47.22 97 P **P** 14 08 24.0 +0.9
baz=326,SNR=6.0
X45A UM Field Stati 47.22 96 P **P** 14 08 24.0 +0.8
baz=326
BINY Binghamton 47.27 78 *e*P **P** 14 08 23.8 +0.3
comp=Z,104nm,1.1s
536A Bastrop 47.33 107 P **P** 14 08 25.7 +1.8
baz=329
634A China Grove, S 47.34 108 P **P** 14 08 25.6 +1.5
baz=329
Z43A Armstrong Fami 47.36 99 P **P** 14 08 24.9 +0.7
baz=326
339A Huntington 47.40 103 P **P** 14 08 25.5 +1.0
baz=328
ACCN Adirondack Com 47.41 75 *e*P **P** 14 08 24.7 +0.3
comp=Z,35nm,1.1s
438A Sam Houston St 47.47 105 P **P** 14 08 26.7 +1.6
baz=328
SLBS Sierra La Lagu 47.48 125 *e*P **P** 14 08 28.8 +3.5
comp=Z,86nm,1.8s
733A Divot King Ran 47.49 110 P **P** 14 08 26.7 +1.4
baz=330,SNR=12
LBNH Lisbon 47.53 73 *e*P **P** 14 08 25.9 +0.5
LBNH pmax pmax
comp=Z,49nm,1.1s
LBNH Lisbon 47.53 73 *e*P **P** 14 08 25.9 +0.5
comp=Z,49nm,1.1s
832A Faith Ranch, C 47.56 111 P **P** 14 08 27.2 +1.4
baz=330,SNR=5.9
241A Mo Tay, Goldon 47.58 101 P **P** 14 08 27.1 +1.3
baz=327,SNR=5.3
142A Monroe 47.59 100 P **P** 14 08 27.2 +1.3
baz=327
635A Leesville 47.59 108 P **P** 14 08 27.8 +1.7
baz=329,SNR=6.8
O56A Blue Knob Stat 47.60 82 P **P** 14 08 26.5 +0.5
baz=322,SNR=55
Y45A Yeager Farm, C 47.61 97 P **P** 14 08 27.1 +1.0
baz=326,SNR=9.3
SSPA Standing Stone 47.62 81 *e*P **P** 14 08 26.7 +0.6
comp=Z,232nm,1.4s
340A Bronson 47.64 103 P **P** 14 08 27.4 +1.0
baz=328
537A Green Hill Far 47.66 106 P **P** 14 08 28.6 +2.0
baz=329
Z44A Pea Ridge, Bel 47.69 98 P **P** 14 08 27.6 +0.9
baz=326
734A La Parita Cree 47.71 109 P **P** 14 08 28.7 +1.8
baz=330
143A Socs Landing, 47.71 99 P **P** 14 08 28.2 +1.3
baz=327
439A Center Grove, 47.76 104 P **P** 14 08 28.7 +1.4
baz=328
HNH Hanover 47.78 74 *e*P **P** 14 08 28.0 +0.7
comp=Z,61nm,1.1s
833A Chaparral WMA, 47.79 110 P **P** 14 08 29.2 +1.6
baz=330
636A Smothers Creek 47.84 107 P **P** 14 08 30.4 +2.4
baz=329,SNR=17
242A Grayson 47.90 100 P **P** 14 08 29.6 +1.3
baz=327
MSHR Mys Shultsa 47.91 284 *c i*P **P** 14 08 27.6 -0.7
PKME Peaks-Kenny Pk 47.91 70 *e*P **P** 14 08 28.5 +0.2
comp=Z,55nm,1.1s
538A Harpers Horsep 47.91 105 P **P** 14 08 30.4 +1.9
baz=328
TRY Troy 47.92 76 *e*P **P** 14 08 28.9 +0.4
comp=Z,25nm,0.9s
Y46A Houston 47.92 96 P **P** 14 08 29.7 +1.2
baz=326,SNR=49
Z45A Winona 47.95 97 P **P** 14 08 29.9 +1.1
baz=326
735A Kenedy 48.03 108 P **P** 14 08 31.5 +2.1
baz=330
341A Kurthwood 48.04 102 P **P** 14 08 31.0 +1.5
baz=328
BORG Borgarnes 48.17 26 LR LR 14 31 08.6
comp=Z,97nm,21.6s,baz=347,slow=39
440A Kirbyville 48.17 103 P **P** 14 08 32.1 +1.6
baz=328
637A Eagle Lake 48.20 106 P **P** 14 08 33.1 +2.4
baz=329,SNR=6.3
SWET Sewanee 48.20 92 *e*P **P** 14 08 30.6 -0.2
comp=Z,21nm,1.2s
144A Alexander Plac 48.23 98 P **P** 14 08 32.2 +1.3
baz=327
TZTN Tazewell 48.24 89 *e*P **P** 14 08 28.1 -2.9
comp=Z,59nm,0.8s
736A Circle Diamond 48.28 107 P **P** 14 08 33.8 +2.5
baz=329
WVL Waterville 48.29 71 *e*P **P** 14 08 31.6 +0.3
comp=Z,74nm,1.3s
834A Tilden 48.33 110 P **P** 14 08 34.1 +2.4
baz=330,SNR=7.1
243A Waterproof 48.36 100 P **P** 14 08 33.5 +1.6
baz=327
539A Cross D Ranch, 48.36 104 P **P** 14 08 34.1 +2.2
baz=328
Y47A UCPARC, Winfie 48.38 95 P **P** 14 08 32.8 +0.8
baz=326,SNR=31
N59A State Game Lan 48.38 79 P **P** 14 08 32.3 +0.3
baz=322,SNR=21
342A Flagon Creek P 48.39 101 P **P** 14 08 33.8 +1.6
baz=327,SNR=7.8
Z46A Louisville 48.45 97 P **P** 14 08 33.8 +1.2
baz=326
933A Laredo 48.45 111 P **P** 14 08 34.8 +2.1
baz=330,SNR=11
145A Houston Renfro 48.48 98 P **P** 14 08 34.0 +1.2
baz=327
835A Beeville 48.51 109 P **P** 14 08 35.5 +2.4
baz=330
441A DeRidder 48.52 102 P **P** 14 08 35.1 +2.0
baz=328
VBMS Vicksburg 48.52 99 P **P** 14 08 34.4 +1.3
baz=327
244A Avery, Jackson 48.59 99 P **P** 14 08 35.1 +1.4
baz=327,SNR=17
540A Vidor 48.61 104 P **P** 14 08 36.1 +2.2
baz=328
638A Rosharon 48.62 106 P **P** 14 08 36.1 +2.3
baz=329
ARA0 ARCESS Array S 48.66 1 *e*P **P** 14 08 33.1 -0.7
ARCES ARCESS Array B 48.66 1 P **P** 14 08 33.1 -0.7
comp=Z,5.6nm,0.8s,baz=339,slow=6.9,SNR=15
ARCES PcP **PcP** 14 09 57.3 -0.3
comp=Z,7.3nm,0.5s,baz=359,slow=4.1,SNR=7.4
ARCES ScP **ScP** 14 13 44.7 +0.5
comp=Z,1.3nm,0.6s,baz=357,slow=6.4,SNR=4.5
ARCES LR LR 14 29 29.9
comp=Z,73nm,21.5s,baz=350,slow=36
ARCES ARCESS Array B 48.66 1 *e*P **P** 14 08 32.5 -1.3
CPCT Cooper Cave 48.67 91 *e*P **P** 14 08 34.7 +0.3
comp=Z,18nm,0.7s
737A Port Lavaca 48.73 107 P **P** 14 08 37.7 +2.9
baz=329
ODNJ Ogdensburg 48.79 78 *e*P **P** 14 08 35.1 0.0
comp=Z,40nm,0.9s
343A Vidalia 48.80 100 P **P** 14 08 36.7 +1.4
baz=327
934A Benavides 48.80 110 P **P** 14 08 38.0 +2.7
baz=330,SNR=5.7
LUPA Lehigh Univers 48.82 79 *e*P **P** 14 08 35.8 +0.5
comp=Z,134nm,1.0s
MVL Millersville 48.84 80 *e*P **P** 14 08 36.3 +0.8
comp=Z,63nm,1.1s
Z47A Carrollton 48.85 96 P **P** 14 08 36.3 +0.6
baz=326,SNR=9.7
TKL Tuckaleechee C 48.85 90 *e*P **P** 14 08 36.2 +0.5
TKL pmax pmax
comp=Z,52nm,0.8s
TKL Tuckaleechee C 48.85 90 *e*P **P** 14 08 36.2 +0.5
comp=Z,52nm,0.8s
146A Union 48.86 97 P **P** 14 08 37.0 +1.2
baz=326,SNR=15
QUA2 Belchertown 48.87 75 *e*P **P** 14 08 35.9 +0.2
comp=Z,37nm,1.0s
442A Mamou 48.90 102 P **P** 14 08 38.0 +1.9
baz=328
Z48A Northport 48.95 95 P **P** 14 08 36.5 +0.1
baz=326,SNR=9.4
245A Little AP, Sta 48.97 98 P **P** 14 08 37.6 +1.0
baz=327
738A Farr-Stevens R 49.02 106 P **P** 14 08 38.2 +1.2
baz=329
HRV Adam Dziewonsk 49.05 74 *e*P **P** 14 08 37.7 +0.6
HRV pmax pmax
comp=Z,45nm,1.3s
HRV Adam Dziewonsk 49.05 74 *e*P **P** 14 08 37.7 +0.6
comp=Z,45nm,1.3s
344A Westbrook Farm 49.06 100 P **P** 14 08 39.1 +1.8
baz=327
541A Lake Charles 49.10 103 P **P** 14 08 40.2 +2.6
baz=328
GGN Saint George 49.11 69 *e*P **P** 14 08 37.6 +0.2
comp=Z,94nm,1.0s
BRNJ Basking Ridge 49.12 78 *e*P **P** 14 08 37.9 +0.2
comp=Z,97nm,1.6s
EMMW East Machias 49.16 70 *e*P **P** 14 08 38.0 +0.2
comp=Z,57nm,1.0s
PAL Palisades 49.17 78 *e*P **P** 14 08 38.4 +0.4
PAL pmax pmax
comp=Z,53nm,1.2s
PAL Palisades 49.17 78 *e*P **P** 14 08 38.4 +0.4
comp=Z,53nm,1.2s
BLA Blacksburg 49.17 86 *e*P **P** 14 08 38.6 +0.4
BLA pmax pmax
comp=Z,83nm,0.9s
BLA Blacksburg 49.17 86 *e*P **P** 14 08 38.6 +0.4
comp=Z,83nm,0.9s
034A Hebbronville 49.19 110 P **P** 14 08 40.6 +2.3
baz=330,SNR=11
147A Livingston 49.20 96 P **P** 14 08 39.1 +0.8
baz=326
WES Weston 49.26 74 *e*P **P** 14 08 39.1 +0.4
WES pmax pmax
comp=Z,115nm,1.2s
WES Weston 49.26 74 *e*P **P** 14 08 39.1 +0.4
comp=Z,115nm,1.2s
CPNY Central Park 49.31 78 *e*P **P** 14 08 40.2 +1.0
comp=Z,72nm,1.3s
PSUB Penn St. - Bra 49.31 80 *e*P **P** 14 08 39.6 +0.5
comp=Z,79nm,1.3s
542A Morse 49.34 102 P **P** 14 08 41.8 +2.4
baz=328
246A Jackson Lee, B 49.34 98 P **P** 14 08 40.8 +1.4
baz=327
LMN Caledonia Moun 49.42 67 *e*P **P** 14 08 39.9 0.0
comp=Z,62nm,1.0s
MJB9 Matsu-Tunnel 49.44 273 *e*P **P** 14 08 40.3 +0.1
comp=Z,6.3nm,0.5s
MAJO Matsushiro 49.44 273 *c i*P **P** 14 08 37.9 -2.3
MAJO Matsushiro 49.44 273 *e*P **P** 14 08 39.9 -0.2
comp=Z,25nm,0.5s
MJAR Matsushiro Arr 49.44 273 P **P** 14 08 39.9 -0.3
comp=Z,4.8nm,0.7s,baz=14,slow=6.7,SNR=15
MJAR LR LR 14 31 02.9
comp=Z,78nm,21.1s,baz=35,slow=38
LRAL Lakeview Retre 49.49 95 *e*P **P** 14 08 40.8 +0.3
comp=Z,25nm,0.9s
345A Thompson Farm, 49.51 99 P **P** 14 08 42.3 +1.6
baz=327
CN2 Changchun 49.52 289 ⇑P **P** 14 08 40.3 -0.4
CN2 *e*S **S** 14 15 41.3 -0.2
CN2 pmax pmax
comp=Z,80nm,1.2s
CN2 pmax pmax
comp=Z,400nm,4.0s
CN2 LR LR
comp=Z,200nm,18.0s
CN2 LR LR
comp=Z,200nm,18.0s
CN2 LR LR
comp=Z,300nm,19.0s
BRYW Bryant College 49.53 75 *e*P **P** 14 08 41.1 +0.3
comp=Z,54nm,0.8s
247A Quitman 49.55 97 P **P** 14 08 42.4 +1.3
baz=327,SNR=5.2
035A Encino 49.55 110 P **P** 14 08 43.5 +2.4
baz=330,SNR=6.8
543A St. Martinvill 49.69 102 P **P** 14 08 44.5 +2.4
baz=328
346A Big Creek Wild 49.71 98 P **P** 14 08 43.6 +1.3
baz=327
DRLN Deer Lake 49.79 59 *e*P **P** 14 08 43.0 +0.3
comp=Z,105nm,1.1s
445A Amite 49.85 100 P **P** 14 08 44.9 +1.6
baz=328
248A Dixon Mills 49.92 96 P **P** 14 08 44.8 +0.9
baz=327
035Z Hargill 49.98 110 P **P** 14 08 46.4 +2.1
baz=331
544A White Castle 49.99 101 P **P** 14 08 46.2 +1.8
baz=328
347A Saraland 50.13 97 P **P** 14 08 46.7 +1.3
baz=327
URVA University of 50.23 83 *e*P **P** 14 08 47.1 +1.0
446A Poplarville 50.26 99 P **P** 14 08 47.8 +1.4
baz=327
545A Edgard 50.36 100 P **P** 14 08 49.0 +1.8
baz=328
348A Jackson 50.42 97 P **P** 14 08 48.9 +1.3
baz=327
KMSC Kings Mountain 50.42 88 P **P** 14 08 47.7 +0.1
baz=325,SNR=7.6
KMSC Kings Mountain 50.42 88 *e*P **P** 14 08 48.2 +0.6
comp=Z,77nm,1.2s
546A Slidell 50.56 99 P **P** 14 08 49.5 +0.8
baz=328
APA Apatity 50.60 358 ⇓ *i*P **P** 14 08 47.6 -0.9
APA pmax pmax
comp=Z,9.0nm,0.8s
448A Bay Minette 50.84 97 P **P** 14 08 52.0 +1.3
baz=327
GOGA Godfrey 50.84 91 *e*P **P** 14 08 51.0 +0.2
GOGA pmax pmax
comp=Z,47nm,1.0s
GOGA Godfrey 50.84 91 *e*P **P** 14 08 51.0 +0.2
comp=Z,47nm,1.0s
JSC Jenkinsville 51.16 89 *e*P **P** 14 08 53.7 +0.5
JSC pmax pmax
comp=Z,103nm,0.8s
JSC Jenkinsville 51.16 89 *e*P **P** 14 08 53.7 +0.5
comp=Z,103nm,0.8s
ZAIG Zacatecas 51.28 117 *e*P **P** 14 08 56.2 +1.7
comp=Z,25nm,1.1s
IRK Irkutsk 51.38 310 *e*P **P** 14 08 53.6 -1.0
IRK pmax pmax
comp=Z,98nm,2.3s
SNY Shenyang 51.92 289 ⇑P **P** 14 08 58.5 -0.2
SNY pmax pmax
comp=Z,41nm,2.1s
SNY pmax pmax
comp=Z,390nm,3.5s
SNY LR LR
comp=Z,220nm,23.4s
SNY LR LR
comp=Z,290nm,31.2s
KRAR Krasnoyarsk 52.03 320 *c i*P **P** 14 08 59.0 -0.3
TLY Talaya 52.07 310 *e*P **P** 14 09 00.6 +0.9
TLY *e*S **S** 14 16 22.1 +5.6
TLY pmax pmax
comp=Z,68nm,1.9s
TLY MLR MLR
comp=Z,121nm,18.0s
TIGA Tifton 52.42 93 P **P** 14 09 02.4 -0.1
baz=327
MOY Mondy 53.02 312 *e*P **P** 14 09 08.4 +1.6
MOY pmax pmax
comp=Z,128nm,2.2s
ZAK Zakamensk 53.27 310 *e*P **P** 14 09 08.7 0.0
ZAK *e* 14 10 13.9
ZAK pmax pmax
comp=Z,12nm,1.2s
ZAK pmax pmax
comp=Z,9.0nm,1.2s
ZAK pmax pmax
comp=Z,13nm,1.3s
KS01 Wonju Array Si 53.49 282 *e*P **P** 14 09 09.6 -0.7
KSRS Korea Array 53.49 282 P **P** 14 09 11.1 +0.7
comp=Z,12nm,0.6s,baz=29,slow=6.9,SNR=44
KSRS PcP **PcP** 14 10 17.5 +1.4
comp=Z,11nm,1.1s,baz=32,slow=6.1,SNR=2.8
KSRS LR LR 14 33 27.4
comp=Z,66nm,18.4s,baz=36,slow=38
KS15 Wonju Array Si 53.52 282 *e*P **P** 14 09 11.1 +0.6
KSAR Wonju Array Be 53.52 282 P **P** 14 09 11.1 +0.5
KSAR 14 10 17.5
KSAR Wonju Array Be 53.52 282 P **P** 14 09 11.1 +0.5
KSAR PcP **PcP** 14 10 17.5 +1.3
SONA1 Songino Array 54.19 306 *e*P **P** 14 09 15.7 +0.2
SONM Songino Array 54.20 306 P **P** 14 09 16.8 +1.2
comp=Z,44nm,1.0s,baz=40,slow=6.9,SNR=173
SONM LR LR 14 32 36.7
comp=Z,264nm,21.9s,baz=36,slow=36
SONM PKP2bc 14 39 40.4
comp=Z,0.2nm,0.4s,baz=236,slow=1.6,SNR=2.7
DL2 Dalian 55.16 288 P **P** 14 09 22.5 +0.1
DL2 sP **pP** 14 09 48.0 +4.0
DL2 *e*S **S** 14 16 59.0 +0.5
DL2 sS **sS** 14 17 33.3 -2.2
DL2 pmax pmax
comp=Z,41nm,1.3s
DL2 pmax pmax
comp=Z,180nm,5.0s
DL2 LR LR
comp=Z,270nm,21.1s
DL2 LR LR
comp=Z,400nm,23.0s
DL2 LR LR
comp=Z,280nm,25.9s
JNU Nakatsue 55.68 277 P **P** 14 09 25.9 -0.4
comp=Z,3.4nm,0.6s,baz=360,slow=4.2,SNR=7.9
NVS Novosibirsk 55.80 325 ⇑ *i*P **P** 14 09 25.7 -1.1
NVS *e*S **S** 14 17 01.5 -5.1
NVS pmax pmax
comp=N,24nm,1.0s
NVS pmax pmax
comp=Z,65nm,1.0s
NVS pmax pmax
comp=E,26nm,1.1s
NVS smax smax
comp=E,22nm,1.7s
ZALV Zalesovo Beam 56.16 324 P **P** 14 09 28.9 -0.4
comp=E,45nm,0.5s,baz=26,slow=6.8,SNR=202
ZALV PcP **PcP** 14 10 26.0 -0.1
comp=E,16nm,0.8s,baz=23,slow=6.1,SNR=3.9
NC204 NORSAR Array S 56.22 10 *e*P **P** 14 09 29.2 -0.6
NC303 NORSAR Array S 56.32 10 *e*P **P** 14 09 30.2 -0.2
NBO02 NORSAR Array S 56.45 10 *e*P **P** 14 09 30.1 -1.2
NC405 NORSAR Array S 56.46 10 *e*P **P** 14 09 30.8 -0.6
NB201 NORSAR Array S 56.49 10 *e*P **P** 14 09 31.3 -0.3
NB2 NORSAR Subarra 56.49 10 P **P** 14 09 30.5 -1.2
comp=Z,10.0nm,0.9s,baz=351,slow=7.4
NOA NORSAR Array B 56.49 10 P **P** 14 09 30.6 -1.0
comp=Z,3.4nm,0.7s,baz=352,slow=6.9,SNR=22
NOA pP **pP** 14 09 52.3 -1.0
comp=Z,6.4nm,0.8s,baz=352,slow=6.9,SNR=7.0
BJI Beijing 56.63 293 P **P** 14 09 33.0 +0.1
BJI sP **sP** 14 10 00.5 -3.8

BJI pmax pmax
comp=Z,36nm,1.3s
BJI pmax pmax
comp=Z,410nm,3.5s
BJI LR LR
comp=Z,230nm,17.4s
BJI LR LR
comp=Z,240nm,18.1s
BJI LR LR
comp=Z,340nm,44.6s
FIA1 FINESS Array S 56.79 1 *e*P **P 14 09 33.2 -0.5**
FINES FINESS Array B 56.79 1 P **P 14 09 32.8 -0.8**
comp=Z,6.9nm,0.7s,baz=7.1,slow=7.7,SNR=22
FINES ScP **ScP 14 14 20.2 +0.6**
comp=Z,7.0nm,1.0s,baz=5.7,slow=7.7,SNR=6.7
FINES FINESS Array B 56.79 1 *i* P **P 14 09 33.0 -0.7**
FINES pmax pmax
comp=Z,7.0nm,0.7s
KLMR Klimovskoe 57.11 354 *e*P **P 14 09 33.1 -2.9**
KLMR pmax pmax
comp=Z,71nm,1.3s
HFS Hagfors 57.58 9 P **P 14 09 38.2 -1.0**
comp=Z,3.2nm,0.4s,baz=35,slow=5.4,SNR=23
BTO Baotou 58.77 298 *e*P **P 14 09 47.0 -1.0**
SVE Sverdlovsk 58.83 340*d* *i*P **P 14 09 47.8 -0.2**
SVE pmax pmax
comp=Z,79nm,1.2s
ARU Arti 59.54 341 P **P 14 09 52.5 -0.4**
comp=Z,15nm,0.5s,baz=357,slow=3.1,SNR=49
ARU LR LR 14 37 03.7
comp=Z,142nm,21.9s,baz=10,slow=37
ARU Arti 59.54 341*c* *i*P **P 14 09 52.3 -0.6**
ARU 14 10 39.9
ARU 14 12 03.9
ARU S **S 14 17 58.6 +3.2**
ARU 14 19 41.9
ARU pmax pmax
comp=Z,59nm,1.0s
VSU Vasula 59.78 1*ce*P **P 14 09 54.1 -0.5**
VSU pmax pmax
comp=Z,84nm,1.2s
TIY Taiyuan 60.18 295 *e*P **P 14 09 58.5 +0.8**
EKA Eskdalemuir Ar 60.31 20 P **P 14 09 58.2 0.0**
comp=Z,2.7nm,0.4s,baz=331,slow=5.2,SNR=26
EKA LR LR 14 38 33.6
comp=Z,49nm,20.2s,baz=335,slow=38
ESK Eskdalemuir 60.32 20 *e*P **P 14 09 58.6 +0.3**
ESK pmax pmax
comp=Z,21nm,0.8s
ESK Eskdalemuir 60.32 20 *e*P **P 14 09 58.6 +0.3**
comp=Z,21nm,0.8s
BBSR BB Station 60.46 76 *e*P **P 14 09 59.0 -0.6**
comp=Z,92nm,0.9s
BRVK Borovoye 60.58 333*c* *i*P **P 14 09 59.3 -0.8**
BRVK pmax pmax
comp=Z,41nm,0.9s
BRVK pmax pmax
comp=Z,202nm,1.7s
BRVK Borovoye 60.58 333 *e*P **P 14 09 59.5 -0.6**
comp=Z,65nm,1.2s
BVA0 Borovoye Array 60.59 332 P **P 14 09 59.4 -0.8**
BVA0 pmax pmax
comp=Z,34nm,0.9s
BVAR Borovoye Array 60.59 332 P **P 14 09 59.5 -0.7**
comp=Z,21nm,0.5s,baz=42,slow=6.8,SNR=104
BVAR LR LR 14 39 31.5
comp=Z,118nm,19.2s,baz=46,slow=39
BVAR PKP2ab 14 39 41.4
comp=Z,0.4nm,0.4s,baz=209,slow=2.6,SNR=3.3
KURK Kurchatov 60.74 326 P **P 14 10 01.4 +0.2**
KURK Kurchatov 60.74 326 P **P 14 10 01.4 +0.2**
KURK P'P' 14 39 16.0
KURK ⇑*e* 14 39 26.0
KURK P'P'ab **P'P'ab 14 39 37.4 -4.6**
KURBB Kurchatov Arra 60.85 326 P **P 14 10 01.4 -0.5**
comp=Z,22nm,0.5s,baz=29,slow=6.9,SNR=113
KURBB PKPPKP **P'P'df 14 39 16.0 -6.1**
comp=Z,0.2nm,0.4s,baz=317,slow=47,SNR=3.1
KURBB PKP2bc 14 39 26.0
comp=Z,0.2nm,0.3s,baz=208,slow=3.1,SNR=3.4
KURBB PKP2ab 14 39 37.4
comp=Z,0.3nm,0.5s,baz=225,slow=3.7,SNR=2.4
NJ2 Nanjing 62.11 286 *e*P **P 14 10 09.0 -1.7**
NJ2 pmax pmax
comp=Z,56nm,1.1s
JOW Kunigami 62.17 275 P **P 14 10 11.3 +0.1**
comp=Z,26nm,0.8s,baz=28,slow=7.4,SNR=6.4
JOW Kunigami 62.17 275 *e*P **P 14 10 11.7 +0.5**
comp=Z,193nm,1.7s
MOS Moscow 62.31 354 *e*P **P 14 10 11.0 -0.7**
MOS *e*S **S 14 18 30.7 +0.1**
MOS pmax pmax
comp=Z,100nm,1.4s
MOS pmax pmax
comp=Z,59nm,1.0s
MOS smax smax
comp=N,400nm,3.0s
MOS smax smax
comp=E,600nm,3.4s
OBN Obninsk 62.98 355 P **P 14 10 15.7 -0.4**
comp=E,23nm,0.4s,baz=56,slow=2.0,SNR=15
OBN Obninsk 62.98 355⇓*e*P **P 14 10 15.8 -0.3**
OBN *e* 14 10 23.2
OBN *e*S **S 14 18 42.3 +3.3**
OBN pmax pmax
comp=Z,77nm,1.2s
OBN MLR MLR
comp=Z,55nm,17.0s
MK31 Makanchi Array 63.29 322 *i* P **P 14 10 17.4 -0.9**
MK31 pmax pmax
comp=Z,16nm,0.7s
MK31 Makanchi Array 63.29 322 *e*P **P 14 10 17.5 -0.9**
MKAR Makanchi Array 63.29 322 P **P 14 10 17.4 -1.0**
comp=Z,18nm,0.5s,baz=41,slow=6.7,SNR=207
MKAR PKPPKP P'P'df 14 39 10.1 -8.1
comp=Z,0.3nm,0.8s,baz=220,slow=3.8,SNR=3.5
MKAR PKP2ab 14 39 40.5
comp=Z,1.5nm,1.0s,baz=259,slow=1.5,SNR=5.4
MKAR LR LR 14 41 28.8
comp=Z,97nm,19.3s,baz=24,slow=39
MK01 Makanchi Array 63.31 322 *e*P **P 14 10 16.8 -1.7**
NACGM Naroch 63.35 1 *e* pP 14 10 40.0 -0.7
MAKZ Makanchi 63.37 322 *i* P **P 14 10 17.6 -1.3**
MAKZ pmax pmax
comp=Z,33nm,0.7s
MAKZ Makanchi 63.37 322 *e*P **P 14 10 18.0 -0.9**
comp=Z,85nm,1.4s
GTA Gaotai 63.87 305 ⇑P **P 14 10 22.8 +0.4**
GTA pP pP 14 10 46.5 +1.9
GTA S **S 14 18 50.5 -0.3**
GTA pmax pmax
comp=Z,45nm,0.9s
GTA pmax pmax
comp=Z,320nm,5.3s
GTA LR LR
comp=Z,170nm,20.4s
GTA LR LR
comp=Z,180nm,19.5s
GTA LR LR
comp=Z,250nm,20.9s
WMQ Urumqi 64.30 316 *e*P P 14 10 31.8 +6.7
WMQ pP pP 14 10 49.3 +2.0
WMQ S **S 14 19 01.8 +6.0**
WMQ ScS **ScS 14 20 13.5 +2.7**
WMQ Urumqi 64.30 316 SS SS 14 23 20.0 +14
WMQ pmax pmax
comp=Z,13nm,0.9s
WMQ pmax pmax
comp=Z,170nm,4.6s
WMQ LR LR
comp=N,350nm,26.8s
WMQ LR LR
comp=E,410nm,27.2s
WMQ LR LR
comp=Z,480nm,25.5s
OTUK Ortayu 64.61 329 P **P 14 10 26.1 -0.9**
OTUK pmax pmax
comp=Z,45nm,0.8s
XAN Xi'an 64.80 295 P **P 14 10 27.5 -1.0**
XAN S **S 14 18 56.0 -6.2**
XAN pmax pmax
comp=Z,29nm,1.4s
XAN pmax pmax
comp=Z,180nm,6.9s
LZH Lanzhou 65.15 300 ⇑P **P 14 10 31.3 +0.4**
LZH pP pP 14 10 49.5 -3.6

LZH sP sP 14 10 55.3 -7.4
LZH PP **PP 14 12 56.3 +1.6**
LZH *e*S **S 14 19 05.5 -1.2**
LZH sS sS 14 19 43.5 -1.2
LZH SS **SS 14 23 13.3 -6.4**
LZH pmax pmax
comp=Z,100nm,1.3s
LZH pmax pmax
comp=Z,330nm,4.1s
LZH LR LR
comp=Z,260nm,12.1s
LZH LR LR
comp=Z,350nm,12.5s
LZH LR LR
comp=Z,500nm,14.2s
AKTO Aktyubinsk 65.42 340 P **P 14 10 31.7 -0.4**
comp=Z,23nm,0.9s,baz=16,slow=6.0,SNR=58
AKTO LR LR 14 40 53.3
comp=Z,49nm,20.8s,slow=38
AKTO Aktyubinsk 65.42 340 *i* P **P 14 10 31.5 -0.7**
AKTO pmax pmax
comp=Z,48nm,1.0s
WHN Wuhan 65.42 289 P **P 14 10 32.0 -0.4**
WHN LR LR
comp=Z,550nm,21.1s
GUMO Guam 65.89 253 LR LR 14 35 60.0
comp=Z,75nm,21.7s,baz=92,slow=33
BEBN Eben Emael 66.00 16 P **P 14 10 36.1 +0.2**
AB31 Akbulak array 66.23 338 *i* P **P 14 10 36.9 -0.5**
AB31 pmax pmax
comp=Z,76nm,1.4s
ABKAR Akbulak array 66.23 338 *e*P **P 14 10 36.9 -0.5**
MEM Membach 66.23 16 P **P 14 10 37.5 +0.1**
CLL Collm 66.28 11 *i* P **P 14 10 37.2 -0.5**
comp=Z,8.0nm,1.0s
CLL *i* 14 10 41.3
CLL *i* PcP **PcP 14 11 06.4 -0.6**
comp=Z,10.0nm,0.9s
CLL *e* 14 27 12.0
CLL *e*PKPPKP **P'P'df 14 39 09.0 -4.3**
CLL Collm 66.28 11 *i* P **P 14 10 37.2 -0.5**
CLL *i* 14 10 41.3
CLL *i* 14 11 06.4
CLL pmax pmax
comp=Z,8.0nm,1.0s
CLL pmax pmax
comp=Z,10.0nm,0.9s
BCLA Clavier 66.33 16 P **P 14 10 38.0 0.0**
comp=Z,6.7nm,1.6s
DOU Dourbes 66.55 17 P **P 14 10 40.2 +0.8**
VSR Storozhevoye 66.74 353 *e*P **P 14 10 39.4 -1.2**
VSR pmax pmax
comp=Z,30nm,1.3s
BRG Berggiesshubel 66.80 10 *e*P **P 14 10 40.7 -0.3**
comp=Z,8.2nm,0.9s
BRG S **S 14 19 23.0 -2.9**
BRG *e*PKPPKP **P'P'df 14 39 08.4 -4.0**
comp=Z,12nm,1.4s
BRG Berggiesshubel 66.80 10 *e*P **P 14 10 40.7 -0.3**
BRG S **S 14 19 23.0 -2.9**
BRG pmax pmax
comp=Z,8.0nm,0.9s
WLF Walferdange 67.18 16 P **P 14 10 43.8 +0.4**
PVCC Panska Ves 67.19 10 *e*P **P 14 10 44.1 +0.6**
PVCC Panska Ves 67.19 10 *e*P **P 14 10 44.1 +0.6**
PDGK Podgornoye 67.26 322 *i* P **P 14 10 43.7 -0.3**
NKC Novy Kostel 67.30 11 *e*P **P 14 10 44.7 +0.5**
NKC *e*pP **pP 14 11 08.3 +1.8**
NKC Novy Kostel 67.30 11 *e*P **P 14 10 44.7 +0.5**
NKC *e* 14 11 08.3
UPC Upice 67.32 9 *e*P **P 14 10 44.5 +0.2**
UPC AMS AMS 14 36 50.0
comp=Z,200nm,21.6s
UPC Upice 67.32 9 *e*P **P 14 10 44.5 +0.2**
UPC MLR MLR
comp=Z,200nm,21.6s
DPC Dobruska-Polom 67.50 8 *e*P **P 14 10 45.8 +0.3**
DPC *e*pP **pP 14 11 06.9 -0.9**
DPC *ex* x 14 11 09.6
DPC *e*sP **sP 14 11 20.0 +2.6**
DPC Dobruska-Polom 67.50 8 *e*P **P 14 10 45.8 +0.3**
DPC *e* 14 11 09.6
AKASG Malin Array Be 67.57 360 P **P 14 10 45.0 -0.8**
comp=Z,6.8nm,0.4s,baz=2.3,slow=6.1,SNR=40
AKASG pP **pP 14 11 07.1 -1.1**
comp=Z,16nm,0.7s,baz=1.5,slow=6.2,SNR=5.9
AKASG PKP2bc 14 39 07.5
comp=Z,0.3nm,0.3s,baz=194,slow=2.7,SNR=5.1
AKASG LR LR 14 39 43.9
comp=Z,50nm,22.0s,baz=10.0,slow=35
KIEV Kiev 67.58 360*c* *i*P **P 14 10 45.0 -0.9**
KIEV pmax pmax
comp=Z,17nm,0.7s
KIEV Kiev 67.58 360 *e*P **P 14 10 44.9 -1.0**
comp=Z,30nm,0.8s
PRU Pruhonice 67.72 10 *e*P **P 14 10 47.0 +0.2**
PRU *e*S **S 14 19 36.6 -0.5**
PRU Pruhonice 67.72 10 *e*P **P 14 10 47.0 +0.2**
PRU *e*S **S 14 19 36.6 -0.5**
KRLC Kraliky 67.80 8 *e*P **P 14 10 47.3 -0.1**
KRLC Kraliky 67.80 8 *e*P **P 14 10 47.3 -0.1**
GOPC GO Pecny, Ondr 67.82 10 *e*S **S 14 19 37.9 -0.4**
GOPC *e*XS sS 14 20 18.5 +2.1
LANF Langenberg 68.05 15 *e*P **P 14 10 49.0 +0.1**
OKC Ostrava-Krasne 68.12 7 *e*P **P 14 10 49.5 +0.1**
OKC *e*S **S 14 19 41.5 -0.3**
OKC Ostrava-Krasne 68.12 7 *e*P **P 14 10 49.5 +0.1**
OKC *e*S **S 14 19 41.5 -0.3**
MORC Moravsky Berou 68.15 8⇓*i*P **P 14 10 49.8 +0.2**
MORC Moravsky Berou 68.15 8 ⇓P **P 14 10 49.8 +0.2**
MORC Moravsky Berou 68.15 8 *e*P **P 14 10 49.8 +0.2**
comp=Z,55nm,1.2s
SSLB Suanglung 68.19 280 *e*P **P 14 10 49.9 -0.3**
YULB Yu-li 68.37 279 *e*P **P 14 10 53.1 +1.8**
LVV L'vov 68.39 3 *e*P **P 14 10 50.2 -0.8**
KHC Kasperske Hory 68.49 11 *e*P **P 14 10 52.2 +0.5**
KHC *ex* x 14 11 03.4
KHC *e*pP **pP 14 11 13.9 -0.2**
KHC *e*sP **sP 14 11 26.1 +2.4**
KHC *e*S **S 14 19 47.5 +1.1**
KHC *e*XS **sS 14 20 27.0 +2.4**
KHC Kasperske Hory 68.49 11 *e*P **P 14 10 52.2 +0.5**
KHC *e**PP **pP 14 11 13.9 -0.2**
KHC *e*S **S 14 19 47.5 +1.1**
KHC *e**SS **sS 14 20 27.0 +2.4**
KHC Kasperske Hory 68.49 11 *e*P **P 14 10 52.2 +0.5**
comp=Z,3.7nm,0.8s
VRAC Vranov 68.55 8 P **P 14 10 52.1 0.0**
comp=Z,10nm,0.9s,baz=6.9,slow=6.4,SNR=14
VRAC Vranov 68.55 8⇑*i*P **P 14 10 53.0 +0.9**
VRAC Vranov 68.55 8 ⇑P **P 14 10 53.0 +0.9**
STHS Stebnicka Huta 68.70 5 *e*P **P 14 10 53.9 +0.9**
STHS pmax pmax
comp=Z,9.0nm,0.9s
STHS Stebnicka Huta 68.70 5 *e*P **P 14 10 53.9 +0.9**
ECH Echery 68.73 15 *e*P **P 14 10 52.3 -0.9**
TKM2 Tokmak 2 68.73 325 *i* P **P 14 10 53.1 -0.4**
TKM2 pmax pmax
comp=Z,33nm,1.1s
BFO Black Forest 68.75 14 *i* P **P 14 10 54.0 +0.7**
BFO Black Forest 68.75 14 *e*P **P 14 10 53.5 +0.2**
GEC2 GERESS Array S 68.79 10 *e*P **P 14 10 54.1 +0.4**
GEC2 GERESS Array S 68.79 10 *e*P **P 14 10 54.1 +0.4**
GERES GERESS Array B 68.79 10 P **P 14 10 53.9 +0.3**
comp=Z,2.5nm,0.8s,baz=339,slow=3.3,SNR=20
GERES PKP2bc 14 39 02.8
comp=Z,0.3nm,0.2s,baz=188,slow=3.0,SNR=7.6
GERES LR LR 14 42 09.5
comp=Z,36nm,22.0s,baz=342,slow=37
GEA0 GERESS Array S 68.80 10 *e*P **P 14 10 53.4 -0.3**
LANS Liptovska Anna 68.88 6 *e*P **P 14 10 54.3 +0.1**
LANS Liptovska Anna 68.88 6 *e*P **P 14 10 54.3 +0.1**
FRU Bishkek 69.07 325 *e*P **P 14 10 55.0 -0.4**
FRU *e* 14 11 18.5
FRU *e* 14 13 24.0
FRU pmax pmax
comp=Z,100nm,1.8s
MOF Molkenrain 69.08 15 *e*P **P 14 10 54.9 -0.6**
AAK Ala-Archa 69.29 325 P **P 14 10 57.0 +0.1**
comp=Z,15nm,0.7s,baz=59,slow=1.8,SNR=40
AAK Ala-Archa 69.29 325 *i* P **P 14 10 56.7 -0.2**
AAK pmax pmax
comp=Z,31nm,0.9s

SMOL Smolenice 69.40 8 *e*P **P 14 10 57.4 +0.1**
SMOL Smolenice 69.40 8 *e*P **P 14 10 57.4 +0.1**
VYHS Vyhne 69.50 7 *e*P **P 14 10 57.5 -0.5**
VYHS pmax pmax
comp=Z,6.0nm,1.1s
VYHS Vyhne 69.50 7 *e*P **P 14 10 57.5 -0.5**
VYHS *e*pP **pP 14 11 19.1 -1.3**
UZH Uzhgorod 69.53 4 *e*P **P 14 10 56.6 -1.5**
UZH *e* 14 11 00.0
UZH *e* 14 11 02.0
LOMF Lomont 69.53 16 *e*P **P 14 10 57.9 -0.4**
KECS Kecovo 69.60 6 *e*P **P 14 10 58.5 0.0**
KECS pmax pmax
comp=Z,5.0nm,0.9s
KECS Kecovo 69.60 6 *e*P **P 14 10 58.5 0.0**
CD2 Chengdu 69.68 298 *e*P **P 14 11 02.5 +3.2**
CD2 pP PcP 14 11 20.0 -1.7
CD2 sP sP 14 11 27.5 -3.9
CD2 S **S 14 20 06.0 +5.2**
CD2 sS SKiKP 14 20 36.5 -1.4
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,180nm,5.4s
MOA Molln 69.83 10 *i* P **P 14 10 60.0 0.0**
comp=Z,9.6nm,1.1s
RETA Reutte 69.86 13 *i* P **P 14 11 00.6 +0.4**
comp=Z,8.6nm,1.0s
CONA Conrad Observa 69.87 9 *i* P **P 14 11 00.5 +0.2**
comp=Z,14nm,1.0s,SNR=7.8
KK31 Karatay Array 69.87 329 *i* P **P 14 10 59.2 -1.1**
KK31 pmax pmax
comp=Z,38nm,1.3s
KKAR Karatay Array 69.87 329 *e*P **P 14 10 59.8 -0.5**
KKAR Karatay Array 69.87 329 *e*P **P 14 10 59.8 -0.5**
MNAS Manas 69.95 327 *i* P **P 14 11 00.7 -0.3**
MNAS pmax pmax
comp=Z,33nm,0.9s
DAVA Damuels 69.96 13 *i* P **P 14 11 00.3 -0.7**
comp=Z,5.9nm,0.9s
MOTA Moosalm 70.03 13 *i* P **P 14 11 02.0 +0.6**
comp=Z,16nm,1.2s
WATA Walderalm 70.09 12 *i* P **P 14 11 01.6 -0.1**
comp=Z,19nm,1.1s
PSZ Piszkesteto 70.14 6⇑*i*P **P 14 11 02.3 +0.4**
PSZ Piszkesteto 70.14 6 ⇑P **P 14 11 02.3 +0.4**
SORM Soroca 70.14 0⇑*i*P **P 14 11 01.0 -0.8**
SORM Soroca 70.14 0 ⇑P **P 14 11 01.0 -0.8**
AGO Saint Agoulin 70.30 19 *e*P **P 14 11 03.0 +0.1**
FETA Feichten 70.31 13 *i* P **P 14 11 03.7 +0.6**
comp=Z,13nm,1.2s
PLDF La Plantade 70.45 18 *e*P **P 14 11 03.7 -0.2**
KBA Koelnbreinsper 70.51 11 *i* P **P 14 11 04.7 +0.4**
comp=Z,20nm,1.0s,SNR=9.0
ARSA Arzberg 70.52 9 *i* P **P 14 11 04.7 +0.5**
comp=Z,10nm,1.3s
SENIN Lac Senin/Sane 70.56 15 *e*P **P 14 11 05.4 +0.7**
BUR08 Bucovina Ar. S 70.60 2 *e*P **P 14 11 05.0 +0.2**
BURAR Bucovina Array 70.63 2⇑*i*P **P 14 11 04.4 -0.6**
BURAR Bucovina Array 70.63 2 ⇑P **P 14 11 04.5 -0.5**
FUORN Ofenpass-Fuorn 70.66 13 *e*P **P 14 11 06.3 +0.9**
TUE Stuetta 70.70 14 *e*P **P 14 11 06.5 +0.9**
comp=Z,15nm,0.9s
ABTA Abfaltersbach 70.76 12 *i* P **P 14 11 06.5 +0.7**
comp=Z,3.1nm,0.5s
MYKA Terra Mystica 70.98 11 *i* P **P 14 11 07.1 0.0**
comp=Z,5.5nm,0.9s
SOKA Soboth 71.05 10 *i* P **P 14 11 08.5 +1.0**
comp=Z,11nm,1.4s
LBL Lubilhac 71.11 19 *e*P **P 14 11 07.8 -0.1**
OBKA Obir 71.18 10 *i* P **P 14 11 08.5 +0.2**
comp=Z,26nm,0.9s,SNR=7.9
TAOE Nuku Hiva Isla 71.25 168 *e*LR LR 14 32 56.0
comp=Z,203nm,30.1s
KIS Kishinev 71.28 360 *e*P **P 14 11 07.0 -1.7**
KIS Kishinev 71.28 360 *e*P **P 14 11 07.0 -1.7**
KIS *e* 14 11 34.0
DRGR 71.38 4⇑*i*P **P 14 11 09.1 -0.4**
DRGR 71.38 4 ⇑P **P 14 11 09.1 -0.4**
KSH Kashi 71.79 323 P **P 14 11 14.8 +2.7**
KSH *e*pP pP 14 11 35.5 +0.8
KSH *e*sP sP 14 11 44.5 +0.3
KSH S **S 14 20 26.8 +1.5**
KSH SKS **SKSac 14 21 06.8 -0.9**
KSH pmax pmax
comp=Z,38nm,1.3s
KSH LR LR
comp=Z,180nm,5.9s
KSH LR LR
comp=Z,160nm,5.4s
KSH LR LR
comp=Z,150nm,13.3s
PGAV Gavieira, Arco 72.13 28 *e*P **P 14 11 15.2 +1.1**
comp=Z,46nm,1.5s
PGAV Gavieira, Arco 72.13 28 *e*LR LR 14 34 19.6
comp=Z,74nm,20.0s
DOPR Dopca 72.28 2⇑*i*P **P 14 11 15.3 +0.5**
GYA Guiyang 72.32 293⇑*i*P **P 14 11 15.3 -0.2**
GYA pP pP 14 11 39.0 +1.0
GYA PP **PP 14 14 00.5 +3.7**
GYA S **S 14 20 32.0 +0.3**
GYA SS **SS 14 25 13.0 +2.5**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.8s
GYA LR LR
comp=Z,550nm,18.3s
GYA LR LR
comp=Z,540nm,19.5s
GYA LR LR
comp=Z,500nm,19.8s
VRI Vrincioaia 72.40 1⇑*i*P **P 14 11 16.2 +0.7**
VRI Vrincioaia 72.40 1 ⇑P **P 14 11 16.2 +0.7**
PLOR Plostina 72.41 1⇑*i*P **P 14 11 16.5 +0.9**
PLOR Plostina 72.41 1 ⇑P **P 14 11 16.5 +0.9**
BZS Buzias 72.51 5⇑*i*P **P 14 11 16.4 +0.2**
BZS Buzias 72.51 5 ⇑P **P 14 11 16.4 +0.2**
GOF Gofitskoye 72.59 349⇑*e*P **P 14 11 16.6 0.0**
GOF pmax pmax
comp=Z,117nm,1.3s
PBRG Braganca 72.61 27 *e*P **P 14 11 17.7 +0.8**
comp=Z,26nm,1.9s
MLR Muntele Rosu 72.76 2 P **P 14 11 17.2 -0.6**
comp=Z,1.2nm,0.8s,baz=329,slow=6.5,SNR=9.1
MLR Muntele Rosu 72.76 2⇑*i*P **P 14 11 19.1 +1.3**
MLR Muntele Rosu 72.76 2 ⇑P **P 14 11 19.1 +1.3**
MLR Muntele Rosu 72.76 2 *e*P **P 14 11 18.8 +0.9**
GZR Gura Zlata 72.78 4⇑*i*P **P 14 11 17.8 0.0**
GZR Gura Zlata 72.78 4 ⇑P **P 14 11 17.8 0.0**
POLO Lamas de Olo 72.80 28 *e*P **P 14 11 19.3 +1.2**
comp=Z,18nm,1.3s
VOIR 72.80 3⇑*i*P **P 14 11 18.5 +0.5**
VOIR 72.80 3 ⇑P **P 14 11 18.5 +0.5**
ARR Arges 72.86 3⇑*i*P **P 14 11 19.1 +0.8**
MVIF Mont Vial 72.97 16 *e*P **P 14 11 19.2 +0.1**
LUCF Luceram 73.00 16 *e*P **P 14 11 18.9 -0.3**
TLCR 73.09 360⇑*i*P **P 14 11 19.4 -0.2**
TLCR 73.09 360 ⇑P **P 14 11 19.4 -0.2**
CFR Carcaliu 73.10 0⇑*i*P **P 14 11 19.0 -0.6**
CFR Carcaliu 73.10 0 ⇑P **P 14 11 19.0 -0.6**
REVF Revere 73.16 16 *e*P **P 14 11 20.4 +0.3**
MVO Moncorvo 73.17 27 *e*P **P 14 11 20.2 0.0**
comp=Z,33nm,1.0s
MVO *e*S **SKiKP 14 20 48.4 +5.5**
MVO Moncorvo 73.17 27 *e*LR LR 14 35 06.2
comp=Z,97nm,22.0s
MDVR Moldovita 73.35 5⇑*i*P **P 14 11 20.7 -0.5**
HARR Harsova 73.58 0⇑*i*P **P 14 11 22.9 +0.4**
HARR Harsova 73.58 0 ⇑P **P 14 11 22.9 +0.4**
TLB Topalu 73.69 0⇑*i*P **P 14 11 22.9 -0.2**
TLB Topalu 73.69 0 ⇑P **P 14 11 22.9 -0.2**
KIV Kislovodsk 73.71 349 *e*P **P 14 11 23.1 -0.3**
KIV *e* 14 11 40.7
KIV *e*S **S 14 20 51.1 +4.2**
KIV pmax pmax
comp=Z,30nm,1.0s
KIV Kislovodsk 73.71 349 *e*P **P 14 11 23.3 -0.1**
MTE Manteigas 73.78 28 *e*P **P 14 11 24.7 +0.9**
comp=Z,36nm,1.4s
MTE *e*S **S 14 20 50.2 +2.4**
MTE Manteigas 73.78 28 *e*LR LR 14 35 19.1
comp=Z,59nm,22.0s
MTE Manteigas 73.78 28 *e*P **P 14 11 24.8 +0.9**

PCAS	**Casmilo, Conde**	**73.90**	**29**	*eP*	**P**	**14 11 25.3**	**+0.9**
	comp=Z,38nm,2.4s							
PCAS				*eS*	**S**	**14 20 50.6**	**+1.6**
KBZ	**Khabaz**	**73.92**	**349**	P	**P**	**14 11 24.6**	**+0.2**
	comp=Z,13nm,0.9s,baz=2.0,slow=4.0,SNR=20							
KBZ				LR	LR	14 46 08.9		
	comp=Z,43nm,21.6s,baz=4.0,slow=38							
PCBR	**Castelo Branco**	**74.33**	**28**	*eP*	**P**	**14 11 27.0**	**+0.1**
	comp=Z,38nm,1.7s							
NEY	**Neytrino**	**74.41**	**349**	*eP*	**P**	**14 11 27.9**	**+0.3**
NEY				pmax	pmax			
	comp=Z,3.0nm,1.0s							
PMRV	**Marv??o**	**74.75**	**28**	*eS*	**S**	**14 21 01.6**	**+3.1**
PMAFR	**Mafra**	**74.77**	**30**	*eP*	**P**	**14 11 30.5**	**+1.0**
	comp=Z,183nm,1.0s							
SJCC	**San Jacinto, C**	**74.86**	**98**	*eP*	pP	14 11 50.5	-2.6	
KMI	**Kunming**	**75.17**	**296**	P	**P**	**14 11 34.0**	**+1.7**
KMI				pmax	pmax			
	comp=Z,19nm,1.0s							
KMI				pmax	pmax			
	comp=Z,140nm,5.3s							
ES19	**SONSECA Array**	**75.23**	**25**	*eP*	**P**	**14 11 32.6**	**+0.4**
ESDC	**Sonseca Array**	**75.24**	**25**	P	**P**	**14 11 32.4**	**+0.1**
	comp=Z,10nm,0.8s,baz=344,slow=5.6,SNR=38							
ESDC				LR	LR	14 46 27.9		
	comp=Z,26nm,21.4s,baz=340,slow=37							
ESLA	**Sonseca Array**	**75.24**	**25**	*eP*	**P**	**14 11 33.0**	**+0.7**
PESTR	**Estremoz**	**75.24**	**28**	*eP*	**P**	**14 11 33.0**	**+0.8**
	comp=Z,30nm,1.4s							
PESTR				*eS*	**S**	**14 21 05.1**	**+1.2**
PAB	**San Pablo**	**75.28**	**26**	*eP*	**P**	**14 11 33.2**	**+0.7**
PAB	**San Pablo**	**75.28**	**26**	*eP*	**P**	**14 11 33.2**	**+0.7**
EVO	**Evora**	**75.47**	**29**	*eP*	**P**	**14 11 32.1**	**-1.4**
	comp=Z,41nm,1.3s							
PDG	**Podgorica**	**75.57**	**7⇑**	*iP*	**P**	**14 11 32.4**	**-1.6**
PNCL	**Nicolau / Gran**	**75.75**	**29**	*eP*	**P**	**14 11 35.9**	**+0.8**
	comp=Z,79nm,0.9s							
PBEJ	**Beja**	**75.98**	**29**	*eP*	**P**	**14 11 37.3**	**+0.9**
	comp=Z,22nm,1.5s							
PBAR	**Barrancos**	**76.03**	**28**	*eP*	**P**	**14 11 37.4**	**+0.7**
	comp=Z,119nm,1.5s							
PBAR				*eS*	**S**	**14 21 14.9**	**+2.3**
MESJ	**Messejana**	**76.08**	**29**	*eP*	**P**	**14 11 36.9**	**-0.1**
	comp=Z,33nm,2.0s							
PTEO	**Sao Teotonio**	**76.24**	**30**	*eP*	**P**	**14 11 39.1**	**+1.2**
	comp=Z,104nm,1.9s							
PCVE	**Castro Verde**	**76.32**	**29**	*eP*	**P**	**14 11 39.6**	**+1.3**
	comp=Z,46nm,1.6s							
PCVE				*eS*	**S**	**14 21 16.2**	**+0.4**
MORF	**Marmelete**	**76.49**	**30**	*eP*	**P**	**14 11 40.1**	**+0.7**
	comp=Z,110nm,1.5s							
MORF	**Marmelete**	**76.49**	**30**	*eP*	**P**	**14 11 40.1**	**+0.7**
PVAQ	**Vaqueiros**	**76.61**	**29**	*eP*	**P**	**14 11 40.5**	**+0.5**
	comp=Z,56nm,1.2s							
PVAQ	**Vaqueiros**	**76.61**	**29**	*e*LR	LR	14 36 26.6		
	comp=Z,66nm,18.0s							
PBDV	**Barranco-do-Ve**	**76.72**	**29**	*eP*	**P**	**14 11 41.2**	**+0.6**
	comp=Z,73nm,1.2s							
GNI	**Garni**	**77.29**	**347**	*c iP*	**P**	**14 11 44.4**	**+0.4**
GNI				pmax	pmax			
	comp=Z,69nm,1.1s							
QIZ	**Qiongzhong**	**77.40**	**287**	P	**P**	**14 11 46.3**	**+1.6**
QIZ				LR	LR			
	comp=Z,180nm,38.9s							
AFI	**Afiamalu**	**77.42**	**200**	LR	LR	14 38 06.3		
	comp=Z,184nm,20.5s,baz=72,slow=30							
GEYT	**Alibeck**	**77.52**	**336**	P	**P**	**14 11 45.4**	**+0.2**
	comp=Z,14nm,1.0s,baz=332,slow=5.0,SNR=26							
GEYT				pP	**pP**	**14 12 08.0**	**0.0**	
	comp=Z,27nm,0.9s,baz=328,slow=5.3,SNR=13							
GEYT				LR	LR	14 50 44.3		
	comp=Z,92nm,21.0s,baz=180,slow=39							
SDV	**Santo Domingo**	**77.88**	**94**	*eP*	pP	14 12 04.5	-5.9	
SDV	**Santo Domingo**	**77.88**	**94**	*eP*	**P**	**14 11 48.3**	**+0.7**
GRMC	**Gramalote, San**	**77.88**	**96**	*eP*	pP	14 12 06.2	-4.2	
CBRI	**Barrientos, No**	**77.88**	**96**	*eP*	pP	14 12 10.3	-0.2	
HELC	**Santa Helena**	**77.95**	**100**	*eP*	pP	14 12 09.1	-2.0	
BRRC	**Barranca, Sant**	**77.99**	**98**	*eP*	pP	14 12 06.2	-4.6	
KBL	**Kabul**	**78.33**	**327**	*eP*	**P**	**14 11 48.6**	**-1.3**
KBL	**Kabul**	**78.33**	**327**	*eP*	**P**	**14 11 48.6**	**-1.3**
BR231	**Keskin MP Arra**	**78.38**	**357**	*eP*	**P**	**14 11 49.7**	**-0.3**
BR131	**Keskin Array S**	**78.47**	**356**	*eP*	**P**	**14 11 50.6**	**+0.2**
BRTR	**Keskin Array B**	**78.47**	**356**	P	**P**	**14 11 50.1**	**-0.3**
	comp=Z,9.5nm,1.1s,baz=5.7,slow=2.5,SNR=34							
BRTR				pP	**pP**	**14 12 13.5**	**+0.2**	
	comp=Z,0.8nm,0.4s,baz=301,slow=32,SNR=2.5							
BRTR				LR	LR	14 50 21.0		
	comp=Z,31nm,21.4s,baz=337,slow=39							
BARC	**Barichara**	**78.69**	**97**	*eP*	**P**	**14 11 52.0**	**-0.1**
GUN	**Gumba**	**79.30**	**311**	*eP*	**P**	**14 11 55.4**	**-0.1**
RUSC	**La Rusia**	**79.35**	**98**	*eP*	**P**	**14 11 55.9**	**-0.1**
RUSC	**La Rusia**	**79.35**	**98**	*eP*	**P**	**14 11 56.1**	**+0.1**
PPT	**Papeete**	**79.39**	**178**	LR	LR	14 38 43.9		
	comp=Z,165nm,21.7s,baz=322,slow=29							
PPT2	**Papeete2**	**79.41**	**178**	*e*LR	LR	14 36 45.6		
	comp=Z,391nm,32.0s							
JIRN	**Jiri**	**79.42**	**310**	*eP*	**P**	**14 11 56.4**	**+0.2**
	comp=Z,811nm,0.7s							
TOLC	**Tolima**	**79.46**	**100**	*eP*	pP	14 12 19.5	+0.1	
KKN	**Kakani**	**79.63**	**311**	*eP*	**P**	**14 11 57.1**	**0.0**
	comp=Z,49nm,0.8s							
GKN	**Gorkha**	**79.66**	**312**	*eP*	**P**	**14 11 57.2**	**0.0**
ROSC	**El Rosal**	**79.70**	**99**	pP	pP	14 12 21.7	+1.0	
	comp=Z,38nm,0.9s,baz=227,slow=20,SNR=8.8							
ROSC	**El Rosal**	**79.70**	**99**	*eP*	pP	14 12 21.4	+0.7	
PKIN	**Phulchoki**	**79.78**	**311**	*eP*	**P**	**14 11 58.5**	**+0.5**
	comp=Z,24nm,0.5s							
DMN	**Daman**	**79.85**	**311**	*eP*	**P**	**14 11 58.4**	**0.0**
	comp=Z,35nm,0.5s							
PYUN	**Piuthan**	**80.14**	**313**	*eP*	**P**	**14 11 59.6**	**-0.3**
	comp=Z,140nm,1.1s							
CHIC	**Chingaza**	**80.16**	**99**	*eP*	**P**	**14 12 00.3**	**0.0**
KOLN	**Koldanda**	**80.23**	**313**	*eP*	**P**	**14 12 00.3**	**-0.1**
	comp=Z,37nm,0.7s							
PRAC	**Prado**	**80.42**	**100**	*eP*	pP	14 12 23.4	-0.8	
VILC	**Villavicencio,**	**80.63**	**99**	*eP*	pP	14 12 26.4	+0.9	
NONG	**Nongkai**	**81.22**	**292**	P	**P**	**14 12 04.7**	**-0.8**
	comp=Z,40nm,0.9s							
SJAC	**San Juan de Ar**	**81.25**	**100**	*eP*	pP	14 12 26.8	-1.9	
KEST	**Kesra**	**81.30**	**16**	P	**P**	**14 12 06.5**	**+0.7**
	comp=Z,10nm,0.7s,baz=287,slow=0.9,SNR=9.2							
KEST				LR	LR	14 51 38.1		
	comp=Z,44nm,20.3s,baz=286,slow=38							
KEST	**Kesra**	**81.30**	**16**	*eP*	**P**	**14 12 06.3**	**+0.5**
CMAI	**Chiengmai2**	**81.33**	**296**	P	**P**	**14 12 06.0**	**-0.2**
	comp=Z,152nm,1.7s,comp=Z,16µm							
CMBC	**Cumbal**	**81.52**	**104**	*eP*	pP	14 12 30.4	-0.2	
SKNT	**Sakolnakorn**	**81.82**	**291**	P	**P**	**14 12 08.4**	**-0.2**
	comp=Z,41nm,1.1s							
OTAV	**Otavalo**	**81.86**	**105**	*eP*	pP	14 12 28.8	-3.6	
LAMP	**Lampang**	**82.33**	**295**	P	**P**	**14 12 11.1**	**-0.2**
	comp=Z,8.1nm,0.9s,comp=Z,112nm							
CHTO	**Chiang Mai**	**82.37**	**296**	*eP*	**P**	**14 12 10.7**	**-0.8**
CHTO	**Chiang Mai**	**82.37**	**296**	*eP*	**P**	**14 12 10.7**	**-0.8**
UTTA	**Uttaradit**	**82.63**	**294**	P	**P**	**14 12 13.1**	**+0.3**
	comp=Z,5.7nm,1.4s							
UBPT	**Khong Chiam**	**82.66**	**289**	P	**P**	**14 12 13.0**	**0.0**
	comp=Z,26nm,1.5s							
CMAR	**Chiang Mai Arr**	**82.69**	**296**	P	**P**	**14 12 12.5**	**-0.6**
	comp=Z,12nm,0.9s,baz=6.1,slow=5.5,SNR=57							
CMAR				pP	**pP**	**14 12 37.0**	**+0.7**	
	comp=Z,12nm,0.8s,baz=8.0,slow=5.8,SNR=8.4							
CMAR				LR	LR	14 51 43.1		
	comp=Z,114nm,19.3s,baz=350,slow=38							
IDI	**Anoyia**	**82.93**	**3**	P	**P**	**14 12 12.0**	**-2.3**
	comp=Z,4.8nm,0.5s,baz=30,slow=10,SNR=3.4							
PBKT	**Sadao Pong**	**83.49**	**293**	P	**P**	**14 12 16.9**	**-0.4**
	comp=Z,12nm,1.2s,comp=Z,860nm							
MMAI	**Mount Meron Ar**	**85.08**	**354**	P	**P**	**14 12 25.2**	**-0.1**
	comp=Z,1.0nm,0.4s,baz=338,slow=3.1,SNR=5.4							
TBI	**Tubuai**	**85.14**	**178**	*e*LR	LR	14 39 24.7		
	comp=Z,265nm,34.2s							
SRAK	**Srakaew**	**85.29**	**291**	P	**P**	**14 12 25.9**	**-0.5**
	comp=Z,58nm,0.9s							
ASF	**Jabal al Asfar**	**85.84**	**353**	P	**P**	**14 12 28.6**	**-0.5**
	comp=Z,6.3nm,0.9s,baz=273,slow=0.4,SNR=12							
ASF				pP	**pP**	**14 12 53.0**	**+0.7**	
	comp=Z,7.3nm,0.9s,baz=220,slow=0.9,SNR=4.0							
ATAH	**Atahualpa**	**88.41**	**108**	LR	LR	14 54 32.4		
	comp=Z,102nm,20.8s,baz=12,slow=37							
EIL	**Elat**	**88.44**	**354**	P	**P**	**14 12 39.8**	**-1.7**
	comp=Z,11nm,0.9s,baz=34,slow=2.6,SNR=8.7							
EIL				pP	**pP**	**14 13 04.8**	**0.0**	
	comp=Z,9.8nm,0.9s,baz=240,slow=4.0,SNR=3.2							
DZM	**Mont Dzumac**	**90.34**	**219**	*e*LR	LR	14 41 46.0		
	comp=Z,307nm,27.1s							

PTGA	**Pitinga**	**91.31**	**89**	*eP*	**P**	**14 12 55.3**	**+0.2**
WRA	**Warramunga Arr**	**100.31**	**247**	P	**Pdif**	**14 13 34.0**	**-1.7**
	comp=Z,1.0nm,0.9s,baz=32,slow=5.7,SNR=5.4							
WRA				pP	pP	14 13 57.8	-1.5	
	comp=Z,1.3nm,1.1s,baz=28,slow=6.8,SNR=2.8							
WRA				PKiKP	**PKiKP**	**14 18 01.4**	**-0.9**	
	comp=Z,0.5nm,0.5s,baz=5.2,slow=1.7,SNR=7.9							
WRA	**Warramunga Arr**	**100.31**	**247**	P	**Pdif**	**14 13 34.0**	**-1.7**
TORD	**Torodi Ar. Bea**	**102.09**	**27**	PP	PP	14 18 04.2	+8.6	
	comp=Z,0.3nm,0.3s,baz=320,slow=7.6,SNR=3.3							
FITZ	**Fitzroy Crossi**	**102.57**	**255**	PP	PP	14 18 03.8	+3.8	
	comp=Z,1.8nm,0.9s,baz=2.8,slow=6.8,SNR=2.9							
ASAR	**Alice Springs**	**103.78**	**246**	Pdiff	**Pdif**	**14 13 51.0**	**-0.1**
	comp=Z,0.3nm,0.6s,baz=25,slow=5.0,SNR=6.9							
ASAR				PKiKP	**PKiKP**	**14 18 07.0**	**-1.6**	
	comp=Z,0.4nm,0.4s,baz=68,slow=1.3,SNR=12							
STKA	**Stephens Creek**	**107.89**	**235**	PKiKP	**PKiKP**	**14 18 12.7**	**-3.1**
	comp=Z,1.6nm,0.6s,baz=65,slow=2.1,SNR=4.2							
KMBO	**Kilima Mbogo**	**118.85**	**350**	PKP	**PKPdf**	**14 18 36.2**	**-1.5**
	comp=Z,2.4nm,0.7s,baz=10,slow=8.7,SNR=5.6							
KMBO				pPKP	**pPKPdf**	**14 19 01.4**	**-0.7**	
	comp=Z,3.3nm,0.8s,baz=8.0,slow=4.4,SNR=3.9							
PLCA	**Paso Flores**	**121.10**	**119**	PKP	**PKPdf**	**14 18 40.6**	**-0.3**
	comp=Z,4.1nm,1.1s,baz=38,slow=4.7,SNR=4.2							
PLCA				pPKP	**pPKPdf**	**14 19 04.2**	**-1.0**	
	comp=Z,2.5nm,0.8s,baz=3.4,slow=1.0,SNR=2.9							
LSZ	**Lusaka**	**133.26**	**1**	PKP	**PKPdf**	**14 19 05.1**	**+0.2**
	comp=Z,1.1nm,0.4s,baz=253,slow=6.2,SNR=3.3							
LSZ				pPKP	**pPKPdf**	**14 19 29.8**	**+0.6**	
	comp=Z,3.2nm,0.6s,baz=3.5,slow=2.2,SNR=3.6							
TSUM	**Tsumeb**	**136.48**	**15**	PKP	**PKPdf**	**14 19 10.6**	**-0.2**
	comp=Z,4.1nm,0.9s,baz=18,slow=2.3,SNR=5.8							
TSUM				pPKP	**pPKPdf**	**14 19 35.2**	**0.0**	
	comp=Z,13nm,0.8s,baz=325,slow=3.6,SNR=11							
MATP	**Matopo**	**138.38**	**0**	PKhKP	PKPpre	14 19 07.1		
	comp=Z,0.8nm,0.5s,baz=259,slow=16,SNR=3.1							
MATP				PKP	**PKPdf**	**14 19 13.1**	**-1.3**	
	comp=Z,1.3nm,0.4s,baz=33,slow=2.9,SNR=5.4							
VNDA	**Vanda**	**142.28**	**195**	PKhKP	PKPpre	14 19 14.8		
	comp=Z,2.1nm,0.9s,baz=8.9,slow=2.4,SNR=6.8							
LBTB	**Lobatse**	**142.90**	**5**	PKhKP	PKPpre	14 19 17.8		
	comp=Z,3.7nm,0.5s,baz=294,slow=0.7,SNR=5.9							
LBTB				PKP	**PKPdf**	**14 19 21.5**	**-0.8**	
	comp=Z,3.7nm,0.5s,baz=294,slow=1.2,SNR=5.3							
LBTB				pPKP	pPKPdf	14 19 46.9	+0.2	
	comp=Z,10nm,0.8s,baz=15,slow=2.7,SNR=5.0							
BOSA	**Boshof**	**146.46**	**5**	PKPbc	**PKPbc**	**14 19 29.5**	**-0.4**
	comp=Z,39nm,1.0s,baz=357,slow=3.0,SNR=21							
BOSA				pPKPbc	pPKPbc	14 19 54.5	+0.5	
	comp=Z,50nm,0.8s,baz=6.5,slow=2.1,SNR=12							
SUR	**Sutherland**	**149.87**	**13**	PKPbc	**PKPbc**	**14 19 38.9**	**+0.1**
	comp=Z,0.5nm,0.5s,baz=268,slow=2.0,SNR=14							
SUR				pPKPbc	**pPKPbc**	**14 20 02.6**	**-0.4**	
	comp=Z,4.0nm,0.8s,baz=301,slow=3.5,SNR=9.8							

*ISCJB **28** 14:03:23.3±0.9, 11°.11S±0°.08×164°.58E±0°.10, h29km, mb4.0/6, MS3.5/5, Error ellipse: s-maj=15.8km s-min=8.1km az=144.7*
*IDC **28** 14:03:27.9±3.5, 11°.10S×164°.51E, h55km±29km, mb3.8/6, mb1 4.0/8, mb1mx3.7/43, mbtmp4.2/8, ML4.4/2, MS3.5/8, Ms1 3.5/8, ms1mx3.2/32, Error ellipse: s-maj=29.0km s-min=18.3km az=58.0*
ISC 28 14:03:25.1±1.1, 11°.01S±0°.10×164°.6E±0°.1, h29km, n20, σ1s24/11, mb4.0/6, MS3.6/5, Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m	s ISC
HNR	**Honiara**	**4.86**	**288**	P	**Pn**	**14 04**	**36.9**	**+0.6**
	24nm,0.3s,baz=154,slow=8.4,SNR=11							
HNR				S	**Sn**	**14 05**	**32.5**	**+0.9**
	baz=214,slow=18,SNR=1.5							
HNR				LR	LR	14 06 38.5		
	comp=Z,506nm,19.5s,baz=142,slow=40							
HNR	**Honiara**	**4.86**	**288**	P	Pn	14 04 30.0	-6.3	
DZM	**Mont Dzumac**	**11.14**	**171**	P	**Pn**	**14 06**	**04.5**	**+1.9**
	1.6nm,0.3s,baz=355,slow=10,SNR=37							
DZM				S	**Sn**	**14 08**	**05.3**	**-0.9**
	0.1nm,0.3s,baz=198,slow=19,SNR=2.4							
DZM				LR	LR	14 09 47.1		
	comp=Z,415nm,18.1s,baz=21,slow=34							
PMG	**Port Moresby**	**17.25**	**274**	LR	LR	14 14 00.1		
	comp=Z,200nm,18.9s,baz=110,slow=37							
CTA	**Charters Tower**	**19.84**	**241**	P	**Pn**	**14 07**	**55.8**	**+0.2**
	0.4nm,0.3s,baz=77,slow=13,SNR=10							
H11S2	**WAKE ISLAND Hy**	**29.39**	**4**	T	T	14 40 03.5		
	baz=184,slow=76,SNR=14							
H11S3	**WAKE ISLAND Hy**	**29.39**	**4**	T	T	14 40 04.5		
	baz=184,slow=76,SNR=7.7							
H11S1	**WAKE ISLAND Hy**	**29.40**	**4**	T	T	14 40 02.9		
	baz=184,slow=76,SNR=13							
STKA	**Stephens Creek**	**29.71**	**222**	P	**P**	**14 09**	**28.8**	**0.0**
	3.6nm,0.8s,baz=63,slow=7.6,SNR=4.8							
STKA				LR	LR	14 19 59.0		
	comp=Z,170nm,20.8s,baz=28,slow=34							
WRA	**Warramunga Arr**	**30.45**	**249**	P	**P**	**14 09**	**34.5**	**-1.1**
	1.8nm,0.9s,baz=75,slow=9.1,SNR=7.8							
H11N1	**WAKE ISLAND Hy**	**30.61**	**4**	T	T	14 41 35.7		
	baz=184,slow=76,SNR=9.9							
H11N3	**WAKE ISLAND Hy**	**30.62**	**4**	T	T	14 41 35.2		
	baz=184,slow=76,SNR=8.3							
H11N2	**WAKE ISLAND Hy**	**30.63**	**4**	T	T	14 41 36.4		
	baz=184,slow=76,SNR=7.1							
ASAR	**Alice Springs**	**31.82**	**243**	P	**P**	**14 09**	**45.4**	**-2.2**
	0.8nm,0.7s,baz=74,slow=9.8,SNR=5.1							
ASAR				LR	LR	14 21 01.8		
	comp=Z,60nm,20.6s,baz=76,slow=33							
FITZ	**Fitzroy Crossi**	**38.32**	**255**	LR	LR	14 25 16.7		
	comp=Z,45nm,20.8s,baz=34							
PETK	**Petropavlovsk-**	**64.14**	**355**	LR	LR	14 35 53.5		
	comp=Z,43nm,19.8s,baz=157,slow=30							
SONM	**Songino Array**	**77.98**	**324**	P	**P**	**14 15**	**21.2**	**+0.3**
	1.0nm,1.0s,baz=134,slow=6.2,SNR=1.9							
ILAR	**Eielson Array**	**83.83**	**19**	P	**P**	**14 15**	**51.5**	**0.0**
	1.3nm,0.9s,baz=223,slow=5.0,SNR=8.3							
MKAR	**Makanchi Array**	**92.74**	**317**	P	**P**	**14 16**	**34.1**	**-0.6**
	1.5nm,0.7s,baz=123,slow=5.3,SNR=5.8							
NRIK	**Noril'sk**	**95.70**	**340**	LR	LR	15 01 53.2		
	comp=Z,20nm,18.4s,baz=128,slow=37							

*ISCJB **28** 14:07:53.0±0.5, 30°.99N±0°.06×138°.6E±0°.1, h394km, mb3.5/12, Error ellipse: s-maj=13.1km s-min=7.4km az=174.8*
*IDC **28** 14:07:54.3±0.8, 31°.02N×138°.41E, h385km±8km, mb3.2/12, mb1 3.3/15, mb1mx3.2/47, mbtmp4.0/15, Error ellipse: s-maj=20.8km s-min=10.3km az=80.0*
*JMA **28** 14:07:56.9±0.2, 31°.41N×139°.20E, h405km, M3.9*
ISC 28 14:07:54.3±0.7, 31°.08N±0°.08×138°.8E±0°.1, h394km, n26, σ2s10/33, mb3.5/12, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m	s ISC
JHCJ	**Hachijojimakas**	**2.16**	**23**	P	**Pn**	**14 08**	**51.9**	**+1.3**
JHJ	**Hachijo jima 2**	**2.19**	**22**	P	**Pn**	**14 08**	**52.6**	**+1.7**
	52nm,0.3s,baz=90,slow=20,SNR=53							
JHJ				S	**S**	**14 09**	**38.1**	**+1.5**
	83nm,0.3s,baz=72,slow=22,SNR=11							
JHJ2	**Mitsune**	**2.20**	**23**	P	**Pn**	**14 08**	**52.5**	**+1.6**
BSO3	**Boso 3**	**3.98**	**21**	P	**Pn**	**14 09**	**05.9**	**+0.6**
BSO1	**Boso 1**	**4.00**	**27**	P	**Pn**	**14 09**	**06.1**	**+0.8**
JAO	**Obara**	**4.37**	**343**	P	**Pn**	**14 09**	**11.2**	**+1.7**
JHU	**Hanno**	**4.77**	**5**	P	**Pn**	**14 09**	**13.7**	**+0.2**
JHU				S	**S**	**14 10**	**13.7**	**-4.3**
JRY	**Ryogami san**	**4.92**	**1**	P	**Pn**	**14 09**	**16.5**	**+1.4**
JRY				*eS*	**S**	**14 10**	**17.8**	**-3.0**
CBIJ	**Chichi jima**	**4.95**	**142**	*eS*	**S**	**14 10**	**17.3**	**-4.3**
JAG	**Ashikaga**	**5.36**	**6**	P	**Pn**	**14 09**	**19.4**	**-0.2**
JAG				*eS*	**S**	**14 10**	**23.5**	**-5.6**
MJAR	**Matsushiro Arr**	**5.47**	**355**	P	**Pn**	**14 09**	**20.4**	**-0.4**
	2.6nm,0.3s,baz=170,slow=11,SNR=18							
MJAR				S	**S**	**14 10**	**30.2**	**-1.1**
	0.8nm,0.3s,baz=276,slow=28,SNR=3.5							
MAT	**Matsushiro**	**5.47**	**355**	P	**Pn**	**14 09**	**21.5**	**+0.7**
MAT				*eS*	**S**	**14 10**	**27.6**	**-3.7**
KLR	**Kul'dur**	**18.89**	**346**	P	**P**	**14 11**	**48.4**	**+0.2**
	0.4nm,0.3s,baz=166,slow=10,SNR=4.6							
MA2	**Magadan**	**29.61**	**12**	P	**P**	**14 13**	**27.5**	**+2.8**
	5.5nm,0.8s,baz=180,slow=8.1,SNR=4.0							
SONM	**Songino Array**	**29.81**	**313**	P	**P**	**14 13**	**26.0**	**-0.7**
	1.0nm,0.4s,baz=128,slow=9.5,SNR=5.3							
TIXI	**Tiksi**	**40.98**	**355**	P	**P**	**14 15**	**01.1**	**+1.1**
	1.9nm,0.5s,baz=166,slow=4.2,SNR=2.5							
ZALV	**Zalesovo Beam**	**44.55**	**317**	P	**P**	**14 15**	**28.5**	**-0.2**
	0.8nm,0.4s,baz=86,slow=9.2,SNR=3.4							

MKAR	**Makanchi Array**	**45.69**	**307**	P	**P**	**14 15**	**36.8**	**-0.9**
	1.4nm,0.4s,baz=76,slow=11,SNR=20							
KURBB	**Kurchatov Arra**	**48.16**	**312**	P	**P**	**14 15**	**55.3**	**-1.1**
	baz=90,slow=6.8							
WRA	**Warramunga Arr**	**50.91**	**185**	P	**P**	**14 16**	**16.9**	**-0.3**
	2.0nm,0.6s,baz=1.2,slow=7.7,SNR=25							
WRA				PcP	**PcP**	**14 17**	**28.8**	**+1.6**
	1.2nm,1.1s,baz=2.1,slow=4.4,SNR=3.1							
ASAR	**Alice Springs**	**54.64**	**186**	P	**P**	**14 16**	**44.0**	**-0.1**
	0.7nm,0.5s,baz=358,slow=5.5,SNR=20							
ILAR	**Eielson Array**	**55.70**	**30**	P	**P**	**14 16**	**52.7**	**+1.7**
	0.3nm,0.5s,baz=287,slow=7.6,SNR=5.5							
INK	**Inuvik**	**60.67**	**25**	P	**P**	**14 17**	**27.1**	**+2.2**
	1.0nm,0.6s,baz=282,slow=4.2,SNR=3.8							
FINES	**FINESS Array B**	**73.07**	**332**	P	**P**	**14 18**	**42.8**	**+0.6**
	0.6nm,0.7s,baz=79,slow=8.6,SNR=2.7							
AKASG	**Malin Array Be**	**77.66**	**322**	P	**P**	**14 19**	**07.0**	**-1.3**
	0.6nm,0.4s,baz=55,slow=5.4,SNR=3.0							
BRTR	**Keskin Array B**	**81.14**	**311**	P	**P**	**14 19**	**26.9**	**-0.4**
	0.5nm,0.5s,baz=95,slow=1.8,SNR=3.4							

*CSEM **28** 14:12:25.1±0.6, 37°.85N×41°.76E, h2km, MD2.5, Error ellipse: s-maj=10.6km s-min=7.6km az=120.0*
*ISK **28** 14:12:26.6, 37°.88N×41°.61E, h4km, MD2.5*
*DDA **28** 14:12:29.8, 38°.01N×41°.38E, h7km, Ml2.8*
ISC 28 14:12:27.4±2.5, 37°.85N±0°.05×41°.6E±0°.1, h7km±10km, n14, σ1s30/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m	s ISC
BTMN	**Batman**	**0.29**	**278**	*i P*	**Pg**	**14 12**	**32.1**	**-1.0**
BTMN				*i* S	**Sg**	**14 12**	**39.1**	**+2.1**
BTMN	**Batman**	**0.29**	**278**	P	**Pg**	**14 12**	**32.1**	**-1.0**
BTMN				S	**Sg**	**14 12**	**39.1**	**+2.1**
SVAN	**Silvan-Diyarba**	**0.46**	**311**	*e*PG	**Pg**	**14 12**	**35.5**	**-0.7**
SVAN				*e*SG	**Sg**	**14 12**	**42.1**	**-0.1**
SVAN	**Silvan-Diyarba**	**0.46**	**311**	*e*Pg	**Pg**	**14 12**	**35.5**	**-0.7**
SVAN				*e*Sg	**Sg**	**14 12**	**42.2**	**-0.1**
MARD	**Mardin**	**0.86**	**232**	*i* P	**Pg**	**14 12**	**43.9**	**-0.1**
MARD				*i* S	**Sn**	**14 12**	**59.1**	**+0.2**
MAZI	**Mazidag**	**1.02**	**248**	*e*PG	**Pg**	**14 12**	**46.7**	**-0.2**
MAZI				*e*SG	**Sn**	**14 13**	**01.4**	**-1.3**
MAZI	**Mazidag**	**1.02**	**248**	*e*Pg	**Pg**	**14 12**	**46.7**	**-0.2**

3.4nm,0.5s,baz=6.9,slow=7.0,SNR=28
ASAR Alice Springs 62.89 189 P **P 14 26 45.6 +0.1**
1.6nm,0.7s,baz=357,slow=5.4,SNR=13
FINES FINESS Array B 67.54 332 P **P 14 27 15.2 -0.1**
0.8nm,0.5s,baz=38,slow=9.6,SNR=5.6
HFS Hagfors 72.70 336 P **P 14 27 47.3 +0.3**
0.8nm,0.3s,baz=37,slow=7.6,SNR=6.8
NOA NORSAR Array B 72.75 338 P **P 14 27 47.5 +0.1**
1.1nm,0.7s,baz=40,slow=6.0,SNR=5.5
AKASG Malin Array Be 73.35 322 P **P 14 27 50.9 -0.1**
1.0nm,0.4s,baz=46,slow=5.5,SNR=4.7
PDAR Pinedale Array 75.57 46 P **P 14 28 04.8 +0.4**
0.4nm,0.5s,baz=234,slow=1.3,SNR=3.9
TXAR Lajitas Array 88.12 53 P **P 14 29 11.0 +0.5**
0.2nm,0.3s,baz=310,slow=4.2,SNR=4.5
TXAR Lajitas Array 88.12 53 P **P 14 29 11.0 +0.5**

*ISCJB **28** 14:18:12.7±0.6,39.°18N±0.°03×27.°96E±0.°03,h2km±6km, Error ellipse: s-maj=5.3km s-min=4.1km az=17.0*
*DDA **28** 14:18:12.9,39.°13N×27.°96E,h7km,Ml2.7*
*ISK **28** 14:18:12.8,39.°19N×27.°92E,h9km,ML2.4*
*CSEM **28** 14:18:13.2±0.2,39.°18N×27.°97E,h8km,ML2.4, Error ellipse: s-maj=3.8km s-min=3.5km az=71.0*
ISC 28 14:18:12.9±1.1, 39.°18N±0.°02×27.°94E±0.°02, h9km±10km, n31, σ0s74/42, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AKS	**Akhisar**	**0.32**	**199**	*e*PG		**Pg**	**14 18 19.5**	**+0.3**
AKS	**Akhisar**	**0.32**	**199**	*e*Pg		**Pg**	**14 18 19.5**	**+0.3**
BALB	**Balikesir**	**0.46**	**354**	*e*PG		**Pg**	**14 18 22.1**	**+0.1**
BALB	**Balikesir**	**0.46**	**354**	*e*Pg		**Pg**	**14 18 22.1**	**+0.1**
DEMI	**Demirci**	**0.62**	**102**	*i* P		**Pg**	**14 18 24.9**	**0.0**
DEMI				*i* S		**Sb**	**14 18 33.9**	**-0.8**
DEMI	**Demirci**	**0.62**	**102**	P		**Pg**	**14 18 24.9**	**0.0**
DEMI				S		**Sb**	**14 18 33.9**	**-0.8**
MANT	**Manisa**	**0.84**	**145**	*i* P		**Pg**	**14 18 28.2**	**-0.9**
MANT				*i* S		**Sg**	**14 18 39.8**	**-0.3**
MANT	**Manisa**	**0.84**	**145**	P		**Pg**	**14 18 28.2**	**-0.9**
MANT				S		**Sg**	**14 18 39.8**	**-0.3**
KULA	**Kula-Manisa**	**0.87**	**140**	*e*PG		**Pb**	**14 18 30.0**	**-0.2**
KULA	**Kula-Manisa**	**0.87**	**140**	*e*Pg		**Pb**	**14 18 30.0**	**-0.2**
GONE	**Gonen-Balikesi**	**0.89**	**347**	*e*PG		**Pg**	**14 18 30.1**	**0.0**
GONE	**Gonen-Balikesi**	**0.89**	**347**	*e*Pg		**Pg**	**14 18 30.1**	**0.0**
IZM	**Izmir**	**0.94**	**214**	*e*PG		**Pb**	**14 18 32.0**	**+0.5**
IZM	**Izmir**	**0.94**	**214**	*e*Pg		**Pb**	**14 18 32.0**	**+0.5**
AYVA	**Ayvalik**	**0.98**	**278**	*i* P		**Pg**	**14 18 31.6**	**-0.2**
AYVA				*i* S		**Sn**	**14 18 46.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.13**	**16**	*e*PN		**Pg**	**14 18 34.4**	**-0.3**
KCTX	**Karacabey (Bur**	**1.13**	**16**	*e*Pn		**Pg**	**14 18 34.4**	**-0.3**
EDC	**Edincik**	**1.17**	**357**	*e*PN		**Pb**	**14 18 35.3**	**0.0**
EDC	**Edincik**	**1.17**	**357**	*e*Pn		**Pb**	**14 18 35.3**	**0.0**
GDZ	**Gediz**	**1.20**	**94**	*i* P		**Pn**	**14 18 36.1**	**+0.1**
GDZ				*i* S		**Sb**	**14 18 51.8**	**+0.2**
GDZ	**Gediz**	**1.20**	**94**	P		**Pn**	**14 18 36.1**	**+0.1**
GDZ				S		**Sb**	**14 18 51.8**	**+0.2**
TVSB	**Tavsanli**	**1.21**	**77**	*e*PN		**Pn**	**14 18 36.9**	**+0.8**
TVSB	**Tavsanli**	**1.21**	**77**	*e*Pn		**Pn**	**14 18 36.9**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**1.23**	**182**	*e*PN		**Pb**	**14 18 36.2**	**-0.2**
AYDB				*e*SN		**Sn**	**14 18 54.2**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**1.23**	**182**	*e*Pn		**Pb**	**14 18 36.2**	**-0.2**
AYDB				*e*Sn		**Sn**	**14 18 54.3**	**+1.1**
URLA	**Izmir**	**1.33**	**233**	*i* P		**Pn**	**14 18 36.1**	**-1.6**
URLA				*i* S		**Sg**	**14 18 57.3**	**+1.5**
BOZC	**Bozcaada**	**1.60**	**295**	*i* P		**Pn**	**14 18 38.8**	**-2.7**
BOZC				*i* S		**Sg**	**14 19 04.4**	**-0.1**
SIGR	**SIGRI**	**1.62**	**272**	*e*PN		**Pn**	**14 18 42.3**	**+0.7**
SIGR	**SIGRI**	**1.62**	**272**	*e*Pn		**Pn**	**14 18 42.3**	**+0.7**
IZI	**Iznik**	**1.65**	**45**	*e*PN		**Pb**	**14 18 43.6**	**0.0**
IZI	**Iznik**	**1.65**	**45**	*e*Pn		**Pb**	**14 18 43.6**	**0.0**

IDC 28 14:18:39.0±3.1, 4.°88S×133.°28E, h0km, mb3.4/1, mb1 3.7/4, mb1mx3.4/44, mbtmp3.5/4, ML3.7/3, Error ellipse: s-maj=125.8km s-min=31.4km az=81.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**15.01**	**176**	Pn		Pn	14 22 10.5	-2.1
	0.2nm,0.3s,baz=352,slow=13,SNR=12							
WRA				Sn		Sn	14 24 49.5	-10
	0.1nm,0.3s,baz=350,slow=24,SNR=3.3							
FITZ	**Fitzroy Crossi**	**15.11**	**209**	Pn		Pn	14 22 14.5	+0.6
	0.3nm,0.3s,baz=37,slow=10,SNR=22							
FITZ				Sn		Sn	14 24 54.7	-7.5
	0.1nm,0.3s,baz=220,slow=17,SNR=1.8							
ASAR	**Alice Springs**	**18.68**	**178**	P		Pn	14 22 59.5	+0.3
	0.3nm,0.3s,baz=6.6,slow=8.7,SNR=18							
MKAR	**Makanchi Array**	**68.31**	**325**	P		P	14 29 42.1	0.0
	0.1nm,0.3s,baz=115,slow=6.8,SNR=2.1							

*ISCJB **28** 14:19:37.6±0.4,27.°89N±0.°04×139.°54E±0.°08,h478km, mb3.6/19, Error ellipse: s-maj=9.0km s-min=5.4km az=178.3*
*JMA **28** 14:19:39.7±0.2,28.°10N×140.°37E,h504km,M4.2*
*IDC **28** 14:19:39.4±1.4,27.°84N×139.°66E,h504km±16km, mb3.2/19,mb1 3.2/24,mb1mx3.1/61,mbtmp4.1/24, Error ellipse: s-maj=15.4km s-min=11.9km az=118.0*
ISC 28 14:19:38.4±0.7, 27.°92N±0.°07×139.°71E±0.°09, h478km, n47, σ1s72/56, mb3.6/19, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**2.35**	**110**	P		**P**	**14 20 44.8**	**+1.4**
CBIJ				*e*S		**S**	**14 21 37.2**	**+1.0**
JHHJ	**Haha-jima-NKT**	**2.55**	**120**	P		**P**	**14 20 46.6**	**+2.0**
JHHJ				*e*S		**S**	**14 21 39.5**	**+1.1**
JHJ	**Hachijo jima 2**	**5.18**	**1**	P		**P**	**14 21 07.1**	**+1.4**
	6.9nm,0.3s,baz=131,slow=22,SNR=6.1							
JHJ				S		**S**	**14 22 16.9**	**-0.2**
	4.7nm,0.3s,baz=258,slow=20,SNR=3.3							
TTO1	**TONANKAI O.B.S**	**6.21**	**337**	P		P	14 21 21.0	+5.6
BSO1	**Boso 1**	**6.80**	**9**	P		**P**	**14 21 23.2**	**+2.2**
BSO3	**Boso 3**	**6.89**	**6**	P		**P**	**14 21 24.3**	**+2.0**
BSO3				*e*S		**S**	**14 22 47.3**	**-0.3**
JIE	**Ise**	**6.94**	**339**	P		**P**	**14 21 27.4**	**+4.3**
BSO4	**Boso 4**	**7.07**	**4**	P		**P**	**14 21 27.2**	**+3.0**
JOD2	**Odawara 2**	**7.34**	**356**	P		**P**	**14 21 29.2**	**+2.0**
JNY	**Yasuok**	**7.58**	**348**	P		**P**	**14 21 32.8**	**+3.1**
JHU	**Hanno**	**7.91**	**357**	P		**P**	**14 21 33.9**	**+0.7**
JHU				S		**S**	**14 23 06.3**	**-1.2**
JRY	**Ryogami san**	**8.10**	**355**	P		**P**	**14 21 36.7**	**+1.5**
JRY				*e*S		**S**	**14 21 38.2**	**+1.1**
JYT	**Yasato**	**8.29**	**3**	P		**P**	**14 21 38.2**	**+1.1**
JYT				*e*S		**S**	**14 23 12.6**	**-2.1**
JAG	**Ashikaga**	**8.48**	**359**	P		**P**	**14 21 39.7**	**+0.5**
JAG				*e*S		**S**	**14 23 16.2**	**-2.3**
MJAR	**Matsushiro Arr**	**8.69**	**352**	P		**P**	**14 21 41.9**	**+0.5**
	1.1nm,0.3s,baz=170,slow=12,SNR=12							
MJAR				S		**S**	**14 23 21.4**	**-1.1**
	0.3nm,0.3s,baz=62,slow=26,SNR=3.8							
JHO	**Hitachi**	**8.69**	**5**	P		**P**	**14 21 41.8**	**+0.4**
JHO				*e*S		**S**	**14 23 20.7**	**-1.9**
JNU	**Nakatsue**	**9.21**	**306**	P		**P**	**14 21 50.2**	**+3.2**
	0.4nm,0.3s,baz=128,slow=4.2,SNR=8.2							
JAMN	**Amaminishikomi**	**9.31**	**274**	P		**P**	**14 21 50.5**	**+2.4**
JFK	**Kawauchi**	**9.47**	**6**	P		**P**	**14 21 51.7**	**+2.0**
JOW	**Kunigami**	**10.22**	**267**	P		**P**	**14 21 59.3**	**+1.3**
	0.9nm,0.3s,baz=116,slow=14,SNR=3.7							
JMK	**Ichinoseki**	**11.07**	**6**	P		**P**	**14 22 08.8**	**+2.0**
JOT	**Ohata**	**13.47**	**4**	P		**P**	**14 22 34.5**	**+2.0**
KSRS	**Korea Array**	**13.73**	**317**	P		**P**	**14 22 39.4**	**+4.1**
	0.4nm,0.3s,baz=136,slow=7.9,SNR=8.4							
JKB	**Kayabe**	**13.97**	**4**	P		**P**	**14 22 39.1**	**+1.3**
JOSM	**Okushiri--Mats**	**14.13**	**359**	P		**P**	**14 22 40.9**	**+1.4**
NEM2	**Nemuro 2**	**16.16**	**16**	P		**P**	**14 23 01.7**	**+0.8**
JTKR	**Abashiri--Toko**	**16.37**	**11**	P		**P**	**14 23 04.6**	**+1.5**
USRK	**Ussuriysk Ar.**	**17.39**	**341**	P		**P**	**14 23 15.3**	**+1.7**
	0.2nm,0.3s,baz=160,slow=7.0,SNR=5.7							
KLR	**Kul'dur**	**22.14**	**346**	P		**P**	**14 23 58.1**	**+0.8**
	1.1nm,0.5s,baz=166,slow=8.3,SNR=3.8							
PETK	**Petropavlovsk-**	**28.47**	**23**	P		**P**	**14 24 54.7**	**+1.3**
	1.1nm,0.5s,baz=202,slow=5.3,SNR=10							
MA2	**Magadan**	**32.55**	**10**	P		**P**	**14 25 28.4**	**-0.1**
	3.3nm,0.7s,baz=191,slow=10,SNR=4.1							
SONM	**Songino Array**	**32.60**	**317**	P		**P**	**14 25 28.4**	**-1.0**
	0.7nm,0.6s,baz=125,slow=10,SNR=4.1							
SEY	**Seymchan**	**35.99**	**10**	P		**P**	**14 25 58.0**	**+0.5**
	1.7nm,0.6s,baz=225,slow=8.1,SNR=6.3							
CMAR	**Chiang Mai Arr**	**38.49**	**265**	P		**P**	**14 26 17.6**	**-1.1**
	0.6nm,0.5s,baz=51,slow=9.0,SNR=5.1							
ZALV	**Zalesovo Beam**	**47.42**	**319**	P		**P**	**14 27 27.4**	**-0.9**
	1.2nm,0.5s,baz=97,slow=7.4,SNR=4.5							
WRA	**Warramunga Arr**	**47.87**	**187**	P		**P**	**14 27 30.5**	**-1.6**
	0.6nm,0.3s,baz=1.6,slow=7.7,SNR=8.0							
MKAR	**Makanchi Array**	**48.25**	**309**	P		**P**	**14 27 34.1**	**-0.6**
	0.9nm,0.4s,baz=67,slow=9.8,SNR=13							
KURBB	**Kurchatov Arra**	**50.89**	**314**	P		**P**	**14 27 53.4**	**-0.7**
	5.4nm,0.6s,baz=91,slow=8.1,SNR=30							
ASAR	**Alice Springs**	**51.59**	**187**	P		**P**	**14 27 58.1**	**-1.5**
	0.2nm,0.4s,baz=1.6,slow=4.8,SNR=4.1							
BVAR	**Borovoye Array**	**55.94**	**317**	P		**P**	**14 28 29.7**	**-0.4**
	4.7nm,0.4s,baz=91,slow=6.9,SNR=20							
ILAR	**Eielson Array**	**58.05**	**29**	P		**P**	**14 28 43.8**	**-0.6**
	0.8nm,0.4s,baz=248,slow=5.6,SNR=18							
INK	**Inuvik**	**63.20**	**25**	P		**P**	**14 29 18.3**	**0.0**
	0.4nm,0.3s,baz=288,slow=3.2,SNR=6.0							
AKTO	**Aktyubinsk**	**63.90**	**315**	P		**P**	**14 29 22.3**	**-0.9**
	1.6nm,0.6s,baz=84,slow=14,SNR=5.9							
YKA	**Yellowknife Ar**	**72.45**	**28**	P		**P**	**14 30 14.7**	**-0.4**
	1.6nm,0.7s,baz=298,slow=6.3,SNR=4.5							
FINES	**FINESS Array B**	**76.22**	**333**	P		**P**	**14 30 35.6**	**-0.9**
	1.7nm,0.3s,baz=67,slow=5.4,SNR=19							
HFS	**Hagfors**	**81.78**	**336**	P		**P**	**14 31 04.3**	**-1.9**
	0.6nm,0.5s,baz=86,slow=4.6,SNR=4.5							
NOA	**NORSAR Array B**	**82.02**	**337**	P		**P**	**14 31 05.6**	**-1.9**
	0.5nm,0.6s,baz=44,slow=5.0,SNR=3.1							

*ISCJB **28** 14:20:24.8±0.4, 18.°75N±0.°06×68.°89W±0.°03, h129km, Error ellipse: s-maj=8.1km s-min=3.1km az=12.1*
*RSPR **28** 14:20:27.4, 18.°94N×68.°80W, h103km±2km, MD4.0/19*
ISC 28 14:20:25.2±1.0, 18.°75N±0.°08×68.°89W±0.°04, h129km, n43, σ0s90/48, 15C-7D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
DR12	**Loma Pena Alta**	**0.46**	**275**	*i* P		**Pn**	**14 20 43.5**	**-0.5**
DR12				*e*S		**Sn**	**14 20 56.4**	**-1.9**
DR08	**Loma La Naviza**	**1.09**	**281**	*e*P		**Pn**	**14 20 49.1**	**+0.1**
DR08				*e*S		**Sn**	**14 21 06.6**	**-0.4**
IMPR	**Mona Island, P**	**1.13**	**126**	*i* P		**Pn**	**14 20 49.7**	**+0.3**
IMPR	**Mona Island, P**	**1.13**	**126**	*e*S		**Sn**	**14 21 06.6**	**-1.0**
IDE	**Isla Desecheo**	**1.40**	**105**	*e*P		**Pn**	**14 20 52.4**	**+0.3**
IDE	**Isla Desecheo**	**1.40**	**105**	*e*S		**Sn**	**14 21 10.7**	**-1.9**
AGPR	**Aguadilla, PR**	**1.71**	**99**	*e*P		**Pn**	**14 20 56.0**	**+0.3**
AGPR	**Aguadilla, PR**	**1.71**	**99**	*e*S		**Sn**	**14 21 17.9**	**-1.0**
LSP	**Las Mesas**	**1.81**	**108**	*e*P		**Pn**	**14 20 58.4**	**+1.5**
LSP	**Las Mesas**	**1.81**	**108**	*e*S		**Sn**	**14 21 20.8**	**-0.2**
CRPR	**Cabo Rojo, PR**	**1.85**	**113**	*e*P		**Pn**	**14 20 57.8**	**+0.5**
CRPR	**Cabo Rojo, PR**	**1.85**	**113**	*e*S		**Sn**	**14 21 21.9**	**+0.1**
GBPR	**Guanica, Bosqu**	**2.06**	**112**	*e*P		**Pn**	**14 21 01.0**	**+1.1**
GBPR	**Guanica, Bosqu**	**2.06**	**112**	*e*S		**Sn**	**14 21 26.6**	**+0.1**
AOPR	**Arecibo Observ**	**2.07**	**101**	*e*P		**Pn**	**14 21 00.8**	**+0.8**
AOPR	**Arecibo Observ**	**2.07**	**101**	*e*S		**Sn**	**14 21 26.5**	**-0.2**
SDDR	**Presa de Saban**	**2.28**	**276**	*e*P		**Pn**	**14 21 04.6**	**+2.0**
SDDR				*e*S		**Sn**	**14 21 33.0**	**+1.6**
OBIP	**Obispado Ponce**	**2.28**	**108**	*e*P		**Pn**	**14 21 03.6**	**+1.0**
OBIP	**Obispado Ponce**	**2.28**	**108**	*e*S		**Sn**	**14 21 31.2**	**-0.1**
CELP	**Cerrillos**	**2.30**	**107**	*e*P		**Pn**	**14 21 03.8**	**+1.0**
CELP				*e*S		**Sn**	**14 21 31.4**	**-0.3**
ICMP	**Isla Caja de M**	**2.41**	**111**	*e*P		**Pn**	**14 21 03.9**	**-0.3**
ICMP	**Isla Caja de M**	**2.41**	**111**	*e*S		**Sn**	**14 21 34.0**	**-0.2**
SJG	**San Juan**	**2.68**	**103**	*e*S		**Sn**	**14 21 41.4**	**+1.0**
SJG	**San Juan**	**2.68**	**103**	*e*P		**Pn**	**14 21 08.3**	**+0.6**
CBYP	**Canovanas**	**2.92**	**99**	*e*P		**Pn**	**14 21 11.2**	**+0.4**
CBYP	**Canovanas**	**2.92**	**99**	*e*P		**Pn**	**14 21 11.4**	**+0.6**
CBYP				*e*S		**Sn**	**14 21 45.3**	**-0.7**
CBYP	**Canovanas**	**2.92**	**99**	*e*S		**Sn**	**14 21 46.2**	**+0.2**
HUMP	**Col San Antoni**	**2.95**	**101**	*e*P		**Pn**	**14 21 12.8**	**+1.6**
HUMP	**Col San Antoni**	**2.95**	**101**	*e*S		**Sn**	**14 21 46.5**	**-0.1**
HUMP	**Col San Antoni**	**2.95**	**101**	*e*S		**Sn**	**14 21 46.5**	**-0.7**
CULB	**Culebra**	**3.44**	**97**	*e*P		**Pn**	**14 21 17.6**	**+0.1**
GRTK	**Grand Turk**	**3.46**	**323**	*e*P		**Pn**	**14 21 18.4**	**+0.6**
GRTK				*e*S		**Sn**	**14 21 57.7**	**-0.7**
STVI	**Saint Thomas**	**3.76**	**95**	*e*P		**Pn**	**14 21 22.3**	**+0.5**
STVI	**Saint Thomas**	**3.76**	**95**	*e*P		**Pn**	**14 21 22.8**	**+1.1**
STVI	**Saint Thomas**	**3.76**	**95**	*e*S		**Sn**	**14 22 05.2**	**-0.4**
CDVI	**St. Croix**	**4.05**	**104**	*e*S		**Sn**	**14 22 13.9**	**+1.5**
ABV	**Anegada**	**4.32**	**90**	*e*P		**Pn**	**14 21 29.8**	**+0.6**
ABV	**Anegada**	**4.32**	**90**	*e*S		**Sn**	**14 22 18.7**	**-0.3**
SDV	**Santo Domingo**	**9.95**	**190**	*e*P		**Pn**	**14 22 45.5**	**+0.4**
CBRI	**Barrientos, No**	**11.61**	**200**	*e*P		**Pn**	**14 23 06.5**	**-0.7**
GRMC	**Gramalote, San**	**11.61**	**200**	*e*P		Pn	14 23 02.5	-4.8
BARC	**Barichara**	**12.79**	**200**	*e*P		**Pn**	**14 23 21.3**	**-1.4**
RUSC	**La Rusia**	**13.42**	**198**	*e*P		**Pn**	**14 23 30.6**	**-0.5**

JMA 28 14:23:18.2, 36.°07N×137.°56E, h8km±1km, M1.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JGN	**Niukaw**	**0.25**	**308**	P		Pg	14 23 23.3	+0.1
JNT	**Takato**	**0.51**	**112**	P		Pg	14 23 27.9	-0.2
JNT				S		Sg	14 23 34.4	-0.3
JNG	**Nsakai**	**0.55**	**52**	P		Pg	14 23 29.1	+0.2
JNG				S		Sg	14 23 36.3	+0.2
MAT	**Matsushiro**	**0.70**	**48**	P		Pg	14 23 31.6	-0.2
MAT				S		Sg	14 23 40.6	-0.4
MAT	**Matsushiro**	**0.70**	**48**	P		Pg	14 23 31.7	-0.1
MAT				S		Sg	14 23 40.6	-0.4

*ISCJB **28** 14:47:58.3±0.3, 8.°47N±0.°03×77.°40W±0.°04, h44km, mb4.2/21, MS3.5/6, Error ellipse: s-maj=5.6km s-min=3.6km az=164.1*
*RSNC **28** 14:47:58.4±0.6, 8.°49N×77.°54W, h32km±15km, ML4.0*
*NEIC **28** 14:48:01.3±1.2, 8.°39N×77.°22W, h57km±11km, mb4.3/3, Error ellipse: s-maj=13.1km s-min=8.5km az=85.0*
*IDC **28** 14:48:03.3±2.5, 8.°33N×77.°23W, h77km±23km, mb3.8/16, mb1 4.0/19, mb1mx3.9/31, mbtmp4.1/19, MS3.6/10, Ms1 3.6/10, ms1mx3.3/39, Error ellipse: s-maj=18.4km s-min=13.7km az=70.0*
ISC 28 14:47:59.8±0.5, 8.°43N±0.°04×77.°37W±0.°05, h44km, n57, σ1s90/70, mb4.2/21, MS3.5/6, 2C, Panama-Colombia border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
DBBC	**Dabeiba**	**1.81**	**141**	*e*P		**Pn**	**14 48 28.7**	**+0.1**
DBBC				*e*S		**Sn**	**14 48 52.0**	**+1.6**
DBBC				*i*			14 48 56.5	
	comp=Z,237nm,0.3s							
SOLC	**Bahia Solano**	**2.19**	**181**	*e*P		**Pn**	**14 48 31.8**	**-1.9**
SOLC				*i*			14 48 41.6	
	comp=Z,282nm,0.4s							
SOLC				*e*S		**Sn**	**14 48 59.6**	**+0.1**
SJCC	**San Jacinto, C**	**2.60**	**56**	*e*P		**Pn**	**14 48 39.1**	**-0.4**
SJCC				*e*S		**Sn**	**14 49 10.7**	**+0.7**
SJCC				*i*			14 49 23.8	
	comp=Z,150nm,0.6s							
HELC	**Santa Helena**	**2.87**	**141**	*e*P		**Pn**	**14 48 43.8**	**+0.3**
HELC				*e*S		**Sn**	**14 49 19.5**	**+2.5**
HELC				*i*			14 49 25.0	
	comp=Z,249nm,0.3s							
GUYC	**Guyana, Colomb**	**3.74**	**148**	*e*P		**Pn**	**14 48 56.0**	**+0.5**
GUYC				*e*S		**Sn**	**14 49 40.0**	**+1.5**
GUYC				*i*			14 49 45.6	
	comp=Z,142nm,0.6s							
BRRC	**Barranca, Sant**	**3.85**	**110**	*e*P		**Pn**	**14 48 57.4**	**+0.8**
BRRC				*i*			14 49 50.4	
	comp=Z,671nm,0.4s							
OCAC	**Ocana**	**4.01**	**92**	*e*P		**Pn**	**14 48 59.7**	**+0.9**
OCAC				*i*			14 49 52.1	
	comp=Z,1μm,0.3s							
TOLC	**Tolima**	**4.32**	**152**	*e*P		**Pn**	**14 49 04.0**	**+0.6**
BARC	**Barichara**	**4.53**	**113**	*e*P		**Pn**	**14 49 06.7**	**+0.6**
BARC				*i*			14 50 03.1	
	comp=Z,788nm,0.5s							
CBRI	**Barrientos, No**	**4.58**	**99**	*e*P		**Pn**	**14 49 07.6**	**+0.9**
CBRI				*e*S		**Sn**	**14 50 00.9**	**+2.1**
ROSC	**El Rosal**	**4.67**	**139**	P		**Pn**	**14 49 10.5**	**+2.2**
	comp=Z,10nm,0.3s,baz=297,slow=13,SNR=21							
ROSC				S		**Sn**	**14 50 07.9**	**+6.5**
	comp=Z,13nm,0.3s,baz=55,slow=19,SNR=3.6							
ROSC				LR		LR	14 51 13.8	
	comp=Z,1μm,18.2s,baz=335,slow=42							
PAMC	**Pamplona, Colo**	**4.75**	**103**	*e*P		**Pn**	**14 49 10.8**	**+1.5**
RUSC	**La Rusia**	**4.94**	**120**	*e*P		**Pn**	**14 49 11.7**	**-0.3**
RUSC				*i*			14 50 13.3	
	comp=Z,159nm,0.6s							
SDV	**Santo Domingo**	**6.67**	**86**	P		**Pn**	**14 49 35.7**	**+0.2**
	comp=Z,5.3nm,0.3s,baz=255,slow=9.4,SNR=54							
SDV				S		**Sn**	**14 50 50.4**	**0.0**
	comp=Z,78nm,0.3s,baz=64,slow=13,SNR=15							
SDV	**Santo Domingo**	**6.67**	**86**	*e*Pn		**Pn**	**14 49 35.4**	**-0.2**
	comp=Z,80nm,0.6s							
SDV				*e*Sn		**Sn**	**14 50 49.3**	**-1.1**
OTAV	**Otavalo**	**8.21**	**188**	*e*Pn		**Pn**	**14 49 56.9**	**+0.1**
	comp=Z,67nm,0.8s							
OTAV				*e*Sn		**Sn**	**14 51 27.3**	**-1.2**
PCJ	**Portland Cotta**	**9.26**	**1**	*i* P		**Pn**	**14 50 10.5**	**-0.3**
MCJ	**Malvern**	**9.45**	**358**	*i* P		**Pn**	**14 50 12.3**	**-1.2**
STH	**Stony Hill**	**9.61**	**3**	*i* P		**Pn**	**14 50 15.4**	**-0.2**
BBJ	**Bamboo Saint A**	**9.90**	**1**	*i* P		**Pn**	**14 50 19.1**	**-0.5**
SDDR	**Presa de Saban**	**12.04**	**29**	*e*Pn		**Pn**	**14 50 48.8**	**0.0**
	comp=Z,71nm,0.6s							
SDDR				*e*Sn		**Sn**	**14 53 02.0**	**+0.2**
PCRV	**Puerto La Cruz**	**12.68**	**81**	P		**Pn**	**14 50 54.5**	**-3.2**
	comp=Z,1.9nm,0.3s,baz=271,slow=2.9,SNR=4.5							
PCRV				S		**Sn**	**14 53 12.4**	**-5.3**
	comp=Z,1.2nm,0.3s,baz=153,slow=12,SNR=2.5							
PCRV				LR		LR	14 57 12.7	
	comp=Z,408nm,21.8s,baz=266,slow=44							
SJG	**San Juan**	**14.54**	**47**	S		Sn	14 53 49.7	-13
	comp=Z,2.2nm,0.3s,baz=208,slow=3.5,SNR=3.2							
SJG				LR		LR	14 57 41.9	
	comp=Z,196nm,21.3s,baz=241,slow=40							
ATAH	**Atahualpa**	**15.49**	**184**	P		**P**	**14 51 40.2**	**+0.5**
	comp=Z,0.6nm,0.3s,baz=33,slow=10,SNR=3.6							
PTGA	**Pitinga**	**19.58**	**117**	P		**Pn**	**14 52 25.6**	**-0.4**
	comp=Z,0.5nm,0.3s,baz=298,slow=16,SNR=6.2							
PTGA				S		**S**	**14 55 56.4**	**-6.9**
	comp=Z,0.2nm,0.3s,baz=336,slow=20,SNR=3.2							
PTGA				LR		LR	15 00 31.4	
	comp=Z,308nm,21.3s,baz=325,slow=38							
NNA	**Nana**	**20.29**	**179**	P		**P**	**14 52 31.9**	**-0.1**
	comp=Z,4.4nm,0.4s,baz=17,slow=11,SNR=3.0							
SAML	**Samuel**	**22.31**	**140**	*e*P		**P**	**14 52 52.4**	**-1.3**
	comp=Z,16nm,0.8s							
LPAZ	**La Paz**	**26.20**	**160**	P		**P**	**14 53 30.8**	**-0.6**
	comp=Z,1.4nm,0.8s,baz=352,slow=18,SNR=6.1							
TKL	**Tuckaleechee C**	**27.73**	**349**	P		**P**	**14 53 45.4**	**+1.2**
	comp=Z,2.7nm,0.9s,baz=256,slow=10,SNR=2.6							
TKL				LR		LR	15 04 32.7	
	comp=Z,102nm,20.6s,baz=142,slow=36							
SIV	**San Ignacio**	**29.14**	**146**	P		**P**	**14 54 01.4**	**+4.5**
	comp=Z,3.7nm,0.8s,baz=335,slow=11,SNR=6.5							
TXAR	**Lajitas Array**	**32.28**	**314**	P		**P**	**14 54 27.8**	**+3.0**
	comp=Z,0.5nm,0.9s,baz=146,slow=6.6,SNR=5.1							
TXAR				PcP		**PcP**	**14 57 12.7**	**+0.4**
	comp=Z,0.7nm,1.0s,baz=134,slow=5.4,SNR=4.3					

ellipse: s-maj=58.0km s-min=29.0km az=76.0

ISC 28 15:01:31.9±1.7,**35°61′N 0°05′×142°0′E±0°1′, h22km, n12, σ2966/17, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.91**	**276**	P	**Pn**	**15 01 50.4**	**+1.2**
CHOJ				*eS*	**Sn**	**15 02 07.0**	**+5.4**
BSO1	**Boso 1**	**1.25**	**221**	P	**Pb**	**15 01 53.3**	**-1.1**
JFK	**Kawauchi**	**1.96**	**334**	P	**Pn**	**15 02 02.6**	**-1.3**
JAG	**Ashikaga**	**2.19**	**293**	P	**Pb**	**15 02 08.1**	**-2.7**
JAG				S	**Sb**	**15 02 37.0**	**-0.6**
JFT	**Otama**	**2.31**	**326**	P	**Pn**	**15 02 09.0**	**+0.3**
JFT				S	**Sn**	**15 02 38.5**	**+2.0**
JOD2	**Odawara 2**	**2.37**	**263**	P	**Pb**	**15 02 11.0**	**-2.9**
JOD2				S	**Sb**	**15 02 41.9**	**-0.8**
JRY	**Ryogami san**	**2.52**	**280**	P	**Pb**	**15 02 13.7**	**-2.7**
JHJ	**Hachijo jima 2**	**3.07**	**217**	Pn	**Pn**	**15 02 18.4**	**-0.5**
	5.5nm,0.3s,baz=75,slow=20,SNR=1.3						
JHJ				Sn	**Sn**	**15 02 54.1**	**-0.9**
	22nm,0.3s,baz=264,slow=23,SNR=10						
MJAR	**Matsushiro Arr**	**3.18**	**288**	Pn	Pb	15 02 22.8	-4.9
	0.9nm,0.3s,baz=95,slow=8.5,SNR=10						
MJAR				Sn	**Sn**	**15 03 00.5**	**+2.6**
	0.9nm,0.3s,baz=95,slow=14,SNR=4.5						
MAT	**Matsushiro**	**3.18**	**288**	P	**Pb**	**15 02 23.5**	**-4.2**
MAT				S	**Sb**	**15 03 04.2**	**-1.9**
MKAR	**Makanchi Array**	**45.26**	**303**	P	**P**	**15 09 50.5**	**+2.9**
	0.3nm,0.8s,baz=79,slow=7.8,SNR=2.2						
WRA	**Warramunga Arr**	**55.72**	**189**	P	P	15 11 12.0	+5.3
	0.4nm,0.5s,baz=6.5,slow=7.5,SNR=1.9						

NIED ***28*** *15:07:00,36.60N×144.30E,h8km,Mw4.3 Best double couple: M0 3.14000×10^15 NP1:φs 1.00000°,δ34.00000°, λ-77.00000°. NP2:φs 165.00000°,δ57.00000°, λ-99.00000°.*

IDC ***28*** *15:07:01.6±0.7,36.44N×144.62E,h0km,mb4.1/22, mb1 4.3/29,mb1mx4.1/68,mbtmp4.2/29,ML3.7/6,MS3.1/12, Ms1 3.1/12,ms1mx2.9/47,Error ellipse: s-maj=17.5km s-min=14.6km az=106.0*

ISCJB ***28*** *15:07:05.6±0.2,36.53N±0.03×144.35E±0.03,h33km, mb4.3/52,MS3.3/7,Error ellipse: s-maj=4.4km s-min=3.2km az=161.0*

BJI ***28*** *15:07:05.7,36.85N×144.25E,h12km,mb4.3/9,mB4.8/5, Ms4.0/4,Ms7 3.8/5*

MOS ***28*** *15:07:05.8±1.1,36.50N×144.49E,h35km,mb4.6/23,Error ellipse: s-maj=10.5km s-min=7.2km az=124.3*

JMA ***28*** *15:07:06.1±0.2,36.58N×144.32E,h71km,M4.6*

NEIC ***28*** *15:07:07.4±0.2,36.56N×144.47E,h35km,mb4.6/26,Error ellipse: s-maj=5.7km s-min=4.9km az=139.0*

ISC 28 15:07:07.6±0.5,**36.55N±0.05×144.41E±0.06, h35km, n167, σ1887/177, mb4.4/52, MS3.2/7, 5C-2D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.95**	**287**	P	**Pn**	**15 07 50.4**	**-1.6**
JFK				*eS*	**Sn**	**15 08 24.2**	**-2.0**
ONAJ	**Iwakimizuishiy**	**2.95**	**282**	*eS*	**Sn**	**15 08 24.0**	**-2.2**
CHOJ	**Chosi**	**3.00**	**255**	P	**Pn**	**15 07 51.6**	**-1.0**
CHOJ				*eS*	**Sn**	**15 08 25.8**	**-1.4**
JHO	**Hitachi**	**3.09**	**272**	P	**Pn**	**15 07 52.5**	**-1.4**
BSO1	**Boso 1**	**3.37**	**237**	P	**Pn**	**15 07 55.8**	**-1.5**
JMK	**Ichinoseki**	**3.49**	**315**	P	**Pn**	**15 07 57.9**	**-1.4**
JRY	**Ryogami san**	**4.48**	**265**	P	**Pn**	**15 08 11.8**	**-1.3**
JRY				*eS*	**Sn**	**15 09 02.3**	**-1.7**
JOD2	**Odawara 2**	**4.50**	**255**	P	**Pn**	**15 08 12.6**	**-0.8**
JOD2				*eS*	**Sn**	**15 09 02.9**	**-1.6**
MJAR	**Matsushiro Arr**	**4.99**	**272**	Pn	**Pn**	**15 08 19.8**	**-0.2**
	13nm,0.3s,baz=89,slow=14,SNR=99						
MJAR				Sn	**Sn**	**15 09 15.2**	**-1.4**
	11nm,0.3s,baz=266,slow=32,SNR=5.1						
MJAR				LR	LR	15 10 46.0	
	comp=Z,179nm,18.6s,baz=95,slow=44						
MAJO	**Matsushiro**	**4.99**	**272**	*d* iP	**Pn**	**15 08 20.4**	**+0.3**
MAJO	**Matsushiro**	**4.99**	**272**	*e*Pn	**Pn**	**15 08 20.1**	**0.0**
MAT	**Matsushiro**	**4.99**	**272**	P	**Pn**	**15 08 20.1**	**0.0**
MAT				S	**Sn**	**15 09 11.1**	**-5.5**
MJB9	**Matsu-Tunnel**	**5.00**	**272**	*e*Pn	**Pn**	**15 08 20.0**	**-0.1**
JHJ2	**Mitsune**	**5.10**	**229**	P	**Pn**	**15 08 18.9**	**-2.6**
JHJ2	**Mitsune**	**5.10**	**229**	*e*Pn	**Pn**	**15 08 18.9**	**-2.6**
JHJ2				*e*Sn	**Sn**	**15 09 12.7**	**-6.5**
JHJ	**Hachijo jima 2**	**5.11**	**229**	Pn	**Pn**	**15 08 19.0**	**-2.7**
	55nm,0.3s,baz=86,slow=23,SNR=51						
JHJ				Sn	**Sn**	**15 09 14.0**	**-5.5**
	169nm,0.3s,baz=359,slow=22,SNR=13						
JHJ				LR	LR	15 10 34.6	
	comp=Z,140nm,19.8s,baz=50,slow=41						
JOT	**Ohata**	**5.49**	**333**	P	**Pn**	**15 08 25.4**	**-1.5**
JOT				*eS*	**Sn**	**15 09 28.0**	**-0.8**
ERM	**Erimo**	**5.55**	**350**	*e*P	**Pn**	**15 08 24.9**	**-2.7**
ERM	**Erimo**	**5.55**	**350**	*e*Pn	**Pn**	**15 08 24.9**	**-2.7**
ERM				*e*Sn	Sn	15 09 19.0	-11
JKB	**Kayabe**	**5.94**	**335**	P	**Pn**	**15 08 31.7**	**-1.4**
JKB				*eS*	**Sn**	**15 09 38.8**	**-1.1**
INU	**Inuyama**	**6.11**	**261**	*e*Pn	**Pn**	**15 08 35.6**	**+0.1**
INU				*e*Sn	**Sn**	**15 09 37.1**	**-7.1**
JCH	**Churui**	**6.12**	**353**	P	**Pn**	**15 08 32.3**	**-3.1**
NEM2	**Nemuro 2**	**6.89**	**8**	P	Pn	15 08 40.6	-5.4
JTKR	**Abashiri--Toko**	**7.43**	**357**	P	**Pn**	**15 08 50.1**	**-3.3**
JHR	**Hokuryu**	**7.48**	**345**	P	**Pn**	**15 08 53.0**	**-1.1**
ASAJ	**Asahikawa**	**7.69**	**350**	Pn	**Pn**	**15 08 55.0**	**-2.0**
	baz=207,slow=9.9						
ASAJ				Sn	**Sn**	**15 10 15.5**	**-7.3**
	baz=90,slow=19						
ASAJ	**Asahikawa**	**7.69**	**350**	*e*Pn	**Pn**	**15 08 54.2**	**-2.9**
ASAJ				*e*Sn	**Sn**	**15 10 16.8**	**-6.0**
JWZ	**Kozaga**	**7.74**	**250**	P	**Pn**	**15 08 57.5**	**-0.3**
KUR	**Kuril'sk**	**9.06**	**16**	*e*P	**Pn**	**15 09 11.7**	**-4.2**
KUR				pmax	pmax		
	comp=E,3.0nm,0.5s						
KUR				pmax	pmax		
	comp=Z,8.0nm,0.5s						
JHS	**Saijyo**	**9.31**	**264**	P	**Pn**	**15 09 19.8**	**+0.5**
CBIJ	**Chichi jima**	**9.61**	**192**	P	**Pn**	**15 09 24.1**	**+0.7**
CBIJ	**Chichi jima**	**9.61**	**192**	*e*Pn	**Pn**	**15 09 26.2**	**+2.8**
YSS	**Yuzh-Sakhalins**	**10.47**	**354**	*e*P	**Pn**	**15 09 32.7**	**-2.5**
YSS	**Yuzh-Sakhalins**	**10.47**	**354**	*e*Pn	**Pn**	**15 09 33.1**	**-2.1**
JNU	**Nakatsue**	**11.63**	**257**	Pn	**Pn**	**15 09 51.6**	**+0.4**
	comp=Z,0.4nm,0.3s,baz=61,slow=19,SNR=3.9						
MSHR	**Mys Shultsa**	**11.87**	**305**	*e*P	Pn	15 09 57.7	+3.5
USRK	**Ussuriysk Ar.**	**12.16**	**313**	Pn	**Pn**	**15 09 59.0**	**+0.7**
	comp=Z,0.7nm,0.3s,baz=138,slow=13,SNR=13						
KSRS	**Korea Array**	**13.21**	**279**	Pn	**Pn**	**15 10 15.5**	**+2.9**
	comp=Z,0.2nm,0.3s,baz=76,slow=16,SNR=5.0						
KSRS				LR	LR	15 15 37.4	
	comp=Z,123nm,18.2s,baz=84,slow=38						
KS15	**Wonju Array Si**	**13.24**	**279**	*e*Pn	**Pn**	**15 10 13.5**	**+0.4**
KSAR	**Wonju Array Be**	**13.24**	**279**	P	**Pn**	**15 10 15.5**	**+2.4**
KSAR	**Wonju Array Be**	**13.24**	**279**	Pn	**Pn**	**15 10 15.5**	**+2.4**
KLR	**Kul'dur**	**15.68**	**328**	Pn	**Pn**	**15 10 45.9**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=135,slow=13,SNR=5.2						
KLR				LR	LR	15 16 43.2	
	comp=Z,50nm,20.2s,baz=122,slow=37						
JOW	**Kunigami**	**16.78**	**239**	LR	LR	15 16 56.2	
	comp=Z,52nm,20.1s,baz=94,slow=35						
PETK	**Petropavlovsk-**	**19.00**	**25**	P	**Pn**	**15 11 28.9**	**+1.9**
	comp=Z,0.1nm,0.3s,baz=121,slow=17,SNR=3.1						
PETK				LR	LR	15 21 32.1	
	comp=Z,13nm,18.1s,baz=218,slow=46						
PEA1	**Petropavlovsk-**	**19.00**	**25**	*e*P	**Pn**	**15 11 28.9**	**+1.8**
SARN	**Sarigan**	**19.80**	**176**	*e*P	**Pn**	**15 11 36.0**	**-0.9**
MA2	**Magadan**	**23.41**	**8**	LR	LR	15 21 58.3	
	comp=Z,25nm,18.7s,baz=186,slow=38						
WHN	**Wuhan**	**25.70**	**265**	P	**P**	**15 12 35.8**	**+1.4**
WHN				LR	LR		
	comp=Z,490nm,16.8s						
H11N2	**WAKE ISLAND Hy**	**25.86**	**124**	T	T	15 39 30.6	
	baz=316,slow=75,SNR=295						
H11N1	**WAKE ISLAND Hy**	**25.87**	**124**	T	T	15 39 28.2	
	baz=316,slow=75,SNR=306						
H11N3	**WAKE ISLAND Hy**	**25.88**	**124**	T	T	15 39 29.9	
	baz=316,slow=75,SNR=417						
H11S1	**WAKE ISLAND Hy**	**26.60**	**127**	T	T	15 40 28.4	
	baz=318,slow=76,SNR=114						
H11S3	**WAKE ISLAND Hy**	**26.61**	**127**	T	T	15 40 24.5	
	baz=318,slow=76,SNR=119						
H11S2	**WAKE ISLAND Hy**	**26.62**	**127**	T	T	15 40 29.4	
	baz=318,slow=76,SNR=123						
SEY	**Seymchan**	**26.87**	**8**	P	**P**	**15 12 45.0**	**+0.3**
	comp=Z,2.3nm,0.9s,baz=170,slow=11,SNR=3.1						
SEY	**Seymchan**	**26.87**	**8**	*e*P	**P**	**15 12 45.0**	**+0.3**
YAK	**Yakutsk**	**27.12**	**345**	P	**P**	**15 12 47.4**	**+0.5**
	comp=Z,6.6nm,0.5s,baz=345,slow=2.7,SNR=5.7						
YAK	**Yakutsk**	**27.12**	**345**	*e*P	**P**	**15 12 47.9**	**+0.9**
YAK				pmax	pmax		
	comp=Z,11nm,0.9s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.0s						
YAK				pmax	pmax		
	comp=N,12nm,1.4s						
YAK	**Yakutsk**	**27.12**	**345**	*e*P	**P**	**15 12 46.3**	**-0.7**
	comp=N,17nm,1.0s						
SONA0	**Songino Array**	**30.05**	**304**	*e*P	**P**	**15 13 14.9**	**+1.5**
SONM	**Songino Array**	**30.05**	**304**	P	**P**	**15 13 14.9**	**+1.5**
	comp=N,0.7nm,0.8s,baz=106,slow=8.9,SNR=3.9						
SONM				LR	LR	15 25 52.0	
	comp=N,29nm,18.4s,baz=98,slow=37						
ZAK	**Zakamensk**	**32.46**	**308**	*e*P	**P**	**15 13 33.9**	**-0.6**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
GTA	**Gaotai**	**35.00**	**289**	*e*P	**P**	**15 13 59.0**	**+2.2**
GTA				pP	pP	15 14 02.5	-4.5
GTA				sP	sP	15 14 05.0	-6.2
GTA				pmax	pmax		
	comp=Z,6.0nm,1.4s						
TIXI	**Tiksi**	**36.09**	**352**	*e*P	**P**	**15 14 06.0**	**+0.4**
CM31	**Chiang Mai Arr**	**43.73**	**258**	*e*P	**P**	**15 15 09.0**	**-0.6**
CMAR	**Chiang Mai Arr**	**43.73**	**258**	P	**P**	**15 15 09.2**	**-0.4**
	comp=Z,1.7nm,0.7s,baz=45,slow=7.6,SNR=11						
CMAR				LR	LR	15 35 01.8	
	comp=Z,31nm,19.3s,baz=220,slow=38						
CMAR	**Chiang Mai Arr**	**43.73**	**258**	*i* P	**P**	**15 15 11.8**	**+2.2**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
CM01	**Chiang Mai Arr**	**43.73**	**258**	*e*P	**P**	**15 15 09.2**	**-0.4**
ZAA0	**Zalesovo Array**	**44.02**	**313**	*e*P	**P**	**15 15 11.4**	**-0.1**
ZAA0				*e*PP	**PcP**	**15 16 56.2**	**-0.3**
ZAA1	**Zalesovo Array**	**44.02**	**313**	*e*P	**P**	**15 15 11.3**	**-0.2**
ZAA1				*e*PP	**PcP**	**15 16 56.6**	**+0.1**
ZALV	**Zalesovo Beam**	**44.02**	**313**	P	**P**	**15 15 11.3**	**-0.2**
	comp=Z,2.5nm,0.9s,baz=93,slow=6.3,SNR=9.0						
ZALV				PcP	**PcP**	**15 16 56.6**	**+0.1**
	comp=Z,2.0nm,0.5s,baz=118,slow=2.6,SNR=6.7						
ZALV				LR	LR	15 34 03.6	
	comp=Z,26nm,19.5s,baz=70,slow=37						
NRIK	**Noril'sk**	**44.72**	**335**	P	**P**	**15 15 16.1**	**-0.8**
	comp=Z,3.9nm,0.9s,baz=111,slow=9.3,SNR=3.4						
MK01	**Makanchi Array**	**46.41**	**303**	*e*P	**P**	**15 15 31.5**	**+0.8**
MK31	**Makanchi Array**	**46.41**	**303**	*e*P	**P**	**15 15 30.8**	**+0.2**
MK31	**Makanchi Array**	**46.41**	**303**	*e*P	**P**	**15 15 30.8**	**+0.2**
MK32	**Makanchi Array**	**46.41**	**303**	*e*P	**P**	**15 15 31.8**	**+1.1**
MK32				*e*PcP	**PcP**	**15 17 05.4**	**+0.4**
MKAR	**Makanchi Array**	**46.41**	**303**	P	**P**	**15 15 31.8**	**+1.1**
	comp=Z,3.7nm,0.8s,baz=87,slow=9.2,SNR=32						
MKAR				PcP	**PcP**	**15 17 05.4**	**+0.4**
	comp=Z,0.5nm,0.8s,baz=45,slow=4.9,SNR=2.3						
MKAR	**Makanchi Array**	**46.41**	**303**	*i* P	**P**	**15 15 32.2**	**+1.6**
MKAR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
MKAR	**Makanchi Array**	**46.41**	**303**	*e*P	**P**	**15 15 31.0**	**+0.3**
	comp=Z,35nm,0.8s						
MKAR				PcP	**PcP**	**15 17 05.4**	**+0.4**
MAKZ	**Makanchi**	**46.62**	**303**	*e*P	**P**	**15 15 33.1**	**+0.8**
MAKZ				pmax	pmax		
	comp=Z,6.0nm,1.0s						
MAKZ	**Makanchi**	**46.62**	**303**	*e*P	**P**	**15 15 33.1**	**+0.8**
	comp=Z,5.8nm,1.0s						
MDM	**Murphy Dome**	**48.05**	**32**	*e*P	**P**	**15 15 41.9**	**-1.3**
	comp=Z,3.3nm,1.2s						
KURK	**Kurchatov**	**48.12**	**309**	*e*P	**P**	**15 15 44.6**	**+0.8**
KURK	**Kurchatov**	**48.12**	**309**	*e*P	**P**	**15 15 44.6**	**+0.8**
IL1	**Eielson Array**	**48.62**	**32**	*e*P	**P**	**15 15 48.1**	**+0.6**
ILAR	**Eielson Array**	**48.62**	**32**	P	**P**	**15 15 47.0**	**-0.6**
	comp=Z,0.7nm,0.8s,baz=258,slow=6.0,SNR=5.1						
ILAR	**Eielson Array**	**48.62**	**32**	P	**P**	**15 15 47.0**	**-0.6**
PAX	**Paxson**	**49.27**	**35**	*e*P	**P**	**15 15 50.4**	**-2.3**
PAX				pmax	pmax		
	comp=Z,9.0nm,0.8s						
PAX	**Paxson**	**49.27**	**35**	*e*P	**P**	**15 15 50.4**	**-2.3**
	comp=Z,9.0nm,0.8s						
MTN	**Manton Dam**	**50.69**	**197**	*e*P	**P**	**15 16 03.5**	**-0.3**
	comp=Z,22nm,1.3s						
BRVK	**Borovoye**	**52.73**	**313**	*ce*P	**P**	**15 16 20.4**	**+1.8**
BRVK				pmax	pmax		
	comp=Z,9.0nm,0.7s						
AAK	**Ala-Archa**	**52.83**	**300**	LR	LR	15 39 30.3	
	comp=Z,33nm,18.6s,baz=51,slow=37						
KKAR	**Karatay Array**	**55.44**	**301**	*e*P	**P**	**15 16 38.2**	**-0.4**
KKAR				pmax	pmax		
	comp=Z,12nm,0.8s						
KKAR	**Karatay Array**	**55.44**	**301**	*e*P	**P**	**15 16 38.2**	**-0.4**
	comp=Z,12nm,0.8s						
WRAB	**Tennant Creek**	**56.97**	**191**	*e*P	**P**	**15 16 49.1**	**-0.5**
WRAB				pmax	pmax		
	comp=Z,28nm,1.7s						
WRAB	**Tennant Creek**	**56.97**	**191**	*e*P	**P**	**15 16 49.0**	**-0.5**
	comp=Z,28nm,1.7s						
WB2	**Warramunga Arr**	**56.98**	**191**	*e*P	**P**	**15 16 48.8**	**-0.9**
WR1	**Warramunga Arr**	**56.98**	**191**	*e*P	**P**	**15 16 48.0**	**-1.7**
	comp=Z,32nm,1.8s						
WRA	**Warramunga Arr**	**56.98**	**191**	P	**P**	**15 16 48.0**	**-1.7**
	comp=Z,1.7nm,0.8s,baz=12,slow=7.0,SNR=13						
WRA	**Warramunga Arr**	**56.98**	**191**	*i* P	**P**	**15 16 49.2**	**-0.5**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
FITZ	**Fitzroy Crossi**	**57.17**	**201**	*e*P	**P**	**15 16 51.3**	**+0.2**
	comp=Z,35nm,1.8s						
ARU	**Arti**	**58.31**	**319**	*d* iP	**P**	**15 16 59.5**	**+0.8**
ARU						15 19 04.1	
ARU				S	**S**	**15 25 02.5**	**+4.1**
ARU				SS	**SS**	**15 28 52.5**	**+2.5**
ARU				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ABKAR	**Akbulak array**	**60.08**	**311**	*e*P	**P**	**15 17 11.3**	**+0.2**
	comp=Z,20nm,0.6s						
AS01	**Alice Springs**	**60.69**	**191**	*e*P	**P**	**15 17 14.6**	**-0.9**
AS31	**Alice Springs**	**60.70**	**191**	*e*P	**P**	**15 17 15.1**	**-0.4**
	comp=Z,8nm,1.4s						
ASAR	**Alice Springs**	**60.70**	**191**	P	**P**	**15 17 14.6**	**-1.0**
	comp=Z,0.6nm,0.7s,baz=6.3,slow=7.1,SNR=16						
AKTO	**Aktyubinsk**	**60.78**	**313**	P	**P**	**15 17 15.9**	**+0.1**
	comp=Z,3.7nm,0.8s,baz=84,slow=10,SNR=11						
AKTO				LR	LR	15 44 21.6	
	comp=Z,24nm,20.4s,baz=1.7,slow=37						
GEYT	**Alibeck**	**66.17**	**300**	P	**P**	**15 17 53.0**	**+1.3**
	comp=Z,3.3nm,1.1s,baz=72,slow=4.7,SNR=3.4						
STKA	**Stephens Creek**	**68.12**	**183**	*e*P	**P**	**15 18 05.6**	**+1.8**
STKA				pmax	pmax		
	comp=Z,8.0nm,1.8s						
STKA	**Stephens Creek**	**68.12**	**183**	*e*P	**P**	**15 18 05.6**	**+1.8**
	comp=Z,8.3nm,1.8s						
FIA1	**FINESS Array S**	**70.35**	**333**	*e*P	**P**	**15 18 17.2**	**-0.1**
	comp=Z,14nm,1.0s						
FIA0	**FINESS Array S**	**70.35**	**333**	*e*P	**P**	**15 18 17.6**	**+0.2**
FIA0	**FINESS Array S**	**70.35**	**333**	*e*P	**P**	**15 18 17.6**	**+0.2**
FINES	**FINESS Array B**	**70.35**	**333**	P	**P**	**15 18 17.6**	**+0.2**
	comp=Z,3.7nm,0.8s,baz=24,slow=8.1,SNR=9.9						
FINES	**FINESS Array B**	**70.35**	**333**	*ce*P	**P**	**15 18 18.6**	**+1.2**
FINES				pmax	pmax		
	comp=Z,3.0nm,0.7s						
SLMT	**Seeley Lake**	**71.40**	**45**	*e*P	**P**	**15 18 23.6**	**-0.6**
LRM	**Limekiln Ridge**	**72.80**	**45**	*e*P	**P**	**15 18 31.9**	**-0.8**
DLMT	**Dillon**	**72.97**	**46**	*e*P	**P**	**15 18 33.7**	**0.0**
	comp=Z,2.5nm,0.8s						
KIV	**Kislovodsk**	**73.03**	**312**	*e*P	**P**	**15 18 34.9**	**+0.9**
KIV				pmax	pmax		
	comp=Z,11nm,1.1s						
KBZ	**Khabaz**	**73.03**	**312**	P	**P**	**15 18 35.4**	**+1.6**
	comp=Z,3.1nm,0.7s,baz=41,slow=1.2,SNR=6.2						
BOZ	**Bozeman (W)**	**73.37**	**45**	*e*P	**P**	**15 18 36.6**	**+0.6**
BOZ				pmax	pmax		
	comp=Z,3.0nm,0.9s						
BOZ	**Bozeman (W)**	**73.37**	**45**	*e*P	**P**	**15 18 36.6**	**+0.6**
	comp=Z,2.5nm,0.9s						
R11A	**Troy Canyon, C**	**75.15**	**53**	*e*P	**P**	**15 18 47.0**	**+0.4**
	comp=Z,8.0nm,1.6s						
NC204	**NORSAR Array S**	**75.49**	**339**	*e*P	**P**	**15 18 47.8**	**-0.1**
HFS	**Hagfors**	**75.50**	**337**	P	**P**	**15 18 48.6**	**+0.7**
	comp=Z,2.9nm,0.9s,baz=68,slow=9.5,SNR=3.7						
TPNV	**Topopah Spring**	**75.51**	**55**	*e*P	**P**	**15 18 49.4**	**+0.7**
TPNV				pmax	pmax		
	comp=Z,9.0nm,1.4s						
TPNV	**Topopah Spring**	**75.51**	**55**	*e*P	**P**	**15 18 49.4**	**+0.7**
	comp=Z,8.7nm,1.4s						
NB2	**NORSAR Subarra**	**75.54**	**339**	P	**P**	**15 18 48.8**	**+0.5**
	comp=Z,2.0nm,0.8s,baz=41,slow=5.9						
NB200	**NORSAR Array S**	**75.54**	**339**	*e*P	**P**	**15 18 48.7**	**+0.5**
NOA	**NORSAR Array B**	**75.54**	**339**	P	**P**	**15 18 48.7**	**+0.5**
	comp=Z,3.5nm,0.8s,baz=39,slow=5.7,SNR=8.5						
NBO02	**NORSAR Array S**	**75.64**	**339**	*e*P	**P**	**15 18 49.4**	**+0.6**
AKASG	**Malin Array Be**	**76.14**	**324**	P	**P**	**15 18 51.5**	**-0.2**
	comp=Z,2.6nm,0.7s,baz=45,slow=6.7,SNR=11						
AKASG	**Malin Array Be**	**76.14**	**324**	*ce*P	**P**	**15 18 52.5**	**+0.8**
AKASG				pmax	pmax		
	comp=Z,3.0nm,0.7s						
AKBB	**Malin Array Si**	**76.14**	**324**	*e*P	**P**	**15 18 51.0**	**-0.7**
AKBB				pmax	pmax		
	comp=Z,8.0nm,1.2s						
AKBB	**Malin Array Si**	**76.14**	**324**	*e*P	**P**	**15 18 51.0**	**-0.7**
	comp=Z,7.6nm,1.2s						
KIEV	**Kiev**	**76.15**	**324**	*i* P	**P**	**15 18 51.5**	**-0.3**
KIEV				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BW06	**Boulder Array**	**76.27**	**47**	*e*P	**P**	**15 18 52.1**	**-0.9**
PD31	**Pinedale Array**	**76.27**	**47**	*e*P	**P**	**15 18 51.1**	**-1.8**
PDAR	**Pinedale Array**	**76.27**	**47**	P	**P**	**15 18 51.9**	**-1.0**
	comp=Z,0.7nm,0.6s,baz=265,slow=2.2,SNR=9.6						
SRU	**San Rafael Swe**	**77.90**	**50**	*e*P	**P**	**15 19 02.7**	**+0.6**
SRU				pmax	pmax		
	comp=Z,4.0nm,0.8s						
SRU	**San Rafael Swe**	**77.90**	**50**	*e*P	**P**	**15 19 02.7**	**+0.6**
	comp=Z,4.1nm,0.8s						
RSSD	**Black Hills**	**78.57**	**43**	*e*P	**P**	**15 19 04.3**	**-1.5**
RSSD				pmax	pmax		
	comp=Z,2.0nm,0.8s						
RSSD	**Black Hills**	**78.57**	**43**	*e*P	**P**	**15 19 04.3**	**-1.5**
	comp=Z,1.8nm,0.8s						
O20A	**White River Ci**	**78.66**	**48**	*e*P	**P**	**15 19 05.9**	**-0.5**
	comp=Z,4.1nm,0.6s						
PV09	**Paradox Valley**	**79.13**	**50**	*e*P	**P**	**15 19 10.0**	**+0.9**
PV10	**Paradox Valley**	**79.27**	**50**	*e*P	**P**	**15 19 10.8**	**+1.0**
PV05	**Paradox Valley**	**79.41**	**50**	*e*P	**P**	**15 19 09.5**	**-1.0**
WUAZ	**Wupatki**	**79.54**	**54**	*e*P	**P**	**15 19 10.6**	**-0.6**
	comp=Z,5.1nm,1.3s						
N23A	**Red Feather La**	**79.55**	**47**	*e*P	**P**	**15 19 11.6**	**+0.3**
	comp=Z,2.7nm,0.9s						
PV15	**Paradox Valley**	**79.63**	**50**	*e*P	**P**	**15 19 09.5**	**-2.3**
BUR08	**Bucovina Ar. S**	**80.15**	**323**	*e*P	**P**	**15 19 10.0**	**-4.2**
OJC	**Ojcow**	**80.76**	**328**	*e*P	**P**	**15 19 18.1**	**+0.8**
OJC				pmax	pmax		
	comp=Z,15nm,1.6s						
OJC	**Ojcow**	**80.76**	**328**	*e*P	**P**	**15 19 18.1**	**+0.8**
	comp=Z,15nm,1.6s						
BR101	**Keskin Array S**	**80.96**	**313**	*e*P	**P**	**15 19 19.6**	**+0.8**
BRTR	**Keskin Array B**	**80.96**	**313**	P	**P**	**15 19 19.6**	**+0.8**
	comp=Z,2.2nm,1.0s,baz=123,slow=4.6,SNR=8.3						
BRTR	**Keskin Array B**	**80.96**	**313**	*ce*P	**P**	**15 19 20.6**	**+1.9**
BRTR				pmax	pmax		
	comp=Z,2.0nm,1.0s						
BR231	**Keskin MP Arra**	**81.39**	**314**	*e*P	**P**	**15 19 20.4**	**-0.5**
CLL	**Collm**	**82.69**	**332**	*e*P	**P**	**15 19 23.0**	**-4.4**
CLL	**Collm**	**82.69**	**332**	*e*P	**P**	**15 19 23.0**	**-4.4**
T25A	**Trinidad**	**82.88**	**49**	*e*P	**P**	**15 19 27.5**	**-1.5**
	comp=Z,3.6nm,1.0s						
ANMO	**Albuquerque**	**83.04**	**51**	*ce*P	**P**	**15 19 27.0**	**-2.8**
ANMO				pmax	pmax		
	comp=Z,1.0nm,1.1s						
MMAI	**Mount Meron Ar**	**84.19**	**307**	P	**P**	**15 19 36.9**	**+1.3**
	comp=Z,1.8nm,0.6s,baz=47,slow=11,SNR=3.6						
GERES	**

mb1 3.6/4,**mb1mx3.4**/43,**mbtmp3.4**/4,**MS2.9**/1,**Ms1 2.9**/1,**ms1mx2.3**/24,**Error ellipse: s-maj=146.1km s-min=22.6km az=68.0,Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**21.99**	**120**	LR	LR	15 37 30.2	
	comp=Z,31nm,18.6s,baz=321,slow=42						
WRA	**Warramunga Arr**	**22.33**	**164**	P	P	15 27 18.3	+0.1
	1.0nm,0.5s,baz=344,slow=11,SNR=17						
ASAR	**Alice Springs**	**25.80**	**168**	P	P	15 27 51.5	-0.2
	0.3nm,0.5s,baz=346,slow=12,SNR=8.0						
MKAR	**Makanchi Array**	**59.99**	**325**	P	P	15 32 27.4	+0.3
	0.2nm,0.5s,baz=112,slow=11,SNR=1.7						
KURBB	**Kurchatov Arra**	**64.18**	**327**	P	P	15 32 54.9	-0.2
	0.3nm,0.4s,baz=127,slow=6.1,SNR=4.3						

*IDC **28** 15:25:40.7±2.2,29.66S×176.42W,h0km,mb4.1/3, mb1 4.2/4,mb1mx3.9/27,mbtmp4.0/4,ML3.6/1,MS3.5/3, Ms1 3.5/3,ms1mx3.0/36,Error ellipse: s-maj=40.4km s-min=36.9km az=124.0*

*ISCJB **28** 15:25:41.4±0.9,29.57S±0.08×176.36W±0.10,h21km, mb4.7/10,MS3.5/2,Error ellipse: s-maj=13.5km s-min=9.4km az=144.7*

*NEIC **28** 15:25:45.9±0.9,29.55S×176.47W,h36km±7km,mb4.9/12, Error ellipse: s-maj=14.0km s-min=10.0km az=104.0*

ISC 28 15:25:43.5±0.9,29.59S±0.07×176.4W±0.1,h21km,n31, σ1ş74/30,mb4.7/10,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.34**	**284**	Pn	**Pn**	**15 26 07.4**	**+0.4**
	280nm,0.3s,baz=264,slow=2.6,SNR=16						
RAO				Sn	**Sn**	**15 26 23.4**	**-0.8**
	832nm,0.3s,baz=114,slow=19,SNR=10						
RAO				LR	LR	15 26 53.7	
	comp=Z,1μm,19.5s,baz=196,slow=53						
OUZ	**Omahuta**	**10.12**	**234**	*e*Pn	**Pn**	**15 28 10.2**	**+2.6**
URZ	**Urewera**	**10.17**	**210**	Pn	**Pn**	**15 28 08.3**	**+0.1**
	0.5nm,0.3s,baz=22,slow=17,SNR=1.3						
URZ				Sn	**Sn**	**15 29 59.7**	**-1.9**
	1.9nm,0.3s,baz=218,slow=22,SNR=7.8						
BKZ	**Black Stump Fm**	**11.19**	**210**	*e*Pn	**Pn**	**15 28 20.4**	**-1.8**
BFZ	**Birch Farm**	**12.58**	**206**	*e*Pn	**Pn**	**15 28 37.1**	**-4.1**
MSVF	**Nonsavu**	**12.84**	**336**	*e*Pn	**Pn**	**15 28 41.4**	**-3.5**
THZ	**Tophouse**	**14.90**	**213**	*e*Pn	**P**	**15 29 16.2**	**-2.3**
KHZ	**Kahutara**	**15.14**	**210**	*e*Pn	**Pn**	**15 29 16.2**	**+0.2**
	162nm,1.7s						
LTZ	**Lake Taylor**	**15.99**	**212**	*e*Pn	**P**	**15 29 29.2**	**-1.4**
	146nm,1.9s						
OXZ	**Oxford**	**16.53**	**211**	*e*Pn	**P**	**15 29 37.4**	**+1.0**
	66nm,1.4s						
MQZ	**McQueen's Vall**	**16.57**	**209**	*e*Pn	**Pn**	**15 29 33.3**	**-1.1**
	250nm,2.0s						
DZM	**Mont Dzumac**	**17.13**	**292**	LR	LR	15 34 58.4	
	comp=Z,197nm,19.4s,baz=106,slow=32						
DZM	**Mont Dzumac**	**17.13**	**292**	*e*Pn	**Pn**	**15 29 40.9**	**-0.9**
STKA	**Stephens Creek**	**35.99**	**256**	P	**P**	**15 32 44.2**	**+1.2**
	3.1nm,1.0s,baz=94,slow=13,SNR=3.9						
STKA				LR	LR	15 46 02.1	
	comp=Z,28nm,19.3s,baz=20,slow=34						
STKA	**Stephens Creek**	**35.99**	**256**	*e*P	**P**	**15 32 44.9**	**+1.8**
	11nm,2.0s						
AS01	**Alice Springs**	**44.48**	**265**	*e*P	**P**	**15 33 54.1**	**+0.5**
AS31	**Alice Springs**	**44.52**	**265**	*e*P	**P**	**15 33 54.2**	**+0.4**
	4.1nm,1.6s						
ASAR	**Alice Springs**	**44.52**	**265**	P	**P**	**15 33 54.0**	**+0.2**
	1.3nm,0.5s,baz=103,slow=6.7,SNR=38						
ASAR				LR	LR	15 52 15.0	
	comp=Z,130nm,18.1s,baz=108,slow=36						
WB2	**Warramunga Arr**	**45.43**	**271**	*e*P	**P**	**15 34 00.7**	**-0.4**
WRAB	**Tennant Creek**	**45.43**	**271**	*e*P	**P**	**15 34 01.2**	**+0.1**
	44nm,1.9s						
WR1	**Warramunga Arr**	**45.44**	**271**	*e*P	**P**	**15 34 00.9**	**-0.2**
	28nm,1.8s						
WRA	**Warramunga Arr**	**45.44**	**271**	P	**P**	**15 34 00.9**	**-0.3**
	1.2nm,0.6s,baz=110,slow=8.1,SNR=20						
SBA	**Scott Base**	**48.95**	**185**	*e*P	**P**	**15 34 26.6**	**-1.1**
	108nm,1.9s						
VNDA	**Vanda**	**49.04**	**186**	*e*P	**P**	**15 34 29.0**	**+0.6**
	20nm,1.8s						
KIP	**Kipapa**	**53.73**	**21**	*e*P	**P**	**15 35 04.7**	**+0.5**
	106nm,1.4s						
CASY	**Casey**	**56.49**	**208**	*e*P	**P**	**15 35 28.1**	**+4.5**
	3.3nm,0.6s						
QSPA	**South Pole Qui**	**60.52**	**180**	*e*P	P	15 35 59.1	+7.2
TVH3	**East Aurora ar**	**86.38**	**42**	*e*pP	pP	15 38 36.0	+4.6
FIA0	**FINESS Array S**	**144.84**	**341**	*e*PKPdf	**PKPdf**	**15 45 18.8**	**+0.7**
FINES	**FINESS Array B**	**144.84**	**341**	PKP	**PKPdf**	**15 45 18.8**	**+0.7**
	1.2nm,0.7s,baz=24,slow=3.8,SNR=4.1						
AKASG	**Malin Array Be**	**151.46**	**325**	PKPbc	**PKPbc**	**15 45 36.0**	**+0.6**
	0.5nm,0.4s,baz=48,slow=4.4,SNR=2.0						

*SOME **28** 15:32:57.5,50.78N×85.98E,h20km*
*NNC **28** 15:33:03.7±3.0,49.93N×87.79E,h0km,mb3.3,mpv2.9, Error ellipse: s-maj=22.7km s-min=15.6km az=83.0*

ISC 28 15:33:04.6±4.4,50.1N±0.1×87.9E±0.3,h11km,n5, σ1ş45/12,5C-8D,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZSN	**Zaisan**	**3.48**	**222**	*e*P	**Pn**	**15 33 59.2**	**+0.5**
	3.4nm,0.2s						
ZSN				*e*S	**Sn**	**15 34 41.5**	**+1.6**
	15nm,0.3s						
MK31	**Makanchi Array**	**4.95**	**231**	⇓Pn	**Pn**	**15 34 17.4**	**-1.5**
	0.4nm,0.3s,baz=51,slow=14,SNR=21						
MK31				⇑Pg	**Pb**	**15 34 31.9**	**+0.7**
	0.4nm,0.3s,baz=52,slow=16,SNR=6.0						
MK31				⇑Sn	**Sn**	**15 35 16.4**	**+0.3**
	0.7nm,0.3s,baz=59,slow=27,SNR=6.3						
MK31				⇑Lg	Lg	15 35 33.9	
	2.9nm,0.6s,baz=58,slow=31,SNR=5.9						
MAKZ	**Makanchi**	**5.09**	**232**	⇓Pn	**Pn**	**15 34 20.9**	**0.0**
	1.0nm,0.7s						
MAKZ				⇓Pg	**Pb**	**15 34 34.5**	**+0.8**
	0.7nm,0.3s						
MAKZ				⇑Sn	**Sn**	**15 35 18.4**	**-1.3**
	1.3nm,0.6s						
MAKZ				⇓Lg	Lg	15 35 39.8	
	2.8nm,0.6s						
KURBB	**Kurchatov Arra**	**5.99**	**279**	⇓Pn	**Pn**	**15 34 31.9**	**-1.3**
	1.6nm,0.5s						
KURBB				⇓Sn	**Sn**	**15 35 43.7**	**+2.0**
	3.8nm,0.6s						
KURBB				⇓Lg	Lg	15 36 13.8	
	6.5nm,0.6s						
KAPS	**Kapalarasan**	**7.47**	**233**	↑*i*P	**Pn**	**15 34 52.5**	**-1.0**
	1.2nm,0.4s						
KAPS				⇓*i*S	**Sn**	**15 36 16.1**	**-2.1**
	1.9nm,0.3s						

IDC 28 15:35:06.5±2.3,5.14S×128.86E,h0km,mb3.3/1, mb1 3.4/3,mb1mx3.2/32,mbtmp3.3/3,ML3.3/2,Error ellipse: s-maj=141.5km s-min=31.7km az=68.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**15.65**	**161**	Pn	Pn	15 38 49.2	+0.7
	0.1nm,0.3s,baz=339,slow=11,SNR=2.3						
WRA				Sn	Sn	15 41 31.3	-11
	0.0nm,0.3s,baz=336,slow=28,SNR=1.9						
ASAR	**Alice Springs**	**19.05**	**166**	P	P	15 39 30.1	-0.3
	0.1nm,0.3s,baz=346,slow=11,SNR=11						
MKAR	**Makanchi Array**	**66.06**	**327**	P	P	15 45 55.3	0.0
	0.1nm,0.3s,baz=139,slow=7.1,SNR=2.3						

JMA 28 15:39:34.8±0.4,37.23N×134.41E,h423km±5km,M3.6, Sea of Japan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKY	**Yasaka**	**1.69**	**160**	P	P	15 40 31.3	0.0
JWT	**Wachi**	**2.10**	**157**	P	P	15 40 33.9	+0.3
JHS	**Saijyo**	**2.46**	**206**	P	P	15 40 35.9	0.0
JMM	**Marumori**	**5.11**	**81**	P	P	15 40 59.5	+0.7
JRG	**Rokugo**	**5.35**	**64**	P	P	15 41 02.3	+1.1
JOT	**Ohata**	**6.61**	**49**	P	P	15 41 15.6	+0.8

*ISCJB **28** 15:48:46.5±0.9,24.1S±0.1×179.9E±0.2,h526km,mb3.6/7, Error ellipse: s-maj=20.6km s-min=16.0km az=135.4*

*IDC **28** 15:48:46.0±1.8,24.04S×179.88E,h500km±17km,mb3.2/7, mb1 3.4/9,mb1mx3.2/27,mbtmp4.2/9,Error ellipse: s-maj=23.1km s-min=19.2km az=28.0*

ISC 28 15:48:47.5±0.9,24.1S±0.1×180.0E±0.1,h526km,n11, σ1ş59/13,mb3.6/7,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**5.45**	**160**	P	**P**	**15 50 18.7**	**-1.1**
	36nm,0.3s,baz=111,slow=8.9,SNR=5.7						
DZM	**Mont Dzumac**	**12.59**	**277**	P	**P**	**15 51 32.1**	**-0.2**
	0.2nm,0.3s,baz=104,slow=18,SNR=3.1						
URZ	**Urewera**	**14.29**	**189**	P	**P**	**15 51 48.9**	**-0.8**
	1.9nm,0.3s,baz=257,slow=2.5,SNR=14						
STKA	**Stephens Creek**	**34.59**	**248**	P	**P**	**15 54 52.8**	**+0.4**
	0.7nm,0.4s,baz=102,slow=14,SNR=3.8						
ASAR	**Alice Springs**	**41.95**	**261**	P	**P**	**15 55 52.1**	**-0.3**
	1.2nm,0.3s,baz=96,slow=7.3,SNR=75						
ASAR				ScP	**ScP**	**16 00 39.1**	**+3.2**
	0.8nm,0.8s,baz=106,slow=3.7,SNR=8.7						
WRA	**Warramunga Arr**	**42.34**	**266**	P	**P**	**15 55 54.6**	**-0.8**
	4.2nm,0.5s,baz=97,slow=8.4,SNR=195						
WRA				ScP	**ScP**	**16 00 40.2**	**+2.7**
	1.1nm,1.0s,baz=95,slow=3.9,SNR=4.6						
VNDA	**Vanda**	**54.15**	**185**	P	**P**	**15 57 23.6**	**+1.0**
	1.2nm,0.9s,baz=22,slow=3.9,SNR=3.1						
MAW	**Mawson**	**77.52**	**200**	P	**P**	**15 59 49.1**	**+0.7**
	1.2nm,0.5s,baz=139,slow=11,SNR=3.3						
PETK	**Petropavlovsk-**	**79.31**	**347**	P	**P**	**15 59 57.2**	**-0.8**
	2.3nm,0.9s,baz=123,slow=6.4,SNR=4.0						
TXAR	**Lajitas Array**	**90.59**	**58**	P	**P**	**16 00 54.5**	**+0.6**
	0.5nm,0.7s,baz=211,slow=6.5,SNR=6.0						
BRTR	**Keskin Array B**	**147.68**	**307**	PKPbc	**PKPab**	**16 07 35.7**	**-1.6**
	0.2nm,0.4s,baz=81,slow=3.9,SNR=4.2						

*NIED **28** 16:01:00,38.80N×142.00E,h59km,Mw3.9 Best double couple: M0 7.65000×10^14 NP1:φs51.00000°,δ42.00000°, λ115.00000°. NP2:φs198.00000°,δ53.00000°,λ69.00000°.*

*ISCJB **28** 16:01:37.2±0.7,38.77N±0.04×142.09E±0.08,h58km±6km, mb3.9/12,Error ellipse: s-maj=11.3km s-min=5.7km az=14.0*

*IDC **28** 16:01:37.7±2.3,38.71N×142.04E,h48km±23km,mb3.7/12, mb1 3.9/14,mb1mx3.7/36,mbtmp4.0/14,ML3.2/2,MS2.6/2, Ms1 2.6/2,ms1mx2.3/40,Error ellipse: s-maj=20.5km s-min=14.2km az=96.0*

*JMA **28** 16:01:38.4±0.1,38.80N×142.02E,h56km±1km,M4.1*

JMA Felt III J1.

ISC 28 16:01:37.5±1.4,38.77N±0.04×142.18E±0.09,h47km±12km, n39,σ1ş60/43,mb3.9/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.50**	**308**	P	**Pn**	**16 01 49.2**	**+0.5**
OFUJ				S	**Sn**	**16 01 56.7**	**+0.1**
JIO	**Ouri**	**0.72**	**244**	P	**Pn**	**16 01 51.6**	**+0.1**
JIO				S	**Sn**	**16 02 00.7**	**-0.8**
JMK	**Ichinoseki**	**0.77**	**284**	P	**Pn**	**16 01 52.0**	**-0.1**
JMK				S	**Sn**	**16 02 01.7**	**-1.0**
JOM	**Ohasama**	**0.98**	**316**	P	**Pn**	**16 01 55.0**	**+0.1**
JOM				S	**Sn**	**16 02 07.0**	**-0.8**
JOU	**Okura**	**1.26**	**252**	P	**Pn**	**16 01 58.4**	**-0.3**
JOU				S	**Sn**	**16 02 13.2**	**-1.2**
JRG	**Rokugo**	**1.36**	**298**	P	**Pn**	**16 01 59.5**	**-0.5**
JRG				S	**Sn**	**16 02 15.4**	**-1.4**
JMM	**Marumori**	**1.42**	**231**	P	**Pn**	**16 02 00.6**	**-0.2**
JMM				S	**Sn**	**16 02 16.7**	**-1.6**
JYK	**Kaneyama**	**1.43**	**276**	P	**Pn**	**16 02 00.6**	**-0.4**
JANG	**Nango**	**1.68**	**342**	P	**Pn**	**16 02 04.3**	**-0.2**
JFK	**Kawauchi**	**1.74**	**217**	P	**Pn**	**16 02 05.6**	**+0.3**
JFK				S	**Sn**	**16 02 25.6**	**-0.7**
JYS	**Shirataka**	**1.75**	**252**	P	**Pn**	**16 02 05.5**	**+0.1**
JYS				S	**Sn**	**16 02 25.7**	**-0.8**
MAT	**Matsushiro**	**3.86**	**236**	P	**Pn**	**16 02 35.8**	**+1.4**
MAT				*e*S	**Sn**	**16 03 23.7**	**+5.3**
MJAR	**Matsushiro Arr**	**3.86**	**236**	P	**Pn**	**16 02 36.4**	**+2.0**
	3.8nm,0.3s,baz=36,slow=12,SNR=36						
MJAR				S	Sn	16 03 29.5	+11
	0.9nm,0.3s,baz=57,slow=38,SNR=2.9						
MJAR				LR	LR	16 04 18.6	
	comp=Z,76nm,20.9s,baz=75,slow=43						
ASAJ	**Asahikawa**	**5.35**	**3**	P	**Pn**	**16 02 55.0**	**+0.3**
	baz=239,slow=10						
JHJ	**Hachijo jima 2**	**5.97**	**200**	P	**Pn**	**16 03 02.9**	**-0.4**
	4.1nm,0.3s,baz=228,slow=16,SNR=4.3						
JHJ				S	**Sn**	**16 04 06.0**	**-4.3**
	12nm,0.3s,baz=53,slow=20,SNR=4.5						
USRK	**Ussuriysk Ar.**	**9.37**	**309**	P	**Pn**	**16 03 49.9**	**+0.1**
	1.0nm,0.3s,baz=121,slow=14,SNR=32						
KSRS	**Korea Array**	**11.31**	**268**	P	**Pn**	**16 04 19.9**	**+3.5**
	0.8nm,0.3s,baz=77,slow=14,SNR=12						
KLR	**Kul'dur**	**12.86**	**328**	P	**P**	**16 04 43.6**	**-3.5**
	0.2nm,0.3s,baz=128,slow=13,SNR=4.6						
PETK	**Petropavlovsk-**	**17.89**	**32**	LR	LR	16 13 21.7	
	comp=Z,20nm,18.8s,baz=269,slow=39						
SEY	**Seymchan**	**24.97**	**11**	P	**P**	**16 06 57.5**	**+1.2**
	2.9nm,0.9s,baz=234,slow=19,SNR=7.3						
SONM	**Songino Array**	**27.36**	**301**	P	**P**	**16 07 18.1**	**-0.1**
	0.4nm,0.5s,baz=96,slow=10,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**28.57**	**125**	T	T	16 37 51.0	
	baz=317,slow=75,SNR=1565						
H11N1	**WAKE ISLAND Hy**	**28.58**	**125**	T	T	16 37 53.0	
	baz=317,slow=75,SNR=2443						
H11N3	**WAKE ISLAND Hy**	**28.59**	**125**	T	T	16 37 53.7	
	baz=317,slow=75,SNR=1847						
H11S1	**WAKE ISLAND Hy**	**29.35**	**127**	T	T	16 38 48.9	
	baz=318,slow=76,SNR=202						
H11S3	**WAKE ISLAND Hy**	**29.35**	**127**	T	T	16 38 49.2	
	baz=318,slow=76,SNR=242						
H11S2	**WAKE ISLAND Hy**	**29.36**	**127**	T	T	16 38 50.5	
	baz=318,slow=76,SNR=223						
ZALV	**Zalesovo Beam**	**41.22**	**311**	P	**P**	**16 09 17.0**	**-0.4**
	2.6nm,0.4s,baz=88,slow=7.7,SNR=15						
NRIK	**Noril'sk**	**41.95**	**334**	P	**P**	**16 09 22.0**	**-1.2**
	1.1nm,0.4s,baz=217,slow=5.1,SNR=2.2						
MKAR	**Makanchi Array**	**43.73**	**301**	P	**P**	**16 09 37.1**	**-0.9**
	0.7nm,0.6s,baz=84,slow=10,SNR=9.4						
ILAR	**Eielson Array**	**47.71**	**33**	P	**P**	**16 10 09.8**	**+0.7**
	1.9nm,0.7s,baz=268,slow=6.6,SNR=22						
INK	**Inuvik**	**52.57**	**28**	P	**P**	**16 10 46.6**	**+0.9**
	0.6nm,0.4s,baz=290,slow=6.9,SNR=6.0						
WRA	**Warramunga Arr**	**58.87**	**189**	P	**P**	**16 11 30.6**	**-0.9**
	1.7nm,0.5s,baz=6.8,slow=7.0,SNR=45						
ASAR	**Alice Springs**	**62.59**	**189**	P	**P**	**16 11 56.3**	**-0.4**
	0.7nm,0.6s,baz=2.8,slow=6.5,SNR=22						
FINES	**FINESS Array B**	**67.56**	**332**	P	**P**	**16 12 30.5**	**+2.0**
	0.8nm,0.6s,baz=54,slow=7.1,SNR=3.4						
PDAR	**Pinedale Array**	**76.02**	**46**	P	**P**	**16 13 20.8**	**+0.8**
	0.7nm,0.6s,baz=260,slow=4.2,SNR=4.9						
TXAR	**Lajitas Array**	**88.58**	**53**	P	**P**	**16 14 26.4**	**+0.8**
	0.4nm,0.7s,baz=274,slow=2.6,SNR=7.1						
LPAZ	**La Paz**	**145.28**	**58**	PKPbc	**PKPdf**	**16 21 11.3**	**+0.2**
	1.0nm,0.5s,baz=263,slow=2.4,SNR=4.5						
SIV	**San Ignacio**	**149.49**	**48**	PKPbc	**PKPbc**	**16 21 21.1**	**-0.9**
	2.2nm,0.7s,baz=315,slow=5.7,SNR=3.0						

*IDC **28** 16:05:54.5±0.4,35.76S×73.30W,h0km,mb4.7/12, mb1 4.8/15,mb1mx4.8/23,mbtmp4.7/15,ML5.3/3,MS4.7/14, Ms1 4.7/14,ms1mx4.6/19,Error ellipse: s-maj=27.0km s-min=13.0km az=84.0*

*GUC **28** 16:05:55.1±0.4,35.83S×73.49W,h20km±5km,ML5.3*

*GCMT **28** 16:05:55.0±0.2,35.91S×73.57W,h13km,MW5.2/96, Moment Tensor Solution. s49,c64; s96,c132; Duration: 1ş0 Moment tensor: Scale 10^16Nm; Mrr4.39±.19; Mθθ-0.10±.12; Mφφ-4.29±.15; Mrθ-0.96±.34; Mθφ-1.41±.10; Mφr-5.88±.59; Best double couple: M0 7.50200×10^16 NP1:φs191.00000°,δ71.00000°,λ86.00000°. NP2: φs24.00000°,δ19.00000°,λ103.00000°. Principal axes: T 7.3650, Plg63.0000°, Azm94.0000°; N 0.2750, Plg4.0000°, Azm192.0000°; P -7.6390, Plg26.0000°, Azm284.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **28** 16:05:57.3±1.0,35.78S±0.03×73.24W±0.05,h30km±7km, mb5.2/108,MS4.7/19 Error ellipse: s-maj=7.4km s-min=4.2km az=179.0*

*BJI **28** 16:05:58.1,35.80S×73.10W,h22km,mB5.1/26,Ms5.2/15, Ms7 5.0/17*

*MOS **28** 16:05:58.7±1.4,35.66S×72.90W,h33km,mb5.3/19, MS4.7/4,Error ellipse: s-maj=17.7km s-min=8.1km az=102.2*

*NEIC **28** 16:05:59.8±0.1,35.76S×73.10W,h35km,mb5.2/101, ML5.3(GUC),Error ellipse: s-maj=6.1km s-min=3.5km az=79.0*

NEIC Felt [IV] at Chillan, Cobquecura, Concepcion, Constitucion, Hualpen, Linares, Longavi, Pelluhue and San Pedro de la Paz; [III] at Arauco, Cabrero, Cauquenes, Chanco, La Laja, Maule, Parral, Pencahue and Talca; [II] at Curico and Romeral. Also felt at Coronel, Los Angeles and Talcahuano.

ISC 28 16:05:58.9±0.9,35.80S±0.03×73.22W±0.05,h29km±5km, n488,σ1ş40/530,mb5.2/107,MS4.7/20,2C-2D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.48**	**134**	*e*P	**Pb**	**16 06 07.1**	**-1.8**
COCH				*e*S	**Sb**	**16 06 16.2**	**+0.4**
COCH				IAML		16 06 17.1	
	comp=E,204μm,0.5s						
CCSP	**San Pedro de C**	**1.05**	**175**	*e*P	**Pn**	**16 06 13.8**	**-3.8**
CCSP				*e*S	**Sn**	**16 06 28.2**	**-3.0**
CCSP				IAML		16 06 32.0	
	comp=N,148μm,0.5s						
CCHI	**Chillan**	**1.22**	**132**	*e*P	**Pn**	**16 06 19.4**	**-0.5**
CCHI				*e*S	**Sb**	**16 06 37.3**	**+0.5**
CCHI				IAML		16 06 49.6	
	comp=N,158μm,0.5s						
TALC	**Talca**	**1.35**	**73**	*e*P	**Pn**	**16 06 22.1**	**+0.5**
TALC				*e*S	**Sb**	**16 06 42.7**	**+2.4**
NICH	**Los Niches**	**1.81**	**65**	*e*P	**Pn**	**16 06 29.5**	**+1.5**
NICH				*e*S	**Sb**	**16 06 55.4**	**+1.9**
ROC1	**El Roble**	**3.35**	**34**	*e*P	**Pn**	**16 06 49.4**	**-0.1**
ROC1				*e*S	Sb	16 07 51.4	+13
ROC1	**El Roble**	**3.35**	**34**	*e*Pn	**Pn**	**16 06 49.3**	**-0.1**
AAGR	**Agrelo**	**4.52**	**55**	*e*P	**Pn**	**16 07 08.7**	**+2.2**
ARCO	**CERRO ARCO**	**4.61**	**51**	*e*P	**Pn**	**16 07 09.7**	**+3.0**
ARCO				IAML		16 07 34.7	
	comp=Z,689nm,0.5s						
ARCO				*e*S	**Sb**	**16 08 16.6**	**+2.3**
AUSP	**Uspallata**	**4.78**	**43**	*e*P	**Pn**	**16 07 11.3**	**+2.2**
AUSP				*e*S	**Sb**	**16 08 22.8**	**+3.6**
ASAL	**Salagasta**	**4.84**	**50**	*e*P	**Pn**	**16 07 12.7**	**+2.9**
RTLS	**Leoncito**	**5.15**	**40**	*e*P	**Pn**	**16 07 16.0**	**+1.8**
RTLS				*e*S	Sb	16 08 39.0	+9.0
PLCA	**Paso Flores**	**5.36**	**158**	*e*P	**Pn**	**16 07 16.9**	**+0.1**
PLCA				*e*S	**Sb**	**16 08 42.8**	**+7.2**
PLCA				IAML		16 08 51.3	
	comp=Z,797nm,0.6s						
PLCA	**Paso Flores**	**5.36**	**158**	Pn	**Pn**	**16 07 17.1**	**+0.3**
	comp=Z,8.1nm,0.3s,baz=347,slow=11,SNR=183						
PLCA				Lg	Lg	16 08 43.3	
	comp=Z,41nm,0.3s,baz=97,slow=20,SNR=6.0						
PLCA	**Paso Flores**	**5.36**	**158**	*e*P	**Pn**	**16 07 16.6**	**-0.2**
PLCA	**Paso Flores**	**5.36**	**158**	*e*Pn	**Pn**	**16 07 16.7**	**-0.2**
PLCA				*e*Sg	**Sb**	**16 08 42.2**	**+6.6**
RTCV	**Cerro Valdivia**	**5.53**	**46**	*e*P	**Pn**	**16 07 20.6**	**+1.4**
SJA	**San Juan**	**5.76**	**44**	*e*P	**Pn**	**16 07 24.2**	**+1.8**
SJA				*e*S	**Sb**	**16 08 54.2**	**+7.0**
SJA				IAML		16 09 16.4	
	comp=Z,446nm,0.7s						
RTLL	**Cerro Villicun**	**5.96**	**43**	*e*P	**Pn**	**16 07 26.1**	**+1.0**
ACAN	**Cantantal**	**6.11**	**57**	*e*P	**Pn**	**16 07 29.1**	**+1.9**
AVFE	**Valle Fertil**	**7.04**	**45**	*e*P	**Pn**	**16 07 39.8**	**-0.2**
MRA	**San Martin**	**7.07**	**64**	*e*P	**Pn**	**16 07 42.0**	**+1.6**
LCO	**Las Campanas**	**7.09**	**18**	*e*P	**Pn**	**16 07 39.6**	**-1.3**
LCO				*e*S	**Sn**	**16 08 59.4**	**-1.2**
LCO	**Las Campanas**	**7.09**	**18**	*e*Pn	**Pn**	**16 07 38.8**	**-2.1**
ACHE	**Chepes**	**7.16**	**52**	*e*P	**Pn**	**16 07 42.0**	**+0.2**
SUCO	**SUCO**	**7.29**	**73**	IAML		16 08 14.8	
	comp=Z,99nm,0.5s						
VCA	**Vinchina**	**8.22**	**32**	*e*P	**Pn**	**16 07 56.7**	**+0.5**
VCA				*e*S	Sb	16 09 51.3	-6.6
VCA				IAML		16 10 10.2	
	comp=Z,264nm,0.7s						
TCA	**Tanti**	**8.46**	**61**	*e*P	**Pn**	**16 07 59.3**	**-0.1**
TCA				IAML		16 08 06.3	
	comp=Z,110nm,0.7s						
TRQA	**Tornquist**	**9.28**	**107**	*e*P	**Pn**	**16 08 13.0**	**+2.4**
TRQA	**Tornquist**	**9.28**	**107**	*e*Pn	**Pn**	**16 08 11.8**	**+1.2**
CYA	**Choya**	**9.65**	**43**	*e*P	**Pn**	**16 08 12.4**	**-3.5**
AHML	**Horco Molle**	**11.22**	**39**	IAML		16 09 07.5	
	comp=Z,26nm,0.6s						
CHRN	**Cochrane**	**11.45**	**178**	*e*Pn	**Pn**	**16 08 39.4**	**-0.9**
FSA	**Cafayete**	**11.47**	**35**	*e*P	**Pn**	**16 08 37.6**	**-3.3**
PB10	**IPOC Station P**	**12.46**	**11**	*e*Pn	**Pn**	**16 08 54.6**	**+0.4**
LVC	**Limon Verde**	**13.66**	**17**	Pn	**Pn**	**16 09 08.4**	**-2.6**
	comp=Z,20nm,0.3s,baz=145,slow=12,SNR=3.8						
LVC				LR	LR	16 14 59.0	
	comp=Z,19μm,18.0s,baz=207,slow=40						
PB04	**IPOC Station P**	**13.68**	**12**	*e*Pn	**Pn**	**16 09 07.6**	**-3.4**
HJA	**Humahuaca**	**14.26**	**30**	*e*P	**Pn**	**16 09 15.5**	**-3.6**
PB01	**IPOC Station P**	**15.06**	**14**	*e*Pn	**Pn**	**16 09 30.4**	**+0.8**
	comp=Z,103nm,1.0s						
**

comp=Z,68nm,0.4s
VNA1 Neumayer--Stat 48.41 156 P **P** 16 14 38.9 +1.0
GRGR Grenville 48.91 15 eP **P** 16 14 41.9 -0.3
comp=Z,346nm,1.4s
PTCN Pitcairn Islan 49.59 266 eP **P** 16 14 49.5 +2.0
comp=Z,2µm,2.0s
SVB Belmont 50.10 15 eP **P** 16 14 50.6 -0.7
comp=Z,123nm,0.7s
SVB ePcP **PcP** 16 16 13.9 +3.2
SNAA Sanae 50.30 157 P **P** 16 14 53.0 +0.6
SNAA Sanae 50.30 157 *c iP* **P** 16 14 52.5 +0.2
SNAA Sanae 50.30 157 eP **P** 16 14 52.7 +0.4
comp=Z,293nm,1.6s
FDF Fort de France 51.54 15 eP **P** 16 15 03.1 +0.9
FDF pmax pmax
comp=Z,183nm,1.3s
FDF Fort de France 51.54 15 eP **P** 16 15 03.1 +0.9
comp=Z,184nm,1.3s
GDHS Morne Mazeau, 52.91 14 eP **P** 16 15 12.3 0.0
comp=Z,84nm,1.1s
CELP Cerrillos 53.94 8 eP **P** 16 15 20.0 +0.1
SABA Saba 53.96 12 eP **P** 16 15 19.4 -0.6
comp=Z,181nm,1.2s
SJG San Juan 54.03 8 eP **P** 16 15 19.5 -1.0
SJG pmax pmax
comp=Z,40nm,1.2s
SJG San Juan 54.03 8 eP **P** 16 15 19.5 -1.0
comp=Z,40nm,1.2s
HUMP Col San Antoni 54.09 9 eP **P** 16 15 19.4 -1.5
comp=Z,37nm,1.2s
CBYP Canovanas 54.22 9 eP **P** 16 15 21.4 -0.5
comp=Z,62nm,1.2s
QSPA South Pole Qui 54.44 180 eP **P** 16 15 23.1 -0.1
RKT Rikitea 54.44 266 eS **S** 16 23 00.4 -0.2
comp=Z,338nm,27.0s
RKT eLR LR 16 31 19.3
comp=Z,601nm,40.8s,baz=122
RKT Rikitea 54.44 266 eT T 17 13 45.0
comp=Z,2.3nm,0.2s
ABVI Anegada Island 54.88 10 eP **P** 16 15 28.1 +1.4
comp=Z,205nm,1.2s
NVL N'lazarevskaya 55.06 156 eP **P** 16 15 28.9 +1.5
NVL e*PP **pP** 16 15 35.1 -1.3
NVL eS **S** 16 23 11.2 +3.6
NVL MLR MLR
comp=Z,881nm,22.0s
VNDA Vanda 62.15 192 P **P** 16 16 17.7 +1.0
comp=Z,3.1nm,1.0s,baz=130,slow=8.0,SNR=5.0
VNDA LR LR 16 41 39.4
comp=Z,250nm,18.2s,baz=128,slow=34
VNDA Vanda 62.15 192 eP **P** 16 16 18.0 +1.3
VNDA pmax pmax
comp=Z,15nm,1.2s
VNDA Vanda 62.15 192 eP **P** 16 16 18.0 +1.3
comp=Z,15nm,1.2s
SHEL Horse Pasture 62.69 90 eP **P** 16 16 19.9 -1.4
SHEL pmax pmax
comp=Z,364nm,1.4s
SHEL Horse Pasture 62.69 90 eP **P** 16 16 19.9 -1.4
comp=Z,364nm,1.4s
DWPF Disney Wildern 64.04 352 eP **P** 16 16 31.9 +2.3
comp=Z,139nm,1.6s
ZAIG Zacatecas 64.54 330 eP **P** 16 16 35.1 +1.6
comp=Z,23nm,1.8s
SYO Syowa Base 64.55 158 ||| *iP* **P** 16 16 31.0 -1.7
SYO Syowa Base 64.55 158 ||| *eX* **P** 16 16 37.0 +4.3
TBI Tubuai 65.98 258 eS **S** 16 25 27.9 -0.6
comp=Z,595nm,27.8s
TBI Tubuai 65.98 258 eLR LR 16 36 41.7
comp=Z,681nm,27.2s,baz=118
TAOE Nuku Hiva Isla 66.18 276 eS **S** 16 25 29.7 -1.8
comp=Z,201nm,23.4s
TAOE Nuku Hiva Isla 66.18 276 eLR LR 16 36 40.6
comp=Z,581nm,30.5s
TAOE Nuku Hiva Isla 66.18 276 eP **P** 16 16 45.9 +1.7
comp=Z,167nm,1.4s
MEH Mehetia 67.67 264 eT T 17 30 22.0
comp=Z,49nm,0.2s
TVO Taravao 68.67 263 eT T 17 31 33.5
comp=Z,1.9nm,0.3s
PPT2 Papeete2 69.04 263 eS **S** 16 26 04.9 -0.7
comp=Z,329nm,23.0s
PPT2 Papeete2 69.04 263 eLR LR 16 38 00.3
comp=Z,876nm,25.2s,baz=127
PPT Papeete 69.05 263 LR LR 16 39 49.9
comp=Z,217nm,18.5s,baz=130,slow=30
HPIG 69.51 329 eP **P** 16 17 04.4 -0.5
comp=Z,14nm,1.2s
GOGA Godfrey 69.51 351 eP **P** 16 17 04.4 -0.1
GOGA Godfrey 69.51 351 eP **P** 16 17 04.4 -0.1
LRAL Lakeview Retre 69.68 348 eP **P** 16 17 05.8 +0.2
JSC Jenkinsville 70.12 353 eP **P** 16 17 07.9 -0.3
JSC Jenkinsville 70.12 353 eP **P** 16 17 07.9 -0.3
NATX Nacogdoches 70.15 341 eP **P** 16 17 09.3 +0.9
JCT Junction City 70.51 336 eP **P** 16 17 10.8 0.0
JCT Junction City 70.51 336 eP **P** 16 17 10.8 0.0
433A Art 70.53 337 P **P** 16 17 11.4 +0.5
baz=158
Y47A UCPARC, Winfie 70.68 347 P **P** 16 17 12.2 +0.5
baz=167
334A Lometa 70.79 337 P **P** 16 17 13.1 +0.7
baz=159
CNNC Cliffs of the 70.81 356 eP **P** 16 17 12.1 -0.3
LTX Lajitas 70.85 332 eP **P** 16 17 13.5 +0.6
LTX Lajitas 70.85 332 eP **P** 16 17 13.5 +0.6
TXAR Lajitas Array 70.85 332 P **P** 16 17 13.5 +0.6
comp=Z,1.8nm,0.8s,baz=148,slow=8.5,SNR=19
TXAR LR LR 16 43 48.6
comp=Z,375nm,18.1s,baz=0.0,slow=32
TX31 Lajitas Ar. Si 70.85 332 eP **P** 16 17 13.3 +0.4
KMSC Kings Mountain 70.98 353 P **P** 16 17 14.0 +0.5
baz=173
KMSC Kings Mountain 70.98 353 eP **P** 16 17 13.6 +0.2
comp=Z,74nm,0.1s
333A Richland Sprin 71.02 337 P **P** 16 17 13.4 -0.5
baz=158
WHTX Lake Whitney, 71.16 338 eP **P** 16 17 14.1 -0.6
comp=Z,26nm,1.0s
WLAR White Oak Lake 71.59 343 eP **P** 16 17 17.8 +0.6
comp=Z,24nm,1.0s
233A Rising Star 71.63 337 P **P** 16 17 17.9 +0.4
baz=158
SWET Sewanee 71.64 349 eP **P** 16 17 17.4 -0.1
comp=Z,8.2nm,0.8s
CPCT Cooper Cave 71.66 350 eP **P** 16 17 15.7 -1.9
comp=Z,20nm,1.2s
MAW Mawson 71.73 164 P **P** 16 17 18.5 +0.8
comp=Z,15nm,0.8s,baz=228,slow=7.2,SNR=22
MAW LR LR 16 49 48.7
comp=Z,699nm,18.4s,baz=232,slow=37
MAW Mawson 71.73 164 eP **P** 16 17 18.1 +0.4
MAW pmax pmax
comp=Z,10.0nm,1.1s
MAW Mawson 71.73 164 eP **P** 16 17 18.1 +0.4
comp=Z,10nm,1.1s
TKL Tuckaleechee C 71.77 351 eP **P** 16 17 17.8 -0.4
TKL pmax pmax
comp=Z,14nm,0.8s
TKL Tuckaleechee C 71.77 351 eP **P** 16 17 17.8 -0.4
comp=Z,14nm,0.8s
Z35A Perchaven, San 72.36 339 P **P** 16 17 20.7 -1.1
baz=160
ABTX Abilene, Hawle 72.43 337 eP **P** 16 17 22.2 -0.1
comp=Z,13nm,0.7s
MIAR Mount Ida 72.52 342 eP **P** 16 17 23.2 +0.5
MIAR Mount Ida 72.52 342 eP **P** 16 17 23.2 +0.5
TZTN Tazewell 72.61 351 eP **P** 16 17 23.9 +0.6
comp=Z,36nm,1.4s
W41B Gary Mavity, V 72.80 344 P **P** 16 17 24.7 +0.4
baz=164
WVT Waverly 72.84 348 eP **P** 16 17 24.2 -0.4
WVT pmax pmax
comp=Z,37nm,1.1s
WVT Waverly 72.84 348 eP **P** 16 17 24.2 -0.4
comp=Z,37nm,1.1s
X301 Greenbrier Sit 72.90 344 eP **P** 16 17 25.3 +0.4
comp=Z,14nm,0.9s
WHAR Wooly Hollow 72.92 344 eP **P** 16 17 24.9 -0.2
comp=Z,36nm,1.3s
X201 Greenbrier Sit 72.94 344 eP **P** 16 17 25.2 -0.1
comp=Z,22nm,1.0s
X38A Whitesboro 72.95 341 P **P** 16 17 25.8 +0.5
baz=162
URVA University of 73.11 356 eP **P** 16 17 26.5 +0.4
W39A Magazine 73.19 343 P **P** 16 17 27.7 +1.0
baz=163
V42A Cord 73.22 345 P **P** 16 17 27.2 +0.4
baz=165
X36A Centrahoma 73.26 340 P **P** 16 17 26.9 -0.3
baz=160
V41A Mountainview 73.37 344 P **P** 16 17 27.6 -0.2
baz=164
MNTX Cornudas Mount 73.61 332 P **P** 16 17 27.8 -1.6
baz=153
MNTX Cornudas Mount 73.61 332 eP **P** 16 17 28.6 -0.8
U42A Revenden 73.71 345 P **P** 16 17 28.8 -0.9
baz=165
PBMO Poplar Bluff 73.96 346 eP **P** 16 17 30.6 -0.6
comp=Z,9.3nm,0.6s
U40A Yellville 74.08 344 P **P** 16 17 32.1 +0.2
baz=164
WMOK Wichita Mounta 74.12 338 eP **P** 16 17 33.2 +1.0
WMOK pmax pmax
comp=Z,13nm,1.3s
WMOK Wichita Mounta 74.12 338 eP **P** 16 17 33.1 +1.0
comp=Z,13nm,1.3s
T43A Greenville 74.23 346 P **P** 16 17 32.7 0.0
baz=166
U39A Green Forest 74.25 343 P **P** 16 17 31.4 -1.5
baz=163
HHAR Hobbs 74.26 343 eP **P** 16 17 32.5 -0.4
comp=Z,15nm,0.8s
W34A Bridge Creek, 74.29 339 eP **P** 16 17 35.6 +2.4
comp=Z,21nm,1.1s
V36A Jenks 74.30 341 P **P** 16 17 32.7 -0.5
baz=161
TUL1 Leonard 74.38 341 eP **P** 16 17 34.5 +0.8
comp=Z,28nm,0.8s
W33A Caddo, Fort Co 74.41 339 P **P** 16 17 34.5 +0.6
baz=159
T41A Mountain View 74.49 345 P **P** 16 17 34.3 0.0
baz=164
USIN University of 74.60 348 eP **P** 16 17 34.3 -0.6
comp=Z,37nm,0.9s
W32A Sentinel 74.62 338 P **P** 16 17 35.7 +0.6
baz=158
SIUC Southern Illin 74.63 347 eP **P** 16 17 35.0 0.0
comp=Z,20nm,0.9s
S43A Fulton Ridge, 74.66 346 P **P** 16 17 35.1 -0.1
baz=166
MSTX Muleshoe 74.70 335 P **P** 16 17 36.4 +0.6
baz=155
MSTX Muleshoe 74.70 335 eP **P** 16 17 35.9 +0.2
comp=Z,19nm,1.0s
V34A Guthrie 74.77 340 eP **P** 16 17 36.5 +0.6
comp=Z,76nm,1.7s
T39A Clever 74.83 343 P **P** 16 17 37.2 +0.9
baz=163
S42A Caledonia 74.99 346 P **P** 16 17 36.8 -0.4
baz=165
AMTX Amarillo 75.17 336 eP **P** 16 17 38.5 +0.1
S40A Lebanon 75.19 344 P **P** 16 17 38.7 +0.4
baz=164
T37A Cheneyville 18 75.30 342 P **P** 16 17 38.5 -0.4
baz=162
PSUB Penn St. - Bra 75.38 358 eP **P** 16 17 38.9 -0.4
comp=Z,23nm,0.9s
S39A Bolivar 75.46 344 P **P** 16 17 40.3 +0.4
baz=163
T35A Sooner Cattle 75.51 341 P **P** 16 17 40.6 +0.4
baz=161
S38A Stockton 75.54 343 P **P** 16 17 40.4 +0.1
baz=163
R41A Rosebud 75.62 345 P **P** 16 17 40.9 +0.2
baz=165
T34A McClaskey Farm 75.80 340 P **P** 16 17 41.3 -0.5
baz=160
R40A Maddies Statio 75.80 345 P **P** 16 17 41.1 -0.7
baz=164
S37A Fort Scott 75.88 342 P **P** 16 17 42.0 -0.2
baz=162
Q43A New Douglas 75.91 347 P **P** 16 17 42.2 -0.2
baz=166
R39A Chumby, Stover 75.99 344 P **P** 16 17 41.8 -1.0
baz=163
T33A Patterson Ranc 76.14 340 P **P** 16 17 44.7 +0.9
baz=159
SSPA Standing Stone 76.18 356 eP **P** 16 17 43.6 -0.3
comp=Z,28nm,1.0s
ACSO Alum Creek Sta 76.19 352 eP **P** 16 17 44.0 +0.1
TUC Tucson 76.36 328 eP **P** 16 17 45.7 +0.5
TUC pmax pmax
comp=Z,12nm,1.3s
TUC Tucson 76.36 328 eP **P** 16 17 45.6 +0.5
comp=Z,12nm,1.3s
Q40A Laux Farm, Aux 76.43 345 P **P** 16 17 45.6 +0.2
baz=164
ODNJ Ogdensburg 76.52 359 eP **P** 16 17 44.7 -1.1
comp=Z,51nm,1.8s
KIC Kan Boka 76.56 72 ePKP1 **P** 16 17 46.2 -0.5
comp=Z,153nm,0.8s
P42A Winchester 76.66 346 P **P** 16 17 46.4 -0.3
baz=166
DBIC Dimbokro 76.67 72 LR LR 16 48 18.2
comp=Z,330nm,20.8s,baz=212,slow=33
DBIC Dimbokro 76.67 72 eP **P** 16 17 45.8 -1.5
DBIC pmax pmax
comp=Z,64nm,0.8s
DBIC Dimbokro 76.67 72 eP **P** 16 17 45.8 -1.5
comp=Z,64nm,0.8s
DBIC Dimbokro 76.67 72 eP **P** 16 17 45.8 -1.5
comp=Z,64nm,0.8s
Q39A Willow Grove F 76.68 344 P **P** 16 17 46.6 -0.2
baz=164
LAZ Ladron 76.69 332 eP **P** 16 17 47.1 -0.1
Q38A Cooks Store, C 76.74 344 P **P** 16 17 47.0 -0.1
baz=163
ANMO Albuquerque 76.91 332 P **P** 16 17 49.4 +0.9
baz=153
ANMO Albuquerque 76.91 332 eP **P** 16 17 48.1 -0.3
ANMO pmax pmax
comp=Z,2.0nm,1.0s
ANMO Albuquerque 76.91 332 eP **P** 16 17 48.6 +0.1
comp=Z,11nm,1.1s
P40A Paris 76.94 345 P **P** 16 17 48.2 0.0
baz=164
O40A La Belle 77.48 345 P **P** 16 17 51.6 +0.4
baz=164
T25A Trinidad 78.13 335 P **P** 16 17 56.6 +1.3
baz=154
T25A Trinidad 78.13 335 eP **P** 16 17 56.2 +0.9
comp=Z,24nm,1.1s
TRY Troy 78.16 360 eP **P** 16 17 56.0 +1.1
comp=Z,35nm,1.0s
CASY Casey 78.21 182 eP **P** 16 17 55.2 +0.1
comp=Z,37nm,1.1s
MMNY Mt. Morris Dam 78.27 356 eP **P** 16 17 55.8 +0.2
N39A Derby Farms, D 78.33 345 P **P** 16 17 56.4 +0.5
baz=164
N38A Joes South For 78.41 345 P **P** 16 17 56.3 -0.1
baz=163
X16A Lo Mia Camp, P 78.44 329 eP **P** 16 17 57.1 +0.1
comp=Z,14nm,1.4s
ACCN Adirondack Com 78.81 360 eP **P** 16 17 59.2 +0.7
comp=Z,32nm,1.4s
M38A Pleasantville 79.00 345 P **P** 16 17 59.6 0.0
baz=164
SDCO Great Sand Dun 79.06 334 eP **P** 16 18 01.1 +0.7
L41A Preston 79.10 347 P **P** 16 17 59.3 -0.8
baz=166
HNH Hanover 79.13 1 eP **P** 16 18 01.2 +1.0
L40A Anamosa 79.22 346 P **P** 16 18 01.0 +0.2
baz=165
L39A Vinton 79.43 346 P **P** 16 18 02.1 +0.2
baz=164
S22A 4UR Ranch, Cre 79.53 333 eP **P** 16 18 04.6 +1.6
comp=Z,25nm,1.8s
L38A Oak Wood Farm, 79.64 345 P **P** 16 18 02.5 -0.6
baz=164
TSUM Tsumeb 79.65 106 eP **P** 16 18 04.9 +0.9
comp=Z,21nm,1.1s
L37A Phoenix Point, 79.79 345 P **P** 16 18 03.3 -0.7
baz=163
K40A Colesburg 79.82 347 P **P** 16 18 03.0 -1.0
baz=165
JFWS Jewell Farm 79.86 347 eP **P** 16 18 04.4 +0.1
JFWS Jewell Farm 79.86 347 eP **P** 16 18 04.4 +0.1
K39A Oelwein 79.97 346 P **P** 16 18 05.1 +0.3
baz=165
Q24A Divide 80.03 335 eP **P** 16 18 05.9 +0.2
LONY Lake Ozonia 80.05 359 eP **P** 16 18 05.6 +0.3
WVL Waterville 80.05 3 eP **P** 16 18 05.5 +0.3
comp=Z,32nm,1.2s
W13A Hualapai Mount 80.08 327 eP **P** 16 18 06.6 +0.7
comp=Z,6.1nm,1.3s
BOSA Boshof 80.09 118 P **P** 16 18 06.5 +0.2
comp=Z,35nm,0.8s,baz=231,slow=4.8,SNR=44
BOSA LR LR 16 49 27.2
comp=Z,335nm,19.5s,baz=218,slow=33
BOSA Boshof 80.09 118 eP **P** 16 18 05.8 -0.5
BOSA pmax pmax
comp=Z,54nm,0.9s
BOSA Boshof 80.09 118 eP **P** 16 18 05.8 -0.5
comp=Z,54nm,0.9s
FRNY Flat Rock 80.26 360 eP **P** 16 18 06.6 +0.2
comp=Z,44nm,1.7s
J41A Loganville 80.26 348 P **P** 16 18 06.9 +0.4
baz=166
SADO Sadowa 80.37 356 P **P** 16 18 07.0 0.0
comp=Z,5.6nm,0.7s,baz=234,slow=6.4,SNR=3.7
SADO Sadowa 80.37 356 eP **P** 16 18 06.7 -0.3
comp=Z,22nm,1.1s
K37A Belmond 80.38 345 P **P** 16 18 07.0 -0.1
baz=163
J40A Soldiers Grove 80.42 347 P **P** 16 18 07.1 -0.2
baz=166
U15A North Rim 80.52 329 eP **P** 16 18 09.8 +1.4
comp=Z,16nm,1.4s
PLVO Plevna 80.54 357 eP **P** 16 18 07.8 0.0
comp=Z,20nm,1.0s
J39A Decorah 80.54 346 P **P** 16 18 07.9 0.0
baz=165
PKME Peaks-Kenny Pk 80.76 3 eP **P** 16 18 08.4 -0.6
J37A Redenius Farm, 80.89 345 P **P** 16 18 09.5 -0.3
baz=163
ISCO Idaho Springs 80.94 335 eP **P** 16 18 08.3 -2.2
ISCO Idaho Springs 80.94 335 eP **P** 16 18 08.3 -2.2
J36A Seneca 1, Swea 81.07 345 P **P** 16 18 10.9 +0.1
baz=163
I38A Scanlan Farm, 81.34 346 P **P** 16 18 12.2 -0.1
baz=164
I37A Lemond, Waseca 81.53 345 P **P** 16 18 13.5 +0.3
baz=164
LMN Caledonia Moun 81.63 6 eP **P** 16 18 12.0 -1.6
comp=Z,19nm,1.1s
TRQ Mont Tremblant 81.65 359 eP **P** 16 18 13.5 -0.4
J33A Davis 81.66 343 P **P** 16 18 14.3 +0.4
baz=161
SHPR Sheep Range 81.82 327 eP **P** 16 18 15.4 +0.3
CCUT Cedar City 81.92 329 eP **P** 16 18 16.6 +0.9
comp=Z,17nm,1.2s
ECSD EROS Data Cent 81.97 343 P **P** 16 18 15.7 +0.2
baz=161
ECSD EROS Data Cent 81.97 343 eP **P** 16 18 15.2 -0.4
N23A Red Feather La 82.03 336 eP **P** 16 18 16.5 +0.3
comp=Z,23nm,1.4s
SRU San Rafael Swe 82.11 332 eP **P** 16 18 16.4 -0.3
SRU pmax pmax
comp=Z,8.0nm,1.1s
SRU San Rafael Swe 82.11 332 eP **P** 16 18 16.4 -0.3
comp=Z,8.2nm,1.1s
PHWY Pilot Hill 82.23 336 eP **P** 16 18 17.4 +0.1
comp=Z,15nm,1.4s
LBTB Lobatse 82.42 115 eP **P** 16 18 18.7 0.0
LBTB pmax pmax
comp=Z,46nm,1.2s
LBTB Lobatse 82.42 115 eP **P** 16 18 18.7 0.0
comp=Z,46nm,1.2s
H35A Sunnyside Ranc 82.48 345 P **P** 16 18 18.3 +0.1
baz=162
TMUT Trail Mountain 82.54 331 eP **P** 16 18 19.0 0.0
comp=Z,19nm,1.4s
TPNV Topopah Spring 82.67 327 eP **P** 16 18 20.8 +1.2
TPNV pmax pmax
comp=Z,17nm,1.4s
TPNV Topopah Spring 82.67 327 eP **P** 16 18 20.8 +1.2
comp=Z,17nm,1.4s
COWI Conover 82.78 349 eP **P** 16 18 18.1 -1.7
H33A Prehn Over Nor 82.90 343 P **P** 16 18 20.9 +0.5
baz=161
LMQ La Malbaie 83.01 2 eP **P** 16 18 20.1 -0.7
F36A Milaca 83.33 346 P **P** 16 18 22.2 -0.4
baz=163
MPU Maple Canyon 83.33 331 eP **P** 16 18 23.1 +0.2
comp=Z,23nm,1.4s
NLU North Lily Min 83.45 331 eP **P** 16 18 22.8 -0.8
comp=Z,25nm,1.4s
R11A Troy Canyon, C 83.54 328 eP **P** 16 18 25.0 +0.9
comp=Z,22nm,1.5s
F34A Alexandria 83.62 345 P **P** 16 18 24.6 +0.5
baz=162
VLDQ Val d'Or 83.62 357 eP **P** 16 18 24.5 +0.6
comp=Z,23nm,1.2s
K22A Casper 83.79 336 eP **P** 16 18 25.2 0.0
comp=Z,32nm,1.4s
F33A 5 Mile Ranch, 83.89 344 P **P** 16 18 25.4 0.0
baz=161
E36A McGregor 83.90 346 P **P** 16 18 25.3 -0.2
baz=164
DUG Dugway, Tooele 83.95 331 eP **P** 16 18 26.9 +0.9
DUG Dugway, Tooele 83.95 331 eP **P** 16 18 26.9 +0.9
TCUT Toone Canyon 84.19 332 eP **P** 16 18 28.0 +0.6
comp=Z,49nm,1.4s
RSSD Black Hills 84.33 338 eP **P** 16 18 27.5 -0.5
RSSD pmax pmax
comp=Z,41nm,1.8s
RSSD Black Hills 84.33 338 eP **P** 16 18 27.5 -0.5
comp=Z,42nm,1.8s
D35A Remer 84.60 346 P **P** 16 18 29.0 0.0
baz=163
C39A Grand Marais 84.61 349 P **P** 16 18 28.7 -0.3
baz=166
HWUT Hardware Ranch 84.67 332 eP **P** 16 18 29.6 -0.1
comp=Z,41nm,1.4s
C38A Sawbill Land. 84.70 348 P **P** 16 18 29.2 -0.3
baz=165
BW06 Boulder Array 84.94 334 P **P** 16 18 30.4 -0.8
baz=151
BW06 Boulder Array 84.94 334 eP **P** 16 18 30.1 -1.0
PD31 Pinedale Array 84.94 334 eP **P** 16 18 30.0 -1.1
PDAR Pinedale Array 84.94 334 P **P** 16 18 30.6 -0.5
comp=Z,1.3nm,1.0s,baz=161,slow=5.7,SNR=7.5
EYMN Ely 84.96 348 P **P** 16 18 30.3 -0.5
baz=165
EYMN Ely 84.96 348 eP **P** 16 18 29.6 -1.2
C35A Jirik Farms, M 85.18 346 P **P** 16 18 32.0 +0.2
baz=163
HVU Hansel Valley 85.28 331 eP **P** 16 18 32.0 -0.8
HVU pmax pmax
comp=Z,15nm,1.2s
HVU Hansel Valley 85.28 331 eP **P** 16 18 32.0 -0.8
comp=Z,15nm,1.2s
B35A Bob, Littlefor 85.76 346 P **P** 16 18 34.4 -0.4
baz=163
DRLN Deer Lake 85.82 10 eP **P** 16 18 35.5 +0.4
comp=Z,23nm,0.9s
REDW Red Top Meadow 85.92 333 eP **P** 16 18 36.2 +0.2
comp=Z,25nm,1.3s
LOHW Long Hollow 86.05 334 eP **P** 16 18 36.9 +0.3
comp=Z,22nm,1.5s
TPAW Teton Pass 86.07 333 eP **P** 16 18 37.0 +0.2
comp=Z,45nm,1.8s
PMOZ Porto Moniz, M 86.08 44 eLR LR 16 52 38.3
comp=Z,280nm,20.0s
AGMN Agassiz Nation 86.13 345 P **P** 16 18 36.7 +0.1
baz=162
AGMN Agassiz Nation 86.13 345 eP **P** 16 18 36.4 -0.2
IMW Indian Meadow 86.42 334 eP **P** 16 18 39.0 +0.5
comp=Z,30nm,1.4s
AFDM Forest Hills D 86.47 325 eP **P** 16 18 38.8 +0.2
comp=Z,26nm,1.6s
FLWY Flagg Ranch 86.49 334 eP **P** 16 18 39.2 +0.4
comp=Z,43nm,1.4s
A33A Warroad 86.64 346 P **P** 16 18 38.9 -0.2
baz=162
RLMT Red Lodge 86.90 335 eP **P** 16 18 39.8 -0.9
ORV Oroville 87.20 325 eP **P** 16 18 43.6 +1.5
ORV pmax pmax
comp=Z,49nm,1.6s
ORV Oroville 87.20 325 eP **P** 16 18 43.6 +1.5
comp=Z,48nm,1.6s
LAO LASA Array 87.31 338 eP **P** 16 18 42.0 -0.5
HLID Hailey 87.43 331 eP **P** 16 18 44.2 +0.9
MFID Camas Ranch 87.87 330 eP **P** 16 18 45.4 0.0
comp=Z,24nm,1.4s
MCMT McKenzie Canyo 87.92 333 eP **P** 16 18 46.9 +1.2
ULM Lac du Bonnet 87.99 346 P **P** 16 18 44.9 -0.6
comp=Z,7.7nm,0.9s,baz=158,slow=2.4,SNR=7.3
ULM Lac du Bonnet 87.99 346 eP **P** 16 18 45.0 -0.6
ULM pmax pmax
comp=Z,113nm,1.9s
ULM Lac du Bonnet 87.99 346 eP **P** 16 18 45.0 -0.6

comp=Z,113nm,1.9s
DLMT Dillon 88.28 333 *e*P **P** **16 18 48.2 +0.9**
comp=Z,24nm,1.4s
DGMT Dagmar 88.33 340 *e*P **P** **16 18 45.8 -1.5**
MOD Modoc Plateau 88.53 327 *e*P **P** **16 18 47.8 -0.7**
comp=Z,50nm,1.8s
LRM Limekiln Ridge 88.62 334 *e*P **P** **16 18 48.6 -0.4**
LSZ Lusaka 90.15 109 *e*P **P** **16 18 58.1 +1.3**
LSZ pmax pmax
comp=Z,18nm,1.4s
LSZ Lusaka 90.15 109 *e*P **P** **16 18 58.1 +1.3**
comp=Z,18nm,1.4s
SCHQ Schefferville 90.43 4 P **P** **16 18 56.7 -0.3**
comp=Z,1.6nm,0.3s,baz=56,slow=3.6,SNR=3.5
SCHQ LR LR 16 58 53.2
comp=Z,121nm,21.7s,baz=162,slow=35
SCHQ Schefferville 90.43 4 *e*P **P** **16 18 56.5 -0.5**
comp=Z,6.3nm,0.9s
BSMT Bassoo Peak 91.19 333 *e*P **P** **16 19 01.0 +0.1**
TAM Tamanrasset 94.46 65 *e*P **P** **16 19 17.1 +0.5**
TAM pmax pmax
comp=Z,9.0nm,1.3s
TAM Tamanrasset 94.46 65 *e*P **P** **16 19 17.1 +0.5**
comp=Z,9.3nm,1.3s
PVAQ Vaqueiros 94.80 47 *e*LR LR 16 54 20.0
comp=Z,354nm,20.0s
PMRV Marv??o 96.34 45 *e*LR LR 16 54 39.1
comp=Z,285nm,18.0s
MTE Manteigas 96.90 45 *e*LR LR 16 55 14.9
comp=Z,339nm,18.0s
PGAV Gavieira, Arco 97.54 43 *e*LR LR 16 55 05.6
comp=Z,451nm,20.0s
MVO Moncorvo 97.70 44 *e*LR LR 16 54 48.3
comp=Z,371nm,20.0s
ESDC Sonseca Array 98.51 47 P Pdif 16 19 35.2 +0.8
comp=Z,0.5nm,0.6s,baz=248,slow=5.5,SNR=4.5
ES19 SONSECA Array 98.57 47 *e*P **P** **16 19 34.6 -0.1**
DZM Mont Dzumac 99.40 234 *e*LR LR 16 52 01.3
comp=Z,175nm,22.5s
INK Inuvik 113.01 339 PKiKP **PKiKP** **16 24 31.3 -0.7**
comp=Z,2.7nm,1.1s,baz=135,slow=5.7,SNR=4.1
GERES GERESS Array B 114.10 46 PKP PKPdf 16 24 34.2 -0.6
comp=Z,0.6nm,0.7s,baz=192,slow=3.6,SNR=4.6
KHC Kasperske Hory 114.16 46 AMS AMS 17 17 40.0
comp=Z,200nm,20.2s
CLL Collm 114.81 44 *e*PP PP 16 25 38.0 +2.8
CLL *e*PS **PKKPab** **16 35 17.0 +0.1**
CLL *e*PPS PPS 16 36 32.0
CLL Lm MLR 17 12 00.0
comp=N,100nm,22.0s
CLL Lm MLR 17 12 00.0
comp=E,200nm,20.2s
CLL Lm MLR 17 12 00.0
comp=Z,300nm,20.3s
PRU Pruhonice 115.10 45 AMS AMS 17 12 20.0
comp=Z,200nm,19.7s
ILAR Eielson Array 115.35 333 PKP **PKPdf** **16 24 36.6 0.0**
comp=Z,0.4nm,0.7s,baz=143,slow=1.6,SNR=4.3
PVCC Panska Ves 115.36 45 AMS AMS 17 22 20.0
comp=Z,200nm,17.0s
ASAR Alice Springs 115.53 208 PKP **PKPdf** **16 24 36.4 -2.1**
comp=Z,0.4nm,0.8s,baz=124,slow=2.4,SNR=4.2
ASAR PKKPbc **PKKPbc** **16 35 10.8 -0.1**
comp=Z,0.7nm,0.7s,baz=354,slow=2.8,SNR=4.5
ASAR PKKPab **PKKPab** **16 35 17.2 -2.3**
comp=Z,1.2nm,1.0s,baz=352,slow=3.7,SNR=4.4
OKC Ostrava-Krasne 117.15 47 AMS AMS 17 19 40.0
comp=Z,200nm,18.3s
KECS Kecovo 118.01 49 *e*PDIFF **Pdif** **16 20 59.5 -1.4**
NB200 NORSAR Array S 118.05 33 *e*PKPdf **PKPdf** **16 24 43.9 +1.9**
NOA NORSAR Array B 118.05 33 PKP **PKPdf** **16 24 43.9 +1.9**
comp=Z,0.4nm,0.7s,baz=296,slow=8.0,SNR=2.8
WR1 Warramunga Arr 118.72 210 *e*PKPdf **PKPdf** **16 24 43.8 -0.8**
WRA Warramunga Arr 118.73 210 PKP **PKPdf** **16 24 43.8 -0.8**
comp=Z,0.4nm,0.6s,baz=160,slow=1.8,SNR=8.8
CRVS Cervenica-Dubn 118.77 49 *e*P **Pdif** **16 21 04.0 -0.2**
CRVS Cervenica-Dubn 118.77 49 *e*PDIFF **Pdif** **16 21 04.0 -0.2**
BR231 Keskin MP Arra 122.96 62 *e*PKPdf **PKPdf** **16 24 52.6 +0.4**
BR101 Keskin Array S 123.54 62 *e*PKPdf **PKPdf** **16 24 53.4 0.0**
BRTR Keskin Array B 123.54 62 PKP **PKPdf** **16 24 53.4 0.0**
comp=Z,1.1nm,0.7s,baz=181,slow=1.0,SNR=6.0
AK11 Malin Array Si 124.07 49 *e*PKPdf **PKPdf** **16 24 52.8 -1.0**
KIEV Kiev 124.10 49 *e*PKIKP **PKPdf** **16 24 51.3 -2.5**
KIEV Kiev 124.10 49 *e*PKPdf **PKPdf** **16 24 52.4 -1.4**
AKASG Malin Array Be 124.11 49 PKP **PKPdf** **16 24 53.0 -0.8**
comp=Z,1.6nm,0.7s,baz=263,slow=2.9,SNR=6.1
AKBB Malin Array Si 124.11 49 *e*PKIKP **PKPdf** **16 24 52.0 -1.8**
AKBB Malin Array Si 124.11 49 *e*PKPdf **PKPdf** **16 24 52.0 -1.8**
H11S2 WAKE ISLAND Hyl 124.77 269 T T 18 42 03.4
baz=111
H11S1 WAKE ISLAND Hyl 124.78 269 T T 18 42 08.6
baz=111
H11S3 WAKE ISLAND Hyl 124.78 269 T T 18 42 06.9
baz=111
FIA0 FINESS Array S 125.01 35 *e*PKIKP **PKPdf** **16 24 56.7 +1.4**
FIA0 FINESS Array S 125.01 35 *e*PKPdf **PKPdf** **16 24 56.7 +1.4**
FINES FINESS Array B 125.01 35 PKP **PKPdf** **16 24 56.7 +1.4**
comp=Z,2.0nm,0.8s,baz=180,slow=25,SNR=3.5
H11N3 WAKE ISLAND Hyl 125.23 270 T T 18 42 40.2
baz=116,slow=78,SNR=5.5
H11N1 WAKE ISLAND Hyl 125.24 270 T T 18 42 26.9
baz=116,slow=78,SNR=11
H11N2 WAKE ISLAND Hyl 125.24 270 T T 18 42 38.9
baz=116,slow=78,SNR=13
ARCES ARCESS Array B 126.05 25 PKP **PKPdf** **16 24 57.9 +0.8**
comp=Z,2.1nm,0.7s,baz=204,slow=2.0,SNR=5.2
OBN Obninsk 129.40 44 *e*PKIKP **PKPdf** **16 25 02.1 -1.7**
OBN 16 32 01.0
OBN *e*SS SS 16 44 27.2 -6.5
OBN pmax pmax
comp=Z,15nm,0.6s
OBN MLR MLR
comp=Z,200nm,19.0s
KIV Kislovodsk 131.24 60 *i* PKIKP **PKPdf** **16 25 07.0 -0.9**
KIV *e* 16 27 23.0
KIV *e*PS **PS** **16 37 37.1 -3.2**
KIV *e*SS SS 16 44 56.9 -0.4
KIV pmax pmax
comp=Z,7.0nm,1.0s
KBZ Khabaz 131.34 60 PKP **PKPdf** **16 25 07.6 -0.2**
comp=Z,1.5nm,0.7s,baz=236,slow=7.3,SNR=4.0
KLMR Klimovskoe 131.42 37 *e*PKIKP **PKPdf** **16 25 04.5 -3.0**
KLMR pmax pmax
comp=Z,19nm,1.1s
BILL Bilibino 134.01 333 ⇑ *i*PKIKP **PKPdf** **16 25 13.8 +1.6**
BILL *e* 16 25 20.8
BILL *e* 16 25 30.4
BILL SS SS 16 45 25.0 -4.2
BILL pmax pmax
comp=Z,10.0nm,1.4s
BILL MLR MLR
comp=Z,80nm,17.0s
BILL Bilibino 134.01 333 *e*PKPdf **PKPdf** **16 25 13.7 +1.5**
PEA1 Petropavlovsk- 140.68 312 *e*PKPdf **PKPdf** **16 25 26.4 +1.4**
PETK Petropavlovsk- 140.68 312 PKP **PKPdf** **16 25 26.4 +1.4**
comp=Z,3.1nm,0.8s,baz=122,slow=5.4,SNR=3.8
GEYT Alibeck 141.35 72 PKhKP PKPpre 16 25 14.5
comp=Z,0.7nm,0.5s,baz=297,slow=16,SNR=2.4
GEYT PKP **PKPdf** **16 25 26.0 -0.7**
comp=Z,1.2nm,0.7s,baz=215,slow=12,SNR=4.3
GEYT SKPbc **SKPbc** **16 29 02.1 +0.5**
comp=Z,0.5nm,0.3s,baz=298,slow=6.4,SNR=3.8
ARU Arti 141.73 42 PKhKP PKPpre 16 25 20.4
comp=Z,1.9nm,0.5s,baz=112,slow=4.2,SNR=4.9
ARU Arti 141.73 42 *i* PKHKP PKPpre 16 25 20.9
ARU MLR MLR
comp=Z,252nm,22.0s
ARU Arti 141.73 42 *e*PKPpre PKPpre 16 25 20.6
AKTO Aktyubinsk 142.22 52 PKhKP PKPpre 16 25 22.4
comp=Z,1.4nm,0.7s,baz=256,slow=6.9,SNR=4.3
AKTO PP **PP** **16 28 36.8 +1.9**
comp=Z,1.7nm,0.7s,baz=278,slow=8.9,SNR=4.2
TIXI Tiksi 142.28 349 *e*PKIKP **PKPdf** **16 25 26.0 -1.3**
PDSI Padang 143.01 169 PKP **PKPdf** **16 25 29.9 -0.5**
PDSI PKP **PKiKP** **16 25 33.7 +0.1**
PDSI PKP 16 25 43.8
AB31 Akbulak array 143.54 54 *i* PKIKP PKPbc 16 25 27.2 -0.4
AB31 pmax pmax
comp=Z,13nm,0.8s
ABKAR Akbulak array 143.54 54 *e*PKPpre PKPbc 16 25 27.4 -0.1
MNSI Mandailing Nat 144.54 168 PKP **PKPab** **16 25 28.8 -2.6**
MNSI PKP PKPbc 16 25 30.7 -0.9
MNSI PKP **PKPdf** **16 25 31.5 -1.6**
GSI Gunungsitoli 144.63 164 PKP PKPbc 16 25 31.9 -0.1
GSI PKP **PKPdf** **16 25 33.0 -0.2**
GSI PKP **PKPab** **16 25 33.8 +2.0**
GSI Gunungsitoli 144.63 164 *e*PKPdf **PKPdf** **16 25 32.6 -0.6**
NRIK Noril'sk 144.77 12 PKP PKPbc 16 25 31.2 +0.5
comp=Z,9.2nm,0.7s,baz=28,slow=1.1,SNR=13
SBSI Sibolga 145.15 166 PKP **PKPbc** **16 25 30.8 -2.8**
SBSI PKP **PKPab** **16 25 31.7 -2.0**
SBSI PKP **PKPdf** **16 25 33.6 -0.5**
KSM Kuching 145.69 186 *e*PKPdf **PKPdf** **16 25 34.8 -0.3**
PSI Prapat 146.37 166 PKPbc **PKPbc** **16 25 37.2 -0.4**
comp=Z,17nm,0.6s,baz=204,slow=7.5,SNR=9.4
PSI Prapat 146.37 166 *e*PKPdf **PKPdf** **16 25 36.7 +0.3**
TPTI 146.43 162 PKP **PKPdf** **16 25 36.0 -0.3**
TPTI PKP **PKPbc** **16 25 37.0 -0.6**
TPTI PKP **PKiKP** **16 25 40.0 -0.6**
SBUM Sibu 146.44 190 *e*PKPdf **PKPbc** **16 25 37.0 -0.6**
KCSI Kotacane, Aceh 146.82 163 PKP **PKPdf** **16 25 36.3 -0.7**
KCSI PKP **PKiKP** **16 25 42.0 +0.5**
HYB Hyderabad 148.99 119 *i* PKP **PKPbc** **16 25 45.0 +0.5**
HYB *e* 16 26 12.5
BRVK Borovoye 149.17 44 *e*PKP2 **PKPbc** **16 25 44.2 +0.4**
BRVK Borovoye 149.17 44 *e*PKPdf **PKPdf** **16 25 41.1 +1.6**
BVA0 Borovoye Array 149.24 44 *i* PKIKP **PKPdf** **16 25 40.5 +0.8**
BVA0 pmax pmax
comp=Z,30nm,1.7s
BVAR Borovoye Array 149.24 44 PKP **PKPdf** **16 25 41.0 +1.3**
comp=Z,3.7nm,0.6s,baz=282,slow=3.2,SNR=21
BVAR PKPbc **PKiKP** **16 25 45.0 -0.2**
comp=Z,3.7nm,0.6s,baz=301,slow=3.8,SNR=23
BVAR Borovoye Array 149.24 44 PKIKP **PKPdf** **16 25 41.0 +1.3**
BVAR 16 25 45.0
KBL Kabul 149.24 81 *e*PKIKP **PKPdf** **16 25 40.6 0.0**
KBL *e* 16 25 44.8
KBL Kabul 149.24 81 *e*PKPdf **PKPdf** **16 25 40.6 0.0**
KBL *e*PKPbc **PKPbc** **16 25 44.8 -0.1**
YAK Yakutsk 150.07 338 *e*PKIKP **PKPdf** **16 25 40.3 -0.4**
YAK *e* 16 25 45.6
YAK Yakutsk 150.07 338 *e*PKPdf **PKPdf** **16 25 40.3 -0.4**
YAK *e*PKPbc **PKPbc** **16 25 45.5 -0.1**
TYV Tymovskoe 150.22 312 *e*PKIKP **PKPbc** **16 25 45.0 -1.4**
TYV pmax pmax
comp=Z,100nm,1.6s
NKL Nikolayevsk 150.61 317 *e*PKIKP **PKPbc** **16 25 46.8 -0.5**
YSS Yuzh-Sakhalins 151.04 304 *e*PKIKP **PKPdf** **16 25 43.2 +0.5**
YSS *e* 16 25 48.3
YSS Yuzh-Sakhalins 151.04 304 *e*PKPdf **PKPdf** **16 25 43.2 +0.5**
YSS *e*PKPbc **PKPbc** **16 25 48.3 -0.2**
ERM Erimo 151.18 294 *e*PKIKP **PKPbc** **16 25 49.0 0.0**
ERM *e* 16 25 57.8
ERM Erimo 151.18 294 *e*PKPbc **PKPbc** **16 25 49.0 0.0**
ERM *e*PKPab **PKPab** **16 25 57.8 +0.8**
KK31 Karatay Array 151.22 64 *i* PKIKP **PKPbc** **16 25 49.1 0.0**
KK31 pmax pmax
comp=Z,7.0nm,0.8s
KKAR Karatay Array 151.22 64 *e*PKIKP **PKPbc** **16 25 49.1 0.0**
KKAR Karatay Array 151.22 64 *e*PKPbc **PKPbc** **16 25 49.1 0.0**
ASAJ Asahikawa 151.50 298 *e*PKPdf **PKPbc** **16 25 48.4 -1.3**
OTUK Ortayu 151.79 53 PKIKP **PKPbc** **16 25 50.7 +0.4**
OTUK pmax pmax
comp=Z,13nm,0.9s
MNAS Manas 152.72 65 PKIKP **PKPdf** **16 25 45.2 -0.4**
MNAS pmax pmax
comp=Z,9.0nm,1.6s
AAK Ala-Archa 154.17 65 PKP **PKPdf** **16 25 48.6 +0.9**
comp=Z,2.2nm,0.5s,baz=238,slow=4.4,SNR=4.7
AAK PKPbc **PKiKP** **16 25 56.9 +1.0**
comp=Z,3.3nm,0.5s,baz=166,slow=2.0,SNR=7.1
AAK PKPab **PKPab** **16 26 10.8 +1.0**
comp=Z,16nm,0.8s,baz=226,slow=4.7,SNR=14
AAK PP **PP** **16 29 45.0 -0.2**
comp=Z,1.5nm,0.3s,baz=261,slow=7.9,SNR=5.3
AAK Ala-Archa 154.17 65 *e*PKIKP **PKPdf** **16 25 47.8 +0.1**
AAK *e* 16 25 56.8
AAK *e* 16 25 56.9
AAK *e* 16 29 45.0
AAK Ala-Archa 154.17 65 *e*PKPdf **PKPdf** **16 25 47.8 +0.1**
AAK *e*PKPbc **PKiKP** **16 25 56.8 +0.9**
AAK *e*PKPbc **PKiKP** **16 25 56.9 +1.0**
AAK *e*PKPab **PKPab** **16 26 10.4 +0.6**
AAK *e*PP **PP** **16 29 45.0 -0.2**
FRU Bishkek 154.25 64 *e*PKIKP **PKPdf** **16 25 47.0 -0.6**
FRU *e* 16 29 45.0
MJAR Matsushiro Arr 154.68 281 PKPab **PKPab** **16 26 11.5 -0.4**
comp=Z,0.5nm,0.5s,baz=92,slow=8.5,SNR=3.9
KURBB Kurchatov Arra 154.83 45 PKP **PKPdf** **16 25 48.5 +0.3**
comp=Z,2.2nm,1.1s,baz=297,slow=2.2,SNR=9.1
KURBB PKPbc **PKiKP** **16 25 57.1 +0.4**
comp=Z,2.5nm,0.7s,baz=293,slow=2.4,SNR=18
KURBB PKPab **PKPab** **16 26 11.2 -0.8**
comp=Z,5.1nm,0.9s,baz=289,slow=4.4,SNR=16
KURK Kurchatov 154.84 45 PKIKP **PKPdf** **16 25 48.5 +0.4**
KURK 16 25 57.1
KURK 16 26 11.3
KURK pmax pmax
comp=Z,2.0nm,1.1s
KURK pmax pmax
comp=Z,3.0nm,0.7s
KURK pmax pmax
comp=Z,5.0nm,0.9s
KURK Kurchatov 154.84 45 *e*PKPdf **PKPdf** **16 25 48.6 +0.5**
KURK *e*PKPbc **PKiKP** **16 25 57.1 +0.3**
TKM2 Tokmak 2 154.96 64 PKIKP **PKPdf** **16 25 48.4 -0.5**
TKM2 pmax pmax
comp=Z,12nm,0.9s
NVS Novosibirsk 154.97 33 *e*PKIKP **PKPdf** **16 25 43.9 -4.2**
KSH Kashi 155.39 72 *e*PKPbc **PKPdf** **16 25 49.5 +0.1**
KSH *es*PKP 16 26 03.0
KSH PKS **PKSdf** **16 29 22.5 -1.1**
KSH SKS **SKSdf** **16 32 50.8 -3.1**
KSH AMB AMB
comp=Z,170nm,4.4s
KSH LR LR
comp=Z,100nm,6.2s
KSH LR LR
comp=Z,91nm,6.9s
KSH LR LR
comp=Z,110nm,6.2s
ZAA1 Zalesovo Array 156.25 33 *e*PKPdf **PKPdf** **16 25 49.6 -0.3**
ZAA1 *e*PKPab **PKPab** **16 26 19.0 +1.0**
ZAA0 Zalesovo Array 156.26 33 *e*PKPdf **PKPdf** **16 25 48.9 -1.0**
ZAA0 *e*PKPdf **PKPdf** **16 25 49.0 -0.9**
ZAA0 *e*PKPab **PKPab** **16 26 18.4 +0.4**
ZAA0 *e*PKPab PKPab 16 26 18.9 +0.9
ZALV Zalesovo Beam 156.26 33 PKP **PKPdf** **16 25 49.6 -0.3**
comp=Z,3.7nm,0.8s,baz=307,slow=2.3,SNR=20
ZALV PKPab **PKPab** **16 26 19.0 +1.0**
comp=Z,14nm,0.8s,baz=306,slow=4.7,SNR=14
PDGK Podgornoye 157.72 62 PKIKP **PKPdf** **16 25 51.8 -0.5**
PDGK pmax pmax
comp=Z,18nm,1.0s
MAKZ Makanchi 158.45 52 *e*PKIKP **PKPdf** **16 25 53.0 0.0**
MAKZ Makanchi 158.45 52 *e*PKPdf **PKPdf** **16 25 53.0 0.0**
MK31 Makanchi Array 158.65 51 *i* PKIKP **PKPdf** **16 25 52.7 -0.5**
MK31 pmax pmax
comp=Z,5.0nm,0.9s
MK31 Makanchi Array 158.65 51 *e*PKPdf **PKPdf** **16 25 53.0 -0.3**
MK31 *e*PKPab **PKPab** **16 26 29.4 +0.6**
MK32 Makanchi Array 158.65 51 *e*PKPdf **PKPdf** **16 25 53.4 +0.2**
MK32 *e*PKPab **PKPab** **16 26 28.5 -0.3**
MK32 *e*PP **PP** **16 30 10.3 +0.8**
MKAR Makanchi Array 158.65 51 PKP **PKPdf** **16 25 53.4 +0.2**
comp=Z,2.2nm,0.8s,baz=337,slow=0.6,SNR=21
MKAR PKPab **PKPab** **16 26 28.5 -0.3**
comp=Z,3.3nm,0.8s,baz=309,slow=3.2,SNR=8.2
MKAR PP **PP** **16 30 10.3 +0.8**
comp=Z,4.2nm,1.1s,baz=289,slow=3.7,SNR=7.3
MKAR Makanchi Array 158.65 51 *e*PKPdf **PKPdf** **16 25 52.8 -0.4**
MKAR PKPab **PKPab** **16 26 28.5 -0.3**
MKAR PP **PP** **16 30 10.3 +0.8**
MK01 Makanchi Array 158.67 52 *e*PKPdf **PKPdf** **16 25 52.7 -0.5**
GKN Gorkha 159.68 106 *e*P **PKPab** **16 26 33.9 0.0**
comp=Z,96nm,1.3s
DMN Daman 159.86 108 *e*P **PKPab** **16 26 35.2 +0.4**
PKIN Phulchoki 160.07 108 *e*P **PKPab** **16 26 36.3 +0.6**
comp=Z,31nm,0.9s
KKN Kakani 160.08 108 *e*P **PKPab** **16 26 36.1 +0.4**
comp=Z,110nm,1.2s
GUN Gumba 160.60 108 *e*P **PKPab** **16 26 38.9 +0.7**
CM01 Chiang Mai Arr 161.36 156 *e*PKPdf **PKPdf** **16 25 56.6 -0.4**
CM01 *e*PKPab **PKPab** **16 26 39.1 -1.9**
CM31 Chiang Mai Arr 161.39 156 *e*PKPdf **PKPdf** **16 25 56.5 -0.6**
CM31 *e*PKPab **PKPab** **16 26 41.5 +0.4**
CMAR Chiang Mai Arr 161.39 156 PKP **PKPdf** **16 25 57.3 +0.2**
comp=Z,0.6nm,0.7s,baz=259,slow=1.8,SNR=6.2
CMAR PKPab **PKPab** **16 26 40.0 -1.2**
comp=Z,1.4nm,0.8s,baz=222,slow=4.6,SNR=6.4
CHTO Chiang Mai 161.72 156 *e*PKIKP **PKPdf** **16 25 56.2 -1.2**
CHTO *e* 16 26 41.6
CHTO Chiang Mai 161.72 156 *e*PKPdf **PKPdf** **16 25 56.2 -1.2**
CHTO *e*PKPab **PKPab** **16 26 41.6 -1.0**
KS01 Wonju Array Si 162.97 282 *e*PKPdf **PKPdf** **16 25 57.4 -0.7**
QIZ Qiongzhong 163.08 190 PKP **PKPdf** **16 26 00.3 +1.5**
QIZ PP **PP** **16 30 36.8 +4.6**
QIZ SS SS 16 51 00.5 +6.1
QIZ LR LR
comp=Z,120nm,19.4s
WMQ Urumqi 163.31 56 *e*PKP **PKPdf** **16 25 55.8 -2.6**
WMQ pPKP pPKPdf 16 26 08.0 -0.1
WMQ PP **PP** **16 30 31.8 -2.9**
WMQ SKKS 16 37 18.3
WMQ AMB AMB
comp=Z,130nm,6.0s
WMQ LR LR
comp=Z,230nm,19.4s
WMQ LR LR
comp=Z,230nm,23.2s
WMQ LR LR
comp=Z,220nm,22.3s
TLY Talaya 163.96 7 PKPab **PKPab** **16 26 52.7 +1.1**
comp=Z,1.6nm,0.6s,baz=222,slow=22,SNR=3.5
TLY Talaya 163.96 7 *e*PKP2 **PKPab** **16 26 53.7 +2.1**
TLY pmax pmax
comp=Z,9.0nm,1.3s
ZAK Zakamensk 165.20 9 *e*PKP2 **PKPab** **16 26 56.5 -0.7**
ZAK pmax pmax
comp=Z,5.0nm,1.3s
LSA Lhasa 165.51 110 *e*PKIKP **PKPdf** **16 26 01.3 0.0**
LSA *e* 16 26 56.6
LSA Lhasa 165.51 110 *e*PKPdf **PKPdf** **16 26 01.3 0.0**
LSA *e*PKPab **PKPab** **16 26 56.5 -3.3**
SONA1 Songino Array 167.96 1 *e*PKPdf **PKPdf** **16 26 00.6 -1.5**
SONA1 *e*PKPab **PKPab** **16 27 09.6 +0.1**
SONA0 Songino Array 167.97 1 *e*PKPdf **PKPdf** **16 26 01.1 -1.0**
SONA0 *e*PKPab **PKPab** **16 27 10.9 +1.3**
SONA0 *e*PP **PP** **16 30 59.4 +1.6**
SONM Songino Array 167.97 1 PKP **PKPdf** **16 26 01.1 -1.0**
comp=Z,0.9nm,0.9s,baz=171,slow=0.8,SNR=8.1
SONM PKPab **PKPab** **16 27 10.9 +1.3**
comp=Z,1.7nm,0.7s,baz=339,slow=5.4,SNR=9.0
SONM PP **PP** **16 30 59.4 +1.6**
comp=Z,0.2nm,0.5s,baz=352,slow=8.7,SNR=3.2
KMI Kunming 168.81 161 PKP **PKPdf** **16 26 03.0 -0.5**
KMI AMB AMB
comp=Z,170nm,3.9s
GYA Guiyang 170.69 179 *e*PKP **PKPdf** **16 26 03.8 -0.7**
GYA PKPab **PKPab** **16 27 24.0 +1.9**
GYA PKS **PKSdf** **16 29 35.0 -2.1**
GYA PP **PP** **16 31 14.5 +3.0**
GYA AMB AMB
comp=Z,120nm,7.9s
BJI Beijing 171.46 303 PKP **PKPdf** **16 26 04.5 +0.3**
BJI AMB AMB
comp=Z,100nm,10.7s
BJI LR LR
comp=Z,150nm,19.4s
BJI LR LR
comp=Z,140nm,20.3s
BJI LR LR
comp=Z,180nm,20.3s
WHN Wuhan 171.78 233 PKP **PKPdf** **16 25 59.0 -5.7**
GTA Gaotai 173.40 55 *e*PKP **PKPdf** **16 26 05.8 +0.5**
GTA pPKP pPKPdf 16 26 14.0 -1.1
GTA sPKP 16 26 17.8
GTA PKPab **PKPab** **16 27 34.8 +0.8**
GTA PP **PP** **16 30 28.8 +2.7**
GTA SKS **SKSdf** **16 33 03.3 -3.2**
GTA SKKS **SKKSac** **16 38 10.0 -0.4**
GTA SS **SS** **16 52 38.0 -2.2**
GTA AMB AMB
comp=Z,140nm,6.4s
GTA LR LR
comp=Z,140nm,20.0s
GTA LR LR
comp=Z,79nm,20.4s
GTA LR LR
comp=Z,180nm,20.0s
HHC Hu-ho-hao-te 173.71 325 *e*PKP **PKPdf** **16 26 04.5 -0.9**
HHC AMB AMB
comp=Z,75nm,7.3s
CD2 Chengdu 174.51 152 PKP **PKPdf** **16 26 05.5 -0.4**
CD2 pPKP pPKPdf 16 26 13.3 -2.3
CD2 sPKP 16 26 16.0
CD2 PP **PP** **16 31 31.0 +0.4**
CD2 SKS **SKSdf** **16 33 07.3 +0.3**
CD2 SKKS **SKKSac** **16 38 15.8 +0.3**
CD2 SS **SS** **16 52 51.5 +2.2**
CD2 AMB AMB
comp=Z,120nm,5.6s

ISCJB ***28*** *16:11:54.8±0.4,3°.82N±0°.07×32°.86W±0°.06,h10km, mb4.9/20,MS3.9/4,Error ellipse: s-maj=10.5km s-min=8.1km az=144.0*

GCMT ***28*** *16:11:58.3±0.4,4°.05N×32°.38W,h29km±1km,MW5.0/72, Moment Tensor Solution. s19,c21; s72,c94; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-0.72±.20; Mθθ0.42±.16; Mϕϕ0.30±.16; Mrθ-1.33±.26; Mrϕ-3.44±.14; Mθϕ-0.58±.25; Best double couple: M₀3.78400×10¹⁶ NP1:ϕs92.00000°,δ78.00000°,λ-157.00000°. NP2: ϕs357.00000°,δ68.00000°,λ-13.00000°. Principal axes: T 3.8690, Plg7.0000°, Azm223.0000°; N -0.1710, Plg64.0000°, Azm118.0000°; P -3.6990, Plg25.0000°, Azm316.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

IDC ***28*** *16:11:58.3±23.0,4°.03N×32°.52W,h0km,mb3.7/3, mb1 3.9/3,mb1mx3.5/47,mbtmp3.7/3,MS3.9/4,Ms1 4.0/4, ms1mx3.4/28 Error ellipse: s-maj=538.1km s-min=59.9km az=40.0*

NEIC ***28*** *16:11:58.3±0.5,4°.14N×32°.91W,h10km,mb5.1/12,Error ellipse: s-maj=14.6km s-min=9.4km az=158.0*

ISC 28 16:11:57.6±0.6,4°.00N±0°.09×32°.9W±0°.1,h10km,n38,
σ1§48/30,mb5.2/20,MS3.9/4,Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RCBR	**Riachuelo**	**10.22**	**197**	*e*Pn	**Pn**	**Pn**	**16 14 27.9**	**+3.5**
RCBR				*e*Sn	**Sn**	**Sn**	**16 16 16.0**	**-3.3**
H10N3	**ASCENSION HYDR**	**21.76**	**123**	T		T	16 38 26.4	
	baz=303,slow=75,SNR=326							
H10N2	**ASCENSION HYDR**	**21.77**	**123**	T		T	16 38 27.2	
	baz=303,slow=75,SNR=329							
H10N1	**ASCENSION HYDR**	**21.78**	**123**	T		T	16 38 28.3	
	baz=303,slow=75,SNR=503							
H10S3	**ASCENSION HYDR**	**22.23**	**125**	T		T	16 39 21.0	
	baz=306,slow=74,SNR=491							
H10S1	**ASCENSION HYDR**	**22.24**	**125**	T		T	16 39 04.1	
	baz=306,slow=74,SNR=564							
H10S2	**ASCENSION HYDR**	**22.25**	**125**	T		T	16 39 22.3	
	baz=306,slow=74,SNR=355							
LIC	**Lamto**	**27.80**	**84**	*e*PKP1	**P**		**16 17 45.6**	**-1.6**
	175nm,0.8s							
TIC	**Toumodi**	**27.84**	**83**	*e*PKP1	**P**		**16 17 47.0**	**-0.5**
DBIC	**Dimbokro**	**28.00**	**83**	P	**P**		**16 17 48.2**	**-0.7**
	54nm,0.7s,baz=208,slow=6.2,SNR=56							
DBIC				LR	LR		16 27 59.1	
	comp=Z,125nm,18.5s,baz=252,slow=35							
SVB	**Belmont**	**29.52**	**290**	*e*P	**P**		**16 18 03.7**	**+1.2**
	97nm,1.2s							
SMRT	**St. Maarten**	**32.71**	**298**	*e*P	**P**		**16 18 29.5**	**-1.1**
	53nm,1.0s							
HUMP	**Col San Antoni**	**35.21**	**296**	*e*P	**P**		**16 18 52.1**	**-0.3**
	39nm,1.3s							
MPR	**Mayaguez**	**36.39**	**296**	*e*P	**P**		**16 19 02.9**	**+0.4**
	53nm,1.5s							
IDE	**Isla Desecheo**	**36.75**	**296**	*e*P	**P**		**16 19 04.2**	**-1.3**
CPUP	**Villa Florida**	**38.34**	**217**	LR	LR		16 35 37.0	
	comp=Z,361nm,18.1s,baz=87,slow=37							
GTBY	**Guantanamo Bay**	**44.10**	**295**	*e*P	**P**		**16 20 06.1**	**-0.3**
	58nm,1.0s							
ESDC	**Sonseca Array**	**44.10**	**32**	LR	LR		16 33 35.4	
	comp=Z,54nm,21.1s,baz=190,slow=30							
PB10	**IPOC Station P**	**45.81**	**232**	*e*P	**P**		**16 20 18.8**	**-1.1**
	40nm,1.1s							
CLTB	**Caltabellotta**	**53.71**	**45**	*e*P	**P**		**16 21 19.1**	**-1.0**
	39nm,1.6s							
WDD	**Wied Dalam**	**53.90**	**48**	*e*P	**P**		**16 21 19.0**	**-2.3**
	56nm,0.8s							

SSPA	**Standing Stone**	**54.45**	**319**	*eP*	**P**		**16 21 24.9**	**-0.4**
	19nm,1.7s								
MMNY	**Mt. Morris Dam**	**55.52**	**321**	*eP*	**P**		**16 21 32.4**	**-0.6**
PLCA	**Paso Flores**	**56.30**	**214**	LR	LR		16 45 55.9		
	comp=Z,295nm,18.3s,baz=74,slow=36								
ALLY	**Alegheny Colle**	**56.43**	**319**	*eP*	**P**		**16 21 38.8**	**-0.8**
	39nm,1.1s								
GEA0	**GERESS Array S**	**59.66**	**34**	*eP*	**P**		**16 22 02.2**	**+0.1**
GERES	**GERESS Array B**	**59.66**	**34**	P	**P**		**16 22 03.0**	**+0.8**
	0.7nm,0.9s,baz=231,slow=6.0,SNR=6.0								
WVT	**Waverly**	**59.73**	**310**	*eP*	**P**		**16 22 03.8**	**+1.1**
	10nm,0.8s								
MORC	**Moravsky Berou**	**62.29**	**34**	*eP*	**P**		**16 22 21.2**	**+1.2**
	24nm,1.2s								
PSZ	**Piszkesteto**	**62.78**	**37**	*eP*	**P**		**16 22 23.0**	**-0.3**
	8.2nm,1.1s								
BR231	**Keskin MP Arra**	**68.83**	**49**	*eP*	**P**		**16 23 05.8**	**+3.2**
AK11	**Malin Array Si**	**69.44**	**37**	*eP*	**P**		**16 23 06.2**	**+0.2**
BR101	**Keskin Array S**	**69.45**	**49**	*eP*	**P**		**16 23 07.2**	**+0.7**
BR131	**Keskin Array S**	**69.45**	**49**	*eP*	**P**		**16 23 06.6**	**+0.1**
BRTR	**Keskin Array B**	**69.45**	**49**	P	**P**		**16 23 07.2**	**+0.7**
	0.8nm,0.9s,baz=235,slow=6.3,SNR=6.3								
KIEV	**Kiev**	**69.47**	**37**	*eP*	**P**		**16 23 07.5**	**+1.4**
	2.8nm,0.8s								
AKASG	**Malin Array Be**	**69.48**	**37**	P	**P**		**16 23 07.2**	**+1.0**
	0.4nm,0.5s,baz=246,slow=6.1,SNR=5.8								
AKBB	**Malin Array Si**	**69.48**	**37**	*eP*	**P**		**16 23 07.5**	**+1.3**
	2.9nm,0.8s								

*ISCJB **28** 16:17:45.7±0.9, 24°.2N±0°.2×94°.6E±0°.2, h96km, mb3.5/3, Error ellipse: s-maj=35.1km s-min=8.2km az=34.8*

*IDC **28** 16:17:47.5±5.7, 23°.87N×93°.84E, h116km±43km, mb3.0/3, mb1 3.1/4, mb1mx2.8/51, mbtmp3.3/4, MS3.1/1, Ms1 3.1/1, ms1mx2.6/11, Error ellipse: s-maj=202.6km s-min=21.4km az=60.0*

ISC 28 16:17:47.5±1.2, 24°.2N±0°.3×94°.5E±0°.2, h96km, n9, σ1^{2}75/11, mb3.6/3, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SHL	**Shillong**	**2.70**	**300**	*e*PN		**Pn**	**16 18 31.0**	**+1.6**
SHL				*e*SN		**Sn**	**16 19 04.0**	**+2.5**
CMAR	**Chiang Mai Arr**	**7.10**	**143**	P		**Pn**	**16 19 30.0**	**+1.3**
	0.1nm,0.3s,baz=313,slow=12,SNR=2.6							
PKIN	**Phulchoki**	**8.83**	**294**	*e*P		**Pn**	**16 19 53.6**	**+1.1**
	3.9nm,0.3s							
PKIN				*e*S		**Sn**	**16 21 29.0**	**-1.4**
KKN	**Kakani**	**9.00**	**295**	*e*P		**Pn**	**16 19 55.2**	**+0.4**
	3.0nm,0.2s							
GKN	**Gorkha**	**9.61**	**295**	*e*P		**Pn**	**16 20 03.2**	**+0.2**
	5.0nm,0.3s							
GKN				*e*S		**Sn**	**16 21 46.6**	**-2.6**
MKAR	**Makanchi Array**	**24.54**	**340**	P		**P**	**16 22 57.6**	**-0.5**
	0.5nm,0.4s,baz=152,slow=9.4,SNR=9.5							
KSRS	**Korea Array**	**31.42**	**57**	LR		LR	16 38 38.6	
	comp=Z,37nm,21.5s,baz=220,slow=39							
WRA	**Warramunga Arr**	**58.61**	**135**	P		**P**	**16 27 33.1**	**-1.6**
	0.2nm,0.4s,baz=324,slow=7.4,SNR=1.2							
ASAR	**Alice Springs**	**61.08**	**138**	P		**P**	**16 27 50.5**	**-1.1**
	0.2nm,0.4s,baz=315,slow=6.4,SNR=11							

*ISCJB **28** 16:26:55.6±0.8, 6°.7N±0°.2×123°.8E±0°.3, h600km, mb4.0/10, Error ellipse: s-maj=48.1km s-min=11.4km az=155.0*

*IDC **28** 16:26:58.5±1.6, 6°.62N×123°.75E, h618km±18km, mb3.3/10, mb1 3.5/10, mb1mx3.0/36, mbtmp4.4/10, Error ellipse: s-maj=45.1km s-min=9.7km az=63.0*

ISC 28 16:26:56.4±0.8, 6°.6N±0°.2×123°.8E±0°.4, h600km, n10, σ1^{2}65/17, mb4.1/10, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FITZ	**Fitzroy Crossi**	**24.60**	**176**	P		**P**	**16 31 32.4**	**+1.2**
	1.7nm,0.3s,baz=356,slow=12,SNR=33							
CMAR	**Chiang Mai Arr**	**26.97**	**298**	P		**P**	**16 31 52.9**	**+0.7**
	2.5nm,0.6s,baz=110,slow=7.2,SNR=20							
WRA	**Warramunga Arr**	**28.32**	**159**	P		**P**	**16 32 05.3**	**+1.5**
	12nm,0.5s,baz=331,slow=11,SNR=303							
WRA				S		**S**	**16 36 05.9**	**-3.7**
	0.5nm,0.6s,baz=334,slow=15,SNR=3.9							
WRA				ScP		**ScP**	**16 37 41.0**	**-0.8**
	0.8nm,0.6s,baz=343,slow=3.2,SNR=17							
ASAR	**Alice Springs**	**31.64**	**162**	P		**P**	**16 32 34.2**	**+1.9**
	8.6nm,0.3s,baz=340,slow=7.1,SNR=664							
ASAR				PcP		**PcP**	**16 35 06.0**	**+0.5**
	0.4nm,0.5s,baz=350,slow=2.5,SNR=4.1							
ASAR				S		**S**	**16 36 58.7**	**-1.9**
	0.8nm,0.7s,baz=352,slow=23,SNR=7.2							
ASAR				ScP		**ScP**	**16 37 51.9**	**-0.9**
	0.7nm,0.5s,baz=340,slow=3.4,SNR=9.1							
STKA	**Stephens Creek**	**41.84**	**157**	P		**P**	**16 33 57.1**	**+1.7**
	7.4nm,0.5s,baz=338,slow=8.4,SNR=28							
SONM	**Songino Array**	**43.71**	**343**	P		**P**	**16 34 10.7**	**+0.7**
	0.9nm,0.7s,baz=155,slow=6.9,SNR=4.6							
MKAR	**Makanchi Array**	**53.58**	**326**	P		**P**	**16 35 23.4**	**+0.7**
	4.5nm,0.4s,baz=120,slow=7.8,SNR=71							
MKAR				PcP		**PcP**	**16 36 19.2**	**-0.2**
	0.6nm,0.5s,baz=95,slow=4.5,SNR=3.9							
MKAR				ScP		**ScP**	**16 39 18.3**	**-2.2**
	0.2nm,0.6s,baz=98,slow=6.0,SNR=3.9							
ZALV	**Zalesovo Beam**	**56.76**	**334**	P		**P**	**16 35 44.0**	**-0.5**
	0.8nm,0.5s,baz=147,slow=6.2,SNR=3.9							
BRTR	**Keskin Array B**	**85.99**	**309**	P		**P**	**16 38 33.5**	**-1.3**
	0.8nm,0.9s,baz=116,slow=6.6,SNR=2.7							
FINES	**FINESS Array B**	**87.97**	**332**	P		**P**	**16 38 42.6**	**-0.7**
	1.5nm,0.8s,baz=66,slow=6.7,SNR=5.3							

MAN 28 16:41:12, 16°.52N×122°.64E, h17km, mb4.3, ML3.1, MS2.9, 2D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CVP	**Callao Caves**	**1.41**	**326**	*i* P		Pb	16 41 38.1	+0.2
CVP				*i* S		Sb	16 41 55.4	-0.2
PCPH	**Palayan**	**1.76**	**237**	*e*P		Pn	16 41 41.3	-0.5
PCPH				*e*S		Sn	16 42 01.5	-2.3
GQP	**Guinayangan**	**2.61**	**184**	*e*P		Pg	16 42 13.0	+11
GQP				*e*S		Sn	16 42 25.1	+0.3
LQP	**Lukban**	**2.62**	**204**	*e*P		Sn	16 42 25.0	-0.3

*IDC **28** 16:49:56.6±0.8, 34°.92N×26°.68E, h0km, mb4.0/9, mb1 3.8/15, mb1mx3.6/45, mbtmp3.8/15, ML3.5/5, Error ellipse: s-maj=20.2km s-min=12.2km az=169.0*

*HLW **28** 16:49:57.4, 35°.14N×26°.69E, h11km±13km, Md4.0, Ml3.9*

*ISCJB **28** 16:49:58.6±0.6, 34°.89N±0°.03×26°.65E±0°.02, h26km±4km, mb4.1/13, Error ellipse: s-maj=4.5km s-min=2.9km az=179.4*

*NEIC **28** 16:49:59.4±1.4, 34°.95N×26°.64E, h19km±9km, mb4.5/6, Error ellipse: s-maj=7.7km s-min=5.0km az=187.0*

*CSEM **28** 16:49:59.3±0.1, 34°.95N×26°.60E, h15km, mb4.7/5, Error ellipse: s-maj=4.7km s-min=3.0km az=5.0*

*ISK **28** 16:50:00.6, 35°.09N×26°.51E, h16km, ML3.3*

*THE **28** 16:50:00.8, 35°.16N×26°.50E, h0km±1km, ML3.5/4, Error ellipse: s-maj=3.3km s-min=0.8km az=160.0*

*ATH **28** 16:50:00.1, 35°.04N×26°.52E, h26km±1km, ML3.8/3, Error ellipse: s-maj=3.9km s-min=1.0km az=342.0*

*NIC **28** 16:50:01.4±0.4, 35°.25N×26°.60E, h86km, mb4.6, ML4.2*

*DDA **28** 16:50:36.4, 35°.26N×26°.59E, h11km, Ml3.7*

ISC 28 16:49:58.6±1.1, 35°.00N±0°.03×26°.63E±0°.03, h13km±7km, n192, σ1^{2}40/232, mb4.0/13, Crete

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ZKR	**Zakros**	**0.36**	**288**	P		**Pg**	**16 50 06.6**	**+0.7**
ZKR				S		**Sg**	**16 50 11.4**	**+0.7**
ZKR	**Zakros**	**0.36**	**288**	P		**Pg**	**16 50 06.6**	**+0.7**
ZKR				S		**Sg**	**16 50 11.4**	**+0.7**
ZKR				AML		AML	16 50 12.3	
ZKR				AML		AML	16 50 12.3	
	comp=N,27567μm,0.2s							
KARP	**Karpathos**	**0.70**	**39**	*e*PG		**Pn**	**16 50 14.7**	**+0.4**
KARP				*e*SG		**Sn**	**16 50 25.2**	**+0.3**
KARP	**Karpathos**	**0.70**	**39**	P		**Pn**	**16 50 14.3**	**+0.1**
KARP				S		**Sn**	**16 50 24.6**	**-0.3**
KARP	**Karpathos**	**0.70**	**39**	*e*Pg		**Pn**	**16 50 14.1**	**-0.1**
KARP				S		**Sn**	**16 50 24.6**	**-0.3**
KARP				*e*Sg		**Sn**	**16 50 25.2**	**+0.3**
KARP	**Karpathos**	**0.70**	**39**	*e*Pg		**Pn**	**16 50 14.1**	**-0.1**
KARP				*e*Sg		**Sn**	**16 50 25.2**	**+0.3**
KARP	**Karpathos**	**0.70**	**39**	*e*P		**Pn**	**16 50 14.0**	**-0.1**
KARP				S		**Sn**	**16 50 25.8**	**+0.9**
KARP				AML		AML	16 50 26.8	
	comp=E,30416μm,0.5s							
KARP				AML		AML	16 50 27.8	
	comp=N,23398μm,0.3s							
NPS	**Neapolis**	**0.87**	**288**	P		**Pg**	**16 50 15.4**	**-0.1**
NPS				S		**Sg**	**16 50 26.5**	**-0.5**
NPS	**Neapolis**	**0.87**	**288**	P		**Pg**	**16 50 15.6**	**+0.1**
NPS				S		**Sg**	**16 50 26.5**	**-0.5**
NPS	**Neapolis**	**0.87**	**288**	P		**Pg**	**16 50 15.6**	**+0.1**
NPS				S		**Sg**	**16 50 26.0**	**-1.0**
NPS				AML		AML	16 50 29.6	
	comp=E,17878μm,0.4s							
NPS				AML		AML	16 50 30.8	
	comp=N,10951μm,0.4s							
LAST	**Lasithi**	**0.96**	**280**	P		**Pb**	**16 50 16.6**	**-0.5**
LAST				S		**Sg**	**16 50 30.4**	**+0.7**
LAST	**Lasithi**	**0.96**	**280**	P		**Pb**	**16 50 16.6**	**-0.5**
LAST				S		**Sg**	**16 50 30.0**	**+0.3**
LAST	**Lasithi**	**0.96**	**280**	P		**Pb**	**16 50 16.2**	**-0.9**
IDI	**Anoyia**	**1.45**	**282**	Pn		**Pn**	**16 50 25.5**	**+0.8**
	comp=N,50nm,0.3s,baz=96,slow=16,SNR=185							
IDI				Sn		**Sg**	**16 50 45.5**	**0.0**
	comp=N,70nm,0.3s,baz=36,slow=8.8,SNR=8.3							
IDI	**Anoyia**	**1.45**	**282**	P		**Pn**	**16 50 25.1**	**+0.4**
IDI				S		**Sb**	**16 50 44.3**	**+0.3**
IDI	**Anoyia**	**1.45**	**282**	P		**Pn**	**16 50 25.1**	**+0.4**
IDI				S		**Sb**	**16 50 44.3**	**+0.3**
IDI				*e*Sn		**Sg**	**16 50 45.2**	**-0.3**
IDI	**Anoyia**	**1.45**	**282**	*e*Pn		**Pn**	**16 50 25.3**	**+0.6**
IDI				*e*Sn		**Sg**	**16 50 45.2**	**-0.3**
IDI	**Anoyia**	**1.45**	**282**	P		**Pn**	**16 50 25.6**	**+0.9**
SIVA	**Sivas**	**1.49**	**271**	P		**Pn**	**16 50 25.9**	**+0.8**
SIVA	**Sivas**	**1.49**	**271**	P		**Pn**	**16 50 25.9**	**+0.8**
SIVA	**Sivas**	**1.49**	**271**	P		**Pn**	**16 50 26.0**	**+0.9**
NIS1	**Nisyros Isl.**	**1.66**	**15**	*e*PN		**Pb**	**16 50 29.0**	**0.0**
NIS1	**Nisyros Isl.**	**1.66**	**15**	*e*Pn		**Pb**	**16 50 29.0**	**0.0**
SANT	**Santorini**	**1.67**	**325**	*e*Pn		**Pn**	**16 50 26.8**	**0.0**
SANT	**Santorini**	**1.67**	**325**	P		**Pn**	**16 50 28.0**	**+0.4**
SANT	**Santorini**	**1.67**	**325**	*e*Pn		**Pn**	**16 50 26.8**	**-0.8**
SANT	**Santorini**	**1.67**	**325**	P		**Pn**	**16 50 28.0**	**+0.4**
THR6	**Thira Island,**	**1.68**	**324**	P		**Pn**	**16 50 27.3**	**-0.4**
THR6	**Thira Island,**	**1.68**	**324**	P		**Pn**	**16 50 27.3**	**-0.4**
SAP1	**Santorini-Akro**	**1.69**	**324**	P		**Pg**	**16 50 30.3**	**-0.7**
SAP1	**Santorini-Akro**	**1.69**	**324**	P		**Pg**	**16 50 30.3**	**-0.7**
THT1	**Athinios (Pele**	**1.69**	**325**	P		**Pn**	**16 50 28.1**	**+0.3**
THT1	**Athinios (Pele**	**1.69**	**325**	P		**Pn**	**16 50 28.1**	**+0.3**
ARG	**Arkhangelos**	**1.72**	**45**	P		**Pb**	**16 50 30.1**	**0.0**
THR3	**Thira Island,**	**1.72**	**325**	P		**Pn**	**16 50 28.4**	**+0.1**
THR3	**Thira Island,**	**1.72**	**325**	P		**Pn**	**16 50 28.4**	**+0.1**
THR5	**Thira Island,**	**1.75**	**324**	*e*PN		**Pn**	**16 50 29.7**	**+0.9**
THR5	**Thira Island,**	**1.75**	**324**	P		**Pn**	**16 50 28.5**	**-0.2**
THR5	**Thira Island,**	**1.75**	**324**	P		**Pn**	**16 50 28.5**	**-0.2**
THR5	**Thira Island,**	**1.75**	**324**	*e*Pn		**Pn**	**16 50 29.7**	**+0.9**
VAM	**Vamos**	**2.03**	**282**	P		**Pn**	**16 50 33.8**	**+1.2**
VAM				S		**Sn**	**16 50 58.9**	**+1.2**
VAM	**Vamos**	**2.03**	**282**	P		**Pn**	**16 50 33.7**	**+1.2**
VAM				S		**Sn**	**16 50 58.9**	**+1.2**
GVD	**Gavdhos**	**2.10**	**266**	P		**Pn**	**16 50 35.5**	**+2.1**
GVD	**Gavdhos**	**2.10**	**266**	P		**Pn**	**16 50 35.5**	**+2.1**
GVD	**Gavdhos**	**2.10**	**266**	P		**Pb**	**16 50 36.5**	**0.0**
BODT	**Bodrum**	**2.13**	**15**	*e*PN		**Pb**	**16 50 36.3**	**-0.8**
BODT	**Bodrum**	**2.13**	**15**	*e*Pn		**Pb**	**16 50 36.3**	**-0.8**
BDRM	**Kayabasi**	**2.16**	**18**	*i* P		**Pn**	**16 50 34.7**	**+0.3**
BDRM				*i* S		**Sb**	**16 51 04.3**	**-0.1**
BDRM	**Kayabasi**	**2.16**	**18**	P		**Pn**	**16 50 34.7**	**+0.3**
BDRM				S		**Sb**	**16 51 04.3**	**-0.1**
IMMV	**Iera Moni Meta**	**2.21**	**283**	P		**Pn**	**16 50 34.9**	**-0.2**
IMMV	**Iera Moni Meta**	**2.21**	**283**	P		**Pn**	**16 50 34.9**	**-0.2**
IMMV	**Iera Moni Meta**	**2.21**	**283**	P		**Pb**	**16 50 37.8**	**-0.8**
APE	**Apeiranthos**	**2.25**	**337**	*e*PN		**Pn**	**16 50 36.4**	**+0.9**
APE	**Apeiranthos**	**2.25**	**337**	P		**Pn**	**16 50 35.2**	**-0.3**
APE	**Apeiranthos**	**2.25**	**337**	*e*Pn		**Pn**	**16 50 36.4**	**+0.9**
APE	**Apeiranthos**	**2.25**	**337**	P		**Pn**	**16 50 35.2**	**-0.3**
DALY	**Dalyan (Mu¨la**	**2.44**	**42**	*e*PN		**Pb**	**16 50 41.3**	**-1.2**
DALY	**Dalyan (Mu¨la**	**2.44**	**42**	*e*Pn		**Pb**	**16 50 41.3**	**-1.2**
TURN	**Turunc**	**2.46**	**40**	*i* P		**Pn**	**16 50 36.1**	**-2.3**
TURN				*i* S		**Sn**	**16 51 08.3**	**0.0**
MLSB	**Milas**	**2.47**	**22**	*e*PN		**Pb**	**16 50 41.3**	**-1.6**
MLSB	**Milas**	**2.47**	**22**	*e*Pn		**Pb**	**16 50 41.3**	**-1.6**
MHLO	**Agia Marina, M**	**2.47**	**314**	P		**Pn**	**16 50 38.6**	**0.0**
MHLO	**Agia Marina, M**	**2.47**	**314**	P		**Pn**	**16 50 38.6**	**0.0**
MHLO	**Agia Marina, M**	**2.47**	**314**	P		**Pn**	**16 50 40.7**	**+2.1**
FETY	**Fethiye**	**2.58**	**50**	*e*PN		**Pb**	**16 50 43.4**	**-1.3**
FETY	**Fethiye**	**2.58**	**50**	*e*Pn		**Pb**	**16 50 43.4**	**-1.3**
AKAS	**Kas**	**2.72**	**62**	*i* P		**Pn**	**16 50 44.3**	**+2.2**
AKAS				*i* S		**Sn**	**16 51 17.6**	**+2.7**
AKAS	**Kas**	**2.72**	**62**	P		**Pn**	**16 50 44.3**	**+2.2**
AKAS				S		**Sn**	**16 51 17.6**	**+2.7**
ANKY	**Antikythira Is**	**2.85**	**289**	P		**Pn**	**16 50 43.8**	**0.0**
ANKY	**Antikythira Is**	**2.85**	**289**	P		**Pn**	**16 50 43.8**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**3.11**	**19**	*e*PN		**Pn**	**16 50 49.6**	**+2.1**
AYDB	**Zeytinkoy-Aydi**	**3.11**	**19**	*e*Pn		**Pn**	**16 50 49.6**	**+2.1**
GLHS	**Glhisar (BURDU**	**3.17**	**46**	*e*PN		**Pn**	**16 50 51.2**	**+2.9**
GLHS	**Glhisar (BURDU**	**3.17**	**46**	*e*Pn		**Pn**	**16 50 51.2**	**+2.9**
KYTH	**Kithira**	**3.18**	**294**	P		**Pn**	**16 50 49.3**	**+0.9**
KYTH	**Kithira**	**3.18**	**294**	P		**Pn**	**16 50 49.3**	**+0.9**
ELL	**Elmali**	**3.18**	**56**	*e*PN		**Pn**	**16 50 51.8**	**+3.3**
ELL	**Elmali**	**3.18**	**56**	*e*Pn		**Pn**	**16 50 51.8**	**+3.3**
URLA	**Izmir**	**3.35**	**360**	*i* P		**Pn**	**16 50 50.6**	**-0.1**
URLA				*i* S		**Sg**	**16 51 43.9**	**-2.4**
URLA	**Izmir**	**3.35**	**360**	P		**Pn**	**16 50 50.6**	**-0.1**
CHOS	**Chios island**	**3.41**	**352**	*e*PN		**Pn**	**16 50 53.0**	**+1.5**
CHOS	**Chios island**	**3.41**	**352**	*e*Pn		**Pn**	**16 50 53.0**	**+1.5**
VLI	**Veliai**	**3.45**	**301**	P		**Pn**	**16 50 52.0**	**-0.1**
VLI	**Veliai**	**3.45**	**301**	P		**Pn**	**16 50 52.0**	**-0.1**
VLI	**Veliai**	**3.45**	**301**	P		**Pn**	**16 50 51.4**	**-0.7**
SLUM	**Salum**	**3.70**	**199**	P		**Pn**	**16 50 56.1**	**+0.6**
	baz=200							
SLUM				AMP			16 51 00.0	
	comp=N,250μm,0.3s,logA/T=5.9,baz=200							
SLUM	**Salum**	**3.70**	**199**	P		**Pn**	**16 50 56.1**	**+0.6**
DID	**Didima**	**3.71**	**313**	P		**Pn**	**16 50 56.0**	**+0.3**
DID	**Didima**	**3.71**	**313**	P		**Pn**	**16 50 56.8**	**+1.1**
DID	**Didima**	**3.71**	**313**	P		**Pn**	**16 50 56.8**	**+1.1**
MANT	**Manisa**	**3.81**	**23**	*i* P		**Pn**	**16 50 56.5**	**-0.7**
MANT				*i* S		**Sn**	**16 51 43.5**	**+1.5**
MANT	**Manisa**	**3.81**	**23**	P		**Pn**	**16 50 56.5**	**-0.7**
MANT				S		**Sn**	**16 51 43.5**	**+1.5**
KULA	**Kula-Manisa**	**3.87**	**24**	*e*PN		**Pn**	**16 51 00.9**	**+3.0**
KULA	**Kula-Manisa**	**3.87**	**24**	*e*Pn		**Pn**	**16 51 00.9**	**+3.0**
VLX	**Vlachokerasia**	**4.17**	**306**	P		**Pn**	**16 51 04.1**	**+2.0**
VLX	**Vlachokerasia**	**4.17**	**306**	P		**Pn**	**16 51 04.1**	**+2.0**
ISP	**Isparta**	**4.22**	**47**	*e*Pn		**Pn**	**16 51 01.1**	**-1.6**
ISP	**Isparta**	**4.22**	**47**	*e*Pn		**Pn**	**16 51 01.1**	**-1.6**
SIGR	**SIGRI**	**4.25**	**352**	*e*PN		**Pn**	**16 51 04.7**	**+1.7**
SIGR	**SIGRI**	**4.25**	**352**	*e*Pn		**Pn**	**16 51 04.7**	**+1.7**
SUTC	**Sutluce-Ispart**	**4.31**	**54**	*e*PN		**Pn**	**16 51 08.5**	**+4.5**
SUTC	**Sutluce-Ispart**	**4.31**	**54**	*e*Pn		**Pn**	**16 51 08.5**	**+4.5**
DEMI	**Demirci**	**4.37**	**22**	*i* P		**Pn**	**16 51 05.7**	**+1.0**
DEMI	**Demirci**	**4.37**	**22**	P		**Pn**	**16 51 05.7**	**+1.0**
ITM	**Ithomi**	**4.38**	**301**	P		**Pn**	**16 51 05.2**	**+0.3**
ITM	**Ithomi**	**4.38**	**301**	P		**Pn**	**16 51 05.2**	**+0.3**
AKMC	**Akamas**	**4.68**	**88**	P		**Pn**	**16 51 10.3**	**+1.3**
	baz=274							
AKMC	**Akamas**	**4.68**	**88**	P		**Pn**	**16 51 10.3**	**+1.3**
KLV	**Kalavryta, Ach**	**4.71**	**311**	P		**Pn**	**16 51 09.7**	**+0.2**
KLV	**Kalavryta, Ach**	**4.71**	**311**	P		**Pn**	**16 51 09.7**	**+0.2**
ALFC	**Alefka**	**4.90**	**86**	P		**Pn**	**16 51 13.1**	**+1.1**
	baz=272							
ALFC				S		**Sn**	**16 52 08.6**	**0.0**
ALFC	**Alefka**	**4.90**	**86**	P		**Pn**	**16 51 13.1**	**+1.1**
ALFC				S		**Sn**	**16 52 08.6**	**0.0**
LAKA	**Lakka**	**4.94**	**312**	P		**Pn**	**16 51 15.1**	**+2.5**
LAKA	**Lakka**	**4.94**	**312**	P		**Pn**	**16 51 15.1**	**+2.5**
TVSB	**Tavsanli**	**4.98**	**26**	*e*PN		**Pn**	**16 51 17.1**	**+3.9**
TVSB	**Tavsanli**	**4.98**	**26**	*e*Pn		**Pn**	**16 51 17.1**	**+3.9**
SZAC	**Souni**	**5.15**	**91**	P		**Pn**	**16 51 16.3**	**+0.9**
	baz=277							
SZAC	**Souni**	**5.15**	**91**	P		**Pn**	**16 51 16.3**	**+0.9**
AGG	**Agios Georgios**	**5.28**	**321**	*e*PN		**Pn**	**16 51 20.3**	**+3.0**
AGG	**Agios Georgios**	**5.28**	**321**	*e*Pn		**Pn**	**16 51 19.6**	**+2.3**
AGG	**Agios Georgios**	**5.28**	**321**	*e*Pn		**Pn**	**16 51 19.6**	**+2.3**
ERMK	**Ermenek**	**5.36**	**70**	*i* P		**Pn**	**16 51 21.3**	**+2.8**
ERMK				*i* S		**Sn**	**16 52 22.0**	**+1.8**
ERMK	**Ermenek**	**5.36**	**70**	P		**Pn**	**16 51 21.3**	**+2.8**
ERMK				S		**Sn**	**16 52 22.0**	**+1.8**
CSS	**Mathiatis**	**5.50**	**89**	P		**Pn**	**16 51 20.7**	**+0.4**
	baz=274							
CSS				S		**Sn**	**16 52 24.6**	**+1.2**
CSS	**Mathiatis**	**5.50**	**89**	*e*Pn		**Pn**	**16 51 20.0**	**-0.3**
CSS	**Mathiatis**	**5.50**	**89**	P		**Pn**	**16 51 20.7**	**+0.4**
CSS				S		**Sn**	**16 52 24.6**	**+1.2**
CSS	**Mathiatis**	**5.50**	**89**	*e*Pn		**Pn**	**16 51 19.9**	**-0.3**
CSS				*e*Sn		**Sn**	**16 52 21.1**	**-2.3**
SWA2		**5.83**	**190**	AMP			16 52 00.0	
	comp=E,240μm,0.4s,logA/T=5.8,baz=191							
KOT	**Kottamia**	**6.70**	**138**	P		**Pn**	**16 51 36.9**	**+0.1**
	baz=138							
KOT				S		**Sn**	**16 52 49.5**	**-3.5**
	baz=138							
KOT	**Kottamia**	**6.70**	**138**	P		**Pn**	**16 51 36.9**	**+0.1**
BR231	**Keskin MP Arra**	**6.87**	**44**	*e*Pn		**Pn**	**16 51 39.1**	**-0.1**
BR231	**Keskin MP Arra**	**6.87**	**44**	*e*Pn		**Pn**	**16 51 39.1**	**-0.1**
GLL	**Jalalah**	**6.91**	**140**	P		**Pn**	**16 51 40.4**	**+0.7**
	baz=141							
GLL	**Jalalah**	**6.91**	**140**	P		**Pn**	**16 51 40.4**	**+0.7**
RSH		**7.19**	**122**	P		**Pn**	**16 51 43.0**	**-0.5**
	baz=123							
RSH		**7.19**	**122**	P		**Pn**	**16 51 43.0**	**-0.5**
BRTR	**Keskin Array B**	**7.30**	**48**	Pn		**Pn**	**16 51 46.4**	**+1.3**
	comp=E,0.2nm,0.3s,baz=218,slow=15,SNR=7.6							
BRTR				Sn		**Sn**	**16 53 09.1**	**+1.2**
	baz=216,slow=16,SNR=2.2							
BR101	**Keskin Array S**	**7.30**	**48**	*e*Pn		**Pn**	**16 51 46.4**	**+1.3**
BR101				*e*Sn		**Sn**	**16 53 09.1**	**+1.1**
BR101	**Keskin Array S**	**7.30**	**48**	*e*Pn		**Pn**	**16 51 46.4**	**+1.3**
BR101				*e*Sn		**Sn**	**16 53 09.2**	**+1.1**
BR131	**Keskin Array S**	**7.30**	**48**	*e*Pn		**Pn**	**16 51 44.9**	**-0.2**
BR131	**Keskin Array S**	**7.30**	**48**	*e*Pn		**Pn**	**16 51 44.9**	**-0.2**
MMAI	**Mount Meron Ar**	**7.55**	**103**	Pn		**Pn**	**16 51 48.4**	**0.0**
	comp=E,2.8nm,0.3s,baz=298,slow=13,SNR=12							
MMAI				Sn		**Sn**	**16 53 13.5**	**-0.5**
	comp=E,2.7nm,0.3s,baz=295,slow=14,SNR=5.5							
EIL	**Elat**	**8.82**	**125**	Pn		**Pn**	**16 52 06.3**	**+0.5**
	comp=E,0.6nm,0.3s,baz=282,slow=1.8,SNR=12							
EIL				Sn		**Sn**	**16 53 40.7**	**-4.4**
	comp=E,1.6nm,0.3s,baz=211,slow=4.6,SNR=5.1							
ASF	**Jabal al Asfar**	**9.02**	**105**	Pn		**Pn**	**16 52 06.9**	**-1.7**
	comp=E

MJAR				Sn	**Sn**	**16 52 16.9**	**+2.4**
	0.4nm,0.3s,baz=39,slow=15,SNR=4.2							
ASAJ	**Asahikawa**	**5.13**	**0**	*e*Pn	**Pn**	**16 51 40.4**	**+2.8**
INU	**Inuyama**	**5.71**	**232**	*e*Pn	**Pn**	**16 51 47.8**	**+2.2**
JHJ2	**Mitsune**	**6.26**	**201**	*e*Pn	**Pn**	**16 51 54.2**	**+1.0**
JHJ	**Hachijo jima 2**	**6.26**	**202**	Pn	**Pn**	**16 51 53.8**	**+0.6**
	18nm,0.3s,baz=66,slow=20,SNR=10							
JHJ				Sn	**Sn**	**16 52 59.9**	**-5.2**
	4.3nm,0.3s,baz=44,slow=19,SNR=2.3							
YSS	**Yuzh-Sakhalins**	**7.97**	**1**	*e*Pn	**Pn**	**16 52 21.0**	**+4.3**
MA2	**Magadan**	**21.27**	**12**	P	**P**	**16 55 08.1**	**+1.0**
	3.3nm,0.8s,baz=184,slow=19,SNR=3.4							
MA2				LR	LR	17 05 01.9		
	comp=Z,28nm,18.6s,baz=188,slow=41							
ANA2	**Anatahan**	**22.73**	**172**	*e*P	**P**	**16 55 23.1**	**0.0**
SEY	**Seymchan**	**24.71**	**11**	P	**P**	**16 55 43.5**	**+1.5**
	0.8nm,0.5s,baz=205,slow=19,SNR=3.1							
SONA1	**Songino Array**	**27.50**	**301**	*e*P	**P**	**16 56 07.9**	**+0.4**
H11N2	**WAKE ISLAND Hy**	**28.46**	**125**	T	T	17 26 43.3		
	baz=317,slow=75,SNR=78							
H11N1	**WAKE ISLAND Hy**	**28.47**	**125**	T	T	17 26 44.6		
	baz=317,slow=75,SNR=47							
H11N3	**WAKE ISLAND Hy**	**28.48**	**125**	T	T	17 26 45.2		
	baz=317,slow=75,SNR=60							
H11S1	**WAKE ISLAND Hy**	**29.25**	**127**	T	T	17 27 41.5		
	baz=318,slow=76,SNR=22							
H11S3	**WAKE ISLAND Hy**	**29.25**	**127**	T	T	17 27 39.1		
	baz=318,slow=76,SNR=36							
H11S2	**WAKE ISLAND Hy**	**29.27**	**127**	T	T	17 27 44.5		
	baz=318,slow=76,SNR=23							
ZAA0	**Zalesovo Array**	**41.29**	**311**	*e*P	**P**	**16 58 05.9**	**-0.4**
MK32	**Makanchi Array**	**43.87**	**301**	*e*P	**P**	**16 58 27.6**	**+0.2**
MKAR	**Makanchi Array**	**43.87**	**301**	P	**P**	**16 58 27.6**	**+0.2**
	0.7nm,0.7s,baz=90,slow=11,SNR=4.7							
ILAR	**Eielson Array**	**47.38**	**33**	P	**P**	**16 58 55.1**	**+0.2**
	0.5nm,0.8s,baz=263,slow=6.3,SNR=6.8							
ILB	**Eielson Array**	**47.38**	**33**	*e*P	**P**	**16 58 53.9**	**-1.0**
INK	**Inuvik**	**52.25**	**28**	P	**P**	**16 59 32.9**	**+1.0**
	0.7nm,0.6s,baz=270,slow=9.1,SNR=2.9							
WR1	**Warramunga Arr**	**59.11**	**189**	*e*P	**P**	**17 00 20.9**	**-0.8**
	34nm,1.9s							
WRA	**Warramunga Arr**	**59.11**	**189**	P	**P**	**17 00 20.9**	**-0.8**
	0.4nm,0.4s,baz=6.5,slow=6.9,SNR=16							
ASAR	**Alice Springs**	**62.84**	**189**	P	**P**	**17 00 46.2**	**-0.7**
	0.4nm,0.9s,baz=5.2,slow=8.7,SNR=4.5							

IGQ 28 16:51:55,2.62S×79.19W,h32km±2km, Mb4.0,3C-2D, Error ellipse: s-maj=6.0km s-min=2.1km az=79.8, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGUAY	**Guayaquil**	**0.94**	**306**	P	Pb	16 52 13.0	+0.1
AGUAY	baz=306			S	Sb	16 52 25.6	+0.5
	baz=306						
RIOE	**Riobamba**	**1.02**	**33**	P	Pb	16 52 15.7	+1.2
	baz=32						
IGUA	**Igualata**	**1.25**	**26**	⇑P	Pb	16 52 19.8	+1.4
	baz=25						
BMAS	**Trigal station**	**1.31**	**33**	⇑P	Pb	16 52 19.5	+0.1
	baz=32						
BMAS				⇑S	Sb	16 52 37.5	+1.5
	baz=32						
ARRY	**Arrayan**	**1.32**	**34**	P	Pb	16 52 19.2	-0.3
	baz=33						
PAT1	**Patacocha**	**1.33**	**34**	P	Pb	16 52 20.9	+1.2
	baz=34						
BPAT	**Tungurahua Vol**	**1.34**	**34**	P	Pb	16 52 20.2	+0.3
	baz=34						
BPAT				S	Sb	16 52 38.6	+1.8
	baz=34						
BIL2	**Estacion Bilba**	**1.34**	**31**	P	Pb	16 52 21.9	+2.1
	baz=30						
BBIL	**Ulba Tungurahu**	**1.35**	**31**	P	Pb	16 52 20.8	+0.8
	baz=30						
RETU	**Refugio**	**1.37**	**33**	⇓P	Pb	16 52 20.4	-0.1
	baz=32						
JUI6	**Juive**	**1.39**	**31**	P	Pb	16 52 20.4	-0.1
	baz=31						
POND	**Pondoa**	**1.40**	**32**	P	Pb	16 52 20.4	-0.3
	baz=31						
BULB	**Ulba Tungurahu**	**1.41**	**34**	P	Pb	16 52 21.8	+0.8
	baz=33						
BULB				S	Sb	16 52 39.6	+1.0
	baz=33						
RUN5	**Runtun**	**1.42**	**33**	P	Pb	16 52 21.7	+0.6
	baz=32						
BRUN	**Tungurahua Vol**	**1.42**	**33**	⇓P	Pb	16 52 21.7	+0.6
	baz=32						
BMOR	**Cotopaxi Volca**	**2.01**	**21**	P	Pb	16 52 31.6	+0.4
	baz=21						
MOV1	**Cotopaxi Vol s**	**2.03**	**22**	P	Pb	16 52 31.1	-0.6
	baz=21						
CAMI	**Rancho Maria**	**2.04**	**20**	P	Pb	16 52 31.5	-0.3
	baz=19						
BNAS	**Cotopaxi Volca**	**2.06**	**20**	P	Pb	16 52 30.4	-1.7
	baz=19						
NAS2	**Nasa**	**2.08**	**20**	P	Pn	16 52 29.3	+1.0
	baz=20						
BVC2	**Cotopaxi Volca**	**2.09**	**22**	P	Pb	16 52 32.1	-0.6
	baz=21						
VC1	**Cotopaxi 1**	**2.11**	**22**	P	Pb	16 52 31.5	-1.4
	baz=21						
COV1	**Cotopaxi Volc**	**2.12**	**24**	P	Pb	16 52 32.7	-0.5
	baz=21						
PITA	**Cotopaxi Volc**	**2.18**	**20**	P	Pn	16 52 31.8	+2.3
	baz=20						
ANTI	**Antisana**	**2.38**	**26**	P	Pn	16 52 33.7	+1.2
	baz=25						
JUA2	**San Juan 2**	**2.46**	**14**	P	Pb	16 52 37.4	-1.5
	baz=13						
TERV	**Terraza Guagua**	**2.49**	**14**	P	Pn	16 52 36.4	+2.5
	baz=13						
GGP	**Refugio Guagua**	**2.50**	**14**	P	Pb	16 52 37.5	-2.0
	baz=13						
PINO	**Pino**	**2.51**	**13**	P	Pn	16 52 36.2	+2.1
	baz=13						
JAMA	**Jama**	**2.55**	**336**	P	Pn	16 52 33.2	-1.0
	baz=336						
YANA	**Yana**	**2.56**	**14**	P	Pb	16 52 38.6	-1.9
	baz=13						
MAG1	**Magdalena**	**2.59**	**347**	P	Pn	16 52 34.5	-0.2
	baz=347						
OTAV	**Otavalo**	**2.93**	**15**	P	Pn	16 52 42.3	+2.5
	baz=14						
CUIC	**Cuicocha-Domo**	**3.02**	**16**	P	Pn	16 52 43.4	+2.5
	baz=15						
COTA	**Cotacachi**	**3.05**	**16**	P	Pb	16 52 46.6	-2.4
	baz=16						

IDC 28 16:53:16.1±2.6,29.11N×139.84E,h311km±58km,mb3.3/2, mb1 3.2/6,mb1mx2.8/33,mbtmp3.9/6,Error ellipse: s-maj=110.0km s-min=33.5km az=66.0,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**3.99**	**359**	P	Pn	16 54 23.1	+0.4
	11nm,0.3s,baz=98,slow=22,SNR=8.3						
JHJ				S	S	16 55 12.1	-4.1
	28nm,0.3s,baz=242,slow=23,SNR=9.4						
MJAR	**Matsushiro Arr**	**7.53**	**350**	P	Pn	16 55 02.9	-1.1
	0.6nm,0.3s,baz=177,slow=6.0,SNR=3.6						
KSRS	**Korea Array**	**12.97**	**313**	P	P	16 56 10.3	+0.1
	0.3nm,0.3s,baz=134,slow=13,SNR=6.8						
USRK	**Ussuriysk Ar.**	**16.31**	**340**	P	P	16 56 47.1	+0.4
	0.2nm,0.3s,baz=139,slow=11,SNR=4.9						
WRA	**Warramunga Arr**	**49.06**	**187**	P	P	17 01 32.6	-0.1
	1.4nm,0.3s,baz=6.0,slow=7.8,SNR=72						
ASAR	**Alice Springs**	**52.79**	**187**	P	P	17 02 00.1	-0.1
	0.5nm,0.5s,baz=3.6,slow=6.4,SNR=25						

*ISCJB **28** 17:02:17.7±0.4,67.03N±0.02×20.91E±0.07,h0km, Error ellipse: s-maj=4.2km s-min=3.2km az=159.7*
*CSEM **28** 17:02:18.0±0.4,66.99N×20.95E,h2km, ML2.1, Error ellipse: s-maj=10.1km s-min=6.7km az=78.0, Mining explosion.*
*UPP **28** 17:02:18.5±0.1,67.05N×20.92E,h0km, ML2.1, Explosion*
*NAO **28** 17:02:19.3±0.9,67.06N×21.16E, ML2.4*
*HEL **28** 17:02:19.1±0.1,67.06N×20.92E,h0km, ML2.3, ML2.1(UPP), Explosion*
*BER **28** 17:02:21.4±3.7,67.02N×20.91E,h0km, MD2.6, ML1.6, ML2.4(NAO), Suspected explosion*

ISC 28 17:02:18.7±0.7,67.08N±0.02×20.89E±0.03,h0km,n61, σ0s83/85,Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DUNU	**Dundret**	**0.13**	**291**	P	Pg	17 02 21.8	+0.6
DUNU				S	Sg	17 02 23.8	+0.9
DUNU	**Dundret**	**0.13**	**291**	*i* P	Pg	17 02 21.8	+0.6
DUNU				*i* S	Sg	17 02 23.8	+0.9
MASU	**Masugnsbyn**	**0.58**	**48**	P	Pg	17 02 29.7	**0.0**
MASU	**Masugnsbyn**	**0.58**	**48**	*i* P	Pg	17 02 29.7	**0.0**
ERTU	**Ertsjaerv**	**0.73**	**135**	P	Pg	17 02 31.8	-0.9
ERTU	**Ertsjaerv**	**0.73**	**135**	*i* P	Pg	17 02 31.8	-0.9
HARU	**Harads**	**0.92**	**178**	P	Pg	17 02 35.2	-1.0
HARU	**Harads**	**0.92**	**178**	*i* P	Pg	17 02 35.2	-1.0
LANU	**Lannavaara**	**1.07**	**23**	P	Pg	17 02 37.9	-1.2
LANU	**Lannavaara**	**1.07**	**23**	*e*P	Pg	17 02 38.1	-1.0
LANU	**Lannavaara**	**1.07**	**23**	P	Pg	17 02 38.0	-1.0
NIKU	**Nikkaluokta**	**1.07**	**319**	P	Pg	17 02 38.8	-0.3
NIKU	**Nikkaluokta**	**1.07**	**319**	*e*P	Pg	17 02 38.8	-0.3
NIKU	**Nikkaluokta**	**1.07**	**319**	P	Pg	17 02 38.8	-0.3
SJUU	**Sjulsmark**	**1.60**	**169**	P	Pn	17 02 47.5	-0.6
SJUU	**Sjulsmark**	**1.60**	**169**	*e*P	Pn	17 02 47.5	-0.6
SJUU	**Sjulsmark**	**1.60**	**169**	P	Pn	17 02 47.5	-0.6
HEF	**Hetta**	**1.71**	**37**	*e*P	Pn	17 02 49.4	-0.2
HEF				*e*S	Sn	17 03 10.8	-1.3
HEF	**Hetta**	**1.71**	**37**	*e*P	Pn	17 02 49.0	-0.6
HEF				MSG		17 03 10.5	
	comp=Z,24nm,0.2s						
HEF				*e*S	Sn	17 03 11.9	-0.2
HEF	**Hetta**	**1.71**	**37**	*e*P	Pn	17 02 49.4	-0.2
	SNR=50						
HEF				S	Sn	17 03 11.9	-0.2
KIF	**Kilpisjarvi**	**1.94**	**359**	Pn	Pb	17 02 54.2	-0.6
KIF				Lg	Lg	17 03 23.4	
KIF	**Kilpisjarvi**	**1.94**	**359**	*e*P	Pb	17 02 54.8	-0.1
KIF				*e*S	Sg	17 03 20.4	-0.5
KIF	**Kilpisjarvi**	**1.94**	**359**	*e*PG	Pb	17 02 54.7	-0.1
KIF				MSG		17 03 18.3	
	comp=Z,24nm,0.2s						
KIF				*e*SG	Sg	17 03 21.2	+0.3
KIF	**Kilpisjarvi**	**1.94**	**359**	Pn	Pb	17 02 54.2	-0.6
KIF	**Kilpisjarvi**	**1.94**	**359**	Pg	Pb	17 02 54.7	-0.1
KIF	**Kilpisjarvi**	**1.94**	**359**	*e*P	Pb	17 02 54.8	-0.1
	SNR=50						
KIF				*e*S	Sg	17 03 20.4	-0.5
	SNR=50						
KIF				Sg	Sg	17 03 21.2	+0.3
KIF				Lg	Lg	17 03 23.4	
RNF	**Rovaniemi**	**2.08**	**101**	*e*PB	Pn	17 02 55.1	+0.4
RNF				*e*SG	Sn	17 03 22.8	+1.5
RNF	**Rovaniemi**	**2.08**	**101**	Pb	Pn	17 02 55.1	+0.4
RNF				Sg	Sn	17 03 22.8	+1.5
STEI	**Steigen**	**2.34**	**294**	IAML		17 03 37.2	
	comp=Z,3.7nm,0.2s						
BURU	**Burvik**	**2.51**	**175**	*e*P	Pn	17 03 01.2	+0.6
BURU	**Burvik**	**2.51**	**175**	Pg	Pn	17 03 01.2	+0.6
TRO	**Tromso**	**2.67**	**345**	*e*P	Pn	17 03 04.4	+1.6
TRO				*e*S	Sb	17 03 39.5	-1.0
TRO				IAML		17 03 44.6	
	comp=Z,8.2nm,0.2s						
TRO	**Tromso**	**2.67**	**345**	*e*P	Pn	17 03 04.4	+1.6
	SNR=50						
OUL	**Oulu**	**2.86**	**132**	*e*PB	Pn	17 03 07.1	+1.7
OUL				*e*SG	Sb	17 03 45.6	-0.2
OUL	**Oulu**	**2.86**	**132**	Pb	Pn	17 03 07.1	+1.7
OUL				Sg	Sb	17 03 45.6	-0.2
LOF	**Lofoten**	**3.01**	**294**	*e*P	Pn	17 03 07.2	-0.2
LOF				IAML		17 04 03.6	
	comp=Z,6.3nm,0.8s						
LOF	**Lofoten**	**3.01**	**294**	*e*P	Pn	17 03 07.2	-0.2
	SNR=50						
ARA0	**ARCESS Array S**	**3.01**	**33**	Pn	Pn	17 03 07.5	+0.1
	baz=219,slow=16						
ARA0				Sn	Sn	17 03 44.5	+0.3
	baz=207,slow=22						
ARA0	**ARCESS Array S**	**3.01**	**33**	Pn	Pn	17 03 07.5	+0.1
	baz=219,slow=16						
ARA0				Sn	Sn	17 03 44.5	+0.3
	baz=207,slow=22						
ARA0	**ARCESS Array S**	**3.01**	**33**	Pn	Pn	17 03 07.6	+0.1
	SNR=50						
ARA0				Sn	Sn	17 03 44.5	+0.3
	SNR=50						
ARE0	**ARCESS Array S**	**3.01**	**33**	*e*P	Pn	17 03 08.0	+0.5
ARE0				IAML		17 03 52.7	
	comp=Z,5.8nm,0.2s						
ARE0	**ARCESS Array S**	**3.01**	**33**	*e*P	Pn	17 03 08.0	+0.5
	SNR=50						
OUFX	**Oulainen**	**3.15**	**148**	*e*P	Pn	17 03 10.1	+0.8
OUFX	**Oulainen**	**3.15**	**148**	Pb	Pn	17 03 10.1	+0.8
UMAU	**Umeaa**	**3.21**	**182**	*e*P	Pn	17 03 10.5	+0.3
UMAU				*e*SG	Sb	17 03 56.2	+0.3
UMAU	**Umeaa**	**3.21**	**182**	Pb	Pn	17 03 10.5	+0.3
VRF	**Varrio**	**3.43**	**75**	*e*P	Pn	17 03 14.0	+0.7
VRF				*e*SG	Sb	17 04 03.2	+0.7
VRF	**Varrio**	**3.43**	**75**	P	Pn	17 03 14.0	+0.7
VRF				Sb	Sb	17 04 03.2	+0.7
MSF	**Maaselka**	**3.47**	**106**	*e*P	Pn	17 03 15.6	+1.8
MSF	**Maaselka**	**3.47**	**106**	Pb	Pn	17 03 15.6	+1.8
KU6	**Riekki**	**3.75**	**102**	*e*P	Pn	17 03 18.6	+0.9
KU6				*e*S	Sn	17 04 04.2	+1.7
KU6	**Riekki**	**3.75**	**102**	P	Pn	17 03 18.5	+0.9
KU6				S	Sn	17 04 04.1	+1.7
FIA0	**FINESS Array S**	**6.09**	**156**	Pn	Pn	17 03 50.3	+0.6
	baz=346,slow=16						
FIA0				Sn	Sn	17 04 59.1	-0.9
	baz=346,slow=28						
FIA0	**FINESS Array S**	**6.09**	**156**	Pn	Pn	17 03 50.3	+0.6
	baz=346,slow=16						
FIA0				Sn	Sn	17 04 59.1	-0.9
	baz=346,slow=28						
FIA0	**FINESS Array S**	**6.09**	**156**	Pn	Pn	17 03 50.3	+0.6
	SNR=50						
FIA0				Sn	Sn	17 04 59.1	-0.9
	SNR=50						
NB2	**NORSAR Subarra**	**7.39**	**220**	Pn	Pn	17 04 06.6	-1.0
NB2	**NORSAR Subarra**	**7.39**	**220**	Pn	Pn	17 04 06.6	-1.0
NB2	**NORSAR Subarra**	**7.39**	**220**	Pn	Pn	17 04 06.6	-1.0
	SNR=50						
HFS	**Hagfors**	**7.66**	**208**	Pn	Pn	17 04 10.8	-0.5
	baz=21,slow=16						
HFS	**Hagfors**	**7.66**	**208**	Pn	Pn	17 04 10.8	-0.5
	baz=21,slow=16						
HFS	**Hagfors**	**7.66**	**208**	Pn	Pn	17 04 10.9	-0.5
	SNR=9.5						

*ISCJB **28** 17:37:32.0±0.5,7.51S±0.09×116.74E±0.07,h308km±5km, mb3.8/15, Error ellipse: s-maj=15.3km s-min=8.2km az=30.3*
*IDC **28** 17:37:37.3±2.3,7.49S×116.84E,h348km±23km, mb3.5/15, mb1 3.6/16,mb1mx3.3/49,mbtmp4.2/16, Error ellipse: s-maj=20.5km s-min=8.5km az=56.0*
*DJA **28** 17:37:38.1±0.8,8°S±8°×11°7E±°,h263km±10km, M4.6/8, mb4.8/1,mB4.8/1,MLv4.4/8,Mw(mB)4.0/1*

ISC 28 17:37:32.8±0.7,7.53S±0.09×116.73E±0.07,h305km±6km, n25,σ1s40/36,mb3.9/15,Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWSI	**Taliwang, Sumb**	**1.22**	**173**	P	Pn	17 38 15.5	+0.6
TWSI				S	S	17 38 46.6	-1.7
PLAI	**Plampang**	**1.66**	**141**	P	Pn	17 38 18.5	+0.9
PLAI				S	S	17 38 51.9	-1.3
DNP	**Denpasar**	**1.89**	**233**	P	Pn	17 38 20.9	+1.7
DNP				S	S	17 38 53.6	-2.6
IGBI	**Denpasar**	**2.03**	**231**	P	Pn	17 38 21.1	+0.8
IGBI				S	S	17 38 55.7	-2.4
JAGI	**Jajag, Banyuwa**	**2.72**	**250**	P	Pn	17 38 27.6	+1.3
JAGI				S	S	17 39 07.3	-1.7
GMJI	**Gumukmas**	**3.34**	**257**	P	Pn	17 38 33.8	+1.4
GMJI				S	S	17 39 20.3	+0.3
FITZ	**Fitzroy Crossi**	**13.63**	**141**	P	Pn	17 40 35.8	+0.9
	1.0nm,0.3s,baz=308,slow=6.1,SNR=27						
FITZ				S	S	17 43 07.5	+2.4
	0.3nm,0.3s,baz=342,slow=16,SNR=2.5						
WRA	**Warramunga Arr**	**21.07**	**128**	P	P	17 41 54.3	+0.2
	10nm,0.6s,baz=303,slow=12,SNR=114						
WRA				S	S	17 45 25.7	-2.3
	1.0nm,0.7s,baz=303,slow=16,SNR=5.0						
ASAR	**Alice Springs**	**23.00**	**136**	P	P	17 42 12.3	+0.6
	3.9nm,0.6s,baz=318,slow=9.6,SNR=83						
ASAR				PcP	**PcP**	**17 45 50.9**	**-0.6**
	0.8nm,0.7s,baz=316,slow=1.6,SNR=6.9						
ASAR				S	**S**	**17 45 57.3**	**-1.9**
	1.3nm,0.8s,baz=341,slow=25,SNR=5.2						
CTA	**Charters Tower**	**31.20**	**117**	P	**P**	**17 43 24.2**	**-0.4**
	6.4nm,0.8s,baz=306,slow=13,SNR=3.0						
CMAR	**Chiang Mai Arr**	**31.22**	**326**	P	**P**	**17 43 26.2**	**+1.5**
	0.5nm,0.5s,baz=152,slow=7.2,SNR=6.6						
STKA	**Stephens Creek**	**33.52**	**140**	P	**P**	**17 43 45.6**	**+1.1**
	7.3nm,0.7s,baz=311,slow=9.7,SNR=16						
STKA				PcP	**PcP**	**17 46 15.2**	**-2.4**
	2.6nm,0.9s,baz=22,slow=5.4,SNR=3.4						
MJAR	**Matsushiro Arr**	**48.25**	**23**	P	**P**	**17 45 43.2**	**-0.5**
	1.2nm,0.8s,baz=201,slow=6.7,SNR=4.6						
SONM	**Songino Array**	**55.87**	**352**	P	**P**	**17 46 40.4**	**+1.0**
	1.1nm,0.5s,baz=171,slow=7.6,SNR=9.8						
RPZ	**Rata Peaks**	**59.41**	**137**	P	**P**	**17 47 04.6**	**+0.6**
	13nm,0.8s,baz=326,slow=15,SNR=3.0						
MKAR	**Makanchi Array**	**62.14**	**334**	P	**P**	**17 47 22.6**	**+0.5**
	0.5nm,0.3s,baz=148,slow=5.9,SNR=7.7						
ZALV	**Zalesovo Beam**	**66.89**	**340**	P	**P**	**17 47 52.0**	**-0.4**
	0.4nm,0.3s,baz=168,slow=7.4,SNR=2.6						
PETK	**Petropavlovsk-**	**69.66**	**25**	P	**P**	**17 48 09.5**	**0.0**
	1.7nm,0.7s,baz=204,slow=2.5,SNR=3.6						
MAW	**Mawson**	**69.86**	**199**	P	**P**	**17 48 11.1**	**+0.5**
	2.7nm,0.7s,baz=90,slow=8.8,SNR=4.9						
VNDA	**Vanda**	**73.79**	**171**	P	**P**	**17 48 33.7**	**0.0**
	0.7nm,0.4s,baz=310,slow=8.3,SNR=9.7						
BOSA	**Boshof**	**87.73**	**242**	P	**P**	**17 49 47.3**	**-0.8**
	1.0nm,0.7s,baz=122,slow=9.5,SNR=2.3						
BRTR	**Keskin Array B**	**89.47**	**310**	P	**P**	**17 49 54.3**	**-1.7**
	0.5nm,0.7s,baz=90,slow=5.8,SNR=2.7						
TORD	**Torodi Ar. Bea**	**115.98**	**281**	PKP	**PKPdf**	**17 55 39.6**	**-1.0**
	0.5nm,0.6s,baz=105,slow=1.9,SNR=3.3						
CPUP	**Villa Florida**	**145.86**	**190**	PKPbc	**PKPab**	**17 56 37.5**	**-0.6**
	3.3nm,0.6s,baz=144,slow=2.2,SNR=9.0						
LPAZ	**La Paz**	**155.86**	**169**	PKPab	**PKPab**	**17 57 21.4**	**+0.8**
	0.8nm,0.6s,baz=215,slow=5.4,SNR=6.6						

*NIED **28** 17:45:00,37.30N×141.80E,h32km,Mw3.5 Best double couple: M0 2.37000×10^14 NP1:φs143.00000°,δ53.00000°, λ-27.00000°. NP2:φs250.00000°,δ69.00000°, λ-140.00000°.*
*IDC **28** 17:45:04.1±1.6,37.42N×142.47E,h0km, mb3.6/5, mb1 3.7/8,mb1mx3.4/49,mbtmp3.7/8,ML4.0/2,Error ellipse: s-maj=43.5km s-min=19.9km az=78.0*
*JMA **28** 17:45:11.0±0.1,37.29N×141.71E,h42km±3km, M4.0*
JMA Felt I J1

ISC 28 17:45:08.2±3.4,37.27N±0.04×141.87E±0.07,h15km±22km, n26,σ1s68/31,mb3.5/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.80**	**278**	P	Pb	**17 45 24.2**	**+0.4**
JFK				S	Sb	**17 45 33.1**	**-1.3**
ONAJ	**Iwakimizuishiy**	**0.87**	**260**	P	Pb	**17 45 25.3**	**+0.3**
ONAJ				S	Sb	**17 45 35.1**	**-1.3**
JMM	**Marumori**	**1.04**	**306**	P	Pb	**17 45 27.7**	**-0.2**
JMM				S	Sb	**17 45 39.8**	**-1.6**
JHO	**Hitachi**	**1.23**	**238**	P	Pn	**17 45 30.3**	**-0.5**
JHO				S	Sb	**17 45 43.8**	**-2.9**
JFT	**Otama**	**1.24**	**282**	P	Pn	**17 45 31.3**	**+0.3**
JFT				S	Sb	**17 45 45.3**	**-1.9**
JIO	**Ouri**	**1.26**	**341**	P	Pn	**17 45 31.3**	**+0.1**
JIO				S	Sb	**17 45 45.3**	**-2.3**
JOU	**Okura**	**1.45**	**320**	P	Pn	**17 45 34.5**	**+0.6**
JOU				S	Sn	**17 45 51.4**	**-1.4**
JYS	**Shirataka**	**1.72**	**304**	P	Pn	**17 45 38.4**	**+0.9**
JYS				S	Sn	**17 45 58.9**	**-0.3**
JFY	**Yanaizu**	**1.73**	**275**	P	Pn	**17 45 38.4**	**+0.7**
JFY				S	Sn	**17 45 58.5**	**-1.0**
JMK	**Ichinoseki**	**1.76**	**343**	P	Pn	**17 45 38.8**	**+0.7**
JMK				S	Sn	**17 45 59.4**	**-0.9**
MJAR	**Matsushiro Arr**	**3.02**	**257**	Pn	Pb	**17 46 00.2**	**-1.4**
	8.4nm,0.3s,baz=104,slow=19,SNR=126						
MAT	**Matsushiro**	**3.02**	**257**	P	Pn	**17 45 57.0**	**+1.5**
MAT				*e*S	Sn	**17 46 35.4**	**+4.0**
JHJ	**Hachijo jima 2**	**4.47**	**203**	Pn	Pn	**17 46 16.6**	**+1.2**
	26nm,0.3s,baz=338,slow=23,SNR=26						
JHJ				Sn	Sn	**17 47 05.1**	**-2.1**
	46nm,0.3s,baz=248,slow=21,SNR=8.8						
ASAJ	**Asahikawa**	**6.87**	**4**	Pn	Pn	17 46 43.2	-5.1
	baz=270,slow=20						
USRK	**Ussuriysk Ar.**	**10.20**	**316**	Pn	Pn	**17 47 38.3**	**+4.3**
	0.2nm,0.3s,baz=133,slow=13,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**27.96**	**122**	T	T	18 20 23.3	
	baz=314,slow=75,SNR=118						
H11N1	**WAKE ISLAND Hy**	**27.97**	**122**	T	T	18 20 23.9	
	baz=314,slow=75,SNR=170						
H11N3	**WAKE ISLAND Hy**	**27.98**	**122**	T	T	18 20 25.0	
	baz=314,slow=75,SNR=133						
H11S1	**WAKE ISLAND Hy**	**28.68**	**124**	T	T	18 21 17.9	
	baz=316,slow=76,SNR=110						
H11S3	**WAKE ISLAND Hy**	**28.69**	**124**	T	T	18 21 16.8	
	baz=316,slow=76,SNR=65						
H11S2	**WAKE ISLAND Hy**	**28.70**	**124**	T	T	18 21 18.5	
	baz=316,slow=76,SNR=47						
ZALV	**Zalesovo Beam**	**42.03**	**312**	P	**P**	**17 52 58.7**

comp=E,877nm,0.5s
TEZP TEZPUR 3.95 65 *e*P **Pn** **17 54 39.3 -0.7**
TEZP AML AML 17 55 43.6
comp=N,1μm,0.3s
TEZP AML AML 17 55 44.9
comp=E,674nm,0.3s
PKIN Phulchoki 3.98 311 *e*Pn **Pn** **17 54 40.1 -0.6**
PKIN *e*Sn **Sn** **17 55 27.2 +0.9**
comp=E,441nm,0.5s
KKN Kakani 4.20 312 *e*Pn **Pn** **17 54 43.2 -0.4**
KKN *e*Sn **Sn** **17 55 32.1 +0.6**
comp=E,1μm,0.8s
DMN Daman 4.21 309 *e*Pn **Pn** **17 54 43.4 -0.3**
DMN *e*Sn **Sn** **17 55 31.5 -0.2**
comp=E,636nm,0.7s
IMP Imphal 4.68 91 *e*P **Pn** **17 54 51.0 +0.9**
IMP *e*S **Sn** **17 55 44.6 +1.3**
IMP *e*S **Sn** **17 55 45.4 +2.2**
GKN Gorkha 4.77 310 *e*Pn **Pn** **17 54 50.5 -0.9**
GKN *e*Sn **Sn** **17 55 45.2 -0.4**
comp=E,737nm,0.7s
ITAN ITANAGAR 4.92 63 AML AML 17 56 25.6
comp=N,1μm,0.4s
ITAN AML AML 17 56 25.8
comp=E,1μm,0.4s
ZIRO ZIRO 5.19 60 *e*P **Pn** **17 54 57.3 +0.2**
ZIRO AML AML 17 56 37.6
comp=N,5μm,0.5s
ZIRO AML AML 17 56 37.8
comp=E,4μm,0.5s
MOKO MOKOCHONG 5.33 75 *e*P **Pn** **17 54 59.0 0.0**
MOKO *e*S **Sn** **17 55 57.4 -1.9**
MOKO AML AML 17 56 40.3
comp=N,461nm,0.5s
MOKO AML AML 17 56 40.8
comp=E,946nm,0.5s
KOLN Koldanda 5.41 302 *e*Pn **Pn** **17 54 58.5 -1.7**
KOLN *e*Sn **Sn** **17 56 00.6 -0.7**
comp=E,169nm,0.5s
PYUN Piuthan 6.04 302 *e*Pn **Pn** **17 55 08.1 -0.8**
PYUN *e*Sn **Sn** **17 56 15.1 -1.8**
comp=E,1μm,0.9s
LKP Lekhapani 6.75 68 *e*P **Pn** **17 55 15.3 -3.1**
LKP AML AML 17 57 20.0
comp=N,370nm,0.4s
LKP AML AML 17 57 22.0
comp=E,428nm,0.6s
BHPL Bhopal 10.53 263 *e*P **Pn** **17 56 06.1 -4.2**
BHPL *e*P **Pn** **17 56 06.7 -3.5**
BHPL *e*S Sn 17 57 53.4 -13
BHPL *e*S Sn 17 57 56.5 -10
BHPL IAML 17 59 16.4
comp=N,161nm,0.9s
BHPL IAML 17 59 16.9
comp=E,88nm,0.5s
BHPL AML AML 17 59 17.8
comp=E,54nm,0.6s
BHPL AML AML 17 59 18.2
comp=N,93nm,0.7s
CMAR Chiang Mai Arr 11.46 123 Pn **Pn** **17 56 23.6 +0.6**
comp=N,0.3nm,0.3s,baz=293,slow=14,SNR=8.9
SMLA Simla 11.94 303 *e*P Pn 17 56 24.0 -5.4
SMLA *e*S Sn 17 58 24.4 -17
HYB Hyderabad 12.16 234 *i*P **Pn** **17 56 34.0 +1.4**
HYB *e*S **Sn** **17 58 49.0 +2.1**
AAK Ala-Archa 21.17 330 P **P** **17 58 25.7 +2.3**
comp=N,5.0nm,0.8s,baz=126,slow=12,SNR=6.1
MKAR Makanchi Array 22.36 348 P **P** **17 58 36.6 +0.7**
comp=N,0.6nm,0.6s,baz=172,slow=9.8,SNR=8.2
SONM Songino Array 26.71 27 P **P** **17 59 18.6 +1.8**
comp=N,1.7nm,0.8s,baz=210,slow=9.5,SNR=9.3
KURBB Kurchatov Arra 26.78 345 P **P** **17 59 18.2 +0.9**
comp=N,0.3nm,0.7s,baz=168,slow=8.9,SNR=9.6
ZALV Zalesovo Beam 29.06 355 P **P** **17 59 39.0 +1.4**
comp=N,0.3nm,0.4s,baz=190,slow=7.5,SNR=4.2
BVAR Borovoye Array 31.24 338 P **P** **17 59 55.6 -1.3**
comp=N,0.3nm,0.5s,baz=142,slow=7.2,SNR=3.6
AKASG Malin Array Be 51.93 316 P **P** **18 02 43.9 -2.0**
comp=N,0.8nm,0.7s,baz=73,slow=8.1,SNR=3.5
AKASG LR LR 18 28 10.7
comp=N,31nm,18.6s,baz=70,slow=40
FINES FINESS Array B 55.36 329 P **P** **18 03 09.9 -0.9**
comp=N,1.0nm,0.8s,baz=104,slow=8.0,SNR=3.7
WRA Warramunga Arr 62.92 131 P **P** **18 04 03.7 0.0**
comp=N,0.6nm,1.0s,baz=316,slow=7.8,SNR=3.5
ASAR Alice Springs 65.21 134 P **P** **18 04 20.0 +1.3**
comp=N,0.3nm,0.9s,baz=317,slow=5.9,SNR=5.1
TORD Torodi Ar. Bea 81.97 281 P **P** **18 05 56.9 -0.4**
comp=N,1.0nm,0.9s,baz=81,slow=4.0,SNR=6.0

*ISCJB **28** 17:58:50.5±0.6,24.°02N±0.°03×122.°38E±0.°02,h7km±4km, Error ellipse: s-maj=4.4km s-min=2.8km az=169.1*
*TAP **28** 17:58:51.8,24.°10N×122.°38E,h31km,ML2.8,D*
*JMA **28** 17:58:51.1±0.1,24.°00N×122.°37E,h20km±3km,M2.4*
ISC 28 17:58:51.3±1.1,24.°02N±0.°03×122.°37E±0.°02,h24km±14km, n35,σ0°61/67,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.68**	**51**	P	**Pb**	**17 59 04.2**	**-0.3**
JYNG				S	**Sb**	**17 59 13.6**	**+0.2**
ENA	**Nanau**	**0.70**	**305**	*i* P	**Pb**	**17 59 04.9**	**+0.1**
	baz=308						
ENA				S	**Sb**	**17 59 14.5**	**+0.4**
	baz=308						
TWD	**Chiawan**	**0.71**	**275**	P	**Pb**	**17 59 04.8**	**-0.3**
	baz=269						
TWD				*e*S	**Sb**	**17 59 14.7**	**+0.3**
	baz=269						
YOJ	**Yonaguni jima**	**0.73**	**53**	P	**Pb**	**17 59 05.1**	**-0.3**
YOJ				*e*S	**Sb**	**17 59 15.0**	**+0.1**
TWC	**Suao**	**0.75**	**321**	*i* P	**Pb**	**17 59 05.0**	**-0.7**
	baz=316						
TWC				*e*S	**Sb**	**17 59 14.8**	**-0.8**
	baz=316						
ESL	**Shilin**	**0.88**	**256**	*e*P	**Pb**	**17 59 07.6**	**-0.4**
	baz=243						
ESL				S	**Sn**	**17 59 20.2**	**-0.1**
	baz=243						
TWE	**Neicheng**	**0.94**	**317**	P	**Pn**	**17 59 08.9**	**-0.2**
	baz=313						
TWE				*e*S	**Sb**	**17 59 20.7**	**-0.4**
	baz=313						
ENTT	**Nioudou**	**0.96**	**310**	P	**Pb**	**17 59 09.2**	**0.0**
	baz=305						
ENTT				*e*S	**Sn**	**17 59 22.4**	**+0.2**
	baz=305						
NNS	**Nan Shan**	**1.00**	**295**	P	**Pn**	**17 59 09.9**	**-0.1**
	baz=290						
NNS				S	**Sn**	**17 59 23.4**	**0.0**
	baz=290						
WHF	**Hehuan Shan**	**1.02**	**277**	P	**Pn**	**17 59 10.1**	**-0.4**
	baz=273						
WHF				*e*S	**Sb**	**17 59 24.0**	**+0.4**
	baz=273						
EHY	**Hungye**	**1.09**	**242**	*e*P	**Pn**	**17 59 11.0**	**-0.1**
	baz=239						
EHY				*e*S	**Sb**	**17 59 25.9**	**+0.7**
	baz=239						
TWT	**Tachien**	**1.11**	**282**	*e*P	**Pb**	**17 59 12.4**	**+0.4**
	baz=267						
TWT				*e*S	**Sn**	**17 59 26.2**	**-0.1**
	baz=267						
NSK	**Sanguang**	**1.13**	**305**	P	**Pn**	**17 59 11.7**	**0.0**
	baz=290						
NSK				S	**Sb**	**17 59 26.3**	**-0.1**
	baz=290						
NWF	**Wu-fen Shan**	**1.17**	**333**	P	**Pn**	**17 59 11.9**	**-0.4**
	baz=328						
NWF				*e*S	**Sb**	**17 59 27.4**	**-0.3**
	baz=328						
TWF1	**Yuli**	**1.19**	**236**	*i* P	**Pn**	**17 59 12.7**	**+0.2**
	baz=224						
TWF1				*e*S	**Sn**	**17 59 28.5**	**+0.5**
	baz=224						
IRIF	**Iriomote-Funau**	**1.28**	**76**	P	**Pn**	**17 59 14.0**	**+0.3**
IRIF				S	**Sb**	**17 59 31.2**	**+0.4**
CHKT	**Chengkung**	**1.30**	**225**	*e*P	**Pn**	**17 59 12.4**	**-1.6**
	baz=215						
CHKT				*e*S	**Sn**	**17 59 29.1**	**-1.6**
	baz=215						
SMLT	**Sun Moon Lake**	**1.35**	**264**	P	**Pn**	**17 59 15.4**	**+0.5**
	baz=252						
SMLT				*e*S	**Sb**	**17 59 34.1**	**+1.2**
	baz=252						
NSTT	**Nanjuang**	**1.39**	**296**	*e*S	**Sb**	**17 59 34.6**	**+0.8**
	baz=292						
TYC	**Yuchr**	**1.39**	**265**	*e*P	**Pn**	**17 59 15.9**	**+0.7**
	baz=262						
TYC				*e*S	**Sb**	**17 59 34.9**	**+1.1**
	baz=262						
YUS	**Yu-Shan**	**1.40**	**248**	P	**Pn**	**17 59 16.4**	**+0.5**
	baz=246						
YUS				*e*S	**Sn**	**17 59 34.0**	**+0.1**
	baz=246						
ELDTW	**Lidau**	**1.49**	**236**	*e*P	**Pn**	**17 59 17.0**	**+0.2**
	baz=235						
ELDTW				*e*S	**Sb**	**17 59 37.6**	**+0.6**
	baz=235						
JKRS	**Kuro-shima**	**1.51**	**82**	P	**Pb**	**17 59 18.3**	**-0.4**
JKRS				S	**Sb**	**17 59 38.2**	**+0.8**
ALS	**Alishan**	**1.52**	**251**	P	**Pb**	**17 59 18.6**	**-0.4**
	baz=249						
ALS				*e*S	**Sb**	**17 59 38.4**	**+0.4**
	baz=249						
WNT	**Mingjian**	**1.55**	**265**	*e*P	**Pb**	**17 59 19.3**	**0.0**
	baz=262						
WNT				*e*S	**Sb**	**17 59 39.5**	**+1.0**
	baz=262						
CHN5	**Tsauling**	**1.61**	**255**	P	**Pb**	**17 59 20.2**	**-0.2**
	baz=243						
CHN5				*e*S	**Sb**	**17 59 40.5**	**+0.3**
	baz=243						
JIJ	**Ishigaki jima**	**1.65**	**78**	P	**Pn**	**17 59 19.3**	**+0.4**
WGK	**Gukeng**	**1.69**	**259**	*e*P	**Pb**	**17 59 22.8**	**+1.1**
	baz=257						
WGK				*e*S	**Sb**	**17 59 42.9**	**+0.3**
	baz=257						
STYT	**Tauyuan**	**1.71**	**240**	*e*P	**Pn**	**17 59 21.0**	**+1.2**
	baz=230						
STYT				*e*S	**Sb**	**17 59 44.0**	**+0.8**
	baz=230						
CHN4	**Tsaushan**	**1.76**	**248**	*e*P	**Pb**	**17 59 22.5**	**-0.5**
	baz=247						
CHN4				*e*S	**Sb**	**17 59 45.1**	**+0.5**
	baz=247						
WTP	**Ta-pu**	**1.79**	**245**	*e*P	**Pb**	**17 59 22.8**	**-0.6**
	baz=243						
WTP				*e*S	**Sb**	**17 59 45.2**	**-0.2**
	baz=243						
JISG	**Ishigakijimahi**	**1.86**	**72**	P	**Pn**	**17 59 22.2**	**+0.5**
TWK	**Hsinying**	**1.88**	**247**	*e*P	**Pb**	**17 59 23.9**	**-1.1**
	baz=245						
TWK				*e*S	**Sb**	**17 59 47.9**	**-0.3**
	baz=245						
CHN1	**Nanshi**	**1.89**	**244**	*e*P	**Pb**	**17 59 24.3**	**-0.7**
	baz=243						
CHN1				*e*S	**Sb**	**17 59 47.8**	**-0.4**
	baz=243						
SGST	**Jiashian**	**1.89**	**241**	*e*P	**Pb**	**17 59 24.3**	**-0.8**
	baz=240						
SGST				*e*S	**Sb**	**17 59 48.0**	**-0.3**
	baz=240						

GCMT 28 17:59:44.0±0.4,39.°89S×15.°93W,h21km±2km,MW4.9/74, Moment Tensor Solution. s18,c20; s74,c87; Duration: 0 Moment tensor: Scale 10^16^Nm; M_{rr}-0.56±.16; $M_{\theta\theta}$-0.34±.15; $M_{\phi\phi}$0.89±.14; $M_{r\theta}$-0.50±.23; $M_{\theta\phi}$2.15±.10; $M_{\phi r}$0.52±.21; **Best double couple:** M_o2.38700×10^16^ **NP1:**ϕ_s174.00000°,δ76.00000°, λ-162.00000°. **NP2:**ϕ_s80.00000°,δ73.00000°, λ-15.00000°. **Principal axes:** T 2.5180, Plg2.0000°, Azm307.0000°; N -0.2600, Plg67.0000°, Azm212.0000°; P -2.2570, Plg23.0000°, Azm38.0000°; **nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s. Tristan da Cunha region**

*ISCJB **28** 18:01:02.2±0.6,0.°35N±0.°08×122.°1E±0.°1,h189km±4km, mb3.7/6 Error ellipse: s-maj=17.4km s-min=12.2km az=157.3*
*IDC **28** 18:01:06.3±6.5,0.°26N×121.°99E,h216km±67km,mb3.2/6, mb1 3.3/7,mb1mx3.1/37,mbtmp3.8/7,MS3.1/1,Ms1 3.1/1, ms1mx2.5/20,Error ellipse: s-maj=95.4km s-min=15.1km az=65.0*
*DJA **28** 18:01:06.2±1.1,0.°N±6.°×12.°2E±.°,h159km±9km,M3.4/5, MLv3.4/5*
ISC 28 18:01:03.3±0.8,0.°36N±0.°09×122.°0E±0.°1,h184km±7km, n12,σ0°80/15,mb3.6/6,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRSI	**Marisa**	**0.15**	**323**	P	**Pn**	**18 01 27.9**	**+0.3**
MRSI				S	**Sn**	**18 01 45.1**	**-1.2**
GTOI	**Gorontalo**	**1.02**	**74**	P	**Pn**	**18 01 32.1**	**+0.6**
GTOI				S	**Sn**	**18 01 53.1**	**-0.1**
LUWI	**Luwuk**	**1.57**	**152**	P	**Pn**	**18 01 37.3**	**+1.1**
LUWI				S	**Sn**	**18 02 01.5**	**-0.4**
PCI	**Palu**	**2.53**	**240**	P	**Pn**	**18 01 47.2**	**+0.7**
FITZ	**Fitzroy Crossi**	**18.68**	**169**	P	**P**	**18 05 07.4**	**-0.2**
	0.5nm,0.3s,baz=2.9,slow=8.8,SNR=28						
WRA	**Warramunga Arr**	**23.50**	**150**	P	**P**	**18 05 56.0**	**-0.7**
	2.6nm,0.5s,baz=324,slow=11,SNR=26						
ASAR	**Alice Springs**	**26.52**	**155**	P	**P**	**18 06 23.8**	**-0.2**
	0.6nm,0.6s,baz=344,slow=14,SNR=18						
ASAR				PcP	**PcP**	**18 09 42.5**	**-1.5**
	0.1nm,0.3s,baz=344,slow=2.1,SNR=4.0						
STKA	**Stephens Creek**	**37.02**	**152**	P	**P**	**18 07 55.5**	**+0.1**
	1.2nm,0.6s,baz=317,slow=8.3,SNR=5.0						
KSRS	**Korea Array**	**37.31**	**8**	LR	LR	18 24 07.6	
	comp=Z,25nm,18.4s,baz=150,slow=37						
SONM	**Songino Array**	**49.20**	**346**	P	**P**	**18 09 33.5**	**+0.5**
	1.0nm,0.6s,baz=165,slow=7.4,SNR=7.1						
MKAR	**Makanchi Array**	**57.81**	**329**	P	**P**	**18 10 35.8**	**+0.4**
	0.4nm,0.3s,baz=119,slow=9.9,SNR=4.0						
ZALV	**Zalesovo Beam**	**61.59**	**336**	P	**P**	**18 11 01.1**	**0.0**
	0.4nm,0.4s,baz=126,slow=7.3,SNR=3.5						

*IDC **28** 18:10:53.9±0.7,19.°96N×121.°51E,h0km,mb3.8/10, mb1 4.0/11,mb1mx3.8/41,mbtmp3.9/11,ML3.6/1,MS3.3/10, Ms1 3.3/10,ms1mx3.0/57,Error ellipse: s-maj=29.0km s-min=14.0km az=69.0*
*NEIC **28** 18:10:55.6±0.5,19.°90N×121.°47E,h10km,mb4.0/1,Error ellipse: s-maj=14.5km s-min=7.1km az=83.0*
*ISCJB **28** 18:10:57.5±0.5,19.°99N±0.°04×121.°63E±0.°08,h40km, mb3.8/11,MS3.3/9,Error ellipse: s-maj=11.1km s-min=5.5km az=14.5*
ISC 28 18:10:59.8±0.7,20.°06N±0.°06×121.°4E±0.°1,h40km,n34, σ1°43/23,mb4.0/11,MS3.4/9,1D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**1.88**	**204**	*i*P	**Pn**	**18 11 28.6**	**-0.9**
PIP				*e*S	**Sn**	**18 11 50.9**	**-1.0**
CVP	**Callao Caves**	**2.37**	**171**	*e*P	**Pn**	**18 11 38.9**	**+2.7**
CVP				*e*S	**Sn**	**18 12 05.4**	**+1.3**
TPUB	**Ta-pu**	**3.31**	**347**	*e*P	**Pn**	**18 11 49.2**	**+0.1**
YULB	**Yu-li**	**3.32**	**358**	*e*P	**Pn**	**18 11 50.5**	**+1.2**
SSLB	**Suanglung**	**3.74**	**353**	*e*P	**Pn**	**18 11 55.5**	**+0.5**
NACB	**Ninganchiao**	**4.10**	**2**	*e*P	**Pn**	**18 12 00.0**	**+0.1**
YHNB	**Yeheng**	**4.59**	**360**	*e*P	**Pn**	**18 12 09.0**	**+2.2**
TGY	**Tagaytay City**	**5.94**	**185**	LR	LR	18 15 11.2	
	comp=Z,158nm,20.3s,baz=321,slow=44						
JOW	**Kunigami**	**9.22**	**42**	Pn	**Pn**	**18 13 10.2**	**-0.1**
	1.4nm,0.3s,baz=165,slow=16,SNR=11						
JOW				Sn	**Sn**	**18 14 50.5**	**-2.3**
	0.2nm,0.3s,baz=217,slow=19,SNR=1.8						
CMAR	**Chiang Mai Arr**	**21.28**	**270**	P	**P**	**18 15 44.3**	**+1.4**
	0.8nm,0.7s,baz=77,slow=8.5,SNR=7.4						
CMAR				LR	LR	18 23 40.6	
	comp=Z,34nm,20.6s,baz=100,slow=36						
GUMO	**Guam**	**23.34**	**102**	LR	LR	18 23 41.1	
	comp=Z,50nm,21.2s,baz=210,slow=33						
KLR	**Kul'dur**	**30.26**	**13**	LR	LR	18 31 14.6	
	comp=Z,38nm,18.1s,baz=223,slow=40						
SONM	**Songino Array**	**30.27**	**340**	P	**P**	**18 17 07.8**	**+0.7**
	0.4nm,0.7s,baz=153,slow=9.7,SNR=2.7						
SONM				LR	LR	18 30 11.7	
	comp=Z,76nm,19.6s,baz=104,slow=38						
FITZ	**Fitzroy Crossi**	**38.15**	**173**	P	**P**	**18 18 12.0**	**-3.3**
	2.1nm,1.1s,baz=337,slow=7.7,SNR=3.3						
MKAR	**Makanchi Array**	**41.52**	**319**	P	**P**	**18 18 44.0**	**+0.9**
	1.3nm,0.5s,baz=114,slow=9.1,SNR=20						
WRAB	**Tennant Creek**	**41.71**	**162**	*e*P	**P**	**18 18 44.0**	**-1.0**
	1.7nm,0.6s						
WRA	**Warramunga Arr**	**41.72**	**162**	P	**P**	**18 18 43.7**	**-1.3**
	1.7nm,0.6s,baz=350,slow=8.6,SNR=17						
H11N1	**WAKE ISLAND Hy**	**42.66**	**82**	T	T	19 04 36.1	
	baz=278,slow=75,SNR=10						
H11S3	**WAKE ISLAND Hy**	**42.66**	**84**	T	T	19 04 11.7	
	baz=281,slow=74,SNR=9.9						
H11N2	**WAKE ISLAND Hy**	**42.66**	**82**	T	T	19 04 35.5	
	baz=278,slow=75,SNR=7.3						
H11S1	**WAKE ISLAND Hy**	**42.67**	**84**	T	T	19 04 12.4	
	baz=281,slow=74,SNR=12						
H11N3	**WAKE ISLAND Hy**	**42.68**	**82**	T	T	19 04 33.3	
	baz=278,slow=75,SNR=5.4						
H11S2	**WAKE ISLAND Hy**	**42.68**	**84**	T	T	19 04 10.6	
	baz=281,slow=74,SNR=8.9						
ZALV	**Zalesovo Beam**	**43.85**	**329**	P	**P**	**18 19 02.0**	**0.0**
	2.2nm,0.7s,baz=116,slow=7.8,SNR=12						
ASAR	**Alice Springs**	**45.13**	**164**	P	**P**	**18 19 12.3**	**-0.2**
	1.7nm,0.8s,baz=342,slow=6.9,SNR=33						
AAK	**Ala-Archa**	**45.26**	**311**	LR	LR	18 41 04.2	
	comp=Z,60nm,21.7s,baz=178,slow=40						
KURK	**Kurchatov**	**45.44**	**323**	P	**P**	**18 19 15.4**	**+0.8**
KURBB	**Kurchatov Arra**	**45.45**	**323**	P	**P**	**18 19 15.4**	**+0.7**
	1.5nm,0.6s,baz=122,slow=7.5,SNR=11						
HNR	**Honiara**	**47.92**	**124**	LR	LR	18 39 45.9	
	comp=Z,30nm,18.0s,baz=89,slow=36						
NRIK	**Noril'sk**	**53.43**	**346**	LR	LR	18 45 17.0	
	comp=Z,38nm,18.3s,baz=159,slow=38						
STKA	**Stephens Creek**	**55.14**	**159**	P	**P**	**18 20 27.6**	**-0.6**
	2.7nm,0.9s,baz=335,slow=19,SNR=2.6						
GNI	**Garni**	**67.36**	**306**	LR	LR	18 56 25.2	
	comp=Z,34nm,19.1s,baz=215,slow=40						
ILAR	**Eielson Array**	**72.78**	**27**	P	**P**	**18 22 23.8**	**0.0**
	0.2nm,0.5s,baz=292,slow=4.8,SNR=2.7						
FINES	**FINESS Array B**	**75.11**	**330**	LR	LR	18 56 30.1	
	comp=Z,50nm,18.5s,baz=222,slow=36						

MEX 28 18:14:26.1±0.6,14.°65N×93.°73W,h16km±999km,MD4.1, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**2.19**	**15**	*e*P	Pn	18 14 59.0	-3.0
TGIG				*e*S	Sn	18 15 24.2	-4.6
CCIG	**Comitan**	**2.23**	**43**	*e*P	Pn	18 15 00.3	-2.2
CCIG				*i* S	Sn	18 15 25.1	-4.8

*IDC **28** 18:21:41.6±0.9,7.°13S×145.°42E,h0km,mb3.7/6, mb1 3.9/9,mb1mx3.7/31,mbtmp3.7/9,ML3.6/2,MS3.5/2, Ms1 3.5/2,ms1mx2.7/34,Error ellipse: s-maj=27.1km s-min=17.9km az=83.0*
*ISCJB **28** 18:21:44.8±0.7,7.°23S±0.°06×145.°24E±0.°08,h33km, mb3.7/6,MS3.4/2,Error ellipse: s-maj=11.4km s-min=8.7km az=154.2*
ISC 28 18:21:46.8±0.8,7.°35S±0.°08×145.°14E±0.°09,h35km,n13, σ2°17/15,mb3.7/6,Near south coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.85**	**136**	Pn	**Pn**	**18 22 29.5**	**-0.3**
	2.9nm,0.3s,baz=309,slow=5.9,SNR=12						
PMG				Sn	**Sn**	**18 23 03.7**	**+0.7**
	12nm,0.3s,baz=336,slow=20,SNR=9.6						
WRA	**Warramunga Arr**	**16.32**	**219**	Pn	**Pn**	**18 25 34.5**	**+1.2**
	0.2nm,0.3s,baz=45,slow=12,SNR=7.6						
WRA				Sn	**Sn**	**18 28 29.6**	**-3.9**
	0.1nm,0.3s,baz=44,slow=22,SNR=3.5						
ASAR	**Alice Springs**	**19.48**	**212**	P	**Pn**	**18 26 14.6**	**+2.3**
	0.3nm,0.3s,baz=48,slow=8.1,SNR=38						
ASAR				S	**S**	**18 29 46.1**	**-3.1**
	0.0nm,0.3s,baz=25,slow=27,SNR=3.7						
FITZ	**Fitzroy Crossi**	**21.79**	**239**	P	**P**	**18 26 39.3**	**+3.4**
	1.4nm,0.7s,baz=65,slow=11,SNR=5.7						
FITZ				LR	LR	18 36 02.0	
	comp=Z,56nm,19.2s,baz=60,slow=39						
CMAR	**Chiang Mai Arr**	**52.29**	**300**	P	**P**	**18 30 56.2**	**+0.9**
	0.6nm,0.8s,baz=113,slow=4.5,SNR=5.8						
USRK	**Ussuriysk Ar.**	**52.67**	**348**	P	**P**	**18 30 56.7**	**-0.9**
	1.9nm,0.6s,baz=192,slow=7.4,SNR=5.1						
KLR	**Kul'dur**	**57.55**	**350**	P	**P**	**18 31 32.0**	**-0.7**
	baz=202,slow=5.4						
VNDA	**Vanda**	**70.69**	**176**	P	**P**	**18 32 59.9**	**+1.3**
	0.6nm,0.6s,baz=277,slow=11,SNR=5.9						
MKAR	**Makanchi Array**	**77.38**	**321**	P	**P**	**18 33 39.0**	**+0.8**
	0.2nm,0.6s,baz=104,slow=4.9,SNR=2.1						
ILAR	**Eielson Array**	**87.45**	**23**	P	**P**	**18 34 28.0**	**-2.3**
	0.7nm,0.9s,baz=261,slow=3.8,SNR=4.8						
BBB	**Bella Bella**	**93.76**	**38**	LR	LR	19 08 46.3	
	comp=Z,39nm,20.6s,baz=259,slow=30						
YKA	**Yellowknife Ar**	**101.22**	**28**	P	**Pdif**	**18 35 32.7**	**-0.7**
	1.0nm,0.7s,baz=273,slow=4.6,SNR=3.6						
TORD	**Torodi Ar. Bea**	**143.60**	**282**	PKP	**PKPdf**	**18 41 17.6**	**-1.4**
	0.6nm,0.9s,baz=45,slow=3.1,SNR=3.1						

*CSEM **28** 18:28:16.2±0.7,51.°40N×16.°16E,h1km,ML2.5/4,Error ellipse: s-maj=10.0km s-min=5.0km az=10.0*
*PRU **28** 18:28:17.8,51.°35N×16.°16E,h0km*
ISC 28 18:28:16.7±3.0,51.°4N±0.°1×16.°14E±0.°07,h0km,n15, σ0°58/22,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.55**	**170**	*e*Pg	**Pg**	**18 28 27.1**	**-0.2**
KSP				*e*Sg	**Sg**	**18 28 34.7**	**+0.3**
KSP	**Ksiaz**	**0.55**	**170**	*e*Pg	**Pg**	**18 28 27.1**	**-0.2**
KSP				*e*Sg	**Sg**	**18 28 34.7**	**+0.3**
DPC	**Dobruska-Polom**	**1.04**	**174**	*e*PG	**Pg**	**18 28 36.3**	**-0.3**
DPC				*e*SG	**Sg**	**18 28 50.5**	**+0.4**
	comp=Z,2.4nm,0.3s						
DPC	**Dobruska-Polom**	**1.04**	**174**	Pg	**Pg**	**18 28 36.3**	**-0.3**
DPC				Sg	**Sg**	**18 28 50.5**	**+0.4**
	2.4nm,0.3s						
PVCC	**Panska Ves**	**1.31**	**230**	*e*PG	**Pg**	**18 28 41.6**	**-0.2**
PVCC				*e*SG	**Sb**	**18 29 00.0**	**+0.4**
	comp=Z,14nm,0.3s						
PVCC	**Panska Ves**	**1.31**	**230**	Pg	**Pg**	**18 28 41.6**	**-0.2**
PVCC				Sg	**Sb**	**18 29 00.0**	**+0.4**
	14nm,0.3s						
BRG	**Berggiesshubel**	**1.48**	**251**	PG	**Pb**	**18 28 44.7**	**-0.3**
BRG				SG	**Sg**	**18 29 04.2**	**+0.1**
	4.9nm,0.4s						
GOPC	**GO Pecny, Ondr**	**1.71**	**211**	*e*SG	**Sb**	**18 29 11.7**	**+0.8**
GOPC	**GO Pecny, Ondr**	**1.71**	**211**	Sg	**Sb**	**18 29 11.7**	**+0.8**
PRU	**Pruhonice**	**1.73**	**217**	*e*SG	**Sb**	**18 29 11.6**	**+0.1**
	comp=Z,3.0nm,0.4s						
PRU	**Pruhonice**	**1.73**	**217**	Sg	**Sb**	**18 29 11.6**	**+0.1**
	3.0nm,0.4s						
NKC	**Novy Kostel**	**2.61**	**245**	*e*SG	**Sg**	**18 29 41.4**	**+0.9**
	comp=Z,4.1nm,0.3s						
NKC	**Novy Kostel**	**2.61**	**245**	Sg	**Sg**	**18 29 41.4**	**+0.9**
	4.1nm,0.3s						
KHC	**Kasperske Hory**	**2.79**	**217**	*e*SG	**Sg**	**18 29 45.3**	**-1.0**
KHC	**Kasperske Hory**	**2.79**	**217**	Sg	**Sg**	**18 29 45.3**	**-1.0**

*ISCJB **28** 18:33:19.0±0.6,5.°81S±0.°05×145.°65E±0.°09,h109km, mb3.8/12,Error ellipse: s-maj=12.8km s-min=7.4km az=168.8*
*IDC **28** 18:33:19.4±2.0,5.°78S×145.°70E,h97km±20km,mb3.6/12, mb1 3.8/14,mb1mx3.6/34,mbtmp4.0/14,Error ellipse: s-maj=22.6km s-min=13.6km az=72.0*
**ISC 28 18:33:20.7±0.7,5.°89S±0.°08×145.°5E±0.°1,h109km,n15, σ

CMAR	**Chiang Mai Arr**	**51.91**	**299**	P		**P**	**18 42 19.9**	**+1.3**
	1.1nm,0.6s,baz=114,slow=5.9,SNR=8.3							
PETK	**Petropavlovsk-**	**59.67**	**8**	P		**P**	**18 43 12.2**	**-1.3**
	3.7nm,0.7s,baz=176,slow=7.1,SNR=2.8							
SONM	**Songino Array**	**63.60**	**332**	P		**P**	**18 43 39.9**	**-0.3**
	0.3nm,0.4s,baz=153,slow=4.7,SNR=2.6							
VNDA	**Vanda**	**72.11**	**176**	P		**P**	**18 44 33.9**	**+1.1**
	0.6nm,0.6s,baz=328,slow=3.0,SNR=5.0							
MKAR	**Makanchi Array**	**76.48**	**321**	P		**P**	**18 44 59.4**	**+0.6**
	1.1nm,0.6s,baz=96,slow=8.0,SNR=14							
ZALV	**Zalesovo Beam**	**78.14**	**328**	P		**P**	**18 45 07.4**	**-0.4**
	1.0nm,0.5s,baz=99,slow=5.8,SNR=5.0							
KURBB	**Kurchatov Arra**	**80.26**	**323**	P		**P**	**18 45 18.6**	**-0.8**
	0.5nm,0.2s,baz=116,slow=4.4,SNR=5.4							
BVAR	**Borovoye Array**	**85.82**	**324**	P		**P**	**18 45 48.6**	**+0.5**
	1.3nm,0.6s,baz=116,slow=8.8,SNR=8.7							
ILAR	**Eielson Array**	**85.96**	**23**	P		**P**	**18 45 47.6**	**-0.8**
	1.0nm,0.7s,baz=250,slow=5.1,SNR=12							

DJA 28 18:42:29.4±0.7,**8°S**×4°×**10°7E**±°,**h14**km±3km,**M4.2**/12,
mb4.5/3,**MLv4.0**/12,**Jawa**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CNJI	**Cibinong**	**0.70**	**54**	P		Pb	18 42 43.7	+0.4
CNJI				S		Sb	18 42 53.1	+0.3
SKJI	**Sukabumi**	**0.71**	**360**	P		Pb	18 42 43.9	+0.3
SKJI				S		Sb	18 42 54.4	+1.2
DBJI	**Dramaga**	**1.17**	**9**	P		Pn	18 42 51.2	-0.2
DBJI				S		Sb	18 43 04.3	-2.3
CISI	**Cisompet, Garu**	**1.25**	**83**	P		Pn	18 42 51.3	-1.3
CISI				S		Sb	18 43 06.3	-2.7
LEM	**Lembang**	**1.37**	**50**	P		Pg	18 43 00.0	+4.1
LEM				S		Sg	18 43 16.3	+2.5
CGJI	**Cibinong**	**1.40**	**322**	P		Pn	18 42 53.5	-1.0
CGJI				S		Sn	18 43 10.2	-2.5
SBJI	**Serang**	**1.65**	**345**	P		Pn	18 42 58.2	+0.3
SBJI				S		Sn	18 43 17.3	-1.6
CMJI	**Cimerak**	**1.87**	**92**	P		Pn	18 42 59.8	-1.2
KASI	**Kota Agung**	**2.99**	**317**	P		Pn	18 43 17.2	+0.7
KASI				S		Sn	18 43 51.8	-0.4
LWLI	**Liwa**	**3.66**	**317**	P		Pn	18 43 26.3	+0.6
LWLI				S		Sn	18 44 09.8	+1.0
UGM	**Wanagama**	**3.93**	**93**	P		Pn	18 43 28.8	-0.6
PCJI	**Pacitan**	**4.60**	**96**	P		Pn	18 43 38.9	+0.4
PCJI				S		Sn	18 44 27.2	-4.6
MNAI	**Manna**	**4.90**	**313**	P		Pn	18 43 43.0	+0.3
PWJI	**Pagerwojo**	**5.20**	**94**	P		Pn	18 43 47.1	+0.2
	27nm,0.8s							
JAGI	**Jajag, Banyuwa**	**7.55**	**96**	P		Pn	18 44 19.2	0.0
	30nm,1.9s							
PPSI	**Pulau Pagai**	**8.17**	**307**	P		Pn	18 44 27.2	-0.5

IDC ***28*** *18:42:30.1±0.4,33°30N×75°99E,h0km,mb4.3/40,*
mb1 4.4/44,mb1mx4.3/66,mbtmp4.3/44,ML3.9/4,MS3.1/8,
Ms1 3.1/8,ms1mx2.8/38,Error ellipse: s-maj=11.6km
s-min=9.3km az=34.0
ISCJB ***28*** *18:42:32.2±0.2,33°30N±0°02×76°08E±0°03,h26km,*
mb4.4/77,MS3.1/11,Error ellipse: s-maj=4.0km
s-min=2.3km az=148.3
NDI ***28*** *18:42:33.1±2.2,33°53N×75°82E,h33km,ML4.5,*
mb4.5(NEIC)
MOS ***28*** *18:42:34.0±1.0,33°38N×76°06E,h35km,mb4.7/21,Error*
ellipse: s-maj=8.3km s-min=4.6km az=104.4
NEIC ***28*** *18:42:35.3±2.5,33°32N×76°00E,h33km±17km,mb4.5/11,*
Error ellipse: s-maj=7.4km s-min=5.4km az=201.0
BJI ***28*** *18:42:37.5,33°61N×76°79E,h12km,mb4.5/22,mB4.5/20,*
ML4.1/5,Ms3.8/7,Ms7 3.6/3

ISC 28 18:42:34.1±0.3,**33°33N**±0°03×**76°08E**±0°04,**h26**km,**n185,**
σ1s74/215,**mb4.5**/79,**MS3.1**/11,**12C-11D,Kashmir-India**
border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JWA	**Jwalamukhi**	**1.47**	**172**	*e*P		**Pn**	**18 42 58.0**	**-1.0**
JWA				*e*S		**Sb**	**18 43 22.0**	**+2.9**
BHK	**Bhakra**	**1.93**	**171**	*e*P		**Pn**	**18 43 06.0**	**+0.7**
BHK				*e*S		**Sb**	**18 43 32.8**	**+0.6**
SDNR	**Sundarnagar**	**1.97**	**157**	*e*P		**Pn**	**18 43 07.0**	**+1.1**
SDNR				*e*S		**Sb**	**18 43 33.0**	**-0.5**
SMLA	**Simla**	**2.38**	**157**	*e*P		**Pn**	**18 43 13.9**	**+2.5**
SMLA				*e*S		**Sb**	**18 43 44.4**	**-0.8**
SMLA				IAML			18 43 48.2	
	comp=N,13μm,0.4s							
SMLA				IAML			18 43 50.3	
	comp=E,7μm,0.5s							
DDI	**Dehra Dun**	**3.43**	**150**	*e*P		**Pn**	**18 43 29.5**	**+3.4**
DDI				*e*S		**Sn**	**18 44 09.5**	**+3.5**
DDI				IAML			18 44 22.4	
	comp=E,3μm,0.5s							
DDI				IAML			18 44 22.4	
	comp=N,2μm,0.5s							
CEP	**Cherat**	**3.52**	**279**	P		**Pn**	**18 43 28.2**	**+0.9**
THW	**Thamme Wali**	**3.68**	**263**	P		**Pn**	**18 43 29.9**	**+0.5**
NDI	**New Delhi**	**4.73**	**168**	*e*PG		**Pb**	**18 43 53.0**	**-3.4**
NDI				*e*SG		**Sb**	**18 44 56.0**	**+3.1**
SONA	**Sohna**	**5.13**	**170**	*e*P		**Pn**	**18 43 51.6**	**+2.3**
SONA				*e*S		**Sn**	**18 44 45.6**	**-2.1**
PTH	**Pithoragarh**	**5.16**	**136**	*e*P		**Pn**	**18 43 52.8**	**+2.9**
PTH				*e*S		**Sn**	**18 44 48.1**	**-0.6**
KUDL	**Kundal**	**5.18**	**176**	*e*P		**Pn**	**18 43 51.3**	**+1.3**
KUDL				*e*S		**Sn**	**18 44 49.7**	**+0.8**
KUDL				IAML			18 45 26.7	
	comp=N,182nm,0.5s							
KUDL				IAML			18 45 28.9	
	comp=E,340nm,0.7s							
KHET	**Khetri**	**5.24**	**183**	*e*P		**Pn**	**18 43 50.6**	**-0.2**
KHET				*e*S		**Sn**	**18 44 49.1**	**-1.4**
KBL	**Kabul**	**5.98**	**284**	P		**Pn**	**18 44 01.8**	**+0.7**
KSH	**Kashi**	**6.18**	**359**	*e*Pn		**Pn**	**18 44 04.8**	**+1.0**
KSH				Sn		**Sn**	**18 45 09.5**	**-4.1**
KSH				smax		smax		
	comp=E,150nm,1.2s							
KSH				smax		smax		
	comp=E,210nm,1.0s							
PYUN	**Piuthan**	**7.90**	**129**	*e*Pn		**Pn**	**18 44 27.5**	**-0.1**
PYUN				*e*Sn		**Sn**	**18 45 56.6**	**+0.3**
	comp=E,639nm,0.8s							
KOLN	**Koldanda**	**8.52**	**129**	*e*Pn		**Pn**	**18 44 36.3**	**+0.2**
KOLN				*e*Sn		**Sn**	**18 46 11.8**	**+0.3**
	comp=E,315nm,0.6s							
GKN	**Gorkha**	**9.08**	**124**	*e*Pn		**Pn**	**18 44 43.2**	**-0.4**
GKN				*e*Sn		**Sn**	**18 46 22.9**	**-2.2**
	comp=E,151nm,0.4s							
AAK	**Ala-Archa**	**9.38**	**353**	Pn		**Pn**	**18 44 49.8**	**+2.1**
	comp=E,2.5nm,0.3s,baz=154,slow=12,SNR=9.8							
AAK				Sn		**Sn**	**18 46 31.1**	**-1.3**
	comp=E,0.9nm,0.3s,baz=144,slow=18,SNR=2.2							
AAK	**Ala-Archa**	**9.38**	**353**	*d*iP		**Pn**	**18 44 49.2**	**+1.5**
FRU	**Bishkek**	**9.56**	**353**	*e*P		**Pn**	**18 44 51.5**	**+1.4**
FRU				*e*S		**Sn**	**18 46 42.0**	**+5.3**
FRU				pmax		pmax		
	comp=Z,40nm,1.8s							
FRU				smax		smax		
	comp=E,100nm,2.0s							
MNAS	**Manas**	**9.57**	**344**	*i* P		**Pn**	**18 44 51.0**	**+0.7**
MNAS				pmax		pmax		
	comp=Z,16nm,0.6s							
TKM2	**Tokmak 2**	**9.59**	**358**	*i* P		**Pn**	**18 44 53.3**	**+2.7**
TKM2				pmax		pmax		
	comp=Z,13nm,0.7s							
DMN	**Daman**	**9.64**	**124**	*e*Pn		**Pn**	**18 44 50.8**	**-0.7**
DMN				*e*Sn		**Sn**	**18 46 39.0**	**-0.2**
	comp=Z,129nm,0.5s							
KKN	**Kakani**	**9.66**	**122**	*e*Pn		**Pn**	**18 44 50.7**	**-1.0**
KKN				*e*Sn		**Sn**	**18 46 36.9**	**-2.5**
PKIN	**Phulchoki**	**9.87**	**123**	*e*Pn		**Pn**	**18 44 54.0**	**-0.6**
PKIN				*e*Sn		**Sn**	**18 46 42.3**	**-2.4**
	comp=Z,120nm,0.5s							
GUN	**Gumba**	**10.02**	**120**	*e*Pn		**Pn**	**18 44 56.2**	**-0.5**
GUN				*e*Sn		**Sn**	**18 46 46.8**	**-1.6**
PDGK	**Podgornoye**	**10.33**	**14**	*i* P		**Pn**	**18 45 02.5**	**+1.9**
PDGK				pmax		pmax		
	comp=Z,19nm,0.5s							
JIRN	**Jiri**	**10.38**	**120**	*e*Pn		**Pn**	**18 45 01.0**	**-0.8**
JIRN				*e*Sn		**Sn**	**18 46 54.3**	**-3.2**
	comp=Z,394nm,0.3s							
KK31	**Karatay Array**	**10.70**	**337**	*i* P		**Pn**	**18 45 05.3**	**-0.3**
KK31				pmax		pmax		
	comp=Z,15nm,0.6s							
KKAR	**Karatay Array**	**10.70**	**337**	*e*P		**Pn**	**18 45 05.0**	**-0.6**
KKAR				pmax		pmax		
	comp=Z,24nm,0.6s							
KKAR	**Karatay Array**	**10.70**	**337**	*e*Pn		**Pn**	**18 45 05.0**	**-0.6**
	comp=Z,24nm,0.6s							
MAKZ	**Makanchi**	**14.19**	**17**	*i* P		**Pn**	**18 45 53.9**	**+0.5**
MAKZ				pmax		pmax		
	comp=Z,11nm,0.6s							
MK31	**Makanchi Array**	**14.26**	**18**	*i* P		**Pn**	**18 45 54.6**	**+0.3**
MK31				pmax		pmax		
	comp=Z,7.0nm,0.7s							
MKAR	**Makanchi Array**	**14.26**	**18**	Pn		**Pn**	**18 45 53.8**	**-0.5**
	comp=Z,0.9nm,0.3s,baz=204,slow=13,SNR=25							
MKAR				Sn		**Sn**	**18 48 26.9**	**-4.7**
	comp=Z,0.9nm,0.3s,baz=199,slow=23,SNR=8.6							
MKAR				LR		LR	18 52 09.2	
	comp=Z,98nm,18.5s,baz=200,slow=40							
MKAR	**Makanchi Array**	**14.26**	**18**	*i* P		**Pn**	**18 45 55.0**	**+0.7**
MKAR				pmax		pmax		
	comp=Z,2.0nm,0.4s							
SRSP	**Sriramsagar**	**14.48**	**171**	*e*Pn		**Pn**	**18 45 53.0**	**-4.5**
SRSP				IAmb		IAmb	18 45 54.3	
	comp=Z,12nm,0.7s							
SRSP				*e*			18 48 25.9	
RPR	**Rampur**	**14.69**	**168**	*e*Pn		**Pn**	**18 45 57.9**	**-2.4**
RPR				IAmb		IAmb	18 45 58.6	
	comp=Z,11nm,0.6s							
RPR				*e*			18 48 32.4	
POO	**Poona**	**14.87**	**188**	*e*P		**Pn**	**18 46 02.3**	**-0.5**
OTUK	**Ortayu**	**15.17**	**350**	P		**Pn**	**18 46 03.5**	**-3.0**
OTUK				pmax		pmax		
	comp=Z,10.0nm,1.1s							
KLRI	**Killari**	**15.20**	**178**	*e*Pn		**Pn**	**18 46 01.6**	**-5.6**
KLRI				IAmb		IAmb	18 46 06.7	
	comp=Z,16nm,0.6s							
KLRI				*e*			18 48 40.4	
GEYT	**Alibeck**	**15.31**	**293**	Pn		**Pn**	**18 46 05.5**	**-3.1**
	comp=Z,0.3nm,0.3s,baz=121,slow=11,SNR=7.4							
SHL	**Shillong**	**15.78**	**115**	*e*P		**Pn**	**18 46 16.3**	**+1.6**
SHL				*ex*		x	18 48 54.9	
HYBB	**Hyderabad (bro**	**16.00**	**171**	*e*Pn		**Pn**	**18 46 16.8**	**-0.7**
HYBB				IAmb		IAmb	18 46 20.6	
	comp=Z,12nm,1.0s							
HYBB				*e*			18 49 00.8	
HYB	**Hyderabad**	**16.00**	**171**	*i* P		**Pn**	**18 46 13.0**	**-4.5**
HYB				*e*			18 46 26.0	
HYB				*e*S		Sn	18 49 01.0	-13
CHLP	**Challavanipeta**	**16.40**	**152**	*e*Pn		**Pn**	**18 46 22.6**	**0.0**
CHLP				IAmb		IAmb	18 46 28.3	
	comp=Z,18nm,0.3s							
CHLP				*e*			18 49 11.8	
PVM	**Polavaram**	**16.77**	**161**	*e*P		**Pn**	**18 46 22.5**	**-4.7**
PVM				IAmb		IAmb	18 46 26.5	
	comp=Z,12nm,0.9s							
PVM				*e*			18 49 18.9	
NJS	**Nagarjunasagar**	**16.95**	**169**	*e*P		**P**	**18 46 33.8**	**+2.5**
NJS				IAmb		IAmb	18 46 39.5	
	comp=Z,9.8nm,0.7s							
SRLM	**Srisailam**	**17.34**	**171**	*e*Pn		**Pn**	**18 46 30.9**	**-3.6**
SRLM				IAmb		IAmb	18 46 34.6	
	comp=Z,15nm,0.9s							
SRLM				*e*			18 49 36.9	
KURBB	**Kurchatov Arra**	**17.38**	**5**	Pn		**Pn**	**18 46 32.0**	**-2.6**
	comp=Z,0.2nm,0.3s,baz=192,slow=12,SNR=34							
KURK	**Kurchatov**	**17.48**	**5**	P		**Pn**	**18 46 32.0**	**-3.9**
KURK	**Kurchatov**	**17.48**	**5**	Pn		**Pn**	**18 46 32.0**	**-3.9**
ADKI	**Addanki**	**17.76**	**168**	*e*P		**Pn**	**18 46 37.8**	**-1.8**
ADKI				IAmb		IAmb	18 46 43.4	
	comp=Z,18nm,1.3s							
ADKI				*e*			18 49 46.0	
RCLA	**Racherla**	**17.98**	**171**	*e*Pn		**Pn**	**18 46 38.8**	**-3.6**
RCLA				IAmb		IAmb	18 46 45.6	
	comp=Z,59nm,1.8s							
RCLA				*e*			18 49 46.5	
URV	**Uravakonda**	**18.33**	**176**	*e*Pn		**Pn**	**18 46 46.8**	**+0.2**
URV				IAmb		IAmb	18 46 48.1	
	comp=Z,17nm,1.1s							
URV				*e*			18 49 57.8	
SKHT	**Srikalahasti**	**19.78**	**170**	*e*Pn		**Pn**	**18 47 03.4**	**-0.6**
SKHT				IAmb		IAmb	18 47 05.2	
	comp=Z,26nm,1.4s							
AB31	**Akbulak array**	**19.94**	**328**	*i* P		**P**	**18 47 03.9**	**-0.1**
AB31				pmax		pmax		
	comp=Z,4.0nm,0.5s							
ABKAR	**Akbulak array**	**19.94**	**328**	*e*P		**P**	**18 47 04.1**	**+0.1**
	comp=Z,6.4nm,0.6s							
GTA	**Gaotai**	**20.02**	**66**	*e*P		**P**	**18 47 06.0**	**+0.9**
GTA				pP		sP	18 47 15.3	-0.3
GTA				sP		pP	18 47 19.5	+7.3
GTA				pmax		pmax		
	comp=Z,8.0nm,1.0s							
GTA				pmax		pmax		
	comp=Z,34nm,4.6s							
GTA				LR		LR		
	comp=Z,160nm,15.2s							
GTA				LR		LR		
	comp=Z,97nm,14.3s							
BVA0	**Borovoye Array**	**20.11**	**350**	*i* P		**P**	**18 47 06.2**	**+0.4**
BVA0				pmax		pmax		
	comp=Z,15nm,1.0s							
BVAR	**Borovoye Array**	**20.11**	**350**	P		**P**	**18 47 06.5**	**+0.7**
	comp=Z,8.7nm,0.6s,baz=163,slow=11,SNR=30							
BRVK	**Borovoye**	**20.16**	**350**	*de*P		**P**	**18 47 07.2**	**+0.9**
BRVK				pmax		pmax		
	comp=Z,55nm,0.8s							
BRVK	**Borovoye**	**20.16**	**350**	*e*P		Pn	18 47 07.3	-1.0
	comp=Z,60nm,0.8s							
ZALV	**Zalesovo Beam**	**21.53**	**14**	P		**P**	**18 47 20.2**	**-0.9**
	comp=Z,4.1nm,0.4s,baz=207,slow=10,SNR=26							
ZALV				S		**S**	**18 51 15.7**	**-2.7**
	comp=Z,0.7nm,0.5s,baz=200,slow=21,SNR=3.4							
ZALV				LR		LR	18 55 17.0	
	comp=Z,15nm,19.9s,baz=250,slow=36							
AKTO	**Aktyubinsk**	**21.66**	**327**	P		**P**	**18 47 22.6**	**+0.1**
	comp=Z,33nm,0.7s,baz=127,slow=9.3,SNR=151							
AKTO				S		**S**	**18 51 19.5**	**-1.4**
	comp=Z,1.0nm,0.7s,baz=204,slow=20,SNR=2.8							
AKTO	**Aktyubinsk**	**21.66**	**327**	*i* P		**P**	**18 47 21.8**	**-0.7**
AKTO				pmax		pmax		
	comp=Z,41nm,0.8s							
NVS	**Novosibirsk**	**22.09**	**11**	*e*P		**P**	**18 47 25.8**	**-1.3**
NVS				*e*S		**S**	**18 51 23.3**	**-5.8**
NVS				pmax		pmax		
	comp=N,12nm,1.0s							
NVS				pmax		pmax		
	comp=Z,18nm,1.0s							
NVS				smax		smax		
	comp=N,9.0nm,1.1s							
LZH	**Lanzhou**	**22.96**	**75**	*e*P		**P**	**18 47 38.3**	**+1.6**
LZH				pP		pP	18 47 44.3	+0.4
LZH				sP		sP	18 47 48.5	+1.3
LZH				pmax		pmax		
	comp=N,22nm,1.0s							
LZH				pmax		pmax		
	comp=N,130nm,4.6s							
CMAI	**Chiengmai2**	**24.41**	**117**	P		**P**	**18 47 50.5**	**-0.3**
	comp=N,103nm,0.8s							
MHMT	**Maesarieng**	**24.72**	**122**	P		**P**	**18 47 54.3**	**+0.9**
	comp=N,22nm,0.7s							
CHTO	**Chiang Mai**	**25.03**	**120**	*e*P		**P**	**18 47 56.5**	**+0.2**
CHTO				pmax		pmax		
	comp=Z,20nm,0.6s							
CHTO	**Chiang Mai**	**25.03**	**120**	*e*P		**P**	**18 47 56.5**	**+0.2**
	comp=Z,20nm,0.6s							
CMMT	**Chiang Mai**	**25.04**	**120**	P		**P**	**18 47 56.8**	**+0.5**
	comp=Z,35nm,0.7s							
CMAR	**Chiang Mai Arr**	**25.26**	**120**	P		**P**	**18 47 58.8**	**+0.5**
	comp=Z,24nm,0.7s,baz=307,slow=9.4,SNR=163							
CMAR				PcP		**PcP**	**18 51 32.3**	**+1.0**
	comp=Z,0.7nm,0.5s,baz=290,slow=3.4,SNR=4.3							
CMAR	**Chiang Mai Arr**	**25.26**	**120**	*ce*P		**P**	**18 47 58.5**	**+0.2**
CMAR				pmax		pmax		
	comp=Z,25nm,0.7s							
LAMP	**Lampang**	**25.72**	**119**	P		**P**	**18 48 04.8**	**+2.3**
	comp=Z,4.3nm,0.8s							
SVE	**Sverdlovsk**	**25.79**	**340**	*e*P		**P**	**18 48 03.5**	**+0.8**
GNI	**Garni**	**25.93**	**294**	P		**P**	**18 48 04.1**	**-0.4**
	comp=Z,2.7nm,0.4s,baz=114,slow=20,SNR=2.3							
GNI	**Garni**	**25.93**	**294**	*e*P		**P**	**18 48 04.3**	**-0.2**
GNI				pmax		pmax		
	comp=Z,15nm,1.0s							
ARU	**Arti**	**26.07**	**338**	P		**P**	**18 48 05.8**	**+0.5**
	comp=Z,7.6nm,0.9s,baz=141,slow=3.4,SNR=14							
ARU				LR		LR	18 59 05.4	
	comp=Z,23nm,22.0s,baz=86,slow=38							
ARU	**Arti**	**26.07**	**338**	*c* iP		**P**	**18 48 05.7**	**+0.4**
ARU							18 48 47.3	
ARU				S		**S**	**18 52 35.7**	**+0.9**
ARU				SS		**SnSn**	**18 53 38.7**	**+5.1**
ARU				pmax		pmax		
	comp=Z,9.0nm,1.0s							
ARU	**Arti**	**26.07**	**338**	*e*P		**P**	**18 48 05.5**	**+0.1**
	comp=Z,12nm,1.0s							
ZAK	**Zakamensk**	**26.26**	**41**	*e*P		**P**	**18 48 06.0**	**-1.2**
ZAK				pmax		pmax		
	comp=Z,2.0nm,1.0s							
PALK	**Pallekele**	**26.28**	**170**	P		**P**	**18 48 09.0**	**+1.5**
	comp=Z,8.7nm,0.8s,baz=298,slow=9.3,SNR=4.7							
PALK				LR		LR	18 58 44.5	
	comp=Z,86nm,19.3s,baz=296,slow=37							
UMPA	**Umpang Tak**	**26.70**	**124**	P		**P**	**18 48 14.4**	**+3.0**
	comp=Z,9.1nm,0.8s,comp=Z,86nm							
UTTA	**Uttaradit**	**26.89**	**119**	P		**P**	**18 48 16.1**	**+3.1**
	comp=Z,5.0nm,0.9s,comp=Z,41nm							
SONM	**Songino Array**	**26.99**	**49**	P		**P**	**18 48 15.7**	**+1.8**
	comp=Z,3.1nm,0.7s,baz=242,slow=9.7,SNR=23							
SONM				PcP		**PcP**	**18 51 35.8**	**+0.8**
	comp=Z,0.6nm,0.5s,baz=248,slow=1.6,SNR=4.1							
SONM				LR		LR	18 59 57.1	
	comp=Z,44nm,21.8s,baz=188,slow=39							
TLY	**Talaya**	**27.12**	**39**	P		**P**	**18 48 15.9**	**+1.1**
	comp=Z,1.0nm,0.4s,baz=218,slow=19,SNR=2.6							
TLY				LR		LR	19 00 14.5	
	comp=Z,75nm,19.8s,baz=196,slow=39							
KBZ	**Khabaz**	**27.80**	**302**	P		**P**	**18 48 20.2**	**-0.8**
	comp=Z,1.0nm,0.5s,baz=41,slow=20,SNR=2.7							
KBZ				LR		LR	19 02 00.8	
	comp=Z,23nm,20.5s,baz=60,slow=42							
NEY	**Neytrino**	**27.84**	**301**	*e*P		**P**	**18 48 25.3**	**+3.7**
PBKT	**Sadao Pong**	**27.95**	**121**	P		**P**	**18 48 24.6**	**+2.0**
	comp=Z,13nm,0.7s,comp=Z,1μm							
KIV	**Kislovodsk**	**27.99**	**302**	*e*P		**P**	**18 48 24.1**	**+1.3**
KIV				pmax		pmax		
	comp=Z,4.0nm,1.1s							
KIV				MLR		MLR		
	comp=Z,30nm,15.0s							
CHAI	**Chaiyaphum**	**29.12**	**120**	P		**P**	**18 48 34.2**	**+1.2**
	comp=Z,7.3nm,0.8s,comp=Z,71nm							
HHC	**Hu-ho-hao-te**	**29.13**	**65**	*e*P		**P**	**18 48 33.8**	**+0.7**
HHC				S		**S**	**18 53 23.5**	**-0.1**
HHC				SS		**SnSn**	**18 54 50.0**	**+1.3**
HHC				pmax		pmax		
	comp=Z,14nm,0.9s							
HHC				pmax		pmax		
	comp=Z,54nm,5.1s							
HHC				LR		LR		
	comp=Z,77nm,14.8s							
HHC				LR		LR		
	comp=Z,87nm,12.3s							
HHC				LR		LR		
	comp=Z,73nm,12.3s							
WHN	**Wuhan**	**32.48**	**84**	P		P	18 49 08.0	+5.5
BRTR	**Keskin Array B**	**34.45**	**293**	P		**P**	**18 49 20.6**	**+0.8**
	comp=Z,1.0nm,0.6s,baz=107,slow=12,SNR=6.0							
BRTR	**Keskin Array B**	**34.45**	**293**	*ce*P		**P**	**18 49 21.2**	**+1.4**
BRTR				pmax		pmax		
	comp=Z,1.0nm,0.6s							
OBN	**Obninsk**	**35.05**	**320**	*de*P		**P**	**18 49 24.6**	**+0.1**
OBN				*e**PP		**sP**	**18 49 36.7**	**+1.2**
OBN							18 50 47.0	
OBN				*e*			18 52 01.5	
OBN				pmax		pmax		
	comp=Z,7.0nm,0.8s							
OBN				MLR		MLR		
	comp=Z,28nm,16.0s							
KLMR	**Klimovskoe**	**36.29**	**330**	*e*P		**P**	**18 49 34.2**	**-0.9**
KLMR				pmax		pmax		
	comp=Z,4.0nm,0.6s							
AKASG	**Malin Array Be**	**38.18**	**311**	P		**P**	**18 49 50.4**	**-1.0**
	comp=Z,0.9nm,0.6s,baz=83,slow=6.6,SNR=6.1							
KIEV	**Kiev**	**38.19**	**311**	*i* P		**P**	**18 49 52.3**	**+0.9**
KIEV				pmax		pmax		
	comp=Z,2.0nm,1.1s							
KIEV	**Kiev**	**38.19**	**311**	*e*P		**P**	**18 49 50.3**	**-1.1**
	comp=Z,1.6nm,0.6s							
VRI	**Vrincioaia**	**39.44**	**303**	‖*i*P		**P**	**18 50 02.7**	**+0.7**
VRI	**Vrincioaia**	**39.44**	**303**	‖P		**P**	**18 50 02.7**	**+0.7**
PLOR	**Plostina**	**39.50**	**303**	‖*i*P		**P**	**18 50 03.4**	**+0.9**
PLOR	**Plostina**	**39.50**	**303**	‖P		**P**	**18 50 03.4**	**+0.9**
MLR	**Muntele Rosu**	**39.99**	**303**	P		**P**	**18 50 06.0**	**-0.8**
	comp=Z,1.8nm,0.9s,baz=110,slow=2.4,SNR=15							
MLR	**Muntele Rosu**	**39.99**	**303**	‖*i*P		**P**	**18 50 08.0**	**+1.3**
MLR	**Muntele Rosu**	**39.99**	**303**	‖P		**P**	**18 50 08.0**	**+1.3**
VOIR		**40.62**	**303**	⇑*i*P		**P**	**18 50 12.3**	**+0.4**
VOIR		**40.62**	**303**	⇑P		**P**	**18 50 12.3**	**+0.4**
IDI	**Anoyia**	**41.95**	**288**	P		**P**	**18 50 22.3**	**-0.6**
	comp=Z,4.0nm,0.7s,baz=38,slow=9.8,SNR=6.0							
KSRS	**Korea Array**	**42.03**	**69**	LR		LR	19 09 20.5	
	comp=Z,36nm,18.0s,baz=202,slow=38							
DRGR		**42.22**

MAJO					pmax	pmax		
	comp=Z,25nm,0.8s							
MJAR	**Matsushiro Arr**	**50.25**	**68**	P		**P**	**18 51 28.3**	**+0.1**
	comp=Z,4.4nm,0.8s,baz=286,slow=9.1,SNR=10							
FETA	**Feichten**	**50.38**	**306**	*i* P		**P**	**18 51 27.9**	**-1.3**
	comp=Z,1.7nm,0.6s							
DAVA	**Damuels**	**50.91**	**307**	*i* P		**P**	**18 51 32.5**	**-0.7**
	comp=Z,5.0nm,0.6s							
DAVOX	**Davos/Dischmat**	**50.99**	**306**	P		**P**	**18 51 33.2**	**-0.7**
	comp=Z,1.6nm,0.5s,baz=163,slow=17,SNR=2.7							
YSS	**Yuzh-Sakhalins**	**51.28**	**54**⇑	*eP*		**P**	**18 51 36.0**	**+0.3**
YSS				*e*			18 51 44.0	
KEST	**Kesra**	**54.06**	**293**	P		**P**	**18 51 55.1**	**-1.5**
	comp=Z,5.6nm,0.7s,baz=338,slow=1.8,SNR=5.2							
EKA	**Eskdalemuir Ar**	**57.45**	**318**	P		**P**	**18 52 20.1**	**-0.4**
	comp=Z,1.2nm,0.7s,baz=90,slow=6.9,SNR=5.0							
PETK	**Petropavlovsk-**	**59.34**	**44**	P		**P**	**18 52 32.4**	**-1.3**
	comp=Z,1.9nm,0.6s,baz=292,slow=3.9,SNR=5.9							
BILL	**Bilibino**	**59.62**	**26**⇑	*eP*		**P**	**18 52 37.4**	**+1.9**
BILL				*e*			18 52 50.1	
BILL							18 53 23.0	
BILL					pmax	pmax		
	comp=Z,5.0nm,0.9s							
ESDC	**Sonseca Array**	**62.65**	**301**	P		**P**	**18 52 56.2**	**-0.3**
	comp=Z,1.0nm,0.5s,baz=58,slow=7.0,SNR=9.9							
SUMG	**Summit**	**65.38**	**342**	*i* P		**P**	**18 53 15.2**	**+0.9**
	comp=Z,10nm,1.1s							
SUMG	**Summit**	**65.38**	**342**	*i* P		**P**	**18 53 15.2**	**+0.9**
SUMG					pmax	pmax		
	comp=Z,10.0nm,1.1s							
SUMG	**Summit**	**65.38**	**342**	*eP*		**P**	**18 53 15.1**	**+0.9**
	comp=Z,8.8nm,1.0s							
MDT	**Midelt**	**65.86**	**294**	P		**P**	**18 53 17.7**	**-0.1**
	comp=Z,1.7nm,0.7s,baz=84,slow=10,SNR=5.1							
FITZ	**Fitzroy Crossi**	**69.65**	**129**	P		**P**	**18 53 41.8**	**+0.3**
	comp=Z,1.9nm,1.0s,baz=344,slow=7.4,SNR=4.0							
TORD	**Torodi Ar. Bea**	**69.94**	**273**	P		**P**	**18 53 41.6**	**-1.8**
	comp=Z,6.8nm,0.8s,baz=49,slow=5.4,SNR=42							
COLD	**Coldfoot**	**73.83**	**17**	*eP*		**P**	**18 54 06.7**	**+0.6**
	comp=Z,3.8nm,1.0s							
INK	**Inuvik**	**76.29**	**11**	*eP*		**P**	**18 54 21.5**	**+1.4**
INK					pmax	pmax		
	comp=Z,4.0nm,1.1s							
INK	**Inuvik**	**76.29**	**11**	*eP*		**P**	**18 54 21.5**	**+1.4**
	comp=Z,4.3nm,1.1s							
ILAR	**Eielson Array**	**76.61**	**17**	P		**P**	**18 54 21.9**	**-0.1**
	comp=Z,2.0nm,0.9s,baz=315,slow=4.4,SNR=17							
ILAR			PP			**PP**	**18 57 18.5**	**+4.7**
	comp=Z,0.3nm,0.9s,baz=306,slow=10,SNR=4.2							
WRA	**Warramunga Arr**	**76.76**	**125**	P		**P**	**18 54 23.6**	**0.0**
	comp=Z,4.6nm,0.8s,baz=311,slow=4.7,SNR=36							
WRAB	**Tennant Creek**	**76.76**	**125**	*ceP*		**P**	**18 54 22.4**	**-1.1**
WRAB					pmax	pmax		
	comp=Z,26nm,1.2s							
BOSA	**Boshof**	**78.20**	**224**	P		**P**	**18 54 30.8**	**-0.7**
	comp=Z,2.7nm,0.5s,baz=41,slow=5.7,SNR=10							
SML	**Sawmill**	**78.62**	**20**	*eP*		**P**	**18 54 33.7**	**+0.3**
SML					pmax	pmax		
	comp=Z,2.0nm,0.9s							
SML	**Sawmill**	**78.62**	**20**	*eP*		**P**	**18 54 33.7**	**+0.3**
	comp=Z,1.8nm,0.9s							
DBIC	**Dimbokro**	**78.81**	**271**	P		**P**	**18 54 34.1**	**-1.1**
	comp=Z,2.3nm,0.5s,baz=15,slow=4.3,SNR=6.5							
KIC	**Kosan Boka**	**78.88**	**270**	*eP*		**P**	**18 54 34.5**	**-1.0**
	comp=Z,11nm,0.7s							
TIC	**Toumodi**	**78.96**	**271**	*eP*		**P**	**18 54 34.7**	**-1.3**
ASAR	**Alice Springs**	**79.02**	**128**	P		**P**	**18 54 36.2**	**+0.2**
	comp=Z,3.2nm,0.8s,baz=318,slow=5.5,SNR=29							
LIC	**Lamto**	**79.19**	**270**	*eP*		**P**	**18 54 36.0**	**-1.3**
	comp=Z,49nm,1.6s							
YKA	**Yellowknife Ar**	**84.13**	**5**	P		**P**	**18 55 03.1**	**+0.7**
	comp=Z,2.3nm,0.8s,baz=350,slow=5.1,SNR=4.7							
CTA	**Charters Tower**	**85.40**	**117**	P		**P**	**18 55 09.8**	**+0.2**
	comp=Z,3.6nm,0.5s,baz=291,slow=8.1,SNR=5.1							
STKA	**Stephens Creek**	**89.55**	**129**	P		**P**	**18 55 29.6**	**+0.4**
	comp=Z,2.2nm,0.7s,baz=308,slow=6.6,SNR=6.7							
TXAR	**Lajitas Array**	**117.68**	**360**	PKP		**PKPdf**	**19 01 19.0**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=358,slow=2.7,SNR=2.7							
PLCA	**Paso Flores**	**152.48**	**245**	PKPbc		**PKPbc**	**19 02 27.8**	**-0.2**
	comp=Z,4.1nm,0.9s,baz=22,slow=4.4,SNR=7.0							

IDC 28 18:48:55.3±4.0, 2°55S×138°69E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.3/35, mbtmp3.5/3, ML3.2/1, Error ellipse: s-maj=66.2km s-min=24.7km az=146.0, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**2.02**	**89**	Pn	Pn	18 49 31.4	+0.8
	0.2nm,0.3s,baz=270,slow=20,SNR=14						
JAY				Sn	Sn	18 49 57.1	+0.5
	0.2nm,0.3s,baz=90,slow=20,SNR=4.8						
WRA	**Warramunga Arr**	**17.80**	**193**	P	Pn	18 53 04.9	+0.2
	0.1nm,0.3s,baz=17,slow=13,SNR=5.5						
ASAR	**Alice Springs**	**21.50**	**192**	P	P	18 53 46.8	+0.8
	0.5nm,0.9s,baz=22,slow=10,SNR=4.1						
STKA	**Stephens Creek**	**29.30**	**175**	P	P	18 54 58.7	-0.9
	1.8nm,0.7s,baz=336,slow=20,SNR=1.9						

IDC 28 18:50:22.1±8.7, 18°44S×178°20W, h469km±90km, mb3.4/6, mb1 3.6/6, mb1mx3.1/35, mbtmp4.2/6, 1D, Error ellipse: s-maj=80.5km s-min=41.5km az=156.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**33.56**	**261**	P	P	18 56 21.9	-0.1
	4.4nm,0.9s,baz=58,slow=9.5,SNR=1.6						
STKA	**Stephens Creek**	**38.55**	**242**	P	P	18 57 03.8	+0.3
	2.9nm,0.5s,baz=81,slow=8.9,SNR=12						
WRA	**Warramunga Arr**	**44.73**	**260**	P	P	18 57 51.9	-0.9
	1.4nm,0.5s,baz=98,slow=6.5,SNR=41						
WRA				PcP	PcP	18 59 25.2	-0.3
	0.6nm,0.9s,baz=98,slow=3.6,SNR=3.3						
ASAR	**Alice Springs**	**44.84**	**255**	P	P	18 57 53.5	-0.1
	8.3nm,0.4s,baz=89,slow=8.7,SNR=208						
ASAR				PcP	PcP	18 59 25.3	-0.5
	0.4nm,0.5s,baz=106,slow=4.2,SNR=3.9						
FITZ	**Fitzroy Crossi**	**53.14**	**261**	P	P	18 58 55.7	+0.3
	1.9nm,0.6s,baz=123,slow=8.3,SNR=12						
TXAR	**Lajitas Array**	**86.11**	**58**	P	P	19 02 12.8	-0.2
	0.2nm,0.6s,baz=260,slow=5.2,SNR=2.2						
CLL	**Collm**	**146.02**	**347**	*i* PKP	PKPbc	19 09 08.7	+0.1
	comp=Z,5.0nm,0.6s						
BRG	**Berggiesshubel**	**146.23**	**346**	*e*(P)	PKPbc	19 09 09.0	-0.2
	comp=Z,2.1nm,0.7s						
GERES	**GERESS Array B**	**148.17**	**345**	PKPbc	PKPbc	19 09 14.2	-0.4
	comp=Z,1.0nm,0.7s,baz=29,slow=3.0,SNR=9.4						

*SJA **28** 18:53:42.8±0.6, 32°89S×70°07W, h117km±3km, ML3.5, MW3.7*
*ISCJB **28** 18:53:43.1±0.9, 32°90S±0°05×70°08W±0°05, h120km±7km, Error ellipse: s-maj=9.9km s-min=4.9km az=143.6*
*GUC **28** 18:53:44.1±0.4, 32°78S×70°05W, h105km±5km, ML3.7*
ISC 28 18:53:42.2±2.1, 32°94S±0°07×70°13W±0°06, h127km±14km, n21, σ1°03/40, 1C, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FCH	**Farellones**	**0.41**	**200**	*eP*	**Pn**	**18 54 01.4**	**+0.6**
FCH				*eS*	**Sn**	**18 54 14.4**	**-0.5**
PEL	**Peldehue**	**0.51**	**247**	*eP*	**Pn**	**18 54 01.1**	**+0.1**
PEL				*eS*	**Sn**	**18 54 14.3**	**-0.9**
PEL				IAML		18 54 16.2	
	comp=E,4μm,0.4s						
CLCH	**Cerro Calan**	**0.57**	**217**	*eP*	**Pn**	**18 54 02.1**	**+0.7**
CLCH				*eS*	**Sn**	**18 54 16.0**	**0.0**
CLCH				IAML		18 54 17.8	
	comp=E,3μm,0.4s						
FSR	**Penalolen**	**0.63**	**212**	*eP*	**Pn**	**18 54 02.7**	**+0.9**
FSR				*eS*	**Sn**	**18 54 16.6**	**-0.1**
YECH	**El Yeso**	**0.72**	**177**	*eP*	**Pn**	**18 54 04.3**	**+1.5**
YECH				*eS*	**Sn**	**18 54 19.2**	**+0.8**
ROCH	**El Roble**	**0.75**	**267**⇑	*eP*	**Pn**	**18 54 03.5**	**+0.7**
ROCH				*eS*	**Sn**	**18 54 18.2**	**-0.2**
ROC1	**El Roble**	**0.75**	**267**	*eP*	**Pn**	**18 54 03.9**	**+1.0**
ROC1				*eS*	**Sn**	**18 54 19.1**	**+0.6**
ANTU	**Antumapu**	**0.76**	**214**	*eP*	**Pn**	**18 54 03.9**	**+1.1**
ANTU				*eS*	**Sn**	**18 54 18.8**	**+0.5**
RCDM	**Rinconada Maip**	**0.79**	**226**	*eP*	**Pn**	**18 53 59.8**	**-3.1**
RCDM				*eS*	**Sn**	**18 54 15.3**	**-3.4**
AUSP	**Uspallata**	**0.95**	**41**	*i* P	**Pn**	**18 54 05.0**	**+0.3**
AUSP				*eS*	**Sn**	**18 54 20.8**	**-0.8**
ARCO	**CERRO ARCO**	**1.01**	**85**	*eP*	**Pn**	**18 54 05.3**	**+0.2**
ARCO				*eS*	**Sn**	**18 54 21.8**	**-0.6**
ARCO				IAML		18 54 22.8	
	comp=Z,582nm,0.5s						
AAGR	**Agrelo**	**1.10**	**98**	*eP*	**Pn**	**18 54 06.2**	**+0.3**
AAGR				*eS*	**Sn**	**18 54 23.7**	**-0.2**
ASAL	**Salagasta**	**1.14**	**73**	*eP*	**Pn**	**18 54 06.4**	**+0.1**
ASAL				*eS*	**Sn**	**18 54 24.0**	**-0.6**
RTLS	**Loncito**	**1.34**	**32**	*eP*	**Pn**	**18 54 09.3**	**+0.7**
RTLS				*eS*	**Sn**	**18 54 28.7**	**+0.1**
RTCV	**Cerro Valdivia**	**1.72**	**52**	*eP*	**Pn**	**18 54 12.9**	**+0.2**
RTCV				*eS*	**Sn**	**18 54 34.9**	**-0.9**
SJA	**San Juan**	**1.93**	**44**	*eP*	**Pn**	**18 54 15.7**	**+0.4**
SJA				*eS*	**Sn**	**18 54 39.8**	**-0.7**
RTLL	**Cerro Villicun**	**2.13**	**42**	*eP*	**Pn**	**18 54 18.2**	**+0.5**
RTLL				*eS*	**Sn**	**18 54 44.1**	**-0.8**
AVFE	**Valle Fertil**	**3.21**	**46**	*eP*	**Pn**	**18 54 32.2**	**+0.6**
AVFE				IAML		18 54 34.0	
	comp=Z,89nm,0.2s						
AVFE				*eS*	**Sn**	**18 55 08.9**	**-0.9**
ACHE	**Chepes**	**3.43**	**60**	*eP*	**Pn**	**18 54 35.4**	**+0.8**
ACHE				*eS*	**Sn**	**18 55 14.2**	**-0.8**
VCA	**Vinchina**	**4.50**	**22**	*eP*	**Pn**	**18 54 49.9**	**+1.1**
VCA				IAML		18 55 43.9	
	comp=Z,51nm,0.4s						
TCA	**Tanti**	**4.96**	**73**	*eP*	**Pn**	**18 54 54.8**	**0.0**
TCA				IAML		18 54 54.9	
	comp=Z,55nm,0.4s						

*IDC **28** 19:04:03.0±1.4, 10°95S×164°56E, h0km, mb3.9/5, mb1 4.1/8, mb1mx3.8/31, mbtmp4.0/8, ML3.9/3, MS3.3/4, Ms1 3.2/4, ms1mx2.8/33, Error ellipse: s-maj=32.8km s-min=25.2km az=132.0*
*ISCJB **28** 19:04:05.6±1.0, 11°15S±0°1×164°51E±0°10, h29km, mb3.8/5, MS3.2/2, Error ellipse: s-maj=18.4km s-min=11.0km az=35.6*
ISC 28 19:04:07.4±1.1, 11°05S±0°1×164°6E±0°1, h29km, n13, σ1°04/9, mb3.9/5, Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**4.79**	**288**	Pn	**Pn**	**19 05 17.1**	**-0.5**
	9.3nm,0.3s,baz=109,slow=3.7,SNR=3.0						
HNR				Sn	**Sn**	**19 06 13.0**	**+0.8**
	6.7nm,0.3s,baz=188,slow=19,SNR=2.8						
HNR				LR	LR	19 07 19.9	
	comp=Z,313nm,18.8s,baz=184,slow=41						
DZM	**Mont Dzumac**	**11.20**	**171**	Pn	**Pn**	**19 06 46.2**	**+0.5**
	0.6nm,0.3s,baz=323,slow=21,SNR=9.1						
DZM				LR	LR	19 10 18.9	
	comp=Z,148nm,21.2s,baz=26,slow=34						
CTA	**Charters Tower**	**19.82**	**241**	P	**P**	**19 08 36.8**	**+0.8**
	0.2nm,0.3s,baz=45,slow=11,SNR=3.9						
STKA	**Stephens Creek**	**29.72**	**222**	LR	LR	19 20 40.4	
	comp=Z,48nm,20.0s,baz=27,slow=34						
WRA	**Warramunga Arr**	**30.42**	**249**	P	**P**	**19 10 16.7**	**-1.0**
	2.2nm,1.0s,baz=80,slow=9.6,SNR=5.8						
H11N1	**WAKE ISLAND Hy**	**30.56**	**4**	T	T	19 42 19.0	
	baz=184,slow=76,SNR=9.8						
H11N3	**WAKE ISLAND Hy**	**30.57**	**4**	T	T	19 42 18.0	
	baz=184,slow=76,SNR=6.9						
H11N2	**WAKE ISLAND Hy**	**30.58**	**4**	T	T	19 42 19.1	
	baz=184,slow=76,SNR=5.9						
ASAR	**Alice Springs**	**31.80**	**243**	P	**P**	**19 10 28.5**	**-1.3**
	0.6nm,0.8s,baz=83,slow=7.8,SNR=4.8						
PETK	**Petropavlovsk-**	**64.08**	**355**	LR	LR	19 37 28.3	
	comp=Z,26nm,21.2s,baz=123,slow=31						
SONM	**Songino Array**	**77.91**	**324**	P	**P**	**19 16 04.2**	**+1.4**
	0.3nm,0.5s,baz=122,slow=7.0,SNR=2.7						
ILAR	**Eielson Array**	**83.80**	**19**	P	**P**	**19 16 33.1**	**-0.6**
	1.0nm,0.8s,baz=239,slow=5.4,SNR=11						
MKAR	**Makanchi Array**	**92.66**	**317**	P	**P**	**19 17 16.5**	**-0.2**
	1.1nm,0.9s,baz=90,slow=6.6,SNR=8.1						

WEL 28 19:12:10.9±0.1, 45°11S×167°43E, h74km±1km, ML3.6/15, 6C-5D, Error ellipse: s-maj=1.0km s-min=0.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DCZ	**Deep Cove**	**0.41**	**208**	PN	Pn	19 12 23.0	-0.2
DCZ				SN	Sn	19 12 32.6	+0.3
DCZ				AML	AML	19 12 33.6	
DCZ				AML	AML	19 12 34.9	
DCZ				AML	AML	19 12 34.9	
MLZ	**Mavora Lakes**	**0.55**	**118**	⇓PN	Pn	19 12 24.4	-0.2
MLZ				SN	Sn	19 12 34.4	-0.4
MLZ				AML	AML	19 12 34.8	
MSZ	**Milford Sound**	**0.56**	**39**	⇑PN	Pn	19 12 24.5	-0.2
MSZ				AML	AML	19 12 36.6	
MSZ				AML	AML	19 12 36.7	
MSZ				AML	AML	19 12 36.9	
MSZ				AML	AML	19 12 37.1	
WHZ	**Wether Hill Ro**	**0.86**	**155**	⇓PN	Pn	19 12 27.8	-0.2
WHZ				SN	Sn	19 12 40.4	-0.2
WHZ				AML	AML	19 12 41.0	
WKZ	**Wanaka**	**1.16**	**77**	⇑PN	Pn	19 12 31.6	-0.1
WKZ				SN	Sn	19 12 46.8	-0.4
WKZ				AML	AML	19 12 48.7	
WKZ				AML	AML	19 12 51.3	
WKZ				AML	AML	19 12 51.3	
EAZ	**Earnscleugh**	**1.34**	**96**	⇑PN	Pn	19 12 33.8	-0.1
EAZ				SN	Sn	19 12 50.1	-1.0
EAZ				AML	AML	19 12 50.2	
EAZ				AML	AML	19 12 50.2	
EAZ				AML	AML	19 12 50.7	
JCZ	**Jackson Bay**	**1.42**	**44**	⇓PN	Pn	19 12 34.6	-0.5
JCZ				AML	AML	19 12 57.2	
JCZ				AML	AML	19 12 57.5	
TUZ	**Tuapeka**	**1.76**	**119**	PN	Pn	19 12 39.2	-0.3
TUZ				AML	AML	19 13 00.5	
TUZ				AML	AML	19 13 00.6	
TUZ				AML	AML	19 13 01.5	
TUZ				AML	AML	19 13 01.6	
APZ	**The Paps**	**1.77**	**167**	PN	Pn	19 12 39.4	-0.2
APZ				AML	AML	19 13 02.3	
APZ				AML	AML	19 13 03.3	
SYZ	**Scrubby Hill**	**1.86**	**141**	⇓PN	Pn	19 12 40.5	-0.3
SYZ				AML	AML	19 13 02.9	
SYZ				AML	AML	19 13 03.1	
SYZ				AML	AML	19 13 05.4	
LBZ	**Lake Benmore**	**2.09**	**71**	⇑PN	Pn	19 12 42.4	-1.5
LBZ				AML	AML	19 13 15.4	
LBZ				AML	AML	19 13 15.6	
LBZ				AML	AML	19 13 15.6	
LBZ				AML	AML	19 13 43.1	
ODZ	**Otahua Downs**	**2.28**	**89**	⇑PN	Pn	19 12 45.3	-1.1
ODZ				AML	AML	19 13 10.9	
ODZ				AML	AML	19 13 11.0	
ODZ				AML	AML	19 13 11.5	
ODZ				AML	AML	19 13 11.5	
FOZ	**Fox Glacier**	**2.33**	**48**	⇓PN	Pn	19 12 45.6	-1.5
FOZ				AML	AML	19 13 25.0	
FOZ				AML	AML	19 13 25.0	
FOZ				AML	AML	19 13 25.7	
FOZ				AML	AML	19 13 27.4	
HHSZ	**Highcliff Hill**	**2.36**	**110**	PN	Pn	19 12 47.2	-0.3
HHSZ				AML	AML	19 13 14.1	
HHSZ				AML	AML	19 13 14.2	
RPZ	**Rata Peaks**	**2.95**	**63**	⇑PN	Pn	19 12 53.1	-2.3
RPZ				AML	AML	19 13 27.5	
RPZ				AML	AML	19 13 27.7	
WVZ	**Waitaha Valley**	**3.13**	**51**	PN	Pn	19 12 56.4	-1.6
INZ	**Inchbonnie**	**3.75**	**52**	PN	Pn	19 13 04.0	-2.4
MQZ	**McQueen's Vall**	**4.00**	**71**	PN	Pn	19 13 07.2	-2.6
DSZ	**Denniston Nort**	**4.63**	**45**	PN	Pn	19 13 16.5	-2.0
THZ	**Tophouse**	**5.21**	**52**	PN	Pn	19 13 23.0	-3.3
QRZ	**Quartz Range**	**5.69**	**43**	PN	Pn	19 13 31.3	-1.5
NNZ	**Nelson**	**5.84**	**50**	PN	Pn	19 13 34.4	-0.4

*NIED **28** 19:25:00, 36°50N×141°0E, h5km, Mw3.5 Best double couple: M0 2.18000×10^14 NP1:φs358.00000°, δ37.00000°, λ-88.00000°. NP2:φs175.00000°, δ53.00000°, λ-92.00000°.*
*IDC **28** 19:25:22.5±1.9, 36°59N×141°24E, h0km, mb3.5/5, mb1 3.6/7, mb1mx3.4/42, mbtmp3.6/7, ML3.4/2, MS2.3/2, Ms1 2.3/2, ms1mx2.1/35, Error ellipse: s-maj=49.3km s-min=19.7km az=69.0*
*ISCJB **28** 19:25:23.1±1.3, 36°49N±0°04×141°08E±0°07, h5km±6km, mb3.5/5, Error ellipse: s-maj=9.1km s-min=6.5km az=7.0*
*JMA **28** 19:25:26.1±0.1, 36°52N×140°93E, h15km±2km, M3.6*
JMA Felt I J1.
ISC 28 19:25:24.6±1.9, 36°53N±0°05×141°04E±0°08, h6km±11km, n20, σ0°70/19, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.39**	**282**	P	**Pg**	**19 25 32.3**	**+0.2**
JHO				S	**Sg**	**19 25 36.9**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.60**	**341**	P	**Pg**	**19 25 36.1**	**0.0**
JYT	**Yasato**	**0.75**	**246**	P	**Pg**	**19 25 38.6**	**-0.3**
JYT				S	**Sg**	**19 25 47.5**	**-1.1**
JFK	**Kawauchi**	**0.84**	**351**	P	**Pb**	**19 25 41.6**	**0.0**
JFK				S	**Sb**	**19 25 53.1**	**-0.1**
JSB	**Shiboa**	**1.00**	**296**	P	**Pg**	**19 25 44.0**	**+0.3**
JSB				S	**Sg**	**19 25 57.5**	**+0.8**
MJAR	**Matsushiro Arr**	**2.28**	**271**	Pn	**Pn**	**19 26 03.1**	**+0.4**
	6.9nm,0.3s,baz=83,slow=9.9,SNR=46						
MJAR				LR	LR	19 27 06.7	
	comp=Z,63nm,20.0s,baz=120,slow=43						
MAT	**Matsushiro**	**2.28**	**271**	P	**Pn**	**19 26 03.1**	**+0.4**
MAT				S	**Sn**	**19 26 31.8**	**+0.7**
JHJ	**Hachijo jima 2**	**3.56**	**197**	Pn	**Pn**	**19 26 21.7**	**+1.4**
	9.3nm,0.3s,baz=60,slow=20,SNR=4.6						
JHJ				Sn	**Sn**	**19 27 03.6**	**+0.9**
	6.7nm,0.3s,baz=69,slow=17,SNR=2.8						
KSRS	**Korea Array**	**10.53**	**279**	LR	LR	19 31 43.0	
	comp=Z,14nm,20.9s,baz=210,slow=36						
SONM	**Songino Array**	**27.82**	**305**	P	**P**	**19 31 14.2**	**-0.4**
	0.2nm,0.3s,baz=90,slow=10,SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**28.16**	**119**	T	T	20 00 45.9	
	baz=312,slow=75,SNR=171						
H11N1	**WAKE ISLAND Hy**	**28.16**	**120**	T	T	20 00 45.9	
	baz=312,slow=75,SNR=272						
H11N3	**WAKE ISLAND Hy**	**28.18**	**119**	T	T	20 00 45.3	
	baz=312,slow=75,SNR=182						
H11S1	**WAKE ISLAND Hy**	**28.85**	**122**	T	T	20 01 37.5	
	baz=314,slow=76,SNR=1327						
H11S3	**WAKE ISLAND Hy**	**28.85**	**122**	T	T	20 01 36.9	
	baz=314,slow=76,SNR=1162						
H11S2	**WAKE ISLAND Hy**	**28.86**	**122**	T	T	20 01 36.9	
	baz=314,slow=76,SNR=868						
ZALV	**Zalesovo Beam**	**42.03**	**313**	P	**P**	**19 33 16.4**	**-0.1**
	0.7nm,0.3s,baz=76,slow=6.3,SNR=4.7						
MKAR	**Makanchi Array**	**44.13**	**302**	P	**P**	**19 33 33.3**	**-0.4**
	0.2nm,0.5s,baz=92,slow=12,SNR=2.7						
WRA	**Warramunga Arr**	**56.53**	**188**	P	**P**	**19 35 07.0**	**-0.7**
	0.7nm,0.7s,baz=3.9,slow=7.2,SNR=4.1						
ASAR	**Alice Springs**	**60.25**	**188**	P	**P**	**19 35 32.9**	**-0.8**
	0.3nm,0.7s,baz=22,slow=6.0,SNR=4.7						

*IDC **28** 19:34:28.4±33.0, 12°68N×124°75E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.4/42, mbtmp3.7/4, Error ellipse: s-maj=640.6km s-min=63.3km az=139.0*
ISC 28 19:34:31.9±3.6, 12°9N±0°5×124°6E±0°2, h10km, n6, σ0°39/6, mb3.6/4, 1C-1D, Samar

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GQP	**Guinayangan**	**2.29**	**297**⇑	*i* P	**Pg**	**19 35 16.0**	**+0.2**
GQP				*i* S	Sn	19 35 30.6	-7.4
LQP	**Lukban**	**3.18**	**293**⇓	*eP*	**Pn**	**19 35 21.8**	**-0.3**
CMAR	**Chiang Mai Arr**	**25.26**	**286**	P	**P**	**19 39 58.7**	**+0.3**
	3.9nm,0.7s,baz=96,slow=8.0,SNR=4.3						
SONM	**Songino Array**	**38.01**	**340**	P	**P**	**19 41 50.1**	**-0.2**
	0.6nm,0.6s,baz=164,slow=7.5,SNR=5.1						
MKAR	**Makanchi Array**	**48.95**	**322**	P	**P**	**19 43 18.1**	**-0.3**
	0.5nm,0.7s,baz=128,slow=7.9,SNR=4.9						
ZALV	**Zalesovo Beam**	**51.55**	**331**	P	**P**	**19 43 38.3**	**+0.4**
	0.2nm,0.4s,baz=127,slow=9.2,SNR=2.2						

*ISCJB **28** 19:34:55.7±0.8, 13°9N±0°1×122°79E±0°09, h5km, mb4.0/8, MS2.7/4, Error ellipse: s-maj=17.6km s-min=9.1km az=32.1*
*MAN **28** 19:34:55, 14°91N×122°74E, h90km, mb4.8, ML3.7, MS3.8*
*IDC **28** 19:34:57.1±1.0, 13°88N×122°67E, h0km, mb3.9/7, mb1 4.1/7, mb1mx3.6/42, mbtmp3.9/7, MS2.8/4, Ms1 2.8/4, ms1mx2.5/35, Error ellipse: s-maj=33.0km s-min=15.1km az=57.0*
*NEIC **28** 19:35:02.1±0.6, 13°85N×122°60E, h35km, mb4.1/1, Error ellipse: s-maj=22.7km s-min=9.3km az=57.0*
ISC 28 19:34:57.8±1.0, 13°9N±0°1×122°63E±0°09, h5km, n19, σ0°66/11, mb4.0/8, MS2.7/4, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TGY	**Tagaytay City**	**1.66**	**278**	Pn	**Pb**	**19 35 28.4**	**-0.6**
	148nm,0.3s,baz=72,slow=1.5,SNR=13						
TGY				Sn	**Sg**	**19 35 51.2**	**0.0**
	240nm,0.3s,baz=86,slow=16,SNR=21						
TGY	**Tagaytay City**	**1.66**	**278**	*eP*	**Pn**	**19 35 28.1**	**

λ-91.00000°.

*IDC **28** 19:49:25.6±1.7, 36˚.94N×143˚.82E, h0km, mb3.7/4, mb1 3.9/7, mb1mx3.6/37, mbtmp3.8/7, ML3.5/3, MS2.6/2, Ms1 2.6/2, ms1mx2.2/43, Error ellipse: s-maj=44.4km s-min=21.6km az=73.0*

*ISCJB **28** 19:49:28.5±0.9, 37˚.09N±0˚.05×143˚.47E±0˚.07, h33km, mb3.7/4, Error ellipse: s-maj=8.3km s-min=6.7km az=149.4*

*JMA **28** 19:49:29.5±0.2, 37˚.11N×143˚.34E, h31km, M3.6*

ISC 28 19:49:30.6±1.2, 37˚.06N±0˚.06×143˚.50E±0˚.09, h35km, n19, σ2°26/27, mb3.7/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.12**	**279**	P	**Pn**	**19 50 01.8**	**-1.8**
JFK				S	**Sn**	**19 50 26.2**	**-2.5**
ONAJ	**Iwakimizuishiy**	**2.16**	**272**	P	**Pn**	**19 50 02.9**	**-1.3**
ONAJ				S	**Sn**	**19 50 26.9**	**-2.9**
JIO	**Ouri**	**2.21**	**310**	P	**Pn**	**19 50 03.2**	**-1.5**
JIO				S	**Sn**	**19 50 27.9**	**-2.8**
JMM	**Marumori**	**2.30**	**291**	P	**Pn**	**19 50 04.9**	**-1.1**
JMM				S	**Sn**	**19 50 31.2**	**-1.9**
JFT	**Otama**	**2.57**	**281**	S	**Sn**	**19 50 38.2**	**-1.5**
JOU	**Okura**	**2.60**	**301**	P	**Pn**	**19 50 09.4**	**-0.8**
JOU				S	**Sn**	**19 50 38.9**	**-1.7**
JMK	**Ichinoseki**	**2.61**	**317**	S	**Sn**	**19 50 38.1**	**-2.7**
JOM	**Ohasama**	**2.98**	**325**	P	**Pn**	**19 50 15.2**	**-0.1**
JOM				S	**Sn**	**19 50 47.4**	**-2.3**
JYK	**Kaneyama**	**3.10**	**308**	P	**Pn**	**19 50 16.7**	**-0.3**
JAG	**Ashikaga**	**3.31**	**260**	P	**Pn**	**19 50 19.6**	**-0.3**
MJAR	**Matsushiro Arr** 1.7nm,0.3s,baz=81,slow=11,SNR=14	**4.28**	**265**	Pn	**Pn**	**19 50 33.6**	**+0.3**
MJAR	comp=Z,55nm,18.5s,baz=85,slow=51			LR	LR	19 53 16.8	
MAT	**Matsushiro**	**4.28**	**265**	P	**Pn**	**19 50 33.5**	**+0.2**
MAT				*e*S	**Sn**	**19 51 21.9**	**-0.1**
JHJ	**Hachijo jima 2** 5.8nm,0.3s,baz=68,slow=18,SNR=3.3	**4.97**	**219**	Pn	**Pn**	**19 50 42.1**	**-0.6**
JHJ				Sn	**Sn**	**19 51 33.8**	**-5.2**
ASAJ	**Asahikawa** 1.0nm,0.3s,baz=208,slow=12,SNR=12	**7.09**	**355**	Pn	**Pn**	**19 51 10.8**	**-0.9**
ASAJ	baz=136,slow=17			Sn	**Sn**	**19 52 26.7**	**-4.4**
KSRS	**Korea Array** comp=Z,28nm,20.4s,baz=52,slow=34	**12.42**	**277**	LR	LR	19 56 41.3	
SONM	**Songino Array** 0.6nm,0.8s,baz=111,slow=7.9,SNR=3.6	**29.16**	**303**	P	**P**	**19 55 32.4**	**+3.8**
MKAR	**Makanchi Array** 0.4nm,0.7s,baz=80,slow=8.9,SNR=3.4	**45.52**	**302**	P	**P**	**19 57 49.0**	**+2.3**
WRA	**Warramunga Arr** 1.5nm,0.6s,baz=8.0,slow=7.1,SNR=23	**57.35**	**190**	P	**P**	**19 59 14.8**	**-0.5**
ASAR	**Alice Springs** 0.5nm,0.5s,baz=4.5,slow=7.2,SNR=17	**61.07**	**190**	P	**P**	**19 59 40.9**	**-0.1**

*IDC **28** 19:50:14.4±0.4, 35˚.79S×73˚.25W, h0km, mb5.2/18, mb1 5.3/20, mb1mx5.3/24, mbtmp5.3/20, ML5.7/2, MS5.5/14, Ms1 5.5/14, ms1mx5.3/20, Error ellipse: s-maj=20.5km s-min=11.3km az=85.0*

*GUC **28** 19:50:14.3±0.3, 35˚.79S×73˚.46W, h19km±3km, ML5.5*

*BJI **28** 19:50:16.9, 36˚.33S×73˚.58W, h26km, mB5.4/41, Ms5.7/37, Ms7 5.5/39*

*ISCJB **28** 19:50:17.9±0.1, 35˚.74S±0˚.02×73˚.19W±0˚.03, h33km, mb5.4/227, MS5.4/182, Error ellipse: s-maj=3.7km s-min=2.9km az=139.9*

*MOS **28** 19:50:18.2±1.0, 35˚.76S×73˚.23W, h31km, mb5.6/52, MS5.3/34, Error ellipse: s-maj=18.5km s-min=6.9km az=101.7*

*NEIC **28** 19:50:19.0±0.0, 35˚.92S×73˚.10W, h26km, Moment Tensor Solution. s11 Moment tensor: Scale 10^{17}Nm; M_{rr}1.10; $M_{\theta\theta}$0.20; $M_{\phi\phi}$-1.30; $M_{r\theta}$0.10; $M_{\theta\phi}$-0.50; $M_{\phi r}$-3.70; Best double couple: M_{ϕ}4.00000×10^{17} NP1:ϕ_s178.00000°, δ81.00000°, λ82.00000°. NP2:ϕ_s40.00000°, δ11.00000°, λ131.00000°. Principal axes: T 3.9000, Plg52.0000°, Azm79.0000°; N 0.2000, Plg7.0000°, Azm179.0000°; P -4.1000, Plg36.0000°, Azm275.0000°;*

*NEIC **28** 19:50:20.1±0.1, 35˚.77S×73˚.12W, h35km, mb5.5/205, MS5.3/153, MW5.7, ML5.5(GUC) Error ellipse: s-maj=5.3km s-min=3.2km az=74.0*

NEIC Felt [VI] at Constitucion; [V] at Cauquenes, Chanca, Cobquecura, Coelemu, Longavi, Pelluhue, Quirihue and San Clemente. Felt in much of central Chile as far as Santiago and Temuco.

*GCMT **28** 19:50:20.1±0.1, 35˚.86S×73˚.53W, h13km, MW6.6/112, Moment Tensor Solution. s93,c159; s112,c238; Duration: 1s6 Moment tensor: Scale 10^{17}Nm; M_{rr}1.61±.04; $M_{\theta\theta}$0.43±.02; $M_{\phi\phi}$-2.04±.03; $M_{r\theta}$-0.83±.08; $M_{\theta\phi}$-0.08±.02; $M_{\phi r}$-2.94±.17; Best double couple: M_{o}3.56700×10^{17} NP1:ϕ_s194.00000°, δ75.00000°, λ98.00000°. NP2:ϕ_s344.00000°, δ17.00000°, λ61.00000°. Principal axes: T 3.4040, Plg59.0000°, Azm116.0000°; N 0.3290, Plg8.0000°, Azm12.0000°; P -3.7300, Plg30.0000°, Azm278.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISC 28 19:50:16.1±0.7, 35˚.77S±0˚.03×73˚.36W±0˚.04, h10km±3km, n1162, σ1°62/1084, mb5.5/227, MS5.4/183, 16C-16D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.59**	**128**	*e*P	**Pg**	**19 50 26.7**	**-0.8**
COCH				*e*S	**Sg**	**19 50 35.6**	**+0.4**
COCH	comp=E,450μm,1.4s			IAML		19 50 37.6	
CCSP	**San Pedro de C**	**1.09**	**169**	*e*P	**Pb**	**19 50 33.8**	**-3.2**
CCSP				*e*S	**Sb**	**19 50 48.6**	**-2.7**
CCSP	comp=N,183μm,0.4s			IAML		19 50 51.8	
CCHI	**Chillan**	**1.33**	**129**	*e*P	**Pn**	**19 50 38.6**	**-2.0**
CCHI				*e*S	**Sb**	**19 50 56.8**	**-1.3**
CCHI	comp=N,177μm,0.5s			IAML		19 51 11.1	
GO05	**HualaæØ**	**1.39**	**57**	*e*P	**Pn**	**19 50 39.7**	**-1.8**
GO05				*e*S	**Sb**	**19 50 59.0**	**-0.9**
GO05	comp=N,113μm,1.0s			IAML		19 51 09.6	
TALC	**Talca**	**1.45**	**76**	*e*P	**Pn**	**19 50 42.0**	**-0.4**
TALC				*e*S	**Sg**	**19 51 02.4**	**-0.4**
CHPI	**Pichilemu**	**1.77**	**39**	*e*P	**Pn**	**19 50 45.6**	**-1.0**
NICH	**Los Niches**	**1.90**	**67**	*e*P	**Pn**	**19 50 48.4**	**-0.1**
NICH				*e*S	**Sb**	**19 51 13.9**	**-0.6**
CANA	**Caviahue**	**2.81**	**140**	*i* P	**Pn**	**19 51 00.5**	**-0.6**
CANA				*i* S	**Sg**	**19 51 54.7**	**+8.5**
RCDM	**Rinconada Maip**	**3.10**	**44**	*e*P	**Pn**	**19 51 00.9**	**-4.1**
RCDM				*e*S	**Sn**	**19 51 37.7**	**-4.3**
ANTU	**Antumapu**	**3.14**	**46**	*e*P	**Pn**	**19 51 05.6**	**0.0**
ANTU				*e*S	**Sn**	**19 51 44.9**	**+1.8**
ROC1	**El Roble**	**3.39**	**36**	*i* S	**Sg**	**19 52 08.6**	**+3.5**
ROC1	**El Roble**	**3.39**	**36**	*e*Pn	**Pn**	**19 51 09.0**	**-0.2**
AAGR	**Agrelo**	**4.60**	**56**	*i* P	**Pn**	**19 51 29.1**	**+3.3**
ARCO	**CERRO ARCO**	**4.68**	**53**	*i* P	**Pn**	**19 51 29.4**	**+2.5**
ARCO				*i* S	**Sg**	**19 52 45.2**	**-1.3**
ARCO	comp=Z,2μm,0.7s			IAML		19 53 04.0	
AUSP	**Uspallata**	**4.83**	**44**	*i* P	**Pn**	**19 51 30.3**	**+1.2**
ASAL	**Salagasta**	**4.91**	**51**	*i* P	**Pn**	**19 51 32.0**	**+2.0**
RTLS	**Leoncito**	**5.21**	**42**	*i* P	**Pn**	**19 51 34.2**	**0.0**
RTLS				*i* S	**Sb**	**19 52 53.4**	**+3.4**
PLCA	**Paso Flores**	**5.43**	**157**	*i* P	Pn	19 51 28.6	-8.5
PLCA				*i* S	**Sn**	**19 52 43.3**	**+3.7**
PLCA	**Paso Flores** comp=Z,25nm,0.3s,baz=348,slow=11,SNR=412	**5.43**	**157**	Pn	**Pn**	**19 51 37.5**	**+0.4**
PLCA				Lg	Lg	19 53 02.6	
PLCA	**Paso Flores** comp=Z,53nm,0.3s,baz=278,slow=18,SNR=4.7	**5.43**	**157**	*e*P	**Pn**	**19 51 36.4**	**-0.6**
PLCA	**Paso Flores**	**5.43**	**157**	*e*Pn	**Pn**	**19 51 36.5**	**-0.6**
PLCA				Lg	Lg	19 53 02.6	
RTCV	**Cerro Valdivia**	**5.59**	**47**	*i* P	**Pn**	**19 51 40.2**	**+1.0**
SJA	**San Juan**	**5.82**	**45**	*i* P	**Pn**	**19 51 42.5**	**+0.1**
RTLL	**Cerro Villicun**	**6.02**	**44**	*i* P	**Pn**	**19 51 45.0**	**-0.1**
AVFE	**Valle Fertil**	**7.10**	**46**	*i* P	**Pn**	**19 51 59.9**	**-0.2**
AVFE				*i* S	**Sb**	**19 53 38.2**	**-6.0**
AVFE	comp=Z,160nm,0.7s			IAML		19 53 47.3	
LCO	**Las Campanas**	**7.10**	**19**	*e*Pn	**Pn**	**19 51 57.9**	**-2.3**
MRA	**San Martin**	**7.16**	**64**	*i* P	**Pn**	**19 52 04.9**	**+3.9**
MRA				*i* S	**Sb**	**19 53 46.8**	**+0.6**
MRA	comp=Z,510nm,0.7s			IAML		19 54 08.8	
VCA	**Vinchina**	**8.26**	**33**	*i* P	**Pn**	**19 52 11.5**	**-4.5**
VCA				*i* S	**Sn**	**19 53 57.9**	**+8.5**
VCA	comp=Z,144nm,10.2s			IAML		19 54 55.8	
TCA	**Tanti**	**8.54**	**61**	*i* S	Sn	19 54 17.8	+21
TRQA	**Tornquist**	**9.39**	**107**	*e*Pn	**Pn**	**19 52 31.6**	**+0.1**
CYA	**Choya**	**9.71**	**43**	*i* P	**Pn**	**19 52 33.8**	**-2.0**
AHML	**Horco Molle**	**11.28**	**40**	*i* P	**Pn**	**19 52 53.4**	**-3.9**
CHRN	**Cochrane**	**11.49**	**177**	*e*Pn	**Pn**	**19 52 59.0**	**-1.1**
FSA	**Cafayete**	**11.52**	**35**	*i* P	Pn	19 52 55.8	-5.0
PB10	**IPOC Station P**	**12.45**	**12**	*e*Pn	**Pn**	**19 53 14.4**	**+1.1**
LPA	**La Plata**	**12.63**	**91**	*ce*P	**Pn**	**19 53 15.0**	**-0.7**
LPA				S	**Sn**	**19 55 34.0**	**-2.3**
LPA				sS		19 55 42.0	
LPA				PCS	**PcS**	**20 02 28.0**	**+0.2**
LVC	**Limon Verde** comp=Z,26nm,0.3s,baz=229,slow=9.3,SNR=6.7	**13.67**	**18**	Pn	**Pn**	**19 53 26.5**	**-3.9**
LVC	baz=252,slow=20,SNR=4.9			Lg	Lg	19 57 13.0	
LVC	comp=Z,93μm,18.2s,baz=207,slow=40			LR	LR	19 59 26.6	
PB04	**IPOC Station P**	**13.68**	**13**	*e*Pn	**Pn**	**19 53 27.8**	**-2.4**
HJA	**Humahuaca**	**14.29**	**31**	*i* P	Pn	19 53 30.0	-8.8
PB01	**IPOC Station P**	**15.06**	**14**	*e*Pn	**Pn**	**19 53 48.6**	**-0.4**
PB11	**IPOC Station P** comp=Z,690nm,1.2s	**16.28**	**13**	*e*Pn	**Pn**	**19 54 04.8**	**-0.1**
CPUP	**Villa Florida** comp=Z,0.2nm,0.3s,baz=234,slow=12,SNR=20	**16.63**	**60**	Pn	**Pn**	**19 54 04.0**	**-5.2**
CPUP	comp=Z,0.5nm,0.3s,baz=143,slow=12,SNR=3.7			Lg	Lg	19 59 02.5	
CPUP	comp=Z,8μm,21.2s,baz=236,slow=38			LR	LR	20 00 45.9	
EFI	**East Falkland**	**19.30**	**150**	*e*P	**P**	**19 54 39.2**	**-1.7**
EFI	comp=Z,90nm,1.0s			pmax	pmax		
EFI	**East Falkland** comp=Z,108nm,0.7s	**19.30**	**150**	*e*P	**Pn**	**19 54 42.0**	**0.0**
USHA	**Ushuaia** comp=Z,163nm,0.3s,baz=331,slow=8.6,SNR=35	**19.37**	**171**	P	**Pn**	**19 54 42.7**	**-0.1**
USHA	comp=Z,56μm,19.5s,baz=328,slow=39			LR	LR	20 02 43.2	
LPAZ	**La Paz** comp=Z,0.6nm,0.3s,baz=178,slow=9.1,SNR=41	**19.95**	**15**	P	**Pn**	**19 54 51.2**	**+0.6**
LPAZ	**La Paz**	**19.95**	**15**	*e*P	**Pn**	**19 54 51.0**	**+0.4**
LPAZ	comp=Z,229nm,1.1s			pmax	pmax		
LPAZ	**La Paz** comp=Z,229nm,1.1s	**19.95**	**15**	*e*P	**Pn**	**19 54 51.0**	**+0.4**
SIV	**San Ignacio** comp=Z,125nm,1.1s,baz=231,slow=13,SNR=97	**22.54**	**32**	P	**P**	**19 55 16.4**	**+0.1**
SIV	comp=Z,25μm,19.2s,baz=226,slow=42			LR	LR	20 05 53.7	
NNA	**Nana** comp=Z,20nm,0.8s,baz=179,slow=9.8,SNR=12	**23.88**	**352**	P	**P**	**19 55 29.9**	**0.0**
NNA				LR	LR	20 02 54.9	
NNA	**Nana**	**23.88**	**352**	*ce*P	**P**	**19 55 30.5**	**+0.6**
NNA	**Nana** comp=Z,107nm,1.3s	**23.88**	**352**	*e*P	**P**	**19 55 29.6**	**-0.3**
SPB	**Sao Paulo** comp=Z,208nm,0.9s	**25.50**	**69**	*e*P	**P**	**19 55 43.7**	**-0.8**
SPB	comp=Z,35μm,19.0s			LR	LR		
SAML	**Samuel** comp=Z,31nm,0.9s	**28.26**	**22**	*e*P	**P**	**19 56 08.7**	**-0.8**
SAML	comp=Z,11μm,20.0s			LR	LR		
ATAH	**Atahualpa** comp=Z,14nm,1.0s,baz=183,slow=6.5,SNR=11	**28.87**	**350**	P	**P**	**19 56 17.3**	**+2.0**
ATAH	comp=Z,4μm,18.3s,baz=188,slow=33			LR	LR	20 05 56.7	
PMSA	**Palmer Station** comp=Z,41nm,0.9s,baz=351,slow=8.0,SNR=29	**29.58**	**172**	P	**P**	**19 56 21.1**	**+0.3**
PMSA	comp=Z,12μm,18.4s,baz=336,slow=37			LR	LR	20 08 15.5	
PMSA	**Palmer Station** comp=Z,140nm,1.3s	**29.58**	**172**	*e*P	**P**	**19 56 21.0**	**+0.3**
HOPE	**Hope Point** comp=Z,193nm,1.1s	**31.48**	**138**	*e*P	**P**	**19 56 37.6**	**0.0**
HOPE	comp=Z,3μm,20.0s			LR	LR		
RPN	**Rapa Nui** comp=Z,2μm,21.0s	**31.74**	**276**	PFAKE		19 56 50.0	+10
RPN				LR	LR		
OTAV	**Otavalo**	**36.13**	**351**	*e*P	**P**	**19 57 18.6**	**-0.4**
OTAV	**Otavalo** comp=Z,128nm,1.6s	**36.13**	**351**	*e*P	**P**	**19 57 21.2**	**+2.3**
OTAV	comp=Z,2μm,19.0s			LR	LR		
CMBC	**Cumbal**	**36.76**	**353**	*e*P	**P**	**19 57 24.8**	**+0.5**
PTGA	**Pitinga** comp=Z,58nm,1.0s,baz=198,slow=8.9,SNR=49	**37.02**	**23**	P	**P**	**19 57 25.4**	**-0.6**
PTGA	**Pitinga** comp=Z,94nm,1.1s	**37.02**	**23**	*e*P	**P**	**19 57 25.4**	**-0.6**
PTGA	comp=Z,27μm,19.0s			LR	LR		
PAYG	**Puerto Ayora** comp=Z,5μm,19.0s	**38.30**	**332**	PFAKE		19 57 50.0	+13
PAYG				LR	LR		
SJAC	**San Juan de Ar**	**38.84**	**359**	*e*P	**P**	**19 57 42.0**	**+0.6**
PRAC	**Prado**	**39.30**	**358**	*e*P	**P**	**19 57 47.4**	**+2.1**
PRAC	**Prado** comp=Z,60nm,0.8s	**39.30**	**358**	*e*P	**P**	**19 57 46.7**	**+1.5**
CHIC	**Chingaza**	**40.19**	**359**	*e*P	**P**	**19 57 53.5**	**+0.5**
ROSC	**El Rosal** comp=Z,8.8nm,0.5s,baz=220,slow=17,SNR=4.3	**40.40**	**359**	P	**P**	**19 57 57.9**	**+3.1**
ROSC	**El Rosal**	**40.40**	**359**	*e*P	**P**	**19 57 52.7**	**-2.1**
RUSC	**La Rusia**	**41.44**	**0**	*e*P	**P**	**19 58 03.0**	**-0.5**
RUSC	**La Rusia** comp=Z,66nm,1.1s	**41.44**	**0**	*e*P	**P**	**19 58 04.4**	**+1.0**
HELC	**Santa Helena**	**41.78**	**357**	*e*P	**P**	**19 58 06.7**	**+0.5**
HELC	**Santa Helena** comp=Z,129nm,1.0s	**41.78**	**357**	*e*P	**P**	**19 58 06.7**	**+0.5**
BARC	**Barichara**	**42.13**	**0**	*e*P	**P**	**19 58 11.6**	**+2.7**
SDV	**Santo Domingo**	**44.49**	**4**	*e*P	**P**	**19 58 26.0**	**-1.8**
SDV	**Santo Domingo** comp=Z,72nm,1.1s	**44.49**	**4**	*e*P	**P**	**19 58 27.5**	**-0.3**
SDV	comp=Z,5μm,20.0s			LR	LR		
SJCC	**San Jacinto, C**	**45.45**	**357**	*e*P	**P**	**19 58 34.6**	**-0.7**
CODC	**Agust´›n Codaz**	**45.45**	**360**	*e*P	**P**	**19 58 32.6**	**-2.7**
RCBR	**Riachuelo** comp=Z,23nm,0.9s,baz=210,slow=12,SNR=10	**45.49**	**58**	P	**P**	**19 58 35.0**	**-0.8**
RCBR				PP	**PP**	**20 00 22.1**	**-0.2**
RCBR	**Riachuelo** comp=Z,46nm,1.1s,baz=202,slow=11,SNR=4.5	**45.49**	**58**	*e*P	**P**	**19 58 36.0**	**+0.2**
RCBR	comp=Z,176nm,1.6s			PP	**PP**	**20 00 22.1**	**-0.2**
RCBR	comp=Z,4μm,19.0s			LR	LR		
PCRV	**Puerto La Cruz** comp=Z,39nm,0.9s,baz=150,slow=8.1,SNR=6.2	**46.43**	**12**	P	**P**	**19 58 43.6**	**+0.5**
VNA1	**Neumayer--Stat**	**48.49**	**156**	P	**P**	**19 58 58.5**	**+0.1**
GRGR	**Grenville** comp=Z,266nm,0.9s	**48.91**	**15**	*e*P	**P**	**19 59 04.5**	**+2.3**
GRGR	comp=Z,4μm,19.0s			LR	LR		
PTCN	**Pitcairn Islan**	**49.48**	**266**	PFAKE		19 59 20.0	+13
PTCN	comp=Z,4μm,19.0s			LR	LR		
SVB	**Belmont** comp=Z,216nm,0.7s	**50.10**	**15**	*e*P	**P**	**19 59 11.2**	**-0.1**
BBGH	**Gun Hill** comp=Z,9μm,21.0s	**50.37**	**18**	PFAKE		19 59 30.0	+17
BBGH				LR	LR		
SNAA	**Sanae**	**50.37**	**157**	P	**P**	**19 59 12.4**	**-0.5**
SNAA	**Sanae** comp=Z,163nm,1.0s,baz=276,slow=6.4,SNR=222	**50.37**	**157**	P	**P**	**19 59 12.7**	**-0.2**
SNAA	**Sanae**	**50.37**	**157**	*c* *i* P	**P**	**19 59 12.3**	**-0.6**
SNAA	**Sanae** comp=Z,297nm,1.1s	**50.37**	**157**	*e*P	**P**	**19 59 12.6**	**-0.2**
FDF	**Fort de France**	**51.54**	**15**	*e*P	**P**	**19 59 21.7**	**-0.5**
FDF	comp=Z,158nm,0.9s			pmax	pmax		
FDF	comp=Z,4μm,20.0s			MLR	MLR		
FDF	**Fort de France** comp=Z,158nm,0.9s	**51.54**	**15**	*e*P	**P**	**19 59 21.7**	**-0.5**
FDF	comp=Z,4μm,20.0s			LR	LR		
GDHS	**Morne Mazeau,** comp=Z,232nm,1.2s	**52.91**	**14**	*e*P	**P**	**19 59 31.1**	**-1.3**
MTDJ	**Mount Denham**	**53.84**	**355**	PFAKE		19 59 50.0	+11
MTDJ	comp=Z,2μm,22.0s			LR	LR		
CELP	**Cerrillos**	**53.93**	**8**	*e*P	**P**	**19 59 38.6**	**-1.3**
SJG	**San Juan**	**54.02**	**8**	*e*P	**P**	**19 59 39.5**	**-0.9**
SJG	comp=Z,63nm,0.9s			pmax	pmax		
SJG	comp=Z,3μm,19.0s			MLR	MLR		
SJG	**San Juan** comp=Z,63nm,0.9s	**54.02**	**8**	*e*P	**P**	**19 59 39.5**	**-0.9**
SJG	comp=Z,3μm,19.0s			LR	LR		
HUMP	**Col San Antoni** comp=Z,102nm,1.6s	**54.08**	**9**	*e*P	**P**	**19 59 39.8**	**-1.1**
CBYP	**Canovanas** comp=Z,66nm,0.9s	**54.21**	**9**	*e*P	**P**	**19 59 40.7**	**-1.2**
ANWB	**Willy Bob**	**54.26**	**14**	PFAKE		19 59 50.0	+7.8
ANWB	comp=Z,3μm,19.0s			LR	LR		
RKT	**Rikitea** comp=Z,2μm,26.5s	**54.33**	**266**	*e*S	**S**	**20 07 19.6**	**-1.3**
RKT	comp=Z,3μm,28.5s,baz=128			*e*LR	LR	20 15 26.0	
RKT	**Rikitea** comp=Z,1.7nm,0.2s	**54.33**	**266**	*e*T	T	20 58 06.3	
QSPA	**South Pole Qui** comp=Z,508nm,1.1s	**54.47**	**180**	*e*P	**P**	**19 59 43.2**	**-0.3**
QSPA	comp=Z,2μm,19.0s			LR	LR		
SDDR	**Presa de Saban**	**54.48**	**2**	PFAKE		20 00 00.0	+16
SDDR	comp=Z,2μm,19.0s			LR	LR		
CCIG	**Comitan** comp=Z,36nm,1.1s	**54.74**	**338**	*e*P	**P**	**19 59 46.5**	**+0.6**
NVL	**N'lazarevskaya**	**55.14**	**156**	*e*P	**P**	**19 59 48.2**	**+0.2**
NVL				*e**PP	**sP**	**19 59 58.8**	**+6.2**
NVL				*e*S	**S**	**20 07 31.8**	**+1.3**
NVL				*e**SS	sS	20 07 51.9	+16
NVL				*e*SS	**SS**	**20 11 18.7**	**+4.9**
NVL	comp=Z,2μm,19.0s			MLR	MLR		
GTBY	**Guantanamo Bay**	**55.41**	**358**	PFAKE		20 00 00.0	+9.5
GTBY	comp=Z,2μm,20.0s			LR	LR		
GRTK	**Grand Turk**	**57.00**	**2**	PFAKE		20 00 10.0	+8.1
GRTK	comp=Z,1μm,20.0s			LR	LR		
TLIG	**Tlapa** comp=Z,25nm,1.1s	**58.17**	**331**	*e*P	**P**	**20 00 11.5**	**+1.2**
ASCN	**Ascension**	**60.35**	**78**	PFAKE		20 00 40.0	+15
ASCN	comp=Z,3μm,20.0s			LR	LR		
SBA	**Scott Base**	**61.13**	**192**	*e*P	**P**	**20 00 32.1**	**+2.2**
SBA	comp=Z,91nm,1.6s			pmax	pmax		
SBA	comp=Z,2μm,20.0s			MLR	MLR		
SBA	**Scott Base** comp=Z,91nm,1.6s	**61.13**	**192**	*e*P	**P**	**20 00 32.1**	**+2.2**
SBA	comp=Z,2μm,20.0s			LR	LR		
VNDA	**Vanda** comp=Z,14nm,1.2s,baz=131,slow=6.1,SNR=13	**62.16**	**192**	P	**P**	**20 00 37.9**	**+1.1**
VNDA	**Vanda**	**62.16**	**192**	*e*P	**P**	**20 00 37.7**	**+0.8**
VNDA	comp=Z,76nm,1.5s			pmax	pmax		
VNDA	**Vanda** comp=Z,76nm,1.5s	**62.16**	**192**	*e*P	**P**	**20 00 37.6**	**+0.8**
SHEL	**Horse Pasture**	**62.81**	**91**	PFAKE		20 00 50.0	+7.9
SHEL	comp=Z,2μm,22.0s			LR	LR		
ZAIG	**Zacatecas** comp=Z,10nm,1.0s	**64.45**	**330**	*e*P	**P**	**20 00 54.3**	**+1.3**
SYO	**Syowa Base**	**64.62**	**158**	‖ *i*P	**P**	**20 00 50.2**	**-3.0**
TBI	**Tubuai** comp=Z,3μm,26.8s	**65.87**	**258**	*e*S	**S**	**20 09 48.5**	**-0.7**
TBI	**Tubuai** comp=Z,5μm,27.8s,baz=117	**65.87**	**258**	*e*LR	LR	20 21 00.4	
TAOE	**Nuku Hiva Isla** comp=Z,955nm,23.1s	**66.06**	**276**	*e*S	**S**	**20 09 50.9**	**-1.1**
TAOE	**Nuku Hiva Isla** comp=Z,3μm,29.9s	**66.06**	**276**	*e*LR	LR	20 21 02.3	
035Z	**Hargill** baz=158	**66.15**	**336**	P	**P**	**20 01 04.2**	**+0.6**
035A	**Encino** baz=158	**66.60**	**336**	P	**P**	**20 01 05.8**	**-0.6**
034A	**Hebbronville** baz=158,SNR=6.5	**66.91**	**336**	P	**P**	**20 01 09.3**	**+0.9**
KVTX	**Kingsville**	**67.09**	**336**	PFAKE		20 01 20.0	+10
KVTX	comp=Z,1μm,22.0s			LR	LR		
545A	**Edgard** baz=165	**67.42**	**344**	P	**P**	**20 01 11.4**	**-0.1**
546A	**Slidell** baz=166	**67.43**	**345**	P	**P**	**20 01 11.6**	**0.0**
TIGA	**Tifton** baz=171	**67.54**	**351**	P	**P**	**20 01 11.4**	**-0.9**
TIGA	**Tifton** comp=Z,53nm,1.0s	**67.54**	**351**	*e*P	**P**	**20 01 12.4**	**+0.1**
MEH	**Mehetia** comp=Z,53nm,0.2s	**67.56**	**264**	*e*T	T	21 14 41.0	
738A	**Farr-Stevens R** baz=160	**67.61**	**339**	P	**P**	**20 01 14.0**	**+1.2**
933A	**Laredo** baz=157,SNR=5.7	**67.62**	**335**	P	**P**	**20 01 13.5**	**+0.6**
544A	**White Castle** baz=164	**67.64**	**343**	P	**P**	**20 01 13.8**	**+0.9**
448A	**Bay Minette** baz=167	**67.73**	**347**	P	**P**	**20 01 12.9**	**-0.6**
447A	**Lucedale** baz=166	**67.75**	**346**	P	**P**	**20 01 14.7**	**+1.0**
835A	**Beeville** baz=159	**67.76**	**337**	P	**P**	**20 01 15.3**	**+1.5**
737A	**Port Lavaca** baz=160	**67.77**	**338**	P	**P**	**20 01 15.0**	**+1.1**
543A	**St. Martinvill** baz=164	**67.78**	**343**	P	**P**	**20 01 15.1**	**+1.3**
BRAL	**Brewton**	**67.81**	**347**	PFAKE		20 01 30.0	+16
BRAL	comp=Z,1μm,19.0s			LR	LR		
834A	**Tilden** baz=158	**67.85**	**336**	P	**P**	**20 01 15.7**	**+1.4**
446A	**Poplarville** baz=166	**67.89**	**345**	P	**P**	**20 01 14.6**	**0.0**
542A	**Morse** baz=163	**67.98**	**342**	P	**P**	**20 01 15.4**	**+0.2**
445A	**Amite** baz=165	**68.05**	**344**	P	**P**	**20 01 16.6**	**+1.1**
541A	**Lake Charles** baz=163	**68.08**	**342**	P	**P**	**20 01 17.3**	**+1.5**
638A	**Rosharon** baz=161	**68.09**	**339**	P	**P**	**20 01 17.4**	**+1.5**
736A	**Circle Diamond** baz=159,SNR=7.6	**68.14**	**338**	P	**P**	**20 01 17.7**	**+1.6**
348A	**Jackson** baz=167	**68.21**	**347**	P	**P**	**20 01 16.4**	**-0.1**
BBSR	**BB Station**	**68.27**	**8**	PFAKE		20 01 30.0	+13
BBSR	comp=Z,889nm,20.0s			LR	LR		
735A	**Kenedy** baz=159	**68.28**	**337**	P	**P**	**20 01 18.0**	**+1.0**
833A	**Chaparral WMA,** baz=157,SNR=5.5	**68.31**	**335**	P	**P**	**20 01 17.9**	**+0.6**
347A	**Saraland** baz=167	**68.32**	**346**	P	**P**	**20 01 17.8**	**+0.6**
637A	**Eagle Lake** baz=160	**68.37**	**339**	P	**P**	**20 01 18.9**	**+1.3**
443A	**Delano Plantat** baz=164	**68.41**	**343**	P	**P**	**20 01 18.4**	**+0.6**
540A	**Vidor** baz=162	**68.43**	**341**	P	**P**	**

733A **Divot King Ran** 68.64 336 P P 20 01 19.6 +0.3
baz=158
TIAR **Tiarei** 68.76 263 eT T 21 16 11.2
comp=Z,8.2nm,0.2s
635A **Leesville** 68.77 337 P P 20 01 20.1 0.0
baz=159
NHSC **New Hope** 68.81 354 eP P 20 01 20.6 +0.3
comp=Z,73nm,0.8s
NHSC LR LR
comp=Z,2µm,22.0s
344A **Westbrook Farm** 68.83 344 P P 20 01 20.6 +0.1
baz=165
248A **Dixon Mills** 68.84 347 P P 20 01 19.9 -0.6
baz=167
538A **Harpers Horsep** 68.86 340 P P 20 01 21.1 +0.5
baz=161
343A **Vidalia** 68.87 343 P P 20 01 21.0 +0.4
baz=164
PPT2 **Papeete2** 68.93 263 eS S 20 10 25.2 -1.1
comp=Z,3µm,26.2s
PPT2 **Papeete2** 68.93 263 eLR LR 20 22 20.3
comp=Z,5µm,24.8s,baz=122
440A **Kirbyville** 68.94 341 P P 20 01 22.2 +1.1
baz=162
PPT **Papeete** 68.94 263 LR LR 20 23 52.2
comp=Z,2µm,18.3s,baz=126,slow=29
634A **China Grove, S** 68.94 337 P P 20 01 21.4 +0.2
baz=158
247A **Quitman** 68.97 346 P P 20 01 21.4 +0.2
baz=167
537A **Green Hill Far** 68.97 339 P P 20 01 21.9 +0.5
baz=160
SACV **Santiago Islan** 68.99 52 PFAKE 20 01 30.0 +8.2
SACV LR LR
comp=Z,914nm,20.0s
342A **Flagon Creek P** 69.12 343 P P 20 01 23.2 +0.9
baz=163
536A **Bastrop** 69.19 338 P P 20 01 22.9 +0.2
baz=159
439A **Center Grove,** 69.20 340 P P 20 01 23.8 +1.1
baz=161
245A **Little AP, Sta** 69.21 345 P P 20 01 23.2 +0.4
baz=166
633A **Saathoff Ranch** 69.28 336 P P 20 01 23.6 +0.3
baz=158,SNR=6.4
341A **Kurthwood** 69.29 342 P P 20 01 24.1 +0.8
baz=163,SNR=8.3
535A **Dale** 69.30 338 P P 20 01 23.7 +0.3
baz=159
438A **Sam Houston St** 69.36 340 P P 20 01 24.0 +0.3
baz=161
244A **Avery, Jackson** 69.39 344 P P 20 01 24.5 +0.6
baz=165
243A **Waterproof** 69.41 344 P P 20 01 25.0 +1.0
baz=164
HPIG 69.42 329 eP P 20 01 25.0 +0.5
comp=Z,33nm,1.0s
GOGA **Godfrey** 69.47 351 eP P 20 01 24.0 -0.3
GOGA pmax pmax
comp=Z,32nm,0.9s
GOGA MLR MLR
comp=Z,868nm,20.0s
GOGA **Godfrey** 69.47 351 eP P 20 01 24.0 -0.3
comp=Z,32nm,0.9s
GOGA LR LR
comp=Z,868nm,20.0s
147A **Livingston** 69.50 347 P P 20 01 24.8 +0.2
baz=167,SNR=8.2
VBMS **Vicksburg** 69.52 345 P P 20 01 24.9 +0.3
baz=165
340A **Bronson** 69.56 341 P P 20 01 25.2 +0.3
baz=162
534A **Blanco** 69.58 337 P P 20 01 24.6 -0.6
baz=158
437A **Phantom Ranch,** 69.62 339 P P 20 01 26.0 +0.7
baz=160
146A **Union** 69.62 346 P P 20 01 25.6 +0.3
baz=166
LRAL **Lakeview Retre** 69.63 348 eP P 20 01 25.4 0.0
comp=Z,43nm,1.4s
339A **Huntington** 69.65 341 P P 20 01 26.1 +0.5
baz=162
242A **Grayson** 69.74 343 P P 20 01 26.7 +0.7
baz=164
436A **Wall Ranch, Ga** 69.76 339 P P 20 01 26.7 +0.5
baz=160
145A **Houston Renfro** 69.77 345 P P 20 01 26.6 +0.4
baz=166
533A **Kerrville** 69.80 336 P P 20 01 26.8 +0.2
baz=158,SNR=7.5
338A **Crockett** 69.88 340 P P 20 01 28.2 +1.2
baz=161
241A **Mo Tay, Goldon** 69.89 342 P P 20 01 28.0 +1.1
baz=163
144A **Alexander Plac** 69.89 345 P P 20 01 27.6 +0.6
baz=165
Z47A **Carrollton** 69.98 347 P P 20 01 27.6 +0.1
baz=167,SNR=13
337A **Centerville** 70.00 340 P P 20 01 28.9 +1.2
baz=160,SNR=6.2
435B **Jarrell** 70.01 338 P P 20 01 27.9 +0.2
baz=159
Z48A **Northport** 70.06 347 P P 20 01 27.8 -0.1
baz=168,SNR=13
JSC **Jenkinsville** 70.08 353 eP P 20 01 25.4 -2.7
JSC pmax pmax
comp=Z,27nm,0.8s
JSC **Jenkinsville** 70.08 353 eP P 20 01 25.4 -2.7
comp=Z,26nm,0.8s
NATX **Nacogdoches** 70.08 341 P P 20 01 28.6 +0.4
baz=162
NATX **Nacogdoches** 70.08 341 eP P 20 01 29.4 +1.2
comp=Z,92nm,1.0s
NATX LR LR
comp=Z,537nm,20.0s
240A **Hunter Patters** 70.11 342 P P 20 01 29.0 +0.7
baz=162
Z46A **Louisville** 70.14 346 P P 20 01 29.1 +0.7
baz=166
142A **Monroe** 70.16 343 P P 20 01 29.1 +0.6
baz=164
143A **Socs Landing,** 70.18 344 P P 20 01 29.4 +0.7
baz=164
434A **Burnet** 70.25 337 P P 20 01 29.2 0.0
baz=159,SNR=13
239A **Gary** 70.28 341 P P 20 01 29.8 +0.4
baz=162,SNR=5.8
336A **Riesel** 70.35 339 P P 20 01 30.2 +0.4
baz=160
335A **Moody** 70.42 338 P P 20 01 30.6 +0.3
baz=159
JCT **Junction City** 70.43 336 P P 20 01 30.7 +0.3
baz=157,SNR=6.5
JCT **Junction City** 70.43 336 eP P 20 01 31.0 +0.6
JCT pmax pmax
comp=Z,47nm,1.0s
JCT MLR MLR
comp=Z,533nm,19.0s
JCT **Junction City** 70.43 336 eP P 20 01 31.0 +0.6
comp=Z,47nm,1.0s
JCT LR LR
comp=Z,533nm,19.0s
141A **Papa Simpson,** 70.44 343 P P 20 01 30.8 +0.4
baz=163
238A **Jacksonville** 70.44 340 P P 20 01 30.5 +0.2
baz=161
433A **Art** 70.45 337 P P 20 01 30.5 0.0
baz=158,SNR=22
Z45A **Winona** 70.46 346 P P 20 01 30.4 0.0
baz=166
Z44A **Pea Ridge, Bel** 70.52 345 P P 20 01 30.8 0.0
baz=165
Y47A **UCPARC, Winfie** 70.62 347 P P 20 01 31.4 0.0
baz=167,SNR=33
237A **Washetta, Mont** 70.63 340 P P 20 01 31.8 +0.3
baz=161
Z43A **Armstrong Fami** 70.63 344 P P 20 01 31.5 0.0
baz=164
140A **Cam and Jess,** 70.64 342 P P 20 01 32.0 +0.5
baz=163
334A **Lometa** 70.72 338 P P 20 01 32.1 0.0
baz=159,SNR=15
TXAR **Lajitas Array** 70.77 332 P P 20 01 33.0 +0.5
comp=Z,14nm,0.9s,baz=146,slow=9.1,SNR=104
TXAR LR LR 20 27 50.0
comp=Z,2µm,18.4s,baz=0.0,slow=32
TX31 **Lajitas Ar. Si** 70.77 332 eP P 20 01 32.2 -0.3
CNNC **Cliffs of the** 70.77 356 PFAKE 20 01 40.0 +7.7
CNNC LR LR
comp=Z,875nm,20.0s
Y46A **Houston** 70.79 346 P P 20 01 31.9 -0.5
baz=167
Z42A **Norrel Spur, H** 70.85 344 P P 20 01 32.6 -0.2
baz=164
Y45A **Yeager Farm, C** 70.91 346 P P 20 01 33.4 +0.2
baz=166
KMSC **Kings Mountain** 70.94 353 P P 20 01 33.0 -0.3
baz=173
KMSC **Kings Mountain** 70.94 353 eP P 20 01 33.2 -0.2
comp=Z,28nm,0.8s
333A **Richland Sprin** 70.95 337 P P 20 01 33.4 -0.1
baz=158,SNR=12
Z41A **Richland Creek** 71.04 343 P P 20 01 34.2 +0.3
baz=163
138A **Matatall Enter** 71.05 341 P P 20 01 34.5 +0.4
baz=161
WHTX **Lake Whitney,** 71.09 338 P P 20 01 34.2 -0.1
baz=159
Y44A **Strider, Charl** 71.14 345 P P 20 01 34.2 -0.3
baz=165
136A **Heron Place, G** 71.17 340 P P 20 01 35.4 +0.6
baz=161
Z40A **Long Farm, Mag** 71.18 342 P P 20 01 35.3 +0.4
baz=163
Y43A **Makayla and Ka** 71.24 345 P P 20 01 35.2 0.0
baz=165
136A **Ennis** 71.28 339 P P 20 01 35.9 +0.5
baz=160
234A **Clairette** 71.31 338 P P 20 01 36.1 +0.4
baz=159
Y42A **Garnett, Star** 71.36 344 P P 20 01 35.5 -0.4
baz=164
Z39A **Irene McRaven,** 71.36 342 P P 20 01 35.8 -0.1
baz=162
X45A **UM Field Stati** 71.42 346 P P 20 01 35.8 -0.4
baz=166
OXF **Oxford** 71.51 346 eP P 20 01 36.0 -0.8
OXF pmax pmax
comp=Z,105nm,1.0s
OXF **Oxford** 71.51 346 eP P 20 01 36.0 -0.8
comp=Z,106nm,1.0s
WLAR **White Oak Lake** 71.52 343 eP P 20 01 37.9 +1.0
comp=Z,89nm,1.2s
233A **Rising Star** 71.56 337 P P 20 01 37.2 0.0
baz=156,SNR=7.9
Z38A **Mt. Pleasant** 71.58 341 P P 20 01 37.5 +0.3
baz=162
SWET **Sewanee** 71.59 349 eP P 20 01 37.6 +0.3
comp=Z,36nm,1.1s
Y41A **Eaglette Beard** 71.59 343 P P 20 01 37.6 +0.4
baz=164
135A **Vickery Place,** 71.61 339 P P 20 01 37.1 -0.3
baz=159
X44A **Crenshaw** 71.64 345 P P 20 01 37.1 -0.5
baz=166
Z37A **Pogue Cattle C** 71.70 340 P P 20 01 38.0 0.0
baz=161
MAW **Mawson** 71.79 164 P P 20 01 37.9 -0.4
comp=Z,66nm,1.1s,baz=215,slow=6.9,SNR=42
MAW LR LR 20 34 00.8
comp=Z,4µm,18.6s,baz=228,slow=37
MAW **Mawson** 71.79 164 eP P 20 01 37.8 -0.4
MAW pmax pmax
comp=Z,28nm,1.3s
MAW **Mawson** 71.79 164 eP P 20 01 37.8 -0.4
comp=Z,28nm,1.3s
134A **White-Moore Ra** 71.82 338 P P 20 01 38.7 0.0
baz=159
Y40A **Okolona** 71.87 343 P P 20 01 38.7 -0.3
baz=163
Z36A **Blue Ridge** 72.00 340 P P 20 01 39.8 +0.1
baz=160,SNR=9.1
Y39A **Lockesburg** 72.00 342 P P 20 01 39.8 0.0
baz=162
W45A **Hickory Valley** 72.09 346 P P 20 01 40.0 -0.3
baz=166
133A **Hamilton Ranch** 72.11 338 P P 20 01 40.6 +0.1
baz=158,SNR=7.3
X41A **Kaden, Bauxite** 72.15 343 P P 20 01 40.0 -0.7
baz=164
Y38A **Idabel** 72.16 341 P P 20 01 40.3 -0.4
baz=162
W44A **Shelby Farms P** 72.19 346 P P 20 01 40.2 -0.7
baz=166
X40A **Basin Creek Fa** 72.22 343 P P 20 01 40.7 -0.4
baz=163
Z35A **Perchaven, San** 72.29 339 P P 20 01 41.4 -0.1
baz=160,SNR=9.1
ABTX **Abilene, Hawle** 72.36 337 P P 20 01 42.0 +0.1
baz=158,SNR=11
ABTX **Abilene, Hawle** 72.36 337 eP P 20 01 42.1 +0.1
comp=Z,60nm,1.0s
UALR **University of** 72.38 344 eP P 20 01 42.0 0.0
comp=Z,34nm,1.1s
MIAR **Mount Ida** 72.45 343 P P 20 01 42.2 -0.2
baz=163
MIAR **Mount Ida** 72.45 343 eP P 20 01 42.5 0.0
MIAR pmax pmax
comp=Z,31nm,1.2s
MIAR MLR MLR
comp=Z,455nm,20.0s
MIAR **Mount Ida** 72.45 343 eP P 20 01 42.5 0.0
comp=Z,31nm,1.2s
MIAR LR LR
comp=Z,455nm,20.0s
Z34A **Collier Ranch,** 72.52 339 P P 20 01 42.7 -0.2
baz=159,SNR=5.9
Y36A **Durant** 72.55 340 P P 20 01 42.7 -0.3
baz=160,SNR=5.9
X39A **Fountain Ranch** 72.55 342 P P 20 01 43.0 -0.1
baz=162,SNR=10
V45A **Humboldt** 72.61 347 P P 20 01 43.0 -0.3
baz=167
Z33A **Whitaker Ranch** 72.69 338 P P 20 01 44.0 +0.1
baz=158,SNR=12
W41B **Gary Mavity, V** 72.74 344 P P 20 01 43.7 -0.4
baz=164,SNR=13
Y35A **Marietta** 72.76 340 P P 20 01 44.3 0.0
baz=160
WVT **Waverly** 72.79 348 eP P 20 01 43.6 -0.8
WVT pmax pmax
comp=Z,93nm,0.9s
WVT **Waverly** 72.79 348 eP P 20 01 43.6 -0.8
comp=Z,93nm,0.9s
X301 **Greenbrier Sit** 72.84 344 eP P 20 01 45.0 +0.3
comp=Z,86nm,1.0s
WHAR **Wooly Hollow** 72.86 344 eP P 20 01 45.0 +0.1
comp=Z,86nm,1.2s
V44A **Blytheville** 72.88 346 P P 20 01 44.8 -0.1
baz=166
X201 **Greenbrier Sit** 72.88 344 eP P 20 01 45.2 +0.2
comp=Z,74nm,1.0s
X38A **Whitesboro** 72.89 342 P P 20 01 45.1 0.0
baz=162,SNR=12
BLA **Blacksburg** 72.91 354 PFAKE 20 02 00.0 +15
BLA LR LR
comp=Z,901nm,20.0s
W40A **Ferguson Farm,** 72.95 343 P P 20 01 45.7 +0.3
baz=163
Y34A **Reagan Ranch,** 73.02 339 P P 20 01 45.6 -0.2
baz=159,SNR=11
URVA **University of** 73.07 357 eP P 20 01 47.1 +1.1
W39A **Magazine** 73.12 343 P P 20 01 46.6 +0.2
baz=163,SNR=23
V42A **Cord** 73.16 345 P P 20 01 45.5 -1.1
baz=165
W38A **Poteau** 73.19 342 P P 20 01 46.8 -0.1
baz=162,SNR=13
X36A **Centrahoma** 73.20 340 P P 20 01 46.2 -0.7
baz=160,SNR=12
X35A **Drake** 73.21 340 P P 20 01 46.4 -0.6
baz=160,SNR=7.3
V41A **Mountainview** 73.31 344 P P 20 01 46.8 -0.8
baz=164,SNR=22
Y33A **Hilltop Ranch,** 73.32 338 P P 20 01 47.4 -0.3
baz=159,SNR=7.1
W37B **Quinton** 73.49 341 P P 20 01 48.0 -0.5
baz=161,SNR=8.7
MNTX **Cornudas Mount** 73.53 332 P P 20 01 48.0 -1.0
baz=153
MNTX **Cornudas Mount** 73.53 332 eP P 20 01 48.2 -0.8
comp=Z,19nm,0.9s
MNTX LR LR
comp=Z,2µm,19.0s
X34A **Smith Ranch, M** 73.64 339 P P 20 01 49.3 -0.2
baz=159,SNR=8.2
U42A **Revenden** 73.66 345 P P 20 01 48.9 -0.6
baz=165,SNR=14
CBN **Corbin Frederi** 73.70 357 PFAKE 20 02 00.0 +10
CBN LR LR
comp=Z,1µm,21.0s
W36A **Wetumka** 73.70 341 P P 20 01 48.7 -1.1
baz=161
V39A **Pettigrew** 73.70 343 P P 20 01 49.6 -0.3
baz=163,SNR=11
X33A **Lawton** 73.78 339 P P 20 01 49.5 -0.9
baz=159
U41A **Viola** 73.79 344 P P 20 01 49.8 -0.5
baz=164
W35A **Tecumseh** 73.89 340 P P 20 01 50.1 -0.8
baz=160,SNR=5.6
PBMO **Poplar Bluff** 73.90 346 eP P 20 01 50.7 -0.2
comp=Z,47nm,1.0s
X32A **Elmer** 73.91 338 P P 20 01 50.9 -0.2
baz=158,SNR=6.3
V38A **Canehill** 73.91 342 P P 20 01 50.4 -0.7
baz=162,SNR=10
U40A **Yellville** 74.01 344 P P 20 01 51.1 -0.6
baz=164,SNR=21
WMOK **Wichita Mounta** 74.05 338 P P 20 01 51.3 -0.6
baz=159,SNR=17
WMOK **Wichita Mounta** 74.05 338 eP P 20 01 51.3 -0.6
WMOK pmax pmax
comp=Z,23nm,1.0s
WMOK MLR MLR
comp=Z,582nm,19.0s
WMOK **Wichita Mounta** 74.05 338 eP P 20 01 51.3 -0.6
comp=Z,23nm,1.0s
WMOK LR LR
comp=Z,582nm,19.0s
V37A **Hulbert** 74.11 342 P P 20 01 51.7 -0.5
baz=162,SNR=7.3
U39A **Green Forest** 74.18 343 P P 20 01 52.0 -0.7
baz=163,SNR=16
HHAR **Hobbs** 74.20 343 eP P 20 01 52.6 -0.2
comp=Z,19nm,0.8s
W34A **Bridge Creek,** 74.22 339 P P 20 01 52.4 -0.5
baz=159
W34A **Bridge Creek,** 74.22 339 eP P 20 01 53.0 +0.1
comp=Z,187nm,1.8s
V36A **Jenks** 74.23 341 P P 20 01 52.5 -0.4
baz=161,SNR=11
TUL1 **Leonard** 74.31 341 P P 20 01 52.8 -0.6
baz=161,SNR=5.9
TUL1 **Leonard** 74.31 341 eP P 20 01 52.4 -1.0
comp=Z,56nm,0.9s
S45A **Carrier Mills** 74.43 348 P P 20 01 52.9 -1.1
baz=167
T41A **Mountain View** 74.43 345 P P 20 01 53.5 -0.6
baz=164,SNR=15
V35A **Meyer Ranch, C** 74.45 340 P P 20 01 53.8 -0.4
baz=160,SNR=8.0
U38A **Gravette** 74.45 343 P P 20 01 53.5 -0.7
baz=162
USIN **University of** 74.55 348 eP P 20 01 54.2 -0.6
comp=Z,110nm,1.1s
S44A **Carbondale** 74.56 347 P P 20 01 54.1 -0.7
baz=166,SNR=8.2
SIUC **Southern Illin** 74.58 347 eP P 20 01 54.6 -0.2
comp=Z,44nm,0.8s
S43A **Fulton Ridge,** 74.60 346 P P 20 01 54.3 -0.8
baz=166,SNR=25
U37A **Salina** 74.61 342 P P 20 01 54.5 -0.6
baz=162,SNR=7.2
MSTX **Muleshoe** 74.63 335 P P 20 01 55.0 -0.4
baz=155
MSTX **Muleshoe** 74.63 335 eP P 20 01 55.6 +0.2
comp=Z,35nm,0.9s
T40A **Mansfield** 74.70 344 P P 20 01 55.0 -0.7
baz=164,SNR=8.0
V34A **Guthrie** 74.71 340 P P 20 01 55.2 -0.6
baz=160
V34A **Guthrie** 74.71 340 eP P 20 01 55.8 +0.1
comp=Z,46nm,0.9s
U36A **Oologah** 74.75 341 P P 20 01 55.6 -0.4
baz=161
T39A **Clever** 74.77 344 P P 20 01 55.6 -0.5
baz=163,SNR=9.4
319A **Douglas** 74.82 329 eP P 20 01 58.0 +1.4
comp=Z,49nm,0.9s
V33A **Lossen Ranch,** 74.91 339 P P 20 01 56.9 0.0
baz=159,SNR=6.1
SUR **Sutherland** 74.92 119 eP P 20 01 58.4 +0.8
comp=Z,267nm,1.7s
SUR LR LR
comp=Z,5µm,20.0s
S41A **Jillco Farms,** 74.95 345 P P 20 01 56.5 -0.6
baz=164,SNR=17
U35A **Pawnee** 74.99 341 P P 20 01 57.2 -0.2
baz=160,SNR=7.2
T38A **Diamond** 75.00 343 P P 20 01 56.9 -0.5
baz=162,SNR=9.7
V32A **Arapaho** 75.04 339 P P 20 01 57.9 +0.2
baz=158,SNR=5.8
R44A **Waltonville** 75.07 347 P P 20 01 56.6 -1.1
baz=167
AMTX **Amarillo** 75.09 336 P P 20 01 58.1 0.0
baz=156
AMTX **Amarillo** 75.09 336 eP P 20 01 58.0 -0.1
comp=Z,76nm,1.0s
S40A **Lebanon** 75.13 344 P P 20 01 57.7 -0.4
baz=164,SNR=22
121A **Cookes Peak, D** 75.21 330 P P 20 01 59.7 +0.8
baz=152
121A **Cookes Peak, D** 75.21 330 eP P 20 01 59.7 +0.8
comp=Z,28nm,0.9s
T37A **Cheneyville 18** 75.23 342 P P 20 01 58.0 -0.7
baz=162,SNR=14
U34A **Anderson Ranch** 75.28 340 P P 20 01 58.7 -0.3
baz=160,SNR=6.9
U34A **Anderson Ranch** 75.28 340 eP P 20 01 59.2 +0.2
comp=Z,76nm,1.1s
PSUB **Penn St. - Bra** 75.35 358 eP P 20 02 00.4 +1.1
comp=Z,41nm,1.0s
OLIL **Olney** 75.37 348 eP P 20 01 59.1 -0.3
comp=Z,52nm,1.3s
S39A **Bolivar** 75.40 344 P P 20 01 59.1 -0.5
baz=163,SNR=13
T36A **Boggs Farm, Ca** 75.42 342 P P 20 01 59.4 -0.4
baz=161,SNR=10
U33A **Lingo Farm, Me** 75.43 340 P P 20 01 59.3 -0.6
baz=159
T35A **Sooner Cattle** 75.45 341 P P 20 01 59.8 -0.2
baz=161,SNR=17
S38A **Stockton** 75.47 343 P P 20 01 59.5 -0.6
baz=163,SNR=18
BLO **Bloomington** 75.55 349 eP P 20 01 59.8 -0.7
BLO pmax pmax
comp=Z,91nm,1.4s
BLO **Bloomington** 75.55 349 eP P 20 01 59.8 -0.7
comp=Z,91nm,1.4s
U32A **Winter Ranch,** 75.64 339 P P 20 02 01.1 0.0
baz=159,SNR=5.5
Q44A **Meyer Farm, Va** 75.70 347 P P 20 02 00.0 -1.3
baz=167
T34A **McClaskey Farm** 75.73 341 P P 20 02 01.5 -0.1
baz=160,SNR=16
R40A **Maddies Statio** 75.74 345 P P 20 02 01.1 -0.5
baz=164,SNR=26
O56A **Blue Knob Stat** 75.81 356 P P 20 02 01.1 -1.0
baz=175
S37A **Fort Scott** 75.82 343 P P 20 02 01.2 -0.8
baz=162,SNR=7.7
Q43A **New Douglas** 75.86 347 P P 20 02 01.5 -0.8
baz=166,SNR=12
S36A **Lake Cedric, C** 75.97 342 P P 20 02 02.4 -0.5
baz=161,SNR=7.7
Q42A **Golden Eagle** 75.99 346 P P 20 02 02.8 -0.2
baz=166,SNR=11
R38A **Fenwick Farm,** 76.01 343 P P 20 02 02.2 -0.9
baz=163,SNR=7.0
LUPA **Lehigh Univers** 76.02 358 eP P 20 02 03.9 +0.8
comp=Z,24nm,1.0s
T33A **Patterson Ranc** 76.08 340 P P 20 02 03.8 +0.2
baz=159,SNR=5.4
BRNJ **Basking Ridge** 76.09 359 eP P 20 02 04.8 +1.3
comp=Z,28nm,0.8s
S35A **Otter Creek Ra** 76.12 341 P P 20 02 03.4 -0.4
baz=161
ACSO **Alum Creek Sta** 76.14 352 eP P 20 02 02.1 -1.8
comp=Z,83nm,0.9s
ACSO LR LR
comp=Z,1µm,21.0s
BNM **Barren Site** 76.19 332 eP P 20 02 05.3 +0.8

Y22D	IRIS PASSCAL I	76.23	332	P		P		20 02 05.9	+1.2
	baz=152								
TUC	Tucson	76.27	328	P		P		20 02 05.6	+0.7
	baz=149								
TUC	Tucson	76.27	328	*e*P		P		20 02 05.8	+0.9
TUC	comp=Z,21nm,1.0s			pmax		pmax			
TUC	comp=Z,1µm,19.0s			MLR		MLR			
TUC	Tucson	76.27	328	*e*P		P		20 02 05.8	+0.9
	comp=Z,21nm,1.0s								
TUC	comp=Z,1µm,19.0s			LR		LR			
LPM	Los Pinos Moun	76.33	332	*e*P		P		20 02 06.0	+0.7
N59A	State Game Lan	76.34	358	P		P		20 02 05.2	+0.2
	baz=178								
R37A	Teagarden Farm	76.34	343	P		P		20 02 04.2	-0.9
	baz=162,SNR=6.3								
S34A	Willow Spring	76.35	341	P		P		20 02 04.8	-0.2
	baz=160								
LIC	Lamto	76.36	72	*e*P		P		20 02 04.0	-1.7
	comp=Z,440nm,1.3s								
T32A	Huddler Ranch,	76.36	339	P		P		20 02 05.4	+0.2
	baz=159,SNR=6.9								
Q40A	Laux Farm, Aux	76.38	345	P		P		20 02 04.8	-0.4
	baz=164,SNR=26								
ODNJ	Ogdensburg	76.49	359	*e*P		P		20 02 06.8	+1.0
	comp=Z,18nm,0.9s								
S33A	Kaszmaul Farm,	76.49	340	P		P		20 02 06.0	+0.1
	baz=160,SNR=5.8								
R36A	Gordon, Harris	76.52	342	P		P		20 02 05.3	-0.8
	baz=162								
N54A	Moraine State	76.60	355	P		P		20 02 05.9	-0.5
	baz=174								
P42A	Winchester	76.60	347	P		P		20 02 05.8	-0.7
	baz=166,SNR=13								
LAZ	Ladron	76.61	332	*e*P		P		20 02 08.1	+1.2
Q39A	Willow Grove F	76.62	344	P		P		20 02 05.7	-0.8
	baz=164,SNR=11								
TIC	Toumodi	76.63	72	*e*P		P		20 02 05.5	-1.8
KIC	Kosan Boka	76.66	72	*e*P		P		20 02 05.5	-2.0
	comp=Z,196nm,0.8s								
Q38A	Cooks Store, C	76.68	344	P		P		20 02 06.4	-0.5
	baz=163,SNR=9.6								
R35A	Emporia Munici	76.69	342	P		P		20 02 06.7	-0.3
	baz=161								
YLE	Yale	76.71	0	*e*P		P		20 02 08.7	+1.7
	comp=Z,89nm,0.9s								
DBIC	Dimbokro	76.77	72	P		P		20 02 07.7	-0.3
	comp=Z,79nm,0.7s,baz=206,slow=5.8,SNR=90								
DBIC				LR		LR		20 32 37.1	
	comp=Z,2µm,20.5s,baz=214,slow=33								
DBIC	Dimbokro	76.77	72	*e*P		P		20 02 07.7	-0.3
DBIC				pmax		pmax			
	comp=Z,499nm,1.8s								
DBIC	Dimbokro	76.77	72	*e*P		P		20 02 07.7	-0.3
	comp=Z,499nm,1.8s								
Q37A	Longview Farm,	76.79	343	P		P		20 02 06.6	-1.0
	baz=162								
SFIN	Lafayette	76.82	349	P		P		20 02 07.0	-0.7
	baz=168								
P41A	Barry, Barry	76.83	346	P		P		20 02 06.9	-0.8
	baz=165								
ANMO	Albuquerque	76.83	333	P		P		20 02 08.6	+0.5
	baz=153								
ANMO	Albuquerque	76.83	333	*de*P		P		20 02 08.7	+0.6
ANMO				pmax		pmax			
	comp=Z,33nm,1.2s								
ANMO	Albuquerque	76.83	333	*e*P		P		20 02 08.9	+0.8
	comp=Z,42nm,1.1s								
ANMO				LR		LR			
	comp=Z,2µm,20.0s								
S32A	Newby Ranch, P	76.85	339	P		P		20 02 08.3	+0.3
	baz=159,SNR=5.3								
214A	Organ Pipe Nat	76.86	326	P		P		20 02 09.4	+1.2
	baz=148								
214A	Organ Pipe Nat	76.86	326	*e*P		P		20 02 09.4	+1.2
	comp=Z,74nm,0.9s								
P40A	Paris	76.89	345	P		P		20 02 07.8	-0.3
	baz=164,SNR=40								
R34A	Isabella, Hill	76.95	341	P		P		20 02 08.3	-0.1
	baz=160,SNR=10								
P39B	Salisbury	76.99	345	P		P		20 02 07.9	-0.7
	baz=164,SNR=8.4								
Q36A	Arnold C. Orve	77.11	342	P		P		20 02 08.6	-0.8
	baz=162								
M54A	Oil Creek Stat	77.12	355	P		P		20 02 08.8	-0.5
	baz=175								
O42A	Bath	77.14	347	P		P		20 02 08.7	-0.7
	baz=166								
Q35A	Mercer Eighty,	77.16	342	P		P		20 02 09.3	-0.4
	baz=161								
O41A	Passleys Farm,	77.22	346	P		P		20 02 08.8	-1.1
	baz=165,SNR=17								
P38A	Dawn	77.30	344	P		P		20 02 09.7	-0.7
	baz=163,SNR=13								
BRYW	Bryant College	77.33	1	*e*P		P		20 02 11.9	+1.4
	comp=Z,98nm,1.1s								
HDIL	Hopedale	77.35	348	P		P		20 02 10.0	-0.7
	baz=167,SNR=6.1								
HDIL	Hopedale	77.35	348	*e*P		P		20 02 10.3	-0.3
HDIL	comp=Z,159nm,1.5s			LR		LR			
	comp=Z,894nm,19.0s								
O40A	La Belle	77.42	346	P		P		20 02 10.7	-0.3
	baz=164,SNR=13								
P37A	Lathrop	77.44	344	P		P		20 02 10.2	-1.0
	baz=162								
Q34A	Chapman	77.45	341	P		P		20 02 10.8	-0.5
	baz=160								
R32A	Long Quarter,	77.46	340	P		P		20 02 11.5	+0.1
	baz=159,SNR=5.8								
MIR	Mirnyy	77.47	174	*i* P		P		20 02 10.0	-1.1
MIR				pmax		pmax			
	comp=Z,4.0nm,1.5s								
KSU1	Kansas State U	77.53	342	P		P		20 02 11.1	-0.6
	baz=161								
KSU1	Kansas State U	77.53	342	*e*P		P		20 02 11.7	-0.1
	comp=Z,32nm,1.0s								
KSU1				LR		LR			
	comp=Z,828nm,19.0s								
BINY	Binghamton	77.63	358	*e*P		P		20 02 12.5	+0.3
	comp=Z,29nm,1.0s								
BINY				LR		LR			
	comp=Z,2µm,19.0s								
P36A	Good Intent, A	77.68	343	P		P		20 02 11.3	-1.2
	baz=162,SNR=6.9								
QUA2	Belchertown	77.68	1	*e*P		P		20 02 13.2	+0.8
	comp=Z,36nm,0.8s								
O39A	Kirksville	77.69	345	P		P		20 02 11.9	-0.7
	baz=164								
ERPA	Erie	77.75	355	*e*P		P		20 02 13.1	+0.3
	comp=Z,44nm,0.8s								
O38A	Galt	77.76	344	P		P		20 02 12.2	-0.8
	baz=163								
Q33A	Connelly Farm,	77.76	341	P		P		20 02 12.7	-0.3
	baz=160,SNR=5.6								
P35A	Duane Minner,	77.79	342	P		P		20 02 12.5	-0.7
	baz=161,SNR=11								
WES	Weston	77.80	2	*e*P		P		20 02 14.1	+1.0
WES				pmax		pmax			
	comp=Z,122nm,1.4s								
WES	Weston	77.80	2	*e*P		P		20 02 14.1	+1.0
	comp=Z,122nm,1.4s								
X18A	Snowflake	77.83	330	*e*P		P		20 02 14.9	+1.2
	comp=Z,23nm,1.1s								
HRV	Adam Dziewonsk	77.92	1	*e*P		P		20 02 14.9	+1.2
HRV				pmax		pmax			
	comp=Z,34nm,0.9s								
HRV	Adam Dziewonsk	77.92	1	*e*P		P		20 02 14.9	+1.2
	comp=Z,34nm,0.9s								
Q32A	Meitler Ranch,	77.95	340	P		P		20 02 14.1	0.0
	baz=159,SNR=7.0								
O37A	Wolven Farm, M	77.95	344	P		P		20 02 13.3	-0.8
	baz=163								
113A	Mohawk Valley,	77.98	326	*e*P		P		20 02 15.8	+1.5
	comp=Z,34nm,1.6s								
P34A	Walnut Farm, R	78.01	342	P		P		20 02 14.2	-0.2
	baz=161,SNR=8.8								
T25A	Trinidad	78.06	335	P		P		20 02 15.9	+0.9
	baz=154,SNR=21								
T25A	Trinidad	78.06	335	*e*P		P		20 02 16.1	+1.1
	comp=Z,172nm,1.5s								
O36A	Bolckow	78.11	343	P		P		20 02 13.6	-1.3
	baz=162								
CBKS	Cedar Bluff	78.11	339	P		P		20 02 15.1	+0.1
	baz=158,SNR=6.9								
CBKS	Cedar Bluff	78.11	339	*e*P		P		20 02 15.7	+0.7
CBKS				pmax		pmax			
	comp=Z,76nm,1.0s								
CBKS				MLR		MLR			
	comp=Z,620nm,19.0s								
CBKS	Cedar Bluff	78.11	339	*e*P		P		20 02 15.7	+0.7
	comp=Z,76nm,1.0s								
CBKS				LR		LR			
	comp=Z,620nm,19.0s								
TRY	Troy	78.12	360	*e*P		P		20 02 16.4	+1.5
	comp=Z,81nm,0.9s								
P33A	Williams Farm,	78.13	341	P		P		20 02 14.9	-0.2
	baz=160								
CASY	Casey	78.23	182	*e*P		P		20 02 15.1	-0.3
	comp=Z,158nm,1.5s								
CASY				LR		LR			
	comp=Z,536nm,19.0s								
MMNY	Mt. Morris Dam	78.23	357	*e*P		P		20 02 15.8	+0.3
W18A	Petrified Fore	78.26	330	P		P		20 02 17.2	+1.1
	baz=150								
W18A	Petrified Fore	78.26	330	*e*P		P		20 02 15.7	-0.4
	comp=Z,60nm,1.1s								
AAM	Ann Arbor	78.26	352		PFAKE			20 02 30.0	+14
AAM				LR		LR			
	comp=Z,1µm,19.0s								
N39A	Derby Farms, D	78.28	345	P		P		20 02 15.2	-0.6
	baz=164,SNR=14								
N38A	Joes South For	78.35	345	P		P		20 02 15.7	-0.5
	baz=164,SNR=6.2								
X16A	Lo Mia Camp, P	78.36	329	*e*P		P		20 02 18.2	+1.5
O35A	Humboldt	78.46	343	P		P		20 02 15.7	-1.1
	baz=161								
BUF	Buffalo	78.48	356	*e*P		P		20 02 17.1	+0.2
N37A	Lee Faris, Mou	78.53	344	P		P		20 02 16.6	-0.6
	baz=163								
P32A	Huiting Farm,	78.55	340	P		P		20 02 17.4	0.0
	baz=159								
O34A	Beatrice	78.57	342	P		P		20 02 17.1	-0.4
	baz=161,SNR=7.9								
GLA	Glamis	78.70	325	P		P		20 02 19.6	+1.2
	baz=147								
GLA	Glamis	78.70	325	*e*P		P		20 02 18.1	-0.3
GLA				pmax		pmax			
	comp=Z,21nm,1.0s								
GLA	Glamis	78.70	325	*e*P		P		20 02 18.1	-0.3
	comp=Z,21nm,1.0s								
O33A	Hebron	78.70	341	P		P		20 02 17.9	-0.3
	baz=160,SNR=6.2								
N36A	Muff Farm, Cla	78.75	343	P		P		20 02 17.7	-0.8
	baz=162								
ACCN	Adirondack Com	78.78	360	*e*P		P		20 02 19.1	+0.6
	comp=Z,49nm,1.3s								
M39A	Webster	78.79	346	P		P		20 02 17.9	-0.7
	baz=164								
FFD	Franklin Falls	78.88	1	*e*P		P		20 02 20.6	+1.6
	comp=Z,89nm,0.9s								
M38A	Pleasantville	78.94	345	P		P		20 02 19.0	-0.5
	baz=164,SNR=12								
N35A	Tabor	78.96	343	P		P		20 02 18.8	-0.7
	baz=162								
IKP	In-Ko-Pah, Jac	78.97	324	P		P		20 02 21.3	+1.3
	baz=146,SNR=10								
SDCO	Great Sand Dun	78.98	335	P		P		20 02 20.7	+0.6
	baz=154,SNR=18								
SDCO	Great Sand Dun	78.98	335	*e*P		P		20 02 20.8	+0.6
	comp=Z,17nm,1.0s								
SDCO				LR		LR			
	comp=Z,956nm,19.0s								
L41A	Preston	79.04	347	P		P		20 02 18.9	-1.1
	baz=166,SNR=14								
O32A	Brockman Farm,	79.06	341	P		P		20 02 20.1	-0.1
	baz=160,SNR=5.2								
SWSC	Sam W. Stewart	79.07	325	P		P		20 02 21.5	+1.2
	baz=146								
HNH	Hanover	79.10	1	*e*P		P		20 02 21.8	+1.5
	comp=Z,45nm,0.9s								
M37A	Trindle Farm,	79.11	344	P		P		20 02 20.3	-0.1
	baz=163								
N34A	Lincoln	79.14	342	P		P		20 02 19.8	-0.9
	baz=161								
Y12C	Blythe	79.15	326	P		P		20 02 22.2	+1.4
	baz=147,SNR=9.9								
Y12C	Blythe	79.15	326	*e*P		P		20 02 22.2	+1.4
	comp=Z,28nm,1.0s								
L40A	Amoosa	79.16	347	P		P		20 02 19.7	-1.0
	baz=165,SNR=10								
KSCO	Kaye Shedlock'	79.17	337	P		P		20 02 21.7	+0.8
	baz=156								
KSCO	Kaye Shedlock'	79.17	337	*e*P		P		20 02 22.1	+1.1
	comp=Z,108nm,1.5s								
O31A	Woolen Ranch,	79.24	340	P		P		20 02 21.0	-0.2
	baz=159								
BAR	Barrett	79.26	324	*e*P		P		20 02 22.9	+1.5
	comp=Z,16nm,0.9s								
WUAZ	Wupatki	79.27	329	P		P		20 02 22.7	+1.0
	baz=149,SNR=13								
WUAZ	Wupatki	79.27	329	*e*P		P		20 02 22.8	+1.2
	comp=Z,30nm,1.1s								
WUAZ				LR		LR			
	comp=Z,916nm,20.0s								
MONP2	Monument Peak	79.32	324	P		P		20 02 23.1	+1.1
	baz=146,SNR=7.4								
M36A	Felix, Anita	79.33	344	P		P		20 02 20.9	-0.7
	baz=162								
NCB	Newcomb	79.37	359	*e*P		P		20 02 22.0	+0.2
	comp=Z,0.2nm,0.8s								
L39A	Vinton	79.37	346	P		P		20 02 20.8	-1.1
	baz=164,SNR=9.1								
MDV	Middlebury	79.39	0	*e*P		P		20 02 22.3	+0.5
SCIA	State Center	79.41	345		PFAKE			20 02 30.0	+8.0
SCIA				LR		LR			
	comp=Z,668nm,20.0s								
PDMCI	Parker Dam,Lak	79.44	327	P		P		20 02 23.7	+1.4
	baz=147								
S22A	4UR Ranch, Cre	79.45	334	P		P		20 02 23.3	+0.6
	baz=153,SNR=12								
S22A	4UR Ranch, Cre	79.45	334	*e*P		P		20 02 23.5	+0.8
	comp=Z,28nm,1.2s								
BC3	Big Chuckawall	79.49	325	P		P		20 02 23.7	+0.9
	baz=146,SNR=23								
K41A	Shullsburg	79.52	347	P		P		20 02 21.9	-0.7
	baz=166,SNR=18								
N32A	Stein Farm,	79.53	341	P		P		20 02 22.7	-0.1
	baz=160								
M35A	Neola	79.55	343	P		P		20 02 22.4	-0.3
	baz=162								
L38A	Oak Wood Farm,	79.58	345	P		P		20 02 22.2	-0.7
	baz=164								
MVCO	Mesa Verde	79.60	332	P		P		20 02 24.1	+0.6
	baz=152,SNR=11								
MVCO	Mesa Verde	79.60	332	*e*P		P		20 02 24.1	+0.6
	comp=Z,76nm,1.5s								
MVCO				LR		LR			
	comp=Z,3µm,20.0s								
109C	Camp Elliot, M	79.64	324	P		P		20 02 24.7	+1.3
	baz=145								
LBNH	Lisbon	79.64	1	*e*P		P		20 02 24.1	+0.9
LBNH				pmax		pmax			
	comp=Z,33nm,0.9s								
LBNH	Lisbon	79.64	1	*e*P		P		20 02 24.1	+0.9
	comp=Z,33nm,0.9s								
L37A	Phoenix Point,	79.73	345	P		P		20 02 22.8	-0.9
	baz=163,SNR=7.3								
K40A	Colesburg	79.77	347	P		P		20 02 23.1	-0.8
	baz=165,SNR=14								
N31A	Bailey Ranch,	79.77	341	P		P		20 02 23.8	-0.2
	baz=159								
IRM	Iron Mountain	79.77	326	P		P		20 02 25.4	+1.2
	baz=146,SNR=14								
TSUM	Tsumeb	79.77	106	*e*P		P		20 02 24.7	-0.1
TSUM	comp=Z,66nm,1.4s			LR		LR			
	comp=Z,2µm,20.0s								
M34A	Aspy Farms, Fr	79.79	342	P		P		20 02 23.7	-0.5
	baz=161								
JFWS	Jewell Farm	79.81	347	*e*P		P		20 02 24.0	-0.2
JFWS				pmax		pmax			
	comp=Z,57nm,1.0s								
JFWS				MLR		MLR			
	comp=Z,1µm,21.0s								
JFWS	Jewell Farm	79.81	347	*e*P		P		20 02 24.0	-0.2
	comp=Z,57nm,1.0s								
JFWS				LR		LR			
	comp=Z,1µm,21.0s								
K39A	Oelwein	79.91	346	P		P		20 02 23.7	-1.0
	baz=165,SNR=10								
L36A	Harm Buss Farm	79.91	344	P		P		20 02 24.1	-0.7
	baz=162,SNR=7.3								
TPFO	Pinon Flats	79.92	325	P		P		20 02 26.5	+1.4
	baz=146,SNR=13								
PFO	Pinyon Flats O	79.93	325	P		P		20 02 26.8	+1.6
	baz=146,SNR=14								
PFO	Pinyon Flats O	79.93	325	*e*P		P		20 02 26.4	+1.2
PFO				pmax		pmax			
	comp=Z,36nm,1.1s								
PFO				MLR		MLR			
	comp=Z,1µm,19.0s								
PFO	Pinyon Flats O	79.93	325	*e*P		P		20 02 26.4	+1.2
	comp=Z,36nm,1.1s								
PFO				LR		LR			
	comp=Z,1µm,19.0s								
Q24A	Divide	79.95	335	P		P		20 02 26.0	+0.6
	baz=154,SNR=12								
Q24A	Divide	79.95	335	*e*P		P		20 02 26.1	+0.7
	comp=Z,70nm,1.5s								
W13A	Hualapai Mount	79.99	327	*e*P		P		20 02 26.9	+1.3
	comp=Z,8.7nm,0.9s								
M33A	Taylor Creek F	80.01	342	P		P		20 02 24.7	-0.6
	baz=160								
LONY	Lake Ozonia	80.02	359	*e*P		P		20 02 25.6	+0.3
	comp=Z,34nm,0.9s								
LONY				LR		LR			
	comp=Z,1µm,19.0s								
WVL	Waterville	80.03	3	*e*P		P		20 02 27.0	+1.7
	comp=Z,77nm,1.2s								
K38A	Parkersburg	80.03	346	P		P		20 02 24.6	-0.8
	baz=164								
BELC	Belle Mtn. Jos	80.03	325	P		P		20 02 27.1	+1.3
	baz=146,SNR=7.6								
NEE2	Needles Airpor	80.04	327	P		P		20 02 26.4	+0.8
	baz=147								
BGNE	Belgrade	80.10	341	P		P		20 02 25.8	0.0
	baz=160								
BGNE	Belgrade	80.10	341	*e*P		P		20 02 26.3	+0.4
	comp=Z,81nm,1.1s								
L35A	Bielow Farm, R	80.12	343	P		P		20 02 25.4	-0.5
	baz=162								
L34A	Svendsen Farm,	80.18	343	P		P		20 02 25.6	-0.6
	baz=161								
BOSA	Boshof	80.20	118	P		P		20 02 26.4	-0.7
	comp=Z,69nm,0.9s,baz=233,slow=5.3,SNR=70								
BOSA				LR		LR		20 33 27.8	
	comp=Z,2µm,20.3s,baz=230,slow=32								
BOSA	Boshof	80.20	118	*e*P		P		20 02 26.2	-0.9
BOSA				pmax		pmax			
	comp=Z,119nm,1.0s								
BOSA	Boshof	80.20	118	*e*P		P		20 02 26.2	-0.9
	comp=Z,119nm,1.0s								
J41A	Loganville	80.21	348	P		P		20 02 25.7	-0.7
	baz=166,SNR=17								
FRNY	Flat Rock	80.23	360	*e*P		P		20 02 26.9	+0.5
	comp=Z,34nm,0.9s								
M31A	Lambtecht Ranc	80.26	341	P		P		20 02 26.9	+0.2
	baz=159								
MURC	Murrieta	80.27	324	P		P		20 02 28.5	+1.5
	baz=145								
EMMW	East Machias	80.28	4	*e*P		P		20 02 28.3	+1.7
	comp=Z,47nm,1.0s								
K37A	Belmond	80.33	345	P		P		20 02 26.0	-1.0
	baz=163,SNR=11								
SADO	Sadowa	80.33	356	*e*P		P		20 02 26.7	-0.2
	comp=Z,30nm,0.9s								
J40A	Soldiers Grove	80.37	347	P		P		20 02 26.3	-0.8
	baz=166,SNR=9.6								
SCI2	San Clemente I	80.42	323	P		P		20 02 29.0	+1.3
	baz=144								
U15A	North Rim	80.44	329	*e*P		P		20 02 29.2	+1.2
	comp=Z,23nm,1.0s								
PV01	Paradox Valley	80.44	333	*e*P		P		20 02 29.2	+1.2
J39A	Decorah	80.48	347	P		P		20 02 26.8	-1.1
	baz=165,SNR=10								
PLVO	Plevna	80.50	357	*e*P		P		20 02 28.1	+0.2
	comp=Z,45nm,1.2s								
GMRC	Granite Mounta	80.53	326	P		P		20 02 29.7	+1.3
	baz=146,SNR=22								
PV05	Paradox Valley	80.59	332	*e*P		P		20 02 29.8	+1.0
L33A	Hoskins	80.59	342	P		P		20 02 28.1	-0.3
	baz=160								
J38A	Wedel Dairy, R	80.62	346	P		P		20 02 27.4	-1.2
	baz=164,SNR=8.5								
L32A	Elgin	80.62	342	P		P		20 02 28.3	-0.3
	baz=160								
K35A	Storm Lake	80.63	344	P		P		20 02 28.5	-0.1
	baz=162								
BBRC	Big Bear Solar	80.68	325	P		P		20 02 30.7	+1.4
	baz=145								
CIS	Catalina Islan	80.69	323	P		P		20 02 31.4	+2.2
	baz=144								
GGN	Saint George	80.73	5	*e*P		P		20 02 30.6	+1.6
	comp=Z,175nm,2.0s								
PKME	Peaks-Kenny Pk	80.74	3	*e*P		P		20 02 30.0	+0.9
	comp=Z,31nm,1.0s								
PKME				LR		LR			
	comp=Z,1µm,22.0s								
OGNE	Ogallala	80.76	338	P		P		20 02 30.0	+0.5
	baz=157								
OGNE	Ogallala	80.76	338	*e*P		P		20 02 30.2	+0.8
	comp=Z,33nm,1.0s								
OGNE				LR		LR			
	comp=Z,678nm,19.0s								
SMCO	Snowmass	80.78	334	*e*P		P		20 02 31.7	+1.7
	comp=Z,53nm,1.2s								
PV04	Paradox Valley	80.79	332	*e*P		P		20 02 30.5	+0.7
K34A	Le Mars	80.80	343	P		P		20 02 29.0	-0.5
	baz=161								
PV10	Paradox Valley	80.83	332	*e*P		P		20 02 30.6	+0.5
J37A	Redenius Farm,	80.83	345	P		P		20 02 28.9	-0.7
	baz=163,SNR=13								
ISCO	Idaho Springs	80.86	335	P		P		20 02 30.7	+0.4
	baz=154,SNR=6.8								
ISCO	Idaho Springs	80.86	335	*e*P		P		20 02 30.8	+0.5
ISCO				pmax		pmax			
	comp=Z,34nm,1.4s								
ISCO				MLR		MLR			
	comp=Z,1µm,19.0s								
ISCO	Idaho Springs	80.86	335	*e*P		P		20 02 30.8	+0.5
	comp=Z,34nm,1.4s								
ISCO				LR		LR			
	comp=Z,1µm,19.0s								
HEC	Hector,Ludlow	80.87	325	P		P		20 02 31.8	+1.6
	baz=146								
PV09	Paradox Valley	80.97	332	*e*P		P		20 02 32.1	+1.1
L31A	Butterfield Fa	81.00	341	P		P		20 02 31.1	+0.4
	baz=159								
BFSC	Mount Baldy Ra	81.01	324	P		P		20 02 31.9	+0.9
	baz=145,SNR=11								
J36A	Seneca 1, Swea	81.01	345	P		P		20 02 30.2	-0.4
	baz=163,SNR=19								
SNZO	South Karori	81.15	225		PFAKE			20 02 40.0	+8.3
SNZO				LR		LR			
	comp=Z,2µm,20.0s								
KNB	Kanab	81.16	329	*e*P		P		20 02 33.1	+1.3
KNB				pmax		pmax			
	comp=Z,90nm,1.3s								
KNB	Kanab	81.16	329	*e*P		P		20 02 33.1	+1.3
	comp=Z,90nm,1.3s								
TUQ	Turquoise Moun	81.19	326	P		P		20 02 33.0	+1.1
	baz=146,SNR=12								
M

baz=161,SNR=6.4
I36A Fitzsimmons Fa 81.60 345 P P 20 02 33.4 -0.3
baz=163
LMN Caledonia Moun 81.61 6 eP P 20 02 34.6 +0.8
comp=Z,42nm,0.9s
TRQ Mont Tremblant 81.62 359 eP P 20 02 33.9 0.0
I35A Creekview Farm 81.66 344 P P 20 02 33.4 -0.6
baz=162,SNR=8.1
K30A Basset 81.67 341 P P 20 02 34.3 +0.1
baz=159
EDW2 Edwards Air Fo 81.69 324 P P 20 02 35.3 +0.8
baz=145,SNR=11
SHOC Shoshone, Teco 81.73 326 P P 20 02 35.5 +0.8
baz=146
SHPR Sheep Range 81.73 327 eP P 20 02 36.3 +1.4
comp=Z,67nm,1.6s
SZCU Shurtz Canyon 81.76 329 eP P 20 02 36.8 +1.7
comp=Z,60nm,1.2s
SCZ2 Santa Cruz Isl 81.77 323 P P 20 02 36.0 +1.1
baz=144,SNR=5.3
CCUT Cedar City 81.84 329 eP P 20 02 37.2 +1.7
comp=Z,41nm,1.1s
J32A Parkston 81.87 342 P P 20 02 34.8 -0.3
baz=160
ECSD EROS Data Cent 81.91 343 P P 20 02 35.0 -0.3
baz=161,SNR=33
ECSD EROS Data Cent 81.91 343 eP P 20 02 35.2 -0.2
comp=Z,76nm,1.0s
ECSD LR LR
comp=Z,608nm,20.0s
H37A Dierke Farm, C 81.92 346 P P 20 02 34.7 -0.7
baz=164
N23A Red Feather La 81.95 336 P P 20 02 35.9 -0.1
baz=154
J31A Geddes 82.02 342 P P 20 02 35.6 -0.3
baz=159
I34A Hadley 82.02 344 P P 20 02 35.5 -0.5
baz=162
LRMC Laurel Mtn Rad 82.03 325 P P 20 02 37.6 +1.2
baz=145,SNR=9.5
SRU San Rafael Swe 82.03 332 eP P 20 02 37.2 +0.8
SRU pmax pmax
comp=Z,21nm,1.0s
SRU San Rafael Swe 82.03 332 eP P 20 02 37.2 +0.8
comp=Z,21nm,1.0s
O20A White River Ci 82.08 334 P P 20 02 37.3 +0.7
baz=152
O20A White River Ci 82.08 334 eP P 20 02 37.6 +0.9
comp=Z,31nm,1.3s
H36A Jessenland, He 82.12 345 P P 20 02 36.1 -0.3
baz=163,SNR=7.3
PHWY Pilot Hill 82.16 336 eP P 20 02 37.8 +0.7
comp=Z,56nm,1.4s
SBC Santa Barbara 82.17 323 P P 20 02 38.5 +1.5
baz=144
MSU Marysvale 82.17 330 eP P 20 02 38.2 +1.0
MSU Marysvale 82.17 330 eP P 20 02 38.1 +1.0
J30A Dallas 82.24 341 P P 20 02 36.9 -0.3
baz=159,SNR=7.6
I33A Coleman 82.25 343 P P 20 02 36.8 -0.4
baz=161,SNR=5.5
ARVC Arvin 82.29 324 P P 20 02 38.7 +1.1
baz=144
I32A Karley and Nic 82.39 343 P P 20 02 37.6 -0.3
baz=160
MPMC Manual Prospec 82.42 325 P P 20 02 39.4 +0.9
baz=145,SNR=12
H35A Sunnyside Ranc 82.42 345 P P 20 02 37.5 -0.5
baz=162,SNR=8.8
P17A Butcher Ranch, 82.43 332 eP P 20 02 39.4 +0.9
comp=Z,50nm,1.2s
TMUT Trail Mountain 82.46 331 eP P 20 02 39.9 +1.1
comp=Z,24nm,0.9s
FURC Furnace Creek, 82.47 326 P P 20 02 39.7 +1.2
baz=146,SNR=10
SPMN Marine on St. 82.52 346 P P 20 02 37.2 -1.3
baz=164
SPMN Marine on St. 82.52 346 eP P 20 02 38.0 -0.5
comp=Z,28nm,0.8s
LBTB Lobatse 82.54 115 eP P 20 02 39.0 -0.5
LBTB pmax pmax
comp=Z,59nm,0.8s
LBTB Lobatse 82.54 115 eP P 20 02 39.0 -0.5
comp=Z,59nm,0.8s
ISA Isabella, Lake 82.56 324 P P 20 02 40.3 +1.2
baz=144,SNR=7.6
ISA Isabella, Lake 82.56 324 eP P 20 02 40.4 +1.4
ISA pmax pmax
comp=Z,23nm,0.9s
ISA Isabella, Lake 82.56 324 eP P 20 02 40.4 +1.4
comp=Z,23nm,0.9s
PKM Mcpherson Peak 82.57 323 P P 20 02 40.6 +1.3
baz=144,SNR=19
TPNV Topopah Spring 82.59 327 P P 20 02 40.6 +1.3
baz=146,SNR=19
TPNV Topopah Spring 82.59 327 eP P 20 02 40.7 +1.4
TPNV pmax pmax
comp=Z,23nm,1.0s
TPNV Topopah Spring 82.59 327 eP P 20 02 40.7 +1.4
comp=Z,22nm,1.0s
H34A Spellman Lake, 82.60 344 P P 20 02 38.5 -0.5
baz=162,SNR=14
DAC Darwin (Calif) 82.64 325 eP P 20 02 40.8 +1.2
DAC pmax pmax
comp=Z,33nm,1.1s
DAC Darwin (Calif) 82.64 325 eP P 20 02 40.8 +1.2
comp=Z,33nm,1.1s
I31A Royce, Wessing 82.66 342 P P 20 02 39.1 -0.2
baz=160
G36A St. Michael 82.71 346 P P 20 02 39.0 -0.5
baz=163
COWI Conover 82.73 349 eP P 20 02 39.4 -0.2
COWI LR LR
comp=Z,24nm,0.9s
comp=Z,1µm,22.0s
H32A Carlson Farm, 82.83 343 P P 20 02 39.7 -0.5
baz=160,SNR=7.0
H33A Prehn Over Nor 82.83 343 P P 20 02 39.8 -0.5
baz=161,SNR=14
G35A Watkins 82.85 345 P P 20 02 39.9 -0.4
baz=163
LMQ La Malbaie 82.99 2 eP P 20 02 41.2 +0.3
VES Vestal, Richgr 82.99 324 P P 20 02 42.1 +0.9
baz=144,SNR=8.0
CWC Cottonwood Cre 83.00 325 P P 20 02 42.9 +1.4
baz=145
SMMC Simmler 83.00 323 P P 20 02 43.1 +1.8
baz=143
H31A Wolsey 83.06 342 P P 20 02 40.8 -0.6
baz=160,SNR=7.1
G34A Benson 83.12 344 P P 20 02 41.0 -0.6
baz=162
GRAC Grapevine Rang 83.13 326 P P 20 02 43.5 +1.5
baz=145,SNR=5.8
SUSD Miller 83.15 342 P P 20 02 41.5 -0.4
baz=159
G33A Ortonville 83.25 344 P P 20 02 41.6 -0.7
baz=161
F36A Milaca 83.27 346 P P 20 02 41.6 -0.8
baz=164,SNR=18
NLU North Lily Min 83.36 331 eP P 20 02 44.6 +1.2
comp=Z,39nm,1.2s
R11A Troy Canyon, C 83.46 328 P P 20 02 45.0 +1.1
baz=147,SNR=33
R11A Troy Canyon, C 83.46 328 eP P 20 02 44.9 +1.1
comp=Z,41nm,1.3s
PAGB Antelope Grade 83.46 323 eP P 20 02 45.7 +2.0
comp=Z,34nm,1.1s
F35A Swanville 83.48 345 P P 20 02 43.1 -0.4
baz=163
G32A Webster 83.55 343 P P 20 02 43.5 -0.5
baz=160
F34A Alexandria 83.56 345 P P 20 02 43.5 -0.4
baz=162
TIN Tinemaha, Big 83.57 325 P P 20 02 45.3 +1.0
baz=145
VLDQ Val d'Or 83.59 357 eP P 20 02 44.0 +0.1
comp=Z,43nm,1.0s
JLU Jordanelle 83.68 332 eP P 20 02 45.9 +0.9
comp=Z,27nm,1.0s
G31A Conde 83.70 343 P P 20 02 44.1 -0.6
baz=160
K22A Casper 83.72 336 P P 20 02 44.8 -0.2
baz=153
K22A Casper 83.72 336 eP P 20 02 45.8 +0.7
comp=Z,66nm,1.1s
E37A Wrenshall 83.73 347 P P 20 02 44.3 -0.5
baz=164

F33A 5 Mile Ranch, 83.83 344 P P 20 02 44.4 -0.9
baz=161,SNR=11
E36A McGregor 83.85 346 P P 20 02 44.9 -0.5
baz=164,SNR=14
DUG Dugway, Tooele 83.86 331 P P 20 02 46.4 +0.6
baz=149,SNR=39
DUG Dugway, Tooele 83.86 331 eP P 20 02 46.1 +0.3
DUG pmax pmax
comp=Z,83nm,1.2s
DUG MLR MLR
comp=Z,754nm,21.0s
DUG Dugway, Tooele 83.86 331 eP P 20 02 46.1 +0.3
comp=Z,82nm,1.2s
DUG LR LR
comp=Z,754nm,21.0s
CTU Camp Tracy 83.87 332 eP P 20 02 47.0 +1.1
comp=Z,52nm,1.2s
F32A Veblen 84.05 344 P P 20 02 45.6 -0.8
baz=161
TCUT Toone Canyon 84.11 332 eP P 20 02 48.1 +1.0
comp=Z,87nm,1.2s
E35A Pequot Lakes 84.11 346 P P 20 02 46.1 -0.6
baz=163
PMPB Monarch Peak 84.12 323 eP P 20 02 49.9 +2.8
comp=Z,39nm,1.2s
E34A Wadena 84.23 345 P P 20 02 47.0 -0.3
baz=162
RSSD Black Hills 84.26 338 P P 20 02 47.7 -0.2
baz=155
F31A Hecla 84.30 343 P P 20 02 47.2 -0.5
baz=160,SNR=8.8
D37A Cotton 84.31 347 P P 20 02 46.9 -0.8
baz=164,SNR=6.9
MLAC Mammoth, Mammo 84.32 325 P P 20 02 49.1 +0.8
baz=144
E33A Westby DABS, E 84.40 344 P P 20 02 47.5 -0.7
baz=162
MCU Monte Cristo P 84.44 332 eP P 20 02 49.2 +0.3
D36A Goodland 84.46 347 P P 20 02 47.6 -0.9
baz=164
D35A Remer 84.54 346 P P 20 02 48.0 -0.9
baz=163,SNR=20
C39A Grand Marais 84.55 349 P P 20 02 48.0 -1.0
baz=166,SNR=7.7
BGU Big Grassy Mou 84.57 331 eP P 20 02 49.6 +0.2
comp=Z,34nm,1.3s
H25A Fruitdale 84.58 339 P P 20 02 48.8 -0.4
baz=156
HWUT Hardware Ranch 84.59 332 eP P 20 02 50.1 +0.6
comp=Z,57nm,1.1s
HWUT LR LR
comp=Z,1µm,20.0s
C38A Sawbill Land. 84.64 348 P P 20 02 48.3 -1.1
baz=165,SNR=13
F29A Eureka 84.67 342 P P 20 02 49.2 -0.4
baz=158
SPUT South Promonto 84.67 332 eP P 20 02 50.7 +0.8
comp=Z,61nm,1.1s
E32A Braaten, Kindr 84.72 344 P P 20 02 49.1 -0.6
baz=161
C37A Embarrass 84.81 347 P P 20 02 49.5 -0.7
baz=165,SNR=6.2
PDAR Pinedale Array 84.86 334 P P 20 02 51.1 +0.2
comp=Z,3.0nm,0.8s,baz=159,slow=4.6,SNR=12
BW06 Boulder Array 84.86 334 P P 20 02 50.5 -0.5
baz=151
BW06 Boulder Array 84.86 334 eP P 20 02 50.4 -0.5
BW06 LR LR
comp=Z,2µm,19.0s
E31A Nome 84.87 343 P P 20 02 50.2 -0.4
baz=160,SNR=13
TVH3 East Aurora ar 84.90 326 eP P 20 02 53.1 +1.9
comp=Z,26nm,1.3s
EYMN Ely 84.90 348 P P 20 02 49.7 -1.0
baz=165,SNR=9.4
EYMN Ely 84.90 348 eP P 20 02 50.7 0.0
comp=Z,35nm,1.1s
EYMN LR LR
comp=Z,834nm,21.0s
C36A Pine Crest Far 84.96 347 P P 20 02 50.0 -1.0
baz=164,SNR=6.4
TVH1 TV Hill, Hawth 84.96 326 eP P 20 02 53.2 +1.5
comp=Z,46nm,0.3s
D33A Wam Sam, Waubun 84.97 345 P P 20 02 50.3 -0.7
baz=162
C35A Jirik Farms, M 85.12 346 P P 20 02 51.2 -0.6
baz=163,SNR=12
HVU Hansel Valley 85.20 332 eP P 20 02 52.8 +0.3
HVU pmax pmax
comp=Z,29nm,1.0s
HVU Hansel Valley 85.20 332 eP P 20 02 52.8 +0.3
comp=Z,29nm,1.0s
D32A Dogwood Acres, 85.22 344 P P 20 02 51.8 -0.5
baz=161
C34A RKJ Ranch, Bem 85.26 346 P P 20 02 51.6 -0.9
baz=162
D31A Mcclaflin, Tow 85.30 344 P P 20 02 52.3 -0.3
baz=160
WAKR Walker 85.31 325 eP P 20 02 54.2 +1.0
comp=Z,23nm,1.0s
JLAB Laurel Hill 85.32 323 eP P 20 02 53.4 +0.4
CMB Columbia Colle 85.37 325 eP P 20 02 54.4 +1.0
CMB pmax pmax
comp=Z,19nm,1.1s
CMB Columbia Colle 85.37 325 eP P 20 02 54.4 +1.0
comp=Z,19nm,1.1s
AHID Auburn Hatcher 85.42 333 eP P 20 02 54.2 +0.5
comp=Z,103nm,1.8s
AHID LR LR
comp=Z,2µm,20.0s
CMLA Cha da Macela 85.54 36 PFAKE 20 03 10.0 +16
CMLA LR LR
comp=Z,3µm,19.0s
C33A Trail 85.54 345 P P 20 02 53.3 -0.6
baz=162
YERR Yerington 85.61 326 eP P 20 02 56.3 +1.6
comp=Z,46nm,1.3s
B35A Bob, Littlefor 85.70 347 P P 20 02 53.9 -0.8
baz=163,SNR=7.0
C32A Crookston 85.76 345 P P 20 02 54.6 -0.4
baz=161
DRLN Deer Lake 85.82 10 eP P 20 02 55.8 +0.6
comp=Z,53nm,0.8s
TOA0 Torodi Ar. Sit 85.83 71 eP P 20 02 54.9 -1.2
TORD Torodi Ar. Bea 85.83 71 P P 20 02 55.5 -0.6
comp=Z,32nm,1.1s,baz=237,slow=4.2,SNR=94
TORD PP PP 20 06 17.0 +1.2
comp=Z,4.2nm,0.8s,baz=234,slow=6.8,SNR=3.5
REDW Red Top Meadow 85.84 334 eP P 20 02 55.8 0.0
comp=Z,64nm,1.4s
PNTR Pine Nut 85.85 326 eP P 20 02 57.7 +1.7
comp=Z,31nm,0.9s
SNOW Snow King Moun 85.90 334 eP P 20 02 57.1 +1.1
comp=Z,46nm,1.4s
LOHW Long Hollow 85.97 334 eP P 20 02 56.9 +0.5
comp=Z,29nm,1.3s
B33A Robert and Kas 85.99 345 P P 20 02 55.5 -0.6
baz=162
TPAW Teton Pass 85.99 334 eP P 20 02 57.1 +0.5
comp=Z,54nm,1.2s
C31A Landman Farms, 86.00 344 P P 20 02 55.8 -0.4
baz=160,SNR=12
B34A Aery, Baudette 86.00 346 P P 20 02 55.7 -0.5
baz=163
AGMN Agassiz Nation 86.07 345 P P 20 02 55.9 -0.6
baz=162,SNR=15
AGMN Agassiz Nation 86.07 345 eP P 20 02 56.2 -0.3
AGMN LR LR
comp=Z,27nm,0.9s
comp=Z,1µm,19.0s
PMOZ Porto Moniz, M 86.14 45 eP P 20 03 00.4 +3.1
comp=Z,115nm,1.7s
PMOZ Porto Moniz, M 86.14 45 eSKS S 20 13 41.1 +9.1
PMOZ Porto Moniz, M 86.14 45 eLR LR 20 36 59.7
comp=Z,2µm,20.0s
MOOW Moose Ponds 86.14 334 eP P 20 02 57.5 +0.3
comp=Z,13nm,1.1s
PMAR Madeira 86.22 45 eP P 20 03 03.5 +5.6
comp=Z,118nm,1.7s
PAHR Pah Rah Range 86.25 326 eP P 20 02 59.4 +1.6
comp=Z,17nm,1.0s
B32A Ashes, Strandq 86.31 345 P P 20 02 57.2 -0.5
baz=161,SNR=10
IMW Indian Meadow 86.34 334 eP P 20 02 58.9 +0.5
comp=Z,44nm,1.1s
AFDM Forest Hills D 86.38 325 eP P 20 02 59.3 +1.0
comp=Z,54nm,1.6s
XMAS Kiritimati 86.38 275 PFAKE 20 03 10.0 +11

XMAS LR LR
comp=Z,6.0nm,22.0s
FLWY Flagg Ranch 86.42 334 eP P 20 02 59.3 +0.7
comp=Z,80nm,1.4s
MDND Maddock 86.49 343 P P 20 02 58.7 +0.1
baz=159
MDND Maddock 86.49 343 eP P 20 02 59.1 +0.5
comp=Z,212nm,1.3s
B31A Greenbush Farm 86.58 344 P P 20 02 58.0 -0.9
baz=160
A33A Warroad 86.58 346 P P 20 02 58.5 -0.5
baz=162,SNR=14
LKWY Lake 86.73 334 PFAKE 20 03 10.0 +10
LKWY LR LR
comp=Z,2µm,19.0s
RLMT Red Lodge 86.83 335 P P 20 03 00.7 +0.1
baz=151
RLMT Red Lodge 86.83 335 eP P 20 03 00.9 +0.3
comp=Z,21nm,1.0s
RLMT LR LR
comp=Z,626nm,19.0s
YMR Madison River 87.02 334 eP P 20 03 03.2 +1.7
comp=Z,61nm,1.2s
YHH Holmes Hill 87.08 334 eP P 20 03 03.4 +1.4
comp=Z,42nm,1.0s
ORV Oroville 87.11 325 eP P 20 03 03.1 +1.3
ORV pmax pmax
comp=Z,65nm,1.3s
ORV Oroville 87.11 325 eP P 20 03 03.1 +1.3
comp=Z,65nm,1.3s
LAO LASA Array 87.24 338 P P 20 03 02.4 0.0
baz=154
LAO LASA Array 87.24 338 eP P 20 03 02.3 0.0
comp=Z,40nm,1.0s
LAO LR LR
comp=Z,466nm,20.0s
QLMT Earthquake Lak 87.32 334 eP P 20 03 04.3 +1.3
HLID Hailey 87.35 331 P P 20 03 04.0 +0.9
baz=148
HLID Hailey 87.35 331 eP P 20 03 03.9 +0.8
HLID LR LR
comp=Z,586nm,19.0s
MFID Camas Ranch 87.79 331 eP P 20 03 06.0 +0.8
comp=Z,41nm,1.3s
O03D Paynes Creek 87.83 325 P P 20 03 05.8 +0.4
baz=142
MCMT McKenzie Canyo 87.84 333 P P 20 03 06.6 +1.1
ULM Lac du Bonnet 87.93 346 P P 20 03 05.1 -0.4
comp=Z,34nm,0.8s,baz=178,slow=3.3,SNR=43
ULM Lac du Bonnet 87.93 346 eP P 20 03 05.1 -0.4
ULM pmax pmax
comp=Z,73nm,1.1s
ULM Lac du Bonnet 87.93 346 eP P 20 03 05.1 -0.4
comp=Z,73nm,1.1s
BOZ Bozeman (W) 88.10 334 P P 20 03 06.6 0.0
baz=150
BOZ Bozeman (W) 88.10 334 PFAKE 20 03 20.0 +13
BOZ LR LR
comp=Z,1µm,19.0s
WVOR Wild Horse Val 88.14 328 eP P 20 03 07.7 +0.8
WVOR pmax pmax
comp=Z,36nm,1.1s
WVOR MLR MLR
comp=Z,798nm,19.0s
WVOR Wild Horse Val 88.14 328 eP P 20 03 07.7 +0.8
comp=Z,36nm,1.1s
WVOR LR LR
comp=Z,798nm,19.0s
DLMT Dillon 88.20 334 eP P 20 03 08.0 +0.9
comp=Z,39nm,1.4s
DGMT Dagmar 88.26 340 P P 20 03 07.3 +0.2
baz=155
DGMT Dagmar 88.26 340 eP P 20 03 07.3 +0.2
comp=Z,174nm,1.1s
DGMT LR LR
comp=Z,595nm,21.0s
LTIM Timbered Crate 88.39 326 P P 20 03 09.1 +1.1
WDC Whiskeytown Da 88.41 325 eP P 20 03 08.2 +0.2
WDC pmax pmax
comp=Z,40nm,1.6s
WDC Whiskeytown Da 88.41 325 eP P 20 03 08.2 +0.2
comp=Z,40nm,1.6s
MOD Modoc Plateau 88.44 327 eP P 20 03 09.4 +1.1
comp=Z,55nm,1.0s
LRM Limekiln Ridge 88.54 334 eP P 20 03 09.6 +0.7
AFI Afiamalu 88.66 254 PFAKE 20 03 20.0 +10
AFI LR LR
comp=Z,2µm,19.0s
N02D Trinity Center 88.79 325 P P 20 03 11.1 +1.1
baz=142
M04C Macdoel 89.03 326 P P 20 03 11.9 +0.8
baz=142
M02C Callahan 89.19 325 P P 20 03 12.8 +1.0
baz=142
K05A Summer Lake 89.36 327 eP P 20 03 14.3 +1.6
comp=Z,72nm,1.1s
YBH Yreka Blue Hor 89.39 325 eP P 20 03 13.5 +0.8
YBH pmax pmax
comp=Z,16nm,0.9s
YBH Yreka Blue Hor 89.39 325 eP P 20 03 13.5 +0.8
comp=Z,16nm,0.9s
EGMT Eagleton 89.53 337 P P 20 03 13.3 0.0
baz=151
EGMT Eagleton 89.53 337 eP P 20 03 12.9 -0.3
comp=Z,16nm,1.0s
EGMT LR LR
comp=Z,473nm,22.0s
BMO Blue Mountains 89.57 330 eP P 20 03 14.2 +0.6
comp=Z,15nm,1.2s
BMO LR LR
comp=Z,737nm,19.0s
CHMT Chamberlain Mo 89.77 334 eP P 20 03 15.1 +0.6
MSO Missoula 89.94 333 P P 20 03 15.7 +0.5
baz=148
MSO Missoula 89.94 333 eP P 20 03 17.5 +2.3
comp=Z,21nm,1.4s
J05D Fort Rock, OR 89.95 327 P P 20 03 16.4 +1.0
baz=143
SLMT Seeley Lake 90.13 334 eP P 20 03 16.5 +0.4
L02D Cave Junction, 90.14 325 P P 20 03 17.6 +1.5
baz=141
LSZ Lusaka 90.27 109 eP P 20 03 18.1 +0.5
LSZ pmax pmax
comp=Z,57nm,1.4s
LSZ MLR MLR
comp=Z,3µm,19.0s
LSZ Lusaka 90.27 109 eP P 20 03 18.1 +0.5
comp=Z,57nm,1.4s
LSZ LR LR
comp=Z,3µm,19.0s
SCHQ Schefferville 90.41 4 P P 20 03 16.8 -0.2
comp=Z,3.4nm,0.4s,baz=122,slow=3.4,SNR=3.7
SCHQ LR LR 20 43 11.9
comp=Z,814nm,21.8s,baz=176,slow=35
SCHQ Schefferville 90.41 4 eP P 20 03 17.4 +0.3
comp=Z,48nm,1.4s
F10A Beach Ranch, E 90.47 331 eP P 20 03 18.8 +1.1
comp=Z,29nm,1.1s
SWMT Swartz Lake 90.54 334 eP P 20 03 18.6 +0.6
G08A Pilot Rock 90.60 330 eP P 20 03 19.3 +1.0
comp=Z,64nm,1.9s
I05D Terrebonne, OR 90.84 328 P P 20 03 20.6 +1.2
baz=143
JTMT Jette 90.84 334 eP P 20 03 19.9 +0.5
I04A Tendick Farm, 90.88 327 P P 20 03 20.1 +0.6
baz=142
BLMT Blacktail Moun 91.09 334 eP P 20 03 21.7 +1.0
BSMT Bassoo Peak 91.11 334 eP P 20 03 21.2 +0.5
I03D Drain, OR 91.22 326 P P 20 03 21.9 +0.9
baz=141
G05D Wamic, OR 91.55 328 P P 20 03 23.6 +1.0
baz=143
HAWA Hanford 91.73 330 eP P 20 03 24.5 +1.1
comp=Z,22nm,1.0s
HAWA LR LR
comp=Z,937nm,19.0s
WALA Waterton Lakes 91.82 335 eP P 20 03 24.2 +0.3
comp=Z,23nm,1.1s
D08A Wollman Farm, 92.03 331 eP P 20 03 25.5 +0.7
comp=Z,24nm,1.1s
NEW Newport 92.32 332 P P 20 03 25.9 -0.2
baz=146
NEW Newport 92.32 332 eP P 20 03 26.0 -0.2
NEW pmax pmax
comp=Z,13nm,1.1s
NEW MLR MLR
comp=Z,692nm,19.0s

NEW **Newport** 92.32 332 *e*P **P** 20 03 26.0 -0.2
comp=Z,12nm,1.1s
NEW LR LR
comp=Z,692nm,19.0s
ASR **Mount Adams--S** 92.39 329 P **P** 20 03 27.6 +1.0
LON **Longmire** 92.96 329 *e*P **P** 20 03 28.9 -0.2
LON pmax pmax
comp=Z,12nm,1.1s
LON **Longmire** 92.96 329 *e*P **P** 20 03 28.9 -0.2
comp=Z,12nm,1.1s
D05A **Enumclaw** 93.38 329 *e*P **P** 20 03 34.2 +3.2
comp=Z,29nm,0.9s
FFC **Flin Flon** 93.43 344 *e*P **P** 20 03 31.2 +0.2
FFC pmax pmax
comp=Z,12nm,1.0s
FFC MLR MLR
comp=Z,922nm,19.0s
FFC **Flin Flon** 93.43 344 *e*P **P** 20 03 31.2 +0.2
comp=Z,12nm,1.0s
FFC LR LR
comp=Z,922nm,19.0s
PFVI **Vila Bisbo** 94.03 46 *e*P **P** 20 03 38.0 +3.8
comp=Z,65nm,2.0s
PFVI **Vila Bisbo** 94.03 46 *e*PP PP 20 07 20.2 -0.7
PFVI *e*SKS **SKSac** 20 14 14.7 +5.7
MSVF **Nonsavu** 94.07 245 PFAKE 20 03 50.0 +15
MSVF LR LR
comp=Z,2µm,19.0s
MORF **Marmelete** 94.25 46 *e*P **P** 20 03 34.9 -0.4
MORF AMS AMS 20 45 49.2
comp=Z,2µm,18.9s
MORF **Marmelete** 94.25 46 *e*SKS **S** 20 14 54.1 +7.4
MORF **Marmelete** 94.25 46 *e*P **P** 20 03 34.9 -0.4
B05A **Bryant** 94.28 330 P **P** 20 03 35.1 +0.1
baz=142
NLWA **Neilton Lookou** 94.33 328 PFAKE 20 03 50.0 +15
NLWA LR LR
comp=Z,643nm,20.0s
TAM **Tamanrasset** 94.56 65 *e*P **P** 20 03 37.0 -0.2
TAM pmax pmax
comp=Z,23nm,1.4s
TAM MLR MLR
comp=Z,2µm,19.0s
TAM **Tamanrasset** 94.56 65 *e*P **P** 20 03 37.0 -0.2
comp=Z,23nm,1.4s
TAM LR LR
comp=Z,2µm,19.0s
PBDV **Barranco-do-Ve** 94.63 47 *e*P P 20 03 42.0 +5.0
comp=Z,56nm,1.6s
PBDV **Barranco-do-Ve** 94.63 47 *e*PP PP 20 07 30.7 +5.0
PBDV *e*SKS **SKSac** 20 14 20.5 +8.2
PCVE **Castro Verde** 94.83 46 *e*P P 20 03 43.7 +5.8
comp=Z,30nm,1.6s
PCVE **Castro Verde** 94.83 46 *e*PP PP 20 07 30.3 +3.2
PCVE *e*SKS **SKSac** 20 14 21.8 +8.5
PCVE *e*SS **SS** 20 21 21.9 +5.1
MESJ **Messejana** 94.86 46 *e*P **P** 20 03 38.1 +0.1
MESJ AMS AMS 20 45 03.7
comp=Z,2µm,22.8s
MESJ **Messejana** 94.86 46 *e*P P 20 03 44.9 +6.9
comp=Z,51nm,1.9s
MESJ **Messejana** 94.86 46 *e*P **P** 20 03 38.1 +0.1
PNCL **Nicolau / Gran** 94.86 46 *e*P P 20 03 31.5 -6.5
comp=Z,39nm,1.7s
PNCL **Nicolau / Gran** 94.86 46 *e*PP PP 20 07 23.4 -4.0
PNCL *e*SKS **S** 20 14 59.3 +7.5
PVAQ **Vaqueiros** 94.87 47 *e*P **P** 20 03 42.8 +4.7
comp=Z,41nm,1.7s
PVAQ **Vaqueiros** 94.87 47 *e*PP PP 20 07 27.0 -0.4
PVAQ *e*SKS **SKSac** 20 14 21.3 +7.8
PVAQ *e*SS **SS** 20 21 18.8 +1.5
PVAQ **Vaqueiros** 94.87 47 *e*LQ LQ 20 34 17.5
PVAQ *e*LR LR 20 37 44.2
comp=Z,2µm,20.0s
PMAFR **Mafra** 95.00 45 *e*P **P** 20 03 43.4 +4.7
comp=Z,52nm,2.0s
PMAFR **Mafra** 95.00 45 *e*PP PP 20 07 28.9 +0.4
PMAFR *e*SKS **SKSac** 20 14 19.6 +5.4
PMAFR *e*SS **SS** 20 21 26.3 +7.1
POHA **Pohakuloa** 95.23 290 PFAKE 20 03 50.0 +10
POHA LR LR
comp=Z,534nm,19.0s
EVO **Evora** 95.45 46 *e*P P 20 03 45.7 +5.0
comp=Z,24nm,1.7s
PBAR **Barrancos** 95.78 47 *e*SKS **SKSac** 20 14 25.2 +6.9
PESTR **Estremoz** 95.92 46 *e*P **P** 20 03 46.9 +4.0
comp=Z,26nm,1.7s
PESTR **Estremoz** 95.92 46 *e*SKS **SKSac** 20 14 26.8 +7.7
PCAS **Casmilo, Conde** 96.19 44 *e*P **P** 20 03 44.0 -0.1
comp=Z,41nm,1.9s
PCAS **Casmilo, Conde** 96.19 44 *e*PP PP 20 07 39.8 +2.1
PCAS *e*SKS **SKSac** 20 14 24.9 +4.5
PCAS *e*SS **SS** 20 21 43.7 +7.7
PMRV **Marv??o** 96.41 45 *e*P **P** 20 03 48.3 +3.2
comp=Z,19nm,1.7s
PMRV **Marv??o** 96.41 45 *e*SKS **SKSac** 20 14 25.8 +4.2
PMRV **Marv??o** 96.41 45 *e*LQ LQ 20 34 55.6
PMRV *e*LR LR 20 39 05.7
comp=Z,2µm,18.0s
MTE **Manteigas** 96.96 45 *e*PP PP 20 07 44.0 +0.3
MTE *e*SKS **S** 20 15 15.2 +5.1
MTE *e*SS **SS** 20 21 44.4 -2.7
MTE **Manteigas** 96.96 45 *e*LQ LQ 20 35 03.3
MTE *e*LR LR 20 39 37.2
comp=Z,2µm,18.0s
MTE **Manteigas** 96.96 45 PFAKE 20 04 00.0 +12
MTE LR LR
comp=Z,2µm,20.0s
POLO **Lamas de Olo** 97.47 44 *e*PP PP 20 07 46.5 -1.1
POLO *e*SKS **SKSac** 20 14 32.6 +5.4
PGAV **Gavieira, Arco** 97.60 43 *e*PP PP 20 07 48.9 +0.3
PGAV *e*SKS **S** 20 15 18.4 +2.9
PGAV *e*SS **SS** 20 21 56.8 +0.7
PGAV **Gavieira, Arco** 97.60 43 *e*LR LR 20 43 00.8
comp=Z,3µm,20.0s
MVO **Moncorvo** 97.76 44 *e*PP PP 20 07 51.7 +1.9
MVO *e*SKS **SKSac** 20 14 33.3 +4.7
MVO *e*SS SS 20 22 09.8 +11
MVO **Moncorvo** 97.76 44 *e*LQ LQ 20 35 16.0
MVO *e*LR LR 20 42 22.6
comp=Z,2µm,18.0s
KIP **Kipapa** 98.09 290 PFAKE 20 04 10.0 +17
KIP LR LR
comp=Z,2µm,19.0s
PAB **San Pablo** 98.27 47 PFAKE 20 04 00.0 +6.4
PAB LR LR
comp=Z,2µm,19.0s
ESDC **Sonseca Array** 98.58 47 P **P** 20 03 54.7 -0.2
comp=Z,1.5nm,0.9s,baz=236,slow=2.6,SNR=6.7
ESDC LR LR 20 47 30.7
comp=Z,2µm,19.0s,baz=245,slow=35
ES19 **SONSECA Array** 98.63 47 *e*P **P** 20 03 54.6 -0.6
FUNA **Funafuti** 98.94 253 PFAKE 20 04 10.0 +13
FUNA LR LR
comp=Z,13µm,19.0s
CAN **Canberra** 99.00 214 PFAKE 20 04 10.0 +13
CAN LR LR
comp=Z,945nm,19.0s
DZM **Mont Dzumac** 99.33 234 *e*SKSac **SKSac** 20 14 34.6 -3.2
DZM *e*SP **SP** 20 16 56.2 -0.9
comp=Z,289nm,23.1s
DZM *e*SS **SS** 20 22 20.7 +1.3
comp=Z,757nm,22.9s
DZM *e*LQ LQ 20 32 17.3
comp=Z,1µm,30.5s
DZM *e*LR LR 20 36 32.3
comp=Z,1µm,29.4s
MBAR **Mbarara** 101.07 99 PFAKE 20 04 20.0 +13
MBAR LR LR
comp=Z,784nm,22.0s
ABPO **Ambohimpanom** 101.71 124 PFAKE 20 04 20.0 +10
ABPO LR LR
comp=Z,783nm,20.0s
YKA **Yellowknife Ar** 103.38 342 Pdiff **Pdif** 20 04 15.2 -0.4
comp=Z,1.8nm,0.8s,baz=130,slow=5.2,SNR=6.5
YKA PKKPbc **PKKPbc** 20 20 13.5 +2.3
comp=Z,1.5nm,0.9s,baz=52,slow=8.1,SNR=4.1
SFJD **Kangerlussuaq** 103.90 9 PFAKE 20 04 30.0 +12
SFJD LR LR
comp=Z,966nm,19.0s
WRAK **Wrangell Islan** 104.53 331 PFAKE 20 04 30.0 +9.1
WRAK LR LR
comp=Z,908nm,19.0s
KMBO **Kilima Mbogo** 105.95 103 PFAKE 20 08 50.0
KMBO LR LR
comp=Z,2µm,19.0s
VSL **Villasalto** 106.80 53 PFAKE 20 08 50.0
VSL LR LR
comp=Z,2µm,20.0s
SSB **Saint Sauveur** 106.96 46 PFAKE 20 08 50.0
SSB LR LR
comp=Z,1µm,21.0s
BNI **Bardonecchia** 108.10 47 PFAKE 20 09 00.0
BNI LR LR
comp=Z,3µm,21.0s
BORG **Borgarnes** 108.12 21 PFAKE 20 08 50.0
BORG LR LR
comp=Z,1µm,19.0s
CLTB **Caltabellotta** 108.35 57 PFAKE 20 09 00.0
CLTB LR LR
comp=Z,3µm,20.0s
WDD **Wied Dalam** 108.35 59 PFAKE 20 09 00.0
WDD LR LR
comp=Z,5µm,21.0s
ESK **Eskdalemuir** 108.64 35 PFAKE 20 09 00.0
ESK LR LR
comp=Z,2µm,19.0s
VLC **Villacollemand** 109.89 50 PFAKE 20 09 00.0
VLC LR LR
comp=Z,668nm,19.0s
WLF **Walferdange** 110.25 43 PFAKE 20 09 00.0
WLF LR LR
comp=Z,2µm,19.0s
TUE **Stuetta** 110.44 47 PFAKE 20 09 00.0
TUE LR LR
comp=Z,1µm,22.0s
CEL **Celeste** 110.52 57 PFAKE 20 09 00.0
CEL LR LR
comp=Z,4µm,19.0s
BFO **Black Forest** 110.79 45 PFAKE 20 09 00.0
BFO LR LR
comp=Z,747nm,19.0s
AQU **L'Aquila** 110.89 52 PFAKE 20 09 00.0
AQU LR LR
comp=Z,2µm,20.0s
NWAO **Narrogin (SRO)** 110.95 190 PFAKE 20 09 00.0
NWAO LR LR
comp=Z,1µm,20.0s
CUC **Castrocucco** 111.32 56 PFAKE 20 09 00.0
CUC LR LR
comp=Z,2µm,19.0s
TIP **Timpagrande** 111.56 57 PFAKE 20 09 00.0
TIP LR LR
comp=Z,3µm,19.0s
HNR **Honiara** 112.63 239 PFAKE 20 09 10.0
HNR LR LR
comp=Z,630nm,22.0s
CTAO **Charters Tower** 112.97 221 PFAKE 20 09 10.0
CTAO LR LR
comp=Z,1µm,20.0s
EGAK **Eagle** 113.21 334 PFAKE 20 09 00.0
EGAK LR LR
comp=Z,807nm,22.0s
NKC **Novy Kostel** 114.07 45 *e*SKS **SKSac** 20 15 43.2 +2.2
NKC *ex* x 20 16 56.3
NKC *e*SDIF **Sdif** 20 17 37.5 +4.9
NKC *e*PS PS 20 19 27.9 +0.9
NKC AMS AMS 20 55 40.0
comp=Z,2µm,18.6s
GERES **GERESS Array B** 114.16 46 PKiKP PKPdf 20 08 54.5 -0.7
comp=Z,0.8nm,0.7s,baz=226,slow=3.5,SNR=6.8
GERES PKKPbc **PKKPab** 20 19 43.3 +3.0
comp=Z,0.2nm,0.6s,baz=57,slow=9.7,SNR=4.1
KDAK **Kodiak Island** 114.20 325 PFAKE 20 09 10.0 +15
KDAK LR LR
comp=Z,275nm,19.0s
KHC **Kasperske Hory** 114.22 46 *e*SKS **SKSac** 20 15 39.4 -2.3
KHC *e*SKKS **SKKSac** 20 16 54.6 +2.4
KHC *e*SDIF **Sdif** 20 17 39.7 +5.7
KHC *e*PS PS 20 19 32.5 +4.0
KHC AMS AMS 21 02 00.0
comp=Z,1µm,17.1s
TIR **Tirane** 114.67 56 PFAKE 20 09 10.0 +14
TIR LR LR
comp=Z,4µm,20.0s
STAV **Stavanger** 114.68 34 IVMs_BB IVMs_BB 20 56 58.1
comp=Z,572nm,19.6s
CLL **Collm** 114.87 44 *e*PKiKP PKPdf 20 08 56.0 -0.4
CLL *e*PP **PP** 20 09 52.0 -3.6
CLL *e*SKSac **SKSac** 20 15 42.0 -2.0
CLL *e*Sdif **Sdif** 20 17 42.0 +2.8
CLL *e*SKKSac SKKSac 20 18 00.0 +64
CLL *e*PS **PS** 20 19 35.0 +0.8
CLL *e*PPS PPS 20 20 53.0
CLL *e* 20 24 52.0
CLL *e*SS **SS** 20 25 49.0 -1.9
CLL *e* 20 27 56.0
CLL *e*SSS SSS 20 29 48.0
CLL *e*SSSS 20 33 30.0
CLL Lm MLR 20 56 00.0
comp=N,800nm,21.3s
CLL Lm MLR 20 56 00.0
comp=E,1µm,20.2s
CLL Lm MLR 20 56 00.0
comp=Z,2µm,20.4s
CLL L L 21 09 00.0
comp=Z,900nm,18.4s
CLL **Collm** 114.87 44 *e*PKIKP PKPdf 20 08 56.0 -0.4
CLL *e* 20 09 52.0
CLL MLR MLR
comp=Z,2µm,20.4s
PRU **Pruhonice** 115.16 45 *e*PS PS 20 19 38.7 +1.7
PRU AMS AMS 20 56 50.0
comp=Z,900nm,19.0s
BER **Bergen** 115.20 33 IVMs_BB IVMs_BB 20 54 12.4
comp=Z,652nm,24.0s
IL1 **Eielson Array** 115.27 333 *e*PKPdf **PKPdf** 20 08 55.5 -1.3
ILAR **Eielson Array** 115.27 333 PKP **PKPdf** 20 08 56.2 -0.6
comp=Z,0.8nm,0.8s,baz=144,slow=1.3,SNR=9.2
GOPC **GO Pecny, Ondr** 115.27 46 *e*SDIF **Sdif** 20 17 48.5 +5.8
GOPC *e*PS PS 20 19 38.5 +0.4
GOPC *ex* x 20 25 41.4
GOPC AMS AMS 20 57 00.0
comp=Z,1µm,20.3s
PVCC **Panska Ves** 115.42 45 *e*PS PS 20 19 39.9 +0.6
PVCC AMS AMS 20 56 20.0
comp=Z,1µm,19.6s
ASAR **Alice Springs** 115.50 208 PKP **PKPdf** 20 08 57.6 -1.1
comp=Z,0.4nm,0.7s,baz=160,slow=1.7,SNR=5.5
ASAR PKKPbc **PKKPbc** 20 19 32.0 +0.8
comp=Z,1.3nm,0.9s,baz=336,slow=2.7,SNR=8.5
FOO **Floro** 115.65 31 *e*SS SS 20 25 59.1 -1.4
FOO IVMs_BB IVMs_BB 20 58 09.4
comp=Z,791nm,21.6s
HOMB **Homborsund** 115.67 35 IVMs_BB IVMs_BB 20 55 58.3
comp=Z,657nm,19.6s
COLA **College** 115.68 333 PFAKE 20 09 10.0 +13
COLA LR LR
comp=Z,550nm,19.0s
DPC **Dobruska-Polom** 116.35 46 *e*PKP **PKPdf** 20 09 01.7 +2.3
DPC *ex* x 20 09 05.8
DPC *e*SDIF 20 17 55.6
DPC *e*PS **PS** 20 19 48.1 +0.1
DPC *e*SS **SS** 20 26 05.1 -5.4
DPC AMS AMS 21 08 40.0
comp=Z,900nm,18.0s
DPC **Dobruska-Polom** 116.35 46 *e*PKIKP **PKPdf** 20 09 01.7 +2.3
DPC *e* 20 09 05.8
DPC *e*SP SP 20 19 48.1 +1.9
DPC *e*SS **SS** 20 26 05.1 -5.4
DPC MLR MLR
comp=Z,900nm,18.0s
SANT **Santorini** 116.37 63 PFAKE 20 09 10.0 +10
SANT LR LR
comp=Z,1µm,21.0s
BPAW **Bear Paw Mtn.** 116.50 331 *e*PKPdf **PKPdf** 20 08 59.3 +0.1
MIDW **Midway** 116.58 287 PFAKE 20 09 10.0 +10
MIDW LR LR
comp=Z,984nm,19.0s
CAST **Castle Rocks** 116.63 330 *e*PKPdf **PKPdf** 20 08 58.9 -0.5
KONO **Kongsberg** 116.78 34 *e*PP PP 20 10 14.2 +5.4
KONO *e*SS SS 20 26 17.0 +1.5
KONO IVMs_BB IVMs_BB 20 59 40.8
comp=Z,472nm,21.1s
KONO **Kongsberg** 116.78 34 PFAKE 20 09 10.0 +10
KONO LR LR
comp=Z,1µm,20.0s
VYHS **Vyhne** 117.08 48 *e*PKIKP **PKPdf** 20 08 59.7 -1.1
VYHS **Vyhne** 117.08 48 *e*PKP **PKPdf** 20 08 59.7 -1.1
MOL **Molde** 117.14 31 IVMs_BB IVMs_BB 20 56 34.2
comp=Z,784nm,26.1s
OKC **Ostrava-Krasne** 117.21 47 *e*PS PS 20 19 56.3 +0.6
OKC *e*SS SS 20 26 20.0 -1.6
OKC AMS AMS 21 02 30.0
comp=Z,1µm,18.8s
PSZ **Piszkesteto** 117.49 49 PFAKE 20 09 10.0 +8.3
PSZ LR LR
comp=Z,1µm,21.0s
DOMB **Dombas** 117.56 32 IVMs_BB IVMs_BB 21 02 32.2
comp=Z,530nm,18.8s
BZS **Buzias** 117.65 52 ⇓*i*P **PKPdf** 20 09 07.6 +5.7
BZS **Buzias** 117.65 52 ⇓PKIKP **PKPdf** 20 09 07.6 +5.7
LANS **Liptovska Anna** 117.72 48 *e*PKIKP **PKPdf** 20 09 00.5 -1.5
LANS **Liptovska Anna** 117.72 48 *e*PKP **PKPdf** 20 09 00.5 -1.5
KECS **Kecovo** 118.08 49 *e*PKIKP **PKPdf** 20 09 00.5 -2.2
KECS **Kecovo** 118.08 49 *e*PKP **PKPdf** 20 09 00.5 -2.2
NC602 **NORSAR Array S** 118.12 34 *e*PP PP 20 10 18.9 +0.8
NC602 *e*SS SS 20 26 28.9 -4.0
NC602 IVMsBB 21 02 17.2
comp=Z,544nm,19.2s
GZR **Gura Zlata** 118.30 53 ⇓*i*P PKPdf 20 09 12.5 +9.2
WRA **Warramunga Arr** 118.69 210 PKP **PKPdf** 20 09 03.3 -1.6
comp=Z,1.0nm,0.6s,baz=156,slow=1.7,SNR=22
WRAB **Tennant Creek** 118.70 210 PFAKE 20 09 20.0 +15
WRAB LR LR
comp=Z,2µm,20.0s
DRGR 118.81 51 ⇓*i*P **PKPdf** 20 09 02.0 -2.2
DRGR 118.81 51 ⇓PKIKP **PKPdf** 20 09 02.0 -2.2
STHS **Stebnicka Huta** 118.90 48 *e*PKIKP **PKPdf** 20 09 04.5 +0.2
STHS **Stebnicka Huta** 118.90 48 *e*PKP **PKPdf** 20 09 04.5 +0.2
HUMR **Humele** 119.41 54 ⇓*i*P **PKPdf** 20 09 04.6 -0.7
ARR **Arges** 119.50 53 ⇓*i*P **PKPdf** 20 09 11.1 +5.5
MLR **Muntele Rosu** 120.40 54 ⇑*i*P **PKPdf** 20 09 06.7 -0.7
MLR **Muntele Rosu** 120.40 54 ⇑PKIKP **PKPdf** 20 09 06.7 -0.7
MLR **Muntele Rosu** 120.40 54 *e*PKPdf **PKPdf** 20 09 06.3 -1.1
ISP **Isparta** 120.65 63 PFAKE 20 09 20.0 +12
ISP LR LR
comp=Z,1µm,21.0s
BUR08 **Bucovina Ar. S** 120.70 51 *e*PKPdf **PKPdf** 20 09 08.0 +0.1
BURAR **Bucovina Array** 120.70 51 ⇑*i*P **PKPdf** 20 09 08.0 +0.1
BURAR **Bucovina Array** 120.70 51 ⇑PKIKP **PKPdf** 20 09 08.0 +0.1
PMG **Port Moresby** 121.03 228 PFAKE 20 09 20.0 +11
PMG LR LR
comp=Z,764nm,20.0s
VRI **Vrincioaia** 121.05 53 ⇓*i*P **PKPdf** 20 09 05.4 -3.1
VRI **Vrincioaia** 121.05 53 ⇓PKIKP **PKPdf** 20 09 05.4 -3.1
TESR **Tescani** 121.23 53 ⇑*i*P **PKPdf** 20 09 08.4 -0.4
LOF **Lofoten** 121.54 26 *e*PP PP 20 10 42.3 +1.0
LOF *e*SS SS 20 27 17.6 +1.2
LOF IVMsBB 20 57 37.3
comp=Z,350nm,5.8s
CSS **Mathiatis** 121.58 67 PFAKE 20 09 20.0 +10
CSS LR LR
comp=Z,184nm,19.0s
TIRR **Tirgusor** 121.67 55 *e*PKIKP **PKPdf** 20 09 08.9 -0.8
TIRR **Tirgusor** 121.67 55 *e*P **PKPdf** 20 09 08.9 -0.8
CFR **Carcaliu** 121.73 55 ⇓*i*P **PKPdf** 20 09 09.4 -0.4
CFR **Carcaliu** 121.73 55 ⇓PKIKP **PKPdf** 20 09 09.4 -0.4
MBWA **Marble Bar** 122.04 194 PFAKE 20 09 20.0 +8.7
MBWA LR LR
comp=Z,1µm,19.0s
KIS **Kishinev** 122.80 53 *e*PP PP 20 10 46.0 -4.5
KIS **Kishinev** 122.80 53 *e*PS PS 20 20 36.0 -10
KIS *e*L L 20 55 44.0
KIS LRM MLR 21 05 00.0
comp=Z,1µm,19.0s
BR231 **Keskin MP Arra** 123.05 62 *e*PKPdf **PKPdf** 20 09 11.6 -1.1
ANTO **Ankara** 123.07 62 PFAKE 20 09 20.0 +7.3
ANTO LR LR
comp=Z,1µm,20.0s
BRTR **Keskin Array B** 123.63 62 PKP **PKPdf** 20 09 13.1 -0.8
comp=Z,1.9nm,1.0s,baz=208,slow=2.4,SNR=7.5
TRO **Tromso** 123.81 25 *e*PKPdf **PKPdf** 20 09 13.8 +0.8
TRO *e*SS SS 20 27 46.6 +1.5
TRO IVMsBB 20 59 07.2
comp=Z,370nm,18.8s
KBS **Kingsbay** 123.92 13 *e*SS SS 20 27 47.1 +0.8
KBS IVMs_BB IVMs_BB 20 58 07.7
comp=Z,268nm,21.1s
KBS **Kingsbay** 123.92 13 PFAKE 20 09 20.0 +6.9
KBS LR LR
comp=Z,586nm,21.0s
KIEV **Kiev** 124.17 49 *e*PKIKP **PKPdf** 20 09 12.6 -1.6
KIEV **Kiev** 124.17 49 *e*PKPdf **PKPdf** 20 09 12.7 -1.6
KIEV LR LR
comp=Z,1µm,21.0s
AKASG **Malin Array Be** 124.18 49 PKP **PKPdf** 20 09 13.2 -1.1
comp=Z,0.6nm,0.5s,baz=285,slow=1.8,SNR=8.2
AKASG PP **PP** 20 10 56.5 -3.2
comp=Z,1.0nm,0.5s,baz=258,slow=5.0,SNR=4.1
HSPB **Hornsund (broa** 124.28 16 IVMs_BB IVMs_BB 20 57 47.2
comp=Z,286nm,22.8s
MICGM **Minsk** 124.41 44 *e* **PKPdf** 20 09 10.0 -4.6
MICGM *e*LR LR 21 00 02.0
MICGM LRM MLR 21 02 48.0
comp=Z,1.7nm,20.0s
MNK **Minsk** 124.41 44 *e*PKIKP **PKPdf** 20 09 10.0 -4.6
MNK MLR MLR
comp=Z,2µm,20.0s
H11S2 **WAKE ISLAND Hyl** 124.65 269 T T 22 26 24.0
baz=124
SPA0 **Spitsbergen Ar** 124.65 15 *e*SS SS 20 27 56.8 +1.3
H11S1 **WAKE ISLAND Hyl** 124.67 269 T T 22 26 24.0
baz=124
H11S3 **WAKE ISLAND Hyl** 124.67 269 T T 22 26 23.4
baz=124
FINES **FINESS Array B** 125.06 35 PKP **PKPdf** 20 09 16.2 +0.5
comp=Z,3.7nm,1.0s,baz=188,slow=13,SNR=4.4
H11N3 **WAKE ISLAND Hyl** 125.11 270 T T 22 26 53.8
baz=166
H11N1 **WAKE ISLAND Hyl** 125.12 270 T T 22 26 53.8
baz=166
H11N2 **WAKE ISLAND Hyl** 125.13 270 T T 22 26 53.8
baz=166
ARCES **ARCESS Array B** 126.07 25 PKP **PKPdf** 20 09 18.1 +0.7
comp=Z,1.1nm,0.5s,baz=291,slow=3.8,SNR=6.4
ARE0 **ARCESS Array S** 126.07 25 *e*PKPdf **PKPdf** 20 09 18.2 +0.8
ARE0 *e*PP **PP** 20 11 10.5 -1.4
ARE0 *e*SS SS 20 28 14.7 +1.0
ARE0 IVMs_BB IVMs_BB 20 59 00.5
comp=Z,379nm,24.9s
DGAR **Diego Garcia** 126.34 136 PFAKE 20 09 30.0 +10
DGAR LR LR
comp=Z,1µm,19.0s
HOPEN **Hopen** 126.40 17 IVMsBB 21 00 43.6
comp=Z,465nm,20.3s
KEV **Kevo** 126.62 25 PFAKE 20 09 30.0 +12
KEV LR LR
comp=Z,992nm,21.0s
APA **Apatity** 128.86 28 ⇓*i*PKIKP **PKPdf** 20 09 21.1 -1.6
APA MLR MLR
comp=Z,1µm,21.0s
SOC **Sochi** 129.15 60 *e*PKIKP **PKPdf** 20 09 22.6 -1.4
SOC *e* 20 11 29.4
SOC *e*PPP PPP 20 14 16.4
SOC *e*SS SS 20 28 45.1 -8.3
SOC pmax pmax
comp=Z,4.0nm,0.4s
LVZ **Lovozero** 129.33 28 PFAKE 20 09 40.0 +16
LVZ LR LR
comp=Z,1µm,20.0s
OBN **Obninsk** 129.46 44 *c i*PKIKP **PKPdf** 20 09 23.7 -0.5
OBN *e* 20 11 37.5
OBN *e*PPP PPP 20 14 31.0
OBN *e*PS **PS** 20 21 39.8 -4.3
OBN pmax pmax
comp=Z,3.0nm,0.5s
OBN pmax pmax
comp=Z,27nm,1.5s
OBN **Obninsk** 129.46 44 PFAKE 20 09 40.0 +16
OBN LR LR
comp=Z,1µm,20.0s
MOS **Moscow** 130.14 44 *e*PKIKP **PKPdf** 20 09 24.4 -1.1
MOS *e* 20 29 19.4
MOS *e* 20 33 59.4
MOS MLR MLR
comp=Z,2µm,19.0s
NEY **Neytrino** 131.19 61 *e*PKIKP **PKPdf** 20 09 30.0 +1.8
AKH **Akhalkalaki** 131.28 63 ⇓*i*P **PKPdf** 20 09 29.1 +0.7
KIV **Kislovodsk** 131.33 60 *i* PKIKP **PKPdf** 20 09 27.0 -1.3
KIV *e* 20 11 43.3
KIV *e*PS **PS** 20 21 57.6 -3.3
KIV *e*SS SS 20 29 15.0 -5.3

KIV eSSS SSS 20 34 06.7
KIV pmax pmax
comp=Z,12nm,1.1s
KIV MLR MLR
comp=Z,566nm,21.0s
KIV Kislovodsk 131.33 60 ePKPdf **PKPdf 20 09 28.1 -0.2**
KIV LR LR
comp=Z,590nm,21.0s
COCO West Island 131.41 167 PFAKE 20 09 40.0 +11
COCO LR LR
comp=Z,2μm,20.0s
KBZ Khabaz 131.43 60 PKP **PKPdf 20 09 27.9 -0.4**
comp=Z,2.8nm,1.0s,baz=297,slow=3.1,SNR=9.6
KLMR Klimovskoe 131.47 37 ePKIKP **PKPdf 20 09 25.1 -2.8**
KLMR e 20 11 44.6
KLMR pmax pmax
comp=Z,57nm,1.4s
GOF Gofitskoye 131.82 58⇑ ePKIKP **PKPdf 20 09 29.3 +0.2**
GOF pmax pmax
comp=Z,16nm,0.8s
GNI Garni 131.86 65c *i* PKIKP **PKPdf 20 09 31.8 +2.3**
GNI pmax pmax
comp=Z,42nm,1.7s
GNI Garni 131.86 65 PFAKE 20 09 40.0 +10
GNI LR LR
comp=Z,1μm,19.0s
BILL Bilibino 133.93 333de PKIKP **PKPdf 20 09 33.0 +0.6**
BILL *i* 20 09 39.2
BILL e 20 09 46.3
BILL 20 12 12.0
BILL pmax pmax
comp=Z,10.0nm,1.3s
BILL pmax pmax
comp=Z,19nm,1.3s
BILL MLR MLR
comp=Z,444nm,18.0s
BILL Bilibino 133.93 333 PFAKE 20 09 40.0 +7.6
BILL LR LR
comp=Z,708nm,20.0s
KAPI Kappang 137.61 200 PFAKE 20 09 50.0 +9.1
KAPI LR LR
comp=Z,866nm,20.0s
PET Petropavlovsk 140.01 312 *i* PKIKP PKPpre 20 09 39.3
PET e 20 12 42.4
PET eSS SS 20 30 58.7 -4.7
PET pmax pmax
comp=Z,400nm,12.8s
PET MLR MLR
comp=Z,400nm,19.0s
PET Petropavlovsk 140.01 312 PFAKE 20 10 00.0 +16
PET LR LR
comp=Z,798nm,21.0s
PETK Petropavlovsk- 140.57 312 PKP **PKPdf 20 09 45.5 +0.4**
comp=Z,4.8nm,0.9s,baz=106,slow=4.8,SNR=3.8
SEY Seymchan 141.00 329 PKhKP PKPpre 20 09 37.9
comp=Z,5.9nm,0.8s,baz=91,slow=2.2,SNR=12
GEYT Alibeck 141.46 72 PKhKP PKPpre 20 09 40.0
comp=Z,0.9nm,0.3s,baz=308,slow=3.6,SNR=5.4
ARU Arti 141.78 42 *i* PKHKP PKPpre 20 09 41.7
ARU MLR MLR
comp=Z,2μm,20.0s
ARU Arti 141.78 42 PFAKE 20 10 00.0 +13
ARU LR LR
comp=Z,2μm,20.0s
TIXI Tiksi 142.22 349c *i* PKIKP **PKPdf 20 09 49.5 +2.0**
TIXI pmax pmax
comp=Z,24nm,1.7s
TIXI Tiksi 142.22 349 PFAKE 20 10 00.0 +13
TIXI LR LR
comp=Z,534nm,19.0s
SVE Sverdlovsk 142.81 41 *i* PKIKP **PKPdf 20 09 48.4 -0.5**
SVE pmax pmax
comp=Z,24nm,1.6s
SVE MLR MLR
comp=Z,981nm,20.0s
SVE MLR MLR
comp=E,878nm,19.0s
MA2 Magadan 142.94 324 PKhKP PKPpre 20 09 45.3
comp=E,4.6nm,0.5s,baz=163,slow=9.1,SNR=4.1
MA2 Magadan 142.94 324 PKPpre PKPpre 20 09 45.3
MA2 LR LR
comp=Z,740nm,20.0s
ABKAR Akbulak array 143.62 53 ePKPdf PKPab 20 09 46.6 -0.5
BKNI Bangkinang 144.36 170 PKP PKPbc 20 09 51.6 +0.3
BKNI PKP **PKPdf 20 09 52.2 -0.9**
BKNI Bangkinang 144.36 170 ePKPdf **PKPab 20 09 49.9 -1.1**
MNSI Mandailing Nat 144.59 168 PKP **PKPab 20 09 50.8 -1.1**
MNSI PKP **PKPab 20 09 50.8 -1.1**
GSI Gunungsitoli 144.69 164 PKP **PKPab 20 09 51.9 -0.4**
GSI PKP PKPbc 20 09 52.6 +0.2
GSI Gunungsitoli 144.69 164 ePKPdf **PKPab 20 09 52.1 -0.2**
NRIK Noril'sk 144.76 12 PKP **PKPab 20 09 50.9 -0.1**
comp=Z,23nm,0.9s,baz=32,slow=1.7,SNR=19
KSM Kuching 145.71 187 ePKPdf **PKPbc 20 09 55.7 0.0**
KSM LR LR
comp=Z,744nm,21.0s
POO Poona 146.35 112 eP **PKPdf 20 09 52.0 -4.3**
URV Uravakonda 146.52 121 ePKPbc **PKPdf 20 09 55.8 -0.9**
DAV Davao City (W) 146.58 216 PFAKE 20 10 10.0 +11
DAV LR LR
comp=Z,605nm,22.0s
SKHT Srikalahasti 147.34 125 ePKPbc **PKPdf 20 09 58.9 +0.9**
RCLA Racherla 148.05 122 ePKPbc **PKPbc 20 10 00.8 -1.5**
KLRI Killari 148.11 116 ePKPbc **PKPdf 20 10 00.7 +1.4**
SRLM Srisailam 148.45 121 ePKPbc **PKPbc 20 10 02.0 -1.4**
ADKI Addanki 149.02 123 ePKPbc **PKPbc 20 10 03.7 -1.0**
NJS Nagarjunasagar 149.05 121 ePKPbc **PKPbc 20 10 03.6 -1.2**
HYB Hyderabad 149.10 119 *i* PKP **PKPdf 20 10 02.0 +1.1**
HYB e 20 10 10.5
HYB epPKP PKPab 20 10 18.0 +8.7
HYBB Hyderabad (bro 149.10 119 ePKIKP **PKPbc 20 10 05.2 +0.1**
KKM Kota Kinabalu 149.14 199 PFAKE 20 10 10.0 +0.5
KKM LR LR
comp=Z,466nm,19.0s
KULM Kulim 149.17 168 ePKPdf **PKPdf 20 10 03.1 +1.9**
KULM LR LR
comp=Z,1μm,20.0s
BRVK Borovoye 149.23 44c *i* PKIKP **PKPdf 20 10 00.8 +0.8**
BRVK pmax pmax
comp=Z,184nm,2.5s
BRVK Borovoye 149.23 44 ePKPdf **PKPdf 20 10 00.9 +0.9**
BRVK LR LR
comp=Z,1μm,20.0s
KBL Kabul 149.35 81 ePKP2 **PKPbc 20 10 04.6 -0.9**
KBL Kabul 149.35 81 ePKPbc **PKPbc 20 10 04.6 -0.9**
YAK Yakutsk 150.00 338 PKPbc **PKPbc 20 10 05.7 -0.1**
comp=Z,51nm,0.7s,baz=95,slow=0.6,SNR=33
YAK Yakutsk 150.00 338 ePKIKP **PKPbc 20 10 05.7 -0.1**
YAK e 20 13 40.7
YAK pmax pmax
comp=Z,62nm,0.8s
YAK pmax pmax
comp=E,3.0nm,0.9s
YAK pmax pmax
comp=N,6.0nm,0.8s
YAK pmax pmax
comp=E,32nm,1.7s
YAK pmax pmax
comp=N,38nm,2.3s
YAK pmax pmax
comp=Z,133nm,2.8s
YAK Yakutsk 150.00 338 ePKPbc **PKPbc 20 10 05.6 -0.1**
YAK LR LR
comp=Z,564nm,19.0s
TYV Tymovskoe 150.11 312 ePKIKP **PKPbc 20 10 06.5 0.0**
TYV pmax pmax
comp=Z,48nm,1.0s
NKL Nikolayevsk 150.51 317 ePKIKP **PKPbc 20 10 06.0 -1.3**
NKL pmax pmax
comp=Z,350nm,2.0s
NKL pmax pmax
comp=Z,69nm,1.0s
RPR Rampur 150.58 118 ePKPbc **PKPbc 20 10 07.1 -1.4**
YSS Yuzh-Sakhalins 150.93 304 *i* PKIKP **PKPbc 20 10 08.5 0.0**
YSS e 20 10 14.7
YSS e 20 13 54.0
YSS pmax pmax
comp=Z,20nm,2.1s
YSS Yuzh-Sakhalins 150.93 304 PFAKE 20 10 10.0 +1.5
YSS LR LR
comp=Z,332nm,20.0s
ERM Erimo 151.06 294 ePKIKP **PKPbc 20 10 10.4 +1.4**
ERM MLR MLR
comp=Z,560nm,19.0s
ERM Erimo 151.06 294 ePKPbc **PKPbc 20 10 10.4 +1.4**
ERM LR LR
comp=Z,560nm,19.0s
PVM Polavaram 151.13 123 ePKPbc **PKPbc 20 10 08.9 -0.9**
ASAJ Asahikawa 151.38 298 ePKPdf **PKPdf 20 10 03.1 -0.5**
NDI New Delhi 154.19 98 eP **PKPdf 20 10 08.0 -0.2**
AAK Ala-Archa 154.27 65 ePKIKP **PKPdf 20 10 07.9 -0.2**
AAK MLR MLR
comp=Z,1μm,20.0s
AAK Ala-Archa 154.27 65 ePKPdf **PKPdf 20 10 07.9 -0.2**
AAK LR LR
comp=Z,1μm,20.0s
FRU Bishkek 154.34 64 ePKIKP **PKPdf 20 10 08.0 -0.1**
FRU e 20 10 30.0
FRU e 20 14 05.0
FRU pmax pmax
comp=Z,70nm,2.0s
MJAR Matsushiro Arr 154.56 281 PKP **PKPdf 20 10 06.9 -1.6**
comp=Z,0.6nm,0.6s,baz=101,slow=2.5,SNR=3.1
MJAR Matsushiro Arr 154.56 281 PKIKP **PKPdf 20 10 07.0 -1.6**
MAJO Matsushiro 154.56 281 PFAKE 20 10 20.0 +3.0
MAJO LR LR
comp=Z,720nm,22.0s
MAT Matsushiro 154.56 281 PKP **PKPdf 20 10 07.4 -1.1**
KURK Kurchatov 154.90 45 ePKIKP **PKPdf 20 10 07.9 -0.6**
KURK MLR MLR
comp=Z,2μm,20.0s
KURK Kurchatov 154.90 45 ePKPdf **PKPdf 20 10 07.9 -0.6**
KURK LR LR
comp=Z,2μm,20.0s
NVS Novosibirsk 155.01 33⇑ *i* PKIKP **PKPdf 20 10 07.5 -1.0**
NVS pmax pmax
comp=Z,84nm,2.1s
KSH Kashi 155.49 72 PKP **PKPdf 20 10 09.8 -0.1**
KSH epPKP pPKPdf 20 10 20.5 +7.0
KSH PKS **PKSdf 20 13 42.5 -1.5**
KSH ePP **PP 20 14 19.0 +6.1**
KSH SKKS 20 21 01.5
KSH AMB AMB
comp=Z,330nm,3.9s
KSH LR LR
comp=Z,380nm,14.0s
KSH LR LR
comp=Z,99nm,5.2s
KSH LR LR
comp=Z,250nm,11.9s
HABR Khabarovsk 155.56 310de PKP2 **PKPab 20 10 35.8 +0.4**
HABR e 20 14 13.4
HABR e 20 17 12.7
HABR pmax pmax
comp=E,32nm,1.6s
HABR pmax pmax
comp=N,11nm,1.4s
HABR pmax pmax
comp=Z,53nm,1.6s
CLNS Chul'man 155.59 335 ePKP2 **PKPab 20 10 35.1 -0.3**
CLNS pmax pmax
comp=Z,14nm,0.9s
CLNS pmax pmax
comp=N,8.0nm,0.9s
CLNS pmax pmax
comp=E,7.0nm,0.9s
ZALV Zalesovo Beam 156.30 33 PKP **PKPdf 20 10 09.2 -1.1**
comp=E,8.1nm,0.9s,baz=277,slow=2.4,SNR=34
ZALV PKPab **PKPab 20 10 39.3 +0.9**
comp=E,22nm,0.8s,baz=300,slow=4.6,SNR=5.8
KLR Kul'dur 157.25 314 PKP **PKPdf 20 10 11.1 -0.5**
comp=E,0.9nm,0.5s,baz=359,slow=2.7,SNR=4.2
MAKZ Makanchi 158.52 52 ePKIKP **PKPdf 20 10 12.8 -0.5**
MAKZ Makanchi 158.52 52 ePKPdf **PKPdf 20 10 12.8 -0.5**
PYUN Piuthan 158.55 104 eP **PKPab 20 10 46.7 -2.6**
comp=E,87nm,1.2s
PYUN Piuthan 158.55 104 eP **PP 20 14 29.3 -0.6**
MKAR Makanchi Array 158.73 51 PKP **PKPdf 20 10 12.6 -1.0**
comp=E,4.5nm,0.9s,baz=338,slow=1.3,SNR=5.5
MKAR PKPab **PKPab 20 10 48.5 -0.7**
comp=E,6.7nm,0.9s,baz=289,slow=3.7,SNR=5.1
MKAR PP **PP 20 14 28.6 -1.5**
comp=E,4.6nm,1.0s,baz=300,slow=2.7,SNR=5.5
KOLN Koldanda 158.88 106 eP **PP 20 14 29.6 -2.1**
USRK Ussuriysk Ar. 158.89 301 PKPab **PKPab 20 10 50.1 +0.1**
comp=E,2.3nm,0.7s,baz=69,slow=6.5,SNR=6.0
GKN Gorkha 159.80 106 eP **PKPab 20 10 53.3 -1.4**
comp=E,195nm,1.3s
GKN Gorkha 159.80 106 eP **PP 20 14 34.6 -2.0**
DMN Daman 159.98 108 eP **PKPab 20 10 52.3 -3.3**
comp=E,156nm,1.2s
PKIN Phulchoki 160.19 108 eP **PKPab 20 10 53.5 -3.0**
comp=E,65nm,0.9s
PKIN Phulchoki 160.19 108 eP **PP 20 14 35.5 -3.3**
KKN Kakani 160.20 108 eP **PKPab 20 10 55.0 -1.5**
comp=E,250nm,1.4s
KKN Kakani 160.20 108 eP **PP 20 14 35.7 -3.1**
MDJ Mudanjiang 160.42 304 PKP **PKPdf 20 10 15.3 -0.3**
MDJ Mudanjiang 160.42 304 PFAKE 20 10 30.0 +14
MDJ LR LR
comp=Z,667nm,20.0s
GUN Gumba 160.72 108 eP **PKPab 20 10 58.1 -0.8**
CMAR Chiang Mai Arr 161.46 156 PKP **PKPdf 20 10 14.6 -2.9**
comp=Z,1.0nm,0.8s,baz=253,slow=1.9,SNR=10
CMAR PKPab **PKPab 20 11 00.8 -0.9**
comp=Z,3.4nm,1.0s,baz=224,slow=3.6,SNR=7.7
CMAR PP **PP 20 14 46.0 +1.9**
comp=Z,0.9nm,0.7s,baz=211,slow=6.1,SNR=4.4
CHTO Chiang Mai 161.79 156 ePKIKP **PKPdf 20 10 16.1 -1.7**
CHTO MLR MLR
comp=Z,912nm,21.0s
CHTO Chiang Mai 161.79 156 ePKPdf **PKPdf 20 10 16.1 -1.7**
CHTO LR LR
comp=Z,912nm,21.0s
KSRS Korea Array 162.83 282 PKPab **PKPab 20 11 08.3 +0.9**
comp=Z,4.2nm,0.9s,baz=107,slow=3.1,SNR=5.6
KSAR Wonju Array Be 162.86 282 PKP2 **PKPab 20 11 08.4 +0.8**
KSAR Wonju Array Be 162.86 282 PKPab **PKPab 20 11 08.3 +0.8**
QIZ Qiongzhong 163.09 190 PKPbc **PKPdf 20 10 23.0 +3.9**
QIZ PP **PP 20 14 57.0 +4.5**
QIZ Qiongzhong 163.09 190 PFAKE 20 10 30.0 +11
QIZ LR LR
comp=Z,1μm,20.0s
YHNB Yeheng 163.16 233 PFAKE 20 10 30.0 +11
YHNB LR LR
comp=Z,757nm,19.0s
TATO Taipei 163.29 234 PFAKE 20 10 30.0 +11
TATO LR LR
comp=Z,782nm,19.0s
WMQ Urumqi 163.39 55 PKP **PKPdf 20 10 19.5 +0.8**
WMQ PKPab **PKPab 20 11 10.3 +0.5**
WMQ PP **PP 20 14 54.0 -1.3**
WMQ SKKS 20 21 41.0
WMQ AMB AMB
comp=Z,310nm,9.8s
WMQ LR LR
comp=Z,960nm,19.3s
WMQ LR LR
comp=Z,780nm,16.8s
WMQ LR LR
comp=Z,690nm,23.0s
IRK Irkutsk 163.44 5 ePKIKP **PKPdf 20 10 16.5 -1.9**
IRK e 20 11 09.3
IRK e 20 14 52.4
IRK pmax pmax
comp=Z,58nm,1.9s
HIA Hailar 163.44 329 PFAKE 20 10 30.0 +11
HIA LR LR
comp=Z,683nm,20.0s
CN2 Changchun 163.49 305 PKP **PKPdf 20 10 14.0 -4.7**
CN2 PP **PP 20 14 53.5 -2.2**
CN2 SS SS 20 35 22.3 -0.5
CN2 AMB AMB
comp=Z,200nm,8.0s
CN2 LR LR
comp=Z,800nm,18.0s
CN2 LR LR
comp=Z,500nm,18.0s
CN2 LR LR
comp=Z,500nm,20.0s
MOY Mondy 163.60 13 ePKP2 **PKPab 20 11 10.9 +0.5**
MOY pmax pmax
comp=Z,48nm,2.7s
INCN Inchon 163.86 282 PFAKE 20 10 30.0 +11
INCN LR LR
comp=Z,497nm,20.0s
TLY Talaya 163.95 7 PKPab **PKPab 20 11 13.1 +1.3**
comp=Z,3.4nm,0.8s,baz=341,slow=2.7,SNR=5.3
TLY Talaya 163.95 7 PKP2 **PKPab 20 11 13.1 +1.3**
TLY MLR MLR
comp=Z,1μm,20.0s
TLY Talaya 163.95 7 PKPab **PKPab 20 11 13.1 +1.3**
TLY LR LR
comp=Z,1μm,20.0s
ZAK Zakamensk 165.19 8 ePKP2 **PKPab 20 11 14.6 -2.8**
ZAK pmax pmax
comp=Z,12nm,1.5s
LSA Lhasa 165.63 111 ePKIKP **PKPdf 20 10 21.0 -0.7**
LSA MLR MLR
comp=Z,868nm,21.0s
LSA Lhasa 165.63 111 ePKPdf **PKPdf 20 10 21.0 -0.7**
LSA LR LR
comp=Z,868nm,21.0s
DL2 Dalian 167.67 289 PKP **PKPdf 20 10 23.5 +1.2**
DL2 PKPab **PKPab 20 11 31.5 +2.8**
DL2 PP **PP 20 15 19.3 +1.5**
DL2 SS SS 20 36 06.0 -0.1
DL2 AMB AMB
comp=Z,400nm,7.3s
DL2 LR LR
comp=Z,770nm,18.3s
DL2 LR LR
comp=Z,300nm,19.3s
DL2 LR LR
comp=Z,1μm,19.6s
SONM Songino Array 167.94 1 PKP **PKPdf 20 10 21.4 -1.0**
comp=Z,1.2nm,1.0s,baz=267,slow=1.2,SNR=10
SONM PKPab **PKPab 20 11 30.4 +0.8**
comp=Z,5.9nm,0.9s,baz=341,slow=3.9,SNR=17
SONM PP **PP 20 15 16.8 -1.0**
comp=Z,1.5nm,0.9s,baz=5.7,slow=2.9,SNR=3.6
KMI Kunming 168.87 161 PKP **PKPdf 20 10 24.0 +0.1**
KMI pPKP pPKPdf 20 10 32.0 +4.5
KMI sPKP 20 10 35.0
NJ2 Nanjing 169.20 253 ePKP **PKPdf 20 10 24.5 +1.0**
GYA Guiyang 170.72 180 PKP **PKPdf 20 10 24.0 -0.8**
GYA PKPab **PKPab 20 11 44.5 +2.1**
GYA PKS **PKSdf 20 13 55.8 -1.6**
GYA SKKS 20 22 18.0
GYA AMB AMB
comp=Z,190nm,7.9s
GYA LR LR
comp=Z,250nm,23.3s
GYA LR LR
comp=Z,180nm,24.5s
GYA LR LR
comp=Z,200nm,24.8s
BJI Beijing 171.34 302 PKP **PKPdf 20 10 24.3 -0.2**
BJI PP **PP 20 15 38.3 +2.3**
BJI AMB AMB
comp=Z,400nm,13.9s
BJI LR LR
comp=Z,670nm,23.0s
BJI LR LR
comp=Z,420nm,29.5s
BJI LR LR
comp=Z,990nm,21.9s
BJT Baijiatuan 171.36 302 PFAKE 20 10 40.0 +15
BJT LR LR
comp=Z,1μm,20.0s
TIA Tai'an 171.49 276 PKP **PKPdf 20 10 22.0 -2.7**
TIA AMB AMB
comp=Z,410nm,12.0s
TIA LR LR
comp=Z,600nm,18.0s
TIA LR LR
comp=Z,870nm,21.0s
TIA LR LR
comp=Z,850nm,19.0s
WHN Wuhan 171.70 233 PKP **PKPdf 20 10 20.5 -4.5**
WHN LR LR
comp=Z,2μm,14.4s
WHN LR LR
comp=Z,4μm,23.8s
WHN LR LR
comp=Z,3μm,19.4s
GTA Gaotai 173.47 54 PKP **PKPdf 20 10 25.0 -0.7**
GTA pPKP pPKPdf 20 10 32.3 +3.0
GTA sPKP 20 10 36.0
GTA PKPab **PKPab 20 11 54.0 -0.6**
GTA PP **PP 20 15 46.3 -0.3**
GTA SKS **SKSdf 20 17 23.5 -5.4**
GTA SKKS **SKKSac 20 22 28.5 -4.6**
GTA AMB AMB
comp=Z,370nm,5.2s
GTA LR LR
comp=Z,550nm,21.9s
GTA LR LR
comp=Z,520nm,20.4s
GTA LR LR
comp=Z,670nm,20.0s
HHC Hu-ho-hao-te 173.62 324 ePKP **PKPdf 20 10 24.5 -1.1**
HHC PP **PP 20 15 47.5 +0.8**
HHC SKKS 20 22 34.5
HHC AMB AMB
comp=Z,220nm,10.5s
HHC LR LR
comp=Z,440nm,21.8s
HHC LR LR
comp=Z,520nm,18.9s
HHC LR LR
comp=Z,540nm,22.4s
ENH Enshi 174.02 204 PFAKE 20 10 40.0 +14
ENH LR LR
comp=Z,992nm,20.0s
CD2 Chengdu 174.59 153 PKP **PKPdf 20 10 26.0 -0.2**
CD2 pPKP pPKPdf 20 10 34.8 +5.0
CD2 sPKP 20 10 38.0
CD2 PP **PP 20 15 48.5 -2.6**
CD2 SKS **SKSdf 20 17 27.3 -2.1**
CD2 SKKS **SKKSac 20 22 36.0 -2.2**
CD2 AMB AMB
comp=Z,580nm,6.5s
CD2 LR LR
comp=Z,1μm,20.1s
CD2 LR LR
comp=Z,1μm,17.2s
CD2 LR LR
comp=Z,850nm,21.0s
XAN Xi'an 177.45 228 PKP **PKPdf 20 10 26.3 -0.5**
XAN pPKP pPKPdf 20 10 37.3 +6.9
LZH Lanzhou 177.71 81 ePKP **PKPdf 20 10 28.0 +1.1**
LZH pPKP pPKPdf 20 10 36.5 +6.0
LZH PP **PP 20 16 06.0 -1.5**
LZH SKKS 20 22 51.0
LZH AMB AMB
comp=Z,850nm,6.4s
LZH LR LR
comp=Z,2μm,17.8s
LZH LR LR
comp=Z,2μm,18.6s
LZH LR LR
comp=Z,2μm,19.9s

NIED ***28*** *20:04:00.39′10N×142′40E,h56km,Mw3.3 Best double couple: M₀9.46000×10¹³ NP1:φ₈146.00000°,δ14.00000°, λ62.00000°. NP2:φ₈354.00000°,δ78.00000°,λ96.00000°.*

JMA 28 20:04:42.4±0.1,39′10N×142′39E,h32km±1km,M3.5,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.56**	**268**	P	Pb	20 04 53.8	-0.1
OFUJ				S	Sb	20 05 01.5	-0.3
MIYJ	**Miyakonagasawa**	**0.65**	**317**	P	Pb	20 04 54.9	-0.5
MIYJ				S	Sb	20 05 03.6	-0.6
JMK	**Ichinoseki**	**0.92**	**261**	P	Pn	20 04 59.3	+0.2
JMK				S	Sn	20 05 11.1	-0.2
JOM	**Ohasama**	**0.93**	**294**	P	Pn	20 04 59.5	+0.3
JOM				S	Sn	20 05 11.6	+0.1
JTH	**Tanohata**	**0.93**	**334**	P	Pn	20 04 59.0	-0.3
JIO	**Ouri**	**1.04**	**232**	P	Pn	20 05 00.3	-0.4
JIO				S	Sn	20 05 12.7	-1.4
JKZ	**Kuzumaki**	**1.21**	**317**	P	Pb	20 05 04.0	-0.7
JKZ				S	Sn	20 05 19.0	+0.6
JRG	**Rokugo**	**1.40**	**283**	P	Pb	20 05 07.4	-0.5
JANG	**Nango**	**1.44**	**332**	S	Sn	20 05 25.0	+0.9
JOU	**Okura**	**1.54**	**242**	S	Sb	20 05 28.1	-1.3

JMA ***28*** *20:09:51.8±0.3,34′82N×142′98E,h38km,M3.7*
IDC ***28*** *20:09:51.1±1.1,34′81N×142′86E,h0km,mb3.8/7, mb1 3.9/10,mb1mx3.7/42,mbtmp3.8/10,ML3.7/3,Error*

ellipse: s-maj=32.0km s-min=22.1km az=80.0
*ISCJB **28** 20:09:53.3±0.7,34°.87N±0°.05×142°.93E±0°.05, h33km, mb3.9/9, Error ellipse: s-maj=7.6km s-min=6.4km az=175.9*
*NEIC **28** 20:09:56.2±0.7,34°.92N×142°.86E, h35km, mb4.4/2, Error ellipse: s-maj=18.5km s-min=13.1km az=64.0*

ISC 28 20:09:55.7±0.9,**34°.87N**±0°.07×**142°.90E**±0°.08,**h35**km,**n34,** σ1§**76**/38,**mb3.9**/9,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.59**	**263**	P		**Pn**	**Pn**	**20 10 19.1**	**-1.8**
BSO1				eS		Sn	Sn	20 10 38.5	-1.5
BSO2	**Boso 2**	**1.77**	**267**	eS		Sn	Sn	20 10 45.0	+0.4
CHOJ	**Chosi**	**1.86**	**297**	P		Pn	Pn	20 10 23.7	-1.4
CHOJ				eS		Sn	Sn	20 10 46.2	-1.2
BSO3	**Boso 3**	**1.96**	**269**	P		Pn	Pn	20 10 25.0	-1.2
BSO3				S		Sn	Sn	20 10 49.9	+0.4
BSO4	**Boso 4**	**2.10**	**274**	P		Pn	Pn	20 10 27.4	-0.9
BSO4				eS		Sn	Sn	20 10 53.8	+0.6
JCN	**Nagara**	**2.28**	**285**	S		Sn	Sn	20 10 58.3	+0.7
JHJ2	**Mitsune**	**3.10**	**237**	P		Pn	Pn	20 10 40.2	-1.9
JHJ	**Hachijo jima 2**	**3.12**	**237**	Pn		Pn	Pn	20 10 40.2	-2.1
	38nm,0.3s,baz=69,slow=22,SNR=25								
JHJ				Sn		Sn	Sn	20 11 13.0	-5.4
	70nm,0.3s,baz=258,slow=23,SNR=12								
JOD2	**Odawara 2**	**3.15**	**278**	P		Pn	Pn	20 10 40.9	-1.9
JAG	**Ashikaga**	**3.21**	**300**	P		Pn	Pn	20 10 42.8	-0.8
JFT	**Otama**	**3.36**	**323**	P		Pn	Pn	20 10 44.7	-1.0
JRY	**Ryogami san**	**3.46**	**291**	P		Pn	Pn	20 10 46.3	-0.7
JRY				S		Sn	Sn	20 11 27.9	+1.1
JYN	**Shimob**	**3.62**	**281**	P		Pn	Pn	20 10 47.6	-1.7
MJAR	**Matsushiro Arr**	**4.17**	**295**	Pn		Pn	Pn	20 10 55.9	-0.9
	2.1nm,0.3s,baz=107,slow=8.4,SNR=16								
MAJO	**Matsushiro**	**4.17**	**295**	*e*P		Pn	Pn	20 10 56.3	-0.5
MAT	**Matsushiro**	**4.17**	**295**	P		Pn	Pn	20 10 56.2	-0.6
JYK	**Kaneyama**	**4.53**	**334**	P		Pn	Pn	20 11 00.7	-1.0
JYK				eS		Sn	Sn	20 11 52.2	-0.9
ASAJ	**Asahikawa**	**9.24**	**359**	Pn		Pn	Pn	20 12 04.3	-2.1
	1.2nm,0.3s,baz=238,slow=7.7,SNR=8.7								
ASAJ				Sn		Sn	Sn	20 13 43.3	-5.8
	baz=202,slow=16								
H11N2	**WAKE ISLAND Hy**	**26.02**	**119**	T		T	T	20 42 34.1	
	baz=306								
H11N1	**WAKE ISLAND Hy**	**26.03**	**119**	T		T	T	20 42 35.8	
	baz=306								
H11N3	**WAKE ISLAND Hy**	**26.04**	**119**	T		T	T	20 42 35.7	
	baz=306								
H11S1	**WAKE ISLAND Hy**	**26.69**	**121**	T		T	T	20 43 24.8	
	baz=312,slow=75,SNR=17								
H11S3	**WAKE ISLAND Hy**	**26.69**	**122**	T		T	T	20 43 24.8	
	baz=312,slow=75,SNR=17								
H11S2	**WAKE ISLAND Hy**	**26.70**	**122**	T		T	T	20 43 25.9	
	baz=312,slow=75,SNR=16								
ZALV	**Zalesovo Beam**	**44.27**	**314**	P		**P**	**20**	**18 02.5**	**+0.8**
	0.9nm,0.7s,baz=93,slow=5.9,SNR=4.1								
ZALV				PcP		**PcP**	**20**	**19 46.5**	**+1.0**
	0.6nm,0.6s,baz=90,slow=4.8,SNR=2.7								
MKAR	**Makanchi Array**	**46.31**	**304**	P		**P**	**20**	**18 18.3**	**+0.4**
	0.8nm,0.8s,baz=84,slow=9.0,SNR=3.6								
MKAR				PcP		**PcP**	**20**	**19 53.8**	**+1.0**
	0.2nm,0.6s,baz=83,slow=6.0,SNR=2.5								
KURK	**Kurchatov**	**48.23**	**310**	*e*P		**P**	**20**	**18 33.3**	**+0.5**
	5.4nm,0.6s								
KURBB	**Kurchatov Arra**	**48.30**	**310**	P		**P**	**20**	**18 34.1**	**+0.9**
	0.7nm,0.5s,baz=84,slow=7.8,SNR=13								
WRAB	**Tennant Creek**	**55.10**	**190**	P		**P**	**20**	**19 24.6**	**+0.3**
	1.9nm,0.9s								
WRA	**Warramunga Arr**	**55.11**	**190**	P		**P**	**20**	**19 24.4**	**0.0**
	1.8nm,0.8s,baz=4.9,slow=7.5,SNR=15								
FINES	**FINESS Array B**	**71.29**	**333**	P		**P**	**20**	**21 12.4**	**+1.2**
	1.8nm,0.9s,baz=127,slow=3.7,SNR=3.0								
NOA	**NORSAR Array B**	**76.64**	**338**	P		**P**	**20**	**21 44.1**	**+1.5**
	0.4nm,0.7s,baz=41,slow=5.9,SNR=3.3								
BRTR	**Keskin Array B**	**81.19**	**313**	P		**P**	**20**	**22 09.0**	**+0.9**
	0.4nm,0.6s,baz=350,slow=4.4,SNR=2.6								
LPAZ	**La Paz**	**146.65**	**64**	PKPbc		**PKPab**	**20**	**29 35.7**	**-0.4**
	0.5nm,0.4s,baz=29,slow=13,SNR=3.0								

*NIED **28** 20:21:00,35°.30N×141°.20E, h26km, Mw4.0 Best double couple: M0 1.01000×10^15 NP1:φs297.00000°, δ26.00000°, λ151.00000°. NP2:φs53.00000°, δ78.00000°, λ67.00000°.*
*IDC **28** 20:21:39.5±0.7,35°.32N×141°.17E, h0km, mb3.8/15, mb1 3.9/17, mb1mx3.8/51, mbtmp3.8/17, ML3.6/2, MS4.0/2, Ms1 4.1/2, ms1mx3.3/47, Error ellipse: s-maj=23.3km s-min=14.7km az=86.0*
*ISCJB **28** 20:21:42.5±0.5,35°.22N±0°.04×141°.25E±0°.06, h33km, mb3.9/17, MS3.9/2, Error ellipse: s-maj=7.6km s-min=5.6km az=176.6*
*JMA **28** 20:21:42.5±0.2,35°.27N×141°.23E, h31km±3km, M3.6*
*NEIC **28** 20:21:42.7±3.9,35°.36N×141°.34E, h21km±27km, mb4.8/2, Error ellipse: s-maj=14.7km s-min=11.7km az=95.0*

ISC 28 20:21:44.3±0.7,**35°.29N**±0°.05×**141°.14E**±0°.07,**h33**km,**n39,** σ1§**54**/36,**mb3.9**/17,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.47**	**331**	P		**Pb**	**Pb**	**20 21 53.2**	**-1.3**
CHOJ				S		**Sb**	**Sb**	**20 22 01.0**	**-0.4**
BSO1	**Boso 1**	**0.65**	**192**	P		**Pn**	**Pn**	**20 21 54.9**	**-1.8**
KTR	**Katsuura**	**0.69**	**258**	P		**Pn**	**Pn**	**20 21 56.7**	**-1.0**
KTR				S		**Sb**	**Sb**	**20 22 06.8**	**-0.4**
BSO3	**Boso 3**	**0.71**	**227**	P		**Pn**	**Pn**	**20 21 56.6**	**-1.1**
BSO4	**Boso 4**	**0.72**	**246**	P		**Pn**	**Pn**	**20 21 57.4**	**-0.7**
JCN	**Nagara**	**0.77**	**280**	P		**Pn**	**Pn**	**20 21 59.0**	**+0.1**
JYT	**Yasato**	**1.21**	**321**	P		**Pn**	**Pn**	**20 22 04.5**	**-0.4**
JHJ	**Hachijo jima 2**	**2.48**	**208**	Pn		**Pn**	**Pn**	**20 22 20.5**	**-1.3**
	15nm,0.3s,baz=327,slow=23,SNR=14								
JHJ				Sn		**Sn**	**Sn**	**20 22 48.4**	**-2.1**
	48nm,0.3s,baz=15,slow=12,SNR=6.3								
MJAR	**Matsushiro Arr**	**2.68**	**299**	Pn		**Pn**	**Pn**	**20 22 27.5**	**+2.3**
	4.1nm,0.3s,baz=120,slow=9.3,SNR=35								
MAJO	**Matsushiro**	**2.69**	**299**	*e*Pn		**Pn**	**Pn**	**20 22 27.4**	**+2.1**
MAT	**Matsushiro**	**2.69**	**299**	P		**Pn**	**Pn**	**20 22 27.8**	**+2.6**
MAT				eS		**Sb**	**Sb**	**20 23 02.0**	**-2.3**
ASAJ	**Asahikawa**	**8.89**	**7**	Pn		**Pn**	**Pn**	**20 23 47.6**	**-2.8**
	1.0nm,0.3s,baz=224,slow=13,SNR=10								
ASAJ	**Asahikawa**	**8.89**	**7**	*e*Pn		**Pn**	**Pn**	**20 23 46.5**	**-3.8**
	2.1nm,0.6s								
USRK	**Ussuriysk Ar.**	**11.34**	**324**	Pn		**Pn**	**Pn**	**20 24 27.9**	**+3.9**
	0.2nm,0.3s,baz=146,slow=16,SNR=2.5								
GUMO	**Guam**	**21.87**	**170**	LR		LR	LR	20 33 54.0	
	comp=Z,114nm,19.5s,baz=267,slow=34								
H11N2	**WAKE ISLAND Hy**	**27.50**	**118**	T		T	T	20 56 20.9	
	baz=310,slow=75,SNR=230								
H11N1	**WAKE ISLAND Hy**	**27.50**	**118**	T		T	T	20 56 21.6	
	baz=310,slow=75,SNR=263								
H11N3	**WAKE ISLAND Hy**	**27.51**	**118**	T		T	T	20 56 20.4	
	baz=310,slow=75,SNR=218								
H11S3	**WAKE ISLAND Hy**	**28.15**	**120**	T		T	T	20 57 08.6	
	baz=312,slow=75,SNR=374								
H11S1	**WAKE ISLAND Hy**	**28.15**	**120**	T		T	T	20 57 09.1	
	baz=312,slow=75,SNR=569								
H11S2	**WAKE ISLAND Hy**	**28.16**	**120**	T		T	T	20 57 09.1	
	baz=312,slow=75,SNR=365								
SONM	**Songino Array**	**28.61**	**307**	P		**P**	**20**	**27 37.6**	**0.0**
	0.5nm,0.5s,baz=107,slow=8.2,SNR=3.6								
ZALV	**Zalesovo Beam**	**42.94**	**314**	P		**P**	**20**	**29 39.8**	**0.0**
	1.8nm,0.5s,baz=98,slow=6.1,SNR=12								
MKAR	**Makanchi Array**	**44.87**	**304**	P		**P**	**20**	**29 56.0**	**+0.4**
	0.9nm,0.7s,baz=87,slow=8.9,SNR=9.5								
KURK	**Kurchatov**	**46.85**	**309**	*e*P		**P**	**20**	**30 10.9**	**-0.1**
	25nm,0.7s								
KURBB	**Kurchatov Arra**	**46.91**	**309**	P		**P**	**20**	**30 11.8**	**+0.3**
	1.8nm,0.5s,baz=85,slow=8.2,SNR=27								
ILAR	**Eielson Array**	**51.09**	**32**	P		**P**	**20**	**30 43.7**	**+0.5**
	0.3nm,0.8s,baz=263,slow=7.0,SNR=3.4								
ILAR				LR		LR	LR	20 56 31.0	
	comp=Z,494nm,18.1s,baz=102,slow=41								
BVAR	**Borovoye Array**	**51.59**	**313**	P		**P**	**20**	**30 47.9**	**+0.7**
	1.0nm,0.7s,baz=112,slow=9.5,SNR=3.4								
FITZ	**Fitzroy Crossi**	**55.10**	**198**	P		**P**	**20**	**31 13.7**	**+0.5**
	1.4nm,0.7s,baz=353,slow=8.7,SNR=4.3								
WRAB	**Tennant Creek**	**55.30**	**188**	*e*P		**P**	**20**	**31 14.9**	**+0.2**
WRA	**Warramunga Arr**	**55.31**	**188**	P		**P**	**20**	**31 14.4**	**-0.3**
	1.3nm,0.6s,baz=2.4,slow=7.4,SNR=13								
ARU	**Arti**	**57.52**	**319**	P		**P**	**20**	**31 30.7**	**+0.5**
	2.1nm,0.7s,baz=130,slow=6.5,SNR=4.0								
ABKAR	**Akbulak array**	**58.90**	**311**	*e*P		**P**	**20**	**31 40.2**	**+0.3**
	1.4nm,0.7s								
ASAR	**Alice Springs**	**59.03**	**188**	P		**P**	**20**	**31 42.0**	**+1.0**
	0.6nm,0.6s,baz=15,slow=8.7,SNR=10								
FINES	**FINESS Array B**	**70.25**	**332**	P		**P**	**20**	**32 52.7**	**-1.1**
	2.0nm,0.9s,baz=28,slow=6.8,SNR=2.8								
NOA	**NORSAR Array B**	**75.70**	**337**	P		**P**	**20**	**33 27.2**	**+1.1**
	0.6nm,0.8s,baz=47,slow=9.8,SNR=2.7								
PDAR	**Pinedale Array**	**79.05**	**45**	P		**P**	**20**	**33 45.3**	**-0.2**
	0.3nm,0.5s,baz=333,slow=2.0,SNR=3.8								
BRTR	**Keskin Array B**	**79.84**	**312**	P		**P**	**20**	**33 49.5**	**-0.2**
	0.4nm,0.7s,baz=53,slow=5.6,SNR=2.4								
TXAR	**Lajitas Array**	**91.36**	**52**	P		**P**	**20**	**34 47.9**	**+0.7**
	0.2nm,0.5s,baz=298,slow=1.9,SNR=4.0								

*GUC **28** 20:29:49.9±0.4,36°.12S×73°.75W, h19km±7km, ML4.2*
*IDC **28** 20:29:51.1±1.0,36°.07S×73°.43W, h0km, mb4.1/6, mb1 4.2/8, mb1mx4.0/29, mbtmp4.0/8, ML3.8/2, MS4.1/2, Ms1 4.1/2, ms1mx3.6/26, Error ellipse: s-maj=38.9km s-min=19.6km az=87.0*
*NEIC **28** 20:29:56.5±0.6,36°.03S×73°.28W, h35km, mb4.3/1, Error ellipse: s-maj=18.1km s-min=9.7km az=89.0*

ISC 28 20:29:50.9±2.0,**36°.05S**±0°.04×**73°.55W**±0°.08,**h1**km±12km, **n27,** σ1§**25**/33,**mb4.2**/6,**Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.62**	**98**	*e*P		**Pb**	**Pb**	**20 30 04.4**	**-0.1**
COCH				eS		**Sn**	**Sn**	**20 30 15.0**	**-2.4**
CCSP	**San Pedro de C**	**0.87**	**156**	*e*P		**Pg**	**Pg**	**20 30 06.3**	**-1.3**
CCSP				eS		**Sg**	**Sg**	**20 30 18.3**	**-0.6**
CCSP				IAML				20 30 21.3	
	comp=N,12μm,0.3s								
CCHI	**Chillan**	**1.31**	**115**	*e*P		**Pg**	**Pg**	**20 30 14.7**	**-1.3**
CCHI				eS		**Sn**	**Sn**	**20 30 33.8**	**-0.7**
CCHI				IAML				20 30 48.7	
	comp=N,7μm,0.5s								
GO05	**HualaæØ**	**1.68**	**52**	*e*P		**Pn**	**Pn**	**20 30 21.1**	**-0.4**
GO05				eS		**Sg**	**Sg**	**20 30 45.2**	**+0.4**
TALC	**Talca**	**1.69**	**68**	*e*P		**Pn**	**Pn**	**20 30 21.5**	**0.0**
TALC				eS		**Sg**	**Sg**	**20 30 45.9**	**+0.8**
NICH	**Los Niches**	**2.16**	**62**	*e*P		**Pn**	**Pn**	**20 30 29.2**	**+1.1**
CANA	**Caviahue**	**2.71**	**133**	*i* P		**Pn**	**Pn**	**20 30 36.7**	**+0.9**
CANA				*i* S		**Sg**	**Sg**	**20 31 21.6**	**+3.7**
CANA				IAML				20 31 27.3	
	comp=E,469nm,0.5s								
ARCO	**CERRO ARCO**	**4.98**	**51**	*i* P		**Pn**	**Pn**	**20 31 09.1**	**+2.1**
ARCO				IAML				20 31 30.3	
	comp=Z,82nm,0.6s								
AUSP	**Uspallata**	**5.14**	**43**	*i* P		**Pn**	**Pn**	**20 31 10.6**	**+1.3**
ASAL	**Salagasta**	**5.21**	**50**	*i* P		**Pn**	**Pn**	**20 31 11.6**	**+1.6**
PLCA	**Paso Flores**	**5.24**	**154**	Pn		**Pn**	**Pn**	**20 31 10.9**	**+0.5**
	comp=Z,0.8nm,0.3s,baz=354,slow=13,SNR=26								
PLCA				Lg		Lg	Lg	20 32 31.4	
	comp=Z,1.6nm,0.3s,baz=264,slow=19,SNR=2.5								
RTLS	**Leoncito**	**5.52**	**41**	*i* P		**Pn**	**Pn**	**20 31 14.8**	**+0.3**
RTCV	**Cerro Valdivia**	**5.89**	**46**	*i* P		**Pn**	**Pn**	**20 31 20.5**	**+1.0**
LCO	**Las Campanas**	**7.42**	**20**	*e*Pn		**Pn**	**Pn**	**20 31 39.4**	**-1.2**
	comp=Z,18nm,0.6s								
CPUP	**Villa Florida**	**16.90**	**60**	Pn		**Pn**	**Pn**	**20 33 49.0**	**+0.3**
	comp=Z,0.1nm,0.3s,baz=259,slow=12,SNR=2.9								
CPUP				LR		LR	LR	20 40 28.5	
	comp=Z,481nm,18.9s,baz=346,slow=38								
LPAZ	**La Paz**	**20.26**	**15**	P		**P**	**P**	**20 34 29.6**	**+1.1**
	comp=Z,5.9nm,0.8s,baz=188,slow=8.6,SNR=16								
SIV	**San Ignacio**	**22.86**	**32**	P		**P**	**P**	**20 34 55.7**	**-0.2**
	comp=Z,10nm,1.0s,baz=228,slow=13,SNR=17								
PTGA	**Pitinga**	**37.34**	**23**	P		**P**	**P**	**20 37 04.4**	**-0.6**
	comp=Z,3.0nm,0.7s,baz=196,slow=13,SNR=7.4								
SNAA	**Sanae**	**50.17**	**157**	P		**P**	**P**	**20 38 47.4**	**-0.3**
	comp=Z,2.6nm,0.8s,baz=272,slow=6.4,SNR=9.8								
SNAA				PcP		**PcP**	**PcP**	**20 40 06.5**	**-0.5**
	comp=Z,1.1nm,0.6s,baz=306,slow=19,SNR=3.1								
TXAR	**Lajitas Array**	**70.94**	**332**	P		**P**	**P**	**20 41 10.7**	**+0.7**
	comp=Z,0.8nm,0.6s,baz=151,slow=7.5,SNR=5.9								
SDCO	**Great Sand Dun**	**79.17**	**335**	*e*P		**P**	**P**	**20 41 58.9**	**+1.3**
	comp=Z,3.3nm,0.9s								
PDAR	**Pinedale Array**	**85.05**	**334**	P		**P**	**P**	**20 42 29.5**	**+1.3**
	comp=Z,0.3nm,0.4s,baz=148,slow=7.1,SNR=4.2								
AFI	**Afiamalu**	**88.43**	**254**	LR		LR	LR	21 17 28.1	
	comp=Z,109nm,18.1s,baz=70,slow=32								
ABKAR	**Akbulak array**	**143.91**	**54**	*e*PKPpre		PKPpre	PKPpre	20 49 24.3	
BVAR	**Borovoye Array**	**149.61**	**45**	PKPbc		**PKPbc**	**PKPbc**	**20 49 41.5**	**-0.2**
	comp=Z,0.7nm,0.6s,baz=274,slow=3.9,SNR=5.8								
ZALV	**Zalesovo Beam**	**156.62**	**33**	PKPab		**PKPab**	**PKPab**	**20 50 16.2**	**0.0**
	comp=Z,1.6nm,0.9s,baz=303,slow=6.3,SNR=6.5								
MKAR	**Makanchi Array**	**159.02**	**52**	PKP		**PKPdf**	**PKPdf**	**20 49 49.7**	**-0.7**
	comp=Z,0.3nm,0.8s,baz=279,slow=2.8,SNR=3.7								
MKAR				PKPab		**PKPab**	**PKPab**	**20 50 26.6**	**-0.4**
	comp=Z,0.1nm,0.4s,baz=294,slow=6.0,SNR=3.7								

PGC 28 20:32:54.2±3.6,**58°.48N×138°.15W, h30km, ML2.0**/4, **118km Ese of Yakutat, Ak Southeastern Alaska, Southeastern Alaska**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PLBC	**Pleasant Camp**	**1.35**	**43**	P		Pn	Pn	20 33 15.8	-1.2
PLBC				S		Sb	Sb	20 33 35.0	-0.7
PCA	**Pinnacle**	**1.95**	**327**	Pn		Pn	Pn	20 33 25.6	+0.3
PCA				Sg		Sb	Sb	20 33 53.7	+0.8
YUK7	**Dusty Glacier**	**2.05**	**0**	Pg		Pb	Pb	20 33 30.4	-0.5
YUK7				Sn		Sn	Sn	20 33 52.1	+0.5
HYT	**Haines Junctio**	**2.37**	**8**	Pg		Pb	Pb	20 33 34.3	-2.0
HYT				Sg		Sb	Sb	20 34 08.0	+2.8
YUK6	**Outpost Mounta**	**2.47**	**358**	Pn		Pn	Pn	20 33 33.0	+0.4
YUK6				Sg		Sb	Sb	20 34 10.8	+2.7
WHY	**Whitehorse**	**2.75**	**36**	Pn		Pn	Pn	20 33 36.0	-0.3
WHY				Sg		Sb	Sb	20 34 18.6	+2.8

*IDC **28** 20:34:39.6±0.6, 18°.82N×67°.68W, h0km, mb4.1/16, mb1 4.3/18, mb1mx4.1/39, mbtmp4.1/18, ML3.1/2, MS4.3/2, Ms1 4.3/2, ms1mx3.6/35, Error ellipse: s-maj=17.6km s-min=12.7km az=74.0*
*RSPR **28** 20:34:40.4, 19°.03N×67°.93W, h10km±22km, MD4.6/10*
*NEIC **28** 20:34:40.4, 19°.03N×67°.93W, h10km, MD4.6(RSPR), After RSPR.*
*ISCJB **28** 20:34:41.6±1.3, 18°.76N±0°.04×67°.89W±0°.04, h30km±9km, mb4.1/15, MS4.3/2, Error ellipse: s-maj=7.7km s-min=6.1km az=27.7*

ISC 28 20:34:42.2±1.6,**18°.85N**±0°.05×**67°.76W**±0°.06,**h17**km±9km, **n50,** σ1§**03**/61,**mb4.2**/15,**16C-7D, Mona Passage**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**0.54**	**149**	⇓*e*P		**Pg**	**Pg**	**20 34 53.9**	**+1.0**
IDE	**Isla Desecheo**	**0.54**	**149**	⇓*e*P		**Pg**	**Pg**	**20 34 53.9**	**+1.0**
AGPR	**Aguadilla, PR**	**0.72**	**121**	⇑*e*P		**Pg**	**Pg**	**20 34 55.7**	**-0.7**
AGPR	**Aguadilla, PR**	**0.72**	**121**	⇑*e*P		**Pg**	**Pg**	**20 34 55.7**	**-0.7**
MPR	**Mayaguez**	**0.87**	**137**	⇑*e*P		**Pb**	**Pb**	**20 34 58.4**	**-0.4**
MPR	**Mayaguez**	**0.87**	**137**	⇑*e*P		**Pb**	**Pb**	**20 34 58.4**	**-0.4**
LSP	**Las Mesas**	**0.93**	**136**	⇑*e*P		**Pb**	**Pb**	**20 34 59.6**	**-0.3**
LSP	**Las Mesas**	**0.93**	**136**	⇑*e*P		**Pb**	**Pb**	**20 34 59.6**	**-0.3**
CRPR	**Cabo Rojo, PR**	**1.04**	**143**	⇑*e*P		**Pn**	**Pn**	**20 35 01.1**	**-0.9**
CRPR				eS		**Sb**	**Sb**	**20 35 17.2**	**+2.1**
CRPR	**Cabo Rojo, PR**	**1.04**	**143**	⇑*e*P		**Pn**	**Pn**	**20 35 01.1**	**-0.9**
AOPR	**Arecibo Observ**	**1.08**	**117**	⇑*e*P		**Pn**	**Pn**	**20 35 00.7**	**-1.8**
AOPR				eS		**Sb**	**Sb**	**20 35 17.2**	**+1.0**
AOPR	**Arecibo Observ**	**1.08**	**117**	⇑*e*P		**Pn**	**Pn**	**20 35 00.7**	**-1.8**
GBPR	**Guanica, Bosqu**	**1.21**	**136**	⇑*e*P		**Pn**	**Pn**	**20 35 03.9**	**-0.4**
GBPR				eS		**Sn**	**Sn**	**20 35 22.1**	**+1.9**
GBPR	**Guanica, Bosqu**	**1.21**	**136**	⇑*e*P		**Pn**	**Pn**	**20 35 03.9**	**-0.4**
OBIP	**Obispado Ponce**	**1.36**	**126**	⇑*e*P		**Pn**	**Pn**	**20 35 05.6**	**-0.8**
OBIP				eS		**Sn**	**Sn**	**20 35 24.8**	**+0.8**
OBIP	**Obispado Ponce**	**1.36**	**126**	⇑*e*P		**Pn**	**Pn**	**20 35 05.6**	**-0.8**
SJG	**San Juan**	**1.70**	**115**	⇓*e*P		**Pn**	**Pn**	**20 35 10.2**	**-0.8**
SJG				eS		**Sn**	**Sn**	**20 35 33.2**	**+0.9**
SJG	**San Juan**	**1.70**	**115**	Pn		**Pn**	**Pn**	**20 35 10.2**	**-0.8**
	161nm,0.3s,baz=303,slow=10,SNR=75								
SJG				Sn		**Sn**	**Sn**	**20 35 30.8**	**-1.5**
	433nm,0.3s,baz=324,slow=19,SNR=17								
CBYP	**Canovanas**	**1.90**	**107**	⇑*e*P		**Pn**	**Pn**	**20 35 12.9**	**-0.9**
CBYP				eS		**Sn**	**Sn**	**20 35 38.4**	**+1.0**
CBYP	**Canovanas**	**1.90**	**107**	⇑*e*P		**Pn**	**Pn**	**20 35 12.9**	**-0.9**
HUMP	**Col San Antoni**	**1.95**	**111**	⇓*e*P		**Pn**	**Pn**	**20 35 14.0**	**-0.5**
HUMP				eS		**Sn**	**Sn**	**20 35 40.0**	**+1.5**
HUMP	**Col San Antoni**	**1.95**	**111**	⇓*e*P		**Pn**	**Pn**	**20 35 14.0**	**-0.5**
STVI	**Saint Thomas**	**2.71**	**100**	⇑*e*P		**Pn**	**Pn**	**20 35 24.4**	**-0.6**
STVI				eS		**Sn**	**Sn**	**20 35 57.5**	**+0.2**
STVI	**Saint Thomas**	**2.71**	**100**	⇑*e*P		**Pn**	**Pn**	**20 35 24.4**	**-0.6**
PCRV	**Puerto La Cruz**	**9.14**	**160**	Pn		**Pn**	**Pn**	**20 36 52.8**	**-0.6**
	0.7nm,0.3s,baz=315,slow=5.7,SNR=3.3								
PCRV				Sn		**Sn**	**Sn**	**20 38 34.5**	**-1.3**
	1.3nm,0.3s,baz=353,slow=19,SNR=3.3								

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SDV	**Santo Domingo**	**10.29**	**196**	Pn		**Pn**	**Pn**	**20 37 08.4**	**-0.8**
	0.4nm,0.3s,baz=18,slow=20,SNR=2.5								
SDV				Sn		**Sn**	**Sn**	**20 39 02.0**	**-2.4**
	1.2nm,0.3s,baz=317,slow=10,SNR=2.4								
ROSC	**El Rosal**	**15.32**	**206**	Pn		**Pn**	**Pn**	**20 38 20.4**	**+2.2**
	1.4nm,0.3s,baz=108,slow=20,SNR=1.6								
PTGA	**Pitinga**	**20.91**	**158**	P		**P**	**P**	**20 39 25.3**	**+1.3**
	6.7nm,1.0s,baz=344,slow=13,SNR=15								
TKL	**Tuckaleechee C**	**21.92**	**323**	S		**S**	**S**	**20 43 35.7**	**-0.6**
	5.2nm,0.6s,baz=66,slow=17,SNR=3.8								
TXAR	**Lajitas Array**	**34.28**	**295**	P		P	P	20 41 30.0	+2.3
	0.4nm,0.5s,baz=120,slow=10,SNR=3.4								
TXAR				PcP		**PcP**	**PcP**	**20 44 04.7**	**+0.6**
	0.5nm,0.8s,baz=122,slow=5.2,SNR=3.5								
TXAR				ScP		**ScP**	**ScP**	**20 47 50.7**	**+2.2**
	0.3nm,0.7s,baz=132,slow=6.7,SNR=4.0								
SIV	**San Ignacio**	**35.24**	**169**	P		**P**	**P**	**20 41 35.4**	**-0.6**
	1.8nm,0.7s,baz=335,slow=8.7,SNR=3.2								
SCHQ	**Schefferville**	**35.93**	**1**	P		**P**	**P**	**20 41 42.0**	**+0.5**
	2.9nm,0.5s,baz=196,slow=15,SNR=3.9								
LVC	**Limon Verde**	**41.22**	**182**	P		**P**	**P**	**20 42 26.3**	**-0.3**
	9.6nm,0.6s,baz=24,slow=19,SNR=3.3								
PFO	**Pinyon Flats O**	**45.69**	**299**	LR		LR		21 04 32.8	
	comp=Z,221nm,18.3s,baz=133,slow=39								
CPUP	**Villa Florida**	**46.04**	**167**	P		**P**	**P**	**20 43 03.0**	**-2.0**
	1.7nm,0.6s,baz=9.5,slow=7.5,SNR=3.2								
YKA	**Yellowknife Ar**	**54.19**	**335

0.7nm,0.5s,baz=135,slow=11,SNR=4.5
KK31 ⇓Sn **Sn 21 05 45.2 -2.2**
0.6nm,0.4s,baz=145,slow=25,SNR=4.8
PYUN Piuthan 9.17 149 *eP* **Pn 21 04 13.5 +1.2**
14nm,0.4s
KOLN Koldanda 9.71 147 *eP* **Pn 21 04 19.3 -0.5**
8.5nm,0.5s
GKN Gorkha 10.00 142 *eP* **Pn 21 04 20.9 -2.8**
5.4nm,0.4s
PKIN Phulchoki 10.74 140 *eP* Pn 21 04 24.7 -9.2
7.2nm,0.5s
MK31 Makanchi Array 11.20 16 ⇓Pn **Pn 21 04 39.4 -0.5**
0.5nm,0.5s,baz=198,slow=13,SNR=10
MK31 ⇓Sn **Sn 21 06 42.1 -1.5**
0.4nm,0.3s,baz=195,slow=23,SNR=6.0
MKAR Makanchi Array 11.20 16 Pn **Pn 21 04 40.3 +0.4**
0.3nm,0.3s,baz=200,slow=13,SNR=8.0
MKAR Sn **Sn 21 06 42.7 -0.9**
0.3nm,0.3s,baz=193,slow=22,SNR=5.6
KURBB Kurchatov Arra 14.51 2 Pn **Pn 21 05 25.6 +0.9**
0.0nm,0.3s,baz=189,slow=12,SNR=3.2
BVAR Borovoye Array 17.67 345 P **P 21 06 05.4 +0.2**
0.3nm,0.3s,baz=160,slow=14,SNR=6.6
AKTO Aktyubinsk 20.16 321 P **P 21 06 32.3 -0.2**
1.4nm,0.4s,baz=121,slow=8.9,SNR=3.2
ARU Arti 24.09 333 P **P 21 07 13.1 +0.1**
1.0nm,0.4s,baz=112,slow=11,SNR=3.2
SONM Songino Array 24.19 52 P **P 21 07 17.7 +3.4**
0.6nm,0.8s,baz=251,slow=9.0,SNR=3.7
FINES FINESS Array B 40.87 325 P **P 21 09 38.4 -0.8**
0.4nm,0.4s,baz=92,slow=8.9,SNR=6.2
ARCES ARCESS Array B 43.62 336 P **P 21 10 01.9 +0.4**
1.2nm,0.8s,baz=107,slow=7.6,SNR=2.8
NOA NORSAR Array B 47.94 323 P **P 21 10 34.4 -1.3**
0.4nm,0.6s,baz=93,slow=7.6,SNR=3.3

IDC 28 21:10:45.1±6.0, 23°24S×175°94W, h0km, mb3.9/3, mb1 3.9/3, mb1mx3.6/36, mbtmp3.8/3, Error ellipse: s-maj=242.3km s-min=58.5km az=147.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**45.82**	**259**	P		21 19 10.1	+0.9
0.5nm,0.7s,baz=101,slow=8.1,SNR=4.1							
WRA	**Warramunga Arr**	**46.18**	**264**	P		21 19 11.0	-1.0
0.8nm,0.7s,baz=103,slow=8.3,SNR=9.5							
SONM	**Songino Array**	**99.06**	**318**	P	Pdif	21 24 28.4	+0.3
0.4nm,0.5s,baz=117,slow=5.0,SNR=3.0							
BRTR	**Keskin Array B**	**150.08**	**310**	PKPbc	PKPbc	21 30 37.4	-0.8
0.4nm,0.7s,baz=117,slow=0.3,SNR=3.8							

*PDG **28** 21:16:23.6±0.2, 42.12N×19.91E, h19km, ML2.0/12, Error ellipse: s-maj=0.3km s-min=0.5km az=0.0*
*CSEM **28** 21:16:23.4±0.3, 42.10N×19.92E, h2km, ML2.0, Error ellipse: s-maj=5.5km s-min=4.4km az=123.0*
*BEO **28** 21:16:25.3±0.3, 42.10N×19.88E, h0km, M1.7/7*
*TIR **28** 21:16:33.8, 41.60N×20.14E, h2km, ML2.1*
ISC 28 21:16:23.9±1.2, 42.11N±0.02×19.90E±0.02, h19km±3km, n41, σ1°10/77, 14C-8D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PVY	**Plav**	**0.49**	**5**	⇑*i*Pg	**Pg**	**21 16 33.3**	**-0.6**
PVY				*e*Sg	**Sb**	**21 16 41.2**	**+0.3**
PVY	**Plav**	**0.49**	**5**	⇓*i*Pg	**Pg**	**21 16 33.3**	**-0.6**
PVY				*e*Sg	**Sb**	**21 16 41.2**	**+0.3**
ULC	**Ulcinj**	**0.51**	**254**	⇓*i*Pg	**Pg**	**21 16 33.9**	**-0.2**
ULC				*e*Sg	**Sb**	**21 16 42.3**	**+1.1**
ULC	**Ulcinj**	**0.51**	**254**	⇓*i*Pg	**Pg**	**21 16 33.9**	**-0.2**
ULC				*e*Sg	**Sb**	**21 16 42.3**	**+1.1**
DRME	**Dracevica, Mon**	**0.54**	**279**	⇑*i*Pg	**Pb**	**21 16 33.4**	**-1.3**
DRME				*e*Sg	**Sg**	**21 16 43.0**	**+1.0**
DRME	**Dracevica, Mon**	**0.54**	**279**	⇑*i*Pg	**Pb**	**21 16 33.4**	**-1.3**
DRME				*e*Sg	**Sg**	**21 16 43.0**	**+1.0**
PDG	**Podgorica**	**0.58**	**304**	*e*Pg	**Pb**	**21 16 35.6**	**+0.2**
PDG				*e*Sg	**Sg**	**21 16 43.8**	**+0.6**
PDG	**Podgorica**	**0.58**	**304**	⇑*i*Pg	**Pb**	**21 16 34.4**	**-0.9**
PDG				*e*Sg	**Sg**	**21 16 43.8**	**+0.6**
TTG	**Podgorica**	**0.58**	**304**	⇑*i*PG	**Pb**	**21 16 34.4**	**-0.9**
TTG				*e*Sg	**Sg**	**21 16 44.1**	**+0.9**
TIR	**Tirane**	**0.76**	**182**	*i* PG	**Pb**	**21 16 38.0**	**-0.4**
TIR				*i* SG	**Sn**	**21 16 50.0**	**-0.4**
TIR	**Tirane**	**0.76**	**182**	*e*Pg	**Pb**	**21 16 37.8**	**-0.6**
TIR				*e*Sg	**Sn**	**21 16 49.8**	**-0.7**
TIR	**Tirane**	**0.76**	**182**	*i* Pg	**Pb**	**21 16 38.0**	**-0.4**
TIR				*e*Sg	**Sn**	**21 16 49.8**	**-0.7**
BEY	**Berane**	**0.77**	**360**	⇑*i*Pg	**Pb**	**21 16 37.9**	**-0.8**
BEY				*e*Sg	**Sn**	**21 16 50.1**	**-0.8**
IVA	**Berane**	**0.77**	**360**	⇑*i*Pg	**Pb**	**21 16 37.9**	**-0.8**
IVA				*e*Sg	**Sn**	**21 16 50.1**	**-0.8**
BUM	**Brajici-Budva**	**0.77**	**285**	⇑*i*Pg	**Pb**	**21 16 38.8**	**-0.2**
BUM				*e*Sg	**Sn**	**21 16 50.9**	**-0.1**
BUM	**Brajici-Budva**	**0.77**	**285**	⇑*i*Pg	**Pg**	**21 16 38.8**	**-0.2**
BUM				*e*Sg	**Sn**	**21 16 50.9**	**-0.1**
CEME	**Cevo**	**0.85**	**302**	⇑*i*Pg	**Pb**	**21 16 39.4**	**-0.7**
CEME				*e*Sg	**Sn**	**21 16 53.4**	**+0.5**
CEME	**Cevo**	**0.85**	**302**	⇑*i*Pg	**Pb**	**21 16 39.4**	**-0.7**
CEME				*e*Sg	**Sn**	**21 16 53.4**	**+0.5**
NKME	**Niksic**	**0.96**	**314**	⇑*i*Pg	**Pb**	**21 16 41.2**	**-0.8**
NKME				*e*Sg	**Sn**	**21 16 57.2**	**+1.5**
NKME	**Niksic**	**0.96**	**314**	⇑*i*Pg	**Pb**	**21 16 41.2**	**-0.8**
NKME				*e*Sg	**Sn**	**21 16 57.2**	**+1.5**
NKY	**Niksic**	**0.97**	**317**	⇓*i*Pg	**Pb**	**21 16 41.6**	**-0.6**
NKY				*e*Sg	**Sn**	**21 16 57.7**	**+1.6**
NKY	**Niksic**	**0.97**	**317**	⇓*i*Pg	**Pb**	**21 16 41.6**	**-0.6**
NKY				*e*Sg	**Sn**	**21 16 57.7**	**+1.6**
HCY	**Herceg Novi**	**1.10**	**289**	⇓*i*Pg	**Pb**	**21 16 44.1**	**-0.2**
HCY				*e*Sg	**Sg**	**21 17 02.0**	**+2.4**
HCY	**Herceg Novi**	**1.10**	**289**	⇓*i*Pg	**Pb**	**21 16 44.1**	**-0.2**
BRY	**Bratogost**	**1.28**	**309**	*e*Pg	**Pb**	**21 16 47.3**	**-0.2**
BRY				*e*Sg	**Sg**	**21 17 06.9**	**+1.4**
BRY	**Bratogost**	**1.28**	**309**	*e*Pg	**Pb**	**21 16 47.3**	**-0.2**
BRY				*e*Sg	**Sg**	**21 17 06.9**	**+1.4**
TREB	**Trebinje**	**1.30**	**299**	*e*Pg	**Pb**	**21 16 47.7**	**0.0**
TREB				*e*Sg	**Sg**	**21 17 06.6**	**+0.6**
TREB	**Trebinje**	**1.30**	**299**	*e*Pg	**Pb**	**21 16 47.7**	**0.0**
TREB				*e*Sg	**Sg**	**21 17 06.6**	**+0.6**
UPM	**Unac-Piva**	**1.32**	**327**	⇓*i*Pg	**Pb**	**21 16 48.0**	**-0.2**
UPM				*e*Sg	**Sg**	**21 17 07.5**	**+0.8**
UPM	**Unac-Piva**	**1.32**	**327**	⇓*i*Pg	**Pb**	**21 16 48.0**	**-0.2**
UPM				*e*Sg	**Sg**	**21 17 07.5**	**+0.8**
SELS	**Selova**	**1.43**	**39**	*e*Pg	**Pg**	**21 16 50.3**	**-1.2**
SELS				*e*Sg	**Sg**	**21 17 12.3**	**+2.1**
IVAS	**Ivanjica**	**1.48**	**7**	*e*Pg	**Pg**	**21 16 52.1**	**-0.4**
IVAS				*e*Sg	**Sg**	**21 17 11.4**	**-0.5**
IVAS	**Ivanjica**	**1.48**	**7**	*e*Pg	**Pg**	**21 16 52.1**	**-0.4**
IVAS				*e*Sg	**Sg**	**21 17 11.4**	**-0.5**
GRUS	**Gruza**	**1.88**	**18**	*e*Pn	**Pb**	**21 16 57.6**	**0.0**
GRUS				*e*Sg	**Sg**	**21 17 25.8**	**+1.3**
GRUS	**Gruza**	**1.88**	**18**	*e*Pn	**Pb**	**21 16 57.6**	**0.0**
GRUS				*e*Sg	**Sg**	**21 17 25.8**	**+1.3**
ZAPS	**Zavoj**	**2.33**	**59**	*e*Pn	**Pb**	**21 17 06.2**	**+0.9**
ZAPS	**Zavoj**	**2.33**	**59**	*e*Pn	**Pb**	**21 17 06.2**	**+0.9**
ZAGS	**Zajecar**	**2.42**	**44**	*e*Pn	**Pb**	**21 17 07.2**	**+0.4**
ZAGS				*e*Sg	**Sg**	**21 17 41.3**	**-0.4**
ZAGS	**Zajecar**	**2.42**	**44**	*e*Pn	**Pb**	**21 17 07.2**	**+0.4**
ZAGS				*e*Sg	**Sg**	**21 17 41.3**	**-0.4**
UDBI	**Udbina**	**3.87**	**310**	*e*Pn	**Pb**	**21 17 27.4**	**-4.1**
UDBI	**Udbina**	**3.87**	**310**	*e*Pn	**Pb**	**21 17 27.4**	**-4.1**

*ISCJB **28** 21:19:14.2±1.0, 18.92S±0.09×169.3E±0.1, h100km, mb4.4/9, Error ellipse: s-maj=20.5km s-min=10.8km az=25.0*
*NEIC **28** 21:19:16.6±2.3, 18.93S×169.30E, h110km±20km, mb4.6/3, Error ellipse: s-maj=20.1km s-min=16.4km az=208.0*
*IDC **28** 21:19:18.6±4.4, 19.11S×169.24E, h122km±37km, mb4.1/7, mb1 4.2/8, mb1mx3.7/40, mbtmp4.5/8, MS3.8/1, Ms1 3.8/1, ms1mx3.1/33, Error ellipse: s-maj=37.8km s-min=23.4km az=7.0*
ISC 28 21:19:16.1±1.1, 19.0S±0.1×169.3E±0.2, h100km, n15, σ1°12/15, mb4.2/9, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.08**	**220**	P	**Pn**	**21 20 18.5**	**+2.0**
15nm,0.3s,baz=29,slow=3.6,SNR=171							
DZM				S	**Sn**	**21 21 02.8**	**-0.6**
22nm,0.3s,baz=329,slow=22,SNR=15							
DZM	**Mont Dzumac**	**4.08**	**220**	*e*Pn	**Pn**	**21 20 17.3**	**+0.8**
DZM				*e*Sn	**Sn**	**21 21 01.9**	**-1.5**
URZ	**Urewera**	**20.41**	**162**	P	**P**	**21 23 45.2**	**0.0**
14nm,0.6s,baz=344,slow=6.9,SNR=11							
CTA	**Charters Tower**	**21.73**	**263**	P	**P**	**21 24 01.5**	**+1.9**
5.0nm,0.6s,baz=80,slow=12,SNR=6.2							
RPZ	**Rata Peaks**	**24.73**	**177**	LR	LR	21 31 54.1	
comp=Z,222nm,19.6s,baz=154,slow=31							
STKA	**Stephens Creek**	**28.03**	**237**	P	**P**	**21 24 57.5**	**-0.5**
4.4nm,0.7s,baz=76,slow=9.6,SNR=15							
WRA	**Warramunga Arr**	**32.93**	**262**	P	**P**	**21 25 40.1**	**-1.2**
2.2nm,0.6s,baz=90,slow=8.5,SNR=42							
ASAR	**Alice Springs**	**33.23**	**256**	P	**P**	**21 25 43.2**	**-0.8**
7.7nm,0.4s,baz=83,slow=8.9,SNR=87							
GUMO	**Guam**	**40.30**	**322**	P	P	21 26 42.2	-1.7
10nm,0.6s							
FITZ	**Fitzroy Crossi**	**41.31**	**264**	P	**P**	**21 26 52.5**	**+0.3**
13nm,0.7s,baz=101,slow=6.9,SNR=44							
MBWA	**Marble Bar**	**46.45**	**259**	*e*P	**P**	**21 27 32.6**	**-0.7**
4.7nm,0.4s							
MAJO	**Matsushiro**	**62.52**	**332**	P	**P**	**21 29 29.0**	**-0.3**
0.9nm,0.4s							
ILAR	**Eielson Array**	**89.95**	**17**	P	**P**	**21 32 03.6**	**-0.1**
0.5nm,0.7s,baz=234,slow=5.2,SNR=3.9							
ARCES	**ARCESS Array B**	**124.81**	**345**	PKP	**PKPdf**	**21 38 03.0**	**-0.6**
0.4nm,0.3s,baz=98,slow=2.7,SNR=4.2							
GERES	**GERESS Array B**	**144.26**	**332**	PKP	**PKPab**	**21 38 39.5**	**+0.9**
0.7nm,0.6s,baz=32,slow=5.2,SNR=10.0							

*ISCJB **28** 21:21:57.6±0.6, 35.62N±0.04×140.83E±0.08, h51km±4km, mb3.5/8, Error ellipse: s-maj=11.3km s-min=6.9km az=168.3*
*JMA **28** 21:21:58.2±0.1, 35.62N×140.73E, h46km±1km, M3.2*
JMA Felt I J1.
*IDC **28** 21:21:60.0±2.9, 35.57N×140.62E, h52km±27km, mb3.3/8, mb1 3.4/10, mb1mx3.3/61, mbtmp3.6/10, ML3.3/2, Error ellipse: s-maj=32.2km s-min=14.1km az=76.0*
ISC 28 21:21:58.7±0.9, 35.62N±0.05×140.79E±0.07, h43km±7km, n24, σ1°00/23, mb3.6/8, 3C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.10**	**33**	⇑P	**Pn**	**21 22 05.6**	**-0.1**
CHOJ				S	**Sn**	**21 22 11.1**	**+0.4**
JCN	**Nagara**	**0.52**	**247**	⇓P	**Pn**	**21 22 09.6**	**-0.3**
JCN				S	**Sn**	**21 22 18.4**	**+0.6**
KTR	**Katsuura**	**0.61**	**220**	P	**Pn**	**21 22 10.3**	**-0.8**
BSO4	**Boso 4**	**0.73**	**211**	⇓P	**Pn**	**21 22 12.2**	**-0.4**
JYT	**Yasato**	**0.78**	**321**	⇑P	**Pn**	**21 22 12.4**	**-0.9**
JYT				S	**Sn**	**21 22 22.5**	**-1.3**
BSO3	**Boso 3**	**0.85**	**196**	⇑P	**Pn**	**21 22 13.7**	**-0.3**
BSO1	**Boso 1**	**0.98**	**171**	⇓P	**Pn**	**21 22 15.6**	**+0.1**
MJAR	**Matsushiro Arr**	**2.29**	**294**	P	**Pn**	**21 22 33.7**	**-0.3**
5.6nm,0.3s,baz=96,slow=12,SNR=51							
MAT	**Matsushiro**	**2.29**	**294**	P	**Pn**	**21 22 34.6**	**+0.6**
MAT				*e*S	**Sn**	**21 23 03.8**	**+2.8**
JHJ	**Hachijo jima 2**	**2.63**	**199**	P	**Pn**	**21 22 38.8**	**+0.1**
28nm,0.3s,baz=280,slow=19,SNR=14							
JHJ				S	**Sn**	**21 23 08.9**	**-0.6**
24nm,0.3s,baz=37,slow=20,SNR=4.4							
H11N2	**WAKE ISLAND Hy**	**27.90**	**118**	T	T	21 56 58.3	
baz=310,slow=75,SNR=20							
H11N1	**WAKE ISLAND Hy**	**27.90**	**118**	T	T	21 56 58.3	
baz=310,slow=75,SNR=18							
H11N3	**WAKE ISLAND Hy**	**27.91**	**118**	T	T	21 56 60.0	
baz=310,slow=75,SNR=16							
SONM	**Songino Array**	**28.19**	**306**	P	**P**	**21 27 46.6**	**-0.6**
0.3nm,0.6s,baz=97,slow=9.3,SNR=2.9							
H11S3	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	21 57 44.9	
baz=312,slow=76,SNR=19							
H11S1	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	21 57 38.1	
baz=312,slow=76,SNR=26							
H11S2	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	21 57 44.3	
baz=312,slow=76,SNR=14							
ZALV	**Zalesovo Beam**	**42.51**	**314**	P	**P**	**21 29 49.5**	**-0.1**
0.5nm,0.6s,baz=95,slow=16,SNR=3.1							
MKAR	**Makanchi Array**	**44.46**	**303**	P	**P**	**21 30 05.6**	**+0.1**
0.4nm,0.7s,baz=93,slow=9.8,SNR=5.9							
KURBB	**Kurchatov Arra**	**46.49**	**309**	P	**P**	**21 30 21.1**	**-0.3**
0.5nm,0.4s,baz=84,slow=8.3,SNR=7.5							
ILAR	**Eielson Array**	**50.95**	**32**	P	**P**	**21 30 57.1**	**+1.6**
0.3nm,0.5s,baz=262,slow=6.3,SNR=3.2							
BVAR	**Borovoye Array**	**51.16**	**313**	P	**P**	**21 30 58.0**	**+0.8**
0.3nm,0.5s,baz=160,slow=18,SNR=3.5							
WRA	**Warramunga Arr**	**55.60**	**187**	P	**P**	**21 31 30.3**	**+0.2**
0.3nm,0.4s,baz=2.6,slow=7.6,SNR=4.3							
FINES	**FINESS Array B**	**69.83**	**332**	P	**P**	**21 33 02.8**	**-1.6**
1.2nm,0.8s,baz=39,slow=9.0,SNR=3.0							

IDC 28 21:24:37.6±1.6, 2.05N×127.48E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.5/50, mbtmp3.6/5, Error ellipse: s-maj=145.3km s-min=20.4km az=67.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.86**	**163**	P	P	21 29 41.7	-1.2
1.7nm,0.5s,baz=343,slow=11,SNR=14							
ASAR	**Alice Springs**	**26.31**	**167**	P	P	21 30 16.1	+0.9
0.2nm,0.4s,baz=346,slow=11,SNR=5.1							
MKAR	**Makanchi Array**	**59.36**	**325**	P	P	21 34 42.2	+0.5
0.3nm,0.4s,baz=124,slow=7.7,SNR=6.2							
KURBB	**Kurchatov Arra**	**63.55**	**328**	P	P	21 35 09.7	-0.2
0.5nm,0.6s,baz=129,slow=6.0,SNR=6.3							
BVAR	**Borovoye Array**	**69.13**	**327**	P	P	21 35 45.5	-0.1
0.6nm,0.6s,baz=119,slow=5.4,SNR=5.4							

CASC 28 21:41:50.4±2.3, 12.24N×89.22W, h36km±999km, MD3.7, ML3.3, 1D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LFRS	**El Faro**	**1.38**	**6**	*e*P	Pn	21 42 13.5	+0.3
LFRS				*e*S	Sn	21 42 29.8	-0.5
SNET	**Serv Nac Est T**	**1.43**	**360**	AML	AML	21 42 36.1	
comp=Z,511nm,0.2s							
BOQS	**Boqueron**	**1.48**	**358**	*e*P	Pn	21 42 15.6	+0.8
LFU	**La Fuente**	**1.50**	**4**	*e*P	Pn	21 42 15.3	+0.5
LFU				*e*S	Sn	21 42 34.5	+1.3
PACA	**Pacayal**	**1.50**	**36**	*e*P	Pn	21 42 15.6	+0.7
SBLS	**San Blas**	**1.63**	**346**	*e*P	Pn	21 42 16.9	0.0
SBLS				*e*S	Sn	21 42 38.6	+1.8
MONT	**Ecomontaæa**	**1.66**	**346**	*e*P	Pn	21 42 17.5	+0.3
MONT				*e*S	Sn	21 42 37.9	+0.6
SNJE	**San Jose**	**1.66**	**347**	*e*P	Pn	21 42 17.4	+0.2
SNJE				*e*S	Sn	21 42 38.1	+0.8
RTR	**El Retiro**	**1.69**	**346**	*e*P	Pn	21 42 18.4	+0.7
RTR				*e*S	Sn	21 42 38.2	0.0
CNCH	**Conchagua**	**1.70**	**53**	*e*P	Pn	21 42 19.1	+1.5
CAHU	**Cacaocatique**	**1.81**	**33**	*e*P	Pn	21 42 20.8	+1.6
RBDL	**Robledal**	**1.91**	**346**	*e*P	Pn	21 42 21.2	+0.5
RBDL				*e*S	Sn	21 42 44.9	+1.3
CNGN	**Cerro Negro**	**2.48**	**84**	*e*P	Pn	21 42 26.4	-1.9
CNGN				*e*S	Sn	21 43 03.3	+5.9
CNGN				AML	AML	21 43 04.5	
comp=N,147nm,0.3s							
COPN	**Copaltepe**	**2.57**	**91**	*e*P	Pn	21 42 29.7	+0.2
COPN				*e*S	Sn	21 43 00.8	+1.2
COPN				AML	AML	21 43 03.8	
comp=Z,199nm,0.3s							
MOMN	**Momotombo**	**2.63**	**86**	*e*P	Pn	21 42 28.7	-1.6

*NEIC **28** 21:56:31.1, 19.25N×67.70W, h34km, MD3.1(RSPR), After RSPR.*
RSPR 28 21:56:31.1, 19.25N×67.70W, h34km±29km, MD3.1/4, 9C-6D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AGPR	**Aguadilla, PR**	**0.96**	**144**	⇓*e*P	Pn	21 56 46.0	-2.2
AGPR	**Aguadilla, PR**	**0.96**	**144**	⇓*e*P	Pn	21 56 46.0	-2.2
IMPR	**Mona Island, P**	**1.19**	**191**	⇓*e*P	Pn	21 56 49.3	-2.0
IMPR	**Mona Island, P**	**1.19**	**191**	*e*S	Sn	21 57 01.7	-4.7
AOPR	**Arecibo Observ**	**1.27**	**135**	⇓*e*P	Pn	21 56 52.4	-0.1
AOPR	**Arecibo Observ**	**1.27**	**135**	*e*S	Sn	21 57 08.0	-0.4
AOPR	**Arecibo Observ**	**1.27**	**135**	⇑*e*P	Pn	21 56 51.4	-1.1
AOPR				*e*S	Sn	21 57 06.6	-1.8
AOPR	**Arecibo Observ**	**1.27**	**135**	⇓*e*P	Pn	21 56 52.4	-0.1
AOPR				*e*S	Sn	21 57 08.0	-0.4
CRPR	**Cabo Rojo, PR**	**1.36**	**156**	⇓*e*P	Pn	21 56 52.0	-1.7
CRPR				*e*S	Sn	21 57 09.4	-1.1
CRPR	**Cabo Rojo, PR**	**1.36**	**156**	⇓*e*P	Pn	21 56 52.0	-1.7
CELP	**Cerrillos**	**1.58**	**138**	⇑*e*P	Pn	21 56 56.2	-0.6
CELP	**Cerrillos**	**1.58**	**138**	⇑*e*P	Pn	21 56 56.2	-0.6
OBIP	**Obispado Ponce**	**1.59**	**139**	⇑*e*P	Pn	21 56 55.8	-1.0
OBIP	**Obispado Ponce**	**1.59**	**139**	*e*S	Sn	21 57 15.1	-1.1
OBIP	**Obispado Ponce**	**1.59**	**139**	⇑*e*P	Pn	21 56 55.9	-1.0
OBIP				*e*S	Sn	21 57 14.6	-1.6
OBIP	**Obispado Ponce**	**1.59**	**139**	⇑*e*P	Pn	21 56 55.8	-1.0
OBIP				*e*S	Sn	21 57 15.1	-1.1
HUMP	**Col San Antoni**	**2.07**	**122**	*e*S	Sn	21 57 29.3	+1.2
HUMP	**Col San Antoni**	**2.07**	**122**	⇑*e*P	Pn	21 57 04.2	+0.7
HUMP	**Col San Antoni**	**2.07**	**122**	⇑*e*P	Pn	21 57 04.2	+0.7
HUMP				*e*S	Sn	21 57 29.3	+1.2

*ISCJB **28** 21:59:45.6±0.5, 27.63N±0.08×100.87E±0.06, h8km, mb3.8/16, MS3.4/2, Error ellipse: s-maj=12.1km s-min=7.1km az=178.7*
*IDC **28** 21:59:47.0±0.7, 27.81N×101.12E, h0km, mb3.8/16, mb1 3.9/17, mb1mx3.8/48, mbtmp3.8/17, MS3.6/2, Ms1 3.6/2, ms1mx2.8/52, Error ellipse: s-maj=25.6km s-min=13.5km az=54.0*
*NEIC **28** 21:59:48.9±0.5, 27.81N×100.99E, h10km, mb4.1/1, Error ellipse: s-maj=11.4km s-min=9.3km az=224.0*
*BJI **28** 21:59:48.5, 27.76N×100.88E, h10km, mb3.9/2, ML3.6/12, Ms3.9/6, Ms7 3.9/5*
ISC 28 21:59:47.7±0.5, 27.61N±0.05×100.95E±0.06, h8km, n32, σ2°11/34, mb3.9/16, Yunnan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KMI	**Kunming**	**2.95**	**147**	Pg	**Pb**	**22 00 39.8**	**-0.9**
KMI				Sg	**Sb**	**22 01 18.0**	**+1.0**
KMI				smax	smax		
comp=N,320nm,1.0s							
KMI				smax	smax		
comp=E,180nm,1.0s							
KMI				LR	LR		
comp=N,1μm,4.9s							
KMI				LR	LR		
comp=E,1μm,5.4s							
CD2	**Chengdu**	**4.11**	**36**	Pn	**Pn**	**22 00 53.5**	**+2.6**
CD2				Sn	**Sn**	**22 01 32.8**	**-6.4**
CD2				Sg	**Sb**	**22 01 54.0**	**+3.8**
CD2				smax	smax		
comp=N,430nm,1.0s							
CD2				smax	smax		
comp=E,390nm,0.9s							
CD2				LR	LR		
comp=N,2μm,6.1s							
CD2				LR	LR		
comp=E,2μm,5.7s							
CD2				LR	LR		
comp=Z,3μm,7.7s							
ENH	**Enshi**	**7.94**	**68**	*e*Pn	**Pn**	**22 01 45.2**	**+1.7**
23nm,0.8s							
LSA	**Lhasa**	**8.86**	**286**	*e*Pn	**Pn**	**22 01 57.9**	**+1.4**
4.5nm,0.6s							
CMAR	**Chiang Mai Arr**	**9.29**	**192**	Pn	Pn	22 02 07.4	+5.4
baz=7.2,slow=12,SNR=9.3							
CMAR				Pg	Pg	22 02 45.0	
0.4nm,0.3s,baz=6.2,slow=15,SNR=12							
CMAR				Lg	Lg	22 04 53.5	
baz=14,slow=29,SNR=5.0							
XAN	**Xi'an**	**9.39**	**45**	P	**Pn**	**22 02 02.3**	**-1.0**
XAN				LR	LR		
comp=N,320nm,10.2s							
XAN				LR	LR		
comp=E,720nm,12.6s							
XAN				LR	LR		
comp=Z,910nm,13.0s							
PKIN	**Phulchoki**	**13.79**	**273**	*e*P	**Pn**	**22 03 01.0**	**-2.8**
26nm,0.6s							
KKN	**Kakani**	**13.88**	**274**	*e*P	**Pn**	**22 03 02.7**	**-2.3**
12nm,0.4s							
DMN	**Daman**	**14.05**	**274**	*e*P	**Pn**	**22 03 04.3**	**-3.0**
19nm,0.7s							
GKN	**Gorkha**	**14.44**	**275**	*e*P	**Pn**	**22 03 10.8**	**-1.8**
PYUN	**Piuthan**	**15.89**	**276**	*e*P	**Pn**	**22 03 28.2**	**-3.8**
29nm,0.8s							
WMQ	**Urumqi**	**19.39**	**330**	*e*P	**P**	**22 04 14.0**	**-0.1**
SONM	**Songino Array**	**20.64**	**10**	P	**P**	**22 04 25.9**	**-1.9**
1.4nm,0.9s,baz=195,slow=11,SNR=7.4							
SONM				LR	LR	22 13 13.6	
comp=Z,228nm,20.1s,baz=174,slow=40							
KSH	**Kashi**	**23.88**	**306**	*e*P	**P**	**22 05 04.8**	**+2.9**
MKAR	**Makanchi Array**	**24.13**	**327**	P	**P**	**22 05 03.7**	**-0.4**
1.1nm,0.7s,baz=135,slow=10,SNR=14							
KSAR	**Wonju Array Be**	**24.67**	**60**	P	**P**	**22 05 08.5**	**-0.5**

JHJ	**Hachijo jima 2**	**3.50**	**196**	Pn	**Pn**	**22**	**08**	**14.0 -1.3**
	12nm,0.3s,baz=332,slow=15,SNR=4.1							
JHJ				Sn	**Sn**	**22**	**08**	**55.6 -1.5**
	12nm,0.3s,baz=261,slow=15,SNR=2.2							
KSRS	**Korea Array**	**10.48**	**279**	Pn	**Pn**	**22**	**09**	**54.5 +3.3**
	0.2nm,0.3s,baz=90,slow=14,SNR=2.8							
SONM	**Songino Array**	**27.80**	**305**	P	**P**	**22**	**13**	**11.9 +1.6**
	0.4nm,0.7s,baz=110,slow=8,SNR=2.9							
H11N2	**WAKE ISLAND Hy**	**28.19**	**119**	T	T	22	42	42.2
	baz=312,slow=75,SNR=316							
H11N1	**WAKE ISLAND Hy**	**28.20**	**119**	T	T	22	42	42.8
	baz=312,slow=75,SNR=227							
H11N3	**WAKE ISLAND Hy**	**28.20**	**119**	T	T	22	42	46.7
	baz=312,slow=75,SNR=192							
H11S1	**WAKE ISLAND Hy**	**28.88**	**121**	T	T	22	43	33.3
	baz=314,slow=76,SNR=909							
H11S3	**WAKE ISLAND Hy**	**28.88**	**121**	T	T	22	43	36.2
	baz=314,slow=76,SNR=700							
H11S2	**WAKE ISLAND Hy**	**28.89**	**121**	T	T	22	43	37.0
	baz=314,slow=76,SNR=318							
ZALV	**Zalesovo Beam**	**42.02**	**313**	P	**P**	**22**	**15**	**12.4 0.0**
	1.9nm,0.7s,baz=94,slow=5.7,SNR=8.1							
MKAR	**Makanchi Array**	**44.10**	**303**	P	**P**	**22**	**15**	**31.4 +1.9**
	0.3nm,0.6s,baz=83,slow=10,SNR=5.1							
KURBB	**Kurchatov Arra**	**46.05**	**308**	P	**P**	**22**	**15**	**43.4 -1.4**
	2.2nm,0.7s,baz=83,slow=7.8,SNR=6.1							
WRA	**Warramunga Arr**	**56.47**	**187**	P	**P**	**22**	**17**	**01.7 -1.6**
	0.6nm,0.8s,baz=3.8,slow=7.4,SNR=7.2							
ASAR	**Alice Springs**	**60.20**	**187**	P	**P**	**22**	**17**	**27.9 -1.4**
	0.3nm,0.7s,baz=15,slow=8.7,SNR=3.1							
FINES	**FINESS Array B**	**69.13**	**332**	P	**P**	**22**	**18**	**29.2 +2.0**
	0.4nm,0.4s,baz=57,slow=10,SNR=4.7							

NIED ***28*** *22:11:00,35.˚80N×141.˚00E, h8km,Mw4.0 Best double couple: M₀1.33000×10¹⁵ NP1:φ=167.00000°,δ=36.00000°, λ=-91.00000°. NP2:φ=348.00000°,δ=54.00000°, λ=-89.00000°.*

IDC ***28*** *22:11:49.1±0.6,35.˚68N×140.˚93E, h0km, mb3.8/18, mb1 4.0/22, mb1mx3.9/44, mbtmp3.8/22, ML3.3/4, MS3.2/1, Ms1 3.2/1, ms1mx2.5/42, Error ellipse: s-maj=16.5km s-min=14.3km az=94.0*

ISCJB ***28*** *22:11:50.6±0.7,35.˚76N±0.˚03×141.˚03E±0.˚06, h21km±4km, mb3.8/20, MS3.1/1, Error ellipse: s-maj=8.9km s-min=5.5km az=172.6*

JMA ***28*** *22:11:51.4±0.2,35.˚76N×140.˚99E, h13km±1km, M4.2*

JMA Felt II J1.

NEIC ***28*** *22:11:52.1±4.5,35.˚76N×140.˚98E, h18km±26km, mb4.2/2, Error ellipse: s-maj=14.5km s-min=9.7km az=134.0*

NEIC Recorded [2 JMA] in Chiba and Ibaraki.

ISC 28 22:11:51.2±1.1,35.˚76N±0.˚04×141.˚00E±0.˚06, h13km±6km, n46, σ1§23/46, mb3.9/20, 3C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.13**	**242**	⇑P	**Pg**	**22** **11** **54.5**	**+0.1**
CHOJ				S	**Sg**	**22** **11** **56.9**	**+0.1**
JCN	**Nagara**	**0.73**	**242**	⇑P	**Pb**	**22** **12** **06.3**	**+0.5**
JYT	**Yasato**	**0.80**	**306**	⇓P	**Pg**	**22** **12** **06.2**	**-0.4**
JYT				S	**Sg**	**22** **12** **16.8**	**-0.3**
JHO	**Hitachi**	**0.91**	**338**	⇓P	**Pg**	**22** **12** **08.0**	**-0.8**
BSO4	**Boso 4**	**0.94**	**215**	⇓P	**Pn**	**22** **12** **09.7**	**-0.3**
BSO3	**Boso 3**	**1.04**	**203**	P	**Pb**	**22** **12** **10.4**	**-0.5**
BSO3				S	**Sg**	**22** **12** **24.9**	**+0.2**
BSO1	**Boso 1**	**1.11**	**181**	⇑P	**Pb**	**22** **12** **10.8**	**-1.1**
MJAR	**Matsushiro Arr**	**2.38**	**290**	Pn	**Pn**	**22** **12** **29.4**	**-0.6**
	13nm,0.3s,baz=98,slow=8.6,SNR=47						
MJAR				Sn	**Sn**	**22** **13** **00.8**	**+1.6**
	20nm,0.3s,baz=286,slow=15,SNR=7.6						
MAJO	**Matsushiro**	**2.39**	**290**	*e*Pn	**Pn**	**22** **12** **30.2**	**+0.1**
MAT	**Matsushiro**	**2.39**	**290**	P	**Pn**	**22** **12** **30.0**	**-0.1**
MAT				*e*S	**Sg**	**22** **13** **05.6**	**-2.3**
JHJ	**Hachijo jima 2**	**2.82**	**201**	Pn	**Pn**	**22** **12** **35.6**	**-0.4**
	30nm,0.3s,baz=322,slow=22,SNR=10						
JHJ				Sn	**Sn**	**22** **13** **08.0**	**-1.9**
	37nm,0.3s,baz=90,slow=20,SNR=3.4						
ERM	**Erimo**	**6.47**	**14**	*e*Pn	**Pn**	**22** **13** **25.4**	**-0.6**
	13nm,0.3s						
JNU	**Nakatsue**	**8.76**	**255**	Pn	**Pn**	**22** **14** **00.2**	**+2.5**
	0.2nm,0.3s,baz=8.1,slow=18,SNR=2.0						
KSRS	**Korea Array**	**10.64**	**283**	Pn	**Pn**	**22** **14** **23.8**	**+0.5**
	0.1nm,0.3s,baz=94,slow=15,SNR=3.3						
KSAR	**Wonju Array**	**10.67**	**283**	Pn	**Pn**	**22** **14** **23.8**	**+0.1**
USRK	**Ussuriysk Ar.**	**10.89**	**323**	Pn	**Pn**	**22** **14** **30.0**	**+3.3**
	0.2nm,0.3s,baz=124,slow=11,SNR=5.8						
KLR	**Kul'dur**	**15.07**	**336**	Pn	**Pn**	**22** **15** **23.1**	**-0.7**
	0.1nm,0.3s,baz=86,slow=19,SNR=2.5						
MA2	**Magadan**	**24.66**	**12**	P	**P**	**22** **17** **12.7**	**+1.2**
	5.0nm,0.4s,baz=205,slow=11,SNR=3.8						
MA2				LR	LR	22	28	10.7
	comp=Z,52nm,18.1s,baz=107,slow=40							
H11N2	**WAKE ISLAND Hy**	**27.82**	**118**	T	T	22	46	40.8
	baz=310,slow=75,SNR=321							
H11N1	**WAKE ISLAND Hy**	**27.82**	**118**	T	T	22	46	40.0
	baz=310,slow=75,SNR=232							
H11N3	**WAKE ISLAND Hy**	**27.84**	**118**	T	T	22	46	42.1
	baz=310,slow=75,SNR=314							
SONM	**Songino Array**	**28.24**	**306**	P	**P**	**22**	**17**	**43.2 -0.8**
	0.3nm,0.4s,baz=116,slow=9.9,SNR=3.1							
H11S1	**WAKE ISLAND Hy**	**28.48**	**120**	T	T	22	47	29.9
	baz=312,slow=76,SNR=309							
H11S3	**WAKE ISLAND Hy**	**28.48**	**120**	T	T	22	47	29.9
	baz=312,slow=76,SNR=380							
H11S2	**WAKE ISLAND Hy**	**28.50**	**120**	T	T	22	47	31.1
	baz=312,slow=76,SNR=265							
CMAR	**Chiang Mai Arr**	**40.86**	**256**	P	**P**	**22**	**19**	**33.0 -0.1**
	0.2nm,0.3s,baz=57,slow=6.7,SNR=2.6							
ZALV	**Zalesovo Beam**	**42.53**	**313**	P	**P**	**22**	**19**	**46.6 +0.3**
	0.8nm,0.6s,baz=94,slow=9.4,SNR=4.7							
MKAR	**Makanchi Array**	**44.52**	**303**	P	**P**	**22**	**20**	**03.0 +0.6**
	1.9nm,0.7s,baz=90,slow=9.3,SNR=22							
ILAR	**Eielson Array**	**50.75**	**32**	P	**P**	**22**	**20**	**51.4 +0.8**
	0.8nm,0.6s,baz=271,slow=5.9,SNR=7.5							
AAK	**Ala-Archa**	**50.80**	**299**	P	**P**	**22**	**20**	**51.7 +0.3**
	0.9nm,0.6s							
BVAR	**Borovoye Array**	**51.18**	**313**	P	**P**	**22**	**20**	**52.7 -1.3**
	0.5nm,0.5s,baz=92,slow=7.6,SNR=3.4							
BRVK	**Borovoye**	**51.24**	**313**	*e*P	**P**	**22**	**20**	**55.3 +1.0**
	4.4nm,0.8s							
INK	**Inuvik**	**55.67**	**27**	P	**P**	**22**	**21**	**27.8 +1.1**
	0.9nm,0.5s,baz=301,slow=12,SNR=2.7							
WRA	**Warramunga Arr**	**55.76**	**188**	P	**P**	**22**	**21**	**25.5 -2.3**
	1.3nm,0.7s,baz=5.3,slow=7.2,SNR=21							
AKTO	**Aktyubinsk**	**59.28**	**312**	P	**P**	**22**	**21**	**52.4 0.0**
	0.7nm,0.6s,baz=115,slow=9.4,SNR=3.0							
ASAR	**Alice Springs**	**59.49**	**188**	P	**P**	**22**	**21**	**53.8 -0.2**
	0.7nm,0.8s,baz=16,slow=11,SNR=8.2							
ARCES	**ARCESS Array B**	**65.06**	**340**	P	**P**	**22**	**22**	**31.4 +0.5**
	0.8nm,0.7s,baz=46,slow=3.9,SNR=2.1							
FINES	**FINESS Array B**	**69.78**	**332**	P	**P**	**22**	**23**	**01.1 +0.3**
	2.3nm,1.0s,baz=29,slow=4.4,SNR=4.6							
AKASG	**Malin Array Be**	**75.09**	**322**	P	**P**	**22**	**23**	**31.9 -0.8**
	0.3nm,0.4s,baz=45,slow=5.7,SNR=4.4							
NB2	**NORSAR Subarra**	**75.22**	**337**	P	**P**	**22**	**23**	**33.8 +0.4**
	comp=Z,2.9nm,1.1s,baz=39,slow=6.2							
NOA	**NORSAR Array B**	**75.22**	**337**	P	**P**	**22**	**23**	**33.5 +0.1**
	comp=Z,1.2nm,1.1s,baz=50,slow=11,SNR=4.3							
PDAR	**Pinedale Array**	**78.88**	**45**	P	**P**	**22**	**23**	**54.0 0.0**
	comp=Z,0.3nm,0.6s,baz=338,slow=2.1,SNR=4.1							
GERES	**GERESS Array B**	**83.61**	**328**	P	**P**	**22**	**24**	**17.7 -1.6**
	comp=Z,0.3nm,0.4s,baz=49,slow=8.1,SNR=3.0							
TXAR	**Lajitas Array**	**91.16**	**52**	P	**P**	**22**	**24**	**57.6 +1.3**
	comp=Z,0.2nm,0.7s,baz=266,slow=2.4,SNR=3.0							
SYO	**Syowa Base**	**126.92**	**206**	⇓*e*P	**Pdif**	**22**	**27**	**31.4 -3.5**
LPAZ	**La Paz**	**147.62**	**61**	PKPbc	**PKPbc**	**22**	**31**	**37.5 +0.9**
	comp=Z,0.9nm,0.7s,baz=254,slow=8.4,SNR=5.5							

ISCJB ***28*** *22:15:29.3±0.5,40.˚47N±0.˚03×28.˚94E±0.˚04, h5km±4km, Error ellipse: s-maj=5.7km s-min=3.8km az=144.5*

CSEM ***28*** *22:15:29.5±0.1,40.˚46N×28.˚96E, h5km, MD2.5, Error ellipse: s-maj=3.3km s-min=2.7km az=178.0*

ISK ***28*** *22:15:29.1,40.˚45N×28.˚93E, h5km, MD2.5*

DDA ***28*** *22:15:29.7,40.˚38N×29.˚04E, h7km, Md2.7*

ISC 28 22:15:29.6±0.9,40.˚46N±0.˚02×28.˚96E±0.˚02, h8km±7km, n41, σ0§40/57, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MDNY	**Mudanya-Bursa**	**0.10**	**212**	*e*PG	**Pg**	**22** **15** **31.7**	**-0.3**
MDNY	**Mudanya-Bursa**	**0.10**	**212**	*e*Pg	**Pg**	**22** **15** **31.7**	**-0.3**
ARMT	**Armutlu**	**0.13**	**327**	*e*PG	**Pg**	**22** **15** **32.8**	**+0.3**
ARMT	**Armutlu**	**0.13**	**327**	*e*Pg	**Pg**	**22** **15** **32.8**	**+0.3**
GEMT	**Gemlik**	**0.18**	**97**	*e*PG	**Pg**	**22** **15** **33.2**	**-0.1**
GEMT	**Gemlik**	**0.18**	**97**	*e*Pg	**Pg**	**22** **15** **33.2**	**-0.1**
SBT5	**Esenkoy-Cinarc**	**0.18**	**342**	*e*PG	**Pg**	**22** **15** **33.1**	**-0.3**
SBT5	**Esenkoy-Cinarc**	**0.18**	**342**	*e*Pg	**Pg**	**22** **15** **33.1**	**-0.3**
IZI	**Iznik**	**0.41**	**107**	*e*PG	**Pg**	**22** **15** **37.6**	**0.0**
IZI	**Iznik**	**0.41**	**107**	*e*Pg	**Pg**	**22** **15** **37.7**	**0.0**
KCTX	**Karacabey (Bur**	**0.49**	**248**	*e*PG	**Pg**	**22** **15** **38.7**	**-0.5**
KCTX				*e*SG	**Sg**	**22** **15** **45.9**	**+0.2**
KCTX	**Karacabey (Bur**	**0.49**	**248**	*e*Pg	**Pg**	**22** **15** **38.7**	**-0.5**
KCTX				*e*Sg	**Sg**	**22** **15** **45.9**	**+0.2**
SBT2	**Guzelce-Avcila**	**0.54**	**322**	*e*PG	**Pg**	**22** **15** **40.2**	**+0.2**
SBT2	**Guzelce-Avcila**	**0.54**	**322**	*e*Pg	**Pg**	**22** **15** **40.2**	**+0.2**
ADVT	**Abdulvahap**	**0.60**	**92**	*e*PG	**Pg**	**22** **15** **41.1**	**0.0**
ADVT	**Abdulvahap**	**0.60**	**92**	*e*Pg	**Pg**	**22** **15** **41.1**	**0.0**
EDC	**Edincik**	**0.84**	**263**	*e*PG	**Pg**	**22** **15** **44.9**	**-0.8**
EDC	**Edincik**	**0.84**	**263**	*e*Pg	**Pg**	**22** **15** **44.9**	**-0.8**
SBT3	**Marmara-Eregli**	**0.86**	**300**	*e*PG	**Pg**	**22** **15** **45.5**	**-0.6**
SBT3	**Marmara-Eregli**	**0.86**	**300**	*e*Pg	**Pg**	**22** **15** **45.5**	**-0.6**
DST	**Dursunbey**	**0.89**	**197**	*e*PG	**Pb**	**22** **15** **47.3**	**0.0**
DST				*e*SG	**Sb**	**22** **15** **59.2**	**0.0**
DST	**Dursunbey**	**0.89**	**197**	*e*Pg	**Pb**	**22** **15** **47.3**	**0.0**
DST				*e*Sg	**Sb**	**22** **15** **59.2**	**0.0**
MRMT	**Marmara Adasi**	**1.05**	**279**	*e*PG	**Pg**	**22** **15** **49.8**	**+0.1**
MRMT	**Marmara Adasi**	**1.05**	**279**	*e*Pg	**Pg**	**22** **15** **49.8**	**+0.1**
TVSB	**Tavsanli**	**1.08**	**159**	*e*PN	**Pb**	**22** **15** **50.7**	**+0.2**
TVSB	**Tavsanli**	**1.08**	**159**	*e*Pn	**Pb**	**22** **15** **50.7**	**+0.2**
KAND	**Kocaeli-Kandir**	**1.14**	**55**	*i* P	**Pg**	**22** **15** **50.6**	**-0.8**
KAND				*i* S	**Sg**	**22** **16** **05.6**	**-0.5**
KAND	**Kocaeli-Kandir**	**1.14**	**55**	P	**Pg**	**22** **15** **50.6**	**-0.8**
KAND				S	**Sg**	**22** **16** **05.6**	**-0.5**
BALB	**Balikesir**	**1.16**	**226**	*e*PN	**Pg**	**22** **15** **51.4**	**-0.4**
BALB				*e*SN	**Sg**	**22** **16** **07.2**	**+0.2**
BALB	**Balikesir**	**1.16**	**226**	*e*Pn	**Pg**	**22** **15** **51.4**	**-0.4**
BALB				*e*Sn	**Sg**	**22** **16** **07.2**	**+0.2**
GULT	**Gulveren**	**1.19**	**91**	*e*PN	**Pn**	**22** **15** **52.9**	**+0.3**
GULT				*e*SN	**Sn**	**22** **16** **09.7**	**+0.7**
GULT	**Gulveren**	**1.19**	**91**	*e*Pn	**Pn**	**22** **15** **52.9**	**+0.3**
GULT				*e*Sn	**Sn**	**22** **16** **09.7**	**+0.7**
BORA	**Eskisehir**	**1.28**	**116**	*i* P	**Pn**	**22** **15** **53.3**	**-0.6**
BORA				*i* S	**Sb**	**22** **16** **10.2**	**-0.5**
BORA	**Eskisehir**	**1.28**	**116**	P	**Pn**	**22** **15** **53.3**	**-0.6**
BORA				S	**Sb**	**22** **16** **10.2**	**-0.5**
SIMA	**Simav-Kutahya**	**1.37**	**179**	*e*PN	**Pg**	**22** **15** **56.0**	**+0.1**
SIMA	**Simav-Kutahya**	**1.37**	**179**	*e*Pn	**Pg**	**22** **15** **56.0**	**+0.1**
DEMI	**Demirci**	**1.42**	**187**	*i* P	**Pn**	**22** **15** **55.6**	**-0.2**
DEMI				*i* S	**Sg**	**22** **16** **15.6**	**+0.3**
DEMI	**Demirci**	**1.42**	**187**	P	**Pn**	**22** **15** **55.6**	**-0.2**
DEMI				S	**Sg**	**22** **16** **15.6**	**+0.3**
SAHE	**Sakarya_HENDEK**	**1.50**	**74**	*i* P	Pn	22	15	51.9 -4.9
SAHE				*i* S	**Sb**	**22** **16** **17.1**	**+0.3**
MANT	**Manisa**	**1.99**	**189**	*i* P	**Pb**	**22** **16** **06.2**	**+0.1**
MANT				*i* S	**Sb**	**22** **16** **30.8**	**-0.2**
MANT	**Manisa**	**1.99**	**189**	P	**Pb**	**22** **16** **06.2**	**+0.1**
MANT				S	**Sb**	**22** **16** **30.8**	**-0.2**

ISCJB ***28*** *22:22:00.3±0.5,38.˚21N±0.˚04×142.˚16E±0.˚06, h30km, mb3.8/16, Error ellipse: s-maj=6.9km s-min=5.5km az=29.3*

NIED ***28*** *22:22:00,38.˚30N×141.˚90E, h50km, Mw3.8 Best double couple: M₀6.67000×10¹⁴ NP1:φ=184.00000°,δ11.00000°, λ.70.00000°. NP2:φ=25.00000°,δ80.00000°,λ.94.00000°.*

JMA ***28*** *22:22:03.8±0.1,38.˚28N×141.˚93E, h46km±1km, M3.8*

IDC ***28*** *22:22:05.9±2.7,38.˚20N×141.˚90E, h65km±25km, mb3.5/16, mb1 3.7/19, mb1mx3.6/56, mbtmp3.9/19, ML3.2/3, MS2.7/2, Ms1 2.7/2, ms1mx2.5/31, Error ellipse: s-maj=21.8km s-min=15.9km az=75.0*

ISC 28 22:22:01.9±0.7,38.˚23N±0.˚04×142.˚00E±0.˚07, h30km, n39, σ1§16/38, mb3.9/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.56**	**294**	P	**Pn**	**22** **22** **14.7**	**+0.9**
JIO				S	**Sn**	**22** **22** **22.2**	**+0.1**
OFUJ	**Ofunato**	**0.89**	**343**	P	**Pb**	**22** **22** **19.2**	**+0.4**
OFUJ				S	**Sn**	**22** **22** **30.0**	**-0.3**
JMK	**Ichinoseki**	**0.95**	**320**	P	**Pb**	**22** **22** **20.1**	**+0.3**
JMM	**Marumori**	**1.02**	**250**	P	**Pb**	**22** **22** **20.8**	**+0.6**
JMM				S	**Sn**	**22** **22** **33.8**	**+0.3**
JOU	**Okura**	**1.06**	**278**	P	**Pb**	**22** **22** **21.9**	**+0.2**
JFK	**Kawauchi**	**1.24**	**226**	P	**Pn**	**22** **22** **24.2**	**+0.9**
JFK				*e*S	**Sn**	**22** **22** **39.0**	**0.0**
JOM	**Ohasama**	**1.36**	**336**	P	**Pb**	**22** **22** **26.0**	**-0.8**
JYK	**Kaneyama**	**1.46**	**299**	P	**Pn**	**22** **22** **27.2**	**+1.0**
JFT	**Otama**	**1.50**	**242**	P	**Pb**	**22** **22** **28.3**	**-0.8**
JYS	**Shirataka**	**1.52**	**270**	P	**Pn**	**22** **22** **28.3**	**+1.2**
JRG	**Rokugo**	**1.58**	**318**	P	**Pn**	**22** **22** **28.9**	**+1.0**
JYA	**Atsumi**	**1.83**	**282**	P	**Pn**	**22** **22** **32.7**	**+1.3**
MJAR	**Matsushiro Arr**	**3.46**	**242**	P	**Pn**	**22** **22** **56.7**	**+2.9**
	2.1nm,0.3s,baz=65,slow=11,SNR=28						
MJAR				LR	LR	22	24	38.0
	comp=Z,99nm,19.4s,baz=330,slow=45							
JHJ	**Hachijo jima 2**	**5.41**	**200**	P	**Pn**	**22** **23** **23.1**	**+2.5**
	8.0nm,0.3s,baz=332,slow=23,SNR=9.0						
JHJ				S	**Sn**	**22** **24** **19.9**	**-1.9**
	11nm,0.3s,baz=255,slow=19,SNR=3.5						
USRK	**Ussuriysk Ar.**	**9.61**	**312**	P	**Pn**	**22** **24** **20.3**	**+2.1**
	0.7nm,0.3s,baz=132,slow=14,SNR=12						
USRK				LR	LR	22	27	14.7
	comp=Z,66nm,21.8s,baz=174,slow=32							
KLR	**Kul'dur**	**13.25**	**329**	P	**P**	**22**	**25**	**14.6 -2.7**
	0.1nm,0.3s,baz=154,slow=12,SNR=3.0							
SEY	**Seymchan**	**25.53**	**11**	P	**P**	**22**	**27**	**29.0 +1.5**
	1.2nm,0.3s,baz=200,slow=5.9,SNR=4.2							
SONM	**Songino Array**	**27.53**	**302**	P	**P**	**22**	**27**	**46.6 +0.7**
	0.4nm,0.6s,baz=115,slow=11,SNR=2.6							
H11N2	**WAKE ISLAND Hy**	**28.39**	**123**	T	T	22	58	06.2
	baz=316,slow=75,SNR=256							
H11N1	**WAKE ISLAND Hy**	**28.40**	**124**	T	T	22	58	06.4
	baz=316,slow=75,SNR=308							
H11N3	**WAKE ISLAND Hy**	**28.41**	**123**	T	T	22	58	07.1
	baz=316,slow=75,SNR=296							
H11S1	**WAKE ISLAND Hy**	**29.14**	**125**	T	T	22	59	03.1
	baz=318,slow=76,SNR=106							
H11S3	**WAKE ISLAND Hy**	**29.15**	**126**	T	T	22	59	03.2
	baz=318,slow=76,SNR=119							
H11S2	**WAKE ISLAND Hy**	**29.16**	**126**	T	T	22	59	05.7
	baz=318,slow=76,SNR=67							
ZALV	**Zalesovo Beam**	**41.47**	**311**	P	**P**	**22**	**29**	**45.5 -0.3**
	1.1nm,0.6s,baz=91,slow=6.7,SNR=6.4							
MKAR	**Makanchi Array**	**43.89**	**301**	P	**P**	**22**	**30**	**03.7 -1.9**
	0.7nm,0.7s,baz=87,slow=5.9,SNR=7.9							
KURBB	**Kurchatov Arra**	**45.64**	**307**	P	**P**	**22**	**30**	**19.0 -0.4**
	1.8nm,0.6s,baz=83,slow=8.3,SNR=19							
ILAR	**Eielson Array**	**48.24**	**33**	P	**P**	**22**	**30**	**39.3 -0.2**
	0.4nm,0.6s,baz=269,slow=5.4,SNR=3.8							
BVAR	**Borovoye Array**	**50.12**	**312**	P	**P**	**22**	**30**	**54.1 0.0**
	0.2nm,0.3s,baz=81,slow=4.8,SNR=3.0							
WRA	**Warramunga Arr**	**59.31**	**188**	P	**P**	**22**	**31**	**53.1 -0.9**
	1.2nm,0.8s,baz=5.3,slow=6.9,SNR=5.8							
ASAR	**Alice Springs**	**62.04**	**188**	P	**P**	**22**	**32**	**19.7 +0.2**
	0.7nm,0.8s,baz=3.6,slow=6.1,SNR=5.2							
ARCES	**ARCESS Array B**	**63.04**	**339**	P	**P**	**22**	**32**	**25.6 -0.1**
	2.4nm,1.1s,baz=56,slow=9.9,SNR=2.6							
FINES	**FINESS Array B**	**67.97**	**332**	P	**P**	**22**	**32**	**57.8 +0.1**
	1.5nm,0.6s,baz=57,slow=7.0,SNR=6.4							
HFS	**Hagfors**	**73.19**	**336**	P	**P**	**22**	**33**	**29.7 +0.2**
	1.5nm,0.8s,baz=61,slow=9.0,SNR=3.2							
NB2	**NORSAR Subarra**	**73.27**	**337**	P	**P**	**22**	**33**	**29.8 -0.2**
	comp=Z,0.9nm,0.6s,baz=39,slow=6.2							
NOA	**NORSAR Array B**	**73.27**	**337**	P	**P**	**22**	**33**	**30.1 +0.2**
	comp=Z,1.4nm,0.7s,baz=39,slow=6.0,SNR=6.9							
AKASG	**Malin Array Be**	**73.64**	**322**	P	**P**	**22**	**33**	**32.2 -0.1**
	comp=Z,0.4nm,0.4s,baz=48,slow=8.0,SNR=5.8							
PDAR	**Pinedale Array**	**76.50**	**46**	P	**P**	**22**	**33**	**49.6 +0.4**
	comp=Z,0.3nm,0.7s,baz=290,slow=6.5,SNR=3.5							
TXAR	**Lajitas Array**	**89.03**	**53**	P	**P**	**22**	**34**	**54.6 +0.3**
	comp=Z,0.2nm,0.6s,baz=344,slow=2.9,SNR=3.1							

OMAN ***28*** *22:26:55.9±99.0,29.˚22N×58.˚43E, h60km±9km, Error ellipse: s-maj=414.5km s-min=34.6km az=23.0*

DSN ***28*** *22:27:06.4±2.1,28.˚44N×57.˚75E, h9km, ML5.0/7, Error ellipse: s-maj=26.2km s-min=21.8km az=84.0*

IDC ***28*** *22:27:06.8±0.7,28.˚23N×57.˚49E, h0km, mb3.9/21, mb1 4.1/23, mb1mx3.9/45, mbtmp4.0/23, ML4.1/2, Error ellipse: s-maj=15.9km s-min=15.6km az=165.0*

ISCJB ***28*** *22:27:10.0±0.3,28.˚21N±0.˚02×57.˚69E±0.˚04, h30km, mb3.9/28, Error ellipse: s-maj=5.5km s-min=3.6km az=3.8*

THR ***28*** *22:27:11.9±0.3,28.˚09N×57.˚51E, h44km±4km, ML4.5*

CSEM ***28*** *22:27:11.6±0.2,28.˚23N×57.˚66E, h30km, mb4.3/6, Error ellipse: s-maj=7.7km s-min=4.8km az=89.0*

TEH ***28*** *22:27:13.7,28.˚20N×57.˚45E, h20km, ML4.6*

NEIC ***28*** *22:27:13.7,28.˚20N×57.˚45E, h20km, mb4.1/7, After TEH.*

ISC 28 22:27:11.4±0.5,28.˚19N±0.˚03×57.˚58E±0.˚04, h30km, n129, σ1§73/137, mb3.9/28, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IBND	**Bandar-abas**	**1.18**	**232**	*e*Pg	**Pb**	**22** **27** **34.3**	**+1.0**
IBND				*e*Sg	**Sb**	**22** **27** **48.6**	**+0.4**
IBND				*e*AMB	AMB	22	28	19.6
	comp=Z,90μm,0.2s							
IBND	**Bandar-abas**	**1.18**	**232**	Pg	**Pb**	**22** **27** **34.2**	**+1.0**
IBND				*e*Sg	**Sb**	**22** **27** **48.6**	**+0.4**
IBND	**Bandar-abas**	**1.18**	**232**	Pg	**Pb**	**22** **27** **34.2**	**+1.0**
IBND				Sg	**Sb**	**22** **27** **48.5**	**+0.4**
GENO	**Geno**	**1.48**	**238**	*e*Pg	**Pb**	**22** **27** **37.8**	**-0.5**
GENO	**Geno**	**1.48**	**238**	*e*Pg	**Pb**	**22** **27** **37.8**	**-0.5**
BNDS	**Bandar-Abbas**	**1.48**	**238**	*e*Pg	**Pn**	**22** **27** **37.3**	**+1.2**
BNDS				AML	AML	22	28	19.0
	comp=N,8μm,0.4s							
BNDS				AML	AML	22	28	20.1
	comp=E,9μm,0.4s							
BNDS	**Bandar-Abbas**	**1.48**	**238**	*e*Pg	**Pn**	**22** **27** **37.3**	**+1.2**
BNDS	**Bandar-Abbas**	**1.48**	**238**	*e*Pg	**Pn**	**22** **27** **37.0**	**+0.9**
NGRK	**Negar Kerman**	**1.63**	**333**	*e*Pn	**Pn**	**22** **27** **37.7**	**-0.7**
NGRK	**Negar Kerman**	**1.63**	**333**	*e*Pn	**Pn**	**22** **27** **37.7**	**-0.7**
CHMN	**Cheshme madani**	**1.66**	**359**	*e*Pn	**Pn**	**22** **27** **39.0**	**+0.1**
CHMN	**Cheshme madani**	**1.66**	**359**	*e*Pn	**Pn**	**22** **27** **39.0**	**+0.1**
TVBK	**TV Kerman**	**1.93**	**338**	*e*Pn	**Pb**	**22** **27** **44.8**	**-1.3**
TVBK	**TV Kerman**	**1.93**	**338**	*e*Pn	**Pb**	**22** **27** **44.8**	**-1.3**
KHGB	**Koh Gabri**	**2.38**	**336**	*e*Pn	**Pn**	**22** **27** **51.2**	**+2.6**
KHGB	**Koh Gabri**	**2.38**	**336**	*e*Pn	**Pn**	**22** **27** **51.2**	**+2.6**
**BAN

ASF	Jabal al Asfar	18.31	288	P		P		22 31 20.9	-2.4
	comp=N,0.6nm,0.3s,baz=84,slow=9.2,SNR=5.5								
KSH	Kashi	18.96	49	*e*P		P		22 31 27.8	-2.5
KSH				*e*pP		Pn		22 31 30.5	-0.6
KSH				*e*PP		sP		22 31 42.8	+0.6
KSH				S		Sn		22 34 41.5	-21
KSH				SS		S		22 35 03.5	-0.5
KSH				pmax	pmax				
	comp=Z,45nm,3.4s								
KSH				LR	LR				
	comp=N,150nm,5.9s								
KSH				LR	LR				
	comp=E,100nm,4.8s								
KSH				LR	LR				
	comp=Z,190nm,10.6s								
ABKAR	Akbulak array	21.11	4	*e*P		P		22 31 53.7	+0.2
	comp=Z,4.7nm,0.5s								
ABKAR	Akbulak array	21.11	4	*e*P		P		22 31 53.7	+0.2
	comp=Z,4.7nm,0.5s								
CSS	Mathiatis	21.71	294	*e*P		P		22 31 57.7	-2.3
	comp=Z,1.3nm,0.8s								
CSS	Mathiatis	21.71	294	*e*P		P		22 31 57.6	-2.3
	comp=Z,1.3nm,0.8s								
AKTO	Aktyubinsk	22.22	1	P		P		22 32 05.5	+0.2
	comp=Z,12nm,0.8s,baz=204,slow=9.2,SNR=17								
BRTR	Keskin Array B	22.88	306	P		P		22 32 12.0	-0.6
	comp=Z,9.2nm,0.9s,baz=122,slow=10,SNR=40								
BVAR	Borovoye Array	26.56	17	P		P		22 32 46.0	-0.6
	comp=Z,1.2nm,0.7s,baz=220,slow=15,SNR=5.1								
BVAR	Borovoye Array	26.56	17	P		P		22 32 46.0	-0.6
BRVK	Borovoye	26.57	17	*e*P		P		22 32 45.6	-1.0
	comp=Z,5.1nm,0.8s								
BRVK	Borovoye	26.57	17	*e*P		P		22 32 45.6	-1.0
	comp=Z,5.1nm,0.8s								
MKAR	Makanchi Array	26.82	40	P		P		22 32 48.8	-0.3
	comp=Z,0.3nm,0.6s,baz=232,slow=10,SNR=3.6								
KURBB	Kurchatov Arra	27.46	30	P		P		22 32 54.9	+0.3
	comp=Z,0.8nm,0.7s,baz=230,slow=7.7,SNR=7.0								
KURK	Kurchatov	27.56	30	*e*P		P		22 32 54.8	-0.8
	comp=Z,7.2nm,0.7s								
KURK	Kurchatov	27.56	30	*e*P		P		22 32 54.8	-0.8
	comp=Z,7.2nm,0.7s								
IDI	Anoyia	28.60	293	P		P		22 33 03.6	-1.5
	comp=Z,3.2nm,0.6s,baz=287,slow=14,SNR=3.8								
LSA	Lhasa	29.36	79	*e*P		P		22 33 13.0	+0.7
	comp=Z,1.1nm,0.6s								
LSA	Lhasa	29.36	79	*e*P		P		22 33 13.0	+0.7
	comp=Z,1.1nm,0.6s								
AKASG	Malin Array Be	31.06	324	P		P		22 33 25.2	-1.4
	comp=Z,0.3nm,0.4s,baz=111,slow=10,SNR=3.3								
ZALV	Zalesovo Beam	32.55	30	P		P		22 33 39.5	-0.1
	comp=Z,1.4nm,0.3s,baz=247,slow=11,SNR=12								
PSZ	Piszkesteto	35.15	314	*e*P		P		22 34 00.7	-1.7
	comp=Z,1.0nm,0.6s								
PSZ	Piszkesteto	35.15	314	*e*P		P		22 34 00.7	-1.7
	comp=Z,1.0nm,0.6s								
FINES	FINESS Array B	39.31	337	P		P		22 34 37.3	0.0
	comp=Z,1.0nm,0.5s,baz=136,slow=9.9,SNR=11								
GERES	GERESS Array B	39.37	314	P		P		22 34 37.5	-0.7
	comp=Z,0.7nm,0.7s,baz=111,slow=7.3,SNR=9.0								
SONM	Songino Array	42.36	49	P		P		22 35 03.6	+0.6
	comp=Z,0.7nm,0.8s,baz=251,slow=9.0,SNR=4.7								
HFS	Hagfors	43.51	330	P		P		22 35 11.0	-0.9
	comp=Z,1.5nm,0.6s,baz=123,slow=7.1,SNR=6.5								
NOA	NORSAR Array B	45.01	330	P		P		22 35 22.5	-1.5
	comp=Z,0.6nm,0.8s,baz=132,slow=7.7,SNR=2.8								
ARCES	ARCESS Array B	45.33	345	P		P		22 35 26.0	-0.3
	comp=Z,1.0nm,0.6s,baz=138,slow=8.2,SNR=5.1								
ESDC	Sonseca Array	51.43	300	P		P		22 36 13.4	-0.5
	comp=Z,0.1nm,0.3s,baz=72,slow=7.5,SNR=3.5								
DBIC	Dimbokro	62.62	263	P		P		22 37 32.9	-0.4
	comp=Z,1.2nm,0.6s,baz=63,slow=6.8,SNR=2.0								
BOSA	Boshof	64.41	211	P		P		22 37 45.2	+0.3
	comp=Z,0.8nm,0.3s,baz=12,slow=9.3,SNR=2.8								
YSS	Yuzh-Sakhalins	66.84	48	P		P		22 37 59.7	-0.7
	comp=Z,7.5nm,0.6s								
YSS	Yuzh-Sakhalins	66.84	48	P		P		22 37 59.6	-0.7
	comp=Z,7.5nm,0.6s								
ILAR	Eielson Array	85.40	10	P		P		22 39 44.8	-0.8
	comp=Z,0.2nm,0.5s,baz=322,slow=4.6,SNR=3.4								
WRA	Warramunga Arr	88.23	114	P		P		22 40 00.8	+0.7
	comp=Z,2.3nm,0.9s,baz=317,slow=4.0,SNR=16								
YKA	Yellowknife Ar	89.42	356	P		P		22 40 03.1	-1.8
	comp=Z,1.8nm,0.8s,baz=2.0,slow=5.5,SNR=4.4								
ASAR	Alice Springs	89.78	117	P		P		22 40 08.2	+0.8
	comp=Z,0.7nm,0.8s,baz=306,slow=3.3,SNR=4.4								

ISCJB ***28*** *22:27:20.9±0.2,28.˚13N±0.˚04×57.˚56E±0.˚03,h10km, mb4.5/95,MS3.6/3,Error ellipse: s-maj=5.2km s-min=3.9km az=9.7*

IDC ***28*** *22:27:20.9±0.5,28.˚15N×57.˚57E,h0km,mb4.4/32, mb1 4.5/39,mb1mx4.4/50,mbtmp4.4/39,ML4.3/7,MS3.4/2, Ms1 3.4/2,ms1mx2.9/31,Error ellipse: s-maj=12.3km s-min=10.9km az=169.0*

CSEM ***28*** *22:27:22.6±0.2,28.˚16N×57.˚55E,h10km,mb4.6/42,Error ellipse: s-maj=6.3km s-min=5.4km az=178.0*

NEIC ***28*** *22:27:22.6±0.3,28.˚13N×57.˚54E,h10km,mb4.6/33, ML4.6(THR),MN4.6(TEH),Error ellipse: s-maj=6.2km s-min=5.0km az=168.0*

MOS ***28*** *22:27:34.1±1.1,28.˚38N×57.˚46E,h118km,mb4.5/24,Error ellipse: s-maj=8.1km s-min=4.7km az=115.7*

ISC 28 22:27:22.6±0.4, 28.˚12N±0.˚05×57.˚45E±0.˚05, h10km, n365, σ1s41/371, mb4.5/97, MS3.6/3, 25C-19D, Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UOSS	Minazif	3.36	200	*e*Pn	Pn	22 28 10.1	-5.1
UOSS	Minazif	3.36	200	*e*Pn	Pn	22 28 10.1	-5.1
WSAR	Wadi Sarin	4.98	167	Pn	Pn	22 28 38.3	+0.8
	11nm,0.3s,baz=9.3,slow=8.7,SNR=8.8						
WSAR				Sn	Sn	22 29 37.0	+1.9
	26nm,0.3s,baz=134,slow=2.9,SNR=3.6						
GEYT	Alibeck	9.79	3	Pn	Pn	22 29 46.7	+3.1
	1.6nm,0.3s,baz=184,slow=16,SNR=8.6						
DRN	Derbent	15.74	334	*i* P	P	22 31 09.6	+1.3
DRN	Derbent	15.74	334	*i* P	P	22 31 09.6	+1.3
GNI	Garni	15.94	322	Pn	P	22 31 13.7	+3.0
	2.7nm,0.3s,baz=48,slow=5.9,SNR=5.0						
GNI	Garni	15.94	322	*ce*P	P	22 31 13.0	+2.2
GNI				pmax	pmax		
	comp=Z,149nm,1.2s						
GNI	Garni	15.94	322	*e*Pn	Pn	22 31 08.1	+1.0
	comp=Z,34nm,0.8s						
GNI	Garni	15.94	322	*e*P	P	22 31 13.0	+2.2
	comp=Z,149nm,1.2s						
GNI	Garni	15.94	322	*e*Pn	Pn	22 31 08.1	+1.0
	comp=Z,34nm,0.8s						
TUTA	Tutak	16.55	317	*i* P	P	22 31 19.0	+1.3
MARD	Mardin	16.74	307	*i* P	P	22 31 21.5	+1.9
DIGO	Kars	16.88	320	*i* P	P	22 31 22.4	+1.2
ERZM	Erzurum	17.74	316	*i* P	P	22 31 34.2	+3.3
SURC	SANLIURFA_SURCI	18.11	304	*i* P	P	22 31 35.8	+1.1
DDEM	Demirkent	18.12	319	*i* P	P	22 31 36.6	+1.8
DAMY	Dhamar	18.14	225	*e*Pn	Pn	22 31 33.3	-1.8
DAMY	Dhamar	18.14	225	*e*Pn	Pn	22 31 33.3	-1.8
ARTV	Artvin	18.21	320	*i* P	P	22 31 38.2	+2.3
ASF	Jabal al Asfar	18.23	288	P	Pn	22 31 36.1	+0.3
	comp=Z,2.5nm,0.3s,baz=277,slow=1.9,SNR=16						
ZEI	Tsey	18.29	327	*e*P	P	22 31 37.7	+0.8
ZEI				pmax	pmax		
	comp=Z,68nm,0.9s						
ZEI	Tsey	18.29	327	*e*P	P	22 31 37.7	+0.8
	comp=Z,68nm,0.9s						
KKAR	Karatay Array	18.30	32	*e*P	P	22 31 37.8	+1.1
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KKAR	Karatay Array	18.30	32	*e*P	P	22 31 37.8	+1.1
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KKAR	Karatay Array	18.30	32	*e*P	P	22 31 37.8	+1.1
	comp=Z,1.0nm,0.3s						
KKAR	Karatay Array	18.30	32	*e*Pn	P	22 31 37.8	+1.1
	comp=Z,0.6nm,0.3s						
KKAR	Karatay Array	18.30	32	*e*Pn	P	22 31 37.8	+1.1
	comp=Z,0.6nm,0.3s						
KOPT	Kop Dagi	18.35	315	*i* P	P	22 31 40.4	+2.8
TNCL	Tunceli-Merkez	18.48	311	*i* P	Pn	22 31 41.9	+2.9
GZT	Gaziantep	19.07	304	*i* P	Pn	22 31 48.5	+2.4
REFA	Refahiye_ERZ	19.14	311	*i* P	Pn	22 31 50.7	+3.7
KELT	Kelkit	19.21	313	*i* P	Pn	22 31 48.4	+0.5
KUZU	Kuzuini	19.21	302	*i* P	Pn	22 31 49.5	+1.8
NEY	Neytrino	19.21	326	*e*P	Pn	22 31 50.5	+2.6
NEY	Neytrino	19.21	326	*e*P	Pn	22 31 50.5	+2.6
KEMA	Kemaliye	19.26	310	*i* P	Pn	22 31 50.1	+1.7
KBZ	Khabaz	19.48	327	P	Pn	22 31 51.1	+0.3
	comp=Z,0.2nm,0.3s,baz=315,slow=1.4,SNR=2.3						
KBZ				LR	LR	22 41 10.2	
	comp=Z,66nm,19.1s,baz=86,slow=42						
MMAI	Mount Meron Ar	19.59	290	P	Pn	22 31 53.4	+1.0
	comp=Z,1.1nm,0.3s,baz=99,slow=14,SNR=8.2						
MMAI				S	S	22 35 24.7	-7.6
	comp=Z,2.1nm,0.3s,baz=104,slow=26,SNR=6.8						
KVAR	Kislovodsk Arr	19.75	327	P	Pn	22 31 54.5	+0.3
	baz=311,slow=4.7,SNR=4.7						
KIV	Kislovodsk	19.75	327	*e*P	Pn	22 31 54.7	+0.5
KIV				pmax	pmax		
	comp=Z,32nm,0.9s						
KIV	Kislovodsk	19.75	327	*e*P	Pn	22 31 54.7	+0.5
	comp=Z,32nm,0.9s						
KIV	Kislovodsk	19.75	327	*e*P	Pn	22 31 54.6	+0.5
	comp=Z,32nm,0.9s						
EIL	Elat	19.76	280	P	Pn	22 31 55.4	+1.1
	comp=Z,0.5nm,0.3s,baz=56,slow=10.0,SNR=5.4						
SUSE	Susehri	19.93	312	*i* P	Pn	22 31 57.6	+1.2
AAK	Ala-Archa	20.01	39	P	P	22 31 55.4	-0.2
	comp=Z,0.6nm,0.3s,baz=207,slow=9.2,SNR=6.3						
AAK	Ala-Archa	20.01	39	*i* P	Pn	22 31 56.7	-0.7
AAK				pmax	pmax		
	comp=Z,7.0nm,0.6s						
AAK	Ala-Archa	20.01	39	*e*P	P	22 31 55.9	+0.2
	comp=Z,24nm,1.5s						
AAK	Ala-Archa	20.01	39	*e*P	P	22 31 55.9	+0.2
	comp=Z,24nm,1.5s						
ANDN	Andirin	20.05	303	*i* P	Pn	22 31 59.3	+1.5
FRU	Bishkek	20.21	39	*e*P	Pn	22 32 02.0	+2.4
FRU				*e*		22 32 30.5	
FRU	Bishkek	20.21	39	*e*P	Pn	22 32 02.0	+2.4
GRSN	GIRESUNGRSN	20.27	314	*i* P	P	22 31 59.7	+1.4
CUALT	Altinyayla-SIV	20.45	308	*i* P	Pn	22 32 03.1	+0.5
SCER	sogukcermik	20.47	310	*i* P	P	22 32 01.9	+1.3
CUSAR	Sarkisla-SIVAS	20.87	308	*i* P	P	22 32 06.5	+1.5
SOC	Sochi	21.02	322	*e*P	P	22 32 01.6	-4.8
SOC				*e**SP	sP	22 32 39.0	+28
SOC				*e*S	S	22 35 44.4	-16
SOC				MLR	MLR		
	comp=Z,37nm,11.0s						
SOC	Sochi	21.02	322	*e*P	P	22 32 01.6	-4.8
SOC				*e*S	S	22 35 44.4	-16
ERBA	Erbaa	21.12	312	*i* P	P	22 32 08.7	+1.2
ABKAR	Akbulak array	21.19	5	*e*P	P	22 32 08.8	+0.7
	comp=Z,20nm,0.5s						
ABKAR	Akbulak array	21.19	5	*e*P	P	22 32 08.8	+0.7
	comp=Z,20nm,0.5s						
ATD	Arta Tunnel	21.44	223	P	P	22 32 13.5	+2.3
	comp=Z,7.2nm,0.9s,baz=56,slow=3.3,SNR=5.9						
AVNS	Nevsehir-Avano	21.61	305	*i* P	P	22 32 14.4	+1.5
CSS	Mathiatis	21.63	294	*e*P	P	22 32 14.7	+1.6
	comp=Z,7.8nm,0.8s						
CSS	Mathiatis	21.63	294	*e*P	P	22 32 14.7	+1.6
	comp=Z,7.8nm,0.8s						
KERG	Konya-Eregli	21.65	301	*i* P	P	22 32 16.6	+3.3
COAL	Corum-Alaca	22.11	309	*i* P	P	22 32 18.9	+0.6
CDAG	Cicekdag	22.27	307	*i* P	P	22 32 21.1	+1.2
AKTK	Aktyubinsk	22.29	1	P	P	22 32 20.7	+0.8
AKTO	Aktyubinsk	22.29	1	P	P	22 32 20.7	+0.8
	comp=Z,59nm,1.1s,baz=280,slow=8.6,SNR=4.7						
AKSY	AKSARAY - Alti	22.34	304	*i* P	P	22 32 22.3	+1.6
BOYT	Boyabat	22.70	312	*i* P	P	22 32 25.7	+1.2
BRTR	Keskin Array B	22.83	307	P	P	22 32 26.7	+0.7
	comp=Z,42nm,1.0s,baz=118,slow=9.9,SNR=42						
BRTR				PcP	PcP	22 36 15.4	-1.7
	comp=Z,0.8nm,0.8s,baz=145,slow=3.5,SNR=4.4						
BRTR	Keskin Array B	22.83	307	*ce*P	P	22 32 27.0	+1.0
BRTR				pmax	pmax		
	comp=Z,41nm,1.0s						
ANN	Anapa	23.06	322	*e*P	P	22 32 28.3	+0.2
ANN				pmax	pmax		
	comp=Z,20nm,0.8s						
ANN	Anapa	23.06	322	*e*P	P	22 32 28.3	+0.2
	comp=Z,20nm,0.8s						
BBAL	Bala	23.12	306	*i* P	P	22 32 27.9	-1.1
KKUL	Konya-Kulu	23.14	305	*i* P	P	22 32 30.2	+1.0
ANTO	Ankara	23.48	306	*e*P	P	22 32 33.8	+1.2
ANTO				pmax	pmax		
	comp=Z,117nm,0.8s						
ANTO	Ankara	23.48	306	*e*P	P	22 32 33.8	+1.2
	comp=Z,117nm,0.8s						
ANTO	Ankara	23.48	306	*e*P	P	22 32 33.8	+1.2
	comp=Z,117nm,0.8s						
KDHN	Kadinhani	23.50	303	*i* P	P	22 32 33.6	+0.7
BCAM	Yenicaga	24.36	308	*i* P	P	22 32 40.4	-0.7
KORT	Korkueli	24.43	298	*i* P	P	22 32 41.5	-0.2
BOLV	Bolvadin	24.43	302	*i* P	P	22 32 42.6	+0.9
ISP	Isparta	24.50	300	*e*P	P	22 32 44.2	+1.9
ISP				pmax	pmax		
	comp=Z,19nm,0.9s						
ISP	Isparta	24.50	300	*e*P	P	22 32 44.2	+1.9
	comp=Z,19nm,0.9s						
ESKT	Eskisehir	24.76	304	*i* P	P	22 32 44.9	+0.2
BTAS	Taskesti	25.02	307	*i* P	P	22 32 47.1	+0.3
GOLH	Golhisar	25.10	298	*i* P	P	22 32 48.3	+0.6
BORA	Eskisehir	25.17	305	*i* P	P	22 32 48.3	0.0
SAHE	Sakarya_HENDEK	25.23	312	*i* P	P	22 32 49.4	+0.7
TURN	Turunc	25.77	297	*i* P	P	22 32 57.3	+3.7
BVAR	Borovoye Array	26.66	18	P	P	22 33 01.9	+0.4
	comp=Z,4.9nm,0.7s,baz=197,slow=8.5,SNR=13						
BVAR				PcP	PcP	22 36 24.7	-0.4
	comp=Z,3.0nm,0.7s,baz=316,slow=0.1,SNR=9.0						
BVAR				ScP	ScP	22 40 01.2	-4.1
	comp=Z,0.5nm,0.6s,baz=198,slow=1.4,SNR=3.9						
BRVK	Borovoye	26.66	17	*ce*P	P	22 33 01.9	+0.4
BRVK				pmax	pmax		
	comp=Z,24nm,1.3s						
BRVK	Borovoye	26.66	17	*e*P	P	22 33 01.8	+0.3
	comp=Z,6.7nm,1.0s						
BRVK	Borovoye	26.66	17	*e*P	P	22 33 01.8	+0.3
	comp=Z,6.7nm,1.0s						
KARP	Karpathos	26.71	294	*e*P	P	22 33 02.6	+0.4
KARP	Karpathos	26.71	294	*e*P	P	22 33 02.6	+0.4
MAKZ	Makanchi	26.78	39	*e*P	P	22 33 02.4	-0.3
MAKZ				pmax	pmax		
	comp=Z,4.0nm,0.9s						
MAKZ	Makanchi	26.78	39	*e*P	P	22 33 02.4	-0.3
	comp=Z,3.6nm,0.9s						
MAKZ	Makanchi	26.78	39	*e*P	P	22 33 02.4	-0.3
	comp=Z,3.6nm,0.9s						
MK01	Makanchi Array	26.94	40	*e*P	P	22 33 03.5	-0.6
MK01	Makanchi Array	26.94	40	*e*P	P	22 33 03.5	-0.6
MK31	Makanchi Array	26.95	40	*e*P	P	22 33 04.2	0.0
MK31	Makanchi Array	26.95	40	*e*P	P	22 33 04.2	0.0
MK31	Makanchi Array	26.95	40	*e*P	P	22 33 04.2	0.0
MKAR	Makanchi Array	26.95	40	P	P	22 33 03.7	-0.5
	comp=Z,1.7nm,0.7s,baz=228,slow=8.8,SNR=13						
MKAR				PcP	PcP	22 36 24.5	-1.5
	comp=Z,0.5nm,0.4s,baz=226,slow=2.2,SNR=3.8						
MKAR	Makanchi Array	26.95	40	*e*P	P	22 33 04.2	0.0
MKAR						22 36 24.5	
MKAR	Makanchi Array	26.95	40	*e*P	P	22 33 04.2	0.0
MKAR	Makanchi Array	26.95	40	*e*P	P	22 33 04.2	0.0
MKAR				PcP	PcP	22 36 24.5	-1.5
KURBB	Kurchatov Arra	27.57	30	P	P	22 33 09.8	+0.1
	comp=Z,2.9nm,0.7s,baz=229,slow=8.6,SNR=17						
KURBB				PcP	PcP	22 36 26.3	-1.0
	comp=Z,0.4nm,0.8s,baz=224,slow=3.2,SNR=4.1						
KURK	Kurchatov	27.68	30	P	P	22 33 09.8	-0.8
KURK						22 36 26.3	
KURK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KURK	Kurchatov	27.68	30	P	P	22 33 09.8	-0.8
	comp=Z,3.0nm,0.7s						
KURK	Kurchatov	27.68	30	*e*P	P	22 33 08.9	-1.7
	comp=Z,18nm,0.6s						
KURK				PcP	PcP	22 36 26.3	-1.3
ARU	Arti	28.30	1	P	P	22 33 16.6	+0.4
	comp=Z,3.7nm,0.6s,baz=174,slow=7.0,SNR=4.8						
ARU	Arti	28.30	1	*e*P	P	22 33 17.1	+1.0
	comp=Z,5.6nm,0.7s						
IDI	Anoyia	28.52	293	P	P	22 33 19.4	+0.9
	comp=Z,13nm,0.7s,baz=106,slow=9.3,SNR=16						
IDI	Anoyia	28.52	293	*e*P	P	22 33 19.6	+1.1
	comp=Z,15nm,0.7s						
IDI	Anoyia	28.52	293	*e*P	P	22 33 19.6	+1.1
	comp=Z,15nm,0.7s						
TLB	Topalu	28.62	313	*i*P	P	22 33 23.7	+4.6
TLB	Topalu	28.62	313	P	P	22 33 23.7	+4.6
TLB	Topalu	28.62	313	P	P	22 33 23.7	+4.6
SVE	Sverdlovsk	28.77	4	*e*P	P	22 33 20.4	0.0
SVE	Sverdlovsk	28.77	4	*e*P	P	22 33 20.4	0.0
CFR	Carcaliu	28.81	314	*i*P	P	22 33 22.9	+2.1
CFR	Carcaliu	28.81	314	P	P	22 33 22.9	+2.1
CFR	Carcaliu	28.81	314	P	P	22 33 22.9	+2.1
WMQ	Urumqi	28.85	49	*e*P	P	22 33 22.5	+1.2
WMQ				pP	sP	22 33 27.0	+1.4
WMQ				sP	pP	22 33 30.5	+6.1
WMQ				S	S	22 38 12.3	+0.8
WMQ				SS	SnSn	22 39 42.5	+9.4
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,140nm,5.0s						
WMQ				LR	LR		
	comp=N,270nm,22.0s						
WMQ				LR	LR		
	comp=E,420nm,21.8s						
WMQ				LR	LR		
	comp=Z,540nm,23.6s						
LSA	Lhasa	29.48	79	*e*P	P	22 33 27.3	-0.2
LSA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
LSA	Lhasa	29.48	79	*e*P	P	22 33 27.3	-0.2
	comp=Z,3.5nm,0.9s						
LSA	Lhasa	29.48	79	*e*P	P	22 33 27.3	-0.2
	comp=Z,3.5nm,0.9s						
RZN	Rozhen	29.87	306	*i* P	P	22 33 31.0	+0.5
VRI	Vrincioaia	30.01	314	*i*P	P	22 33 33.4	+1.9
VRI	Vrincioaia	30.01	314	P	P	22 33 33.4	+1.9
VRI	Vrincioaia	30.01	314	P	P	22 33 33.4	+1.9
PLOR	Plostina	30.05	314	*i*P	P	22 33 32.6	+0.7
PLOR	Plostina	30.05	314	P	P	22 33 32.6	+0.7
PLOR	Plostina	30.05	314	P	P	22 33 32.6	+0.7
SORM	Soroca	30.10	319	*i*P	P	22 33 31.1	-1.1
SORM	Soroca	30.10	319	P	P	22 33 31.1	-1.1
SORM	Soroca	30.10	319	P	P	22 33 31.1	-1.1
TESR	Tescani	30.34	316	*i*P	P	22 33 34.3	-0.1
MLR	Muntele Rosu	30.35	313	P	P	22 33 35.7	+1.1
	comp=Z,0.6nm,0.7s,baz=354,slow=4.0,SNR=5.9						
MLR	Muntele Rosu	30.35	313	*i*P	P	22 33 37.2	+2.6
MLR	Muntele Rosu	30.35	313	P	P	22 33 37.2	+2.6
MLR	Muntele Rosu	30.35	313	*e*P	P	22 33 36.4	+1.8
	comp=Z,8.1nm,1.1s						
MLR	Muntele Rosu	30.35	313	*e*P	P	22 33 36.4	+1.8
	comp=Z,8.1nm,1.1s						
PGB	Panagyurishte	30.51	307	*i* P	P	22 33 37.2	+1.2
MMB	Musomiste	30.56	305	*i* P	P	22 33 36.8	+0.4
DOPR	Dopca	30.90	314	*i*P	P	22 33 39.4	+0.1
VOIR		30.90	313	*i*P	P	22 33 40.3	+0.8
VOIR		30.90	313	P	P	22 33 40.3	+0.8
VOIR		30.90	313	P	P	22 33 40.3	+0.8
OBN	Obninsk	30.92	337	*e*P	P	22 33 39.6	+0.3
OBN				*PP	sP	22 34 06.0	+22
OBN						22 34 52.0	
OBN				*e*S	S	22 38 33.6	-10
OBN				pmax	pmax		
	comp=Z,7.0nm,0.8s						
OBN	Obninsk	30.92	337	*e*P	P	22 33 39.6	+0.3
	comp=Z,7.0nm,0.8s						
OBN				*e*S	S	22 38 33.6	-10
AKASG	Malin Array Be	31.05	324	P	P	22 33 39.8	-0.8
	comp=Z,1.1nm,0.4s,baz=126,slow=8.5,SNR=8.5						
AKBB	Malin Array Si	31.05	324	*e*P	P	22 33 39.9	-0.6
AKBB				pmax	pmax		
	comp=Z,5.0nm,0.8s						
AKBB	Malin Array Si	31.05	324	*e*P	P	22 33 39.9	-0.6
	comp=Z,5.2nm,0.8s						
AKBB	Malin Array Si	31.05	324	*e*P	P	22 33 39.9	-0.6
	comp=Z,5.2nm,0.8s						
KIEV	Kiev	31.05	324	*e*P	P	22 33 39.3	-1.3
KIEV				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KIEV	Kiev	31.05	324	*e*P	P	22 33 39.9	-0.7
	comp=Z,5.2nm,0.6s						
KIEV	Kiev	31.05	324	*e*P	P	22 33 39.9	-0.7
	comp=Z,5.2nm,0.6s						
MPEP	Malo Peshtene	31.05	308	*i* P	P	22 33 41.4	+0.6
KKB	Krupnik	31.09	305	*i* P	P	22 33 41.1	0.0
ARR	Arges	31.15	312	*i*P	P	22 33 42.0	+0.4
VTS	Vitosha	31.20	307	*i* P	P	22 33 47.1	+4.9
BURAR	Bucovina Array	31.70	317	*i*P	P	22 33 46.5	0.0
BURAR	Bucovina Array	31.70	317	P	P	22 33 46.5	0.0
BU

comp=Z,12nm,0.9s,baz=137,slow=5.3,SNR=4.9
MORC Moravsky Berou 37.23 317 ⇓ *i*P **P 22 34 32.8 -1.4**
MORC Moravsky Berou 37.23 317 ⇓ P **P 22 34 32.8 -1.4**
MORC Moravsky Berou 37.23 317 *e*P **P 22 34 33.7 -0.6**
comp=Z,17nm,0.8s
MORC Moravsky Berou 37.23 317 *e*P **P 22 34 33.7 -0.6**
comp=Z,17nm,0.8s
VRAC Vranov 37.65 315 P **P 22 34 37.8 0.0**
comp=Z,2.7nm,0.8s,baz=122,slow=9.2,SNR=8.7
VRAC Vranov 37.65 315 ⇑ *i*P **P 22 34 38.1 +0.3**
VRAC Vranov 37.65 315 ⇑ P **P 22 34 38.1 +0.3**
VRAC Vranov 37.65 315 P **P 22 34 38.1 +0.3**
CONA Conrad Observa 37.69 313 *i* P **P 22 34 37.7 -0.6**
comp=Z,7.8nm,1.2s
ARSA Arzberg 37.73 312 *i* P **P 22 34 38.0 -0.5**
comp=Z,6.3nm,1.1s
SOKA Soboth 37.91 311 *i* P **P 22 34 40.3 +0.2**
comp=Z,5.2nm,1.5s
DPC Dobruska-Polom 38.16 317 *e*P **P 22 34 41.9 -0.3**
DPC *ex* x 22 34 51.9
DPC *ex* x 22 34 56.2
DPC Dobruska-Polom 38.16 317 *e*P **P 22 34 41.9 -0.3**
DPC Dobruska-Polom 38.16 317 *e*P **P 22 34 41.9 -0.3**
OBKA Obir 38.19 310 *i* pP pP 22 34 44.6 -1.0
comp=Z,6.2nm,1.1s
AQU L'Aquila 38.25 304 *e*P **P 22 34 44.8 +1.8**
AQU pmax pmax
comp=Z,31nm,1.0s
AQU L'Aquila 38.25 304 *e*P **P 22 34 44.8 +1.8**
comp=Z,31nm,1.0s
AQU L'Aquila 38.25 304 *e*P **P 22 34 44.8 +1.8**
comp=Z,31nm,1.0s
MOA Molln 38.71 313 *i* P **P 22 34 46.4 -0.3**
comp=Z,12nm,1.1s
MYKA Terra Mystica 38.83 310 *i* P **P 22 34 48.2 +0.4**
comp=Z,5.3nm,0.9s
KBA Koelnbreinsper 39.13 311 *i* P **P 22 34 49.8 -0.7**
comp=Z,6.7nm,0.8s
FIA1 FINESS Array S 39.32 337 *e*P **P 22 34 51.3 -0.3**
FIA1 FINESS Array S 39.32 337 *e*P **P 22 34 51.3 -0.3**
FINES FINESS Array B 39.32 337 P **P 22 34 51.4 -0.3**
comp=Z,4.5nm,0.5s,baz=132,slow=9.3,SNR=18
FINES FINESS Array B 39.32 337 *ce*P **P 22 34 51.2 -0.4**
FINES pmax pmax
comp=Z,5.0nm,0.5s
GEA0 GERESS Array S 39.33 314 *e*P **P 22 34 50.8 -1.2**
GEA0 GERESS Array S 39.33 314 *e*P **P 22 34 50.8 -1.2**
GEA0 *e*PcP **PcP 22 37 00.1 -0.4**
GEC2 GERESS Array S 39.33 314 *e*P **P 22 34 51.5 -0.5**
GEC2 pmax pmax
comp=Z,10.0nm,1.0s
GEC2 GERESS Array S 39.33 314 *e*P **P 22 34 51.5 -0.5**
comp=Z,9.9nm,1.0s
GEC2 GERESS Array S 39.33 314 *e*P **P 22 34 51.5 -0.5**
comp=Z,9.9nm,1.0s
GERES GERESS Array B 39.33 314 P **P 22 34 52.0 0.0**
comp=Z,2.7nm,0.6s,baz=108,slow=8.6,SNR=20
GERES PcP **PcP 22 37 00.1 -0.4**
comp=Z,1.1nm,0.8s,baz=141,slow=4.5,SNR=4.2
KHC Kasperske Hory 39.49 314 *e*P **P 22 34 52.7 -0.6**
KHC *ex* x 22 35 03.4
KHC *ex* x 22 35 06.7
KHC Kasperske Hory 39.49 314 *e*P **P 22 34 52.7 -0.6**
KHC Kasperske Hory 39.49 314 *e*P **P 22 34 52.7 -0.6**
ABTA Abfaltersbach 39.61 310 *i* P **P 22 34 52.8 -1.6**
comp=Z,10nm,1.3s
BRG Berggiesshubel 39.77 317 *e*P **P 22 34 55.1 -0.3**
comp=Z,13nm,1.9s
BRG Berggiesshubel 39.77 317 *e*P **P 22 34 55.2 -0.3**
BRG pmax pmax
comp=Z,13nm,1.9s
BRG Berggiesshubel 39.77 317 *e*P **P 22 34 55.2 -0.3**
comp=Z,13nm,1.9s
WATA Walderalm 40.36 311 *i* P **P 22 34 59.5 -1.2**
comp=Z,5.6nm,0.9s
KMI Kunming 40.42 83 P **P 22 35 00.0 -1.5**
KMI pmax pmax
comp=Z,12nm,0.7s
KMI pmax pmax
comp=Z,120nm,3.8s
CLL Collm 40.47 317 *i* P **P 22 35 00.6 -0.7**
comp=Z,15nm,1.4s
CLL *i* 22 35 06.2
CLL *i* 22 35 15.0
CLL *e*PP **PP 22 36 36.0 +1.7**
CLL Collm 40.47 317 *i* P **P 22 35 00.6 -0.7**
CLL pmax pmax
comp=Z,15nm,1.4s
CLL Collm 40.47 317 *e*P **P 22 35 00.7 -0.6**
comp=Z,13nm,1.3s
CLL Collm 40.47 317 *e*P **P 22 35 00.7 -0.6**
comp=Z,13nm,1.3s
NKC Novy Kostel 40.49 316 *e*P **P 22 35 02.1 +0.5**
MOTA Moosalm 40.68 311 *i* P **P 22 35 01.9 -1.5**
comp=Z,5.9nm,0.7s
FETA Feichten 40.87 310 *i* P **P 22 35 03.7 -1.2**
comp=Z,10nm,0.8s
RETA Reutte 40.93 311 *i* P **P 22 35 03.8 -1.5**
comp=Z,4.5nm,0.7s
FUORN Ofenpass-Fuorn 41.11 310 *e*P **P 22 35 07.9 +0.9**
comp=Z,4.1nm,0.6s
FUORN Ofenpass-Fuorn 41.11 310 *e*P **P 22 35 07.9 +0.9**
comp=Z,4.1nm,0.6s
DAVOX Davos/Dischmat 41.40 310 P **P 22 35 08.9 -0.4**
comp=Z,5.2nm,0.5s,baz=90,slow=5.0,SNR=12
DAVA Damuels 41.48 311 *i* P **P 22 35 08.7 -1.2**
comp=Z,12nm,0.8s
SONM Songino Array 42.49 49 P **P 22 35 18.0 -0.1**
comp=Z,2.6nm,0.9s,baz=253,slow=9.0,SNR=13
SONA1 Songino Array 42.50 49 *e*P **P 22 35 18.2 0.0**
SONA1 Songino Array 42.50 49 *e*P **P 22 35 18.2 0.0**
SENIN Lac Senin/Sane 43.10 309 *e*P **P 22 35 23.5 +0.3**
comp=Z,6.3nm,0.7s
SENIN Lac Senin/Sane 43.10 309 *e*P **P 22 35 23.5 +0.3**
comp=Z,6.3nm,0.7s
HFS Hagfors 43.51 330 P **P 22 35 26.0 0.0**
comp=Z,2.0nm,0.4s,baz=125,slow=9.3,SNR=14
MEM Membach 44.59 315 P **P 22 35 35.9 +1.0**
comp=Z,7.8nm,1.7s
NC602 NORSAR Array S 44.74 330 *e*P **P 22 35 35.5 -0.3**
NC602 NORSAR Array S 44.74 330 *e*P **P 22 35 35.5 -0.3**
SNR=25
NRIK Noril'sk 44.80 15 P **P 22 35 35.4 -0.8**
comp=Z,3.2nm,0.8s,baz=191,slow=5.2,SNR=4.7
NC405 NORSAR Array S 44.83 330 *e*P **P 22 35 36.0 -0.6**
NC405 NORSAR Array S 44.83 330 *e*P **P 22 35 36.0 -0.6**
SSB Saint Sauveur 44.92 307 *e*P **P 22 35 35.6 -2.0**
SSB pmax pmax
comp=Z,2.0nm,0.7s
SSB Saint Sauveur 44.92 307 *e*P **P 22 35 35.6 -2.0**
comp=Z,1.5nm,0.7s
SSB Saint Sauveur 44.92 307 *e*P **P 22 35 35.6 -2.0**
comp=Z,1.5nm,0.7s
BCLA Clavier 45.00 314 P **P 22 35 38.1 -0.1**
comp=Z,7.8nm,1.8s
NB2 NORSAR Subarra 45.01 330 P **P 22 35 37.0 -1.1**
comp=Z,2.4nm,0.7s,baz=112,slow=7.9
NB2 NORSAR Subarra 45.01 330 P **P 22 35 37.0 -1.1**
baz=112,slow=7.9
NB2 NORSAR Subarra 45.01 330 P **P 22 35 37.0 -1.1**
SNR=24
NOA NORSAR Array B 45.01 330 P **P 22 35 37.5 -0.7**
comp=Z,1.9nm,0.6s,baz=116,slow=7.9,SNR=13
ARCES ARCESS Array B 45.37 345 P **P 22 35 40.2 -0.6**
comp=Z,2.9nm,0.5s,baz=139,slow=9.5,SNR=15
ARCES PcP **PcP 22 37 19.3 -0.8**
comp=Z,2.2nm,0.8s,baz=166,slow=4.6,SNR=4.5
ARE0 ARCESS Array S 45.37 345 *e*P **P 22 35 40.6 -0.2**
ARE0 ARCESS Array S 45.37 345 *e*P **P 22 35 40.6 -0.2**
SNR=24
DOU Dourbes 45.40 314 P **P 22 35 41.4 +0.1**
comp=Z,5.1nm,2.0s
SNF Seneffe 45.66 314 P **P 22 35 44.8 +1.5**
HHC Hu-ho-hao-te 45.71 59 *e*P **P 22 35 43.0 -1.0**
HHC pmax pmax
comp=Z,13nm,1.1s
HHC pmax pmax
comp=Z,58nm,5.8s
TAM Tamanrasset 46.90 276 *e*P **P 22 35 54.4 +0.7**
TAM pmax pmax
comp=Z,3.0nm,1.0s
TAM Tamanrasset 46.90 276 *e*P **P 22 35 54.4 +0.7**
comp=Z,3.3nm,1.0s
TAM Tamanrasset 46.90 276 *e*P **P 22 35 54.4 +0.7**
comp=Z,3.3nm,1.0s
TRO Tromso 47.06 343 *e*P **P 22 35 54.1 0.0**
TRO IAmb IAmb 22 35 55.9
comp=Z,20nm,1.0s
TRO Tromso 47.06 343 *e*P **P 22 35 54.1 0.0**
SNR=24
BJI Beijing 49.27 60 P **P 22 36 10.5 -1.1**
BJI pmax pmax
comp=Z,3.0nm,0.4s
BJI pmax pmax
comp=Z,91nm,4.6s
BJO Bjornoya 50.35 348 *e*P **P 22 36 19.2 -0.1**
BJO Bjornoya 50.35 348 *e*P **P 22 36 19.2 -0.1**
SNR=23
HOPEN Hopen 50.89 351 *e*P **P 22 36 24.0 +0.7**
HOPEN Hopen 50.89 351 *e*P **P 22 36 24.0 +0.7**
SNR=23
ES19 SONSECA Array 51.32 300 *e*P **P 22 36 27.6 +0.4**
ES19 SONSECA Array 51.32 300 *e*P **P 22 36 27.6 +0.4**
ESDC Sonseca Array 51.37 300 P **P 22 36 27.6 0.0**
comp=Z,0.6nm,0.4s,baz=70,slow=6.5,SNR=4.1
HSPB Hornsund (broa 52.73 349 *e*P **P 22 36 37.1 0.0**
HSPB IAmb IAmb 22 36 38.0
comp=Z,13nm,0.9s
HSPB Hornsund (broa 52.73 349 *e*P **P 22 36 37.1 0.0**
SNR=23
SPA0 Spitsbergen Ar 53.41 350 *e*P **P 22 36 41.9 -0.2**
SPA0 Spitsbergen Ar 53.41 350 *e*P **P 22 36 42.2 +0.1**
SPA0 Spitsbergen Ar 53.41 350 *e*P **P 22 36 42.2 +0.1**
PBAR Barrancos 53.96 298 *e*P **P 22 36 47.6 +0.9**
comp=Z,43nm,1.7s
PCBR Castelo Branco 54.03 300 *e*P **P 22 36 49.0 +1.8**
comp=Z,24nm,1.5s
PESTR Estremoz 54.27 299 *e*P **P 22 36 48.8 -0.2**
comp=Z,21nm,1.8s
KBS Kingsbay 54.57 350 *e*P **P 22 36 50.2 -0.3**
KBS Kingsbay 54.57 350 *e*P **P 22 36 50.2 -0.3**
SNR=22
PCAS Casmilo, Conde 54.77 301 *e*P **P 22 36 54.5 +1.9**
comp=Z,34nm,2.0s
PTOM Tomar 54.77 300 *e*P **P 22 36 53.5 +0.9**
comp=Z,29nm,1.8s
PNCL Nicolau / Gran 55.12 299 *e*P **P 22 36 56.7 +1.5**
comp=Z,15nm,1.8s
KSAR Wonju Array Be 58.71 61 P **P 22 37 19.2 -1.4**
KSAR Wonju Array Be 58.71 61 P **P 22 37 19.2 -1.4**
KSAR Wonju Array Be 58.71 61 P **P 22 37 19.2 -1.4**
KSRS Korea Array 58.74 61 P **P 22 37 19.2 -1.6**
comp=Z,4.5nm,0.7s,baz=278,slow=7.2,SNR=13
DAG Danmarks Havn 59.66 345 ⇑ *i*P **P 22 37 25.7 -0.9**
comp=Z,11nm,0.9s
DAG Danmarks Havn 59.66 345 ⇑ *i*P **P 22 37 25.7 -0.9**
DAG pmax pmax
comp=Z,9.0nm,0.9s
DBIC Dimbokro 62.50 263 P **P 22 37 46.4 -0.4**
comp=Z,3.5nm,0.7s,baz=37,slow=7.1,SNR=3.7
BOSA Boshof 64.30 211 P **P 22 37 58.4 -0.1**
comp=Z,4.5nm,0.9s,baz=10.0,slow=7.5,SNR=5.5
SUMG Summit 65.18 341 ⇑ *i*P **P 22 38 04.0 -0.1**
comp=Z,21nm,1.1s
SUMG Summit 65.18 341 ⇑ *i*P **P 22 38 04.0 -0.1**
SUMG pmax pmax
comp=Z,21nm,1.1s
SUMG Summit 65.18 341 *i* P **P 22 38 04.0 -0.1**
comp=Z,21nm,1.1s
SUMG Summit 65.18 341 *e*P **P 22 38 03.7 -0.3**
comp=Z,14nm,0.8s
MJAR Matsushiro Arr 66.91 60 P **P 22 38 14.5 -0.9**
comp=Z,0.8nm,0.5s,baz=272,slow=5.0,SNR=5.7
YSS Yuzh-Sakhalins 66.97 48 *e*P **P 22 38 13.9 -1.6**
YSS Yuzh-Sakhalins 66.97 48 *e*P **P 22 38 13.9 -1.6**
YSS Yuzh-Sakhalins 66.97 48 *e*P **P 22 38 13.5 -1.9**
comp=Z,17nm,0.6s
SEY Seymchan 67.53 30 ⇓ *i*P **P 22 38 18.0 -0.7**
SEY Seymchan 67.53 30 *i* P **P 22 38 18.0 -0.7**
BILL Bilibino 70.89 22 *i* P **P 22 38 38.9 -0.6**
BILL *e* 22 38 54.3
BILL *PP PcP 22 39 13.0 +13
BILL *e*S S 22 47 38.6 -16
BILL *e*SS SS 22 52 13.9 -12
BILL pmax pmax
comp=Z,6.0nm,1.7s
BILL Bilibino 70.89 22 *i* P **P 22 38 38.9 -0.6**
comp=Z,6.0nm,1.7s
COLD Coldfoot 82.68 10 *e*P **P 22 39 45.8 -0.3**
comp=Z,2.6nm,0.8s
COLD Coldfoot 82.68 10 *e*P **P 22 39 45.8 -0.3**
comp=Z,2.6nm,0.8s
INK Inuvik 83.52 4 *e*P **P 22 39 49.6 -0.7**
INK pmax pmax
comp=Z,10.0nm,1.5s
INK Inuvik 83.52 4 *e*P **P 22 39 49.6 -0.7**
comp=Z,10.0nm,1.5s
INK Inuvik 83.52 4 *e*P **P 22 39 49.5 -0.7**
comp=Z,9.9nm,1.5s
SCHQ Scherville 84.57 331 P **P 22 39 55.0 -1.0**
comp=Z,2.0nm,0.6s,baz=60,slow=8.1,SNR=2.9
BPAW Bear Paw Mtn. 85.40 12 *e*P **P 22 39 59.1 -0.9**
BPAW Bear Paw Mtn. 85.40 12 *e*P **P 22 39 59.1 -0.9**
ILAR Eielson Array 85.48 10 P **P 22 39 58.7 -1.7**
comp=Z,0.7nm,0.6s,baz=333,slow=3.2,SNR=7.4
ILAR LR LR 23 24 18.4
comp=Z,24nm,18.0s,baz=218,slow=40
EGAK Eagle 86.27 8 *e*P **P 22 40 03.6 -0.7**
comp=Z,2.0nm,1.0s
EGAK Eagle 86.27 8 *e*P **P 22 40 03.6 -0.7**
comp=Z,2.0nm,1.0s
DAWY Dawson 87.17 7 *e*P **P 22 40 08.0 -0.7**
comp=Z,16nm,1.3s
DAWY Dawson 87.17 7 *e*P **P 22 40 08.0 -0.7**
comp=Z,16nm,1.3s
WRA Warramunga Arr 88.31 114 P **P 22 40 15.1 +0.2**
comp=Z,5.0nm,0.8s,baz=312,slow=4.2,SNR=23
WRAB Tennant Creek 88.31 114 *de*P **P 22 40 15.9 +1.0**
WRAB pmax pmax
comp=Z,35nm,1.7s
WRAB Tennant Creek 88.31 114 *e*P **P 22 40 14.7 -0.2**
comp=Z,3.7nm,0.8s
WRAB Tennant Creek 88.31 114 *e*P **P 22 40 14.7 -0.2**
comp=Z,3.7nm,0.8s
YKA Yellowknife Ar 89.47 356 P **P 22 40 19.3 -0.3**
comp=Z,6.5nm,0.6s,baz=0.2,slow=5.3,SNR=23
YKA Yellowknife Ar 89.47 356 *ce*P **P 22 40 19.2 -0.4**
YKA pmax pmax
comp=Z,7.0nm,0.6s
ASAR Alice Springs 89.85 117 P **P 22 40 22.5 +0.4**
comp=Z,1.6nm,0.9s,baz=304,slow=4.5,SNR=7.4
KDAK Kodiak Island 90.78 16 *ce*P **P 22 40 26.5 +0.7**
KDAK Kodiak Island 90.78 16 *e*P **P 22 40 26.5 +0.7**
TXAR Lajitas Array 120.08 341 PKP **PKPdf 22 46 13.6 -0.7**
comp=Z,0.5nm,0.7s,baz=182,slow=0.9,SNR=7.6

*ISCJB **28** 22:27:31.0±0.4, 39.32N±0.02×24.03E±0.03, h18km±5km, Error ellipse: s-maj=4.1km s-min=3.7km az=23.7*
*ATH **28** 22:27:30.1, 39.31N×24.02E, h28km±1km, ML2.6/6, Error ellipse: s-maj=1.5km s-min=0.8km az=245.0*
*CSEM **28** 22:27:30.6±0.1, 39.32N×24.02E, h15km, ML2.6, Error ellipse: s-maj=2.4km s-min=2.2km az=89.0*
*THE **28** 22:27:30.0, 39.31N×24.06E, h1km±1km, ML2.5/6, Error ellipse: s-maj=1.9km s-min=0.5km az=105.0*
ISC 28 22:27:30.2±0.9, **39.32N**±0.02×**24.03E**±0.02, **h15**km±6km, **n62**, σ0 **846**/94, **Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AOS	**Alonnisos**	**0.19**	**217**	P	**Pg**	**22 27 34.7**	**0.0**
AOS				S	**Sg**	**22 27 37.4**	**-0.3**
AOS	**Alonnisos**	**0.19**	**217**	P	**Pg**	**22 27 34.7**	**0.0**
AOS	**Alonnisos**	**0.19**	**217**	P	**Pg**	**22 27 34.3**	**-0.4**
AOS				AML	AML	22 27 38.2	
AOS	comp=E,3374μm,0.3s			AML	AML	22 27 38.6	
	comp=N,3885μm,0.4s						
SKIA	**Skiathos**	**0.46**	**250**	P	**Pg**	**22 27 39.3**	**-0.1**
SKIA				S	**Sb**	**22 27 46.3**	**-0.5**
SKIA	**Skiathos**	**0.46**	**250**	P	**Pg**	**22 27 39.3**	**-0.1**
SKIA				S	**Sg**	**22 27 46.0**	**+0.3**
SKIA	**Skiathos**	**0.46**	**250**	P	**Pg**	**22 27 38.8**	**-0.7**
SKIA				S	**Sg**	**22 27 46.0**	**+0.3**
SKIA				AML	AML	22 27 47.6	
SKIA	comp=N,1516μm,0.4s			AML	AML	22 27 48.3	
	comp=E,1536μm,0.2s						
SKY	**Skiros Island**	**0.60**	**137**	P	**Pb**	**22 27 42.8**	**+0.3**
SKY				S	**Sb**	**22 27 51.4**	**+0.5**
SKY	**Skiros Island**	**0.60**	**137**	P	**Pb**	**22 27 42.8**	**+0.3**
SKY				S	**Sb**	**22 27 51.4**	**+0.5**
SKY	comp=E,3398μm,0.2s			AML	AML	22 27 53.7	
SKY	comp=N,2505μm,0.2s			AML	AML	22 27 54.3	
NEO	**Neokhori**	**0.62**	**269**	P	**Pb**	**22 27 42.6**	**-0.3**
NEO				S	**Sb**	**22 27 51.4**	**0.0**
NEO	**Neokhori**	**0.62**	**269**	P	**Pb**	**22 27 42.6**	**-0.3**
NEO				S	**Sb**	**22 27 51.4**	**0.0**
NEO	**Neokhori**	**0.62**	**269**	P	**Pb**	**22 27 43.1**	**+0.2**
NEO				S	**Sb**	**22 27 52.5**	**+1.1**
XOR	**Xorichti**	**0.65**	**274**	P	**Pg**	**22 27 42.9**	**0.0**
XOR				S	**Sb**	**22 27 52.0**	**-0.2**
XOR	**Xorichti**	**0.65**	**274**	P	**Pg**	**22 27 42.9**	**0.0**
XOR				S	**Sb**	**22 27 52.0**	**-0.2**
XOR	**Xorichti**	**0.65**	**274**	P	**Pg**	**22 27 42.7**	**-0.3**
XOR				S	**Sn**	**22 27 53.5**	**-1.5**
XOR				AML	AML	22 27 54.1	
XOR	comp=N,2387μm,0.4s			AML	AML	22 27 54.8	
	comp=E,1767μm,0.4s						
PAIG	**Paliouri**	**0.66**	**336**	P	**Pg**	**22 27 43.3**	**+0.2**
PAIG				S	**Sb**	**22 27 53.2**	**+0.7**
PAIG	**Paliouri**	**0.66**	**336**	P	**Pg**	**22 27 43.3**	**+0.2**
PAIG				S	**Sb**	**22 27 53.2**	**+0.7**
PAIG	**Paliouri**	**0.66**	**336**	P	**Pb**	**22 27 44.1**	**+0.6**
PAIG				S	**Sn**	**22 27 54.2**	**-1.0**
PAIG				AML	AML	22 27 56.2	
PAIG	comp=E,542μm,0.3s			AML	AML	22 27 57.3	
	comp=N,370μm,0.3s						
SMIA	**Simia**	**0.78**	**235**	P	**Pb**	**22 27 45.8**	**+0.3**
SMIA				S	**Sb**	**22 27 56.5**	**+0.7**
SMIA	**Simia**	**0.78**	**235**	P	**Pb**	**22 27 45.8**	**+0.3**
SMIA				S	**Sb**	**22 27 56.5**	**+0.7**
FYTO	**Fytoko, Volos**	**0.85**	**276**	P	**Pn**	**22 27 47.5**	**-0.2**
FYTO				S	**Sg**	**22 27 58.3**	**+0.5**
FYTO	**Fytoko, Volos**	**0.85**	**276**	P	**Pn**	**22 27 47.5**	**-0.2**
FYTO				S	**Sg**	**22 27 58.3**	**+0.5**
EREA	**Eretria**	**0.91**	**185**	P	**Pb**	**22 27 47.0**	**-0.7**
EREA				S	**Sg**	**22 27 59.7**	**0.0**
EREA	**Eretria**	**0.91**	**185**	P	**Pg**	**22 27 47.7**	**-0.1**
EREA				S	**Sg**	**22 27 59.7**	**0.0**
EREA	**Eretria**	**0.91**	**185**	P	**Pg**	**22 27 47.7**	**-0.1**
EREA				S	**Sg**	**22 27 60.0**	**+0.3**
EREA				AML	AML	22 28 02.8	
EREA	comp=N,685μm,0.4s			AML	AML	22 28 03.4	
	comp=E,520μm,0.2s						
ATAL	**Atalanti**	**1.00**	**231**	P	**Pb**	**22 27 48.6**	**-0.8**
ATAL				S	**Sn**	**22 28 03.4**	**-0.3**
ATAL	**Atalanti**	**1.00**	**231**	P	**Pg**	**22 27 49.4**	**-0.3**
ATAL				S	**Sn**	**22 28 03.4**	**-0.3**
ATAL	**Atalanti**	**1.00**	**231**	P	**Pg**	**22 27 49.4**	**-0.3**
OUR	**Ouranopolis**	**1.01**	**358**	P	**Pb**	**22 27 48.6**	**-0.8**
OUR				S	**Sn**	**22 28 03.7**	**-0.2**
OUR	**Ouranopolis**	**1.01**	**358**	P	**Pg**	**22 27 50.0**	**+0.2**
OUR				S	**Sn**	**22 28 03.7**	**-0.2**
OUR	**Ouranopolis**	**1.01**	**358**	P	**Pg**	**22 27 50.0**	**+0.2**
LKR	**Lokris**	**1.04**	**230**	P	**Pb**	**22 27 49.8**	**-0.2**
LKR				S	**Sn**	**22 28 04.5**	**-0.2**
LKR	**Lokris**	**1.04**	**230**	P	**Pg**	**22 27 50.5**	**+0.1**
LKR				S	**Sn**	**22 28 04.5**	**-0.2**
LKR	**Lokris**	**1.04**	**230**	P	**Pg**	**22 27 50.5**	**+0.1**
LIA	**Limnos Island**	**1.06**	**57**	P	**Pb**	**22 27 49.6**	**-0.7**
LIA				S	**Sb**	**22 28 04.3**	**+0.3**
LIA	**Limnos Island**	**1.06**	**57**	P	**Pg**	**22 27 50.7**	**0.0**
LIA				S	**Sg**	**22 28 04.6**	**0.0**
PLG	**Polygyros**	**1.14**	**337**	P	**Pn**	**22 27 50.9**	**-0.8**
PLG	**Polygyros**	**1.14**	**337**	P	**Pn**	**22 27 50.9**	**-0.8**
VIL2	**Platees**	**1.26**	**208**	P	**Pb**	**22 27 53.9**	**+0.1**
PTL	**Penteli**	**1.28**	**186**	P	**Pb**	**22 27 53.8**	**-0.2**
PTL	**Penteli**	**1.28**	**186**	P	**Pb**	**22 27 53.8**	**-0.2**
VILL	**Villia**	**1.28**	**206**	P	**Pb**	**22 27 53.8**	**-0.4**
KARY	**Karystos**	**1.33**	**166**	P	**Pb**	**22 27 54.7**	**-0.2**
KARY	**Karystos**	**1.33**	**166**	P	**Pb**	**22 27 54.6**	**-0.2**
AGG	**Agios Georgios**	**1.35**	**258**	P	**Pn**	**22 27 54.7**	**+0.1**
AGG				S	**Sg**	**22 28 15.1**	**+1.2**
AGG	**Agios Georgios**	**1.35**	**258**	P	**Pn**	**22 27 54.7**	**+0.1**
AGG				S	**Sg**	**22 28 15.1**	**+1.2**
ATHU	**Athens Univers**	**1.37**	**188**	P	**Pb**	**22 27 55.8**	**+0.2**
ATHU	**Athens Univers**	**1.37**	**188**	P	**Pb**	**22 27 55.8**	**+0.2**
LIT	**Litokhoron**	**1.42**	**304**	P	**Pn**	**22 27 55.3**	**-0.2**
LIT	**Litokhoron**	**1.42**	**304**	P	**Pn**	**22 27 55.3**	**-0.2**
SIGR	**SIGRI**	**1.42**	**94**	P	**Pb**	**22 27 56.5**	**0.0**
SIGR	**SIGRI**	**1.42**	**94**	P	**Pb**	**22 27 56.5**	**0.0**
HORT	**Hortiatis**	**1.46**	**331**	P	**Pb**	**22 27 56.9**	**-0.3**
HORT	**Hortiatis**	**1.46**	**331**	P	**Pb**	**22 27 56.9**	**-0.3**
VLY	**Voula,Athens**	**1.48**	**187**	P	**Pn**	**22 27 56.6**	**+0.2**
VLY	**Voula,Athens**	**1.48**	**187**	P	**Pn**	**22 27 56.6**	**+0.2**
DSF	**Desfina**	**1.48**	**233**	P	**Pb**	**22 27 57.6**	**0.0**
DSF	**Desfina**	**1.48**	**233**	P	**Pb**	**22 27 57.6**	**0.0**
LTK	**Loutraki**	**1.54**	**213**	P	**Pn**	**22 27 57.0**	**-0.2**
LTK	**Loutraki**	**1.54**	**213**	P	**Pn**	**22 27 57.0**	**-0.2**
THL	**Klokotos Trika**	**1.58**	**279**	P	**Pn**	**22 27 57.6**	**-0.1**
KNT	**Kendrikon**	**2.03**	**335**	P	**Pn**	**22 28 04.6**	**+0.7**
KNT	**Kendrikon**	**2.03**	**335**	P	**Pn**	**22 28 04.6**	**+0.7**

*CSEM **28** 22:27:30.9±0.2, 43.26N×46.31E, h2km, mb4.4, Error ellipse: s-maj=5.8km s-min=2.6km az=28.0*
*AZER **28** 22:27:30.5±3.3, 43.12N×46.12E, h10km, Error ellipse: s-maj=4.1km s-min=2.7km az=334.0*
*MOS **28** 22:27:31.2±1.1, 43.25N×46.36E, h17km, mb4.4/3, Error ellipse: s-maj=6.2km s-min=4.9km az=43.2*
*DDA **28** 22:27:47.9, 42.88N×45.60E, h5km, Md3.2*
ISC 28 22:27:31.0±1.1, **43.23N**±0.02×**46.35E**±0.02, **h1**km±9km, **n134**, σ1 **867**/233, **20C-29D**, **Eastern Caucasus**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DLMR	**Dylym**	**0.26**	**128**	⇑ *i*PG	**Pg**	**22 27 36.0**	**0.0**
DLMR				pmax	pmax		
	comp=Z,2μm,0.3s						
DLMR	**Dylym**	**0.26**	**128**	*i* Pg	**Pg**	**22 27 36.0**	**0.0**
	comp=Z,2μm,0.3s						
GROC	**Groznyy**	**0.41**	**266**	*e*PG	**Pg**	**22 27 38.9**	**+0.1**
GROC				*e*		22 27 45.9	
GROC				pmax	pmax		
	comp=Z,42nm,0.4s						
GROC				smax	smax		
	comp=N,233nm,0.8s						
GROC				smax	smax		
	comp=N,250nm,0.4s						
GROC				smax	smax		
	comp=E,220nm,0.6s						
GROC	**Groznyy**	**0.41**	**266**	*e*Pg	**Pg**	**22 27 38.9**	**+0.1**
	comp=E,42nm,0.4s						
GROC				*e*Sg	**Sb**	**22 27 45.9**	**-1.8**
	comp=E,250nm,0.4s						
DBC	**Dubki**	**0.41**	**121**	⇓ *i*PG	Pn	22 27 47.3	+3.2
DBC				pmax	pmax		
	comp=Z,220nm,0.2s						
DBC	**Dubki**	**0.41**	**121**	*i* Pg	Pn	22 27 47.3	+3.2
	comp=Z,220nm,0.2s						
KRNR	**Karanay**	**0.58**	**135**	*e*PG	**Pg**	**22 27 41.0**	**-1.0**
KRNR				*e*S	**Sg**	**22 27 50.3**	**+0.8**
KRNR	**Karanay**	**0.58**	**135**	*e*Pg	**Pg**	**22 27 41.0**	**-1.0**
KRNR				*e*Sg	**Sg**	**22 27 50.3**	**+0.8**
UNCR	**Uncukul**	**0.61**	**148**	*e*PG	**Pg**	**22 27 42.0**	**-0.7**
UNCR				*e*S	**Sb**	**22 27 52.0**	**-1.6**
UNCR	**Uncukul**	**0.61**	**148**	*e*Pg	**Pg**	**22 27 42.0**	**-0.7**
UNCR				*e*Sg	**Sb**	**22 27 52.0**	**-1.6**
BUJR	**Buynaksk**	**0.69**	**126**	*e*PG	**Pg**	**22 27 44.0**	**-0.2**
BUJR				*e*S	**Sn**	**22 27 56.0**	**-3.2**
BUJR	**Buynaksk**	**0.69**	**126**	*e*Pg	**Pg**	**22 27 44.0**	**-0.2**
BUJR				*e*Sg	**Sn**	**22 27 56.0**	**-3.2**
XNZR	**Khunzakh**	**0.74**	**159**	⇑ *i*PG	**Pg**	**22 27 44.3**	**-0.8**
XNZR				*e*S	**Sb**	**22 27 56.0**	**-1.4**
XNZR				pmax	pmax		
	comp=Z,134nm,0.3s						
XNZR	**Khunzakh**	**0.74**	**159**	*i* Pg	**Pg**	**22 27 44.3**	**-0.8**
	comp=Z,134nm,0.3s						
XNZR				*e*Sg	**Sb**	**22 27 56.0**	**-1.4**
ARKR	**Arakani**	**0.79**	**143**	*e*PG	**Pb**	**22 27 44.5**	**-3.0**
ARKR				*e*S	**Sb**	**22 27 56.5**	**-2.2**
ARKR	**Arakani**	**0.79**	**143**	*e*Pg	**Pb**	**22 27 44.5**	**-3.0**
ARKR				*e*Sg	**Sb**	**22 27 56.5**	**-2.2**
GNBR	**Gunib**	**0.96**	**152**	⇑ *i*PG	**Pb**	**22 27 49.0**	**-1.4**
GNBR

	comp=Z,51nm,0.1s								
GNBR	**Gunib**	**0.96**	**152**	*i*	Pg	**Pb**	**22 27 49.0**	**-1.4**
	comp=Z,51nm,0.1s								
GNBR				*i*	Sg	**Sn**	**22 28 03.8**	**-2.1**
KMGR	**Komgaron**	**1.10**	**261**	*i*	Pg	**Pb**	**22 27 50.1**	**-2.7**
KMGR				*eS*		**Sb**	**22 28 05.5**	**-2.2**
KMGR	**Komgaron**	**1.10**	**261**	*i*	Pg	**Pb**	**22 27 50.1**	**-2.7**
KMGR				*eS*	g	**Sb**	**22 28 05.5**	**-2.2**
KMKR	**Kumukh**	**1.23**	**153**	*e*	PG	**Pn**	**22 27 54.0**	**-1.5**
KMKR				*eS*		**Sg**	**22 28 12.0**	**+1.5**
KMKR	**Kumukh**	**1.23**	**153**	*e*	Pg	**Pn**	**22 27 54.0**	**-1.5**
KMKR				*eS*	g	**Sg**	**22 28 12.0**	**+1.5**
SGKR	**Sergokala**	**1.23**	**128**	*e*	PG	**Pn**	**22 27 55.0**	**+0.4**
SGKR				*eS*		**Sg**	**22 28 13.5**	**+2.9**
SGKR	**Sergokala**	**1.23**	**128**	*e*	Pg	**Pg**	**22 27 55.0**	**+0.4**
SGKR				*eS*	g	**Sg**	**22 28 13.5**	**+2.9**
VLKR	**Vladikavkaz**	**1.24**	**262**	⇓	*i*PG	**Pg**	**22 27 54.9**	**+0.2**
VLKR				*eS*		**Sg**	**22 28 12.1**	**+1.3**
VLKR	**Vladikavkaz**	**1.24**	**262**	*i*	Pg	**Pg**	**22 27 54.9**	**+0.2**
VLKR				*eS*	g	**Sg**	**22 28 12.1**	**+1.3**
TRKR	**Terskaya**	**1.28**	**293**	*e*	PG	**Pn**	**22 27 54.0**	**-1.9**
TRKR				*eS*		**Sg**	**22 28 12.6**	**+0.6**
TRKR	**Terskaya**	**1.28**	**293**	*e*	Pg	**Pn**	**22 27 54.0**	**-1.9**
TRKR				*eS*	g	**Sg**	**22 28 12.6**	**+0.6**
BTKR	**Batakoyurt**	**1.33**	**277**	*e*	PG	**Pn**	**22 27 54.5**	**-2.2**
BTKR				*eS*		**Sb**	**22 28 13.4**	**-0.8**
BTKR	**Batakoyurt**	**1.33**	**277**	*e*	Pg	**Pn**	**22 27 54.5**	**-2.2**
BTKR				*eS*	g	**Sb**	**22 28 13.4**	**-0.8**
URKR	**Urkarakh**	**1.43**	**138**	*e*	PG	**Pb**	**22 27 57.5**	**-0.9**
URKR				*eS*		**Sg**	**22 28 17.8**	**+1.0**
URKR	**Urkarakh**	**1.43**	**138**	*e*	Pg	**Pb**	**22 27 57.5**	**-0.9**
URKR				*eS*	g	**Sg**	**22 28 17.8**	**+1.0**
ARNR	**Ardon**	**1.51**	**269**	⇓	*i*PG	**Pn**	**22 27 58.0**	**-1.2**
ARNR				*eS*		**Sb**	**22 28 18.6**	**-0.9**
ARNR	**Ardon**	**1.51**	**269**	*i*	Pg	**Pn**	**22 27 58.0**	**-1.2**
ARNR				*eS*	g	**Sb**	**22 28 18.6**	**-0.9**
LACR	**Lac**	**1.56**	**256**	⇓	*i*PG	**Pn**	**22 27 57.9**	**-2.1**
LACR				*eS*		**Sn**	**22 28 18.7**	**-2.2**
LACR	**Lac**	**1.56**	**256**	*i*	Pg	**Pn**	**22 27 57.9**	**-2.1**
LACR				*eS*	g	**Sn**	**22 28 18.7**	**-2.2**
GUDG	**Gudauri**	**1.58**	**242**		P	**Pn**	**22 27 58.9**	**-1.4**
GUDG					S	**Sb**	**22 28 20.1**	**-1.5**
PRTR	**Priterechnaya**	**1.59**	**290**	*i*	PG	**Pn**	**22 27 59.0**	**-1.3**
PRTR				*eS*		**Sg**	**22 28 21.6**	**-0.5**
PRTR	**Priterechnaya**	**1.59**	**290**	*i*	Pg	**Pn**	**22 27 59.0**	**-1.3**
PRTR				*eS*	g	**Sg**	**22 28 21.6**	**-0.5**
ZKTA	**Zakatala**	**1.61**	**173**	⇓	P	**Pb**	**22 28 00.1**	**-1.4**
	SNR=55								
ZKTA				⇓	S	**Sg**	**22 28 23.0**	**+0.5**
DUS	**Dusheti**	**1.67**	**227**		P	**Pg**	**22 28 02.6**	**-0.3**
DUS					S	**Sg**	**22 28 26.9**	**+2.3**
DUS	**Dusheti**	**1.67**	**227**		PN	**Pg**	**22 28 02.6**	**-0.3**
DUS					S	**Sg**	**22 28 26.9**	**+2.3**
DUS	**Dusheti**	**1.67**	**227**		Pn	**Pg**	**22 28 02.6**	**-0.3**
DUS					Sg	**Sg**	**22 28 26.9**	**+2.3**
STDR	**Stavd-Durt**	**1.68**	**275**	⇑	*i*PN	**Pb**	**22 28 01.5**	**-1.1**
STDR				*eS*		**Sg**	**22 28 24.3**	**-0.5**
STDR	**Stavd-Durt**	**1.68**	**275**	*i*	Pn	**Pb**	**22 28 01.5**	**-1.1**
STDR				*eS*	g	**Sg**	**22 28 24.3**	**-0.5**
KORR	**Kora**	**1.68**	**266**	⇓	*i*PN	**Pn**	**22 28 00.1**	**-1.4**
KORR				*eS*		**Sb**	**22 28 22.8**	**-1.5**
KORR	**Kora**	**1.68**	**266**	*i*	Pn	**Pn**	**22 28 00.1**	**-1.4**
KORR				*eS*	g	**Sb**	**22 28 22.8**	**-1.5**
LSNR	**Lesken**	**1.84**	**272**	⇓	*i*PN	**Pb**	**22 28 04.2**	**-1.3**
LSNR				*eS*		**Sg**	**22 28 29.4**	**-0.8**
LSNR	**Lesken**	**1.84**	**272**	*i*	Pn	**Pb**	**22 28 04.2**	**-1.3**
LSNR				*eS*	g	**Sg**	**22 28 29.4**	**-0.8**
ZEI	**Tsey**	**1.85**	**257**	*e*	PN	**Pn**	**22 28 03.0**	**-1.0**
ZEI	**Tsey**	**1.85**	**257**	*e*	Pn	**Pn**	**22 28 03.0**	**-1.0**
SEAG	**Tbilisi Sea**	**1.86**	**218**		P	**Pb**	**22 28 05.3**	**-0.5**
SEAG					S	**Sg**	**22 28 31.2**	**+0.4**
DRN	**Derbent**	**1.89**	**129**	⇓	*i*PN	**Pb**	**22 28 04.8**	**-1.5**
DRN				*e*			22 28 30.9		
DRN	**Derbent**	**1.89**	**129**	*i*	Pn	**Pb**	**22 28 04.8**	**-1.5**
DRN				*eSg*		**Sg**	**22 28 30.9**	**-0.8**
TBLG	**Delisi**	**1.92**	**219**		P	**Pb**	**22 28 05.7**	**-1.0**
TBLG					S	**Sg**	**22 28 32.9**	**+0.3**
TBLG	**Delisi**	**1.92**	**219**		PN	**Pb**	**22 28 05.7**	**-1.0**
TBLG					S	**Sg**	**22 28 32.9**	**+0.3**
TBLG	**Delisi**	**1.92**	**219**		Pn	**Pb**	**22 28 05.7**	**-1.0**
TBLG					Sg	**Sg**	**22 28 32.9**	**+0.3**
DGRG	**David-gareji**	**1.92**	**202**		P	**Pb**	**22 28 06.7**	**-0.1**
DGRG					S	**Sg**	**22 28 35.1**	**+2.3**
DGRG	**David-gareji**	**1.92**	**202**		PN	**Pb**	**22 28 06.7**	**-0.1**
DGRG					S	**Sg**	**22 28 35.0**	**+2.3**
DGRG	**David-gareji**	**1.92**	**202**		Pn	**Pb**	**22 28 06.7**	**-0.1**
DGRG					Sg	**Sg**	**22 28 35.0**	**+2.3**
AKT	**Akhty**	**2.03**	**149**	*e*	PN	**Pb**	**22 28 07.0**	**-1.7**
AKT				*e*			22 28 36.1		
AKT					pmax	pmax			
	comp=Z,93nm,0.5s								
AKT					smax	smax			
	comp=N,373nm,0.3s								
AKT					smax	smax			
	comp=E,387nm,0.6s								
AKT					smax	smax			
	comp=E,442nm,0.6s								
AKT	**Akhty**	**2.03**	**149**	*e*	Pn	**Pb**	**22 28 07.0**	**-1.7**
	comp=E,93nm,0.5s								
AKT				*e*	Sg	**Sg**	**22 28 36.1**	**0.0**
	comp=E,373nm,0.3s								
DIGR	**Digorskoe uzhe**	**2.06**	**262**	*e*	PN	**Pn**	**22 28 06.6**	**-0.3**
DIGR	**Digorskoe uzhe**	**2.06**	**262**	*e*	Pn	**Pn**	**22 28 06.6**	**-0.3**
KSMR	**Kasumkent**	**2.09**	**140**	*e*	PN	**Pb**	**22 28 10.0**	**+0.2**
KSMR				*eS*		**Sg**	**22 28 42.0**	**+3.8**
KSMR	**Kasumkent**	**2.09**	**140**	*e*	Pn	**Pb**	**22 28 10.0**	**+0.2**
KSMR				*eS*	g	**Sg**	**22 28 42.0**	**+3.8**
SEKA	**Sheki**	**2.12**	**162**	⇑	P	**Pb**	**22 28 08.1**	**-2.1**
	SNR=60								
SEKA				⇓	S	**Sg**	**22 28 37.8**	**-1.2**
SEKA	**Sheki**	**2.12**	**162**		P	**Pb**	**22 28 08.1**	**-2.1**
	SNR=60								
SEKA					S	**Sg**	**22 28 37.8**	**-1.2**
ONI	**Oni**	**2.22**	**254**		P	**Pn**	**22 28 09.0**	**0.0**
ONI					S	**Sb**	**22 28 38.5**	**-1.5**
ONI	**Oni**	**2.22**	**254**		PN	**Pn**	**22 28 09.0**	**0.0**
ONI					S	**Sb**	**22 28 38.5**	**-1.5**
ONI	**Oni**	**2.22**	**254**		Pn	**Pn**	**22 28 09.0**	**0.0**
ONI					Sn	**Sb**	**22 28 38.5**	**-1.5**
QSAR	**Qusar**	**2.23**	**140**	⇑	P	**Pb**	**22 28 10.9**	**-1.1**
	SNR=17								
QSAR				⇑	S	**Sg**	**22 28 42.1**	**-0.4**
QZX	**Qazax, Azerbai**	**2.29**	**199**	⇓	P	**Pn**	**22 28 10.2**	**+0.3**
	SNR=22								
QZX				⇓	S	**Sb**	**22 28 39.3**	**-2.6**
QZX	**Qazax, Azerbai**	**2.29**	**199**		P	**Pn**	**22 28 10.2**	**+0.3**
	SNR=22								
QZX					S	**Sb**	**22 28 39.3**	**-2.6**
XNQ	**Khinaliq**	**2.45**	**147**	⇓	P	**Pb**	**22 28 14.6**	**-1.4**
	SNR=13								
XNQ				⇑	S	**Sg**	**22 28 48.2**	**-1.5**
XNQ	**Khinaliq**	**2.45**	**147**		P	**Pb**	**22 28 14.6**	**-1.4**
	SNR=13								
XNQ					S	**Sg**	**22 28 48.2**	**-1.5**
QUBA	**Quba, Azerbaij**	**2.46**	**139**	⇑	P	**Pb**	**22 28 14.8**	**-1.2**
	SNR=9.7								
QUBA				⇓	S	**Sb**	**22 28 47.3**	**+0.5**
QUBA	**Quba, Azerbaij**	**2.46**	**139**		P	**Pb**	**22 28 14.8**	**-1.2**
	SNR=9.7								
QUBA					S	**Sb**	**22 28 47.3**	**+0.5**
QBL	**Gabala**	**2.54**	**154**	⇓	P	**Pb**	**22 28 15.2**	**-2.2**
	SNR=22								
QBL				⇓	S	**Sb**	**22 28 50.1**	**+1.0**
QBL	**Gabala**	**2.54**	**154**		P	**Pb**	**22 28 15.2**	**-2.2**
	SNR=22								
QBL					S	**Sb**	**22 28 50.1**	**+1.0**
GDB	**GEDABAY**	**2.55**	**190**	⇓	P	**Pn**	**22 28 13.5**	**-0.1**
	SNR=17								
GDB				⇓	S	**Sn**	**22 28 44.9**	**-0.4**
GDB	**GEDABAY**	**2.55**	**190**		P	**Pn**	**22 28 13.5**	**-0.1**
	SNR=17								
GDB					S	**Sn**	**22 28 44.9**	**-0.4**
GANJ	**Ganja**	**2.58**	**180**		P	**Pn**	**22 28 13.7**	**-0.3**
	SNR=5.9								
GANJ				⇑	S	**Sb**	**22 28 46.8**	**-3.6**
GANJ	**Ganja**	**2.58**	**180**		P	**Pn**	**22 28 13.7**	**-0.3**
	SNR=5.9								
GANJ					S	**Sb**	**22 28 46.8**	**-3.6**
NEY	**Neytrino**	**2.65**	**272**	*e*	PN	**Pn**	**22 28 13.8**	**-1.2**
NEY	**Neytrino**	**2.65**	**272**	*e*	Pn	**Pn**	**22 28 13.8**	**-1.2**
KIV	**Kislovodsk**	**2.76**	**286**	*i*	PN	**Pn**	**22 28 13.6**	**-2.8**
KIV	**Kislovodsk**	**2.76**	**286**	*i*	Pn	**Pn**	**22 28 13.6**	**-2.8**
AKH	**Akhalkalaki**	**2.79**	**230**		P	**Pb**	**22 28 19.1**	**-2.7**
AKH					S	**Sb**	**22 28 57.5**	**+0.9**
AKH	**Akhalkalaki**	**2.79**	**230**		PN	**Pb**	**22 28 19.1**	**-2.7**
AKH					S	**Sb**	**22 28 57.5**	**+0.9**
AKH	**Akhalkalaki**	**2.79**	**230**		Pn	**Pb**	**22 28 19.1**	**-2.7**
AKH					Sb	**Sb**	**22 28 57.5**	**+0.9**
IML	**Ismayilli**	**2.79**	**150**	⇓	P	**Pb**	**22 28 18.6**	**-3.1**
	SNR=5.2								
IML				⇓	S	**Sb**	**22 28 54.7**	**-1.8**
IML	**Ismayilli**	**2.79**	**150**		P	**Pb**	**22 28 18.6**	**-3.1**
	SNR=5.2								
IML					S	**Sb**	**22 28 54.7**	**-1.8**
BGD	**Bogdanovka**	**2.84**	**227**		P	**Sb**	**22 28 58.8**	**+1.0**
SIZA	**Siyzn**	**2.87**	**138**	⇓	P	**Pb**	**22 28 19.2**	**-3.8**
	SNR=3.0								
SIZA				⇓	S	**Sb**	**22 28 58.3**	**-0.3**
SIZA	**Siyzn**	**2.87**	**138**		P	**Pb**	**22 28 19.2**	**-3.8**
	SNR=3.0								
SIZA					S	**Sb**	**22 28 58.3**	**-0.3**
PQL	**Pirkuli**	**2.96**	**145**	⇑	P	**Pb**	**22 28 20.7**	**-3.9**
	SNR=4.6								
PQL				⇓	S	**Sb**	**22 29 00.1**	**-1.2**
PQL	**Pirkuli**	**2.96**	**145**		P	**Pb**	**22 28 20.7**	**-3.9**
	SNR=4.6								
PQL					S	**Sb**	**22 29 00.1**	**-1.2**
GOF	**Gofitskoye**	**3.00**	**309**	⇑	*e*PN	**Pb**	**22 28 25.9**	**+0.7**
GOF				*eS*		**Sg**	**22 29 05.4**	**-1.9**
GOF					pmax	pmax			
	comp=Z,34nm,0.6s								
GOF					pmax	pmax			
	comp=E,110nm,0.6s								
GOF					smax	smax			
	comp=E,110nm,0.6s								
GOF					smax	smax			
	comp=N,73nm,0.5s								
GOF	**Gofitskoye**	**3.00**	**309**	*e*	Pn	**Pb**	**22 28 25.9**	**+0.7**
	comp=N,34nm,0.6s								
GOF				*e*	Sb	**Sg**	**22 29 05.4**	**-1.9**
	comp=N,73nm,0.5s								
BRDA	**Brd**	**3.03**	**168**	⇑	P	**Pn**	**22 28 20.7**	**+0.6**
	SNR=5.9								
BRDA				⇑	S	**Sb**	**22 29 00.2**	**-3.0**
BRDA	**Brd**	**3.03**	**168**		P	**Pn**	**22 28 20.7**	**+0.6**
	SNR=5.9								
BRDA					S	**Sb**	**22 29 00.2**	**-3.0**
ATGJ	**Altiaghaj**	**3.06**	**140**	⇑	P	**Pn**	**22 28 22.1**	**+1.6**
ATGJ				⇓	S	**Sb**	**22 29 05.3**	**+1.3**
ATGJ	**Altiaghaj**	**3.06**	**140**		P	**Pn**	**22 28 22.1**	**+1.6**
ATGJ					S	**Sb**	**22 29 05.3**	**+1.3**
ZRD	**Zardab**	**3.12**	**161**	⇓	P	**Pn**	**22 28 22.3**	**+1.1**
	SNR=3.3								
ZRD				⇑	S	**Sb**	**22 29 02.2**	**-3.4**
ZRD	**Zardab**	**3.12**	**161**		P	**Pn**	**22 28 22.3**	**+1.1**
	SNR=3.3								
ZRD					S	**Sb**	**22 29 02.2**	**-3.4**
EPOS	**Posof**	**3.19**	**238**	*i*	P	**Pb**	**22 28 27.6**	**-1.0**
EPOS				*i*	S	**Sb**	**22 29 08.8**	**+0.8**
GNI	**Garni**	**3.31**	**202**	*e*	PN	**Pn**	**22 28 23.8**	**-0.2**
GNI	**Garni**	**3.31**	**202**	*e*	Pn	**Pn**	**22 28 23.8**	**-0.2**
DIGO	**Kars**	**3.59**	**219**	*i*	P	**Pb**	**22 28 35.1**	**-0.3**
DIGO				*i*	S	**Sb**	**22 29 19.7**	**+0.2**
ARTV	**Artvin**	**3.87**	**240**	*i*	P	**Pn**	**22 28 31.8**	**0.0**
DBOC	**Borcka**	**3.95**	**243**	*i*	P	**Pn**	**22 28 33.1**	**+0.3**
DBOC				*i*	S	**Sb**	**22 29 32.8**	**+3.0**
NAX	**Nakhchivan**	**4.11**	**189**	⇓	S	**Sn**	**22 29 21.8**	**-1.9**
NAX	**Nakhchivan**	**4.11**	**189**		S	**Sn**	**22 29 21.8**	**-1.9**
GLBA	**Clilabad**	**4.27**	**158**	⇑	P	**Pn**	**22 28 37.3**	**+0.2**
GLBA				⇓	S	**Sn**	**22 29 29.8**	**+2.2**
GLBA	**Clilabad**	**4.27**	**158**		P	**Pn**	**22 28 37.3**	**+0.2**
GLBA					S	**Sn**	**22 29 29.8**	**+2.2**
RPOR	**Krasnaya Polya**	**4.45**	**278**	*e*	PN	**Pn**	**22 28 39.1**	**-0.6**
RPOR	**Krasnaya Polya**	**4.45**	**278**	*e*	Pn	**Pn**	**22 28 39.1**	**-0.6**
LRK	**Lerik**	**4.83**	**161**	⇑	S	**Sn**	**22 29 41.8**	**+0.3**
LRK	**Lerik**	**4.83**	**161**		S	**Sn**	**22 29 41.8**	**+0.3**
LKRN	**Lenkeran, Azer**	**4.88**	**157**	⇓	P	**Pn**	**22 28 45.7**	**+0.3**
LKRN				⇑	S	**Sn**	**22 29 42.9**	**+0.4**
LKRN	**Lenkeran, Azer**	**4.88**	**157**		P	**Pn**	**22 28 45.7**	**+0.3**
LKRN					S	**Sn**	**22 29 42.9**	**+0.4**
ASTR	**Astara**	**5.02**	**158**	⇑	P	**Pn**	**22 28 47.7**	**+0.3**
ASTR				⇓	S	**Sn**	**22 29 46.2**	**+0.1**
ASTR	**Astara**	**5.02**	**158**		P	**Pn**	**22 28 47.7**	**+0.3**
ASTR					S	**Sn**	**22 29 46.2**	**+0.1**
ANN	**Anapa**	**6.62**	**287**	*e*	P	**Pn**	**22 29 08.2**	**-1.1**
ANN				*eS*		**Sn**	**22 30 28.1**	**+2.8**
ANN					pmax	pmax			
	comp=Z,16nm,1.2s								
ANN	**Anapa**	**6.62**	**287**	*e*	P	**Pn**	**22 29 08.2**	**-1.1**
	comp=Z,16nm,1.2s								
ANN				*eS*		**Sn**	**22 30 28.1**	**+2.8**
VSR	**Storozhevoye**	**9.36**	**331**	*e*	P	**Pn**	**22 29 48.6**	**+1.7**
VSR	**Storozhevoye**	**9.36**	**331**	*e*	P	**Pn**	**22 29 48.6**	**+1.7**
KIEV	**Kiev**	**13.86**	**309**	*e*	P	**Pn**	**22 30 48.4**	**0.0**
KIEV					pmax	pmax			
	comp=Z,2.0nm,0.8s								
KIEV	**Kiev**	**13.86**	**309**	*e*	P	**Pn**	**22 30 48.4**	**0.0**
	comp=Z,2.0nm,0.8s								
BRVK	**Borovoye**	**18.67**	**50**	*e*	P	**Pn**	**22 31 52.1**	**+1.6**
BRVK					pmax	pmax			
	comp=Z,4.0nm,0.8s								
BRVK	**Borovoye**	**18.67**	**50**	*e*	P	**Pn**	**22 31 52.1**	**+1.6**
	comp=Z,4.0nm,0.8s								
FINES	**FINESS Array B**	**21.88**	**333**	*e*	P	**P**	**22 32 29.4**	**+4.5**
FINES					pmax	pmax			
	comp=Z,1.0nm,0.7s								
SONM	**Songino Array**	**41.39**	**62**	*e*	P	**P**	**22 35 18.6**	**-0.1**
	comp=Z,3.0nm,0.8s								

MEX 28 22:53:09.0±0.5, 16°39N×97°86W, h6km±999km, MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.26**	**270**	*i* P	Pg	22 53 14.0	0.0
PNIG				*i* S	Sg	22 53 17.1	-0.3
VHO	**Vista Hermosa**	**1.27**	**58**	*e*P	Pg	22 53 29.0	-4.5
VHO				*i* S	Sg	22 53 45.7	-4.4
TLIG	**Tlapa**	**1.35**	**330**	*e*P	Pn	22 53 31.3	-3.2
TLIG				*i* S	Sb	22 53 47.9	-4.4

*ISCJB **28** 22:56:09.1±1.1, 36°.12N±0°.05×31°.13E±0°.03, h5km±8km, Error ellipse: s-maj=8.6km s-min=3.8km az=6.3*
*CSEM **28** 22:56:09.3±0.2, 36°.10N×31°.10E, h5km, MD3.5, Error ellipse: s-maj=7.3km s-min=3.3km az=6.0*
*ISK **28** 22:56:09.1, 36°.10N×31°.11E, h12km, MD3.5*
*DDA **28** 22:56:35.7, 35°.92N×31°.08E, h132km, Ml3.5*

ISC 28 22:56:09.5±1.2, 36°.10N±0°.04×31°.11E±0°.02, h10km±10km, n52, σ1°17/74, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ANTB	**Antalya**	**0.88**	**335**	*e*PG	**Pg**	**22 56 26.4**	**-0.1**
ANTB	**Antalya**	**0.88**	**335**	*e*Pg	**Pg**	**22 56 26.4**	**-0.1**
GAZI	**Gazipasa**	**0.98**	**82**	*i* P	**Pb**	**22 56 27.7**	**-1.0**
GAZI				*i* S	**Sg**	**22 56 40.0**	**-1.2**
GAZI	**Gazipasa**	**0.98**	**82**	P	**Pb**	**22 56 27.7**	**-1.0**
GAZI				S	**Sg**	**22 56 40.0**	**-1.2**
ELL	**Elmali**	**1.17**	**304**	*e*PN	**Pb**	**22 56 32.5**	**+0.5**
ELL				*e*SN	**Sg**	**22 56 47.9**	**+0.7**
ELL	**Elmali**	**1.17**	**304**	*e*Pn	**Pb**	**22 56 32.5**	**+0.5**
ELL				*e*Sn	**Sg**	**22 56 47.9**	**+0.7**
AKAS	**Kas**	**1.23**	**277**	*i* P	**Pg**	**22 56 32.9**	**-0.3**
AKAS				*i* S	**Sg**	**22 56 49.4**	**+0.3**
AKAS	**Kas**	**1.23**	**277**	P	**Pg**	**22 56 32.9**	**-0.3**
AKAS				S	**Sg**	**22 56 49.4**	**+0.3**
SUTC	**Sutluce-Ispart**	**1.38**	**356**	*e*PN	**Pn**	**22 56 34.1**	**-0.9**
SUTC	**Sutluce-Ispart**	**1.38**	**356**	*e*Pn	**Pn**	**22 56 34.1**	**-0.9**
ERMK	**Ermenek**	**1.55**	**69**	*i* P	**Pn**	**22 56 37.1**	**-0.3**
ERMK				*i* S	**Sg**	**22 57 01.3**	**+1.9**
ERMK	**Ermenek**	**1.55**	**69**	P	**Pn**	**22 56 37.1**	**-0.3**
ERMK				S	**Sg**	**22 57 01.3**	**+1.9**
GOLH	**Golhisar**	**1.69**	**313**	*i* P	**Pb**	**22 56 41.1**	**+0.3**
GOLH				*i* S	**Sb**	**22 57 03.6**	**+1.5**
GOLH	**Golhisar**	**1.69**	**313**	P	**Pb**	**22 56 41.1**	**+0.3**
GOLH				S	**Sb**	**22 57 03.6**	**+1.5**
FETY	**Fethiye**	**1.72**	**289**	*e*PN	**Pn**	**22 56 40.1**	**+0.4**
FETY	**Fethiye**	**1.72**	**289**	*e*Pn	**Pn**	**22 56 40.1**	**+0.4**
LEF	**Lefka**	**1.75**	**124**	*e*PN	**Pn**	**22 56 39.6**	**-0.3**
LEF	**Lefka**	**1.75**	**124**	*e*Pn	**Pn**	**22 56 39.6**	**-0.3**
KMER	**Konya-Meram**	**1.95**	**31**	*i* P	**Pn**	**22 56 43.0**	**+0.2**
KMER				*i* S	**Sn**	**22 57 06.2**	**-1.2**
KMER	**Konya-Meram**	**1.95**	**31**	P	**Pn**	**22 56 43.0**	**+0.2**
KMER				S	**Sn**	**22 57 06.2**	**-1.2**
AKKU	**Akkuyu-Mersin**	**1.97**	**88**	*e*PN	**Pn**	**22 56 43.5**	**+0.4**
AKKU	**Akkuyu-Mersin**	**1.97**	**88**	*e*Pn	**Pn**	**22 56 43.5**	**+0.4**
IKL	**Isikli**	**2.08**	**85**	*e*PN	**Pn**	**22 56 44.9**	**+0.3**
IKL				*e*SN	**Sn**	**22 57 11.0**	**+0.4**
IKL	**Isikli**	**2.08**	**85**	*e*Pn	**Pn**	**22 56 44.9**	**+0.3**
IKL				*e*Sn	**Sn**	**22 57 11.0**	**+0.4**
KONT	**Konya--Tatoy**	**2.10**	**28**	*e*PN	**Pn**	**22 56 45.2**	**+0.4**
KONT	**Konya--Tatoy**	**2.10**	**28**	*e*Pn	**Pn**	**22 56 45.2**	**+0.4**
DALY	**Dalyan (Mu˙la**	**2.11**	**291**	*e*PN	**Pn**	**22 56 45.0**	**+0.1**
DALY	**Dalyan (Mu˙la**	**2.11**	**291**	*e*Pn	**Pn**	**22 56 45.0**	**+0.1**
LFK	**Lefkose**	**2.13**	**112**	*e*PN	**Pn**	**22 56 45.2**	**-0.1**
LFK	**Lefkose**	**2.13**	**112**	*e*Pn	**Pn**	**22 56 45.2**	**-0.1**
LADK	**Ladik-KONYA**	**2.32**	**25**	*e*PN	**Pn**	**22 56 48.6**	**+0.6**
LADK	**Ladik-KONYA**	**2.32**	**25**	*e*Pn	**Pn**	**22 56 48.6**	**+0.6**
KIZK	**Mersin**	**2.48**	**80**	*i* P	**Pb**	**22 56 51.6**	**-2.5**
KIZK				*i* S	**Sn**	**22 57 21.9**	**+1.6**
KIZK	**Mersin**	**2.48**	**80**	P	**Pb**	**22 56 51.6**	**-2.5**
KIZK				S	**Sn**	**22 57 21.9**	**+1.6**
KDHN	**Kadinhani**	**2.55**	**18**	*i* P	**Pn**	**22 56 51.0**	**-0.1**
KDHN				*i* S	**Sn**	**22 57 19.5**	**-2.7**
KDHN	**Kadinhani**	**2.55**	**18**	P	**Pn**	**22 56 51.0**	**-0.1**
KDHN				S	**Sn**	**22 57 19.5**	**-2.7**
KERG	**Konya-Eregli**	**2.75**	**61**	*i* P	**Pn**	**22 56 55.0**	**+1.1**
KERG				*i* S	**Sn**	**22 57 28.9**	**+1.6**
KERG	**Konya-Eregli**	**2.75**	**61**	P	**Pn**	**22 56 55.0**	**+1.1**
KERG				S	**Sn**	**22 57 28.9**	**+1.6**
KIZT	**Kizilcal**	**2.84**	**12**	*e*PN	**Pn**	**22 56 55.6**	**+0.5**
KIZT	**Kizilcal**	**2.84**	**12**	*e*Pn	**Pn**	**22 56 55.6**	**+0.5**
MERS	**Mersin**	**2.85**	**73**	*e*PN	**Pn**	**22 56 55.8**	**+0.6**
MERS	**Mersin**	**2.85**	**73**	*e*Pn	**Pn**	**22 56 55.8**	**+0.6**
BDRM	**Kayabasi**	**3.11**	**289**	*i* P	**Pn**	**22 56 56.7**	**-2.0**
BDRM				*i* S	**Sn**	**22 57 33.7**	**-2.2**
BDRM	**Kayabasi**	**3.11**	**289**	P	**Pn**	**22 56 56.7**	**-2.0**
BDRM				S	**Sn**	**22 57 33.7**	**-2.2**
BODT	**Bodrum**	**3.21**	**289**	*e*PN	**Pn**	**22 57 00.3**	**+0.2**
BODT	**Bodrum**	**3.21**	**289**	*e*Pn	**Pn**	**22 57 00.3**	**+0.2**
KARP	**Karpathos**	**3.26**	**261**	*e*PN	**Pn**	**22 57 01.6**	**+0.8**
KARP	**Karpathos**	**3.26**	**261**	*e*Pn	**Pn**	**22 57 01.6**	**+0.8**
KARA	**Karaisali**	**3.37**	**69**	*e*PN	**Pn**	**22 57 03.6**	**+1.3**
KARA	**Karaisali**	**3.37**	**69**	*e*Pn	**Pn**	**22 57 03.6**	**+1.3**
TAHT	**Tahtakopru-Hat**	**4.11**	**85**	*e*PN	**Pn**	**22 57 14.1**	**+1.7**
TAHT	**Tahtakopru-Hat**	**4.11**	**85**	*e*Pn	**Pn**	**22 57 14.1**	**+1.7**

*NIED **28** 22:57:00, 37°.30N×143°.50E, h8km, Mw3.7 Best double couple: M0

SONA					IAML			23 01 28.4	
	comp=N,15nm,0.3s								
SONA					IAML			23 01 28.8	
	comp=E,25nm,0.5s								
KUDL	**Kundal**	**5.19**	**175**	*eP*		**Pn**		**22 59 53.3**	**-0.7**
KUDL				*eS*		**Sn**		**23 00 51.0**	**-2.0**
KUDL					IAML			23 01 32.8	
	comp=N,13nm,1.2s								
KUDL					IAML			23 01 34.5	
	comp=E,19nm,0.4s								
KHET	**Khetri**	**5.25**	**182**	*eS*		**Sn**		**23 00 54.2**	**-0.4**
KHET					IAML			23 01 21.6	
	comp=N,8.5nm,0.0s								
KHET					IAML			23 01 22.3	
	comp=E,11nm,0.4s								
MNAS	**Manas**	**9.54**	**344**	⇑Pn		**Pn**		**23 00 56.7**	**+2.9**
	comp=E,1.1nm,0.5s								
MNAS				⇑Sn		**Sn**		**23 02 38.5**	**-1.8**
	comp=E,3.2nm,0.8s								
KK31	**Karatay Array**	**10.66**	**338**	Pn		**Pn**		**23 01 11.6**	**+2.5**
	comp=E,1.4nm,0.8s,baz=154,slow=12,SNR=7.4								
KK31				⇑Sn		**Sn**		**23 03 01.5**	**-6.1**
	comp=E,2.3nm,0.6s,baz=146,slow=20,SNR=9.8								
MKAR	**Makanchi Array**	**14.27**	**18**	Pn		**Pn**		**23 02 01.1**	**+2.8**
	comp=E,0.1nm,0.3s,baz=199,slow=12,SNR=4.8								
MKAR				Sn		**Sn**		**23 04 32.3**	**-3.3**
	comp=E,0.1nm,0.3s,baz=197,slow=24,SNR=4.9								
KURBB	**Kurchatov Arra**	**17.37**	**5**	P		**Pn**		**23 02 38.1**	**-0.3**
	comp=E,0.1nm,0.3s,baz=194,slow=9.8,SNR=3.1								
BVAR	**Borovoye Array**	**20.09**	**350**	P		Pn		23 03 11.8	+0.4
	comp=E,0.5nm,0.3s,baz=165,slow=11,SNR=7.8								
ZALV	**Zalesovo Beam**	**21.53**	**14**	P		**P**		**23 03 26.1**	**+1.1**
	comp=E,0.3nm,0.3s,baz=198,slow=9.1,SNR=3.0								
AKTO	**Aktyubinsk**	**21.62**	**328**	P		**P**		**23 03 28.6**	**+2.6**
	comp=E,2.1nm,0.7s,baz=132,slow=11,SNR=7.9								
CMAR	**Chiang Mai Arr**	**25.32**	**120**	P		**P**		**23 04 02.2**	**-0.5**
	comp=E,1.3nm,0.6s,baz=309,slow=10.0,SNR=6.4								

IDC ***28*** *23:06:43.1±0.7, 35°.80S×73°.10W, h0km, mb4.4/9, mb1 4.5/13, mb1mx4.3/34, mbtmp4.4/13, ML4.1/3, MS4.0/10, Ms1 4.0/10, ms1mx3.8/20, Error ellipse: s-maj=28.0km s-min=13.6km az=81.0*

GUC ***28*** *23:06:43.7±0.4, 35°.77S×73°.38W, h31km±2km, ML4.4*

ISCJB ***28*** *23:06:46.1±0.9, 35°.84S±0°.03×73°.19W±0°.06, h26km±7km, mb4.5/30, MS4.0/10, Error ellipse: s-maj=7.7km s-min=4.8km az=17.9*

NEIC ***28*** *23:06:48.9±2.5, 35°.84S×72°.84W, h32km±17km, mb4.5/24, ML4.4(GUC), Error ellipse: s-maj=14.6km s-min=6.2km az=85.0*

NEIC Felt [II] at Cobquecura and Renaico.

ISC 28 23:06:44.7±1.6, 35°.81S±0°.04×73°.21W±0°.06, h10km±9km, n79, σ1°67/81, mb4.6/30, MS4.1/10, 1C, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
COCH	**Cobquecura**	**0.47**	**133**	*eP*		**Pg**	**23 06 55.2**		**+1.2**
COCH				*eS*		**Sg**	**23 07 03.5**		**+3.4**
COCH					IAML		23 07 04.2		
	comp=E,36μm,0.6s								
CCSP	**San Pedro de C**	**1.04**	**175**	*eP*		**Pb**	**23 07 02.8**		**-2.0**
CCSP				*eS*		**Sg**	**23 07 17.5**		**-0.7**
CCSP					IAML		23 07 22.9		
	comp=N,24μm,0.4s								
CCHI	**Chillan**	**1.21**	**131**	*eP*		**Pn**	**23 07 07.1**		**-0.7**
CCHI				*eS*		**Sb**	**23 07 24.5**		**+1.0**
GO05	**HualaæØ**	**1.32**	**53**	*eP*		**Pn**	**23 07 07.6**		**-1.7**
GO05				*eS*		**Sn**	**23 07 26.0**		**-1.0**
GO05					IAML		23 07 32.6		
	comp=N,8μm,0.8s								
TALC	**Talca**	**1.35**	**73**	*eP*		**Pn**	**23 07 09.1**		**-0.6**
TALC				*eS*		**Sn**	**23 07 28.1**		**+0.5**
NICH	**Los Niches**	**1.81**	**64**	*eP*		**Pn**	**23 07 16.1**		**+0.1**
NICH				*eS*		**Sn**	**23 07 40.5**		**+1.5**
CANA	**Caviahue**	**2.70**	**141**	*i P*		**Pn**	**23 07 30.8**		**+2.4**
CANA					IAML		23 08 20.4		
	comp=E,964nm,0.5s								
CANA				*i* S		Sg	23 08 30.4		+19
ROC1	**El Roble**	**3.36**	**33**	*i* P		**Pn**	**23 07 37.7**		**+0.1**
ROC1	**El Roble**	**3.36**	**33**	*ePn*		**Pn**	**23 07 37.3**		**-0.3**
ARCO	**CERRO ARCO**	**4.62**	**51**	*i P*		**Pn**	**23 07 56.6**		**+1.8**
ARCO				*i* S		**Sg**	**23 09 17.6**		**+4.6**
AUSP	**Uspallata**	**4.78**	**43**	*i P*		**Pn**	**23 07 57.8**		**+0.6**
ASAL	**Salagasta**	**4.84**	**50**	*i P*		**Pn**	**23 07 59.5**		**+1.7**
RTLS	**Leoncito**	**5.16**	**40**	*i P*		**Pn**	**23 08 01.5**		**-0.9**
PLCA	**Paso Flores**	**5.34**	**158**	Pn		**Pn**	**23 08 05.0**		**+0.3**
	comp=E,3.2nm,0.3s,baz=356,slow=13,SNR=65								
PLCA				Lg		Lg	23 09 30.2		
	comp=E,5.8nm,0.3s,baz=270,slow=12,SNR=5.1								
PLCA	**Paso Flores**	**5.34**	**158**	*ePn*		**Pn**	**23 08 04.6**		**-0.1**
LCO	**Las Campanas**	**7.10**	**18**	*ePn*		**Pn**	**23 08 27.2**		**-1.8**
LCO				*eSn*		**Sn**	**23 09 49.3**		**-0.8**
TRQA	**Tornquist**	**9.27**	**107**	*ePn*		**Pn**	**23 08 57.3**		**-1.2**
CHRN	**Cochrane**	**11.44**	**178**	*ePn*		**Pn**	**23 09 28.3**		**+0.1**
LVC	**Limon Verde**	**13.68**	**17**	Pn		**P**	**23 10 03.8**		**-4.3**
	comp=E,12nm,0.3s,baz=132,slow=15,SNR=3.2								
LVC				Lg		Lg	23 13 27.9		
	comp=E,9.1nm,0.3s,baz=265,slow=16,SNR=3.6								
LVC	**Limon Verde**	**13.68**	**17**	*ePn*		**Pn**	**23 10 00.5**		**+1.3**
LVC				*eSn*		**Sn**	**23 12 32.0**		**+0.6**
PB01	**IPOC Station P**	**15.07**	**13**	*ePn*		**P**	**23 10 21.2**		**-2.1**
	comp=E,19nm,1.0s								
PB11	**IPOC Station P**	**16.29**	**12**	*ePn*		**P**	**23 10 35.7**		**-1.2**
	comp=E,55nm,1.0s								
CPUP	**Villa Florida**	**16.55**	**60**	Pn		**Pn**	**23 10 33.5**		**-3.4**
	comp=E,0.1nm,0.3s,baz=257,slow=11,SNR=3.5								
CPUP				Lg		Lg	23 15 25.2		
	comp=E,0.0nm,0.3s,baz=348,slow=19,SNR=3.2								
USHA	**Ushuaia**	**19.31**	**172**	P		**Pn**	**23 11 10.3**		**-0.5**
	comp=E,10nm,0.3s,baz=352,slow=1.8,SNR=4.8								
LPAZ	**La Paz**	**19.96**	**14**	P		**Pn**	**23 11 18.7**		**-0.8**
	comp=E,0.2nm,0.3s,baz=173,slow=2.7,SNR=11								
LPAZ	**La Paz**	**19.96**	**14**	*eP*		**Pn**	**23 11 19.4**		**-0.2**
	comp=E,13nm,1.0s								
SIV	**San Ignacio**	**22.52**	**32**	P		**P**	**23 11 43.5**		**-1.3**
	comp=E,8.4nm,0.8s,baz=220,slow=15,SNR=26								
SIV				LR		LR	23 22 20.7		
	comp=E,1μm,18.8s,baz=218,slow=42								
NNA	**Nana**	**23.94**	**351**	LR		LR	23 19 13.9		
	comp=E,185nm,19.4s,baz=182,slow=31								
SPB	**Sao Paulo**	**25.41**	**68**	*eP*		**P**	**23 12 12.2**		**-0.3**
	comp=E,21nm,0.9s								
ATAH	**Atahualpa**	**28.93**	**349**	LR		LR	23 21 35.7		
	comp=E,116nm,20.9s,baz=184,slow=31								
PMSA	**Palmer Station**	**29.52**	**172**	LR		LR	23 24 43.4		
	comp=E,422nm,18.2s,baz=314,slow=37								
OTAV	**Otavalo**	**36.19**	**351**	*eP*		**P**	**23 13 50.5**		**+2.2**
	comp=E,3.2nm,0.8s								
SDV	**Santo Domingo**	**44.52**	**4**	P		**P**	**23 14 56.4**		**-0.6**
	comp=E,1.8nm,0.6s,baz=257,slow=14,SNR=3.7								
SDV	**Santo Domingo**	**44.52**	**4**	*eP*		**P**	**23 14 57.0**		**+0.1**
	comp=E,1.8nm,0.6s								
VNA1	**Neumayer--Stat**	**48.40**	**156**	P		**P**	**23 15 27.6**		**+1.1**
SNAA	**Sanae**	**50.28**	**157**	P		**P**	**23 15 40.8**		**-0.2**
SNAA	**Sanae**	**50.28**	**157**	P		**P**	**23 15 41.3**		**+0.2**
	comp=E,10.0nm,0.8s,baz=269,slow=6.8,SNR=39								
SNAA	**Sanae**	**50.28**	**157**	*eP*		**P**	**23 15 40.9**		**-0.2**
	comp=E,16nm,1.0s								
QSPA	**South Pole Qui**	**54.43**	**180**	*eP*		**P**	**23 16 12.1**		**+0.1**
	comp=E,26nm,0.9s								
SYO	**Syowa Base**	**64.54**	**158**	*eP*		**P**	**23 17 19.9**		**-1.6**
TBI	**Tubuai**	**65.98**	**258**	*eLR*		LR	23 37 26.5		
	comp=E,180nm,27.5s								
PPT2	**Papeete2**	**69.04**	**263**	*eS*		**S**	**23 27 01.9**		**+5.3**
	comp=E,80nm,22.2s								
PPT2	**Papeete2**	**69.04**	**263**	*eLR*		LR	23 38 36.0		
	comp=E,161nm,24.2s								
PPT	**Papeete**	**69.05**	**263**	LR		LR	23 41 48.4		
	comp=E,112nm,18.6s,baz=148,slow=30								
TXAR	**Lajitas Array**	**70.86**	**332**	P		**P**	**23 18 01.9**		**0.0**
	comp=E,0.6nm,0.8s,baz=156,slow=8.4,SNR=4.4								
TXAR				LR		LR	23 44 09.5		
	comp=E,56nm,18.6s,baz=0.0,slow=32								
SWET	**Sewanee**	**71.65**	**349**	*eP*		**P**	**23 18 08.3**		**+1.7**
	comp=E,1.5nm,0.8s								
MAW	**Mawson**	**71.72**	**164**	P		**P**	**23 18 06.9**		**+0.3**
	comp=E,2.7nm,0.7s,baz=251,slow=8.7,SNR=5.5								
MAW				LR		LR	23 49 51.5		
	comp=E,144nm,18.6s,baz=238,slow=36								
TKL	**Tuckaleechee C**	**71.78**	**351**	P		**P**	**23 18 08.0**		**+0.7**
	comp=E,1.6nm,0.6s,baz=154,slow=13,SNR=2.8								
MIAR	**Mount Ida**	**72.53**	**342**	P		**P**	**23 18 13.7**		**+2.0**
	comp=E,1.0nm,0.4s								
X301	**Greenbrier Sit**	**72.91**	**344**	*eP*		**P**	**23 18 14.8**		**+0.8**
	comp=E,7.1nm,1.1s								
ACSO	**Alum Creek Sta**	**76.20**	**352**	*eP*		**P**	**23 18 34.9**		**+1.9**
	comp=E,3.9nm,0.3s								
LIC	**Lamto**	**76.26**	**72**	*eP*		**P**	**23 18 33.6**		**-0.4**
	comp=E,30nm,0.9s								
TIC	**Toumodi**	**76.53**	**72**	*eP*		**P**	**23 18 35.0**		**-0.5**
KIC	**Kosan Boka**	**76.56**	**72**	*eP*		**P**	**23 18 35.4**		**-0.3**
	comp=E,27nm,0.8s								
DBIC	**Dimbokro**	**76.67**	**72**	P		**P**	**23 18 35.8**		**-0.5**
	comp=E,8.2nm,0.7s,baz=209,slow=6.9,SNR=14								
DBIC				LR		LR	23 49 03.7		
	comp=E,81nm,20.6s,baz=207,slow=33								
DBIC	**Dimbokro**	**76.67**	**72**	*eP*		**P**	**23 18 36.2**		**0.0**
	comp=E,9.4nm,0.8s								
ANMO	**Albuquerque**	**76.92**	**332**	*eP*		**P**	**23 18 39.5**		**+2.0**
	comp=E,4.4nm,1.3s								
KSU1	**Kansas State U**	**77.61**	**342**	*eP*		**P**	**23 18 43.1**		**+2.1**
	comp=E,6.2nm,0.4s								
T25A	**Trinidad**	**78.15**	**335**	*eP*		**P**	**23 18 46.6**		**+2.3**
	comp=E,6.6nm,0.8s								
CASY	**Casey**	**78.19**	**182**	*eP*		**P**	**23 18 44.1**		**+0.1**
	comp=E,1.3nm,1.3s								
BOSA	**Boshof**	**80.08**	**118**	P		**P**	**23 18 54.6**		**-0.7**
	comp=E,7.0nm,0.8s,baz=216,slow=5.4,SNR=12								
BOSA				LR		LR	23 49 54.6		
	comp=E,92nm,20.3s,baz=206,slow=32								
PV10	**Paradox Valley**	**80.92**	**332**	P		**P**	**23 19 01.7**		**+2.2**
	comp=E,44nm,0.8s								
ISCO	**Idaho Springs**	**80.95**	**335**	*eP*		**P**	**23 19 02.0**		**+2.4**
	comp=E,5.5nm,0.8s								
KNB	**Kanab**	**81.26**	**329**	*eP*		**P**	**23 19 03.3**		**+2.2**
	comp=E,3.8nm,1.0s								
ECSD	**EROS Data Cent**	**81.98**	**343**	*eP*		**P**	**23 19 05.4**		**+0.7**
	comp=E,3.8nm,0.8s								
DUG	**Dugway, Tooele**	**83.96**	**331**	*eP*		**P**	**23 19 17.9**		**+2.8**
	comp=E,3.6nm,1.0s								
HWUT	**Hardware Ranch**	**84.68**	**332**	*eP*		**P**	**23 19 20.3**		**+1.5**
	comp=E,2.0nm,0.5s								
PDAR	**Pinedale Array**	**84.95**	**334**	LR		LR	23 53 34.1		
	comp=E,54nm,18.1s,baz=144,slow=33								
JUCM	**University of**	**85.46**	**323**	*eP*		P	23 19 28.6		+6.0
ULM	**Lac du Bonnet**	**88.00**	**346**	P		**P**	**23 19 33.7**		**-0.9**
	comp=E,3.2nm,0.8s,baz=243,slow=8.4,SNR=3.6								
LSZ	**Lusaka**	**90.14**	**109**	P		**P**	**23 19 45.9**		**+0.1**
	comp=E,1.1nm,0.6s								
FCC	**Fort Churchill**	**95.82**	**349**	P		**P**	**23 20 12.3**		**+1.7**
	comp=E,8.9nm,0.7s								
INK	**Inuvik**	**113.02**	**339**	*e*PKP		**PKiKP**	**23 25 22.2**		**+1.0**
WRA	**Warramunga Arr**	**118.72**	**210**	PKP		**PKPdf**	**23 25 31.4**		**-2.3**
	comp=E,0.3nm,1.0s,baz=154,slow=1.9,SNR=2.7								
NRIK	**Noril'sk**	**144.78**	**12**	PKP		**PKPdf**	**23 26 19.6**		**-1.3**
	comp=E,2.8nm,0.7s,baz=152,slow=4.3,SNR=3.2								
KSH	**Kashi**	**155.39**	**72**	P		**PKPab**	**23 27 02.5**		**-1.6**
KSH				pmax		pmax			
	comp=Z,6.0nm,1.0s								
ZALV	**Zalesovo Beam**	**156.26**	**33**	PKP		**PKPdf**	**23 26 38.3**		**-0.7**
	comp=Z,0.7nm,0.6s,baz=210,slow=4.8,SNR=4.6								
ZALV				PKPab		**PKPab**	**23 27 07.0**		**-0.1**
	comp=Z,2.3nm,0.6s,baz=308,slow=5.5,SNR=9.2								
MKAR	**Makanchi Array**	**158.66**	**52**	PKPab		**PKPab**	**23 27 17.1**		**-0.6**
	comp=Z,0.9nm,0.8s,baz=349,slow=2.9,SNR=4.1								
SONM	**Songino Array**	**167.98**	**1**	PKPab		**PKPab**	**23 27 58.5**		**-0.1**
	comp=Z,0.4nm,0.6s,baz=353,slow=3.5,SNR=3.3								

MEX 28 23:14:54.3±0.4, 15°.13N×93°.43W, h68km±46km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
TGIG		**1.67**	**10**	*eP*		Pn	23 15 20.0		-1.5
TGIG				*i* S		Sn	23 15 40.5		-1.6
CCIG	**Comitan**	**1.69**	**47**	*i* P		Pn	23 15 22.1		+0.1
CCIG				*i* S		Sn	23 15 40.8		-2.0

IDC 28 23:31:01.9±3.4, 2°.17S×134°.63E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.4/21, mbtmp3.4/3, ML3.3/1, Error ellipse: s-maj=164.8km s-min=28.2km az=78.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
WRA	**Warramunga Arr**	**17.67**	**181**	P		Pn	23 35 09.1		-0.6
	0.1nm,0.3s,baz=360,slow=12,SNR=5.1								
ASAR	**Alice Springs**	**21.38**	**182**	P		P	23 35 51.5		+0.2
	0.9nm,0.7s,baz=6.3,slow=11,SNR=8.7								
MKAR	**Makanchi Array**	**66.91**	**324**	P		P	23 41 56.2		0.0
	0.4nm,0.8s,baz=116,slow=5.9,SNR=3.0								

ISCJB ***28*** *23:56:24.1±0.2, 6°.53S±0°.02×129°.26E±0°.04, h200km, mb4.6/34, Error ellipse: s-maj=5.0km s-min=3.0km az=166.8*

NEIC ***28*** *23:56:24.8±0.9, 6°.50S×129°.14E, h193km±9km, mb5.1/16, Error ellipse: s-maj=7.6km s-min=5.7km az=96.0*

IDC ***28*** *23:56:24.4±1.9, 6°.47S×129°.17E, h191km±19km, mb4.0/15, mb1 4.3/19, mb1mx4.1/30, mbtmp4.7/19, MS3.2/3, Ms1 3.2/3, ms1mx2.7/28, Error ellipse: s-maj=18.0km s-min=8.2km az=84.0*

DJA ***28*** *23:56:26.6±0.3, 7°.5S×129°.9E±°, h169km±6km, M4.9/12, mb4.9/12, mB5.3/7, MLv5.1/9, Mw(mB)4.7/7*

BJI ***28*** *23:56:27.6, 7°.46S×129°.69E, h218km, mb4.4/5, mB4.6/14*

ISC 28 23:56:25.0±0.3, 6°.54S±0°.04×129°.28E±0°.05, h200km, n103, σ1°80/107, mb4.5/34, 1C-1D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
BNDI	**Bandanaira**	**2.10**	**17**	P		**Pn**	**23 57 07.7**		**+3.1**
SAUI	**Saumlaki**	**2.47**	**126**	P		**Pn**	**23 57 12.1**		**+3.5**
SAUI				S		**Sn**	**23 57 38.9**		**-3.7**
MSAI	**Masohi**	**3.19**	**354**	P		**Pn**	**23 57 19.6**		**+2.6**
MSAI				S		**Sn**	**23 57 56.4**		**-1.3**
NLAI	**Namlea**	**3.93**	**326**	P		Pn	23 57 28.8		+2.8
NLAI				S		**Sn**	**23 58 14.3**		**+0.4**
FAKI	**Fak Fak**	**4.66**	**40**	P		**Pn**	**23 57 35.1**		**0.0**
FAKI				S		**Sn**	**23 58 27.4**		**-2.9**
SANI	**Sanana**	**5.53**	**324**	P		**Pn**	**23 57 48.1**		**+1.8**
	160nm,0.7s,2μm0.7nm								
SANI				S		**Sn**	**23 58 50.2**		**-0.4**
	160nm,0.7s,2μm0.7nm								
SOEI	**Soe**	**5.90**	**237**	P		**Pn**	**23 57 51.7**		**+0.5**
	278nm,0.8s,3μm2.5nm								
SOEI				S		**Sn**	**23 58 57.3**		**-2.0**
	278nm,0.8s,3μm2.5nm								
SIJI	**Sorong**	**5.97**	**19**	P		**Pn**	**23 57 51.1**		**-0.9**
	19nm,0.3s,baz=269,slow=24,SNR=12								
SIJI				S		**Sn**	**23 58 55.1**		**-5.7**
	11nm,0.3s,baz=270,slow=23,SNR=12								
SWI	**Sorong**	**5.97**	**19**	P		**Pn**	**23 57 51.1**		**-0.9**
	477nm,0.6s,10μm								
SWI				S		**Sn**	**23 58 56.4**		**-4.4**
	477nm,0.6s,10μm								
LBMI	**Labuha**	**6.12**	**343**	P		**Pn**	**23 57 55.2**		**+1.2**
	545nm,0.7s,7μm2.4nm								
LBMI				S		**Sn**	**23 59 03.9**		**-0.4**
	545nm,0.7s,7μm2.4nm								
MTN	**Manton Dam**	**6.53**	**164**	P		**Pn**	**23 58 00.5**		**+1.3**
	baz=6.6,SNR=236								
MTN	**Manton Dam**	**6.53**	**164**	*ePn*		**Pn**	**23 58 00.2**		**+1.0**
BBSI	**Bau Bau**	**6.75**	**279**	P		Pn	23 58 04.8		+2.7
	125nm,1.1s,1μm0.4nm								
KDU	**Kakadu**	**6.88**	**153**	P		**Pn**	**23 58 05.2**		**+1.6**
	baz=7.0,SNR=72								
KDI	**Kendari**	**7.11**	**291**	P		**Pn**	**23 58 09.2**		**+2.5**
	52nm,0.9s,0.2nm								
LUWI	**Luwuk**	**8.48**	**310**	P		Pn	23 58 27.6		+3.0
	91nm,0.7s,2μm								
KAPI	**Kappang**	**9.60**	**279**	LR		LR	00 02 22.8		
	comp=Z,68nm,18.3s,baz=114,slow=38								
SPSI	**Sidrap Palu**	**9.81**	**285**	P		Pn	23 58 45.5		+3.6
	37nm,0.8s								
MRSI	**Marisa**	**10.11**	**313**	P		**Pn**	**23 58 47.9**		**+2.1**
	115nm,0.9s,3μm								
GENI	**Genyem**	**11.54**	**71**	P		**P**	**23 59 07.9**		**-1.7**
PLAI	**Plampang**	**11.62**	**258**	P		**Pn**	**23 59 04.6**		**-0.6**
	87nm,0.7s								
PLAI				S		**Sn**	**23 59 05.0**		**-0.2**
	87nm,0.7s								
FITZ	**Fitzroy Crossi**	**12.03**	**197**	P		**Pn**	**23 59 08.9**		**-1.4**
	18nm,0.3s,baz=27,slow=11,SNR=306								
FITZ				S		**Sn**	**00 01 18.5**		**-6.1**
	3.6nm,0.3s,baz=87,slow=13,SNR=4.1								
FITZ				LR		LR	00 05 01.4		
	comp=Z,101nm,18.6s,baz=344,slow=43								
FITZ	**Fitzroy Crossi**	**12.03**	**197**	P		**Pn**	**23 59 08.8**		**-1.6**
	baz=12,SNR=393								
JAY	**Jayapura**	**12.07**	**71**	P		**Pn**	**23 59 12.0**		**+1.1**
	0.1nm,0.3s,baz=93,slow=24,SNR=5.4								
JAY	**Jayapura**	**12.07**	**71**	P		**Pn**	**23 59 12.4**		**+1.4**
WRAB	**Tennant Creek**	**14.20**	**160**	*e*Pn		**Pn**	**23 59 37.4**		**-0.1**
WRA	**Warramunga Arr**	**14.20**	**160**	P		**Pn**	**23 59 37.5**		**-0.1**
	6.4nm,0.3s,baz=340,slow=11,SNR=56								
WRA				S		S	00 02 08.2		-7.5
	3.4nm,0.3s,baz=339,slow=21,SNR=13								
WB2	**Warramunga Arr**	**14.21**	**160**	*e*Pn		**Pn**	**23 59 37.6**		**0.0**
COEN	**Coen**	**15.53**	**119**	P		**Pn**	**23 59 55.5**		**+1.6**
	baz=16,SNR=81								
COEN	**Coen**	**15.53**	**119**	*eP*		**Pn**	**23 59 56.2**		**+2.3**
	123nm,0.8s								
QIS	**Mount Isa**	**17.16**	**145**	P		**Pn**	**00 00 14.0**		**+0.6**
	baz=17,SNR=118								
MBWA	**Marble Bar**	**17.23**	**212**	*eP*		**Pn**	**00 00 13.1**		**-0.9**
	26nm,0.6s								
AS31	**Alice Springs**	**17.60**	**166**	*eP*		**Pn**	**00 00 18.3**		**-0.3**
	46nm,0.6s								
ASAR	**Alice Springs**	**17.60**	**166**	P		**Pn**	**00 00 19.2**		**+0.6**
	18nm,0.3s,baz=347,slow=11,SNR=943								
ASAR				S		**S**	**00 03 26.4**		**-2.8**
	1.2nm,0.3s,baz=340,slow=22,SNR=7.7								
AS01	**Alice Springs**	**17.61**	**166**	*eP*		**P**	**00 00 18.1**		**+1.3**
PMG	**Port Moresby**	**17.94**	**100**	P		**Pn**	**00 00 24.5**		**+2.0**
	4.8nm,0.3s,baz=266,slow=6.7,SNR=18								
PMG	**Port Moresby**	**17.94**	**100**	*eP*		**Pn**	**00 00 22.1**		**-0.3**
	76nm,0.7s								
WRKA	**Warakurna**	**18.42**	**183**	P		**Pn**	**00 00 27.2**		**-0.9**
	baz=18,SNR=112								
MTSU	**Mount Surprise**	**18.66**	**130**	P		**Pn**	**00 00 30.4**		**-0.5**
	baz=19,SNR=98								
CTA	**Charters Tower**	**21.29**	**131**	P		**P**	**00 00 58.5**		**+2.2**
	54nm,0.8s,baz=308,slow=11,SNR=29								
CTAO	**Charters Tower**	**21.29**	**131**	*eP*		**P**	**00 00 58.4**		**+2.2**
	64nm,1.0s								
GIRL	**Giralia**	**21.61**	**221**	P		**P**	**00 00 59.2**		**-0.2**
	baz=22,SNR=11								
TGY	**Tagaytay City**	**22.11**	**338**	P		**P**	**00 01 03.7**		**-0.8**
	288nm,0.4s,baz=190,slow=4.0,SNR=6.3								
MEEK	**Meekatharra**	**22.42**	**206**	P		**P**	**00 01 07.2**		**-0.2**
	baz=22,SNR=8.6								
FORT	**Forrest**	**24.14**	**183**	P		**P**	**00 01 23.1**		**+0.3**
	baz=24,SNR=6.8								
FORT	**Forrest**	**24.14**	**183**	*eP*		**P**	**00 01 22.6**		**-0.2**
	776nm,0.8s								
QLP	**Quilpie**	**24.50**	**146**	P		**P**	**00 01 27.9**		**+1.8**
	baz=25,SNR=9.7								
GUMO	**Guam**	**25.29**	**38**	P		**P**	**00 01 33.7**		**+0.4**
	35nm,0.3s,baz=191,slow=16,SNR=3.3								
BBOO	**Buckleboo**	**26.89**	**167**	P		**P**	**00 01 48.2**		**+0.7**
	baz=27,SNR=59								
BBOO	**Buckleboo**	**26.89**	**167**	*eP*		**P**	**00 01 48.4**		**+0.9**
	29nm,0.4s								
STKA	**Stephens Creek**	**27.71**	**157**	P		**P**	**00 01 55.9**		**+1.1**
	6.5nm,0.4s,baz=331,slow=9.0,SNR=30								
STKA	**Stephens Creek**	**27.71**	**157**	P		**P**	**00 01 55.9**		**+1.1**
	baz=28,SNR=26								
STKA	**Stephens Creek**	**27.71**	**157**	*eP*		**P**	**00 01 56.0**		**+1.1**
	2.6nm,0.6s								
HTT	**Hallett**	**28.22**	**163**	P		**P**	**00 02 00.7**	

SYO	Syowa Base	83.83	201	⇓	*e*X	P		00 08 30.0	-1.7
SYO	Syowa Base	83.83	201	⇑	*e*PcP	PcP		00 08 34.4	-0.9
ILAR	Eielson Array	93.24	25	P		P		00 09 16.7	+0.2
	comp=Z,0.4nm,0.7s,baz=258,slow=4.5,SNR=3.5								
DOT	Dot Lake	94.32	27	*e*P		P		00 09 25.9	+4.3
	comp=Z,26nm,1.1s								
SNAA	Sanae	95.94	194	P		P		00 09 29.5	+0.6
SNAA	Sanae	95.94	194	*e*P		P		00 09 29.8	+0.9
	comp=Z,32nm,0.5s								
TXAR	Lajitas Array	125.30	59	PKP		PKPdf		00 15 02.8	-0.1
	comp=Z,0.3nm,0.7s,baz=182,slow=2.7,SNR=5.3								
DBIC	Dimbokro	134.45	273	PKP		PKPdf		00 15 20.9	+0.5
	comp=Z,1.0nm,0.5s,baz=82,slow=3.5,SNR=4.1								
CPUP	Villa Florida	146.71	169	PKPbc		PKPbc		00 15 44.2	+0.1
	comp=Z,6.1nm,0.5s,baz=196,slow=0.7,SNR=20								

SCB ***29*** *00:13:19.8±0.6, 19°.39S×69°.15W, h120km, Ml3.7/1, Error ellipse: s-maj=19.9km s-min=5.7km az=69.0*
NEIC ***29*** *00:13:20.0, 19°.54S×69°.39W, h106km, mb4.2/5, After GUC.*
GUC ***29*** *00:13:20.9±0.6, 19°.54S×69°.39W, h106km±4km, ML4.2*
IDC ***29*** *00:13:22.7±1.5, 19°.52S×68°.98W, h123km±12km, mb4.1/6, mb1 4.1/10, mb1mx3.8/38, mbtmp4.5/10, MS2.3/1, Ms1 2.3/1, ms1mx2.2/17, Error ellipse: s-maj=22.5km s-min=11.7km az=99.0*

ISC 29 00:13:20.4±0.6, 19°.60S±0°.04×69°.19W±0°.06, h106km±6km, n39, σ1.1 81/48, mb4.4/9, 6C-5D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB11	**IPOC Station P**	**0.47**	**250**	*e*P	**Pn**	**00 13 37.1**	**+0.2**
PB11				*e*S	**Sn**	**00 13 49.1**	**0.0**
PB08	**IPOC Station P**	**0.54**	**176** ⇑	*e*P	**Pn**	**00 13 39.6**	**+2.0**
PB08				*e*S	**Sn**	**00 13 53.3**	**+2.8**
PB08				IAML		00 13 54.6	
	comp=E,12μm,0.8s						
MNMC	**Minye Minye**	**0.60**	**321** ⇑	*e*P	**Pn**	**00 13 37.7**	**-0.2**
MNMC				*e*S	**Sn**	**00 13 50.2**	**-0.8**
PSGC	**Pisagua**	**0.88**	**270** ⇑	*e*P	**Pn**	**00 13 39.3**	**-0.9**
PSGC				*e*S	**Sn**	**00 13 53.1**	**-2.0**
PSGC				IAML		00 13 57.5	
	comp=E,6μm,0.5s						
HMBC	**Humberstone**	**0.94**	**224** ⇑	*e*P	**Pn**	**00 13 41.2**	**+0.4**
HMBC				*e*S	**Sn**	**00 13 56.3**	**+0.1**
HMBC				IAML		00 13 57.0	
	comp=N,16μm,0.6s						
PB13	**IPOC Station P**	**1.29**	**347** ⇓	*e*P	**Pn**	**00 13 45.3**	**+0.1**
PB13				*e*S	**Sn**	**00 14 03.1**	**-0.8**
PB12	**IPOC Station P**	**1.46**	**312**	*e*P	**Pn**	**00 13 44.8**	**-1.8**
PB12				*e*S	**Sn**	**00 14 02.6**	**-3.8**
BBOJ	**La Paz, Jacaqu**	**2.78**	**20** ⇓	*e*Pn	**Pn**	**00 14 06.0**	**+2.1**
BBOD	**La Paz, Gloria**	**3.00**	**11** ⇓	*e*Pn	**Pn**	**00 14 08.4**	**+1.5**
BBOE	**La Paz, Chanca**	**3.00**	**23** ⇓	*i*Pn	**Pn**	**00 14 08.3**	**+1.4**
LVC	**Limon Verde**	**3.00**	**175**	P	Pn	00 14 10.1	+3.4
	comp=N,372nm,0.3s,baz=32,slow=8.4,SNR=53						
LVC				S	**Sn**	**00 14 38.2**	**-4.1**
	comp=N,2μm,0.3s,baz=327,slow=12,SNR=16						
LVC	**Limon Verde**	**3.00**	**175**	*e*Pn	Pn	00 14 09.7	+3.0
LVC				S	**Sn**	**00 14 38.2**	**-4.1**
LPAZ	**La Paz**	**3.45**	**17**	P	**Pn**	**00 14 14.5**	**+1.6**
	comp=N,5.4nm,0.3s,baz=209,slow=6.8,SNR=141						
LPAZ				S	**Sn**	**00 14 54.4**	**+1.1**
	comp=N,3.1nm,0.3s,baz=235,slow=19,SNR=6.9						
LPAZ	**La Paz**	**3.45**	**17** ⇓	*i*Pn	**Pn**	**00 14 14.4**	**+1.5**
LPAZ				*e*Sn	**Sn**	**00 14 54.5**	**+1.1**
BBOB	**La Paz, Bander**	**3.59**	**17** ⇑	*i*Pn	**Pn**	**00 14 15.9**	**+1.2**
BBOB				*e*Sn	**Sn**	**00 14 57.7**	**+1.2**
	comp=N,108nm,0.7s						
MOCB	**Mochara**	**3.71**	**117** ⇑	*i*Pn	Pn	00 14 21.9	+5.6
SIV	**San Ignacio**	**8.53**	**66**	P	**Pn**	**00 15 19.8**	**-1.3**
	comp=N,8.8nm,0.3s,baz=270,slow=11,SNR=111						
SIV				S	**Sn**	**00 16 51.0**	**-4.8**
	comp=N,0.2nm,0.3s,baz=176,slow=23,SNR=2.8						
SIV				LR	LR	00 19 20.4	
	comp=N,18nm,18.9s,baz=186,slow=43						
SIV	**San Ignacio**	**8.53**	**66**	*e*P	**Pn**	**00 15 19.8**	**-1.3**
LCO	**Las Campanas**	**9.47**	**188**	Pn	Pn	00 15 37.5	+3.4
NNA	**Nana**	**10.56**	**315**	*e*Pn	**Pn**	**00 15 51.9**	**+3.1**
SAML	**Samuel**	**12.08**	**30**	*e*Pn	**Pn**	**00 16 08.6**	**-0.6**
	comp=N,3.5nm,0.6s						
CPUP	**Villa Florida**	**12.81**	**124**	P	**Pn**	**00 16 19.3**	**+0.6**
	comp=N,0.4nm,0.3s,baz=311,slow=15,SNR=6.3						
TRQA	**Tornquist**	**19.43**	**163**	*e*P	**Pn**	**00 17 39.5**	**-1.1**
	comp=N,3.4nm,0.6s						
PTGA	**Pitinga**	**20.82**	**27**	P	**P**	**00 17 51.2**	**-2.4**
	comp=N,16nm,0.4s,baz=205,slow=18,SNR=76						
PLCA	**Paso Flores**	**21.09**	**183**	P	**P**	**00 17 57.8**	**+1.4**
	comp=N,7.6nm,0.8s,baz=26,slow=12,SNR=11						
OTAV	**Otavalo**	**21.71**	**334**	*e*P	**P**	**00 18 04.8**	**+1.3**
	comp=N,0.9nm,0.5s						
RCBR	**Riachuelo**	**35.15**	**72**	P	**P**	**00 20 03.4**	**-0.8**
	comp=N,12nm,0.7s,baz=230,slow=8.2,SNR=11						
RCBR	**Riachuelo**	**35.15**	**72**	*e*P	**P**	**00 20 03.1**	**-1.1**
	comp=N,9.5nm,0.6s						
SNAA	**Sanae**	**64.15**	**161**	P	**P**	**00 23 44.3**	**+1.0**
	comp=N,0.8nm,0.6s,baz=276,slow=7.3,SNR=6.5						
LIC	**Lamto**	**68.13**	**75**	*e*PKP2	**P**	**00 24 09.3**	**-0.3**
	comp=N,64nm,1.9s						
TIC	**Toumodi**	**68.31**	**74**	*e*PKP2	**P**	**00 24 09.4**	**-1.3**
KIC	**Kosan Boka**	**68.44**	**75**	*e*PKP2	**P**	**00 24 10.5**	**-1.0**
	comp=N,17nm,0.8s						
DBIC	**Dimbokro**	**68.46**	**74**	P	**P**	**00 24 10.9**	**-0.7**
	comp=N,4.7nm,0.6s,baz=220,slow=7.2,SNR=8.3						
ESDC	**Sonseca Array**	**84.67**	**45**	P	**P**	**00 25 42.9**	**+0.3**
	comp=N,0.1nm,0.3s,baz=239,slow=5.7,SNR=3.4						
YKA	**Yellowknife Ar**	**89.32**	**341**	P	**P**	**00 26 03.7**	**-0.6**
	comp=N,2.1nm,0.7s,baz=132,slow=4.9,SNR=8.3						
MBAR	**Mbarara**	**99.15**	**94**	*e*P	**Pdif**	**00 26 50.3**	**-0.5**
	comp=N,0.9nm,1.0s						
ASAR	**Alice Springs**	**131.45**	**209**	PKP	**PKPdf**	**00 32 21.2**	**-0.1**
	comp=N,0.3nm,0.5s,baz=130,slow=1.4,SNR=5.0						
WRA	**Warramunga Arr**	**134.43**	**212**	PKP	**PKPdf**	**00 32 26.9**	**0.0**
	comp=N,1.5nm,0.3s,baz=139,slow=1.7,SNR=6.5						
SONM	**Songino Array**	**151.61**	**6**	PKPbc	**PKPbc**	**00 33 02.4**	**-0.1**
	comp=N,0.6nm,0.6s,baz=318,slow=2.2,SNR=3.4						

IDC ***29*** *00:26:52.3±1.9, 38°.32N×21°.65E, h0km, mb3.7/6, mb1 3.6/10, mb1mx3.5/37, mbtmp3.6/10, ML3.3/4, MS2.7/4, Ms1 2.7/4, ms1mx2.3/51, Error ellipse: s-maj=34.8km s-min=15.8km az=45.0*
ISCJB ***29*** *00:26:53.8±0.2, 38°.34N±0°.01×21°.76E±0°.01, h11km±1km, mb3.7/6, MS2.5/2, Error ellipse: s-maj=2.2km s-min=1.7km az=32.0*
ATH ***29*** *00:26:53.6, 38°.32N×21°.79E, h18km, ML3.4/23, Error ellipse: s-maj=0.7km s-min=0.5km az=205.0*
IASPEI ***29*** *00:26:53.9±0.8, 38°.33N±0°.01×21°.77E±0°.01, h11km±4km, mb3.6/6, Error ellipse: s-maj=2.1km s-min=2.0km az=23.0, GT5 selection from ISC bulletin GT5 identified by Bond˜¡r and McLaughlin (2009) selection criteria Bond˜¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
CSEM ***29*** *00:26:54.1±0.1, 38°.33N×21°.79E, h5km, ML3.4, Error ellipse: s-maj=2.2km s-min=1.7km az=40.0*
THE ***29*** *00:26:54.0, 38°.34N×21°.77E, h0km±1km, ML3.7/6, Error ellipse: s-maj=1.3km s-min=0.4km az=184.0*

ISC 29 00:26:54.1±0.7, 38°.33N±0°.01×21°.78E±0°.01, h10km±4km, n288, σ1.9 13/374, mb3.6/6, 6C-7D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.04**	**170**	P	**Pg**	**00 26 55.8**	**-0.3**
UPR				S	**Sg**	**00 26 57.0**	**-0.5**
UPR	**University Cam**	**0.04**	**170**	P	**Pg**	**00 26 55.8**	**-0.3**
UPR				S	**Sg**	**00 26 57.0**	**-0.5**
UPR	**University Cam**	**0.04**	**170**	P	**Pg**	**00 26 54.9**	**-1.2**
VVK	**Vomvokou**	**0.10**	**16**	S	**Sg**	**00 26 58.8**	**0.0**
LAKA	**Lakka**	**0.18**	**118**	P	**Pg**	**00 26 58.0**	**0.0**
LAKA				S	**Sg**	**00 27 01.1**	**+0.4**
LAKA	**Lakka**	**0.18**	**118**	P	**Pg**	**00 26 57.8**	**-0.2**
LAKA				S	**Sg**	**00 27 00.9**	**+0.2**
LAKA	**Lakka**	**0.18**	**118**	P	**Pg**	**00 26 57.9**	**-0.2**
LAKA				S	**Sg**	**00 27 00.9**	**+0.2**
TRIZ	**Trizonia**	**0.24**	**80**	P	**Pg**	**00 26 59.3**	**+0.3**
TRIZ				S	**Sg**	**00 27 03.5**	**+1.3**
SERG	**Sergoula**	**0.24**	**68**	P	**Pg**	**00 26 59.0**	**0.0**
SERG				S	**Sg**	**00 27 02.9**	**+0.6**
SERG	**Sergoula**	**0.24**	**68**	P	**Pg**	**00 26 59.1**	**0.0**
SERG				S	**Sg**	**00 27 02.9**	**+0.6**
ANX	**Ano Chora**	**0.29**	**23**	P	**Pg**	**00 27 00.0**	**0.0**
ANX				S	**Sg**	**00 27 04.7**	**+0.7**
ANX	**Ano Chora**	**0.29**	**23**	P	**Pg**	**00 27 00.0**	**0.0**
ANX				S	**Sg**	**00 27 04.2**	**+0.2**
KALE	**Kalithea**	**0.29**	**77**	P	**Pg**	**00 27 00.1**	**+0.1**
KALE				S	**Sg**	**00 27 04.7**	**+0.7**
KALE	**Kalithea**	**0.29**	**77**	P	**Pg**	**00 27 00.1**	**+0.1**
KALE				S	**Sg**	**00 27 04.7**	**+0.7**
KALE	**Kalithea**	**0.29**	**77**	P	**Pg**	**00 27 00.6**	**+0.6**
KALE				S	**Sb**	**00 27 05.3**	**-1.1**
KALE				AML	AML	00 27 05.6	
	comp=N,24923μm,0.3s						
KALE				AML	AML	00 27 09.7	
	comp=E,17374μm,0.1s						
AXS	**Araxos**	**0.34**	**248**	P	**Pg**	**00 27 00.7**	**-0.2**
AXS				S	**Sg**	**00 27 06.2**	**+0.8**
AXS	**Araxos**	**0.34**	**248**	P	**Pg**	**00 27 00.7**	**-0.2**
AXS				S	**Sg**	**00 27 05.8**	**+0.4**
AXS	**Araxos**	**0.34**	**248**	P	**Pg**	**00 27 00.4**	**-0.5**
AXS				S	**Sg**	**00 27 05.8**	**+0.4**
PVO	**Paravola**	**0.35**	**326**	P	**Pg**	**00 27 00.8**	**-0.3**
PVO				S	**Sg**	**00 27 05.6**	**-0.2**
PVO	**Paravola**	**0.35**	**326**	P	**Pg**	**00 27 00.8**	**-0.3**
PVO				S	**Sg**	**00 27 05.6**	**-0.2**
PVO	**Paravola**	**0.35**	**326**	P	**Pg**	**00 27 00.8**	**-0.3**
PVO				S	**Sb**	**00 27 07.3**	**-0.7**
RLS	**Riolos of Patr**	**0.36**	**222**	P	**Pg**	**00 27 01.3**	**0.0**
RLS				S	**Sg**	**00 27 07.1**	**+1.0**
RLS	**Riolos of Patr**	**0.36**	**222**	P	**Pg**	**00 27 01.5**	**+0.2**
RLS				S	**Sg**	**00 27 07.1**	**+1.0**
RLS	**Riolos of Patr**	**0.36**	**222**	S	**Sg**	**00 27 07.2**	**+1.1**
RLS				AML	AML	00 27 07.7	
	comp=E,11175μm,0.3s						
RLS				AML	AML	00 27 09.6	
	comp=N,11420μm,0.4s						
DRO	**Drossia**	**0.38**	**188**	P	**Pg**	**00 27 01.4**	**-0.2**
DRO				S	**Sg**	**00 27 06.6**	**0.0**
DRO	**Drossia**	**0.38**	**188**	P	**Pg**	**00 27 01.4**	**-0.2**
DRO				S	**Sg**	**00 27 06.6**	**0.0**
DRO	**Drossia**	**0.38**	**188**	P	**Pg**	**00 27 01.4**	**-0.2**
DRO				S	**Sg**	**00 27 06.7**	**+0.1**
DRO				AML	AML	00 27 10.9	
	comp=N,20259μm,0.3s						
DRO				AML	AML	00 27 11.6	
	comp=E,25654μm,0.2s						
KLV	**Kalavryta, Ach**	**0.41**	**134**	P	**Pg**	**00 27 01.9**	**-0.3**
KLV				S	**Sg**	**00 27 08.6**	**+1.0**
KLV	**Kalavryta, Ach**	**0.41**	**134**	P	**Pg**	**00 27 01.9**	**-0.3**
KLV				S	**Sg**	**00 27 08.0**	**+0.4**
KLV	**Kalavryta, Ach**	**0.41**	**134**	P	**Pg**	**00 27 02.2**	**0.0**
KLV				S	**Sg**	**00 27 08.0**	**+0.4**
PDO	**Prodromos**	**0.54**	**300**	P	**Pg**	**00 27 03.5**	**-1.1**
PDO				S	**Sg**	**00 27 12.1**	**+0.4**
PDO	**Prodromos**	**0.54**	**300**	P	**Pg**	**00 27 03.5**	**-1.1**
PDO				S	**Sg**	**00 27 12.1**	**+0.4**
PDO	**Prodromos**	**0.54**	**300**	P	**Pg**	**00 27 03.5**	**-1.1**
PDO				S	**Sg**	**00 27 12.2**	**+0.4**
PDO				AML	AML	00 27 15.8	
	comp=N,24028μm,0.2s						
PDO				AML	AML	00 27 18.8	
	comp=E,13559μm,0.2s						
EVR	**Evrytania**	**0.59**	**2**	P	**Pg**	**00 27 05.0**	**-0.6**
EVR				S	**Sg**	**00 27 13.8**	**+0.4**
EVR	**Evrytania**	**0.59**	**2**	P	**Pg**	**00 27 05.0**	**-0.6**
EVR				S	**Sg**	**00 27 13.8**	**+0.4**
EVR	**Evrytania**	**0.59**	**2**	P	**Pg**	**00 27 05.0**	**-0.6**
EVR				S	**Sg**	**00 27 13.8**	**+0.4**
EVR				AML	AML	00 27 17.6	
	comp=N,6916μm,0.3s						
DSF	**Desfina**	**0.60**	**82**	P	**Pg**	**00 27 04.9**	**-0.8**
DSF				S	**Sg**	**00 27 13.7**	**+0.1**
DSF	**Desfina**	**0.60**	**82**	P	**Pg**	**00 27 05.2**	**-0.5**
DSF				S	**Sg**	**00 27 13.7**	**+0.1**
DSF	**Desfina**	**0.60**	**82**	P	**Pg**	**00 27 05.2**	**-0.5**
DSF				S	**Sg**	**00 27 13.8**	**+0.3**
DSF				AML	AML	00 27 16.8	
	comp=E,7014μm,0.2s						
DSF				AML	AML	00 27 18.3	
	comp=N,8786μm,0.1s						
VTN	**Vitineika**	**0.62**	**229**	P	**Pb**	**00 27 06.7**	**-0.3**
VTN	**Vitineika**	**0.62**	**229**	P	**Pb**	**00 27 06.7**	**-0.3**
THAL	**Thalero**	**0.76**	**112**	P	**Pg**	**00 27 08.2**	**-0.5**
THAL	**Thalero**	**0.76**	**112**	P	**Pg**	**00 27 08.6**	**-0.1**
THAL				S	**Sg**	**00 27 18.8**	**+0.3**
THAL	**Thalero**	**0.76**	**112**	P	**Pg**	**00 27 08.6**	**-0.1**
THAL				S	**Sg**	**00 27 18.8**	**+0.3**
THAL				AML	AML	00 27 26.9	
	comp=N,12193μm,0.3s						
THAL				AML	AML	00 27 27.5	
	comp=E,15419μm,0.3s						
AMT	**Artemida-Makis**	**0.80**	**184**	P	**Pg**	**00 27 09.3**	**-0.1**
AMT	**Artemida-Makis**	**0.80**	**184**	P	**Pg**	**00 27 09.4**	**0.0**
AMT				S	**Sg**	**00 27 20.0**	**+0.2**
AMT	**Artemida-Makis**	**0.80**	**184**	P	**Pg**	**00 27 09.4**	**0.0**
AMT				S	**Sg**	**00 27 20.0**	**+0.2**
AMT				AML	AML	00 27 27.5	
	comp=E,5954μm,0.4s						
AMT				AML	AML	00 27 28.5	
	comp=N,8818μm,0.4s						
KFL	**Anninata**	**0.81**	**255**	P	**Pg**	**00 27 09.4**	**-0.3**
KFL	**Anninata**	**0.81**	**255**	P	**Pg**	**00 27 09.8**	**+0.1**
KFL				S	**Sb**	**00 27 21.1**	**0.0**
KFL	**Anninata**	**0.81**	**255**	P	**Pg**	**00 27 09.8**	**+0.1**
KFL				S	**Sb**	**00 27 21.1**	**0.0**
AGG	**Agios Georgios**	**0.82**	**32**	P	**Pg**	**00 27 09.0**	**-0.9**
AGG	**Agios Georgios**	**0.82**	**32**	P	**Pg**	**00 27 09.0**	**-0.9**
AGG				S	**Sg**	**00 27 21.0**	**+0.4**
AGG	**Agios Georgios**	**0.82**	**32**	P	**Pg**	**00 27 08.5**	**-1.4**
AGG				S	**Sg**	**00 27 21.0**	**+0.4**
AGG				AML	AML	00 27 23.8	
	comp=E,16867μm,0.3s						
AGG				AML	AML	00 27 24.3	
	comp=N,9970μm,0.4s						
PROD	**Prodromos**	**0.89**	**94**	P	**Pg**	**00 27 10.7**	**-0.5**
PROD				S	**Sg**	**00 27 22.3**	**-0.4**
PROD	**Prodromos**	**0.89**	**94**	P	**Pg**	**00 27 10.7**	**-0.5**
PROD				S	**Sg**	**00 27 22.3**	**-0.4**
PROD				AML	AML	00 27 28.4	
	comp=N,11696μm,0.3s						
PROD				AML	AML	00 27 29.6	
	comp=E,7050μm,0.3s						
TRIP	**Tripoli**	**0.89**	**154**	P	**Pg**	**00 27 10.8**	**-0.4**
TRIP	**Tripoli**	**0.89**	**154**	P	**Pg**	**00 27 10.8**	**-0.4**
VLS	**Valsamata**	**0.95**	**261**	P	**Pg**	**00 27 11.3**	**-1.0**
VLS	**Valsamata**	**0.95**	**261**	P	**Pg**	**00 27 11.3**	**-1.0**
VLS				S	**Sb**	**00 27 26.1**	**+1.0**
DSL	**Palaion Diasel**	**0.97**	**327**	P	**Pg**	**00 27 10.7**	**-2.0**
DSL				S	**Sb**	**00 27 25.8**	**+0.1**
DSL	**Palaion Diasel**	**0.97**	**327**	P	**Pg**	**00 27 10.7**	**-2.0**
DSL				S	**Sb**	**00 27 25.8**	**+0.1**
DSL				AML	AML	00 27 32.0	
	comp=N,4519μm,0.5s						
DSL				AML	AML	00 27 35.0	
	comp=E,5283μm,0.4s						
LTK	**Loutraki**	**0.99**	**108**	P	**Pg**	**00 27 12.7**	**-0.4**
LTK	**Loutraki**	**0.99**	**108**	P	**Pg**	**00 27 12.9**	**-0.2**
LTK				S	**Sg**	**00 27 24.9**	**-1.0**
LTK	**Loutraki**	**0.99**	**108**	P	**Pg**	**00 27 12.9**	**-0.2**
LTK				S	**Sg**	**00 27 24.9**	**-1.0**
LTK				AML	AML	00 27 30.4	
	comp=E,4438μm,0.4s						
LTK				AML	AML	00 27 34.3	
	comp=N,3594μm,0.3s						
LKD2	**Lefkada island**	**0.99**	**298**	P	**Pg**	**00 27 12.0**	**-1.2**
LKD2	**Lefkada island**	**0.99**	**298**	P	**Pg**	**00 27 12.0**	**-1.2**
LKD2				S	**Sg**	**00 27 26.4**	**+0.3**
LKD2	**Lefkada island**	**0.99**	**298**	P	**Pg**	**00 27 11.9**	**-1.3**
LKD2				S	**Sg**	**00 27 26.4**	**+0.3**
LKD2				AML	AML	00 27 34.5	
	comp=N,2612μm,0.5s						
LKD2				AML	AML	00 27 36.7	
	comp=E,3355μm,0.3s						
LOUT	**Loutraki**	**1.00**	**109**	P	**Pg**	**00 27 13.2**	**-0.2**
LOUT	**Loutraki**	**1.00**	**109**	P	**Pg**	**00 27 13.1**	**-0.3**
LOUT	**Loutraki**	**1.00**	**109**	P	**Pg**	**00 27 13.1**	**-0.3**
ZKS	**Zakynthos**	**1.00**	**232**	P	**Pg**	**00 27 12.4**	**-1.0**
ZKS	**Zakynthos**	**1.00**	**232**	P	**Pg**	**00 27 12.4**	**-1.0**
ZKS	**Zakynthos**	**1.00**	**232**	P	**Pg**	**00 27 12.3**	**-1.1**
LKR	**Lokris**	**1.01**	**71**	P	**Pg**	**00 27 13.0**	**-0.6**
LKR	**Lokris**	**1.01**	**71**	P	**Pg**	**00 27 13.0**	**-0.6**
LKR				S	**Sg**	**00 27 26.3**	**-0.5**
LKR	**Lokris**	**1.01**	**71**	P	**Pg**	**00 27 11.8**	**-1.8**
LKR				S	**Sg**	**00 27 26.3**	**-0.5**
LKR				AML	AML	00 27 32.4	
	comp=E,4686μm,0.2s						
LKR				AML	AML	00 27 33.2	
	comp=N,3890μm,0.2s						
ATAL	**Atalanti**	**1.04**	**69**	P	**Pg**	**00 27 13.1**	**-1.1**
ATAL	**Atalanti**	**1.04**	**69**	P	**Pg**	**00 27 13.1**	**-1.1**
ATAL				S	**Sg**	**00 27 27.5**	**-0.2**
ATAL	**Atalanti**	**1.04**	**69**	P	**Pg**	**00 27 11.8**	**-2.3**
ATAL				S	**Sg**	**00 27 27.5**	**-0.2**
ATAL				AML	AML	00 27 31.9	
	comp=E,1730μm,0.4s						
ATAL				AML	AML	00 27 33.0	
	comp=N,2707μm,0.3s						
VLX	**Vlachokerasia**	**1.07**	**153**	P	**Pg**	**00 27 13.6**	**-1.0**
VLX	**Vlachokerasia**	**1.07**	**153**	P	**Pg**	**00 27 13.4**	**-1.3**
VLX				S	**Sg**	**00 27 28.0**	**-0.5**
VLX	**Vlachokerasia**	**1.07**	**153**	P	**Pg**	**00 27 13.4**	**-1.3**
VLX				S	**Sg**	**00 27 28.0**	**-0.5**
VLX				AML	AML	00 27 37.4	
	comp=E,3450μm,0.4s						
VLX				AML	AML	00 27 39.8	
	comp=N,3052μm,0.8s						
ITM	**Ithomi**	**1.15**	**174**	P	**Pb**	**00 27 15.5**	**-0.6**
ITM	**Ithomi**	**1.15**	**174**	P	**Pb**	**00 27 15.3**	**-0.8**
ITM				S	**Sb**	**00 27 30.7**	**-0.4**
ITM	**Ithomi**	**1.15**	**174**	P	**Pb**	**00 27 15.3**	**-0.8**
ITM				S	**Sb**	**00 27 30.7**	**-0.4**
ITM				AML	AML	00 27 35.8	
	comp=N,1488μm,0.7s						
ITM				AML	AML	00 27 41.9	
	comp=E,1389μm,0.3s						
VIL2	**Platees**	**1.18**	**95**	P	**Pg**	**00 27 17.9**	**+1.2**
VIL2				S	**Sn**	**00 27 33.2**	**+0.4**
VIL2				AML	AML	00 27 38.8	
	comp=N,6414μm,0.8s						
VIL2				AML	AML	00 27 39.1	
	comp=E,4189μm,0.6s						
VILL	**Villia**	**1.22**	**97**	P	**Pn**	**00 27 17.2**	**0.0**
VILL	**Villia**	**1.22**	**97**	P	**Pn**	**00 27 17.2**	**0.0**
VILL				S	**Sb**	**00 27 33.2**	**+0.1**
THL	**Klokotos Trika**	**1.25**	**8**	P	**Pn**	**00 27 17.5**	**-0.1**
THL	**Klokotos Trika**	**1.25**	**8**	P	**Pb**	**00 27 17.8**	**+0.1**
THL				S	**Sn**	**00 27 34.8**	**+0.4**
SMIA	**Simia**	**1.25**	**63**	P	**Pn**	**00 27 17.2**	**-0.4**
SMIA	**Simia**	**1.25**	**63**	P	**Pn**	**00 27 17.2**	**-0.4**
FYTO	**Fytoko, Volos**	**1.41**	**40**	P	**Pn**	**00 27 20.2**	**+0.4**
FYTO	**Fytoko, Volos**	**1.41**	**40**	P	**Pn**	**00 27 20.2**	**+0.4**
DID	**Didima**	**1.42**	**125**	P	**Pn**	**00 27 20.0**	**+0.1**
DID	**Didima**	**1.42**	**125**	P	**Pn**	**00 27 20.2**	**+0.3**
DID				S	**Sg**	**00 27 39.8**	**+0.1**
DID	**Didima**	**1.42**	**125**	P	**Pn**	**00 27 20.2**	**+0.3**
DID				S	**Sg**	**00 27 39.8**	**+0.1**
DID				AML	AML	00 27 44.8	
	comp=N,2652μm,0.4s						
DID				AML	AML	00 27 46.4	
	comp=E,3076μm,0.6s						
PYL	**PYLOS**	**1.43**	**181**	P	**Pn**	**00 27 20.0**	**0.0**
PYL	**PYLOS**	**1.43**	**181**	P	**Pn**	**00 27 19.6**	**-0.4**
PYL	**PYLOS**	**1.43**	**181**	P	**Pn**	**00 27 19.6**	**-0.4**
NEO	**Neokhori**	**1.50**	**49**	P	**Pn**	**00 27 20.8**	**-0.2**
NEO	**Neokhori**	**1.50**	**49**	P	**Pn**	**00 27 21.1**	**+0.1**
NEO	**Neokhori**	**1.50**	**49**	P	**Pn**	**00 27 21.1**	**+0.1**
XOR	**Xorichti**	**1.52**	**46**	P	**Pn**	**00 27 21.0**	**-0.3**
XOR	**Xorichti**	**1.52**	**46**	P	**Pn**	**00 27 21.4**	**+0.1**
XOR	**Xorichti**	**1.52**	**46**	P	**Pn**	**00 27 21.4**	**+0.1**
SKIA	**Skiathos**	**1.56**	**57**	P	**Pn**	**00 27 22.0**	**+0.1**
SKIA	**Skiathos**	**1.56**	**57**	P	**Pn**	**00 27 22.0**	**+0.1**
SKIA	**Skiathos**	**1.56**	**57**	P	**Pn**	**00 27 21.9**	**0.0**
ATH	**Athens Observa**	**1.57**	**102**	P	**Pb**	**00 27 22.9**	**-0.3**
ATH	**Athens Observa**	**1.57**	**102**	P	**Pb**	**00 27 22.7**	**-0.5**
ATH				S	**Sb**	**00 27 43.8**	**+0.7**
ATHU	**Athens Univers**	**1.62**	**102**	P	**Pn**	**00 27 22.9**	**+0.2**
ATHU	**Athens Univers**	**1.62**	**102**	P	**Pn**	**00 27 22.9**	**+0.2**
ATHU				S	**Sn**	**00 27 43.7**	**0.0**
ATHU	**Athens Univers**	**1.62**	**102**	P	**Pn**	**00 27 22.9**	**+0.2**
ATHU				S	**Sn**	**00 27 43.7**	**0.0**
ATHU				AML	AML	00

KNT	Kendrikon	2.96	17	P		Pn	00 27 43.7 +2.5
LIA	Limnos Island	3.08	58	P		Pn	00 27 41.6 -1.1
SRS	Serrai	3.12	26	P		Pn	00 27 44.6 +1.3
SRS	Serrai	3.12	26	P		Pn	00 27 44.6 +1.3
SRS	Serrai	3.12	26	P		Pn	00 27 45.2 +1.9
APE	Apeiranthos	3.23	112	⇓	iP	Pn	00 27 46.1 +1.2
APE	Apeiranthos	3.23	112		S	Sn	00 28 23.4 0.0
APE	Apeiranthos	3.23	112		P	Pn	00 27 44.0 -0.9
APE	Apeiranthos	3.23	112		P	Pn	00 27 44.0 -0.9
SIGR	SIGRI	3.31	73		P	Pn	00 27 45.4 -0.4
SIGR	SIGRI	3.31	73		P	Pn	00 27 45.4 -0.4
TIR	Tirane	3.36	335	⇑	iP	Pn	00 27 49.9 +3.4
TIR	Tirane	3.36	335		P	Pn	00 27 46.4 -0.1
TIR	Tirane	3.36	335		P	Pn	00 27 46.4 -0.1
IMMV	Iera Moni Meta	3.36	148		P	Pn	00 27 47.5 +0.9
IMMV	Iera Moni Meta	3.36	148		P	Pn	00 27 47.5 +0.9
CHOS	Chios island	3.36	88		P	Pn	00 27 47.7 +1.0
CHOS	Chios island	3.36	88		P	Pn	00 27 47.7 +1.0
KAVA	Kavala	3.40	38		P	Pn	00 27 45.8 -1.4
KAVA	Kavala	3.40	38		P	Pn	00 27 45.8 -1.4
NVR	Nevrokopi	3.42	27		P	Pn	00 27 48.6 +1.1
NVR	Nevrokopi	3.42	27		P	Pn	00 27 48.5 +1.1
VAM	Vamos	3.50	146		P	Pn	00 27 48.8 +0.2
SMTH	Samothraki Isl	3.61	52		P	Pn	00 27 48.3 -1.7
SMTH	Samothraki Isl	3.61	52		P	Pn	00 27 48.3 -1.7
PRK	Paraskevi	3.63	74		P	Pn	00 27 50.3 0.0
PRK	Paraskevi	3.63	74		P	Pn	00 27 50.3 0.0
IDI	Anoyia	3.93	140	Pn		Pn	00 27 56.0 +1.5
	comp=N,1.5nm,0.3s,baz=345,slow=9.0,SNR=16						
IDI				Sn		Sn	00 28 43.1 +2.4
	comp=N,4.2nm,0.3s,baz=103,slow=23,SNR=4.3						
IDI	Anoyia	3.93	140	P		Pn	00 27 54.7 +0.2
IDI	Anoyia	3.93	140	P		Pn	00 27 54.7 +0.2
GVD	Gavdhos	3.95	151	P		Pn	00 27 56.8 +2.2
GVD	Gavdhos	3.95	151	P		Pn	00 27 56.8 +2.2
TIP	Timpagrande	4.01	284	P		Pn	00 27 56.9 +1.2
TIP	Timpagrande	4.01	284	P		Pn	00 27 56.9 +1.2
SMG	Samos	4.04	97	P		Pn	00 27 57.0 +1.0
SMG	Samos	4.04	97	P		Pn	00 27 57.0 +1.0
SIVA	Sivas	4.11	143	P		Pn	00 27 58.9 +2.1
SIVA	Sivas	4.11	143	P		Pn	00 27 58.9 +2.1
TAR1	Taranto	4.11	304	*e*	Pn	Pn	00 27 58.1 +1.2
ALN	Alexandroupoli	4.18	51	P		Pn	00 27 57.1 -0.7
ALN	Alexandroupoli	4.18	51	P		Pn	00 27 57.1 -0.7
DRME	Dracevica, Mon	4.33	334	*e*	Pn	Pn	00 28 01.9 +1.9
LAST	Lasithi	4.34	136	P		Pn	00 27 59.5 -0.6
LAST	Lasithi	4.34	136	P		Pn	00 27 59.5 -0.6
NPS	Neapolis	4.34	134	P		Pn	00 28 02.2 +2.1
NPS	Neapolis	4.34	134	P		Pn	00 28 02.2 +2.1
NOCI	Noci	4.39	305	P		Pn	00 28 00.8 0.0
NOCI	Noci	4.39	305	P		Pn	00 28 00.8 0.0
PDG	Podgorica	4.53	336	⇓	iP	Pn	00 28 05.2 +2.6
PDG	Podgorica	4.53	336		S	Sn	00 29 00.3 +5.0
PDG	Podgorica	4.53	336	*e*	Pn	Pn	00 28 04.8 +2.2
PDG	Podgorica	4.53	336	⇓	iP	Pn	00 28 05.2 +2.6
SG1	Sgolgore (BA)	4.67	304	*i*	Pn	Pn	00 28 05.8 +1.2
SG1					Sn	Sn	00 28 58.5 -0.4
BAI	Bari	4.69	308	*i*	Pn	Pn	00 28 05.5 +0.7
HCY	Herceg Novi	4.82	330	*e*	Pn	Pn	00 28 06.2 -0.4
CUC	Castrocucco	4.92	292		P	Pn	00 28 11.9 +3.7
CDT	Castel del Mon	5.06	305	*e*	Pn	Pn	00 28 10.8 +0.9
TREB	Trebinje	5.10	330	*e*	Pn	Pn	00 28 10.3 -0.2
BRY	Bratogost	5.19	333	*e*	Pn	Pn	00 28 12.5 +0.6
UPM	Unac-Piva	5.34	337	*e*	Pn	Pn	00 28 16.1 +2.2
IVAS	Ivanjica	5.39	347	*e*	Pn	Pn	00 28 18.7 +4.2
ZAGS	Zajecar	5.49	3	*e*	Pn	Pn	00 28 18.1 +2.2
BOLS	Boljevac	5.50	1	*e*	Pn	Pn	00 28 18.2 +2.2
BBLS	Lazići	5.82	343	*e*	Pn	Pn	00 28 21.5 +1.1
VAE	Valguarnera	5.88	264		Sn	Sn	00 29 33.5 +4.6
	comp=N,0.7nm,0.3s,baz=268,slow=8.0,SNR=2.6						
DIVS	Divibare	5.92	347	*e*	Pn	Pn	00 28 23.2 +1.3
TEKS	Tekeris	6.44	346	*e*	Pn	Pn	00 28 28.9 -0.1
GZR	Gura Zlata	7.10	6	⇑	iP	Pn	00 28 40.6 +2.6
GZR	Gura Zlata	7.10	6	⇑	iP	Pn	00 28 40.6 +2.6
VOIR		7.51	18	⇑	iP	Pn	00 28 46.0 +2.3
VOIR		7.51	18	⇑	iP	Pn	00 28 46.0 +2.3
UDBI	Udbina	7.67	326	*e*	Pn	Pn	00 28 45.3 -0.5
UDBI					Sn	Sn	00 30 12.7 0.0
UDBI	Udbina	7.67	326	*e*	Pn	Pn	00 28 45.3 -0.5
UDBI					Sn	Sn	00 30 12.6 0.0
MLR	Muntele Rosu	7.80	22		Pn	Pn	00 28 50.1 +2.4
	comp=N,0.1nm,0.3s,baz=326,slow=7.2,SNR=12						
MLR	Muntele Rosu	7.80	22	⇓	iP	Pn	00 28 49.8 +2.1
MLR	Muntele Rosu	7.80	22	⇓	iP	Pn	00 28 49.8 +2.1
NVLJ	Novalja	8.10	322	*e*	Pn	Pn	00 28 52.5 +0.8
NVLJ					Sn	Sn	00 30 21.3 -2.0
NVLJ	Novalja	8.10	322	*e*	Pn	Pn	00 28 52.5 +0.8
PLOR	Plostina	8.34	24	⇓	iP	Pn	00 28 58.8 +3.7
VRI	Vrincioaia	8.38	24	⇓	iP	Pn	00 28 59.0 +3.4
BOJS	Bojanci	8.66	328	*i*	Pn	Pn	00 28 59.7 +0.3
BOJS				*i*	Sn	Sn	00 30 35.4 -1.7
BOJS	Bojanci	8.66	328	*i*	Pn	Pn	00 28 59.7 +0.3
CRES	Cresnjev	8.84	330	*i*	Pn	Pn	00 29 01.8 -0.1
CRES				*i*	Sn	Sn	00 30 39.6 -1.9
CRES	Cresnjev	8.84	330	*i*	Pn	Pn	00 29 01.8 -0.1
VISS	Visnje	9.07	328	*i*	Pn	Pn	00 29 05.0 0.0
VISS				*i*	Sn	Sn	00 30 47.0 -0.2
VISS	Visnje	9.07	328	*i*	Pn	Pn	00 29 05.1 0.0
VISS				*i*	Sn	Sn	00 30 47.0 -0.2
BRTR	Keskin Array B	9.34	78		Pn	Pn	00 29 11.6 +2.8
	comp=N,0.3nm,0.3s,baz=256,slow=11,SNR=9.9						
PSZ	Piszkesteto	9.69	352	⇑	iP	Pn	00 29 17.1 +3.6
SOKA	Soboth	9.71	331	*e*	Pn	Pn	00 29 14.1 +0.2
	comp=N,0.9nm,0.3s						
SOKA				*e*	Sn	Sn	00 31 00.6 -2.4
	comp=N,1.1nm,0.6s						
SOKA	Soboth	9.71	331		Pn	Pn	00 29 14.1 +0.2
	comp=N,0.9nm,0.3s						
OBKA	Obir	9.76	329	*e*	Pn	Pn	00 29 16.8 +2.2
	comp=N,0.8nm,0.2s						
OBKA					Sn	Sn	00 31 01.8 -2.4
	comp=N,4.1nm,0.6s						
OBKA	Obir	9.76	329		Pn	Pn	00 29 16.8 +2.2
	comp=N,0.8nm,0.2s						
KECS	Kecovo	10.20	355	*e*	PN	Pn	00 29 18.6 -1.8
VYHS	Vyhne	10.38	349	*e*	Pn	Pn	00 29 23.8 +0.8
VYHS	Vyhne	10.38	349	*e*	PN	Pn	00 29 23.8 +0.8
ABTA	Abfaltersbach	10.83	324	*e*	Pn	Pn	00 29 29.4 +0.2
	comp=N,1.2nm,0.3s						
ABTA					Sn	Sn	00 31 27.8 -2.7
	comp=N,5.0nm,0.7s						
ABTA	Abfaltersbach	10.83	324		Pn	Pn	00 29 29.4 +0.2
	comp=N,1.2nm,0.3s						
MOA	Molln	10.98	332	*e*	Sn	Sn	00 31 34.1 +0.1
	comp=N,1.0nm,0.3s						
MOA	Molln	10.98	332		Sn	Sn	00 31 34.1 +0.1
	comp=N,1.0nm,0.3s						
VRAC	Vranov	11.60	343		LR	LR	00 34 27.5
	comp=N,29nm,18.8s,baz=186,slow=39						
MOTA	Moosalm	11.93	322	*e*	Pn	Pn	00 29 45.2 +0.9
	comp=N,1.2nm,0.4s						
MOTA	Moosalm	11.93	322		Pn	Pn	00 29 45.2 +0.9
	comp=N,1.2nm,0.4s						
GERES	GERESS Array B	12.03	334		Pn	Pn	00 29 45.5 0.0
	comp=N,0.1nm,0.3s,baz=150,slow=14,SNR=3.5						
GERES					Sn	Sn	00 31 59.1 -0.5
	comp=N,0.1nm,0.3s,baz=150,slow=24,SNR=5.8						
GERES					LR	LR	00 35 33.2
	comp=N,50nm,18.3s,baz=106,slow=43						
RETA	Reutte	12.20	322		Sn	Sn	00 32 01.3 -2.5
	comp=N,2.5nm,0.8s						
HFS	Hagfors	22.42	349		P	P	00 31 52.1 -0.6
	comp=N,0.8nm,0.4s,baz=162,slow=10,SNR=10						
HFS					LR	LR	00 41 01.8
	comp=N,31nm,19.5s,baz=180,slow=38						
FINES	FINESS Array B	23.30	5		P	P	00 32 00.4 -1.3
	comp=N,0.7nm,0.4s,baz=182,slow=9.3,SNR=5.8						
NB2	NORSAR Subarra	23.68	347		P	P	00 32 05.0 -0.6
	comp=Z,0.9nm,0.6s,baz=160,slow=11						
NB2	NORSAR Subarra	23.68	347		P	P	00 32 05.0 -0.6
	comp=Z,0.9nm,0.6s,SNR=4.8						
NOA	NORSAR Array B	23.68	347		P	P	00 32 04.6 -1.0
	comp=Z,0.3nm,0.5s,baz=161,slow=9.8,SNR=5.2						
NOA					LR	LR	00 41 47.7
	comp=Z,8.8nm,18.7s,baz=50,slow=38						
EKA	Eskdalemuir Ar	23.89	323		P	P	00 32 07.7 +0.1
	comp=Z,0.6nm,0.5s,baz=123,slow=9.6,SNR=5.5						
MKAR	Makanchi Array	44.38	59		P	P	00 35 05.0 +0.4
	comp=Z,3.3nm,0.5s,baz=273,slow=7.7,SNR=53						
ZALV	Zalesovo Beam	44.85	48		P	P	00 35 08.3 +0.1
	comp=Z,2.2nm,0.4s,baz=271,slow=8.7,SNR=12						

*IDC **29** 00:45:53.1±1.6,24.7°18S×179.4°84W,h470km±16km,mb3.4/9, mb1 3.7/11,mb1mx3.5/21,mbtmp4.3/11, Error ellipse: s-maj=19.4km s-min=18.3km az=7.0*
*ISCJB **29** 00:45:54.7±0.8,24.3°33S±0.0°09×179.9°9W±0.1°,h500km, mb3.8/9, Error ellipse: s-maj=18.1km s-min=10.7km az=155.3*

ISC 29 00:45:55.4±0.7,24°38S±0.0°8×179°8W±0.1°,h500km,n33, σ1°70/36,mb3.8/9,8C-6D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	5.12	162	P		P	P	00 47 20.6	-2.7
	27nm,0.3s,baz=83,slow=19,SNR=2.9								
RAO				S			S	00 48 34.6	-0.7
	23nm,0.3s,baz=60,slow=20,SNR=3.1								
DZM	Mont Dzumac	12.90	277	P		P	P	00 48 42.7	-0.9
	0.6nm,0.3s,baz=101,slow=12,SNR=5.9								
URZ	Urewera	14.09	190	P		P	P	00 48 55.3	-0.6
	1.1nm,0.3s,baz=49,slow=20,SNR=5.2								
URZ				S			S	00 51 25.9	+1.2
	0.9nm,0.3s,baz=23,slow=20,SNR=7.3								
STKA	Stephens Creek	34.76	249	P		P	P	00 52 03.1	-0.2
	3.7nm,0.5s,baz=92,slow=12,SNR=14								
ASAR	Alice Springs	42.18	261	P		P	P	00 53 03.0	-0.9
	3.2nm,0.5s,baz=95,slow=7.2,SNR=44								
ASAR				ScP			ScP	00 57 51.8	+2.2
	0.5nm,0.6s,baz=94,slow=4.0,SNR=4.4								
WRA	Warramunga Arr	42.60	267	P		P	P	00 53 06.0	-1.3
	8.8nm,0.5s,baz=97,slow=8.4,SNR=278								
WRA				ScP			ScP	00 57 54.0	+2.7
	1.0nm,0.8s,baz=94,slow=4.1,SNR=5.6								
VNDA	Vanda	53.92	185	P		P	P	00 54 33.1	+2.2
	0.5nm,0.7s,baz=17,slow=8.9,SNR=3.6								
MJAR	Matsushiro Arr	72.42	326	P		P	P	00 56 29.7	-0.9
	1.2nm,0.5s,baz=154,slow=6.6,SNR=4.2								
MAW	Mawson	77.38	200	P		P	P	00 56 59.1	+1.2
	2.5nm,0.6s,baz=121,slow=3.6,SNR=6.7								
PETK	Petropavlovsk-	79.62	346	P		P	P	00 57 10.2	+0.2
	1.4nm,0.5s,baz=156,slow=4.6,SNR=3.5								
CMAR	Chiang Mai Arr	89.90	290	P		P	P	00 58 02.3	+1.1
	0.5nm,0.4s,baz=140,slow=3.7,SNR=6.0								
TXAR	Lajitas Array	90.49	58	P		P	P	00 58 04.1	+0.3
	0.3nm,0.6s,baz=211,slow=5.5,SNR=5.8								
MKAR	Makanchi Array	112.64	312	PKiKP			PKiKP	01 03 33.3	-1.3
	0.2nm,0.4s,baz=109,slow=2.7,SNR=4.6								
FINES	FINESS Array B	138.97	341	PKhKP		PKPpre		01 04 14.7	
	1.3nm,0.8s,baz=48,slow=5.7,SNR=4.7								
FINES				PKP			PKPdf	01 04 24.9	+0.8
	1.1nm,0.6s,baz=112,slow=2.9,SNR=6.6								
NOA	NORSAR Array B	142.59	351	PKhKP		PKPpre		01 04 26.0	
	0.9nm,0.8s,baz=20,slow=2.7,SNR=3.6								
AKASG	Malin Array Be	145.50	327	PKPbc			PKPdf	01 04 36.3	+0.4
	1.7nm,0.4s,baz=47,slow=4.6,SNR=8.7								
SORM	Soroca	147.52	324	⇓	iP		PKPdf	01 04 42.2	+2.8
BRTR	Keskin Array B	148.04	307	PKPbc			PKPdf	01 04 44.0	+3.2
	1.6nm,0.6s,baz=137,slow=4.2,SNR=13								
CFR	Carcaliu	149.34	320	⇑	iP		PKPbc	01 04 47.3	-0.1
TESR	Tescani	149.42	323	⇑	iP		PKPbc	01 04 47.4	-0.2
BURAR	Bucovina Array	149.49	326	⇓	iP		PKPbc	01 04 48.6	+0.7
TLB	Topalu	149.72	319	⇑	iP		PKPbc	01 04 48.5	+0.2
PLOR	Plostina	149.82	322	⇑	iP		PKPdf	01 04 37.1	-6.1
MLR	Muntele Rosu	150.43	322	⇑	iP		PKPbc	01 04 49.7	-0.5
DOPR	Dopca	150.45	323	⇑	iP		PKPbc	01 04 50.5	+0.4
VOIR		150.96	323	⇓	iP		PKPbc	01 04 51.3	0.0
ARR	Arges	151.24	323	⇑	iP		PKPbc	01 04 52.8	+0.8
DRGR		151.31	327	⇓	iP		PKPbc	01 04 51.7	-0.4
CLL	Collm	151.38	343	⇓	iP		PKPbc	01 04 51.9	-0.1
	comp=Z,6.0nm,0.8s								
CLL				*i*				01 05 02.0	
	comp=Z,3.0nm,0.8s								
BRG	Berggiesshubel	151.51	342	*i*	P		PKPbc	01 04 52.3	0.0
	comp=Z,4.9nm,0.5s								
PSZ	Piszkesteto	151.81	331	⇓	iP		PKPbc	01 04 53.3	+0.1
BZS	Buzias	152.67	326	⇑	iP		PKPbc	01 04 54.7	-0.3
GERES	GERESS Array B	153.38	340	PKPbc			PKPbc	01 04 55.4	-1.2
	comp=Z,0.1nm,0.3s,baz=320,slow=2.9,SNR=4.4								

*SOME **29** 01:06:00.1,43.7°17N×77.7°67E,h15km*

KRNET 29 01:06:00.3±0.1,43.12N×77.70E,h21km,mb1.7,20C, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ANVS	Anan'yevo	0.34	184	⇑	iP		Pb	01 06 07.5	-0.2
	baz=185								
ANVS				⇑	*i*S		Sb	01 06 13.0	+0.2
	baz=185								
KOTS	Kotyrbulak	0.45	285	*e*	P		Pb	01 06 08.9	-0.6
	9.1nm,0.1s								
KOTS				*e*	S		Sb	01 06 14.8	-0.9
	14nm,0.2s								
MDOK	Medeo	0.48	275	*e*	P		Pb	01 06 09.0	-1.1
	1.5nm,0.2s								
MDOK				*e*	S		Sb	01 06 15.4	-1.4
	11nm,0.2s								
KURS	Kuram	0.50	43	*e*	P		Pb	01 06 08.7	-1.7
	0.6nm,0.1s								
KURS				*e*	S		Sb	01 06 14.9	-2.4
	12nm,0.3s								
SATY	Saty	0.52	97	*e*	P		Pb	01 06 10.2	-0.7
	34nm,0.1s								
SATY				*e*	S		Sb	01 06 17.4	-0.6
	139nm,0.1s								
ZHN	Zhinishke	0.54	85	*e*	P		Pb	01 06 10.1	-1.0
	4.7nm,0.1s								
ZHN				*e*	S		Sb	01 06 17.4	-1.2
	22nm,0.2s								
TNSS	Tian-Shan	0.56	261	*e*	P		Pb	01 06 10.8	-0.9
	1.3nm,0.1s								
TNSS				*e*	S		Sb	01 06 18.8	-0.7
	11nm,0.1s								
KPKS	Kokpek	0.79	64	*e*	P		Pb	01 06 14.9	-0.6
	4.9nm,0.1s								
KPKS				*e*	S		Sb	01 06 25.1	-0.8
	11nm,0.2s								
IZV	Izvestkoviy	0.80	264	*e*	P		Pb	01 06 15.4	-0.2
	3.1nm,0.2s								
IZV				*e*	S		Sb	01 06 26.5	+0.4
	12nm,0.2s								
CHKK	Chushkaly	0.90	325	*e*	P		Pb	01 06 15.6	-1.5
	4.9nm,0.2s								
CHKK				*e*	S		Sb	01 06 26.7	-2.0
	26nm,0.3s								
UZB	Uzynbulak	0.97	88	*e*	P		Pb	01 06 17.5	-0.9
	0.6nm,0.0s								
UZB				*e*	S		Sb	01 06 30.0	-0.8
	9.7nm,0.1s								
KDJ	Kajisay	1.06	201	⇑	iP		Pn	01 06 20.5	+0.3
	baz=201								
KDJ				⇑	*i*S		Sn	01 06 35.1	+0.7
	baz=201								
MNBS	Baschi	1.08	28	*e*	P		Pn	01 06 18.7	-1.7
	3.9nm,0.2s								
MNBS				*e*	S		Sb	01 06 32.1	-2.0
	15nm,0.2s								
ARXS	Arharly	1.09	5	*e*	P		Pn	01 06 18.9	-1.5
	9.8nm,0.1s								
ARXS				*e*	S		Sb	01 06 33.1	-1.2
	13nm,0.1s								
KST	Kastek	1.28	267	*e*	P		Pb	01 06 24.5	+0.8
	1.6nm,0.2s								
KST				*e*	S		Sb	01 06 41.5	+1.7
	1.3nm,0.2s								
PDGK	Podgornoye	1.32	80	⇑	iP		Pb	01 06 24.8	+0.3
	baz=80								
PDGK				⇑	*e*S		Sb	01 06 42.4	+1.4
	baz=80								
ULHL	Ulahol	1.39	231	⇑	iP		Pb	01 06 25.5	-0.2
	baz=231								
ULHL				⇑	*i*S		Sb	01 06 44.0	+1.0
	baz=231								
ULHL	Ulahol	1.39	231	⇑	iP		Pb	01 06 25.5	-0.2
	baz=234								
ULHL				⇑	*i*S		Sb	01 06 44.0	+1.0
	baz=234								
DGS	Degeres	1.42	275	*e*	P		Pn	01 06 25.1	+0.1
	1.4nm,0.3s								
DGS				*e*	S		Sn	01 06 43.1	+0.1
	7.3nm,0.4s								
BOOM	Boomskoye usch	1.44	245	⇑	iP		Pb	01 06 27.4	+0.8
	baz=245								
BOOM				⇑	*i*S		Sb	01 06 47.0	+2.5
	baz=245								
TKM2	Tokmak 2	1.56	263	⇑	iP		Pb	01 06 28.2	-0.3
	baz=263								
TKM2				⇑	*i*S		Sb	01 06 49.3	+1.4
	baz=265								
KTMS	Ketmen	1.96	80	*e*	P		Pb	01 06 36.0	+0.6
	1.3nm,0.1s								
KTMS				*e*	S		Sb	01 07 01.8	+2.4
	4.1nm,0.2s								
CHMS	Chumysh	2.17	268	⇑	iP		Pb	01 06 37.2	-1.6
	baz=268								
CHMS				⇑	*i*S		Sb	01 07 05.1	-0.1
	baz=268								
CHMS	Chumysh	2.17	268	⇑	iP		Pb	01 06 37.2	-1.6
	baz=269								
CHMS				⇑	*i*S		Sb	01 07 05.1	-0.1
	baz=269								
KAPS	Kapalarasan	2.47	28	*e*	P		Pb	01 06 43.6	-0.3
	0.3nm,0.1s								
KAPS				*e*	S		Sb	01 07 14.7	+0.8
	0.9nm,0.1s								

*IDC **29** 01:06:24.0±0.8,11.4°45S×165.7°44E,h0km,mb4.2/12, mb1 4.4/13,mb1mx4.1/47,mbtmp4.3/13,ML4.4/1,MS3.7/13, Ms1 3.7/13,ms1mx3.4/28,Error ellipse: s-maj=29.5km s-min=18.5km az=115.0*
*ISCJB **29** 01:06:26.2±0.6,11.5°51S±0.0°08×165.7°34E±0.0°08,h24km, mb4.4/15,MS3.7/11,Error ellipse: s-maj=12.9km s-min=10.1km az=142.2*
*NEIC **29** 01:06:29.4±1.2,11.4°47S×165.7°39E,h36km±10km,mb4.6/3, Error ellipse: s-maj=10.2km s-min=7.9km az=70.0*

ISC 29 01:06:27.8±0.6,11°56S±0.0°07×165°35E±0.0°10,h24km,n47, σ1°12/34,mb4.3/15,MS3.6/11,2C,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HNR	Honiara	5.71	291	*e*	P		Pn	01 07 52.0	+0.7
HNR				*e*	S		Sn	01 08 53.0	-3.1
HNR	Honiara	5.71	291	*e*	Pn		Pn	01 07 52.0	+0.7
	178nm,0.6s								
HNR				*e*	Sn		Sn	01 08 55.6	-0.5
DZM	Mont Dzumac	10.51	174		Pn		Pn	01 08 58.7	+1.6
	2.7nm,0.3s,baz=57,slow=17,SNR=55								
DZM					Sn		Sn	01 10 51.6	-2.6
	0.1nm,0.3s,baz=60,slow=20,SNR=3.7								
DZM					LR		LR	01 12 26.3	
	comp=Z,316nm,18.5s,baz=18,slow=34								
DZM	Mont Dzumac	10.51	174	*e*	Pn		Pn	01 08 57.5	+0.3
	12nm,0.2s								
DZM				*e*	Sn		Sn	01 10 52.2	-2.1
	1.5nm,0.2s								
DZM				*e*	LR		LR	01 11 18.6	
	487nm,25.6s								
PMG	Port Moresby	18.01	275		LR		LR	01 16 53.8	
	comp=Z,224nm,18.7s,baz=99,slow=35								
CTA	Charters Tower	20.22	243		P		Pn	01 11 03.3	0.0
	7.1nm,0.9s,baz=51,slow=14,SNR=3.1								
ARMA	Armidale	22.68	212	*e*	P		P	01 11 29.4	+1.5
	34nm,1.4s								
STKA	Stephens Creek	29.80	224		P		P	01 12 34.0	+1.0
	3.7nm,0.8s,baz=46,slow=11,SNR=4.8								
STKA					LR		LR	01 23 35.6	
	comp=Z,206nm,19.8s,baz=27,slow=34								
H11S2	WAKE ISLAND Hy	29.89	3	T			T	01 43 04.1	
	baz=182,slow=76,SNR=34								
H11S3	WAKE ISLAND Hy	29.89	3	T			T	01 43 06.0	
	baz=182,slow=76,SNR=17								
H11S1	WAKE ISLAND Hy	29.90	3	T			T	01 42 59.4	
	baz=182,slow=76,SNR=20								
WRAB	Tennant Creek	30.93	250	*e*	P		P	01 12 43.1	0.0
	30nm,1.4s								
WRA	Warramunga Arr	30.94	250		P		P	01 12 43.6	+0.3
	11nm,0.7s,baz=80,slow=8.9,SNR=15								
WRA					LR		LR	01 23 18.0	
	comp=Z,71nm,19.6s,baz=70,slow=33								
H11N1	WAKE ISLAND Hy	31.11	3	T			T	01 44 23.9	
	baz=182,slow=76,SNR=21								
H11N3	WAKE ISLAND Hy	31.11	3	T			T	01 44 30.0	
	baz=182,slow=76,SNR=8.3								
H11N2	WAKE ISLAND Hy	31.13	3	T			T	01 44 32.1	
	baz=182,slow=76,SNR=7.8								
GUMO	Guam	32.20	320		LR		LR	01 23 59.4	
	comp=Z,74nm,20.2s,baz=118,sl

CTBH	**Cotabato--PC H**	**3.60**	**332**	⇑*i*P		**Pn**	**01 09 14.4**	**+0.2**
KMSI	**Cibinong**	**3.93**	**210**	P		**Pn**	**01 09 19.8**	**+1.3**
KMSI				S		**Sn**	**01 10 05.9**	**+2.1**
GTOI	**Gorontalo**	**4.45**	**221**	P		**Pn**	**01 09 26.5**	**+1.0**
GTOI				S		**Sn**	**01 10 14.8**	**-1.4**
LBMI	**Labuha**	**4.88**	**161**	P		**Pn**	**01 09 31.5**	**+0.2**
LBMI				S		**Sn**	**01 10 27.5**	**+0.8**
MRSI	**Marisa**	**5.31**	**229**	P		**Pn**	**01 09 38.8**	**+1.6**
MRSI				S		**Sn**	**01 10 36.2**	**-1.0**
LUWI	**Luwuk**	**5.93**	**212**	P		**Pn**	**01 09 49.6**	**+4.0**
LUWI				S		**Sn**	**01 10 55.6**	**+3.4**
SANI	**Sanana**	**6.02**	**179**	P		**Pn**	**01 09 44.3**	**-2.5**
SANI				S		**Sn**	**01 10 47.7**	**-6.7**
JAY	**Jayapura**	**16.12**	**113**	P		**P**	**01 12 04.3**	**+2.3**
	0.1nm,0.3s,baz=270,slow=20,SNR=3.4							
FITZ	**Fitzroy Crossi**	**21.98**	**181**	P		**P**	**01 13 05.2**	**-0.3**
	9.2nm,0.5s,baz=3.2,slow=8.8,SNR=35							
WRA	**Warramunga Arr**	**25.20**	**161**	P		**P**	**01 13 36.3**	**+0.4**
	5.3nm,0.5s,baz=340,slow=10,SNR=7.9							
ASAR	**Alice Springs**	**28.59**	**165**	P		**P**	**01 14 07.0**	**+0.6**
	1.3nm,0.5s,baz=344,slow=7.2,SNR=15							
ASAR				pP		**pP**	**01 14 30.6**	**+0.6**
	0.9nm,0.4s,baz=344,slow=10,SNR=2.8							
STKA	**Stephens Creek**	**38.68**	**158**	P		**P**	**01 15 34.3**	**+0.7**
	2.3nm,0.3s,baz=349,slow=6.8,SNR=11							
USRK	**Ussuriysk Ar.**	**40.38**	**7**	P		**P**	**01 15 48.3**	**+0.8**
	1.8nm,0.6s,baz=194,slow=8.0,SNR=5.6							
KLR	**Kul'dur**	**45.33**	**5**	P		**P**	**01 16 27.6**	**+0.3**
	1.3nm,0.4s,baz=185,slow=9.7,SNR=7.1							
MKAR	**Makanchi Array**	**56.87**	**326**	P		**P**	**01 17 52.8**	**-1.1**
	0.3nm,0.5s,baz=124,slow=7.6,SNR=5.0							
MKAR				sP		**sP**	**01 18 29.2**	**-2.5**
	1.1nm,0.5s,baz=119,slow=7.5,SNR=4.8							
MKAR				ScP		**ScP**	**01 22 37.0**	**-1.2**
	0.4nm,0.6s,baz=130,slow=5.8,SNR=3.8							
KURBB	**Kurchatov Arra**	**61.08**	**328**	P		**P**	**01 18 22.9**	**+0.2**
	0.3nm,0.6s,baz=125,slow=6.7,SNR=4.4							
KURBB				pP		**pP**	**01 18 48.1**	**-0.9**
	0.4nm,0.6s,baz=129,slow=6.7,SNR=3.1							
KURBB				sP		**sP**	**01 18 58.0**	**-2.8**
	1.3nm,0.6s,baz=126,slow=6.1,SNR=7.1							
BVAR	**Borovoye Array**	**66.65**	**327**	sP		sP	01 19 37.5	-0.1
	0.6nm,0.5s,baz=127,slow=9.4,SNR=3.2							
VNDA	**Vanda**	**83.81**	**173**	P		**P**	**01 20 37.6**	**+0.5**
	0.5nm,0.4s,baz=332,slow=6.5,SNR=4.4							
FINES	**FINESS Array B**	**91.21**	**332**	P		**P**	**01 21 11.7**	**-1.3**
	0.4nm,0.5s,baz=104,slow=4.6,SNR=3.0							

*DDA **29** 01:09:24.6,37.°99N×25.°64E,h15km,MI3.7*
*ATH **29** 01:09:26.9,37.°91N×25.°88E,h34km±2km,ML3.5/8,Error ellipse: s-maj=2.6km s-min=0.9km az=99.0*
*CSEM **29** 01:09:27.6±0.1,37.°90N×25.°77E,h10km,ML3.6,Error ellipse: s-maj=2.8km s-min=2.6km az=140.0*
*ISK **29** 01:09:27.1,37.°95N×25.°66E,h14km,ML3.4*
*THE **29** 01:09:27.5,37.°91N×25.°90E,h10km±1km,ML3.6/5,Error ellipse: s-maj=1.2km s-min=0.4km az=90.0*

ISC 29 01:09:26.5±1.0,**37.°92N**±0.°02×**25.°76E**±0.°01,**h8**km±9km, **n290**,σ1°**29**/337,**10C-4D**,**Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOS	**Chios island**	**0.52**	**26**	*e*PG		**Pb**		**01 09 37.8**	**-0.3**
CHOS	**Chios island**	**0.52**	**26**	P		**Pg**		**01 09 37.1**	**+0.4**
CHOS				S		**Sg**		**01 09 43.9**	**+0.3**
CHOS	**Chios island**	**0.52**	**26**	P		**Pg**		**01 09 37.1**	**+0.4**
CHOS	**Chios island**	**0.52**	**26**	*e*Pg		**Pb**		**01 09 37.8**	**-0.3**
CHOS				S		**Sg**		**01 09 43.9**	**+0.3**
CHOS	**Chios island**	**0.52**	**26**	P		**Pg**		**01 09 36.8**	**0.0**
CHOS				S		**Sb**		**01 09 45.5**	**-0.3**
CHOS					AML	AML		01 09 47.1	
	comp=E,13725μm,0.2s								
CHOS					AML	AML		01 09 48.7	
	comp=N,6636μm,0.3s								
URLA	**Izmir**	**0.79**	**56**	*i* P		**Pg**		**01 09 41.3**	**-0.5**
URLA				*i* S		**Sg**		**01 09 52.9**	**+0.7**
URLA	**Izmir**	**0.79**	**56**	P		**Pg**		**01 09 41.3**	**-0.5**
URLA				S		**Sg**		**01 09 52.9**	**+0.7**
APE	**Apeiranthos**	**0.86**	**192**	*e*PG		**Pb**		**01 09 44.4**	**+0.6**
APE				*e*SG		**Sn**		**01 09 57.1**	**-0.7**
APE	**Apeiranthos**	**0.86**	**192**	P		**Pb**		**01 09 43.9**	**+0.1**
APE				S		**Sb**		**01 09 56.8**	**+1.2**
APE	**Apeiranthos**	**0.86**	**192**	P		**Pb**		**01 09 43.9**	**+0.1**
APE	**Apeiranthos**	**0.86**	**192**	*e*Pg		**Pb**		**01 09 44.4**	**+0.6**
APE				*e*Sg		**Sn**		**01 09 57.1**	**-0.7**
APE	**Apeiranthos**	**0.86**	**192**	P		**Pb**		**01 09 44.2**	**+0.3**
APE				S		**Sn**		**01 09 57.3**	**-0.6**
APE					AML	AML		01 09 59.5	
	comp=N,4740μm,0.3s								
APE					AML	AML		01 09 59.7	
	comp=E,4217μm,0.5s								
SMG	**Samos**	**0.88**	**103**	P		**Pg**		**01 09 42.7**	**-0.7**
SMG				S		**Sg**		**01 09 53.5**	**-1.3**
SMG	**Samos**	**0.88**	**103**	P		**Pg**		**01 09 42.7**	**-0.7**
SMG				S		**Sg**		**01 09 53.5**	**-1.3**
SMG	**Samos**	**0.88**	**103**	P		**Pg**		**01 09 43.5**	**+0.1**
SMG				S		**Sg**		**01 09 54.9**	**+0.1**
SMG					AML	AML		01 09 55.3	
	comp=N,7311μm,0.3s								
SMG					AML	AML		01 09 55.6	
	comp=E,13046μm,0.5s								
KARY	**Karystos**	**1.05**	**277**	P		**Pn**		**01 09 48.3**	**+0.7**
KARY	**Karystos**	**1.05**	**277**	P		**Pn**		**01 09 48.3**	**+0.7**
KARY				S		**Sn**		**01 10 02.6**	**+0.2**
KARY	**Karystos**	**1.05**	**277**	P		**Pn**		**01 09 48.4**	**+0.7**
KARY				S		**Sn**		**01 10 02.6**	**+0.2**
KARY					AML	AML		01 10 05.5	
	comp=E,3880μm,0.2s								
KARY					AML	AML		01 10 06.7	
	comp=N,4013μm,0.2s								
SERI	**Serifos**	**1.26**	**234**	P		**Pg**		**01 09 50.2**	**-0.6**
SERI	**Serifos**	**1.26**	**234**	P		**Pg**		**01 09 50.2**	**-0.6**
IZM	**Izmir**	**1.28**	**67**	*e*PN		**Pb**		**01 09 51.6**	**+0.7**
IZM	**Izmir**	**1.28**	**67**	*e*Pn		**Pb**		**01 09 51.6**	**+0.7**
SIGR	**SIGRI**	**1.29**	**3**	*e*PN		**Pn**		**01 09 50.9**	**0.0**
SIGR				*e*SN		**Sg**		**01 10 08.1**	**-0.1**
SIGR	**SIGRI**	**1.29**	**3**	P		**Pn**		**01 09 50.4**	**-0.5**
SIGR				S		**Sg**		**01 10 08.1**	**-0.1**
SIGR	**SIGRI**	**1.29**	**3**	P		**Pn**		**01 09 50.4**	**-0.5**
SIGR	**SIGRI**	**1.29**	**3**	*e*Pn		**Pn**		**01 09 50.9**	**0.0**
SIGR				S		**Sg**		**01 10 08.1**	**-0.1**
SIGR	**SIGRI**	**1.29**	**3**	P		**Pn**		**01 09 50.4**	**-0.5**
SIGR				S		**Sg**		**01 10 06.9**	**-1.3**
SIGR					AML	AML		01 10 12.8	
	comp=E,3219μm,0.5s								
SIGR					AML	AML		01 10 13.7	
	comp=N,2249μm,0.6s								
SKY	**Skiros Island**	**1.35**	**316**	P		**Pg**		**01 09 52.6**	**+0.1**
SKY	**Skiros Island**	**1.35**	**316**	P		**Pg**		**01 09 52.6**	**+0.1**
PRK	**Paraskevi**	**1.39**	**17**	P		**Pn**		**01 09 51.2**	**-1.0**
PRK				S		**Sb**		**01 10 09.7**	**-0.8**
PRK	**Paraskevi**	**1.39**	**17**	P		**Pn**		**01 09 51.2**	**-1.0**
PRK				S		**Sb**		**01 10 11.1**	**+0.5**
PRK	**Paraskevi**	**1.39**	**17**	P		**Pn**		**01 09 51.0**	**-1.2**
PRK				S		**Sb**		**01 10 11.1**	**+0.5**
PRK					AML	AML		01 10 14.9	
	comp=N,2778μm,0.5s								
PRK					AML	AML		01 10 16.1	
	comp=E,3386μm,0.4s								
DKL	**Dikili**	**1.46**	**38**	*e*PN		**Pn**		**01 09 53.4**	**+0.2**
DKL				*e*SN		**Sg**		**01 10 13.9**	**+0.4**
DKL	**Dikili**	**1.46**	**38**	*e*Pn		**Pn**		**01 09 53.4**	**+0.2**
DKL				*e*Sn		**Sg**		**01 10 13.9**	**+0.4**
CMBO	**Columbo, Santo**	**1.47**	**191**	P		**Pn**		**01 09 53.0**	**-1.3**
CMBO	**Columbo, Santo**	**1.47**	**191**	P		**Pn**		**01 09 53.0**	**-0.3**
CMBO	**Columbo, Santo**	**1.47**	**191**	P		**Pn**		**01 09 52.9**	**-0.3**
THR2	**Thira island,**	**1.49**	**190**	P		**Pn**		**01 09 53.3**	**-0.3**
THR2	**Thira island,**	**1.49**	**190**	P		**Pn**		**01 09 53.3**	**-0.3**
BODT	**Bodrum**	**1.50**	**124**	*e*PN		**Pg**		**01 09 55.4**	**+0.1**
BODT				*e*SN		**Sg**		**01 10 15.6**	**+0.9**
BODT	**Bodrum**	**1.50**	**124**	P		**Pn**		**01 09 52.5**	**-1.2**
BODT				S		**Sn**		**01 10 11.5**	**-1.9**
BODT	**Bodrum**	**1.50**	**124**	P		**Pn**		**01 09 52.5**	**-1.2**
BODT	**Bodrum**	**1.50**	**124**	*e*Pn		**Pg**		**01 09 55.4**	**+0.1**
BODT				S		**Sn**		**01 10 11.5**	**-1.9**
BODT				*e*Sn		**Sg**		**01 10 15.6**	**+0.9**
PTL	**Penteli**	**1.50**	**276**	P		**Pb**		**01 09 54.8**	**+0.1**
PTL				S		**Sg**		**01 10 16.2**	**+1.3**
PTL	**Penteli**	**1.50**	**276**	P		**Pb**		**01 09 54.9**	**+0.1**
PTL				S		**Sg**		**01 10 15.2**	**+0.3**
PTL	**Penteli**	**1.50**	**276**	P		**Pb**		**01 09 54.9**	**+0.1**
PTL				S		**Sg**		**01 10 15.2**	**+0.3**
PTL					AML	AML		01 10 19.8	
	comp=E,1681μm,0.3s								
PTL					AML	AML		01 10 22.9	
	comp=N,1769μm,0.4s								
THR7	**Fira-Santorini**	**1.51**	**190**	P		**Pn**		**01 09 53.5**	**-0.4**
THR7	**Fira-Santorini**	**1.51**	**190**	P		**Pn**		**01 09 53.5**	**-0.4**
EREA	**Eretria**	**1.53**	**290**	P		**Pb**		**01 09 55.1**	**0.0**
EREA	**Eretria**	**1.53**	**290**	P		**Pb**		**01 09 55.3**	**+0.2**
EREA	**Eretria**	**1.53**	**290**	P		**Pb**		**01 09 55.3**	**+0.2**
THR3	**Thira Island,**	**1.53**	**191**	P		**Pn**		**01 09 53.9**	**-0.2**
THR3	**Thira Island,**	**1.53**	**191**	P		**Pn**		**01 09 53.9**	**-0.2**
THR5	**Thira Island,**	**1.53**	**193**	*e*PN		**Pn**		**01 09 54.3**	**+0.1**
THR5	**Thira Island,**	**1.53**	**193**	P		**Pn**		**01 09 53.7**	**-0.5**
THR5	**Thira Island,**	**1.53**	**193**	P		**Pn**		**01 09 53.7**	**-0.5**
THR5	**Thira Island,**	**1.53**	**193**	*e*Pn		**Pn**		**01 09 54.3**	**+0.1**
THT1	**Athinios (Pele**	**1.55**	**190**	P		**Pn**		**01 09 53.9**	**-0.5**
THT1	**Athinios (Pele**	**1.55**	**190**	P		**Pn**		**01 09 53.9**	**-0.5**
VLY	**Voula,Athens**	**1.56**	**268**	P		**Pb**		**01 09 55.5**	**0.0**
VLY				S		**Sg**		**01 10 17.1**	**+0.5**
VLY	**Voula,Athens**	**1.56**	**268**	P		**Pb**		**01 09 55.6**	**0.0**
VLY				S		**Sg**		**01 10 17.1**	**+0.5**
VLY	**Voula,Athens**	**1.56**	**268**	P		**Pb**		**01 09 55.6**	**0.0**
VLY				S		**Sn**		**01 10 15.2**	**+0.3**
VLY					AML	AML		01 10 21.1	
	comp=E,2770μm,0.4s								
VLY					AML	AML		01 10 26.1	
	comp=N,2441μm,0.4s								
SANT	**Santorini**	**1.56**	**189**	P		**Pn**		**01 09 53.6**	**-1.0**
SANT	**Santorini**	**1.56**	**189**	P		**Pn**		**01 09 53.6**	**-1.0**
ATHU	**Athens Univers**	**1.56**	**272**	P		**Pn**		**01 09 55.3**	**+0.7**
ATHU				S		**Sg**		**01 10 17.7**	**+0.9**
ATHU	**Athens Univers**	**1.56**	**272**	P		**Pn**		**01 09 55.3**	**+0.7**
ATHU				S		**Sg**		**01 10 17.7**	**+0.9**
ATHU	**Athens Univers**	**1.56**	**272**	P		**Pn**		**01 09 54.8**	**+0.2**
AYVA	**Ayvalik**	**1.57**	**27**	*i* P		**Pn**		**01 09 53.5**	**-1.2**
AYVA				*i* S		**Sg**		**01 10 17.6**	**+0.6**
AYVA	**Ayvalik**	**1.57**	**27**	P		**Pn**		**01 09 53.5**	**-1.2**
AYVA				S		**Sg**		**01 10 17.6**	**+0.6**
THR6	**Thira Island,**	**1.58**	**191**	P		**Pn**		**01 09 54.7**	**-0.2**
THR6	**Thira Island,**	**1.58**	**191**	P		**Pn**		**01 09 54.7**	**-0.2**
BDRM	**Kayabasi**	**1.59**	**122**	*i* P		**Pb**		**01 09 56.4**	**+0.2**
BDRM				*i* S		**Sg**		**01 10 1.4**	**0.0**
BDRM	**Kayabasi**	**1.59**	**122**	P		**Pb**		**01 09 56.3**	**+0.2**
BDRM				S		**Sg**		**01 10 17.5**	**0.0**
ATH	**Athens Observa**	**1.62**	**273**	P		**Pb**		**01 09 56.5**	**-0.1**
ATH				S		**Sg**		**01 10 19.0**	**+0.5**
ATH	**Athens Observa**	**1.62**	**273**	P		**Pb**		**01 09 56.5**	**-0.1**
ATH				S		**Sg**		**01 10 19.0**	**+0.5**
MHLO	**Agia Marina, M**	**1.64**	**222**	P		**Pn**		**01 09 55.7**	**+0.1**
MHLO				S		**Sg**		**01 10 18.9**	**-0.2**
MHLO	**Agia Marina, M**	**1.64**	**222**	P		**Pn**		**01 09 55.7**	**+0.1**
MHLO				S		**Sg**		**01 10 18.9**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.68**	**88**	*e*PN		**Pb**		**01 09 58.1**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.68**	**88**	*e*Pn		**Pb**		**01 09 58.1**	**+0.3**
MLSB	**Milas**	**1.72**	**111**	*e*PN		**Pb**		**01 09 58.9**	**+0.6**
MLSB	**Milas**	**1.72**	**111**	*e*Pn		**Pb**		**01 09 58.9**	**+0.6**
NIS1	**Nisyros Isl.**	**1.73**	**139**	*e*PN		**Pb**		**01 09 58.4**	**-0.2**
NIS1	**Nisyros Isl.**	**1.73**	**139**	*e*Pn		**Pb**		**01 09 58.4**	**-0.2**
AKS	**Akhisar**	**1.88**	**59**	*e*PN		**Pn**		**01 10 00.2**	**+1.3**
AKS	**Akhisar**	**1.88**	**59**	*e*Pn		**Pn**		**01 10 00.2**	**+1.3**
AOS	**Alonnisos**	**1.94**	**311**	*e*PN		**Pn**		**01 10 00.0**	**+0.3**
AOS	**Alonnisos**	**1.94**	**311**	P		**Pn**		**01 10 00.5**	**+0.8**
AOS	**Alonnisos**	**1.94**	**311**	*e*Pn		**Pn**		**01 10 00.0**	**+0.3**
AOS	**Alonnisos**	**1.94**	**311**	P		**Pn**		**01 10 00.5**	**+0.8**
AOS	**Alonnisos**	**1.94**	**311**	P		**Pn**		**01 10 00.5**	**+0.8**
BOZC	**Bozcaada**	**1.94**	**7**	*i* P		**Pn**		**01 09 59.2**	**-0.5**
BOZC				*i* S		**Sg**		**01 10 30.3**	**+1.5**
VILL	**Villia**	**1.95**	**278**	P		**Pn**		**01 10 01.2**	**+1.2**
VILL	**Villia**	**1.95**	**278**	P		**Pn**		**01 10 01.2**	**+1.2**
EZN	**Ezine**	**1.96**	**13**	*e*PN		**Pn**		**01 10 01.0**	**+1.0**
EZN	**Ezine**	**1.96**	**13**	P		**Pn**		**01 09 59.4**	**-0.6**
EZN	**Ezine**	**1.96**	**13**	P		**Pn**		**01 09 59.4**	**-0.6**
EZN	**Ezine**	**1.96**	**13**	*e*Pn		**Pn**		**01 10 01.0**	**+1.0**
VIL2	**Platees**	**1.99**	**279**	P		**Pn**		**01 10 01.3**	**+0.8**
LIA	**Limnos Island**	**2.03**	**347**	P		**Pn**		**01 10 01.0**	**0.0**
LIA	**Limnos Island**	**2.03**	**347**	P		**Pn**		**01 10 01.0**	**0.0**
SKIA	**Skiathos**	**2.19**	**305**	P		**Pn**		**01 10 04.4**	**+1.2**
SKIA	**Skiathos**	**2.19**	**305**	P		**Pn**		**01 10 04.7**	**+1.5**
SKIA	**Skiathos**	**2.19**	**305**	P		**Pn**		**01 10 04.7**	**+1.5**
LOUT	**Loutraki**	**2.20**	**273**	P		**Pn**		**01 10 04.9**	**+1.5**
LOUT	**Loutraki**	**2.20**	**273**	P		**Pn**		**01 10 04.9**	**+1.5**
LOUT	**Loutraki**	**2.20**	**273**	P		**Pn**		**01 10 05.0**	**+1.5**
LTK	**Loutraki**	**2.21**	**274**	P		**Pn**		**01 10 04.9**	**+1.4**
LTK	**Loutraki**	**2.21**	**274**	P		**Pn**		**01 10 04.9**	**+1.4**
SMIA	**Simia**	**2.22**	**296**	P		**Pn**		**01 10 05.2**	**+1.5**
SMIA	**Simia**	**2.22**	**296**	P		**Pn**		**01 10 05.2**	**+1.5**
SMIA	**Simia**	**2.22**	**296**	P		**Pb**		**01 10 05.7**	**-1.2**
GADA	**Gvkgeada**	**2.27**	**3**	*e*PN		**Pn**		**01 10 04.5**	**+0.1**
GADA	**Gvkgeada**	**2.27**	**3**	*e*Pn		**Pn**		**01 10 04.5**	**+0.1**
MANT	**Manisa**	**2.28**	**75**	*i* P		**Pb**		**01 10 07.3**	**-0.7**
MANT				*i* S		**Sb**		**01 10 35.8**	**-0.6**
MANT	**Manisa**	**2.28**	**75**	P		**Pb**		**01 10 07.3**	**-0.7**
MANT				S		**Sb**		**01 10 35.8**	**-0.6**
PROD	**Prodromos**	**2.28**	**280**	P		**Pn**		**01 10 06.2**	**+1.7**
PROD	**Prodromos**	**2.28**	**280**	P		**Pn**		**01 10 06.2**	**+1.7**
ATAL	**Atalanti**	**2.29**	**291**	P		**Pn**		**01 10 05.8**	**+1.2**
ATAL	**Atalanti**	**2.29**	**291**	P		**Pn**		**01 10 05.9**	**+1.3**
ATAL	**Atalanti**	**2.29**	**291**	P		**Pn**		**01 10 05.9**	**+1.3**
LKR	**Lokris**	**2.29**	**289**	P		**Pn**		**01 10 05.7**	**+1.1**
LKR	**Lokris**	**2.29**	**289**	P		**Pn**		**01 10 05.8**	**+1.1**
LKR	**Lokris**	**2.29**	**289**	P		**Pn**		**01 10 05.8**	**+1.2**
KULA	**Kula-Manisa**	**2.36**	**74**	*e*PN		**Pb**		**01 10 08.2**	**-1.1**
KULA	**Kula-Manisa**	**2.36**	**74**	*e*Pn		**Pb**		**01 10 08.2**	**-1.1**
BALB	**Balikesir**	**2.39**	**43**	*e*PN		**Pn**		**01 10 07.7**	**+1.8**
BALB	**Balikesir**	**2.39**	**43**	*e*Pn		**Pn**		**01 10 07.7**	**+1.8**
NEO	**Neokhori**	**2.42**	**306**	P		**Pn**		**01 10 07.6**	**+1.2**
NEO	**Neokhori**	**2.42**	**306**	P		**Pn**		**01 10 07.7**	**+1.2**
NEO	**Neokhori**	**2.42**	**306**	P		**Pn**		**01 10 07.7**	**+1.2**
THAL	**Thalero**	**2.45**	**274**	P		**Pn**		**01 10 08.1**	**+1.3**
THAL	**Thalero**	**2.45**	**274**	P		**Pn**		**01 10 08.1**	**+1.3**
THAL	**Thalero**	**2.45**	**274**	P		**Pn**		**01 10 08.4**	**+1.6**
XOR	**Xorichti**	**2.48**	**307**	P		**Pn**		**01 10 07.9**	**+0.7**
XOR	**Xorichti**	**2.48**	**307**	P		**Pn**		**01 10 07.9**	**+0.7**
XOR	**Xorichti**	**2.48**	**307**	P		**Pn**		**01 10 07.9**	**+0.7**
TURN	**Turunc**	**2.49**	**114**	*i* P		**Pn**		**01 10 03.8**	**-3.5**
TURN				*i* S		**Sb**		**01 10 41.8**	**-0.5**
GELI	**Tayfur-Gelibol**	**2.54**	**12**	*e*PN		**Pn**		**01 10 08.5**	**+0.5**
GELI	**Tayfur-Gelibol**	**2.54**	**12**	*e*Pn		**Pn**		**01 10 08.5**	**+0.5**
ARG	**Arkhangelos**	**2.54**	**131**	P		**Pn**		**01 10 08.0**	**0.0**
VLI	**Veliai**	**2.55**	**243**	P		**Pn**		**01 10 08.9**	**+0.8**
VLI	**Veliai**	**2.55**	**243**	P		**Pn**		**01 10 08.9**	**+0.8**
VLI	**Veliai**	**2.55**	**243**	P		**Pn**		**01 10 08.4**	**+0.2**
DALY	**Dalyan (Mu˘la**	**2.55**	**115**	*e*PN		**Pb**		**01 10 10.8**	**-1.7**
DALY	**Dalyan (Mu˘la**	**2.55**	**115**	*e*Pn		**Pb**		**01 10 10.8**	**-1.7**
SMTH	**Samothraki Isl**	**2.56**	**356**	P		**Pn**		**01 10 07.1**	**-1.2**
SMTH	**Samothraki Isl**	**2.56**	**356**	P		**Pn**		**01 10 07.1**	**-1.2**
LPK	**Lapseki**	**2.57**	**17**	*e*PN		**Pn**		**01 10 09.3**	**+0.8**
LPK	**Lapseki**	**2.57**	**17**	*e*Pn		**Pn**		**01 10 09.3**	**+0.8**
DEMI	**Demirci**	**2.58**	**63**	*i* P		**Pb**		**01 10 12.1**	**-0.9**
DEMI	**Demirci**	**2.58**	**63**	P		**Pb**		**01 10 12.1**	**-0.9**
PAIG	**Paliouri**	**2.58**	**322**	P		**Pn**		**01 10 08.9**	**+0.3**
PAIG	**Paliouri**	**2.58**	**322**	P		**Pn**		**01 10 09.1**	**+0.5**
PAIG	**Paliouri**	**2.58**	**322**	P		**Pn**		**01 10 09.1**	**+0.5**
DENT	**Denizli**	**2.60**	**93**	*e*PN		**Pb**		**01 10 11.6**	**-1.7**
DENT	**Denizli**	**2.60**	**93**	*e*Pn		**Pb**		**01 10 11.6**	**-1.7**
DSF	**Desfina**	**2.60**	**282**	P		**Pn**		**01 10 10.3**	**+1.4**
DSF	**Desfina**	**2.60**	**282**	P		**Pn**		**01 10 10.2**	**+1.4**
DSF	**Desfina**	**2.60**	**282**	P		**Pn**		**01 10 10.2**	**+1.4**
GONE	**Gonen-Balikesi**	**2.60**	**35**	*e*PN		**Pn**		**01 10 10.3**	**+1.4**
GONE	**Gonen-Balikesi**	**2.60**	**35**	*e*Pn		**Pn**		**01 10 10.3**	**+1.4**
KARP	**Karpathos**	**2.62**	**154**	*e*PN		**Pn**		**01 10 11.4**	**+2.3**
KARP	**Karpathos**	**2.62**	**154**	P		**Pn**		**01 10 08.3**	**-0.8**
KARP	**Karpathos**	**2.62**	**154**	*e*Pn		**Pn**		**01 10 11.4**	**+2.3**
KARP	**Karpathos**	**2.62**	**154**	P		**Pn**		**01 10 08.3**	**-0.8**
NPS	**Neapolis**	**2.65**	**183**	P		**Pn**		**01 10 09.0**	**-0.6**
NPS	**Neapolis**	**2.65**	**183**	P		**Pn**		**01 10 09.0**	**-0.6**
NPS	**Neapolis**	**2.65**	**183**	P		**Pn**		**01 10 08.9**	**-0.6**
FYTO	**Fytoko, Volos**	**2.66**	**305**	P		**Pn**		**01 10 11.1**	**+1.4**
FYTO	**Fytoko, Volos**	**2.66**	**305**	P		**Pn**		**01 10 11.1**	**+1.4**
IDI	**Anoyia**	**2.71**	**195**	P		**Pn**		**01 10 09.6**	**-0.9**
IDI	**Anoyia**	**2.71**	**195**	P		**Pn**		**01 10 09.6**	**-0.9**
KYTH	**Kithira**	**2.73**	**234**	P		**Pn**		**01 10 10.1**	**-0.5**
KYTH	**Kithira**	**2.73**	**234**	P		**Pn**		**01 10 10.1**	**-0.5**
VLX	**Vlachokerasia**	**2.74**	**260**	P		**Pn**		**01 10 12.9**	**+2.0**
VLX	**Vlachokerasia**	**2.74**	**260**	P		**Pn**		**01 10 12.9**	**+2.0**
VLX	**Vlachokerasia**	**2.74**	**260**	P		**Pb**		**01 10 13.8**	**-2.0**
KRBG	**Karabiga-Canak**	**2.75**	**25**	*e*PN		**Pn**		**01 10 11.6**	**+0.7**
KRBG	**Karabiga-Canak**	**2.75**	**25**	*e*Pn		**Pn**		**01 10 11.6**	**+0.7**
LAST	**Lasithi**	**2.76**	**185**	P		**Pn**		**01 10 09.5**	**-1.6**
LAST	**Lasithi**	**2.76**	**185**	P		**Pn**		**01 10 09.5**	**-1.6**
OUR	**Ouranopolis**	**2.78**	**331**	*e*PN		**Pn**		**01 10 11.9**	**+0.6**
OUR	**Ouranopolis**	**2.78**	**331**	*e*Pn		**Pn**		**01 10 11.9**	**+0.6**
TRIP	**Tripoli**	**2.79**	**263**	P		**Pn**		**01 10 14.4**	**+2.8**
TRIP	**Tripoli**	**2.79**	**263**	P		**Pn**		**01 10 14.4**	**+2.8**
VAM	**Vamos**	**2.80**	**207**	P		**Pn**		**01 10 11.7**	**+0.1**
VAM	**Vamos**	**2.80**	**207**	P		**Pn**		**01 10 11.7**	**+0.1**
ERIK	**Erikli-Kesan**	**2.81**	**12**	*e*PN		**Pn**		**01 10 12.4**	**+0.7**
ERIK	**Erikli-Kesan**	**2.81**	**12**	*e*Pn		**Pn**		**01 10 12.4**	**+0.7**
ENEZ	**Enez**	**2.83**	**6**	*e*PN		**Pn**		**01 10 12.6**	**+0.6**
ENEZ	**Enez**	**2.83**	**6**	*e*Pn		**Pn**		**01 10 12.6**	**+0.6**
IMMV	**Iera Moni Meta**	**2.84**	**211**	P		**Pn**		**01 10 13.4**	**+1.3**
IMMV	**Iera Moni Meta**	**2.84**	**211**	P		**Pn**		**01 10 13.4**	**+1.3**
IMMV	**Iera Moni Meta**	**2.84**	**211**	P		**Pn**		**01 10 13.5**	**+1.3**
**AN

0.2nm,0.3s,baz=4.7,slow=7.4,SNR=3.3

NIED ***29*** *01:44:00, 38˚.40N×144˚.50E, h8km, Mw3.4 Best double couple: M₀1.49000×10¹⁴ NP1:φs35.00000°, δ30.00000°, λ-90.00000°. NP2:φs216.00000°, δ60.00000°, λ-90.00000°.*

JMA 29 01:44:36.8±0.2, 38˚.42N×144˚.55E, h39km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.35**	**287**	P	Pn	01 45 14.3	+1.5
OFUJ				*e*S	Sn	01 45 42.3	+1.9
MIYJ	**Miyakonagasawa**	**2.42**	**299**	*e*S	Sn	01 45 43.5	+1.3
JIO	**Ouri**	**2.51**	**272**	S	Sn	01 45 46.2	+1.7
JMK	**Ichinoseki**	**2.66**	**283**	P	Pn	01 45 19.1	+2.0
JMK				*e*S	Sn	01 45 49.9	+1.8
JOM	**Ohasama**	**2.75**	**294**	P	Pn	01 45 20.2	+1.9
JOM				S	Sn	01 45 52.3	+2.0
JOU	**Okura**	**3.05**	**270**	P	Pn	01 45 25.0	+2.4
JOU				S	Sn	01 46 00.6	+2.7
JFT	**Otama**	**3.45**	**256**	*e*S	Sn	01 46 10.5	+2.9
JAH	**Hinai**	**3.51**	**301**	S	Sn	01 46 11.6	+2.5
JTM	**Tenmabayashi**	**3.58**	**312**	S	Sn	01 46 11.1	+0.3
JCH	**Churui**	**4.29**	**348**	*e*S	Sn	01 46 23.5	-4.7
NEM2	**Nemuro 2**	**5.02**	**10**	P	Pn	01 45 45.9	-3.6
NEM2				*e*S	Sn	01 46 38.0	-8.3

TIR ***29*** *01:56:00.0, 42˚.22N×19˚.94E, h2km, ML2.8*

PDG ***29*** *01:56:04.7±0.2, 42˚.11N×19˚.92E, h15km, ML2.3/12, Error ellipse: s-maj=0.3km s-min=0.6km az=0.0*

CSEM ***29*** *01:56:04.4±0.3, 42˚.08N×19˚.93E, h2km, ML2.3, Error ellipse: s-maj=5.2km s-min=4.3km az=123.0*

BEO ***29*** *01:56:06.9±0.3, 42˚.11N×19˚.84E, h0km, M2.0/7*

ISC 29 01:56:05.2±1.0, 42˚.11N±0˚.02×19˚.90E±0˚.02, h17km±8km, n55, σ1§28/96, 12C-15D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PVY	**Plav**	**0.49**	**5**	⇓*i*	Pg	**01 56 14.2**	**-1.0**
PVY				*e*Sg	**Sb**	**01 56 22.0**	**-0.5**
PVY	**Plav**	**0.49**	**5**	⇓*i*	Pg	**01 56 14.2**	**-1.0**
PVY				*e*Sg	**Sb**	**01 56 22.0**	**-0.5**
ULC	**Ulcinj**	**0.51**	**254**	⇑*i*	Pg	**01 56 14.8**	**-0.6**
ULC				*e*Sg	**Sb**	**01 56 23.5**	**+0.7**
ULC	**Ulcinj**	**0.51**	**254**	⇑*i*	Pg	**01 56 14.8**	**-0.6**
ULC				*e*Sg	**Sb**	**01 56 23.5**	**+0.7**
DRME	**Dracevica, Mon**	**0.54**	**279**	⇓*i*	Pg	**01 56 14.4**	**-1.5**
DRME				*e*Sg	**Sb**	**01 56 24.2**	**+0.6**
DRME	**Dracevica, Mon**	**0.54**	**279**	⇑*i*	Pg	**01 56 14.5**	**-1.5**
DRME				*e*Sg	**Sg**	**01 56 23.3**	**+0.2**
PDG	**Podgorica**	**0.58**	**305**	*e*Pg	**Pg**	**01 56 15.6**	**-1.1**
PDG				*i* Sg	**Sb**	**01 56 24.7**	**-0.1**
PDG	**Podgorica**	**0.58**	**305**	⇑*i*	Pg	**01 56 15.6**	**-1.1**
PDG				*i* Sg	**Sb**	**01 56 24.7**	**-0.1**
TTG	**Podgorica**	**0.58**	**305**	⇑*i*	Pg	**01 56 15.6**	**-1.1**
TTG				*e*Sg	**Sb**	**01 56 25.5**	**+0.7**
PEJK	**Peje**	**0.61**	**28**	P	Pg	**01 56 16.6**	**-0.7**
TIR	**Tirane**	**0.76**	**182**	*i* PG	Pg	**01 56 18.5**	**-1.5**
TIR				*i* SG	Sn	**01 56 32.3**	**+0.1**
TIR	**Tirane**	**0.76**	**182**	*e*Pg	Pg	**01 56 18.9**	**-1.1**
TIR				*i* Sg	Sn	**01 56 31.6**	**-0.6**
TIR	**Tirane**	**0.76**	**182**	*i* P	Pg	**01 56 18.5**	**-1.5**
TIR	**Tirane**	**0.76**	**182**	P	Pg	**01 56 18.9**	**-1.1**
TIR				*i* Sg	Sn	**01 56 31.6**	**-0.6**
BEY	**Berane**	**0.77**	**360**	*e*Pg	Pg	**01 56 19.1**	**-1.1**
BEY	**Berane**	**0.77**	**360**	P	Pn	**01 56 20.6**	**-0.8**
BEY				*e*Sg	Sn	**01 56 31.1**	**-1.5**
IVA	**Berane**	**0.77**	**360**	*e*Pg	Pg	**01 56 19.1**	**-1.1**
IVA				*e*Sg	Sn	**01 56 31.1**	**-1.5**
BUM	**Brajici-Budva**	**0.77**	**285**	⇑*i*	Pg	**01 56 19.3**	**-1.0**
BUM				*e*Sg	Sn	**01 56 32.5**	**-0.1**
BUM	**Brajici-Budva**	**0.77**	**285**	⇑*i*	Pg	**01 56 19.3**	**-1.0**
BUM				*e*Sg	Sn	**01 56 32.5**	**-0.1**
CEME	**Cevo**	**0.85**	**302**	⇓*i*	Pb	**01 56 20.6**	**-1.0**
CEME				*e*Sg	Sn	**01 56 34.7**	**+0.1**
CEME	**Cevo**	**0.85**	**302**	⇓*i*	Pb	**01 56 20.6**	**-1.0**
CEME				*e*Sg	Sn	**01 56 34.7**	**+0.1**
NKME	**Niksic**	**0.96**	**314**	⇓*i*	Pb	**01 56 22.7**	**-0.8**
NKME				*e*Sg	Sn	**01 56 38.1**	**+0.7**
NKME	**Niksic**	**0.96**	**314**	⇓*i*	Pb	**01 56 22.7**	**-0.8**
NKME				*e*Sg	Sn	**01 56 38.1**	**+0.7**
NKY	**Niksic**	**0.97**	**317**	⇑*i*	Pb	**01 56 22.8**	**-0.9**
NKY				*e*Sg	Sn	**01 56 39.0**	**+1.3**
NKY	**Niksic**	**0.97**	**317**	⇑*i*	Pb	**01 56 22.8**	**-0.9**
NKY				*e*Sg	Sn	**01 56 39.0**	**+1.3**
HCY	**Herceg Novi**	**1.09**	**289**	⇓*i*	Pb	**01 56 25.3**	**-0.4**
HCY				*e*Sg	Sn	**01 56 43.1**	**+2.5**
HCY	**Herceg Novi**	**1.09**	**289**	⇓*i*	Pb	**01 56 25.3**	**-0.4**
HCY				*e*Sg	Sn	**01 56 40.8**	**+0.2**
PLE	**Pljevlja**	**1.28**	**343**	⇓*i*	Pn	**01 56 28.0**	**-0.5**
PLE				*e*Sg	Sg	**01 56 48.0**	**+1.3**
PLE	**Pljevlja**	**1.28**	**343**	⇓*i*	Pn	**01 56 28.0**	**-0.5**
PLE				*e*Sg	Sg	**01 56 48.0**	**+1.3**
BRY	**Bratogost**	**1.28**	**309**	*e*Pg	Pn	**01 56 28.1**	**-0.4**
BRY				*e*Sg	Sg	**01 56 48.9**	**+2.2**
BRY	**Bratogost**	**1.28**	**309**	*e*Pg	Pn	**01 56 28.1**	**-0.4**
BRY				*e*Sg	Sg	**01 56 47.9**	**+1.2**
TREB	**Trebinje**	**1.30**	**299**	*e*Pg	Pn	**01 56 28.7**	**+0.1**
TREB				*e*Sg	Sg	**01 56 48.2**	**+1.0**
TREB	**Trebinje**	**1.30**	**299**	*e*Pg	Pn	**01 56 28.7**	**+0.1**
TREB				*e*Sg	Sg	**01 56 47.4**	**+0.2**
UPM	**Unac-Piva**	**1.32**	**327**	*e*Pg	Pb	**01 56 29.5**	**-0.2**
UPM				*e*Sg	Sg	**01 56 49.5**	**+1.6**
UPM	**Unac-Piva**	**1.32**	**327**	*e*Pg	Pb	**01 56 29.5**	**-0.2**
UPM	**Unac-Piva**	**1.32**	**327**	P	Pg	**01 56 30.5**	**-0.2**
UPM				*e*Sg	Sg	**01 56 48.9**	**+1.0**
SELS	**Selova**	**1.43**	**39**	⇑*i*	Pg	**01 56 31.5**	**-1.4**
SELS				*e*Sg	Sg	**01 56 53.7**	**+2.2**
SELS	**Selova**	**1.43**	**39**	⇑*i*	Pg	**01 56 31.5**	**-1.4**
SELS				*e*Sg	Sg	**01 56 53.7**	**+2.2**
IVAS	**Ivanjica**	**1.48**	**7**	*e*Pg	Pg	**01 56 32.5**	**-1.3**
IVAS	**Ivanjica**	**1.48**	**7**	*e*Pg	Pg	**01 56 32.5**	**-1.3**
BBLS	**Lazići**	**1.80**	**349**	⇑*i*	Pn	**01 56 38.6**	**-1.2**
BBLS				*e*Sg	Sg	**01 57 02.4**	**-0.7**
BBLS	**Lazići**	**1.80**	**349**	*e*Pn	Pb	**01 56 38.6**	**-1.1**
BBLS				*e*Sn	Sb	**01 56 59.7**	**-0.3**
BBLS				*e*Sg	Sg	**01 57 02.4**	**-0.7**
GRUS	**Gruza**	**1.88**	**18**	⇓*i*	Pn	**01 56 41.0**	**-0.4**
GRUS				*e*Sg	Sg	**01 57 08.1**	**+2.3**
GRUS	**Gruza**	**1.88**	**18**	⇓*i*	Pn	**01 56 41.0**	**-0.4**
GRUS				*e*Sg	Sg	**01 57 08.1**	**+2.3**
DIVS	**Divibare**	**1.99**	**2**	*e*Pn	Pb	**01 56 41.6**	**+0.5**
DIVS	**Divibare**	**1.99**	**2**	*e*Pn	Pb	**01 56 41.6**	**+0.5**
TRUS	**Trudelj**	**2.15**	**10**	*e*Pn	Pg	**01 56 44.5**	**-2.0**
TRUS	**Trudelj**	**2.15**	**10**	*e*Pn	Pg	**01 56 44.5**	**-2.0**
ZAPS	**Zavoj**	**2.33**	**59**	*e*Pn	Pg	**01 56 48.4**	**-1.6**
ZAGS	**Zajecar**	**2.42**	**44**	⇓*i*	Pn	**01 56 49.1**	**+0.8**
ZAGS	**Zajecar**	**2.42**	**44**	⇓*i*	Pn	**01 56 49.1**	**+0.8**
TEKS	**Tekeris**	**2.46**	**354**	*e*Pn	Pb	**01 56 48.9**	**-0.1**
TEKS	**Tekeris**	**2.46**	**354**	*e*Pn	Pb	**01 56 48.9**	**-0.1**
UDBI	**Udbina**	**3.87**	**310**	*e*Pn	Pn	**01 57 07.7**	**+3.7**
UDBI				Sn	Sb	**01 57 56.5**	**-3.1**
UDBI	**Udbina**	**3.87**	**310**	*e*Pn	Pn	**01 57 07.6**	**+3.7**
UDBI				Sn	Sb	**01 57 56.4**	**-3.1**

NIED ***29*** *01:59:00, 36˚.60N×141˚.10E, h8km, Mw4.2 Best double couple: M₀2.36000×10¹⁵ NP1:φs2.00000°, δ45.00000°, λ-105.00000°. NP2:φs203.00000°, δ47.00000°, λ-75.00000°.*

JMA ***29*** *01:59:11.4±0.1, 36˚.63N×141˚.07E, h26km±1km, M4.3*

JMA Felt II J1.

ISCJB ***29*** *01:59:11.2±0.7, 36˚.64N±0˚.03×141˚.10E±0˚.04, h25km±4km, mb4.3/63, MS3.0/10, Error ellipse: s-maj=6.2km s-min=4.5km az=36.2*

MOS ***29*** *01:59:12.8±1.1, 36˚.64N×141˚.04E, h36km, mb4.6/29, Error ellipse: s-maj=9.6km s-min=6.1km az=111.2*

NEIC ***29*** *01:59:12.9±1.7, 36˚.67N×141˚.03E, h23km±11km, mb4.4/18, Error ellipse: s-maj=6.9km s-min=4.6km az=137.0*

NEIC Recorded [2 JMA] in Fukushima and Ibaraki.

IDC ***29*** *01:59:16.2±1.9, 36˚.62N×140˚.96E, h52km±17km, mb4.0/25, mb1 4.1/30, mb1mx4.0/42, mbtmp4.2/30, ML3.8/3, MS3.0/11, Ms1 3.1/11, ms1mx2.8/42, Error ellipse: s-maj=13.7km s-min=9.5km az=70.0*

ISC 29 01:59:12.2±1.0, 36˚.67N±0˚.04×141˚.10E±0˚.04, h19km±3km, n151, σ1§42/156, mb4.4/71, MS3.1/10, 9C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.43**	**262**	P	Pg	**01 59 19.6**	**-1.5**
JHO				S	Sg	**01 59 25.9**	**-1.2**
ONAJ	**Iwakimizuishiy**	**0.49**	**330**	P	Pg	**01 59 21.6**	**-0.6**
ONAJ				S	Sb	**01 59 29.4**	**+0.2**
JFK	**Kawauchi**	**0.71**	**345**	P	Pb	**01 59 24.9**	**-1.2**
JYT	**Yasato**	**0.86**	**239**	P	Pb	**01 59 26.4**	**-2.1**
JYT				S	Sb	**01 59 38.1**	**-1.5**
JSB	**Shiboa**	**0.99**	**288**	P	Pb	**01 59 30.0**	**-0.9**
JSB				S	Sb	**01 59 44.0**	**+0.4**
JFT	**Otama**	**1.04**	**324**	P	Pb	**01 59 31.0**	**-0.7**
JFT				S	Sb	**01 59 45.4**	**+0.4**
MJAR	**Matsushiro Arr**	**2.33**	**268**	P	Pn	**01 59 49.2**	**-0.4**
	29nm,0.3s,baz=82,slow=10,SNR=134						
MJAR				S	Sn	**02 00 17.3**	**-0.5**
	49nm,0.3s,baz=93,slow=27,SNR=7.3						
MAJO	**Matsushiro**	**2.33**	**268**	*e*P	Pn	**01 59 49.7**	**0.0**
MAJO	**Matsushiro**	**2.33**	**268**	*e*Pn	Pn	**01 59 49.6**	**0.0**
MAT	**Matsushiro**	**2.33**	**268**	P	Pn	**01 59 49.5**	**-0.1**
MAT				S	Sn	**02 00 19.8**	**+2.0**
MJB9	**Matsu-Tunnel**	**2.33**	**268**	*e*Pn	Pn	**01 59 49.3**	**-0.4**
INU	**Inuyama**	**3.56**	**249**	*e*Pn	Pn	**02 00 06.8**	**+0.2**
JHJ	**Hachijo jima 2**	**3.71**	**197**	P	Pn	**02 00 09.6**	**+1.0**
	49nm,0.3s,baz=73,slow=20,SNR=10.0						
JHJ				S	Sn	**02 00 51.9**	**+0.2**
	70nm,0.3s,baz=248,slow=22,SNR=5.1						
ERM	**Erimo**	**5.57**	**16**	*e*P	Pn	**02 00 32.8**	**-1.2**
ERM				*e*		02 01 34.7	
ERM	**Erimo**	**5.57**	**16**	*e*Pn	Pn	**02 00 32.8**	**-1.2**
ERM				*e*Sn	Sn	**02 01 34.7**	**-2.8**
ASAJ	**Asahikawa**	**7.52**	**8**	*e*Pn	Pn	**02 01 00.0**	**-0.9**
	4.3nm,0.4s						
ASAJ				*e*Sn	Sn	**02 02 18.4**	**-7.3**
JNU	**Nakatsue**	**9.11**	**250**	P	Pn	**02 01 23.6**	**+0.7**
	baz=42,slow=16,SNR=2.7						
MSHR	**Mys Shultsa**	**9.67**	**311**	*e*P	Pn	**02 01 30.2**	**-0.2**
USRK	**Ussuriysk Ar.**	**10.23**	**320**	P	Pn	**02 01 40.0**	**+2.0**
	0.3nm,0.3s,baz=133,slow=13,SNR=15						
YSS	**Yuzh-Sakhalins**	**10.35**	**6**	*e*P	Pn	**02 01 42.3**	**+2.7**
YSS				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KSRS	**Korea Array**	**10.56**	**278**	P	Pn	**02 01 46.4**	**+3.8**
	comp=Z,0.3nm,0.3s,baz=103,slow=12,SNR=4.4						
KSRS				LR	LR	02 05 46.9	
	comp=Z,95nm,18.5s,baz=102,slow=37						
KSAR	**Wonju Array Be**	**10.59**	**278**	P	Pn	**02 01 46.4**	**+3.4**
KSAR	**Wonju Array Be**	**10.59**	**278**	P	Pn	**02 01 46.4**	**+3.4**
CN2	**Changchun**	**13.90**	**306**	*e*P	P	**02 02 38.0**	**+1.7**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				LR	LR		
	comp=N,200nm,13.0s						
CN2				LR	LR		
	comp=E,300nm,13.0s						
CN2				LR	LR		
	comp=Z,300nm,13.0s						
KLR	**Kul'dur**	**14.28**	**334**	P	Pn	**02 02 34.9**	**+1.5**
	comp=Z,0.1nm,0.3s,baz=150,slow=16,SNR=2.5						
KLR				LR	LR	02 07 41.9	
	comp=Z,62nm,18.3s,baz=140,slow=35						
PETK	**Petropavlovsk-**	**20.12**	**30**	LR	LR	02 11 06.8	
	comp=Z,17nm,18.5s,baz=243,slow=35						
HHC	**Hu-ho-hao-te**	**23.35**	**289**	*e*P	P	**02 04 18.5**	**-1.1**
HHC				sP	sP	02 04 26.3	-1.2
HHC				S	S	**02 08 26.8**	**-4.8**
HHC				pmax	pmax		
	comp=Z,15nm,0.7s						
HHC				pmax	pmax		
	comp=Z,120nm,7.7s						
HHC				LR	LR		
	comp=N,120nm,11.1s						
HHC				LR	LR		
	comp=E,190nm,13.6s						
HHC				LR	LR		
	comp=Z,110nm,13.6s						
MA2	**Magadan**	**23.76**	**12**	P	P	**02 04 23.1**	**-0.1**
	comp=Z,7.6nm,0.6s,baz=156,slow=12,SNR=4.8						
MA2				LR	LR	02 15 39.2	
	comp=Z,36nm,18.1s,baz=123,slow=41						
YAK	**Yakutsk**	**26.37**	**348**	LR	LR	02 15 09.9	
	comp=Z,59nm,18.6s,baz=110,slow=36						
YAK	**Yakutsk**	**26.37**	**348**	*e*P	P	**02 04 48.1**	**+1.1**
YAK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
SEY	**Seymchan**	**27.19**	**11**	P	P	**02 04 55.0**	**+0.6**
	comp=Z,5.3nm,0.7s,baz=201,slow=7.0,SNR=17						
SEY	**Seymchan**	**27.19**	**11**	⇓*i*	P	**02 04 55.8**	**+1.4**
SONA	**Songino Array**	**27.78**	**305**	*e*P	P	**02 04 59.9**	**-0.1**
SONM	**Songino Array**	**27.78**	**305**	P	P	**02 04 59.3**	**-0.7**
	comp=Z,1.8nm,0.9s,baz=93,slow=9.3,SNR=8.8						
SONM				LR	LR	02 15 50.1	
	comp=Z,69nm,18.7s,baz=95,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.18**	**120**	T	T	02 34 30.1	
	baz=312,slow=75,SNR=853						
H11N1	**WAKE ISLAND Hy**	**28.19**	**120**	T	T	02 34 28.2	
	baz=312,slow=75,SNR=1306						
H11N3	**WAKE ISLAND Hy**	**28.20**	**120**	T	T	02 34 31.9	
	baz=312,slow=75,SNR=112						
H11S1	**WAKE ISLAND Hy**	**28.88**	**122**	T	T	02 35 20.8	
	baz=314,slow=76,SNR=2041						
H11S3	**WAKE ISLAND Hy**	**28.88**	**122**	T	T	02 35 21.0	
	baz=314,slow=76,SNR=2099						
H11S2	**WAKE ISLAND Hy**	**28.89**	**122**	T	T	02 35 21.1	
	baz=314,slow=76,SNR=1950						
BILL	**Bilibino**	**34.44**	**16**	*e*P	P	**02 05 57.6**	**-0.7**
BILL				*e*		02 07 14.4	
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
CMAR	**Chiang Mai Arr**	**41.16**	**255**	LR	LR	02 25 12.1	
	comp=Z,11nm,19.7s,baz=230,slow=38						
ZAA0	**Zalesovo Array**	**41.97**	**313**	*e*P	P	**02 07 01.4**	**-0.5**
ZALV	**Zalesovo Beam**	**41.97**	**313**	P	P	**02 07 01.2**	**-0.6**
	comp=Z,6.9nm,0.6s,baz=98,slow=6.7,SNR=32						
ZALV				LR	LR	02 23 20.1	
	comp=Z,7.1nm,19.7s,baz=70,slow=34						
NVS	**Novosibirsk**	**42.91**	**314**	*e*P	P	**02 07 08.5**	**-0.9**
NRIK	**Noril'sk**	**43.49**	**335**	P	P	**02 07 14.4**	**+0.5**
	comp=Z,3.6nm,0.6s,baz=127,slow=7.9,SNR=3.8						
NRIK				LR	LR	02 28 29.8	
	comp=Z,25nm,19.2s,baz=95,slow=40						
MK01	**Makanchi Array**	**44.09**	**302**	*e*P	P	**02 07 18.1**	**-1.1**
MKAR	**Makanchi Array**	**44.10**	**302**	P	P	**02 07 18.6**	**-0.5**
	comp=Z,1.2nm,0.6s,baz=85,slow=9.9,SNR=12						
MKAR	**Makanchi Array**	**44.10**	**302**	*e*P	P	**02 07 18.8**	**-0.4**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MAKZ	**Makanchi**	**44.31**	**302**	*e*P	P	**02 07 20.7**	**-0.2**
MAKZ				pmax	pmax		
	comp=Z,7.0nm,1.3s						
MAKZ	**Makanchi**	**44.31**	**302**	*e*P	P	**02 07 20.7**	**-0.2**
	comp=Z,7.1nm,1.3s						
KURK	**Kurchatov**	**45.96**	**308**	P	P	**02 07 33.6**	**-0.3**
KURK	**Kurchatov**	**45.96**	**308**	P	P	**02 07 33.6**	**-0.3**
KURBB	**Kurchatov Arra**	**46.03**	**308**	P	P	**02 07 33.6**	**-0.8**
	comp=Z,3.8nm,0.5s,baz=83,slow=8.2,SNR=46						
KDAK	**Kodiak Island**	**47.53**	**42**	*e*P	P	**02 07 46.9**	**+0.8**
SEW	**Seward**	**49.00**	**38**	*e*P	P	**02 07 57.5**	**+0.2**
	comp=Z,4.7nm,0.4s						
MDM	**Murphy Dome**	**49.35**	**32**	*e*P	P	**02 08 01.8**	**+1.8**
	comp=Z,4.9nm,1.0s						
IL1	**Eielson Array**	**49.93**	**32**	*e*P	P	**02 08 04.2**	**-0.2**
ILAR	**Eielson Array**	**49.93**	**32**	P	P	**02 08 05.2**	**+0.8**
	comp=Z,1.5nm,0.8s,baz=273,slow=6.6,SNR=16						
ILB	**Eielson Array**	**49.93**	**32**	*e*P	P	**02 08 05.5**	**+1.1**
KSH	**Kashi**	**50.32**	**294**	*e*P	P	**02 08 11.5**	**+3.6**
KSH				*ep*P	sP	02 08 40.5	+24
KSH				*e*ScP	ScP	02 13 07.8	-14
KSH				S	S	**02 15 20.0**	**0.0**
KSH				pmax	pmax		
	comp=Z,73nm,3.6s						
KSH				LR	LR		
	comp=N,87nm,8.0s						
KSH				LR	LR		
	comp=E,82nm,6.9s						
KSH				LR	LR		
	comp=Z,110nm,6.6s						
AAK	**Ala-Archa**	**50.44**	**299**	*e*P	P	**02 08 06.5**	**-2.3**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BVAR	**Borovoye Array**	**50.63**	**312**	P	P	**02 08 09.5**	**-0.4**
	comp=Z,1.0nm,0.4s,baz=72,slow=7.1,SNR=6.7						
BRVK	**Borovoye**	**50.69**	**313**	*e*P	P	**02 08 10.3**	**0.0**
BRVK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
BRVK	**Borovoye**	**50.69**	**313**	*e*P	P	**02 08 09.4**	**-0.9**
	comp=Z,6.8nm,0.5s						
KKAR	**Karatay Array**	**53.09**	**300**	*e*P	P	**02 08 28.4**	**0.0**
KKAR				pmax	pmax		
	comp=Z,7.0nm,1.1s						
KKAR	**Karatay Array**	**53.09**	**300**	*e*P	P	**02 08 28.4**	**0.0**
	comp=Z,6.9nm,1.1s						
INK	**Inuvik**	**54.82**	**27**	P	P	**02 08 41.5**	**+0.9**
	comp=Z,1.8nm,0.6s,baz=240,slow=6.3,SNR=3.6						
ARU	**Arti**	**56.46**	**319**	*d i*P	P	**02 08 51.9**	**-0.7**
ARU						02 09 48.5	
ARU				S	S	**02 16 41.6**	**-1.0**
ARU				SS	SS	**02 20 26.3**	**-3.0**
ARU				pmax	pmax		
	comp=Z,13nm,1.7s						
WRAB	**Tennant Creek**	**56.66**	**188**	⇑*e*P	P	**02 08 53.1**	**-1.2**
WRAB				pmax	pmax		
	comp=Z,20nm,1.2s						
WRAB	**Tennant Creek**	**56.66**	**188**	*e*P	P	**02 08 52.7**	**-1.7**
	comp=Z,5.3nm,0.7s						
WRA	**Warramunga Arr**	**56.67**	**188**	P	P	**02 08 53.4**	**-1.1**
	comp=Z,5.1nm,0.7s,baz=4.4,slow=7.4,SNR=15						
WRA	**Warramunga Arr**	**56.67**	**188**	*ce*P	P	**02 08 53.0**	**-1.4**
WRA				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ABKAR	**Akbulak array**	**57.98**	**310**	*e*P	P	**02 09 02.3**	**-1.2**
	comp=Z,2.5nm,0.5s						
AS01	**Alice Springs**	**60.39**	**188**	*e*P	P	**02 09 19.1**	**-1.2**
ASAR	**Alice Springs**	**60.40**	**188**	P	P	**02 09 19.6**	**-0.8**
	comp=Z,2.9nm,0.8s,baz=11,slow=7.4,SNR=24						
GEYT	**Alibeck**	**63.79**	**299**	P	P	**02 09 43.0**	**-0.2**
	comp=Z,0.7nm,0.5s,baz=98,slow=2.9,SNR=2.5						
GEYT				LR	LR	02 37 36.9	
	comp=Z,18nm,21.2s,baz=195,slow=36						
KLMR	**Klimovskoe**	**63.93**	**328**	*e*P	P	**02 09 41.8**	**-1.8**
KLMR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ARCES	**ARCESS Array B**	**64.24**	**339**	P	P	**02 09 45.3**	**-0.3**
	comp=Z,0.6nm,0.4s,baz=52,slow=6.3,SNR=3.6						
YKA	**Yellowknife Ar**	**64.24**	**30**	P	P	**02 09 46.3**	**+0.6**
	comp=Z,0.8nm,0.8s,baz=305,slow=7.0,SNR=3.6						
YKA	**Yellowknife Ar**	**64.24**	**30**	*ce*P	P	**02 09 49.7**	**+4.0**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
STKA	**Stephens Creek**	**68.20**	**180**	P	P	**02 10 10.8**	**-0.4**
	comp=Z,2.9nm,0.6s,baz=1.2,slow=7.4,SNR=5.6						
OBN	**Obninsk**	**68.23**	**323**	*e*P	P	**02 10 11.4**	**0.0**
OBN				pmax	pmax		
	comp=Z,4.0nm,0.5s						
FINES	**FINESS Array B**	**69.02**	**332**	P	P	**02 10 15.6**	**-0.5**
	comp=Z,1.4nm,0.4s,baz=35,slow=8.4,SNR=17						
FINES	**FINESS Array B**	**69.02**	**332**	*ce*P	P	**02 10 16.2**	**+0.1**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
VSR	**Storozhevoye**	**69.04**	**319**	*e*P	P	**02 10 15.2**	**-1.3**
VSR				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KBZ	**Khabaz**	**70.95**	**311**	P	P	**02 10 27.9**	**-0.4**
	comp=Z,1.2nm,0.5s,baz=134,slow=0.9,SNR=5.0						
KIV	**Kislovodsk**	**70.95**	**311**	*ce*P	P	**02 10 28.3**	**-0.2**
KIV				pmax	pmax		
	comp=Z,3.0nm,0.6s						
SUMG	**Summit**	**71.04**	**360**	*e*P	P	**02 10 29.2**	**+0.3**
SUMG				pmax	pmax		
	comp=Z,6.0nm,1.0s						
SUMG	**Summit**	**71.04**	**360**	*e*P	P	**02 10 29.2**	**+0.3**
	comp=Z,5.8nm,1.0s						
BMO	**Blue Mountains**	**72.36**	**47**	*e*P	P	**02 10 38.0**	**+1.0**
	comp=Z,5.1nm,1.4s						
FFC	**Flin Flon**	**74.14**	**33**	*e*P	P	**02 10 47.1**	**-0.1**
FFC				pmax	pmax		
	comp=Z,2.0nm,0.7s						
FFC	**Flin Flon**	**74.14**	**33**	*e*P	P	**02 10 47.0**	**-0.1**
	comp=Z,1.9nm,0.7s						
NB2	**NORSAR Subarra**	**74.42**	**337**	P	P	**02 10 48.4**	**-0.4**
	comp=Z,4.7nm,0.8s,baz=42,slow=6.2						
NOA	**NORSAR Array B**	**74.42**	**337**	P	P	**02 10 48.5**	**-0.2**
	comp=Z,3.9nm,0.9s,baz=40,slow=5.8,SNR=11						
NOA				LR	LR	02 46 48.3	
	comp=Z,18nm,19.7s,baz=25,slow=38						
AKASG	**Malin Array Be**	**74.43**	**322**	P	P	**02 10 48.1**	**

comp=Z,6.3nm,1.1s
OBKA Obir 84.30 326 *i* PcP **P** **02 11 45.7 +2.8**
comp=Z,5.8nm,1.6s
KBA Koelnbreinsper 84.39 327 *i* PcP **P** **02 11 43.6 +0.1**
comp=Z,1.4nm,0.4s
MYKA Terra Mystica 84.61 327 *i* P **P** **02 11 40.1 -4.4**
comp=Z,1.3nm,0.5s
WATA Walderalm 84.95 328 *i* P **P** **02 11 43.8 -2.5**
comp=Z,0.8nm,0.4s
ANMO Albuquerque 85.01 50 *e*P **P** **02 11 47.9 +1.0**
ANMO pmax pmax
comp=Z,2.0nm,1.0s
ABTA Abfaltersbach 85.01 327 *i* P **P** **02 11 43.8 -2.7**
comp=Z,2.3nm,1.0s
MOTA Moosalm 85.15 328 *i* P **P** **02 11 45.3 -2.0**
comp=Z,0.9nm,0.6s
RETA Reutte 85.18 329 *i* PcP **P** **02 11 46.8 -0.5**
comp=Z,2.0nm,0.6s
BFO Black Forest 85.49 331 *c*e**P** **P** **02 11 49.0 +0.2**
FETA Feichten 85.56 328 *i* PcP **P** **02 11 48.3 -1.1**
comp=Z,3.1nm,1.1s
DAVA Damuels 85.70 329 *i* PcP **P** **02 11 50.2 +0.1**
comp=Z,6.0nm,0.9s
TXAR Lajitas Array 90.54 52 P **P** **02 12 14.2 +0.7**
comp=Z,1.0nm,0.7s,baz=299,slow=4.2,SNR=12
LPAZ La Paz 147.09 60 PKPbc **PKPbc** **02 18 55.1 0.0**
comp=Z,1.8nm,0.5s,baz=324,slow=4.2,SNR=8.6

*ISCJB **29** 02:07:25.2±0.4,39°.42N±0°.02×26°.83E±0°.03,h4km±4km, Error ellipse: s-maj=3.3km s-min=3.0km az=3.5*
*ATH **29** 02:07:25.5,39°.37N×26°.78E,h29km±1km,ML2.2/5, Error ellipse: s-maj=3.0km s-min=1.2km az=262.0*
*CSEM **29** 02:07:25.6±0.1,39°.41N×26°.82E,h8km,MD2.7, Error ellipse: s-maj=2.2km s-min=1.9km az=100.0*
*ISK **29** 02:07:25.3,39°.42N×26°.86E,h8km,ML2.6*
*DDA **29** 02:07:25.5,39°.42N×26°.83E,h8km,Md2.7*
ISC 29 02:07:25.7±0.8,39°.41N±0°.02×26°.83E±0°.02,h12km±6km, n72,σ0°57/99,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AYVA	**Ayvalik**	**0.15**	**227**	*i* P		**Pg**		**02 07 29.1**	**-0.1**
AYVA				*i* S		**Sg**		**02 07 31.8**	**+0.1**
AYVA	**Ayvalik**	**0.15**	**227**	P		**Pg**		**02 07 29.1**	**-0.1**
AYVA				S		**Sg**		**02 07 31.8**	**+0.1**
DKL	**Dikili**	**0.34**	**170**	*e*PG		**Pg**		**02 07 32.3**	**-0.3**
DKL	**Dikili**	**0.34**	**170**	*e*Pg		**Pg**		**02 07 32.3**	**-0.3**
PRK	**Paraskevi**	**0.46**	**250**	P		**Pg**		**02 07 34.5**	**-0.3**
PRK				S		**Sg**		**02 07 40.8**	**-0.1**
PRK	**Paraskevi**	**0.46**	**250**	P		**Pg**		**02 07 34.5**	**-0.3**
PRK				S		**Sg**		**02 07 40.8**	**-0.1**
PRK				AML		AML		02 07 41.8	
	comp=E,434μm,0.2s								
PRK				AML		AML		02 07 42.0	
	comp=N,624μm,0.4s								
BOZC	**Bozcaada**	**0.74**	**306**	*i* P		**Pg**		**02 07 39.8**	**-0.2**
BOZC				*i* S		**Sb**		**02 07 50.4**	**-0.2**
SIGR	**SIGRI**	**0.78**	**256**	*e*PG		**Pb**		**02 07 41.3**	**+0.2**
SIGR	**SIGRI**	**0.78**	**256**	P		**Pg**		**02 07 40.8**	**0.0**
SIGR	**SIGRI**	**0.78**	**256**	*e*Pg		**Pb**		**02 07 41.3**	**+0.2**
SIGR				S		**Sg**		**02 07 51.1**	**+0.1**
SIGR	**SIGRI**	**0.78**	**256**	P		**Pg**		**02 07 40.8**	**0.0**
SIGR				S		**Sg**		**02 07 51.1**	**+0.1**
SIGR				AML		AML		02 07 51.4	
	comp=N,417μm,0.5s								
SIGR				AML		AML		02 07 54.0	
	comp=E,303μm,0.3s								
BALB	**Balikesir**	**0.85**	**74**	*e*PG		**Pg**		**02 07 41.6**	**-0.5**
BALB	**Balikesir**	**0.85**	**74**	*e*Pg		**Pg**		**02 07 41.6**	**-0.5**
GONE	**Gonen-Balikesi**	**0.92**	**46**	*e*PG		**Pg**		**02 07 42.8**	**-0.6**
GONE				*e*SG		**Sb**		**02 07 55.5**	**-0.2**
GONE	**Gonen-Balikesi**	**0.92**	**46**	*e*Pg		**Pg**		**02 07 42.8**	**-0.6**
GONE				*e*Sg		**Sb**		**02 07 55.5**	**-0.2**
AKS	**Akhisar**	**0.93**	**124**	*e*PG		**Pg**		**02 07 43.7**	**+0.1**
AKS	**Akhisar**	**0.93**	**124**	*e*Pg		**Pg**		**02 07 43.7**	**+0.1**
LPK	**Lapseki**	**0.96**	**357**	*e*PG		**Pg**		**02 07 43.9**	**-0.4**
LPK	**Lapseki**	**0.96**	**357**	*e*Pg		**Pg**		**02 07 43.9**	**-0.4**
GELI	**Tayfur-Gelibol**	**1.02**	**345**	*e*PG		**Pb**		**02 07 45.2**	**-0.1**
GELI				*e*SG		**Sn**		**02 08 00.4**	**+0.2**
GELI	**Tayfur-Gelibol**	**1.02**	**345**	*e*Pg		**Pb**		**02 07 45.2**	**-0.1**
GELI				*e*Sg		**Sn**		**02 08 00.4**	**+0.2**
KRBG	**Karabiga-Canak**	**1.05**	**20**	*e*PG		**Pg**		**02 07 45.2**	**-0.7**
KRBG	**Karabiga-Canak**	**1.05**	**20**	*e*Pg		**Pg**		**02 07 45.2**	**-0.7**
URLA	**Izmir**	**1.06**	**190**	*i* P		**Pg**		**02 07 45.3**	**-0.8**
URLA				*i* S		**Sn**		**02 08 01.5**	**+0.4**
URLA	**Izmir**	**1.06**	**190**	P		**Pg**		**02 07 45.3**	**-0.8**
URLA				S		**Sn**		**02 08 01.5**	**+0.4**
IZM	**Izmir**	**1.06**	**161**	*e*PG		**Pg**		**02 07 45.8**	**-0.4**
IZM	**Izmir**	**1.06**	**161**	*e*Pg		**Pg**		**02 07 45.8**	**-0.4**
CHOS	**Chios island**	**1.19**	**211**	*e*PN		**Pn**		**02 07 49.5**	**+1.4**
CHOS	**Chios island**	**1.19**	**211**	P		**Pg**		**02 07 46.9**	**-1.6**
CHOS	**Chios island**	**1.19**	**211**	*e*Pn		**Pn**		**02 07 49.5**	**+1.4**
CHOS				S		**Sg**		**02 08 02.6**	**-1.3**
CHOS	**Chios island**	**1.19**	**211**	P		**Pg**		**02 07 46.9**	**-1.6**
CHOS				S		**Sg**		**02 08 02.6**	**-1.3**
CHOS				AML		AML		02 08 08.1	
	comp=E,291μm,0.2s								
CHOS				AML		AML		02 08 08.2	
	comp=N,318μm,0.2s								
EDC	**Edincik**	**1.23**	**40**	*e*PN		**Pb**		**02 07 48.8**	**-0.1**
EDC	**Edincik**	**1.23**	**40**	*e*Pn		**Pb**		**02 07 48.8**	**-0.1**
ERIK	**Erikli-Kesan**	**1.28**	**349**	*e*PN		**Pg**		**02 07 49.9**	**-0.5**
ERIK				*e*SN		**Sn**		**02 08 07.5**	**+1.0**
ERIK	**Erikli-Kesan**	**1.28**	**349**	*e*Pn		**Pg**		**02 07 49.9**	**-0.5**
ERIK				*e*Sn		**Sn**		**02 08 07.5**	**+1.0**
RKY	**Sarkoy-Tekirda**	**1.31**	**12**	*e*PN		**Pn**		**02 07 49.6**	**-0.2**
RKY	**Sarkoy-Tekirda**	**1.31**	**12**	*e*Pn		**Pn**		**02 07 49.6**	**-0.2**
MRMT	**Marmara Adasi**	**1.33**	**26**	*e*PN		**Pn**		**02 07 50.1**	**0.0**
MRMT	**Marmara Adasi**	**1.33**	**26**	*e*Pn		**Pn**		**02 07 50.1**	**0.0**
LIA	**Limnos Island**	**1.36**	**292**	P		**Pn**		**02 07 50.4**	**-0.1**
LIA				S		**Sb**		**02 08 08.4**	**0.0**
KESN	**Edirne-Kesan**	**1.42**	**355**	*i* P		**Pb**		**02 07 52.1**	**-0.2**
KESN				*i* S		**Sg**		**02 08 11.2**	**-0.3**
KESN	**Edirne-Kesan**	**1.42**	**355**	P		**Pb**		**02 07 52.1**	**-0.2**
KESN				S		**Sg**		**02 08 11.2**	**-0.3**
ENEZ	**Enez**	**1.42**	**339**	*e*PN		**Pg**		**02 07 52.9**	**-0.1**
ENEZ	**Enez**	**1.42**	**339**	*e*Pn		**Pg**		**02 07 52.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.46**	**53**	*e*PN		**Pn**		**02 07 52.4**	**+0.6**
KCTX	**Karacabey (Bur**	**1.46**	**53**	*e*Pn		**Pn**		**02 07 52.4**	**+0.6**
SMTH	**Samothraki Isl**	**1.46**	**317**	P		**Pn**		**02 07 52.1**	**+0.3**
SMTH	**Samothraki Isl**	**1.46**	**317**	P		**Pn**		**02 07 52.1**	**+0.3**
SMTH				AML		AML		02 08 13.4	
	comp=N,171μm,0.4s								
SMTH				AML		AML		02 08 13.5	
	comp=E,92μm,0.1s								
DEMI	**Demirci**	**1.51**	**103**	*i* P		**Pb**		**02 07 54.1**	**+0.4**
DEMI				*i* S		**Sg**		**02 08 14.2**	**-0.2**
DEMI	**Demirci**	**1.51**	**103**	P		**Pb**		**02 07 54.1**	**+0.4**
DEMI				S		**Sg**		**02 08 14.2**	**-0.2**
ALN	**Alexandroupoli**	**1.60**	**338**	*e*PN		**Pb**		**02 07 54.7**	**-0.5**
ALN	**Alexandroupoli**	**1.60**	**338**	P		**Pn**		**02 07 54.6**	**+0.8**
ALN				S		**Sn**		**02 08 14.7**	**+0.3**
ALN	**Alexandroupoli**	**1.60**	**338**	P		**Pn**		**02 07 54.6**	**+0.8**
ALN				S		**Sn**		**02 08 14.7**	**+0.3**
ALN				AML		AML		02 08 18.4	
	comp=N,209μm,0.5s								
ALN				AML		AML		02 08 18.7	
	comp=E,99μm,0.5s								
MANT	**Manisa**	**1.63**	**124**	*i* P		**Pn**		**02 07 55.1**	**+0.7**
MANT				*i* S		**Sn**		**02 08 16.0**	**+0.6**
MANT	**Manisa**	**1.63**	**124**	P		**Pn**		**02 07 55.1**	**+0.7**
MANT				S		**Sn**		**02 08 16.0**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**1.68**	**150**	*e*PN		**Pn**		**02 07 55.3**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.68**	**150**	*e*Pn		**Pn**		**02 07 55.3**	**+0.3**
KULA	**Kula-Manisa**	**1.69**	**121**	*e*PN		**Pb**		**02 07 56.2**	**-0.4**
KULA	**Kula-Manisa**	**1.69**	**121**	*e*Pn		**Pb**		**02 07 56.3**	**-0.4**
SMG	**Samos**	**1.70**	**180**	P		**Pn**		**02 07 54.9**	**-0.2**
SMG	**Samos**	**1.70**	**180**	P		**Pn**		**02 07 54.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.85**	**58**	*e*PN		**Pn**		**02 07 57.8**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.85**	**58**	*e*Pn		**Pn**		**02 07 57.8**	**+0.6**
ARMT	**Armutlu**	**1.94**	**53**	*e*PN		**Pn**		**02 07 59.5**	**+1.0**
ARMT	**Armutlu**	**1.94**	**53**	*e*Pn		**Pn**		**02 07 59.5**	**+1.0**
TVSB	**Tavsanli**	**2.04**	**88**	*e*PN		**Pn**		**02 08 00.8**	**+0.9**
TVSB	**Tavsanli**	**2.04**	**88**	*e*Pn		**Pn**		**02 08 00.8**	**+0.9**
GDZ	**Gediz**	**2.08**	**98**	*i* P		**Pg**		**02 08 05.0**	**-0.7**
GDZ				*i* S		**Sg**		**02 08 32.3**	**-0.4**
KAVA	**Kavala**	**2.38**	**313**	P		**Pn**		**02 08 04.7**	**+0.2**
KAVA	**Kavala**	**2.38**	**313**	P		**Pn**		**02 08 04.7**	**+0.2**
EDRB	**Edirne**	**2.44**	**359**	*e*PN		**Pn**		**02 08 05.9**	**+0.6**
EDRB	**Edirne**	**2.44**	**359**	*e*Pn		**Pn**		**02 08 05.9**	**+0.6**

*BJI **29** 02:09:29.3,41°.36N×83°.56E,h9km,ML3.5/8*
*NNC **29** 02:09:31.4±1.1,41°.47N×83°.62E,h10km±4km,mb3.8, mpv3.5,Error ellipse: s-maj=8.9km s-min=6.5km az=158.0*
*SOME **29** 02:09:33.2,41°.45N×83°.27E,h15km*
ISC 29 02:09:34.2±1.5,41°.56N±0°.08×83°.31E±0°.05,h10km,n19, σ2°62/31,6C-13D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**2.89**	**312**	*e*P		**Pb**		**02 10 26.7**	**+0.8**
	34nm,0.3s								
KTMS				*e*S		**Sg**		**02 11 05.8**	**-1.1**
	90nm,0.4s								
SHLS	**Shalkode**	**3.00**	**303**	*e*P		**Pb**		**02 10 26.2**	**-1.6**
	54nm,0.3s								
SHLS				*e*S		**Sb**		**02 11 04.1**	**-0.5**
	104nm,0.6s								
PDGK	**Podgornoye**	**3.34**	**303**	⇑Pn		**Pn**		**02 10 26.8**	**+0.5**
	4.7nm,0.4s								
PDGK				⇑Pg		**Pb**		**02 10 35.3**	**+1.9**
	25nm,0.8s								
PDGK				⇑Sn		**Sb**		**02 11 10.3**	**-3.7**
	40nm,0.4s								
PDGK				⇓Lg		Lg		02 11 26.4	
	66nm,0.6s								
UZB	**Uzynbulak**	**3.55**	**298**	*e*P		**Pb**		**02 10 37.5**	**+0.3**
	12nm,0.4s								
UZB				*e*S		**Sb**		**02 11 23.8**	**+3.4**
	71nm,0.4s								
DJR	**Jarkent**	**3.79**	**318**	*e*P		**Pb**		**02 10 42.8**	**+1.6**
	34nm,0.6s								
DJR				*e*S		**Sg**		**02 11 32.7**	**-3.1**
	44nm,0.5s								
KPKS	**Kokpek**	**3.91**	**301**	*e*P		**Pb**		**02 10 45.8**	**+2.5**
	64nm,0.3s								
KPKS				*e*S		**Sg**		**02 11 37.6**	**-2.2**
	101nm,0.5s								
WMQ	**Urumqi**	**3.95**	**54**	*e*Pn		**Pn**		**02 10 32.5**	**-2.3**
WMQ				Sn		**Sn**		**02 11 20.8**	**-0.4**
WMQ				smax		smax			
	comp=N,67nm,0.5s								
WMQ				smax		smax			
	comp=E,100nm,0.5s								
ZHN	**Zhinishke**	**3.95**	**296**	*e*P		**Pb**		**02 10 44.7**	**+0.7**
	18nm,0.4s								
ZHN				*e*S		**Sg**		**02 11 36.3**	**-4.8**
	28nm,0.2s								
MNBS	**Baschi**	**4.40**	**307**	*e*P		**Pb**		**02 10 51.5**	**-0.1**
	44nm,0.5s								
MNBS				*e*S		**Sb**		**02 11 48.0**	**+3.2**
	87nm,0.4s								
KAPS	**Kapalarasan**	**4.71**	**324**	*e*P		**Pb**		**02 10 59.9**	**+3.1**
	9.0nm,0.3s								
KAPS				*e*S		**Sg**		**02 12 02.4**	**-2.9**
	21nm,0.7s								
ARXS	**Arharly**	**4.82**	**305**	*e*P		**Pb**		**02 11 01.6**	**+2.8**
	12nm,0.5s								
ARXS				*e*S		**Sg**		**02 12 05.7**	**-3.2**
	27nm,0.5s								
MK31	**Makanchi Array**	**5.29**	**352**	Pn		**Pn**		**02 10 52.5**	**-0.7**
	0.1nm,0.2s,baz=137,slow=14,SNR=16								
MK31				⇓Pg		**Pb**		**02 11 09.8**	**+3.2**
	4.7nm,0.8s,baz=166,slow=15,SNR=7.9								
MK31				⇑Lg		Lg		02 12 22.7	
	18nm,0.6s,baz=168,slow=28,SNR=11								
TKM2	**Tokmak 2**	**5.88**	**286**	⇓Pn		**Pn**		**02 11 02.2**	**+0.7**
	2.3nm,0.5s								
TKM2				⇓Pg		**Pg**		**02 11 23.8**	**-3.0**
	3.7nm,0.6s								
TKM2				⇓Lg		Lg		02 12 44.4	
	15nm,0.6s								
KSH	**Kashi**	**5.95**	**252**	Pn		**Pg**		**02 11 29.0**	**+1.0**
KSH				Sn		Sg		02 12 57.5	+12
KSH				smax		smax			
	comp=N,30nm,0.7s								
KSH				smax		smax			
	comp=E,42nm,1.0s								
AAK	**Ala-Archa**	**6.64**	**282**	⇑Pg		**Pg**		**02 11 39.1**	**-2.3**
	comp=E,3.3nm,0.5s								
AAK				⇑Lg		Lg		02 13 11.5	
	comp=E,12nm,0.7s								
MNAS	**Manas**	**8.10**	**280**	⇓Pg		Pg		02 12 04.1	-5.0
	comp=E,3.6nm,1.2s								
MNAS				⇓Lg		Lg		02 13 57.2	
	comp=E,5.6nm,0.9s								
KK31	**Karatay Array**	**9.60**	**284**	⇓Pg		Pg		02 12 31.4	
	comp=E,0.4nm,0.5s,baz=93,slow=16,SNR=4.4								
KK31				⇓Lg		Lg		02 14 43.8	
	comp=E,6.1nm,1.1s,baz=92,slow=27,SNR=4.8								
KURBB	**Kurchatov Arra**	**9.65**	**342**	⇓Sn		**Sn**		**02 13 44.3**	**+2.9**
	comp=E,6.7nm,0.7s								
KURBB				⇓Lg		Lg		02 14 44.2	
	comp=E,20nm,0.7s								
OTUK	**Ortayu**	**10.25**	**314**	⇓Sn		**Sn**		**02 14 01.3**	**+5.0**
	comp=E,1.7nm,0.9s								
OTUK				⇓Lg		Lg		02 15 03.0	
	comp=E,9.2nm,1.3s								

IDC 29 02:18:10.1±6.7,36°.52S×79°.04E,h0km,mb3.7/4, mb1 3.9/4,mb1mx3.6/32,mbtmpb3.7/4,MS3.6/5,Ms1 3.5/5, ms1mx3.1/31,Error ellipse: s-maj=217.8km s-min=44.4km az=39.0,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
H01W2	**Cape Leeuwin H**	**28.45**	**97**	T		T	T	02 54 18.4	
	baz=254,slow=75,SNR=203								
H01W3	**Cape Leeuwin H**	**28.45**	**97**	T		T	T	02 54 19.0	
	baz=254,slow=75,SNR=195								
H01W1	**Cape Leeuwin H**	**28.46**	**97**	T		T	T	02 54 19.8	
	baz=254,slow=75,SNR=213								
H08S2	**Diego Garcia H**	**29.35**	**347**	T		T	T	02 55 29.6	
	baz=171,slow=76,SNR=796								
H08S1	**Diego Carcia H**	**29.36**	**347**	T		T	T	02 55 32.4	
	baz=171,slow=76,SNR=721								
H08S3	**Diego Garcia H**	**29.37**	**347**	T		T	T	02 55 31.1	
	baz=171,slow=76,SNR=872								
H08N1	**Diego Carcia H**	**30.92**	**344**	T		T	T	02 57 42.2	
	baz=167,slow=76,SNR=3.7								
H08N3	**Diego Garcia H**	**30.92**	**344**	T		T	T	02 57 44.5	
	baz=167,slow=76,SNR=3.2								
H08N2	**Diego Garcia H**	**30.94**	**344**	T		T	T	02 57 51.5	
	baz=167,slow=76,SNR=4.2								
MAW	**Mawson**	**32.46**	**191**	LR		LR	LR	02 35 18.4	
	comp=Z,75nm,18.1s,baz=58,slow=32								
FITZ	**Fitzroy Crossi**	**44.81**	**79**	LR		LR	LR	02 41 59.8	
	comp=Z,81nm,21.4s,baz=248,slow=32								
BOSA	**Boshof**	**45.52**	**264**	LR		LR	LR	02 41 02.0	
	comp=Z,64nm,18.7s,baz=126,slow=30								
ASAR	**Alice Springs**	**48.58**	**91**	P		P	P	02 26 55.5	+0.1
	0.4nm,0.7s,baz=246,slow=9.0,SNR=3.5								
WRA	**Warramunga Arr**	**50.77**	**87**	P		P	P	02 27 11.9	-0.3
	0.9nm,0.7s,baz=237,slow=7.6,SNR=5.9								
STKA	**Stephens Creek**	**51.15**	**104**	P		P	P	02 27 15.0	+0.1
	2.5nm,0.9s,baz=270,slow=8.1,SNR=3.4								
GEYT	**Alibeck**	**76.56**	**343**	LR		LR	LR	02 59 38.2	
	comp=Z,21nm,18.7s,baz=230,slow=32								
MKAR	**Makanchi Array**	**82.99**	**2**	P		P	P	02 30 36.6	0.0
	0.2nm,0.4s,baz=189,slow=6.6,SNR=4.1								
DBIC	**Dimbokro**	**89.05**	**279**	LR		LR	LR	03 09 04.7	
	comp=Z,31nm,18.1s,baz=117,slow=34								

GUC 29 02:26:19.6±0.5,23°.93S×67°.41W,h218km±12km,ML3.8, 5C-1D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.91**	**313**	*i* S		S	S	02 27 30.9	+1.5
PB06	**IPOC Station P**	**2.33**	**301**	⇑*i*P		Pn		02 27 04.8	+1.7
PB06				*i* S		S		02 27 39.3	+2.6
PB06				IAML				02 27 42.9	
	comp=E,138nm,0.4s								
PB09	**IPOC Station P**	**2.71**	**321**	⇑*i*P		Pn		02 27 09.3	+2.1
PB09				IAML				02 27 49.1	
	comp=N,212nm,0.6s								
ANCH	**Antofagasta**	**2.76**	**274**	⇓*i*P		Pn		02 27 09.3	+1.8
ANCH				*i* S		S		02 27 46.7	+2.1
PB10	**IPOC Station P**	**2.91**	**277**	*e*P		Pn		02 27 10.7	+1.5
PB10				*i* S		S		02 27 49.9	+2.2
PB10				IAML				02 27 55.3	
	comp=N,188nm,0.6s								
PB04	**IPOC Station P**	**2.98**	**302**	⇑*i*P		Pn		02 27 12.2	+2.0
PB04				IAML				02 27 56.5	
	comp=N,81nm,0.4s								
PB07	**IPOC Station P**	**3.17**	**313**	⇑*i*P		Pn		02 27 14.0	+1.7
PB07				*i* S		S		02 27 56.0	+2.6
PB01	**IPOC Station P**	**3.46**	**326**	⇑*i*P		Pn		02 27 16.9	+1.3
PB01				*i* S		S		02 28 01.6	+2.3

*ISCJB **29** 02:29:38.8±0.9,29°.71S±0°.07×176°.38W±0°.10,h21km, mb4.3/8,MS3.4/1,Error ellipse: s-maj=12.1km s-min=9.3km az=166.8*
*IDC **29** 02:29:38.4±1.2,29°.57S×176°.50W,h0km,mb4.4/6, mb1 4.5/7,mb1mx4.1/32,mbtmp4.3/7,ML3.4/1,MS3.6/3, Ms1 3.6/3,ms1mx3.1/29,Error ellipse: s-maj=33.5km s-min=23.1km az=169.0*
*NEIC **29** 02:29:39.1±0.6,29°.70S×176°.34W,h10km,mb4.5/3,Error ellipse: s-maj=12.6km s-min=10.4km az=120.0*
ISC 29 02:29:41.1±0.8,29°.59S±0°.09×176°.42W±0°.10,h21km,n26, σ0°93/26,mb4.4/8,1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.35**	**284**	Pn		**Pn**		**02 30 04.3**	**-0.4**
	345nm,0.3s,baz=100,slow=13,SNR=58								
RAO				Sn		**Sn**		**02 30 20.9**	**-1.1**
	2μm,0.3s,baz=108,slow=19,SNR=20								
RAO				LR		LR		02 30 42.5	
	comp=Z,2μm,21.9s,baz=128,slow=50								
OUZ	**Omahuta**	**10.13**	**234**	*e*Pn		**Pn**		**02 32 04.3**	**-1.0**
URZ	**Urewera**	**10.18**	**210**	Pn		**Pn**		**02 32 05.5**	**-0.4**
	0.3nm,0.3s,baz=143,slow=20,SNR=2.9								
URZ				Sn		**Sn**		**02 34 00.5**	**+1.1**
	3.3nm,0.3s,baz=90,slow=19,SNR=6.2								
URZ	**Urewera**	**10.18**	**210**	*e*Pn		**Pn**		**02 32 05.2**	**-0.7**
URZ				Sn		**Sn**		**02 34 00.5**	**+1.1**
KHZ	**Kahutara**	**15.14**	**210**	*e*Pn		**Pn**		**02 33 11.8**	**-1.8**
DZM	**Mont Dzumac**	**17.14**	**292**	P		**P**		**02 33 42.2**	**+1.1**
	0.2nm,0.3s,baz=112,slow=18,SNR=3.1								
DZM				LR		LR		02 39 04.6	
	comp=Z,444nm,18.5s,baz=110,slow=33								
RAR	**Rarotonga**	**17.19**	**65**	LR		LR		02 39 40.1	
	comp=Z,135nm,19.9s,baz=274,slow=35								
HNR	**Honiara**	**29.86**	**307**	LR		LR		02 47 19.8	
	comp=Z,85nm,18.7s,baz=58,slow=36								
CTA	**Charters Tower**	**35.04**	**277**	P		**P**		**02 36 33.5**	**+0.9**
	2.6nm,0.3s,baz=128,slow=18,SNR=3.6								
STKA	**Stephens Creek**	**36.00**	**256**	P		**P**		**02 36 41.6**	**+0.9**
	5.1nm,0.9s,baz=112,slow=7.9,SNR=5.2								
ASAR	**Alice Springs**	**44.53**	**265**	P		**P**		**02 37 51.2**	**-0.3**
	2.8nm,0.7s,baz=103,slow=7.1,SNR=23								
WRAB	**Tennant Creek**	**45.44**	**271**	*e*P		**P**		**02 37 58.0**	**-0.8**
	9.0nm,1.1s								
WRA	**Warramunga Arr**	**45.45**	**271**	P		**P**		**02 37 57.8**	**-1.0**
	5.1nm,1.0s,baz=110,slow=6.2,SNR=20								
FITZ	**Fitzroy Crossi**	**53.74**	**269**	P		**P**		**02 39 01.5**	**-0.5**
	3.7nm,0.9s,baz=110,slow=10,SNR=4.0								
FITZ	**Fitzroy Crossi**	**53.74**	**269**	*e*P		**P**		**02 39 01.9**	**-0.1**
	5.7nm,1.0s								
QSPA	**South Pole Qui**	**60.52**	**180**	*e*P		**P**		**02 39 48.6**	**-0.9**
SYO	**Syowa Base**	**78.20**	**192**	⇓*e*pP		pP		02 41 41.9	-3.6
MJAR	**Matsushiro Arr**	**78.38**	**324**	P		**P**		**02 41 39.8**	**-0.1**
	2.0nm,0.8s,baz=159,slow=5.3,SNR=4.1								
HLID	**Hailey**	**92.31**	**40**	*e*P		**P**		**02 42 48.9**	**-0.9**
	0.6nm,0.6s								
KKAR	**Karatay Array**	**125.77**	**304**	*e*PKPdf		**PKPdf**		**02 48 41.9**	**+0.8**
FINES	**FINESS Array B**	**144.84**	**341**	PKP		**PKPdf**		**02 49 15.1**	**-0.7**
	1.8nm,0.7s,baz=316,slow=3.8,SNR=5.3								
NB2	**NORSAR Subarra**	**148.14**	**353**	PKP		**PKPab**		**02 49 28.5**	**+0.9**
	comp=Z,0.7nm,0.6s,baz=14,slow=3.0								
NOA	**NORSAR Array B**	**148.14**	**353**	PKPbc		**PKPbc**		**02 49 24.7**	**0.0**
	comp=Z,0.9nm,0.7s,baz=15,slow=4.6,SNR=5.5								
AKASG	**Malin Array Be**	**151.46**	**325**	PKPbc		**PKPbc**		**02 49 34.3**	**+1.2**
	comp=Z,0.6nm,0.3s,baz=46,slow=3.4,SNR=8.1								
KIEV	**Kiev**	**151.47**

SIJI				Sn	Sn	02 50 02.2	-10
	26nm,0.3s,baz=90,slow=23,SNR=2.9						
JAY	**Jayapura**	**7.60**	**71**	Pn	**Pn**	**02 49 57.1**	**-0.1**
	0.1nm,0.3s,baz=270,slow=20,SNR=3.0						
WRA	**Warramunga Arr**	**14.79**	**177**	Pn	**Pn**	**02 51 35.6**	**0.0**
	1.8nm,0.3s,baz=359,slow=13,SNR=66						
WRA				Sn	**Sn**	**02 54 16.3**	**-2.5**
	1.8nm,0.3s,baz=360,slow=23,SNR=8.8						
WRA				LR	LR	02 58 08.4	
	comp=Z,284nm,18.5s,baz=330,slow=40						
FITZ	**Fitzroy Crossi**	**15.06**	**210**	Pn	**Pn**	**02 51 40.2**	**+1.0**
	2.0nm,0.3s,baz=33,slow=14,SNR=58						
FITZ				Sn	**Sn**	**02 54 25.0**	**-0.4**
	1.2nm,0.3s,baz=182,slow=16,SNR=14						
FITZ				LR	LR	02 57 20.1	
	comp=Z,30nm,20.4s,baz=24,slow=37						
ASAR	**Alice Springs**	**18.48**	**179**	P	**Pn**	**02 52 24.2**	**+1.8**
	1.8nm,0.3s,baz=0.8,slow=11,SNR=56						
ASAR				S	**Sn**	**02 55 46.5**	**-1.8**
	0.5nm,0.3s,baz=360,slow=28,SNR=6.9						
ASAR				LR	LR	03 00 13.5	
	comp=Z,249nm,18.7s,baz=47,slow=39						
STKA	**Stephens Creek**	**27.70**	**165**	P	**P**	**02 53 56.2**	**+1.9**
	1.3nm,0.8s,baz=343,slow=11,SNR=2.2						
STKA				LR	LR	03 06 18.3	
	comp=Z,116nm,19.0s,baz=15,slow=39						
KSRS	**Korea Array**	**42.64**	**353**	LR	LR	03 12 02.0	
	comp=Z,34nm,20.8s,baz=176,slow=34						
MKAR	**Makanchi Array**	**68.63**	**325**	P	**P**	**02 59 08.5**	**-0.5**
	0.4nm,0.5s,baz=115,slow=7.5,SNR=6.0						
ZALV	**Zalesovo Beam**	**71.49**	**332**	P	**P**	**02 59 26.9**	**+0.5**
	1.7nm,0.9s,baz=108,slow=4.7,SNR=3.4						
VNDA	**Vanda**	**73.93**	**174**	LR	LR	03 31 29.1	
	comp=Z,54nm,19.5s,baz=342,slow=35						

*ISCJB **29** 02:49:46.5±0.5, 32°.34N±0°.04×115°.33W±0°.04, h12km±5km, Error ellipse: s-maj=7.5km s-min=5.5km az=38.1*
*ECX **29** 02:49:47.6±0.6, 32°.34N×115°.33W, h5km, MD2.3, ML2.5*
*MEX **29** 02:49:47.4±0.8, 32°.48N×115°.15W, h16km±2km, MD3.7*
ISC 29 02:49:45.9±1.0, 32°.39N±0°.04×115°.29W±0°.04, h19km±3km, n16, σ0°32/23, 1C-4D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.04**	**344**	*e*P	**Pg**	**02 49 49.0**	**-0.2**
CPBX				*e*S	**Sg**	**02 49 51.0**	**-0.5**
CPBX				⇓*e*		02 49 52.0	
CPBX				IAML		02 49 52.0	
	comp=N,10μm,0.1s						
MBIG	**Mexicali**	**0.08**	**74**	*e*P	**Pg**	**02 49 50.0**	**+0.5**
MBIG				*e*S	**Sg**	**02 49 52.3**	**+0.4**
EMSC	**East Mesa**	**0.44**	**36**	*i* P	**Pn**	**02 49 56.7**	**-0.5**
SGL	**Mount Signal**	**0.45**	**306**	⇓*i* P	**Pb**	**02 49 55.6**	**+0.3**
COA	**Coachella**	**0.50**	**17**	⇓*i* P	**Pn**	**02 49 57.7**	**-0.3**
YUH	**Yuha Desert**	**0.59**	**296**	⇑*i* P	**Pg**	**02 49 58.1**	**+0.4**
YMD	**Yuma Desert**	**0.65**	**75**	⇓*i* P	**Pn**	**02 49 60.0**	**-0.2**
IKP	**In-Ko-Pah, Jac**	**0.74**	**291**	*e*P	**Pg**	**02 50 00.4**	**0.0**
ECBX	**El Chinero**	**0.93**	**167**	*e*P	**Pb**	**02 50 03.5**	**0.0**
ECBX				*e*S	**Sb**	**02 50 15.7**	**+0.2**
ECBX				*e*		02 50 16.4	
ECBX				IAML		02 50 16.4	
	comp=N,161nm,0.2s						
CBX	**Cerro Bola**	**1.16**	**267**	*e*P	**Pb**	**02 50 07.4**	**0.0**
CBX				*e*S	**Sn**	**02 50 22.8**	**0.0**
CBX				IAML		02 50 23.5	
	comp=E,69nm,0.2s						
TJIG	**Tijuana**	**1.17**	**273**	*e*P	**Pb**	**02 50 07.5**	**0.0**
TJIG				*i* S	**Sb**	**02 50 22.2**	**-0.1**
TJIG	**Tijuana**	**1.17**	**273**	*e*P	**Pb**	**02 50 07.6**	**0.0**
BAR	**Barrett**	**1.20**	**285**	*e*P	**Pb**	**02 50 08.3**	**+0.3**
ZAX	**El Zacaton**	**1.20**	**224**	*e*P	**Pn**	**02 50 07.3**	**-0.5**
ZAX				*e*S	**Sb**	**02 50 23.2**	**-0.2**
SPIG	**San Pedro Mart**	**1.34**	**186**	*e*P	**Pn**	**02 50 09.9**	**0.0**
SPIG				*e*S	**Sn**	**02 50 27.0**	**-0.4**
PBX	**Punta Banda**	**1.38**	**243**	*e*P	**Pn**	**02 50 10.4**	**+0.3**

*CSEM **29** 02:55:51.8±0.4, 50°.04N×18°.42E, h1km, Error ellipse: s-maj=9.4km s-min=4.8km az=3.0*
PRU 29 02:55:52.6, 50°.04N×18°.40E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAC	**Raciborz**	**0.14**	**288**	*e*Pg	Pg	02 55 55.5	+0.2
RAC				*e*Sg	Sg	02 55 59.0	+1.9
OKC	**Ostrava-Krasne**	**0.26**	**219**	*e*PG	Pg	02 55 57.6	0.0
OKC				*e*SG	Sg	02 56 01.9	+1.0
	comp=Z,26nm,0.5s						
OKC	**Ostrava-Krasne**	**0.26**	**219**	Pg	Pg	02 55 57.6	0.0
OKC				Sg	Sg	02 56 01.9	+1.0
	26nm,0.5s						
MORC	**Moravsky Berou**	**0.61**	**245**	*e*Pg	Pg	02 56 03.9	-0.4
MORC				*e*Sg	Sg	02 56 12.0	-0.3
OJC	**Ojcow**	**0.92**	**78**	*e*Pg	Pg	02 56 08.0	-2.2
OJC				*e*Sg	Sg	02 56 20.5	-1.6
OJC	**Ojcow**	**0.92**	**78**	*e*Pg	Pg	02 56 08.0	-2.2
OJC				*e*Sg	Sg	02 56 20.5	-1.6
LANS	**Liptovska Anna**	**1.13**	**142**	*e*Pg	Pg	02 56 13.7	-0.5
LANS	**Liptovska Anna**	**1.13**	**142**	*e*PG	Pg	02 56 13.7	-0.5
DPC	**Dobruska-Polom**	**1.37**	**284**	*e*PG	Pg	02 56 17.3	-1.6
DPC				*e*SG	Sg	02 56 36.3	-0.3
	comp=Z,7.8nm,0.4s						
DPC	**Dobruska-Polom**	**1.37**	**284**	Pg	Pg	02 56 17.3	-1.6
DPC				Sg	Sg	02 56 36.3	-0.3
	7.8nm,0.4s						
NIE	**Niedzica**	**1.38**	**116**	*e*Pg	Pg	02 56 17.9	-1.2
NIE				*e*Sg	Sb	02 56 37.4	-0.1
VRAC	**Vranov**	**1.38**	**239**	*e*Pg	Pg	02 56 17.6	-1.5
VRAC				*e*Sg	Sg	02 56 36.2	-0.8
VYHS	**Vyhne**	**1.57**	**169**	*e*Pg	Pn	02 56 20.7	-1.1
VYHS	**Vyhne**	**1.57**	**169**	*e*PG	Pn	02 56 20.7	-1.1
STHS	**Stebnicka Huta**	**1.95**	**108**	*e*Pn	Pb	02 56 28.0	-1.0
STHS	**Stebnicka Huta**	**1.95**	**108**	*e*PN	Pb	02 56 28.0	-1.0

*ISCJB **29** 02:56:13.0±0.5, 50°.05N±0°.03×18°.36E±0°.03, h0km, Error ellipse: s-maj=4.8km s-min=2.6km az=15.1*
*CSEM **29** 02:56:14.5±0.4, 50°.04N×18°.41E, h1km, ML2.8/9, Error ellipse: s-maj=7.4km s-min=4.6km az=6.0*
*WAR **29** 02:56:14.8, 50°.04N×18°.44E, h1km, Mw2.6*
*VIE **29** 02:56:14.6±1.1, 49°.73N×18°.58E, h0km, mb1.8/2, ML2.3/5, Error ellipse: s-maj=8.2km s-min=6.9km az=101.0, Suspected Mining induced.*
*IPEC **29** 02:56:15.1±0.3, 50°.04N×18°.46E, h0km, ML2.0/3, Error ellipse: s-maj=2.3km s-min=2.0km az=110.0*
*PRU **29** 02:56:16.3, 50°.01N×18°.34E, h0km*
ISC 29 02:56:14.6±0.8, 50°.01N±0°.03×18°.42E±0°.02, h0km, n34, σ1s24/51, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAC	**Raciborz**	**0.16**	**296**	*e*Pg	**Pg**	**02 56 19.2**	**+1.5**
RAC				*e*Sg	**Sg**	**02 56 22.6**	**+2.8**
OKC	**Ostrava-Krasne**	**0.25**	**226**	*e*PG	**Pg**	**02 56 21.2**	**+1.8**
OKC				*e*SG	**Sg**	**02 56 25.1**	**+2.5**
OKC	**Ostrava-Krasne**	**0.25**	**226**	Pg	**Pg**	**02 56 21.2**	**+1.8**
OKC				Sg	**Sg**	**02 56 25.1**	**+2.5**
MORC	**Moravsky Berou**	**0.61**	**248**	*e*Pg	**Pb**	**02 56 27.6**	**-0.7**
MORC				*e*Sg	**Sg**	**02 56 35.4**	**+1.1**
	49nm,0.4s						
OJC	**Ojcow**	**0.91**	**76**	*e*Pg	**Pg**	**02 56 31.7**	**-0.3**
OJC				*e*Sg	**Sg**	**02 56 44.4**	**+0.6**
OJC	**Ojcow**	**0.91**	**76**	*e*Pg	**Pg**	**02 56 31.7**	**-0.3**
OJC				*e*Sg	**Sg**	**02 56 44.4**	**+0.6**
OJC	**Ojcow**	**0.91**	**76**	*e*Pg	**Pg**	**02 56 31.7**	**-0.3**
OJC				*e*Sg	**Sg**	**02 56 44.4**	**+0.6**
LANS	**Liptovska Anna**	**1.10**	**141**	*e*Sg	**Sg**	**02 56 49.4**	**-0.5**
LANS	**Liptovska Anna**	**1.10**	**141**	*e*SG	**Sg**	**02 56 49.4**	**-0.5**
NIE	**Niedzica**	**1.36**	**115**	*e*Pg	**Pb**	**02 56 41.5**	**+0.6**
NIE				*e*Sg	**Sn**	**02 57 01.1**	**+1.6**
NIE	**Niedzica**	**1.36**	**115**	*e*Pg	**Pb**	**02 56 41.5**	**+0.6**
NIE				*e*Sg	**Sn**	**02 57 01.1**	**+1.6**
NIE	**Niedzica**	**1.36**	**115**	*e*Pg	**Pb**	**02 56 41.5**	**+0.6**
NIE				*e*Sg	**Sn**	**02 57 01.1**	**+1.6**
VRAC	**Vranov**	**1.38**	**240**	*e*Pg	**Pb**	**02 56 41.3**	**0.0**
VRAC				*e*Sg	**Sn**	**02 56 59.5**	**-0.6**
	22nm,0.2s						
DPC	**Dobruska-Polom**	**1.39**	**285**	*e*SG	**Sg**	**02 56 58.8**	**-0.5**
	comp=Z,17nm,0.4s						
DPC	**Dobruska-Polom**	**1.39**	**285**	Sg	**Sg**	**02 56 58.8**	**-0.5**
	17nm,0.4s						
VYHS	**Vyhne**	**1.54**	**170**	*e*Pg	**Pg**	**02 56 43.8**	**-0.4**
VYHS				*e*Sn	**Sn**	**02 57 04.9**	**+0.8**
VYHS	**Vyhne**	**1.54**	**170**	*e*PG	**Pg**	**02 56 43.8**	**-0.4**
VYHS				*e*SN	**Sn**	**02 57 04.9**	**+0.8**
VYHS				*e*LG	Lg	02 57 09.9	
KSP	**Ksiaz**	**1.59**	**302**	*e*Pg	**Pn**	**02 56 43.3**	**-0.8**
KSP				*e*Sg	**Sg**	**02 57 05.6**	**-0.2**
KSP	**Ksiaz**	**1.59**	**302**	*e*Pg	**Pn**	**02 56 43.3**	**-0.8**
KSP				*e*Sg	**Sg**	**02 57 05.6**	**-0.2**
KRUC	**Moravsky**	**1.63**	**235**	*e*Sg	**Sg**	**02 57 07.2**	**+0.4**
	6.5nm,0.2s						
STHS	**Stebnicka Huta**	**1.93**	**107**	*e*PN	**Pg**	**02 56 51.8**	**+0.3**
STHS				*e*SN	**Sg**	**02 57 17.8**	**+1.3**
STHS				*e*LG	Lg	02 57 23.8	
KECS	**Kecovo**	**2.04**	**138**	*e*Sn	**Sn**	**02 57 15.7**	**-0.7**
KECS	**Kecovo**	**2.04**	**138**	*e*SN	**Sn**	**02 57 15.7**	**-0.7**
KECS				*e*LG	Lg	02 57 22.9	
CRVS	**Cervenica-Dubn**	**2.27**	**118**	*e*PN	**Pg**	**02 56 57.9**	**-0.3**
PRU	**Pruhonice**	**2.50**	**271**	*e*SG	**Sb**	**02 57 32.5**	**+0.7**
	comp=Z,4.8nm,0.5s						
PRU	**Pruhonice**	**2.50**	**271**	Sg	**Sb**	**02 57 32.5**	**+0.7**
	4.8nm,0.5s						
PVCC	**Panska Ves**	**2.52**	**283**	*e*SG	**Sg**	**02 57 34.7**	**-1.0**
	comp=Z,12nm,0.2s						
PVCC	**Panska Ves**	**2.52**	**283**	Sg	**Sg**	**02 57 34.7**	**-1.0**
	12nm,0.2s						
CONA	**Conrad Observa**	**2.68**	**220**	Pn	**Pn**	**02 56 57.1**	**-2.0**
	5μm,0.0s						
CONA				Sg	**Sg**	**02 57 39.1**	**-1.6**
	0.6nm,0.2s						
BRG	**Berggiesshubel**	**2.99**	**288**	SG	**Sg**	**02 57 48.9**	**-1.7**
	3.0nm,0.5s						
KHC	**Kasperske Hory**	**3.27**	**256**	*e*SG	**Sg**	**02 57 57.2**	**-2.5**
	comp=Z,5.8nm,0.4s						
KHC	**Kasperske Hory**	**3.27**	**256**	Sg	**Sg**	**02 57 57.2**	**-2.5**
	5.8nm,0.4s						
MOA	**Molln**	**3.49**	**233**	Sg	**Sg**	**02 58 06.1**	**-0.6**
	5.6nm,0.6s						
CLL	**Collm**	**3.68**	**293**	*e*Sg	**Sg**	**02 58 13.0**	**+0.1**
	comp=Z,5.0nm,0.8s						

*SJA **29** 02:56:53.7±0.7, 31°.57S×69°.50W, h109km±5km, ML3.4, MW3.7*
*GUC **29** 02:56:54.6±0.4, 31°.50S×69°.74W, h110km±21km, ML2.8*
ISC 29 02:56:54.3±2.9, 31°.5S±0°.1×69°.49W±0°.07, h111km±17km, n13, σ0°47/22, 2C-1D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RTLS	**Leoncito**	**0.33**	**151**	*i* P	**Pn**	**02 57 11.0**	**+0.3**
AUSP	**Uspallata**	**0.71**	**173**	*i* P	**Pn**	**02 57 13.3**	**+0.1**
AUSP				*i* S	**Sn**	**02 57 27.3**	**-0.1**
RTCV	**Cerro Valdivia**	**0.88**	**114**	*i* P	**Pn**	**02 57 14.8**	**+0.4**
RTCV				*i* S	**Sn**	**02 57 29.3**	**-0.3**
ASAL	**Salagasta**	**1.21**	**153**	*i* P	**Pn**	**02 57 17.9**	**0.0**
ASAL				*i* S	**Sn**	**02 57 35.4**	**-0.4**
ARCO	**CERRO ARCO**	**1.41**	**161**	*i* P	**Pn**	**02 57 20.0**	**-0.2**
ARCO				*i* S	**Sn**	**02 57 39.5**	**-0.4**
ARCO				IAML		02 57 41.0	
	comp=Z,378nm,0.7s						
AAGR	**Agrelo**	**1.66**	**161**	*i* P	**Pn**	**02 57 23.1**	**-0.1**
PEL	**Peldehue**	**1.92**	**212**	⇑*i* P	**Pn**	**02 57 26.6**	**+0.3**
PEL				*i* S	**Sn**	**02 57 50.3**	**-0.4**
PEL				IAML		02 57 52.7	
	comp=N,64nm,0.2s						
FCH	**Farellones**	**1.93**	**200**	*i* P	**Pn**	**02 57 27.8**	**+1.0**
FCH				*i* S	**Sn**	**02 57 52.7**	**+1.2**
FCH				IAML		02 57 53.5	
	comp=N,92nm,0.2s						
ROCH	**El Roble**	**1.95**	**221**	*e*P	**Pn**	**02 57 26.6**	**-0.2**
ROCH				*i* S	**Sn**	**02 57 51.4**	**-0.3**
ROCH				IAML		02 57 54.5	
	comp=N,117nm,0.2s						
ROC1	**El Roble**	**1.95**	**221**	*i* P	**Pn**	**02 57 26.4**	**-0.5**
CLCH	**Cerro Calan**	**2.08**	**205**	⇓*i* P	**Pn**	**02 57 28.6**	**+0.3**
CLCH				*i* S	**Sn**	**02 57 54.7**	**+0.3**
CLCH				IAML		02 57 56.3	
	comp=E,136nm,0.3s						
ACAN	**Cantantal**	**2.10**	**112**	*i* P	**Pn**	**02 57 28.7**	**+0.1**
RCDM	**Rinconada Maip**	**2.26**	**209**	⇑*i* P	**Pn**	**02 57 30.6**	**-0.1**
RCDM				*i* S	**Sn**	**02 57 58.2**	**-0.4**

*CSEM **29** 03:03:09.8±0.1, 39°.82N×38°.91E, h15km, MD2.9, Error ellipse: s-maj=3.3km s-min=3.0km az=54.0*
*ISK **29** 03:03:09.1, 39°.84N×38°.95E, h11km, MD2.6*
*DDA **29** 03:03:09.5, 39°.83N×38°.90E, h18km, Md2.9*
*ISCJB **29** 03:03:10.3±0.5, 39°.85N±0°.03×38°.91E±0°.04, h16km±9km, Error ellipse: s-maj=5.3km s-min=4.8km az=163.9*
ISC 29 03:03:08.9±1.0, 39°.81N±0°.02×38°.89E±0°.02, h9km±10km, n27, σ1s55/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
REFA	**Refahiye_ERZ˜**	**0.42**	**193**	*i* P	**Pg**	**03 03 14.0**	**-3.2**
REFA				*i* S	**Sg**	**03 03 16.5**	**-6.2**
KELT	**Kelkit**	**0.44**	**39**	*i* P	**Pb**	**03 03 18.4**	**-0.6**
KELT				*i* S	**Sg**	**03 03 24.0**	**+0.6**
KELT	**Kelkit**	**0.44**	**39**	P	**Pb**	**03 03 18.4**	**-0.6**
KELT				S	**Sg**	**03 03 24.0**	**+0.6**
KEMA	**Kemaliye**	**0.62**	**210**	*i* P	**Pg**	**03 03 21.9**	**+1.1**
KEMA				*i* S	**Sb**	**03 03 31.2**	**+0.4**
KEMA	**Kemaliye**	**0.62**	**210**	P	**Pg**	**03 03 21.9**	**+1.1**
KEMA				S	**Sb**	**03 03 31.2**	**+0.4**
EUZM	**Uzumlu**	**0.63**	**99**	*i* P	**Pg**	**03 03 21.9**	**+0.9**
EUZM				*i* S	**Sb**	**03 03 31.5**	**+0.4**
EUZM	**Uzumlu**	**0.63**	**99**	P	**Pg**	**03 03 21.9**	**+0.9**
EUZM				S	**Sb**	**03 03 31.5**	**+0.4**
SUSE	**Susehri**	**0.66**	**307**	*i* P	**Pb**	**03 03 22.9**	**+0.2**
SUSE				*i* S	**Sb**	**03 03 32.4**	**+0.2**
SUSE	**Susehri**	**0.66**	**307**	P	**Pb**	**03 03 23.0**	**+0.2**
SUSE				S	**Sb**	**03 03 32.4**	**+0.2**
PTK	**Pertek**	**0.99**	**157**	*e*PG	**Pn**	**03 03 29.2**	**0.0**
PTK				*e*SG	**Sg**	**03 03 42.7**	**+1.9**
PTK	**Pertek**	**0.99**	**157**	*e*Pg	**Pn**	**03 03 29.2**	**0.0**
PTK				*e*Sg	**Sg**	**03 03 42.7**	**+1.9**
ESPY	**Espiye-Giresun**	**1.12**	**354**	*e*PN	**Pg**	**03 03 30.8**	**+0.5**
ESPY				*e*SN	**Sn**	**03 03 45.5**	**-0.8**
ESPY	**Espiye-Giresun**	**1.12**	**354**	*e*Pn	**Pg**	**03 03 30.8**	**+0.5**
ESPY				*e*Sn	**Sn**	**03 03 45.5**	**-0.8**
CUKAN	**kangal_SIVAS**	**1.21**	**246**	*i* P	**Pg**	**03 03 32.8**	**+0.8**
CUKAN				*i* S	**Sg**	**03 03 51.5**	**+3.9**
CUKAN	**kangal_SIVAS**	**1.21**	**246**	P	**Pg**	**03 03 32.8**	**+0.8**
GRSN	**GIRESUNGRSN**	**1.21**	**337**	*i* P	**Pn**	**03 03 31.8**	**-0.3**
GRSN				*i* S	**Sb**	**03 03 45.2**	**-2.6**
GRSN	**GIRESUNGRSN**	**1.21**	**337**	P	**Pn**	**03 03 31.8**	**-0.3**
GRSN				S	**Sb**	**03 03 45.2**	**-2.6**
MACK	**Trabzon**	**1.32**	**30**	*i* P	**Pb**	**03 03 34.0**	**+0.2**
MACK	**Trabzon**	**1.32**	**30**	P	**Pb**	**03 03 34.0**	**+0.2**
YEDI	**Yedisu-Bingol**	**1.33**	**106**	*e*PN	**Pn**	**03 03 33.8**	**0.0**
YEDI	**Yedisu-Bingol**	**1.33**	**106**	*e*Pn	**Pn**	**03 03 33.8**	**0.0**
SCER	**sogukcermik**	**1.36**	**273**	*i* P	**Pn**	**03 03 34.0**	**-0.2**
SCER	**sogukcermik**	**1.36**	**273**	P	**Pn**	**03 03 34.0**	**-0.2**
ORDU	**Ordu-Boztepe**	**1.42**	**327**	*i* P	**Pb**	**03 03 35.8**	**+0.2**
ORDU	**Ordu-Boztepe**	**1.42**	**327**	P	**Pb**	**03 03 35.8**	**+0.2**
SVSK	**Karacayir**	**1.46**	**275**	*e*PN	**Pb**	**03 03 36.6**	**+0.4**
SVSK	**Karacayir**	**1.46**	**275**	*e*Pn	**Pb**	**03 03 36.6**	**+0.4**

*ISCJB **29** 03:12:44.0±1.2, 31°.82N±0°.03×115°.0W±0°.1, h30km±6km, Error ellipse: s-maj=16.1km s-min=5.0km az=179.3*
*ECX **29** 03:12:44.5±0.5, 31°.85N×114°.99W, h13km, MD2.8, ML3.0*
*MEX **29** 03:12:46.8±0.5, 31°.81N×115°.00W, h14km±8km, MD3.8*
ISC 29 03:12:43.8±2.0, 31°.82N±0°.04×115°.0W±0°.1, h19km±3km, n11, σ0°53/19, 3C, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ECBX	**El Chinero**	**0.35**	**187**	⇑*e*P	**Pb**	**03 12 51.7**	**+0.2**
ECBX				*e*S	**Sb**	**03 12 56.9**	**+0.1**
ECBX				IAML		03 12 59.0	
	comp=N,1μm,0.1s						
ECBX				*e*		03 12 59.0	
MBIG	**Mexicali**	**0.61**	**344**	*e*P	**Pn**	**03 12 57.1**	**-0.3**
MBIG				*e*S	**Sb**	**03 13 05.0**	**+1.2**
CPBX	**Cerro Prieto**	**0.65**	**337**	*e*P	**Pn**	**03 12 57.2**	**-0.8**
CPBX				*e*S	**Sb**	**03 13 05.6**	**+0.6**
CPBX				IAML		03 13 08.6	
	comp=N,2μm,0.3s						
CPBX				⇑*e*		03 13 08.6	

SPIG	**San Pedro Mart**	**0.87**	**207**	*e*P	**Pg**	**03 13 01.1**	**+0.3**
SPIG				*i* S	**Sg**	**03 13 12.5**	**+0.1**
SPX	**San Pedro Mart**	**0.87**	**207**	*e*P	**Pb**	**03 13 00.1**	**-0.4**
SPX				*e*S	**Sg**	**03 13 12.9**	**+0.4**
ZAX	**El Zacaton**	**1.13**	**254**	*e*P	**Pn**	**03 13 04.4**	**-0.2**
ZAX				*e*S	**Sn**	**03 13 19.9**	**+0.2**
ZAX				⇑*e*		03 13 20.6	
ZAX				IAML		03 13 20.6	
	comp=N,307nm,0.6s						
RMX	**La Rumorosa**	**1.20**	**311**	*e*P	**Pn**	**03 13 05.4**	**-0.3**
IKP	**In-Ko-Pah, Jac**	**1.25**	**312**	*e*P	**Pn**	**03 13 06.1**	**-0.2**
CBX	**Cerro Bola**	**1.49**	**289**	*e*P	**Pn**	**03 13 09.8**	**0.0**
CBX				*i* S	**Sn**	**03 13 28.4**	**-0.4**
CBX	**Cerro Bola**	**1.49**	**289**	*e*P	**Pn**	**03 13 09.6**	**-0.1**
TJIG	**Tijuana**	**1.55**	**294**	*e*P	**Pn**	**03 13 10.0**	**-0.3**
TJIG				*i* S	**Sn**	**03 13 29.1**	**-0.8**

*MDD **29** 03:20:43.6±2.0, 36°.79N×14°.87W, h50km, mb3.5/8, Error ellipse: s-maj=26.8km s-min=14.0km az=142.0, PRXIMO*
*INMG **29** 03:20:46.5±1.5, 36°.80N×14°.92W, h10km, ML2.4, Error ellipse: s-maj=12.5km s-min=5.4km az=127.0*
*CSEM **29** 03:20:48.4±0.6, 37°.09N×14°.32W, h20km, mb3.5, Error ellipse: s-maj=13.1km s-min=10.4km az=175.0*
ISC 29 03:20:39.0±1.9, 36°.81N±0°.07×14°.76W±0°.09, h10km, n57, σ3s05/90, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMPS	**Porto Santo**	**3.96**	**199**	*e*Sn	**Sn**	**03 22 19.4**	**-7.0**
PMPS	**Porto Santo**	**3.96**	**199**	S	**Sn**	**03 22 19.4**	**-7.0**
PMAR	**Madeira**	**4.45**	**204**	*e*Sn	**Sn**	**03 22 33.6**	**-5.0**
PMAR				A	A	03 22 55.4	
	12nm,0.7s						
PMAR	**Madeira**	**4.45**	**204**	S	**Sn**	**03 22 33.6**	**-5.0**
	6.2nm,0.7s						
PFVI	**Vila Bisbo**	**4.76**	**84**	*e*Pn	**Pn**	**03 21 53.3**	**+2.5**
PFVI				*e*Sn	**Sn**	**03 22 43.6**	**-2.5**
PFVI				A	A	03 22 45.8	
	4.4nm,0.9s						
PFVI	**Vila Bisbo**	**4.76**	**84**	P	**Pn**	**03 21 52.9**	**+2.1**
	0.3nm,0.1s,SNR=7.9						
PFVI				S	**Sn**	**03 22 42.9**	**-3.2**
	2.1nm,0.1s,SNR=7.9						
PFVI	**Vila Bisbo**	**4.76**	**84**	P	**Pn**	**03 21 52.9**	**+2.1**
	0.3nm,0.1s,SNR=7.9						
PFVI				S	**Sn**	**03 22 42.9**	**-3.2**
	2.1nm,0.1s,SNR=7.9						
PFVI				*e*Sn	**Sn**	**03 22 43.6**	**-2.5**
	4.4nm,0.9s						
PMAFR	**Mafra**	**4.83**	**62**	*e*Sn	**Sn**	**03 22 49.8**	**+2.0**
PMAFR				A	A	03 22 53.2	
	8.6nm,0.9s						
PMAFR	**Mafra**	**4.83**	**62**	P	**Pn**	**03 21 53.9**	**+2.2**
	0.7nm,0.1s,SNR=7.9						
PMAFR				S	**Sn**	**03 22 46.6**	**-1.2**
	3.1nm,0.2s,SNR=7.9						
PMAFR	**Mafra**	**4.83**	**62**	P	**Pn**	**03 21 53.9**	**+2.2**
	0.7nm,0.1s,SNR=7.9						
PMAFR				S	**Sn**	**03 22 46.6**	**-1.2**
	3.1nm,0.2s,SNR=7.9						
PMAFR				*e*Sn	**Sn**	**03 22 49.8**	**+2.0**
	8.6nm,0.9s						
PTEO	**Sao Teotonio**	**4.88**	**80**	*e*Pn	**Pn**	**03 21 56.3**	**+4.0**
PTEO				*e*Sn	**Sn**	**03 22 46.8**	**-2.0**
PTEO	**Sao Teotonio**	**4.88**	**80**	P	**Pn**	**03 21 56.3**	**+4.0**
PTEO				S	**Sn**	**03 22 46.8**	**-2.0**
PTEO	**Sao Teotonio**	**4.88**	**80**	P	**Pn**	**03 21 56.3**	**+4.0**
PTEO				S	**Sn**	**03 22 46.8**	**-2.0**
MORF	**Marmelete**	**4.91**	**82**	*e*Sn	**Sn**	**03 22 48.0**	**-1.8**
MORF				A	A	03 22 53.5	
	2.2nm,0.1s						
MORF	**Marmelete**	**4.91**	**82**	S	**Sn**	**03 22 48.0**	**-1.8**
	2.2nm,0.1s						
MORF	**Marmelete**	**4.91**	**82**	S	**Sn**	**03 22 48.0**	**-1.8**
	2.2nm,0.1s						
PNCL	**Nicolau / Gran**	**5.12**	**73**	*e*Pn	**Pn**	**03 22 00.3**	**+4.5**
PNCL				*e*Sn	**Sn**	**03 22 54.0**	**-1.

0.3nm,0.2s,SNR=7.9
PGAV Gavieira, Arco 7.19 42 *e*Sn **Sn 03 23 42.0 -4.0**
PGAV Gavieira, Arco 7.19 42 *e*Sn **Sn 03 23 42.0 -4.0**
MVO Moncorvo 7.42 52 S **Sn 03 23 46.5 -5.2**
0.4nm,0.1s,SNR=7.9
MVO Moncorvo 7.42 52 S **Sn 03 23 46.5 -5.2**
0.4nm,0.1s,SNR=7.9
ECAB El Cabril 7.54 78 P **Pn 03 22 30.8 +1.9**
0.2nm,0.2s,SNR=7.9
ECAB S **Sn 03 23 51.2 -3.3**
0.3nm,0.2s,SNR=7.9
ECAB El Cabril 7.54 78 P **Pn 03 22 30.8 +1.9**
0.2nm,0.2s,SNR=7.9
ECAB S **Sn 03 23 51.2 -3.3**
0.3nm,0.2s,SNR=7.9
EAGO Agolada(Pontev 7.88 39 P **Pn 03 22 36.0 +2.4**
0.2nm,0.1s,SNR=7.9
EAGO S **Sn 03 23 58.3 -4.5**
0.0nm,0.2s,SNR=7.9
EAGO Agolada(Pontev 7.88 39 P **Pn 03 22 36.0 +2.4**
0.2nm,0.1s,SNR=7.9
EAGO S **Sn 03 23 58.3 -4.5**
SNR=7.9
EADA Adamuz 8.21 77 P **Pn 03 22 40.9 +2.8**
0.1nm,0.1s,SNR=7.9
EADA S **Sn 03 24 06.3 -4.7**
0.0nm,0.2s,SNR=7.9
EADA Adamuz 8.21 77 P **Pn 03 22 40.9 +2.8**
0.1nm,0.1s,SNR=7.9
EADA S **Sn 03 24 06.3 -4.7**
SNR=7.9

ISCJB ***29*** *03:36:19.7±0.2,32˚.45S±0˚.03×70˚.22W±0˚.04, h106km±2km, mb4.4/61, Error ellipse: s-maj=6.3km s-min=5.4km az=16.6*
SJA ***29*** *03:36:19.1±0.7,32˚.41S×70˚.32W, h104km±10km, ML4.7, MW4.7*
IDC ***29*** *03:36:19.1±3.0,32˚.47S×70˚.14W, h89km±26km, mb4.2/11, mb1 4.3/14,mb1mx4.1/25,mbtmp4.5/14,MS3.0/1, Ms1 3.0/1,ms1mx2.6/22, Error ellipse: s-maj=24.4km s-min=12.6km az=88.0*
NEIC ***29*** *03:36:20.0,32˚.36S×70˚.22W, h90km, mb4.5/49, After GUC.*
NEIC Felt [III] at San Fernando and Santiago; [II] at Colina, La Cruz, La Ligua, Puente Alto, San Antonio, San Felipe, Tiltil and Villa Alemana.
GUC ***29*** *03:36:20.1±0.5,32˚.36S×70˚.22W, h90km±12km, ML4.7*
ISC 29 03:36:20.6±0.7, 32˚.51S±0˚.04×70˚.25W±0˚.05, h103km±5km, n365, n0=81/379, mb4.4/61, 3C, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
PEL	**Peldehue**	**0.73**	**210**	*i* P	**Pn**	**03 36 38.0**	**-0.7**
PEL				*i* S	**Sn**	**03 36 52.1**	**0.0**
PEL				IAML		03 36 53.0	
	comp=N,30μm,0.3s						
AUSP	**Uspallata**	**0.79**	**69**	*i* P	**Pn**	**03 36 39.0**	**-0.5**
ROCH	**El Roble**	**0.79**	**234**	*i* P	**Pn**	**03 36 38.8**	**-0.6**
ROCH				⇑*i* P	**Pn**	**03 36 39.3**	**-0.1**
ROCH				*i* S	**Sn**	**03 36 53.7**	**+0.3**
ROCH				*i* S	**Sn**	**03 36 53.8**	**+0.3**
ROCH				IAML		03 36 54.3	
	comp=E,26μm,0.4s						
ROC1	**El Roble**	**0.79**	**234**	*i* P	**Pn**	**03 36 39.3**	**-0.2**
ROC1				*i* S	**Sn**	**03 36 53.8**	**+0.2**
ROC1	**El Roble**	**0.79**	**234**	*e*Pn	**Pn**	**03 36 38.7**	**-0.8**
ROC1				*e*Sn	**Sn**	**03 36 53.8**	**+0.2**
FCH	**Farellones**	**0.82**	**182**	*i* P	**Pn**	**03 36 40.1**	**+0.4**
FCH				*i* S	**Sn**	**03 36 54.9**	**+0.7**
FCH				IAML		03 36 56.0	
	comp=N,34μm,0.3s						
CLCH	**Cerro Calan**	**0.92**	**195**	⇑*i* P	**Pn**	**03 36 40.8**	**+0.3**
CLCH				*i* S	**Sn**	**03 36 56.0**	**+0.6**
CLCH				IAML		03 36 57.3	
	comp=E,30μm,0.4s						
FSR	**Penalolen**	**0.99**	**193**	*i* P	**Pn**	**03 36 41.8**	**+0.5**
FSR				*i* S	**Sn**	**03 36 57.9**	**+1.1**
RTLS	**Leoncito**	**1.08**	**49**	*i* P	**Pn**	**03 36 42.5**	**+0.1**
ANTU	**Antumapu**	**1.10**	**197**	⇑*i* P	**Pn**	**03 36 42.7**	**+0.3**
ANTU				*i* S	**Sn**	**03 36 60.0**	**+1.0**
ANTU				IAML		03 37 00.6	
	comp=E,22μm,0.5s						
ARCO	**CERRO ARCO**	**1.16**	**107**	*i* P	**Pn**	**03 36 43.8**	**+0.6**
ARCO				*i* S	**Sn**	**03 37 02.3**	**+2.0**
ARCO				IAML		03 37 03.7	
	comp=Z,8μm,0.3s						
ASAL	**Salagasta**	**1.20**	**94**	*i* P	**Pn**	**03 36 44.1**	**+0.5**
AAGR	**Agrelo**	**1.33**	**116**	*i* P	**Pn**	**03 36 45.6**	**+0.5**
RTCV	**Cerro Valdivia**	**1.59**	**67**	*i* P	**Pn**	**03 36 48.0**	**-0.2**
LCO	**Las Campanas**	**3.51**	**354**	*e*Pn	**Pn**	**03 37 12.2**	**-1.3**
LCO				*e*Sn	**Sn**	**03 37 51.8**	**-2.6**
PLCA	**Paso Flores**	**8.21**	**182**	P	**Pn**	**03 38 15.4**	**-1.6**
	comp=Z,1.4nm,0.3s,baz=7.3,slow=14,SNR=33						
PLCA				LR	LR	03 41 26.8	
	comp=Z,108nm,21.3s,baz=348,slow=37						
TRQA	**Tornquist**	**8.74**	**132**	*e*Pn	**Pn**	**03 38 23.2**	**-0.9**
TRQA				*e*Sn	**Sn**	**03 39 56.0**	**-4.9**
CPUP	**Villa Florida**	**12.83**	**65**	P	Pn	03 39 13.4	-5.9
	comp=Z,0.8nm,0.3s,baz=242,slow=12,SNR=18						
CPUP	**Villa Florida**	**12.83**	**65**	*e*Pn	Pn	03 39 13.6	-5.7
LPAZ	**La Paz**	**16.26**	**7**	P	**Pn**	**03 40 03.0**	**-0.7**
	comp=Z,0.7nm,0.3s,baz=179,slow=8.2,SNR=34						
LPAZ	**La Paz**	**16.26**	**7**	*e*Pn	**Pn**	**03 40 03.5**	**-0.2**
	comp=Z,11nm,0.7s						
SIV	**San Ignacio**	**18.43**	**29**	P	**P**	**03 40 26.9**	**-1.3**
	comp=Z,1.3nm,0.3s,baz=222,slow=11,SNR=59						
USHA	**Ushuaia**	**22.35**	**177**	P	**P**	**03 41 09.9**	**0.0**
	comp=Z,43nm,0.6s,baz=348,slow=10.0,SNR=8.2						
SAML	**Samuel**	**24.34**	**17**	*e*P	**P**	**03 41 28.8**	**-0.2**
	comp=Z,22nm,1.1s						
PTGA	**Pitinga**	**33.06**	**19**	P	**P**	**03 42 45.8**	**-0.8**
	baz=228,slow=15						
OTAV	**Otavalo**	**33.48**	**345**	*e*P	**P**	**03 42 51.8**	**+1.1**
	comp=Z,1.9nm,0.8s						
RUSC	**La Rusia**	**38.28**	**355**	*e*P	**P**	**03 43 32.5**	**+0.7**
	comp=Z,5.2nm,0.7s						
HELC	**Santa Helena**	**38.81**	**352**	*e*P	**P**	**03 43 36.2**	**+0.2**
	comp=Z,17nm,0.7s						
SJG	**San Juan**	**50.48**	**5**	P	**P**	**03 45 07.2**	**-1.0**
	comp=Z,6.9nm,0.5s,baz=240,slow=8.4,SNR=3.7						
SNAA	**Sanae**	**52.41**	**158**	P	**P**	**03 45 22.6**	**+0.6**
SNAA	**Sanae**	**52.41**	**158**	P	**P**	**03 45 22.1**	**0.0**
	comp=Z,4.1nm,0.6s,baz=280,slow=8.8,SNR=38						
SNAA	**Sanae**	**52.41**	**158**	*e*P	**P**	**03 45 22.7**	**+0.6**
	comp=Z,5.3nm,0.7s						
QSPA	**South Pole Qui**	**57.73**	**180**	*e*P	**P**	**03 46 01.2**	**+0.7**
	comp=Z,8.4nm,0.5s						
035A	**Encino**	**64.79**	**333**	P	**P**	**03 46 49.7**	**+1.4**
	baz=154						
034A	**Hebbronville**	**65.13**	**332**	P	**P**	**03 46 51.9**	**+1.4**
	baz=154						
VNDA	**Vanda**	**65.85**	**191**	P	**P**	**03 46 55.5**	**+0.9**
	comp=Z,0.7nm,0.6s,baz=122,slow=8.2,SNR=6.6						
834A	**Tilden**	**66.03**	**333**	P	**P**	**03 46 58.1**	**+1.8**
	baz=154						
345A	**Thompson Farm,**	**66.17**	**342**	P	**P**	**03 46 58.8**	**+1.6**
	baz=162						
736A	**Circle Diamond**	**66.22**	**334**	P	**P**	**03 46 59.5**	**+2.0**
	baz=155						
833A	**Chaparral WMA,**	**66.53**	**332**	P	**P**	**03 47 00.7**	**+1.2**
	baz=153						
636A	**Smothers Creek**	**66.69**	**335**	P	**P**	**03 47 01.9**	**+1.4**
	baz=156						
832A	**Faith Ranch, C**	**66.73**	**332**	P	**P**	**03 47 01.7**	**+0.9**
	baz=153						
245A	**Little AP, Sta**	**66.82**	**342**	P	**P**	**03 47 01.8**	**+0.5**
	baz=162						
635A	**Leesville**	**66.87**	**334**	P	**P**	**03 47 02.1**	**+0.5**
	baz=155						
244A	**Avery, Jackson**	**67.04**	**341**	P	**P**	**03 47 03.5**	**+0.8**
	baz=161						
341A	**Kurthwood**	**67.10**	**339**	P	**P**	**03 47 03.9**	**+0.9**
	baz=159						
439A	**Center Grove,**	**67.10**	**337**	P	**P**	**03 47 04.4**	**+1.3**
	baz=158						
145A	**Houston Renfro**	**67.37**	**342**	P	**P**	**03 47 05.6**	**+0.8**
	baz=162						
340A	**Bronson**	**67.40**	**338**	P	**P**	**03 47 05.7**	**+0.8**
	baz=158						
633A	**Saathoff Ranch**	**67.46**	**333**	P	**P**	**03 47 06.2**	**+0.7**
	baz=154						
242A	**Grayson**	**67.47**	**340**	P	**P**	**03 47 06.4**	**+1.0**
	baz=160						
Z47A	**Carrollton**	**67.48**	**344**	P	**P**	**03 47 05.2**	**-0.2**
	baz=164						
Z48A	**Northport**	**67.53**	**344**	P	**P**	**03 47 05.2**	**-0.5**
	baz=164						
143A	**Socs Landing,**	**67.86**	**341**	P	**P**	**03 47 08.6**	**+0.8**
	baz=161						
240A	**Hunter Patters**	**67.93**	**339**	P	**P**	**03 47 09.3**	**+1.0**
	baz=159						
533A	**Kerrville**	**67.96**	**333**	P	**P**	**03 47 09.2**	**+0.6**
	baz=154						
NATX	**Nacogdoches**	**67.96**	**338**	P	**P**	**03 47 09.2**	**+0.8**
	baz=158						
Z45A	**Winona**	**68.04**	**343**	P	**P**	**03 47 09.0**	**+0.1**
	baz=162						
HPIG		**68.05**	**326**	*e*P	**P**	**03 47 10.5**	**+1.1**
	comp=Z,5.2nm,0.6s						
KMSC	**Kings Mountain**	**68.09**	**350**	P	**P**	**03 47 09.4**	**+0.2**
	baz=170						
Y47A	**UCPARC, Winfie**	**68.10**	**344**	P	**P**	**03 47 09.1**	**-0.2**
	baz=164						
239A	**Gary**	**68.14**	**338**	P	**P**	**03 47 09.3**	**-0.2**
	baz=158						
Z44A	**Pea Ridge, Bel**	**68.14**	**342**	P	**P**	**03 47 09.8**	**+0.2**
	baz=162						
Y46A	**Houston**	**68.32**	**343**	P	**P**	**03 47 10.4**	**-0.3**
	baz=163						
434A	**Burnet**	**68.34**	**334**	P	**P**	**03 47 11.3**	**+0.4**
	baz=155,SNR=9.3						
336A	**Riesel**	**68.35**	**336**	P	**P**	**03 47 11.5**	**+0.7**
	baz=156						
335A	**Moody**	**68.46**	**335**	P	**P**	**03 47 12.3**	**+0.7**
	baz=156						
Y45A	**Yeager Farm, C**	**68.47**	**343**	P	**P**	**03 47 12.2**	**+0.6**
	baz=162						
433A	**Art**	**68.59**	**334**	P	**P**	**03 47 12.9**	**+0.5**
	baz=154,SNR=12						
JCT	**Junction City**	**68.62**	**333**	P	**P**	**03 47 13.3**	**+0.6**
	baz=153						
JCT	**Junction City**	**68.62**	**333**	*e*P	**P**	**03 47 13.4**	**+0.7**
	comp=Z,7.4nm,0.6s						
334A	**Lometa**	**68.79**	**334**	P	**P**	**03 47 14.1**	**+0.4**
	baz=155,SNR=9.6						
CPCT	**Cooper Cave**	**68.92**	**348**	*e*P	**P**	**03 47 14.2**	**-0.1**
	comp=Z,3.1nm,0.7s						
SWET	**Sewanee**	**68.96**	**346**	*e*P	**P**	**03 47 14.7**	**+0.1**
	comp=Z,4.1nm,0.6s						
Z40A	**Long Farm, Mag**	**68.96**	**339**	P	**P**	**03 47 15.4**	**+0.8**
	baz=159						
X45A	**UM Field Stati**	**68.97**	**343**	P	**P**	**03 47 14.5**	**-0.2**
	baz=163						
333A	**Richland Sprin**	**69.06**	**334**	P	**P**	**03 47 15.6**	**+0.2**
	baz=154,SNR=5.6						
WHTX	**Lake Whitney,**	**69.11**	**335**	P	**P**	**03 47 15.8**	**+0.2**
	baz=156						
TX31	**Lajitas Ar. Si**	**69.20**	**329**	*e*P	**P**	**03 47 17.0**	**+0.6**
TXAR	**Lajitas Array**	**69.20**	**329**	P	**P**	**03 47 17.1**	**+0.7**
	comp=Z,2.7nm,0.7s,baz=153,slow=8.6,SNR=39						
234A	**Clairette**	**69.36**	**335**	P	**P**	**03 47 17.6**	**+0.4**
	baz=155						
Y40A	**Okolona**	**69.63**	**340**	P	**P**	**03 47 19.1**	**+0.4**
	baz=159						
233A	**Rising Star**	**69.65**	**334**	P	**P**	**03 47 19.4**	**+0.3**
	baz=154,SNR=7.7						
Y39A	**Lockesburg**	**69.80**	**339**	P	**P**	**03 47 20.0**	**+0.2**
	baz=159						
134A	**White-Moore Ra**	**69.86**	**335**	P	**P**	**03 47 20.4**	**+0.2**
	baz=155						
Z36A	**Blue Ridge**	**69.93**	**337**	P	**P**	**03 47 21.0**	**+0.4**
	baz=157						
133A	**Hamilton Ranch**	**70.19**	**335**	P	**P**	**03 47 22.6**	**+0.3**
	baz=154,SNR=5.7						
MIAR	**Mount Ida**	**70.21**	**340**	P	**P**	**03 47 22.2**	**-0.1**
	baz=159						
MIAR	**Mount Ida**	**70.21**	**340**	*e*P	**P**	**03 47 22.6**	**+0.3**
	comp=Z,8.9nm,1.3s						
WVT	**Waverly**	**70.24**	**345**	*e*P	**P**	**03 47 22.1**	**-0.3**
	comp=Z,22nm,0.6s						
Z35A	**Perchaven, San**	**70.26**	**336**	P	**P**	**03 47 22.9**	**+0.2**
	baz=156						
X39A	**Fountain Ranch**	**70.34**	**339**	P	**P**	**03 47 23.5**	**+0.4**
	baz=159						
W41A	**Tony Mavity, V**	**70.42**	**341**	P	**P**	**03 47 23.5**	**-0.1**
	baz=160						
W41B	**Gary Mavity, V**	**70.42**	**341**	P	**P**	**03 47 23.4**	**-0.2**
	baz=160						
ABTX	**Abilene, Hawle**	**70.47**	**334**	P	**P**	**03 47 24.3**	**+0.3**
	baz=154						
ABTX	**Abilene, Hawle**	**70.47**	**334**	*e*P	**P**	**03 47 24.7**	**+0.7**
	comp=Z,9.7nm,0.8s						
Z34A	**Collier Ranch,**	**70.52**	**336**	P	**P**	**03 47 24.5**	**+0.2**
	baz=155						
X301	**Greenbrier Sit**	**70.52**	**341**	*e*P	**P**	**03 47 24.6**	**+0.4**
	comp=Z,5.2nm,0.7s						
W40A	**Ferguson Farm,**	**70.67**	**340**	P	**P**	**03 47 25.4**	**+0.4**
	baz=160						
X38A	**Whitesboro**	**70.70**	**339**	P	**P**	**03 47 25.7**	**+0.4**
	baz=158						
Y35A	**Marietta**	**70.71**	**337**	P	**P**	**03 47 25.8**	**+0.4**
	baz=156						
Z33A	**Whitaker Ranch**	**70.75**	**335**	P	**P**	**03 47 26.0**	**+0.3**
	baz=155,SNR=7.6						
V42A	**Cord**	**70.79**	**342**	P	**P**	**03 47 25.6**	**-0.2**
	baz=161						
X37A	**Clayton**	**70.80**	**338**	P	**P**	**03 47 26.0**	**+0.1**
	baz=158						
W39A	**Magazine**	**70.88**	**340**	P	**P**	**03 47 26.9**	**+0.6**
	baz=159,SNR=11						
V41A	**Mountainview**	**70.97**	**341**	P	**P**	**03 47 26.5**	**-0.4**
	baz=160,SNR=6.3						
W38A	**Poteau**	**70.98**	**339**	P	**P**	**03 47 27.2**	**+0.2**
	baz=158						
Y34A	**Reagan Ranch,**	**71.00**	**336**	P	**P**	**03 47 27.0**	**-0.2**
	baz=156						
X36A	**Centrahoma**	**71.09**	**337**	P	**P**	**03 47 27.2**	**-0.5**
	baz=157,SNR=7.0						
X35A	**Drake**	**71.14**	**337**	P	**P**	**03 47 27.6**	**-0.4**
	baz=156						
V40A	**Witts Springs**	**71.17**	**341**	P	**P**	**03 47 27.9**	**-0.2**
	baz=160						
U42A	**Revenden**	**71.26**	**342**	P	**P**	**03 47 28.3**	**-0.4**
	baz=161,SNR=5.9						
W37B	**Quinton**	**71.32**	**338**	P	**P**	**03 47 29.0**	**-0.1**
	baz=158						
Y33A	**Hilltop Ranch,**	**71.35**	**335**	P	**P**	**03 47 29.3**	**+0.1**
	baz=155						
U41A	**Viola**	**71.43**	**342**	P	**P**	**03 47 29.5**	**-0.2**
	baz=161						
V39A	**Pettigrew**	**71.44**	**340**	P	**P**	**03 47 29.9**	**+0.1**
	baz=159,SNR=5.8						
W36A	**Wetumka**	**71.57**	**338**	P	**P**	**03 47 29.8**	**-0.8**
	baz=157						
X34A	**Smith Ranch, M**	**71.61**	**336**	P	**P**	**03 47 31.1**	**+0.2**
	baz=156						
V38A	**Canehill**	**71.68**	**340**	P	**P**	**03 47 30.8**	**-0.4**
	baz=159,SNR=5.2						
U40A	**Yellville**	**71.70**	**341**	P	**P**	**03 47 31.1**	**-0.2**
	baz=160,SNR=6.3						
W35A	**Tecumseh**	**71.80**	**337**	P	**P**	**03 47 31.2**	**-0.7**
	baz=156						
U39A	**Green Forest**	**71.90**	**340**	P	**P**	**03 47 32.2**	**-0.3**
	baz=160,SNR=5.4						
V37A	**Hulbert**	**71.92**	**339**	P	**P**	**03 47 33.5**	**+0.9**
	baz=158						
HHAR	**Hobbs**	**71.94**	**340**	*e*P	**P**	**03 47 32.9**	**+0.1**
	comp=Z,7.2nm,0.8s						
MNTX	**Cornudas Mount**	**71.98**	**329**	P	**P**	**03 47 32.8**	**-0.3**
	baz=149						
MNTX	**Cornudas Mount**	**71.98**	**329**	*e*P	**P**	**03 47 32.8**	**-0.3**
	comp=Z,5.4nm,0.6s						
T41A	**Mountain View**	**72.05**	**342**	P	**P**	**03 47 33.2**	**-0.2**
	baz=161,SNR=8.5						
WMOK	**Wichita Mounta**	**72.06**	**336**	P	**P**	**03 47 33.7**	**+0.2**
	baz=155						
V36A	**Jenks**	**72.08**	**338**	P	**P**	**03 47 33.5**	**-0.1**
	baz=157						
S43A	**Fulton Ridge,**	**72.13**	**344**	P	**P**	**03 47 33.2**	**-0.6**
	baz=162,SNR=8.6						
TUL1	**Leonard**	**72.15**	**338**	P	**P**	**03 47 33.8**	**-0.1**
	baz=158						
W34A	**Bridge Creek,**	**72.17**	**337**	P	**P**	**03 47 34.1**	**0.0**
	baz=156						
U38A	**Gravette**	**72.21**	**340**	P	**P**	**03 47 33.8**	**-0.5**
	baz=159						
W33A	**Caddo, Fort Co**	**72.33**	**336**	P	**P**	**03 47 35.8**	**+0.7**
	baz=155,SNR=6.6						
V35A	**Meyer Ranch, C**	**72.34**	**338**	P	**P**	**03 47 34.7**	**-0.4**
	baz=157						
U37A	**Salina**	**72.40**	**339**	P	**P**	**03 47 35.2**	**-0.2**
	baz=158						
T39A	**Clever**	**72.47**	**341**	P	**P**	**03 47 35.7**	**-0.2**
	baz=160						
S41A	**Jillco Farms,**	**72.56**	**342**	P	**P**	**03 47 36.3**	**-0.1**
	baz=161,SNR=11						
W32A	**Sentinel**	**72.57**	**335**	P	**P**	**03 47 36.8**	**+0.2**
	baz=155						
V34A	**Guthrie**	**72.63**	**337**	P	**P**	**03 47 36.5**	**-0.3**
	baz=156						
T38A	**Diamond**	**72.74**	**340**	P	**P**	**03 47 37.4**	**-0.1**
	baz=159,SNR=6.1						
S40A	**Lebanon**	**72.77**	**342**	P	**P**	**03 47 37.5**	**-0.1**
	baz=160,SNR=8.2						
MSTX	**Muleshoe**	**72.86**	**332**	P	**P**	**03 47 38.6**	**+0.2**
	baz=152						
MSTX	**Muleshoe**	**72.86**	**332**	*e*P	**P**	**03 47 38.9**	**+0.4**
	comp=Z,9.9nm,0.7s						
U35A	**Pawnee**	**72.86**	**338**	P	**P**	**03 47 38.3**	**0.0**
	baz=157						
V33A	**Lossen Ranch,**	**72.87**	**336**	P	**P**	**03 47 38.5**	**+0.2**
	baz=155						
LIC	**Lamto**	**72.88**	**71**	*e*PKP2	**P**	**03 47 38.2**	**-0.6**
	comp=Z,34nm,1.2s						
T37A	**Cheneyville 18**	**73.00**	**340**	P	**P**	**03 47 38.7**	**-0.3**
	baz=158						
S39A	**Bolivar**	**73.08**	**341**	P	**P**	**03 47 39.3**	**-0.1**
	baz=160,SNR=12						
TIC	**Toumodi**	**73.13**	**70**	*e*PKP2	**P**	**03 47 39.9**	**-0.5**
S38A	**Stockton**	**73.18**	**341**	P	**P**	**03 47 39.9**	**-0.2**
	baz=159,SNR=12						
U34A	**Anderson Ranch**	**73.18**	**337**	P	**P**	**03 47 40.2**	**+0.1**
	baz=156						
U34A	**Anderson Ranch**	**73.18**	**337**	*e*P	**P**	**03 47 40.2**	**+0.1**
	comp=Z,9.2nm,0.5s						
KIC	**Kosan Boka**	**73.19**	**71**	*e*PKP2	**P**	**03 47 39.0**	**-1.7**
	comp=Z,20nm,0.9s						
T36A	**Boggs Farm, Ca**	**73.23**	**339**	P	**P**	**03 47 40.3**	**-0.1**
	baz=158						
N59A	**State Game Lan**	**73.24**	**356**	P	**P**	**03 47 40.9**	**+0.6**
	baz=175						
AMTX	**Amarillo**	**73.25**	**333**	P	**P**	**03 47 40.9**	**+0.3**
	baz=153						
AMTX	**Amarillo**	**73.25**	**333**	*e*P	**P**	**03 47 41.2**	**+0.6**
	comp=Z,5.8nm,0.8s						
DBIC	**Dimbokro**	**73.28**	**71**	P	**P**	**03 47 40.6**	**-0.6**
	comp=Z,3.9nm,0.6s,baz=215,slow=5.2,SNR=11						
T35A	**Sooner Cattle**	**73.30**	**338**	P	**P**	**03 47 40.9**	**+0.1**
	baz=157						
Q43A	**New Douglas**	**73.35**	**344**	P	**P**	**03 47 40.5**	**-0.5**
	baz=163						
R40A	**Maddies Statio**	**73.36**	**342**	P	**P**	**03 47 41.0**	**-0.1**
	baz=161,SNR=21						
U33A	**Lingo Farm, Me**	**73.37**	**337**	P	**P**	**03 47 41.0**	**-0.2**
	baz=156						
Q42A	**Golden Eagle**	**73.52**	**344**	P	**P**	**03 47 41.8**	**-0.2**
	baz=162						
S37A	**Fort Scott**	**73.57**	**340**	P	**P**	**03 47 41.9**	**-0.4**
	baz=158						
R39A	**Chumby, Stover**	**73.58**	**341**	P	**P**	**03 47 42.3**	**-0.2**
	baz=160,SNR=8.2						
T34A	**McClaskey Farm**	**73.61**	**338**	P	**P**	**03 47 42.9**	**+0.3**
	baz=156						
U32A	**Winter Ranch,**	**73.62**	**336**	P	**P**	**03 47 43.0**	**+0.3**
	baz=155						
N54A	**Moraine State**	**73.66**	**352**	P	**P**	**03 47 42.8**	**0.0**
	baz=171						
R38A	**Fenwick Farm,**	**73.70**	**341**	P	**P**	**03 47 42.6**	**-0.5**
	baz=159,SNR=5.1						
121A	**Cookes Peak, D**	**73.75**	**328**	P	**P**	**03 47 45.3**	**+1.5**
	baz=148						
121A	**Cookes Peak, D**	**73.75**	**328**	*e*P	**P**	**03 47 45.1**	**+1.3**
	comp=Z,2.2nm,1.0s						
S36A	**Lake Cedric, C**	**73.76**	**339**	P	**P**	**03 47 43.2**	**-0.3**
	baz=158						
S35A	**Otter Creek Ra**	**73.94**	**339**	P	**P**	**03 47 44.5**	**0.0**
	baz=157						
Q40A	**Laux Farm, Aux**	**73.97**	**342**	P	**P**	**03 47 44.5**	**-0.1**
	baz=161,SNR=6.4						
R37A	**Teagarden Farm**	**74.08**	**340**	P	**P**	**03 47 45.1**	**-0.2**
	baz=159						
P42A	**Winchester**	**74.11**	**344**	P	**P**	**03 47 44.9**	**-0.6**
	baz=162						
M54A	**Oil Creek Stat**	**74.16**	**353**	P	**P**	**03 47 45.3**	**-0.4**
	baz=172						
MAW	**Mawson**	**74.17**	**163**	P	**P**	**03 47 46.0**	**+0.4**
	comp=Z,3.2nm,0.8s,baz=239,slow=5.9,SNR=5.5						
Q39A	**Willow Grove F**	**74.26**	**342**	P	**P**	**03 47 45.9**	**-0.4**
	baz=160						
R36A	**Gordon, Harris**	**74.29**	**340**	P	**P**	**03 47 46.4**	**-0.1**
	baz=158						
T32A	**Huddler Ranch,**	**74.32**	**337**	P	**P**	**03 47 47.3**	**+0.5**
	baz=155						
Q38A	**Cooks Store, C**	**74.35**	**341**	P	**P**	**03 47 46.7**	**-0.1**
	baz=160,SNR=6.7						
P41A	**Barry, Barry**	**74.37**	**343**	P	**P**	**03 47 46.3**	**-0.6**
	baz=162						
P40A	**Paris**	**74.47**	**343**	P	**P**	**03 47 47.4**	**-0.1**
	baz=161,SNR=9.3						
P39B	**Salisbury**	**74.61**	**342**	P	**P**	**03 47 47.9**	**-0.5**
	baz=160						
O41A	**Passleys Farm,**	**74.74**	**344**	P	**P**	**03 47 48.5**	**-0.6**
	baz=162						
S32A	**Newby Ranch, P**	**74.80**	**337**	P	**P**	**03 47 49.8**	**+0.3**
	baz=155						
HDIL	**Hopedale**	**74.80**	**345**	P	**P**	**03 47 48.8**	**-0.6**
	baz=163						
P38A	**Dawn**	**74.95**	**342**	P	**P**	**03 47 50.0**	**-0.3**
	baz=160						
TUC	**Tucson**	**74.97**	**325**	P	**P**	**03 47 51.0**	**+0.2**
	baz=145						
O40A	**La Belle**	**74.99**	**343**	P	**P**	**03 47 50.3**	**-0.2**
	baz=161						
R33A	**Olander Ranch,**	**75.04**	**338**	P	**P**	**03 47 50.5**	**-0.4**
	baz=156						
P37A	**Lathrop**	**75.14**	**341**	P	**P**	**03 47 50.8**	**-0.6**
	baz=159						
ANMO	**Albuquerque**	**75.22**	**330**	P	**P**	**03 47 53.4**	**+1.1**
	baz=149						
ANMO	**Albuquerque**	**75.22**	**330**	*e*P	**P**	**03 47 53.0**	**+0.8**
	comp=Z,3.2nm,0.8s						
O39A	**Kirksville**	**75.28**	**343**	P	**P**	**03 47 51.9**	**-0.3**
	baz=161						
P36A	**Good Intent, A**	**75.41**	**340**	P	**P**	**03 47 52.3**	**-0.7**
	baz=158						
O37A	**Wolven Farm, M**	**75.62**	**341**	P	**P**	**03 47 53.7

L38A	Oak Wood Farm, baz=160	77.16	343	P	P	03 48 02.4 -0.4
SDCO	Great Sand Dun baz=150	77.23	332	P	P	03 48 04.6 +0.9
K40A	Colesburg baz=162	77.26	344	P	P	03 48 02.6 -0.7
K39A	Oelwein baz=161	77.44	344	P	P	03 48 03.5 -0.8
GLA	Glamis baz=143	77.57	323	P	P	03 48 06.9 +1.5
J41A	Loganville baz=163	77.64	345	P	P	03 48 05.2 -0.3
S22A	4UR Ranch, Cre baz=149	77.77	331	P	P	03 48 07.7 +1.0
L35A	Bielow Farm, R baz=158	77.81	341	P	P	03 48 06.3 -0.2
J40A	Soldiers Grove baz=162	77.83	345	P	P	03 48 05.9 -0.6
WUAZ	Wupatki baz=145	77.88	327	P	P	03 48 08.7 +1.5
L34A	Svendsen Farm, baz=158	77.91	340	P	P	03 48 07.0 0.0
BGNE	Belgrade baz=156	77.92	339	P	P	03 48 07.0 -0.1
Y12C	Blythe baz=143	77.97	324	P	P	03 48 09.1 +1.6
J39A	Decorah baz=162	77.99	344	P	P	03 48 06.9 -0.5
K36A	Gilmore City baz=159	78.01	342	P	P	03 48 07.3 -0.2
MVCO	Mesa Verde baz=148	78.01	330	P	P	03 48 08.8 +0.9
MVCO	Mesa Verde comp=Z,5.7nm,0.9s	78.01	330	*eP*	P	03 48 08.9 +0.9
Q24A	Divide baz=150	78.15	333	P	P	03 48 09.8 +1.0
Q24A	Divide comp=Z,6.9nm,0.8s	78.15	333	*eP*	P	03 48 10.2 +1.4
J38A	Wedel Dairy, R baz=161	78.16	344	P	P	03 48 07.8 -0.5
TSUM	Tsumeb comp=Z,6.4nm,1.1s	78.17	105	*eP*	P	03 48 09.1 -0.2
PDMCI	Parker Dam,Lak baz=143	78.23	324	P	P	03 48 09.2 +0.4
MONP2	Monument Peak baz=142	78.27	322	P	P	03 48 08.9 -0.6
K35A	Storm Lake baz=159	78.30	341	P	P	03 48 09.3 +0.2
BC3	Big Chuckawall baz=142	78.37	323	P	P	03 48 11.1 +1.2
J37A	Redenius Farm, baz=160	78.41	343	P	P	03 48 08.9 -0.8
J36A	Seneca 1, Swea baz=159	78.63	342	P	P	03 48 10.5 -0.4
I38A	Scanlan Farm, baz=161	78.80	344	P	P	03 48 11.2 -0.6
TPFO	Pinon Flats baz=142	78.85	322	P	P	03 48 11.3 -1.2
PFO	Pinyon Flats O baz=142	78.86	322	P	P	03 48 11.4 -1.1
BELC	Belle Mtn. Jos baz=142	78.92	323	P	P	03 48 13.8 +0.9
J34A	George baz=158	79.01	341	P	P	03 48 12.8 -0.2
SMCO	Snowmass comp=Z,7.2nm,0.9s	79.05	332	*eP*	P	03 48 15.5 +1.6
U15A	North Rim	79.05	327	*eP*	P	03 48 15.5 +1.7
ISCO	Idaho Springs baz=150	79.06	333	P	P	03 48 14.4 +0.7
ISCO	Idaho Springs comp=Z,2.2nm,0.8s	79.06	333	*eP*	P	03 48 15.0 +1.2
K31A	O'Neill baz=156	79.21	339	P	P	03 48 14.2 0.0
PV10	Paradox Valley	79.22	330	*eP*	P	03 48 15.2 +0.6
MURC	Murrieta baz=141	79.23	322	P	P	03 48 16.1 +1.6
I35A	Creekview Farm baz=159	79.29	342	P	P	03 48 14.1 -0.4
GMRC	Granite Mounta baz=142	79.37	323	P	P	03 48 16.5 +1.2
BOSA	Boshof comp=Z,1.8nm,0.6s,baz=235,slow=4.6,SNR=5.2	79.43	117	P	P	03 48 15.7 -0.3
K30A	Basset baz=155	79.52	338	P	P	03 48 16.1 +0.3
ECSD	EROS Data Cent baz=158	79.61	341	P	P	03 48 16.1 -0.2
ECSD	EROS Data Cent comp=Z,8.4nm,0.9s	79.61	341	*eP*	P	03 48 16.6 +0.3
H36A	Jessenland, He baz=160	79.69	343	P	P	03 48 16.4 -0.3
KNB	Kanab comp=Z,5.7nm,1.0s	79.78	327	*eP*	P	03 48 19.3 +1.8
J31A	Geddes baz=156	79.82	339	P	P	03 48 17.1 -0.3
BFSC	Mount Baldy Ra baz=141	79.97	322	P	P	03 48 20.2 +1.6
H35A	Sunnyside Ranc baz=159	80.03	342	P	P	03 48 18.0 -0.5
SPMN	Marine on St. baz=161	80.03	344	P	P	03 48 17.6 -0.9
N23A	Red Feather La baz=150	80.13	333	P	P	03 48 20.3 +0.9
N23A	Red Feather La comp=Z,5.2nm,1.1s	80.13	333	*eP*	P	03 48 20.8 +1.3
H34A	Spellman Lake, baz=158	80.25	342	P	P	03 48 19.4 -0.3
GSC	Goldstone, Bar baz=142	80.35	323	P	P	03 48 21.3 +0.7
O20A	White River Ci baz=148	80.38	331	P	P	03 48 21.3 +0.6
I31A	Royce, Wessing baz=156	80.43	340	P	P	03 48 20.5 -0.1
CCUT	Cedar City comp=Z,4.6nm,0.9s	80.46	327	*eP*	P	03 48 23.3 +2.0
SRU	San Rafael Swe comp=Z,4.8nm,0.8s	80.47	329	*eP*	P	03 48 21.8 +0.5
H33A	Prehn Over Nor baz=158	80.52	341	P	P	03 48 20.9 -0.2
H32A	Carlson Farm, baz=157	80.55	341	P	P	03 48 20.9 -0.4
EDW2	Edwards Air Fo baz=141	80.64	322	P	P	03 48 23.2 +1.1
MSU	Marysvale	80.70	328	*eP*	P	03 48 24.0 +1.5
F36A	Milaca baz=160	80.80	344	P	P	03 48 21.7 -0.9
H31A	Wolsey baz=156	80.82	340	P	P	03 48 22.6 -0.2
MPMC	Manual Prospec baz=141	81.29	323	P	P	03 48 26.2 +0.6
FURC	Furnace Creek, baz=142	81.29	324	P	P	03 48 26.8 +1.4
E36A	McGregor baz=160	81.36	344	P	P	03 48 25.1 -0.4
TPNV	Topopah Spring baz=142	81.37	324	P	P	03 48 27.4 +1.4
TPNV	Topopah Spring comp=Z,3.3nm,0.9s	81.37	324	*eP*	P	03 48 27.6 +1.5
PKM	Mcpherson Peak baz=140	81.60	321	P	P	03 48 28.8 +1.5
D37A	Cotton baz=161	81.78	345	P	P	03 48 27.6 -0.1
E34A	Wadena baz=159	81.81	343	P	P	03 48 28.3 +0.4
K22A	Casper baz=150	81.86	334	P	P	03 48 29.0 +0.4
C39A	Grand Marais baz=163	81.93	347	P	P	03 48 27.7 -0.7
VES	Vestal, Richgr baz=140	81.94	322	P	P	03 48 30.0 +1.1
E33A	Westby DABS, E baz=158	82.02	342	P	P	03 48 28.1 -0.8
F31A	Hecla baz=156	82.02	341	P	P	03 48 29.3 +0.2
C38A	Sawbill Land. baz=162	82.06	346	P	P	03 48 28.2 -1.0
D35A	Remer baz=160	82.08	344	P	P	03 48 28.8 -0.5
R11A	Troy Canyon, C baz=143	82.15	326	P	P	03 48 31.2 +1.0
R11A	Troy Canyon, C comp=Z,2.1nm,0.8s	82.15	326	*eP*	P	03 48 31.4 +1.3
RSSD	Black Hills baz=152	82.26	336	P	P	03 48 30.8 +0.2
RSSD	Black Hills comp=Z,5.6nm,0.8s	82.26	336	*eP*	P	03 48 30.7 +0.1
TORD	Torodi Ar. Bea comp=Z,5.0nm,0.6s,baz=254,slow=4.5,SNR=124	82.29	69	P	P	03 48 30.6 -0.5
DUG	Dugway, Tooele baz=145	82.36	328	P	P	03 48 31.7 +0.5
DUG	Dugway, Tooele comp=Z,2.9nm,0.9s	82.36	328	*eP*	P	03 48 32.2 +1.1
E31A	Nome baz=157	82.56	341	P	P	03 48 31.5 -0.3
D33A	AnnSam, Waubun baz=158	82.57	343	P	P	03 48 31.3 -0.5
C35A	Jirik Farms, M baz=160	82.64	344	P	P	03 48 31.6 -0.6
D32A	Dogwood Acres, baz=157	82.86	342	P	P	03 48 33.0 -0.4
D31A	Mcclaflin, Tow baz=157	82.97	341	P	P	03 48 33.6 -0.3
HWUT	Hardware Ranch comp=Z,3.4nm,0.7s	82.98	330	*eP*	P	03 48 34.2 -0.1
SPUT	South Promonto comp=Z,3.2nm,0.8s	83.12	329	*eP*	P	03 48 35.8 +0.7
C33A	Trail baz=158	83.12	343	P	P	03 48 34.3 -0.4
BW06	Boulder Array baz=147	83.13	332	P	P	03 48 34.7 -0.5
BW06	Boulder Array	83.13	332	*eP*	P	03 48 34.9 -0.3
PD31	Pinedale Array	83.13	332	*eP*	P	03 48 36.5 +1.3
PDAR	Pinedale Array comp=Z,1.3nm,0.7s,baz=133,slow=5.3,SNR=11	83.13	332	P	P	03 48 35.1 0.0
B35A	Bob, Littlefor baz=160	83.20	344	P	P	03 48 34.4 -0.6
B34A	Aery, Baudette baz=159	83.53	344	P	P	03 48 36.1 -0.7
HVU	Hansel Valley comp=Z,4.5nm,0.9s	83.64	329	*eP*	P	03 48 38.2 +0.4
AGMN	Agassiz Nation baz=158	83.65	343	P	P	03 48 37.0 -0.3
C31A	Landman Farms, baz=157	83.66	342	P	P	03 48 36.9 -0.5
TVH2	Borealis Mine comp=Z,2.2nm,0.8s	83.72	324	*eP*	P	03 48 39.9 +1.6
B32A	Ashes, Strandq baz=158	83.91	343	P	P	03 48 38.2 -0.4
A33A	Warroad baz=159	84.13	344	P	P	03 48 39.4 -0.4
WAKR	Walker comp=Z,3.6nm,0.9s	84.16	323	*eP*	P	03 48 42.5 +2.0
MDND	Maddock baz=155	84.22	341	P	P	03 48 40.3 0.0
MDND	Maddock	84.22	341	*eP*	P	03 48 40.8 +0.5
YERR	Yerington comp=Z,3.7nm,0.8s	84.43	324	*eP*	P	03 48 43.5 +1.6
IMW	Indian Meadow comp=Z,6.2nm,1.3s	84.63	332	*eP*	P	03 48 43.1 +0.3
PNTR	Pine Nut comp=Z,6.8nm,0.8s	84.69	324	*eP*	P	03 48 44.9 +1.8
RLMT	Red Lodge baz=148	85.00	333	P	P	03 48 44.9 +0.3
PAHR	Pah Rah Range comp=Z,3.0nm,0.8s	85.06	324	*eP*	P	03 48 46.5 +1.6
LAO	LASA Array baz=150	85.25	336	P	P	03 48 46.0 +0.4
LAO	LASA Array comp=Z,9.9nm,1.3s	85.25	336	*eP*	P	03 48 46.0 +0.4
YMR	Madison River comp=Z,17nm,0.4s	85.28	332	*eP*	P	03 48 47.5 +1.6
ULM	Lac du Bonnet comp=Z,3.4nm,0.8s,baz=167,slow=8.1,SNR=5.5	85.47	344	P	P	03 48 46.0 -0.5
HLID	Hailey baz=144	85.79	329	P	P	03 48 49.7 +1.2
HLID	Hailey comp=Z,2.6nm,0.8s	85.79	329	*eP*	P	03 48 49.5 +1.0
MCMT	McKenzie Canyo	86.17	331	*eP*	P	03 48 51.3 +0.9
BOZ	Bozeman (W) baz=146	86.36	332	P	P	03 48 51.0 -0.2
O03D	Paynes Creek baz=138	86.71	323	P	P	03 48 54.1 +1.1
LSZ	Laaka comp=Z,2.9nm,0.7s	88.83	107	*eP*	P	03 49 04.6 +0.8
YKA	Yellowknife Ar comp=Z,0.3nm,0.6s,baz=142,slow=4.6,SNR=3.3	101.14	341	P	Pdif	03 49 58.4 -0.1
CSS	Mathiatis	117.91	65	*e*PKPdf	PKPdf	03 54 55.1 -0.2
ASAR	Alice Springs comp=Z,0.5nm,0.6s,baz=105,slow=1.9,SNR=5.6	119.56	206	PKP	PKPdf	03 54 57.8 -1.1
BRTR	Keskin Array B comp=Z,0.4nm,0.6s,baz=180,slow=1.2,SNR=3.7	119.80	60	PKP	PKPdf	03 54 58.2 -0.7
WRA	Warramunga Arr comp=Z,0.2nm,0.6s,baz=158,slow=1.7,SNR=35	122.78	208	PKP	PKPdf	03 55 04.5 -0.6
WRAB	Tennant Creek	122.79	208	*e*PKPdf	PKPdf	03 55 04.4 -0.8
ABKAR	Akbulak array	139.59	51	*e*PKPdf	PKPdf	03 55 35.8 0.0
KAPI	Kappang	141.49	196	*e*PKPdf	PKPdf	03 55 40.4 0.0
BRVK	Borovoye	145.10	42	*e*PKPdf	PKPdf	03 55 45.8 +0.3
KKAR	Karatay Array	147.51	60	*e*PKPbc	PKPbc	03 55 52.4 -0.3
AAK	Ala-Archa comp=Z,9.6nm,0.6s,baz=188,slow=3.1,SNR=16	150.47	60	PKPbc	PKPbc	03 56 00.2 -0.1
AAK	Ala-Archa	150.47	60	*e*PKPbc	PKPbc	03 56 00.7 +0.4
KURBB	Kurchatov Arra comp=Z,5.9nm,0.6s,baz=299,slow=3.0,SNR=36	150.76	43	PKPbc	PKPbc	03 56 00.5 0.0
KURK	Kurchatov	150.77	42	*e*PKPbc	PKPbc	03 56 00.5 0.0
IPM	Ipoh	150.94	162	*e*PKPdf	PKPdf	03 55 56.8 +0.5
IPM				*e*PKPbc	PKPbc	03 56 01.7 -0.4
KULM	Kulim	151.62	161	*e*PKPbc	PKPbc	03 56 02.9 -0.7
KSH	Kashi	151.92	66	*e*PKPbc	PKPdf	03 55 56.3 -0.9
KSH				*ep*PKP	pPKPdf	03 56 24.0 -1.3
KSH				*es*PKP		03 56 34.0
KSH				*e*PP	PP	03 59 47.0 +1.1
KSH				SKS	SKSdf	04 02 52.0 -3.3
ZALV	Zalesovo Beam comp=Z,12nm,0.5s,baz=303,slow=3.3,SNR=46	152.17	32	PKPbc	PKPbc	03 56 03.6 0.0
MKAR	Makanchi Array comp=Z,0.3nm,0.5s,baz=280,slow=1.8,SNR=5.2	154.66	48	PKPbc	PKPbc	03 56 09.2 -0.2
SONM	Songino Array comp=Z,0.7nm,0.6s,baz=314,slow=3.6,SNR=4.1	164.48	8	PKPab	PKPab	03 57 07.0 -0.3

IDC 29 03:45:23.9±5.8, 10°.85N×94°.65E, h181km±54km, mb3.4/8, mb1 3.5/9, mb1mx3.2/51, mbtmpb3.8/9, MS3.1/5, Ms1 3.1/5, ms1mx2.7/28, Error ellipse: s-maj=41.9km s-min=13.5km az=52.0, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	Chiang Mai Arr	8.63	28	P	Pn	03 47 25.9	+0.4
	0.6nm,0.3s,baz=220,slow=14,SNR=4.1						
CMAR				LR	LR	03 51 01.0	
	comp=Z,36nm,18.3s,baz=215,slow=39						
PSI	Prapat	9.05	152	LR	LR	03 51 13.2	
	comp=Z,227nm,18.1s,baz=336,slow=38						
MKAR	Makanchi Array	37.33	346	P	P	03 52 17.9	-0.8
	0.9nm,0.7s,baz=160,slow=8.4,SNR=6.3						
SONM	Songino Array	38.17	13	P	P	03 52 26.3	+0.4
	0.2nm,0.4s,baz=185,slow=10.0,SNR=2.8						
KURBB	Kurchatov Arra	41.82	345	P	P	03 52 54.6	-1.0
	0.4nm,0.2s,baz=161,slow=7.5,SNR=4.9						
GEYT	Alibeck	42.38	316	P	P	03 53 00.2	-0.4
	5.9nm,0.8s,baz=147,slow=8.6,SNR=7.0						
GEYT				LR	LR	04 12 35.6	
	comp=Z,18nm,18.6s,baz=85,slow=38						
ZALV	Zalesovo Beam	43.70	352	P	P	03 53 11.0	+0.2
	1.3nm,0.7s,baz=156,slow=7.6,SNR=5.2						
WRA	Warramunga Arr	49.62	128	P	P	03 53 57.2	-0.1
	1.7nm,0.7s,baz=304,slow=9.0,SNR=14						
ASAR	Alice Springs	51.48	132	P	P	03 54 11.0	-0.2
	1.1nm,0.7s,baz=311,slow=7.2,SNR=12						
ARU	Arti	53.38	336	LR	LR	04 19 18.7	
	comp=Z,30nm,21.5s,baz=144,slow=38						
BRTR	Keskin Array B	60.91	309	P	P	03 55 18.8	+0.9
	0.9nm,0.7s,baz=126,slow=6.3,SNR=5.7						
NOA	NORSAR Array B	77.41	330	LR	LR	04 34 29.1	
	comp=Z,7.8nm,18.9s,baz=345,slow=38						

GUC 29 04:05:25.0±0.5, 34°.71S×71°.78W, h42km±2km, ML3.5, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	Pichilemu	0.37	329	*i* P	Pn	04 05 33.7	-0.4
CHPI				*i* S	Sn	04 05 40.2	-0.4
NICH	Los Niches	0.54	123	*i* P	Pn	04 05 36.3	0.0
NICH				*i* S	Sn	04 05 44.4	+0.1
TALC	Talca	0.70	170	*i* P	Pn	04 05 38.7	+0.2
TALC				*i* S	Sn	04 05 48.5	+0.4
RCDM	Rinconada Maip	1.46	34	*e*P	Pn	04 05 49.5	+0.6
RCDM				*e*S	Sn	04 06 08.0	+1.1
ANTU	Antumapu	1.48	40	*i* P	Pn	04 05 50.5	+1.3
ANTU				*e*S	Sn	04 06 10.8	+3.5
ANTU				IAML		04 06 12.4	
	comp=N,1μm,0.2s						
CLCH	Cerro Calan	1.67	39	*i* P	Pn	04 05 53.0	+1.2
CLCH				*i* S	Sn	04 06 15.0	+3.0
CLCH				IAML		04 06 20.0	
	comp=N,829nm,0.3s						
PEL	Peldehue	1.81	30	*i* P	Pn	04 05 55.4	+1.7
PEL				*i* S	Sn	04 06 18.4	+3.0
PEL				IAML		04 06 27.2	
	comp=N,426nm,0.2s						
ROCH	El Roble	1.84	20	*e*P	Pn	04 05 55.5	+1.1
ROCH				*i* S	Sn	04 06 19.8	+3.2
ROCH				IAML		04 06 23.3	
	comp=N,567nm,0.4s						
FCH	Farellones	1.85	42	*e*P	Pn	04 05 55.9	+1.4
FCH				*e*S	Sn	04 06 18.3	+1.4
FCH				IAML		04 06 23.5	
	comp=N,775nm,0.2s						

IDC 29 04:46:18.9±1.6, 3°.32S×145°.26E, h0km, mb3.6/3, mb1 3.9/4, mb1mx3.5/32, mbtmpb3.7/4, ML3.8/1, MS4.2/1, Ms1 4.2/1, ms1mx2.6/35, Error ellipse: s-maj=89.7km s-min=26.4km az=122.0, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	Warramunga Arr	19.66	212	P	P	04 50 49.3	-0.3
	0.3nm,0.3s,baz=33,slow=11,SNR=29						
ASAR	Alice Springs	23.02	207	P	P	04 51 25.5	-0.2
	0.8nm,0.6s,baz=39,slow=7.8,SNR=9.1						
FITZ	Fitzroy Crossi	24.20	231	P	P	04 51 37.6	+0.3
	2.9nm,0.7s,baz=47,slow=9.2,SNR=8.1						
RAO	Raoul Island	43.42	130	LR	LR	05 08 53.8	
	comp=Z,292nm,21.7s,baz=60,slow=31						
ILAR	Eielson Array	83.72	24	P	P	04 58 49.6	+0.1
	0.3nm,0.7s,baz=261,slow=5.4,SNR=3.2						

*DDA **29** 05:07:22.3,38°.96N×25°.96E,h17km,Ml2.8*
*ATH **29** 05:07:22.3,38°.95N×26°.03E,h25km±1km,ML2.5/5,Error ellipse: s-maj=1.8km s-min=1.1km az=261.0*
*ISCJB **29** 05:07:22.6±0.6,38°.94N±0°.02×25°.97E±0°.04,h0km±4km, Error ellipse: s-maj=5.3km s-min=3.2km az=167.8*
*CSEM **29** 05:07:22.9±0.2,38°.92N×25°.96E,h2km,ML2.5,Error ellipse: s-maj=4.2km s-min=3.0km az=76.0*
*THE **29** 05:07:23.1,38°.95N×26°.00E,h1km±1km,ML2.5/5,Error ellipse: s-maj=1.7km s-min=0.5km az=131.0*
*ISK **29** 05:07:23.0,38°.93N×26°.01E,h8km,ML2.6*

ISC 29 05:07:23.0±0.9, 38°.94N±0°.02×25°.99E±0°.02, h11km±8km, n58, σ0°59/89, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIGR	SIGRI	0.29	339	*e*PG	Pb	05 07 29.6	-0.5
SIGR				*e*SG	Sb	05 07 34.4	-0.5
SIGR	SIGRI	0.29	339	P	Pg	05 07 28.9	0.0
SIGR				S	Sg	05 07 33.2	+0.4
SIGR	SIGRI	0.29	339	P	Pg	05 07 28.9	0.0
SIGR	SIGRI	0.29	339	*e*Pg	Pb	05 07 29.6	-0.5
SIGR				S	Sg	05 07 32.4	-0.4
SIGR				*e*Sg	Sb	05 07 34.4	-0.5
SIGR	SIGRI	0.29	339	P	Pg	05 07 28.5	-0.3
SIGR				S	Sg	05 07 32.4	-0.4
SIGR				AML	AML	05 07 33.9	
	comp=E,1946μm,0.5s						
SIGR				AML	AML	05 07 37.2	
	comp=N,1797μm,0.3s						
PRK	Paraskevi	0.38	36	P	Pg	05 07 30.2	-0.3
PRK				S	Sg	05 07 35.5	0.0
PRK	Paraskevi	0.38	36	P	Pg	05 07 30.2	-0.3
PRK				S	Sg	05 07 35.8	+0.3
PRK	Paraskevi	0.38	36	P	Pg	05 07 30.1	-0.4
PRK				S	Sg	05 07 35.8	+0.3
PRK				AML	AML	05 07 38.2	
	comp=N,1728μm,0.4s						
PRK				AML	AML	05 07 41.5	
	comp=E,1890μm,0.6s						
CHOS	Chios island	0.56	174	*e*PG	Pg	05 07 33.9	0.0
CHOS	Chios island	0.56	174	P	Pg	05 07 34.1	+0.2
CHOS				S	Sg	05 07 42.1	+0.8
CHOS	Chios island	0.56	174	*e*Pg	Pg	05 07 33.9	0.0
CHOS				S	Sg	05 07 41.8	+0.5
CHOS	Chios island	0.56	174	P	Pb	05 07 34.5	-0.3
CHOS				S	Sg	05 07 41.8	+0.5
CHOS				AML	AML	05 07 43.9	
	comp=N,1273μm,0.2s						
CHOS				AML	AML	05 07 43.9	
	comp=E,2001μm,0.2s						
AYVA	Ayvalik	0.66	56	*i* P	Pb	05 07 36.8	+0.3
AYVA				*i* S	Sg	05 07 44.6	+0.2
AYVA	Ayvalik	0.66	56	P	Pb	05 07 36.8	+0.3
AYVA				S	Sg	05 07 44.6	+0.2
DKL	Dikili	0.73	80	*e*PG	Pg	05 07 37.1	0.0
DKL	Dikili	0.73	80	*e*Pg	Pg	05 07 37.1	0.0
URLA	Izmir	0.75	140	*i* P	Pg	05 07 37.0	-0.6
URLA				*i* S	Sb	05 07 48.8	+0.5
URLA	Izmir	0.75	140	P	Pg	05 07 37.0	-0.6
URLA				S	Sb	05 07 48.8	+0.5
BOZC	Bozcaada	0.90	3	*i* P	Pg	05 07 38.9	-1.5
BOZC				*i* S	Sb	05 07 52.9	+0.1
SKY	Skiros Island	1.12	267	P	Pg	05 07 44.4	-0.2
SKY	Skiros Island	1.12	267	P	Pg	05 07 44.4	-0.2
LIA	Limnos Island	1.14	327	P	Pg	05 07 44.1	-0.8
LIA				S	Sn	05 08 00.6	+0.2
LIA	Limnos Island	1.14	327	P	Pn	05 07 45.0	+0.2
LIA				S	Sb	05 08 00.3	+0.9
GADA	Gvkgeada	1.25	357	*e*PN	Pg	05 07 47.3	+0.3
GADA	Gvkgeada	1.25	357	P	Pn	05 07 46.5	+0.2
GADA				S	Sn	05 08 03.7	+0.6
GADA	Gvkgeada	1.25	357	P	Pn	05 07 46.5	+0.2
GADA	Gvkgeada	1.25	357	*e*Pn	Pg	05 07 47.3	+0.3
SMG	Samos	1.40	151	P	Pn	05 07 47.7	-0.7
SMG				S	Sb	05 08 06.2	-0.8
SMG	Samos	1.40	151	P	Pn	05 07 47.7	-0.7
SMG				S	Sb	05 08 06.2	-0.8
SMG				AML	AML	05 08 11.8	
	comp=N,363μm,0.4s						
SMG				AML	AML	05 08 12.4	
	comp=E,280μm,0.5s						
GELI	Tayfur-Gelibol	1.50	14	*e*PN	Pg	05 07 51.3	-0.5
GELI				*e*SN	Sg	05 08 11.2	0.0
GELI	Tayfur-Gelibol	1.50	14	*e*Pn	Pg	05 07 51.3	-0.5
LPK	Lapseki	1.55	22	*e*PN	Pb	05 07 51.9	+0.3
LPK				*e*SN	Sg	05 08 12.6	-0.2
LPK	Lapseki	1.55	22	*e*Pn	Pb	05 07 51.9	+0.3
LPK				*e*Sn	Sg	05 08 12.6	-0.2
SMTH	Samothraki Isl	1.57	347	P	Pn	05 07 51.0	+0.3
SMTH				S	Sg	05 08 12.9	-0.5
SMTH	Samothraki Isl	1.57	347	P	Pn	05 07 51.0	+0.3
SMTH				S	Sg	05 08 12.9	-0.5
SMTH	Samothraki Isl	1.57	347	P	Pn	05 07 50.5	-0.2
SMTH				S	Sn	05 08 10.1	-0.8
SMTH				AML	AML	05 08 15.3	
	comp=E,133μm,0.3s						
SMTH				AML	AML	05 08 17.1	
	comp=N,168μm,0.4s						
BALB	Balikesir	1.63	64	*e*PN	Pb	05 07 52.8	-0.1
BALB	Balikesir	1.63	64	*e*Pn	Pb	05 07 52.8	-0.1
AOS	Alonnisos	1.66	279	*e*PN	Pb	05 07 53.9	+0.5
AOS	Alonnisos	1.66	279	*e*Pn	Pb	05 07 53.9	+0.5
ERIK	Erikli-Kesan	1.77	13	*e*PN	Pb	05 07 55.0	-0.5
ERIK	Erikli-Kesan	1.77	13	*e*Pn	Pb	05 07 55.0	-0.5
APE	Apeiranthos	1.91	191	*e*PN	Pn	05 07 56.3	+0.9
APE	Apeiranthos	1.91	191	P	Pn	05 07 54.6	-0.8
APE	Apeiranthos	1.91	191	*e*Pn	Pn	05 07 56.3	+0.9
APE	Apeiranthos	1.91	191	P	Pn	05 07 54.6	-0.8
ALN	Alexandroupoli	1.95	1	*e*PN	Pn	05 07 57.2	+1.2
ALN	Alexandroupoli	1.95	1	P	Pn	05 07 56.7	+0.7
ALN	Alexandroupoli	1.95	1	*e*Pn	Pn	05 07 57.2	+1.2
ALN	Alexandroupoli	1.95	1	P	Pn	05 07 56.7	+0.7
KESN	Edirne-Kesan	1.96	16	*i* P	Pg	05 08 01.2	+0.7
KESN				*i* S	Sb	05 08 23.4	+0.1
KESN	Edirne-Kesan	1.96	16	P	Pg	05 08 01.2	+0.7
KESN				S	Sb	05 08 23.4	+0.1
RKY	Sarkoy-Tekirda	1.97	27	*e*PN	Pb	05 07 58.0	-0.8
RKY	Sarkoy-Tekirda	1.97	27	*e*Pn	Pb	05 07 58.0	-0.8
MANT	Manisa	2.06	102	*i* P	Pb	05 08 01.2	+0.7
MANT				*i* S	Sg	05 08 28.1	-1.2
MANT	Manisa	2.06	102	P	Pb	05 08 01.2	+0.7
MANT				S	Sg	05 08 28.1	-1.2
MRMT	Marmara Adasi	2.07	36	*e*PN	Pn	05 07 58.6	+1.0
MRMT	Marmara Adasi	2.07	36	*e*Pn	Pn	05

IDC 29 05:07:35.4±1.7,3°38S×145°33E,h0km,mb4.0/4, mb1 4.3/5,mb1mx3.8/38,mbtmp4.0/5,ML4.0/1,MS3.2/10, Ms1 3.2/10,ms1mx2.9/33,Error ellipse: s-maj=85.7km s-min=24.2km az=116.0,Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.26**	**163**	LR	LR	05 11 06.2	
	comp=Z,46nm,21.4s,baz=20,slow=34						
HNR	**Honiara**	**15.71**	**113**	LR	LR	05 17 31.6	
	comp=Z,66nm,18.5s,baz=13,slow=38						
WRA	**Warramunga Arr**	**19.65**	**212**	P	P	05 12 06.0	+0.1
	0.4nm,0.3s,baz=40,slow=12,SNR=28						
WRA				LR	LR	05 20 28.9	
	comp=Z,192nm,19.0s,baz=40,slow=39						
ASAR	**Alice Springs**	**22.99**	**208**	P	P	05 12 42.1	+0.1
	2.4nm,0.6s,baz=35,slow=11,SNR=11						
ASAR				LR	LR	05 21 34.1	
	comp=Z,117nm,18.8s,baz=40,slow=36						
FITZ	**Fitzroy Crossi**	**24.21**	**231**	P	P	05 12 53.9	-0.1
	4.9nm,0.7s,baz=56,slow=9.7,SNR=12						
FITZ				LR	LR	05 22 54.8	
	comp=Z,32nm,19.7s,baz=56,slow=38						
DZM	**Mont Dzumac**	**27.66**	**134**	LR	LR	05 22 03.4	
	comp=Z,47nm,20.2s,baz=333,slow=31						
STKA	**Stephens Creek**	**28.56**	**187**	LR	LR	05 25 45.8	
	comp=Z,58nm,19.1s,baz=24,slow=38						
KSRS	**Korea Array**	**43.73**	**340**	LR	LR	05 31 17.7	
	comp=Z,31nm,18.6s,baz=164,slow=32						
MKAR	**Makanchi Array**	**74.43**	**321**	LR	LR	05 53 45.9	
	comp=Z,8.8nm,18.0s,baz=162,slow=37						
ZALV	**Zalesovo Beam**	**75.92**	**328**	LR	LR	05 52 00.3	
	comp=Z,31nm,20.3s,baz=70,slow=35						
BVAR	**Borovoye Array**	**83.69**	**324**	P	P	05 20 06.1	+0.1
	0.9nm,0.5s,baz=108,slow=4.7,SNR=4.2						
ILAR	**Eielson Array**	**83.75**	**24**	P	P	05 20 06.1	-0.1
	0.9nm,0.8s,baz=258,slow=5.3,SNR=8.1						

*NIED **29** 05:11:00,37.50N×144.30E,h8km,Mw3.4 Best double couple: M₀1.53000×10¹⁴ NP1:φs275.00000°,δ44.00000°, λ-110.00000°. NP2:φs122.00000°,δ49.00000°, λ-71.00000°*

*IDC **29** 05:11:53.7±2.4,37.31N×144.56E,h0km,mb3.6/3, mb1 3.7/4,mb1mx3.4/46,mbtmp3.5/4,ML3.2/1,MS2.4/2, Ms1 2.4/2,ms1mx2.1/46,Error ellipse: s-maj=55.4km s-min=32.1km az=45.0*

*ISCJB **29** 05:11:56.6±0.9,37.52N±0.06×144.47E±0.07,h33km, mb3.7/3,MS2.0/1,Error ellipse: s-maj=8.5km s-min=7.5km az=41.0*

*JMA **29** 05:11:58.3±0.3,37.54N×144.33E,h39km,M3.5*

ISC 29 05:11:57.0±1.3,37.50N±0.06×144.62E±0.09,h35km,n17, σ1§98/24,mb3.8/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.76**	**291**	P	**Pn**	**05 12 38.7**	**0.0**
JIO				S	**Sn**	**05 13 08.5**	**-2.2**
OFUJ	**Ofunato**	**2.81**	**305**	P	**Pn**	**05 12 39.5**	**+0.1**
OFUJ				S	**Sn**	**05 13 09.5**	**-2.6**
JMK	**Ichinoseki**	**3.05**	**299**	P	**Pn**	**05 12 43.7**	**+1.0**
JMK				S	**Sn**	**05 13 15.8**	**-2.1**
JOM	**Ohasama**	**3.27**	**308**	P	**Pn**	**05 12 46.1**	**+0.3**
JOM				S	**Sn**	**05 13 21.9**	**-1.6**
JFT	**Otama**	**3.41**	**272**	P	**Pn**	**05 12 48.5**	**+0.8**
JFT				S	**Sn**	**05 13 25.5**	**-1.4**
JYK	**Kaneyama**	**3.65**	**294**	P	**Pn**	**05 12 51.6**	**+0.7**
JYK				S	**Sn**	**05 13 31.8**	**-0.9**
JANG	**Nango**	**3.76**	**321**	S	**Sn**	**05 13 32.5**	**-2.9**
JKB	**Kayabe**	**5.18**	**329**	P	**Pn**	**05 13 13.4**	**+1.4**
JCH	**Churui**	**5.20**	**350**	P	**Pn**	**05 13 12.5**	**+0.2**
JCH				S	**Sn**	**05 14 07.5**	**-3.5**
MJAR	**Matsushiro Arr**	**5.22**	**261**	Pn	**Pn**	**05 13 12.7**	**+0.1**
	0.8nm,0.3s,baz=92,slow=15,SNR=5.9						
MJAR				Sn	**Sn**	**05 14 11.4**	**-0.2**
	0.9nm,0.3s,baz=93,slow=26,SNR=6.4						
MAT	**Matsushiro**	**5.22**	**261**	P	**Pn**	**05 13 13.3**	**+0.7**
MAT				S	**Sn**	**05 14 10.4**	**-1.2**
JHJ	**Hachijo jima 2**	**5.89**	**224**	Sn	**Sn**	**05 14 22.8**	**-5.3**
	22nm,0.3s,baz=249,slow=23,SNR=4.6						
PETK	**Petropavlovsk-**	**18.07**	**26**	LR	LR	05 23 49.0	
	comp=Z,17nm,18.1s,baz=127,slow=39						
MA2	**Magadan**	**22.45**	**8**	LR	LR	05 25 51.1	
	comp=Z,5.7nm,21.7s,baz=69,slow=37						
KURBB	**Kurchatov Arra**	**47.73**	**308**	P	**P**	**05 20 32.5**	**+2.3**
	0.6nm,0.5s,baz=79,slow=7.5,SNR=3.2						
WRA	**Warramunga Arr**	**57.95**	**191**	P	**P**	**05 21 46.3**	**+0.4**
	0.3nm,0.6s,baz=11,slow=7.1,SNR=7.8						
ASAR	**Alice Springs**	**61.67**	**191**	P	**P**	**05 22 12.2**	**+0.7**
	0.7nm,0.9s,baz=27,slow=6.4,SNR=4.3						

*NNC **29** 05:13:29.3±3.8,40.90N×72.17E,h0km,mb3.7,mpv3.4, Error ellipse: s-maj=34.6km s-min=12.2km az=9.0*

*KRNET **29** 05:13:31.5±0.1,41.01N×72.24E,h28km,mb3.0*

*SOME **29** 05:13:34.1,41.22N×72.25E,h5km*

ISC 29 05:13:31.1±1.3,41.00N±0.03×72.20E±0.03,h3km±11km, n30,σ1§61/60,23C-18D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHH	**Osh**	**0.65**	**136**	⇑*i*P	**Pg**	**05 13 44.3**	**+0.7**
	baz=139						
OHH				⇑*i*S	**Sb**	**05 13 53.7**	**-0.9**
	baz=139						
ARSB	**Arslanbob**	**0.68**	**61**	⇓*e*P	**Pg**	**05 13 43.1**	**-1.0**
	baz=60						
ARSB				⇓*e*S	**Sg**	**05 13 52.9**	**0.0**
	baz=60						
ARK	**Arkit**	**0.82**	**348**	⇓*e*P	**Pg**	**05 13 46.8**	**0.0**
	baz=346						
ARK				⇓*i*S	**Sg**	**05 13 58.3**	**+0.9**
	baz=346						
BTK	**Batken**	**1.41**	**229**	⇓*e*P	**Pn**	**05 13 57.2**	**-0.5**
	baz=229						
BTK				⇓*e*S	**Sn**	**05 14 16.3**	**-0.5**
	baz=229						
MNAS	**Manas**	**1.50**	**9**	⇓*e*P	**Pn**	**05 13 58.6**	**-0.5**
	baz=8.0						
MNAS				⇓*e*S	**Sb**	**05 14 18.7**	**-0.6**
	baz=8.0						
DRK	**Karamyk**	**1.55**	**191**	⇓*i*P	**Pn**	**05 13 59.1**	**-0.7**
	baz=192						
DRK				⇓*i*S	**Sb**	**05 14 20.3**	**-0.3**
	baz=192						
AML	**Almayashu**	**1.60**	**44**	⇑*i*P	**Pn**	**05 13 59.1**	**-1.4**
	baz=44						
AML				⇑*i*S	**Sn**	**05 14 19.7**	**-2.2**
	baz=44						
ARLS	**Aral**	**1.82**	**61**	⇓*e*P	**Pn**	**05 14 02.8**	**-0.6**
	baz=61						
ARLS				⇓*i*S	**Sb**	**05 14 26.3**	**-2.0**
	baz=61						
MRKS	**Merke**	**1.91**	**23**	*e*P	**Pn**	**05 14 04.5**	**0.0**
	46nm,0.5s						
MRKS				*e*S	**Sn**	**05 14 27.0**	**-2.2**
	243nm,0.3s						
IUG	**Iuzhnay**	**1.99**	**306**	*e*P	**Pb**	**05 14 08.8**	**+0.8**
	127nm,0.2s						
IUG				*e*S	**Sb**	**05 14 34.2**	**+1.0**
	429nm,0.4s						
EKS2	**Erkin-Say**	**2.04**	**35**	⇑*i*P	**Pn**	**05 14 06.4**	**0.0**
	baz=34						
EKS2				⇑*i*S	**Sb**	**05 14 32.6**	**-2.0**
	baz=34						
UCH	**Uchtor**	**2.13**	**54**	⇑*i*P	**Pn**	**05 14 07.3**	**-0.6**
	baz=54						
UCH				⇑*i*S	**Sb**	**05 14 35.9**	**-1.6**
	baz=54						
AAK	**Ala-Archa**	**2.37**	**46**	⇑*i*P	**Pn**	**05 14 11.0**	**0.0**
	baz=45						
AAK				⇑*i*S	**Sn**	**05 14 41.1**	**+0.4**
	baz=45						
AAK	**Ala-Archa**	**2.37**	**46**	⇓Pn	**Pn**	**05 14 10.5**	**-0.6**
	5.7nm,0.5s						
AAK				⇓Sn	**Sb**	**05 14 43.9**	**-0.4**
	39nm,0.3s						
KK31	**Karatay Array**	**2.45**	**330**	Pn	**Pn**	**05 14 12.0**	**+0.1**
	10nm,0.3s,baz=138,slow=13,SNR=72						
KK31				⇓Sn	**Sb**	**05 14 43.9**	**-2.4**
	18nm,0.3s,baz=158,slow=29,SNR=12						
KZA	**Kyzart**	**2.53**	**64**	⇓*i*P	**Pn**	**05 14 13.1**	**-0.4**
	baz=64						
KZA				⇓*i*S	**Sb**	**05 14 46.0**	**-3.1**
	baz=64						
FRU1	**Bishkek**	**2.56**	**44**	⇑*e*P	**Pn**	**05 14 14.4**	**+0.8**
	baz=44						
FRU1				⇑*e*S	**Sn**	**05 14 44.5**	**-0.8**
	baz=44						
KBK	**Karagaybulak**	**2.64**	**50**	⇑*i*P	**Pn**	**05 14 14.8**	**+0.1**
	baz=50						
KBK				⇑*i*S	**Sn**	**05 14 48.0**	**+0.6**
	baz=50						
CHMS	**Chumysh**	**2.76**	**43**	⇑*i*P	**Pn**	**05 14 15.7**	**-0.5**
	baz=43						
CHMS				⇑*i*S	**Sn**	**05 14 50.1**	**0.0**
	baz=43						
USP	**Ospenovka**	**2.84**	**36**	⇑*i*P	**Pn**	**05 14 17.2**	**-0.2**
	baz=36						
USP				⇑*i*S	**Sn**	**05 14 51.9**	**-0.2**
	baz=36						
TKM2	**Tokmak 2**	**3.18**	**52**	⇑*i*P	**Pn**	**05 14 21.7**	**-0.4**
	baz=52						
TKM2				⇑*i*S	**Sn**	**05 15 00.5**	**-0.2**
	baz=52						
TKM2	**Tokmak 2**	**3.18**	**52**	⇑Pn	**Pn**	**05 14 21.8**	**-0.4**
	6.5nm,0.5s						
TKM2				⇓Sn	**Sn**	**05 15 00.8**	**0.0**
	31nm,0.7s						
ULHL	**Ulahol**	**3.28**	**66**	⇑*i*P	**Pn**	**05 14 23.2**	**-0.3**
	baz=67						
ULHL				⇑*i*S	**Sn**	**05 15 03.5**	**+0.4**
	baz=67						
BMNS	**Besmoynak**	**3.34**	**50**	*e*P	**Pb**	**05 14 32.3**	**+1.3**
	37nm,0.3s						
BMNS				*e*S	**Sb**	**05 15 14.4**	**+2.4**
	82nm,0.7s						
KST	**Kastek**	**3.47**	**53**	*e*P	**Pb**	**05 14 35.0**	**+1.8**
	2.1nm,0.4s						
KST				*e*S	**Sb**	**05 15 18.2**	**+2.4**
	18nm,0.5s						
DGS	**Degeres**	**3.48**	**49**	*e*P	**Pb**	**05 14 33.2**	**-0.2**
	8.7nm,0.6s						
DGS				*e*S	**Sb**	**05 15 16.0**	**0.0**
	22nm,0.4s						
IZV	**Izvestkoviy**	**3.87**	**57**	*e*P	**Pb**	**05 14 41.4**	**+1.4**
	11nm,0.6s						
IZV				*e*S	**Sb**	**05 15 29.8**	**+2.4**
	18nm,0.4s						
MDOK	**Medeo**	**4.21**	**57**	*e*P	**Pb**	**05 14 48.3**	**+2.5**
	6.9nm,0.6s						
MDOK				*e*S	**Sg**	**05 15 41.2**	**-5.1**
	15nm,0.3s						
KTBS	**Karatobe**	**4.29**	**49**	*e*P	**Pb**	**05 14 49.1**	**+2.0**
	2.4nm,0.5s						
KTBS				*e*S	**Sb**	**05 15 42.6**	**+3.3**
	10nm,0.6s						
ARXS	**Arharly**	**5.25**	**50**	*e*P	**Pb**	**05 15 05.9**	**+2.3**
	2.9nm,0.3s						
ARXS				*e*S	**Sb**	**05 16 11.5**	**+4.5**
	12nm,0.4s						

IDC 29 05:25:49.8±2.8,53.55N×87.89E,h0km,mb1 2.9/2, mb1mx2.9/39,mbtmp2.9/2,ML2.7/2,Error ellipse: s-maj=24.0km s-min=17.4km az=57.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.87**	**284**	*i*		05 37 48.5	
	baz=99,slow=323,SNR=13						
ZALV	**Zalesovo Beam**	**1.87**	**284**	Pn	Pn	05 26 22.9	-0.1
	2.2nm,0.3s,baz=101,slow=15,SNR=14						
ZALV				Lg	Lg	05 26 49.5	
	4.7nm,0.3s,baz=102,slow=26,SNR=11						
KURBB	**Kurchatov Arra**	**6.47**	**247**	Pn	Pn	05 27 26.6	+0.4
	0.1nm,0.3s,baz=61,slow=14,SNR=8.9						
KURBB				Sn	Sn	05 28 39.7	-1.0
	0.1nm,0.3s,baz=64,slow=26,SNR=3.2						
KURBB				Lg	Lg	05 29 15.0	
	0.0nm,0.3s,baz=64,slow=32,SNR=5.5						
MKAR	**Makanchi Array**	**7.65**	**210**	Pn	Pn	05 27 44.0	+1.5
	0.1nm,0.3s,baz=24,slow=13,SNR=5.2						
MKAR				Lg	Lg	05 29 52.0	
	0.0nm,0.3s,baz=35,slow=33,SNR=5.7						

NNC 29 05:34:27.9±2.7,37.22N×71.48E,h0km,mb3.6,mpv3.2, 2C-3D,Error ellipse: s-maj=23.5km s-min=12.6km az=144.0,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.62**	**308**	⇓P	Pn	05 35 11.5	-0.1
	4.0nm,0.3s						
DZET				⇓S	Sn	05 35 46.0	+1.8
	39nm,0.4s						
MNAS	**Manas**	**5.32**	**8**	⇓P	Pn	05 35 49.5	+0.8
	1.0nm,0.4s						
MNAS				⇑S	Sn	05 36 52.4	+1.7
	3.3nm,0.4s						
KK31	**Karatay Array**	**5.92**	**353**	P	Pn	05 35 56.2	-0.7
	1.2nm,0.4s,baz=177,slow=12,SNR=17						
KK31				⇑S	Sn	05 37 05.8	+0.4
	1.0nm,0.4s,baz=182,slow=22,SNR=7.4						

*SOME **29** 05:34:45.5,50.85N×85.93E,h10km*

*NNC **29** 05:35:02.0±2.5,50.63N×86.82E,h6km±11km,mb3.9, mpv3.5,Error ellipse: s-maj=16.4km s-min=10.4km az=62.0*

ISC 29 05:34:59.6±4.4,50.6N±0.1×87.1E±0.2,h8km,n6,σ1§61/10, 5C-4D,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZSN	**Zaisan**	**3.64**	**210**	*e*P	**Pn**	**05 35 55.5**	**-0.7**
	6.1nm,0.2s						
ZSN				*e*S	**Sn**	**05 36 37.4**	**-2.0**
	9.9nm,0.5s						
MK31	**Makanchi Array**	**4.98**	**221**	Pn	Pn	05 36 16.2	+1.6
	1.6nm,0.5s,baz=39,slow=13,SNR=56						
MK31				⇓Sn	**Sn**	**05 37 13.9**	**+1.5**
	4.6nm,0.6s,baz=46,slow=23,SNR=4.6						
MK31				⇑Lg	Lg	05 37 35.0	
	5.0nm,0.5s,baz=47,slow=30,SNR=6.4						
MAKZ	**Makanchi**	**5.11**	**223**	⇑Pn	**Pn**	**05 36 17.5**	**+1.2**
	2.3nm,0.3s						
MAKZ				⇓Sn	**Sn**	**05 37 16.8**	**+1.4**
	5.3nm,0.6s						
MAKZ				⇑Lg	Lg	05 37 38.2	
	7.7nm,0.8s						
KURK	**Kurchatov**	**5.38**	**274**	⇑Lg	Lg	05 37 49.7	
	6.9nm,0.5s						
KURBB	**Kurchatov Arra**	**5.44**	**273**	⇓Pn	**Pn**	**05 36 20.8**	**0.0**
	6.1nm,0.3s						
KURBB				⇑Sn	**Sn**	**05 37 23.0**	**-0.6**
	3.5nm,0.3s						
KURBB				⇓Lg	Lg	05 37 52.1	
	21nm,0.7s						
KAPS	**Kapalarasan**	**7.45**	**227**	*e*P	**Pn**	**05 36 48.7**	**+0.2**
	1.7nm,0.4s						
KAPS				*e*S	**Sn**	**05 38 10.9**	**-2.3**
	6.2nm,0.5s						

*IDC **29** 05:37:13.2±2.4,37.01N×140.94E,h0km,mb3.5/2, mb1 3.7/3,mb1mx3.3/44,mbtmp3.4/3,ML3.1/1,Error ellipse: s-maj=45.7km s-min=30.5km az=38.0*

*ISCJB **29** 05:37:14.8±0.8,37.02N±0.03×140.86E±0.07,h12km±4km, mb3.5/2,Error ellipse: s-maj=9.0km s-min=4.3km az=9.0*

*JMA **29** 05:37:15.6,37.03N×140.75E,h9km±1km,M3.2 Broadband fault plane solution: P waves. NP1: φs66.00000°,δ53.00000°,λ-85.00000°. NP2:φs237.00000°, δ37.00000°,λ-97.00000°. Principal axes: T Plg8.0000°, Azm152.0000°; N Plg4.0000°, Azm243.0000°; P Plg81.0000°, Azm359.0000°;*

JMA Felt I J1.

ISC 29 05:37:15.1±1.0,37.03N±0.03×140.83E±0.05,h10km±6km, n19,σ0§93/23,7C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**342**	⇑P	**Pg**	**05 37 17.8**	**+0.3**
ONAJ				S	**Sg**	**05 37 19.4**	**+0.3**
JFK	**Kawauchi**	**0.34**	**7**	⇑P	**Pb**	**05 37 22.5**	**-0.8**
JFK				S	**Sb**	**05 37 27.7**	**-1.0**
JHO	**Hitachi**	**0.47**	**206**	⇑P	**Pg**	**05 37 24.1**	**-0.2**
JHO				S	**Sg**	**05 37 30.2**	**-0.2**
JFT	**Otama**	**0.62**	**321**	⇑P	**Pg**	**05 37 27.2**	**0.0**
JFT				S	**Sg**	**05 37 35.4**	**0.0**
JSB	**Shiboa**	**0.73**	**265**	⇑P	**Pb**	**05 37 29.3**	**-0.6**
JSB				S	**Sg**	**05 37 38.6**	**-0.1**
JMM	**Marumori**	**0.83**	**358**	⇑P	**Pb**	**05 37 31.2**	**-0.5**
JMM				S	**Sg**	**05 37 42.5**	**+0.4**
JYT	**Yasato**	**0.95**	**213**	P	**Pg**	**05 37 32.8**	**-0.6**
JYT				S	**Sb**	**05 37 45.6**	**-0.7**
JFY	**Yanaizu**	**0.97**	**293**	⇑P	**Pg**	**05 37 33.2**	**-0.6**
JFY				S	**Sg**	**05 37 45.4**	**-1.0**
MJAR	**Matsushiro Arr**	**2.16**	**258**	Pn	**Pn**	**05 37 52.0**	**+0.8**
	5.4nm,0.3s,baz=81,slow=16,SNR=17						
MJAR				Sn	**Sn**	**05 38 19.9**	**+1.9**
	11nm,0.3s,baz=61,slow=15,SNR=18						
MAT	**Matsushiro**	**2.16**	**258**	P	**Pn**	**05 37 52.0**	**+0.8**
MAT				S	**Sn**	**05 38 19.8**	**+1.8**
JHJ	**Hachijo jima 2**	**4.00**	**193**	Sn	**Sn**	**05 39 05.0**	**+1.7**
	14nm,0.3s,baz=262,slow=22,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	06 12 56.7	
	baz=312,slow=75,SNR=79						
H11N1	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	06 12 59.0	
	baz=312,slow=75,SNR=77						
H11N3	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	06 13 02.0	
	baz=312,slow=75,SNR=77						
H11S1	**WAKE ISLAND Hy**	**29.25**	**122**	T	T	06 13 53.9	
	baz=315,slow=74						
H11S3	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	06 13 48.3	
	baz=315,slow=74,SNR=49						
H11S2	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	06 13 54.2	
	baz=315						
MKAR	**Makanchi Array**	**43.72**	**302**	P	**P**	**05 45 20.2**	**-0.2**
	0.4nm,0.6s,baz=84,slow=9.6,SNR=3.9						
WRA	**Warramunga Arr**	**57.00**	**187**	P	**P**	**05 47 00.6**	**-0.4**
	0.6nm,0.6s,baz=4.3,slow=7.3,SNR=18						

*DDA **29** 05:52:48.7,39.65N×25.73E,h7km,Ml2.9*

*ISK **29** 05:52:50.8,39.70N×26.07E,h5km,MD3.0*

*ISCJB **29** 05:52:52.0±0.4,39.67N±0.02×26.08E±0.04,h5km±4km, Error ellipse: s-maj=4.8km s-min=2.9km az=173.9*

*ATH **29** 05:52:51.4,39.65N×26.08E,h29km±2km,ML2.4/4,Error ellipse: s-maj=3.4km s-min=1.0km az=250.0*

*CSEM **29** 05:52:52.0±0.1,39.68N×26.08E,h2km,ML2.4,Error ellipse: s-maj=3.6km s-min=2.3km az=86.0*

ISC 29 05:52:52.1±0.9,39.67N±0.02×26.08E±0.02,h13km±7km, n67,σ0§92/88,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOZC	**Bozcaada**	**0.17**	**354**	*i* P	**Pg**	**05 52 56.4**	**+0.3**
BOZC				*i* S	**Sg**	**05 52 59.5**	**+0.6**
PRK	**Paraskevi**	**0.45**	**160**	P	**Pb**	**05 53 01.4**	**-0.4**
PRK				S	**Sg**	**05 53 07.4**	**+0.6**
PRK	**Paraskevi**	**0.45**	**160**	P	**Pb**	**05 53 01.4**	**-0.4**
PRK				S	**Sg**	**05 53 07.5**	**+0.6**
PRK				AML	AML	05 53 08.1	
	comp=N,1506μm,0.2s						
PRK				AML	AML	05 53 09.3	
	comp=E,1843μm,0.5s						
SIGR	**SIGRI**	**0.49**	**201**	*e*PG	**Pb**	**05 53 02.1**	**-0.4**
SIGR	**SIGRI**	**0.49**	**201**	P	**Pg**	**05 53 01.6**	**0.0**
SIGR	**SIGRI**	**0.49**	**201**	*e*Pg	**Pb**	**05 53 02.1**	**-0.4**
SIGR				S	**Sb**	**05 53 08.9**	**-0.6**
SIGR	**SIGRI**	**0.49**	**201**	P	**Pg**	**05 53 01.6**	**0.0**
SIGR				S	**Sb**	**05 53 08.9**	**-0.6**
SIGR				AML	AML	05 53 09.8	
	comp=N,1166μm,0.2s						
SIGR				AML	AML	05 53 11.5	
	comp=E,941μm,0.2s						
GADA	**Gvkgeada**	**0.54**	**345**	*e*PG	**Pg**	**05 53 01.8**	**-0.9**
GADA				*e*SG	**Sb**	**05 53 09.9**	**-1.2**
GADA	**Gvkgeada**	**0.54**	**345**	*e*Pg	**Pg**	**05 53 01.8**	**-0.9**
GADA				*e*Sg	**Sb**	**05 53 09.9**	**-1.2**
AYVA	**Ayvalik**	**0.59**	**127**	*i* P	**Pb**	**05 53 03.7**	**-0.6**
AYVA				*i* S	**Sn**	**05 53 17.7**	**+1.9**
AYVA	**Ayvalik**	**0.59**	**127**	P	**Pb**	**05 53 03.7**	**-0.6**
LIA	**Limnos Island**	**0.73**	**289**	P	**Pb**	**05 53 06.6**	**0.0**
LIA				S	**Sb**	**05 53 17.6**	**+1.1**
GELI	**Tayfur-Gelibol**	**0.79**	**22**	*e*PG	**Pg**	**05 53 06.7**	**-0.7**
GELI				*e*SG	**Sb**	**05 53 18.4**	**+0.1**
GELI	**Tayfur-Gelibol**	**0.79**	**22**	*e*Pg	**Pg**	**05 53 06.7**	**-0.7**
GELI				*e*Sg	**Sb**	**05 53 18.4**	**+0.1**
DKL	**Dikili**	**0.88**	**133**	*e*PG	**Pb**	**05 53 09.3**	**+0.2**
DKL	**Dikili**	**0.88**	**133**	*e*Pg	**Pb**	**05 53 09.3**	**+0.2**
LPK	**Lapseki**	**0.88**	**36**	*e*PG	**Pb**	**05 53 08.5**	**-0.7**
LPK				*e*SG	**Sb**	**05 53 21.4**	**+0.6**
LPK	**Lapseki**	**0.88**	**36**	*e*Pg	**Pb**	**05 53 08.5**	**-0.7**
LPK				*e*Sg	**Sb**	**05 53 21.4**	**+0.6**
SMTH	**Samothraki Isl**	**0.91**	**333**	P	**Pb**	**05 53 09.4**	**-0.3**
SMTH				S	**Sb**	**05 53 21.1**	**-0.6**
SMTH	**Samothraki Isl**	**0.91**	**333**	P	**Pb**	**05 53 09.4**	**-0.3**
SMTH				S	**Sb**	**05 53 21.1**	**-0.6**
SMTH				AML	AML	05 53 23.8	
	comp=N,320μm,0.2s						
SMTH				AML	AML	05 53 24.4	
	comp=E,264μm,0.1s						
ERIK	**Erikli-Kesan**	**1.06**	**18**	*e*Pg	**Pb**	**05 53 11.7**	**-0.5**
ERIK	**Erikli-Kesan**	**1.06**	**18**	*e*Pg	**Pb**	**05 53 11.7**	**-0.5**
ENEZ	**Enez**	**1.07**	**3**	*e*PG	**Pg**	**05 53 11.9**	**-0.8**
ENEZ	**Enez**	**1.07**	**3**	*e*Pg	**Pg**	**05 53 11.9**	**-0.8**
KRBG	**Karabiga-Canak**	**1.18**	**52**	*e*PN	**Pg**	**05 53 14.0**	**-0.9**
KRBG	**Karabiga-Canak**	**1.18**	**52**	*e*Pn	**Pg**	**05 53 14.0**	**-0.9**
ALN	**Alexandroupoli**	**1.23**	**359**	*e*PN	**Pb**	**05 53 14.8**	**-0.4**
ALN	**Alexandroupoli**	**1.23**	**359**	P	**Pb**	**05 53 14.8**	**-0.4**
ALN				S	**Sn**	**05 53 32.0**	**+0.6**
ALN	**Alexandroupoli**	**1.23**	**359**	P	**Pb**	**05 53 14.8**	**-0.4**
ALN				S	**Sn**	**05 53 32.0**	**+0.6**
ALN				AML	AML	05 53 32.2	
	comp=E,399μm,0.5s						
ALN				AML	AML	05 53 32.8	
	comp=N,273μm,0.5s						
KESN	**Edirne-Kesan**	**1.25**	**22**	*i* P	**Pn**	**05 53 15.6**	**0.0**
KESN				*i* S	**Sn**	**05 53 33.5**	**+1.1**
KESN	**Edirne-Kesan**	**1.25**	**22**	P	**Pn**	**05 53 15.6**	**0.0**
KESN				S	**Sn**	**05 53 33.5**	**+1.1**
CHOS	**Chios island**	**1.28**	**181**	*e*PN	**Pg**	**05 53 16.5**	**-0.2**
CHOS	**Chios island**	**1.28**	**181**	P	**Pn**	**05 53 14.4**	**-1.3**
CHOS	**Chios island**	**1.28**	**181**	*e*Pn	**Pg**	**05 53 16.5**	**-0.2**
CHOS	**Chios island**	**1.28**	**181**	P	**Pn**	**05 53 14.4**	**-1.3**

mb1 3.7/4, mb1mx3.6/25, mbtmp3.5/4, ML3.6/1, MS3.0/2, Ms1 3.0/2, ms1mx2.6/20, Error ellipse: s-maj=55.4km s-min=21.0km az=75.0

GUC ***29*** *05:54:09.0±0.7, 35°.83S×73°.56W, h33km±7km, ML4.0*

ISC 29 05:54:07.8±2.1, 35°.87S±0°.04×73°.52W±0°.09, h6km±12km, n28, σ1s56/34, 1C-3D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.65**	**114**	⇓*iP*	**Pg**	**05 54 20.9**	**+0.6**
COCH				*i* S	**Sg**	**05 54 29.3**	**+0.6**
COCH				IAML		05 54 30.4	
	comp=E,9μm,0.7s						
CCSP	**San Pedro de C**	**1.03**	**161**	*eP*	**Pn**	**05 54 27.6**	**-1.2**
CCSP				*i* S	**Sg**	**05 54 41.2**	**+0.3**
CCSP				IAML		05 54 45.0	
	comp=N,5μm,0.4s						
CCHI	**Chillan**	**1.38**	**123**	⇓*iP*	**Pn**	**05 54 33.3**	**-0.4**
CCHI				*i* S	**Sn**	**05 54 50.7**	**-1.5**
CCHI				IAML		05 54 56.2	
	comp=N,4μm,0.5s						
TALC	**Talca**	**1.61**	**74**	*eP*	**Pn**	**05 54 35.8**	**-0.9**
TALC				*i* S	**Sn**	**05 54 56.7**	**-1.1**
NICH	**Los Niches**	**2.06**	**66**	*eP*	**Pn**	**05 54 41.9**	**-1.1**
NICH				*eS*	**Sn**	**05 55 07.6**	**-1.4**
CANA	**Caviahue**	**2.82**	**136**	*eP*	**Pb**	**05 54 56.5**	**-2.3**
CANA				*eS*	**Sb**	**05 55 35.3**	**+1.7**
RCDM	**Rinconada Maip**	**3.26**	**44**	*eP*	**Pn**	**05 54 58.5**	**-1.1**
CLCH	**Cerro Calan**	**3.48**	**46**	⇓*iP*	**Pn**	**05 55 01.9**	**-0.8**
CLCH				IAML		05 56 11.0	
	comp=N,470nm,1.1s						
ROC1	**El Roble**	**3.55**	**36**	*eP*	**Pn**	**05 55 02.6**	**-1.1**
ROCH	**El Roble**	**3.55**	**36**	*eP*	**Pn**	**05 55 02.9**	**-0.9**
ROCH				IAML		05 56 21.8	
	comp=E,246nm,0.4s						
PEL	**Peldehue**	**3.58**	**42**	⇑*iP*	**Pn**	**05 55 03.6**	**-0.4**
PEL				IAML		05 56 14.8	
	comp=N,197nm,0.9s						
FCH	**Farellones**	**3.67**	**47**	*eP*	**Pn**	**05 55 04.8**	**-0.7**
AAGR	**Agrelo**	**4.76**	**56**	*i* P	**Pn**	**05 55 21.5**	**+1.1**
AUSP	**Uspallata**	**5.00**	**45**	*i* P	**Pn**	**05 55 24.2**	**+0.5**
AUSP				*i* S	**Sg**	**05 56 47.3**	**-1.0**
ASAL	**Salagasta**	**5.07**	**51**	*i* P	**Pn**	**05 55 25.5**	**+1.0**
ASAL				*eS*	**Sb**	**05 56 42.3**	**+3.9**
RTLS	**Leoncito**	**5.37**	**42**	*i* P	**Pn**	**05 55 29.6**	**+0.9**
PLCA	**Paso Flores**	**5.39**	**155**	Pn	**Pn**	**05 55 30.5**	**+1.6**
	comp=N,0.5nm,0.3s,baz=346,slow=12,SNR=16						
PLCA				Lg	Lg	05 56 58.8	
	comp=N,2.3nm,0.3s,baz=299,slow=18,SNR=5.6						
PLCA				LR	LR	05 57 16.3	
	comp=N,45nm,19.5s,baz=97,slow=35						
RTCV	**Cerro Valdivia**	**5.75**	**47**	*i* P	**Pn**	**05 55 33.6**	**-0.2**
RTLL	**Cerro Villicun**	**6.18**	**44**	*i* P	**Pn**	**05 55 38.9**	**-0.9**
ACAN	**Cantantal**	**6.36**	**58**	*i* P	**Pn**	**05 55 41.8**	**-0.4**
ACCO	**Cerro Coronel**	**6.45**	**37**	*i* P	**Pn**	**05 55 43.2**	**-0.5**
ACCO				IAML		05 55 46.9	
	comp=Z,41nm,0.3s						
ACDV	**Cuesta del Vie**	**6.78**	**34**	*eP*	**Pn**	**05 55 43.6**	**-4.4**
VCA	**Vinchina**	**8.41**	**34**	*eP*	**Pn**	**05 56 09.1**	**-1.3**
TCA	**Tanti**	**8.71**	**61**	*eP*	**Pn**	**05 56 12.6**	**-1.8**
LPAZ	**La Paz**	**20.08**	**15**	P	Pn	05 58 44.8	+0.3
	comp=Z,0.9nm,0.8s,baz=206,slow=9.6,SNR=3.7						
SIV	**San Ignacio**	**22.70**	**32**	P	**P**	**05 59 10.3**	**0.0**
	comp=Z,1.6nm,0.6s,baz=226,slow=14,SNR=5.8						
PCRV	**Puerto La Cruz**	**46.55**	**12**	LR	LR	06 23 05.8	
	comp=Z,68nm,20.1s,baz=330,slow=37						
TXAR	**Lajitas Array**	**70.79**	**332**	P	**P**	**06 05 26.9**	**+1.7**
	comp=Z,0.3nm,0.6s,baz=156,slow=8.9,SNR=5.1						

IDC ***29*** *06:02:33.9±1.1, 35°.13N×143°.42E, h0km, mb3.9/5, mb1 3.9/8, mb1mx3.7/45, mbtmp3.8/8, ML3.4/3, MS2.6/5, Ms1 2.6/5, ms1mx2.3/59, Error ellipse: s-maj=27.0km s-min=22.5km az=112.0*

NEIC ***29*** *06:02:35.1±0.7, 35°.07N×143°.37E, h10km, mb4.5/2, Error ellipse: s-maj=13.0km s-min=11.5km az=144.0*

ISCJB ***29*** *06:02:37.5±0.7, 35°.19N±0°.05×143°.17E±0°.06, h33km, mb4.0/7, MS2.5/2, Error ellipse: s-maj=7.2km s-min=6.4km az=151.5*

JMA ***29*** *06:02:37.9±0.2, 35°.24N×143°.14E, h86km, M3.4*

ISC 29 06:02:39.4±0.9, 35°.17N±0°.06×143°.16E±0°.08, h35km, n32, σ1s55/32, mb3.8/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.87**	**254**	P	**Pn**	**06 03 08.4**	**0.0**
BSO1				*eS*	**Sn**	**06 03 31.5**	**+1.0**
CHOJ	**Chosi**	**1.96**	**286**	P	**Pn**	**06 03 09.7**	**-0.4**
CHOJ				*eS*	**Sn**	**06 03 33.1**	**-0.3**
BSO3	**Boso 3**	**2.21**	**261**	S	**Sn**	**06 03 39.7**	**+0.4**
JAG	**Ashikaga**	**3.27**	**294**	P	**Pn**	**06 03 27.3**	**-0.8**
JAG				*eS*	**Sn**	**06 04 04.5**	**-1.2**
JFT	**Otama**	**3.27**	**317**	P	**Pn**	**06 03 27.0**	**-1.2**
JFT				S	**Sn**	**06 04 04.3**	**-1.5**
JOD2	**Odawara 2**	**3.34**	**273**	P	**Pn**	**06 03 28.5**	**-0.6**
JOD2				*eS*	**Sn**	**06 04 06.9**	**-0.7**
JHJ2	**Mitsune**	**3.46**	**234**	P	**Pn**	**06 03 30.1**	**-0.6**
JHJ2	**Mitsune**	**3.46**	**234**	*ePn*	**Pn**	**06 03 29.9**	**-0.8**
JHJ2				*eSn*	**Sn**	**06 04 10.2**	**-0.2**
JHJ	**Hachijo jima 2**	**3.47**	**235**	Pn	**Pn**	**06 03 30.3**	**-0.6**
	16nm,0.3s,baz=346,slow=19,SNR=6.2						
JHJ				Sn	**Sn**	**06 04 07.6**	**-3.2**
	33nm,0.3s,baz=219,slow=21,SNR=8.8						
JRY	**Ryogami san**	**3.57**	**285**	P	**Pn**	**06 03 32.6**	**+0.2**
MJAR	**Matsushiro Arr**	**4.25**	**290**	Pn	**Pn**	**06 03 42.4**	**+0.7**
	1.7nm,0.3s,baz=89,slow=14,SNR=13						
MJAR				Sn	**Sn**	**06 04 29.1**	**-0.9**
	1.2nm,0.3s,baz=106,slow=19,SNR=8.2						
MJAR				LR	LR	06 05 35.6	
	comp=Z,52nm,20.8s,baz=110,slow=41						
MAJO	**Matsushiro**	**4.25**	**290**	*ePn*	**Pn**	**06 03 42.1**	**+0.4**
MAT	**Matsushiro**	**4.25**	**290**	P	**Pn**	**06 03 43.4**	**+1.7**
MAT				S	**Sn**	**06 04 24.4**	**-5.7**
MAT	**Matsushiro**	**4.25**	**290**	*eS*	**Sn**	**06 04 29.0**	**-1.1**
ERM	**Erimo**	**6.83**	**360**	*ePn*	Pn	06 04 11.7	-5.4
ERM				*eSn*	Sn	06 05 25.4	-8.2
KSRS	**Korea Array**	**12.50**	**285**	LR	LR	06 10 11.5	
	comp=Z,40nm,21.5s,baz=142,slow=36						
KLR	**Kul'dur**	**16.37**	**333**	Pn	**Pn**	**06 06 28.6**	**+2.2**
	0.1nm,0.3s,baz=120,slow=10,SNR=6.3						
KLR				LR	LR	06 12 40.6	
	comp=Z,24nm,19.8s,baz=61,slow=37						
GUMO	**Guam**	**21.55**	**175**	LR	LR	06 14 06.5	
	comp=Z,10nm,21.7s,baz=164,slow=32						
H11N2	**WAKE ISLAND Hy**	**25.98**	**120**	T	T	06 35 20.6	
	baz=311						
H11N1	**WAKE ISLAND Hy**	**25.99**	**120**	T	T	06 35 18.3	
	baz=311						
H11N3	**WAKE ISLAND Hy**	**26.00**	**120**	T	T	06 35 19.3	
	baz=311						
H11S1	**WAKE ISLAND Hy**	**26.66**	**122**	T	T	06 35 59.8	
	baz=315						
H11S3	**WAKE ISLAND Hy**	**26.66**	**122**	T	T	06 35 58.1	
	baz=315						
H11S2	**WAKE ISLAND Hy**	**26.68**	**122**	T	T	06 35 58.7	
	baz=315						
SEY	**Seymchan**	**28.37**	**9**	P	**P**	**06 08 30.2**	**+0.2**
	0.8nm,0.4s,baz=179,slow=6.6,SNR=4.2						
SONM	**Songino Array**	**30.01**	**306**	P	**P**	**06 08 46.1**	**+1.2**
	1.1nm,0.8s,baz=114,slow=9.6,SNR=5.3						
MKAR	**Makanchi Array**	**46.32**	**304**	P	**P**	**06 11 02.7**	**+0.9**
	0.9nm,0.9s,baz=89,slow=8.9,SNR=5.1						
MKAR				LR	LR	06 30 53.3	
	comp=Z,13nm,19.7s,baz=125,slow=36						
KURK	**Kurchatov**	**48.20**	**310**	*eP*	**P**	**06 11 16.7**	**+0.4**
	15nm,0.8s						
ILAR	**Eielson Array**	**50.32**	**32**	P	**P**	**06 11 30.4**	**-1.8**
	0.6nm,0.7s,baz=258,slow=6.1,SNR=8.8						
WRA	**Warramunga Arr**	**55.45**	**190**	P	**P**	**06 12 10.4**	**-0.2**
	2.1nm,0.8s,baz=11,slow=7.6,SNR=12						
ABKAR	**Akbulak array**	**60.23**	**311**	*eP*	**P**	**06 12 44.0**	**+0.1**
	0.8nm,0.7s						
LPAZ	**La Paz**	**146.32**	**64**	PKPbc	**PKPdf**	**06 22 17.1**	**+0.6**
	1.2nm,1.0s,baz=312,slow=7.2,SNR=3.7						

ISCJB ***29*** *06:06:10.0±0.6, 21°.55S±0°.08×170°.36E±0°.08, h134km, mb4.4/17, Error ellipse: s-maj=11.8km s-min=9.2km az=33.3*

NEIC ***29*** *06:06:09.5±1.9, 21°.45S×170°.47E, h119km±16km, mb4.6/12, Error ellipse: s-maj=17.2km s-min=9.7km az=47.0*

IDC ***29*** *06:06:09.2±3.6, 21°.51S×170°.40E, h111km±28km, mb4.1/10, mb1 4.3/12, mb1mx4.0/34, mbtmp4.5/12, Error ellipse: s-maj=29.1km s-min=25.8km az=166.0*

ISC 29 06:06:11.5±0.6, 21°.58S±0°.10×170°.34E±0°.08, h134km, n49, σ0s86/50, mb4.4/17, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.65**	**262**	P	**Pn**	**06 07 06.1**	**-0.7**
	28nm,0.3s,baz=307,slow=16,SNR=249						
DZM				S	**Sn**	**06 07 47.5**	**-2.2**
	75nm,0.3s,baz=286,slow=18,SNR=10						
DZM	**Mont Dzumac**	**3.65**	**262**	*ePn*	**Pn**	**06 07 04.9**	**-1.9**
DZM				*eSn*	**Sn**	**06 07 50.0**	**+0.3**
OUZ	**Omahuta**	**13.88**	**169**	*ePn*	**Pn**	**06 09 22.7**	**+0.2**
URZ	**Urewera**	**17.62**	**162**	P	**Pn**	**06 10 08.4**	**-0.2**
	0.9nm,0.3s,baz=16,slow=4.0,SNR=9.9						
URZ	**Urewera**	**17.62**	**162**	*eP*	**P**	**06 10 07.8**	**+0.2**
	43nm,1.1s						
EIDS	**Eidsvold**	**18.06**	**254**	*eP*	**Pn**	**06 10 15.2**	**+1.1**
	8.4nm,0.9s						
THZ	**Tophouse**	**20.24**	**174**	*eP*	Pn	06 10 38.6	-0.8
CTA	**Charters Tower**	**22.55**	**269**	P	**P**	**06 11 01.4**	**+0.7**
	2.7nm,0.4s,baz=95,slow=12,SNR=7.8						
CTAO	**Charters Tower**	**22.55**	**269**	*eP*	**P**	**06 11 01.8**	**+1.1**
	254nm,1.6s						
PMG	**Port Moresby**	**25.36**	**295**	P	**P**	**06 11 27.3**	**+1.0**
	37nm,0.8s,baz=101,slow=8.4,SNR=6.0						
PMG	**Port Moresby**	**25.36**	**295**	*eP*	**P**	**06 11 27.6**	**+1.2**
	19nm,0.8s						
COEN	**Coen**	**26.93**	**282**	*eP*	**P**	**06 11 41.5**	**+1.1**
	18nm,1.2s						
ASAR	**Alice Springs**	**33.64**	**259**	P	**P**	**06 12 39.5**	**-0.1**
	3.6nm,0.7s,baz=86,slow=9.1,SNR=33						
WRAB	**Tennant Creek**	**33.65**	**266**	*eP*	**P**	**06 12 38.9**	**-0.8**
	3.3nm,0.8s						
WRA	**Warramunga Arr**	**33.66**	**266**	P	**P**	**06 12 39.0**	**-0.8**
	2.2nm,0.5s,baz=98,slow=8.3,SNR=40						
FITZ	**Fitzroy Crossi**	**42.08**	**267**	P	**P**	**06 13 51.1**	**+0.7**
	11nm,0.8s,baz=126,slow=7.4,SNR=20						
FITZ	**Fitzroy Crossi**	**42.08**	**267**	*eP*	**P**	**06 13 51.4**	**+0.9**
	20nm,1.1s						
MBWA	**Marble Bar**	**46.95**	**261**	*eP*	**P**	**06 14 29.6**	**+0.4**
	45nm,0.8s						
NWAO	**Narrogin (SRO)**	**48.10**	**245**	*eP*	**P**	**06 14 38.5**	**+0.6**
	103nm,1.1s						
SBA	**Scott Base**	**56.35**	**181**	*eP*	**P**	**06 15 38.4**	**+0.4**
	3.1nm,0.7s						
MJAR	**Matsushiro Arr**	**65.30**	**332**	P	**P**	**06 16 38.5**	**-0.6**
	2.1nm,0.5s,baz=164,slow=6.8,SNR=9.0						
MAJO	**Matsushiro**	**65.30**	**332**	*eP*	**P**	**06 16 38.8**	**-0.3**
	4.2nm,0.6s						
QSPA	**South Pole Qui**	**68.48**	**180**	*eP*	**P**	**06 16 58.0**	**-1.0**
	12nm,0.9s						
PETK	**Petropavlovsk-**	**75.18**	**352**	P	**P**	**06 17 38.4**	**-0.5**
	5.4nm,0.8s,baz=135,slow=7.3,SNR=4.8						
CMAR	**Chiang Mai Arr**	**80.40**	**294**	P	**P**	**06 18 10.2**	**+1.7**
	1.4nm,0.4s,baz=130,slow=3.4,SNR=9.1						
SEY	**Seymchan**	**85.42**	**352**	P	**P**	**06 18 33.0**	**-0.4**
	1.8nm,0.7s,baz=114,slow=6.2,SNR=6.2						
SONM	**Songino Array**	**89.70**	**323**	P	**P**	**06 18 54.9**	**+0.5**
	1.7nm,0.7s,baz=137,slow=5.0,SNR=8.3						
ARCES	**ARCESS Array B**	**127.58**	**345**	PKP	**PKPdf**	**06 24 59.1**	**-0.9**
	1.1nm,0.5s,baz=70,slow=1.4,SNR=7.1						
FINES	**FINESS Array B**	**133.14**	**337**	PKP	**PKPdf**	**06 25 08.5**	**-2.2**
	2.3nm,0.9s,baz=135,slow=1.1,SNR=6.0						
PSZ	**Piszkesteto**	**144.61**	**325**	*e*PKPdf	**PKPab**	**06 25 31.0**	**-0.1**
DPC	**Dobruska-Polom**	**144.76**	**331**	*e*PKP	**PKPdf**	**06 25 32.0**	**-0.3**
PVCC	**Panska Ves**	**145.41**	**333**	*e*PKP	**PKPab**	**06 25 34.2**	**+0.3**
PRU	**Pruhonice**	**145.82**	**332**	*e*PKP	**PKPbc**	**06 25 34.6**	**-0.3**
CONA	**Conrad Observa**	**146.67**	**328**	*i* PKPab	**PKPbc**	**06 25 38.0**	**+0.4**
	5.3nm,0.8s						
KHC	**Kasperske Hory**	**146.88**	**332**	*e*PKP	**PKPbc**	**06 25 38.1**	**+0.1**
GERES	**GERESS Array B**	**147.03**	**331**	PKPbc	**PKPbc**	**06 25 38.5**	**-0.1**
	8.1nm,0.6s,baz=33,slow=3.2,SNR=49						
ARSA	**Arzberg**	**147.30**	**328**	*i* PKPbc	**PKPdf**	**06 25 37.7**	**+1.0**
	1.6nm,0.5s						
MOA	**Molln**	**147.49**	**329**	*i* PKPbc	**PKPbc**	**06 25 39.7**	**-0.1**
	3.6nm,0.6s						
SOKA	**Soboth**	**147.94**	**327**	*i* PKPbc	**PKPbc**	**06 25 40.5**	**-0.6**
	3.4nm,0.6s						
OBKA	**Obir**	**148.29**	**327**	*i* PKiKP	**PKPbc**	**06 25 42.0**	**0.0**
	2.5nm,0.5s						
KBA	**Koelnbreinsper**	**148.48**	**329**	*e*PKPdf	**PKPdf**	**06 25 39.0**	**+0.2**
	4.0nm,0.6s						
MYKA	**Tema Mystica**	**148.66**	**328**	*i* PKPbc	**PKPbc**	**06 25 42.1**	**-0.8**
	5.5nm,0.5s						
WATA	**Walderalm**	**149.11**	**331**	*i* PKPbc	**PKPbc**	**06 25 43.6**	**-0.5**
	3.7nm,0.5s						
ABTA	**Abfaltersbach**	**149.12**	**330**	*i* PKPbc	**PKPbc**	**06 25 43.3**	**-0.8**
	7.5nm,0.7s						
MOTA	**Moosalm**	**149.31**	**332**	*i* PKPbc	**PKPbc**	**06 25 44.3**	**-0.4**
	5.2nm,0.6s						
RETA	**Reutte**	**149.35**	**332**	*i* PKPbc	**PKPbc**	**06 25 44.4**	**-0.3**
	3.1nm,0.6s						
BFO	**Black Forest**	**149.67**	**336**	*e*PKPbc	**PKPbc**	**06 25 44.5**	**-0.8**
FETA	**Feichten**	**149.72**	**332**	*i* PKiKP	**PKPbc**	**06 25 45.6**	**0.0**
	10nm,1.0s						
DAVA	**Damuels**	**149.88**	**333**	*i* PKiKP	**PKPbc**	**06 25 46.0**	**0.0**
	4.2nm,0.5s						

IDC 29 06:12:45.4±3.4, 6°.34S×147°.76E, h0km, mb3.6/2, mb1 3.7/4, mb1mx3.5/32, mbtmp3.6/4, ML3.5/1, MS2.0/1, Ms1 2.0/1, ms1mx2.0/30, Error ellipse: s-maj=79.2km s-min=34.1km az=95.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.10**	**191**	Pn	Pn	06 13 36.8	+1.1
	3.4nm,0.3s,baz=18,slow=14,SNR=4.7						
PMG				Sn	Sn	06 14 13.9	+0.4
	7.1nm,0.3s,baz=17,slow=14,SNR=4.5						
PMG				LR	LR	06 14 27.8	
	comp=Z,24nm,20.3s,baz=339,slow=33						
WRA	**Warramunga Arr**	**18.78**	**223**	P	Pn	06 17 06.9	0.0
	0.2nm,0.3s,baz=47,slow=11,SNR=5.4						
ASAR	**Alice Springs**	**21.78**	**216**	P	P	06 17 37.8	-1.3
	0.5nm,0.5s,baz=50,slow=9.4,SNR=5.2						
FITZ	**Fitzroy Crossi**	**24.54**	**240**	P	P	06 18 07.0	-0.1
	1.7nm,0.4s,baz=51,slow=8.2,SNR=12						
TORD	**Torodi Ar. Bea**	**145.91**	**284**	PKPbc	PKPdf	06 32 27.5	+0.1
	0.6nm,0.5s,baz=67,slow=3.7,SNR=7.4						

IDC ***29*** *06:14:47.4±0.8, 59°.62S×26°.26W, h0km, mb4.2/5, mb1 4.4/6, mb1mx4.0/26, mbtmp4.3/6, ML4.5/1, MS3.1/5, Ms1 3.1/5, ms1mx2.9/22, Error ellipse: s-maj=32.9km s-min=23.9km az=61.0*

ISCJB ***29*** *06:14:51.6±0.8, 59°.65S±0°.1×26°.1W±0°.4, h40km, mb4.3/8, MS3.0/3, Error ellipse: s-maj=30.1km s-min=11.6km az=144.7*

NEIC ***29*** *06:14:52.5±0.6, 59°.52S×26°.14W, h35km, mb4.7/3, Error ellipse: s-maj=26.3km s-min=11.8km az=56.0*

ISC 29 06:14:52.5±0.7, 59°.65S±0°.1×26°.0W±0°.2, h40km, n22, σ1s64/19, mb4.3/8, MS3.1/3, 1D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**7.78**	**308**	*ePn*	**Pn**	**06 16 40.2**	**-2.8**
VNA1	**Neumayer--Stat**	**13.34**	**154**	P	**Pn**	**06 17 58.2**	**-0.7**
SNAA	**Sanae**	**15.32**	**152**	P	**Pn**	**06 18 24.6**	**-1.0**
SNAA	**Sanae**	**15.32**	**152**	Pn	**Pn**	**06 18 24.9**	**-0.7**
	2.0nm,0.3s,baz=10,slow=12,SNR=80						
SNAA				Sn	Sn	06 20 57.9	-16
	0.1nm,0.3s,baz=324,slow=19,SNR=2.6						
SNAA				LR	LR	06 23 09.9	
	comp=Z,60nm,20.6s,baz=308,slow=33						
SNAA	**Sanae**	**15.32**	**152**	*eP*	**Pn**	**06 18 24.3**	**-1.3**
	556nm,0.6s						
SNAA				*eS*	Sn	06 20 59.1	-15
PMSA	**Palmer Station**	**18.29**	**237**	LR	LR	06 25 05.6	
	comp=Z,84nm,19.2s,baz=89,slow=34						
SYO	**Syowa Base**	**28.54**	**137**	*eP*	**P**	**06 20 40.2**	**-3.6**
QSPA	**South Pole Qui**	**30.70**	**180**	*eP*	**P**	**06 21 04.6**	**+1.4**
	13nm,0.9s						
TRQA	**Tornquist**	**31.38**	**297**	*eP*	**P**	**06 21 10.4**	**+1.1**
	8.3nm,1.2s						
PLCA	**Paso Flores**	**33.35**	**284**	P	**P**	**06 21 26.4**	**-0.1**
	2.5nm,0.9s,baz=146,slow=8.0,SNR=5.3						
PLCA				LR	LR	06 33 14.7	
	comp=Z,38nm,21.9s,baz=185,slow=33						
CPUP	**Villa Florida**	**39.63**	**313**	LR	LR	06 39 10.2	
	comp=Z,15nm,18.5s,baz=184,slow=37						
SBA	**Scott Base**	**42.63**	**184**	*eP*	**P**	**06 22 46.9**	**+2.8**
	44nm,2.1s						
VNDA	**Vanda**	**43.10**	**182**	P	**P**	**06 22 48.6**	**+0.7**
	3.3nm,0.8s,baz=192,slow=7.4,SNR=9.1						
BOSA	**Boshof**	**46.36**	**71**	LR	LR	06 39 58.3	
	comp=Z,24nm,18.5s,baz=270,slow=32						
LPAZ	**La Paz**	**52.93**	**306**	P	**P**	**06 24 05.8**	**+0.5**
	0.7nm,0.4s,baz=105,slow=5.6,SNR=13						
TORD	**Torodi Ar. Bea**	**75.83**	**28**	P	**P**	**06 26 36.6**	**+2.3**
	1.9nm,0.6s,baz=197,slow=6.6,SNR=15						
ASAR	**Alice Springs**	**95.46**	**162**	P	**P**	**06 28 12.7**	**-0.2**
	0.9nm,0.7s,baz=180,slow=3.7,SNR=8.9						
ARCES	**ARCESS Array B**	**133.96**	**22**	PKP	**PKPdf**	**06 34 03.0**	**-0.5**
	0.4nm,0.4s,baz=163,slow=1.5,SNR=3.7						
YKA	**Yellowknife Ar**	**139.14**	**315**	PKP	**PKPdf**	**06 34 13.2**	**0.0**
	0.4nm,0.7s,baz=117,slow=2.9,SNR=3.9						
SONM	**Songino Array**	**150.16**	**92**	PKPbc	**PKPbc**	**06 34 39.2**	**+1.2**
	2.8nm,0.7s,baz=224,slow=2.6,SNR=16						
DOT	**Dot Lake**	**151.28**	**305**	*e*PKPbc	**PKPbc**	**06 34 40.2**	**+0.2**
ILAR	**Eielson Array**	**152.81**	**306**	PKPbc	**PKPbc**	**06 34 43.2**	**-0.1**
	0.8nm,0.8s,baz=104,slow=0.8,SNR=10						

NNC ***29*** *06:21:47.1±2.6, 44°.41N×80°.99E, h0km, mb2.5, mpv2.3, Error ellipse: s-maj=68.9km s-min=7.1km az=123.0*

SOME ***29*** *06:21:48.3, 44°.37N×81°.07E, h15km*

ISC 29 06:21:47.4±1.7, 44°.37N±0°.05×81°.04E±0°.06, h3km±13km, n13, σ0s58/24, 4C-2D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**0.89**	**268**	*eP*	**Pb**	**06 22 05.3**	**-0.3**
	66nm,0.2s						
DJR				*eS*	**Sb**	**06 22 17.6**	**-0.4**
	10nm,0.2s						
KTMS	**Ketmen**	**1.05**	**208**	*eP*	**Pg**	**06 22 08.0**	**+0.6**
	8.3nm,0.1s						
KTMS				*eS*	**Sb**	**06 22 22.1**	**-0.3**
	41nm,0.1s						
SHLS	**Shalkode**	**1.47**	**215**	*eP*	Pn	06 22 15.1	0.0
	6.4nm,0.2s						
SHLS				*eS*	**Sn**	**06 22 34.3**	**-0.6**
	57nm,0.2s						
KAPS	**Kapalarasan**	**1.50**	**308**	*eP*	**Pb**	**06 22 15.9**	**-0.1**
	8.5nm,0.1s						
KAPS				*eS*	**Sg**	**06 22 35.5**	**-0.2**
	27nm,0.2s						
PDGK	**Podgornoye**	**1.53**	**228**	⇓P	**Pn**	**06 22 15.6**	**0.0**
	5.1nm,0.5s						
PDGK				⇑S	**Sb**	**06 22 35.8**	**-0.3**
	20nm,0.5s						
UZB	**Uzynbulak**	**1.90**	**231**	*eP*	**Pn**	**06 22 21.4**	**+0.5**
	1.7nm,0.2s						
UZB				*eS*	**Sn**	**06 22 45.9**	**+0.4**
	18nm,0.2s						
MNBS	**Baschi**	**1.92**	**262**	*eP*	Pn	06 22 21.4	+0.3
	9.7nm,0.3s						
MNBS				*eS*	**Sn**	**06 22 45.9**	**+0.1**
	26nm,0.3s						
KPKS	**Kokpek**	**1.92**	**243**	*eP*	Pn	06 22 22.0	+0.8
	20nm,0.1s						
KPKS				*eS*	**Sb**	**06 22 46.7**	**-0.9**
	75nm,0.4s						
ZHN	**Zhinishke**	**2.23**	**238**	*eP*	Pb	06 22 28.3	-0.1
	3.7nm,0.1s						
ZHN				*eS*	**Sb**	**06 22 57.0**	**+0.4**
	33nm,0.2s						
ARXS	**Arharly**	**2.31**	**267**	*eP*	Pb	06 22 30.4	+0.6
	8.9nm,0.4s						
ARXS				*eS*	**Sg**	**06 23 00.3**	**-1.2**
	7.3nm,0.2s						
SATY	**Saty**	**2.31**	**236**	*eP*	Pb	06 22 29.5	-0.3
	17nm,0.1s						
SATY				*eS*	**Sb**	**06 22 59.0**	**+0.1**
	49nm,0.1s						
MAKZ	**Makanchi**	**2.53**	**15**	⇑Pg	Pb	06 22 33.9	+0.5
	0.6nm,0.5s						
MAKZ				⇑Lg	Lg	06 23 04.4	
	0.6nm,0.2s						
MK31	**Makanchi Array**	**2.58**	**20**	⇓Pg	Pb	06 22 33.4	-0.9
	0.2nm,0.3s,baz=196,slow=16,SNR=5.3						
MK31				⇑Lg	Lg	06 23 06.8	
	0.4nm,0.2s,baz=192,slow=29,SNR=5.8						

ISK ***29*** *06:23:30.9, 39°.21N×27°.91E, h3km, ML2.8*

DDA ***29*** *06:

SIGR	**SIGRI**	**1.62 271**	*e*PN	**Pn**	**06 24 01.1 +0.2**
SIGR	**SIGRI**	**1.62 271**	P	**Pn**	**06 24 00.1 -0.8**
SIGR	**SIGRI**	**1.62 271**	*e*Pn	**Pn**	**06 24 01.1 +0.2**
SIGR			S	**Sb**	**06 24 22.3 -0.5**
SIGR	**SIGRI**	**1.62 271**	P	**Pn**	**06 24 00.1 -0.8**
SIGR			S	**Sb**	**06 24 22.3 -0.5**
SIGR			AML	AML	06 24 27.4
	comp=N,276µm,0.6s				
SIGR			AML	AML	06 24 28.8
	comp=E,228µm,0.4s				
IZI	**Iznik**	**1.64 46**	*e*PN	**Pb**	**06 24 02.0 -0.4**
IZI	**Iznik**	**1.64 46**	*e*Pn	**Pb**	**06 24 02.0 -0.4**
GELI	**Tayfur-Gelibol**	**1.64 317**	*e*PN	**Pn**	**06 24 01.3 +0.1**
GELI	**Tayfur-Gelibol**	**1.64 317**	*e*Pn	**Pn**	**06 24 01.3 +0.1**
CHOS	**Chios island**	**1.69 242**	*e*PN	**Pb**	**06 24 02.7 -0.6**
CHOS	**Chios island**	**1.69 242**	*e*Pn	**Pb**	**06 24 02.7 -0.6**
CHOS	**Chios island**	**1.69 242**	P	**Pg**	**06 24 03.6 -0.5**
CHOS			S	**Sg**	**06 24 27.4 +1.4**
CHOS	**Chios island**	**1.69 242**	P	**Pg**	**06 24 03.6 -0.5**
CHOS			S	**Sg**	**06 24 27.4 +1.4**
CHOS			AML	AML	06 24 29.0
	comp=N,236µm,0.4s				
CHOS			AML	AML	06 24 29.5
	comp=E,261µm,0.8s				
SMG	**Samos**	**1.73 211**	P	**Pg**	**06 24 06.5 +1.6**
SMG			S	**Sg**	**06 24 28.5 +1.2**
SMG	**Samos**	**1.73 211**	P	**Pg**	**06 24 06.5 +1.6**
SMG			S	**Sg**	**06 24 28.5 +1.2**
SMG			AML	AML	06 24 30.6
	comp=E,259µm,0.4s				
SMG			AML	AML	06 24 33.6
	comp=N,244µm,0.7s				
ERIK	**Erikli-Kesan**	**1.83 324**	*e*PN	**Pn**	**06 24 03.6 -0.2**
ERIK	**Erikli-Kesan**	**1.83 324**	*e*Pn	**Pn**	**06 24 03.6 -0.2**
ADVT	**Abdulvahap**	**1.85 48**	*e*PN	**Pn**	**06 24 04.9 +0.8**
ADVT	**Abdulvahap**	**1.85 48**	*e*Pn	**Pn**	**06 24 04.9 +0.8**
GADA	**Gvkgeada**	**1.86 303**	*e*PN	**Pn**	**06 24 04.0 -0.1**
GADA	**Gvkgeada**	**1.86 303**	*e*Pn	**Pn**	**06 24 04.0 -0.1**
KESN	**Edirne-Kesan**	**1.89 330**	*i* P	**Pn**	**06 24 04.2 -0.8**
KESN	**Edirne-Kesan**	**1.89 330**	P	**Pn**	**06 24 04.2 -0.8**
ISK	**Istanbul-Kandi**	**2.05 24**	*e*PN	**Pn**	**06 24 07.4 +0.6**
ISK	**Istanbul-Kandi**	**2.05 24**	*e*Pn	**Pn**	**06 24 07.4 +0.6**
BORA	**Eskisehir**	**2.06 70**	*i* P	**Pn**	**06 24 07.0 0.0**
BORA	**Eskisehir**	**2.06 70**	P	**Pn**	**06 24 07.0 0.0**
ENEZ	**Enez**	**2.06 319**	*e*PN	**Pn**	**06 24 07.2 +0.3**
ENEZ	**Enez**	**2.06 319**	*e*Pn	**Pn**	**06 24 07.2 +0.3**
CTKS	**Kestanelik-??a**	**2.08 12**	*e*PN	**Pn**	**06 24 07.7 +0.5**
CTKS	**Kestanelik-??a**	**2.08 12**	*e*Pn	**Pn**	**06 24 07.7 +0.5**
HRT	**Hereke**	**2.09 39**	*e*PN	**Pn**	**06 24 08.1 +0.7**
HRT	**Hereke**	**2.09 39**	*e*Pn	**Pn**	**06 24 08.1 +0.7**
BODT	**Bodrum**	**2.19 193**	*e*PN	**Pn**	**06 24 09.9 +1.1**
BODT	**Bodrum**	**2.19 193**	*e*Pn	**Pn**	**06 24 10.0 +1.1**
KLYT	**Kilyos**	**2.21 22**	*e*PN	**Pn**	**06 24 09.8 +0.8**
KLYT	**Kilyos**	**2.21 22**	*e*Pn	**Pn**	**06 24 09.8 +0.8**
SMTH	**Samothraki Isl**	**2.25 305**	P	**Pn**	**06 24 09.4 -0.1**
SMTH	**Samothraki Isl**	**2.25 305**	P	**Pn**	**06 24 09.4 -0.1**
ESKT	**Eskisehir**	**2.28 81**	*i* P	**Pg**	**06 24 14.7 -0.8**
SEYT	**Eskypehyr**	**2.28 81**	P	**Pg**	**06 24 14.7 -0.8**
GULT	**Gulveren**	**2.33 57**	*e*PN	**Pn**	**06 24 11.8 +1.0**
GULT	**Gulveren**	**2.33 57**	*e*Pn	**Pn**	**06 24 11.8 +1.0**

*ISCJB **29** 06:31:28.8±0.6,39°.18N×0°.03×28°.02E±0°.04, h6km±6km,*
Error ellipse: s-maj=5.8km s-min=4.3km az=1.7
*CSEM **29** 06:31:28.9±0.1,39°.18N×28°.01E, h5km, MD2.6, Error*
ellipse: s-maj=3.3km s-min=2.6km az=83.0
*ISK **29** 06:31:28.4,39°.18N×28°.00E, h5km, MD2.6*

ISC 29 06:31:28.5±1.1, 39°.16N±0°.02×28°.04E±0°.03, h5km±10km, n46, σ1°.24/55, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKS	**Akhisar**	**0.33**	**212**	*e*PG	**Pg**	**06 31 35.5**	**+0.5**
AKS				*e*SG	**Sg**	**06 31 40.7**	**+1.3**
AKS	**Akhisar**	**0.33**	**212**	*e*Pg	**Pg**	**06 31 35.5**	**+0.5**
AKS				*e*Sg	**Sg**	**06 31 40.7**	**+1.3**
BALB	**Balikesir**	**0.49**	**346**	*e*PG	**Pg**	**06 31 38.1**	**+0.1**
BALB				*e*SG	**Sg**	**06 31 45.2**	**+0.8**
BALB	**Balikesir**	**0.49**	**346**	*e*Pg	**Pg**	**06 31 38.1**	**+0.1**
BALB				*e*Sg	**Sg**	**06 31 45.2**	**+0.8**
DEMI	**Demirci**	**0.54**	**103**	*i* P	**Pb**	**06 31 40.8**	**+0.2**
DEMI	**Demirci**	**0.54**	**103**	P	**Pb**	**06 31 40.8**	**+0.2**
MANT	**Manisa**	**0.79**	**149**	*i* P	**Pg**	**06 31 43.9**	**+0.3**
MANT				*i* S	**Sg**	**06 31 45.8**	**-8.0**
MANT	**Manisa**	**0.79**	**149**	P	**Pg**	**06 31 43.9**	**+0.3**
KULA	**Kula-Manisa**	**0.81**	**143**	*e*PG	**Pg**	**06 31 45.0**	**+0.9**
KULA				*e*SG	**Sb**	**06 31 57.1**	**+0.6**
KULA	**Kula-Manisa**	**0.81**	**143**	*e*Pg	**Pg**	**06 31 45.0**	**+0.9**
KULA				*e*Sg	**Sb**	**06 31 57.1**	**+0.6**
GONE	**Gonen-Balikesi**	**0.92**	**343**	*e*PG	**Pg**	**06 31 46.2**	**0.0**
GONE	**Gonen-Balikesi**	**0.92**	**343**	*e*Pg	**Pg**	**06 31 46.2**	**0.0**
IZM	**Izmir**	**0.98**	**219**	*e*PG	**Pg**	**06 31 47.5**	**+0.2**
IZM	**Izmir**	**0.98**	**219**	*e*Pg	**Pg**	**06 31 47.5**	**+0.2**
AYVA	**Ayvalik**	**1.06**	**278**	*i* P	**Pg**	**06 31 47.6**	**-1.2**
AYVA	**Ayvalik**	**1.06**	**278**	P	**Pg**	**06 31 47.6**	**-1.2**
KCTX	**Karacabey (Bur**	**1.13**	**12**	*e*PN	**Pg**	**06 31 50.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.13**	**12**	*e*Pn	**Pg**	**06 31 50.1**	**0.0**
TVSB	**Tavsanli**	**1.14**	**75**	*e*PN	**Pb**	**06 31 51.2**	**+0.3**
TVSB	**Tavsanli**	**1.14**	**75**	*e*Pn	**Pb**	**06 31 51.2**	**+0.3**
EDC	**Edincik**	**1.19**	**354**	*e*PN	**Pb**	**06 31 51.3**	**-0.3**
EDC	**Edincik**	**1.19**	**354**	*e*Pn	**Pb**	**06 31 51.3**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**185**	*e*PN	**Pb**	**06 31 52.5**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**185**	*e*Pn	**Pb**	**06 31 52.5**	**+0.3**
URLA	**Izmir**	**1.38**	**235**	*i* P	**Pn**	**06 31 54.5**	**-0.1**
URLA				*i* S	**Sn**	**06 32 13.3**	**0.0**
URLA	**Izmir**	**1.38**	**235**	P	**Pn**	**06 31 54.5**	**-0.1**
URLA				S	**Sn**	**06 32 13.3**	**0.0**
MRMT	**Marmara Adasi**	**1.48**	**347**	*e*PN	**Pb**	**06 31 56.3**	**-0.2**
MRMT	**Marmara Adasi**	**1.48**	**347**	*e*Pn	**Pb**	**06 31 56.3**	**-0.2**
ARMT	**Armutlu**	**1.54**	**24**	*e*PN	**Pb**	**06 31 57.3**	**-0.2**
ARMT	**Armutlu**	**1.54**	**24**	*e*Pn	**Pb**	**06 31 57.3**	**-0.2**
LPK	**Lapseki**	**1.56**	**321**	*e*PN	**Pb**	**06 31 57.4**	**-0.5**
LPK	**Lapseki**	**1.56**	**321**	*e*Pn	**Pb**	**06 31 57.4**	**-0.5**
IZI	**Iznik**	**1.61**	**43**	*e*PN	**Pn**	**06 31 58.4**	**+0.6**
IZI	**Iznik**	**1.61**	**43**	*e*Pn	**Pn**	**06 31 58.4**	**+0.6**
RKY	**Sarkoy-Tekirda**	**1.66**	**337**	*e*PN	**Pn**	**06 31 58.1**	**-0.3**
RKY	**Sarkoy-Tekirda**	**1.66**	**337**	*e*Pn	**Pn**	**06 31 58.1**	**-0.3**
SIGR	**SIGRI**	**1.70**	**272**	*e*PN	**Pn**	**06 31 59.0**	**+0.2**
SIGR	**SIGRI**	**1.70**	**272**	*e*Pn	**Pn**	**06 31 59.0**	**+0.2**
GELI	**Tayfur-Gelibol**	**1.72**	**316**	*e*PN	**Pn**	**06 31 59.4**	**+0.2**
GELI	**Tayfur-Gelibol**	**1.72**	**316**	*e*Pn	**Pn**	**06 31 59.4**	**+0.2**
CHOS	**Chios island**	**1.73**	**244**	*e*PN	**Pn**	**06 31 59.8**	**+0.4**
CHOS	**Chios island**	**1.73**	**244**	*e*Pn	**Pn**	**06 31 59.8**	**+0.4**
ERIK	**Erikli-Kesan**	**1.91**	**323**	*e*PN	**Pn**	**06 32 02.3**	**+0.6**
ERIK	**Erikli-Kesan**	**1.91**	**323**	*e*Pn	**Pn**	**06 32 02.3**	**+0.6**
ALN	**Alexandroupoli**	**2.31**	**319**	*e*PN	**Pn**	**06 32 07.9**	**+0.6**
ALN	**Alexandroupoli**	**2.31**	**319**	*e*Pn	**Pn**	**06 32 07.9**	**+0.6**

PGC 29 06:47:15.3, 64°.87N×129°.26W, h15km, ML3.5/6, 128km west of Norman Wells, Nt Nw Territories - Nunavut, Canada, Northwest Territories

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CLVN	**Colville Lake**	**2.54**	**29**	Pn	Pn	06 47 55.0	-0.9
CLVN				Pg	Pb	06 48 01.0	+0.5
CLVN				Sg	Sg	06 48 34.6	-2.3
SMPN	**Simpson Lake**	**3.52**	**16**	Sg	Sb	06 49 03.6	+4.1
INK	**Inuvik**	**3.85**	**336**	Pn	Pn	06 48 12.8	-1.0
INK				Pg	Pb	06 48 23.0	+0.2
INK				Sn	Sn	06 48 58.5	-0.2
INK				Sg	Sb	06 49 13.5	+4.3
DAWY	**Dawson**	**4.46**	**264**	Pn	Pn	06 48 21.1	-1.3
DAWY				Sn	Sn	06 49 12.6	-1.3
DHRN	**Dharma Camp**	**4.54**	**57**	Pn	Pn	06 48 22.3	-1.1
DHRN				Sn	Sn	06 49 11.9	-3.9
WHY	**Whitehorse**	**4.95**	**214**	Pn	Pn	06 48 27.9	-1.2
WHY				Pg	Pg	06 48 46.0	-4.0
WHY				Sg	Sb	06 49 46.2	+5.3
YUK5	**Granite Creek**	**5.42**	**230**	Pn	Pn	06 48 34.9	-0.8
YUK5				Sg	Sg	06 50 02.5	-6.6
HYT	**Haines Junctio**	**5.54**	**227**	Pn	Pn	06 48 36.5	-0.7
HYT				Sg	Sb	06 50 04.6	+6.7
BVCY	**Beaver Creek**	**5.72**	**250**	Pn	Pn	06 48 37.9	-1.7
BVCY				Sn	Sn	06 49 42.3	-2.8
YUK6	**Outpost Mounta**	**5.73**	**231**	Pn	Pn	06 48 39.0	-0.9
YUK6				Sg	Sg	06 50 12.1	-6.8
YUK3	**Moose Creek**	**5.92**	**244**	Pn	Pn	06 48 41.2	-1.3
YUK7	**Dusty Glacier**	**5.97**	**227**	Sg	Sg	06 50 20.6	-6.0
YUK2	**White River**	**6.06**	**245**	Pn	Pn	06 48 43.2	-1.2
YUK2				Sn	Sn	06 49 50.8	-2.6
YUK2				Sg	Sg	06 50 21.5	-8.1
PLBC	**Pleasant Camp**	**6.37**	**215**	Pn	Pn	06 48 48.3	-0.2
PLBC				Sg	Sb	06 50 30.4	+8.9
KUKN	**Kugluktuk,NWT**	**6.42**	**56**	Pn	Pn	06 48 48.1	-1.0
KUKN				Sn	Sn	06 49 55.4	-6.7
KUKN				Sg	Sg	06 50 33.8	-7.3
DLBC	**Dease Lake**	**6.46**	**184**	Pn	Pn	06 48 49.5	-0.4
DLBC				Sg	Sg	06 50 38.9	-3.7
DOT	**Dot Lake**	**6.56**	**266**	Pn	Pn	06 48 49.1	-2.1
DOT				Sg	Sg	06 50 38.8	-6.9
FNBB	**Fort Nelson**	**6.68**	**151**	Pn	Pn	06 48 51.0	-1.8
YKR1	**Yellowknife Ar**	**6.79**	**104**	Pn	Pn	06 48 52.6	-1.6
YKR2	**Yellowknife Ar**	**6.81**	**104**	Pn	Pn	06 48 52.8	-1.8
YKR3	**Yellowknife Ar**	**6.83**	**104**	Pn	Pn	06 48 53.1	-1.7
YKR4	**Yellowknife Ar**	**6.85**	**104**	Pn	Pn	06 48 53.5	-1.6
YKR5	**Yellowknife Ar**	**6.87**	**104**	Pn	Pn	06 48 53.9	-1.5
YKB0	**Yellowknife Ar**	**6.88**	**103**	Pn	Pn	06 48 54.1	-1.4
YKR6	**Yellowknife Ar**	**6.89**	**104**	Pn	Pn	06 48 54.0	-1.6
YKB9	**Yellowknife Ar**	**6.89**	**103**	Pn	Pn	06 48 54.8	-0.9
YKW3	**Yellowknife Ar**	**6.90**	**103**	Pn	Pn	06 48 53.8	-1.9
YKW3				Sn	Sn	06 50 08.4	-5.4
YKB8	**Yellowknife Ar**	**6.90**	**103**	Pn	Pn	06 48 54.6	-1.2
YKB7	**Yellowknife Ar**	**6.91**	**103**	Pn	Pn	06 48 54.7	-1.2
YKR7	**Yellowknife Ar**	**6.91**	**103**	Pn	Pn	06 48 54.4	-1.5
YKB6	**Yellowknife Ar**	**6.92**	**103**	Pn	Pn	06 48 54.7	-1.4
YKR8	**Yellowknife Ar**	**6.93**	**103**	Pn	Pn	06 48 54.5	-1.7
YKB4	**Yellowknife Ar**	**6.94**	**104**	Pn	Pn	06 48 54.9	-1.5
YKB3	**Yellowknife Ar**	**6.95**	**104**	Pn	Pn	06 48 54.8	-1.7
YKR9	**Yellowknife Ar**	**6.95**	**103**	Pn	Pn	06 48 54.8	-1.7
YKB2	**Yellowknife Ar**	**6.96**	**104**	Pn	Pn	06 48 54.9	-1.8
YKB1	**Yellowknife Ar**	**6.97**	**104**	Pn	Pn	06 48 54.8	-2.0
WHFN	**White Fish Lak**	**10.08**	**93**	Pn	Pn	06 49 38.3	-1.1
WHFN				Sn	Sn	06 51 22.7	-9.3

*GEN **29** 06:51:33.0,44°.16N×12°.22E, h1km, ML2.2*
*ISCJB **29** 06:51:35.1±0.3,44°.22N±0°.02×11°.98E±0.03, h24km±5km,*
Error ellipse: s-maj=4.4km s-min=3.2km az=137.8
*ROM **29** 06:51:35.3±0.1,44°.18N×11°.94E, h24km±3km, Md2.5/34,*
Ml2.2/29, Error ellipse: s-maj=2.4km s-min=1.5km az=33.0
*CSEM **29** 06:51:35.2±0.1,44°.21N×11°.97E, h20km, ML2.7/16, Error*
ellipse: s-maj=2.0km s-min=1.6km az=95.0

ISC 29 06:51:35.3±0.9, 44°.20N±0°.02×11°.98E±0°.02, h24km±7km, n113, σ0°.66/158, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMOL	**Imola, Italy**	**0.23**	**314**	Pg	**Pb**	**06 51 41.5**	**+0.2**
IMOL				Sg	**Sb**	**06 51 47.2**	**+1.8**
	5µm,8.2s						
IMOL	**Imola, Italy**	**0.23**	**314**	Pg	**Pb**	**06 51 41.5**	**+0.2**
SFI	**Santa Sofia**	**0.31**	**198**	Pg	**Pb**	**06 51 41.5**	**-0.9**
SFI				Sg	**Sb**	**06 51 46.7**	**-0.5**
	982nm,0.3s						
SFI	**Santa Sofia**	**0.31**	**198**	Pg	**Pb**	**06 51 41.5**	**-0.9**
SFI				Sg	**Sb**	**06 51 46.7**	**-0.5**
	982nm,0.3s						
T0502	**Localit˜San**	**0.32**	**158**	Pg	**Pb**	**06 51 42.1**	**-0.4**
T0502				Sg	**Sb**	**06 51 48.5**	**+1.0**
	411nm,0.3s						
VMG	**Vicchio**	**0.39**	**233**	Pg	**Pb**	**06 51 42.7**	**-1.0**
VMG				Sg	**Sb**	**06 51 49.2**	**-0.2**
VMG	**Vicchio**	**0.39**	**233**	Pg	**Pb**	**06 51 42.7**	**-1.0**
VMG				Sg	**Sb**	**06 51 49.2**	**-0.2**
MTRZ	**Monterenzio**	**0.41**	**296**	Pg	**Pb**	**06 51 44.2**	**+0.2**
	185nm,0.3s						
MTRZ	**Monterenzio**	**0.41**	**296**	Pg	**Pb**	**06 51 44.2**	**+0.2**
	185nm,0.3s						
ASQU	**Asqua**	**0.42**	**199**	Pg	**Pb**	**06 51 43.3**	**-0.9**
ASQU				Sg	**Sb**	**06 51 50.1**	**-0.2**
	374nm,0.3s						
ASQU	**Asqua**	**0.42**	**199**	Pg	**Pb**	**06 51 43.3**	**-0.9**
ASQU				Sg	**Sb**	**06 51 50.1**	**-0.2**
	374nm,0.3s						
CPGN	**Carpegna, Ital**	**0.47**	**148**	Pg	**Pb**	**06 51 45.2**	**+0.2**
	43µm,15.0s						
CPGN	**Carpegna, Ital**	**0.47**	**148**	Pg	**Pb**	**06 51 45.2**	**+0.2**
	43µm,15.0s						
SEI	**Scarperia**	**0.47**	**252**	Pg	**Pb**	**06 51 44.0**	**-1.0**
SEI				Sg	**Sb**	**06 51 51.4**	**-0.1**
SEI	**Scarperia**	**0.47**	**252**	Pg	**Pb**	**06 51 44.0**	**-1.0**
SEI				Sg	**Sb**	**06 51 51.4**	**-0.1**
PARC	**Parchiule**	**0.58**	**161**	Pg	**Pb**	**06 51 46.3**	**-0.6**
PARC				Sg	**Sn**	**06 51 56.1**	**-0.7**
	97nm,0.5s						
PARC	**Parchiule**	**0.58**	**161**	Pg	**Pb**	**06 51 46.3**	**-0.6**
PARC				Sg	**Sn**	**06 51 56.1**	**-0.7**
	97nm,0.5s						
FNVD	**Fontana Vidola**	**0.61**	**268**	Pg	**Pb**	**06 51 46.9**	**-0.5**
	93nm,0.4s						
FNVD	**Fontana Vidola**	**0.61**	**268**	Pg	**Pb**	**06 51 46.9**	**-0.5**
	93nm,0.4s						
PESA	**Pesaro**	**0.67**	**112**	Pg	**Pn**	**06 51 49.4**	**+0.1**
	176nm,0.2s						
PESA	**Pesaro**	**0.67**	**112**	Pg	**Pn**	**06 51 49.4**	**+0.1**
	176nm,0.2s						
PTF	**Prato**	**0.69**	**250**	Pg	**Pb**	**06 51 48.9**	**+0.1**
PTF	**Prato**	**0.69**	**250**	Pg	**Pb**	**06 51 48.9**	**+0.1**
BADI	**Badiali**	**0.71**	**164**	Pg	**Pb**	**06 51 48.7**	**-0.4**
BADI				Sg	**Sn**	**06 52 00.2**	**+0.1**
	76nm,0.5s						
BADI	**Badiali**	**0.71**	**164**	Pg	**Pb**	**06 51 48.7**	**-0.4**
BADI				Sg	**Sn**	**06 52 00.2**	**+0.1**
	76nm,0.5s						
ATMC	**Monte Cedrone**	**0.77**	**168**	Pg	**Pb**	**06 51 50.0**	**0.0**
	88nm,0.5s						
ATMC	**Monte Cedrone**	**0.77**	**168**	Pg	**Pb**	**06 51 50.0**	**0.0**
	88nm,0.5s						
FSSB	**Fossombrone**	**0.77**	**131**	Pg	**Pn**	**06 51 51.0**	**+0.4**
	216nm,0.4s						
FSSB	**Fossombrone**	**0.77**	**131**	Pg	**Pn**	**06 51 51.0**	**+0.4**
	216nm,0.4s						
PIEI	**Pieia**	**0.78**	**148**	Pg	**Pb**	**06 51 49.5**	**-0.6**
	57nm,0.5s						
PIEI	**Pieia**	**0.78**	**148**	Pg	**Pb**	**06 51 49.5**	**-0.6**
	57nm,0.5s						
ATPC	**Poggio Castell**	**0.80**	**154**	Pg	**Pb**	**06 51 50.4**	**-0.1**
	48nm,0.5s						
ATPC	**Poggio Castell**	**0.80**	**154**	Pg	**Pb**	**06 51 50.4**	**-0.1**
	48nm,0.5s						
MPAG	**Monte Paganucc**	**0.80**	**135**	Pg	**Pb**	**06 51 50.5**	**-0.1**
	53nm,0.3s						
MPAG	**Monte Paganucc**	**0.80**	**135**	Pg	**Pb**	**06 51 50.5**	**-0.1**
	53nm,0.3s						
PZZT	**Monte Pizzetto**	**0.80**	**266**	Pg	**Pb**	**06 51 50.8**	**+0.1**
	45nm,0.4s						
PZZT	**Monte Pizzetto**	**0.80**	**266**	Pg	**Pb**	**06 51 50.8**	**+0.1**
	45nm,0.4s						
CRMI	**Carmignano**	**0.83**	**241**	Pg	**Pb**	**06 51 50.7**	**-0.4**
	38nm,0.5s						
CRMI	**Carmignano**	**0.83**	**241**	Pg	**Pb**	**06 51 50.7**	**-0.4**
	38nm,0.5s						
CAFI	**Castiglion Fio**	**0.87**	**180**	Pg	**Pb**	**06 51 51.2**	**-0.5**
	44nm,0.6s						
CAFI	**Castiglion Fio**	**0.87**	**180**	Pg	**Pb**	**06 51 51.2**	**-0.5**
	44nm,0.6s						
FRON	**Frontone**	**0.87**	**141**	Pg	**Pb**	**06 51 51.8**	**+0.1**
	695nm,2.8s						
FRON	**Frontone**	**0.87**	**141**	Pg	**Pb**	**06 51 51.8**	**+0.1**
	695nm,2.8s						
ATVO	**AVT- Monte Val**	**0.87**	**159**	Pg	**Pb**	**06 51 51.6**	**-0.2**
	60nm,0.5s						
ATVO	**AVT- Monte Val**	**0.87**	**159**	Pg	**Pb**	**06 51 51.6**	**-0.2**
	60nm,0.5s						
CSNT	**Castellina Chi**	**0.88**	**215**	Pg	**Pn**	**06 51 52.4**	**+0.3**
	50nm,0.7s						
CSNT	**Castellina Chi**	**0.88**	**215**	Pg	**Pn**	**06 51 52.4**	**+0.3**
	50nm,0.7s						
POPM	**Popiglio**	**0.89**	**261**	P	**Pn**	**06 51 52.9**	**+0.6**
SSFR	**Montelago di S**	**0.96**	**142**	Pg	**Pn**	**06 51 53.2**	**-0.1**
	113nm,0.2s						
SSFR	**Montelago di S**	**0.96**	**142**	Pg	**Pn**	**06 51 53.2**	**-0.1**
	113nm,0.2s						
MURB	**Monte Urbino**	**1.01**	**157**	Pg	**Pb**	**06 51 55.0**	**+0.8**
	82nm,0.4s						
MURB	**Monte Urbino**	**1.01**	**157**	Pg	**Pb**	**06 51 55.0**	**+0.8**
	82nm,0.4s						
ATTE	**AVT- Monte Tez**	**1.04**	**165**	Pg	**Pb**	**06 51 54.8**	**+0.2**
	41nm,0.6s						
ATTE	**AVT- Monte Tez**	**1.04**	**165**	Pg	**Pb**	**06 51 54.8**	**+0.2**
	41nm,0.6s						
MAIM	**Mastiano**	**1.11**	**256**	Pg	**Pn**	**06 51 55.1**	**-0.1**
	31nm,0.5s						
MAIM	**Mastiano**	**1.11**	**256**	P	**Pb**	**06 51 56.1**	**+0.4**
ATCC	**AVT- Casa Cast**	**1.12**	**154**	Pg	**Pb**	**06 51 56.6**	**+0.6**
	52nm,0.5s						
ATCC	**AVT- Casa Cast**	**1.12**	**154**	Pg	**Pb**	**06 51 56.6**	**+0.6**
	52nm,0.5s						
SARO	**Sassorosso**	**1.13**	**270**	P	**Pb**	**06 51 57.2**	**+1.0**
SNTG	**Esanatoglia**	**1.17**	**143**	Pg	**Pb**	**06 51 57.1**	**+0.2**
	26nm,0.3s						
SNTG	**Esanatoglia**	**1.17**	**143**	Pg	**Pb**	**06 51 57.1**	**+0.2**
	26nm,0.3s						
TEOL	**Teolo**	**1.18**	**350**	Pg	**Pn**	**06 51 56.3**	**0.0**
TEOL	**Teolo**	**1.18**	**350**	*e*Pg	**Pn**	**06 51 56.4**	**0.0**
TEOL	**Teolo**	**1.18**	**350**	*e*P	**Pn**	**06 51 56.4**	**0.0**
CING	**Cingoli**	**1.21**	**132**	Pg	**Pb**	**06 51 58.1**	**+0.6**
	20nm,0.3s						
CING	**Cingoli**	**1.21**	**132**	Pg	**Pb**	**06 51 58.1**	**+0.6**
	20nm,0.3s						
MGAB	**Montegabbione**	**1.29**	**176**	Pg	**Pb**	**06 51 59.2**	**+0.4**
	31nm,0.3s						
MGAB	**Montegabbione**	**1.29**	**176**	Pg	**Pb**	**06 51 59.2**	**+0.4**
	31nm,0.3s						
MARN	**Marana (Italy)**	**1.54**	**340**	*e*Pg	**Pn**	**06 52 01.4**	**+0.1**
MARN				*e*Sg	**Sn**	**06 52 20.2**	**-0.3**
MARN	**Marana (Italy)**	**1.54**	**340**	*e*Pg	**Pn**	**06 52 01.4**	**+0.1**
MARN				*e*Sg	**Sn**	**06 52 20.2**	**-0.3**
CGRP	**Cima Grappa**	**1.69**	**356**	Pg	**Pn**	**06 52 03.6**	**+0.2**
CGRP	**Cima Grappa**	**1.69**	**356**	*e*Pg	**Pn**	**06 52 03.4**	**0.0**
CGRP				*e*Sg	**Sn**	**06 52 24.5**	**+0.1**
CGRP	**Cima Grappa**	**1.69**	**356**	Pg	**Pn**	**06 52 03.6**	**+0.2**
CGRP				*e*Sg	**Sn**	**06 52 24.5**	**+0.1**
DDS	**Dosso del Somm**	**1.77**	**342**	*e*Pg	**Pn**	**06 52 04.3**	**-0.3**
DDS	**Dosso del Somm**	**1.77**	**342**	*e*P	**Pn**	**06 52 04.3**	**-0.3**
SKDS	**Skadanscina**	**1.98**	**46**	*i* Pn	**Pn**	**06 52 06.9**	**-0.4**
SKDS				*i* Sn	**Sn**	**06 52 31.7**	**+0.3**
	comp=Z,10.0nm,0.2s						
SKDS	**Skadanscina**	**1.98**	**46**	Pn	**Pn**	**06 52 06.9**	**-0.4**
SKDS				*i* Sn	**Sn**	**06 52 31.7**	**+0.3**
	comp=Z,10.0nm,0.2s						
NVLJ	**Novalja**	**2.11**	**79**	*e*Pn	**Pn**	**06 52 09.7**	**+0.6**
NVLJ				Sn	**Sn**	**06 52 34.8**	**+0.3**
NVLJ	**Novalja**	**2.11**	**79**	*e*Pn	**Pn**	**06 52 09.6**	**+0.6**
NVLJ				Sn	**Sn**	**06 52 34.7**	**+0.3**
SABO	**M.te Sabotino**	**2.12**	**32**	*e*Pn	**Pn**	**06 52 09.1**	**-0.1**
SABO	**M.te Sabotino**	**2.12**	**32**	*e*P	**Pn**	**06 52 09.1**	**-0.1**
CIMO	**Cimolais**	**2.14**	**9**	*e*Pn	**Pn**	**06 52 09.0**	**-0.5**
CIMO				*e*Sn	**Sn**	**06 52 35.2**	**-0.1**
CIMO	**Cimolais**	**2.14**	**9**	*e*Pn	**Pn**	**06 52 09.0**	**-0.5**
CIMO				*e*Sn	**Sn**	**06 52 35.2**	**-0.1**
KNDS	**Knezji Dol**	**2.17**	**51**	*i* Pn	**Pn**	**06 52 10.0**

RSNC ***29*** *06:53:21.0±0.7, 6°.83N×73°.11W, h145km±4km, ML3.3*
ISC 29 06:53:18.6±1.4, 6°.87N±0°.04×73°.07W±0°.05, h160km±8km, n32, σ0s87/48, 1C-4D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.29**	**202**	*i*	P		**Pn**	**06 53 40.6**	**0.0**
BARC				*i*				06 53 40.9	
	comp=Z,252nm,0.1s								
BARC					*e*S		**Sn**	**06 53 56.0**	**-1.4**
PAMC	**Pamplona, Colo**	**0.60**	**38**	*e*	P		**Pn**	**06 53 43.1**	**+1.0**
PAMC					*e*S		**Sn**	**06 53 59.8**	**-0.4**
BRRC	**Barranca, Sant**	**0.68**	**291**	*e*	P		**Pn**	**06 53 42.4**	**+0.4**
BRRC					*e*S		**Sn**	**06 53 58.7**	**-1.2**
BRRC				*i*				06 54 00.1	
	comp=Z,641nm,0.1s								
CBRI	**Barrientos, No**	**0.89**	**18**	*i*	P		**Pn**	**06 53 44.7**	**+1.1**
CBRI					*e*S		**Sn**	**06 54 03.2**	**+0.3**
RUSC	**La Rusia**	**0.97**	**181⇑**	*i*	P		**Pn**	**06 53 44.7**	**0.0**
RUSC					*e*S		**Sn**	**06 54 03.0**	**-1.5**
RUSC				*i*				06 54 05.9	
	comp=Z,100nm,0.2s								
CAPV	**Capacho**	**1.25**	**37⇓**	*i*	P		**Pn**	**06 53 48.2**	**+1.5**
CAPV					*e*S		**Sn**	**06 54 09.2**	**+0.9**
OCAC	**Ocana**	**1.39**	**350**	*e*	P		**Pn**	**06 53 48.5**	**+0.6**
OCAC					*e*S		**Sn**	**06 54 09.9**	**-0.7**
OCAC				*i*				06 54 11.8	
	comp=Z,283nm,0.3s								
CHIC	**Chingaza**	**2.32**	**197**	*e*	P		**Pn**	**06 53 59.2**	**+0.7**
CHIC					*e*S		**Sn**	**06 54 29.4**	**+0.2**
CHIC				*i*				06 54 36.4	
	comp=Z,81nm,0.6s								
ROSC	**El Rosal**	**2.36**	**212**	*e*	P		**Pn**	**06 53 59.7**	**+0.7**
ROSC					*e*S		**Sn**	**06 54 29.7**	**-0.5**
ROSC				*i*				06 54 36.8	
	comp=Z,191nm,0.3s								
HELC	**Santa Helena**	**2.53**	**255**	*e*	P		**Pn**	**06 54 02.2**	**+1.2**
HELC					*e*S		**Sn**	**06 54 32.9**	**-0.8**
VIGV	**El Vigia**	**2.59**	**41⇓**	*i*	P		**Pn**	**06 54 02.5**	**+1.2**
VIGV					*e*S		**Sn**	**06 54 33.8**	**-0.7**
SOCV	**Socops**	**2.61**	**57⇓**	*e*	P		**Pn**	**06 54 02.2**	**+0.6**
SOCV					*e*S		**Sn**	**06 54 34.4**	**-0.4**
VILC	**Villavicencio,**	**2.80**	**193**	*e*	P		**Pn**	**06 54 04.9**	**+0.8**
VILC					*e*S		**Sn**	**06 54 39.3**	**0.0**
VILC				*i*				06 54 45.3	
	comp=Z,69nm,0.5s								
GUYC	**Guyana, Colomb**	**2.82**	**235**	*e*	P		**Pn**	**06 54 06.1**	**+1.5**
GUYC					*e*S		**Sn**	**06 54 40.7**	**+0.5**
GUYC				*i*				06 54 46.0	
	comp=Z,149nm,0.5s								
DBBC	**Dabeiba**	**3.12**	**273**	*e*	P		**Pn**	**06 54 08.6**	**+0.6**
SDV	**Santo Domingo**	**3.14**	**50**	*e*	P		**Pn**	**06 54 09.7**	**+1.4**
SDV				*i*				06 54 10.5	
	comp=Z,49nm,0.5s								
SDV	**Santo Domingo**	**3.14**	**50**	*e*	P		**Pn**	**06 54 09.6**	**+1.2**
TOLC	**Tolima**	**3.18**	**225**	*e*	P		**Pn**	**06 54 10.6**	**+1.6**
ELOV	**Elorza**	**3.56**	**88**	*e*	P		**Pn**	**06 54 14.4**	**+0.8**
PRAC	**Prado**	**3.61**	**210**	*e*	P		**Pn**	**06 54 14.5**	**+0.3**
PRAC					*e*S		**Sn**	**06 54 57.3**	**-0.2**
SJAC	**San Juan de Ar**	**3.67**	**194**	*e*	P		**Pn**	**06 54 15.6**	**+0.6**
VIRV	**Villa del Rosa**	**3.67**	**10⇓**	*e*	P		**Pn**	**06 54 14.7**	**-0.2**
VIRV					*e*S		**Sn**	**06 54 57.2**	**-1.6**
SANV	**Sanarito**	**4.37**	**53**	*e*	P		**Pn**	**06 54 24.6**	**+0.5**
CURV	**Curarigua**	**4.39**	**44**	*e*	P		**Pn**	**06 54 24.7**	**+0.5**
DABV	**Dabajuro**	**4.70**	**31**	*e*	P		**Pn**	**06 54 29.0**	**+0.8**
TEPV	**Terepaima**	**4.92**	**51**	*e*	P		**Pn**	**06 54 31.6**	**+0.4**
SIQV	**Siquisique**	**4.95**	**40**	*e*	P		**Pn**	**06 54 31.2**	**-0.5**
BAUV	**El Baul**	**5.39**	**67**	*e*	P		**Pn**	**06 54 36.7**	**-0.7**
MAPV	**Macapo**	**5.43**	**57**	*e*	P		**Pn**	**06 54 38.3**	**+0.4**
MONV	**Montecano**	**5.91**	**31**	*e*	P		**Pn**	**06 54 44.0**	**-0.2**
TURV	**Turiamo**	**6.28**	**55**	*e*	P		**Pn**	**06 54 49.5**	**+0.4**
CUPV	**Cœpira**	**7.87**	**66**	*e*	P		**Pn**	**06 55 09.7**	**-0.7**

CSEM ***29*** *07:13:35.0±0.5, 39°.00N×27°.71E, h20km, MD2.6, Error ellipse: s-maj=11.7km s-min=3.5km az=173.0*
ISK ***29*** *07:13:35.7, 38°.89N×27°.74E, h21km, MD2.6*
ISC 29 07:13:34.5±2.3, 39°.0N±0°.1×27°.68E±0°.04, h19km±3km, n12, σ0s76/21, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
AKS	**Akhisar**	**0.19**	**146**	*e*	PG		**Pg**	**07 13 39.6**	**+0.1**
AKS					*e*SG		**Sg**	**07 13 42.8**	**-0.1**
AKS	**Akhisar**	**0.19**	**146**	*e*	Pg		**Pg**	**07 13 39.6**	**+0.1**
AKS					*e*Sg		**Sg**	**07 13 42.8**	**-0.1**
IZM	**Izmir**	**0.72**	**207**	*e*	PG		**Pb**	**07 13 48.5**	**+0.1**
IZM					*e*SG		**Sb**	**07 13 57.7**	**-0.2**
IZM	**Izmir**	**0.72**	**207**	*e*	Pg		**Pb**	**07 13 48.5**	**+0.1**
IZM					*e*Sg		**Sb**	**07 13 57.7**	**-0.2**
MANT	**Manisa**	**0.88**	**128**	*i*	P		**Pb**	**07 13 50.7**	**-0.6**
MANT				*i*	S		**Sn**	**07 14 07.2**	**+2.8**
MANT	**Manisa**	**0.88**	**128**		P		**Pb**	**07 13 50.7**	**-0.6**
KULA	**Kula-Manisa**	**0.93**	**124**	*e*	PG		**Pn**	**07 13 52.3**	**-0.4**
KULA					*e*SG		**Sb**	**07 14 04.0**	**-0.1**
KULA	**Kula-Manisa**	**0.93**	**124**	*e*	Pg		**Pn**	**07 13 52.3**	**-0.4**
KULA					*e*Sg		**Sb**	**07 14 04.0**	**-0.1**
URLA	**Izmir**	**1.08**	**232**	*i*	P		**Pn**	**07 13 54.8**	**+0.1**
URLA				*i*	S		**Sn**	**07 14 09.2**	**0.0**
URLA	**Izmir**	**1.08**	**232**		P		**Pn**	**07 13 54.8**	**+0.1**
URLA					S		**Sn**	**07 14 09.2**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.10**	**171**	*e*	PG		**Pn**	**07 13 54.3**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.10**	**171**	*e*	Pg		**Pn**	**07 13 54.3**	**-0.7**

NIED ***29*** *07:14:00, 45°.50N×151°.60E, h17km, Mw4.0 Best double couple: M0 1.27000×10^15 NP1:φs259.00000°, δ44.00000°, λ161.00000°. NP2:φs3.00000°, δ77.00000°, λ48.00000°.*
JMA ***29*** *07:14:33.8±0.6, 45°.47N×151°.60E, h30km, M4.4*
SKHL ***29*** *07:14:34.4±2.7, 44°.76N×151°.73E, h59km±5km, mb4.2/3*
MOS ***29*** *07:14:35.4±1.1, 45°.25N×151°.49E, h41km, mb4.7/7, Error ellipse: s-maj=11.2km s-min=10.0km az=59.2*
NEIC ***29*** *07:14:38.5±1.0, 45°.37N×151°.32E, h44km±9km, mb4.4/8, Error ellipse: s-maj=15.3km s-min=7.7km az=138.0*
IDC ***29*** *07:14:38.1±2.7, 45°.37N×151°.39E, h42km±23km, mb3.9/16, mb1 4.0/20, mb1mx3.8/53, mbtmp4.1/20, ML3.4/5, MS3.2/4, Ms1 3.2/4, ms1mx2.9/57, Error ellipse: s-maj=24.7km s-min=17.3km az=120.0*
ISC 29 07:14:35.5±0.7, 44°.94N±0°.09×151°.62E±0°.08, h36km, n85, σ1s90/89, mb4.3/26, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**2.67**	**278**	*e*	PN		**Pn**	**07 15 16.3**	**+0.3**
KUR					*e*S		**Sn**	**07 15 50.8**	**+3.7**
KUR					pmax		pmax		
	comp=Z,76nm,0.3s								
KUR					pmax		pmax		
	comp=E,52nm,0.1s								
KUR					smax		smax		
	comp=N,224nm,0.5s								
KUR					smax		smax		
	comp=E,190nm,0.4s								
KUR	**Kuril'sk**	**2.67**	**278**	*e*	P		**Pn**	**07 15 17.4**	**+1.4**
KUR					AMB		AMB	07 15 18.0	
	comp=E,40nm,0.6s								
KUR					*e*S		**Sn**	**07 15 49.4**	**+2.3**
KUR					A		A	07 15 54.0	
	comp=E,150nm,0.7s								
KUR					A		A	07 15 54.0	
	comp=E,260nm,0.7s								
SHO	**Shikotan**	**3.59**	**254**	*e*	PN		**Pn**	**07 15 28.9**	**+0.3**
SHO					*e*S		**Sn**	**07 16 09.5**	**-0.3**
SHO					pmax		pmax		
	comp=Z,72nm,0.5s								
SHO					pmax		pmax		
	comp=N,26nm,0.4s								
SHO					smax		smax		
	comp=N,392nm,0.5s								
SHO					smax		smax		
	comp=E,464nm,0.5s								
SHO	**Shikotan**	**3.59**	**254**	*e*	P		**Pn**	**07 15 28.9**	**+0.3**
SHO					AMB		AMB	07 15 30.0	
	comp=E,30nm,0.6s								
SHO					*e*S		**Sn**	**07 16 09.8**	**0.0**
SHO					A		A	07 16 14.1	
	comp=E,120nm,0.6s								
SHO					A		A	07 16 14.1	
	comp=E,160nm,0.6s								
YUK	**Yuzh-Kuril'sk**	**4.22**	**260**	*e*	P		**Pn**	**07 15 38.5**	**+1.3**
YUK					AMB		AMB	07 15 38.9	
	comp=E,50nm,0.6s								
YUK					*e*S		**Sn**	**07 16 24.7**	**-0.4**
YUK					A		A	07 16 35.0	
	comp=E,250nm,0.8s								
NEM2	**Nemuro 2**	**4.51**	**252**		P		**Pn**	**07 15 41.7**	**+0.5**
NEM2					*e*S		**Sn**	**07 16 32.0**	**-0.4**
JRA	**Rausu**	**4.76**	**260**		P		**Pn**	**07 15 46.8**	**+2.2**
JNK	**Nakash**	**5.14**	**257**		P		**Pn**	**07 15 51.4**	**+1.6**
JAK	**Akkeshi**	**5.36**	**251**		P		**Pn**	**07 15 53.3**	**+0.4**
JAK					*e*S		**Sn**	**07 16 51.9**	**-1.4**
JTKR	**Abashiri--Toko**	**5.60**	**263**		P		**Pn**	**07 15 58.2**	**+2.0**
JAR	**Ashorobuto**	**5.88**	**257**		P		**Pn**	**07 16 02.1**	**+2.0**
JAR					*e*S		**Sn**	**07 17 07.6**	**+1.4**
JOB	**Onbets**	**5.98**	**253**		P		**Pn**	**07 16 02.6**	**+1.2**
JOB					*e*S		**Sn**	**07 17 07.7**	**-0.8**
JMP	**Maruseppu**	**5.98**	**264**		P		**Pn**	**07 16 03.7**	**+2.2**
HRK	**Horoka**	**6.28**	**259**	*e*	P		**Pn**	**07 16 08.2**	**+2.7**
JCH	**Churui**	**6.41**	**252**		P		**Pn**	**07 16 08.2**	**+0.9**
JCH					*e*S		**Sn**	**07 17 18.6**	**-0.6**
JKK2	**Kamakawa 2**	**6.44**	**264**		P		**Pn**	**07 16 10.0**	**+2.2**
JKA	**Kamikawa-asahi**	**6.50**	**266**	*e*	P		**Pn**	**07 16 10.9**	**+2.4**
YSS	**Yuzh-Sakhalins**	**6.50**	**291**	PN			**Pn**	**07 16 10.8**	**+2.3**
YSS	**Yuzh-Sakhalins**	**6.50**	**291**	*e*	P		**Pn**	**07 16 10.8**	**+2.3**
ASAJ	**Asahikawa**	**6.50**	**266**		P		**Pn**	**07 16 10.8**	**+2.3**
	comp=E,1.8nm,0.3s,baz=85,slow=17,SNR=14								
ASAJ	**Asahikawa**	**6.50**	**266**		P		**Pn**	**07 16 11.1**	**+2.5**
ASAJ	**Asahikawa**	**6.50**	**266**	*e*	Pn		**Pn**	**07 16 10.6**	**+2.0**
MYR	**Moyori**	**6.60**	**249**	*e*	P		**Pn**	**07 16 11.2**	**+1.3**
MYR					*e*S		**Sn**	**07 17 22.9**	**-1.0**
ERM	**Erimo**	**6.81**	**248**	*e*	PN		**Pn**	**07 16 16.1**	**+3.3**
ERM					pmax		pmax		
	comp=Z,116nm,0.8s								
ERM	**Erimo**	**6.81**	**248**	*e*	Pn		**Pn**	**07 16 16.1**	**+3.3**
	comp=Z,116nm,0.8s								
ERM					*e*Sn		**Sn**	**07 17 30.9**	**+1.9**
JNBK	**Urakawa-nobuka**	**6.96**	**251**		P		**Pn**	**07 16 15.2**	**+0.3**
JNBK					*e*S		**Sn**	**07 17 30.4**	**-2.3**
JBT2	**Biratori 2**	**7.03**	**255**		P		**Pn**	**07 16 16.6**	**+0.8**
JNB	**Noboribetsu**	**8.05**	**256**	*e*	S		**Sn**	**07 17 58.6**	**-1.0**
JKB	**Kayabe**	**8.29**	**252**	*e*	S		**Sn**	**07 18 01.3**	**-4.0**
JANG	**Nango**	**8.73**	**242**	*e*	S		**Sn**	**07 18 09.8**	**-6.4**
JTM	**Tenmabayashi**	**8.79**	**246**	*e*	S		**Sn**	**07 18 13.3**	**-4.3**
PETK	**Petropavlovsk-**	**9.10**	**24**		P		**Pn**	**07 16 42.7**	**-1.4**
	comp=Z,0.3nm,0.3s,baz=185,slow=13,SNR=2.7								
MJAR	**Matsushiro Arr**	**13.17**	**235**		P		**Pn**	**07 17 42.0**	**+2.1**
	comp=Z,0.4nm,0.3s,baz=24,slow=16,SNR=4.7								
MJAR					LR		LR	07 23 38.9	
	comp=Z,47nm,20.9s,baz=35,slow=41								
USRK	**Ussuriysk Ar.**	**14.02**	**274**		P		**Pn**	**07 17 51.7**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=75,slow=13,SNR=7.7								
KSRS	**Korea Array**	**19.29**	**255**		P		**Pn**	**07 18 59.4**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=60,slow=10,SNR=5.3								
KSRS					LR		LR	07 26 37.0	
	comp=Z,67nm,18.4s,baz=75,slow=37								
KSRS	**Korea Array**	**19.29**	**255**	*e*	P		**Pn**	**07 18 58.4**	**+0.1**
KSAR	**Wonju Array Be**	**19.32**	**255**		P		**Pn**	**07 18 59.4**	**+0.7**
KSAR	**Wonju Array Be**	**19.32**	**255**		P		**Pn**	**07 18 59.4**	**+0.7**
BILL	**Bilibino**	**24.39**	**13**	*e*	P		P	07 20 01.3	+11
BILL					pmax		pmax		
	comp=Z,3.0nm,1.3s								
H11N2	**WAKE ISLAND Hy**	**28.16**	**148**		T		T	07 51 14.5	
	baz=338,slow=75,SNR=15								
H11N1	**WAKE ISLAND Hy**	**28.17**	**148**		T		T	07 51 15.3	
	baz=338,slow=75,SNR=12								
H11N3	**WAKE ISLAND Hy**	**28.18**	**148**		T		T	07 51 16.7	
	baz=338,slow=75,SNR=9.8								
H11S1	**WAKE ISLAND Hy**	**29.21**	**150**		T		T	07 52 36.7	
	baz=338,slow=76,SNR=17								
H11S3	**WAKE ISLAND Hy**	**29.21**	**150**		T		T	07 52 38.0	
	baz=338,slow=76,SNR=14								
H11S2	**WAKE ISLAND Hy**	**29.23**	**150**		T		T	07 52 38.1	
	baz=338,slow=76,SNR=12								
SONM	**Songino Array**	**30.99**	**292**		P		**P**	**07 20 48.5**	**-0.9**
	comp=Z,0.3nm,0.4s,baz=79,slow=7.5,SNR=3.6								
SONM					LR		LR	07 33 34.8	
	comp=Z,54nm,20.4s,baz=52,slow=37								
ILAR	**Eielson Array**	**38.62**	**37**		P		**P**	**07 21 54.6**	**-0.2**
	comp=Z,0.5nm,0.9s,baz=276,slow=8.5,SNR=7.3								
EGAK	**Eagle**	**41.07**	**37**	*e*	P		**P**	**07 22 15.0**	**-0.1**
	comp=Z,3.3nm,0.9s								
ZALV	**Zalesovo Beam**	**42.84**	**307**	PcP			**PcP**	**07 24 21.1**	**+0.9**
	comp=Z,0.9nm,0.3s,baz=66,slow=3.5,SNR=3.9								
ZALV					LR		LR	07 41 11.8	
	comp=Z,48nm,19.6s,baz=70,slow=38								
INK	**Inuvik**	**43.74**	**31**	*e*	P		**P**	**07 22 36.3**	**-0.4**
INK					pmax		pmax		
	comp=Z,7.0nm,1.3s								
INK	**Inuvik**	**43.74**	**31**	*e*	P		**P**	**07 22 36.3**	**-0.4**
	comp=Z,7.1nm,1.3s								
MKAR	**Makanchi Array**	**46.86**	**298**		P		**P**	**07 23 00.4**	**-1.5**
	comp=Z,0.9nm,0.6s,baz=67,slow=7.3,SNR=8.8								
MKAR					PcP		**PcP**	**07 24 35.2**	**+0.9**
	comp=Z,0.6nm,0.6s,baz=64,slow=3.1,SNR=4.1								
DLBC	**Dease Lake**	**47.61**	**44**	*e*	P		**P**	**07 23 11.1**	**+3.5**
	comp=Z,9.2nm,1.1s								
ARU	**Arti**	**55.65**	**318**		P		**P**	**07 24 05.1**	**-2.5**
	comp=Z,2.5nm,0.3s,baz=95,slow=11,SNR=5.2								
ARU	**Arti**	**55.65**	**318**	*e*	P		**P**	**07 24 05.0**	**-2.5**
ARU					pmax		pmax		
	comp=Z,5.0nm,0.7s								
ARU	**Arti**	**55.65**	**318**	*e*	P		**P**	**07 24 05.0**	**-2.5**
	comp=Z,4.7nm,0.7s								
KKAR	**Karatay Array**	**55.96**	**299**	*e*	P		**P**	**07 24 09.6**	**-0.4**
KKAR					pmax		pmax		
	comp=Z,1.0nm,0.6s								
KKAR	**Karatay Array**	**55.96**	**299**	*e*	P		**P**	**07 24 09.6**	**-0.4**
	comp=Z,1.3nm,0.6s								
ABKAR	**Akbulak array**	**58.79**	**310**	*e*	P		**P**	**07 24 28.8**	**-1.0**
	comp=Z,2.0nm,0.4s								
AKTO	**Aktyubinsk**	**59.16**	**312**		P		**P**	**07 24 31.4**	**-0.9**
	comp=Z,1.0nm,0.5s,baz=51,slow=6.1,SNR=4.3								
SUMG	**Summit**	**62.58**	**3**	*e*	P		**P**	**07 24 54.7**	**-1.0**
SUMG					pmax		pmax		
	comp=Z,9.0nm,1.0s								
SUMG	**Summit**	**62.58**	**3**	*e*	P		**P**	**07 24 54.7**	**-1.0**
	comp=Z,8.5nm,1.0s								
FINES	**FINESS Array B**	**65.23**	**334**		P		**P**	**07 25 11.3**	**-1.4**
	comp=Z,2.3nm,0.6s,baz=42,slow=5.9,SNR=8.6								
OBN	**Obninsk**	**66.21**	**325**	*e*	P		P	07 25 27.7	+8.5
OBN					pmax		pmax		
	comp=Z,5.0nm,0.9s								
WRA	**Warramunga Arr**	**66.46**	**198**		P		**P**	**07 25 24.6**	**+3.4**
	comp=Z,0.6nm,0.9s,baz=9.3,slow=6.7,SNR=4.7								
GEYT	**Alibeck**	**66.63**	**301**		P		**P**	**07 25 22.5**	**+0.2**
	comp=Z,1.0nm,0.3s,baz=62,slow=3.4,SNR=4.5								
NB2	**NORSAR Subarra**	**69.60**	**341**		P		**P**	**07 25 39.2**	**-1.3**
	comp=Z,1.7nm,0.6s,baz=28,slow=6.5								
NOA	**NORSAR Array B**	**69.60**	**341**		P		**P**	**07 25 39.3**	**-1.2**
	comp=Z,1.8nm,0.6s,baz=29,slow=6.4,SNR=9.8								
HFS	**Hagfors**	**69.78**	**339**		P		**P**	**07 25 40.3**	**-1.2**
	comp=Z,3.6nm,0.5s,baz=57,slow=5.5,SNR=19								
ASAR	**Alice Springs**	**70.16**	**197**		P		**P**	**07 25 49.1**	**+4.8**
	comp=Z,0.6nm,0.8s,baz=12,slow=6.4,SNR=4.2								
ASAR	**Alice Springs**	**70.16**	**197**	*e*	P		P	07 25 49.7	+5.4
KIV	**Kislovodsk**	**71.31**	**314**	*e*	P		P	07 25 58.5	+7.2
KIV					pmax		pmax		
	comp=Z,7.0nm,0.6s								
KBZ	**Khabaz**	**71.36**	**314**		P		**P**	**07 25 51.8**	**+0.3**
	comp=Z,7.9nm,0.9s,baz=65,slow=2.8,SNR=17								
AKASG	**Malin Array Be**	**72.46**	**326**		P		**P**	**07 25 56.6**	**-1.3**
	comp=Z,2.2nm,0.5s,baz=35,slow=6.8,SNR=5.6								
KIEV	**Kiev**	**72.47**	**326**	*e*	P		**P**	**07 25 56.3**	**-1.7**
KIEV					pmax		pmax		
	comp=Z,2.0nm,0.7s								
KIEV	**Kiev**	**72.47**	**326**	*e*	P		**P**	**07 25 56.3**	**-1.7**
	comp=Z,1.6nm,0.7s								
LANS	**Liptovska Anna**	**77.41**	**330**	*e*	P		**P**	**07 26 27.7**	**+1.1**
LANS	**Liptovska Anna**	**77.41**	**330**	*e*	P		**P**	**07 26 27.7**	**+1.1**
VYHS	**Vyhne**	**78.19**	**330**	*e*	P		**P**	**07 26 31.6**	**+0.7**
VYHS	**Vyhne**	**78.19**	**330**	*e*	P		**P**	**07 26 31.6**	**+0.7**
VRAC	**Vranov**	**78.26**	**332**		P		**P**	**07 26 31.4**	**+0.1**
	comp=Z,3.3nm,0.4s,baz=87,slow=2.9,SNR=4.3								
BRTR	**Keskin Array B**	**78.98**	**316**		P		**P**	**07 26 36.3**	**+0.7**
	comp=Z,0.9nm,0.8s,baz=182,slow=6.2,SNR=5.1								
KHC	**Kasperske Hory**	**79.40**	**333**	*e*	P		**P**	**07 26 37.0**	**-0.6**
KHC	**Kasperske Hory**	**79.40**	**333**	*e*	P		**P**	**07 26 37.0**	**-0.6**
GERES	**GERESS Array B**	**79.61**	**333**		P		**P**	**07 26 38.3**	**-0.5**
	comp=Z,0.4nm,0.4s,baz=28,slow=6.0,SNR=4.3								

ISCJB ***29*** *07:28:44.4±0.5, 39°.07N±0°.04×29°.11E±0°.04, h7km±6km, Error ellipse: s-maj=7.9km s-min=4.3km az=148.2*
CSEM ***29*** *07:28:44.5±0.1, 39°.07N×29°.13E, h8km, MD2.2, Error ellipse: s-maj=3.9km s-min=2.4km az=128.0*
ISK ***29*** *07:28:44.1, 39°.09N×29°.17E, h5km, MD2.2*

DDA ***29*** *07:28:44.1, 39°.17N×29°.08E, h7km, Md2.5*
ISC 29 07:28:44.3±1.0, 39°.07N±0°.03×29°.14E±0°.03, h9km±11km, n24, σ0s26/36, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
GEDZ	**Gediz**	**0.21**	**98**	*e*	PG		**Pg**	**07 28 48.7**	**+0.1**
GEDZ	**Gediz**	**0.21**	**98**	*e*	Pg		**Pg**	**07 28 48.7**	**+0.1**
GDZ	**Gediz**	**0.26**	**87**	*i*	P		**Pb**	**07 28 51.2**	**-0.1**
GDZ				*i*	S		**Sb**	**07 28 55.8**	**-0.2**
GDZ	**Gediz**	**0.26**	**87**		P		**Pb**	**07 28 51.2**	**-0.1**
GDZ					S		**Sb**	**07 28 55.8**	**-0.2**
DEMI	**Demirci**	**0.34**	**265**	*i*	P		**Pg**	**07 28 51.2**	**+0.3**
DEMI				*i*	S		**Sg**	**07 28 55.4**	**0.0**
DEMI	**Demirci**	**0.34**	**265**		P		**Pg**	**07 28 51.2**	**+0.3**
DEMI					S		**Sg**	**07 28 55.4**	**0.0**
TVSB	**Tavsanli**	**0.45**	**33**	*e*	PG		**Pg**	**07 28 53.0**	**0.0**
TVSB				*e*	SG		**Sg**	**07 28 58.8**	**-0.2**
TVSB	**Tavsanli**	**0.45**	**33**	*e*	Pg		**Pg**	**07 28 53.0**	**0.0**
TVSB				*e*	Sg		**Sg**	**07 28 58.8**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**214**	*e*	PG		**Pb**	**07 28 58.1**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**214**	*e*	Pg		**Pb**	**07 28 58.1**	**-0.2**
MANT	**Manisa**	**0.74**	**218**	*i*	P		**Pg**	**07 28 58.3**	**-0.3**
MANT				*i*	S		**Sg**	**07 29 07.8**	**-0.5**
MANT	**Manisa**	**0.74**	**218**		P		**Pg**	**07 28 58.3**	**-0.3**
MANT					S		**Sg**	**07 29 07.8**	**-0.5**
KHL	**Karahalli**	**0.81**	**158**	*e*	PG		**Pg**	**07 29 00.1**	**+0.3**
KHL	**Karahalli**	**0.81**	**158**	*e*	Pg		**Pg**	**07 29 00.1**	**+0.3**
IZI	**Iznik**	**1.29**	**11**	*e*	PN		**Pg**	**07 29 08.8**	**-0.2**
IZI	**Iznik**	**1.29**	**11**	*e*	Pn		**Pg**	**07 29 08.8**	**-0.2**
BORA	**Eskisehir**	**1.29**	**51**	*i*	P		**Pg**	**07 29 08.9**	**-0.2**
BORA				*i*	S		**Sg**	**07 29 25.7**	**-0.2**
BORA	**Eskisehir**	**1.29**	**51**		P		**Pg**	**07 29 08.9**	**-0.2**
BORA					S		**Sg**	**07 29 25.7**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**18**	*e*	PN		**Pb**	**07 29 11.0**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**18**	*e*	Pn		**Pb**	**07 29 11.0**	**-0.1**
ARMT	**Armutlu**	**1.50**	**352**	*e*	PN		**Pb**	**07 29 12.2**	**-0.2**
ARMT				*e*	SN		**Sg**	**07 29 32.7**	**0.0**
ARMT	**Armutlu**	**1.50**	**352**	*e*	Pn		**Pg**	**07 29 12.2**	**-0.2**
ARMT				*e*	Sn		**Sg**	**07 29 32.7**	**0.0**
GULT	**Gulveren**	**1.72**	**37**	*e*	PN		**Pn**	**07 29 15.1**	**+0.6**
GULT	**Gulveren**	**1.72**	**37**	*e*	Pn		**Pn**	**07 29 15.1**	**+0.6**

CASC 29 07:30:28.3±2.6, 11°.85N×87°.13W, h28km±16km, MD3.7, ML3.1, 1C, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
COPN	**Copaltepe**	**0.62**	**58**	*e*	P		**Pb**	07 30 40.3	-0.3
COPN					*e*S		Sn	07 30 51.1	+0.9
CNGN	**Cerro Negro**	**0.77**	**33⇑**	*i*	P		Pb	07 30 42.7	-0.5
CNGN					*e*S		Sn	07 30 54.8

KUZ ScP **ScP** 07 52 46.5 +1.5
ABAZ Army Bay 13.53 197 *e*PN **P** 07 45 18.8 +1.8
WIAZ Waiheke Island 13.63 196 *e*PN **P** 07 45 19.0 +1.0
WIAZ *e*SN **S** 07 47 44.1 +1.5
WIAZ ScP **ScP** 07 52 47.8 +2.5
MTAZ Motutapu 13.69 197 *e*PN **P** 07 45 20.1 +1.6
RVAZ Riverhead Bore 13.76 198 *e*PN **P** 07 45 20.4 +1.0
ETAZ East Tamaki Re 13.84 197 *e*PN **P** 07 45 21.4 +1.3
MXZ Matakaoa Point 13.85 185 *e*P **P** 07 45 18.0 -2.2
MXZ Matakaoa Point 13.85 185 *e*PN **P** 07 45 17.0 -3.2
MXZ *e*SN **S** 07 47 41.0 -5.7
WTAZ Waiatarua 13.91 198 PN **P** 07 45 22.2 +1.3
MKAZ Moumakai 13.92 196 *e*PN **P** 07 45 21.8 +0.8
KBAZ Karaka Road Bo 13.98 197 *e*PN **P** 07 45 22.8 +1.2
HAZ Te Kaha 14.09 187 *e*PN **P** 07 45 18.9 -3.8
WMGZ Waiomatatini S 14.10 185 *e*PN **P** 07 45 19.4 -3.4
WMGZ *e*SN **S** 07 47 46.9 -4.5
PKGZ Pakihiroa 14.19 186 *e*PN **P** 07 45 19.9 -4.0
PKGZ ScP **ScP** 07 52 47.6 +1.3
PUZ Puketiti 14.36 185 *e*PN **P** 07 45 21.5 -4.1
PUZ ScP **ScP** 07 52 47.8 +1.1
TOZ Tahuroa Road 14.44 194 *e*PN **P** 07 45 26.6 +0.2
TWGZ Tauwhareparae 14.49 186 *e*PN **P** 07 45 23.4 -3.5
TWGZ ScP **ScP** 07 52 48.5 +1.6
URZ Urewera 14.67 188 P **P** 07 45 27.1 -1.7
84nm,0.3s,baz=335,slow=1.9,SNR=178
URZ S **S** 07 47 57.8 -4.6
254nm,0.3s,baz=182,slow=21,SNR=22
URZ ScS **ScS** 07 56 31.4 +6.3
9.2nm,0.3s,baz=206,slow=23,SNR=9.8
URZ Urewera 14.67 188 *e*P **P** 07 45 24.8 -4.0
URZ S **S** 07 47 57.8 -4.6
URZ ScS **ScS** 07 56 31.4 +6.3
URZ Urewera 14.67 188 *e*PN **P** 07 45 24.0 -4.8
URZ ScP **ScP** 07 52 47.0 -0.1
MWZ Matawai 14.69 187 *e*PN **P** 07 45 25.4 -3.7
MWZ ScP **ScP** 07 52 47.5 +0.3
TKGZ Te Karaka 14.76 186 *e*PN **P** 07 45 26.3 -3.4
HRRZ Handcock Road 14.93 191 *e*PN **P** 07 45 30.0 -1.5
TLZ Tolley Road 15.01 193 *e*PN **P** 07 45 32.5 +0.1
PRRZ Plateau Road 15.01 190 *e*PN **P** 07 45 30.1 -2.3
FUNA Funafuti 15.13 358 *e*P **P** 07 45 31.6 -2.3
9µm,0.9s
SNGZ Shannon Statio 15.15 187 *e*PN **P** 07 45 30.7 -3.2
HIZ Hauiti 15.34 195 *e*P **P** 07 45 36.4 +0.7
14µm,1.9s
MRHZ Matea Rd 15.34 190 *e*PN **P** 07 45 32.4 -3.4
KNZ Kokohu 15.36 186 ScP **ScP** 07 52 50.0 +1.7
BKZ Black Stump Fm 15.65 190 *e*P **P** 07 45 36.1 -2.9
1µm,0.5s
KWHZ Kaweka Forest 15.91 190 *e*PN **P** 07 45 38.3 -3.4
VRZ Vera Road 15.94 194 *e*PN **P** 07 45 41.5 -0.5
PKVZ Pokaka 15.97 193 PN **P** 07 45 39.5 -2.9
MOVZ Moawhango 16.01 192 *e*PN **P** 07 45 38.5 -4.2
KRHZ Kereru 16.14 190 *e*PN **P** 07 45 39.4 -4.5
KAHZ Kahuranaki 16.21 188 *e*PN **P** 07 45 41.0 -3.7
PNHZ Pukenui 16.43 190 *e*PN **P** 07 45 42.1 -4.8
NMEZ Namu Road 16.43 196 *e*PN **P** 07 45 47.5 +0.7
PXZ Pawanui 16.45 188 *e*PN **P** 07 45 43.1 -3.9
BFZ Birch Farm 17.17 189 *e*P **P** 07 45 51.4 -2.6
1µm,0.6s
MRZ Mangatainoka R 17.26 191 *e*PN **P** 07 45 50.4 -4.4
MRZ ScP **ScP** 07 52 52.8 +0.7
CAW Cannon Point 17.78 192 *e*PN **P** 07 45 56.9 -2.8
SNZO South Karori 18.05 193 *e*P **P** 07 45 59.9 -2.1
3µm,0.9s
QRZ Quartz Range 18.12 198 *e*PN **P** 07 46 02.3 -0.4
NNZ Nelson 18.26 196 *e*PN **P** 07 46 01.7 -2.2
TUWZ Tuamarina 18.32 194 *e*PN **P** 07 46 02.0 -2.5
THZ Tophouse 18.89 196 *e*P **P** 07 46 09.8 +0.1
1µm,1.0s
THZ Tophouse 18.89 196 *e*PN **P** 07 46 08.3 -1.4
RAR Rarotonga 19.02 86 P **P** 07 46 10.9 -0.2
15nm,0.3s,baz=248,slow=6.5,SNR=28
RAR Rarotonga 19.02 86 *e*P **P** 07 46 10.9 -0.2
RAR pmax pmax
comp=Z,1µm,1.2s
RAR Rarotonga 19.02 86 *e*P **P** 07 46 10.9 -0.2
comp=Z,1µm,1.2s
KHZ Kahutara 19.36 194 *e*P **P** 07 46 12.9 -0.9
comp=Z,3µm,1.1s
KHZ Kahutara 19.36 194 *e*PN **P** 07 46 12.2 -1.7
KHZ ScP **ScP** 07 52 57.6 +0.9
LHI Lord Howe Isla 19.95 243 *e*P **P** 07 46 22.3 +2.9
comp=Z,732nm,0.7s
LTZ Lake Taylor 20.01 196 *e*P **P** 07 46 18.9 -1.0
comp=Z,1µm,0.5s
INZ Inchbonnie 20.18 198 *e*PN **P** 07 46 20.3 -1.1
OXZ Oxford 20.58 196 *e*P **P** 07 46 23.6 -1.5
comp=Z,2µm,0.5s
CRLZ Canterbury Las 20.67 195 *e*P **P** 07 46 25.0 -0.8
comp=Z,486nm,0.6s
CRLZ Canterbury Las 20.67 195 *e*PN **P** 07 46 24.9 -0.9
MQZ McQueen's Vall 20.78 195 *e*P **P** 07 46 25.8 -1.0
comp=Z,381nm,0.6s
MQZ McQueen's Vall 20.78 195 *e*PN **P** 07 46 25.5 -1.4
MQZ *e*SN **S** 07 49 39.8 -4.9
MQZ ScP **ScP** 07 53 01.1 +1.0
RPZ Rata Peaks 21.20 198 P **P** 07 46 29.7 -1.0
comp=Z,625nm,0.5s,baz=2.5,slow=1.8,SNR=145
RPZ S **S** 07 49 48.3 -3.2
comp=Z,348nm,0.8s,baz=246,slow=12,SNR=5.9
RPZ ScS **ScS** 07 56 45.5 -0.1
comp=Z,114nm,1.1s,baz=110,slow=21,SNR=7.0
RPZ Rata Peaks 21.20 198 *e*P **P** 07 46 30.2 -0.5
comp=Z,866nm,0.8s
RPZ S **S** 07 49 48.3 -3.2
RPZ ScS **ScS** 07 56 45.5 -0.1
RPZ Rata Peaks 21.20 198 ScP **ScP** 07 53 01.2 0.0
FOZ Fox Glacier 21.41 200 *e*P **P** 07 46 31.6 -0.9
comp=Z,2µm,1.5s
FOZ Fox Glacier 21.41 200 ScP **ScP** 07 53 01.7 +0.1
LBZ Lake Benmore 22.07 199 *e*P **P** 07 46 36.6 -1.9
comp=Z,790nm,1.6s
LBZ Lake Benmore 22.07 199 *e*PN **P** 07 46 36.4 -2.0
JCZ Jackson Bay 22.23 201 ScP **ScP** 07 53 05.8 +1.9
ODZ Otahua Downs 22.54 197 *e*P **P** 07 46 42.0 -0.7
comp=Z,250nm,1.0s
WKZ Wanaka 22.82 200 *e*P **P** 07 46 44.0 -1.3
comp=Z,340nm,0.7s
EAZ Earnscleugh 23.10 199 *e*PN **P** 07 46 46.2 -1.5
MLZ Mavora Lakes 23.59 201 *e*P **P** 07 46 52.2 +0.1
comp=Z,439nm,0.8s
TUZ Tuapeka 23.66 198 *e*PN **P** 07 46 52.1 -0.5
HNR Honiara 23.72 304 P **P** 07 46 53.1 -0.6
comp=Z,2µm,0.8s,baz=3.9,slow=6.4,SNR=31
HNR S **S** 07 50 29.9 -2.1
comp=Z,155nm,0.9s,baz=324,slow=16,SNR=1.9
HNR Honiara 23.72 304 *e*P **P** 07 46 52.0 -1.6
HNR *e*S S 07 50 11.0 -21
HNR Honiara 23.72 304 *e*P **P** 07 46 53.4 -0.3
HNR S **S** 07 50 29.9 -2.1
HNR pmax pmax
comp=Z,3µm,1.2s
HNR Honiara 23.72 304 *e*P **P** 07 46 53.4 -0.3
comp=Z,3µm,1.2s
HNR S **S** 07 50 29.9 -2.1
DCZ Deep Cove 24.00 202 *e*P **P** 07 46 56.0 +0.4
comp=Z,389nm,0.9s
WHZ Wether Hill Ro 24.11 201 *e*P **P** 07 46 56.6 -0.1
comp=Z,711nm,0.7s
SYZ Scrubby Hill 24.33 198 *e*PN **P** 07 46 58.0 -0.5
APZ The Paps 24.94 200 *e*PN **P** 07 47 03.8 -0.2
TARA Tarawa 25.82 344 *e*P **P** 07 47 11.7 -0.5
comp=Z,14µm,0.9s
ARMA Armidale 25.93 249 P **P** 07 47 15.0 +1.8
baz=26,SNR=212
ARMA Armidale 25.93 249 *e*P **P** 07 47 15.3 +2.1
comp=Z,304nm,0.6s
EIDS Eidsvold 26.18 260 P **P** 07 47 16.1 +0.8
baz=26,SNR=214
EIDS Eidsvold 26.18 260 *e*P **P** 07 47 16.7 +1.5
comp=Z,368nm,0.9s
MGCD Mangrove Creek 26.88 243 P **P** 07 47 23.3 +2.0
baz=27,SNR=199
TBI Tubuai 28.14 95 *e*P **P** 07 47 33.4 +0.9
comp=Z,4µm,1.4s
TBI *e*ScP **ScP** 07 53 22.7 +1.4
comp=Z,424nm,1.1s
RMQ Roma 28.23 258 P **P** 07 47 35.3 +2.0
baz=28,SNR=284
CNB Canberra Magne 28.80 239 P **P** 07 47 40.1 +1.9
baz=29,SNR=199
CAN Canberra 29.09 240 *e*P **P** 07 47 42.4 +1.7
CAN pmax pmax
comp=Z,376nm,0.7s
CAN Canberra 29.09 240 *e*P **P** 07 47 42.4 +1.7
comp=Z,376nm,0.7s
PAE Paea 29.21 84 *e*P **P** 07 47 42.2 +0.3
comp=Z,219nm,1.0s
PAE *e*ScP **ScP** 07 53 25.7 +0.9
comp=Z,18nm,0.9s
PPT2 Papeete2 29.24 84 *e*P **P** 07 47 42.7 +0.5
comp=Z,1µm,1.3s
PPT2 *e*ScP **ScP** 07 53 25.9 +0.9
comp=Z,183nm,1.1s
PPT Papeete 29.24 84 P **P** 07 47 42.7 +0.5
comp=Z,650nm,0.8s,baz=244,slow=4.7,SNR=25
PPT S **S** 07 51 59.3 +1.0
comp=Z,57nm,0.6s,baz=120,slow=20,SNR=4.7
PPT ScP **ScP** 07 53 27.8 +2.9
comp=Z,193nm,0.9s,baz=324,slow=1.5,SNR=5.0
PPT Papeete 29.24 84 *e*P **P** 07 47 43.5 +1.3
PPT S **S** 07 51 59.3 +1.0
PPT Papeete 29.24 84 *e*P **P** 07 47 43.5 +1.3
PPT S **S** 07 51 59.3 +1.0
PPT ScP **ScP** 07 53 27.8 +2.9
YNG Young 29.33 242 P **P** 07 47 45.1 +2.4
baz=29,SNR=116
TIAR Tiarei 29.46 84 *e*P **P** 07 47 44.6 +0.5
comp=Z,688nm,1.1s
TIAR *e*ScP **ScP** 07 53 26.5 +0.9
comp=Z,28nm,0.9s
MILA Mila 29.46 236 P **P** 07 47 45.5 +1.6
baz=30,SNR=311
TVO Taravao 29.48 84 *e*P **P** 07 47 44.5 +0.2
comp=Z,311nm,0.9s
MEH Mehetia 30.53 85 *e*P **P** 07 47 53.4 +0.1
comp=Z,523nm,1.3s
CMSA Cobar Meteorol 31.13 248 P **P** 07 47 59.1 +0.8
baz=31,SNR=359
CTA Charters Tower 31.32 270 P **P** 07 48 00.9 +0.9
comp=Z,822nm,0.5s,baz=93,slow=11,SNR=898
CTA PcP **PcP** 07 50 38.6 +0.4
comp=Z,73nm,0.6s,baz=89,slow=4.5,SNR=3.8
CTA S **S** 07 52 30.0 -0.2
comp=Z,243nm,1.3s,baz=246,slow=18,SNR=12
CTA ScP **ScP** 07 53 34.9 +3.1
comp=Z,147nm,1.0s,baz=133,slow=2.5,SNR=9.2
CTAO Charters Tower 31.32 270 *e*P **P** 07 48 01.0 +0.9
CTAO pmax pmax
comp=Z,994nm,0.9s
CTAO Charters Tower 31.32 270 *e*P **P** 07 48 01.0 +0.9
comp=Z,994nm,0.9s
VAH Vaihoa 31.77 81 *e*P **P** 07 48 03.9 0.0
comp=Z,1µm,1.2s
VAH *e*ScP **ScP** 07 53 34.0 +0.7
comp=Z,238nm,1.2s
QLP Quilpie 32.28 257 P **P** 07 48 09.0 +0.9
baz=32,SNR=88
TOO Toolangi 32.41 237 P **P** 07 48 10.3 +1.1
baz=32,SNR=255
MOO Moorlands 32.83 227 P **P** 07 48 14.0 +1.4
baz=33,SNR=27
TAU Tasmania Unive 32.94 227 *e*P **P** 07 48 14.9 +1.4
TAU pmax pmax
comp=Z,280nm,0.6s
TAU Tasmania Unive 32.94 227 *e*P **P** 07 48 15.2 +1.7
comp=Z,280nm,0.6s
RABL Rabaul 33.01 302 *e*P **P** 07 48 14.6 +0.1
comp=Z,698nm,0.6s
MTSU Mount Surprise 33.57 273 P **P** 07 48 19.9 +0.7
baz=34,SNR=508
XMAS Kiritimati 33.84 44 *e*P **P** 07 48 21.7 +0.2
comp=Z,2µm,0.8s
PMG Port Moresby 34.29 289 P **P** 07 48 25.6 +0.3
comp=Z,2µm,0.8s,baz=105,slow=5.4,SNR=89
PMG S **S** 07 53 15.0 -0.4
comp=Z,49nm,0.8s,baz=261,slow=19,SNR=8.1
PMG ScP **ScP** 07 53 45.0 +2.8
comp=Z,231nm,1.2s,baz=26,slow=6.7,SNR=5.9
PMG Port Moresby 34.29 289 *i*P **P** 07 48 25.3 0.0
PMG pmax pmax
comp=Z,7µm,0.8s
PMG Port Moresby 34.29 289 *e*P **P** 07 48 25.6 +0.3
comp=Z,2µm,0.8s
PMG S **S** 07 53 15.0 -0.4
PMG ScP **ScP** 07 53 45.0 +2.8
MCQ Macquarie Isla 34.46 202 P **P** 07 48 27.4 +1.3
baz=35,SNR=4.9
MCQ Macquarie Isla 34.46 202 *e*P **P** 07 48 28.2 +2.1
MCQ pmax pmax
comp=Z,754nm,1.4s
MCQ Macquarie Isla 34.46 202 *e*P **P** 07 48 28.2 +2.1
comp=Z,754nm,1.4s
KWAJ Kwajalein Atol 34.47 338 *i*P **P** 07 48 27.4 +0.7
KWAJ Kwajalein Atol 34.47 338 *e*P **P** 07 48 26.9 +0.2
comp=Z,3µm,0.9s
STKA Stephens Creek 34.64 248 P **P** 07 48 29.1 +1.0
comp=Z,139nm,0.6s,baz=92,slow=10,SNR=260
STKA PcP **PcP** 07 50 48.5 +0.9
comp=Z,77nm,0.5s,baz=107,slow=5.0,SNR=5.0
STKA S **S** 07 53 19.6 -0.8
comp=Z,17nm,0.7s,baz=248,slow=18,SNR=1.8
STKA ScP **ScP** 07 53 45.9 +2.7
comp=Z,105nm,1.0s,baz=73,slow=3.7,SNR=6.6
STKA Stephens Creek 34.64 248 P **P** 07 48 28.9 +0.8
baz=35,SNR=262
STKA Stephens Creek 34.64 248 *e*P **P** 07 48 29.0 +1.0
comp=Z,65nm,0.9s
STKA PcP **PcP** 07 50 48.5 +0.9
STKA S **S** 07 53 19.6 -0.8
STKA ScP **ScP** 07 53 45.9 +2.7
ARPS Mount Arapiles 35.07 239 P **P** 07 48 32.4 +0.9
baz=35,SNR=111
COEN Coen 35.93 279 P **P** 07 48 39.9 +0.9
baz=36,SNR=169
COEN Coen 35.93 279 *e*P **P** 07 48 40.0 +0.9
comp=Z,239nm,0.8s
PATS Pohnpei 36.94 323 P **P** 07 48 47.3 0.0
baz=37,SNR=128
PATS Pohnpei 36.94 323 *e*P **P** 07 48 47.2 -0.1
comp=Z,1µm,0.9s
HTT Hallett 37.00 245 P **P** 07 48 48.0 +0.3
baz=37,SNR=294
QIS Mount Isa 37.30 267 P **P** 07 48 50.3 0.0
baz=37,SNR=76
MANU Manus Island 38.10 300 *e*P **P** 07 48 56.3 -0.5
comp=Z,599nm,0.9s
BBOO Buckleboo 39.36 247 P **P** 07 49 06.5 -0.3
baz=39,SNR=541
BBOO Buckleboo 39.36 247 *e*P **P** 07 49 06.8 -0.1
comp=Z,374nm,0.8s
TAOE Nuku Hiva Isla 41.00 76 *e*P **P** 07 49 20.4 +0.1
comp=Z,3µm,1.1s
TAOE Nuku Hiva Isla 41.00 76 *e*P **P** 07 49 21.0 +0.7
comp=Z,1µm,0.8s
RKT Rikitea 41.35 99 *e*P **P** 07 49 23.9 +1.1
comp=Z,1µm,1.4s
JOHN Johnston Islan 41.54 15 *e*P **P** 07 49 24.5 +0.2
comp=Z,2µm,0.9s
AS01 Alice Springs 41.86 260 *e*P **P** 07 49 27.4 +0.4
AS31 Alice Springs 41.90 260 *e*P **P** 07 49 27.6 +0.3
comp=Z,109nm,0.6s
ASAR Alice Springs 41.91 260 P **P** 07 49 28.2 +0.9
comp=Z,400nm,0.7s,baz=98,slow=7.4,SNR=1295
ASAR pP **pP** 07 51 00.8 -0.7
comp=Z,114nm,0.9s,baz=88,slow=8.4,SNR=2.7
ASAR ScP **ScP** 07 54 14.2 +2.8
comp=Z,265nm,1.0s,baz=111,slow=3.9,SNR=15
ASAR S **S** 07 55 03.3 -4.5
comp=Z,28nm,0.9s,baz=102,slow=13,SNR=2.6
ASAR ScS **ScS** 07 58 32.0 +0.9
comp=Z,87nm,1.2s,baz=105,slow=6.6,SNR=5.5
ASAR P3KPbc 08 18 41.4
comp=Z,1.6nm,0.6s,baz=282,slow=4.0,SNR=17
WB2 Warramunga Arr 42.25 266 *e*P **P** 07 49 30.1 0.0
WRAB Tennant Creek 42.25 266 *e*P **P** 07 49 29.5 -0.5
WRAB pmax pmax
comp=Z,379nm,0.8s
WRAB Tennant Creek 42.25 266 *e*P **P** 07 49 29.5 -0.5
comp=Z,379nm,0.8s
WRA Warramunga Arr 42.26 266 P **P** 07 49 30.2 +0.1
comp=Z,178nm,0.3s,baz=92,slow=8.4,SNR=1631
WRA pP **pP** 07 51 03.5 -1.1
comp=Z,69nm,0.8s,baz=103,slow=7.1,SNR=2.2
WRA ScP **ScP** 07 54 16.1 +3.3
comp=Z,200nm,1.1s,baz=99,slow=4.2,SNR=12
WRA S **S** 07 55 10.1 -2.8
comp=Z,91nm,0.9s,baz=100,slow=14,SNR=14
WRA P3KPbc 08 18 41.1
comp=Z,2.5nm,0.7s,baz=310,slow=2.8,SNR=24
WRA PKP2ab 08 22 35.7
comp=Z,3.7nm,1.2s,baz=288,slow=3.3,SNR=4.6
JAY Jayapura 43.30 293 P **P** 07 49 38.1 -0.2
comp=Z,46nm,0.7s,baz=279,slow=23,SNR=29
JAY PcP **pP** 07 51 14.2 +0.7
comp=Z,22nm,0.9s,baz=275,slow=23,SNR=4.0
JAY ScP **ScP** 07 54 19.3 +2.2
comp=Z,4.4nm,0.8s,baz=270,slow=20,SNR=4.4
JAY S **S** 07 55 25.7 -2.3
comp=Z,0.8nm,0.4s,baz=270,slow=20,SNR=2.9
JAY Jayapura 43.30 293 P **P** 07 49 37.1 -1.3
comp=Z,751nm,1.0s,comp=Z,9µm
GENI Genyem 43.71 293 P **P** 07 49 40.9 -0.6
comp=Z,2µm,0.9s,comp=Z,18µm
H11S2 WAKE ISLAND Hy 43.87 342 P **P** 07 49 42.5 +0.2
baz=159,slow=5.6,SNR=34
H11S3 WAKE ISLAND Hy 43.88 342 P **P** 07 49 42.9 +0.4
baz=159,slow=5.6,SNR=21
H11S1 WAKE ISLAND Hy 43.89 342 P **P** 07 49 43.0 +0.5
baz=159,slow=5.6,SNR=22
WAKE Wake Island 44.64 342 *e*P **P** 07 49 48.5 0.0
comp=Z,2µm,0.9s
H11N3 WAKE ISLAND Hy 44.98 343 P **P** 07 49 51.0 +0.1
baz=189,slow=11,SNR=224
H11N1 WAKE ISLAND Hy 44.98 343 P **P** 07 49 50.9 0.0
baz=189,slow=11,SNR=198
H11N2 WAKE ISLAND Hy 45.00 343 P **P** 07 49 50.8 -0.2
baz=189,slow=11,SNR=80
PTCN Pitcairn Islan 45.41 102 *e*P **P** 07 49 55.2 +0.7
comp=Z,13µm,1.9s
KDU Kakadu 46.11 275 P **P** 07 49 59.5 -0.4
baz=46,SNR=54
FORT Forrest 46.22 249 P **P** 07 50 00.1 -0.5
baz=46,SNR=786
FORT Forrest 46.22 249 *e*P **P** 07 50 00.3 -0.3
comp=Z,18µm,0.6s
WRKA Warakurna 46.72 257 P **P** 07 50 04.1 -0.4
baz=47,SNR=613
MTN Manton Dam 47.28 274 P **P** 07 50 08.2 -0.6
baz=47,SNR=140
MTN Manton Dam 47.28 274 *e*P **P** 07 50 08.2 -0.6
comp=Z,264nm,0.6s
KNRA Kununurra 48.53 270 P **P** 07 50 18.0 -0.1
baz=48,SNR=162
SAUI Saumlaki 48.98 280 P **P** 07 50 21.2 -0.3
SAUI Saumlaki 48.98 280 *e*P **P** 07 50 23.3 +1.8
comp=Z,687nm,0.8s
KKH Kailua Kona 49.14 31 *e*P **P** 07 50 23.9 +1.5
KKH Kailua Kona 49.14 31 *e*P **P** 07 50 23.9 +1.5
MLOA Mauna Loa Obse 49.24 31 *e*P **P** 07 50 24.3 +0.6
UWE Uwekahuna 49.28 32 *e*P **P** 07 50 24.5 +0.9
comp=Z,1µm,1.1s
POHA Pohakuloa 49.45 31 *e*P **P** 07 50 26.3 +1.2
comp=Z,782nm,0.8s
KEKH Kekaha 49.61 25 *e*P **P** 07 50 26.7 +0.8
comp=Z,2µm,1.0s
HPAH Hawaii Prepara 49.61 31 *e*P **P** 07 50 26.5 +0.5
comp=Z,3µm,0.8s
MHA Mahukona 49.65 30 *e*P **P** 07 50 27.3 +1.1
MHA Mahukona 49.65 30 *e*P **P** 07 50 27.2 +1.1
HON Honolulu 49.71 27 *e*P **P** 07 50 27.6 +0.9
HON Honolulu 49.71 27 *e*P **P** 07 50 27.6 +0.9
KIP Kipapa 49.80 27 *d*/*e*P **P** 07 50 27.1 -0.2
KIP pmax pmax
comp=Z,5µm,1.1s
KIP Kipapa 49.80 27 *e*P **P** 07 50 27.9 +0.6
comp=Z,699nm,1.0s
HLK Haleakala 49.98 30 *e*P **P** 07 50 29.8 +0.8
comp=Z,2µm,1.0s
OPA Opana 50.03 27 *e*P **P** 07 50 29.8 +0.8
OPA pmax pmax
comp=Z,1µm,0.8s
OPA Opana 50.03 27 *e*P **P** 07 50 29.8 +0.8
comp=Z,1µm,0.8s
FAKI Fak Fak 50.38 287 P **P** 07 50 30.9 -0.9
FAKI Fak Fak 50.38 287 *e*P **P** 07 50 31.4 -0.4
comp=Z,1µm,1.9s
GUMO Guam 50.44 314 P **P** 07 50 32.0 -0.1
comp=Z,2µm,0.8s,baz=169,slow=9.0,SNR=65
GUMO ScP **ScP** 07 54 49.5 +2.4
GUMO S **S** 07 57 07.7 +0.9
GUMO S **S** 07 57 09.7 +0.9
comp=Z,548nm,1.1s,baz=172,slow=4.8,SNR=6.6
GUMO Guam 50.44 314 *e*P **P** 07 50 31.8 -0.3
comp=Z,87nm,1.1s,baz=311,slow=19,SNR=6.5
GUMO ScP **ScP** 07 54 49.5 +2.4
comp=Z,2µm,0.9s
FITZ Fitzroy Crossi 50.68 266 P **P** 07 50 34.6 +0.6
comp=Z,361nm,0.8s
FITZ pP **pP** 07 52 12.6 -0.7
comp=Z,290nm,1.1s,baz=112,slow=10.0,SNR=3.9
FITZ ScP **ScP** 07 54 50.3 +2.0
comp=Z,120nm,1.2s,baz=98,slow=6.2,SNR=5.8
FITZ S **S** 07 57 09.4 -0.8
comp=Z,21nm,1.0s,baz=238,slow=19,SNR=7.0
FITZ Fitzroy Crossi 50.68 266 P **P** 07 50 34.3 +0.4
baz=51,SNR=396
FITZ Fitzroy Crossi 50.68 266 *e*P **P** 07 50 34.9 +0.9
comp=Z,327nm,0.8s
FITZ pP **pP** 07 52 12.6 -0.7
FITZ ScP **ScP** 07 54 50.3 +2.0
FITZ S **S** 07 57 09.4 -0.8
KMBL Kambalda 51.44 248 P **P** 07 50 38.9 -0.4
baz=52,SNR=36
MIDW Midway 51.71 3 *e*P **P** 07 50 41.2 +0.1
comp=Z,1µm,0.7s
BNDI Bandanaira 51.71 284 P **P** 07 50 41.3 -0.2
ANA2 Anatahan 51.93 317 *e*P **P** 07 50 42.6 -0.3
SARN Sarigan 52.16 317 *e*P **P** 07 50 44.1 -0.5
SIJI Sorong 52.23 289 P **P** 07 50 45.1 -0.1
comp=Z,44nm,0.4s,baz=267,slow=24,SNR=11
SWI Sorong 52.24 289 P **P** 07 50 44.6 -0.7
MSAI Masohi 53.11 284 P **P** 07 50 50.5 -1.0
VNDA Vanda 54.54 185 P **P** 07 51 02.1 +1.5
comp=Z,87nm,0.7s,baz=1.8,slow=8.0,SNR=279
VNDA PcP **PcP** 07 51 55.6 -0.2
comp=Z,51nm,0.6s,baz=0.3,slow=6.2,SNR=5.7
VNDA ScP **ScP** 07 55 05.0 +1.0
comp=Z,31nm,0.7s,baz=357,slow=4.0,SNR=6.3
VNDA S **S** 07 58 01.3 +1.6
comp=Z,4.5nm,0.8s,baz=239,slow=18,SNR=4.4
VNDA Vanda 54.54 185 *e*P **P** 07 51 02.6 +2.0
comp=Z,1µm,1.9s
VNDA PcP **PcP** 07 51 55.6 -0.2
VNDA ScP **ScP** 07 55 05.0 +1.0
VNDA S **S** 07 58 01.3 +1.6
SBA Scott Base 54.54 183 *e*P **P** 07 51 03.5 +2.9
SBA pmax pmax
comp=Z,632nm,0.9s
SBA Scott Base 54.54 183 *e*P **P** 07 51 03.5 +2.9
comp=Z,632nm,0.9s
SOEI Soe 54.67 275 P **P** 07 51 03.2 +0.5
SOEI Soe 54.67 275 *e*P **P** 07 51 04.2 +1.5
comp=Z,1µm,0.9s
KLBR Kellerberrin 54.91 247 P **P** 07 51 03.6 -0.4
baz=55,SNR=160
MEEK Meekatharra 55.01 253 P **P** 07 51 04.2 -0.6
baz=55,SNR=121
NWAO Narrogin (SRO) 55.16 245 P **P** 07 51 05.6 -0.1
comp=Z,90nm,0.5s,baz=342,slow=6.8,SNR=122
NWAO pP **pP** 07 52 46.3 -1.2
comp=Z,102nm,1.1s,baz=319,slow=7.5,SNR=2.4
NWAO S **S** 07 58 07.8 -1.5
comp=Z,15nm,0.8s,baz=131,slow=13,SNR=1.6
NWAO Narrogin (SRO) 55.16 245 P **P** 07 51 05.6 -0.1
baz=55,SNR=107
NWAO P **P** 07 51 05.6 -0.1
baz=55,SNR=107
NWAO Narrogin (SRO) 55.16 245 *e*P **P** 07 51 05.6 -0.1
NWAO *PP **pP** 07 52 46.3 -1.2
NWAO S **S** 07 58 07.8 -1.5
NWAO pmax pmax
comp=Z,287nm,1.1s
NWAO Narrogin (SRO) 55.16 245 P **P** 07 51 06.2 +0.4
SNR=5.0
NWAO Narrogin (SRO) 55.16 245 *e*P **P** 07 51 05.6 -0.1
comp=Z,287nm,1.1s
NWAO pP **pP** 07 52 46.3 -1.2
NWAO S **S** 07 58 07.8 -1.5
RKGY Rocky Gully 55.17 243 P **P** 07 51 05.8 +0.1
baz=55,SNR=123
MBWA Marble Bar 55.24 260 P **P** 07 51 06.3 -0.2
SNR=26
MBWA Marble Bar 55.24 260 *e*P **P** 07 51 05.9 -0.5
comp=Z,523nm,1.0s
LBMI Labuha 55.63 286 P **P** 07 51 08.9 -0.4

BLDU	**Ballidu**		55.94	248	P		P	07 51 10.7	-0.5	
	baz=56,SNR=375									
SANI	**Sanana**		56.31	284	P		P	07 51 13.5	-0.5	
MORW	**Morawa**		56.78	250	P		P	07 51 16.7	-0.3	
	baz=57,SNR=275									
MMRI	**Maumere**		56.95	275	P		P	07 51 16.3	-2.1	
MMRI	**Maumere**		56.95	275	*e*P		P	07 51 17.9	-0.5	
	comp=Z,457nm,0.6s									
H01W1	**Cape Leeuwin H**		57.44	243	P		P	07 51 22.1	+0.9	
	baz=110,slow=6.9,SNR=11									
H01W2	**Cape Leeuwin H**		57.45	243	P		P	07 51 22.1	+0.9	
	baz=110,slow=6.9,SNR=6.4									
H01W3	**Cape Leeuwin H**		57.45	243	P		P	07 51 22.2	+0.9	
	baz=110,slow=6.9,SNR=8.7									
BASI	**Baing, Sumba**		57.87	273	P		P	07 51 26.1	+1.4	
WSI	**Waingapu**		58.33	273	P		P	07 51 28.0	+0.2	
	comp=Z,2µm,0.6s									
LUWI	**Luwuk**		59.63	283	*e*P		P	07 51 37.0	+0.5	
	comp=Z,941nm,1.2s									
GIRL	**Giralia**		59.80	257	P		P	07 51 38.4	+0.9	
	baz=60,SNR=121									
CASY	**Casey**		60.20	206	*e*P		P	07 51 39.3	-0.1	
	comp=Z,40nm,0.6s									
KAPI	**Kappang**		60.65	278	P		P	07 51 43.2	-0.1	
	comp=Z,64nm,0.6s,baz=157,slow=3.7,SNR=36									
KAPI					pP		pP	07 53 26.6	-1.2	
	comp=Z,78nm,1.2s,baz=257,slow=2.3,SNR=2.4									
KAPI					S		S	07 59 17.9	-1.7	
	comp=Z,6.2nm,0.4s,baz=345,slow=12,SNR=8.5									
KAPI	**Kappang**		60.65	278	*e*P		P	07 51 43.4	+0.2	
	comp=Z,2µm,2.0s									
KAPI					pP		pP	07 53 26.6	-1.2	
KAPI					S		S	07 59 17.9	-1.7	
PLAI	**Plampang**		60.95	273	P		P	07 51 43.7	-1.6	
	comp=Z,1µm,0.8s,comp=Z,16µm									
TWSI	**Taliwang, Sumb**		61.80	273	P		P	07 51 49.7	-1.1	
	comp=Z,399nm,0.9s,comp=Z,6µm									
CTBH	**Cotabato--PC H**		62.35	292	⇑*i*P		P	07 51 54.6	+0.2	
CGP	**Cagayan de Oro**		62.62	294	⇓*e*P		P	07 51 56.4	+0.3	
RPN	**Rapa Nui**		63.29	110	*e*P		P	07 52 02.3	+2.1	
RPN					pmax		pmax			
	comp=Z,8µm,2.0s									
RPN	**Rapa Nui**		63.29	110	*e*P		P	07 52 02.3	+2.1	
	comp=Z,8µm,2.0s									
IGBI	**Denpasar**		63.36	272	P		P	07 51 59.8	-1.1	
	comp=Z,804nm,0.6s,comp=Z,15µm									
SRBI	**Singaraja**		63.58	273	P		P	07 52 00.3	-2.0	
	comp=Z,530nm,1.5s,comp=Z,11µm									
PLP	**Palo**		63.84	297	⇓*e*P		P	07 52 02.6	-1.3	
LLP	**Lapu-Lapu**		64.22	295	⇑*e*P		P	07 52 05.5	-0.9	
LLP					*e*S		S	08 00 03.3	+0.1	
JAGI	**Jajag, Banyuwa**		64.40	272	P		P	07 52 06.3	-1.3	
	comp=Z,460nm,1.7s,comp=Z,8µm									
JAGI	**Jajag, Banyuwa**		64.40	272	*e*P		P	07 52 06.5	-1.0	
	comp=Z,349nm,0.9s									
ABJI	**Asem Bagus**		64.58	273	P		P	07 52 07.9	-0.8	
GMJI	**Gumukmas**		65.13	272	P		P	07 52 11.1	-1.0	
	comp=Z,284nm,0.7s,comp=Z,8µm									
RCP	**Roxas**		65.89	296	⇓*e*P		P	07 52 16.1	-0.7	
MYLDM	**Lahad Datu**		66.29	287	*e*P		P	07 52 21.1	+1.7	
	comp=Z,863nm,1.7s									
TSM	**Tawau**		66.42	286	⇑P		P	07 52 21.9	+1.6	
GRJI	**Gresik**		66.53	273	P		P	07 52 20.5	-0.4	
PWJI	**Pagerwojo**		66.72	271	P		P	07 52 22.4	+0.3	
	comp=Z,612nm,0.7s,comp=Z,8µm									
MIR	**Mirnyy**		67.22	206	⇓*i*P		P	07 52 25.0	+0.8	
MIR					*i*			07 55 06.0		
MIR					*i* S		S	08 00 36.0	-1.3	
MIR					pmax		pmax			
	comp=Z,6µm,8.0s									
MIR					smax		smax			
	comp=E,11µm,11.0s									
PCJI	**Pacitan**		67.23	271	P		P	07 52 25.4	+0.2	
	comp=E,1µm,0.6s,comp=E,15µm									
NGJI	**Ngawi**		67.29	272	P		P	07 52 25.6	0.0	
SDKM	**Sandakan**		67.65	287	⇑P		P	07 52 29.0	+1.1	
UGM	**Wanagama**		67.94	271	P		P	07 52 29.0	-0.6	
	comp=E,571nm,0.7s,comp=E,9µm									
UGM	**Wanagama**		67.94	271	*e*P		P	07 52 29.5	-0.1	
	comp=E,455nm,0.9s									
JHJ2	**Mitsune**		68.19	324	*e*P		P	07 52 31.1	+0.5	
	comp=E,1µm,0.8s									
JHJ	**Hachijo jima 2**		68.21	324	P		P	07 52 30.9	+0.2	
	comp=E,1µm,0.7s,baz=186,slow=10,SNR=45									
JHJ					S		S	08 00 49.0	-0.7	
	comp=E,51nm,0.7s,baz=49,slow=16,SNR=1.8									
KKM	**Kota Kinabalu**		68.70	287	⇓P		P	07 52 35.2	+0.9	
KKM	**Kota Kinabalu**		68.70	287	*e*P		P	07 52 34.2	-0.1	
	comp=E,247nm,0.8s									
KKM					*e*pP		pP	07 54 23.5	+1.1	
TGY	**Tagaytay City**		68.74	297	P		P	07 52 34.1	-0.3	
	comp=E,157nm,0.4s,baz=191,slow=6.1,SNR=7.3									
TGY					pP		pP	07 54 21.6	-0.9	
	comp=E,176nm,0.3s,baz=108,slow=19,SNR=2.6									
TGY					S		S	08 00 55.1	-1.6	
	comp=E,83nm,0.3s,baz=107,slow=20,SNR=2.2									
CMJI	**Cimerak**		69.89	270	P		P	07 52 40.4	-0.9	
BTM	**Bintulu**		70.18	283	⇑P		P	07 52 44.8	+1.8	
JCJI	**Jatiwangi**		70.55	271	P		P	07 52 44.4	-0.8	
	comp=E,1µm,0.9s,comp=E,14µm									
CISI	**Cisompet, Garu**		70.56	270	P		P	07 52 44.0	-1.4	
CISI	**Cisompet, Garu**		70.56	270	*e*P		P	07 52 44.5	-0.9	
	comp=E,424nm,0.7s									
CISI					*e*pP		pP	07 54 33.7	-0.5	
SBUM	**Sibu**		70.62	282	⇓P		P	07 52 46.9	+1.2	
SBUM	**Sibu**		70.62	282	*e*P		P	07 52 46.3	+0.7	
	comp=E,293nm,1.5s									
JOW	**Kunigami**		70.76	312	P		P	07 52 46.9	+0.7	
	comp=E,541nm,0.6s,baz=165,slow=6.0,SNR=89									
JOW					pP		pP	07 54 33.6	-1.6	
	comp=E,113nm,1.0s,baz=181,slow=8.6,SNR=4.9									
JOW					PP		PP	07 55 32.8	+0.4	
	baz=152,slow=7.7									
JOW	**Kunigami**		70.76	312	*e*P		P	07 52 46.9	+0.7	
	comp=E,1µm,1.1s									
JOW					*e*pP		pP	07 54 37.1	+2.0	
JOW					PP		PP	07 55 32.8	+0.4	
CNJI	**Cibinong**		71.28	270	P		P	07 52 48.2	-1.3	
INU	**Inuyama**		71.39	324	*e*P		P	07 52 50.2	+0.5	
	comp=E,644nm,1.1s									
XMIS	**Christmas Isla**		71.45	266	*e*P		P	07 52 50.8	+0.2	
	comp=E,360nm,0.8s									
MJAR	**Matsushiro Arr**		71.67	326	P		P	07 52 51.4	+0.1	
	comp=E,538nm,0.9s,baz=159,slow=5.9,SNR=69									
MJAR					pP		pP	07 54 38.9	-1.8	
	comp=E,3.5nm,0.6s,baz=178,slow=37,SNR=1.1									
MJAR					PKPPKP		P'P'df	08 20 31.0	-3.8	
	comp=E,19nm,1.1s,baz=321,slow=2.9,SNR=16									
MAJO	**Matsushiro**		71.67	326	*de*P		P	07 52 51.4	+0.1	
MAJO					pmax		pmax			
	comp=Z,4µm,1.0s									
MAJO	**Matsushiro**		71.67	326	*e*P		P	07 52 51.6	+0.3	
	comp=Z,706nm,0.9s									
MAT	**Matsushiro**		71.67	326	P		P	07 52 51.5	+0.2	
MAT					S		S	08 01 30.2	+1.1	
DBJI	**Dramaga**		71.91	271	P		P	07 52 51.7	-1.6	
	comp=Z,688nm,1.9s,comp=Z,13µm									
KSM	**Kuching**		71.92	280	⇑P		P	07 52 54.0	+0.8	
KSM	**Kuching**		71.92	280	*e*P		P	07 52 53.2	-0.1	
	comp=Z,362nm,0.9s									
SKJI	**Sukabumi**		71.92	270	P		P	07 52 52.6	-0.7	
	comp=Z,731nm,0.7s,comp=Z,7µm									
SBJI	**Serang**		72.65	271	P		P	07 52 58.3	+0.8	
	comp=Z,476nm,2.0s,comp=Z,13µm									
CGJI	**Cibinong**		72.86	270	P		P	07 52 57.6	-1.1	
	comp=Z,756nm,0.7s,comp=Z,9µm									
YOJ	**Yonaguni jima**		73.00	307	*e*P		P	07 52 59.5	+0.3	
YOJ					pmax		pmax			
	comp=Z,1µm,1.2s									
YOJ	**Yonaguni jima**		73.00	307	*e*P		P	07 52 59.5	+0.3	
	comp=Z,1µm,1.2s									
JNU	**Nakatsue**		73.29	319	P		P	07 53 01.4	+0.5	
	comp=Z,245nm,0.9s,baz=96,slow=4.6,SNR=83									
JNU					S		S	08 01 48.3	+1.0	
	comp=Z,28nm,1.1s,baz=294,slow=19,SNR=13									
JNU					PKPPKP		P'P'df	08 20 26.1	-6.4	
	comp=Z,3.9nm,0.8s,baz=30,slow=5.0,SNR=6.4									
JNU	**Nakatsue**		73.29	319	*e*P		P	07 53 01.7	+0.9	
	comp=Z,427nm,1.1s									
JNU					S		S	08 01 48.3	+1.0	
JNU					P'P'			08 20 26.1		
TWG	**Pinlang**		73.48	305	*e*P		P	07 53 00.8	-1.2	
	comp=Z,758nm,0.7s									
YULB	**Yu-li**		73.64	305	*e*P		P	07 53 01.8	-1.2	
	comp=Z,102nm,1.0s									
ERM	**Erimo**		73.68	332	*e*P		P	07 53 04.8	+2.1	
ERM					pmax		pmax			
	comp=Z,467nm,1.0s									
ERM	**Erimo**		73.68	332	*e*P		P	07 53 04.8	+2.1	
	comp=Z,467nm,1.0s									
NACB	**Ninganchiao**		73.87	306	*e*P		P	07 53 04.1	-0.1	
	comp=Z,1µm,1.3s									
NACB					*e*pP		pP	07 54 54.5	0.0	
TPUB	**Ta-pu**		74.09	305	*e*P		P	07 53 04.3	-1.2	
	comp=Z,400nm,0.9s									
SSLB	**Suanglung**		74.13	305	*e*P		P	07 53 04.8	-0.9	
	comp=E,361nm,1.0s									
KLI	**Kotabumi**		74.30	272	P		P	07 53 06.9	-0.1	
	comp=Z,373nm,0.7s,comp=Z,7µm									
YHNB	**Yeheng**		74.33	306	*e*P		P	07 53 06.8	0.0	
	comp=Z,1µm,1.5s									
KASI	**Kota Agung**		74.38	271	P		P	07 53 06.4	-1.0	
	comp=Z,384nm,0.7s,comp=Z,7µm									
TATO	**Taipei**		74.42	307	P		P	07 53 07.4	+0.1	
	SNR=18									
TATO	**Taipei**		74.42	307	*e*P		P	07 53 07.4	+0.1	
	comp=Z,1µm,1.2s									
TATO					*e*pP		pP	07 54 58.5	+0.8	
KLSI			74.49	272	P		P	07 53 06.9	-1.1	
KUR	**Kuril'sk**		74.56	337	*d*iP		P	07 53 01.2	-6.4	
KUR					*e*			07 54 52.3		
KUR					*i* S		S	08 01 56.1	-4.4	
KUR					pmax		pmax			
	comp=Z,601nm,1.7s									
KUR					pmax		pmax			
	comp=Z,3µm,6.0s									
KUR					MLR		MLR			
	comp=N,4µm,20.0s									
KUR					MLR		MLR			
	comp=E,2µm,20.0s									
KUR					MLR		MLR			
	comp=Z,5µm,20.0s									
ASAJ	**Asahikawa**		75.64	333	P		P	07 53 15.8	+2.1	
	baz=90,slow=20									
ASAJ	**Asahikawa**		75.64	333	*e*P		P	07 53 13.3	-0.4	
	comp=Z,1µm,1.2s									
MNAI	**Manna**		76.24	271	*e*P		P	07 53 18.2	+0.5	
	comp=Z,475nm,0.9s									
SMY	**Shemya**		76.30	356	*e*P		P	07 53 17.2	+0.1	
SMY					*e**PP		pP	07 55 08.8	+0.5	
SMY					pmax		pmax			
	comp=Z,2µm,1.5s									
SMY	**Shemya**		76.30	356	*e*P		P	07 53 17.2	+0.1	
	comp=Z,2µm,1.5s									
SMY					*e*pP		pP	07 55 08.8	+0.5	
QZH	**Quanzhou**		76.55	305	⇑*i*P		P	07 53 19.5	+0.3	
QZH					sP		sP	07 56 05.0	+0.6	
QZH					S		S	08 02 19.0	-3.9	
QZH					pmax		pmax			
	comp=Z,920nm,1.3s									
QZH					pmax		pmax			
	comp=Z,7µm,4.7s									
SKR	**Severo-Kuril's**		76.99	345	*e*P		P	07 53 21.1	+0.1	
SKR					*e*			07 53 27.4		
SKR					*e*			07 55 09.5		
SKR					*e*PPP		PPP	07 56 10.2		
SKR					*i* S		S	08 02 27.5	+1.1	
SKR					pmax		pmax			
	comp=Z,3µm,2.9s									
SKR					pmax		pmax			
	comp=Z,756nm,1.1s									
NIKH	**Nikolski High**		77.01	7	*e*P		P	07 53 20.6	-0.4	
	comp=Z,2µm,0.7s									
MAW	**Mawson**		77.85	200	P		P	07 53 26.8	+1.3	
	comp=Z,245nm,0.7s,baz=129,slow=6.5,SNR=732									
MAW					S		S	08 02 35.3	+0.1	
	comp=Z,9.4nm,0.9s,baz=303,slow=19,SNR=2.9									
MAW	**Mawson**		77.85	200	P		P	07 53 26.3	+0.8	
	baz=78,SNR=477									
MYKOM	**Kota Tinggi**		77.90	277	⇓P		P	07 53 28.1	+1.3	
MYKOM	**Kota Tinggi**		77.90	277	*e*P		P	07 53 27.2	+0.4	
	comp=Z,232nm,0.7s									
YSS	**Yuzh-Sakhalins**		77.91	335	*α i*P		P	07 53 28.1	+2.0	
YSS					*e**PP		pP	07 55 17.8	0.0	
YSS					*e*			07 56 35.7		
YSS					*i* S		S	08 02 41.0	+4.7	
YSS					*e*SS		SS	08 07 58.3	+5.7	
YSS					pmax		pmax			
	comp=Z,4µm,3.0s									
YSS					pmax		pmax			
	comp=N,820nm,1.2s									
YSS					smax		smax			
	comp=N,29µm,5.0s									
YSS	**Yuzh-Sakhalins**		77.91	335	*e*P		P	07 53 28.0	+2.0	
	comp=N,1µm,1.0s									
KSRS	**Korea Array**		78.01	320	P		P	07 53 27.9	+1.0	
	comp=N,238nm,1.0s,baz=140,slow=5.9,SNR=136									
KSRS					pP		pP	07 55 17.2	-1.4	
	comp=N,32nm,1.0s,baz=136,slow=5.5,SNR=4.1									
KSRS					PP		PP	07 56 30.9	-1.8	
	comp=N,23nm,0.9s,baz=134,slow=4.3,SNR=4.3									
KSRS					S		S	08 02 38.9	+1.1	
	comp=N,1.6nm,0.7s,baz=168,slow=8.6,SNR=3.0									
KS15	**Wonju Array Si**		78.03	320	*e*P		P	07 53 28.5	+1.6	
KSAR	**Wonju Array Be**		78.03	320	P		P	07 53 27.9	+1.0	
KSAR					*e*PP		pP	07 55 17.2	-1.5	
KSAR								07 56 31.0		
KSAR					S		S	08 02 38.9	+0.9	
KSAR	**Wonju Array Be**		78.03	320	P		P	07 53 27.9	+1.0	
KSAR					pP		pP	07 55 17.2	-1.5	
KSAR					PP		PP	07 56 30.9	-2.0	
KSAR					S		S	08 02 38.9	+0.9	
KS01	**Wonju Array Si**		78.05	320	*e*P		P	07 53 28.6	+1.6	
UNV	**Unalaska Valle**		78.15	8	*e*P		P	07 53 26.3	-0.8	
	comp=N,485nm,1.0s									
SSE	**Sheshan**		78.26	312	P		P	07 53 29.5	+1.2	
SSE					pP		pP	07 55 21.3	+1.1	
SSE					S		S	08 02 42.0	+1.4	
KGM	**Kluang**		78.48	277	⇓P		P	07 53 31.2	+1.3	
AKUT	**Akutan**		78.53	9	*e*P		P	07 53 28.5	-0.7	
	comp=N,812nm,1.5s									
PET	**Petropavlovsk**		78.62	347	*ce*P		P	07 53 30.0	+0.3	
PET					*e**PP		pP	07 55 20.0	-1.7	
PET					*e**SP		sP	07 56 17.5	+2.1	
PET					*i* S		S	08 02 42.9	-0.5	
PET					*e*			08 03 06.0		
PET					*e*SP		SPn	08 03 29.2	-0.5	
PET					pmax		pmax			
	comp=Z,2µm,8.8s									
PET					pmax		pmax			
	comp=Z,311nm,1.4s									
PET					pmax		pmax			
	comp=Z,1µm,15.2s									
PET	**Petropavlovsk**		78.62	347	*e*P		P	07 53 29.5	-0.2	
	comp=Z,485nm,1.3s									
INCN	**Inchon**		78.80	320	P		P	07 53 32.3	+1.2	
	SNR=39									
INCN	**Inchon**		78.80	320	*e*P		P	07 53 30.7	-0.4	
	comp=Z,635nm,1.2s									
COCO	**West Island**		78.85	262	*i* P		P	07 53 34.3	+2.4	
COCO	**West Island**		78.85	262	*e*P		P	07 53 33.9	+2.0	
	comp=Z,2µm,1.9s									
PEA0	**Petropavlovsk-**		78.90	347	*e*P		P	07 53 31.6	+0.4	
PEA0B	**Petropavlovsk-**		78.90	347	*e*P		P	07 53 31.2	0.0	
	comp=Z,1µm,1.2s									
PETK	**Petropavlovsk-**		78.90	347	P		P	07 53 31.4	+0.2	
	comp=Z,484nm,0.9s,baz=115,slow=6.2,SNR=167									
PETK					PKiKP		PKiKP	07 58 59.5	-0.7	
	comp=Z,6.7nm,0.6s,baz=100,slow=4.4,SNR=6.2									
PMSA	**Palmer Station**		79.13	157	P		P	07 53 33.5	+1.1	
	comp=Z,348nm,0.8s,baz=235,slow=5.4,SNR=87									
PMSA					S		S	08 02 51.0	+2.3	
	comp=Z,20nm,1.2s,baz=104,slow=19,SNR=27									
PMSA					PKKPbc		PKKPbc	08 12 19.0	-1.9	
	comp=Z,3.4nm,0.6s,baz=113,slow=2.1,SNR=4.2									
PMSA	**Palmer Station**		79.13	157	*e*P		P	07 53 33.4	+1.1	
	comp=Z,466nm,0.9s									
PMSA					S		S	08 02 51.0	+2.3	
PMSA					PKKPbc		PKKPbc	08 12 19.0	-1.9	
GZH	**Guangzhou**		79.59	301	P		P	07 53 36.3	+0.8	
GZH					pP		pP	07 55 29.8	+1.9	
GZH					sP		sP	07 56 27.3	+5.8	
GZH					S		S	08 02 55.0	+0.3	
GZH					sS		sS	08 06 20.3	+5.3	
GZH					pmax		pmax			
	comp=Z,3µm,3.5s									
H06S1	**SOCORRO T**		79.61	64	P		P	07 53 36.3	+0.6	
	SNR=16									
H06N1	**SOCORRO T-PHAS**		79.64	64	P		P	07 53 35.9	0.0	
H06E1	**SOCORRO T-PHAS**		79.66	64	P		P	07 53 36.6	+0.6	
	SNR=36									
MSHR	**Mys Shultsa**		79.79	326	*c i*P		P	07 53 37.4	+1.2	
VLA	**Vladivostok**		79.80	326	*c i*P		P	07 53 36.9	+0.7	
VLA					pmax		pmax			
	comp=Z,289nm,1.0s									
BKNI	**Bangkinang**		79.86	275	*e*P		P	07 53 38.5	+1.2	
	comp=Z,272nm,0.8s									
KTGM	**Kuala Trenggan**		80.03	280	⇑P		P	07 53 39.3	+1.2	
QIZ	**Qiongzhong**		80.38	296	P		P	07 53 40.0	+0.2	
QIZ					pP		pP	07 55 30.5	-1.9	
QIZ					sP		sP	07 56 26.3	+0.3	
QIZ					S		S	08 03 04.0	+0.9	
QIZ					SS		SS	08 08 32.8	+2.7	
QIZ					pmax		pmax			
	comp=Z,2µm,3.3s									
NJ2	**Nanjing**		80.43	311	*e*P		P	07 53 40.5	+0.7	
NJ2					pP		pP	07 55 33.5	+1.1	
NJ2					PP		PP	07 56 54.5	+1.8	
NJ2					S		S	08 03 04.5	+1.5	
NJ2					pmax		pmax			
	comp=Z,3µm,4.6s									
USRK	**Ussuriysk Ar.**		80.53	327	P		P	07 53 41.0	+1.0	
	comp=Z,490nm,1.1s,baz=128,slow=4.3,SNR=262									
USRK					pP		pP	07 55 30.9	-1.8	
	comp=Z,57nm,1.0s,baz=106,slow=3.7,SNR=3.6									
USRK					S		S	08 03 05.3	+1.8	
	comp=Z,0.9nm,0.5s,baz=175,slow=28,SNR=2.1									
USRK					PKKPbc		PKKPbc	08 12 15.1	-2.9	
	comp=Z,2.2nm,0.5s,baz=307,slow=3.5,SNR=5.8									
USRK					PKPPKP		P'P'df	08 20 20.5	+1.6	
	comp=Z,1.5nm,0.5s,baz=158,slow=0.8,SNR=5.2									
SDPT	**Sand Point**		80.54	11	*e*P		P	07 53 40.5	+0.7	
	comp=Z,1µm,1.4s									
SNCC	**San Nicolas Is**		80.91	48	P		P	07 53 43.7	+1.4	
	baz=234,SNR=9.5									
SNCC	**San Nicolas Is**		80.91	48	*e*P		P	07 53 43.8	+1.6	
	comp=Z,665nm,1.5s									
SPIA	**Saint Paul Isl**		81.02	5	*e*P		P	07 53 42.9	+0.6	
	comp=Z,1µm,1.1s									
TYV	**Tymovskoe**		81.18	337	*e*P		P	07 53 44.0	+0.8	
TYV					*e*			07 55 36.0		
TYV					*e*S		S	08 03 10.0	+0.2	
TYV					pmax		pmax			
	comp=N,2µm,4.0s									
TYV					pmax		pmax			
	comp=Z,1µm,1.2s									
TYV					smax		smax			
	comp=N,4µm,3.0s									
TYV					smax		smax			
	comp=N,35µm,9.0s									
SCZ2	**Santa Cruz Isl**		81.27	47	P		P	07 53 45.6	+1.4	
	baz=234,SNR=26									
SCI2	**San Clemente I**		81.42	48	P		P	07 53 46.2	+1.3	
	baz=234,SNR=31									
SBC	**Santa Barbara**		81.48	47	P		P	07 53 46.7	+1.6	
	baz=234,SNR=11									
IPM	**Ipoh**		81.58	279	*e*P		P	07 53 46.3	+0.1	
	comp=N,318nm,0.7s									
PKM	**Mcpherson Peak**		81.68	46	P		P	07 53 47.9	+1.5	
	baz=234,SNR=94									
HJGM	**San Juan Grade**		81.69	44	*e*P		P	07 53 47.3	+1.1	
LRC	**Lone Oak Road**		81.69	45	*e*P		P	07 53 47.5	+1.3	
MCCM	**Marconi Confer**		81.70	42	*e*P		P	07 53 47.4	+1.2	
	comp=N,857nm,1.4s									
BLG	**Laguna Peak, P**		81.72	47	P		P	07 53 47.3	+0.9	
	baz=234,SNR=7.4									
SAO	**San Andreas Ge**		81.75	44	*e*P		P	07 53 47.5	+1.0	
SAO					pmax		pmax			
	comp=Z,595nm,1.4s									
SAO	**San Andreas Ge**		81.75	44	*e*P		P	07 53 47.5	+1.0	
	comp=Z,595nm,1.4s									
CIS	**Catalina Islan**		81.75	48	P		P	07 53 47.6	+0.9	
	baz=234,SNR=23									
HLPM	**Lions Peak**		81.80	44	*e*P		P	07 53 48.3	+1.6	
SMMC	**Simmler**		81.81	46	P		P	07 53 48.6	+1.7	
	baz=233,SNR=63									
CHGN	**Chignik**		81.82	12	*e*P		P	07 53 47.1	+0.8	
PMPB	**Monarch Peak**		81.83	45	*e*P		P	07 53 48.3	+1.3	
	comp=Z,859nm,1.4s									
EKH	**Elkhorn Ranch**		81.86	44	*e*P		P	07 53 48.7	+1.6	
PAGB	**Antelope Grade**		81.89	45	*e*P		P	07 53 48.5	+1.3	
	comp=Z,2µm,1.8s

PSI PKKPbc **PKKPbc** **08 12 11.9 +0.7**
MONP2 Monument Peak 82.83 50 P **P** **07 53 53.8 +1.4**
baz=236,SNR=329
SLBS Sierra La Lagu 82.86 60 *e*P **P** **07 53 53.9 +1.4**
comp=Z,3µm,1.8s
EDW2 Edwards Air Fo 82.89 47 P **P** **07 53 53.6 +1.2**
baz=235,SNR=168
RCTC Rector, Farmer 82.89 45 P **P** **07 53 52.8 +0.6**
baz=234,SNR=47
SRIG Santa Rosalia 82.90 56 *e*P **P** **07 53 54.0 +1.5**
comp=Z,1µm,1.4s
KHMM Horse Mountain 82.92 40 *e*P **P** **07 53 54.5 +2.0**
comp=Z,1µm,1.6s
IKP In-Ko-Pah, Jac 82.92 50 P **P** **07 53 54.3 +1.6**
baz=236,SNR=207
ISA Isabella, Lake 83.02 46 P **P** **07 53 54.4 +1.3**
baz=234,SNR=204
ISA Isabella, Lake 83.02 46 *e*P **P** **07 53 53.0 -0.1**
ISA pmax pmax
comp=Z,894nm,1.4s
ISA Isabella, Lake 83.02 46 *e*P **P** **07 53 53.0 -0.1**
comp=Z,894nm,1.4s
SKLT Songkhla 83.07 281 P **P** **07 53 54.8 +1.1**
comp=Z,301nm,1.6s,comp=Z,7µm
SYO Syowa Base 83.14 193 ⇓ *i*P **P** **07 53 51.0 -2.0**
SYO Syowa Base 83.14 193 ⇓ *i*PcP **PcP** **07 53 55.0 -1.2**
CMB Columbia Colle 83.19 43 *e*P **P** **07 53 54.2 +0.4**
CMB Columbia Colle 83.19 43 *e*P **P** **07 53 55.0 +1.2**
comp=Z,569nm,1.3s
PFO Pinyon Flats O 83.21 49 P **P** **07 53 55.0 +0.9**
comp=Z,73nm,0.9s,baz=245,slow=3.8,SNR=140
PFO pP **pP** **07 55 45.9 -1.8**
comp=Z,8.1nm,1.0s,baz=220,slow=2.0,SNR=0.9
PFO S **S** **08 03 27.6 -3.6**
comp=Z,0.9nm,0.5s,baz=135,slow=19,SNR=14
PFO PKKPbc **PKKPbc** **08 12 12.5 +1.0**
comp=Z,5.3nm,0.9s,baz=79,slow=1.0,SNR=6.6
PFO Pinyon Flats O 83.21 49 P **P** **07 53 55.3 +1.2**
baz=236,SNR=108
PFO Pinyon Flats O 83.21 49 *e*P **P** **07 53 55.0 +0.9**
PFO *PP **pP** **07 55 45.9 -1.8**
PFO S **S** **08 03 27.6 -3.6**
PFO pmax pmax
comp=Z,1µm,1.8s
PFO Pinyon Flats O 83.21 49 *e*P **P** **07 53 55.0 +0.9**
comp=Z,1µm,1.8s
PFO pP **pP** **07 55 45.9 -1.8**
PFO S **S** **08 03 27.6 -3.6**
PFO PKKPbc **PKKPbc** **08 12 12.5 +1.0**
TPFO Pinon Flats 83.21 49 P **P** **07 53 55.3 +1.2**
baz=236,SNR=145
KRMB Red Mountain 83.23 39 *e*P **P** **07 53 56.1 +2.1**
comp=Z,1µm,1.6s
BBRC Big Bear Solar 83.26 48 P **P** **07 53 55.6 +1.1**
baz=235,SNR=45
SWSC Sam W. Stewart 83.30 50 P **P** **07 53 55.9 +1.5**
baz=236,SNR=242
AFDM Forest Hills D 83.38 42 *e*P **P** **07 53 55.4 +0.7**
comp=Z,587nm,1.3s
SNY Shenyang 83.41 321 ⇑ P **P** **07 53 55.3 +0.6**
SNY pP **pP** **07 55 45.3 -3.1**
SNY sP **sP** **07 56 40.5 -1.2**
SNY PP **PP** **07 57 15.0 -1.7**
SNY S **S** **08 03 24.5 -7.9**
GSI Gunungsitoli 83.42 274 *e*P **P** **07 53 56.4 +0.9**
comp=Z,490nm,0.7s
WDC Whiskeytown Da 83.43 40 *e*P **P** **07 53 56.0 +1.1**
WDC pmax pmax
comp=Z,1µm,1.5s
WDC Whiskeytown Da 83.43 40 *e*P **P** **07 53 56.0 +1.1**
comp=Z,1µm,1.5s
LRMC Laurel Mtn Rad 83.44 47 P **P** **07 53 56.4 +1.2**
baz=235,SNR=111
RRX Edison Barstow 83.56 48 P **P** **07 53 56.9 +1.2**
baz=235
N02D Trinity Center 83.58 40 P **P** **07 53 57.6 +1.9**
baz=231,SNR=114
CN2 Changchun 83.66 324 ⇑ *i*P **P** **07 53 56.5 +0.6**
CN2 *e*pP pP 07 55 54.3 +4.6
CN2 *e*sP sP 07 56 47.5 +4.5
CN2 PP **PP** **07 57 19.0 +0.4**
CN2 SKS **SKSac** **08 03 25.0 -3.4**
CN2 *e*S **S** **08 03 34.5 -0.3**
CN2 pmax pmax
comp=Z,4µm,3.0s
O03D Paynes Creek 83.70 41 P **P** **07 53 57.4 +1.1**
baz=232,SNR=187
O03D Paynes Creek 83.70 41 P **P** **07 53 57.2 +0.9**
CWC Cottonwood Cre 83.73 46 P **P** **07 53 57.8 +1.1**
baz=234
BELC Belle Mtn. Jos 83.75 49 P **P** **07 53 58.3 +1.5**
baz=236,SNR=399
OHAK Old Harbor 83.75 14 *e*P **P** **07 53 56.1 +0.1**
comp=Z,650nm,1.4s
M02C Callahan 83.76 40 P **P** **07 53 58.6 +2.0**
baz=231,SNR=118
NKL Nikolayevsk 83.76 338 *i* P **P** **07 53 56.0 -0.2**
NKL *e* 07 55 48.0
NKL *i* S **SKSac** **08 03 26.0 -2.6**
NKL pmax pmax
comp=N,1µm,4.0s
NKL pmax pmax
comp=E,800nm,4.0s
NKL pmax pmax
comp=Z,4µm,4.0s
NKL pmax pmax
comp=N,460nm,2.0s
NKL pmax pmax
comp=E,500nm,2.0s
NKL pmax pmax
comp=Z,2µm,2.0s
NKL smax smax
comp=N,24µm,16.0s
NKL smax smax
comp=E,18µm,16.0s
L02D Cave Junction, 83.81 39 P **P** **07 53 58.6 +1.9**
baz=230,SNR=24
MPMC Manual Prospec 83.90 46 P **P** **07 53 58.6 +1.0**
baz=235,SNR=294
CHBT CHBT 83.92 287 P **P** **07 53 59.3 +1.4**
comp=E,253nm,1.8s,comp=E,7µm
GSC Goldstone, Bar 83.93 47 P **P** **07 53 58.7 +1.1**
baz=235,SNR=261
GSC Goldstone, Bar 83.93 47 *e*P **P** **07 53 58.0 +0.4**
GSC pmax pmax
comp=Z,905nm,1.5s
GSC Goldstone, Bar 83.93 47 *e*P **P** **07 53 58.0 +0.4**
comp=Z,905nm,1.5s
MLAC Mammoth, Mammo 83.93 44 P **P** **07 53 59.1 +1.3**
baz=234,SNR=36
BC3 Big Chuckawall 83.93 49 P **P** **07 53 59.3 +1.6**
baz=236,SNR=257
DAC Darwin (Calif) 83.96 46 *e*P **P** **07 53 58.5 +0.6**
DAC pmax pmax
comp=Z,298nm,1.4s
DAC Darwin (Calif) 83.96 46 *e*P **P** **07 53 58.5 +0.6**
comp=Z,298nm,1.4s
HEC Hector,Ludlow 83.98 48 P **P** **07 53 59.0 +1.1**
baz=236,SNR=254
TIN Tinemaha, Big 83.99 45 P **P** **07 53 59.1 +1.2**
baz=234,SNR=26
TIA Tai'an 84.00 314 ⇑ P **P** **07 53 59.0 +1.2**
TIA pP **pP** **07 55 51.3 -0.4**
TIA SS SS 08 09 26.3 +3.6
TIA pmax pmax
comp=Z,560nm,1.0s
TIA pmax pmax
comp=Z,5µm,4.5s
CHRN Cochrane 84.01 139 *e*P **P** **07 53 59.7 +1.9**
comp=Z,261nm,1.8s
GLA Glamis 84.04 50 P **P** **07 54 00.1 +2.0**
baz=237,SNR=226
GLA Glamis 84.04 50 *e*P **P** **07 53 59.4 +1.3**
GLA pmax pmax
comp=Z,1µm,1.3s
GLA Glamis 84.04 50 *e*P **P** **07 53 59.4 +1.3**
comp=Z,1µm,1.3s
YBH Yreka Blue Hor 84.06 39 *e*P **P** **07 53 59.4 +1.3**
YBH pmax pmax
comp=Z,695nm,1.3s
YBH Yreka Blue Hor 84.06 39 *e*P **P** **07 53 59.4 +1.3**
comp=Z,694nm,1.3s
WAKR Walker 84.07 43 *e*P **P** **07 53 59.4 +1.1**
comp=Z,1µm,1.4s
PAF Port-aux-Franc 84.17 218 *e*P **P** **07 53 58.8 +0.3**
PAF pmax pmax
comp=Z,2µm,1.7s
PAF Port-aux-Franc 84.17 218 *e*P **P** **07 53 58.8 +0.3**
comp=Z,2µm,1.7s
TRTT Trang 84.18 281 P **P** **07 54 00.4 +1.2**
comp=Z,460nm,1.7s,comp=Z,7µm
KLR Kul'dur 84.31 331 P **P** **07 53 59.9 +0.9**
comp=Z,106nm,1.0s,baz=128,slow=4.1,SNR=129
KLR pP **pP** **07 55 51.0 -2.0**
comp=Z,16nm,1.0s,baz=108,slow=5.9,SNR=1.2
KLR PP **PP** **07 57 23.7 0.0**
comp=Z,23nm,1.0s,baz=126,slow=8.3,SNR=3.2
KLR PKiKP **PKiKP** **07 59 08.2 -0.7**
comp=Z,6.5nm,0.6s,baz=144,slow=4.6,SNR=5.6
KLR S **SKSac** **08 03 31.6 -0.7**
comp=Z,4.5nm,0.9s,baz=37,slow=20,SNR=28
KLR PKKPbc **PKKPbc** **08 12 06.1 -3.5**
comp=Z,5.8nm,0.7s,baz=319,slow=1.4,SNR=11
KLR PKPPKP **P'P'df** **08 20 11.6 -0.2**
comp=Z,4.0nm,1.0s,baz=307,slow=3.3,SNR=8.5
PNTR Pine Nut 84.31 43 *e*P **P** **07 54 00.2 +0.6**
comp=Z,594nm,1.1s
SKNT Sakolnakorn 84.35 291 P **P** **07 54 00.6 +0.6**
comp=Z,1µm,0.9s,comp=Z,12µm
TVH3 East Aurora ar 84.37 44 *e*P **P** **07 54 00.7 +0.8**
comp=Z,728nm,1.6s
GMRC Granite Mounta 84.42 48 P **P** **07 54 01.3 +1.2**
baz=236,SNR=207
KDAK Kodiak Island 84.42 14 *i* P **P** **07 53 59.3 0.0**
KDAK Kodiak Island 84.42 14 *e*P **P** **07 53 59.5 +0.2**
comp=Z,870nm,1.7s
TVH2 Borealis Mine 84.42 44 *e*P **P** **07 54 00.9 +0.7**
comp=Z,643nm,1.6s
IRM Iron Mountain 84.42 49 P **P** **07 54 01.7 +1.7**
baz=236,SNR=604
TVH1 TV Hill, Hawth 84.46 44 *e*P **P** **07 54 01.5 +0.9**
comp=Z,1µm,1.7s
HUMO Hull Mountain 84.47 39 *e*P **P** **07 54 01.2 +1.2**
comp=Z,1µm,1.6s
YERR Yerington 84.47 43 *e*P **P** **07 54 00.7 +0.3**
comp=Z,1µm,1.7s
GRAC Grapevine Rang 84.52 46 P **P** **07 54 01.8 +1.3**
baz=235,SNR=389
FURC Furnace Creek, 84.55 46 P **P** **07 54 01.5 +1.1**
baz=235,SNR=110
M04C Macdoel 84.60 40 P **P** **07 54 02.2 +1.4**
baz=232,SNR=75
TUQ Turquoise Moun 84.60 48 P **P** **07 54 02.1 +1.1**
baz=236,SNR=172
SHOC Shoshone, Teco 84.62 47 P **P** **07 54 02.0 +1.1**
baz=236,SNR=231
Y12C Blythe 84.63 50 P **P** **07 54 02.6 +1.6**
baz=237
Y12C Blythe 84.63 50 *e*P **P** **07 54 02.3 +1.3**
comp=Z,572nm,1.3s
113A Mohawk Valley, 84.64 51 *e*P **P** **07 54 01.9 +0.9**
comp=Z,1µm,1.6s
BUOR Burton Butte 84.67 39 *e*P **P** **07 54 02.7 +1.5**
HSIG 84.75 55 *e*P **P** **07 54 03.3 +1.7**
comp=Z,1µm,1.6s
PAHR Pah Rah Range 84.81 43 *e*P **P** **07 54 02.6 +0.7**
comp=Z,942nm,1.6s
SNAA Sanae 84.84 179 P **P** **07 54 01.3 -0.2**
SNAA S **SKSac** **08 03 25.7 -10**
SNAA Sanae 84.84 179 S **SKSac** **08 03 33.9 -1.6**
comp=Z,17nm,1.0s,baz=4.5,slow=23,SNR=18
SNAA PKKPbc PKKPbc 08 12 04.7 -3.8
comp=Z,3.0nm,0.6s,baz=221,slow=2.1,SNR=16
SNAA Sanae 84.84 179 *c i*P **P** **07 54 01.1 -0.4**
SNAA Sanae 84.84 179 *e*P **P** **07 54 01.5 0.0**
comp=Z,801nm,1.6s
SNAA S **SKSac** **08 03 33.9 -1.6**
SNAA PKKPbc **PKKPbc** **08 12 04.7 -3.8**
214A Organ Pipe Nat 84.89 52 P **P** **07 54 04.2 +1.9**
baz=238
214A Organ Pipe Nat 84.89 52 *e*P **P** **07 54 03.6 +1.2**
comp=Z,9µm,1.9s
I03D Drain, OR 84.94 38 P **P** **07 54 03.7 +1.5**
baz=230,SNR=47
LDFC Landfair 84.95 48 *e*P **P** **07 54 04.7 +2.0**
comp=Z,2µm,1.4s
NEE2 Needles Airpor 85.12 49 P **P** **07 54 04.9 +1.6**
baz=237
K04D Chiloquin, OR 85.17 39 P **P** **07 54 04.9 +1.4**
baz=232,SNR=15
PDMCI Parker Dam,Lak 85.20 49 P **P** **07 54 05.3 +1.6**
baz=237
TPNV Topopah Spring 85.23 46 P **P** **07 54 05.1 +1.1**
baz=236,SNR=312
TPNV Topopah Spring 85.23 46 *e*P **P** **07 54 04.4 +0.4**
TPNV Topopah Spring 85.23 46 *e*P **P** **07 54 04.9 +0.9**
comp=Z,695nm,1.5s
PATY Pattaya 85.28 286 P **P** **07 54 06.9 +2.4**
comp=Z,74nm,0.8s
J04D Umpqua Nationa 85.35 38 P **P** **07 54 06.1 +1.6**
baz=231,SNR=137
NVL N'lazarevskaya 85.38 184 ⇑ *i*P **P** **07 54 04.5 +0.5**
NVL *e**PP **pP** **07 56 03.6 +5.3**
NVL *e*S **SKSac** **08 03 36.2 -2.5**
NVL *e*SS **SS** **08 09 42.5 +2.8**
NVL *e*SSS SSS 08 13 20.1
SURT Suratani 85.45 282 P **P** **07 54 07.8 +2.4**
comp=Z,111nm,2.4s,comp=Z,3µm
I04A Tendick Farm, 85.52 38 P **P** **07 54 06.2 +1.0**
baz=231
COR Corvallis 85.53 37 *e*P **P** **07 54 06.7 +1.7**
COR pmax pmax
comp=Z,2µm,1.8s
COR Corvallis 85.53 37 *e*P **P** **07 54 06.7 +1.7**
comp=Z,2µm,1.8s
NONG Nongkai 85.55 292 P **P** **07 54 06.6 +0.8**
comp=Z,455nm,1.3s,comp=Z,6µm
MOD Modoc Plateau 85.58 40 *e*P **P** **07 54 06.5 +1.0**
comp=Z,396nm,1.1s
LHMI Lhok Sumawe 85.59 278 *e*P **P** **07 54 06.8 +0.7**
comp=Z,374nm,0.9s
LHMI *e*pP **pP** **07 56 03.5 +3.1**
CHAI Chaiyaphum 85.59 289 P **P** **07 54 07.1 +1.1**
comp=Z,31nm,1.1s,comp=Z,436nm
SHPR Sheep Range 85.71 47 *e*P **P** **07 54 07.7 +1.3**
comp=Z,791nm,1.7s
VNA1 Neumayer--Stat 85.71 177 P **P** **07 54 05.8 +0.2**
VNA1 S **SKSac** **08 03 44.8 +4.2**
K05A Summer Lake 85.73 39 *e*P **P** **07 54 08.0 +1.7**
comp=Z,2µm,1.6s
W13A Hualapai Mount 85.81 49 *e*P **P** **07 54 07.7 +0.7**
comp=Z,866nm,1.7s
J05D Fort Rock, OR 85.88 39 P **P** **07 54 08.5 +1.5**
baz=232,SNR=262
G03D McMinnville, O 85.95 36 P **P** **07 54 08.6 +1.5**
baz=230,SNR=33
ENH Enshi 86.21 305 *e*P **P** **07 54 09.6 +0.9**
comp=Z,821nm,1.3s
ENH *e*pP **pP** **07 56 06.4 +3.0**
F03A Seaside 86.25 36 *e*P **P** **07 54 10.1 +1.6**
comp=Z,1µm,1.5s
CNPM China Pot 86.30 14 *e*P **P** **07 54 08.2 -0.3**
comp=Z,1µm,1.6s
HOM Homer 86.33 14 *e*P **P** **07 54 08.6 +0.1**
comp=Z,564nm,0.8s
HOM *e*pP **pP** **07 56 07.4 +4.2**
MA2 Magadan 86.37 346 S **SKSac** **08 03 43.3 -1.3**
comp=Z,61nm,1.2s,baz=15,slow=21,SNR=13
MA2 PKKPbc PKKPbc 08 12 02.6 -2.5
comp=Z,8.0nm,0.6s,baz=68,slow=4.6,SNR=4.6
R11A Troy Canyon, C 86.45 45 P **P** **07 54 10.6 +0.7**
baz=236
R11A Troy Canyon, C 86.45 45 *e*P **P** **07 54 10.5 +0.6**
comp=Z,72nm,1.0s
I05D Terrebonne, OR 86.47 38 P **P** **07 54 10.9 +1.3**
baz=232,SNR=16
GYA Guiyang 86.52 301 ⇑ *i*P **P** **07 54 11.0 +0.6**
GYA pP pP 07 56 07.0 +1.8
GYA sP sP 07 56 59.5 +1.3
GYA PP **PP** **07 57 45.0 +3.0**
GYA SKS **SKSac** **08 03 47.5 +0.2**
GYA S **S** **08 04 03.3 -0.1**
GYA sS sS 08 07 27.3 -0.6
GYA SS **SS** **08 10 03.8 +3.9**
TUC Tucson 86.54 53 P **P** **07 54 12.5 +2.2**
baz=239
TUC Tucson 86.54 53 *e*P **P** **07 54 12.7 +2.4**
TUC pmax pmax
comp=Z,1µm,1.5s
TUC Tucson 86.54 53 *e*P **P** **07 54 12.7 +2.4**
comp=Z,1µm,1.5s
BMN Battle Mountai 86.58 43 *e*P **P** **07 54 11.5 +1.1**
BMN pmax pmax
comp=Z,948nm,1.5s
BMN Battle Mountai 86.58 43 *e*P **P** **07 54 11.5 +1.1**
comp=Z,948nm,1.5s
BRLK Bradley Lake 86.59 14 *e*P **P** **07 54 09.6 -0.2**
comp=Z,937nm,1.6s
F04D Rainier, OR 86.64 36 P **P** **07 54 12.2 +1.9**
baz=230
E03A Lebam 86.64 35 *e*P **P** **07 54 11.9 +1.6**
comp=Z,1µm,1.5s
ON2 Olympics--Nort 86.74 35 P **P** **07 54 12.4 +1.6**
PBKT Sadao Pong 86.76 290 P **P** **07 54 12.8 +1.3**
comp=Z,361nm,1.1s,comp=Z,6µm
VBEM Beaver Butte 86.78 37 P **P** **07 54 12.1 +0.9**
BJT Baijiatuau 86.79 316 *e*P **P** **07 54 12.2 +1.1**
BJT pmax pmax
comp=Z,1µm,1.9s
BJT Baijiatuau 86.79 316 *e*P **P** **07 54 12.2 +1.1**
comp=Z,1µm,1.9s
BJI Beijing 86.80 316 P **P** **07 54 12.0 +0.8**
BJI pP **pP** **07 56 03.5 -2.6**
BJI sP **sP** **07 56 58.5 -0.6**
BJI SKS **SKSac** **08 03 46.3 -1.7**
BJI S **S** **08 04 03.0 -2.1**
TDH Tom, Dick, Har 86.81 37 P **P** **07 54 12.1 +0.8**
RSO Redoubt South 86.82 13 *e*P **P** **07 54 10.3 -0.8**
VLMM Larch Mountain 86.83 37 P **P** **07 54 09.2 -2.2**
SVW2 Sparrevohn 86.84 12 *e*P **P** **07 54 10.0 -0.9**
comp=Z,308nm,1.8s
F04A Amboy 86.87 36 *e*P **P** **07 54 12.5 +1.2**
comp=Z,2µm,1.7s
WVOR Wild Horse Val 86.89 41 *e*P **P** **07 54 13.0 +1.3**
WVOR pmax pmax
comp=Z,1µm,1.6s
WVOR Wild Horse Val 86.89 41 *e*P **P** **07 54 13.0 +1.3**
comp=Z,1µm,1.6s
WISH Wishkah 86.90 35 P **P** **07 54 13.1 +1.6**
VFP Flag Point 87.00 37 P **P** **07 54 13.3 +1.0**
NLWA Neilton Lookou 87.03 34 *e*P **P** **07 54 13.3 +1.1**
comp=Z,1µm,1.8s
G05D Wamic, OR 87.04 37 P **P** **07 54 13.5 +1.3**
baz=232
DIB Dawson Inlet, 87.05 26 *e*P **P** **07 54 13.2 +1.2**
comp=Z,658nm,1.6s
H02S1 DAWSON INLET T 87.05 26 P **P** **07 54 12.5 +0.4**
SNR=64
OSR Olympics--Salm 87.05 34 P **P** **07 54 13.9 +1.6**
H02N1 VAN INLET T-PH 87.06 26 P **P** **07 54 12.7 +0.4**
SNR=33
FL2 Flat Top 2 87.07 36 *e*P **P** **07 54 14.1 +1.6**
SHW Mount Saint He 87.13 36 P **P** **07 54 14.5 +1.7**
SHW Mount Saint He 87.13 36 P **P** **07 54 14.5 +1.7**
ERK Elk Rock 87.14 36 P **P** **07 54 14.3 +1.4**
X16A Lo Mia Camp, P 87.15 50 *e*P **P** **07 54 14.3 +1.0**
comp=Z,606nm,1.4s
STD Studebaker Rid 87.16 36 P **P** **07 54 14.5 +1.6**
319A Douglas 87.18 54 *e*P **P** **07 54 14.9 +1.6**
comp=Z,3µm,1.7s
B201 Coldwater, Mou 87.18 36 *e*P **P** **07 54 14.5 +1.6**
SEW Seward 87.23 15 *e*P **P** **07 54 12.5 -0.2**
comp=Z,213nm,1.2s
SEW *e*pP **pP** **07 56 10.8 +3.0**
TDL Tradedollar La 87.24 36 *e*P **P** **07 54 15.0 +1.7**
LCMT Little Creek M 87.27 48 *e*P **P** **07 54 14.4 +0.7**
comp=Z,679nm,1.5s
MID Middleton Isla 87.41 17 *e*P **P** **07 54 14.6 +1.0**
MID pmax pmax
comp=Z,1µm,1.7s
MID Middleton Isla 87.41 17 *e*P **P** **07 54 14.6 +1.0**
comp=Z,1µm,1.7s
VTHM Trough 87.42 38 P **P** **07 54 14.9 +0.8**
SRDT SRDT 87.42 287 P **P** **07 54 16.8 +2.1**
comp=Z,1µm,1.0s,comp=Z,16µm
GAMB Gambell 87.47 4 *e*P **P** **07 54 15.8 +2.1**
comp=Z,194nm,1.0s
CCUT Cedar City 87.48 47 *e*P **P** **07 54 15.7 +0.9**
comp=Z,815nm,1.6s
KNB Kanab 87.56 48 *e*P **P** **07 54 16.8 +1.7**
KNB *e*S **S** **08 04 17.7 +4.9**
KNB pmax pmax
comp=Z,1µm,1.6s
KNB Kanab 87.56 48 *e*P **P** **07 54 16.8 +1.7**
comp=Z,1µm,1.6s
KNB *e*S **S** **08 04 17.7 +4.9**
U15A North Rim 87.61 48 *e*P **P** **07 54 16.9 +1.4**
comp=Z,761nm,1.4s
SPU Mount Spurr 87.62 13 *e*P **P** **07 54 13.5 -1.1**
UTTA Uttaradit 87.63 290 P **P** **07 54 17.2 +1.6**
comp=Z,39nm,1.6s,comp=Z,549nm
B941 Kapowsin 87.64 36 *e*P **P** **07 54 16.1 +1.2**
GNW Green Mountain 87.68 35 P **P** **07 54 15.8 +0.6**
PSUT Pine Spring 87.68 46 *e*P **P** **07 54 16.9 +1.2**
comp=Z,358nm,1.6s
SZCU Shurtz Canyon 87.69 47 *e*P **P** **07 54 17.3 +1.5**
comp=Z,1µm,1.6s
LON Longmire 87.71 36 P **P** **07 54 16.2 +0.8**
LON Longmire 87.71 36 P **P** **07 54 16.2 +0.8**
GL2 New Goldendale 87.75 37 P **P** **07 54 17.0 +1.4**
WUAZ Wupatki 87.77 50 P **P** **07 54 17.5 +1.4**
baz=239
WUAZ Wupatki 87.77 50 *e*P **P** **07 54 17.6 +1.5**
comp=Z,912nm,1.6s
OBSR Observation Ro 87.80 36 *e*P **P** **07 54 17.2 +1.1**
HPIG 87.81 59 *e*P **P** **07 54 17.0 +0.4**
comp=Z,867nm,1.7s
EKU East Kanab 87.81 48 *e*P **P** **07 54 17.2 +0.9**
BHU Blowhard Mount 87.84 47 *e*P **P** **07 54 18.4 +1.7**
D05A Enumclaw 87.89 35 *e*P **P** **07 54 17.6 +1.4**
comp=Z,2µm,1.4s
TIY Taiyuan 87.96 313 *e*P **P** **07 54 18.8 +2.0**
TIY SKS **SKSac** **08 03 55.0 -0.3**
TIY S **S** **08 04 17.5 +1.3**
TIY pmax pmax
comp=Z,270nm,0.8s
SP2 Seward Park 2 87.98 35 P **P** **07 54 18.4 +1.9**
RC01 Rabbit Creek A 88.04 14 *e*P **P** **07 54 16.3 -0.2**
comp=Z,638nm,1.5s
PGC Sidney 88.05 34 *e*P **P** **07 54 17.8 +0.9**
comp=Z,879nm,1.5s
PKCU Pink Cliffs 88.13 48 *e*P **P** **07 54 19.8 +1.9**
SUA Susitna One 88.15 14 *e*P **P** **07 54 16.7 -0.5**
comp=Z,236nm,0.7s
BBB Bella Bella 88.19 29 *e*P **P** **07 54 18.4 +1.0**
comp=Z,1µm,1.6s
MOIG Morelia 88.22 68 *e*P **P** **07 54 19.6 +1.0**
comp=Z,2µm,1.8s
X18A Snowflake 88.27 51 *e*P **P** **07 54 19.4 +0.9**
comp=Z,1µm,1.8s
G08A Pilot Rock 88.39 38 *e*P **P** **07 54 19.8 +1.1**
comp=Z,1µm,1.7s
ZAIG Zacatecas 88.42 64 *e*P **P** **07 54 20.6 +1.0**
comp=Z,1µm,2.0s
UMPA Umpang Tak 88.44 288 P **P** **07 54 21.1 +1.7**
comp=Z,42nm,0.8s,comp=Z,853nm
TT01 Tatalina 88.44 11 *e*P **P** **07 54 18.2 -0.2**
TTA Tatalina 88.47 11 *e*P **P** **07 54 18.3 -0.3**
TTA pmax pmax
comp=Z,353nm,1.5s
TTA Tatalina 88.47 11 *e*P **P** **07 54 18.3 -0.3**
comp=Z,352nm,1.5s
CRAG Craig 88.47 25 *e*P **P** **07 54 19.9 +1.3**
comp=Z,682nm,1.6s
A04D Lummi Island 88.48 34 P **P** **07 54 20.3 +1.5**
baz=231,SNR=22
PLCA Paso Flores 88.50 134 P **P** **07 54 20.7 +1.2**
comp=Z,163nm,1.2s,baz=280,slow=5.1,SNR=93
PLCA pP **pP** **07 56 13.2 -1.6**
comp=Z,37nm,1.4s,baz=40,slow=3.6,SNR=1.0
PLCA PKKPbc **PKKPbc** **08 11 58.5 -0.2**
comp=Z,4.7nm,0.6s,baz=73,slow=1.5,SNR=16
PLCA PKPPKP **P'P'df** **08 20 04.4 -3.0**
comp=Z,4.6nm,0.9s,baz=225,slow=4.3,SNR=5.8
PLCA Paso Flores 88.50 134 *e*P **P** **07 54 20.9 +1.4**
PLCA *PP **pP** **07 56 13.2 -1.6**
PLCA pmax pmax
comp=Z,2µm,1.8s
PLCA Paso Flores 88.50 134 *e*P **P** **07 54 20.9 +1.4**
comp=Z,2µm,1.8s
PLCA pP **pP** **07 56 13.2 -1.6**
PLCA PKKPbc **PKKPbc** **08 11 58.5 -0.2**
PLCA P'P' 08 20 04.4
B05A Bryant 88.50 35 P **P** **07 54 20.3 +1.3**
baz=231,SNR=111
XAN Xi'an 88.51 308 P **P** **07 54 20.3 +0.9**
XAN SKS **SKSac** **08 03 57.3 -1.3**
XAN S **ScS** **08 04 25.3 +0.3**

XAN pmax pmax
comp=Z,290nm,0.8s
XAN pmax pmax
comp=Z,2µm,7.9s
FID Port Fidalgo 88.52 16 *eP* **P 07 54 18.7 -0.1**
comp=Z,495nm,1.4s
FID *epP* **pP 07 56 18.0 +3.8**
EYAK Cordova Ski Ar 88.53 16 *eP* **P 07 54 19.0 +0.3**
comp=Z,695nm,1.6s
EYAK *epP* **pP 07 56 18.3 +4.1**
PMR Palmer 88.62 14 *eP* **P 07 54 18.8 -0.4**
PMR pmax pmax
comp=Z,814nm,1.7s
PMR Palmer 88.62 14 *eP* **P 07 54 18.8 -0.4**
comp=Z,814nm,1.7s
FSU Fish Springs 88.63 45 *eP* **P 07 54 21.1 +1.1**
E07A Sunnyside 88.65 37 *eP* **P 07 54 20.9 +1.2**
comp=Z,546nm,1.1s
RAGM Ragged Mountai 88.67 17 *eP* **P 07 54 20.0 +0.5**
comp=Z,926nm,1.7s
W18A Petrified Fore 88.72 51 P **P 07 54 21.8 +1.2**
baz=240
W18A Petrified Fore 88.72 51 *eP* **P 07 54 21.9 +1.3**
comp=Z,855nm,1.6s
HAWA Hanford 88.73 37 *eP* **P 07 54 20.7 +0.6**
comp=Z,1µm,1.5s
MDW Midway 88.74 37 P **P 07 54 21.4 +1.3**
MDW Midway 88.74 37 P **P 07 54 21.4 +1.3**
LAMP Lampang 88.75 291 P **P 07 54 22.5 +1.6**
comp=Z,96nm,1.1s,comp=Z,858nm
MSU Marysvale 88.78 47 *eP* **P 07 54 22.0 +1.1**
MSU Marysvale 88.78 47 *eP* **P 07 54 21.9 +1.1**
121A Cookes Peak, D 88.85 54 P **P 07 54 23.2 +1.9**
baz=241
121A Cookes Peak, D 88.85 54 *eP* **P 07 54 22.7 +1.5**
comp=Z,2µm,1.9s
GBL Gable Mountain 88.89 37 P **P 07 54 22.2 +1.3**
GBL Gable Mountain 88.89 37 P **P 07 54 22.2 +1.3**
C06D Leavenworth 88.92 35 P **P 07 54 21.9 +0.9**
baz=232
RPW Rockport 88.92 35 *eP* **P 07 54 21.4 +0.4**
SML Sawmill 88.99 15 *eP* **P 07 54 20.9 -0.1**
SML pmax pmax
comp=Z,370nm,1.6s
SML Sawmill 88.99 15 *eP* **P 07 54 20.9 -0.1**
comp=Z,370nm,1.6s
DIV Divide 89.02 16 *eP* **P 07 54 21.3 +0.1**
comp=Z,305nm,1.1s
ETW Entiat 89.03 36 *eP* **P 07 54 22.4 +0.8**
KMI Kunming 89.04 298 P **P 07 54 23.3 +0.9**
KMI pP pP 07 56 16.5 -1.4
KMI sP sP 07 57 09.0 -1.7
KMI PP **PP 07 58 05.0 +3.0**
KMI SKS **SKSac 08 04 02.5 0.0**
KMI S **S 08 04 26.8 -0.2**
KMI sS sS 08 07 52.0 -1.0
KMI SS **SS 08 10 40.5 +4.0**
KMI pmax pmax
comp=Z,2µm,3.1s
SEY Seymchan 89.07 348 S **SKSac 08 04 00.6 +0.2**
comp=Z,13nm,1.2s,baz=301,slow=21,SNR=18
SEY ScS **S 08 04 25.6 +0.5**
comp=Z,8.8nm,1.0s,baz=30,slow=21,SNR=7.1
SEY Seymchan 89.07 348*c iP* **P 07 54 21.6 +0.4**
BMO Blue Mountains 89.08 39 *eP* **P 07 54 22.0 +0.1**
comp=Z,871nm,1.8s
MFID Camas Ranch 89.14 41 *eP* **P 07 54 22.7 +0.4**
comp=Z,563nm,1.3s
PPLA Purkeypile 89.14 12 *eP* **P 07 54 20.6 -1.2**
comp=Z,242nm,1.7s
BMRM Bremner River 89.18 16 *eP* **P 07 54 21.9 0.0**
comp=Z,318nm,1.2s
MMU Miners Mountai 89.21 47 *eP* **P 07 54 23.5 +0.6**
SCM Sheep Creek Mo 89.25 15 *eP* **P 07 54 22.2 0.0**
SCM pmax pmax
comp=Z,247nm,0.9s
SCM Sheep Creek Mo 89.25 15 *eP* **P 07 54 22.2 0.0**
comp=Z,246nm,0.9s
DUG Dugway, Tooele 89.26 45 P **P 07 54 23.7 +0.8**
baz=238
DUG Dugway, Tooele 89.26 45 *eP* **P 07 54 23.4 +0.5**
DUG pmax pmax
comp=Z,635nm,1.8s
DUG Dugway, Tooele 89.26 45 *eP* **P 07 54 23.4 +0.5**
comp=Z,636nm,1.8s
CM01 Chiang Mai Arr 89.29 290 *eP* **P 07 54 25.2 +1.9**
KLU Klutina 89.29 16 *eP* **P 07 54 22.6 +0.2**
comp=Z,386nm,1.6s
CM31 Chiang Mai Arr 89.32 290 *eP* **P 07 54 25.3 +1.8**
CMAR Chiang Mai Arr 89.32 290 P **P 07 54 24.9 +1.4**
comp=Z,89nm,1.0s,baz=126,slow=2.9,SNR=128
CMAR pP **pP 07 56 17.3 -1.8**
comp=Z,45nm,0.9s,baz=136,slow=3.7,SNR=6.0
CMAR PP **PP 07 58 04.5 +0.5**
comp=Z,23nm,1.0s,baz=127,slow=5.6,SNR=4.8
CMAR S **SKSac 08 04 05.0 +1.1**
comp=Z,0.9nm,0.3s,baz=72,slow=2.9,SNR=2.4
CMAR ScS **ScS 08 04 31.0 -1.3**
comp=Z,1.2nm,0.4s,baz=132,slow=5.0,SNR=3.0
CMAR PKKPbc **PKKPbc 08 11 56.8 +0.7**
comp=Z,11nm,0.6s,baz=280,slow=3.9,SNR=16
CMAR PKPPKP **P'P'df 08 20 03.5 -1.9**
comp=Z,1.5nm,0.3s,baz=289,slow=2.8,SNR=17
CRQM Cirque 89.39 17 *eP* **P 07 54 23.6 +0.5**
comp=Z,559nm,1.6s
EFI East Falkland 89.44 148*c iP* **P 07 54 24.3 +0.8**
EFI pmax pmax
comp=Z,497nm,1.4s
EFI East Falkland 89.44 148 *eP* **P 07 54 24.7 +1.2**
comp=Z,2µm,1.6s
CMMT Chiang Mai 89.46 291 P **P 07 54 25.3 +1.1**
comp=Z,287nm,1.9s,comp=Z,4µm
D08A Wollman Farm, 89.47 37 *eP* **P 07 54 24.4 +0.8**
comp=Z,740nm,1.4s
CHTO Chiang Mai 89.47 291 P **P 07 54 25.3 +1.1**
comp=Z,921nm,2.3s,comp=Z,20µm
CHTO Chiang Mai 89.47 291 *eP* **P 07 54 25.7 +1.5**
CHTO pmax pmax
comp=Z,226nm,1.1s
CHTO Chiang Mai 89.47 291 P **P 07 54 26.0 +1.8**
SNR=76
CHTO Chiang Mai 89.47 291 *eP* **P 07 54 25.7 +1.5**
comp=Z,226nm,1.1s
WRAK Wrangell Islan 89.47 24 *eP* **P 07 54 24.2 +1.0**
comp=Z,673nm,1.6s
DHAK Deception Hill 89.48 20 *eP* **P 07 54 24.5 +1.1**
comp=Z,894nm,1.7s
SGU Sterling 89.49 46 *eP* **P 07 54 25.6 +1.5**
BGU Big Grassy Mou 89.51 44 *eP* **P 07 54 24.7 +0.6**
comp=Z,721nm,1.8s
LEVU Levan 89.55 46 *eP* **P 07 54 25.2 +0.8**
TLIG Tlapa 89.57 71 *eP* **P 07 54 26.1 +1.3**
comp=Z,2µm,1.9s
E09A Wood Farm, Sta 89.57 38 *eP* **P 07 54 24.5 +0.5**
comp=Z,480nm,1.4s
NLU North Lily Min 89.61 45 *eP* **P 07 54 25.8 +1.2**
comp=Z,326nm,1.4s
SNO Snow College 89.63 46 *eP* **P 07 54 26.4 +1.5**
CAST Castle Rocks 89.64 12 *eP* **P 07 54 22.4 -1.5**
comp=Z,141nm,0.9s
PCA Pinnacle 89.66 19 *eP* **P 07 54 24.7 +0.5**
comp=Z,463nm,1.5s
PCA *epP* **pP 07 56 23.5 +3.6**
F10A Beach Ranch, E 89.78 38 *eP* **P 07 54 24.8 -0.3**
comp=Z,945nm,1.6s
UNM Universidad Na 89.78 69 *eP* **P 07 54 27.7 +1.8**
UNM pmax pmax
comp=Z,923nm,1.5s
UNM Universidad Na 89.78 69 *eP* **P 07 54 27.7 +1.8**
comp=Z,923nm,1.5s
SNUT Stansbury Nort 89.82 45 *eP* **P 07 54 26.0 +0.5**
WMUT West Mountain 89.83 45 *eP* **P 07 54 26.7 +1.1**
TMUT Trail Mountain 89.84 46 *eP* **P 07 54 26.9 +1.0**
comp=Z,2µm,1.6s
BALM Baldy 89.84 17 *eP* **P 07 54 25.1 +0.1**
BALM pmax pmax
comp=Z,395nm,1.4s
BALM Baldy 89.84 17 *eP* **P 07 54 25.1 +0.1**
comp=Z,395nm,1.4s
CMAI Chiengmai2 89.85 292 P **P 07 54 27.4 +1.3**
comp=Z,2µm,1.1s,comp=Z,24µm
KTH Kantishna Hill 89.99 13 *eP* **P 07 54 24.5 -1.1**
comp=Z,420nm,1.7s
SAIU Southern Antel 90.02 45 *eP* **P 07 54 26.8 +0.4**
B08A Colville Reser 90.02 36 *eP* **P 07 54 25.7 -0.4**
comp=Z,520nm,1.7s

ELU Electric Lake 90.02 46 *eP* **P 07 54 28.3 +1.6**
TRF Thorofare Moun 90.02 13 *eP* **P 07 54 24.9 -1.0**
comp=Z,738nm,1.7s
MHMT Maesarieng 90.07 290 P **P 07 54 28.8 +1.8**
comp=Z,106nm,1.5s
NAIU Northern Antel 90.07 45 *eP* **P 07 54 27.0 +0.3**
HLID Hailey 90.07 42 P **P 07 54 28.0 +1.3**
baz=237
HLID Hailey 90.07 42 *eP* **P 07 54 27.8 +1.1**
comp=Z,618nm,1.6s
SPUT South Promonto 90.08 44 *eP* **P 07 54 27.6 +0.9**
comp=Z,1µm,1.6s
LLLB Lillooet 90.09 33 *eP* **P 07 54 27.0 +0.6**
comp=Z,240nm,1.3s
HVU Hansel Valley 90.12 44 *eP* **P 07 54 27.6 +0.7**
HVU pmax pmax
comp=Z,2µm,1.7s
HVU Hansel Valley 90.12 44 *eP* **P 07 54 27.6 +0.7**
comp=Z,2µm,1.7s
HIA Hailar 90.17 325 *eP* **P 07 54 27.6 +0.8**
HIA pmax pmax
comp=Z,119nm,1.2s
HIA Hailar 90.17 325 *eP* **P 07 54 27.6 +0.8**
comp=Z,119nm,1.2s
HHC Hu-ho-hao-te 90.19 315 *eP* **P 07 54 28.5 +1.4**
HHC pP pP 07 56 20.5 -2.4
HHC pmax pmax
comp=Z,2µm,5.7s
SRU San Rafael Swe 90.20 47 *eP* **P 07 54 28.4 +1.1**
SRU pmax pmax
comp=Z,1µm,1.6s
SRU San Rafael Swe 90.20 47 *eP* **P 07 54 28.4 +1.1**
comp=Z,1µm,1.6s
CTU Camp Tracy 90.21 45 *eP* **P 07 54 28.0 +0.6**
comp=Z,1µm,1.3s
LAZ Ladron 90.23 52 *eP* **P 07 54 28.4 +0.8**
Y22D IRIS PASSCAL I 90.23 53 P **P 07 54 29.3 +1.8**
baz=241
Y22D IRIS PASSCAL I 90.23 53 *eP* **P 07 54 29.4 +1.8**
comp=Z,617nm,1.2s
P17A Butcher Ranch, 90.24 46 *eP* **P 07 54 28.8 +1.3**
comp=Z,2µm,2.0s
MNTX Cornudas Mount 90.25 55 P **P 07 54 28.9 +1.4**
baz=242
MNTX Cornudas Mount 90.25 55 *eP* **P 07 54 28.1 +0.6**
comp=Z,1µm,1.8s
C09A Chrisman Ranch 90.26 36 *eP* **P 07 54 28.2 +1.0**
comp=Z,549nm,1.6s
RND Reindeer 90.28 14 *eP* **P 07 54 26.1 -0.9**
RND pmax pmax
comp=Z,451nm,1.0s
RND Reindeer 90.28 14 *eP* **P 07 54 26.1 -0.9**
comp=Z,451nm,1.0s
MTUT Morton Thiokol 90.29 44 *eP* **P 07 54 27.9 +0.3**
DHY Denali Highway 90.32 14 *eP* **P 07 54 26.9 -0.4**
comp=Z,387nm,1.8s
JLU Jordanelle 90.36 45 *eP* **P 07 54 28.6 +0.4**
comp=Z,1µm,1.7s
RCJ Ross Creek 90.39 45 *eP* **P 07 54 29.0 +0.7**
HLJ Hailstone 90.39 45 *eP* **P 07 54 29.4 +1.2**
KLJ Keetly 90.40 45 *eP* **P 07 54 29.1 +0.9**
PNT Penticton 90.45 35 *eP* **P 07 54 29.1 +1.1**
PNT Penticton 90.45 35 *eP* **P 07 54 29.1 +1.1**
GZU Grizzly Peak 90.45 44 *eP* **P 07 54 28.9 +0.3**
BPAW Bear Paw Mtn. 90.47 12 *eP* **P 07 54 26.4 -1.4**
comp=Z,202nm,1.7s
BNM Barren Site 90.48 53 *eP* **P 07 54 29.7 +0.8**
TX31 Lajitas Ar. Si 90.48 58 *eP* **P 07 54 30.1 +1.3**
TXAR Lajitas Array 90.48 58 P **P 07 54 30.3 +1.6**
comp=Z,101nm,0.7s,baz=215,slow=6.4,SNR=644
TXAR pP **pP 07 56 24.2 -0.3**
comp=Z,19nm,1.0s,baz=211,slow=4.4,SNR=1.9
TXAR S **SKSac 08 04 11.2 +0.9**
comp=Z,1.3nm,0.8s,baz=172,slow=7.3,SNR=3.5
TXAR PKKPbc **PKKPbc 08 11 54.8 +1.1**
comp=Z,6.8nm,0.6s,baz=93,slow=2.7,SNR=31
TXAR PKP2ab 08 19 48.9
comp=Z,0.8nm,0.9s,baz=45,slow=1.9,SNR=3.7
TXAR PKPPKP **P'P'df 08 19 59.7 -2.8**
comp=Z,1.8nm,1.0s,baz=122,slow=1.6,SNR=4.0
ARGU Argyle Ridge 90.55 46 *eP* **P 07 54 30.1 +0.9**
LPM Los Pinos Moun 90.55 53 *eP* **P 07 54 29.9 +0.8**
MCK McKinley 90.56 13 *eP* **P 07 54 27.6 -0.6**
MCK pmax pmax
comp=Z,260nm,1.0s
MCK McKinley 90.56 13 *eP* **P 07 54 27.6 -0.6**
comp=Z,260nm,1.0s
MVCO Mesa Verde 90.63 49 P **P 07 54 30.1 +0.6**
baz=240
MVCO Mesa Verde 90.63 49 *eP* **P 07 54 30.0 +0.5**
comp=Z,231nm,1.6s
PV05 Paradox Valley 90.64 48 *eP* **P 07 54 30.5 +1.0**
TCUT Toone Canyon 90.65 45 *eP* **P 07 54 30.4 +0.9**
comp=Z,3µm,1.6s
PAX Paxson 90.67 15 *eP* **P 07 54 28.4 -0.4**
PAX pmax pmax
comp=Z,197nm,1.4s
PAX Paxson 90.67 15 *eP* **P 07 54 28.4 -0.4**
comp=Z,197nm,1.4s
SKAG Skagway 90.70 21 *eP* **P 07 54 30.4 +1.6**
comp=Z,852nm,2.0s
MCU Monte Cristo P 90.77 44 *eP* **P 07 54 30.1 +0.1**
HWUT Hardware Ranch 90.80 44 *eP* **P 07 54 30.1 0.0**
comp=Z,944nm,1.8s
PV09 Paradox Valley 90.83 48 *eP* **P 07 54 31.0 +0.6**
PV10 Paradox Valley 90.83 48 *eP* **P 07 54 30.4 +0.1**
CD2 Chengdu 90.85 303 ⇑P **P 07 54 32.0 +1.6**
CD2 pP pP 07 56 28.8 +2.6
CD2 sP sP 07 57 22.3 +3.4
CD2 SKS **SKSac 08 04 09.5 -2.7**
CD2 S **ScS 08 04 44.0 -0.7**
CD2 sS sS 08 08 13.5 +3.7
CD2 SS **SS 08 11 04.5 +2.7**
CD2 pmax pmax
comp=Z,530nm,0.7s
CD2 pmax pmax
comp=Z,3µm,3.7s
RSUT Red Spur Mount 90.92 44 *eP* **P 07 54 30.7 -0.1**
PV04 Paradox Valley 90.93 48 *eP* **P 07 54 31.2 +0.4**
ANMO Albuquerque 90.98 52 P **P 07 54 32.1 +1.0**
baz=242
ANMO Albuquerque 90.98 52*c iP* **P 07 54 31.8 +0.7**
ANMO pmax pmax
comp=Z,343nm,1.6s
ANMO Albuquerque 90.98 52 *eP* **P 07 54 31.2 +0.2**
comp=Z,342nm,1.4s
PV01 Paradox Valley 91.03 48 *eP* **P 07 54 31.5 +0.2**
BTO Baotou 91.06 314 *eP* **P 07 54 31.3 +0.1**
HYT Haines Junctio 91.07 19 *eP* **P 07 54 31.4 +0.7**
comp=Z,270nm,1.8s
MENT Mentasta 91.07 16 *eP* **P 07 54 30.0 -0.6**
comp=Z,452nm,1.8s
NEW Newport 91.16 37 P **P 07 54 31.5 +0.1**
baz=235,SNR=23
NEW Newport 91.16 37 *eP* **P 07 54 31.2 -0.2**
NEW pmax pmax
comp=Z,28nm,0.8s
NEW Newport 91.16 37 *eP* **P 07 54 31.2 -0.2**
comp=Z,28nm,0.8s
BMUT Black Mountain 91.20 44 *eP* **P 07 54 32.0 0.0**
MLY Manley 91.35 12 *eP* **P 07 54 30.6 -1.3**
comp=Z,89nm,1.0s
WRH Wood River Hil 91.38 13 *eP* **P 07 54 30.8 -1.1**
comp=Z,273nm,1.1s
HDA Harding Lake 91.58 14 *eP* **P 07 54 32.4 -0.5**
comp=Z,128nm,0.9s
DOT Dot Lake 91.59 15 *eP* **P 07 54 32.6 -0.4**
comp=Z,217nm,1.0s
CCB Clear Creek Bu 91.60 13 *eP* **P 07 54 31.5 -1.4**
comp=Z,214nm,1.1s
AHID Auburn Hatcher 91.70 43 *eP* **P 07 54 35.0 +0.8**
comp=Z,1µm,1.8s
MCMT McKenzie Canyo 91.70 41 *eP* **P 07 54 34.7 +0.5**
WHY Whitehorse 91.76 20 *eP* **P 07 54 34.5 +0.5**
comp=Z,95nm,1.1s
MDM Murphy Dome 91.78 13 *eP* **P 07 54 32.6 -1.2**
comp=Z,226nm,1.1s
COLA College 91.79 13 *eP* **P 07 54 33.1 -0.7**
COLA pmax pmax
comp=Z,287nm,1.0s
COLA College 91.79 13 *eP* **P 07 54 33.1 -0.7**
comp=Z,287nm,1.0s
DLBC Dease Lake 91.80 24 *eP* **P 07 54 34.7 +0.6**
comp=Z,229nm,1.6s
IL1 Eielson Array 91.90 14 *eP* **P 07 54 33.2 -1.1**
ILAR Eielson Array 91.90 14 P **P 07 54 33.2 -1.1**
comp=Z,18nm,0.6s,baz=222,slow=5.1,SNR=140
ILAR pP **pP 07 56 28.2 -2.1**
comp=Z,63nm,1.1s,baz=238,slow=4.3,SNR=4.6
ILAR PP **PP 07 58 23.1 -0.1**
comp=Z,33nm,1.0s,baz=222,slow=7.6,SNR=4.6
ILAR PKiKP **PKiKP 07 59 20.7 -0.4**
comp=Z,2.5nm,0.5s,baz=304,slow=3.2,SNR=8.7
ILAR S **SKSac 08 04 15.9 -0.5**
comp=Z,5.2nm,1.0s,baz=224,slow=4.6,SNR=7.4
ILAR ScS **S 08 04 47.6 -2.7**
comp=Z,2.6nm,1.1s,baz=213,slow=3.9,SNR=3.3
ILAR PKKP **PKKPdf 08 11 48.5 -0.4**
comp=Z,5.3nm,0.8s,baz=338,slow=3.1,SNR=10
ILAR PKPPKP **P'P'df 08 19 56.9 -0.1**
comp=Z,2.1nm,1.0s,baz=352,slow=2.2,SNR=6.8
ILB Eielson Array 91.90 14 *eP* **P 07 54 33.3 -1.1**
PBA Port Blair 91.98 282 *eP* P 07 54 35.6 -0.3
BILL Bilibino 92.04 355*c iP* **P 07 54 34.7 -0.2**
BILL *i* *PP **pP 07 56 29.0 -1.8**
BILL *e* 07 58 26.2
BILL *i* S **SKSac 08 04 16.5 -0.5**
BILL *i* 08 04 51.7
BILL *e*SS **SS 08 11 12.9 -4.3**
BILL *e*SSS SSS 08 14 57.1
BILL pmax pmax
comp=Z,126nm,1.0s
BILL MLR MLR
comp=Z,3µm,18.0s
S22A 4UR Ranch, Cre 92.05 49 P **P 07 54 37.2 +1.1**
baz=241
S22A 4UR Ranch, Cre 92.05 49 *eP* **P 07 54 36.8 +0.8**
comp=Z,483nm,1.4s
ROC1 El Roble 92.07 127 *eP* **P 07 54 36.9 +0.5**
comp=Z,116nm,1.5s
ROCH El Roble 92.07 127 *i* P **P 07 54 36.6 +0.2**
MSO Missoula 92.14 39 P **P 07 54 35.6 -0.4**
baz=237,SNR=35
MSO Missoula 92.14 39 *eP* **P 07 54 35.4 -0.6**
comp=Z,67nm,1.3s
DLMT Dillon 92.14 41 *eP* **P 07 54 36.6 +0.5**
comp=Z,255nm,1.6s
REDW Red Top Meadow 92.16 43 *eP* **P 07 54 37.3 +0.9**
comp=Z,728nm,1.6s
TPAW Teton Pass 92.17 43 *eP* **P 07 54 37.1 +0.6**
comp=Z,674nm,1.9s
CLCH Cerro Calan 92.20 128⇑ *iP* **P 07 54 37.5 +0.7**
BSMT Bassoo Peak 92.22 38 *eP* **P 07 54 36.3 -0.1**
PEL Peldehue 92.22 128⇑*iP* **P 07 54 37.5 +0.7**
O20A White River Ci 92.24 47 P **P 07 54 37.3 +0.6**
baz=241
O20A White River Ci 92.24 47 *eP* **P 07 54 37.1 +0.4**
comp=Z,697nm,1.8s
IMW Indian Meadow 92.38 43 *eP* **P 07 54 37.8 +0.3**
comp=Z,500nm,1.7s
MCID Moose Creek 92.39 42 *eP* **P 07 54 38.7 +1.3**
DGPR DIGLIPUR 92.42 283 *eP* **P 07 54 37.2 -0.6**
MOOW Moose Ponds 92.43 43 *eP* **P 07 54 38.2 +0.7**
comp=Z,460nm,1.9s
JTMT Jette 92.44 38 *eP* **P 07 54 36.9 -0.6**
LOHW Long Hollow 92.45 43 *eP* **P 07 54 37.5 -0.2**
comp=Z,457nm,1.8s
LRM Limekiln Ridge 92.47 40 *eP* **P 07 54 38.1 +0.4**
SWMT Swartz Lake 92.47 38 *eP* **P 07 54 36.9 -0.6**
BLMT Blacktail Moun 92.54 38 *eP* **P 07 54 37.5 -0.5**
BLMT *ep*P **pP 07 56 37.9 +4.0**
QLMT Earthquake Lak 92.56 42 *eP* **P 07 54 39.5 +1.3**
CLNS Chul'man 92.57 333 *eP* **P 07 54 37.1 -0.6**
CLNS *e**PP **pP 07 56 36.5 +2.9**
CLNS *e* 07 58 25.8
CLNS *e*PPP PPP 08 00 32.0
CLNS *e*S **SKSac 08 04 17.2 -3.3**
CLNS *e* 08 04 53.3
CLNS *e**SS 08 06 15.1
CLNS pmax pmax
comp=Z,61nm,1.0s
CLNS pmax pmax
comp=N,27nm,1.1s
CLNS pmax pmax
comp=E,21nm,1.1s
CLNS pmax pmax
comp=E,13nm,0.9s
CLNS pmax pmax
comp=N,58nm,1.3s
CLNS pmax pmax
comp=Z,32nm,1.1s
CLNS smax smax
comp=N,5µm,12.3s
CLNS smax smax
comp=E,3µm,12.3s
CMIG Matias Romero 92.58 73 PKiKP **PKiKP 07 59 23.1 -0.5**
comp=E,1.8nm,0.5s,baz=252,slow=3.2,SNR=4.0
CMIG S **SKSac 08 04 23.5 +1.3**
comp=E,3.3nm,1.1s,baz=16,slow=22,SNR=14
CMIG ScS **ScS 08 05 02.0 +2.6**
comp=E,1.4nm,0.7s,baz=143,slow=20,SNR=3.8
CHMT Chamberlain Mo 92.58 39 *eP* **P 07 54 37.8 -0.4**
SLMT Seeley Lake 92.62 39 *eP* **P 07 54 37.7 -0.6**
FLWY Flagg Ranch 92.63 43 *eP* **P 07 54 39.7 +1.2**
comp=E,670nm,1.8s
SMCO Snowmass 92.63 48 *eP* **P 07 54 38.8 0.0**
comp=E,573nm,1.8s
YPP Pitchstone Pla 92.66 42 *eP* **P 07 54 39.9 +1.2**
comp=E,247nm,1.9s
YBMT Yellow Bay 92.66 38 *eP* **P 07 54 37.9 -0.5**
YHB Horse Butte 92.67 42 *eP* **P 07 54 40.0 +1.4**
comp=E,165nm,1.2s
BW06 Boulder Array 92.68 44 P **P 07 54 38.9 +0.2**
baz=240
BW06 Boulder Array 92.68 44 *eP* **P 07 54 38.6 -0.2**
comp=E,576nm,1.8s
PD31 Pinedale Array 92.68 44 *eP* **P 07 54 38.5 -0.2**
PDAR Pinedale Array 92.68 44 P **P 07 54 38.9 +0.1**
comp=E,40nm,0.6s,baz=203,slow=3.0,SNR=272
PDAR pP **pP 07 56 33.2 -1.5**
comp=E,2.5nm,0.8s,baz=237,slow=19,SNR=1.3
PDAR PP **PP 07 58 30.6 +0.6**
comp=E,17nm,0.9s,baz=232,slow=7.3,SNR=4.5
PDAR S **SKSac 08 04 23.5 +1.3**
comp=E,1.6nm,0.9s,baz=266,slow=8.9,SNR=4.9
PDAR ScS **ScS 08 05 02.6 +2.9**
comp=E,1.9nm,1.0s,baz=73,slow=10,SNR=2.7
PDAR SP SPn 08 06 17.8 -0.3
comp=E,1.2nm,0.9s,baz=134,slow=2.6,SNR=2.2
PDAR PKKP **PKKPdf 08 11 46.9 -0.1**
comp=E,4.3nm,0.7s,baz=95,slow=4.2,SNR=10.0
PDAR PKPPKP **P'P'df 08 19 56.7 -0.9**
comp=E,1.9nm,0.8s,baz=103,slow=3.2,SNR=8.0
YFT Old Faithful 92.73 42 *eP* **P 07 54 41.2 +2.2**
comp=E,130nm,1.2s
YMR Madison River 92.77 42 *eP* **P 07 54 40.5 +1.5**
comp=E,445nm,1.8s
YMC Maple Creek 92.79 42 *eP* **P 07 54 40.4 +1.2**
H17A Grant Village 92.86 42 P **P 07 54 41.5 +1.9**
baz=239
H17A Grant Village 92.86 42 *eP* **P 07 54 41.6 +1.9**
comp=E,314nm,1.9s
BOZ Bozeman (W) 92.87 41 P **P 07 54 40.2 +0.7**
baz=239
BOZ Bozeman (W) 92.87 41 *eP* **P 07 54 39.9 +0.4**
BOZ pmax pmax
comp=Z,127nm,1.1s
BOZ Bozeman (W) 92.87 41 *eP* **P 07 54 39.9 +0.4**
comp=Z,126nm,1.1s
YHH Holmes Hill 92.90 42 *eP* **P 07 54 41.1 +1.3**
comp=Z,123nm,1.4s
832A Faith Ranch, C 92.93 60 P **P 07 54 40.4 +0.4**
baz=245,SNR=120
SDCO Great Sand Dun 92.97 50 P **P 07 54 40.9 +0.6**
baz=242
SDCO Great Sand Dun 92.97 50 *eP* **P 07 54 40.4 +0.1**
comp=Z,229nm,1.4s
LKWY Lake 93.06 42 *eP* **P 07 54 42.6 +2.1**
LKWY pmax pmax
comp=Z,73nm,1.0s
LKWY Lake 93.06 42 *eP* **P 07 54 42.6 +2.1**
comp=Z,73nm,1.0s
DAWY Dawson 93.11 17 *eP* **P 07 54 39.5 -0.5**
comp=Z,134nm,1.0s
LZH Lanzhou 93.14 308 *eP* **P 07 54 42.5 +1.5**
LZH pP pP 07 56 36.3 -0.6
LZH sP sP 07 57 27.5 -2.1
LZH SKS **SKSac 08 04 24.3 -0.6**
LZH *e*S **S 08 05 02.0 -0.8**
LZH sS sS 08 08 33.5 +2.3
LZH pmax pmax
comp=Z,190nm,1.0s

LZH pmax pmax
comp=Z,1µm,5.6s
933A Laredo 93.20 61 P P 07 54 42.1 +0.9
baz=245,SNR=42
MSTX Muleshoe 93.23 54 P P 07 54 41.9 +0.5
baz=244
MSTX Muleshoe 93.23 54 eP P 07 54 41.7 +0.4
comp=Z,790nm,1.8s
EGAK Eagle 93.24 16 eP P 07 54 40.2 -0.2
comp=Z,168nm,0.9s
HRY Holter Researc 93.30 40 eP P 07 54 41.6 +0.2
WALA Waterton Lakes 93.37 37 eP P 07 54 41.9 +0.2
comp=Z,184nm,1.6s
833A Chaparral WMA, 93.41 61 P P 07 54 42.7 +0.6
baz=245,SNR=43
COLD Coldfoot 93.41 11 eP P 07 54 41.7 +0.5
comp=Z,108nm,1.0s
034A Hebbronville 93.45 62 P P 07 54 44.0 +1.6
baz=245,SNR=103
T25A Trinidad 93.47 51 P P 07 54 42.9 +0.4
baz=243
T25A Trinidad 93.47 51 eP P 07 54 42.9 +0.4
comp=Z,154nm,1.3s
733A Divot King Ran 93.65 60 P P 07 54 43.8 +0.6
baz=245,SNR=28
035Z Hargill 93.70 63 P P 07 54 44.5 +1.0
baz=245,SNR=10
Q24A Divide 93.78 49 P P 07 54 44.8 +0.8
baz=242
Q24A Divide 93.78 49 eP P 07 54 44.8 +0.8
comp=Z,261nm,1.4s
FYU Fort Yukon 93.80 13 eP P 07 54 42.9 -0.1
comp=Z,51nm,1.1s
934A Benavides 93.81 62 P P 07 54 45.6 +1.6
baz=245,SNR=6.0
ISCO Idaho Springs 93.85 48 P P 07 54 45.0 +0.7
baz=242
ISCO Idaho Springs 93.85 48 eP P 07 54 44.6 +0.3
ISCO pmax pmax
comp=Z,239nm,1.8s
ISCO Idaho Springs 93.85 48 eP P 07 54 44.6 +0.3
comp=Z,238nm,1.8s
035A Encino 93.87 62 P P 07 54 45.8 +1.5
baz=245,SNR=35
JCT Junction City 93.99 59 P P 07 54 45.1 +0.3
baz=245,SNR=54
JCT Junction City 93.99 59 eP P 07 54 44.8 0.0
JCT pmax pmax
comp=Z,674nm,1.9s
JCT Junction City 93.99 59 eP P 07 54 44.8 0.0
comp=Z,674nm,1.9s
834A Tilden 94.00 61 P P 07 54 46.2 +1.3
baz=245,SNR=55
RLMT Red Lodge 94.03 42 P P 07 54 45.7 +0.8
baz=240
RLMT Red Lodge 94.03 42 eP P 07 54 45.7 +0.8
comp=Z,106nm,1.4s
633A Saathoff Ranch 94.06 60 P P 07 54 46.0 +0.9
baz=245,SNR=92
GCMT Greycliff 94.12 41 eP P 07 54 46.0 +0.8
N23A Red Feather La 94.14 47 P P 07 54 46.2 +0.7
baz=242
N23A Red Feather La 94.14 47 eP P 07 54 46.3 +0.7
comp=Z,189nm,1.5s
LCO Las Campanas 94.28 124 eP P 07 54 47.3 +0.8
comp=Z,201nm,0.9s
KVTX Kingsville 94.29 62 eP P 07 54 48.4 +2.3
comp=Z,499nm,1.5s
734A La Parita Cree 94.29 60 P P 07 54 47.0 +0.8
baz=245,SNR=5.4
YAK Yakutsk 94.36 339 S SKSac 08 04 25.7 -4.0
comp=Z,13nm,0.3s,baz=183,slow=23,SNR=31
YAK ScS S 08 05 11.7 0.0
comp=Z,12nm,0.5s,baz=238,slow=19,SNR=2.3
YAK Yakutsk 94.36 339 eP P 07 54 45.3 -0.3
YAK e*PP pP 07 56 36.8 -4.9
YAK e 07 58 38.6
YAK eS SKSac 08 04 26.0 -3.7
YAK e 08 05 12.3
YAK eSSS SSS 08 15 33.2
YAK pmax pmax
comp=Z,110nm,1.0s
YAK pmax pmax
comp=N,58nm,1.8s
YAK pmax pmax
comp=E,60nm,1.8s
YAK pmax pmax
comp=E,1µm,7.4s
YAK pmax pmax
comp=N,2µm,7.1s
YAK pmax pmax
comp=Z,3µm,6.8s
YAK smax smax
comp=N,4µm,2.5s
YAK Yakutsk 94.36 339 eP P 07 54 45.5 -0.1
YAK epP pP 07 56 43.2 +1.6
YAK S SKSac 08 04 25.7 -4.0
YAK ScS S 08 05 11.8 0.0
533A Kerrville 94.42 59 P P 07 54 47.4 +0.6
baz=245,SNR=126
AMTX Amarillo 94.45 54 P P 07 54 47.0 +0.2
baz=244
AMTX Amarillo 94.45 54 eP P 07 54 47.0 +0.2
comp=N,351nm,1.8s
K22A Casper 94.58 45 P P 07 54 47.8 +0.4
baz=242
K22A Casper 94.58 45 eP P 07 54 47.8 +0.4
comp=N,336nm,1.7s
835A Beeville 94.64 61 P P 07 54 49.4 +1.7
baz=246,SNR=23
433A Art 94.67 59 P P 07 54 48.2 +0.3
baz=245,SNR=341
CCIG Comitan 94.67 74 eP P 07 54 49.4 +1.1
comp=N,280nm,1.7s
634A China Grove, S 94.68 60 P P 07 54 48.6 +0.7
baz=245
936A North Padre Is 94.71 62 P P 07 54 49.6 +1.6
baz=246
534A Blanco 94.85 59 P P 07 54 49.2 +0.5
baz=245,SNR=109
735A Kenedy 94.89 61 P P 07 54 50.1 +1.2
baz=246,SNR=22
333A Richland Sprin 94.98 58 P P 07 54 49.4 +0.1
baz=245,SNR=81
ABTX Abilene, Hawle 95.02 57 P P 07 54 49.8 +0.4
baz=245,SNR=50
ABTX Abilene, Hawle 95.02 57 eP P 07 54 49.8 +0.4
comp=N,541nm,1.7s
635A Leesville 95.14 60 P P 07 54 50.8 +0.8
baz=246,SNR=14
EGMT Eagleton 95.19 39 P P 07 54 50.0 +0.2
baz=240,SNR=17
EGMT Eagleton 95.19 39 eP P 07 54 50.2 +0.3
comp=N,152nm,1.6s
434A Burnet 95.33 59 P P 07 54 51.0 +0.1
baz=246,SNR=104
233A Rising Star 95.34 57 P P 07 54 51.2 +0.3
baz=245,SNR=40
TRQA Tornquist 95.52 136 eP P 07 54 52.3 +0.6
comp=N,281nm,1.8s
TRQA epP pP 07 56 52.4 +4.6
736A Circle Diamond 95.53 61 P P 07 54 53.4 +1.6
baz=246,SNR=15
KSCO Kaye Shedlock' 95.56 50 P P 07 54 52.6 +0.8
baz=244
KSCO Kaye Shedlock' 95.56 50 eP P 07 54 52.5 +0.6
comp=N,548nm,1.4s
KSCO epP pP 07 56 52.1 +4.1
535A Dale 95.56 60 P P 07 54 52.6 +0.7
baz=246,SNR=13
133A Hamilton Ranch 95.57 57 P P 07 54 52.3 +0.4
baz=245,SNR=30
334A Lometa 95.57 58 P P 07 54 52.3 +0.4
baz=246,SNR=158
636A Smothers Creek 95.75 60 P P 07 54 53.9 +1.2
baz=246,SNR=12
435B Jarrell 95.86 59 P P 07 54 53.7 +0.5
baz=246,SNR=11
234A Clairette 95.92 58 P P 07 54 53.9 +0.4
baz=246,SNR=74
737A Port Lavaca 95.95 61 P P 07 54 55.4 +1.7
baz=246
Z33A Whitaker Ranch 95.97 56 P P 07 54 54.0 +0.4
baz=246,SNR=27
536A Bastrop 95.98 60 P P 07 54 54.4 +0.7
baz=246
X32A Elmer 96.04 55 P P 07 54 53.9 0.0
baz=245,SNR=29
335A Moody 96.18 59 P P 07 54 54.8 +0.2
baz=246,SNR=16
134A White-Moore Ra 96.20 57 P P 07 54 55.1 +0.4
baz=246,SNR=27
HOPE Hope Point 96.25 160 eP P 07 54 55.3 +0.8
comp=N,690nm,1.9s
637A Eagle Lake 96.31 61 P P 07 54 56.0 +0.7
baz=246,SNR=8.0
W32A Sentinel 96.36 55 P P 07 54 55.7 +0.4
baz=246
Y33A Hilltop Ranch, 96.37 56 P P 07 54 55.6 +0.2
baz=246,SNR=8.7
WHTX Lake Whitney, 96.45 58 Pdiff P 07 54 56.2 +0.3
baz=246
WHTX Lake Whitney, 96.45 58 eP P 07 54 56.1 +0.3
comp=N,409nm,1.8s
436A Wall Ranch, Ga 96.47 59 Pdiff P 07 54 56.9 +0.9
baz=246
WMOK Wichita Mounta 96.55 55 Pdiff P 07 54 56.0 -0.2
baz=246
WMOK Wichita Mounta 96.55 55 eP P 07 54 55.8 -0.4
WMOK pmax pmax
comp=Z,104nm,2.0s
WMOK Wichita Mounta 96.55 55 eP P 07 54 55.8 -0.4
comp=Z,104nm,2.0s
537A Green Hill Far 96.58 60 Pdiff P 07 54 57.6 +1.2
baz=246
738A Farr-Stevens R 96.62 62 Pdiff P 07 54 58.8 +2.1
baz=247
Z34A Collier Ranch, 96.65 57 Pdiff P 07 54 57.0 +0.3
baz=246
LAO LASA Array 96.65 42 Pdiff P 07 54 57.6 +1.2
baz=242
LAO LASA Array 96.65 42 eP P 07 54 57.7 +1.2
comp=Z,194nm,1.4s
X33A Lawton 96.68 55 Pdiff P 07 54 56.6 -0.2
baz=246
336A Riesel 96.68 59 Pdiff P 07 54 57.1 +0.3
baz=246
135A Vickery Place, 96.71 58 Pdiff P 07 54 57.3 +0.4
baz=246
V32A Arapaho 96.75 54 Pdiff P 07 54 57.7 +0.5
baz=246
OGNE Ogallala 96.81 48 Pdiff P 07 54 57.7 +0.3
baz=244
OGNE Ogallala 96.81 48 eP P 07 54 57.8 +0.5
comp=Z,390nm,1.7s
RSSD Black Hills 96.86 45 Pdiff P 07 54 57.8 +0.1
baz=244
RSSD Black Hills 96.86 45 eP P 07 54 57.8 +0.1
RSSD pmax pmax
comp=Z,122nm,1.5s
RSSD Black Hills 96.86 45 eP P 07 54 57.8 +0.1
comp=Z,122nm,1.5s
SONM Songino Array 96.87 319 P P 07 54 57.6 +0.1
comp=Z,16nm,0.7s,baz=130,slow=5.3,SNR=49
SONM pP pP 07 56 51.9 -1.9
comp=Z,12nm,1.1s,baz=134,slow=4.3,SNR=3.1
SONM PP PP 07 58 59.6 -2.2
comp=Z,35nm,1.0s,baz=127,slow=8.1,SNR=7.0
SONM PKiKP PKiKP 07 59 30.6 +0.2
comp=Z,10.0nm,1.0s,baz=138,slow=2.2,SNR=4.3
SONM S SKSac 08 04 42.8 -1.1
comp=Z,9.2nm,1.2s,baz=149,slow=3.0,SNR=5.1
SONM PKKPbc PKKPbc 08 11 37.3 -0.6
comp=Z,8.7nm,0.5s,baz=277,slow=2.7,SNR=27
SONM PKKPab PKKPab 08 12 10.8
comp=Z,9.1nm,1.0s,baz=282,slow=4.1,SNR=7.4
SONM PKPPKP P'P'df 08 19 45.5 -3.8
comp=Z,5.4nm,1.1s,baz=232,slow=2.5,SNR=8.6
SONA1 Songino Array 96.87 319 eP P 07 54 56.6 -0.9
W33A Caddo, Fort Co 96.95 55 Pdiff P 07 54 58.8 +0.8
baz=246
Y34A Reagan Ranch, 97.00 56 Pdiff Pdif 07 54 58.3 0.0
baz=246
638A Rosharon 97.01 61 Pdiff Pdif 07 55 00.0 +1.7
baz=247
437A Phantom Ranch, 97.02 60 Pdiff Pdif 07 54 59.3 +0.9
baz=247
U32A Winter Ranch, 97.06 53 Pdiff Pdif 07 54 58.9 +0.4
baz=246
NNA Nana 97.14 106 P Pdif 07 55 00.3 +0.9
comp=Z,13nm,0.7s,baz=225,slow=7.2,SNR=6.3
NNA Nana 97.14 106 eP P 07 54 59.1 -0.3
NNA pmax pmax
comp=Z,83nm,1.3s
NNA Nana 97.14 106 eP P 07 54 59.1 -0.3
comp=Z,83nm,1.3s
Z35A Perchaven, San 97.14 57 Pdiff Pdif 07 54 59.1 +0.2
baz=246
X34A Smith Ranch, M 97.21 55 Pdiff Pdif 07 55 00.1 +0.9
baz=246
538A Harpers Horsep 97.29 60 Pdiff P 07 55 01.1 +1.5
baz=247
V33A Lossen Ranch, 97.36 54 Pdiff P 07 55 00.0 +0.2
baz=246
136A Ennis 97.36 58 Pdiff P 07 55 00.1 +0.2
baz=247
H25A Fruitdale 97.36 44 Pdiff P 07 55 00.3 +0.6
baz=244
337A Centerville 97.41 59 Pdiff P 07 55 01.0 +0.9
baz=247
T32A Huddler Ranch, 97.44 53 Pdiff P 07 55 00.5 +0.4
baz=246
GTA Gaotai 97.46 310 ⇑P P 07 55 01.0 +0.6
GTA pP pP 07 57 01.0 +4.3
GTA sP sP 07 57 54.3 +5.0
GTA PP PP 07 59 11.5 +5.0
GTA SKS SKSac 08 04 45.5 -1.7
GTA S ScS 08 05 37.5 -2.1
GTA SS SS 08 12 38.3 +3.6
GTA pmax pmax
comp=Z,690nm,6.4s
W34A Bridge Creek, 97.50 55 Pdiff P 07 55 00.9 +0.4
baz=246
W34A Bridge Creek, 97.50 55 eP P 07 55 01.1 +0.6
comp=Z,146nm,1.5s
438A Sam Houston St 97.51 60 Pdiff P 07 55 02.0 +1.4
baz=247
CBKS Cedar Bluff 97.52 51 Pdiff P 07 55 00.8 +0.3
baz=246
Y35A Marietta 97.53 56 Pdiff P 07 55 01.0 +0.3
baz=246
S32A Newby Ranch, P 97.64 52 Pdiff P 07 55 01.3 +0.2
baz=246
U33A Lingo Farm, Me 97.73 54 Pdiff P 07 55 01.5 0.0
baz=246
237A Washetta, Mont 97.73 59 Pdiff P 07 55 02.2 +0.6
baz=247
Z36A Blue Ridge 97.75 57 Pdiff P 07 55 02.1 +0.5
baz=247
X35A Drake 97.78 56 Pdiff P 07 55 01.9 +0.1
baz=247
X35A SKSac SKSac 08 04 49.7 +1.0
baz=247
539A Cross D Ranch, 97.86 61 Pdiff P 07 55 03.4 +1.3
baz=247
338A Crockett 97.88 59 Pdiff P 07 55 02.8 +0.6
baz=247
T33A Patterson Ranc 97.89 53 Pdiff P 07 55 02.4 +0.1
baz=246
INK Inuvik 97.91 16 P Pdif 07 55 00.6 -0.8
comp=Z,12nm,0.6s,baz=253,slow=3.8,SNR=34
INK pP pP 07 56 55.8 -2.1
comp=Z,3.6nm,0.8s,baz=189,slow=14,SNR=1.4
INK PP PP 07 59 07.9 -1.1
comp=Z,32nm,1.2s,baz=242,slow=9.8,SNR=3.5
INK PKiKP PKiKP 07 59 31.3 -0.1
comp=Z,9.9nm,0.9s,baz=254,slow=1.3,SNR=3.5
INK S SKSac 08 04 47.5 -0.2
comp=Z,15nm,1.1s,baz=355,slow=30,SNR=39
INK PKKPbc PKKPbc 08 11 33.0 -2.5
comp=Z,1.8nm,0.4s,baz=39,slow=3.2,SNR=4.0
INK PKKPab PKKPab 08 12 04.2
comp=Z,2.5nm,0.5s,baz=55,slow=5.8,SNR=3.1
INK PKPPKP P'P'df 08 19 46.1 +0.4
comp=Z,3.1nm,0.8s,baz=88,slow=2.7,SNR=3.4
INK Inuvik 97.91 16 eP Pdif 07 55 00.5 -0.9
INK *PP pP 07 56 55.8 -2.1
INK 07 59 07.9
INK S SKSac 08 04 47.6 -0.2
INK pmax pmax
comp=Z,11nm,1.5s
INK Inuvik 97.91 16 eP Pdif 07 55 00.5 -1.0
comp=Z,11nm,1.5s
INK pP pP 07 56 55.8 -2.1
INK PP PP 07 59 07.9 -1.1
INK PKiKP PKiKP 07 59 31.3 -0.1
INK S SKSac 08 04 47.5 -0.2
INK PKKPbc PKKPbc 08 11 33.0 -2.5
INK PKKPab PKKPab 08 12 04.2
INK P'P' 08 19 46.1
V34A Guthrie 97.94 54 Pdiff Pdif 07 55 02.4 0.0
baz=246
V34A Guthrie 97.94 54 eP P 07 55 03.0 +0.6
comp=Z,153nm,1.7s
137A Heron Place, G 98.01 58 Pdiff P 07 55 03.8 +1.0
baz=247
439A Center Grove, 98.09 60 Pdiff P 07 55 04.1 +0.9
baz=247
R32A Long Quarter, 98.09 52 Pdiff P 07 55 03.5 +0.4
baz=246
Y36A Durant 98.11 57 Pdiff P 07 55 03.8 +0.6
baz=247
W35A Tecumseh 98.15 55 Pdiff P 07 55 03.8 +0.4
baz=247
U34A Anderson Ranch 98.16 54 Pdiff P 07 55 03.5 +0.1
baz=247
U34A Anderson Ranch 98.16 54 eP Pdif 07 55 02.8 -0.5
comp=Z,17nm,0.9s
SHL Shillong 98.17 294 eP P 07 55 04.0 +0.1
SHL eS SKSac 08 04 50.0 -1.4
238A Jacksonville 98.27 59 Pdiff P 07 55 05.1 +1.1
baz=247
S33A Kaszmaul Farm, 98.28 53 Pdiff P 07 55 04.3 +0.4
baz=246
X36A Centrahoma 98.32 56 Pdiff P 07 55 04.4 +0.2
baz=247
Z37A Pogue Cattle C 98.34 58 Pdiff P 07 55 05.2 +0.9
baz=247
O31A Woolen Ranch, 98.35 50 Pdiff P 07 55 04.6 +0.4
baz=246
V35A Meyer Ranch, C 98.42 55 Pdiff P 07 55 04.6 +0.1
baz=247
Q32A Meitler Ranch, 98.43 51 Pdiff P 07 55 05.0 +0.4
baz=246
339A Huntington 98.46 60 Pdiff P 07 55 05.7 +0.9
baz=247
540A Vidor 98.49 61 Pdiff P 07 55 06.2 +1.2
baz=248
NATX Nacogdoches 98.54 59 Pdiff P 07 55 05.9 +0.7
baz=247
NATX Nacogdoches 98.54 59 eP P 07 55 05.8 +0.5
comp=Z,288nm,1.9s
138A Matatall Enter 98.55 58 Pdiff P 07 55 06.3 +1.0
baz=247
R33A Olander Ranch, 98.57 52 Pdiff P 07 55 05.5 +0.3
baz=247
W36A Wetumka 98.63 56 Pdiff P 07 55 05.7 +0.2
baz=247
Y37A Hugo 98.65 57 Pdiff P 07 55 06.2 +0.5
baz=247
T34A McClaskey Farm 98.65 53 Pdiff P 07 55 05.8 +0.2
baz=247
P32A Huiting Farm, 98.65 51 Pdiff P 07 55 05.7 +0.2
baz=246
DGMT Dagmar 98.68 41 Pdiff P 07 55 06.2 +0.7
baz=244
DGMT Dagmar 98.68 41 ePdif P 07 55 06.2 +0.7
DGMT epP pP 07 57 07.5 +5.6
440A Kirbyville 98.71 60 Pdiff P 07 55 06.9 +0.9
baz=248
U35A Pawnee 98.73 54 Pdiff P 07 55 06.2 +0.2
baz=247
239A Gary 98.79 59 Pdiff P 07 55 06.8 +0.5
baz=248
Z38A Mt. Pleasant 98.86 58 Pdiff P 07 55 07.4 +0.8
baz=247
LVC Limon Verde 98.87 119 P P 07 55 09.4 +1.9
comp=Z,74nm,1.0s,baz=233,slow=4.5,SNR=15
LVC Limon Verde 98.87 119 ePdif P 07 55 09.9 +2.5
comp=Z,120nm,1.6s
LVC epP pP 07 57 09.6 +5.8
N31A Bailey Ranch, 98.88 49 Pdiff P 07 55 07.1 +0.5
baz=246
C25A Freed Ranch, W 98.92 42 Pdiff P 07 55 07.5 +0.9
baz=245
Q33A Connelly Farm, 98.95 51 Pdiff P 07 55 07.3 +0.3
baz=247
S34A Willow Spring 98.97 53 Pdiff P 07 55 07.2 +0.1
baz=247
340A Bronson 99.02 60 Pdiff Pdif 07 55 08.0 +0.7
baz=248
X37A Clayton 99.07 56 Pdiff Pdif 07 55 07.5 +0.1
baz=247
541A Lake Charles 99.07 61 Pdiff Pdif 07 55 10.4 +2.8
baz=248
M31A Lambtecht Ranc 99.08 49 Pdiff Pdif 07 55 08.4 +1.0
baz=246
V36A Jenks 99.09 55 Pdiff Pdif 07 55 07.9 +0.4
baz=247
139A Bunkhouse Ranc 99.10 58 Pdiff Pdif 07 55 08.2 +0.6
baz=248
R34A Isabella, Hill 99.10 52 Pdiff Pdif 07 55 07.8 +0.2
baz=247
T35A Sooner Cattle 99.11 54 Pdiff Pdif 07 55 07.9 +0.3
baz=247
O32A Brockman Farm, 99.13 50 Pdiff Pdif 07 55 07.9 +0.3
baz=247
K30A Basset 99.17 47 Pdiff Pdif 07 55 08.6 +0.9
baz=246
P33A Williams Farm, 99.22 51 Pdiff Pdif 07 55 08.5 +0.5
baz=247
W37B Quinton 99.23 56 Pdiff Pdif 07 55 08.6 +0.4
baz=248
TUL1 Leonard 99.25 55 Pdiff Pdif 07 55 08.5 +0.3
baz=247
TUL1 Leonard 99.25 55 eP Pdif 07 55 08.3 +0.1
comp=Z,16nm,0.8s
Y38A Idabel 99.31 57 Pdiff Pdif 07 55 08.5 0.0
baz=248
N32A Stulken Farm, 99.32 50 Pdiff Pdif 07 55 08.9 +0.4
baz=247
441A DeRidder 99.33 61 Pdiff Pdif 07 55 09.6 +1.0
baz=248
240A Hunter Patters 99.35 59 Pdiff Pdif 07 55 09.3 +0.6
baz=248
Z39A Irene McRaven, 99.48 58 Pdiff Pdif 07 55 10.1 +0.8
baz=248
U36A Oologah 99.48 55 Pdiff Pdif 07 55 09.5 +0.3
baz=248
L31A Butterfield Fa 99.50 48 Pdiff Pdif 07 55 09.8 +0.6
baz=247
J30A Dallas 99.51 47 Pdiff Pdif 07 55 09.7 +0.4
baz=246
X38A Whitesboro 99.51 56 Pdiff Pdif 07 55 09.9 +0.5
baz=248
S35A Otter Creek Ra 99.54 53 Pdiff Pdif 07 55 09.6 +0.2
baz=247
O33A Hebron 99.55 50 Pdiff Pdif 07 55 09.8 +0.4
baz=247
341A Kurthwood 99.56 60 Pdiff Pdif 07 55 10.5 +0.8
baz=248
Q34A Chapman 99.56 52 Pdiff Pdif 07 55 10.0 +0.5
baz=247
542A Morse 99.61 61 Pdiff Pdif 07 55 11.3 +1.4
baz=248
T36A Boggs Farm, Ca 99.63 54 Pdiff Pdif 07 55 10.2 +0.4
baz=247
BGNE Belgrade 99.67 49 Pdiff Pdif 07 55 10.8 +0.8
baz=247
BGNE Belgrade 99.67 49 ePdif Pdif 07 55 11.6 +1.6
comp=Z,576nm,1.8s
BGNE epP pP 07 57 11.3 +4.7
140A Cam and Jess, 99.73 59 Pdiff Pdif 07 55 11.2 +0.8
baz=248
K31A O'Neill 99.73 48 Pdiff Pdif 07 55 10.8 +0.5
baz=247
V37A Hulbert 99.73 55 Pdiff Pdif 07 55 10.7 +0.3
baz=248
Y39A Lockesburg 99.81 57 Pdiff Pdif 07 55 11.0 +0.3
baz=248
ZAK Zakamensk 99.84 321 eP Pdif 07 55 10.3 -0.3
ZAK pmax pmax
comp=Z,24nm,2.2s
KSU1 Kansas State U 99.87 52 Pdiff Pdif 07 55 11.4 +0.5
baz=248
KSU1 Kansas State U 99.87 52 ePdif Pdif 07 55 12.1 +1.2
comp=Z,23nm,0.6s
R35A Emporia Munici 99.87 53 Pdiff Pdif 07 55 11.4 +0.4
baz=248
P34A Walnut Farm, R 99.89 51 Pdiff Pdif 07 55 11.6 +0.7
baz=247
N33A J Bar K, Exete 99.90 50 Pdiff Pdif 07 55 11.6 +0.6
baz=247

W38A **Poteau** 99.90 56 Pdiff **Pdif** 07 55 11.6 +0.5
baz=248
442A **Mamou** 99.92 61 Pdiff **Pdif** 07 55 12.4 +1.1
baz=248
U37A **Salina** 99.95 55 Pdiff **Pdif** 07 55 11.6 +0.3
baz=248
L32A **Elgin** 100.00 49 Pdiff **Pdif** 07 55 12.0 +0.6
baz=247
X39A **Fountain Ranch** 100.00 57 Pdiff **Pdif** 07 55 12.2 +0.6
baz=248
J31A **Geddes** 100.01 47 Pdiff **Pdif** 07 55 11.6 +0.2
baz=247
241A **Mo Tay, Goldon** 100.01 59 Pdiff **Pdif** 07 55 12.6 +1.0
baz=248
LPA **La Plata** 100.01 135 *e*PDIFF **Pdif** 07 55 14.0 +2.3
LPA PP **PP** 07 59 24.0 -0.7
LPA SKIKP 08 02 17.0
LPA SKS 08 05 00.0
LPA PS **PS** 08 08 42.0 +1.4
S36A **Lake Cedric, C** 100.09 53 Pdiff **Pdif** 07 55 12.2 +0.3
baz=248
Z40A **Long Farm, Mag** 100.09 58 Pdiff **Pdif** 07 55 12.8 +0.8
baz=248
543A **St. Martinvill** 100.15 62 Pdiff **Pdif** 07 55 14.0 +1.7
baz=248
TLY **Talaya** 100.19 322 P **Pdif** 07 55 10.8 -1.2
comp=Z,3.2nm,0.6s,baz=102,slow=4.1,SNR=4.7
TLY PP **PP** 07 59 24.0 -2.6
comp=Z,9.4nm,0.9s,baz=112,slow=2.7,SNR=5.0
TLY S **SKSac** 08 05 00.1 +0.3
comp=Z,1.1nm,0.5s,baz=319,slow=22,SNR=10
TLY PKKPbc **PKKPbc** 08 11 28.6 0.0
comp=Z,5.4nm,0.6s,baz=218,slow=5.6,SNR=8.3
TLY PKKPab PKKPab 08 11 55.8
comp=Z,3.1nm,0.5s,baz=235,slow=5.3,SNR=5.5
Q35A **Mercer Eighty,** 100.19 52 Pdiff **Pdif** 07 55 12.6 +0.3
baz=248
O34A **Beatrice** 100.22 51 Pdiff **Pdif** 07 55 12.8 +0.3
baz=248
141A **Papa Simpson,** 100.24 59 Pdiff **Pdif** 07 55 13.5 +0.8
baz=248
342A **Flagon Creek P** 100.25 60 Pdiff **Pdif** 07 55 13.9 +1.2
baz=248
YKA **Yellowknife Ar** 100.28 25 P **Pdif** 07 55 11.8 -0.2
comp=Z,1.7nm,0.5s,baz=234,slow=4.2,SNR=25
YKA pP pP 07 57 07.9 -0.8
comp=Z,4.0nm,0.9s,baz=251,slow=7.1,SNR=2.4
YKA PP **PP** 07 59 23.9 -3.0
comp=Z,14nm,0.9s,baz=239,slow=7.1,SNR=3.6
YKA PKKPbc **PKKPbc** 08 11 26.5 -2.2
comp=Z,3.5nm,0.5s,baz=39,slow=2.5,SNR=20
YKA PKKP **PKKPdf** 08 11 34.9 +1.6
comp=Z,2.6nm,0.6s,baz=45,slow=1.9,SNR=6.4
YKA PKPPKP **P'P'df** 08 19 44.2 +2.6
comp=Z,6.5nm,1.1s,baz=48,slow=2.5,SNR=9.2
K32A **Verdigre** 100.28 48 Pdiff **Pdif** 07 55 12.5 -0.1
baz=247
V38A **Canehill** 100.28 55 Pdiff **Pdif** 07 55 13.1 +0.3
baz=248
F29A **Eureka** 100.29 44 Pdiff **Pdif** 07 55 12.8 +0.1
baz=247
LSA **Lhasa** 100.30 298 P **Pdif** 07 55 15.0 +1.4
SUSD **Miller** 100.31 46 Pdiff **Pdif** 07 55 12.7 -0.1
baz=247
T37A **Cheneyville 18** 100.36 54 Pdiff **Pdif** 07 55 13.4 +0.3
baz=248
R36A **Gordon, Harris** 100.38 53 Pdiff **Pdif** 07 55 13.4 +0.2
baz=248
M33A **Taylor Creek F** 100.40 49 Pdiff **Pdif** 07 55 13.6 +0.4
baz=248
MIAR **Mount Ida** 100.43 57 Pdiff **Pdif** 07 55 13.9 +0.4
baz=248
MIAR **Mount Ida** 100.43 57 *e*P **Pdif** 07 55 14.1 +0.6
MIAR pmax pmax
comp=Z,10.0nm,0.9s
MIAR **Mount Ida** 100.43 57 *e*Pdif **Pdif** 07 55 14.1 +0.6
comp=Z,9.6nm,0.9s
I31A **Royce, Wessing** 100.43 47 Pdiff **Pdif** 07 55 13.3 0.0
baz=247
P35A **Duane Minner,** 100.46 51 Pdiff **Pdif** 07 55 14.0 +0.5
baz=248
443A **Delano Plantat** 100.46 61 Pdiff **Pdif** 07 55 14.8 +1.1
baz=249
Y40A **Okolona** 100.46 58 Pdiff **Pdif** 07 55 14.3 +0.6
baz=248
W39A **Magazine** 100.51 56 Pdiff **Pdif** 07 55 14.3 +0.5
baz=248
U38A **Gravette** 100.51 55 Pdiff **Pdif** 07 55 13.8 0.0
baz=248
Z41A **Richland Creek** 100.56 58 Pdiff **Pdif** 07 55 14.6 +0.5
baz=248
L33A **Hoskins** 100.57 49 Pdiff **Pdif** 07 55 14.0 0.0
baz=248
N34A **Lincoln** 100.61 50 Pdiff **Pdif** 07 55 14.4 +0.2
baz=248
242A **Grayson** 100.63 60 Pdiff **Pdif** 07 55 15.1 +0.6
baz=249
J32A **Parkston** 100.64 47 Pdiff **Pdif** 07 55 13.9 -0.3
baz=248
H31A **Wolsey** 100.64 46 Pdiff **Pdif** 07 55 14.2 0.0
baz=247
Q36A **Arnold C. Orve** 100.65 52 Pdiff **Pdif** 07 55 14.5 +0.2
baz=248
S37A **Fort Scott** 100.67 53 Pdiff **Pdif** 07 55 14.8 +0.3
baz=248
544A **White Castle** 100.72 62 Pdiff **Pdif** 07 55 16.0 +1.1
baz=249
343A **Vidalia** 100.78 61 Pdiff **Pdif** 07 55 16.1 +1.0
baz=249
T38A **Diamond** 100.80 54 Pdiff **Pdif** 07 55 15.4 +0.3
baz=248
M34A **Aspy Farms, Fr** 100.80 49 Pdiff **Pdif** 07 55 15.5 +0.5
baz=248
O35A **Humboldt** 100.81 51 Pdiff **Pdif** 07 55 15.7 +0.7
baz=248
OTAV **Otavalo** 100.83 95 *e*P **Pdif** 07 55 11.3 -5.0
OTAV **Otavalo** 100.83 95 *e*P **PKKPbc** 08 11 27.7 +1.5
OTAV **Otavalo** 100.83 95 *e*Pdif **Pdif** 07 55 17.2 +0.9
comp=Z,32nm,1.4s
OTAV *e*PKPdf **PKiKP** 07 59 38.8 -0.1
V39A **Pettigrew** 100.85 56 Pdiff **Pdif** 07 55 15.6 +0.2
baz=249
R37A **Teagarden Farm** 100.87 53 Pdiff **Pdif** 07 55 15.7 +0.3
baz=248
K33A **Hardington** 100.92 48 Pdiff **Pdif** 07 55 15.5 0.0
baz=248
Y41A **Eaglette Beard** 100.93 58 Pdiff **Pdif** 07 55 16.3 +0.6
baz=249
142A **Monroe** 100.97 59 Pdiff **Pdif** 07 55 17.0 +1.1
baz=249
X40A **Basin Creek Fa** 100.98 57 Pdiff **Pdif** 07 55 16.1 +0.1
baz=249
W40A **Ferguson Farm,** 101.05 56 Pdiff **Pdif** 07 55 16.8 +0.5
baz=249
P36A **Good Intent, A** 101.07 52 Pdiff **Pdif** 07 55 16.5 +0.3
baz=248
243A **Waterproof** 101.10 60 Pdiff **Pdif** 07 55 17.6 +1.1
baz=249
G31A **Conde** 101.10 45 Pdiff **Pdif** 07 55 15.8 -0.4
baz=248
L34A **Svendsen Farm,** 101.11 49 Pdiff **Pdif** 07 55 16.3 -0.1
baz=248
I32A **Karley and Nic** 101.14 47 Pdiff **Pdif** 07 55 16.4 -0.1
baz=248
U39A **Green Forest** 101.17 55 Pdiff **Pdif** 07 55 16.8 0.0
baz=249
J33A **Davis** 101.21 48 Pdiff **Pdif** 07 55 16.7 0.0
baz=248
N35A **Tabor** 101.22 50 Pdiff **Pdif** 07 55 17.2 +0.3
baz=248
MDND **Maddock** 101.22 43 Pdiff **Pdif** 07 55 16.7 0.0
baz=247
X41A **Kaden, Bauxite** 101.23 57 Pdiff **Pdif** 07 55 17.4 +0.4
baz=249
Z42A **Norrel Spur, H** 101.23 59 Pdiff **Pdif** 07 55 17.4 +0.3
baz=249
545A **Edgard** 101.24 62 Pdiff **Pdif** 07 55 18.0 +0.8
baz=249
S38A **Stockton** 101.30 54 Pdiff **Pdif** 07 55 17.2 -0.1
baz=249
F31A **Hecla** 101.32 45 Pdiff **Pdif** 07 55 16.9 -0.3
baz=248
H32A **Carlson Farm,** 101.34 46 Pdiff **Pdif** 07 55 17.1 -0.3
baz=248
TIXI **Tiksi** 101.34 345 PKPPKP **P'P'df** 08 19 42.3 +3.2
comp=Z,3.0nm,0.5s,baz=63,slow=2.5,SNR=3.2
TIXI **Tiksi** 101.34 345 *e*P **Pdif** 07 55 17.2 +0.6
TIXI **Tiksi** 101.34 345 *e*Pdif **Pdif** 07 55 16.8 +0.1
comp=Z,14nm,0.9s
TIXI P'P' 08 19 42.3
Q37A **Longview Farm,** 101.35 53 Pdiff **Pdif** 07 55 17.4 -0.1
baz=249
M35A **Neola** 101.40 50 Pdiff **Pdif** 07 55 17.9 +0.3
baz=248
O36A **Bolckow** 101.43 51 Pdiff **Pdif** 07 55 18.2 +0.3
baz=249
143A **Socs Landing,** 101.45 59 Pdiff **Pdif** 07 55 18.7 +0.7
baz=249
V40A **Witts Springs** 101.46 56 Pdiff **Pdif** 07 55 18.2 +0.1
baz=249
T39A **Clever** 101.47 55 Pdiff **Pdif** 07 55 18.0 -0.1
baz=249
R38A **Fenwick Farm,** 101.50 53 Pdiff **Pdif** 07 55 18.2 0.0
baz=249
344A **Westbrook Farm** 101.55 61 Pdiff **Pdif** 07 55 19.9 +1.4
baz=249
Y42A **Garnett, Star** 101.56 58 Pdiff **Pdif** 07 55 19.1 +0.7
baz=249
K34A **Le Mars** 101.57 48 Pdiff **Pdif** 07 55 18.7 +0.3
baz=248
G32A **Webster** 101.58 46 Pdiff **Pdif** 07 55 18.0 -0.3
baz=248
I33A **Coleman** 101.59 47 Pdiff **Pdif** 07 55 18.4 -0.1
baz=249
ECSD **EROS Data Cent** 101.60 47 Pdiff **Pdif** 07 55 18.6 +0.1
baz=248
ECSD **EROS Data Cent** 101.60 47 *e*Pdif **Pdif** 07 55 18.2 -0.3
comp=Z,12nm,1.1s
445A **Amite** 101.61 62 Pdiff **Pdif** 07 55 19.6 +0.8
baz=249
U40A **Yellville** 101.63 55 Pdiff **Pdif** 07 55 18.8 0.0
baz=249
W41B **Gary Mavity, V** 101.67 57 Pdiff **Pdif** 07 55 19.6 +0.6
baz=249
P37A **Lathrop** 101.68 52 Pdiff **Pdif** 07 55 19.0 0.0
baz=249
CMBC **Cumbal** 101.68 94 *e*P **Pdif** 07 55 28.0 +7.9
CMBC **Cumbal** 101.68 94 *e*P **PKKPbc** 08 11 23.1 -0.6
N36A **Muff Farm, Cla** 101.68 51 Pdiff **Pdif** 07 55 19.4 +0.4
baz=249
L35A **Bielow Farm, R** 101.74 49 Pdiff **Pdif** 07 55 19.3 +0.1
baz=249
S39A **Bolivar** 101.75 54 Pdiff **Pdif** 07 55 19.2 -0.1
baz=249
Z43A **Armstrong Fami** 101.76 59 Pdiff **Pdif** 07 55 19.7 +0.3
baz=249
244A **Avery, Jackson** 101.79 60 Pdiff **Pdif** 07 55 20.4 +0.8
baz=249
E31A **Nome** 101.81 44 Pdiff **Pdif** 07 55 19.0 -0.4
baz=248
H33A **Prehn Over Nor** 101.87 46 Pdiff **Pdif** 07 55 19.6 -0.1
baz=248
J34A **George** 101.88 48 Pdiff **Pdif** 07 55 19.5 -0.3
baz=249
546A **Slidell** 101.93 62 Pdiff **Pdif** 07 55 21.8 +1.6
baz=249
V41A **Mountainview** 101.96 56 Pdiff **Pdif** 07 55 20.0 -0.3
baz=249
VBMS **Vicksburg** 101.98 60 Pdiff **Pdif** 07 55 22.1 +1.6
baz=249
Q38A **Cooks Store, C** 101.99 53 Pdiff **Pdif** 07 55 20.3 0.0
baz=249
M36A **Felix, Anita** 102.02 50 Pdiff **Pdif** 07 55 20.5 0.0
baz=249
O37A **Wolven Farm, M** 102.03 51 Pdiff **Pdif** 07 55 20.9 +0.4
baz=249
F32A **Veblen** 102.05 45 Pdiff **Pdif** 07 55 19.9 -0.5
baz=248
345A **Thompson Farm,** 102.06 61 Pdiff **Pdif** 07 55 21.8 +1.0
baz=250
D31A **Mcclaflin, Tow** 102.10 44 Pdiff **Pdif** 07 55 20.5 -0.1
baz=248
T40A **Mansfield** 102.16 55 Pdiff **Pdif** 07 55 21.6 +0.5
baz=249
K35A **Storm Lake** 102.18 49 Pdiff **Pdif** 07 55 21.4 +0.3
baz=249
R39A **Chumby, Stover** 102.18 53 Pdiff **Pdif** 07 55 21.7 +0.5
baz=249
N37A **Lee Faris, Mou** 102.20 51 Pdiff **Pdif** 07 55 21.2 0.0
baz=249
144A **Alexander Plac** 102.20 60 Pdiff **Pdif** 07 55 22.7 +1.3
baz=250
I34A **Hadley** 102.22 47 Pdiff **Pdif** 07 55 21.4 +0.1
baz=249
Y43A **Makayla and Ka** 102.25 58 Pdiff **Pdif** 07 55 22.7 +1.1
baz=250
G33A **Ortonville** 102.25 46 Pdiff **Pdif** 07 55 21.2 -0.2
baz=249
P38A **Dawn** 102.28 52 Pdiff **Pdif** 07 55 21.6 0.0
baz=249
S40A **Lebanon** 102.33 54 Pdiff **Pdif** 07 55 22.0 +0.1
baz=250
U41A **Viola** 102.33 56 Pdiff **Pdif** 07 55 22.0 +0.1
baz=250
CHLP **Challavanipeta** 102.34 285 *e*Pdif **Pdif** 07 55 20.6 -1.7
CHLP *e*Pdif **pPdif** 07 57 16.7 -2.0
CHLP *e*PP **PKiKP** 07 59 41.5 +0.6
CHLP *e*SKSac **SKSac** 08 05 08.4 -2.9
CHLP *e* 08 05 50.3
CHLP *e* 08 06 17.8
L36A **Harm Buss Farm** 102.35 49 Pdiff **Pdif** 07 55 21.9 +0.1
baz=249
E32A **Braaten, Kindr** 102.35 44 Pdiff **Pdif** 07 55 21.8 0.0
baz=249
C31A **Landman Farms,** 102.37 43 Pdiff **Pdif** 07 55 21.5 -0.3
baz=248
446A **Poplarville** 102.41 62 Pdiff **Pdif** 07 55 22.3 -0.1
baz=250
245A **Little AP, Sta** 102.42 60 Pdiff **Pdif** 07 55 23.2 +0.9
baz=250
Z44A **Pea Ridge, Bel** 102.42 59 Pdiff **Pdif** 07 55 22.7 +0.4
baz=250
J35A **Milford** 102.42 48 Pdiff **Pdif** 07 55 21.9 -0.3
baz=249
Q39A **Willow Grove F** 102.48 53 Pdiff **Pdif** 07 55 22.3 -0.2
baz=250
X43A **Marvell** 102.50 58 Pdiff **Pdif** 07 55 23.4 +0.8
baz=250
O38A **Galt** 102.50 52 Pdiff **Pdif** 07 55 22.6 0.0
baz=250
H34A **Spellman Lake,** 102.50 47 Pdiff **Pdif** 07 55 22.8 +0.3
baz=249
M37A **Trindle Farm,** 102.53 50 Pdiff **Pdif** 07 55 23.1 +0.4
baz=249
346A **Big Creek Wild** 102.54 61 Pdiff **Pdif** 07 55 24.0 +1.0
baz=250
V42A **Cord** 102.55 56 Pdiff **Pdif** 07 55 22.9 +0.1
baz=250
D32A **Dogwood Acres,** 102.58 44 Pdiff **Pdif** 07 55 22.4 -0.3
baz=249
F33A **5 Mile Ranch,** 102.58 45 Pdiff **Pdif** 07 55 23.0 +0.2
baz=249
145A **Houston Renfro** 102.59 60 Pdiff **Pdif** 07 55 24.2 +1.1
baz=250
BOK **Bokaro** 102.60 291 *e*P **Pdif** 07 55 22.7 -0.7
BOK IAMs_20 IAMs_20 08 17 26.7
comp=Z,2μm,11.2s
LPAZ **La Paz** 102.64 114 P **Pdif** 07 55 26.4 +1.9
comp=Z,7.6nm,0.7s,baz=241,slow=3.9,SNR=25
LPAZ PKiKP **PKiKP** 07 59 42.3 -0.1
comp=Z,9.9nm,0.9s,baz=267,slow=4.9,SNR=8.7
LPAZ PKKPbc **PKKPbc** 08 11 20.8 -0.6
comp=Z,3.7nm,0.6s,baz=356,slow=4.5,SNR=9.3
LPAZ PKKP **PKKPdf** 08 11 26.2 -1.1
comp=Z,2.0nm,0.5s,baz=249,slow=13,SNR=4.6
LPAZ SKKPbc SKKPbc 08 14 13.7 +2.5
comp=Z,3.9nm,0.9s,baz=20,slow=9.0,SNR=3.8
B31A **Greenbush Farm** 102.65 43 Pdiff **Pdif** 07 55 22.8 -0.3
baz=249
K36A **Gilmore City** 102.69 49 Pdiff **Pdif** 07 55 23.8 +0.5
baz=249
T41A **Mountain View** 102.69 55 Pdiff **Pdif** 07 55 23.6 +0.1
baz=250
VIS **Vishakhapatnam** 102.70 284 *e*P **Pdif** 07 55 25.5 +1.5
VIS IAMs_20 IAMs_20 08 22 17.4
comp=Z,4μm,14.7s
R40A **Maddies Statio** 102.74 54 Pdiff **Pdif** 07 55 23.9 +0.2
I35A **Creekview Farm** 102.75 48 Pdiff **Pdif** 07 55 23.1 -0.5
baz=249
P39B **Salisbury** 102.80 52 Pdiff **Pdif** 07 55 23.8 -0.1
baz=250
G34A **Benson** 102.80 46 Pdiff **Pdif** 07 55 23.5 -0.3
baz=249
Y44A **Strider, Charl** 102.83 58 Pdiff **Pdif** 07 55 24.7 +0.6
baz=250
U42A **Revenden** 102.85 56 Pdiff **Pdif** 07 55 23.8 -0.4
baz=250
S41A **Jillco Farms,** 102.89 55 Pdiff **Pdif** 07 55 23.7 -0.7
baz=250
N38A **Joes South For** 102.90 51 Pdiff **Pdif** 07 55 24.4 +0.1
baz=250
447A **Lucedale** 102.99 62 Pdiff **Pdif** 07 55 25.2 +0.3
baz=250
L37A **Phoenix Point,** 102.99 50 Pdiff **Pdif** 07 55 25.0 +0.3
baz=250
E33A **Westby DABS, E** 103.00 45 Pdiff **Pdif** 07 55 24.6 -0.1
baz=249
J36A **Seneca 1, Swea** 103.00 48 Pdiff **Pdif** 07 55 24.7 0.0
baz=250
246A **Jackson Lee, B** 103.02 61 Pdiff **Pdif** 07 55 26.1 +1.0
baz=250
Z45A **Winona** 103.03 59 Pdiff **Pdif** 07 55 25.6 +0.6
baz=250
X44A **Crenshaw** 103.06 58 Pdiff **Pdif** 07 55 25.6 +0.4
baz=250
RAMN **Ramite** 103.09 294 *e*P **PKiKP** 07 59 41.5 -0.9
A31A **Linda, St. Vin** 103.12 42 Pdiff **Pdif** 07 55 24.4 -0.7
baz=249
Q40A **Laux Farm, Aux** 103.13 53 Pdiff **Pdif** 07 55 25.6 +0.2
baz=250
C32A **Crookston** 103.14 43 Pdiff **Pdif** 07 55 24.8 -0.4
baz=249
M38A **Pleasantville** 103.14 50 Pdiff **Pdif** 07 55 25.3 -0.1
baz=250
H35A **Sunnyside Ranc** 103.15 47 Pdiff **Pdif** 07 55 25.5 +0.2
baz=250
O39A **Kirksville** 103.21 52 Pdiff **Pdif** 07 55 25.8 +0.1
baz=250
F34A **Alexandria** 103.24 46 Pdiff **Pdif** 07 55 26.0 +0.2
baz=250
347A **Saraland** 103.29 61 Pdiff **Pdif** 07 55 27.4 +1.2
baz=250
146A **Union** 103.29 60 Pdiff **Pdif** 07 55 27.1 +0.9
baz=250
K37A **Belmond** 103.29 49 Pdiff **Pdif** 07 55 25.8 -0.2
baz=250
Y45A **Yeager Farm, C** 103.32 59 Pdiff **Pdif** 07 55 27.1 +0.7
baz=250
P40A **Paris** 103.33 53 Pdiff **Pdif** 07 55 26.0 -0.3
baz=250
D33A **AnnSam, Wauburn** 103.33 44 Pdiff **Pdif** 07 55 26.0 -0.1
baz=250
B32A **Ashes, Strandq** 103.33 43 Pdiff **Pdif** 07 55 25.5 -0.5
baz=249
POPC **Popayan, Colom** 103.38 93 *e*P **Pdif** 07 55 22.8 -4.6
POPC **Popayan, Colom** 103.38 93 *e*P **PKKPbc** 08 11 18.0 -0.5
247A **Quitman** 103.45 61 Pdiff **Pdif** 07 55 27.5 +0.5
baz=250
N39A **Derby Farms, D** 103.45 51 Pdiff **Pdif** 07 55 26.9 +0.1
baz=250
I36A **Fitzsimmons Fa** 103.46 48 Pdiff **Pdif** 07 55 26.8 0.0
baz=250
W44A **Shelby Farms P** 103.53 57 Pdiff **Pdif** 07 55 27.5 +0.3
baz=250
J37A **Redenius Farm,** 103.54 49 Pdiff **Pdif** 07 55 26.9 -0.2
baz=250
A32A **Rocking H Ranc** 103.54 42 Pdiff **Pdif** 07 55 26.5 -0.5
baz=250
E34A **Wadena** 103.55 45 Pdiff **Pdif** 07 55 26.8 -0.3
baz=250
L38A **Oak Wood Farm,** 103.55 50 Pdiff **Pdif** 07 55 27.5 +0.3
baz=250
G35A **Watkins** 103.56 46 Pdiff **Pdif** 07 55 27.3 +0.2
baz=250
Z46A **Louisville** 103.57 60 Pdiff **Pdif** 07 55 28.3 +0.9
baz=250
C33A **Trail** 103.59 44 Pdiff **Pdif** 07 55 26.8 -0.4
baz=250
X45A **UM Field Stati** 103.62 58 Pdiff **Pdif** 07 55 28.1 +0.4
baz=250
O40A **La Belle** 103.65 52 Pdiff **Pdif** 07 55 27.9 +0.2
baz=250
JIRN **Jiri** 103.67 294 *e*P **PKiKP** 07 59 42.9 -0.7
JIRN **Jiri** 103.67 294 *e*P **PKKPbc** 08 11 18.4 +0.2
448A **Bay Minette** 103.68 62 Pdiff **Pdif** 07 55 28.6 +0.6
baz=250
V44A **Blytheville** 103.70 57 Pdiff **Pdif** 07 55 28.8 +0.8
baz=250
H36A **Jessemand, He** 103.71 47 Pdiff **Pdif** 07 55 27.9 0.0
baz=250
F35A **Swanville** 103.72 46 Pdiff **Pdif** 07 55 28.4 +0.6
baz=250
AGMN **Agassiz Nation** 103.72 43 Pdiff **Pdif** 07 55 27.6 -0.2
baz=250
AGMN **Agassiz Nation** 103.72 43 *e*Pdif **Pdif** 07 55 27.0 -0.8
comp=Z,71nm,1.8s
D34A **Park Rapids** 103.73 44 Pdiff **Pdif** 07 55 27.6 -0.3
baz=250
MDRS **Chennai** 103.80 278 *e*P **Pdif** 07 55 26.1 -2.7
348A **Jackson** 103.80 62 Pdiff **Pdif** 07 55 29.7 +1.2
baz=250
K38A **Parkersburg** 103.86 49 Pdiff **Pdif** 07 55 28.3 -0.2
baz=250
Y46A **Houston** 103.86 59 Pdiff **Pdif** 07 55 29.0 +0.2
baz=251
I37A **Lemond, Waseca** 103.88 48 Pdiff **Pdif** 07 55 28.9 +0.3
baz=250
B33A **Robert and Kas** 103.89 43 Pdiff **Pdif** 07 55 28.3 -0.2
baz=250
M39A **Webster** 103.89 51 Pdiff **Pdif** 07 55 29.0 +0.3
baz=251
147A **Livingston** 103.93 60 Pdiff **Pdif** 07 55 29.6 +0.5
baz=251
FLOC **Florencia** 103.93 94 *e*P **Pdif** 07 55 28.0 -1.6
GUN **Gumba** 104.01 295 *e*P **PKiKP** 07 59 43.5 -0.7
GUN **Gumba** 104.01 295 *e*P **PKKPbc** 08 11 17.7 +0.5
comp=Z,109nm,0.5s
W45A **Hickory Valley** 104.02 58 Pdiff **Pdif** 07 55 29.5 +0.1
baz=251
G36A **St. Michael** 104.05 47 Pdiff **Pdif** 07 55 30.2 +0.9
baz=250
PVM **Polavaram** 104.06 283 *e*Pdif **Pdif** 07 55 29.8 -0.2
PVM *e*pPdif **pPdif** 07 57 24.3 -2.1
PVM *e*PKiKP **PKiKP** 07 59 42.8 -1.3
PVM *e*PP **PP** 07 59 55.0 -0.8
PVM *e*SKSac **SKSac** 08 05 16.1 -3.1
PVM *e* 08 06 03.0
PVM *e* 08 06 31.7
E35A **Pequot Lakes** 104.06 45 Pdiff **Pdif** 07 55 29.6 +0.2
baz=250
P41A **Barry, Barry** 104.09 53 Pdiff **Pdif** 07 55 29.9 +0.2
baz=251
C34A **RKJ Ranch, Bem** 104.10 44 Pdiff **Pdif** 07 55 29.1 -0.4
baz=250
S43A **Fulton Ridge,** 104.14 55 Pdiff **Pdif** 07 55 30.0 +0.1
baz=251
248A **Dixon Mills** 104.16 61 Pdiff **Pdif** 07 55 30.6 +0.5
baz=251
L39A **Vinton** 104.22 50 Pdiff **Pdif** 07 55 30.3 +0.1
baz=251
Q42A **Golden Eagle** 104.23 54 Pdiff **Pdif** 07 55 30.6 +0.4
baz=251
A33A **Warroad** 104.23 43 Pdiff **Pdif** 07 55 29.3 -0.7
baz=250
Z47A **Carrollton** 104.26 60 Pdiff **Pdif** 07 55 30.5 0.0
baz=251
J38A **Wedel Dairy, R** 104.28 49 Pdiff **Pdif** 07 55 30.2 -0.2
baz=251
PKIN **Phulchoki** 104.31 294 *e*P **PKiKP** 07 59 43.4 -1.2
PKIN **Phulchoki** 104.31 294 *e*P **PKKPbc** 08 11 16.7 +0.5
comp=Z,18nm,0.5s
O41A **Passleys Farm,** 104.37 52 Pdiff **Pdif** 07 55 30.9 +0.1
baz=251
ULM **Lac du Bonnet** 104.38 41 Pdiff **Pdif** 07 55 31.3 +0.6
comp=Z,3.3nm,0.6s,baz=260,slow=3.6,SNR=8.1
ULM PKiKP **PKiKP** 07 59 42.2 -1.5
comp=Z,6.2nm,0.6s,baz=238,slow=1.9,SNR=7.3
ULM PP **PP** 07 59 55.6 -1.9
comp=Z,7.1nm,0.8s,baz=260,slow=7.0,SNR=6.6
ULM PKKPbc **PKKPbc** 08 11 14.2 -2.1
comp=Z,8.4nm,0.5s,baz=92,slow=2.2,SNR=15
ULM PKPPKP **P'P'df** 08 19 37.9 +3.0
comp=Z,6.1nm,1.1s,baz=40,slow=1.6,SNR=3.0
V45A **Humboldt** 104.39 57 Pdiff **Pdif** 07 55 31.1 +0.1
baz=251
H37A **Dierke Farm, C** 104.39 47 Pdiff **Pdif** 07 55 31.4 +0.5
baz=251
F36A **Milaca** 104.41 46 Pdiff **Pdif** 07 55 31.5 +0.6
baz=251
D35A **Remer** 104.46 45 Pdiff **Pdif** 07 55 30.5 -0.6
baz=251
KKN **Kakani** 104.47 294 *e*P **PKiKP** 07 59 44.0 -0.9

KKN Kakani 104.47 294 eP PKKPbc 08 11 16.0 +0.4
comp=Z,33nm,0.5s
K39A Oelwein 104.49 50 Pdiff Pdif 07 55 30.4 -0.9
baz=251
SKHT Srikalahasti 104.53 279 ePdif Pdif 07 55 32.6 +0.5
SKHT epPdif pPdif 07 57 26.6 -2.0
SKHT ePKiKP PKiKP 07 59 44.6 -0.4
SKHT eSKSac SKSac 08 05 21.5 0.0
SKHT e 08 06 07.3
SKHT e 08 06 38.4
B34A Aery, Baudette 104.55 43 Pdiff Pdif 07 55 31.1 -0.4
baz=251
DMN Daman 104.56 294 eP PKiKP 07 59 45.0 -0.1
comp=Z,208nm,1.3s
DMN Daman 104.56 294 eP PKKPbc 08 11 15.8 +0.4
comp=Z,48nm,0.8s
P42A Winchester 104.59 53 Pdiff Pdif 07 55 31.7 -0.1
baz=251
I38A Scanlan Farm, 104.62 48 Pdiff Pdif 07 55 32.0 +0.1
baz=251
Y47A UCPARC, Winfie 104.66 59 Pdiff Pdif 07 55 32.3 0.0
baz=251
SPMN Marine on St. 104.68 47 Pdiff Pdif 07 55 32.5 +0.4
baz=251
SPMN Marine on St. 104.68 47 ePdif Pdif 07 55 32.7 +0.5
comp=Z,24nm,1.1s
C35A Jirik Farms, M 104.72 44 Pdiff Pdif 07 55 31.6 -0.6
baz=251
Z48A Northport 104.72 60 Pdiff Pdif 07 55 32.4 -0.2
baz=251
L40A Anamosa 104.75 50 Pdiff Pdif 07 55 32.1 -0.4
baz=251
S44A Carbondale 104.79 55 Pdiff Pdif 07 55 32.6 -0.2
baz=251
E36A McGregor 104.80 45 Pdiff Pdif 07 55 32.8 +0.2
baz=251
J39A Decorah 104.82 49 Pdiff Pdif 07 55 32.8 0.0
baz=251
Q43A New Douglas 104.86 54 Pdiff Pdif 07 55 33.2 +0.2
baz=251
O42A Bath 104.97 52 Pdiff Pdif 07 55 33.5 0.0
baz=252
K40A Colesburg 105.01 50 Pdiff Pdif 07 55 33.4 -0.2
baz=252
ADKI Addanki 105.04 281 ePdif Pdif 07 55 34.7 +0.3
ADKI epPdif pPdif 07 57 28.9 -2.0
ADKI eSKSac SKSac 08 05 21.6 -2.2
ADKI e 08 06 09.7
ADKI e 08 06 41.9
LRAL Lakeview Retre 105.06 60 ePKPdf PKiKP 07 59 44.2 -1.2
D36A Goodland 105.07 45 Pdiff Pdif 07 55 33.9 +0.1
baz=251
GKN Gorkha 105.08 294 eP PKiKP 07 59 45.4 -0.5
comp=Z,69nm,0.9s
GKN Gorkha 105.08 294 eP PKKPbc 08 11 14.0 +0.2
comp=Z,89nm,0.7s
B35A Bob, Littlefor 105.09 44 Pdiff Pdif 07 55 33.4 -0.5
baz=251
R44A Waltonville 105.10 55 Pdiff Pdif 07 55 34.2 +0.1
baz=252
TRD Trivandrum 105.11 273 eP Pdif 07 55 33.1 -1.6
L41A Preston 105.27 51 Pdiff Pdif 07 55 34.4 -0.4
baz=252
S45A Carrier Mills 105.29 55 Pdiff Pdif 07 55 35.8 +0.8
baz=252
Q44A Meyer Farm, Va 105.35 54 Pdiff Pdif 07 55 35.6 +0.3
baz=252
E37A Wrenshall 105.37 46 Pdiff Pdif 07 55 34.9 -0.2
baz=252
C36A Pine Crest Far 105.46 44 Pdiff Pdif 07 55 35.3 -0.3
baz=252
PRAC Prado 105.48 93 eP Pdif 07 55 30.3 -6.2
PRAC Prado 105.48 93 eP PKKPbc 08 11 10.9 -1.1
J40A Soldiers Grove 105.51 49 Pdiff Pdif 07 55 35.9 0.0
baz=252
D37A Cotton 105.54 45 Pdiff Pdif 07 55 36.1 +0.2
baz=252
K41A Shullsburg 105.57 50 Pdiff Pdif 07 55 36.1 0.0
baz=252
GUYC Guyana, Colomb 105.61 91 eP Pdif 07 55 35.6 -2.0
GUYC Guyana, Colomb 105.61 91 eP PKKPbc 08 11 13.0 +0.8
CPUP Villa Florida 105.64 128 Pdiff Pdif 07 55 39.0 +2.1
comp=Z,1.5nm,0.7s,baz=264,slow=1.8,SNR=4.3
CPUP PKiKP PKiKP 07 59 46.4 -0.5
comp=Z,2.9nm,0.6s,baz=342,slow=2.2,SNR=6.8
CPUP PP PP 08 00 04.5 -1.9
comp=Z,12nm,1.2s,baz=250,slow=2.3,SNR=3.1
CPUP PKKPbc PKKPbc 08 11 11.6 -0.6
comp=Z,2.5nm,0.6s,baz=45,slow=5.2,SNR=5.7
CPUP PKKP PKKPdf 08 11 22.6 +1.7
comp=Z,4.0nm,0.5s,baz=80,slow=2.5,SNR=12
CPUP PKKPab PKKPab 08 11 31.6 -1.2
comp=Z,5.9nm,1.0s,baz=55,slow=3.4,SNR=4.3
CPUP SKKPbc SKKPbc 08 14 04.3 +2.2
comp=Z,6.2nm,1.0s,baz=94,slow=4.3,SNR=3.3
CPUP PKPPKP P'P'df 08 19 32.4 -2.7
comp=Z,1.4nm,0.8s,baz=89,slow=6.5,SNR=3.3
HDIL Hopedale 105.66 52 ePKPdf PKiKP 07 59 45.1 -1.3
JFWS Jewell Farm 105.70 50 ePKPdf PKiKP 07 59 44.9 -1.5
RCLA Racherla 105.82 280 ePKiKP Pdif 07 55 39.7 +1.8
RCLA eSKSac SKSac 08 05 24.5 -2.8
RCLA e 08 06 12.4
RCLA e 08 06 46.5
HELC Santa Helena 105.86 90 eP PKKPbc 08 11 11.5 +0.1
KOLN Koldanda 105.87 294 eP PKiKP 07 59 46.3 -1.2
comp=Z,34nm,0.7s
KOLN Koldanda 105.87 294 eP PKKPbc 08 11 11.3 -0.1
NJS Nagarjunasagar 105.89 281 ePdif Pdif 07 55 38.0 -0.2
NJS epPdif pPdif 07 57 33.3 -1.3
NJS ePKiKP PKiKP 07 59 46.1 -1.3
NJS ePP PP 08 00 04.3 -4.9
NJS eSKSac SKSac 08 05 24.9 -2.6
NJS e 08 06 12.1
NJS e 08 06 47.9
SRLM Srisailam 106.10 281 ePdif Pdif 07 55 39.7 +0.6
SRLM epPdif pPdif 07 57 34.8 -0.8
SRLM esPdif sPdif 07 58 26.1 -2.0
SRLM ePKiKP PKiKP 07 59 46.4 -1.6
SRLM ePP PP 08 00 05.3 -5.5
SRLM eSKSac SKSac 08 05 25.4 -3.2
SRLM e 08 06 16.6
SRLM e 08 06 51.1
SJAC San Juan de Ar 106.16 94 eP Pdif 07 55 39.5 -0.1
SJAC San Juan de Ar 106.16 94 eP PKKPbc 08 11 08.4 -1.7
EYMN Ely 106.38 44 ePKPdf PKiKP 07 59 46.1 -1.4
ROSC El Rosal 106.44 92 PKiKP PKiKP 07 59 48.6 -0.5
comp=Z,5.3nm,0.7s,baz=336,slow=18,SNR=5.1
ROSC PP PP 08 00 12.9 -0.7
comp=Z,3.0nm,0.5s,baz=273,slow=7.9,SNR=7.4
ROSC PKKPbc PKKPbc 08 11 11.7 +2.1
comp=Z,14nm,0.6s,baz=157,slow=5.4,SNR=11
ROSC El Rosal 106.44 92 eP Pdif 07 55 39.6 -1.6
ROSC El Rosal 106.44 92 eP PKKPbc 08 11 09.9 +0.3
PYUN Piuthan 106.49 294 eP PKiKP 07 59 46.9 -1.7
comp=Z,164nm,1.1s
PYUN Piuthan 106.49 294 eP PKKPbc 08 11 09.7 +0.1
comp=Z,36nm,0.5s
RPR Rampur 106.69 284 ePdif Pdif 07 55 40.7 -1.0
RPR epPdif pPdif 07 57 36.1 -1.9
RPR esPdif sPdif 07 58 26.1 -4.5
RPR ePKiKP PKiKP 07 59 48.3 -0.6
RPR ePP PP 08 00 12.5 -2.5
RPR eSKSac SKSac 08 05 27.7 -3.2
RPR e 08 06 20.7
RPR e 08 06 53.8
HYB Hyderabad 106.86 282 i Pdiff Pdif 07 55 44.0 +1.5
HYB epPdiff pPdif 07 57 36.0 -3.0
HYB ePKP PKiKP 07 59 50.0 +0.7
HYB ePP PP 08 00 12.0 -4.3
HYB e 08 01 56.0
HYB eSKP 08 02 38.0
HYB eSKS SKSac 08 05 32.0 +0.2
HYB e 08 06 24.0
HYB eSdiff Sdif 08 06 58.0 -0.7
HYB e 08 08 20.0
HYB e 08 09 32.0
HYB ePKKP PKKPbc 08 11 08.5 +0.5
HYB ePKKP PKKPab 08 11 26.5 +1.4
HYB e 08 12 10.0
HYB e 08 14 30.0
HYB Hyderabad 106.86 282 eP Pdif 07 55 40.5 -2.0
HYBB Hyderabad (bro 106.86 282 ePdif Pdif 07 55 41.8 -0.8
HYBB epPdif pPdif 07 57 38.4 -0.6
HYBB ePKiKP PKiKP 07 59 48.5 -0.8
HYBB ePP PP 08 00 11.7 -4.6
HYBB eSKSac SKSac 08 05 28.8 -3.1
HYBB e 08 06 19.8
HYBB e 08 06 55.1
URV Uravakonda 107.17 279 ePdif Pdif 07 55 42.6 -1.3
URV epPdif pPdif 07 57 39.4 -1.0
URV ePKiKP PKiKP 07 59 48.4 -1.6
URV ePP PP 08 00 14.6 -4.0
URV eSKSac SKSac 08 05 30.0 -3.2
URV e 08 06 24.2
URV e 08 06 57.0
WCI Wyandotte Cave 107.18 55 ePKPdf PKiKP 07 59 48.0 -1.3
COWI Conover 107.39 47 ePKPdf PKiKP 07 59 48.2 -1.3
WMQ Urumqi 107.50 311 Pdif Pdif 07 55 45.0 +0.2
WMQ PP PP 08 00 24.0 +3.5
WMQ SKKS 08 06 27.0
WMQ AMB AMB
comp=Z,1μm,10.8s
SRSP Sriramsagar 107.56 283 ePdif Pdif 07 55 46.0 +0.5
SRSP epPdif pPdif 07 57 40.0 -2.0
SRSP ePKiKP PKiKP 07 59 49.8 -0.8
SRSP eSKSac SKSac 08 05 30.6 -4.2
SRSP e 08 06 25.2
SRSP e 08 07 02.1
BRRC Barranca, Sant 107.87 90 eP PKKPbc 08 11 05.4 +0.7
RUSC La Rusia 107.98 91 eP Pdif 07 55 52.9 +4.7
RUSC La Rusia 107.98 91 eP PKKPbc 08 11 05.9 +0.9
SIV San Ignacio 108.61 118 Pdiff Pdif 07 55 52.3 +1.9
comp=Z,1.8nm,0.9s,baz=247,slow=11,SNR=3.3
SIV PKiKP PKiKP 07 59 52.1 -0.6
comp=Z,2.1nm,0.4s,baz=260,slow=4.0,SNR=7.8
SIV PP PP 08 00 29.3 +1.0
comp=Z,6.1nm,0.7s,baz=246,slow=10,SNR=9.8
SIV PKKPbc PKKPbc 08 11 02.6 -0.3
comp=Z,5.9nm,0.6s,baz=81,slow=5.2,SNR=19
SIV PKKPab PKKPab 08 11 19.1 -0.1
comp=Z,4.8nm,0.6s,baz=120,slow=4.4,SNR=5.9
SIV SKKPbc SKKPbc 08 13 55.9 +1.7
comp=Z,9.2nm,1.1s,baz=58,slow=4.1,SNR=4.2
OCAC Ocana 108.66 89 eP Pdif 07 55 43.6 -7.2
OCAC Ocana 108.66 89 eP PKKPbc 08 11 02.4 -0.1
KLRI Killari 108.83 282 ePdif Pdif 07 55 52.7 +1.4
KLRI epPdif pPdif 07 57 48.1 +0.3
KLRI ePKiKP PKiKP 07 59 51.5 -1.5
KLRI e 08 00 17.4
KLRI eSKSac SKSac 08 05 38.8 -1.5
KLRI e 08 06 35.9
KLRI e 08 07 10.5
GRMC Gramalote, San 108.94 90 eP Pdif 07 55 56.1 +4.1
GRMC Gramalote, San 108.94 90 eP PKKPbc 08 11 01.8 +0.2
CBRI Barrientos, No 108.94 90 eP PKKPbc 08 11 02.4 +0.7
CODC Agust´›n Codaz 109.18 87 eP PKKPbc 08 11 00.8 +0.2
BHPL Bhopal 109.76 287 eP Pdif 07 55 55.6 +0.4
KMSC Kings Mountain 110.17 60 ePKPdf PKiKP 07 59 53.8 -1.2
ACSO Alum Creek Sta 110.20 54 ePKPdf PKiKP 07 59 53.5 -1.5
SAML Samuel 110.43 110 ePKPdf PKiKP 07 59 55.0 -1.1
DDI Dehra Dun 111.26 295 eP PKiKP 07 59 56.6 -0.7
SDV Santo Domingo 111.37 89 eP Pdif 07 56 03.5 +0.7
SDV Santo Domingo 111.37 89 eP PKKPbc 08 10 52.7 -1.2
SDV Santo Domingo 111.37 89 ePKPdf PKiKP 07 59 56.8 -1.4
BLA Blacksburg 111.40 58 ePKiKP PKiKP 07 59 56.2 -1.2
BLA Blacksburg 111.40 58 ePKPdf PKiKP 07 59 56.2 -1.2
RES Resolute Bay 111.45 17 PKKPab PKKPab 08 11 02.9 0.0
comp=Z,15nm,1.0s,baz=118,slow=7.9,SNR=5.0
RES Resolute Bay 111.45 17 ePKiKP PKiKP 07 59 55.1 -1.2
RES Resolute Bay 111.45 17 ePKPdf PKiKP 07 59 55.1 -1.2
RES PKKPab PKKPab 08 11 02.9 0.0
POO Poona 111.45 281 eP PKiKP 07 59 55.8 -2.1
NDI New Delhi 111.52 293 ex PKiKP 07 59 50.5 -7.3
ZALV Zalesovo Beam 111.72 321 Pdiff Pdif 07 56 01.8 -1.4
comp=Z,1.4nm,0.5s,baz=114,slow=7.2,SNR=3.5
ZALV PKiKP PKiKP 07 59 56.2 -1.1
comp=Z,30nm,0.6s,baz=167,slow=0.4,SNR=37
ZALV SKP 08 02 43.4
comp=Z,18nm,0.8s,baz=132,slow=2.2,SNR=5.4
ZALV Sdiff 08 05 47.6
comp=Z,13nm,1.0s,baz=89,slow=6.7,SNR=3.6
ZALV PKKPbc PKKPbc 08 10 52.6 -0.9
comp=Z,5.1nm,0.4s,baz=272,slow=3.2,SNR=7.9
ZALV SKKPbc SKKPbc 08 13 45.0 -4.5
comp=Z,3.7nm,0.6s,baz=265,slow=3.7,SNR=4.4
MK31 Makanchi Array 111.92 313 PKIKP PKiKP 07 59 57.3 -0.7
MK31 pmax pmax
comp=Z,33nm,0.6s
MKAR Makanchi Array 111.92 313 Pdiff Pdif 07 56 07.1 +2.8
comp=Z,3.7nm,0.6s,baz=93,slow=5.5,SNR=24
MKAR PKiKP PKiKP 07 59 57.0 -1.0
comp=Z,32nm,0.5s,baz=222,slow=1.3,SNR=66
MKAR SKP 08 02 44.5
comp=Z,17nm,0.9s,baz=140,slow=0.4,SNR=5.8
MKAR Sdiff 08 05 49.2
comp=Z,11nm,0.9s,baz=84,slow=9.1,SNR=7.1
MKAR PKKPbc PKKPbc 08 10 52.2 -0.5
comp=Z,9.3nm,0.7s,baz=333,slow=2.7,SNR=10
MKAR PKKPab PKKPab 08 11 02.8 +1.2
comp=Z,15nm,0.6s,baz=267,slow=3.6,SNR=14
SMLA Simla 112.21 295 eP PKiKP 07 59 58.1 -0.9
NRIK Noril'sk 112.77 337 PKiKP PKiKP 07 59 58.4 -0.6
comp=Z,16nm,0.6s,baz=114,slow=2.2,SNR=19
NRIK PP PP 08 00 56.2 -0.8
comp=Z,89nm,1.1s,baz=106,slow=7.3,SNR=15
NRIK SKP 08 02 45.5
comp=Z,27nm,1.0s,baz=106,slow=2.5,SNR=4.2
NRIK Sdiff 08 05 52.6
comp=Z,10nm,1.0s,baz=260,slow=19,SNR=15
NRIK PKKPbc PKKPbc 08 10 49.3 -1.1
comp=Z,5.1nm,1.0s,baz=44,slow=3.3,SNR=3.6
NRIK PKKPab PKKPab 08 10 58.1 +0.9
comp=Z,8.1nm,0.8s,baz=302,slow=2.6,SNR=5.9
NVS Novosibirsk 112.78 321 ePKiKP PKiKP 07 59 58.4 -0.9
PDGK Podgornoye 113.18 309 PKIKP PKiKP 07 59 59.7 -1.0
PDGK pmax pmax
comp=Z,30nm,0.7s
DHRM DHARAMSHALA 113.21 296 eP PKiKP 08 00 00.4 -0.8
THN Thein Dam 113.73 296 eP PKiKP 08 00 01.0 -0.9
THN ex x 08 01 02.0
SADO Sadowa 113.94 50 ePKPdf PKiKP 08 00 00.3 -1.5
SADO e 08 01 05.0
CBN Corbin Frederi 113.98 57 ePKPdf PKiKP 08 00 00.4 -1.7
SSPA Standing Stone 114.08 55 ePKPdf PKPdf 08 00 01.0 -1.3
SDDR Presa de Saban 114.21 79 ePKPdf PKPdf 08 00 01.5 -1.7
SPB Sao Paulo 114.29 132 ePKPdf PKPdf 08 00 03.1 -0.2
KURK Kurchatov 114.97 317 ePKIKP PKPdf 08 00 02.9 -0.8
KURK 08 01 14.0
KURK 08 02 50.5
KURK 08 06 00.4
KURK Kurchatov 114.97 317 ePKPdf PKPdf 08 00 02.9 -0.8
KURK PP PP 08 01 14.0 +1.1
KURK SKP 08 02 50.5
KURK e 08 06 00.3
KURK PKKPbc PKKPbc 08 10 42.0 -0.6
KURK SKKPbc SKKPbc 08 13 36.5 -2.9
KURBB Kurchatov Arra 115.01 316 PKP PKPdf 08 00 02.6 -1.1
comp=Z,54nm,0.6s,baz=100,slow=1.8,SNR=199
KURBB PP PP 08 01 14.0 +0.8
comp=Z,30nm,0.9s,baz=94,slow=6.3,SNR=6.7
KURBB SKP 08 02 50.5
comp=Z,35nm,1.1s,baz=110,slow=2.2,SNR=8.6
KURBB Sdiff 08 06 00.3
comp=Z,10nm,1.1s,baz=96,slow=5.9,SNR=5.9
KURBB PKKPbc PKKPbc 08 10 42.0 -0.4
comp=Z,8.8nm,0.7s,baz=278,slow=4.4,SNR=11
KURBB SKKPbc SKKPbc 08 13 36.5 -2.8
comp=Z,4.2nm,0.7s,baz=286,slow=3.6,SNR=8.0
KSH Kashi 115.04 304 ePKP PKPdf 08 00 05.0 +0.6
KSH ePP PP 08 01 22.8 +8.9
KSH PKS PKSdf 08 03 40.5 -0.6
KSH SKKS 08 07 21.8
KSH SS SS 08 16 40.0 +9.2
KSH AMB AMB
comp=Z,500nm,4.7s
MVL Millersville 115.11 55 ePKPdf PKPdf 08 00 03.5 -0.8
PLVO Plevna 115.43 50 ePKPdf PKPdf 08 00 03.7 -1.1
VLDQ Val d'Or 115.61 46 ePKPdf PKPdf 08 00 03.2 -1.7
PSUB Penn St. - Bra 115.78 56 ePKPdf PKPdf 08 00 04.5 -1.1
KSPA Keystone Colle 115.82 54 ePKPdf PKPdf 08 00 04.9 -0.7
TKM2 Tokmak 2 115.91 308 PKIKP PKPdf 08 00 05.3 -0.8
TKM2 pmax pmax
comp=Z,55nm,0.6s
LUPA Lehigh Univers 115.96 55 ePKPdf PKPdf 08 00 05.1 -0.8
BRNJ Basking Ridge 116.57 55 ePKPdf PKPdf 08 00 06.5 -0.6
BHJ Bhuj 116.60 285 eP PKPdf 08 00 07.5 -0.2
ODNJ Ogdensburg 116.61 55 ePKPdf PKPdf 08 00 06.2 -1.0
FRU Bishkek 116.61 307 i PKIKP PKPdf 08 00 06.0 -1.2
FRU i S SKSac 08 06 09.0 -0.6
FRU pmax pmax
comp=Z,200nm,2.0s
FRU smax smax
comp=E,6μm,6.0s
AAK Ala-Archa 116.67 307 PKP PKPdf 08 00 07.2 -0.3
comp=E,34nm,0.6s,baz=133,slow=4.3,SNR=38
AAK SKP 08 02 54.9
comp=E,54nm,1.3s,baz=140,slow=3.9,SNR=5.4
AAK PKKPbc PKKPbc 08 10 37.0 +0.3
comp=E,29nm,0.6s,baz=238,slow=3.4,SNR=21
CPNY Central Park 117.05 55 ePKPdf PKPdf 08 00 06.6 -1.3
PAL Palisades 117.12 55 ePKiKP PKPdf 08 00 07.4 -0.7
PAL Palisades 117.12 55 ePKPdf PKPdf 08 00 07.4 -0.7
PTGA Pitinga 117.13 104 ePKPdf PKPdf 08 00 08.1 -0.9
LONY Lake Ozonia 117.13 51 ePKPdf PKPdf 08 00 06.9 -1.1
NCB Newcomb 117.30 51 ePKPdf PKPdf 08 00 07.3 -1.1
TRQ Mont Tremblant 117.34 49 ePKPdf PKPdf 08 00 06.8 -1.7
OPO Ambohidratompo 117.53 232 PKP PKPdf 08 00 10.3 +0.4
comp=E,27nm,0.9s,baz=90,slow=2.2,SNR=22
TRY Troy 117.54 53 ePKPdf PKPdf 08 00 08.5 -0.4
ACCN Adirondack Com 117.63 52 ePKPdf PKPdf 08 00 07.8 -1.2
FRNY Flat Rock 117.86 50 ePKPdf PKPdf 08 00 08.2 -1.3
YLE Yale 117.89 54 ePKPdf PKPdf 08 00 08.9 -0.6
MDV Middlebury 118.05 51 ePKPdf PKPdf 08 00 08.8 -1.0
MNAS Manas 118.11 307 PKIKP PKPdf 08 00 09.9 -0.3
MNAS pmax pmax
comp=Z,109nm,0.6s
CELP Cerrillos 118.19 82 ePKPdf PKPdf 08 00 09.4 -1.4
QUA2 Belchertown 118.45 53 ePKPdf PKPdf 08 00 10.2 -0.5
SJG San Juan 118.59 82 ePKiKP PKPdf 08 00 10.3 -1.3
SJG San Juan 118.59 82 ePKPdf PKPdf 08 00 10.3 -1.3
HNH Hanover 118.66 52 ePKPdf PKPdf 08 00 10.7 -0.3
OTUK Ortayu 118.80 313 PKIKP PKPdf 08 00 10.5 -0.7
OTUK pmax pmax
comp=Z,108nm,0.6s
HUMP Col San Antoni 118.87 82 ePKPdf PKPdf 08 00 11.2 -0.9
LBNH Lisbon 118.98 51 ePKiKP PKPdf 08 00 11.2 -0.4
LBNH Lisbon 118.98 51 ePKPdf PKPdf 08 00 11.2 -0.4
BRYW Bryant College 119.00 54 ePKPdf PKPdf 08 00 11.2 -0.6
FFD Franklin Falls 119.09 52 ePKPdf PKPdf 08 00 11.5 -0.3
WES Weston 119.22 53 ePKiKP PKPdf 08 00 11.5 -0.6
WES Weston 119.22 53 ePKPdf PKPdf 08 00 11.5 -0.6
BCX Boston College 119.33 54 ePKPdf PKPdf 08 00 11.6 -0.7
KBL Kabul 119.62 297 ePKiKP PKPdf 08 00 13.5 +0.1
KBL Kabul 119.62 297 ePKPdf PKPdf 08 00 13.5 +0.1
KK31 Karatay Array 119.63 307 PKIKP PKPdf 08 00 12.6 -0.3
KK31 pmax pmax
comp=Z,69nm,0.6s
BVAR Borovoye Array 120.21 319 PKP PKPdf 08 00 12.9 -0.8
comp=Z,87nm,0.5s,baz=116,slow=1.4,SNR=12
BVAR PP PP 08 01 50.4 +1.8
comp=Z,68nm,1.2s,baz=98,slow=6.3,SNR=3.5
BVAR SKP 08 03 00.4
comp=Z,51nm,1.0s,baz=66,slow=3.7,SNR=5.4
BVAR PKKPbc PKKPbc 08 10 24.1 -0.1
comp=Z,8.4nm,0.7s,baz=275,slow=3.2,SNR=13
BRVK Borovoye 120.27 319 c iPKIKP PKPdf 08 00 13.2 -0.7
BRVK Borovoye 120.27 319 ePKPdf PKPdf 08 00 13.1 -0.7
LMQ La Malbaie 120.34 48 ePKPdf PKPdf 08 00 12.6 -1.5
WVL Waterville 120.63 51 ePKPdf PKPdf 08 00 13.5 -1.2
SUR Sutherland 120.71 201 PKP PKPdf 08 00 16.0 +0.2
comp=Z,8.9nm,0.6s,baz=127,slow=1.5,SNR=146
SUR PKKPbc PKKPbc 08 10 22.7 -0.4
comp=Z,0.7nm,0.6s,baz=341,slow=8.7,SNR=13
PKME Peaks-Kenny Pk 120.93 50 ePKPdf PKPdf 08 00 14.7 -0.7
KULLO Kullorsuaq 121.26 15 ⇑ iP PKPdf 08 00 14.2 -0.9
comp=Z,86nm,0.6s
KULLO Kullorsuaq 121.26 15 ⇑ iPKIKP PKPdf 08 00 14.2 -0.9
KULLO pmax pmax
comp=Z,86nm,0.6s
SMRT St. Maarten 121.36 83 ePKPdf PKPdf 08 00 15.3 -1.6
GDHS Morne Mazeau, 122.02 85 ePKPdf PKPdf 08 00 17.7 -0.7
FDF Fort de France 122.10 87 ePKiKP PKPdf 08 00 17.3 -1.2
FDF Fort de France 122.10 87 ePKPdf PKPdf 08 00 17.3 -1.2
EMMW East Machias 122.20 51 ePKPdf PKPdf 08 00 17.1 -0.7
H05S1 Guadeloupe/Mar 122.28 87 PKP PKPdf 08 00 17.6 -1.1
SNR=11
ANWB Willy Bob 122.42 84 ePKPdf PKPdf 08 00 17.9 -1.0
SCHQ Schefferville 122.44 39 PKP PKPdf 08 00 16.8 -1.2
comp=Z,24nm,0.5s,baz=291,slow=2.9,SNR=27
SCHQ PKKPbc PKKPab 08 10 15.3 +0.3
comp=Z,16nm,0.6s,baz=79,slow=3.8,SNR=22
BOSA Boshof 122.48 207 i P PKPdf 08 00 19.3 +0.2
BOSA i 08 00 19.3
baz=26,slow=12
BOSA Boshof 122.48 207 PKP PKPdf 08 00 19.4 +0.3
comp=Z,98nm,0.9s,baz=156,slow=2.2,SNR=82
BOSA PKKPbc PKKPbc 08 10 15.1 -1.3
comp=Z,14nm,0.6s,baz=329,slow=3.4,SNR=24
GGN Saint George 122.66 51 ePKPdf PKPdf 08 00 17.9 -0.7
H05N1 Guadeloupe/Mar 122.68 85 PKP PKPdf 08 00 18.2 -1.3
SNR=21
BBSR BB Station 123.15 66 ePKPdf PKPdf 08 00 19.8 -0.2
LMN Caledonia Moun 124.10 50 ePKPdf PKPdf 08 00 20.4 -1.0
KBS Kingsbay 124.46 357 ⇑ iP PKPdf 08 00 21.1 -0.1
KBS IAmb IAmb 08 00 22.4
comp=Z,216nm,1.1s
KBS ePP PP 08 02 15.4 -0.7
KBS Kingsbay 124.46 357 ePKiKP PKPdf 08 00 21.3 +0.1
KBS Kingsbay 124.46 357 ePKPdf PKPdf 08 00 21.3 +0.1
SPA0 Spitsbergen Ar 124.94 356 ⇑ iP PKPdf 08 00 21.8 -0.4
SPA0 IAmb IAmb 08 00 24.8
comp=Z,2μm,2.3s
SPA0 ePP PP 08 02 18.4 -0.9
SPA0 Spitsbergen Ar 124.94 356 ePKPdf PKPdf 08 00 21.6 -0.6
SPITS Spitsbergen Ar 124.94 356 PKKPab PKKPbc 08 10 05.5 -1.3
comp=Z,10nm,0.4s,baz=165,slow=6.9,SNR=54
SVE Sverdlovsk 125.45 324 d iPKIKP PKPdf 08 00 23.0 -0.6
SVE pmax pmax
comp=Z,261nm,1.4s
ILULI Ilulissat 125.45 20 ⇑ iP PKPdf 08 00 22.3 -0.9
comp=Z,115nm,0.6s
ILULI Ilulissat 125.45 20 ⇑ iPKIKP PKPdf 08 00 22.3 -0.9
ILULI pmax pmax
comp=Z,120nm,0.6s
LBTB Lobatse 125.49 209 PKP PKPdf 08 00 25.1 +0.2
comp=Z,49nm,0.6s,baz=180,slow=3.2,SNR=8.2
LBTB PKKPbc PKKPbc 08 10 03.4 -1.2
comp=Z,2.4nm,0.4s,baz=285,slow=4.5,SNR=4.6
HOPEN Hopen 125.71 353 ⇑ iP PKPdf 08 00 23.2 -0.4
HOPEN IAmb IAmb 08 00 24.3
comp=Z,471nm,1.9s
HSPB Hornsund (broa 126.12 356 ePKiKP PKPdf 08 00 24.0 -0.4
HSPB e 08 02 24.7
HSPB e 08 06 41.8
HSPB ePS PS 08 12 35.3 -2.6
DAG Danmarks Havn 126.13 5 ⇑ iP PKPdf 08 00 22.9 -1.5
comp=Z,81nm,0.9s
DAG e 08 02 24.2
DAG i 08 02 48.5
DAG Danmarks Havn 126.13 5 ⇑ iPKIKP PKPdf 08 00 22.9 -1.5
DAG e 08 02 24.2
DAG pmax pmax
comp=Z,68nm,0.9s
WSAR Wadi Sarin 126.41 282 PKP PKPdf 08 00 26.6 +0.1
comp=Z,37nm,0.9s,baz=142,slow=3.7
WSAR PKKPbc PKKPbc 08 10 00.9 +0.9
comp=Z,20nm,0.6s,baz=270,slow=5.2,SNR=22
ARU Arti 126.65 324 PKP PKPdf 08 00 26.2 +0.3
comp=Z,184nm,0.5s,baz=77,slow=1.6,SNR=152
ARU pPKP pPKPdf 08 02 27.6 -1.5
comp=Z,22nm,0.8s,baz=86,slow=4.7,SNR=2.8
ARU PKKPbc PKKPbc 08 09 59.6 -0.1
comp=Z,6.6nm,0.5s,baz=198,slow=1.9,SNR=5.1
ARU Arti 126.65 324 i PKIKP PKPdf 08 00 25.4 -0.5
ARU 08 03 11.5
ARU PPP PPP 08 05 14.6
ARU 08 06 42.5
ARU PS SP 08 11 45.3 +2.8
SFJD Kangerlussuaq 126.68 22 PKKPbc PKKPbc 08 09 58.5 -1.2
comp=Z,18nm,0.5s,baz=124,slow=4.3,SNR=7.0
SFJD Kangerlussuaq 126.68 22 ⇑ iP PKPdf 08 00 24.5 -1.2
SFJD Kangerlussuaq 126.68 22 ⇑ iPKIKP PKPdf 08 00 24.5 -1.2
SFJD Kangerlussuaq 126.68 22 ePKPdf PKPdf 08 00 24.8 -0.8
SFJD PKKPbc PKKPbc 08 09 58.5 -1.2
JMDO Jabal Madar 126.69 281 PKPdf PKPdf 08 00 26.6 -0.5
SNR=22
SUMG Summit 126.75 13 ⇑ iP PKPdf 08 00 26.0 -0.2
comp=Z,412nm,1.4s
SUMG Summit 126.75 13 ⇑ iPKIKP PKPdf 08 00 26.0 -0.2
SUMG pmax pmax
comp=Z,410nm,1.4s

SUMG **Summit** 126.75 13 *e*PKPdf **PKPdf** 08 00 26.1 -0.1
SMDO **Samad** 126.89 282 PKPdf **PKPdf** 08 00 27.3 -0.2
SNR=29
BIDO **Bidbid** 126.93 282 PKPdf **PKPdf** 08 00 27.0 -0.4
SNR=34
AB31 **Akbulak array** 126.97 315 PKIKP **PKPdf** 08 00 26.3 -0.5
AB31 pmax pmax
comp=Z,52nm,0.8s
MATP **Matopo** 127.97 215 *i* P **PKPdf** 08 00 30.1 +0.2
MATP *i* 08 00 30.2
baz=222,slow=2.7
MATP **Matopo** 127.97 215 PKP **PKPdf** 08 00 30.1 +0.3
comp=Z,63nm,0.5s,baz=155,slow=1.2,SNR=12
MATP SKPbc SKPbc 08 03 00.8
comp=Z,76nm,0.7s,baz=143,slow=3.2,SNR=9.5
AKTO **Aktyubinsk** 128.06 316 PKP **PKPdf** 08 00 29.0 +0.1
comp=Z,78nm,0.6s,baz=96,slow=4.1,SNR=103
AKTO PP **PP** 08 02 40.7 +0.1
comp=Z,27nm,0.9s,baz=124,slow=4.5,SNR=3.5
AKTO SKPbc SKPbc 08 02 59.9
comp=Z,42nm,0.8s,baz=42,slow=3.2,SNR=6.2
AKTO PKKPbc PKKPbc 08 09 52.6
comp=Z,5.1nm,0.6s,baz=159,slow=4.9,SNR=5.9
BJO **Bjornoya** 128.16 353⇑ *i* P **PKPdf** 08 00 27.1 -1.2
BJO IAmb IAmb 08 00 28.6
comp=Z,469nm,1.9s
BJO *e*pPKPdf **pPKPdf** 08 02 31.2 -0.3
BJO *e*PP **PP** 08 02 39.6 -0.6
GEYT **Alibeck** 128.74 300 PKP **PKPdf** 08 00 30.6 0.0
comp=Z,54nm,0.6s,baz=259,slow=1.9,SNR=45
GEYT pPKP **pPKPdf** 08 02 32.0 -1.7
comp=Z,20nm,0.9s,baz=254,slow=5.5,SNR=4.0
GEYT SKPbc SKPbc 08 03 03.3
comp=Z,56nm,0.9s,baz=27,slow=1.7,SNR=13
DRLN **Deer Lake** 128.79 45 *e*PKPdf **PKPdf** 08 00 28.2 -2.0
UOSS **Minazif** 128.94 284 *e*PKPdf **PKPdf** 08 00 30.5 -0.8
RBK **Rabkut** 128.97 274 PKPdf **PKPdf** 08 00 27.2 -4.4
SNR=14
HATD **Hatta, Dubai** 128.98 283 *i* P **PKPdf** 08 00 30.9 -0.5
SNR=18
HATD **Hatta, Dubai** 128.98 283 PKPdf **PKPdf** 08 00 30.9 -0.5
SNR=18
ASHO **Ashiyiah** 129.02 283 *i* P **PKPdf** 08 00 31.0 -0.5
SNR=19
ASHO **Ashiyiah** 129.02 283 PKPdf **PKPdf** 08 00 30.9 -0.6
SNR=19
NAZ **Nazwa, Dubai** 129.43 284 *i* P **PKPdf** 08 00 31.7 -0.5
SNR=23
FAQ **Al Faqa, Dubai** 129.44 283 *i* P **PKPdf** 08 00 31.6 -0.7
SNR=17
LVZ **Lovozero** 130.93 343*c* *i*PKIKP **PKPdf** 08 00 33.0 -0.8
LVZ **Lovozero** 130.93 343 *e*PKPpre PKPpre 08 00 27.3
LVZ *e*PKPdf **PKPdf** 08 00 34.2 +0.4
HAMF **Hammerfest** 131.05 350⇑ *i*P **PKPdf** 08 00 32.5 -1.4
HAMF *ep*PKPdf **pPKPdf** 08 02 35.3 -1.8
KEV **Kevo** 131.22 348 *e*PKIKP **PKPdf** 08 00 33.4 -0.8
KEV **Kevo** 131.22 348 *e*PKPdf **PKPdf** 08 00 33.4 -0.8
APA **Apatity** 131.49 344⇑ *i*PKIKP **PKPdf** 08 00 33.5 -1.3
APA *i* 08 03 08.0
APA *i* 08 05 59.0
APA *i* PPP PPP 08 06 53.0
APA *i* PS **PS** **08 13 27.0 +2.8**
APA pmax pmax
comp=Z,45nm,0.6s
NRS **Narsarsuaq** 131.52 27⇑ *i*P **PKPdf** 08 00 33.8 -1.2
comp=Z,77nm,0.8s
NRS *i* 08 03 11.5
NRS **Narsarsuaq** 131.52 27⇑ *i*PKIKP **PKPdf** 08 00 33.8 -1.2
NRS *i* 08 03 11.5
NRS pmax pmax
comp=Z,77nm,0.8s
SCO **Scoresbysund** 131.52 10⇑ *i*P **PKPdf** 08 00 34.7 -0.1
SCO **Scoresbysund** 131.52 10⇑ *i*PKIKP **PKPdf** 08 00 34.7 -0.1
ARCES **ARCESS Array B** 131.69 348 PKhKP PKPpre 08 00 20.2
comp=Z,3.6nm,0.6s,baz=42,slow=2.0,SNR=8.5
ARCES PKP **PKPdf** 08 00 34.9 -0.3
comp=Z,56nm,0.6s,baz=75,slow=1.0,SNR=55
ARCES SKPbc **SKPab** 08 03 12.7 -0.6
comp=Z,218nm,0.9s,baz=44,slow=3.9,SNR=25
ARE0 **ARCESS Array S** 131.69 348⇑ *i*P **PKPdf** 08 00 34.3 -0.9
ARE0 *ep*PKPdf **pPKPdf** 08 02 38.9 +0.5
ARE0 **ARCESS Array S** 131.69 348 *e*PKPpre PKPpre 08 00 21.8
ARE0 *e*PKPdf **PKiKP** 08 00 35.7 -0.5
LSZ **Lusaka** 132.34 218 PKhKP PKPpre 08 00 19.1
comp=Z,1.7nm,0.6s,baz=63,slow=2.8,SNR=1.2
LSZ PKP **PKPdf** 08 00 38.0 -0.2
comp=Z,58nm,0.6s,baz=161,slow=1.8,SNR=15
LSZ SKPbc **SKPab** 08 03 17.0 -0.8
comp=Z,47nm,0.8s,baz=145,slow=4.2,SNR=7.8
JMIC **Jan Mayen** 132.47 4 SKPbc **SKPbc** 08 03 15.5 +0.9
comp=Z,143nm,1.0s,baz=122,slow=5.5,SNR=7.6
JMIC **Jan Mayen** 132.47 4 *e*P **PKPdf** 08 00 36.8 +0.2
TRO **Tromso** 132.69 351⇑ *i*P **PKPdf** 08 00 36.3 -0.7
TRO *ep*PKPdf **pPKPdf** 08 02 40.5 +0.3
TSUM **Tsumeb** 133.95 204 PKhKP PKPpre 08 00 29.1
comp=Z,7.8nm,0.6s,baz=236,slow=3.8,SNR=14
TSUM PKP **PKPdf** 08 00 41.2 +0.1
comp=Z,62nm,0.9s,baz=165,slow=3.0,SNR=19
TSUM SKPbc **SKPbc** 08 03 22.0 +0.7
comp=Z,73nm,1.0s,baz=170,slow=5.7,SNR=9.6
TSUM **Tsumeb** 133.95 204 *e*PKPpre PKPpre 08 00 30.9
TSUM *e*PKPdf **PKPdf** 08 00 41.4 +0.3
TSUM SKPbc **SKPbc** 08 03 22.0 +0.7
KLMR **Klimovskoe** 133.96 334 *e*PKIKP PKPpre 08 00 33.5
KLMR pmax pmax
comp=Z,220nm,1.4s
RCBR **Riachuelo** 134.41 126 SKPbc **SKPbc** 08 03 22.8 -0.1
comp=Z,64nm,0.7s,baz=178,slow=3.3,SNR=13
RCBR **Riachuelo** 134.41 126 *e*PKPdf **PKPdf** 08 00 41.1 -1.0
RCBR SKPbc **SKPbc** 08 03 22.8 -0.1
STEI **Steigen** 134.78 352 *e*PKPdf **PKPdf** 08 00 40.9 0.0
STEI *ep*PKPdf **pPKPdf** 08 02 45.0 +0.8
STEI *e*PP **PP** 08 03 22.3 +0.2
LOF **Lofoten** 134.79 353⇑ *i*P **PKPdf** 08 00 39.6 -1.4
LOF *ep*PKPdf **pPKPdf** 08 02 42.3 -2.0
LOF *e*PP **PP** 08 03 20.1 -2.2
KMBO **Kilima Mbogo** 136.04 241 PKhKP PKPpre 08 00 34.8
comp=Z,8.6nm,0.9s,baz=116,slow=3.1,SNR=9.4
KMBO PKP **PKPdf** 08 00 46.0 +0.7
comp=Z,49nm,0.9s,baz=101,slow=1.9,SNR=15
KMBO pPKP pPKPdf 08 02 46.3 -2.2
comp=Z,14nm,1.0s,baz=245,slow=1.9,SNR=2.4
KMBO SKP 08 03 31.1
comp=Z,93nm,1.1s,baz=128,slow=3.6,SNR=11
KMBO **Kilima Mbogo** 136.04 241 *e*PKPpre PKPpre 08 00 34.7
KMBO *e*PKPdf **PKiKP** 08 00 46.8 -0.3
KMBO pPKP pPKPdf 08 02 46.3 -2.2
KMBO SKP 08 03 31.1
BORG **Borgarnes** 136.73 13 PKP **PKPdf** 08 00 44.8 +0.2
baz=321,slow=4.4
BORG SKPbc **SKPbc** 08 03 28.7 +0.6
comp=Z,97nm,1.0s,baz=292,slow=2.6,SNR=7.1
DAMY **Dhamar** 137.07 266 *e*PKPpre PKPpre 08 00 38.9
DAMY *e*PKPdf **PKiKP** 08 00 49.2 +0.1
ATD **Arta Tunnel** 137.40 261 SKP **SKPdf** 08 03 34.7 +1.9
comp=Z,154nm,1.1s,baz=91,slow=2.2,SNR=5.4
GROC **Groznyy** 137.62 309 *e*PKIKP **PKPdf** 08 00 46.8 -0.2
GROC *e* 08 03 32.9
GROC pmax pmax
comp=Z,152nm,0.6s
MOS **Moscow** 137.69 329 *e*PKIKP **PKPdf** 08 00 45.2 -1.5
MOS *i* 08 03 32.5
MOS *e* 08 13 14.4
MOS *i* 08 15 08.1
MOS pmax pmax
comp=Z,2μm,3.7s
MOS pmax pmax
comp=Z,422nm,1.8s
VRH **Novokhopyorsk** 137.75 321 *e*PKIKP **PKPdf** 08 00 47.0 +0.1
VRH *e* 08 03 31.9
VRH pmax pmax
comp=Z,240nm,0.6s
FIA1 **FINESS Array S** 138.23 341 *e*PKPdf **PKPdf** 08 00 49.3 +1.8
FINES **FINESS Array B** 138.23 341 PKhKP PKPpre 08 00 36.9
comp=Z,17nm,0.5s,baz=56,slow=2.8,SNR=41
FINES PKP **PKPdf** 08 00 47.1 -0.4
comp=Z,84nm,0.6s,baz=48,slow=2.1,SNR=31
FINES SKPbc **SKPbc** 08 03 33.1 +0.5
comp=Z,440nm,1.0s,baz=83,slow=4.6,SNR=28
FINES SKKPbc **SKKPbc** 08 12 17.7 -2.5
comp=Z,4.9nm,0.5s,baz=187,slow=2.2,SNR=8.5
DGRG **David-gareji** 138.28 306 P PKPpre 08 00 39.9
DGRG **David-gareji** 138.28 306 P **SKiKP** 08 03 36.3 -0.7
DGRG **David-gareji** 138.28 306 PKHKP PKPpre 08 00 39.9
OBN **Obninsk** 138.54 329 PKhKP PKPpre 08 00 39.4
comp=Z,37nm,0.4s,baz=139,slow=4.2,SNR=10
OBN PKP **PKPdf** 08 00 47.6 -0.7
comp=Z,69nm,0.5s,baz=43,slow=2.4,SNR=22
OBN SKPbc **SKPbc** 08 03 34.3 +0.7
comp=Z,370nm,1.0s,baz=40,slow=0.8,SNR=22
OBN SKPab **SKPab** 08 03 45.2 +1.5
comp=Z,167nm,1.0s,baz=88,slow=4.3,SNR=4.4
OBN **Obninsk** 138.54 329*d* *i*PKHKP PKPpre 08 00 40.6
OBN *e* 08 00 47.3
OBN *i* 08 03 34.2
OBN *e* 08 03 44.0
OBN *e*SSS SSS 08 26 40.7
OBN pmax pmax
comp=Z,41nm,0.6s
OBN pmax pmax
comp=Z,95nm,1.1s
OBN MLR MLR
comp=Z,2μm,20.0s
OBN **Obninsk** 138.54 329 *e*PKPpre PKPpre 08 00 41.5
OBN PKP **PKPdf** **08 00 47.6 -0.7**
OBN SKPbc **SKPbc** **08 03 34.3 +0.7**
OBN SKPab **SKPab** **08 03 45.2 +1.5**
SEAG **Tbilisi Sea** 138.63 307 P PKPpre 08 00 43.5
SEAG **Tbilisi Sea** 138.63 307 P **SKiKP** **08 03 37.0 -0.7**
DUS **Dusheti** 138.64 307 P PKPpre 08 00 37.5
DUS **Dusheti** 138.64 307 P **SKiKP** **08 03 40.8 +3.0**
DUS **Dusheti** 138.64 307 PKHKP PKPpre 08 00 37.5
TBLG **Delisi** 138.69 307 P PKPpre 08 00 41.6
TBLG **Delisi** 138.69 307 P **SKiKP** **08 03 36.8 -1.0**
TBLG **Delisi** 138.69 307 PKHKP PKPpre 08 00 41.6
VORR **Voronezh** 138.96 323 *e*PKHKP PKPpre 08 00 40.0
VORR pmax pmax
comp=Z,950nm,1.6s
GNI **Garni** 138.97 304 PKhKP PKPpre 08 00 41.6
comp=Z,11nm,0.6s,baz=309,slow=0.7,SNR=15
GNI SKPbc **SKPbc** **08 03 36.8 +1.2**
comp=Z,375nm,1.3s,baz=122,slow=1.0,SNR=11
GNI **Garni** 138.97 304 *i* P **PKPdf** **08 00 48.0 -1.8**
SNR=7.7
GNI **Garni** 138.97 304‖ *e*PKIKP **PKPdf** **08 00 50.8 +1.0**
GNI **Garni** 138.97 304 *e*PKPpre PKPpre 08 00 44.5
GNI *e*PKPdf **PKiKP** **08 00 51.3 -0.9**
GNI SKPbc **SKPbc** **08 03 36.8 +1.2**
ZEI **Tsey** 139.07 309 *i* PKIKP **PKPdf** **08 00 49.1 -0.8**
ZEI pmax pmax
comp=Z,465nm,1.5s
GOF **Gofitskoye** 139.08 312⇑ *e*PKHKP PKPpre 08 00 41.3
GOF pmax pmax
comp=Z,47nm,0.9s
VSR **Storozhevoye** 139.19 322 *e*PKIKP **PKPdf** **08 00 49.0 -0.6**
VSR *e* 08 03 36.2
VSR pmax pmax
comp=Z,150nm,1.3s
KBZ **Khabaz** 139.55 310 PKhKP PKPpre 08 00 42.6
comp=Z,5.1nm,0.7s,baz=130,slow=4.5,SNR=13
KBZ PKP **PKPdf** **08 00 50.5 +0.1**
comp=Z,20nm,0.7s,baz=92,slow=3.6,SNR=37
KBZ SKPbc **SKPbc** **08 03 38.0 +1.3**
comp=Z,54nm,1.0s,baz=104,slow=2.9,SNR=9.5
BGD **Bogdanovka** 139.62 306 P PKPpre 08 00 46.0
BGD **Bogdanovka** 139.62 306 P **SKiKP** **08 03 42.2 +2.2**
KVAR **Kislovodsk Arr** 139.63 311 PKhKP PKPpre 08 00 42.9
comp=Z,13nm,0.6s,baz=6.7,slow=3.1,SNR=6.8
KVAR PKP **PKPdf** **08 00 50.9 +0.1**
comp=Z,75nm,1.2s,baz=322,slow=3.0,SNR=37
KVAR pPKP pPKPdf 08 02 52.1 -2.0
comp=Z,40nm,1.0s,baz=11,slow=5.2,SNR=2.2
KVAR SKPbc **SKPbc** **08 03 38.2 +1.0**
comp=Z,275nm,1.2s,baz=22,slow=3.0,SNR=9.6
KIV **Kislovodsk** 139.63 311*d* *i*PKHKP PKPpre 08 00 43.3
KIV *i* 08 00 50.3
KIV *i* 08 03 37.0
KIV *e* 08 03 50.2
KIV *i* SS SS 08 21 30.0 -2.0
KIV pmax pmax
comp=Z,15nm,0.6s
KIV pmax pmax
comp=Z,302nm,1.6s
KIV **Kislovodsk** 139.63 311 *e*PKPpre PKPpre 08 00 46.1
KIV *e*PKPdf **PKPdf** **08 00 51.6 +0.8**
AKH **Akhalkalaki** 139.67 307⇑ *i*P PKPpre 08 00 44.9
AKH **Akhalkalaki** 139.67 307 P PKPpre 08 00 45.1
AKH **Akhalkalaki** 139.67 307 P **SKiKP** **08 03 40.2 +0.2**
AKH **Akhalkalaki** 139.67 307 PKIKP **PKPdf** **08 00 54.1 +3.1**
NEY **Neytrino** 139.79 310*d* *i*PKIKP **PKPdf** **08 00 52.3 +1.1**
FURI **Furi** 140.06 255 *e*P **PKPdf** **08 00 52.4 -0.4**
SHEL **Horse Pasture** 140.18 172 *e*PKHKP PKPpre 08 00 47.7
SHEL **Horse Pasture** 140.18 172 *e*PKPpre PKPpre 08 00 47.7
VSU **Vasula** 140.35 338*de* PKIKP **PKPdf** **08 00 51.8 +0.4**
CHVG **Ch'k'valeri** 140.38 309 P PKPpre 08 00 41.6
CHVG **Ch'k'valeri** 140.38 309 P **SKiKP** **08 03 43.6 +2.4**
DOMB **Dombas** 141.19 353⇑ *i*P PKPpre 08 00 44.6
DOMB IAmb IAmb 08 00 50.0
comp=Z,257nm,1.6s
AKN **Aaknes** 141.26 355⇑ *i*P PKPpre 08 00 46.5
MBAR **Mbarara** 141.45 236 *e*PKHKP PKPpre 08 00 49.9
MBAR **Mbarara** 141.45 236 *e*PKPpre PKPpre 08 00 49.9
NC303 **NORSAR Array S** 141.69 351 *e*PKPpre PKPpre 08 00 49.0
NC204 **NORSAR Array S** 141.72 351 *e*PKPpre PKPpre 08 00 49.3
NC405 **NORSAR Array S** 141.75 351 *e*PKPpre PKPpre 08 00 49.0
SOC **Sochi** 141.80 311*c* *i*PKHKP PKPpre 08 00 48.9
SOC *i* 08 00 56.9
SOC *e* 08 04 02.5
SOC *e*PPP PPP 08 07 22.7
SOC pmax pmax
comp=Z,103nm,1.1s
SOC pmax pmax
comp=Z,95nm,0.9s
NB201 **NORSAR Array S** 141.87 351 *e*PKPpre PKPpre 08 00 49.6
NB2 **NORSAR Subarra** 141.89 351 PKP PKPpre 08 00 49.8
comp=Z,104nm,0.9s,baz=16,slow=3.2
NB2 **NORSAR Subarra** 141.89 351 PKP PKPpre 08 00 49.8
baz=16,slow=3.2
NOA **NORSAR Array B** 141.89 351 PKhKP PKPpre 08 00 49.9
comp=Z,72nm,0.6s,baz=16,slow=4.7,SNR=330
NOA SKPbc **SKPbc** **08 03 42.9 +0.6**
comp=Z,111nm,1.0s,baz=15,slow=4.2,SNR=7.7
NOA SKPab **SKPab** **08 04 00.0 +1.5**
comp=Z,52nm,1.0s,baz=18,slow=3.1,SNR=4.3
NOA SKKPbc **SKKPab** **08 12 04.1 -0.8**
comp=Z,3.6nm,0.7s,baz=196,slow=4.2,SNR=4.1
NBO02 **NORSAR Array S** 141.93 351 *e*PKPpre PKPpre 08 00 49.4
NBO00 **NORSAR Array S** 141.96 351 *e*PKPpre PKPpre 08 00 50.1
FOO **Floro** 141.98 356⇑ *i*P PKPpre 08 00 49.1
NAO01 **NORSAR Array S** 142.12 351 *e*PKPpre PKPpre 08 00 50.6
NC602 **NORSAR Array S** 142.13 351⇑ *i*P PKPpre 08 00 49.4
NC602 **NORSAR Array S** 142.13 351 *e*PKPpre PKPpre 08 00 50.3
HFS **Hagfors** 142.35 349 PKhKP PKPpre 08 00 51.2
comp=Z,159nm,0.3s,baz=67,slow=3.7,SNR=18
HFS SKPbc **SKPbc** **08 03 43.9 +0.5**
comp=Z,116nm,0.8s,baz=48,slow=2.2,SNR=10.0
HFS SKKPbc **SKKPab** **08 12 02.1 -0.6**
comp=Z,9.9nm,0.7s,baz=163,slow=5.6,SNR=5.4
SUE **Sulen** 142.54 356⇑ *i*P PKPpre 08 00 50.4
IZAR **Zarasai** 142.57 336 *e*P **PKPdf** **08 00 52.6 -2.8**
IZAR IAmb IAmb 08 00 57.2
comp=Z,140nm,0.9s
IZAR **Zarasai** 142.57 336 *e*P **PKKPdf** **08 10 07.5 -4.6**
IZAR IAmb IAmb 08 10 11.7
comp=Z,66nm,1.3s
IDID **Didziasalis** 142.70 335 *e*P **PKPdf** **08 00 53.0 -2.7**
IDID IAmb IAmb 08 00 55.9
comp=Z,41nm,0.6s
IDID **Didziasalis** 142.70 335 *e*P **PKKPdf** **08 10 07.9 -3.9**
IDID IAmb IAmb 08 10 12.3
comp=Z,19nm,1.0s
ISAL **Salakas** 142.75 335 *e*P **PKPdf** **08 00 53.3 -2.5**
ISAL IAmb IAmb 08 00 57.6
comp=Z,73nm,0.7s
ISAL **Salakas** 142.75 335 *e*P **PKKPdf** **08 10 09.0 -2.7**
ISAL IAmb IAmb 08 10 14.4
comp=Z,30nm,1.0s
MICGM **Minsk** 142.82 333⇑ *i*PKP PKPpre 08 00 52.0
MICGM ⇑ *i*PKP PKPpre 08 00 52.0
MICGM PKPM 08 00 53.0
comp=Z,1.7nm,1.0s
MICGM PKPM 08 00 53.0
comp=Z,21nm,3.0s
MICGM PKPM 08 00 54.0
comp=N,1.1nm,1.4s
MICGM PKPM 08 00 54.0
comp=E,1.0nm,1.4s
MICGM *ep*PKP pPKPdf 08 02 50.0 -9.4
MICGM *e*PP PP 08 03 44.0 -28
MICGM PPM 08 03 45.0
comp=Z,22nm,4.0s
MICGM *e*PPP PPP 08 06 36.0
MICGM *e*SKKS 08 10 08.0
MICGM *e*SP 08 13 24.0
MICGM *e*PS 08 15 20.0
MICGM *e*PPS PPS 08 16 36.0
MICGM *e*SS **SS** **08 22 10.0 +3.0**
MICGM *e*SSS SSS 08 27 18.0
MICGM *e*LQ LQ 08 37 32.0
MICGM *e*LR LR 08 56 16.0
MICGM LRM MLR 09 01 56.0
comp=Z,7.0nm,24.0s
MNK **Minsk** 142.82 333*c* *i*PKHKP PKPpre 08 00 52.0
MNK *e*SS SS 08 22 10.0 +3.0
MNK pmax pmax
comp=Z,21μm,3.0s
MNK pmax pmax
comp=Z,2μm,1.0s
MNK pmax pmax
comp=N,1μm,1.4s
MNK pmax pmax
comp=E,960nm,1.4s
MNK pmax pmax
comp=Z,22μm,4.0s
MNK MLR MLR
comp=Z,7μm,24.0s
ANN **Anapa** 142.93 314*c* *i*PKHKP PKPpre 08 00 53.5
ANN *e*SS SS 08 22 07.2 -2.1
ANN pmax pmax
comp=N,67nm,0.6s
ANN pmax pmax
comp=E,29nm,0.6s
ANN pmax pmax
comp=Z,374nm,0.6s
ANN pmax pmax
comp=E,215nm,4.0s
ANN pmax pmax
comp=Z,1μm,3.9s
ANN pmax pmax
comp=N,405nm,3.9s
NACGM **Naroch** 142.98 334 *e*PKP PKPpre 08 00 52.0
NACGM *e*PKP PKPpre 08 00 52.0
NACGM *ep*PKP pPKPdf 08 02 50.0 -10
NACGM *es*PKP 08 03 42.0
NACGM *e*SKP 08 04 30.0
NACGM *e*PPP PPP 08 06 34.0
NACGM *e*SKKS 08 10 06.0
NACGM *e*SP 08 13 24.0
NACGM *e*PPS PPS 08 15 52.0
NACGM *e*SS SS 08 21 53.0 -16
OSL **Oslo** 143.02 351 *e*P PKPab 08 00 53.5 -0.1
ASK **Askoy** 143.08 356⇑ *i*P PKPab 08 00 53.9 +0.1
ASK IAmb IAmb 08 00 55.4
comp=Z,349nm,0.6s
BER **Bergen** 143.17 355⇑ *i*P PKPab 08 00 54.1 0.0
BER *ep*PKPdf pPKPdf 08 02 54.6 -5.2
KONO **Kongsberg** 143.45 352⇑ *i*P PKPab 08 00 55.0 -0.3
KONO **Kongsberg** 143.45 352*c* *i*PKIKP PKPab 08 00 54.9 -0.4
KONO **Kongsberg** 143.45 352 *e*PKPdf PKPab 08 00 55.0 -0.3
ODD1 **Odda** 143.53 354 *e*P PKPab 08 00 55.0 -0.6
LRW **Lerwick** 143.61 1 *e*P PKPab 08 00 54.1 -1.7
BLS5 **Blasjo** 144.03 354⇑ *i*P PKPbc 08 00 57.2 -0.1
BLS5 IAmb IAmb 08 00 58.6
comp=Z,1μm,1.7s
BLS5 *ep*PKPdf pPKPdf 08 02 58.1 -3.3
KMY **Karmoy** 144.34 355⇑ *i*P PKPbc 08 00 58.1 -0.2
KMY *ep*PKPdf pPKPdf 08 03 02.3 +0.4
H10S3 **ASCENSION HYDR** 144.57 155 PKP **PKPab** **08 01 00.5 +0.1**
baz=252,slow=5.8,SNR=18
H10S2 **ASCENSION HYDR** 144.57 155 PKP **PKPab** **08 01 00.6 +0.2**
baz=252,slow=5.8,SNR=16
STAV **Stavanger** 144.57 355⇑ *i*P **PKPdf** **08 00 58.7 -0.2**
STAV *ep*PKPdf **pPKPdf** **08 02 59.1 -3.3**
H10S1 **ASCENSION HYDR** 144.58 155 PKPbc **PKPab** **08 01 00.7 +0.2**
baz=252,slow=5.8,SNR=26
AKASG **Malin Array Be** 144.74 327 PKP **PKPdf** **08 00 58.8 -0.6**
comp=Z,217nm,0.6s,baz=48,slow=4.5,SNR=170
AKASG SKKPbc **SKiKP** **08 03 50.2 +0.3**
comp=Z,249nm,0.9s,baz=47,slow=3.3,SNR=23
AKASG SKKPbc **SKKPab** **08 11 51.5 -0.6**
comp=Z,5.0nm,0.7s,baz=240,slow=3.5,SNR=5.0
AKBB **Malin Array Si** 144.74 327 *e*PKIKP **PKPdf** **08 00 58.6 -0.8**
AKBB **Malin Array Si** 144.74 327 *e*PKPdf **PKPdf** **08 00 58.6 -0.8**
KIEV **Kiev** 144.75 327*c* *i*PKIKP **PKPdf** **08 00 58.8 -0.7**
KIEV **Kiev** 144.75 327 *e*PKPdf **PKPdf** **08 00 58.6 -0.8**
AK11 **Malin Array Si** 144.78 327 *e*PKPdf **PKPdf** **08 00 58.7 -0.8**
HOMB **Homborsund** 144.93 352⇑ *i*P **PKPdf** **08 00 59.3 -0.2**
HOMB IAmb IAmb 08 01 01.5
comp=Z,757nm,1.1s
HOMB *ep*PKPdf **pPKPdf** **08 03 00.6 -2.4**
GZT **Gaziantep** 145.01 302 *i* P **PKPab** **08 01 02.1 0.0**
SNART **Snartemo** 145.02 353 *e*P **PKPdf** **08 00 59.5 -0.2**
SIM **Simferopol'** 145.03 316 *i* PKIKP **PKPbc** **08 01 01.0 +0.1**
SIM *e* 08 03 52.0
SIM pmax pmax
comp=Z,731nm,0.9s
SIM pmax pmax
comp=Z,419nm,1.2s
CUALT **Altinyayla-SIV** 145.18 305 *i* P **PKPbc** **08 01 02.2 +0.5**
MLA1 **Latheron** 145.38 3 *e*P **PKPdf** **08 00 59.6 -0.7**
KUZU **Kuzuini** 145.51 301 *i* P **PKPdf** **08 01 01.7 +0.4**
CUSAR **Sarkisla-SIVAS** 145.52 306 *i* P **PKPdf** **08 01 01.5 +0.1**
KLNR **Kaliningrad** 145.61 339*c* *i*PKIKP **PKPdf** **08 00 59.9 -0.9**
ASCN **Ascension** 145.62 155 *e*PKPdf **PKPbc** **08 01 03.9 +0.4**
H10N3 **ASCENSION HYDR** 145.64 154 PKPbc **PKPab** **08 01 04.1 -0.5**
baz=208,slow=3.4,SNR=12
H10N1 **ASCENSION HYDR** 145.65 154 PKPbc **PKPbc** **08 01 03.4 +0.2**
baz=208,slow=3.4,SNR=14
H10N2 **ASCENSION HYDR** 145.66 154 PKPbc **PKPab** **08 01 04.2 -0.4**
baz=208,slow=3.4,SNR=11
ANDN **Andirin** 145.91 302 *i* P **PKPdf** **08 01 02.4 +0.4**
KAC **Achnashellach** 146.06 5 *e*P **PKPdf** **08 01 00.6 -0.9**
MCD **Coleburn Disti** 146.10 3 *e*P **PKPdf** **08 00 59.8 -1.8**
MDO **Dochfour** 146.18 4 *e*P **PKPdf** **08 01 00.8 -0.9**
KPL **Plockton** 146.19 5 *e*P **PKPdf** **08 01 00.4 -1.3**
COAL **Corum-Alaca** 146.20 308 *i* P **PKPdf** **08 01 02.5 0.0**
CTAK **Corum_Osmancik** 146.21 308 *i* P **PKPdf** **08 01 02.4 -0.1**
ASF **Jabal al Asfar** 146.32 293 PKP **PKPdf** **08 01 02.6 -0.2**
comp=Z,82nm,0.6s
ASF PKPbc **PKPbc** **08 01 06.0 +0.9**
ASF pPKPbc pPKPbc 08 03 03.5 -2.8
comp=Z,89nm,1.1s,baz=87,slow=3.0,SNR=3.1
MME1 **Meikle Cairn** 146.39 3 *e*P **PKPdf** **08 01 00.8 -1.3**
YAHY **KAYSERI_Yahyal** 146.54 304 *i* P **PKPbc** **08 01 05.6 +0.1**
MUD **Monsted U'grnd** 146.60 351⇑ *i*P **PKPdf** **08 01 02.3 -0.1**
comp=Z,277nm,0.7s
MUD **Monsted U'grnd** 146.60 351⇑ *i*PKIKP **PKPdf** **08 01 02.3 -0.1**
MUD pmax pmax
comp=Z,280nm,0.7s
BSD **Bornholm Skovb** 146.71 344⇑ *i*P **PKPdf** **08 01 02.3 -0.3**
comp=Z,472nm,0.7s
BSD *i* 08 03 02.8
BSD **Bornholm Skovb** 146.71 344⇑ *i*PKIKP **PKPdf** **08 01 02.3 -0.3**
BSD *i* 08 03 02.8
BSD pmax pmax
comp=Z,470nm,0.7s
AVNS **Nevsehir-Avano** 146.73 305 *i* P **PKPbc** **08 01 06.5 +0.4**
COP **Copenhagen** 146.75 347⇑ *i*P **PKPdf** **08 01 02.7 0.0**
comp=Z,292nm,0.6s
COP *i* 08 03 02.4
COP **Copenhagen** 146.75 347⇑ *i*PKIKP **PKPdf** **08 01 02.7 0.0**
COP *i* 08 03 02.4
COP pmax pmax
comp=Z,290nm,0.6s
SORM **Soroca** 146.77 324⇑ *i*P **PKPdf** **08 01 02.2 -0.7**
SORM **Soroca** 146.77 324 ⇑ *i*PKIKP **PKPdf** **08 01 02.2 -0.7**
DRUM **Mains of Drumt** 146.81 2 *e*P **PKPdf** **08 01 01.4 -1.4**
ILGA **Ilgaz** 146.84 310 *i* P **PKPdf** **08 01 03.8 +0.2**
CDAG **Cicekdag** 146.84 307 *i* P **PKPdf** **08 01 03.7 +0.1**
HWQ **Hawqa** 146.86 297 *e*P **PKPdf** **08 01 03.0 -0.8**
LLD **Lille Linde** 147.12 347 *i* P **PKPdf** **08 01 03.6 +0.3**
LLD *i* 08 03 08.2
LLD **Lille Linde** 147.12 347 *i* PKIKP **PKPdf** **08 01 03.6 +0.3**
EDU **Dundee** 147.15 3 *e*P **PKPdf** **08 01 02.2 -1.2**
BHL **Bhannes** 147.16 296 *e*P **PKPdf** **08 01 04.0 -0.2**
KIS **Kishinev** 147.18 322⇑ *i*PKP **PKPdf** **08 01 01.5 -2.2**
KIS M M 08 01 06.5
comp=Z,2μm,2.0s
KIS *i* pPKP **pPKPdf** **08 03 07.0 -0.2**
KIS **Kishinev** 147.18 322 *i* PKS **PKSdf** **08 04 40.0 +1.3**
KIS *e*SKS **SKSdf** **08 07 30.0 +7.4**
KIS *i* SKKS **SKKSac** **08 10 36.0 -0.3**

KIS *i* SKSP 08 13 59.0
KIS Kishinev 147.18 322 *o i* PKHKP **PKPdf 08 01 01.5 -2.2**
KIS *i* 08 01 10.0
KIS pmax pmax
comp=Z,2µm,2.0s
KIS pmax pmax
comp=Z,5µm,4.0s
KIS pmax pmax
comp=Z,11µm,8.0s
KIS pmax pmax
comp=N,2µm,7.0s
KIS pmax pmax
comp=E,2µm,8.0s
ELDT Eldivan 147.24 309 *i* P **PKPbc 08 01 06.3 -1.1**
BR131 Keskin Array S 147.35 307 *e* PKPdf **PKPdf 08 01 03.6 -0.8**
BR131 *e* PKPbc **PKPbc 08 01 08.4 +0.7**
BRTR Keskin Array B 147.35 307 PKP **PKPdf 08 01 04.2 -0.2**
comp=E,78nm,0.6s,baz=143,slow=4.2,SNR=92
BRTR PKPbc **PKPbc 08 01 07.8 +0.1**
comp=E,137nm,0.6s,baz=146,slow=5.5,SNR=127
BRTR pPKPbc **pPKPbc 08 03 06.2 -3.1**
comp=E,9.6nm,0.7s,baz=200,slow=31,SNR=2.6
EAB Aberfoyle 147.43 4 *e* P **PKPdf 08 01 02.7 -1.1**
MMAI Mount Meron Ar 147.49 295 PKP **PKPdf 08 01 04.2 -0.6**
comp=E,344nm,0.6s,baz=316,slow=2.3,SNR=200
MMAI PKPbc **PKiKP 08 01 09.3 -0.5**
comp=E,383nm,0.6s,baz=76,slow=4.5,SNR=282
MMAI pPKPbc **pPKPbc 08 03 09.1 -0.7**
comp=E,257nm,1.0s,baz=64,slow=3.9,SNR=11
AKSY AKSARAY - Alti 147.59 305 *i* P **PKPdf 08 01 04.2 -0.6**
RGN Rugen 147.61 345 *e* PKPdf **PKPdf 08 01 04.9 +0.8**
BTIN Bart¯in 147.64 311 *i* P **PKPbc 08 01 07.3 -0.9**
BEL Belsk 147.65 335 *e* PKPdf **PKPdf 08 01 04.3 +0.1**
BEL *e* PKPab **PKPbc 08 01 08.6 +0.8**
BEL *ep* PKPdf **pPKPdf 08 03 06.9 -1.0**
BEL *ep* PKPab **pPKPab 08 03 10.7 +0.4**
BEL *e* 08 09 39.9
BEL *e* 08 10 38.0
BEL *e* 08 13 56.6
BEL Belsk 147.65 335 *e* PKP2 **PKPbc 08 01 08.6 +0.8**
KERG Konya-Eregli 147.66 303 *i* P **PKPbc 08 01 08.6 0.0**
GKP Gorka Klasztor 147.69 340 *e* PKPdf **PKPdf 08 01 04.4 +0.1**
GKP *e* PKPab **PKPbc 08 01 08.3 +0.4**
GKP *ep* PKPdf **pPKPdf 08 03 06.2 -1.7**
GKP *ep* PKPab **pPKPab 08 03 10.3 -0.1**
GKP *e* 08 09 39.7
GKP *e* 08 10 37.2
GKP Gorka Klasztor 147.69 340 *e* PKP2 **PKPbc 08 01 08.3 +0.4**
IAS Iasi 147.76 323 ⇑ *i* P **PKPdf 08 01 02.4 -2.2**
EDI Edinburgh 147.77 3 *e* P **PKPdf 08 01 03.0 -1.3**
PGBU Glenifferbraes 147.80 5 *e* P **PKPdf 08 01 02.7 -1.7**
ESY Stoneypath 147.80 3 *e* P **PKPdf 08 01 03.1 -1.3**
LEOM Leova 147.81 322 ⇓ *i* P **PKPdf 08 01 04.4 -0.3**
LEOM Leova 147.81 322 ⇓ PKIKP **PKPdf 08 01 04.4 -0.3**
LVV L'vov 147.81 330 *e* PKIKP **PKPdf 08 01 04.4 -0.2**
KIZK Mersin 147.88 301 *i* P **PKPbc 08 01 07.8 -1.2**
BR231 Keskin MP Arra 147.93 308 *e* PKPdf **PKPdf 08 01 04.2 -1.1**
BR231 *e* PKPbc **PKPbc 08 01 09.2 0.0**
KKUL Konya-Kulu 148.06 307 *i* P **PKPdf 08 01 05.2 -0.3**
BCAM Yenicaga 148.09 310 *i* P **PKPdf 08 01 05.3 -0.2**
EIL Elat 148.15 288 PKP **PKPdf 08 01 04.4 -1.4**
comp=E,14nm,0.5s,baz=18,slow=0.8,SNR=45
EIL PKPbc **PKiKP 08 01 11.0 -0.1**
comp=E,241nm,0.6s,baz=7.6,slow=2.7,SNR=108
EIL pPKPbc **pPKPbc 08 03 09.4 -2.2**
comp=E,111nm,1.0s,baz=132,slow=1.6,SNR=3.3
GMK Mull of Kintyr 148.17 6 *e* P **PKPdf 08 01 03.9 -1.1**
TLCR 148.19 319 ⇓ *i* P **PKPdf 08 01 06.1 +0.7**
TLCR 148.19 319 ⇓ PKHKP **PKPdf 08 01 06.1 +0.7**
IDGL Inch Island, C 148.22 8 *e* P **PKPdf 08 01 04.3 -0.8**
EKA Eskdalemuir Ar 148.36 3 PKP **PKPdf 08 01 04.5 -0.8**
comp=E,60nm,0.7s,baz=351,slow=1.5,SNR=39
EKA PKPbc **PKPbc 08 01 09.5 0.0**
comp=E,38nm,0.4s,baz=312,slow=1.3,SNR=105
EKA pPKPbc **pPKPbc 08 03 09.1 -2.4**
comp=E,68nm,0.8s,baz=345,slow=2.9,SNR=7.1
ESK Eskdalemuir 148.37 3 *e* P **PKPdf 08 01 04.2 -1.1**
ESK Eskdalemuir 148.37 3 *e* PKIKP **PKPdf 08 01 04.8 -0.6**
ESK Eskdalemuir 148.37 3 *e* PKPdf **PKPdf 08 01 04.8 -0.6**
ESK *e* PKPbc **PKPbc 08 01 09.5 -0.1**
PRAR RASCA 148.38 325 ⇑ *i* P **PKPdf 08 01 05.2 -0.5**
ECK Cauldkaine Hil 148.51 3 *e* P **PKPdf 08 01 04.6 -1.0**
KWP Kalwaria Pacla 148.54 331 *e* PKPdf **PKPdf 08 01 05.8 -0.1**
KWP *e* PKPab **PKPbc 08 01 10.8 +0.6**
KWP *ep* PKPdf **pPKPdf 08 03 08.6 -0.8**
KWP *ep* PKPab **pPKPab 08 03 13.7 -0.1**
KWP *e* 08 14 09.2
KWP Kalwaria Pacla 148.54 331 *e* PKP2 **PKPbc 08 01 10.8 +0.6**
BHH Howats Hill 148.59 3 *e* P **PKPdf 08 01 05.0 -0.7**
CFR Carcaliu 148.60 320 ⇓ *i* P **PKPdf 08 01 05.5 -0.5**
CFR Carcaliu 148.60 320 ⇓ PKIKP **PKPdf 08 01 05.5 -0.5**
TESR Tescani 148.67 323 ⇑ *i* P **PKPdf 08 01 05.3 -0.9**
GAL1 Galloway 148.72 5 *e* P **PKPdf 08 01 05.0 -0.9**
BUR08 Bucovina Ar. S 148.73 326 *e* PKPdf **PKPdf 08 01 06.6 +0.3**
BUR08 *e* PKPbc **PKiKP 08 01 13.5 +1.5**
BURAR Bucovina Array 148.74 326 ⇑ *i* P **PKPdf 08 01 06.2 -0.2**
ERMK Ermenek 148.80 302 *i* P **PKPbc 08 01 11.1 -0.4**
KDHN Kadinhani 148.86 306 *i* P **PKPbc 08 01 11.1 -0.3**
CSS Mathiatis 148.86 299 P **PKPbc 08 01 11.8 +0.3**
CSS Mathiatis 148.86 299 P **PKPdf 08 01 04.9 -1.9**
CSS Mathiatis 148.86 299 *e* PKPdf **PKPdf 08 01 06.0 -0.9**
CSS *e* PKPbc **PKiKP 08 01 12.2 -0.2**
EFOR EFORIE 148.89 318 ⇓ *i* P **PKPdf 08 01 04.6 -1.9**
ODBI Odobesti 148.89 322 ⇓ *i* P **PKPdf 08 01 06.8 +0.3**
KMER Konya-Meram 148.90 304 *i* P **PKPbc 08 01 11.2 -0.4**
SAHE Sakarya_HENDEK 148.92 311 *i* P **PKPdf 08 01 06.7 -0.1**
BBO1 Bothel 148.95 3 *e* P **PKPdf 08 01 05.5 -0.8**
TLB Topalu 148.98 319 ⇑ *i* P **PKPdf 08 01 06.2 -0.5**
TLB Topalu 148.98 319 ⇑ PKIKP **PKPdf 08 01 06.2 -0.5**
HARR Harsova 148.99 319 ⇓ *i* P **PKPdf 08 01 06.6 -0.1**
HARR Harsova 148.99 319 ⇓ PKIKP **PKPdf 08 01 06.6 -0.1**
VRI Vrincioaia 149.02 322 ⇓ *i* P **PKPdf 08 01 05.9 -0.8**
VRI Vrincioaia 149.02 322 ⇓ PKIKP **PKPdf 08 01 05.9 -0.8**
MANR Mangalia 149.05 317 ⇑ *i* P **PKPdf 08 01 07.2 +0.4**
PLOR Plostina 149.07 322 ⇑ *i* P **PKPdf 08 01 05.9 -1.0**
PLOR Plostina 149.07 322 ⇑ PKIKP **PKPdf 08 01 05.9 -1.0**
KESW Keswick, Cumbr 149.10 3 *e* P **PKPdf 08 01 05.3 -1.2**
CVDA Cernavoda 149.12 319 ⇓ *i* P **PKPdf 08 01 07.5 +0.6**
GRER 149.16 321 ⇑ *i* P **PKPdf 08 01 06.8 -0.2**
SZAC Souni 149.26 299 P **PKPbc 08 01 13.0 +0.5**
KAND Kocaeli-Kandir 149.28 312 *i* P **PKPbc 08 01 12.0 -0.2**
OJC Ojcow 149.31 335 *e* PKPdf **PKPdf 08 01 06.9 -0.2**
OJC *e* PKPab **PKPbc 08 01 12.4 +0.4**
OJC *ep* PKPdf **pPKPdf 08 03 10.0 -0.7**
OJC *ep* PKPab **pPKPab 08 03 15.2 -1.6**
OJC *e* 08 06 37.4
OJC *e* 08 10 44.2
OJC *e* 08 14 03.7
OJC *e* SS SS 08 23 13.8 -5.9
OJC Ojcow 149.31 335 *e* PKPdf **PKPdf 08 01 06.7 -0.4**
OJC *e* PKPbc **PKiKP 08 01 12.8 -0.1**
STHS Stebnicka Huta 149.34 332 *e* PKP **PKPdf 08 01 07.5 +0.3**
STHS *e* 08 01 13.1
STHS *e* 08 03 18.7
GAZI Gazipasa 149.37 302 *i* P **PKPbc 08 01 11.1 -1.5**
AMRR Amara 149.39 320 ⇑ *i* P **PKPdf 08 01 09.1 +1.8**
PGOR Pogoanele 149.43 320 ⇓ *i* P **PKPdf 08 01 06.3 -1.1**
H07N1 FLORES T-PHASE SNR=42 **149.43 51** PKPbc **PKPdf 08 01 07.6 0.0**
H07N1 FLORES T-PHASE 149.43 51 *e* PKPdf **PKPdf 08 01 07.1 -0.5**
WIM Isle of Man 149.44 5 *e* P **PKPdf 08 01 06.2 -1.0**
UZH Uzhgorod 149.46 330 *e* PKIKP **PKPdf 08 01 06.9 -0.4**
UZH *e* 08 01 17.5
UZH *e* 08 03 03.9
UZH *i* 08 16 47.9
H07S1 FLORES T-PHASE SNR=78 **149.49 52** PKPbc **PKPdf 08 01 08.2 +0.5**
H07S1 FLORES T-PHASE 149.49 52 *e* PKPdf **PKPdf 08 01 06.5 -1.2**
ARCR ARCALIA 149.53 326 ⇓ *i* P **PKPdf 08 01 07.8 +0.3**
ISR Istrita 149.56 321 ⇑ *i* P **PKPdf 08 01 07.2 -0.5**
ISR Istrita 149.56 321 ⇑ PKIKP **PKPdf 08 01 07.2 -0.5**
BMR Baia Mare 149.56 328 ⇓ *i* P **PKPdf 08 01 07.1 -0.4**
BMR Baia Mare 149.56 328 ⇓ PKIKP **PKPdf 08 01 07.1 -0.4**
BORA Eskisehir 149.59 309 *i* P **PKPbc 08 01 13.4 +0.3**
CRVS Cervenica-Dubn 149.63 331 *e* PKIKP **PKPdf 08 01 07.7 +0.1**
CRVS *e* SS SS 08 23 25.4 +2.0
CRVS Cervenica-Dubn 149.63 331 *e* PKP **PKPdf 08 01 07.7 +0.1**
CRVS *e* 08 01 13.7
CRVS *e* 08 03 12.9
CRVS *e* 08 10 46.8
CRVS *e* SS SS 08 23 25.4 +2.0

CRVS *e* 08 37 08.6
AKMC Akamas 149.65 299 P **PKPbc 08 01 13.0 -0.4**
BOLV Bolvadin 149.65 307 *i* P **PKPbc 08 01 12.3 -1.2**
BOLV *i* S **PKPab 08 01 21.3 +0.4**
PPCY Paphos 149.67 299 P **PKPbc 08 01 13.3 -0.1**
MLR Muntele Rosu 149.68 322 PKP **PKPdf 08 01 06.7 -1.2**
comp=E,76nm,1.5s,baz=357,slow=2.5,SNR=74
MLR PKPbc **PKPbc 08 01 13.4 +0.2**
comp=E,40nm,0.6s,baz=323,slow=4.1,SNR=98
MLR pPKPbc **pPKPbc 08 03 12.8 -2.7**
comp=E,8.4nm,1.1s,baz=302,slow=2.7,SNR=1.4
MLR Muntele Rosu 149.68 322 ⇑ *i* P **PKPdf 08 01 06.8 -1.2**
MLR Muntele Rosu 149.68 322 PKP **PKPdf 08 01 06.7 -1.2**
MLR *e* PKPbc **PKiKP 08 01 14.1 +0.1**
MLR pPKPbc **pPKPbc 08 03 12.8 -2.7**
DOPR Dopca 149.70 323 ⇑ *i* P **PKPdf 08 01 07.8 0.0**
TRPA Tarpa 149.70 329 ⇑ *ex* **PKPdf 08 01 07.4 -0.3**
TRPA *ex* x 08 01 13.1
NIE Niedzica 149.74 333 *e* PKPdf **PKPdf 08 01 08.2 +0.4**
NIE *e* PKPab **PKiKP 08 01 14.2 +0.3**
NIE *ep* PKPdf **pPKPdf 08 03 10.1 -1.3**
NIE *e* 08 09 45.6
NIE *e* 08 10 47.9
NIE *e* 08 14 16.6
SECR 149.88 321 ⇑ *i* P **PKPdf 08 01 07.6 -0.5**
SUR 149.98 321 ⇑ *i* P **PKPdf 08 01 07.1 -1.1**
RAC Raciborz 150.04 336 *e* PKIKP **PKPdf 08 01 08.5 +0.3**
ISK Istanbul-Kandi 150.06 312 P **PKPdf 08 01 06.0 -2.5**
KSP Ksiaz 150.07 339 *e* PKPdf **PKPdf 08 01 08.3 +0.1**
KSP *e* PKPab **PKiKP 08 01 14.6 +0.2**
KSP *ep* PKPdf **pPKPdf 08 03 11.1 -0.7**
KSP *ep* PKPab **pPKPab 08 03 17.4 -2.5**
KSP *e* 08 06 44.9
KSP *e* 08 09 46.0
KSP *e* 08 10 51.7
KSP *e* SS SS 08 23 20.4 -7.4
PRD Provadia 150.11 317 *i* P **PKPdf 08 01 08.0 -0.5**
DSB Dublin 150.15 7 *e* PKPdf **PKPdf 08 01 07.7 -0.6**
DSB *e* PKPbc **PKPbc 08 01 13.9 0.0**
CJR Cluj-Napoca 150.16 326 ⇑ *i* P **PKPdf 08 01 08.1 -0.5**
CJR Cluj-Napoca 150.16 326 ⇑ PKIKP **PKPdf 08 01 08.1 -0.5**
WPS Cemaes, Angles 150.19 5 *e* P **PKPdf 08 01 07.5 -0.8**
WME Myndd Eilian 150.21 5 *e* P **PKPdf 08 01 07.2 -1.1**
VOIR 150.21 323 ⇓ *i* P **PKPdf 08 01 08.7 0.0**
VOIR 150.21 323 ⇓ PKIKP **PKPdf 08 01 08.7 0.0**
BUC Bucharest 150.23 320 ⇑ PKIKP **PKPdf 08 01 09.6 +1.0**
OKC Ostrava-Krasne 150.26 336 ⇑ *e* PKPDF **PKPdf 08 01 08.6 +0.1**
OKC ⇑ *e* PKP **PKiKP 08 01 14.6 -0.2**
OKC *e* PKPAB **PKPab 08 01 24.6 +1.8**
OKC *ep* PKP **pPKPdf 08 03 19.5 +7.3**
OKC *ex* x 08 06 53.3
OKC *e* SKKS 08 10 51.3
OKC *ex* x 08 17 08.4
OKC *e* SS **SS 08 23 31.0 +1.1**
OKC Ostrava-Krasne 150.26 336 *e* PKIKP **PKPdf 08 01 08.6 +0.1**
OKC *e* 08 17 08.4
OKC *e* SS SS 08 23 31.0 +1.1
ISP Isparta 150.27 305 P **PKPdf 08 01 05.2 -3.9**
ISP Isparta 150.27 305 ⇑ *i* P **PKPdf 08 01 07.6 -1.5**
ISP Isparta 150.27 305 ⇑ PKIKP **PKPdf 08 01 07.6 -1.5**
ISP Isparta 150.27 305 *e* PKPdf **PKPdf 08 01 09.2 +0.1**
ISP *e* PKPbc **PKPbc 08 01 14.5 -0.4**
LANS Liptovska Anna 150.29 334 *e* PKIKP **PKPdf 08 01 09.4 -0.7**
LANS Liptovska Anna 150.29 334 *e* PKP **PKPdf 08 01 09.4 +0.7**
LANS *e* 08 01 15.8
LANS *e* 08 03 16.3
LANS *e* 08 03 23.4
BUC1 Bucharest 150.31 320 ⇑ *i* P **PKPdf 08 01 09.6 +0.8**
LMK Market Rasen 150.31 0 *e* P **PKPdf 08 01 07.8 -0.7**
MTUR Matau 150.34 322 ⇑ *i* P **PKPdf 08 01 09.5 +0.6**
MTUR Matau 150.34 322 ⇑ PKIKP **PKPdf 08 01 09.5 +0.6**
KECS Kecovo 150.37 332 *e* PKIKP **PKPdf 08 01 08.0 -0.8**
KECS Kecovo 150.37 332 *e* PKP **PKPdf 08 01 08.0 -0.8**
KECS *e* 08 01 14.7
KECS *e* 08 01 24.9
KECS *e* 08 03 16.8
KECS *e* 08 03 22.5
KECS *e* 08 10 52.5
WPM1 Penmaenmawr 150.38 5 *e* P **PKPdf 08 01 07.9 -0.7**
UPC Upice 150.45 339 ⇑ *e* PKPDF **PKPdf 08 01 08.8 0.0**
UPC ⇑ *i* PKP **PKiKP 08 01 15.5 +0.3**
UPC *e* PKPAB **PKPab 08 01 25.9 +2.3**
UPC *ep* PKP **pPKPdf 08 03 12.7 +0.2**
UPC *ex* x 08 03 24.0
UPC *e* SKKS 08 10 54.3
UPC *ex* x 08 14 10.2
UPC *ex* x 08 17 00.7
UPC *e* SS **SS 08 23 38.2 +6.2**
UPC Upice 150.45 339 *e* PKIKP **PKPdf 08 01 08.8 0.0**
UPC 08 17 00.7
UPC *e* SS SS 08 23 38.2 +6.2
YLL Llanberis 150.47 5 *e* P **PKPdf 08 01 07.8 -0.9**
DPC Dobruska-Polom 150.48 338 *e* PKPDF **PKPdf 08 01 09.0 +0.1**
DPC ⇑ *e* PKP **PKiKP 08 01 15.5 +0.1**
DPC *e* PKPAB **PKPab 08 01 25.7 +1.9**
DPC *ep* PKP **pPKPdf 08 03 18.8 +6.2**
DPC *e* SKKS 08 15 16.7
DPC *e* SS **SS 08 23 35.6 +3.2**
DPC Dobruska-Polom 150.48 338 *e* PKIKP **PKPdf 08 01 09.0 +0.1**
DPC *e* 08 01 10.9
DPC *e* SS SS 08 23 35.6 +3.2
ARR Arges 150.49 323 ⇑ *i* P **PKPdf 08 01 09.0 -0.1**
MORC Moravsky Berou 150.53 336 ⇑ *i* P **PKPdf 08 01 08.8 -0.2**
MORC Moravsky Berou 150.53 336 ⇑ PKIKP **PKPdf 08 01 08.8 -0.2**
MORC Moravsky Berou 150.53 336 *e* PKPdf **PKPdf 08 01 09.1 0.0**
MORC *e* PKPbc **PKiKP 08 01 15.9 +0.4**
KRLC Kraliky 150.56 338 *e* PKPDF **PKPdf 08 01 09.4 +0.3**
KRLC ⇑ *e* PKP **PKPbc 08 01 15.2 +0.1**
KRLC *e* PKPAB **PKPab 08 01 26.0 +1.9**
KRLC *ep* PKP **pPKPdf 08 03 19.5 +6.8**
KRLC Kraliky 150.56 338 *e* PKIKP **PKPdf 08 01 09.4 +0.3**
DRGR 150.56 327 ⇑ *i* P **PKPdf 08 01 08.8 -0.4**
DRGR 150.56 327 ⇑ PKIKP **PKPdf 08 01 08.8 -0.4**
GDZ Gediz 150.58 308 *i* P **PKPbc 08 01 15.7 +0.1**
GDZ *i* S **PKPab 08 01 22.4 -2.3**
STNC Stoke 150.64 2 *e* P **PKPdf 08 01 08.7 -0.3**
CLL Collm 150.65 343 *e* PKPdf **PKPdf 08 01 09.0 -0.1**
comp=Z,667nm,2.1s
CLL *i* PKPbc **PKPbc 08 01 15.3 +0.2**
comp=Z,688nm,0.7s
CLL *e* PKPab **PKPab 08 01 25.0 +0.7**
comp=Z,624nm,1.5s
CLL *ep* PKPdf **pPKPdf 08 03 14.0 +1.2**
CLL *ep* PKPbc **pPKPbc 08 03 19.0 +1.5**
CLL *i* pPKPab **pPKPab 08 03 23.5 +1.4**
comp=Z,451nm,1.0s
CLL *i* 08 03 29.2
CLL *es* PKPdf **sPKPdf 08 04 08.0 +4.4**
CLL *e* PKSdf **PKSdf 08 04 45.0 +1.5**
CLL *ep* P 08 06 48.0
CLL *i* SKKSac SKKSac 08 10 54.4 -0.6
CLL *e* SKSP 08 14 24.0
CLL *e* 08 17 10.0
CLL *e* PPS PPS 08 17 58.0
CLL *e* 08 19 30.0
CLL *e* SS **SS 08 23 34.0 +0.1**
CLL *e* 08 24 25.0
CLL *e* 08 27 58.0
CLL *e* SSS SSS 08 29 30.0
CLL *e* 08 32 54.0
CLL *e* SSSS 08 33 42.0
CLL Collm 150.65 343 *e* PKIKP **PKPdf 08 01 09.0 -0.1**
CLL *e* 08 01 25.0
CLL pmax pmax
comp=Z,667nm,2.1s
CLL Collm 150.65 343 *e* PKPdf **PKPdf 08 01 08.8 -0.2**
CLL *e* PKPbc **PKiKP 08 01 15.8 +0.2**
KORT Korkueli 150.67 304 *i* P **PKPbc 08 01 16.8 +0.9**
BRG Berggiesshubel 150.77 342 *i* PKP **PKPdf 08 01 09.2 -0.1**
comp=Z,572nm,2.0s
BRG *i* 08 01 16.0
comp=Z,577nm,0.6s
BRG *i* 08 01 24.3
comp=Z,215nm,0.8s
BRG pPKP **pPKPdf 08 03 11.0 -2.0**
BRG Berggiesshubel 150.77 342 *i* PKIKP **PKPdf 08 01 09.2 -0.1**
BRG *i* 08 01 24.3
BRG pmax pmax
comp=Z,572nm,2.0s
FOEL Foel Wylfa 150.79 4 *e* P **PKPdf 08 01 08.8 -0.5**

VAL Valentia 150.79 13 ⇓ *i* P **PKPdf 08 01 08.8 -0.4**
LLW Llanuwchllyn 150.80 4 *e* P **PKPdf 08 01 07.4 -1.9**
HUMR Humele 150.81 321 ⇑ *i* P **PKPdf 08 01 08.6 -0.9**
PVCC Panska Ves 150.89 340 ⇑ *e* PKPBC **PKPbc 08 01 16.1 +0.4**
PVCC *ep* PKP **pPKPdf 08 03 20.4 +7.2**
PVCC *e* SKKS 08 10 54.1
PVCC Panska Ves 150.89 340 *e* PKIKP **PKPbc 08 01 16.1 +0.4**
LOT Lotru 150.91 324 ⇑ *i* P **PKPdf 08 01 08.8 -1.0**
IWEX Carrickbyrne, 150.96 8 *e* P **PKPdf 08 01 08.8 -0.7**
SZH Strazhica 150.97 319 *i* P **PKPdf 08 01 09.7 -0.2**
CWF Charnwood Fore 151.02 1 *e* P **PKPdf 08 01 08.4 -1.2**
CWF Charnwood Fore 151.02 1 *e* PKPdf **PKPdf 08 01 09.2 -0.4**
CWF *e* PKPbc **PKiKP 08 01 16.1 -0.2**
PSZ Piszkesteto 151.06 332 ⇑ *i* P **PKPdf 08 01 09.2 -0.7**
PSZ Piszkesteto 151.06 332 *e* PKIKP **PKPdf 08 01 09.2 -0.7**
PSZ Piszkesteto 151.06 332 *e* PKPdf **PKPdf 08 01 09.2 -0.7**
PSZ *e* PKPbc **PKiKP 08 01 16.8 +0.1**
PSZ Piszkesteto 151.06 332 ⇑ *ex* **PKPdf 08 01 09.4 -0.5**
PSZ *ex* x 08 01 16.2
PSZ *ex* x 08 03 21.9
VYHS Vyhne 151.06 333 *e* PKIKP **PKPdf 08 01 09.6 -0.2**
VYHS *e* 08 01 27.1
VYHS *e* SS SS 08 23 36.5 -2.4
VYHS Vyhne 151.06 333 *e* PKP **PKPdf 08 01 09.6 -0.2**
VYHS *e* 08 01 16.7
VYHS *e* 08 01 27.1
VYHS *e* 08 03 15.4
VYHS *e* 08 10 56.9
VYHS *e* SS SS 08 23 36.5 -2.4
VYHS *e* 08 36 34.3
DEV Deva 151.08 326 ⇓ *i* P **PKPdf 08 01 09.5 -0.4**
DEV Deva 151.08 326 ⇓ PKIKP **PKPdf 08 01 09.5 -0.4**
ZIMR 151.09 320 ⇑ *i* P **PKPdf 08 01 09.7 -0.3**
ZIMR 151.09 320 ⇑ PKIKP **PKPdf 08 01 09.7 -0.3**
DEMI Demirci 151.15 309 *i* P **PKPbc 08 01 15.7 -1.2**
HLM1 Long Mynd 151.18 3 *e* P **PKPdf 08 01 09.1 -0.8**
GOLH Golhisar 151.19 305 *i* P **PKPbc 08 01 15.7 -1.3**
EDRB Edirne 151.22 315 P **PKPdf 08 01 06.6 -3.7**
VRAC Vranov 151.26 337 PKP **PKPdf 08 01 09.6 -0.5**
comp=Z,7.4nm,0.5s,baz=63,slow=0.7,SNR=43
VRAC PKPbc **PKiKP 08 01 17.0 0.0**
comp=Z,50nm,0.6s,baz=35,slow=2.2,SNR=33
VRAC PKPab **PKPab 08 01 29.3 +2.2**
comp=Z,126nm,0.7s,baz=37,slow=4.5,SNR=16
VRAC Vranov 151.26 337 ⇑ *i* P **PKPdf 08 01 09.8 -0.3**
VRAC Vranov 151.26 337 ⇑ PKIKP **PKPdf 08 01 09.8 -0.3**
WTSB Winterswijk 151.30 351 *e* PKPdf **PKPdf 08 01 09.8 -0.2**
WTSB *e* PKPbc **PKPbc 08 01 16.7 +0.1**
WTSB *e* PKPab **PKPab 08 01 27.3 +0.3**
WTSB *ep* PKP **pPKPdf 08 03 15.6 +1.9**
PVL Pavlikeni 151.37 319 *i* P **PKPdf 08 01 10.4 0.0**
PRU Pruhonice 151.37 340 ⇑ *e* PKPDF **PKPdf 08 01 10.1 -0.1**
PRU ⇑ *e* PKP **PKPbc 08 01 16.8 0.0**
PRU *e* PKPAB **PKPab 08 01 29.3 +1.8**
PRU *ep* PKP **pPKPdf 08 03 20.9 +7.0**
PRU *ex* x 08 06 45.4
PRU *e* SKKS 08 10 58.0
PRU *ex* x 08 14 27.0
PRU *ex* x 08 17 06.9
PRU *e* SS **SS 08 23 41.2 -0.8**
PRU Pruhonice 151.37 340 *e* PKIKP **PKPdf 08 01 10.1 -0.1**
PRU *e* 08 17 06.9
PRU SS SS 08 23 41.2 -0.8
KULA Kula-Manisa 151.40 308 P **PKPdf 08 01 09.2 -1.5**
SIRR Siria 151.44 327 ⇑ *i* P **PKPdf 08 01 10.0 -0.5**
GZR Gura Zlata 151.47 325 ⇑ *i* P **PKPdf 08 01 09.8 -0.8**
GZR Gura Zlata 151.47 325 ⇑ PKIKP **PKPdf 08 01 09.8 -0.8**
AKAS Kas 151.47 303 *i* P **PKPbc 08 01 17.9 +0.2**
MANT Manisa 151.48 308 *i* P **PKPbc 08 01 15.7 -2.1**
LPW Lampeter 151.50 5 *e* P **PKPdf 08 01 09.5 -0.8**
KSL Kastellorizon 151.51 303 P **PKPdf 08 01 09.5 -1.4**
PCED Cedros 151.57 52 *e* PKPdf **PKPdf 08 01 11.9 +1.0**
CALA Caldeira 151.59 52 *e* PKPdf **PKPdf 08 01 10.6 -0.4**
CRAR CRAIOVA 151.60 322 ⇑ *i* P **PKPdf 08 01 10.5 -0.2**
CRAR CRAIOVA 151.60 322 ⇑ PKIKP **PKPdf 08 01 10.5 -0.2**
SMOL Smolenice 151.61 335 *e* PKIKP **PKPdf 08 01 11.1 +0.5**
SMOL Smolenice 151.61 335 *e* PKP **PKPdf 08 01 11.1 +0.5**
SMOL *e* 08 01 18.2
SMOL *e* 08 01 30.8
SMOL *e* 08 03 26.5
MCH1 Michaelchurch 151.69 4 *e* P **PKPdf 08 01 09.4 -1.2**
SRE Strehaia 151.72 323 ⇑ *i* P **PKPdf 08 01 10.2 -0.7**
SRE Strehaia 151.72 323 ⇑ PKIKP **PKPdf 08 01 10.2 -0.7**
FETY Fethiye 151.75 304 P **PKPdf 08 01 09.3 -2.0**
NKC Novy Kostel 151.77 343 ⇑ *e* PKPBC **PKPbc 08 01 17.8 0.0**
NKC *e* PKPAB **PKPab 08 01 30.1 +0.9**
NKC *ep* PKP **pPKPdf 08 03 21.3 +6.7**
NKC *ex* x 08 06 52.0
NKC *e* SKKS 08 11 00.1
NKC *ex* x 08 14 29.8
NKC *ex* x 08 17 10.3
NKC Novy Kostel 151.77 343 *e* PKIKP **PKPbc 08 01 17.8 0.0**
NKC *e* 08 17 10.3
BUD Budapest 151.77 332 ⇑ *ex* **PKPdf 08 01 10.4 -0.5**
KESN Edirne-Kesan 151.77 314 *i* P **PKPbc 08 01 17.7 -0.8**
PCAN Candelaria 151.79 52 *e* PKPdf **PKPdf 08 01 12.0 +0.7**
PICO Pico 151.82 52 *e* PKPdf **PKPdf 08 01 11.3 -0.1**
MONM Monmouth 151.86 3 *e* P **PKPdf 08 01 09.5 -1.4**
ROSA Rosais 151.87 51 *e* PKPdf **PKPdf 08 01 11.5 +0.2**
ROSA Rosais 151.87 51 *e* PKPdf **PKPdf 08 01 12.4 +1.1**
ROSA *e* PKPbc **PKiKP 08 01 19.2 +0.7**
BZS Buzias 151.92 326 ⇑ *i* P **PKPdf 08 01 10.4 -0.8**
BZS Buzias 151.92 326 ⇑ PKIKP **PKPdf 08 01 10.4 -0.8**
PGRA Graciosa 151.93 51 *e* PKPdf **PKPdf 08 01 10.9 -0.5**
STRD Stroud 151.96 3 *e* P **PKPdf 08 01 10.0 -1.0**
PMAN Manadas 152.01 51 *e* PKPdf **PKPdf 08 01 10.9 -0.6**
TURN Turunc 152.03 305 *i* P **PKPbc 08 01 20.2 +1.5**
TIM Timisoara 152.03 327 ⇓ *i* P **PKPdf 08 01 11.9 +0.6**
TIM Timisoara 152.03 327 ⇓ PKIKP **PKPdf 08 01 11.9 +0.6**
OLDB Oldbury-Upon-S 152.05 3 *e* P **PKPdf 08 01 08.7 -2.4**
HGH Gray Hill 152.06 4 *e* P **PKPdf 08 01 10.3 -0.9**
ALN Alexandroupoli 152.15 314 P **PKPdf 08 01 07.4 -4.3**
ALN Alexandroupoli 152.15 314 PKIKP **PKPdf 08 01 07.4 -4.3**
ALN Alexandroupoli 152.15 314 P **PKPdf 08 01 07.4 -4.3**
CSKK Cs˙‡kako 152.19 333 ⇑ *ex* **PKPdf 08 01 10.3 -0.2**
CSKK *ex* x 08 01 18.0
CSKK *ex* x 08 03 24.8
MPEP Malo Peshtene 152.23 321 *i* P **PKPdf 08 01 11.0 -0.7**
MPEP *i* P **PKPbc 08 01 11.4 -7.6**
BANR Banloc 152.32 327 ⇓ *i* P **PKPdf 08 01 11.6 -0.1**
KHC Kasperske Hory 152.43 340 *e* PKPDF **PKPdf 08 01 11.6 -0.3**
KHC ⇑ *e* PKP **PKPbc 08 01 18.9 -0.4**
KHC *e* PKPAB **PKPab 08 01 34.0 +2.0**
KHC *ep* PKP **pPKPdf 08 03 23.3 +7.7**
KHC *ex* x 08 06 57.2
KHC *e* SKKS 08 11 03.8
KHC *ex* x 08 14 31.5
KHC *ex* x 08 17 15.6
KHC Kasperske Hory 152.43 340 *e* PKIKP **PKPdf 08 01 11.6 -0.3**
KHC Kasperske Hory 152.43 340 *e* PKPdf **PKPdf 08 01 11.6 -0.3**
KHC *e* PKPbc **PKiKP 08 01 19.7 +0.3**
MDVR Moldovita 152.44 325 ⇓ *i* P **PKPdf 08 01 11.2 -0.8**
WOL Wolverton 152.45 1 *e* P **PKPdf 08 01 11.0 -0.7**
HTL Hartland 152.58 6 *e* P **PKPdf 08 01 11.5 -0.4**
GRFO Grafenberg 152.59 344 *e* PKIKP **PKPdf 08 01 12.5 +0.4**
GRFO Grafenberg 152.59 344 *e* PKPdf **PKPdf 08 01 12.5 +0.4**
GRFO *e* PKPbc **PKiKP 08 01 20.1 +0.4**
GADA Gvkgeada 152.60 313 P **PKPdf 08 01 05.4 -6.9**
HGN Heimansgroeve 152.60 352 *i* PKPdf **PKPdf 08 01 11.4 -0.6**
comp=Z,748nm,2.1s
HGN *e* PKPbc **PKPbc 08 01 19.5 0.0**
comp=Z,1µm,2.3s
HGN *e* PKPab **PKPab 08 01 32.4 -0.2**
comp=Z,451nm,1.2s
HGN *ep* PKP **pPKPdf 08 03 16.4 +0.6**

comp=Z,34nm,0.5s,baz=24,slow=2.6,SNR=70
GERES PKPab **PKPab 08 01 34.8 +1.8**
comp=Z,22nm,0.7s,baz=29,slow=6.1,SNR=8.3
GERES pPKPbc **pPKPbc 08 03 19.0 -3.5**
comp=Z,4.2nm,0.7s,baz=258,slow=27,SNR=2.1
GEA0 GERESS Array S 152.65 340 *e*PKPdf **PKPdf 08 01 10.8 -1.4**
GEA0 *e*PKPbc **PKiKP 08 01 19.9 -0.1**
SMTH Samothraki Isl 152.71 314 P **PKPdf 08 01 08.4 -4.1**
MEM Membach 152.74 351 PKP **PKPdf 08 01 11.9 -0.3**
MEM PKPbc **PKiKP 08 01 19.9 -0.1**
MEM PKPab **PKPab 08 01 34.3 +1.1**
MEM APKP **pPKPdf 08 03 22.4 +6.4**
UCC Uccle 152.75 354 PKP **PKPdf 08 01 12.5 +0.3**
UCC PKPbc **PKiKP 08 01 20.2 +0.2**
UCC PKPab **PKPab 08 01 33.7 +0.5**
UCC APKPbc 08 03 24.0
PRK Paraskevi 152.78 311 P **PKPdf 08 01 10.0 -2.6**
HMNX Herstmonceux 152.91 359 *e*P **PKPdf 08 01 12.4 0.0**
BODT Bodrum 152.93 306 P **PKPdf 08 01 08.4 -4.6**
URLA Izmir 152.94 309 *i* P **PKPbc 08 01 20.2 -0.6**
VTS Vitosha 153.00 320 *i* P **PKPdf 08 01 16.5 +3.4**
BCLA Clavier 153.02 352 PKP **PKPdf 08 01 12.2 -0.4**
BCLA PKPbc **PKPbc 08 01 20.1 -0.4**
BCLA PKPab **PKPab 08 01 35.4 +1.0**
BCLA APKPbc 08 03 28.1
SMG Samos 153.03 307 P **PKPdf 08 01 06.5 -6.6**
SNF Seneffe 153.04 354 PKP **PKPdf 08 01 12.5 -0.1**
SNF PKPbc **PKiKP 08 01 20.6 +0.1**
SNF PKPab **PKPab 08 01 35.6 +1.2**
SNF APKPbc 08 03 24.2
KAVA Kavala 153.10 316 P **PKPdf 08 01 08.9 -4.1**
KAVA Kavala 153.10 316 P **PKPdf 08 01 08.9 -4.1**
MENF Mencas 153.16 357 PKP **PKPdf 08 01 12.3 -0.5**
MMB Musomiste 153.27 317 *i* P PKPpre 08 01 01.2
CCA1 Carnmenellis 153.30 7 *e*P **PKPdf 08 01 10.3 -2.7**
CHOS Chios island 153.32 309 P **PKPdf 08 01 07.8 -5.7**
CHOS Chios island 153.32 309 P **PKPdf 08 01 07.8 -5.7**
NVR Nevrokopi 153.32 317 P **PKPdf 08 01 10.0 -3.5**
NVR Nevrokopi 153.32 317 P **PKPdf 08 01 09.9 -3.5**
DOU Dourbes 153.42 353 PKP **PKPdf 08 01 12.9 -0.3**
DOU PKPbc **PKiKP 08 01 21.4 +0.1**
DOU PKPab **PKPab 08 01 37.0 +1.0**
DOU APKPbc 08 03 25.0
KKR Krupnik 153.50 319 *i* P **PKPdf 08 01 12.4 -1.2**
KARP Karpathos 153.57 303 *e*PKPdf **PKPdf 08 01 15.5 +1.5**
KARP *e*PKPbc **PKiKP 08 01 23.0 +0.8**
SRS Serrai 153.62 317 P **PKPdf 08 01 10.1 -3.7**
SRS Serrai 153.62 317 PKIKP **PKPdf 08 01 10.1 -3.7**
SRS Serrai 153.62 317 P **PKPdf 08 01 10.1 -3.7**
WLF Walferdange 153.64 351 PKP **PKPdf 08 01 13.9 +0.3**
WLF PKPbc **PKPbc 08 01 21.4 -0.4**
WLF PKPab **PKPab 08 01 37.7 +0.6**
WLF APKPbc 08 03 26.6
WLF Walferdange 153.64 351 *e*PKIKP **PKPdf 08 01 13.8 +0.3**
WLF Walferdange 153.64 351 *e*PKPdf **PKPdf 08 01 13.8 +0.3**
OUR Ouranopolis 153.79 315 P **PKPdf 08 01 07.1 -6.9**
SOH Sokhos 153.93 316 P **PKPdf 08 01 10.4 -3.9**
SOH Sokhos 153.93 316 PKIKP **PKPdf 08 01 10.4 -3.9**
SOH Sokhos 153.93 316 P **PKPdf 08 01 10.4 -3.9**
STU Stuttgart 153.93 346 *e*PKIKP **PKPdf 08 01 13.9 -0.1**
STU *e* 08 01 38.8
STU Stuttgart 153.93 346 *e*PKPdf **PKPdf 08 01 13.9 -0.1**
STU *e*PKPbc **PKiKP 08 01 23.0 +0.5**
STU *e*PKPab **PKPab 08 01 38.8 +0.4**
LANF Langenberg 154.02 348 PKP **PKPdf 08 01 14.4 +0.3**
KNT Kendrikon 154.02 318 P **PKPdf 08 01 11.6 -2.8**
KNT Kendrikon 154.02 318 PKIKP **PKPdf 08 01 11.6 -2.8**
KNT Kendrikon 154.02 318 P **PKPdf 08 01 11.6 -2.8**
PERS Pernice 154.04 335 *i* PKPdf **PKPdf 08 01 13.0 -1.3**
PERS *e*PKPbc **PKPbc 08 01 22.1 -0.7**
PERS *i* PKPab **PKPab 08 01 38.9 -0.1**
PERS *ep*PKPbc **pPKPbc 08 03 16.5 -9.1**
PSET Sete Cidades 154.04 51 *e*PKPdf **PKPdf 08 01 16.0 +1.5**
PLG Polygyros 154.12 315 P **PKPdf 08 01 11.9 -2.7**
PLG Polygyros 154.12 315 PKIKP **PKPdf 08 01 11.9 -2.7**
PLG Polygyros 154.12 315 P **PKPdf 08 01 11.9 -2.7**
PDA Ponta Delgada 154.12 51 *e*PKPdf **PKPdf 08 01 14.2 -0.4**
VAY Valandovo 154.13 318 P **PKPdf 08 01 12.4 -2.1**
VAY Valandovo 154.13 318 ⇑*i*PKP **PKPdf 08 01 12.5 -1.8**
VAY Valandovo 154.13 318 PKIKP **PKPdf 08 01 12.4 -2.1**
VAY Valandovo 154.13 318 P **PKPdf 08 01 12.4 -2.1**
PAIG Paliouri 154.20 314 P **PKPdf 08 01 09.3 -5.3**
CMLA Cha da Macela 154.21 51 *e*PKIKP **PKPdf 08 01 15.9 +1.2**
CMLA Cha da Macela 154.21 51 *e*PKPdf **PKPdf 08 01 15.9 +1.2**
HORT Hortiatis 154.21 316 P **PKPdf 08 01 10.6 -4.1**
HORT Hortiatis 154.21 316 P **PKPdf 08 01 10.6 -4.1**
APE Apeiranthos 154.24 307 ⇑*i*P **PKPdf 08 01 12.6 -2.2**
APE Apeiranthos 154.24 307 ⇑PKIKP **PKPdf 08 01 12.6 -2.2**
THE Thessaloniki 154.28 316 P **PKPdf 08 01 11.1 -3.6**
THE Thessaloniki 154.28 316 PKIKP **PKPdf 08 01 11.1 -3.6**
THE Thessaloniki 154.28 316 P **PKPdf 08 01 11.1 -3.6**
STR Strasbourg 154.41 348 PKP **PKPdf 08 01 14.9 +0.3**
SKO Skopje 154.42 320 P **PKPdf 08 01 13.5 -1.4**
SKO Skopje 154.42 320 ⇑*i*PKP **PKPdf 08 01 13.5 -1.4**
GRG Griva 154.45 318 P **PKPdf 08 01 11.5 -3.5**
BART Pico Bartolome 154.46 51 *e*PKPdf **PKPdf 08 01 15.2 0.0**
SISC Sisak 154.49 332 *i* P **PKPdf 08 01 14.8 -0.1**
JQE Queens East 154.53 3 *e*P **PKPdf 08 01 13.5 -1.3**
BFO Black Forest 154.54 347 *e*PKIKP **PKPdf 08 01 14.3 -0.6**
BFO Black Forest 154.54 347 *e*PKPdf **PKPdf 08 01 14.3 -0.6**
BFO *e*PKPbc **PKPbc 08 01 23.9 +0.1**
BFO *e*PKPab **PKPab 08 01 42.2 +1.2**
JSA Saint Aubin 154.54 3 *e*P **PKPdf 08 01 13.3 -1.4**
SANT Santorini 154.57 306 *e*PKPdf **PKPdf 08 01 14.0 -1.3**
SANT *e*PKPbc **PKiKP 08 01 23.8 -0.4**
KARY Karystos 154.62 310 P **PKPdf 08 01 10.9 -4.4**
PLE Pljevlja 154.65 325 ⇑*i*P **PKPdf 08 01 13.9 -1.4**
IVA Berane 154.70 324 ⇑*i*PKP **PKPdf 08 01 14.3 -1.0**
SKIA Skiathos 154.74 313 P **PKPdf 08 01 12.8 -2.6**
OZLJ Ozalj 154.75 334 P **PKPdf 08 01 14.7 -0.5**
XOR Xorichti 154.81 314 P **PKPdf 08 01 11.8 -3.7**
PSMA Santa Maria 154.82 53 *e*PKPdf **PKPdf 08 01 14.1 -1.5**
NEO Neokhori 154.82 314 P **PKPdf 08 01 12.3 -3.2**
NEO Neokhori 154.82 314 P **PKPdf 08 01 12.3 -3.2**
VISS Visnje 154.84 335 *i* PKPdf **PKPdf 08 01 14.6 -0.8**
VISS *e*PKPbc **PKiKP 08 01 24.4 -0.1**
VISS *e*PKPab **PKPab 08 01 42.6 +0.2**
VISS *i* pPKPbc **pPKPbc 08 03 18.5 -8.9**
VISS *e* 08 11 16.0
PVY Plav 154.85 323 *e*PKPdf **PKPdf 08 01 14.3 -1.3**
PSMN Pico do Norte, 154.87 52 *e*PKPdf **PKPdf 08 01 14.1 -1.5**
ECH Echery 154.88 348 PKP **PKPdf 08 01 14.7 -0.6**
LIT Litokhoron 154.88 316 P **PKPdf 08 01 12.2 -3.4**
LIT Litokhoron 154.88 316 PKIKP **PKPdf 08 01 12.2 -3.4**
LIT Litokhoron 154.88 316 P **PKPdf 08 01 12.2 -3.4**
BOJS Bojanci 154.93 334 *i* PKPdf **PKPdf 08 01 15.1 -0.4**
BOJS *e*PKPbc **PKPbc 08 01 25.9 +1.3**
BOJS *i* PKPab **PKPab 08 01 43.4 +0.6**
BOJS *i* pPKPbc **pPKPbc 08 03 18.8 -8.7**
BOJS *e* 08 11 16.9
FYTO Fytoko, Volos 154.96 314 P **PKPdf 08 01 12.7 -3.0**
FYTO Fytoko, Volos 154.96 314 P **PKPdf 08 01 12.7 -3.0**
UPM Unac-Piva 155.00 326 ⇑*i*PKP **PKPdf 08 01 14.5 -1.4**
LAST Lasithi 155.00 303 P **PKPdf 08 01 12.5 -3.5**
JAVS Javornik 155.06 336 *i* PKPdf **PKPdf 08 01 14.9 -0.9**
JAVS *e*PKPbc PKPbc 08 01 24.4
JAVS *e*PKPab **PKPab 08 01 43.4 -0.1**
JAVS *ep*PKPbc pPKPbc 08 03 17.7 -10
JAVS *e* 08 11 17.3
THEF They Montfort 155.07 350 PKP **PKPdf 08 01 15.6 0.0**
VLY Voula,Athens 155.15 310 P **PKPdf 08 01 12.8 -3.2**
FNA Florina 155.18 318 P **PKPdf 08 01 13.8 -2.2**
FNA Florina 155.18 318 PKIKP **PKPdf 08 01 13.8 -2.2**
FNA Florina 155.18 318 P **PKPdf 08 01 13.8 -2.2**
KZN Kozani 155.22 317 P **PKPdf 08 01 12.8 -3.3**
KZN Kozani 155.22 317 PKIKP **PKPdf 08 01 12.8 -3.3**
KZN Kozani 155.22 317 P **PKPdf 08 01 12.8 -3.3**
NKY Niksic 155.22 325 ⇑*i*PKP **PKPdf 08 01 15.2 -0.9**
MOF Molkenrain 155.23 348 PKP **PKPdf 08 01 15.3 -0.6**
ATAL Atalanti 155.27 313 P **PKPdf 08 01 13.4 -2.7**
ATAL Atalanti 155.27 313 P **PKPdf 08 01 13.4 -2.7**
NKME Niksic 155.28 325 ⇑*i*PKP **PKPdf 08 01 15.0 -1.1**
OHR Ohrid 155.33 320 ⇑*i*PKP **PKPdf 08 01 14.7 -1.5**
TRI Trieste 155.33 336 *e*PKIKP **PKPdf 08 01 15.0 -0.9**
TRI Trieste 155.33 336 *e*PKPdf **PKPdf 08 01 15.0 -0.9**
VILL Villia 155.34 311 P **PKPdf 08 01 13.8 -2.5**
TTG Podgorica 155.34 324 ⇑*i*PKP **PKPdf 08 01 15.0 -1.1**
BRY Bratogost 155.40 326 ⇑*i*PKP **PKPdf 08 01 15.1 -1.3**
IDI Anoyia 155.40 304 PKP **PKPdf 08 01 16.2 -0.3**
comp=Z,34nm,0.8s,baz=85,slow=3.5,SNR=17
IDI PKPbc PKPbc 08 01 27.5
comp=Z,39nm,0.5s,baz=352,slow=21,SNR=17
IDI Anoyia 155.40 304 P **PKPdf 08 01 13.9 -2.6**
IDI Anoyia 155.40 304 *e*PKPdf **PKPdf 08 01 16.6 +0.1**
IDI PKPbc 08 01 27.5
CEME Cevo 155.45 324 ⇑*i*PKP **PKPdf 08 01 14.8 -1.5**
THL Klokotos Trika 155.48 315 P **PKPdf 08 01 13.0 -3.3**
UDBI Udbina 155.50 332 P **PKPdf 08 01 15.8 -0.5**
DRME Dracevica, Mon 155.55 323 ⇑*i*PKP **PKPdf 08 01 15.3 -1.1**
SIVA Sivas 155.56 303 P **PKPdf 08 01 15.3 -1.3**
AGG Agios Georgios 155.57 314 P **PKPdf 08 01 13.2 -3.4**
AGG Agios Georgios 155.57 314 *e*PKIKP **PKPdf 08 01 15.6 -1.0**
AGG Agios Georgios 155.57 314 *e*PKPdf **PKPdf 08 01 15.6 -1.0**
DAVOX Davos/Dischmat 155.62 343 PKP **PKPdf 08 01 16.2 -0.4**
comp=Z,27nm,0.6s,baz=24,slow=1.1,SNR=77
DAVOX PKPab **PKPab 08 01 47.5 +1.6**
comp=Z,115nm,0.6s,baz=357,slow=3.4,SNR=15
LTK Loutraki 155.64 311 P **PKPdf 08 01 13.3 -3.4**
FUORN Ofenpass-Fuorn 155.66 342 *e*PKPdf **PKPdf 08 01 16.3 -0.4**
FUORN *e*PKPab **PKPab 08 01 48.3 +2.1**
ULC Ulcinj 155.67 323 ⇑*i*PKP **PKPdf 08 01 15.1 -1.5**
KPRO Kipourio 155.67 317 P **PKPdf 08 01 13.2 -3.5**
PENT Pentalofos 155.67 317 P **PKPdf 08 01 13.4 -3.4**
HCY Herceg Novi 155.74 325 ⇑*i*PKP **PKPdf 08 01 15.2 -1.4**
DSF Desfina 155.75 312 P **PKPdf 08 01 13.9 -2.9**
DSF Desfina 155.75 312 P **PKPdf 08 01 13.9 -2.9**
LOMF Lomont 155.77 348 PKP **PKPdf 08 01 16.5 -0.1**
THAL Thalero 155.84 312 P **PKPdf 08 01 13.5 -3.4**
NVLJ Novalja 155.85 333 P **PKPdf 08 01 15.6 -1.1**
VAM Vamos 155.88 304 P **PKPdf 08 01 15.3 -1.7**
EVR Evrytania 155.97 314 P **PKPdf 08 01 14.7 -2.5**
EVR Evrytania 155.97 314 P **PKPdf 08 01 14.7 -2.5**
KALE Kalithea 156.02 313 P **PKPdf 08 01 11.8 -5.4**
KALE Kalithea 156.02 313 P **PKPdf 08 01 11.8 -5.4**
IMMV Iera Moni Meta 156.03 305 P **PKPdf 08 01 15.7 -1.5**
TUE Stuetta 156.04 344 *e*PKPdf **PKPdf 08 01 16.0 -1.2**
SERG Sergoula 156.07 313 P **PKPdf 08 01 12.7 -4.5**
KLV Kalavryta, Ach 156.19 312 P **PKPdf 08 01 13.9 -3.5**
LAKA Lakka 156.21 313 P **PKPdf 08 01 15.0 -2.4**
LAKA Lakka 156.21 313 P **PKPdf 08 01 15.0 -2.4**
SACV Santiago Islan 156.26 107 *e*PKPdf **PKPdf 08 01 16.9 -1.2**
SACV *e*PKPab **PKPab 08 01 49.1 -0.3**
VLI Veliai 156.27 308 P **PKPdf 08 01 12.1 -5.4**
DSL Palaion Diasel 156.31 315 P **PKPdf 08 01 15.9 -1.6**
DSL Palaion Diasel 156.31 315 P **PKPdf 08 01 15.9 -1.6**
PVO Paravola 156.31 314 P **PKPdf 08 01 15.3 -2.2**
VLX Vlachokerasia 156.37 310 P **PKPdf 08 01 14.7 -3.0**
ANKY Antikythira Is 156.37 306 P **PKPdf 08 01 14.1 -3.5**
DRO Drossia 156.54 312 P **PKPdf 08 01 16.4 -1.4**
PDO Prodromos 156.55 314 P **PKPdf 08 01 15.9 -1.9**
IGT Igoumenitsa 156.56 317 P **PKPdf 08 01 15.2 -2.6**
IGT Igoumenitsa 156.56 317 PKIKP **PKPdf 08 01 15.2 -2.6**
IGT Igoumenitsa 156.56 317 P **PKPdf 08 01 15.2 -2.6**
SGD Sagiada 156.58 317 P **PKPdf 08 01 16.4 -1.4**
SENIN Lac Senin/Sane 156.62 347 *e*PKPdf **PKPdf 08 01 17.7 -0.2**
SENIN *e*PKPab **PKPab 08 01 51.7 +1.4**
ITM Ithomi 156.77 310 P **PKPdf 08 01 14.2 -4.0**
ITM Ithomi 156.77 310 P **PKPdf 08 01 14.2 -4.0**
KEK Kerkira 156.79 318 P **PKPdf 08 01 15.3 -2.8**
PYL PYLOS 157.04 310 P **PKPdf 08 01 15.3 -3.2**
VLS Valsamata 157.17 314 P **PKPdf 08 01 15.3 -3.3**
ZKYS Zakynthos 157.30 313 P **PKPdf 08 01 15.2 -3.4**
AGO Saint Agoulin 157.57 354 PKP **PKPdf 08 01 18.9 0.0**
PLDF La Plantade 157.60 353 PKP **PKPdf 08 01 19.2 +0.2**
VLC Villacollemand 157.85 340 *e*PKPdf **PKPdf 08 01 15.9 -3.4**
PYM Petit Puy Mans 157.88 354 PKP **PKPdf 08 01 19.7 +0.4**
GDM Grand'Maison 157.97 348 PKP **PKPdf 08 01 19.7 +0.1**
GRN Grenoble 158.00 349 PKP **PKPdf 08 01 19.7 +0.2**
SSB Saint Sauveur 158.16 351 PKP **PKPdf 08 01 19.7 +0.1**
SSB Saint Sauveur 158.16 351 *e*PKIKP **PKPdf 08 01 19.4 -0.2**
SSB *e* 08 01 57.6
SSB Saint Sauveur 158.16 351 *e*PKPdf **PKPdf 08 01 19.4 -0.2**
SSB *e*PKPab **PKPab 08 01 57.6 +0.8**
AQU L'Aquila 158.27 332 *e*PKIKP **PKPdf 08 01 19.3 -0.6**
AQU *e* 08 01 58.2
AQU L'Aquila 158.27 332 *e*PKPdf **PKPdf 08 01 19.3 -0.6**
AQU *e*PKPab **PKPab 08 01 58.2 +0.8**
FRNF Fournols 158.28 355 PKP **PKPdf 08 01 20.2 +0.4**
LBL Lubilhac 158.37 353 PKP **PKPdf 08 01 20.9 +0.6**
AUTN L'Aution 158.84 345 PKP **PKPdf 08 01 21.3 +0.6**
CUC Castrocucco 158.90 324 *e*PKPdf **PKPdf 08 01 20.4 -0.3**
CUC *e*PKPab **PKPab 08 02 00.6 +0.4**
TIP Timpagrande 158.94 321 P **PKPdf 08 01 18.9 -1.9**
TIP Timpagrande 158.94 321 *e*PKPdf **PKPdf 08 01 20.1 -0.6**
TIP *e*PKPab **PKPab 08 02 03.0 +2.6**
LUCF Luceram 158.96 345 PKP **PKPdf 08 01 20.0 -0.7**
MVIF Mont Vial 159.00 345 PKP **PKPdf 08 01 20.2 -0.6**
REVF Revere 159.10 345 PKP **PKPdf 08 01 19.7 -1.1**
CEL Celeste 160.06 320 *e*PKPdf **PKPdf 08 01 21.5 -0.5**
CEL *e*PKPab **PKPab 08 02 07.5 +2.2**
OSSF Osses 160.50 2 PKP **PKPdf 08 01 21.7 -0.6**
ORDF Ordiarp 160.56 2 PKP **PKPdf 08 01 22.0 -0.3**
PGAV Gavieira, Arco 160.60 18 *e*PKPdf **PKPdf 08 01 22.8 +0.2**
PGAV Gavieira, Arco 160.60 18 *e*PKPab **PKPab 08 02 08.3 +0.7**
PGAV *ep*PKPdf **pPKPdf 08 03 26.0 -0.7**
PGAV *ep*PKPab **pPKPab 08 04 05.2 +0.6**
PGAV Gavieira, Arco 160.60 18 *e*PP PP 08 05 59.8 +1.4
ATE Arette 160.69 1 PKP **PKPdf 08 01 22.7 +0.2**
REYF Montagne du Re 160.71 0 PKP **PKPdf 08 01 22.9 +0.3**
LARF Larrau 160.73 2 PKP **PKPdf 08 01 23.0 +0.4**
MELF Melles 160.89 358 PKP **PKPdf 08 01 22.8 0.0**
VIEF Viey 160.89 360 PKP **PKPdf 08 01 23.5 +0.7**
RESF Ens 160.97 359 PKP **PKPdf 08 01 23.8 +0.8**
FILF Fillols 161.08 354 PKP **PKPdf 08 01 22.9 -0.1**
SJAF Saint Jean de 161.12 353 PKP **PKPdf 08 01 22.6 -0.4**
PBRG Braganca 161.16 15 *e*PKPdf **PKPdf 08 01 23.1 0.0**
PBRG Braganca 161.16 15 *e*PKPab **PKPab 08 02 09.7 -0.3**
PBRG *ep*PKPdf **pPKPdf 08 03 25.6 -1.7**
PBRG *ep*PKPab **pPKPab 08 04 06.6 -0.3**
POLO Lamas de Olo 161.28 18 *e*PKPdf **PKPdf 08 01 23.7 +0.4**
POLO Lamas de Olo 161.28 18 *e*PKPab **PKPab 08 02 10.2 -0.4**
POLO *ep*PKPdf **pPKPdf 08 03 27.4 -0.1**
POLO *ep*PKPab **pPKPab 08 04 08.3 +0.8**
POLO Lamas de Olo 161.28 18 *e*PP PP 08 06 02.3 +7.3
VALF Valcebollere 161.29 355 PKP **PKPdf 08 01 23.6 +0.2**
PVRL Vila Real 161.40 18 *e*PKPdf **PKPdf 08 01 23.9 +0.5**
PVRL Vila Real 161.40 18 *e*PKPab **PKPab 08 02 11.4 +0.4**
PVRL *ep*PKPdf **pPKPdf 08 03 29.3 +1.7**
PVRL *ep*PKPab **pPKPab 08 04 09.4 +1.4**
PVRL Vila Real 161.40 18 *e*PP PP 08 05 59.2 +3.7
VAE Valguarnera 161.45 321 PKP **PKPdf 08 01 23.9 +0.3**
comp=Z,11nm,0.6s,baz=161,slow=12,SNR=7.2
MVO Moncorvo 161.69 17 *e*PKPdf **PKPdf 08 01 24.0 +0.3**
MVO Moncorvo 161.69 17 *e*PKPab **PKPab 08 02 12.0 -0.4**
MVO *ep*PKPdf **pPKPdf 08 03 26.8 -1.1**
MVO *ep*PKPab **pPKPab 08 04 09.6 +0.3**
MVO Moncorvo 161.69 17 *e*PP PP 08 05 55.0 -2.0
PVIS Viseu 161.86 19 *e*PKPdf **PKPdf 08 01 23.9 0.0**
PVIS Viseu 161.86 19 *e*PKPab **PKPab 08 02 12.8 -0.3**
PVIS *ep*PKPdf **pPKPdf 08 03 29.4 +1.3**
PVIS *ep*PKPab **pPKPab 08 04 10.4 +0.4**
LIC Lamto 161.98 164 *e*PKIKP **PKPdf 08 01 23.0 -1.7**
comp=Z,1μm,1.7s
CLTB Caltabellotta 162.05 323 *e*PKPdf **PKPdf 08 01 23.6 -0.6**
KIC Kosan Boka 162.18 165 *e*PKIKP **PKPdf 08 01 23.0 -1.9**
comp=Z,1μm,1.6s
MTE Manteigas 162.26 19 *e*PKPdf **PKPdf 08 01 24.8 +0.5**
MTE Manteigas 162.26 19 *e*PKPab **PKPab 08 02 14.2 -0.7**
MTE *ep*PKPdf **pPKPdf 08 03 26.6 -1.9**
MTE *ep*PKPab **pPKPab 08 04 11.7 0.0**
MTE Manteigas 162.26 19 *e*PP PP 08 06 09.7 +10
MTE Manteigas 162.26 19 *e*PKPdf **PKPdf 08 01 24.5 +0.2**
PCAS Casmilo, Conde 162.27 21 *e*PKPdf **PKPdf 08 01 24.4 +0.2**
PCAS Casmilo, Conde 162.27 21 *e*PKPab **PKPab 08 02 14.8 -0.1**
PCAS *ep*PKPdf **pPKPdf 08 03 29.4 +0.9**
PCAS *ep*PKPab **pPKPab 08 04 12.1 +0.3**
PCAS Casmilo, Conde 162.27 21 *e*PP PP 08 06 06.5 +6.4
VSL Villasalto 162.32 335 *e*PKPdf **PKPdf 08 01 24.6 +0.3**
TIC Toumodi 162.39 164 *e*PKIKP **PKPdf 08 01 23.6 -1.5**
DBIC Dimbokro 162.45 164 PKP **PKPdf 08 01 24.8 -0.4**
comp=Z,121nm,0.9s,baz=142,slow=1.2,SNR=90
DBIC PKPab **PKPab 08 02 17.0 +0.8**
comp=Z,172nm,1.1s,baz=168,slow=4.8,SNR=19
DBIC Dimbokro 162.45 164 *e*PKPdf **PKPdf 08 01 24.9 -0.2**
DBIC *e*PKPab **PKPab 08 02 17.2 +1.0**
PMOZ Porto Moniz, M 162.50 55 *e*PKPdf **PKPdf 08 01 26.0 +1.2**
PMOZ Porto Moniz, M 162.50 55 *e*PKPab **PKPab 08 02 16.5 +0.1**
PMOZ *ep*PKPdf **pPKPdf 08 03 30.3 +1.3**
PMOZ Porto Moniz, M 162.50 55 *e*PP PP 08 06 03.2 +0.6
PTOM Tomar 162.69 22 *e*PKPab **PKPab 08 02 17.3 +0.6**
PTOM *ep*PKPdf **pPKPdf 08 03 30.0 +1.1**
PTOM *ep*PKPab **pPKPab 08 04 15.2 +1.6**
PTOM Tomar 162.69 22 *e*PP PP 08 06 07.9 +5.6
PMAR Madeira 162.76 55 *e*PKPdf **PKPdf 08 01 26.0 +0.8**
PMAR Madeira 162.76 55 *e*PKPab **PKPab 08 02 18.2 +0.6**
PMAR *ep*PKPdf **pPKPdf 08 03 32.7 +3.3**
PMAR Madeira 162.76 55 *e*PP PP 08 06 05.3 +1.3
PCBR Castelo Branco 162.79 19 *e*PKPdf **PKPdf 08 01 25.4 +0.7**
PCBR Castelo Branco 162.79 19 *e*PKPab **PKPab 08 02 17.0 -0.1**
PCBR *ep*PKPdf **pPKPdf 08 03 30.3 +1.3**
PCBR *ep*PKPab **pPKPab 08 04 15.6 +1.6**
FUL Funchal 162.81 55 *e*PKPdf **PKPdf 08 01 25.3 +0.3**
FUL Funchal 162.81 55 *e*PKPab **PKPab 08 02 18.5 +0.9**
FUL Funchal 162.81 55 *e*PP PP 08 06 04.6 +0.5
PMAFR Mafra 162.96 25 *e*PKPdf **PKPdf 08 01 25.5 +0.6**
PMAFR Mafra 162.96 25 *e*PKPab **PKPab 08 02 18.0 0.0**
PMAFR *ep*PKPdf **pPKPdf 08 03 29.3 +0.1**
PMAFR *ep*PKPab **pPKPab 08 04 15.5 +0.7**
PMAFR Mafra 162.96 25 *e*PP PP 08 05 56.6 -7.2
PMPS Porto Santo 163.03 53 *e*PKPdf **PKPdf 08 01 25.3 +0.2**
PMPS Porto Santo 163.03 53 *e*PKPab **PKPab 08 02 18.9 +0.3**
PMPS *ep*PKPdf **pPKPdf 08 03 31.6 +2.2**
PMPS Porto Santo 163.03 53 *e*PP PP 08 06 06.4 +1.2
PMST Lisbon--Monsan 163.19 25 *e*PKPdf **PKPdf 08 01 25.9 +0.8**
PMST Lisbon--Monsan 163.19 25 *e*PKPab **PKPab 08 02 18.6 -0.3**
PMST *ep*PKPdf **pPKPdf 08 03 29.6 +0.2**
PMST *ep*PKPab **pPKPab 08 04 16.3 +0.5**
PMST Lisbon--Monsan 163.19 25 *e*PP PP 08 06 04.3 -0.7
PMRV Marv??o 163.19 20 *e*PKPdf **PKPdf 08 01 25.5 +0.3**
PMRV Marv??o 163.19 20 *e*PKPab **PKPab 08 02 18.7 -0.3**
PMRV *ep*PKPdf **pPKPdf 08 03 29.6 +0.2**
PMRV *ep*PKPab **pPKPab 08 04 15.8 0.0**
PMRV Marv??o 163.19 20 *e*PP PP 08 06 04.9 0.0
LIS Lisbon 163.22 25 *e*P **PKPdf 08 01 24.9 -0.2**
LIS *e*SS SS 08 25 48.6 +1.6
LIS AMS AMS 08 33 41.3
comp=E,5μm,26.6s
LIS Lisbon 163.22 25 *e*PKPdf **PKPdf 08 01 26.0 +0.9**
LIS Lisbon 163.22 25 *e*PKPab **PKPab 08 02 19.8 +0.7**
LIS *ep*PKPdf **pPKPdf 08 03 30.1 +0.7**
LIS *ep*PKPab **pPKPab 08 04 16.6 +0.7**
LIS Lisbon 163.22 25 *e*PP PP 08 06 06.0 +0.9
LIS Lisbon 163.22 25 *e*PKIKP **PKPdf 08 01 24.9 -0.2**
LIS *e*SS SS 08 25 48.6 +1.5
PESTR Estremoz 163.64 21 *e*PKPdf **PKPdf 08 01 25.9 +0.3**
PESTR Estremoz 163.64 21 *e*PKPab **PKPab 08 02 20.0 -1.0**
PESTR *ep*PKPdf **pPKPdf 08 03 29.0 -0.9**
PESTR *ep*PKPab **pPKPab 08 04 18.3 +0.5**
ES19 SONSECA Array 163.77 10 *e*PKPdf **PKPdf 08 01 25.6 -0.1**
ES19 *e*PKPab **PKPab 08 02 22.0 +0.5**
ESDC Sonseca Array 163.78 11 PKP **PKPdf 08 01 25.9 +0.1**
comp=E,4.6nm,0.8s,baz=14,slow=2.4,SNR=31
ESDC PKPab **PKPab 08 02 21.2 -0.4**
comp=E,18nm,0.7s,baz=345,slow=4.2,SNR=23
ESDC *ep*PKPab **pPKPab 08 04 17.7 -0.7**
comp=E,12nm,0.8s,baz=348,slow=3.5,SNR=5.9
ESLA Sonseca Array 163.78 11 *e*PKPdf **PKPdf 08 01 26.6 +0.9**
ESLA *e*PKPab **PKPab 08 02 21.9 +0.3**
EVO Evora 163.80 23 *e*PKPdf **PKPdf 08 01 26.4 +0.7**
EVO Evora 163.80 23 *e*PKPab **PKPab 08 02 21.1 -0.5**
EVO *ep*PKPdf **pPKPdf 08 03 29.7 -0.3**
EVO *ep*PKPab **pPKPab 08 04 18.2 -0.3**
EVO Evora 163.80 23 *e*PP PP 08 06 08.5 +0.4
PAB San Pablo 163.84 12 *e*PKIKP **PKPdf 08 01 26.2 +0.4**
PAB *e* 08 02 22.2
PAB San Pablo 163.84 12 *e*PKPdf **PKPdf 08 01 26.2 +0.4**
PAB *e*PKPab **PKPab 08 02 22.2 +0.3**
PNCL Nicolau / Gran 163.98 25 *e*PKPdf **PKPdf 08 01 26.6 +0.7**
PNCL Nicolau / Gran 163.98 25 *e*PKPab **PKPab 08 02 23.0 +0.6**
PNCL *ep*PKPdf **pPKPdf 08 03 30.0 -0.2**
PNCL *ep*PKPab **pPKPab 08 04 19.6 +0.3**
PBEJ Beja 164.30 23 *e*PKPdf **PKPdf 08 01 26.9 +0.7**
PBEJ Beja 164.30 23 *e*PKPab **PKPab 08 02 24.1 +0.2**
PBEJ *ep*PKPdf **pPKPdf 08 03 30.0 -0.5**
PBEJ *ep*PKPab **pPKPab 08 04 22.4 +1.7**
MESJ Messejana 164.34 24 *e*P **PKPdf 08 01 25.8 -0.4**
MESJ *e*SS SS 08 25 59.8 +1.4
MESJ AMS AMS 08 31 46.4
comp=N,4μm,21.3s
MESJ Messejana 164.34 24 *e*PKPdf **PKPdf 08 01 27.1 +0.9**
MESJ Messejana 164.34 24 *e*PKPab **PKPab 08 02 24.4 +0.4**
MESJ *ep*PKPdf **pPKPdf 08 03 30.6 +0.1**
MESJ *ep*PKPab **pPKPab 08 04 21.2 +0.4**
MESJ Messejana 164.34 24 *e*PP PP 08 06 10.4 -0.5
MESJ Messejana 164.34 24 *e*PKIKP **PKPdf 08 01 25.8 -0.4**
MESJ *e*SS SS 08 25 59.8 +1.4
PTEO Sao Teotonio 164.40 26 *e*PKPdf **PKPdf 08 01 27.4 +1.1**
PTEO Sao Teotonio 164.40 26 *e*PKPab **PKPab 08 02 24.2 -0.1**
PTEO *ep*PKPdf **pPKPdf 08 03 32.8 +2.2**
PTEO *ep*PKPab **pPKPab 08 04 23.5 +2.4**
PBAR Barrancos 164.45 21 *e*PKPdf **PKPdf 08 01 26.9 +0.6**
PBAR Barrancos 164.45 21 *e*PKPab **PKPab 08 02 24.5 0.0**
PBAR *ep*PKPdf **pPKPdf 08 03 30.1 -0.5**
PBAR *ep*PKPab **pPKPab 08 04 21.6 +0.3**
PBAR Barrancos 164.45 21 *e*PP PP 08 06 10.8 -0.6
PCVE Castro Verde 164.59 24 *e*PKPdf **PKPdf 08 01 27.4 +1.0**
PCVE Castro Verde 164.59 24 *e*PKPab **PKPab 08 02 24.7 -0.4**
PCVE *ep*PKPdf **pPKPdf 08 03 30.9 +0.1**
PCVE *ep*PKPab **pPKPab

az=139.0
*JMA **29** 07:48:19.1±0.2,26.67N×127.76E,h47km±3km,M3.5*
JMA Felt I J1.
ISC 29 07:48:18.7±0.8,**26.62N**±0.05×**127.83E**±0.04,**h54**km±6km,
n25,σ1.34/41,mb3.9/8,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNTH	**Nagotoyohara**	**0.20**	**120**	P	**Pn**	**07 48 27.5**	**+0.1**
JNTH				S	**Sn**	**07 48 33.6**	**0.0**
JIH	**Iheya**	**0.43**	**17**	P	**Pn**	**07 48 29.3**	**-0.1**
JIH				S	**Sn**	**07 48 36.5**	**-0.7**
JOW	**Kunigami**	**0.45**	**62**	P	**Pn**	**07 48 29.9**	**+0.3**
	248nm,0.3s,baz=199,slow=5.2,SNR=720						
JOW				S	**Sn**	**07 48 37.6**	**0.0**
	3μm,0.3s,baz=120,slow=18,SNR=218						
JOW	**Kunigami**	**0.45**	**62**	P	**Pn**	**07 48 29.9**	**+0.3**
JOW				S	**Sn**	**07 48 37.6**	**0.0**
JJT2	**Tamagusuku 2**	**0.48**	**189**	P	**Pn**	**07 48 30.8**	**+0.9**
JJT2				*e*S	**Sn**	**07 48 39.6**	**+1.5**
JAGN	**Aguni-jima**	**0.53**	**267**	P	**Pn**	**07 48 29.7**	**-0.7**
JAGN				S	**Sn**	**07 48 37.5**	**-1.4**
JKE	**Kume jima 2**	**0.98**	**253**	P	**Pn**	**07 48 35.4**	**-0.8**
JKE				*e*S	**Sn**	**07 48 47.5**	**-1.6**
JOKE	**Okinoerabujima**	**0.99**	**42**	P	**Pn**	**07 48 36.5**	**+0.1**
JOKE				S	**Sn**	**07 48 49.1**	**-0.4**
JTK	**Tokunoshima**	**1.53**	**40**	P	**Pn**	**07 48 44.0**	**+0.3**
JTK				*e*S	**Sn**	**07 49 01.9**	**-0.6**
JAMN	**Amaminishikomi**	**2.01**	**36**	P	**Pn**	**07 48 50.4**	**+0.2**
JAMN				S	**Sn**	**07 49 13.6**	**-0.6**
JAM	**Amami Oshima**	**2.38**	**41**	P	**Pn**	**07 48 56.4**	**+1.1**
JAM				*e*S	**Sn**	**07 49 24.0**	**+0.7**
JZK	**Kikaishima**	**2.55**	**48**	P	**Pn**	**07 48 59.2**	**+1.7**
JZK				*e*S	**Sn**	**07 49 30.1**	**+2.8**
JTAJ	**Takarajima**	**2.80**	**25**	P	**Pn**	**07 49 01.5**	**+0.5**
JTAJ				S	**Sn**	**07 49 33.0**	**-0.6**
JMZ	**Minamidaito 2**	**3.15**	**104**	P	**Pn**	**07 49 04.4**	**-1.4**
JMZ				S	**Sn**	**07 49 38.7**	**-3.4**
JTJ	**Tarama**	**3.44**	**236**	P	**Pn**	**07 49 12.5**	**+2.7**
JTJ				S	**Sn**	**07 49 52.7**	**+3.4**
JISG	**Ishigakijimahi**	**3.77**	**238**	P	**Pn**	**07 49 15.0**	**+0.8**
JISG				S	**Sn**	**07 49 56.8**	**-0.5**
JNU	**Nakatsue**	**7.00**	**21**	P	**Pn**	**07 49 59.6**	**+1.0**
	1.2nm,0.3s,baz=201,slow=0.7,SNR=6.9						
SONM	**Songino Array**	**27.03**	**327**	P	**P**	**07 53 57.2**	**+1.3**
	1.3nm,0.8s,baz=139,slow=9.6,SNR=4.9						
MKAR	**Makanchi Array**	**41.01**	**312**	P	**P**	**07 55 56.6**	**+0.1**
	1.6nm,0.7s,baz=101,slow=9.8,SNR=22						
KURBB	**Kurchatov Arra**	**44.33**	**316**	P	**P**	**07 56 23.0**	**-0.2**
	1.8nm,0.5s,baz=104,slow=9.0,SNR=16						
KBZ	**Khabaz**	**68.64**	**309**	P	**P**	**07 59 17.1**	**+0.9**
	1.0nm,0.7s,baz=101,slow=5.1,SNR=4.6						
FINES	**FINESS Array B**	**72.35**	**330**	P	**P**	**07 59 38.3**	**-0.2**
	1.1nm,0.7s,baz=87,slow=4.2,SNR=4.2						
AKASG	**Malin Array Be**	**75.00**	**319**	P	**P**	**07 59 53.4**	**-0.9**
	0.2nm,0.3s,baz=58,slow=7.1,SNR=3.7						
BRTR	**Keskin Array B**	**76.51**	**308**	P	**P**	**08 00 04.2**	**+0.9**
	1.3nm,0.9s,baz=98,slow=6.0,SNR=5.3						
NOA	**NORSAR Array B**	**78.81**	**334**	P	**P**	**08 00 13.5**	**-2.1**
	1.6nm,0.8s,baz=57,slow=5.7,SNR=3.9						

JMA 29 07:50:23.8±0.1,**36.95N×141.48E,h36**km±2km,**M3.5,**
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.57**	**286**	*e*S	Sn	07 50 43.0	-0.6
JFK	**Kawauchi**	**0.64**	**311**	*e*S	Sn	07 50 45.7	+0.3
JHO	**Hitachi**	**0.81**	**245**	P	Pn	07 50 38.8	+0.2
JHO				*e*S	Sn	07 50 49.6	+0.2
JMM	**Marumori**	**1.07**	**329**	*e*S	Sn	07 50 57.6	+1.9
JFT	**Otama**	**1.07**	**302**	*e*S	Sn	07 50 58.4	+2.4
JFY	**Yanaizu**	**1.49**	**288**	*e*S	Sn	07 51 09.4	+3.2

*ISCJB **29** 07:50:52.5±0.6,23.73S±0.03×179.73E±0.04,h503km±7km,*
mb5.0/149,Error ellipse: s-maj=5.5km s-min=4.5km
az=44.1
*MOS **29** 07:50:53.6±1.1,23.58S×179.83E,h533km,mb5.5/29,*
Error ellipse: s-maj=16.5km s-min=13.2km az=159.8
*IDC **29** 07:50:53.3±0.5,23.72S×179.82E,h509km±4km,mb4.4/29,*
mb1 4.5/31,mb1mx4.4/41,mbtmp5.3/31,Error ellipse:
s-maj=9.8km s-min=8.6km az=76.0
*BJI **29** 07:50:55.0,23.13S×179.88E,h522km,mb4.9/35,*
mB5.6/22
*NEIC **29** 07:50:56.1±0.4,23.76S×179.68E,h540km±4km,*
mb5.2/108,Error ellipse: s-maj=4.9km s-min=3.5km
az=128.0
ISC 29 07:50:54.5±0.4,**23.79S**±0.05×**179.78E**±0.05,**h526**km±3km,
h526km:**pP-P,n572,σ1.52/604,mb5.1**/149,**36C-21D,**
South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**5.81**	**160**	P	**P**	**07 52 28.8**	**-1.4**
	322nm,0.3s,baz=285,slow=19,SNR=10						
RAO				S	**S**	**07 53 45.2**	**-3.2**
	baz=90,slow=20,SNR=1.3						
RAO	**Raoul Island**	**5.81**	**160**	*e*P	**P**	**07 52 32.5**	**+2.4**
RAO				S	**S**	**07 53 45.3**	**-3.2**
RAO	**Raoul Island**	**5.81**	**160**	*e*P	**P**	**07 52 32.5**	**+2.4**
RAO				S	**S**	**07 53 45.2**	**-3.2**
MSVF	**Nonsavu**	**6.24**	**345**	*e*P	**P**	**07 52 33.4**	**-1.0**
MSVF	**Nonsavu**	**6.24**	**345**	*e*P	**P**	**07 52 33.5**	**-1.0**
OUZ	**Omahuta**	**12.59**	**204**	*e*P	**P**	**07 53 42.6**	**+3.5**
OUZ	**Omahuta**	**12.59**	**204**	PN	**P**	**07 53 42.2**	**+3.1**
AFI	**Afiamalu**	**12.66**	**41**	P	P	07 53 34.9	-5.3
AFI	**Afiamalu**	**12.66**	**41**	*e*P	P	07 53 35.2	-5.0
AFI	**Afiamalu**	**12.66**	**41**	*e*P	P	07 53 35.2	-5.0
KUZ	**Kuaotunu**	**13.38**	**194**	*e*PN	**P**	**07 53 48.4**	**+1.2**
MXZ	**Matakaoa Point**	**13.79**	**185**	*e*P	**P**	**07 53 53.2**	**+1.8**
AWAZ	**Awhitu Peninsu**	**13.95**	**197**	PN	**P**	**07 53 54.6**	**+1.5**
HAZ	**Te Kaha**	**14.03**	**187**	*e*PN	**P**	**07 53 53.3**	**-0.6**
WMGZ	**Waiomatatini S**	**14.03**	**184**	PN	**P**	**07 53 54.0**	**-0.1**
WMGZ				*e*SN	**S**	**07 56 22.6**	**+0.5**
PKGZ	**Pakihiroa**	**14.13**	**186**	PN	**P**	**07 53 54.3**	**-0.8**
RUGZ	**Raukumara Rang**	**14.24**	**187**	PN	**P**	**07 53 56.8**	**+0.4**
PUZ	**Puketiti**	**14.29**	**185**	*e*PN	**P**	**07 53 55.2**	**-1.6**
PUZ				*e*SN	**S**	**07 56 21.3**	**-5.9**
URZ	**Urewera**	**14.60**	**188**	P	**P**	**07 53 59.2**	**-0.8**
	32nm,0.3s,baz=244,slow=4.9,SNR=38						
URZ				S	S	07 56 21.0	-12
	3.8nm,0.3s,baz=164,slow=20,SNR=7.4						
URZ	**Urewera**	**14.60**	**188**	*e*PN	**P**	**07 53 57.6**	**-2.4**
MWZ	**Matawai**	**14.62**	**187**	*e*PN	**P**	**07 53 59.5**	**-0.8**
MWZ				*e*SN	**S**	**07 56 25.2**	**-8.3**
TKGZ	**Te Karaka**	**14.70**	**186**	PN	**P**	**07 54 00.2**	**+3.8**
CNGZ	**Carnagh Statio**	**14.71**	**185**	PN	**P**	**07 54 00.3**	**-0.9**
MUGZ	**Murupara**	**14.86**	**189**	PN	**P**	**07 54 00.1**	**-2.6**
RIGZ	**Rimuhau**	**14.97**	**186**	PN	**P**	**07 54 02.3**	**-1.5**
SNGZ	**Shannon Statio**	**15.09**	**187**	PN	**P**	**07 54 03.7**	**-1.4**
FUNA	**Funafuti**	**15.19**	**358**	*e*P	**P**	**07 54 03.3**	**-3.2**
	620nm,0.9s						
HIZ	**Hauiti**	**15.27**	**195**	*e*P	**P**	**07 54 09.1**	**+2.2**
	230nm,0.5s						
WHHZ	**Waihua**	**15.39**	**187**	PN	**P**	**07 54 06.7**	**-1.6**
MHGZ	**Mahia Peninsul**	**15.40**	**185**	*e*PN	**P**	**07 54 09.1**	**+0.8**
RATZ	**Rangitukua**	**15.41**	**192**	PN	**P**	**07 54 07.3**	**-1.2**
RITZ	**Rihia Road**	**15.50**	**192**	PN	**P**	**07 54 08.9**	**-0.5**
BKZ	**Black Stump Fm**	**15.58**	**190**	*e*P	**P**	**07 54 09.9**	**-0.4**
	295nm,1.6s						
BKZ	**Black Stump Fm**	**15.58**	**190**	PN	**P**	**07 54 07.5**	**-2.8**
ARHZ	**Aropaoanui**	**15.61**	**188**	PN	**P**	**07 54 09.3**	**-1.2**
MCHZ	**McNeill Hill**	**15.82**	**189**	PN	**P**	**07 54 10.5**	**-2.2**
MOVZ	**Moawhango**	**15.94**	**191**	PN	**P**	**07 54 12.3**	**-1.7**
KRHZ	**Kereru**	**16.07**	**190**	PN	**P**	**07 54 12.6**	**-2.5**
PNHZ	**Pukenui**	**16.36**	**190**	PN	**P**	**07 54 15.5**	**-2.6**
PXZ	**Pawanui**	**16.38**	**188**	PN	**P**	**07 54 17.2**	**-1.0**
TSZ	**Takapari Road**	**16.54**	**190**	PN	**P**	**07 54 17.6**	**-2.2**
ANWZ	**Angora Road**	**16.85**	**189**	PN	**P**	**07 54 21.0**	**-1.7**
BFZ	**Birch Farm**	**17.10**	**189**	*e*P	**P**	**07 54 24.4**	**-0.7**
	62nm,0.8s						
MRZ	**Mangatainoka R**	**17.19**	**191**	PN	**P**	**07 54 22.9**	**-3.0**
OGWZ	**Otaki Gorge**	**17.41**	**192**	PN	**P**	**07 54 25.9**	**-2.1**
KIW	**Kapiti Island**	**17.51**	**192**	PN	**P**	**07 54 27.0**	**-1.9**
MTW	**Mount Morrison**	**17.69**	**191**	PN	**P**	**07 54 29.1**	**-1.4**
CAW	**Cannon Point**	**17.71**	**192**	PN	**P**	**07 54 28.8**	**-2.0**
TCW	**Tory Channel**	**17.97**	**194**	PN	**P**	**07 54 32.0**	**-1.1**
SNZO	**South Karori**	**17.98**	**192**	*e*P	**P**	**07 54 33.6**	**+0.4**
	233nm,1.0s						
QRZ	**Quartz Range**	**18.05**	**198**	PN	**P**	**07 54 34.5**	**+0.7**
NNZ	**Nelson**	**18.19**	**196**	PN	**P**	**07 54 34.4**	**-0.7**
NNZ				*e*SN	**S**	**07 57 35.0**	**+0.3**
TUWZ	**Tuamarina**	**18.25**	**194**	PN	**P**	**07 54 35.0**	**-0.6**
THZ	**Tophouse**	**18.82**	**196**	*e*P	**P**	**07 54 41.8**	**+0.9**
	197nm,1.3s						
THZ	**Tophouse**	**18.82**	**196**	*e*PN	**P**	**07 54 40.6**	**-0.3**
THZ				*e*SN	**S**	**07 57 41.5**	**-3.6**
DSZ	**Denniston Nort**	**19.10**	**199**	PN	**P**	**07 54 44.5**	**+1.0**
KHZ	**Kahutara**	**19.29**	**194**	*e*P	**P**	**07 54 44.9**	**-0.2**
	201nm,1.0s						
KHZ	**Kahutara**	**19.29**	**194**	PN	**P**	**07 54 44.4**	**-0.7**
LHI	**Lord Howe Isla**	**19.88**	**243**	P	**P**	**07 54 53.0**	**+2.3**
	baz=20						
LHI	**Lord Howe Isla**	**19.88**	**243**	*e*P	**P**	**07 54 52.2**	**+1.6**
	122nm,1.1s						
LTZ	**Lake Taylor**	**19.94**	**196**	*e*P	**P**	**07 54 51.3**	**+0.2**
	133nm,0.4s						
INZ	**Inchbonnie**	**20.11**	**198**	PN	**P**	**07 54 52.9**	**+0.4**
OXZ	**Oxford**	**20.51**	**196**	*e*P	**P**	**07 54 56.9**	**+0.7**
	163nm,0.9s						
OXZ	**Oxford**	**20.51**	**196**	PN	**P**	**07 54 55.8**	**-0.4**
CRLZ	**Canterbury Las**	**20.60**	**195**	*e*P	**P**	**07 54 57.7**	**+0.8**
	341nm,1.8s						
WVZ	**Waitaha Valley**	**20.64**	**199**	PN	**P**	**07 54 58.1**	**+0.8**
MQZ	**McQueen's Vall**	**20.71**	**195**	*e*P	**P**	**07 54 58.4**	**+0.3**
	188nm,1.5s						
MQZ	**McQueen's Vall**	**20.71**	**195**	PN	**P**	**07 54 57.6**	**-0.4**
RPZ	**Rata Peaks**	**21.13**	**198**	P	**P**	**07 55 02.1**	**+0.3**
	44nm,0.5s,baz=273,slow=7.9,SNR=16						
RPZ				S	**S**	**07 58 20.3**	**-1.7**
	28nm,1.1s,baz=108,slow=9.6,SNR=2.2						
RPZ	**Rata Peaks**	**21.13**	**198**	*e*P	**P**	**07 55 04.2**	**+2.4**
	223nm,1.5s						
RPZ				S	**S**	**07 58 20.4**	**-1.7**
FOZ	**Fox Glacier**	**21.34**	**200**	*e*P	**P**	**07 55 04.5**	**+0.9**
	200nm,1.3s						
FOZ	**Fox Glacier**	**21.34**	**200**	PN	**P**	**07 55 04.2**	**+0.6**
LBZ	**Lake Benmore**	**22.00**	**199**	*e*P	**P**	**07 55 10.2**	**+0.5**
	287nm,1.9s						
ODZ	**Otahua Downs**	**22.47**	**197**	*e*P	**P**	**07 55 15.5**	**+1.7**
	305nm,1.9s						
WKZ	**Wanaka**	**22.75**	**200**	*e*P	**P**	**07 55 17.9**	**+1.5**
	515nm,1.9s						
MLZ	**Mavora Lakes**	**23.52**	**201**	*e*P	**P**	**07 55 24.8**	**+1.5**
	32nm,0.7s						
DCZ	**Deep Cove**	**23.93**	**202**	*e*P	**P**	**07 55 27.8**	**+1.0**
	64nm,1.2s						
WHZ	**Wether Hill Ro**	**24.04**	**201**	*e*P	**P**	**07 55 29.6**	**+1.8**
	67nm,0.6s						
TARA	**Tarawa**	**25.87**	**344**	*e*P	**P**	**07 55 43.7**	**-0.7**
	653nm,0.6s						
ARMA	**Armidale**	**25.87**	**249**	P	**P**	**07 55 46.1**	**+1.7**
	baz=26						
ARMA	**Armidale**	**25.87**	**249**	*e*P	**P**	**07 55 46.4**	**+2.0**
	26nm,1.0s						
ARMA				*e*pP	**pP**	**07 57 17.0**	**+6.4**
EIDS	**Eidsvold**	**26.13**	**261**	*e*P	**P**	**07 55 47.6**	**+1.0**
	29nm,1.0s						
CAN	**Canberra**	**29.02**	**240**	P	**P**	**07 56 13.5**	**+1.6**
	baz=29						
CAN	**Canberra**	**29.02**	**240**	*e*P	**P**	**07 56 14.1**	**+2.2**
CAN				pmax	pmax		
	comp=Z,73nm,1.5s						
CAN	**Canberra**	**29.02**	**240**	*e*P	**P**	**07 56 14.1**	**+2.2**
	comp=Z,73nm,1.5s						
CMSA	**Cobar Meteorol**	**31.07**	**248**	P	**P**	**07 56 31.0**	**+1.4**
	baz=32						
CTA	**Charters Tower**	**31.28**	**270**	P	**P**	**07 56 32.3**	**+0.8**
	comp=Z,71nm,0.3s,baz=96,slow=11,SNR=67						
CTA				PcP	**PcP**	**07 59 09.9**	**+0.1**
	comp=Z,8.3nm,0.8s,baz=104,slow=4.2,SNR=2.9						
CTA	**Charters Tower**	**31.28**	**270**	P	**P**	**07 56 31.8**	**+0.3**
	baz=32						
CTAO	**Charters Tower**	**31.28**	**270**	*e*P	**P**	**07 56 32.6**	**+1.1**
CTAO				pmax	pmax		
	comp=Z,161nm,1.1s						
CTAO	**Charters Tower**	**31.28**	**270**	*e*P	**P**	**07 56 32.6**	**+1.1**
	comp=Z,161nm,1.1s						
QLP	**Quilpie**	**32.23**	**257**	P	**P**	**07 56 40.1**	**+0.5**
	baz=33						
XMAS	**Kiritimati**	**33.91**	**44**	*e*P	**P**	**07 56 53.8**	**-0.1**
	comp=Z,160nm,0.8s						
PMG	**Port Moresby**	**34.27**	**289**	P	**P**	**07 56 57.0**	**+0.1**
	comp=Z,108nm,0.8s,baz=106,slow=4.9,SNR=13						
PMG	**Port Moresby**	**34.27**	**289**	*c i*P	**P**	**07 56 56.8**	**-0.1**
PMG				pmax	pmax		
	comp=Z,480nm,0.8s						
PMG	**Port Moresby**	**34.27**	**289**	*e*P	**P**	**07 56 57.3**	**+0.4**
	comp=Z,111nm,0.8s						
STKA	**Stephens Creek**	**34.58**	**248**	P	**P**	**07 57 00.3**	**+1.0**
	comp=Z,5.1nm,0.4s,baz=97,slow=11,SNR=4.9						
STKA				PcP	**PcP**	**07 59 19.2**	**+0.2**
	comp=Z,6.0nm,0.5s,baz=104,slow=5.7,SNR=4.4						
AS01	**Alice Springs**	**41.81**	**261**	*e*P	**P**	**07 57 59.1**	**+0.8**
ASAR	**Alice Springs**	**41.86**	**261**	P	**P**	**07 57 59.0**	**+0.3**
	comp=Z,32nm,0.8s,baz=96,slow=7.5,SNR=11						
ASAR				ScP	**ScP**	**08 02 45.5**	**+2.9**
	comp=Z,5.4nm,0.8s,baz=114,slow=4.4,SNR=7.6						
ASAR				S	**S**	**08 03 33.1**	**-5.5**
	comp=Z,2.3nm,1.0s,baz=114,slow=5.0,SNR=2.9						
WC3	**Warramunga Arr**	**42.18**	**266**	P	**P**	**07 58 00.4**	**-0.9**
	baz=42						
WB2	**Warramunga Arb**	**42.20**	**266**	P	**P**	**07 58 01.0**	**-0.4**
	baz=43						
WRAB	**Tennant Creek**	**42.21**	**266**	*c i*P	**P**	**07 58 00.5**	**-0.9**
WRAB				pmax	pmax		
	comp=Z,210nm,1.3s						
WRA	**Warramunga Ar**	**42.22**	**266**	P	**P**	**07 58 01.0**	**-0.5**
	comp=Z,28nm,0.5s,baz=92,slow=8.5,SNR=62						
WRA				ScP	**ScP**	**08 02 47.5**	**+3.4**
	comp=Z,5.8nm,1.0s,baz=110,slow=4.9,SNR=5.1						
WRA				S	**S**	**08 03 39.2**	**-4.7**
	comp=Z,8.0nm,1.0s,baz=103,slow=14,SNR=5.4						
JAY	**Jayapura**	**43.29**	**293**	P	**P**	**07 58 08.4**	**-1.6**
	comp=Z,4.3nm,0.9s,baz=90,slow=20,SNR=3.7						
WRKA	**Warakurna**	**46.66**	**257**	P	**P**	**07 58 34.9**	**-0.9**
	baz=47						
HPAH	**Hawaii Prepara**	**49.68**	**31**	*e*P	**P**	**07 58 58.2**	**-0.1**
	comp=Z,250nm,0.9s						
MHA	**Mahukona**	**49.72**	**30**	*e*P	**P**	**07 58 59.2**	**+0.7**
MHA	**Mahukona**	**49.72**	**30**	*e*P	**P**	**07 58 59.2**	**+0.7**
KIP	**Kipapa**	**49.87**	**27**	*e*P	**P**	**07 58 59.3**	**-0.3**
KIP				pmax	pmax		
	comp=Z,476nm,1.1s						
GUMO	**Guam**	**50.45**	**314**	P	**P**	**07 59 03.4**	**-0.5**
	comp=Z,72nm,0.9s,baz=172,slow=19,SNR=3.4						
FITZ	**Fitzroy Crossi**	**50.64**	**266**	P	**P**	**07 59 06.0**	**+0.7**
	comp=Z,28nm,0.8s,baz=121,slow=5.9,SNR=15						
VNDA	**Vanda**	**54.47**	**185**	P	**P**	**07 59 33.8**	**+1.9**
	comp=Z,4.4nm,0.6s,baz=18,slow=7.9,SNR=5.5						
VNDA				PcP	**PcP**	**08 00 28.3**	**+1.1**
	comp=Z,4.9nm,0.6s,baz=355,slow=5.2,SNR=3.8						
NWAO	**Narrogin (SRO)**	**55.10**	**246**	P	**P**	**07 59 36.8**	**-0.2**
	comp=Z,13nm,0.7s,baz=2.4,slow=10,SNR=6.8						
KKM	**Kota Kinabalu**	**68.68**	**287**	*e*P	**P**	**08 01 06.0**	**+0.1**
	comp=Z,373nm,1.8s						
CISI	**Cisompet, Garu**	**70.52**	**270**	*e*P	**P**	**08 01 15.6**	**-1.3**
JOW	**Kunigami**	**70.77**	**312**	P	**P**	**08 01 18.3**	**+0.4**
	comp=Z,44nm,0.7s,baz=210,slow=20,SNR=11						
JOW	**Kunigami**	**70.77**	**312**	*e*P	**P**	**08 01 18.1**	**+0.1**
	comp=Z,46nm,0.7s						
INU	**Inuyama**	**71.42**	**324**	*e*P	**P**	**08 01 22.1**	**+0.5**
	comp=Z,109nm,1.3s						
MJAR	**Matsushiro Arr**	**71.69**	**326**	P	**P**	**08 01 23.0**	**-0.1**
	comp=Z,14nm,0.8s,baz=163,slow=6.5,SNR=8.5						
MAJO	**Matsushiro**	**71.70**	**326**	*e*P	**P**	**08 01 22.7**	**-0.5**
MAJO				pmax	pmax		
	comp=Z,194nm,0.9s						
KSM	**Kuching**	**71.89**	**280**	*e*P	**P**	**08 01 24.5**	**-0.3**
	comp=Z,56nm,0.9s						
JNU	**Nakatsue**	**73.31**	**319**	P	**P**	**08 01 32.2**	**-0.4**
	comp=Z,16nm,0.9s,baz=151,slow=7.3,SNR=7.4						
ERM	**Erimo**	**73.72**	**332**	*e*P	**P**	**08 01 36.1**	**+1.5**
ERM				pmax	pmax		
	comp=Z,152nm,1.8s						
ERM	**Erimo**	**73.72**	**332**	*e*P	**P**	**08 01 36.1**	**+1.5**
	comp=Z,152nm,1.8s						
NACB	**Ninganchiao**	**73.88**	**306**	*e*P	**P**	**08 01 34.8**	**-1.2**
	comp=Z,89nm,1.4s						
SSLB	**Suanglung**	**74.13**	**305**	*e*P	**P**	**08 01 36.0**	**-1.4**
	comp=Z,51nm,1.1s						
KUR	**Kuril'sk**	**74.60**	**337**	*e*P	P	08 01 33.1	-6.4
KUR				pmax	pmax		
	comp=E,17nm,0.3s						
KUR				pmax	pmax		
	comp=Z,29nm,0.3s						
ASAJ	**Asahikawa**	**75.68**	**333**	P	**P**	**08 01 46.4**	**+0.8**
	baz=90,slow=17						
NIKH	**Nikolski High**	**77.08**	**7**	*e*P	**P**	**08 01 52.7**	**-0.4**
	comp=Z,784nm,1.8s						
MAW	**Mawson**	**77.78**	**200**	P	**P**	**08 01 58.1**	**+1.3**
	comp=Z,22nm,0.7s,baz=137,slow=5.2,SNR=21						
YSS	**Yuzh-Sakhalins**	**77.95**	**335**	*i*P	**P**	**08 01 59.2**	**+1.2**
YSS				pmax	pmax		
	comp=Z,30nm,0.6s						
KSRS	**Korea Array**	**78.04**	**320**	P	**P**	**08 01 59.6**	**+1.0**
	comp=Z,15nm,0.8s,baz=130,slow=5.7,SNR=14						
KS15	**Wonju Array Si**	**78.05**	**320**	*e*P	**P**	**08 02 00.1**	**+1.3**
KSAR	**Wonju Array Be**	**78.05**	**320**	P	**P**	**08 01 59.7**	**+0.9**
KSAR	**Wonju Array Be**	**78.05**	**320**	P	**P**	**08 01 59.6**	**+0.9**
UNV	**Unalaska Valle**	**78.22**	**8**	*e*P	**P**	**08 01 58.5**	**-0.7**
	comp=Z,141nm,1.4s						
PET	**Petropavlovsk**	**78.67**	**347**	*e*P	**P**	**08 02 00.8**	**-0.8**
PET				pmax	pmax		
	comp=Z,32nm,1.6s						
PETK	**Petropavlovsk-**	**78.95**	**347**	P	**P**	**08 02 03.3**	**+0.1**
	comp=Z,19nm,0.8s,baz=118,slow=6.9,SNR=10						
PMSA	**Palmer Station**	**79.09**	**157**	P	**P**	**08 02 05.2**	**+1.3**
	comp=Z,34nm,1.0s,baz=231,slow=4.1,SNR=4.3						
MSHR	**Mys Shultsa**	**79.82**	**326**	*i*P	**P**	**08 02 08.2**	**+0.2**
VLA	**Vladivostok**	**79.83**	**327**	*i*P	**P**	**08 02 08.1**	**0.0**
VLA				pmax	pmax		
	comp=Z,20nm,1.1s						
NJ2	**Nanjing**	**80.44**	**311**	*e*P	**P**	**08 02 12.3**	**+0.8**
NJ2				pmax	pmax		
	comp=Z,32nm,1.0s						
USRK	**Ussuriysk Ar.**	**80.56**	**327**	P	**P**	**08 02 12.9**	**+1.0**
	comp=Z,20nm,0.9s,baz=134,slow=3.4,SNR=15						
USRK				pP	**pP**	**08 04 02.0**	**-3.1**
	comp=Z,2.2nm,0.9s,baz=165,slow=25,SNR=2.7						
SCZ2	**Santa Cruz Isl**	**81.34**	**47**	P	**P**	**08 02 17.0**	**+0.8**
	baz=234						
SCI2	**San Clemente I**	**81.49**	**48**	P	**P**	**08 02 18.3**	**+1.3**
	baz=235						
SBC	**Santa Barbara**	**81.55**	**47**	P	**P**	**08 02 18.6**	**+1.4**
	baz=234						
PKM	**Mcpherson Peak**	**81.75**	**46**	P	**P**	**08 02 19.5**	**+1.0**
	baz=234						
BLG	**Laguna Peak, P**	**81.79**	**47**	P	**P**	**08 02 19.2**	**+0.7**
	baz=234						
SAO	**San Andreas Ge**	**81.82**	**44**	*e*P	**P**	**08 02 19.9**	**+1.3**
SAO				pmax	pmax		
	comp=Z,23nm,0.8s						
SAO	**San Andreas Ge**	**81.82**	**44**	*e*P	**P**	**08 02 19.9**	**+1.3**
	comp=Z,23nm,0.8s						
CIS	**Catalina Islan**	**81.82**	**48**	P	**P**	**08 02 19.3**	**+0.7**
	baz=235						
SMMC	**Simmler**	**81.88**	**46**	P	**P**	**08 02 20.2**	**+1.2**
	baz=233						
MDJ	**Mudanjiang**	**82.06**	**326**	P	**P**	**08 02 20.0**	**+0.4**
MDJ				pP	pP	08 04 16.5	+3.1
MDJ				PP	**PP**	**08 05 34.5**	**-3.0**
MDJ				S	**S**	**08 11 47.5**	**-3.0**
MDJ				pmax	pmax		
	comp=Z,33nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,1μm,9.8s						
FMP	**Fort Macarthur**	**82.08**	**48**	P	**P**	**08 02 21.0**	**+1.1**
	baz=235						
HOPS	**Hopland Field**	**82.19**	**41**	*e*P	**P**	**08 02 21.5**	**+1.1**
	comp=Z,136nm,1.9s						
OSI	**Osito Audit: C**	**82.31**	**47**	P	**P**	**08 02 22.1**	**+0.9**
	baz=234						
109C	**Camp Elliot, M**	**82.43**	**49**	P	**P**	**08 02 22.5**	**+0.8**
	baz=236						
MWC	**Mount Wilson**	**82.54**	**48**	*e*P	**P**	**08 02 23.3**	**+0.8**
MWC				pmax	pmax		
	comp=Z,15nm,0.7s						
MWC	**Mount

GSC eS S 08 12 11.2 +1.0
BC3 Big Chuckawall 84.00 49 P P 08 02 30.8 +1.1
baz=236
MLAC Mammoth, Mammo 84.00 44 P P 08 02 30.1 +0.3
baz=234
HEC Hector,Ludlow 84.05 48 P P 08 02 30.6 +0.7
baz=236,SNR=7.2
TIN Tinemaha, Big 84.06 45 P P 08 02 31.0 +1.1
baz=234
GLA Glamis 84.11 50 P P 08 02 31.5 +1.3
baz=237,SNR=13
GLA Glamis 84.11 50 eP P 08 02 31.6 +1.4
GLA eS S 08 12 10.7 -0.6
GLA pmax pmax
comp=Z,49nm,0.8s
GLA Glamis 84.11 50 eP P 08 02 31.6 +1.4
comp=Z,49nm,0.8s
GLA eS S 08 12 10.7 -0.6
YBH Yreka Blue Hor 84.13 39 eP P 08 02 31.3 +1.2
YBH pmax pmax
comp=Z,254nm,1.9s
YBH Yreka Blue Hor 84.13 39 eP P 08 02 31.3 +1.2
comp=Z,254nm,1.9s
WAKR Walker 84.14 44 eP P 08 02 31.7 +1.3
comp=Z,37nm,1.0s
WAKR eS S 08 12 11.2 -0.4
TRTT Trang 84.15 281 P P 08 02 33.0 +2.2
comp=Z,42nm,0.7s,comp=Z,3µm
SKNT Sakolnakorn 84.34 291 P P 08 02 32.3 +0.7
comp=Z,190nm,0.9s,comp=Z,3µm
KLR Kul'dur 84.34 331 P P 08 02 31.5 +0.6
comp=Z,9.2nm,1.0s,baz=163,slow=4.4,SNR=4.3
PNTR Pine Nut 84.39 43 eP P 08 02 32.6 +1.0
comp=Z,44nm,1.0s
TVH3 East Aurora ar 84.44 44 eP P 08 02 33.0 +1.0
comp=Z,15nm,1.0s
TVH3 eS S 08 12 10.7 -4.0
GMRC Granite Mounta 84.49 48 P P 08 02 32.8 +0.7
baz=236,SNR=5.8
KDAK Kodiak Island 84.49 14 i P P 08 02 31.3 0.0
IRM Iron Mountain 84.49 49 P P 08 02 33.1 +1.1
baz=236,SNR=7.0
TVH2 Borealis Mine 84.50 44 eP P 08 02 33.2 +1.0
comp=Z,56nm,2.0s
HUMO Hull Mountain 84.54 39 eP P 08 02 33.8 +1.7
comp=Z,92nm,1.7s
YERR Yerington 84.55 43 eP P 08 02 32.7 +0.3
comp=Z,31nm,1.1s
GRAC Grapevine Rang 84.59 46 P P 08 02 33.3 +0.9
baz=235,SNR=7.3
M04C Macdoel 84.67 40 P P 08 02 33.8 +0.9
baz=232
TUQ Turquoise Moun 84.67 48 P P 08 02 33.6 +0.6
baz=236,SNR=5.6
SHOC Shoshone, Teco 84.69 47 P P 08 02 33.5 +0.5
baz=236,SNR=5.9
Y12C Blythe 84.70 50 P P 08 02 34.1 +1.1
baz=237,SNR=5.8
Y12C Blythe 84.70 50 eP P 08 02 34.2 +1.1
comp=Z,27nm,0.9s
113A Mohawk Valley, 84.71 51 eP P 08 02 34.2 +1.1
comp=Z,26nm,1.0s
SNAA Sanae 84.78 179 P P 08 02 32.6 -0.3
comp=Z,11nm,0.6s,baz=208,slow=8.6,SNR=25
HSIG 84.81 55 eP P 08 02 34.7 +1.0
comp=Z,40nm,0.8s
PAHR Pah Rah Range 84.89 43 eP P 08 02 34.6 +0.6
comp=Z,85nm,1.8s
214A Organ Pipe Nat 84.96 52 P P 08 02 35.5 +1.1
baz=238,SNR=7.6
I03D Drain, OR 85.01 38 P P 08 02 35.3 +1.1
baz=230
LDFC Landfair 85.02 48 eP P 08 02 35.9 +1.2
comp=Z,66nm,0.8s
NEE2 Needles Airpor 85.19 49 P P 08 02 36.2 +0.9
baz=237
K04D Chiloquin, OR 85.24 39 P P 08 02 36.5 +0.9
baz=232
PDMCI Parker Dam,Lak 85.27 49 P P 08 02 36.5 +0.7
baz=237,SNR=9.3
TPNV Topopah Spring 85.30 46 P P 08 02 36.6 +0.6
baz=236,SNR=7.6
J04D Umpqua Nationa 85.42 38 P P 08 02 37.4 +0.8
baz=231,SNR=8.2
NONG Nongkai 85.54 292 P P 08 02 38.7 +1.3
comp=Z,65nm,1.2s
I04A Tendick Farm, 85.60 38 P P 08 02 37.7 +0.6
baz=231
W13A Hualapai Mount 85.88 49 eP P 08 02 39.9 +0.9
comp=Z,30nm,1.4s
J05D Fort Rock, OR 85.95 39 P P 08 02 40.1 +1.1
baz=232
G03D McMinnville, O 86.02 36 P P 08 02 40.4 +1.3
baz=230
PHET Kaeng Krachan 86.35 286 P P 08 02 43.4 +2.1
comp=Z,30nm,0.9s,comp=Z,325nm
CNPM China Poot 86.37 14 eP P 08 02 40.2 -0.2
comp=Z,160nm,1.5s
MA2 Magadan 86.42 346 P P 08 02 40.0 -0.6
comp=Z,23nm,0.9s,baz=158,slow=7.3,SNR=9.4
MA2 Magadan 86.42 346 P P 08 02 40.0 -0.6
R11A Troy Canyon, C 86.52 45 P P 08 02 42.6 +0.8
baz=236
GYA Guiyang 86.52 301 P P 08 02 43.3 +1.2
GYA PP PP 08 06 17.8 +4.1
GYA SKS SKSac 08 12 16.0 -2.7
GYA S S 08 12 33.8 -1.0
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.7s
TUC Tucson 86.61 53 P P 08 02 43.3 +1.0
baz=239
TUC Tucson 86.61 53 eP P 08 02 43.1 +0.8
TUC pmax pmax
comp=Z,34nm,0.9s
TUC Tucson 86.61 53 eP P 08 02 43.1 +0.8
comp=Z,34nm,0.9s
BMN Battle Mountai 86.66 43 eP P 08 02 43.0 +0.6
BMN pmax pmax
comp=Z,17nm,0.9s
BMN Battle Mountai 86.66 43 eP P 08 02 43.0 +0.6
comp=Z,18nm,0.9s
BRLK Bradley Lake 86.67 14 eP P 08 02 41.6 -0.2
comp=Z,323nm,1.9s
PBKT Sadao Pong 86.75 290 P P 08 02 45.0 +1.9
comp=Z,30nm,1.2s,comp=Z,3µm
BJI Beijing 86.81 316 P P 08 02 43.3 +0.4
BJI pmax pmax
comp=Z,21nm,1.6s
BJI pmax pmax
comp=Z,2µm,12.1s
F04A Amboy 86.94 36 eP P 08 02 44.4 +1.0
comp=Z,64nm,1.3s
WVOR Wild Horse Val 86.96 41 eP P 08 02 44.5 +0.8
WVOR pmax pmax
comp=Z,27nm,1.1s
WVOR Wild Horse Val 86.96 41 eP P 08 02 44.5 +0.8
comp=Z,27nm,1.1s
NLWA Neilton Lookou 87.10 34 eP P 08 02 45.6 +1.4
comp=Z,70nm,1.6s
G05D Wamic, OR 87.11 37 P P 08 02 44.8 +0.6
baz=232
319A Douglas 87.25 54 eP P 08 02 47.3 +1.9
comp=Z,87nm,1.1s
LCMT Little Creek M 87.34 48 eP P 08 02 47.0 +1.3
comp=Z,17nm,0.9s
SRDT SRDT 87.41 287 P P 08 02 48.9 +2.6
comp=Z,188nm,1.3s,comp=Z,16µm
CCUT Cedar City 87.55 47 eP P 08 02 48.0 +1.2
comp=Z,83nm,1.9s
SPU Mount Spurr 87.69 13 eP P 08 02 45.5 -1.1
SZCU Shurtz Canyon 87.76 47 eP P 08 02 49.1 +1.3
comp=Z,31nm,1.0s
LON Longmire 87.78 36 eP P 08 02 48.1 +0.7
LON pmax pmax
comp=Z,57nm,1.7s
LON Longmire 87.78 36 eP P 08 02 48.1 +0.7
comp=Z,57nm,1.7s
WUAZ Wupatki 87.84 50 P P 08 02 48.9 +0.8
baz=239
WUAZ Wupatki 87.84 50 eP P 08 02 49.5 +1.4
comp=Z,38nm,1.3s
HPIG 87.88 59 eP P 08 02 49.2 +0.7
comp=Z,23nm,0.8s
D05A Enumclaw 87.96 35 eP P 08 02 49.9 +1.8
comp=Z,95nm,1.1s

RC01 Rabbit Creek A 88.11 14 eP P 08 02 48.8 +0.2
comp=Z,490nm,1.9s
PGC Sidney 88.13 34 eP P 08 02 50.0 +1.1
comp=Z,49nm,0.9s
X18A Snowflake 88.34 51 eP P 08 02 51.5 +1.0
comp=Z,15nm,0.8s
PLCA Paso Flores 88.48 134 P P 08 02 52.0 +1.0
comp=Z,9.2nm,1.0s,baz=264,slow=4.9,SNR=5.1
PLCA Paso Flores 88.48 134 eP P 08 02 53.0 +1.9
PLCA pmax pmax
comp=Z,50nm,1.5s
PLCA Paso Flores 88.48 134 eP P 08 02 53.0 +1.9
comp=Z,50nm,1.5s
ZAIG Zacatecas 88.48 64 eP P 08 02 51.9 +0.3
comp=Z,21nm,1.0s
XAN Xi'an 88.52 308 P P 08 02 51.8 +0.6
XAN pmax pmax
comp=Z,36nm,0.8s
A04D Lummi Island 88.55 34 P P 08 02 51.7 +0.8
baz=231
B05A Bryant 88.58 35 P P 08 02 51.7 +0.7
baz=231
LAMP Lampang 88.74 291 P P 08 02 54.8 +2.3
comp=Z,14nm,1.1s,comp=Z,117nm
W18A Petrified Fore 88.79 51 P P 08 02 52.6 0.0
baz=240
W18A Petrified Fore 88.79 51 eP P 08 02 53.8 +1.2
comp=Z,28nm,1.2s
HAWA Hanford 88.80 37 eP P 08 02 52.9 +0.8
comp=Z,28nm,0.8s
121A Cookes Peak, D 88.92 54 P P 08 02 54.2 +0.9
baz=241
KMI Kunming 89.04 298 P P 08 02 55.3 +1.3
KMI pmax pmax
comp=Z,35nm,1.5s
B06A Marblemount 89.06 35 eP P 08 02 53.8 +0.6
comp=Z,164nm,1.8s
DIV Divide 89.09 16 eP P 08 02 53.1 0.0
comp=Z,60nm,1.2s
SEY Seymchan 89.12 348 P P 08 02 53.1 -0.1
comp=Z,19nm,0.8s,baz=150,slow=4.4,SNR=12
SEY Seymchan 89.12 348 eP P 08 02 53.4 +0.2
MFID Camas Ranch 89.21 41 eP P 08 02 54.8 +0.6
comp=Z,30nm,0.9s
CMAR Chiang Mai Arr 89.30 290 P P 08 02 56.6 +1.5
comp=Z,22nm,1.0s,baz=139,slow=3.4,SNR=13
DUG Dugway, Tooele 89.33 45 P P 08 02 55.6 +0.7
baz=236
CMMT Chiang Mai 89.45 291 P P 08 02 57.6 +1.8
comp=Z,36nm,1.2s,comp=Z,2µm
CHTO Chiang Mai 89.45 291 P P 08 02 57.6 +1.8
comp=Z,161nm,1.2s,comp=Z,9µm
CHTO Chiang Mai 89.45 291 eP P 08 02 57.4 +1.6
CHTO pmax pmax
comp=Z,37nm,1.0s
CHTO Chiang Mai 89.45 291 eP P 08 02 57.4 +1.6
comp=Z,37nm,1.0s
D08A Wollman Farm, 89.54 37 eP P 08 02 56.2 +0.7
comp=Z,119nm,1.9s
WRAK Wrangell Islan 89.54 24 eP P 08 02 56.4 +1.2
comp=Z,26nm,0.8s
TLIG Tlapa 89.62 71 eP P 08 02 58.1 +1.4
comp=Z,27nm,0.9s
NLU North Lily Min 89.68 46 eP P 08 02 57.7 +1.1
comp=Z,12nm,1.1s
CMAI Chiengmai2 89.84 292 P P 08 02 59.4 +1.6
comp=Z,298nm,1.0s,comp=Z,13µm
TMUT Trail Mountain 89.91 46 eP P 08 02 59.5 +1.6
comp=Z,56nm,0.8s
HLID Hailey 90.15 42 P P 08 02 59.6 +1.0
baz=237
SPUT South Promonto 90.16 44 eP P 08 02 59.7 +1.0
comp=Z,36nm,1.0s
HIA Hailar 90.20 325 eP P 08 02 55.6 -3.0
HIA pmax pmax
comp=Z,9.0nm,1.0s
HVU Hansel Valley 90.20 44 eP P 08 02 59.9 +1.0
HVU pmax pmax
comp=Z,27nm,0.8s
HVU Hansel Valley 90.20 44 eP P 08 02 59.9 +1.0
comp=Z,27nm,0.8s
HHC Hu-ho-hao-te 90.20 315 eP P 08 03 00.5 +1.6
HHC pmax pmax
comp=Z,21nm,0.7s
HHC pmax pmax
comp=Z,420nm,5.6s
SRU San Rafael Swe 90.27 47 eP P 08 03 00.4 +1.0
SRU pmax pmax
comp=Z,45nm,0.8s
SRU San Rafael Swe 90.27 47 eP P 08 03 00.4 +1.0
comp=Z,45nm,0.8s
CTU Camp Tracy 90.28 45 eP P 08 03 00.2 +0.8
comp=Z,284nm,1.6s
LAZ Ladron 90.30 52 eP P 08 03 00.4 +0.8
LAZ epP pP 08 04 59.5 +3.6
Y22D IRIS PASSCAL I 90.30 53 P P 08 03 00.4 +0.8
baz=241
P17A Butcher Ranch, 90.31 46 eP P 08 03 00.9 +1.4
comp=Z,29nm,1.0s
MNTX Cornudas Mount 90.31 55 P P 08 03 00.5 +0.9
baz=242
JLU Jordanelle 90.43 45 eP P 08 03 01.0 +0.9
comp=Z,131nm,2.0s
TXAR Lajitas Array 90.54 58 P P 08 03 01.7 +1.0
comp=Z,14nm,0.7s,baz=214,slow=6.6,SNR=31
TXAR pP pP 08 04 54.6 -2.4
comp=Z,0.9nm,0.8s,baz=171,slow=8.9,SNR=1.4
BNM Barren Site 90.55 53 eP P 08 03 01.9 +1.1
LPM Los Pinos Moun 90.62 53 eP P 08 03 01.7 +0.7
TCUT Toone Canyon 90.72 45 eP P 08 03 02.2 +0.7
comp=Z,58nm,0.9s
CD2 Chengdu 90.85 303 P P 08 03 03.0 +0.9
CD2 pP pP 08 05 04.0 +5.6
CD2 SKS SKSac 08 12 41.3 -2.3
CD2 S S 08 13 12.8 -1.4
CD2 SS SS 08 19 33.8 +0.4
CD2 pmax pmax
comp=Z,20nm,0.6s
CD2 pmax pmax
comp=Z,120nm,5.0s
HWUT Hardware Ranch 90.88 44 eP P 08 03 02.3 +0.2
comp=Z,66nm,1.5s
PV09 Paradox Valley 90.90 48 eP P 08 03 03.2 +0.8
PV10 Paradox Valley 90.90 48 eP P 08 03 02.9 +0.5
PV10 epP pP 08 05 00.8 +2.1
ANMO Albuquerque 91.05 52 P P 08 03 03.7 +0.6
baz=242
ANMO Albuquerque 91.05 52 eP P 08 03 03.7 +0.6
ANMO pmax pmax
comp=Z,15nm,1.0s
ANMO Albuquerque 91.05 52 eP P 08 03 03.5 +0.4
comp=Z,16nm,1.0s
AHID Auburn Hatcher 91.77 44 eP P 08 03 06.8 +0.6
comp=Z,114nm,1.8s
COLA College 91.86 13 eP P 08 03 05.1 -0.6
COLA pmax pmax
comp=Z,10.0nm,1.0s
BILL Bilibino 92.10 355 eP P 08 03 07.0 +0.2
BILL pmax pmax
comp=Z,13nm,1.0s
S22A 4UR Ranch, Cre 92.12 49 P P 08 03 08.5 +0.4
baz=241
S22A 4UR Ranch, Cre 92.12 49 eP P 08 03 08.7 +0.6
comp=Z,22nm,1.0s
DLMT Dillon 92.21 41 epP pP 08 05 08.6 +4.0
O20A White River Ci 92.31 47 P P 08 03 09.3 +0.5
baz=241
CMIG Matias Romero 92.63 73 P P 08 03 10.9 +0.4
comp=Z,6.8nm,0.9s,baz=274,slow=6.1,SNR=5.2
BW06 Boulder Array 92.75 44 P P 08 03 11.3 +0.5
baz=240
PD31 Pinedale Array 92.75 44 eP P 08 03 11.2 +0.4
PDAR Pinedale Array 92.75 44 P P 08 03 10.7 -0.1
comp=Z,6.1nm,0.7s,baz=214,slow=3.6,SNR=9.8
BOZ Bozeman (W) 92.94 41 P P 08 03 11.9 +0.4
baz=239
832A Faith Ranch, C 92.99 60 P P 08 03 12.4 +0.5
baz=245
SDCO Great Sand Dun 93.05 50 P P 08 03 12.6 +0.3
baz=242
LZH Lanzhou 93.15 308 eP P 08 03 14.5 +1.8
LZH pP pP 08 05 14.8 +5.6
LZH pmax pmax
comp=Z,36nm,1.0s
933A Laredo 93.27 61 P P 08 03 13.7 +0.5
baz=245
MSTX Muleshoe 93.30 54 P P 08 03 14.1 +0.8
baz=244
833A Chaparral WMA, 93.47 61 P P 08 03 14.6 +0.5
baz=245
034A Hebbronville 93.51 62 P P 08 03 14.9 +0.6
baz=245
T25A Trinidad 93.54 51 P P 08 03 14.7 +0.2
baz=243
733A Divot King Ran 93.72 60 P P 08 03 15.8 +0.6
baz=245
Q24A Divide 93.85 49 P P 08 03 16.4 +0.4
baz=242
Q24A Divide 93.85 49 eP P 08 03 16.7 +0.7
comp=Z,14nm,0.9s
934A Benavides 93.87 62 P P 08 03 16.1 +0.2
baz=245
ISCO Idaho Springs 93.92 48 P P 08 03 16.7 +0.4
baz=242
035A Encino 93.93 62 P P 08 03 16.4 +0.2
baz=245
JCT Junction City 94.06 59 P P 08 03 17.0 +0.2
baz=245
633A Saathoff Ranch 94.12 60 P P 08 03 17.7 +0.6
baz=245
533A Kerrville 94.49 59 P P 08 03 18.8 +0.1
baz=245
433A Art 94.73 59 P P 08 03 19.7 -0.1
baz=245
534A Blanco 94.91 59 P P 08 03 20.7 +0.1
baz=246
434A Burnet 95.40 59 P P 08 03 23.0 +0.2
baz=246
KSCO Kaye Shedlock' 95.63 50 P P 08 03 24.3 +0.5
baz=244
KSCO Kaye Shedlock' 95.63 50 eP P 08 03 24.6 +0.8
comp=Z,19nm,0.9s
334A Lometa 95.64 58 P P 08 03 24.3 +0.5
baz=246
R32A Long Quarter, 98.16 52 Pdiff P 08 03 35.6 +0.5
baz=246
X41A Kaden, Bauxite 101.29 57 Pdiff Pdif 08 03 50.0 +1.1
baz=249
WMQ Urumqi 107.51 311 Pdif Pdif 08 04 16.3 -0.2
WMQ AMB AMB
comp=Z,190nm,14.2s
ZALV Zalesovo Beam 111.74 321 PKiKP PKiKP 08 08 27.7 -1.3
comp=Z,2.4nm,0.3s,baz=7.0,slow=1.8,SNR=4.3
MKAR Makanchi Array 111.93 313 PKiKP PKiKP 08 08 28.6 -1.1
comp=Z,6.0nm,0.9s,baz=93,slow=2.2,SNR=14
KURK Kurchatov 114.98 317 c i PKIKP PKPdf 08 08 34.9 -0.4
KURK Kurchatov 114.98 317 PKP PKPdf 08 08 34.3 -1.0
KURBB Kurchatov Arra 115.03 316 PKP PKPdf 08 08 34.3 -1.1
comp=Z,7.6nm,0.7s,baz=95,slow=2.0,SNR=10
KSH Kashi 115.05 304 ePKP PKPdf 08 08 39.5 +3.5
KSH PKS PKSdf 08 12 14.8 +2.0
KSH SKS SKSdf 08 15 00.0 +1.7
KSH AMB AMB
comp=Z,960nm,5.4s
ODNJ Ogdensburg 116.68 55 ePKPdf PKPdf 08 08 39.0 +0.1
PTGA Pitinga 117.15 104 ePKPdf PKPdf 08 08 40.0 -0.8
QUA2 Belchertown 118.52 54 ePKPdf PKPdf 08 08 42.4 0.0
HUMP Col San Antoni 118.92 82 ePKPdf PKPdf 08 08 43.0 -0.9
BRYW Bryant College 119.07 54 ePKPdf PKPdf 08 08 43.1 -0.4
BVAR Borovoye Array 120.23 319 PKP PKPdf 08 08 44.6 -0.8
comp=Z,7.3nm,0.4s,baz=109,slow=2.4,SNR=30
BRVK Borovoye 120.29 319 d i PKIKP PKPdf 08 08 44.9 -0.6
LMQ La Malbaie 120.41 48 ePKPdf PKPdf 08 08 44.3 -1.6
SUR Sutherland 120.64 201 PKP PKPdf 08 08 46.9 -0.3
comp=Z,1.0nm,0.6s,baz=138,slow=0.8,SNR=20
SUR Sutherland 120.64 201 ePKPdf PKPdf 08 08 47.8 +0.6
WVL Waterville 120.70 51 ePKPdf PKPdf 08 08 45.5 -1.0
PKME Peaks-Kenny Pk 121.00 50 ePKPdf PKPdf 08 08 46.3 -0.8
BOSA Boshof 122.41 207 PKP PKPdf 08 08 50.7 +0.1
comp=Z,11nm,0.9s,baz=191,slow=2.4,SNR=8.2
BOSA Boshof 122.41 207 ePKIKP PKPdf 08 08 51.1 +0.5
BOSA Boshof 122.41 207 ePKPdf PKPdf 08 08 51.1 +0.5
LMN Caledonia Moun 124.17 50 ePKPdf PKPdf 08 08 51.9 -1.3
KBS Kingsbay 124.52 357 ePKPdf PKPdf 08 08 52.5 -0.5
SPA0 Spitsbergen Ar 125.00 356 eP PKPdf 08 08 53.4 -0.5
SPA0 Spitsbergen Ar 125.00 356 ePKPdf PKPdf 08 08 53.9 -0.1
SPITS Spitsbergen Ar 125.00 356 PKP PKPdf 08 08 53.4 -0.5
comp=Z,26nm,0.8s,baz=130,slow=8.9,SNR=12
LBTB Lobatse 125.41 209 PKP PKPdf 08 08 57.0 +0.5
comp=Z,37nm,0.5s,baz=167,slow=4.7,SNR=6.0
LBTB Lobatse 125.41 209 ePKIKP PKPdf 08 08 57.0 +0.5
LBTB Lobatse 125.41 209 ePKPdf PKPdf 08 08 57.0 +0.5
DAG Danmarks Havn 126.19 5 i P PKPdf 08 08 53.9 -2.3
comp=Z,16nm,1.0s
DAG Danmarks Havn 126.19 5 i PKIKP PKPdf 08 08 53.9 -2.3
DAG pmax pmax
comp=Z,16nm,1.0s
ARU Arti 126.68 324 PKP PKPdf 08 08 57.4 -0.3
comp=Z,16nm,0.4s,baz=87,slow=2.2,SNR=8.3
SUMG Summit 126.82 13 i P PKPdf 08 08 58.1 +0.1
SUMG Summit 126.82 13 i PKIKP PKPdf 08 08 58.1 +0.1
SUMG Summit 126.82 13 ePKPdf PKPdf 08 08 57.7 -0.3
MATP Matopo 127.90 215 PKP PKPdf 08 09 01.0 -0.3
comp=Z,9.5nm,0.7s,baz=165,slow=1.4,SNR=7.8
AKTO Aktyubinsk 128.08 316 PKP PKPdf 08 09 00.7 +0.1
comp=Z,11nm,0.8s,baz=213,slow=3.3,SNR=5.5
GEYT Alibeck 128.74 300 PKP PKPdf 08 09 02.0 -0.2
comp=Z,11nm,0.8s,baz=90,slow=1.5,SNR=6.1
UOSS Minazif 128.91 284 ePKPdf PKPdf 08 09 02.2 -0.7
LVZ Lovozero 130.97 343 d i PKIKP PKPdf 08 09 06.5 +1.0
ARA0 ARCESS Array S 131.74 348 ePKPdf PKPdf 08 09 06.0 -0.9
ARCES ARCESS Array B 131.74 348 PKP PKPdf 08 09 06.1 -0.8
comp=Z,15nm,0.8s,baz=84,slow=2.8,SNR=12
ARCES pPKP pPKPdf 08 11 07.9 -2.8
comp=Z,2.3nm,0.7s,baz=151,slow=2.8,SNR=2.3
ARE0 ARCESS Array S 131.74 348 eP PKPdf 08 09 06.1 -0.8
ARE0 ARCESS Array S 131.74 348 ePKPdf PKPdf 08 09 06.3 -0.6
LSZ Lusaka 132.27 218 PKP PKPdf 08 09 11.0 +1.3
comp=Z,7.1nm,0.5s,baz=175,slow=2.9,SNR=6.3
TRO Tromso 132.74 351 eP PKPdf 08 09 09.1 +0.3
KLMR Klimovskoe 134.00 334 ePKIKP PKPdf 08 09 09.1 -2.2
KLMR e 08 11 46.3
KLMR pmax pmax
comp=Z,63nm,1.2s
STEI Steigen 134.83 352 eP PKPdf 08 09 11.8 -0.9
KMBO Kilima Mbogo 135.97 241 PKP PKPdf 08 09 17.4 +0.6
comp=Z,4.6nm,1.0s,baz=110,slow=3.2,SNR=4.7
FINES FINESS Array B 138.28 341 PKhKP PKPpre 08 09 07.6
comp=Z,2.6nm,0.6s,baz=37,slow=2.9,SNR=7.5
FINES PKP PKPdf 08 09 19.6 +0.3
comp=Z,18nm,0.8s,baz=90,slow=2.8,SNR=8.8
OBN Obninsk 138.57 329 i PKIKP PKPdf 08 09 21.4 +1.4
OBN pmax pmax
comp=Z,83nm,1.9s
GNI Garni 138.98 304 i PKIKP PKPdf 08 09 24.2 +2.7
KIV Kislovodsk 139.65 311 i PKIKP PKPdf 08 09 22.3 -0.2
KIV pmax pmax
comp=Z,33nm,1.3s
NB2 NORSAR Subarra1 141.94 351 PKP PKPpre 08 09 21.1
comp=Z,24nm,0.8s,baz=19,slow=3.1
NB2 NORSAR Subarra1 141.94 351 PKP PKPpre 08 09 21.1
baz=19,slow=3.1
NOA NORSAR Array B 141.94 351 PKhKP PKPpre 08 09 21.4
comp=Z,19nm,0.8s,baz=16,slow=4.8,SNR=24
NOA PKP PKiKP 08 09 28.0 -1.1
comp=Z,2.9nm,0.8s,baz=14,slow=4.1,SNR=4.8
NBO02 NORSAR Array S 141.99 351 ePKPpre PKPpre 08 09 21.6
NC602 NORSAR Array S 142.19 351 eP PKPpre 08 09 20.5
HFS Hagfors 142.40 349 PKhKP PKPpre 08 09 22.4
comp=Z,26nm,0.5s,baz=62,slow=2.3,SNR=61
SUE Sulen 142.60 356 eP PKPdf 08 09 24.0 -3.0
MICGM Minsk 142.86 333 e PKPdf 08 09 25.0 -2.7
MNK Minsk 142.86 333 ePKHKP PKPpre 08 09 25.0
ANN Anapa 142.94 314 i PKHKP PKPpre 08 09 25.6
ANN pmax pmax
comp=Z,80nm,0.9s
OSL Oslo 143.07 351 eP PKPab 08 09 25.0 -0.4
ASK Askoy 143.14 356 ePKPdf PKPab 08 09 25.3 -0.4
BER Bergen 143.23 355 ePKPbc PKPab 08 09 25.6 -0.4
KONO Kongsberg 143.51 352 ePKPab PKPab 08 09 26.5 -0.7
ODD1 Odda 143.59 354 ePKPab PKPab 08 09 26.8 -0.7
BLS5 Blasjo 144.08 354 ePKPbc PKPbc 08 09 28.2 -0.9
KMY Karmoy 144.40 355 ePKPbc PKPbc 08 09 29.4 -0.7
STAV Stavanger 144.63 355 eP PKPdf 08 09 30.5 -0.1
AKASG Malin Array Be 144.77 327 PKP PKPdf 08 09 30.6 -0.5
comp=Z,33nm,0.7s,baz=46,slow=4.6,SNR=54
AKASG pPKP pPKPdf 08 11 31.3 -3.9
comp=Z,1.6nm,0.5s,baz=2.5,slow=36,SNR=1.7
AKBB Malin Array Si 144.77 327 ePKIKP PKPdf 08 09 30.7 -0.4
AKBB Malin Array Si 144.77 327 ePKPdf PKPdf 08 09 30.7 -0.4
AKBB ePKPbc PKPbc 08 09 31.0 -0.6
KIEV Kiev 144.78 327 ePKIKP PKPdf 08 09 30.7 -0.5

KIEV	Kiev	144.78	327	ePKPdf	PKPdf	08 09 30.7	-0.5
AK11	Malin Array Si	144.81	327	ePKPdf	PKPdf	08 09 30.7	-0.5
HOMB	Homborsund	144.99	352	ePKPdf	PKPdf	08 09 31.4	+0.1
SIM	Simferopol'	145.04	316	*i* PKIKP	PKPab	08 09 33.1	-0.4
SIM				pmax	pmax		
	comp=Z,149nm,0.9s						
KLNR	Kaliningrad	145.66	339⇓	ePKIKP	PKPdf	08 09 32.9	+0.4
ASF	Jabal al Asfar	146.31	293	PKPbc	PKPbc	08 09 37.3	+0.6
	comp=Z,25nm,1.0s,baz=78,slow=2.5,SNR=11						
ASF				pPKPbc	pPKPbc	08 11 34.0	-4.5
	comp=Z,5.9nm,0.9s,baz=91,slow=3.0,SNR=2.6						
MUD	Monsted U'grnd	146.66	351	*i* P	PKPbc	08 09 36.3	-0.4
	comp=Z,52nm,0.9s						
MUD	Monsted U'grnd	146.66	351	*i* PKIKP	PKPbc	08 09 36.3	-0.4
MUD				pmax	pmax		
	comp=Z,52nm,0.9s						
BSD	Bornholm Skovb	146.76	344	*i* P	PKPbc	08 09 36.4	-0.6
	comp=Z,112nm,0.9s						
BSD	Bornholm Skovb	146.76	344	*i* PKIKP	PKPbc	08 09 36.4	-0.6
BSD				pmax	pmax		
	comp=Z,110nm,0.9s						
SORM	Soroca	146.80	324⇓	*i* P	PKPdf	08 09 34.8	+0.2
SORM	Soroca	146.80	324	⇓PKIKP	PKPdf	08 09 34.8	+0.2
COP	Copenhagen	146.80	347	*i* P	PKPbc	08 09 36.5	-0.6
COP	Copenhagen	146.80	347	*i* PKIKP	PKPbc	08 09 36.5	-0.6
KIS	Kishinev	147.21	322	*i* PS		08 14 50.0	
KIS				LRM	MLR	09 01 24.0	
	comp=Z,2μm,22.0s						
BR131	Keskin Array S	147.35	307	ePKPbc	PKPbc	08 09 39.2	-0.1
BRTR	Keskin Array B	147.35	307	PKPbc	PKPbc	08 09 38.9	-0.5
	comp=Z,16nm,0.8s,baz=146,slow=5.7,SNR=11						
BRTR				pPKPbc	pPKPbc	08 11 37.0	-4.5
	comp=Z,6.1nm,1.0s,baz=216,slow=9.0,SNR=2.7						
MMAI	Mount Meron Ar	147.47	294	PKPbc	PKPbc	08 09 40.6	+0.8
	comp=Z,70nm,0.8s,baz=76,slow=4.6,SNR=38						
MMAI				pPKPbc	pPKPbc	08 11 40.1	-1.9
	comp=Z,1.1nm,0.4s,baz=336,slow=43,SNR=2.7						
BR231	Keskin MP Arra	147.94	308	ePKPbc	PKPbc	08 09 39.8	-1.1
EIL	Elat	148.13	288	PKPbc	PKPbc	08 09 42.0	+0.5
	comp=Z,42nm,0.8s,baz=346,slow=3.9,SNR=15						
EIL				pPKPbc	pPKPbc	08 11 38.5	-5.4
	comp=Z,11nm,1.1s,baz=348,slow=9.0,SNR=2.0						
EKA	Eskdalemuir Ar	148.42	3	PKPbc	PKPbc	08 09 40.6	-0.8
	comp=Z,27nm,0.9s,baz=328,slow=2.2,SNR=24						
ESK	Eskdalemuir	148.44	3	ePKPbc	PKPbc	08 09 41.0	-0.4
CFR	Carcaliu	148.62	320⇑	*i* P	PKPbc	08 09 42.0	-0.2
TESR	Tescani	148.70	323⇑	*i* P	PKPbc	08 09 42.2	-0.2
BUR08	Bucovina Ar. S	148.76	326	ePKPbc	PKPbc	08 09 43.1	+0.5
BURAR	Bucovina Array	148.77	326⇓	*i* P	PKPbc	08 09 42.8	+0.2
CSS	Mathiatis	148.85	299	ePKPbc	PKPbc	08 09 43.1	0.0
TLB	Topalu	149.00	319⇑	*i* P	PKPbc	08 09 43.4	+0.3
HARR	Harsova	149.01	319⇑	*i* P	PKPbc	08 09 43.3	+0.2
VRI	Vrincioaia	149.04	322⇓	*i* P	PKPbc	08 09 42.3	-0.9
OJC	Ojcow	149.35	334	ePKPbc	PKPbc	08 09 43.7	-0.1
OJC	Ojcow	149.35	334	*e*	PKPbc	08 09 43.9	+0.1
STHS	Stebnicka Huta	149.38	332	ePKP	PKPbc	08 09 44.5	+0.6
UZH	Uzhgorod	149.49	330⇓	ePKHKP	PKPpre	08 09 43.7	
UZH				*i*		08 09 52.1	
CRVS	Cervenica-Dubn	149.67	331	ePKP	PKPbc	08 09 44.6	0.0
MLR	Muntele Rosu	149.71	322	PKPbc	PKPbc	08 09 44.3	-0.7
	comp=Z,5.6nm,0.8s,baz=316,slow=4.6,SNR=7.5						
MLR	Muntele Rosu	149.71	322⇑	*i* P	PKPbc	08 09 43.7	-1.3
MLR	Muntele Rosu	149.71	322	ePKPbc	PKPbc	08 09 44.6	-0.4
DOPR	Dopca	149.72	323⇑	*i* P	PKPbc	08 09 45.2	+0.3
CJR	Cluj-Napoca	150.19	326⇑	*i* P	PKPbc	08 09 46.2	+0.2
DSB	Dublin	150.22	7	ePKPbc	PKPbc	08 09 45.3	-0.5
VOIR		150.24	323⇑	*i* P	PKPbc	08 09 45.7	-0.5
VOIR		150.24	323	⇑PKIKP	PKPbc	08 09 45.7	-0.5
ISP	Isparta	150.28	305⇑	*i* P	PKPbc	08 09 45.6	-0.9
ISP	Isparta	150.28	305	⇑PKIKP	PKPbc	08 09 45.6	-0.9
OKC	Ostrava-Krasne	150.30	336⇑	ePKP	PKPbc	08 09 46.1	+0.1
OKC	Ostrava-Krasne	150.30	336	ePKIKP	PKPbc	08 09 46.1	+0.1
LANS	Liptovska Anna	150.32	333	ePKIKP	PKPbc	08 09 47.2	+1.0
LANS	Liptovska Anna	150.32	333	ePKP	PKPbc	08 09 47.2	+1.0
KECS	Kecovo	150.41	332	ePKIKP	PKPdf	08 09 40.3	-0.2
KECS				*e*		08 09 55.1	
KECS	Kecovo	150.41	332	ePKP	PKPdf	08 09 40.3	-0.2
KECS				*e*		08 09 45.8	
KECS				*e*		08 09 55.1	
ARR	Arges	150.51	323⇑	*i* P	PKPbc	08 09 47.5	+0.7
DPC	Dobruska-Polom	150.52	338⇑	ePKP	PKPbc	08 09 47.0	+0.4
DPC				*e*pPKP	pPKPdf	08 11 53.7	+8.8
DPC	Dobruska-Polom	150.52	338	ePKIKP	PKPbc	08 09 47.0	+0.4
MORC	Moravsky Berou	150.57	336⇑	*i* P	PKPbc	08 09 47.0	+0.2
MORC	Moravsky Berou	150.57	336	ePKIKP	PKPbc	08 09 47.0	+0.2
MORC	Moravsky Berou	150.57	336	ePKPbc	PKPbc	08 09 47.0	+0.2
DRGR		150.59	327⇑	*i* P	PKPbc	08 09 46.7	-0.2
DRGR		150.59	327	⇑PKIKP	PKPbc	08 09 46.7	-0.2
KRLC	Kraliky	150.60	337⇑	ePKP	PKPbc	08 09 47.0	+0.2
KRLC	Kraliky	150.60	337	ePKIKP	PKPbc	08 09 47.0	+0.2
CLL	Collm	150.69	343⇑	*i* PKPbc	PKPbc	08 09 46.8	-0.1
	comp=Z,149nm,0.9s						
CLL				*e*pPKPbc	pPKPbc	08 11 49.0	-0.9
CLL				*i* pPKPab	pPKPab	08 11 53.7	-0.8
	comp=Z,55nm,1.0s						
CLL	Collm	150.69	343	*i* PKIKP	PKPbc	08 09 46.8	-0.1
CLL				pmax	pmax		
	comp=Z,149nm,0.9s						
CLL	Collm	150.69	343	ePKPbc	PKPbc	08 09 47.2	+0.3
BRG	Berggiesshubel	150.82	341	ePKP	PKPbc	08 09 47.2	0.0
	comp=Z,74nm,0.8s						
BRG				*i*		08 09 53.4	
	comp=Z,24nm,1.0s						
BRG				SKKS		08 10 55.0	
	comp=N,3μm,24.2s						
	comp=E,2μm,35.4s						
	comp=Z,3μm,24.2s						
BRG	Berggiesshubel	150.82	341	ePKIKP	PKPbc	08 09 47.2	0.0
BRG				*i*		08 09 53.4	
BRG				pmax	pmax		
	comp=Z,74nm,0.8s						
BRG				MLR	MLR		
	comp=N,3μm,24.2s						
BRG				MLR	MLR		
	comp=E,2μm,35.4s						
BRG				MLR	MLR		
	comp=Z,3μm,24.2s						
PVCC	Panska Ves	150.94	340⇑	ePKP	PKPbc	08 09 47.8	+0.3
PVCC				*e*pPKP	pPKPdf	08 11 54.7	+9.2
PVCC	Panska Ves	150.94	340	ePKIKP	PKPbc	08 09 47.8	+0.3
CWF	Charnwood Fore	151.09	1	ePKPbc	PKPbc	08 09 47.4	-0.3
PSZ	Piszkesteto	151.09	331⇓	*i* P	PKPbc	08 09 48.1	+0.1
PSZ	Piszkesteto	151.09	331	⇓PKIKP	PKPbc	08 09 48.1	+0.1
PSZ	Piszkesteto	151.09	331	ePKPbc	PKPbc	08 09 47.9	-0.1
VYHS	Vyhne	151.10	333	ePKIKP	PKPdf	08 09 40.7	-0.8
VYHS				*e*		08 09 58.3	
VYHS	Vyhne	151.10	333	ePKP	PKPdf	08 09 40.7	-0.8
VYHS				*e*		08 09 48.0	
VYHS				*e*		08 09 58.3	
VRAC	Vranov	151.31	337	PKPbc	PKPbc	08 09 47.6	-0.8
	comp=Z,8.7nm,0.7s,baz=323,slow=0.7,SNR=4.9						
VRAC	Vranov	151.31	337⇓	*i* P	PKPbc	08 09 48.0	-0.3
VRAC	Vranov	151.31	337	⇓PKIKP	PKPbc	08 09 48.1	-0.3
PRU	Pruhonice	151.42	340⇑	ePKP	PKPbc	08 09 48.2	-0.4
PRU				ePKPAB	PKPab	08 09 59.3	0.0
PRU				*e*pPKP	pPKPdf	08 11 55.3	+9.0
PRU	Pruhonice	151.42	340	ePKIKP	PKPbc	08 09 48.2	-0.4
PRU				*e*		08 09 59.3	
SIRR	Siria	151.47	327⇑	*i* P	PKPbc	08 09 48.8	-0.1
GZR	Gura Zlata	151.50	325⇓	*i* P	PKPbc	08 09 48.5	-0.5
GZR	Gura Zlata	151.50	325	⇓PKIKP	PKPbc	08 09 48.5	-0.5
NKC	Novy Kostel	151.82	343⇑	ePKP	PKPbc	08 09 49.8	+0.3
NKC	Novy Kostel	151.82	343	ePKIKP	PKPbc	08 09 49.8	+0.3
ROSA	Rosais	151.94	51	ePKPbc	PKPbc	08 09 50.5	+0.4
BZS	Buzias	151.95	326⇑	*i* P	PKPbc	08 09 49.6	-0.3
BZS	Buzias	151.95	326	⇑PKIKP	PKPbc	08 09 49.6	-0.3
MDVR	Moldovita	152.47	325⇑	*i* P	PKPbc	08 09 51.0	-0.2
KHC	Kasperske Hory	152.47	340⇑	ePKP	PKPbc	08 09 50.9	-0.1
KHC				ePKPAB	PKPab	08 10 04.0	+0.1
KHC				*e*pPKP	pPKPdf	08 11 56.8	+8.8
KHC	Kasperske Hory	152.47	340	ePKIKP	PKPbc	08 09 50.9	-0.1
KHC				*e*		08 10 04.0	
KHC	Kasperske Hory	152.47	340	ePKPbc	PKPbc	08 09 51.0	-0.1
GEC2	GERESS Array S	152.69	340	ePKIKP	PKPbc	08 09 51.6	0.0
GEC2	GERESS Array S	152.69	340	ePKPbc	PKPbc	08 09 51.6	0.0
GERES	GERESS Array B	152.69	340	PKPbc	PKPbc	08 09 51.3	-0.3
	comp=Z,8.9nm,0.7s,baz=48,slow=2.0,SNR=12						
GERES				pPKPbc	pPKPbc	08 11 53.0	-1.9
	comp=Z,4.7nm,1.0s,baz=54,slow=2.5,SNR=2.5						
GEA0	GERESS Array S	152.69	340	ePKPdf	PKPdf	08 09 41.8	-2.2
GEA0				ePKPbc	PKPbc	08 09 51.3	-0.3
CONA	Conrad Observa	152.73	336	*i* PKPbc	PKPbc	08 09 51.6	-0.1
	comp=Z,33nm,1.1s						
MEM	Membach	152.79	351	PKPbc	PKPbc	08 09 51.2	-0.4
DYA	Yadsworthy	153.25	5	ePKPbc	PKPbc	08 09 52.0	-0.6
MOA	Molln	153.36	338	*i* PKPbc	PKPbc	08 09 52.6	-0.4
	comp=Z,9.0nm,0.9s						
ARSA	Arzberg	153.42	336	*i* PKPbc	PKPbc	08 09 53.1	0.0
	comp=Z,14nm,1.0s						
DOU	Dourbes	153.47	353	PKPbc	PKPbc	08 09 53.8	+0.7
KARP	Karpathos	153.57	303	ePKPbc	PKPbc	08 09 53.7	-0.1
WLF	Walferdange	153.69	351	PKPbc	PKPbc	08 09 54.2	+0.7
SOKA	Soboth	154.08	336	*i* PKPdf	PKPdf	08 09 45.3	-0.7
	comp=Z,32nm,1.3s						
PERS	Pernice	154.08	335	*i* PKPbc	PKPbc	08 09 54.2	-0.4
BFO	Black Forest	154.59	347	ePKIKP	PKPbc	08 09 56.3	+0.7
BFO				*e*		08 10 12.7	
BFO	Black Forest	154.59	347	ePKPbc	PKPbc	08 09 56.2	+0.7
BFO				ePKPab	PKPab	08 10 12.7	-0.2
MYKA	Terra Mystica	154.63	337	*i* PKPbc	PKPbc	08 09 54.9	-0.9
	comp=Z,15nm,0.8s						
WATA	Walderalm	154.68	341	*i* PKPab	PKPab	08 10 11.6	-1.9
	comp=Z,12nm,0.8s						
RETA	Reutte	154.78	342	PKPab	PKPab	08 10 12.7	-1.1
	comp=Z,25nm,1.0s						
MOTA	Moosalm	154.81	342	*i* PKPab	PKPab	08 10 13.3	-0.8
	comp=Z,21nm,0.9s						
ABTA	Abfaltersbach	154.91	339	*i* PKPdf	PKPdf	08 09 46.1	-1.0
	comp=Z,27nm,1.1s						
BOJS	Bojanci	154.96	334	*i* PKPbc	PKPbc	08 09 56.6	+0.2
FETA	Feichten	155.21	342	*i* PKPdf	PKPdf	08 09 46.7	-0.9
	comp=Z,20nm,1.0s						
DAVOX	Davos/Dischmat	155.67	343	PKPbc	PKPbc	08 09 58.4	
	comp=Z,3.5nm,0.5s,baz=288,slow=14,SNR=3.6						
DAVOX				PKPab	PKPab	08 10 18.2	+0.4
	comp=Z,13nm,0.7s,baz=334,slow=4.3,SNR=6.0						
FUORN	Ofenpass-Fuorn	155.71	342	ePKPab	PKPab	08 10 19.0	+0.9
SENIN	Lac Senin/Sane	156.68	347	ePKPab	PKPab	08 10 22.6	+0.3
BNI	Bardonecchia	158.06	347	ePKP2	PKPab	08 10 26.6	-1.5
BNI	Bardonecchia	158.06	347	ePKPab	PKPab	08 10 26.6	-1.5
AQU	L'Aquila	158.30	332	ePKIKP	PKPdf	08 09 50.7	-0.9
AQU	L'Aquila	158.30	332	ePKPdf	PKPdf	08 09 50.6	-0.9
DBIC	Dimbokro	162.40	165	ePKIKP	PKPdf	08 09 56.5	-0.2
DBIC				*e*		08 10 48.7	
DBIC	Dimbokro	162.40	165	ePKPdf	PKPdf	08 09 56.5	-0.2
DBIC				ePKPab	PKPab	08 10 48.7	+1.1
ESDC	Sonseca Array	163.85	10	PKPab	PKPab	08 10 53.0	-0.5
	comp=Z,5.5nm,0.9s,baz=348,slow=4.0,SNR=6.8						
MDT	Midelt	170.21	22	PKP	PKPdf	08 10 02.5	+0.1
	comp=Z,11nm,0.9s,baz=88,slow=0.6,SNR=6.5						

IDC ***29*** *07:51:35.5±6.1,23.°71S×179.°91W,h500km±69km, mb4.0/5, mb1 4.1/6,mb1mx3.6/41,mbtmp4.9/6,Error ellipse: s-maj=55.7km s-min=28.1km az=9.0*
ISCJB ***29*** *07:51:36.3±1.2,23.°9S±0.°2×180.°0E±0.°2,h518km, mb4.5/5, Error ellipse: s-maj=25.0km s-min=24.7km az=136.0*
ISC 29 07:51:36.6±1.1,23.°9S±0.°2×179.9W±0.°2,h518km,n10, σ1$06/9,mb4.4/5,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	Urewera	14.53	189	P	P		07 54 41.5	0.0
	2.3nm,0.3s,baz=0.2,slow=17,SNR=1.1							
CTA	Charters Tower	31.57	270	P	P		07 57 17.5	+0.9
	30nm,0.3s,baz=90,slow=12,SNR=7.5							
ASAR	Alice Springs	42.13	261	P	P		07 58 43.0	-0.5
	9.6nm,0.8s,baz=97,slow=7.4,SNR=3.2							
WRA	Warramunga Ar	42.50	266	P	P		07 58 46.2	-0.2
	6.0nm,0.3s,baz=91,slow=8.4,SNR=9.2							
JOW	Kunigami	71.07	312	P	P		08 02 02.4	-0.1
	5.1nm,0.4s,baz=113,slow=15,SNR=2.7							
TXAR	Lajitas Array	90.35	58	P	P		08 03 43.6	+0.9
	1.0nm,0.7s,baz=230,slow=5.6,SNR=2.2							
BVAR	Borovoye Array	120.51	319	PKP	PKPdf		08 09 27.4	-1.5
	0.9nm,0.4s,baz=115,slow=2.4,SNR=1.9							
HFS	Hagfors	142.57	349	PKhKP	PKPpre		08 10 05.5	
	3.1nm,0.3s,baz=56,slow=0.5,SNR=7.0							
MMAI	Mount Meron Ar	147.79	294	PKPbc	PKPbc		08 10 24.5	+0.9
	2.6nm,0.4s,baz=73,slow=4.8,SNR=2.8							
EKA	Eskdalemuir Ar	148.52	4	PKPbc	PKPbc		08 10 23.1	-1.4
	0.8nm,0.4s,baz=346,slow=3.2,SNR=3.5							

CSEM ***29*** *07:58:45.8,38.°30N×21.°75E,h8km,ML1.2/4*
ATH 29 07:58:45.8,38.°30N×21.°75E,h8km±2km,ML1.2/3,Error ellipse: s-maj=2.8km s-min=0.8km az=123.0,Greece

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
UPR	University Cam	0.04	116	P	P		07 58 47.5	0.0
UPR				S	S		07 58 48.7	+0.1
UPR	University Cam	0.04	116	P	P		07 58 47.5	+0.1
UPR				S	S		07 58 48.7	+0.1
LAKA	Lakka	0.19	108	P	P		07 58 50.0	+0.2
LAKA				S	S		07 58 52.8	+0.3
LAKA	Lakka	0.19	108	P	P		07 58 50.0	+0.2
LAKA				S	S		07 58 52.9	+0.3
TRIZ	Trizonia	0.27	76	P	P		07 58 51.3	+0.2
TRIZ				S	S		07 58 55.8	+1.1
SERG	Sergoula	0.27	65	P	P		07 58 51.6	+0.4
SERG				S	S		07 58 54.3	-0.6
AXS	Araxos	0.31	251	P	P		07 58 51.6	-0.3
AXS	Araxos	0.31	251	P	P		07 58 51.6	-0.3
KALE	Kalithea	0.32	74	P	P		07 58 51.7	-0.6
KALE				S	S		07 58 56.3	-0.3
KALE	Kalithea	0.32	74	P	P		07 58 51.7	-0.6
KALE				S	S		07 58 56.4	-0.2
KALE				AML	AML		07 58 58.1	
	comp=E,74μm,0.2s							
KALE				AML	AML		07 58 59.6	
	comp=N,79μm,0.2s							
RLS	Riolos of Patr	0.33	222	P	Pg		07 58 52.2	-0.1
DRO	Drossia	0.35	184	P	Pg		07 58 52.7	0.0
DRO				S	Sg		07 58 58.2	+0.9
DRO	Drossia	0.35	184	P	Pg		07 58 52.7	0.0
DRO				S	Sg		07 58 58.2	+0.9
DRO				AML	AML		07 58 59.4	
	comp=N,96μm,0.2s							
DRO				AML	AML		07 59 00.6	
	comp=E,132μm,0.3s							
PVO	Paravola	0.36	332	P	Pg		07 58 52.0	-0.9
PVO				S	Sg		07 58 58.8	+1.1
PVO	Paravola	0.36	332	P	Pg		07 58 52.0	-0.9
PVO				S	Sg		07 58 58.8	+1.1
PVO				AML	AML		07 58 59.4	
	comp=E,268μm,0.2s							
PVO				AML	AML		07 58 59.7	
	comp=N,124μm,0.2s							
KLV	Kalavryta, Ach	0.41	129	P	Pg		07 58 53.8	0.0
KLV				S	Sg		07 58 59.5	+0.3
KLV	Kalavryta, Ach	0.41	129	P	Pg		07 58 53.8	-0.1
KLV				S	Sg		07 58 59.5	+0.3
PDO	Prodromos	0.53	304	P	Pb		07 58 56.8	-0.6
PDO				S	Sg		07 59 03.1	0.0
PDO	Prodromos	0.53	304	P	Pb		07 58 56.8	-0.6
PDO				S	Sg		07 59 03.1	0.0
DSF	Desfina	0.62	80	P	Pg		07 58 58.3	+0.4
DSF	Desfina	0.62	80	P	Pg		07 58 58.3	+0.4

IDC 29 07:59:24.9±8.6,23.°99S×179.°97W,h517km±88km, mb3.4/5,mb1 3.5/6,mb1mx3.2/37,mbtmp4.3/6,Error ellipse: s-maj=73.0km s-min=36.9km az=29.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	Urewera	14.44	189	P	P		08 02 29.9	+1.1
	1.2nm,0.3s,baz=278,slow=2.4,SNR=7.6							
URZ				S	S		08 04 55.4	-5.2
	0.1nm,0.3s,baz=169,slow=16,SNR=2.2							
CTA	Charters Tower	31.51	270	P	P		08 05 04.4	0.0
	7.5nm,0.4s,baz=88,slow=9.3,SNR=8.9							
STKA	Stephens Creek	34.72	248	P	P		08 05 32.1	+0.7
	2.2nm,1.0s,baz=60,slow=8.1,SNR=3.4							
ASAR	Alice Springs	42.05	261	P	P		08 06 31.1	-0.1
	3.4nm,0.8s,baz=96,slow=7.4,SNR=18							
WRA	Warramunga Ar	42.43	266	P	P		08 06 33.3	-0.9
	2.4nm,0.3s,baz=103,slow=8.3,SNR=34							
FITZ	Fitzroy Crossi	50.85	266	P	P		08 07 38.3	+0.3
	2.5nm,1.0s,baz=131,slow=9.0,SNR=5.1							
AKASG	Malin Array Be	145.06	327	PKPbc	PKPdf		08 18 01.1	-1.8
	0.7nm,0.4s,baz=41,slow=4.1,SNR=4.7							
BRTR	Keskin Array B	147.66	307	PKPbc	PKPbc		08 18 13.1	+1.6
	0.8nm,0.6s,baz=76,slow=4.4,SNR=3.4							
MMAI	Mount Meron Ar	147.76	294	PKPbc	PKPbc		08 18 11.1	-0.7
	0.9nm,0.3s,baz=76,slow=6.5,SNR=3.6							

IDC ***29*** *08:19:07.0±0.8,23.°49S×179.°83W,h516km±8km,mb4.2/24, mb1 4.3/27,mb1mx4.2/42,mbtmp5.1/27,Error ellipse: s-maj=10.5km s-min=8.5km az=96.0*
ISCJB ***29*** *08:19:07.5±0.1,23.°57S±0.°02×180.°00W±0.°03,h532km, mb4.9/216,Error ellipse: s-maj=4.4km s-min=2.5km az=28.4*
NEIC ***29*** *08:19:07.7±0.4,23.°50S×179.°94W,h524km±4km, mb5.0/193,Error ellipse: s-maj=4.4km s-min=3.2km az=132.0*
MOS ***29*** *08:19:08.0±0.9,23.°43S×179.°96W,h535km,mb4.9/35, Error ellipse: s-maj=10.2km s-min=7.6km az=66.9*
BJI ***29*** *08:19:09.3,22.°86S×179.°57W,h538km,mb4.8/25, mB5.3/13*
ISC 29 08:19:08.1±0.2,23.°51S±0.°04×179.°82W±0.°05,h532km, n667,σ1$32/703,mb4.9/216,22C-28D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	5.97	164	P	P		08 20 45.5	+0.1
	367nm,0.3s,baz=66,slow=6.8,SNR=25							
RAO				S	S		08 22 02.1	-3.0
	104nm,0.3s,baz=89,slow=22,SNR=7.3							
MSVF	Nonsavu	6.08	340	*e*P	P		08 20 46.0	-0.8
MSVF	Nonsavu	6.08	340	*e*P	P		08 20 46.0	-0.8
AFI	Afiamalu	12.21	40	*e*P	P		08 21 44.7	-4.3
AFI	Afiamalu	12.21	40	*e*P	P		08 21 44.7	-4.3
DZM	Mont Dzumac	12.75	274	P	P		08 21 53.9	-0.7
	1.7nm,0.3s,baz=90,slow=16,SNR=19							
DZM	Mont Dzumac	12.75	274	*e*P	P		08 21 53.2	-1.4
OUZ	Omahuta	13.00	205	*e*P	P		08 21 58.4	+1.6
OUZ	Omahuta	13.00	205	*e*PN	P		08 21 58.1	+1.2
KUZ	Kuaotunu	13.74	195	*e*PN	P		08 22 04.6	+0.1
MXZ	Matakaoa Point	14.10	186	*e*P	P		08 22 06.4	-1.8
MXZ				*e*S	S		08 24 36.7	-0.1
MXZ	Matakaoa Point	14.10	186	*e*PN	P		08 22 05.2	-3.1
MXZ				*e*SN	S		08 24 32.8	-4.0
WMGZ	Waiomatatini S	14.35	186	*e*PN	P		08 22 08.9	-2.0
HAZ	Te Kaha	14.35	188	*e*PN	P		08 22 08.8	-2.1
TGRZ	Tauranga	14.57	192	PN	P		08 22 18.8	-0.4
TOZ	Tahuroa Road	14.73	195	*e*PN	P		08 22 14.5	-0.3
FUNA	Funafuti	14.93	356	*e*P	P		08 22 14.9	-2.3
URZ	Urewera	14.94	189	P	P		08 22 14.2	-2.7
	26nm,0.3s,baz=3.5,slow=3.6,SNR=54							
URZ				S	S		08 24 46.7	-6.1
	22nm,0.3s,baz=191,slow=21,SNR=20							
URZ	Urewera	14.94	189	*e*P	P		08 22 14.3	-2.7
	253nm,0.7s							
URZ				S	S		08 24 46.7	-6.1
URZ	Urewera	14.94	189	*e*PN	P		08 22 12.7	-4.3
URZ				*e*SN	S		08 24 46.4	-6.4
MWZ	Matawai	14.95	188	*e*PN	P		08 22 14.3	-2.9
RRRZ	Republican Roa	15.11	191	*e*PN	P		08 22 17.5	-1.4
HIZ	Hauiti	15.63	196	*e*P	P		08 22 24.1	-0.1
	211nm,0.8s							
BKZ	Black Stump Fm	15.92	191	*e*P	P		08 22 23.6	-3.6
	130nm,0.6s							
BKZ	Black Stump Fm	15.92	191	PN	P		08 22 23.3	-3.9
BKZ				*e*SN	S		08 25 04.4	-6.0
VRZ	Vera Road	16.24	195	*e*PN	P		08 22 30.0	-0.3
WNVZ	Wahianoa	16.25	193	*e*PN	P		08 22 26.7	-3.8
TSZ	Takapari Road	16.88	191	*e*PN	P		08 22 32.8	-3.6
MRZ	Mangatainoka R	17.54	192	*e*PN	P		08 22 38.5	-3.9
OGWZ	Otaki Gorge	17.77	193

ASAR ScP **ScP** **08 30 59.1 +2.5**
comp=Z,10nm,0.8s,baz=107,slow=4.3,SNR=11
ASAR S **S** **08 31 54.5 -2.8**
comp=Z,4.4nm,0.7s,baz=95,slow=13,SNR=13
WB2 Warramunga Arr 42.59 266 *eP* **P** **08 26 17.0 -0.6**
comp=Z,157nm,0.6s
WB2 *eS* **S** **08 31 59.0 -3.0**
WRAB Tennant Creek 42.59 266 *c iP* **P** **08 26 16.7 -1.0**
WRAB Tennant Creek 42.59 266 *eP* **P** **08 26 16.6 -1.0**
comp=Z,140nm,0.8s
WRA Warramunga Arr 42.60 266 P **P** **08 26 16.9 -0.8**
comp=Z,145nm,0.7s,baz=90,slow=6.0,SNR=815
WRA ScP **ScP** **08 31 01.0 +2.9**
comp=Z,11nm,0.9s,baz=98,slow=4.4,SNR=9.6
WRA S **S** **08 31 57.8 -4.3**
comp=Z,12nm,0.9s,baz=103,slow=14,SNR=9.2
WRA Warramunga Arr 42.60 266 *i* P **P** **08 26 15.3 -2.4**
WRA pmax pmax
comp=Z,36nm,0.3s
FORT Forrest 46.60 249 *eP* **P** **08 26 47.6 -0.7**
comp=Z,3µm,0.6s
MTN Manton Dam 47.59 274 *eP* **P** **08 26 54.9 -1.1**
comp=Z,41nm,0.7s
HPAH Hawaii Prepara 49.25 30 *eP* **P** **08 27 08.5 +0.2**
comp=Z,266nm,0.8s
MHA Mahukona 49.29 30 *eP* **P** **08 27 09.4 +0.9**
MHA Mahukona 49.29 30 *eP* **P** **08 27 09.4 +0.9**
KIP Kipapa 49.45 27 *c iP* **P** **08 27 09.8 +0.2**
FITZ Fitzroy Crossi 51.03 265 P **P** **08 27 21.2 -0.1**
comp=Z,64nm,0.8s,baz=130,slow=3.1,SNR=116
FITZ S **S** **08 33 58.1 -1.0**
comp=Z,3.3nm,0.9s,baz=239,slow=17,SNR=4.5
FITZ Fitzroy Crossi 51.03 265 *eP* **P** **08 27 21.1 -0.1**
comp=Z,86nm,1.0s
FITZ S **S** **08 33 58.1 -1.0**
SBA Scott Base 54.78 183 *eP* **P** **08 27 50.5 +3.4**
SBA pmax pmax
comp=Z,12nm,0.9s
SBA Scott Base 54.78 183 *eP* **P** **08 27 50.5 +3.4**
comp=Z,12nm,0.9s
VNDA Vanda 54.78 185 P **P** **08 27 48.7 +1.6**
comp=Z,2.8nm,0.7s,baz=0.8,slow=5.7,SNR=21
VNDA ScP **ScP** **08 31 49.8 +1.0**
comp=Z,3.2nm,0.8s,baz=351,slow=4.4,SNR=8.6
SOEI Soe 54.98 275 *eP* **P** **08 27 50.6 +1.0**
comp=Z,211nm,1.0s
MBWA Marble Bar 55.60 260 *eP* **P** **08 27 53.0 -0.8**
comp=Z,103nm,1.0s
CASY Casey 60.54 206 *eP* **P** **08 28 26.3 -0.1**
comp=Z,14nm,0.6s
QSPA South Pole Qui 66.57 180 *eP* **P** **08 29 06.8 +1.6**
JOW Kunigami 70.85 312 P **P** **08 29 31.7 +0.3**
comp=Z,23nm,0.6s,baz=147,slow=4.1,SNR=6.3
MJAR Matsushiro Arr 71.67 325 P **P** **08 29 35.8 -0.2**
comp=Z,12nm,0.8s,baz=159,slow=5.7,SNR=37
MAJO Matsushiro 71.67 325 *c iP* **P** **08 29 35.4 -0.7**
MAJO pmax pmax
comp=Z,119nm,0.9s
MAJO Matsushiro 71.67 325 *eP* **P** **08 29 35.8 -0.2**
comp=Z,19nm,0.9s
MAT Matsushiro 71.67 325 P **P** **08 29 35.6 -0.5**
MJB9 Matsu-Tunnel 71.67 325 *eP* **P** **08 29 36.1 0.0**
comp=Z,4.6nm,0.9s
KSM Kuching 72.20 280 *eP* **P** **08 29 39.5 -0.2**
comp=Z,24nm,0.8s
JNU Nakatsue 73.34 318 P **P** **08 29 45.5 -0.4**
comp=Z,7.2nm,0.8s,baz=110,slow=4.6,SNR=6.0
ERM Erimo 73.64 332 *eP* **P** **08 29 48.8 +1.6**
ERM pmax pmax
comp=Z,60nm,0.9s
ERM Erimo 73.64 332 *eP* **P** **08 29 48.8 +1.6**
comp=Z,60nm,0.9s
ASAJ Asahikawa 75.59 333 P **P** **08 29 59.9 +1.7**
ASAJ Asahikawa 75.59 333 *eP* **P** **08 29 59.8 +1.6**
comp=Z,135nm,0.9s
NIKH Nikolski High 76.75 7 *eP* **P** **08 30 03.8 -0.5**
comp=Z,201nm,0.8s
YSS Yuzh-Sakhalins 77.85 335 *eP* **P** **08 30 10.7 +0.3**
YSS pmax pmax
comp=Z,126nm,0.8s
YSS Yuzh-Sakhalins 77.85 335 *eP* **P** **08 30 10.7 +0.3**
comp=Z,126nm,0.8s
UNV Unalaska Valle 77.89 8 *eP* **P** **08 30 09.6 -0.8**
comp=Z,47nm,0.8s
KSRS Korea Array 78.05 320 P **P** **08 30 12.1 +0.3**
comp=Z,4.9nm,0.7s,baz=143,slow=5.5,SNR=8.4
KSAR Wonju Array Be 78.07 320 P **P** **08 30 12.1 +0.2**
KSAR Wonju Array Be 78.07 320 P **P** **08 30 12.1 +0.2**
KS01 Wonju Array Si 78.09 320 *eP* **P** **08 30 11.8 -0.1**
MAW Mawson 78.17 200 P **P** **08 30 13.1 +1.1**
comp=Z,9.7nm,0.6s,baz=141,slow=6.3,SNR=29
AKUT Akutan 78.27 8 *eP* **P** **08 30 11.6 -0.8**
comp=Z,28nm,0.7s
PET Petropavlovsk 78.48 347 *i* P **P** **08 30 12.9 -0.7**
PET pmax pmax
comp=Z,28nm,0.8s
PEA0 Petropavlovsk- 78.76 346 *eP* **P** **08 30 15.0 -0.2**
PEA0B Petropavlovsk- 78.76 346 *eP* **P** **08 30 15.6 +0.4**
comp=Z,120nm,1.6s
PETK Petropavlovsk- 78.76 346 P **P** **08 30 15.1 -0.1**
comp=Z,25nm,0.7s,baz=126,slow=7.0,SNR=25
PMSA Palmer Station 79.20 157 P **P** **08 30 18.7 +1.2**
comp=Z,8.7nm,0.7s,baz=295,slow=5.4,SNR=3.6
MSHR Mys Shultsa 79.79 325 ǁ *iP* **P** **08 30 21.7 +0.8**
USRK Ussuriysk Ar. 80.53 327 P **P** **08 30 25.8 +1.1**
comp=Z,14nm,1.0s,baz=128,slow=4.6,SNR=27
SPIA Saint Paul Isl 80.77 5 *eP* **P** **08 30 26.2 +0.6**
comp=Z,112nm,1.0s
SCZ2 Santa Cruz Isl 80.88 47 P **P** **08 30 28.3 +1.5**
baz=234
SCI2 San Clemente I 81.03 48 P **P** **08 30 29.1 +1.6**
baz=234
TYV Tymovskoe 81.11 337 *eP* **P** **08 30 27.0 -0.5**
TYV pmax pmax
comp=Z,44nm,1.0s
PKM Mcpherson Peak 81.29 46 P **P** **08 30 30.5 +1.4**
baz=234
BLG Laguna Peak, P 81.33 47 P **P** **08 30 30.0 +0.8**
baz=234
CIS Catalina Islan 81.36 48 P **P** **08 30 30.3 +1.0**
baz=235
SAO San Andreas Ge 81.36 44 *eP* **P** **08 30 30.5 +1.3**
SAO pmax pmax
comp=Z,24nm,0.9s
SAO San Andreas Ge 81.36 44 *eP* **P** **08 30 30.5 +1.3**
comp=Z,24nm,0.9s
SMMC Simmler 81.42 46 P **P** **08 30 31.2 +1.6**
baz=233
PMPB Monarch Peak 81.44 45 *eP* **P** **08 30 31.4 +1.7**
comp=Z,28nm,1.0s
PAGB Antelope Grade 81.50 45 *eP* **P** **08 30 31.8 +1.8**
comp=Z,9.8nm,0.8s
CHGN Chignik 81.54 12 *eP* **P** **08 30 29.7 +0.2**
OSI Osito Audit: C 81.85 47 P **P** **08 30 32.9 +1.0**
baz=234
OSI Osito Audit: C 81.85 47 *eP* **P** **08 30 32.9 +1.0**
comp=Z,15nm,0.8s
DECC Green Verdugo 81.91 47 P **P** **08 30 32.8 +0.7**
baz=234
PASC Pasadena Art C 81.96 47 *eP* **P** **08 30 33.2 +0.9**
comp=Z,17nm,0.9s
109C Camp Elliot, M 81.97 49 P **P** **08 30 33.5 +1.2**
baz=235
MDJ Mudanjiang 82.03 326 P **P** **08 30 33.3 +0.9**
MDJ pP pP **08 32 28.0 +0.7**
MDJ sP sP **08 33 21.8 +0.2**
MDJ PP **PP** **08 33 48.8 -1.6**
MDJ S **S** **08 40 06.8 +4.1**
MDJ pmax pmax
comp=Z,20nm,0.8s
MDJ pmax pmax
comp=Z,840nm,11.5s
MDJ Mudanjiang 82.03 326 *eP* **P** **08 30 33.4 +1.0**
comp=Z,61nm,1.0s
MWC Mount Wilson 82.08 47 *eP* **P** **08 30 34.0 +0.8**
MWC pmax pmax
comp=Z,26nm,1.1s
MWC Mount Wilson 82.08 47 *eP* **P** **08 30 34.0 +0.8**
comp=Z,26nm,1.1s
ARVC Arvin 82.08 46 P **P** **08 30 33.8 +0.9**
baz=234
KMRM Mail Ridge 82.14 40 *eP* **P** **08 30 34.4 +1.2**
comp=Z,70nm,1.1s
BAR Barrett 82.15 49 *eP* **P** **08 30 34.8 +1.4**
comp=Z,47nm,1.9s
HABR Khabarovsk 82.25 332 *eP* **P** **08 30 32.3 -1.1**
HABR *e*PPP PPP 08 35 45.3
HABR *e*S **S** **08 40 00.0 -4.6**
HABR *e*SS **SS** **08 45 37.6 -3.3**
HABR *e*SSS SSS 08 49 13.2
HABR pmax pmax
comp=N,10.0nm,0.6s
HABR pmax pmax
comp=Z,4.0nm,0.6s
HABR pmax pmax
comp=E,13nm,0.7s
HABR MLR MLR
comp=Z,427nm,20.0s
MURC Murrieta 82.31 48 P **P** **08 30 35.4 +1.2**
baz=235,SNR=6.4
VES Vestal, Richgr 82.33 46 P **P** **08 30 35.0 +0.8**
baz=234,SNR=18
BFSC Mount Baldy Ra 82.36 48 P **P** **08 30 35.2 +0.7**
baz=235,SNR=8.9
MONP2 Monument Peak 82.44 49 P **P** **08 30 36.6 +1.5**
baz=236,SNR=24
EDW2 Edwards Air Fo 82.50 47 P **P** **08 30 36.3 +1.2**
baz=235,SNR=16
RCTC Rector, Farmer 82.50 45 P **P** **08 30 35.3 +0.3**
baz=234
SRIG Santa Rosalia 82.50 56 *eP* **P** **08 30 36.5 +1.3**
comp=Z,27nm,1.0s
IKP In-Ko-Pah, Jac 82.53 50 P **P** **08 30 36.9 +1.5**
baz=236,SNR=12
ISA Isabella, Lake 82.63 46 P **P** **08 30 37.1 +1.3**
baz=234,SNR=13
ISA Isabella, Lake 82.63 46 *eP* **P** **08 30 37.1 +1.3**
ISA pmax pmax
comp=Z,29nm,0.8s
ISA Isabella, Lake 82.63 46 *eP* **P** **08 30 37.1 +1.3**
comp=Z,29nm,0.8s
CMB Columbia Colle 82.80 43 *eP* **P** **08 30 37.4 +0.8**
CMB pmax pmax
comp=Z,31nm,0.8s
CMB Columbia Colle 82.80 43 *eP* **P** **08 30 37.4 +0.8**
comp=Z,30nm,0.8s
PFO Pinyon Flats O 82.82 49 P **P** **08 30 37.7 +0.8**
comp=Z,6.2nm,0.8s,baz=284,slow=5.5,SNR=9.9
PFO Pinyon Flats O 82.82 49 P **P** **08 30 38.0 +1.2**
baz=236,SNR=7.1
PFO Pinyon Flats O 82.82 49 *eP* **P** **08 30 37.9 +1.1**
PFO pmax pmax
comp=Z,32nm,1.6s
PFO Pinyon Flats O 82.82 49 *eP* **P** **08 30 37.9 +1.1**
comp=Z,32nm,1.6s
TPFO Pinon Flats 82.82 49 P **P** **08 30 38.0 +1.2**
baz=236,SNR=6.9
SWSC Sam W. Stewart 82.91 50 P **P** **08 30 38.5 +1.4**
baz=236,SNR=10.0
AFDM Forest Hills D 82.99 42 *eP* **P** **08 30 38.4 +0.9**
comp=Z,28nm,1.0s
LRMC Laurel Mtn Rad 83.05 47 P **P** **08 30 38.9 +0.9**
baz=235,SNR=6.6
WDC Whiskeytown Da 83.05 40 *eP* **P** **08 30 39.0 +1.3**
WDC pmax pmax
comp=Z,43nm,1.3s
WDC Whiskeytown Da 83.05 40 *eP* **P** **08 30 39.0 +1.3**
comp=Z,43nm,1.3s
RRX Edison Barstow 83.17 47 P **P** **08 30 39.7 +1.3**
baz=235
N02D Trinity Center 83.20 40 P **P** **08 30 40.2 +1.7**
baz=231,SNR=7.9
O03D Paynes Creek 83.31 41 P **P** **08 30 40.0 +0.9**
baz=232,SNR=10
CWC Cottonwood Cre 83.34 46 P **P** **08 30 40.5 +1.0**
baz=234
BELC Belle Mtn. Jos 83.36 49 P **P** **08 30 41.0 +1.4**
baz=236,SNR=23
M02C Callahan 83.38 39 P **P** **08 30 41.4 +2.0**
baz=231,SNR=8.5
SYO Syowa Base 83.43 193 ǁ *eP* **P** **08 30 37.6 -1.5**
L02D Cave Junction, 83.43 38 P **P** **08 30 41.1 +1.5**
baz=230
OHAK Old Harbor 83.46 14 *eP* **P** **08 30 39.5 +0.3**
comp=Z,26nm,0.8s
MPMC Manual Prospec 83.51 46 P **P** **08 30 41.3 +1.0**
baz=235,SNR=21
GSC Goldstone, Bar 83.54 47 P **P** **08 30 41.4 +1.0**
baz=235,SNR=26
GSC Goldstone, Bar 83.54 47 *eP* **P** **08 30 41.4 +1.0**
GSC pmax pmax
comp=Z,24nm,0.9s
GSC Goldstone, Bar 83.54 47 *eP* **P** **08 30 41.4 +1.0**
comp=Z,24nm,0.9s
BC3 Big Chuckawall 83.54 49 P **P** **08 30 41.9 +1.5**
baz=236,SNR=14
MLAC Mammoth, Mammo 83.55 44 P **P** **08 30 41.5 +1.0**
baz=234
HEC Hector,Ludlow 83.59 48 P **P** **08 30 41.5 +0.9**
baz=236,SNR=17
TIN Tinemaha, Big 83.60 45 P **P** **08 30 42.0 +1.3**
baz=234
GLA Glamis 83.65 50 P **P** **08 30 42.6 +1.7**
baz=237,SNR=11
CN2 Changchun 83.67 324 *eP* **P** **08 30 41.3 +0.6**
CN2 pmax pmax
comp=Z,20nm,1.0s
YBH Yreka Blue Hor 83.68 39 *eP* **P** **08 30 42.8 +1.9**
YBH pmax pmax
comp=Z,20nm,0.8s
YBH Yreka Blue Hor 83.68 39 *eP* **P** **08 30 42.8 +1.9**
comp=Z,20nm,0.8s
WAKR Walker 83.68 43 *eP* **P** **08 30 42.4 +1.3**
comp=Z,30nm,0.9s
PNTR Pine Nut 83.93 43 *eP* **P** **08 30 43.5 +1.1**
comp=Z,50nm,0.9s
TVH3 East Aurora ar 83.98 44 *eP* **P** **08 30 43.6 +1.0**
comp=Z,16nm,1.0s
GMRC Granite Mounta 84.02 48 P **P** **08 30 44.1 +1.3**
baz=236,SNR=15
IRM Iron Mountain 84.03 49 P **P** **08 30 44.3 +1.5**
baz=236,SNR=22
TVH2 Borealis Mine 84.04 44 *eP* **P** **08 30 44.0 +1.1**
comp=Z,13nm,1.0s
TVH1 TV Hill, Hawth 84.08 44 *eP* **P** **08 30 44.6 +1.3**
comp=Z,18nm,1.0s
HUMO Hull Mountain 84.09 38 *eP* **P** **08 30 44.6 +1.7**
comp=Z,26nm,1.0s
YERR Yerington 84.09 43 *eP* **P** **08 30 44.0 +0.9**
comp=Z,24nm,0.8s
KDAK Kodak Island 84.13 14 *i* P **P** **08 30 42.6 +0.1**
KDAK Kodiak Island 84.13 14 *eP* **P** **08 30 43.1 +0.5**
comp=Z,88nm,1.6s
GRAC Grapevine Rang 84.13 46 P **P** **08 30 44.5 +1.3**
baz=235,SNR=9.8
FURC Furnace Creek, 84.16 46 P **P** **08 30 44.4 +1.2**
baz=235,SNR=9.0
TUQ Turquoise Moun 84.21 47 P **P** **08 30 44.8 +1.0**
baz=236,SNR=15
M04C Macdoel 84.22 40 P **P** **08 30 44.9 +1.3**
baz=232,SNR=5.2
SHOC Shoshone, Teco 84.23 47 P **P** **08 30 44.6 +0.9**
baz=236,SNR=13
Y12C Blythe 84.24 50 P **P** **08 30 45.1 +1.4**
baz=237,SNR=8.1
Y12C Blythe 84.24 50 *eP* **P** **08 30 45.3 +1.6**
comp=Z,24nm,0.9s
113A Mohawk Valley, 84.24 51 *eP* **P** **08 30 45.3 +1.5**
comp=Z,21nm,1.0s
KLR Kul'dur 84.27 330 P **P** **08 30 44.4 +0.9**
comp=Z,4.2nm,0.9s,baz=94,slow=3.3,SNR=13
HSIG 84.35 55 *eP* **P** **08 30 45.7 +1.3**
comp=Z,26nm,0.8s
PAHR Pah Rah Range 84.43 42 *eP* **P** **08 30 45.7 +0.9**
comp=Z,23nm,1.1s
214A Organ Pipe Nat 84.50 52 P **P** **08 30 46.8 +1.7**
baz=238,SNR=9.8
I03D Drain, OR 84.56 37 P **P** **08 30 46.7 +1.6**
baz=230
LDFC Landfair 84.56 48 *eP* **P** **08 30 47.1 +1.6**
comp=Z,58nm,0.8s
K04D Chiloquin, OR 84.79 39 P **P** **08 30 47.8 +1.4**
baz=232
PDMCI Parker Dam,Lak 84.81 49 P **P** **08 30 48.0 +1.5**
baz=237,SNR=21
TPNV Topopah Spring 84.84 46 P **P** **08 30 47.8 +1.0**
baz=236,SNR=17
TPNV Topopah Spring 84.84 46 *eP* **P** **08 30 47.8 +1.0**
TPNV pmax pmax
comp=Z,11nm,0.8s
TPNV Topopah Spring 84.84 46 *eP* **P** **08 30 47.8 +1.0**
comp=Z,11nm,0.8s
J04D Umpqua Nationa 84.97 38 P **P** **08 30 48.8 +1.4**
baz=231,SNR=13
SNAA Sanae 85.06 179 P **P** **08 30 46.8 -0.4**
SNAA Sanae 85.06 179 *eP* **P** **08 30 46.9 -0.4**
SNAA pmax pmax
comp=Z,15nm,1.3s
SNAA Sanae 85.06 179 *eP* **P** **08 30 46.9 -0.4**
comp=Z,15nm,1.3s
I04A Tendick Farm, 85.15 38 P **P** **08 30 48.6 +0.6**
baz=231
MOD Modoc Plateau 85.20 40 *eP* **P** **08 30 49.4 +0.9**
comp=Z,34nm,1.4s
SHPR Sheep Range 85.32 47 *eP* **P** **08 30 50.5 +1.3**
comp=Z,7.7nm,0.9s
K05A Summer Lake 85.35 39 *eP* **P** **08 30 50.6 +1.4**
comp=Z,37nm,1.0s
W13A Hualapai Mount 85.42 49 *eP* **P** **08 30 51.1 +1.4**
comp=Z,9.2nm,0.8s
J05D Fort Rock, OR 85.50 39 P **P** **08 30 51.1 +1.3**
baz=232,SNR=24
NVL N'lazarevskaya 85.63 184 *eP* **P** **08 30 49.8 -0.1**
CNPM China Poot 86.01 14 *eP* **P** **08 30 51.7 0.0**
comp=Z,38nm,0.8s
R11A Troy Canyon, C 86.06 45 P **P** **08 30 54.3 +1.6**
baz=236,SNR=9.0
R11A Troy Canyon, C 86.06 45 *eP* **P** **08 30 53.2 +0.5**
comp=Z,4.7nm,1.0s
TUC Tucson 86.15 52 P **P** **08 30 54.8 +1.7**
baz=239
TUC Tucson 86.15 52 *eP* **P** **08 30 55.1 +2.0**
TUC pmax pmax
comp=Z,26nm,0.9s
TUC Tucson 86.15 52 *eP* **P** **08 30 55.1 +2.0**
comp=Z,26nm,0.9s
BMN Battle Mountai 86.20 43 *eP* **P** **08 30 54.2 +0.9**
BMN pmax pmax
comp=Z,15nm,0.8s
BMN Battle Mountai 86.20 43 *eP* **P** **08 30 54.2 +0.9**
comp=Z,15nm,0.8s
MA2 Magadan 86.24 345 P **P** **08 30 52.3 -0.5**
comp=Z,15nm,0.8s,baz=149,slow=6.8,SNR=14
F04D Rainier, OR 86.27 36 P **P** **08 30 54.7 +1.4**
baz=230
BRLK Bradley Lake 86.30 14 *eP* **P** **08 30 53.0 -0.1**
comp=Z,50nm,1.2s
F04A Amboy 86.50 36 *eP* **P** **08 30 55.3 +1.0**
comp=Z,60nm,1.2s
WVOR Wild Horse Val 86.50 41 *eP* **P** **08 30 55.7 +1.1**
WVOR pmax pmax
comp=Z,23nm,1.0s
WVOR Wild Horse Val 86.50 41 *eP* **P** **08 30 55.7 +1.1**
comp=Z,23nm,1.0s
RSO Redoubt South 86.53 13 *eP* **P** **08 30 53.8 -0.6**
SVW2 Sparrevohn 86.56 12 *eP* **P** **08 30 53.8 -0.5**
comp=Z,7.7nm,0.7s
NLWA Neilton Lookou 86.66 34 *eP* **P** **08 30 56.9 +1.8**
comp=Z,33nm,1.4s
G05D Wamic, OR 86.67 37 P **P** **08 30 56.2 +1.0**
baz=232
GYA Guiyang 86.69 301 P **P** **08 30 57.3 +1.4**
GYA pP pP **08 32 56.0 +3.6**
GYA sP sP **08 33 49.5 +3.3**
GYA PP **PP** **08 34 31.3 +3.1**
GYA SKS **SKSac** **08 40 32.0 -0.2**
GYA S **S** **08 40 48.0 -1.0**
GYA sS sS 08 44 17.3 +0.7
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.9s
X16A Lo Mia Camp, P 86.76 50 *eP* **P** **08 30 57.8 +1.7**
comp=Z,19nm,0.9s
ERK Elk Rock 86.77 36 P **P** **08 30 57.2 +1.4**
319A Douglas 86.78 54 *eP* **P** **08 30 58.3 +2.1**
comp=Z,42nm,1.0s
BJI Beijing 86.86 316 P **P** **08 30 57.0 +0.8**
BJI pmax pmax
comp=Z,10.0nm,1.4s
BJI pmax pmax
comp=Z,870nm,8.9s
TDL Tradedollar La 86.87 36 P **P** **08 30 58.0 +1.7**
LCMT Little Creek M 86.88 47 *eP* **P** **08 30 57.8 +1.2**
comp=Z,19nm,0.9s
CCUT Cedar City 87.09 47 *eP* **P** **08 30 59.1 +1.5**
comp=Z,14nm,0.9s
KNB Kanab 87.17 48 *eP* **P** **08 30 59.4 +1.5**
KNB pmax pmax
comp=Z,18nm,1.0s
KNB Kanab 87.17 48 *eP* **P** **08 30 59.4 +1.5**
comp=Z,18nm,1.0s
U15A North Rim 87.22 48 *eP* **P** **08 30 59.9 +1.5**
comp=Z,30nm,0.8s
SZCU Shurtz Canyon 87.30 47 *eP* **P** **08 31 00.4 +1.8**
comp=Z,19nm,1.0s
SPU Mount Spurr 87.33 13 *eP* **P** **08 30 56.8 -1.1**
LON Longmire 87.34 36 *eP* **P** **08 30 59.3 +1.0**
LON pmax pmax
comp=Z,10.0nm,0.8s
LON Longmire 87.34 36 *eP* **P** **08 30 59.3 +1.0**
comp=Z,9.8nm,0.8s
WUAZ Wupatki 87.38 49 P **P** **08 31 00.1 +1.2**
baz=239
WUAZ Wupatki 87.38 49 *eP* **P** **08 31 00.2 +1.2**
comp=Z,15nm,1.1s
D05A Enumclaw 87.52 35 *eP* **P** **08 31 01.0 +1.9**
comp=Z,95nm,1.1s
PGC Sidney 87.69 34 *eP* **P** **08 31 01.3 +1.5**
comp=Z,44nm,0.9s
TRW Toppenish Ridg 87.74 37 P **P** **08 31 01.5 +1.2**
RC01 Rabbit Creek A 87.74 14 *eP* **P** **08 30 59.7 -0.1**
comp=Z,50nm,1.0s
BBB Bella Bella 87.84 29 *eP* **P** **08 31 02.0 +1.6**
comp=Z,33nm,0.9s
SUA Susitna One 87.86 14 *eP* **P** **08 31 00.4 -0.1**
comp=Z,52nm,0.8s
X18A Snowflake 87.88 51 *eP* **P** **08 31 02.9 +1.5**
comp=Z,11nm,0.8s
G08A Pilot Rock 88.02 38 *eP* **P** **08 31 02.5 +0.9**
comp=Z,39nm,1.0s
ZAIG Zacatecas 88.03 64 *eP* **P** **08 31 04.5 +2.1**
comp=Z,11nm,1.0s
A04D Lumni Island 88.11 34 P **P** **08 31 02.9 +1.1**
baz=230
B05A Bryant 88.14 34 P **P** **08 31 03.3 +1.4**
baz=231
TT01 Tatalina 88.17 11 *eP* **P** **08 31 01.9 +0.1**
TTA Tatalina 88.19 11 *eP* **P** **08 31 02.0 0.0**
TTA pmax pmax
comp=Z,22nm,1.1s
TTA Tatalina 88.19 11 *eP* **P** **08 31 02.0 0.0**
comp=Z,22nm,1.1s
EYAK Cordova Ski Ar 88.22 16 *eP* **P** **08 31 02.1 0.0**
comp=Z,23nm,0.8s
CMW Cultus Mountai 88.23 34 P **P** **08 31 04.0 +1.5**
PMR Palmer 88.33 14 *eP* **P** **08 31 02.2 -0.3**
PMR pmax pmax
comp=Z,32nm,0.9s
PMR Palmer 88.33 14 *eP* **P** **08 31 02.2 -0.3**
comp=Z,32nm,0.9s
SNIWA Snively Ranch 88.33 37 P **P** **08 31 02.2 -0.7**
BENWA Benson Ranch 88.33 37 P **P** **08 31 03.6 +0.7**
HAWA Hanford 88.36 37 *eP* **P** **08 31 04.2 +1.2**
comp=Z,36nm,0.9s
MSU Marysvale 88.39 47 *eP* **P** **08 31 05.3 +1.6**
MSU Marysvale 88.39 47 *eP* **P** **08 31 05.3 +1.6**
PLCA Paso Flores 88.42 134 P **P** **08 31 05.0 +1.3**
comp=Z,2.7nm,0.9s,baz=266,slow=12,SNR=3.9
121A Cookes Peak, D 88.46 53 P **P** **08 31 05.6 +1.5**
baz=241
RPW Rockport 88.56 35 P **P** **08 31 04.8 +0.8**
B06A Marblemount 88.61 34 *eP* **P** **08 31 05.2 +1.0**
comp=Z,23nm,0.9s
SML Sawmill 88.70 14 *eP* **P** **08 31 04.4 +0.1**
SML pmax pmax
comp=Z,14nm,0.9s
SML Sawmill 88.70 14 *eP* **P** **08 31 04.3 +0.1**
comp=Z,14nm,0.9s
BMO Blue Mountains 88.70 39 *eP* **P** **08 31 05.4 +0.5**
BMO pmax pmax
comp=Z,31nm,1.6s
BMO Blue Mountains 88.70 39 *eP* **P** **08 31 05.3 +0.5**
comp=Z,31nm,1.6s
DIV Divide 88.72 16 *eP* **P** **08 31 04.4 0.0**
comp=Z,34nm,1.0s
MFID Camas Ranch 88.75 41 *eP* **P** **08 31 06.1 +1.0**
comp=Z,32nm,0.9s
PPLA Purkeypile 88.86 12 *eP* **P** **08 31 04.0 -1.2**
comp=Z,22nm,1.3s
DUG Dugway, Tooele 88.87 45 P **P** **08 31 06.7 +0.9**
baz=238,SNR=8.0

DUG	**Dugway, Tooele**	**88.87**	**45**	*e*P		**P**		**08 31 06.5**	**+0.7**
DUG				pmax		pmax			
	comp=Z,11nm,1.3s								
DUG	**Dugway, Tooele**	**88.87**	**45**	*e*P		**P**		**08 31 06.5**	**+0.7**
	comp=Z,11nm,1.3s								
BMRM	**Bremner River**	**88.88**	**16**	*e*P		**P**		**08 31 05.3**	**+0.1**
	comp=Z,36nm,0.9s								
WTV	**Waterville**	**88.92**	**36**	P		**P**		**08 31 06.6**	**+0.9**
SEY	**Seymchan**	**88.92**	**348**	P		**P**		**08 31 05.5**	**+0.2**
	comp=Z,20nm,0.8s,baz=146,slow=5.2,SNR=54								
SCM	**Sheep Creek Mo**	**88.95**	**15**	*e*P		**P**		**08 31 05.6**	**+0.1**
SCM				pmax		pmax			
	comp=Z,53nm,0.8s								
SCM	**Sheep Creek Mo**	**88.95**	**15**	*e*P		**P**		**08 31 05.6**	**+0.1**
	comp=Z,53nm,0.8s								
KLU	**Klutina**	**88.99**	**16**	*e*P		**P**		**08 31 06.0**	**+0.3**
	comp=Z,27nm,1.2s								
CRQM	**Cirque**	**89.08**	**17**	*e*P		**P**		**08 31 06.9**	**+0.6**
	comp=Z,31nm,1.0s								
D08A	**Wollman Farm,**	**89.09**	**37**	*e*P		**P**		**08 31 07.6**	**+1.2**
	comp=Z,25nm,0.9s								
BGU	**Big Grassy Mou**	**89.12**	**44**	*e*P		**P**		**08 31 07.9**	**+1.0**
	comp=Z,12nm,1.3s								
WRAK	**Wrangell Islan**	**89.14**	**24**	*e*P		**P**		**08 31 07.9**	**+1.5**
	comp=Z,32nm,0.8s								
TLIG	**Tlapa**	**89.18**	**71**	*e*P		**P**		**08 31 09.0**	**+1.3**
	comp=Z,8.8nm,0.8s								
E09A	**Wood Farm, Sta**	**89.20**	**37**	*e*P		**P**		**08 31 08.0**	**+1.1**
	comp=Z,18nm,1.0s								
NLU	**North Lily Min**	**89.22**	**45**	*e*P		**P**		**08 31 08.9**	**+1.4**
	comp=Z,8.0nm,1.1s								
KMI	**Kunming**	**89.23**	**298**	P		**P**		**08 31 09.5**	**+1.6**
KMI				pmax		pmax			
	comp=Z,14nm,0.8s								
PCA	**Pinnacle**	**89.35**	**19**	*e*P		**P**		**08 31 08.1**	**+0.7**
	comp=Z,30nm,0.8s								
CAST	**Castle Rocks**	**89.35**	**12**	*e*P		**P**		**08 31 06.2**	**-1.1**
	comp=Z,32nm,0.9s								
F10A	**Beach Ranch, E**	**89.40**	**38**	*e*P		**P**		**08 31 08.3**	**+0.2**
	comp=Z,23nm,0.9s								
TMUT	**Trail Mountain**	**89.45**	**46**	*e*P		**P**		**08 31 10.3**	**+1.6**
	comp=Z,42nm,0.8s								
BALM	**Baldy**	**89.53**	**17**	*e*P		**P**		**08 31 08.6**	**+0.3**
BALM				pmax		pmax			
	comp=Z,28nm,0.9s								
BALM	**Baldy**	**89.53**	**17**	*e*P		**P**		**08 31 08.6**	**+0.3**
	comp=Z,28nm,0.9s								
MPU	**Maple Canyon**	**89.54**	**45**	*e*P		**P**		**08 31 10.5**	**+1.5**
	comp=Z,15nm,0.9s								
CMAR	**Chiang Mai Arr**	**89.55**	**290**	P		**P**		**08 31 10.6**	**+1.3**
	comp=Z,1.0nm,0.4s,baz=132,slow=2.1,SNR=5.7								
B08A	**Colville Reser**	**89.65**	**35**	*e*P		**P**		**08 31 09.4**	**+0.3**
	comp=Z,14nm,1.0s								
HLID	**Hailey**	**89.69**	**41**	P		**P**		**08 31 10.7**	**+1.2**
	baz=237								
HLID	**Hailey**	**89.69**	**41**	*e*P		**P**		**08 31 10.8**	**+1.2**
	comp=Z,16nm,0.9s								
SPUT	**South Promonto**	**89.70**	**44**	*e*P		**P**		**08 31 10.7**	**+1.1**
	comp=Z,27nm,1.0s								
KTH	**Kantishna Hill**	**89.70**	**12**	*e*P		**P**		**08 31 07.5**	**-1.4**
	comp=Z,22nm,0.9s								
LLLB	**Lillooet**	**89.72**	**33**	*e*P		**P**		**08 31 10.4**	**+1.0**
	comp=Z,10.0nm,0.8s								
TRF	**Thorofare Moun**	**89.74**	**13**	*e*P		**P**		**08 31 08.2**	**-1.0**
	comp=Z,32nm,0.8s								
HVU	**Hansel Valley**	**89.74**	**44**	*e*P		**P**		**08 31 10.9**	**+1.1**
HVU				pmax		pmax			
	comp=Z,23nm,0.8s								
HVU	**Hansel Valley**	**89.74**	**44**	*e*P		**P**		**08 31 10.9**	**+1.1**
	comp=Z,23nm,0.8s								
SRU	**San Rafael Swe**	**89.81**	**47**	*e*P		**P**		**08 31 11.4**	**+1.2**
SRU				pmax		pmax			
	comp=Z,35nm,0.8s								
SRU	**San Rafael Swe**	**89.81**	**47**	*e*P		**P**		**08 31 11.4**	**+1.2**
	comp=Z,34nm,0.8s								
CTU	**Camp Tracy**	**89.82**	**45**	*e*P		**P**		**08 31 11.4**	**+1.2**
	comp=Z,62nm,0.9s								
LAZ	**Ladron**	**89.83**	**52**	*e*P		**P**		**08 31 11.0**	**+0.5**
Y22D	**IRIS PASSCAL I**	**89.83**	**52**	P		**P**		**08 31 12.0**	**+1.6**
	baz=241								
Y22D	**IRIS PASSCAL I**	**89.83**	**52**	*e*P		**P**		**08 31 12.4**	**+2.0**
	comp=Z,28nm,1.1s								
P17A	**Butcher Ranch,**	**89.85**	**46**	*e*P		**P**		**08 31 11.9**	**+1.6**
	comp=Z,18nm,0.9s								
MNTX	**Cornudas Mount**	**89.85**	**55**	P		**P**		**08 31 11.8**	**+1.4**
	baz=242								
MNTX	**Cornudas Mount**	**89.85**	**55**	*e*P		**P**		**08 31 11.8**	**+1.4**
	comp=Z,13nm,0.9s								
C09A	**Chrisman Ranch**	**89.89**	**36**	*e*P		**P**		**08 31 11.2**	**+1.0**
	comp=Z,19nm,1.3s								
JLU	**Jordanelle**	**89.97**	**45**	*e*P		**P**		**08 31 11.9**	**+0.9**
	comp=Z,9.4nm,0.8s								
RND	**Reindeer**	**89.99**	**13**	*e*P		**P**		**08 31 09.9**	**-0.4**
RND				pmax		pmax			
	comp=Z,42nm,1.1s								
RND	**Reindeer**	**89.99**	**13**	*e*P		**P**		**08 31 09.9**	**-0.4**
	comp=Z,42nm,1.1s								
DHY	**Denali Highway**	**90.03**	**14**	*e*P		**P**		**08 31 10.4**	**-0.2**
	comp=Z,34nm,1.7s								
TX31	**Lajitas Ar. Si**	**90.08**	**58**	*e*P		**P**		**08 31 13.1**	**+1.5**
BNM	**Barren Site**	**90.08**	**53**	*e*P		**P**		**08 31 12.8**	**+1.1**
TXAR	**Lajitas Array**	**90.08**	**58**	P		**P**		**08 31 13.0**	**+1.4**
	comp=Z,8.2nm,0.7s,baz=213,slow=6.5,SNR=107								
LPM	**Los Pinos Moun**	**90.16**	**52**	*e*P		**P**		**08 31 13.3**	**+1.4**
HIA	**Hailar**	**90.17**	**325**	*i* P		**P**		**08 31 11.6**	**+0.2**
HIA				pmax		pmax			
	comp=Z,3.0nm,0.9s								
MVCO	**Mesa Verde**	**90.23**	**49**	P		**P**		**08 31 13.7**	**+1.4**
	baz=240								
PV05	**Paradox Valley**	**90.25**	**48**	*e*P		**P**		**08 31 13.8**	**+1.4**
HHC	**Hu-ho-hao-te**	**90.26**	**315**	*e*P		**P**		**08 31 15.8**	**+3.6**
HHC				pmax		pmax			
	comp=Z,16nm,0.8s								
HHC				pmax		pmax			
	comp=Z,2µm,8.0s								
TCUT	**Toone Canyon**	**90.26**	**45**	*e*P		**P**		**08 31 13.6**	**+1.2**
	comp=Z,50nm,0.9s								
MCK	**McKinley**	**90.27**	**13**	*e*P		**P**		**08 31 11.1**	**-0.4**
MCK				pmax		pmax			
	comp=Z,22nm,1.2s								
MCK	**McKinley**	**90.27**	**13**	*e*P		**P**		**08 31 11.1**	**-0.4**
	comp=Z,22nm,1.2s								
HWUT	**Hardware Ranch**	**90.42**	**44**	*e*P		**P**		**08 31 13.4**	**+0.5**
	comp=Z,14nm,0.6s								
PV10	**Paradox Valley**	**90.44**	**48**	*e*P		**P**		**08 31 13.8**	**+0.6**
RSUT	**Red Spur Mount**	**90.53**	**44**	*e*P		**P**		**08 31 14.2**	**+0.5**
ANMO	**Albuquerque**	**90.58**	**52**	P		**P**		**08 31 15.0**	**+1.0**
	baz=242								
ANMO	**Albuquerque**	**90.58**	**52**	*c*e P		**P**		**08 31 14.9**	**+1.0**
ANMO				*e**PP		**pP**		**08 33 13.9**	**+2.5**
ANMO				pmax		pmax			
	comp=Z,14nm,1.1s								
ANMO	**Albuquerque**	**90.58**	**52**	*e*P		**P**		**08 31 14.7**	**+0.8**
	comp=Z,15nm,1.1s								
PV01	**Paradox Valley**	**90.64**	**48**	*e*P		**P**		**08 31 14.7**	**+0.5**
MENT	**Mentasta**	**90.77**	**16**	*e*P		**P**		**08 31 14.0**	**+0.2**
	comp=Z,10nm,0.7s								
NEW	**Newport**	**90.78**	**36**	P		**P**		**08 31 14.5**	**+0.2**
	baz=235								
NEW	**Newport**	**90.78**	**36**	*e*P		**P**		**08 31 14.7**	**+0.4**
NEW				pmax		pmax			
	comp=Z,3.0nm,0.8s								
NEW	**Newport**	**90.78**	**36**	*e*P		**P**		**08 31 14.7**	**+0.4**
	comp=Z,3.3nm,0.8s								
CD2	**Chengdu**	**91.00**	**303**	P		**P**		**08 31 17.0**	**+1.2**
CD2				pP		pP		08 33 15.5	+2.2
CD2				sP		sP		08 34 10.0	+3.2
CD2				SKS		**SKSac**		**08 40 56.5**	**-0.4**
CD2				S		**S**		**08 41 28.5**	**+0.5**
CD2				sS		sS		08 45 01.5	+3.2
CD2				SS		**SS**		**08 47 49.8**	**+1.4**
CD2				pmax		pmax			
	comp=Z,10.0nm,0.5s								
CD2				pmax		pmax			
	comp=Z,120nm,5.0s								
MLY	**Manley**	**91.06**	**12**	*e*P		**P**		**08 31 14.3**	**-0.9**
	comp=Z,12nm,1.4s								
WRH	**Wood River Hil**	**91.09**	**13**	*e*P		**P**		**08 31 14.5**	**-0.7**
	comp=Z,22nm,1.2s								
HDA	**Harding Lake**	**91.28**	**14**	*e*P		**P**		**08 31 15.8**	**-0.4**
	comp=Z,10.0nm,0.7s								
DOT	**Dot Lake**	**91.29**	**15**	*e*P		**P**		**08 31 16.1**	**-0.2**
	comp=Z,27nm,0.9s								
CCB	**Clear Creek Bu**	**91.31**	**13**	*e*P		**P**		**08 31 15.3**	**-1.0**
	comp=Z,9.3nm,0.8s								
AHID	**Auburn Hatcher**	**91.31**	**43**	*e*P		**P**		**08 31 18.2**	**+1.1**
	comp=Z,16nm,0.8s								
MCMT	**McKenzie Canyo**	**91.32**	**41**	*e*P		**P**		**08 31 18.1**	**+1.0**
MDM	**Murphy Dome**	**91.50**	**13**	*e*P		**P**		**08 31 16.0**	**-1.1**
	comp=Z,12nm,1.0s								
COLA	**College**	**91.50**	**13**	*e*P		**P**		**08 31 16.5**	**-0.6**
COLA				pmax		pmax			
	comp=Z,15nm,1.0s								
COLA	**College**	**91.50**	**13**	*e*P		**P**		**08 31 16.5**	**-0.6**
	comp=Z,15nm,1.0s								
IL1	**Eielson Array**	**91.61**	**13**	*e*P		**P**		**08 31 16.4**	**-1.3**
ILAR	**Eielson Array**	**91.61**	**13**	P		**P**		**08 31 16.9**	**-0.8**
	comp=Z,3.2nm,0.8s,baz=224,slow=5.6,SNR=34								
ILAR				PP		**PP**		**08 35 02.7**	**-3.2**
	comp=Z,2.0nm,1.1s,baz=228,slow=7.2,SNR=5.1								
ILB	**Eielson Array**	**91.61**	**13**	*e*P		**P**		**08 31 17.0**	**-0.7**
S22A	**4UR Ranch, Cre**	**91.66**	**49**	P		**P**		**08 31 20.0**	**+1.1**
	baz=241,SNR=22								
S22A	**4UR Ranch, Cre**	**91.66**	**49**	*e*P		**P**		**08 31 19.9**	**+1.0**
	comp=Z,13nm,0.9s								
DLMT	**Dillon**	**91.76**	**41**	*e*P		**P**		**08 31 20.1**	**+1.1**
	comp=Z,8.0nm,1.3s								
MSO	**Missoula**	**91.76**	**39**	P		**P**		**08 31 18.6**	**-0.4**
	baz=237								
REDW	**Red Top Meadow**	**91.78**	**43**	*e*P		**P**		**08 31 20.1**	**+0.8**
	comp=Z,18nm,1.1s								
TPAW	**Teton Pass**	**91.78**	**43**	*e*P		**P**		**08 31 20.5**	**+1.2**
	comp=Z,8.4nm,0.9s								
BSMT	**Bassoo Peak**	**91.84**	**38**	*e*P		**P**		**08 31 19.6**	**+0.2**
O20A	**White River Ci**	**91.85**	**47**	P		**P**		**08 31 20.2**	**+0.6**
	baz=241,SNR=7.2								
O20A	**White River Ci**	**91.85**	**47**	*e*P		**P**		**08 31 20.6**	**+1.0**
	comp=Z,16nm,1.3s								
BILL	**Bilibino**	**91.85**	**355**	*e*P		**P**		**08 31 17.1**	**-1.6**
BILL				pmax		pmax			
	comp=Z,15nm,0.9s								
BILL	**Bilibino**	**91.85**	**355**	*e*P		**P**		**08 31 19.2**	**+0.5**
	comp=Z,16nm,0.8s								
SNOW	**Snow King Moun**	**91.89**	**43**	*e*P		**P**		**08 31 21.1**	**+1.3**
	comp=Z,19nm,1.3s								
IMW	**Indian Meadow**	**92.00**	**42**	*e*P		**P**		**08 31 21.3**	**+1.0**
	comp=Z,26nm,1.5s								
MOOW	**Moose Ponds**	**92.05**	**43**	*e*P		**P**		**08 31 21.4**	**+1.0**
	comp=Z,19nm,1.8s								
LOHW	**Long Hollow**	**92.06**	**43**	*e*P		**P**		**08 31 21.4**	**+0.8**
	comp=Z,23nm,1.7s								
LRM	**Limekiln Ridge**	**92.09**	**40**	*e*P		**P**		**08 31 21.3**	**+0.6**
SMCO	**Snowmass**	**92.24**	**48**	*e*P		**P**		**08 31 22.2**	**+0.5**
	comp=Z,7.1nm,0.8s								
YHB	**Horse Butte**	**92.28**	**42**	*e*P		**P**		**08 31 23.2**	**+1.7**
	comp=Z,5.7nm,0.9s								
BW06	**Boulder Array**	**92.29**	**44**	P		**P**		**08 31 22.3**	**+0.7**
	baz=240								
BW06	**Boulder Array**	**92.29**	**44**	*e*P		**P**		**08 31 22.1**	**+0.4**
	comp=Z,7.3nm,0.8s								
PD31	**Pinedale Array**	**92.29**	**44**	*e*P		**P**		**08 31 22.1**	**+0.4**
PDAR	**Pinedale Array**	**92.29**	**44**	P		**P**		**08 31 21.9**	**+0.2**
	comp=Z,6.6nm,0.8s,baz=212,slow=4.0,SNR=49								
PDAR				PP		**PP**		**08 35 09.3**	**-2.7**
	comp=Z,2.2nm,1.0s,baz=235,slow=7.0,SNR=9.8								
H17A	**Grant Village**	**92.48**	**42**	P		**P**		**08 31 24.2**	**+1.7**
	baz=239								
BOZ	**Bozeman (W)**	**92.49**	**41**	P		**P**		**08 31 23.1**	**+0.7**
	baz=239								
BOZ	**Bozeman (W)**	**92.49**	**41**	*e*P		**P**		**08 31 23.3**	**+0.9**
BOZ				pmax		pmax			
	comp=Z,5.0nm,0.8s								
BOZ	**Bozeman (W)**	**92.49**	**41**	*e*P		**P**		**08 31 23.2**	**+0.9**
	comp=Z,4.7nm,0.8s								
832A	**Faith Ranch, C**	**92.53**	**60**	P		**P**		**08 31 23.4**	**+0.6**
	baz=245,SNR=5.4								
SDCO	**Great Sand Dun**	**92.58**	**50**	P		**P**		**08 31 23.7**	**+0.5**
	baz=242,SNR=18								
SDCO	**Great Sand Dun**	**92.58**	**50**	*e*P		**P**		**08 31 23.8**	**+0.5**
	comp=Z,7.8nm,0.8s								
DAWY	**Dawson**	**92.81**	**17**	*e*P		**P**		**08 31 23.4**	**+0.2**
	comp=Z,12nm,0.8s								
933A	**Laredo**	**92.81**	**61**	P		**P**		**08 31 25.1**	**+1.0**
	baz=245								
MSTX	**Muleshoe**	**92.84**	**54**	P		**P**		**08 31 25.0**	**+0.8**
	baz=244								
MSTX	**Muleshoe**	**92.84**	**54**	*e*P		**P**		**08 31 24.9**	**+0.7**
	comp=Z,5.8nm,0.8s								
HRY	**Holter Researc**	**92.92**	**40**	*e*P		**P**		**08 31 25.1**	**+0.7**
EGAK	**Eagle**	**92.94**	**16**	*e*P		**P**		**08 31 23.6**	**-0.1**
	comp=Z,13nm,0.8s								
833A	**Chaparral WMA,**	**93.01**	**61**	P		**P**		**08 31 26.0**	**+1.0**
	baz=245								
034A	**Hebbronville**	**93.06**	**62**	P		**P**		**08 31 27.1**	**+1.8**
	baz=245								
T25A	**Trinidad**	**93.07**	**51**	P		**P**		**08 31 25.5**	**+0.2**
	baz=243,SNR=5.5								
733A	**Divot King Ran**	**93.26**	**60**	P		**P**		**08 31 26.9**	**+0.8**
	baz=245								
LZH	**Lanzhou**	**93.27**	**308**	*e*P		**P**		**08 31 27.8**	**+1.6**
LZH				pP		pP		08 33 25.8	+2.0
LZH				sP		sP		08 34 20.0	+2.7
LZH				pmax		pmax			
	comp=Z,36nm,1.3s								
Q24A	**Divide**	**93.39**	**49**	P		**P**		**08 31 27.6**	**+0.7**
	baz=242								
ISCO	**Idaho Springs**	**93.46**	**48**	P		**P**		**08 31 27.7**	**+0.6**
	baz=242								
ISCO	**Idaho Springs**	**93.46**	**48**	*e*P		**P**		**08 31 28.1**	**+0.9**
ISCO				pmax		pmax			
	comp=Z,2.0nm,0.8s								
ISCO	**Idaho Springs**	**93.46**	**48**	*e*P		**P**		**08 31 28.1**	**+0.9**
	comp=Z,2.2nm,0.8s								
JCT	**Junction City**	**93.60**	**58**	P		**P**		**08 31 28.3**	**+0.6**
	baz=245								
JCT	**Junction City**	**93.60**	**58**	*e*P		**P**		**08 31 28.1**	**+0.4**
JCT				pmax		pmax			
	comp=Z,6.0nm,0.8s								
JCT	**Junction City**	**93.60**	**58**	*e*P		**P**		**08 31 28.1**	**+0.4**
	comp=Z,5.7nm,0.8s								
834A	**Tilden**	**93.61**	**61**	P		**P**		**08 31 28.9**	**+1.2**
	baz=245								
RLMT	**Red Lodge**	**93.65**	**42**	P		**P**		**08 31 28.9**	**+1.1**
	baz=240								
RLMT	**Red Lodge**	**93.65**	**42**	*e*P		**P**		**08 31 28.9**	**+1.1**
	comp=Z,3.4nm,0.8s								
633A	**Saathoff Ranch**	**93.66**	**60**	P		**P**		**08 31 28.7**	**+0.7**
	baz=245,SNR=7.6								
N23A	**Red Feather La**	**93.75**	**47**	P		**P**		**08 31 29.3**	**+0.9**
	baz=242								
N23A	**Red Feather La**	**93.75**	**47**	*e*P		**P**		**08 31 29.3**	**+0.9**
	comp=Z,11nm,1.4s								
533A	**Keyville**	**94.03**	**59**	P		**P**		**08 31 30.1**	**+0.5**
	baz=245,SNR=12								
K22A	**Casper**	**94.19**	**45**	P		**P**		**08 31 30.5**	**+0.3**
	baz=242								
433A	**Art**	**94.27**	**58**	P		**P**		**08 31 31.1**	**+0.4**
	baz=245,SNR=13								
YAK	**Yakutsk**	**94.27**	**339**	*i* P		**P**		**08 31 30.1**	**+0.2**
YAK				pmax		pmax			
	comp=Z,8.0nm,0.5s								
534A	**Blanco**	**94.45**	**59**	P		**P**		**08 31 32.1**	**+0.5**
	baz=246,SNR=8.3								
333A	**Richland Sprin**	**94.59**	**58**	P		**P**		**08 31 32.4**	**+0.3**
	baz=245								
ABTX	**Abilene, Hawle**	**94.62**	**57**	P		**P**		**08 31 32.7**	**+0.4**
	baz=245								
434A	**Burnet**	**94.94**	**59**	P		**P**		**08 31 34.0**	**+0.2**
	baz=246,SNR=5.4								
233A	**Rising Star**	**94.94**	**57**	P		**P**		**08 31 34.0**	**+0.2**
	baz=245								
KSCO	**Kaye Shedlock'**	**95.17**	**50**	P		**P**		**08 31 35.4**	**+0.6**
	baz=244,SNR=5.2								
133A	**Hamilton Ranch**	**95.17**	**57**	P		**P**		**08 31 35.0**	**+0.3**
	baz=246								
334A	**Lometa**	**95.18**	**58**	P		**P**		**08 31 35.2**	**+0.4**
	baz=246,SNR=5.5								
Z33A	**Whitaker Ranch**	**95.57**	**56**	P		**P**		**08 31 36.8**	**+0.3**
	baz=246								
X32A	**Elmer**	**95.64**	**55**	P		**P**		**08 31 36.9**	**0.0**
	baz=246								
W32A	**Sentinel**	**95.96**	**54**	P		**P**		**08 31 38.6**	**+0.3**
	baz=246								
LAO	**LASA Array**	**96.27**	**42**	P		**P**		**08 31 40.5**	**+1.1**
	baz=242								
LAO	**LASA Array**	**96.27**	**42**	*e*P		**P**		**08 31 40.9**	**+1.5**
	comp=Z,13nm,1.3s								
RSSD	**Black Hills**	**96.47**	**45**	P		**P**		**08 31 40.7**	**+0.1**
	baz=244								
RSSD	**Black Hills**	**96.47**	**45**	*e*P		**P**		**08 31 40.9**	**+0.3**
RSSD				pmax		pmax			
	comp=Z,3.0nm,0.8s								
RSSD	**Black Hills**	**96.47**	**45**	*e*P		**P**		**08 31 40.9**	**+0.3**
	comp=Z,3.3nm,0.8s								
INK	**Inuvik**	**97.61**	**16**	P		Pdif		08 31 43.4	-1.4
	comp=Z,5.3nm,0.9s,baz=234,slow=3.8,SNR=7.8								
R32A	**Long Quarter,**	**97.70**	**52**	P		**P**		**08 31 46.8**	**+0.8**
	baz=246								
YKA	**Yellowknife Ar**	**99.94**	**25**	P		**Pdif**		**08 31 55.4**	**+0.1**
	comp=Z,0.6nm,0.7s,baz=237,slow=4.8,SNR=5.1								
YKA				PP		**PP**		**08 36 06.2**	**-3.0**
	comp=Z,1.5nm,0.9s,baz=242,slow=7.2,SNR=5.2								
V40A	**Witts Springs**	**101.06**	**56**	Pdiff		**Pdif**		**08 32 01.6**	**+0.7**
	baz=249								
T39A	**Clever**	**101.08**	**54**	Pdiff		**Pdif**		**08 32 02.0**	**+1.0**
	baz=249								
R38A	**Fenwick Farm,**	**101.11**	**53**	Pdiff		**Pdif**		**08 32 02.2**	**+1.2**
	baz=249								
ECSD	**EROS Data Cent**	**101.21**	**47**	Pdiff		**Pdif**		**08 32 02.7**	**+1.3**
	baz=248								
U40A	**Yellville**	**101.24**	**55**	Pdiff		**Pdif**		**08 32 02.9**	**+1.2**
	baz=249								
P37A	**Lathrop**	**101.29**	**52**	Pdiff		**Pdif**		**08 32 03.0**	**+1.2**
	baz=249								
R39A	**Chumby, Stover**	**101.79**	**53**	Pdiff		**Pdif**		**08 32 05.7**	**+1.6**
	baz=249								
Y46A	**Houston**	**103.47**	**59**	Pdiff		**Pdif**		**08 32 12.8**	**+1.1**
	baz=251								
W45A	**Hickory Valley**	**103.63**	**57**	Pdiff		**Pdif**		**08 32 13.5**	**+1.2**
	baz=251								
B34A	**Aery, Baudette**	**104.16**	**43**	Pdiff		**Pdif**		**08 32 16.0**	**+1.6**
	baz=251								
Z48A	**Northport**	**104.33**	**60**	Pdiff		**Pdif**		**08 32 16.5**	**+1.0**
	baz=251								
ZALV	**Zalesovo Beam**	**111.75**	**321**	PKiKP		**PKiKP**		**08 36 40.9**	**-1.1**
	comp=Z,0.8nm,0.4s,baz=223,slow=0.4,SNR=4.6								
MKAR	**Makanchi Array**	**112.01**	**313**	PKiKP		**PKiKP**		**08 36 41.9**	**-0.9**
	comp=Z,1.3nm,0.6s,baz=205,slow=0.6,SNR=15								
KURK	**Kurchatov**	**115.03**	**317**	⇑*i* PKIKP		**PKPdf**		**08 36 47.7**	**-0.7**
KURK				pmax		pmax			
	comp=Z,3.0nm,0.6s								
KSH	**Kashi**	**115.19**	**304**	*e*PKP		**PKPdf**		**08 36 52.0**	**+2.7**
KSH				*es*PKP				08 39 51.0	
KSH				PKS		**PKSdf**		**08 40 27.5**	**+1.5**
KSH				SKS		**SKSdf**		**08 43 11.5**	**+0.5**
AAK	**Ala-Archa**	**116.80**	**307**	⇑*i* PKIKP		**PKPdf**		**08 36 51.9**	**-0.4**
KKAR	**Karatay Array**	**119.76**	**307**	*e*PKIKP		**PKPdf**		**08 36 57.5**	**-0.3**
KKAR	**Karatay Array**	**119.76**	**307**	*e*PKPdf		**PKPdf**		**08 36 57.5**	**-0.3**
BVAR	**Borovoye Array**	**120.25**	**319**	PKP		**PKPdf**		**08 36 57.9**	**-0.5**
	comp=Z,3.1nm,0.5s,baz=90,slow=2.2,SNR=16								
BRVK	**Borovoye**	**120.32**	**319**	⇓*i* PKIKP		**PKPdf**		**08 36 57.8**	**-0.7**
BRVK				pmax		pmax			
	comp=Z,11nm,1.0s								
BRVK	**Borovoye**	**120.32**	**319**	*e*PKPdf		**PKPdf**		**08 36 58.1**	**-0.4**
SCHQ	**Schefferville**	**122.06**	**39**	PKP		**PKPdf**		**08 37 00.9**	**-0.9**
	comp=Z,4.7nm,0.8s,baz=224,slow=7.1,SNR=3.2								
SPA0	**Spitsbergen Ar**	**124.74**	**356**	*e*P		**PKPdf**		**08 37 06.0**	**-0.4**
SPA0	**Spitsbergen Ar**	**124.74**	**356**	*e*PKPdf		**PKPdf**		**08 37 06.4**	**0.0**
DAG	**Danmarks Havn**	**125.88**	**5**	*i* P		**PKPdf**		**08 37 07.1**	**-1.4**
	comp=Z,4.9nm,0.8s								
DAG	**Danmarks Havn**	**125.88**	**5**	*i* PKIKP		**PKPdf**		**08 37 07.1**	**-1.4**
DAG				pmax		pmax			
	comp=Z,4.0nm,0.8s								
SUMG	**Summit**	**126.46**	**14**	*i* P		**PKPdf**		**08 37 10.6**	**+0.3**
	comp=Z,7.9nm,1.0s								
SUMG	**Summit**	**126.46**	**14**	*i* PKIKP		**PKPdf**		**08 37 10.6**	**+0.3**
SUMG				pmax		pmax			
	comp=Z,8.0nm,1.0s								
ARU	**Arti**	**126.67**	**324**	*i* PKIKP		**PKPdf**		**08 37 10

PLOR	Plostina	149.09	323	⇑	*i*P	PKPbc	08 37 55.9	-0.4
OJC	Ojcow	149.25	335		*e*PKP	PKPbc	08 37 56.8	+0.2
STHS	Stebnicka Huta	149.30	333		*e*PKP2	PKPbc	08 37 57.4	+0.7
STHS	Stebnicka Huta	149.30	333		*e*PKP	PKPbc	08 37 57.4	+0.7
UZH	Uzhgorod	149.43	331		*e*PKHKP	PKPpre	08 37 57.1	
UZH					*e*		08 38 04.9	
CRVS	Cervenica-Dubn	149.59	332		*e*PKP	PKPbc	08 37 58.0	+0.6
NIE	Niedzica	149.69	334		*e*PKP	PKPbc	08 37 58.6	+1.0
NIE	Niedzica	149.69	334		*e*PKP2	PKPbc	08 37 58.6	+1.0
MLR	Muntele Rosu	149.71	323	⇓	*i*P	PKPbc	08 37 57.6	-0.3
MLR	Muntele Rosu	149.71	323		*e*PKPbc	PKPbc	08 37 57.8	-0.1
DOPR	Dopca	149.71	324	⇓	*i*P	PKPbc	08 37 58.4	+0.6
SECR		149.91	322	⇑	*i*P	PKPbc	08 37 58.1	-0.2
KSP	Ksiaz	149.98	339		*e*PKP	PKPbc	08 37 59.0	+0.8
CJR	Cluj-Napoca	150.16	327	⇓	*i*P	PKPbc	08 37 58.8	-0.1
CJR	Cluj-Napoca	150.16	327	⇓	PKIKP	PKPbc	08 37 58.8	-0.1
OKC	Ostrava-Krasne	150.19	336	⇑	*e*PKP	PKPbc	08 37 59.0	+0.3
OKC					*e*PKPAB	PKPab	08 38 07.3	+0.2
OKC	Ostrava-Krasne	150.19	336		*e*PKIKP	PKPbc	08 37 59.0	+0.3
OKC					*e*		08 38 08.7	
VOIR		150.23	323	⇓	*i*P	PKPbc	08 37 58.8	-0.3
VOIR		150.23	323	⇓	PKIKP	PKPbc	08 37 58.8	-0.3
LANS	Liptovska Anna	150.23	334		*e*PKIKP	PKPbc	08 38 00.4	+1.5
LANS	Liptovska Anna	150.23	334		*e*PKP	PKPbc	08 38 00.4	+1.5
KECS	Kecovo	150.33	332		*e*PKIKP	PKPbc	08 37 59.2	+0.1
KECS					*e*		08 38 08.2	
KECS	Kecovo	150.33	332		*e*PKP	PKPbc	08 37 59.2	+0.1
KECS					*e*		08 38 08.2	
DPC	Dobruska-Polom	150.40	339		*e*PKPDF	PKPdf	08 37 50.6	-2.8
DPC				⇑	*e*PKP	PKiKP	08 37 59.7	-0.1
DPC					*e*PKPAB	PKPab	08 38 07.4	-0.7
DPC	Dobruska-Polom	150.40	339		*e*PKIKP	PKPdf	08 37 50.6	-2.8
DPC					*e*		08 38 07.4	
MORC	Moravsky Berou	150.46	337	⇓	*i*P	PKPbc	08 37 59.6	+0.2
MORC	Moravsky Berou	150.46	337	⇓	PKIKP	PKPbc	08 37 59.6	+0.2
MORC	Moravsky Berou	150.46	337		*e*PKPbc	PKPbc	08 37 59.7	+0.2
KRLC	Kraliky	150.47	338	⇑	*e*PKP	PKPbc	08 37 59.9	+0.4
KRLC	Kraliky	150.47	338		*e*PKIKP	PKPbc	08 37 59.9	+0.4
CLL	Collm	150.53	344	⇓	*i*PKPbc	PKPbc	08 37 59.6	+0.1
CLL	comp=Z,51nm,0.8s			⇑	*i*PKPab	PKPab	08 38 08.4	-0.1
CLL	comp=Z,29nm,0.8s			⇓	*i*PKIKP	PKPbc	08 37 59.6	+0.1
CLL					*i*		08 38 08.4	
CLL	comp=Z,51nm,0.8s				pmax	pmax		
CLL	Collm	150.53	344		*e*PKPbc	PKPbc	08 37 59.5	0.0
CLL					*e*PKPab	PKPab	08 38 08.5	0.0
DRGR		150.55	328	⇓	*i*P	PKPbc	08 37 59.5	-0.3
DRGR		150.55	328	⇓	PKIKP	PKPbc	08 37 59.5	-0.3
BRG	Berggiesshubel	150.67	342		*i* PKP	PKPbc	08 37 59.9	+0.1
BRG	comp=Z,32nm,0.7s				*e*pPKP	pPKP	08 40 15.5	
BRG	comp=Z,8.1nm,1.4s				*i* PKIKP	PKPbc	08 37 59.9	+0.1
BRG	Berggiesshubel	150.67	342		pmax	pmax		
PVCC	comp=Z,8.0nm,1.4s Panska Ves	150.79	341	⇑	*e*PKP	PKPbc	08 38 00.4	+0.3
PVCC					*e*PKPAB	PKPab	08 38 09.8	+0.1
PVCC	Panska Ves	150.79	341		*e*PKIKP	PKPbc	08 38 00.4	+0.3
PVCC					*e*		08 38 09.8	
CWF	Charnwood Fore	150.79	2		*e*PKPbc	PKPbc	08 37 59.9	-0.1
LOT	Lotru	150.92	325	⇓	*i*P	PKPbc	08 37 59.2	-1.5
VYHS	Vyhne	151.01	334		*e*PKIKP	PKPbc	08 38 00.8	+0.1
VYHS					*e*		08 38 11.2	
VYHS	Vyhne	151.01	334		*e*PKP	PKPbc	08 38 00.8	+0.1
VYHS					*e*		08 38 11.2	
PSZ	Piszkesteto	151.02	332	⇑	*i*P	PKPbc	08 37 59.9	-0.9
PSZ	Piszkesteto	151.02	332	⇑	PKIKP	PKPbc	08 37 59.9	-0.9
VRAC	Vranov	151.19	337	⇑	*i*P	PKPab	08 38 11.7	+0.3
PRU	Pruhonice	151.28	341	⇑	*e*PKP	PKPbc	08 38 01.4	+0.2
PRU					*e*PKPAB	PKPab	08 38 12.1	+0.4
PRU	Pruhonice	151.28	341		*e*PKIKP	PKPbc	08 38 01.4	+0.2
PRU					*e*		08 38 12.1	
SIRR	Siria	151.43	328	⇑	*i*P	PKPbc	08 38 01.7	0.0
NKC	Novy Kostel	151.65	343		*e*PKPAB	PKPab	08 38 13.4	+0.1
BZS	Buzias	151.91	327	⇓	*i*P	PKPbc	08 38 01.8	-1.0
BZS	Buzias	151.91	327	⇓	PKIKP	PKPbc	08 38 01.8	-1.0
KHC	Kasperske Hory	152.33	341		*e*PKPDF	PKPdf	08 37 56.1	-0.2
KHC				⇑	*e*PKP	PKiKP	08 38 03.8	0.0
KHC					*e*PKPAB	PKPab	08 38 13.7	-2.5
KHC	Kasperske Hory	152.33	341		*e*PKIKP	PKPdf	08 37 56.1	-0.2
KHC					*e*		08 38 13.7	
KHC	Kasperske Hory	152.33	341		*e*PKPdf	PKPdf	08 37 56.4	+0.1
KHC					*e*PKPbc	PKiKP	08 38 03.8	0.0
KHC					*e*PKPab	PKPab	08 38 14.0	-2.2
BEBN	Eben Emael	152.43	352		PKPab	PKPab	08 38 16.4	-0.1
MDVR	Moldovita	152.44	326	⇑	*i*P	PKPbc	08 38 03.8	-0.3
GEC2	GERESS Array S	152.54	340		*e*PKIKP	PKPbc	08 38 04.5	+0.3
GEC2	GERESS Array S	152.54	340		*e*PKPbc	PKPbc	08 38 04.5	+0.3
GERES	GERESS Array B	152.54	340		PKPbc	PKPbc	08 38 04.0	-0.2
GERES	comp=Z,4.2nm,0.8s,baz=11,slow=1.4,SNR=23				PKPab	PKPab	08 38 16.9	-0.4
GEA0	comp=Z,2.0nm,0.7s,baz=41,slow=4.3,SNR=6.8 GERESS Array S	152.55	340		*e*PKPdf	PKPdf	08 37 56.6	-0.1
GEA0					*e*PKPbc	PKPbc	08 38 04.2	0.0
GEA0					*e*PKPab	PKPab	08 38 17.4	+0.1
MEM	Membach	152.57	352		PKPbc	PKPbc	08 38 04.2	+0.1
MEM					PKPab	PKPab	08 38 16.8	-0.3
CONA	Conrad Observa	152.61	337		*i* PKPbc	PKPbc	08 38 04.1	-0.3
BCLA	comp=Z,8.1nm,0.9s Clavier	152.84	353		PKPab	PKPab	08 38 17.9	-0.3
SNF	Seneffe	152.86	354		PKPab	PKPab	08 38 18.6	+0.3
DOU	Dourbes	153.24	354		PKPab	PKPab	08 38 19.7	-0.3
MOA	Molln	153.24	339		*i* PKPab	PKPab	08 38 20.6	+0.5
ARSA	comp=Z,16nm,1.6s Arzberg	153.31	336		*i* PKPab	PKPab	08 38 17.9	-2.6
WLF	comp=Z,5.5nm,0.7s Walferdange	153.47	351		PKPbc	PKPbc	08 38 08.4	+2.4
WLF					PKPab	PKPab	08 38 21.8	+0.7
SOKA	Soboth	153.97	336		*i* PKPab	PKPab	08 38 23.1	-0.3
PERS	comp=Z,10nm,1.1s Pernice	153.98	336		*i* PKPbc	PKPab	08 38 23.4	0.0
KBA	Koelnbreinsper	154.22	339		PKPbc	PKPbc	08 38 07.8	-0.1
OBKA	comp=Z,3.1nm,0.6s Obir	154.29	337		*i* PKPab	PKPab	08 38 24.7	-0.1
BFO	comp=Z,8.2nm,0.8s Black Forest	154.40	347		*e*PKIKP	PKPbc	08 38 07.3	-0.8
BFO					*e*		08 38 24.6	
BFO	Black Forest	154.40	347		*e*PKPbc	PKPbc	08 38 07.3	-0.8
BFO					*e*PKPab	PKPab	08 38 24.6	-0.5
MYKA	Terra Mystica	154.51	338		*i* PKPab	PKPab	08 38 25.2	-0.5
WATA	comp=Z,6.1nm,0.7s Walderalm	154.53	342		*i* PKPab	PKPab	08 38 26.0	+0.1
RETA	comp=Z,1.9nm,0.5s Reutte	154.62	343		*i* PKPab	PKPab	08 38 26.4	+0.3
MOTA	comp=Z,25nm,1.1s Moosalm	154.66	342		*i* PKPab	PKPab	08 38 26.5	+0.1
ABTA	comp=Z,13nm,0.9s Abfaltersbach	154.78	340		*i* PKPab	PKPab	08 38 26.0	-0.8
VISS	comp=Z,11nm,1.3s Visnje	154.78	335		*i* PKPbc	PKPab	08 38 26.4	-0.4
BOJS	Bojanci	154.87	334		*i* PKPbc	PKPab	08 38 27.2	0.0
JAVS	Javornik	154.99	337		*e*PKPbc	PKPab	08 38 27.2	-0.6
DAVA	Damuels	155.03	344		*i* PKPab	PKPab	08 38 27.8	-0.2
FETA	comp=Z,20nm,0.8s Feichten	155.06	343		*i* PKPab	PKPab	08 38 28.1	0.0
FUORN	comp=Z,8.3nm,1.1s Ofenpass-Fuorn	155.55	343		*e*PKPab	PKPab	08 38 31.1	+0.8
SENIN	Lac Senin/Sane	156.48	348		*e*PKPab	PKPab	08 38 33.7	-0.7
PBRG	Braganca	160.86	16		*e*PKPab	PKPab	08 38 53.9	+0.6
MVO	Moncorvo	161.38	17		*e*PKPab	PKPab	08 38 55.9	+0.2
PVIS	Viseu	161.54	20		*e*PKPab	PKPab	08 38 56.0	-0.4
PTOM	Tomar	162.36	22		*e*PKPab	PKPab	08 38 59.9	0.0
PCBR	Castelo Branco	162.47	20		*e*PKPdf	PKPdf	08 38 09.9	+0.9
PCBR	Castelo Branco	162.47	20		*e*PKPab	PKPab	08 39 00.2	-0.2
DBIC	Dimbokro	162.57	163		PKPab	PKPab	08 39 01.2	-0.2
PESTR	comp=Z,3.7nm,0.8s,baz=210,slow=9.6,SNR=4.2 Estremoz	163.32	22		*e*PKPab	PKPab	08 39 02.0	-2.2
ES19	SONSECA Array	163.49	11		*e*PKPab	PKPab	08 39 04.9	0.0
ESDC	Sonseca Array	163.50	11		PKPab	PKPab	08 39 03.9	-1.1
ESLA	comp=Z,2.7nm,0.7s,baz=344,slow=4.7,SNR=19 Sonseca Array	163.50	11		*e*PKPab	PKPab	08 39 05.0	0.0
PBEJ	Beja	163.97	24		*e*PKPab	PKPab	08 39 07.4	+0.3
PTEO	Sao Teotonio	164.06	27		*e*PKPdf	PKPdf	08 38 11.7	+1.2
PBAR	Barrancos	164.13	21		*e*PKPdf	PKPdf	08 38 11.1	+0.5
PBAR	Barrancos	164.13	21		*e*PKPab	PKPab	08 39 07.6	-0.1
PCVE	Castro Verde	164.25	25		*e*PKPdf	PKPdf	08 38 11.8	+1.1
PVAQ	Vaqueiros	164.58	24		*e*PKPab	PKPab	08 39 10.1	+0.3
KEST	Kesra	165.45	329		PKPab	PKPab	08 39 14.3	+0.4
TAM	comp=Z,7.0nm,0.9s,baz=302,slow=4.8,SNR=5.0 Tamanrasset	175.03	263		*e*PKP2	PKPab	08 39 57.9	+0.9
TAM	Tamanrasset	175.03	263		*e*PKPab	PKPab	08 39 57.9	+0.9

IDC **29** *08:23:51.1±5.5, 23°.67S×179°.98W, h498km±61km, mb3.4/4, mb1 3.6/5, mb1mx3.2/43, mbtmp4.3/5, Error ellipse: s-maj=37.0km s-min=30.3km az=77.0*
ISCJB **29** *08:23:53.0±1.0, 23°.7S±0°.1×179°.9E±0°.3, h532km, mb3.7/4, Error ellipse: s-maj=31.6km s-min=14.7km az=8.8*
ISC 29 08:23:53.6±1.0, 23°.8S±0°.1×180°.0E±0°.2, h532km, n6, σ1°59/7, mb3.5/4, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	Urewera	14.58	189	P		P		08 26 58.1	-0.7
	5.9nm,0.3s,baz=15,slow=6.2,SNR=9.2								
URZ				S		S		08 29 30.9	-0.7
	1.0nm,0.3s,baz=227,slow=19,SNR=6.3								
CTA	Charters Tower	31.43	270	P		P		08 29 31.9	+0.3
	5.3nm,0.3s,baz=96,slow=11,SNR=8.9								
MAW	Mawson	77.80	200	P		P		08 34 57.0	+1.6
	1.4nm,0.6s,baz=94,slow=10,SNR=3.9								
TXAR	Lajitas Array	90.44	58	P		P		08 36 00.2	+1.5
	0.3nm,0.7s,baz=207,slow=7.9,SNR=3.9								
ILAR	Eielson Array	91.98	14	P		P		08 36 02.8	-2.1
	0.2nm,0.5s,baz=216,slow=4.7,SNR=4.4								
AKASG	Malin Array Be	144.89	327	PKP		PKPdf		08 42 29.5	-0.3
	0.9nm,0.4s,baz=40,slow=4.2,SNR=4.4								

IDC **29** *08:28:50.8±3.0, 23°.55S×179°.98E, h489km±32km, mb3.2/5, mb1 3.5/6, mb1mx3.1/43, mbtmp4.2/6, Error ellipse: s-maj=34.3km s-min=26.4km az=164.0*
ISCJB **29** *08:28:53.3±1.1, 23°.65S±0°.1×179°.9E±0°.2, h535km, mb3.6/5, Error ellipse: s-maj=23.9km s-min=12.5km az=172.6*
ISC 29 08:28:54.3±1.2, 23°.8S±0°.1×180°.0E±0°.2, h535km, n10, σ1°80/12, mb3.5/5, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PUZ	Puketiti	14.27	185	*e*PN		P		08 31 56.1	-0.2
URZ	Urewera	14.58	189	P		P		08 31 57.8	-1.7
	2.0nm,0.3s,baz=287,slow=3.3,SNR=13								
URZ				S		S		08 34 32.1	-0.2
	0.4nm,0.3s,baz=65,slow=22,SNR=6.1								
URZ	Urewera	14.58	189	*e*PN		P		08 31 58.4	-1.1
URZ				*e*SN				08 33 05.9	
QRZ	Quartz Range	18.05	198	*e*PN		P		08 32 34.8	+1.6
THZ	Tophouse	18.82	197	*e*PN		P		08 32 40.9	+0.6
CTA	Charters Tower	31.44	270	P		P		08 34 32.5	+0.3
	3.5nm,0.3s,baz=92,slow=9.7,SNR=5.5								
ASAR	Alice Springs	42.01	261	P		P		08 35 59.5	+0.4
	0.5nm,0.4s,baz=94,slow=7.5,SNR=4.6								
ASAR				ScP		ScP		08 40 45.4	+4.0
	1.2nm,0.9s,baz=113,slow=4.5,SNR=7.4								
WRA	Warramunga Arr	42.37	266	P		P		08 36 01.6	-0.4
	0.4nm,0.3s,baz=91,slow=8.3,SNR=23								
MJAR	Matsushiro Arr	71.82	326	P		P		08 39 20.7	-2.3
	1.2nm,0.8s,baz=148,slow=7.2,SNR=4.2								
TXAR	Lajitas Array	90.43	58	P		P		08 41 00.1	+0.9
	0.9nm,0.9s,baz=206,slow=8.8,SNR=6.3								

ISCJB **29** *08:31:26.6±0.3, 45°.98N±0°.06×142°.48E±0°.07, h345km±4km, mb3.6/15, Error ellipse: s-maj=9.4km s-min=7.2km az=178.6*
JMA **29** *08:31:26.7±0.3, 46°.01N×142°.55E, h345km±3km, M4.1*
SKHL **29** *08:31:26.6±7.8, 42°.21N×141°.69E, h35km*
IDC **29** *08:31:28.5±1.6, 46°.10N×142°.24E, h346km±18km, mb3.4/15, mb1 3.6/21, mb1mx3.4/56, mbtmp4.1/21, Error ellipse: s-maj=15.5km s-min=10.8km az=129.0*
ISC 29 08:31:27.2±0.6, 45°.89N±0°.07×142°.47E±0°.06, h340km±7km, n46, σ1°62/58, mb3.7/15, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JWK2	Keihoku	0.70	215	P		Pn		08 32 11.5	+0.6
JWK2				*e*S		S		08 32 45.7	-0.1
JSE	Soyaes	0.93	175	P		Pn		08 32 12.0	+0.3
JSE				*e*S		S		08 32 47.6	+0.3
JRR	Rishiri	1.11	228	P		Pn		08 32 13.0	+0.6
JSS	Shosan	1.55	197	P		Pn		08 32 15.8	+1.1
JYG	Yagishiri	1.64	207	P		Pn		08 32 16.1	+0.9
ASAJ	Asahikawa	1.77	177	P		Pn		08 32 17.2	+1.1
ASAJ				*e*S		S		08 32 57.0	+1.7
JMP	Maruseppu	1.98	161	P		Pn		08 32 18.6	+1.0
JMP				*e*S		S		08 32 59.1	+1.1
JKK2	Kamakawa 2	2.03	174	P		Pn		08 32 19.1	+1.2
JTKR	Abashiri--Toko	2.17	151	P		Pn		08 32 20.2	+1.3
JTKR				*e*S		S		08 33 02.5	+2.2
JHR	Hokuryu	2.21	194	P		Pn		08 32 20.4	+1.2
JAR	Ashorobuto	2.75	160	P		Pn		08 32 25.1	+1.4
JAR				*e*S		S		08 33 10.4	+1.4
JSK	Shakotan	2.91	210	P		Pn		08 32 26.4	+1.4
YUK	Yuzh-Kuril'sk	3.04	126	*e*P		Pn		08 32 15.2	-11
YUK				AMB		AMB		08 32 15.9	
	156nm,0.1s								
YUK				*e*S		S		08 33 07.0	-6.5
YUK				A		A		08 33 07.2	
	56nm,0.3s								
YUK				A		A		08 33 07.2	
	130nm,0.3s								
JEW	Eniwo	3.13	194	P		Pn		08 32 28.8	+1.7
JAK	Akkeshi	3.30	150	P		Pn		08 32 29.0	+0.3
JAK				*e*S		S		08 33 16.7	-1.4
JCH	Churui	3.34	169	P		Pn		08 32 28.7	-0.3
JCH				*e*S		S		08 33 15.5	-3.2
NEM2	Nemuro 2	3.44	136	P		Pn		08 32 29.8	-0.2
NEM2				*e*S		S		08 33 17.7	-2.8
JNBK	Urakawa-nobuka	3.61	177	P		Pn		08 32 32.7	+1.0
JNBK				*e*S		S		08 33 20.6	-3.1
SHO	Shikotan	3.70	122	*e*P		Pn		08 32 33.0	+0.5
SHO				*e*S		S		08 33 22.8	-2.3
SHO				A		A		08 33 26.0	
	270nm,0.5s								
SHO				A		A		08 33 26.0	
	310nm,0.5s								
KUR	Kuril'sk	3.85	98	*e*P		Pn		08 32 35.8	+1.8
KUR				*e*S		S		08 33 45.8	+18
JKB	Kayabe	4.13	195	P		Pn		08 32 37.2	+0.2
JOSM	Okushiri--Mats	4.38	211	P		Pn		08 32 40.2	+0.6
JOT	Ohata	4.62	193	P		Pn		08 32 42.2	-0.1
USRK	Ussuriysk Ar.	7.61	261	P		Pn		08 33 17.2	+0.7
	1.8nm,0.3s,baz=69,slow=12,SNR=32								
USRK				S		S		08 34 44.0	-1.6
	baz=56,slow=19,SNR=3.0								
KLR	Kul'dur	7.98	299	P		Pn		08 33 20.7	-0.1
	1.3nm,0.3s,baz=117,slow=11,SNR=22								
MAT	Matsushiro	9.87	200	P		Pn		08 33 44.8	+1.1
MJAR	Matsushiro Arr	9.87	200	P		Pn		08 33 44.9	+1.2
	2.6nm,0.3s,baz=11,slow=12,SNR=29								
KSRS	Korea Array	13.74	237	P		Pn		08 34 30.5	+0.9
	0.2nm,0.3s,baz=39,slow=11,SNR=2.4								
MA2	Magadan	14.58	17	P		P		08 34 37.5	+0.1
	0.5nm,0.3s,baz=199,slow=12,SNR=4.6								
SEY	Seymchan	17.99	15	P		P		08 35 13.8	-0.3
	1.4nm,0.3s,baz=209,slow=7.8,SNR=29								
SONM	Songino Array	24.61	288	P		P		08 36 17.4	-0.2
	1.4nm,0.3s,baz=78,slow=9.1,SNR=12								
MKAR	Makanchi Array	40.66	294	P		P		08 38 33.6	-1.6
	0.8nm,0.5s,baz=75,slow=9.6,SNR=6.2								
ILAR	Eielson Array	41.77	37	P		P		08 38 43.4	-0.4
	1.5nm,0.6s,baz=278,slow=8.6,SNR=34								
BVAR	Borovoye Array	45.56	306	P		P		08 39 11.5	-2.3
	0.6nm,0.4s,baz=99,slow=8.2,SNR=3.2								
INK	Inuvik	46.26	31	P		P		08 39 18.6	-0.4
	3.9nm,0.4s,baz=302,slow=9.1,SNR=22								
YKA	Yellowknife Ar	55.85	33	P		P		08 40 29.9	+0.1
	1.3nm,0.5s,baz=301,slow=6.3,SNR=27								
FINES	FINESS Array B	61.42	331	P		P		08 41 06.7	-1.1
	1.5nm,0.6s,baz=48,slow=6.7,SNR=3.5								
NEW	Newport	63.38	47	P		P		08 41 20.6	-0.3
	1.3nm,0.7s,baz=292,slow=3.4,SNR=4.8								
WRA	Warramunga Arr	65.93	188	P		P		08 41 39.1	+1.6
	0.8nm,1.0s,baz=4.8,slow=6.8,SNR=5.6								
NB2	NORSAR Subarra	66.36	336	P		P		08 41 38.9	-0.9
	comp=Z,0.8nm,0.5s,baz=39,slow=6.5								
NOA	NORSAR Array B	66.36	336	P		P		08 41 38.5	-1.2
	comp=Z,0.8nm,0.6s,baz=42,slow=6.1,SNR=5.1								
ASAR	Alice Springs	69.66	188	P		P		08 42 02.9	+2.4
	comp=Z,0.5nm,0.5s,baz=360,slow=5.1,SNR=10								
PDAR	Pinedale Array	71.01	48	P		P		08 42 10.0	+1.2
	comp=Z,1.1nm,0.6s,baz=300,slow=1.4,SNR=11								
ULM	Lac du Bonnet	71.74	35	P		P		08 42 12.8	+0.1
	comp=Z,8.4nm,0.7s,baz=321,slow=6.6,SNR=16								
SCHQ	Schefferville	76.62	17	P		P		08 42 40.9	+0.3
	comp=Z,1.8nm,0.5s,baz=358,slow=7.3,SNR=5.5								
TXAR	Lajitas Array	84.14	53	P		P		08 43 22.7	+1.8
	comp=Z,0.4nm,0.5s,baz=298,slow=3.9,SNR=7.3								

IDC **29** *08:44:07.9±1.1, 37°.47N×144°.55E, h0km, mb3.5/5, mb1 3.7/7, mb1mx3.5/54, mbtmp3.6/7, ML3.2/2, Error ellipse: s-maj=27.5km s-min=22.3km az=94.0*
ISCJB **29** *08:44:10.9±0.8, 37°.66N±0°.05×144°.41E±0°.06, h33km, mb3.6/5, Error ellipse: s-maj=7.8km s-min=6.0km az=43.4*
JMA **29** *08:44:12.0±0.1, 37°.79N×144°.22E, h12km, M3.8*
ISC 29 08:44:12.9±1.2, 37°.62N±0°.05×144°.38E±0°.09, h35km, n20, σ1°94/31, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.54	290	*e*S		Sn		08 45 20.8	-0.4
OFUJ	Ofunato	2.59	305	P		Pn		08 44 51.9	-0.3
OFUJ				*e*S		Sn		08 45 21.4	-1.0
MIYJ	Miyakonagasawa	2.80	315	P		Pn		08 44 54.6	-0.6
MIYJ				*e*S		Sn		08 45 26.1	-1.7
JMK	Ichinoseki	2.82	299	P		Pn		08 44 55.6	+0.1
JMK				*e*S		Sn		08 45 27.8	-0.4
JOU	Okura	3.03	285	*e*S		Sn		08 45 33.5	0.0
JOM	Ohasama	3.05	308	P		Pn		08 44 59.2	+0.6
JOM				*e*S		Sn		08 45 33.5	-0.4
JFT	Otama	3.22	269	P		Pn		08 45 01.9	+1.0
JFT				*e*S		Sn		08 45 38.4	+0.4
JYK	Kaneyama	3.42	294	P		Pn		08 45 04.5	+0.8
JYK				*e*S		Sn		08 45 43.5	+0.4
JRG	Rokugo	3.44	302	P		Pn		08 45 05.2	+1.3
JRG				*e*S		Sn		08 45 43.5	+0.1
JANG	Nango	3.55	322	*e*S		Sn		08 45 44.1	-2.0
JTM	Tenmabayashi	4.08	322	*e*S		Sn		08 45 57.1	-2.1
JRY	Ryogami san	4.68	252	P		Pn		08 45 21.0	0.0
JRY				*e*S		Sn		08 46 11.7	-2.4
JCH	Churui	5.05	351	P		Pn		08 45 24.6	-1.5
JCH				*e*S		Sn		08 46 18.8	-4.4
MJAR	Matsushiro Arr	5.05	260	Pn		Pn		08 45 27.3	+1.2
MJAR	0.7nm,0.3s,baz=89,slow=15,SNR=5.7			Sn		Sn		08 46 25.1	+1.8
JHJ	0.8nm,0.3s,baz=100,slow=22,SNR=4.2 Hachijo jima 2	5.85	221	Pn		Pn		08 45 35.4	-1.7
JHJ	2.9nm,0.3s,baz=48,slow=19,SNR=2.3			Sn		Sn		08 46 36.1	-6.8
MKAR	3.5nm,0.3s,baz=77,slow=16,SNR=2.5 Makanchi Array	45.81	302	P		P		08 52 33.4	+2.2
KURBB	0.2nm,0.6s,baz=96,slow=8.9,SNR=2.4 Kurchatov Arra	47.51	308	P		P		08 52 45.4	+1.0
ILAR	0.3nm,0.6s,baz=82,slow=8.1,SNR=3.8 Eielson Array	47.73	33	P		P		08 52 46.2	+0.4
	0.4nm,0.9s,baz=262,slow=6.2,SNR=5.2								
WRA	Warramunga Arr	58.03	191	P		P		08 54 01.6	-0.7
	1.5nm,0.5s,baz

comp=Z,1.1nm,0.3s,baz=355,slow=12,SNR=11
ARCES Sn **Sn** **08 51 00.9 -4.3**
comp=Z,3.1nm,0.3s,baz=355,slow=20,SNR=7.7
ARE0 ARCESS Array S 7.83 163 *e*P **Pn** **08 49 38.0 +0.4**
ARE0 *e*S **Sn** **08 51 00.3 -4.9**
ARE0 IAML 08 51 17.1
comp=Z,11nm,0.4s
ARE0 ARCESS Array S 7.83 163 *e*P **Pn** **08 49 38.0 +0.4**
SNR=51
APA0 Apatity Array 10.40 149 Pn **Pn** **08 50 12.3 -0.4**
baz=349,slow=28
APA0 Apatity Array 10.40 149 Pn **Pn** **08 50 12.3 -0.4**
baz=349,slow=28
APA0 Apatity Array 10.40 149 Pn **Pn** **08 50 12.3 -0.4**
SNR=3.2
FIA0 FINESS Array S 15.91 167 Pn **Pn** **08 51 25.1 -2.2**
FIA0 FINESS Array S 15.91 167 Pn **Pn** **08 51 25.1 -2.2**
FINES FINESS Array B 15.91 167 Pn **Pn** **08 51 24.1 -3.2**
comp=Z,0.1nm,0.3s,baz=7,6,slow=12,SNR=2.1
HFS Hagfors 17.14 189 P **P** **08 51 45.5 +1.1**
baz=37,slow=10
HFS Hagfors 17.14 189 P **P** **08 51 43.3 -1.1**
comp=Z,0.2nm,0.3s,baz=17,slow=10,SNR=7.0
HFS Hagfors 17.14 189 P **P** **08 51 45.5 +1.1**
baz=37,slow=10
HFS Hagfors 17.14 189 P **P** **08 51 45.5 +1.1**
SNR=4.0
KURBB Kurchatov Array 34.55 104 P **P** **08 54 34.3 +2.9**
comp=Z,0.4nm,0.6s,baz=340,slow=7.9,SNR=3.4
ILAR Eielson Array 38.09 350 P **P** **08 55 04.2 +2.9**
comp=Z,0.8nm,0.6s,baz=358,slow=6.9,SNR=13
MKAR Makanchi Array 38.99 103 P **P** **08 55 12.2 +3.0**
comp=Z,0.3nm,0.4s,baz=341,slow=7.9,SNR=4.0

ISCJB ***29*** *09:01:10.4±0.7, 64°.80N±0°.03×30°.7E±0°.1, h0km, Error ellipse: s-maj=8.0km s-min=4.1km az=1.2*
UPP ***29*** *09:01:11.5±3.5, 64°.70N×30°.80E, h0km, ML1.6, Suspected explosion*
CSEM ***29*** *09:01:11.5±0.4, 64°.82N×30°.73E, h1km, ML2.1, Error ellipse: s-maj=10.1km s-min=5.7km az=88.0, Mining explosion.*
HEL ***29*** *09:01:11.7±0.1, 64°.79N×30°.78E, h0km, ML2.1, Explosion*
IDC ***29*** *09:01:13.5±1.8, 64°.82N×29°.66E, h0km, mb1 3.1/3, mb1mx2.9/45, mbtmp3.0/3, ML2.5/3, Error ellipse: s-maj=26.9km s-min=7.6km az=98.0*
NAO ***29*** *09:01:14.1±1.3, 64°.83N×30°.34E, ML2.7*
BER ***29*** *09:01:15.0±3.7, 64°.83N×30°.33E, h0km, ML2.7(NAO), Suspected explosion*

ISC 29 09:01:11.3±1.0, 64°.81N±0°.03×30°.62E±0°.06, h0km, n46, σ1$65/63, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
KU6	**Riekki**	**1.26**	**346**	*e*PB	**Pg**		**09 01 35.1**	**-0.2**
KU6	**Riekki**	**1.26**	**346**	Pb	**Pg**		**09 01 35.1**	**-0.2**
MSF	**Maaselka**	**1.29**	**330**	*e*P	**Pg**		**09 01 35.7**	**-0.2**
MSF				*e*S	**Sg**		**09 01 52.9**	**+0.3**
MSF	**Maaselka**	**1.29**	**330**	P	**Pg**		**09 01 35.7**	**-0.2**
MSF				S	**Sg**		**09 01 52.9**	**+0.3**
JOF	**Joensuu**	**1.93**	**170**	*e*P	**Pn**		**09 01 44.8**	**-0.5**
JOF				*e*S	**Sn**		**09 02 09.7**	**-0.4**
JOF	**Joensuu**	**1.93**	**170**	P	**Pn**		**09 01 44.7**	**-0.5**
JOF				S	**Sn**		**09 02 09.7**	**-0.4**
OUL	**Oulu**	**2.03**	**280**	*e*P	**Pn**		**09 01 47.8**	**+1.2**
OUL				*e*S	**Sn**		**09 02 14.0**	**+1.3**
OUL	**Oulu**	**2.03**	**280**	P	**Pn**		**09 01 47.8**	**+1.2**
OUL				S	**Sn**		**09 02 13.9**	**+1.3**
OUFX	**Oulainen**	**2.59**	**263**	*e*P	**Pn**		**09 01 56.2**	**+1.8**
OUFX	**Oulainen**	**2.59**	**263**	P	**Pn**		**09 01 56.1**	**+1.8**
RNF	**Rovaniemi**	**2.62**	**316**	*e*PB	**Pb**		**09 01 58.1**	**-1.0**
RNF	**Rovaniemi**	**2.62**	**316**	Pb	**Pb**		**09 01 58.0**	**-1.0**
SUF	**Sumiainen**	**2.89**	**225**	*e*SB	**Sb**		**09 02 39.3**	**-0.1**
SUF				MSG			09 02 41.5	
	comp=Z,4.7nm,0.1s							
APA0	**Apatity Array**	**2.97**	**18**	Pn	**Pn**		**09 02 00.7**	**+1.1**
	baz=188,slow=16							
APA0				Lg	Lg		09 02 50.4	
	baz=207,slow=28							
APA0	**Apatity Array**	**2.97**	**18**	Pn	**Pn**		**09 02 00.7**	**+1.1**
	baz=188,slow=16							
APA0				Lg	Lg		09 02 50.4	
	baz=207,slow=28							
APA0	**Apatity Array**	**2.97**	**18**	Pn	**Pn**		**09 02 00.7**	**+1.1**
	SNR=50							
APA0				Lg	Lg		09 02 50.4	
	SNR=2.1							
KAF	**Kangasniemi**	**3.33**	**217**	*e*SB	**Sb**		**09 02 51.7**	**-0.3**
KAF				MSG			09 02 53.8	
	comp=Z,6.3nm,0.2s							
SJUU	**Sjulsmark**	**3.87**	**284**	P	**Pn**		**09 02 12.6**	**+0.8**
SJUU	**Sjulsmark**	**3.87**	**284**	P	**Pn**		**09 02 12.6**	**+0.8**
ERTU	**Ertsjaerv**	**3.90**	**300**	P	**Pn**		**09 02 14.0**	**+1.6**
ERTU	**Ertsjaerv**	**3.90**	**300**	P	**Pn**		**09 02 14.0**	**+1.6**
FIA0	**FINESS Array S**	**3.96**	**213**	Pn	**Pn**		**09 02 14.3**	**+1.2**
	baz=26,slow=11							
FIA0				Pg	**Pb**		**09 02 23.5**	**+1.7**
	baz=21,slow=16							
FIA0				Sn	**Sn**		**09 03 00.7**	**+0.5**
	baz=32,slow=28							
FIA0				Lg	Lg		09 03 13.5	
	baz=26,slow=28							
FIA0	**FINESS Array S**	**3.96**	**213**	Pn	**Pn**		**09 02 14.3**	**+1.2**
	baz=26,slow=11							
FIA0				Pg	**Pb**		**09 02 23.5**	**+1.7**
	baz=21,slow=16							
FIA0				Sn	**Sn**		**09 03 00.7**	**+0.5**
	baz=32,slow=28							
FIA0				Lg	Lg		09 03 13.5	
	baz=26,slow=28							
FIA0	**FINESS Array S**	**3.96**	**213**	Pn	**Pn**		**09 02 14.3**	**+1.2**
	SNR=50							
FIA0				Sn	**Sn**		**09 03 00.7**	**+0.5**
	SNR=2.9							
FIA0				Lg	Lg		09 03 13.5	
	SNR=1.9							
FINES	**FINESS Array B**	**3.96**	**213**	Pn	**Pn**		**09 02 14.3**	**+1.2**
	comp=Z,0.2nm,0.3s,baz=33,slow=14,SNR=11							
FINES				Sn	**Sn**		**09 02 57.4**	**-2.8**
	comp=Z,0.9nm,0.3s,baz=22,slow=15,SNR=8.1							
FINES				Lg	Lg		09 03 09.5	
	comp=Z,0.6nm,0.3s,baz=34,slow=25,SNR=3.7							
HARU	**Harads**	**4.24**	**293**	P	**Pn**		**09 02 18.5**	**+1.5**
HARU	**Harads**	**4.24**	**293**	P	**Pn**		**09 02 18.5**	**+1.5**
LANU	**Lannavaara**	**4.75**	**317**	P	**Pn**		**09 02 24.4**	**+0.4**
LANU	**Lannavaara**	**4.75**	**317**	P	**Pn**		**09 02 24.4**	**+0.4**
SVAU	**Svanoeiden**	**4.76**	**271**	P	**Pn**		**09 02 25.0**	**+0.9**
SVAU	**Svanoeiden**	**4.76**	**271**	P	**Pn**		**09 02 25.0**	**+0.9**
ARA0	**ARCESS Array S**	**5.14**	**340**	Pn	**Pn**		**09 02 30.0**	**+0.6**
	baz=155,slow=14							
ARA0				Sn	**Sn**		**09 03 27.1**	**-2.3**
	baz=140,slow=22							
ARA0				Lg	Lg		09 03 48.8	
	baz=155,slow=37							
ARA0	**ARCESS Array S**	**5.14**	**340**	Pn	**Pn**		**09 02 30.0**	**+0.6**
	baz=155,slow=14							
ARA0				Sn	**Sn**		**09 03 27.1**	**-2.3**
	baz=140,slow=22							
ARA0				Lg	Lg		09 03 48.8	
	baz=155,slow=37							
ARA0	**ARCESS Array S**	**5.14**	**340**	Pn	**Pn**		**09 02 30.0**	**+0.6**
	SNR=50							
ARA0				Sn	**Sn**		**09 03 27.1**	**-2.3**
	SNR=50							
ARA0				Lg	Lg		09 03 48.8	
	SNR=51							
ARCES	**ARCESS Array B**	**5.14**	**340**	Pn	**Pn**		**09 02 27.5**	**-1.9**
	comp=Z,1.3nm,0.3s,baz=154,slow=13,SNR=44							
ARCES				Sn	**Sn**		**09 03 25.9**	**-3.5**
	comp=Z,0.7nm,0.3s,baz=156,slow=25,SNR=5.1							
ARCES				Lg	Lg		09 03 48.7	
	comp=Z,2.5nm,0.3s,baz=154,slow=28,SNR=15							
KUA	**Kurravaara**	**5.20**	**312**	P	**Pn**		**09 02 31.6**	**+1.5**
KUA	**Kurravaara**	**5.20**	**312**	P	**Pn**		**09 02 31.6**	**+1.5**
NIKU	**Nikkaluokta**	**5.58**	**309**	P	**Pn**		**09 02 37.1**	**+1.7**
NIKU	**Nikkaluokta**	**5.58**	**309**	P	**Pn**		**09 02 37.1**	**+1.7**
HFS	**Hagfors**	**9.12**	**247**	Pn	**Pn**		**09 03 23.7**	**-0.2**
	baz=46,slow=14							
HFS				Sn	**Sn**		**09 05 01.5**	**-5.5**
	baz=55,slow=28							
HFS				Lg	Lg		09 05 54.6	
	baz=58,slow=28							
HFS	**Hagfors**	**9.12**	**247**	Pn	**Pn**		**09 03 23.7**	**-0.2**
	SNR=50							
NB2	**NORSAR Subarra**	**9.60**	**256**	Pn	**Pn**		**09 03 31.9**	**+1.3**
	baz=61,slow=16							
NB2	**NORSAR Subarra**	**9.60**	**256**	Pn	**Pn**		**09 03 31.9**	**+1.3**
	baz=61,slow=16							
NB2	**NORSAR Subarra**	**9.60**	**256**	Pn	**Pn**		**09 03 31.9**	**+1.3**
	SNR=50							
NOA	**NORSAR Array B**	**9.60**	**256**	Pn	Pn		09 03 24.4	-6.2
	comp=Z,0.0nm,0.3s,baz=54,slow=10,SNR=2.2							
NOA				Lg	Lg		09 06 03.0	
	comp=Z,0.3nm,0.3s,baz=308,slow=23,SNR=3.5							

IDC 29 09:01:51.5±1.3, 13°.09N×145°.90E, h0km, mb3.4/3, mb1 3.7/3, mb1mx3.4/46, mbtmp3.4/3, Error ellipse: s-maj=27.8km s-min=21.1km az=55.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
GUMO	**Guam**	**1.12**	**296**	Pn	Pn		09 02 14.9	+0.6
	45nm,0.3s,baz=151,slow=15,SNR=18							
GUMO				Sn	Sn		09 02 30.2	-0.3
	108nm,0.3s,baz=41,slow=20,SNR=20							
WRA	**Warramunga Arr**	**34.74**	**199**	P	P		09 08 43.4	-0.2
	0.6nm,0.9s,baz=23,slow=9.5,SNR=6.6							
ASAR	**Alice Springs**	**38.37**	**198**	P	P		09 09 14.6	0.0
	0.4nm,0.8s,baz=16,slow=9.8,SNR=2.8							
ILAR	**Eielson Array**	**68.59**	**25**	P	P		09 12 55.9	-0.1
	0.2nm,0.5s,baz=270,slow=5.4,SNR=3.6							

ISCJB ***29*** *09:02:38.4±1.2, 31°.81S±0°.07×178°.2W±0°.3, h61km, mb3.9/2, Error ellipse: s-maj=34.8km s-min=5.2km az=15.6*
IDC ***29*** *09:02:43.0±2.5, 31°.53S×178°.62W, h59km±24km, mb3.8/2, mb1 4.1/4, mb1mx3.6/35, mbtmp4.1/4, ML3.9/2, MS4.2/1, Ms1 4.2/1, ms1mx3.7/25, Error ellipse: s-maj=40.6km s-min=17.4km az=114.0*

ISC 29 09:02:40.9±1.4, 31°.7S±0°.1×178°.3W±0°.3, h61km, n16, σ1$40/21, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
RAO	**Raoul Island**	**2.49**	**9**	P	**Pn**		**09 03 19.3**	**+0.2**
	26nm,0.3s,baz=108,slow=20,SNR=2.3							
RAO				S	**Sn**		**09 03 47.7**	**-0.7**
	130nm,0.3s,baz=95,slow=23,SNR=5.2							
MXZ	**Matakaoa Point**	**6.44**	**204**	*e*PN	**Pn**		**09 04 11.6**	**-1.5**
WMGZ	**Waiomatatini S**	**6.64**	**203**	*e*PN	**Pn**		**09 04 16.1**	**+0.3**
HAZ	**Te Kaha**	**6.81**	**207**	*e*PN	**Pn**		**09 04 18.2**	**+0.1**
HAZ				*e*SN	**Sn**		**09 05 36.5**	**+2.3**
PUZ	**Puketiti**	**6.92**	**203**	*e*PN	**Pn**		**09 04 18.5**	**-1.2**
PUZ				*e*SN	**Sn**		**09 05 35.6**	**-1.4**
CNGZ	**Carnagh Statio**	**7.31**	**202**	*e*PN	**Pn**		**09 04 24.0**	**-1.0**
MWZ	**Matawai**	**7.41**	**206**	*e*PN	**Pn**		**09 04 25.0**	**-1.5**
MWZ				*e*SN	**Sn**		**09 05 48.7**	**-0.4**
URZ	**Urewera**	**7.51**	**209**	P	**Pn**		**09 04 30.4**	**+2.7**
	2.2nm,0.3s,baz=269,slow=4.7,SNR=13							
URZ				S	**Sn**		**09 05 50.1**	**-1.3**
	1.2nm,0.3s,baz=195,slow=20,SNR=8.0							
URZ	**Urewera**	**7.51**	**209**	*e*PN	**Pn**		**09 04 27.4**	**-0.3**
URZ				*e*SN	**Sn**		**09 05 49.8**	**-1.6**
MUGZ	**Murupara**	**7.83**	**209**	SN	**Sn**		**09 05 59.1**	**-0.3**
SNGZ	**Shannon Statio**	**7.88**	**205**	*e*PN	**Pn**		**09 04 32.2**	**-0.5**
AFI	**Afiamalu**	**18.73**	**20**	LR	LR		09 14 06.1	
	comp=Z,709nm,19.3s,baz=64,slow=37							
ASAR	**Alice Springs**	**42.76**	**269**	P	**P**		**09 10 32.9**	**+0.3**
	0.8nm,0.4s,baz=106,slow=7.2,SNR=24							
WRA	**Warramunga Arr**	**43.87**	**274**	P	**P**		**09 10 41.6**	**0.0**
	1.6nm,0.4s,baz=114,slow=7.6,SNR=14							
FINES	**FINESS Array B**	**146.28**	**339**	PKPbc	**PKPab**		**09 22 14.4**	**-0.3**
	2.8nm,0.9s,baz=47,slow=3.9,SNR=6.8							
TORD	**Torodi Ar. Bea**	**161.51**	**180**	PKPab	**PKPab**		**09 23 22.7**	**+2.8**
	0.5nm,0.6s,baz=162,slow=4.5,SNR=4.6							

ISCJB ***29*** *09:06:12.0±0.3, 27°.74N±0°.03×105°.75W±0°.03, h10km, mb3.4/2, Error ellipse: s-maj=4.7km s-min=3.4km az=145.9*
IDC ***29*** *09:06:14.3±2.3, 27°.94N×105°.77W, h0km, mb3.4/2, mb1 3.7/4, mb1mx3.5/37, mbtmp3.3/4, ML4.0/2, Error ellipse: s-maj=31.7km s-min=12.8km az=164.0*
MEX ***29*** *09:06:15.3±0.2, 27°.74N×105°.76W, h2km±5km, MD4.3*
NEIC ***29*** *09:06:15.4, 27°.74N×105°.74W, h4km, MD4.2(MEX), After MEX.*

ISC 29 09:06:13.9±0.7, 27°.71N±0°.04×105°.75W±0°.05, h10km, n38, σ1$58/55, Northern Mexico

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
HPIG		**0.77**	**174**	*e*P	**Pb**		**09 06 29.6**	**+0.1**
HPIG				*e*S	**Sb**		**09 06 40.9**	**+0.8**
HPIG		**0.77**	**174**	*e*Pn	**Pb**		**09 06 29.6**	**+0.1**
HPIG				*e*Sn	**Sb**		**09 06 41.3**	**+1.2**
LTX	**Lajitas**	**2.45**	**48**	*e*Pn	**Pn**		**09 06 52.6**	**-1.4**
LTX				eLg	Lg		09 07 27.6	
TX31	**Lajitas Ar. Si**	**2.45**	**48**	*e*Pn	**Pn**		**09 06 52.1**	**-1.9**
TX31				*e*Sn	**Sn**		**09 07 23.7**	**-0.3**
TXAR	**Lajitas Array**	**2.45**	**48**	Pn	**Pn**		**09 06 52.6**	**-1.3**
	12nm,0.3s,baz=228,slow=14,SNR=203							
TXAR				Lg	Lg		09 07 27.6	
	170nm,0.3s,baz=232,slow=31,SNR=22							
MNTX	**Cornudas Mount**	**3.99**	**4**	*e*Pn	**Pn**		**09 07 13.4**	**-1.7**
GUYB	**Guaymas**	**4.54**	**274**	*e*P	**Pn**		**09 07 22.4**	**-0.3**
GUYB				*e*S	**Sn**		**09 08 14.0**	**-1.5**
HSIG		**4.77**	**287**	*e*P	**Pn**		**09 07 25.7**	**-0.1**
HSIG				*e*S	**Sn**		**09 08 20.2**	**-0.9**
HSIG		**4.77**	**287**	*e*Pn	**Pn**		**09 07 25.7**	**-0.1**
HSIG				*e*Sn	**Sn**		**09 08 20.2**	**-0.9**
319A	**Douglas**	**4.78**	**321**	*e*P	**Pn**		**09 07 25.8**	**-0.2**
319A				*e*S	**Sn**		**09 08 20.0**	**-1.6**
319A	**Douglas**	**4.78**	**321**	*e*Pn	**Pn**		**09 07 25.8**	**-0.2**
319A				*e*Sn	**Sn**		**09 08 20.9**	**-0.7**
121A	**Cookes Peak, D**	**5.12**	**340**	*e*P	**Pn**		**09 07 29.9**	**-1.0**
121A				*e*S	**Sn**		**09 08 29.4**	**-0.8**
121A	**Cookes Peak, D**	**5.12**	**340**	*e*Pn	**Pn**		**09 07 29.8**	**-1.0**
121A				*e*Sn	**Sn**		**09 08 25.6**	**-4.5**
ZAIG	**Zacatecas**	**5.70**	**149**	*e*P	**Pn**		**09 07 39.2**	**+0.4**
ZAIG				*e*S	**Sn**		**09 08 44.3**	**-0.2**
ZAIG	**Zacatecas**	**5.70**	**149**	*e*Pn	**Pn**		**09 07 39.2**	**+0.4**
ZAIG				*e*Sn	**Sn**		**09 08 44.3**	**-0.2**
LNIG	**Linares**	**6.29**	**115**	*e*P	**Pn**		**09 07 47.0**	**+0.2**
LNIG				*i* S	**Sn**		**09 08 59.6**	**+0.8**
LNIG	**Linares**	**6.29**	**115**	*e*Pn	**Pn**		**09 07 47.0**	**+0.2**
LNIG				*e*Sn	**Sn**		**09 08 57.9**	**-0.9**
TUC	**Tucson**	**6.33**	**318**	*e*Pn	**Pn**		**09 07 47.0**	**-0.4**
TUC				*e*Sn	**Sn**		**09 08 58.5**	**-1.3**
Y22D	**IRIS PASSCAL I**	**6.43**	**351**	*e*Pn	**Pn**		**09 07 48.1**	**-0.6**
BNM	**Barren Site**	**6.47**	**354**	*e*Pn	**Pn**		**09 07 49.0**	**-0.4**
LPM	**Los Pinos Moun**	**6.63**	**354**	*e*Pn	**Pn**		**09 07 51.1**	**-0.4**
MSTX	**Muleshoe**	**6.75**	**22**	*e*Pn	**Pn**		**09 07 52.2**	**-0.8**
LAZ	**Ladron**	**6.78**	**350**	*e*Pn	**Pn**		**09 07 53.6**	**0.0**
ABTX	**Abilene, Hawle**	**7.21**	**46**	*e*Pn	**Pn**		**09 07 58.1**	**-1.2**
ANMO	**Albuquerque**	**7.24**	**355**	*e*Pn	**Pn**		**09 08 00.5**	**+0.6**
214A	**Organ Pipe Nat**	**7.45**	**306**	*e*P	**Pn**		**09 08 06.5**	**+3.8**
214A				*e*S	Sb		09 10 02.3	+10
214A	**Organ Pipe Nat**	**7.45**	**306**	*e*Pn	**Pn**		**09 08 03.9**	**+1.2**
214A				*e*Sn	Sn		09 09 37.3	+10
X18A	**Snowflake**	**7.70**	**333**	*e*Pn	**Pn**		**09 08 06.5**	**+0.3**
AMTX	**Amarillo**	**7.96**	**25**	*e*Pn	**Pn**		**09 08 10.5**	**+0.9**
AMTX				*e*Sn	**Sn**		**09 09 37.3**	**-2.5**
X16A	**Lo Mia Camp, P**	**8.28**	**325**	*e*Pn	**Pn**		**09 08 14.7**	**+0.4**
WUAZ	**Wupatki**	**9.14**	**330**	*e*Pn	**Pn**		**09 08 28.4**	**+2.4**
WMOK	**Wichita Mounta**	**9.20**	**39**	*e*Pn	**Pn**		**09 08 23.9**	**-2.7**
PV01	**Paradox Valley**	**10.66**	**348**	*e*Pn	**Pn**		**09 08 50.2**	**+3.2**
PV01				*e*Sn	**Sn**		**09 10 50.5**	**+4.0**
SHPR	**Sheep Range**	**11.85**	**320**	*e*Pn	**Pn**		**09 09 05.3**	**+2.2**
WVUT	**Wellsville**	**14.77**	**341**	*e*Pn	**Pn**		**09 09 40.4**	**-2.6**
PDAR	**Pinedale Array**	**15.34**	**349**	Pn	**Pn**		**09 09 52.1**	**+1.4**
	0.1nm,0.3s,baz=171,slow=17,SNR=3.7							
YKA	**Yellowknife Ar**	**35.28**	**353**	P	**P**		**09 13 08.2**	**-0.3**
	0.7nm,0.8s,baz=170,slow=9.3,SNR=4.2							
ILAR	**Eielson Array**	**45.25**	**337**	P	**P**		**09 14 33.1**	**+2.0**
	0.3nm,0.8s,baz=156,slow=8.0,SNR=4.4							

GUC 29 09:21:15.9±0.6, 20°.71S×69°.01W, h94km±3km, ML3.6,

1C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
PB01	**IPOC Station P**	**0.56**	**233**	*i* P		Pn	09 21 31.9	+0.3
PB01				*i* S		Sn	09 21 44.0	+0.7
PB01				IAML			09 21 44.9	
	comp=N,4μm,0.2s							
PB08	**IPOC Station P**	**0.58**	**346**	⇓*i* P		Pn	09 21 32.6	+0.5
PB08				*i* S		Sn	09 21 45.0	+0.9
HMBC	**Humberstone**	**0.93**	**297**	*i* P		Pn	09 21 35.4	+0.2
HMBC				*i* S		Sn	09 21 50.9	+1.2
HMBC				IAML			09 21 52.4	
	comp=N,2μm,0.4s							
PB09	**IPOC Station P**	**1.11**	**191**	*i* P		Pn	09 21 37.9	+0.6
PB09				*i* S		Sn	09 21 54.5	+1.2
PB07	**IPOC Station P**	**1.31**	**219**	⇑*i* P		Pn	09 21 39.9	+0.2
PB07				*i* S		Sn	09 21 58.5	+1.0
PB07				IAML			09 21 59.5	
	comp=E,1μm,0.3s							
PSGC	**Pisagua**	**1.52**	**316**	*i* P		Pn	09 21 42.4	+0.2
PSGC				*e*S		Sn	09 22 02.4	+0.3
MNMC	**Minye Minye**	**1.66**	**340**	*i* P		Pn	09 21 45.0	+0.8
MNMC				*e*S		Sn	09 22 06.5	+1.0
MNMC				IAML			09 22 17.7	
	comp=E,885nm,0.2s							
LVC	**Limon Verde**	**1.90**	**177**	*i* P		Pn	09 21 48.4	+1.1
LVC				*i* S		Sn	09 22 12.7	+1.6
PB04	**IPOC Station P**	**1.94**	**213**	*i* P		Pn	09 21 48.5	+0.9
PB04				*i* S		Sn	09 22 13.3	+1.5
PB04				IAML			09 22 18.7	
	comp=N,531nm,0.2s							
PB06	**IPOC Station P**	**2.06**	**195**	*i* P		Pn	09 21 50.1	+1.0
PB06				*i* S		Sn	09 22 15.7	+1.1
PB06				IAML			09 22 21.3	
	comp=E,494nm,0.3s							
PB13	**IPOC Station P**	**2.40**	**349**	*e*P		Pn	09 21 55.7	+1.5
PB12	**IPOC Station P**	**2.42**	**329**	*i* P		Pn	09 21 53.5	-0.4
PB12				*i* S		Sn	09 22 25.3	+2.3

ISCJB ***29*** *09:24:27.4±0.4, 6°.80N±0°.03×73°.02W±0°.04, h165km±4km, mb3.3/2, Error ellipse: s-maj=7.8km s-min=3.3km az=39.1*
IDC ***29*** *09:24:28.3±0.8, 6°.80N×73°.03W, h159km±13km, mb3.0/2, mb1 3.6/5, mb1mx3.2/28, mbtmp3.8/5, Error ellipse: s-maj=40.5km s-min=8.3km az=133.0*
FUNV ***29*** *09:24:29.3, 6°.81N×73°.14W, h160km, MW3.4*
RSNC ***29*** *09:24:29.8±0.6, 6°.77N×73°.10W, h150km±3km, ML3.6*

ISC 29 09:24:28.0±0.9, 6°.81N±0°.04×73°.02W±0°.04, h164km±6km, n38, σ1$44/61, 2C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
BARC	**Barichara**	**0.27**	**216**	*i* P		**Pn**	**09 24 49.9**	**-0.7**
BARC				*e*S		**Sn**	**09 25 05.3**	**-2.4**
BARC				*i*			09 25 08.0	
	comp=Z,759nm,0.3s							
PAMC	**Pamplona, Colo**	**0.61**	**31**	*e*P		**Pn**	**09 24 52.7**	**+0.5**
PAMC				*e*S		**Sn**	**09 25 10.2**	**-0.6**
BRRC	**Barranca, Sant**	**0.75**	**293**	⇑*i*P		**Pn**	**09 24 51.8**	**-0.5**
BRRC				*e*S		**Sn**	**09 25 08.8**	**-2.3**
BRRC				*i*			09 25 12.5	
	comp=Z,760nm,0.2s							
RUSC	**La Rusia**	**0.92**	**184**	⇓*i*P		**Pn**	**09 24 53.6**	**-0.5**
RUSC				*e*S		**Sn**	**09 25 12.5**	**-1.7**
RUSC				*i*			09 25 15.3	
	comp=Z,398nm,0.5s							
CBRI	**Barrientos, No**	**0.92**	**14**	*i* P		**Pn**	**09 24 54.5**	**+0.6**
CBRI				*e*S		**Sn**	**09 25 13.7**	**0.0**
GRMC	**Gramalote, San**	**0.92**	**13**	*i* P		**Pn**	**09 24 55.7**	**+1.9**
GRMC				*e*S		**Sn**	**09 25 15.9**	**+2.2**
GRMC				*i*			09 25 20.5	
	comp=Z,474nm,0.4s							
CAPV	**Capacho**	**1.26**	**34**	⇑*i*P		**Pn**	**09 24 57.8**	**+1.1**
CAPV				*e*S		**Sn**	**09 25 18.7**	**0.0**
OCAC	**Ocana**	**1.45**	**348**	*e*P		**Pn**	**09 24 58.5**	**+0.1**
OCAC				*e*S		**Sn**	**09 25 21.1**	**-0.7**
OCAC				*i*			09 25 25.5	
	comp=Z,758nm,0.3s							
CHIC	**Chingaza**	**2.28**	**198**	*e*P		**Pn**	**09 25 07.5**	**-0.3**
CHIC				*e*S		**Sn**	**09 25 36.9**	**-1.6**
CHIC				*i*			09 25 45.7	
	comp=Z,239nm,0.6s							
ROSC	**El Rosal**	**2.35**	**214**	P		**Pn**	**09 25 09.8**	**+1.2**
	comp=Z,67nm,0.3s,baz=33,slow=4.3,SNR=122							
ROSC				S		**Sn**	**09 25 39.0**	**-0.8**
	comp=Z,32nm,0.3s,baz=118,slow=20,SNR=4.5							
ROSC	**El Rosal**	**2.35**	**214**	*e*S		**Sn**	**09 25 38.1**	**-1.6**
HELC	**Santa Helena**	**2.57**	**256**	*e*P		**Pn**	**09 25 10.0**	**-1.1**
HELC				*e*S		**Sn**	**09 25 43.1**	**-1.3**
SOCV	**Socops**	**2.59**	**56**	*e*P		**Pn**	**09 25 11.8**	**+0.7**
SOCV				*e

PSMA				A	A	09 25 49.0	
	42nm,0.1s						
PCALD	**Caldeiras da R**	**0.70**	**293**	*e*S	Sg	09 25 48.2	-3.4
PCALD				A	A	09 25 49.2	
	78nm,0.1s						
PDA	**Ponta Delgada**	**0.81**	**286**	*e*P	Pg	09 25 41.9	-2.7
PDA				*e*S	Sg	09 25 51.4	-3.8
PDA				A	A	09 25 52.5	
	130nm,0.1s						
PDA	**Ponta Delgada**	**0.81**	**286**	*e*P	Pg	09 25 41.9	-2.7
PDA				*e*S	Sg	09 25 51.4	-3.8
PSET	**Sete Cidades**	**0.88**	**290**	*e*S	Sg	09 25 53.0	-4.3
PSET				A	A	09 25 57.4	
	159nm,0.4s						
PSET	**Sete Cidades**	**0.88**	**290**	*e*S	Sg	09 25 53.0	-4.3

*ISK **29** 09:27:10.2, 37°.25N × 28°.20E, h5km, ML2.1*
*CSEM **29** 09:27:11.2±0.2, 37°.25N×28°.19E, h2km, MD2.5, Error ellipse: s-maj=6.4km s-min=4.2km az=31.0*
*DDA **29** 09:27:14.2, 36°.87N×28°.02E, h7km, Md2.5*

ISC 29 09:27:11.1±1.2, 37°.26N±0°.04×28°.21E±0°.03, h2km±15km, n17, σ0.58/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLSB	**Milas**	**0.34**	**277**	*e*PG	**Pg**	**09 27 17.3**	**-0.5**
MLSB				*e*SG	**Sg**	**09 27 22.6**	**+0.3**
MLSB	**Milas**	**0.34**	**277**	*e*Pg	**Pg**	**09 27 17.3**	**-0.5**
MLSB				*e*Sg	**Sg**	**09 27 22.6**	**+0.3**
TURN	**Turunc**	**0.50**	**140**	*i* P	**Pg**	**09 27 19.2**	**-1.4**
TURN				*i* S	**Sg**	**09 27 26.6**	**-0.5**
DALY	**Dalyan (Mu¨la**	**0.56**	**141**	*e*PG	**Pg**	**09 27 21.6**	**-0.3**
DALY				*e*SG	**Sg**	**09 27 29.9**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.56**	**141**	*e*Pg	**Pg**	**09 27 21.6**	**-0.3**
DALY				*e*Sg	**Sg**	**09 27 29.9**	**+0.7**
BDRM	**Kayabasi**	**0.64**	**253**	*i* P	**Pg**	**09 27 23.3**	**0.0**
BDRM				*i* S	**Sg**	**09 27 32.1**	**+0.5**
BDRM	**Kayabasi**	**0.64**	**253**	P	**Pg**	**09 27 23.3**	**0.0**
BDRM				S	**Sg**	**09 27 32.1**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**340**	*e*PG	**Pg**	**09 27 24.8**	**-0.5**
AYDB				*e*SG	**Sg**	**09 27 35.4**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**340**	*e*Pg	**Pg**	**09 27 24.8**	**-0.5**
AYDB				*e*Sg	**Sg**	**09 27 35.4**	**+0.6**
BODT	**Bodrum**	**0.74**	**255**	*e*PG	**Pg**	**09 27 24.8**	**-0.5**
BODT	**Bodrum**	**0.74**	**255**	*e*Pg	**Pg**	**09 27 24.8**	**-0.5**
FETY	**Fethiye**	**0.94**	**131**	*e*PG	**Pg**	**09 27 28.6**	**-0.4**
FETY	**Fethiye**	**0.94**	**131**	*e*Pg	**Pg**	**09 27 28.6**	**-0.4**
MANT	**Manisa**	**1.27**	**13**	*i* S	**Sn**	**09 27 53.5**	**-0.1**
MANT	**Manisa**	**1.27**	**13**	S	**Sn**	**09 27 53.5**	**-0.1**
AKAS	**Kas**	**1.52**	**132**	*i* P	**Pg**	**09 27 40.8**	**+0.6**
AKAS	**Kas**	**1.52**	**132**	P	**Pg**	**09 27 40.8**	**+0.6**

*IDC **29** 09:33:40.7±3.2, 53°.55N×87°.69E, h0km, mb1 3.1/2, mb1mx3.0/36, mbtmp3.1/2, ML2.7/2, Error ellipse: s-maj=29.6km s-min=16.7km az=55.0*
*NNC **29** 09:33:50.2±2.8, 53°.15N×87°.12E, h19km±13km, mb3.5, mpv3.1, Error ellipse: s-maj=17.8km s-min=11.2km az=95.0*

ISC 29 09:33:47.0±4.8, 53°.5N±0°.1×87°.3E±0°.3, h35km, n7, σ1.9/47/8, 1C-5D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZALV	**Zalesovo Beam**	**1.58**	**289**	Pg	**Pn**	**09 34 12.1**	**-0.4**
	5.3nm,0.3s,baz=100,slow=14,SNR=21						
ZALV				Lg	Lg	09 34 36.3	
	2.8nm,0.3s,baz=104,slow=24,SNR=6.8						
I46RU	**ZALESOVO INFRA**	**1.58**	**289**	*i*		09 45 03.1	
	baz=101,slow=319,SNR=9.6						
KURK	**Kurchatov**	**6.04**	**246**	⇓Pn	**Pn**	**09 35 15.0**	**+1.3**
	1.4nm,0.7s						
KURK				⇑Lg	Lg	09 36 55.6	
	3.7nm,0.8s						
KURBB	**Kurchatov Arra**	**6.13**	**246**	Pn	**Pn**	**09 35 16.5**	**+1.4**
	0.1nm,0.3s,baz=62,slow=14,SNR=6.7						
KURBB				Lg	Lg	09 37 01.1	
	0.0nm,0.3s,baz=64,slow=33,SNR=3.6						
KURBB	**Kurchatov Arra**	**6.13**	**246**	⇓Pn	**Pn**	**09 35 16.2**	**+1.1**
	1.4nm,0.4s						
KURBB				⇓Lg	Lg	09 36 56.7	
	4.6nm,0.8s						
MK31	**Makanchi Array**	**7.42**	**208**	Pn	**Pn**	**09 35 32.9**	**+0.2**
	0.5nm,0.6s,baz=28,slow=10,SNR=5.9						
MK31				⇓Sn	**Sn**	**09 36 53.7**	**-2.0**
	0.2nm,0.4s,baz=16,slow=28,SNR=4.0						
MK31				⇓Lg	Lg	09 37 34.3	
	0.9nm,0.7s						
MKAR	**Makanchi Array**	**7.42**	**208**	Pn	**Pn**	**09 35 33.8**	**+1.0**
	0.2nm,0.3s,baz=22,slow=10,SNR=4.6						
MKAR				Sn	**Sn**	**09 36 54.9**	**-0.8**
	baz=21,slow=22,SNR=3.6						
MKAR				Lg	Lg	09 37 41.6	
	0.0nm,0.3s,baz=28,slow=28,SNR=3.0						

*IDC **29** 09:39:07.1±2.8, 53°.55N×87°.88E, h0km, mb1 3.3/2, mb1mx3.0/51, mbtmp3.3/2, ML3.0/2, Error ellipse: s-maj=23.6km s-min=14.8km az=61.0*
*NNC **29** 09:39:11.2±4.2, 53°.34N×87°.68E, h1km±21km, mb3.5, mpv3.2, Error ellipse: s-maj=26.7km s-min=23.9km az=52.0*

ISC 29 09:39:10.2±4.0, 53°.7N±0°.1×88°.0E±0°.2, h35km, n7, σ0.69/10, 4C-4D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.89**	**280**	*i*		09 50 56.5	
	baz=100,slow=319,SNR=15						
ZALV	**Zalesovo Beam**	**1.89**	**280**	Pg	**Pn**	**09 39 39.7**	**-0.2**
	3.1nm,0.3s,baz=103,slow=14,SNR=14						
ZALV				Lg	Lg	09 40 06.4	
	4.6nm,0.3s,baz=104,slow=22,SNR=15						
KURK	**Kurchatov**	**6.46**	**247**	⇑Pn	**Pn**	**09 40 43.1**	**+0.5**
	1.6nm,1.0s						
KURK				⇓Lg	Lg	09 42 26.9	
	5.3nm,0.9s						
KURBB	**Kurchatov Arra**	**6.55**	**246**	Pn	**Pn**	**09 40 44.5**	**+0.6**
	0.3nm,0.3s,baz=62,slow=14,SNR=18						
KURBB				Sn	**Sn**	**09 41 56.5**	**-0.9**
	0.0nm,0.3s,baz=60,slow=24,SNR=3.0						
KURBB				Lg	Lg	09 42 32.2	
	0.0nm,0.3s,baz=62,slow=33,SNR=4.0						
KURBB	**Kurchatov Arra**	**6.55**	**246**	⇑Pn	**Pn**	**09 40 44.3**	**+0.4**
	1.7nm,0.3s,baz=62,slow=14						
KURBB				⇓Sn	**Sn**	**09 41 57.8**	**+0.5**
	3.6nm,0.7s						
KURBB				⇑Lg	Lg	09 42 29.5	
	4.4nm,0.7s						
MK31	**Makanchi Array**	**7.77**	**210**	⇓Pn	**Pn**	**09 41 01.0**	**+0.4**
	0.6nm,0.8s,baz=30,slow=14,SNR=9.1						
MK31				⇓Sn	**Sn**	**09 42 26.2**	**-1.1**
	1.9nm,1.1s,baz=40,slow=23,SNR=4.7						
MK31				⇑Lg	Lg	09 43 07.7	
	2.8nm,1.1s,baz=245,slow=32,SNR=6.5						
MKAR	**Makanchi Array**	**7.77**	**210**	Pn	**Pn**	**09 41 00.5**	**-0.1**
	0.3nm,0.3s,baz=30,slow=13,SNR=7.9						
MKAR				Sn	**Sn**	**09 42 27.7**	**+0.4**
	0.1nm,0.3s,baz=27,slow=28,SNR=5.4						
MKAR				Lg	Lg	09 43 09.4	
	0.1nm,0.3s,baz=24,slow=29,SNR=4.0						

*GUC **29** 09:40:11.9±0.6, 31°.81S×70°.31W, h100km±21km, ML3.0*
*SJA **29** 09:40:11.0±0.5, 31°.85S×70°.13W, h95km±4km, ML3.5*

ISC 29 09:40:11.2±3.3, 31°.8S±0°.1×70°.18W±0°.10, h101km±24km, n11, σ0.37/20, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	**Leoncito**	**0.75**	**91**	*i* P	**Pn**	**09 40 29.8**	**+0.3**
RTLS				*i* S	**Sn**	**09 40 43.6**	**+0.4**
AUSP	**Uspallata**	**0.80**	**123**	*i* P	**Pn**	**09 40 29.7**	**-0.2**
AUSP				*i* S	**Sn**	**09 40 43.8**	**-0.2**
ROCH	**El Roble**	**1.38**	**211**	*i* P	**Pn**	**09 40 36.5**	**+0.2**
ROCH				*i* S	**Sn**	**09 40 54.6**	**-0.6**
ROCH				IAML		09 40 57.9	
	comp=N,262nm,0.3s						
ROC1	**El Roble**	**1.38**	**211**	*i* P	**Pn**	**09 40 36.4**	**+0.1**
ROC1				*i* S	**Sn**	**09 40 55.3**	**-0.1**
ASAL	**Salagasta**	**1.39**	**126**	*i* P	**Pn**	**09 40 36.3**	**+0.1**
RTCV	**Cerro Valdivia**	**1.39**	**94**	*i* P	**Pn**	**09 40 36.3**	**+0.1**
RTCV				*i* S	**Sn**	**09 40 54.6**	**-0.6**
PEL	**Peldehue**	**1.42**	**198**	*i* P	**Pn**	**09 40 36.5**	**-0.1**
PEL				*i* S	**Sn**	**09 40 55.7**	**-0.1**
PEL				IAML		09 40 57.1	
	comp=N,287nm,0.4s						
FCH	**Farellones**	**1.54**	**184**	*i* P	**Pn**	**09 40 38.8**	**+0.5**
FCH				*i* S	**Sn**	**09 40 59.6**	**+0.7**
FCH				IAML		09 41 02.5	
	comp=E,319nm,0.2s						
CLCH	**Cerro Calan**	**1.63**	**191**	*i* P	**Pn**	**09 40 39.5**	**+0.3**
CLCH				*i* S	**Sn**	**09 41 00.2**	**-0.3**
CLCH				IAML		09 41 01.9	
	comp=E,206nm,0.5s						
AAGR	**Agrelo**	**1.73**	**139**	*i* P	**Pn**	**09 40 40.5**	**+0.1**
RCDM	**Rinconada Maip**	**1.78**	**197**	*i* P	**Pn**	**09 40 41.0**	**0.0**
RCDM				*i* S	**Sn**	**09 41 03.3**	**-0.4**

*IDC **29** 09:56:54.9±1.5, 51°.63N×130°.96W, h0km, mb3.6/2, mb1 3.8/6, mb1mx3.5/68, mbtmp3.6/6, ML3.8/3, Error ellipse: s-maj=18.7km s-min=13.2km az=29.0*
*PGC **29** 09:56:56.6±1.8, 51°.76N×131°.04W, h20km, ML3.9/33, 174km Sse of Sandspit, Bc Haida Gwaii Region*

ISC 29 09:56:58.5±1.2, 51°.79N±0°.04×131°.04W±0°.04, h24km±11km, n76, σ2.92/97, Queen Charlotte Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNB	**Barry Inlet**	**0.90**	**331**	P	**Pb**	**09 57 13.8**	**-1.8**
BNB				S	**Sb**	**09 57 26.5**	**-0.7**
MOBC	**Moresby Island**	**1.47**	**338**	Pn	**Pn**	**09 57 22.1**	**-1.5**
MOBC				Pg	**Pb**	**09 57 24.2**	**-1.0**
MOBC				Sg	**Sb**	**09 57 44.9**	**+1.4**
DIB	**Dawson Inlet,**	**1.67**	**329**	Pn	**Pn**	**09 57 24.4**	**-1.7**
DIB				Pg	**Pb**	**09 57 27.9**	**-0.6**
DIB				Sg	**Sb**	**09 57 49.9**	**+0.9**
H02S1	**DAWSON INLET T**	**1.67**	**329**	Pn	**Pn**	**09 57 24.5**	**-1.7**
H02S1				Sn	**Sb**	**09 57 50.0**	**+1.0**
BNAB	**Bonilla**	**1.72**	**8**	Pn	**Pb**	**09 57 28.4**	**-1.1**
BNAB				Sn	**Sb**	**09 57 52.1**	**+1.5**
H02N1	**VAN INLET T-PH**	**1.73**	**328**	Pn	**Pn**	**09 57 25.6**	**-1.6**
H02N1				Sn	**Sb**	**09 57 51.3**	**+0.4**
H02N1				T	T	09 57 55.5	
VIB	**Van Inlet**	**1.73**	**329**	Pn	**Pn**	**09 57 25.3**	**-1.8**
VIB				Sn	**Sn**	**09 57 47.1**	**-1.4**
VIB				Sg	**Sb**	**09 57 52.0**	**+1.1**
BBB	**Bella Bella**	**1.85**	**77**	Pn	**Pn**	**09 57 26.9**	**-1.8**
	34nm,0.3s,baz=262,slow=8.1,SNR=349						
BBB				Sn	**Sn**	**09 57 50.4**	**-0.9**
	204nm,0.3s,baz=330,slow=19,SNR=38						
BBB	**Bella Bella**	**1.85**	**77**	Pn	**Pn**	**09 57 25.7**	**-3.0**
BBB				Pg	**Pb**	**09 57 30.7**	**-0.9**
BBB				Sn	**Sn**	**09 57 49.9**	**-1.4**
HOLB	**Holberg**	**2.16**	**121**	Pn	**Pn**	**09 57 29.0**	**-4.0**
HOLB				Pg	**Pb**	**09 57 35.4**	**-1.5**
NDB	**Naden**	**2.46**	**333**	Pn	**Pn**	**09 57 35.5**	**-1.6**
NDB				Sg	**Sb**	**09 58 13.3**	**+1.5**
PHC	**Port Hardy**	**2.51**	**114**	Pn	Pn	09 57 32.4	-5.3
PHC				Sn	**Sb**	**09 58 01.4**	**-6.2**
PHC				Sg	**Sb**	**09 58 10.8**	**-2.5**
BPBC	**Brooks Peninsu**	**2.63**	**127**	Pn	**Pn**	**09 57 34.9**	**-4.7**
BPBC				Sn	**Sn**	**09 58 09.4**	**-1.4**
BCBC	**Bella Coola**	**2.71**	**76**	Pn	**Pn**	**09 57 39.1**	**-1.3**
BCBC				Sn	**Sb**	**09 58 15.4**	**-3.5**
MAYB	**Maynard**	**2.81**	**118**	Pn	**Pn**	**09 57 38.1**	**-3.8**
TLCB	**Telegraph Cove**	**2.92**	**114**	Pn	Pn	09 57 38.5	-4.9
TLCB				Sn	**Sb**	**09 58 21.4**	**-3.8**
EDB	**Eliza Dome**	**3.14**	**126**	Pn	**Pn**	**09 57 42.8**	**-3.6**
WOSB	**Woss**	**3.26**	**118**	Pn	**Pn**	**09 57 44.9**	**-3.3**
NCRB	**Newcastle Ridg**	**3.44**	**112**	Pn	**Pn**	**09 57 47.2**	**-3.4**
ETB	**Estevan Point**	**3.75**	**128**	Pn	**Pn**	**09 57 52.8**	**-1.9**
GDR	**Gold River**	**3.76**	**120**	Pn	**Pn**	**09 57 51.1**	**-3.8**
GDR				Sg	**Sb**	**09 58 54.0**	**+4.8**
SPLB	**Strathcona Par**	**3.91**	**117**	Pn	**Pn**	**09 57 54.2**	**-2.7**
SPLB				Sn	**Sb**	**09 58 52.5**	**-1.0**
CBB	**Campbell River**	**4.00**	**114**	Pn	**Pn**	**09 57 54.5**	**-3.7**
CBB				Sn	**Sb**	**09 58 52.1**	**-4.0**
MWAB	**Mount Washingt**	**4.18**	**117**	Pn	**Pn**	**09 58 04.6**	**+3.8**
MWAB				Sn	**Sb**	**09 58 57.4**	**-4.0**
TOFB	**Tofino**	**4.21**	**127**	Pn	**Pn**	**09 57 58.9**	**-2.1**
TOFB				Sg	**Sb**	**09 59 09.3**	**+7.3**
BTB	**Buttle Lake**	**4.21**	**121**	Pn	**Pn**	**09 57 58.3**	**-3.0**
UBRB	**Upper Baezaeko**	**4.41**	**73**	Pn	**Pn**	**09 58 03.4**	**-0.5**
UBRB				Sg	**Sb**	**09 59 08.9**	**+1.0**
B012	**Ucluelet**	**4.54**	**127**	Pn	**Pn**	**09 58 03.9**	**-1.8**
OZB	**Mount Ozzard**	**4.54**	**126**	Pn	**Pn**	**09 58 04.6**	**-1.1**
OZB				Sg	Sb	09 59 21.2	+9.4
TXB	**Texada**	**4.69**	**114**	Pn	**Pn**	**09 58 05.1**	**-2.7**
ALB	**Alberni**	**4.69**	**120**	Pn	**Pn**	**09 58 11.8**	**+4.1**
ALB				Sg	**Sb**	**09 59 20.6**	**+4.6**
B927	**Port Alberni**	**4.74**	**120**	Pn	**Pn**	**09 58 11.5**	**+3.2**
B927				Sg	**Sb**	**09 59 19.0**	**+1.8**
B928	**Bamfield**	**4.80**	**126**	Pn	**Pn**	**09 58 06.5**	**-2.7**
MGB	**Mount Grey**	**4.93**	**122**	Pn	**Pn**	**09 58 08.7**	**-2.4**
MGB				Sg	**Sb**	**09 59 28.4**	**+5.4**
GHNB	**Nanoose**	**5.00**	**117**	Pn	**Pn**	**09 58 14.7**	**+2.7**
GHNB				Sg	**Sb**	**09 59 24.9**	**+0.1**
SHB	**Sechelt**	**5.05**	**113**	Pn	**Pn**	**09 58 10.9**	**-1.9**
SHB				Sg	**Sb**	**09 59 26.6**	**+0.1**
NLLB	**Nanaimo Lost L**	**5.18**	**117**	Pn	**Pn**	**09 58 13.9**	**-0.6**
NLLB				Sg	**Sb**	**09 59 30.6**	**+0.6**
YOUB	**Youbou, Lake C**	**5.21**	**121**	Pn	**Pn**	**09 58 12.7**	**-2.3**
PFB	**Port Renfrew**	**5.32**	**125**	Pn	**Pn**	**09 58 13.6**	**-2.8**
PFB				Sg	Sb	09 59 44.0	+10
B926	**Mesachie Lake**	**5.33**	**121**	Sg	**Sb**	**09 59 39.2**	**+4.8**
WSLR	**Whistler**	**5.39**	**105**	Sg	**Sb**	**09 59 34.2**	**-2.1**
WPB	**Watts Point**	**5.41**	**110**	Pn	**Pn**	**09 58 15.4**	**-2.2**
BIB	**Bowen Island**	**5.47**	**113**	Pn	**Pn**	**09 58 16.6**	**-1.8**
BIB				Sg	**Sb**	**09 59 41.3**	**+2.8**
LZB	**Mount Lazard**	**5.62**	**122**	Pn	**Pn**	**09 58 18.2**	**-2.3**
B009	**North Saanich**	**5.80**	**120**	Sg	**Sb**	**09 59 53.4**	**+5.6**
B010	**North Saanich**	**5.80**	**120**	Sg	**Sb**	**09 59 53.5**	**+5.8**
PGC	**Sidney**	**5.80**	**120**	Sg	**Sb**	**09 59 53.2**	**+5.5**
B011	**North Saanich**	**5.80**	**120**	Sg	**Sb**	**09 59 53.1**	**+5.4**
LLLB	**Lillooet**	**5.88**	**98**	Pg	**Pb**	**09 58 42.5**	**+2.3**
VGZ	**Gonzales**	**6.00**	**121**	Sg	**Sb**	**09 59 58.4**	**+4.7**
CMW	**Cultus Mountai**	**6.65**	**117**	Pn	**Pn**	**09 58 33.5**	**-1.3**
DLBC	**Dease Lake**	**6.69**	**5**	Pn	**Pn**	**09 58 37.5**	**+2.3**
	2.2nm,0.3s,baz=188,slow=24,SNR=18						
DLBC				Sn	**Sn**	**09 59 54.1**	**+3.5**
	baz=191,slow=16,SNR=2.5						
DLBC				Lg	Lg	10 00 25.6	
	1.3nm,0.3s,baz=281,slow=15,SNR=6.8						
DLBC	**Dease Lake**	**6.69**	**5**	Pn	**Pn**	**09 58 37.0**	**+1.8**
DLBC				Sg	Sb	10 00 23.1	+10
JCW	**Jim Creek**	**6.89**	**118**	Pn	**Pn**	**09 58 36.4**	**-1.5**
JCW				Sg	**Sb**	**10 00 25.1**	**+6.0**
DOWB	**Downie Slide**	**7.80**	**87**	Sg	Sb	10 00 55.2	+10
WAPA	**Wapiti River**	**7.81**	**60**	Sg	Sb	10 01 01.9	+16
MNB	**Mounoet Dainar**	**7.83**	**82**	Pn	**Pn**	**09 58 50.4**	**-0.6**
MNB				Sg	Sb	10 01 02.8	+17
LTY	**Liberty**	**8.13**	**120**	Pn	**Pn**	**09 58 54.2**	**-0.8**
PLBC	**Pleasant Camp**	**8.25**	**341**	Pn	**Pn**	**09 58 56.7**	**+0.1**
FNBB	**Fort Nelson**	**8.45**	**30**	Sg	Sb	10 01 20.4	+16
WHY	**Whitehorse**	**9.14**	**348**	Pn	**Pn**	**09 59 10.2**	**+1.4**
NEW	**Newport**	**9.63**	**106**	Lg	Lg	10 01 49.4	
	0.1nm,0.3s,baz=77,slow=23,SNR=3.6						
HYT	**Haines Junctio**	**9.74**	**341**	Pn	**Pn**	**09 59 17.8**	**+0.7**
PRDA	**Priddis**	**10.52**	**88**	Sg		10 02 24.2	
WALA	**Waterton Lakes**	**11.26**	**97**	Sg		10 02 41.6	
YKA	**Yellowknife Ar**	**13.90**	**33**	Pn	**Pn**	**10 00 12.5**	**-1.1**
	0.1nm,0.3s,baz=224,slow=13,SNR=3.0						
YKA				Lg	Lg	10 04 07.9	
	0.0nm,0.3s,baz=221,slow=31,SNR=3.0						
ILAR	**Eielson Array**	**15.38**	**334**	Pn	**P**	**10 00 37.5**	**-0.6**
	baz=143,slow=11,SNR=3.2						
PDAR	**Pinedale Array**	**17.09**	**113**	Pn	**P**	**10 00 56.5**	**-1.0**
	0.1nm,0.3s,baz=302,slow=9.4,SNR=30						
H11N2	**WAKE ISLAND Hy 57.51**		**261**	T	T	11 09 16.9	
	baz=40,slow=76,SNR=659						
H11N3	**WAKE ISLAND Hy 57.51**		**261**	T	T	11 09 17.1	
	baz=40,slow=76,SNR=580						
H11N1	**WAKE ISLAND Hy 57.53**		**261**	T	T	11 09 18.1	
	baz=40,slow=76,SNR=553						
H11S1	**WAKE ISLAND Hy 58.56**		**260**	T	T	11 10 38.3	
	baz=40,slow=76,SNR=45						
H11S2	**WAKE ISLAND Hy 58.57**		**260**	T	T	11 10 33.3	
	baz=40,slow=76,SNR=48						
H11S3	**WAKE ISLAND Hy 58.58**		**260**	T	T	11 10 33.9	
	baz=40,slow=76,SNR=44						

KURBB	**Kurchatov Arra**	**74.93**	**341**	P	**P**	**10 08 37.7**	**+0.7**
	0.4nm,0.6s,baz=19,slow=5.8,SNR=3.4						
MKAR	**Makanchi Array**	**77.71**	**337**	P	**P**	**10 08 53.6**	**+0.7**
	0.4nm,0.6s,baz=25,slow=4.8,SNR=3.2						

IDC 29 09:59:09.3±999.0, 47°.24N×46°.95E, h0km, Error ellipse: s-maj=463.1km s-min=200.6km az=133.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON**	**11.22**	**331**	*i*		11 15 00.0	
	baz=142,slow=318,SNR=1.2						
I26DE	**FREYUNG INFRAS**	**22.18**	**287**	*i*		12 12 50.0	
	baz=81,slow=299,SNR=1.2						
I48TN	**KESRA INFRASON**	**30.12**	**261**	*i*		13 03 50.0	
	baz=55,slow=296,SNR=0.4						

*DDA **29** 10:05:42.3, 37°.18N×27°.52E, h7km, Ml2.6*
*ISK **29** 10:05:45.8, 37°.13N×27°.90E, h14km, MD2.3*
*CSEM **29** 10:05:46.8±0.4, 37°.17N×27°.92E, h2km, ML2.6, Error ellipse: s-maj=8.4km s-min=7.5km az=175.0*

ISC 29 10:05:46.4±0.9, 37°.15N±0°.03×27°.89E±0°.03, h15km±7km, n15, σ1.44/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLSB	**Milas**	**0.17**	**328**	*e*PG	**Pg**	**10 05 50.5**	**-0.2**
MLSB				*e*SG	**Sg**	**10 05 54.0**	**+0.5**
MLSB	**Milas**	**0.17**	**328**	*e*Pg	**Pg**	**10 05 50.5**	**-0.2**
MLSB				*e*Sg	**Sg**	**10 05 54.1**	**+0.5**
BDRM	**Kayabasi**	**0.37**	**257**	*i* P	**Pb**	**10 05 54.3**	**-0.4**
BDRM				*i* S	**Sb**	**10 06 00.9**	**+0.7**
BDRM	**Kayabasi**	**0.37**	**257**	P	**Pb**	**10 05 54.3**	**-0.4**
BDRM				S	**Sb**	**10 06 00.9**	**+0.7**
BODT	**Bodrum**	**0.47**	**260**	*e*PG	**Pg**	**10 05 55.6**	**-0.3**
BODT				*e*SG	**Sb**	**10 06 03.0**	**-0.3**
BODT	**Bodrum**	**0.47**	**260**	*e*Pg	**Pg**	**10 05 55.6**	**-0.3**
BODT				*e*Sg	**Sb**	**10 06 03.0**	**-0.3**
TURN	**Turunc**	**0.63**	**116**	*i* P	**Pg**	**10 05 55.9**	**-2.9**
TURN				*i* S	**Sg**	**10 06 05.2**	**-2.0**
DALY	**Dalyan (Mu¨la**	**0.69**	**118**	*e*PG	**Pg**	**10 05 59.6**	**-0.4**
DALY	**Dalyan (Mu¨la**	**0.69**	**118**	*e*Pg	**Pg**	**10 05 59.6**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.80**	**360**	*e*PG	**Pb**	**10 06 01.9**	**-0.2**
AYDB				*e*SG	**Sb**	**10 06 13.8**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**0.80**	**360**	*e*Pg	**Pb**	**10 06 01.9**	**-0.2**
AYDB				*e*Sg	**Sb**	**10 06 13.8**	**+1.1**
MANT	**Manisa**	**1.44**	**21**	*i* P	**Pn**	**10 06 11.5**	**-0.7**
MANT				*i* S	**Sg**	**10 06 33.2**	**+0.3**
MANT	**Manisa**	**1.44**	**21**	P	**Pn**	**10 06 11.5**	**-0.7**
MANT				S	**Sg**	**10 06 33.2**	**+0.3**
AKAS	**Kas**	**1.65**	**123**	*i* P	**Pg**	**10 06 18.4**	**+0.2**
AKAS				*i* S	**Sg**	**10 06 45.1**	**+5.4**
AKAS	**Kas**	**1.65**	**123**	P	**Pg**	**10 06 18.4**	**+0.2**

*ISK **29** 10:08:48.7, 39°.31N×27°.69E, h9km, ML2.1*
*DDA **29** 10:08:48.9, 39°.36N×27°.69E, h7km, Ml2.8*
*ISCJB **29** 10:08:49.0±0.5, 39°.31N±0°.02×27°.68E±0°.03, h6km±5km, Error ellipse: s-maj=4.3km s-min=3.5km az=175.5*
*CSEM **29** 10:08:49.3±0.1, 39°.31N×27°.69E, h10km, ML2.1, Error ellipse: s-maj=2.6km s-min=2.1km az=93.0*

ISC 29 10:08:49.5±1.0, 39°.32N±0°.02×27°.70E±0°.02, h13km±8km, n45, σ0.88/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.35**	**24**	*e*PG	**Pg**	**10 08 56.5**	**-0.1**
BALB				*e*SG	**Sg**	**10 09 01.9**	**+0.6**
BALB	**Balikesir**	**0.35**	**24**	*e*Pg	**Pg**	**10 08 56.5**	**-0.1**
BALB				*e*Sg	**Sg**	**10 09 01.9**	**+0.6**
AKS	**Akhisar**	**0.45**	**168**	*e*PG	**Pg**	**10 08 58.0**	**-0.4**
AKS	**Akhisar**	**0.45**	**168**	*e*Pg	**Pg**	**10 08 58.0**	**-0.4**
DKL	**Dikili**	**0.66**	**248**	*e*PG	**Pg**	**10 09 01.8**	**-0.6**
DKL	**Dikili**	**0.66**	**248**	*e*Pg	**Pg**	**10 09 01.8**	**-0.6**
AYVA	**Ayvalik**	**0.78**	**269**	*i* P	**Pb**	**10 09 04.8**	**-0.1**
AYVA				*i* S	**Sn**	**10 09 18.8**	**+1.0**
AYVA	**Ayvalik**	**0.78**	**269

JAG				S	**Sn**	**10 16 59.8**	**-1.5**
JRY	**Ryogami san**	**3.23**	**273**	P	**Pn**	**10 16 34.1**	**-0.1**
JRY				*e*S	**Sn**	**10 17 09.4**	**-2.1**
JMK	**Ichinoseki**	**3.30**	**337**	P	**Pn**	**10 16 33.7**	**-1.5**
JYN	**Shimob**	**3.56**	**264**	P	**Pn**	**10 16 39.6**	**+0.9**
JYK	**Kaneyama**	**3.60**	**327**	P	**Pn**	**10 16 38.4**	**-0.9**
JOM	**Ohasama**	**3.76**	**341**	P	**Pn**	**10 16 40.6**	**-0.9**
JHJ2	**Mitsune**	**3.77**	**223**	P	**Pn**	**10 16 41.4**	**-0.3**
JHJ	**Hachijo jima 2**	**3.79**	**223**	Pn	**Pn**	**10 16 41.2**	**-0.7**
	8.5nm,0.3s,baz=358,slow=17,SNR=17						
JHJ				Sn	**Sn**	**10 17 22.1**	**-3.2**
	55nm,0.3s,baz=54,slow=22,SNR=11						
MJAR	**Matsushiro Arr**	**3.83**	**281**	Pn	**Pn**	**10 16 43.5**	**+1.1**
	1.7nm,0.3s,baz=101,slow=9.5,SNR=18						
MJAR				Sn	**Sn**	**10 17 26.6**	**+0.4**
	1.3nm,0.3s,baz=109,slow=25,SNR=5.0						
MAT	**Matsushiro**	**3.83**	**281**	P	Pn	10 16 44.6	+2.1
MAT				S	**Sn**	**10 17 25.1**	**-1.2**
H11N2	**WAKE ISLAND Hy**	**26.56**	**121**	T	T	10 48 59.6	
	baz=313,slow=75,SNR=5.8						
H11N1	**WAKE ISLAND Hy**	**26.57**	**121**	T	T	10 49 06.3	
	baz=313,slow=75,SNR=4.9						
H11N3	**WAKE ISLAND Hy**	**26.58**	**121**	T	T	10 49 09.9	
	baz=313,slow=75,SNR=3.5						
H11S1	**WAKE ISLAND Hy**	**27.26**	**123**	T	T	10 50 02.4	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**27.26**	**123**	T	T	10 49 56.0	
	baz=314						
H11S2	**WAKE ISLAND Hy**	**27.28**	**123**	T	T	10 49 59.5	
	baz=314						
ZALV	**Zalesovo Beam**	**43.54**	**313**	P	**P**	**10 23 47.2**	**+1.2**
	1.4nm,0.5s,baz=79,slow=7.6,SNR=3.4						
MKAR	**Makanchi Array**	**45.72**	**303**	P	**P**	**10 24 04.6**	**+1.0**
	0.3nm,0.4s,baz=78,slow=7.5,SNR=5.6						
KURBB	**Kurchatov Arra**	**47.62**	**309**	P	**P**	**10 24 19.3**	**+0.9**
	2.1nm,0.6s,baz=83,slow=7.6,SNR=14						
ILAR	**Eielson Array**	**49.81**	**32**	P	**P**	**10 24 35.4**	**+0.4**
	0.5nm,0.8s,baz=268,slow=5.5,SNR=7.5						
WRA	**Warramunga Arr**	**56.14**	**190**	P	**P**	**10 25 21.5**	**-0.7**
	0.4nm,0.4s,baz=7.8,slow=7.2,SNR=12						
ASAR	**Alice Springs**	**59.87**	**190**	P	**P**	**10 25 48.3**	**+0.1**
	0.2nm,0.4s,baz=3.6,slow=6.6,SNR=8.1						
PDAR	**Pinedale Array**	**77.60**	**46**	P	P	10 27 40.0	+1.1
	0.4nm,0.6s,baz=277,slow=2.4,SNR=6.5						
TXAR	**Lajitas Array**	**89.85**	**53**	P	**P**	**10 28 42.3**	**+0.8**
	0.2nm,0.6s,baz=316,slow=3.5,SNR=3.6						

*ISCJB **29** 10:19:06.0±0.6,37.97N±0.03×35.67E±0.03,h1km±7km, Error ellipse: s-maj=5.2km s-min=4.0km az=16.8*
*CSEM **29** 10:19:05.7±0.3,37.98N×35.68E,h2km,ML2.6,Error ellipse: s-maj=8.0km s-min=6.3km az=23.0*
*DDA **29** 10:19:05.6,37.99N×35.63E,h7km,Ml2.6*
*ISK **29** 10:19:06.2,37.94N×35.71E,h5km,ML1.8*
ISC 29 10:19:05.8±1.1,37.99N±0.03×35.67E±0.02,h5km±10km, n20,σ0$86/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YAHY	**KAYSERI_Yahyal**	**0.26**	**294**	*i* P	**Pg**	**10 19 10.4**	**-0.6**
YAHY				*i* S	**Sg**	**10 19 14.8**	**+0.3**
YAHY	**KAYSERI_Yahyal**	**0.26**	**294**	P	**Pg**	**10 19 10.4**	**-0.6**
YAHY				S	**Sg**	**10 19 14.8**	**+0.3**
KOZT	**Kozan**	**0.52**	**166**	*e*PG	**Pg**	**10 19 15.9**	**0.0**
KOZT				*e*SG	**Sg**	**10 19 23.0**	**+0.3**
KOZT	**Kozan**	**0.52**	**166**	*e*Sg	**Sg**	**10 19 23.0**	**+0.3**
ANDN	**Andirin**	**0.67**	**127**	*i* P	**Pg**	**10 19 18.2**	**-0.6**
ANDN				*i* S	**Sb**	**10 19 30.4**	**+0.6**
ANDN	**Andirin**	**0.67**	**127**	P	**Pg**	**10 19 18.2**	**-0.6**
SARI	**SarD1z-Kayseri**	**0.72**	**54**	*e*PG	**Pb**	**10 19 20.6**	**-0.5**
SARI				*e*SG	**Sb**	**10 19 31.2**	**+0.2**
NIG	**Nigde**	**0.84**	**279**	*e*PG	**Pb**	**10 19 23.8**	**+0.7**
NIG				*e*SG	**Sb**	**10 19 35.8**	**+0.9**
NIG	**Nigde**	**0.84**	**279**	*e*Pg	**Pb**	**10 19 23.8**	**+0.7**
NIG				*e*Sg	**Sb**	**10 19 35.8**	**+0.9**
AVNS	**Nevsehir-Avano**	**1.04**	**322**	*i* P	**Pg**	**10 19 24.4**	**-1.4**
AVNS				*i* S	**Sb**	**10 19 40.4**	**0.0**
AVNS	**Nevsehir-Avano**	**1.04**	**322**	P	**Pg**	**10 19 24.4**	**-1.4**
AVNS				S	**Sb**	**10 19 40.4**	**0.0**
KMRS	**Kahramanmaras**	**1.09**	**116**	*e*PG	**Pg**	**10 19 26.4**	**-0.3**
KMRS				*e*SG	**Sb**	**10 19 41.2**	**-0.5**
KERG	**Konya-Eregli**	**1.35**	**245**	*i* P	**Pn**	**10 19 30.2**	**-1.3**
KERG				*i* S	**Sn**	**10 19 50.0**	**+0.1**
KERG	**Konya-Eregli**	**1.35**	**245**	P	**Pn**	**10 19 30.2**	**-1.3**
KERG				S	**Sn**	**10 19 50.0**	**+0.1**
MERS	**Mersin**	**1.44**	**220**	*e*PN	**Pg**	**10 19 33.5**	**0.0**
MERS	**Mersin**	**1.44**	**220**	*e*Pn	**Pg**	**10 19 33.5**	**0.0**
CUSAR	**Sarkisla-SIVAS**	**1.50**	**17**	*i* P	**Pn**	**10 19 33.6**	**+0.1**
CUSAR				*i* S	**Sg**	**10 19 56.2**	**+2.2**
CUSAR	**Sarkisla-SIVAS**	**1.50**	**17**	P	**Pn**	**10 19 33.7**	**+0.1**
CUSAR				S	**Sg**	**10 19 56.2**	**+2.2**
DARE	**Darende-Malaty**	**1.54**	**67**	*e*PN	**Pb**	**10 19 34.8**	**-0.2**
DARE	**Darende-Malaty**	**1.54**	**67**	*e*Pn	**Pb**	**10 19 34.8**	**-0.2**

IDC 29 10:26:45.2±3.2,53.81N×88.10E,h0km,mb1 2.9/2, mb1mx2.8/59,mbtmp2.9/2,ML2.6/2,Error ellipse: s-maj=25.2km s-min=16.6km az=57.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.95**	**275**	*i*		10 39 20.0	
	baz=93,slow=325,SNR=39						
ZALV	**Zalesovo Beam**	**1.95**	**275**	Pg	Pn	10 27 19.9	+0.4
	3.0nm,0.3s,baz=89,slow=13,SNR=32						
ZALV				Lg	Lg	10 27 47.9	
	4.2nm,0.3s,baz=94,slow=21,SNR=19						
KURBB	**Kurchatov Arra**	**6.69**	**245**	Pn	Pn	10 28 24.9	+0.4
	0.1nm,0.3s,baz=59,slow=14,SNR=4.5						
KURBB				Sn	Sn	10 29 40.2	-1.3
	0.0nm,0.3s,baz=46,slow=24,SNR=2.6						
KURBB				Lg	Lg	10 30 17.5	
	0.1nm,0.3s,baz=58,slow=29,SNR=7.7						
MKAR	**Makanchi Array**	**7.94**	**210**	Pn	Pn	10 28 43.5	+1.6
	0.1nm,0.3s,baz=26,slow=12,SNR=4.0						
MKAR				Sn	Sn	10 30 11.8	-0.6
	0.1nm,0.3s,baz=32,slow=26,SNR=6.8						
MKAR				Lg	Lg	10 30 58.1	
	0.1nm,0.3s,baz=26,slow=33,SNR=3.8						

*NEIC **29** 10:34:34.9,39.73S×175.37E,h70km,ML4.1(WEL),After WEL.*
NEIC Felt [IV] at Hunterville, Wanganui and Wanganui East.
WEL 29 10:34:34.7±0.1,39.73S×175.37E,h70km±2km,ML4.1/50, 17C-20D,Error ellipse: s-maj=0.8km s-min=0.6km az=90.0,intensity MM 4.,North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAZ	**Wanganui**	**0.29**	**264**	Pn	Pn	10 34 45.5	-0.4
WAZ	**Wanganui**	**0.29**	**264**	PN	Pn	10 34 45.5	-0.4
MTVZ	**Mangateitei**	**0.35**	**14**	Pn	Pn	10 34 45.9	-0.5
MTVZ	**Mangateitei**	**0.35**	**14**	⇓PN	Pn	10 34 45.9	-0.5
PKVZ	**Pokaka**	**0.44**	**358**	Pn	Pn	10 34 46.6	-0.5
PKVZ	**Pokaka**	**0.44**	**358**	⇓PN	Pn	10 34 46.6	-0.5
MOVZ	**Moawhango**	**0.44**	**43**	Pn	Pn	10 34 46.4	-0.6
MOVZ				Sn	Sn	10 34 55.4	-0.7
MOVZ	**Moawhango**	**0.44**	**43**	⇓PN	Pn	10 34 46.4	-0.6
MOVZ				SN	Sn	10 34 55.4	-0.7
WNVZ	**Wahianoa**	**0.44**	**24**	Pn	Pn	10 34 46.7	-0.5
WNVZ	**Wahianoa**	**0.44**	**24**	⇓PN	Pn	10 34 46.7	-0.5
TRVZ	**Turoa**	**0.45**	**18**	Pn	Pn	10 34 46.8	-0.5
TRVZ	**Turoa**	**0.45**	**18**	⇓PN	Pn	10 34 46.8	-0.5
DRZ	**Dome Shelter**	**0.48**	**19**	Pn	Pn	10 34 47.1	-0.6
DRZ	**Dome Shelter**	**0.48**	**19**	⇑PN	Pn	10 34 47.1	-0.6
WHVZ	**Whangaehu Hut**	**0.48**	**21**	Pn	Pn	10 34 47.0	-0.6
WHVZ	**Whangaehu Hut**	**0.48**	**21**	⇓PN	Pn	10 34 47.0	-0.6
OHWZ	**Ohakea**	**0.48**	**185**	⇑PN	Pn	10 34 47.8	+0.5
FWVZ	**Far West T-bar**	**0.49**	**17**	Pn	Pn	10 34 47.1	-0.6
FWVZ	**Far West T-bar**	**0.49**	**17**	⇓PN	Pn	10 34 47.1	-0.7
FWVZ				eSn	Sn	10 34 56.1	-1.2
TUVZ	**Tukino**	**0.51**	**26**	Pn	Pn	10 34 47.4	-0.4
TUVZ	**Tukino**	**0.51**	**26**	⇓PN	Pn	10 34 47.4	-0.4
TSZ	**Takapari Road**	**0.57**	**126**	Pn	Pn	10 34 48.0	-0.2
TSZ	**Takapari Road**	**0.57**	**126**	⇑PN	Pn	10 34 48.0	-0.2
TSZ				*e*SN	Sn	10 34 58.4	+0.2
TSZ				AML	AML	10 34 59.8	
NGZ	**Ngauruhoe**	**0.58**	**18**	Pn	Pn	10 34 47.9	-0.6
NGZ	**Ngauruhoe**	**0.58**	**18**	⇓PN	Pn	10 34 47.9	-0.6
OTVZ	**Oturere**	**0.61**	**23**	Pn	Pn	10 34 48.4	-0.4
OTVZ				Sn	Sn	10 34 58.9	-0.3
OTVZ	**Oturere**	**0.61**	**23**	⇓PN	Pn	10 34 48.4	-0.4
OTVZ				SN	Sn	10 34 58.9	-0.3
WTVZ	**West Tongariro**	**0.64**	**16**	Pn	Pn	10 34 48.4	-0.6
WTVZ	**West Tongariro**	**0.64**	**16**	⇓PN	Pn	10 34 48.4	-0.7
TWVZ	**Taurewa**	**0.66**	**5**	Pn	Pn	10 34 48.4	-0.9
TWVZ	**Taurewa**	**0.66**	**5**	PN	Pn	10 34 48.4	-0.9
KRVZ	**Karewarewa**	**0.67**	**19**	Pn	Pn	10 34 48.8	-0.6
KRVZ	**Karewarewa**	**0.67**	**19**	PN	Pn	10 34 48.8	-0.6
PNHZ	**Pukenui**	**0.67**	**106**	Pn	Pn	10 34 49.1	-0.3
PNHZ	**Pukenui**	**0.67**	**106**	PN	Pn	10 34 49.1	-0.3
PNHZ				AML	AML	10 35 02.9	
PNHZ				AML	AML	10 35 02.9	
POWZ	**Post Office Ro**	**0.73**	**155**	Pn	Pn	10 34 50.0	0.0
POWZ	**Post Office Ro**	**0.73**	**155**	PN	Pn	10 34 50.0	0.0
POWZ				AML	AML	10 35 03.3	
POWZ				AML	AML	10 35 04.3	
VRZ	**Vera Road**	**0.76**	**322**	Pn	Pn	10 34 49.8	-0.5
VRZ	**Vera Road**	**0.76**	**322**	PN	Pn	10 34 49.8	-0.5
KRHZ	**Kereru**	**0.78**	**84**	PN	Pn	10 34 50.6	0.0
KRHZ				AML	AML	10 35 06.4	
KRHZ				AML	AML	10 35 06.4	
LREZ	**Lake Rotokare**	**0.79**	**289**	⇓PN	Pn	10 34 50.4	-0.2
KATZ	**Kakaramea**	**0.79**	**19**	Pn	Pn	10 34 50.4	-0.5
KATZ				Sn	Sn	10 35 00.8	-2.0
KATZ	**Kakaramea**	**0.79**	**19**	⇑PN	Pn	10 34 50.4	-0.5
DVHZ	**Dannevirke**	**0.84**	**133**	Pn	Pn	10 34 52.5	+1.3
DVHZ	**Dannevirke**	**0.84**	**133**	PN	Pn	10 34 52.5	+1.3
DVHZ				AML	AML	10 35 09.3	
DVHZ				AML	AML	10 35 09.3	
RITZ	**Rihia Road**	**0.84**	**27**	Pn	Pn	10 34 50.9	-0.4
RITZ	**Rihia Road**	**0.84**	**27**	PN	Pn	10 34 50.9	-0.4
KWHZ	**Kaweka Forest**	**0.87**	**70**	⇓PN	Pn	10 34 52.1	+0.4
KWHZ				AML	AML	10 35 09.7	
KWHZ				AML	AML	10 35 10.0	
WPHZ	**Waipukurau**	**0.89**	**113**	Pn	Pn	10 34 53.0	+1.1
WPHZ	**Waipukurau**	**0.89**	**113**	PN	Pn	10 34 53.0	+1.1
WPHZ				AML	AML	10 35 09.1	
WPHZ				AML	AML	10 35 16.1	
RATZ	**Rangitukua**	**0.92**	**20**	Pn	Pn	10 34 51.7	-0.5
RATZ	**Rangitukua**	**0.92**	**20**	PN	Pn	10 34 51.7	-0.5
MRZ	**Mangatainoka R**	**0.95**	**170**	Pn	Pn	10 34 52.1	-0.5
MRZ	**Mangatainoka R**	**0.95**	**170**	⇑PN	Pn	10 34 52.1	-0.5
MRZ				*e*SN	Sn	10 35 07.3	+1.5
MRZ				AML	AML	10 35 08.5	
PRWZ	**Pori Road**	**0.95**	**151**	Pn	Pn	10 34 54.1	+1.5
PRWZ	**Pori Road**	**0.95**	**151**	PN	Pn	10 34 54.1	+1.5
PRWZ				AML	AML	10 35 09.5	
PRWZ				AML	AML	10 35 17.2	
HATZ	**Hinemaiaia**	**1.01**	**34**	Pn	Pn	10 34 52.5	-0.8
HATZ				Sn	Sn	10 35 06.1	-1.0
HATZ	**Hinemaiaia**	**1.01**	**34**	PN	Pn	10 34 52.5	-0.8
HATZ				SN	Sn	10 35 06.1	-1.0
PREZ	**Palmer Road**	**1.01**	**292**	Pn	Pn	10 34 53.7	+0.4
PREZ	**Palmer Road**	**1.01**	**292**	⇓PN	Pn	10 34 53.7	+0.4
MHEZ	**Mangahewa**	**1.04**	**309**	Pn	Pn	10 34 53.8	+0.2
MHEZ	**Mangahewa**	**1.04**	**309**	⇑PN	Pn	10 34 53.8	+0.2
BKZ	**Black Stump Fm**	**1.04**	**58**	Pn	Pn	10 34 53.4	-0.4
BKZ	**Black Stump Fm**	**1.04**	**58**	PN	Pn	10 34 53.4	-0.4
BKZ				AML	AML	10 35 11.4	
BKZ				AML	AML	10 35 12.9	
DREZ	**Durham Road**	**1.05**	**300**	Pn	Pn	10 34 53.8	0.0
DREZ	**Durham Road**	**1.05**	**300**	PN	Pn	10 34 53.8	0.0
WATZ	**Wairara**	**1.06**	**16**	Pn	Pn	10 34 53.5	-0.4
WATZ				Sn	Sn	10 35 08.0	-0.2
WATZ	**Wairara**	**1.06**	**16**	⇑PN	Pn	10 34 53.5	-0.4
WATZ				SN	Sn	10 35 08.0	-0.2
MCHZ	**McNeill Hill**	**1.07**	**75**	Pn	Pn	10 34 54.4	+0.3
MCHZ	**McNeill Hill**	**1.07**	**75**	PN	Pn	10 34 54.4	+0.3
MCHZ				AML	AML	10 35 18.1	
MCHZ				AML	AML	10 35 19.6	
OGWZ	**Otaki Gorge**	**1.10**	**188**	Pn	Pn	10 34 54.3	-0.1
OGWZ	**Otaki Gorge**	**1.10**	**188**	⇑PN	Pn	10 34 54.3	-0.1
OGWZ				AML	AML	10 35 13.8	
OGWZ				AML	AML	10 35 14.6	
PRHZ	**Porangahau**	**1.11**	**119**	Pn	Pn	10 34 55.0	+0.3
PRHZ	**Porangahau**	**1.11**	**119**	PN	Pn	10 34 55.0	+0.3
PRHZ				AML	AML	10 35 19.7	
PRHZ				AML	AML	10 35 20.2	
TIWZ	**Tintock**	**1.12**	**159**	Pn	Pn	10 34 56.0	+1.3
TIWZ	**Tintock**	**1.12**	**159**	PN	Pn	10 34 56.0	+1.3
TIWZ				AML	AML	10 35 15.6	
TIWZ				AML	AML	10 35 17.3	
KHEZ	**Kahui Hut**	**1.13**	**292**	Pn	Pn	10 34 55.1	+0.2
KHEZ	**Kahui Hut**	**1.13**	**292**	PN	Pn	10 34 55.1	+0.2
WHTZ	**Whakaora**	**1.16**	**24**	Pn	Pn	10 34 55.4	+0.1
WHTZ	**Whakaora**	**1.16**	**24**	PN	Pn	10 34 55.3	+0.1
KAHZ	**Kahuranaki**	**1.17**	**94**	Pn	Pn	10 34 55.6	+0.2
KAHZ	**Kahuranaki**	**1.17**	**94**	PN	Pn	10 34 55.6	+0.2
KAHZ				AML	AML	10 35 22.7	
KAHZ				AML	AML	10 35 25.4	
BFZ	**Birch Farm**	**1.17**	**145**	Pn	Pn	10 34 56.8	+1.4
HOWZ	**Holdsworth Sta**	**1.18**	**174**	Pn	Pn	10 34 55.0	-0.5
HOWZ	**Holdsworth Sta**	**1.18**	**174**	⇓PN	Pn	10 34 55.0	-0.5
HOWZ				AML	AML	10 35 14.6	
HOWZ				AML	AML	10 35 15.8	
KIW	**Kapiti Island**	**1.19**	**197**	Pn	Pn	10 34 55.2	-0.4
KIW	**Kapiti Island**	**1.19**	**197**	⇑PN	Pn	10 34 55.2	-0.4
KIW				AML	AML	10 35 13.6	
KIW				AML	AML	10 35 15.4	
NMEZ	**Namu Road**	**1.19**	**285**	Pn	Pn	10 34 55.6	+0.1
NMEZ	**Namu Road**	**1.19**	**285**	PN	Pn	10 34 55.6	0.0
PKE	**Pukeiti**	**1.19**	**296**	Pn	Pn	10 34 55.7	0.0
PKE	**Pukeiti**	**1.19**	**296**	PN	Pn	10 34 55.7	0.0
PXZ	**Pawanui**	**1.19**	**105**	Pn	Pn	10 34 55.8	+0.2
PXZ	**Pawanui**	**1.19**	**105**	PN	Pn	10 34 55.8	+0.2
PXZ				AML	AML	10 35 19.6	
PXZ				AML	AML	10 35 19.6	
PXZ				AML	AML	10 35 23.7	
PXZ				AML	AML	10 35 23.7	
MRHZ	**Matea Rd**	**1.21**	**43**	PN	Pn	10 34 55.0	-0.9
MRHZ				AML	AML	10 35 14.2	
MRHZ				AML	AML	10 35 15.7	
NWEZ	**Newall Road**	**1.24**	**291**	Pn	Pn	10 34 56.4	+0.1
NWEZ	**Newall Road**	**1.24**	**291**	PN	Pn	10 34 56.3	+0.1
NMHZ	**Naumai**	**1.28**	**61**	Pn	Pn	10 34 57.6	+0.7
NMHZ	**Naumai**	**1.28**	**61**	PN	Pn	10 34 57.6	+0.7
NMHZ				AML	AML	10 35 20.3	
NMHZ				AML	AML	10 35 20.6	
KUTZ	**Kaahu Road**	**1.29**	**16**	Pn	Pn	10 34 56.0	-0.5
KUTZ	**Kaahu Road**	**1.29**	**16**	PN	Pn	10 34 56.3	-0.5
CKHZ	**Cape Kidnapper**	**1.32**	**88**	Pn	Pn	10 34 59.7	+2.4
CKHZ				Sn	Sn	10 35 21.4	+7.1
CKHZ	**Cape Kidnapper**	**1.32**	**88**	AML	AML	10 35 24.5	
CKHZ				AML	AML	10 35 25.7	
ARHZ	**Aropaoanui**	**1.34**	**70**	Pn	Pn	10 34 57.5	0.0
ARHZ	**Aropaoanui**	**1.34**	**70**	⇓PN	Pn	10 34 57.5	0.0
ARHZ				AML	AML	10 35 23.4	
ARHZ				AML	AML	10 35 25.8	
WPRZ	**Whakapapatarin**	**1.36**	**27**	Pn	Pn	10 34 54.4	-3.4
ALRZ	**Allen Road**	**1.39**	**34**	Pn	Pn	10 34 57.8	-0.4
ALRZ	**Allen Road**	**1.39**	**34**	⇑PN	Pn	10 34 57.8	-0.4
CAW	**Cannon Point**	**1.40**	**189**	Pn	Pn	10 34 57.7	-0.6
CAW	**Cannon Point**	**1.40**	**189**	PN	Pn	10 34 57.7	-0.6
CAW				AML	AML	10 35 20.6	
CAW				AML	AML	10 35 21.3	
TLZ	**Tolley Road**	**1.40**	**6**	Pn	Pn	10 34 57.5	-0.9
TLZ	**Tolley Road**	**1.40**	**6**	⇑PN	Pn	10 34 57.5	-0.9
MTW	**Mount Morrison**	**1.43**	**176**	AML	AML	10 35 28.2	
MTW				AML	AML	10 35 28.5	
TMWZ	**Te Maipa**	**1.44**	**164**	Pn	Pn	10 34 55.9	-2.9
TMWZ	**Te Maipa**	**1.44**	**164**	AML	AML	10 35 24.9	
TMWZ				AML	AML	10 35 26.4	
PRRZ	**Plateau Road**	**1.46**	**33**	Pn	Pn	10 34 58.8	-0.4
PRRZ	**Plateau Road**	**1.46**	**33**	⇑PN	Pn	10 34 58.8	-0.4
HRRZ	**Handcock Road**	**1.51**	**28**	Pn	Pn	10 35 00.2	+0.3
HRRZ	**Handcock Road**	**1.51**	**28**	PN	Pn	10 35 00.2	+0.3
HSRZ	**Hossack Road**	**1.57**	**26**	PN	Pn	10 35 00.6	0.0
WHHZ	**Waihua**	**1.59**	**66**	PN	Pn	10 35 00.8	0.0
WHHZ				AML	AML	10 35 29.5	
WHHZ				AML	AML	10 35 31.1	
WEL	**Wellington**	**1.62**	**196**	Pn	Pn	10 35 00.5	-0.8
WEL	**Wellington**	**1.62**	**196**	PN	Pn	10 35 00.4	-0.8
WEL				AML	AML	10 35 02.8	
WEL				AML	AML	10 35 31.0	
RRRZ	**Republican Roa**	**1.65**	**33**	Pn	Pn	10 35 01.4	-0.3
RRRZ	**Republican Roa**	**1.65**	**33**	PN	Pn	10 35 01.4	-0.3
PAWZ	**Paruwai Farm**	**1.65**	**178**	Pn	Pn	10 35 04.2	+2.5
PAWZ	**Paruwai Farm**	**1.65**	**178**	AML	AML	10 35 32.8	
PAWZ				AML	AML	10 35 42.4	
MUGZ	**Murupara**	**1.66**	**42**	PN	Pn	10 35 01.1	-0.7
SNZO	**South Karori**	**1.66**	**197**	*e*Pn	Pn	10 35 02.5	+0.7
SNZO				*e*Sn	Sn	10 35 22.2	0.0
TRWZ	**Traveller**	**1.69**	**172**	Pn	Pn	10 35 01.8	-0.4
TRWZ	**Traveller**	**1.69**	**172**	PN	Pn	10 35 01.8	-0.4
TRWZ				AML	AML	10 35 37.6	
TRWZ				AML	AML	10 35 37.6	
MSWZ	**Moikau Station**	**1.69**	**183**	Pn	Pn	10 35 00.9	-1.3
MSWZ	**Moikau Station**	**1.69**	**183**	PN	Pn	10 35 00.9	-1.3
MSWZ				AML	AML	10 35 33.1	
MSWZ				AML	AML	10 35 33.9	
TCW	**Tory Channel**	**1.70**	**209**	Pn	Pn	10 35 01.5	-0.8
TCW	**Tory Channel**	**1.70**	**209**	⇓PN	Pn	10 35 01.5	-0.8
TCW				AML	AML	10 35 27.8	
TCW				AML	AML	10 35 29.7	
BHW	**Baring Head**	**1.72**	**192**	Pn	Pn	10 35 01.4	-1.2
BHW	**Baring Head**	**1.72**	**192**	AML	AML	10 35 31.3	
BHW				AML	AML	10 35 33.7	
TARZ	**Mount Tarawera**	**1.73**	**31**	Pn	Pn	10 35 03.3	+0.4
TARZ	**Mount Tarawera**	**1.73**	**31**	PN	Pn	10 35 03.3	+0.4
SNGZ	**Shannon Statio**	**1.80**	**59**	Pn	Pn	10 35 03.4	-0.3
SNGZ	**Shannon Statio**	**1.80**	**59**	PN	Pn	10 35 03.4	-0.3
SNGZ				AML	AML	10 35 35.5	
SNGZ				AML	AML	10 35 40.0	
PLWZ	**Palliser**	**1.84**	**183**	Pn	Pn	10 35 03.0	-1.3
PLWZ	**Palliser**	**1.84**	**183**	PN	Pn	10 35 03.0	-1.3
PLWZ				AML	AML	10 35 38.3	
PLWZ				AML	AML	10 35 38.5	
KNZ	**Kokohu**	**1.92**	**69**	Pn	Pn	10 35 04.2	-1.0
KNZ	**Kokohu**	**1.92**	**69**	PN	Pn	10 35 04.2	-1.0
KNZ				AML	AML	10 35 43.0	
KNZ				AML	AML	10 36 00.4	
TOZ	**Tahuroa Road**	**2.00**	**3**	Pn	Pn	10 35 05.5	-0.7
TOZ	**Tahuroa Road**	**2.00**	**3**	⇑PN	Pn	10 35 05.5	-0.7
URZ	**Urewera**	**2.00**	**43**	Pn	Pn	10 35 05.1	-1.2
URZ	**Urewera**	**2.00**	**43**	⇓PN	Pn	10 35 05.1	-1.2
URZ				AML	AML	10 35 34.4	
URZ				AML	AML	10 35 35.2	
RAGZ	**Rawiri**	**2.01**	**53**	Pn	Pn	10 35 08.1	+1.5
RAGZ	**Rawiri**	**2.01**	**53**	AML	AML	10 35 38.6	
RAGZ				AML	AML	10 35 38.7	
TUWZ	**Tuamarina**	**2.02**	**212**	AML	AML	10 35 35.6	
TUWZ				AML	AML	10 35 35.8	
MHGZ	**Mahia Peninsul**	**2.05**	**75**	Pn	Pn	10 35 06.3	-0.7
MHGZ	**Mahia Peninsul**	**2.05**	**75**	PN	Pn	10 35 06.3	-0.7
MHGZ				AML	AML	10 35 55.0	
MHGZ				AML	AML	10 36 01.1	
OPRZ	**Ohinepanea**	**2.10**	**27**	Pn	Pn	10 35 07.4	-0.2
OPRZ	**Ohinepanea**	**2.10**	**27**	⇑PN	Pn	10 35 07.4	-0.2
PRGZ	**Paritu Road**	**2.11**	**68**	Pn	Pn	10 35 06.9	-0.9
PRGZ	**Paritu Road**	**2.11**	**68**	PN	Pn	10 35 06.9	-0.9
PRGZ				AML	AML	10 35 54.3	
PRGZ				AML	AML	10 35 56.7	
TGRZ	**Tauranga**	**2.11**	**20**	Pn	Pn	10 35 07.7	-0.2

MOZS				*i* Sg		**Sg**	**10 37 39.5**	**-0.1**
	comp=Z,8μm,0.1s							
MOZS	**Mozjanca**	**0.13**	**199**	Pg		**Pg**	**10 37 37.4**	**-0.1**
MOZS				*i* Sg		**Sg**	**10 37 39.5**	**-0.1**
	comp=Z,8μm,0.1s							
VNDS	**Vrh nad Dolski**	**0.34**	**156**	⇓*i*Pg		**Pg**	**10 37 41.4**	**+0.1**
VNDS	**Vrh nad Dolski**	**0.34**	**156**	⇓*i*Pg		**Pg**	**10 37 41.4**	**+0.1**
GORS	**Gorjuse**	**0.37**	**255**	⇑*i*Pg		**Pg**	**10 37 41.2**	**-0.6**
GORS				*i* Sg		**Sg**	**10 37 46.6**	**-0.1**
	comp=Z,150nm,0.1s							
LJU	**Ljubljana**	**0.37**	**178**	⇓*i*Pg		**Pg**	**10 37 42.0**	**+0.1**
LJU				*i* Sg		**Sg**	**10 37 46.9**	**+0.1**
	comp=Z,225nm,0.1s							
LJU	**Ljubljana**	**0.37**	**178**	⇓*i*Pg		**Pg**	**10 37 42.0**	**+0.1**
LJU				*e*Sg		**Sg**	**10 37 46.6**	**-0.2**
CRNS	**Crni Vrh**	**0.38**	**207**	⇑*i*Pg		**Pg**	**10 37 42.0**	**+0.1**
CRNS				*i* Sg		**Sg**	**10 37 47.5**	**+0.7**
	comp=Z,756nm,0.1s							
SOKA	**Soboth**	**0.45**	**54**	Pg		**Pg**	**10 37 43.3**	**0.0**
	SNR=261							
SOKA				Sg		**Sg**	**10 37 49.6**	**+0.3**
	comp=Z,296nm,0.2s							
PERS	**Pernice**	**0.48**	**62**	⇑*i*Pg		**Pg**	**10 37 43.7**	**-0.1**
PERS				*i* Sg		**Sg**	**10 37 50.4**	**+0.2**
	comp=Z,464nm,0.1s							
PERS	**Pernice**	**0.48**	**62**	⇑*i*Pg		**Pg**	**10 37 43.7**	**-0.1**
PERS				*i* Sg		**Sg**	**10 37 50.4**	**+0.2**
	comp=Z,464nm,0.1s							
GBAS	**Gorenja Brezov**	**0.48**	**185**	⇓*i*Pg		**Pg**	**10 37 43.7**	**-0.3**
GBAS				*i* Sg		**Sg**	**10 37 50.5**	**+0.3**
	comp=Z,512nm,0.2s							
BISS	**Bistriski jare**	**0.49**	**61**	⇑*i*Pg		**Pg**	**10 37 44.0**	**-0.1**
BISS				*i* Sg		**Sg**	**10 37 50.6**	**+0.1**
	comp=Z,1μm,0.1s							
BISS	**Bistriski jare**	**0.49**	**61**	⇑*i*Pg		**Pg**	**10 37 44.0**	**-0.1**
BISS				*i* Sg		**Sg**	**10 37 50.6**	**+0.1**
	comp=Z,1μm,0.1s							
PDKS	**Podkum**	**0.49**	**136**	⇓*i*Pg		**Pg**	**10 37 44.3**	**+0.2**
PDKS				*i* Sg		**Sg**	**10 37 50.7**	**+0.1**
	comp=Z,487nm,0.1s							
PDKS	**Podkum**	**0.49**	**136**	⇓*i*Pg		**Pg**	**10 37 44.3**	**+0.2**
PDKS				*i* Sg		**Sg**	**10 37 50.7**	**+0.1**
	comp=Z,487nm,0.1s							
CADS	**Cadrg**	**0.56**	**251**	⇑*i*Pg		**Pg**	**10 37 44.8**	**-0.7**
CADS				*i* Sg		**Sg**	**10 37 53.6**	**+0.7**
	comp=Z,289nm,0.1s							
CADS	**Cadrg**	**0.56**	**251**	⇑*i*Pg		**Pg**	**10 37 44.8**	**-0.7**
CADS				*i* Sg		**Sg**	**10 37 53.6**	**+0.7**
	comp=Z,289nm,0.1s							
VOJS	**Vojsko**	**0.58**	**229**	⇑*i*Pg		**Pg**	**10 37 45.1**	**-0.6**
VOJS				*i* Sg		**Sg**	**10 37 53.9**	**+0.6**
	comp=Z,204nm,0.1s							
VOJS	**Vojsko**	**0.58**	**229**	⇑*i*Pg		**Pg**	**10 37 45.1**	**-0.6**
VOJS				*i* Sg		**Sg**	**10 37 53.9**	**+0.6**
	comp=Z,204nm,0.1s							
JAVS	**Javornik**	**0.60**	**211**	⇑*i*Pg		**Pg**	**10 37 45.7**	**-0.5**
JAVS				*i* Sg		**Sg**	**10 37 54.5**	**+0.3**
	comp=Z,390nm,0.2s							
JAVS	**Javornik**	**0.60**	**211**	⇑*i*Pg		**Pg**	**10 37 45.7**	**-0.5**
JAVS				*i* Sg		**Sg**	**10 37 54.5**	**+0.3**
	comp=Z,390nm,0.2s							
MYKA	**Terra Mystica**	**0.63**	**290**	Pg		**Pg**	**10 37 46.4**	**-0.4**
	comp=Z,24nm,0.2s,SNR=39							
MYKA				Sg		**Sg**	**10 37 55.5**	**+0.4**
	comp=Z,310nm,0.2s							
DRE	**Drenchia**	**0.64**	**248**	⇑*e*Pg		**Pg**	**10 37 46.2**	**-0.8**
DRE	**Drenchia**	**0.64**	**248**	*e*P		**Pg**	**10 37 46.2**	**-0.8**
VISS	**Visnje**	**0.66**	**159**	*i* Pg		**Pg**	**10 37 47.0**	**-0.2**
VISS				*i* Sg		**Sg**	**10 37 56.4**	**+0.7**
	comp=Z,188nm,0.1s							
LSR	**Lussari**	**0.68**	**275**	⇑*e*Pg		**Pg**	**10 37 47.4**	**-0.3**
LSR				*e*Sg		**Sb**	**10 37 57.5**	**-0.6**
LSR	**Lussari**	**0.68**	**275**	*e*P		**Pg**	**10 37 47.4**	**-0.3**
CEY	**Cerknica**	**0.68**	**185**	⇓*i*Pg		**Pg**	**10 37 47.2**	**-0.4**
CEY				*i* Sg		**Sg**	**10 37 56.9**	**+0.4**
	comp=Z,182nm,0.1s							
CEY	**Cerknica**	**0.68**	**185**	⇓*i*Pg		**Pg**	**10 37 47.2**	**-0.4**
CEY				*i* Sg		**Sg**	**10 37 56.9**	**+0.4**
	comp=Z,182nm,0.1s							
GROS	**Grobnik**	**0.69**	**86**	⇑*i*Pg		**Pg**	**10 37 47.4**	**-0.6**
GROS				*i* Sg		**Sg**	**10 37 56.5**	**-0.4**
	comp=Z,148nm,0.1s							
GROS	**Grobnik**	**0.69**	**86**	⇑*i*Pg		**Pg**	**10 37 47.3**	**-0.6**
GROS				*i* Sg		**Sg**	**10 37 56.5**	**-0.4**
	comp=Z,148nm,0.1s							
ACOM	**Acomizza, Ital**	**0.70**	**281**	⇑*e*Pg		**Pg**	**10 37 47.8**	**-0.2**
ACOM				*e*Sg		**Sg**	**10 37 57.2**	**0.0**
ACOM	**Acomizza, Ital**	**0.70**	**281**	*e*P		**Pg**	**10 37 47.8**	**-0.2**
ROBS	**Robic**	**0.71**	**256**	⇑*i*Pg		**Pg**	**10 37 47.2**	**-1.0**
	comp=Z,85nm,0.1s							
ROBS	**Robic**	**0.71**	**256**	⇑*i*Pg		**Pg**	**10 37 47.2**	**-1.0**
	comp=Z,85nm,0.1s							
DOBS	**Dobrina**	**0.72**	**111**	⇑*i*Pg		**Pg**	**10 37 48.5**	**+0.1**
	comp=Z,245nm,0.1s							
DOBS	**Dobrina**	**0.72**	**111**	⇑*i*Pg		**Pg**	**10 37 48.5**	**+0.1**
	comp=Z,245nm,0.1s							
LEGS	**Legarje**	**0.73**	**129**	⇓*i*Pg		**Pg**	**10 37 48.6**	**0.0**
LEGS				*i* Sg		**Sg**	**10 37 58.2**	**0.0**
SABO	**M.te Sabotino**	**0.76**	**236**	⇑*e*Pg		**Pg**	**10 37 48.0**	**-1.2**
SABO				*e*Sg		**Sg**	**10 37 59.2**	**0.0**
SABO	**M.te Sabotino**	**0.76**	**236**	*e*P		**Pg**	**10 37 48.0**	**-1.2**
CESS	**Cesta pri Krsk**	**0.80**	**123**	*i* Pg		**Pg**	**10 37 49.9**	**0.0**
COLI	**Coloredo**	**0.83**	**251**	⇑*e*Pg		**Pg**	**10 37 49.9**	**-0.6**
COLI	**Coloredo**	**0.83**	**251**	*e*P		**Pg**	**10 37 49.9**	**-0.6**
VINO	**Villanova**	**0.86**	**260**	⇑*e*Pg		**Pg**	**10 37 49.8**	**-1.3**
VINO				*e*Sg		**Sb**	**10 38 02.7**	**-0.6**
VINO	**Villanova**	**0.86**	**260**	*e*P		**Pg**	**10 37 49.8**	**-1.3**
TRI	**Trieste**	**0.87**	**216**	⇓*e*Pg		**Pg**	**10 37 50.4**	**-1.0**
TRI				*e*Sg		**Sg**	**10 38 02.8**	**0.0**
TRI	**Trieste**	**0.87**	**216**	*e*P		**Pg**	**10 37 50.3**	**-1.0**
GOLS	**Golise**	**0.88**	**117**	⇓*i*Pg		**Pg**	**10 37 51.4**	**0.0**
GOLS				*i* Sg		**Sg**	**10 38 03.1**	**+0.3**
	comp=Z,221nm,0.1s							
CRES	**Cresnjev**	**0.89**	**131**	⇓*i*Pg		**Pg**	**10 37 51.1**	**-0.4**
CRES				*i* Sg		**Sb**	**10 38 04.0**	**0.0**
	comp=Z,104nm,0.1s							
CRES	**Cresnjev**	**0.89**	**131**	⇓*i*Pg		**Pg**	**10 37 51.2**	**-0.4**
CRES				*i* Sg		**Sb**	**10 38 04.0**	**0.0**
	comp=Z,104nm,0.1s							
BAD	**Bernadia**	**0.89**	**259**	⇓*e*Pg		**Pg**	**10 37 50.7**	**-1.0**
BAD				*e*Sg		**Sb**	**10 38 03.7**	**-0.4**
BAD	**Bernadia**	**0.89**	**259**	*e*P		**Pg**	**10 37 50.7**	**-1.0**
KNDS	**Knezji Dol**	**0.89**	**186**	⇑*i*Pg		**Pg**	**10 37 51.1**	**-0.6**
	comp=Z,258nm,0.2s							
KNDS	**Knezji Dol**	**0.89**	**186**	⇑*i*Pg		**Pg**	**10 37 51.1**	**-0.6**
	comp=Z,258nm,0.2s							
GBRS	**Gornja Briga**	**0.91**	**166**	*i* Pg		**Pg**	**10 37 51.5**	**-0.5**
	comp=Z,88nm,0.1s							
SKDS	**Skadanscina**	**0.93**	**202**	⇓*i*Pg		**Pg**	**10 37 51.2**	**-1.3**
SKDS				*i* Sg		**Sg**	**10 38 04.7**	**+0.1**
	comp=Z,135nm,0.1s							
SKDS	**Skadanscina**	**0.93**	**202**	⇓*i*Pg		**Pg**	**10 37 51.2**	**-1.3**
SKDS				*i* Sg		**Sg**	**10 38 04.7**	**+0.1**
	comp=Z,135nm,0.1s							
PLRO	**Paularo**	**0.95**	**279**	⇓*e*Pg		**Pg**	**10 37 52.3**	**-0.5**
PLRO	**Paularo**	**0.95**	**279**	*e*P		**Pg**	**10 37 52.3**	**-0.5**
GCIS	**Gornji Cirnik**	**0.95**	**125**	⇓*i*Pg		**Pg**	**10 37 52.7**	**-0.2**
	comp=Z,191nm,0.2s							
KBA	**Koelnbreinsper**	**1.04**	**310**	*e*Pg		**Pg**	**10 37 53.9**	**-0.6**
KBA				*e*Sg		**Sg**	**10 38 06.7**	**-1.2**
KBA	**Koelnbreinsper**	**1.04**	**310**	Pg		**Pg**	**10 37 53.9**	**-0.6**
KBA				Sg		**Sg**	**10 38 07.1**	**-0.9**
	comp=Z,114nm,0.2s							
FUSE	**Fusea**	**1.04**	**270**	*e*Pg		**Pg**	**10 37 53.6**	**-0.9**
FUSE	**Fusea**	**1.04**	**270**	*e*P		**Pg**	**10 37 53.6**	**-0.9**
OZLJ	**Ozalj**	**1.04**	**140**	*i* Pg		**Pg**	**10 37 54.3**	**-0.3**
OZLJ				Sg		**Sn**	**10 38 09.4**	**-0.6**
OZLJ	**Ozalj**	**1.04**	**140**	*i* Pg		**Pg**	**10 37 54.2**	**-0.3**
OZLJ				Sg		**Sn**	**10 38 09.3**	**-0.6**
BOJS	**Bojanci**	**1.05**	**150**	⇓*i*Pg		**Pg**	**10 37 54.2**	**-0.5**
	comp=Z,326nm,0.2s							
BOJS	**Bojanci**	**1.05**	**150**	⇓*i*Pg		**Pg**	**10 37 54.2**	**-0.5**
	comp=Z,326nm,0.2s							
MPRI	**Monte Prat**	**1.06**	**261**	*e*Pg		**Pg**	**10 37 53.8**	**-1.2**
MPRI	**Monte Prat**	**1.06**	**261**	*e*P		**Pg**	**10 37 53.8**	**-1.2**
ZOU	**Zoufplan**	**1.07**	**278**	*e*Pg		**Pg**	**10 37 54.6**	**-0.5**
ZOU	**Zoufplan**	**1.07**	**278**	*e*Pg		**Pg**	**10 37 54.5**	**-0.5**
ZOU	**Zoufplan**	**1.07**	**278**	*e*P		**Pg**	**10 37 54.5**	**-0.5**
ARSA	**Arzberg**	**1.09**	**40**	*e*Pg		**Pg**	**10 37 54.6**	**-0.9**
ARSA				*e*Sg		**Sg**	**10 38 08.6**	**-1.1**
ARSA	**Arzberg**	**1.09**	**40**	Pg		**Pg**	**10 37 54.6**	**-0.9**
ARSA				Sg		**Sg**	**10 38 08.7**	**-0.9**
	comp=Z,106nm,0.2s							
TLI	**Talmassons**	**1.09**	**244**	*e*Pg		**Pb**	**10 37 54.9**	**-0.6**
TLI	**Talmassons**	**1.09**	**244**	*e*P		**Pb**	**10 37 54.9**	**-0.6**
ZAG	**Zagreb**	**1.19**	**119**	*e*Sg		**Sn**	**10 38 13.1**	**-0.4**
KOGS	**Kog**	**1.21**	**88**	*i* Pg		**Pn**	**10 37 57.2**	**-0.4**
	comp=Z,154nm,0.2s							
CSMI	**Casera Mimoias**	**1.28**	**275**	⇑*e*Pg		**Pn**	**10 37 58.4**	**-0.4**
CSMI	**Casera Mimoias**	**1.28**	**275**	*e*P		**Pn**	**10 37 58.4**	**-0.4**
MLNI	**Malnisio**	**1.34**	**259**	*e*Pg		**Pn**	**10 37 58.9**	**-0.6**
MLNI	**Malnisio**	**1.34**	**259**	*e*P		**Pn**	**10 37 58.9**	**-0.6**
ABTA	**Abfaltersbach**	**1.41**	**284**	Pg		**Pn**	**10 38 00.4**	**-0.1**
	comp=Z,7.1nm,0.1s,SNR=38							
ABTA				Sg		**Sg**	**10 38 21.4**	**+1.4**
	comp=Z,64nm,0.2s							
CIMO	**Cimolais**	**1.43**	**267**	*e*Pg		**Pn**	**10 38 00.7**	**0.0**
CIMO	**Cimolais**	**1.43**	**267**	*e*P		**Pn**	**10 38 00.7**	**0.0**
MOA	**Molln**	**1.44**	**354**	*e*Pg		**Pg**	**10 38 02.3**	**+0.1**
MOA				*e*Sg		**Sg**	**10 38 23.2**	**+2.1**
MOA	**Molln**	**1.44**	**354**	Pg		**Pg**	**10 38 02.3**	**+0.1**
	comp=Z,5.8nm,0.1s,SNR=35							
MOA				Sg		**Sg**	**10 38 23.1**	**+2.1**
	comp=Z,15nm,0.2s							
CAE	**Caneva**	**1.49**	**255**	*e*Pg		**Pb**	**10 38 02.5**	**+0.1**
CAE	**Caneva**	**1.49**	**255**	*e*P		**Pb**	**10 38 02.5**	**+0.1**
BEHE	**Becsehely**	**1.57**	**87**	*e*Sn		**Sg**	**10 38 25.5**	**+0.5**
VARN	**Col Varnada, M**	**1.72**	**257**	*e*Pg		**Pb**	**10 38 05.3**	**-1.0**
VARN	**Col Varnada, M**	**1.72**	**257**	*e*P		**Pb**	**10 38 05.3**	**-1.0**
CONA	**Conrad Observa**	**1.77**	**31**	Pg		**Pb**	**10 38 06.2**	**-1.1**
	comp=Z,5.2nm,0.2s,SNR=20							
CONA				Sg		**Sg**	**10 38 31.6**	**0.0**
	comp=Z,30nm,0.4s							
MTLO	**Montello**	**1.78**	**251**	*e*Pg		**Pb**	**10 38 06.4**	**-0.9**
MTLO	**Montello**	**1.78**	**251**	*e*P		**Pb**	**10 38 06.4**	**-0.9**
NVLJ	**Novalja**	**1.87**	**172**	*e*Pn		**Pb**	**10 38 07.9**	**-1.0**
NVLJ				Sn		**Sb**	**10 38 33.4**	**+1.1**
NVLJ	**Novalja**	**1.87**	**172**	*e*Pn		**Pb**	**10 38 07.8**	**-1.0**
NVLJ				Sn		**Sb**	**10 38 33.3**	**+1.1**
CGRP	**Cima Grappa**	**1.96**	**255**	*e*Pn		**Pn**	**10 38 08.6**	**+0.6**
CGRP	**Cima Grappa**	**1.96**	**255**	*e*P		**Pn**	**10 38 08.6**	**+0.6**
UDBI	**Udbina**	**2.08**	**154**	*e*Pn		**Pb**	**10 38 11.0**	**-1.5**
UDBI				Sn		**Sb**	**10 38 37.9**	**-0.6**
UDBI	**Udbina**	**2.08**	**154**	*e*Pn		**Pb**	**10 38 11.0**	**-1.5**
UDBI				Sn		**Sb**	**10 38 37.9**	**-0.6**
MRAK	**Mrakovica**	**2.19**	**129**	*e*Sn		**Sn**	**10 38 39.4**	**+1.1**
WATA	**Walderalm**	**2.21**	**296**	Pg		**Pb**	**10 38 14.9**	**+0.2**
	comp=Z,6.2nm,0.3s							
WATA				Sg		**Sg**	**10 38 46.5**	**+1.0**
	comp=Z,22nm,0.3s							
PANI	**Panarotta**	**2.23**	**262**	*e*Pn		**Pn**	**10 38 12.8**	**+1.0**
DDS	**Dosso del Somm**	**2.37**	**258**	*e*Pn		**Pn**	**10 38 14.4**	**+0.7**
DDS	**Dosso del Somm**	**2.37**	**258**	*e*P		**Pn**	**10 38 14.4**	**+0.7**
OZOL	**Ozolo**	**2.39**	**271**	*e*Pn		**Pb**	**10 38 15.6**	**-2.1**
OZOL	**Ozolo**	**2.39**	**271**	*e*P		**Pb**	**10 38 15.6**	**-2.1**
GEC2	**GERESS Array S**	**2.49**	**348**	*e*Pn		**Pn**	**10 38 16.5**	**+1.2**
GEC2				*e*Pg		**Pb**	**10 38 20.3**	**+0.8**
GEC2	**GERESS Array S**	**2.49**	**348**	Pn		**Pn**	**10 38 16.5**	**+1.2**
MOTA	**Moosalm**	**2.51**	**293**	Pg		**Pb**	**10 38 19.6**	**-0.2**
	comp=Z,2.8nm,0.2s							
MOTA				Sg		**Sg**	**10 38 55.3**	**+0.1**
	comp=Z,23nm,0.5s							
BLY	**Banja Luka**	**2.51**	**131**	*e*Pn		**Pn**	**10 38 17.0**	**+1.5**
BLY				*e*Sn		**Sn**	**10 38 48.1**	**+1.9**
FETA	**Feichten**	**2.67**	**285**	Pg		**Pb**	**10 38 21.4**	**-1.1**
	comp=Z,1.3nm,0.3s							
FETA				Sg		**Sg**	**10 38 58.8**	**-1.4**
	comp=Z,9.7nm,0.4s							
RETA	**Reutte**	**2.78**	**294**	Pg		**Pg**	**10 38 29.7**	**+1.9**
	comp=Z,2.5nm,0.1s							
RETA				Sg		**Sg**	**10 39 04.6**	**+0.9**
	comp=Z,15nm,0.4s							
KHC	**Kasperske Hory**	**2.79**	**347**	*e*PN		**Pn**	**10 38 20.6**	**+1.3**
KHC				*e*PG		**Pg**	**10 38 26.0**	**-1.9**
KHC				*e*SG		**Sg**	**10 39 02.8**	**-1.3**
	comp=Z,14nm,0.3s							
KHC	**Kasperske Hory**	**2.79**	**347**	Pn		**Pn**	**10 38 20.6**	**+1.3**
WET	**Wettzell**	**2.94**	**339**	*e*Pn		**Pn**	**10 38 22.8**	**+1.4**
WET				*e*Pg		**Pg**	**10 38 29.9**	**-1.0**
WET	**Wettzell**	**2.94**	**339**	Pn		**Pn**	**10 38 22.8**	**+1.4**
DAVA	**Damuels**	**3.29**	**287**	*e*Pn		**Pn**	**10 38 29.1**	**+2.8**
DAVA				*e*Sg		**Sg**	**10 39 20.2**	**0.0**
DAVA	**Damuels**	**3.29**	**287**	Pn		**Pn**	**10 38 29.1**	**+2.8**
DAVA				Sg		**Sg**	**10 39 20.2**	**0.0**
PRU	**Pruhonice**	**3.58**	**0**	*e*SG		**Sg**	**10 39 27.2**	**-2.1**
	comp=Z,17nm,0.6s							
PRU	**Pruhonice**	**3.58**	**0**	Sg		**Sg**	**10 39 27.2**	**-2.1**
	comp=Z,17nm,0.6s							
VYHS	**Vyhne**	**3.60**	**53**	*e*Pn		**Pn**	**10 38 30.1**	**-0.4**
VYHS	**Vyhne**	**3.60**	**53**	*e*PN		**Pn**	**10 38 30.0**	**-0.4**
ROTZ	**Rotzenmuhle**	**3.69**	**336**	*e*Pn		**Pn**	**10 38 32.7**	**+1.0**
ROTZ				*e*Pg		**Pg**	**10 38 44.3**	**-0.9**
ROTZ	**Rotzenmuhle**	**3.69**	**336**	Pn		**Pn**	**10 38 32.7**	**+1.0**
MORC	**Moravsky Berou**	**3.93**	**30**	*e*Pn		**Pn**	**10 38 36.1**	**+1.1**
MORC				*e*Sg		**Sg**	**10 39 41.5**	**+0.8**
GRA1	**Grafenberg Arr**	**3.95**	**327**	Pg		**Pg**	**10 38 49.2**	**-1.0**
GRF	**Grafenberg Arr**	**3.95**	**327**	*e*Pg		**Pg**	**10 38 49.2**	**-1.0**
WILA	**Wila**	**3.96**	**287**	*e*Pn		**Pn**	**10 38 37.9**	**+2.4**
WILA	**Wila**	**3.96**	**287**	Pn		**Pn**	**10 38 37.9**	**+2.4**
NKC	**Novy Kostel**	**4.06**	**341**	*e*SG		**Sg**	**10 39 42.7**	**-2.1**
	comp=Z,11nm,0.4s							
NKC	**Novy Kostel**	**4.06**	**341**	Sg		**Sg**	**10 39 42.7**	**-2.1**
	comp=Z,11nm,0.4s							
ROHR	**Rohrbach**	**4.09**	**340**	*e*Pg		**Pg**	**10 38 51.8**	**-1.1**
ROHR	**Rohrbach**	**4.09**	**340**	Pg		**Pg**	**10 38 51.8**	**-1.1**
PVCC	**Panska Ves**	**4.12**	**1**	*e*SG		**Sg**	**10 39 44.6**	**-2.0**
	comp=Z,32nm,0.6s							
PVCC	**Panska Ves**	**4.12**	**1**	Sg		**Sg**	**10 39 44.6**	**-2.0**
	comp=Z,32nm,0.6s							
WERN	**Wernitzgruen**	**4.13**	**341**	*e*Pn		**Pn**	**10 38 38.7**	**+1.0**
WERN	**Wernitzgruen**	**4.13**	**341**	Pn		**Pn**	**10 38 38.7**	**+1.0**
GUNZ	**Gunzen**	**4.21**	**341**	*e*Pn		**Pn**	**10 38 40.5**	**+1.6**
GUNZ				*e*Pg		**Pg**	**10 38 54.9**	**-0.2**
GUNZ	**Gunzen**	**4.21**	**341**	Pn		**Pn**	**10 38 40.5**	**+1.6**
TRIB	**Obertriebel**	**4.24**	**339**	*e*Pn		**Pn**	**10 38 40.7**	**+1.4**
TRIB	**Obertriebel**	**4.24**	**339**	Pn		**Pn**	**10 38 40.7**	**+1.4**
LANS	**Liptovska Anna**	**4.32**	**49**	*e*Pn		**Pn**	**10 38 40.1**	**-0.3**
LANS	**Liptovska Anna**	**4.32**	**49**	*e*PN		**Pn**	**10 38 40.1**	**-0.3**
BRG	**Berggiesshubel**	**4.48**	**355**	SG		**Sb**	**10 39 52.1**	**+4.8**
	comp=Z,6.7nm,0.6s							
MOX	**Moxa**	**4.65**	**337**	*e*Pn		**Pn**	**10 38 46.0**	**+1.2**
MOX	**Moxa**	**4.65**	**337**	Pn		**Pn**	**10 38 46.0**	**+1.2**
SCHD	**Schmiedefeld**	**4.67**	**333**	*e*Pn		**Pn**	**10 38 46.5**	**+1.3**
SCHD	**Schmiedefeld**	**4.67**	**333**	Pn		**Pn**	**10 38 46.5**	**+1.3**
CLL	**Collm**	**5.00**	**349**	*e*Sg		**Sg**	**10 40 14.0**	**-0.8**
	comp=Z,12nm,0.9s							

IDC 29 10:51:51.5±26.0, 22°91S×178°42W, h541km±296km, mb3.1/4, mb1 3.3/4, mb1mx2.9/35, mbtmp4.0/4, Error ellipse: s-maj=385.8km s-min=55.8km az=40.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
CTA	**Charters Tower**	**32.94**	**268**	P	P		10 57 41.6	-0.1
	2.8nm,0.3s,baz=84,slow=11,SNR=8.2							
ASAR	**Alice Springs**	**43.63**	**259**	P	P		10 59 08.3	-0.2
	0.8nm,0.6s,baz=94,slow=7.3,SNR=18							
WRA	**Warramunga Arr**	**43.93**	**265**	P	P		10 59 10.7	-0.1
	1.4nm,0.5s,baz=103,slow=8.2,SNR=60							
VNDA	**Vanda**	**55.48**	**185**	P	P		11 00 34.6	-0.1
	0.5nm,0.6s,baz=11,slow=4.0,SNR=3.0							

MEX 29 10:52:37.2±0.5, 14°88N×93°05W, h16km±24km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
CCIG	**Comitan**	**1.65**	**32**	*e*P	Pn		10 53 02.6	-3.1
CCIG				*i* S	Sn		10 53 21.2	-5.5
TGIG		**1.89**	**358**	*i* P	Pn		10 53 05.7	-3.3
TGIG				*e*S	Sn		10 53 27.0	-5.5

*NIED **29** 10:58:00, 36°80N×140°60E, h5km, Mw3.9 Best double couple: M0 7.67000×10^14 NP1:φs342.00000°, δ41.00000°, λ-118.00000°. NP2:φs197.00000°, δ55.00000°, λ-68.00000°.*

*ISCJB **29** 10:58:54.9±0.4, 36°83N±0°03×140°67E±0°04, h10km, mb4.0/16, Error ellipse: s-maj=5.4km s-min=3.6km az=23.1*

*IDC **29** 10:58:55.0±0.7, 36°81N×140°58E, h0km, mb3.9/12, mb1 4.0/17, mb1mx3.9/37, mbtmp3.8/17, ML3.3/3, MS3.2/1, Ms1 3.2/1, ms1mx2.6/47, Error ellipse: s-maj=15.7km s-min=12.0km az=155.0*

*JMA **29** 10:58:56.9, 36°83N×140°59E, h8km±1km, M4.1 Broadband fault plane solution: P waves. NP1: φs195.00000°, δ59.00000°, λ-54.00000°. NP2: φs320.00000°, δ46.00000°, λ-134.00000°. Principal axes: T Plg7.0000°, Azm260.0000°; N Plg30.0000°, Azm354.0000°; P Plg59.0000°, Azm158.0000°;*

JMA Felt II J1.

*NEIC **29** 10:59:00.1±0.4, 36°83N×140°53E, h35km, mb4.4/4 Error ellipse: s-maj=8.3km s-min=6.4km az=119.0*

NEIC Recorded [2 JMA] in Fukushima and Ibaraki.

ISC 29 10:58:56.4±0.5, 36°82N±0°03×140°59E±0°04, h10km, n41, σ0s85/45, mb4.0/16, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
JHO	**Hitachi**	**0.21**	**184**	⇑P	P		**11 59 01.3**	**+0.5**
JHO				S	S		**11 59 04.7**	**+0.9**
ONAJ	**Iwakimizuishiy**	**0.33**	**31**	⇑P	P		**11 59 03.2**	**+0.3**
JSB	**Shiboa**	**0.56**	**285**	⇑P	P		**11 59 08.3**	**0.0**
JSB				S	S		**11 59 16.4**	**+0.1**
JFK	**Kawauchi**	**0.59**	**23**	⇑P	P		**11 59 07.8**	**-0.1**
JFT	**Otama**	**0.72**	**344**	⇓P	P		**11 59 10.7**	**+0.3**
JAG	**Ashikaga**	**1.00**	**247**	⇑P	P		**11 59 15.2**	**-0.4**
MJAR	**Matsushiro Arr**	**1.93**	**262**	Pg	Pn		**11 59 30.2**	**+0.9**
	75nm,0.3s,baz=80,slow=17,SNR=539							
MJAR				Lg	Lg		11 59 55.8	
	111nm,0.3s,baz=76,slow=30,SNR=16							
MAJO	**Matsushiro**	**1.94**	**262**	*e*Pn	Pn		**11 59 30.6**	**+1.2**
MAJO				*e*Sn	Sn		**11 59 53.5**	**-0.3**
MAT	**Matsushiro**	**1.94**	**262**	P	Pn		**11 59 30.6**	**+1.2**
MAT				S	Sb		**11 59 56.6**	**+0.6**
JHJ	**Hachijo jima 2**	**3.75**	**190**	Pn	Pn		**11 59 55.0**	**+0.7**
	23nm,0.3s,baz=101,slow=22,SNR=28							
JHJ				Sn	Sn		**11 00 37.2**	**-1.4**
	20nm,0.3s,baz=233,slow=23,SNR=3.1							
JHJ2	**Mitsune**	**3.76**	**190**	*e*Pn	Pn		**11 59 55.7**	**+1.4**
JHJ2				*e*Sn	Sn		**11 00 38.4**	**-0.3**
ERM	**Erimo**	**

	baz=315							
WHF	**Hehuan Shan**	**0.72**	**245**	⇓*i*P	**Pb**	**11 19 10.9**	**-0.3**	
	baz=243							
WHF				S	**Sb**	**11 19 20.3**	**-0.9**	
	baz=243							
TAP	**Taipei**	**0.73**	**324**	*e*P	**Pg**	**11 19 11.5**	**+0.7**	
	baz=312							
TWT	**Tachien**	**0.76**	**255**	⇑*i*P	**Pn**	**11 19 12.2**	**-1.0**	
	baz=254							
TWT				*e*S	**Sb**	**11 19 21.5**	**-0.6**	
	baz=254							
ESL	**Shilin**	**0.81**	**219**	P	**Pb**	**11 19 12.4**	**0.0**	
	baz=224							
TWS1	**Kuangyinshan**	**0.83**	**322**	⇓*i*P	**Pn**	**11 19 14.1**	**+0.2**	
	baz=321							
TWS1				*e*S	**Sn**	**11 19 26.8**	**+0.9**	
	baz=321							
JYNG	**Yonagunijimaku**	**0.88**	**90**	P	**Pb**	**11 19 14.0**	**+0.4**	
JYNG				*e*S	**Sb**	**11 19 25.5**	**+0.3**	
NCU	**National Centr**	**0.89**	**306**	P	**Pn**	**11 19 15.3**	**+0.6**	
	baz=305							
NCU				*e*S	**Sn**	**11 19 28.9**	**+1.4**	
	baz=305							
TWY	**Chenhua**	**0.89**	**337**	P	**Pn**	**11 19 14.7**	**-0.1**	
	baz=337							
TWY				S	**Sg**	**11 19 25.5**	**-0.1**	
	baz=337							
NSTT	**Nanjuang**	**0.91**	**282**	⇓*i*P	**Pn**	**11 19 15.1**	**0.0**	
	baz=281							
NSTT				*e*S	**Sg**	**11 19 25.8**	**-0.3**	
	baz=281							
YOJ	**Yonaguni jima**	**0.94**	**89**	P	**Pb**	**11 19 14.8**	**+0.2**	
YOJ				S	**Sb**	**11 19 27.0**	**+0.1**	
YOJ	**Yonaguni jima**	**0.94**	**89**	P	**Pb**	**11 19 14.8**	**+0.2**	
	baz=90							
YOJ				S	**Sb**	**11 19 27.5**	**+0.6**	
	baz=90							
HSN	**Hsinchu**	**0.99**	**291**	*e*P	**Pn**	**11 19 16.9**	**+0.8**	
	baz=288							
HSN				*e*S	**Sn**	**11 19 29.8**	**-0.1**	
	baz=288							
TWQ1	**Liyutan**	**1.11**	**265**	*e*P	**Pg**	**11 19 18.9**	**+1.0**	
	baz=264							
TWQ1				*e*S	**Sg**	**11 19 33.9**	**+1.6**	
	baz=264							
NSY	**Sanyi**	**1.11**	**269**	*e*P	**Pg**	**11 19 19.2**	**+1.2**	
	baz=268							
NSY				*e*S	**Sg**	**11 19 34.9**	**+2.3**	
	baz=268							
EHY	**Hungye**	**1.12**	**213**	*e*P	**Pn**	**11 19 17.8**	**-0.1**	
	baz=212							
SMLT	**Sun Moon Lake**	**1.14**	**241**	*e*P	**Pg**	**11 19 19.0**	**+0.5**	
	baz=239							
TYC	**Yuchr**	**1.16**	**242**	⇑P	**Pg**	**11 19 19.2**	**+0.2**	
	baz=241							
PCYT	**Pengchaiyu**	**1.18**	**4**	*e*P	**Pb**	**11 19 18.9**	**+0.2**	
	baz=5.0							
TCU	**Taichung**	**1.23**	**256**	*e*P	**Pg**	**11 19 22.3**	**+2.1**	
	baz=255							
TWF1	**Yuli**	**1.26**	**210**	*e*P	**Pb**	**11 19 20.5**	**+0.4**	
	baz=225							
WNT	**Mingjian**	**1.32**	**245**	*e*P	**Pg**	**11 19 23.5**	**+1.6**	
	baz=257							
YUS	**Yu-Shan**	**1.34**	**225**	*e*P	**Pg**	**11 19 22.5**	**+0.1**	
	baz=224							
ALS	**Alishan**	**1.43**	**229**	⇓*e*P	**Pg**	**11 19 24.2**	**+0.2**	
	baz=216							
CHKT	**Chengkung**	**1.46**	**203**	*e*P	**Pb**	**11 19 23.2**	**-0.3**	
	baz=189							
CHN5	**Tsauling**	**1.46**	**235**	*e*P	**Pg**	**11 19 25.7**	**+1.0**	
	baz=235							
ELDTW	**Lidau**	**1.54**	**215**	*e*P	**Pb**	**11 19 24.6**	**-0.3**	
	baz=203							
IRIF	**Iriomote-Funau**	**1.60**	**94**	P	**Pn**	**11 19 24.1**	**-0.3**	
IRIF				S	**Sn**	**11 19 44.1**	**-0.8**	
CHN2	**Minshiung**	**1.65**	**237**	*e*P	**Pg**	**11 19 28.7**	**+0.4**	
	baz=223							
STYT	**Tauyuan**	**1.70**	**222**	*e*P	**Pb**	**11 19 28.2**	**+0.5**	
	baz=222							
HATJ	**Hateruma jima**	**1.71**	**103**	P	**Pn**	**11 19 26.9**	**+0.9**	
HATJ				S	**Sn**	**11 19 48.1**	**+0.5**	
WTP	**Ta-pu**	**1.73**	**227**	*e*P	**Pg**	**11 19 29.4**	**-0.5**	
	baz=227							
TWK	**Hsinying**	**1.81**	**230**	*e*P	**Pg**	**11 19 30.5**	**-0.7**	
	baz=230							
TWG	**Pinlang**	**1.82**	**207**	*e*P	**Pn**	**11 19 28.0**	**+0.5**	
	baz=194							
CHN1	**Nanshi**	**1.83**	**227**	*e*P	**Pg**	**11 19 31.1**	**-0.6**	
	baz=228							
JKRS	**Kuro-shima**	**1.86**	**96**	P	**Pn**	**11 19 28.4**	**+0.4**	
JKRS				S	**Sn**	**11 19 50.8**	**-0.6**	
SGST	**Jiashian**	**1.87**	**224**	*e*P	**Pb**	**11 19 29.4**	**-1.2**	
	baz=224							
JIJ	**Ishigaki jima**	**1.97**	**92**	P	**Pn**	**11 19 29.1**	**-0.5**	
JIJ				S	**Sn**	**11 19 52.0**	**-2.1**	
SSD	**Sandimen**	**2.10**	**216**	*e*P	**Pb**	**11 19 34.7**	**+0.2**	
	baz=228							
JISG	**Ishigakijimahi**	**2.12**	**86**	P	**Pn**	**11 19 31.6**	**-0.1**	
JISG				S	**Sn**	**11 19 57.1**	**-0.8**	
EAST	**Anshuo**	**2.31**	**207**	*e*P	**Pb**	**11 19 36.6**	**-1.3**	
	baz=197							
JTJ	**Tarama**	**2.48**	**85**	P	**Pn**	**11 19 37.2**	**+0.6**	
JTJ				S	**Sn**	**11 20 06.5**	**-0.3**	
JIRB	**Irabujima**	**2.93**	**82**	P	**Pn**	**11 19 43.3**	**+0.6**	
JIRB				S	**Sn**	**11 20 17.2**	**-0.5**	

*ISCJB **29** 11:19:41.2±0.7, 18°.4S±0°.1×177°.5W±0°.1, h300km, mb3.5/5, Error ellipse: s-maj=18.4km s-min=8.6km az=136.0*
*IDC **29** 11:19:43.5±1.9, 18°.54S×177°.37W, h315km±23km, mb3.3/6, mb1 3.5/7, mb1mx3.2/30, mbtmp4.1/7, Error ellipse: s-maj=20.1km s-min=16.7km az=94.0*
ISC 29 11:19:42.2±0.8, 18°.5S±0°.1×177°.3W±0°.1, h300km, n9, σ1§57/11, mb3.7/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**6.99**	**50**	P	**Pn**	**11 21 25.1**	**+1.4**
	5.3nm,0.3s,baz=246,slow=2.4,SNR=6.5						
AFI				S	**S**	**11 22 43.7**	**-2.0**
	1.2nm,0.3s,baz=81,slow=19,SNR=1.7						
RAO	**Raoul Island**	**10.74**	**183**	P	**Pn**	**11 22 10.2**	**+0.8**
	85nm,0.3s,baz=93,slow=7.5,SNR=7.0						
DZM	**Mont Dzumac**	**15.65**	**254**	P	**Pn**	**11 23 10.7**	**+2.2**
	0.2nm,0.3s,baz=83,slow=19,SNR=5.4						
URZ	**Urewera**	**20.30**	**193**	P	**P**	**11 23 55.9**	**-0.3**
	2.5nm,0.3s,baz=32,slow=9.6,SNR=4.6						
URZ				S	**S**	**11 27 23.5**	**-1.9**
	11nm,1.1s,baz=54,slow=19,SNR=1.9						
CTA	**Charters Tower**	**34.38**	**261**	P	**P**	**11 26 01.9**	**+0.1**
	6.6nm,1.1s,baz=80,slow=12,SNR=4.1						
WRA	**Warramunga Arr**	**45.55**	**260**	P	**P**	**11 27 31.5**	**-1.7**
	0.4nm,0.5s,baz=98,slow=6.8,SNR=14						
ASAR	**Alice Springs**	**45.64**	**255**	P	**P**	**11 27 33.0**	**-0.8**
	2.8nm,0.5s,baz=90,slow=8.4,SNR=67						
FITZ	**Fitzroy Crossi**	**53.96**	**261**	P	**P**	**11 28 35.4**	**-0.7**
	3.0nm,1.0s,baz=81,slow=7.1,SNR=5.3						
TXAR	**Lajitas Array**	**85.42**	**57**	P	**P**	**11 31 47.3**	**+0.5**
	0.3nm,0.9s,baz=232,slow=5.5,SNR=3.1						

*IDC **29** 11:20:33.5±2.3, 23°.97S×179°.77W, h494km±26km, mb3.3/10, mb1 3.5/11, mb1mx3.3/27, mbtmp4.2/11, Error ellipse: s-maj=36.3km s-min=16.0km az=164.0*
*ISCJB **29** 11:20:34.9±0.6, 23°.82S±0°.08×179°.91W±0°.10, h518km, mb3.9/11, Error ellipse: s-maj=13.1km s-min=8.7km az=36.3*
ISC 29 11:20:35.3±0.7, 23°.89S±0°.10×179°.81W±0°.10, h518km, n17, σ1§31/18, mb3.8/11, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**12.49**	**39**	S	**S**	**11 25 32.2**	**-2.0**
	1.4nm,0.3s,baz=288,slow=22,SNR=3.0						
DZM	**Mont Dzumac**	**12.79**	**275**	P	**P**	**11 23 19.5**	**-2.8**
	0.4nm,0.3s,baz=126,slow=19,SNR=4.6						
URZ	**Urewera**	**14.57**	**190**	P	**P**	**11 23 41.4**	**+0.9**
	1.2nm,0.3s,baz=279,slow=2.6,SNR=8.9						
URZ				S	**S**	**11 26 11.6**	**-1.7**
	0.3nm,0.3s,baz=90,slow=20,SNR=5.1						
PPT	**Papeete**	**28.93**	**83**	P	**P**	**11 25 52.0**	**-0.5**
	76nm,0.6s,baz=94,slow=19,SNR=3.3						
CTA	**Charters Tower**	**31.65**	**270**	P	**P**	**11 26 16.9**	**+1.0**
	6.1nm,0.4s,baz=90,slow=10,SNR=16						
STKA	**Stephens Creek**	**34.89**	**248**	P	**P**	**11 26 42.8**	**-0.4**
	2.3nm,0.8s,baz=74,slow=10,SNR=7.4						
ASAR	**Alice Springs**	**42.21**	**261**	P	**P**	**11 27 42.4**	**-0.4**
	2.5nm,0.7s,baz=97,slow=7.8,SNR=13						
WRA	**Warramunga Arr**	**42.58**	**266**	P	**P**	**11 27 45.3**	**-0.4**
	6.2nm,0.6s,baz=103,slow=8.2,SNR=75						
WRA				ScP	**ScP**	**11 32 30.1**	**+2.3**
	0.3nm,0.6s,baz=100,slow=3.8,SNR=5.1						
JAY	**Jayapura**	**43.67**	**293**	P	**P**	**11 27 54.5**	**+0.1**
	1.6nm,0.9s,baz=86,slow=22,SNR=4.5						
FITZ	**Fitzroy Crossi**	**51.00**	**266**	P	**P**	**11 28 49.7**	**+0.2**
	2.1nm,0.6s,baz=123,slow=4.8,SNR=8.0						
MJAR	**Matsushiro Arr**	**71.98**	**325**	P	**P**	**11 31 06.8**	**+0.5**
	0.8nm,0.5s,baz=165,slow=5.4,SNR=5.1						
PETK	**Petropavlovsk-**	**79.13**	**346**	P	**P**	**11 31 46.7**	**+1.1**
	2.3nm,0.9s,baz=130,slow=6.2,SNR=4.4						
CMAR	**Chiang Mai Arr**	**89.69**	**290**	P	**P**	**11 32 39.2**	**+0.8**
	0.5nm,0.4s,baz=139,slow=3.4,SNR=5.6						
TXAR	**Lajitas Array**	**90.28**	**58**	P	**P**	**11 32 41.3**	**+0.2**
	0.2nm,0.8s,baz=227,slow=6.1,SNR=3.3						
FINES	**FINESS Array B**	**138.49**	**342**	PKP	**PKPdf**	**11 39 02.1**	**+0.8**
	1.3nm,0.8s,baz=90,slow=1.4,SNR=3.3						
HFS	**Hagfors**	**142.57**	**349**	PKhKP	PKPpre	11 39 05.1	
	2.3nm,0.4s,baz=31,slow=3.5,SNR=20						
BRTR	**Keskin Array B**	**147.71**	**307**	PKPbc	**PKPbc**	**11 39 21.4**	**-0.5**
	0.5nm,0.6s,baz=70,slow=1.7,SNR=3.3						

*CSEM **29** 11:22:17.8, 42°.80N×7°.22W, h14km, ML1.7*
MDD 29 11:22:17.8±1.0, 42°.80N×7°.22W, h14km±18km, mbLg1.7/7, 1C, Error ellipse: s-maj=5.6km s-min=4.6km az=132.0, PRXIMO, Spain

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EPON	**Pontenova**	**0.53**	**6**	Pg	Pg	11 22 27.6	-0.7
	0.6nm,0.1s,SNR=7.9						
EPON				Lg	Lg	11 22 34.5	
	3.3nm,0.1s,SNR=8.0						
EPON	**Pontenova**	**0.53**	**6**	Pg	Pg	11 22 27.6	-0.7
	0.6nm,0.1s,SNR=7.9						
EPON				Lg	Lg	11 22 34.5	
	3.3nm,0.1s,SNR=8.0						
EAGO	**Agolada(Pontev**	**0.64**	**271**	⇑Pg	Pg	11 22 29.5	-0.8
	6.3nm,0.1s,SNR=18						
EAGO				Lg	Lg	11 22 38.2	
	10nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**0.64**	**271**	Pg	Pg	11 22 29.5	-0.8
	6.3nm,0.1s,SNR=18						
EAGO				Lg	Lg	11 22 38.2	
	10nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**0.93**	**157**	Pg	Pg	11 22 34.3	-1.3
	0.7nm,0.1s,SNR=7.9						
ECAL				Lg	Lg	11 22 47.5	
	5.9nm,0.2s,SNR=5.7						
ECAL	**Calabor**	**0.93**	**157**	Pg	Pg	11 22 34.3	-1.4
	0.7nm,0.1s,SNR=7.9						
ECAL				Lg	Lg	11 22 47.5	
	5.9nm,0.2s,SNR=5.7						
PBRG	**Braganca**	**1.05**	**160**	*e*S	Sn	11 22 53.0	+0.3
PBRG	**Braganca**	**1.05**	**160**	Lg	Lg	11 22 53.0	
PBRG	**Braganca**	**1.05**	**160**	Lg	Lg	11 22 53.0	
ELOB	**Lobios**	**1.12**	**214**	Pg	Pb	11 22 37.5	-1.5
	1.4nm,0.2s,SNR=7.9						
ELOB				Lg	Lg	11 22 53.0	
	2.6nm,0.1s,SNR=19						
ELOB	**Lobios**	**1.12**	**214**	Pg	Pb	11 22 37.5	-1.5
	1.4nm,0.2s,SNR=7.9						
ELOB				Lg	Lg	11 22 53.0	
	2.6nm,0.1s,SNR=19						
PGAV	**Gavieira, Arco**	**1.14**	**224**	*e*P	Pb	11 22 38.8	-0.5
PGAV				*e*S	Sb	11 22 53.7	-0.3
PGAV				A	A	11 22 58.8	
	8.8nm,0.5s						
EMAZ	**Mazaricos**	**1.30**	**277**	Pg	Pn	11 22 41.1	-0.5
	1.0nm,0.2s,SNR=7.9						
EMAZ				Lg	Lg	11 22 59.1	
	3.8nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**1.30**	**277**	Pg	Pn	11 22 41.1	-0.5
	1.0nm,0.2s,SNR=7.9						
EMAZ				Lg	Lg	11 22 59.1	
	3.8nm,0.1s,SNR=7.9						
POLO	**Lamas de Olo**	**1.48**	**197**	*e*Pg	Pg	11 22 46.7	+0.4
POLO				*e*Sg	Sb	11 23 04.4	+0.4
EARI	**Arriondas**	**1.56**	**70**	Pg	Pb	11 22 46.3	-0.1
	0.2nm,0.2s,SNR=7.9						
EARI				Lg	Lg	11 23 05.5	
	1.2nm,0.1s,SNR=7.9						
EARI	**Arriondas**	**1.56**	**70**	Pg	Pb	11 22 46.3	-0.1
	0.2nm,0.2s,SNR=7.9						
EARI				Lg	Lg	11 23 05.5	
	1.2nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**1.64**	**175**	Lg	Lg	11 23 07.5	
	1.6nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**1.64**	**175**	Lg	Lg	11 23 07.4	
	1.6nm,0.1s,SNR=7.9						

*ISCJB **29** 11:22:43.3±0.4, 42°.76N±0°.02×7°.04W±0°.03, h10km±2km, Error ellipse: s-maj=4.0km s-min=2.1km az=35.7*
*CSEM **29** 11:22:45.2±0.1, 42°.80N×7°.13W, h12km, ML3.4/32, Error ellipse: s-maj=3.3km s-min=1.7km az=120.0*
*LDG **29** 11:22:46.9±0.1, 42°.83N×7°.21W, h10km, Md3.4/3, Ml3.2/23, Error ellipse: s-maj=3.1km s-min=2.0km az=116.0*
*MDD **29** 11:22:47.4±0.4, 42°.79N×7°.23W, h11km, mbLg3.0/29, Error ellipse: s-maj=3.5km s-min=3.0km az=103.0, PRXIMO*
MDD EMS: II-III INTENSIDAD MAXIMA.
*INMG **29** 11:22:47.9±1.8, 42°.76N×7°.24W, h13km±4km, ML2.9, Error ellipse: s-maj=3.3km s-min=2.8km az=122.0*
ISC 29 11:22:44.7±1.1, 42°.84N±0°.03×7°.16W±0°.02, h20km±4km, n148, σ1§88/250, 3C, Spain

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EPON	**Pontenova**	**0.49**	**1**	Pg	**Pn**	**11 22 57.2**	**+0.6**
	7.0nm,0.1s,SNR=39						
EPON				Lg	Lg	11 23 03.9	
	346nm,0.2s,SNR=9.3						
EAGO	**Agolada(Pontev**	**0.69**	**267**	⇑Pg	**Pn**	**11 22 59.2**	**-0.2**
	226nm,0.1s,SNR=18						
EAGO				Lg	Lg	11 23 07.6	
	1µm,0.2s,SNR=7.9						
EAGO	**Agolada(Pontev**	**0.69**	**267**	Pg	**Pn**	**11 22 59.2**	**-0.2**
	226nm,0.1s,SNR=18						
EAGO				Lg	Lg	11 23 07.6	
	1µm,0.2s,SNR=7.9						
ECAL	**Calabor**	**0.95**	**161**	Pg	**Pn**	**11 23 04.3**	**+1.3**
	26nm,0.2s,SNR=44						
ECAL				Lg	Lg	11 23 15.9	
	215nm,0.2s,SNR=27						
ECAL	**Calabor**	**0.95**	**161**	Pg	**Pn**	**11 23 04.3**	**+1.3**
	26nm,0.2s,SNR=44						
ECAL				Lg	Lg	11 23 15.9	
	215nm,0.2s,SNR=27						
PBRG	**Braganca**	**1.08**	**163**	*e*P	**Pg**	**11 23 06.6**	**+0.9**
PBRG				*e*S	**Sn**	**11 23 20.4**	**+1.2**
PBRG				A	A	11 23 26.0	
	124nm,0.6s						
PBRG	**Braganca**	**1.08**	**163**	Pg	**Pg**	**11 23 06.6**	**+0.9**
PBRG				Lg	Lg	11 23 20.4	
	62nm,0.6s						
PBRG	**Braganca**	**1.08**	**163**	Pg	**Pg**	**11 23 06.6**	**+0.9**
PBRG				*e*S	**Sn**	**11 23 20.4**	**+1.2**
	124nm,0.6s						
ELOB	**Lobios**	**1.18**	**215**	Pg	**Pg**	**11 23 07.7**	**+0.1**
	26nm,0.4s,SNR=145						
ELOB				Lg	Lg	11 23 22.0	
	153nm,0.2s,SNR=19						
ELOB	**Lobios**	**1.18**	**215**	Pg	**Pg**	**11 23 07.7**	**+0.1**
	26nm,0.4s,SNR=145						
ELOB				Lg	Lg	11 23 22.0	
	153nm,0.2s,SNR=19						
PGAV	**Gavieira, Arco**	**1.20**	**224**	⇑*e*P	**Pb**	**11 23 06.9**	**+0.1**
PGAV				*e*S	**Sb**	**11 23 22.0**	**0.0**
PGAV				A	A	11 23 27.6	
	205nm,0.3s						
PGAV	**Gavieira, Arco**	**1.20**	**224**	⇑*e*P	**Pb**	**11 23 06.9**	**+0.1**
PGAV				*e*S	**Sb**	**11 23 22.0**	**0.0**
	205nm,0.3s						
EMAZ	**Mazaricos**	**1.34**	**275**	Pg	**Pg**	**11 23 11.0**	**+0.4**
	185nm,0.4s,SNR=7.9						
EMAZ				Sn	**Sb**	**11 23 26.6**	**+0.6**
	56nm,0.1s,SNR=4.0						
EMAZ				Lg	Lg	11 23 28.3	
	278nm,0.2s,SNR=7.9						
EMAZ	**Mazaricos**	**1.34**	**275**	Pg	**Pg**	**11 23 11.0**	**+0.4**
	185nm,0.4s,SNR=7.9						
EMAZ				Sn	**Sb**	**11 23 26.6**	**+0.6**
	56nm,0.1s,SNR=4.0						
EMAZ				Lg	Lg	11 23 28.3	
	278nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**1.50**	**71**	Pg	**Pg**	**11 23 15.4**	**+1.7**
	39nm,0.6s,SNR=5.3						
EARI				Lg	Lg	11 23 35.6	
	153nm,0.4s,SNR=23						
POLO	**Lamas de Olo**	**1.54**	**198**	*e*Pn	**Pb**	**11 23 12.2**	**-0.4**
POLO	**Lamas de Olo**	**1.54**	**198**	*e*Pg	**Pg**	**11 23 14.4**	**0.0**
POLO				*e*Sn	**Sn**	**11 23 30.7**	**+0.1**
POLO				*e*Sg	**Sg**	**11 23 33.1**	**-1.4**
POLO				A	A	11 23 34.5	
	78nm,0.4s						
POLO	**Lamas de Olo**	**1.54**	**198**	*e*Pn	**Pb**	**11 23 12.2**	**-0.4**
POLO	**Lamas de Olo**	**1.54**	**198**	*e*Pg	**Pg**	**11 23 14.4**	**0.0**
POLO				*e*Sn	**Sn**	**11 23 30.7**	**+0.1**
POLO				*e*Sg	**Sg**	**11 23 33.1**	**-1.4**
	78nm,0.4s						
PVRL	**Vila Real**	**1.62**	**195**	*e*Pg	**Pg**	**11 23 16.1**	**+0.2**
PVRL				*e*Sn	**Sn**	**11 23 32.9**	**+0.4**
PVRL				*e*Sg	**Sg**	**11 23 35.9**	**-1.0**
PVRL				A	A	11 23 37.6	
	180nm,0.1s						
PVRL	**Vila Real**	**1.62**	**195**	Pg	**Pg**	**11 23 16.1**	**+0.2**
PVRL				Sn	**Sn**	**11 23 32.9**	**+0.4**
PVRL				Lg	Lg	11 23 35.9	
	90nm,0.1s						
PVRL	**Vila Real**	**1.62**	**195**	Pg	**Pg**	**11 23 16.1**	**+0.2**
PVRL				Sn	**Sn**	**11 23 32.9**	**+0.4**
PVRL				*e*Sg	**Sg**	**11 23 35.9**	**-1.0**
	180nm,0.1s						
MVO	**Moncorvo**	**1.68**	**177**	*e*Pn	**Pb**	**11 23 15.6**	**+0.7**
MVO				*e*Sn	**Sn**	**11 23 34.2**	**+0.2**
MVO				*e*Sg	**Sg**	**11 23 37.8**	**-1.0**
MVO				A	A	11 23 40.1	
	98nm,0.4s						
MVO	**Moncorvo**	**1.68**	**177**	Pg	**Pb**	**11 23 15.7**	**+0.8**
	4.5nm,0.1s,SNR=16						
MVO				Sn	**Sn**	**11 23 34.1**	**+0.1**
	2.7nm,0.3s,SNR=5.5						
MVO				Lg	Lg	11 23 37.7	
	56nm,0.3s,SNR=9.0						
MVO	**Moncorvo**	**1.68**	**177**	*e*Pn	**Pb**	**11 23 15.6**	**+0.7**
MVO				*e*Sn	**Sn**	**11 23 34.2**	**+0.2**
MVO				Lg	Lg	11 23 37.7	
	56nm,0.3s,SNR=9.0						
MVO				*e*Sg	**Sg**	**11 23 37.8**	**-1.0**
	98nm,0.4s						
PTO	**Porto**	**2.01**	**213**	*e*Sg	**Sg**	**11 23 48.5**	**-1.0**
PTO	**Porto**	**2.01**	**213**	Lg	Lg	11 23 48.5	
PTO	**Porto**	**2.01**	**213**	*e*Sg	**Sg**	**11 23 48.5**	**-1.0**
PVIS	**Viseu**	**2.19**	**195**	*e*Pn	**Pn**	**11 23 21.9**	**+1.8**
PVIS	**Viseu**	**2.19**	**195**	*e*Pg	**Pg**	**11 23 26.7**	**-0.1**
PVIS				*e*Sg	**Sg**	**11 23 53.2**	**-2.1**
PVIS				A	A	11 23 55.9	
	91nm,0.3s						
PVIS	**Viseu**	**2.19**	**195**	Pn	**Pn**	**11 23 21.9**	**+1.8**
PVIS				Pg	**Pg**	**11 23 26.7**	**-0.1**
PVIS				Lg	Lg	11 23 53.2	
	46nm,0.3s						
PVIS	**Viseu**	**2.19**	**195**	Pn	**Pn**	**11 23 21.9**	**+1.8**
PVIS	**Viseu**	**2.19**	**195**	Pg	**Pg**	**11 23 26.7**	**-0.1**
PVIS				*e*Sg	**Sg**	**11 23 53.2**	**-2.1**
	91nm,0.3s						
MTE	**Manteigas**	**2.45**	**187**	*e*Pg	**Pg**	**11 23 31.5**	**-0.3**
MTE				*e*Sn	**Sn**	**11 23 53.1**	**-0.1**
MTE				*e*Sg	**Sg**	**11 24 02.6**	**-1.1**
MTE				A	A	11 24 06.1	
	72nm,0.5s						
MTE	**Manteigas**	**2.45**	**187**	Pg	**Pg**	**11 23 31.5**	**-0.3**
MTE				Sn	**Sn**	**11 23 53.1**	**-0.1**
MTE				Lg	Lg	11 24 02.6	
	36nm,0.5s						
MTE	**Manteigas**	**2.45**	**187**	Pg	**Pg**	**11 23 31.5**	**-0.3**
MTE				Sn	**Sn**	**11 23 53.1**	**-0.1**
MTE				*e*Sg	**Sg**	**11 24 02.6**	**-1.1**
	72nm,0.5s						
ELAN	**Lanestosa**	**2.76**	**81**	Pn	**Pb**	**11 23 31.8**	**-1.6**
	5.5nm,0.3s,SNR=11						
ELAN				Pg	**Pg**	**11 23 37.8**	**+0.2**
	2.4nm,0.7s,SNR=12						
ELAN				Sn	**Sb**	**11 24 04.4**	**-2.3**
	18nm,0.3s,SNR=4.7						
ELAN				Lg	Lg	11 24 14.5	
	50nm,0.5s,SNR=12						
COI	**Coimbra**	**2.79**	**200**	Lg	Lg	11 24 12.8	
	30nm,0.5s						
COI	**Coimbra**	**2.79**	**200**	*e*Sg	**Sg**	**11 24 12.8**	**-1.6**
	61nm,0.5s						
EPLA	**Plasencia**	**2.89**	**163**	Pn	**Pn**	**11 23 31.3**	**+1.6**
	0.5nm,0.1s,SNR=5.9						
EPLA				Sn	**Sn**	**11 24 03.5**	**-0.3**
	4.1nm,0.1s,SNR=7.9						
EPLA				Lg	Lg	11 24 16.1	
	20nm,0.5s,SNR=8.9						
EPLA	**Plasencia**	**2.89**	**163**	Pn	**Pn**	**11 23 31.3**	**+1.6**
	0.5nm,0.1s,SNR=5.9						
EPLA				Sn	**Sn**	**11 24 03.5**	**-0.3**
	4.1nm,0.1s,SNR=7.9						
EPLA				Lg	Lg	11 24 16.1	
	20nm,0.5s,SNR=8.9						
PCAS	**Casmilo, Conde**	**2.96**	**200**	*e*Pn	**Pn**	**11 23 32.1**	**+1.5**
PCAS	**Casmilo, Conde**	**2.96**	**200**	*e*Pg	**Pg**	**11 23 41.1**	**-0.4**
PCAS				*e*Sn	**Sn**	**11 24 06.2**	**+0.6**
PCAS				*e*Sg	**Sg**	**11 24 18.7**	**-1.1**
PCAS				A	A	11 24

2.4nm,0.3s,baz=320,slow=24,SNR=31
ESDC Lg Lg 11 24 47.9
9.8nm,0.7s,baz=317,slow=29,SNR=9.9
ESDC Sonseca Array 3.97 142 Pn Pn 11 23 46.6 +2.0
0.8nm,0.7s,SNR=7.9
ESDC Sonseca Array 3.97 142 Pg Pg 11 23 59.9 -0.9
2.5nm,0.3s,SNR=9.5
ESDC Sn Sn **11 24 32.0 +1.3**
2.4nm,0.3s,SNR=31
ESDC Lg Lg 11 24 47.9
9.8nm,0.7s,SNR=9.9
PESTR Estremoz 3.98 185 ePn Pn 11 23 46.2 +1.5
PESTR eSn **Sn 11 24 30.3 -0.5**
PESTR eSg **Sg 11 24 49.1 -3.4**
PESTR A A 11 24 56.9
28nm,0.6s
PESTR Estremoz 3.98 185 ePn Pn 11 23 46.2 +1.5
PESTR eSn **Sn 11 24 30.3 -0.5**
PESTR eSg **Sg 11 24 49.1 -3.4**
28nm,0.6s
EBAD Badajoz 4.08 178 Pn Pn 11 23 49.3 +3.3
0.7nm,0.1s,SNR=4.0
EBAD Sn Sn **11 24 33.8 +0.6**
2.9nm,0.3s,SNR=7.9
EBAD Lg Lg 11 24 54.4
0.9nm,0.4s,SNR=9.4
EALK Alkurruntz 4.16 83 Sn Sn 11 24 38.6 +3.3
SNR=7.9
PMAFR Mafra 4.20 203 eSn Sn 11 24 35.2 -1.0
PMAFR eSg **Sg 11 24 57.4 -2.1**
PMAFR A A 11 25 07.8
24nm,0.7s
PMAFR Mafra 4.20 203 Sn Sn 11 24 36.1 0.0
24nm,0.4s,SNR=7.9
PMAFR Lg Lg 11 24 58.0
84nm,0.7s,SNR=7.9
PMAFR Mafra 4.20 203 eSn Sn 11 24 35.2 -1.0
PMAFR eSg **Sg 11 24 57.4 -2.1**
24nm,0.7s
PMAFR Lg Lg 11 24 58.0
84nm,0.7s,SNR=7.9
EORO Oroz-Betelu 4.30 87 Sn Sn 11 24 42.8 +4.1
5.5nm,0.3s,SNR=7.9
EORO Lg Lg 11 25 06.8
5.3nm,0.6s,SNR=7.9
ETOR Torete 4.31 116 Pn Pn 11 23 51.9 +2.6
0.8nm,0.2s,SNR=7.9
ETOR Pg **Pg 11 24 07.0 -0.3**
13nm,0.4s,SNR=16
ETOR Lg Lg 11 25 02.4
43nm,0.5s,SNR=6.2
ETOR Torete 4.31 116 Pg Pg 11 24 07.0 -0.3
13nm,0.4s,SNR=16
ETOR Lg Lg 11 25 02.4
43nm,0.5s,SNR=6.2
EVO Evora 4.35 189 ePn Pn 11 23 51.7 +2.0
EVO eSn **Sn 11 24 36.7 -3.2**
EVO eSg **Sg 11 25 02.2 -2.2**
EVO A A 11 25 11.5
13nm,0.5s
EVO Evora 4.35 189 ePn Pn 11 23 51.7 +2.0
EVO eSn **Sn 11 24 36.7 -3.2**
EVO eSg **Sg 11 25 02.2 -2.2**
13nm,0.5s
IELO Elcoad 4.35 88 Sn Sn 11 24 43.6 +3.5
13nm,0.6s,SNR=7.9
SJPF Ste Jean 4.36 84 eSn Sn 11 24 39.8 -0.3
8.1nm,0.4s
SJPF eSg **Sg 11 25 04.9 +0.2**
8.3nm,0.4s
SJPF Ste Jean 4.36 84 eSn Sn 11 24 39.8 -0.3
4.1nm,0.4s
SJPF eSg **Sg 11 25 04.9 +0.2**
4.2nm,0.4s
PBAR Barrancos 4.66 179 ePn Pn 11 23 56.2 +2.2
PBAR eSn **Sn 11 24 46.1 -1.4**
PBAR eSg **Sg 11 25 10.9 -3.4**
PBAR A A 11 25 21.4
25nm,0.7s
PBAR Barrancos 4.66 179 ePn Pn 11 23 56.2 +2.2
PBAR eSn **Sn 11 24 46.1 -1.4**
PBAR eSg **Sg 11 25 10.9 -3.4**
25nm,0.7s
ATE Arette 4.75 85 Sn Sn 11 24 53.4 +3.8
6.5nm,0.6s,SNR=7.9
PNCL Nicolau / Gran 4.84 193 eSg Sg 11 25 18.2 -1.7
PNCL A A 11 25 28.9
8.0nm,0.6s
PNCL Nicolau / Gran 4.84 193 eSg Sg 11 25 18.2 -1.7
8.0nm,0.6s
PBEJ Beja 4.84 187 eSg Sg 11 25 17.2 -2.8
PBEJ A A 11 25 27.9
7.2nm,0.7s
PBEJ Beja 4.84 187 eSg Sg 11 25 17.2 -2.8
7.2nm,0.7s
ETSF Etsaut 4.85 87 eSn Sn 11 24 51.5 -0.8
7.8nm,0.4s
ETSF eSg **Sg 11 25 20.3 -0.1**
6.0nm,0.4s
ETSF Etsaut 4.85 87 eSn Sn 11 24 51.5 -0.8
3.9nm,0.4s
ETSF eSg **Sg 11 25 20.3 -0.1**
3.0nm,0.4s
ECAB El Cabril 4.94 164 Pn Pn 11 24 00.4 +2.6
1.1nm,0.2s,SNR=7.9
ECAB Sn Sn **11 24 53.6 -0.8**
1.1nm,0.2s,SNR=6.2
ECAB Lg Lg 11 25 21.9
21nm,0.7s,SNR=8.8
ECAB El Cabril 4.94 164 Pn Pn 11 24 00.4 +2.6
1.1nm,0.2s,SNR=7.9
ECAB Sn Sn **11 24 53.6 -0.8**
1.1nm,0.2s,SNR=6.2
ECAB Lg Lg 11 25 21.9
21nm,0.7s,SNR=8.8
MESJ Messejana 5.06 190 ePn Pn 11 24 01.1 +1.7
MESJ eSn **Sn 11 24 56.5 -0.8**
MESJ eSg **Sg 11 25 26.4 -0.6**
MESJ A A 11 25 31.9
7.2nm,0.4s
MESJ Messejana 5.06 190 ePn Pn 11 24 01.1 +1.7
MESJ eSn **Sn 11 24 56.5 -0.8**
MESJ eSg **Sg 11 25 26.4 -0.6**
7.2nm,0.4s
EADA Adamuz 5.06 156 Sn Sn 11 24 55.1 -2.4
0.9nm,0.0s,SNR=7.2
EADA Lg Lg 11 25 23.6
4.5nm,0.6s,SNR=5.0
EMIN Mina Concepcio 5.08 176 Sn Sn 11 24 53.7 -4.1
0.5nm,0.3s,SNR=8.0
EMIN Lg Lg 11 25 25.7
17nm,0.6s,SNR=8.2
ESAC San Caprasio 5.09 100 Lg Lg 11 25 28.3
31nm,0.3s,SNR=7.9
ESAC San Caprasio 5.09 100 Lg Lg 11 25 28.3
31nm,0.3s,SNR=7.9
PCVE Castro Verde 5.24 188 eSg Sg 11 25 31.0 -2.0
PCVE A A 11 25 40.7
8.1nm,0.7s
PCVE Castro Verde 5.24 188 eSg Sg 11 25 31.0 -2.0
8.1nm,0.7s
EGRO El Granado 5.30 183 Lg Lg 11 25 32.9
20nm,0.6s,SNR=5.1
EGRO El Granado 5.30 183 Lg Lg 11 25 32.9
20nm,0.6s,SNR=5.1
ECHI Chisagues Biel 5.42 89 Sn Sn 11 25 09.9 +3.6
1.0nm,0.2s,SNR=7.9
PTEO Sao Teotonio 5.42 193 eSg Sg 11 25 37.4 -1.3
PTEO A A 11 25 41.3
16nm,0.6s
PTEO Sao Teotonio 5.42 193 eSg Sg 11 25 37.4 -1.3
16nm,0.6s
PVAQ Vaqueiros 5.45 185 ePn Pn 11 24 06.7 +1.9
PVAQ eSn **Sn 11 25 05.9 -0.9**
PVAQ eSg **Sg 11 25 39.0 -0.4**
PVAQ A A 11 25 43.3
11nm,0.5s
PVAQ Vaqueiros 5.45 185 ePn Pn 11 24 06.7 +1.9
PVAQ eSn **Sn 11 25 05.9 -0.9**
PVAQ eSg **Sg 11 25 39.0 -0.4**
11nm,0.5s
EPF Esparros 5.51 85 eSn Sn 11 25 07.5 -0.9
9.6nm,0.6s
EPF eSg **Sg 11 25 39.9 -1.5**
15nm,0.7s
EPF Esparros 5.51 85 eSn Sn 11 25 07.5 -0.9
4.8nm,0.6s
EPF eSg **Sg 11 25 39.9 -1.5**
7.4nm,0.7s
EMOS Mosqueruela 5.59 114 Pn Pn 11 24 11.1 +4.2
0.1nm,0.1s,SNR=7.9
EMOS Sn Sn **11 25 14.0 +3.4**
4.5nm,0.2s,SNR=7.9
EMOS Lg Lg 11 25 47.0
33nm,1.2s,SNR=7.9
EMOS Mosqueruela 5.59 114 Lg Lg 11 25 47.0
33nm,1.2s,SNR=7.9
PBDV Barranco-do-Ve 5.62 186 eSg Sg 11 25 43.5 -1.6
PBDV A A 11 25 56.4
14nm,0.5s
PBDV Barranco-do-Ve 5.62 186 eSg Sg 11 25 43.5 -1.6
14nm,0.5s
QUIF Quistinic 5.80 28 ePn Pn 11 24 10.9 +1.3
QUIF eSn **Sn 11 25 12.5 -3.1**
7.5nm,0.2s
QUIF Quistinic 5.80 28 ePn Pn 11 24 10.9 +1.3
QUIF eSn **Sn 11 25 12.5 -3.1**
3.8nm,0.2s
PFVI Vila Bisbo 5.84 193 eSn Sn 11 25 16.3 -0.3
PFVI Vila Bisbo 5.84 193 Sn Sn 11 25 15.0 -1.6
3.0nm,0.4s,SNR=7.9
PFVI Vila Bisbo 5.84 193 eSn Sn 11 25 16.3 -0.3
SESP Santiago Espad 5.88 142 Lg Lg 11 25 50.6
10nm,0.3s,SNR=7.9
SESP Santiago Espad 5.88 142 Lg Lg 11 25 50.6
10nm,0.3s,SNR=7.9
ERTA Horta de San J 5.90 106 Pn Pn 11 24 15.7 +4.7
0.7nm,0.1s,SNR=7.9
EQES Quesada 5.92 147 Lg Lg 11 25 54.7
10nm,0.6s,SNR=5.6
EQES Quesada 5.92 147 Lg Lg 11 25 54.7
10nm,0.6s,SNR=5.6
ETOB Tobarra 5.97 133 Pn Pn 11 24 16.8 +4.7
0.5nm,0.1s,SNR=7.9
ETOB Lg Lg 11 25 53.3
6.8nm,1.8s,SNR=5.4
LFF La Frestale 6.08 67 ePn Pn 11 24 15.8 +2.3
LFF eSn
5.1nm,0.4s
LFF La Frestale 6.08 67 ePn Pn 11 24 15.8 +2.3
ROSF Rostrenen 6.13 25 ePn Pn 11 24 15.7 +1.5
ROSF eSn **Sn 11 25 20.9 -2.9**
7.6nm,0.4s
ROSF Rostrenen 6.13 25 ePn Pn 11 24 15.7 +1.5
ROSF eSn **Sn 11 25 20.9 -2.9**
3.8nm,0.4s
MFF Saint Martin d 6.25 51 ePn Pn 11 24 17.5 +1.7
MFF eSn **Sn 11 25 24.5 -2.2**
3.4nm,0.3s
MFF Saint Martin d 6.25 51 ePn Pn 11 24 17.5 +1.7
MFF eSn **Sn 11 25 24.5 -2.2**
1.7nm,0.3s
SGMF Saint Gilles 6.30 29 ePn Pn 11 24 17.4 +0.9
SGMF eSn **Sn 11 25 25.7 -2.2**
2.4nm,0.2s
SGMF Saint Gilles 6.30 29 ePn Pn 11 24 17.4 +0.9
SGMF eSn **Sn 11 25 25.7 -2.2**
1.2nm,0.2s
RJF Les Rejaudoux 6.72 66 ePn Pn 11 24 23.7 +1.5
RJF eSn **Sn 11 25 36.3 -1.8**
7.2nm,0.6s
RJF Les Rejaudoux 6.72 66 ePn Pn 11 24 23.7 +1.5
RJF eSn **Sn 11 25 36.3 -1.8**
3.6nm,0.6s
MTLF Montolieu 6.88 83 ePn Pn 11 24 24.9 +0.4
MTLF eSn **Sn 11 25 39.7 -2.5**
2.1nm,0.5s
MTLF Montolieu 6.88 83 ePn Pn 11 24 24.9 +0.4
MTLF eSn **Sn 11 25 39.7 -2.5**
1.0nm,0.5s
CAF Calviac 6.98 69 ePn Pn 11 24 26.8 +0.9
CAF Calviac 6.98 69 ePn Pn 11 24 26.8 +0.9
GRR Gorron 7.09 36 ePn Pn 11 24 28.6 +1.3
GRR eSn **Sn 11 25 43.5 -3.8**
4.1nm,0.3s
GRR Gorron 7.09 36 ePn Pn 11 24 28.6 +1.3
GRR eSn **Sn 11 25 43.5 -3.8**
2.0nm,0.3s
TCF Toulx Ste Croi 7.53 60 ePn Pn 11 24 34.7 +1.4
TCF eSn **Sn 11 25 52.7 -5.3**
3.0nm,0.2s
TCF Toulx Ste Croi 7.53 60 ePn Pn 11 24 34.7 +1.4
TCF eSn **Sn 11 25 52.7 -5.3**
1.5nm,0.2s
FLN La Foliniere 7.54 36 ePn Pn 11 24 34.6 +1.2
baz=232
FLN eSn **Sn 11 25 54.6 -3.7**
2.2nm,0.2s
FLN La Foliniere 7.54 36 ePn Pn 11 24 34.6 +1.2
FLN eSn **Sn 11 25 54.6 -3.7**
1.1nm,0.2s
LDF La Druitiere 7.57 38 ePn Pn 11 24 34.9 +1.0
LDF eSn **Sn 11 25 55.4 -3.7**
2.2nm,0.3s
LDF La Druitiere 7.57 38 ePn Pn 11 24 34.9 +1.0
LDF eSn **Sn 11 25 55.4 -3.7**
1.1nm,0.3s
BGF Bois d'Agland 8.04 59 ePn Pn 11 24 41.9 +1.6
BGF eSn **Sn 11 26 07.7 -2.9**
4.8nm,0.4s
BGF Bois d'Agland 8.04 59 ePn Pn 11 24 41.9 +1.6
BGF eSn **Sn 11 26 07.7 -2.9**
2.4nm,0.4s
HYF Humbligny 8.23 54 ePn Pn 11 24 45.5 +2.6
HYF Humbligny 8.23 54 ePn Pn 11 24 45.5 +2.6
AVF Avril sur Loir 8.45 59 ePn Pn 11 24 47.1 +1.1
AVF Avril sur Loir 8.45 59 ePn Pn 11 24 47.1 +1.1
SSF Saint Saulge 8.66 57 eSn Sn 11 26 22.1 -3.8
1.1nm,0.3s
SSF Saint Saulge 8.66 57 eSn Sn 11 26 22.1 -3.8
0.6nm,0.3s
LOR Lormes 8.96 57 ePn Pn 11 24 54.9 +1.9
baz=242
LOR eSn **Sn 11 26 30.1 -3.3**
LOR Lormes 8.96 57 ePn Pn 11 24 54.9 +1.9
LOR eSn **Sn 11 26 30.1 -3.3**

*CSEM **29** 11:29:31.9±0.1, 42°.79N×7°.21W, h2km, ML1.5, Error ellipse: s-maj=2.2km s-min=1.9km az=113.0*
MDD 29 11:29:32.8±0.5, 42°.80N×7°.22W, h20km, mbLg1.5/7, 1C, Error ellipse: s-maj=4.9km s-min=4.6km az=95.0, PRXIMO, Spain

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EPON	**Pontenova**	**0.53**	**5**	Pg	Pb	11 29 42.8	-0.6
	0.8nm,0.1s,SNR=7.9						
EPON				Lg	Lg	11 29 49.5	
	2.6nm,0.1s,SNR=5.6						
EPON	**Pontenova**	**0.53**	**5**	Pg	Pb	11 29 42.8	-0.6
	0.8nm,0.1s,SNR=7.9						
EPON				Lg	Lg	11 29 49.5	
	2.6nm,0.1s,SNR=5.6						
EAGO	**Agolada(Pontev**	**0.64**	**270**	⇑Pg	Pb	11 29 44.7	-0.7
	7.6nm,0.1s,SNR=18						
EAGO				Lg	Lg	11 29 53.3	
	18nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**0.64**	**270**	Pg	Pb	11 29 44.7	-0.7
	7.6nm,0.1s,SNR=18						
EAGO				Lg	Lg	11 29 53.3	
	18nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**0.93**	**157**	Pg	Pb	11 29 49.9	-0.4
	0.2nm,0.1s,SNR=7.9						
ECAL				Lg	Lg	11 30 01.4	
	2.9nm,0.2s,SNR=6.3						
ECAL	**Calabor**	**0.93**	**157**	Pg	Pb	11 29 49.9	-0.4
	0.2nm,0.1s,SNR=7.9						
ECAL				Lg	Lg	11 30 01.4	
	2.9nm,0.2s,SNR=6.3						
PBRG	**Braganca**	**1.06**	**160**	eS	Sb	11 30 05.7	-0.1
PBRG				A	A	11 30 07.0	
	2.9nm,0.4s						
PBRG	**Braganca**	**1.06**	**160**	Lg	Lg	11 30 05.7	
	1.4nm,0.4s						
PBRG	**Braganca**	**1.06**	**160**	eS	Sb	11 30 05.7	-0.1
	2.9nm,0.4s						
ELOB	**Lobios**	**1.12**	**214**	Pg	Pn	11 29 53.4	-0.2
	0.7nm,0.1s,SNR=7.9						
ELOB				Lg	Lg	11 30 08.2	
	1.2nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**1.12**	**214**	Pg	Pn	11 29 53.4	-0.1
	0.7nm,0.1s,SNR=7.9						
ELOB				Lg	Lg	11 30 08.2	
	1.2nm,0.1s,SNR=7.9						
PGAV	**Gavieira, Arco**	**1.14**	**223**	eP	Pn	11 29 53.8	0.0
PGAV				eS	Sb	11 30 08.5	+0.1
PGAV				A	A	11 30 09.2	
	2.1nm,0.1s						
PGAV	**Gavieira, Arco**	**1.14**	**223**	eP	Pn	11 29 53.8	0.0
PGAV				eS	Sb	11 30 08.5	+0.1
	2.1nm,0.1s						
EMAZ	**Mazaricos**	**1.30**	**277**	Pg	Pb	11 29 56.4	-0.2
	0.9nm,0.1s,SNR=7.9						
EMAZ				Lg	Lg	11 30 13.8	
	2.8nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**1.30**	**277**	Pg	Pb	11 29 56.4	-0.2
	0.9nm,0.1s,SNR=7.9						
EMAZ				Lg	Lg	11 30 13.8	
	2.8nm,0.1s,SNR=7.9						
POLO	**Lamas de Olo**	**1.49**	**197**	eS	Sb	11 30 19.3	+0.9
POLO	**Lamas de Olo**	**1.49**	**197**	eS	Sb	11 30 19.3	+0.9
EARI	**Arriondas**	**1.55**	**71**	Pg	Pb	11 30 01.3	+0.3
	0.2nm,0.1s,SNR=7.9						
EARI				Lg	Lg	11 30 20.6	
	0.6nm,0.1s,SNR=7.9						
EARI	**Arriondas**	**1.55**	**71**	Pg	Pb	11 30 01.3	+0.4
	0.2nm,0.1s,SNR=7.9						
EARI				Lg	Lg	11 30 20.6	
	0.6nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**1.64**	**175**	Lg	Lg	11 30 23.7	
	1.5nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**1.64**	**175**	Lg	Lg	11 30 23.7	
	1.5nm,0.1s,SNR=7.9						
MVO				eSg	Sb	11 30 24.0	+1.3

*ISCJB **29** 11:30:16.9±0.4, 42°.73N±0°.02×7°.07W±0°.03, h6km±2km, Error ellipse: s-maj=4.2km s-min=2.1km az=39.4*
*CSEM **29** 11:30:18.8±0.1, 42°.78N×7°.19W, h12km, ML3.1/32, Error ellipse: s-maj=3.5km s-min=2.0km az=123.0*
*MDD **29** 11:30:20.4±0.3, 42°.81N×7°.23W, h11km, mbLg2.7/33, Error ellipse: s-maj=3.5km s-min=2.7km az=120.0, PRXIMO*
MDD EMS: II-III INTENSIDAD MAXIMA.
*LDG **29** 11:30:20.3±0.1, 42°.83N×7°.29W, h10km, Md3.2/3, Ml3.0/17, Error ellipse: s-maj=3.6km s-min=2.6km az=124.0*
*INMG **29** 11:30:20.2±1.6, 42°.82N×7°.20W, h17km±4km, ML2.7, Error ellipse: s-maj=3.8km s-min=2.3km az=91.0*
ISC 29 11:30:19.6±1.0, 42°.82N±0°.02×7°.22W±0°.03, h15km±8km, n164, σ2s26/237, 2C-2D, Spain

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EPON	**Pontenova**	**0.51**	**6**	Pg	Pg	**11 30 29.9**	**+0.3**
	11nm,0.1s,SNR=36						
EPON				Lg	Lg	11 30 37.2	
	95nm,0.1s,SNR=9.2						
EPON	**Pontenova**	**0.51**	**6**	Pg	Pg	**11 30 29.9**	**+0.3**
	11nm,0.1s,SNR=36						
EPON				Lg	Lg	11 30 37.2	
	95nm,0.1s,SNR=9.2						
EAGO	**Agolada(Pontev**	**0.64**	**268**	Pg	Pg	**11 30 32.3**	**+0.2**
	167nm,0.1s,SNR=7.9						
EAGO				Lg	Lg	11 30 40.8	
	508nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**0.64**	**268**	Pg	Pg	**11 30 32.3**	**+0.2**
	167nm,0.1s,SNR=7.9						
EAGO				Lg	Lg	11 30 40.8	
	508nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**0.95**	**158**	Pg	Pg	**11 30 37.3**	**-0.7**
	22nm,0.2s,SNR=29						
ECAL				Lg	Lg	11 30 49.9	
	144nm,0.3s,SNR=12						
ECAL	**Calabor**	**0.95**	**158**	Pg	Pg	**11 30 37.3**	**-0.7**
	22nm,0.2s,SNR=29						
ECAL				Lg	Lg	11 30 49.9	
	144nm,0.3s,SNR=12						
PBRG	**Braganca**	**1.08**	**161**	eP	Pb	**11 30 39.6**	**-0.3**
PBRG				eS	Sb	**11 30 52.9**	**-0.9**
PBRG				A	A	11 30 59.1	
	61nm,0.3s						
PBRG	**Braganca**	**1.08**	**161**	Pg	Pb	**11 30 39.6**	**-0.3**
PBRG				Lg	Lg	11 30 52.9	
	31nm,0.3s						
PBRG	**Braganca**	**1.08**	**161**	eP	Pb	**11 30 39.6**	**-0.3**
PBRG				eS	Sb	**11 30 52.9**	**-0.9**
	61nm,0.3s						
ELOB	**Lobios**	**1.14**	**213**	⇓Pg	Pb	**11 30 41.2**	**+0.2**
	80nm,0.2s,SNR=18						
ELOB				Lg	Lg	11 30 56.0	
	104nm,0.2s,SNR=5.0						
ELOB	**Lobios**	**1.14**	**213**	Pg	Pb	**11 30 41.2**	**+0.2**
	80nm,0.2s,SNR=18						
ELOB				Lg	Lg	11 30 56.0	
	104nm,0.2s,SNR=5.0						
PGAV	**Gavieira, Arco**	**1.16**	**223**	⇑eP	Pb	**11 30 40.1**	**-1.2**
PGAV				eS	Sb	**11 30 56.0**	**-0.2**
PGAV				A	A	11 30 58.4	
	121nm,0.3s						
PGAV	**Gavieira, Arco**	**1.16**	**223**	⇑eP	Pb	**11 30 40.1**	**-1.2**
PGAV				eS	Sb	**11 30 56.0**	**-0.2**
	121nm,0.3s						
EMAZ	**Mazaricos**	**1.30**	**276**	⇓Pg	Pn	**11 30 44.3**	**+1.1**
	42nm,0.2s,SNR=18						
EMAZ				Lg	Lg	11 31 01.6	
	88nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**1.30**	**276**	Pg	Pn	**11 30 44.3**	**+1.1**
	42nm,0.2s,SNR=18						
EMAZ				Lg	Lg	11 31 01.6	
	88nm,0.1s,SNR=7.9						
POLO	**Lamas de Olo**	**1.51**	**197**	ePn	Pn	**11 30 45.2**	**-1.0**
POLO	**Lamas de Olo**	**1.51**	**197**	ePg	Pn	**11 30 47.6**	**+1.4**
POLO				eSn	Sn	**11 31 04.0**	**-1.6**
POLO				eSg	Sb	**11 31 06.3**	**0.0**
POLO				A	A	11 31 07.8	
	48nm,0.3s						
POLO	**Lamas de Olo**	**1.51**	**197**	ePn	Pn	**11 30 45.2**	**-1.0**
POLO	**Lamas de Olo**	**1.51**	**197**	ePg	Pn	**11 30 47.6**	**+1.4**
POLO				eSn	Sn	**11 31 04.0**	**-1.6**
POLO				eSg	Sb	**11 31 06.3**	**0.0**
	48nm,0.3s						
EARI	**Arriondas**	**1.55**	**71**	Pg	Pb	**11 30 48.7**	**+0.7**
	4.5nm,0.1s,SNR=23						
EARI				Lg	Lg	11 31 08.7	
	72nm,0.3s,SNR=5.0						
EARI	**Arriondas**	**1.55**	**71**	Pg	Pb	**11 30 48.7**	**+0.7**
	4.5nm,0.1s,SNR=23						
EARI				Lg	Lg	11 31 08.7	
	72nm,0.3s,SNR=5.0						
PVRL	**Vila Real**	**1.59**	**194**	ePg	Pn	**11 30 47.8**	**+0.6**
PVRL				eSn	Sn	**11 31 05.5**	**-2.0**
PVRL				eSg	Sb	**11 31 07.8**	**-0.8**
PVRL				A	A	11 31 09.7	
	103nm,0.6s						
PVRL	**Vila Real**	**1.59**	**194**	Pg	Pn	**11 30 47.8**	**+0.6**
PVRL				Sn	Sn	**11 31 05.5**	**-2.0**
PVRL				Lg	Lg	11 31 07.8	
	52nm,0.6s						
PVRL	**Vila Real**	**1.59**	**194**	Pg	Pn	**11 30 47.8**	**+0.6**
PVRL				Sn	Sn	**11 31 05.5**	**-2.0**
PVRL				eSg	Sb	**11 31 07.8**	**-0.8**
	103nm,0.6s						
MVO	**Moncorvo**	**1.66**	**175**	ePn	Pn	**11 30 47.6**	**-0.6**
MVO	**Moncorvo**	**1.66**	**175**	ePg	Pn	**11 30 49.2**	**+0.9**
MVO				eSg	Sn	**11 31 10.9**	**+1.5**
MVO				A	A	11 31 19.0	
	60nm,0.3s						
MVO	**Moncorvo**	**1.66**	**175**	Pn	Pn	**11 30 49.2**	**+0.9**
	0.6nm,0.1s,SNR=9.0						
MVO				Pg	Pb	**11 30 51.2**	**+1.3**
	2.7nm,0.1s,SNR=12						
MVO				Sn	Sn	**11 31 10.2**	**+0.9**
	52nm,0.2s,SNR=5.7						
MVO	**Moncorvo**	**1.66**	**175**	ePn	Pn	**11 30 47.6**	**-0.6**
MVO	**Moncorvo**	**1.66**	**175**	ePg	Pn	**11 30 49.2**	**+0.9**
MVO				eSg	Sn	**11 31 10.9**	**+1.5**
	60nm,0.3s						
PVIS	**Viseu**	**2.17**	**194**	ePn	Pn	**11 30 54.9**	**-0.2**
PVIS				eSg	Sb	**11 31 26.4**	**+1.3**
PVIS				A	A	11 31 29.0	
	45nm,0.2s						
PVIS	**Viseu**	**2.17**	**194**	Pn	Pn	**11 30 54.9**	**-0.2**
PVIS				Lg	Lg	11 31 26.4	
	22nm,0.2s						
PVIS	**Viseu**	**2.17**	**194**	Pn	Pn	**11 30 54.9**	**-0.2**
PVIS				eSg	Sb	**11 31 26.4**	**+1.3**

45nm,0.2s
MTE Manteigas 2.43 186 *e*Pg **Pb 11 31 04.7 +1.6**
MTE *e*Sn **Sn 11 31 26.2 -2.2**
MTE *e*Sg **Sb 11 31 35.5 +2.6**
MTE A A 11 31 39.5

44nm,0.4s
MTE Manteigas 2.43 186 Pg **Pb 11 31 04.7 +1.6**
MTE Sn **Sn 11 31 26.2 -2.2**
MTE Lg Lg 11 31 35.5

22nm,0.4s
MTE Manteigas 2.43 186 Pg **Pb 11 31 04.7 +1.6**
MTE Sn **Sn 11 31 26.2 -2.2**
MTE *e*Sg **Sb 11 31 35.5 +2.6**

44nm,0.4s
COI Coimbra 2.76 199 Lg Lg 11 31 46.2
COI Coimbra 2.76 199 *e*Sg **Sg 11 31 46.2 -2.1**
ELAN Lanestosa 2.81 80 Pn **Pn 11 31 05.0 +1.1**

1.3nm,0.2s,SNR=7.9
ELAN Sn **Sn 11 31 37.1 -0.4**

9.2nm,0.2s,SNR=5.1
ELAN Lg Lg 11 31 46.9

25nm,0.3s,SNR=12
ELAN Lanestosa 2.81 80 Pn **Pn 11 31 05.0 +1.1**

1.3nm,0.2s,SNR=7.9
ELAN Sn **Sn 11 31 37.1 -0.4**

9.2nm,0.2s,SNR=5.1
ELAN Lg Lg 11 31 46.9

25nm,0.3s,SNR=12
EPLA Plasencia 2.89 162 Pn **Pn 11 31 05.8 +0.8**

1.1nm,0.1s,SNR=7.9
EPLA Sn **Sn 11 31 38.0 -1.5**

6.3nm,0.2s,SNR=7.9
EPLA Lg Lg 11 31 48.2

17nm,0.4s,SNR=5.9
EPLA Plasencia 2.89 162 Pn **Pn 11 31 05.8 +0.8**

1.1nm,0.1s,SNR=7.9
EPLA Sn **Sn 11 31 38.0 -1.5**

6.3nm,0.2s,SNR=7.9
EPLA Lg Lg 11 31 48.2

17nm,0.4s,SNR=5.9
PCAS Casmilo, Conde 2.93 200 *e*Sn **Sn 11 31 40.0 -0.5**
PCAS *e*Sg **Sg 11 31 51.9 -1.8**
PCAS A A 11 31 54.0

29nm,0.8s
PCAS Casmilo, Conde 2.93 200 *e*Sn **Sn 11 31 40.0 -0.5**
PCAS *e*Sg **Sg 11 31 51.9 -1.8**

29nm,0.8s
PCBR Castelo Branco 2.99 184 *e*Pn **Pn 11 31 06.0 -0.4**
PCBR *e*Sn **Sn 11 31 39.6 -2.3**
PCBR *e*Sg **Sb 11 31 52.2 +3.5**
PCBR A A 11 31 57.2

14nm,0.5s
PCBR Castelo Branco 2.99 184 Pn **Pn 11 31 06.0 -0.4**
PCBR Sn **Sn 11 31 39.6 -2.3**
PCBR Lg Lg 11 31 52.2

7.1nm,0.5s
PCBR Castelo Branco 2.99 184 Pn **Pn 11 31 06.0 -0.4**
PCBR Sn **Sn 11 31 39.6 -2.3**
PCBR *e*Sg **Sb 11 31 52.2 +3.5**

14nm,0.5s
GUD Guadarrama 3.16 132 Pn **Pn 11 31 09.2 +0.3**

2.8nm,0.3s,SNR=9.6
GUD Pg **Pb 11 31 18.1 +2.5**

5.0nm,0.3s,SNR=5.9
GUD Sn **Sn 11 31 44.4 -2.1**

1.4nm,0.2s,SNR=8.0
GUD Lg Lg 11 31 57.2

33nm,0.4s,SNR=14
GUD Guadarrama 3.16 132 Pn **Pn 11 31 09.2 +0.3**

2.8nm,0.3s,SNR=9.6
PTOM Tomar 3.33 196 *e*Pn **Pn 11 31 10.8 -0.2**
PTOM *e*Sg **Sg 11 32 04.6 -1.8**
PTOM Tomar 3.33 196 Pn **Pn 11 31 10.8 -0.2**
PTOM Lg Lg 11 32 04.6
PTOM Tomar 3.33 196 Pn **Pn 11 31 10.8 -0.2**
PTOM *e*Sg **Sg 11 32 04.6 -1.8**
PMRV Marv??o 3.39 182 *e*Pn **Pn 11 31 11.8 -0.2**
PMRV *e*Sn **Sn 11 31 49.3 -2.7**
PMRV *e*Sg **Sg 11 32 05.6 -3.0**
PMRV A A 11 32 12.3

13nm,0.5s
PMRV Marv??o 3.39 182 Pn **Pn 11 31 11.8 -0.2**
PMRV Sn **Sn 11 31 49.3 -2.7**
PMRV Lg Lg 11 32 05.6

13nm,0.5s
PMRV Marv??o 3.39 182 Pn **Pn 11 31 11.8 -0.2**
PMRV Sn **Sn 11 31 49.3 -2.7**
PMRV *e*Sg **Sg 11 32 05.6 -3.0**

13nm,0.5s
PESTR Estremoz 3.96 184 *e*Sg **Sb 11 32 22.1 +5.3**
PESTR A A 11 32 30.0

14nm,0.6s
PESTR Estremoz 3.96 184 *e*Sg **Sb 11 32 22.1 +5.3**

14nm,0.6s
ESDC Sonseca Array 3.99 141 Lg Lg 11 32 22.9

3.5nm,0.4s,baz=314,slow=30,SNR=11
ESDC Sonseca Array 3.99 141 Lg Lg 11 32 22.9

3.5nm,0.4s,SNR=11
EBAD Badajoz 4.07 178 Lg Lg 11 32 25.4

7.7nm,0.2s,SNR=8.4
EBAD Badajoz 4.07 178 Lg Lg 11 32 25.4

7.7nm,0.2s,SNR=8.4
EALK Alkurruntz 4.21 83 Sn **Sn 11 32 09.7 -2.4**

7.4nm,0.6s,SNR=7.9
EALK Lg Lg 11 32 39.4

8.8nm,0.4s,SNR=7.9
EALK Alkurruntz 4.21 83 Sn **Sn 11 32 09.7 -2.4**

7.4nm,0.6s,SNR=7.9
EALK Lg Lg 11 32 39.4

8.8nm,0.4s,SNR=7.9
EVO Evora 4.33 188 *e*Sg **Sg 11 32 35.4 -3.1**
EVO Evora 4.33 188 Lg Lg 11 32 35.4
EVO Evora 4.33 188 Lg Lg 11 32 35.4
EORO Oroz-Betelu 4.35 87 Pn **Pn 11 31 26.8 +1.7**

0.1nm,0.0s,SNR=7.4
ETOR Torete 4.35 116 Pg Pb 11 31 39.8 +4.1

SNR=7.9
ETOR Lg Lg 11 32 35.3

5.5nm,0.3s,SNR=11
ETOR Torete 4.35 116 Pg Pb 11 31 39.8 +4.1

SNR=7.9
ETOR Lg Lg 11 32 35.3

5.5nm,0.3s,SNR=11
IEPA Eparoz 4.38 89 Pn **Pn 11 31 27.0 +1.4**

2.3nm,0.2s,SNR=7.9
IEPA Sn **Sn 11 32 13.7 -2.7**

2.3nm,0.2s,SNR=7.9
IELO Elcoad 4.40 88 Pn **Pn 11 31 27.2 +1.3**

1.3nm,0.2s,SNR=7.9
IELO Sn **Sn 11 32 16.8 -0.1**

SNR=7.9
IELO Lg Lg 11 32 43.1

2.8nm,0.3s,SNR=7.9
SJPF Ste Jean 4.41 84 *e*Pn **Pn 11 31 26.5 +0.6**
SJPF *e*Sn **Sn 11 32 14.9 -2.1**

2.7nm,0.2s
SJPF *e*Sg **Sg 11 32 40.2 -0.9**

5.1nm,0.4s
SJPF Ste Jean 4.41 84 Pn **Pn 11 31 26.5 +0.6**
SJPF Sn **Sn 11 32 14.9 -2.1**

1.4nm,0.2s
SJPF Lg Lg 11 32 40.2

2.6nm,0.4s
SJPF Ste Jean 4.41 84 Pn **Pn 11 31 26.5 +0.6**
SJPF *e*Sn **Sn 11 32 14.9 -2.1**

1.4nm,0.2s
SJPF *e*Sg **Sg 11 32 40.2 -0.9**

2.5nm,0.4s
YARA Arangoiti 4.45 90 Pn **Pn 11 31 28.0 +1.4**

0.8nm,0.1s,SNR=7.9
YASP Aspurt 4.46 89 Pn **Pn 11 31 28.1 +1.4**

4.8nm,0.3s,SNR=7.9
YASP Sn **Sn 11 32 19.2 +0.9**

1.1nm,0.2s,SNR=7.9
YUND Undues 4.49 91 Pn **Pn 11 31 28.3 +1.1**

1.5nm,0.3s,SNR=7.9
YUND Sn **Sn 11 32 17.4 -1.8**

1.0nm,0.2s,SNR=7.9
YUND Undues 4.49 91 Pn **Pn 11 31 28.3 +1.1**

1.5nm,0.3s,SNR=7.9
YUND Sn **Sn 11 32 17.4 -1.8**

1.0nm,0.2s,SNR=7.9
YSOS Sos del Rey Ca 4.50 93 Pn **Pn 11 31 27.7 +0.5**

1.2nm,0.2s,SNR=7.9
YSOS Sn **Sn 11 32 16.8 -2.5**

1.8nm,0.2s,SNR=7.9
YSOS Lg Lg 11 32 39.2

2.8nm,0.2s,SNR=7.9
YSOS Sos del Rey Ca 4.50 93 Pn **Pn 11 31 27.7 +0.5**

1.2nm,0.2s,SNR=7.9
YSOS Sn **Sn 11 32 16.8 -2.5**

1.8nm,0.2s,SNR=7.9
YSOS Lg Lg 11 32 39.2

2.8nm,0.2s,SNR=7.9
YMUS Pe˜a Musera 4.58 91 Pn **Pn 11 31 29.4 +1.1**

1.4nm,0.2s,SNR=7.9
YMUS Sn **Sn 11 32 18.8 -2.3**

2.4nm,0.2s,SNR=7.9
YMUS Pe˜a Musera 4.58 91 Pn **Pn 11 31 29.4 +1.1**

1.4nm,0.2s,SNR=7.9
YMUS Sn **Sn 11 32 18.8 -2.3**

2.4nm,0.2s,SNR=7.9
YSIG Sigues 4.59 90 Pn **Pn 11 31 29.3 +0.8**

0.5nm,0.1s,SNR=7.9
YSIG Sn **Sn 11 32 20.4 -1.1**

1.3nm,0.3s,SNR=7.9
YSIG Sigues 4.59 90 Pn **Pn 11 31 29.3 +0.8**

0.5nm,0.1s,SNR=7.9
YSIG Sn **Sn 11 32 20.4 -1.1**

1.3nm,0.3s,SNR=7.9
PBAR Barrancos 4.64 178 *e*Sn **Sn 11 32 19.1 -3.7**
PBAR *e*Sg **Sg 11 32 44.1 -4.6**
PBAR A A 11 32 56.7

14nm,0.5s
PBAR Barrancos 4.64 178 Sn **Sn 11 32 19.1 -3.7**
PBAR Lg Lg 11 32 44.1

14nm,0.5s
PBAR Barrancos 4.64 178 Sn **Sn 11 32 19.1 -3.7**
PBAR *e*Sg **Sg 11 32 44.1 -4.6**

14nm,0.5s
ATE Arette 4.79 85 Pn **Pn 11 31 32.8 +1.6**

1.0nm,0.2s,SNR=7.9
ATE Sn **Sn 11 32 26.9 +0.4**

3.1nm,0.4s,SNR=7.9
ETSF Etsaut 4.90 87 *e*Pn **Pn 11 31 33.8 +1.1**
ETSF *e*Sn **Sn 11 32 26.6 -2.5**

4.7nm,0.4s
ETSF *e*Sg **Sg 11 32 55.3 -1.4**

5.7nm,0.5s
ETSF Etsaut 4.90 87 Pn **Pn 11 31 33.8 +1.1**
ETSF Sn **Sn 11 32 26.6 -2.5**

2.3nm,0.4s
ETSF Lg Lg 11 32 55.3

2.8nm,0.5s
ETSF Etsaut 4.90 87 Pn **Pn 11 31 33.8 +1.1**
ETSF *e*Sn **Sn 11 32 26.6 -2.5**

2.3nm,0.4s
ETSF *e*Sg **Sg 11 32 55.3 -1.4**

2.8nm,0.5s
ECAB El Cabril 4.94 163 Pn **Pn 11 31 31.5 -1.7**

0.0nm,0.1s,SNR=7.9
ECAB Sn **Sn 11 32 27.5 -2.6**

0.7nm,0.2s,SNR=7.4
ECAB Lg Lg 11 32 55.9

26nm,0.8s,SNR=7.0
ECAB El Cabril 4.94 163 Pn **Pn 11 31 31.5 -1.7**

SNR=7.9
ECAB Sn **Sn 11 32 27.5 -2.6**

0.7nm,0.2s,SNR=7.4
ECAB Lg Lg 11 32 55.9

26nm,0.8s,SNR=7.0
MESJ Messejana 5.04 189 *e*Sg **Sg 11 33 00.3 -0.9**
MESJ A A 11 33 05.0

5.1nm,0.5s
MESJ Messejana 5.04 189 Lg Lg 11 33 00.3

5.1nm,0.5s
MESJ Messejana 5.04 189 *e*Sg **Sg 11 33 00.3 -0.9**

5.1nm,0.5s
EMIN Mina Concepcio 5.07 175 Sn **Sn 11 32 30.7 -2.5**

0.5nm,0.3s,SNR=5.8
EMIN Lg Lg 11 32 59.2

5.9nm,0.5s,SNR=5.7
EMIN Mina Concepcio 5.07 175 Sn **Sn 11 32 30.7 -2.5**

0.5nm,0.3s,SNR=5.8
EMIN Lg Lg 11 32 59.2

5.9nm,0.5s,SNR=5.7
EADA Adamuz 5.07 156 Lg Lg 11 32 56.9

2.1nm,0.3s,SNR=6.7
EADA Adamuz 5.07 156 Lg Lg 11 32 56.9

2.1nm,0.3s,SNR=6.7
ESAC San Caprasio 5.13 100 Lg Lg 11 33 00.7

14nm,0.3s,SNR=4.6
ESAC San Caprasio 5.13 100 Lg Lg 11 33 00.7

14nm,0.3s,SNR=4.6
PCVE Castro Verde 5.22 187 *e*Sg **Sg 11 33 04.2 -3.0**
PCVE A A 11 33 11.5

5.3nm,0.5s
PCVE Castro Verde 5.22 187 Lg Lg 11 33 04.2

5.3nm,0.5s
PCVE Castro Verde 5.22 187 *e*Sg **Sg 11 33 04.2 -3.0**

5.3nm,0.5s
EGRO El Granado 5.29 182 Lg Lg 11 33 06.1

1.6nm,0.4s,SNR=5.3
EGRO El Granado 5.29 182 Lg Lg 11 33 06.1

1.6nm,0.4s,SNR=5.3
PTEO Sao Teotonio 5.39 193 *e*Sg **Sg 11 33 11.5 -1.2**
PTEO Sao Teotonio 5.39 193 Lg Lg 11 33 11.5
PTEO Sao Teotonio 5.39 193 *e*Sg **Sg 11 33 11.5 -1.2**
PVAQ Vaqueiros 5.43 184 *e*Pn **Pn 11 31 40.2 +0.3**
PVAQ *e*Sn **Sn 11 32 38.9 -3.2**
PVAQ *e*Sg **Sg 11 33 12.5 -1.2**
PVAQ A A 11 33 14.0

7.3nm,0.6s
PVAQ Vaqueiros 5.43 184 Pn **Pn 11 31 40.2 +0.3**
PVAQ Sn **Sn 11 32 38.9 -3.2**
PVAQ Lg Lg 11 33 12.5

7.3nm,0.6s
PVAQ Vaqueiros 5.43 184 Pn **Pn 11 31 40.2 +0.3**
PVAQ *e*Sn **Sn 11 32 38.9 -3.2**
PVAQ *e*Sg **Sg 11 33 12.5 -1.2**

7.3nm,0.6s
EPF Esparros 5.55 85 *e*Pn **Pn 11 31 42.7 +1.0**
EPF *e*Sn **Sn 11 32 42.1 -3.2**

3.5nm,0.4s
EPF *e*Sg **Sg 11 33 16.8 -1.0**

4.5nm,0.5s
EPF Esparros 5.55 85 Pn **Pn 11 31 42.7 +1.0**
EPF Sn **Sn 11 32 42.1 -3.2**

1.8nm,0.4s
EPF Lg Lg 11 33 16.8

2.2nm,0.5s
EPF Esparros 5.55 85 Pn **Pn 11 31 42.7 +1.0**
EPF *e*Sn **Sn 11 32 42.1 -3.2**

1.8nm,0.4s
EPF *e*Sg **Sg 11 33 16.8 -1.0**

2.2nm,0.5s
PBDV Barranco-do-Ve 5.60 186 *e*Sg **Sg 11 33 16.6 -2.7**
PBDV Barranco-do-Ve 5.60 186 Lg Lg 11 33 16.6
PBDV Barranco-do-Ve 5.60 186 *e*Sg **Sg 11 33 16.6 -2.7**
EMOS Mosqueruela 5.62 114 Sn **Sn 11 32 46.4 -0.8**

4.8nm,0.3s,SNR=7.9
EMOS Lg Lg 11 33 19.0

3.6nm,0.5s,SNR=7.9
EMOS Mosqueruela 5.62 114 Sn **Sn 11 32 46.4 -0.8**

4.8nm,0.3s,SNR=7.9
EMOS Lg Lg 11 33 19.0

3.6nm,0.5s,SNR=7.9
QUIF Quistinic 5.84 28 *e*Pn **Pn 11 31 44.2 -1.3**
QUIF *e*Sn **Sn 11 32 47.1 -5.1**

3.8nm,0.3s
QUIF Quistinic 5.84 28 Pn **Pn 11 31 44.2 -1.3**
QUIF Sn **Sn 11 32 47.1 -5.1**

1.9nm,0.3s
QUIF Quistinic 5.84 28 Pn **Pn 11 31 44.2 -1.3**
EQES Quesada 5.93 146 Lg Lg 11 33 26.2

3.2nm,0.5s,SNR=7.9
EQES Quesada 5.93 146 Lg Lg 11 33 26.2

3.2nm,0.5s,SNR=7.9
ETOB Tobarra 6.00 132 Lg Lg 11 33 27.1

4.2nm,0.6s,SNR=5.5
ETOB Tobarra 6.00 132 Lg Lg 11 33 27.1

4.2nm,0.6s,SNR=5.5
LFF La Frestale 6.13 67 *e*Pn **Pn 11 31 48.9 -0.6**
LFF *e*Sn **Sn 11 32 55.6 -3.8**

3.0nm,0.2s
LFF La Frestale 6.13 67 Pn **Pn 11 31 48.9 -0.6**
LFF Sn **Sn 11 32 55.6 -3.8**

1.5nm,0.2s
LFF La Frestale 6.13 67 Pn **Pn 11 31 48.9 -0.6**
ROSF Rostrenen 6.17 25 *e*Pn **Pn 11 31 49.7 -0.4**
ROSF *e*Sn **Sn 11 32 55.5 -4.8**

2.5nm,0.3s
ROSF Rostrenen 6.17 25 Pn **Pn 11 31 49.7 -0.4**
ROSF Sn **Sn 11 32 55.5 -4.8**

1.2nm,0.3s
ROSF Rostrenen 6.17 25 Pn **Pn 11 31 49.7 -0.4**
MFF Saint Martin d 6.30 51 *e*Pn **Pn 11 31 51.3 -0.6**
MFF *e*Sn **Sn 11 32 59.4 -4.1**

3.0nm,0.4s
MFF Saint Martin d 6.30 51 Pn **Pn 11 31 51.3 -0.6**
MFF Sn **Sn 11 32 59.4 -4.1**

1.5nm,0.4s
MFF Saint Martin d 6.30 51 Pn **Pn 11 31 51.3 -0.6**
SGMF Saint Gilles 6.34 29 *e*Pn **Pn 11 31 50.9 -1.5**
SGMF *e*Sn **Sn 11 32 59.3 -5.2**

1.7nm,0.2s
SGMF Saint Gilles 6.34 29 Pn **Pn 11 31 50.9 -1.5**
SGMF Sn **Sn 11 32 59.3 -5.2**

0.9nm,0.2s
SGMF Saint Gilles 6.34 29 Pn **Pn 11 31 50.9 -1.5**
RJF Les Rejaudoux 6.76 66 *e*Pn **Pn 11 31 57.8 -0.5**
RJF *e*Sn **Sn 11 33 10.3 -4.7**

2.6nm,0.4s
RJF Les Rejaudoux 6.76 66 Pn **Pn 11 31 57.8 -0.5**
RJF Sn **Sn 11 33 10.3 -4.7**

1.3nm,0.4s
RJF Les Rejaudoux 6.76 66 Pn **Pn 11 31 57.8 -0.5**
CAF Calviac 7.03 69 *e*Pn **Pn 11 32 00.9 -1.1**
CAF Calviac 7.03 69 Pn **Pn 11 32 00.9 -1.1**
CAF Calviac 7.03 69 Pn **Pn 11 32 00.9 -1.1**
GRR Gorron 7.13 37 *e*Pn **Pn 11 32 02.5 -0.8**
GRR *e*Sn **Sn 11 33 16.4 -7.6**

2.3nm,0.3s
GRR Gorron 7.13 37 Pn **Pn 11 32 02.5 -0.8**
GRR Sn **Sn 11 33 16.4 -7.6**

1.2nm,0.3s
GRR Gorron 7.13 37 Pn **Pn 11 32 02.5 -0.8**
TCF Toulx Ste Croi 7.57 60 *e*Pn **Pn 11 32 07.9 -1.5**
TCF *e*Sn **Sn 11 33 27.8 -7.1**

2.4nm,0.4s
TCF Toulx Ste Croi 7.57 60 Pn **Pn 11 32 07.9 -1.5**
TCF Sn **Sn 11 33 27.8 -7.1**

1.2nm,0.4s
TCF Toulx Ste Croi 7.57 60 Pn **Pn 11 32 07.9 -1.5**
FLN La Foliniere 7.58 36 *e*Sn **Sn 11 33 29.0 -6.0**

1.5nm,0.2s
FLN La Foliniere 7.58 36 Sn **Sn 11 33 29.0 -6.0**

0.8nm,0.2s
LDF La Druitiere 7.61 38 *e*Pn **Pn 11 32 08.8 -1.1**
LDF La Druitiere 7.61 38 *e*Pn **Pn 11 32 08.8 -1.1**
BGF Bois d'Agland 8.09 59 *e*Pn **Pn 11 32 15.8 -0.6**
BGF Bois d'Agland 8.09 59 Pn **Pn 11 32 15.8 -0.6**
BGF Bois d'Agland 8.09 59 Pn **Pn 11 32 15.8 -0.6**
AVF Avril sur Loir 8.50 59 *e*Pn **Pn 11 32 20.5 -1.5**
AVF Avril sur Loir 8.50 59 Pn **Pn 11 32 20.5 -1.5**
AVF Avril sur Loir 8.50 59 Pn **Pn 11 32 20.5 -1.5**
LOR Lormes 9.01 57 *e*Pn **Pn 11 32 28.4 -0.7**

baz=227
LOR Lormes 9.01 57 Pn **Pn 11 32 28.4 -0.7**
LOR Lormes 9.01 57 Pn **Pn 11 32 28.4 -0.7**

*IDC **29** 11:34:17.9±4.9, 37˚.80N×72˚.84E, h117km±29km, mb3.3/7, mb1 3.5/12, mb1mx3.2/58, mbtmp3.8/12, Error ellipse: s-maj=60.8km s-min=21.1km az=171.0*
*ISCJB **29** 11:34:18.2±0.4, 37˚.98N±0˚.04×72˚.94E±0˚.08, h127km, mb3.6/7, Error ellipse: s-maj=8.9km s-min=4.8km az=161.6*
*NNC **29** 11:34:24.9±2.2, 38˚.32N×72˚.65E, h150km±44km, mb3.1, mpv3.8, Error ellipse: s-maj=26.1km s-min=15.0km az=23.0*

ISC 29 11:34:19.3±0.6, 38˚.03N±0˚.05×72˚.90E±0˚.08, h127km, n29, σ2s68/36, mb3.7/7, 4C-3D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CEP	**Cherat**	**4.27**	**191**	P	**Pn**	**11 35 25.2**	**+2.4**
CEP				S	**Sn**	**11 36 15.0**	**+3.1**
CHCP	**Chirah Chowk**	**4.37**	**176**	P	**Pn**	**11 35 27.7**	**+3.7**
MNAS	**Manas**	**4.47**	**356**	⇓P	**Pn**	**11 35 27.8**	**+2.5**
	4.0nm,0.4s						
MNAS				⇑S	**Sn**	**11 36 16.6**	**0.0**
	83nm,0.7s						
AAK	**Ala-Archa**	**4.76**	**14**	P	**Pn**	**11 35 32.4**	**+3.1**
	9.2nm,0.3s,baz=151,slow=5.8,SNR=20						
AAK				S	**Sn**	**11 36 25.1**	**+1.4**
	6.0nm,0.3s,baz=306,slow=23,SNR=20						
AAK	**Ala-Archa**	**4.76**	**14**	⇑P	**Pn**	**11 35 32.2**	**+2.9**
	12nm,0.4s						
AAK				⇓S	**Sn**	**11 36 25.9**	**+2.2**
	33nm,0.5s						
THW	**Thamme Wali**	**5.30**	**191**	P	**Pn**	**11 35 38.0**	**+1.5**
TKM2	**Tokmak 2**	**5.30**	**22**	⇓P	**Pn**	**11 35 38.6**	**+2.1**
	6.5nm,0.6s						
KK31	**Karatay Array**	**5.39**	**341**	⇑P	**Pn**	**11 35 39.6**	**+2.1**
	6.6nm,0.2s,baz=153,slow=9.8,SNR=166						
KK31				S	**Sn**	**11 36 36.6**	**-1.9**
	46nm,0.3s,baz=151,slow=16,SNR=36						
SDNR	**Sundarnagar**	**7.32**	**152**	*e*P	**Pn**	**11 36 04.0**	**+0.4**
SDNR				*e*S	**Sn**	**11 37 19.0**	**-6.2**
MKAR	**Makanchi Array**	**11.17**	**35**	P	**Pn**	**11 36 55.0**	**-0.2**
	0.2nm,0.3s,baz=215,slow=12,SNR=8.4						
GEYT	**Alibeck**	**11.67**	**274**	P	**Pn**	**11 37 00.0**	**-1.9**
	1.4nm,0.3s,baz=99,slow=7.5,SNR=6.2						
GEYT				S	Sn	11 39 01.5	-9.0
	1.2nm,0.3s,baz=112,slow=16,SNR=4.1						
PYUN	**Piuthan**	**13.01**	**137**	*e*P	**Pn**	**11 37 17.1**	**-2.5**
	55nm,0.4s						
KURBB	**Kurchatov Arra**	**13.22**	**16**	P	**Pn**	**11 37 20.6**	**-1.3**
	0.1nm,0.3s,baz=204,slow=12,SNR=3.9						
KOLN	**Koldanda**	**13.60**	**136**	*e*P	**Pn**	**11 37 24.1**	**-3.2**
	18nm,0.5s						
GKN	**Gorkha**	**14.02**	**132**	*e*P	**Pn**	**11 37 30.5**	**-2.0**
	21nm,0.3s						
KKN	**Kakani**	**14.55**	**131**	*e*P	**Pn**	**11 37 38.0**	**-1.4**
	15nm,0.4s						
AB31	**Akbulak array**	**14.61**	**324**	P	**Pn**	**11 37 39.9**	**+0.3**
	2.4nm,0.5s,baz=136,slow=12,SNR=38						
PKIN	**Phulchoki**	**14.78**	**131**	*e*P	**Pn**	**11 37 40.4**	**-1.9**
	14nm,0.4s						
JIRN	**Jiri**	**15.20**	**129**	*e*P	**Pn**	**11 37 46.2**	**-1.5**
AKTO	**Aktyubinsk**	**16.32**	**324**	P	**Pn**	**11 38 01.5**	**+0.5**
	0.5nm,0.3s,baz=114,slow=11,SNR=8.5						
AKTO				S	**Sn**	**11 40 53.2**	**-9.1**
	0.2nm,0.3s,baz=343,slow=20,SNR=6.0						
AKTO	**Aktyubinsk**	**16.32**	**324**	⇑P	**Pn**	**11 38 01.4**	**+0.5**
	6.8nm,1.2s						
ZALV	**Zalesovo Beam**	**17.91**	**23**	P	**Pn**	**11 38 19.9**	**-0.1**
	0.6nm,0.3s,baz=215,slow=9.8,SNR=7.6						
SONM	**Songino Array**	**26.23**	**57**	P	**P**	**11 39 43.8**	**+1.4**
	0.3nm,0.4s,baz=233,slow=8.6,SNR=3.6						
AKASG	**Malin Array Be**	**33.21**	**307**	P	**P**	**11 40 44.0**	**+0.2**
	0.2nm,0.3s,baz=82,slow=7.0,SNR=4.6						
FINES	**FINESS Array B**	**37.10**	**324**	P	**P**	**11 41 18.1**	**+1.2**
	0.6nm,0.3s,baz=114,slow=9.8,SNR=6.1						
ARCES	**ARCESS Array B**	**40.34**	**336**	P	**P**	**11 41 44.6**	**+0.7**
	0.7nm,0.5s,baz=114,slow=8.4,SNR=4.1						
HFS	**Hagfors**	**42.83**	**321**	P	**P**	**11 42 04.9**	**+0.6**
	0.8nm,0.4s,baz=98,slow=9.1,SNR=6.2						
NOA	**NORSAR Array B**	**44.10**	**322**	P	**P**	**11 42 15.0**	**+0.5**
	1.1nm,0.6s,baz=93,slow=7.8,SNR=3.5						
YKA	**Yellowknife Ar**	**79.64**	**4**	P	**P**	**11 46 13.3**	**+1.1**
	0.2nm,0.6s,baz=353,slow=5.6,SNR=2.8						

*CSEM **29** 11:37:30.2, 42˚.79N×7˚.21W, h11km, ML2.4*
MDD 29 11:37:30.2±1.0, 42˚.79N×7˚.21W, h11km±3km, mbLg2.4/3, 1C-2D, Error ellipse: s-maj=6.1km s-min=4.8km az=132.0, PRXIMO, Spain

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EPON	**Pontenova**	**0.54**	**5**	Pg	Pg	11 37 40.3	-0.4
	3.6nm,0.1s,SNR=7.9						
EPON				Lg	Lg	11 37 47.1	
	17nm,0.1s,SNR=20						
EPON	**Pontenova**	**0.54**	**5**	Pg	Pg	11 37 40.3	-0.4
	3.6nm,0.1s,SNR=7.9						
EPON				Lg	Lg	11 37 47.1	
	17nm,0.1s,SNR=20						
EAGO	**Agolada(Pontev**	**0.65**	**271**	⇑Pg	Pg	11 37 42.3	-0.5
	30nm,0.1s,SNR=18						
EAGO				Lg	Lg	11 37 50.8	
	138nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**0.65**	**271**	Pg	Pg	11 37 42.3	-0.5
	30nm,0.1s,SNR=18						
EAGO				Lg	Lg	11 37 50.8	
	138nm,0.1s,SNR=7.9						

ECAL	**Calabor**	**0.92**	**157**	Pg	Pg	11 37 47.2	-0.7
	1.4nm,0.1s,SNR=7.9						
ECAL				Lg	Lg	11 37 58.6	
	18nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**0.92**	**157**	Pg	Pg	11 37 47.2	-0.7
	1.4nm,0.1s,SNR=7.9						
ECAL				Lg	Lg	11 37 58.6	
	18nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**1.12**	**215**	Pg	Pb	11 37 50.9	-0.7
	8.8nm,0.1s,SNR=7.9						
ELOB				Lg	Lg	11 38 04.7	
	148nm,0.3s,SNR=7.9						
ELOB	**Lobios**	**1.12**	**215**	Pg	Pb	11 37 50.9	-0.7
	8.8nm,0.1s,SNR=7.9						
ELOB				Lg	Lg	11 38 04.7	
	148nm,0.3s,SNR=7.9						
PGAV	**Gavieira, Arco**	**1.14**	**224**⇓	*e*P	Pb	11 37 50.1	-1.9
EMAZ	**Mazaricos**	**1.31**	**278**	⇓Pg	Pn	11 37 54.1	-0.4
	6.5nm,0.2s,SNR=18						
EMAZ	**Mazaricos**	**1.31**	**278**	Pg	Pn	11 37 54.1	-0.4
	6.5nm,0.2s,SNR=18						
EARI	**Arriondas**	**1.55**	**70**	Pg	Pb	11 37 58.7	-0.4
	3.4nm,0.3s,SNR=7.9						
EARI	**Arriondas**	**1.55**	**70**	Pg	Pb	11 37 58.7	-0.4
	3.4nm,0.3s,SNR=7.9						
MVO	**Moncorvo**	**1.63**	**175**	*e*Pg	Pb	11 38 00.1	-0.3
MVO	**Moncorvo**	**1.63**	**175**	Pg	Pb	11 37 60.0	-0.4
	0.8nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**1.63**	**175**	Pg	Pb	11 38 00.0	-0.4
	0.8nm,0.1s,SNR=7.9						

ISCJB ***29*** *11:37:42.8±0.4, 42°.71N±0°.02×7°.12W±0°.03, h13km±2km, Error ellipse: s-maj=4.6km s-min=1.9km az=39.1*
CSEM ***29*** *11:37:43.8±0.2, 42°.78N×7°.20W, h10km, ML3.4/44, Error ellipse: s-maj=4.0km s-min=2.1km az=128.0*
IGIL ***29*** *11:37:44.9, 42°.77N×7°.20W, h0km, ML2.2*
MDD ***29*** *11:37:45.5±0.3, 42°.79N×7°.24W, h11km, mbLg3.0/38, Error ellipse: s-maj=3.2km s-min=2.5km az=130.0, PRXIMO*
MDD EMS: III INTENSIDAD MAXIMA.
LDG ***29*** *11:37:45.3±0.1, 42°.87N×7°.28W, h10km, Md3.1/3, Ml3.3/23, Error ellipse: s-maj=3.2km s-min=2.2km az=121.0*
INMG ***29*** *11:37:45.2±1.8, 42°.79N×7°.20W, h13km±3km, ML3.0, Error ellipse: s-maj=3.2km s-min=2.1km az=101.0*

ISC 29 11:37:43.5±1.0, 42°.77N±0°.02×7°.19W±0°.02, h6km±8km, n212, σ2s31/358, 3C, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EPON	**Pontenova**	**0.56**	**3**	Pg	**Pg**	**11 37 55.6**	**+1.4**
	92nm,0.1s,SNR=20						
EPON				Lg	Lg	11 38 02.2	
	316nm,0.2s,SNR=27						
EPON	**Pontenova**	**0.56**	**3**	Pg	**Pg**	**11 37 55.6**	**+1.4**
	92nm,0.1s,SNR=20						
EPON				Lg	Lg	11 38 02.2	
	316nm,0.2s,SNR=27						
EAGO	**Agolada(Pontev**	**0.66**	**273**	⇑Pg	**Pg**	**11 37 57.3**	**+1.1**
	512nm,0.1s,SNR=18						
EAGO				Lg	Lg	11 38 05.8	
	1μm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**0.66**	**273**	Pg	**Pg**	**11 37 57.3**	**+1.1**
	512nm,0.1s,SNR=18						
EAGO				Lg	Lg	11 38 05.8	
	1μm,0.1s,SNR=7.9						
ECAL	**Calabor**	**0.89**	**158**	Pg	**Pg**	**11 38 02.5**	**+1.9**
	59nm,0.2s,SNR=9.0						
ECAL				Lg	Lg	11 38 15.0	
	260nm,0.1s,SNR=22						
ECAL	**Calabor**	**0.89**	**158**	Pg	**Pg**	**11 38 02.5**	**+1.9**
	59nm,0.2s,SNR=9.0						
ECAL				Lg	Lg	11 38 15.0	
	260nm,0.1s,SNR=22						
PBRG	**Braganca**	**1.02**	**161**	*e*P	**Pg**	**11 38 03.1**	**+0.1**
PBRG				*e*S	**Sg**	**11 38 18.1**	**+1.9**
PBRG				A	A	11 38 21.9	
	109nm,0.1s						
PBRG	**Braganca**	**1.02**	**161**	Pg	**Pg**	**11 38 03.1**	**+0.1**
PBRG				Lg	Lg	11 38 18.1	
	55nm,0.1s						
PBRG	**Braganca**	**1.02**	**161**	*e*P	**Pg**	**11 38 03.1**	**+0.1**
PBRG				*e*S	**Sg**	**11 38 18.1**	**+1.9**
	109nm,0.1s						
ELOB	**Lobios**	**1.11**	**216**	Pg	**Pg**	**11 38 06.0**	**+1.2**
	122nm,0.1s,SNR=167						
ELOB				Lg	Lg	11 38 20.5	
	105nm,0.1s						
ELOB	**Lobios**	**1.11**	**216**	Pg	**Pg**	**11 38 06.0**	**+1.2**
	122nm,0.1s,SNR=167						
ELOB				Lg	Lg	11 38 20.5	
	105nm,0.1s						
PGAV	**Gavieira, Arco**	**1.14**	**225**⇑	*e*P	**Pb**	**11 38 05.0**	**-0.6**
PGAV				*e*S	**Sg**	**11 38 21.0**	**+1.1**
PGAV				A	A	11 38 22.7	
	262nm,0.3s						
PGAV	**Gavieira, Arco**	**1.14**	**225**⇑	*e*P	**Pb**	**11 38 05.0**	**-0.6**
PGAV				*e*S	**Sg**	**11 38 21.0**	**+1.1**
	262nm,0.3s						
EMAZ	**Mazaricos**	**1.33**	**278**	Pg	**Pn**	**11 38 09.2**	**+0.6**
	44nm,0.1s,SNR=7.9						
EMAZ				Lg	Lg	11 38 26.1	
	485nm,0.2s,SNR=7.9						
EMAZ	**Mazaricos**	**1.33**	**278**	Pg	**Pn**	**11 38 09.2**	**+0.6**
	44nm,0.1s,SNR=7.9						
EMAZ				Lg	Lg	11 38 26.1	
	485nm,0.2s,SNR=7.9						
POLO	**Lamas de Olo**	**1.47**	**198**	*e*Pn	**Pn**	**11 38 09.9**	**-0.6**
POLO	**Lamas de Olo**	**1.47**	**198**	*e*Pg	**Pn**	**11 38 11.4**	**+0.9**
POLO				*e*Sn	**Sn**	**11 38 28.9**	**-1.2**
POLO				*e*Sg	**Sb**	**11 38 31.2**	**+1.1**
POLO				A	A	11 38 32.7	
	106nm,0.3s						
POLO	**Lamas de Olo**	**1.47**	**198**	*e*S	**Pn**	**11 38 10.3**	**-0.2**
POLO	**Lamas de Olo**	**1.47**	**198**	*e*Pn	**Pn**	**11 38 09.9**	**-0.6**
POLO	**Lamas de Olo**	**1.47**	**198**	*e*Pg	**Pn**	**11 38 11.4**	**+0.9**
POLO				*e*Sn	**Sn**	**11 38 28.9**	**-1.2**
POLO				*e*Sg	**Sb**	**11 38 31.2**	**+1.1**
	106nm,0.3s						
PVRL	**Vila Real**	**1.54**	**195**	*e*Pn	**Pn**	**11 38 11.3**	**-0.3**
PVRL				*e*Sg	**Sn**	**11 38 33.6**	**+1.7**
PVRL				A	A	11 38 35.7	
	192nm,0.2s						
PVRL	**Vila Real**	**1.54**	**195**	Pn	**Pn**	**11 38 11.3**	**-0.3**
PVRL				Lg	Lg	11 38 33.6	
	96nm,0.2s						
PVRL	**Vila Real**	**1.54**	**195**	*e*Pn	**Pn**	**11 38 11.3**	**-0.3**
PVRL				*e*Sg	**Sn**	**11 38 33.6**	**+1.7**
	192nm,0.2s						
EARI	**Arriondas**	**1.54**	**69**	Pg	**Pn**	**11 38 13.4**	**+1.8**
	19nm,0.2s,SNR=15						
EARI				Lg	Lg	11 38 33.9	
	124nm,0.3s						
EARI	**Arriondas**	**1.54**	**69**	Pg	**Pn**	**11 38 13.4**	**+1.8**
	19nm,0.2s,SNR=15						
EARI				Lg	Lg	11 38 33.9	
	124nm,0.3s						
MVO	**Moncorvo**	**1.61**	**176**	*e*Pn	**Pn**	**11 38 12.1**	**-0.4**
MVO	**Moncorvo**	**1.61**	**176**	*e*Pg	**Pn**	**11 38 14.4**	**+1.9**
MVO				*e*Sg	**Sn**	**11 38 35.8**	**+2.2**
MVO				A	A	11 38 37.3	
	147nm,0.4s						
MVO	**Moncorvo**	**1.61**	**176**	Pg	**Pn**	**11 38 14.7**	**+2.2**
	5.6nm,0.1s,SNR=17						
MVO				Lg	Lg	11 38 35.8	
	116nm,0.2s,SNR=17						
MVO	**Moncorvo**	**1.61**	**176**	*e*Pn	**Pn**	**11 38 12.1**	**-0.4**
MVO	**Moncorvo**	**1.61**	**176**	Pg	**Pn**	**11 38 14.7**	**+2.2**
	5.6nm,0.1s,SNR=17						
MVO				*e*Sg	**Sn**	**11 38 35.8**	**+2.2**
	147nm,0.4s						
PTO	**Porto**	**1.94**	**213**	*e*Pg	**Pb**	**11 38 21.3**	**+2.1**
PTO				*e*Sg	**Sb**	**11 38 45.7**	**+2.0**
PTO	**Porto**	**1.94**	**213**	Pg	**Pb**	**11 38 21.3**	**+2.1**
PTO				Lg	Lg	11 38 45.7	
PTO	**Porto**	**1.94**	**213**	*e*Pg	**Pb**	**11 38 21.3**	**+2.1**
PTO				*e*Sg	**Sb**	**11 38 45.7**	**+2.0**
PVIS	**Viseu**	**2.12**	**195**	*e*Pn	**Pn**	**11 38 19.0**	**-0.5**
PVIS				*e*Sn	**Sn**	**11 38 44.6**	**-1.6**
PVIS				*e*Sg	**Sb**	**11 38 51.2**	**+2.3**
	98nm,0.1s						
PVIS	**Viseu**	**2.12**	**195**	Pn	**Pn**	**11 38 19.0**	**-0.5**
PVIS				Sn	**Sn**	**11 38 44.6**	**-1.6**
PVIS				Lg	Lg	11 38 51.2	
	49nm,0.1s						
PVIS	**Viseu**	**2.12**	**195**	*e*Pn	**Pn**	**11 38 19.0**	**-0.5**
PVIS				*e*Sn	**Sn**	**11 38 44.6**	**-1.6**
PVIS				*e*Sg	**Sb**	**11 38 51.2**	**+2.3**
	98nm,0.1s						
MTE	**Manteigas**	**2.38**	**187**	*e*Pg	**Pb**	**11 38 29.3**	**+2.5**
MTE				*e*Sn	**Sn**	**11 38 51.8**	**-0.9**
MTE				*e*Sg	**Sb**	**11 38 59.5**	**+3.0**
MTE				A	A	11 39 04.4	
	90nm,0.5s						
MTE	**Manteigas**	**2.38**	**187**	Pg	**Pb**	**11 38 29.3**	**+2.5**
MTE				Sn	**Sn**	**11 38 51.8**	**-0.9**
MTE				Lg	Lg	11 38 59.5	
	45nm,0.5s						
MTE	**Manteigas**	**2.38**	**187**	*e*Pg	**Pb**	**11 38 29.3**	**+2.5**
MTE				*e*Sn	**Sn**	**11 38 51.8**	**-0.9**
MTE				*e*Sg	**Sb**	**11 38 59.5**	**+3.0**
	90nm,0.5s						
COI	**Coimbra**	**2.72**	**200**	Lg	Lg	11 39 10.8	
COI	**Coimbra**	**2.72**	**200**	*e*Sg	**Sg**	**11 39 10.8**	**0.0**
ELAN	**Lanestosa**	**2.79**	**79**	Pn	**Pn**	**11 38 29.9**	**+1.2**
	2.4nm,0.2s,SNR=11						
ELAN				Pg	**Pb**	**11 38 36.4**	**+2.6**
	3.1nm,0.2s,SNR=12						
ELAN				Sn	**Sn**	**11 39 03.9**	**+1.2**
	32nm,0.3s,SNR=5.8						
ELAN				Lg	Lg	11 39 12.6	
	38nm,0.2s,SNR=13						
ELAN	**Lanestosa**	**2.79**	**79**	Pn	**Pn**	**11 38 29.9**	**+1.2**
	2.4nm,0.2s,SNR=11						
EPLA	**Plasencia**	**2.83**	**162**	Pn	**Pn**	**11 38 29.6**	**+0.4**
	0.9nm,0.1s,SNR=14						
EPLA				Sn	**Sn**	**11 39 04.4**	**+0.8**
	8.9nm,0.1s,SNR=5.0						
EPLA				Lg	Lg	11 39 13.6	
	10.0nm,0.1s,SNR=5.0						
EPLA	**Plasencia**	**2.83**	**162**	Pn	**Pn**	**11 38 29.6**	**+0.4**
	0.9nm,0.1s,SNR=14						
EPLA				Sn	**Sn**	**11 39 04.4**	**+0.8**
	8.9nm,0.1s,SNR=5.0						
EPLA				Lg	Lg	11 39 13.6	
	10.0nm,0.1s,SNR=5.0						
PCAS	**Casmilo, Conde**	**2.89**	**200**	*e*Pn	**Pn**	**11 38 30.4**	**+0.4**
PCAS				*e*Sn	**Sn**	**11 39 03.3**	**-1.8**
PCAS				*e*Sg	**Sb**	**11 39 15.4**	**+4.4**
PCAS				A	A	11 39 18.9	
	56nm,0.7s						
PCAS	**Casmilo, Conde**	**2.89**	**200**	*e*Pn	**Pn**	**11 38 30.4**	**+0.4**
PCAS				*e*Sn	**Sn**	**11 39 03.3**	**-1.8**
PCAS				*e*Sg	**Sb**	**11 39 15.4**	**+4.4**
	56nm,0.7s						
PCBR	**Castelo Branco**	**2.94**	**184**	*e*Pn	**Pn**	**11 38 31.0**	**+0.4**
PCBR				*e*Sn	**Sn**	**11 39 04.4**	**-1.8**
PCBR				*e*Sg	**Sb**	**11 39 17.1**	**+4.8**
PCBR				A	A	11 39 21.3	
	26nm,0.4s						
PCBR	**Castelo Branco**	**2.94**	**184**	Pn	**Pn**	**11 38 31.0**	**+0.4**
PCBR				Sn	**Sn**	**11 39 04.4**	**-1.8**
PCBR				Lg	Lg	11 39 17.1	
	13nm,0.4s						
PCBR	**Castelo Branco**	**2.94**	**184**	*e*Pn	**Pn**	**11 38 31.0**	**+0.4**
PCBR				*e*Sn	**Sn**	**11 39 04.4**	**-1.8**
PCBR				*e*Sg	**Sb**	**11 39 17.1**	**+4.8**
	26nm,0.4s						
GUD	**Guadarrama**	**3.11**	**132**	Pn	**Pn**	**11 38 34.0**	**+0.8**
	2.5nm,0.2s,SNR=6.1						
GUD				Sn	**Sn**	**11 39 09.0**	**-1.7**
	4.5nm,0.2s,SNR=15						
GUD				Lg	Lg	11 39 21.4	
	49nm,0.3s,SNR=5.0						
GUD	**Guadarrama**	**3.11**	**132**	Pn	**Pn**	**11 38 34.0**	**+0.8**
	2.5nm,0.2s,SNR=6.1						
GUD				Sn	**Sn**	**11 39 09.0**	**-1.7**
	4.5nm,0.2s,SNR=15						
GUD				Lg	Lg	11 39 21.4	
	49nm,0.3s,SNR=5.0						
PTOM	**Tomar**	**3.28**	**197**	*e*Pn	**Pn**	**11 38 35.8**	**+0.4**
PTOM				*e*Sn	**Sn**	**11 39 13.7**	**-1.0**
PTOM				*e*Sg	**Sg**	**11 39 28.2**	**-0.6**
PTOM				A	A	11 39 36.4	
	52nm,0.6s						
PTOM	**Tomar**	**3.28**	**197**	Pn	**Pn**	**11 38 35.8**	**+0.4**
PTOM				Sn	**Sn**	**11 39 13.7**	**-1.0**
PTOM				Lg	Lg	11 39 28.2	
	26nm,0.6s						
PTOM	**Tomar**	**3.28**	**197**	*e*Pn	**Pn**	**11 38 35.8**	**+0.4**
PTOM				*e*Sn	**Sn**	**11 39 13.7**	**-1.0**
PTOM				*e*Sg	**Sg**	**11 39 28.2**	**-0.6**
	52nm,0.6s						
PMRV	**Marv??o**	**3.34**	**183**	*e*Pn	**Pn**	**11 38 36.7**	**+0.4**
PMRV				*e*Sn	**Sn**	**11 39 14.3**	**-2.0**
PMRV				*e*Sg	**Sb**	**11 39 29.4**	**+5.4**
PMRV				A	A	11 39 36.4	
	29nm,0.4s						
PMRV	**Marv??o**	**3.34**	**183**	Pn	**Pn**	**11 38 36.7**	**+0.4**
PMRV				Sn	**Sn**	**11 39 14.3**	**-2.0**
PMRV				Lg	Lg	11 39 29.4	
	29nm,0.4s						
PMRV	**Marv??o**	**3.34**	**183**	*e*Pn	**Pn**	**11 38 36.7**	**+0.4**
PMRV				*e*Sn	**Sn**	**11 39 14.3**	**-2.0**
PMRV				*e*Sg	**Sb**	**11 39 29.4**	**+5.4**
	29nm,0.4s						
PESTR	**Estremoz**	**3.91**	**185**	*e*Pn	**Pn**	**11 38 44.3**	**+0.2**
PESTR				*e*Sn	**Sn**	**11 39 27.6**	**-2.7**
PESTR				*e*Sg	**Sg**	**11 39 47.1**	**-1.9**
PESTR				A	A	11 39 54.6	
	22nm,0.7s						
PESTR	**Estremoz**	**3.91**	**185**	*e*Pn	**Pn**	**11 38 44.3**	**+0.2**
PESTR				*e*Sn	**Sn**	**11 39 27.6**	**-2.7**
PESTR				*e*Sg	**Sg**	**11 39 47.1**	**-1.9**
	22nm,0.7s						
ESDC	**Sonseca Array**	**3.93**	**141**	Pn	**Pn**	**11 38 44.9**	**+0.5**
	1.4nm,0.1s,baz=322,slow=13,SNR=4.5						
ESDC				Lg	Lg	11 39 47.2	
	6.6nm,0.4s,baz=322,slow=29,SNR=14						
ESDC	**Sonseca Array**	**3.93**	**141**	Pn	**Pn**	**11 38 44.9**	**+0.5**
	1.4nm,0.1s,SNR=4.5						
ESDC				Lg	Lg	11 39 47.2	
	6.6nm,0.4s,SNR=14						
EBAD	**Badajoz**	**4.01**	**178**	Pn	**Pn**	**11 38 45.7**	**+0.2**
	0.7nm,0.1s,SNR=7.9						
EBAD				Sn	**Sn**	**11 39 32.3**	**-0.5**
	2.2nm,0.1s,SNR=7.9						
EBAD				Lg	Lg	11 39 53.4	
	14nm,0.2s,SNR=9.8						
EBAD	**Badajoz**	**4.01**	**178**	Pn	**Pn**	**11 38 45.7**	**+0.2**
	0.7nm,0.1s,SNR=7.9						
EBAD				Sn	**Sn**	**11 39 32.3**	**-0.5**
	2.2nm,0.1s,SNR=7.9						
EBAD				Lg	Lg	11 39 53.4	
	14nm,0.2s,SNR=9.8						
PMAFR	**Mafra**	**4.13**	**203**	*e*Sg	**Sg**	**11 39 56.8**	**+0.8**
PMAFR	**Mafra**	**4.13**	**203**	*e*Sg	**Sg**	**11 39 56.8**	**+0.8**
IUSE	**Utxeti**	**4.15**	**86**	Pn	**Pn**	**11 38 49.3**	**+1.9**
	1.1nm,0.1s,SNR=7.9						
IUSE				Sn	**Sn**	**11 39 33.9**	**-2.4**
	1.7nm,0.1s,SNR=7.9						
IUSE	**Utxeti**	**4.15**	**86**	Pn	**Pn**	**11 38 49.3**	**+1.9**
	1.1nm,0.1s,SNR=7.9						
IUSE				Sn	**Sn**	**11 39 33.9**	**-2.4**
	1.7nm,0.1s,SNR=7.9						
EALK	**Alkurruntz**	**4.19**	**82**	Pn	**Pn**	**11 38 48.7**	**+0.7**
	1.1nm,0.2s,SNR=7.9						
EALK				Sn	**Sn**	**11 39 36.0**	**-1.3**
	6.0nm,0.2s,SNR=7.9						
EALK				Lg	Lg	11 39 57.0	
	16nm,0.4s,SNR=7.9						
EALK	**Alkurruntz**	**4.19**	**82**	Pn	**Pn**	**11 38 48.7**	**+0.7**
	1.1nm,0.2s,SNR=7.9						
EALK				Sn	**Sn**	**11 39 36.0**	**-1.3**
	6.0nm,0.2s,SNR=7.9						
EALK				Lg	Lg	11 39 57.0	
	16nm,0.4s,SNR=7.9						
EVO	**Evora**	**4.28**	**189**	*e*Pn	**Pn**	**11 38 49.3**	**+0.2**
EVO				*e*Sn	**Sn**	**11 39 37.3**	**-2.1**
EVO				*e*Sg	**Sg**	**11 40 00.1**	**-0.8**
EVO				A	A	11 40 03.5	
	16nm,0.4s						
EVO	**Evora**	**4.28**	**189**	Pn	**Pn**	**11 38 49.3**	**+0.2**
EVO				Sn	**Sn**	**11 39 37.3**	**-2.1**
EVO				Lg	Lg	11 40 00.1	
	16nm,0.4s						
EVO	**Evora**	**4.28**	**189**	*e*Pn	**Pn**	**11 38 49.3**	**+0.2**
EVO				*e*Sn	**Sn**	**11 39 37.3**	**-2.1**
EVO				*e*Sg	**Sg**	**11 40 00.1**	**-0.8**
EVO				A	A	11 40 03.5	
	16nm,0.4s						
ETOR	**Torete**	**4.30**	**115**	Pn	**Pn**	**11 38 49.4**	**-0.2**
	10nm,0.4s,SNR=13						
ETOR				Pg	Pb	11 39 05.2	+5.6
	10nm,0.4s,SNR=8.0						
ETOR				Lg	Lg	11 40 01.6	
	12nm,0.3s,SNR=6.2						
ETOR	**Torete**	**4.30**	**115**	Pn	**Pn**	**11 38 49.4**	**-0.2**
	10nm,0.4s,SNR=13						
EORO	**Oroz-Betelu**	**4.33**	**86**	Pn	**Pn**	**11 38 51.6**	**+1.8**
	2.7nm,0.1s,SNR=11						
EORO				Sn	**Sn**	**11 39 40.8**	**+0.2**
	4.5nm,0.3s,SNR=5.6						
EORO				Lg	Lg	11 40 03.0	
	5.5nm,0.4s,SNR=5.0						
EORO	**Oroz-Betelu**	**4.33**	**86**	Pn	**Pn**	**11 38 51.6**	**+1.8**
	2.7nm,0.1s,SNR=11						
EORO				Sn	**Sn**	**11 39 40.8**	**+0.2**
	4.5nm,0.3s,SNR=5.6						
EORO				Lg	Lg	11 40 03.0	
	5.5nm,0.4s,SNR=5.0						
IEPA	**Eparoz**	**4.36**	**88**	Pn	**Pn**	**11 38 51.9**	**+1.6**
	5.3nm,0.1s,SNR=7.9						
IEPA				Sn	**Sn**	**11 39 39.4**	**-2.0**
	2.0nm,0.2s,SNR=7.9						
IEPA	**Eparoz**	**4.36**	**88**	Pn	**Pn**	**11 38 51.9**	**+1.6**
	5.3nm,0.1s,SNR=7.9						
IEPA				Sn	**Sn**	**11 39 39.4**	**-2.0**
	2.0nm,0.2s,SNR=7.9						
IELO	**Elcoad**	**4.38**	**87**	Pn	**Pn**	**11 38 52.2**	**+1.6**
	3.8nm,0.2s,SNR=7.9						
IELO				Sn	**Sn**	**11 39 40.8**	**-1.2**
	3.4nm,0.1s,SNR=7.9						
IELO				Lg	Lg	11 40 06.8	
	4.0nm,0.2s,SNR=7.9						
IELO	**Elcoad**	**4.38**	**87**	Pn	**Pn**	**11 38 52.2**	**+1.6**
	3.8nm,0.2s,SNR=7.9						
IELO				Sn	**Sn**	**11 39 40.8**	**-1.2**
	3.4nm,0.1s,SNR=7.9						
IELO				Lg	Lg	11 40 06.8	
	4.0nm,0.2s,SNR=7.9						
SJPF	**Ste Jean**	**4.39**	**83**	*e*Pn	**Pn**	**11 38 52.1**	**+1.4**
	SNR=1.0						
SJPF				*e*Sn	**Sn**	**11 39 40.3**	**-1.9**
	5.1nm,0.3s						
SJPF				*e*Sg	**Sg**	**11 40 03.8**	**-0.7**
	8.4nm,0.3s						
SJPF	**Ste Jean**	**4.39**	**83**	Pn	**Pn**	**11 38 52.1**	**+1.4**
SJPF				Sn	**Sn**	**11 39 40.3**	**-1.9**
	2.6nm,0.3s						
SJPF				Lg	Lg	11 40 03.8	
	4.2nm,0.3s						
SJPF	**Ste Jean**	**4.39**	**83**	*e*Pn	**Pn**	**11 38 52.1**	**+1.4**
	SNR=1.0						
SJPF				*e*Sn	**Sn**	**11 39 40.3**	**-1.9**
	2.5nm,0.3s						
SJPF				*e*Sg	**Sg**	**11 40 03.8**	**-0.7**
	4.2nm,0.3s						
YARA	**Arangoiti**	**4.42**	**90**	Pn	**Pn**	**11 38 52.8**	**+1.6**
	1.5nm,0.1s,SNR=7.9						
YARA				Sn	**Sn**	**11 39 42.9**	**-0.2**
	4.2nm,0.4s,SNR=7.9						
YARA	**Arangoiti**	**4.42**	**90**	Pn	**Pn**	**11 38 52.8**	**+1.6**
	1.5nm,0.1s,SNR=7.9						
YARA				Sn	**Sn**	**11 39 42.9**	**-0.2**
	4.2nm,0.4s,SNR=7.9						
YASP	**Aspurt**	**4.44**	**88**	Pn	**Pn**	**11 38 53.2**	**+1.9**
	2.2nm,0.1s,SNR=7.9						
YASP				Sn	**Sn**	**11 39 42.6**	**-0.7**
	2.2nm,0.2s,SNR=7.9						
YASP	**Aspurt**	**4.44**	**88**	Pn	**Pn**	**11 38 53.2**	**+1.9**
	2.2nm,0.1s,SNR=7.9						
YASP				Sn	**Sn**	**11 39 42.6**	**-0.7**
	2.2nm,0.2s,SNR=7.9						
YUND	**Undues**	**4.47**	**90**	Pn	**Pn**	**11 38 53.4**	**+1.6**
	1.7nm,0.1s,SNR=7.9						
YUND				Sn	**Sn**	**11 39 43.7**	**-0.4**
	3.3nm,0.2s,SNR=7.9						
YUND	**Undues**	**4.47**	**90**	Pn	**Pn**	**11 38 53.4**	**+1.6**
	1.7nm,0.1s,SNR=7.9						
YUND				Sn	**Sn**	**11 39 43.7**	**-0.4**
	3.3nm,0.2s,SNR=7.9						
YSOS	**Sos del Rey Ca**	**4.47**	**92**	Pn	**Pn**	**11 38 52.8**	**+1.0**
	1.4nm,0.1s,SNR=7.9						
YSOS				Sn	**Sn**	**11 39 42.8**	**-1.4**
	2.6nm,0.1s,SNR=7.9						
YSOS	**Sos del Rey Ca**	**4.47**	**92**	Pn	**Pn**	**11 38 52.8**	**+1.0**
	1.4nm,0.1s,SNR=7.9						
YSOS				Sn	**Sn**	**11 39 42.8**	**-1.4**
	2.6nm,0.1s,SNR=7.9						
YMUS	**Pe˜a Musera**	**4.55**	**90**	Pn	**Pn**	**11 38 54.5**	**+1.6**
	2.2nm,0.1s,SNR=7.9						
YMUS				Sn	**Sn**	**11 39 45.0**	**-1.1**
	9.7nm,0.3s,SNR=7.9						
YMUS	**Pe˜a Musera**	**4.55**	**90**	Pn	**Pn**	**11 38 54.5**	**+1.6**
	2.2nm,0.1s,SNR=7.9						
YMUS				Sn	**Sn**	**11 39 45.0**	**-1.1**
	9.7nm,0.3s,SNR=7.9						
YSIG	**Sigues**	**4.57**	**90**	Pn	**Pn**	**11 38 54.4**	**+1.3**
	1.0nm,0.1s,SNR=7.9						
YSIG				Sn	**Sn**	**11 39 45.2**	**-1.3**
	2.5nm,0.2s,SNR=7.9						
YSIG	**Sigues**	**4.57**	**90**	Pn	**Pn**	**11 38 54.4**	**+1.3**
	1.0nm,0.1s,SNR=7.9						
YSIG				Sn	**Sn**	**11 39 45.2**	**-1.3**
	2.5nm,0.2s,SNR=7.9						
PBAR	**Barrancos**	**4.59**	**179**	*e*Pn	**Pn**	**11 38 54.1**	**+0.7**
PBAR				*e*Sn	**Sn**	**11 39 44.3**	**-2.8**
PBAR				*e*Sg	**Sg**	**11 40 08.9**	**-2.0**
PBAR				A	A	11 40 16.4

ETSF	**Etsaut**	**4.88**	**86**	*e*Pn	**Pn**	**11 38 58.2**	**+0.8**
	SNR=1.0								
ETSF				*e*Sn	**Sn**	**11 39 51.9**	**-2.3**
	3.0nm,0.3s								
ETSF				*e*Sg	**Sg**	**11 40 19.6**	**-0.5**
	3.3nm,0.4s								
ECAB	**El Cabril**	**4.88**	**163**	Pn	**Pn**	**11 38 59.1**	**+1.7**
	0.4nm,0.1s,SNR=7.3								
ECAB				Sn	**Sn**	**11 39 52.4**	**-1.9**
	1.5nm,0.1s,SNR=7.8								
ECAB				Lg	Lg	11 40 18.3			
	3.6nm,0.3s,SNR=9.7								
ECAB	**El Cabril**	**4.88**	**163**	Pn	**Pn**	**11 38 59.1**	**+1.7**
	0.4nm,0.1s,SNR=7.3								
ECAB				Sn	**Sn**	**11 39 52.4**	**-1.9**
	1.5nm,0.1s,SNR=7.8								
ECAB				Lg	Lg	11 40 18.3			
	3.6nm,0.3s,SNR=9.7								
MESJ	**Messejana**	**4.99**	**189**	*e*P	**Pn**	**11 38 58.9**	**+0.1**
MESJ				*e*S	**Sn**	**11 39 52.7**	**-4.1**
MESJ				AML	AML	11 39 58.1			
	comp=N,3.8nm,0.3s								
MESJ	**Messejana**	**4.99**	**189**	*e*Pn	**Pn**	**11 38 59.1**	**+0.3**
MESJ				*e*Sn	**Sn**	**11 39 52.5**	**-4.3**
MESJ				*e*Sg	**Sg**	**11 40 24.0**	**+0.4**
MESJ				A	A	11 40 35.0			
	comp=N,7.9nm,0.6s								
MESJ	**Messejana**	**4.99**	**189**	Pn	**Pn**	**11 38 59.1**	**+0.3**
MESJ				Sn	**Sn**	**11 39 52.5**	**-4.3**
MESJ				Lg	Lg	11 40 24.0			
	comp=N,7.9nm,0.6s								
MESJ	**Messejana**	**4.99**	**189**	*e*Pn	**Pn**	**11 38 59.1**	**+0.3**
MESJ				Sn	**Sn**	**11 39 52.5**	**-4.3**
MESJ				*e*Sg	**Sg**	**11 40 24.0**	**+0.4**
	comp=N,7.9nm,0.6s								
EADA	**Adamuz**	**5.01**	**156**	Pn	**Pn**	**11 39 01.5**	**+2.3**
	comp=N,0.2nm,0.1s,SNR=9.1								
EADA				Sn	**Sn**	**11 39 54.0**	**-3.4**
	comp=N,0.8nm,0.1s,SNR=7.9								
EADA				Lg	Lg	11 40 21.5			
	comp=N,4.3nm,0.2s,SNR=7.4								
EADA	**Adamuz**	**5.01**	**156**	Pn	**Pn**	**11 39 01.5**	**+2.3**
	comp=N,0.2nm,0.1s,SNR=9.1								
EADA				Sn	**Sn**	**11 39 54.0**	**-3.4**
	comp=N,0.8nm,0.1s,SNR=7.9								
EADA				Lg	Lg	11 40 21.5			
	comp=N,4.3nm,0.2s,SNR=7.4								
EMIN	**Mina Concepcio**	**5.01**	**175**	Pn	**Pn**	**11 39 00.6**	**+1.4**
	comp=N,0.1nm,0.1s,SNR=7.9								
EMIN				Sn	**Sn**	**11 39 56.3**	**-1.1**
	comp=N,0.4nm,0.1s,SNR=7.9								
EMIN				Lg	Lg	11 40 24.2			
	comp=N,9.5nm,0.5s,SNR=9.4								
EMIN	**Mina Concepcio**	**5.01**	**175**	Pn	**Pn**	**11 39 00.6**	**+1.4**
	comp=N,0.1nm,0.1s,SNR=7.9								
EMIN				Sn	**Sn**	**11 39 56.3**	**-1.1**
	comp=N,0.4nm,0.1s,SNR=7.9								
EMIN				Lg	Lg	11 40 24.2			
	comp=N,9.5nm,0.5s,SNR=9.4								
ESAC	**San Caprasio**	**5.10**	**100**	Pn	**Pn**	**11 39 03.7**	**+3.3**
	comp=N,3.0nm,0.2s,SNR=7.9								
ESAC				Sn	**Sn**	**11 39 58.2**	**-1.4**
	comp=N,16nm,0.3s,SNR=7.9								
ESAC				Lg	Lg	11 40 25.9			
	comp=N,36nm,0.3s,SNR=7.9								
ESAC	**San Caprasio**	**5.10**	**100**	Pn	**Pn**	**11 39 03.7**	**+3.3**
	comp=N,3.0nm,0.2s,SNR=7.9								
ESAC				Sn	**Sn**	**11 39 58.2**	**-1.4**
	comp=N,16nm,0.3s,SNR=7.9								
ESAC				Lg	Lg	11 40 25.9			
	comp=N,36nm,0.3s,SNR=7.9								
PCVE	**Castro Verde**	**5.17**	**188**	*e*Pn	**Pn**	**11 39 02.3**	**+0.9**
PCVE				*e*Sn	**Sn**	**11 39 58.0**	**-3.4**
PCVE				*e*Sg	**Sg**	**11 40 27.4**	**-2.2**
PCVE				A	A	11 40 36.5			
	comp=N,8.6nm,0.5s								
PCVE	**Castro Verde**	**5.17**	**188**	Pn	**Pn**	**11 39 02.3**	**+0.9**
PCVE				Sn	**Sn**	**11 39 58.0**	**-3.4**
PCVE				Lg	Lg	11 40 27.4			
	comp=N,8.6nm,0.5s								
PCVE	**Castro Verde**	**5.17**	**188**	*e*Pn	**Pn**	**11 39 02.3**	**+0.9**
PCVE				*e*Sn	**Sn**	**11 39 58.0**	**-3.4**
PCVE				*e*Sg	**Sg**	**11 40 27.4**	**-2.2**
	comp=N,8.6nm,0.5s								
EGRO	**El Granado**	**5.23**	**183**	Pn	**Pn**	**11 39 04.4**	**+2.2**
	comp=N,0.3nm,0.1s,SNR=7.9								
EGRO				Sn	**Sn**	**11 40 00.7**	**-2.2**
	comp=N,0.8nm,0.2s,SNR=7.9								
EGRO				Lg	Lg	11 40 31.2			
	comp=N,5.2nm,0.4s,SNR=6.6								
EGRO	**El Granado**	**5.23**	**183**	Pn	**Pn**	**11 39 04.4**	**+2.2**
	comp=N,0.3nm,0.1s,SNR=7.9								
EGRO				Sn	**Sn**	**11 40 00.7**	**-2.2**
	comp=N,0.8nm,0.2s,SNR=7.9								
EGRO				Lg	Lg	11 40 31.2			
	comp=N,5.2nm,0.4s,SNR=6.6								
PTEO	**Sao Teotonio**	**5.35**	**193**	*e*Pn	Pn	11 39 09.2	+5.4		
PTEO				*e*Sg	**Sg**	**11 40 34.2**	**-1.0**		
PTEO	**Sao Teotonio**	**5.35**	**193**	Pn	Pn	11 39 09.2	+5.4		
PTEO				Lg	Lg	11 40 34.2			
PTEO	**Sao Teotonio**	**5.35**	**193**	*e*Pn	Pn	11 39 09.2	+5.4		
PTEO				*e*Sg	**Sg**	**11 40 34.2**	**-1.0**		
PVAQ	**Vaqueiros**	**5.38**	**184**	*e*Pn	**Pn**	**11 39 04.2**	**0.0**		
PVAQ				*e*Sn	**Sn**	**11 40 02.5**	**-3.9**		
PVAQ				*e*Sg	**Sg**	**11 40 33.3**	**-2.7**		
PVAQ				A	A	11 40 38.7			
	comp=N,15nm,0.5s								
PVAQ	**Vaqueiros**	**5.38**	**184**	Pn	**Pn**	**11 39 04.2**	**0.0**		
PVAQ				Sn	**Sn**	**11 40 02.5**	**-3.9**		
PVAQ				Lg	Lg	11 40 33.3			
	comp=N,15nm,0.5s								
PVAQ	**Vaqueiros**	**5.38**	**184**	*e*Pn	**Pn**	**11 39 04.2**	**0.0**		
PVAQ				Sn	**Sn**	**11 40 02.5**	**-3.9**		
PVAQ				*e*Sg	**Sg**	**11 40 33.3**	**-2.7**		
	comp=N,15nm,0.5s								
EVIA	**Vianos**	**5.45**	**138**	Lg	Lg	11 40 38.3			
	SNR=7.9								
EVIA	**Vianos**	**5.45**	**138**	Lg	Lg	11 40 38.3			
	SNR=7.9								
EPF	**Esparros**	**5.54**	**85**	*e*Pn	**Pn**	**11 39 08.3**	**+1.8**		
EPF				*e*Sn	**Sn**	**11 40 06.9**	**-3.5**		
	comp=N,3.5nm,0.3s								
EPF	**Esparros**	**5.54**	**85**	Pn	**Pn**	**11 39 08.3**	**+1.8**		
EPF				Sn	**Sn**	**11 40 06.9**	**-3.5**		
	comp=N,1.8nm,0.3s								
EPF	**Esparros**	**5.54**	**85**	Pn	**Pn**	**11 39 08.3**	**+1.8**		
EPF				*e*Sn	**Sn**	**11 40 06.9**	**-3.5**		
	comp=N,1.8nm,0.3s								
PBDV	**Barranco-do-Ve**	**5.55**	**186**	*e*Sn	**Sn**	**11 40 07.1**	**-3.6**		
PBDV				*e*Sg	**Sg**	**11 40 41.0**	**-0.6**		
PBDV				A	A	11 40 53.7			
	comp=N,12nm,0.5s								
PBDV	**Barranco-do-Ve**	**5.55**	**186**	Sn	**Sn**	**11 40 07.1**	**-3.6**		
PBDV				Lg	Lg	11 40 41.0			
	comp=N,12nm,0.5s								
PBDV	**Barranco-do-Ve**	**5.55**	**186**	*e*Sn	**Sn**	**11 40 07.1**	**-3.6**		
PBDV				*e*Sg	**Sg**	**11 40 41.0**	**-0.6**		
	comp=N,12nm,0.5s								
MORF	**Marmelete**	**5.57**	**192**	*e*P	**Pn**	**11 39 06.5**	**-0.4**		
MORF	**Marmelete**	**5.57**	**192**	*e*Pn	**Pn**	**11 39 07.0**	**+0.1**		
MORF				*e*Sn	**Sn**	**11 40 09.1**	**-2.2**		
MORF				A	A	11 40 51.8			
	comp=N,5.4nm,0.8s								
MORF	**Marmelete**	**5.57**	**192**	Pn	**Pn**	**11 39 07.0**	**+0.1**		
MORF				Sn	**Sn**	**11 40 09.1**	**-2.2**		
	comp=N,5.4nm,0.8s								
MORF	**Marmelete**	**5.57**	**192**	*e*Pn	**Pn**	**11 39 07.0**	**+0.1**		
MORF				*e*Sn	**Sn**	**11 40 09.1**	**-2.2**		
	comp=N,5.4nm,0.8s								
EMOS	**Mosqueruela**	**5.58**	**113**	Pn	**Pn**	**11 39 08.0**	**+0.8**		
	comp=N,0.2nm,0.1s,SNR=7.9								
EMOS				Sn	**Sn**	**11 40 12.3**	**+0.5**		
	comp=N,3.4nm,0.2s,SNR=8.3								
EMOS				Lg	Lg	11 40 45.3			
	comp=N,7.3nm,0.4s								
EMOS	**Mosqueruela**	**5.58**	**113**	Pn	**Pn**	**11 39 08.0**	**+0.8**		
	comp=N,0.2nm,0.1s,SNR=7.9								
EMOS				Sn	**Sn**	**11 40 12.3**	**+0.5**		
	comp=N,3.4nm,0.2s,SNR=8.3								
EMOS				Lg	Lg	11 40 45.3			
	comp=N,7.3nm,0.4s								
PFVI	**Vila Bisbo**	**5.77**	**193**	*e*Pn	**Pn**	**11 39 09.5**	**-0.1**		
PFVI				*e*Sn	**Sn**	**11 40 13.9**	**-2.2**		
PFVI	**Vila Bisbo**	**5.77**	**193**	Pn	**Pn**	**11 39 09.3**	**-0.3**		
	SNR=7.9								
PFVI				Sn	**Sn**	**11 40 11.9**	**-4.2**		
	SNR=7.9								
PFVI				Lg	Lg	11 40 49.4			
	SNR=7.9								
PFVI	**Vila Bisbo**	**5.77**	**193**	*e*Pn	**Pn**	**11 39 09.5**	**-0.1**		
PFVI				Sn	**Sn**	**11 40 11.9**	**-4.2**		
	SNR=7.9								
PFVI				Lg	Lg	11 40 49.4			
	SNR=7.9								
SESP	**Santiago Espad**	**5.84**	**141**	Sn	**Sn**	**11 40 14.7**	**-3.4**		
	SNR=7.9								
SESP				Lg	Lg	11 40 48.0			
	comp=N,14nm,0.5s,SNR=7.9								
SESP	**Santiago Espad**	**5.84**	**141**	Sn	**Sn**	**11 40 14.7**	**-3.4**		
	SNR=7.9								
SESP				Lg	Lg	11 40 48.0			
	comp=N,14nm,0.5s,SNR=7.9								
EQES	**Quesada**	**5.88**	**146**	Sn	**Sn**	**11 40 18.1**	**-0.8**		
	comp=N,0.4nm,0.2s,SNR=5.9								
EQES				Lg	Lg	11 40 51.3			
	comp=N,5.8nm,0.5s,SNR=7.9								
EQES	**Quesada**	**5.88**	**146**	Sn	**Sn**	**11 40 18.1**	**-0.8**		
	comp=N,0.4nm,0.2s,SNR=5.9								
EQES				Lg	Lg	11 40 51.3			
	comp=N,5.8nm,0.5s,SNR=7.9								
QUIF	**Quistinic**	**5.88**	**27**	*e*Pn	**Pn**	**11 39 09.0**	**-2.0**		
	SNR=1.0								
QUIF				*e*Sn	Sn	11 40 10.7	-7.9		
	comp=N,10nm,0.2s								
QUIF	**Quistinic**	**5.88**	**27**	Pn	**Pn**	**11 39 09.0**	**-2.0**		
QUIF				Sn	Sn	11 40 10.7	-7.9		
	comp=N,5.1nm,0.2s								
QUIF	**Quistinic**	**5.88**	**27**	*e*Pn	**Pn**	**11 39 09.0**	**-2.0**		
	SNR=1.0								
QUIF				*e*Sn	Sn	11 40 10.7	-7.9		
	comp=N,5.1nm,0.2s								
ERTA	**Horta de San J**	**5.90**	**105**	Sn	**Sn**	**11 40 18.2**	**-1.2**		
	comp=N,1.7nm,0.2s,SNR=6.6								
ERTA	**Horta de San J**	**5.90**	**105**	Sn	**Sn**	**11 40 18.2**	**-1.2**		
	comp=N,1.7nm,0.2s,SNR=6.6								
ETOB	**Tobarra**	**5.95**	**132**	Pn	**Pn**	**11 39 11.8**	**-0.3**		
	comp=N,0.7nm,0.2s,SNR=7.9								
ETOB				Lg	Lg	11 40 52.3			
	comp=N,7.4nm,0.4s,SNR=5.4								
ETOB	**Tobarra**	**5.95**	**132**	Pn	**Pn**	**11 39 11.8**	**-0.3**		
	comp=N,0.7nm,0.2s,SNR=7.9								
ETOB				Lg	Lg	11 40 52.3			
	comp=N,7.4nm,0.4s,SNR=5.4								
ROSF	**Rostrenen**	**6.21**	**25**	*e*Pn	**Pn**	**11 39 12.8**	**-2.8**		
	SNR=1.0								
ROSF				*e*Sn	Sn	11 40 19.0	-7.8		
	comp=N,6.8nm,0.3s								
ROSF	**Rostrenen**	**6.21**	**25**	Pn	**Pn**	**11 39 12.8**	**-2.8**		
ROSF				Sn	Sn	11 40 19.0	-7.8		
	comp=N,3.4nm,0.3s								
ROSF	**Rostrenen**	**6.21**	**25**	*e*Pn	**Pn**	**11 39 12.8**	**-2.8**		
	SNR=1.0								
ROSF				*e*Sn	Sn	11 40 19.0	-7.8		
	comp=N,3.4nm,0.3s								
MFF	**Saint Martin d**	**6.31**	**50**	*e*Pn	**Pn**	**11 39 16.2**	**-0.9**		
	SNR=1.0								
MFF				*e*Sn	**Sn**	**11 40 24.4**	**-5.1**		
	comp=N,3.6nm,0.3s								
MFF	**Saint Martin d**	**6.31**	**50**	Pn	**Pn**	**11 39 16.2**	**-0.9**		
MFF				Sn	**Sn**	**11 40 24.4**	**-5.1**		
	comp=N,1.8nm,0.3s								
MFF	**Saint Martin d**	**6.31**	**50**	*e*Pn	**Pn**	**11 39 16.2**	**-0.9**		
	SNR=1.0								
MFF				*e*Sn	**Sn**	**11 40 24.4**	**-5.1**		
	comp=N,1.8nm,0.3s								
SGMF	**Saint Gilles**	**6.38**	**29**	*e*Pn	**Pn**	**11 39 15.8**	**-2.1**		
	SNR=1.0								
SGMF				*e*Sn	**Sn**	**11 40 23.8**	**-7.2**		
	comp=N,2.3nm,0.2s								
SGMF	**Saint Gilles**	**6.38**	**29**	Pn	**Pn**	**11 39 15.8**	**-2.1**		
SGMF				Sn	**Sn**	**11 40 23.8**	**-7.2**		
	comp=N,1.2nm,0.2s								
SGMF	**Saint Gilles**	**6.38**	**29**	*e*Pn	**Pn**	**11 39 15.8**	**-2.1**		
	SNR=1.0								
SGMF				*e*Sn	**Sn**	**11 40 23.8**	**-7.2**		
	comp=N,1.1nm,0.2s								
RJF	**Les Rejaudoux**	**6.77**	**65**	*e*Pn	**Pn**	**11 39 22.6**	**-0.7**		
RJF				*e*Sn	**Sn**	**11 40 34.1**	**-6.5**		
	comp=N,3.9nm,0.3s,SNR=1.0								
RJF	**Les Rejaudoux**	**6.77**	**65**	Pn	**Pn**	**11 39 22.6**	**-0.7**		
RJF				Sn	**Sn**	**11 40 34.1**	**-6.5**		
	comp=N,1.9nm,0.3s								
RJF	**Les Rejaudoux**	**6.77**	**65**	*e*Pn	**Pn**	**11 39 22.6**	**-0.7**		
RJF				*e*Sn	**Sn**	**11 40 34.1**	**-6.5**		
	comp=N,2.0nm,0.3s,SNR=1.0								
MTLF	**Montolieu**	**6.92**	**82**	*e*Pn	**Pn**	**11 39 25.4**	**+0.1**		
	SNR=1.0								
MTLF	**Montolieu**	**6.92**	**82**	Pn	**Pn**	**11 39 25.4**	**+0.1**		
MTLF	**Montolieu**	**6.92**	**82**	*e*Pn	**Pn**	**11 39 25.4**	**+0.1**		
	SNR=1.0								
CAF	**Calviac**	**7.03**	**69**	*e*Sn	**Sn**	**11 40 40.7**	**-6.4**		
	comp=N,2.2nm,0.3s								
CAF	**Calviac**	**7.03**	**69**	Sn	**Sn**	**11 40 40.7**	**-6.4**		
	comp=N,1.1nm,0.3s								
CAF	**Calviac**	**7.03**	**69**	*e*Sn	**Sn**	**11 40 40.7**	**-6.4**		
	comp=N,1.1nm,0.3s								
GRR	**Gorron**	**7.16**	**36**	*e*Sn	Sn	11 40 41.5	-8.8		
	comp=N,4.0nm,0.3s								
GRR	**Gorron**	**7.16**	**36**	Sn	Sn	11 40 41.5	-8.8		
	comp=N,2.0nm,0.3s								
GRR	**Gorron**	**7.16**	**36**	*e*Sn	Sn	11 40 41.5	-8.8		
	comp=N,2.0nm,0.3s								
TCF	**Toulx Ste Croi**	**7.58**	**59**	*e*Pn	**Pn**	**11 39 33.0**	**-1.5**		
	SNR=1.0								
TCF				*e*Sn	Sn	11 40 51.1	-10		
	comp=N,5.2nm,0.3s								
TCF	**Toulx Ste Croi**	**7.58**	**59**	Pn	**Pn**	**11 39 33.0**	**-1.5**		
TCF				Sn	Sn	11 40 51.1	-10		
	comp=N,2.6nm,0.3s								
TCF	**Toulx Ste Croi**	**7.58**	**59**	*e*Pn	**Pn**	**11 39 33.0**	**-1.5**		
	SNR=1.0								
TCF				*e*Sn	Sn	11 40 51.1	-10		
	comp=N,2.6nm,0.3s								
FLN	**La Foliniere**	**7.61**	**36**	*e*Sn	Sn	11 40 53.5	-7.8		
	comp=N,4.0nm,0.3s								
FLN	**La Foliniere**	**7.61**	**36**	Sn	Sn	11 40 53.5	-7.8		
	comp=N,2.0nm,0.3s								
FLN	**La Foliniere**	**7.61**	**36**	*e*Sn	Sn	11 40 53.5	-7.8		
	comp=N,2.0nm,0.3s								
LDF	**La Druitiere**	**7.64**	**38**	*e*Pn	**Pn**	**11 39 32.7**	**-2.5**		
	SNR=1.0								
LDF				*e*Sn	Sn	11 40 53.3	-8.8		
	comp=N,2.1nm,0.3s								
LDF	**La Druitiere**	**7.64**	**38**	*e*Pn	**Pn**	**11 39 32.7**	**-2.5**		
	SNR=1.0								
LDF				*e*Sn	Sn	11 40 53.3	-8.8		
	comp=N,1.0nm,0.3s								
BGF	**Bois d'Agland**	**8.09**	**59**	*e*Pn	**Pn**	**11 39 39.8**	**-1.7**		
	SNR=1.0								
BGF				*e*Sn	**Sn**	**11 41 06.5**	**-6.8**		
	comp=N,8.1nm,0.4s								
BGF	**Bois d'Agland**	**8.09**	**59**	Pn	**Pn**	**11 39 39.8**	**-1.7**		
BGF				Sn	**Sn**	**11 41 06.5**	**-6.8**		
	comp=N,4.1nm,0.4s								
BGF	**Bois d'Agland**	**8.09**	**59**	*e*Pn	**Pn**	**11 39 39.8**	**-1.7**		
	SNR=1.0								
BGF				*e*Sn	**Sn**	**11 41 06.5**	**-6.8**		
	comp=N,4.1nm,0.4s								
LASF	**Ste Croix**	**8.15**	**77**	*e*Sn	**Sn**	**11 41 09.1**	**-5.5**		
	comp=N,2.7nm,0.3s,SNR=1.0								
LASF	**Ste Croix**	**8.15**	**77**	Sn	**Sn**	**11 41 09.1**	**-5.5**		
	comp=N,1.4nm,0.3s								
LASF	**Ste Croix**	**8.15**	**77**	*e*Sn	**Sn**	**11 41 09.1**	**-5.5**		
	comp=N,1.4nm,0.3s,SNR=1.0								
AVF	**Avril sur Loir**	**8.51**	**58**	*e*Pn	**Pn**	**11 39 45.3**	**-1.8**		
	SNR=1.0								
AVF	**Avril sur Loir**	**8.51**	**58**	Pn	**Pn**	**11 39 45.3**	**-1.8**		
AVF	**Avril sur Loir**	**8.51**	**58**	*e*Pn	**Pn**	**11 39 45.3**	**-1.8**		
	SNR=1.0								
SSF	**Saint Saulge**	**8.72**	**57**	*e*Pn	**Pn**	**11 39 48.0**	**-2.0**		
	SNR=1.0								
SSF				*e*Sn	Sn	11 41 20.7	-7.9		
	comp=N,2.1nm,0.3s								
SSF	**Saint Saulge**	**8.72**	**57**	Pn	**Pn**	**11 39 48.0**	**-2.0**		
SSF				Sn	Sn	11 41 20.7	-7.9		
	comp=N,1.1nm,0.3s								
SSF	**Saint Saulge**	**8.72**	**57**	*e*Pn	**Pn**	**11 39 48.0**	**-2.0**		
	SNR=1.0								
SSF				*e*Sn	Sn	11 41 20.7	-7.9		
	comp=N,1.0nm,0.3s								
VIVF	**Saint-Julien-l**	**8.83**	**72**	*e*Pn	**Pn**	**11 39 50.3**	**-1.3**		
	SNR=1.0								
VIVF				*e*Sn	Sn	11 41 24.2	-7.2		
	comp=N,4.0nm,0.6s								

VIVF	**Saint-Julien-l**	**8.83**	**72**	Pn	**Pn**	**11 39 50.3**	**-1.3**		
VIVF				Sn	Sn	11 41 24.2	-7.2		
	comp=N,2.0nm,0.6s								
VIVF	**Saint-Julien-l**	**8.83**	**72**	*e*Pn	**Pn**	**11 39 50.3**	**-1.3**		
	SNR=1.0								
VIVF				*e*Sn	Sn	11 41 24.2	-7.2		
	comp=N,2.0nm,0.6s								
LOR	**Lormes**	**9.02**	**56**	*e*Pn	**Pn**	**11 39 53.1**	**-1.1**		
	baz=246								
LOR				*e*Sn					
	comp=N,2.9nm,0.5s								
LOR	**Lormes**	**9.02**	**56**	Pn	**Pn**	**11 39 53.1**	**-1.1**		
LOR	**Lormes**	**9.02**	**56**	*e*Pn	**Pn**	**11 39 53.1**	**-1.1**		
CABF	**La Chapelle**	**10.20**	**63**	*e*Pn	**Pn**	**11 40 10.3**	**-0.2**		
	SNR=1.0								
CABF	**La Chapelle**	**10.20**	**63**	Pn	**Pn**	**11 40 10.3**	**-0.2**		
CABF	**La Chapelle**	**10.20**	**63**	*e*Pn	**Pn**	**11 40 10.3**	**-0.2**		
	SNR=1.0								

*IDC **29** 11:38:10.2±2.5, 1°.25N×98°.84E, h85km±18km, mb3.8/11, mb1 3.8/12, mb1mx3.6/45, mbtmp4.1/12, Error ellipse: s-maj=35.5km s-min=14.6km az=55.0*

*ISCJB **29** 11:38:11.8±0.4, 1°.46N±0°.04×98°.89E±0°.04, h109km±3km, mb4.2/15, Error ellipse: s-maj=7.5km s-min=5.1km az=146.7*

*NEIC **29** 11:38:12.6±0.6, 1°.35N×98°.91E, h105km±5km, mb4.6/4, Error ellipse: s-maj=10.2km s-min=7.1km az=53.0*

*DJA **29** 11:38:14.1±0.4, 1°.1N±4°×9°.9E±°, h80km±8km, M4.1/11, mB5.7/1, mb4.3/1, MLv4.0/11, Mw(mB)5.2/1*

ISC 29 11:38:12.6±0.8, 1°.46N±0°.04×98°.88E±0°.04, h101km±7km, n33, σ1°.9/19/43, mb4.0/15, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MNSI	**Mandailing Nat**	**0.96**	**133**	P	**Pn**	**11 38 33.2**	**+0.5**
MNSI				S	**Sn**	**11 38 47.2**	**-0.6**
GSI	**Gunungsitoli**	**1.31**	**263**	P	**Pn**	**11 38 37.3**	**+0.6**
GSI				S	**Sn**	**11 38 55.2**	**+0.3**
GSI	**Gunungsitoli**	**1.31**	**263**	*e*Pn	**Pn**	**11 38 37.5**	**+0.8**
GSI				*e*Sn	**Sn**	**11 38 55.1**	**+0.3**
PSI	**Prapat**	**1.33**	**2**	P	**Pn**	**11 38 36.6**	**-0.5**
	70nm,0.3s,baz=342,slow=7.3,SNR=91						
PSI				S	**Sn**	**11 38 53.7**	**-1.7**
	25nm,0.3s,baz=288,slow=22,SNR=20						
KCSI	**Kotacane, Aceh**	**2.33**	**332**	P	**Pn**	**11 38 50.0**	**+0.5**
KCSI				S	**Sn**	**11 39 16.9**	**-0.9**
BKNI	**Bangkinang**	**2.44**	**118**	P	**Pn**	**11 38 51.9**	**+1.0**
BKNI	**Bangkinang**	**2.44**	**118**	*e*Pn	**Pn**	**11 38 51.6**	**+0.7**
BKNI				*e*Sn	**Sn**	**11 39 20.9**	**+0.6**
TPTI		**2.47**	**316**	P	**Pn**	**11 38 52.2**	**+0.9**
PDSI	**Padang**	**2.84**	**146**	P	**Pn**	**11 38 57.3**	**+1.0**
SDSI	**Sungai Dareh**	**3.48**	**133**	P	**Pn**	**11 39 06.2**	**+1.3**
IPM	**Ipoh**	**3.68**	**35**	*e*Pn	**Pn**	**11 39 09.1**	**+1.5**
IPM				*e*Sn	**Sn**	**11 39 52.0**	**+1.9**
MLSI	**Meulaboh, Aceh**	**3.73**	**318**	P	**Pn**	**11 39 08.5**	**+0.3**
KULM	**Kulim**	**4.19**	**25**	*e*Pn	**Pn**	**11 39 15.1**	**+0.6**
KULM				*e*Sn	**Sn**	**11 40 01.1**	**-1.3**
LHMI	**Lhok Sumawe**	**4.21**	**333**	P	**Pn**	**11 39 16.7**	**+2.0**
PPSI	**Pulau Pagai**	**4.34**	**165**	P	**Pn**	**11 39 18.2**	**+1.7**
CMAR	**Chiang Mai Arr**	**16.89**	**0**	P	**P**	**11 42 04.7**	**+1.3**
	0.3nm,0.3s,baz=192,slow=11,SNR=3.7						
WRA	**Warramunga Arr**	**40.76**	**123**	P	**P**	**11 45 42.3**	**-1.9**
	10nm,0.6s,baz=302,slow=9.0,SNR=45						
WRA				PcP	**PcP**	**11 47 44.0**	**+0.3**
	0.3nm,0.5s,baz=316,slow=2.6,SNR=4.6						
WRAB	**Tennant Creek**	**40.76**	**123**	*e*P	**P**	**11 45 41.8**	**-2.4**
	7.2nm,0.5s						
ASAR	**Alice Springs**	**42.23**	**128**	P	**P**	**11 45 54.0**	**-2.1**
	0.8nm,0.4s,baz=302,slow=7.9,SNR=19						
ASAR				PcP	**PcP**	**11 47

	123nm,0.3s								
PGAV	**Gavieira, Arco**	**1.16**	**225**	*e*S		Sn	11 41 50.5	+33	
PGAV	**Gavieira, Arco**	**1.16**	**225**	*e*P		**Pb**	**11 41 01.6**	**-0.2**	
PGAV				*e*S		**Sg**	**11 41 17.6**	**-0.2**	
	123nm,0.3s								
EMAZ	**Mazaricos**	**1.33**	**277**	Pn		**Pn**	**11 41 04.0**	**0.0**	
	3.1nm,0.2s,SNR=7.9								
EMAZ				Pg		**Pg**	**11 41 05.7**	**-0.1**	
	46nm,0.2s,SNR=7.9								
EMAZ				Lg		Lg	11 41 23.3		
	173nm,0.2s,SNR=7.9								
EMAZ	**Mazaricos**	**1.33**	**277**	Pn		**Pn**	**11 41 04.0**	**0.0**	
	3.1nm,0.2s,SNR=7.9								
POLO	**Lamas de Olo**	**1.50**	**198**	*e*Pn		**Pn**	**11 41 06.6**	**+0.3**	
POLO	**Lamas de Olo**	**1.50**	**198**	*e*Pg		**Pg**	**11 41 09.1**	**+0.2**	
POLO				*e*Sn		**Sn**	**11 41 25.1**	**-0.4**	
POLO				*e*Sg		**Sg**	**11 41 28.0**	**-0.4**	
POLO				A		A	11 41 30.6		
	37nm,0.3s								
POLO	**Lamas de Olo**	**1.50**	**198**	*e*S		Sg	11 42 00.5	+32	
POLO				A		A	11 42 01.9		
	11nm,0.4s								
POLO	**Lamas de Olo**	**1.50**	**198**	*e*Pn		**Pn**	**11 41 06.6**	**+0.3**	
POLO	**Lamas de Olo**	**1.50**	**198**	*e*Pg		**Pg**	**11 41 09.1**	**+0.2**	
POLO				*e*Sn		**Sn**	**11 41 25.1**	**-0.4**	
POLO				*e*Sg		**Sg**	**11 41 28.0**	**-0.4**	
	37nm,0.3s								
EARI	**Arriondas**	**1.53**	**70**	Pg		**Pg**	**11 41 10.1**	**+0.6**	
	11nm,0.2s,SNR=18								
EARI				Lg		Lg	11 41 30.1		
	31nm,0.1s,SNR=12								
EARI	**Arriondas**	**1.53**	**70**	Pg		**Pg**	**11 41 10.1**	**+0.6**	
	11nm,0.2s,SNR=18								
EARI				Lg		Lg	11 41 30.1		
	31nm,0.1s,SNR=12								
PVRL	**Vila Real**	**1.57**	**195**	*e*Pg		**Pg**	**11 41 10.8**	**+0.4**	
PVRL				*e*Sg		**Sg**	**11 41 31.0**	**+0.1**	
PVRL				A		A	11 41 33.3		
	93nm,0.1s								
PVRL	**Vila Real**	**1.57**	**195**	Pg		**Pg**	**11 41 10.8**	**+0.4**	
PVRL				Lg		Lg	11 41 31.0		
	46nm,0.1s								
PVRL	**Vila Real**	**1.57**	**195**	Pg		**Pg**	**11 41 10.8**	**+0.4**	
PVRL				*e*Sg		**Sg**	**11 41 31.0**	**+0.1**	
	93nm,0.1s								
MVO	**Moncorvo**	**1.64**	**176**	*e*Pn		**Pn**	**11 41 09.1**	**+0.8**	
MVO	**Moncorvo**	**1.64**	**176**	*e*Pg		**Pg**	**11 41 11.1**	**-0.5**	
MVO				*e*Sn		**Sn**	**11 41 28.9**	**-0.1**	
MVO				*e*Sg		**Sg**	**11 41 32.5**	**-0.4**	
MVO				A		A	11 41 34.4		
	72nm,0.4s								
MVO	**Moncorvo**	**1.64**	**176**	Pg		**Pg**	**11 41 11.9**	**+0.3**	
	3.7nm,0.1s,SNR=9.0								
MVO				Lg		Lg	11 41 32.6		
	46nm,0.2s,SNR=11								
MVO	**Moncorvo**	**1.64**	**176**	*e*Pn		**Pn**	**11 41 09.1**	**+0.8**	
MVO	**Moncorvo**	**1.64**	**176**	*e*Pg		**Pg**	**11 41 11.1**	**-0.5**	
MVO				*e*Sn		**Sn**	**11 41 28.9**	**-0.1**	
MVO				*e*Sg		**Sg**	**11 41 32.5**	**-0.4**	
	72nm,0.4s								
MVO				Lg		Lg	11 41 32.6		
	46nm,0.2s,SNR=11								
PTO	**Porto**	**1.97**	**213**	*e*Pg		**Pg**	**11 41 17.9**	**0.0**	
PTO				*e*Sg		**Sg**	**11 41 42.9**	**-0.6**	
PTO	**Porto**	**1.97**	**213**	Pg		**Pg**	**11 41 17.9**	**0.0**	
PTO				Lg		Lg	11 41 42.9		
PTO	**Porto**	**1.97**	**213**	Pg		**Pg**	**11 41 17.9**	**0.0**	
PTO				*e*Sg		**Sg**	**11 41 42.9**	**-0.6**	
PVIS	**Viseu**	**2.15**	**195**	*e*Sg		**Sg**	**11 41 47.8**	**-1.4**	
PVIS				A		A	11 41 53.9		
	44nm,0.4s								
PVIS	**Viseu**	**2.15**	**195**	Lg		Lg	11 41 47.8		
	22nm,0.4s								
PVIS	**Viseu**	**2.15**	**195**	*e*Sg		**Sg**	**11 41 47.8**	**-1.4**	
	44nm,0.4s								
MTE	**Manteigas**	**2.41**	**187**	*e*Pg		**Pg**	**11 41 26.2**	**-0.2**	
MTE				*e*Sn		**Sn**	**11 41 48.3**	**+0.2**	
MTE				*e*Sg		**Sg**	**11 41 57.3**	**-0.4**	
MTE				A		A	11 42 00.0		
	30nm,0.5s								
MTE	**Manteigas**	**2.41**	**187**	Pg		**Pg**	**11 41 26.2**	**-0.2**	
MTE				Sn		**Sn**	**11 41 48.3**	**+0.2**	
MTE				Lg		Lg	11 41 57.3		
	15nm,0.5s								
MTE	**Manteigas**	**2.41**	**187**	Pg		**Pg**	**11 41 26.2**	**-0.2**	
MTE				Sn		**Sn**	**11 41 48.3**	**+0.2**	
MTE				*e*Sg		**Sg**	**11 41 57.3**	**-0.4**	
	30nm,0.5s								
COI	**Coimbra**	**2.75**	**200**	Lg		Lg	11 42 07.3		
COI	**Coimbra**	**2.75**	**200**	*e*Sg		**Sg**	**11 42 07.3**	**-1.1**	
ELAN	**Lanestosa**	**2.78**	**80**	Pn		**Pn**	**11 41 26.0**	**+2.0**	
	1.7nm,0.2s,SNR=6.1								
ELAN				Sn		**Sn**	**11 41 59.6**	**+2.5**	
	12nm,0.2s,SNR=7.9								
ELAN				Lg		Lg	11 42 09.1		
	14nm,0.3s,SNR=11								
ELAN	**Lanestosa**	**2.78**	**80**	Pn		**Pn**	**11 41 26.0**	**+2.0**	
	1.7nm,0.2s,SNR=6.1								
ELAN				Sn		**Sn**	**11 41 59.6**	**+2.5**	
	12nm,0.2s,SNR=7.9								
ELAN				Lg		Lg	11 42 09.1		
	14nm,0.3s,SNR=11								
EPLA	**Plasencia**	**2.85**	**163**	Pn		**Pn**	**11 41 26.7**	**+1.7**	
	2.6nm,0.3s,SNR=7.9								
EPLA				Sn		**Sn**	**11 41 59.4**	**+0.4**	
	6.1nm,0.2s,SNR=7.9								
EPLA				Lg		Lg	11 42 11.4		
	14nm,0.4s,SNR=6.0								
EPLA	**Plasencia**	**2.85**	**163**	Pn		**Pn**	**11 41 26.7**	**+1.7**	
	2.6nm,0.3s,SNR=7.9								
EPLA				Sn		**Sn**	**11 41 59.4**	**+0.4**	
	6.1nm,0.2s,SNR=7.9								
EPLA				Lg		Lg	11 42 11.4		
	14nm,0.4s,SNR=6.0								
PCAS	**Casmilo, Conde**	**2.92**	**200**	*e*Pn		**Pn**	**11 41 27.1**	**+1.3**	
PCAS				*e*Sn		**Sn**	**11 42 01.6**	**+1.1**	
PCAS				*e*Sg		**Sg**	**11 42 13.6**	**-0.2**	
PCAS				A		A	11 42 25.6		
	20nm,0.6s								
PCAS	**Casmilo, Conde**	**2.92**	**200**	*e*Pn		**Pn**	**11 41 27.1**	**+1.3**	
PCAS				*e*Sn		**Sn**	**11 42 01.6**	**+1.1**	
PCAS				*e*Sg		**Sg**	**11 42 13.6**	**-0.2**	
	20nm,0.6s								
PCBR	**Castelo Branco**	**2.96**	**184**	*e*Pn		**Pn**	**11 41 27.9**	**+1.5**	
PCBR				*e*Sn		**Sn**	**11 42 01.1**	**-0.5**	
PCBR				*e*Sg		**Sg**	**11 42 13.7**	**-1.6**	
PCBR				A		A	11 42 24.1		
	14nm,0.4s								
PCBR	**Castelo Branco**	**2.96**	**184**	Pn		**Pn**	**11 41 27.9**	**+1.5**	
PCBR				Sn		**Sn**	**11 42 01.1**	**-0.5**	
PCBR				Lg		Lg	11 42 13.7		
	7.1nm,0.4s								
PCBR	**Castelo Branco**	**2.96**	**184**	Pn		**Pn**	**11 41 27.9**	**+1.5**	
PCBR				Sn		**Sn**	**11 42 01.1**	**-0.5**	
PCBR				*e*Sg		**Sg**	**11 42 13.7**	**-1.6**	
	14nm,0.4s								
GUD	**Guadarrama**	**3.12**	**133**	Pn		**Pn**	**11 41 30.9**	**+2.1**	
	1.2nm,0.2s,SNR=7.9								
GUD				Pg		**Pg**	**11 41 39.0**	**-1.0**	
	12nm,0.3s,SNR=6.5								
GUD				Lg		Lg	11 42 19.0		
	26nm,0.3s,SNR=8.2								
GUD	**Guadarrama**	**3.12**	**133**	Pn		**Pn**	**11 41 30.9**	**+2.1**	
	1.2nm,0.2s,SNR=7.9								
PTOM	**Tomar**	**3.31**	**197**	*e*Sg		**Sg**	**11 42 25.1**	**-1.3**	
PTOM	**Tomar**	**3.31**	**197**	Lg		Lg	11 42 25.1		
PTOM	**Tomar**	**3.31**	**197**	*e*Sg		**Sg**	**11 42 25.1**	**-1.3**	
PMRV	**Marv??o**	**3.37**	**183**	*e*Pn		**Pn**	**11 41 34.6**	**+2.5**	
PMRV				*e*Sn		**Sn**	**11 42 11.0**	**-0.7**	
PMRV				*e*Sg		**Sg**	**11 42 27.2**	**-1.2**	
PMRV				A		A	11 42 34.5		
	20nm,0.5s								
PMRV	**Marv??o**	**3.37**	**183**	Pn		**Pn**	**11 41 34.6**	**+2.5**	
PMRV				Sn		**Sn**	**11 42 11.0**	**-0.7**	
PMRV				Lg		Lg	11 42 27.2		
	20nm,0.5s								
PMRV	**Marv??o**	**3.37**	**183**	Pn		**Pn**	**11 41 34.6**	**+2.5**	
PMRV				Sn		**Sn**	**11 42 11.0**	**-0.7**	
PMRV				*e*Sg		**Sg**	**11 42 27.2**	**-1.2**	
	20nm,0.5s								
PESTR	**Estremoz**	**3.94**	**185**	*e*Pn		**Pn**	**11 41 41.2**	**+1.3**	
PESTR				*e*Sg		**Sg**	**11 42 46.5**	**-0.1**	
PESTR				A		A	11 42 50.9		
	9.9nm,0.5s								
PESTR	**Estremoz**	**3.94**	**185**	*e*Pn		**Pn**	**11 41 41.2**	**+1.3**	
	9.9nm,0.5s								
ESDC	**Sonseca Array**	**3.95**	**141**	Pg		**Pg**	**11 41 54.5**	**-1.3**	
	0.1nm,0.1s,baz=321,slow=18,SNR=5.4								
ESDC				Lg		Lg	11 42 45.0		
	6.2nm,0.5s,baz=317,slow=29,SNR=73								
ESDC	**Sonseca Array**	**3.95**	**141**	Pg		**Pg**	**11 41 54.5**	**-1.3**	
	0.1nm,0.1s,SNR=5.4								
ESDC				Lg		Lg	11 42 45.0		
	6.2nm,0.5s,SNR=73								
EBAD	**Badajoz**	**4.04**	**178**	Lg		Lg	11 42 50.1		
	14nm,0.3s,SNR=5.2								
EBAD	**Badajoz**	**4.04**	**178**	Lg		Lg	11 42 50.1		
	14nm,0.3s,SNR=5.2								
PMAFR	**Mafra**	**4.16**	**203**	*e*Sn		**Sn**	**11 42 31.1**	**0.0**	
PMAFR	**Mafra**	**4.16**	**203**	*e*Sn		**Sn**	**11 42 31.1**	**0.0**	
ETOR	**Torete**	**4.31**	**116**	Pn		**Pn**	**11 41 46.3**	**+1.3**	
	1.0nm,0.3s,SNR=7.9								
ETOR				Pg		**Pg**	**11 42 01.2**	**-1.4**	
	4.7nm,0.2s,SNR=5.9								
ETOR				Lg		Lg	11 42 56.6		
	18nm,0.5s,SNR=7.9								
ETOR	**Torete**	**4.31**	**116**	Pn		**Pn**	**11 41 46.3**	**+1.3**	
	1.0nm,0.3s,SNR=7.9								
EORO	**Oroz-Betelu**	**4.32**	**87**	Pn		**Pn**	**11 41 46.7**	**+1.6**	
	0.6nm,0.1s,SNR=7.9								
EORO				Sn		**Sn**	**11 42 36.0**	**+1.0**	
	2.3nm,0.2s,SNR=7.9								
EORO	**Oroz-Betelu**	**4.32**	**87**	Pn		**Pn**	**11 41 46.7**	**+1.6**	
	0.6nm,0.1s,SNR=7.9								
EORO				Sn		**Sn**	**11 42 36.0**	**+1.0**	
	2.3nm,0.2s,SNR=7.9								
IEPA	**Eparoz**	**4.35**	**88**	Pn		**Pn**	**11 41 48.5**	**+3.0**	
	2.7nm,0.1s,SNR=7.9								
IEPA				Sn		**Sn**	**11 42 36.3**	**+0.4**	
	4.9nm,0.3s,SNR=7.9								
IEPA	**Eparoz**	**4.35**	**88**	Pn		**Pn**	**11 41 48.5**	**+3.0**	
	2.7nm,0.1s,SNR=7.9								
IEPA				Sn		**Sn**	**11 42 36.3**	**+0.4**	
	4.9nm,0.3s,SNR=7.9								
IELO	**Elcoad**	**4.37**	**87**	Pn		**Pn**	**11 41 48.7**	**+2.9**	
	2.7nm,0.2s,SNR=7.9								
IELO				Sn		**Sn**	**11 42 36.2**	**-0.2**	
	2.3nm,0.2s,SNR=7.9								
IELO				Lg		Lg	11 43 00.9		
	4.6nm,0.3s,SNR=7.9								
IELO	**Elcoad**	**4.37**	**87**	Pn		**Pn**	**11 41 48.7**	**+2.9**	
	2.7nm,0.2s,SNR=7.9								
IELO				Sn		**Sn**	**11 42 36.2**	**-0.2**	
	2.3nm,0.2s,SNR=7.9								
IELO				Lg		Lg	11 43 00.9		
	4.6nm,0.3s,SNR=7.9								
SJPF	**Ste Jean**	**4.38**	**84**	*e*Pn		**Pn**	**11 41 45.4**	**-0.5**	
SJPF				*e*Sn		**Sn**	**11 42 35.3**	**-1.3**	
	4.5nm,0.4s								
SJPF				*e*Sg		**Sg**	**11 43 00.4**	**-0.3**	
	5.0nm,0.4s								
SJPF	**Ste Jean**	**4.38**	**84**	Pn		**Pn**	**11 41 45.4**	**-0.5**	
SJPF				Sn		**Sn**	**11 42 35.3**	**-1.3**	
	2.2nm,0.4s								
SJPF				Lg		Lg	11 43 00.4		
	2.5nm,0.4s								
SJPF	**Ste Jean**	**4.38**	**84**	Pn		**Pn**	**11 41 45.4**	**-0.5**	
SJPF				*e*Sn		**Sn**	**11 42 35.3**	**-1.3**	
	2.2nm,0.4s								
SJPF				*e*Sg		**Sg**	**11 43 00.4**	**-0.3**	
	2.5nm,0.4s								
YARA	**Arangoiti**	**4.41**	**90**	Pn		**Pn**	**11 41 49.4**	**+2.9**	
	1.1nm,0.2s,SNR=7.9								
YARA	**Arangoiti**	**4.41**	**90**	Pn		**Pn**	**11 41 49.4**	**+2.9**	
	1.1nm,0.2s,SNR=7.9								
YASP	**Aspurt**	**4.43**	**89**	Pn		**Pn**	**11 41 49.6**	**+3.0**	
	4.4nm,0.3s,SNR=7.9								
YASP				Sn		**Sn**	**11 42 37.7**	**-0.1**	
	1.5nm,0.2s,SNR=7.9								
YASP				Lg		Lg	11 43 03.7		
	3.3nm,0.2s,SNR=7.9								
YASP	**Aspurt**	**4.43**	**89**	Pn		**Pn**	**11 41 49.6**	**+3.0**	
	4.4nm,0.3s,SNR=7.9								
YASP				Sn		**Sn**	**11 42 37.7**	**-0.1**	
	1.5nm,0.2s,SNR=7.9								
YASP				Lg		Lg	11 43 03.7		
	3.3nm,0.2s,SNR=7.9								
YUND	**Undues**	**4.46**	**91**	Pn		**Pn**	**11 41 49.6**	**+2.5**	
	1.2nm,0.1s,SNR=7.9								
YUND				Sn		**Sn**	**11 42 37.5**	**-1.1**	
	1.2nm,0.2s,SNR=7.9								
YUND				Lg		Lg	11 43 01.7		
	3.2nm,0.2s,SNR=7.9								
YUND	**Undues**	**4.46**	**91**	Pn		**Pn**	**11 41 49.6**	**+2.5**	
	1.2nm,0.1s,SNR=7.9								
YUND				Sn		**Sn**	**11 42 37.5**	**-1.1**	
	1.2nm,0.2s,SNR=7.9								
YUND				Lg		Lg	11 43 01.7		
	3.2nm,0.2s,SNR=7.9								
YSOS	**Sos del Rey Ca**	**4.46**	**92**	Pn		**Pn**	**11 41 49.9**	**+2.8**	
	1.9nm,0.2s,SNR=7.9								
YSOS				Sn		**Sn**	**11 42 39.3**	**+0.6**	
	2.0nm,0.2s,SNR=7.9								
YSOS				Lg		Lg	11 43 03.8		
	11nm,0.2s,SNR=7.9								
YSOS	**Sos del Rey Ca**	**4.46**	**92**	Pn		**Pn**	**11 41 49.9**	**+2.8**	
	1.9nm,0.2s,SNR=7.9								
YSOS				Sn		**Sn**	**11 42 39.3**	**+0.6**	
	2.0nm,0.2s,SNR=7.9								
YSOS				Lg		Lg	11 43 03.8		
	11nm,0.2s,SNR=7.9								
YMUS	**Pe˜a Musera**	**4.54**	**91**	Pn		**Pn**	**11 41 51.1**	**+2.9**	
	1.2nm,0.2s,SNR=7.9								
YMUS				Sn		**Sn**	**11 42 40.4**	**-0.3**	
	2.6nm,0.2s,SNR=7.9								
YMUS				Lg		Lg	11 43 06.0		
	2.4nm,0.2s,SNR=7.9								
YMUS	**Pe˜a Musera**	**4.54**	**91**	Pn		**Pn**	**11 41 51.1**	**+2.9**	
	1.2nm,0.2s,SNR=7.9								
YMUS				Sn		**Sn**	**11 42 40.4**	**-0.3**	
	2.6nm,0.2s,SNR=7.9								
YMUS				Lg		Lg	11 43 06.0		
	2.4nm,0.2s,SNR=7.9								
YSIG	**Sigues**	**4.56**	**90**	Pn		**Pn**	**11 41 51.0**	**+2.6**	
	1.0nm,0.1s,SNR=7.9								
YSIG				Sn		**Sn**	**11 42 41.0**	**0.0**	
	1.3nm,0.1s,SNR=7.9								
YSIG	**Sigues**	**4.56**	**90**	Pn		**Pn**	**11 41 51.0**	**+2.6**	
	1.0nm,0.1s,SNR=7.9								
YSIG				Sn		**Sn**	**11 42 41.0**	**0.0**	
	1.3nm,0.1s,SNR=7.9								
PBAR	**Barrancos**	**4.62**	**179**	*e*Pn		**Pn**	**11 41 50.9**	**+1.7**	
PBAR				*e*Sn		**Sn**	**11 42 41.7**	**-0.7**	
PBAR				*e*Sg		**Sg**	**11 43 05.5**	**-2.9**	
PBAR				A		A	11 43 12.9		
	15nm,0.4s								
PBAR	**Barrancos**	**4.62**	**179**	Pn		**Pn**	**11 41 50.9**	**+1.7**	
PBAR				Sn		**Sn**	**11 42 41.7**	**-0.7**	
PBAR				Lg		Lg	11 43 05.5		
	15nm,0.4s								
PBAR	**Barrancos**	**4.62**	**179**	Pn		**Pn**	**11 41 50.9**	**+1.7**	
PBAR				Sn		**Sn**	**11 42 41.7**	**-0.7**	
PBAR				*e*Sg		**Sg**	**11 43 05.5**	**-2.9**	
	15nm,0.4s								
YBER	**Berdun**	**4.62**	**91**	Pn		**Pn**	**11 41 51.5**	**+2.3**	
	1.5nm,0.1s,SNR=7.9								
YBER				Sn		**Sn**	**11 42 42.3**	**-0.2**	
	3.3nm,0.2s,SNR=7.9								
YBER	**Berdun**	**4.62**	**91**	Pn		**Pn**	**11 41 51.5**	**+2.3**	
	1.5nm,0.1s,SNR=7.9								
YBER				Sn		**Sn**	**11 42 42.3**	**-0.2**	
	3.3nm,0.2s,SNR=7.9								
ATE	**Arette**	**4.76**	**84**	Pn		**Pn**	**11 41 54.1**	**+2.9**	
	1.6nm,0.1s,SNR=7.9								
ATE				Sn		**Sn**	**11 42 46.3**	**+0.3**	
	0.8nm,0.1s,SNR=7.9								
ATE				Lg		Lg	11 43 14.4		
	5.7nm,0.5s,SNR=7.9								
ATE	**Arette**	**4.76**	**84**	Pn		**Pn**	**11 41 54.1**	**+2.9**	
	1.6nm,0.1s,SNR=7.9								
ATE				Sn		**Sn**	**11 42 46.3**	**+0.3**	
	0.8nm,0.1s,SNR=7.9								
ATE				Lg		Lg	11 43 14.4		
	5.7nm,0.5s,SNR=7.9								
ETSF	**Etsaut**	**4.87**	**87**	*e*Pn		**Pn**	**11 41 55.4**	**+2.7**	
ETSF				*e*Sn		**Sn**	**11 42 47.8**	**-0.9**	
	2.7nm,0.3s								
ETSF				*e*Sg		**Sg**	**11 43 16.1**	**-0.2**	
	5.6nm,0.4s								
ETSF	**Etsaut**	**4.87**	**87**	Pn		**Pn**	**11 41 55.4**	**+2.7**	
ETSF				Sn		**Sn**	**11 42 47.8**	**-0.9**	
	1.4nm,0.3s								
ETSF				Lg		Lg	11 43 16.1		
	2.8nm,0.4s								
ETSF	**Etsaut**	**4.87**	**87**	Pn		**Pn**	**11 41 55.4**	**+2.7**	
ETSF				Sn		**Sn**	**11 42 47.8**	**-0.9**	
	1.4nm,0.3s								
ETSF				*e*Sg		**Sg**	**11 43 16.1**	**-0.2**	
	2.8nm,0.4s								
ECAB	**El Cabril**	**4.90**	**164**	Pn		**Pn**	**11 41 54.2**	**+1.1**	
	0.6nm,0.3s,SNR=7.9								
ECAB				Sn		**Sn**	**11 42 48.1**	**-1.4**	
	1.8nm,0.2s,SNR=7.9								
ECAB				Lg		Lg	11 43 12.9		
	13nm,0.6s,SNR=7.9								
ECAB	**El Cabril**	**4.90**	**164**	Pn		**Pn**	**11 41 54.2**	**+1.1**	
	0.6nm,0.3s,SNR=7.9								
ECAB				Sn		**Sn**	**11 42 48.1**	**-1.4**	
	1.8nm,0.2s,SNR=7.9								
ECAB				Lg		Lg	11 43 12.9		
	13nm,0.6s,SNR=7.9								
MESJ	**Messejana**	**5.01**	**189**	*e*Pn		**Pn**	**11 41 55.6**	**+1.0**	
MESJ				*e*Sg		**Sg**	**11 43 21.7**	**+0.6**	
MESJ	**Messejana**	**5.01**	**189**	Pn		**Pn**	**11 41 55.6**	**+1.0**	
MESJ				Lg		Lg	11 43 21.7		
MESJ	**Messejana**	**5.01**	**189**	Pn		**Pn**	**11 41 55.6**	**+1.0**	
MESJ				*e*Sg		**Sg**	**11 43 21.7**	**+0.6**	
EADA	**Adamuz**	**5.03**	**156**	Sn		**Sn**	**11 42 53.8**	**+1.1**	
	0.1nm,0.2s,SNR=7.9								
EADA				Lg		Lg	11 43 19.0		
	5.2nm,0.4s,SNR=4.9								
EADA	**Adamuz**	**5.03**	**156**	Sn		**Sn**	**11 42 53.8**	**+1.1**	
	0.1nm,0.2s,SNR=7.9								
EADA				Lg		Lg	11 43 19.0		
	5.2nm,0.4s,SNR=4.9								
EMIN	**Mina Concepcio**	**5.04**	**175**	Sn		**Sn**	**11 42 52.0**	**-0.8**	
	0.3nm,0.1s,SNR=7.9								
EMIN				Lg		Lg	11 43 19.2		
	1.0nm,0.2s,SNR=7.9								
EMIN	**Mina Concepcio**	**5.04**	**175**	Sn		**Sn**	**11 42 52.0**	**-0.8**	
	0.3nm,0.1s,SNR=7.9								
EMIN				Lg		Lg	11 43 19.2		
	1.0nm,0.2s,SNR=7.9								
ESAC	**San Caprasio**	**5.09**	**100**	Sn		**Sn**	**11 42 54.8**	**+0.6**	
	5.0nm,0.2s,SNR=7.9								
ESAC				Lg		Lg	11 43 23.7		
	20nm,0.6s,SNR=7.9								
ESAC	**San Caprasio**	**5.09**	**100**	Sn		**Sn**	**11 42 54.8**	**+0.6**	
	5.0nm,0.2s,SNR=7.9								
ESAC				Lg		Lg	11 43 23.7		
	20nm,0.6s,SNR=7.9								
EGRO	**El Granado**	**5.26**	**183**	Lg		Lg	11 43 28.5		
	2.7nm,0.4s,SNR=7.9								
EGRO	**El Granado**	**5.26**	**183**	Lg		Lg	11 43 28.5		
	2.7nm,0.4s,SNR=7.9								
PTEO	**Sao Teotonio**	**5.38**	**193**	*e*Sg		**Sg**	**11 43 30.7**	**-2.0**	
PTEO	**Sao Teotonio**	**5.38**	**193**	Lg		Lg	11 43 30.7		
PTEO	**Sao Teotonio**	**5.38**	**193**	*e*Sg		**Sg**	**11 43 30.7**	**-2.0**	
PVAQ	**Vaqueiros**	**5.40**	**185**	*e*Pn		**Pn**	**11 42 01.9**	**+1.9**	
PVAQ	**Vaqueiros**	**5.40**	**185**	Pn		**Pn**	**11 42 01.9**	**+1.9**	
PVAQ	**Vaqueiros**	**5.40**	**185**	Pn		**Pn**	**11 42 01.9**	**+1.9**	
EPF	**Esparros**	**5.53**	**85**	*e*Pn		**Pn**	**11 42 03.0**	**+1.3**	
EPF				*e*Sg		**Sg**	**11 43 36.0**	**-1.4**	
	2.1nm,0.2s								
EPF	**Esparros**	**5.53**	**85**	Pn		**Pn**	**11 42 03.0**	**+1.3**	
EPF				Lg		Lg	11 43 36.0		
	1.1nm,0.2s								
EPF	**Esparros**	**5.53**	**85**	Pn		**Pn**	**11 42 03.0**	**+1.3**	
EPF				*e*Sg		**Sg**	**11 43 36.0**	**-1.4**	
	1.0nm,0.2s								
EMOS	**Mosqueruela**	**5.58**	**114**	Pn		**Pn**	**11 42 04.5**	**+1.9**	
	0.2nm,0.1s,SNR=7.9								
EMOS				Sn		**Sn**	**11 43 06.3**	**-0.2**	
	1.5nm,0.1s,SNR=7.9								
EMOS	**Mosqueruela**	**5.58**	**114**	Pn		**Pn**	**11 42 04.5**	**+1.9**	
	0.2nm,0.1s,SNR=7.9								
EMOS				Sn		**Sn**	**11 43 06.3**	**-0.2**	
	1.5nm,0.1s,SNR=7.9								
QUIF	**Quistinic**	**5.85**	**28**	*e*Pn		**Pn**	**11 42 05.9**	**-0.1**	
QUI

MACK			S	Sn	11 49 22.8	-0.4
SVSK	**Karacayir**	**1.35 260**	*e*PN	**Pb**	**11 49 11.1**	**+0.3**
SVSK			*e*SN	**Sn**	**11 49 30.6**	**+1.5**
SVSK	**Karacayir**	**1.35 260**	*e*Pn	**Pb**	**11 49 11.1**	**+0.3**
SVSK			*e*Sn	**Sn**	**11 49 30.6**	**+1.5**
PTK	**Pertek**	**1.37 158**	*e*PN	**Pg**	**11 49 10.8**	**-0.3**
PTK			*e*SN	**Sn**	**11 49 30.1**	**+0.2**
PTK	**Pertek**	**1.37 158**	*e*Pn	**Pg**	**11 49 10.8**	**-0.3**
DARE	**Darende-Malaty**	**1.86 212**	*e*PN	**Pn**	**11 49 18.2**	**+0.5**
DARE	**Darende-Malaty**	**1.86 212**	*e*Pn	**Pn**	**11 49 18.2**	**+0.5**

ISK ***29*** *11:50:03.8, 39˚.19N×27˚.94E, h6km, MD2.6, ML2.6*
ISCJB ***29*** *11:50:04.0±0.5, 39˚.17N±0˚.03×27˚.94E±0˚.04, h7km±5km, Error ellipse: s-maj=5.0km s-min=4.1km az=146.9*
CSEM ***29*** *11:50:04.3±0.1, 39˚.17N×27˚.95E, h8km, MD2.6, Error ellipse: s-maj=2.4km s-min=2.1km az=60.0*
DDA ***29*** *11:50:04.8, 39˚.07N×27˚.96E, h7km, Md2.6*

ISC 29 11:50:04.5±0.9, 39˚.17N±0˚.02×27˚.95E±0˚.02, h12km±10km, n54, σ0s61/63, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKS	**Akhisar**	**0.31**	**200**	*e*PG	**Pg**	**11 50 10.8**	**0.0**
AKS				*e*SG	**Sg**	**11 50 15.7**	**+0.6**
AKS	**Akhisar**	**0.31**	**200**	*e*Pg	**Pg**	**11 50 10.8**	**0.0**
AKS				*e*Sg	**Sg**	**11 50 15.7**	**+0.6**
BALB	**Balikesir**	**0.47**	**353**	*e*PG	**Pg**	**11 50 13.3**	**-0.4**
BALB				*e*SG	**Sg**	**11 50 20.3**	**+0.3**
BALB	**Balikesir**	**0.47**	**353**	*e*Pg	**Pg**	**11 50 13.3**	**-0.4**
BALB				*e*Sg	**Sg**	**11 50 20.3**	**+0.3**
DEMI	**Demirci**	**0.61**	**102**	*i* P	**Pg**	**11 50 16.3**	**-0.1**
DEMI				*i* S	**Sb**	**11 50 25.2**	**-0.5**
DEMI	**Demirci**	**0.61**	**102**	*i* P	**Pg**	**11 50 16.3**	**-0.1**
DEMI				S	**Sb**	**11 50 25.2**	**-0.5**
DST	**Dursunbey**	**0.67**	**50**	*e*PG	**Pg**	**11 50 17.2**	**-0.4**
DST	**Dursunbey**	**0.67**	**50**	*e*Pg	**Pg**	**11 50 17.2**	**-0.4**
DKL	**Dikili**	**0.82**	**263**	*e*PG	**Pg**	**11 50 19.2**	**-1.1**
DKL	**Dikili**	**0.82**	**263**	*e*Pg	**Pg**	**11 50 19.2**	**-1.1**
MANT	**Manisa**	**0.83**	**145**	*i* P	**Pg**	**11 50 19.4**	**-1.1**
MANT				*i* S	**Sg**	**11 50 30.0**	**-1.4**
MANT	**Manisa**	**0.83**	**145**	P	**Pg**	**11 50 19.4**	**-1.1**
KULA	**Kula-Manisa**	**0.86**	**140**	*e*PG	**Pg**	**11 50 21.0**	**-0.1**
KULA	**Kula-Manisa**	**0.86**	**140**	*e*Pg	**Pg**	**11 50 21.0**	**-0.1**
GONE	**Gonen-Balikesi**	**0.90**	**347**	*e*PG	**Pg**	**11 50 21.4**	**-0.4**
GONE	**Gonen-Balikesi**	**0.90**	**347**	*e*Pg	**Pg**	**11 50 21.4**	**-0.4**
IZM	**Izmir**	**0.94**	**215**	*e*PG	**Pg**	**11 50 22.3**	**-0.4**
IZM	**Izmir**	**0.94**	**215**	*e*Pg	**Pg**	**11 50 22.3**	**-0.4**
KCTX	**Karacabey (Bur**	**1.14**	**16**	*e*PN	**Pg**	**11 50 25.6**	**-0.7**
KCTX	**Karacabey (Bur**	**1.14**	**16**	*e*Pn	**Pg**	**11 50 25.6**	**-0.7**
EDC	**Edincik**	**1.17**	**357**	*e*PN	**Pg**	**11 50 26.5**	**-0.6**
EDC	**Edincik**	**1.17**	**357**	*e*Pn	**Pg**	**11 50 26.5**	**-0.6**
GDZ	**Gediz**	**1.19**	**94**	*i* P	**Pg**	**11 50 27.4**	**-0.3**
GDZ				*i* S	**Sg**	**11 50 42.5**	**-0.5**
GDZ	**Gediz**	**1.19**	**94**	P	**Pb**	**11 50 27.4**	**+0.3**
GDZ				S	**Sg**	**11 50 42.5**	**-0.5**
TVSB	**Tavsanli**	**1.20**	**76**	*e*PN	**Pb**	**11 50 27.5**	**+0.2**
TVSB	**Tavsanli**	**1.20**	**76**	*e*Pn	**Pb**	**11 50 27.5**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.23**	**182**	*e*PN	**Pb**	**11 50 27.7**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.23**	**182**	*e*Pn	**Pb**	**11 50 27.7**	**+0.1**
KRBG	**Karabiga-Canak**	**1.32**	**338**	*e*PN	**Pn**	**11 50 29.2**	**+0.5**
KRBG	**Karabiga-Canak**	**1.32**	**338**	*e*Pn	**Pn**	**11 50 29.2**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.39**	**31**	*e*PN	**Pb**	**11 50 30.6**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.39**	**31**	*e*Pn	**Pb**	**11 50 30.6**	**+0.1**
MRMT	**Marmara Adasi**	**1.46**	**349**	*e*PN	**Pn**	**11 50 31.1**	**+0.4**
MRMT	**Marmara Adasi**	**1.46**	**349**	*e*Pn	**Pn**	**11 50 31.1**	**+0.4**
LPK	**Lapseki**	**1.51**	**323**	*e*PN	**Pn**	**11 50 31.9**	**+0.5**
LPK	**Lapseki**	**1.51**	**323**	*e*Pn	**Pn**	**11 50 31.9**	**+0.5**
ARMT	**Armutlu**	**1.56**	**26**	*e*PN	**Pn**	**11 50 32.3**	**+0.3**
ARMT	**Armutlu**	**1.56**	**26**	*e*Pn	**Pn**	**11 50 32.3**	**+0.3**
RKY	**Sarkoy-Tekirda**	**1.63**	**339**	*e*PN	**Pn**	**11 50 33.5**	**+0.5**
RKY	**Sarkoy-Tekirda**	**1.63**	**339**	*e*Pn	**Pn**	**11 50 33.5**	**+0.5**
SIGR	**SIGRI**	**1.63**	**272**	*e*PN	**Pn**	**11 50 33.5**	**+0.5**
SIGR	**SIGRI**	**1.63**	**272**	*e*Pn	**Pn**	**11 50 33.5**	**+0.5**
IZI	**Iznik**	**1.65**	**45**	*e*PN	**Pn**	**11 50 33.8**	**+0.4**
IZI	**Iznik**	**1.65**	**45**	*e*Pn	**Pn**	**11 50 33.8**	**+0.4**
GELI	**Tayfur-Gelibol**	**1.67**	**318**	*e*PN	**Pn**	**11 50 34.1**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.67**	**318**	*e*Pn	**Pn**	**11 50 34.1**	**+0.5**
GADA	**Gvkgeada**	**1.88**	**303**	*e*PN	**Pn**	**11 50 37.0**	**+0.5**
GADA	**Gvkgeada**	**1.88**	**303**	*e*Pn	**Pn**	**11 50 37.0**	**+0.5**
ENEZ	**Enez**	**2.08**	**319**	*e*PN	**Pn**	**11 50 40.1**	**+0.9**
ENEZ	**Enez**	**2.08**	**319**	*e*Pn	**Pn**	**11 50 40.1**	**+0.9**
ALN	**Alexandroupoli**	**2.26**	**320**	*e*PN	**Pn**	**11 50 42.4**	**+0.7**
ALN	**Alexandroupoli**	**2.26**	**320**	*e*Pn	**Pn**	**11 50 42.4**	**+0.7**
GULT	**Gulveren**	**2.34**	**57**	*e*PN	**Pn**	**11 50 44.2**	**+1.3**
GULT	**Gulveren**	**2.34**	**57**	*e*Pn	**Pn**	**11 50 44.2**	**+1.3**

ISCJB ***29*** *12:06:22.5±0.6, 44˚.20N±0˚.04×11˚.92E±0˚.04, h31km±4km, Error ellipse: s-maj=7.8km s-min=3.7km az=29.9*
ROM ***29*** *12:06:22.6±0.2, 44˚.18N×11˚.93E, h7km±1km, Md2.2/20, Ml1.9/15, Error ellipse: s-maj=2.1km s-min=0.9km az=28.0*
CSEM ***29*** *12:06:22.2±0.3, 44˚.23N×11˚.98E, h10km, ML2.8/12, Error ellipse: s-maj=5.1km s-min=2.8km az=23.0*

ISC 29 12:06:22.9±1.0, 44˚.17N±0˚.03×11˚.94E±0˚.03, h23km±8km, n45, σ0s53/78, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.28**	**194**	Pg	**Pb**	**12 06 28.9**	**-0.5**
SFI				Sg	**Sb**	**12 06 34.2**	**+0.3**
	555nm,0.3s						
SFI	**Santa Sofia**	**0.28**	**194**	Pg	**Pb**	**12 06 28.9**	**-0.5**
SFI				Sg	**Sb**	**12 06 34.2**	**+0.3**
	555nm,0.3s						
T0502	**Localit` San**	**0.31**	**152**	Pg	**Pb**	**12 06 29.5**	**-0.4**
T0502				Sg	**Sb**	**12 06 35.8**	**+1.1**
	185nm,0.3s						
VMG	**Vicchio**	**0.35**	**233**	Pg	**Pb**	**12 06 30.2**	**-0.4**
VMG				Sg	**Sb**	**12 06 36.7**	**+0.8**
VMG	**Vicchio**	**0.35**	**233**	Pg	**Pb**	**12 06 30.2**	**-0.4**
VMG				Sg	**Sb**	**12 06 36.7**	**+0.8**
ASQU	**Asqua**	**0.39**	**196**	Pg	**Pb**	**12 06 30.7**	**-0.6**
ASQU				Sg	**Sb**	**12 06 37.4**	**+0.4**
	186nm,0.3s						
ASQU	**Asqua**	**0.39**	**196**	Pg	**Pb**	**12 06 30.7**	**-0.6**
ASQU				Sg	**Sb**	**12 06 37.4**	**+0.4**
	186nm,0.3s						
MTRZ	**Monterenzio**	**0.40**	**301**	Pg	**Pb**	**12 06 31.7**	**+0.4**
MTRZ				Sg	**Sb**	**12 06 37.7**	**+0.7**
	83nm,0.3s						
MTRZ	**Monterenzio**	**0.40**	**301**	Pg	**Pb**	**12 06 31.7**	**+0.4**
MTRZ				Sg	**Sb**	**12 06 37.7**	**+0.7**
	83nm,0.3s						
SEI	**Scarperia**	**0.43**	**254**	Pg	**Pb**	**12 06 31.6**	**-0.4**
SEI				Sg	**Sb**	**12 06 38.8**	**+0.7**
SEI	**Scarperia**	**0.43**	**254**	Pg	**Pb**	**12 06 31.6**	**-0.4**
SEI				Sg	**Sb**	**12 06 38.8**	**+0.7**
CPGN	**Carpegna, Ital**	**0.46**	**143**	Pg	**Pb**	**12 06 32.6**	**+0.1**
CPGN				Sg	**Sn**	**12 06 40.8**	**-1.0**
	18µm,14.0s						
CPGN	**Carpegna, Ital**	**0.46**	**143**	Pg	**Pb**	**12 06 32.6**	**+0.1**
CPGN				Sg	**Sn**	**12 06 40.8**	**-1.0**
	18µm,14.0s						
CRE	**Caprese Michel**	**0.55**	**179**	Pg	**Pb**	**12 06 33.9**	**-0.1**
CRE				Sg	**Sb**	**12 06 42.6**	**+1.0**
	90nm,0.2s						
CRE	**Caprese Michel**	**0.55**	**179**	Pg	**Pb**	**12 06 33.9**	**-0.1**
CRE				Sg	**Sb**	**12 06 42.6**	**+1.0**
	90nm,0.2s						
PARC	**Parchiule**	**0.57**	**157**	Pg	**Pb**	**12 06 33.8**	**-0.4**
PARC				Sg	**Sn**	**12 06 43.4**	**-0.8**
	42nm,0.3s						
PARC	**Parchiule**	**0.57**	**157**	Pg	**Pb**	**12 06 33.8**	**-0.4**
PARC				Sg	**Sn**	**12 06 43.4**	**-0.8**
	42nm,0.3s						
FNVD	**Fontana Vidola**	**0.59**	**270**	Pg	**Pb**	**12 06 34.3**	**-0.2**
FNVD				Sg	**Sb**	**12 06 43.0**	**+0.5**
	48nm,0.4s						
FNVD	**Fontana Vidola**	**0.59**	**270**	Pg	**Pb**	**12 06 34.3**	**-0.2**
FNVD				Sg	**Sb**	**12 06 43.0**	**+0.5**
	48nm,0.4s						
BADI	**Badiali**	**0.70**	**161**	Pg	**Pb**	**12 06 35.8**	**-0.6**
BADI				Sg	**Sn**	**12 06 46.9**	**-0.5**
	38nm,0.4s						
BADI	**Badiali**	**0.70**	**161**	Pg	**Pb**	**12 06 35.8**	**-0.6**
BADI				Sg	**Sn**	**12 06 46.9**	**-0.5**
	38nm,0.4s						
ATMC	**Monte Cedrone**	**0.75**	**166**	Pg	**Pb**	**12 06 37.7**	**+0.4**
ATMC	**Monte Cedrone**	**0.75**	**166**	Pg	**Pb**	**12 06 37.7**	**+0.4**
PIEI	**Pieia**	**0.77**	**146**	Pg	**Pb**	**12 06 37.3**	**-0.3**
PIEI				Sg	**Sn**	**12 06 48.9**	**-0.3**
	26nm,0.5s						
PIEI	**Pieia**	**0.77**	**146**	Pg	**Pb**	**12 06 37.3**	**-0.3**
PIEI				Sg	**Sn**	**12 06 48.9**	**-0.3**
	26nm,0.5s						
FSSB	**Fossombrone**	**0.77**	**128**	Pg	**Pn**	**12 06 38.9**	**+0.5**
FSSB				Sg	**Sn**	**12 06 49.4**	**+0.1**
	97nm,0.4s						
FSSB	**Fossombrone**	**0.77**	**128**	Pg	**Pn**	**12 06 38.9**	**+0.5**
FSSB				Sg	**Sn**	**12 06 49.4**	**+0.1**
	97nm,0.4s						
PZZT	**Monte Pizzetto**	**0.78**	**267**	Pg	**Pb**	**12 06 37.8**	**0.0**
	9.0nm,0.7s						
PZZT	**Monte Pizzetto**	**0.78**	**267**	Pg	**Pb**	**12 06 37.8**	**0.0**
	9.0nm,0.7s						
ATPC	**Poggio Castell**	**0.79**	**151**	Pg	**Pb**	**12 06 38.0**	**+0.1**
	25nm,0.6s						
ATPC	**Poggio Castell**	**0.79**	**151**	Pg	**Pb**	**12 06 38.0**	**+0.1**
	25nm,0.6s						
CRMI	**Carmignano**	**0.80**	**242**	Pg	**Pb**	**12 06 38.0**	**-0.1**
CRMI	**Carmignano**	**0.80**	**242**	Pg	**Pb**	**12 06 38.0**	**-0.1**
MPAG	**Monte Paganucc**	**0.81**	**132**	Pg	**Pb**	**12 06 38.7**	**+0.5**
MPAG				Sg	**Sn**	**12 06 50.2**	**+0.1**
MPAG	**Monte Paganucc**	**0.81**	**132**	Pg	**Pb**	**12 06 38.7**	**+0.5**
MPAG				Sg	**Sn**	**12 06 50.2**	**+0.1**
CSNT	**Castellina Chi**	**0.84**	**214**	Pg	**Pb**	**12 06 38.8**	**0.0**
CSNT	**Castellina Chi**	**0.84**	**214**	Pg	**Pb**	**12 06 38.8**	**0.0**
CAFI	**Castiglion Fio**	**0.84**	**179**	Pg	**Pb**	**12 06 38.6**	**-0.3**
CAFI	**Castiglion Fio**	**0.84**	**179**	Pg	**Pb**	**12 06 38.6**	**-0.3**
ATVO	**AVT- Monte Val**	**0.86**	**157**	Pg	**Pb**	**12 06 39.1**	**-0.1**
ATVO				Sg	**Sn**	**12 06 51.4**	**0.0**
	28nm,0.6s						
ATVO	**AVT- Monte Val**	**0.86**	**157**	Pg	**Pb**	**12 06 39.1**	**-0.1**
ATVO				Sg	**Sn**	**12 06 51.4**	**0.0**
	28nm,0.6s						
FRON	**Frontone**	**0.87**	**139**	Pg	**Pb**	**12 06 39.3**	**0.0**
FRON				Sg	**Sn**	**12 06 52.2**	**+0.6**
	23nm,0.4s						
FRON	**Frontone**	**0.87**	**139**	Pg	**Pb**	**12 06 39.3**	**0.0**
FRON				Sg	**Sn**	**12 06 52.2**	**+0.6**
	23nm,0.4s						
NVLJ	**Novalja**	**2.14**	**78**	*e*Pn	**Pn**	**12 06 56.1**	**-1.0**
NVLJ				Sn	**Sn**	**12 07 22.0**	**-0.8**
NVLJ	**Novalja**	**2.14**	**78**	*e*Pn	**Pn**	**12 06 56.0**	**-1.0**
NVLJ				Sn	**Sn**	**12 07 22.0**	**-0.8**

NIED ***29*** *12:13:00, 36˚.90N×140˚.70E, h14km, Mw3.7 Best double couple: M0 3.63000×10^14 NP1:φs37.00000°, δ57.00000°, λ1.00000°. NP2:φs307.00000°, δ89.00000°, λ147.00000°.*
IDC ***29*** *12:13:57.8±0.8, 36˚.84N×140˚.73E, h0km, mb3.7/12, mb1 3.8/15, mb1mx3.7/42, mbtmpg3.7/15, ML3.4/3, Error ellipse: s-maj=21.4km s-min=15.8km az=96.0*
ISCJB ***29*** *12:13:58.4±0.7, 36˚.85N±0˚.03×140˚.82E±0˚.05, h14km±4km, mb3.7/12, Error ellipse: s-maj=7.5km s-min=4.1km az=15.6*
JMA ***29*** *12:13:59.6, 36˚.88N×140˚.68E, h9km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φs180.00000°, δ50.00000°, λ-91.00000°. NP2:φs2.00000°, δ40.00000°, λ-89.00000°. Principal axes: T Plg5.0000°, Azm271.0000°; N Plg1.0000°, Azm181.0000°; P Plg85.0000°, Azm80.0000°;*
JMA Felt II J1.

ISC 29 12:13:59.6±1.0, 36˚.88N±0˚.03×140˚.68E±0˚.04, h10km±7km, n31, σ0s71/33, mb3.7/12, 6C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**22**	↑P	**Pg**	**12 14 04.6**	**0.0**
ONAJ				S	**Sg**	**12 14 08.0**	**+0.1**
JHO	**Hitachi**	**0.28**	**199**	↑P	**Pg**	**12 14 05.2**	**-0.1**
JHO				S	**Sg**	**12 14 09.1**	**0.0**
JFK	**Kawauchi**	**0.51**	**17**	P	**Pg**	**12 14 09.4**	**-0.2**
JFK				S	**Sg**	**12 14 16.1**	**-0.2**
JSB	**Shiboa**	**0.62**	**279**	↑P	**Pb**	**12 14 12.3**	**-0.2**
JFT	**Otama**	**0.70**	**337**	↑P	**Pg**	**12 14 13.1**	**0.0**
JFT				S	**Sg**	**12 14 22.6**	**+0.4**
JYT	**Yasato**	**0.76**	**211**	↑P	**Pg**	**12 14 13.7**	**-0.5**
JFY	**Yanaizu**	**0.94**	**304**	↑P	**Pg**	**12 14 17.5**	**-0.2**
JFY				S	**Sg**	**12 14 29.8**	**-0.2**
JMM	**Marumori**	**0.99**	**5**	↓P	**Pg**	**12 14 17.8**	**-0.8**
JMM				S	**Sg**	**12 14 30.9**	**-0.6**
MJAR	**Matsushiro Arr**	**2.02**	**261**	Pn	**Pn**	**12 14 34.2**	**+0.6**
	30nm,0.3s,baz=77,slow=17,SNR=236						
MJAR				Sn	**Sb**	**12 15 01.6**	**+0.2**
	33nm,0.3s,baz=78,slow=28,SNR=14						
MAT	**Matsushiro**	**2.02**	**261**	P	**Pn**	**12 14 34.6**	**+0.9**
MAT				S	**Sb**	**12 15 01.8**	**+0.3**
JHJ	**Hachijo jima 2**	**3.82**	**191**	Pn	**Pn**	**12 14 59.1**	**+0.7**
	8.1nm,0.3s,baz=58,slow=23,SNR=8.5						
JHJ				Sn	**Sn**	**12 15 43.6**	**+0.2**
	6.7nm,0.3s,baz=72,slow=20,SNR=2.8						
ASAJ	**Asahikawa**	**7.38**	**11**	Pn	**Pn**	**12 15 47.9**	**+0.7**
	0.5nm,0.3s,baz=204,slow=12,SNR=3.5						
USRK	**Usuriysk Ar.**	**9.86**	**321**	Pn	Pn	12 16 26.6	+5.3
	0.2nm,0.3s,baz=79,slow=12,SNR=5.4						
SEY	**Seymchan**	**27.06**	**12**	P	**P**	**12 19 42.2**	**+0.4**
	1.2nm,0.8s,baz=210,slow=5.3,SNR=3.2						
SONM	**Songino Array**	**27.39**	**304**	P	**P**	**12 19 45.3**	**+0.1**
	0.5nm,0.4s,baz=108,slow=9.3,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	12 49 41.4	
	baz=312,slow=75,SNR=190						
H11N1	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	12 49 41.7	
	baz=312,slow=75,SNR=252						
H11N3	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	12 49 42.5	
	baz=312,slow=75,SNR=257						
H11S1	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	12 50 34.2	
	baz=314,slow=76,SNR=83						
H11S3	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	12 50 33.3	
	baz=314,slow=76,SNR=104						
H11S2	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	12 50 34.5	
	baz=314,slow=76,SNR=70						
ZALV	**Zalesovo Beam**	**41.59**	**313**	P	**P**	**12 21 47.2**	**-0.1**
	0.4nm,0.3s,baz=122,slow=10,SNR=2.5						
MKAR	**Makanchi Array**	**43.71**	**302**	P	**P**	**12 22 04.0**	**-0.7**
	0.2nm,0.5s,baz=93,slow=8.7,SNR=2.9						
KURBB	**Kurchatov Arra**	**45.64**	**308**	P	**P**	**12 22 18.1**	**-1.9**
	1.1nm,0.4s,baz=78,slow=8.0,SNR=4.5						
ILAR	**Eielson Array**	**49.94**	**32**	P	**P**	**12 22 53.6**	**+0.4**
	0.2nm,0.7s,baz=270,slow=6.0,SNR=2.8						
BVAR	**Borovoye Array**	**50.24**	**312**	P	**P**	**12 22 56.5**	**+0.9**
	0.6nm,0.5s,baz=69,slow=12,SNR=4.0						
WRA	**Warramunga Arr**	**56.83**	**187**	P	**P**	**12 23 43.6**	**-0.7**
	1.0nm,0.6s,baz=3.6,slow=7.1,SNR=11						
ASAR	**Alice Springs**	**60.56**	**187**	P	**P**	**12 24 09.3**	**-0.8**
	0.4nm,0.7s,baz=355,slow=6.6,SNR=5.9						
FINES	**FINESS Array B**	**68.68**	**332**	P	**P**	**12 25 02.2**	**-0.6**
	1.3nm,0.8s,baz=79,slow=8.6,SNR=3.1						
NOA	**NORSAR Array B**	**74.10**	**337**	P	**P**	**12 25 37.5**	**+1.9**
	1.1nm,0.9s,baz=47,slow=5.9,SNR=3.0						
TXAR	**Lajitas Array**	**90.68**	**52**	P	**P**	**12 27 02.2**	**-0.6**
	0.2nm,0.6s,baz=321,slow=3.2,SNR=3.9						

NEIC ***29*** *12:17:02.2, 16˚.01N×98˚.51W, h5km, MD4.1(MEX), After MEX.*

MEX 29 12:17:02.4±0.4, 16˚.01N×98˚.51W, h5km±3km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.53**	**44**	*e*P	Pg	12 17 12.2	-0.3
PNIG				*e*S	Sg	12 17 19.7	+0.2
PNIG	**Pinotepa**	**0.53**	**44**	*e*P	Pg	12 17 12.2	-0.3
PNIG				*e*S	Sg	12 17 19.7	+0.2
TLIG	**Tlapa**	**1.54**	**358**	*e*P	Pn	12 17 27.1	-3.6
TLIG				*e*S	Sn	12 17 46.0	-5.2
ACX	**Acapulco**	**1.55**	**304**	*e*P	Pg	12 17 32.3	+0.1
ACX				*e*S	Sb	12 17 51.8	+0.2
ACX	**Acapulco**	**1.55**	**304**	*e*P	Pg	12 17 32.3	+0.1
ACX				*e*S	Sb	12 17 51.8	+0.2
ACP2	**Acapulco**	**1.57**	**303**	*i* P	Pn	12 17 27.9	-3.1
ACP2				*e*S	Sn	12 17 47.2	-4.6
CAIG	**El Cayaco**	**1.98**	**302**	*i* P	Pn	12 17 32.6	-3.9
CAIG				*e*S	Sn	12 17 56.8	-4.9
CAIG	**El Cayaco**	**1.98**	**302**	*e*P	Pn	12 17 30.6	-5.9
CAIG				*e*S	Sn	12 17 56.8	-4.9
VHO	**Vista Hermosa**	**2.00**	**58**	*e*P	Pn	12 17 34.4	-2.8
VHO				*e*S	Sn	12 17 57.8	-4.9
VHO	**Vista Hermosa**	**2.00**	**58**	*e*P	Pn	12 17 34.8	-2.3
VHO				*e*S	Sn	12 17 57.8	-4.9
MEIG	**Mezcala**	**2.18**	**331**	*e*P	Pn	12 17 35.6	-3.8
MEIG				*e*S	Sn	12 18 02.7	-4.1
MEIG	**Mezcala**	**2.18**	**331**	*e*P	Pn	12 17 35.6	-3.8
MEIG				*e*S	Sn	12 18 02.7	-4.1
HUIG	**Huatulco**	**2.32**	**96**	*e*P	Pn	12 17 38.3	-3.0
HUIG				*e*S	Sn	12 18 06.1	-4.2
HUIG	**Huatulco**	**2.32**	**96**	*e*P	Pn	12 17 41.7	+0.4
HUIG				*e*S	Sn	12 18 06.1	-4.2
PLIG	**Platanillo**	**2.55**	**338**	*e*P	Pn	12 17 40.7	-3.9
PLIG				*e*S	Sn	12 18 12.3	-3.7
PLIG	**Platanillo**	**2.55**	**338**	*e*P	Pn	12 17 40.7	-3.9
PLIG				*e*S	Sn	12 18 12.3	-3.7
ARIG	**Puente Sto Nin**	**2.86**	**322**	*e*P	Pn	12 17 45.8	-2.9
ARIG				*e*S	Sn	12 18 19.9	-3.6

ATH ***29*** *12:24:45.9, 40˚.47N×21˚.90E, h10km±31km, ML1.9/5, Error ellipse: s-maj=31.6km s-min=0.9km az=0.0*
THE ***29*** *12:24:46.4, 40˚.44N×21˚.86E, h12km±2km, ML1.7/5, Error ellipse: s-maj=2.3km s-min=0.6km az=190.0*
SKO ***29*** *12:24:47.7, 40˚.40N×21˚.91E, h16km, M1.7, ML2.0*

CSEM 29 12:24:46.5±0.2, 40˚.46N×21˚.84E, h1km, ML2.0, Error ellipse: s-maj=4.4km s-min=3.4km az=130.0, Suspected Mining explosion., Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZN	**Kozani**	**0.16**	**199**	P	Pg	12 24 49.4	-0.2
KZN				S	Sg	12 24 52.2	+0.5
KZN	**Kozani**	**0.16**	**199**	P	Pg	12 24 49.2	-0.4
KZN				S	Sg	12 24 52.2	+0.5
KTI	**Kastanea**	**0.22**	**108**	P	Pg	12 24 50.4	-0.4
KTI	**Kastanea**	**0.22**	**108**	P	Pg	12 24 50.4	-0.4
FNA	**Florina**	**0.48**	**313**	P	Pg	12 24 54.7	-1.0
FNA	**Florina**	**0.48**	**313**	P	Pg	12 24 55.1	-0.6
FNA				S	Sg	12 25 03.1	+1.2
FNA				AML	AML	12 25 11.0	
	comp=E,304µm,0.4s						
FNA				AML	AML	12 25 12.2	
	comp=N,304µm,0.4s						
FNA	**Florina**	**0.48**	**313**	P	Pg	12 24 54.7	-1.0
PENT	**Pentalofos**	**0.60**	**244**	P	Pg	12 24 58.4	+0.4
PENT				S	Sg	12 25 07.2	+1.5
PENT	**Pentalofos**	**0.60**	**244**	P	Pg	12 24 58.4	+0.4
PENT				S	Sg	12 25 07.2	+1.5
PENT	**Pentalofos**	**0.60**	**244**	P	Pg	12 24 58.5	+0.6
PENT				S	Sb	12 25 07.7	-1.1
PENT				AML	AML	12 25 12.4	
	comp=E,124µm,0.5s						
PENT				AML	AML	12 25 15.9	
	comp=N,215µm,0.6s						
PENT	**Pentalofos**	**0.60**	**244**	P	Pb	12 24 59.0	-0.8
LIT	**Litokhoron**	**0.61**	**126**	P	Pg	12 24 57.3	-0.9
LIT				S	Sg	12 25 06.8	+0.6
LIT	**Litokhoron**	**0.61**	**126**	P	Pg	12 24 57.3	-0.9
LIT				S	Sg	12 25 06.8	+0.6
LIT	**Litokhoron**	**0.61**	**126**	P	Pg	12 24 57.6	-0.6
LIT				S	Sg	12 25 05.6	-0.5
LIT				AML	AML	12 25 07.2	
	comp=E,250µm,0.5s						
LIT				AML	AML	12 25 08.3	
	comp=N,189µm,0.4s						
LIT	**Litokhoron**	**0.61**	**126**	P	Pg	12 24 57.5	-0.7
KPRO	**Kipourio**	**0.62**	**216**	P	Pg	12 24 58.3	-0.1
KPRO				S	Sg	12 25 06.9	+0.4
KPRO	**Kipourio**	**0.62**	**216**	P	Pg	12 24 58.6	+0.2
KPRO				S	Sg	12 25 06.9

URZ				S	**S**	12 37 55.1	-2.4	
	6.9nm,0.3s,baz=78,slow=21,SNR=22							
URZ	**Urewera**	**14.48**	**189**	*e*P	**P**	12 35 22.5	-3.1	
URZ				*e*S	**S**	12 37 57.5	-0.1	
URZ	**Urewera**	**14.48**	**189**	*e*PN	**P**	12 35 22.5	-3.1	
MWZ	**Matawai**	**14.49**	**188**	*e*PN	**P**	12 35 24.6	-1.2	
MWZ				*e*SN	**S**	12 37 55.9	-2.1	
BKZ	**Black Stump Fm**	**15.46**	**191**	*e*P	**P**	12 35 35.8	-0.1	
	20nm,0.7s							
BKZ				*e*S	**S**	12 38 15.0	-1.2	
BFZ	**Birch Farm**	**16.98**	**190**	*e*P	**P**	12 35 49.8	-1.3	
	60nm,0.6s							
BFZ				*e*S	**S**	12 38 44.4	+2.0	
THZ	**Tophouse**	**18.74**	**197**	*e*P	**P**	12 36 07.2	0.0	
	58nm,0.7s							
THZ	**Tophouse**	**18.74**	**197**	*e*PN	**P**	12 36 06.3	-1.0	
THZ				*e*SN	**S**	12 39 08.3	-2.8	
KHZ	**Kahutara**	**19.19**	**195**	*e*P	**P**	12 36 10.9	-0.3	
	84nm,0.9s							
KHZ	**Kahutara**	**19.19**	**195**	*e*PN	**P**	12 36 10.5	-0.7	
LTZ	**Lake Taylor**	**19.86**	**197**	*e*P	**P**	12 36 16.5	-0.9	
	74nm,0.6s							
LHI	**Lord Howe Isla**	**20.06**	**243**	*e*P	**P**	12 36 21.4	+2.1	
	91nm,0.9s							
OXZ	**Oxford**	**20.43**	**197**	*e*P	**P**	12 36 21.8	-0.7	
	97nm,0.8s							
OXZ	**Oxford**	**20.43**	**197**	*e*PN	**P**	12 36 21.6	-0.9	
WVZ	**Waitaha Valley**	**20.57**	**200**	*e*PN	**P**	12 36 21.3	-2.5	
MQZ	**McQueen's Vall**	**20.62**	**195**	*e*PN	**P**	12 36 23.2	-1.1	
RPZ	**Rata Peaks**	**21.06**	**198**	P	**P**	12 36 27.1	-1.1	
	30nm,0.6s,baz=312,slow=2.0,SNR=22							
RPZ				S	**S**	12 39 47.9	-0.3	
	11nm,0.8s,baz=143,slow=20,SNR=3.5							
RPZ	**Rata Peaks**	**21.06**	**198**	*e*P	**P**	12 36 29.0	+0.8	
	35nm,0.6s							
WHZ	**Wether Hill Ro**	**23.98**	**201**	*e*P	**P**	12 36 55.6	+1.2	
	56nm,0.7s							
ARMA	**Armidale**	**26.08**	**249**	*e*P	**P**	12 37 14.7	+1.3	
	28nm,0.6s							
EIDS	**Eidsvold**	**26.38**	**261**	*e*P	**P**	12 37 16.1	+0.1	
	27nm,0.8s							
CAN	**Canberra**	**29.19**	**240**	*e*P	**P**	12 37 41.2	+0.8	
	53nm,0.9s							
CTA	**Charters Tower**	**31.56**	**270**	P	**P**	12 38 01.2	+0.1	
	37nm,0.4s,baz=93,slow=11,SNR=72							
CTAO	**Charters Tower**	**31.56**	**270**	*e*P	**P**	12 38 01.2	+0.1	
	68nm,1.1s							
TAU	**Tasmania Unive**	**32.96**	**227**	*e*P	**P**	12 38 13.5	+0.9	
	31nm,0.6s							
STKA	**Stephens Creek**	**34.78**	**248**	P	**P**	12 38 28.3	+0.2	
	13nm,0.6s,baz=96,slow=10,SNR=20							
STKA				PcP	**PcP**	12 40 47.4	+0.5	
	4.3nm,0.7s,baz=48,slow=6.0,SNR=3.7							
STKA	**Stephens Creek**	**34.78**	**248**	*e*P	**P**	12 38 28.4	+0.3	
	9.4nm,1.3s							
BBOO	**Buckleboo**	**39.50**	**247**	*e*P	**P**	12 39 06.2	-0.7	
	30nm,0.8s							
AS01	**Alice Springs**	**42.07**	**261**	*e*P	**P**	12 39 26.8	-0.7	
AS01				*e*PcP	**PcP**	12 41 10.9	+0.6	
AS31	**Alice Springs**	**42.11**	**261**	*e*P	**P**	12 39 27.4	-0.4	
	10nm,0.6s							
ASAR	**Alice Springs**	**42.11**	**261**	P	**P**	12 39 27.4	-0.5	
	38nm,0.9s,baz=95,slow=7.0,SNR=252							
ASAR				PcP	**PcP**	12 41 10.5	+0.1	
	4.1nm,0.8s,baz=103,slow=3.9,SNR=4.6							
ASAR				ScP	**ScP**	12 44 14.6	+3.3	
	7.1nm,0.9s,baz=105,slow=4.1,SNR=17							
ASAR				S	**S**	12 45 09.2	-0.5	
	1.9nm,0.7s,baz=97,slow=15,SNR=6.7							
ASAR				ScS	**SS**	12 48 34.5	-1.4	
	1.3nm,1.1s,baz=107,slow=6.2,SNR=4.1							
WB2	**Warramunga Ar**	**42.48**	**266**	*e*P	**P**	12 39 29.6	-1.1	
WRAB	**Tennant Creek**	**42.48**	**266**	*e*P	**P**	12 39 29.7	-1.1	
	38nm,0.8s							
WRA	**Warramunga Arr**	**42.49**	**266**	P	**P**	12 39 29.7	-1.1	
	36nm,0.6s,baz=96,slow=8.4,SNR=974							
WRA				PcP	**PcP**	12 41 12.1	+0.4	
	3.3nm,0.7s,baz=98,slow=3.6,SNR=5.1							
WRA				ScP	**ScP**	12 44 16.4	+3.5	
	4.8nm,0.7s,baz=102,slow=4.1,SNR=8.0							
WRA				S	**S**	12 45 13.7	-1.5	
	3.3nm,1.0s,baz=100,slow=14,SNR=4.4							
JAY	**Jayapura**	**43.62**	**293**	P	**P**	12 39 38.4	-1.3	
	2.0nm,0.9s,baz=89,slow=23,SNR=4.5							
FORT	**Forrest**	**46.37**	**250**	*e*P	**P**	12 39 59.6	-1.0	
	1μm,0.6s							
FITZ	**Fitzroy Crossi**	**50.91**	**266**	*e*P	**P**	12 40 34.1	-0.4	
	25nm,0.9s							
SBA	**Scott Base**	**54.32**	**183**	*e*P	**P**	12 41 01.4	+3.5	
	35nm,0.9s							
VNDA	**Vanda**	**54.33**	**185**	P	**P**	12 40 59.8	+1.8	
	4.8nm,0.7s,baz=12,slow=7.4,SNR=30							
VNDA				PcP	**PcP**	12 41 55.6	+1.7	
	2.9nm,0.6s,baz=341,slow=5.8,SNR=6.6							
VNDA	**Vanda**	**54.33**	**185**	*e*P	**P**	12 40 59.9	+1.8	
	6.2nm,0.8s							
SOEI	**Soe**	**54.94**	**275**	*e*P	**P**	12 41 04.2	+0.7	
	122nm,1.2s							
MBWA	**Marble Bar**	**55.45**	**260**	*e*P	**P**	12 41 05.8	-1.0	
	37nm,1.0s							
QSPA	**South Pole Qui**	**66.12**	**180**	*e*P	**P**	12 42 18.0	+1.5	
SBUM	**Sibu**	**70.91**	**282**	*e*P	**P**	12 42 46.2	-0.1	
	13nm,1.4s							
MJAR	**Matsushiro Arr**	**72.00**	**326**	P	**P**	12 42 51.4	-0.7	
	2.1nm,0.9s,baz=154,slow=5.6,SNR=4.9							
KSM	**Kuching**	**72.20**	**280**	*e*P	**P**	12 42 53.4	-0.5	
	22nm,0.8s							
MAW	**Mawson**	**77.72**	**200**	P	**P**	12 43 24.7	+0.9	
	16nm,0.6s,baz=134,slow=5.9,SNR=41							
MAW	**Mawson**	**77.72**	**200**	*e*P	**P**	12 43 25.2	+1.5	
	4.1nm,0.8s							
PMSA	**Palmer Station**	**78.82**	**157**	P	**P**	12 43 31.3	+1.7	
	4.2nm,0.5s,baz=247,slow=3.2,SNR=4.7							
USRK	**Ussuriysk Ar.**	**80.86**	**327**	P	**P**	12 43 41.4	+0.7	
	3.2nm,0.8s,baz=134,slow=4.2,SNR=7.1							
AFDM	**Forest Hills D**	**83.38**	**42**	*e*P	**P**	12 43 54.2	+0.6	
	4.4nm,1.0s							
GSC	**Goldstone, Bar**	**83.90**	**47**	*e*P	**P**	12 43 57.4	+1.0	
	3.1nm,0.9s							
CN2	**Changchun**	**83.99**	**324**	*e*P	**P**	12 43 56.5	0.0	
WAKR	**Walker**	**84.06**	**43**	*e*P	**P**	12 43 58.4	+1.1	
	7.0nm,1.2s							
PNTR	**Pine Nut**	**84.31**	**43**	*e*P	**P**	12 43 59.1	+0.6	
	5.2nm,0.9s							
SNAA	**Sanae**	**84.60**	**179**	*e*P	**P**	12 43 59.2	-0.1	
	4.7nm,0.7s							
KLR	**Kul'dur**	**84.63**	**331**	P	**P**	12 44 00.8	+1.3	
	0.4nm,0.3s,baz=138,slow=5.9,SNR=4.0							
SKNT	**Sakolnakorn**	**84.67**	**291**	P	**P**	12 44 01.5	+1.1	
	65nm,1.4s							
LDFC	**Landfair**	**84.92**	**48**	*e*P	**P**	12 44 02.7	+1.3	
	7.0nm,0.6s							
NONG	**Nongkai**	**85.87**	**292**	P	**P**	12 44 07.9	+1.7	
	50nm,2.1s							
TUC	**Tucson**	**86.49**	**52**	*e*P	**P**	12 44 10.9	+2.0	
	4.1nm,0.8s							
ENH	**Enshi**	**86.55**	**305**	*e*P	**P**	12 44 10.1	+0.8	
GYA	**Guiyang**	**86.85**	**301**	*e*P	**P**	12 44 11.0	+0.1	
GYA				pmax	pmax			
	comp=Z,10.0nm,1.0s							
319A	**Douglas**	**87.11**	**54**	*e*P	**P**	12 44 13.8	+1.8	
	comp=Z,5.9nm,0.9s							
LCMT	**Little Creek M**	**87.25**	**47**	*e*P	**P**	12 44 13.7	+1.2	
	comp=Z,1.8nm,0.9s							
CCUT	**Cedar City**	**87.46**	**47**	*e*P	**P**	12 44 14.8	+1.2	
	comp=Z,2.1nm,0.9s							
U15A	**North Rim**	**87.58**	**48**	*e*P	**P**	12 44 15.6	+1.3	
	comp=Z,4.3nm,1.0s							
G08A	**Pilot Rock**	**88.42**	**38**	*e*P	**P**	12 44 18.5	+0.7	
	comp=Z,9.4nm,1.5s							
LAMP	**Lampang**	**89.07**	**291**	P	**P**	12 44 23.9	+2.7	
	comp=Z,4.9nm,1.0s							
KMI	**Kunming**	**89.37**	**298**	P	**P**	12 44 24.5	+1.7	
KMI				pmax	pmax			
	comp=Z,20nm,0.6s							
CM01	**Chiang Mai Arr**	**89.60**	**290**	*e*P	**P**	12 44 24.7	+1.0	
CMAR	**Chiang Mai Arr**	**89.63**	**290**	P	**P**	12 44 24.3	+0.5	
	comp=Z,4.9nm,0.9s,baz=138,slow=3.2,SNR=23							
CMMT	**Chiang Mai**	**89.78**	**291**	P	**P**	12 44 26.5	+2.0	
	comp=Z,12nm,1.0s							
CHTO	**Chiang Mai**	**89.78**	**291**	P	**P**	12 44 26.5	+2.0	
	comp=Z,52nm,1.0s							
CHTO	**Chiang Mai**	**89.78**	**291**	*e*P	**P**	12 44 26.2	+1.6	
	comp=Z,10nm,1.0s							
TMUT	**Trail Mountain**	**89.82**	**46**	*e*P	**P**	12 44 26.0	+1.3	
	comp=Z,5.8nm,0.8s							
WMUT	**West Mountain**	**89.82**	**45**	*e*P	**P**	12 44 24.9	+0.3	
CMAI	**Chiengmai2**	**90.17**	**292**	P	**P**	12 44 28.1	+1.6	
	comp=Z,81nm,1.4s							
MNTX	**Cornudas Mount**	**90.18**	**55**	*e*P	**P**	12 44 27.2	+1.1	
	comp=Z,5.9nm,1.5s							
SRU	**San Rafael Swe**	**90.18**	**47**	*e*P	**P**	12 44 26.9	+0.7	
	comp=Z,4.0nm,0.8s							
TX31	**Lajitas Ar. Si**	**90.39**	**58**	*e*P	**P**	12 44 27.7	+0.5	
TXAR	**Lajitas Array**	**90.39**	**58**	P	**P**	12 44 28.0	+0.8	
	comp=Z,1.8nm,0.7s,baz=214,slow=6.5,SNR=29							
HHC	**Hu-ho-hao-te**	**90.53**	**315**	*e*P	**P**	12 44 28.3	+0.7	
HHC				pmax	pmax			
	comp=Z,13nm,0.7s							
HHC				pmax	pmax			
	comp=Z,59nm,4.2s							
ILAR	**Eielson Array**	**92.07**	**14**	P	**P**	12 44 34.2	+0.1	
	comp=Z,0.2nm,0.8s,baz=217,slow=4.4,SNR=2.8							
PDAR	**Pinedale Array**	**92.67**	**44**	P	**P**	12 44 37.7	0.0	
	comp=Z,0.6nm,0.7s,baz=190,slow=4.0,SNR=6.5							
ZALV	**Zalesovo Beam**	**112.06**	**321**	PKiKP	**PKiKP**	12 49 55.4	-1.5	
	comp=Z,0.4nm,0.3s,baz=40,slow=2.5,SNR=2.3							
MKAR	**Makanchi Array**	**112.26**	**313**	PKiKP	**PKiKP**	12 49 56.5	-1.1	
	comp=Z,0.7nm,0.6s,baz=140,slow=1.1,SNR=8.3							
KURBB	**Kurchatov Arra**	**115.35**	**316**	PKP	**PKPdf**	12 50 02.5	-0.8	
	comp=Z,1.4nm,0.2s,baz=94,slow=2.0,SNR=6.1							
KSH	**Kashi**	**115.38**	**304**	*e*PKP	**PKPdf**	12 50 01.3	-2.6	
KSH				*e*PP	**PP**	12 51 17.3	+2.1	
KSH				*es*PKP		12 52 59.0		
KSH				SKS	**SKSdf**	12 56 21.3	-5.3	
KSH				SKKS	**SKKSac**	12 57 12.5	-9.1	
KSH	**Kashi**	**115.38**	**304**	SS	SS	13 06 32.8	-1.3	
KSH				AMB	AMB			
	comp=Z,94nm,4.7s							
BVAR	**Borovoye Array**	**120.54**	**319**	PKP	**PKPdf**	12 50 12.1	-1.2	
	comp=Z,2.3nm,0.5s,baz=90,slow=3.0,SNR=10							
BOSA	**Boshof**	**122.39**	**206**	PKP	**PKPdf**	12 50 18.1	+0.3	
	comp=Z,3.7nm,0.8s,baz=50,slow=8.2,SNR=4.4							
SCHQ	**Schefferville**	**122.47**	**39**	SKP		12 53 04.4		
	comp=Z,2.5nm,0.5s,baz=270,slow=4.0,SNR=3.3							
ARU	**Ati**	**126.99**	**324**	PKP	**PKPdf**	12 50 24.8	-0.7	
	comp=Z,3.3nm,0.4s,baz=54,slow=3.0,SNR=5.6							
AKTO	**Aktyubinsk**	**128.40**	**316**	PKP	**PKPdf**	12 50 28.2	-0.2	
	comp=Z,1.9nm,0.6s,baz=95,slow=2.7,SNR=5.5							
GEYT	**Alibeck**	**129.07**	**300**	PKP	**PKPdf**	12 50 28.9	-1.3	
	comp=Z,1.2nm,0.3s,baz=56,slow=2.6,SNR=7.5							
ARCES	**ARCESS Array B**	**131.97**	**348**	PKP	**PKPdf**	12 50 33.4	-1.2	
	comp=Z,2.5nm,0.8s,baz=355,slow=1.5,SNR=8.9							
ARCES				SKPbc	**SKPbc**	12 53 12.7	+0.8	
	comp=Z,5.6nm,0.8s,baz=35,slow=3.3,SNR=16							
FINES	**FINESS Array B**	**138.53**	**341**	PKiKP	PKPpre	12 50 38.2		
	comp=Z,4.0nm,1.1s,baz=50,slow=4.3,SNR=4.2							
FINES				PKP	**PKPdf**	12 50 47.5	+0.5	
	comp=Z,0.8nm,0.4s,baz=14,slow=1.0,SNR=5.6							
FINES				SKP		12 53 34.0		
	comp=Z,6.4nm,0.7s,baz=58,slow=3.4,SNR=16							
NB2	**NORSAR Subarra**	**142.16**	**351**	PKP	**PKPdf**	12 50 49.3	-4.3	
	comp=Z,0.7nm,0.7s,baz=10,slow=3.2							
NOA	**NORSAR Array B**	**142.16**	**351**	PKiKP	PKPpre	12 50 49.0		
	comp=Z,0.3nm,0.8s,baz=52,slow=1.5,SNR=4.2							
NOA				SKPbc	**SKiKP**	12 53 43.7	+0.4	
	comp=Z,2.0nm,0.7s,baz=12,slow=4.4,SNR=5.5							
AKASG	**Malin Array Be**	**145.07**	**327**	PKP	**PKPdf**	12 50 58.5	-0.4	
	comp=Z,5.5nm,0.6s,baz=42,slow=4.5,SNR=23							
AKASG				SKPbc	**SKiKP**	12 53 51.1	+1.6	
	comp=Z,0.7nm,0.3s,baz=46,slow=3.3,SNR=7.2							
AKBB	**Malin Array Si**	**145.07**	**327**	*e*PKPdf	**PKPdf**	12 50 58.3	-0.6	
KIEV	**Kiev**	**145.08**	**327**	*e*PKPdf	**PKPdf**	12 50 58.5	-0.5	
AK11	**Malin Array Si**	**145.11**	**327**	*e*PKPdf	**PKPdf**	12 50 58.5	-0.5	
SORM	**Soroca**	**147.10**	**324**	⇓*i*P	**PKPbc**	12 51 05.5	0.0	
BR131	**Keskin Array S**	**147.69**	**307**	*e*PKPbc	**PKPbc**	12 51 07.5	0.0	
BR131				*e*PKPab	**PKPab**	12 51 12.8	+1.2	
BRTR	**Keskin Array B**	**147.69**	**307**	PKPbc	**PKPbc**	12 51 06.8	-0.8	
	comp=Z,4.2nm,0.8s,baz=137,slow=3.6,SNR=14							
BRTR				PKPab	**PKPab**	12 51 11.7	0.0	
	comp=Z,5.0nm,0.7s,baz=81,slow=2.8,SNR=16							
BR231	**Keskin MP Arra**	**148.27**	**308**	*e*PKPdf	**PKPdf**	12 51 04.2	-0.6	
BR231				*e*PKPbc	**PKPbc**	12 51 08.3	-0.6	
BR231				*e*PKPab	**PKPab**	12 51 13.5	-0.6	
EKA	**Eskdalemuir Ar**	**148.57**	**4**	PKPbc	**PKPbc**	12 51 08.0	-1.0	
	comp=Z,0.5nm,0.3s,baz=328,slow=3.0,SNR=3.6							
CFR	**Carcaliu**	**148.94**	**320**	⇑*i*P	**PKPbc**	12 51 11.0	+0.8	
TESR	**Tescani**	**149.01**	**323**	⇓*i*P	**PKPbc**	12 51 09.3	-1.1	
BUR08	**Bucovina Ar. S**	**149.06**	**326**	*e*PKPbc	**PKPbc**	12 51 11.5	+0.9	
BURAR	**Bucovina Array**	**149.07**	**326**	⇑*i*P	**PKPbc**	12 51 10.9	+0.3	
CSS	**Mathiatis**	**149.19**	**299**	*e*PKPbc	**PKPbc**	12 51 11.2	0.0	
TLB	**Topalu**	**149.32**	**319**	⇑*i*P	**PKPbc**	12 51 11.1	0.0	
PLOR	**Plostina**	**149.41**	**322**	⇑*i*P	**PKPbc**	12 51 11.8	+0.4	
OJC	**Ojcow**	**149.63**	**335**	*e*PKP	**PKPbc**	12 51 12.2	+0.5	
STHS	**Stebnicka Huta**	**149.66**	**332**	*e*PKP	**PKPbc**	12 51 12.0	+0.1	
CRVS	**Cervenica-Dubn**	**149.95**	**331**	*e*PKP	**PKPbc**	12 51 13.2	+0.6	
MLR	**Muntele Rosu**	**150.02**	**322**	⇓*i*P	**PKPbc**	12 51 12.3	-0.7	
MLR	**Muntele Rosu**	**150.02**	**322**	*e*PKPbc	**PKPbc**	12 51 12.7	-0.3	
DOPR	**Dopca**	**150.03**	**323**	⇑*i*P	**PKPbc**	12 51 14.1	+1.2	
NIE	**Niedzica**	**150.06**	**333**	*e*PKP	**PKPbc**	12 51 14.0	+1.1	
KSP	**Ksiaz**	**150.38**	**339**	*e*PKP	**PKPbc**	12 51 14.2	+0.8	
VOIR		**150.55**	**323**	⇓*i*P	**PKPbc**	12 51 14.2	0.0	
OKC	**Ostrava-Krasne**	**150.57**	**336**	*e*PKP	**PKPbc**	12 51 14.6	+0.7	
LANS	**Liptovska Anna**	**150.61**	**334**	*e*PKP	**PKPbc**	12 51 15.3	+1.2	
DPC	**Dobruska-Polom**	**150.79**	**338**	*e*PKP	**PKPbc**	12 51 15.1	+0.6	
ARR	**Argos**	**150.82**	**323**	⇑*i*P	**PKPbc**	12 51 15.1	+0.3	
MORC	**Moravsky Berou**	**150.84**	**336**	⇑*i*P	**PKPbc**	12 51 15.4	+0.8	
MORC	**Moravsky Berou**	**150.84**	**336**	*e*PKPbc	**PKPbc**	12 51 15.1	+0.4	
DRGR		**150.89**	**327**	⇑*i*P	**PKPbc**	12 51 15.3	+0.4	
CLL	**Collm**	**150.94**	**343**	⇓*i*PKP	**PKPbc**	12 51 15.1	+0.4	
	comp=Z,15nm,0.9s							
CLL				*ep*PKP	**pPKPdf**	12 53 19.0	+7.1	
CLL	**Collm**	**150.94**	**343**	*e*PKPbc	**PKPbc**	12 51 15.1	+0.3	
BRG	**Berggiesshubel**	**151.07**	**342**	*i* PKP	**PKPbc**	12 51 15.3	+0.2	
	comp=Z,13nm,1.1s							
BRG				*e*		12 53 18.7		
	comp=Z,9.0nm,1.5s							
PVCC	**Panska Ves**	**151.19**	**341**	⇑*e*PKP	**PKPbc**	12 51 15.7	+0.4	
VYHS	**Vyhne**	**151.38**	**334**	*e*PKP	**PKPbc**	12 51 16.3	+0.4	
VYHS				*e*		12 51 27.0		
VRAC	**Vranov**	**151.58**	**337**	⇑*i*P	**PKPab**	12 51 24.8	-2.5	
SIRR	**Siria**	**151.77**	**327**	⇑*i*P	**PKPbc**	12 51 17.7	+0.9	
GZR	**Gura Zlata**	**151.80**	**325**	⇑*i*P	**PKPbc**	12 51 17.0	0.0	
BZS	**Buzias**	**152.25**	**326**	⇑*i*P	**PKPbc**	12 51 17.8	-0.1	
KHC	**Kasperske Hory**	**152.73**	**340**	⇑*e*PKP	**PKPbc**	12 51 18.9	0.0	
MDVR	**Moldovita**	**152.77**	**325**	⇑*i*P	**PKPbc**	12 51 18.3	-0.8	
GERES	**GERESS Array B**	**152.94**	**340**	PKPbc	**PKPbc**	12 51 19.6	+0.2	
	comp=Z,0.8nm,0.5s,baz=53,slow=0.7,SNR=11							
GEA0	**GERESS Array S**	**152.95**	**340**	*e*PKPbc	**PKPbc**	12 51 19.1	-0.3	
TAM	**Tamanrasset**	**174.88**	**258**	*e*PKPab	**PKPab**	12 53 12.4	+1.8	

*KRNET **29** 12:43:36.7±0.1, 42°.07N×70°.44E, mb2.5*
*SOME **29** 12:43:36.6, 42°.15N×70°.42E, h0km*
*NNC **29** 12:43:37.5±0.1, 42°.22N×70°.40E, h6km±4km, mb3.1, mpv3.1, Error ellipse: s-maj=3.3km s-min=0.9km az=106.0*

ISC 29 12:43:36.8±1.3, 42°.20N±0°.04×70°.40E±0°.03, h2km±12km, n19, σ1°916/38, 19C-9D, Central Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
IUG	**Iuzhnay**	**0.28**	**259**	*e*P	**Pg**	12 43 42.4	+0.2
	329nm,0.2s						
IUG				*e*S	**Sg**	12 43 45.9	+0.1
	2μm,0.2s						
BRLS	**Borolday**	**0.79**	**318**	*e*P	**Pg**	12 43 52.3	+0.4
	8.5nm,0.1s						
BRLS				*e*S	**Sb**	12 44 03.5	-1.0
	65nm,0.1s						
KK07	**Karatay Array**	**0.89**	**5**	⇑P	**Pb**	12 43 54.5	-0.4
KK07				⇓S	**Sb**	12 44 06.7	-0.6
KK06	**Karatay Array**	**0.90**	**6**	⇑P	**Pg**	12 43 54.6	+0.6
KK06				⇑S	**Sb**	12 44 06.9	-0.6
KK03	**Karatay Array**	**0.90**	**5**	⇑P	**Pg**	12 43 54.7	+0.6
KK03				⇓S	**Sb**	12 44 07.3	-0.4
KK02	**Karatay Array**	**0.90**	**5**	⇑P	**Pg**	12 43 54.8	+0.7
KK02				⇑S	**Sb**	12 44 07.2	-0.6
KK08	**Karatay Array**	**0.90**	**4**	⇑P	**Pg**	12 43 54.8	+0.6
KK08				⇑S	**Sb**	12 44 07.3	-0.4
KK31	**Karatay Array**	**0.90**	**5**	⇑P	**Pg**	12 43 54.8	+0.7
	14nm,0.1s,baz=234,slow=11,SNR=268						
KK31				⇑S	**Sb**	12 44 07.2	-0.5
	29nm,0.1s,baz=186,slow=32,SNR=20						
KK01	**Karatay Array**	**0.91**	**5**	⇑P	**Pg**	12 43 54.8	+0.6
KK01				⇑S	**Sb**	12 44 07.4	-0.4
KK04	**Karatay Array**	**0.91**	**5**	⇑P	**Pb**	12 43 54.9	-0.4
KK04				⇑S	**Sb**	12 44 07.5	-0.4
KK05	**Karatay Array**	**0.92**	**6**	⇓P	**Pg**	12 43 55.0	+0.6
KK05				⇓S	**Sb**	12 44 07.7	-0.4
MNAS	**Manas**	**1.58**	**79**	⇓*i*P	**Pn**	12 44 06.2	+0.1
	baz=74						
MNAS				⇓*i*S	**Sg**	12 44 28.9	+1.2
	baz=74						
MNAS	**Manas**	**1.58**	**79**	⇑P	**Pn**	12 44 06.1	0.0
	1.7nm,0.2s						
MNAS				⇓S	**Sb**	12 44 27.1	-0.4
	21nm,0.5s						
MRKS	**Merke**	**2.16**	**75**	*e*P	**Pb**	12 44 16.8	+0.2
	6.4nm,0.2s						
MRKS				*e*S	**Sg**	12 44 45.9	-0.3
	21nm,0.3s						
BTK	**Batken**	**2.17**	**171**	⇑*e*P	**Pn**	12 44 13.3	-0.7
	baz=172						
BTK				⇑*e*S	**Sn**	12 44 42.2	+0.8
	baz=172						
EKS2	**Erkin-Say**	**2.54**	**78**	⇑*i*P	**Pb**	12 44 23.6	+0.4
	baz=75						
EKS2				⇑*i*S	**Sb**	12 44 55.3	+0.3
	baz=75						
ARLS	**Aral**	**2.94**	**95**	⇓*e*P	**Pn**	12 44 26.3	+1.6
	baz=93						
ARLS				⇓*i*S	**Sb**	12 45 03.3	-3.2
	baz=93						
BMNS	**Besmoynak**	**3.99**	**75**	*e*P	**Pb**	12 44 50.3	+2.3
BMNS				*e*S	**Sg**	12 45 42.9	-2.0
DGS	**Degeres**	**4.09**	**73**	*e*P	**Pb**	12 44 50.1	+0.5
	1.7nm,0.5s						
DGS				*e*S	**Sg**	12 45 44.6	-3.6
	4.2nm,0.3s						

*ISCJB **29** 13:03:03.6±0.5, 2°.63N±0°.06×128°.39E±0°.06, h250km, mb4.0/9, Error ellipse: s-maj=9.2km s-min=7.7km az=41.1*
*DJA **29** 13:03:07.1±0.7, 2°.1N±10°×12°.8E±°, h238km±23km, M4.4/7, mb4.5/6, mB4.9/3, MLv4.4/7, Mw(mB)4.2/3*
*IDC **29** 13:03:11.4±4.6, 2°.55N×128°.57E, h320km±49km, mb3.7/10, mb1 3.8/12, mb1mx3.4/36, mbtmp4.3/12, Error ellipse: s-maj=32.4km s-min=12.0km az=60.0*

ISC 29 13:03:05.5±0.7, 2°.53N±0°.08×128°.42E±0°.08, h250km, n21, σ1°993/23, mb4.1/9, 1C, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LBMI	**Labuha**	**3.28**	**196**	P	**Pn**	13 04 00.9	-0.1
SWI	**Sorong**	**4.41**	**140**	P	**Pn**	13 04 13.5	-0.6
SANI	**Sanana**	**5.16**	**208**	P	**Pn**	13 04

SNR=74
BANOM **Banah** 2.51 205 P Pn 13 43 09.2 +1.7
SNR=60
ZHSF **Zahedan** 3.20 63 *e*Pn Pn 13 43 19.3 +2.2
ZHSF **Zahedan** 3.20 63 *e*Pn Pn 13 43 19.3 +2.2
UOSS **Minazif** 3.45 200 P Pn 13 43 21.4 +1.0
HATD **Hatta, Dubai** 3.58 200 P Pn 13 43 23.5 +1.2
HATD **Hatta, Dubai** 3.58 200 P Pn 13 43 23.5 +1.2
NAZ **Nazwa, Dubai** 3.60 207 P Pn 13 43 25.7 +3.2
NAZ **Nazwa, Dubai** 3.60 207 P Pn 13 43 25.7 +3.2
ASHO **Ashiyiah** 3.74 200 *i* P Pn 13 43 26.7 +2.3
SNR=18
ASHO **Ashiyiah** 3.74 200 P Pn 13 43 27.3 +2.9
ASHO **Ashiyiah** 3.74 200 P Pn 13 43 26.7 +2.3
SNR=18
IBAF **Bafgh** 3.76 334 *e*Pn Pn 13 43 28.7 +3.9
IBAF *e*AMB AMB 13 43 43.3
comp=Z,2μm,0.2s
IBAF **Bafgh** 3.76 334 *e*Pn Pn 13 43 28.7 +3.9
FAQ **Al Faqa, Dubai** 3.85 207 *i* P Pn 13 43 28.3 +2.4
SNR=8.3
FAQ **Al Faqa, Dubai** 3.85 207 P Pn 13 43 28.3 +2.4
SNR=8.3
FAQ **Al Faqa, Dubai** 3.85 207 Pn Pn 13 43 28.3 +2.4
SNR=8.3
FAQ **Al Faqa, Dubai** 3.85 207 P Pn 13 43 28.3 +2.4
SNR=8.3
GHIR **Ghir-Karzin** 3.98 272 *e*Pn Pn 13 43 31.0 +3.3
GHIR AML AML 13 44 19.4
comp=N,235nm,0.3s
GHIR **Ghir-Karzin** 3.98 272 *e*Pn Pn 13 43 31.0 +3.3
ISRV **Sarvestan** 4.02 288 *e*Pn Pn 13 43 31.2 +2.7
ISRV *e*AMB AMB 13 44 22.2
comp=Z,2μm,0.1s
ISRV **Sarvestan** 4.02 288 *e*Pn Pn 13 43 31.2 +2.7
IMEH **Mehriz** 4.04 322 *e*Pn Pn 13 43 31.7 +3.0
IMEH *e*AMB AMB 13 44 50.1
comp=Z,2μm,0.4s
IMEH **Mehriz** 4.04 322 *e*Pn Pn 13 43 31.7 +3.0
IPAR **Pars** 4.22 294 *e*Pn Pn 13 43 35.4 +4.2
IPAR *e*Sg Sb 13 44 43.9 +11
IPAR *e*AMB AMB 13 44 59.0
comp=Z,1μm,0.4s
IPAR **Pars** 4.22 294 *e*Pn Pn 13 43 35.4 +4.2
IKOO **Kooshah** 4.40 17 *e*Pn Pn 13 43 37.3 +3.6
IKOO *e*AMB AMB 13 43 50.5
comp=Z,1μm,0.2s
IKOO **Kooshah** 4.40 17 *e*Pn Pn 13 43 37.3 +3.6
BIDO **Bidbid** 4.70 173 P Pn 13 43 38.0 +0.3
SNR=12
BIDO **Bidbid** 4.70 173 Pn Pn 13 43 38.0 +0.3
SNR=12
BIDO **Bidbid** 4.70 173 Pn Pn 13 43 38.0 +0.3
SNR=12
ITEG **Tejag** 4.80 13 *e*Pn Pn 13 43 42.7 +3.6
ITEG *e*AMB AMB 13 43 43.3
comp=Z,2μm,0.2s
ITEG **Tejag** 4.80 13 *e*Pn Pn 13 43 42.7 +3.6
ICHK **Chekchek** 4.83 327 *e*Pn Pn 13 43 42.9 +3.4
ICHK *e*AMB AMB 13 44 23.5
comp=Z,775nm,0.2s
ICHK **Chekchek** 4.83 327 *e*Pn Pn 13 43 42.9 +3.4
ARQ **Araqi** 4.93 190 P Pn 13 43 43.4 +2.6
SNR=20
ARQ **Araqi** 4.93 190 P Pn 13 43 43.4 +2.6
SNR=20
ISAD **Sadrabad** 4.95 319 *e*Pn Pn 13 43 44.8 +3.5
ISAD *e*AMB AMB 13 45 19.6
comp=Z,783nm,0.3s
ISAD **Sadrabad** 4.95 319 *e*Pn Pn 13 43 44.8 +3.5
WSAR **Wadi Sarin** 5.05 168 Pn Pn 13 43 42.8 +0.3
comp=Z,7.2nm,0.3s,baz=345,slow=5.8,SNR=73
WSAR Sn Sn 13 44 36.0 -3.9
comp=Z,14nm,0.3s,baz=278,slow=17,SNR=8.3
IRAM **Ramesheh** 5.70 310 *e*Pn Pn 13 43 53.7 +2.1
IRAM *e*AMB AMB 13 43 55.0
comp=Z,575nm,0.1s
IRAM **Ramesheh** 5.70 310 *e*Pn Pn 13 43 53.7 +2.1
IGAR **Gharneh** 6.30 313 *e*AMB AMB 13 44 03.3
comp=Z,847nm,0.1s
IGAR *e*Pn Pn 13 44 02.5 +2.7
IZEF **Zefreh** 6.45 318 *e*AMB AMB 13 44 04.6
comp=Z,374nm,0.1s
IZEF *e*Pn Pn 13 44 03.9 +2.0
IKLH **Kolahrood** 7.20 316 *e*Pn Pn 13 44 13.5 +1.4
IKLH *e*AMB AMB 13 44 19.2
comp=Z,149nm,0.1s
IKLH **Kolahrood** 7.20 316 *e*Pn Pn 13 44 13.5 +1.4
IPIR **Pirpir** 7.24 310 *e*Pn Pn 13 44 14.8 +2.1
IPIR *e*AMB AMB 13 44 16.5
comp=Z,653nm,0.1s
IPIR **Pirpir** 7.24 310 *e*Pn Pn 13 44 14.8 +2.1
GEYT **Alibeck** 9.71 3 Pn Pn 13 44 49.4 +3.0
comp=Z,0.5nm,0.3s,baz=179,slow=16,SNR=4.8
GEYT LR LR 13 49 08.6
comp=Z,83nm,21.7s,baz=15,slow=42
GNI **Garni** 15.89 322 Pn Pn 13 46 12.3 +2.0
comp=Z,0.9nm,0.3s,baz=139,slow=18,SNR=2.7
ASF **Jabal al Asfar** 18.23 288 P P 13 46 38.7 -0.9
comp=Z,1.5nm,0.3s,baz=307,slow=2.7,SNR=9.7
ASF S Sn 13 49 52.6 -10
comp=Z,0.2nm,0.3s,baz=216,slow=17,SNR=2.5
KBZ **Khabaz** 19.43 327 P Pn 13 46 57.2 +3.4
comp=Z,0.2nm,0.3s,baz=129,slow=14,SNR=2.9
MMAI **Mount Meron Ar** 19.60 290 P P 13 46 55.7 +1.2
baz=92,slow=13,SNR=2.7
EIL **Elat** 19.78 280 P P 13 46 56.1 -0.4
comp=Z,0.3nm,0.3s,baz=221,slow=14,SNR=4.1
AAK **Ala-Archa** 19.93 39 P P 13 46 58.2 0.0
comp=Z,0.7nm,0.3s,baz=233,slow=5.1,SNR=2.7
ABKAR **Akbulak array** 21.10 4 *e*P P 13 47 11.7 +1.1
comp=Z,2.9nm,0.4s
ABKAR **Akbulak array** 21.10 4 *e*P P 13 47 11.7 +1.1
comp=Z,2.9nm,0.4s
AKTO **Aktyubinsk** 22.20 1 P P 13 47 23.1 +0.6
comp=Z,4.5nm,0.5s,baz=174,slow=9.8,SNR=16
AKTO **Aktyubinsk** 22.20 1 ⇑S S 13 51 25.5 +0.3
comp=Z,1.0nm,0.8s
BRTR **Keskin Array B** 22.80 306 P P 13 47 29.2 0.0
comp=Z,9.8nm,1.0s,baz=124,slow=11,SNR=32
BVAR **Borovoye Array** 26.57 18 P P 13 48 04.9 +1.0
comp=Z,0.7nm,0.6s,baz=192,slow=10,SNR=5.4
MKAR **Makanchi Array** 26.86 40 P P 13 48 07.5 +0.8
comp=Z,0.2nm,0.5s,baz=226,slow=7.8,SNR=1.8
IDI **Anoyia** 28.52 293 P P 13 48 22.0 +0.3
comp=Z,6.0nm,0.6s,baz=67,slow=9.0,SNR=5.7
IDI **Anoyia** 28.52 293 P P 13 48 22.0 +0.3
AKASG **Malin Array Be** 31.00 324 P P 13 48 41.9 -1.4
comp=Z,0.4nm,0.4s,baz=131,slow=8.6,SNR=2.4
ZALV **Zalesovo Beam** 32.57 30 P P 13 48 55.6 -1.5
comp=Z,1.6nm,0.3s,baz=225,slow=9.4,SNR=6.8
FINES **FINESS Array B** 39.26 337 P P 13 49 53.8 -0.5
comp=Z,1.7nm,0.5s,baz=136,slow=9.4,SNR=13
GERES **GERESS Array B** 39.30 314 P P 13 49 54.1 -0.8
comp=Z,0.8nm,0.6s,baz=118,slow=14,SNR=5.6
NOA **NORSAR Array B** 44.96 330 P P 13 50 39.8 -1.0
comp=Z,0.5nm,0.6s,baz=132,slow=7.2,SNR=2.9
ARCES **ARCESS Array B** 45.30 345 P P 13 50 43.4 0.0
comp=Z,0.6nm,0.3s,baz=142,slow=7.7,SNR=4.5
TORD **Torodi Ar. Bea** 53.88 266 P P 13 51 48.5 -0.9
comp=Z,7.0nm,0.8s,baz=63,slow=7.3,SNR=42
KSAR **Wonju Array Be** 58.64 61 P P 13 52 22.7 -0.5
KSAR **Wonju Array Be** 58.64 61 P P 13 52 22.7 -0.5
KSRS **Korea Array** 58.67 61 P P 13 52 22.7 -0.7
comp=Z,0.6nm,0.6s,baz=277,slow=7,SNR=3.3
DBIC **Dimbokro** 82.54 263 LR LR 14 24 24.6
comp=Z,22nm,18.0s,baz=154,slow=40
BOSA **Boshof** 64.39 211 P P 13 53 02.0 0.0
comp=Z,6.3nm,0.9s,baz=139,slow=16,SNR=4.8
GUMO **Guam** 81.43 79 LR LR 14 33 19.6
comp=Z,20nm,22.0s,baz=78,slow=38
ILAR **Eielson Array** 85.39 10 P P 13 55 01.1 -1.7
comp=Z,0.1nm,0.4s,baz=340,slow=4.9,SNR=2.8
WRA **Warramunga Arr** 89.31 114 P P 13 55 18.0 +0.2
comp=Z,1.3nm,0.7s,baz=316,slow=4.0,SNR=16
YKA **Yellowknife Ar** 89.39 356 P P 13 55 21.8 -0.3
comp=Z,1.1nm,0.6s,baz=2.4,slow=5.3,SNR=16
ASAR **Alice Springs** 89.86 117 P P 13 55 25.3 +0.3
comp=Z,0.4nm,0.7s,baz=304,slow=4.7,SNR=8.1
TXAR **Lajitas Array** 120.01 341 PKP PKPdf 14 01 16.6 -0.3
comp=Z,0.2nm,0.6s,baz=146,slow=1.8,SNR=3.4

ISCJB ***29*** *13:46:56.5±0.5,23.°92N±0.°03×122.°44E±0.°02,h18km±5km, Error ellipse: s-maj=5.6km s-min=2.4km az=165.8*

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TAP ***29*** *13:46:56.3,23.°94N×122.°37E,h12km±1km,ML2.7,D*
JMA ***29*** *13:46:56.5±0.2,23.°95N×122.°42E,h20km,M2.0*
ISC 29 13:46:55.9±1.1,23.°93N±0.°04×122.°42E±0.°02,h16km±9km, n33,σ0°62/54,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.71**	**43**	P	**Pg**	**13 47 09.7**	**0.0**
JYNG				S	**Sg**	**13 47 17.9**	**-1.2**
YOJ	**Yonaguni jima**	**0.76**	**45**	P	**Pg**	**13 47 10.6**	**0.0**
YOJ				S	**Sg**	**13 47 19.5**	**-1.1**
TWD	**Chiawan**	**0.77**	**281**	*e*P	**Pb**	**13 47 11.1**	**+0.2**
baz=281							
TWD				*e*S	**Sb**	**13 47 21.8**	**+0.6**
baz=281							
ENA	**Nanau**	**0.80**	**309**	P	**Pb**	**13 47 11.5**	**+0.1**
baz=310							
ENA				*e*S	**Sb**	**13 47 22.8**	**+0.9**
baz=310							
TWC	**Suao**	**0.85**	**322**	P	**Pb**	**13 47 12.2**	**-0.2**
baz=325							
TWC				*e*S	**Sb**	**13 47 23.1**	**-0.5**
baz=325							
ESL	**Shilin**	**0.91**	**263**	*e*S	**Sb**	**13 47 25.2**	**0.0**
baz=261							
TWE	**Neicheng**	**1.05**	**319**	*e*P	**Pg**	**13 47 16.2**	**+0.1**
baz=321							
TWE				*e*S	**Sg**	**13 47 29.8**	**0.0**
baz=321							
ENTT	**Nioudou**	**1.05**	**312**	*e*P	**Pg**	**13 47 16.3**	**0.0**
baz=313							
ENTT				*e*S	**Sg**	**13 47 30.0**	**-0.1**
baz=313							
WHF	**Hehuan Shan**	**1.08**	**282**	*e*S	**Sg**	**13 47 30.7**	**-0.3**
baz=281							
NNS	**Nan Shan**	**1.08**	**298**	*e*P	**Pb**	**13 47 16.6**	**+0.2**
baz=298							
NNS				*e*S	**Sb**	**13 47 29.9**	**-0.5**
baz=298							
EHY	**Hungye**	**1.09**	**247**	*e*P	**Pg**	**13 47 18.0**	**+1.0**
baz=245							
EHY				*e*S	**Sb**	**13 47 30.4**	**-0.1**
baz=245							
TWF1	**Yuli**	**1.18**	**241**	*e*P	**Pn**	**13 47 17.8**	**0.0**
baz=239							
TWF1				*e*S	**Sb**	**13 47 33.4**	**+0.4**
baz=239							
TWT	**Tachien**	**1.18**	**286**	*e*S	**Sg**	**13 47 34.2**	**0.0**
baz=285							
NSK	**Sanguang**	**1.22**	**308**	P	**Pb**	**13 47 19.0**	**+0.4**
baz=308							
NSK				*e*S	**Sg**	**13 47 35.5**	**0.0**
baz=308							
IRIF	**Iriomote-Funau**	**1.26**	**71**	P	**Pn**	**13 47 19.6**	**+0.7**
IRIF				S	**Sb**	**13 47 35.5**	**+0.2**
HATJ	**Hateruma jima**	**1.27**	**84**	S	**Sb**	**13 47 36.4**	**+0.8**
CHKT	**Chengkung**	**1.27**	**230**	*e*P	**Pn**	**13 47 18.8**	**-0.2**
baz=227							
NWF	**Wu-fen Shan**	**1.28**	**333**	*e*S	**Sn**	**13 47 36.6**	**+0.5**
baz=334							
SMLT	**Sun Moon Lake**	**1.39**	**268**	*e*P	**Pg**	**13 47 22.9**	**+0.2**
baz=267							
SMLT				*e*S	**Sb**	**13 47 39.2**	**0.0**
baz=267							
YUS	**Yu-Shan**	**1.42**	**252**	*e*P	**Pn**	**13 47 21.5**	**0.0**
baz=251							
YUS				*e*S	**Sn**	**13 47 38.8**	**-1.2**
baz=251							
TYC	**Yuchr**	**1.43**	**269**	*e*P	**Pb**	**13 47 22.8**	**+0.6**
baz=268							
TYC				*e*S	**Sb**	**13 47 40.1**	**-0.1**
baz=268							
ELDTW	**Lidau**	**1.48**	**240**	*e*S	**Sn**	**13 47 39.3**	**-1.9**
baz=238							
JKRS	**Kuro-shima**	**1.48**	**78**	P	**Pb**	**13 47 23.6**	**+0.5**
JKRS				S	**Sn**	**13 47 42.3**	**+1.3**
ALS	**Alishan**	**1.54**	**255**	*e*P	**Pb**	**13 47 24.4**	**+0.1**
baz=253							
ALS				S	**Sb**	**13 47 43.4**	**-0.2**
baz=253							
CHN5	**Tsauling**	**1.63**	**259**	*e*S	**Sb**	**13 47 46.4**	**+0.4**
baz=257							
JIJ	**Ishigaki jima**	**1.63**	**74**	P	**Pn**	**13 47 23.6**	**-0.4**
JIJ				S	**Sn**	**13 47 43.6**	**-1.1**
TWG	**Pinlang**	**1.66**	**229**	*e*S	**Sn**	**13 47 44.4**	**-1.0**
baz=226							
STYT	**Tauyuan**	**1.71**	**244**	*e*P	**Pn**	**13 47 25.4**	**+0.3**
baz=242							
STYT				*e*S	**Sn**	**13 47 47.0**	**+0.4**
baz=242							
WTP	**Ta-pu**	**1.79**	**248**	*e*P	**Pb**	**13 47 28.5**	**+0.1**
baz=246							
WTP				*e*S	**Sb**	**13 47 50.8**	**+0.2**
baz=246							
JISG	**Ishigakijimahi**	**1.84**	**69**	P	**Pn**	**13 47 27.0**	**+0.1**
JISG				S	**Sn**	**13 47 49.4**	**-0.5**
CHN1	**Nanshi**	**1.89**	**247**	*e*S	**Sb**	**13 47 54.0**	**+0.6**
baz=246							
TWK	**Hsinying**	**1.89**	**250**	*e*S	**Sb**	**13 47 54.0**	**+0.5**
baz=248							
SSD	**Sandimen**	**2.02**	**235**	*e*S	**Sb**	**13 47 56.1**	**-1.2**
baz=233							

ISCJB ***29*** *13:47:16.8±1.1,35.°99N±0.°04×141.°5E±0.°1,h48km±8km, mb3.9/10,MS3.8/1,Error ellipse: s-maj=14.0km s-min=6.6km az=178.4*
JMA ***29*** *13:47:17.2±0.1,36.°05N×141.°41E,h48km±2km,M3.3*
IDC ***29*** *13:47:27.7±2.3,35.°61N×140.°28E,h94km±18km,mb3.3/9, mb1 3.4/10,mb1mx3.2/44,mbtmp3.7/10,MS3.7/1, Ms1 3.7/1,ms1mx2.3/39,Error ellipse: s-maj=32.6km s-min=14.6km az=72.0*
ISC 29 13:47:16.9±1.7,36.°04N±0.°05×141.°39E±0.°08,h29km±11km, n25,σ1°19/24,mb3.7/10,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.55**	**232**	P	**Pb**	**13 47 28.9**	**+0.8**
CHOJ				S	**Sn**	**13 47 37.9**	**+1.0**
JYT	**Yasato**	**0.98**	**281**	P	**Pn**	**13 47 34.9**	**+0.2**
JYT				S	**Sn**	**13 47 47.9**	**+0.3**
JFK	**Kawauchi**	**1.38**	**343**	P	**Pn**	**13 47 40.3**	**0.0**
JFK				S	**Sb**	**13 47 58.9**	**-0.6**
JAG	**Ashikaga**	**1.61**	**284**	P	**Pn**	**13 47 43.9**	**+0.5**
JAG				S	**Sn**	**13 48 03.7**	**+0.6**
JFT	**Otama**	**1.69**	**331**	P	**Pn**	**13 47 46.2**	**+1.6**
JFT				S	**Sb**	**13 48 07.1**	**-1.3**
MJAR	**Matsushiro Arr**	**2.61**	**282**	P	**Pn**	**13 47 58.9**	**+1.7**
MJAR	3.2nm,0.3s,baz=108,slow=7.9,SNR=36			LR	LR	13 48 33.3	
	comp=Z,30nm,20.2s,baz=95,slow=35						
MAT	**Matsushiro**	**2.62**	**282**	P	**Pn**	**13 47 59.0**	**+1.8**
MAT				*e*S	**Sb**	**13 48 32.4**	**-2.4**
JHJ	**Hachijo jima 2**	**3.20**	**205**	P	**Pn**	**13 48 06.3**	**+1.0**
13nm,0.3s,baz=11,slow=19,SNR=22							
JHJ				S	**Sn**	**13 48 42.4**	**-0.1**
23nm,0.3s,baz=50,slow=23,SNR=12							
H11N2	**WAKE ISLAND Hy**	**27.68**	**119**	T	T	14 22 09.6	
baz=310							
H11N1	**WAKE ISLAND Hy**	**27.68**	**119**	T	T	14 22 06.6	
baz=310							
H11N3	**WAKE ISLAND Hy**	**27.69**	**119**	T	T	14 22 11.2	
baz=310							
SONM	**Songino Array**	**28.33**	**305**	P	**P**	**13 53 08.9**	**+0.7**
0.3nm,0.5s,baz=120,slow=8.5,SNR=3.0							
H11S1	**WAKE ISLAND Hy**	**28.35**	**121**	T	T	14 23 00.0	
baz=314							
H11S3	**WAKE ISLAND Hy**	**28.35**	**121**	T	T	14 23 00.7	
baz=314							
H11S2	**WAKE ISLAND Hy**	**28.37**	**121**	T	T	14 23 02.8	
baz=314							
TGY	**Tagaytay City**	**28.52**	**225**	P	**P**	**13 53 07.9**	**-2.2**
185nm,0.2s,baz=37,slow=5.1,SNR=3.1							
ZALV	**Zalesovo Beam**	**42.57**	**313**	P	**P**	**13 55 10.6**	**+0.7**
0.9nm,0.7s,baz=94,slow=6.4,SNR=3.6							
MKAR	**Makanchi Array**	**44.63**	**303**	P	**P**	**13 55 25.8**	**-0.9**
0.4nm,0.6s,baz=57,slow=9.8,SNR=4.5							
KURBB	**Kurchatov Arra**	**46.60**	**309**	P	**P**	**13 55 42.5**	**+0.4**
1.6nm,0.5s,baz=85,slow=8.1,SNR=16							
ILAR	**Eielson Array**	**50.34**	**32**	P	P	13 56 21.4	+11
0.3nm,0.6s,baz=286,slow=5.7,SNR=4.1							
BVAR	**Borovoye Array**	**51.22**	**313**	P	**P**	**13 56 18.7**	**+1.1**
0.3nm,0.3s,baz=73,slow=11,SNR=4.4							
WRA	**Warramunga Arr**	**56.08**	**188**	P	**P**	**13 56 52.8**	**-0.6**
0.3nm,0.4s,baz=4.3,slow=7.2,SNR=13							
AKTO	**Aktyubinsk**	**59.32**	**312**	P	**P**	**13 57 16.6**	**+0.6**
0.9nm,0.6s,baz=2.1,slow=4.0,SNR=4.2							
ASAR	**Alice Springs**	**59.81**	**188**	P	**P**	**13 57 19.3**	**-0.2**
0.2nm,0.6s,baz=1.6,slow=5.6,SNR=4.2							
RPZ	**Rata Peaks**	**83.85**	**159**	LR	LR	14 32 46.5	
comp=Z,49nm,22.0s,baz=26,slow=32							

CSEM ***29*** *13:50:38.8±0.2,38.°10N×32.°52E,h20km,MD2.5,Error ellipse: s-maj=6.8km s-min=4.8km az=102.0*
ISK ***29*** *13:50:38.3,38.°13N×32.°51E,h23km,MD2.5*
ISCJB ***29*** *13:50:39.2±1.4,38.°11N±0.°05×32.°54E±0.°08,h23km±26km, Error ellipse: s-maj=11.3km s-min=7.8km az=153.3*
DDA ***29*** *13:50:39.0,38.°14N×32.°59E,h7km,Md2.6*
ISC 29 13:50:38.7±1.2,38.°10N±0.°04×32.°49E±0.°05,h26km±9km, n14,σ0°46/24,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KONT	**Konya--Tatoy**	**0.18**	**214**	*e*PG	**Pb**	**13 50 43.8**	**-0.4**
KONT				*e*SG	**Sb**	**13 50 48.6**	**+0.6**
KONT	**Konya--Tatoy**	**0.18**	**214**	*e*Pg	**Pb**	**13 50 43.8**	**-0.4**
KONT				*e*Sg	**Sb**	**13 50 48.6**	**+0.6**
KMER	**Konya-Meram**	**0.34**	**196**	*i* P	**Pb**	**13 50 46.0**	**-0.4**
KMER				*i* S	**Sn**	**13 50 54.3**	**+0.1**
KMER	**Konya-Meram**	**0.34**	**196**	P	**Pb**	**13 50 46.0**	**-0.4**
KMER				S	**Sn**	**13 50 54.3**	**+0.1**
KDHN	**Kadinhani**	**0.52**	**326**	*i* P	**Pb**	**13 50 49.2**	**-0.1**
KDHN				*i* S	**Sn**	**13 50 57.8**	**-0.8**
KDHN	**Kadinhani**	**0.52**	**326**	P	**Pb**	**13 50 49.2**	**-0.1**
KDHN				S	**Sn**	**13 50 57.8**	**-0.8**
CHBY	**Cihanbeyli**	**0.58**	**33**	*e*PG	**Pb**	**13 50 49.7**	**-0.6**
CHBY	**Cihanbeyli**	**0.58**	**33**	*e*Pg	**Pb**	**13 50 49.7**	**-0.6**
SULT	**Sultanhani-AKS**	**0.82**	**82**	*e*PG	**Pb**	**13 50 54.3**	**0.0**
SULT	**Sultanhani-AKS**	**0.82**	**82**	*e*Pg	**Pb**	**13 50 54.3**	**0.0**
KIZT	**Kizilcal**	**0.92**	**329**	*e*PG	**Pb**	**13 50 56.0**	**-0.1**
KIZT				*e*SG	**Sn**	**13 51 08.7**	**+0.2**
KIZT	**Kizilcal**	**0.92**	**329**	*e*Pg	**Pb**	**13 50 56.0**	**-0.1**
KIZT				*e*Sg	**Sn**	**13 51 08.7**	**+0.2**
KKUL	**Konya-Kulu**	**1.13**	**17**	*i* P	**Pb**	**13 50 59.9**	**+0.3**
KKUL				*i* S	**Sn**	**13 51 13.3**	**-0.3**
KKUL	**Konya-Kulu**	**1.13**	**17**	P	**Pb**	**13 50 59.9**	**+0.3**
KKUL				S	**Sn**	**13 51 13.3**	**-0.3**

NIED ***29*** *13:55:00,28.°00N×143.°00E,h5km,Mw3.9 Best double couple: M0 7.59000×10^14 NP1:φ=168.00000°,δ=19.00000°, λ=54.00000°. NP2:φ=26.00000°,δ=75.00000°,λ=101.00000°.*
IDC ***29*** *13:55:49.8±1.0,27.°92N×142.°09E,h0km,mb3.8/13, mb1 4.0/15,mb1mx3.8/44,mbtmp3.9/15,ML3.5/2,Error ellipse: s-maj=39.3km s-min=17.6km az=79.0*
ISC 29 13:55:55.7±1.0,28.°1N±0.°1×142.°1E±0.°3,h42km,n21, σ2°52/22,mb3.9/13,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**5.44**	**339**	Pn	**Pn**	**13 57 12.8**	**-1.3**
2.2nm,0.3s,baz=238,slow=18,SNR=3.3							
JHJ				Sn	**Sn**	**13 58 13.0**	**-2.4**
4.3nm,0.3s,baz=101,slow=16,SNR=2.5							
MJAR	**Matsushiro Arr**	**9.09**	**340**	Pn	**Pn**	**13 58 02.4**	**-1.9**
0.8nm,0.3s,baz=161,slow=13,SNR=9.5							
MJAR				Sn	**Sn**	**13 59 41.4**	**-3.8**
0.2nm,0.3s,baz=177,slow=27,SNR=2.8							
MAT	**Matsushiro**	**9.09**	**340**	P	**Pn**	**13 58 02.1**	**-2.1**
MAT				S	**Sn**	**13 59 52.1**	**+6.9**
KSRS	**Korea Array**	**15.17**	**312**	Pn	**P**	**13 59 33.1**	**+1.7**
0.1nm,0.3s,baz=120,slow=11,SNR=4.9							
USRK	**Ussuriysk Ar.**	**18.05**	**336**	P	**Pn**	**14 00 00.1**	**-3.1**
0.1nm,0.3s,baz=146,slow=11,SNR=4.4							
KLR	**Kul'dur**	**22.60**	**342**	P	**P**	**14 00 52.1**	**-0.4**
1.6nm,0.8s,baz=159,slow=14,SNR=8.8							
H11N2	**WAKE ISLAND Hy**	**24.07**	**105**	T	T	14 25 47.7	
baz=297							
H11N1	**WAKE ISLAND Hy**	**24.08**	**105**	T	T	14 25 47.1	
baz=297							
H11N3	**WAKE ISLAND Hy**	**24.09**	**105**	T	T	14 25 44.1	
baz=297							
SONM	**Songino Array**	**34.00**	**315**	P	**P**	**14 02 36.5**	**+1.0**
0.9nm,0.5s,baz=120,slow=8.8,SNR=5.0							
WRA	**Warramunga Arr**	**48.31**	**190**	P	**P**	**14 04 31.7**	**-1.3**
1.9nm,0.7s,baz=13,slow=8.7,SNR=18							
ZALV	**Zalesovo Beam**	**48.74**	**319**	P	**P**	**14 04 37.0**	**+1.0**
0.6nm,0.4s,baz=101,slow=7.8,SNR=2.6							
ZALV				PcP	**PcP**	**14 05 56.8**	**-3.7**
0.4nm,0.4s,baz=99,slow=1.9,SNR=2.4							
MKAR	**Makanchi Array**	**49.83**	**309**	P	**P**	**14 04 45.2**	**+0.7**
0.8nm,0.8s,baz=88,slow=9.2,SNR=7.5							
ASAR	**Alice Springs**	**52.03**	**190**	P	**P**	**14 04 59.7**	**-1.5**
0.7nm,1.1s,baz=7.9,slow=6.1,SNR=5.4							
BVAR	**Borovoye Array**	**57.31**	**317**	P	**P**	**14 05 40.0**	**+0.9**
1.1nm,0.6s,baz=92,slow=7.4,SNR=7.1							
AKTO	**Aktyubinsk**	**65.31**	**316**	P	**P**	**14 06 33.9**	**+0.6**
0.6nm,0.5s,baz=72,slow=6.4,SNR=3.3							
YKA	**Yellowknife Ar**	**71.32**	**28**	P	**P**	**14 07 12.3**	**+1.6**
0.3nm,0.7s,baz=301,slow=6.6,SNR=2.7							
FINES	**FINESS Array B**	**77.07**	**334**	P	**P**	**14 07 46.0**	**+1.9**
1.9nm,0.9s,baz=50,slow=3.0,SNR=3.8							
KBZ	**Khabaz**	**77.32**	**313**	P	**P**	**14 07 47.2**	**+1.4**
1.7nm,0.7s,baz=170,slow=5.0,SNR=4.6							
NOA	**NORSAR Array B**	**82.70**	**338**	P	**P**	**14 08 15.6**	**+0.9**
0.5nm,0.8s,baz=45,slow=5.5,SNR=2.4							
BRTR	**Keskin Array B**	**85.32**	**313**	P	**P**	**14 08 29.3**	**+0.7**
0.6nm,0.8s,baz=68,slow=3.6,SNR=3.3							

ISCJB ***29*** *14:01:40.2±2.6,30.°04S±0.°09×176.°3W±0.°2,h21km, mb3.7/2,Error ellipse: s-maj=27.9km s-min=11.6km az=167.7*
IDC ***29*** *14:01:48.1±4.3,29.°67S×176.°52W,h63km±30km,mb3.4/2, mb1 3.6/2,mb1mx3.3/27,mbtmp3.7/2,Error ellipse: s-maj=63.3km s-min=45.2km az=9.0*
ISC 29 14:01:41.8±1.5,29.°9S±0.°1×176.°3W±0.°1,h21km,n7, σ0°60/9,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.54**	**294**	P	**Pb**	**14 02 09.8**	**+0.2**
47nm,0.3s,baz=90,slow=20,SNR=4.0							
RAO				S	**Sn**	**14 02 27.6**	**+0.2**
586nm,0.3s,baz=100,slow=21,SNR=7.4							
URZ	**Urewera**	**9.98**	**211**	S	**Sn**	**14 05 55.1**	**-0.2**
0.7nm,0.3s,baz=203,slow=22,SNR=7.2							
ASAR	**Alice Springs**	**44.61**	**266**	P	**P**	**14 09 52.5**	**-0.3**
0.4nm,0.7s,baz=103,slow=7.2,SNR=8.5							
ASAR				PcP	**PP**	**14 11 37.3**	**+0.2**
0.2nm,0.6s,baz=115,slow=3.8,SNR=3.5							
WRA	**Warramunga Arr**	**45.

WRA				S		Sn	14 15 57.0 -11
	0.0nm,0.3s,baz=348,slow=24,SNR=2.6						
ASAR	**Alice Springs**	**19.51**	**168**	P		P	14 13 50.5 +0.6
	0.5nm,0.3s,baz=346,slow=11,SNR=78						
MKAR	**Makanchi Array**	**65.93**	**326**	P		P	14 20 05.7 -0.1
	0.1nm,0.3s,baz=116,slow=5.9,SNR=2.7						

JMA ***29*** *14:14:52.5,24.70N×122.23E,h53km,M2.0*
TAP ***29*** *14:14:53.2,24.78N×122.12E,h9km,ML2.9,D*
ISC 29 14:14:51.2±1.2,24.80N±0.03×122.29E±0.03,h5km±10km, n33,σ0.976/54,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.34**	**307**	*e*P			**Pb**	**14 14 58.8**	**-0.9**
	baz=333								
TWB1				S			**Sg**	**14 15 02.9**	**+0.5**
	baz=333								
TWC	**Suao**	**0.45**	**244**	P			**Pg**	**14 14 59.9**	**+0.1**
	baz=233								
TWC				S			**Sg**	**14 15 04.4**	**-1.1**
	baz=233								
ILA	**Ilan**	**0.49**	**266**	*e*S			**Sg**	**14 15 06.3**	**-0.8**
	baz=266								
NWF	**Wu-fen Shan**	**0.53**	**300**	*e*P			**Pb**	**14 15 02.8**	**-0.3**
	baz=313								
NWF				*e*S			**Sg**	**14 15 09.2**	**+0.8**
	baz=313								
TWE	**Neicheng**	**0.57**	**262**	*e*P			**Pg**	**14 15 02.3**	**+0.1**
	baz=260								
TWE				*e*S			**Sg**	**14 15 08.7**	**-0.9**
	baz=260								
ENA	**Nanau**	**0.62**	**233**	*e*P			**Pg**	**14 15 03.5**	**+0.3**
	baz=223								
ENA				*e*S			**Sg**	**14 15 10.6**	**-0.6**
	baz=223								
TWA	**Mucha**	**0.67**	**286**	*e*S			**Sg**	**14 15 13.3**	**+0.7**
	baz=292								
ENTT	**Nioudou**	**0.68**	**256**	*e*P			**Pg**	**14 15 04.5**	**+0.3**
	baz=253								
ENTT				*e*S			**Sg**	**14 15 12.4**	**-0.6**
	baz=253								
JYNG	**Yonagunijimaku**	**0.69**	**120**	P			**Pb**	**14 15 06.2**	**+0.5**
JYNG				S			**Sb**	**14 15 16.6**	**+1.0**
YOJ	**Yonaguni jima**	**0.74**	**117**	P			**Pb**	**14 15 07.1**	**+0.6**
YOJ				S			**Sb**	**14 15 17.2**	**+0.3**
TWY	**Chenhua**	**0.78**	**307**	*e*P			**Pb**	**14 15 07.7**	**+0.4**
	baz=316								
TWY				*e*S			**Sb**	**14 15 19.0**	**+0.8**
	baz=316								
TWS1	**Kuangyinshan**	**0.85**	**291**	*e*S			**Sb**	**14 15 20.4**	**+0.4**
	baz=296								
NSK	**Sanguang**	**0.86**	**262**	*e*P			**Pg**	**14 15 07.5**	**-0.1**
	baz=260								
NSK				S			**Sg**	**14 15 17.2**	**-1.6**
	baz=260								
NNS	**Nan Shan**	**0.91**	**247**	*e*P			**Pg**	**14 15 08.8**	**+0.1**
	baz=242								
NNS				S			**Sg**	**14 15 20.0**	**-0.4**
	baz=242								
TWD	**Chiawan**	**0.96**	**221**	P			**Pg**	**14 15 09.7**	**+0.2**
	baz=213								
TWD				*e*S			**Sg**	**14 15 21.5**	**-0.5**
	baz=213								
WHF	**Hehuan Shan**	**1.14**	**235**	P			**Pg**	**14 15 13.4**	**+0.3**
	baz=230								
WHF				S			**Sg**	**14 15 27.0**	**-0.9**
	baz=230								
TWT	**Tachien**	**1.15**	**242**	*e*P			**Pn**	**14 15 14.4**	**+0.3**
	baz=238								
TWT				*e*S			**Sg**	**14 15 27.2**	**-1.1**
	baz=238								
NSTT	**Nanjuang**	**1.19**	**262**	*e*P			**Pn**	**14 15 15.1**	**+0.7**
	baz=261								
NSTT				*e*S			**Sg**	**14 15 28.9**	**-0.4**
	baz=261								
ESL	**Shilin**	**1.26**	**219**	*e*P			**Pg**	**14 15 15.3**	**0.0**
	baz=212								
ESL				*e*S			**Sg**	**14 15 31.9**	**+0.3**
	baz=212								
IRIF	**Iriomote-Funau**	**1.39**	**109**	P			**Pn**	**14 15 16.1**	**-1.2**
SMLT	**Sun Moon Lake**	**1.56**	**234**	*e*P			**Pg**	**14 15 21.6**	**+0.4**
	baz=230								
EHY	**Hungye**	**1.56**	**215**	*e*P			**Pb**	**14 15 20.4**	**-0.2**
	baz=209								
EHY				*e*S			**Sg**	**14 15 42.0**	**+0.6**
	baz=209								
TYC	**Yuchr**	**1.58**	**236**	*e*P			**Pb**	**14 15 21.4**	**+0.4**
	baz=232								
TYC				*e*S			**Sg**	**14 15 42.2**	**+0.1**
	baz=232								
JKRS	**Kuro-shima**	**1.66**	**109**	P			**Pn**	**14 15 20.4**	**-0.6**
TWF1	**Yuli**	**1.71**	**212**	*e*P			**Pn**	**14 15 21.4**	**-0.2**
	baz=207								
TWF1				*e*S			**Sn**	**14 15 44.5**	**+0.6**
	baz=207								
JIJ	**Ishigaki jima**	**1.74**	**104**	P			**Pn**	**14 15 21.2**	**-0.9**
YUS	**Yu-Shan**	**1.79**	**223**	*e*P			**Pb**	**14 15 24.7**	**0.0**
	baz=219								
YUS				*e*S			**Sn**	**14 15 47.0**	**+0.5**
	baz=219								
ALS	**Alishan**	**1.87**	**227**	*e*P			**Pg**	**14 15 27.2**	**+0.1**
	baz=223								
ALS				*e*S			**Sn**	**14 15 47.4**	**-0.9**
	baz=223								
CHN5	**Tsauling**	**1.90**	**231**	*e*P			**Pg**	**14 15 27.4**	**-0.2**
	baz=228								
ELDTW	**Lidau**	**1.98**	**216**	*e*S			**Sn**	**14 15 51.9**	**+1.0**
	baz=212								
STYT	**Tauyuan**	**2.15**	**221**	*e*P			**Pb**	**14 15 30.9**	**+0.3**
	baz=217								
TWK	**Hsinying**	**2.25**	**228**	*e*S			**Sn**	**14 15 54.5**	**-2.8**
	baz=224								
CHN1	**Nanshi**	**2.28**	**225**	*e*P			**Pn**	**14 15 30.3**	**+0.8**
	baz=222								

MEX 29 14:24:04.2±0.4,16.87N×100.57W,h5km±2km,MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.34**	**58**	*e*P			Pg	14 24 10.3	-0.4
CAIG				*i* S			Sg	14 24 15.5	+0.3
ACP2	**Acapulco**	**0.65**	**89**	*e*P			Pg	14 24 16.0	-0.8
ACP2				*e*S			Sg	14 24 24.9	-0.3
ACX	**Acapulco**	**0.68**	**90**	*e*P			Pn	14 24 22.0	+1.5
ACX				*e*S			Sn	14 24 31.2	-0.2
ZIIG	**Zihuatanejo**	**1.13**	**311**	*e*P			Pg	14 24 22.6	-3.2
ZIIG				*e*S			Sg	14 24 37.5	-3.0
MEIG	**Mezcala**	**1.39**	**41**	*e*P			Pn	14 24 26.7	-3.5
MEIG				*i* S			Sb	14 24 43.6	-5.1
ARIG	**Puente Sto Nin**	**1.42**	**8**	*e*P			Pn	14 24 27.1	-3.6
ARIG				*e*S			Sb	14 24 44.8	-4.8
PLIG	**Platanillo**	**1.82**	**34**	*e*P			Pn	14 24 33.1	-3.2
PLIG				*e*S			Sn	14 24 55.0	-4.8
TLIG	**Tlapa**	**2.03**	**70**	*e*P			Pn	14 24 36.2	-3.0
TLIG				*i* S			Sn	14 24 59.8	-5.2

DDA ***29*** *14:27:43.9,38.71N×38.91E,h7km,Ml2.2*
CSEM ***29*** *14:27:44.3±0.4,38.67N×38.91E,h2km,ML2.2,Error ellipse: s-maj=9.7km s-min=4.9km az=168.0*
ISK ***29*** *14:27:44.4,38.79N×38.92E,h2km,MD2.6*
ISCJB ***29*** *14:27:45.1±1.1,38.69N±0.07×38.94E±0.05,h11km,Error ellipse: s-maj=10.3km s-min=5.5km az=164.4*
ISC 29 14:27:45.4±1.2,38.74N±0.06×38.94E±0.03,h11km,n13, σ0.981/21,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PTK	**Pertek**	**0.39**	**66**	*e*PG			**Pg**	**14 27 52.9**	**-0.3**
PTK				*e*SG			**Sb**	**14 27 59.2**	**-1.3**
PTK	**Pertek**	**0.39**	**66**	*e*Pg			**Pg**	**14 27 52.9**	**-0.3**
PTK				*e*Sg			**Sb**	**14 27 59.2**	**-1.3**
TNCL	**Tunceli-Merkez**	**0.60**	**51**	*i* P			**Pg**	**14 27 56.5**	**-0.7**
TNCL				*i* S			**Sg**	**14 28 05.9**	**+0.7**
TNCL	**Tunceli-Merkez**	**0.60**	**51**	P			**Pg**	**14 27 56.5**	**-0.7**
TNCL				S			**Sg**	**14 28 05.9**	**+0.7**
KEMA	**Kemaliye**	**0.64**	**327**	*i* P			**Pg**	**14 27 56.6**	**-1.2**
KEMA				*i* S			**Sg**	**14 28 06.6**	**+0.4**
KEMA	**Kemaliye**	**0.64**	**327**	P			**Pg**	**14 27 56.6**	**-1.2**
KEMA				S			**Sg**	**14 28 06.6**	**+0.4**
DARE	**Darende-Malaty**	**1.15**	**262**	*e*PN			**Pg**	**14 28 07.2**	**-0.4**
DARE	**Darende-Malaty**	**1.15**	**262**	*e*Pn			**Pg**	**14 28 07.2**	**-0.4**
KELT	**Kelkit**	**1.43**	**10**	*i* P			**Pg**	**14 28 13.1**	**+0.2**
KELT				*i* S			**Sg**	**14 28 32.4**	**+0.9**
KELT	**Kelkit**	**1.43**	**10**	P			**Pg**	**14 28 13.1**	**+0.2**
KELT				S			**Sg**	**14 28 32.4**	**+0.9**
SVSK	**Karacayir**	**1.91**	**309**	*e*PN			**Pn**	**14 28 18.4**	**+0.6**
SVSK	**Karacayir**	**1.91**	**309**	*e*Pn			**Pn**	**14 28 18.5**	**+0.6**
SARI	**SarD1z-Kayseri**	**2.00**	**261**	*e*PN			**Pn**	**14 28 20.1**	**+0.8**

IDC 29 14:29:32.5±5.2,18.45S×167.72E,h0km,mb3.5/3, mb1 3.8/4,mb1mx3.6/26,mbtmp3.5/4,ML3.6/1,MS3.2/4, Ms1 3.2/4,ms1mx3.0/25,Error ellipse: s-maj=103.1km s-min=34.8km az=90.0,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.80**	**198**	Pn			Pn	14 30 33.3	+0.9
	5.0nm,0.3s,baz=71,slow=13,SNR=98								
DZM				Sn			Sn	14 31 17.3	-0.6
	5.2nm,0.3s,baz=110,slow=22,SNR=9.1								
DZM				LR			LR	14 31 48.2	
	comp=Z,158nm,20.6s,baz=352,slow=36								
HNR	**Honiara**	**11.71**	**319**	LR			LR	14 35 43.9	
	comp=Z,74nm,19.9s,baz=177,slow=32								
RPZ	**Rata Peaks**	**25.34**	**174**	LR			LR	14 44 29.7	
	comp=Z,144nm,18.4s,baz=34,slow=35								
WRA	**Warramunga Arr**	**31.54**	**262**	P			P	14 35 56.5	-0.2
	0.3nm,0.8s,baz=93,slow=8.5,SNR=3.4								
ASAR	**Alice Springs**	**31.94**	**255**	P			P	14 36 00.4	+0.1
	0.5nm,0.5s,baz=83,slow=8.5,SNR=18								
ASAR				LR			LR	14 48 41.4	
	comp=Z,36nm,19.3s,baz=300,slow=36								
CMAR	**Chiang Mai Arr**	**76.87**	**295**	P			P	14 41 27.0	0.0
	0.4nm,0.5s,baz=141,slow=4.4,SNR=4.5								

INMG ***29*** *14:35:31.9±1.1,32.83N×5.28W,h10km,ML2.1,Error ellipse: s-maj=8.1km s-min=2.9km az=38.0*
ISCJB ***29*** *14:35:32.2±0.6,32.95N±0.03×5.41W±0.05,h24km±6km, Error ellipse: s-maj=7.8km s-min=4.6km az=29.1*
CSEM ***29*** *14:35:32.0±0.2,32.87N×5.38W,h10km,mb3.7,Error ellipse: s-maj=5.9km s-min=4.2km az=115.0*
MDD ***29*** *14:35:32.8±0.5,32.80N×5.32W,h8km±5km,mb3.7/5, Error ellipse: s-maj=6.2km s-min=3.5km az=138.0, PRXIMO*
CNRM ***29*** *14:35:33.1,32.76N×5.29W,h4km,MD3.0*
ISC 29 14:35:31.9±1.0,32.83N±0.03×5.34W±0.03,h17km±7km, n47,σ1.933/89,2D,Morocco

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CZD	**Col de Zad**	**0.32**	**50**	P			**Pg**	**14 35 39.0**	**+0.1**
CZD				S			**Sg**	**14 35 44.0**	**+0.4**
CZD	**Col de Zad**	**0.32**	**50**	P			**Pg**	**14 35 39.0**	**+0.1**
CZD				S			**Sg**	**14 35 44.0**	**+0.4**
KIB	**El Ksiba**	**0.64**	**247**	P			**Pg**	**14 35 44.5**	**-0.1**
KIB				S			**Sg**	**14 35 53.0**	**-0.2**
KIB	**El Ksiba**	**0.64**	**247**	P			**Pg**	**14 35 44.5**	**-0.1**
KIB				S			**Sg**	**14 35 53.0**	**-0.2**
ZFT	**Errachidia**	**1.15**	**133**	P			**Pg**	**14 35 53.0**	**-1.1**
ZFT				S			**Sg**	**14 36 07.0**	**-2.2**
ZFT	**Errachidia**	**1.15**	**133**	P			**Pg**	**14 35 53.0**	**-1.1**
ZFT				S			**Sg**	**14 36 07.0**	**-2.2**
TZC	**Tazercounte**	**1.19**	**235**	P			**Pn**	**14 35 56.0**	**+2.1**
TZC				S			**Sn**	**14 36 12.0**	**+2.3**
TZC	**Tazercounte**	**1.19**	**235**	P			**Pn**	**14 35 56.0**	**+2.1**
TZC				*i* S			**Sn**	**14 36 12.0**	**+2.3**
TGT	**Taghat**	**1.26**	**11**	P			**Pn**	**14 35 57.0**	**+2.2**
TGT				S			**Sb**	**14 36 13.0**	**+1.8**
TGT	**Taghat**	**1.26**	**11**	P			**Pn**	**14 35 57.0**	**+2.2**
TGT				S			**Sb**	**14 36 13.0**	**+1.8**
TZK	**Tazeka**	**1.58**	**37**	P			**Pn**	**14 36 01.0**	**+1.6**
TZK				S			**Sn**	**14 36 21.0**	**+1.4**
TZK	**Tazeka**	**1.58**	**37**	P			**Pn**	**14 36 01.0**	**+1.6**
TZK				S			**Sn**	**14 36 21.0**	**+1.4**
OUK	**Oukaimeden**	**2.69**	**234**	P			**Pn**	**14 36 15.0**	**+0.4**
OUK				S			**Sn**	**14 36 46.0**	**-1.0**
OUK	**Oukaimeden**	**2.69**	**234**	P			**Pn**	**14 36 15.0**	**+0.4**
OUK				S			**Sn**	**14 36 46.0**	**-1.0**
PVAQ	**Vaqueiros**	**4.96**	**338**	*e*Pn			**Pn**	**14 36 45.8**	**+0.2**
PVAQ				*e*Sn			**Sn**	**14 37 41.0**	**-1.6**
PVAQ				A			A	14 37 47.6	
	1.3nm,0.3s								
PVAQ	**Vaqueiros**	**4.96**	**338**	P			**Pn**	**14 36 45.8**	**+0.2**
PVAQ				S			**Sn**	**14 37 41.0**	**-1.6**
	1.3nm,0.3s								
PVAQ	**Vaqueiros**	**4.96**	**338**	P			**Pn**	**14 36 45.8**	**+0.2**
PVAQ				S			**Sn**	**14 37 41.0**	**-1.6**
	1.3nm,0.3s								
EGRO	**El Granado**	**5.01**	**340**	P			**Pn**	**14 36 46.7**	**+0.4**
	0.8nm,0.1s,SNR=7.9								
EGRO				S			**Sn**	**14 37 42.9**	**-0.9**
	0.6nm,0.1s,SNR=7.9								
EGRO	**El Granado**	**5.01**	**340**	P			**Pn**	**14 36 46.7**	**+0.4**
	0.8nm,0.1s,SNR=7.9								
EGRO				S			**Sn**	**14 37 42.9**	**-0.9**
	0.6nm,0.1s,SNR=7.9								
EMIN	**Mina Concepcio**	**5.05**	**348**	P			**Pn**	**14 36 47.3**	**+0.5**
	0.2nm,0.1s,SNR=7.9								
EMIN				S			**Sn**	**14 37 44.4**	**-0.3**
	0.3nm,0.1s,SNR=7.9								
EMIN	**Mina Concepcio**	**5.05**	**348**	P			**Pn**	**14 36 47.3**	**+0.5**
	0.2nm,0.1s,SNR=7.9								
EMIN				S			**Sn**	**14 37 44.4**	**-0.3**
	0.3nm,0.1s,SNR=7.9								
PFVI	**Vila Bisbo**	**5.16**	**327**	*e*Pn			**Pn**	**14 36 49.0**	**+0.6**
PFVI				*e*Sn			**Sn**	**14 37 45.6**	**-1.9**
PFVI	**Vila Bisbo**	**5.16**	**327**	P			**Pn**	**14 36 48.9**	**+0.6**
	0.6nm,0.1s,SNR=7.9								
PFVI				S			**Sn**	**14 37 46.0**	**-1.5**
	0.9nm,0.1s,SNR=7.9								
PFVI	**Vila Bisbo**	**5.16**	**327**	P			**Pn**	**14 36 48.9**	**+0.6**
	0.6nm,0.1s,SNR=7.9								
PFVI				*e*Sn			**Sn**	**14 37 45.6**	**-1.9**
PFVI				S			**Sn**	**14 37 46.0**	**-1.5**
	0.9nm,0.1s,SNR=7.9								
MORF	**Marmelete**	**5.23**	**330**	*e*Pn			**Pn**	**14 36 49.5**	**+0.2**
MORF				*e*Sn			**Sn**	**14 37 47.4**	**-1.8**
MORF	**Marmelete**	**5.23**	**330**	P			**Pn**	**14 36 49.5**	**+0.2**
MORF				S			**Sn**	**14 37 47.4**	**-1.8**
MORF	**Marmelete**	**5.23**	**330**	P			**Pn**	**14 36 49.7**	**+0.3**
MORF				S			**Sn**	**14 37 47.4**	**-1.8**
ECAB	**El Cabril**	**5.24**	**359**	P			**Pn**	**14 36 49.7**	**+0.3**
	0.1nm,0.1s,SNR=7.9								
ECAB				S			**Sn**	**14 37 47.9**	**-1.5**
	0.2nm,0.1s,SNR=7.9								
ECAB	**El Cabril**	**5.24**	**359**	P			**Pn**	**14 36 49.7**	**+0.3**
	0.1nm,0.1s,SNR=7.9								
ECAB				S			**Sn**	**14 37 47.9**	**-1.5**
	0.2nm,0.1s,SNR=7.9								
PCVE	**Castro Verde**	**5.28**	**336**	*e*Pn			**Pn**	**14 36 50.9**	**+1.0**
PCVE				*e*Sn			**Sn**	**14 37 48.1**	**-2.3**
PCVE				A			A	14 38 06.3	
	2.0nm,0.4s								
PCVE	**Castro Verde**	**5.28**	**336**	P			**Pn**	**14 36 50.9**	**+1.0**
PCVE				S			**Sn**	**14 37 48.1**	**-2.3**
	2.0nm,0.4s								
PCVE	**Castro Verde**	**5.28**	**336**	P			**Pn**	**14 36 50.9**	**+1.0**
PCVE				S			**Sn**	**14 37 48.1**	**-2.3**
	2.0nm,0.4s								
EADA	**Adamuz**	**5.36**	**6**	S			**Sn**	**14 37 51.3**	**-1.2**
	0.3nm,0.1s,SNR=7.9								
EADA	**Adamuz**	**5.36**	**6**	S			**Sn**	**14 37 51.3**	**-1.2**
	0.3nm,0.1s,SNR=7.9								
PBAR	**Barrancos**	**5.51**	**346**	*e*Pn			**Pn**	**14 36 53.9**	**+0.8**
PBAR				*e*Sn			**Sn**	**14 37 53.5**	**-2.6**
PBAR				A			A	14 37 55.6	
	2.3nm,0.5s								
PBAR	**Barrancos**	**5.51**	**346**	P			**Pn**	**14 36 53.9**	**+0.8**
PBAR				S			**Sn**	**14 37 53.5**	**-2.6**
	2.3nm,0.5s								
PBAR	**Barrancos**	**5.51**	**346**	P			**Pn**	**14 36 53.9**	**+0.8**
MESJ	**Messejana**	**5.53**	**336**	*e*Pn			**Pn**	**14 36 53.6**	**+0.2**
MESJ				*e*Sn			**Sn**	**14 37 55.6**	**-0.9**
MESJ				A			A	14 38 00.9	
	1.7nm,0.4s								
MESJ	**Messejana**	**5.53**	**336**	P			**Pn**	**14 36 53.6**	**+0.2**
MESJ				S			**Sn**	**14 37 55.6**	**-0.9**
	1.7nm,0.4s								
MESJ	**Messejana**	**5.53**	**336**	P			**Pn**	**14 36 53.6**	**+0.2**
MESJ				S			**Sn**	**14 37 55.6**	**-0.9**
	1.7nm,0.4s								
PNCL	**Nicolau / Gran**	**5.88**	**335**	*e*Pn			**Pn**	**14 36 58.3**	**+0.1**
PNCL				*e*Sn			**Sn**	**14 38 03.7**	**-1.5**
PNCL	**Nicolau / Gran**	**5.88**	**335**	*e*Pn			**Pn**	**14 36 58.3**	**+0.1**
PNCL				*e*Sn			**Sn**	**14 38 03.7**	**-1.5**
EBAD	**Badajoz**	**6.07**	**348**	P			**Pn**	**14 37 01.2**	**+0.4**
	0.9nm,0.1s,SNR=6.4								
EBAD				S			**Sn**	**14 38 07.8**	**-2.0**
	0.8nm,0.1s,SNR=7.9								
EBAD	**Badajoz**	**6.07**	**348**	P			**Pn**	**14 37 01.2**	**+0.4**
	0.9nm,0.1s,SNR=6.4								
EBAD				S			**Sn**	**14 38 07.8**	**-2.0**
	0.8nm,0.1s,SNR=7.9								
PMRV	**Marv??o**	**6.79**	**346**	*e*Pn			**Pn**	**14 37 11.4**	**+0.6**
PMRV	**Marv??o**	**6.79**	**346**	P			**Pn**	**14 37 11.4**	**+0.6**
PMRV	**Marv??o**	**6.79**	**346**	P			**Pn**	**14 37 11.4**	**+0.6**

IDC ***29*** *14:42:58.9±3.0,35.54N×140.99E,h0km,mb3.4/2, mb1 3.4/4,mb1mx3.3/33,mbtmp3.3/4,ML2.7/2,Error ellipse: s-maj=67.0km s-min=24.4km az=59.0*
ISCJB ***29*** *14:43:00.1±1.1,35.63N±0.04×141.10E±0.09,h22km±5km, mb3.4/2,Error ellipse: s-maj=12.3km s-min=6.0km az=166.4*
JMA ***29*** *14:43:01.2±0.1,35.62N×141.00E,h13km±1km,M3.3*
ISC 29 14:42:59.8±1.5,35.59N±0.04×141.09E±0.09,h15km±7km, n18,σ1.927/19,3C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.22**	**301**	⇑P			**Pg**	**14 43 04.8**	**+0.1**
CHOJ				S			**Sg**	**14 43 07.6**	**-0.4**
KTR	**Katsuura**	**0.77**	**235**	P			**Pn**	**14 43 15.4**	**-0.7**
KTR				S			**Sb**	**14 43 26.0**	**+0.9**
BSO4	**Boso 4**	**0.86**	**226**	P			**Pn**	**14 43 17.7**	**+0.5**
BSO3	**Boso 3**	**0.92**	**211**	⇑P			**Pn**	**14 43 18.4**	**+0.5**
BSO1	**Boso 1**	**0.94**	**186**	⇑P			**Pg**	**14 43 18.3**	**+0.5**
JYT	**Yasato**	**0.97**	**312**	P			**Pb**	**14 43 18.0**	**-0.2**
JYT				S			**Sb**	**14 43 29.6**	**-1.2**
JHO	**Hitachi**	**1.10**	**338**	P			**Pn**	**14 43 20.4**	**-0.3**
JHO				S			**Sb**	**14 43 33.8**	**-0.9**
MJAR	**Matsushiro Arr**	**2.52**	**293**	Pn			**Pn**	**14 43 40.6**	**+0.4**
	1.6nm,0.3s,baz=95,slow=8.7,SNR=12								
MJAR				Sn			**Sn**	**14 44 09.9**	**-0.7**
	2.3nm,0.3s,baz=103,slow=26,SNR=5.8								
MAT	**Matsushiro**	**2.52**	**293**	P			**Pn**	**14 43 41.3**	**+1.1**
MAT				S			**Sn**	**14 44 11.2**	**+0.5**
JHJ	**Hachijo jima 2**	**2.69**	**204**	Pn			**Pn**	**14 43 42.5**	**0.0**
	3.2nm,0.3s,baz=73,slow=19,SNR=3.3								
JHJ				Sn			**Sn**	**14 44 10.8**	**-4.0**
	10nm,0.3s,baz=53,slow=20,SNR=4.2								
H11N2	**WAKE ISLAND Hy 27.67**	**118**		T			T	15 17 45.1	
	baz=310,slow=75,SNR=22								
H11N1	**WAKE ISLAND Hy 27.68**	**118**		T			T	15 17 46.6	
	baz=310,slow=75,SNR=16								
H11N3	**WAKE ISLAND Hy 27.69**	**118**		T			T	15 17 49.1	
	baz=310,slow=75,SNR=20								
H11S1	**WAKE ISLAND Hy 28.33**	**120**		T			T	15 18 37.3	
	baz=312,slow=75,SNR=99								
H11S3	**WAKE ISLAND Hy 28.33**	**120**		T			T	15 18 37.3	
	baz=312,slow=75,SNR=114								
H11S2	**WAKE ISLAND Hy 28.34**	**120**		T			T	15 18 38.5	
	baz=312,slow=75,SNR=83								
MKAR	**Makanchi Array**	**44.68**	**303**	P			**P**	**14 51 12.9**	**+1.0**
	0.1nm,0.3s,baz=88,slow=9.1,SNR=3.1								
WRA	**Warramunga Arr**	**55.60**	**188**	P			**P**	**14 52 35.6**	**+0.7**
	0.5nm,0.8s,baz=5.5,slow=7.7,SNR=5.6								

NIED ***29*** *14:53:00,36.70N×142.00E,h23km,Mw5.4 Best double couple: M0 1.56000×10^17 NP1:φs219.00000°,δ16.00000°, λ111.00000°. NP2:φs18.00000°,δ75.00000°,λ84.00000°.*
JMA ***29*** *14:53:17.4±0.2,36.69N×142.13E,h29km,M5.6*
JMA Felt III J1.
NEIC ***29*** *14:53:19.0±2.2,36.69N×141.87E,h17km±13km, mb5.2/141,MS5.0/122,Error ellipse: s-maj=4.5km s-min=2.9km az=138.0*
NEIC Recorded [3 JMA] in Fukushima, Ibaraki and Tochigi.
ISCJB ***29*** *14:53:19.2±0.6,36.71N±0.02×141.94E±0.02,h30km±4km, mb5.2/263,MS5.1/190,Error ellipse: s-maj=3.1km s-min=2.1km az=163.6*
BJI ***29*** *14:53:19.8,36.76N×141.64E,h28km,mb5.4/81,mB5.4/67, Ms5.6/90,Ms7 5.5/82*
GCMT ***29*** *14:53:19.0±0.1,36.67N×142.11E,h30km,MW5.4/116, Moment Tensor Solution. s82,c140; s116,c219; Duration: 1s3 Moment tensor: Scale 10^17Nm; Mrr 1.12±.03; Mθθ 0.15±.02; Mφφ -0.96±.02; Mrθ 0.45±.03; Mθφ -0.47±.01; Mφr 1.32±.04; Best double couple: M0 1.80800×10^17 NP1:φs20.00000°,δ70.00000°, λ87.00000°. NP2:φs210.00000°,δ20.00000°,λ99.00000°. Principal axes: T 1.7800, Plg65.0000°, Azm284.0000°; N 0.0580, Plg3.0000°, Azm21.0000°; P -1.8370, Plg25.0000°, Azm113.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***29*** *14:53:20.4±4.2,36.68N×142.02E,h30km±30km,mb4.7/34, mb1 4.8/39,mb1mx4.8/42,mbtmp4.9/39,ML4.5/3,MS4.9/44, Ms1 4.9/44,ms

ASAJ Sn **Sn** **14 56 25.4 -4.4**
baz=171,slow=19
ASAJ **Asahikawa** **7.43 3** *e*Pn **Pn** **14 55 04.8 -1.8**
ASAJ *e*Sn **Sn** **14 56 30.1 +0.4**
JKIT **Kitakata** **9.57 248** P **Pn** **14 55 38.3 +2.2**
KUR **Kuril'sk** **9.62 26** *e*P **Pn** **14 55 36.9 +0.4**
KUR *i* S **Sn** **14 57 15.5 -8.0**
KUR pmax pmax
comp=N,14nm,0.6s
KUR pmax pmax
comp=E,17nm,0.6s
KUR pmax pmax
comp=Z,54nm,0.6s
KUR pmax pmax
comp=Z,268nm,3.7s
KUR smax smax
comp=E,112μm,0.5s
KUR smax smax
comp=N,53nm,0.5s
KUR smax smax
comp=N,954nm,4.6s
KUR smax smax
comp=E,639nm,2.3s
KUR MLR MLR
comp=N,2μm,13.0s
KUR MLR MLR
comp=E,3μm,13.0s
KUR MLR MLR
comp=Z,2μm,13.0s
JNU **Nakatsue** **9.79 252** Pn **Pn** **14 55 41.2 +2.2**
comp=Z,2.0nm,0.3s,baz=67,slow=7.1,SNR=44
JNU LR LR 14 59 41.1
comp=Z,51nm,21.0s,baz=69,slow=39
JNU **Nakatsue** **9.79 252** P **Pn** **14 55 41.1 +2.0**
JNU **Nakatsue** **9.79 252** *e*Pn **Pn** **14 55 41.1 +2.0**
VLA **Vladivostok** **10.06 313** *c i*P **Pn** **14 55 44.0 +1.3**
JIU2 **Izumi 2** **10.09 249** P **Pn** **14 55 45.2 +2.1**
JTZ **Takazaki** **10.20 245** P **Pn** **14 55 46.4 +1.8**
MSHR **Mys Shultsa** **10.21 308** *c i*P **Pn** **14 55 46.1 +1.5**
YSS **Yuzh-Sakhalins** **10.27** 3‖ *e*P **Pn** **14 55 44.0 -1.4**
YSS *e*S **Sn** **14 57 36.0 -3.4**
YSS pmax pmax
comp=Z,60nm,0.8s
YSS MLR MLR
comp=N,9μm,16.0s
YSS MLR MLR
comp=Z,8μm,16.0s
YSS MLR MLR
comp=E,11μm,15.0s
YSS **Yuzh-Sakhalins** **10.27 3** *e*Pn **Pn** **14 55 41.7 -3.8**
JZO **Okuchi** **10.44 248** P **Pn** **14 55 49.7 +1.7**
USRK **Ussuriysk Ar.** **10.68 318** Pn **Pn** **14 55 52.4 +1.3**
comp=E,2.1nm,0.3s,baz=119,slow=16,SNR=65
USRK LR LR 14 59 51.7
comp=E,19μm,18.0s,baz=122,slow=36
KSRS **Korea Array** **11.26 278** Pn **Pn** **14 56 03.0 +3.9**
comp=E,1.5nm,0.3s,baz=91,slow=13,SNR=136
KSRS LR LR 15 00 14.6
comp=E,17μm,19.1s,baz=92,slow=37
KS01 **Wonju Array Si** **11.28 278** *e*Pn **Pn** **14 56 01.8 +2.4**
KS15 **Wonju Array Si** **11.29 278** *e*Pn **Pn** **14 56 02.9 +3.4**
KSAR **Wonju Array Be** **11.29 278** P **Pn** **14 56 03.0 +3.5**
KSAR **Wonju Array Be** **11.29 278** Pn **Pn** **14 56 03.0 +3.5**
MDJ **Mudanjiang** **12.28 314** P **Pn** **14 56 13.5 +0.4**
MDJ S **Sn** **14 58 31.3 +2.5**
MDJ PcP **PcP** **15 01 55.5 +1.5**
MDJ ScP **ScP** **15 05 25.0 +0.2**
MDJ PcS **PcS** **15 05 28.3 +0.2**
MDJ ScS **ScS** **15 09 01.0 +0.3**
MDJ pmax pmax
comp=E,21nm,1.1s
MDJ pmax pmax
comp=E,880nm,5.7s
MDJ LR LR
comp=E,8μm,17.0s
MDJ LR LR
comp=E,5μm,18.4s
MDJ LR LR
comp=E,13μm,18.4s
MDJ **Mudanjiang** **12.28 314** Pn **Pn** **14 56 11.4 -1.6**
comp=E,115nm,0.8s
INCN **Inchon** **12.29 278** Pn **Pn** **14 56 16.0 +2.8**
SNR=14
INCN **Inchon** **12.29 278** P **Pn** **14 56 16.0 +2.8**
SNR=14
INCN **Inchon** **12.29 278** *e*Pn **Pn** **14 56 15.7 +2.6**
UGL **Uglegorsk** **12.38 0** P **Pn** **14 56 10.0 -4.3**
UGL *e*S **Sn** **14 58 28.0 -3.0**
UGL pmax pmax
comp=Z,700nm,6.0s
UGL smax smax
comp=N,500nm,12.0s
UGL smax smax
comp=E,2μm,12.0s
UGL MLR MLR
comp=Z,7μm,14.0s
UGL MLR MLR
comp=N,5μm,15.0s
UGL MLR MLR
comp=E,13μm,17.0s
HABR **Khabarovsk** **12.82 339** *c e*P **Pn** **14 56 18.2 -2.2**
HABR *e*S **Sn** **14 58 39.7 -2.2**
HABR pmax pmax
comp=N,33nm,1.5s
HABR pmax pmax
comp=E,23nm,1.5s
HABR pmax pmax
comp=Z,63nm,1.5s
HABR MLR MLR
comp=Z,9μm,15.0s
TYV **Tymovskoe** **14.17 2** *e*P **Pn** **14 56 37.5 -1.3**
TYV pmax pmax
comp=Z,55nm,0.8s
TYV MLR MLR
comp=N,12μm,16.0s
CN2 **Changchun** **14.47 304** *e*P **Pn** **14 56 41.8 -1.1**
CN2 *e*pP P 14 56 49.3 0.0
CN2 *e*S **Sn** **14 59 21.8 -0.5**
CN2 pmax pmax
comp=N,30nm,1.1s
CN2 pmax pmax
comp=N,1μm,10.0s
CN2 LR LR
comp=N,8μm,14.0s
CN2 LR LR
comp=N,12μm,14.0s
CN2 LR LR
comp=N,13μm,15.0s
KLR **Kul'dur** **14.58 332** Pn **Pn** **14 56 42.1 -2.2**
comp=N,0.5nm,0.3s,baz=138,slow=9.4,SNR=15
KLR LR LR 15 02 17.0
comp=N,11μm,18.9s,baz=146,slow=37
SNY **Shenyang** **15.14 295** ⇑P **Pn** **14 56 51.3 -0.6**
SNY S **Sn** **14 59 42.5 +3.9**
SNY pmax pmax
comp=N,53nm,1.3s
SNY LR LR
comp=N,8μm,13.9s
SNY LR LR
comp=N,19μm,16.7s
SNY LR LR
comp=N,29μm,14.6s
JOW **Kunigami** **15.24 234** Pn **Pn** **14 56 51.1 -2.2**
comp=N,0.2nm,0.3s,baz=46,slow=9.9,SNR=5.9
JOW LR LR 15 02 36.5
comp=N,6μm,21.0s,baz=54,slow=36
JOW **Kunigami** **15.24 234** *e*Pn **Pn** **14 56 51.4 -1.9**
comp=N,186nm,1.2s
DL2 **Dalian** **16.24 284** ⇑ *i*P **Pn** **14 57 06.3 +0.2**
DL2 S **Sn** **15 00 06.8 +1.5**
DL2 pmax pmax
comp=N,180nm,1.0s
DL2 pmax pmax
comp=N,1μm,6.0s
DL2 LR LR
comp=N,6μm,12.4s
DL2 LR LR
comp=N,12μm,13.9s
DL2 LR LR
comp=N,17μm,17.1s
NKL **Nikolayevsk** **16.48 357** *e*P **Pn** **14 57 07.0 -2.0**
NKL *e*S **Sn** **15 00 04.0 -6.9**
NKL pmax pmax
comp=Z,500nm,9.0s
NKL pmax pmax
comp=E,33nm,1.1s
NKL pmax pmax
comp=Z,55nm,1.1s
NKL smax smax
comp=E,900nm,11.0s
NKL MLR MLR
comp=N,5μm,16.0s
NKL MLR MLR
comp=E,8μm,16.0s
NKL MLR MLR
comp=Z,8μm,16.0s
SSE **Sheshan** **18.13 258** P **Pn** **14 57 29.0 -0.8**
SSE S **Sn** **15 00 50.5 -0.8**
SSE pmax pmax
comp=Z,90nm,1.2s
SSE pmax pmax
comp=Z,1μm,10.4s
SSE LR LR
comp=Z,5μm,13.6s
SSE LR LR
comp=Z,10μm,13.5s
SSE LR LR
comp=Z,14μm,13.5s
NJ2 **Nanjing** **19.63 263** *e*P **P** **14 57 44.8 -1.6**
NJ2 sP **pP** **14 57 54.8 +0.4**
NJ2 pmax pmax
comp=Z,52nm,0.9s
NJ2 LR LR
comp=Z,4μm,13.6s
NJ2 LR LR
comp=Z,16μm,14.6s
NJ2 LR LR
comp=Z,17μm,15.2s
PEA0 **Petropavlovsk-** **19.75 29** *e*P **P** **14 57 47.7 +0.1**
PEA0B **Petropavlovsk-** **19.75 29** *e*P **Pn** **14 57 54.9 +5.6**
comp=E,56nm,1.1s
PETK **Petropavlovsk-** **19.75 29** P **P** **14 57 48.2 +0.6**
comp=Z,0.2nm,0.3s,baz=219,slow=12,SNR=6.6
PETK LR LR 15 05 41.7
comp=Z,2μm,19.9s,baz=214,slow=38
TIA **Tai'an** **19.99 276** ⇑P **P** **14 57 48.5 -1.8**
TIA S **S** **15 01 31.0 -2.6**
TIA pmax pmax
comp=Z,110nm,1.4s
TIA pmax pmax
comp=Z,1μm,11.0s
TIA LR LR
comp=Z,6μm,17.0s
TIA LR LR
comp=Z,12μm,16.0s
TIA LR LR
comp=Z,14μm,15.0s
PET **Petropavlovsk** **20.07 30** *e*P **P** **14 57 50.4 -0.6**
PET *e*S Sn 15 01 37.4 -0.3
PET pmax pmax
comp=Z,300nm,10.0s
PET pmax pmax
comp=Z,300nm,9.5s
PET MLR MLR
comp=Z,3μm,18.0s
PET MLR MLR
comp=Z,3μm,19.0s
PET **Petropavlovsk** **20.07 30** *e*P **P** **14 57 50.6 -0.4**
comp=Z,64nm,1.1s
PET LR LR
comp=Z,2μm,19.0s
HIA **Hailar** **20.46 315** P **P** **14 57 51.8 -3.6**
HIA pmax pmax
comp=Z,136nm,1.3s
HIA MLR MLR
comp=Z,10μm,19.0s
HIA **Hailar** **20.46 315** P **P** **14 57 51.8 -3.6**
comp=Z,136nm,1.3s
HIA LR LR
comp=Z,10μm,19.0s
BJI **Beijing** **20.48 287** P **P** **14 57 52.5 -3.1**
BJI pP **pP** **14 58 03.3 -0.4**
BJI S **S** **15 01 44.8 +1.5**
BJI pmax pmax
comp=Z,38nm,1.6s
BJI pmax pmax
comp=Z,650nm,4.1s
BJI LR LR
comp=Z,4μm,15.9s
BJI LR LR
comp=Z,7μm,15.2s
BJT **Baijiatuau** **20.49 287** *e*P **P** **14 57 53.3 -2.4**
BJT pmax pmax
comp=Z,75nm,0.7s
BJT MLR MLR
comp=Z,5μm,21.0s
BJT **Baijiatuau** **20.49 287** *e*P **P** **14 57 53.3 -2.4**
comp=Z,75nm,0.7s
BJT LR LR
comp=Z,5μm,21.0s
ANA2 **Anatahan** **20.54 170** *e*P **P** **14 57 49.3 -7.1**
YHNB **Yeheng** **21.34 242** *e*P **P** **14 58 04.4 -0.7**
comp=Z,59nm,0.8s
YHNB LR LR
comp=Z,5μm,20.0s
NACB **Ninganchiao** **21.51 240** *e*P **P** **14 58 05.4 -1.3**
comp=Z,53nm,0.8s
SSLB **Suanglung** **22.20 240** *e*P **P** **14 58 10.7 -3.5**
comp=Z,52nm,0.9s
YULB **Yu-li** **22.22 239** *e*P **P** **14 58 12.3 -2.1**
comp=Z,46nm,0.9s
TPUB **Ta-pu** **22.74 240** *e*P **P** **14 58 16.8 -3.2**
comp=Z,109nm,0.7s
TWG **Pinlang** **22.75 238** *e*P **P** **14 58 17.4 -2.8**
comp=Z,426nm,1.0s
GUMO **Guam** **23.16 173** P **P** **14 58 28.0 +3.8**
comp=Z,158nm,1.1s,baz=56,slow=7.3,SNR=5.0
GUMO LR LR 15 07 30.3
comp=Z,668nm,21.0s,baz=11,slow=37
GUMO **Guam** **23.16 173** *e*P **P** **14 58 25.2 +1.0**
comp=Z,129nm,1.0s
CLNS **Chul'man** **23.18 336** *e*P **P** **14 58 21.8 -2.4**
CLNS *e**PP **pP** **14 58 32.6 +0.1**
CLNS *e* 14 58 48.8
CLNS *e*S **S** **15 02 27.6 -6.2**
CLNS *e*SS SnSn 15 03 24.5 +16
CLNS pmax pmax
comp=Z,10.0nm,0.8s
CLNS pmax pmax
comp=E,37nm,1.1s
CLNS pmax pmax
comp=N,40nm,1.2s
CLNS pmax pmax
comp=Z,33nm,1.0s
CLNS pmax pmax
comp=N,49nm,1.0s
CLNS pmax pmax
comp=E,20nm,1.0s
CLNS smax smax
comp=N,555nm,10.5s
CLNS smax smax
comp=E,891nm,13.0s
CLNS MLR MLR
comp=Z,7μm,15.0s
CLNS MLR MLR
comp=N,4μm,13.0s
CLNS MLR MLR
comp=E,2μm,12.0s
QZH **Quanzhou** **23.19 246** ⇓ *i*P **P** **14 58 21.8 -2.8**
QZH S **S** **15 02 34.0 -0.4**
QZH pmax pmax
comp=E,220nm,0.8s
QZH LR LR
comp=E,5μm,11.2s
QZH LR LR
comp=E,9μm,15.1s
QZH LR LR
comp=E,12μm,14.5s
TIY **Taiyuan** **23.52 281** *e*P **P** **14 58 25.8 -2.0**
TIY pmax pmax
comp=E,64nm,1.1s
TIY pmax pmax
comp=E,340nm,3.5s
TIY LR LR
comp=E,4μm,12.8s
TIY LR LR
comp=E,15μm,13.7s
TIY LR LR
comp=E,16μm,13.9s
MA2 **Magadan** **23.59 11** P **P** **14 58 27.2 -1.0**
comp=E,40nm,0.8s,baz=192,slow=8.9,SNR=21
MA2 LR LR 15 07 29.9
comp=E,1μm,21.5s,baz=194,slow=36
MA2 **Magadan** **23.59 11** P **P** **14 58 27.2 -1.0**
MA2 MLR MLR
comp=Z,2μm,19.0s
MA2 **Magadan** **23.59 11** P **P** **14 58 27.2 -1.0**
MA2 LR LR
comp=Z,2μm,19.0s
WHN **Wuhan** **23.77 263** ⇓P **P** **14 58 29.0 -1.2**
WHN S **S** **15 02 39.5 -4.2**
WHN pmax pmax
comp=Z,2μm,3.6s
WHN LR LR
comp=Z,9μm,20.2s
WHN LR LR
comp=Z,24μm,14.1s
WHN LR LR
comp=Z,27μm,14.6s
HHC **Hu-ho-hao-te** **24.01 289** *e*P **P** **14 58 29.3 -3.2**
HHC sP pP 14 58 42.5 +1.3
HHC S **S** **15 02 41.0 -6.7**
HHC pmax pmax
comp=Z,38nm,0.9s
HHC pmax pmax
comp=Z,620nm,5.2s
HHC LR LR
comp=Z,5μm,13.6s
HHC LR LR
comp=Z,5μm,13.1s
HHC LR LR
comp=Z,4μm,13.6s
BTO **Baotou** **25.19 289** *e*P **P** **14 58 39.5 -3.7**
CIT **Chita** **25.24 316** *e*P **P** **14 58 43.4 -0.1**
CIT *e* 14 58 50.4
CIT *e* 14 58 56.8
CIT *e* 14 59 25.6
CIT pmax pmax
comp=Z,817nm,1.6s
YAK **Yakutsk** **26.50 347** P **P** **14 58 54.3 -0.4**
comp=Z,176nm,0.8s,baz=158,slow=1.1,SNR=118
YAK LR LR 15 09 25.7
comp=Z,2μm,18.3s,baz=156,slow=36
YAK **Yakutsk** **26.50 347** *c i*P **P** **14 58 54.2 -0.4**
YAK *e**PP **pP** **14 59 01.2 -2.2**
YAK *e*S **S** **15 03 27.0 +0.4**
YAK *e**SS **sS** **15 03 43.6 +2.6**
YAK pmax pmax
comp=Z,205nm,0.9s
YAK pmax pmax
comp=E,34nm,1.4s
YAK pmax pmax
comp=N,92nm,1.2s
YAK pmax pmax
comp=N,323nm,2.5s
YAK pmax pmax
comp=E,190nm,2.2s
YAK pmax pmax
comp=Z,285nm,2.3s
YAK smax smax
comp=N,995nm,3.3s
YAK smax smax
comp=E,385nm,2.8s
YAK MLR MLR
comp=Z,9μm,16.0s
YAK MLR MLR
comp=E,3μm,15.0s
YAK MLR MLR
comp=N,8μm,17.0s
YAK **Yakutsk** **26.50 347** *e*P **P** **14 58 54.4 -0.4**
comp=N,210nm,0.9s
XAN **Xi'an** **27.02 274** P **P** **14 58 59.0 -0.8**
XAN PP **PnPn** **14 59 45.5 +2.7**
XAN S **S** **15 03 38.8 +3.3**
XAN pmax pmax
comp=N,160nm,1.6s
XAN pmax pmax
comp=N,1μm,4.9s
XAN LR LR
comp=N,5μm,15.0s
XAN LR LR
comp=N,3μm,15.0s
SEY **Seymchan** **27.04 10** *c i*P **P** **14 59 00.1 +0.6**
comp=N,37nm,0.8s,baz=195,slow=7.1,SNR=69
SEY **Seymchan** **27.04 10** *c i*P **P** **14 59 00.5 +1.0**
H11N2 **WAKE ISLAND Hy** **27.58 121** T T 15 28 43.0
baz=313,slow=75
H11N1 **WAKE ISLAND Hy** **27.59 121** T T 15 28 38.3
baz=313
H11N3 **WAKE ISLAND Hy** **27.60 121** T T 15 28 38.5
baz=313,slow=75
ENH **Enshi** **27.76 266** *e*P **P** **14 59 05.9 -0.5**
comp=N,334nm,0.7s
ENH LR LR
comp=Z,5μm,19.0s
GZH **Guangzhou** **28.17 249** P **P** **14 59 06.5 -3.5**
GZH S **S** **15 03 47.0 -6.6**
GZH pmax pmax
comp=Z,2μm,3.8s
H11S1 **WAKE ISLAND Hy** **28.29 123** T T 15 29 29.9
baz=314,slow=76,SNR=661
H11S3 **WAKE ISLAND Hy** **28.29 123** T T 15 29 27.0
baz=314,slow=76,SNR=497
H11S2 **WAKE ISLAND Hy** **28.31 123** T T 15 29 27.0
baz=314,slow=76,SNR=277
SONA1 **Songino Array** **28.35 304** *e*P **P** **14 59 11.0 -0.7**
SONM **Songino Array** **28.35 304** P **P** **14 59 11.6 -0.1**
comp=Z,85nm,0.8s,baz=105,slow=7.8,SNR=230
SONM LR LR 15 10 43.2
comp=Z,4μm,19.1s,baz=103,slow=37
LZH **Lanzhou** **30.57 280** *e*P **P** **14 59 32.0 +0.5**
LZH pP pP 14 59 40.8 +0.5
LZH sP sP 14 59 44.3 +0.4
LZH PP **PnPn** **15 00 26.3 -4.8**
LZH *e*S **S** **15 04 32.3 +0.7**
LZH sS sS 15 04 46.5 +0.4
LZH SS **ScP** **15 06 12.0 +2.0**
LZH pmax pmax
comp=Z,110nm,1.0s
LZH pmax pmax
comp=Z,440nm,4.2s
LZH LR LR
comp=Z,7μm,14.8s
LZH LR LR
comp=Z,14μm,15.5s
LZH LR LR
comp=Z,17μm,16.1s
IRK **Irkutsk** **30.66 312** *e*P **P** **14 59 32.2 +0.3**
IRK pmax pmax
comp=Z,168nm,2.3s
ZAK **Zakamensk** **30.84 309** *e*P **P** **14 59 34.2 +0.6**
ZAK pmax pmax
comp=Z,67nm,1.4s
TLY **Talaya** **30.90 311** P **P** **14 59 34.6 +0.6**
comp=Z,15nm,0.6s,baz=107,slow=11
TLY LR LR 15 12 43.8
comp=Z,7μm,18.1s,baz=105,slow=38
TLY **Talaya** **30.90 311** *c i*P **P** **14 59 34.7 +0.6**
TLY *e* 15 00 35.0
TLY *e*PPP PPP 15 00 44.0
TLY *e*S **S** **15 04 40.2 +4.1**
TLY *e*SSS SSS 15 06 42.3
TLY pmax pmax
comp=Z,125nm,1.5s
TLY MLR MLR
comp=Z,6μm,15.0s
TLY **Talaya** **30.90 311** P **P** **14 59 34.6 +0.6**
TLY LR LR
comp=Z,6μm,19.0s
GYA **Guiyang** **31.62 261** ⇑ *i*P **P** **14 59 39.8 -0.9**
GYA pP sP 14 59 52.0 -1.2
GYA PP **PnPn** **15 00 47.3 +2.5**
GYA PcP **PcP** **15 02 34.8 +2.2**
GYA S **S** **15 04 48.3 +0.3**
GYA sS sS 15 05 02.5 0.0
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,140nm,4.4s
GYA LR LR
comp=Z,4μm,16.2s
GYA LR LR
comp=Z,5μm,14.4s
GYA LR LR
comp=Z,5μm,12.2s
CD2 **Chengdu** **32.13 271** P **P** **14 59 45.5 +0.3**
CD2 pP pP 14 59 54.8 +0.9
CD2 sP sP 14 59 59.0 +1.4
CD2 S **S** **15 04 56.3 +0.4**

CD2 sS sS 15 05 12.5 +2.2
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,730nm,5.5s
CD2 LR LR
comp=Z,7µm,13.9s
CD2 LR LR
comp=Z,7µm,15.1s
CD2 LR LR
comp=Z,11µm,14.5s
MOY Mondy 32.50 311 *e*P **P 14 59 48.6 +0.3**
MOY pmax pmax
comp=Z,120nm,3.5s
DAV Davao City (W) 33.07 211 PFAKE 15 00 10.0 +17
DAV LR LR
comp=Z,1µm,21.0s
GTA Gaotai 33.10 288 ⇑P **P 14 59 53.5 -0.1**
GTA pP pP 15 00 02.5 +0.1
GTA sP sP 15 00 06.5 +0.4
GTA PP **PnPn 15 01 05.0 +1.4**
GTA PcP **PcP 15 02 36.8 +0.4**
GTA S **S 15 05 09.8 -1.1**
GTA sS sS 15 05 25.3 -0.1
GTA PcS **PcS 15 06 22.3 +0.3**
GTA ScS **ScS 15 10 17.8 -1.2**
GTA pmax pmax
comp=Z,32nm,1.1s
GTA pmax pmax
comp=Z,650nm,5.9s
GTA LR LR
comp=Z,5µm,14.6s
GTA LR LR
comp=Z,3µm,14.2s
GTA LR LR
comp=Z,3µm,14.8s
QIZ Qiongzhong 33.21 247 P **P 14 59 54.5 -0.1**
QIZ S **S 15 05 13.0 +0.3**
QIZ pmax pmax
comp=Z,100nm,1.8s
QIZ LR LR
comp=Z,3µm,16.8s
QIZ LR LR
comp=Z,4µm,13.4s
QIZ Qiongzhong 33.21 247 *e*P **P 14 59 53.9 -0.7**
comp=Z,181nm,1.4s
CTBH Cotabato--PC H 33.51 213 ⇑*i*P **P 14 59 58.0 +0.8**
BILL Bilibino 34.22 16*c i*P **P 15 00 02.6 -0.3**
BILL *e* 15 00 11.9
BILL *e* 15 01 16.4
BILL *e*PPP PPP 15 01 28.2
BILL pmax pmax
comp=Z,22nm,1.0s
BILL MLR MLR
comp=Z,2µm,16.0s
BILL Bilibino 34.22 16 *e*P **P 15 00 02.8 -0.1**
comp=Z,29nm,1.2s
BILL LR LR
comp=Z,2µm,19.0s
MIDW Midway 35.12 92 PFAKE 15 00 20.0 +9.0
MIDW LR LR
comp=Z,2µm,20.0s
KMI Kunming 35.37 262 P **P 15 00 13.5 0.0**
KMI pP pP 15 00 23.5 +1.2
KMI sP sP 15 00 28.5 +2.5
KMI PP **PnPn 15 01 27.5 -4.8**
KMI S **S 15 05 44.5 -1.8**
KMI sS sS 15 06 03.5 +2.6
KMI pmax pmax
comp=Z,130nm,1.4s
KMI pmax pmax
comp=Z,550nm,3.4s
KMI LR LR
comp=Z,3µm,15.7s
KMI LR LR
comp=Z,5µm,15.4s
KMI LR LR
comp=Z,5µm,19.8s
TIXI Tiksi 35.68 353 P **P 15 00 15.1 -0.3**
comp=Z,10nm,0.6s,baz=151,slow=7.1,SNR=7.9
TIXI Tiksi 35.68 353*c i*P **P 15 00 14.9 -0.5**
TIXI pmax pmax
comp=Z,27nm,1.2s
KDM Kudat 37.49 224 ⇑P **P 15 00 33.1 +1.7**
KRAR Krasnoyarsk 38.02 316 ⇑*i*P **P 15 00 35.7 +0.2**
MYLDM Lahad Datu 38.04 220 ⇑P **P 15 00 38.8 +2.8**
MYLDM Lahad Datu 38.04 220 *e*P **P 15 00 37.7 +1.6**
comp=Z,141nm,1.0s
SDKM Sandakan 38.34 222 ⇓P **P 15 00 39.9 +1.2**
KKM Kota Kinabalu 38.55 224 *e*P **P 15 00 39.3 -1.1**
comp=Z,59nm,1.1s
KKM LR LR
comp=Z,1µm,19.0s
SWI Sorong 38.67 197 P **P 15 00 42.1 +0.7**
comp=Z,68nm,1.4s,comp=Z,1µm
NONG Nongkai 38.84 252 P **P 15 00 43.5 +0.7**
comp=Z,170nm,0.8s,comp=Z,3µm
SKNT Sakolnakorn 38.86 250 P **P 15 00 43.8 +0.9**
comp=Z,219nm,1.2s,comp=Z,4µm
JAY Jayapura 39.03 182 LR LR 15 14 37.0
comp=Z,34nm,21.4s,slow=33
JAY Jayapura 39.03 182 P **P 15 00 46.2 +1.8**
comp=Z,38nm,1.5s
GENI Genyem 39.12 183 P **P 15 00 48.3 +3.2**
comp=Z,68nm,0.9s,comp=Z,2µm
LBMI Labuha 39.51 203 P **P 15 00 47.2 -1.1**
comp=Z,128nm,0.8s,comp=Z,3µm
GTOI Gorontalo 39.95 210 P **P 15 00 52.3 +0.3**
comp=Z,168nm,0.9s,comp=Z,2µm
FAKI Fak Fak 40.44 195 P **P 15 00 57.4 +1.3**
comp=Z,87nm,1.1s
FAKI Fak Fak 40.44 195 *e*P **P 15 00 58.0 +1.9**
comp=Z,65nm,0.9s
MRSI Marisa 40.54 212 P **P 15 00 57.4 +0.5**
comp=Z,250nm,1.4s,comp=Z,6µm
CMAI Chiengmai2 40.95 258 P **P 15 01 01.3 +0.7**
comp=Z,637nm,1.0s,comp=Z,7µm
UTTA Uttaradit 41.02 254 P **P 15 01 01.9 +1.1**
comp=Z,19nm,0.8s,comp=Z,203nm
CHAI Chaiyaphum 41.02 250 P **P 15 01 01.3 +0.4**
comp=Z,50nm,1.0s,comp=Z,411nm
LAMP Lampang 41.28 256 P **P 15 01 04.1 +1.0**
comp=Z,25nm,1.1s,comp=Z,249nm
SANI Sanana 41.32 205 P **P 15 01 02.7 -0.7**
comp=Z,224nm,1.1s,comp=Z,3µm
PBKT Sadao Pong 41.39 252 P **P 15 01 04.6 +0.7**
comp=Z,123nm,2.0s,comp=Z,2µm
WMQ Urumqi 41.40 297 P **P 15 01 05.3 +1.4**
WMQ sP sP 15 01 18.0 +1.6
WMQ PP **PP 15 02 40.8 +1.2**
WMQ PcS **PcS 15 06 53.0 +0.2**
WMQ S **S 15 07 20.0 +3.2**
WMQ pmax pmax
comp=Z,130nm,1.7s
WMQ pmax pmax
comp=Z,830nm,3.9s
WMQ LR LR
comp=Z,4µm,14.7s
WMQ LR LR
comp=Z,4µm,17.7s
WMQ LR LR
comp=Z,3µm,22.6s
LUWI Luwuk 41.57 210 P **P 15 01 05.6 +0.2**
comp=Z,156nm,0.8s,comp=Z,2µm
LUWI Luwuk 41.57 210 *e*P **P 15 01 04.8 -0.6**
comp=Z,188nm,1.1s
CMMT Chiang Mai 41.65 257 P **P 15 01 06.5 +0.4**
comp=Z,65nm,1.3s,comp=Z,896nm
CHTO Chiang Mai 41.65 257 P **P 15 01 06.6 +0.5**
comp=Z,288nm,1.4s,comp=Z,4µm
CHTO Chiang Mai 41.65 257 *e*P **P 15 01 06.6 +0.5**
CHTO pmax pmax
comp=Z,47nm,0.9s
CHTO MLR MLR
comp=Z,3µm,22.0s
CHTO Chiang Mai 41.65 257 P **P 15 01 06.7 +0.5**
SNR=17
CHTO Chiang Mai 41.65 257 P **P 15 01 06.7 +0.5**
SNR=17
CHTO P **P 15 01 06.7 +0.5**
SNR=17
CHTO Chiang Mai 41.65 257 *e*P **P 15 01 06.6 +0.5**
comp=Z,47nm,0.9s
CHTO LR LR
comp=Z,3µm,22.0s
CM31 Chiang Mai Arr 41.86 256 *e*P **P 15 01 08.9 +1.1**
CMAR Chiang Mai Arr 41.86 256 P **P 15 01 08.2 +0.5**
comp=Z,10nm,0.7s,baz=46,slow=8.3,SNR=63
CMAR LR LR 15 20 28.7
comp=Z,2µm,18.8s,baz=55,slow=39
CM01 Chiang Mai Arr 41.86 256 *e*P **P 15 01 07.3 -0.6**
SUKH Sukhothai 41.88 254 P **P 15 01 09.0 +1.0**
comp=Z,18nm,1.0s,comp=Z,162nm
SRAK Srakaew 42.16 248 P **P 15 01 08.2 -2.0**
comp=Z,229nm,1.4s,comp=Z,3µm
ZAA0 Zalesovo Array 42.48 313 *e*P **P 15 01 12.6 +0.1**
ZALV Zalesovo Beam 42.48 313 P **P 15 01 12.5 +0.1**
comp=Z,53nm,0.9s,baz=91,slow=6.2,SNR=125
ZALV PcP **PcP 15 03 05.0 +0.2**
comp=Z,9.4nm,0.7s,baz=103,slow=3.1,SNR=3.2
ZALV LR LR 15 19 33.0
comp=Z,5µm,19.4s,baz=74,slow=37
BTM Bintulu 42.65 225 ⇓P **P 15 01 15.7 +1.5**
PCI Palu 42.69 214 P **P 15 01 14.7 +0.1**
comp=Z,344nm,1.4s,comp=Z,4µm
LSA Lhasa 42.70 276 P **P 15 01 16.8 +1.7**
LSA pmax pmax
comp=Z,64nm,1.2s
LSA pmax pmax
comp=Z,610nm,5.6s
LSA LR LR
comp=Z,950nm,17.2s
LSA LR LR
comp=Z,2µm,15.9s
LSA LR LR
comp=Z,4µm,17.2s
LSA Lhasa 42.70 276 *e*P **P 15 01 16.3 +1.2**
LSA pmax pmax
comp=Z,135nm,1.2s
LSA MLR MLR
comp=Z,2µm,22.0s
LSA Lhasa 42.70 276 *e*P **P 15 01 16.3 +1.2**
comp=Z,135nm,1.2s
LSA LR LR
comp=Z,2µm,22.0s
CHBT CHBT 42.76 247 P **P 15 01 17.0 +1.9**
comp=Z,150nm,1.3s
MHMT Maesarieng 42.80 257 P **P 15 01 16.5 +1.0**
comp=Z,36nm,1.9s,comp=Z,632nm
ZSN Zaisan 43.16 303 ⇑*i*P **P 15 01 16.8 -1.3**
comp=Z,1µm,1.4s
ZSN LR LR 15 19 02.8
comp=Z,2µm,14.5s
UMPA Umpang Tak 43.23 254 P **P 15 01 22.3 +3.3**
comp=Z,27nm,1.0s,comp=Z,247nm
NVS Novosibirsk 43.40 314 ⇓*i*P **P 15 01 20.7 +0.8**
NVS *e*S **S 15 07 48.9 +3.1**
NVS pmax pmax
comp=Z,107nm,1.3s
NVS pmax pmax
comp=N,13nm,1.4s
NVS pmax pmax
comp=E,93nm,1.4s
NVS smax smax
comp=N,20nm,1.9s
NVS smax smax
comp=E,33nm,1.9s
PATY Pattaya 43.73 248 P **P 15 01 26.0 +3.0**
comp=E,22nm,1.1s
SBUM Sibu 43.75 226 *e*P **P 15 01 23.4 +0.3**
comp=E,121nm,1.3s
NRIK Noril'sk 43.76 335 P **P 15 01 22.0 -0.6**
comp=E,12nm,0.7s,baz=117,slow=6.8,SNR=37
NRIK LR LR 15 21 00.9
comp=E,4µm,18.6s,baz=101,slow=38
SHL Shillong 43.86 270 *e*P **P 15 01 25.0 +0.8**
SHL *e*S **S 15 07 56.0 +2.4**
SRDT SRDT 44.15 251 P **P 15 01 28.4 +2.1**
comp=E,228nm,2.0s,comp=E,5µm
PHET Kaeng Krachan 44.66 249 P **P 15 01 32.0 +1.5**
comp=E,44nm,0.9s,comp=E,372nm
MK01 Makanchi Array 44.68 302 *e*P **P 15 01 30.4 0.0**
MK31 Makanchi Array 44.68 302 *i*P **P 15 01 30.3 0.0**
MK31 pmax pmax
comp=Z,44nm,0.9s
MK31 Makanchi Array 44.68 302 *e*P **P 15 01 30.4 0.0**
MKAR Makanchi Array 44.68 302 P **P 15 01 30.7 +0.4**
comp=Z,25nm,0.8s,baz=88,slow=9.7,SNR=206
MKAR LR LR 15 20 31.7
comp=Z,2µm,21.7s,baz=88,slow=36
MKAR Makanchi Array 44.68 302 *e*P **P 15 01 30.4 0.0**
MAKZ Makanchi 44.89 303 *e*P **P 15 01 32.4 +0.4**
MAKZ pmax pmax
comp=Z,49nm,0.9s
MAKZ Makanchi 44.89 303 *e*P **P 15 01 32.4 +0.4**
comp=Z,49nm,0.9s
TT01 Tatalina 45.43 35 *e*P **P 15 01 36.1 +0.1**
TTA Tatalina 45.44 35 *e*P **P 15 01 36.0 -0.2**
TTA pmax pmax
comp=Z,10.0nm,1.2s
TTA Tatalina 45.44 35 *e*P **P 15 01 36.0 -0.2**
comp=Z,9.8nm,1.2s
SPSI Sidrap Palu 45.46 212 P **P 15 01 36.7 0.0**
SEM Semipalatinsk 45.51 308 *e*P **P 15 01 35.2 -1.6**
comp=Z,461nm,1.6s
SEM *e*S **S 15 08 13.9 -2.6**
SEM LR LR 15 20 06.7
comp=Z,3µm,15.0s
SVW2 Sparrevohn 45.51 37 *e*P **P 15 01 36.2 -0.5**
comp=Z,29nm,1.4s
KSM Kuching 45.66 227 *e*P **P 15 01 39.6 +1.3**
comp=Z,100nm,0.9s
KSM LR LR
comp=Z,663nm,20.0s
PMG Port Moresby 46.12 173 LR LR 15 19 52.6
comp=Z,427nm,22.0s,baz=354,slow=34
PMG Port Moresby 46.12 173 ⇑*e*P **P 15 01 42.5 +0.7**
PMG pmax pmax
comp=Z,42nm,0.9s
STKI Sintang 46.12 225 P **P 15 01 43.0 +1.0**
KAPI Kappang 46.41 211 *e*P **P 15 01 45.3 +1.1**
comp=Z,500nm,1.3s
KAPI LR LR
comp=Z,690nm,21.0s
KURK Kurchatov 46.50 308*c i*P **P 15 01 44.5 -0.1**
KURK pmax pmax
comp=Z,743nm,1.7s
KURK Kurchatov 46.50 308 *e*P **P 15 01 44.8 +0.2**
comp=Z,116nm,0.8s
KURK LR LR
comp=Z,8µm,21.0s
KURBB Kurchatov Arra 46.57 308 P **P 15 01 45.2 +0.1**
comp=Z,35nm,0.7s,baz=84,slow=8.3,SNR=278
RSO Redoubt South 46.88 30 *e*P **P 15 01 48.2 +0.5**
KDAK Kodiak Island 47.05 42 *i*P **P 15 01 49.4 +0.7**
KDAK Kodiak Island 47.05 42 *e*P **P 15 01 47.8 -0.9**
comp=Z,22nm,0.8s
KDAK LR LR
comp=Z,586nm,21.0s
SHLS Shalkode 47.10 298 *e*P **P 15 01 48.5 -1.2**
comp=Z,269nm,1.1s
SHLS *e*S **S 15 08 37.0 -3.0**
SHLS LR LR 15 21 40.3
comp=Z,3µm,13.9s
JOHN Johnston Islan 47.10 102 PFAKE 15 02 00.0 +10
JOHN LR LR
comp=Z,191nm,20.0s
PPLA Purkeypile 47.18 35 *e*P **P 15 01 51.8 +1.8**
comp=Z,30nm,1.2s
SPU Mount Spurr 47.23 37 *e*P **P 15 01 50.7 +0.5**
CAST Castle Rocks 47.25 34 *e*P **P 15 01 52.6 +2.3**
comp=Z,28nm,1.4s
BBKI Banjar Baru 47.29 218 P **P 15 01 51.5 +0.3**
PDGK Podgornoye 47.34 298 P **P 15 01 51.5 +0.3**
PDGK pmax pmax
comp=Z,94nm,1.0s
GUN Gumba 47.64 276 *e*P **P 15 01 55.0 +0.7**
comp=Z,380nm,0.9s
UZB Uzynbulak 47.71 298 *e*P **P 15 01 53.2 -1.1**
comp=Z,354nm,1.7s
UZB *e*S **S 15 08 46.7 -2.0**
UZB LR LR 15 21 56.8
comp=Z,2µm,13.0s
BPAW Bear Paw Mtn. 47.76 33 *e*P **P 15 01 54.6 +0.4**
comp=Z,10.0nm,1.1s
KTH Kantishna Hill 47.77 34 *e*P **P 15 01 55.9 +1.4**
comp=Z,21nm,1.0s
SUA Susitna One 47.85 37 *e*P **P 15 01 56.1 +0.9**
comp=Z,22nm,1.1s
KPKS Kokpek 47.87 299 *e*P **P 15 01 54.0 -1.5**
comp=Z,668nm,1.6s
KPKS *e*S **S 15 08 48.2 -2.6**
KPKS LR LR 15 22 05.4
comp=Z,2µm,13.7s
MLY Manley 47.89 32 *e*P **P 15 01 57.0 +1.7**
comp=Z,18nm,1.1s
TRTT Trang 47.96 244 P P 15 02 05.4 +9.0
TRF Thorofare Moun 48.06 34 *e*P **P 15 01 58.1 +1.4**
comp=Z,9.4nm,1.0s
ZHN Zhinishke 48.12 298 *e*P **P 15 01 56.3 -1.2**
comp=Z,285nm,1.8s
ZHN *e*S **S 15 08 52.1 -2.2**
ZHN LR LR 15 22 08.5
comp=Z,1µm,15.3s
PKIN Phulchoki 48.17 276 *e*P **P 15 01 59.2 +0.9**
comp=Z,111nm,0.8s
KKN Kakani 48.17 276 *e*P **P 15 01 58.8 +0.6**
comp=Z,191nm,0.9s
COLD Coldfoot 48.23 29 *e*P **P 15 01 59.1 +1.3**
comp=Z,18nm,1.0s
RC01 Rabbit Creek A 48.35 37 *e*P **P 15 01 59.8 +0.9**
comp=Z,18nm,1.0s
DMN Daman 48.39 276 *e*P **P 15 02 00.5 +0.6**
comp=Z,571nm,1.9s
SEW Seward 48.54 38 *e*P **P 15 02 01.1 +0.9**
comp=Z,37nm,1.2s
GKN Gorkha 48.60 277 *e*P **P 15 02 02.0 +0.6**
comp=Z,539nm,1.0s
PMR Palmer 48.62 36 *e*P **P 15 02 01.3 +0.4**
PMR pmax pmax
comp=Z,15nm,1.0s
PMR Palmer 48.62 36 *e*P **P 15 02 01.3 +0.4**
comp=Z,15nm,1.0s
MCK McKinley 48.66 34 *e*P **P 15 02 01.8 +0.6**
MCK pmax pmax
comp=Z,13nm,0.9s
MCK McKinley 48.66 34 *e*P **P 15 02 01.8 +0.6**
comp=Z,13nm,0.9s
RND Reindeer 48.70 34 *e*P **P 15 02 02.2 +0.6**
RND pmax pmax
comp=Z,28nm,1.3s
RND Reindeer 48.70 34 *e*P **P 15 02 02.2 +0.6**
comp=Z,28nm,1.3s
MMRI Maumere 48.76 206 P **P 15 01 58.3 -4.1**
MMRI Maumere 48.76 206 *e*P **P 15 02 02.8 +0.4**
comp=Z,191nm,1.0s
HNR Honiara 48.89 156 LR LR 15 21 19.4
comp=Z,1µm,20.4s,baz=336,slow=34
HNR Honiara 48.89 156 PFAKE 15 02 20.0 +17
HNR LR LR
comp=Z,2µm,20.0s
PKDT Phuket 48.91 245 P P 15 02 12.3 +8.6
MDM Murphy Dome 48.96 32 *e*P **P 15 02 04.6 +1.1**
comp=Z,36nm,1.1s
SML Sawmill 48.99 36 *e*P **P 15 02 04.6 +0.8**
SML pmax pmax
comp=Z,23nm,0.9s
SML Sawmill 48.99 36 *e*P **P 15 02 04.6 +0.8**
comp=Z,23nm,0.9s
WRH Wood River Hil 49.02 33 *e*P **P 15 02 04.7 +0.8**
comp=Z,17nm,1.2s
KULM Kulim 49.05 241 *e*P **P 15 02 09.2 +4.4**
comp=Z,162nm,1.5s
KULM LR LR
comp=Z,2µm,19.0s
MDOK Medeo 49.10 299 *i*P **P 15 02 03.4 -1.7**
comp=Z,381nm,1.4s
MDOK *i*S **S 15 09 05.4 -2.8**
MDOK LR LR 15 22 44.4
comp=Z,3µm,13.3s
SOEI Soe 49.12 203 P **P 15 02 07.1 +1.8**
SOEI Soe 49.12 203 *e*P **P 15 02 05.7 +0.4**
comp=Z,393nm,1.0s
COLA College 49.12 32 *e*P **P 15 02 02.6 -2.1**
COLA pmax pmax
comp=Z,8.0nm,0.8s
COLA MLR MLR
comp=Z,929nm,20.0s
COLA College 49.12 32 *e*P **P 15 02 02.5 -2.1**
comp=Z,8.4nm,0.8s
COLA LR LR
comp=Z,929nm,20.0s
CCB Clear Creek Bu 49.14 32 *e*P **P 15 02 05.5 +0.6**
comp=Z,18nm,1.4s
AAA Alma-Ata 49.14 299 *e*P **P 15 02 05.7 +0.4**
AAA pmax pmax
comp=Z,800nm,6.2s
AAA MLR MLR
comp=Z,11µm,16.0s
IPM Ipoh 49.36 239 *e*P **P 15 02 07.2 +0.1**
comp=Z,141nm,1.2s
DHY Denali Highway 49.38 34 *e*P **P 15 02 08.0 +1.1**
comp=Z,13nm,1.1s
KUU Kurty 49.40 300 *e*P **P 15 02 05.3 -1.9**
comp=Z,643nm,0.9s
KUU *e*S **S 15 09 09.2 -3.1**
KUU LR LR 15 22 53.7
comp=Z,2µm,14.7s
SCM Sheep Creek Mo 49.47 36 *e*P **P 15 02 08.5 +1.0**
SCM pmax pmax
comp=Z,16nm,0.9s
SCM Sheep Creek Mo 49.47 36 *e*P **P 15 02 08.5 +1.0**
comp=Z,16nm,0.9s
KOLN Koldanda 49.52 277 *e*P **P 15 02 09.2 +0.6**
comp=Z,187nm,0.9s
IL1 Eielson Array 49.53 32 *e*P **P 15 02 07.5 -0.3**
ILAR Eielson Array 49.53 32 P **P 15 02 07.9 0.0**
comp=Z,8.9nm,0.8s,baz=266,slow=6.2,SNR=102
ILAR LR LR 15 23 15.4
comp=Z,553nm,21.9s,baz=279,slow=36
ILB Eielson Array 49.53 32 *e*P **P 15 02 08.2 +0.3**
PYUN Piuthan 49.87 278 *e*P **P 15 02 12.0 +0.8**
comp=Z,881nm,1.2s
FID Port Fidalgo 49.96 37 *e*P **P 15 02 12.4 +1.2**
comp=Z,19nm,1.1s
BMNS Besmoynak 50.09 299 *e*P **P 15 02 11.0 -1.6**
comp=Z,2µm,0.9s
BMNS *e*S **S 15 09 19.1 -3.0**
BMNS LR LR 15 23 26.6
comp=Z,1µm,14.2s
KLU Klutina 50.16 36 *e*P **P 15 02 14.0 +1.2**
comp=Z,19nm,1.0s
FYU Fort Yukon 50.17 30 *e*P **P 15 02 14.9 +2.3**
comp=Z,214nm,2.0s
TKM2 Tokmak 2 50.19 299 P **P 15 02 13.6 +0.1**
TKM2 pmax pmax
comp=Z,101nm,1.1s
PAX Paxson 50.25 35 *e*P **P 15 02 15.1 +1.6**
PAX pmax pmax
comp=Z,9.0nm,1.0s
PAX Paxson 50.25 35 *e*P **P 15 02 15.1 +1.6**
comp=Z,8.7nm,1.0s
DIV Divide 50.27 37 *e*P **P 15 02 15.5 +1.9**
comp=Z,28nm,1.1s
MTN Manton Dam 50.32 194 *e*P **P 15 02 14.5 +0.1**
comp=Z,117nm,1.0s
EYAK Cordova Ski Ar 50.34 38 *e*P **P 15 02 15.4 +1.4**
comp=Z,16nm,1.0s
BRZS Berezniki 50.37 308 *e*P **P 15 02 12.4 -2.1**
comp=Z,117nm,1.0s
BRZS *e*S **S 15 09 22.2 -3.3**
BRZS LR LR 15 23 39.0
BTLS Baital 50.68 302 *e*P **P 15 02 15.6 -1.2**
comp=Z,104nm,0.5s
BTLS *e*S **S 15 09 27.3 -2.6**
BTLS LR LR 15 23 45.5
comp=Z,2µm,15.4s
DOT Dot Lake 50.83 34 *e*P **P 15 02 18.3 +0.5**
comp=Z,28nm,0.8s
BMRM Bremner River 50.85 37 *e*P **P 15 02 19.8 +1.9**
comp=Z,23nm,0.9s
RAGM Ragged Mountai 50.89 38 *e*P **P 15 02 22.7 +4.5**
comp=Z,35nm,1.2s
FRU Bishkek 50.91 299 *i*P **P 15 02 18.0 -0.6**
FRU *e* 15 02 30.0
FRU *e* 15 09 40.0
FRU pmax pmax
comp=E,6µm,20.0s
KSH Kashi 50.96 295 P **P 15 02 23.8 +4.6**
KSH *e*pP sP 15 02 33.5 +1.6
KSH *e*sP pP 15 02 37.5 +9.2
KSH PcS **PcS 15 07 34.8 +2.0**
KSH S **S 15 09 38.5 +4.3**
KSH ScS **ScS 15 12 08.0 +0.2**
KSH pmax pmax
comp=E,40nm,1.2s
KSH LR LR
comp=E,4µm,16.9s
KSH LR LR
comp=E,3µm,16.3s

KSH LR LR
comp=E,4µm,18.5s
OTUK Ortayu 50.99 306 P **P** **15 02 19.3 +0.1**
OTUK pmax pmax
comp=Z,98nm,1.1s
AAK Ala-Archa 51.05 299 P **P** **15 02 20.2 +0.3**
comp=Z,8.7nm,0.6s,baz=94,slow=5.7,SNR=29
AAK Ala-Archa 51.05 299 *eP* **P** **15 02 20.6 +0.7**
AAK pmax pmax
comp=Z,52nm,1.4s
AAK MLR MLR
comp=Z,9µm,19.0s
AAK Ala-Archa 51.05 299 P **P** **15 02 20.6 +0.7**
SNR=17
AAK Ala-Archa 51.05 299 P **P** **15 02 20.6 +0.7**
SNR=17
AAK P **P** **15 02 20.6 +0.7**
SNR=17
AAK Ala-Archa 51.05 299 *eP* **P** **15 02 20.6 +0.7**
comp=Z,52nm,1.4s
AAK LR LR
comp=Z,9µm,19.0s
MENT Mentasta 51.05 34 *eP* **P** **15 02 20.7 +1.3**
comp=Z,18nm,0.9s
BVAR Borovoye Array 51.14 313 P **P** **15 02 20.2 +0.1**
comp=Z,14nm,0.8s,baz=81,slow=9.2,SNR=52
BRVK Borovoye 51.19 313*c iP* **P** **15 02 20.8 +0.2**
BRVK pmax pmax
comp=Z,238nm,2.5s
BRVK Borovoye 51.19 313 *eP* **P** **15 02 21.0 +0.5**
comp=Z,180nm,1.9s
BRVK LR LR
comp=Z,3µm,19.0s
CRQM Cirque 51.59 37 *eP* **P** **15 02 22.8 -0.9**
comp=Z,42nm,1.2s
EGAK Eagle 51.98 32 *eP* **P** **15 02 25.8 -0.5**
comp=Z,27nm,1.1s
EGAK LR LR
comp=Z,1µm,21.0s
PSI Prapat 52.02 240 LR LR 15 27 24.3
comp=Z,991nm,18.4s,slow=39
PSI Prapat 52.02 240 *eP* **P** **15 02 27.7 +0.4**
PSI pmax pmax
comp=Z,216nm,1.8s
PSI Prapat 52.02 240 *eP* **P** **15 02 27.7 +0.4**
comp=Z,216nm,1.8s
MNAS Manas 52.50 299 P **P** **15 02 31.4 +0.8**
MNAS pmax pmax
comp=Z,51nm,0.9s
KK31 Karatay Array 53.69 300 *i P* **P** **15 02 39.5 +0.2**
KK31 pmax pmax
comp=Z,39nm,1.0s
KKAR Karatay Array 53.69 300 *eP* **P** **15 02 39.7 +0.5**
KKAR Karatay Array 53.69 300 *eP* **P** **15 02 39.7 +0.5**
GSI Gunungsitoli 54.02 240 *eP* **P** **15 02 42.0 0.0**
comp=Z,1µm,1.8s
HYT Haines Junctio 54.30 37 *eP* **P** **15 02 45.8 +2.3**
comp=Z,65nm,1.3s
IUG luzhnaya 54.34 300 *eP* **P** **15 02 42.9 -1.2**
comp=Z,851nm,1.6s
IUG *eS* **S** **15 10 17.9 -2.4**
IUG LR LR 15 26 19.7
comp=Z,1µm,14.7s
INK Inuvik 54.48 27 *eP* **P** **15 02 45.5 +1.0**
INK pmax pmax
comp=Z,12nm,0.8s
INK Inuvik 54.48 27 *eP* **P** **15 02 45.5 +1.0**
comp=Z,12nm,0.8s
WHY Whitehorse 55.59 36 *eP* **P** **15 02 54.8 +2.0**
comp=Z,19nm,1.1s
SVE Sverdlovsk 55.70 319*d iP* **P** **15 02 53.9 +0.3**
SVE pmax pmax
comp=Z,107nm,1.3s
SVE MLR MLR
comp=Z,5µm,17.0s
SVE MLR MLR
comp=E,4µm,17.0s
CTA Charters Tower 56.62 175 LR LR 15 27 14.3
comp=E,340nm,20.6s,slow=36
CTAO Charters Tower 56.62 175 PFAKE 15 03 10.0 +10
CTAO LR LR
comp=Z,664nm,20.0s
FITZ Fitzroy Crossi 56.65 199 LR LR 15 26 23.6
comp=Z,249nm,20.4s,slow=35
FITZ Fitzroy Crossi 56.65 199 *eP* **P** **15 03 01.2 +0.6**
comp=Z,62nm,1.4s
WRAB Tennant Creek 56.78 189*d iP* **P** **15 03 01.2 -0.4**
WRAB pmax pmax
comp=Z,78nm,1.7s
WRAB Tennant Creek 56.78 189 *eP* **P** **15 03 01.3 -0.4**
comp=Z,80nm,0.9s
WRAB LR LR
comp=Z,1µm,20.0s
WB2 Warramunga Ar 56.79 189 *eP* **P** **15 03 01.4 -0.3**
WRA Warramunga Arr 56.79 189 P **P** **15 03 00.6 -1.1**
comp=Z,5.3nm,0.5s,baz=6.6,slow=7.4,SNR=48
WRA LR LR 15 26 15.5
comp=Z,749nm,22.0s,baz=355,slow=35
WRA Warramunga Ar 56.79 189 *i P* **P** **15 03 00.3 -1.4**
WRA pmax pmax
comp=Z,5.0nm,0.5s
ARU Arti 56.91 319 P **P** **15 03 02.6 +0.3**
comp=Z,34nm,0.8s,baz=79,slow=4.2,SNR=71
ARU Arti 56.91 319*c iP* **P** **15 03 02.5 +0.3**
ARU 15 03 56.9
ARU 15 05 10.0
ARU PPP PPP 15 06 27.0
ARU S **S** **15 10 55.6 +1.7**
ARU 15 12 46.5
ARU pmax pmax
comp=Z,125nm,1.2s
ARU MLR MLR
comp=Z,5µm,18.0s
ARU Arti 56.91 319 P **P** **15 03 02.6 +0.3**
ARU LR LR
comp=Z,5µm,19.0s
KBL Kabul 57.96 291 *eP* **P** **15 03 09.7 -0.5**
KBL pmax pmax
comp=Z,125nm,1.4s
KBL Kabul 57.96 291 *eP* **P** **15 03 09.7 -0.5**
comp=Z,125nm,1.4s
AB31 Akbulak array 58.51 310 P **P** **15 03 13.4 -0.1**
AB31 pmax pmax
comp=Z,22nm,0.7s
ABKAR Akbulak array 58.51 310 *eP* **P** **15 03 13.4 -0.1**
DLBC Dease Lake 58.61 38 *eP* **P** **15 03 15.6 +1.3**
comp=Z,10nm,0.9s
HYB Hyderabad 58.65 269 *i P* **P** **15 03 15.0 0.0**
HYB *es*P **pP** **15 03 25.0 +0.7**
AKTO Aktyubinsk 59.24 312 P **P** **15 03 18.5 -0.2**
comp=Z,24nm,0.9s,baz=79,slow=7.3,SNR=38
AS01 Alice Springs 60.51 188 *eP* **P** **15 03 27.0 -0.6**
AS31 Alice Springs 60.52 189 *eP* **P** **15 03 27.7 0.0**
comp=Z,6.8nm,0.7s
ASAR Alice Springs 60.52 189 P **P** **15 03 27.2 -0.4**
comp=Z,6.8nm,0.8s,baz=18,slow=7.2,SNR=64
ASAR LR LR 15 28 40.6
comp=Z,576nm,21.5s,baz=6.0,slow=35
ASAR PKP2ab 15 33 09.8
comp=Z,0.7nm,0.9s,baz=199,slow=1.7,SNR=5.2
SPITS Spitsbergen Ar 60.94 349 P **P** **15 03 30.2 +0.3**
comp=Z,5.4nm,0.9s,baz=82,slow=10,SNR=3.9
KBS Kingsbay 61.07 350 PFAKE 15 03 40.0 +9.3
KBS LR LR
comp=Z,944nm,20.0s
MBWA Marble Bar 61.26 204 *eP* **P** **15 03 32.2 -0.4**
comp=Z,44nm,0.8s
MBWA LR LR
comp=Z,512nm,19.0s
LVZ Lovozero 62.60 336*c iP* **P** **15 03 41.1 -0.1**
LVZ pmax pmax
comp=Z,27nm,1.7s
LVZ Lovozero 62.60 336 *eP* **P** **15 03 40.0 -1.2**
comp=Z,20nm,1.0s
LVZ LR LR
comp=Z,4µm,19.0s
PALK Pallekele 62.74 258 *i P* **P** **15 03 42.2 -0.8**
DZM Mont Dzumac 62.85 154 LR LR 15 28 32.1
comp=Z,2µm,20.8s,baz=332,slow=34
DZM Mont Dzumac 62.85 154 *eS* **S** **15 12 09.0 -2.0**
comp=Z,2µm,28.6s
DZM Mont Dzumac 62.85 154 *eLR* LR 15 22 31.5
comp=Z,3µm,21.3s
APA Apatity 63.18 336⇓ *iP* **P** **15 03 43.0 -2.0**
APA pmax pmax
comp=Z,9.0nm,0.8s
APA MLR MLR
comp=Z,3µm,17.0s
YKA Yellowknife Ar 63.87 30 P **P** **15 03 49.5 -0.1**
comp=Z,3.3nm,1.0s,baz=298,slow=6.6,SNR=12
YKA LR LR 15 30 38.9
comp=Z,32nm,21.9s,baz=0.0,slow=35
YKA PKP2ab 15 32 57.0
comp=Z,0.5nm,0.8s,baz=100,slow=2.1,SNR=3.6
KEV Kevo 63.92 339 *eP* **P** **15 03 49.5 -0.3**
KEV pmax pmax
comp=Z,25nm,1.0s
KEV MLR MLR
comp=Z,2µm,19.0s
KEV Kevo 63.92 339 *eP* **P** **15 03 49.5 -0.3**
comp=Z,26nm,1.0s
KEV LR LR
comp=Z,2µm,19.0s
MSVF Nonsavu 63.96 141 PFAKE 15 04 00.0 +9.2
MSVF LR LR
comp=Z,2µm,21.0s
KLMR Klimovskoe 64.28 328 *eP* **P** **15 03 50.6 -1.8**
KLMR *e* 15 06 12.1
KLMR pmax pmax
comp=Z,67nm,1.4s
GEYT Alibeck 64.40 299 P **P** **15 03 54.0 +0.4**
comp=Z,17nm,0.7s,baz=29,slow=3.4,SNR=41
GEYT LR LR 15 35 40.6
comp=Z,1µm,18.1s,baz=75,slow=39
ARA0 ARCESS Array S 64.47 340 *eP* **P** **15 03 54.1 +0.6**
ARCES ARCESS Array B 64.47 340 P **P** **15 03 53.7 +0.2**
comp=Z,3.8nm,0.7s,baz=59,slow=8.8,SNR=14
ARCES LR LR 15 35 17.3
comp=Z,1µm,21.1s,baz=34,slow=39
ARE0 ARCESS Array S 64.47 340 *eP* **P** **15 03 54.2 +0.7**
comp=Z,102nm,2.0s
DAG Danmarks Havn 66.15 355 *i* P **P** **15 04 05.6 +1.4**
DAG Danmarks Havn 66.15 355 *eP* **P** **15 04 05.6 +1.4**
AFI Afiamalu 66.57 130 LR LR 15 28 22.7
comp=Z,941nm,20.3s,baz=353,slow=32
AFI Afiamalu 66.57 130 PFAKE 15 04 20.0 +12
AFI LR LR
comp=Z,1µm,19.0s
NLWA Neilton Lookou 66.61 48 *eP* **P** **15 04 08.5 +0.8**
comp=Z,27nm,1.1s
NLWA LR LR
comp=Z,447nm,19.0s
MOS Moscow 67.79 324 *eP* **P** **15 04 14.8 -0.2**
MOS *e* 15 06 43.7
MOS *eS* **S** **15 13 09.7 -1.0**
MOS *e* 15 13 31.3
MOS pmax pmax
comp=Z,500nm,2.1s
MOS pmax pmax
comp=Z,153nm,1.7s
MOS smax smax
comp=N,400nm,3.0s
MOS smax smax
comp=E,400nm,3.0s
MOS MLR MLR
comp=Z,1µm,15.0s
G03D McMinnville, O 68.05 49 P **P** **15 04 18.0 +1.2**
baz=300
VRH Novokhopyorsk 68.14 318 *eP* **P** **15 04 17.0 -0.2**
VRH pmax pmax
comp=Z,40nm,0.6s
STKA Stephens Creek 68.22 180 P **P** **15 04 18.5 +0.7**
comp=Z,3.0nm,0.7s,baz=3.0,slow=6.8,SNR=4.3
STKA LR LR 15 33 21.0
comp=Z,347nm,22.0s,baz=0.7,slow=35
FORT Forrest 68.38 193 *eP* **P** **15 04 18.4 -0.4**
comp=Z,569nm,0.7s
OBN Obninsk 68.64 324 P **P** **15 04 20.3 +0.1**
comp=Z,12nm,0.3s,baz=85,slow=2.1,SNR=22
OBN Obninsk 68.64 324*c iP* **P** **15 04 20.4 +0.1**
OBN *i* 15 04 27.0
OBN *e* 15 04 49.8
OBN *e* 15 06 51.9
OBN *i S* **S** **15 13 21.7 +0.9**
OBN *eSS* **SS** **15 17 47.3 +2.7**
OBN pmax pmax
comp=Z,117nm,1.7s
OBN MLR MLR
comp=Z,2µm,16.0s
OBN Obninsk 68.64 324 *eP* **P** **15 04 20.6 +0.4**
comp=Z,73nm,1.1s
OBN LR LR
comp=Z,1µm,20.0s
B08A Colville Reser 68.75 45 *eP* **P** **15 04 19.5 -1.7**
comp=Z,17nm,1.2s
G05D Wamic, OR 69.22 49 P **P** **15 04 25.4 +1.2**
baz=302
I04A Tendick Farm, 69.30 50 P **P** **15 04 26.1 +1.3**
baz=301
FIA1 FINESS Array S 69.32 332 *eP* **P** **15 04 24.8 +0.3**
FINES FINESS Array B 69.32 332 P **P** **15 04 24.8 +0.3**
comp=Z,12nm,0.7s,baz=53,slow=7.4,SNR=37
FINES LR LR 15 37 02.5
comp=Z,3µm,18.4s,baz=32,slow=38
VSR Storozhevoye 69.48 319 *eP* **P** **15 04 24.9 -0.7**
VSR pmax pmax
comp=Z,140nm,1.8s
VSR MLR MLR
comp=Z,4µm,16.0s
HAWA Hanford 69.67 47 PFAKE 15 04 40.0 +13
HAWA LR LR
comp=Z,428nm,19.0s
NEW Newport 70.05 44 PFAKE 15 04 40.0 +11
NEW LR LR
comp=Z,405nm,20.0s
M02C Callahan 70.28 53 P **P** **15 04 32.2 +1.4**
baz=302
J05D Fort Rock, OR 70.30 50 P **P** **15 04 32.1 +1.1**
baz=302
E09A Wood Farm, Sta 70.42 46 *eP* **P** **15 04 33.5 +2.0**
comp=Z,32nm,1.4s
N02D Trinity Center 70.59 53 P **P** **15 04 34.4 +1.7**
baz=302
M04C Macdoel 70.71 52 P **P** **15 04 34.3 +0.7**
baz=302
VSU Vasula 70.97 330*c iP* **P** **15 04 35.1 +0.5**
VSU pmax pmax
comp=Z,143nm,1.2s
SUMG Summit 71.02 0⇑ *iP* **P** **15 04 36.1 +0.9**
comp=Z,20nm,1.0s
SUMG Summit 71.02 0⇑ *iP* **P** **15 04 36.1 +0.9**
SUMG pmax pmax
comp=Z,20nm,1.0s
SUMG Summit 71.02 0 *eP* **P** **15 04 36.2 +0.9**
comp=Z,90nm,1.8s
ZEI Tsey 71.36 310 *eP* **P** **15 04 36.4 -1.2**
ZEI pmax pmax
comp=Z,87nm,1.1s
TBLG Delisi 71.42 308 P **P** **15 04 38.2 +0.5**
TBLG Delisi 71.42 308 P **P** **15 04 38.2 +0.5**
KBZ Khabaz 71.47 311 P **P** **15 04 38.4 +0.6**
comp=Z,27nm,0.8s,baz=63,slow=4.6,SNR=70
KBZ LR LR 15 40 45.9
comp=Z,2µm,18.4s,baz=52,slow=40
KIV Kislovodsk 71.47 311 *i P* **P** **15 04 39.0 +1.0**
SNR=18
KIV Kislovodsk 71.47 311*c iP* **P** **15 04 38.8 +0.8**
KIV *e* 15 05 01.0
KIV *e* 15 07 17.3
KIV *i S* **S** **15 13 54.5 -0.2**
KIV *eSS* **SS** **15 18 31.1 +2.1**
KIV pmax pmax
comp=Z,130nm,1.0s
KIV MLR MLR
comp=Z,2µm,17.0s
KIV Kislovodsk 71.47 311 P **P** **15 04 39.0 +1.0**
SNR=42
KIV Kislovodsk 71.47 311 P **P** **15 04 39.0 +1.0**
SNR=42
KIV Kislovodsk 71.47 311 *eP* **P** **15 04 39.0 +1.0**
comp=Z,110nm,1.0s
KIV LR LR
comp=Z,2µm,19.0s
O03D Paynes Creek 71.53 53 P **P** **15 04 39.5 +1.0**
baz=303
MOD Modoc Plateau 71.62 51 *eP* **P** **15 04 39.1 +0.1**
comp=Z,6.0nm,0.9s
BIDO Bidbid 71.63 286 P **P** **15 04 40.0 +0.8**
SNR=6.0
BIDO Bidbid 71.63 286 P **P** **15 04 40.0 +0.8**
BIDO P **P** **15 04 40.0 +0.8**
SNR=6.0
ONI Oni 71.75 310 P **P** **15 04 40.8 +1.1**
ONI Oni 71.75 310 P **P** **15 04 40.8 +1.1**
BMO Blue Mountains 71.82 47 *eP* **P** **15 04 40.5 +0.4**
comp=Z,13nm,1.1s
BMO LR LR
comp=Z,404nm,22.0s
NEY Neytrino 71.84 311⇓ *eP* **P** **15 04 41.5 +1.1**
NEY pmax pmax
comp=Z,2.0nm,0.7s
JTMT Jette 71.92 44 *eP* **P** **15 04 41.2 +0.5**
SMDO Samad 71.94 286 P **P** **15 04 42.3 +1.0**
SNR=7.1
SMDO Samad 71.94 286 P **P** **15 04 42.3 +1.0**
SNR=7.1
CAN Canberra 71.95 174 P **P** **15 04 39.8 -0.9**
CAN pmax pmax
comp=Z,22nm,1.4s
CAN MLR MLR
comp=Z,737nm,20.0s
CAN Canberra 71.95 174 P **P** **15 04 39.8 -0.9**
comp=Z,22nm,1.4s
CAN LR LR
comp=Z,737nm,20.0s
YBMT Yellow Bay 72.01 43 *eP* **P** **15 04 42.2 +1.0**
SWMT Swartz Lake 72.22 44 *eP* **P** **15 04 43.9 +1.4**
HOQ Hoqain 72.23 286 P **P** **15 04 43.2 +0.4**
SNR=9.5
HOQ Hoqain 72.23 286 P **P** **15 04 43.2 +0.4**
SNR=9.5
GNI Garni 72.27 307 *i* P **P** **15 04 44.3 +1.4**
SNR=9.3
GNI Garni 72.27 307 P **P** **15 04 44.4 +1.4**
SNR=16
GNI Garni 72.27 307 P **P** **15 04 44.4 +1.4**
SNR=16
GNI P **P** **15 04 44.4 +1.4**
SNR=16
GNI Garni 72.27 307 PFAKE 15 05 00.0 +17
GNI LR LR
comp=Z,2µm,19.0s
JMDO Jabal Madar 72.27 285 P **P** **15 04 43.7 +0.6**
SNR=5.6
JMDO Jabal Madar 72.27 285 P **P** **15 04 43.7 +0.6**
SNR=5.6
UOSS Minazif 72.35 288 *eP* **P** **15 04 43.7 +0.2**
comp=Z,34nm,0.9s
AKH Akhalkalaki 72.37 309⇓ *iP* **P** **15 04 44.9 +1.3**
AKH Akhalkalaki 72.37 309 P **P** **15 04 44.8 +1.3**
AKH Akhalkalaki 72.37 309 P **P** **15 04 44.8 +1.2**
BGD Bogdanovka 72.39 309 P **P** **15 04 45.5 +1.7**
HATD Hatta, Dubai 72.47 288 *i* P **P** **15 04 45.0 +0.7**
SNR=12
HATD Hatta, Dubai 72.47 288 P **P** **15 04 44.9 +0.7**
SNR=7.6
HATD Hatta, Dubai 72.47 288 P **P** **15 04 44.9 +0.7**
SNR=7.6
HATD P **P** **15 04 44.9 +0.7**
SNR=7.6
ASHO Ashiyiah 72.60 288 *i* P **P** **15 04 45.7 +0.7**
SNR=11
ASHO Ashiyiah 72.60 288 P **P** **15 04 45.5 +0.5**
SNR=10
ASHO Ashiyiah 72.60 288 P **P** **15 04 45.5 +0.5**
SNR=10
ASHO P **P** **15 04 45.5 +0.5**
SNR=10
MSO Missoula 72.64 44 P **P** **15 04 45.8 +0.8**
baz=305
MSO Missoula 72.64 44 *eP* **P** **15 04 45.2 +0.2**
comp=Z,13nm,1.2s
SLMT Seeley Lake 72.65 44 *eP* **P** **15 04 45.7 +0.6**
NAZ Nazwa, Dubai 72.74 288 *i* P **P** **15 04 46.3 +0.4**
SNR=7.0
NAZ Nazwa, Dubai 72.74 288 P **P** **15 04 46.2 +0.4**
SNR=8.8
NAZ Nazwa, Dubai 72.74 288 P **P** **15 04 46.2 +0.4**
SNR=8.8
NAZ P **P** **15 04 46.2 +0.4**
SNR=8.8
FAQ Al Faqa, Dubai 72.92 288 *i* P **P** **15 04 47.1 +0.2**
SNR=6.9
IZAR Zarasai 72.94 328 IAmb IAmb 15 04 48.0
comp=Z,18nm,0.9s
ARQ Araqi 72.97 287 P **P** **15 04 47.8 +0.5**
SNR=15
ARQ Araqi 72.97 287 P **P** **15 04 47.8 +0.5**
SNR=15
IDID Didziasalis 73.01 327 *eP* **P** **15 04 47.3 +0.4**
IDID IAmb IAmb 15 04 48.3
comp=Z,13nm,0.7s
NWAO Narrogin (SRO) 73.02 202 LR LR 15 37 32.9
comp=Z,148nm,19.8s,baz=276,slow=36
MICGM Minsk 73.03 326 *e* **P** **15 04 48.0 +1.0**
MICGM *eLR* LR 15 34 16.0
MICGM LRM MLR 15 40 02.0
comp=Z,2.5nm,16.0s
MNK Minsk 73.03 326 *eP* **P** **15 04 48.0 +1.0**
MNK MLR MLR
comp=Z,2µm,16.0s
ISAL Salakas 73.11 328 *eP* **P** **15 04 47.9 +0.5**
ISAL IAmb IAmb 15 04 50.1
comp=Z,66nm,1.5s
NACGM Naroch 73.26 327 *eP* **P** **15 04 48.0 -0.3**
NACGM *eP* **P** **15 04 48.0 -0.3**
NACGM *ePP* PP 15 07 40.0 +8.9
NACGM *ePPP* PPP 15 09 18.0
NACGM *eS* **S** **15 14 12.0 -2.5**
NACGM *ePS* **PnS** **15 14 50.0 +1.5**
NACGM *eSS* **SS** **15 19 06.0 +11**
NACGM *eLQ* LQ 15 33 22.0
NACGM *eLR* LR 15 38 12.0
NACGM LRM MLR 15 42 23.0
comp=Z,4.7nm,14.0s
MFID Camas Ranch 73.51 48 *eP* **P** **15 04 50.7 +0.4**
comp=Z,29nm,1.4s
CMB Columbia Colle 73.69 55 *eP* **P** **15 04 51.6 +0.3**
CMB pmax pmax
comp=Z,134nm,1.1s
CMB Columbia Colle 73.69 55 *eP* **P** **15 04 51.6 +0.3**
comp=Z,134nm,1.1s
FFC Flin Flon 73.74 33 *eP* **P** **15 04 51.0 -0.2**
FFC pmax pmax
comp=Z,26nm,1.1s
FFC Flin Flon 73.74 33 *eP* **P** **15 04 51.0 -0.2**
comp=Z,26nm,1.1s
JHC Johnson Canyon 73.85 56 *eP* **P** **15 04 53.3 +1.1**
JHC Johnson Canyon 73.85 56 *eP* **P** **15 04 53.3 +1.1**
HRY Holter Researc 73.89 43 *eP* **P** **15 04 52.2 -0.2**
YERR Yerington 73.91 53 *eP* **P** **15 04 53.9 +1.1**
comp=Z,41nm,1.5s
LRM Limekiln Ridge 74.07 44 *eP* **P** **15 04 54.9 +1.3**
ANN Anapa 74.09 314 *eP* **P** **15 04 53.1 -0.3**
ANN *e* 15 05 04.2
ANN *e* 15 07 40.8
ANN *eS* **S** **15 14 24.4 +0.2**
ANN pmax pmax
comp=Z,74nm,1.3s
ANN MLR MLR
comp=Z,2µm,18.0s
ANN MLR MLR
comp=E,855nm,18.0s
EGMT Eagleton 74.22 41 P **P** **15 04 55.1 +0.8**
baz=308
EGMT Eagleton 74.22 41 *eP* **P** **15 04 53.7 -0.6**
comp=E,12nm,0.8s
EGMT LR LR
comp=Z,536nm,20.0s
DLMT Dillon 74.26 45 *eP* **P** **15 04 56.0 +1.4**
comp=Z,20nm,1.1s
HLID Hailey 74.27 47 P **P** **15 04 55.9 +1.1**
baz=306
HLID Hailey 74.27 47 *eP* **P** **15 04 56.8 +2.0**
comp=Z,12nm,1.2s
HLID LR LR
comp=Z,374nm,20.0s
BMN Battle Mountai 74.37 51 *eP* **P** **15 04 57.7 +2.3**
BMN pmax pmax
comp=Z,13nm,1.1s
BMN Battle Mountai 74.37 51 *eP* **P** **15 04 57.7 +2.3**
comp=Z,13nm,1.1s
NC405 NORSAR Array S 74.46 337 *eP* **P** **15 04 56.0 +0.6**
NC303 NORSAR Array S 74.48 338 *eP* **P** **15 04 56.3 +0.9**
TVH3 East Aurora ar 74.53 54 *eP* **P** **15 04 57.0 +0.6**
comp=Z,11nm,0.9s
NC204 NORSAR Array S 74.63 338 *eP* **P** **15 04 56.9 +0.5**
BOZ Bozeman (W) 74.63 44 P **P** **15 04 57.7 +0.9**
baz=307

BOZ **Bozeman (W)** 74.63 44 *e*P P 15 04 57.9 +1.1
BOZ pmax pmax
comp=Z,15nm,1.0s
BOZ MLR MLR
comp=Z,457nm,19.0s
BOZ **Bozeman (W)** 74.63 44 *e*P P 15 04 57.9 +1.1
comp=Z,15nm,1.0s
BOZ LR LR
comp=Z,457nm,19.0s
NB201 **NORSAR Array S** 74.64 338 *e*P P 15 04 57.3 +0.9
NB2 **NORSAR Subarra** 74.67 338 P P 15 04 56.7 +0.1
comp=Z,29nm,0.9s,baz=40,slow=5.9
NB2 **NORSAR Subarra** 74.67 338 P P 15 04 56.7 +0.1
baz=40,slow=5.9
NOA **NORSAR Array B** 74.67 338 P P 15 04 57.0 +0.4
comp=Z,14nm,0.8s,baz=39,slow=5.8,SNR=48
NOA LR LR 15 40 14.0
comp=Z,2μm,21.6s,baz=40,slow=38
NOA **NORSAR Array B** 74.67 338 P P 15 04 57.0 +0.4
NBO02 **NORSAR Array S** 74.77 338 *e*P P 15 04 57.7 +0.6
NBO00 **NORSAR Array S** 74.81 338 *e*P P 15 04 58.2 +0.9
AKASG **Malin Array Be** 74.84 323 P P 15 04 57.8 +0.1
comp=Z,19nm,0.7s,baz=46,slow=6.3,SNR=112
AKASG LR LR 15 40 45.4
comp=Z,2μm,18.2s,baz=55,slow=38
KIEV **Kiev** 74.85 323 *c i*P P 15 04 57.6 -0.1
KIEV pmax pmax
comp=Z,33nm,0.9s
KIEV **Kiev** 74.85 323 *e*P P 15 04 57.7 -0.1
comp=Z,42nm,0.9s
KIEV LR LR
comp=Z,2μm,19.0s
NAO01 **NORSAR Array S** 74.92 338 *e*P P 15 04 58.7 +0.7
YHB **Horse Butte** 75.42 45 *e*P P 15 05 03.5 +2.1
comp=Z,13nm,0.9s
GCMT **Greycliff** 75.64 43 *e*P P 15 05 04.0 +1.4
RAO **Raoul Island** 75.64 144 LR LR 15 32 04.6
comp=Z,751nm,21.8s,baz=7.0,slow=31
VES **Vestal, Richgr** 75.79 56 P P 15 05 05.5 +2.0
baz=305
PKM **Mcpherson Peak** 75.85 57 P P 15 05 05.1 +1.0
baz=305
SIM **Simferopol'** 75.89 316 *ce*P P 15 05 00.4 -3.4
SIM *e*S S 15 14 45.0 +0.8
SIM pmax pmax
comp=Z,136nm,1.1s
YPP **Pitchstone Pla** 75.93 45 *e*P P 15 05 08.2 +3.7
comp=Z,15nm,1.1s
LKWY **Lake** 75.98 45 PFAKE 15 05 20.0 +15
LKWY LR LR
comp=Z,596nm,20.0s
H17A **Grant Village** 75.99 45 P P 15 05 05.5 +0.8
baz=308
H17A **Grant Village** 75.99 45 *e*P P 15 05 07.9 +3.2
comp=Z,15nm,0.8s
IMW **Indian Meadow** 76.08 45 *e*P P 15 05 07.5 +2.1
comp=Z,14nm,1.0s
FLWY **Flagg Ranch** 76.11 45 *e*P P 15 05 08.0 +2.6
comp=Z,59nm,1.6s
CWC **Cottonwood Cre** 76.11 55 P P 15 05 05.8 +0.3
baz=306
GRAC **Grapevine Rang** 76.26 54 P P 15 05 06.7 +0.6
baz=306,SNR=9.5
KONO **Kongsberg** 76.27 337⇑ *e*P P 15 05 04.7 -1.0
KONO pmax pmax
comp=Z,62nm,1.0s
KONO **Kongsberg** 76.27 337 PFAKE 15 05 20.0 +14
KONO LR LR
comp=Z,3μm,19.0s
RLMT **Red Lodge** 76.27 44 P P 15 05 07.0 +0.7
baz=309
RLMT **Red Lodge** 76.27 44 *e*P P 15 05 07.0 +0.7
comp=Z,24nm,1.4s
RLMT LR LR
comp=Z,497nm,21.0s
MOOW **Moose Ponds** 76.29 45 *e*P P 15 05 07.9 +1.5
comp=Z,31nm,1.6s
HVU **Hansel Valley** 76.30 48 *e*P P 15 05 08.6 +2.2
HVU pmax pmax
comp=Z,23nm,1.5s
HVU **Hansel Valley** 76.30 48 *e*P P 15 05 08.6 +2.2
comp=Z,23nm,1.5s
ISA **Isabella, Lake** 76.30 56 P P 15 05 07.2 +0.8
baz=306
REDW **Red Top Meadow** 76.46 46 *e*P P 15 05 09.7 +2.3
comp=Z,14nm,1.1s
R11A **Troy Canyon, C** 76.61 52 P P 15 05 08.9 +0.7
baz=306,SNR=15
R11A **Troy Canyon, C** 76.61 52 *e*P P 15 05 08.7 +0.4
comp=Z,33nm,1.4s
BGU **Big Grassy Mou** 76.66 49 *e*P P 15 05 10.7 +2.2
comp=Z,15nm,1.3s
AHID **Auburn Hatcher** 76.69 46 PFAKE 15 05 20.0 +11
AHID LR LR
comp=Z,403nm,19.0s
MPMC **Manual Prospec** 76.72 55 P P 15 05 09.5 +0.5
baz=306
DGMT **Dagmar** 76.82 39 PFAKE 15 05 20.0 +11
DGMT LR LR
comp=Z,572nm,20.0s
FURC **Furnace Creek,** 76.89 54 P P 15 05 10.3 +0.7
baz=306
LAO **LASA Array** 76.93 41 P P 15 05 10.6 +0.8
baz=310
LAO **LASA Array** 76.93 41 *e*P P 15 05 11.3 +1.5
comp=Z,40nm,1.3s
LAO LR LR
comp=Z,564nm,20.0s
LRMC **Laurel Mtn Rad** 76.93 56 P P 15 05 11.1 +1.0
baz=306
SORM **Soroca** 76.94 321⇑ *i*P P 15 05 09.9 +0.3
SORM **Soroca** 76.94 321 ⇑P P 15 05 10.0 +0.3
SNCC **San Nicolas Is** 76.98 58 P P 15 05 11.3 +1.0
baz=306
TPNV **Topopah Spring** 77.01 54 P P 15 05 11.2 +0.7
baz=306,SNR=12
TPNV **Topopah Spring** 77.01 54 *e*P P 15 05 11.7 +1.2
TPNV pmax pmax
comp=Z,46nm,1.5s
TPNV **Topopah Spring** 77.01 54 *e*P P 15 05 11.7 +1.2
comp=Z,46nm,1.5s
EDW2 **Edwards Air Fo** 77.07 56 P P 15 05 11.6 +0.8
baz=306
HWUT **Hardware Ranch** 77.12 48 *e*P P 15 05 12.8 +1.6
comp=Z,34nm,1.3s
HWUT LR LR
comp=Z,318nm,20.0s
DUG **Dugway, Tooele** 77.23 49 P P 15 05 12.0 +0.3
baz=308
DUG **Dugway, Tooele** 77.23 49 *e*P P 15 05 13.4 +1.7
DUG pmax pmax
comp=Z,18nm,1.0s
DUG MLR MLR
comp=Z,360nm,19.0s
DUG **Dugway, Tooele** 77.23 49 *e*P P 15 05 13.4 +1.7
comp=Z,18nm,1.0s
DUG LR LR
comp=Z,360nm,19.0s
KIS **Kishinev** 77.44 320⇑ *i*P P 15 05 12.0 -0.6
comp=Z,200nm,2.0s
KIS *e*S S 15 15 15.0 +14
KIS **Kishinev** 77.44 320 *α i*P P 15 05 12.0 -0.6
KIS *e* 15 08 05.0
KIS *e*S S 15 15 15.0 +14
KIS *e*PS PnS 15 15 50.0 +7.2
KIS pmax pmax
comp=Z,200nm,2.0s
KIS pmax pmax
comp=Z,200nm,2.0s
KIS MLR MLR
comp=Z,5μm,16.0s
KIS MLR MLR
comp=N,3μm,17.0s
KIS MLR MLR
comp=E,3μm,16.0s
KIS MLR MLR
comp=Z,6μm,18.0s
MILM **Milestii Mici** 77.50 320⇑ *i*P P 15 05 13.1 +0.2
TCUT **Toone Canyon** 77.51 48 *e*P P 15 05 15.5 +2.1
comp=Z,31nm,1.1s
BW06 **Boulder Array** 77.58 46 P P 15 05 14.2 +0.4
baz=309
BW06 **Boulder Array** 77.58 46 *e*P P 15 05 13.9 +0.2
PD31 **Pinedale Array** 77.58 46 *e*P P 15 05 14.0 +0.3
PDAR **Pinedale Array** 77.58 46 P P 15 05 14.2 +0.4
comp=Z,3.3nm,0.7s,baz=280,slow=2.7,SNR=32
PDAR LR LR 15 36 54.3
comp=Z,202nm,21.6s,baz=334,slow=34
SHOC **Shoshone, Teco** 77.61 54 P P 15 05 15.0 +1.2
baz=306
GSC **Goldstone, Bar** 77.61 55 P P 15 05 15.2 +1.3
baz=306
GSC **Goldstone, Bar** 77.61 55 *e*P P 15 05 16.0 +2.2
GSC pmax pmax
comp=Z,11nm,1.3s
GSC **Goldstone, Bar** 77.61 55 *e*P P 15 05 16.0 +2.2
comp=Z,11nm,1.3s
BFSC **Mount Baldy Ra** 77.67 57 P P 15 05 15.7 +1.5
baz=306
JLU **Jordanelle** 77.81 48 *e*P P 15 05 17.2 +2.1
comp=Z,49nm,1.8s
NLU **North Lily Min** 77.83 49 *e*P P 15 05 17.2 +2.1
comp=Z,7.4nm,1.0s
LVV **L'vov** 77.92 324 *e*P P 15 05 14.9 -0.3
LVV *e* 15 08 10.7
LVV *e*S S 15 15 03.0 -3.2
LVV MLR MLR
comp=N,2μm,16.0s
LVV MLR MLR
comp=E,2μm,16.0s
LVV MLR MLR
comp=Z,3μm,16.0s
BSD **Bornholm Skovb** 77.96 332⇑ *i*P P 15 05 15.6 +0.4
comp=Z,1μm,16.0s
BSD **Bornholm Skovb** 77.96 332⇑ *e*P P 15 05 15.6 +0.4
BSD MLR MLR
comp=Z,1μm,16.0s
SHPR **Sheep Range** 77.97 53 *e*P P 15 05 18.5 +2.6
comp=Z,37nm,1.7s
BEL **Belsk** 77.98 327 *e*P P 15 05 16.7 +1.3
BEL **Belsk** 77.98 327 *e*P P 15 05 16.7 +1.3
TUQ **Turquoise Moun** 78.12 55 P P 15 05 17.6 +0.8
baz=307
MURC **Murrieta** 78.36 57 P P 15 05 19.1 +1.1
baz=306
GKP **Gorka Klasztor** 78.43 330 *e*P P 15 05 18.6 +0.7
GKP **Gorka Klasztor** 78.43 330 *e*P P 15 05 18.6 +0.7
COP **Copenhagen** 78.43 334 *i* P P 15 05 19.9 +2.1
comp=Z,2μm,15.0s
COP **Copenhagen** 78.43 334 *e*P P 15 05 19.9 +2.1
COP MLR MLR
comp=Z,2μm,15.0s
CCUT **Cedar City** 78.49 52 *e*P P 15 05 21.1 +2.2
comp=Z,29nm,1.6s
SZCU **Shurtz Canyon** 78.64 52 *e*P P 15 05 21.7 +2.0
comp=Z,29nm,1.7s
MSU **Marysvale** 78.65 50 *e*P P 15 05 21.7 +2.0
MSU **Marysvale** 78.65 50 *e*P P 15 05 21.7 +2.0
KWP **Kalwaria Pacla** 78.67 325 *e*P P 15 05 20.5 +1.2
KWP **Kalwaria Pacla** 78.67 325 *e*P P 15 05 20.5 +1.2
GMRC **Granite Mounta** 78.68 55 P P 15 05 20.7 +0.9
baz=307
TMUT **Trail Mountain** 78.76 49 *e*P P 15 05 22.5 +2.1
BUR08 **Bucovina Ar. S** 78.85 322 *e*P P 15 05 21.5 +1.0
PFO **Pinyon Flats O** 78.85 56 PFAKE 15 05 30.0 +9.2
PFO LR LR
comp=Z,1μm,20.0s
BURAR **Bucovina Array** 78.86 322⇑ *i*P P 15 05 21.6 +1.1
BURAR **Bucovina Array** 78.86 322 ⇑P P 15 05 21.6 +1.1
TESR **Tescani** 78.88 320⇓ *i*P P 15 05 21.5 +0.9
LCMT **Little Creek M** 78.90 52 *e*P P 15 05 22.9 +2.0
comp=Z,19nm,1.1s
BELC **Belle Mtn. Jos** 78.92 56 P P 15 05 20.5 -0.6
baz=307
P17A **Butcher Ranch,** 78.93 49 *e*P P 15 05 23.4 +2.2
comp=Z,37nm,1.2s
CFR **Carcaliu** 79.00 319⇓ *i*P P 15 05 21.9 +0.7
CFR **Carcaliu** 79.00 319 ⇓P P 15 05 21.9 +0.7
SRU **San Rafael Swe** 79.29 49 *e*P P 15 05 24.3 +1.1
SRU pmax pmax
comp=Z,23nm,1.1s
SRU **San Rafael Swe** 79.29 49 *e*P P 15 05 24.3 +1.1
comp=Z,22nm,1.1s
MONP2 **Monument Peak** 79.30 57 P P 15 05 23.4 0.0
baz=307
PLOR **Plostina** 79.33 320⇓ *i*P P 15 05 24.3 +1.2
PLOR **Plostina** 79.33 320 ⇓P P 15 05 24.3 +1.2
TIRR **Tirgusor** 79.33 318 *e*P P 15 05 23.3 +0.3
TIRR pmax pmax
comp=Z,32nm,1.2s
TIRR **Tirgusor** 79.33 318 *e*P P 15 05 23.3 +0.3
comp=Z,32nm,1.2s
K22A **Casper** 79.37 44 P P 15 05 23.8 +0.3
baz=311
K22A **Casper** 79.37 44 *e*P P 15 05 24.1 +0.6
comp=Z,36nm,1.5s
TAU **Tasmania Unive** 79.38 176 PFAKE 15 05 40.0 +17
TAU LR LR
comp=Z,638nm,22.0s
IRM **Iron Mountain** 79.39 55 P P 15 05 23.9 +0.2
baz=307
BR131 **Keskin Array S** 79.42 312 *e*P P 15 05 24.8 +1.0
BRTR **Keskin Array B** 79.42 312 P P 15 05 24.4 +0.6
comp=Z,13nm,1.0s,baz=106,slow=4.0,SNR=52
BRTR LR LR 15 46 00.4
comp=Z,768nm,19.5s,baz=47,slow=40
TLB **Topalu** 79.44 318⇑ *i*P P 15 05 24.0 +0.4
TLB **Topalu** 79.44 318 ⇑P P 15 05 24.0 +0.4
BC3 **Big Chuckawall** 79.49 56 P P 15 05 24.9 +0.6
baz=307
STHS **Stebnicka Huta** 79.50 325 *e*P P 15 05 24.9 +1.0
STHS pmax pmax
comp=Z,23nm,1.2s
STHS **Stebnicka Huta** 79.50 325 *e*P P 15 05 24.9 +1.0
ULM **Lac du Bonnet** 79.53 34 P P 15 05 23.9 0.0
comp=Z,4.4nm,0.9s,baz=13,slow=4.3,SNR=3.5
ULM LR LR 15 40 11.6
comp=Z,254nm,21.9s,baz=328,slow=35
ULM **Lac du Bonnet** 79.53 34 P P 15 05 24.0 0.0
UZH **Uzhgorod** 79.56 324⇑ *i*P P 15 05 23.5 -0.7
UZH *e* 15 05 32.1
UZH *e* 15 08 20.1
UZH *e* 15 10 14.1
UZH *e*S S 15 15 19.5 -4.3
UZH MLR MLR
comp=N,6μm,15.0s
UZH MLR MLR
comp=E,5μm,15.0s
UZH MLR MLR
comp=Z,820nm,15.0s
OJC **Ojcow** 79.57 326 *e*P P 15 05 25.3 +1.0
OJC **Ojcow** 79.57 326 *e*P P 15 05 25.0 +0.7
OJC pmax pmax
comp=Z,59nm,1.1s
OJC **Ojcow** 79.57 326 *e*P P 15 05 25.0 +0.7
comp=Z,59nm,1.1s
CRVS **Cervenica-Dubn** 79.76 325 *e*P P 15 05 26.3 +1.0
CRVS *e*S S 15 15 26.4 +0.4
CRVS **Cervenica-Dubn** 79.76 325 *e*P P 15 05 26.3 +1.0
CRVS *e*S S 15 15 26.4 +0.4
RSSD **Black Hills** 79.78 42 P P 15 05 26.2 +0.4
baz=312
ANTO **Ankara** 79.83 312 PFAKE 15 05 40.0 +14
ANTO LR LR
comp=Z,945nm,19.0s
BR231 **Keskin MP Arra** 79.86 312 *e*P P 15 05 25.1 -1.1
ISR **Istrita** 79.88 319⇑ *i*P P 15 05 27.8 +1.7
ISR **Istrita** 79.88 319 ⇑P P 15 05 27.8 +1.7
DOPR **Dopca** 79.90 321⇑ *i*P P 15 05 28.0 +1.9
NIE **Niedzica** 79.93 326 *e*P P 15 05 27.4 +1.2
NIE **Niedzica** 79.93 326 *e*P P 15 05 27.4 +1.2
MLR **Muntele Rosu** 79.94 320⇓ *i*P P 15 05 27.3 +0.8
MLR **Muntele Rosu** 79.94 320 ⇓P P 15 05 27.3 +0.8
MLR **Muntele Rosu** 79.94 320 *e*P P 15 05 27.1 +0.6
comp=Z,62nm,1.6s
PDMCI **Parker Dam,Lak** 79.97 55 P P 15 05 27.5 +0.8
baz=308
O20A **White River Ci** 80.01 47 P P 15 05 27.4 +0.3
baz=310
O20A **White River Ci** 80.01 47 *e*P P 15 05 28.2 +1.1
comp=Z,20nm,1.1s
B31A **Greenbush Farm** 80.03 36 P P 15 05 26.8 0.0
baz=315
Y12C **Blythe** 80.05 55 P P 15 05 27.4 +0.3
baz=308
A32A **Rocking H Ranc** 80.21 35 P P 15 05 27.9 +0.1
baz=316
VOIR 80.43 320⇓ *i*P P 15 05 30.3 +1.2
VOIR 80.43 320 ⇓P P 15 05 30.3 +1.2
C31A **Landman Farms,** 80.44 36 P P 15 05 29.1 +0.1
baz=315
LANS **Liptovska Anna** 80.50 326 *e*P P 15 05 30.9 +1.6
LANS **Liptovska Anna** 80.50 326 *e*P P 15 05 30.9 +1.6
KECS **Kecovo** 80.51 325 *e*P P 15 05 29.9 +0.5
KECS pmax pmax
comp=Z,8.0nm,1.0s
KECS **Kecovo** 80.51 325 *e*P P 15 05 29.9 +0.5
KECS *e*PP PP 15 08 31.6 -0.6
PV09 **Paradox Valley** 80.52 49 *e*P P 15 05 31.6 +1.6
B32A **Ashes, Strandq** 80.57 35 P P 15 05 29.4 -0.3
baz=316
OKC **Ostrava-Krasne** 80.58 327⇑ *i*P P 15 05 30.5 +0.8
OKC *e*PP PP 15 08 30.1 -2.6
OKC *e*S S 15 15 35.0 +0.5
OKC AMS AMS 15 44 10.0
comp=Z,3μm,16.7s
OKC **Ostrava-Krasne** 80.58 327⇑ *i*P P 15 05 30.5 +0.8
OKC *e* 15 08 30.1
OKC *e*S S 15 15 35.0 +0.5
OKC MLR MLR
comp=Z,3μm,16.7s
KSP **Ksiaz** 80.63 329 *e*P P 15 05 30.9 +1.0
KSP **Ksiaz** 80.63 329 *e*P P 15 05 30.9 +1.0
PV10 **Paradox Valley** 80.65 49 *e*P P 15 05 32.4 +1.8
DRGR 80.66 323⇑ *i*P P 15 05 31.2 +0.9
DRGR 80.66 323 ⇑P P 15 05 31.2 +0.9
ARR **Arges** 80.69 321⇑ *i*P P 15 05 32.4 +1.9
A33A **Warroad** 80.70 34 P P 15 05 30.1 -0.3
baz=317
PRD **Provadia** 80.72 318 *i* P P 15 05 31.4 +0.9
F29A **Eureka** 80.80 39 P P 15 05 31.5 +0.6
baz=314
PV05 **Paradox Valley** 80.81 49 *e*P P 15 05 32.8 +1.3
N23A **Red Feather La** 80.85 45 P P 15 05 32.3 +0.6
baz=311
N23A **Red Feather La** 80.85 45 *e*P P 15 05 33.3 +1.6
MORC **Moravsky Berou** 80.89 327⇑ *i*P P 15 05 32.7 +1.3
MORC **Moravsky Berou** 80.89 327 ⇑P P 15 05 32.7 +1.3
MORC **Moravsky Berou** 80.89 327 *e*P P 15 05 32.3 +0.9
comp=Z,122nm,1.1s
AGMN **Agassiz Nation** 80.95 35 P P 15 05 31.6 -0.1
baz=317
AGMN **Agassiz Nation** 80.95 35 *e*P P 15 05 31.7 0.0
comp=Z,10nm,1.0s
AGMN LR LR
comp=Z,668nm,20.0s
DPC **Dobruska-Polom** 80.98 328⇑ *i*P P 15 05 33.0 +1.1
DPC *e*PP PP 15 05 40.8 -0.7
DPC *e*S S 15 15 36.7 -2.1
DPC AMS AMS 15 44 20.0
comp=Z,2μm,17.0s
DPC **Dobruska-Polom** 80.98 328⇑ *i*P P 15 05 33.0 +1.1
DPC *e* 15 05 40.8
DPC *e*S S 15 15 36.7 -2.1
DPC MLR MLR
comp=Z,2μm,17.0s
KRLC **Kraliky** 81.00 328⇑ *e*P P 15 05 32.7 +0.7
KRLC **Kraliky** 81.00 328 *e*P P 15 05 32.7 +0.7
UPC **Upice** 81.00 328⇑ *e*P P 15 05 32.9 +1.0
UPC *e*PP PP 15 05 40.6 -0.9
UPC *e*PP PP 15 08 37.1 +1.0
UPC *e*S S 15 15 40.2 +1.3
UPC AMS AMS 15 44 10.0
comp=Z,2μm,17.0s
WUAZ **Wupatki** 81.01 52 P P 15 05 33.6 +1.2
baz=309,SNR=8.9
WUAZ **Wupatki** 81.01 52 *e*P P 15 05 34.2 +1.7
comp=Z,16nm,1.1s
PV01 **Paradox Valley** 81.09 49 *e*P P 15 05 34.5 +1.6
PSZ **Piszkesteto** 81.19 325⇓ *i*P P 15 05 34.6 +1.5
PSZ **Piszkesteto** 81.19 325 ⇓P P 15 05 34.6 +1.5
PSZ **Piszkesteto** 81.19 325 *e*P P 15 05 34.2 +1.1
PSZ LR LR
comp=Z,2μm,19.0s
PSZ **Piszkesteto** 81.19 325⇑ *e*P P 15 05 34.2 +1.1
E31A **Nome** 81.24 37 P P 15 05 33.8 +0.5
baz=316
VYHS **Vyhne** 81.26 326 *e*P P 15 05 34.1 +0.7
VYHS pmax pmax
comp=Z,21nm,1.3s
VYHS **Vyhne** 81.26 326 *e*P P 15 05 34.1 +0.7
VYHS *e*PP PP 15 08 31.3 -7.1
VYHS *e*S S 15 15 42.6 +0.9
C33A **Trail** 81.38 35 P P 15 05 34.6 +0.6
baz=317
SZH **Strazhica** 81.46 318 *i* P P 15 05 45.0 +10
SIRR **Siria** 81.54 323⇓ *i*P P 15 05 35.5 +0.6
F31A **Hecla** 81.56 38 P P 15 05 35.3 +0.3
baz=315
BRG **Berggiesshubel** 81.57 330 *i* P P 15 05 35.4 +0.4
comp=Z,36nm,1.3s
BRG PP PP 15 08 38.0 -2.9
BRG S S 15 15 45.0 +0.2
BRG SS SS 15 20 56.0 -4.8
comp=N,2μm,15.0s
comp=E,1μm,14.4s
comp=Z,3μm,14.8s
BRG **Berggiesshubel** 81.57 330 *i* P P 15 05 35.4 +0.4
BRG 15 08 38.0
BRG S S 15 15 45.0 +0.2
BRG SS SS 15 20 56.0 -4.8
BRG pmax pmax
comp=Z,36nm,1.3s
BRG MLR MLR
comp=N,2μm,15.0s
BRG MLR MLR
comp=E,1μm,14.4s
BRG MLR MLR
comp=Z,3μm,14.8s
PVCC **Panska Ves** 81.58 329⇑ *i*P P 15 05 36.1 +1.1
PVCC *e*PP PP 15 05 43.9 -0.7
PVCC AMS AMS 15 46 50.0
comp=Z,3μm,17.1s
PVCC **Panska Ves** 81.58 329⇑ *i*P P 15 05 36.1 +1.1
PVCC *e* 15 05 43.9
PVCC MLR MLR
comp=Z,3μm,17.1s
GZR **Gura Zlata** 81.61 322⇓ *i*P P 15 05 36.0 +0.6
GZR **Gura Zlata** 81.61 322 ⇓P P 15 05 36.0 +0.6
CLL **Collm** 81.61 330⇑ *i*P P 15 05 35.5 +0.3
comp=Z,41nm,1.1s
CLL *i* 15 05 40.7
CLL *i* 15 05 43.2
CLL *e*PP PP 15 08 47.0 +5.8
CLL *e*S S 15 15 46.0 +0.8
CLL *e*SS SS 15 21 06.0 +4.7
CLL *e*SSS SSS 15 24 30.0
CLL *e* 15 26 06.0
CLL **Collm** 81.61 330⇑ *i*P P 15 05 35.5 +0.3
CLL *i* 15 05 40.7
CLL *e*S S 15 15 46.0 +0.8
CLL pmax pmax
comp=Z,41nm,1.1s
CLL **Collm** 81.61 330 *e*P P 15 05 35.4 +0.3
VRAC **Vranov** 81.65 327⇓ *i*P P 15 05 36.4 +1.0
VRAC **Vranov** 81.65 327 ⇓P P 15 05 36.4 +1.0
X16A **Lo Mia Camp, P** 81.65 53 *e*P P 15 05 37.8 +1.8
MVCO **Mesa Verde** 81.73 50 P P 15 05 36.8 +0.4
baz=310
MVCO **Mesa Verde** 81.73 50 *e*P P 15 05 38.3 +2.0
comp=Z,34nm,1.4s
MVCO LR LR
comp=Z,354nm,20.0s
ISCO **Idaho Springs** 81.76 46 P P 15 05 36.9 +0.3
baz=312
ISCO **Idaho Springs** 81.76 46 *e*P P 15 05 38.1 +1.5
ISCO pmax pmax
comp=Z,16nm,1.4s
ISCO MLR MLR
comp=Z,394nm,19.0s
ISCO **Idaho Springs** 81.76 46 *e*P P 15 05 38.1 +1.5
comp=Z,16nm,1.4s
ISCO LR LR
comp=Z,394nm,19.0s
B35A **Bob, Littlefor** 81.87 34 P P 15 05 37.2 +0.6
baz=318
EDRB **Edirne** 81.99 317 P P 15 05 35.0 -2.3
PRU **Pruhonice** 82.01 329⇑ *i*P P 15 05 38.1 +0.8
PRU *e*PP PcP 15 05 42.9 +0.2
PRU *e*PP PP 15 08 43.2 -1.2
PRU *e*S S 15 15 48.3 -1.0
PRU AMS AMS 15 44 50.0
comp=Z,3μm,17.5s
PRU **Pruhonice** 82.01 329⇑ *i*P P 15 05 38.1 +0.8
PRU *e* 15 08 43.2
PRU *e*S S 15 15 48.3 -1.0

PRU				MLR	MLR		
	comp=Z,3µm,17.5s						
BZS	Buzias	82.03	322	⇓iP	P	15 05 37.0	-0.5
BZS	Buzias	82.03	322	⇓P	P	15 05 37.0	-0.5
G31A	Conde	82.03	38	P	P	15 05 38.2	+0.7
	baz=315						
D34A	Park Rapids	82.14	35	P	P	15 05 37.9	-0.2
	baz=317						
E33A	Westby DABS, E	82.19	36	P	P	15 05 38.1	-0.2
	baz=317						
SUSD	Miller	82.21	39	P	P	15 05 38.2	-0.3
	baz=315						
C35A	Jirik Farms, M	82.25	34	P	P	15 05 38.1	-0.5
	baz=318,SNR=5.8						
214A	Organ Pipe Nat	82.29	56	P	P	15 05 39.0	-0.2
	baz=309						
S22A	4UR Ranch, Cre	82.39	48	P	P	15 05 40.9	+1.0
	baz=311,SNR=5.7						
S22A	4UR Ranch, Cre	82.39	48	eP	P	15 05 41.8	+1.9
ISP	Isparta	82.50	312	P	P	15 05 38.5	-1.7
ISP	Isparta	82.50	312	c iP	P	15 05 40.2	0.0
ISP				pmax	pmax		
	comp=Z,21nm,1.1s						
ISP	Isparta	82.50	312	PFAKE		15 05 50.0	+10
ISP				LR	LR		
	comp=Z,1µm,19.0s						
F33A	5 Mile Ranch,	82.53	37	P	P	15 05 39.3	-0.8
	baz=317,SNR=5.1						
MDVR	Moldovita	82.58	322	⇑iP	P	15 05 41.0	+0.6
Q24A	Divide	82.58	46	P	P	15 05 40.5	-0.4
	baz=312						
Q24A	Divide	82.58	46	eP	P	15 05 43.0	+2.1
CSS	Mathiatis	82.63	308	P	P	15 05 40.1	-0.7
CSS	Mathiatis	82.63	308	eP	P	15 05 41.8	+1.0
CSS				LR	LR		
	comp=Z,302nm,20.0s						
NKC	Novy Kostel	82.67	330	⇑AMS	AMS	15 46 10.0	
	comp=Z,2µm,14.7s						
D35A	Remer	82.67	35	P	P	15 05 40.4	-0.4
	baz=318						
I31A	Royce, Wessing	82.72	39	P	P	15 05 40.9	-0.2
	baz=315						
C36A	Pine Crest Far	82.72	34	P	P	15 05 40.8	-0.3
	baz=319						
J30A	Dallas	82.72	40	P	P	15 05 41.0	-0.2
	baz=315						
KDZ	Kurdzhali	82.84	318	iP	P	15 05 42.9	+1.1
SOP	Sopron	82.89	326	⇑eP	P	15 05 43.2	+1.3
PGB	Panagyurishte	82.89	319	iP	P	15 05 43.1	+1.0
G33A	Ortonville	82.93	37	P	P	15 05 42.1	0.0
	baz=316						
H32A	Carlson Farm,	82.93	38	P	P	15 05 42.3	0.0
	baz=316						
D36A	Goodland	83.01	34	P	P	15 05 41.8	-0.8
	baz=318						
CONA	Conrad Observa	83.01	327	iP	P	15 05 43.7	+1.1
	comp=Z,33nm,1.3s,SNR=19						
CONA				isP	pP	15 05 53.4	+1.2
	comp=Z,56nm,1.7s						
OGNE	Ogallala	83.01	43	P	P	15 05 42.6	-0.2
	baz=314						
OGNE	Ogallala	83.01	43	PFAKE		15 06 00.0	+17
OGNE				LR	LR		
	comp=Z,490nm,22.0s						
ALN	Alexandroupoli	83.02	317	P	P	15 05 42.1	-0.6
C37A	Embarrass	83.03	33	P	P	15 05 42.4	-0.3
	baz=319						
F34A	Alexandria	83.06	36	P	P	15 05 42.8	-0.1
	baz=317						
ENEZ	Enez	83.07	316	P	P	15 05 42.3	-0.6
KHC	Kasperske Hory	83.07	329	⇑iP	P	15 05 43.5	+0.6
KHC				epP	PcP	15 05 48.0	+0.5
KHC				ePP	PP	15 08 48.4	-4.8
KHC				eS	S	15 16 00.5	+0.2
KHC				AMS	AMS	15 45 40.0	
	comp=Z,2µm,17.0s						
KHC	Kasperske Hory	83.07	329	⇑iP	P	15 05 43.5	+0.6
KHC				e		15 08 48.4	
KHC				eS	S	15 16 00.5	+0.2
KHC				MLR	MLR		
	comp=Z,2µm,17.0s						
K30A	Basset	83.11	41	P	P	15 05 43.5	+0.3
	baz=315						
J31A	Geddes	83.13	40	P	P	15 05 43.6	+0.3
	baz=315						
KULA	Kula-Manisa	83.14	313	P	P	15 05 42.1	-1.4
H33A	Prehn Over Nor	83.15	38	P	P	15 05 43.4	0.0
	baz=316,SNR=7.1						
EYMN	Ely	83.17	33	P	P	15 05 43.3	-0.1
	baz=320,SNR=6.3						
EYMN	Ely	83.17	33	eP	P	15 05 43.7	+0.3
	comp=Z,23nm,1.3s						
EYMN				LR	LR		
	comp=Z,507nm,22.0s						
SDCO	Great Sand Dun	83.18	48	P	P	15 05 43.7	-0.3
	baz=312,SNR=6.1						
SDCO	Great Sand Dun	83.18	48	eP	P	15 05 45.4	+1.4
	comp=Z,38nm,1.9s						
RZN	Rozhen	83.20	318	iP	P	15 05 45.0	+1.1
GEC2	GERESS Array S	83.24	329	eP	P	15 05 44.2	+0.4
GEC2	GERESS Array S	83.24	329	eP	P	15 05 44.2	+0.4
GERES	GERESS Array B	83.24	329	P	P	15 05 43.9	+0.1
	comp=Z,8.8nm,1.0s,baz=41,slow=4.4,SNR=47						
GERES				LR	LR	15 48 01.8	
	comp=Z,2µm,18.7s,baz=20,slow=39						
GEA0	GERESS Array S	83.24	329	eP	P	15 05 43.5	-0.3
G34A	Benson	83.28	37	P	P	15 05 43.8	-0.2
	baz=317						
F35A	Swanville	83.34	36	P	P	15 05 44.1	-0.2
	baz=318						
D37A	Cotton	83.36	34	P	P	15 05 44.3	-0.1
	baz=319						
VTS	Vitosha	83.37	319	iP	P	15 05 49.5	+4.8
TUC	Tucson	83.40	55	eP	P	15 05 48.4	+3.4
TUC				pmax	pmax		
	comp=Z,9.0nm,1.2s						
TUC	Tucson	83.40	55	eP	P	15 05 48.4	+3.4
	comp=Z,9.3nm,1.2s						
C38A	Sawbill Land.	83.44	33	P	P	15 05 44.1	-0.7
	baz=320,SNR=6.4						
E36A	McGregor	83.46	35	P	P	15 05 44.6	-0.3
	baz=318						
GRFO	Grafenberg	83.59	330	eP	P	15 05 45.5	0.0
GRFO	Grafenberg	83.59	330	eP	P	15 05 45.5	0.0
EZN	Ezine	83.59	316	P	P	15 05 43.8	-1.9
SMTH	Samothraki Isl	83.59	317	P	P	15 05 44.0	-1.7
K31A	O'Neill	83.60	40	P	P	15 05 45.9	+0.2
	baz=315						
H34A	Spellman Lake,	83.63	37	P	P	15 05 45.6	-0.2
	baz=317						
ARSA	Arzberg	83.67	327	iP	P	15 05 47.0	+1.0
	comp=Z,22nm,1.6s,SNR=11						
MOA	Molln	83.77	328	iP	P	15 05 47.2	+0.7
	comp=Z,23nm,1.3s,SNR=13						
MMB	Musomiste	83.80	318	iP	P	15 05 47.8	+1.0
G35A	Watkins	83.85	36	P	P	15 05 47.2	+0.3
	baz=318						
C39A	Grand Marais	83.86	32	P	P	15 05 46.5	-0.4
	baz=320						
L31A	Butterfield Fa	83.87	41	P	P	15 05 46.8	-0.4
	baz=315						
NVR	Nevrokopi	83.89	318	P	P	15 05 46.5	-0.8
ECSD	EROS Data Cent	83.90	38	P	P	15 05 46.9	-0.3
	baz=316,SNR=6.5						
ECSD	EROS Data Cent	83.90	38	eP	P	15 05 47.3	+0.1
	comp=Z,12nm,1.0s						
ECSD				LR	LR		
	comp=Z,473nm,20.0s						
DIVS	Divibare	83.92	322	P	P	15 05 43.9	-3.5
KSCO	Kaye Shedlock'	84.00	45	P	P	15 05 47.4	-0.6
	baz=313						
J33A	Davis	84.02	39	P	P	15 05 48.3	+0.4
	baz=316						
PRK	Paraskevi	84.02	315	P	P	15 05 47.4	-0.5
I34A	Hadley	84.05	38	P	P	15 05 48.5	+0.5
	baz=317						
H35A	Sunnyside Ranc	84.07	37	P	P	15 05 48.4	+0.3
	baz=318						
PPT	Papeete	84.08	117	LR	LR	15 36 43.4	
	comp=Z,850nm,19.9s,baz=305,slow=31						
PPT2	Papeete2	84.09	117	eS	S	15 16 12.6	+1.3
	comp=Z,291nm,24.5s						
PPT2	Papeete2	84.09	117	eLR	LR	15 32 10.0	
	comp=Z,1µm,21.2s,baz=313						
LIA	Limnos Island	84.18	316	P	P	15 05 46.8	-1.9
SRS	Serrai	84.20	318	P	P	15 05 47.2	-1.6
T25A	Trinidad	84.23	47	P	P	15 05 50.0	+0.7
	baz=312,SNR=9.2						
T25A	Trinidad	84.23	47	eP	P	15 05 50.6	+1.3
SIGR	SIGRI	84.28	315	P	P	15 05 46.6	-2.6
PERS	Pernice	84.32	326	iP	P	15 05 49.7	+0.3
SOKA	Soboth	84.33	326	iP	P	15 05 49.9	+0.5
	comp=Z,48nm,1.4s,SNR=27						
LAZ	Ladron	84.39	51	eP	P	15 05 52.3	+2.2
M31A	Lambtecht Ranc	84.39	41	P	P	15 05 50.3	+0.5
	baz=315						
L32A	Elgin	84.43	40	P	P	15 05 50.6	+0.6
	baz=316						
ANMO	Albuquerque	84.45	50	P	P	15 05 50.8	+0.3
	baz=312						
ANMO	Albuquerque	84.45	50	ceP	P	15 05 51.5	+1.1
ANMO				pmax	pmax		
	comp=Z,8.0nm,1.2s						
ANMO	Albuquerque	84.45	50	PFAKE		15 06 00.0	+10
ANMO				LR	LR		
	comp=Z,337nm,20.0s						
SOH	Sokhos	84.54	318	P	P	15 05 50.1	-0.5
OUR	Ouranopolis	84.54	317	P	P	15 05 48.9	-1.6
KNT	Kendrikon	84.54	318	P	P	15 05 49.2	-1.3
J34A	George	84.55	38	P	P	15 05 51.0	+0.4
	baz=317						
H36A	Jessenland, He	84.59	36	P	P	15 05 51.1	+0.4
	baz=318						
VAY	Valandovo	84.60	319	P	P	15 05 50.2	-0.6
VAY	Valandovo	84.60	319	iP	P	15 05 51.5	+0.8
SPMN	Marine on St.	84.64	35	P	P	15 05 50.6	-0.3
	baz=319						
OBKA	Obir	84.67	327	iP	P	15 05 51.2	0.0
	comp=Z,6.1nm,1.1s						
L33A	Hoskins	84.69	40	P	P	15 05 51.6	+0.3
	baz=316						
SKO	Skopje	84.73	320	P	P	15 05 51.3	-0.1
SKO	Skopje	84.73	320	iP	P	15 05 52.9	+1.4
KBA	Koelnbreinsper	84.76	328	iP	P	15 05 52.0	+0.2
	comp=Z,19nm,1.4s,SNR=7.9						
BEBN	Eben Emael	84.78	334	P	P	15 05 51.8	+0.3
BGNE	Belgrade	84.78	41	P	P	15 05 51.8	0.0
	baz=316						
PLG	Polygyros	84.80	318	P	P	15 05 51.3	-0.6
MEM	Membach	84.81	334	P	P	15 05 51.8	+0.2
	comp=Z,16nm,1.5s						
BNM	Barren Site	84.87	51	eP	P	15 05 54.2	+1.6
THE	Thessaloniki	84.88	318	P	P	15 05 51.5	-0.7
K34A	Le Mars	84.92	39	P	P	15 05 52.4	0.0
	baz=317						
GRG	Griva	84.95	319	P	P	15 05 49.9	-2.7
I36A	Fitzsimmons Fa	84.97	37	P	P	15 05 52.8	+0.2
	baz=318						
MYKA	Terra Mystica	84.98	327	eP	P	15 05 52.7	0.0
	comp=Z,13nm,1.0s,SNR=5.1						
PAIG	Paliouri	84.99	317	P	P	15 05 51.1	-1.7
O31A	Woolen Ranch,	85.04	42	P	P	15 05 52.6	-0.5
	baz=315						
H37A	Dierke Farm, C	85.07	36	P	P	15 05 52.7	-0.4
	baz=319						
VISS	Visnje	85.08	326	iP	P	15 05 53.0	-0.2
BOJS	Bojanci	85.12	326	iP	P	15 05 53.4	0.0
121A	Cookes Peak, D	85.20	53	P	P	15 05 54.0	-0.3
	baz=311						
BCLA	Clavier	85.22	334	P	P	15 05 53.9	+0.1
	comp=Z,19nm,1.8s						
I37A	Lemond, Waseca	85.26	37	P	P	15 05 53.9	-0.2
	baz=319						
L34A	Svendsen Farm,	85.30	40	P	P	15 05 53.2	-1.1
	baz=317						
WATA	Walderalm	85.31	329	eP	P	15 05 54.5	+0.1
	comp=Z,1.0nm,0.6s						
J36A	Seneca 1, Swea	85.32	38	P	P	15 05 53.2	-1.2
	baz=318						
JAVS	Javornik	85.36	326	iP	P	15 05 54.0	-0.7
ABTA	Abfaltersbach	85.37	328	iP	P	15 05 54.1	-0.6
	comp=Z,12nm,1.1s,SNR=6.1						
MOTA	Moosalm	85.50	329	eP	P	15 05 55.5	+0.2
	comp=Z,20nm,1.3s						
SNF	Seneffe	85.51	334	P	P	15 05 55.9	+0.7
PDG	Podgorica	85.51	321	⇑iP	P	15 05 56.1	+0.8
LIT	Litokhoron	85.51	318	P	P	15 05 53.1	-2.3
RETA	Reutte	85.52	329	iPcP	P	15 05 56.0	+0.6
	comp=Z,27nm,1.0s,SNR=6.7						
O32A	Brockman Farm,	85.53	42	P	P	15 05 54.7	-0.9
	baz=316						
SCHQ	Schefferville	85.53	16	P	P	15 05 55.3	+0.1
	comp=Z,7.6nm,0.8s,baz=240,slow=4.3,SNR=3.5						
SCHQ				LR	LR	15 44 43.3	
	comp=Z,594nm,21.6s,baz=344,slow=36						
WLF	Walferdange	85.55	333	P	P	15 05 56.7	+1.4
	comp=Z,31nm,2.0s						
WLF	Walferdange	85.55	333	eP	P	15 05 56.8	+1.4
WLF				MLR	MLR		
	comp=Z,1µm,19.0s						
WLF	Walferdange	85.55	333	eP	P	15 05 56.8	+1.4
WLF				LR	LR		
	comp=Z,1µm,19.0s						
L35A	Bielow Farm, R	85.62	39	P	P	15 05 55.1	-0.8
	baz=317						
COWI	Conover	85.62	33	PFAKE		15 06 10.0	+14
COWI				LR	LR		
	comp=Z,629nm,22.0s						
TAOE	Nuku Hiva Isla	85.65	104	eS	S	15 16 28.8	+1.8
	comp=Z,382nm,27.1s						
TAOE	Nuku Hiva Isla	85.65	104	eLR	LR	15 32 56.7	
	comp=Z,3µm,22.5s,baz=320						
XOR	Xorichti	85.65	317	P	P	15 05 52.5	-3.6
OHR	Ohrid	85.68	320	iP	P	15 05 56.4	+0.1
J37A	Redenius Farm,	85.72	37	P	P	15 05 55.5	-0.8
	baz=318						
DOU	Dourbes	85.74	334	P	P	15 05 56.5	+0.2
I38A	Scanlan Farm,	85.75	36	P	P	15 05 55.6	-1.0
	baz=319						
CBKS	Cedar Bluff	85.76	44	P	P	15 05 56.2	-0.5
	baz=315						
CBKS	Cedar Bluff	85.76	44	PFAKE		15 06 10.0	+13
CBKS				LR	LR		
	comp=Z,482nm,21.0s						
K36A	Gilmore City	85.78	38	P	P	15 05 56.6	-0.1
	baz=318						
P32A	Huiting Farm,	85.81	42	P	P	15 05 56.7	-0.2
	baz=316						
BFO	Black Forest	85.82	331	iP	P	15 05 57.3	+0.5
BFO	Black Forest	85.82	331	eP	P	15 05 57.1	+0.3
BFO				LR	LR		
	comp=Z,2µm,19.0s						
FETA	Feichten	85.91	329	iPcP	P	15 05 57.7	+0.3
	comp=Z,13nm,1.1s,SNR=9.5						
TIR	Tirane	85.99	320	PFAKE		15 06 10.0	+12
TIR				LR	LR		
	comp=Z,5µm,19.0s						
M35A	Neola	86.01	40	P	P	15 05 57.8	-0.1
	baz=317						
O33A	Hebron	86.03	42	P	P	15 05 57.5	-0.5
	baz=316						
DAVA	Damuels	86.05	330	iPcP	P	15 05 58.5	+0.4
	comp=Z,30nm,1.2s,SNR=11						
N34A	Lincoln	86.06	40	P	P	15 05 57.4	-0.7
	baz=317						
K37A	Belmond	86.08	38	P	P	15 05 58.2	0.0
	baz=318,SNR=8.8						
J38A	Wedel Dairy, R	86.23	37	P	P	15 05 58.2	-0.7
	baz=319						
LKR	Lokris	86.26	317	P	P	15 05 56.2	-2.9
Q32A	Meitler Ranch,	86.28	43	P	P	15 05 58.9	-0.4
	baz=316						
ECH	Echery	86.36	332	⇑eP	P	15 05 59.6	+0.1
FUORN	Ofenpass-Fuorn	86.42	329	eP	P	15 06 00.5	+0.4
O34A	Beatrice	86.43	41	P	P	15 05 59.7	-0.2
	baz=317						
P33A	Williams Farm,	86.43	42	P	P	15 05 59.5	-0.5
	baz=316						
SANT	Santorini	86.47	314	PFAKE		15 06 10.0	+10
SANT				LR	LR		
	comp=Z,931nm,19.0s						
N35A	Tabor	86.48	40	P	P	15 06 00.2	0.0
	baz=317						
L37A	Phoenix Point,	86.50	38	P	P	15 06 00.3	0.0
	baz=318						
J39A	Decorah	86.58	36	P	P	15 06 00.4	-0.2
	baz=320						
K38A	Parkersburg	86.59	37	P	P	15 06 01.0	+0.3
	baz=319						
R32A	Long Quarter,	86.61	43	P	P	15 06 00.9	0.0
	baz=316						
MOF	Molkenrain	86.67	331	⇑eP	P	15 06 01.2	+0.1
Q33A	Connelly Farm,	86.67	42	P	P	15 06 00.8	-0.3
	baz=316						
O35A	Humboldt	86.78	40	P	P	15 06 01.4	-0.2
	baz=317						
P34A	Walnut Farm, R	86.82	41	P	P	15 06 02.0	+0.1
	baz=317						
N36A	Muff Farm, Cla	86.87	40	P	P	15 06 02.5	+0.4
	baz=318						
M37A	Trindle Farm,	86.89	39	P	P	15 06 02.0	-0.2
	baz=318						
TUE	Stuetta	86.92	329	eP	P	15 06 02.7	+0.3
TUE				LR	LR		
	comp=Z,3µm,19.0s						
K39A	Oelwein	86.97	37	P	P	15 06 02.2	-0.3
	baz=320						
J40A	Soldiers Grove	86.99	36	P	P	15 06 02.5	-0.1
	baz=320						
S32A	Newby Ranch, P	86.99	44	P	P	15 06 02.7	-0.1
	baz=316						
R33A	Olander Ranch,	87.09	43	P	P	15 06 03.0	-0.2
	baz=316						
LOMF	Lomont	87.20	331	⇑eP	P	15 06 03.6	-0.1
Q34A	Chapman	87.21	42	P	P	15 06 03.9	+0.2
	baz=317						
KSU1	Kansas State U	87.26	42	P	P	15 06 03.9	-0.1
	baz=317						
KSU1	Kansas State U	87.26	42	PFAKE		15 06 20.0	+16
KSU1				LR	LR		
	comp=Z,527nm,21.0s						
P35A	Duane Minner,	87.26	41	P	P	15 06 04.2	+0.1
	baz=317						
MNTX	Cornudas Mount	87.28	52	P	P	15 06 04.3	+0.1
	baz=312						
MNTX	Cornudas Mount	87.28	52	eP	P	15 06 07.3	+3.0
MNTX				LR	LR		
	comp=Z,334nm,20.0s						
N37A	Lee Faris, Mou	87.29	39	P	P	15 06 03.9	-0.2
	baz=318						
M38A	Pleasantville	87.31	38	P	P	15 06 04.4	+0.2
	baz=319						
K40A	Colesburg	87.34	36	P	P	15 06 04.3	0.0
	baz=320						
J41A	Loganville	87.35	35	P	P	15 06 04.4	0.0
	baz=321						
L39A	Vinton	87.36	37	P	P	15 06 04.5	0.0
	baz=320						
O36A	Bolckow	87.37	40	P	P	15 06 04.6	0.0
	baz=318						
T32A	Huddler Ranch,	87.37	44	P	P	15 06 05.1	+0.5
	baz=316						
AMTX	Amarillo	87.39	48	P	P	15 06 05.5	+0.7
	baz=314						
AMTX	Amarillo	87.39	48	eP	P	15 06 06.2	+1.4
IDI	Anoyia	87.55	313	eP	P	15 06 05.5	0.0
S33A	Kaszmaul Farm,	87.59	44	P	P	15 06 06.2	+0.5
	baz=316						
JFWS	Jewell Farm	87.59	36	PFAKE		15 06 20.0	+14
JFWS				LR	LR		
	comp=Z,808nm,21.0s						
P36A	Good Intent, A	87.62	41	P	P	15 06 05.4	-0.3
	baz=318						
Q35A	Mercer Eighty,	87.74	42	P	P	15 06 06.2	-0.1
	baz=317						
N38A	Joes South For	87.76	39	P	P	15 06 06.7	+0.3
	baz=319						
O37A	Wolven Farm, M	87.76	40	P	P	15 06 06.1	-0.3
	baz=318						
M39A	Webster	87.77	38	P	P	15 06 06.6	+0.2
	baz=320						
L40A	Anamosa	87.78	37	P	P	15 06 06.5	0.0
	baz=320						
K41A	Shullsburg	87.80	36	P	P	15 06 06.8	+0.3
	baz=321						
T33A	Patterson Ranc	87.82	44	P	P	15 06 06.4	-0.3
	baz=316						
SENIN	Lac Senin/Sane	87.83	330	eP	P	15 06 08.1	+1.2
TBI	Tubuai	87.96	121	eS	S	15 16 45.6	-3.2
	comp=Z,464nm,32.0s						
TBI	Tubuai	87.96	121	eLR	LR	15 33 47.9	
	comp=Z,2µm,23.2s,baz=316						
S34A	Willow Spring	88.00	43	P	P	15 06 07.4	-0.2
	baz=317						
R35A	Emporia Munici	88.04	42	P	P	15 06 08.2	+0.4
	baz=317						
N39A	Derby Farms, D	88.06	38	P	P	15 06 08.2	+0.4
	baz=319						
P37A	Lathrop	88.09	40	P	P	15 06 07.9	-0.1
	baz=318						
L41A	Preston	88.12	36	P	P	15 06 08.2	+0.2
	baz=320						
O38A	Galt	88.14	39	P	P	15 06 08.4	+0.2
	baz=319						
VLC	Villacollemand	88.34	327	PFAKE		15 06 20.0	+11
VLC				LR	LR		
	comp=Z,2µm,19.0s						
V32A	Arapaho	88.34	45	P	P	15 06 09.4	+0.1
	baz=316						
U33A	Lingo Farm, Me	88.36	44	P	P	15 06 09.3	0.0
	baz=316						
AQU	L'Aquila	88.40	325	PFAKE		15 06 20.0	+11
AQU				LR	LR		
	comp=Z,1µm,20.0s						
R36A	Gordon, Harris	88.42	42	P	P	15 06 10.1	+0.5
	baz=318						
S35A	Otter Creek Ra	88.45	42	P	P	15 06 10.2	+0.5
	baz=317						
T34A	McClaskey Farm	88.45	43	P	P	15 06 10.4	+0.6
	baz=316						
VAL	Valentia	88.45	343	eP	P	15 06 07.3	-2.1
VAL	Valentia	88.45	343	⇓iS	S	15 16 55.8	+3.0
P38A	Dawn	88.48	40	P	P	15 06 10.1	+0.3
	baz=319						
O39A	Kirksville	88.51	39	P	P	15 06 10.1	+0.2
	baz=319						
Q37A	Longview Farm,	88.56	41	P	P	15 06 10.4	+0.2
	baz=318						
W32A	Sentinel	88.64	46	P	P	15 06 10.8	+0.1
	baz=315						
U34A	Anderson Ranch	88.68	44	P	P	15 06 11.1	+0.3
	baz=316						
V33A	Lossen Ranch,	88.70	45	P	P	15 06 10.9	0.0
	baz=316						
R37A	Teagarden Farm	88.78	41	P	P	15 06 11.3	0.0
	baz=318						
S36A	Lake Cedric, C	88.81	42	P	P	15 06 11.6	+0.2
	baz=317						
T35A	Sooner Cattle	88.90	43	P	P	15 06 12.0	+0.1
	baz=317						
Q38A	Cooks Store, C	88.93	40	P	P	15 06 12.1	+0.2
	baz=319						
O40A	La Belle	88.94	38	P	P	15 06 12.0	0.0
	baz=320						
P39B	Salisbury	88.98	39	P	P	15 06 12.0	-0.2
	baz=319						
CUC	Castrocucco	89.05	322	PFAKE		15 06 20.0	+7.4
CUC				LR	LR		
	comp=Z,2µm,19.0s						
W33A	Caddo, Fort Co	89.07	45	P	P	15 06 12.5	-0.2
	baz=316						
X32A	Elmer	89.12	46	P	P	15 06 12.8	-0.1
	baz=315						
V34A	Guthrie	89.12	44	P	P	15 06 12.8	-0.1
	baz=316						
T36A	Boggs Farm, Ca	89.14	43	P	P	15 06 13.4	+0.4
	baz=317						
BNI	Bardonecchia	89.16	330	PFAKE		15 06 20.0	+6.9
BNI				LR	LR		
	comp=Z,1µm,21.0s						
U35A	Pawnee	89.17	44	P	P	15 06 13.3	+0.2
	baz=317						
WMOK	Wichita Mounta	89.19	46	P	P	15 06 13.6	+0.4
	baz=316						
WMOK	Wichita Mounta	89.19	46	eP	P	15 06 14.1	+0.8
WMOK	Wichita Mounta	89.19	46	eP	P	15 06 14.1	+0.8
S37A	Fort Scott	89.19	42	P	P	15 06 13.2	0.0
	baz=318						
TIP	Timpagrande	89.19	321	PFAKE		15 06 20.0	+6.7
TIP				LR	LR		
	comp=Z,3µm,22.0s						
Q39A	Willow Grove F	89.20	40	P	P	15 06 13.6	+0.4
	baz=319						
P40A	Paris	89.31	39	P	P	15 06 14.1	+0.4
	baz=320						
R38A	Fenwick Farm,	89.36	41	P	P	15 06 13.6	-0.3
	baz=318						
W34A	Bridge Creek,	89.41	45	P	P	15 06 13.4	-0.9
	baz=316						

O41A	**Passleys Farm,** baz=320	**89.44**	**38**	P	**P**	**15 06 14.5**	**+0.2**		
V35A	**Meyer Ranch, C** baz=317	**89.56**	**44**	P	**P**	**15 06 15.2**	**+0.3**		
PLDF	**La Plantade**	**89.57**	**332**	*e*P	**P**	**15 06 15.6**	**+0.7**		
T37A	**Cheneyville 18** baz=318	**89.61**	**42**	P	**P**	**15 06 15.2**	**0.0**		
AGO	**Saint Agoulin**	**89.68**	**333**	*e*P	**P**	**15 06 16.2**	**+0.8**		
P41A	**Barry, Barry** baz=320	**89.69**	**38**	P	**P**	**15 06 15.9**	**+0.4**		
Q40A	**Laux Farm, Aux** baz=320	**89.70**	**39**	P	**P**	**15 06 15.3**	**-0.2**		
R39A	**Chumby, Stover** baz=319	**89.72**	**40**	P	**P**	**15 06 15.9**	**+0.3**		
O42A	**Bath** baz=321	**89.77**	**37**	P	**P**	**15 06 15.9**	**0.0**		
S38A	**Stockton** baz=318	**89.78**	**41**	P	**P**	**15 06 15.8**	**-0.1**		
Y33A	**Hilltop Ranch,** baz=316	**89.80**	**46**	P	**P**	**15 06 16.1**	**0.0**		
SSB	**Saint Sauveur**	**89.81**	**331**	PFAKE		15 06 30.0	+14		
SSB	comp=Z,1μm,20.0s			LR	LR				
HDIL	**Hopedale** baz=321	**89.87**	**36**	P	**P**	**15 06 16.9**	**+0.6**		
HDIL	**Hopedale**	**89.87**	**36**	PFAKE		15 06 30.0	+14		
HDIL	comp=Z,587nm,20.0s			LR	LR				
TX31	**Lajitas Ar. Si**	**89.96**	**53**	*e*P	**P**	**15 06 17.6**	**+0.5**		
TXAR	**Lajitas Array**	**89.96**	**53**	P	**P**	**15 06 17.9**	**+0.8**		
TXAR	comp=Z,2.5nm,0.8s,baz=298,slow=3.9,SNR=20			pP	**pP**	**15 06 27.5**	**+0.8**		
TXAR	comp=Z,4.5nm,0.7s,baz=313,slow=3.5,SNR=16			LR	LR	15 43 28.2			
W35A	**Tecumseh** baz=317	**89.98**	**45**	P	**P**	**15 06 17.4**	**+0.5**		
T38A	**Diamond** baz=318	**90.01**	**42**	P	**P**	**15 06 17.4**	**+0.4**		
U37A	**Salina** baz=318	**90.03**	**43**	P	**P**	**15 06 17.6**	**+0.4**		
V36A	**Jenks** baz=317	**90.04**	**44**	P	**P**	**15 06 17.3**	**+0.1**		
S39A	**Bolivar** baz=319	**90.04**	**41**	P	**P**	**15 06 17.0**	**-0.1**		
P42A	**Winchester** baz=321	**90.11**	**38**	P	**P**	**15 06 17.6**	**+0.1**		
ABTX	**Abilene, Hawle** baz=315	**90.18**	**48**	P	**P**	**15 06 17.8**	**-0.1**		
Z33A	**Whitaker Ranch** baz=316	**90.23**	**47**	P	**P**	**15 06 18.4**	**+0.3**		
CEL	**Celeste**	**90.33**	**320**	PFAKE		15 06 30.0	+11		
CEL	comp=Z,2μm,19.0s			LR	LR				
Y34A	**Reagan Ranch,** baz=316	**90.33**	**46**	P	**P**	**15 06 19.3**	**+0.6**		
LBL	**Lubilhac**	**90.34**	**332**	*e*P	**P**	**15 06 19.3**	**+0.8**		
W36A	**Wetumka** baz=317	**90.35**	**44**	P	**P**	**15 06 18.9**	**+0.3**		
U38A	**Gravette** baz=318	**90.41**	**42**	P	**P**	**15 06 19.2**	**+0.2**		
V37A	**Hulbert** baz=318	**90.41**	**43**	P	**P**	**15 06 18.8**	**-0.1**		
X35A	**Drake** baz=317	**90.47**	**45**	P	**P**	**15 06 18.7**	**-0.5**		
T39A	**Clever** baz=319	**90.51**	**41**	P	**P**	**15 06 19.2**	**-0.1**		
S40A	**Lebanon** baz=319	**90.54**	**40**	P	**P**	**15 06 19.4**	**-0.1**		
Q42A	**Golden Eagle** baz=321	**90.54**	**38**	P	**P**	**15 06 20.0**	**+0.5**		
Z34A	**Collier Ranch,** baz=316	**90.66**	**46**	P	**P**	**15 06 20.8**	**+0.6**		
X36A	**Centrahoma** baz=317	**90.69**	**45**	P	**P**	**15 06 19.9**	**-0.3**		
HHAR	**Hobbs**	**90.76**	**42**	*e*P	**P**	**15 06 21.3**	**+0.7**		
Y35A	**Marietta** baz=317	**90.78**	**45**	P	**P**	**15 06 20.5**	**-0.2**		
W37B	**Quinton** baz=318	**90.79**	**44**	P	**P**	**15 06 20.1**	**-0.6**		
V38A	**Canehill** baz=318	**90.82**	**43**	P	**P**	**15 06 20.5**	**-0.4**		
T40A	**Mansfield** baz=319	**90.87**	**41**	P	**P**	**15 06 20.9**	**-0.1**		
Q43A	**New Douglas** baz=321	**90.93**	**38**	P	**P**	**15 06 21.3**	**0.0**		
U39A	**Green Forest** baz=319	**90.93**	**42**	P	**P**	**15 06 21.6**	**+0.2**		
S41A	**Jillco Farms,** baz=320	**90.94**	**40**	P	**P**	**15 06 21.3**	**0.0**		
AAM	**Ann Arbor**	**91.03**	**32**	PFAKE		15 06 30.0	+8.4		
AAM	comp=Z,526nm,20.0s			LR	LR				
SFIN	**Lafayette** baz=323	**91.04**	**35**	P	**P**	**15 06 22.0**	**+0.2**		
233A	**Rising Star** baz=316	**91.05**	**48**	P	**P**	**15 06 22.5**	**+0.5**		
Z35A	**Perchaven, San** baz=316	**91.08**	**46**	P	**P**	**15 06 21.8**	**-0.2**		
134A	**White-Moore Ra** baz=316	**91.14**	**47**	P	**P**	**15 06 22.9**	**+0.5**		
Y36A	**Durant** baz=317	**91.22**	**45**	P	**P**	**15 06 23.0**	**+0.3**		
X37A	**Clayton** baz=318	**91.23**	**44**	P	**P**	**15 06 23.0**	**+0.3**		
V39A	**Pettigrew** baz=319	**91.25**	**42**	P	**P**	**15 06 23.2**	**+0.3**		
U40A	**Yellville** baz=319	**91.29**	**41**	P	**P**	**15 06 23.4**	**+0.3**		
Q44A	**Meyer Farm, Va** baz=322	**91.29**	**37**	P	**P**	**15 06 23.3**	**+0.4**		
T41A	**Mountain View** baz=320	**91.34**	**40**	P	**P**	**15 06 23.0**	**-0.3**		
W38A	**Poteau** baz=318	**91.35**	**43**	P	**P**	**15 06 24.0**	**+0.8**		
X38A	**Whitesboro** baz=318	**91.47**	**44**	P	**P**	**15 06 24.5**	**+0.6**		
333A	**Richland Sprin** baz=316	**91.49**	**48**	P	**P**	**15 06 24.3**	**+0.2**		
234A	**Clairette** baz=316	**91.51**	**47**	P	**P**	**15 06 24.4**	**+0.3**		
135A	**Vickery Place,** baz=316	**91.54**	**47**	P	**P**	**15 06 25.3**	**+1.0**		
JCT	**Junction City** baz=315	**91.59**	**50**	P	**P**	**15 06 25.0**	**+0.5**		
JCT	**Junction City**	**91.59**	**50**	PFAKE		15 06 40.0	+15		
JCT	comp=Z,457nm,21.0s			LR	LR				
Z36A	**Blue Ridge** baz=317	**91.59**	**46**	P	**P**	**15 06 25.1**	**+0.6**		
W39A	**Magazine** baz=318	**91.66**	**43**	P	**P**	**15 06 25.5**	**+0.8**		
V40A	**Witts Springs** baz=319	**91.72**	**42**	P	**P**	**15 06 25.2**	**+0.2**		
R44A	**Waltonville** baz=322	**91.77**	**38**	P	**P**	**15 06 26.3**	**+1.1**		
U41A	**Viola** baz=320	**91.79**	**41**	P	**P**	**15 06 25.7**	**+0.3**		
S43A	**Fulton Ridge,** baz=321	**91.80**	**39**	P	**P**	**15 06 25.2**	**-0.1**		
334A	**Lometa** baz=316	**91.93**	**48**	P	**P**	**15 06 26.1**	**0.0**		
X39A	**Fountain Ranch** baz=318	**91.99**	**43**	P	**P**	**15 06 26.5**	**+0.2**		
W40A	**Ferguson Farm,** baz=319	**92.05**	**42**	P	**P**	**15 06 26.8**	**+0.3**		
V41A	**Mountainview** baz=320	**92.09**	**41**	P	**P**	**15 06 26.9**	**+0.2**		
U42A	**Revenden** baz=320	**92.14**	**40**	P	**P**	**15 06 27.7**	**+0.7**		
CLTB	**Caltabellotta**	**92.21**	**322**	PFAKE		15 06 40.0	+13		
CLTB	comp=Z,1μm,20.0s			LR	LR				
MIAR	**Mount Ida** baz=319	**92.25**	**43**	P	**P**	**15 06 28.1**	**+0.6**		
MIAR	**Mount Ida**	**92.25**	**43**	PFAKE		15 06 40.0	+13		
MIAR	comp=Z,420nm,20.0s			LR	LR				
X201	**Greenbrier Sit**	**92.35**	**42**	*e*P	**P**	**15 06 28.5**	**+0.6**		
X301	**Greenbrier Sit**	**92.37**	**42**	*e*P	**P**	**15 06 29.0**	**+1.0**		
WHAR	**Wooly Hollow**	**92.39**	**42**	*e*P	**P**	**15 06 29.0**	**+0.9**		
236A	**Katherine and** baz=317	**92.46**	**46**	P	**P**	**15 06 29.5**	**+1.0**		
W41A	**Tony Mavity, V** baz=319	**92.50**	**42**	P	**P**	**15 06 28.9**	**+0.2**		
W41B	**Gary Mavity, V** baz=319	**92.50**	**42**	P	**P**	**15 06 28.9**	**+0.2**		
VSL	**Villasalto**	**92.53**	**325**	PFAKE		15 06 40.0	+11		
VSL	comp=Z,883nm,22.0s			LR	LR				
LONY	**Lake Ozonia**	**92.55**	**25**	PFAKE		15 06 40.0	+11		
LONY	comp=Z,630nm,19.0s			LR	LR				
WDD	**Wied Dalam**	**92.89**	**320**	PFAKE		15 06 40.0	+10		
WDD	comp=Z,1μm,19.0s			LR	LR				
ACSO	**Alum Creek Sta**	**93.01**	**33**	PFAKE		15 06 40.0	+9.1		
ACSO	comp=Z,512nm,22.0s			LR	LR				
PKME	**Peaks-Kenny Pk**	**93.66**	**22**	PFAKE		15 06 50.0	+16		
PKME	comp=Z,776nm,21.0s			LR	LR				
NATX	**Nacogdoches**	**93.72**	**45**	PFAKE		15 06 50.0	+16		
NATX	comp=Z,431nm,20.0s			LR	LR				
BINY	**Binghamton**	**94.16**	**27**	PFAKE		15 06 50.0	+14		
BINY	comp=Z,718nm,19.0s			LR	LR				
LMN	**Caledonia Moun**	**94.35**	**18**	*e*P	**P**	**15 06 37.9**	**+1.0**		
KVTX	**Kingsville**	**94.84**	**50**	PFAKE		15 06 50.0	+10		
KVTX	comp=Z,577nm,20.0s			LR	LR				
KEST	**Kesra**	**95.57**	**323**	LR	LR	15 55 33.6			
	comp=Z,1μm,18.8s,baz=358,slow=39								
BLA	**Blacksburg**	**96.63**	**33**	PFAKE		15 07 00.0	+12		
BLA	comp=Z,515nm,21.0s			LR	LR				
CBN	**Corbin Frederi**	**97.07**	**30**	PFAKE		15 07 00.0	+10		
CBN	comp=Z,349nm,19.0s			LR	LR				
ES19	**SONSECA Array**	**97.75**	**334**	*e*P	Pdif	15 06 53.0	+0.3		
ESDC	**Sonseca Array**	**97.79**	**334**	P	**P**	**15 06 51.9**	**-0.9**		
ESDC	comp=Z,0.3nm,0.4s,baz=12,slow=3.1,SNR=4.3			PP	**PP**	**15 10 51.8**	**+1.7**		
ESDC	comp=Z,0.2nm,0.3s,baz=33,slow=6.5,SNR=4.2			LR	LR	15 55 32.0			
PAB	**San Pablo**	**98.04**	**334**	PFAKE		15 07 10.0	+16		
PAB	comp=Z,2μm,20.0s			LR	LR				
RKT	**Rikitea**	**98.20**	**113**	*e*LR	LR	15 38 46.8			
	comp=Z,2μm,23.8s,baz=311								
MTE	**Manteigas**	**98.33**	**337**	PFAKE		15 07 10.0	+15		
MTE	comp=Z,1μm,21.0s			LR	LR				
BRAL	**Brewton**	**98.35**	**41**	PFAKE		15 07 10.0	+15		
BRAL	comp=Z,557nm,20.0s			LR	LR				
GOGA	**Godfrey**	**98.37**	**37**	PFAKE		15 07 10.0	+15		
GOGA	comp=Z,473nm,19.0s			LR	LR				
CNNC	**Cliffs of the**	**99.39**	**32**	PFAKE		15 07 10.0	+10		
CNNC	comp=Z,485nm,19.0s			LR	LR				
NHSC	**New Hope**	**100.17**	**35**	PFAKE		15 07 20.0	+17		
NHSC	comp=Z,562nm,20.0s			LR	LR				
KMBO	**Kilima Mbogo**	**102.47**	**278**	PFAKE		15 07 30.0	+16		
KMBO	comp=Z,677nm,19.0s			LR	LR				
ABPO	**Ambohimpanom**	**104.82**	**257**	PFAKE		15 07 40.0	+16		
ABPO	comp=Z,185nm,19.0s			LR	LR				
CASY	**Casey**	**105.47**	**193**	PFAKE		15 11 50.0			
CASY	comp=Z,60nm,20.0s			LR	LR				
BBSR	**BB Station**	**106.90**	**23**	PFAKE		15 12 00.0			
BBSR	comp=Z,442nm,19.0s			LR	LR				
TAM	**Tamanrasset**	**107.97**	**318**	PFAKE		15 12 00.0			
TAM	comp=Z,662nm,19.0s			LR	LR				
GTBY	**Guantanamo Bay**	**113.68**	**38**	PFAKE		15 12 10.0			
GTBY	comp=Z,282nm,19.0s			LR	LR				
MTDJ	**Mount Denham**	**113.85**	**41**	PFAKE		15 12 10.0			
MTDJ	comp=Z,388nm,19.0s			LR	LR				
GRTK	**Grand Turk**	**114.20**	**34**	PFAKE		15 12 10.0	+13		
GRTK	comp=Z,595nm,19.0s			LR	LR				
TORD	**Torodi Ar. Bea**	**117.89**	**315**	PKP	**PKPdf**	**15 12 03.4**	**-1.0**		
TORD	comp=Z,0.8nm,0.9s,baz=0.0,slow=2.4,SNR=3.7			PP	PP	15 13 09.5	-8.1		
LSZ	**Lusaka**	**117.95**	**271**	PFAKE		15 12 20.0	+15		
LSZ	comp=Z,1.7nm,0.7s,baz=21,slow=7.4,SNR=5.4			LR	LR				
PAYG	**Puerto Ayora**	**119.92**	**66**	PFAKE		15 12 20.0	+12		
PAYG	comp=Z,859nm,20.0s			LR	LR				
ANWB	**Willy Bob**	**121.45**	**27**	PFAKE		15 12 20.0	+8.8		
ANWB	comp=Z,826nm,19.0s			LR	LR				
FDF	**Fort de France**	**124.38**	**27**	PFAKE		15 12 30.0	+13		
FDF	comp=Z,481nm,21.0s			LR	LR				
GRGR	**Grenville**	**126.57**	**29**	PFAKE		15 12 30.0	+8.9		
GRGR	comp=Z,305nm,20.0s			LR	LR				
SACV	**Santiago Islan**	**126.84**	**343**	PFAKE		15 12 30.0	+8.4		
SACV	comp=Z,497nm,21.0s			LR	LR				
DBIC	**Dimbokro**	**126.85**	**317**	PKP	**PKPdf**	**15 12 20.7**	**-0.9**		
	comp=Z,3.2nm,0.9s,baz=42,slow=4.8,SNR=3.1								
OTAV	**Otavalo**	**127.54**	**55**	PFAKE		15 12 40.0	+16		
OTAV	comp=Z,326nm,21.0s			LR	LR				
SYO	**Syowa Base**	**128.11**	**207**	*e*Pdiff	**Pdif**	**15 09 12.0**	**+5.5**		
SNAA	**Sanae**	**140.56**	**197**	PKP	PKPpre	15 12 35.1			
VNA3	**Neumayer Olymp**	**142.36**	**195**	PKP	**PKPdf**	**15 12 44.2**	**-4.6**		
VNA1	**Neumayer--Stat**	**142.52**	**196**	PKP	**PKPdf**	**15 12 48.5**	**-0.5**		
LPAZ	**La Paz**	**146.47**	**61**	PKPbc	**PKPbc**	**15 12 59.5**	**-0.2**		
	comp=Z,9.0nm,0.8s,baz=344,slow=4.0,SNR=30								
PMSA	**Palmer Station**	**147.90**	**159**	PFAKE		15 13 10.0	+6.0		
PMSA	comp=Z,535nm,21.0s			LR	LR				
LVC	**Limon Verde**	**149.86**	**71**	PFAKE		15 13 20.0	+6.2		
LVC	comp=Z,767nm,21.0s			LR	LR				
LCO	**Las Campanas**	**151.59**	**84**	PFAKE		15 13 20.0	-0.7		
LCO	comp=Z,593nm,19.0s			LR	LR				
SPB	**Sao Paulo**	**164.62**	**34**	PFAKE		15 13 30.0	+8.6		
SPB	comp=Z,509nm,19.0s			LR	LR				

*ATH **29** 15:09:32.6,38˚.30N±.21˚.77E,h16km±1km,ML2.9/15,Error ellipse: s-maj=1.4km s-min=0.6km az=250.0*
*ISCJB **29** 15:09:32.9±0.3,38˚.31N±0˚.02×21˚.75E±0˚.02,h6km±2km, mb3.7/4,Error ellipse: s-maj=2.6km s-min=2.3km az=167.4*
*IASPEI **29** 15:09:32.9±0.9,38˚.32N±0˚.02×21˚.75E±0˚.01,h8km±6km, mb3.8/4,Error ellipse: s-maj=2.3km s-min=2.0km az=165.5,GT5 selection from ISC bulletin GT5 identified by Bond˚jr and McLaughlin (2009) selection criteria Bond˚jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*CSEM **29** 15:09:32.9±0.1,38˚.30N×21˚.77E,h5km,ML2.9,Error ellipse: s-maj=2.3km s-min=2.1km az=174.0*
*THE **29** 15:09:33.0,38˚.32N×21˚.75E,h0km±1km,ML2.9/6,Error ellipse: s-maj=1.8km s-min=0.6km az=233.0*
*IDC **29** 15:09:34.4±1.3,38˚.58N×22˚.03E,h0km,mb3.6/5, mb1 3.8/5,mb1mx3.5/39,mbtmp3.7/5,Error ellipse: s-maj=42.9km s-min=22.4km az=141.0*

ISC 29 15:09:32.9±0.8,**38˚.31N**±0˚.01×**21˚.75E**±0˚.01,**h7**km±5km, **n126,s067**/182,**mb3.8**/4,**Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.04**	**135**	P	**Pg**	**15 09 34.2**	**-0.1**
UPR	**University Cam**	**0.04**	**135**	P	**Pg**	**15 09 34.2**	**-0.1**
UPR	**University Cam**	**0.04**	**135**	P	**Pg**	**15 09 33.0**	**-1.3**
LAKA	**Lakka**	**0.19**	**111**	P	**Pg**	**15 09 36.6**	**-0.2**
LAKA				S	**Sg**	**15 09 39.4**	**0.0**
LAKA	**Lakka**	**0.19**	**111**	P	**Pg**	**15 09 36.6**	**-0.2**
LAKA				S	**Sg**	**15 09 39.4**	**0.0**
LAKA	**Lakka**	**0.19**	**111**	P	**Pg**	**15 09 36.4**	**-0.4**

TRIZ	**Trizonia**	**0.26**	**77**	P	**Pg**	**15 09 38.0**	**0.0**		
TRIZ				S	**Sg**	**15 09 42.5**	**+1.0**		
SERG	**Sergoula**	**0.26**	**66**	P	**Pg**	**15 09 38.2**	**+0.1**		
SERG	**Sergoula**	**0.26**	**66**	P	**Pg**	**15 09 38.2**	**+0.1**		
ANX	**Ano Chora**	**0.31**	**25**	P	**Pg**	**15 09 39.0**	**-0.1**		
ANX	**Ano Chora**	**0.31**	**25**	P	**Pg**	**15 09 39.0**	**-0.1**		
ANX	**Ano Chora**	**0.31**	**25**	P	**Pg**	**15 09 39.0**	**-0.1**		
ANX				S	**Sg**	**15 09 44.6**	**+1.3**		
ANX	**Ano Chora**	**0.31**	**25**	S	**Sg**	**15 09 44.6**	**+1.3**		
ANX	comp=E,7804μm,0.5s			AML	AML	15 09 45.1			
ANX	comp=N,7394μm,0.4s			AML	AML	15 09 49.7			
KALE	**Kalithea**	**0.32**	**75**	P	**Pg**	**15 09 38.9**	**-0.2**		
KALE				S	**Sg**	**15 09 43.6**	**+0.2**		
KALE	**Kalithea**	**0.32**	**75**	P	**Pg**	**15 09 38.9**	**-0.2**		
KALE				S	**Sg**	**15 09 43.5**	**+0.2**		
KALE	**Kalithea**	**0.32**	**75**	P	**Pg**	**15 09 38.9**	**-0.2**		
KALE				S	**Sg**	**15 09 43.5**	**+0.2**		
KALE	comp=E,3281μm,0.2s			AML	AML	15 09 48.4			
KALE	comp=N,4463μm,0.6s			AML	AML	15 09 49.9			
AXS	**Araxos**	**0.32**	**249**	P	**Pg**	**15 09 39.1**	**-0.1**		
AXS	**Araxos**	**0.32**	**249**	P	**Pg**	**15 09 39.1**	**-0.1**		
AXS	**Araxos**	**0.32**	**249**	P	**Pg**	**15 09 39.1**	**-0.1**		
RLS	**Riolos of Patr**	**0.34**	**222**	P	**Pg**	**15 09 39.7**	**+0.2**		
RLS				S	**Sg**	**15 09 45.3**	**+1.3**		
RLS	**Riolos of Patr**	**0.34**	**222**	P	**Pg**	**15 09 39.7**	**+0.2**		
RLS				S	**Sg**	**15 09 45.3**	**+1.3**		
RLS	**Riolos of Patr**	**0.34**	**222**	S	**Sb**	**15 09 46.4**	**-0.5**		
RLS	comp=N,6664μm,0.6s			AML	AML	15 09 50.8			
RLS	comp=E,5848μm,0.9s			AML	AML	15 09 52.1			
PVO	**Paravola**	**0.35**	**330**	P	**Pg**	**15 09 39.5**	**-0.4**		
PVO				S	**Sg**	**15 09 46.1**	**+1.5**		
PVO	**Paravola**	**0.35**	**330**	P	**Pg**	**15 09 39.5**	**-0.4**		
PVO				S	**Sg**	**15 09 46.1**	**+1.5**		
PVO	**Paravola**	**0.35**	**330**	P	**Pg**	**15 09 39.5**	**-0.4**		
PVO				S	**Sb**	**15 09 46.6**	**-0.9**		
DRO	**Drossia**	**0.36**	**185**	P	**Pg**	**15 09 39.9**	**0.0**		
DRO	**Drossia**	**0.36**	**185**	P	**Pg**	**15 09 39.9**	**0.0**		
DRO				S	**Sg**	**15 09 45.9**	**+1.2**		
DRO	**Drossia**	**0.36**	**185**	P	**Pg**	**15 09 40.0**	**0.0**		
DRO				S	**Sg**	**15 09 45.9**	**+1.2**		
DRO	comp=E,16261μm,0.4s			AML	AML	15 09 46.3			
DRO	comp=N,12814μm,0.4s			AML	AML	15 09 51.8			
KLV	**Kalavryta, Ach**	**0.41**	**130**	P	**Pg**	**15 09 40.6**	**-0.3**		
KLV				S	**Sg**	**15 09 46.9**	**+0.6**		
KLV	**Kalavryta, Ach**	**0.41**	**130**	P	**Pg**	**15 09 40.7**	**-0.3**		
KLV				S	**Sg**	**15 09 46.7**	**+0.4**		
KLV	**Kalavryta, Ach**	**0.41**	**130**	P	**Pg**	**15 09 40.7**	**-0.3**		
KLV				S	**Sg**	**15 09 46.7**	**+0.4**		
PDO	**Prodromos**	**0.53**	**303**	P	**Pg**	**15 09 42.4**	**-0.9**		
PDO				S	**Sb**	**15 09 51.6**	**-0.9**		
PDO	**Prodromos**	**0.53**	**303**	P	**Pg**	**15 09 42.4**	**-0.9**		
PDO				S	**Sg**	**15 09 51.1**	**+0.9**		
PDO	**Prodromos**	**0.53**	**303**	P	**Pg**	**15 09 42.3**	**-0.9**		
PDO				S	**Sg**	**15 09 51.1**	**+0.9**		
PDO	comp=N,7725μm,0.3s			AML	AML	15 09 54.2			
PDO	comp=E,4919μm,0.3s			AML	AML	15 09 56.4			
VTN	**Vitineika**	**0.59**	**229**	P	**Pb**	**15 09 45.8**	**+0.1**		
VTN				S	**Sg**	**15 09 52.3**	**+0.1**		
VTN	**Vitineika**	**0.59**	**229**	P	**Pb**	**15 09 45.8**	**+0.1**		
VTN				S	**Sg**	**15 09 52.3**	**+0.1**		
EVR	**Evrytania**	**0.61**	**4**	P	**Pg**	**15 09 44.1**	**-0.6**		
EVR	**Evrytania**	**0.61**	**4**	P	**Pg**	**15 09 44.3**	**-0.4**		
EVR	**Evrytania**	**0.61**	**4**	P	**Pg**	**15 09 44.3**	**-0.4**		
EVR				AML	AML	15 10 03.2			
DSF	**Desfina**	**0.62**	**80**	P	**Pg**	**15 09 43.9**	**-0.9**		
DSF				S	**Sb**	**15 09 54.1**	**-0.9**		
DSF	**Desfina**	**0.62**	**80**	P	**Pg**	**15 09 43.9**	**-0.9**		
DSF				S	**Sg**	**15 09 53.5**	**+0.6**		
DSF	**Desfina**	**0.62**	**80**	P	**Pg**	**15 09 43.8**	**-1.1**		
DSF				S	**Sg**	**15 09 53.5**	**+0.6**		
DSF	comp=N,1227μm,0.1s			AML	AML	15 09 55.2			
DSF	comp=E,1291μm,0.5s			AML	AML	15 09 58.3			
THAL	**Thalero**	**0.77**	**110**	P	**Pg**	**15 09 47.0**	**-0.7**		
THAL	**Thalero**	**0.77**	**110**	P	**Pg**	**15 09 47.0**	**-0.7**		
THAL	**Thalero**	**0.77**	**110**	P	**Pg**	**15 09 46.9**	**-0.7**		
AMT	**Artemida-Makis**	**0.78**	**183**	P	**Pg**	**15 09 48.0**	**+0.1**		
AMT				S	**Sb**	**15 10 00.1**	**+0.5**		
AMT	**Artemida-Makis**	**0.78**	**183**	P	**Pg**	**15 09 48.0**	**+0.1**		
AMT				S	**Sb**	**15 09 59.5**	**-0.1**		
AMT	**Artemida-Makis**	**0.78**	**183**	P	**Pb**	**15 09 48.5**	**-0.3**		
AMT				S	**Sb**	**15 09 59.5**	**-0.1**		
AMT	comp=E,2667μm,0.4s			AML	AML	15 10 05.6			
AMT	comp=N,3927μm,1.0s			AML	AML	15 10 12.4			
KFL	**Anninata**	**0.79**	**256**	P	**Pg**	**15 09 48.4**	**+0.3**		
KFL				S	**Sg**	**15 09 59.0**	**+0.7**		
KFL	**Anninata**	**0.79**	**256**	P	**Pg**	**15 09 48.4**	**+0.3**		
KFL				S	**Sg**	**15 09 59.0**	**+0.7**		
KFL	**Anninata**	**0.79**	**256**	P	**Pb**	**15 09 49.0**	**0.0**		
AGG	**Agios Georgios**	**0.84**	**32**	P	**Pg**	**15 09 48.5**	**-0.7**		
AGG				S	**Sb**	**15 10 02.0**	**+0.5**		
AGG	**Agios Georgios**	**0.84**	**32**	P	**Pg**	**15 09 48.5**	**-0.7**		
AGG				S	**Sb**	**15 10 01.3**	**-0.2**		
AGG	**Agios Georgios**	**0.84**	**32**	P	**Pg**	**15 09 47.6**	**-1.6**		
AGG				S	**Sb**	**15 10 01.3**	**-0.2**		
AGG	comp=N,1956μm,0.6s			AML	AML	15 10 08.0			
AGG	comp=E,2548μm,0.8s			AML	AML	15 10 10.4			
PROD	**Prodromos**	**0.90**	**93**	P	**Pg**	**15 09 49.6**	**-0.7**		
PROD	**Prodromos**	**0.90**	**93**	P	**Pg**	**15 09 49.6**	**-0.7**		
VLS	**Valsamata**	**0.93**	**262**	P	**Pg**	**15 09 49.9**	**-0.8**		
VLS				S	**Sb**	**15 10 04.1**	**+0.2**		
VLS	**Valsamata**	**0.93**	**262**	P	**Pg**	**15 09 49.9**	**-0.8**		
VLS				S	**Sb**	**15 10 04.1**	**+0.2**		
DSL	**Palaion Diasel**	**0.97**	**328**	P	**Pg**	**15 09 50.8**	**-0.8**		
DSL	**Palaion Diasel**	**0.97**	**328**	P	**Pg**	**15 09 50.8**	**-0.8**		
DSL				S	**Sg**	**15 10 03.0**	**-1.2**		
DSL	**Palaion Diasel**	**0.97**	**328**	P	**Pg**	**15 09 50.3**	**-1.3**		
DSL				S	**Sg**	**15 10 03.0**	**-1.2**		
DSL	comp=E,1480μm,0.9s			AML	AML	15 10 13.8			
DSL	comp=N,1423μm,0.6s			AML	AML	15 10 16.4			
ZKS	**Zakynthos**	**0.98**	**232**	P	**Pg**	**15 09 51.3**	**-0.4**		
ZKS	**Zakynthos**	**0.98**	**232**	P	**Pg**	**15 09 51.3**	**-0.4**		
ZKS	**Zakynthos**	**0.98**	**232**	P	**Pg**	**15 09 51.3**	**-0.4**		
LKD2	**Lefkada island**	**0.98**	**299**	P	**Pg**	**15 09 51.1**	**-0.7**		
LKD2	**Lefkada island**	**0.98**	**299**	P	**Pg**	**15 09 51.1**	**-0.7**		
LKD2	**Lefkada island**	**0.98**	**299**	P	**Pg**	**15 09 50.5**	**-1.4**		
LTK	**Loutraki**	**1.00**	**106**	P	**Pg**	**15 09 52.0**	**-0.1**		
LTK				S	**Sb**	**15 10 05.8**	**-0.2**		
LTK	**Loutraki**	**1.00**	**106**	P	**Pg**	**15 09 52.0**	**-0.1**		
LTK				S	**Sb**	**15 10 05.8**	**-0.2**		
LTK	**Loutraki**	**1.00**	**106**	P	**Pg**	**15 09 51.4**	**-0.7**		
LOUT	**Loutraki**	**1.01**	**108**	P	**Pg**	**15 09 52.4**	**0.0**		
LOUT	**Loutraki**	**1.01**	**108**	P	**Pg**	**15 09 52.4**	**0.0**		
LOUT	**Loutraki**	**1.01**	**108**	P	**Pg**	**15 09 52.3**	**-0.1**	

ATAL					AML	AML	15 10 09.3	
	comp=N,690μm,0.9s							
ATAL					AML	AML	15 10 10.3	
	comp=E,467μm,0.9s							
ITM	**Ithomi**	**1.14**	**173**	P		**Pb**	**15 09 55.1**	**+0.2**
ITM				S		**Sn**	**15 10 11.0**	**-0.2**
ITM	**Ithomi**	**1.14**	**173**	P		**Pb**	**15 09 55.1**	**+0.2**
ITM				S		**Sn**	**15 10 11.0**	**-0.2**
ITM				AML		AML	15 10 18.6	
	comp=E,1099μm,1.1s							
ITM				AML		AML	15 10 19.3	
	comp=N,1181μm,0.6s							
VIL2	**Platees**	**1.20**	**94**	P		**Pn**	**15 09 57.4**	**+1.3**
VIL2				S		**Sg**	**15 10 10.7**	**-0.7**
VIL2				AML		AML	15 10 24.0	
	comp=E,714μm,0.6s							
VIL2				AML		AML	15 10 26.1	
	comp=N,1276μm,1.0s							
VILL	**Villia**	**1.24**	**96**	P		**Pg**	**15 09 56.2**	**-0.5**
VILL				S		**Sn**	**15 10 14.5**	**+0.8**
VILL	**Villia**	**1.24**	**96**	P		**Pg**	**15 09 56.2**	**-0.5**
VILL				S		**Sn**	**15 10 14.5**	**+0.8**
THL	**Klokotos Trika**	**1.27**	**9**	P		**Pn**	**15 09 57.2**	**+0.1**
THL				S		**Sn**	**15 10 15.4**	**+1.0**
THL	**Klokotos Trika**	**1.27**	**9**	P		**Pn**	**15 09 57.1**	**0.0**
THL				S		**Sn**	**15 10 15.4**	**+1.0**
PYL	**PYLOS**	**1.41**	**180**	P		**Pn**	**15 09 57.2**	**-1.9**
PYL	**PYLOS**	**1.41**	**180**	P		**Pn**	**15 09 57.2**	**-1.9**
DID	**Didima**	**1.42**	**124**	P		**Pn**	**15 09 58.9**	**-0.3**
DID	**Didima**	**1.42**	**124**	P		**Pn**	**15 09 58.9**	**-0.3**
FYTO	**Fytoko, Volos**	**1.44**	**40**	P		**Pb**	**15 09 59.8**	**-0.2**
FYTO	**Fytoko, Volos**	**1.44**	**40**	P		**Pb**	**15 09 59.9**	**-0.2**
NEO	**Neokhori**	**1.52**	**49**	P		**Pn**	**15 10 00.8**	**+0.2**
NEO				S		**Sb**	**15 10 21.2**	**+0.2**
NEO	**Neokhori**	**1.52**	**49**	P		**Pn**	**15 10 00.8**	**+0.2**
NEO				S		**Sb**	**15 10 21.2**	**+0.2**
NEO				AML		AML	15 10 30.5	
	comp=N,511μm,0.4s							
NEO				AML		AML	15 10 30.6	
	comp=E,370μm,0.4s							
XOR	**Xorichti**	**1.54**	**46**	P		**Pn**	**15 10 00.5**	**-0.4**
XOR				S		**Sg**	**15 10 23.5**	**+1.0**
XOR	**Xorichti**	**1.54**	**46**	P		**Pn**	**15 10 01.3**	**+0.4**
XOR				S		**Sg**	**15 10 23.5**	**+1.0**
XOR	**Xorichti**	**1.54**	**46**	P		**Pn**	**15 10 01.3**	**+0.4**
ATH	**Athens Observa**	**1.58**	**102**	P		**Pn**	**15 10 01.6**	**+0.2**
SKIA	**Skiathos**	**1.59**	**57**	P		**Pn**	**15 10 00.8**	**-0.7**
SKIA	**Skiathos**	**1.59**	**57**	P		**Pn**	**15 10 00.8**	**-0.7**
ATHU	**Athens Univers**	**1.64**	**101**	P		**Pn**	**15 10 02.1**	**-0.1**
ATHU	**Athens Univers**	**1.64**	**101**	P		**Pn**	**15 10 02.1**	**-0.1**
IGT	**Igoumenitsa**	**1.65**	**318**	P		**Pg**	**15 10 04.7**	**+0.1**
IGT	**Igoumenitsa**	**1.65**	**318**	P		**Pg**	**15 10 04.7**	**+0.1**
VLY	**Voula,Athens**	**1.67**	**105**	P		**Pn**	**15 10 02.3**	**-0.4**
VLY	**Voula,Athens**	**1.67**	**105**	P		**Pn**	**15 10 02.4**	**-0.4**
PTL	**Penteli**	**1.68**	**98**	P		**Pn**	**15 10 02.6**	**-0.2**
PTL	**Penteli**	**1.68**	**98**	P		**Pn**	**15 10 02.6**	**-0.2**
VLI	**Veliai**	**1.85**	**149**	P		**Pn**	**15 10 04.9**	**-0.1**
VLI				S		**Sg**	**15 10 33.5**	**+1.2**
VLI	**Veliai**	**1.85**	**149**	P		**Pn**	**15 10 05.0**	**-0.1**
VLI				S		**Sg**	**15 10 33.5**	**+1.2**
VLI	**Veliai**	**1.85**	**149**	P		**Pn**	**15 10 05.0**	**0.0**
AOS	**Alonnisos**	**1.87**	**62**	P		**Pn**	**15 10 04.7**	**-0.7**
AOS	**Alonnisos**	**1.87**	**62**	P		**Pn**	**15 10 04.7**	**-0.7**
PENT	**Pentalofos**	**1.94**	**346**	P		**Pb**	**15 10 09.2**	**+0.4**
PENT	**Pentalofos**	**1.94**	**346**	P		**Pb**	**15 10 09.2**	**+0.4**
KEK	**Kerkira**	**2.07**	**313**	P		**Pb**	**15 10 09.8**	**-1.0**
FNA	**Florina**	**2.49**	**353**	P		**Pn**	**15 10 14.9**	**+1.0**
FNA	**Florina**	**2.49**	**353**	P		**Pn**	**15 10 14.9**	**+1.0**
ESDC	**Sonseca Array**	**20.02**	**282**	P		Pn	15 14 08.7	+0.6
	comp=E,0.7nm,0.7s,baz=81,slow=12,SNR=4.7							
FINES	**FINESS Array B**	**23.32**	**5**	P		**P**	**15 14 42.3**	**+1.1**
	comp=E,2.7nm,0.8s,baz=185,slow=14,SNR=3.0							
TORD	**Torodi Ar. Bea**	**30.75**	**221**	P		P	15 15 55.3	+6.3
	comp=E,0.8nm,0.8s,baz=26,slow=10,SNR=2.8							
MKAR	**Makanchi Array**	**44.41**	**59**	P		**P**	**15 17 43.9**	**-0.3**
	comp=E,0.8nm,0.4s,baz=277,slow=7.1,SNR=11							
ZALV	**Zalesovo Beam**	**44.88**	**48**	P		**P**	**15 17 46.8**	**-1.0**
	comp=E,0.5nm,0.4s,baz=279,slow=9.5,SNR=3.3							

*IDC **29** 15:13:55.4±1.8, 4°.79N×126°.59E, h0km, **mb3.6**/5, **mb1 3.8**/5, **mb1mx3.5**/45, **mbtmp3.6**/5, **MS4.3**/1, **Ms1 4.3**/1, **ms1mx3.2**/41, Error ellipse: s-maj=106.7km s-min=23.0km az=68.0, Talaud Islands*

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JOW	**Kunigami**	**21.98**	**4**	LR		LR	15 28 44.0	
	comp=Z,647nm,18.2s,baz=334,slow=40							
FITZ	**Fitzroy Crossi**	**22.77**	**182**	P		P	15 19 00.0	+0.5
	1.3nm,0.9s,baz=8.4,slow=10,SNR=3.2							
WRA	**Warramunga Arr**	**25.73**	**163**	P		P	15 19 27.4	-0.4
	1.5nm,0.9s,baz=342,slow=9.7,SNR=10							
ASAR	**Alice Springs**	**29.17**	**166**	P		P	15 19 58.0	-0.6
	0.3nm,0.6s,baz=345,slow=7.0,SNR=14							
STKA	**Stephens Creek**	**39.16**	**160**	P		P	15 21 25.7	+0.6
	1.0nm,0.4s,baz=326,slow=11,SNR=4.3							
MKAR	**Makanchi Array**	**56.61**	**325**	P		P	15 23 40.1	-0.1
	0.1nm,0.3s,baz=119,slow=9.0,SNR=4.5							

*NEIC **29** 15:14:51.8, 18°.84N×67°.61W, h6km, MD3.2(RSPR), After RSPR.*

RSPR 29 15:14:51.8, 18°.84N×67°.61W, h6km±31km, MD3.2/11, 14C-9D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**0.47**	**164**	↓P		Pg	15 15 00.3	-0.4
IDE	**Isla Desecheo**	**0.47**	**164**	↓eP		Pg	15 15 00.3	-0.4
IDE				eS		Sg	15 15 07.9	+1.0
AGPR	**Aguadilla, PR**	**0.60**	**127**	↑eP		Pg	15 15 02.1	-1.2
AGPR	**Aguadilla, PR**	**0.60**	**127**	↑eP		Pg	15 15 02.1	-1.2
AGPR				eS		Sg	15 15 12.3	+1.1
IMPR	**Mona Island, P**	**0.81**	**202**	eS		Sg	15 15 17.6	-0.4
IMPR	**Mona Island, P**	**0.81**	**202**	↓eP		Pg	15 15 05.6	-1.8
LSP	**Las Mesas**	**0.83**	**143**	↓eP		Pg	15 15 05.9	-1.7
LSP	**Las Mesas**	**0.83**	**143**	↓eP		Pg	15 15 05.9	-1.7
LSP				eS		Sg	15 15 19.0	+0.7
AOPR	**Arecibo Observ**	**0.95**	**121**	↓eP		Pg	15 15 07.4	-2.6
AOPR	**Arecibo Observ**	**0.95**	**121**	↓eP		Pg	15 15 07.4	-2.6
AOPR				eS		Sg	15 15 21.4	-0.9
CRPR	**Cabo Rojo, PR**	**0.95**	**150**	↑eP		Pg	15 15 08.7	-1.4
CRPR	**Cabo Rojo, PR**	**0.95**	**150**	↑eP		Pg	15 15 08.7	-1.4
CRPR				eS		Sg	15 15 22.4	-0.1
GBPR	**Guanica, Bosqu**	**1.10**	**141**	eS		Sg	15 15 26.0	-1.3
CELP	**Cerrillos**	**1.24**	**127**	↓eP		Pg	15 15 12.4	-3.2
CELP				eS		Sg	15 15 28.2	-3.5
CELP	**Cerrillos**	**1.24**	**127**	↓eP		Pg	15 15 12.4	-3.2
OBIP	**Obispado Ponce**	**1.24**	**129**	↑eP		Pg	15 15 12.2	-3.4
OBIP	**Obispado Ponce**	**1.24**	**129**	↑eP		Pg	15 15 12.2	-3.4
OBIP				eS		Sg	15 15 29.5	-2.2
SJG	**San Juan**	**1.56**	**117**	↑eP		Pn	15 15 16.9	-3.2
SJG	**San Juan**	**1.56**	**117**	↑eP		Pn	15 15 16.9	-3.2
SJG				eS		Sn	15 15 36.8	-3.9
DR12	**Loma Pena Alta**	**1.68**	**269**	↑eP		Pn	15 15 19.3	-2.4
DR12				eS		Sn	15 15 40.2	-3.3
DR12	**Loma Pena Alta**	**1.68**	**269**	↑eP		Pn	15 15 19.3	-2.4
CBYP	**Canovanas**	**1.76**	**108**	↑eP		Pn	15 15 20.1	-2.8
CBYP	**Canovanas**	**1.76**	**108**	↑eP		Pn	15 15 20.1	-2.8
CBYP				eS		Sn	15 15 42.0	-3.6
HUMP	**Col San Antoni**	**1.81**	**112**	↑eP		Pn	15 15 21.0	-2.5
HUMP	**Col San Antoni**	**1.81**	**112**	↑eP		Pn	15 15 21.0	-2.5
HUMP				eS		Sn	15 15 42.6	-4.1
SDDR	**Presa de Saban**	**3.48**	**273**	ePn		Pn	15 15 46.4	-0.2
SDDR				eSn		Sn	15 16 27.4	-0.7

MEX 29 15:32:11.5±0.7, 18°.19N×100°.16W, h54km±9km, MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ARIG	**Puente Sto Nin**	**0.20**	**296**	eP		Pn	15 32 18.6	-1.7
ARIG				eS		Sn	15 32 24.9	-1.8
MEIG	**Mezcala**	**0.58**	**117**	eP		Pn	15 32 22.2	-1.8
MEIG				eS		Sn	15 32 31.4	-1.7
PLIG	**Platanillo**	**0.66**	**72**	eP		Pn	15 32 24.1	-0.9
PLIG				eS		Sn	15 32 32.6	-2.2
CAIG	**El Cayaco**	**1.14**	**185**	eP		Pn	15 32 29.6	-1.6
CAIG				eS		Sn	15 32 44.0	-1.9
TLIG	**Tlapa**	**1.64**	**112**	eP		Pn	15 32 43.2	+5.1
TLIG				eS		Sn	15 33 03.5	+5.3

*CSEM **29** 15:41:03.0, 38°.73N×35°.82E, h5km, MD2.7*

ISK 29 15:41:03.0, 38°.73N×35°.82E, h5km, MD2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BNN	**Bunyan**	**0.12**	**9**	ePG		Pg	15 41 05.9	+0.3
BNN				eSG		Sg	15 41 08.2	+0.8
BNN	**Bunyan**	**0.12**	**9**	ePg		Pg	15 41 05.9	+0.2
BNN				eSg		Sg	15 41 08.2	+0.8
SARI	**SarD1z-Kayseri**	**0.57**	**124**	ePG		Pg	15 41 14.4	+0.5
YOZ	**Yozgat**	**0.99**	**337**	ePG		Pb	15 41 23.0	+0.2
YOZ	**Yozgat**	**0.99**	**337**	ePg		Pb	15 41 23.0	+0.3
KOZT	**Kozan**	**1.25**	**180**	ePN		Pg	15 41 26.7	-0.2
KOZT	**Kozan**	**1.25**	**180**	ePn		Pg	15 41 26.7	-0.2
DARE	**Darende-Malaty**	**1.31**	**96**	ePN		Pb	15 41 28.3	+0.1
DARE	**Darende-Malaty**	**1.31**	**96**	ePn		Pb	15 41 28.3	+0.1
KMRS	**Kahramanmaras**	**1.49**	**145**	ePN		Pg	15 41 31.4	-0.1
KMRS	**Kahramanmaras**	**1.49**	**145**	ePn		Pg	15 41 31.4	-0.1
SVSK	**Karacayir**	**1.50**	**37**	ePN		Pg	15 41 31.7	0.0
SVSK	**Karacayir**	**1.50**	**37**	ePn		Pg	15 41 31.7	0.0
CORM	**Corum**	**1.72**	**328**	ePN		Pn	15 41 34.1	+0.4
CORM	**Corum**	**1.72**	**328**	ePn		Pn	15 41 34.1	+0.4

*IDC **29** 15:43:41.1±1.5, 9°.83N×123°.50E, h0km, mb3.4/4, mb1 3.7/4, mb1mx3.4/49, mbtmp3.4/4, Error ellipse: s-maj=90.0km s-min=21.8km az=56.0*
*ISCJB **29** 15:43:43.8±1.2, 9°.86N±0°.04×123°.07E±0°.05, h10km±8km, mb3.4/4, Error ellipse: s-maj=7.7km s-min=6.0km az=164.4*
*MAN **29** 15:43:44, 9°.86N×123°.14E, h10km, mb4.7, ML3.6, MS3.5*
MAN INTENSITY II - AYUNGON NEGROS ORIENTAL; TAYASAN NEGROS ORIENTAL.

ISC 29 15:43:43.4±1.7, 9°.86N±0°.03×123°.14E±0°.05, h10km±12km, n13, σ1°33/21, mb3.4/4, 6C-2D, Negros

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.52**	**170**	↑iP		**Pg**	**15 43 53.9**	**+0.3**
SNPH				*i* S		**Sb**	**15 44 02.8**	**+0.5**
TBP	**Tagbilaran**	**0.73**	**103**	*i* P		**Pn**	**15 44 00.4**	**+0.6**
TBP				*i* S		**Sn**	**15 44 11.8**	**+0.8**
LLP	**Lapu-Lapu**	**0.93**	**61**	↓eP		**Pg**	**15 44 00.3**	**-1.0**
LLP				eS		**Sb**	**15 44 15.7**	**+1.6**
DCPH	**Dipolog City**	**1.28**	**171**	↑eP		**Pn**	**15 44 07.0**	**-0.4**
DCPH				eS		**Sb**	**15 44 24.3**	**0.0**
JAP	**San Jose, Anti**	**1.47**	**307**	↑eP		**Pn**	**15 44 10.7**	**+0.6**
RCP	**Roxas**	**1.73**	**347**	↑eP		**Pn**	**15 44 13.4**	**-0.2**
RCP				*i* S		**Sb**	**15 44 37.8**	**+0.5**
CGP	**Cagayan de Oro**	**2.07**	**132**	↑eP		**Pn**	**15 44 19.4**	**+1.1**
CGP				eS		**Sb**	**15 44 47.0**	**0.0**
PLP	**Palo**	**2.22**	**54**	↓eP		**Pn**	**15 44 20.7**	**+0.3**
CTBH	**Cotabato--PC H**	**2.84**	**157**	↑iP		**Pn**	**15 44 30.3**	**+1.4**
CMAR	**Chiang Mai Arr**	**24.95**	**293**	P		**P**	**15 49 08.6**	**+1.3**
	0.4nm,0.4s,baz=123,slow=7.6,SNR=4.2							
WRA	**Warramunga Arr**	**31.60**	**160**	P		**P**	**15 50 04.5**	**-2.2**
	0.4nm,0.8s,baz=342,slow=8.8,SNR=4.2							
WRA				PcP		**PcP**	**15 52 56.7**	**-2.5**
	0.2nm,0.5s,baz=338,slow=2.7,SNR=3.5							
ASAR	**Alice Springs**	**34.94**	**163**	P		**P**	**15 50 34.8**	**-1.1**
	0.6nm,0.7s,baz=338,slow=8.1,SNR=18							
ASAR				PcP		**PcP**	**15 53 06.5**	**-2.0**
	0.3nm,0.8s,baz=333,slow=3.1,SNR=3.8							
MKAR	**Makanchi Array**	**50.53**	**324**	P		**P**	**15 52 43.9**	**+1.9**
	0.2nm,0.6s,baz=124,slow=8.1,SNR=3.0							

KRSC 29 15:50:19.6±1.8, 53°.12N×162°.74E, h65km±28km, ML3.5, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**1.56**	**338**	eP		Pn	15 50 46.7	+1.5
MKZ				eS		Sn	15 51 06.0	+1.5
SPN	**Mys Shipunski**	**1.64**	**270**	eP		Pn	15 50 48.3	+2.1
SPN				eS		Sn	15 51 07.4	+1.1
NLC	**Nalytchevo**	**2.04**	**273**	eP		Pn	15 50 54.4	+2.7
NLC				eS		Sn	15 51 17.8	+1.7
SDLR	**Sedlovina**	**2.32**	**276**	eP		Pn	15 50 58.6	+3.0
SDLR				eS		Sn	15 51 25.1	+2.0
UGLR	**Uglovaya**	**2.36**	**274**	eP		Pn	15 50 59.3	+3.2
UGLR				eS		Sn	15 51 26.8	+2.9
SMAR	**Somma**	**2.37**	**275**	eP		Pn	15 50 59.0	+2.6
DALK	**Dalny**	**2.40**	**270**	eP		Pn	15 51 00.0	+3.4
DALK				eS		Sn	15 51 27.3	+2.4
KRER	**Koryakskii**	**2.41**	**276**	eP		Pn	15 51 00.2	+3.4
KRER				eS		Sn	15 51 27.9	+2.7
AVH	**Avacha**	**2.41**	**275**	eP		Pn	15 51 00.3	+3.6
AVH				eS		Sn	15 51 27.8	+2.6
KRX	**Arik**	**2.47**	**277**	eP		Pn	15 51 00.6	+3.0
KRX				eS		Sn	15 51 28.2	+1.5
KOK	**Koryaka**	**2.47**	**276**	eP		Pn	15 51 00.7	+3.1
TUMR	**Tumrok**	**2.65**	**326**	eP		Pn	15 51 03.5	+3.4
RUS	**Russkaya**	**2.65**	**257**	eP		Pn	15 51 02.9	+2.9
RUS				eS		Sn	15 51 32.8	+1.8
KRMR	**Karymshinskiy**	**2.80**	**266**	eP		Pn	15 51 05.1	+3.1
KRMR				eS		Sn	15 51 36.3	+1.8
BKI	**Bering**	**2.83**	**41**	eS		Sn	15 51 35.3	+0.1
GNL	**Ganaly**	**2.93**	**283**	eP		Pn	15 51 07.5	+3.7
GNL				eS		Sn	15 51 40.9	+3.0
KMNR	**Kamenistaya**	**3.02**	**332**	eP		Pn	15 51 09.2	+4.1
ASAK	**Asacha**	**3.03**	**258**	eP		Pn	15 51 09.0	+3.8
KBG	**Krutoberegovo**	**3.15**	**360**	eP		Pn	15 51 08.4	+1.7
KBG				eS		Sn	15 51 44.8	+1.8
KIRR	**Kirishev**	**3.17**	**335**	eP		Pn	15 51 10.3	+3.2
KPT	**Kopyto**	**3.21**	**334**	eP		Pn	15 51 11.3	+3.7
KOZ	**Kozyrevsk**	**3.39**	**332**	eP		Pn	15 51 14.3	+4.3
KLY	**Klyuchi**	**3.42**	**340**	eP		Pn	15 51 13.2	+2.7
SMKR	**Semkarok**	**3.55**	**349**	eP		Pn	15 51 15.4	+3.1
BDR	**Baidarnaya**	**3.57**	**346**	eP		Pn	15 51 15.8	+3.2
SRKR	**Sorokina**	**3.66**	**346**	eP		Pn	15 51 17.2	+3.4
ESO	**Esso**	**3.67**	**322**	eP		Pn	15 51 17.2	+3.4
SKR	**Severo-Kuril's**	**4.77**	**242**	eP		Pn	15 51 30.5	+1.7
SKR				eS		Sn	15 52 23.4	+0.7

WEL 29 16:04:38.7±0.3, 34°.45S×178°.33E, h33km, ML3.9/4, Error ellipse: s-maj=4.9km s-min=2.2km az=90.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**3.10**	**180**	ePN		Pn	16 05 25.1	-0.3
MXZ				eSN		Sn	16 05 59.0	-2.3
HAZ	**Te Kaha**	**3.33**	**187**	PN		Pn	16 05 28.5	+0.1
HAZ				eSN		Sn	16 06 06.3	-0.4
WMGZ	**Waiomatatini S**	**3.36**	**179**	PN		Pn	16 05 28.1	-0.7
WMGZ				SN		Sn	16 06 05.7	-2.0
URZ	**Urewera**	**3.92**	**194**	PN		Pn	16 05 36.2	-0.5
URZ				SN		Sn	16 06 19.5	-2.0
MWZ	**Matawai**	**3.93**	**189**	PN		Pn	16 05 35.9	-0.8
MWZ				eSN		Sn	16 06 17.7	-4.0

IDC 29 16:13:24.7±2.1, 6°.375×128°.97E, h0km, mb3.5/1, mb1 3.5/3, mb1mx3.3/22, mbtmp3.3/3, ML3.2/2, Error ellipse: s-maj=132.3km s-min=31.0km az=67.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.46**	**159**	Pn		Pn	16 16 51.0	0.0
	0.1nm,0.3s,baz=338,slow=12,SNR=3.4							
WRA				Sn		Sn	16 19 17.2	-15
	0.3nm,0.3s,baz=339,slow=21,SNR=9.2							
ASAR	**Alice Springs**	**17.84**	**165**	P		Pn	16 17 34.5	-0.1
	0.1nm,0.3s,baz=349,slow=11,SNR=6.8							
MKAR	**Makanchi Array**	**67.14**	**327**	P		P	16 24 20.5	0.0
	0.2nm,0.4s,baz=116,slow=8.0,SNR=2.9							

IDC 29 16:33:41.3±3.7, 22°.79S×66°.03W, h242km±48km, mb3.3/1, mb1 3.2/3, mb1mx3.0/20, mbtmp3.8/3, Error ellipse: s-maj=75.3km s-min=22.7km az=97.0, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**6.76**	**343**	P		Pn	16 35 20.4	+0.8
	0.6nm,0.3s,baz=163,slow=8.4,SNR=9.2							
LPAZ				S		S	16 36 36.5	-1.5
	0.2nm,0.3s,baz=108,slow=14,SNR=7.4							
PLCA	**Paso Flores**	**18.30**	**191**	P		P	16 37 36.4	-1.2
	0.1nm,0.3s,baz=10,slow=11,SNR=3.8							
TORD	**Torodi Ar. Bea**	**75.30**	**69**	P		P	16 44 57.5	-0.8
	0.5nm,0.4s,baz=246,slow=5.7,SNR=10							
MKAR	**Makanchi Array**	**145.02**	**39**	PKPbc		PKPab	16 52 50.4	+0.7
	0.1nm,0.4s,baz=297,slow=4.7,SNR=3.4							

*IDC **29** 16:40:03.6±0.8, 27°.27N×143°.50E, h0km, mb3.8/10, mb1 4.0/12, mb1mx3.8/42, mbtmp3.9/12, ML3.6/2, Error ellipse: s-maj=36.8km s-min=15.9km az=79.0*
*ISCJB **29** 16:40:06.2±0.9, 27°.12N±0°.10×143°.5E±0°.3, h33km, mb3.8/10, Error ellipse: s-maj=35.6km s-min=12.2km az=167.9*

ISC 29 16:40:08.6±0.8, 27°.2N±0°.1×143°.5E±0°.2, h35km, n13, σ1°95/14, mb3.8/10, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**6.70**	**332**	Pn		**Pn**	**16 41 44.0**	**-0.6**
	2.0nm,0.3s,baz=72,slow=20,SNR=2.6							
JHJ				Sn		**Sn**	**16 42 55.1**	**-4.5**
	2.4nm,0.3s,baz=90,slow=20,SNR=2.1							
MJAR	**Matsushiro Arr**	**10.32**	**336**	Pn		**Pn**	**16 42 34.0**	**-0.2**
	0.8nm,0.3s,baz=154,slow=12,SNR=7.5							
KLR	**Kul'dur**	**23.78**	**341**	P		**P**	**16 45 19.0**	**+1.1**
	1.0nm,0.5s,baz=124,slow=6.6,SNR=4.7							
SONM	**Songino Array**	**35.43**	**316**	P		**P**	**16 47 03.4**	**+1.9**
	0.3nm,0.5s,baz=132,slow=6.0,SNR=2.6							
WRA	**Warramunga Arr**	**47.70**	**192**	P		**P**	**16 48 41.3**	**-0.7**
	3.1nm,0.6s,baz=12,slow=8.7,SNR=50							
MKAR	**Makanchi Array**	**51.29**	**310**	P		**P**	**16 49 09.5**	**+0.3**
	0.3nm,0.4s,baz=89,slow=8.8,SNR=4.8							
ASAR	**Alice Springs**	**51.42**	**191**	P		**P**	**16 49 08.8**	**-1.4**
	0.4nm,0.6s,baz=8.6,slow=5.9,SNR=15							
ILAR	**Eielson Array**	**57.06**	**29**	P		**P**	**16 49 51.4**	**+0.5**
	0.5nm,0.8s,baz=270,slow=5.9,SNR=6.5							
STKA	**Stephens Creek**	**58.79**	**182**	P		**P**	**16 50 01.9**	**-1.4**
	1.8nm,0.8s,baz=347,slow=8.2,SNR=3.6							
AKTO	**Aktyubinsk**	**66.75**	**316**	P		**P**	**16 50 58.9**	**+2.6**
	0.7nm,0.5s,baz=42,slow=5.9,SNR=5.0							
FINES	**FINESS Array B**	**78.35**	**334**	P		**P**	**16 52 05.9**	**+0.9**
	1.0nm,0.6s,baz=66,slow=11,SNR=4.2							
AKASG	**Malin Array Be**	**83.20**	**324**	P		**P**	**16 52 31.2**	**+0.1**
	0.8nm,0.5s,baz=45,slow=6.9,SNR=7.0							
LPAZ	**La Paz**	**148.78**	**76**	PKPbc		**PKPab**	**16 59 55.6**	**-2.0**
	1.2nm,0.8s,baz=276,slow=4.6,SNR=5.3							

*ATH **29** 16:41:10.4, 40°.30N×19°.80E, h4km±1km, ML2.8/7, Error ellipse: s-maj=1.8km s-min=1.1km az=122.0*
*THE **29** 16:41:10.7, 40°.29N×19°.74E, h1km±4km, ML2.9/7, Error ellipse: s-maj=6.4km s-min=1.2km az=278.0*
*CSEM **29** 16:41:12.6±0.2, 40°.23N×19°.84E, h2km, ML2.9, Error ellipse: s-maj=5.1km s-min=2.6km az=65.0*
*PDG **29** 16:41:14.6±0.9, 40°.25N×19°.68E, h21km±2km, ML3.0/10, Error ellipse: s-maj=2.0km s-min=3.1km az=0.0*
*TIR **29** 16:41:28.4, 40°.16N×20°.05E, h29km, ML3.1*

ISC 29 16:41:13.8±1.1, 40°.19N±0°.02×19°.81E±0°.03, h8km±9km, n112, σ1°40/160, 15C-6D, Albania

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KEK	**Kerkira**	**0.48**	**181**	P		**Pg**	**16 41 21.5**	**-1.6**
KEK				S		**Sg**	**16 41 29.5**	**+0.1**
KEK	**Kerkira**	**0.48**	**181**	P		**Pg**	**16 41 21.5**	**-1.6**
KEK				S		**Sg**	**16 41 29.5**	**+0.1**
SGD	**Sagiada**	**0.67**	**150**	P		**Pg**	**16 41 24.9**	**-1.7**
SGD				S		**Sg**	**16 41 36.0**	**+0.7**
SGD	**Sagiada**	**0.67**	**150**	P		**Pg**	**16 41 24.9**	**-1.7**
SGD				S		**Sg**	**16 41 36.0**	**+0.7**
SGD	**Sagiada**	**0.67**	**150**	P		Pg	16 41 23.0	-3.6
IGT	**Igoumenitsa**	**0.77**	**148**	P		**Pg**	**16 41 27.1**	**-1.6**
IGT				S		**Sg**	**16 41 40.5**	**+1.8**
IGT	**Igoum

SKO				*e*Sn	**Sb**	**16 42 20.3**	**+0.1**
NOCI	**Noci**	**2.17**	**287**	P	**Pn**	**16 41 49.7**	**-0.7**
NOCI	**Noci**	**2.17**	**287**	P	**Pn**	**16 41 49.7**	**-0.7**
BUM	**Brajici-Budva**	**2.21**	**342**	⇓*i*Pn	**Pn**	**16 41 49.8**	**-1.2**
BUM				*e*Sn	**Sn**	**16 42 18.4**	**-0.2**
BUM	**Brajici-Budva**	**2.21**	**342**	⇓*i*Pn	**Pn**	**16 41 49.8**	**-1.2**
BUM				*e*Sn	**Sn**	**16 42 18.4**	**-0.2**
KFL	**Anninata**	**2.22**	**160**	P	**Pn**	**16 41 52.5**	**+1.6**
KFL	**Anninata**	**2.22**	**160**	P	**Pn**	**16 41 52.5**	**+1.6**
AGG	**Agios Georgios**	**2.27**	**120**	P	**Pn**	**16 41 52.4**	**+0.7**
AGG				S	**Sn**	**16 42 21.8**	**+1.9**
AGG	**Agios Georgios**	**2.27**	**120**	P	**Pn**	**16 41 52.4**	**+0.7**
AGG				S	**Sn**	**16 42 21.8**	**+1.9**
AGG				AML	AML	16 42 30.4	
	comp=E,453µm,1.0s						
AGG				AML	AML	16 42 42.9	
	comp=N,546µm,0.9s						
PDG	**Podgorica**	**2.27**	**350**	⇑*i*Pn	**Pn**	**16 41 51.5**	**-0.2**
PDG				*e*Sn	**Sn**	**16 42 20.0**	**+0.1**
TTG	**Podgorica**	**2.27**	**350**	⇑*i*Pn	**Pn**	**16 41 51.5**	**-0.2**
TTG				*e*Sn	**Sn**	**16 42 20.0**	**+0.1**
AXS	**Araxos**	**2.34**	**148**	P	**Pn**	**16 41 53.5**	**+0.9**
AXS	**Araxos**	**2.34**	**148**	P	**Pn**	**16 41 53.5**	**+0.9**
VAY	**Valandovo**	**2.38**	**61**	*e*Pn	**Pn**	**16 41 53.9**	**+0.8**
VAY				*e*Sn	**Sn**	**16 42 24.2**	**+1.7**
VAY	**Valandovo**	**2.38**	**61**	*e*Pn	**Pn**	**16 41 53.9**	**+0.8**
VAY				*e*Sn	**Sn**	**16 42 24.2**	**+1.7**
PVY	**Plav**	**2.40**	**3**	⇓*i*Pn	**Pn**	**16 41 53.3**	**-0.3**
PVY				*e*Sn	**Sn**	**16 42 23.4**	**+0.1**
PVY	**Plav**	**2.40**	**3**	⇓*i*Pn	**Pn**	**16 41 53.3**	**-0.3**
PVY				*e*Sn	**Sn**	**16 42 23.4**	**+0.1**
CEME	**Cevo**	**2.44**	**344**	⇑*i*Pn	**Pn**	**16 41 52.7**	**-1.4**
CEME				*e*Sn	**Sn**	**16 42 23.8**	**-0.4**
CEME	**Cevo**	**2.44**	**344**	⇑*i*Pn	**Pn**	**16 41 52.7**	**-1.4**
CEME				*e*Sn	**Sn**	**16 42 23.8**	**-0.4**
HCY	**Herceg Novi**	**2.46**	**337**	⇑*i*Pn	**Pn**	**16 41 53.5**	**-0.8**
HCY				*e*Sn	**Sn**	**16 42 23.7**	**-0.8**
HCY	**Herceg Novi**	**2.46**	**337**	⇑*i*Pn	**Pn**	**16 41 53.5**	**-0.8**
HCY				*e*Sn	**Sn**	**16 42 23.7**	**-0.8**
SERG	**Sergoula**	**2.49**	**135**	P	**Pn**	**16 41 56.0**	**+1.3**
TRIZ	**Trizonia**	**2.53**	**135**	P	**Pn**	**16 41 55.8**	**+0.6**
KNT	**Kendrikon**	**2.54**	**67**	P	**Pn**	**16 41 54.3**	**-1.1**
KNT	**Kendrikon**	**2.54**	**67**	P	**Pn**	**16 41 54.3**	**-1.1**
HORT	**Hortiatis**	**2.55**	**80**	P	**Pn**	**16 41 53.3**	**-2.2**
HORT	**Hortiatis**	**2.55**	**80**	P	**Pn**	**16 41 53.3**	**-2.2**
KALE	**Kalithea**	**2.55**	**134**	P	**Pn**	**16 41 55.7**	**+0.1**
KALE	**Kalithea**	**2.55**	**134**	P	**Pn**	**16 41 55.7**	**+0.1**
TIP	**Timpagrande**	**2.56**	**248**	P	**Pn**	**16 41 55.4**	**-0.3**
TIP	**Timpagrande**	**2.56**	**248**	P	**Pn**	**16 41 55.4**	**-0.3**
LAKA	**Lakka**	**2.58**	**138**	P	**Pn**	**16 41 55.5**	**-0.4**
LAKA	**Lakka**	**2.58**	**138**	P	**Pn**	**16 41 55.5**	**-0.4**
ZKS	**Zakynthos**	**2.61**	**163**	P	**Pn**	**16 41 54.9**	**-1.4**
ZKS	**Zakynthos**	**2.61**	**163**	P	**Pn**	**16 41 54.9**	**-1.4**
NKME	**Niksic**	**2.65**	**346**	⇑*i*Pn	**Pn**	**16 41 55.8**	**-1.1**
NKME				*e*Sn	**Sn**	**16 42 28.8**	**-0.5**
NKME	**Niksic**	**2.65**	**346**	⇑*i*Pn	**Pn**	**16 41 55.8**	**-1.1**
NKME				*e*Sn	**Sn**	**16 42 28.8**	**-0.5**
BEY	**Berane**	**2.68**	**1**	⇑*i*Pn	**Pn**	**16 41 57.4**	**+0.1**
BEY				*e*Sn	**Sn**	**16 42 29.5**	**-0.5**
IVA	**Berane**	**2.68**	**1**	⇑*i*Pn	**Pn**	**16 41 57.4**	**+0.1**
IVA				*e*Sn	**Sn**	**16 42 29.5**	**-0.5**
DRO	**Drossia**	**2.68**	**146**	P	**Pn**	**16 41 56.7**	**-0.6**
DRO	**Drossia**	**2.68**	**146**	P	**Pn**	**16 41 56.7**	**-0.6**
XOR	**Xorichti**	**2.73**	**106**	P	**Pn**	**16 41 56.8**	**-1.3**
XOR	**Xorichti**	**2.73**	**106**	P	**Pn**	**16 41 56.8**	**-1.3**
KLV	**Kalavryta, Ach**	**2.82**	**139**	P	**Pn**	**16 41 59.3**	**+0.1**
KLV	**Kalavryta, Ach**	**2.82**	**139**	P	**Pn**	**16 41 59.3**	**+0.1**
BRY	**Bratogost**	**2.87**	**341**	*e*Pn	**Pn**	**16 41 58.9**	**-1.1**
BRY				*e*Sn	**Sn**	**16 42 33.8**	**-1.0**
BRY	**Bratogost**	**2.87**	**341**	*e*Pn	**Pn**	**16 41 58.9**	**-1.1**
BRY				*e*Sn	**Sn**	**16 42 33.8**	**-1.0**
PAIG	**Paliouri**	**2.98**	**94**	P	**Pn**	**16 41 59.0**	**-2.4**
PAIG	**Paliouri**	**2.98**	**94**	P	**Pn**	**16 41 59.0**	**-2.4**
BARS	**Barje**	**3.02**	**29**	⇑*i*Pn	**Pn**	**16 42 01.1**	**-0.9**
UPM	**Unac-Piva**	**3.08**	**348**	*e*Pn	**Pn**	**16 42 02.3**	**-0.7**
UPM				*e*Sn	**Sn**	**16 42 38.9**	**-1.2**
UPM	**Unac-Piva**	**3.08**	**348**	*e*Pn	**Pn**	**16 42 02.3**	**-0.7**
UPM				*e*Sn	**Sn**	**16 42 38.9**	**-1.2**
AOS	**Alonnisos**	**3.30**	**107**	P	**Pn**	**16 42 07.1**	**+1.2**
AOS	**Alonnisos**	**3.30**	**107**	P	**Pn**	**16 42 07.0**	**+1.2**
VILZ	**Platees**	**3.34**	**125**	P	**Pn**	**16 42 06.3**	**0.0**
IVAS	**Ivanjica**	**3.39**	**4**	*e*Pn	**Pn**	**16 42 06.2**	**-0.9**
VILL	**Villia**	**3.39**	**126**	P	**Pn**	**16 42 06.3**	**-0.8**
BBLS	**Lazići**	**3.68**	**355**	⇑*i*Pn	**Pn**	**16 42 09.9**	**-1.2**
GRUS	**Gruza**	**3.75**	**10**	*e*Pn	**Pn**	**16 42 11.0**	**-1.0**
DID	**Didima**	**3.79**	**134**	P	**Pn**	**16 42 11.2**	**-1.3**
DID	**Didima**	**3.79**	**134**	P	**Pn**	**16 42 11.2**	**-1.3**
DIVS	**Divibare**	**3.90**	**2**	*e*Pn	**Pn**	**16 42 10.9**	**-3.3**
BOLS	**Boljevac**	**3.97**	**23**	*e*Pn	**Pn**	**16 42 11.9**	**-3.1**
ZAGS	**Zajecar**	**4.04**	**26**	*e*Pn	**Pn**	**16 42 13.5**	**-2.5**
TEKS	**Tekeris**	**4.36**	**357**	⇑*i*Pn	**Pn**	**16 42 19.0**	**-1.4**
UDBI	**Udbina**	**5.27**	**327**	*e*Pn	**Pn**	**16 42 32.5**	**-0.4**
UDBI				Sn	**Sn**	**16 43 34.2**	**+0.4**
UDBI	**Udbina**	**5.27**	**327**	*e*Pn	**Pn**	**16 42 32.5**	**-0.4**
UDBI				Sn	**Sn**	**16 43 34.1**	**+0.4**

NIED ***29*** *17:07:00,35°.70N×141°.10E,h8km,Mw3.9 Best double couple: M₀8.25000×10¹⁴ NP1:φs174.00000°,δ44.00000°, λ-103.00000°. NP2:φs12.00000°,δ47.00000°, λ-78.00000°.*

IDC ***29*** *17:07:07.5±1.0,35°.56N×141°.16E,h0km,mb3.7/8, mb1 3.8/10,mb1mx3.6/46,mbtmp3.6/10,ML3.1/2,MS2.5/2, Ms1 2.5/2,ms1mx2.3/42,Error ellipse: s-maj=28.5km s-min=17.3km az=85.0*

ISCJB ***29*** *17:07:08.5±0.9,35°.61N±0°.03×141°.15E±0°.07,h19km±5km, mb3.6/8,Error ellipse: s-maj=9.3km s-min=5.5km az=172.1*

JMA ***29*** *17:07:09.9±0.1,35°.63N×141°.01E,h15km±1km,M3.9*

JMA Felt I J1.

ISC 29 17:07:08.2±1.7,35°.58N±0°.05×141°.11E±0°.07,h5km±10km, n27,σ0s89/27,mb3.7/8,1C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.24**	**301**	P	**Pg**	**17 07 13.7**	**+0.8**
CHOJ				*e*S	**Sg**	**17 07 16.8**	**+0.7**
JCN	**Nagara**	**0.76**	**258**	⇑P	**Pb**	**17 07 24.1**	**+0.3**
KTR	**Katsuura**	**0.78**	**237**	P	**Pb**	**17 07 24.2**	**0.0**
KTR				S	**Sb**	**17 07 34.9**	**-0.1**
BSO4	**Boso 4**	**0.86**	**227**	P	**Pn**	**17 07 26.6**	**-0.2**
BSO4				X		17 07 39.7	
BSO3	**Boso 3**	**0.92**	**213**	P	**Pn**	**17 07 27.4**	**0.0**
BSO1	**Boso 1**	**0.93**	**187**	P	**Pb**	**17 07 27.1**	**+0.7**
JYT	**Yasato**	**0.99**	**311**	P	**Pg**	**17 07 26.5**	**-0.6**
JYT				S	**Sg**	**17 07 38.7**	**-1.2**
JHO	**Hitachi**	**1.12**	**337**	P	**Pg**	**17 07 28.9**	**-0.8**
JHO				S	**Sg**	**17 07 43.0**	**-1.2**
MJAR	**Matsushiro Arr**	**2.54**	**293**	Pn	**Pn**	**17 07 49.0**	**-1.0**
	4.4nm,0.3s,baz=106,slow=5.6,SNR=41						
MJAR				LR	LR	17 08 17.9	
	comp=Z,79nm,21.0s,baz=35,slow=28						
MJAR				Sn	**Sn**	**17 08 21.6**	**+0.2**
	5.0nm,0.3s,baz=92,slow=19,SNR=6.7						
MAT	**Matsushiro**	**2.54**	**293**	P	**Pn**	**17 07 49.8**	**-0.2**
MAT				*e*S	**Sn**	**17 08 20.2**	**-1.2**
JHJ	**Hachijo jima 2**	**2.69**	**205**	Pn	**Pn**	**17 07 51.2**	**-0.8**
	7.3nm,0.3s,baz=68,slow=19,SNR=7.5						
JHJ				Sn	**Sn**	**17 08 22.4**	**-2.5**
	24nm,0.3s,baz=90,slow=20,SNR=3.7						
ASAJ	**Asahikawa**	**8.60**	**7**	Pn	**Pn**	**17 09 13.2**	**0.0**
	baz=241,slow=8.7						
KSRS	**Korea Array**	**10.78**	**284**	LR	LR	17 13 57.5	
	comp=Z,40nm,21.0s,baz=65,slow=38						
H11N2	**WAKE ISLAND Hy**	**27.65**	**118**	T	T	17 41 53.6	
	baz=310,slow=75,SNR=298						
H11N1	**WAKE ISLAND Hy**	**27.65**	**118**	T	T	17 41 55.8	
	baz=310,slow=75,SNR=186						
H11N3	**WAKE ISLAND Hy**	**27.66**	**118**	T	T	17 41 56.2	
	baz=310,slow=75,SNR=226						
H11S3	**WAKE ISLAND Hy**	**28.31**	**120**	T	T	17 42 44.1	
	baz=310,slow=74						
H11S1	**WAKE ISLAND Hy**	**28.31**	**120**	T	T	17 42 41.5	
	baz=310						
H11S2	**WAKE ISLAND Hy**	**28.32**	**120**	T	T	17 42 41.2	
	baz=310,slow=74						
SONM	**Songino Array**	**28.42**	**306**	P	**P**	**17 13 04.9**	**+1.2**
	0.5nm,0.6s,baz=99,slow=7.7,SNR=2.2						
ZALV	**Zalesovo Beam**	**42.73**	**314**	P	**P**	**17 15 06.5**	**+0.5**
	0.7nm,0.4s,baz=100,slow=7.3,SNR=5.6						
MKAR	**Makanchi Array**	**44.70**	**303**	P	**P**	**17 15 22.3**	**+0.3**
	1.1nm,0.9s,baz=94,slow=9.4,SNR=5.2						
ILAR	**Eielson Array**	**50.85**	**32**	P	**P**	**17 16 09.1**	**-0.4**
	0.5nm,0.8s,baz=266,slow=6.8,SNR=3.3						
WRA	**Warramunga Arr**	**55.59**	**188**	P	**P**	**17 16 44.9**	**+0.1**
	0.8nm,0.6s,baz=5.5,slow=7.6,SNR=12						
ASAR	**Alice Springs**	**59.32**	**188**	P	**P**	**17 17 11.1**	**+0.1**
	0.2nm,0.8s,baz=8.6,slow=8.7,SNR=5.9						
FINES	**FINESS Array B**	**69.99**	**332**	P	**P**	**17 18 20.8**	**+0.6**
	1.6nm,0.9s,baz=46,slow=8.0,SNR=2.3						
NOA	**NORSAR Array B**	**75.43**	**337**	P	**P**	**17 18 53.3**	**+0.6**
	0.4nm,0.6s,baz=42,slow=5.8,SNR=2.5						

IDC ***29*** *17:11:28.5±4.6,36°.52N×143°.30E,h0km,mb3.4/2, mb1 3.6/4,mb1mx3.3/42,mbtmp3.5/4,ML3.0/2,Error ellipse: s-maj=87.4km s-min=44.5km az=24.0*

ISCJB ***29*** *17:11:29.8±1.0,36°.85N±0°.04×143°.19E±0°.07,h35km, mb3.5/2,Error ellipse: s-maj=8.0km s-min=6.0km az=173.0*

JMA ***29*** *17:11:30.9±0.2,36°.96N×143°.16E,h39km,M3.3*

ISC 29 17:11:30.2±1.5,36°.87N±0°.05×143°.30E±0°.10,h35km,n16, σ1s38/26,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.00**	**285**	P	**Pn**	**17 12 01.5**	**0.0**
JFK				*e*S	**Sn**	**17 12 24.2**	**-1.1**
ONAJ	**Iwakimizuishiy**	**2.01**	**277**	P	**Pn**	**17 12 01.7**	**0.0**
ONAJ				*e*S	**Sn**	**17 12 24.6**	**-1.1**
JIO	**Ouri**	**2.21**	**316**	P	**Pn**	**17 12 04.4**	**+0.1**
JIO				*e*S	**Sn**	**17 12 28.7**	**-1.7**
JMM	**Marumori**	**2.23**	**297**	P	**Pn**	**17 12 04.6**	**0.0**
JMM				*e*S	**Sn**	**17 12 30.1**	**-0.8**
JFT	**Otama**	**2.45**	**286**	P	**Pn**	**17 12 08.7**	**+1.0**
JFT				*e*S	**Sn**	**17 12 36.6**	**+0.2**
JMK	**Ichinoseki**	**2.65**	**322**	P	**Pn**	**17 12 10.5**	**+0.1**
JMK				*e*S	**Sn**	**17 12 40.3**	**-0.9**
JOM	**Ohasama**	**3.04**	**329**	*e*S	**Sn**	**17 12 49.4**	**-1.5**
JYK	**Kaneyama**	**3.09**	**312**	P	**Pn**	**17 12 17.5**	**+1.0**
JYK				*e*S	**Sn**	**17 12 52.9**	**+0.6**
JAG	**Ashikaga**	**3.12**	**263**	P	**Pn**	**17 12 17.9**	**+1.0**
JAG				*e*S	**Sn**	**17 12 51.5**	**-1.5**
JRY	**Ryogami san**	**3.64**	**258**	*e*S	**Sn**	**17 13 03.3**	**-2.6**
JANG	**Nango**	**3.77**	**339**	*e*S	**Sn**	**17 13 05.7**	**-3.1**
JOD2	**Odawara 2**	**3.77**	**246**	P	**Pn**	**17 12 26.9**	**+1.1**
JOD2				*e*S	**Sn**	**17 13 07.6**	**-1.3**
MJAR	**Matsushiro Arr**	**4.10**	**267**	Pn	**Pn**	**17 12 31.9**	**+1.5**
	1.0nm,0.3s,baz=89,slow=15,SNR=7.4						
MJAR				Sn	**Sn**	**17 13 15.7**	**-1.5**
	0.4nm,0.3s,baz=69,slow=25,SNR=2.8						
JHJ	**Hachijo jima 2**	**4.72**	**219**	Pn	**Pn**	**17 12 37.4**	**-1.5**
	2.1nm,0.3s,baz=90,slow=20,SNR=3.0						
WRA	**Warramunga Arr**	**57.14**	**190**	P	**P**	**17 21 14.1**	**+0.7**
	0.4nm,0.8s,baz=7.9,slow=7.4,SNR=3.4						
ASAR	**Alice Springs**	**60.86**	**190**	P	**P**	**17 21 40.7**	**+1.6**
	0.4nm,1.1s,baz=4.7,slow=7.6,SNR=3.1						

MAN 29 17:15:20,9°.38N×122°.28E,h23km,mb4.4,ML3.3,MS3.1, 1C-2D,Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.95**	**92**	⇓*i*P	Pn	17 15 38.1	+0.1
SNPH				*i* S	Sn	17 15 51.2	+0.4
LLP	**Lapu-Lapu**	**1.91**	**61**	⇓*e*P	Pn	17 15 52.0	+0.8
LLP				*e*S	Sb	17 16 16.1	-1.4
RCP	**Roxas**	**2.21**	**12**	⇑*e*P	Pn	17 15 56.5	+1.2
RCP				*e*S	Sn	17 16 23.9	+1.9

IDC 29 17:51:04.6±7.1,6°.26S×148°.70E,h84km±57km,mb3.3/2, mb1 3.6/4,mb1mx3.1/30,mbtmp3.7/4,ML3.7/1,Error ellipse: s-maj=94.2km s-min=50.8km az=121.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.48**	**206**	P	Pn	17 51 57.1	+0.5
	6.3nm,0.3s,baz=25,slow=9.5,SNR=29						
PMG				S	Sn	17 52 37.1	+0.4
	6.1nm,0.3s,baz=73,slow=19,SNR=9.6						
WRA	**Warramunga Arr**	**19.49**	**224**	P	P	17 55 25.4	+0.3
	0.2nm,0.3s,baz=50,slow=11,SNR=34						
ASAR	**Alice Springs**	**22.41**	**218**	P	P	17 55 57.0	+0.5
	0.4nm,0.5s,baz=52,slow=9.2,SNR=11						
FITZ	**Fitzroy Crossi**	**25.39**	**240**	P	P	17 56 24.2	-0.2
	1.3nm,0.3s,baz=59,slow=7.9,SNR=7.9						
TORD	**Torodi Ar. Bea**	**146.79**	**284**	PKPbc	PKPdf	18 10 37.1	+0.8
	0.1nm,0.3s,baz=109,slow=1.4,SNR=3.2						

IDC 29 17:51:29.2±5.5,35°.88N×75°.00E,h0km,mb3.4/2, mb1 3.7/4,mb1mx3.3/39,mbtmp3.5/4,ML3.3/2,MS3.2/1, Ms1 3.2/1,ms1mx2.2/37,Error ellipse: s-maj=212.2km s-min=27.8km az=78.0,Eastern Kashmir

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AAK	**Ala-Archa**	**6.76**	**357**	Pn	Pn	17 53 15.0	+5.2
	1.5nm,0.3s,baz=181,slow=9.3,SNR=3.8						
ZALV	**Zalesovo Beam**	**19.33**	**18**	P	P	17 55 55.7	-0.2
	0.1nm,0.3s,baz=214,slow=10,SNR=2.8						
PALK	**Pallekele**	**28.94**	**168**	LR	LR	18 10 17.2	
	comp=Z,44nm,18.1s,baz=297,slow=39						
WRA	**Warramunga Arr**	**78.94**	**124**	P	P	18 03 35.5	+0.6
	0.4nm,1.1s,baz=323,slow=5.0,SNR=5.2						
ASAR	**Alice Springs**	**81.27**	**127**	P	P	18 03 47.0	-0.5
	0.2nm,0.6s,baz=324,slow=5.7,SNR=3.8						

ISCJB ***29*** *17:52:09.3±0.8,37°.04N±0°.05×71°.8E±0°.1,h142km, mb3.5/1,Error ellipse: s-maj=14.4km s-min=5.0km az=160.5*

IDC ***29*** *17:52:14.5±8.6,37°.28N×71°.84E,h165km±57km,mb3.3/1, mb1 3.1/7,mb1mx2.8/43,mbtmp3.6/7,Error ellipse: s-maj=77.1km s-min=51.1km az=176.0*

NNC ***29*** *17:52:14.4±4.3,37°.32N×71°.51E,h133km±116km,mb3.4, mpv4.3,Error ellipse: s-maj=45.6km s-min=34.1km az=43.0*

ISC 29 17:52:10.1±1.1,37°.01N±0°.07×72°.0E±0°.1,h142km,n17, σ2s30/24,2C-4D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAS	**Manas**	**5.48**	**4**	⇓P	**Pn**	**17 53 30.8**	**+0.9**
	24nm,0.4s						
MNAS				⇑S	**Sn**	**17 54 30.6**	**-1.5**
	15nm,0.5s						
THN	**Thein Dam**	**5.50**	**145**	*e*P	**Pn**	**17 53 31.5**	**+1.5**
THN				*e*S	**Sn**	**17 54 35.8**	**+3.4**
AAK	**Ala-Archa**	**5.93**	**18**	P	**Pn**	**17 53 38.2**	**+2.3**
	10nm,0.3s,baz=174,slow=5.3,SNR=25						
AAK				S	**Sn**	**17 54 43.9**	**+0.9**
	1.3nm,0.3s,baz=318,slow=20,SNR=7.6						
AAK	**Ala-Archa**	**5.93**	**18**	⇑P	**Pn**	**17 53 37.9**	**+2.0**
	17nm,0.4s						
AAK				⇓S	**Sn**	**17 54 43.6**	**+0.6**
	10nm,0.6s						
KK31	**Karatay Array**	**6.19**	**350**	⇓P	**Pn**	**17 53 39.2**	**0.0**
	4.8nm,0.2s,baz=185,slow=18,SNR=42						
KK31				S	**Sn**	**17 54 44.8**	**-4.1**
	10nm,0.4s,baz=173,slow=20,SNR=14						
TKM2	**Tokmak 2**	**6.52**	**24**	⇓P	**Pn**	**17 53 45.7**	**+2.0**
	10nm,0.5s						
MKAR	**Makanchi Array**	**12.41**	**35**	P	**Pn**	**17 55 03.6**	**+1.7**
	0.1nm,0.3s,baz=221,slow=15,SNR=4.4						
PYUN	**Piuthan**	**12.84**	**131**	*e*P	**Pn**	**17 55 08.2**	**+0.5**
	3.7nm,0.2s						
PYUN				*e*S	**Sn**	**17 57 24.3**	**-5.3**
KOLN	**Koldanda**	**13.45**	**130**	*e*P	**Pn**	**17 55 16.7**	**+1.2**
	4.4nm,0.3s						
KOLN				*e*S	**Sn**	**17 57 39.3**	**-5.0**
GKN	**Gorkha**	**13.93**	**127**	*e*P	**Pn**	**17 55 23.3**	**+1.6**
	5.0nm,0.3s						
KURBB	**Kurchatov Arra**	**14.39**	**17**	P	**Pn**	**17 55 26.1**	**-1.0**
	0.0nm,0.3s,baz=206,slow=11,SNR=3.2						
PKIN	**Phulchoki**	**14.71**	**126**	*e*P	**P**	**17 55 33.5**	**-0.5**
	2.3nm,0.3s						
AB31	**Akbulak array**	**15.05**	**328**	P	**Pn**	**17 55 34.2**	**-1.0**
	0.6nm,0.4s,baz=134,slow=14,SNR=19						
BVAR	**Borovoye Array**	**16.05**	**356**	P	**Pn**	**17 55 47.2**	**-0.4**
	0.1nm,0.3s,baz=163,slow=10,SNR=2.7						
AKTO	**Aktyubinsk**	**16.75**	**328**	P	**Pn**	**17 55 55.8**	**-0.4**
	0.2nm,0.3s,baz=138,slow=14,SNR=3.3						
ZALV	**Zalesovo Beam**	**19.12**	**24**	P	**P**	**17 56 23.0**	**+1.1**
	0.7nm,0.3s,baz=207,slow=10,SNR=10						
ARCES	**ARCESS Array B**	**40.98**	**337**	P	**P**	**17 59 38.2**	**-0.3**
	0.9nm,0.7s,baz=120,slow=8.4,SNR=3.2						

TRN 29 17:55:24.1,15°.85N×60°.93W,h32km,MD3.6,2C-2D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MGG	**Marie-Galante**	**0.37**	**280**	*e*P	Pn	17 55 34.6	+1.4
DWS	**Wesley**	**0.46**	**232**	⇓*i*P	Pn	17 55 35.9	+1.4
DWS				*e*S	Sn	17 55 43.9	+2.3
DEG	**La Desirade**	**0.47**	**345**	*e*P	Pn	17 55 34.8	+0.1
DLPL	**La Plaine**	**0.60**	**210**	⇑*i*P	Pn	17 55 37.8	+1.4
DLPL				*e*S	Sn	17 55 47.6	+2.5
BBL	**Barber's Block**	**0.61**	**238**	*e*P	Pn	17 55 37.8	+1.2
BBL				*e*S	Sn	17 55 47.4	+2.1
TBG	**Guadaloupe-3**	**0.69**	**270**	*e*P	Pb	17 55 39.1	+1.5
TBG				*e*S	Sn	17 55 49.6	+2.4
MDN	**Morne-Daniel**	**0.69**	**220**	*e*P	Pb	17 55 40.0	+2.2
MDN				*e*S	Sn	17 55 50.6	+3.4
BAMF	**Morne Balai**	**1.05**	**191**	*e*P	Pb	17 55 44.5	+0.7
CXM	**Morne La Croix**	**1.06**	**192**	*e*P	Pb	17 55 44.4	+0.4
CXM				*e*S	Sb	17 55 58.2	+0.6
PCM	**Pelee Case Pet**	**1.06**	**195**	*e*P	Pb	17 55 44.2	+0.2
PCM	**Pelee Case Pet**	**1.06**	**195**	*e*P	Pb	17 55 44.9	+0.9
GBMF	**Grand Be**	**1.07**	**192**	*e*P	Pb	17 55 44.1	-0.1
PML	**Morne Lenard**	**1.09**	**193**	*e*P	Pb	17 55 44.9	+0.4
FDF	**Fort de France**	**1.13**	**191**	*e*P	Pb	17 55 44.9	-0.2
FDF				*e*S	Sb	17 55 59.7	+0.1
LPMF	**Morne Lapointe**	**1.27**	**181**	*e*P	Pb	17 55 46.8	-0.7
ZAM	**Aeronautique**	**1.27**	**184**	⇑*e*P	Pb	17 55 46.9	-0.6
MVM	**Montagne Vaucl**	**1.29**	**178**	‖*e*P	Pb	17 55 47.5	-0.3
TRMF	**Trois Ilets**	**1.31**	**185**	*e*P	Pb	17 55 47.6	-0.5
BPA	**Boggy Peak**	**1.48**	**323**	*e*P	Pb	17 55 50.1	-0.9
BPA				*e*S	Sb	17 56 09.0	-0.5
MLYT	**Lee's Yard**	**1.48**	**306**	*e*P	Pb	17 55 51.0	-0.1
ANWB	**Willy Bob**	**1.98**	**336**	*e*S	Sb	17 56 21.8	-2.0
MCLT	**Moule a Chique**	**2.13**	**180**	*e*P	Pn	17 55 59.3	+1.8
MCLT				*e*S	Sn	17 56 25.2	+2.4

WEL 29 18:04:24.8±0.1,43°.60S×172°.77E,h9km,ML3.6/14,8C, Error ellipse: s-maj=1.1km s-min=0.6km az=90.0,South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.11**	**284**	⇑PG	Pg	18 04 27.4	0.0
CRLZ				SG	Sg	18 04 28.8	-0.5
CRLZ				AML	AML	18 04 29.3	
CRLZ				AML	AML	18 04 29.8	
CRLZ				AML	AML	18 04 29.8	
MQZ	**McQueen's Vall**	**0.14**	**220**	⇑PG	Pg	18 04 28.2	+0.3
MQZ				SG	Sg	18 04 30.4	+0.5
MQZ				AML	AML	18 04 30.5	
OXZ	**Oxford**	**0.60**	**297**	P*	Pg	18 04 36.3	-0.2
OXZ				S*	Sg	18 04 45.1	+0.8
OXZ				AML	AML	18 04 46.2	
OXZ				AML	AML	18 04 46.2	
OXZ				AML	AML	18 04 46.3	
LTZ	**Lake Taylor**	**0.90**	**336**	⇑P*	Pg	18 04 42.0	-0.1
LTZ				AML	AML	18 04 55.0	
RPZ	**Rata Peaks**	**1.25**	**264**	⇑P*	Pn	18 04 47.3	-1.1
RPZ				AML	AML	18 05 09.9	
RPZ				AML	AML	18 05 10.9	
INZ	**Inchbonnie**	**1.31**	**312**	PN	Pn	18 04 48.7	-0.5
KHZ	**Kahutara**	**1.31

NEIC ***29*** *18:12:32.2, 52.68N×169.57W, h5km, ML3.4(AEIC), After AEIC.*

ISC 29 18:12:32.2±1.8, 52.75N±0.09×169.60W±0.06, h12km±11km, n30, σ1s06/32, mb3.8/4, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NIKH	**Nikolski High**	**0.51**	**64**	*e*Pn	**Pb**	**18 12 42.9**	**-0.2**
NIKH				*e*Sn	**Sb**	**18 12 50.6**	**+0.2**
OKSO	**Okmok South**	**1.06**	**55**	P	**Pg**	**18 12 52.6**	**-0.1**
OKSO				S	**Sn**	**18 13 08.4**	**+0.7**
OKWR	**Okmok West Rim**	**1.09**	**50**	P	**Pn**	**18 12 53.6**	**+0.2**
OKCE	**Okmok Cone E**	**1.10**	**51**	P	**Pb**	**18 12 53.1**	**-0.1**
OKCE				S	**Sn**	**18 13 10.8**	**+2.1**
OKAK	**Okmok**	**1.12**	**42**	*e*Pn	**Pb**	**18 12 52.0**	**-1.4**
OKAK				*e*Sn	**Sb**	**18 13 06.3**	**-1.7**
OKTU	**Okmok Mt. Tuli**	**1.14**	**55**	P	**Pg**	**18 12 54.0**	**-0.1**
OKER	**Okmok East Rim**	**1.17**	**52**	P	**Pg**	**18 12 55.2**	**+0.4**
OKFG	**Magazine Ridge**	**1.22**	**56**	P	**Pn**	**18 12 54.7**	**-0.4**
OKFG				S	**Sn**	**18 13 11.7**	**+0.3**
MGOD	**Makushin Gods**	**1.94**	**56**	*e*Pn	**Pn**	**18 13 06.1**	**+0.9**
MCIR	**Makushin Cirqu**	**2.02**	**52**	P	**Pn**	**18 13 07.1**	**+0.9**
MTBL	**Makushin Table**	**2.14**	**54**	*e*Pn	**Pn**	**18 13 09.0**	**+1.2**
UNV	**Unalaska Valle**	**2.16**	**58**	*e*Pn	**Pn**	**18 13 09.1**	**+1.1**
UNV				*e*Sn	**Sn**	**18 13 35.5**	**+0.7**
AKRB	**Akutan Reef Bi**	**2.53**	**55**	P	**Pn**	**18 13 15.0**	**+1.9**
AKGG	**Akutan Green G**	**2.60**	**55**	P	**Pn**	**18 13 16.1**	**+2.0**
AKUT	**Akutan**	**2.68**	**57**	*e*Pn	**Pn**	**18 13 16.4**	**+1.3**
AKUT				*e*Sn	**Sb**	**18 13 52.5**	**-0.3**
KOFP	**Korovin Flat P**	**2.79**	**262**	P	**Pn**	**18 13 17.7**	**+1.0**
WESP	**Westdahl Peak**	**3.39**	**57**	P	**Pn**	**18 13 25.9**	**+0.9**
SPIA	**Saint Paul Isl**	**4.45**	**355**	*e*Pn	**Pn**	**18 13 40.6**	**+1.1**
SPIA				*e*Sn	**Sn**	**18 14 31.2**	**0.0**
KDAK	**Kodiak Island**	**10.93**	**56**	*e*Pn	**Pn**	**18 15 08.2**	**0.0**
ILAR	**Eielson Array**	**16.72**	**35**	Pn	**P**	**18 16 28.4**	**+0.1**
	0.1nm,0.3s,baz=224,slow=11,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**37.66**	**218**	T	T	18 59 42.5	
	baz=24						
H11N3	**WAKE ISLAND Hy**	**37.67**	**218**	T	T	18 59 37.3	
	baz=24,slow=74						
H11N1	**WAKE ISLAND Hy**	**37.68**	**218**	T	T	18 59 43.8	
	baz=24,slow=74						
H11S1	**WAKE ISLAND Hy**	**38.86**	**217**	T	T	19 01 06.6	
	baz=22,slow=76						
H11S2	**WAKE ISLAND Hy**	**38.87**	**217**	T	T	19 01 09.6	
	baz=22,slow=76						
H11S3	**WAKE ISLAND Hy**	**38.87**	**217**	T	T	19 01 08.0	
	baz=22,slow=76						
PDAR	**Pinedale Array**	**40.47**	**79**	P	**P**	**18 20 10.2**	**-0.6**
	0.2nm,0.5s,baz=297,slow=4.0,SNR=3.0						
TXAR	**Lajitas Array**	**52.88**	**89**	P	**P**	**18 21 48.4**	**+0.4**
	0.9nm,0.8s,baz=292,slow=4.8,SNR=6.3						
WRA	**Warramunga Arr**	**87.13**	**231**	P	**P**	**18 25 16.5**	**-1.4**
	0.6nm,1.0s,baz=36,slow=5.8,SNR=3.7						
ASAR	**Alice Springs**	**90.53**	**230**	P	**P**	**18 25 33.0**	**-0.9**
	0.6nm,0.7s,baz=21,slow=5.2,SNR=9.8						

IDC 29 18:18:41.0±48.0, 16.84S×177.17W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.6/38, mbtmp3.9/3, Error ellipse: s-maj=899.5km s-min=154.8km az=78.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**40.18**	**240**	P	P	18 26 19.4	+0.2
	2.2nm,0.9s,baz=96,slow=10,SNR=3.4						
WRA	**Warramunga Arr**	**46.00**	**258**	P	P	18 27 06.1	-0.4
	0.2nm,0.5s,baz=94,slow=7.8,SNR=13						
ASAR	**Alice Springs**	**46.23**	**253**	P	P	18 27 08.1	-0.2
	3.0nm,0.6s,baz=89,slow=8.1,SNR=123						

JMA 29 18:27:22.1, 37.75N×139.97E, h9km±1km, M0.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFT	**Otama**	**0.37**	**128**	P	Pg	18 27 29.7	+0.3
JFT				*e*S	Sg	18 27 34.6	+0.3

NIED ***29*** *18:27:00, 36.70N×142.10E, h20km, Mw4.7 Best double couple: M0 1.21000×10^16 NP1:φs 199.00000°, δ16.00000°, λ83.00000°. NP2:φs 26.00000°, δ74.00000°, λ92.00000°.*
JMA ***29*** *18:27:44.0±0.2, 36.67N×142.09E, h13km±3km, M4.7*
JMA Felt I J1.
ISCJB ***29*** *18:27:45.1±0.7, 36.67N±0.02×142.02E±0.03, h24km±5km, mb4.8/155, MS4.2/56, Error ellipse: s-maj=3.8km s-min=3.3km az=140.0*
MOS ***29*** *18:27:47.8±1.0, 36.94N×141.90E, h30km, mb5.0/46, MS4.4/14, Error ellipse: s-maj=7.2km s-min=4.3km az=110.5*
NEIC ***29*** *18:27:47.7±0.5, 36.74N×141.95E, h30km±3km, mb4.9/90, Error ellipse: s-maj=4.7km s-min=3.3km az=141.0*
NEIC Recorded [1 JMA] in Fukushima, Ibaraki, Miyagi and Tochigi.
BJI ***29*** *18:27:48.5, 36.85N×141.72E, h43km, mb4.9/70, mB5.0/49, Ms4.5/65, Ms7 4.3/66*
IDC ***29*** *18:27:48.3±0.6, 36.67N×141.95E, h34km±4km, mb4.3/27, mb1 4.4/34, mb1mx4.3/53, mbtmp4.5/34, ML4.1/5, MS4.0/35, Ms1 4.0/35, ms1mx3.8/52, Error ellipse: s-maj=13.6km s-min=10.2km az=110.0*

ISC 29 18:27:47.1±0.4, 36.70N±0.03×141.94E±0.03, h25km±2km, h24km:pP-P, n421, σ1s49/461, mb4.9/162, MS4.3/55, 29C-21D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.00**	**294**	P	**Pn**	**18 28 04.7**	**-0.9**
JFK	**Kawauchi**	**1.08**	**308**	P	**Pn**	**18 28 05.7**	**-1.1**
JHO	**Hitachi**	**1.11**	**266**	P	**Pn**	**18 28 06.2**	**-0.8**
JHO				*e*S	**Sb**	**18 28 22.4**	**+0.8**
JMM	**Marumori**	**1.48**	**322**	P	**Pn**	**18 28 11.7**	**-0.5**
JMM				*e*S	**Sb**	**18 28 31.7**	**-0.7**
JFT	**Otama**	**1.52**	**303**	P	**Pn**	**18 28 13.3**	**+0.5**
JFT				*e*S	**Sb**	**18 28 34.4**	**+0.9**
JIO	**Ouri**	**1.81**	**345**	P	**Pn**	**18 28 16.2**	**-0.6**
JIO				S	**Sn**	**18 28 39.2**	**+0.2**
JFY	**Yanaizu**	**1.92**	**292**	P	**Pn**	**18 28 19.6**	**+1.3**
JOU	**Okura**	**1.95**	**329**	P	**Pn**	**18 28 19.0**	**+0.3**
JOU				*e*S	**Sb**	**18 28 44.6**	**-1.2**
JAG	**Ashikaga**	**2.02**	**263**	P	**Pn**	**18 28 19.6**	**0.0**
JYS	**Shirataka**	**2.13**	**316**	P	**Pn**	**18 28 21.9**	**+0.8**
JYS				*e*S	**Sb**	**18 28 50.8**	**-0.2**
BSO1	**Boso 1**	**2.19**	**201**	P	**Pn**	**18 28 20.8**	**-0.6**
BSO1				*e*S	**Sn**	**18 28 48.9**	**+1.5**
JMK	**Ichinoseki**	**2.32**	**346**	P	**Pn**	**18 28 23.7**	**0.0**
JNS	**Sasagawa**	**2.37**	**299**	P	**Pb**	**18 28 27.1**	**-2.0**
MJAR	**Matsushiro Arr**	**3.01**	**268**	Pn	**Pn**	**18 28 34.3**	**+1.1**
	85nm,0.3s,baz=95,slow=9.5,SNR=1232						
MJAR				Sn	**Sn**	**18 29 06.6**	**-1.8**
	39nm,0.3s,baz=85,slow=15,SNR=5.3						
MJAR				LR	LR	18 30 00.5	
	comp=Z,3μm,18.2s,baz=120,slow=44						
MAJO	**Matsushiro**	**3.01**	**268**	*d* iP	**Pn**	**18 28 34.9**	**+1.7**
MAJO	**Matsushiro**	**3.01**	**268**	*e*Pn	**Pn**	**18 28 34.7**	**+1.5**
MAT	**Matsushiro**	**3.01**	**268**	P	**Pn**	**18 28 34.7**	**+1.5**
MAT				S	**Sb**	**18 29 16.0**	**-0.3**
MJB9	**Matsu-Tunnel**	**3.01**	**268**	*e*Pn	**Pn**	**18 28 35.0**	**+1.7**
JHJ2	**Mitsune**	**3.98**	**207**	*e*Pn	**Pn**	**18 28 45.6**	**-1.0**
JHJ2				*e*Sn	**Sn**	**18 29 28.6**	**-3.8**
JHJ	**Hachijo jima 2**	**3.99**	**207**	Pn	**Pn**	**18 28 45.0**	**-1.7**
	89nm,0.3s,baz=53,slow=20,SNR=49						
JHJ				Sn	**Sn**	**18 29 28.5**	**-4.1**
	188nm,0.3s,baz=64,slow=22,SNR=14						
JHJ				LR	LR	18 30 19.5	
	comp=Z,415nm,19.4s,baz=349,slow=38						
INU	**Inuyama**	**4.21**	**253**	*e*Pn	**Pn**	**18 28 51.6**	**+1.8**
INU				*e*Sn	**Sb**	**18 29 48.6**	**-2.3**
ERM	**Erimo**	**5.39**	**10**	*e*P	**Pn**	**18 29 04.4**	**-1.5**
ERM				*e*		18 30 03.6	
ERM	**Erimo**	**5.39**	**10**	*e*Pn	**Pn**	**18 29 04.4**	**-1.5**
ERM				*e*Sn	**Sn**	**18 30 03.6**	**-3.6**
ASAJ	**Asahikawa**	**7.43**	**4**	Pn	**Pn**	**18 29 32.5**	**-1.4**
	3.9nm,0.3s,baz=211,slow=17,SNR=31						
ASAJ				Sn	**Sn**	**18 30 55.0**	**-2.3**
	4.7nm,0.3s,baz=151,slow=19,SNR=4.2						
ASAJ	**Asahikawa**	**7.43**	**4**	*e*Pn	**Pn**	**18 29 32.6**	**-1.2**
ASAJ				*e*Sn	Sn	18 30 45.4	-12
ASAJ				Sn	**Sn**	**18 30 55.0**	**-2.3**
CBIJ	**Chichi jima**	**9.58**	**179**	*e*Pn	**Pn**	**18 30 05.7**	**+2.3**
KUR	**Kuril'sk**	**9.63**	**26**	*e*P	**Pn**	**18 30 07.2**	**+3.2**
KUR				*i* S	**Sn**	**18 31 43.1**	**-8.2**
KUR				pmax	pmax		
	comp=Z,22nm,0.6s						
KUR				pmax	pmax		
	comp=Z,154nm,2.8s						
KUR				smax	smax		
	comp=N,51nm,0.6s						
KUR				smax	smax		
	comp=E,32nm,0.6s						
KUR				smax	smax		
	comp=N,166nm,2.5s						
KUR				smax	smax		
	comp=E,123nm,2.4s						
KUR				MLR	MLR		
	comp=N,282nm,15.0s						
KUR				MLR	MLR		
	comp=E,412nm,15.0s						
KUR				MLR	MLR		
	comp=Z,240nm,15.0s						
JNU	**Nakatsue**	**9.76**	**252**	Pn	**Pn**	**18 30 07.8**	**+1.9**
	comp=Z,1.2nm,0.3s,baz=52,slow=5.7,SNR=22						
JNU	**Nakatsue**	**9.76**	**252**	*e*Pn	**Pn**	**18 30 05.7**	**-0.2**
VLA	**Vladivostok**	**10.03**	**313**	*ce*P	**Pn**	**18 30 11.9**	**+2.3**
MSHR	**Mys Shultsa**	**10.18**	**309**	*ce*P	**Pn**	**18 30 12.7**	**+1.1**
YSS	**Yuzh-Sakhalins**	**10.27**	**3**	*e*P	**Pn**	**18 30 11.6**	**-1.1**
YSS				*e*S	**Sn**	**18 32 03.0**	**-4.0**
YSS				pmax	pmax		
	comp=Z,20nm,0.7s						
YSS				MLR	MLR		
	comp=Z,600nm,14.0s						
YSS				MLR	MLR		
	comp=N,600nm,12.0s						
YSS				MLR	MLR		
	comp=E,600nm,15.0s						
YSS	**Yuzh-Sakhalins**	**10.27**	**3**	*e*Pn	**Pn**	**18 30 09.5**	**-3.2**
USRK	**Ussuriysk Ar.**	**10.65**	**318**	Pn	**Pn**	**18 30 19.6**	**+1.6**
	comp=E,0.6nm,0.3s,baz=132,slow=13,SNR=24						
USRK				LR	LR	18 34 09.9	
	comp=E,1μm,19.7s,baz=122,slow=36						
KSRS	**Korea Array**	**11.22**	**278**	Pn	**Pn**	**18 30 29.7**	**+3.8**
	comp=E,0.6nm,0.3s,baz=92,slow=14,SNR=39						
KSRS				LR	LR	18 34 41.4	
	comp=E,1μm,19.1s,baz=90,slow=37						
KS01	**Wonju Array Si**	**11.25**	**278**	*e*Pn	**Pn**	**18 30 25.1**	**-1.1**
KS15	**Wonju Array Si**	**11.26**	**278**	*e*Pn	**Pn**	**18 30 27.1**	**+0.7**
KSAR	**Wonju Array Be**	**11.26**	**278**	P	**Pn**	**18 30 29.7**	**+3.3**
KSAR	**Wonju Array Be**	**11.26**	**278**	Pn	**Pn**	**18 30 29.7**	**+3.3**
MDJ	**Mudanjiang**	**12.26**	**314**	P	**Pn**	**18 30 42.0**	**+2.0**
MDJ				S	**Sn**	**18 32 56.8**	**+1.0**
MDJ				PcP	**PcP**	**18 36 23.0**	**+1.4**
MDJ				PcS	**PcS**	**18 39 56.8**	**+1.1**
MDJ				ScS	**ScS**	**18 43 30.8**	**+2.0**
MDJ				pmax	pmax		
	comp=E,11nm,1.1s						
MDJ				pmax	pmax		
	comp=E,94nm,5.8s						
MDJ				LR	LR		
	comp=E,630nm,16.6s						
MDJ				LR	LR		
	comp=E,400nm,17.5s						
MDJ				LR	LR		
	comp=E,970nm,17.0s						
MDJ	**Mudanjiang**	**12.26**	**314**	*e*Pn	**Pn**	**18 30 39.1**	**-0.9**
HABR	**Khabarovsk**	**12.81**	**339**	*e*P	**Pn**	**18 30 45.7**	**-1.8**
HABR				*e*S	**Sn**	**18 33 07.0**	**-2.1**
HABR				pmax	pmax		
	comp=Z,21nm,1.5s						
HABR				MLR	MLR		
	comp=Z,645nm,13.0s						
TYV	**Tymovskoe**	**14.17**	**2**	*e*P	**Pn**	**18 31 06.5**	**+0.4**
TYV				pmax	pmax		
	comp=Z,24nm,0.8s						
TYV				MLR	MLR		
	comp=N,2μm,16.0s						
CN2	**Changchun**	**14.44**	**304**	*e*P	**Pn**	**18 31 09.0**	**-0.9**
CN2				*ep*P	P	18 31 17.8	+1.4
CN2				*es*P		18 31 24.3	
CN2				*e*S	**Sn**	**18 33 48.3**	**-0.8**
CN2				pmax	pmax		
	comp=N,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=N,200nm,8.0s						
CN2				LR	LR		
	comp=N,700nm,14.0s						
CN2				LR	LR		
	comp=N,1μm,14.0s						
CN2				LR	LR		
	comp=N,1μm,17.0s						
KLR	**Kul'dur**	**14.56**	**333**	Pn	**Pn**	**18 31 09.8**	**-1.6**
	comp=N,0.3nm,0.3s,baz=139,slow=12,SNR=6.7						
KLR				LR	LR	18 36 44.5	
	comp=N,811nm,18.8s,baz=146,slow=37						
JOW	**Kunigami**	**15.21**	**234**	Pn	**Pn**	**18 31 20.2**	**0.0**
	comp=N,0.6nm,0.3s,baz=8.1,slow=7.1,SNR=4.0						
JOW				LR	LR	18 37 02.4	
	comp=N,458nm,21.0s,baz=68,slow=36						
JOW	**Kunigami**	**15.21**	**234**	*e*Pn	**Pn**	**18 31 20.3**	**0.0**
	comp=N,48nm,1.1s						
DL2	**Dalian**	**16.21**	**284**	P	**Pn**	**18 31 32.3**	**-0.8**
DL2				*e*S	**Sn**	**18 34 29.0**	**-3.0**
DL2				pmax	pmax		
	comp=N,35nm,1.0s						
DL2				LR	LR		
	comp=N,600nm,13.7s						
DL2				LR	LR		
	comp=N,940nm,13.0s						
DL2				LR	LR		
	comp=N,1μm,17.6s						
NJ2	**Nanjing**	**19.60**	**263**	*e*P	**Pn**	**18 32 14.3**	**-0.6**
NJ2				S	**S**	**18 35 44.8**	**-8.5**
NJ2				pmax	pmax		
	comp=N,22nm,0.6s						
NJ2				LR	LR		
	comp=N,780nm,12.7s						
NJ2				LR	LR		
	comp=N,1μm,13.6s						
NJ2				LR	LR		
	comp=N,3μm,11.1s						
PEA0	**Petropavlovsk-**	**19.77**	**29**	*ep*P	pP	18 32 25.4	+3.3
PETK	**Petropavlovsk-**	**19.77**	**29**	P	**P**	**18 32 15.1**	**-0.1**
	baz=195,slow=10,SNR=1.7						
PETK				LR	LR	18 40 09.6	
	comp=N,147nm,20.0s,baz=209,slow=38						
PEA1	**Petropavlovsk-**	**19.77**	**29**	*e*P	**P**	**18 32 15.1**	**-0.2**
TIA	**Tai'an**	**19.96**	**276**	*e*P	**P**	**18 32 16.3**	**-1.1**
TIA				pmax	pmax		
	comp=N,30nm,1.1s						
TIA				LR	LR		
	comp=N,560nm,14.0s						
TIA				LR	LR		
	comp=N,1μm,16.5s						
TIA				LR	LR		
	comp=N,1μm,16.1s						
HIA	**Hailar**	**20.44**	**315**	*e*P	**P**	**18 32 18.7**	**-3.9**
HIA				pmax	pmax		
	comp=Z,18nm,1.0s						
HIA	**Hailar**	**20.44**	**315**	*e*P	**P**	**18 32 18.7**	**-3.9**
	comp=Z,18nm,1.0s						
BJI	**Beijing**	**20.45**	**287**	P	**P**	**18 32 21.8**	**-0.9**
BJI				pP	**sP**	**18 32 32.8**	**+0.1**
BJI				S	**S**	**18 36 09.0**	**-1.5**
BJI				pmax	pmax		
	comp=Z,16nm,1.5s						
BJI				LR	LR		
	comp=Z,280nm,17.0s						
BJI				LR	LR		
	comp=Z,520nm,14.9s						
BJI				LR	LR		
	comp=Z,310nm,22.0s						
BJT	**Baijiatuan**	**20.46**	**287**	*e*P	**P**	**18 32 20.9**	**-1.9**
BJT	**Baijiatuan**	**20.46**	**287**	*e*P	**P**	**18 32 20.9**	**-1.9**
BJT				*e*Pn	Pn	18 32 23.4	-1.6
SSLB	**Suanglung**	**22.17**	**240**	*e*P	**P**	**18 32 38.5**	**-2.9**
	comp=Z,14nm,0.8s						
YULB	**Yu-li**	**22.19**	**239**	*e*P	**P**	**18 32 38.5**	**-3.1**
	comp=Z,11nm,0.8s						
TPUB	**Ta-pu**	**22.71**	**240**	*e*P	**P**	**18 32 44.0**	**-3.1**
	comp=Z,25nm,0.8s						
CLNS	**Chul'man**	**23.16**	**336**	*e*P	**P**	**18 32 46.5**	**-5.0**
CLNS				pmax	pmax		
	comp=Z,12nm,0.8s						
CLNS				pmax	pmax		
	comp=N,18nm,1.0s						
CLNS				pmax	pmax		
	comp=E,5.0nm,0.8s						
CLNS				MLR	MLR		
	comp=Z,545nm,15.0s						
CLNS				MLR	MLR		
	comp=N,348nm,14.0s						
CLNS				MLR	MLR		
	comp=E,233nm,14.0s						
GUMO	**Guam**	**23.16**	**173**	LR	LR	18 44 20.8	
	comp=E,64nm,19.0s,baz=12,slow=43						
MA2	**Magadan**	**23.60**	**11**	P	**P**	**18 32 55.2**	**-0.5**
	comp=E,12nm,0.8s,baz=189,slow=11,SNR=7.8						
MA2				LR	LR	18 43 43.0	
	comp=E,95nm,18.2s,baz=194,slow=40						
HHC	**Hu-ho-hao-te**	**23.98**	**289**	*e*P	**P**	**18 32 58.8**	**-0.9**
HHC				pP	sP	18 33 09.5	-0.6
HHC				S	**S**	**18 37 09.0**	**-6.1**
HHC				pmax	pmax		
	comp=E,7.0nm,0.7s						
HHC				pmax	pmax		
	comp=E,130nm,5.2s						
HHC				LR	LR		
	comp=E,420nm,12.3s						
HHC				LR	LR		
	comp=E,480nm,13.6s						
HHC				LR	LR		
	comp=E,290nm,12.3s						
CIT	**Chita**	**25.21**	**316**	*e*P	**P**	**18 33 11.9**	**+1.1**
CIT				*e*		18 33 19.0	
CIT				*e*		18 33 24.2	
CIT				*e*		18 33 45.3	
CIT				*e*		18 33 52.8	
CIT				pmax	pmax		
	comp=Z,120nm,1.3s						
YAK	**Yakutsk**	**26.49**	**347**	P	**P**	**18 33 21.2**	**-0.9**
	comp=Z,84nm,0.8s,baz=204,slow=0.9,SNR=50						
YAK				LR	LR	18 44 02.4	
	comp=Z,234nm,18.4s,baz=156,slow=37						
YAK	**Yakutsk**	**26.49**	**347**	*e*P	**P**	**18 33 21.7**	**-0.4**
YAK				*e*PP	**sP**	**18 33 33.7**	**+1.2**
YAK				*e*S	**S**	**18 37 53.4**	**-1.0**
YAK				*e*SS	**sS**	**18 38 08.7**	**+2.1**
YAK				pmax	pmax		
	comp=Z,117nm,1.3s						
YAK				pmax	pmax		
	comp=N,38nm,1.2s						
YAK				pmax	pmax		
	comp=E,12nm,1.4s						
YAK				pmax	pmax		
	comp=Z,29nm,1.7s						
YAK				pmax	pmax		
	comp=N,30nm,1.9s						
YAK				pmax	pmax		
	comp=E,35nm,2.0s						
YAK				smax	smax		
	comp=N,46nm,2.6s						
YAK				smax	smax		
	comp=E,46nm,2.7s						
YAK				MLR	MLR		
	comp=Z,634nm,17.0s						
YAK				MLR	MLR		
	comp=E,208nm,17.0s						
YAK				MLR	MLR		
	comp=N,638nm,18.0s						
YAK	**Yakutsk**	**26.49**	**347**	*e*P	**P**	**18 33 20.8**	**-1.3**
	comp=N,89nm,0.9s						
XAN	**Xi'an**	**26.98**	**274**	P	**P**	**18 33 27.0**	**0.0**
XAN				S	**S**	**18 38 02.3**	**-0.6**
XAN				pmax	pmax		
	comp=N,23nm,1.0s						
XAN				pmax	pmax		
	comp=N,1μm,4.9s						
XAN				LR	LR		
	comp=N,450nm,15.5s						
XAN				LR	LR		
	comp=N,400nm,15.1s						
XAN				LR	LR		
	comp=N,760nm,13.1s						
SEY	**Seymchan**	**27.04**	**11**	P	**P**	**18 33 27.6**	**+0.6**
	comp=N,10nm,0.8s,baz=196,slow=5.8,SNR=30						
SEY	**Seymchan**	**27.04**	**11**	*e*P	**P**	**18 33 28.5**	**+1.4**
H11N2	**WAKE ISLAND Hy**	**27.61**	**121**	T	T	19 03 06.4	
	baz=313,slow=75,SNR=48						
H11N1	**WAKE ISLAND Hy**	**27.62**	**121**	T	T	19 02 59.9	
	baz=313,slow=75,SNR=50						
H11N3	**WAKE ISLAND Hy**	**27.63**	**121**	T	T	19 02 55.8	
	baz=313,slow=75,SNR=49						
ENH	**Enshi**	**27.73**	**266**	*e*P	**P**	**18 33 32.3**	**-1.4**
	comp=N,59nm,0.8s						
SONA1	**Songino Array**	**28.32**	**304**	*e*P	**P**	**18 33 38.6**	**-0.3**
SONA0	**Songino Array**	**28.32**	**304**	*e*P	**P**	**18 33 38.7**	**-0.2**
	comp=N,37nm,0.8s						
SONM	**Songino Array**	**28.32**	**304**	P	**P**	**18 33 38.7**	**-0.2**
	comp=N,36nm,0.8s,baz=104,slow=8.1,SNR=181						
SONM				LR	LR	18 45 19.3	
	comp=N,383nm,18.1s,baz=107,slow=37						
H11S1	**WAKE ISLAND Hy**	**28.32**	**123**	T	T	19 03 58.4	
	baz=314,slow=75,SNR=22						
H11S3	**WAKE ISLAND Hy**	**28.32**	**123**	T	T	19 03 56.1	
	baz=314,slow=75,SNR=18						
H11S2	**WAKE ISLAND Hy**	**28.34**	**123**	T	T	19 03 56.1	
	baz=314,slow=75,SNR=14						
LZH	**Lanzhou**	**30.54**	**280**	*e*P	**P**	**18 33 59.0**	**+0.3**
LZH				pP	sP	18 34 08.8	-0.4
LZH				sP	pP	18 34 12.5	+6.4
LZH				pmax	pmax		
	comp=N,39nm,1.2s						
LZH				pmax	pmax		
	comp=N,180nm,4.1s						
LZH				LR	LR		
	comp=N,1μm,17.6s						
LZH				LR	LR		
	comp=N,1μm,14.8s						
LZH				LR	LR		
	comp=N,1μm,17.9s						
ZAK	**Zakamensk**	**30.81**	**309**	*e*P	**P**	**18 34 01.3**	**+0.4**
ZAK				pmax	pmax		
	comp=Z,13nm,1.1s						
TLY	**Talaya**	**30.87**	**311**	P	**P**	**18 34 01.0**	**-0.3**
	comp=Z,7.0nm,0.7s,baz=134,slow=2.5,SNR=7.9						
TLY	**Talaya**	**30.87**	**311**	*e*P	**P**	**18 34 02.0**	**+0.7**
TLY				*e*		18 35 13.1	
TLY				*e*S	**S**	**18 39 05.4**	**+1.8**
TLY				*e*SS	**SnSn**	**18 40 46.3**	**+2.7**
TLY				pmax	pmax		
	comp=Z,17nm,1.0s						
TLY				MLR	MLR		
	comp=Z,495nm,16.0s						
TLY	**Talaya**	**30.87**	**311**	*e*P	**P**	**18 34 01.8**	**+0.5**
	comp=Z,14nm,0.9s						
GYA	**Guiyang**	**31.58**	**261**	P	**P**	**18 34 10.0**	**+2.0**
GYA				pP	sP	18 34 20.0	+1.6
GYA				PP	**PnPn**	**18 35 15.3**	**+3.6**
GYA				PcP	**PcP**	**18 37 02.8**	**+2.7**
GYA				S	**S**	**18 39 14.5**	**-1.0**
GYA				sS	sS	18 39 32.3	+4.6
GYA				SS	**SnSn**	**18 41 05.5**	**+3.7**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.4s						
GYA				LR	LR		
	comp=Z,540nm,16.6s						
GYA				LR	LR		
	comp=Z,510nm,16.9s						
GYA				LR	LR		
	comp=Z,520nm,17.0s						
CD2	**Chengdu**	**32.10**	**271**	*e*P	**P**	**18 34 11.5**	**-0.9**
CD2				pP	sP	18 34 21.5	-1.3
CD2				sP	pP	18 34 26.0	+6.2
CD2				S	**S**	**18 39 21.8**	**-1.5**
CD2				sS	sS	18 39 39.0	+3.5
CD2		

GTA sP pP 18 34 34.5 +6.2
GTA S **S** **18 39 37.8 -0.6**
GTA sS sS 18 39 53.5 +2.9
GTA SS **SnSn** **18 41 39.0 +1.5**
GTA pmax pmax
comp=Z,18nm,1.1s
GTA pmax pmax
comp=Z,100nm,5.6s
GTA LR LR
comp=Z,400nm,15.2s
GTA LR LR
comp=Z,250nm,14.3s
GTA LR LR
comp=Z,280nm,15.7s
QIZ Qiongzhong 33.18 247 P **P** **18 34 21.5 -0.4**
QIZ S **S** **18 39 39.3 -0.9**
QIZ LR LR
comp=Z,150nm,21.5s
BILL Bilibino 34.23 16⇓ *e*P **P** **18 34 30.4 -0.1**
BILL *e* 18 35 44.1
BILL *e*PPP PPP 18 35 58.8
BILL pmax pmax
comp=Z,6.0nm,1.1s
BILL MLR MLR
comp=Z,173nm,17.0s
BILL Bilibino 34.23 16 *e*P **P** **18 34 29.8 -0.7**
comp=Z,6.5nm,1.0s
KMI Kunming 35.33 262 P **P** **18 34 40.5 -0.2**
KMI pP sP 18 34 51.3 +0.1
KMI sP pP 18 34 57.3 +9.1
KMI S **S** **18 40 14.0 +0.2**
KMI pmax pmax
comp=Z,25nm,1.5s
KMI LR LR
comp=Z,430nm,13.8s
KMI LR LR
comp=Z,510nm,14.8s
KMI LR LR
comp=Z,420nm,15.9s
TIXI Tiksi 35.67 353 P **P** **18 34 42.1 -0.8**
comp=Z,4.7nm,0.7s,baz=153,slow=5.4,SNR=3.2
TIXI LR LR 18 51 51.6
comp=Z,112nm,18.0s,baz=172,slow=40
TIXI Tiksi 35.67 353⇓ *e*P **P** **18 34 42.7 -0.1**
TIXI pmax pmax
comp=Z,7.0nm,1.0s
MYLDM Lahad Datu 38.02 220 *e*P **P** **18 35 05.2 +1.8**
comp=Z,39nm,1.0s
KKM Kota Kinabalu 38.53 224 *e*P **P** **18 35 08.7 +0.8**
comp=Z,18nm,1.0s
UBPT Khong Chiam 38.78 246 P **P** **18 35 11.4 +1.6**
comp=Z,71nm,1.2s
GAMB Gambell 38.78 31 *e*P **P** **18 35 10.3 +1.0**
comp=Z,236nm,1.8s
NONG Nongkai 38.80 252 P **P** **18 35 11.2 +1.2**
comp=Z,104nm,1.1s
SKNT Sakolnakorn 38.82 250 P **P** **18 35 11.7 +1.5**
comp=Z,46nm,1.2s
UTTA Uttaradit 40.98 254 P P 18 35 35.7 +7.6
CHAI Chaiyaphum 40.99 250 P **P** **18 35 29.1 +0.9**
comp=Z,14nm,1.1s
LAMP Lampang 41.25 256 P P 18 35 39.1 +8.8
PBKT Sadao Pong 41.36 252 P **P** **18 35 32.5 +1.3**
comp=Z,28nm,0.9s
WMQ Urumqi 41.37 297 P **P** **18 35 32.5 +1.4**
WMQ sP sP 18 35 46.5 +4.8
WMQ PP **PnPn** **18 37 10.3 -1.1**
WMQ S **S** **18 41 45.5 +1.2**
WMQ pmax pmax
comp=Z,40nm,0.7s
WMQ pmax pmax
comp=Z,270nm,3.7s
WMQ LR LR
comp=Z,320nm,14.0s
WMQ LR LR
comp=Z,300nm,13.5s
WMQ LR LR
comp=Z,470nm,22.9s
CMMT Chiang Mai 41.62 257 P **P** **18 35 34.8 +1.4**
comp=Z,20nm,1.0s
CHTO Chiang Mai 41.62 257 P **P** **18 35 34.8 +1.4**
comp=Z,64nm,1.0s
CHTO Chiang Mai 41.62 257 *e*P **P** **18 35 33.7 +0.3**
CHTO pmax pmax
comp=Z,13nm,1.1s
CHTO Chiang Mai 41.62 257 *e*P **P** **18 35 33.7 +0.3**
comp=Z,13nm,1.1s
CM31 Chiang Mai Arr 41.82 256 *e*P **P** **18 35 35.8 +0.7**
CMAR Chiang Mai Arr 41.82 256 P **P** **18 35 35.2 +0.1**
comp=Z,3.3nm,0.6s,baz=45,slow=9.1,SNR=32
CMAR LR LR 18 55 16.2
comp=Z,198nm,18.4s,baz=54,slow=39
CM01 Chiang Mai Arr 41.83 256 *e*P **P** **18 35 35.0 -0.1**
SUKH Sukhothai 41.85 254 P **P** **18 35 37.1 +1.9**
comp=Z,3.8nm,1.0s
SRAK Srakaew 42.13 248 P P 18 35 45.7 +8.2
comp=Z,62nm,1.0s
ZAA1 Zalesovo Array 42.45 313 *e*P **P** **18 35 39.7 -0.1**
ZAA1 *e*PcP **PcP** **18 37 32.0 -0.4**
ZAA0 Zalesovo Array 42.45 313 *e*P **P** **18 35 39.3 -0.5**
ZAA0 *e*PcP **PcP** **18 37 31.6 -0.7**
ZALV Zalesovo Beam 42.45 313 P **P** **18 35 39.7 -0.1**
comp=Z,24nm,0.9s,baz=91,slow=6.5,SNR=74
ZALV PcP **PcP** **18 37 32.0 -0.3**
comp=Z,3.2nm,0.7s,baz=64,slow=2.4,SNR=4.6
ZALV LR LR 18 54 00.4
comp=Z,344nm,19.4s,baz=70,slow=37
LSA Lhasa 42.66 276 *e*P **P** **18 35 43.5 +1.1**
LSA pmax pmax
comp=Z,10.0nm,0.7s
LSA Lhasa 42.66 276 *e*P **P** **18 35 43.5 +1.1**
comp=Z,10nm,0.7s
NVS Novosibirsk 43.38 314 *e*P **P** **18 35 47.9 +0.7**
NVS *e* 18 35 55.7
NVS pmax pmax
comp=E,11nm,1.1s
NVS pmax pmax
comp=Z,21nm,1.1s
SBUM Sibu 43.73 226 *e*P **P** **18 35 51.0 +0.5**
comp=Z,16nm,1.0s
NRIK Noril'sk 43.75 335 P **P** **18 35 50.0 0.0**
comp=Z,3.0nm,0.5s,baz=126,slow=6.5,SNR=6.2
NRIK LR LR 18 55 28.5
comp=Z,298nm,18.9s,baz=101,slow=38
CHGN Chignik 43.91 44 *e*P **P** **18 35 51.1 -0.4**
MK01 Makanchi Array 44.65 302 *e*P **P** **18 35 57.7 0.0**
MK31 Makanchi Array 44.65 302 *e*P **P** **18 35 57.8 +0.2**
MK31 Makanchi Array 44.65 302 *e*P **P** **18 35 57.8 +0.2**
MK32 Makanchi Array 44.65 302 *e*P **P** **18 35 57.6 -0.1**
MKAR Makanchi Array 44.65 302 P **P** **18 35 57.6 -0.1**
comp=Z,16nm,1.0s,baz=88,slow=9.5,SNR=91
MKAR LR LR 18 54 58.8
comp=Z,176nm,22.0s,baz=86,slow=36
MKAR Makanchi Array 44.65 302 *i* P **P** **18 35 58.0 +0.3**
MKAR pmax pmax
comp=Z,16nm,0.9s
MKAR Makanchi Array 44.65 302 *e*P **P** **18 35 57.8 +0.2**
comp=Z,121nm,0.9s
MAKZ Makanchi 44.86 303 *e*P **P** **18 35 59.5 +0.2**
MAKZ pmax pmax
comp=Z,14nm,0.9s
MAKZ Makanchi 44.86 303 *e*P **P** **18 35 59.5 +0.2**
comp=Z,14nm,0.9s
TT01 Tatalina 45.45 35 *e*P **P** **18 36 02.4 -1.4**
SAUI Saumlaki 45.55 195 *e*P **P** **18 36 05.2 +0.2**
comp=Z,388nm,0.9s
KSM Kuching 45.63 227 *e*P **P** **18 36 06.9 +1.2**
comp=Z,26nm,0.8s
KAPI Kappang 46.39 211 *e*P **P** **18 36 12.8 +1.1**
comp=Z,70nm,1.2s
KURK Kurchatov 46.47 308 *c i*P **P** **18 36 11.8 -0.1**
KURK Kurchatov 46.47 308 *e*P **P** **18 36 11.9 -0.1**
comp=Z,32nm,0.9s
KURBB Kurchatov Arra 46.54 308 P **P** **18 36 12.4 0.0**
comp=Z,14nm,0.6s,baz=83,slow=8.3,SNR=135
RSO Redoubt South 46.90 38 *e*P **P** **18 36 15.8 +0.4**
KDAK Kodiak Island 47.07 42 *e*P **P** **18 36 19.2 +2.8**
KDAK pmax pmax
comp=Z,36nm,1.6s
KDAK Kodiak Island 47.07 42 *e*P **P** **18 36 19.2 +2.8**
comp=Z,36nm,1.6s
SPU Mount Spurr 47.24 37 *e*P **P** **18 36 20.3 +2.4**
PDGK Podgornoye 47.31 298 P **P** **18 36 17.5 -1.0**
PDGK pmax pmax
comp=Z,25nm,1.2s
GUN Gumba 47.61 276 *e*P **P** **18 36 22.3 +0.8**

KTH Kantishna Hill 47.79 34 *e*P **P** **18 36 20.4 -1.7**
comp=Z,10nm,1.1s
BRLK Bradley Lake 47.86 39 *e*P **P** **18 36 24.0 +1.4**
comp=Z,14nm,1.4s
MLY Manley 47.91 32 *e*P **P** **18 36 23.7 +0.7**
comp=Z,6.4nm,0.9s
PKIN Phulchoki 48.14 276 *e*P **P** **18 36 25.7 +0.1**
comp=Z,21nm,0.6s
KKN Kakani 48.14 276 *e*P **P** **18 36 26.1 +0.6**
comp=Z,42nm,0.8s
DMN Daman 48.36 276 *e*P **P** **18 36 27.7 +0.5**
BWN Browne 48.44 33 *e*P **P** **18 36 25.6 -1.4**
comp=Z,23nm,1.0s
SEW Seward 48.56 38 *e*P **P** **18 36 27.0 -1.0**
comp=Z,12nm,1.1s
GKN Gorkha 48.56 277 *e*P **P** **18 36 29.1 +0.4**
comp=Z,90nm,0.8s
MCK McKinley 48.68 34 *e*P **P** **18 36 28.6 -0.3**
MCK pmax pmax
comp=Z,7.0nm,0.4s
MCK McKinley 48.68 34 *e*P **P** **18 36 28.6 -0.3**
comp=Z,6.5nm,0.4s
RND Reindeer 48.72 34 *e*P **P** **18 36 31.2 +1.9**
RND pmax pmax
comp=Z,9.0nm,1.1s
RND Reindeer 48.72 34 *e*P **P** **18 36 31.2 +1.9**
comp=Z,8.6nm,1.1s
MDM Murphy Dome 48.98 32 *e*P **P** **18 36 32.1 +0.9**
comp=Z,12nm,0.9s
SML Sawmill 49.01 36 *e*P **P** **18 36 32.0 +0.5**
SML pmax pmax
comp=Z,10.0nm,0.9s
SML Sawmill 49.01 36 *e*P **P** **18 36 32.0 +0.5**
comp=Z,10nm,0.9s
WRH Wood River Hil 49.04 33 *e*P **P** **18 36 32.9 +1.2**
comp=Z,4.9nm,1.0s
SOEI Soe 49.10 203 *e*P **P** **18 36 35.6 +2.8**
comp=Z,85nm,1.0s
IPM Ipoh 49.33 239 *e*P **P** **18 36 36.2 +1.7**
comp=Z,97nm,1.7s
DHY Denali Highway 49.40 34 *e*P **P** **18 36 35.4 +0.8**
comp=Z,6.0nm,1.2s
SCM Sheep Creek Mo 49.49 36 *e*P **P** **18 36 35.7 +0.5**
SCM pmax pmax
comp=Z,8.0nm,1.0s
SCM Sheep Creek Mo 49.49 36 *e*P **P** **18 36 35.7 +0.5**
comp=Z,8.1nm,1.0s
KOLN Kolonda 49.49 277 *e*P **P** **18 36 36.3 +0.4**
comp=Z,23nm,0.8s
HDA Harding Lake 49.53 33 *e*P **P** **18 36 35.3 -0.1**
comp=Z,5.8nm,1.0s
IL1 Eielson Array 49.55 32 *e*P **P** **18 36 34.7 -0.8**
ILAR Eielson Array 49.55 32 P **P** **18 36 35.3 -0.3**
comp=Z,1.3nm,0.7s,baz=269,slow=6.5,SNR=15
ILAR pP **sP** **18 36 46.0 -0.2**
comp=Z,4.0nm,0.7s,baz=266,slow=6.5,SNR=16
ILAR LR LR 19 01 05.6
comp=Z,29nm,18.5s,baz=290,slow=40
ILB Eielson Array 49.55 32 *e*P **P** **18 36 35.1 -0.4**
PYUN Piuthan 49.83 278 *e*P **P** **18 36 39.1 +0.6**
comp=Z,151nm,0.9s
KLU Klutina 50.18 36 *e*P **P** **18 36 40.0 -0.5**
comp=Z,5.1nm,0.7s
MID Middleton Isla 50.19 39 *e*P **P** **18 36 40.6 +0.2**
MID pmax pmax
comp=Z,61nm,1.0s
MID Middleton Isla 50.19 39 *e*P **P** **18 36 40.6 +0.2**
comp=Z,61nm,1.0s
PAX Paxson 50.27 35 *e*P **P** **18 36 41.7 +0.5**
PAX pmax pmax
comp=Z,3.0nm,1.1s
PAX Paxson 50.27 35 *e*P **P** **18 36 41.7 +0.5**
comp=Z,3.3nm,1.1s
DIV Divide 50.29 37 *e*P **P** **18 36 41.7 +0.4**
comp=Z,17nm,1.2s
MTN Manton Dam 50.32 194 *e*P **P** **18 36 41.2 -0.7**
comp=Z,16nm,0.6s
EYAK Cordova Ski Ar 50.36 38 *e*P **P** **18 36 41.6 -0.1**
comp=Z,32nm,1.7s
RAGM Ragged Mountai 50.91 38 *e*P **P** **18 36 44.9 -1.0**
comp=Z,10nm,0.9s
KSH Kashi 50.93 294 P **P** **18 36 50.8 +4.3**
KSH *e*pP sP 18 37 01.3 +4.1
KSH *e*sP pP 18 37 05.3 +11
KSH *e*PP **PP** **18 38 48.3 +5.5**
KSH *e*ScP **ScP** **18 41 58.3 +1.0**
KSH S **S** **18 44 05.0 +3.2**
KSH ScS **ScS** **18 46 35.5 -0.2**
KSH SS **SS** **18 47 39.0 +2.6**
KSH pmax pmax
comp=Z,7.0nm,1.0s
KSH LR LR
comp=Z,470nm,14.9s
KSH LR LR
comp=Z,190nm,11.2s
KSH LR LR
comp=Z,640nm,17.0s
OTUK Ortayu 50.96 306 P **P** **18 36 46.0 -0.5**
OTUK pmax pmax
comp=Z,25nm,1.1s
AAK Ala-Archa 51.02 299⇑ *e*P **P** **18 36 47.7 +0.5**
AAK pmax pmax
comp=Z,13nm,0.7s
AAK Ala-Archa 51.02 299 *e*P **P** **18 36 47.5 +0.3**
comp=Z,46nm,0.4s
BVA0 Borovoye Array 51.11 313 P **P** **18 36 47.1 -0.4**
BVA0 pmax pmax
comp=Z,9.0nm,1.1s
BVAR Borovoye Array 51.11 313 P **P** **18 36 47.5 -0.1**
comp=Z,3.0nm,0.5s,baz=72,slow=9.5,SNR=29
BVAR PcP **PcP** **18 38 02.7 -0.2**
comp=Z,2.6nm,0.5s,baz=92,slow=4.8,SNR=3.9
BRVK Borovoye 51.16 313 *c i*P **P** **18 36 48.0 +0.1**
BRVK pmax pmax
comp=Z,17nm,0.8s
BRVK Borovoye 51.16 313 *e*P **P** **18 36 48.2 +0.3**
comp=Z,6.5nm,0.8s
PCA Pinnacle 53.13 38 *e*P **P** **18 37 05.0 +2.5**
comp=Z,30nm,1.2s
UGM Wanagama 53.27 220 *e*P **P** **18 37 06.1 +2.1**
comp=Z,455nm,1.7s
GSI Gunungsitoli 53.99 240 *e*P **P** **18 37 09.5 +0.2**
comp=Z,65nm,1.0s
HYT Haines Junctio 54.31 37 *e*pP pP 18 37 18.5 -0.5
DHAK Deception Hill 54.35 39 *e*P **P** **18 37 08.3 -3.2**
comp=Z,38nm,1.2s
CISI Cisompet, Garu 54.42 223 *e*P **P** **18 37 11.9 -0.5**
comp=Z,96nm,1.5s
INK Inuvik 54.49 27 P **P** **18 37 12.6 +0.4**
comp=Z,1.7nm,0.8s,baz=316,slow=12,SNR=4.4
INK Inuvik 54.49 27 *e*P **P** **18 37 10.9 -1.3**
INK pmax pmax
comp=Z,5.0nm,1.0s
INK Inuvik 54.49 27 *e*P **P** **18 37 10.9 -1.3**
comp=Z,4.9nm,1.0s
SVE Sverdlovsk 55.68 319⇓ *e*P **P** **18 37 21.0 0.0**
SVE pmax pmax
comp=Z,28nm,1.1s
SVE MLR MLR
comp=Z,374nm,17.0s
POHA Pohakuloa 56.69 89 *e*P **P** **18 37 28.2 -0.8**
comp=Z,61nm,0.8s
WRAB Tennant Creek 56.78 189⇑ *e*P **P** **18 37 28.2 -1.0**
WRAB pmax pmax
comp=Z,48nm,1.8s
WRAB Tennant Creek 56.78 189 *e*P **P** **18 37 27.9 -1.3**
comp=Z,17nm,0.9s
WB2 Warramunga Arr 56.79 189 *e*P **P** **18 37 27.4 -1.8**
WR1 Warramunga Arr 56.79 189 *e*P **P** **18 37 27.9 -1.4**
WRA Warramunga Arr 56.79 189 P **P** **18 37 27.9 -1.4**
comp=Z,3.4nm,0.8s,baz=8.4,slow=7.1,SNR=31
WRA pP **sP** **18 37 39.2 -0.8**
comp=Z,18nm,0.9s,baz=5.2,slow=7.5,SNR=28
ARU Arti 56.89 319 *d i*P **P** **18 37 29.6 0.0**
ARU 18 38 26.5
ARU 18 39 32.8
ARU S **S** **18 45 22.6 +1.0**
ARU SS **SS** **18 49 08.1 -1.4**
ARU pmax pmax
comp=Z,36nm,1.2s
ARU MLR MLR
comp=Z,352nm,18.0s
ARU Arti 56.89 319 *e*P **P** **18 37 29.8 +0.1**
comp=Z,27nm,1.0s
KBL Kabul 57.93 291 *e*P **P** **18 37 36.6 -1.0**
KBL pmax pmax
comp=Z,22nm,1.1s

KBL Kabul 57.93 291 *e*P **P** **18 37 36.6 -1.0**
comp=Z,22nm,1.1s
AB31 Akbulak array 58.48 310 P **P** **18 37 40.1 -0.8**
AB31 pmax pmax
comp=Z,12nm,0.8s
ABKAR Akbulak array 58.48 310 *e*P **P** **18 37 40.3 -0.6**
comp=Z,101nm,0.7s
HYB Hyderabad 58.62 269 *i* P **P** **18 37 43.0 +0.6**
HYB *e* 18 37 52.5
AS01 Alice Springs 60.51 188 *e*P **P** **18 37 53.8 -1.3**
AS31 Alice Springs 60.52 188 *e*P **P** **18 37 54.8 -0.4**
comp=Z,2.2nm,0.8s
ASAR Alice Springs 60.52 188 P **P** **18 37 54.5 -0.6**
comp=Z,1.8nm,0.7s,baz=16,slow=8.9,SNR=25
ASAR pP **sP** **18 38 05.3 -0.6**
comp=Z,7.7nm,0.8s,baz=1.0,slow=6.9,SNR=21
ASAR LR LR 19 04 37.7
comp=Z,54nm,18.8s,baz=9.5,slow=36
SPA0 Spitsbergen Ar 60.93 349 *e*P **P** **18 37 57.8 +0.4**
MBWA Marble Bar 61.25 204 *e*P **P** **18 37 59.4 -0.8**
comp=Z,16nm,1.0s
PALK Pallekele 62.71 258 LR LR 19 08 01.2
comp=Z,108nm,19.6s,baz=116,slow=38
YKA Yellowknife Ar 63.88 30 P **P** **18 38 17.4 +0.1**
comp=Z,1.1nm,0.9s,baz=300,slow=7.0,SNR=4.6
YKA Yellowknife Ar 63.88 30 *i* P **P** **18 38 17.8 +0.5**
YKA pmax pmax
comp=Z,1.0nm,0.9s
KLMR Klimovskoe 64.26 328 *e*P **P** **18 38 18.9 -0.9**
KLMR *e* 18 38 52.0
KLMR pmax pmax
comp=Z,16nm,1.2s
GEYT Alibeck 64.37 299 P **P** **18 38 21.5 +0.5**
comp=Z,8.0nm,0.8s,baz=46,slow=4.3,SNR=21
GEYT LR LR 19 08 22.0
comp=Z,75nm,20.8s,baz=100,slow=38
ARA0 ARCESS Array S 64.46 340 *e*P **P** **18 38 20.4 -0.6**
ARCES ARCESS Array B 64.46 340 P **P** **18 38 21.3 +0.3**
comp=Z,1.1nm,0.6s,baz=52,slow=5.8,SNR=5.0
ARCES LR LR 19 09 34.3
comp=Z,110nm,21.9s,baz=36,slow=39
XMAS Kiritimati 65.47 107 *e*P **P** **18 38 28.7 +0.3**
comp=Z,121nm,1.1s
DAG Danmarks Havn 66.14 355 *i* P **P** **18 38 31.4 -0.4**
comp=Z,5.6nm,1.0s
DAG Danmarks Havn 66.14 355 *i* P **P** **18 38 31.4 -0.4**
DAG pmax pmax
comp=Z,6.0nm,1.0s
E03A Lebam 67.23 48 *e*P **P** **18 38 40.2 +1.0**
comp=Z,15nm,0.6s
E03A Lebam 67.23 48 *e*P **P** **18 38 40.2 +1.0**
comp=Z,15nm,0.6s
VRH Novokhopyorsk 68.11 318 *e*P **P** **18 38 44.4 -0.3**
VRH pmax pmax
comp=Z,20nm,0.5s
STKA Stephens Creek 68.22 180 P **P** **18 38 45.5 +0.1**
comp=Z,3.5nm,0.9s,baz=278,slow=4.7,SNR=3.8
STKA Stephens Creek 68.22 180 *e*P **P** **18 38 44.7 -0.7**
STKA pmax pmax
comp=Z,4.0nm,1.5s
STKA Stephens Creek 68.22 180 *e*P **P** **18 38 44.6 -0.7**
comp=Z,4.1nm,1.5s
OBN Obninsk 68.62 323 *ce*P **P** **18 38 47.9 +0.2**
OBN *e* 18 39 00.5
OBN *e* 18 39 14.0
OBN *e* 18 41 20.9
OBN pmax pmax
comp=Z,19nm,1.0s
OBN MLR MLR
comp=Z,141nm,15.0s
OBN Obninsk 68.62 323 *e*P **P** **18 38 46.6 -1.1**
comp=Z,15nm,0.6s
FIA1 FINESS Array S 69.31 332 *e*P **P** **18 38 51.6 -0.3**
FIA0 FINESS Array S 69.31 332 *e*P **P** **18 38 51.9 0.0**
FIA0 FINESS Array S 69.31 332 *e*P **P** **18 38 51.9 0.0**
FINES FINESS Array B 69.31 332 P **P** **18 38 51.9 0.0**
comp=Z,6.5nm,0.8s,baz=51,slow=7.6,SNR=13
FINES LR LR 19 11 30.1
comp=Z,188nm,18.5s,baz=32,slow=38
FINES FINESS Array B 69.31 332 *i* P **P** **18 38 52.2 +0.3**
FINES pmax pmax
comp=Z,5.0nm,0.7s
VSR Storozhevoye 69.46 319 *e*P **P** **18 38 52.8 -0.3**
VSR pmax pmax
comp=Z,20nm,1.0s
HAWA Hanford 69.70 47 *e*PcP **PcP** **18 39 18.3 +1.0**
E09A Wood Farm, Sta 70.44 46 *e*P **P** **18 38 58.1 -1.1**
comp=Z,3.4nm,0.8s
VSU Vasula 70.95 330⇑ *e*P **P** **18 39 02.1 0.0**
VSU pmax pmax
comp=Z,57nm,1.7s
SUMG Summit 71.02 0 *i* P **P** **18 39 03.6 +0.8**
comp=Z,8.4nm,1.0s
SUMG Summit 71.02 0 *i* P **P** **18 39 03.6 +0.8**
SUMG pmax pmax
comp=Z,8.0nm,1.0s
SUMG Summit 71.02 0 *e*P **P** **18 39 03.1 +0.4**
comp=Z,9.4nm,1.0s
KBZ Khabaz 71.44 311 P **P** **18 39 05.6 +0.3**
comp=Z,13nm,0.9s,baz=71,slow=2.9,SNR=21
KBZ LR LR 19 15 12.8
comp=Z,200nm,18.3s,baz=56,slow=40
KIV Kislovodsk 71.44 311 *c i*P **P** **18 39 05.8 +0.3**
KIV *e* 18 39 15.7
KIV *e* 18 39 24.9
KIV *e* 18 41 44.4
KIV pmax pmax
comp=Z,35nm,1.0s
KIV MLR MLR
comp=Z,134nm,17.0s
KIV Kislovodsk 71.44 311 *e*P **P** **18 39 05.4 0.0**
comp=Z,28nm,0.9s
NEY Neytrino 71.81 311⇓ *e*P **P** **18 39 09.5 +1.7**
NEY pmax pmax
comp=Z,1.0nm,0.9s
GNI Garni 72.24 307 *d i*P **P** **18 39 11.9 +1.5**
GNI pmax pmax
comp=Z,25nm,1.2s
GNI Garni 72.24 307 *e*P **P** **18 39 10.9 +0.5**
comp=Z,12nm,1.0s
UOSS Minazif 72.31 288 *e*P **P** **18 39 10.8 -0.1**
comp=Z,42nm,1.5s
WVOR Wild Horse Val 72.39 50 *e*P **P** **18 39 08.6 -2.6**
WVOR pmax pmax
comp=Z,7.0nm,1.4s
WVOR Wild Horse Val 72.39 50 *e*P **P** **18 39 08.6 -2.6**
comp=Z,6.8nm,1.4s
BGH Bear Gulch 72.81 56 *e*P **P** **18 39 15.1 +1.4**
CHMT Chamberlain Mo 73.00 44 *e*P **P** **18 39 14.4 -0.5**
MFID Camas Ranch 73.54 48 *e*P **P** **18 39 18.3 +0.3**
comp=Z,2.7nm,0.9s
CMB Columbia Colle 73.72 55 *e*P **P** **18 39 17.6 -1.5**
CMB pmax pmax
comp=Z,4.0nm,1.1s
CMB Columbia Colle 73.72 55 *e*P **P** **18 39 17.6 -1.5**
comp=Z,3.6nm,1.1s
FFC Flin Flon 73.76 33 *e*P **P** **18 39 19.0 +0.1**
FFC pmax pmax
comp=Z,36nm,2.0s
FFC Flin Flon 73.76 33 *e*P **P** **18 39 19.0 +0.1**
comp=Z,36nm,2.0s
HRY Holter Researc 73.91 43 *e*P **P** **18 39 19.5 -0.6**
ANN Anapa 74.07 314 *e*P **P** **18 39 21.6 +0.7**
ANN pmax pmax
comp=Z,42nm,1.1s
ANN MLR MLR
comp=Z,197nm,17.0s
LRM Limekiln Ridge 74.09 44 *e*P **P** **18 39 22.0 +0.6**
EGMT Eagleton 74.24 41 *e*P **P** **18 39 20.6 -1.4**
comp=Z,6.2nm,0.8s
DLMT Dillon 74.28 45 *e*P **P** **18 39 19.6 -2.7**
comp=Z,6.1nm,0.8s
HLID Hailey 74.29 47 *e*P **P** **18 39 21.2 -1.3**
comp=Z,1.4nm,0.8s
BMN Battle Mountai 74.39 51 *e*P **P** **18 39 21.9 -1.2**
BMN pmax pmax
comp=Z,3.0nm,0.6s
BMN Battle Mountai 74.39 51 *e*P **P** **18 39 21.9 -1.2**
comp=Z,2.6nm,0.6s
NC405 NORSAR Array S 74.45 337 *e*P **P** **18 39 22.7 -0.2**
NC303 NORSAR Array S 74.47 338 *e*P **P** **18 39 23.2 +0.3**
TVH1 TV Hill, Hawth 74.54 54 *e*P **P** **18 39 22.5 -1.7**
comp=Z,12nm,1.7s
NC204 NORSAR Array S 74.61 338 *e*P **P** **18 39 22.8 -1.1**
NB201 NORSAR Array S 74.62 337 *e*P **P** **18 39 23.6 -0.3**
BOZ Bozeman (W) 74.66 44 *e*P **P** **18 39 25.1 +0.5**

BOZ	**Bozeman (W)**	**74.66**	**44**	*eP*		**P**	**18 39 25.1**	**+0.5**
NB2	**NORSAR Subarra**	**74.66**	**338**	P		**P**	**18 39 24.0**	**-0.1**
	comp=Z,7.8nm,0.8s,baz=41,slow=5.9							
NB200	**NORSAR Array S**	**74.66**	**338**	*eP*		**P**	**18 39 23.9**	**-0.1**
NOA	**NORSAR Array B**	**74.66**	**338**	P		**P**	**18 39 23.9**	**-0.1**
	comp=Z,5.8nm,0.8s,baz=43,slow=5.4,SNR=22							
NOA				LR		LR	19 14 41.4	
	comp=Z,173nm,21.5s,baz=45,slow=38							
NOA	**NORSAR Array S**	**74.76**	**338**	P		**P**	**18 39 24.0**	**-0.1**
NBO02	**NORSAR Array S**	**74.76**	**338**	*eP*		**P**	**18 39 23.8**	**-0.8**
NBO00	**NORSAR Array S**	**74.80**	**338**	*eP*		**P**	**18 39 24.0**	**-0.8**
AKASG	**Malin Array Be**	**74.82**	**323**	P		**P**	**18 39 25.1**	**0.0**
	comp=Z,7.6nm,0.6s,baz=47,slow=6.2,SNR=29							
AKASG				PP		**PP**	**18 42 19.6**	**+7.5**
	comp=Z,0.7nm,0.4s,baz=45,slow=8.5,SNR=4.0							
AKASG				LR		LR	19 15 12.6	
	comp=Z,154nm,18.6s,baz=45,slow=38							
AKBB	**Malin Array Si**	**74.82**	**323**	*eP*		**P**	**18 39 24.2**	**-0.9**
AKBB				pmax		pmax		
	comp=Z,13nm,0.8s							
AKBB	**Malin Array Si**	**74.82**	**323**	*eP*		**P**	**18 39 24.2**	**-0.9**
	comp=Z,13nm,0.8s							
KIEV	**Kiev**	**74.83**	**323**	*c iP*		**P**	**18 39 25.0**	**-0.2**
KIEV				pmax		pmax		
	comp=Z,13nm,1.0s							
KIEV	**Kiev**	**74.83**	**323**	*eP*		**P**	**18 39 24.6**	**-0.6**
	comp=Z,12nm,0.8s							
AK11	**Malin Array Si**	**74.86**	**323**	*eP*		**P**	**18 39 23.2**	**-2.2**
NAO01	**NORSAR Array S**	**74.91**	**338**	*eP*		**P**	**18 39 24.4**	**-1.1**
GCMT	**Greycliff**	**75.66**	**43**	*epP*		*pP*	18 39 38.9	+0.6
SIM	**Simferopol'**	**75.86**	**316**	*eP*		**P**	**18 39 32.1**	**+0.8**
SIM				pmax		pmax		
	comp=Z,45nm,1.1s							
KLNR	**Kaliningrad**	**76.23**	**329**	⇑*eP*		**P**	**18 39 34.4**	**+1.3**
KLNR				pmax		pmax		
	comp=Z,81nm,1.0s							
SORM	**Soroca**	**76.92**	**321**	⇑*iP*		**P**	**18 39 37.0**	**-0.2**
SORM	**Soroca**	**76.92**	**321**	⇑P		**P**	**18 39 37.0**	**-0.2**
PD31	**Pinedale Array**	**77.60**	**46**	*eP*		**P**	**18 39 41.0**	**-0.4**
PDAR	**Pinedale Array**	**77.60**	**46**	P		**P**	**18 39 41.8**	**+0.4**
	comp=Z,0.5nm,0.7s,baz=267,slow=1.8,SNR=3.9							
LVV	**L'vov**	**77.90**	**324**	*eP*		**P**	**18 39 40.6**	**-2.0**
LVV				MLR		MLR		
	comp=Z,230nm,16.0s							
LVV				MLR		MLR		
	comp=E,170nm,16.0s							
LVV				MLR		MLR		
	comp=N,180nm,16.0s							
BEL	**Belsk**	**77.96**	**327**	*eP*		**P**	**18 39 44.2**	**+1.3**
BEL	**Belsk**	**77.96**	**327**	*eP*		**P**	**18 39 44.2**	**+1.3**
KWP	**Kalwaria Pacla**	**78.65**	**325**	*eP*		**P**	**18 39 48.5**	**+1.7**
KWP	**Kalwaria Pacla**	**78.65**	**325**	*eP*		**P**	**18 39 48.5**	**+1.7**
BUR08	**Bucovina Ar. S**	**78.82**	**322**	*eP*		**P**	**18 39 47.9**	**-0.1**
BURAR	**Bucovina Array**	**78.83**	**322**	⇓*iP*		**P**	**18 39 49.0**	**+1.0**
BURAR	**Bucovina Array**	**78.83**	**322**	⇓P		**P**	**18 39 49.0**	**+1.0**
TESR	**Tescani**	**78.86**	**320**	⇑*iP*		**P**	**18 39 48.6**	**+0.6**
CFR	**Carcaliu**	**78.98**	**319**	⇑*iP*		**P**	**18 39 49.1**	**+0.5**
CFR	**Carcaliu**	**78.98**	**319**	⇑P		**P**	**18 39 49.1**	**+0.5**
VRI	**Vrincioaia**	**79.25**	**320**	⇓*iP*		**P**	**18 39 51.3**	**+1.1**
VRI	**Vrincioaia**	**79.25**	**320**	⇓P		**P**	**18 39 51.3**	**+1.1**
PLOR	**Plostina**	**79.31**	**320**	⇑*iP*		**P**	**18 39 52.0**	**+1.5**
PLOR	**Plostina**	**79.31**	**320**	⇑P		**P**	**18 39 52.0**	**+1.5**
BR101	**Keskin Array S**	**79.39**	**312**	*eP*		**P**	**18 39 51.5**	**+0.3**
BR131	**Keskin Array S**	**79.39**	**312**	*eP*		**P**	**18 39 51.1**	**-0.1**
BRTR	**Keskin Array B**	**79.39**	**312**	P		**P**	**18 39 51.5**	**+0.3**
	comp=N,5.2nm,0.9s,baz=107,slow=4.3,SNR=22							
BRTR				LR		LR	19 20 37.2	
	comp=N,74nm,18.1s,baz=35,slow=40							
BRTR	**Keskin Array B**	**79.39**	**312**	*i* P		**P**	**18 39 52.2**	**+1.0**
BRTR				pmax		pmax		
	comp=Z,6.0nm,0.9s							
K22A	**Casper**	**79.40**	**44**	*eP*		**P**	**18 39 50.6**	**-0.6**
	comp=Z,6.7nm,0.4s							
TLB	**Topalu**	**79.42**	**318**	⇑*iP*		**P**	**18 39 51.5**	**+0.4**
TLB	**Topalu**	**79.42**	**318**	⇑P		**P**	**18 39 51.5**	**+0.4**
STHS	**Stebnicka Huta**	**79.47**	**325**	*eP*		**P**	**18 39 53.0**	**+1.6**
STHS				pmax		pmax		
	comp=Z,6.0nm,0.9s							
STHS	**Stebnicka Huta**	**79.47**	**325**	*eP*		**P**	**18 39 53.0**	**+1.6**
UZH	**Uzhgorod**	**79.54**	**324**	*eP*		**P**	**18 39 52.7**	**+1.0**
UZH				*e*			18 39 59.7	
OJC	**Ojcow**	**79.55**	**326**	*eP*		**P**	**18 39 52.6**	**+0.9**
OJC	**Ojcow**	**79.55**	**326**	*eP*		**P**	**18 39 52.1**	**+0.4**
OJC				pmax		pmax		
	comp=Z,18nm,1.0s							
OJC	**Ojcow**	**79.55**	**326**	*eP*		**P**	**18 39 52.1**	**+0.4**
	comp=Z,18nm,1.0s							
CRVS	**Cervenica-Dubn**	**79.74**	**325**	*eP*		**P**	**18 39 53.6**	**+0.8**
CRVS	**Cervenica-Dubn**	**79.74**	**325**	*eP*		**P**	**18 39 53.6**	**+0.8**
BR231	**Keskin MP Arra**	**79.83**	**312**	*eP*		**P**	**18 39 52.3**	**-1.3**
DOPR	**Dopca**	**79.87**	**321**	⇓*iP*		**P**	**18 39 55.5**	**+1.9**
U15A	**North Rim**	**79.88**	**52**	*eP*		**P**	**18 39 53.4**	**-0.8**
	comp=Z,3.3nm,1.1s							
NIE	**Niedzica**	**79.90**	**326**	*eP*		**P**	**18 39 54.8**	**+1.1**
NIE	**Niedzica**	**79.90**	**326**	*eP*		**P**	**18 39 54.8**	**+1.1**
MLR	**Muntele Rosu**	**79.91**	**320**	*eP*		**P**	**18 39 54.0**	**0.0**
MLR				pmax		pmax		
	comp=Z,8.0nm,1.1s							
MLR	**Muntele Rosu**	**79.91**	**320**	*eP*		**P**	**18 39 54.0**	**0.0**
	comp=Z,8.2nm,1.1s							
VOIR		**80.41**	**320**	⇑*iP*		**P**	**18 39 58.1**	**+1.5**
VOIR		**80.41**	**320**	⇑P		**P**	**18 39 58.1**	**+1.5**
LANS	**Liptovska Anna**	**80.47**	**326**	*eP*		**P**	**18 39 58.5**	**+1.7**
LANS	**Liptovska Anna**	**80.47**	**326**	*eP*		**P**	**18 39 58.5**	**+1.7**
KECS	**Kecovo**	**80.49**	**325**	*eP*		**P**	**18 39 58.0**	**+1.1**
KECS				pmax		pmax		
	comp=Z,2.0nm,0.9s							
KECS	**Kecovo**	**80.49**	**325**	*eP*		**P**	**18 39 58.0**	**+1.1**
KECS				*e*			19 14 43.7	
OKC	**Ostrava-Krasne**	**80.56**	**327**	*eP*		**P**	**18 39 57.7**	**+0.5**
OKC				AMS		AMS	19 18 40.0	
	comp=Z,300nm,17.1s							
OKC	**Ostrava-Krasne**	**80.56**	**327**	*eP*		**P**	**18 39 57.7**	**+0.5**
OKC				MLR		MLR		
	comp=Z,300nm,17.1s							
KSP	**Ksiaz**	**80.61**	**329**	*eP*		**P**	**18 39 58.6**	**+1.2**
KSP	**Ksiaz**	**80.61**	**329**	*eP*		**P**	**18 39 58.6**	**+1.2**
ARR	**Arges**	**80.67**	**321**	⇑*iP*		**P**	**18 39 59.5**	**+1.5**
PV10	**Paradox Valley**	**80.68**	**49**	*eP*		**P**	**18 39 59.0**	**+0.6**
MORC	**Moravsky Berou**	**80.87**	**327**	⇑*iP*		**P**	**18 39 59.5**	**+0.6**
MORC	**Moravsky Berou**	**80.87**	**327**	⇑P		**P**	**18 39 59.5**	**+0.6**
MORC	**Moravsky Berou**	**80.87**	**327**	*eP*		**P**	**18 39 59.0**	**+0.1**
	comp=Z,34nm,1.2s							
DPC	**Dobruska-Polom**	**80.97**	**328**	*eP*		**P**	**18 40 00.4**	**+1.0**
DPC				*epP*		*pP*	**18 40 07.4**	**0.0**
DPC				AMS		AMS	19 18 40.0	
	comp=Z,200nm,17.8s							
DPC	**Dobruska-Polom**	**80.97**	**328**	*eP*		**P**	**18 40 00.4**	**+1.0**
DPC				*e*			18 40 07.4	
DPC				MLR		MLR		
	comp=Z,200nm,17.8s							
UPC	**Upice**	**80.98**	**328**	*eP*		**P**	**18 40 00.6**	**+1.2**
UPC				*epP*		*pP*	**18 40 07.2**	**-0.3**
UPC				AMS		AMS	19 20 10.0	
	comp=Z,200nm,18.6s							
PSZ	**Piszkesteto**	**81.17**	**325**	⇓*iP*		**P**	**18 40 00.1**	**-0.5**
PSZ	**Piszkesteto**	**81.17**	**325**	⇓P		**P**	**18 40 00.1**	**-0.5**
PSZ	**Piszkesteto**	**81.17**	**325**	*eP*		**P**	**18 40 01.0**	**+0.4**
	comp=Z,13nm,1.0s							
PSZ	**Piszkesteto**	**81.17**	**325**	⇑*eP*		**P**	**18 40 01.3**	**+0.7**
VYHS	**Vyhne**	**81.24**	**326**	*eP*		**P**	**18 40 01.7**	**+0.8**
VYHS				pmax		pmax		
	comp=Z,5.0nm,1.2s							
VYHS	**Vyhne**	**81.24**	**326**	*eP*		**P**	**18 40 01.7**	**+0.8**
URZ	**Urewera**	**81.36**	**153**	LR		LR	19 11 21.8	
	comp=Z,77nm,20.4s,baz=342,slow=32							
SIRR	**Siria**	**81.52**	**323**	⇑*iP*		**P**	**18 40 03.0**	**+0.6**
BRG	**Berggiesshubel**	**81.55**	**330**	*eP*		**P**	**18 40 02.8**	**+0.4**
	comp=Z,6.5nm,1.0s							
BRG	**Berggiesshubel**	**81.55**	**330**	*eP*		**P**	**18 40 02.8**	**+0.4**
BRG				pmax		pmax		
	comp=Z,7.0nm,1.0s							
PVCC	**Panska Ves**	**81.56**	**329**	*eP*		**P**	**18 40 03.4**	**+0.9**
PVCC				AMS		AMS	19 19 10.0	
	comp=Z,200nm,18.6s							
PVCC	**Panska Ves**	**81.56**	**329**	*eP*		**P**	**18 40 03.4**	**+0.9**
PVCC				MLR		MLR		
	comp=Z,200nm,18.6s							
CLL	**Collm**	**81.60**	**330**	⇑*iP*		**P**	**18 40 02.7**	**0.0**
	comp=Z,14nm,1.3s							
CLL				*e*			18 40 07.0	
CLL				*e*			18 40 10.0	
CLL				*i*			18 40 13.5	
CLL				LmH			19 15 00.0	
	comp=N,100nm,19.2s							
CLL				LmH			19 15 00.0	
	comp=E,200nm,20.1s							
CLL	**Collm**	**81.60**	**330**	⇑*iP*		**P**	**18 40 02.7**	**0.0**
CLL				pmax		pmax		
	comp=Z,14nm,1.3s							
CLL	**Collm**	**81.60**	**330**	*eP*		**P**	**18 40 02.1**	**-0.6**
	comp=Z,13nm,1.1s							
VRAC	**Vranov**	**81.63**	**327**	⇓*iP*		**P**	**18 40 02.9**	**0.0**
VRAC	**Vranov**	**81.63**	**327**	⇓P		**P**	**18 40 02.9**	**0.0**
PRU	**Pruhonice**	**81.99**	**329**	*eP*		**P**	**18 40 05.4**	**+0.6**
PRU				*epP*		*pP*	**18 40 13.4**	**+0.6**
PRU				AMS		AMS	19 20 20.0	
	comp=Z,300nm,14.4s							
PRU	**Pruhonice**	**81.99**	**329**	*eP*		**P**	**18 40 05.4**	**+0.6**
PRU				*e*			18 40 13.4	
PRU				MLR		MLR		
	comp=Z,300nm,14.4s							
BZS	**Buzias**	**82.01**	**322**	⇓*iP*		**P**	**18 40 04.4**	**-0.5**
BZS	**Buzias**	**82.01**	**322**	⇓P		**P**	**18 40 04.4**	**-0.5**
MMAI	**Mount Meron Ar**	**82.50**	**306**	LR		LR	19 20 27.5	
	comp=Z,112nm,18.0s,baz=60,slow=38							
MDVR	**Moldovita**	**82.56**	**322**	⇓*iP*		**P**	**18 40 08.3**	**+0.4**
NKC	**Novy Kostel**	**82.65**	**330**	AMS		AMS	19 21 00.0	
	comp=Z,300nm,19.7s							
CONA	**Conrad Observa**	**82.99**	**327**	*i* PcP		**P**	**18 40 11.1**	**+0.9**
	comp=Z,6.7nm,1.1s							
KHC	**Kasperske Hory**	**83.05**	**329**	*eP*		**P**	**18 40 10.9**	**+0.5**
KHC				*epP*		*pP*	**18 40 18.8**	**+0.4**
KHC				AMS		AMS	19 20 00.0	
	comp=Z,400nm,14.3s							
KHC	**Kasperske Hory**	**83.05**	**329**	*eP*		**P**	**18 40 10.9**	**+0.5**
KHC				*e*			18 40 18.8	
KHC				MLR		MLR		
	comp=Z,400nm,14.3s							
GEC2	**GERESS Array S**	**83.22**	**328**	*eP*		**P**	**18 40 10.8**	**-0.5**
GEC2				pmax		pmax		
	comp=Z,5.0nm,1.1s							
GEC2	**GERESS Array S**	**83.22**	**328**	*eP*		**P**	**18 40 10.8**	**-0.5**
	comp=Z,4.6nm,1.1s							
GERES	**GERESS Array B**	**83.22**	**328**	P		**P**	**18 40 11.1**	**-0.3**
	comp=Z,2.5nm,0.8s,baz=46,slow=3.9,SNR=18							
GERES				LR		LR	19 21 28.6	
	comp=Z,156nm,18.8s,baz=56,slow=39							
GEA0	**GERESS Array S**	**83.22**	**328**	*eP*		**P**	**18 40 10.2**	**-1.2**
GRFO	**Grafenberg**	**83.57**	**330**	*eP*		**P**	**18 40 12.5**	**-0.5**
GRFO				pmax		pmax		
	comp=Z,10.0nm,0.9s							
GRFO	**Grafenberg**	**83.57**	**330**	*eP*		**P**	**18 40 12.5**	**-0.5**
	comp=Z,10nm,0.9s							
EKA	**Eskdalemuir Ar**	**83.59**	**341**	LR		LR	19 21 27.4	
	comp=Z,110nm,18.2s,baz=0.0,slow=38							
ARSA	**Arzberg**	**83.65**	**327**	*i* PcP		**P**	**18 40 14.0**	**+0.5**
	comp=Z,6.0nm,1.6s							
MOA	**Molln**	**83.75**	**328**	*i* PcP		**P**	**18 40 14.6**	**+0.6**
	comp=Z,4.5nm,1.1s							
PPT	**Papeete**	**84.11**	**117**	LR		LR	19 08 48.2	
	comp=Z,72nm,22.0s,baz=344,slow=29							
T25A	**Trinidad**	**84.26**	**47**	*eP*		**P**	**18 40 18.2**	**+1.2**
	comp=Z,4.7nm,0.8s							
SOKA	**Soboth**	**84.31**	**326**	*i* PcP		**P**	**18 40 17.2**	**+0.3**
	comp=Z,7.0nm,1.1s							
ANMO	**Albuquerque**	**84.48**	**50**	⇓*eP*		**P**	**18 40 19.5**	**+1.3**
ANMO				pmax		pmax		
	comp=Z,1.0nm,0.6s							
ANMO	**Albuquerque**	**84.48**	**50**	*eP*		**P**	**18 40 16.1**	**-2.1**
	comp=Z,3.8nm,1.0s							
EIL	**Elat**	**84.91**	**303**	LR		LR	19 21 47.4	
	comp=Z,60nm,20.5s,baz=58,slow=38							
BCLA	**Clavier**	**85.21**	**334**	P		**P**	**18 40 21.1**	**-0.2**
ABTA	**Abfaltersbach**	**85.35**	**328**	*i* P		**P**	**18 40 21.5**	**-0.7**
	comp=Z,6.4nm,1.4s							
MOTA	**Moosalm**	**85.48**	**329**	*i* PcP		**P**	**18 40 23.6**	**+0.7**
	comp=Z,5.2nm,1.1s							
RETA	**Reutte**	**85.50**	**329**	*i* PcP		**P**	**18 40 23.3**	**+0.4**
	comp=Z,7.3nm,1.0s							
SCHQ	**Schefferville**	**85.54**	**16**	LR		LR	19 19 10.9	
	comp=Z,48nm,21.7s,baz=338,slow=36							
BFO	**Black Forest**	**85.80**	**331**	*i* P		**P**	**18 40 25.0**	**+0.7**
BFO	**Black Forest**	**85.80**	**331**	*eP*		**P**	**18 40 23.7**	**-0.6**
	comp=Z,13nm,1.0s							
FETA	**Feichten**	**85.89**	**329**	*i* PcP		**P**	**18 40 25.1**	**+0.1**
	comp=Z,5.0nm,1.3s							
DAVA	**Damuels**	**86.03**	**330**	*i* P		**P**	**18 40 24.8**	**-0.8**
	comp=Z,11nm,1.1s							
FUORN	**Ofenpass-Fuorn**	**86.40**	**329**	*eP*		**P**	**18 40 27.3**	**-0.3**
	comp=Z,15nm,1.3s							
TX31	**Lajitas Ar. Si**	**89.99**	**53**	*eP*		**P**	**18 40 44.9**	**+0.1**
LTX	**Lajitas**	**89.99**	**53**	*eP*		**P**	**18 40 45.1**	**+0.3**
LTX	**Lajitas**	**89.99**	**53**	*eP*		**P**	**18 40 45.0**	**+0.3**
TXAR	**Lajitas Array**	**89.99**	**53**	P		**P**	**18 40 45.0**	**+0.2**
	comp=Z,0.4nm,0.7s,baz=316,slow=5.2,SNR=5.0							
TXAR				pP		**sP**	**18 40 55.6**	**-0.2**
	comp=Z,2.2nm,0.9s,baz=316,slow=2.5,SNR=14							
TXAR				LR		LR	19 17 56.1	
	comp=Z,41nm,19.6s,baz=0.0,slow=33							
MIAR	**Mount Ida**	**92.28**	**43**	*eP*		**P**	**18 40 54.1**	**-1.1**
MIAR	**Mount Ida**	**92.28**	**43**	*eP*		**P**	**18 40 54.1**	**-1.1**
ESDC	**Sonseca Array**	**97.78**	**334**	LR		LR	19 30 09.9	
	comp=Z,127nm,20.6s,baz=355,slow=38							
TOA1	**Torodi Ar. Sit**	**117.86**	**315**	*ePP*		PP	18 47 43.5	-1.4
TORD	**Torodi Ar. Bea**	**117.87**	**315**	PP		PP	18 47 43.5	-1.4
	comp=Z,1.6nm,1.0s,baz=38,slow=5.0,SNR=4.7							
SNAA	**Sanae**	**140.55**	**197**	PKP		PKPpre	18 47 04.4	
VNA1	**Neumayer--Stat**	**142.51**	**196**	PKP		**PKPdf**	**18 47 13.1**	**-3.5**
LPAZ	**La Paz**	**146.49**	**61**	PKPbc		**PKPbc**	**18 47 27.2**	**-0.2**
	comp=Z,1.7nm,0.5s,baz=16,slow=3.6,SNR=7.4							

NEIC 29 18:33:04.3,53.54N×163.40W,h49km,ML2.6(AEIC), After AEIC.,Unimak Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BRPK	**Brown Peak**	**1.13**	**350**	P		Pn	18 33 24.1	+0.4
WESP	**Westdahl Peak**	**1.23**	**321**	P		Pn	18 33 25.9	+0.6
WESN	**West Dahl Nort**	**1.25**	**326**	*e*Pn		Pn	18 33 26.1	+0.7
SSLW	**Shishaldin Wes**	**1.31**	**341**	P		Pn	18 33 27.0	+0.8
SSLW				S		Sn	18 33 45.0	+2.4
SSLN	**Shishaldin Nor**	**1.32**	**345**	P		Pn	18 33 27.9	+1.5
AKSA	**Akutan Strait**	**1.49**	**295**	*e*Pn		Pn	18 33 29.0	+0.4
AKSA				*e*Sn		Sn	18 33 47.5	+0.6
AKUT	**Akutan**	**1.53**	**294**	*e*Pn		Pn	18 33 29.6	+0.4
AKUT				*e*Sn		Sn	18 33 48.3	+0.5
AKGG	**Akutan Green G**	**1.67**	**294**	P		Pn	18 33 31.8	+0.7
AKGG				S		Sn	18 33 52.4	+1.0
LVA	**Lava Point**	**1.68**	**293**	P		Pn	18 33 32.0	+0.7
AKRB	**Akutan Reef Bi**	**1.69**	**292**	P		Pn	18 33 32.0	+0.6
AKRB				S		Sn	18 33 52.6	+0.8
DTNA	**Dutton South F**	**1.75**	**22**	*e*Pn		Pn	18 33 32.8	+0.6
UNV	**Unalaska Valle**	**1.87**	**281**	*e*Pn		Pn	18 33 33.8	-0.1
UNV				*e*Sn		Sn	18 33 54.5	-1.7
MTBL	**Makushin Table**	**2.00**	**284**	*e*Pn		Pn	18 33 36.2	+0.6
PS4A	**Pavlof South-4**	**2.02**	**26**	P		Pn	18 33 36.9	+1.0
MSW	**Makushin Switc**	**2.05**	**282**	P		Pn	18 33 36.9	+0.6
MSW				S		Sn	18 34 01.8	+1.2
MCIR	**Makushin Cirqu**	**2.12**	**283**	P		Pn	18 33 38.0	+0.8
SDPT	**Sand Point**	**2.49**	**42**	*e*Pn		Pn	18 33 43.0	+0.7
OKTU	**Okmok Mt. Tuli**	**2.78**	**269**	P		Pn	18 33 47.8	+1.5
OKER	**Okmok East Rim**	**2.78**	**270**	P		Pn	18 33 47.9	+1.5
OKRE	**Okmok R'deer P**	**2.84**	**272**	P		Pn	18 33 48.7	+1.5
NIKH	**Nikolski High**	**3.33**	**262**	*e*Pn		Pn	18 33 53.4	-0.4
VNKR	**Veniaminof 5**	**3.42**	**41**	P		Pn	18 33 56.6	+1.5
OHAK	**Old Harbor**	**6.84**	**53**	*e*Pn		Pn	18 34 40.8	-1.1
KDAK	**Kodiak Island**	**7.45**	**51**	*e*Pn		Pn	18 34 49.4	-0.8

*NNC **29** 18:36:10.5±1.9,40.46N×71.98E,h1km±9km,mb3.7, mpv3.3,Error ellipse: s-maj=13.0km s-min=7.0km az=15.0*
*KRNET **29** 18:36:11.5±0.1,40.37N×71.98E,h35km,mb3.4*
*SOME **29** 18:36:13.8,40.57N×72.03E,h10km*
ISC 29 18:36:11.1±1.2,40.29N±0.04×72.07E±0.03,h10km±10km, n32,σ2.50/56,37C-12D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OHH	**Osh**	**0.60**	**67**	⇓*iP*		**Pg**	**18 36 24.5**	**+1.7**
	baz=75							
OHH				⇓*iS*		**Sb**	**18 36 33.8**	**+1.6**
	baz=75							
DRK	**Karamyk**	**0.83**	**194**	⇑*iP*		**Pg**	**18 36 27.8**	**+0.5**
	baz=189							
DRK				⇑*iS*		**Sb**	**18 36 40.4**	**+1.2**
	baz=189							
BTK	**Batken**	**0.98**	**257**	⇑*iP*		**Pg**	**18 36 27.8**	**-2.3**
	baz=251							
BTK				⇑*iS*		**Sg**	**18 36 41.5**	**-1.4**
	baz=251							
ARSB	**Arslanbob**	**1.25**	**34**	⇑*iP*		**Pg**	**18 36 32.2**	**-2.9**
	baz=38							
ARSB				⇑*iS*		**Sg**	**18 36 48.3**	**-3.0**
	baz=38							
ARK	**Arkit**	**1.51**	**357**	⇑*iP*		**Pn**	**18 36 35.8**	**-2.5**
	baz=0.0							
ARK				⇑*iS*		**Sn**	**18 36 54.6**	**-3.5**
	baz=0.0							
AML	**Almayashu**	**2.21**	**33**	⇑*eP*		**Pn**	**18 36 46.8**	**-1.4**
	baz=35							
AML				⇑*iS*		**Sn**	**18 37 14.2**	**-1.6**
	baz=35							
MNAS	**Manas**	**2.22**	**8**	⇓*iP*		**Pn**	**18 36 46.8**	**-1.3**
	baz=11							
MNAS				⇓*iS*		**Sn**	**18 37 12.4**	**-3.3**
	baz=11							
MNAS	**Manas**	**2.22**	**8**	⇓Pn		**Pn**	**18 36 46.3**	**-1.8**
	3.3nm,0.7s							
MNAS				⇓Pg		Pg	18 36 48.5	-5.2
	36nm,0.5s							
MNAS				⇓Lg		Lg	18 37 17.1	
	217nm,0.5s							
ARLS	**Aral**	**2.32**	**47**	⇑*iP*		**Pn**	**18 36 48.6**	**-0.9**
	baz=49							
ARLS				⇑*iS*		**Sn**	**18 37 16.2**	**-1.9**
	baz=49							
IUG	**Iuzhnay**	**2.41**	**321**	*eP*		**Pn**	**18 36 53.8**	**+3.1**
	110nm,0.3s							
IUG				*eS*		**Sn**	**18 37 22.3**	**+2.1**
	779nm,0.3s							
MRKS	**Merke**	**2.60**	**19**	*eP*		**Pn**	**18 36 57.1**	**+3.8**
	31nm,0.3s							
MRKS				*eS*		**Sn**	**18 37 27.9**	**+2.8**
	185nm,0.5s							
UCH	**Uchtor**	**2.67**	**43**	⇑*iP*		**Pn**	**18 36 53.9**	**-0.7**
	baz=45							
UCH				⇑*iS*		**Sn**	**18 37 25.2**	**-2.1**
	baz=45							
EKS2	**Erkin-Say**	**2.70**	**28**	⇓*iP*		**Pn**	**18 36 54.0**	**-0.6**
	baz=30							
EKS2				⇓*iS*		**Sn**	**18 37 26.1**	**-1.3**
	baz=30							
AAK	**Ala-Archa**	**2.97**	**37**	⇑*iP*		**Pn**	**18 36 57.7**	**-0.8**
	baz=39							
AAK				⇑*iS*		**Sn**	**18 37 32.5**	**-1.7**
	baz=39							
AAK	**Ala-Archa**	**2.97**	**37**	⇑Pg		**Pn**	**18 37 02.9**	**+4.4**
	7.1nm,0.3s							
AAK				⇑Lg		Lg	18 37 41.3	
	54nm,0.5s							
KZA	**Kyzart**	**3.00**	**52**	⇑*iP*		**Pn**	**18 36 57.5**	**-1.5**
	baz=54							
KZA				⇑*iS*		**Sn**	**18 37 32.9**	**-2.2**
	baz=54							
KK31	**Karatay Array**	**3.04**	**338**	⇑Pn		**Pn**	**18 36 57.2**	**-2.1**
	1.1nm,0.3s,baz=146,slow=11,SNR=294							
KK31				⇓Pg		Pg	18 37 03.3	-6.1
	12nm,0.5s,baz=166,slow=16,SNR=46							
KK31				⇑Lg		Lg	18 37 40.1	
	29nm,0.3s,baz=142,slow=28,SNR=13							
BRLS	**Borolday**	**3.07**	**325**	*eP*		**Pb**	**18 37 07.4**	**+1.6**
	21nm,0.3s							
BRLS				*eS*		**Sb**	**18 37 45.4**	**+2.1**
	114nm,0.3s							
KSH	**K

MNTX	Cornudas Mount	17.41	332	*e*Pn		P	18 53 58.4	+2.7
	10nm,1.6s							
MIAR	Mount Ida	18.04	6	*e*P		Pn	18 54 02.9	-0.2
	5.0nm,0.9s							
LRAL	Lakeview Retre	18.25	24	*e*P		P	18 54 04.7	-0.4
	7.0nm,1.1s							
WMOK	Wichita Mounta	18.31	352	*e*P		P	18 54 05.4	-0.3
	3.6nm,1.2s							
UALR	University of	18.42	9	*e*P		P	18 54 07.1	+0.2
	7.4nm,0.8s							
MSTX	Muleshoe	18.44	341	*e*P		Pn	18 54 07.8	-0.3
	13nm,1.5s							
X201	Greenbrier Sit	18.93	9	*e*P		P	18 54 12.5	+0.1
	15nm,1.2s							
WHAR	Wooly Hollow	18.93	9	*e*P		P	18 54 12.4	0.0
	8.4nm,1.0s							
AMTX	Amarillo	19.00	345	*e*P		Pn	18 54 14.0	-0.8
	4.3nm,0.8s							
BNM	Barren Site	20.04	333	*e*P		P	18 54 25.0	+0.2
LAZ	Ladron	20.48	332	*e*P		P	18 54 27.2	-2.3
X16A	Lo Mia Camp, P	22.65	325	*e*P		P	18 54 53.4	+0.7
	3.5nm,0.9s							
TZTN	Tazewell	22.70	26	*e*P		P	18 54 51.7	-1.5
	6.6nm,0.8s							
SDCO	Great Sand Dun	22.78	340	*e*P		P	18 54 54.5	+0.3
	2.0nm,1.0s							
113A	Mohawk Valley,	22.89	318	*e*P		P	18 54 55.0	-0.1
	5.2nm,0.6s							
OLIL	Olney	23.12	16	*e*P		P	18 54 55.8	-1.4
	14nm,0.6s							
KSCO	Kaye Shedlock'	23.16	346	*e*P		P	18 54 56.8	-1.0
	4.4nm,0.6s							
ISCO	Idaho Springs	24.69	342	*e*P		P	18 55 13.1	+1.2
	3.2nm,1.1s							
SDD	Santo Domingo	24.78	82	*e*P		P	18 55 14.4	+1.8
	580nm,1.5s							
SFIN	Lafayette	24.93	16	*e*P		P	18 55 12.6	-1.1
	14nm,0.6s							
PFO	Pinyon Flats O	25.18	316	*e*P		P	18 55 17.8	+1.6
	4.1nm,1.0s							
LCMT	Little Creek M	25.56	326	*e*P		P	18 55 19.1	-0.6
	1.4nm,0.8s							
K22A	Casper	27.58	343	*e*P		P	18 55 37.9	+0.1
	15nm,1.4s							
BW06	Boulder Array	28.65	339	*e*P		P	18 55 48.2	+0.8
PDAR	Pinedale Array	28.65	339	P		P	18 55 48.8	+1.4
	0.2nm,0.5s,baz=147,slow=9.5,SNR=3.9							
YKA	Yellowknife Ar	47.76	348	P		P	18 58 26.8	-0.1
	0.4nm,0.5s,baz=152,slow=7.7,SNR=4.7							
ILAR	Eielson Array	59.06	337	P		P	18 59 50.7	+1.0
	0.4nm,0.5s,baz=136,slow=6.2,SNR=6.8							

IDC 29 18:58:38.0±2.1, 27.49N×139.38E, h540km±29km, mb3.0/5, mb1 3.1/6, mb1mx2.6/58, mbtmp4.0/6, Error ellipse: s-maj=67.5km s-min=18.8km az=78.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	Hachijo jima 2	5.62	3	P	P	19 00 12.6	+0.1
	3.6nm,0.3s,baz=218,slow=16,SNR=2.6						
WRA	Warramunga Arr	47.41	186	P	P	19 06 23.6	-0.1
	0.5nm,0.4s,baz=6.9,slow=7.9,SNR=9.0						
KURBB	Kurchatov Arra	50.98	314	P	P	19 06 49.2	-0.5
	0.4nm,0.3s,baz=94,slow=8.5,SNR=3.9						
BVAR	Borovoye Array	56.06	317	P	P	19 07 25.8	+0.1
	0.8nm,0.4s,baz=98,slow=7.3,SNR=11						
ARCES	ARCESS Array B	72.34	340	P	P	19 09 08.6	-0.1
	1.0nm,0.7s,baz=57,slow=8.7,SNR=2.6						
FINES	FINESS Array B	76.48	333	P	P	19 09 32.4	+0.3
	0.7nm,0.6s,baz=72,slow=6.2,SNR=4.5						

*ISCJB **29** 19:03:54.2±0.3, 5.82S×103.03E×97.6E±0.05, h78km, mb4.6/46, Error ellipse: s-maj=7.4km s-min=4.7km az=178.9*

*IDC **29** 19:03:57.1±1.9, 5.82S×147.11E, h96km±16km, mb3.8/14, mb1 4.1/17, mb1mx3.9/34, mbtmp4.3/17, MS3.0/4, Ms1 3.0/4, ms1mx2.8/21, Error ellipse: s-maj=19.4km s-min=10.3km az=69.0*

*NEIC **29** 19:03:58.0±0.4, 5.89S×147.01E, h103km±4km, mb4.9/38, Error ellipse: s-maj=5.5km s-min=4.1km az=99.0*

ISC 29 19:03:55.9±0.4, 5.87S±0.05×147.03E±0.06, h78km, n77, σ1§45/82, mb4.8/46, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	Port Moresby	3.52	178	P	Pn	19 04 49.3	+1.1
	172nm,0.3s,baz=350,slow=6.0,SNR=785						
PMG				S	Sn	19 05 31.8	+3.0
	129nm,0.3s,baz=27,slow=7.9,SNR=5.8						
PMG	Port Moresby	3.52	178	*e*Pn	Pn	19 04 49.3	+1.1
PMG				*e*Sn	Sn	19 05 26.5	-2.2
PMG				S	Sn	19 05 31.8	+3.0
MANU	Manus Island	3.81	5	*e*Pn	Pn	19 04 56.4	+4.1
RABL	Rabaul	5.38	72	*e*Pn	Pn	19 05 17.1	+3.4
JAY	Jayapura	7.13	298	P	Pn	19 05 40.4	+2.7
	0.3nm,0.3s,baz=96,slow=22,SNR=13						
JAY				S	Sn	19 07 02.0	+4.7
	0.1nm,0.3s,baz=90,slow=20,SNR=2.1						
COEN	Coen	8.89	205	*e*Pn	Pn	19 06 02.8	+1.1
COEN				*e*Sn	Sn	19 07 30.8	-9.4
HNR	Honiara	13.28	106	*e*Pn	Pn	19 07 02.5	+1.2
CTA	Charters Tower	14.15	183	P	P	19 07 15.7	-2.3
	1.4nm,0.3s,baz=354,slow=13,SNR=13						
MTN	Manton Dam	17.14	245	*e*Pn	P	19 07 50.8	-0.3
	10nm,0.6s						
WRAB	Tennant Creek	18.64	220	*e*P	P	19 08 07.5	0.0
	29nm,0.6s						
WB2	Warramunga Arr	18.65	220	*e*P	P	19 08 07.1	-0.5
WR1	Warramunga Arr	18.65	220	*e*P	P	19 08 07.9	+0.2
	28nm,0.6s						
WR1				*e*PcP	PcP	19 12 33.0	-0.5
WRA	Warramunga Arr	18.65	220	P	P	19 08 07.9	+0.2
	4.2nm,0.3s,baz=42,slow=12,SNR=60						
WRA				PcP	PcP	19 12 33.0	-0.5
	0.2nm,0.3s,baz=30,slow=1.8,SNR=5.5						
GUMO	Guam	19.45	354	LR	LR	19 14 10.5	
	comp=Z,73nm,21.2s,baz=128,slow=32						
GUMO	Guam	19.45	354	*e*P	Pn	19 08 18.2	-0.1
	188nm,1.4s						
GUMO				*e*		19 14 10.6	
EIDS	Eidsvold	19.77	169	*e*P	P	19 08 19.4	-0.4
	16nm,0.8s						
AS01	Alice Springs	21.72	214	*e*P	P	19 08 40.7	-0.1
AS31	Alice Springs	21.74	214	*e*P	P	19 08 41.6	+0.6
	13nm,0.3s						
ASAR	Alice Springs	21.74	214	P	P	19 08 41.2	+0.1
	12nm,0.4s,baz=53,slow=8.8,SNR=82						
ASAR				PcP	PcP	19 12 37.5	-1.7
	1.5nm,0.8s,baz=106,slow=1.7,SNR=4.9						
SOEI	Soe	22.88	259	*e*P	P	19 08 54.1	+0.8
	42nm,1.0s						
FITZ	Fitzroy Crossi	24.16	238	P	P	19 09 05.0	0.0
	19nm,0.5s,baz=49,slow=7.9,SNR=83						
FITZ	Fitzroy Crossi	24.16	238	*e*P	P	19 09 05.9	+0.9
	21nm,0.5s						
DZM	Mont Dzumac	24.73	133	P	P	19 09 10.5	+0.2
	7.6nm,0.9s,baz=311,slow=24,SNR=6.2						
DZM	Mont Dzumac	24.73	133	*e*P	P	19 09 09.4	-0.9
	80nm,1.9s						
MMRI	Maumere	24.75	262	*e*P	P	19 09 11.4	+1.1
	77nm,1.3s						
ARMA	Armidale	24.80	170	*e*P	P	19 09 11.7	+0.8
	8.0nm,0.6s						
STKA	Stephens Creek	26.37	190	P	P	19 09 24.9	0.0
	3.0nm,0.4s,baz=13,slow=7.9,SNR=17						
STKA				LR	LR	19 19 56.9	
	comp=Z,59nm,18.3s,baz=26,slow=36						
STKA	Stephens Creek	26.37	190	*e*P	P	19 09 25.2	+0.3
	1.8nm,1.1s						
KAPI	Kappang	27.17	270	*e*P	P	19 09 30.4	-1.9
	67nm,1.9s						
BBOO	Buckleboo	28.69	200	*e*P	P	19 09 46.0	+0.4
	74nm,1.8s						
CAN	Canberra	29.37	177	*e*P	P	19 09 52.5	+0.9
	34nm,1.9s						
MBWA	Marble Bar	30.50	237	*e*P	P	19 10 01.2	-0.6
	14nm,1.2s						
JAGI	Jajag, Banyuwa	32.72	264	*e*P	P	19 10 19.6	-1.8
	126nm,1.6s						
JOW	Kunigami	37.24	332	*e*P	P	19 11 00.9	+0.8
	25nm,1.2s						
YULB	Yu-li	38.44	320	*e*P	P	19 11 09.8	-0.5
	37nm,1.6s						
NWAO	Narrogin (SRO)	38.65	222	P	P	19 11 12.9	+1.0
	4.3nm,0.6s,baz=27,slow=16,SNR=3.9						
TPUB	Ta-pu	38.80	319	*e*P	P	19 11 11.8	-1.6
	89nm,1.9s						
SSLB	Suanglung	38.94	320	*e*P	P	19 11 14.1	-0.4
	55nm,1.8s						
CISI	Cisompet, Garu	38.98	265	*e*P	P	19 11 14.5	-0.5
	64nm,1.2s						
YHNB	Yeheng	39.31	322	*e*P	P	19 11 17.0	-0.6
	125nm,1.7s						
JNU	Nakatsue	41.70	339	P	P	19 11 36.6	-0.5
	3.3nm,0.8s,baz=129,slow=3.3,SNR=4.1						
BKZ	Black Stump Fm	42.50	146	*e*P	P	19 11 43.5	-0.2
	99nm,1.8s						
MAJO	Matsushiro	42.99	350	*e*P	P	19 11 48.1	+0.5
	4.6nm,0.8s						
MJB9	Matsu-Tunnel	42.99	350	*e*P	P	19 11 48.1	+0.5
	1.2nm,0.8s						
BFZ	Birch Farm	43.42	147	*e*P	P	19 11 51.4	+0.4
	141nm,1.5s						
BKNI	Bangkinang	46.32	276	*e*P	P	19 12 17.5	+3.0
	95nm,0.5s						
KSRS	Korea Array	46.64	339	P	P	19 12 15.9	-0.5
	1.5nm,0.8s,baz=154,slow=9.1,SNR=3.4						
KSRS				LR	LR	19 29 21.2	
	comp=Z,9.7nm,22.0s,baz=0.0,slow=33						
KSAR	Wonju Array Be	46.65	339	P	P	19 12 15.9	-0.6
IPM	Ipoh	47.08	282	*e*P	P	19 12 19.6	-0.7
	56nm,1.6s						
INCN	Inchon	47.14	338	*e*P	P	19 12 22.1	+1.6
	48nm,1.7s						
KULM	Kulim	47.62	283	*e*P	P	19 12 24.3	-0.3
	109nm,2.0s						
GSI	Gunungsitoli	49.89	277	*e*P	P	19 12 41.0	-1.1
	58nm,1.7s						
YSS	Yuzh-Sakhalins	52.73	356	*e*P	P	19 13 02.5	-0.1
	18nm,1.1s						
CMAR	Chiang Mai Arr	53.22	298	P	P	19 13 06.1	-0.6
	0.4nm,0.7s,baz=119,slow=5.5,SNR=3.8						
SMY	Shemya	62.73	18	*e*P	P	19 14 12.7	+0.1
	210nm,1.9s						
LSA	Lhasa	64.19	307	*e*P	P	19 14 22.4	-0.8
	12nm,1.8s						
SONA0	Songino Array	64.31	331	*e*P	P	19 14 22.7	-0.5
	8.2nm,1.8s						
SONM	Songino Array	64.31	331	P	P	19 14 22.7	-0.5
	0.5nm,0.7s,baz=148,slow=6.2,SNR=5.6						
SONM				LR	LR	19 43 15.6	
	comp=Z,9.9nm,19.1s,baz=110,slow=37						
SONA1	Songino Array	64.31	331	*e*P	P	19 14 22.9	-0.4
CASY	Casey	65.39	195	*e*P	P	19 14 29.9	0.0
	14nm,2.0s						
SEY	Seymchan	68.73	3	P	P	19 14 50.8	-0.2
	1.5nm,0.7s,baz=186,slow=4.9,SNR=5.0						
VNDA	Vanda	72.04	177	P	P	19 15 11.8	+0.7
	0.5nm,0.6s,baz=333,slow=7.3,SNR=5.4						
MK32	Makanchi Array	77.42	320	*e*P	P	19 15 41.4	-1.3
MKAR	Makanchi Array	77.42	320	P	P	19 15 41.4	-1.3
	0.2nm,0.4s,baz=98,slow=7.7,SNR=3.7						
ZALV	Zalesovo Beam	78.92	328	P	P	19 15 48.8	-1.9
	0.5nm,0.3s,baz=113,slow=5.1,SNR=2.7						
ZAA1	Zalesovo Array	78.92	328	*e*P	P	19 15 48.8	-1.9
TRF	Thorofare Moun	83.43	24	*e*P	P	19 16 14.5	-0.2
	9.8nm,1.5s						
SCM	Sheep Creek Mo	83.96	26	*e*P	P	19 16 16.9	-0.4
	20nm,1.7s						
RND	Reindeer	83.99	24	*e*P	P	19 16 16.1	-1.3
	2.4nm,0.7s						
QSPA	South Pole Qui	84.10	180	*e*pP	pP	19 16 42.9	+3.8
ILAR	Eielson Array	85.35	23	P	P	19 16 21.6	-2.6
	2.1nm,0.6s,baz=253,slow=5.0,SNR=19						
ILB	Eielson Array	85.35	23	*e*P	P	19 16 21.8	-2.4
PLCA	Paso Flores	122.21	147	PKP	PKPdf	19 22 41.6	-0.7
	1.8nm,0.7s,baz=245,slow=1.6,SNR=6.8						
TOA0	Torodi Ar. Sit	145.09	285	*e*PKPbc	PKPbc	19 23 23.4	-1.6
TORD	Torodi Ar. Bea	145.09	285	PKPbc	PKPbc	19 23 23.2	-1.8
	1.2nm,0.6s,baz=99,slow=3.4,SNR=15						
TOA1	Torodi Ar. Sit	145.09	285	*e*PKPbc	PKPbc	19 23 23.2	-1.8
DBIC	Dimbokro	152.05	273	PKPbc	PKPbc	19 23 41.9	-1.4
	2.9nm,0.8s,baz=98,slow=3.8,SNR=4.5						

ROM 29 19:11:51.8±0.5, 43.35N×12.73E, h9km±1km, Md1.7/3, Ml0.8/3, Error ellipse: s-maj=3.5km s-min=2.1km az=61.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MURB	Monte Urbino	0.17	241	Pg	Pg	19 11 55.7	+0.2
MURB				Sg	Sg	19 11 59.3	+1.3
	86nm,0.3s						
ATCC	AVT- Casa Cast	0.18	203	Pg	Pg	19 11 56.3	+0.8
ATCC				Sg	Sg	19 11 59.3	+1.3
	18nm,0.3s						
ATVO	AVT- Monte Val	0.24	278	Pg	Pg	19 11 57.6	+0.9
ATVO				Sg	Sg	19 12 01.5	+1.6
	21nm,1.5s						

*THE **29** 19:12:07.7, 38.33N×21.76E, h0km±1km, ML3.5/6, Error ellipse: s-maj=1.2km s-min=0.4km az=253.0*

*ISCJB **29** 19:12:07.5±0.2, 38.35N±0.01×21.73E±0.01, h10km±1km, mb4.3/25, MS3.1/6, Error ellipse: s-maj=2.0km s-min=1.6km az=34.5*

*IDC **29** 19:12:07.7±0.8, 38.41N×21.77E, h0km, mb4.1/14, mb1 4.1/19, mb1mx4.0/38, mbtmp4.0/19, ML3.4/5, MS3.2/7, Ms1 3.2/7, ms1mx2.7/56, Error ellipse: s-maj=17.1km s-min=13.2km az=50.0*

*IASPEI **29** 19:12:07.8±0.8, 38.33N±0.02×21.77E±0.01, h7km±5km, mb4.5/25, MS3.2/6, Error ellipse: s-maj=2.2km s-min=2.1km az=165.0, GT5 selection from ISC bulletin GT5 identified by Bond˜jr and McLaughlin (2009) selection criteria Bond˜jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*

*PDG **29** 19:12:07.8±0.5, 38.32N×21.77E, h12km, ML3.8/10, Error ellipse: s-maj=0.7km s-min=0.8km az=0.0*

*ATH **29** 19:12:07.6, 38.32N×21.79E, h17km, ML3.5/29, Error ellipse: s-maj=0.8km s-min=0.4km az=198.0*

*CSEM **29** 19:12:07.9±0.1, 38.32N×21.77E, h5km, mb4.6/12, Error ellipse: s-maj=2.2km s-min=1.7km az=41.0*

*NEIC **29** 19:12:10.2±1.2, 38.49N×21.81E, h14km±7km, mb4.5/13, Error ellipse: s-maj=5.3km s-min=3.9km az=200.0*

ISC 29 19:12:08.3±0.7, 38.33N±0.01×21.77E±0.01, h9km±4km, n422, σ1§31/545, mb4.5/25, MS3.2/6, 30C-11D, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UPR	University Cam	0.05	164	P	Pg	19 12 09.3	-0.8
UPR				S	Sg	19 12 10.5	-0.9
UPR	University Cam	0.05	164	P	Pg	19 12 09.3	-0.8
UPR				S	Sg	19 12 10.5	-0.9
UPR	University Cam	0.05	164	P	Pg	19 12 08.9	-1.2
LAKA	Lakka	0.19	119	P	Pg	19 12 12.1	-0.1
LAKA	Lakka	0.19	119	P	Pg	19 12 11.7	-0.5
LAKA				S	Sg	19 12 14.4	-0.5
LAKA	Lakka	0.19	119	P	Pg	19 12 11.7	-0.5
LAKA				S	Sg	19 12 14.4	-0.5
LAKA				AML	AML	19 12 15.8	
	comp=E,35914µm,0.4s						
LAKA				AML	AML	19 12 20.1	
	comp=N,25077µm,0.7s						
SERG	Sergoula	0.24	70	P	Pg	19 12 13.5	+0.3
SERG				S	Sg	19 12 18.1	+1.7
TRIZ	Trizonia	0.24	82	P	Pg	19 12 13.6	+0.5
TRIZ				S	Sg	19 12 17.4	+1.0
KALE	Kalithea	0.30	79	P	Pg	19 12 13.9	-0.3
KALE				S	Sg	19 12 18.9	+0.7
KALE	Kalithea	0.30	79	P	Pg	19 12 13.9	-0.3
KALE				S	Sg	19 12 18.9	+0.7
KALE	Kalithea	0.30	79	P	Pg	19 12 14.6	+0.3
KALE				S	Sb	19 12 19.6	-1.3
KALE				AML	AML	19 12 20.1	
	comp=N,21505µm,0.2s						
KALE				AML	AML	19 12 24.0	
	comp=E,22400µm,0.3s						
AXS	Araxos	0.34	246	P	Pg	19 12 14.4	-0.5
AXS				S	Sg	19 12 18.8	-0.6
AXS	Araxos	0.34	246	P	Pg	19 12 14.4	-0.5
AXS				S	Sg	19 12 18.8	-0.6
AXS	Araxos	0.34	246	P	Pg	19 12 14.2	-0.7
AXS				S	Sg	19 12 18.0	-1.4
PVO	Paravola	0.34	326	P	Pg	19 12 14.5	-0.5
PVO				S	Sg	19 12 19.5	-0.1
PVO	Paravola	0.34	326	P	Pg	19 12 14.7	-0.3
PVO				S	Sg	19 12 19.5	-0.1
PVO	Paravola	0.34	326	P	Pg	19 12 14.7	-0.3
PVO				S	Sb	19 12 22.9	+0.8
RLS	Riolos of Patr	0.36	221	P	Pg	19 12 14.8	-0.6
RLS				S	Sg	19 12 19.8	-0.4
RLS	Riolos of Patr	0.36	221	P	Pg	19 12 15.0	-0.4
RLS				S	Sg	19 12 19.8	-0.4
RLS	Riolos of Patr	0.36	221	S	Sb	19 12 21.4	-1.3
RLS				AML	AML	19 12 26.1	
	comp=N,24566µm,0.4s						
RLS				AML	AML	19 12 27.8	
	comp=E,36426µm,0.7s						
DRO	Drossia	0.38	187	P	Pg	19 12 15.0	-0.8
DRO				S	Sg	19 12 21.1	+0.3
DRO	Drossia	0.38	187	P	Pg	19 12 15.0	-0.8
DRO				S	Sg	19 12 21.1	+0.3
DRO	Drossia	0.38	187	P	Pg	19 12 15.4	-0.4
DRO				S	Sg	19 12 21.8	+0.9
DRO				AML	AML	19 12 26.6	
	comp=E,60093µm,0.5s						
DRO				AML	AML	19 12 27.8	
	comp=N,49582µm,0.4s						
KLV	Kalavryta, Ach	0.42	134	P	Pg	19 12 15.6	-0.8
KLV				S	Sg	19 12 22.5	+0.5
KLV	Kalavryta, Ach	0.42	134	P	Pg	19 12 15.6	-0.8
KLV				S	Sg	19 12 22.4	+0.5
KLV	Kalavryta, Ach	0.42	134	P	Pg	19 12 16.0	-0.5
KLV				S	Sg	19 12 22.4	+0.4
KLV				AML	AML	19 12 28.9	
	comp=N,6930µm,0.8s						
KLV				AML	AML	19 12 29.9	
	comp=E,6146µm,0.6s						
PDO	Prodromos	0.53	300	P	Pg	19 12 17.5	-1.1
PDO				S	Sg	19 12 25.7	+0.2
PDO	Prodromos	0.53	300	P	Pg	19 12 17.5	-1.1
PDO				S	Sg	19 12 25.7	+0.2
PDO	Prodromos	0.53	300	P	Pg	19 12 16.6	-1.9
PDO				S	Sg	19 12 26.3	+0.8
PDO				AML	AML	19 12 29.5	
	comp=N,23452µm,0.3s						
PDO				AML	AML	19 12 31.9	
	comp=E,18029µm,0.3s						
EVR	Evrytania	0.58	3	P	Pg	19 12 18.7	-0.9
EVR				S	Sg	19 12 28.1	+0.8
EVR	Evrytania	0.58	3	P	Pg	19 12 19.3	-0.3
EVR				S	Sg	19 12 27.7	+0.4
EVR	Evrytania	0.58	3	P	Pg	19 12 19.3	-0.3
EVR				S	Sg	19 12 27.7	+0.4
EVR				AML	AML	19 12 38.9	
	comp=N,13403µm,0.9s						
DSF	Desfina	0.60	82	P	Pg	19 12 19.2	-0.7
DSF				S	Sg	19 12 28.4	+0.6
DSF	Desfina	0.60	82	P	Pg	19 12 19.2	-0.7
DSF				S	Sg	19 12 26.6	-1.2
DSF	Desfina	0.60	82	P	Pg	19 12 19.0	-1.0
DSF				S	Sg	19 12 26.6	-1.2
DSF				AML	AML	19 12 35.8	
	comp=N,7652µm,0.5s						
DSF				AML	AML	19 12 37.2	
	comp=E,5878µm,0.3s						
VTN	Vitineika	0.62	228	P	Pg	19 12 20.2	0.0
VTN				S	Sg	19 12 27.3	-1.0
VTN	Vitineika	0.62	228	P	Pg	19 12 20.2	0.0
VTN				S	Sg	19 12 27.3	-1.0
THAL	Thalero	0.77	112	P	Pg	19 12 22.0	-1.0
THAL				S	Sg	19 12 33.0	0.0
THAL	Thalero	0.77	112	P	Pg	19 12 22.0	-1.0
THAL				S	Sg	19 12 32.8	-0.1
THAL	Thalero	0.77	112	P	Pg	19 12 22.6	-0.4
THAL				S	Sg	19 12 32.8	-0.1
THAL				AML	AML	19 12 39.9	
	comp=E,9863µm,0.2s						
THAL				AML	AML	19 12 56.0	
	comp=N,8485µm,0.6s						
AMT	Artemida-Makis	0.80	183	P	Pg	19 12 22.6	-1.1
AMT				S	Sb	19 12 34.8	-0.5
AMT	Artemida-Makis	0.80	183	P	Pg	19 12 23.1	-0.6
AMT				S	Sb	19 12 34.8	-0.5
AMT	Artemida-Makis	0.80	183	P	Pg	19 12 23.1	-0.6
AMT				S	Sb	19 12 35.7	+0.4
AMT				AML	AML	19 12 47.8	
	comp=N,16778µm,0.8s						
AMT				AML	AML	19 12 50.6	
	comp=E,13305µm,0.8s						
KFL	Anninata	0.80	254	P	Pg	19 12 22.8	-0.9
KFL	Anninata	0.80	254	P	Pg	19 12 23.8	0.0
KFL	Anninata	0.80	254	P	Pg	19 12 23.8	0.0
AGG	Agios Georgios	0.82	32	P	Pg	19 12 23.2	-0.8
AGG				S	Sg	19 12 34.0	+0.2
AGG	Agios Georgios	0.82	32	P	Pg	19 12 23.2	-0.8
AGG				S	Sg	19 12 34.3	-0.4
AGG	Agios Georgios	0.82	32	*e*Pg	Pg	19 12 23.1	-0.9
AGG	Agios Georgios	0.82	32	P	Pg	19 12 22.8	-1.2
AGG				S	Sg	19 12 34.3	-0.4
AGG				AML	AML	19 12 43.0	
	comp=N,11866µm,0.8s						
AGG				AML	AML	19 12 46.1	
	comp=E,13912µm,0.9s						
PROD	Prodromos	0.89	94	P	Pg	19 12 24.2	-1.3
PROD	Prodromos	0.89	94	P	Pg	19 12 24.2	-1.3
TRIP	Tripoli	0.90	154	P	Pg	19 12 24.7	-0.8
TRIP				S	Sg	19 12 35.8	-1.4
TRIP	Tripoli	0.90	154	P	Pg	19 12 24.7	-0.8
TRIP				S	Sg	19 12 35.8	-1.4
TRIP				AML	AML	19 12 41.3	
	comp=N,4404µm,0.7s						
TRIP				AML	AML	19 12 43.1	
	comp=E,5587µm,0.7s						
VLS	Valsamata	0.94	261	P	Pg	19 12 24.6	-1.8
VLS	Valsamata	0.94	261	P	Pg	19 12 24.6	-1.8
VLS				S	Sb	19 12 39.3	-0.1
DSL	Palaion Diasel	0.96	327	P	Pg	19 12 25.1	-1.6
DSL	Palaion Diasel	0.96	327	P	Pg	19 12 25.5	-1.2
DSL	Palaion Diasel	0.96	327	P	Pg	19 12 25.5	-1.2
DSL				AML	AML	19 12 49.0	
	comp=E,7674µm,0.8s						
DSL				AML	AML	19 12 51.9	
	comp=N,6766µm,0.7s						
LKD2	Lefkada island	0.98	298	P	Pg	19 12 25.5	-1.7
LKD2	Lefkada island	0.98	298	P	Pg	19 12 25.5	-1.7
LKD2				S	Sg	19 12 40.0	+0.1
LKD2	Lefkada island	0.98	298	P	Pg	19 12 25.5	-1.7
LKD2				S	Sg

ATAL				AML	AML	19 12 45.6	
	comp=E,3027µm,0.9s						
VLX	Vlachokerasia	1.08	153	P	Pg	19 12 27.7	-1.2
VLX				S	Sn	19 12 44.6	-0.1
VLX	Vlachokerasia	1.08	153	P	Pg	19 12 27.7	-1.2
VLX				S	Sg	19 12 42.6	-0.3
VLX	Vlachokerasia	1.08	153	P	Pg	19 12 27.5	-1.4
VLX				S	Sg	19 12 42.6	-0.3
VLX				AML	AML	19 12 51.3	
	comp=E,6147µm,0.7s						
VLX				AML	AML	19 12 51.8	
	comp=N,5576µm,0.5s						
ITM	Ithomi	1.16	174	P	Pb	19 12 29.6	-0.8
ITM	Ithomi	1.16	174	P	Pb	19 12 29.7	-0.8
ITM				S	Sb	19 12 44.1	-1.5
ITM	Ithomi	1.16	174	P	Pb	19 12 29.7	-0.8
ITM				S	Sb	19 12 44.1	-1.5
ITM				AML	AML	19 12 56.7	
	comp=N,4238µm,0.5s						
ITM				AML	AML	19 13 03.5	
	comp=E,4279µm,0.8s						
VIL2	Platees	1.19	95	P	Pg	19 12 31.1	+0.1
VIL2				S	Sb	19 12 46.4	-0.1
VIL2				AML	AML	19 12 55.6	
	comp=E,3980µm,0.7s						
VIL2				AML	AML	19 13 02.0	
	comp=N,6337µm,1.3s						
VILL	Villia	1.23	97	P	Pn	19 12 30.9	-0.8
VILL				S	Sn	19 12 48.9	+0.5
VILL	Villia	1.23	97	P	Pn	19 12 31.1	-0.6
VILL				S	Sb	19 12 46.4	-1.3
THL	Klokotos Trika	1.25	9	P	Pn	19 12 30.5	-1.4
THL	Klokotos Trika	1.25	9	P	Pg	19 12 32.1	-0.1
THL				S	Sb	19 12 46.7	-1.4
SMIA	Simia	1.25	64	P	Pg	19 12 32.9	+0.6
SMIA				S	Sn	19 12 49.7	+0.6
SMIA	Simia	1.25	64	P	Pg	19 12 32.9	+0.6
SMIA				S	Sn	19 12 49.6	+0.6
FYTO	Fytoko, Volos	1.41	40	P	Pg	19 12 35.1	-0.2
FYTO	Fytoko, Volos	1.41	40	P	Pg	19 12 35.1	-0.2
DID	Didima	1.43	125	P	Pn	19 12 34.1	-0.3
DID	Didima	1.43	125	P	Pn	19 12 34.1	-0.3
DID	Didima	1.43	125	P	Pn	19 12 33.6	-0.8
PYL	PYLOS	1.44	181	P	Pn	19 12 33.9	-0.6
PYL				S	Sg	19 12 55.5	+1.1
PYL	PYLOS	1.44	181	P	Pn	19 12 34.2	-0.3
PYL				S	Sg	19 12 54.3	-0.1
PYL	PYLOS	1.44	181	P	Pn	19 12 34.2	-0.3
PYL				S	Sg	19 12 54.3	-0.1
PYL				AML	AML	19 13 08.1	
	comp=N,2408µm,1.0s						
PYL				AML	AML	19 13 09.4	
	comp=E,3622µm,0.9s						
NEO	Neokhori	1.50	49	P	Pn	19 12 35.3	-0.1
NEO	Neokhori	1.50	49	P	Pn	19 12 35.3	-0.1
NEO				S	Sg	19 12 56.1	-0.3
NEO	Neokhori	1.50	49	P	Pn	19 12 35.5	+0.1
NEO				S	Sg	19 12 56.1	-0.3
XOR	Xorichti	1.52	47	P	Pn	19 12 35.3	-0.3
XOR	Xorichti	1.52	47	P	Pn	19 12 35.6	0.0
XOR				S	Sn	19 12 55.4	-0.1
XOR	Xorichti	1.52	47	P	Pn	19 12 35.6	0.0
XOR				S	Sn	19 12 55.4	-0.1
SKIA	Skiathos	1.57	57	P	Pn	19 12 36.4	+0.1
SKIA	Skiathos	1.57	57	P	Pn	19 12 36.4	+0.1
SKIA				S	Sn	19 12 56.6	-0.2
SKIA	Skiathos	1.57	57	P	Pn	19 12 36.6	+0.3
SKIA				S	Sn	19 12 56.6	-0.2
SKIA				AML	AML	19 13 08.5	
	comp=N,1484µm,0.8s						
SKIA				AML	AML	19 13 10.1	
	comp=E,908µm,0.7s						
ATH	Athens Observa	1.58	103	P	Pn	19 12 36.0	-0.4
ATH	Athens Observa	1.58	103	P	Pn	19 12 36.3	-0.1
ATHU	Athens Univers	1.63	102	P	Pn	19 12 36.6	-0.6
ATHU				S	Sb	19 12 59.0	-0.2
ATHU	Athens Univers	1.63	102	P	Pn	19 12 37.1	-0.1
ATHU				S	Sb	19 12 58.8	-0.4
ATHU	Athens Univers	1.63	102	P	Pn	19 12 37.1	-0.1
ATHU				S	Sb	19 12 58.9	-0.4
IGT	Igoumenitsa	1.64	317	P	Pn	19 12 37.9	+0.6
IGT	Igoumenitsa	1.64	317	P	Pn	19 12 37.9	+0.6
IGT	Igoumenitsa	1.64	317	P	Pb	19 12 38.7	0.0
IGT				AML	AML	19 13 16.1	
	comp=E,1446µm,0.8s						
IGT				AML	AML	19 13 19.4	
	comp=N,1514µm,0.8s						
KPRO	Kipourio	1.65	349	P	Pg	19 12 40.2	+0.3
KPRO	Kipourio	1.65	349	P	Pg	19 12 40.2	+0.3
VLY	Voula,Athens	1.67	106	P	Pn	19 12 37.2	-0.5
VLY				S	Sb	19 13 00.0	-0.3
VLY	Voula,Athens	1.67	106	P	Pn	19 12 37.2	-0.5
VLY				S	Sb	19 13 00.0	-0.3
VLY	Voula,Athens	1.67	106	P	Pn	19 12 37.0	-0.7
VLY				AML	AML	19 13 10.7	
	comp=N,1816µm,0.7s						
VLY				AML	AML	19 13 17.1	
	comp=E,1755µm,0.5s						
PTL	Penteli	1.68	99	P	Pn	19 12 37.8	0.0
PTL				S	Sg	19 13 01.8	-0.4
PTL	Penteli	1.68	99	P	Pn	19 12 37.8	0.0
PTL				S	Sb	19 13 00.7	+0.1
PTL	Penteli	1.68	99	P	Pn	19 12 37.8	0.0
PTL				S	Sb	19 13 00.7	+0.1
PTL				AML	AML	19 13 07.2	
	comp=E,1538µm,0.7s						
PTL				AML	AML	19 13 12.0	
	comp=N,1666µm,0.8s						
EREA	Eretria	1.70	86	P	Pn	19 12 37.7	-0.5
EREA	Eretria	1.70	86	P	Pn	19 12 37.7	-0.5
EREA				S	Sb	19 13 01.9	+0.6
EREA	Eretria	1.70	86	P	Pn	19 12 38.7	+0.5
EREA				S	Sb	19 13 01.9	+0.6
EREA				AML	AML	19 13 09.3	
	comp=E,1761µm,1.0s						
EREA				AML	AML	19 13 15.3	
	comp=N,1122µm,0.9s						
SGD	Sagiada	1.75	317	P	Pg	19 12 41.4	-0.4
SGD	Sagiada	1.75	317	P	Pg	19 12 41.4	-0.4
AOS	Alonnisos	1.85	62	P	Pn	19 12 39.5	-0.7
AOS	Alonnisos	1.85	62	P	Pn	19 12 39.5	-0.7
AOS	Alonnisos	1.85	62	P	Pn	19 12 38.9	-1.3
AOS				AML	AML	19 13 16.5	
	comp=E,870µm,0.9s						
AOS				AML	AML	19 13 19.3	
	comp=N,840µm,0.7s						
LIT	Litokhoron	1.85	17	P	Pn	19 12 40.2	-0.1
LIT	Litokhoron	1.85	17	P	Pn	19 12 40.2	-0.1
LIT	Litokhoron	1.85	17	P	Pb	19 12 41.3	-1.0
VLI	Veliai	1.86	150	P	Pn	19 12 40.1	-0.2
VLI	Veliai	1.86	150	P	Pn	19 12 40.1	-0.2
VLI	Veliai	1.86	150	P	Pn	19 12 39.8	-0.5
VLI				AML	AML	19 13 17.7	
	comp=E,2843µm,1.5s						
VLI				AML	AML	19 13 20.5	
	comp=N,3256µm,1.0s						
PENT	Pentalofos	1.92	345	P	Pg	19 12 44.8	-0.4
KEK	Kerkira	2.06	313	P	Pn	19 12 43.5	+0.4
KEK	Kerkira	2.06	313	P	Pn	19 12 43.5	+0.4
PAIG	Paliouri	2.18	42	P	Pn	19 12 44.2	-0.5
PAIG	Paliouri	2.18	42	P	Pn	19 12 44.2	-0.5
PAIG	Paliouri	2.18	42	P	Pn	19 12 43.8	-0.9
KYTH	Kithira	2.30	153	P	Pn	19 12 46.2	-0.2
KYTH	Kithira	2.30	153	P	Pn	19 12 46.2	-0.2
KYTH	Kithira	2.30	153	P	Pb	19 12 48.8	-1.2
PLG	Polygyros	2.42	32	P	Pn	19 12 47.9	-0.1
PLG	Polygyros	2.42	32	P	Pn	19 12 48.3	+0.3
PLG	Polygyros	2.42	32	P	Pn	19 12 48.4	+0.3
SERI	Serifos	2.45	118	P	Pn	19 12 47.6	-0.9
SERI	Serifos	2.45	118	P	Pn	19 12 47.6	-0.9
FNA	Florina	2.47	353	P	Pb	19 12 51.5	-1.3
FNA	Florina	2.47	353	P	Pb	19 12 51.5	-1.3
HORT	Hortiatis	2.49	24	P	Pn	19 12 49.5	+0.5
HORT	Hortiatis	2.49	24	P	Pn	19 12 49.1	+0.1
HORT	Hortiatis	2.49	24	P	Pn	19 12 49.1	+0.1
MHLO	Agia Marina, M	2.66	127	P	Pn	19 12 52.1	+0.8
MHLO	Agia Marina, M	2.66	127	P	Pn	19 12 52.1	+0.8
GRG	Griva	2.67	10	P	Pn	19 12 52.4	+0.9
GRG	Griva	2.67	10	P	Pn	19 12 52.4	+0.9
GRG	Griva	2.67	10	P	Pn	19 12 53.1	+1.7
ANKY	Antikythira Is	2.75	153	P	Pb	19 12 55.7	-1.9
SOH	Sokhos	2.77	26	P	Pn	19 12 53.8	+0.9
SOH	Sokhos	2.77	26	P	Pn	19 12 53.8	+0.9
SOH	Sokhos	2.77	26	P	Pb	19 12 55.8	-2.2
OHR	Ohrid	2.87	345	iPn	Pg	19 13 01.7	-1.7
OHR				eSn	Sg	19 13 42.8	+2.2
KNT	Kendrikon	2.96	17	P	Pn	19 12 56.0	+0.6
KNT	Kendrikon	2.96	17	P	Pn	19 12 56.0	+0.6
KNT	Kendrikon	2.96	17	P	Pn	19 12 56.0	+0.6
VAY	Valandovo	3.05	11	P	Pn	19 12 57.9	+1.2
VAY	Valandovo	3.05	11	iPn	Pn	19 12 59.2	+2.5
VAY				eSn	Sb	19 13 37.0	-3.0
VAY	Valandovo	3.05	11	P	Pn	19 12 57.9	+1.2
VAY	Valandovo	3.05	11	iPn	Pn	19 12 59.1	+2.5
VAY				eSn	Sb	19 13 36.9	-3.0
LIA	Limnos Island	3.08	58	P	Pn	19 12 56.8	-0.3
SRS	Serrai	3.12	26	P	Pn	19 12 58.4	+0.8
SRS	Serrai	3.12	26	P	Pn	19 12 58.4	+0.8
APE	Apeiranthos	3.24	112	P	Pn	19 12 58.9	-0.5
APE	Apeiranthos	3.24	112	P	Pn	19 12 58.9	-0.5
SIGR	SIGRI	3.31	73	P	Pn	19 13 01.2	+0.9
SIGR	SIGRI	3.31	73	P	Pn	19 13 01.2	+0.9
TIR	Tirane	3.35	335	ePn	Pn	19 12 59.7	-1.1
TIR	Tirane	3.35	335	P	Pn	19 12 59.7	-1.1
CHOS	Chios island	3.37	88	P	Pn	19 13 02.0	+0.8
CHOS	Chios island	3.37	88	P	Pn	19 13 02.0	+0.8
IMMV	Iera Moni Meta	3.37	148	P	Pn	19 13 01.8	+0.7
IMMV	Iera Moni Meta	3.37	148	P	Pn	19 13 01.2	+0.1
IMMV	Iera Moni Meta	3.37	148	P	Pn	19 13 01.2	+0.1
KAVA	Kavala	3.40	38	P	Pn	19 13 01.4	-0.1
KAVA	Kavala	3.40	38	P	Pn	19 13 01.4	-0.1
NVR	Nevrokopi	3.42	27	P	Pn	19 13 02.7	+0.9
VAM	Vamos	3.51	146	P	Pn	19 13 04.0	+1.0
SANT	Santorini	3.53	123	ePn	Pn	19 13 05.0	+1.6
SANT	Santorini	3.53	123	ePn	Pn	19 13 05.0	+1.6
SMTH	Samothraki Isl	3.61	53	P	Pn	19 13 03.6	-0.8
SMTH	Samothraki Isl	3.61	53	P	Pn	19 13 03.6	-0.8
SKO	Skopje	3.64	356	iPn	Pn	19 13 08.6	+3.7
SKO	Skopje	3.64	356	iPn	Pn	19 13 08.6	+3.7
IDI	Anoyia	3.94	140	Pn	Pn	19 13 11.0	+2.0
	comp=N,1.6nm,0.3s,baz=306,slow=9.1,SNR=17						
IDI				Sn	Sn	19 14 00.2	+4.9
	comp=N,2.2nm,0.3s,baz=313,slow=19,SNR=2.4						
IDI	Anoyia	3.94	140	P	Pn	19 13 08.6	-0.4
IDI	Anoyia	3.94	140	ePn	Pn	19 13 10.4	+1.4
IDI				eSn	Sn	19 13 59.8	+4.5
IDI	Anoyia	3.94	140	ePn	Pn	19 13 10.4	+1.4
IDI				eSn	Sn	19 13 59.8	+4.5
IDI	Anoyia	3.94	140	P	Pn	19 13 08.6	-0.4
TIP	Timpagrande	4.01	284	P	Pn	19 13 09.1	-0.8
TIP	Timpagrande	4.01	284	P	Pn	19 13 09.1	-0.8
TIP	Timpagrande	4.01	284	ePn	Pn	19 13 10.8	+0.9
TIP	Timpagrande	4.01	284	ePn	Pn	19 13 10.8	+0.9
SMG	Samos	4.05	97	P	Pn	19 13 11.2	+0.7
SMG	Samos	4.05	97	P	Pn	19 13 11.2	+0.7
ULC	Ulcinj	4.11	333⇓	iPn	Pn	19 13 11.8	+0.5
ULC				eSn	Sn	19 14 00.9	+1.4
ULC	Ulcinj	4.11	333⇓	iPn	Pn	19 13 11.8	+0.5
ULC				eSn	Sn	19 14 00.9	+1.4
ALN	Alexandroupoli	4.18	51	P	Pn	19 13 11.5	-0.7
ALN	Alexandroupoli	4.18	51	P	Pn	19 13 11.5	-0.7
DRME	Dracevica, Mon	4.33	334⇑	iPn	Pn	19 13 15.2	+1.0
DRME				eSn	Sn	19 14 05.6	+0.8
DRME	Dracevica, Mon	4.33	334⇑	iPn	Pn	19 13 15.2	+1.0
DRME				eSn	Sn	19 14 05.6	+0.8
LAST	Lasithi	4.35	136	P	Pn	19 13 16.4	+1.8
LAST	Lasithi	4.35	136	P	Pn	19 13 16.4	+1.8
NPS	Neapolis	4.35	134	P	Pn	19 13 17.4	+2.9
PVY	Plav	4.47	343⇑	iPn	Pn	19 13 17.5	+1.1
PVY				eSn	Sn	19 14 09.5	+0.8
PVY	Plav	4.47	343⇑	iPn	Pn	19 13 17.5	+1.1
PVY				eSn	Sn	19 14 09.5	+0.8
BARS	Barje	4.48	0	ePn	Pn	19 13 18.5	+2.2
PDG	Podgorica	4.52	336⇑	iP	Pb	19 13 26.8	-1.0
PDG	Podgorica	4.52	336⇑	iPn	Pn	19 13 17.9	+1.0
PDG				eSn	Sn	19 14 11.0	+1.5
TTG	Podgorica	4.52	336⇑	iPn	Pn	19 13 17.9	+1.0
TTG				eSn	Sn	19 14 11.0	+1.5
BUM	Brajici-Budva	4.53	332⇑	iPn	Pn	19 13 17.6	+0.5
BUM				eSn	Sn	19 14 10.8	+0.8
BUM	Brajici-Budva	4.53	332⇑	iPn	Pn	19 13 17.6	+0.5
BUM				eSn	Sn	19 14 10.8	+0.8
CEL	Celeste	4.62	271	ePn	Pn	19 13 21.6	+3.3
CEL				eSn	Sn	19 14 12.8	+0.6
CEL	Celeste	4.62	271	ePn	Pn	19 13 21.6	+3.3
CEL				eSn	Sn	19 14 12.8	+0.6
SG1	Sgolgore (BA)	4.66	304	iPn	Pn	19 13 19.5	+0.6
BAI	Bari	4.68	308	iPn	Pn	19 13 19.6	+0.6
CEME	Cevo	4.74	334⇓	iPn	Pn	19 13 20.9	+1.0
CEME				eSn	Sn	19 14 15.2	+0.2
CEME	Cevo	4.74	334⇓	iPn	Pn	19 13 20.9	+1.0
CEME				eSn	Sn	19 14 15.2	+0.2
BEY	Berane	4.75	343	ePn	Pn	19 13 21.5	+1.3
BEY				eSn	Sn	19 14 16.6	+1.1
IVA	Berane	4.75	343	ePn	Pn	19 13 21.5	+1.3
IVA				eSn	Sn	19 14 16.6	+1.1
HCY	Herceg Novi	4.81	330⇑	iPn	Pn	19 13 21.1	+0.2
HCY				eSn	Sn	19 14 16.9	+0.2
HCY	Herceg Novi	4.81	330⇑	iPn	Pn	19 13 21.1	+0.2
HCY				eSn	Sn	19 14 16.9	+0.2
CUC	Castrocucco	4.91	292	ePn	Pn	19 13 22.5	+0.1
CUC				eSn	Sn	19 14 23.4	+4.0
CUC	Castrocucco	4.91	292	ePn	Pn	19 13 22.4	+0.1
CUC				eSn	Sn	19 14 23.4	+4.0
NKME	Niksic	4.92	335⇑	iPn	Pn	19 13 23.6	+1.2
NKME				eSn	Sn	19 14 20.4	+0.9
NKME	Niksic	4.92	335⇑	iPn	Pn	19 13 23.6	+1.2
NKME				eSn	Sn	19 14 20.4	+0.9
NKY	Niksic	4.95	336⇑	iPn	Pn	19 13 24.1	+1.2
NKY				eSn	Sn	19 14 20.9	+0.6
NKY	Niksic	4.95	336⇑	iPn	Pn	19 13 24.1	+1.2
NKY				eSn	Sn	19 14 20.9	+0.6
CDT	Castel del Mon	5.05	305	iPn	Pn	19 13 24.9	+0.7
TREB	Trebinje	5.09	330	ePn	Pn	19 13 24.5	-0.3
KARP	Karpathos	5.14	121	ePn	Pn	19 13 28.6	+3.2
KARP				eSn	Sn	19 14 23.2	-1.7
KARP	Karpathos	5.14	121	ePn	Pn	19 13 28.6	+3.2
KARP				eSn	Sn	19 14 23.2	-1.7
KARP	Karpathos	5.14	121	P	Pn	19 13 29.1	+3.6
BRY	Bratogost	5.18	333⇓	iPn	Pn	19 13 26.3	+0.2
BRY				eSn	Sn	19 14 26.0	-0.1
BRY	Bratogost	5.18	333⇓	iPn	Pn	19 13 26.3	+0.2
BRY				eSn	Sn	19 14 26.0	-0.1
PLE	Pljevlja	5.31	341	ePn	Pn	19 13 28.4	+0.6
PLE				eSn	Sn	19 14 29.6	+0.4
PLE	Pljevlja	5.31	341	ePn	Pn	19 13 28.4	+0.6
PLE				eSn	Sn	19 14 29.6	+0.4
UPM	Unac-Piva	5.33	337⇑	iPn	Pn	19 13 29.9	+1.7
UPM				eSn	Sn	19 14 30.3	+0.5
UPM	Unac-Piva	5.33	337⇑	iPn	Pn	19 13 29.9	+1.7
UPM				eSn	Sn	19 14 30.3	+0.5
IVAS	Ivanjica	5.38	347	ePn	Pn	19 13 30.7	+1.9
ZAGS	Zajecar	5.49	4	ePn	Pn	19 13 31.9	+1.7
BOLS	Boljevac	5.49	1	ePn	Pn	19 13 30.5	+0.2
MS1	Monte Sant'Ang	5.60	309	iPn	Pn	19 13 31.3	-0.5
SBLS	Lazići	5.81	343	ePn	Pn	19 13 35.1	+0.4
DIVS	Divibare	5.91	347	ePn	Pn	19 13 36.3	+0.2
TRUS	Trudelj	5.97	351	ePn	Pn	19 13 38.9	+2.0
TEKS	Tekeris	6.43	346	ePn	Pn	19 13 43.4	+0.2
MDVR	Moldovita	6.44	360⇑	iP	Pb	19 13 52.1	-8.5
ISP	Isparta	6.92	92	ePn	Pn	19 13 52.6	+2.6
FGSL	Fruska Gora	6.97	349	ePn	Pn	19 13 50.9	+0.3
GZR	Gura Zlata	7.09	6⇑	iP	Pn	19 13 54.0	+1.7
GZR	Gura Zlata	7.09	6⇑	iP	Pn	19 13 54.0	+1.7
BLY	Banja Luka	7.27	333	ePn	Pn	19 13 53.3	-1.4
BZS	Buzias	7.28	359⇓	iP	Pn	19 13 58.5	+3.7
VOIR		7.51	18⇑	iP	Pn	19 14 00.2	+2.2
VOIR		7.51	18⇑	iPn	Pn	19 14 00.2	+2.2
AQU	L'Aquila	7.55	305	ePn	Pn	19 14 01.2	+2.7
AQU	L'Aquila	7.55	305	ePn	Pn	19 14 01.2	+2.7
UDBI	Udbina	7.66	326	ePn	Pn	19 14 00.7	+0.7
UDBI				Sn	Sn	19 15 27.2	+0.2
UDBI	Udbina	7.66	326	ePn	Pn	19 14 00.7	+0.7
UDBI				Sn	Sn	19 15 27.1	+0.2
ISR	Istrita	7.66	26⇑	iP	Pn	19 14 05.8	+5.7
MLR	Muntele Rosu	7.80	22	Pn	Pn	19 14 03.9	+1.9
	comp=N,0.1nm,0.3s,baz=186,slow=9.0,SNR=11						
MLR	Muntele Rosu	7.80	22⇑	iP	Pn	19 14 04.8	+2.8
MLR	Muntele Rosu	7.80	22	ePn	Pn	19 14 02.5	+0.5
MLR	Muntele Rosu	7.80	22⇑	iP	Pn	19 14 04.8	+2.8
MLR	Muntele Rosu	7.80	22	ePn	Pn	19 14 02.5	+0.5
TLB	Topalu	7.82	35⇓	iP	Pn	19 14 09.0	+6.8
DOPR	Dopca	8.09	18⇓	iP	Pn	19 14 08.3	+2.4
DOPR	Dopca	8.09	18⇓	iP	Pn	19 14 08.3	+2.4
NVLJ	Novalja	8.10	322	iPn	Pn	19 14 05.5	-0.5
NVLJ				Sn	Sn	19 15 34.6	-3.0
NVLJ	Novalja	8.10	322	iPn	Pn	19 14 05.4	-0.5
CFR	Carcaliu	8.33	33⇑	iP	Pn	19 14 14.8	+5.6
PLOR	Plostina	8.34	24⇑	iP	Pn	19 14 14.1	+4.7
VRI	Vrincioaia	8.38	24⇓	iP	Pn	19 14 16.4	+6.5
BOJS	Bojanci	8.65	328	iPn	Pn	19 14 13.3	-0.3
BOJS				iSn	Sn	19 15 48.0	-3.3
BOJS	Bojanci	8.65	328	iPn	Pn	19 14 13.3	-0.3
BR231	Keskin MP Arra	8.69	77	ePn	Pn	19 14 20.1	+5.8
VISS	Visnje	9.07	328	ePn	Pn	19 14 18.8	-0.5
VISS				eSn	Sn	19 15 58.4	-3.1
VISS	Visnje	9.07	328	ePn	Pn	19 14 18.8	-0.5
CEY	Cerknica	9.19	326	ePn	Pn	19 14 20.0	-1.1
BR101	Keskin Array S	9.34	78	ePn	Pn	19 14 25.2	+2.0
BR101	Keskin Array S	9.34	78	ePn	Pn	19 14 25.2	+2.0
BR131	Keskin Array S	9.34	78	ePn	Pn	19 14 23.8	+0.6
BR131	Keskin Array S	9.34	78	ePn	Pn	19 14 23.8	+0.6
BRTR	Keskin Array B	9.34	78	Pn	Pn	19 14 25.2	+2.0
	comp=N,0.1nm,0.3s,baz=263,slow=12,SNR=4.2						
TRI	Trieste	9.47	324	ePn	Pn	19 14 21.1	-3.7
JAVS	Javornik	9.47	325	iPn	Pn	19 14 23.8	-1.1
JAVS				iSn	Sn	19 16 08.5	-3.1
JAVS	Javornik	9.47	325	iPn	Pn	19 14 23.8	-1.1
BURAR	Bucovina Array	9.61	14⇑	iP	Pn	19 14 29.3	+2.4
BURAR	Bucovina Array	9.61	14⇑	iP	Pn	19 14 29.3	+2.4
BUR08	Bucovina Ar. S	9.64	14	ePn	Pn	19 14 24.5	-2.7
PERS	Pernice	9.64	332	ePn	Pn	19 14 26.6	-0.6
PERS				eSn	Sn	19 16 13.2	-2.4
PERS	Pernice	9.64	332	ePn	Pn	19 14 26.6	-0.6
PSZ	Piszkesteto	9.68	352⇑	iP	Pn	19 14 32.3	+4.6
PSZ	Piszkesteto	9.68	352	ePn	Pn	19 14 26.8	-0.9
PSZ	Piszkesteto	9.68	352	ePn	Pn	19 14 26.8	-0.9
SOKA	Soboth	9.71	331	ePn	Pn	19 14 27.5	-0.6
SOKA	Soboth	9.71	331	Pn	Pn	19 14 27.5	-0.6
OBKA	Obir	9.76	329	ePn	Pn	19 14 28.6	-0.2
	comp=N,5.5nm,0.7s						
OBKA				eSn	Sn	19 16 16.7	-1.8
	comp=N,9.1nm,0.7s						
OBKA	Obir	9.76	329	Pn	Pn	19 14 28.6	-0.2
	comp=N,5.5nm,0.7s						
VYHS	Vyhne	10.38	349	e	Pn	19 14 45.7	+8.4
ABTA	Abfaltersbach	10.82	324	iPn	Pn	19 14 43.0	-0.5
	comp=N,2.4nm,0.6s						
ABTA				iSn	Sn	19 16 41.8	-2.9
	comp=N,5.3nm,0.7s						
ABTA	Abfaltersbach	10.82	324	Pn	Pn	19 14 43.0	-0.5
	comp=N,2.4nm,0.6s						
LANS	Liptovska Anna	10.94	352	e	Pn	19 14 54.2	+9.2
MOTA	Moosalm	11.92	322	iPn	Pn	19 14 58.4	-0.1
	comp=N,6.4nm,0.7s						
MOTA				eSn	Sn	19 17 09.0	-2.7
	comp=N,4.9nm,0.8s						
MOTA	Moosalm	11.92	322	Pn	Pn	19 14 58.4	-0.1
	comp=N,6.4nm,0.7s						
GEA0	GERESS Array S	12.01	334	ePn	Pn	19 14 59.3	-0.3
GEA0	GERESS Array S	12.01	334	ePn	Pn	19 14 59.3	-0.3
GERES	GERESS Array B	12.02	334	Pn	Pn	19 14 59.6	-0.1
	comp=N,0.2nm,0.3s,baz=156,slow=13,SNR=7.2						
GERES				Sn	Sn	19 17 13.0	-1.0
	comp=N,0.1nm,0.3s,baz=151,slow=25,SNR=5.0						
MMAI	Mount Meron Ar	12.29	111	Pn	Pn	19 15 04.1	+0.6
	comp=N,0.4nm,0.3s,baz=302,slow=14,SNR=3.2						
KHC	Kasperske Hory	12.30	334	eP	Pn	19 15 04.7	+1.1
SENIN	Lac Senin/Sane	13.36	312	ePn	Pn	19 15 18.8	+0.5
SENIN	Lac Senin/Sane	13.36	312	ePn	Pn	19 15 18.8	+0.5
SENIN				eSn	Sn	19 17 42.4	-4.6
KIEV	Kiev	13.44	21	ePn	Pn	19 15 17.7	-1.4
KIEV	Kiev	13.44	21	ePn	Pn	19 15 17.7	-1.4
AKBB	Malin Array Si	13.45	21	ePn	Pn	19 15 17.8	-1.4
AKBB	Malin Array Si	13.45	21	ePn	Pn	19 15 17.8	-1.4
CLL	Collm	14.37	337	ePn	Pn	19 15 29.4	-2.4
OBN	Obninsk	19.54	26	LR	LR	19 24 20.2	
	comp=N,66nm,18.5s,baz=271,slow=38						
ES19	SONSECA Array	19.97	282	eP	Pn	19 16 43.9	+1.3
ESDC	Sonseca Array	20.02	282	P	Pn	19 16 42.5	-0.6
	comp=N,5.9nm,0.8s,baz=76,slow=11,SNR=27						
ESLA	Sonseca Array	20.02	282	eP	Pn	19 16 43.3	+0.1
	comp=N,12nm,1.0s						
ESLA	Sonseca Array	20.02	282	eP	Pn	19 16 43.3	+0.1
	comp=N,12nm,1.0s						
PAB	San Pablo	20.33	282	eP	Pn	19 16 46.3	-0.5
	comp=N,15nm,1.1s						
PAB	San Pablo	20.33	282	eP	Pn	19 16 46.3	-0.5
	comp=N,15nm,1.1s						
HFS	Hagfors	22.41	349	P	P	19 17 05.7	-1.3
	comp=N,2.7nm,0.5s,baz=160,slow=9.5,SNR=17						
FIA0	FINESS Array S	23.29	5	eP	P	19 17 15.4	-0.7
FIA0	FINESS Array S	23.29	5	eP	P	19 17 15.4	-0.7
FINES	FINESS Array B	23.29	5	P	P	19 17 15.4	-0.6
	comp=N,4.3nm,0.8s,baz=182,slow=11,SNR=8.6						
FINES				LR	LR	19 27 11.9	
	comp=N,87nm,18.1s,baz=175,slow=39						
FIA1	FINESS Array S	23.29	5	eP	P	19 17 16.2	+0.1
	comp=N,22nm,1.1s						
FIA1	FINESS Array S	23.29	5	eP	P	19 17 16.2	+0.1
	comp=N,22nm,1.3s						
NC602	NORSAR Array S	23.33	347	eP	P	19 17 14.9	-1.6
NC602	NORSAR Array S	23.33	347	eP	P	19 17 14.9	-1.6
NAO01	NORSAR Array S	23.55	347	eP	P	19 17 18.9	+0.2
NAO01	NORSAR Array S	23.55	347	eP	P	19 17 18.9	+0.2
NC405	NORSAR Array S	23.66	348	eP	P	19 17 19.5	-0.3
NC405	NORSAR Array S	23.66	348	eP	P	19 17 19.5	-0.3
NB201	NORSAR Array S	23.67	347	eP	P	19 17 19.4	-0.5
NB201	NORSAR Array S	23.67	347	eP	P	19 17 19.4	-0.5
NB2	NORSAR Subarra	23.67	347	P	P	19 17 19.4	-0.5
	comp=Z,7.0nm,0.8s,baz=154,slow=10						
NB2	NORSAR Subarra	23.67	347	P	P	19 17 19.4	-0.5
	comp=Z,7.0nm,0.8s,SNR=4.0						
NB200	NORSAR Array S	23.67	347	eP	P	19 17 18.9	-1.0
NB200	NORSAR Array S	23.67	347	eP	P	19 17 18.9	-1.0
NOA	NORSAR Array B	23.67	347	P	P	19 17 18.9	-1.0
	comp=Z,6.6nm,0.9s,baz=154,slow=9.4,SNR=12						
NOA				LR	LR	19 26 47.8	
	comp=Z,32nm,20.6s,baz=190,slow=37						
NBO00	NORSAR Array S	23.74	347	eP	P	19 17 20.4	-0.2
NBO00	NORSAR Array S	23.74	347	eP	P	19 17 20.4	-0.2
NBO02	NORSAR Array S	23.74	347	eP	P	19 17 20.8	+0.2
NBO02	NORSAR Array S	23.74	347	eP	P	19 17 20.8	+0.2
NC303	NORSAR Array S	23.82	348	eP	P	19 17 20.8	-0.5
NC303	NORSAR Array S	23.82	348	eP	P	19 17 20.8	-0.5
EKA	Eskdalemuir Ar	23.88	323	P	P	19 17 21.8	-0.1
	comp=Z,4.6nm,0.7s,baz=121,slow=10,SNR=14						
ESK	Eskdalemuir	23.89	323	eP	P	19 17 21.0	-1.1
	comp=Z,11nm,0.8s						
ESK	Eskdalemuir	23.89	323	eP	P	19 17 21.0	-1.1
	comp=Z,11nm,0.8s						
NC204	NORSAR Array S	23.97	347	eP	P	19 17 22.2	-0.6
NC204	NORSAR Array S	23.97	347	eP	P	19 17 22.2	-0.6
ABKAR	Akbulak array	29.34	56	eP	P	19 18 11.3	0.0
	comp=Z,6.3nm,0.6s						
ABKAR	Akbulak array	29.34	56	eP	P	19 18 11.3	0.0
	comp=Z,6.3nm,0.6s						
TOA1	Torodi Ar. Sit	30.77	221	eP	P	19 18 24.5	+0.3
	comp=Z,9.2nm,1.4s						
TOA1	Torodi Ar. Sit	30.77	221	eP	P	19 18 24.6	+0.3
	comp=Z,9.2nm,1.4s						
TOA0	Torodi Ar. Sit	30.78	221	eP	P	19 18 27.4	+3.2
	comp=Z,10nm,1.4s						
TORD	Torodi Ar. Bea	30.78	221	P	P	19 18 24.6	+0.3
	comp=Z,1.4nm,0.8s,baz=33,slow=8.2,SNR=7.7						
DAMY	Dhamar	30.98	134	eP	P	19 18 27.3	+0.9
	comp=Z,20nm,1.6s						
DAMY	Dhamar	30.98	134	eP	P	19 18 27.3	+0.9
	comp=Z,20nm,1.6s						
ARA0	ARCESS Array S	31.33	3	eP	P	19 18 28.8	+0.2
ARA0	ARCESS Array S	31.33	3	eP	P	19 18 28.8	+0.2
ARCES	ARCESS Array B	31.33	3	P	P	19 18 29.2	+0.6
	comp=Z,0.8nm,0.5s,baz=190,slow=9.7,SNR=8.5						
ARCES				LR	LR	19 32 22.3	
	comp=Z,53nm,18.4s,baz=177,slow=39						
ARE0	ARCESS Array S	31.33	3	eP	P	19 18 29.3	+0.7
	comp=Z,11nm,1.2s						
ARE0	ARCESS Array S	31.33	3	eP	P	19 18 29.3	+0.7
	comp=Z,11nm,1.2s						
JMIC	Jan Mayen	36.28	344	LR	LR	19 34 53.7	
	comp=Z,21nm,18.7s,baz=234,slow=38						
BORG	Borgarnes	36.46	330	LR	LR	19 35 30.8	
	comp=Z,51nm,19.2s,baz=152,slow=39						
KKAR	Karatay Array	36.83	67	eP	P	19 19 17.2	+0.5
	comp=Z,42nm,0.4s						

KKAR	**Karatay Array**	**36.83**	**67**	*e*P		**P**		**19 19 17.2**	**+0.5**
	comp=Z,42nm,0.4s								
CMLA	**Cha da Macela**	**36.93**	**284**	*e*P		**P**		**19 19 18.0**	**+0.5**
CMLA	**Cha da Macela**	**36.93**	**284**	*e*P		**P**		**19 19 18.0**	**+0.5**
SPA0	**Spitsbergen Ar**	**40.02**	**358**	*e*P		**P**		**19 19 41.8**	**-1.2**
SPA0	**Spitsbergen Ar**	**40.02**	**358**	*e*P		**P**		**19 19 41.8**	**-1.2**
SPITS	**Spitsbergen Ar**	**40.02**	**358**	LR		LR		19 38 10.9	
	comp=Z,33nm,20.2s,baz=265,slow=39								
KURK	**Kurchatov**	**41.40**	**54**	*e*P		**P**		**19 19 55.4**	**+0.7**
KURK	**Kurchatov**	**41.40**	**54**	*e*P		**P**		**19 19 55.4**	**+0.7**
KSH	**Kashi**	**41.65**	**71**	*e*P		**P**		**19 19 56.5**	**-0.6**
KSH				*e*gP		*e*P		19 20 06.5	+5.6
KSH				*e*PP		**PP**		**19 21 34.5**	**+1.3**
KSH				S		**S**		**19 26 06.5**	**-7.2**
KSH				SS		SS		19 29 05.3	-13
KSH				ScS		**ScS**		**19 29 55.3**	**-5.6**
KSH				pmax		pmax			
	comp=Z,18nm,2.8s								
KSH				LR		LR			
	comp=N,64nm,4.7s								
KSH				LR		LR			
	comp=E,91nm,6.5s								
KSH				LR		LR			
	comp=Z,200nm,6.3s								
MAKZ	**Makanchi**	**44.17**	**59**	*e*P		**P**		**19 20 17.2**	**-0.1**
	comp=Z,3.3nm,0.9s								
MAKZ	**Makanchi**	**44.17**	**59**	*e*P		**P**		**19 20 17.2**	**-0.1**
	comp=Z,3.3nm,0.9s								
MK31	**Makanchi Array**	**44.38**	**59**	*e*P		**P**		**19 20 18.8**	**-0.2**
MK31	**Makanchi Array**	**44.38**	**59**	*e*P		**P**		**19 20 18.8**	**-0.2**
MK32	**Makanchi Array**	**44.38**	**59**	*e*P		**P**		**19 20 19.1**	**+0.1**
MK32	**Makanchi Array**	**44.38**	**59**	*e*P		**P**		**19 20 19.1**	**+0.1**
MK32				*e*PP		**PcP**		**19 22 02.4**	**-0.4**
MKAR	**Makanchi Array**	**44.38**	**59**	P		**P**		**19 20 19.1**	**+0.1**
	comp=Z,5.0nm,0.5s,baz=275,slow=7.3,SNR=36								
MKAR				PcP		**PcP**		**19 22 02.4**	**-0.4**
	comp=Z,0.6nm,0.6s,baz=296,slow=3.1,SNR=3.7								
MKAR	**Makanchi Array**	**44.38**	**59**	*e*P		**P**		**19 20 19.0**	**0.0**
	comp=Z,55nm,0.7s								
MKAR	**Makanchi Array**	**44.38**	**59**	*e*P		**P**		**19 20 19.0**	**0.0**
	comp=Z,55nm,0.7s								
MKAR				PcP		**PcP**		**19 22 02.4**	**-0.4**
MK01	**Makanchi Array**	**44.39**	**59**	*e*P		**P**		**19 20 19.3**	**+0.2**
MK01	**Makanchi Array**	**44.39**	**59**	*e*P		**P**		**19 20 19.3**	**+0.2**
ZAA1	**Zalesovo Array**	**44.85**	**48**	*e*P		**P**		**19 20 22.1**	**-0.5**
ZAA1	**Zalesovo Array**	**44.85**	**48**	*e*P		**P**		**19 20 22.1**	**-0.5**
ZAA0	**Zalesovo Array**	**44.86**	**48**	*e*P		**P**		**19 20 22.0**	**-0.6**
ZAA0	**Zalesovo Array**	**44.86**	**48**	*e*P		**P**		**19 20 22.0**	**-0.6**
ZALV	**Zalesovo Beam**	**44.86**	**48**	P		**P**		**19 20 22.1**	**-0.5**
	comp=Z,4.2nm,0.7s,baz=274,slow=8.4,SNR=14								
TIXI	**Tiksi**	**59.16**	**21**	*e*P		**P**		**19 22 09.9**	**+1.0**
	comp=Z,4.4nm,0.8s								
TIXI	**Tiksi**	**59.16**	**21**	*e*P		**P**		**19 22 09.9**	**+1.0**
	comp=Z,4.4nm,0.8s								
SONA0	**Songino Array**	**59.60**	**51**	*e*P		**P**		**19 22 12.1**	**-0.4**
	comp=Z,6.5nm,1.5s								
SONA0	**Songino Array**	**59.60**	**51**	*e*P		**P**		**19 22 12.1**	**-0.4**
	comp=Z,6.5nm,1.5s								
SONA1	**Songino Array**	**59.60**	**51**	*e*P		**P**		**19 22 12.3**	**-0.2**
SONA1	**Songino Array**	**59.60**	**51**	*e*P		**P**		**19 22 12.3**	**-0.2**
SONM	**Songino Array**	**59.60**	**51**	P		**P**		**19 22 12.1**	**-0.4**
	comp=Z,1.0nm,0.8s,baz=292,slow=7.8,SNR=7.1								
YKA	**Yellowknife Ar**	**73.58**	**340**	P		**P**		**19 23 42.6**	**+1.3**
	comp=Z,0.4nm,0.8s,baz=27,slow=6.9,SNR=3.7								
YKB5	**Yellowknife Ar**	**73.58**	**340**	*e*P		**P**		**19 23 42.6**	**+1.3**
YKB5	**Yellowknife Ar**	**73.58**	**340**	*e*P		**P**		**19 23 42.6**	**+1.3**
ULM	**Lac du Bonnet**	**76.15**	**324**	P		**P**		**19 23 58.3**	**+1.9**
	comp=Z,4.2nm,0.8s,baz=60,slow=8.1,SNR=4.1								
ILAR	**Eielson Array**	**76.84**	**355**	P		**P**		**19 24 02.6**	**+2.5**
	comp=Z,0.2nm,0.5s,baz=0.0,slow=5.6,SNR=5.4								
KSAR	**Wonju Array Be**	**78.45**	**51**	P		**P**		**19 24 11.1**	**+1.5**
KSAR	**Wonju Array Be**	**78.45**	**51**	P		**P**		**19 24 11.1**	**+1.5**
KSRS	**Korea Array**	**78.47**	**51**	P		**P**		**19 24 11.1**	**+1.4**
	comp=Z,1.5nm,0.6s,baz=295,slow=5.4,SNR=5.5								
ASAR	**Alice Springs**	**121.22**	**97**	PKP		**PKPdf**		**19 31 03.0**	**+1.1**
	comp=Z,0.3nm,0.8s,baz=357,slow=2.0,SNR=4.0								

GUC ***29*** *19:21:49.6±0.4, 34.03°S×71.93°W, h20km±7km, ML3.1*
ISC 29 19:21:49.8±1.6, 34.08°S±0.04°×71.92°W±0.08°, h19km±3km, n22, σ2°29°/38, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHPI	**Pichilemu**	**0.32**	**192**	*e*P		**Pg**	**19 21 56.5**	**-0.2**
CHPI				*e*S		**Sb**	**19 22 01.9**	**+0.4**
CHPI				IAML			19 22 02.2	
	comp=N,3μm,0.2s							
NICH	**Los Niches**	**1.08**	**148**	*e*P		**Pb**	**19 22 08.7**	**-1.2**
NICH				*e*S		**Sb**	**19 22 23.1**	**-0.5**
RCDM	**Rinconada Maip**	**1.10**	**58**	*e*P		**Pn**	**19 22 07.5**	**-2.7**
RCDM				*e*S		**Sb**	**19 22 21.8**	**-2.4**
ANTU	**Antumapu**	**1.19**	**65**	*e*P		**Pn**	**19 22 09.5**	**-1.9**
ANTU				*e*S		**Sb**	**19 22 24.6**	**-2.1**
TALC	**Talca**	**1.33**	**170**	*e*P		**Pn**	**19 22 13.1**	**-0.3**
TALC				*e*S		**Sn**	**19 22 30.4**	**-0.2**
ROC1	**El Roble**	**1.34**	**35**	*e*P		**Pn**	**19 22 13.1**	**-0.5**
CLCH	**Cerro Calan**	**1.34**	**60**	*e*P		**Pn**	**19 22 12.2**	**-1.4**
CLCH				*e*S		**Sn**	**19 22 29.1**	**-1.7**
ROCH	**El Roble**	**1.34**	**35**	*e*P		**Pn**	**19 22 11.8**	**-1.9**
ROCH				*e*S		**Sn**	**19 22 28.8**	**-2.3**
ROCH				IAML			19 22 38.1	
	comp=N,716nm,0.5s							
PEL	**Peldehue**	**1.39**	**48**	*e*P		**Pn**	**19 22 12.8**	**-1.4**
PEL				*e*S		**Sn**	**19 22 30.1**	**-2.0**
PEL				IAML			19 22 38.7	
	comp=N,623nm,0.4s							
FCH	**Farellones**	**1.55**	**62**	*e*P		**Pn**	**19 22 15.6**	**-1.1**
FCH				*e*S		**Sn**	**19 22 35.7**	**-0.7**
YECH	**El Yeso**	**1.58**	**75**	*e*P		**Pb**	**19 22 19.3**	**+0.6**
YECH				*e*S		**Sb**	**19 22 39.1**	**+0.7**
ARCO	**CERRO ARCO**	**2.79**	**65**	*e*P		**Pn**	**19 22 35.5**	**+2.0**
ARCO				IAML			19 22 48.9	
	comp=Z,55nm,0.3s							
ARCO				*e*S		**Sb**	**19 23 15.6**	**+2.7**
AUSP	**Uspallata**	**2.82**	**50**	*e*P		**Pn**	**19 22 36.1**	**+2.0**
AUSP				*e*S		**Sb**	**19 23 15.7**	**+1.8**
ASAL	**Salagasta**	**2.98**	**61**	*e*P		**Pn**	**19 22 38.5**	**+2.3**
ASAL				*e*S		**Sb**	**19 23 20.3**	**+1.9**
RTLS	**Leoncito**	**3.17**	**45**	*e*P		**Pn**	**19 22 40.6**	**+1.7**
RTCV	**Cerro Valdivia**	**3.60**	**53**	*e*P		**Pn**	**19 22 46.6**	**+2.0**
RTLL	**Cerro Villicun**	**4.00**	**48**	*e*P		**Pn**	**19 22 52.2**	**+2.2**
ACCO	**Cerro Coronel**	**4.24**	**36**	*e*P		**Pn**	**19 22 55.5**	**+1.8**
ACCO				*e*S		**Sb**	**19 23 50.3**	**-4.5**
AMOG	**MOGNA**	**4.27**	**44**	*e*P		**Pn**	**19 22 55.7**	**+1.9**
AMOG				*e*S		**Sb**	**19 23 50.6**	**-4.8**
AROD	**Rodeo**	**4.42**	**29**	*e*P		**Pn**	**19 22 57.5**	**+1.4**
AVFE	**Valle Fertil**	**5.09**	**49**	*e*P		**Pn**	**19 23 07.6**	**+2.5**
AVFE				IAML			19 24 19.9	
	comp=Z,8.9nm,0.3s							
AGUA	**GUANDACOL**	**5.43**	**33**	*e*P		**Pn**	**19 23 11.2**	**+1.4**
AGUA				*e*S		**Sn**	**19 24 17.6**	**+5.8**

CSEM ***29*** *19:22:28.0, 42.24°N×12.71°E, h6km, MD2.0/10*
ROM 29 19:22:28.0±0.1, 42.24°N×12.71°E, h6km±1km, Md2.0/10, Ml1.5/7, Error ellipse: s-maj=1.2km s-min=0.8km az=47.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CESX	**Cesi**	**0.20**	**330**	Pg		Pg	19 22 33.0	+1.1
CESX				Sg		Sg	19 22 35.5	+0.9
	68nm,0.3s							
CESX	**Cesi**	**0.20**	**330**	Pg		Pg	19 22 33.0	+1.1
CESX				Sg		Sg	19 22 35.5	+0.9
	68nm,0.3s							
FIAM	**Fiamignano**	**0.35**	**120**	Pg		Pb	19 22 35.7	-0.9
FIAM				Sg		Sb	19 22 41.4	-0.9
	34nm,0.9s							
FIAM	**Fiamignano**	**0.35**	**120**	Pg		Pb	19 22 35.7	-0.9
FIAM				Sg		Sb	19 22 41.4	-0.9
	34nm,0.9s							
MTCE	**Montecelio**	**0.42**	**177**	Pg		Pb	19 22 37.6	-0.2
MTCE				Sg		Sb	19 22 43.8	-0.6
	21nm,0.5s							
MTCE	**Montecelio**	**0.42**	**177**	Pg		Pb	19 22 37.6	-0.2
MTCE				Sg		Sb	19 22 43.8	-0.6
	21nm,0.5s							
NRCA	**Norcia**	**0.49**	**37**	Pg		Pg	19 22 38.2	+0.7
NRCA				Sg		Sb	19 22 45.8	-0.7
	54nm,0.2s							
NRCA	**Norcia**	**0.49**	**37**	Pg		Pg	19 22 38.2	+0.7
NRCA				Sg		Sb	19 22 45.8	-0.7
	54nm,0.2s							
SMA1	**SAN MARTINO**	**0.50**	**67**	Pg		Pb	19 22 38.7	-0.5
SMA1				Sg		Sb	19 22 46.5	-0.2
	59nm,0.1s							
SMA1	**SAN MARTINO**	**0.50**	**67**	Pg		Pb	19 22 38.7	-0.5
SMA1				Sg		Sb	19 22 46.5	-0.2
	59nm,0.1s							
CESI	**CESI - Serrava**	**0.58**	**14**	Pg		Pg	19 22 39.8	+0.6
CESI				Sg		Sb	19 22 48.8	-0.3
	13nm,0.4s							
CESI	**CESI - Serrava**	**0.58**	**14**	Pg		Pg	19 22 39.8	+0.6
CESI				Sg		Sb	19 22 48.8	-0.3
	13nm,0.4s							
MGAB	**Montegabbione**	**0.65**	**317**	Pg		Pb	19 22 41.2	-0.5
MGAB				Sg		Sb	19 22 50.7	-0.3
MGAB	**Montegabbione**	**0.65**	**317**	Pg		Pb	19 22 41.2	-0.5
MGAB				Sg		Sb	19 22 50.7	-0.3
FDMO	**Fiordimonte**	**0.66**	**25**	Pg		Pg	19 22 41.0	+0.4
FDMO				Sg		Sb	19 22 51.2	0.0
	24nm,0.3s							
FDMO	**Fiordimonte**	**0.66**	**25**	Pg		Pg	19 22 41.0	+0.4
FDMO				Sg		Sb	19 22 51.2	0.0
	24nm,0.3s							
TERO	**Teramo**	**0.68**	**74**	Pg		Pg	19 22 41.4	+0.3
TERO				Sg		Sb	19 22 51.6	-0.4
TERO	**Teramo**	**0.68**	**74**	Pg		Pg	19 22 41.4	+0.3
TERO				Sg		Sb	19 22 51.6	-0.4
SACS	**San Casciano d**	**0.72**	**305**	Pg		Pb	19 22 42.8	-0.2
SACS				Sg		Sb	19 22 52.3	-0.8

ISCJB ***29*** *19:35:38.2±0.5, 39.10°N±0.04°×29.12°E±0.04, h9km, Error ellipse: s-maj=6.6km s-min=4.0km az=148.0*
CSEM ***29*** *19:35:38.2±0.1, 39.11°N×29.12E, h8km, MD2.6, Error ellipse: s-maj=4.4km s-min=2.9km az=131.0*
ISK ***29*** *19:35:38.0, 39.14°N×29.13E, h5km, MD2.6*
DDA ***29*** *19:35:38.3, 39.05°N×29.12E, h7km, Md2.6*
ISC 29 19:35:38.3±0.9, 39.11°N±0.04°×29.11°E±0.03, h9km, n20, σ0°45/28, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GEDZ	**Gediz**	**0.24**	**107**	*e*PG		**Pg**	**19 35 43.4**	**+0.2**
GEDZ	**Gediz**	**0.24**	**107**	*e*Pg		**Pg**	**19 35 43.4**	**+0.2**
GDZ	**Gediz**	**0.29**	**95**	*i* P		**Pg**	**19 35 44.5**	**+0.4**
GDZ				*i* S		**Sg**	**19 35 48.4**	**+0.4**
GDZ	**Gediz**	**0.29**	**95**	P		**Pg**	**19 35 44.5**	**+0.4**
GDZ				S		**Sg**	**19 35 48.4**	**+0.4**
DEMI	**Demirci**	**0.32**	**257**	*i* P		**Pg**	**19 35 45.0**	**+0.3**
DEMI				*i* S		**Sg**	**19 35 49.6**	**+0.7**
DEMI	**Demirci**	**0.32**	**257**	P		**Pg**	**19 35 45.0**	**+0.3**
DEMI				S		**Sg**	**19 35 49.7**	**+0.7**
TVSB	**Tavsanli**	**0.43**	**39**	*e*PG		**Pg**	**19 35 46.6**	**-0.2**
TVSB				*e*SG		**Sg**	**19 35 52.1**	**-0.4**
TVSB	**Tavsanli**	**0.43**	**39**	*e*Pg		**Pg**	**19 35 46.6**	**-0.2**
TVSB				*e*Sg		**Sg**	**19 35 52.1**	**-0.4**
KULA	**Kula-Manisa**	**0.69**	**211**	*e*PG		**Pg**	**19 35 52.2**	**+0.4**
KULA	**Kula-Manisa**	**0.69**	**211**	*e*Pg		**Pg**	**19 35 52.2**	**+0.4**
MANT	**Manisa**	**0.76**	**215**	*i* P		**Pg**	**19 35 52.1**	**-0.9**
MANT				*i* S		**Sg**	**19 36 02.3**	**-0.6**
MANT	**Manisa**	**0.76**	**215**	P		**Pg**	**19 35 52.1**	**-0.9**
MANT				S		**Sg**	**19 36 02.3**	**-0.6**
IZI	**Iznik**	**1.25**	**13**	*e*PN		**Pn**	**19 36 01.9**	**-0.2**
IZI	**Iznik**	**1.25**	**13**	*e*Pn		**Pn**	**19 36 01.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*PN		**Pn**	**19 36 02.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*Pn		**Pn**	**19 36 02.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN		**Pn**	**19 36 02.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn		**Pn**	**19 36 02.6**	**0.0**
ARMT	**Armutlu**	**1.46**	**352**	*e*PN		**Pb**	**19 36 05.8**	**+0.1**
ARMT	**Armutlu**	**1.46**	**352**	*e*Pn		**Pb**	**19 36 05.8**	**+0.1**

IDC 29 19:49:32.0±32.0, 19.52°S×177.26°W, h415km±274km, mb3.2/2, mb1 3.5/2, mb1mx2.8/39, mbtmp4.0/2, Error ellipse: s-maj=247.1km s-min=90.6km az=121.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ASAR	**Alice Springs**	**45.43**	**256**	P		P	19 57 12.3	+0.2
	2.7nm,0.8s,baz=98,slow=7.6,SNR=39							
ASAR				PcP		PcP	19 58 41.9	-1.3
	0.5nm,0.6s,baz=104,slow=3.9,SNR=8.1							
WRA	**Warramunga Arr**	**45.44**	**261**	P		P	19 57 11.8	-0.3
	1.0nm,0.6s,baz=95,slow=7.9,SNR=26							
BRTR	**Keskin Array B**	**146.69**	**314**	PKPbc		PKPdf	20 08 24.8	+0.7
	0.5nm,0.5s,baz=130,slow=3.9,SNR=3.5							
MMAI	**Mount Meron Ar**	**147.92**	**301**	PKPbc		PKPbc	20 08 30.1	+0.3
	0.8nm,0.6s,baz=146,slow=3.3,SNR=2.1							
GERES	**GERESS Array B**	**149.44**	**346**	PKPbc		PKPbc	20 08 32.8	-0.3
	0.8nm,0.7s,baz=31,slow=2.3,SNR=8.0							

IASPEI ***29*** *19:52:26.6±0.8, 38.32°N±0.01°×21.76°E±0.01, h9km±4km, mb4.4/54, MS3.4/11, Error ellipse: s-maj=2.0km s-min=1.9km az=5.0, GT5 selection from ISC bulletin GT5 identified by Bond¨jr and McLaughlin (2009) selection criteria Bond¨jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
ISCJB ***29*** *19:52:26.5±0.2, 38.33°N±0.01°×21.73°E±0.01, h14km±1km, mb4.4/54, MS3.4/11, Error ellipse: s-maj=2.0km s-min=1.5km az=41.4*
NEIC ***29*** *19:52:26.8±0.4, 38.36°N×21.76°E, h6km±3km, mb4.3/19, ML4.1(THE), Error ellipse: s-maj=3.2km s-min=2.6km az=200.0*
CSEM ***29*** *19:52:26.9±0.1, 38.32°N×21.77E, h8km, mb4.4/31, Error ellipse: s-maj=2.3km s-min=1.8km az=37.0*
PDG ***29*** *19:52:26.4±0.6, 38.30°N×21.77E, h11km, ML4.0/13, Error ellipse: s-maj=0.8km s-min=0.8km az=90.0*
THE ***29*** *19:52:26.8, 38.32°N×21.76E, h0km±1km, ML4.2/12, Error ellipse: s-maj=1.3km s-min=0.4km az=193.0*
ATH ***29*** *19:52:26.4, 38.32°N×21.77E, h18km, ML3.9/27, Error ellipse: s-maj=0.8km s-min=0.5km az=200.0*
MOS ***29*** *19:52:28.7±1.2, 38.36°N×21.75E, h33km, mb4.7/13, Error ellipse: s-maj=5.9km s-min=3.8km az=79.0*
IDC ***29*** *19:52:30.1±3.9, 38.51°N×21.81E, h26km±27km, mb4.1/25, mb1 4.1/35, mb1mx4.0/63, mbtmp4.1/35, ML3.6/10, MS3.4/17, Ms1 3.4/17, ms1mx3.1/54, Error ellipse: s-maj=14.9km s-min=10.1km az=2.0*
ISC 29 19:52:27.0±0.6, 38.32°N±0.01°×21.77°E±0.01, h11km±3km, n670, σ1°36/776, mb4.4/54, MS3.4/11, 28C-32D, Greece

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
UPR	**University Cam**	**0.04**	**159**	P		**Pg**	**19 52 28.2**	**-0.8**
UPR				S		**Sg**	**19 52 29.4**	**-1.0**
UPR	**University Cam**	**0.04**	**159**	P		**Pg**	**19 52 28.2**	**-0.8**
UPR				S		**Sg**	**19 52 29.4**	**-1.0**
UPR	**University Cam**	**0.04**	**159**	P		**Pg**	**19 52 27.5**	**-1.5**
LAKA	**Lakka**	**0.18**	**115**	P		**Pg**	**19 52 30.7**	**-0.3**
LAKA				S		**Sg**	**19 52 33.2**	**-0.5**
LAKA	**Lakka**	**0.18**	**115**	P		**Pg**	**19 52 30.7**	**-0.3**
LAKA				S		**Sg**	**19 52 33.2**	**-0.5**
LAKA	**Lakka**	**0.18**	**115**	*e*Sg		**Sg**	**19 52 33.2**	**-0.5**
LAKA	**Lakka**	**0.18**	**115**	P		**Pg**	**19 52 30.9**	**-0.1**
LAKA				S		**Sg**	**19 52 33.9**	**+0.2**
LAKA				AML		AML	19 52 34.6	
	comp=E,73619μm,0.6s							
LAKA				AML		AML	19 52 38.9	
	comp=N,31523μm,0.5s							
TRIZ	**Trizonia**	**0.24**	**79**	P		**Pg**	**19 52 32.0**	**0.0**
TRIZ				S		**Sg**	**19 52 36.9**	**+1.5**
SERG	**Sergoula**	**0.24**	**67**	P		**Pg**	**19 52 31.8**	**-0.3**
SERG				S		**Sg**	**19 52 36.0**	**+0.5**
SERG	**Sergoula**	**0.24**	**67**	P		**Pg**	**19 52 31.8**	**-0.3**
SERG				S		**Sg**	**19 52 36.0**	**+0.5**
ANX	**Ano Chora**	**0.30**	**23**	P		**Pg**	**19 52 32.7**	**-0.4**
ANX				S		**Sg**	**19 52 37.5**	**+0.3**
ANX	**Ano Chora**	**0.30**	**23**	P		**Pg**	**19 52 32.7**	**-0.4**
ANX				S		**Sg**	**19 52 37.5**	**+0.3**
ANX	**Ano Chora**	**0.30**	**23**	S		**Sb**	**19 52 38.3**	**-1.2**
ANX				AML		AML	19 52 40.3	
	comp=E,50942μm,0.7s							
ANX				AML		AML	19 52 44.5	
	comp=N,59334μm,0.8s							
KALE	**Kalithea**	**0.30**	**76**	P		**Pg**	**19 52 33.0**	**-0.1**
KALE				S		**Sg**	**19 52 38.1**	**+0.9**
KALE	**Kalithea**	**0.30**	**76**	P		**Pg**	**19 52 33.0**	**-0.1**
KALE				S		**Sg**	**19 52 36.5**	**-0.6**
KALE				AML		AML	19 52 41.7	
	comp=E,26722μm,0.6s							
KALE				AML		AML	19 52 43.1	
	comp=N,31852μm,0.3s							
AXS	**Araxos**	**0.33**	**249**	P		**Pg**	**19 52 32.8**	**-0.9**
AXS				S		**Sg**	**19 52 38.0**	**-0.1**
AXS	**Araxos**	**0.33**	**249**	P		**Pg**	**19 52 32.8**	**-0.9**
AXS				S		**Sg**	**19 52 37.3**	**-0.8**
AXS	**Araxos**	**0.33**	**249**	P		**Pg**	**19 52 32.5**	**-1.2**
AXS				S		**Sg**	**19 52 37.3**	**-0.8**
RLS	**Riolos of Patr**	**0.35**	**223**	P		**Pg**	**19 52 33.4**	**-0.6**
RLS				S		**Sg**	**19 52 39.4**	**+0.7**
RLS	**Riolos of Patr**	**0.35**	**223**	P		**Pg**	**19 52 33.4**	**-0.6**
RLS				S		**Sg**	**19 52 39.0**	**+0.3**
RLS	**Riolos of Patr**	**0.35**	**223**	P		**Pg**	**19 52 33.4**	**-0.6**
RLS				S		**Sg**	**19 52 39.4**	**+0.7**
RLS	**Riolos of Patr**	**0.35**	**223**	S		**Sg**	**19 52 39.0**	**+0.3**
RLS				AML		AML	19 52 39.3	
	comp=E,85968μm,0.5s							
RLS				AML		AML	19 52 40.8	
PVO	**Paravola**	**0.35**	**327**	P		**Pg**	**19 52 33.2**	**-0.9**
PVO				S		**Sg**	**19 52 38.7**	**-0.1**
PVO	**Paravola**	**0.35**	**327**	P		**Pg**	**19 52 33.2**	**-0.9**
PVO				S		**Sg**	**19 52 38.7**	**-0.1**
PVO	**Paravola**	**0.35**	**327**	P		**Pg**	**19 52 33.0**	**-1.1**
PVO				S		**Sb**	**19 52 40.3**	**-0.7**
DRO	**Drossia**	**0.37**	**187**	P		**Pg**	**19 52 33.6**	**-0.7**
DRO				S		**Sg**	**19 52 39.8**	**+0.6**
DRO	**Drossia**	**0.37**	**187**	P		**Pg**	**19 52 33.7**	**-0.7**
DRO				S		**Sg**	**19 52 39.8**	**+0.6**
DRO	**Drossia**	**0.37**	**187**	P		**Pg**	**19 52 33.7**	**-0.7**
DRO				S		**Sb**	**19 52 40.7**	**-0.7**
DRO				AML		AML	19 52 41.6	
DRO				AML		AML	19 52 43.5	
KLV	**Kalavryta, Ach**	**0.41**	**132**	P		**Pg**	**19 52 34.5**	**-0.5**
KLV				S		**Sb**	**19 52 41.7**	**-0.8**
KLV	**Kalavryta, Ach**	**0.41**	**132**	P		**Pg**	**19 52 34.5**	**-0.5**
KLV				S		**Sb**	**19 52 41.7**	**-0.8**
KLV	**Kalavryta, Ach**	**0.41**	**132**	*e*Pg		**Pg**	**19 52 34.5**	**-0.5**
KLV				*e*Sg		**Sb**	**19 52 41.7**	**-0.8**
KLV	**Kalavryta, Ach**	**0.41**	**132**	P		**Pg**	**19 52 34.9**	**-0.2**
KLV				S		**Sb**	**19 52 41.8**	**-0.7**
KLV				AML		AML	19 52 45.8	
	comp=N,26708μm,0.9s							
KLV				AML		AML	19 52 45.9	
	comp=E,15260μm,0.3s							
PDO	**Prodromos**	**0.54**	**301**	P		**Pg**	**19 52 36.4**	**-1.1**
PDO				S		**Sg**	**19 52 45.3**	**+0.7**
PDO	**Prodromos**	**0.54**	**301**	P		**Pg**	**19 52 36.4**	**-1.1**
PDO				S		**Sg**	**19 52 44.9**	**+0.3**
PDO	**Prodromos**	**0.54**	**301**	P		**Pg**	**19 52 36.2**	**-1.3**
PDO				S		**Sg**	**19 52 44.9**	**+0.3**
PDO				AML		AML	19 52 47.8	
	comp=N,59002μm,0.5s							
PDO				AML		AML	19 52 48.5	
	comp=E,41794μm,0.3s							
EVR	**Evrytania**	**0.60**	**3**	P		**Pg**	**19 52 37.7**	**-1.0**
EVR	**Evrytania**	**0.60**	**3**	P		**Pg**	**19 52 37.7**	**-1.0**
EVR				S		**Sg**	**19 52 46.5**	**-0.1**
EVR	**Evrytania**	**0.60**	**3**	P		**Pg**	**19 52 37.7**	**-1.0**
EVR	**Evrytania**	**0.60**	**3**	P		**Pg**	**19 52 37.7**	**-1.0**
EVR				S		**Sg**	**19 52 46.5**	**-0.1**
EVR				AML		AML	19 52 57.6	
	comp=N,18292μm,0.7s							
DSF	**Desfina**	**0.60**	**81**	P		**Pg**	**19 52 38.1**	**-0.6**
DSF				S		**Sb**	**19 52 47.4**	**-0.8**
DSF	**Desfina**	**0.60**	**81**	P		**Pg**	**19 52 38.1**	**-0.6**
DSF				S		**Sb**	**19 52 47.4**	**-0.8**
DSF	**Desfina**	**0.60**	**81**	*e*Pg		**Pg**	**19 52 38.1**	**-0.6**
DSF				*e*Sg		**Sb**	**19 52 47.4**	**-0.8**
DSF	**Desfina**	**0.60**	**81**	P		**Pg**	**19 52 38.0**	**-0.6**
DSF				AML		AML

	comp=N,19169µm,0.7s																		
LKD2					AML	AML	19 53 25.9												
	comp=E,12323µm,1.0s																		
ZKS	**Zakynthos**	**0.99**	**232**		P	**Pg**	**19 52 44.7**	**-1.4**											
ZKS					S	**Sb**	**19 52 59.5**	**+0.1**											
ZKS	**Zakynthos**	**0.99**	**232**		P	**Pg**	**19 52 44.8**	**-1.4**											
ZKS					S	**Sb**	**19 52 59.5**	**+0.1**											
ZKS	**Zakynthos**	**0.99**	**232**		P	**Pg**	**19 52 44.8**	**-1.3**											
ZKS					S	**Sb**	**19 53 00.1**	**+0.7**											
ZKS					AML	AML	19 53 07.6												
	comp=E,47729µm,0.9s																		
ZKS					AML	AML	19 53 10.4												
	comp=N,80456µm,0.5s																		
LOUT	**Loutraki**	**1.00**	**109**		P	**Pg**	**19 52 45.5**	**-0.8**											
LOUT	**Loutraki**	**1.00**	**109**		P	**Pg**	**19 52 46.0**	**-0.4**											
LOUT	**Loutraki**	**1.00**	**109**		P	**Pg**	**19 52 46.0**	**-0.4**											
LOUT					AML	AML	19 53 11.4												
	comp=N,8333µm,0.6s																		
LOUT					AML	AML	19 53 13.9												
	comp=E,7245µm,0.9s																		
LKR	**Lokris**	**1.02**	**71**		P	**Pg**	**19 52 45.5**	**-1.1**											
LKR	**Lokris**	**1.02**	**71**		P	**Pg**	**19 52 45.8**	**-0.8**											
LKR					S	**Sn**	**19 53 01.1**	**-0.5**											
LKR	**Lokris**	**1.02**	**71**		P	**Pg**	**19 52 45.5**	**-1.1**											
LKR	**Lokris**	**1.02**	**71**		P	**Pg**	**19 52 45.8**	**-0.8**											
LKR					S	**Sn**	**19 53 01.1**	**-0.5**											
LKR					AML	AML	19 53 05.4												
	comp=E,4844µm,0.5s																		
LKR					AML	AML	19 53 08.0												
	comp=N,3938µm,0.5s																		
ATAL	**Atalanti**	**1.05**	**69**		P	**Pg**	**19 52 46.8**	**-0.4**											
ATAL	**Atalanti**	**1.05**	**69**		P	**Pg**	**19 52 46.8**	**-0.4**											
ATAL	**Atalanti**	**1.05**	**69**	*e*Pg		**Pg**	**19 52 46.8**	**-0.4**											
ATAL	**Atalanti**	**1.05**	**69**		P	**Pg**	**19 52 44.9**	**-2.3**											
ATAL					S	**Sn**	**19 53 03.4**	**+0.9**											
ATAL					AML	AML	19 53 05.8												
	comp=N,7003µm,0.7s																		
ATAL					AML	AML	19 53 14.6												
	comp=E,4805µm,1.0s																		
VLX	**Vlachokerasia**	**1.06**	**153**		P	**Pg**	**19 52 46.6**	**-0.8**											
VLX					S	**Sn**	**19 53 02.5**	**-0.3**											
VLX	**Vlachokerasia**	**1.06**	**153**		P	**Pg**	**19 52 46.8**	**-0.7**											
VLX					S	**Sn**	**19 53 02.5**	**-0.3**											
VLX	**Vlachokerasia**	**1.06**	**153**	*e*Pg		**Pg**	**19 52 46.6**	**-0.8**											
VLX	**Vlachokerasia**	**1.06**	**153**		P	**Pg**	**19 52 46.8**	**-0.7**											
VLX					S	**Sn**	**19 53 02.5**	**-0.3**											
VLX					AML	AML	19 53 07.5												
	comp=N,26645µm,0.5s																		
VLX					AML	AML	19 53 12.9												
	comp=E,24812µm,0.9s																		
ITM	**Ithomi**	**1.14**	**174**		P	**Pb**	**19 52 47.9**	**-0.9**											
ITM	**Ithomi**	**1.14**	**174**		P	**Pb**	**19 52 48.2**	**-0.6**											
ITM					S	**Sn**	**19 53 05.2**	**+0.5**											
ITM	**Ithomi**	**1.14**	**174**		P	**Pb**	**19 52 47.9**	**-0.9**											
ITM	**Ithomi**	**1.14**	**174**		P	**Pb**	**19 52 48.2**	**-0.6**											
ITM					S	**Sn**	**19 53 05.2**	**+0.5**											
ITM					AML	AML	19 53 11.5												
	comp=E,12919µm,0.6s																		
ITM					AML	AML	19 53 14.4												
	comp=N,14854µm,0.4s																		
VIL2	**Platees**	**1.18**	**95**		P	**Pg**	**19 52 51.5**	**+1.8**											
VIL2					S	**Sn**	**19 53 06.3**	**+0.6**											
VIL2					AML	AML	19 53 14.4												
	comp=E,8743µm,0.6s																		
VIL2					AML	AML	19 53 15.8												
	comp=N,15141µm,0.9s																		
VILL	**Villia**	**1.22**	**97**		P	**Pg**	**19 52 51.5**	**+1.0**											
VILL					S	**Sg**	**19 53 06.3**	**-0.1**											
SMIA	**Simia**	**1.26**	**63**		P	**Pn**	**19 52 50.3**	**-0.3**											
SMIA	**Simia**	**1.26**	**63**		P	**Pn**	**19 52 50.3**	**-0.3**											
SMIA	**Simia**	**1.26**	**63**		P	**Pg**	**19 52 51.4**	**+0.2**											
SMIA					AML	AML	19 53 13.2												
	comp=E,9490µm,0.7s																		
SMIA					AML	AML	19 53 16.9												
	comp=N,10371µm,0.6s																		
THL	**Klokotos Trika**	**1.26**	**9**		P	**Pb**	**19 52 50.9**	**+0.1**											
THL	**Klokotos Trika**	**1.26**	**9**		P	**Pb**	**19 52 50.9**	**+0.1**											
THL					S	**Sb**	**19 53 06.8**	**-0.2**											
DID	**Didima**	**1.42**	**124**		P	**Pn**	**19 52 52.8**	**0.0**											
DID	**Didima**	**1.42**	**124**		P	**Pn**	**19 52 52.8**	**0.0**											
DID					S	**Sn**	**19 53 10.8**	**-0.6**											
DID	**Didima**	**1.42**	**124**	*e*Pn		**Pn**	**19 52 52.8**	**0.0**											
DID	**Didima**	**1.42**	**124**	P		**Pn**	**19 52 52.3**	**-0.5**											
DID					S	**Sn**	**19 53 10.8**	**-0.6**											
DID					AML	AML	19 53 24.0												
	comp=E,13987µm,0.6s																		
DID					AML	AML	19 53 25.7												
	comp=N,12708µm,0.7s																		
FYTO	**Fytoko, Volos**	**1.42**	**40**		P	**Pb**	**19 52 53.4**	**-0.1**											
FYTO	**Fytoko, Volos**	**1.42**	**40**		P	**Pb**	**19 52 53.4**	**-0.1**											
FYTO	**Fytoko, Volos**	**1.42**	**40**	*e*Pn		**Pb**	**19 52 53.4**	**-0.1**											
FYTO	**Fytoko, Volos**	**1.42**	**40**	P		**Pb**	**19 52 53.8**	**+0.3**											
PYL	**PYLOS**	**1.42**	**181**	P		**Pn**	**19 52 52.5**	**-0.3**											
PYL	**PYLOS**	**1.42**	**181**	P		**Pn**	**19 52 53.1**	**+0.3**											
PYL					S	**Sg**	**19 53 13.7**	**+1.0**											
PYL	**PYLOS**	**1.42**	**181**	*e*Pn		**Pn**	**19 52 52.5**	**-0.3**											
PYL	**PYLOS**	**1.42**	**181**	P		**Pn**	**19 52 53.1**	**+0.3**											
PYL					S	**Sg**	**19 53 13.7**	**+1.0**											
PYL					AML	AML	19 53 23.0												
	comp=E,9858µm,0.6s																		
PYL					AML	AML	19 53 25.2												
	comp=N,9269µm,0.6s																		
LRSO	**Larissa Observ**	**1.44**	**20**		P	**Pb**	**19 52 53.9**	**+0.1**											
LRSO	**Larissa Observ**	**1.44**	**20**		P	**Pb**	**19 52 53.9**	**+0.1**											
NEO	**Neokhori**	**1.50**	**49**		P	**Pn**	**19 52 54.1**	**+0.1**											
NEO	**Neokhori**	**1.50**	**49**		P	**Pn**	**19 52 54.1**	**+0.1**											
NEO	**Neokhori**	**1.50**	**49**		P	**Pn**	**19 52 54.1**	**+0.1**											
NEO	**Neokhori**	**1.50**	**49**		P	**Pb**	**19 52 54.8**	**-0.2**											
XOR	**Xorichti**	**1.53**	**46**		P	**Pn**	**19 52 54.3**	**0.0**											
XOR	**Xorichti**	**1.53**	**46**		P	**Pn**	**19 52 54.4**	**+0.1**											
XOR	**Xorichti**	**1.53**	**46**		P	**Pn**	**19 52 54.3**	**0.0**											
XOR	**Xorichti**	**1.53**	**46**		P	**Pn**	**19 52 54.4**	**+0.1**											
ATH	**Athens Observa**	**1.57**	**102**		P	**Pn**	**19 52 55.3**	**+0.4**											
ATH	**Athens Observa**	**1.57**	**102**		P	**Pn**	**19 52 55.3**	**+0.4**											
ATH	**Athens Observa**	**1.57**	**102**		P	**Pn**	**19 52 55.3**	**+0.4**											
ATH	**Athens Observa**	**1.57**	**102**		P	**Pn**	**19 52 55.3**	**+0.4**											
SKIA	**Skiathos**	**1.57**	**57**		P	**Pn**	**19 52 55.2**	**+0.3**											
SKIA	**Skiathos**	**1.57**	**57**		P	**Pn**	**19 52 55.2**	**+0.3**											
SKIA	**Skiathos**	**1.57**	**57**		P	**Pn**	**19 52 54.8**	**-0.1**											
ATHU	**Athens Univers**	**1.63**	**102**		P	**Pb**	**19 52 56.5**	**-0.6**											
ATHU	**Athens Univers**	**1.63**	**102**		P	**Pb**	**19 52 56.5**	**-0.6**											
ATHU					S	**Sb**	**19 53 18.1**	**+0.5**											
ATHU	**Athens Univers**	**1.63**	**102**	*e*Pn		**Pb**	**19 52 56.5**	**-0.6**											
ATHU	**Athens Univers**	**1.63**	**102**	P		**Pn**	**19 52 55.0**	**-0.7**											
ATHU					S	**Sb**	**19 53 18.1**	**+0.5**											
IGT	**Igoumenitsa**	**1.65**	**318**	P		**Pb**	**19 52 56.7**	**-0.8**											
IGT	**Igoumenitsa**	**1.65**	**318**	*e*P		**Pb**	**19 52 56.7**	**-0.8**											
IGT	**Igoumenitsa**	**1.65**	**318**	P		**Pb**	**19 52 56.7**	**-0.8**											
IGT	**Igoumenitsa**	**1.65**	**318**	*e*Pn		**Pb**	**19 52 56.7**	**-0.8**											
IGT	**Igoumenitsa**	**1.65**	**318**	P		**Pg**	**19 52 58.2**	**-0.5**											
KPRO	**Kipourio**	**1.66**	**349**	P		**Pg**	**19 52 58.7**	**-0.3**											
KPRO	**Kipourio**	**1.66**	**349**	P		**Pg**	**19 52 58.7**	**-0.3**											
VLY	**Voula,Athens**	**1.66**	**106**	P		**Pb**	**19 52 57.1**	**-0.6**											
VLY	**Voula,Athens**	**1.66**	**106**	P		**Pn**	**19 52 56.0**	**-0.2**											
VLY	**Voula,Athens**	**1.66**	**106**	*e*Pn		**Pb**	**19 52 57.1**	**-0.6**											
VLY	**Voula,Athens**	**1.66**	**106**	P		**Pn**	**19 52 56.0**	**-0.2**											
VLY					AML	AML	19 53 28.2												
	comp=N,10611µm,1.0s																		
VLY					AML	AML	19 53 29.9												
	comp=E,4857µm,0.4s																		
PTL	**Penteli**	**1.67**	**99**	P		**Pn**	**19 52 56.1**	**-0.2**											
PTL	**Penteli**	**1.67**	**99**	P		**Pn**	**19 52 56.6**	**+0.3**											
PTL	**Penteli**	**1.67**	**99**	*e*Pn		**Pn**	**19 52 56.1**	**-0.2**											
PTL	**Penteli**	**1.67**	**99**	P		**Pn**	**19 52 56.6**	**+0.3**											
EREA	**Eretria**	**1.70**	**86**	P		**Pn**	**19 52 56.8**	**+0.1**											
EREA	**Eretria**	**1.70**	**86**	P		**Pn**	**19 52 56.8**	**+0.1**											
EREA	**Eretria**	**1.70**	**86**	P		**Pn**	**19 52 57.6**	**-0.7**											
SGD	**Sagiada**	**1.76**	**318**	P		**Pn**	**19 52 58.1**	**+0.6**											
SGD	**Sagiada**	**1.76**	**318**	P		**Pn**	**19 52 58.1**	**+0.6**											
SGD	**Sagiada**	**1.76**	**318**	P		**Pn**	**19 52 59.5**	**+0.2**											
VLI	**Veliai**	**1.85**	**149**	P		**Pn**	**19 52 59.3**	**+0.6**											
VLI	**Veliai**	**1.85**	**149**	P		**Pn**	**19 52 58.8**	**+0.1**											
VLI	**Veliai**	**1.85**	**149**	*e*Pn		**Pn**	**19 52 59.3**	**+0.6**											
VLI	**Veliai**	**1.85**	**149**	P		**Pn**	**19 52 58.8**	**+0.1**											
AOS	**Alonnisos**	**1.86**	**62**	P		**Pn**	**19 52 57.6**	**-1.2**											
AOS	**Alonnisos**	**1.86**	**62**	P		**Pn**	**19 52 57.6**	**-1.2**											
LIT	**Litokhoron**	**1.87**	**17**	P		**Pn**	**19 52 59.8**	**+0.8**											
LIT	**Litokhoron**	**1.87**	**17**	*e*P		**Pn**	**19 52 59.8**	**+0.8**											
LIT	**Litokhoron**	**1.87**	**17**	P		**Pn**	**19 52 59.8**	**+0.8**											
LIT	**Litokhoron**	**1.87**	**17**	*e*Pn		**Pn**	**19 52 59.8**	**+0.8**											
PENT	**Pentalofos**	**1.94**	**346**	P		**Pg**	**19 53 04.1**	**-0.1**											
KEK	**Kerkira**	**2.07**	**313**	P		**Pb**	**19 53 03.5**	**-1.2**											
KARY	**Karystos**	**2.12**	**97**	P		**Pn**	**19 53 03.0**	**+0.5**											
KARY	**Karystos**	**2.12**	**97**	P		**Pn**	**19 53 02.9**	**+0.5**											
KARY	**Karystos**	**2.12**	**97**	P		**Pn**	**19 53 02.9**	**+0.5**											
PAIG	**Paliouri**	**2.19**	**42**	P		**Pn**	**19 53 03.3**	**-0.1**											
PAIG	**Paliouri**	**2.19**	**42**	*e*P		**Pn**	**19 53 03.3**	**-0.1**											
PAIG	**Paliouri**	**2.19**	**42**	P		**Pn**	**19 53 03.3**	**-0.1**											
PAIG	**Paliouri**	**2.19**	**42**	*e*Pn		**Pn**	**19 53 03.3**	**-0.1**											
PAIG	**Paliouri**	**2.19**	**42**	P		**Pn**	**19 53 02.2**	**-1.1**											
KYTH	**Kithira**	**2.29**	**153**	P		**Pn**	**19 53 05.4**	**+0.6**											
KYTH	**Kithira**	**2.29**	**153**	P		**Pn**	**19 53 05.4**	**+0.6**											
KYTH	**Kithira**	**2.29**	**153**	*e*Pn		**Pn**	**19 53 05.4**	**+0.6**											
KYTH	**Kithira**	**2.29**	**153**	P		**Pb**	**19 53 07.4**	**-1.0**											
PLG	**Polygyros**	**2.43**	**32**	P		**Pn**	**19 53 06.7**	**0.0**											
PLG	**Polygyros**	**2.43**	**32**	P		**Pn**	**19 53 06.7**	**0.0**											
PLG	**Polygyros**	**2.43**	**32**	P		**Pn**	**19 53 06.8**	**0.0**											
PLG	**Polygyros**	**2.43**	**32**	P		**Pn**	**19 53 06.7**	**0.0**											
PLG	**Polygyros**	**2.43**	**32**	P		**Pn**	**19 53 06.8**	**+0.1**											
SERI	**Serifos**	**2.44**	**117**	P		**Pn**	**19 53 05.9**	**-1.0**											
SERI	**Serifos**	**2.44**	**117**	P		**Pn**	**19 53 05.9**	**-1.0**											
FNA	**Florina**	**2.48**	**353**	P		**Pb**	**19 53 11.3**	**-0.3**											
THE	**Thessaloniki**	**2.49**	**21**	P		**Pn**	**19 53 07.7**	**+0.2**											
THE	**Thessaloniki**	**2.49**	**21**	P		**Pn**	**19 53 07.7**	**+0.2**											
HORT	**Hortiatis**	**2.50**	**24**	P		**Pn**	**19 53 08.2**	**+0.5**											
HORT	**Hortiatis**	**2.50**	**24**	P		**Pn**	**19 53 08.2**	**+0.5**											
HORT	**Hortiatis**	**2.50**	**24**	P		**Pn**	**19 53 08.2**	**+0.5**											
HORT	**Hortiatis**	**2.50**	**24**	P		**Pn**	**19 53 07.6**	**-0.1**											
OUR	**Ouranopolis**	**2.65**	**40**	P		**Pn**	**19 53 09.9**	**+0.3**											
OUR	**Ouranopolis**	**2.65**	**40**	*e*P		**Pn**	**19 53 09.9**	**+0.3**											
OUR	**Ouranopolis**	**2.65**	**40**	P		**Pn**	**19 53 09.9**	**+0.3**											
OUR	**Ouranopolis**	**2.65**	**40**	*e*Pn		**Pn**	**19 53 09.9**	**+0.3**											
OUR	**Ouranopolis**	**2.65**	**40**	P		**Pn**	**19 53 09.4**	**-0.2**											
MHLO	**Agia Marina, M**	**2.65**	**127**	P		**Pn**	**19 53 09.8**	**+0.1**											
MHLO	**Agia Marina, M**	**2.65**	**127**	P		**Pn**	**19 53 09.8**	**+0.1**											
MHLO	**Agia Marina, M**	**2.65**	**127**	P		**Pn**	**19 53 09.3**	**-0.4**											
GRG	**Griva**	**2.68**	**10**	P		**Pn**	**19 53 11.1**	**+0.9**											
GRG	**Griva**	**2.68**	**10**	*e*P		**Pn**	**19 53 11.1**	**+0.9**											
GRG	**Griva**	**2.68**	**10**	P		**Pn**	**19 53 11.1**	**+0.9**											
GRG	**Griva**	**2.68**	**10**	*e*Pn		**Pn**	**19 53 11.1**	**+0.9**											
GRG	**Griva**	**2.68**	**10**	P		**Pn**	**19 53 11.4**	**+1.3**											
ANKY	**Antikythira Is**	**2.74**	**153**	P		**Pn**	**19 53 13.2**	**+2.3**											
ANKY	**Antikythira Is**	**2.74**	**153**	P		**Pn**	**19 53 13.2**	**+2.3**											
SOH	**Sokhos**	**2.78**	**26**	P		**Pn**	**19 53 13.0**	**+1.4**											
SOH	**Sokhos**	**2.78**	**26**	*e*P		**Pn**	**19 53 13.0**	**+1.4**											
SOH	**Sokhos**	**2.78**	**26**	P		**Pn**	**19 53 13.0**	**+1.4**											
SOH	**Sokhos**	**2.78**	**26**	*e*Pn		**Pn**	**19 53 13.0**	**+1.4**											
SOH	**Sokhos**	**2.78**	**26**	P		**Pn**	**19 53 14.1**	**+2.5**											
OHR	**Ohrid**	**2.89**	**345**	*i* Pn		**Pb**	**19 53 19.2**	**+0.6**											
KNT	**Kendrikon**	**2.97**	**17**	P		**Pn**	**19 53 15.1**	**+1.0**											
KNT	**Kendrikon**	**2.97**	**17**	P		**Pn**	**19 53 15.1**	**+1.0**											
KNT	**Kendrikon**	**2.97**	**17**	P		**Pn**	**19 53 15.1**	**+1.0**											
KNT	**Kendrikon**	**2.97**	**17**	P		**Pn**	**19 53 15.1**	**+1.0**											
KNT	**Kendrikon**	**2.97**	**17**	P		**Pn**	**19 53 15.4**	**+1.2**											
VAY	**Valandovo**	**3.06**	**11**	*i* Pn		**Pb**	**19 53 18.9**	**-2.6**											
VAY	**Valandovo**	**3.06**	**11**	*i* Pn		**Pb**	**19 53 18.9**	**-2.6**											
LIA	**Limnos Island**	**3.09**	**58**	P		**Pn**	**19 53 16.6**	**+0.9**											
LIA	**Limnos Island**	**3.09**	**58**	P		**Pn**	**19 53 15.6**	**-0.1**											
LIA	**Limnos Island**	**3.09**	**58**	P		**Pn**	**19 53 16.6**	**+0.9**											
SRS	**Serrai**	**3.13**	**26**	P		**Pn**	**19 53 16.6**	**+0.3**											
SRS	**Serrai**	**3.13**	**26**	*e*P		**Pn**	**19 53 16.6**	**+0.3**											
SRS	**Serrai**	**3.13**	**26**	*e*P		**Pn**	**19 53 16.6**	**+0.3**											
SRS	**Serrai**	**3.13**	**26**	*e*Pn		**Pn**	**19 53 16.6**	**+0.3**											
SRS	**Serrai**	**3.13**	**26**	P		**Pn**	**19 53 16.8**	**+0.5**											
APE	**Apeiranthos**	**3.23**	**112**	*e*P		**Pn**	**19 53 17.9**	**+0.1**											
APE	**Apeiranthos**	**3.23**	**112**	*i* P		**Pn**	**19 53 17.9**	**+0.1**											
APE	**Apeiranthos**	**3.23**	**112**	P		**Pn**	**19 53 17.3**	**-0.5**											
SIGR	**SIGRI**	**3.32**	**73**	P		**Pn**	**19 53 18.4**	**-0.4**											
SIGR	**SIGRI**	**3.32**	**73**	P		**Pn**	**19 53 18.4**	**-0.4**											
IMMV	**Iera Moni Meta**	**3.36**	**147**	P		**Pn**	**19 53 20.8**	**+1.3**											
IMMV	**Iera Moni Meta**	**3.36**	**147**	P		**Pn**	**19 53 20.4**	**+1.0**											
IMMV	**Iera Moni Meta**	**3.36**	**147**	P		**Pn**	**19 53 20.4**	**+1.0**											
TIR	**Tirane**	**3.36**	**335**	*e*P		**Pn**	**19 53 20.1**	**+0.6**											
TIR	**Tirane**	**3.36**	**335**	*e*Pn		**Pn**	**19 53 20.1**	**+0.6**											
TIR	**Tirane**	**3.36**	**335**	*e*Pn		**Pn**	**19 53 20.1**	**+0.6**											
CHOS	**Chios island**	**3.37**	**88**	P		**Pn**	**19 53 20.6**	**+0.9**											
CHOS	**Chios island**	**3.37**	**88**	P		**Pn**	**19 53 20.6**	**+0.9**											
THR5	**Thira Island,**	**3.42**	**123**	P		**Pn**	**19 53 21.5**	**+1.1**											
THR5	**Thira Island,**	**3.42**	**123**	P		**Pn**	**19 53 21.5**	**+1.1**											
NVR	**Nevrokopi**	**3.43**	**27**	P		**Pn**	**19 53 21.4**	**+0.9**											
VAM	**Vamos**	**3.50**	**145**	P		**Pn**	**19 53 21.3**	**-0.1**											
SANT	**Santorini**	**3.52**	**122**	*e*Pn		**Pn**	**19 53 23.0**	**+1.2**											
SANT	**Santorini**	**3.52**	**122**	*e*Pn		**Pn**	**19 53 23.0**	**+1.2**											
SMTH	**Samothraki Isl**	**3.62**	**52**	P		**Pn**	**19 53 22.2**	**-0.9**											
SMTH	**Samothraki Isl**	**3.62**	**52**	P		**Pn**	**19 53 22.2**	**-0.9**											
PRK	**Paraskevi**	**3.64**	**74**	P		**Pn**	**19 53 23.1**	**-0.2**											
PRK	**Paraskevi**	**3.64**	**74**	P		**Pn**	**19 53 23.1**	**-0.2**											
SKO	**Skopje**	**3.66**	**356**	*i* Pn		**Pn**	**19 53 26.9**	**+3.3**											
SKO	**Skopje**	**3.66**	**356**	*i* Pn		**Pn**	**19 53 26.8**	**+3.3**											
IDI	**Anoyia**	**3.93**	**139**	Pn		**Pn**	**19 53 29.6**	**+2.3**											
	comp=E,6.3nm,0.3s,baz=312,slow=18,SNR=34																		
IDI					Sn	**Sb**	**19 54 21.6**	**-2.3**											
	comp=E,11nm,0.3s,baz=308,slow=23,SNR=6.7																		
IDI					LR	LR	19 55 21.3												
	comp=E,224nm,21.6s,baz=310,slow=42																		
IDI	**Anoyia**	**3.93**	**139**	P		**Pn**	**19 53 29.1**	**+1.8**											
IDI	**Anoyia**	**3.93**	**139**	*e*Pn		**Pn**	**19 53 28.0**	**+0.7**											
IDI	**Anoyia**	**3.93**	**139**	P		**Pn**	**19 53 29.1**	**+1.8**											
IDI	**Anoyia**	**3.93**	**139**	*e*Pn		**Pn**	**19 53 28.0**	**+0.7**											
IDI					Sn	**Sb**	**19 53 21.6**	**-2.3**											
IDI	**Anoyia**	**3.93**	**139**	P		**Pn**	**19 53 30.5**	**+3.1**											
TIP	**Timpagrande**	**4.01**	**284**	*e*Pn		**Pn**	**19 53 28.7**	**+0.2**											
TIP	**Timpagrande**	**4.01**	**284**	*e*Pn		**Pn**	**19 53 28.7**	**+0.2**											
SMG	**Samos**	**4.05**	**97**	P		**Pn**	**19 53 29.6**	**+0.7**											
SMG	**Samos**	**4.05**	**97**	P		**Pn**	**19 53 29.6**	**+0.7**											
SMG	**Samos**	**4.05**	**97**	P		**Pn**	**19 53 29.6**	**+0.7**											
SMG	**Samos**	**4.05**	**97**	P		**Pn**	**19 53 29.7**	**+0.7**											
TAR1	**Taranto**	**4.11**	**304**	*e*Pn		**Pn**	**19 53 30.1**	**+0.3**											
ULC	**Ulcinj**	**4.12**	**333**	*i* Pn		**Pn**	**19 53 31.1**	**+1.1**											
ULC					eSn	**Sn**	**19 54 19.5**	**+1.3**											
ULC	**Ulcinj**	**4.12**	**333**	*i* Pn		**Pn**	**19 53 31.1**	**+1.1**											
ULC					eSn	**Sn**	**19 54 19.5**	**+1.3**											
LAST	**Lasithi**	**4.34**	**135**	P		**Pn**	**19 53 34.1**	**+1.1**											
LAST	**Lasithi**	**4.34**	**135**	P		**Pn**	**19 53 34.1**	**

MOA *i* Sn **Sn** **19 57 06.5 -0.5**
comp=Z,2.9nm,0.5s
MOA Molln 10.99 333 Pn **Pn** **19 55 05.2 +1.1**
comp=Z,1.5nm,0.4s
MOA Sn **Sn** **19 57 06.5 -0.5**
comp=Z,2.9nm,0.5s
STHS Stebnicka Huta 11.10 358 *e*P Pn 19 55 13.0 +7.3
STHS Stebnicka Huta 11.10 358 *e*P Pn 19 55 13.0 +7.3
STHS Stebnicka Huta 11.10 358 *e* Pn 19 55 13.0 +7.3
VRAC Vranov 11.60 343 LR LR 20 00 39.3
comp=Z,278nm,18.7s,baz=184,slow=43
WATA Walderalm 11.70 324 *e*Pn **Pn** **19 55 14.8 +0.7**
comp=Z,5.0nm,0.4s
WATA *e*Sn **Sn** **19 57 22.3 -2.4**
comp=Z,5.4nm,0.6s
WATA Walderalm 11.70 324 Pn **Pn** **19 55 14.8 +0.7**
comp=Z,5.0nm,0.4s
FUORN Ofenpass-Fuorn 11.86 318 *e*Pn **Pn** **19 55 16.8 +0.4**
FUORN Ofenpass-Fuorn 11.86 318 *e*Pn **Pn** **19 55 16.8 +0.4**
FETA Feichten 11.89 321 Pn **Pn** **19 55 17.4 +0.8**
FETA *e*Sn **Sn** **19 57 29.5 +0.2**
comp=Z,4.4nm,0.7s
FETA Feichten 11.89 321 Pn **Pn** **19 55 17.4 +0.8**
FETA Sn **Sn** **19 57 29.5 +0.2**
comp=Z,4.4nm,0.7s
MOTA Moosalm 11.93 323 *e*Pn **Pn** **19 55 17.0 -0.2**
comp=Z,6.7nm,0.6s
MOTA *e*Sn **Sn** **19 57 27.7 -2.7**
comp=Z,4.7nm,0.6s
MOTA Moosalm 11.93 323 Pn **Pn** **19 55 17.0 -0.2**
comp=Z,6.7nm,0.6s
OJC Ojcow 11.98 354 *e*P **Pn** **19 55 15.7 -2.0**
OJC Ojcow 11.98 354 *e*Pn **Pn** **19 55 15.7 -2.0**
OJC Ojcow 11.98 354 *e*Pn **Pn** **19 55 15.7 -2.0**
GEA0 GERESS Array S 12.02 334 *e*Pn **Pn** **19 55 17.3 -1.0**
GEA0 GERESS Array S 12.02 334 *e*Pn **Pn** **19 55 17.3 -1.0**
GEC2 GERESS Array S 12.03 334 *e*P **Pn** **19 55 19.1 +0.7**
GEC2 GERESS Array S 12.03 334 *e*Pn **Pn** **19 55 19.1 +0.7**
GEC2 GERESS Array S 12.03 334 *e*Pn **Pn** **19 55 19.1 +0.7**
GERES GERESS Array B 12.03 334 Pn **Pn** **19 55 18.2 -0.2**
comp=Z,0.2nm,0.3s,baz=153,slow=15,SNR=7.4
GERES Sn **Sn** **19 57 32.1 -0.6**
comp=Z,0.2nm,0.3s,baz=151,slow=23,SNR=7.7
GERES LR LR 20 00 55.3
comp=Z,492nm,19.9s,baz=138,slow=42
DAVOX Davos/Dischmat 12.17 318 Pn **Pn** **19 55 21.4 +1.0**
comp=Z,0.2nm,0.3s,baz=139,slow=18,SNR=3.1
DAVOX Sn **Sn** **19 57 35.3 -0.9**
comp=Z,0.3nm,0.3s,baz=323,slow=20,SNR=3.3
TUE Stuetta 12.27 316 *e*Pn **Pn** **19 55 21.1 -0.7**
TUE Stuetta 12.27 316 *e*Pn **Pn** **19 55 21.1 -0.7**
MMAI Mount Meron Ar 12.28 111 Pn **Pn** **19 55 24.0 +2.1**
comp=Z,0.8nm,0.3s,baz=310,slow=12,SNR=7.7
MMAI Sn **Sn** **19 57 39.3 +0.4**
comp=Z,0.6nm,0.3s,baz=290,slow=26,SNR=4.0
KHC Kasperske Hory 12.32 334 *e*P **Pn** **19 55 22.3 0.0**
KHC *e*S **Sn** **19 57 36.4 -3.1**
KHC AMS AMS 20 00 40.0
comp=Z,500nm,15.0s
KHC Kasperske Hory 12.32 334 *e*P **Pn** **19 55 22.3 0.0**
KHC *e*S **Sn** **19 57 36.4 -3.1**
KHC MLR MLR
comp=Z,500nm,15.0s
KHC Kasperske Hory 12.32 334 P **Pn** **19 55 22.3 0.0**
KHC *e*S **Sn** **19 57 36.4 -3.1**
DAVA Damuels 12.50 320 *i* Sn **Sn** **19 57 40.6 -3.6**
comp=Z,6.5nm,0.7s
DPC Dobruska-Polom 12.64 344 AMS AMS 20 01 30.0
comp=Z,300nm,9.8s
PRU Pruhonice 12.76 338 AMS AMS 20 00 50.0
comp=Z,400nm,14.2s
PVCC Panska Ves 13.24 340 AMS AMS 20 01 10.0
comp=Z,400nm,12.7s
SENIN Lac Senin/Sane 13.37 312 *e*Pn **Pn** **19 55 36.8 -0.1**
SENIN Lac Senin/Sane 13.37 312 *e*Pn **Pn** **19 55 36.9 -0.1**
SENIN *e*Sn Sn 19 57 50.9 -15
AK11 Malin Array Si 13.43 21 *e*Pn **Pn** **19 55 35.0 -2.4**
KIEV Kiev 13.45 21⇓ *e*P **Pn** **19 55 38.3 +0.6**
KIEV pmax pmax
comp=Z,2.0nm,1.0s
KIEV Kiev 13.45 21 *e*P **Pn** **19 55 38.3 +0.6**
comp=Z,2.0nm,1.0s
KIEV Kiev 13.45 21 *e*Pn **Pn** **19 55 38.1 +0.4**
AKASG Malin Array Be 13.46 21 Pn **Pn** **19 55 36.9 -1.0**
comp=Z,0.3nm,0.3s,baz=204,slow=12,SNR=5.3
AKBB Malin Array Si 13.46 21 *e*P **Pn** **19 55 38.3 +0.4**
AKBB Malin Array Si 13.46 21 *e*Pn **Pn** **19 55 38.3 +0.4**
AKBB Malin Array Si 13.46 21 *e*Pn **Pn** **19 55 38.3 +0.4**
GRFO Grafenberg 13.65 330 *e*P **Pn** **19 55 39.5 -1.0**
GRFO Grafenberg 13.65 330 *e*Pn **Pn** **19 55 39.5 -1.0**
GRFO Grafenberg 13.65 330 *e*Pn **Pn** **19 55 39.5 -1.0**
EIL Elat 13.92 124 Pn **Pn** **19 55 45.3 +1.1**
comp=Z,0.5nm,0.3s,baz=334,slow=10,SNR=6.7
EIL Sn **Sn** **19 58 14.5 -4.3**
comp=Z,0.5nm,0.3s,baz=260,slow=18,SNR=5.7
BFO Black Forest 13.97 320 *e*P **Pn** **19 55 43.9 -1.0**
BFO Black Forest 13.97 320 *e*Pn **Pn** **19 55 43.9 -1.0**
BFO Black Forest 13.97 320 *e*Pn **Pn** **19 55 43.9 -1.0**
CLL Collm 14.38 337 *e*P Pn 19 55 44.0 -6.5
CLL *e*(PP) 19 56 00.0
CLL Lm MLR 20 01 00.0
comp=Z,300nm,21.7s
CLL Collm 14.38 337 *e*P Pn 19 55 44.0 -6.5
CLL Collm 14.38 337 *e*P Pn 19 55 44.0 -6.5
SSB Saint Sauveur 14.60 304 *e*P **Pn** **19 55 55.2 +1.7**
SSB Saint Sauveur 14.60 304 *e*Pn **Pn** **19 55 55.2 +1.7**
SSB Saint Sauveur 14.60 304 *e*Pn **Pn** **19 55 55.2 +1.7**
WLF Walferdange 15.93 320 *e*P **Pn** **19 56 11.3 +0.3**
WLF pmax pmax
comp=Z,11nm,1.1s
WLF Walferdange 15.93 320 *e*Pn **Pn** **19 56 11.3 +0.3**
comp=Z,11nm,1.1s
WLF Walferdange 15.93 320 *e*Pn **Pn** **19 56 11.3 +0.3**
comp=Z,11nm,1.1s
KIV Kislovodsk 16.72 64⇑ *e*P **P** **19 56 23.6 0.0**
KIV pmax pmax
comp=Z,3.0nm,0.9s
KIV Kislovodsk 16.72 64 *e*P **P** **19 56 23.6 0.0**
comp=Z,3.0nm,0.9s
KBZ Khabaz 16.82 65 Pn **P** **19 56 25.8 +1.3**
comp=Z,0.1nm,0.3s,baz=269,slow=12,SNR=4.2
KBZ LR LR 20 04 04.2
comp=Z,46nm,18.2s,baz=240,slow=42
VSR Storozhevoye 17.80 38 *e*P **P** **19 56 35.2 -0.1**
VSR pmax pmax
comp=Z,8.0nm,0.8s
VSR Storozhevoye 17.80 38 *e*P **P** **19 56 35.2 -0.1**
comp=Z,8.0nm,0.8s
GNI Garni 17.88 77 *e*P **P** **19 56 38.7 +2.1**
GNI pmax pmax
comp=Z,29nm,1.7s
GNI Garni 17.88 77 *e*Pn **P** **19 56 38.7 +2.1**
comp=Z,29nm,1.7s
GNI Garni 17.88 77 *e*Pn **P** **19 56 38.7 +2.1**
comp=Z,29nm,1.7s
VRH Novokhopyorsk 19.07 41 *e*P **Pn** **19 56 50.6 +0.5**
VRH pmax pmax
comp=Z,10.0nm,0.6s
VRH Novokhopyorsk 19.07 41 *e*P **Pn** **19 56 50.6 +0.5**
comp=Z,10.0nm,0.6s
OBN Obninsk 19.55 26 LR LR 20 04 28.2
comp=Z,100nm,19.1s,baz=268,slow=37
OBN Obninsk 19.55 26⇓ *e*P **P** **19 56 54.4 -0.2**
OBN pmax pmax
comp=Z,5.0nm,0.8s
OBN Obninsk 19.55 26 *e*P **P** **19 56 54.4 -0.2**
comp=Z,5.0nm,0.8s
OBN Obninsk 19.55 26 *e*P **P** **19 56 51.9 -2.7**
comp=Z,16nm,1.2s
ES19 SONSECA Array 19.98 282 *e*P **Pn** **19 57 01.1 0.0**
ES19 SONSECA Array 19.98 282 *e*P **Pn** **19 57 01.1 0.0**
ESDC Sonseca Array 20.03 282 P **P** **19 57 00.8 +0.8**
comp=Z,6.3nm,0.9s,baz=76,slow=11,SNR=22
ESLA Sonseca Array 20.03 282 *e*P **P** **19 57 00.8 +0.8**
comp=Z,7.2nm,0.8s
ESLA Sonseca Array 20.03 282 *e*P **P** **19 57 00.8 +0.8**
comp=Z,7.2nm,0.8s
PAB San Pablo 20.34 282 *e*P Pn 19 57 04.4 -1.0
PAB pmax pmax
comp=Z,9.0nm,1.0s
PAB San Pablo 20.34 282 *e*P Pn 19 57 04.4 -1.0
comp=Z,9.2nm,1.0s
PAB San Pablo 20.34 282 *e*P Pn 19 57 04.4 -0.9
comp=Z,9.2nm,1.0s
VSU Vasula 20.41 7⇓ *e*P **P** **19 57 04.7 +0.8**
VSU pmax pmax
comp=Z,206nm,1.7s
VSU Vasula 20.41 7 *e*P **P** **19 57 04.7 +0.8**
comp=Z,206nm,1.7s
TAM Tamanrasset 20.81 227 *e*P Pn 19 57 10.4 -0.7
TAM pmax pmax
comp=Z,9.0nm,1.3s
TAM Tamanrasset 20.81 227 *e*P Pn 19 57 10.4 -0.7
comp=Z,8.5nm,1.3s
TAM Tamanrasset 20.81 227 *e*P Pn 19 57 10.4 -0.7
comp=Z,8.5nm,1.3s
MDT Midelt 22.12 264 P **P** **19 57 23.5 +0.9**
comp=Z,2.9nm,1.0s,baz=41,slow=9.3,SNR=3.5
MVO Moncorvo 22.28 286 *e*P **P** **19 57 29.2 +4.9**
comp=Z,16nm,2.1s
HFS Hagfors 22.43 349 P **P** **19 57 24.1 -1.5**
comp=Z,2.6nm,0.5s,baz=164,slow=12,SNR=15
HFS LR LR 20 06 43.1
comp=Z,94nm,20.4s,baz=174,slow=38
PMRV Marv??o 22.69 282 *e*P **P** **19 57 31.8 +3.2**
comp=Z,17nm,2.1s
KONO Kongsberg 22.72 344 *ce*P **P** **19 57 30.7 +2.0**
KONO pmax pmax
comp=Z,133nm,1.7s
KONO Kongsberg 22.72 344 *e*P **P** **19 57 29.8 +1.1**
comp=Z,25nm,1.3s
KONO Kongsberg 22.72 344 *e*P **P** **19 57 29.8 +1.1**
comp=Z,25nm,1.3s
PESTR Estremoz 22.91 281 *e*P **P** **19 57 34.3 +3.3**
comp=Z,16nm,1.8s
PVIS Viseu 22.96 285 *e*P **P** **19 57 33.8 +2.3**
comp=Z,24nm,2.1s
PVIS Viseu 22.96 285 *e*P **P** **19 57 33.8 +2.3**
comp=Z,24nm,2.1s
FIA0 FINESS Array S 23.30 5 *e*P **P** **19 57 33.0 -1.7**
FIA0 *e* 20 01 21.2
FIA0 FINESS Array S 23.30 5 *e*P **P** **19 57 33.0 -1.7**
FIA0 FINESS Array S 23.30 5 *e*P **P** **19 57 33.0 -1.7**
FIA0 *e*PcP **PcP** **20 01 21.2 -0.3**
FINES FINESS Array B 23.30 5 P **P** **19 57 33.0 -1.7**
comp=Z,1.9nm,0.4s,baz=168,slow=9.7,SNR=17
FINES PcP **PcP** **20 01 21.2 -0.3**
comp=Z,1.5nm,0.7s,baz=187,slow=2.4,SNR=4.7
FINES LR LR 20 07 21.6
comp=Z,149nm,21.9s,baz=191,slow=39
FINES FINESS Array B 23.30 5 *i* P **P** **19 57 33.2 -1.5**
FINES pmax pmax
comp=Z,2.0nm,0.4s
FINES FINESS Array B 23.30 5 *i* P **P** **19 57 33.2 -1.5**
comp=Z,2.0nm,0.4s
FIA1 FINESS Array S 23.31 5 *e*P **P** **19 57 32.7 -2.0**
NC602 NORSAR Array S 23.34 347 *e*P **P** **19 57 34.0 -1.1**
NC602 NORSAR Array S 23.34 347 *e*P **P** **19 57 34.0 -1.1**
NAO01 NORSAR Array S 23.56 347 *e*P **P** **19 57 37.4 +0.1**
NAO01 NORSAR Array S 23.56 347 *e*P **P** **19 57 37.4 +0.1**
NC405 NORSAR Array S 23.67 348 *e*P **P** **19 57 38.2 -0.1**
NC405 NORSAR Array S 23.67 348 *e*P **P** **19 57 38.2 -0.1**
NB201 NORSAR Array S 23.68 347 *e*P **P** **19 57 38.1 -0.4**
NB201 NORSAR Array S 23.68 347 *e*P **P** **19 57 38.1 -0.4**
NB2 NORSAR Subarra 23.69 347 P **P** **19 57 37.7 -0.8**
comp=Z,6.5nm,0.9s,baz=154,slow=10
NB2 NORSAR Subarra 23.69 347 P **P** **19 57 37.7 -0.8**
comp=Z,6.5nm,0.9s,SNR=3.5
NB200 NORSAR Array S 23.69 347 *e*P **P** **19 57 37.5 -1.0**
NB200 NORSAR Array S 23.69 347 *e*P **P** **19 57 37.5 -1.0**
NOA NORSAR Array B 23.69 347 P **P** **19 57 37.5 -1.0**
comp=Z,4.5nm,0.9s,baz=154,slow=9.3,SNR=13
NOA LR LR 20 07 17.1
comp=Z,62nm,20.3s,baz=155,slow=38
NBO00 NORSAR Array S 23.76 347 *e*P **P** **19 57 39.5 +0.3**
NBO00 NORSAR Array S 23.76 347 *e*P **P** **19 57 39.5 +0.3**
NBO02 NORSAR Array S 23.76 347 *e*P **P** **19 57 39.0 -0.2**
NBO02 NORSAR Array S 23.76 347 *e*P **P** **19 57 39.0 -0.2**
NC303 NORSAR Array S 23.83 348 *e*P **P** **19 57 38.5 -1.4**
NC303 NORSAR Array S 23.83 348 *e*P **P** **19 57 38.5 -1.4**
EKA Eskdalemuir Ar 23.89 324 P **P** **19 57 40.4 -0.1**
comp=Z,7.1nm,0.7s,baz=125,slow=10,SNR=28
ESK Eskdalemuir 23.90 323 *e*P **P** **19 57 40.4 -0.2**
ESK pmax pmax
comp=Z,19nm,1.1s
ESK Eskdalemuir 23.90 323 *e*P **P** **19 57 40.4 -0.2**
comp=Z,19nm,1.1s
ESK Eskdalemuir 23.90 323 *e*P **P** **19 57 40.4 -0.2**
comp=Z,19nm,1.1s
NC204 NORSAR Array S 23.99 347 *e*P **P** **19 57 41.0 -0.4**
NC204 NORSAR Array S 23.99 347 *e*P **P** **19 57 41.0 -0.4**
PFVI Vila Bisbo 24.18 277 *e*P **P** **19 57 44.8 +1.4**
comp=Z,79nm,1.4s
PFVI Vila Bisbo 24.18 277 *e*P **P** **19 57 44.8 +1.4**
comp=Z,79nm,1.4s
KLMR Klimovskoe 25.16 21 *e*P **P** **19 57 50.3 -1.7**
KLMR pmax pmax
comp=Z,17nm,1.3s
KLMR Klimovskoe 25.16 21 *e*P **P** **19 57 50.3 -1.7**
comp=Z,17nm,1.3s
AKTK Aktubinsk 28.31 53 P **P** **19 58 18.6 -2.0**
comp=Z,3.0nm,0.6s
AKTO Aktyubinsk 28.31 53 P **P** **19 58 19.9 -0.7**
comp=Z,3.9nm,0.5s,baz=262,slow=9.5,SNR=7.6
AKTO Aktyubinsk 28.31 53 P **P** **19 58 18.6 -2.0**
AKTO pmax pmax
comp=Z,3.0nm,0.6s
GEYT Alibeck 28.48 79 P **P** **19 58 21.8 -0.5**
comp=Z,0.7nm,0.4s,baz=290,slow=8.6,SNR=3.7
AB31 Akbulak array 29.35 56 P **P** **19 58 29.5 -0.3**
AB31 pmax pmax
comp=Z,2.0nm,0.5s
AB31 Akbulak array 29.35 56 P **P** **19 58 29.5 -0.3**
comp=Z,2.0nm,0.5s
ABKAR Akbulak array 29.35 56 *e*P **P** **19 58 29.8 0.0**
comp=Z,4.1nm,0.4s
ABKAR Akbulak array 29.35 56 *e*P **P** **19 58 29.8 0.0**
comp=Z,4.1nm,0.4s
ARU Arti 30.30 41 P **P** **19 58 37.4 -0.7**
comp=Z,1.0nm,0.4s,baz=270,slow=13,SNR=3.9
ARU Arti 30.30 41 *e*P **P** **19 58 37.7 -0.4**
ARU pmax pmax
comp=Z,3.0nm,0.9s
ARU Arti 30.30 41 *e*P **P** **19 58 37.7 -0.4**
comp=Z,2.7nm,0.9s
ARU Arti 30.30 41 *e*P **P** **19 58 37.7 -0.4**
comp=Z,2.7nm,0.9s
DAMY Dhamar 30.97 134 *e*P **P** **19 58 47.2 +2.4**
comp=Z,14nm,1.3s
DAMY Dhmar 30.97 134 *e*P **P** **19 58 47.2 +2.4**
comp=Z,14nm,1.3s
ARA0 ARCESS Array S 31.34 3 *e*P **P** **19 58 46.3 -0.9**
ARA0 ARCESS Array S 31.34 3 *e*P **P** **19 58 46.3 -0.9**
ARCES ARCESS Array B 31.34 3 P **P** **19 58 46.1 -1.1**
comp=Z,1.0nm,0.5s,baz=186,slow=9.6,SNR=7.9
ARCES LR LR 20 12 20.2
comp=Z,162nm,18.2s,baz=188,slow=38
WSAR Wadi Sarin 34.80 105 LR LR 20 16 58.2
comp=Z,16nm,20.1s,baz=60,slow=42
BRVK Borovoye 36.21 50 *ci* P **P** **19 59 30.3 +0.6**
BRVK pmax pmax
comp=Z,7.0nm,0.7s
BRVK Borovoye 36.21 50 *i* P **P** **19 59 30.3 +0.6**
comp=Z,7.0nm,0.7s
BRVK Borovoye 36.21 50 *e*P **P** **19 59 30.4 +0.6**
comp=Z,3.7nm,0.8s
BVAR Borovoye Array 36.27 50 P **P** **19 59 30.8 +0.6**
comp=Z,2.7nm,0.7s,baz=262,slow=4.2,SNR=20
KK31 Karatay Array 36.84 67 *i* P **P** **19 59 35.3 +0.1**
KK31 pmax pmax
comp=Z,10.0nm,0.5s
KK31 Karatay Array 36.84 67 *i* P **P** **19 59 35.3 +0.1**
comp=Z,10.0nm,0.5s
KKAR Karatay Array 36.84 67 *e*P **P** **19 59 35.3 +0.1**
KKAR pmax pmax
comp=Z,199nm,0.5s
KKAR Karatay Array 36.84 67 *e*P **P** **19 59 35.3 +0.1**
comp=Z,199nm,0.5s
KKAR Karatay Array 36.84 67 *e*P **P** **19 59 35.3 +0.1**
comp=Z,199nm,0.5s
CMLA Cha da Macela 36.93 284 *e*P **P** **19 59 38.5 +2.5**
CMLA Cha da Macela 36.93 284 *e*P **P** **19 59 38.5 +2.5**
CMLA Cha da Macela 36.93 284 *e*P **P** **19 59 38.5 +2.5**
OTUK Ortayu 37.51 58 P **P** **19 59 40.7 -0.2**
OTUK pmax pmax
comp=Z,4.0nm,0.6s
OTUK Ortayu 37.51 58 P **P** **19 59 40.7 -0.2**
comp=Z,4.0nm,0.6s
KBL Kabul 37.90 81 *e*P **P** **19 59 43.6 -0.9**
KBL pmax pmax
comp=Z,10.0nm,1.7s
KBL Kabul 37.90 81 *e*P **P** **19 59 43.6 -0.9**
comp=Z,10.0nm,1.7s
KBL Kabul 37.90 81 *e*P **P** **19 59 43.5 -0.9**
comp=Z,10nm,1.7s
MNAS Manas 38.39 67 P **P** **19 59 48.3 -0.2**
MNAS pmax pmax
comp=Z,2.0nm,0.5s
MNAS Manas 38.39 67 P **P** **19 59 48.3 -0.2**
comp=Z,2.0nm,0.5s
MBAR Mbarara 39.60 166 *e*P **P** **19 59 57.0 -1.8**
MBAR pmax pmax
comp=Z,4.0nm,1.0s
MBAR Mbarara 39.60 166 *e*P **P** **19 59 57.0 -1.8**
comp=Z,4.1nm,1.0s
MBAR Mbarara 39.60 166 *e*P **P** **19 59 57.0 -1.8**
comp=Z,4.1nm,1.0s
DBIC Dimbokro 39.67 224 P **P** **20 00 02.1 +2.9**
comp=Z,3.8nm,0.7s,baz=19,slow=11,SNR=4.1
DBIC Dimbokro 39.67 224 *e*P **P** **20 00 00.4 +1.2**
DBIC pmax pmax
comp=Z,51nm,1.7s
DBIC Dimbokro 39.67 224 *e*P **P** **20 00 00.4 +1.2**
comp=Z,51nm,1.7s
DBIC Dimbokro 39.67 224 *e*P **P** **20 00 00.4 +1.2**
comp=Z,51nm,1.7s
AAK Ala-Archa 39.80 67 P **P** **20 00 01.5 +1.2**
comp=Z,2.6nm,0.4s,baz=220,slow=4.9,SNR=6.2
AAK Ala-Archa 39.80 67⇑ *e*P **P** **20 00 01.1 +0.8**
AAK pmax pmax
comp=Z,12nm,0.9s
AAK Ala-Archa 39.80 67 *e*P **P** **20 00 01.1 +0.8**
comp=Z,12nm,0.9s
AAK Ala-Archa 39.80 67 *e*P **P** **20 00 01.3 +1.0**
comp=Z,7.5nm,1.0s
TKM2 Tokmak 2 40.53 66 P **P** **20 00 06.2 -0.2**
TKM2 pmax pmax
comp=Z,2.0nm,0.7s
TKM2 Tokmak 2 40.53 66 P **P** **20 00 06.2 -0.2**
comp=Z,2.0nm,0.7s
KURBB Kurchatov Arra 41.35 54 P **P** **20 00 12.8 0.0**
comp=Z,7.5nm,0.8s,baz=282,slow=8.7,SNR=57
KURK Kurchatov 41.40 54 *de*P **P** **20 00 13.0 -0.2**
KURK pmax pmax
comp=Z,28nm,1.2s
KURK Kurchatov 41.40 54 *e*P **P** **20 00 13.0 -0.2**
comp=Z,28nm,1.2s
KURK Kurchatov 41.40 54 *e*P **P** **20 00 12.8 -0.4**
KSH Kashi 41.65 71 *e*P **P** **20 00 15.0 -0.6**
KSH *e*PP **PnPn** **20 01 54.3 -2.2**
KSH *e*PcP **PcP** **20 02 15.0 +2.7**
KSH S **S** **20 06 29.3 -2.8**
KSH SS **SS** **20 09 27.5 -10**
KSH pmax pmax
comp=Z,110nm,3.5s
KSH LR LR
comp=N,79nm,5.4s
KSH LR LR
comp=E,94nm,5.9s
KSH LR LR
comp=Z,120nm,6.6s
PDGK Podgornoye 43.22 64 P **P** **20 00 27.2 -0.8**
PDGK pmax pmax
comp=Z,4.0nm,0.9s
PDGK Podgornoye 43.22 64 P **P** **20 00 27.2 -0.8**
comp=Z,4.0nm,0.9s
NVS Novosibirsk 43.86 47 *e*P **P** **20 00 33.9 +0.8**
NVS pmax pmax
comp=Z,7.0nm,0.7s
NVS pmax pmax
comp=N,4.0nm,0.9s
NVS pmax pmax
comp=E,4.0nm,0.7s
NVS Novosibirsk 43.86 47 *e*P **P** **20 00 33.9 +0.8**
comp=E,4.0nm,0.9s
MAKZ Makanchi 44.17 59 *e*P **P** **20 00 36.1 +0.3**
MAKZ pmax pmax
comp=Z,9.0nm,0.8s
MAKZ Makanchi 44.17 59 *e*P **P** **20 00 36.1 +0.3**
comp=Z,9.3nm,0.8s
MAKZ Makanchi 44.17 59 *e*P **P** **20 00 36.1 +0.3**
comp=Z,9.3nm,0.8s
MK31 Makanchi Array 44.39 59 *e*P **P** **20 00 37.3 -0.2**
MK31 pmax pmax
comp=Z,18nm,0.7s
MK31 Makanchi Array 44.39 59 *e*P **P** **20 00 37.8 +0.3**
MK31 Makanchi Array 44.39 59 *e*P **P** **20 00 37.8 +0.3**
MK32 Makanchi Array 44.39 59 *e*P **P** **20 00 37.7 +0.2**
MK32 Makanchi Array 44.39 59 *e*P **P** **20 00 37.6 +0.2**
MK32 *e*PP **PP** **20 02 20.6 -0.2**
MKAR Makanchi Array 44.39 59 P **P** **20 00 37.6 +0.1**
comp=Z,19nm,0.5s,baz=274,slow=7.4,SNR=238
MKAR PcP **PP** **20 02 20.6 -0.2**
comp=Z,1.1nm,0.6s,baz=286,slow=3.0,SNR=3.6
MKAR LR LR 20 22 29.1
comp=Z,19nm,18.1s,baz=277,slow=41
MKAR Makanchi Array 44.39 59 *e*P **P** **20 00 37.5 0.0**
comp=Z,196nm,0.6s
MK01 Makanchi Array 44.40 59 *e*P **P** **20 00 37.6 0.0**
MK01 Makanchi Array 44.40 59 *e*P **P** **20 00 37.6 0.0**
ZAA0 Zalesovo Array 44.86 48 *e*P **P** **20 00 40.6 -0.5**
ZAA0 Zalesovo Array 44.86 48 *e*P **P** **20 00 40.6 -0.5**
ZAA1 Zalesovo Array 44.86 48 *e*P **P** **20 00 40.9 -0.2**
ZAA1 Zalesovo Array 44.86 48 *e*P **P** **20 00 40.9 -0.2**
ZALV Zalesovo Beam 44.86 48 P **P** **20 00 40.9 -0.2**
comp=Z,13nm,0.4s,baz=273,slow=8.9,SNR=64
ZALV LR LR 20 22 04.8
comp=Z,24nm,19.7s,baz=257,slow=40
NRIK Noril'sk 46.23 27 LR LR 20 22 04.2
comp=Z,66nm,20.5s,baz=292,slow=38
WMQ Urumqi 48.83 61 *e*P **P** **20 01 12.5 +0.1**
WMQ pP sP 20 01 17.0 -0.1
WMQ pmax pmax
comp=Z,8.0nm,0.6s
FRB Frobisher Bay 56.56 328 LR LR 20 26 37.2
comp=Z,72nm,19.9s,baz=102,slow=36
SONA0 Songino Array 59.61 51 *e*P **P** **20 02 30.6 -0.4**
comp=Z,2.9nm,1.0s
SONA0 Songino Array 59.61 51 *e*P **P** **20 02 30.6 -0.4**
comp=Z,2.9nm,1.0s
SONA1 Songino Array 59.61 51 *e*P **P** **20 02 30.6 -0.4**
SONA1 Songino Array 59.61 51 *e*P **P** **20 02 30.6 -0.4**
SONM Songino Array 59.61 51 P **P** **20 02 30.6 -0.4**
comp=Z,1.7nm,0.7s,baz=281,slow=7.1,SNR=11
RES Resolute Bay 59.91 344 LR LR 20 29 20.5
comp=Z,49nm,20.5s,baz=308,slow=37
EMMW East Machias 63.87 307 *e*P **P** **20 02 59.6 +0.1**
comp=Z,17nm,0.8s
EMMW East Machias 63.87 307 *e*P **P** **20 02 59.6 +0.1**
comp=Z,17nm,0.8s
BOSA Boshof 66.66 177 LR LR 20 34 04.5
comp=Z,49nm,18.3s,baz=335,slow=37
HIA Hailar 66.73 45⇑ *i* P **P** **20 03 18.1 0.0**
HIA pmax pmax
comp=Z,2.0nm,0.8s
HIA Hailar 66.73 45 *i* P **P** **20 03 18.1 0.0**
comp=Z,2.0nm,0.8s
BILL Bilibino 70.66 13 *e*P **P** **20 03 43.7 +1.5**
BILL pmax pmax
comp=Z,4.0nm,1.0s
BILL Bilibino 70.66 13 *e*P **P** **20 03 43.7 +1.5**
comp=Z,4.0nm,1.0s
KLR Kul'dur 73.14 40 P **P** **20 03 56.9 -0.6**
comp=Z,2.1nm,0.7s,baz=314,slow=7.6,SNR=8.2
YKA Yellowknife Ar 73.59 340 P **P** **20 03 59.5 -0.3**
comp=Z,0.6nm,0.7s,baz=31,slow=5.4,SNR=5.6
YKA Yellowknife Ar 73.59 340 *ce*P **P** **20 04 00.1 +0.3**
YKA pmax pmax
comp=Z,1.0nm,0.7s
YKA Yellowknife Ar 73.59 340 *e*P **P** **20 04 00.1 +0.3**
comp=Z,1.0nm,0.7s
ULM Lac du Bonnet 76.17 324 P **P** **20 04 15.3 +0.4**
comp=Z,3.5nm,0.7s,baz=67,slow=7.7,SNR=4.8
USRK Ussuriysk Ar. 76.50 44 P **P** **20 04 15.7 -1.3**
comp=Z,2.1nm,0.6s,baz=291,slow=6.0,SNR=5.3
ILAR Eielson Array 76.86 355 P **P** **20 04 19.0 +0.3**
comp=Z,0.8nm,0.7s,baz=353,slow=3.6,SNR=7.9
ILAR Eielson Array 76.86 355 P **P** **20 04 19.0 +0.3**
ILAR Eielson Array 76.86 355 P **P** **20 04 19.0 +0.3**
KSAR Wonju Array Be 78.46 51 P **P** **20 04 27.1 -1.0**
KSAR Wonju Array Be 78.46 51 P **P** **20 04 27.1 -1.0**
KSAR Wonju Array Be 78.46 51 P **P** **20 04 27.1 -1.0**
KSRS Korea Array 78.48 51 P **P** **20 04 27.1 -1.0**
comp=Z,2.4nm,0.6s,baz=310,slow=5.0,SNR=8.5
KDAK Kodiak Island 84.14 357 *i* P **P** **20 04 59.0 +1.2**
KDAK Kodiak Island 84.14 357 *i* P **P** **20 04 59.0 +1.2**
PDAR Pinedale Array 87.98 326 P **P** **20 05 17.3 -0.1**

comp=Z,0.5nm,0.7s,baz=43,slow=4.1,SNR=2.3

LTX	**Lajitas**	**95.58**	**314**	*e*P	**P**	**20 05 53.4 +0.6**
LTX	**Lajitas**	**95.58**	**314**	*e*P	**P**	**20 05 53.3 +0.6**
LTX	**Lajitas**	**95.58**	**314**	*e*P	**P**	**20 05 53.4 +0.6**
TXAR	**Lajitas Array**	**95.58**	**314**	P	**P**	**20 05 53.4 +0.6**

comp=Z,0.4nm,0.8s,baz=101,slow=5.2,SNR=3.9

IDC 29 19:56:13.6±1.2, 0.44N×129.17E, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.4/54, mbtmp3.5/5, ML3.6/1, Error ellipse: s-maj=57.4km s-min=20.1km az=60.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**2.46**	**122**	Pn	Pn	19 56 53.9	-1.2
	12nm,0.3s,baz=1.7,slow=14,SNR=3.0						
SIJI				Sn	Sn	19 57 23.2	-2.6
	baz=96,slow=20,SNR=3.6						
WRA	**Warramunga Arr**	**20.88**	**166**	P	P	20 00 57.4	-0.1
	0.3nm,0.4s,baz=344,slow=11,SNR=14						
ASAR	**Alice Springs**	**24.40**	**169**	P	P	20 01 34.4	+0.5
	0.8nm,0.9s,baz=350,slow=9.6,SNR=12						
H11N1	**WAKE ISLAND Hy**	**41.60**	**60**	T	T	20 47 53.1	
	baz=247,slow=75,SNR=12						
H11N2	**WAKE ISLAND Hy**	**41.62**	**60**	T	T	20 47 57.8	
	baz=247,slow=75,SNR=6.2						
H11N3	**WAKE ISLAND Hy**	**41.62**	**60**	T	T	20 47 53.3	
	baz=247,slow=75,SNR=22						
MKAR	**Makanchi Array**	**61.63**	**325**	P	P	20 06 33.4	+0.2
	0.2nm,0.3s,baz=114,slow=8.2,SNR=4.1						
KURBB	**Kurchatov Arra**	**65.81**	**327**	P	P	20 07 00.4	-0.2
	0.3nm,0.3s,baz=126,slow=5.7,SNR=5.2						

*ISCJB **29** 19:57:58.6±0.5, 39.09N×0.04×29.01E±0.05, h9km, Error ellipse: s-maj=6.3km s-min=4.5km az=146.7*
*DDA **29** 19:57:58.7, 39.04N×29.03E, h7km, Md2.7*
*CSEM **29** 19:57:58.7±0.2, 39.10N×28.99E, h10km, MD2.7, Error ellipse: s-maj=6.1km s-min=3.8km az=125.0*
*ISK **29** 19:57:58.4, 39.16N×28.93E, h4km, MD2.7*

ISC 29 19:57:58.8±0.9, 39.08N±0.04×29.01E±0.03, h9km, n18, σ0961/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**261**	*i* P	**Pg**	**19 58 04.1**	**+0.6**
DEMI				*i* S	**Sg**	**19 58 07.7**	**+1.0**
DEMI	**Demirci**	**0.23**	**261**	P	**Pg**	**19 58 04.1**	**+0.6**
DEMI				S	**Sg**	**19 58 07.7**	**+1.0**
GDZ	**Gediz**	**0.37**	**88**	*i* P	**Pg**	**19 58 06.0**	**-0.1**
GDZ				*i* S	**Sg**	**19 58 11.4**	**+0.5**
GDZ	**Gediz**	**0.37**	**88**	P	**Pg**	**19 58 06.0**	**-0.1**
GDZ				S	**Sg**	**19 58 11.4**	**+0.5**
TVSB	**Tavsanli**	**0.51**	**43**	*e*PG	**Pg**	**19 58 08.9**	**+0.2**
TVSB	**Tavsanli**	**0.51**	**43**	*e*Pg	**Pg**	**19 58 08.9**	**+0.2**
KULA	**Kula-Manisa**	**0.63**	**206**	*e*PG	**Pb**	**19 58 12.0**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**206**	*e*Pg	**Pb**	**19 58 12.0**	**+0.1**
MANT	**Manisa**	**0.69**	**211**	*i* P	**Pg**	**19 58 11.8**	**-0.3**
MANT				*i* S	**Sg**	**19 58 21.1**	**+0.1**
MANT	**Manisa**	**0.69**	**211**	P	**Pg**	**19 58 11.8**	**-0.3**
MANT				S	**Sg**	**19 58 21.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*PN	**Pn**	**19 58 21.9**	**-1.1**
KCTX				*e*SN	**Sb**	**19 58 39.2**	**-0.6**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*Pn	**Pn**	**19 58 21.9**	**-1.1**
KCTX				*e*Sn	**Sb**	**19 58 39.2**	**-0.6**
IZI	**Iznik**	**1.31**	**16**	*e*PN	**Pn**	**19 58 22.7**	**-0.6**
IZI	**Iznik**	**1.31**	**16**	*e*Pn	**Pn**	**19 58 22.7**	**-0.6**
ARMT	**Armutlu**	**1.49**	**356**	*e*PN	**Pn**	**19 58 25.6**	**-0.1**
ARMT	**Armutlu**	**1.49**	**356**	*e*Pn	**Pn**	**19 58 25.7**	**-0.1**
GULT	**Gulveren**	**1.78**	**40**	*e*PN	**Pn**	**19 58 30.7**	**+0.9**
GULT	**Gulveren**	**1.78**	**40**	*e*Pn	**Pn**	**19 58 30.7**	**+0.9**

*IDC **29** 19:59:09.1±2.4, 37.43N×142.99E, h0km, mb3.7/3, mb1 3.8/5, mb1mx3.4/59, mbtmp3.7/5, ML3.0/2, Error ellipse: s-maj=55.9km s-min=31.8km az=64.0*
*ISCJB **29** 19:59:11.7±0.9, 37.36N±0.06×142.72E±0.07, h24km, mb3.8/3, Error ellipse: s-maj=8.6km s-min=7.6km az=142.4*
*JMA **29** 19:59:11.6±0.3, 37.35N×142.57E, h10km, M3.4*

ISC 29 19:59:12.7±1.3, 37.34N±0.05×142.56E±0.08, h24km, n22, σ2849/23, mb3.8/3, Off east of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.34**	**272**	P	**Pb**	**19 59 36.9**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.43**	**261**	P	**Pb**	**19 59 38.0**	**-0.7**
ONAJ				*e*S	**Sn**	**19 59 56.9**	**+1.7**
JIO	**Ouri**	**1.47**	**320**	P	**Pb**	**19 59 37.4**	**-1.9**
JIO				*e*S	**Sb**	**19 59 56.6**	**-0.9**
JMM	**Marumori**	**1.50**	**291**	P	**Pn**	**19 59 37.9**	**-0.2**
JMM				*e*S	**Sn**	**19 59 57.7**	**+0.8**
JFT	**Otama**	**1.78**	**276**	P	**Pb**	**19 59 43.6**	**-1.0**
JFT				*e*S	**Sn**	**20 00 06.3**	**+2.5**
JOU	**Okura**	**1.82**	**305**	P	**Pb**	**19 59 43.7**	**-1.6**
JMK	**Ichinoseki**	**1.92**	**327**	P	**Pb**	**19 59 45.4**	**-1.7**
JYS	**Shirataka**	**2.16**	**295**	*e*S	**Sb**	**20 00 16.2**	**-1.4**
JYK	**Kaneyama**	**2.34**	**313**	P	**Pb**	**19 59 51.7**	**-2.5**
JOM	**Ohasama**	**2.35**	**335**	P	**Pb**	**19 59 51.8**	**-2.5**
MJAR	**Matsushiro Arr**	**3.58**	**258**	Pn	**Pb**	**20 00 11.6**	**-3.7**
	0.6nm,0.3s,baz=72,slow=9.6,SNR=6.6						
MJAR				Sn	**Sn**	**20 00 54.1**	**+5.9**
	0.6nm,0.3s,baz=99,slow=25,SNR=4.8						
MAT	**Matsushiro**	**3.58**	**258**	P	**Pb**	**20 00 10.9**	**-4.4**
MAT				*e*S	**Sb**	**20 00 55.4**	**-2.9**
JHJ	**Hachijo jima 2**	**4.79**	**209**	Pn	**Pn**	**20 00 24.3**	**+1.0**
	2.3nm,0.3s,baz=75,slow=20,SNR=6.0						
JHJ				Sn	**Sn**	**20 01 15.4**	**-2.7**
	5.7nm,0.3s,baz=107,slow=19,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**27.53**	**123**	T	T	20 33 47.1	
	baz=315,slow=75,SNR=67						
H11N1	**WAKE ISLAND Hy**	**27.54**	**123**	T	T	20 33 47.4	
	baz=315,slow=75,SNR=47						
H11N3	**WAKE ISLAND Hy**	**27.55**	**123**	T	T	20 33 48.5	
	baz=315,slow=75,SNR=45						
H11S1	**WAKE ISLAND Hy**	**28.27**	**125**	T	T	20 34 43.9	
	baz=317,slow=76,SNR=30						
H11S3	**WAKE ISLAND Hy**	**28.27**	**125**	T	T	20 34 43.3	
	baz=317,slow=76,SNR=33						
H11S2	**WAKE ISLAND Hy**	**28.29**	**125**	T	T	20 34 43.4	
	baz=317,slow=76,SNR=26						
KURBB	**Kurchatov Arra**	**46.53**	**308**	P	**P**	**20 07 39.4**	**+1.3**
	0.4nm,0.4s,baz=81,slow=8.4,SNR=4.0						
WRA	**Warramunga Arr**	**57.50**	**189**	P	**P**	**20 09 00.9**	**+0.9**
	1.1nm,0.8s,baz=6.6,slow=7.2,SNR=7.0						
ASAR	**Alice Springs**	**61.23**	**189**	P	**P**	**20 09 27.2**	**+1.5**
	0.4nm,0.6s,baz=6.4,slow=8.1,SNR=7.9						

MAN 29 20:03:35, 9.71N×122.33E, h16km, mb4.3, ML3.2, MS3.0, 1C-3D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.97**	**112**	⇓*i* P	Pb	20 03 50.3	-3.1
LLP	**Lapu-Lapu**	**1.72**	**69**	⇓*e*P	Pn	20 04 03.4	-0.9
LLP				*e*S	Sb	20 04 27.7	-0.1
RCP	**Roxas**	**1.89**	**13**	⇑*e*P	Pn	20 04 07.5	+0.9
CTBH	**Cotabato--PC H**	**3.12**	**142**	⇓*i* P	Pn	20 04 24.9	+1.4

*IDC **29** 20:10:31.3±0.7, 9.43N×122.31E, h0km, mb3.9/9, mb1 4.0/10, mb1mx3.7/41, mbtmp3.9/10, ML3.7/1, MS3.0/6, Ms1 3.0/6, ms1mx2.7/46, Error ellipse: s-maj=47.1km s-min=15.8km az=66.0*
*NEIC **29** 20:10:32.8±0.4, 9.48N×122.34E, h10km, mb4.6/15, Error ellipse: s-maj=10.4km s-min=7.5km az=93.0*
*MAN **29** 20:10:34, 9.47N×122.31E, h15km, mb4.9, ML3.8, MS3.8*
*ISCJB **29** 20:10:35.6±0.6, 9.42N±0.04×122.24E±0.04, h44km±7km, mb4.2/20, MS2.9/4, Error ellipse: s-maj=6.9km s-min=6.1km az=9.1*

ISC 29 20:10:35.9±1.4, 9.49N±0.04×122.29E±0.05, h31km±11km, n49, σ1955/54, mb4.3/20, MS2.9/4, 4C-3D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.94**	**99**	⇓*i* P	**Pb**	**20 10 52.3**	**-1.5**
SNPH				*i* S	**Sn**	**20 11 06.5**	**+1.1**
JAP	**San Jose, Anti**	**1.30**	**345**	⇑*e*P	**Pn**	**20 10 57.4**	**-0.5**
DCPH	**Dipolog City**	**1.38**	**131**	⇑*e*P	**Pn**	**20 10 58.7**	**-0.3**
TBP	**Tagbilaran**	**1.56**	**82**	*e*P	**Pb**	**20 11 05.3**	**+1.2**
TBP				*e*S	**Sb**	**20 11 28.3**	**+4.8**
LLP	**Lapu-Lapu**	**1.84**	**63**	*e*P	**Pn**	**20 11 05.2**	**-0.2**
LLP				*e*S	**Sb**	**20 11 29.8**	**-1.8**
RCP	**Roxas**	**2.10**	**12**	⇓*e*P	**Pn**	**20 11 10.0**	**+1.0**
RCP				*e*S	**Sb**	**20 11 37.8**	**-1.3**
CGP	**Cagayan de Oro**	**2.58**	**113**	⇑*e*P	**Pn**	**20 11 16.6**	**+1.0**
CGP				*i* S	**Sb**	**20 11 50.1**	**-2.8**
CTBH	**Cotabato--PC H**	**2.97**	**139**	⇑*i* P	**Pn**	**20 11 21.9**	**+1.1**
PLP	**Palo**	**3.12**	**58**	⇓*e*P	**Pn**	**20 11 23.8**	**+0.8**
PLP				*e*S	**Sn**	**20 11 54.3**	**-5.0**
MYLDM	**Lahad Datu**	**5.70**	**222**	*e*Pn	**Pn**	**20 12 00.3**	**+1.9**
KKM	**Kota Kinabalu**	**6.93**	**241**	*e*Pn	**Pn**	**20 12 15.4**	**0.0**
KKM				*e*Sn	Sn	20 13 19.8	-13
LUWI	**Luwuk**	**10.47**	**177**	*e*Pn	**Pn**	**20 13 02.9**	**-1.1**
SBUM	**Sibu**	**12.21**	**236**	*e*Pn	**Pn**	**20 13 28.9**	**+1.0**
KSM	**Kuching**	**14.34**	**237**	*e*Pn	**Pn**	**20 13 53.8**	**-3.0**
KAPI	**Kappang**	**14.63**	**190**	LR	LR	20 19 33.8	
	comp=Z,85nm,21.3s,baz=357,slow=37						
FAKI	**Fak Fak**	**15.82**	**141**	*e*Pn	**P**	**20 14 20.4**	**+0.4**
	130nm,1.7s						
JOW	**Kunigami**	**18.15**	**17**	P	**P**	**20 14 46.7**	**+0.9**
	0.4nm,0.3s,baz=195,slow=11,SNR=3.2						
JOW				LR	LR	20 21 07.0	
	comp=Z,57nm,21.1s,baz=148,slow=35						
JOW	**Kunigami**	**18.15**	**17**	*e*P	**P**	**20 14 47.2**	**+1.4**
	14nm,0.9s						
IPM	**Ipoh**	**21.68**	**258**	*e*P	**P**	**20 15 24.4**	**0.0**
	69nm,1.7s						
KULM	**Kulim**	**21.86**	**261**	*e*P	**P**	**20 15 28.3**	**+2.1**
	65nm,1.9s						
PSI	**Prapat**	**24.15**	**256**	*e*P	**P**	**20 15 48.8**	**-0.9**
	30nm,1.4s						
CM01	**Chiang Mai Arr**	**24.30**	**294**	*e*P	**P**	**20 15 51.1**	**+0.2**
CMAR	**Chiang Mai Arr**	**24.32**	**294**	P	**P**	**20 15 52.0**	**+0.9**
	1.2nm,0.8s,baz=124,slow=8.2,SNR=6.5						
CMAR				LR	LR	20 24 58.3	
	comp=Z,19nm,19.2s,baz=90,slow=36						
GSI	**Gunungsitoli**	**25.90**	**253**	*e*P	**P**	**20 16 04.6**	**-0.8**
	13nm,0.8s						
KSRS	**Korea Array**	**28.30**	**9**	LR	LR	20 28 01.7	
	comp=Z,24nm,19.8s,baz=145,slow=37						
WR1	**Warramunga Arr**	**31.56**	**158**	*e*P	**P**	**20 16 54.9**	**-0.9**
	18nm,1.4s						
WR1				*e*PcP	**PcP**	**20 19 46.7**	**-1.3**
WRA	**Warramunga Arr**	**31.56**	**158**	P	**P**	**20 16 54.9**	**-0.9**
	1.2nm,0.8s,baz=339,slow=9.5,SNR=5.8						
WRA				PcP	**PcP**	**20 19 46.7**	**-1.3**
	0.4nm,0.8s,baz=330,slow=2.2,SNR=2.8						
AS31	**Alice Springs**	**34.85**	**161**	*e*P	**P**	**20 17 25.2**	**+0.7**
	1.0nm,0.9s						
ASAR	**Alice Springs**	**34.85**	**161**	P	**P**	**20 17 24.3**	**-0.2**
	1.2nm,0.6s,baz=339,slow=6.8,SNR=20						
ASAR				PcP	**PcP**	**20 19 57.6**	**+0.4**
	0.5nm,0.8s,baz=342,slow=2.1,SNR=4.3						
AS01	**Alice Springs**	**34.87**	**161**	*e*P	**P**	**20 17 24.6**	**0.0**
MDJ	**Mudanjiang**	**35.56**	**9**	*e*P	**P**	**20 17 29.8**	**-0.5**
	6.0nm,1.0s						
SONA0	**Songino Array**	**40.51**	**343**	*e*P	**P**	**20 18 12.1**	**0.0**
	5.2nm,1.6s						
SONM	**Songino Array**	**40.51**	**343**	P	**P**	**20 18 12.1**	**0.0**
	0.3nm,0.6s,baz=167,slow=9.5,SNR=2.5						
STKA	**Stephens Creek**	**45.09**	**157**	P	**P**	**20 18 49.6**	**+0.3**
	1.3nm,0.7s,baz=333,slow=9.0,SNR=2.9						
STKA	**Stephens Creek**	**45.09**	**157**	*e*P	**P**	**20 18 48.2**	**-1.0**
	3.1nm,1.4s						
MK01	**Makanchi Array**	**50.32**	**325**	*e*P	**P**	**20 19 31.3**	**+1.5**
MK31	**Makanchi Array**	**50.34**	**325**	*e*P	**P**	**20 19 28.9**	**-1.1**
MK32	**Makanchi Array**	**50.34**	**325**	*e*P	**P**	**20 19 31.7**	**+1.8**
MKAR	**Makanchi Array**	**50.34**	**325**	P	**P**	**20 19 31.7**	**+1.8**
	1.2nm,0.6s,baz=129,slow=8.6,SNR=13						
MKAR	**Makanchi Array**	**50.34**	**325**	*e*P	**P**	**20 19 28.8**	**-1.2**
	18nm,0.9s						
MAKZ	**Makanchi**	**50.53**	**325**	*e*P	**P**	**20 19 31.8**	**+0.4**
	3.6nm,1.1s						
PETK	**Petropavlovsk-**	**52.02**	**26**	LR	LR	20 44 22.1	
	comp=Z,15nm,18.1s,baz=263,slow=39						
MA2	**Magadan**	**54.39**	**17**	LR	LR	20 41 26.1	
	comp=Z,25nm,20.6s,baz=308,slow=34						
KBL	**Kabul**	**54.57**	**306**	*e*P	**P**	**20 20 02.6**	**+0.9**
	5.0nm,1.3s						
TIXI	**Tiksi**	**62.24**	**2**	*e*P	**P**	**20 20 54.8**	**+0.5**
	5.2nm,0.8s						
ARCES	**ARCESS Array B**	**83.55**	**339**	P	**P**	**20 23 02.8**	**+2.2**
	3.3nm,1.0s,baz=75,slow=7.0,SNR=5.1						
AKASG	**Malin Array Be**	**84.67**	**320**	P	**P**	**20 23 05.9**	**-0.8**
	0.2nm,0.3s,baz=64,slow=5.6,SNR=2.3						
FIA0	**FINESS Array S**	**84.70**	**331**	*e*P	**P**	**20 23 05.6**	**-1.0**
FINES	**FINESS Array B**	**84.70**	**331**	P	**P**	**20 23 05.6**	**-1.0**
	1.7nm,0.9s,baz=64,slow=6.3,SNR=3.0						

WEL 29 20:12:23.6±0.1, 43.61S×172.42E, h8km±1km, ML3.6/16, 3C-3D, Error ellipse: s-maj=1.3km s-min=1.0km az=0.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.15**	**78**	⇓PG	Pg	20 12 26.9	+0.1
CRLZ				SG	Sg	20 12 29.5	+0.5
CRLZ				AML	AML	20 12 29.7	
CRLZ				AML	AML	20 12 29.7	
CRLZ				AML	AML	20 12 29.9	
MQZ	**McQueen's Vall**	**0.20**	**120**	⇓PG	Pg	20 12 27.5	-0.1
MQZ				SG	Sg	20 12 30.5	+0.2
MQZ				AML	AML	20 12 30.9	
OXZ	**Oxford**	**0.39**	**315**	PG	Pg	20 12 31.0	-0.3
OXZ				SG	Sg	20 12 36.8	+0.4
OXZ				AML	AML	20 12 40.3	
OXZ				AML	AML	20 12 40.3	
OXZ				AML	AML	20 12 41.5	
LTZ	**Lake Taylor**	**0.83**	**353**	P*	Pg	20 12 39.5	0.0
LTZ				S*	Sg	20 12 50.8	+0.5
RPZ	**Rata Peaks**	**1.00**	**263**	⇓P*	Pg	20 12 42.1	-0.6
RPZ				AML	AML	20 12 59.0	
RPZ				AML	AML	20 13 02.2	
INZ	**Inchbonnie**	**1.13**	**321**	P*	Pg	20 12 44.9	-0.4
WVZ	**Waitaha Valley**	**1.34**	**293**	⇑PN	Pn	20 12 47.3	-1.3
WVZ				AML	AML	20 13 11.0	
WVZ				AML	AML	20 13 11.3	
KHZ	**Kahutara**	**1.45**	**35**	⇑PN	Pn	20 12 48.0	-2.0
LBZ	**Lake Benmore**	**1.79**	**243**	PN	Pn	20 12 53.6	-1.2
LBZ				AML	AML	20 13 22.2	
LBZ				AML	AML	20 13 26.6	
THZ	**Tophouse**	**1.88**	**11**	PN	Pn	20 12 54.3	-1.8
THZ				AML	AML	20 13 32.0	
THZ				AML	AML	20 13 34.5	
FOZ	**Fox Glacier**	**1.89**	**271**	⇑PN	Pn	20 12 56.2	+0.1
FOZ				AML	AML	20 13 29.2	
FOZ				AML	AML	20 13 33.0	
DSZ	**Denniston Nort**	**1.92**	**346**	AML	AML	20 13 21.8	
DSZ				AML	AML	20 13 21.8	
DSZ				AML	AML	20 13 27.7	
DSZ				AML	AML	20 13 27.7	
ODZ	**Otahua Downs**	**1.92**	**221**	PN	Pn	20 12 54.6	-1.9
ODZ				AML	AML	20 13 25.0	
ODZ				AML	AML	20 13 26.0	
ODZ				AML	AML	20 13 31.7	
ODZ				AML	AML	20 13 32.5	
BSWZ	**Blackbirch Sta**	**2.17**	**30**	PN	Pn	20 12 58.9	-1.2
NNZ	**Nelson**	**2.49**	**17**	PN	Pn	20 13 03.4	-1.0
JCZ	**Jackson Bay**	**2.67**	**259**	PN	Pn	20 13 06.0	-0.9
JCZ				AML	AML	20 13 54.1	
WKZ	**Wanaka**	**2.73**	**242**	AML	AML	20 13 56.7	
EAZ	**Earnscleugh**	**2.76**	**233**	PN	Pn	20 13 06.3	-1.8
EAZ				AML	AML	20 13 51.5	
EAZ				AML	AML	20 13 53.8	
QRZ	**Quartz Range**	**2.78**	**2**	AML	AML	20 14 00.4	
TUZ	**Tuapeka**	**3.07**	**219**	PN	Pn	20 13 10.7	-1.7
TUZ				AML	AML	20 14 10.6	
TUZ				AML	AML	20 14 11.6	
MTW	**Mount Morrison**	**3.35**	**44**	PN	Pn	20 13 13.3	-2.8
SYZ	**Scrubby Hill**	**3.74**	**217**	PN	Pn	20 13 20.3	-1.2
WHZ	**Wether Hill Ro**	**3.92**	**233**	PN	Pn	20 13 21.3	-2.8

*IDC **29** 20:20:00.7±12.0, 12.60N×87.39W, h0km, mb3.1/1, mb1 3.7/1, mb1mx3.3/43, mbtmp3.2/1, Error ellipse: s-maj=946.5km s-min=70.2km az=60.0*
*ISCJB **29** 20:20:23.7±1.3, 12.94N±0.09×88.0W±0.1, h150km, mb3.1/1, Error ellipse: s-maj=19.0km s-min=9.9km az=152.0*
*CASC **29** 20:20:28.2±1.9, 12.82N×87.68W, h145km±34km, MD4.2, ML3.2*

ISC 29 20:20:22.2±1.7, 12.97N±0.09×88.1W±0.2, h150km, n11, σ2811/14, 1D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGUH	**Tegucigalpa,Un**	**1.33**	**36**	*e*P	**Pn**	**20 20 51.5**	**+1.4**
CNGN	**Cerro Negro**	**1.43**	**109**	*e*P	**Pn**	**20 20 52.6**	**+1.6**
MOMN	**Momotombo**	**1.60**	**110**	*e*P	**Pn**	**20 20 54.3**	**+1.4**
COPN	**Copaltepe**	**1.65**	**118**	*e*P	**Pn**	**20 20 55.4**	**+2.0**
COPN				AML	AML	20 21 21.4	
	comp=Z,260nm,0.2s						
ESTN	**Estel**	**1.67**	**85**	*e*P	**Pn**	**20 20 54.2**	**+0.5**
ESTN				*e*S	**Sn**	**20 21 17.9**	**+0.1**
VCR	**Vista de Mar**	**3.71**	**139**	⇓*e*P	**Pn**	**20 21 21.3**	**+2.5**
VCR				*e*S	**Sn**	**20 22 01.1**	**-1.5**
JCR	**Jicaral**	**4.25**	**137**	*e*P	**Pn**	**20 21 27.8**	**+1.9**
JCR				*e*S	**Sn**	**20 22 12.1**	**-3.2**
CGA2	**Cerro Gallo 2**	**4.60**	**129**	*e*P	**Pn**	**20 21 33.5**	**+3.0**
CGA2				*e*S	**Sn**	**20 22 21.8**	**-1.9**
TXAR	**Lajitas Array**	**21.79**	**321**	P	P	20 25 02.2	-0.2
	comp=Z,0.4nm,0.6s,baz=137,slow=11,SNR=6.0						
WRA	**Warramunga Arr**	**138.82**	**255**	PKP	**PKPdf**	**20 39 30.2**	**-1.3**
	comp=Z,0.8nm,0.8s,baz=87,slow=2.5,SNR=12						
ASAR	**Alice Springs**	**138.89**	**249**	PKP	**PKPdf**	**20 39 30.2**	**-1.3**
	comp=Z,0.6nm,0.6s,baz=95,slow=2.0,SNR=8.9						

*TAP **29** 20:24:10.7, 23.70N×122.88E, h38km±1km, ML3.2, D*
*JMA **29** 20:24:10.3±0.1, 23.68N×122.88E, h54km, M2.6*

ISC 29 20:24:08.4±1.2, 23.69N±0.03×122.87E±0.02, h19km±3km, n38, σ0975/71, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.77**	**5**	P	**Pn**	**20 24 25.3**	**+1.2**
JYNG				S	**Sn**	**20 24 35.5**	**+0.4**
YOJ	**Yonaguni jima**	**0.78**	**9**	P	**Pn**	**20 24 25.5**	**+1.1**
YOJ				*e*S	**Sn**	**20 24 36.7**	**+1.2**
HATJ	**Hateruma jima**	**0.93**	**66**	P	**Pg**	**20 24 27.3**	**+0.8**
HATJ				S	**Sn**	**20 24 39.5**	**+0.4**
IRIF	**Iriomote-Funau**	**1.01**	**50**	P	**Pg**	**20 24 28.6**	**+0.5**
IRIF				*e*S	**Sg**	**20 24 41.9**	**+0.4**
JKRS	**Kuro-shima**	**1.18**	**62**	P	**Pg**	**20 24 31.2**	**0.0**
JKRS				*e*S	**Sg**	**20 24 45.6**	**-1.0**
TWD	**Chiawan**	**1.23**	**289**	*e*P	**Pb**	**20 24 31.1**	**+0.1**
	baz=288						
TWD				*e*S	**Sn**	**20 24 46.9**	**+0.2**
	baz=288						
ENA	**Nanau**	**1.27**	**306**	P	**Pg**	**20 24 33.0**	**-0.1**
	baz=304						
ENA				*e*S	**Sg**	**20 24 48.9**	**-0.8**
	baz=304						
TWC	**Suao**	**1.31**	**315**	*e*P	**Pg**	**20 24 33.1**	**-0.6**
	baz=314						
TWC				*e*S	**Sg**	**20 24 50.1**	**-0.8**
	baz=314						
ESL	**Shilin**	**1.33**	**276**	*e*P	**Pb**	**20 24 32.7**	**+0.1**
	baz=274						
ESL				*e*S	**Sn**	**20 24 48.4**	**-0.6**
	baz=274						
JIJ	**Ishigaki jima**	**1.34**	**60**	P	**Pb**	**20 24 33.0**	**+0.1**
JIJ				S	**Sb**	**20 24 48.9**	**-0.8**
EHY	**Hungye**	**1.43**	**263**	*e*P	**Pb**	**20 24 35.0**	**+0.5**
	baz=262						
EHY				*e*S	**Sn**	**20 24 51.6**	**-0.1**
	baz=262						
TWF1	**Yuli**	**1.48**	**257**	*e*P	**Pb**	**20 24 35.3**	**-0.1**
	baz=256						
TWF1				*e*S	**Sn**	**20 24 53.1**	**+0.2**
	baz=256						
CHKT	**Chengkung**	**1.50**	**247**	*e*P	**Pg**	**20 24 37.1**	**-0.3**
	baz=246						
TWE	**Neicheng**	**1.51**	**313**	*e*P	**Pn**	**20 24 34.6**	**+0.3**
	baz=312						
TWE				*e*S	**Sb**	**20 24 54.5**	**0.0**
	baz=312						
ENTT	**Nioudou**	**1.53**	**309**	*e*P	**Pg**	**20 24 36.9**	**-0.9**
	baz=308						
ENTT				*e*S	**Sb**	**20 24 55.6**	**+0.6**
	baz=308						
WHF	**Hehuan Shan**	**1.54**	**288**	*e*P	**Pb**	**20 24 36.9**	**+0.3**
	baz=286						
WHF				*e*S	**Sb**	**20 24 56.3**	**+0.4**
	baz=286						
JISG	**Ishigakijimahi**	**1.59**	**55**	P	**Pb**	**20 24 35.9**	**-1.2**
JISG				*e*S	**Sn**	**20 24 54.9**	**-0.6**
TWT	**Tachien**	**1.65**	**290**	*e*P	**Pb**	**20 24 38.9**	**+0.6**
	baz=289						
TWT				*e*S	**Sb**	**20 24 60.0**	**+1.1**
	baz=289						
NSK	**Sanguang**	**1.70**	**306**	*e*P	**Pb**	**20 24 38.7**	**-0.3**
	baz=305						
NSK				*e*S	**Sn**	**20 24 58.6**	**+0.3**
	baz=305						
NWF	**Wu-fen Shan**	**1.70**	**324**	*e*P	**Pb**	**20 24 38.7**	**-0.3**
	baz=323						
NWF				*e*S	**Sb**

*MAN **29** 20:34:00,9.˚50N×122.˚30E,h10^{km},mb5.1,ML4.0,MS4.1*
MAN INTENSITY III - SIPALAY CITY NEGROS OCCIDENTAL.
*ISCJB **29** 20:34:02.0±0.6,9.˚43N±0.˚03×122.˚23E±0.˚04,h40^{km}±6^{km},*
mb4.2/24,MS3.3/9,Error ellipse: s-maj=6.3km
s-min=5.5km az=3.3
*NEIC **29** 20:34:02.5±2.3,9.˚43N×122.˚30E,h28^{km}±17^{km},mb4.6/14,*
Error ellipse: s-maj=8.3km s-min=5.5km az=82.0
NEIC Felt [III PIVS] at Sipalay.
ISC 29 20:34:02.1±1.6,9.˚44N±0.˚04×122.˚27E±0.˚05,h25^{km}±12^{km},
n61,σ1§20/65,mb4.2/24,MS3.2/9,3C-6D,Negros

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.96**	**96**	⇓*i*P		**Pb**		**20 34 18.6**	**-1.5**
SNPH				*i*S		**Sn**		**20 34 33.2**	**+0.3**
JAP	**San Jose, Anti**	**1.34**	**346**	⇓*e*P		**Pn**		**20 34 23.7**	**-1.5**
DCPH	**Dipolog City**	**1.37**	**128**	⇓*e*P		**Pn**		**20 34 25.2**	**-0.4**
TBP	**Tagbilaran**	**1.59**	**81**	⇓*i*P		**Pb**		**20 34 31.7**	**+0.9**
TBP				*i*S		**Sb**		**20 34 54.2**	**+3.7**
LLP	**Lapu-Lapu**	**1.89**	**62**	⇓*e*P		**Pn**		**20 34 32.0**	**-0.7**
LLP				*e*S		**Sn**		**20 34 56.6**	**+0.8**
RCP	**Roxas**	**2.16**	**13**	⇓*e*P		**Pn**		**20 34 36.4**	**-0.1**
RCP				*e*S		**Sn**		**20 35 03.3**	**+0.8**
CGP	**Cagayan de Oro**	**2.59**	**112**	⇑*e*P		**Pn**		**20 34 42.5**	**+0.1**
CGP				*i*S		**Sb**		**20 35 16.0**	**-3.2**
CTBH	**Cotabato--PC H**	**2.95**	**138**	⇑*i*P		**Pn**		**20 34 49.5**	**+2.1**
PLP	**Palo**	**3.17**	**57**	⇓*e*P		**Pn**		**20 34 50.0**	**-0.4**
PLP				*e*S		**Sn**		**20 35 24.7**	**-2.8**
MYLDM	**Lahad Datu**	**5.64**	**222**	*e*Pn		**Pn**		**20 35 26.6**	**+2.2**
KKM	**Kota Kinabalu**	**6.88**	**241**	*e*Pn		**Pn**		**20 35 41.9**	**+0.3**
KKM				*e*Sn		Sn		20 36 50.5	-8.7
LUWI	**Luwuk**	**10.42**	**177**	*e*Pn		**Pn**		**20 36 28.7**	**-1.4**
SBUM	**Sibu**	**12.16**	**236**	*e*Pn		**Pn**		**20 36 55.0**	**+1.1**
KSM	**Kuching**	**14.29**	**237**	*e*Pn		**Pn**		**20 37 23.7**	**+0.7**
KAPI	**Kappang**	**14.57**	**190**	LR		LR		20 43 11.2	
	comp=Z,194nm,20.3s,baz=11,slow=38								
TATO	**Taipei**	**15.47**	**357**	*e*Pn		**Pn**		**20 37 37.9**	**-0.8**
	160nm,1.4s								
JOW	**Kunigami**	**18.21**	**17**	P		**P**		**20 38 14.9**	**+1.6**
	1.4nm,0.3s,baz=204,slow=10,SNR=6.5								
JOW				LR		LR		20 44 53.3	
	comp=Z,135nm,20.9s,baz=185,slow=36								
JOW	**Kunigami**	**18.21**	**17**	*e*P		**P**		**20 38 14.2**	**+0.9**
	23nm,1.0s								
GUMO	**Guam**	**22.52**	**77**	LR		LR		20 48 13.9	
	comp=Z,94nm,18.3s,baz=268,slow=38								
PSI	**Prapat**	**24.12**	**256**	*e*P		**P**		**20 39 14.4**	**-1.9**
	16nm,1.0s								
CM01	**Chiang Mai Arr**	**24.30**	**294**	*e*P		**P**		**20 39 17.1**	**-0.7**
CMAR	**Chiang Mai Arr**	**24.32**	**294**	P		**P**		**20 39 18.2**	**+0.1**
	1.0nm,0.8s,baz=119,slow=8.3,SNR=7.3								
CMAR				LR		LR		20 48 48.1	
	comp=Z,52nm,18.3s,baz=125,slow=36								
JNU	**Nakatsue**	**24.87**	**17**	P		**P**		**20 39 22.1**	**-0.9**
	3.9nm,0.9s,baz=180,slow=8.1,SNR=3.1								
JNU	**Nakatsue**	**24.87**	**17**	*e*P		**P**		**20 39 22.6**	**-0.3**
	4.1nm,0.8s								
GSI	**Gunungsitoli**	**25.86**	**253**	*e*P		**P**		**20 39 31.7**	**-0.3**
	22nm,1.0s								
FITZ	**Fitzroy Crossi**	**27.57**	**173**	P		**P**		**20 39 47.4**	**+0.1**
	3.4nm,1.0s,baz=51,slow=13,SNR=3.0								
FITZ	**Fitzroy Crossi**	**27.57**	**173**	*e*P		**P**		**20 39 47.2**	**-0.1**
	15nm,1.4s								
KS15	**Wonju Array Si**	**28.34**	**9**	*e*P		**P**		**20 39 54.5**	**+0.5**
KSAR	**Wonju Array Be**	**28.34**	**9**	P		**P**		**20 39 54.4**	**+0.3**
KSRS	**Korea Array**	**28.36**	**10**	P		**P**		**20 39 54.4**	**+0.2**
	2.8nm,0.8s,baz=180,slow=10,SNR=3.6								
KSRS				LR		LR		20 50 15.8	
	comp=Z,50nm,21.7s,baz=201,slow=34								
MJAR	**Matsushiro Arr**	**30.62**	**26**	LR		LR		20 50 55.6	
	comp=Z,63nm,21.7s,baz=205,slow=33								
WR1	**Warramunga Arr**	**31.52**	**158**	*e*P		**P**		**20 40 21.4**	**-1.0**
	21nm,1.6s								
WR1				*e*PcP		**PcP**		**20 43 13.4**	**-1.7**
WRA	**Warramunga Arr**	**31.52**	**158**	P		**P**		**20 40 21.4**	**-1.0**
	1.0nm,0.6s,baz=340,slow=9.4,SNR=12								
WRA				PcP		**PcP**		**20 43 13.4**	**-1.7**
	0.6nm,0.9s,baz=331,slow=2.9,SNR=4.1								
WRA				LR		LR		20 55 28.2	
	comp=Z,64nm,20.0s,baz=315,slow=41								
AS31	**Alice Springs**	**34.81**	**161**	*e*P		**P**		**20 40 51.3**	**+0.1**
	1.4nm,0.6s								
ASAR	**Alice Springs**	**34.81**	**161**	P		**P**		**20 40 50.9**	**-0.3**
	1.5nm,0.5s,baz=338,slow=6.8,SNR=38								
ASAR				PcP		**PcP**		**20 43 23.6**	**-0.7**
	0.7nm,0.7s,baz=339,slow=3.0,SNR=5.6								
AS01	**Alice Springs**	**34.83**	**161**	*e*P		**P**		**20 40 50.7**	**-0.6**
LSA	**Lhasa**	**35.39**	**309**	*e*P		**P**		**20 40 57.3**	**+0.7**
MDJ	**Mudanjiang**	**35.62**	**9**	*e*P		**P**		**20 40 57.0**	**-0.8**
	6.2nm,0.8s								
USRK	**Ussuriysk Ar.**	**35.65**	**12**	P		**P**		**20 40 57.3**	**-0.7**
	3.0nm,0.9s,baz=183,slow=5.6,SNR=8.2								
KLR	**Kul'dur**	**40.45**	**10**	P		**P**		**20 41 38.6**	**+0.1**
	1.9nm,0.7s,baz=207,slow=5.5,SNR=6.8								
SONA0	**Songino Array**	**40.55**	**344**	*e*P		**P**		**20 41 38.9**	**-0.6**
	4.7nm,1.4s								
SONM	**Songino Array**	**40.55**	**344**	P		**P**		**20 41 38.9**	**-0.6**
	0.9nm,0.9s,baz=161,slow=9.4,SNR=6.7								
SONM				LR		LR		21 00 19.0	
	comp=Z,67nm,18.0s,baz=145,slow=39								
SONA1	**Songino Array**	**40.56**	**344**	*e*P		**P**		**20 41 38.9**	**-0.7**
NWAO	**Narrogin (SRO)**	**42.40**	**186**	LR		LR		21 01 23.1	
	comp=Z,45nm,20.0s,baz=96,slow=39								
EIDS	**Eidsvold**	**44.55**	**142**	*e*P		**P**		**20 42 11.8**	**-0.4**
	18nm,1.1s								
STKA	**Stephens Creek**	**45.05**	**157**	LR		LR		21 03 48.9	
	comp=Z,23nm,18.9s,baz=17,slow=40								
MK01	**Makanchi Array**	**50.35**	**325**	*e*P		**P**		**20 42 57.2**	**+0.1**
MK31	**Makanchi Array**	**50.37**	**325**	*e*P		**P**		**20 42 58.1**	**+0.9**
MK32	**Makanchi Array**	**50.37**	**325**	*e*P		**P**		**20 42 57.0**	**-0.3**
MKAR	**Makanchi Array**	**50.37**	**325**	P		**P**		**20 42 57.0**	**-0.3**
	1.1nm,0.6s,baz=126,slow=8.9,SNR=13								
MKAR	**Makanchi Array**	**50.37**	**325**	*e*P		**P**		**20 42 58.0**	**+0.8**
	41nm,1.3s								
DZM	**Mont Dzumac**	**53.45**	**126**	*e*P		**P**		**20 43 21.4**	**+0.8**
	47nm,1.6s								
ZALV	**Zalesovo Beam**	**53.53**	**333**	P		**P**		**20 43 19.5**	**-1.1**
	0.4nm,0.4s,baz=142,slow=7.3,SNR=2.3								
ZAA1	**Zalesovo Array**	**53.53**	**333**	*e*P		**P**		**20 43 19.4**	**-1.1**
ABKAR	**Akbulak array**	**64.95**	**320**	*e*P		**P**		**20 44 39.5**	**-0.3**
	9.6nm,0.9s								
AKTO	**Aktyubinsk**	**66.46**	**321**	P		**P**		**20 44 49.6**	**+0.1**
	0.6nm,0.5s,baz=105,slow=11,SNR=4.4								
BR101	**Keskin Array S**	**83.00**	**309**	*e*P		**P**		**20 46 25.4**	**-0.3**
BRTR	**Keskin Array B**	**83.00**	**309**	P		**P**		**20 46 25.4**	**-0.3**
	0.5nm,0.7s,baz=78,slow=3.5,SNR=3.1								
BRTR				LR		LR		21 28 59.3	
	comp=Z,24nm,20.0s,baz=83,slow=40								
SPITS	**Spitsbergen Ar**	**84.05**	**348**	P		**P**		**20 46 31.3**	**+1.1**
	3.8nm,0.8s,baz=90,slow=7.2,SNR=2.8								
FIA0	**FINESS Array S**	**84.73**	**331**	*e*P		**P**		**20 46 35.8**	**+1.9**
FINES	**FINESS Array B**	**84.73**	**331**	P		**P**		**20 46 35.8**	**+1.9**
	2.4nm,1.0s,baz=103,slow=4.4,SNR=4.3								

*ISCJB **29** 20:41:52.2±1.3,38˚.21N±0.˚04×142˚.22E±0.˚08,h24^{km}±7^{km},*
mb3.5/3,Error ellipse: s-maj=10.2km s-min=6.7km az=9.8
*IDC **29** 20:41:53.4±2.3,37˚.59N×142˚.83E,h0^{km},mb3.6/3,*
mb1 3.6/5,mb1mx3.3/53,mbtmp3.6/5,ML3.2/2,Error
ellipse: s-maj=43.3km s-min=27.3km az=87.0
*JMA **29** 20:41:54.1±0.1,38˚.28N×142˚.17E,h38^{km}±1^{km},M3.4*
ISC 29 20:41:52.3±2.9,38˚.24N±0.˚04×142˚.29E±0.˚09,h26^{km}±20^{km},
n16,σ1§53/26,mb3.7/3,Near east coast of eastern
Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.77**	**286**		P		**Pn**	**20 42 07.1**	**-0.3**
JIO					S		**Sb**	**20 42 16.0**	**-1.2**
OFUJ	**Ofunato**	**0.97**	**330**		P		**Pn**	**20 42 10.2**	**0.0**
OFUJ					S		**Sn**	**20 42 21.4**	**-1.7**
JMK	**Ichinoseki**	**1.10**	**311**		P		**Pn**	**20 42 12.1**	**+0.2**
JMK					S		**Sn**	**20 42 24.7**	**-1.6**
JMM	**Marumori**	**1.24**	**253**		P		**Pn**	**20 42 13.6**	**-0.3**
JMM					S		**Sn**	**20 42 27.5**	**-2.2**
JOU	**Okura**	**1.29**	**276**		P		**Pn**	**20 42 15.1**	**+0.6**
JOU					S		**Sn**	**20 42 30.1**	**-0.8**
JFK	**Kawauchi**	**1.42**	**233**		P		**Pn**	**20 42 16.2**	**-0.2**
JFK					S		**Sn**	**20 42 31.6**	**-2.6**
JOM	**Ohasama**	**1.46**	**328**		P		**Pn**	**20 42 17.7**	**+0.8**
JOM					*e*S		**Sn**	**20 42 34.5**	**-0.6**
JYK	**Kaneyama**	**1.66**	**295**		P		**Pn**	**20 42 20.2**	**+0.6**
JYK					*e*S		**Sn**	**20 42 39.8**	**-0.3**
JFT	**Otama**	**1.71**	**246**		P		**Pn**	**20 42 21.5**	**+1.2**
JFT					S		**Sn**	**20 42 41.1**	**-0.2**
JRG	**Rokugo**	**1.74**	**312**		P		**Pn**	**20 42 22.6**	**+1.9**
JYS	**Shirataka**	**1.75**	**270**		P		**Pn**	**20 42 22.3**	**+1.4**
JYS					*e*S		**Sn**	**20 42 41.9**	**-0.5**
MJAR	**Matsushiro Arr**	**3.67**	**244**		Pn		**Pn**	**20 42 51.5**	**+4.3**
	0.8nm,0.3s,baz=69,slow=9.5,SNR=6.4								
MJAR					Sn		**Sb**	**20 43 40.9**	**+0.5**
	0.9nm,0.3s,baz=84,slow=26,SNR=5.8								
JHJ	**Hachijo jima 2**	**5.50**	**203**		Pn		**Pn**	**20 43 12.6**	**+0.2**
	4.9nm,0.3s,baz=313,slow=21,SNR=6.3								
JHJ					Sn		**Sn**	**20 44 12.8**	**-2.0**
	2.2nm,0.3s,baz=106,slow=22,SNR=3.4								
MKAR	**Makanchi Array**	**44.08**	**301**		P		P	20 50 09.1	+11
	0.3nm,0.6s,baz=88,slow=10,SNR=3.4								
KURBB	**Kurchatov Arra**	**45.82**	**307**		P		P	20 50 22.6	+11
	0.8nm,0.6s,baz=80,slow=7.9,SNR=5.6								
WRA	**Warramunga Arr**	**58.35**	**189**		P		**P**	**20 51 45.7**	**+0.6**
	0.7nm,1.0s,baz=6.2,slow=7.4,SNR=3.0								

*IDC **29** 21:07:07.6±1.8,43˚.64N×105˚.37W,h0^{km},mb3.9/2,*
mb1 3.9/5,mb1mx3.5/51,mbtmp3.7/5,ML3.4/3,MS3.2/5,
Ms1 3.2/5,ms1mx2.6/46,Error ellipse: s-maj=44.3km
s-min=8.8km az=151.0
*ISCJB **29** 21:07:08.4±0.4,43˚.72N±0.˚03×105˚.22W±0.˚03,h0^{km},*
mb4.0/2,MS3.2/4,Error ellipse: s-maj=4.4km s-min=2.7km
az=27.1
*NEIC **29** 21:07:09.9±0.6,43˚.74N×105˚.22W,h0^{km},ML3.4,Error*
ellipse: s-maj=8.8km s-min=6.8km az=183.0,Suspected
Mining explosion.
NEIC 65 km [41 miles] SSE of Gillette.
ISC 29 21:07:09.1±0.6,43˚.78N±0.˚03×105˚.22W±0.˚03,h0^{km},n33,
σ1§29/64,MS3.1/4,Wyoming

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.92**	**68**	*e*Pg		**Pb**		**21 07 27.8**	**-0.4**
RSSD						Sn	**Sn**	**21 07 46.3**	**+2.7**
K22A	**Casper**	**1.48**	**221**	*e*Pg		**Pn**		**21 07 34.9**	**-2.2**
PHWY	**Pilot Hill**	**2.48**	**184**	*e*Pn		**Pn**		**21 07 50.8**	**-0.2**
PHWY				*e*Sn		**Sn**		**21 08 22.3**	**+0.1**
RLMT	**Red Lodge**	**3.19**	**296**	*e*Pn		**Pn**		**21 08 00.7**	**-0.1**
RLMT				*e*Sn		**Sn**		**21 08 41.4**	**+1.7**
RLMT				*e*Sb		**Sb**		**21 08 48.0**	**+1.6**
BW06	**Boulder Array**	**3.33**	**254**	*e*Pn		**Pn**		**21 08 02.2**	**-0.4**
BW06				*e*Pg		**Pg**		**21 08 13.9**	**+1.1**
BW06				*e*Sn		**Sn**		**21 08 43.6**	**+0.6**
PDAR	**Pinedale Array**	**3.33**	**254**	Pn		**Pn**		**21 08 01.9**	**-0.7**
	4.9nm,0.3s,baz=78,slow=16,SNR=63								
PDAR				Lg		Lg		21 08 47.9	
	23nm,0.3s,baz=78,slow=34,SNR=8.6								
OGNE	**Ogallala**	**3.69**	**139**	*e*Pn		**Pn**		**21 08 08.5**	**+1.1**
OGNE				*e*Pg		**Pg**		**21 08 18.8**	**-0.9**
OGNE				*e*Sn		**Sn**		**21 08 51.4**	**-0.2**
H17A	**Grant Village**	**3.91**	**281**	Pn		**Pn**		**21 08 12.2**	**+1.5**
H17A				*e*Pb		**Pb**		**21 08 19.6**	**+0.5**
LOHW	**Long Hollow**	**3.91**	**269**	*e*Pn		**Pn**		**21 08 11.5**	**+0.9**
LOHW				*e*Pb		**Pb**		**21 08 17.9**	**-1.1**
LOHW				*e*Sn		**Sn**		**21 08 58.6**	**+1.3**
LOHW				*e*Sg		**Sg**		**21 09 13.7**	**-1.0**
FLWY	**Flagg Ranch**	**3.97**	**276**	*e*Pn		**Pn**		**21 08 11.8**	**+0.4**
FLWY				*e*Pb		**Pb**		**21 08 19.6**	**-0.5**
FLWY				*e*Sn		**Sn**		**21 08 59.2**	**+0.4**
FLWY				*e*Sg		**Sg**		**21 09 17.9**	**+1.3**
ISCO	**Idaho Springs**	**3.98**	**184**	*e*Pn		**Pn**		**21 08 12.6**	**+0.8**
ISCO				*e*Pg		**Pg**		**21 08 27.6**	**+2.1**
ISCO				*e*Sn		**Sn**		**21 08 59.5**	**+0.2**
ISCO				*e*Sg		**Sg**		**21 09 15.4**	**-1.8**
SNOW	**Snow King Moun**	**4.03**	**267**	*e*Pn		**Pb**		**21 08 17.6**	**-3.5**
REDW	**Red Top Meadow**	**4.11**	**266**	*e*Pn		**Pn**		**21 08 14.3**	**+0.9**
REDW				*e*Pb		**Pb**		**21 08 21.0**	**-1.5**
REDW				*e*Sn		**Sn**		**21 09 03.2**	**+0.9**
REDW				*e*Sg		**Sg**		**21 09 22.7**	**+1.5**
IMW	**Indian Meadow**	**4.14**	**274**	*e*Pn		**Pn**		**21 08 15.5**	**+1.7**
IMW				*e*Pb		**Pb**		**21 08 24.6**	**+1.6**
IMW				*e*Sn		**Sn**		**21 09 04.7**	**+1.6**
IMW				*e*Sb		**Sb**		**21 09 14.2**	**+0.5**
TPAW	**Teton Pass**	**4.17**	**268**	*e*Pn		**Pn**		**21 08 14.8**	**+0.5**
TPAW				*e*Pb		**Pb**		**21 08 25.1**	**+1.6**
TPAW				*e*Sn		**Sn**		**21 09 01.4**	**-2.4**
O20A	**White River Ci**	**4.28**	**213**	*e*Pn		**Pn**		**21 08 15.8**	**+0.2**
O20A				*e*Pg		**Pg**		**21 08 31.8**	**+0.6**
O20A				*e*Sn		**Sn**		**21 09 07.0**	**+0.6**
O20A				*e*Sg		**Sg**		**21 09 26.0**	**-0.6**
BOZ	**Bozeman (W)**	**4.94**	**294**	*e*Pn		**Pn**		**21 08 24.5**	**-0.2**
BOZ				*e*Pb		**Pb**		**21 08 36.4**	**-0.1**
BOZ				*e*Sb		**Sb**		**21 09 34.5**	**-1.9**
KSCO	**Kaye Shedlock'**	**5.15**	**157**	*e*Pn		**Pn**		**21 08 27.5**	**0.0**
	54nm,0.4s								
KSCO				*e*Pg		**Pg**		**21 08 47.8**	**+0.1**
KSCO				*e*Sn		**Sn**		**21 09 26.7**	**-1.0**
HWUT	**Hardware Ranch**	**5.15**	**247**	*e*Pn		**Pn**		**21 08 27.5**	**-0.2**
	8.9nm,0.4s								
HWUT				*e*Pb		**Pb**		**21 08 41.4**	**+1.2**
HWUT				*e*Sn		**Sn**		**21 09 29.1**	**+1.2**
HWUT				*e*Sb		**Sb**		**21 09 43.6**	**+0.9**
SDCO	**Great Sand Dun**	**6.03**	**182**	*e*Pn		**Pn**		**21 08 40.4**	**+0.6**
	2.4nm,0.7s								
PV01	**Paradox Valley**	**6.18**	**205**	*e*Pn		**Pn**		**21 08 42.7**	**+0.9**
	421nm,0.6s								
PV01						Pb	**Pb**	**21 09 00.4**	**+2.7**
ECSD	**EROS Data Cent**	**6.23**	**87**	*e*Pn		**Pn**		**21 08 43.2**	**+0.8**
	5.6nm,0.4s								
ECSD				*e*Pb		**Pb**		**21 09 00.1**	**+1.6**
ULM	**Lac du Bonnet**	**9.09**	**41**	Pn		**Pn**		**21 09 21.0**	**-0.4**
	1.3nm,0.3s,baz=233,slow=13,SNR=10								
ULM				Lg		Lg		21 11 52.8	
	0.6nm,0.3s,baz=329,slow=18,SNR=4.0								
NEW	**Newport**	**9.41**	**303**	LR		LR		21 13 26.0	
	comp=Z,77nm,21.2s,baz=78,slow=40								
I56US	**NEWPORT INFRAS**	**9.42**	**303**	*i*				22 04 50.0	
	baz=117,slow=314,SNR=1.2								
TXAR	**Lajitas Array**	**14.47**	**175**	Pg		Pg		21 11 30.3	
	0.2nm,0.3s,baz=6.0,slow=19,SNR=5.0								
YKA	**Yellowknife Ar**	**19.54**	**347**	P		**P**		**21 11 36.6**	**-1.3**
	0.1nm,0.3s,baz=154,slow=12,SNR=3.5								
INK	**Inuvik**	**28.70**	**338**	LR		LR		21 26 04.5	
	comp=Z,43nm,19.6s,baz=308,slow=40								
FRB	**Frobisher Bay**	**28.85**	**33**	LR		LR		21 24 57.1	
	comp=Z,41nm,19.1s,baz=180,slow=37								
RES	**Resolute Bay**	**31.35**	**5**	LR		LR		21 26 37.2	
	comp=Z,33nm,18.2s,baz=331,slow=37								
ARCES	**ARCESS Array B**	**61.37**	**18**	P		**P**		**21 17 25.0**	**-1.2**
	2.0nm,0.9s,baz=338,slow=7.1,SNR=4.4								
MKAR	**Makanchi Array**	**89.57**	**355**	P		**P**		**21 20 06.7**	**-1.6**
	0.3nm,0.6s,baz=0.9,slow=5.2,SNR=2.4								
PLCA	**Paso Flores**	**89.74**	**154**	LR		LR		21 54 21.4	
	comp=Z,35nm,21.7s,baz=162,slow=32								

*IDC **29** 21:08:14.3±0.7,39˚.48N×73˚.95E,h0^{km},mb4.1/15,*
mb1 4.3/22,mb1mx4.1/53,mbtmp4.2/22,ML3.5/8,MS3.4/23,
Ms1 3.4/23,ms1mx3.3/44,Error ellipse: s-maj=11.9km
s-min=11.5km az=94.0
*BJI **29** 21:08:15.8,39˚.55N×73˚.90E,h10^{km},mb4.4/23,mB4.4/7,*
ML4.2/6,Ms4.0/16,Ms7 3.8/11
*SOME **29** 21:08:15.1,39˚.50N×73˚.90E,h5^{km},MS3.5*
*KRNET **29** 21:08:16.5±0.1,39˚.60N×73˚.96E,h30^{km},mb4.8*
*ISCJB **29** 21:08:17.5±0.9,39˚.41N±0.˚02×73˚.93E±0.˚03,h31^{km}±7^{km},*
mb4.2/23,MS3.4/20,Error ellipse: s-maj=4.5km
s-min=2.7km az=167.1
*NNC **29** 21:08:19.9±1.2,39˚.80N×73˚.91E,h0^{km},mb4.8,mpv4.6,*
Error ellipse: s-maj=10.4km s-min=5.6km az=10.0
*NEIC **29** 21:08:22.0±1.0,39˚.70N×73˚.87E,h54^{km}±9^{km},mb4.3/10,*
Error ellipse: s-maj=10.0km s-min=7.1km az=183.0
ISC 29 21:08:16.7±1.2,39˚.56N±0.˚03×73˚.89E±0.˚02,h12^{km}±7^{km},
n137,σ2§45/175,mb4.3/23,MS3.4/20,36C-35D,
Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OHH	**Osh**	**1.28**	**319**	⇓*i*P		**Pg**		**21 08 43.1**	**+1.7**
	baz=316								
OHH				⇓*i*S		**Sn**		**21 09 00.5**	**+2.7**
	baz=316								
KSH	**Kashi**	**1.61**	**91**	⇑*i*Pg		**Pn**		**21 08 40.8**	**-4.3**
KSH					Sg	Sn		21 08 56.5	-9.4
KSH					smax	smax			
	comp=N,3μm,0.8s								
KSH					smax	smax			
	comp=E,2μm,0.9s								

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DRK	**Karamyk**	**1.62**	**268**	⇓*e*P		**Pg**		**21 08 48.1**	**+0.4**
	baz=267								
DRK				⇓*i*S		**Sg**		**21 09 11.1**	**+2.3**
	baz=267								
ARSB	**Arslanbob**	**1.90**	**339**	⇓*i*P		**Pb**		**21 08 50.4**	**-0.9**
	baz=337								
ARSB				⇓*i*S		**Sg**		**21 09 16.8**	**-0.8**
	baz=337								
ARLS	**Aral**	**2.33**	**8**	⇑*i*P		**Pn**		**21 08 57.0**	**+2.1**
	baz=7.0								
ARLS				⇑*i*S		**Sb**		**21 09 27.5**	**+0.1**
	baz=7.0								
BTK	**Batken**	**2.42**	**283**	⇑*i*P		**Pb**		**21 09 00.7**	**+0.5**
	baz=282								
BTK				⇑*i*S		**Sb**		**21 09 31.2**	**+1.2**
	baz=282								
AML	**Almayashu**	**2.58**	**357**	⇓*i*P		**Pn**		**21 09 00.5**	**+1.9**
	baz=355								
AML				⇓*i*S		**Sb**		**21 09 33.6**	**-1.2**
	baz=355								
ARK	**Arkit**	**2.67**	**327**	⇓*e*P		**Pn**		**21 09 01.6**	**+1.9**
	baz=326								
ARK				⇓*i*S		**Sb**		**21 09 36.4**	**-1.0**
	baz=326								
UCH	**Uchtor**	**2.71**	**10**	⇓*i*P		**Pn**		**21 09 02.8**	**+2.3**
	baz=9.0								
UCH				⇓*i*S		**Sn**		**21 09 36.5**	**+3.1**
	baz=9.0								
KZA	**Kyzart**	**2.72**	**22**	⇑*i*P		**Pn**		**21 09 02.8**	**+2.2**
	baz=21								
KZA				⇑*i*S		**Sn**		**21 09 36.4**	**+2.7**
	baz=21								
EKS2	**Erkin-Say**	**3.10**	**358**	⇑*i*P		**Pn**		**21 09 08.3**	**+2.7**
	baz=358								
EKS2				⇑*i*S		**Sn**		**21 09 46.6**	**+3.9**
	baz=358								
MNAS	**Manas**	**3.11**	**341**	⇓*i*P		**Pn**		**21 09 07.9**	**+2.2**
	baz=340								
MNAS				⇓*i*S		**Sn**		**21 09 46.5**	**+3.6**
	baz=340								
MNAS	**Manas**	**3.11**	**341**	⇓Pn		**Pn**		**21 09 07.7**	**+2.0**
	150nm,0.4s								
MNAS				⇑Pg		**Pb**		**21 09 11.5**	**-0.5**
	284nm,0.5s								
MNAS				⇑Lg		Lg		21 09 52.2	
	588nm,0.4s								
AAK	**Ala-Archa**	**3.11**	**8**	Pn		**Pn**		**21 09 08.3**	**+2.6**
	34nm,0.3s,baz=175,slow=10.0,SNR=133								
AAK						Sn	**Sb**	**21 09 48.9**	**-1.1**
	35nm,0.3s,baz=311,slow=23,SNR=9.0								
AAK						LR	LR	21 10 23.7	
	comp=Z,558nm,18.1s,baz=212,slow=41								
AAK	**Ala-Archa**	**3.11**	**8**	⇑*i*P		**Pn**		**21 09 08.3**	**+2.6**
	baz=7.0								
AAK				⇑*i*S		**Sn**		**21 09 45.8**	**+2.9**
	baz=7.0								

THN	**Thein Dam**	**7.26**	**168**	*e*P	**Pn**	**21 10 05.7**	**+3.1**
THN				*e*S	**Sn**	**21 11 31.4**	**+6.4**
SARP	**Sargodha**	**7.68**	**188**	P	**Pn**	**21 10 11.9**	**+3.5**
BHK	**Bhakra**	**8.38**	**165**	*e*S	**Sn**	**21 11 56.2**	**+3.6**
SDNR	**Sundarnagar**	**8.42**	**162**	*e*P	**Pn**	**21 10 21.0**	**+2.4**
SDNR				*e*S	**Sn**	**21 11 53.6**	**0.0**
OTUK	**Ortayu**	**8.76**	**353**	⇓Pn	**Pn**	**21 10 23.5**	**+0.4**
	7.8nm,0.6s						
OTUK				⇓Pg	Pg	21 10 54.0	-10
	12nm,0.6s						
OTUK				⇑Lg	Lg	21 12 49.5	
	195nm,0.9s						
SMLA	**Simla**	**8.82**	**161**	*e*P	**Pn**	**21 10 25.4**	**+1.4**
SMLA				*e*S	**Sn**	**21 12 03.1**	**-0.3**
SMLA				IAML		21 12 29.6	
	comp=E,96nm,0.8s						
SMLA				IAML		21 12 29.8	
	comp=N,60nm,0.6s						
MAKZ	**Makanchi**	**9.35**	**37**	*e*Pn	**Pn**	**21 10 34.4**	**+3.2**
MK01	**Makanchi Array**	**9.47**	**38**	*e*Pn	**Pn**	**21 10 35.1**	**+2.3**
MK31	**Makanchi Array**	**9.48**	**38**	Pn	**Pn**	**21 10 35.6**	**+2.5**
	comp=N,6.2nm,0.8s,baz=208,slow=13,SNR=32						
MK31				⇓Lg	Lg	21 13 13.1	
	comp=N,39nm,1.1s,baz=228,slow=27,SNR=4.3						
MK31	**Makanchi Array**	**9.48**	**38**	*e*Pn	**Pn**	**21 10 35.8**	**+2.7**
MKAR	**Makanchi Array**	**9.48**	**38**	Pn	**Pn**	**21 10 35.4**	**+2.3**
	comp=N,0.3nm,0.3s,baz=223,slow=14,SNR=17						
MKAR				Lg	Lg	21 13 16.1	
	comp=N,0.4nm,0.3s,baz=216,slow=27,SNR=3.8						
MKAR	**Makanchi Array**	**9.48**	**38**	*e*Pn	**Pn**	**21 10 36.0**	**+2.9**
DDI	**Dehra Dun**	**9.83**	**158**	*e*P	**Pn**	**21 10 39.3**	**+1.4**
DDI				*e*S	**Sn**	**21 12 27.2**	**-0.9**
DDI				IAML		21 12 38.6	
	comp=N,113nm,0.6s						
DDI				IAML		21 12 40.9	
	comp=E,137nm,0.2s						
WMQ	**Urumqi**	**11.17**	**63**	P	**Pn**	**21 10 57.5**	**+1.3**
WMQ				pP		21 11 06.5	
WMQ				S	**Sn**	**21 13 05.0**	**+4.1**
WMQ				pmax	pmax		
	comp=E,13nm,1.1s						
WMQ				LR	LR		
	comp=E,860nm,8.0s						
WMQ				LR	LR		
	comp=E,680nm,6.7s						
WMQ				LR	LR		
	comp=E,570nm,12.0s						
NDI	**New Delhi**	**11.19**	**165**	*e*S	**Sn**	**21 12 57.0**	**-4.5**
KURBB	**Kurchatov Arra**	**11.54**	**15**	Pn	**Pn**	**21 11 00.8**	**-0.3**
	comp=E,0.1nm,0.3s,baz=210,slow=12,SNR=8.8						
KURBB				Lg	Lg	21 14 20.0	
	comp=E,0.3nm,0.3s,baz=207,slow=29,SNR=8.3						
KURBB	**Kurchatov Arra**	**11.54**	**15**	⇓Pn	**Pn**	**21 11 03.1**	**+2.0**
	comp=E,4.7nm,0.7s						
KURBB				⇑Lg	Lg	21 14 20.1	
	comp=E,112nm,0.8s						
KURK	**Kurchatov**	**11.64**	**15**	*e*Pn	**Pn**	**21 11 02.8**	**+0.2**
GEYT	**Alibeck**	**12.42**	**267**	Pn	**Pn**	**21 11 12.4**	**-0.9**
	comp=E,1.2nm,0.3s,baz=81,slow=9.2,SNR=20						
GEYT				Sn	**Sn**	**21 13 28.6**	**-3.1**
	comp=E,1.9nm,0.3s,baz=17,slow=28,SNR=6.0						
GEYT				LR	LR	21 16 42.6	
	comp=E,211nm,18.9s,baz=75,slow=41						
BVA0	**Borovoye Array**	**13.68**	**351**	Pn	**Pn**	**21 11 28.5**	**-2.0**
	comp=E,13nm,0.6s,baz=160,slow=12,SNR=34						
BVA0				⇑Lg	Lg	21 15 26.1	
	comp=E,46nm,1.2s,baz=157,slow=28,SNR=3.5						
BVAR	**Borovoye Array**	**13.68**	**351**	Pn	**Pn**	**21 11 28.6**	**-1.8**
	comp=E,0.9nm,0.3s,baz=159,slow=13,SNR=29						
BVAR				Sn	**Sn**	**21 14 08.7**	**+6.4**
	comp=E,0.2nm,0.3s,baz=157,slow=28,SNR=2.2						
BVAR				Lg	Lg	21 15 29.5	
	comp=E,0.7nm,0.3s,baz=140,slow=26,SNR=3.6						
PYUN	**Piuthan**	**13.69**	**144**	*e*P	**Pn**	**21 11 29.1**	**-1.8**
	comp=E,50nm,0.8s						
PYUN				*e*S	**Sn**	**21 13 56.8**	**-6.3**
BRVK	**Borovoye**	**13.73**	**351**	*e*Pn	**Pn**	**21 11 30.0**	**-1.1**
AB31	**Akbulak array**	**13.88**	**319**	⇑Pn	**Pn**	**21 11 30.7**	**-2.4**
	comp=E,7.6nm,0.6s						
AB31				⇑Sn	**Sn**	**21 14 03.5**	**-3.6**
	comp=E,4.8nm,0.5s						
AB31				⇑Lg	Lg	21 15 36.2	
	comp=E,95nm,1.9s						
ABKAR	**Akbulak array**	**13.88**	**319**	*e*Pn	**Pn**	**21 11 31.4**	**-1.7**
KOLN	**Koldanda**	**14.26**	**143**	*e*P	**Pn**	**21 11 36.3**	**-2.3**
	comp=E,21nm,0.5s						
KOLN				*e*S	**Sn**	**21 14 10.2**	**-6.6**
GKN	**Gorkha**	**14.57**	**139**	*e*P	**Pn**	**21 11 40.4**	**-2.4**
	comp=E,23nm,0.6s						
KKN	**Kakani**	**15.07**	**138**	*e*P	**Pn**	**21 11 47.2**	**-2.5**
	comp=E,14nm,0.5s						
DMN	**Daman**	**15.13**	**139**	*e*P	**Pn**	**21 11 47.8**	**-2.7**
PKIN	**Phulchoki**	**15.30**	**138**	*e*P	**Pn**	**21 11 50.4**	**-2.4**
	comp=E,16nm,0.6s						
AKTO	**Aktyubinsk**	**15.60**	**319**	Pn	**Pn**	**21 11 54.5**	**-1.8**
	comp=E,0.7nm,0.3s,baz=125,slow=13,SNR=37						
AKTO				LR	LR	21 17 58.6	
	comp=E,92nm,18.3s,baz=134,slow=37						
AKTO	**Aktyubinsk**	**15.60**	**319**	⇓Pn	**Pn**	**21 11 53.9**	**-2.3**
	comp=E,15nm,0.8s						
AKTO				⇑Sn	**Sn**	**21 14 49.6**	**+0.7**
	comp=E,20nm,1.4s						
AKTO				⇓Lg	Lg	21 16 30.4	
	comp=E,18nm,1.2s						
ZAA0	**Zalesovo Array**	**16.20**	**24**	*e*Pn	**Pn**	**21 12 03.7**	**-0.2**
ZALV	**Zalesovo Beam**	**16.20**	**24**	Pn	**Pn**	**21 12 03.0**	**-0.9**
	comp=E,0.5nm,0.3s,baz=199,slow=13,SNR=14						
ZALV				Sn	**Sn**	**21 14 58.5**	**-4.9**
	comp=E,0.1nm,0.3s,baz=228,slow=15,SNR=3.0						
ZALV				Lg	Lg	21 16 46.2	
	comp=E,0.1nm,0.3s,baz=215,slow=25,SNR=3.3						
ZALV				LR	LR	21 18 33.4	
	comp=E,108nm,18.4s,baz=250,slow=38						
LSA	**Lhasa**	**17.25**	**119**	*e*Pn	**P**	**21 12 20.4**	**+0.9**
	comp=E,4.1nm,0.6s						
ARU	**Arti**	**19.67**	**334**	P	**P**	**21 12 45.7**	**+0.3**
	comp=E,0.0nm,0.3s,baz=134,slow=6.2,SNR=15						
ARU				Lg	Lg	21 18 35.7	
	comp=E,0.0nm,0.3s,baz=90,slow=20,SNR=1.9						
ARU				LR	LR	21 20 50.5	
	comp=E,147nm,18.6s,baz=128,slow=38						
ARU	**Arti**	**19.67**	**334**	*e*P	**P**	**21 12 44.5**	**-0.8**
	comp=E,5.9nm,0.6s						
GTA	**Gaotai**	**20.00**	**82**	P	Pn	21 12 50.5	-0.4
GTA				pP	sP	21 12 54.8	+0.7
GTA				sP	pP	21 12 57.5	+5.0
GTA				S	Sn	21 16 37.0	+1.3
GTA				sS	sS	21 16 43.8	+4.6
GTA				pmax	pmax		
	comp=E,16nm,1.0s						
GTA				pmax	pmax		
	comp=E,55nm,4.5s						
GTA				LR	LR		
	comp=E,130nm,10.9s						
GTA				LR	LR		
	comp=E,110nm,11.9s						
GUDG	**Gudauri**	**22.33**	**287**	P	**P**	**21 13 15.6**	**+1.2**
GNI	**Garni**	**22.34**	**281**	P	**P**	**21 13 16.1**	**+1.5**
	comp=E,14nm,0.8s,baz=158,slow=5.4,SNR=10						
GNI				LR	LR	21 23 18.4	
	comp=E,42nm,19.4s,baz=78,slow=40						
GNI	**Garni**	**22.34**	**281**	*e*P	**P**	**21 13 16.4**	**+1.9**
	comp=E,28nm,1.0s						
HYB	**Hyderabad**	**22.43**	**168**	*i* P	**P**	**21 13 15.0**	**-0.5**
ONI	**Oni**	**23.08**	**287**	P	**P**	**21 13 26.0**	**+3.8**
KBZ	**Khabaz**	**23.46**	**290**	P	**P**	**21 13 31.3**	**+5.4**
	comp=E,5.7nm,0.7s,baz=108,slow=8.9,SNR=13						
KVAR	**Kislovodsk Arr**	**23.60**	**291**	LR	LR	21 23 30.9	
	comp=E,52nm,18.3s,baz=68,slow=39						
LZH	**Lanzhou**	**23.86**	**89**	*e*P	**P**	**21 13 28.3**	**-1.8**
LZH				pP	pP	21 13 32.0	-1.6
LZH				sP	sP	21 13 34.8	-0.3
LZH				pmax	pmax		
	comp=E,14nm,1.0s						
SONM	**Songino Array**	**24.77**	**60**	P	**P**	**21 13 39.0**	**+0.6**
	comp=E,4.4nm,0.9s,baz=261,slow=9.7,SNR=17						
SONM				LR	LR	21 24 16.7	
	comp=E,105nm,18.6s,baz=264,slow=39						
SONA1	**Songino Array**	**24.78**	**60**	*e*P	**P**	**21 13 39.4**	**+1.0**
CD2	**Chengdu**	**25.79**	**100**	*e*P	**P**	**21 13 48.5**	**+0.9**
HHC	**Hu-ho-hao-te**	**28.66**	**75**	*e*P	**P**	**21 14 14.5**	**+1.1**
HHC				pmax	pmax		
	comp=E,22nm,0.6s						
HHC				LR	LR		
	comp=E,150nm,12.3s						
HHC				LR	LR		
	comp=E,150nm,12.3s						
HHC				LR	LR		
	comp=E,140nm,12.3s						
OBN	**Obninsk**	**29.26**	**315**	LR	LR	21 25 39.9	
	comp=E,52nm,20.0s,baz=91,slow=36						
CMAR	**Chiang Mai Arr**	**30.19**	**127**	P	**P**	**21 14 25.5**	**-1.5**
	comp=E,0.6nm,0.4s,baz=317,slow=9.1,SNR=4.7						
CMAR				LR	LR	21 27 57.3	
	comp=E,38nm,19.8s,baz=325,slow=39						
NRIK	**Noril'sk**	**30.73**	**9**	LR	LR	21 28 42.1	
	comp=E,87nm,19.4s,baz=116,slow=40						
BR131	**Keskin Array S**	**30.81**	**283**	*e*P	**P**	**21 14 33.1**	**+0.6**
BRTR	**Keskin Array B**	**30.81**	**283**	P	**P**	**21 14 33.5**	**+1.0**
	comp=E,2.1nm,0.8s,baz=97,slow=4.0,SNR=13						
BR231	**Keskin MP Arra**	**31.44**	**284**	*e*P	**P**	**21 14 35.0**	**-3.0**
BJT	**Baijiatuao**	**32.27**	**75**	P	**P**	**21 14 44.6**	**-0.5**
	comp=E,4.2nm,0.4s						
PALK	**Pallekele**	**32.72**	**167**	LR	LR	21 28 40.7	
	comp=E,63nm,18.9s,baz=296,slow=38						
AKASG	**Malin Array Be**	**32.95**	**305**	LR	LR	21 29 21.8	
	comp=E,82nm,19.7s,baz=190,slow=38						
AKBB	**Malin Array Si**	**32.95**	**305**	*e*P	**P**	**21 14 51.4**	**+0.4**
	comp=E,3.2nm,0.8s						
KIEV	**Kiev**	**32.95**	**305**	*e*P	**P**	**21 14 50.5**	**-0.5**
	comp=E,2.7nm,0.6s						
MLR	**Muntele Rosu**	**35.40**	**296**	*e*P	**P**	**21 15 13.3**	**+0.8**
	comp=E,6.6nm,0.8s						
BUR08	**Bucovina Ar. S**	**35.67**	**299**	*e*P	**P**	**21 15 14.9**	**+0.2**
FINES	**FINESS Array B**	**36.32**	**323**	P	**P**	**21 15 20.0**	**+0.1**
	comp=E,2.6nm,0.4s,baz=114,slow=10.0,SNR=34						
FINES				LR	LR	21 31 38.3	
	comp=E,60nm,19.5s,baz=99,slow=39						
CN2	**Changchun**	**38.23**	**66**	*e*P	**P**	**21 15 37.5**	**+1.1**
CN2				LR	LR		
	comp=E,200nm,13.0s						
CN2				LR	LR		
	comp=E,200nm,13.0s						
CN2				LR	LR		
	comp=E,200nm,14.0s						
ARCES	**ARCESS Array B**	**39.25**	**335**	P	**P**	**21 15 44.8**	**+0.1**
	comp=E,5.0nm,0.8s,baz=106,slow=8.9,SNR=16						
ARCES				LR	LR	21 33 19.0	
	comp=E,41nm,18.1s,baz=118,slow=38						
VYHS	**Vyhne**	**39.81**	**302**	*e*P	**P**	**21 15 50.7**	**+1.1**
YAK	**Yakutsk**	**40.16**	**37**	LR	LR	21 32 52.4	
	comp=E,68nm,19.2s,baz=264,slow=37						
KS15	**Wonju Array Si**	**41.78**	**75**	*e*P	**P**	**21 16 04.9**	**-1.0**
KS15				*e*PcP	**PcP**	**21 18 01.6**	**-0.5**
KSAR	**Wonju Array Be**	**41.78**	**75**	P	**P**	**21 16 04.6**	**-1.3**
KSRS	**Korea Array**	**41.80**	**75**	P	**P**	**21 16 04.6**	**-1.5**
	comp=E,0.6nm,0.4s,baz=277,slow=6.3,SNR=3.0						
TIXI	**Tiksi**	**42.08**	**23**	LR	LR	21 34 33.7	
	comp=E,80nm,18.2s,baz=246,slow=38						
GEC2	**GERESS Array S**	**43.10**	**303**	*e*P	**P**	**21 16 15.5**	**-1.2**
	comp=E,6.3nm,1.3s						
GERES	**GERESS Array B**	**43.10**	**303**	P	**P**	**21 16 17.5**	**+0.8**
	comp=E,2.1nm,0.7s,baz=60,slow=7.9,SNR=16						
GERES				LR	LR	21 35 42.2	
	comp=E,41nm,18.4s,baz=268,slow=38						
GEA0	**GERESS Array S**	**43.11**	**303**	*e*P	**P**	**21 16 16.8**	**+0.1**
KHC	**Kasperske Hory**	**43.13**	**303**	*e*P	**P**	**21 16 17.5**	**+0.7**
NC303	**NORSAR Array S**	**43.30**	**321**	*e*P	**P**	**21 16 16.9**	**-1.2**
NB2	**NORSAR Subarra**	**43.38**	**321**	P	**P**	**21 16 17.9**	**-0.8**
	comp=Z,4.5nm,0.8s,baz=89,slow=7.9						
NOA	**NORSAR Array B**	**43.38**	**321**	P	**P**	**21 16 17.9**	**-0.8**
	comp=Z,3.7nm,0.7s,baz=91,slow=8.0,SNR=15						
NOA				LR	LR	21 35 02.7	
	comp=Z,46nm,19.0s,baz=85,slow=37						
MJAR	**Matsushiro Arr**	**49.77**	**72**	LR	LR	21 37 42.7	
	comp=Z,30nm,19.3s,baz=100,slow=36						
KEST	**Kesra**	**50.27**	**287**	LR	LR	21 42 18.4	
	comp=Z,36nm,18.6s,baz=242,slow=41						
ES19	**SONSECA Array**	**58.01**	**297**	*e*P	**P**	**21 18 07.9**	**-1.5**
ESDC	**Sonseca Array**	**58.07**	**297**	P	**P**	**21 18 09.5**	**-0.3**
	comp=Z,0.6nm,0.5s,baz=58,slow=6.9,SNR=7.9						
COLD	**Coldfoot**	**68.40**	**17**	*e*P	**P**	**21 19 17.7**	**-0.1**
	comp=Z,3.0nm,0.9s						
INK	**Inuvik**	**70.51**	**10**	P	**P**	**21 19 29.8**	**-0.9**
	comp=Z,2.9nm,0.9s,baz=318,slow=9.2,SNR=7.2						
INK	**Inuvik**	**70.51**	**10**	*e*P	**P**	**21 19 30.9**	**+0.2**
	comp=Z,11nm,1.5s						
IL1	**Eielson Array**	**71.20**	**17**	*e*P	**P**	**21 19 33.9**	**-1.1**
ILAR	**Eielson Array**	**71.20**	**17**	P	**P**	**21 19 33.4**	**-1.7**
	comp=Z,0.8nm,0.8s,baz=328,slow=4.8,SNR=6.2						
ILAR				LR	LR	21 55 11.2	
	comp=Z,30nm,18.4s,baz=290,slow=40						
YKA	**Yellowknife Ar**	**78.07**	**4**	P	**P**	**21 20 14.1**	**-0.8**
	comp=Z,1.8nm,0.7s,baz=349,slow=5.7,SNR=11						
WRA	**Warramunga Arr**	**81.74**	**124**	P	**P**	**21 20 34.7**	**-0.6**
	comp=Z,1.2nm,0.6s,baz=329,slow=5.2,SNR=20						
ASAR	**Alice Springs**	**84.20**	**127**	P	**P**	**21 20 47.2**	**-0.8**
	comp=Z,0.8nm,0.6s,baz=311,slow=4.9,SNR=13						
PDAR	**Pinedale Array**	**98.00**	**3**	LR	LR	22 09 56.6	
	comp=Z,25nm,18.8s,baz=40,slow=38						

NIED ***29*** *21:29:00,37.50N×141.60E,h47km,Mw3.5 Best double couple: M₀1.91000×10¹⁴ NP1:φ₀189.00000°,δ41.00000°, λ-28.00000°. NP2:φ₀300.00000°,δ72.00000°, λ-128.00000°.*

JMA 29 21:29:14.1±0.1,37.48N×141.49E,h38km±2km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.50**	**257**	P	Pn	21 29 24.8	0.0
JFK				S	Sn	21 29 32.2	-0.1
ONAJ	**Iwakimizuishiy**	**0.67**	**236**	P	Pn	21 29 27.0	-0.2
ONAJ				S	Sn	21 29 35.9	-0.5
JMM	**Marumori**	**0.67**	**305**	P	Pn	21 29 27.1	-0.1
JMM				S	Sn	21 29 36.4	-0.1
JFT	**Otama**	**0.92**	**273**	P	Pn	21 29 31.4	+0.9
JFT				S	Sn	21 29 43.5	+1.0
JIO	**Ouri**	**0.98**	**354**	P	Pn	21 29 31.2	-0.1
JIO				*e*S	Sn	21 29 43.3	-0.6
JOU	**Okura**	**1.10**	**324**	P	Pn	21 29 33.3	+0.3
JOU				*e*S	Sn	21 29 47.8	+0.9
JYS	**Shirataka**	**1.35**	**304**	P	Pn	21 29 37.5	+1.1
JYS				S	Sn	21 29 54.7	+1.6
JFY	**Yanaizu**	**1.42**	**268**	*e*S	Sn	21 29 56.5	+1.6
JMK	**Ichinoseki**	**1.48**	**352**	P	Pn	21 29 38.5	+0.3
MAT	**Matsushiro**	**2.79**	**251**	P	Pn	21 29 58.1	+1.9
MAT				S	Sn	21 30 32.1	+3.5

MAN 29 21:30:08,9.46N×122.31E,h16km,mb4.3,ML3.1,MS2.9, 1C-1D,Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.93**	**97**	⇓*i* P	Pg	21 30 26.1	+0.1
SNPH				*i* S	Sn	21 30 40.4	+1.0
TBP	**Tagbilaran**	**1.55**	**81**	*i* P	Pg	21 30 39.2	+1.3
LLP	**Lapu-Lapu**	**1.84**	**62**	*e*P	Pn	21 30 38.9	-0.1
LLP				*e*S	Sb	21 31 03.9	-0.3
RCP	**Roxas**	**2.13**	**12**	⇑*e*P	Pn	21 30 44.3	+1.3

CSEM ***29*** *21:35:27.3,38.31N×21.76E,h14km,ML1.1/6*

ATH 29 21:35:27.3,38.31N×21.76E,h14km±5km,ML1.1/5,Error ellipse: s-maj=5.2km s-min=0.9km az=111.0,Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UPR	**University Cam**	**0.04**	**139**	P	Pg	21 35 27.0	-2.8
UPR				S	Sg	21 35 29.8	-1.8
LAKA	**Lakka**	**0.19**	**112**	P	Pg	21 35 31.3	-0.4
LAKA				S	Sg	21 35 34.1	-0.5
LAKA	**Lakka**	**0.19**	**112**	P	Pg	21 35 29.0	-1.8
LAKA				S	Sg	21 35 33.0	-1.6
LAKA				AML	AML	21 35 35.3	
	comp=E,164μm,0.3s						
LAKA				AML	AML	21 35 36.5	
	comp=N,54μm,0.1s						
LAKA	**Lakka**	**0.19**	**112**	P	Pg	21 35 31.3	-0.4
LAKA				S	Sg	21 35 34.1	-0.5
TRIZ	**Trizonia**	**0.26**	**78**	P	Pg	21 35 33.1	+0.4
TRIZ				S	Sg	21 35 36.1	-0.3
TRIZ	**Trizonia**	**0.26**	**78**	S	Sb	21 35 38.2	+0.3
SERG	**Sergoula**	**0.26**	**67**	P	Pb	21 35 33.3	-0.4
SERG				S	Sg	21 35 36.4	-0.2
ANX	**Ano Chora**	**0.31**	**25**	P	Pg	21 35 33.7	-0.1
ANX				S	Sg	21 35 37.8	-0.4
ANX	**Ano Chora**	**0.31**	**25**	S	Sg	21 35 38.8	+0.6
ANX				AML	AML	21 35 39.6	
	comp=N,133μm,0.2s						
ANX				AML	AML	21 35 40.0	
	comp=E,100μm,0.2s						
ANX	**Ano Chora**	**0.31**	**25**	P	Pg	21 35 33.7	-0.1
ANX				S	Sg	21 35 37.8	-0.4
ANX				AML	AML	21 35 39.6	
	comp=N,133μm,0.2s						
ANX				AML	AML	21 35 40.0	
	comp=E,100μm,0.2s						
KALE	**Kalithea**	**0.31**	**75**	P	Pg	21 35 34.1	+0.3
KALE				S	Sg	21 35 38.6	+0.4
KALE	**Kalithea**	**0.31**	**75**	P	Pb	21 35 34.3	-0.4
KALE				AML	AML	21 35 39.6	
	comp=N,79μm,0.2s						
KALE				S	Sb	21 35 40.0	+0.4
KALE				AML	AML	21 35 40.4	
	comp=E,84μm,0.1s						
KALE	**Kalithea**	**0.31**	**75**	P	Pg	21 35 34.1	+0.3
KALE				S	Sg	21 35 38.6	+0.4
KALE				AML	AML	21 35 39.6	
	comp=N,79μm,0.2s						
KALE				AML	AML	21 35 40.4	
	comp=E,84μm,0.1s						
RLS	**Riolos of Patr**	**0.34**	**222**	P	Pg	21 35 34.3	+0.1
RLS				S	Sg	21 35 39.2	+0.3
RLS	**Riolos of Patr**	**0.34**	**222**	S	Sg	21 35 38.0	-1.0
RLS				AML	AML	21 35 41.5	
	comp=N,75μm,0.4s						
RLS				AML	AML	21 35 41.9	
	comp=E,59μm,0.3s						
RLS	**Riolos of Patr**	**0.34**	**222**	S	Sg	21 35 39.2	+0.3
RLS				AML	AML	21 35 40.4	
	comp=E,66μm,0.2s						
RLS				AML	AML	21 35 41.5	
	comp=N,75μm,0.4s						
PVO	**Paravola**	**0.35**	**329**	P	Pg	21 35 34.5	0.0
PVO	**Paravola**	**0.35**	**329**	P	Pg	21 35 34.6	+0.1
PVO				S	Sg	21 35 39.7	+0.3
PVO				AML	AML	21 35 41.2	
	comp=N,226μm,0.1s						
PVO				AML	AML	21 35 41.4	
	comp=E,254μm,0.1s						
PVO	**Paravola**	**0.35**	**329**	P	Pg	21 35 34.5	0.0
DRO	**Drossia**	**0.36**	**186**	P	Pg	21 35 34.2	-0.4
DRO				S	Sg	21 35 40.2	+0.6
DRO	**Drossia**	**0.36**	**186**	P	Pg	21 35 33.0	-1.6
DRO				S	Sg	21 35 37.5	-2.0
DRO				AML	AML	21 35 44.5	
	comp=N,122μm,0.2s						
DRO				AML	AML	21 35 44.8	
	comp=E,118μm,0.2s						
DRO	**Drossia**	**0.36**	**186**	P	Pg	21 35 34.2	-0.3
DRO				S	Sg	21 35 40.2	+0.6
DRO				AML	AML	21 35 41.1	
	comp=E,132μm,0.4s						
DRO				AML	AML	21 35 41.9	
	comp=N,65μm,0.1s						
KLV	**Kalavryta, Ach**	**0.41**	**131**	P	Pb	21 35 36.2	-0.1
KLV				S	Sg	21 35 41.4	+0.3
KLV	**Kalavryta, Ach**	**0.41**	**131**	P	Pg	21 35 33.9	-1.6
KLV				S	Sg	21 35 39.8	-1.3
KLV				AML	AML	21 35 42.1	
	comp=N,15μm,0.3s						
KLV				AML	AML	21 35 44.4	
	comp=E,28μm,0.2s						
KLV	**Kalavryta, Ach**	**0.41**	**131**	P	Pb	21 35 36.2	-0.1
KLV				S	Sg	21 35 41.4	+0.3
PDO	**Prodromos**	**0.53**	**303**	P	Pg	21 35 37.3	-0.5
PDO				S	Sg	21 35 45.3	+0.4
PDO	**Prodromos**	**0.53**	**303**	P	Pg	21 35 37.3	-0.5
PDO				S	Sg	21 35 45.3	+0.4
PDO				AML	AML	21 35 49.0	
	comp=N,75μm,0.2s						
PDO				AML	AML	21 35 49.1	
	comp=E,46μm,0.2s						
EVR	**Evrytania**	**0.61**	**4**	P	Pg	21 35 39.1	-0.1
EVR				S	Sb	21 35 48.3	+0.1
EVR	**Evrytania**	**0.61**	**4**	P	Pg	21 35 39.1	-0.1
EVR				S	Sb	21 35 48.3	+0.1
DSF	**Desfina**	**0.61**	**80**	P	Pg	21 35 37.8	-1.5
DSF	**Desfina**	**0.61**	**80**	P	Pg	21 35 39.2	-0.2
DSF	**Desfina**	**0.61**	**80**	P	Pg	21 35 37.8	-1.5

ISK ***29*** *21:54:01.9,39.19N×27.79E,h2km,MD2.9*
ISCJB ***29*** *21:54:02.8±0.5,39.18N±0.02×27.78E±0.03,h4km±4km, Error ellipse: s-maj=3.9km s-min=3.4km az=143.0*
DDA ***29*** *21:54:02.2,39.23N×27.79E,h7km,Md2.7*
CSEM ***29*** *21:54:03.0±0.1,39.17N×27.80E,h8km,MD2.9,Error ellipse: s-maj=2.7km s-min=2.4km az=70.0*

ISC 29 21:54:02.4±1.2,39.18N±0.02×27.79E±0.02,h4km±11km, n56,σ0°76/76,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKS	**Akhisar**	**0.30**	**177**	*e*Pg	**Pg**	**21 54 08.9**	**+0.7**
AKS				*e*SG	**Sb**	**21 54 13.9**	**-1.7**
AKS	**Akhisar**	**0.30**	**177**	*e*Pg	**Pg**	**21 54 08.9**	**+0.7**
AKS				*e*Sg	**Sb**	**21 54 13.9**	**-1.7**
BALB	**Balikesir**	**0.46**	**8**	*e*PG	**Pg**	**21 54 11.9**	**+0.6**
BALB				*e*SG	**Sb**	**21 54 19.0**	**-1.3**
BALB	**Balikesir**	**0.46**	**8**	*e*Pg	**Pg**	**21 54 11.9**	**+0.6**
BALB				*e*Sg	**Sb**	**21 54 19.0**	**-1.3**
DKL	**Dikili**	**0.70**	**261**	*e*PG	**Pg**	**21 54 16.2**	**+0.4**

ARMT	**Armutlu**	**1.61**	**30**	*e*PN	**Pb**	**21 54 32.5**	**-0.1**
ARMT	**Armutlu**	**1.61**	**30**	*e*Pn	**Pb**	**21 54 32.5**	**-0.1**
GADA	**Gvkgeada**	**1.77**	**305**	*e*PN	**Pb**	**21 54 34.6**	**-0.8**
GADA	**Gvkgeada**	**1.77**	**305**	*e*Pn	**Pb**	**21 54 34.6**	**-0.8**
ERIK	**Erikli-Kesan**	**1.78**	**327**	*e*PN	**Pb**	**21 54 34.9**	**-0.7**
ERIK	**Erikli-Kesan**	**1.78**	**327**	*e*Pn	**Pb**	**21 54 34.9**	**-0.7**
BORA	**Eskisehir**	**2.17**	**70**	*i* P	**Pg**	**21 54 43.1**	**-0.9**
BORA				*i* S	**Sg**	**21 55 13.9**	**+1.7**
BORA	**Eskisehir**	**2.17**	**70**	P	**Pg**	**21 54 43.1**	**-0.9**
ALN	**Alexandroupoli**	**2.18**	**323**	*e*PN	**Pb**	**21 54 40.5**	**-1.8**
ALN	**Alexandroupoli**	**2.18**	**323**	*e*Pn	**Pb**	**21 54 40.5**	**-1.8**

ISCJB ***29*** *22:06:25.5±0.5, 13.°24N±0.°05×120.°93E±0.°09, h81km±5km, mb4.2/22, Error ellipse: s-maj=15.9km s-min=5.3km az=155.8*
MAN ***29*** *22:06:25, 13.°08N×120.°76E, h34km, mb4.8, ML3.7, MS3.7*
MAN INTENSITY II - PUERTO GALERA ORIENTAL MINDORO; ABRA DE ILOG OCCIDENTAL MINDORO.
IDC ***29*** *22:06:26.9±0.8, 13.°28N×121.°09E, h78km±6km, mb3.9/17, mb1 3.9/17, mb1mx3.7/49, mbtmp4.2/17, MS3.3/23, Ms1 3.3/23, ms1mx3.2/43, Error ellipse: s-maj=25.5km s-min=10.6km az=68.0*
NEIC ***29*** *22:06:27.2±1.0, 13.°31N×121.°06E, h81km±9km, mb4.3/5, Error ellipse: s-maj=16.4km s-min=8.6km az=72.0*
NEIC Felt [II PIVS] at Abra de Ilog and Puerto Galera.

ISC 29 22:06:26.3±0.8, 13.°21N±0.°05×120.°84E±0.°08, h73km±7km, n48, σ1°41/40, mb4.3/22, 2C-4D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.31**	**20**	⇑*e*P	**Pn**	**22 06 37.7**	**-0.2**
PGP				*i* S	**Sn**	**22 06 44.7**	**-1.8**
TGY	**Tagaytay City**	**0.89**	**6**	P	**Pn**	**22 06 43.5**	**-0.3**
	2µm,0.3s,baz=256,slow=0.8,SNR=90						
TGY				S	**Sn**	**22 06 57.6**	**+0.9**
	2µm,0.3s,baz=191,slow=20,SNR=21						
TGY				LR	LR	22 07 12.5	
	comp=Z,2µm,18.1s,baz=150,slow=55						
TGY	**Tagaytay City**	**0.89**	**6**	⇑*i*P	**Pn**	**22 06 43.4**	**-0.4**
TGY				*i* S	**Sn**	**22 06 57.5**	**+0.9**
GQP	**Guinayangan**	**1.71**	**66**	⇓*e*P	**Pn**	**22 06 54.8**	**+0.8**
GQP				*e*S	**Sn**	**22 07 18.4**	**+3.3**
PCPH	**Palayan**	**2.35**	**6**	⇓*e*P	**Pn**	**22 07 02.5**	**-0.3**
PCPH				*e*S	Sn	22 07 58.8	+28
RCP	**Roxas**	**2.48**	**131**	⇓*e*P	**Pn**	**22 07 04.3**	**-0.1**
RCP				*e*S	**Sn**	**22 07 33.4**	**-0.3**
JAP	**San Jose, Anti**	**2.67**	**156**	⇓*e*P	**Pn**	**22 07 06.7**	**-0.4**
SNPH	**Sibulan**	**4.50**	**148**	*e*P	**Pn**	**22 07 33.3**	**+1.2**
SNPH				*i* S	**Sn**	**22 08 22.9**	**-0.3**
YULB	**Yu-li**	**10.14**	**2**	*e*Pn	**Pn**	**22 08 49.2**	**+0.1**
	28nm,1.3s						
JOW	**Kunigami**	**15.24**	**26**	LR	LR	22 15 26.8	
	comp=Z,31nm,21.8s,baz=114,slow=36						
CMAR	**Chiang Mai Arr**	**21.70**	**287**	P	**P**	**22 11 12.5**	**+1.1**
	1.2nm,0.8s,baz=103,slow=8.8,SNR=7.8						
CMAR				LR	LR	22 19 14.1	
	comp=Z,14nm,21.4s,baz=85,slow=35						
JNU	**Nakatsue**	**21.84**	**23**	P	**P**	**22 11 13.3**	**+0.6**
	4.3nm,0.9s,baz=191,slow=10,SNR=3.7						
KSAR	**Wonju Array Be**	**24.94**	**13**	P	**P**	**22 11 40.2**	**-2.4**
KSRS	**Korea Array**	**24.96**	**13**	P	**P**	**22 11 40.2**	**-2.6**
	1.0nm,0.5s,baz=349,slow=37,SNR=2.6						
KSRS				LR	LR	22 22 14.1	
	comp=Z,55nm,21.6s,baz=204,slow=38						
MJAR	**Matsushiro Arr**	**27.98**	**31**	LR	LR	22 21 16.1	
	comp=Z,10nm,20.6s,baz=125,slow=32						
FITZ	**Fitzroy Crossi**	**31.47**	**171**	LR	LR	22 25 46.3	
	comp=Z,29nm,20.5s,baz=336,slow=37						
USRK	**Ussuriysk Ar.**	**32.33**	**15**	LR	LR	22 24 53.6	
	comp=Z,53nm,20.0s,baz=180,slow=34						
WRAB	**Tennant Creek**	**35.51**	**158**	*e*P	**P**	**22 13 16.4**	**+0.2**
	1.9nm,0.5s						
WRA	**Warramunga Arr**	**35.52**	**158**	P	**P**	**22 13 16.5**	**+0.1**
	8.9nm,0.6s,baz=335,slow=9.5,SNR=110						
WRA				S	**S**	**22 18 44.0**	**-2.7**
	1.9nm,1.1s,baz=337,slow=16,SNR=2.9						
SONM	**Songino Array**	**36.57**	**344**	P	**P**	**22 13 25.3**	**+0.2**
	0.8nm,0.5s,baz=158,slow=10,SNR=6.9						
SONM				LR	LR	22 29 54.1	
	comp=Z,73nm,20.0s,baz=159,slow=38						
KLR	**Kul'dur**	**37.03**	**12**	P	**P**	**22 13 27.6**	**-1.3**
	0.4nm,0.2s,baz=12,slow=16,SNR=2.2						
ASAR	**Alice Springs**	**38.81**	**161**	P	**P**	**22 13 45.2**	**+1.0**
	8.8nm,0.5s,baz=340,slow=7.4,SNR=192						
NWAO	**Narrogin (SRO)**	**46.00**	**184**	P	**P**	**22 14 43.5**	**+1.1**
	8.0nm,0.9s,baz=248,slow=10.0,SNR=5.4						
MKAR	**Makanchi Array**	**46.51**	**324**	P	**P**	**22 14 47.5**	**+1.1**
	3.2nm,0.7s,baz=123,slow=8.9,SNR=30						
MKAR				LR	LR	22 36 02.4	
	comp=Z,43nm,18.3s,baz=112,slow=38						
STKA	**Stephens Creek**	**49.04**	**156**	P	**P**	**22 15 06.6**	**+0.6**
	1.7nm,0.6s,baz=338,slow=5.6,SNR=3.4						
PETK	**Petropavlovsk-**	**49.39**	**28**	LR	LR	22 36 42.9	
	comp=Z,20nm,19.9s,baz=217,slow=37						
AAK	**Ala-Archa**	**49.51**	**315**	P	**P**	**22 15 11.3**	**+1.5**
	1.6nm,0.3s,baz=95,slow=8.4,SNR=4.2						
ZALV	**Zalesovo Beam**	**49.56**	**333**	P	**P**	**22 15 09.7**	**0.0**
	1.0nm,0.3s,baz=133,slow=6.8,SNR=5.6						
ZALV				LR	LR	22 37 37.5	
	comp=Z,48nm,18.6s,baz=68,slow=38						
KURBB	**Kurchatov Arra**	**50.67**	**326**	P	**P**	**22 15 19.0**	**+0.9**
	2.4nm,0.4s,baz=127,slow=8.5,SNR=70						
KURK	**Kurchatov**	**50.67**	**326**	P	**P**	**22 15 19.0**	**+0.8**
KKAR	**Karatay Array**	**52.42**	**315**	*e*P	**P**	**22 15 32.4**	**+1.1**
	1.0nm,0.4s						
BVAR	**Borovoye Array**	**56.26**	**326**	P	**P**	**22 15 59.8**	**+0.8**
	1.1nm,0.5s,baz=110,slow=9.2,SNR=12						
BRVK	**Borovoye**	**56.33**	**326**	*e*P	**P**	**22 15 59.8**	**+0.2**
	1.2nm,0.6s						
NRIK	**Noril'sk**	**59.92**	**347**	LR	LR	22 43 37.2	
	comp=Z,61nm,21.4s,baz=121,slow=37						
GEYT	**Alibeck**	**60.54**	**306**	P	**P**	**22 16 30.9**	**+1.7**
	4.8nm,0.8s,baz=98,slow=4.5,SNR=11						
GEYT				LR	LR	22 46 23.9	
	comp=Z,38nm,19.0s,baz=290,slow=40						
ABKAR	**Akbulak array**	**61.20**	**319**	*e*P	**P**	**22 16 34.0**	**+0.7**
	1.9nm,0.4s						
AKTO	**Aktyubinsk**	**62.68**	**320**	LR	LR	22 45 32.3	
	comp=Z,60nm,20.6s,baz=37						
ARU	**Arti**	**63.87**	**327**	LR	LR	22 46 34.5	
	comp=Z,37nm,21.6s,baz=85,slow=38						
GNI	**Garni**	**71.03**	**308**	LR	LR	22 53 38.2	
	comp=Z,15nm,19.5s,baz=87,slow=40						
KBZ	**Khabaz**	**72.31**	**312**	LR	LR	22 54 21.2	
	comp=Z,20nm,18.4s,baz=60,slow=40						
KVAR	**Kislovodsk Arr**	**72.45**	**312**	LR	LR	22 53 23.3	
	comp=Z,20nm,18.4s,slow=39						
ASF	**Jabal al Asfar**	**78.03**	**300**	LR	LR	22 57 00.9	
	comp=Z,94nm,20.9s,slow=39						
ARCES	**ARCESS Array B**	**79.59**	**339**	P	**P**	**22 18 25.1**	**0.0**
	0.4nm,0.4s,baz=88,slow=6.2,SNR=5.3						
ARCES				LR	LR	22 56 01.3	
	comp=Z,26nm,19.8s,baz=48,slow=37						
PAX	**Paxson**	**80.02**	**28**	P	**P**	**22 18 23.6**	**-4.1**
	21nm,0.8s						
FINES	**FINESS Array B**	**80.78**	**331**	P	**P**	**22 18 31.5**	**-0.1**
	2.1nm,1.0s,baz=67,slow=5.0,SNR=4.9						
FINES				LR	LR	22 57 50.4	
	comp=Z,24nm,19.0s,baz=66,slow=38						
NOA	**NORSAR Array B**	**87.76**	**333**	LR	LR	23 01 48.4	
	comp=Z,20nm,18.7s,baz=320,slow=38						
GERES	**GERESS Array B**	**91.10**	**321**	LR	LR	23 01 40.4	
	comp=Z,33nm,20.6s,baz=308,slow=36						
KEST	**Kesra**	**99.11**	**310**	LR	LR	23 10 16.0	
	comp=Z,16nm,18.9s,baz=280,slow=39						

IDC 29 22:10:47.7±1.4, 0.°06S×130.°18E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.4/35, mbtmp3.4/3, Error ellipse: s-maj=47.0km s-min=15.1km az=42.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**1.35**	**126**	Pg	Pg	22 11 12.4	-1.2
	6.5nm,0.3s,baz=89,slow=24,SNR=18						
SIJI				Lg	Lg	22 11 31.4	
	22nm,0.3s,baz=91,slow=23,SNR=19						
WRA	**Warramunga Arr**	**20.17**	**169**	P	P	22 15 23.7	-0.2
	0.6nm,0.4s,baz=349,slow=10,SNR=5.1						
ASAR	**Alice Springs**	**23.74**	**171**	P	P	22 16 02.0	+0.2
	0.8nm,0.6s,baz=349,slow=9.4,SNR=5.7						
MKAR	**Makanchi Array**	**62.62**	**325**	P	P	22 21 14.0	+0.1
	0.2nm,0.5s,baz=113,slow=6.1,SNR=2.9						

DDA ***29*** *22:19:14.5, 39.°03N×29.°00E, h7km, Ml2.7*
CSEM ***29*** *22:19:14.6±0.1, 39.°12N×28.°97E, h2km, ML2.7, Error ellipse: s-maj=2.4km s-min=2.2km az=6.0*
ISK ***29*** *22:19:14.3, 39.°14N×28.°98E, h5km, MD2.8*

ISC 29 22:19:14.8±0.9, 39.°11N±0.°02×28.°98E±0.°02, h9km±9km, n46, σ0°58/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**251**	*i* P	**Pg**	**22 19 19.5**	**+0.2**
DEMI				*i* S	**Sg**	**22 19 22.7**	**+0.3**
DEMI	**Demirci**	**0.22**	**251**	P	**Pg**	**22 19 19.5**	**+0.2**
DEMI				S	**Sg**	**22 19 22.7**	**+0.3**
GEDZ	**Gediz**	**0.34**	**102**	*e*PG	**Pg**	**22 19 21.4**	**-0.3**
GEDZ				*e*SG	**Sg**	**22 19 26.7**	**+0.5**
GEDZ	**Gediz**	**0.34**	**102**	*e*Pg	**Pg**	**22 19 21.4**	**-0.3**
GEDZ				*e*Sg	**Sg**	**22 19 26.7**	**+0.5**
GDZ	**Gediz**	**0.39**	**94**	*i* P	**Pg**	**22 19 22.3**	**-0.3**
GDZ				*i* S	**Sg**	**22 19 27.8**	**+0.1**
GDZ	**Gediz**	**0.39**	**94**	P	**Pg**	**22 19 22.3**	**-0.3**
GDZ				S	**Sg**	**22 19 27.8**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**48**	*e*PG	**Pg**	**22 19 24.1**	**-0.5**
TVSB	**Tavsanli**	**0.50**	**48**	*e*Pg	**Pg**	**22 19 24.1**	**-0.5**
DST	**Dursunbey**	**0.56**	**330**	*e*PG	**Pg**	**22 19 25.3**	**-0.5**
DST				*e*SG	**Sg**	**22 19 33.0**	**-0.2**
DST	**Dursunbey**	**0.56**	**330**	*e*Pg	**Pg**	**22 19 25.3**	**-0.5**
DST				*e*Sg	**Sg**	**22 19 33.0**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*PG	**Pg**	**22 19 27.6**	**+0.2**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*Pg	**Pg**	**22 19 27.6**	**+0.2**
MANT	**Manisa**	**0.70**	**208**	*i* P	**Pg**	**22 19 27.4**	**-1.1**
MANT				*i* S	**Sg**	**22 19 36.3**	**-1.4**
MANT	**Manisa**	**0.70**	**208**	P	**Pg**	**22 19 27.4**	**-1.1**
MANT				S	**Sg**	**22 19 36.3**	**-1.4**
KHL	**Karahalli**	**0.90**	**152**	*e*PG	**Pb**	**22 19 32.2**	**-0.4**
KHL	**Karahalli**	**0.90**	**152**	*e*Pg	**Pb**	**22 19 32.2**	**-0.4**
AKS	**Akhisar**	**0.94**	**256**	*e*PG	**Pg**	**22 19 32.9**	**0.0**
AKS	**Akhisar**	**0.94**	**256**	*e*Pg	**Pg**	**22 19 32.9**	**0.0**
BALB	**Balikesir**	**1.00**	**302**	*e*PG	**Pg**	**22 19 33.7**	**-0.4**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg	**Pg**	**22 19 33.7**	**-0.4**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pb**	**22 19 38.5**	**-0.1**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pb**	**22 19 38.5**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*PN	**Pn**	**22 19 38.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*Pn	**Pn**	**22 19 38.7**	**+0.2**
IZI	**Iznik**	**1.28**	**17**	*e*PN	**Pg**	**22 19 38.5**	**-0.9**
IZI	**Iznik**	**1.28**	**17**	*e*Pn	**Pg**	**22 19 38.5**	**-0.9**
SHUT	**Suhut-Afyon**	**1.35**	**114**	*e*PN	**Pg**	**22 19 40.8**	**+0.1**
SHUT	**Suhut-Afyon**	**1.35**	**114**	*e*Pn	**Pg**	**22 19 40.8**	**+0.1**
BORA	**Eskisehir**	**1.37**	**56**	*i* P	**Pn**	**22 19 40.4**	**+0.1**
BORA				*i* S	**Sn**	**22 19 58.7**	**+0.1**
BORA	**Eskisehir**	**1.37**	**56**	P	**Pn**	**22 19 40.4**	**+0.1**
BORA				S	**Sn**	**22 19 58.7**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*PN	**Pb**	**22 19 41.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*Pn	**Pb**	**22 19 41.9**	**-0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**22 19 41.6**	**+0.3**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**22 19 41.6**	**+0.3**
EDC	**Edincik**	**1.50**	**325**	*e*PN	**Pn**	**22 19 42.2**	**+0.2**
EDC	**Edincik**	**1.50**	**325**	*e*Pn	**Pn**	**22 19 42.2**	**+0.2**
ESKT	**Eskisehir**	**1.51**	**74**	*e*PN	**Pg**	**22 19 43.2**	**-0.5**
ESKT	**Eskisehir**	**1.51**	**74**	*i* P	**Pg**	**22 19 43.5**	**-0.2**
ESKT				*i* S	**Sg**	**22 20 04.0**	**+0.7**
ESKT	**Eskisehir**	**1.51**	**74**	*e*Pn	**Pg**	**22 19 43.2**	**-0.5**
SEYT	**Eskypehyr**	**1.51**	**74**	P	**Pg**	**22 19 43.5**	**-0.2**
SEYT				S	**Sg**	**22 20 04.0**	**+0.7**
KRBG	**Karabiga-Canak**	**1.82**	**315**	*e*PN	**Pn**	**22 19 47.2**	**+0.9**
KRBG	**Karabiga-Canak**	**1.82**	**315**	*e*Pn	**Pn**	**22 19 47.2**	**+0.9**
MRMT	**Marmara Adasi**	**1.83**	**325**	*e*PN	**Pn**	**22 19 47.5**	**+1.0**
MRMT	**Marmara Adasi**	**1.83**	**325**	*e*Pn	**Pn**	**22 19 47.5**	**+1.0**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e*PN	**Pn**	**22 19 51.2**	**+1.0**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e*Pn	**Pn**	**22 19 51.2**	**+1.0**

CSEM ***29*** *22:30:43.4±0.5, 77.°76N×7.°50E, h10km, ML2.0, Error ellipse: s-maj=17.4km s-min=13.7km az=162.0*

BER 29 22:30:49.5±1.8, 77.°77N×8.°73E, h22km±15km, ML2.0, 4C, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.34**	**28**	*e*P	Pn	22 31 10.6	-2.2
KBS				*e*S	Sn	22 31 27.0	-2.8
KBS				IAML		22 31 30.5	
	comp=Z,22nm,0.3s						
KBS	**Kingsbay**	**1.34**	**28**	*e*P	Pn	22 31 10.6	-2.2
	SNR=55						
KBS	**Kingsbay**	**1.34**	**28**	*i* Pg	Pn	22 31 11.6	-1.2
	SNR=103						
KBS				*e*S	Sn	22 31 27.0	-2.8
	SNR=55						
SPA0	**Spitsbergen Ar**	**1.65**	**72**	⇑*i*P	Pn	22 31 17.2	+0.1
SPA0				*e*Sg	Sb	22 31 39.0	-0.6
SPA0				IAML		22 31 40.6	
	comp=Z,52nm,0.2s						
SPA0	**Spitsbergen Ar**	**1.65**	**72**	⇑*i*P	Pn	22 31 17.2	+0.1
	SNR=55						
SPA0				*e*Sg	Sb	22 31 39.0	-0.6
	SNR=94						
HSPB	**Hornsund (broa**	**1.68**	**114**	⇑*i*P	Pn	22 31 15.3	-2.2
HSPB				*e*S	Sn	22 31 35.4	-2.8
HSPB				IAML		22 31 37.8	
	comp=Z,25nm,0.3s						
HSPB	**Hornsund (broa**	**1.68**	**114**	⇑*i*P	Pn	22 31 15.3	-2.1
	SNR=55						
HOPEN	**Hopen**	**3.84**	**101**	*e*P	Pn	22 31 46.1	-1.1
HOPEN	**Hopen**	**3.84**	**101**	*e*P	Pn	22 31 46.1	-1.1
	SNR=53						
DAG	**Danmarks Havn**	**6.10**	**274**	*i* P	Pn	22 32 10.2	-7.9

NIED ***29*** *22:35:00, 37.°80N×143.°40E, h8km, Mw3.5 Best double couple: M0 1.76000×10^14 NP1: φs 337.00000°, δ 40.00000°, λ -174.00000°. NP2: φs 243.00000°, δ 86.00000°, λ -50.00000°.*

JMA 29 22:35:33.6±0.2, 37.°83N×143.°39E, h42km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.73**	**292**	P	Pn	22 36 02.2	+1.1
JIO				*e*S	Sn	22 36 23.1	+1.2
OFUJ	**Ofunato**	**1.84**	**313**	P	Pn	22 36 03.5	+0.8
JMK	**Ichinoseki**	**2.04**	**304**	P	Pn	22 36 06.6	+1.2
JOU	**Okura**	**2.22**	**285**	P	Pn	22 36 09.6	+1.7
JOU				*e*S	Sn	22 36 36.2	+2.2
JOM	**Ohasama**	**2.32**	**316**	P	Pn	22 36 10.5	+1.2
JOM				*e*S	Sn	22 36 37.2	+0.6
JFT	**Otama**	**2.44**	**264**	P	Pn	22 36 11.9	+0.9
JFT				*e*S	Sn	22 36 41.3	+1.7
JYK	**Kaneyama**	**2.62**	**295**	P	Pn	22 36 15.2	+1.8
JRG	**Rokugo**	**2.67**	**307**	P	Pn	22 36 15.9	+1.9
JANG	**Nango**	**2.93**	**331**	P	Pn	22 36 20.2	+2.6
JAG	**Ashikaga**	**3.44**	**247**	P	Pn	22 36 26.3	+1.6
BSO1	**Boso 1**	**3.72**	**212**	P	Pn	22 36 28.6	+0.6
JRY	**Ryogami san**	**4.03**	**245**	P	Pn	22 36 34.5	+1.7
JRY				*e*S	Sn	22 37 18.0	-0.7
JOD2	**Odawara 2**	**4.31**	**235**	P	Pn	22 36 38.2	+1.6
JOD2				*e*S	Sn	22 37 25.0	-0.6
MAT	**Matsushiro**	**4.33**	**254**	P	Pn	22 36 40.9	+3.9
MAT				S	Sn	22 37 28.3	+2.1

SOME ***29*** *22:41:00.0, 39.°78N×71.°55E, h5km*
KRNET ***29*** *22:41:08.8±0.1, 39.°99N×71.°34E, h35km, mb3.5*
NNC ***29*** *22:41:13.7±1.9, 40.°38N×71.°45E, h21km±7km, mb3.8, mpv3.5, Error ellipse: s-maj=13.9km s-min=7.2km az=176.0*

ISC 29 22:41:02.5±1.8, 39.°92N±0.°08×71.°50E±0.°03, h7km±10km, n33, σ2°82/56, 32C-21D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRK	**Karamyk**	**0.49**	**152**	⇓*i*P	Pn	22 41 21.8	+5.6
	baz=144						
DRK				⇓*i*S	Sb	22 41 31.5	+10
	baz=144						
BTK	**Batken**	**0.54**	**285**	⇑*i*P	**Pn**	**22 41 18.9**	**+2.2**
	baz=280						
BTK				⇑*i*S	**Sn**	**22 41 26.8**	**+0.8**
	baz=280						
OHH	**Osh**	**1.16**	**58**	⇑*i*P	Pn	22 41 31.4	+6.3
	baz=63						
OHH				⇑*i*S	**Sn**	**22 41 47.1**	**+5.9**
	baz=63						
ARSB	**Arslanbob**	**1.80**	**38**	⇓*i*P	**Pg**	**22 41 39.2**	**+2.2**
	baz=42						
ARSB				⇓*i*S	**Sg**	**22 42 01.6**	**+1.2**
	baz=42						
ARK	**Arkit**	**1.91**	**10**	⇓*i*P	**Pg**	**22 41 40.3**	**+1.2**
	baz=15						
ARK				⇓*i*S	**Sb**	**22 42 03.3**	**+1.5**
	baz=15						
IUG	**Iuzhnay**	**2.49**	**334**	*e*P	**Pb**	**22 41 48.3**	**+0.8**
	585nm,0.3s						
IUG				*e*S	**Sg**	**22 42 22.7**	**+0.3**
	1µm,0.5s						
MNAS	**Manas**	**2.68**	**16**	⇓*i*P	**Pb**	**22 41 50.8**	**0.0**
	baz=19						
MNAS				⇓*i*S	**Sn**	**22 42 21.9**	**+3.1**
	baz=19						
MNAS	**Manas**	**2.68**	**16**	⇑Pn	**Pb**	**22 41 50.7**	**-0.1**
	0.7nm,0.2s						
MNAS				⇑Pg	**Pg**	**22 41 55.1**	**+1.3**
	10.0nm,0.3s						
MNAS				⇓Lg	Lg	22 42 25.8	
	84nm,0.4s						
AML	**Almayashu**	**2.77**	**36**	⇑*i*P	**Pb**	**22 41 52.4**	**0.0**
	baz=39						
AML				⇑*i*S	**Sn**	**22 42 23.7**	**+2.3**
	baz=39						
ARLS	**Aral**	**2.89**	**47**	⇓*i*P	**Pb**	**22 41 54.9**	**+0.5**
	baz=49						
ARLS				⇓*i*S	**Sb**	**22 42 28.8**	**-1.2**
	baz=49						
MRKS	**Merke**	**3.11**	**24**	*e*P	**Pb**	**22 41 57.8**	**-0.3**
	8.0nm,0.3s						
MRKS				*e*S	**Sb**	**22 42 39.8**	**+3.5**
	199nm,0.3s						
BRLS	**Borolday**	**3.18**	**335**	*e*P	**Pb**	**22 42 01.2**	**+2.0**
	21nm,0.2s						
BRLS				*e*S	**Sg**	**22 42 44.6**	**+0.2**
	88nm,0.2s						
EKS2	**Erkin-Say**	**3.23**	**31**	⇑*i*P	**Pb**	**22 41 58.3**	**-2.0**
	baz=34						
EKS2				⇑*i*S	**Sn**	**22 42 34.4**	**+1.8**
	baz=34						
UCH	**Uchtor**	**3.24**	**44**	⇑*i*P	**Pb**	**22 41 59.4**	**-1.2**
	baz=46						
UCH				⇑*i*S	**Sn**	**22 42 36.3**	**+3.1**
	baz=46						
KK31	**Karatay Array**	**3.27**	**347**	⇓Pn	**Pb**	**22 41 57.8**	**-3.0**
	2.8nm,0.4s,baz=141,slow=10.0,SNR=257						
KK31				Pg	**Pg**	**22 42 04.7**	**-0.4**
	15nm,0.4s,baz=171,slow=17,SNR=105						
KK31				⇓Lg	Lg	22 42 43.6	
	27nm,0.3s,baz=180,slow=31,SNR=9.7						
AAK	**Ala-Archa**	**3.53**	**39**	⇓*i*P	**Pb**	**22 42 02.9**	**-2.5**
	baz=41						
AAK				⇓*i*S	**Sn**	**22 42 42.5**	**+2.5**
	baz=41						
AAK	**Ala-Archa**	**3.53**	**39**	⇑Pn	**Pb**	**22 42 02.7**	**-2.6**
	8.9nm,0.8s						
AAK				⇑Pg	**Pg**	**22 42 12.9**	**+2.8**
	14nm,0.5s						
AAK				⇑Lg	Lg	22 42 54.7	
	39nm,0.5s						
KZA	**Kyzart**	**3.57**	**52**	⇑*i*P	**Pb**	**22 42 04.5**	**-1.6**
	baz=54						
KZA				⇑*i*S	**Sn**	**22 42 44.4**	**+3.3**
	baz=54						
CHMS	**Chumysh**	**3.93**	**37**	⇑*i*P	**Pb**	**22 42 08.1**	**-4.0**
	baz=39						
CHMS				⇑*i*S	**Sn**	**22 42 51.3**	**+1.7**
	baz=39						
USP	**Ospenovka**	**4.03**	**33**	⇑*i*P	**Pb**	**22 42 09.1**	**-4.7**
	baz=35						
USP				⇑*i*S	**Sn**	**22 42 53.0**	**+0.9**
	baz=35						
ULHL	**Ulahol**	**4.27**	**55**	⇑*i*P	**Pb**	**22 42 13.8**	**-4.2**
	baz=57						
ULHL				⇑*i*S	**Sn**	**22 43 01.5**	**+3.2**
	baz=57						
TKM2	**Tokmak 2**	**4.30**	**44**	⇓*i*P	**Pb**	**22 42 13.7**	**-4.8**
	baz=46						
TKM2				⇓*i*S	**Sn**	**22 43 01.4**	**+2.4**
	baz=46						
TKM2	**Tokmak 2**	**4.30**	**44**	⇑Pn	**Pb**	**22 42 14.1**	**-4.4**
	25nm,0.4s						
TKM2				⇑Sn	**Sn**	**22 43 01.3**	**+2.3**
	7.4nm,0.3s						
TKM2				⇑Lg	Lg	22 43 19.7	
	26nm,0.6s						
BMNS

CMAR	**Chiang Mai Arr**	**89.25**	**290**	P		**P**	**22 53 25.5**	**+1.5**
	0.8nm,0.4s,baz=142,slow=4.2,SNR=1.9							
ILAR	**Eielson Array**	**89.44**	**13**	P		**P**	**22 53 22.1**	**-1.6**
	0.3nm,0.3s,baz=213,slow=4.7,SNR=3.7							
PLCA	**Paso Flores**	**89.56**	**134**	P		**P**	**22 53 26.0**	**+0.8**
	2.9nm,0.9s,baz=283,slow=3.6,SNR=2.5							
PDAR	**Pinedale Array**	**90.44**	**44**	P		**P**	**22 53 28.9**	**-0.3**
	0.1nm,0.4s,baz=235,slow=3.2,SNR=1.8							
FINES	**FINESS Array B**	**136.25**	**343**	PKP		**PKPdf**	**22 59 45.1**	**+1.1**
	1.8nm,0.9s,baz=85,slow=1.5,SNR=1.3							
FINES				SKP			23 02 18.1	
	2.8nm,0.8s,baz=57,slow=7.0,SNR=4.2							
AKASG	**Malin Array Be**	**143.16**	**330**	PKP		PKPab	22 59 53.6	-1.2
	4.0nm,0.5s,baz=42,slow=4.0,SNR=7.6							
BRTR	**Keskin Array B**	**146.49**	**311**	PKPbc		**PKPbc**	**23 00 05.0**	**-0.7**
	0.6nm,0.6s,baz=39,slow=2.1,SNR=4.1							
MMAI	**Mount Meron Ar**	**147.16**	**295**	PKPbc		**PKPab**	**23 00 11.2**	**-0.1**
	1.2nm,0.6s,baz=59,slow=5.6,SNR=4.5							
KEST	**Kesra**	**163.81**	**334**	PKPab		**PKPab**	**23 01 22.0**	**-0.6**
	1.9nm,0.9s,baz=11,slow=10,SNR=1.7							
DBIC	**Dimbokro**	**164.43**	**159**	PKPab		**PKPab**	**23 01 26.2**	**+0.6**
	6.8nm,1.1s,baz=135,slow=5.7,SNR=2.2							

*ISK **29** 23:06:14.8, 35.82N×28.69E, h16km, MD3.1*
*ATH **29** 23:06:15.3, 35.82N×28.73E, h42km±3km, ML2.2/1, Error ellipse: s-maj=4.8km s-min=1.4km az=11.0*
*CSEM **29** 23:06:15.9±0.1, 35.69N×28.77E, h40km, ML2.9, Error ellipse: s-maj=4.0km s-min=3.3km az=25.0*
*HLW **29** 23:06:17.8, 35.43N×28.91E, h24km±5km, Md3.5, Ml3.5*
*NIC **29** 23:06:18.4±0.2, 35.79N×29.06E, h71km, ML3.4*
*DDA **29** 23:06:20.6, 36.16N×28.84E, h7km, Ml2.9*

ISC 29 23:06:14.0±1.3, 35.71N±0.03×28.74E±0.03, h26km±15km, n73, σ1.9s10/89, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ARG	**Arkhangelos**	**0.71**	**316**	P		**Pn**	**23 06 29.0**	**+0.5**
KSL	**Kastellorizon**	**0.81**	**57**	P		**Pn**	**23 06 30.8**	**+0.9**
KSL				S		**Sn**	**23 06 41.7**	**+0.6**
KSL				AML		AML	23 06 43.9	
	comp=E,336μm,0.3s							
KSL				AML		AML	23 06 44.0	
	comp=N,188μm,0.4s							
AKAS	**Kas**	**0.87**	**53**	*i* P		**Pn**	**23 06 32.0**	**+1.2**
AKAS				*i* S		**Sn**	**23 06 43.9**	**+1.1**
AKAS	**Kas**	**0.87**	**53**	P		**Pn**	**23 06 32.0**	**+1.2**
AKAS				S		**Sn**	**23 06 43.9**	**+1.1**
FETY	**Fethiye**	**0.97**	**16**	*e*PG		**Pn**	**23 06 32.1**	**+0.1**
FETY				*e*SG		**Sn**	**23 06 44.6**	**-0.3**
FETY	**Fethiye**	**0.97**	**16**	*e*Pg		**Pn**	**23 06 32.1**	**+0.1**
FETY				*e*Sg		**Sn**	**23 06 44.6**	**-0.3**
DALY	**Dalyan (Mu¨la**	**1.11**	**356**	*e*PG		**Pb**	**23 06 34.9**	**+0.3**
DALY	**Dalyan (Mu¨la**	**1.11**	**356**	*e*Pg		**Pb**	**23 06 34.9**	**+0.3**
TURN	**Turunc**	**1.17**	**354**	*i* P		**Pn**	**23 06 35.1**	**+0.4**
TURN				*i* S		**Sn**	**23 06 48.3**	**-1.5**
KARP	**Karpathos**	**1.30**	**263**	*e*PN		**Pb**	**23 06 38.3**	**+0.5**
KARP	**Karpathos**	**1.30**	**263**	P		**Pb**	**23 06 38.3**	**+0.5**
KARP	**Karpathos**	**1.30**	**263**	P		**Pb**	**23 06 38.3**	**+0.5**
ELL	**Elmali**	**1.40**	**42**	*e*PN		**Pb**	**23 06 39.7**	**+0.1**
ELL	**Elmali**	**1.40**	**42**	*e*Pn		**Pb**	**23 06 39.7**	**+0.1**
NIS1	**Nisyros Isl.**	**1.55**	**306**	*e*PN		**Pb**	**23 06 41.4**	**-0.7**
NIS1	**Nisyros Isl.**	**1.55**	**306**	P		**Pn**	**23 06 41.1**	**+1.1**
NIS1	**Nisyros Isl.**	**1.55**	**306**	*e*Pn		**Pb**	**23 06 41.4**	**-0.7**
NIS1	**Nisyros Isl.**	**1.55**	**306**	P		**Pn**	**23 06 41.1**	**+1.1**
GLHS	**Glhisar (BURDU**	**1.57**	**23**	*e*PN		**Pb**	**23 06 41.9**	**-0.6**
GLHS	**Glhisar (BURDU**	**1.57**	**23**	*e*Pn		**Pb**	**23 06 41.9**	**-0.6**
GOLH	**Golhisar**	**1.66**	**23**	*i* P		**Pb**	**23 06 43.9**	**-0.2**
GOLH				*i* S		**Sb**	**23 07 04.5**	**-0.1**
GOLH	**Golhisar**	**1.66**	**23**	P		**Pb**	**23 06 43.9**	**-0.2**
GOLH				S		**Sb**	**23 07 04.5**	**-0.1**
BDRM	**Kayabasi**	**1.71**	**323**	*i* P		**Pn**	**23 06 42.9**	**+0.6**
BDRM				*i* S		**Sn**	**23 07 02.7**	**-0.6**
BDRM	**Kayabasi**	**1.71**	**323**	P		**Pn**	**23 06 42.9**	**+0.6**
BDRM				S		**Sn**	**23 07 02.7**	**-0.6**
MLSB	**Milas**	**1.77**	**334**	*e*PN		**Pn**	**23 06 44.0**	**+1.0**
MLSB	**Milas**	**1.77**	**334**	*e*Pn		**Pn**	**23 06 44.0**	**+1.0**
BODT	**Bodrum**	**1.78**	**320**	*e*PN		**Pn**	**23 06 43.8**	**+0.6**
BODT	**Bodrum**	**1.78**	**320**	*e*Pn		**Pn**	**23 06 43.8**	**+0.6**
KORT	**Korkueli**	**1.83**	**45**	*i* P		**Pb**	**23 06 46.3**	**-0.6**
KORT				*i* S		**Sb**	**23 07 09.1**	**-0.4**
KORT	**Korkueli**	**1.83**	**45**	P		**Pb**	**23 06 46.3**	**-0.6**
ZKR	**Zakros**	**2.15**	**255**	P		**Pn**	**23 06 50.5**	**+2.3**
ZKR	**Zakros**	**2.15**	**255**	P		**Pn**	**23 06 50.5**	**+2.3**
AYDB	**Zeytinkoy-Aydi**	**2.34**	**343**	*e*PN		**Pn**	**23 06 51.8**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**2.34**	**343**	*e*Pn		**Pn**	**23 06 51.8**	**+0.9**
SMG	**Samos**	**2.52**	**323**	P		**Pn**	**23 06 54.0**	**+0.7**
SMG	**Samos**	**2.52**	**323**	P		**Pn**	**23 06 54.0**	**+0.7**
SUTC	**Sutluce-Ispart**	**2.53**	**45**	*e*PN		**Pn**	**23 06 55.8**	**+2.2**
SUTC	**Sutluce-Ispart**	**2.53**	**45**	*e*Pn		**Pn**	**23 06 55.8**	**+2.2**
NPS	**Neapolis**	**2.59**	**261**	P		**Pn**	**23 06 56.0**	**+1.6**
NPS	**Neapolis**	**2.59**	**261**	P		**Pn**	**23 06 56.0**	**+1.6**
LAST	**Lasithi**	**2.72**	**259**	P		**Pb**	**23 06 59.6**	**-2.4**
LAST	**Lasithi**	**2.72**	**259**	P		**Pb**	**23 06 59.6**	**-2.4**
GAZI	**Gazipasa**	**2.94**	**79**	*i* P		**Pn**	**23 07 00.0**	**+0.8**
GAZI				*i* S		**Sn**	**23 07 32.2**	**-1.6**
GAZI	**Gazipasa**	**2.94**	**79**	P		**Pn**	**23 07 00.0**	**+0.8**
GAZI				S		**Sn**	**23 07 32.2**	**-1.6**
AKMC	**Akamas**	**3.01**	**102**	P		**Pn**	**23 07 01.2**	**+1.1**
	baz=286							
AKMC	**Akamas**	**3.01**	**102**	P		**Pn**	**23 07 01.2**	**+1.1**
PPCY	**Paphos**	**3.06**	**105**	P		**Pn**	**23 07 02.1**	**+1.4**
	baz=289							
PPCY	**Paphos**	**3.06**	**105**	P		**Pn**	**23 07 02.1**	**+1.4**
IDI	**Anoyia**	**3.17**	**264**	P		**Pn**	**23 07 03.5**	**+1.1**
IDI	**Anoyia**	**3.17**	**264**	P		**Pn**	**23 07 03.5**	**+1.1**
ALFC	**Alefka**	**3.20**	**99**	P		**Pn**	**23 07 03.8**	**+1.1**
	baz=283							
ALFC				S		**Sn**	**23 07 38.8**	**-1.2**
ALFC	**Alefka**	**3.20**	**99**	P		**Pn**	**23 07 03.8**	**+1.1**
ALFC				S		**Sn**	**23 07 38.8**	**-1.2**
SZAC	**Souni**	**3.52**	**104**	P		**Pn**	**23 07 08.5**	**+1.4**
	baz=289							
SZAC	**Souni**	**3.52**	**104**	P		**Pn**	**23 07 08.5**	**+1.4**
TVSB	**Tavsanli**	**3.78**	**8**	*e*PN		**Pn**	**23 07 12.8**	**+2.0**
TVSB	**Tavsanli**	**3.78**	**8**	*e*Pn		**Pn**	**23 07 12.8**	**+2.0**
CSS	**Mathiatis**	**3.82**	**100**	P		**Pn**	**23 07 11.9**	**+0.6**
	baz=284							
CSS				S		**Sn**	**23 07 54.4**	**-1.0**
CSS	**Mathiatis**	**3.82**	**100**	P		**Pn**	**23 07 11.9**	**+0.6**
CSS				S		**Sn**	**23 07 54.4**	**-1.0**
SLUM	**Salum**	**5.13**	**216**	P		**Pn**	**23 07 31.2**	**+1.9**
	baz=220							
SLUM	**Salum**	**5.13**	**216**	P		**Pn**	**23 07 31.2**	**+1.9**
RSH		**6.31**	**137**	P		**Pn**	**23 07 45.3**	**-0.1**
	baz=136							
RSH		**6.31**	**137**	P		**Pn**	**23 07 45.3**	**-0.1**
KOT	**Kottamia**	**6.32**	**155**	P		**Pn**	**23 07 45.3**	**-0.4**
	baz=155							
KOT				S		Sn	23 08 49.3	-7.8
	baz=155							
KOT	**Kottamia**	**6.32**	**155**	P		**Pn**	**23 07 45.3**	**-0.4**
HHAG	**Hagoal**	**6.39**	**153**	P		**Pn**	**23 07 46.3**	**-0.3**
	baz=152							
HHAG	**Hagoal**	**6.39**	**153**	P		**Pn**	**23 07 46.3**	**-0.3**
GLL	**Jalalah**	**6.60**	**157**	P		**Pn**	**23 07 49.3**	**-0.2**
	baz=157							
GLL	**Jalalah**	**6.60**	**157**	P		**Pn**	**23 07 49.3**	**-0.2**
SWA2		**7.02**	**204**	AMP			23 09 00.0	
	comp=N,40μm,0.6s,logA/T=4.8,baz=207							
HNKL	**Nakhl**	**7.25**	**141**	P		**Pn**	**23 07 58.5**	**+0.1**
	baz=140							
HNKL				AMP			23 09 00.0	
	comp=E,40μm,0.4s,logA/T=5.0,baz=140							
HNKL				S		Sn	23 09 11.9	-8.1
	baz=140							
HNKL	**Nakhl**	**7.25**	**141**	P		**Pn**	**23 07 58.5**	**+0.1**
TR2	**Tor 2**	**8.43**	**149**	P		**Pn**	**23 08 14.9**	**+0.3**
	baz=148							
TR2	**Tor 2**	**8.43**	**149**	P		**Pn**	**23 08 14.9**	**+0.3**

*NIED **29** 23:18:00, 38.40N×142.30E, h20km, Mw4.2 Best double couple: M0 2.43000×10^15 NP1:ϕs155.00000°, δ14.00000°, λ-53.00000°. NP2:ϕs298.00000°, δ79.00000°, λ-98.00000°.*
*IDC **29** 23:18:34.1±0.7, 38.31N×142.44E, h0km, mb4.0/14, mb1 4.1/21, mb1mx3.9/42, mbtmp3.9/21, ML3.6/6, MS3.3/14, Ms1 3.3/14, ms1mx3.1/42, Error ellipse: s-maj=19.8km s-min=14.0km az=105.0*
*ISCJB **29** 23:18:35.3±1.1, 38.38N±0.04×142.32E±0.06, h19km±7km, mb4.0/18, MS3.4/8, Error ellipse: s-maj=8.7km s-min=4.5km az=31.8*
*JMA **29** 23:18:36.7±0.1, 38.46N×142.28E, h31km±2km, M4.3*
JMA Felt II J1.
*NEIC **29** 23:18:37.7±2.8, 38.34N×142.44E, h26km±20km, mb4.5/3, Error ellipse: s-maj=15.5km s-min=7.3km az=125.0*
NEIC Recorded [2 JMA] in Miyagi.

ISC 29 23:18:34.5±1.9, 38.33N±0.04×142.27E±0.06, h3km±11km, n52, σ2.9s05/56, mb4.2/18, MS3.4/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JIO	**Ouri**	**0.74**	**280**	P		**Pn**	**23 18 50.5**	**-1.3**
JIO				S		**Sb**	**23 18 59.7**	**-0.8**
OFUJ	**Ofunato**	**0.89**	**328**	P		**Pg**	**23 18 51.4**	**-0.1**
OFUJ				*e*S		**Sg**	**23 19 01.7**	**-1.4**
JMK	**Ichinoseki**	**1.04**	**307**	P		**Pg**	**23 18 54.3**	**0.0**
JMK				*e*S		**Sg**	**23 19 07.0**	**-0.8**
JMM	**Marumori**	**1.25**	**249**	P		**Pn**	**23 18 58.4**	**-0.5**
JMM				*e*S		**Sg**	**23 19 14.9**	**+0.1**
JOU	**Okura**	**1.27**	**272**	P		**Pg**	**23 18 58.8**	**+0.1**
JOU				*e*S		**Sn**	**23 19 15.4**	**-1.2**
JOM	**Ohasama**	**1.38**	**327**	P		**Pn**	**23 18 59.1**	**-1.5**
JOM				*e*S		**Sb**	**23 19 15.1**	**-3.8**
JFK	**Kawauchi**	**1.46**	**230**	P		**Pn**	**23 19 01.2**	**-0.6**
JFK				*e*S		**Sn**	**23 19 19.3**	**-2.2**
JYK	**Kaneyama**	**1.61**	**292**	P		**Pn**	**23 19 03.3**	**-0.5**
JYK				*e*S		**Sn**	**23 19 23.5**	**-1.6**
JRG	**Rokugo**	**1.67**	**310**	P		**Pn**	**23 19 04.3**	**-0.3**
JYS	**Shirataka**	**1.74**	**267**	P		**Pn**	**23 19 05.7**	**+0.1**
MJAR	**Matsushiro Arr**	**3.69**	**242**	Pn		**Pn**	**23 19 35.1**	**+2.6**
	3.6nm,0.3s,baz=68,slow=11,SNR=55							
MJAR				LR		LR	23 20 53.1	
	comp=Z,186nm,19.2s,baz=70,slow=37							
MAJO	**Matsushiro**	**3.69**	**242**	*e*Pn		**Pn**	**23 19 35.2**	**+2.7**
MAT	**Matsushiro**	**3.69**	**242**	P		**Pn**	**23 19 34.3**	**+1.8**
MAT				*e*S		**Sb**	**23 20 25.5**	**-0.1**
ERM	**Erimo**	**3.75**	**10**	*e*Pn		**Pn**	**23 19 32.7**	**-0.4**
ERM				*e*Sb		**Sb**	**23 20 25.5**	**-1.6**
JHJ	**Hachijo jima 2**	**5.58**	**202**	Pn		**Pn**	**23 19 59.2**	**+0.9**
	16nm,0.3s,baz=346,slow=23,SNR=8.7							
JHJ				Sn		**Sn**	**23 20 57.3**	**-5.6**
	9.5nm,0.3s,baz=104,slow=19,SNR=2.0							
JHJ				LR		LR	23 22 32.9	
	comp=Z,418nm,20.1s,baz=80,slow=43							
ASAJ	**Asahikawa**	**5.79**	**2**	*e*Pn		**Pn**	**23 20 01.7**	**+0.5**
	11nm,0.8s							
ASAJ				*e*Sn		**Sn**	**23 21 06.7**	**-1.4**
ASAJ				Sn		**Sn**	**23 21 14.8**	**+6.7**
USRK	**Ussuriysk Ar.**	**9.71**	**310**	Pn		**Pn**	**23 20 57.9**	**+2.9**
	0.3nm,0.3s,baz=118,slow=18,SNR=3.7							
JNU	**Nakatsue**	**10.62**	**244**	Pn		**Pn**	**23 21 11.5**	**+4.0**
	0.6nm,0.3s,baz=38,slow=8.2,SNR=6.9							
KSRS	**Korea Array**	**11.38**	**270**	Pn		**Pn**	**23 21 22.2**	**+4.4**
	0.5nm,0.3s,baz=80,slow=13,SNR=3.4							
KSRS				LR		LR	23 24 56.4	
	comp=Z,70nm,19.2s,baz=52,slow=33							
MDJ	**Mudanjiang**	**11.40**	**307**	Pn		**Pn**	**23 21 20.0**	**+1.9**
	0.9nm,0.3s							
KSAR	**Wonju Array Be**	**11.41**	**270**	Pn		**Pn**	**23 21 22.2**	**+3.9**
KLR	**Kul'dur**	**13.28**	**329**	Pn		**Pn**	**23 21 43.8**	**+0.1**
	0.1nm,0.3s,baz=139,slow=12,SNR=4.3							
KLR				LR		LR	23 26 52.8	
	comp=Z,165nm,18.6s,baz=134,slow=37							
JOW	**Kunigami**	**16.43**	**230**	Pn		**Pn**	**23 22 26.8**	**+0.8**
	0.7nm,0.3s,baz=98,slow=16,SNR=2.5							
JOW				LR		LR	23 28 44.4	
	comp=Z,45nm,18.9s,baz=206,slow=37							
PETK	**Petropavlovsk-**	**18.23**	**31**	P		**Pn**	**23 22 47.4**	**-1.0**
	0.2nm,0.3s,baz=218,slow=13,SNR=3.7							
PETK				LR		LR	23 29 30.2	
	comp=Z,69nm,21.0s,baz=223,slow=36							
MA2	**Magadan**	**21.95**	**12**	P		**P**	**23 23 28.8**	**-0.3**
	3.3nm,0.4s,baz=191,slow=11,SNR=5.7							
MA2				LR		LR	23 31 49.7	
	comp=Z,66nm,21.4s,baz=148,slow=36							
SEY	**Seymchan**	**25.39**	**11**	P		**P**	**23 24 03.7**	**+0.9**
	8.1nm,0.9s,baz=208,slow=6.1,SNR=24							
SONM	**Songino Array**	**27.66**	**302**	P		**P**	**23 24 24.9**	**+1.4**
	0.3nm,0.4s,baz=116,slow=6.6,SNR=2.7							
ENH	**Enshi**	**28.14**	**263**	*e*P		**P**	**23 24 28.2**	**+0.3**
	13nm,1.1s							
H11N2	**WAKE ISLAND Hy**	**28.26**	**124**	T		T	23 54 04.0	
	baz=317,slow=75,SNR=810							
H11N1	**WAKE ISLAND Hy**	**28.27**	**124**	T		T	23 54 17.3	
	baz=317,slow=75,SNR=660							
H11N3	**WAKE ISLAND Hy**	**28.28**	**124**	T		T	23 54 20.9	
	baz=317,slow=75,SNR=588							
H11S1	**WAKE ISLAND Hy**	**29.03**	**126**	T		T	23 55 06.4	
	baz=318,slow=76,SNR=209							
H11S3	**WAKE ISLAND Hy**	**29.03**	**126**	T		T	23 55 06.3	
	baz=318,slow=76,SNR=266							
H11S2	**WAKE ISLAND Hy**	**29.04**	**126**	T		T	23 55 06.6	
	baz=318,slow=76,SNR=203							
TLY	**Talaya**	**30.02**	**309**	LR		LR	23 37 35.1	
	comp=Z,50nm,18.7s,baz=90,slow=38							
ZALV	**Zalesovo Beam**	**41.56**	**311**	P		**P**	**23 26 23.3**	**+0.1**
	0.7nm,0.4s,baz=91,slow=11,SNR=2.3							
NRIK	**Noril'sk**	**42.39**	**335**	LR		LR	23 44 59.0	
	comp=Z,99nm,19.2s,baz=120,slow=37							
CMAR	**Chiang Mai Arr**	**42.49**	**255**	P		**P**	**23 26 28.9**	**-2.3**
	0.9nm,0.4s,baz=71,slow=4.8,SNR=4.1							
CMAR				LR		LR	23 45 06.7	
	comp=Z,29nm,18.7s,baz=35,slow=37							
MKAR	**Makanchi Array**	**44.02**	**301**	P		**P**	**23 26 43.9**	**+0.7**
	0.9nm,0.9s,baz=81,slow=10,SNR=6.2							
KURK	**Kurchatov**	**45.69**	**307**	*e*P		**P**	**23 26 56.0**	**-0.4**
	3.1nm,0.4s							
COLA	**College**	**47.62**	**33**	P		**P**	**23 27 08.6**	**-2.8**
	2.1nm,0.7s							
ILAR	**Eielson Array**	**48.04**	**33**	P		**P**	**23 27 14.2**	**-0.4**
	0.7nm,0.8s,baz=269,slow=6.0,SNR=8.6							
WRA	**Warramunga Arr**	**58.44**	**189**	P		**P**	**23 28 31.0**	**-0.5**
	5.4nm,0.8s,baz=7.2,slow=7.3,SNR=34							
ASAR	**Alice Springs**	**62.16**	**189**	P		**P**	**23 28 57.2**	**+0.2**
	2.5nm,0.8s,baz=12,slow=6.2,SNR=20							
ARCES	**ARCESS Array B**	**63.03**	**339**	P		**P**	**23 29 01.4**	**-1.0**
	2.3nm,1.0s,baz=24,slow=24,SNR=2.3							
ARCES				LR		LR	23 59 26.3	
	comp=Z,27nm,18.6s,baz=64,slow=39							
FINES	**FINESS Array B**	**67.99**	**332**	P		**P**	**23 29 35.5**	**+1.0**
	3.5nm,1.0s,baz=186,slow=3.6,SNR=4.9							
KBZ	**Khabaz**	**70.58**	**311**	P		**P**	**23 29 51.3**	**+0.5**
	0.8nm,0.4s,baz=21,slow=8.6,SNR=3.1							
KBZ				LR		LR	00 02 30.4	
	comp=Z,15nm,19.1s,baz=39,slow=37							
NB2	**NORSAR Subarra**	**73.26**	**337**	P		**P**	**23 30 06.2**	**-0.5**
	comp=Z,1.6nm,0.6s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**73.26**	**337**	P		**P**	**23 30 06.4**	**-0.3**
	comp=Z,0.7nm,0.7s,baz=39,slow=6.1,SNR=3.0							
NOA				LR		LR	00 07 19.8	
	comp=Z,27nm,18.7s,baz=20,slow=40							
PDAR	**Pinedale Array**	**76.28**	**46**	P		**P**	**23 30 25.1**	**+0.3**
	comp=Z,0.5nm,0.7s,baz=294,slow=0.9,SNR=3.8							
GERES	**GERESS Array B**	**81.97**	**329**	P		**P**	**23 30 58.0**	**+2.3**
	comp=Z,0.6nm,0.7s,baz=39,slow=6.3,SNR=5.4							
SCHQ	**Schefferville**	**83.91**	**16**	LR		LR	00 11 19.8	
	comp=Z,28nm,18.7s,baz=40,slow=38							

*ISCJB **29** 23:20:37.0±0.6, 24.01S±0.05×69.38W±0.06, h81km±5km, mb4.0/18, Error ellipse: s-maj=9.5km s-min=7.3km az=18.4*
*NEIC **29** 23:20:39.0, 23.79S×69.61W, h100km, mb4.0/14, After GUC.*
*GUC **29** 23:20:39.0±0.6, 23.79S×69.61W, h100km±6km, ML4.3*
*IDC **29** 23:20:39.2±0.8, 24.01S×69.21W, h82km±5km, mb3.8/6, mb1 3.9/10, mb1mx3.7/26, mbtmp4.1/10, Error ellipse: s-maj=26.7km s-min=8.0km az=95.0*

ISC 29 23:20:38.0±0.6, 23.98S±0.05×69.32W±0.06, h76km±5km, n43, σ1.9s51/50, mb4.1/18, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ANCH	**Antofagasta**	**1.04**	**286**	*e*P		**Pn**	**23 20 56.6**	**-0.8**
ANCH				*e*S		**Sn**	**23 21 10.5**	**-1.3**
PB10	**IPOC Station P**	**1.23**	**292**	*e*P		**Pn**	**23 20 58.4**	**-1.2**
PB10				*e*S		**Sn**	**23 21 13.7**	**-2.2**
PB10				IAML			23 21 18.4	
	comp=N,15μm,0.3s							
PB06	**IPOC Station P**	**1.29**	**349**	*e*P		**Pn**	**23 21 00.8**	**+0.2**
PB06				*e*S		**Sn**	**23 21 17.5**	**-0.1**
PB06				IAML			23 21 18.6	
	comp=E,9μm,0.3s							
LVC	**Limon Verde**	**1.41**	**15**	P		**Pn**	**23 21 03.7**	**+1.3**
	comp=E,2μm,0.3s,baz=170,slow=7.4,SNR=1549							
LVC				S		**Sn**	**23 21 22.4**	**+1.6**
	comp=E,23μm,0.3s,baz=209,slow=12,SNR=72							
PB04	**IPOC Station P**	**1.81**	**335**	*e*P		**Pn**	**23 21 06.5**	**-0.9**
PB04				*e*S		**Sn**	**23 21 27.2**	**-2.6**
PB04				IAML			23 21 35.3	
	comp=E,3μm,0.8s							
PB09	**IPOC Station P**	**2.17**	**2**	*e*P		**Pn**	**23 21 13.3**	**+1.0**
PB09				*e*S		**Sn**	**23 21 38.5**	**0.0**
PB07	**IPOC Station P**	**2.30**	**347**	*e*P		**Pn**	**23 21 13.5**	**-0.6**
LCO	**Las Campanas**	**5.16**	**194**	*e*Pn		**Pn**	**23 21 54.1**	**+1.2**
	comp=E,38nm,0.6s							
LPAZ	**La Paz**	**7.73**	**8**	P		**Pn**	**23 22 29.9**	**+1.4**
	comp=E,0.2nm,0.3s,baz=277,slow=2.8,SNR=8.2							
SIV	**San Ignacio**	**11.10**	**46**	P		**Pn**	**23 23 12.8**	**-1.0**
	comp=E,3.7nm,0.3s,baz=247,slow=12,SNR=40							
SIV				S		**Sn**	**23 25 09.3**	**-6.9**
	comp=E,0.3nm,0.3s,baz=153,slow=21,SNR=2.7							
CPUP	**Villa Florida**	**11.11**	**105**	P		**Pn**	**23 23 12.0**	**-1.9**
	comp=E,0.1nm,0.3s,baz=286,slow=13,SNR=2.2							
NNA	**Nana**	**13.90**	**328**	P		**Pn**	**23 23 54.2**	**+2.5**
	comp=E,0.7nm,0.3s,baz=271,slow=8.7,SNR=2.9							
NNA	**Nana**	**13.90**	**328**	*e*Pn		**Pn**	**23 23 53.9**	**+2.2**
TRQA	**Tornquist**	**15.37**	**158**	Pn		**Pn**	**23 24 09.8**	**-0.7**
	comp=E,6.7nm,1.2s							
SAML	**Samuel**	**16.06**	**22**	*e*Pn		**P**	**23 24 19.9**	**-1.3**
	comp=E,0.7nm,0.5s							
PTGA	**Pitinga**	**24.83**	**23**	P		**P**	**23 25 53.6**	**+0.4**
	comp=E,0.7nm,0.3s,baz=209,slow=19,SNR=2.9							
SNAA	**Sanae**	**60.07**	**160**	P		**P**	**23 30 37.4**	**+0.6**
	comp=E,1.7nm,0.6s,baz=272,slow=9.2,SNR=14							
OXF	**Oxford**	**61.22**	**341**	*e*P		**P**	**23 30 45.8**	**+0.9**
	comp=E,6.9nm,1.0s							
MIAR	**Mount Ida**	**62.60**	**338**	*e*P		**P**	**23 30 53.4**	**-0.8**
	comp=E,1.6nm,0.8s							
WMOK	**Wichita Mounta**	**64.75**	**333**	*e*P		**P**	**23 31 08.7**	**+0.4**
	comp=E,0.4nm,0.4s							
ACSO	**Alum Creek Sta**	**65.14**	**349**	*e*P		**P**	**23 31 11.0**	**+0.3**
	comp=E,6.3nm,1.0s							
KSU1	**Kansas State U**	**67.75**	**337**	P		**P**	**23 31 28.2**	**+0.8**
	comp=E,6.5nm,0.8s							
ANMO	**Albuquerque**	**68.37**	**328**	*e*P		**P**	**23 31 32.4**	**+0.7**
	comp=E,0.9nm,0.6s							
DBIC	**Dimbokro**	**69.81**	**73**	P		**P**	**23 31 40.6**	**-0.1**
	comp=E,7.6nm,1.1s,baz=130,slow=21,SNR=3.8							
DBIC				pP		**PcP**	**23 32 02.8**	**-0.2**
	comp=E,8.8nm,1.1s,baz=277,slow=9.4,SNR=2.9							
SDCO	**Great Sand Dun**	**70.19**	**330**	*e*P		**P**	**23 31 43.8**	**+0.9**
	comp=E,0.8nm,0.6s							
RSSD	**Black Hills**	**74.86**	**335**	*e*P		**P**	**23 32 11.1**	**+0.6**
	comp=E,1.7nm,0.9s							
PDAR	**Pinedale Array**	**76.07**	**331**	P		**P**	**23 32 17.5**	**0.0**
	comp=E,0.1nm,0.3s,baz=119,slow=5.2,SNR=3.2							
HWUT	**Hardware Ranch**	**76.09**	**329**	*e*P		**P**	**23 32 17.6**	**+0.1**
	com

MRMT	**Marmara Adasi**	**1.84**	**325**	*e*Pn	**Pn**	**23 26 34.4 +0.5**
CTKS	**Kestanelik-??a**	**2.16**	**351**	*e*PN	**Pn**	**23 26 39.2 +1.0**
CTKS	**Kestanelik-??a**	**2.16**	**351**	*e*Pn	**Pn**	**23 26 39.2 +1.0**

NIED ***29*** *23:26:00, 35.°80N×141.°20E, h11km, Mw3.9 Best double couple: M₀8.40000×10¹⁴ NP1:φ₀136.00000°, δ46.00000°, λ-134.00000°. NP2:φ₀11.00000°, δ59.00000°, λ-54.00000°.*

IDC ***29*** *23:26:13.1±0.9, 35.°68N×141.°17E, h0km, mb3.9/7, mb1 3.8/14, mb1mx3.7/42, mbtmp3.8/14, ML3.5/6, MS3.3/2, Ms1 3.3/2, ms1mx2.7/36, Error ellipse: s-maj=21.1km s-min=16.8km az=73.0*

ISCJB ***29*** *23:26:14.5±0.8, 35.°77N±0.°04×141.°19E±0.°06, h22km±5km, mb4.1/12, MS3.6/1, Error ellipse: s-maj=8.2km s-min=6.1km az=175.7*

JMA ***29*** *23:26:14.9±0.2, 35.°77N×141.°14E, h14km±1km, M4.0*

JMA Felt I J1.

NEIC ***29*** *23:26:17.9±2.6, 35.°73N×141.°14E, h33km±19km, mb4.5/5, Error ellipse: s-maj=11.0km s-min=8.5km az=120.0*

NEIC Recorded [1 JMA] in Chiba and Ibaraki.

ISC 29 23:26:14.9±1.5**, 35.°73N**±0.°05×**141.°15E**±0.°07**, h14**km±8km**, n37**, σ1°**23/37, mb4.0/12, 1C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.23**	**265**	⇑P	**Pg**	**23 26 20.0**	**0.0**
CHOJ				S	**Sg**	**23 26 24.1**	**+0.7**
JCN	**Nagara**	**0.83**	**249**	P	**Pn**	**23 26 31.7**	**-0.5**
JCN				S	**Sn**	**23 26 44.6**	**+0.4**
JYT	**Yasato**	**0.92**	**303**	P	**Pb**	**23 26 31.1**	**-1.5**
JYT				S	**Sb**	**23 26 43.0**	**-1.8**
BSO4	**Boso 4**	**0.99**	**222**	P	**Pn**	**23 26 35.2**	**+1.0**
JHO	**Hitachi**	**1.00**	**332**	P	**Pb**	**23 26 32.8**	**-1.2**
JHO				S	**Sb**	**23 26 46.5**	**-0.6**
BSO3	**Boso 3**	**1.06**	**210**	P	**Pn**	**23 26 35.2**	**+0.1**
MJAR	**Matsushiro Arr**	**2.51**	**290**	Pn	**Pn**	**23 26 54.4**	**-1.0**
	12nm,0.3s,baz=94,slow=8.6,SNR=27						
MJAR				Sn	**Sn**	**23 27 25.8**	**0.0**
	10nm,0.3s,baz=97,slow=20,SNR=8.5						
MAJO	**Matsushiro**	**2.52**	**290**	*e*Pn	**Pn**	**23 26 55.3**	**-0.1**
MAT	**Matsushiro**	**2.52**	**290**	P	**Pn**	**23 26 55.2**	**-0.2**
MAT				S	**Sn**	**23 27 25.5**	**-0.4**
JHJ	**Hachijo jima 2**	**2.83**	**204**	Pn	**Pn**	**23 26 57.5**	**-2.3**
	8.0nm,0.3s,baz=58,slow=13,SNR=3.9						
JHJ				Sn	**Sb**	**23 27 37.9**	**-2.0**
	21nm,0.3s,baz=58,slow=21,SNR=4.3						
ERM	**Erimo**	**6.47**	**13**	*e*Pn	**Pn**	**23 27 50.8**	**+1.0**
ASAJ	**Asahikawa**	**8.46**	**7**	Pn	**Pn**	**23 28 17.2**	**+0.3**
	0.9nm,0.3s,baz=158,slow=11,SNR=2.8						
JNU	**Nakatsue**	**8.87**	**256**	Pn	**Pn**	**23 28 24.8**	**+2.1**
	0.4nm,0.3s,baz=72,slow=20,SNR=2.5						
KSRS	**Korea Array**	**10.77**	**283**	Pn	**Pn**	**23 28 51.3**	**+2.6**
	0.3nm,0.3s,baz=73,slow=19,SNR=3.0						
KSAR	**Wonju Array Be**	**10.80**	**283**	Pn	**Pn**	**23 28 51.3**	**+2.2**
USRK	**Ussuriysk Ar.**	**10.99**	**323**	Pn	**Pn**	**23 28 53.9**	**+2.2**
	0.1nm,0.3s,baz=134,slow=16,SNR=2.8						
USRK				LR	LR	23 33 12.4	
	comp=Z,90nm,18.1s,baz=154,slow=38						
KLR	**Kul'dur**	**15.15**	**336**	Pn	**P**	**23 29 51.0**	**-2.5**
	0.1nm,0.3s,baz=131,slow=11,SNR=3.6						
GUMO	**Guam**	**22.30**	**170**	*e*P	**P**	**23 31 12.4**	**+0.5**
	20nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**27.69**	**118**	T	T	00 00 55.1	
	baz=311,slow=75,SNR=228						
H11N1	**WAKE ISLAND Hy**	**27.70**	**118**	T	T	00 00 55.7	
	baz=311,slow=75,SNR=140						
H11N3	**WAKE ISLAND Hy**	**27.71**	**118**	T	T	00 00 56.5	
	baz=311,slow=75,SNR=237						
H11S1	**WAKE ISLAND Hy**	**28.36**	**120**	T	T	00 01 45.3	
	baz=312,slow=76,SNR=145						
H11S3	**WAKE ISLAND Hy**	**28.36**	**121**	T	T	00 01 45.3	
	baz=312,slow=76,SNR=232						
SONM	**Songino Array**	**28.36**	**306**	P	**P**	**23 32 08.8**	**+0.2**
	0.9nm,0.7s,baz=104,slow=9.5,SNR=5.8						
H11S2	**WAKE ISLAND Hy**	**28.37**	**120**	T	T	00 01 46.6	
	baz=312,slow=76,SNR=175						
ZALV	**Zalesovo Beam**	**42.65**	**313**	P	**P**	**23 34 10.9**	**+0.2**
	1.3nm,0.5s,baz=91,slow=8.6,SNR=5.7						
MKAR	**Makanchi Array**	**44.64**	**303**	P	**P**	**23 34 27.4**	**+0.4**
	2.1nm,0.6s,baz=89,slow=10,SNR=24						
KURK	**Kurchatov**	**46.58**	**309**	*e*P	**P**	**23 34 41.4**	**-0.7**
	24nm,0.8s						
COLA	**College**	**50.30**	**32**	*e*P	**P**	**23 35 10.6**	**0.0**
	2.6nm,0.5s						
ILAR	**Eielson Array**	**50.72**	**32**	P	**P**	**23 35 14.5**	**+0.7**
	0.6nm,0.8s,baz=256,slow=7.1,SNR=6.6						
AAK	**Ala-Archa**	**50.93**	**299**	P	**P**	**23 35 16.6**	**+0.6**
	1.4nm,0.4s						
WRA	**Warramunga Arr**	**55.74**	**188**	P	**P**	**23 35 51.2**	**0.0**
	1.2nm,0.8s,baz=5.6,slow=7.4,SNR=9.2						
ABKAR	**Akbulak array**	**58.62**	**311**	*e*P	**P**	**23 36 11.2**	**-0.2**
	0.5nm,0.5s						
ASAR	**Alice Springs**	**59.47**	**188**	P	**P**	**23 36 18.1**	**+0.6**
	0.5nm,0.7s,baz=23,slow=6.8,SNR=4.8						
AKASG	**Malin Array Be**	**75.20**	**322**	LR	LR	00 13 44.9	
	comp=Z,29nm,18.9s,baz=195,slow=38						
NOA	**NORSAR Array B**	**75.31**	**337**	P	**P**	**23 37 57.9**	**+0.5**
	0.5nm,0.6s,baz=55,slow=7.9,SNR=2.7						
LPAZ	**La Paz**	**147.53**	**61**	PKPbc	**PKPbc**	**23 45 59.8**	**-0.1**
	0.4nm,0.4s,baz=292,slow=5.4,SNR=2.3						

GUC ***29*** *23:32:10.9±0.4, 35.°75S×73.°10W, h10km±2km, ML4.1*

IDC ***29*** *23:32:14.8±1.7, 35.°73S×71.°20W, h0km, mb3.9/3, mb1 3.9/6, mb1mx3.8/24, mbtmp3.8/6, ML3.7/3, MS3.8/7, Ms1 3.8/7, ms1mx3.3/20, Error ellipse: s-maj=67.9km s-min=17.1km az=97.0*

NEIC ***29*** *23:32:15.0±0.5, 35.°63S×71.°62W, h10km, mb4.1/7, ML4.1(GUC), Error ellipse: s-maj=17.4km s-min=8.1km az=92.0*

NEIC Felt [II] at Pelluhue and Talca.

ISC 29 23:32:11.3±1.5**, 35.°77S**±0.°04×**72.°95W**±0.°07**, h6**km±11km**, n36**, σ2°**8/33, mb4.1/10, MS3.5/5, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COCH	**Cobquecura**	**0.38**	**160**	*e*P	**Pg**	**23 32 19.2**	**+0.5**
COCH				*e*S	**Sg**	**23 32 25.6**	**+1.9**
COCH				IAML		23 32 26.8	
	comp=N,25μm,0.9s						
CCSP	**San Pedro de C**	**1.08**	**187**	*e*P	**Pb**	**23 32 29.4**	**-3.0**
CCSP				*e*S	**Sg**	**23 32 44.1**	**-1.9**
CCSP				IAML		23 32 48.7	
	comp=N,9μm,0.5s						
CCHI	**Chillan**	**1.09**	**140**	*e*P	**Pb**	**23 32 31.2**	**-1.4**
CCHI				*e*S	**Sb**	**23 32 46.7**	**-0.4**
CCHI				IAML		23 33 00.8	
	comp=N,8μm,0.4s						
GO05	**HualaæØ**	**1.13**	**48**	*e*P	**Pn**	**23 32 30.9**	**-2.9**
GO05				*e*S	**Sb**	**23 32 46.8**	**-1.5**
TALC	**Talca**	**1.14**	**71**	*e*P	**Pn**	**23 32 32.3**	**-1.4**
TALC				*e*S	**Sb**	**23 32 48.2**	**-0.2**
CHPI	**Pichilemu**	**1.58**	**30**	*e*P	**Pn**	**23 32 38.5**	**-1.4**
CHPI				*e*S	**Sn**	**23 32 59.1**	**-1.6**
NICH	**Los Niches**	**1.60**	**62**	*e*P	**Pn**	**23 32 39.6**	**-0.6**
NICH				*e*S	**Sn**	**23 33 01.2**	**0.0**
ROC1	**El Roble**	**3.21**	**30**	*i*P	**Pn**	**23 33 01.8**	**-0.9**
ROC1				*i*S	**Sg**	**23 33 59.4**	**+4.8**
ARCO	**CERRO ARCO**	**4.43**	**50**	*i*P	**Pn**	**23 33 20.6**	**+1.4**
ARCO				IAML		23 33 36.8	
	comp=Z,74nm,0.7s						
ARCO				*i*S	**Sg**	**23 34 33.2**	**-0.4**
AUSP	**Uspallata**	**4.61**	**41**	*i*P	**Pn**	**23 33 22.0**	**+0.1**
ASAL	**Salagasta**	**4.66**	**48**	*i*P	**Pn**	**23 33 23.2**	**+0.8**
RTLS	**Leoncito**	**5.00**	**39**	*i*P	**Pn**	**23 33 26.6**	**-0.5**
PLCA	**Paso Flores**	**5.30**	**160**	Pn	**Pn**	**23 33 32.5**	**+1.3**
	comp=Z,0.9nm,0.3s,baz=356,slow=11,SNR=14						
PLCA				Lg	Lg	23 34 53.7	
	comp=Z,3.5nm,0.3s,baz=278,slow=21,SNR=7.4						
AMOG	**MOGNA**	**6.09**	**39**	*i*P	**Pn**	**23 33 40.4**	**-1.7**
ACCO	**Cerro Coronel**	**6.11**	**33**	*i*P	**Pn**	**23 33 40.4**	**-2.1**
ACCO				*i*S	**Sb**	**23 35 07.1**	**-4.8**
ACCO				IAML		23 35 20.6	
	comp=Z,34nm,0.5s						
LCO	**Las Campanas**	**7.00**	**16**	*e*Pn	**Pn**	**23 33 53.7**	**-1.1**
LVC	**Limon Verde**	**13.58**	**16**	LR	LR	23 41 01.4	
	comp=Z,683nm,20.0s,baz=210,slow=40						
CPUP	**Villa Florida**	**16.34**	**59**	Pn	Pn	23 35 50.7	-11
	comp=Z,0.1nm,0.3s,baz=145,slow=18,SNR=1.8						
USHA	**Ushuaia**	**19.32**	**172**	P	**Pn**	**23 36 40.8**	**+2.7**
	comp=Z,11nm,0.3s,baz=354,slow=9.2,SNR=2.8						
USHA				LR	LR	23 45 01.8	
	comp=Z,566nm,18.4s,baz=352,slow=40						
LPAZ	**La Paz**	**19.88**	**14**	P	**P**	**23 36 43.3**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=197,slow=7.6,SNR=7.5						
SIV	**San Ignacio**	**22.37**	**31**	P	**P**	**23 37 07.9**	**-2.5**
	comp=Z,8.1nm,0.9s,baz=221,slow=12,SNR=15						
SIV				LR	LR	23 47 35.9	
	comp=Z,175nm,18.7s,baz=220,slow=43						
SAML	**Samuel**	**28.15**	**21**	*e*P	**P**	**23 38 04.1**	**-0.3**
	comp=Z,1.1nm,0.8s						
ATAH	**Atahualpa**	**28.94**	**349**	LR	LR	23 47 13.5	
	comp=Z,41nm,18.8s,baz=188,slow=31						
OTAV	**Otavalo**	**36.19**	**351**	*e*P	**P**	**23 39 18.2**	**+2.8**
	comp=Z,1.9nm,0.5s						
SNAA	**Sanae**	**50.24**	**157**	P	**P**	**23 41 07.1**	**-0.8**
	comp=Z,2.0nm,0.9s,baz=307,slow=6.7,SNR=7.2						
VNDA	**Vanda**	**62.22**	**192**	P	P	23 42 40.3	+7.0
	comp=Z,0.4nm,0.6s,baz=169,slow=2.9,SNR=3.6						
WMOK	**Wichita Mounta**	**74.18**	**338**	*e*P	P	23 43 53.3	+4.6
	comp=Z,0.6nm,0.7s						
DBIC	**Dimbokro**	**76.45**	**71**	LR	LR	00 14 43.6	
	comp=Z,27nm,19.6s,baz=172,slow=34						
ANMO	**Albuquerque**	**76.99**	**332**	*e*P	P	23 44 09.9	+4.9
	comp=Z,1.5nm,0.9s						
PV01	**Paradox Valley**	**80.60**	**332**	*e*P	P	23 44 29.1	+4.2
PV10	**Paradox Valley**	**80.98**	**332**	*e*P	P	23 44 31.8	+4.8
ECSD	**EROS Data Cent**	**82.01**	**343**	P	**P**	**23 44 34.4**	**+2.4**
	comp=Z,4.1nm,0.9s						
HLID	**Hailey**	**87.52**	**331**	*e*P	P	23 45 05.0	+5.0
	comp=Z,1.0nm,1.0s						
AFI	**Afiamalu**	**88.98**	**254**	LR	LR	00 16 04.4	
	comp=Z,252nm,21.8s,slow=29						
NEW	**Newport**	**92.48**	**332**	*e*P	P	23 45 28.2	+5.2
	comp=Z,0.7nm,0.5s						
MDT	**Middelt**	**93.50**	**52**	LR	LR	00 27 31.0	
	comp=Z,17nm,18.2s,baz=242,slow=36						

NIED ***29*** *23:44:00, 38.°90N×141.°90E, h53km, Mw3.9 Best double couple: M₀7.84000×10¹⁴ NP1:φ₀176.00000°, δ21.00000°, λ68.00000°. NP2:φ₀20.00000°, δ70.00000°, λ98.00000°.*

ISCJB ***29*** *23:44:10.8±0.7, 38.°87N±0.°03×141.°98E±0.°09, h56km±5km, mb4.1/16, MS3.1/2, Error ellipse: s-maj=11.3km s-min=5.3km az=13.3*

JMA ***29*** *23:44:11.8±0.1, 38.°90N×141.°95E, h50km±1km, M3.9*

JMA Felt II J1.

IDC ***29*** *23:44:13.9±0.8, 38.°86N×141.°98E, h71km±5km, mb3.7/15, mb1 3.8/22, mb1mx3.7/47, mbtmp4.0/22, MS2.8/7, Ms1 2.8/7, ms1mx2.5/53, Error ellipse: s-maj=14.6km s-min=9.4km az=109.0*

ISC 29 23:44:11.6±0.7**, 38.°88N**±0.°05×**141.°99E**±0.°07**, h46**km±4km**, n41**, σ1°**12/47, mb4.1/16, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.32**	**309**	P	**Pn**	**23 44 20.9**	**+0.3**
OFUJ				S	**Sn**	**23 44 27.1**	**+0.2**
JMK	**Ichinoseki**	**0.61**	**277**	P	**Pn**	**23 44 24.0**	**+0.1**
JMK				S	**Sn**	**23 44 32.7**	**-0.1**
JIO	**Ouri**	**0.66**	**230**	P	**Pn**	**23 44 24.5**	**-0.1**
JIO				S	**Sn**	**23 44 33.3**	**-0.6**
JOM	**Ohasama**	**0.81**	**318**	P	**Pn**	**23 44 26.6**	**0.0**
JOM				S	**Sn**	**23 44 37.3**	**-0.2**
JOU	**Okura**	**1.16**	**244**	P	**Pn**	**23 44 31.0**	**-0.4**
JOU				*e*S	**Sn**	**23 44 45.9**	**-0.1**
JRG	**Rokugo**	**1.18**	**297**	P	**Pn**	**23 44 31.4**	**-0.2**
JYK	**Kaneyama**	**1.27**	**272**	P	**Pn**	**23 44 32.8**	**-0.1**
JMM	**Marumori**	**1.38**	**223**	P	**Pn**	**23 44 33.9**	**-0.5**
JMM				*e*S	**Sn**	**23 44 50.7**	**-0.7**
JANG	**Nango**	**1.54**	**346**	P	**Pn**	**23 44 36.3**	**-0.3**
MJAR	**Matsushiro Arr**	**3.80**	**233**	P	**Pn**	**23 45 09.7**	**+2.1**
	5.3nm,0.3s,baz=37,slow=12,SNR=42						
MJAR				S	**Sn**	**23 45 54.6**	**+3.6**
	2.0nm,0.3s,baz=47,slow=24,SNR=4.2						
MJAR				LR	LR	23 46 58.9	
	comp=Z,53nm,20.4s,baz=70,slow=44						
MAT	**Matsushiro**	**3.80**	**233**	P	**Pn**	**23 45 09.7**	**+2.1**
MAT				*e*S	Sn	23 46 00.4	+9.4
ASAJ	**Asahikawa**	**5.26**	**5**	P	**Pn**	**23 45 29.4**	**+1.9**
	1.9nm,0.3s,baz=245,slow=15,SNR=4.5						
JHJ	**Hachijo jima 2**	**6.02**	**198**	P	**Pn**	**23 45 39.6**	**+1.6**
	6.4nm,0.3s,baz=31,slow=18,SNR=3.1						
JHJ				S	**Sn**	**23 46 46.7**	**+1.1**
	10nm,0.3s,baz=60,slow=20,SNR=4.3						
USRK	**Ussuriysk Ar.**	**9.19**	**309**	P	**Pn**	**23 46 22.5**	**+1.0**
	0.8nm,0.3s,baz=117,slow=13,SNR=17						
USRK				LR	LR	23 49 45.9	
	comp=Z,64nm,20.0s,baz=135,slow=36						
KSRS	**Korea Array**	**11.17**	**267**	P	**Pn**	**23 46 50.5**	**+2.0**
	0.3nm,0.3s,baz=86,slow=14,SNR=2.8						
KSRS				LR	LR	23 50 08.8	
	comp=Z,23nm,20.3s,baz=55,slow=32						
KLR	**Kul'dur**	**12.69**	**328**	P	**Pn**	**23 47 12.4**	**+3.1**
	0.1nm,0.3s,baz=143,slow=15,SNR=2.1						
KLR				LR	LR	23 51 49.0	
	comp=Z,37nm,21.5s,baz=134,slow=36						
PETK	**Petropavlovsk-**	**17.88**	**32**	P	**P**	**23 48 18.0**	**+1.1**
	0.1nm,0.3s,baz=218,slow=11,SNR=2.8						
PETK				LR	LR	23 56 02.3	
	comp=Z,20nm,18.9s,baz=232,slow=40						
SEY	**Seymchan**	**24.90**	**11**	P	**P**	**23 49 30.8**	**+1.0**
	2.0nm,0.2s,baz=211,slow=14,SNR=5.5						
SONM	**Songino Array**	**27.18**	**301**	P	**P**	**23 49 51.1**	**+0.3**
	0.6nm,0.7s,baz=94,slow=6.1,SNR=3.2						
H11N2	**WAKE ISLAND Hy**	**28.75**	**124**	T	T	00 20 31.5	
	baz=317,slow=75,SNR=190						
H11N1	**WAKE ISLAND Hy**	**28.76**	**124**	T	T	00 20 25.8	
	baz=317,slow=75,SNR=459						
H11N3	**WAKE ISLAND Hy**	**28.77**	**124**	T	T	00 20 26.5	
	baz=317,slow=75,SNR=246						
TLY	**Talaya**	**29.51**	**308**	LR	LR	00 02 21.4	
	comp=Z,26nm,18.7s,baz=171,slow=37						
H11S1	**WAKE ISLAND Hy**	**29.53**	**126**	T	T	00 21 22.3	
	baz=318,slow=76,SNR=123						
H11S3	**WAKE ISLAND Hy**	**29.53**	**126**	T	T	00 21 22.9	
	baz=318,slow=76,SNR=184						
H11S2	**WAKE ISLAND Hy**	**29.55**	**126**	T	T	00 21 23.4	
	baz=318,slow=76,SNR=123						
ZALV	**Zalesovo Beam**	**41.03**	**311**	P	**P**	**23 51 49.7**	**-0.4**
	1.4nm,0.4s,baz=88,slow=7.7,SNR=10.0						
ZALV				pP	**sP**	**23 52 07.5**	**-0.5**
	2.7nm,0.5s,baz=90,slow=8.2,SNR=6.0						
ZALV				PcP	**PcP**	**23 53 48.7**	**-0.5**
	0.7nm,0.4s,baz=80,slow=2.0,SNR=3.8						
NRIK	**Noril'sk**	**41.80**	**334**	P	**P**	**23 51 55.4**	**-0.7**
	1.4nm,0.5s,baz=49,slow=1.8,SNR=3.7						
MKAR	**Makanchi Array**	**43.55**	**301**	P	**P**	**23 52 10.2**	**-0.6**
	3.4nm,0.7s,baz=85,slow=10,SNR=30						
MKAR				pP	**sP**	**23 52 28.5**	**-0.2**
	1.4nm,0.7s,baz=83,slow=11,SNR=5.3						
KURBB	**Kurchatov Arra**	**45.25**	**307**	P	**P**	**23 52 23.4**	**-0.8**
	6.1nm,0.6s,baz=80,slow=8.1,SNR=44						
KURBB				pP	**sP**	**23 52 41.3**	**-0.9**
	4.0nm,0.7s,baz=82,slow=8.2,SNR=7.5						
ILAR	**Eielson Array**	**47.70**	**33**	P	**P**	**23 52 42.9**	**-0.4**
	0.6nm,0.7s,baz=271,slow=5.6,SNR=6.3						
ILAR				pP	**sP**	**23 53 01.0**	**-0.2**
	0.3nm,0.7s,baz=272,slow=5.2,SNR=2.7						
WRA	**Warramunga Arr**	**58.95**	**188**	P	**P**	**23 54 05.2**	**-1.0**
	0.7nm,0.5s,baz=6.2,slow=7.0,SNR=24						
ASAR	**Alice Springs**	**62.67**	**189**	P	**P**	**23 54 31.3**	**-0.2**
	0.5nm,0.8s,baz=17,slow=9.5,SNR=4.7						
GEYT	**Alibeck**	**63.35**	**298**	P	**P**	**23 54 35.4**	**-0.7**
	0.6nm,0.3s,baz=70,slow=12,SNR=3.1						
FINES	**FINESS Array B**	**67.40**	**332**	P	**P**	**23 55 01.3**	**-0.5**
	1.9nm,0.6s,baz=45,slow=8.9,SNR=7.2						
FINES				pP	**sP**	**23 55 19.7**	**-0.5**
	1.4nm,0.7s,baz=49,slow=8.6,SNR=2.4						
KBZ	**Khabaz**	**70.05**	**310**	P	**P**	**23 55 18.2**	**-0.3**
	1.6nm,0.7s,baz=42,slow=1.0,SNR=4.3						
HFS	**Hagfors**	**72.60**	**336**	LR	LR	00 29 17.9	
	comp=Z,16nm,18.7s,baz=273,slow=37						
NOA	**NORSAR Array B**	**72.67**	**337**	P	**P**	**23 55 34.1**	**-0.1**
	1.1nm,0.8s,baz=38,slow=6.0,SNR=3.2						
BRTR	**Keskin Array B**	**77.97**	**312**	P	**P**	**23 56 04.6**	**-0.5**
	0.4nm,0.4s,baz=128,slow=5.2,SNR=6.8						
GERES	**GERESS Array B**	**81.39**	**328**	P	**P**	**23 56 22.7**	**-0.7**
	0.2nm,0.3s,baz=48,slow=8.0,SNR=3.1						
PPT	**Papeete**	**85.06**	**117**	P	**P**	**23 56 42.5**	**-0.1**
	72nm,0.8s,baz=348,slow=9.3,SNR=3.1						

IDC ***29*** *23:55:37.3±2.2, 22.°26S×179.°29W, h478km±25km, mb3.4/9, mb1 3.7/11, mb1mx3.4/33, mbtmp4.3/11, Error ellipse: s-maj=20.8km s-min=14.3km az=136.0*

ISCJB ***29*** *23:55:44.6±0.7, 22.°54S±0.°10×179.°4W±0.°2, h579km, mb3.8/9, Error ellipse: s-maj=20.6km s-min=12.3km az=14.9*

ISC 29 23:55:45.7±0.7**, 22.°7S**±0.°1×**179.°4W**±0.°2**, h579**km**, n18, σ1°29/18, mb3.9/9, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**11.28**	**41**	P	P	23 58 04.2	-13
	2.0nm,0.3s,baz=191,slow=16,SNR=3.0						
AFI				S	S	00 00 09.7	-12
	0.6nm,0.3s,baz=204,slow=19,SNR=2.1						
URZ	**Urewera**	**15.85**	**190**	P	**P**	**23 58 59.5**	**-3.0**
	2.1nm,0.3s,baz=290,slow=2.7,SNR=13						
URZ				S	**S**	**00 01 42.1**	**-0.8**
	0.6nm,0.3s,baz=13,slow=19,SNR=6.4						
RPZ	**Rata Peaks**	**22.46**	**198**	P	**P**	**00 00 03.2**	**+0.9**
	13nm,0.6s,baz=35,slow=16,SNR=6.2						
STKA	**Stephens Creek**	**35.75**	**247**	P	**P**	**00 01 56.6**	**-0.4**
	3.1nm,0.6s,baz=97,slow=8.7,SNR=6.8						
ASAR	**Alice Springs**	**42.84**	**259**	P	**P**	**00 02 53.5**	**-0.6**
	1.9nm,0.7s,baz=98,slow=7.6,SNR=20						
WRA	**Warramunga Arr**	**43.10**	**265**	P	**P**	**00 02 55.2**	**-0.9**
	1.7nm,0.8s,baz=96,slow=8.3,SNR=14						
VNDA	**Vanda**	**55.67**	**185**	P	**P**	**00 04 29.4**	**+2.1**
	1.4nm,0.7s,baz=0.7,slow=8.1,SNR=13						
TXAR	**Lajitas Array**	**89.26**	**58**	P	**P**	**00 07 41.5**	**+0.4**
	1.4nm,0.9s,baz=218,slow=6.6,SNR=6.8						
CMAR	**Chiang Mai Arr**	**89.66**	**290**	P	**P**	**00 07 44.7**	**+1.6**
	0.9nm,0.3s,baz=116,slow=2.1,SNR=3.0						
ILAR	**Eielson Array**	**90.68**	**13**	P	**P**	**00 07 45.8**	**-0.9**
	0.4nm,0.7s,baz=223,slow=6.2,SNR=4.2						
PDAR	**Pinedale Array**	**91.38**	**44**	P	**P**	**00 07 49.9**	**-0.9**
	1.0nm,0.8s,baz=224,slow=4.1,SNR=7.2						
FINES	**FINESS Array B**	**137.45**	**342**	PKP	**PKPdf**	**00 14 03.4**	**-0.3**
	1.3nm,0.8s,baz=129,slow=2.0,SNR=3.8						
AKASG	**Malin Array Be**	**144.23**	**329**	PKP	**PKPab**	**00 14 15.6**	**-0.8**
	1.3nm,0.5s,baz=144,slow=4.4,SNR=7.0						
BRTR	**Keskin Array B**	**147.28**	**309**	PKPbc	**PKPbc**	**00 14 25.1**	**-0.1**
	0.6nm,0.6s,baz=134,slow=4.7,SNR=5.2						
MMAI	**Mount Meron Ar**	**147.71**	**296**	PKPbc	**PKPbc**	**00 14 27.7**	**+1.4**
	1.0nm,0.5s,baz=70,slow=4.7,SNR=5.6						
EIL	**Elat**	**148.51**	**290**	PKPbc	**PKPbc**	**00 14 29.6**	**+1.3**
	3.1nm,0.8s,baz=5.7,slow=10,SNR=3.8						
MLR	**Muntele Rosu**	**149.28**	**324**	PKPbc	**PKPbc**	**00 14 30.3**	**+0.4**
	0.3nm,0.7s,baz=267,slow=2.7,SNR=3.8						
GERES	**GERESS Array B**	**151.88**	**342**	PKPbc	**PKPbc**	**00 14 35.9**	**+0.2**
	0.1nm,0.2s,baz=35,slow=4.9,SNR=4.3						

NEIC ***30*** *00:01:34.5, 18.°39N×66.°20W, h55km, MD3.0(RSPR), After RSPR.*

RSPR 30 00:01:34.7, 18.°39N×66.°20W, h55km, MD3.0/9, 5C-10D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SJG	**San Juan**	**0.28**	**170**	⇓*e*P	Pn	00 01 43.7	-0.5
SJG				*e*S	Sn	00 01 50.5	-0.5
SJG	**San Juan**	**0.28**	**170**	⇓*e*P	Pn	00 01 43.7	-0.5
CBYP	**Canovanas**	**0.35**	**110**	⇓*e*P	Pn	00 01 44.0	-0.8
CBYP				*e*S	Sn	00 01 51.6	-0.5
CBYP	**Canovanas**	**0.35**	**110**	*e*Pn	Pn	00 01 43.8	-1.0
HUMP	**Col San Antoni**	**0.42**	**127**	⇓*e*P	Pn	00 01 44.6	-0.8
HUMP				*e*S	Sn	00 01 52.6	-0.5
HUMP	**Col San Antoni**	**0.42**	**127**	*e*Pn	Pn	00 01 44.7	-0.7
CELP	**Cerrillos**	**0.48**	**229**	⇑*e*P	Pn	00 01 45.3	-0.7
CELP	**Cerrillos**	**0.48**	**229**	*e*Pn	Pn	00 01 45.1	-1.0
OBIP	**Obispado Ponce**	**0.

CEL	**Celeste**	**96.67**	**310**	*e*P		**P**		**00 16 05.0**	**+0.6**
TXAR	**Lajitas Array**	**121.19**	**47**	PKP		**PKPdf**		**00 21 27.8**	**+0.4**
	0.3nm,0.7s,baz=347,slow=2.8,SNR=2.7								
PLCA	**Paso Flores**	**147.01**	**162**	PKPbc		**PKPbc**		**00 22 17.9**	**+1.0**
	2.5nm,0.8s,baz=171,slow=4.2,SNR=4.2								

IDC ***30*** *00:15:00.4±1.5,37.°42N×20.°96E,h0km,mb3.5/5, mb1 3.5/9,mb1mx3.4/36,mbtmp3.4/9,ML2.7/4,Error ellipse: s-maj=26.4km s-min=19.2km az=9.0*

ISCJB ***30*** *00:15:02.1±0.6,37.°20N±0.°03×20.°69E±0.°03,h19km±4km, mb3.5/5,Error ellipse: s-maj=4.3km s-min=3.4km az=18.0*

ATH ***30*** *00:15:03.0,37.°28N×20.°82E,h21km,ML3.2/22,Error ellipse: s-maj=1.7km s-min=0.9km az=55.0*

CSEM ***30*** *00:15:02.5±0.3,37.°26N×20.°77E,h5km,ML3.6,Error ellipse: s-maj=5.4km s-min=3.3km az=33.0*

THE ***30*** *00:15:04.1,37.°31N×20.°88E,h3km±1km,ML3.6/4,Error ellipse: s-maj=2.0km s-min=0.8km az=57.0*

ISC 30 00:15:02.6±1.2,37.°29N±0.°03×20.°83E±0.°03,h13km±8km, n111,σ1°41/176,mb3.5/5,1C-2D,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZKS	**Zakynthos**	**0.41**	**355**	P	**Pb**	**00 15 12.1**	**+0.3**
ZKS				S	**Sb**	**00 15 18.1**	**+0.1**
ZKS	**Zakynthos**	**0.41**	**355**	P	**Pb**	**00 15 12.1**	**+0.3**
ZKS				S	**Sb**	**00 15 18.1**	**+0.1**
ZKS	**Zakynthos**	**0.41**	**355**	P	**Pb**	**00 15 12.6**	**+0.8**
ZKS				S	**Sb**	**00 15 19.5**	**+1.4**
ZKS				AML	AML	00 15 22.0	
	comp=N,64284μm,0.4s						
ZKS				AML	AML	00 15 22.4	
	comp=E,46318μm,0.5s						
VTN	**Vitineika**	**0.69**	**24**	P	**Pb**	**00 15 16.9**	**+0.4**
VTN				S	**Sb**	**00 15 27.2**	**+1.2**
VTN	**Vitineika**	**0.69**	**24**	P	**Pb**	**00 15 16.9**	**+0.4**
VTN				S	**Sb**	**00 15 27.2**	**+1.2**
AMT	**Artemida-Makis**	**0.74**	**70**	P	**Pb**	**00 15 17.8**	**+0.4**
AMT	**Artemida-Makis**	**0.74**	**70**	P	**Pb**	**00 15 17.8**	**+0.4**
AMT				S	**Sb**	**00 15 28.7**	**+1.3**
AMT	**Artemida-Makis**	**0.74**	**70**	P	**Pb**	**00 15 18.5**	**+1.1**
AMT				S	**Sb**	**00 15 28.7**	**+1.3**
AMT				AML	AML	00 15 34.5	
	comp=N,7501μm,0.4s						
AMT				AML	AML	00 15 35.8	
	comp=E,5526μm,0.4s						
KFL	**Anninata**	**0.82**	**358**	P	**Pg**	**00 15 18.5**	**0.0**
KFL				S	**Sb**	**00 15 31.8**	**+2.0**
KFL	**Anninata**	**0.82**	**358**	P	**Pg**	**00 15 18.5**	**0.0**
KFL				S	**Sb**	**00 15 30.8**	**+1.0**
KFL	**Anninata**	**0.82**	**358**	P	**Pg**	**00 15 18.0**	**-0.5**
KFL				S	**Sb**	**00 15 30.8**	**+1.0**
PYL	**PYLOS**	**0.83**	**118**	P	**Pg**	**00 15 18.8**	**+0.2**
PYL				S	**Sb**	**00 15 31.8**	**+2.0**
PYL	**PYLOS**	**0.83**	**118**	P	**Pg**	**00 15 18.6**	**0.0**
PYL				S	**Sb**	**00 15 31.3**	**+1.5**
PYL	**PYLOS**	**0.83**	**118**	P	**Pg**	**00 15 18.6**	**0.0**
PYL				S	**Sb**	**00 15 31.3**	**+1.5**
PYL				AML	AML	00 15 34.1	
	comp=N,2349μm,0.4s						
PYL				AML	AML	00 15 34.3	
	comp=E,3475μm,0.4s						
ITM	**Ithomi**	**0.88**	**97**	P	**Pb**	**00 15 19.8**	**0.0**
ITM	**Ithomi**	**0.88**	**97**	P	**Pb**	**00 15 19.8**	**0.0**
ITM				S	**Sb**	**00 15 32.7**	**+1.2**
ITM	**Ithomi**	**0.88**	**97**	P	**Pg**	**00 15 19.7**	**+0.1**
ITM				S	**Sb**	**00 15 32.7**	**+1.2**
ITM				AML	AML	00 15 37.9	
	comp=N,2057μm,0.3s						
ITM				AML	AML	00 15 40.6	
	comp=E,1696μm,0.4s						
VLS	**Valsamata**	**0.91**	**348**	P	**Pg**	**00 15 20.2**	**+0.1**
VLS				S	**Sb**	**00 15 33.9**	**+1.5**
VLS	**Valsamata**	**0.91**	**348**	P	**Pg**	**00 15 20.3**	**+0.1**
VLS				S	**Sb**	**00 15 33.9**	**+1.5**
RLS	**Riolos of Patr**	**0.92**	**33**	P	**Pg**	**00 15 20.0**	**-0.3**
RLS				S	**Sb**	**00 15 33.5**	**+0.9**
RLS	**Riolos of Patr**	**0.92**	**33**	P	**Pg**	**00 15 20.1**	**-0.3**
RLS				S	**Sb**	**00 15 33.6**	**+0.9**
RLS	**Riolos of Patr**	**0.92**	**33**	S	**Sb**	**00 15 33.6**	**+0.9**
RLS				AML	AML	00 15 37.5	
	comp=N,3376μm,0.5s						
RLS				AML	AML	00 15 41.1	
	comp=E,1783μm,0.4s						
DRO	**Drossia**	**0.96**	**46**	P	**Pg**	**00 15 20.8**	**-0.4**
DRO				S	**Sb**	**00 15 34.9**	**+1.0**
DRO	**Drossia**	**0.96**	**46**	P	**Pg**	**00 15 20.8**	**-0.4**
DRO				S	**Sn**	**00 15 35.7**	**+0.1**
DRO	**Drossia**	**0.96**	**46**	P	**Pg**	**00 15 20.7**	**-0.5**
DRO				S	**Sn**	**00 15 35.7**	**+0.1**
DRO				AML	AML	00 15 44.5	
	comp=E,10758μm,0.5s						
DRO				AML	AML	00 15 44.6	
	comp=N,6651μm,0.5s						
TRIP	**Tripoli**	**1.17**	**78**	P	**Pg**	**00 15 24.4**	**-0.7**
TRIP				S	**Sn**	**00 15 42.2**	**+1.5**
TRIP	**Tripoli**	**1.17**	**78**	P	**Pg**	**00 15 24.4**	**-0.7**
TRIP				S	**Sn**	**00 15 42.2**	**+1.5**
TRIP				AML	AML	00 15 53.7	
	comp=E,1115μm,0.6s						
TRIP				AML	AML	00 15 56.7	
	comp=N,967μm,0.6s						
VLX	**Vlachokerasia**	**1.24**	**86**	P	**Pn**	**00 15 28.2**	**+2.5**
VLX	**Vlachokerasia**	**1.24**	**86**	P	**Pn**	**00 15 28.2**	**+2.5**
UPR	**University Cam**	**1.25**	**37**	P	**Pg**	**00 15 26.1**	**-0.5**
UPR				S	**Sn**	**00 15 45.2**	**+2.7**
UPR	**University Cam**	**1.25**	**37**	P	**Pg**	**00 15 26.1**	**-0.5**
UPR				S	**Sn**	**00 15 45.2**	**+2.7**
KLV	**Kalavryta, Ach**	**1.29**	**54**	P	**Pg**	**00 15 26.5**	**-0.9**
KLV				S	**Sn**	**00 15 45.5**	**+1.8**
KLV	**Kalavryta, Ach**	**1.29**	**54**	P	**Pg**	**00 15 26.5**	**-0.9**
KLV				S	**Sn**	**00 15 45.5**	**+1.8**
KLV				AML	AML	00 15 54.8	
	comp=E,934μm,0.6s						
KLV				AML	AML	00 15 57.7	
	comp=N,1054μm,0.8s						
LAKA	**Lakka**	**1.32**	**43**	P	**Pb**	**00 15 27.9**	**+0.7**
LAKA	**Lakka**	**1.32**	**43**	P	**Pb**	**00 15 27.9**	**+0.7**
LAKA				S	**Sn**	**00 15 46.9**	**+2.7**
LAKA	**Lakka**	**1.32**	**43**	P	**Pb**	**00 15 27.9**	**+0.7**
LAKA				S	**Sn**	**00 15 46.9**	**+2.7**
LAKA				AML	AML	00 15 53.6	
	comp=E,995μm,0.6s						
LAKA				AML	AML	00 15 56.0	
	comp=N,858μm,0.6s						
PDO	**Prodromos**	**1.34**	**12**	P	**Pn**	**00 15 27.9**	**+0.8**
PDO				S	**Sn**	**00 15 46.8**	**+2.0**
PDO	**Prodromos**	**1.34**	**12**	P	**Pn**	**00 15 27.9**	**+0.8**
PDO				S	**Sn**	**00 15 46.8**	**+2.0**
PDO	**Prodromos**	**1.34**	**12**	P	**Pn**	**00 15 27.2**	**+0.1**
PDO				S	**Sn**	**00 15 46.4**	**+3.6**
PDO				AML	AML	00 15 55.4	
	comp=E,5484μm,0.7s						
PDO				AML	AML	00 15 55.5	
	comp=N,6370μm,0.6s						
PVO	**Paravola**	**1.44**	**22**	P	**Pb**	**00 15 29.8**	**+0.5**
PVO	**Paravola**	**1.44**	**22**	P	**Pb**	**00 15 29.8**	**+0.5**
PVO				S	**Sn**	**00 15 50.4**	**+3.2**
PVO	**Paravola**	**1.44**	**22**	P	**Pg**	**00 15 30.4**	**+0.1**
PVO				S	**Sn**	**00 15 50.4**	**+3.2**
PVO				AML	AML	00 15 59.7	
	comp=N,2723μm,0.4s						
PVO				AML	AML	00 15 59.9	
	comp=E,2101μm,0.3s						
TRIZ	**Trizonia**	**1.46**	**42**	P	**Pg**	**00 15 30.2**	**-0.4**
TRIZ				S	**Sg**	**00 15 48.9**	**-0.7**
SERG	**Sergoula**	**1.49**	**40**	P	**Pn**	**00 15 29.9**	**+0.8**
SERG	**Sergoula**	**1.49**	**40**	P	**Pn**	**00 15 29.9**	**+0.8**
LKD2	**Lefkada island**	**1.51**	**355**	P	**Pg**	**00 15 31.6**	**0.0**
LKD2				S	**Sg**	**00 15 52.3**	**+1.2**
LKD2	**Lefkada island**	**1.51**	**355**	P	**Pg**	**00 15 31.6**	**0.0**
LKD2				S	**Sg**	**00 15 52.3**	**+1.2**
KALE	**Kalithea**	**1.51**	**43**	P	**Pb**	**00 15 30.9**	**+0.3**
KALE	**Kalithea**	**1.51**	**43**	P	**Pb**	**00 15 30.9**	**+0.3**
KALE				S	**Sg**	**00 15 52.3**	**+1.0**
KALE	**Kalithea**	**1.51**	**43**	P	**Pn**	**00 15 29.8**	**+0.3**
KALE				S	**Sg**	**00 15 52.3**	**+1.0**
KALE				AML	AML	00 16 01.9	
	comp=N,1631μm,0.9s						
KALE				AML	AML	00 16 03.7	
	comp=E,1017μm,0.4s						
THAL	**Thalero**	**1.64**	**62**	P	**Pg**	**00 15 33.8**	**-0.2**
THAL				S	**Sg**	**00 15 54.8**	**-0.4**
THAL	**Thalero**	**1.64**	**62**	P	**Pg**	**00 15 33.8**	**-0.2**
THAL				S	**Sg**	**00 15 54.8**	**-0.4**
THAL				AML	AML	00 16 05.9	
	comp=N,2124μm,0.6s						
THAL				AML	AML	00 16 13.6	
	comp=E,2173μm,0.5s						
DSF	**Desfina**	**1.75**	**50**	P	**Pg**	**00 15 35.7**	**-0.5**
DSF				S	**Sn**	**00 15 56.3**	**+1.3**
DSF	**Desfina**	**1.75**	**50**	P	**Pg**	**00 15 35.6**	**-0.5**
DSF				S	**Sn**	**00 15 56.3**	**+1.3**
DSF				AML	AML	00 16 06.5	
	comp=N,640μm,0.4s						
DSF				AML	AML	00 16 06.7	
	comp=E,594μm,0.3s						
EVR	**Evrytania**	**1.80**	**25**	P	**Pb**	**00 15 35.2**	**-0.3**
EVR	**Evrytania**	**1.80**	**25**	P	**Pb**	**00 15 35.2**	**-0.3**
EVR				S	**Sg**	**00 15 59.2**	**-1.4**
EVR	**Evrytania**	**1.80**	**25**	P	**Pg**	**00 15 36.5**	**-0.7**
EVR				AML	AML	00 16 08.9	
	comp=N,1284μm,0.6s						
LOUT	**Loutraki**	**1.84**	**67**	P	**Pg**	**00 15 37.1**	**-0.8**
LOUT				S	**Sg**	**00 16 00.4**	**-1.4**
LOUT	**Loutraki**	**1.84**	**67**	P	**Pg**	**00 15 37.1**	**-0.8**
LOUT				S	**Sg**	**00 16 00.4**	**-1.4**
LOUT				AML	AML	00 16 15.2	
	comp=N,590μm,0.7s						
LOUT				AML	AML	00 16 16.0	
	comp=E,826μm,0.6s						
DSL	**Palaion Diasel**	**1.86**	**6**	P	**Pb**	**00 15 36.7**	**+0.3**
DSL				S	**Sn**	**00 15 59.3**	**+1.7**
DSL	**Palaion Diasel**	**1.86**	**6**	P	**Pb**	**00 15 36.7**	**+0.3**
DSL				S	**Sn**	**00 15 59.3**	**+1.7**
DSL				AML	AML	00 16 14.1	
	comp=N,1166μm,0.5s						
DSL				AML	AML	00 16 21.2	
	comp=E,1162μm,0.5s						
PROD	**Prodromos**	**1.91**	**59**	P	**Pn**	**00 15 35.3**	**+0.5**
PROD	**Prodromos**	**1.91**	**59**	P	**Pn**	**00 15 35.3**	**+0.5**
DID	**Didima**	**1.93**	**83**	P	**Pn**	**00 15 35.7**	**+0.5**
DID	**Didima**	**1.93**	**83**	P	**Pn**	**00 15 35.7**	**+0.5**
KYTH	**Kithira**	**2.05**	**119**	P	**Pb**	**00 15 39.4**	**-0.3**
KYTH				S	**Sb**	**00 16 05.8**	**+0.7**
KYTH	**Kithira**	**2.05**	**119**	P	**Pb**	**00 15 39.4**	**-0.3**
AGG	**Agios Georgios**	**2.10**	**34**	P	**Pn**	**00 15 39.1**	**+1.6**
AGG	**Agios Georgios**	**2.10**	**34**	P	**Pn**	**00 15 39.1**	**+1.6**
VIL2	**Platees**	**2.14**	**64**	P	**Pb**	**00 15 41.7**	**+0.4**
VIL2				S	**Sb**	**00 16 07.0**	**-0.8**
VILL	**Villia**	**2.15**	**65**	P	**Pb**	**00 15 41.7**	**+0.2**
VILL				S	**Sn**	**00 16 07.0**	**+2.1**
LKR	**Lokris**	**2.19**	**51**	P	**Pn**	**00 15 40.1**	**+1.4**
LKR				S	**Sb**	**00 16 08.1**	**-1.0**
LKR	**Lokris**	**2.19**	**51**	P	**Pn**	**00 15 40.1**	**+1.4**
LKR				S	**Sb**	**00 16 08.2**	**-1.0**
LKR				AML	AML	00 16 15.4	
	comp=N,383μm,0.4s						
LKR				AML	AML	00 16 15.5	
	comp=E,315μm,0.4s						
ATAL	**Atalanti**	**2.23**	**50**	P	**Pn**	**00 15 40.8**	**+1.5**
ATAL				S	**Sn**	**00 16 08.1**	**+1.4**
ATAL	**Atalanti**	**2.23**	**50**	P	**Pn**	**00 15 40.8**	**+1.5**
ATAL				S	**Sn**	**00 16 08.1**	**+1.4**
ATAL				AML	AML	00 16 15.7	
	comp=E,208μm,0.4s						
ATAL				AML	AML	00 16 22.6	
	comp=N,264μm,0.9s						
IGT	**Igoumenitsa**	**2.28**	**350**	P	**Pn**	**00 15 41.2**	**+1.3**
IGT	**Igoumenitsa**	**2.28**	**350**	P	**Pn**	**00 15 41.2**	**+1.3**
SGD	**Sagiada**	**2.37**	**349**	P	**Pn**	**00 15 43.7**	**+2.5**
SGD	**Sagiada**	**2.37**	**349**	P	**Pn**	**00 15 43.7**	**+2.5**
ATHU	**Athens Univers**	**2.44**	**73**	P	**Pn**	**00 15 43.4**	**+1.2**
ATHU	**Athens Univers**	**2.44**	**73**	P	**Pn**	**00 15 43.4**	**+1.2**
THL	**Klokotos Trika**	**2.46**	**22**	P	**Pn**	**00 15 44.1**	**+1.7**
THL	**Klokotos Trika**	**2.46**	**22**	P	**Pn**	**00 15 44.1**	**+1.7**
SMIA	**Simia**	**2.46**	**49**	P	**Pn**	**00 15 43.9**	**+1.5**
SMIA				S	**Sn**	**00 16 15.1**	**+2.7**
SMIA	**Simia**	**2.46**	**49**	P	**Pn**	**00 15 43.9**	**+1.5**
SMIA				S	**Sn**	**00 16 15.1**	**+2.7**
SMIA				AML	AML	00 16 23.8	
	comp=E,757μm,0.5s						
SMIA				AML	AML	00 16 25.9	
	comp=N,973μm,0.5s						
EREA	**Eretria**	**2.70**	**64**	P	**Pn**	**00 15 46.0**	**+0.2**
EREA	**Eretria**	**2.70**	**64**	P	**Pn**	**00 15 46.0**	**+0.2**
EREA				AML	AML	00 15 59.4	
	comp=N,125μm,0.2s						
EREA				AML	AML	00 16 00.6	
	comp=E,100μm,0.5s						
SKIA	**Skiathos**	**2.80**	**47**	P	**Pn**	**00 15 48.6**	**+1.5**
SKIA				S	**Sn**	**00 16 21.7**	**+0.9**
SKIA	**Skiathos**	**2.80**	**47**	P	**Pn**	**00 15 48.6**	**+1.5**
SKIA				S	**Sn**	**00 16 21.7**	**+0.9**
SKIA				AML	AML	00 16 29.6	
	comp=N,100μm,0.3s						
SKIA				AML	AML	00 16 34.9	
	comp=E,143μm,0.4s						
LIT	**Litokhoron**	**3.10**	**24**	P	**Pn**	**00 15 52.4**	**+1.2**
LIT	**Litokhoron**	**3.10**	**24**	P	**Pn**	**00 15 52.4**	**+1.2**
IDI	**Anoyia**	**3.84**	**120**	Pn	**Pn**	**00 16 01.3**	**-0.2**
	comp=E,0.4nm,0.3s,baz=310,slow=7.9,SNR=5.0						
IDI				Sn	**Sn**	**00 16 45.9**	**-0.6**
	comp=E,2.6nm,0.3s,baz=247,slow=1.0,SNR=6.9						
TAR1	**Taranto**	**4.26**	**321**	*e*Pn	**Pn**	**00 16 07.7**	**+0.6**
SG1	**Sgolgore (BA)**	**4.80**	**319**	*e*Pn	**Pn**	**00 16 15.7**	**+1.1**
BAI	**Bari**	**4.90**	**322**	*e*Pn	**Pn**	**00 16 16.0**	**+0.1**
VAE	**Valguarnera**	**5.12**	**274**	Pn	**Pn**	**00 16 20.1**	**+1.0**
	comp=E,1.2nm,0.3s,baz=90,slow=8.1,SNR=3.5						
VAE				Sn	**Sn**	**00 17 21.1**	**+3.1**
	comp=E,2.9nm,0.3s,baz=38,slow=20,SNR=2.5						
BARS	**Barje**	**5.58**	**7**	*i*Pn	**Pn**	**00 16 25.6**	**+0.3**
GRUS	**Gruza**	**6.60**	**359**	*i*Pn	**Pn**	**00 16 39.0**	**-0.3**
BBLS	**Lazići**	**6.66**	**351**	*e*Pn	**Pn**	**00 16 41.4**	**+1.4**
DIVS	**Divibare**	**6.84**	**355**	*e*Pn	**Pn**	**00 16 42.0**	**-0.6**
TEKS	**Tekeris**	**7.32**	**353**	*i*Pn	**Pn**	**00 16 48.2**	**-1.1**
UDBI	**Udbina**	**8.19**	**334**	*i*Pn	**Pn**	**00 17 00.6**	**-0.6**
UDBI				Sn	**Sn**	**00 18 29.7**	**-3.8**
NVLJ	**Novalja**	**8.55**	**330**	*e*Pn	**Pn**	**00 17 06.8**	**+0.7**
NVLJ				Sn	**Sn**	**00 18 35.7**	**-6.7**
NVLJ	**Novalja**	**8.55**	**330**	*e*Pn	**Pn**	**00 17 06.8**	**+0.7**
MLR	**Muntele Rosu**	**9.05**	**23**	Pn	**Pn**	**00 17 12.1**	**-0.9**
	comp=E,0.0nm,0.3s,baz=190,slow=13,SNR=1.9						
KEST	**Kesra**	**9.38**	**264**	Pn	**Pn**	**00 17 18.6**	**+1.0**
	comp=E,0.1nm,0.3s,baz=36,slow=19,SNR=3.9						
KEST				Sn	**Sn**	**00 19 00.2**	**-2.6**
	comp=E,0.1nm,0.3s,baz=73,slow=19,SNR=2.8						
HFS	**Hagfors**	**23.32**	**351**	P	**P**	**00 20 08.2**	**-2.0**
	comp=E,0.9nm,0.6s,baz=156,slow=9.5,SNR=12						
EKA	**Eskdalemuir Ar**	**24.30**	**326**	P	**P**	**00 20 19.3**	**-0.3**
	comp=E,1.3nm,0.6s,baz=123,slow=9.3,SNR=8.0						
FINES	**FINESS Array B**	**24.41**	**6**	P	**P**	**00 20 19.0**	**-1.5**
	comp=E,5.0nm,1.2s,baz=167,slow=9.2,SNR=3.6						
NOA	**NORSAR Array B**	**24.54**	**349**	P	**P**	**00 20 20.4**	**-1.3**
	comp=E,0.8nm,0.7s,baz=157,slow=9.1,SNR=3.7						
MKAR	**Makanchi Array**	**45.56**	**58**	P	**P**	**00 23 20.0**	**-2.1**
	comp=E,0.2nm,0.5s,baz=268,slow=7.2,SNR=2.7						

IDC 30 00:26:33.6±2.1,6.°77S×129.°14E,h0km,mb3.8/1, mb1 3.9/3,mb1mx3.5/21,mbtmp3.7/3,ML3.8/2,Error ellipse: s-maj=147.3km s-min=30.7km az=67.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**14.04**	**159**	Pn	Pn	00 29 53.3	-0.6
	0.3nm,0.3s,baz=342,slow=13,SNR=17						
WRA				Sn	Sn	00 32 15.3	-15
	0.9nm,0.3s,baz=338,slow=22,SNR=12						
ASAR	**Alice Springs**	**17.42**	**165**	P	Pn	00 30 38.6	+0.4
	0.6nm,0.3s,baz=345,slow=10,SNR=28						
ASAR				S	Sn	00 33 37.5	-15
	0.2nm,0.3s,baz=328,slow=15,SNR=4.7						
MKAR	**Makanchi Array**	**67.56**	**327**	P	P	00 37 32.0	0.0
	0.5nm,0.5s,baz=123,slow=7.2,SNR=9.3						

DDA ***30*** *00:41:43.9,39.°11N×29.°08E,h7km,Md2.7*
ISK ***30*** *00:41:44.6,39.°11N×29.°15E,h6km,MD2.7*
CSEM ***30*** *00:41:44.6±0.2,39.°08N×29.°11E,h2km,MD2.7,Error ellipse: s-maj=5.7km s-min=3.5km az=136.0*
ISC 30 00:41:44.6±1.0,39.°09N±0.°03×29.°09E±0.°03,h7km±11km, n26,σ0°58/36,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GEDZ	**Gediz**	**0.25**	**100**	*e*PG	**Pg**	**00 41 49.8**	**+0.2**
GEDZ	**Gediz**	**0.25**	**100**	*e*Pg	**Pg**	**00 41 49.8**	**+0.2**
DEMI	**Demirci**	**0.29**	**261**	*i* P	**Pg**	**00 41 50.6**	**+0.2**
DEMI				*i* S	**Sg**	**00 41 54.5**	**+0.2**
DEMI	**Demirci**	**0.29**	**261**	P	**Pg**	**00 41 50.6**	**+0.2**
DEMI				S	**Sg**	**00 41 54.5**	**+0.2**
GDZ	**Gediz**	**0.30**	**90**	*i* P	**Pg**	**00 41 50.7**	**+0.1**
GDZ				*i* S	**Sg**	**00 41 55.3**	**+0.7**
GDZ	**Gediz**	**0.30**	**90**	P	**Pg**	**00 41 50.7**	**+0.1**
GDZ				S	**Sg**	**00 41 55.3**	**+0.7**
TVSB	**Tavsanli**	**0.46**	**39**	*e*PG	**Pg**	**00 41 53.0**	**-0.5**
TVSB				*e*SG	**Sg**	**00 41 58.8**	**-0.8**
TVSB	**Tavsanli**	**0.46**	**39**	*e*Pg	**Pg**	**00 41 53.0**	**-0.5**
TVSB				*e*Sg	**Sg**	**00 41 58.8**	**-0.8**
DST	**Dursunbey**	**0.63**	**325**	*e*PG	**Pb**	**00 41 58.0**	**0.0**
DST	**Dursunbey**	**0.63**	**325**	*e*Pg	**Pb**	**00 41 58.0**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**210**	*e*PG	**Pg**	**00 41 57.8**	**+0.4**
KULA	**Kula-Manisa**	**0.67**	**210**	*e*Pg	**Pg**	**00 41 57.8**	**+0.4**
MANT	**Manisa**	**0.73**	**215**	*i* P	**Pg**	**00 41 57.3**	**-1.3**
MANT				*i* S	**Sg**	**00 42 07.2**	**-0.9**
MANT	**Manisa**	**0.73**	**215**	P	**Pg**	**00 41 57.3**	**-1.3**
MANT				S	**Sg**	**00 42 07.2**	**-0.9**
IZI	**Iznik**	**1.28**	**13**	*e*PN	**Pn**	**00 42 09.6**	**+0.6**
IZI	**Iznik**	**1.28**	**13**	*e*Pn	**Pn**	**00 42 09.6**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*PN	**Pg**	**00 42 09.8**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*Pn	**Pg**	**00 42 09.8**	**+0.5**
BORA	**Eskisehir**	**1.32**	**53**	*i* P	**Pn**	**00 42 09.2**	**-0.3**
BORA				*i* S	**Sb**	**00 42 26.6**	**-0.2**
BORA	**Eskisehir**	**1.32**	**53**	P	**Pn**	**00 42 09.2**	**-0.3**
BORA				S	**Sb**	**00 42 26.6**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**220**	*e*PN	**Pg**	**00 42 13.6**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**220**	*e*Pn	**Pg**	**00 42 13.6**	**+0.7**
ARMT	**Armutlu**	**1.48**	**353**	*e*PN	**Pg**	**00 42 12.8**	**-0.2**
ARMT	**Armutlu**	**1.48**	**353**	*e*Pn	**Pg**	**00 42 12.8**	**-0.2**
GULT	**Gulveren**	**1.73**	**39**	*e*PN	**Pn**	**00 42 15.5**	**+0.3**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn	**Pn**	**00 42 15.5**	**+0.3**

SJA ***30*** *01:02:11.6±0.6,25.°04S×70.°94W,h253km±26km,ML4.0, MW3.7*

IDC ***30*** *01:02:12.9±2.0,25.°54S×71.°23W,h0km,mb1 4.0/4, mb1mx3.7/26,mbtmp4.0/4,ML4.0/4,Error ellipse: s-maj=57.1km s-min=30.4km az=125.0*

ISCJB ***30*** *01:02:19.0±0.9,25.°52S±0.°03×70.°78W±0.°1,h35km,Error ellipse: s-maj=15.5km s-min=4.1km az=0.2*

NEIC ***30*** *01:02:18.0,25.°52S×70.°49W,h23km,ML4.1(GUC),After GUC.*

NEIC Felt [II] at Taltal.

GUC ***30*** *01:02:18.3±0.6,25.°52S×70.°49W,h23km±5km,ML4.1*

ISC 30 01:02:18.4±1.2,25.°52S±0.°04×70.°9W±0.°1,h35km,n21, σ2°59/23,Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ANCH	**Antofagasta**	**1.87**	**13**	*i* P	**Pn**	**01 02 49.1**	**+1.1**
ANCH				*i* S	**Sn**	**01 03 13.5**	**+3.1**
CPCH	**Copiapo**	**1.89**	**166**	*i* P	**Pn**	**01 02 49.5**	**+1.2**
CPCH				*i* S	**Sn**	**01 03 11.9**	**+1.0**
PB10	**IPOC Station P**	**2.01**	**8**	*i* P	**Pn**	**01 02 51.2**	**+1.3**
PB06	**IPOC Station P**	**3.03**	**23**	*i* P	**Pn**	**01 03 04.3**	**+0.2**
PB06				*i* S	**Sn**	**01 03 41.8**	**+2.5**
PB06				IAML		01 03 55.5	
	comp=N,514nm,0.3s						
LVC	**Limon Verde**	**3.40**	**32**	Pn	**Pn**	**01 03 09.6**	**+0.3**
	comp=N,96nm,0.3s,baz=155,slow=6.9,SNR=30						
LVC				Pg		01 03 20.4	
	comp=N,1μm,0.3s,baz=214,slow=12,SNR=39						
LVC				Sn	**Sn**	**01 03 52.9**	**+4.3**
	comp=N,3μm,0.3s,baz=215,slow=4.9,SNR=16						
LVC	**Limon Verde**	**3.40**	**32**	*i* P	**Pn**	**01 03 10.3**	**+1.0**
LVC				*i* S	**Sn**	**01 03 50.4**	**+1.8**
LCO	**Las Campanas**	**3.49**	**178**	*i* P	Pn	01 03 14.2	+3.7
LCO				*i* S	**Sn**	**01 03 56.2**	**+5.6**
LCO				IAML		01 04 10.8	
	comp=N,263nm,0.4s						
LCO	**Las Campanas**	**3.49**	**178**	*e*Pn	**Pn**	**01 03 10.3**	**-0.2**
LCO				*e*Sn	**Sn**	**01 03 49.8**	**-0.9**
VCA	**Vinchina**	**3.99**	**144**	*i* P	Pn	01 03 20.6	+3.4
VCA				IAML		01 03 24.0	
	comp=Z,95nm,0.3s						
VCA				*i* S	Sn	01 04 12.7	+10
FSA	**Cafayete**	**4.44**	**99**	*i*

KLR	**Kul'dur**	**14.08 328**	Pn	**Pn**	**01 10 08.8**	**-0.2**
	0.1nm,0.3s,baz=137,slow=13,SNR=5.2						
SEY	**Seymchan**	**25.81 10**	P	**P**	**01 12 22.4**	**+2.1**
	2.1nm,0.6s,baz=203,slow=8.1,SNR=7.8						
H11N2	**WAKE ISLAND Hy 27.41 124**		T	T	01 41 14.5		
	baz=316,slow=75,SNR=68						
H11N1	**WAKE ISLAND Hy 27.42 124**		T	T	01 41 15.1		
	baz=316,slow=75,SNR=52						
H11N3	**WAKE ISLAND Hy 27.43 124**		T	T	01 41 17.3		
	baz=316,slow=75,SNR=58						
H11S1	**WAKE ISLAND Hy 28.17 126**		T	T	01 42 10.8		
	baz=318,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy 28.17 127**		T	T	01 42 10.1		
	baz=318,slow=76,SNR=20						
H11S2	**WAKE ISLAND Hy 28.19 126**		T	T	01 42 10.3		
	baz=318,slow=76,SNR=22						
ZALV	**Zalesovo Beam**	**42.42 312**	PcP	**PcP**	**01 16 36.2**	**-0.4**
	0.8nm,0.3s,baz=101,slow=6.0,SNR=3.2						
MKAR	**Makanchi Array**	**44.87 302**	P	**P**	**01 15 05.0**	**+1.3**
	0.5nm,0.5s,baz=80,slow=7.9,SNR=3.4						
KURK	**Kurchatov**	**46.54 308**	*e*P	**P**	**01 15 17.7**	**+0.9**
	35nm,0.7s						
ILAR	**Eielson Array**	**48.13 33**	P	**P**	**01 15 30.1**	**+1.2**
	0.9nm,0.8s,baz=265,slow=6.5,SNR=11						
ARU	**Arti**	**56.70 319**	*e*P	**P**	**01 16 33.2**	**+0.6**
	2.0nm,0.6s						
WRA	**Warramunga Arr**	**58.01 190**	P	**P**	**01 16 41.3**	**-0.9**
	1.6nm,0.8s,baz=7.7,slow=7.4,SNR=6.7						
ABKAR	**Akbulak array**	**58.49 310**	*e*P	**P**	**01 16 42.7**	**-2.6**
	0.7nm,0.5s						
KBS	**Kingsbay**	**60.15 350**	*e*P	**P**	**01 16 55.5**	**-0.8**
	24nm,1.1s						
ASAR	**Alice Springs**	**61.74 190**	P	**P**	**01 17 06.0**	**-1.8**
	0.4nm,0.6s,baz=7.7,slow=7.6,SNR=2.9						
GEYT	**Allbeck**	**64.65 299**	LR	LR	01 46 31.0		
	comp=Z,26nm,19.2s,baz=350,slow=37						
FINES	**FINESS Array B**	**68.78 333**	P	**P**	**01 17 54.0**	**+1.0**
	1.4nm,0.6s,baz=36,slow=10.0,SNR=6.7						
KBZ	**Khabaz**	**71.44 311**	P	**P**	**01 18 08.4**	**-1.2**
	0.8nm,0.5s,baz=0.0,slow=1.0,SNR=2.3						
NB2	**NORSAR Subarra**	**74.01 338**	P	**P**	**01 18 25.3**	**+0.6**
	comp=Z,1.7nm,0.9s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.01 338**	P	**P**	**01 18 25.7**	**+1.0**
	comp=Z,1.0nm,0.8s,baz=40,slow=5.7,SNR=4.3						
ELK	**Elko**	**74.03 51**	*e*P	**P**	**01 18 25.0**	**-0.4**
	comp=Z,1.1nm,0.5s						
AKASG	**Malin Array Be**	**74.53 323**	P	**P**	**01 18 28.8**	**+1.0**
	comp=Z,0.5nm,0.4s,baz=51,slow=7.5,SNR=4.3						
PDAR	**Pinedale Array**	**76.17 46**	P	**P**	**01 18 37.7**	**0.0**
	comp=Z,0.4nm,0.7s,baz=274,slow=4.4,SNR=4.3						
BRTR	**Keskin Array B**	**79.36 312**	P	**P**	**01 18 56.9**	**+1.4**
	comp=Z,0.6nm,0.8s,baz=76,slow=6.1,SNR=3.9						
GERES	**GERESS Array B**	**82.78 329**	P	**P**	**01 19 13.7**	**+0.3**
	comp=Z,0.2nm,0.4s,baz=38,slow=3.7,SNR=3.1						
TXAR	**Lajitas Array**	**88.59 53**	P	**P**	**01 19 43.5**	**+0.8**
	comp=Z,0.1nm,0.5s,baz=316,slow=2.5,SNR=2.7						

*IDC **30** 01:06:58.4±5.1, 13°.22N×88°.27W, h0km, mb3.5/2, mb1 3.9/3, mb1mx3.5/33, mbtmp3.6/3, ML3.3/1, Error ellipse: s-maj=112.7km s-min=66.0km az=21.0*

*ISCJB **30** 01:07:04.3±0.8, 12°.80N±0°.09×89°.03W±0°.06, h65km±12km, mb3.5/2, Error ellipse: s-maj=17.6km s-min=4.3km az=31.5*

*CASC **30** 01:07:05.2±1.5, 12°.81N×89°.03W, h38km±459km, ML3.6*

ISC 30 01:07:04.8±1.6, 12.77N±0°.10×89.06W±0°.07, h45km±18km, n32, σ0s82/42, 6C-1D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LFRS	**El Faro**	**0.85**	**360**	⇑*i*P	**Pn**	**01 07 20.3**	**-0.2**
SNVI	**San Vicente**	**0.87**	**14**	*e*P	**Pn**	**01 07 20.7**	**-0.1**
COLS	**Colinas**	**0.92**	**345**	⇑*e*P	**Pn**	**01 07 21.5**	**0.0**
COLS				*e*S	**Sn**	**01 07 33.7**	**0.0**
SNET	**Serv Nac Est T**	**0.93**	**350**	*e*P	**Pn**	**01 07 21.4**	**-0.2**
SNET				*e*S	**Sn**	**01 07 33.2**	**-0.7**
SNET				AML	AML	01 07 36.7	
	comp=Z,9μm,0.3s						
LBRS	**Las Brisas**	**0.97**	**1**	⇑*e*P	**Pn**	**01 07 22.1**	**+0.1**
LFU	**La Fuente**	**0.98**	**357**	⇑*i*P	**Pn**	**01 07 22.4**	**+0.2**
LFU				*e*S	**Sn**	**01 07 34.9**	**-0.1**
BOQS	**Boqueron**	**0.99**	**348**	⇓*e*P	**Pn**	**01 07 22.7**	**+0.3**
BOQS				*e*S	**Sn**	**01 07 35.1**	**-0.3**
LCY	**Lacayo**	**0.99**	**49**	*e*P	**Pn**	**01 07 22.3**	**-0.1**
PACA	**Pacayal**	**1.00**	**46**	⇑*e*P	**Pn**	**01 07 22.7**	**+0.2**
VSM	**San Miguel**	**1.01**	**49**	*e*P	**Pn**	**01 07 23.0**	**+0.2**
SBLS	**San Blas**	**1.20**	**333**	*e*P	**Pn**	**01 07 25.7**	**+0.4**
SBLS				*e*S	**Sn**	**01 07 40.7**	**+0.1**
SNJE	**San Jose**	**1.22**	**334**	*e*P	**Pn**	**01 07 25.7**	**+0.1**
SNJE				*e*S	**Sn**	**01 07 40.5**	**-0.5**
MONT	**Ecomontaæa**	**1.23**	**332**	*e*P	**Pn**	**01 07 26.1**	**+0.4**
RTR	**El Retiro**	**1.26**	**333**	*e*P	**Pn**	**01 07 26.9**	**+0.7**
CAHU	**Cacacuatique**	**1.30**	**40**	*e*P	**Pn**	**01 07 27.0**	**+0.3**
CNCH	**Conchagua**	**1.30**	**67**	*e*P	**Pn**	**01 07 26.7**	**+0.1**
CNCH				*e*S	**Sn**	**01 07 43.5**	**+0.7**
CUS1	**Cusmapa**	**1.43**	**323**	*e*P	**Pn**	**01 07 28.7**	**+0.4**
RBDL	**Robledal**	**1.47**	**336**	⇑*e*P	**Pn**	**01 07 29.8**	**+0.8**
CNGN	**Cerro Negro**	**2.32**	**96**	*e*P	**Pn**	**01 07 41.0**	**+0.4**
CNGN				AML	AML	01 08 08.5	
	comp=N,450nm,0.5s						
COPN	**Copaltepe**	**2.48**	**103**	*e*P	**Pn**	**01 07 43.1**	**+0.4**
COPN				*e*S	**Sn**	**01 08 11.8**	**+0.1**
MOMN	**Momotombo**	**2.49**	**98**	*e*P	**Pn**	**01 07 43.1**	**+0.3**
ESTN	**Estel**	**2.65**	**82**	*e*P	**Pn**	**01 07 45.5**	**+0.5**
XAVN	**Gruta Xavier**	**2.74**	**103**	*e*P	**Pn**	**01 07 46.5**	**+0.2**
TISN	**Laguna Tiscapa**	**2.80**	**103**	*e*P	**Pn**	**01 07 46.2**	**-0.8**
MGAN	**Managua**	**2.82**	**102**	*e*P	**Pn**	**01 07 46.4**	**-0.9**
MGAN				*e*S	**Sn**	**01 08 19.4**	**-0.6**
MGAN				AML	AML	01 08 21.0	
	comp=N,73nm,0.3s						
CONN	**Concepcion**	**3.56**	**109**	*e*P	**Pn**	**01 07 58.8**	**+1.2**
ACON	**Acoyapa**	**3.88**	**101**	*e*P	**Pn**	**01 08 02.6**	**+0.7**
ESPN	**Las Esperanzas**	**4.68**	**96**	*e*P	**Pn**	**01 08 13.6**	**+0.6**
CMIG	**Matias Romero**	**7.08**	**308**	Pn	**Pn**	**01 08 47.4**	**+1.5**
	comp=N,0.5nm,0.3s,baz=153,slow=8.9,SNR=9.0						
CMIG				Sn	**Sn**	**01 10 03.4**	**-1.7**
	comp=N,0.4nm,0.3s,baz=82,slow=15,SNR=2.8						
TXAR	**Lajitas Array**	**21.35**	**323**	P	**P**	**01 11 49.9**	**+1.5**
	comp=N,0.5nm,0.4s,baz=144,slow=11,SNR=18						
YKA	**Yellowknife Ar**	**52.90**	**345**	P	**P**	**01 16 13.7**	**-2.3**
	comp=N,0.5nm,0.4s,baz=129,slow=8.8,SNR=4.3						
WRA	**Warramunga Arr**	**137.84**	**254**	PKP	**PKPdf**	**01 26 27.4**	**+2.2**
	comp=N,0.4nm,0.9s,baz=79,slow=1.8,SNR=2.7						

*NIED **30** 01:07:00, 34°.10N×135°.20E, h8km, Mw3.8 Best double couple: M₀5.46000×10¹⁴ NP1:φ=237.00000°, δ=39.00000°, λ=140.00000°. NP2:φ=360.00000°, δ=66.00000°, λ=58.00000°.*

*IDC **30** 01:07:03.2±1.0, 34°.03N×135°.30E, h0km, mb3.9/6, mb1 4.0/9, mb1mx3.7/46, mbtmp3.9/9, ML3.5/2, MS3.2/1, Ms1 3.2/1, ms1mx2.3/35, Error ellipse: s-maj=23.4km s-min=16.9km az=54.0*

*ISCJB **30** 01:07:04.3±0.4, 34°.07N±0°.03×135°.23E±0°.04, h22km±4km, mb3.9/8, MS3.0/1, Error ellipse: s-maj=5.8km s-min=4.7km az=155.5*

*JMA **30** 01:07:04.7, 34°.09N×135°.22E, h7km, M4.0 Broadband fault plane solution: P waves. NP1:φ=17.00000°, δ=65.00000°, λ=81.00000°. NP2:φ=218.00000°, δ=27.00000°, λ=109.00000°. Principal axes: T Plg69.0000°, Azm268.0000°; N Plg9.0000°, Azm21.0000°; P Plg19.0000°, Azm114.0000°;*

JMA Felt III J1.

*NEIC **30** 01:07:09.3±4.6, 34°.00N×135°.09E, h42km±33km, mb4.2/2 Error ellipse: s-maj=57.2km s-min=10.8km az=71.0*

NEIC Recorded [3 JMA] in Wakayama.

ISC 30 01:07:05.1±1.0, 34°.09N±0°.03×135°.23E±0°.03, h10km±7km, n27, σ0s93/30, mb4.0/8, 1C-6D, Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JWM	**Minabe**	**0.26**	**156**	⇓P	**Pg**	**01 07 10.1**	**-0.3**
JWM				S	**Sg**	**01 07 13.7**	**-0.3**
JWY	**Kouya**	**0.33**	**67**	P	**Pg**	**01 07 11.2**	**-0.5**
JWY				S	**Sg**	**01 07 16.2**	**+0.1**
JAJ2	**Tsuna**	**0.44**	**319**	⇓P	**Pg**	**01 07 13.2**	**-0.5**
JAJ2				S	**Sg**	**01 07 19.1**	**-0.3**
JHE	**Heguri**	**0.68**	**34**	⇑P	**Pg**	**01 07 17.8**	**-0.4**
JHE				S	**Sg**	**01 07 27.0**	**-0.1**
JWZ	**Kozaga**	**0.69**	**144**	⇓P	**Pg**	**01 07 17.9**	**-0.5**
JWZ				S	**Sg**	**01 07 27.2**	**-0.2**
JAI	**Aioi**	**0.71**	**246**	⇓P	**Pg**	**01 07 18.0**	**-0.8**
JAI				S	**Sg**	**01 07 27.0**	**-1.1**
JKN2	**Miekihoku**	**0.88**	**80**	⇓P	**Pg**	**01 07 21.2**	**-0.8**
JKS	**Kasai**	**0.95**	**341**	⇓P	**Pg**	**01 07 22.5**	**-0.8**
JKS				S	**Sg**	**01 07 34.9**	**-0.8**
JNU	**Nakatsue**	**3.76**	**256**	Pn	**Pn**	**01 08 03.1**	**0.0**
	4.3nm,0.3s,baz=33,slow=2.9,SNR=14						
JNU				Pg	**Pb**	**01 08 14.2**	**+2.7**
	15nm,0.3s,baz=53,slow=13,SNR=24						
JNU				Lg	Lg	01 09 03.8	
	4.7nm,0.3s,baz=143,slow=20,SNR=4.4						
KSRS	**Korea Array**	**6.82**	**302**	Pn	**Pn**	**01 08 46.1**	**+1.0**
	1.0nm,0.3s,baz=116,slow=14,SNR=16						
KSAR	**Wonju Array Be**	**6.84**	**301**	Pn	**Pn**	**01 08 46.1**	**+0.7**
USRK	**Ussuriysk Ar.**	**10.40**	**347**	Pn	**Pn**	**01 09 35.3**	**+1.0**
	0.1nm,0.3s,baz=123,slow=15,SNR=6.7						
GUMO	**Guam**	**22.20**	**154**	LR	LR	01 17 47.8	
	comp=Z,66nm,21.1s,baz=243,slow=29						
SONM	**Songino Array**	**25.57**	**311**	P	**P**	**01 12 34.2**	**0.0**
	1.8nm,0.8s,baz=122,slow=8.7,SNR=9.3						
H11N2	**WAKE ISLAND Hy 31.50**		**109**	T	T	01 45 53.3	
	baz=303,slow=74,SNR=13						
H11N1	**WAKE ISLAND Hy 31.51**		**109**	T	T	01 45 53.6	
	baz=303,slow=74,SNR=13						
H11N3	**WAKE ISLAND Hy 31.52**		**109**	T	T	01 45 54.5	
	baz=303,slow=74,SNR=18						
H11S3	**WAKE ISLAND Hy 32.03**		**111**	T	T	01 46 36.4	
	baz=305,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy 32.04**		**111**	T	T	01 46 35.6	
	baz=305,slow=75,SNR=15						
H11S2	**WAKE ISLAND Hy 32.05**		**111**	T	T	01 46 37.0	
	baz=305,slow=75,SNR=10						
ZALV	**Zalesovo Beam**	**40.30**	**315**	P	**P**	**01 14 42.5**	**+0.2**
	1.2nm,0.4s,baz=104,slow=6.1,SNR=4.9						
ZALV				PcP	**PcP**	**01 16 45.5**	**-0.2**
	1.1nm,0.3s,baz=92,slow=3.5,SNR=4.8						
MKAR	**Makanchi Array**	**41.49**	**304**	P	**P**	**01 14 51.9**	**-0.4**
	0.4nm,0.5s,baz=83,slow=12,SNR=4.7						
BRVK	**Borovoye**	**48.93**	**314**	*e*P	**P**	**01 15 50.4**	**-0.8**
	1.2nm,0.3s						
FITZ	**Fitzroy Crossi**	**52.70**	**191**	P	**P**	**01 16 17.8**	**-2.0**
	4.1nm,1.1s,baz=27,slow=9.0,SNR=2.7						
WRAB	**Tennant Creek**	**53.73**	**181**	*e*P	**P**	**01 16 26.7**	**-0.7**
	1.0nm,0.6s						
WRA	**Warramunga Arr**	**53.74**	**181**	P	**P**	**01 16 26.6**	**-0.9**
	3.0nm,0.9s,baz=357,slow=7.7,SNR=17						
WRA				PcP	**PcP**	**01 17 34.6**	**+1.1**
	0.3nm,0.5s,baz=5.1,slow=4.3,SNR=2.9						
ASAR	**Alice Springs**	**57.45**	**181**	P	**P**	**01 16 53.9**	**-0.3**
	0.6nm,0.9s,baz=353,slow=6.5,SNR=4.4						

*CSEM **30** 01:17:13.6±1.8, 81°.46N×19°.55E, h10km, ML2.3, Error ellipse: s-maj=40.4km s-min=30.2km az=178.0*

BER 30 01:17:12.3±3.4, 81°.72N×19°.73E, h15km±318km, ML2.3, ML2.5(NAO), Svalbard region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBS	**Kingsbay**	**3.10**	**209**	*e*P	Pn	01 17 58.5	-2.0
KBS				*e*S	Sn	01 18 32.4	-4.9
KBS	**Kingsbay**	**3.10**	**209**	*e*P	Pn	01 17 58.5	-2.1
	SNR=55						
KBS				*e*S	Sn	01 18 32.4	-4.9
	SNR=55						
SPA0	**Spitsbergen Ar**	**3.61**	**191**	Pn	Pn	01 18 06.0	-1.6
	baz=20,slow=14						
SPA0				Sn	Sn	01 18 47.1	-2.9
SPA0	**Spitsbergen Ar**	**3.61**	**191**	Pn	Pn	01 18 06.0	-1.6
	baz=20,slow=14						
SPA0				Sn	Sn	01 18 47.1	-2.9
SPA0	**Spitsbergen Ar**	**3.61**	**191**	Pn	Pn	01 18 06.0	-1.6
	SNR=55						
SPA0				Sn	Sn	01 18 47.1	-2.8
	SNR=55						
HSP	**Hornsund**	**4.80**	**191**	Pn	Pn	01 18 24.2	+0.3
HSPB	**Hornsund (broa**	**4.81**	**191**	Pn	Pn	01 18 24.2	+0.2
HSPB	**Hornsund (broa**	**4.81**	**191**	Pn	Pn	01 18 24.2	+0.2
	SNR=55						
HOPEN	**Hopen**	**5.33**	**167**	Pn	Pn	01 18 29.7	-1.5
HOPEN				Sn	Sn	01 19 27.8	-4.4
HOPEN	**Hopen**	**5.33**	**167**	Pn	Pn	01 18 29.7	-1.5
HOPEN				Sn	Sn	01 19 27.8	-4.4
HOPEN				IAML		01 19 31.0	
	comp=Z,8.5nm,0.1s						
HOPEN	**Hopen**	**5.33**	**167**	Pn	Pn	01 18 29.7	-1.5
	SNR=55						
HOPEN				Sn	Sn	01 19 27.8	-4.4
	SNR=55						
ARA0	**ARCESS Array S**	**12.33**	**170**	Pn	Pn	01 20 05.1	-1.9
	baz=9.4,slow=18						
ARA0				Sn	Sn	01 22 13.7	-10
	baz=2.4,slow=22						
ARA0	**ARCESS Array S**	**12.33**	**170**	Pn	Pn	01 20 05.1	-1.9
	baz=9.4,slow=18						
ARA0				Sn	Sn	01 22 13.7	-10
	baz=2.4,slow=22						
ARA0	**ARCESS Array S**	**12.33**	**170**	Pn	Pn	01 20 05.1	-1.9
	SNR=55						

*ISCJB **30** 01:24:39.7±0.9, 24°.66N±0°.07×122°.52E±0°.02, h100km±7km, Error ellipse: s-maj=11.6km s-min=3.4km az=178.5*

*TAP **30** 01:24:39.9, 24°.66N×122°.53E, h96km±1km, ML3.2, D*

*JMA **30** 01:24:39.5±0.1, 24°.57N×122°.50E, h105km±2km, M1.9*

ISC 30 01:24:39.9±1.8, 24°.67N±0°.09×122°.51E±0°.03, h101km±12km, n23, σ0s45/40, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.45**	**119**	P	**Pn**	**01 24 55.5**	**+0.1**
JYNG				*e*S	**Sn**	**01 25 07.4**	**+0.4**
YOJ	**Yonaguni jima**	**0.50**	**114**	P	**Pn**	**01 24 55.8**	**+0.1**
YOJ				S	**Sn**	**01 25 07.8**	**+0.2**
TWC	**Suao**	**0.61**	**265**	*e*P	**Pn**	**01 24 56.4**	**-0.2**
	baz=264						
TWC				S	**Sn**	**01 25 08.5**	**-0.6**
	baz=264						
ENA	**Nanau**	**0.74**	**251**	*e*P	**Pn**	**01 24 57.9**	**+0.1**
	baz=251						
ENA				*e*S	**Sn**	**01 25 11.3**	**+0.1**
	baz=251						
TWE	**Neicheng**	**0.77**	**274**	*e*P	**Pn**	**01 24 58.2**	**+0.1**
	baz=274						
TWE				*e*S	**Sn**	**01 25 11.4**	**-0.3**
	baz=274						
NWF	**Wu-fen Shan**	**0.78**	**301**	*e*P	**Pn**	**01 24 57.3**	**-0.9**
	baz=300						
NWF				*e*S	**Sn**	**01 25 13.2**	**+1.2**
	baz=300						
ENTT	**Nioudou**	**0.86**	**268**	*e*P	**Pn**	**01 24 59.2**	**+0.2**
	baz=268						
ENTT				*e*S	**Sn**	**01 25 13.4**	**+0.1**
	baz=268						
TWD	**Chiawan**	**1.02**	**235**	*e*P	**Pn**	**01 25 00.0**	**-0.6**
	baz=235						
TWD				*e*S	**Sn**	**01 25 16.1**	**-0.1**
	baz=235						
NSK	**Sanguang**	**1.05**	**271**	P	**Pn**	**01 25 01.2**	**+0.2**
	baz=270						
NSK				S	**Sn**	**01 25 16.8**	**-0.2**
	baz=270						
NNS	**Nan Shan**	**1.06**	**258**	*e*P	**Pn**	**01 25 01.4**	**+0.2**
	baz=257						
NNS				*e*S	**Sn**	**01 25 17.4**	**+0.1**
	baz=257						
IRIF	**Iriomote-Funau**	**1.16**	**106**	*e*S	**Sn**	**01 25 18.5**	**-0.4**
WHF	**Hehuan Shan**	**1.25**	**246**	*e*P	**Pn**	**01 25 03.7**	**0.0**
	baz=245						
WHF				S	**Sn**	**01 25 21.0**	**-0.5**
	baz=245						
TWT	**Tachien**	**1.29**	**252**	*e*P	**Pn**	**01 25 05.0**	**+1.2**
	baz=251						
TWT				*e*S	**Sn**	**01 25 22.1**	**+0.2**
	baz=251						
HATJ	**Hateruma jima**	**1.32**	**117**	*e*S	**Sn**	**01 25 22.7**	**+0.3**
NSTT	**Nanjuang**	**1.38**	**269**	S	**Sn**	**01 25 23.3**	**-0.2**
	baz=268						
JKRS	**Kuro-shima**	**1.43**	**107**	P	**Pn**	**01 25 05.8**	**+0.5**
JKRS				S	**Sn**	**01 25 24.9**	**+0.3**
JIJ	**Ishigaki jima**	**1.52**	**101**	P	**Pn**	**01 25 06.3**	**-0.1**
JIJ				S	**Sn**	**01 25 25.6**	**-0.9**
WDT	**Danda**	**1.55**	**235**	*e*P	**Pn**	**01 25 06.9**	**-0.2**
	baz=234						
WDT				*e*S	**Sn**	**01 25 27.3**	**-0.5**
	baz=234						
JISG	**Ishigakijimahi**	**1.64**	**92**	P	**Pn**	**01 25 07.7**	**-0.2**
JISG				S	**Sn**	**01 25 28.7**	**-0.5**
SMLT	**Sun Moon Lake**	**1.67**	**242**	*e*S	**Sn**	**01 25 30.2**	**+0.2**
	baz=242						
TYC	**Yuchr**	**1.69**	**244**	*e*S	**Sn**	**01 25 30.2**	**-0.1**
	baz=243						
CHN5	**Tsauling**	**1.99**	**238**	*e*S	**Sn**	**01 25 37.4**	**+0.2**
	baz=237						
JTJ	**Tarama**	**1.99**	**90**	P	**Pn**	**01 25 12.6**	**+0.2**
JTJ				S	**Sn**	**01 25 37.2**	**0.0**

*ISCJB **30** 01:24:54.9±0.6, 39°.24N±0°.04×28°.89E±0°.04, h3km±8km, Error ellipse: s-maj=6.6km s-min=4.4km az=153.0*

*CSEM **30** 01:24:55.2±0.1, 39°.24N×28°.89E, h5km, MD2.9, Error ellipse: s-maj=3.3km s-min=3.2km az=70.0*

*ISK **30** 01:24:55.0, 39°.26N×28°.93E, h7km, MD2.8*

*DDA **30** 01:24:55.9, 39°.14N×28°.93E, h8km, Md2.9*

ISC 30 01:24:55.3±1.0, 39°.23N±0°.02×28°.91E±0°.02, h9km±10km, n36, σ0s56/46, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.24**	**219**	*i* P	**Pg**	**01 25 00.0**	**-0.2**
DEMI				*i* S	**Sg**	**01 25 04.1**	**+0.6**
DEMI	**Demirci**	**0.24**	**219**	P	**Pg**	**01 25 00.0**	**-0.2**
DEMI				S	**Sg**	**01 25 04.1**	**+0.6**
GEDZ	**Gediz**	**0.43**	**115**	*e*PG	**Pg**	**01 25 04.2**	**+0.4**
GEDZ	**Gediz**	**0.43**	**115**	*e*Pg	**Pg**	**01 25 04.2**	**+0.4**
DST	**Dursunbey**	**0.43**	**329**	*e*PG	**Pg**	**01 25 03.6**	**-0.2**
DST	**Dursunbey**	**0.43**	**329**	*e*Pg	**Pg**	**01 25 03.6**	**-0.2**
GDZ	**Gediz**	**0.47**	**108**	*i* P	**Pb**	**01 25 04.9**	**-0.9**
GDZ				*i* S	**Sg**	**01 25 11.3**	**+0.7**
GDZ	**Gediz**	**0.47**	**108**	P	**Pb**	**01 25 04.9**	**-0.9**
GDZ				S	**Sg**	**01 25 11.3**	**+0.7**
TVSB	**Tavsanli**	**0.48**	**63**	*e*PG	**Pg**	**01 25 04.4**	**-0.3**
TVSB				*e*SG	**Sg**	**01 25 11.0**	**0.0**
TVSB	**Tavsanli**	**0.48**	**63**	*e*Pg	**Pg**	**01 25 04.4**	**-0.3**
TVSB				*e*Sg	**Sg**	**01 25 11.0**	**0.0**
KULA	**Kula-Manisa**	**0.74**	**195**	*e*PG	**Pg**	**01 25 10.1**	**+0.5**
KULA	**Kula-Manisa**	**0.74**	**195**	*e*Pg	**Pg**	**01 25 10.1**	**+0.5**
MANT	**Manisa**	**0.79**	**201**	*i* P	**Pg**	**01 25 09.7**	**-0.9**
MANT				*i* S	**Sg**	**01 25 19.5**	**-1.3**
MANT	**Manisa**	**0.79**	**201**	P	**Pg**	**01 25 09.6**	**-0.9**
MANT				S	**Sg**	**01 25 19.5**	**-1.3**
BALB	**Balikesir**	**0.90**	**297**	*e*PG	**Pg**	**01 25 12.7**	**+0.1**
BALB	**Balikesir**	**0.90**	**297**	*e*Pg	**Pg**	**01 25 12.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.12**	**338**	*e*PN	**Pg**	**01 25 16.4**	**-0.4**
KCTX	**Karacabey (Bur**	**1.12**	**338**	*e*Pn	**Pg**	**01 25 16.4**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.14**	**359**	*e*PN	**Pb**	**01 25 17.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.14**	**359**	*e*Pn	**Pb**	**01 25 17.2**	**0.0**
IZI	**Iznik**	**1.19**	**21**	*e*PN	**Pg**	**01 25 17.5**	**-0.6**
IZI	**Iznik**	**1.19**	**21**	*e*Pn	**Pg**	**01 25 17.5**	**-0.6**
ARMT	**Armutlu**	**1.33**	**358**	*e*PN	**Pn**	**01 25 19.9**	**-0.3**
ARMT	**Armutlu**	**1.33**	**358**	*e*Pn	**Pn**	**01 25 19.9**	**-0.3**
BORA	**Eskisehir**	**1.36**	**61**	*i* P	**Pg**	**01 25 21.5**	**+0.1**
BORA				*i* S	**Sn**	**01 25 39.1**	**+0.3**
BORA	**Eskisehir**	**1.36**	**61**	P	**Pg**	**01 25 21.5**	**+0.1**
BORA				S	**Sn**	**01 25 39.1**	**+0.3**
EDC	**Edincik**	**1.38**	**324**	*e*PN	**Pn**	**01 25 21.0**	**+0.2**
EDC	**Edincik**	**1.38**	**324**	*e*Pn	**Pn**	**01 25 21.0**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.51**	**212**	*e*PN	**Pb**	**01 25 23.7**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.51**	**212**	*e*Pn	**Pb**	**01 25 23.7**	**0.0**
KRBG	**Karabiga-Canak**	**1.70**	**314**	*e*PN	**Pn**	**01 25 28.4**	**+0.6**
KRBG	**Karabiga-Canak**	**1.70**	**314**	*e*Pn	**Pn**	**01 25 28.4**	**+0.6**
MRMT	**Marmara Adasi**	**1.70**	**324**	*e*PN	**Pn**	**01 25 28.4**	**+0.5**
MRMT	**Marmara Adasi**	**1.70**	**324**	*e*Pn	**Pn**	**01 25 28.4**	**+0.5**
RKY	**Sarkoy-Tekirda**	**1.97**	**318**	*e*PN	**Pn**	**01 25 29.6**	**+0.6**
RKY	**Sarkoy-Tekirda**	**1.97**	**318**	*e*Pn	**Pn**	**01 25 29.6**	**+0.6**

*ISCJB **30** 01:28:15.5±1.1, 41°.93N±0°.03×32°.50E±0°.05, h8km±6km, Error ellipse: s-maj=7.5km s-min=4.9km az=146.8*

*CSEM **30** 01:28:16.7±0.3, 41°.84N×32°.51E, h10km, MD2.9, Error ellipse: s-maj=9.2km s-min=5.3km az=54.0*

*DDA **30** 01:28:17.7, 41°.74N×32°.54E, h8km, Md2.9*

**ISC 30 01:28:16.8±1.3, 41°.79N±0°.04×32°.50E±0°.04, h15km±10km, n20, σ0s68/35, 6C, Turk

COEN	Coen	9.53 213	*e*Pn		Pn	02 06 08.2	-0.9	
CTA	Charters Tower	14.21 189	Pn		Pn	02 07 11.7	-1.0	
	0.6nm,0.3s,baz=23,slow=11,SNR=7.2							
CTAO	Charters Tower	14.21 189	*e*Pn		Pn	02 07 12.8	+0.1	
WRAB	Tennant Creek	19.56 223	*e*P		P	02 08 17.4	+0.1	
	9.0nm,0.6s							
WRA	Warramunga Arr	19.57 223	P		P	02 08 18.2	+0.7	
	1.3nm,0.3s,baz=50,slow=11,SNR=58							
WRA			S		S	02 11 52.0	-3.1	
	0.1nm,0.3s,baz=48,slow=20,SNR=3.3							
GUMO	Guam	19.77 349	LR		LR	02 14 49.6		
	comp=Z,377nm,19.2s,baz=264,slow=34							
ASAR	Alice Springs	22.53 217	P		P	02 08 49.6	+0.3	
	3.6nm,0.5s,baz=56,slow=9.0,SNR=33							
ASAR			S		S	02 12 52.9	+0.8	
	3.5nm,0.8s,baz=33,slow=22,SNR=12							
FITZ	Fitzroy Crossi	25.39 240	P		P	02 09 17.3	+1.2	
	11nm,0.8s,baz=53,slow=11,SNR=42							
STKA	Stephens Creek	26.58 193	P		P	02 09 28.3	+1.6	
	2.8nm,1.1s,baz=9.5,slow=12,SNR=2.8							
MBWA	Marble Bar	31.72 239	*e*P		P	02 10 12.8	+0.3	
	8.2nm,0.6s							
KSRS	Korea Array	47.28 338	P		P	02 12 22.8	+1.3	
	2.5nm,0.7s,baz=155,slow=8.1,SNR=3.4							
KSRS			LR		LR	02 31 46.2		
	comp=Z,12nm,18.6s,baz=5.0,slow=36							
KSAR	Wonju Array Be	47.29 338	P		P	02 12 22.8	+1.2	
PETK	Petropavlovsk-	59.36 6	LR		LR	02 35 41.1		
	comp=Z,14nm,20.9s,baz=205,slow=32							
VNDA	Vanda	71.86 177	P		P	02 15 10.5	+0.4	
	0.8nm,0.6s,baz=330,slow=7.1,SNR=10							
ZALV	Zalesovo Beam	79.80 327	P		P	02 15 54.5	-1.2	
	0.7nm,0.4s,baz=113,slow=5.8,SNR=3.3							
ZALV			LR		LR	02 51 05.9		
	comp=Z,9.0nm,20.1s,baz=70,slow=36							
KURK	Kurchatov	82.10 323	*e*P		P	02 16 08.0	0.0	
	3.5nm,0.3s							
ILAR	Eielson Array	84.86 23	P		P	02 16 21.0	-0.9	
	1.3nm,0.6s,baz=252,slow=5.0,SNR=18							
SAML	Samuel	145.09 115	*e*PKPdf		PKPbc	02 23 24.1	-1.2	

IDC ***30*** *02:14:55.4±5.2,20.2°45S×178.06W,h499km±59km, mb3.1/7, mb1 3.4/8,mb1mx3.2/26,mbtmp4.0/8, Error ellipse: s-maj=41.8km s-min=24.3km az=173.0*

ISCJB ***30*** *02:14:57.4±0.8,20.2°5S±0.2°2-178.2W±0.2°2, h534km, mb3.6/7, Error ellipse: s-maj=29.1km s-min=16.8km az=144.8*

ISC 30 02:14:58.2±0.9,20.2°6S±0.2°2-178.1W±0.2°2,h534km,n11, σ0§78/12,mb3.6/7,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	Urewera	18.13	192	P	P		02 18 36.9	-1.0
	1.0nm,0.3s,baz=266,slow=5.2,SNR=5.6							
CTA	Charters Tower	33.39	264	P	P		02 20 52.7	0.0
	5.1nm,0.6s,baz=84,slow=10.0,SNR=9.0							
STKA	Stephens Creek	37.68	244	P	P		02 21 28.9	+0.7
	0.8nm,0.4s,baz=61,slow=11,SNR=5.1							
ASAR	Alice Springs	44.42	257	P	P		02 22 21.9	+0.1
	3.3nm,0.6s,baz=96,slow=7.8,SNR=45							
ASAR				PcP	PcP		02 23 54.5	+0.5
	0.6nm,0.5s,baz=105,slow=3.6,SNR=6.3							
WRA	Warramunga Arr	44.50	262	P	P		02 22 21.9	-0.5
	1.4nm,0.6s,baz=98,slow=7.3,SNR=36							
WRA				PcP	PcP		02 23 54.7	+0.4
	0.7nm,0.9s,baz=95,slow=3.3,SNR=2.9							
TXAR	Lajitas Array	87.16	57	P	P		02 26 49.2	+1.2
	0.3nm,0.6s,baz=220,slow=5.6,SNR=5.8							
ILAR	Eielson Array	88.38	13	P	P		02 26 51.4	-1.3
	0.3nm,0.5s,baz=217,slow=6.2,SNR=4.6							
PDAR	Pinedale Array	89.06	43	P	P		02 26 56.6	-0.1
	0.3nm,0.6s,baz=205,slow=3.1,SNR=3.8							
AKASG	Malin Array Be	143.01	331	PKhKP	PKPpre		02 33 28.0	
	0.8nm,0.5s,baz=42,slow=3.8,SNR=5.7							
BRTR	Keskin Array B	146.80	312	PKPbc	PKPbc		02 33 40.7	-0.1
	0.7nm,0.6s,baz=124,slow=4.2,SNR=5.8							
GERES	GERESS Array B	150.22	344	PKPbc	PKPbc		02 33 49.1	+0.1
	0.5nm,0.6s,baz=349,slow=1.4,SNR=5.6							

ISCJB ***30*** *02:15:16.9±0.7,24.°46N±0.°04×122.°40E±0.°02, h70km±8km, Error ellipse: s-maj=7.4km s-min=3.1km az=174.0*

JMA ***30*** *02:15:16.4±0.2,24.°43N×122.°37E, h77km±2km, M2.5*

TAP ***30*** *02:15:17.1,24.°43N×122.°41E, h61km±1km, ML3.3, D*

ISC 30 02:15:17.4±1.5,24.°45N±0.°06×122.°39E±0.°03,h68km±12km, n32,σ0§54/52,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JYNG	Yonagunijimaku	0.50	90	P	P	Pn	02 15 30.3	+0.2
JYNG				S	S	Sn	02 15 40.0	+0.7
TWC	Suao	0.52	288	P	P	Pn	02 15 29.9	-0.3
	baz=289							
TWC				S	S	Sn	02 15 39.3	-0.3
	baz=289							
YOJ	Yonaguni jima	0.56	89	P	P	Pn	02 15 30.6	-0.1
YOJ				*e*S	S	Sn	02 15 40.8	+0.4
EGS		0.57	313	*e*S	S	Sn	02 15 40.7	+0.1
	baz=313							
ENA	Nanau	0.59	268	*e*P	P	Pn	02 15 30.7	-0.3
	baz=269							
TWE	Neicheng	0.71	292	*e*P	P	Pn	02 15 32.2	-0.1
	baz=293							
TWE				*e*S	S	Sn	02 15 43.2	-0.1
	baz=293							
ENTT	Nioudou	0.78	284	P	P	Pn	02 15 33.4	+0.3
	baz=284							
ENTT				S	S	Sn	02 15 45.3	+0.7
	baz=284							
TWD	Chiawan	0.82	243	*e*P	P	Pn	02 15 33.4	-0.1
	baz=244							
TWD				*e*S	S	Sn	02 15 45.8	+0.4
	baz=244							
NWF	Wu-fen Shan	0.83	318	*e*S	S	Sn	02 15 44.8	-1.1
	baz=318							
NNS	Nan Shan	0.93	269	*e*P	P	Pn	02 15 35.1	0.0
	baz=270							
NNS				*e*S	S	Sn	02 15 48.0	-0.1
	baz=270							
NSK	Sanguang	0.97	283	P	P	Pn	02 15 35.5	0.0
	baz=284							
NSK				S	S	Sn	02 15 48.9	0.0
	baz=284							
WHF	Hehuan Shan	1.07	254	P	P	Pn	02 15 37.1	0.0
	baz=254							
WHF				S	S	Sn	02 15 51.5	-0.3
	baz=254							
ESL	Shilin	1.08	234	*e*S	S	Sn	02 15 51.2	-0.1
	baz=235							
TWS1	Kuangyinshan	1.10	306	*e*S	S	Sn	02 15 50.8	-0.8
	baz=306							
TWT	Tachien	1.13	260	*e*P	P	Pn	02 15 38.3	+0.7
	baz=260							
TWT				S	S	Sn	02 15 53.2	+0.6
	baz=260							
IRIF	Iriomote-Funau	1.23	95	P	P	Pn	02 15 38.2	-0.5
IRIF				S	S	Sn	02 15 54.6	0.0
NSTT	Nanjuang	1.28	278	*e*S	S	Sn	02 15 55.8	-0.1
	baz=278							
WDT	Danda	1.34	239	P	P	Pn	02 15 40.6	0.0
	baz=239							
WDT				*e*S	S	Sn	02 15 57.7	-0.2
	baz=239							
HATJ	Hateruma jima	1.35	107	P	P	Pn	02 15 40.7	+0.4
SMLT	Sun Moon Lake	1.48	248	*e*P	P	Pn	02 15 42.5	+0.4
	baz=248							
SMLT				*e*S	S	Sn	02 16 01.6	+0.9
	baz=248							
TWQ1	Liyutan	1.48	266	*e*S	S	Sn	02 16 01.5	+0.9
	baz=266							
TWF1	Yuli	1.49	223	P	P	Pn	02 15 41.6	-0.6
	baz=223							
TWF1				*e*S	S	Sn	02 15 59.7	-1.1
	baz=223							
JKRS	Kuro-shima	1.49	98	P	P	Pn	02 15 42.2	0.0
JKRS				*e*S	S	Sn	02 16 01.4	+0.6
TYC	Yuchr	1.50	249	*e*P	P	Pn	02 15 43.2	+0.8
	baz=249							
TYC				*e*S	S	Sn	02 16 01.7	+0.5
	baz=249							
JIJ	Ishigaki jima	1.60	93	P	P	Pn	02 15 43.0	-0.6
JIJ				S	S	Sn	02 16 03.5	+0.1
YUS	Yu-Shan	1.63	234	*e*P	P	Pn	02 15 45.0	+0.4
	baz=234							
YUS				*e*S	S	Sn	02 16 05.0	+0.1
	baz=234							
CHKT	Chengkung	1.64	215	*e*S	S	Sn	02 16 03.1	-1.4
	baz=215							
ELDTW	Lidau	1.78	225	*e*P	P	Pn	02 15 46.0	-0.2
	baz=225							
ELDTW				*e*S	S	Sn	02 16 07.4	-0.6
	baz=225							
CHN5	Tsauling	1.78	242	*e*P	P	Pn	02 15 45.8	-0.4
	baz=242							
CHN5				*e*S	S	Sn	02 16 08.6	+0.6
	baz=242							
TWK	Hsinying	2.11	236	*e*S	S	Sn	02 16 15.8	+0.1
	baz=236							
JTJ	Tarama	2.11	84	P	P	Pn	02 15 50.4	-0.1
CHN1	Nanshi	2.12	234	*e*S	S	Sn	02 16 17.1	+1.0
	baz=234							

IDC ***30*** *02:31:39.0±14.0, 10.°01N×88.°86W, h0km, mb3.7/4, mb1 4.1/4,mb1mx3.7/20,mbtmp3.7/4, Error ellipse: s-maj=288.4km s-min=63.2km az=6.0*

ISCJB ***30*** *02:32:25.8±0.7, 13.°8N±0.°2×89.°2W±0.°1, h177km±5km, mb3.6/3, Error ellipse: s-maj=32.0km s-min=10.2km az=36.4*

CASC ***30*** *02:32:26.5±1.6, 13.°60N×89.°25W, h168km±8km, MD3.8, ML3.6*

ISC 30 02:32:26.7±1.0,13.°8N±0.°1×89.°3W±0.°1,h169km±7km,n20, σ1§07/23,mb3.6/3,5C-2D,El Salvador

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BOQS	Boqueron	0.08	201	*e*P	Pn		02 32 49.3	-0.2
SNET	Serv Nac Est T	0.13	172	AML	AML		02 32 52.3	
	comp=Z,919nm,0.3s							
LFU	La Fuente	0.15	116	*e*P	Pn		02 32 49.7	+0.4
LFU				*e*S	Sn		02 33 07.1	+0.6
COLS	Colinas	0.15	198	*e*P	Pn		02 32 48.8	-0.6
LBRS	Las Brisas	0.21	110	*e*P	Pn		02 32 49.8	+0.4
LBRS				*e*S	Sn		02 33 07.4	+0.7
FRS	El Faro	0.26	136	*e*P	Pn		02 32 49.6	0.0
LFRS				*e*S	Sn		02 33 06.7	-0.4
SBLS	San Blas	0.36	274	*e*P	Pn		02 32 50.4	+0.4
MONT	Ecomontaæa	0.39	277	*e*P	Pn		02 32 50.5	+0.4
RTR	El Retiro	0.39	282	*e*P	Pn		02 32 50.5	+0.5
RBDL	Robledal	0.52	305	*e*P	Pn		02 32 51.0	+0.5
CUS1	Cusmapa	0.68	278	*e*P	Pn		02 32 51.4	+0.1
PACA	Pacayal	0.96	111	*e*P	Pn		02 32 53.2	0.0
CAHU	Cacacuatique	1.01	92	*e*P	Pn		02 32 53.9	+0.3
IXG	Ixpaco	1.22	287	*e*P	Pn		02 32 55.7	+0.4
MRL	Marmol	1.32	341	*e*P	Pn		02 32 57.5	+1.3
CGA2	Cerro Gallo 2	6.01	128	*e*P	Pn		02 33 56.5	+2.5
CGA2				*e*S	Sn		02 35 01.0	-1.5
TXAR	Lajitas Array	20.42	321	P	P		02 36 53.3	+2.3
	comp=Z,0.6nm,0.5s,baz=133,slow=10,SNR=14							
PDAR	Pinedale Array	33.76	333	P	P		02 38 52.1	-0.4
	comp=Z,0.1nm,0.4s,baz=126,slow=10,SNR=2.8							
SCHQ	Schefferville	44.51	18	P	P		02 40 19.7	-1.6
	comp=Z,2.4nm,0.4s,baz=224,slow=6.7,SNR=4.6							
YKA	Yellowknife Ar	51.85	345	P	P		02 41 16.6	-0.7
	comp=Z,1.0nm,0.6s,baz=146,slow=6.7,SNR=6.7							

CSEM ***30*** *02:56:54.6±0.1,39.°40N×26.°82E, h8km, ML2.6, Error ellipse: s-maj=2.3km s-min=2.0km az=80.0*

ISK ***30*** *02:56:54.0,39.°40N×26.°83E, h7km, MD2.8*

DDA ***30*** *02:56:54.6,39.°42N×26.°88E, h7km, Ml2.6*

ISC 30 02:56:55.0±0.9,39.°40N±0.°02×26.°84E±0.°02,h12km±6km, n49,σ0§60/65,Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
AYVA	Ayvalik	0.15	231	*i* P	Pg		02 56 58.7	+0.2
AYVA				*i* S	Sg		02 57 00.9	-0.1
AYVA	Ayvalik	0.15	231	P	Pg		02 56 58.7	+0.2
AYVA				S	Sg		02 57 00.9	-0.1
EZN	Ezine	0.58	317	*e*PG	Pg		02 57 05.6	-0.7
EZN	Ezine	0.58	317	*e*Pg	Pg		02 57 05.6	-0.7
BOZC	Bozcaada	0.75	306	*i* P	Pg		02 57 09.3	-0.2
BOZC				*i* S	Sb		02 57 20.2	+0.1
SIGR	SIGRI	0.79	256	*e*PG	Pg		02 57 09.3	-0.9
SIGR				*e*SG	Sb		02 57 20.9	-0.2
SIGR	SIGRI	0.79	256	*e*Pg	Pg		02 57 09.3	-0.9
SIGR				*e*Sg	Sb		02 57 20.9	-0.2
BALB	Balikesir	0.84	73	*e*PG	Pg		02 57 10.6	-0.6
BALB				*e*SG	Sb		02 57 22.8	+0.1
BALB	Balikesir	0.84	73	*e*Pg	Pg		02 57 10.6	-0.6
BALB				*e*Sg	Sb		02 57 22.8	+0.1
LPK	Lapseki	0.97	356	*e*PG	Pg		02 57 13.0	-0.7
LPK				*e*SG	Sb		02 57 26.8	+0.3
LPK	Lapseki	0.97	356	*e*Pg	Pg		02 57 13.0	-0.7
LPK				*e*Sg	Sb		02 57 26.8	+0.3
GELI	Tayfur-Gelibol	1.03	344	*e*PG	Pg		02 57 13.8	-1.1
GELI	Tayfur-Gelibol	1.03	344	*e*Pg	Pg		02 57 13.8	-1.1
KRBG	Karabiga-Canak	1.05	20	*e*PG	Pg		02 57 14.6	-0.6
KRBG	Karabiga-Canak	1.05	20	*e*Pg	Pg		02 57 14.6	-0.6
IZM	Izmir	1.06	162	*e*PG	Pg		02 57 14.6	-0.7
IZM	Izmir	1.06	162	*e*Pg	Pg		02 57 14.6	-0.7
URLA	Izmir	1.06	190	*i* P	Pg		02 57 14.1	-1.3
URLA				*i* S	Sn		02 57 31.1	+0.8
URLA	Izmir	1.06	190	P	Pg		02 57 14.1	-1.3
GADA	Gvkgeada	1.07	318	*e*PG	Pg		02 57 14.8	-0.8
GADA	Gvkgeada	1.07	318	*e*Pg	Pg		02 57 14.8	-0.8
CHOS	Chios island	1.18	211	*e*PN	Pg		02 57 17.1	-0.6
CHOS	Chios island	1.18	211	*e*Pn	Pg		02 57 17.1	-0.6
ERIK	Erikli-Kesan	1.29	349	*e*PN	Pb		02 57 19.1	-0.1
ERIK	Erikli-Kesan	1.29	349	*e*Pn	Pb		02 57 19.1	-0.1
RKY	Sarkoy-Tekirda	1.31	11	*e*PN	Pn		02 57 19.1	0.0
RKY	Sarkoy-Tekirda	1.31	11	*e*Pn	Pn		02 57 19.1	0.0
SART	Tekirdag	1.31	11	*i* P	Pn		02 57 19.3	+0.2
SART				*i* S	Sn		02 57 37.9	+1.3
SART	Tekirdag	1.31	11	P	Pn		02 57 19.3	+0.2
SART				S	Sn		02 57 37.9	+1.3
MRMT	Marmara Adasi	1.33	26	*e*PN	Pn		02 57 19.6	+0.2
MRMT	Marmara Adasi	1.33	26	*e*Pn	Pn		02 57 19.6	+0.2
DST	Dursunbey	1.39	81	*e*PN	Pn		02 57 20.7	+0.4
DST	Dursunbey	1.39	81	*e*Pn	Pn		02 57 20.7	+0.4
KESN	Edirne-Kesan	1.43	355	*i* P	Pn		02 57 21.1	+0.1
KESN				*i* S	Sg		02 57 41.0	0.0
KESN	Edirne-Kesan	1.43	355	P	Pn		02 57 21.1	+0.1
KESN				S	Sg		02 57 41.0	0.0
ENEZ	Enez	1.43	339	*e*PN	Pb		02 57 21.2	-0.4
ENEZ	Enez	1.43	339	*e*Pn	Pb		02 57 21.2	-0.4
KCTX	Karacabey (Bur	1.45	53	*e*PN	Pn		02 57 21.0	-0.1
KCTX	Karacabey (Bur	1.45	53	*e*Pn	Pn		02 57 21.0	-0.1
DEMI	Demirci	1.50	103	*i* P	Pb		02 57 22.6	-0.2
DEMI				*i* S	Sg		02 57 42.9	-0.4
DEMI	Demirci	1.50	103	P	Pb		02 57 22.6	-0.2
DEMI				S	Sg		02 57 42.9	-0.4
ALN	Alexandroupoli	1.61	338	*e*PN	Pn		02 57 23.6	+0.4
ALN	Alexandroupoli	1.61	338	*e*Pn	Pn		02 57 23.6	+0.4
AYDB	Zeytinkoy-Aydi	1.67	150	*e*PN	Pn		02 57 24.7	+0.5
AYDB	Zeytinkoy-Aydi	1.67	150	*e*Pn	Pn		02 57 24.7	+0.5
ARMT	Armutlu	1.94	53	*e*PN	Pn		02 57 28.4	+0.6
ARMT	Armutlu	1.94	53	*e*Pn	Pn		02 57 28.4	+0.6
TVSB	Tavsanli	2.03	88	*e*PN	Pn		02 57 29.7	+0.6
TVSB	Tavsanli	2.03	88	*e*Pn	Pn		02 57 29.7	+0.6

ISCJB ***30*** *03:03:44.5±0.7, 19.°03N±0.°06×145.°7E±0.°2, h214km, mb3.5/9, Error ellipse: s-maj=24.8km s-min=8.6km az=178.8*

IDC ***30*** *03:03:48.1±2.8, 18.°99N×145.°64E, h234km±27km, mb3.3/9, mb1 3.5/12,mb1mx3.3/44,mbtmp3.9/12, Error ellipse: s-maj=28.6km s-min=12.0km az=85.0*

ISC 30 03:03:46.1±0.7,19.°01N±0.°08×145.°7E±0.°2,h214km,n13, σ1§10/14,mb3.6/9,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GUMO	Guam	5.45	189	P	P	Pn	03 05 08.3	+1.7
	8.3nm,0.3s,baz=7.6,slow=15,SNR=2.7							
GUMO				S	S		03 06 09.0	-1.2
	19nm,0.3s,baz=36,slow=18,SNR=4.4							
JOW	Kunigami	17.86	299	P	P		03 07 39.6	+0.1
	1.6nm,0.3s,baz=154,slow=6.0,SNR=6.1							
MJAR	Matsushiro Arr	18.68	341	P	P		03 07 49.8	+1.4
	0.4nm,0.3s,baz=158,slow=9.1,SNR=4.6							
WRA	Warramunga Arr	40.29	197	P	P		03 11 02.6	-0.1
	4.0nm,0.6s,baz=16,slow=8.9,SNR=78							
SONM	Songino Array	42.93	321	P	P		03 11 24.3	+0.4
	0.3nm,0.5s,baz=131,slow=4.0,SNR=2.3							
ASAR	Alice Springs	43.96	196	P	P		03 11 31.9	-0.3
	1.0nm,0.5s,baz=16,slow=7.3,SNR=22							
STKA	Stephens Creek	50.75	185	P	P		03 12 23.8	-0.6
	0.9nm,0.4s,baz=348,slow=9.3,SNR=3.3							
MKAR	Makanchi Array	58.28	314	P	P		03 13 18.3	-0.1
	0.3nm,0.5s,baz=80,slow=9.2,SNR=3.5							
ILAR	Eielson Array	63.36	26	P	P		03 13 52.4	+0.1
	0.2nm,0.5s,baz=254,slow=5.2,SNR=5.4							
YKA	Yellowknife Ar	77.70	28	P	P		03 15 18.3	-0.6
	0.4nm,0.5s,baz=290,slow=6.0,SNR=3.1							
FINES	FINESS Array B	86.62	335	P	P		03 16 03.1	-2.1
	2.3nm,0.9s,baz=84,slow=4.3,SNR=7.7							
VNDA	Vanda	96.79	177	P	P		03 16 51.9	+0.1
	0.4nm,0.6s,baz=329,slow=5.9,SNR=6.3							
LPAZ	La Paz	147.64	91	PKPbc	PKPbc		03 23 08.2	+1.3
	0.4nm,0.5s,baz=315,slow=10.0,SNR=2.2							

ISCJB ***30*** *03:10:57.4±0.7, 12.°09S±0.°08×166.°9E±0.°1, h220km, mb3.9/11, Error ellipse: s-maj=19.0km s-min=10.5km az=2.4*

IDC ***30*** *03:11:03.9±4.5, 12.°30S×166.°83E, h268km±44km, mb3.6/11, mb1 3.8/12,mb1mx3.5/30,mbtmp4.2/12, Error ellipse: s-maj=25.3km s-min=18.2km az=16.0*

ISC 30 03:10:58.5±0.6,12.°20S±0.°08×167.°0E±0.°2,h220km,n18, σ0§92/19,mb4.1/11,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	9.82	183	P	P		03 13 20.7	-2.0
	0.5nm,0.3s,baz=263,slow=8.1,SNR=10							
DZM				S	S		03 15 07.4	+1.7
	0.1nm,0.3s,baz=100,slow=13,SNR=2.5							
CTA	Charters Tower	21.36	246	P	P		03 15 29.5	+0.5
	3.1nm,0.6s,baz=80,slow=13,SNR=5.7							
URZ	Urewera	27.48	162	P	P		03 16 24.2	-0.2
	4.7nm,0.9s,baz=326,slow=3.6,SNR=4.6							
RPZ	Rata Peaks	31.60	174	P	P		03 17 01.8	+1.1
	5.5nm,0.4s,baz=316,slow=2.6,SNR=6.5							
WRA	Warramunga Arr	32.23	252	P	P		03 17 05.6	-0.9
	0.9nm,0.5s,baz=82,slow=8.6,SNR=14							
ASAR	Alice Springs	33.36	245	P	P		03 17 15.8	-0.6
	1.3nm,0.6s,baz=70,slow=9.8,SNR=21							
USRK	Ussurisyk Ar.	64.51	333	P	P		03 21 13.1	+1.3
	1.1nm,0.6s,baz=157,slow=7.8,SNR=3.3							
SONM	Songino Array	80.30	323	P	P		03 22 45.6	+0.4
	0.3nm,0.4s,baz=116,slow=3.4,SNR=3.7							
ILAR	Eielson Array	84.23	18	P	P		03 23 04.8	-0.1
	5.6nm,0.6s,baz=246,slow=5.1,SNR=104							
MKAR	Makanchi Array	95.17	317	P	P		03 23 56.6	-0.4
	0.9nm,0.5s,baz=89,slow=7.0,SNR=6.8							
TXAR	Lajitas Array	95.34	61	P	P		03 23 58.6	+0.4
	0.3nm,0.7s,baz=218,slow=6.3,SNR=4.3							
YKA	Yellowknife Ar	95.45	27	P	P		03 23 57.0	-0.8
	0.4nm,0.4s,baz=259,slow=4.9,SNR=8.4							
ARCES	ARCESS Array B	117.75	346	PKP	PKPdf		03 29 17.4	-0.6
	1.5nm,0.6s,baz=75,slow=1.0,SNR=6.1							
FINES	FINESS Array B	123.28	339	PKP	PKPdf		03 29 29.4	+0.6
	1.0nm,0.8s,baz=124,slow=1.4,SNR=4.1							
HFS	Hagfors	128.23	343	PKP	PKPdf		03 29 38.3	0.0
	2.2nm,1.0s,baz=4.1,slow=6.1,SNR=4.0							
EKA	Eskdalemuir Ar	136.28	352	PKP	PKPdf		03 29 53.1	-0.5
	0.2nm,0.5s,baz=16,slow=6.3,SNR=3.7							
KEST	Kesra	149.05	323	PKPbc	PKPbc		03 30 21.2	0.0
	1.9nm,0.8s,baz=63,slow=2.3,SNR=3.6							
ESDC	Sonseca Array	151.48	345	PKPbc	PKPbc		03 30 27.3	+0.5
	0.6nm,0.5s,baz=7.1,slow=3.4,SNR=6.2							

IDC 30 03:28:25.4±1.8,10.°69N×94.°52E, h0km,mb3.6/4, mb1 3.8/4,mb1mx3.3/64,mbtmp3.6/4,MS3.9/1,Ms1 3.9/1, ms1mx2.4/47,Error ellipse: s-maj=124.4km s-min=24.9km az=51.0,Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MKAR	Makanchi Array	37.45	346	P	P		03 35 39.6	-0.8
	0.2nm,0.5s,baz=168,slow=8.9,SNR=3.0							
GEYT	Alibeck	42.41	316	P	P		03 36 22.4	+0.5
	1.5nm,0.5s,baz=138,slow=8.8,SNR=2.2							
WRA	Warramunga Arr	49.63	128	P	P		03 37 19.1	0.0
	0.9nm,0.9s,baz=303,slow=9.3,SNR=6.9							
ASAR	Alice Springs	51.47	132	P	P		03 37 32.9	-0.1
	0.4nm,0.6s,baz=313,slow=8.1,SNR=3.5							
CTA	Charters Tower	59.39	121	LR	LR		04 07 50.1	
	comp=Z,88nm,18.5s,baz=74,slow=40							

ISCJB ***30*** *03:28:48.3±0.8, 34.°65N±0.°04×140.°18E±0.°06, h77km±6km, mb3.7/3, Error ellipse: s-maj=8.9km s-min=6.9km az=150.4*

JMA ***30*** *03:28:48.5±0.2, 34.°63N×140.°16E, h72km±2km, M2.8*

IDC ***30*** *03:29:05.1±1.6, 35.°57N×138.°77E, h121km±17km, mb3.2/3, mb1 3.3/4,mb1mx2.9/61,mbtmp3.6/4, Error ellipse: s-maj=36.6km s-min=29.3km az=66.0*

**ISC 30 03:28:49.1±

DEMI	**Demirci**	**0.23**	**241**	*i* P	**Pg**	**03 31 53.7**	**+0.2**
DEMI				*i* S	**Sg**	**03 31 56.9**	**+0.3**
DEMI	**Demirci**	**0.23**	**241**	P	**Pg**	**03 31 53.7**	**+0.2**
DEMI				S	**Sg**	**03 31 56.9**	**+0.3**
GEDZ	**Gediz**	**0.36**	**108**	*e*PG	**Pg**	**03 31 55.8**	**-0.2**
GEDZ	**Gediz**	**0.36**	**108**	*e*Pg	**Pg**	**03 31 55.8**	**-0.2**
GDZ	**Gediz**	**0.40**	**99**	*i* P	**Pg**	**03 31 56.6**	**-0.2**
GDZ				*i* S	**Sg**	**03 32 02.1**	**0.0**
GDZ	**Gediz**	**0.40**	**99**	P	**Pg**	**03 31 56.6**	**-0.2**
GDZ				S	**Sg**	**03 32 02.1**	**0.0**
TVSB	**Tavsanli**	**0.48**	**52**	*e*PG	**Pg**	**03 31 58.0**	**-0.3**
TVSB				*e*SG	**Sg**	**03 32 05.1**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**52**	*e*Pg	**Pg**	**03 31 58.0**	**-0.3**
TVSB				*e*Sg	**Sg**	**03 32 05.1**	**+0.5**
DST	**Dursunbey**	**0.53**	**329**	*e*PG	**Pg**	**03 31 58.5**	**-0.5**
DST	**Dursunbey**	**0.53**	**329**	*e*Pg	**Pg**	**03 31 58.5**	**-0.5**
KULA	**Kula-Manisa**	**0.68**	**201**	*e*PG	**Pg**	**03 32 01.4**	**-0.6**
KULA	**Kula-Manisa**	**0.68**	**201**	*e*Pg	**Pg**	**03 32 01.4**	**-0.6**
BORA	**Eskisehir**	**1.36**	**57**	*i* P	**Pn**	**03 32 14.1**	**0.0**
BORA				*i* S	**Sg**	**03 32 33.1**	**+0.6**
BORA	**Eskisehir**	**1.36**	**57**	P	**Pn**	**03 32 14.1**	**0.0**
BORA				S	**Sg**	**03 32 33.1**	**+0.6**

IDC ***30*** *03:36:20.6±1.3, 41.°37N×83.°78E, h0km, mb3.5/3, mb1 3.7/9, mb1mx3.5/58, mbtmp3.6/9, ML3.4/6, MS2.9/9, Ms1 2.9/9, ms1mx2.6/39, Error ellipse: s-maj=20.2km s-min=15.1km az=52.0*

BJI ***30*** *03:36:21.4, 41.°27N×83.°75E, h6km, mb4.1/2, ML4.1/11, Ms3.9/2*

NNC ***30*** *03:36:26.6±1.5, 41.°40N×83.°69E, h20km±6km, mb4.2, mpv3.9, Error ellipse: s-maj=12.1km s-min=7.2km az=133.0*

SOME ***30*** *03:36:27.7, 41.°50N×83.°73E, h5km, MS3.5*

ISC 30 03:36:24.8±1.0, 41.°47N±0.°06×83.°90E±0.°04, h10km, n48, σ2°68/69, MS2.8/6, 13C-10D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KTMS	**Ketmen**	**3.29**	**308**	*e*P	**Pb**	**03 37 24.5**	**+1.2**
	112nm,0.6s						
KTMS				*e*S	**Sb**	**03 38 05.2**	**+1.9**
	232nm,0.5s						
SHLS	**Shalkode**	**3.42**	**301**	*e*P	**Pb**	**03 37 27.4**	**+1.8**
	230nm,0.6s						
SHLS				*e*S	**Sg**	**03 38 10.3**	**-4.3**
	726nm,0.5s						
PDGK	**Podgornoye**	**3.76**	**301**	⇓Pn	**Pn**	**03 37 22.3**	**-0.4**
	25nm,0.7s						
PDGK				⇑Pg	**Pb**	**03 37 34.0**	**+2.8**
	114nm,0.6s						
PDGK				⇑Sn	**Sn**	**03 38 06.0**	**-1.0**
	113nm,0.6s						
PDGK				⇓Lg	Lg	03 38 20.7	
	263nm,0.6s						
UZB	**Uzynbulak**	**3.99**	**297**	*e*P	**Pb**	**03 37 37.4**	**+2.2**
	92nm,0.6s						
UZB				*e*S	**Sg**	**03 38 27.3**	**-5.5**
	195nm,0.4s						
DJR	**Jarkent**	**4.16**	**315**	*e*P	**Pb**	**03 37 40.6**	**+2.5**
	100nm,0.4s						
DJR				*e*S	**Sb**	**03 38 32.8**	**+4.4**
	168nm,0.3s						
KPKS	**Kokpek**	**4.34**	**299**	*e*P	**Pb**	**03 37 42.4**	**+1.2**
	141nm,0.3s						
KPKS				*e*S	**Sb**	**03 38 36.0**	**+2.3**
	534nm,0.3s						
SATY	**Saty**	**4.37**	**293**	⇓*i* P	**Pb**	**03 37 43.2**	**+1.4**
	213nm,0.7s						
SATY				*e*S	**Sb**	**03 38 37.3**	**+2.6**
	163nm,0.5s						
KURS	**Kuram**	**4.69**	**297**	*e*P	**Pg**	**03 37 53.5**	**-1.2**
	45nm,0.5s						
KURS				*e*S	**Sg**	**03 38 55.1**	**-0.3**
	78nm,0.7s						
MNBS	**Baschi**	**4.81**	**305**	*e*P	**Pb**	**03 37 51.0**	**+1.7**
	72nm,0.8s						
MNBS				*e*S	**Sb**	**03 38 50.6**	**+3.3**
	356nm,0.5s						
KAPS	**Kapalarasan**	**5.05**	**321**	*e*P	**Pb**	**03 37 58.0**	**+4.8**
	52nm,0.5s						
KAPS				*e*S	**Sg**	**03 39 02.3**	**-4.6**
	71nm,0.6s						
ARXS	**Arharly**	**5.24**	**304**	*e*P	**Pb**	**03 38 00.5**	**+4.0**
	46nm,0.8s						
ARXS				*e*S	**Sg**	**03 39 07.6**	**-5.3**
	117nm,1.0s						
KOTS	**Kotyrbulak**	**5.33**	**292**	*e*P	**Pg**	**03 38 05.8**	**-1.0**
KOTS				*e*S	**Sg**	**03 39 16.3**	**+0.5**
MDOK	**Medeo**	**5.35**	**291**	*e*P	**Pb**	**03 38 03.1**	**+4.7**
	18nm,0.5s						
MDOK				*e*S	**Sg**	**03 39 11.7**	**-4.9**
	99nm,0.8s						
TNSS	**Tian-Shan**	**5.39**	**289**	*e*P	**Pb**	**03 38 02.0**	**+2.7**
	62nm,0.8s						
TNSS				*e*S	**Sb**	**03 39 09.9**	**+5.6**
	82nm,0.7s						
MK31	**Makanchi Array**	**5.45**	**348**	Pn	**Pn**	**03 37 47.0**	**+0.9**
	0.5nm,0.2s,baz=175,slow=14,SNR=66						
MK31				⇓Pg	**Pb**	**03 38 04.2**	**+4.2**
	7.4nm,0.5s,baz=164,slow=15,SNR=8.2						
MK31				⇓Sn	**Sn**	**03 38 50.9**	**+2.0**
	24nm,0.5s,baz=180,slow=24,SNR=6.1						
MK31				⇑Lg	Lg	03 39 19.3	
	84nm,0.6s,baz=165,slow=23,SNR=4.5						
MKAR	**Makanchi Array**	**5.45**	**348**	Pn	**Pn**	**03 37 47.7**	**+1.6**
	1.1nm,0.3s,baz=169,slow=14,SNR=36						
MKAR				Sn	**Sn**	**03 38 50.0**	**+1.1**
	16nm,0.3s,baz=172,slow=20,SNR=15						
MKAR				Lg	Lg	03 39 16.7	
	11nm,0.3s,baz=166,slow=28,SNR=6.1						
AAA	**Alma-Ata**	**5.46**	**292**	*e*P	**Pg**	**03 38 07.8**	**-1.5**
	110nm,0.5s						
AAA				*e*S	**Sg**	**03 39 20.0**	**+0.2**
	204nm,0.6s						
MAKZ	**Makanchi**	**5.52**	**346**	⇑Pn	**Pn**	**03 37 47.8**	**+0.9**
	1.2nm,0.4s						
MAKZ				⇑Pg	**Pg**	**03 38 08.3**	**-2.1**
	6.4nm,0.5s						
MAKZ				⇑Sn	**Sn**	**03 38 52.0**	**+1.6**
	26nm,0.5s						
MAKZ				⇑Lg	Lg	03 39 25.9	
	26nm,0.6s						
CHKK	**Chushkaly**	**5.62**	**298**	*e*P	**Pg**	**03 38 10.5**	**-2.0**
	25nm,0.4s						
CHKK				*e*S	**Sg**	**03 39 23.8**	**-1.5**
	66nm,0.3s						
IZV	**Izvestkoviy**	**5.63**	**289**	*e*P	**Pg**	**03 38 10.7**	**-1.8**
	29nm,0.5s						
IZV				*e*S	**Sg**	**03 39 24.7**	**-0.7**
	186nm,0.8s						
KTBS	**Karatobe**	**5.78**	**295**	*e*P	**Pg**	**03 38 13.6**	**-1.8**
KTBS				*e*S	**Sg**	**03 39 29.7**	**-0.5**
MTBS	**Maitube**	**5.78**	**289**	*e*P	**Pg**	**03 38 14.0**	**-1.5**
	24nm,0.4s						
MTBS				*e*S	**Sg**	**03 39 30.0**	**-0.3**
	47nm,0.3s						
KUU	**Kurty**	**6.08**	**296**	*e*P	**Pg**	**03 38 19.7**	**-1.4**
	50nm,0.4s						
KUU				*e*S	**Sg**	**03 39 40.1**	**+0.4**
	41nm,0.4s						
KST	**Kastek**	**6.09**	**288**	*e*P	**Pg**	**03 38 19.8**	**-1.7**
	14nm,0.8s						
KST				*e*S	**Sg**	**03 39 39.6**	**-0.8**
	52nm,0.5s						
DGS	**Degeres**	**6.28**	**289**	*e*P	**Pg**	**03 38 22.8**	**-2.1**
	28nm,0.4s						
DGS				*e*S	**Sg**	**03 39 45.1**	**-1.1**
	63nm,0.9s						
TKM2	**Tokmak 2**	**6.33**	**286**	⇑Pn	**Pn**	**03 37 56.8**	**-1.6**
	11nm,0.4s						
TKM2				⇓Lg	Lg	03 39 44.3	
	84nm,1.1s						
KSH	**Kashi**	**6.34**	**255**	Pn	**Pn**	**03 38 02.0**	**+3.5**
KSH				Sn	**Sn**	**03 39 10.0**	**-1.0**
KSH				smax	smax		
	comp=N,240nm,0.8s						
KSH				smax	smax		
	comp=E,190nm,0.8s						
AAK	**Ala-Archa**	**7.09**	**283**	Pn	**Pn**	**03 38 08.3**	**-0.5**
	1.5nm,0.3s,baz=105,slow=12,SNR=4.0						
AAK				Lg	Lg	03 40 03.1	
	1.3nm,0.3s,baz=15,slow=16,SNR=4.0						
AAK				LR	LR	03 41 07.9	
	comp=Z,121nm,18.1s,baz=92,slow=41						
AAK	**Ala-Archa**	**7.09**	**283**	⇓Pn	**Pn**	**03 38 06.7**	**-2.0**
	2.3nm,0.6s						
AAK				⇑Pg	**Pb**	**03 38 32.9**	**+4.7**
	6.2nm,0.6s						
AAK				⇑Lg	Lg	03 40 10.6	
	25nm,0.8s						
MNAS	**Manas**	**8.55**	**281**	⇓Pn	**Pn**	**03 38 27.7**	**-1.0**
	2.3nm,0.6s						
MNAS				⇑Pg		03 39 00.8	
	6.6nm,0.9s						
MNAS				⇓Lg	Lg	03 40 50.3	
	8.9nm,0.6s						
KURBB	**Kurchatov Arra**	**9.89**	**340**	Pn	**Pn**	**03 38 45.7**	**-1.1**
	0.2nm,0.3s,baz=160,slow=12,SNR=7.1						
KURBB				Lg	Lg	03 41 37.8	
	0.4nm,0.3s,baz=160,slow=31,SNR=4.4						
KURK	**Kurchatov**	**9.95**	**340**	⇓Pn	**Pn**	**03 38 50.9**	**+3.2**
	1.2nm,0.4s						
KURK				⇑Sn	**Sn**	**03 40 38.7**	**-0.6**
	14nm,0.6s						
KURK				⇑Lg	Lg	03 41 44.5	
	65nm,0.8s						
CEP	**Cherat**	**12.18**	**235**	P	Pn	03 39 12.6	-5.8
GTA	**Gaotai**	**12.30**	**94**	*e*P	Pn	03 39 29.5	+9.4
GTA				pP		03 39 34.5	
GTA				sP		03 39 38.0	
GTA				S	Sn	03 41 57.8	+20
GTA				sS		03 42 03.5	
GTA				SS	SnSn	03 42 12.5	+23
GTA				pmax	pmax		
	comp=Z,4.0nm,0.6s						
GTA				pmax	pmax		
	comp=Z,80nm,3.8s						
GTA				LR	LR		
	comp=N,260nm,15.1s						
GTA				LR	LR		
	comp=E,130nm,13.6s						
GTA				LR	LR		
	comp=Z,150nm,15.2s						
ZALV	**Zalesovo Beam**	**12.51**	**3**	Pn	**Pn**	**03 39 20.8**	**-1.8**
	comp=Z,0.4nm,0.3s,baz=187,slow=16,SNR=5.9						
THW	**Thamme Wali**	**12.98**	**232**	P	Pn	03 39 22.9	-6.5
BVAR	**Borovoye Array**	**14.73**	**326**	Pn	Pn	03 39 48.9	-4.1
	comp=Z,0.2nm,0.3s,baz=132,slow=12,SNR=5.1						
BVAR				Lg	Lg	03 44 08.5	
	comp=Z,0.3nm,0.3s,baz=133,slow=30,SNR=3.3						
TLY	**Talaya**	**16.94**	**46**	LR	LR	03 47 26.6	
	comp=Z,38nm,20.3s,baz=192,slow=39						
SONM	**Songino Array**	**17.20**	**61**	P	**Pn**	**03 40 24.6**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=256,slow=13,SNR=7.4						
SONM				Lg	Lg	03 45 30.0	
	comp=Z,0.2nm,0.3s,baz=259,slow=22,SNR=4.1						
SONM				LR	LR	03 47 50.6	
	comp=Z,29nm,19.3s,baz=104,slow=40						
AKTO	**Aktyubinsk**	**20.02**	**305**	P	**P**	**03 40 54.4**	**-3.2**
	comp=Z,0.5nm,0.5s,baz=106,slow=15,SNR=2.6						
AKTO				Lg	Lg	03 46 56.1	
	comp=Z,0.5nm,0.4s,baz=68,slow=18,SNR=3.7						
AKTO				LR	LR	03 49 21.6	
	comp=Z,44nm,22.0s,baz=107,slow=39						
GEYT	**Alibeck**	**20.12**	**268**	LR	LR	03 50 38.3	
	comp=Z,15nm,20.6s,baz=60,slow=43						
HHC	**Hu-ho-hao-te**	**20.81**	**82**	*e*P	**P**	**03 41 09.8**	**+3.4**
HHC				S	**S**	**03 44 53.5**	**-5.1**
HHC				pmax	pmax		
	comp=Z,10.0nm,1.1s						
HHC				LR	LR		
	comp=Z,170nm,7.4s						
HHC				LR	LR		
	comp=Z,130nm,6.8s						
KVAR	**Kislovodsk Arr**	**30.16**	**289**	LR	LR	03 56 38.2	
	comp=Z,23nm,21.2s,baz=1.0,slow=40						
KSRS	**Korea Array**	**33.95**	**82**	LR	LR	03 58 49.7	
	comp=Z,27nm,19.4s,baz=246,slow=40						
BRTR	**Keskin Array B**	**37.77**	**284**	P	**P**	**03 43 39.0**	**-2.1**
	comp=Z,0.9nm,0.7s,baz=74,slow=6.6,SNR=5.6						
FINES	**FINESS Array B**	**39.57**	**320**	LR	LR	04 00 51.3	
	comp=Z,26nm,18.1s,baz=241,slow=37						
NOA	**NORSAR Array B**	**46.75**	**320**	LR	LR	04 04 23.9	
	comp=Z,13nm,21.7s,baz=65,slow=36						
WRA	**Warramunga Arr**	**76.90**	**132**	P	P	03 48 14.5	-2.8
	comp=Z,0.4nm,0.7s,baz=326,slow=6.1,SNR=3.0						

ISCJB ***30*** *03:51:29.8±0.8, 37.°48N±0.°05×71.°6E±0.°1, h113km, Error ellipse: s-maj=12.9km s-min=5.6km az=152.5*

NNC ***30*** *03:51:38.5±3.6, 37.°94N×71.°77E, h196km±47km, mb2.7, mpv3.6, Error ellipse: s-maj=39.0km s-min=25.1km az=37.0*

ISC 30 03:51:29.7±1.2, 37.°41N±0.°09×71.°5E±0.°1, h113km, n9, σ2°18/14, 4C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MNAS	**Manas**	**5.13**	**8**	⇑P	**Pn**	**03 52 48.2**	**+3.8**
	3.9nm,0.4s						
MNAS				⇓S	**Sn**	**03 53 41.9**	**-0.7**
	21nm,0.6s						
AAK	**Ala-Archa**	**5.71**	**23**	⇑P	**Pn**	**03 52 52.2**	**+0.1**
	2.0nm,0.5s						
AAK				⇓S	**Sn**	**03 53 55.8**	**-0.7**
	8.3nm,0.6s						
KK31	**Karatay Array**	**5.74**	**353**	⇓P	**Pn**	**03 52 56.5**	**+4.0**
	12nm,0.5s,baz=174,slow=12,SNR=80						
KK31				S	**Sn**	**03 53 57.2**	**+0.1**
	11nm,0.5s,baz=172,slow=20,SNR=8.2						
PYUN	**Piuthan**	**13.39**	**131**	*e*P	**Pn**	**03 54 35.2**	**-0.3**
	13nm,0.4s						
PYUN				*e*S	Sn	03 56 50.8	-12
KOLN	**Koldanda**	**14.00**	**130**	*e*P	**Pn**	**03 54 43.4**	**+0.1**
	5.5nm,0.3s						
KOLN				*e*S	Sn	03 57 05.2	-13
GKN	**Gorkha**	**14.49**	**127**	*e*P	**Pn**	**03 54 49.7**	**+0.2**
	7.3nm,0.3s						
AB31	**Akbulak array**	**14.50**	**328**	⇑P	**P**	**03 54 51.9**	**-0.9**
	0.6nm,0.4s,baz=142,slow=13,SNR=25						
AB31				⇓S	**Sn**	**03 57 27.0**	**-2.2**
	1.5nm,0.7s,baz=151,slow=24,SNR=7.9						
PKIN	**Phulchoki**	**15.27**	**126**	*e*P	**P**	**03 55 00.8**	**-0.9**
	3.2nm,0.3s						
AKTO	**Aktyubinsk**	**16.21**	**328**	⇓P	**P**	**03 55 12.0**	**+0.4**
	3.5nm,0.8s						
AKTO				⇑S	**Sn**	**03 58 06.6**	**-3.8**
	2.3nm,0.6s						

NIED ***30*** *04:07:00, 36.°00N×141.°10E, h11km, Mw3.7 Best double couple: M0 3.81000×10^14 NP1:φs 244.00000°, δ36.00000°, λ-21.00000°. NP2:φs 351.00000°, δ78.00000°, λ-124.00000°.*

ISCJB ***30*** *04:07:34.8±1.1, 35.°94N±0.°05×141.°1E±0.°1, h35km, mb3.5/5, MS3.1/1, Error ellipse: s-maj=12.8km s-min=6.7km az=158.5*

JMA ***30*** *04:07:35.0±0.1, 35.°92N×141.°04E, h30km±1km, M3.7*

JMA Felt II J1.

IDC ***30*** *04:07:44.1±2.6, 35.°55N×140.°25E, h75km±23km, mb3.3/5, mb1 3.4/6, mb1mx3.2/33, mbtmp3.6/6, MS2.8/2, Ms1 2.8/2, ms1mx2.3/19, Error ellipse: s-maj=34.5km s-min=17.9km az=75.0*

ISC 30 04:07:36.7±1.2, 35.°95N±0.°06×141.°1E±0.°1, h35km, n21, σ1°94/16, mb3.7/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.30**	**213**	P	**Pn**	**04 07 41.6**	**-3.0**
CHOJ				S	**Sn**	**04 07 46.3**	**-3.6**
JYT	**Yasato**	**0.75**	**292**	P	**Pn**	**04 07 48.8**	**-2.0**
JYT				S	**Sn**	**04 07 58.6**	**-2.3**
JHO	**Hitachi**	**0.77**	**329**	P	**Pn**	**04 07 49.3**	**-1.7**
BSO3	**Boso 3**	**1.23**	**201**	P	**Pn**	**04 07 56.1**	**-1.1**
MJAR	**Matsushiro Arr**	**2.38**	**285**	P	**Pn**	**04 08 13.0**	**-0.1**
	6.1nm,0.3s,baz=109,slow=8.8,SNR=41						
MAT	**Matsushiro**	**2.38**	**285**	P	**Pn**	**04 08 13.0**	**-0.2**
MAT				S	**Sn**	**04 08 43.2**	**+2.0**
JHJ	**Hachijo jima 2**	**3.02**	**201**	P	**Pn**	**04 08 23.6**	**+1.6**
	8.3nm,0.3s,baz=56,slow=12,SNR=3.2						
JHJ				S	**Sn**	**04 08 58.1**	**+1.2**
	24nm,0.3s,baz=41,slow=19,SNR=5.1						
KSRS	**Korea Array**	**10.65**	**282**	LR	LR	04 13 40.7	
	comp=Z,30nm,21.0s,baz=95,slow=35						
H11N2	**WAKE ISLAND Hy 27.86**	**119**		T	T	04 42 20.8	
	baz=311,slow=75,SNR=230						
H11N1	**WAKE ISLAND Hy 27.87**	**119**		T	T	04 42 21.1	
	baz=311,slow=75,SNR=186						
H11N3	**WAKE ISLAND Hy 27.88**	**119**		T	T	04 42 22.2	
	baz=311,slow=75,SNR=189						
SONM	**Songino Array**	**28.17**	**306**	P	**P**	**04 13 27.3**	**+1.5**
	0.2nm,0.4s,baz=101,slow=5.6,SNR=2.9						
H11S1	**WAKE ISLAND Hy 28.54**	**121**		T	T	04 43 12.5	
	baz=313,slow=75,SNR=155						
H11S3	**WAKE ISLAND Hy 28.54**	**121**		T	T	04 43 11.2	
	baz=313,slow=75,SNR=83						
H11S2	**WAKE ISLAND Hy 28.55**	**121**		T	T	04 43 13.2	
	baz=313,slow=75,SNR=100						
MKAR	**Makanchi Array**	**44.46**	**303**	P	**P**	**04 15 45.6**	**+1.3**
	0.9nm,0.6s,baz=88,slow=11,SNR=8.0						
ILAR	**Eielson Array**	**50.56**	**32**	P	P	04 16 40.6	+9.3
	0.4nm,0.8s,baz=261,slow=7.0,SNR=5.0						
AAK	**Ala-Archa**	**50.76**	**299**	LR	LR	04 38 48.8	
	comp=Z,18nm,18.4s,baz=75,slow=37						
WRA	**Warramunga Arr**	**55.95**	**188**	P	**P**	**04 17 11.1**	**-0.4**
	1.2nm,0.9s,baz=5.4,slow=7.6,SNR=12						
ASAR	**Alice Springs**	**59.68**	**188**	P	**P**	**04 17 37.0**	**-0.6**
	0.4nm,0.7s,baz=20,slow=9.9,SNR=5.9						
LPAZ	**La Paz**	**147.48**	**61**	PKPbc	**PKPab**	**04 27 20.1**	**-0.1**
	0.6nm,0.5s,baz=315,slow=2.9,SNR=3.8						

ISCJB ***30*** *04:10:35.6±0.5, 24.°46N±0.°02×121.°97E±0.°02, h5km±5km, Error ellipse: s-maj=4.4km s-min=2.9km az=135.6*

JMA ***30*** *04:10:35.8±0.1, 24.°45N×121.°94E, h13km, M2.1*

TAP ***30*** *04:10:36.3, 24.°51N×121.°88E, h10km, ML2.7, D*

ISC 30 04:10:35.5±0.9, 24.°50N±0.°03×121.°96E±0.°02, h13km±7km, n26, σ0°44/46, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWC	**Suao**	**0.15**	**316**	*i* P	**Pb**	**04 10 39.7**	**-0.4**
	baz=352						
TWC				*i* S	**Sg**	**04 10 41.6**	**0.0**
	baz=352						
ENA	**Nanau**	**0.21**	**249**	*i* P	**Pg**	**04 10 40.3**	**+0.1**
	baz=234						
ENA				*i* S	**Sg**	**04 10 43.0**	**-0.4**
	baz=234						
ILA	**Ilan**	**0.33**	**324**	*e*P	**Pb**	**04 10 43.1**	**-0.1**
	baz=337						
ILA				*e*S	**Sb**	**04 10 48.0**	**-0.4**
	baz=337						
EGS		**0.34**	**356**	*e*P	**Pb**	**04 10 43.6**	**+0.1**
	baz=10.0						
EGS				*e*S	**Sb**	**04 10 49.8**	**+1.0**
	baz=10.0						
TWE	**Neicheng**	**0.34**	**309**	*e*P	**Pb**	**04 10 43.3**	**-0.2**
	baz=320						
TWE				*e*S	**Sg**	**04 10 47.0**	**-0.2**
	baz=320						
ENTT	**Nioudou**	**0.38**	**291**	P	**Pb**	**04 10 43.8**	**-0.4**
	baz=295						
ENTT				S	**Sg**	**04 10 48.3**	**-0.2**
	baz=295						
TWB1	**Santiao Chiao**	**0.50**	**3**	*e*P	**Pb**	**04 10 47.1**	**+0.9**
	baz=12						
TWB1				*e*S	**Sb**	**04 10 54.7**	**+1.2**
	baz=12						
TWD	**Chiawan**	**0.54**	**218**	P	**Pg**	**04 10 46.0**	**-0.1**
	baz=210						
TWD				S	**Sg**	**04 10 52.9**	**-0.4**
	baz=210						
NNS	**Nan Shan**	**0.54**	**263**	*i* P	**Pg**	**04 10 46.3**	**+0.1**
	baz=261						
NNS				S	**Sg**	**04 10 53.4**	**+0.1**
	baz=261						
NSK	**Sanguang**	**0.57**	**288**	*i* P	**Pb**	**04 10 47.5**	**0.0**
	baz=289						
NSK				S	**Sg**	**04 10 54.5**	**0.0**
	baz=289						
TWA	**Mucha**	**0.58**	**324**	*e*S	**Sb**	**04 10 55.6**	**-0.3**
	baz=331						
NWF	**Wu-fen Shan**	**0.59**	**344**	P	**Pn**	**04 10 48.8**	**-0.9**
	baz=351						
NWF				S	**Sb**	**04 10 56.5**	**+0.4**
	baz=351						
WHF	**Hehuan Shan**	**0.73**	**241**	P	**Pg**	**04 10 49.8**	**0.0**
	baz=236						
WHF				S	**Sg**	**04 10 59.4**	**-0.1**
	baz=236						
TWT	**Tachien**	**0.76**	**251**	*e*P	**Pb**	**04 10 51.2**	**+0.5**
	baz=248						
TWT				*e*S	**Sg**	**04 11 00.3**	**+0.1**
	baz=248						
TWS1	**Kuangyinshan**	**0.77**	**320**	*e*P	**Pn**	**04 10 52.7**	**+0.6**
	baz=325						
TWS1				*e*S	**Sn**	**04 11 03.0**	**-0.6**
	baz=325						
ESL	**Shilin**	**0.84**	**215**	*e*S	**Sg**	**04 11 02.6**	**-0.1**
	baz=209						
NSTT	**Nanjuang**	**0.88**	**278**	*e*P	**Pn**	**04 10 53.7**	**0.0**
	baz=278						
NSTT				*e*S	**Sb**	**04 11 04.7**	**+0.3**
	baz=278						
JYNG	**Yonagunijimaku**	**0.90**	**93**	P	**Pb**	**04 10 53.1**	**+0.1**
JYNG				S	**Sb**	**04 11 05.3**	**+0.5**
YOJ	**Yonaguni jima**	**0.96**	**92**	P	**Pb**	**04 10 53.7**	**-0.3**
YOJ				*e*S	**Sg**	**04 11 06.6**	**0.0**
WDT	**Danda**	**1.06**	**226**	*e*P	**Pn**	**04 10 56.7**	**+0.3**
	baz=221						
WDT				*e*S	**Sg**	**04 11 09.9**	**0.0**
	baz=221						
SMLT	**Sun Moon Lake**	**1.15**	**238**	*e*P	**Pg**	**04 10 57.9**	**+0.2**
	baz=234						
TYC	**Yuchr**	**1.17**	**240**	*e*P	**Pg**	**04 10 58.3**	**+0.2**
	baz=236						
TYC				*e*S	**Sn**	**04 11 13.2**	**-0.2**
	baz=236						
CHN5	**Tsauling**	**1.48**	**233**	*e*P	**Pg**	**04 11 03.7**	**-0.2**
	baz=230						
CHN5				*e*S	**Sb**	**04 11 22.3**	**+0.6**
	baz=230						
IRIF	**Iriomote-Funau**	**1.62**	**96**	P	**Pn**	**04 11 03.4**	**-0.4**
JKRS	**Kuro-shima**	**1.89**	**98**	*e*S	**Sn**	**04 11 30.4**	**-0.7**
JIJ	**Ishigaki jima**	**1.99**	**94**	P	**Pn**	**04 11 08.9**	**0.0**

JMA 30 04:16:18.1±0.1, 32.°76N×142.°35E, h0km, M3.6, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ2	**Mitsune**	**2.16**	**280**	*e*S	Sb	04 17 24.2	-1.2
JHCJ	**Hachijojimakas**	**2.17**	**279**	*e*S	Sn	04 17 24.3	+1.2
BSO1	**Boso 1**	**2.21**	**329**	P	Pn	04 16 56.9	+1.4
BSO1				*e*S	Sb	04 17 25.0	-1.3
BSO2	**Boso 2**	**2.39**	**327**	*e*S	Sb	04 17 30.6	-1.2
BSO3	**Boso 3**	**2.55**	**324**	P	Pn	04 17 01.9	+1.4

TAFL	**Tanaga Flats**	**1.73**	**275**	P	Pn	04 44 40.1	+1.2
TAFP	**Tanaga Falls P**	**1.80**	**280**	P	Pn	04 44 40.8	+0.9
TAFP				S	Sn	04 45 02.9	+1.5
TANO	**Tanaga North**	**1.89**	**280**	P	Pn	04 44 41.9	+0.8
GAEA	**Gareloi East**	**2.26**	**275**	P	Pn	04 44 47.0	+0.8
GAEA				S	Sn	04 45 15.9	+3.1
GALAA	**Gareloi Lava P**	**2.27**	**275**	P	Pn	04 44 47.4	+1.0
NIKH	**Nikolski High**	**4.08**	**68**	P	Pn	04 45 12.2	+1.0
NIKH				S	Sn	04 45 58.8	+1.3
UNV	**Unalaska Valle**	**5.69**	**64**	P	Pn	04 45 35.0	+1.7
UNV				S	Sn	04 46 40.5	+3.3
RC01	**Rabbit Creek A**	**16.85**	**46**	*e*Pn	Pn	04 48 04.4	+0.3
COLD	**Coldfoot** 3.8nm,1.1s	**19.89**	**29**	*e*P	Pn	04 48 40.4	-0.6
EGAK	**Eagle** 5.2nm,1.0s	**21.87**	**40**	*e*P	P	04 48 59.7	-0.8
DAWY	**Dawson** 4.0nm,1.1s	**22.36**	**42**	*e*P	P	04 49 05.9	0.0

IDC 30 04:47:16.3±10.0, 24°46S×179°25W, h524km±406km, mb3.0/3, mb1 3.2/4, mb1mx2.9/31, mbtmp4.0/4, Error ellipse: s-maj=509.7km s-min=90.2km az=93.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.10**	**192**	P	P	04 50 16.8	+0.3
	0.4nm,0.3s,baz=346,slow=4.2,SNR=2.4						
URZ				S	S	04 52 44.7	-0.5
	0.9nm,0.3s,baz=14,slow=23,SNR=7.1						
STKA	**Stephens Creek**	**35.16**	**249**	P	P	04 53 25.8	-0.2
	1.5nm,0.6s,baz=82,slow=7.1,SNR=4.9						
ASAR	**Alice Springs**	**42.62**	**261**	P	P	04 54 26.7	+0.1
	0.6nm,0.5s,baz=96,slow=8.5,SNR=10						
WRA	**Warramunga Arr**	**43.05**	**266**	P	P	04 54 29.6	-0.3
	2.4nm,0.6s,baz=103,slow=8.1,SNR=34						

IDC 30 05:10:01.9±3.6, 53°28N×90°95E, h0km, mb1 3.0/3, mb1mx2.9/48, mbtmp3.0/3, ML2.5/3, Error ellipse: s-maj=32.9km s-min=26.3km az=36.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**3.71**	**283**	*i*		05 32 45.8	
	baz=98,slow=304,SNR=11						
ZALV	**Zalesovo Beam**	**3.71**	**283**	Pn	Pn	05 11 01.6	+1.2
	1.0nm,0.3s,baz=101,slow=14,SNR=12						
ZALV				Lg	Lg	05 11 60.0	
	1.5nm,0.3s,baz=97,slow=26,SNR=7.2						
TLY	**Talaya**	**7.92**	**97**	Lg	Lg	05 13 57.8	
	0.0nm,0.3s,baz=317,slow=8.5,SNR=2.3						
KURBB	**Kurchatov Arra**	**8.12**	**256**	Pn	Pn	05 12 00.4	-0.6
	0.1nm,0.3s,baz=71,slow=14,SNR=10						
KURBB				Sn	Sn	05 13 32.1	-1.4
	0.1nm,0.3s,baz=68,slow=26,SNR=4.7						
KURBB				Lg	Lg	05 14 19.1	
	0.0nm,0.3s,baz=69,slow=33,SNR=4.5						
MKAR	**Makanchi Array**	**8.56**	**224**	Pn	Pn	05 12 08.1	+1.1
	0.1nm,0.3s,baz=33,slow=12,SNR=2.5						
MKAR				Sn	Sn	05 13 49.0	+4.8
	0.0nm,0.3s,baz=30,slow=20,SNR=3.7						
MKAR				Lg	Lg	05 14 35.8	
	0.1nm,0.3s,baz=36,slow=32,SNR=3.0						
SONM	**Songino Array**	**11.23**	**113**	Lg	Lg	05 15 47.0	
	0.2nm,0.3s,baz=301,slow=31,SNR=3.4						

*NAO **30** 05:17:51.6±5.9, 58°82N×6°09E, h0km±21km, ML2.3*
*ISCJB **30** 05:17:58.3±0.7, 58°89N±0°04×7°03E±0°06, h4km, Error ellipse: s-maj=6.2km s-min=4.4km az=20.7*
*CSEM **30** 05:17:58.5±0.4, 58°93N×7°14E, h5km, ML2.2, Error ellipse: s-maj=8.8km s-min=7.3km az=53.0*
*BER **30** 05:18:00.1±4.5, 58°85N×6°96E, h0km±20km, ML2.2, ML2.3(NAO)*
ISC 30 05:17:57.0±0.9, 58°89N±0°04×6°78E±0°04, h4km, n26, σ1s46/32, Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BLS5	**Blasjo**	**0.56**	**343**	*e*S	**Sb**	**05 18 18.2**	**+0.4**
BLS5				IAML		05 18 24.1	
	comp=Z,119nm,0.6s						
BLS5	**Blasjo**	**0.56**	**343**	*e*S	**Sb**	**05 18 18.2**	**+0.4**
	SNR=90						
STAV	**Stavanger**	**0.56**	**275**	*e*S	**Sn**	**05 18 22.3**	**+0.8**
STAV	**Stavanger**	**0.56**	**275**	*e*S	**Sn**	**05 18 22.3**	**+0.8**
	SNR=90						
SNART	**Snartemo**	**0.60**	**158**	*e*P	**Pb**	**05 18 10.0**	**0.0**
SNART	**Snartemo**	**0.60**	**158**	*e*P	**Pb**	**05 18 10.0**	**0.0**
	SNR=90						
KMY	**Karmoy**	**0.85**	**293**	*e*S	**Sn**	**05 18 29.8**	**+1.1**
KMY	**Karmoy**	**0.85**	**293**	*e*S	**Sn**	**05 18 29.8**	**+1.1**
	SNR=90						
ODD1	**Odda**	**1.03**	**356**	*e*S	**Sn**	**05 18 33.3**	**+0.2**
ODD1				IAML		05 18 36.0	
	comp=Z,62nm,0.4s						
ODD1	**Odda**	**1.03**	**356**	*e*S	**Sn**	**05 18 33.3**	**+0.2**
	SNR=90						
HOMB	**Homborsund**	**1.10**	**124**	*e*P	**Pg**	**05 18 17.6**	**-0.4**
HOMB	**Homborsund**	**1.10**	**124**	*e*P	**Pg**	**05 18 17.6**	**-0.4**
	SNR=90						
KONO	**Kongsberg**	**1.64**	**61**	*e*P	**Pn**	**05 18 26.8**	**+0.3**
KONO				*e*P	**Pb**	**05 18 27.7**	**0.0**
KONO	**Kongsberg**	**1.64**	**61**	*e*P	**Pn**	**05 18 26.8**	**+0.3**
	SNR=50						
ASK	**Askoy**	**1.79**	**334**	*e*S	**Sb**	**05 18 55.2**	**+2.1**
ASK				IAML		05 19 01.9	
	comp=Z,46nm,0.6s						
NB2	**NORSAR Subarra**	**3.10**	**44**	Pn	**Pn**	**05 18 45.6**	**-1.2**
NB2				Pg	**Pb**	**05 18 53.6**	**+0.9**
	baz=227,slow=16						
NB2				Sn	**Sn**	**05 19 26.4**	**+2.1**
NB2				Lg	Lg	05 19 40.2	
	baz=229,slow=28						
NB2	**NORSAR Subarra**	**3.10**	**44**	Pn	**Pn**	**05 18 45.6**	**-1.2**
NB2				Pg	**Pb**	**05 18 53.6**	**+0.9**
	baz=227,slow=16						
NB2				Sn	**Sn**	**05 19 26.4**	**+2.1**
NB2				Lg	Lg	05 19 40.2	
	baz=229,slow=28						
NB2	**NORSAR Subarra**	**3.10**	**44**	Pn	**Pn**	**05 18 45.6**	**-1.2**
	SNR=50						
NB2	**NORSAR Subarra**	**3.10**	**44**	Pg	**Pb**	**05 18 53.6**	**+0.9**
	SNR=90						
NB2				Lg	Lg	05 19 40.2	
	SNR=51						
AKN	**Aaknes**	**3.30**	**2**	Sn	**Sn**	**05 19 25.5**	**-3.6**
AKN				Lg	Lg	05 19 39.8	
AKN	**Aaknes**	**3.30**	**2**	Sn	**Sn**	**05 19 25.5**	**-3.6**
AKN				Lg	Lg	05 19 39.8	
HFS	**Hagfors**	**3.74**	**68**	Pn	**Pn**	**05 18 53.7**	**-1.7**
	baz=241,slow=14						
HFS				Sn	**Sn**	**05 19 40.9**	**+1.1**
	baz=249,slow=18						
HFS				Lg	Lg	05 20 00.5	
	baz=252,slow=28						
HFS	**Hagfors**	**3.74**	**68**	Pn	**Pn**	**05 18 53.7**	**-1.7**
	baz=241,slow=14						
HFS				Sn	**Sn**	**05 19 40.9**	**+1.1**
	baz=249,slow=18						
HFS				Lg	Lg	05 20 00.5	
	baz=252,slow=28						
HFS	**Hagfors**	**3.74**	**68**	Pn	**Pn**	**05 18 53.7**	**-1.7**
	SNR=50						
HFS				Sn	**Sn**	**05 19 40.9**	**+1.1**
HFS				Lg	Lg	05 20 00.4	
	SNR=51						
FIA0	**FINESS Array S**	**9.94**	**67**	Lg	Lg	05 23 14.9	
	baz=259,slow=37						
FIA0	**FINESS Array S**	**9.94**	**67**	Lg	Lg	05 23 14.9	
	baz=259,slow=37						

IDC 30 05:19:05.6±2.4, 54°12N×86°39E, h0km, mb1 3.3/2, mb1mx3.1/52, mbtmp3.3/2, ML3.1/2, Error ellipse: s-maj=19.4km s-min=12.0km az=56.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.94**	**260**	*i*		05 25 40.0	
	baz=80,slow=319,SNR=14						
ZALV	**Zalesovo Beam**	**0.94**	**260**	Pg	Pg	05 19 22.5	-1.2
	1.9nm,0.3s,baz=76,slow=16,SNR=14						
ZALV				Lg	Lg	05 19 36.8	
	4.8nm,0.3s,baz=80,slow=27,SNR=16						
KURBB	**Kurchatov Arra**	**5.95**	**237**	Pn	Pn	05 20 35.8	+0.9
	0.2nm,0.3s,baz=56,slow=14,SNR=18						
KURBB				Lg	Lg	05 22 16.6	
	0.0nm,0.3s,baz=54,slow=31,SNR=5.6						
MKAR	**Makanchi Array**	**7.79**	**201**	Pn	Pn	05 21 01.2	+1.0
	0.5nm,0.3s,baz=24,slow=13,SNR=12						
MKAR				Sn	Sn	05 22 28.8	-0.2
	0.1nm,0.3s,baz=22,slow=28,SNR=4.1						
MKAR				Lg	Lg	05 23 11.9	
	0.1nm,0.3s,baz=23,slow=27,SNR=4.7						

MEX 30 05:19:10.3±0.6, 16°72N×99°04W, h16km±6km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.80**	**281**	*e*P	Pn	05 19 27.6	+0.7
ACX				*i* S	Sn	05 19 37.7	-0.9
PNIG	**Pinotepa**	**0.93**	**110**	*e*P	Pb	05 19 24.8	-3.3
PNIG				*e*S	Sb	05 19 36.2	-4.1
TLIG	**Tlapa**	**0.95**	**28**	*e*P	Pb	05 19 24.4	-4.1
TLIG				*i* S	Sb	05 19 37.1	-3.8
CAIG	**El Cayaco**	**1.22**	**286**	*e*P	Pn	05 19 29.2	-3.5
CAIG				*e*S	Sb	05 19 43.5	-5.1
MEIG	**Mezcala**	**1.32**	**335**	*e*P	Pn	05 19 31.3	-2.9
MEIG				*i* S	Sn	05 19 46.0	-5.6
PLIG	**Platanillo**	**1.72**	**345**	*e*P	Pn	05 19 35.9	-3.8
PLIG				*e*S	Sn	05 19 56.3	-5.2
ARIG	**Puente Sto Nin**	**1.99**	**321**	*e*P	Pn	05 19 40.8	-2.6
ARIG				*e*S	Sn	05 20 02.7	-5.3
YAIG	**Yautepec**	**2.13**	**359**	*i* P	Pn	05 19 41.9	-3.6
YAIG				*i* S	Sn	05 20 07.1	-4.6
VHO	**Vista Hermosa**	**2.23**	**81**	*e*P	Pn	05 19 44.5	-2.4
VHO				*i* S	Sn	05 20 10.2	-4.1

*GUC **30** 05:28:00.4±0.6, 31°.89S×72°.17W, h36km±6km, ML2.7*
ISC 30 05:27:56.9±3.2, 31°66S±0°08×72°0W±0°3, h10km±21km, n11, σ0s85/16, 1C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROCH	**El Roble**	**1.53**	**149**	*i* P	**Pg**	**05 28 26.1**	**-0.2**
ROCH				*e*S	**Sg**	**05 28 46.1**	**-0.1**
ROCH				IAML		05 28 49.9	
	comp=E,146nm,0.2s						
ROC1	**El Roble**	**1.53**	**149**	*i* P	**Pg**	**05 28 26.4**	**+0.1**
PEL	**Peldehue**	**1.82**	**144**	*e*P	**Pb**	**05 28 30.5**	**+0.1**
PEL				*i* S	**Sb**	**05 28 53.8**	**+0.5**
PEL				IAML		05 28 57.3	
	comp=E,139nm,0.2s						
CLCH	**Cerro Calan**	**2.10**	**146**	*i* P	**Pb**	**05 28 34.5**	**-0.6**
CLCH				*i* S	**Sb**	**05 28 59.8**	**-1.5**
CLCH				IAML		05 29 09.9	
	comp=N,110nm,0.6s						
FCH	**Farellones**	**2.17**	**140**	*i* S	**Sb**	**05 29 03.5**	**-0.1**
FCH				IAML		05 29 05.6	
	comp=E,77nm,0.2s						
AUSP	**Uspallata**	**2.25**	**105**	*i* P	**Pn**	**05 28 35.5**	**+1.1**
RTLS	**Leoncito**	**2.26**	**94**	*i* P	**Pn**	**05 28 35.5**	**+0.8**
AROD	**Rodeo**	**2.60**	**56**	*i* P	**Pn**	**05 28 39.7**	**+0.4**
AROD				*i* S	**Sn**	**05 29 09.9**	**-1.1**
ACCO	**Cerro Coronel**	**2.69**	**67**	*i* P	**Pn**	**05 28 41.1**	**+0.5**
ACCO				*i* S	**Sn**	**05 29 13.4**	**0.0**
ACCO				IAML		05 29 16.0	
	comp=Z,40nm,0.5s						
RTCV	**Cerro Valdivia**	**2.91**	**95**	*i* P	**Pn**	**05 28 44.6**	**+1.3**
AMOG	**MOGNA**	**3.04**	**77**	*i* P	**Pn**	**05 28 46.0**	**+0.8**

*IDC **30** 05:39:05.4±10.0, 7°83S×128°71E, h148km±122km, mb3.5/4, mb1 3.6/7, mb1mx3.3/45, mbtmp3.9/7, ML4.0/3, Error ellipse: s-maj=73.0km s-min=55.2km az=23.0*
ISC 30 05:39:03.4±1.1, 7°84S±0°08×129°1E±0°2, h131km, n7, σ2s38/10, mb3.6/4, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.73**	**198**	P	**Pn**	**05 41 34.8**	**+1.2**
	1.0nm,0.3s,baz=17,slow=9.4,SNR=51						
FITZ				S	**Sn**	**05 43 30.8**	**-1.2**
	2.1nm,0.3s,baz=31,slow=12,SNR=8.0						
WRA	**Warramunga Arr**	**13.07**	**158**	P	**Pn**	**05 42 05.8**	**+1.6**
	0.9nm,0.3s,baz=333,slow=13,SNR=44						
WRA				S	**Sn**	**05 44 25.4**	**-3.1**
	3.3nm,0.3s,baz=337,slow=22,SNR=14						
ASAR	**Alice Springs**	**16.41**	**164**	P	**P**	**05 42 50.1**	**+3.5**
	0.3nm,0.3s,baz=339,slow=9.9,SNR=16						
ASAR				S	**Sn**	**05 45 46.0**	**-2.9**
	0.8nm,0.3s,baz=346,slow=26,SNR=8.6						
SONM	**Songino Array**	**58.95**	**342**	P	**P**	**05 48 48.9**	**-0.1**
	0.3nm,0.5s,baz=134,slow=6.2,SNR=3.0						
MKAR	**Makanchi Array**	**68.43**	**327**	P	**P**	**05 49 50.0**	**-1.1**
	1.4nm,0.5s,baz=124,slow=7.7,SNR=21						
ZALV	**Zalesovo Beam**	**71.93**	**334**	P	**P**	**05 50 10.8**	**-1.4**
	0.6nm,0.6s,baz=122,slow=5.4,SNR=3.5						
KURBB	**Kurchatov Arra**	**72.75**	**329**	P	**P**	**05 50 16.7**	**-0.5**
	0.3nm,0.2s,baz=132,slow=5.2,SNR=8.5						

*NIED **30** 05:42:00.3±8.7, 50°.50N×140°.00E, h5km, Mw3.7 Best double couple: M0 3.37000×10^14 NP1: φs18.00000°, δ49.00000°, λ137.00000°. NP2: φs140.00000°, δ59.00000°, λ50.00000°.*
*ISCJB **30** 05:42:31.9±0.5, 38°.57N±0°.03×139°.99E±0°.04, h14km±3km, mb3.8/12, Error ellipse: s-maj=5.5km s-min=4.8km az=135.3*
*JMA **30** 05:42:32.3, 38°.53N×139°.99E, h5km±2km, M3.7 Broadband fault plane solution: P waves. NP1: φs144.00000°, δ63.00000°, λ47.00000°. NP2: φs27.00000°, δ49.00000°, λ143.00000°. Principal axes: T Plg52.0000°, Azm3.0000°; N Plg37.0000°, Azm167.0000°; P Plg8.0000°, Azm263.0000°;*
JMA Felt II J1.
*IDC **30** 05:42:37.0±3.8, 38°.60N×139°.84E, h35km±32km, mb3.6/12, mb1 3.8/16, mb1mx3.6/48, mbtmp3.8/16, ML3.5/4, MS2.5/3, Ms1 2.5/3, ms1mx2.2/37 Error ellipse: s-maj=22.6km s-min=15.2km az=93.0*
ISC 30 05:42:32.2±1.1, 38°56N±0°04×140°00E±0°03, h5km±8km, n29, σ1s05/31, mb3.9/12, 2C-5D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYA	**Atsumi**	**0.23**	**279**	⇓P	**Pg**	**05 42 36.8**	**+0.2**
JYA				S	**Sg**	**05 42 40.5**	**+0.9**
JYS	**Shirataka**	**0.34**	**171**	⇑P	**Pg**	**05 42 38.6**	**-0.2**
JYS				S	**Sg**	**05 42 43.5**	**+0.2**
JYK	**Kaneyama**	**0.46**	**38**	⇑P	**Pb**	**05 42 41.5**	**-1.2**
JYK				S	**Sb**	**05 42 48.3**	**-1.5**
JOU	**Okura**	**0.56**	**110**	⇓P	**Pg**	**05 42 43.0**	**+0.1**
JOU				S	**Sg**	**05 42 43.8**	**+0.2**
JAW	**Awa shima**	**0.60**	**260**	⇓P	**Pb**	**05 42 43.6**	**-1.5**
JNS	**Sasagawa**	**0.91**	**216**	⇓P	**Pg**	**05 42 49.0**	**-0.7**
JMM	**Marumori**	**0.93**	**138**	⇓P	**Pg**	**05 42 49.4**	**-0.7**
MAT	**Matsushiro**	**2.47**	**216**	P	**Pn**	**05 43 12.8**	**-0.3**
MAT				S	**Sn**	**05 43 41.6**	**-2.0**
MJAR	**Matsushiro Arr**	**2.47**	**216**	Pn	**Pn**	**05 43 13.2**	**+0.2**
	13nm,0.3s,baz=15,slow=14,SNR=46						
MJAR				Sn	**Sn**	**05 43 44.2**	**+0.6**
	5.1nm,0.3s,baz=12,slow=13,SNR=5.5						
MJAR				LR	LR	05 44 23.8	
	comp=Z,63nm,19.3s,baz=15,slow=44						
JHJ	**Hachijo jima 2**	**5.43**	**182**	Pn	**Pn**	**05 43 57.0**	**+3.1**
	7.4nm,0.3s,baz=61,slow=19,SNR=2.5						
USRK	**Ussuriysk Ar.**	**8.24**	**316**	Pn	**Pn**	**05 44 32.0**	**-0.4**
	0.8nm,0.3s,baz=123,slow=14,SNR=5.8						
KSRS	**Korea Array**	**9.60**	**267**	Pn	**Pn**	**05 44 52.5**	**+1.6**
	1.4nm,0.3s,baz=74,slow=14,SNR=8.3						
KSRS				LR	LR	05 48 11.7	
	comp=Z,40nm,18.0s,baz=96,slow=35						
KLR	**Kul'dur**	**12.20**	**334**	LR	LR	05 50 01.3	
	comp=Z,23nm,18.2s,baz=4.0,slow=37						
SEY	**Seymchan**	**25.54**	**13**	P	**P**	**05 48 02.5**	**+1.0**
	2.5nm,0.8s,baz=253,slow=23,SNR=9.9						
H11N2	**WAKE ISLAND Hy**	**29.89**	**121**	T	T	06 19 21.2	
	baz=316,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**29.90**	**121**	T	T	06 19 16.7	
	baz=316,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**29.91**	**121**	T	T	06 19 18.4	
	baz=316,slow=75,SNR=9.9						
MKAR	**Makanchi Array**	**42.37**	**300**	P	**P**	**05 50 26.9**	**-0.4**
	0.5nm,0.8s,baz=87,slow=8.0,SNR=2.7						
KURBB	**Kurchatov Arra**	**44.19**	**307**	P	**P**	**05 50 40.5**	**-1.3**
	0.6nm,0.7s,baz=82,slow=8.3,SNR=4.2						
ILAR	**Eielson Array**	**48.82**	**33**	P	**P**	**05 51 18.2**	**+0.2**
	1.0nm,0.7s,baz=271,slow=6.0,SNR=16						
WRA	**Warramunga Arr**	**58.43**	**186**	P	**P**	**05 52 29.2**	**+0.2**
	1.8nm,0.8s,baz=5.7,slow=7.3,SNR=11						
ASAR	**Alice Springs**	**62.16**	**186**	P	**P**	**05 52 55.1**	**+0.7**
	0.8nm,0.8s,baz=17,slow=7.0,SNR=5.8						
YKA	**Yellowknife Ar**	**63.05**	**30**	P	**P**	**05 53 00.5**	**+0.6**
	0.4nm,0.7s,baz=304,slow=6.0,SNR=3.5						
FINES	**FINESS Array B**	**66.94**	**331**	P	**P**	**05 53 25.0**	**-0.3**
	1.3nm,0.8s,baz=48,slow=13,SNR=2.8						
NEW	**Newport**	**69.81**	**44**	P	**P**	**05 53 44.4**	**+0.8**
	0.9nm,0.5s,baz=311,slow=11,SNR=3.0						
NOA	**NORSAR Array B**	**72.35**	**337**	P	**P**	**05 53 58.3**	**-0.4**
	0.7nm,0.7s,baz=44,slow=9.4,SNR=3.6						
AKASG	**Malin Array Be**	**72.41**	**321**	P	**P**	**05 53 58.6**	**-0.6**
	0.2nm,0.3s,baz=40,slow=6.7,SNR=4.6						
PDAR	**Pinedale Array**	**77.39**	**45**	P	**P**	**05 54 28.8**	**+0.3**
	0.8nm,0.7s,baz=288,slow=1.4,SNR=6.6						
LPAZ	**La Paz**	**146.83**	**56**	PKPbc	**PKPbc**	**06 02 16.6**	**-0.1**
	0.6nm,0.6s,baz=301,slow=2.2,SNR=4.8						

IDC 30 05:43:48.8±5.6, 17°74S×178°63W, h523km±61km, mb3.2/8, mb1 3.4/9, mb1mx3.2/36, mbtmp4.1/9, Error ellipse: s-maj=50.4km s-min=25.2km az=140.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**14.69**	**251**	P	P	05 46 56.3	+0.7
	0.3nm,0.3s,baz=17,slow=20,SNR=2.0						
STKA	**Stephens Creek**	**38.53**	**241**	P	P	05 50 25.7	-0.6
	2.4nm,0.9s,baz=79,slow=11,SNR=6.2						
WRA	**Warramunga Arr**	**44.46**	**259**	P	P	05 51 12.8	-0.7
	0.2nm,0.4s,baz=91,slow=8.4,SNR=5.8						
ASAR	**Alice Springs**	**44.64**	**254**	P	P	05 51 15.2	+0.3
	4.6nm,0.5s,baz=89,slow=8.2,SNR=45						
ASAR				PcP	PcP	05 52 46.4	-0.1
	0.3nm,0.4s,baz=97,slow=4.8,SNR=3.4						
PETK	**Petropavlovsk-**	**73.47**	**345**	P	P	05 54 27.8	+0.2
	3.2nm,0.7s,baz=125,slow=9.9,SNR=4.7						
SEY	**Seymchan**	**83.57**	**347**	P	P	05 55 21.1	-0.2
	3.4nm,0.6s,baz=146,slow=5.0,SNR=14						
ILAR	**Eielson Array**	**85.78**	**13**	P	P	05 55 31.3	-0.8
	0.4nm,0.5s,baz=221,slow=5.7,SNR=6.1						
TXAR	**Lajitas Array**	**86.08**	**58**	P	P	05 55 34.4	-0.1
	0.5nm,0.8s,baz=232,slow=4.9,SNR=6.8						
PDAR	**Pinedale Array**	**87.38**	**44**	P	P	05 55 40.8	+0.3
	0.4nm,0.5s,baz=214,slow=3.7,SNR=4.8						
BRTR	**Keskin Array B**	**144.52**	**315**	PKP	PKPdf	06 02 24.9	-1.0
	3.1nm,1.1s,baz=112,slow=2.3,SNR=5.8						
GERES	**GERESS Array B**	**147.40**	**345**	PKPbc	PKPbc	06 02 33.6	-0.2
	1.3nm,0.5s,baz=31,slow=2.6,SNR=9.6						

*ISCJB **30** 05:54:08.7±0.4, 42°.63N±0°.02×45°.42E±0°.02, h3km±4km, mb4.0/1, Error ellipse: s-maj=3.8km s-min=2.5km az=15.6*
*TIF **30** 05:54:08.9, 42°.62N×45°.34E, h9km±3km*
*CSEM **30** 05:54:09.2±0.2, 42°.62N×45°.41E, h2km, mb4.4, Error ellipse: s-maj=3.6km s-min=2.6km az=19.0*
*MOS **30** 05:54:09.4±0.7, 42°.60N×45°.39E, h14km, mb4.4/1, Error ellipse: s-maj=11.2km s-min=6.2km az=42.2*
ISC 30 05:54:09.1±1.0, 42°61N±0°02×45°41E±0°02, h13km±8km, n58, σ0s92/104, 7C, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMGR	**Komgaron**	**0.60**	**318**	⇑*i*PG	**Pb**	**05 54 21.1**	**-0.3**
KMGR				*e*S	**Sb**	**05 54 29.3**	**-0.4**
KMGR	**Komgaron**	**0.60**	**318**	*i* Pg	**Pb**	**05 54 21.1**	**-0.3**
KMGR				*e*Sg	**Sb**	**05 54 29.3**	**-0.4**
GROC	**Groznyy**	**0.66**	**26**	⇑*i*PG	**Pn**	**05 54 23.3**	**-0.7**
GROC				*i* S	**Sn**	**05 54 33.9**	**-0.3**
GROC	**Groznyy**	**0.66**	**26**	*i* Pg	**Pn**	**05 54 23.3**	**-0.7**
GROC				*i* Sg	**Sn**	**05 54 33.9**	**-0.3**
VLKR	**Vladikavkaz**	**0.69**	**309**	*e*PG	**Pb**	**05 54 23.1**	**+0.1**
VLKR				*e*S	**Sb**	**05 54 32.4**	**0.0**
VLKR	**Vladikavkaz**	**0.69**	**309**	*e*Pg	**Pb**	**05 54 23.1**	**+0.1**
VLKR				*e*Sg	**Sb**	**05 54 32.4**	**0.0**
GUDG	**Gudauri**	**0.70**	**258**	P	**Pg**	**05 54 22.5**	**-0.3**
GUDG				S	**Sg**	**05 54 31.5**	**-0.6**
GUDG	**Gudauri**	**0.70**	**258**	P	**Pg**	**05 54 22.5**	**-0.3**
GUDG				S	**Sg**	**05 54 31.5**	**-0.6**
DUS	**Dusheti**	**0.74**	**225**	P	**Pn**	**05 54 25.5**	**+0.2**
DUS				S	**Sn**	**05 54 36.1**	**-0.3**
DUS	**Dusheti**	**0.74**	**225**	P	**Pn**	**05 54 25.5**	**+0.2**
DUS				S	**Sn**	**05 54 36.1**	**-0.3**
LACR	**Lac**	**0.84**	**285**	*e*PG	**Pg**	**05 54 24.9**	**-0.6**
LACR				*i* S	**Sg**	**05 54 35.5**	**-1.1**
LACR	**Lac**	**0.84**	**285**	*e*Pg	**Pg**	**05 54 24.9**	**-0.6**
LACR				*i* Sg	**Sg**	**05 54 35.5**	**-1.1**
SEAG	**Tbilisi Sea**	**0.96**	**208**	P	**Pg**	**05 54 27.5**	**-0.1**
SEAG				S	**Sn**	**05 54 41.2**	**-0.6**
SEAG	**Tbilisi Sea**	**0.96**	**208**	P	**Pg**	**05 54 27.5**	**-0.1**
SEAG				S	**Sn**	**05 54 41.2**	**-0.6**
XNZR	**Khunzakh**	**0.96**	**94**	*e*PG	**Pb**	**05 54 27.7**	**0.0**
XNZR				*e*S	**Sg**	**05 54 40.0**	**-0.3**
XNZR				pmax	pmax		
	comp=Z,48nm,0.1s						
XNZR	**Khunzakh**	**0.96**	**94**	*e*Pg	**Pb**	**05 54 27.7**	**0.0**
	comp=Z,48nm,0.1s						
XNZR			

LSNR	**Lesken**	**1.34**	**300**	*e*Pg	**Pg**	05	54	35.9 +1.1
LSNR				*e*Sg	**Sg**	05	54	53.9 +1.7
KMKR	**Kumukh**	**1.34**	**110**	*e*PG	**Pb**	05	54	34.0 -0.2
KMKR				*i* S	**Sg**	05	54	52.0 -0.5
KMKR				pmax	pmax			
	comp=Z,28nm,0.3s							
KMKR	**Kumukh**	**1.34**	**110**	*e*Pg	**Pb**	05	54	34.0 -0.2
	comp=Z,28nm,0.3s							
KMKR				*i* Sg	**Sg**	05	54	52.0 -0.5
DIGR	**Digorskoe uzhe**	**1.37**	**283**	*e*PG	**Pn**	05	54	34.4 +0.3
DIGR				*e*S	**Sb**	05	54	51.7 -0.6
DIGR	**Digorskoe uzhe**	**1.37**	**283**	*e*Pg	**Pn**	05	54	34.4 +0.3
DIGR				*e*Sg	**Sb**	05	54	51.7 -0.6
PRTR	**Priterechnaya**	**1.40**	**325**	*e*PG	**Pg**	05	54	35.9 -0.2
PRTR				*e*S	**Sg**	05	54	55.9 +1.6
PRTR	**Priterechnaya**	**1.40**	**325**	*e*Pg	**Pg**	05	54	35.9 -0.2
PRTR				*e*Sg	**Sg**	05	54	55.9 +1.6
ONI	**Oni**	**1.44**	**270**	P	**Pb**	05	54	35.8 0.0
ONI				S	**Sb**	05	54	54.5 +0.4
ONI	**Oni**	**1.44**	**270**	P	**Pb**	05	54	35.8 0.0
ONI				S	**Sb**	05	54	54.5 +0.4
BGD	**Bogdanovka**	**1.91**	**226**	P	**Pb**	05	54	43.4 -0.4
BGD				S	**Sb**	05	55	08.5 +0.9
BGD	**Bogdanovka**	**1.91**	**226**	P	**Pb**	05	54	43.5 -0.3
BGD				S	**Sg**	05	55	09.3 -1.1
NEY	**Neytrino**	**2.07**	**289**	*e*PN	**Pb**	05	54	45.4 -1.2
NEY	**Neytrino**	**2.07**	**289**	*e*Pn	**Pb**	05	54	45.4 -1.2
KIV	**Kislovodsk**	**2.40**	**305**‖	*e*PN	**Pn**	05	54	48.6 +0.5
KIV				*e*S	**Sb**	05	55	20.9 -0.7
KIV				pmax	pmax			
	comp=Z,2.0nm,0.3s							
KIV				smax	smax			
	comp=N,5.0nm,0.3s							
KIV	**Kislovodsk**	**2.40**	**305**	*e*Pn	**Pn**	05	54	48.6 +0.5
	comp=N,2.0nm,0.3s							
KIV				*e*Sn	**Sb**	05	55	20.9 -0.7
	comp=N,5.0nm,0.3s							
GNI	**Garni**	**2.51**	**192**	*e*PN	**Pb**	05	54	53.2 -0.9
GNI	**Garni**	**2.51**	**192**	*e*Pn	**Pb**	05	54	53.2 -0.9
KIEV	**Kiev**	**13.73**	**312**	*e*P	**Pn**	05	57	24.9 +1.6
KIEV				pmax	pmax			
	comp=Z,2.0nm,1.1s							
KIEV	**Kiev**	**13.73**	**312**	*e*P	**Pn**	05	57	24.9 +1.6
	comp=Z,2.0nm,1.1s							
ZAK	**Zakamensk**	**39.69**	**58**	*e*P	**P**	06	01	39.0 -1.8
ZAK				pmax	pmax			
	comp=Z,5.0nm,1.4s							

NIED **30** *06:12:00,35°.60N×142°.50E,h8km,Mw3.9 Best double couple: M₀8.03000×10¹⁴ NP1:φ=212.00000°,δ=33.00000°, λ=-82.00000°. NP2:φ=22.00000°,δ=58.00000°,λ=-95.00000°.*
IDC **30** *06:12:51.8±0.8,35°.50N×142°.72E,h0km,mb3.8/10, mb1 3.9/14,mb1mx3.8/40,mbtmp3.8/14,ML3.7/4,MS2.8/5, Ms1 2.8/5,ms1mx2.5/37,Error ellipse: s-maj=22.6km s-min=18.3km az=85.0*
NEIC **30** *06:12:53.1±0.4,35°.53N×142°.73E,h10km,mb4.6/2,Error ellipse: s-maj=8.6km s-min=7.4km az=104.0*
JMA **30** *06:12:55.9±0.2,35°.59N×142°.53E,h70km,M4.0*
ISCJB **30** *06:12:57.3±0.6,35°.52N±0°.04×142°.43E±0°.05,h56km, mb3.9/12,MS2.9/1,Error ellipse: s-maj=5.9km s-min=5.3km az=27.1*

ISC 30 06:12:59.4±0.8,35°.61N±0°.05×142°.43E±0°.08,h56km,n42, σ2=9.07/46,mb3.7/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.29**	**275**	P	**Pn**	**06 13 19.7**	**-1.4**
CHOJ				*e*S	**Sn**	**06 13 36.6**	**-0.7**
BSO1	**Boso 1**	**1.53**	**232**	P	**Pn**	**06 13 21.7**	**-2.2**
BSO1				S	**Sn**	**06 13 41.7**	**-0.7**
BSO3	**Boso 3**	**1.77**	**244**	P	**Pn**	**06 13 26.4**	**-1.0**
JFT	**Otama**	**2.55**	**319**	P	**Pn**	**06 13 37.0**	**-1.3**
JFT				*e*S	**Sn**	**06 14 07.0**	**-1.1**
JAG	**Ashikaga**	**2.55**	**290**	P	**Pn**	**06 13 36.9**	**-1.4**
JAG				*e*S	**Sn**	**06 14 07.0**	**-1.2**
JOD2	**Odawara 2**	**2.75**	**264**	P	**Pn**	**06 13 39.8**	**-1.3**
JOD2				*e*S	**Sn**	**06 14 11.8**	**-1.4**
JRY	**Ryogami san**	**2.90**	**279**	P	**Pn**	**06 13 42.7**	**-0.4**
JYN	**Shimob**	**3.17**	**269**	P	**Pn**	**06 13 45.9**	**-1.0**
JYN				*e*S	**Sn**	**06 14 23.8**	**+0.2**
JHJ2	**Mitsune**	**3.30**	**222**	P	**Pn**	**06 13 45.9**	**-2.6**
JHJ2				*e*S	**Sn**	**06 14 22.7**	**-3.9**
JHJ2	**Mitsune**	**3.30**	**222**	*e*Pn	**Pn**	**06 13 46.0**	**-2.6**
JHJ2				*e*Sn	**Sn**	**06 14 23.8**	**-2.8**
JHJ	**Hachijo jima 2**	**3.31**	**222**	Pn	**Pn**	**06 13 46.5**	**-2.3**
	29nm,0.3s,baz=338,slow=22,SNR=16						
JHJ				Sn	**Sn**	**06 14 22.8**	**-4.1**
	230nm,0.3s,baz=85,slow=24,SNR=18						
JMK	**Ichinoseki**	**3.48**	**344**	P	**Pn**	**06 13 48.2**	**-2.8**
MJAR	**Matsushiro Arr**	**3.55**	**286**	Pn	**Pn**	**06 13 52.0**	**0.0**
	5.6nm,0.3s,baz=302,slow=29,SNR=35						
MJAR				Sn	**Sn**	**06 14 34.2**	**+1.6**
	5.7nm,0.3s,baz=151,slow=15,SNR=5.9						
MJAR				LR	LR	06 15 32.6	
	comp=Z,115nm,20.5s,baz=105,slow=43						
MAJO	**Matsushiro**	**3.55**	**286**	*e*Pn	**Pn**	**06 13 51.9**	**-0.1**
MAT	**Matsushiro**	**3.55**	**286**	P	**Pn**	**06 13 51.7**	**-0.3**
MAT				S	**Sn**	**06 14 28.7**	**-4.0**
MAT	**Matsushiro**	**3.55**	**286**	P	**Pn**	**06 13 51.8**	**-0.3**
JYK	**Kaneyama**	**3.70**	**334**	P	**Pn**	**06 13 52.0**	**-2.0**
JYK				*e*S	**Sn**	**06 14 32.5**	**-3.8**
ERM	**Erimo**	**6.42**	**5**	*e*Pn	**Pn**	**06 14 27.8**	**-3.5**
ERM				*e*Sn	**Sn**	**06 15 37.3**	**-5.9**
JNU	**Nakatsue**	**9.87**	**259**	Pn	**Pn**	**06 15 18.3**	**-0.3**
	0.7nm,0.3s,baz=342,slow=8.7,SNR=3.0						
KSRS	**Korea Array**	**11.82**	**285**	LR	LR	06 19 43.4	
	comp=Z,43nm,21.6s,baz=86,slow=34						
JOW	**Kunigami**	**14.93**	**238**	LR	LR	06 21 44.4	
	comp=Z,15nm,22.0s,baz=140,slow=35						
KLR	**Kul'dur**	**15.71**	**333**	Pn	**Pn**	**06 16 36.7**	**-0.3**
	0.1nm,0.3s,baz=233,slow=4.7,SNR=3.7						
KLR				LR	LR	06 22 40.4	
	comp=Z,46nm,18.2s,baz=129,slow=37						
H11N2	**WAKE ISLAND Hy**	**26.72**	**120**	T	T	06 46 29.5	
	baz=309						
H11N1	**WAKE ISLAND Hy**	**26.73**	**120**	T	T	06 46 35.4	
	baz=309						
H11N3	**WAKE ISLAND Hy**	**26.73**	**120**	T	T	06 46 36.9	
	baz=309						
H11S1	**WAKE ISLAND Hy**	**27.40**	**122**	T	T	06 47 16.7	
	baz=316						
H11S3	**WAKE ISLAND Hy**	**27.40**	**122**	T	T	06 47 18.1	
	baz=316						
H11S2	**WAKE ISLAND Hy**	**27.41**	**122**	T	T	06 47 18.4	
	baz=316						
YAK	**Yakutsk**	**27.64**	**347**	LR	LR	06 30 58.4	
	comp=Z,28nm,18.2s,baz=144,slow=39						
SONM	**Songino Array**	**29.28**	**306**	P	**P**	**06 18 58.0**	**+1.7**
	1.1nm,0.7s,baz=108,slow=9.3,SNR=5.6						
ZALV	**Zalesovo Beam**	**43.49**	**314**	P	**P**	**06 20 57.3**	**+0.3**
	0.7nm,0.5s,baz=93,slow=8.7,SNR=2.9						
NRIK	**Noril'sk**	**44.90**	**336**	P	**P**	**06 21 09.4**	**+1.3**
	1.7nm,0.6s,baz=93,slow=6.1,SNR=1.9						
MKAR	**Makanchi Array**	**45.58**	**303**	P	**P**	**06 21 15.2**	**+1.4**
	0.7nm,0.6s,baz=87,slow=10,SNR=6.4						
KURK	**Kurchatov**	**47.47**	**309**	*e*P	**P**	**06 21 29.1**	**+0.6**
	1.9nm,0.6s						
ILAR	**Eielson Array**	**50.26**	**32**	P	**P**	**06 21 50.0**	**+0.3**
	0.6nm,0.7s,baz=266,slow=5.9,SNR=8.5						
WRAB	**Tennant Creek**	**55.77**	**189**	*e*P	**P**	**06 22 29.9**	**-0.7**
	19nm,1.6s						
WRA	**Warramunga Arr**	**55.78**	**189**	P	**P**	**06 22 29.8**	**-0.8**
	2.7nm,0.8s,baz=7.0,slow=7.4,SNR=26						
ASAR	**Alice Springs**	**59.50**	**189**	P	**P**	**06 22 56.3**	**-0.5**
	0.6nm,0.5s,baz=2.0,slow=7.0,SNR=8.5						
AKASG	**Malin Array Be**	**75.93**	**323**	P	**P**	**06 24 41.1**	**+1.1**
	0.2nm,0.3s,baz=45,slow=5.4,SNR=5.2						
BRTR	**Keskin Array B**	**80.42**	**312**	P	**P**	**06 25 07.1**	**+1.8**
	0.6nm,0.7s,baz=90,slow=4.3,SNR=3.1						
TXAR	**Lajitas Array**	**90.33**	**53**	P	**P**	**06 25 54.6**	**-0.1**
	0.2nm,0.7s,baz=292,slow=4.8,SNR=2.9						
LPAZ	**La Paz**	**146.66**	**63**	PKPbc	**PKPdf**	**06 32 34.5**	**+0.1**
	0.3nm,0.3s,baz=309,slow=7.1,SNR=3.8						

IDC 30 06:20:04.2±9.0,24°.19N×143°.47E,h0km,mb3.7/3, mb1 3.9/3,mb1mx3.4/31,mbtmp3.7/3,Error ellipse: s-maj=348.7km s-min=31.8km az=74.0,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**37.62**	**318**	P	P	06 27 20.7	-0.1
	0.3nm,0.4s,baz=111,slow=9.5,SNR=2.7						
WRA	**Warramunga Arr**	**44.76**	**192**	P	P	06 28 20.0	+0.3
	1.8nm,0.5s,baz=13,slow=8.7,SNR=19						
ASAR	**Alice Springs**	**48.47**	**192**	P	P	06 28 48.0	-0.7
	0.4nm,0.7s,baz=11,slow=4.8,SNR=5.9						

SOME **30** *06:33:26.5,44°.67N×82°.25E,h10km*
ISCJB **30** *06:33:28.4±1.3,44°.58N±0°.06×82°.4E±0°.1,h10km,Error ellipse: s-maj=14.1km s-min=5.3km az=28.3*
NNC **30** *06:33:28.5±1.5,44°.67N×82°.02E,h0km,mb2.9,mpv2.4, Error ellipse: s-maj=22.7km s-min=4.4km az=116.0*

ISC 30 06:33:25.2±1.7,44°.67N±0°.05×82°.33E±0°.09,h10km,n10, σ1=9.00/19,3C-3D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.85**	**260**	*e*P	**Pg**	**06 34 00.2**	**-0.5**
	14nm,0.2s						
DJR				*e*S	**Sg**	**06 34 24.4**	**-0.3**
	9.3nm,0.3s						
KTMS	**Ketmen**	**1.88**	**230**	*e*P	**Pb**	**06 33 59.7**	**0.0**
	3.2nm,0.3s						
KTMS				*e*S	**Sb**	**06 34 23.5**	**+0.3**
	35nm,0.4s						
MK31	**Makanchi Array**	**2.13**	**359**	⇑Pn	**Pg**	**06 34 05.9**	**-0.1**
	1.4nm,0.3s,baz=188,slow=14,SNR=104						
MK31				⇓Sn	**Sg**	**06 34 33.5**	**-0.1**
	1.9nm,0.3s,baz=186,slow=28,SNR=30						
MAKZ	**Makanchi**	**2.16**	**353**	⇓Pn	**Pg**	**06 34 05.6**	**-1.0**
	1.2nm,0.6s						
MAKZ				⇓Sn	**Sg**	**06 34 34.0**	**-0.5**
	5.1nm,0.5s						
KAPS	**Kapalarasan**	**2.20**	**287**	*e*P	**Pb**	**06 34 05.8**	**+0.7**
	3.3nm,0.2s						
KAPS				*e*S	**Sg**	**06 34 33.8**	**-2.1**
	11nm,0.4s						
SHLS	**Shalkode**	**2.33**	**230**	*e*P	**Pg**	**06 34 08.8**	**-1.0**
	10nm,0.2s						
SHLS				*e*S	**Sg**	**06 34 39.4**	**-0.6**
	34nm,0.4s						
PDGK	**Podgornoye**	**2.45**	**238**	⇑Pg	**Pb**	**06 34 09.4**	**0.0**
	1.6nm,0.6s						
PDGK				⇑Lg	Lg	06 34 42.0	
	12nm,0.6s						
UZB	**Uzynbulak**	**2.83**	**239**	*e*P	**Pb**	**06 34 16.4**	**+0.4**
	3.5nm,0.2s						
UZB				*e*S	**Sb**	**06 34 52.6**	**+1.8**
	5.0nm,0.2s						
KPKS	**Kokpek**	**2.89**	**247**	*e*P	**Pb**	**06 34 17.4**	**+0.5**
	7.5nm,0.1s						
KPKS				*e*S	**Sb**	**06 34 54.2**	**+1.8**
	26nm,0.4s						
ARXS	**Arharly**	**3.26**	**264**	*e*P	**Pb**	**06 34 23.4**	**+0.3**
	3.1nm,0.3s						
ARXS				*e*S	**Sb**	**06 35 04.0**	**+1.1**
	8.7nm,0.3s						

DJA 30 06:35:03.0±1.7,8°S±6°×111°E±°,h18km±20km,M3.5/5, MLv3.5/5,Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	**Plampang**	**1.08**	**170**	P	Pb	06 35 23.2	0.0
PLAI				S	Sn	06 35 37.5	-0.3
TWSI	**Taliwang, Sumb**	**1.19**	**215**	P	Pn	06 35 24.7	-0.1
TWSI				S	Sn	06 35 40.5	-0.1
SRBI	**Singaraja**	**2.37**	**262**	P	Pn	06 35 40.8	-0.2
DNP	**Denpasar**	**2.52**	**249**	P	Pn	06 35 43.0	0.0

KRSC 30 06:52:34.7±0.9,53°.31N×157°.55E,h287km±8km,ML3.8, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GNL	**Ganaly**	**0.45**	**31**	*e*P	Pn	06 53 12.8	+1.0
AVH	**Avacha**	**0.71**	**93**	*e*P	Pn	06 53 14.3	+1.8
KRER	**Koryakskii**	**0.72**	**90**	*e*P	Pn	06 53 14.3	+1.6
UGLR	**Uglovaya**	**0.77**	**97**	*e*P	Pn	06 53 14.6	+1.8
DALK	**Dalny**	**0.77**	**110**	*e*P	Pn	06 53 14.0	+1.4
DALK				*e*S	S	06 53 43.3	+0.6
SDLR	**Sedlovina**	**0.80**	**91**	*e*P	Pn	06 53 14.4	+1.5
RUS	**Russkaya**	**1.05**	**146**	*e*P	Pn	06 53 14.6	+0.7
RUS				*e*S	S	06 53 45.5	+0.5
SPN	**Mys Shipunski**	**1.50**	**97**	*e*P	Pn	06 53 17.6	+1.1
SPN				*e*S	S	06 53 49.8	+0.1
TUMR	**Tumrok**	**2.50**	**36**	*e*P	Pn	06 53 26.5	+1.8
MKZ	**Mys Kozlova**	**2.77**	**61**	*e*P	Pn	06 53 28.9	+1.8
MKZ				*e*S	S	06 54 09.1	+0.2
SRKR	**Sorokina**	**3.95**	**30**	*e*P	Pn	06 53 41.0	+1.4
SMKR	**Semkarok**	**3.98**	**33**	*e*P	Pn	06 53 42.4	+2.4

NIED **30** *06:54:00,27°.20N×143°.10E,h8km,Mw4.8 Best double couple: M₀1.52000×10¹⁶ NP1:φ=12.00000°,δ=20.00000°, λ=122.00000°. NP2:φ=158.00000°,δ=73.00000°,λ=79.00000°.*
BJI **30** *06:54:42.6,27°.05N×143°.13E,h5km,mb4.9/68,mB5.0/44, Ms4.5/54,Ms7 4.2/55*
IDC **30** *06:54:43.2±0.5,27°.12N×143°.35E,h0km,mb4.7/29, mb1 4.8/34,mb1mx4.7/47,mbtmp4.7/34,ML4.0/5,MS3.8/25, Ms1 3.8/25,ms1mx3.7/38,Error ellipse: s-maj=15.0km s-min=11.5km az=87.0*
ISCJB **30** *06:54:44.3±0.2,27°.27N±0°.03×143°.23E±0°.02,h10km, mb4.9/243,MS4.1/45,Error ellipse: s-maj=4.0km s-min=2.8km az=167.4*
NEIC **30** *06:54:45.2±2.5,27°.11N×143°.28E,h9km±15km,mb4.9/173, Error ellipse: s-maj=5.7km s-min=3.6km az=129.0*
MOS **30** *06:54:45.6±1.0,27°.10N×143°.28E,h26km,mb5.1/67,Error ellipse: s-maj=7.7km s-min=4.8km az=106.1*
JMA **30** *06:54:48.0±0.1,27°.20N×143°.08E,h91km,M4.5*

ISC 30 06:54:45.7±0.6,27°.19N±0°.04×143°.31E±0°.04,h13km±3km, n479,σ1=9.56/513,mb4.9/244,MS4.2/47,13C-14D,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.00**	**265**	P	**Pn**	**06 55 05.8**	**+0.3**
CBIJ				*e*S	**Sn**	**06 55 19.3**	**-0.2**
CBIJ	**Chichi jima**	**1.00**	**265**	*e*Pn	**Pn**	**06 55 06.2**	**+0.6**
CBIJ				*e*Sn	**Sn**	**06 55 19.3**	**-0.2**
JHHJ	**Haha-jima-NKT**	**1.15**	**241**	P	**Pg**	**06 55 07.7**	**-0.2**
JHCJ	**Hachijojimakas**	**6.60**	**333**	P	**Pn**	**06 56 21.8**	**-0.7**
JHCJ				*e*S	**Sn**	**06 57 32.6**	**-5.0**
JHJ2	**Mitsune**	**6.63**	**334**	P	**Pn**	**06 56 22.4**	**-0.5**
JHJ2				*e*S	**Sn**	**06 57 32.8**	**-5.5**
JHJ2	**Mitsune**	**6.63**	**334**	*e*Pn	**Pn**	**06 56 24.1**	**+1.2**
JHJ	**Hachijo jima 2**	**6.65**	**334**	Pn	**Pn**	**06 56 22.4**	**-0.7**
	13nm,0.3s,baz=92,slow=22,SNR=6.4						
JHJ				Sn	**Sn**	**06 57 32.6**	**-6.1**
	44nm,0.3s,baz=75,slow=23,SNR=6.2						
BSO1	**Boso 1**	**7.70**	**346**	P	**Pn**	**06 56 35.5**	**-1.6**
BSO1				*e*S	**Sn**	**06 57 58.6**	**-5.4**
BSO3	**Boso 3**	**7.96**	**343**	P	**Pn**	**06 56 40.2**	**-0.6**
BSO3				*e*S	**Sn**	**06 58 06.3**	**-4.3**
BSO4	**Boso 4**	**8.18**	**343**	P	**Pn**	**06 56 43.1**	**-1.0**
BSO4				*e*S	**Sn**	**06 58 11.9**	**-4.4**
JOD2	**Odawara 2**	**8.82**	**337**	P	**Pn**	**06 56 52.8**	**-0.1**
JOD2				*e*S	**Sn**	**06 58 25.1**	**-7.1**
JHU	**Hanno**	**9.29**	**339**	P	**Pn**	**06 56 58.3**	**-1.1**
JHU				*e*S	**Sn**	**06 58 35.6**	**-8.2**
INU	**Inuyama**	**9.75**	**328**	*e*Pn	**Pn**	**06 57 07.5**	**+1.8**
MJAR	**Matsushiro Arr**	**10.28**	**336**	Pn	**Pn**	**06 57 12.1**	**-0.9**
	4.8nm,0.3s,baz=154,slow=11,SNR=32						
MJAR				Sn	**Sn**	**06 59 05.6**	**-2.5**
	1.7nm,0.3s,baz=158,slow=20,SNR=6.0						
MJAR				LR	LR	07 00 47.7	
	comp=Z,310nm,19.5s,baz=150,slow=35						
MAJO	**Matsushiro**	**10.28**	**336**	*e*P	**Pn**	**06 57 12.7**	**-0.3**
MAJO	**Matsushiro**	**10.28**	**336**	*e*Pn	**Pn**	**06 57 13.0**	**0.0**
MAT	**Matsushiro**	**10.28**	**336**	P	**Pn**	**06 57 12.2**	**-0.8**
MAT				S	**Sn**	**06 59 03.7**	**-4.4**
MJB9	**Matsu-Tunnel**	**10.28**	**336**	*e*Pn	**Pn**	**06 57 12.9**	**-0.1**
JMK	**Ichinoseki**	**11.86**	**352**	P	**Pn**	**06 57 31.1**	**-3.4**
JMK				S	Sn	06 59 34.5	-12
JNU	**Nakatsue**	**12.27**	**302**	Pn	**Pn**	**06 57 43.5**	**+3.3**
	0.2nm,0.3s,baz=98,slow=10,SNR=9.0						
JNU	**Nakatsue**	**12.27**	**302**	*e*Pn	**Pn**	**06 57 42.8**	**+2.6**
	6.8nm,0.9s						
JOW	**Kunigami**	**13.41**	**272**	Pn	**Pn**	**06 57 57.1**	**+1.3**
	1.3nm,0.3s,baz=101,slow=12,SNR=5.6						
JOW				LR	LR	07 03 12.5	
	comp=Z,657nm,18.2s,baz=178,slow=38						
JOW	**Kunigami**	**13.41**	**272**	*e*Pn	**Pn**	**06 57 57.6**	**+1.8**
GUMO	**Guam**	**13.61**	**174**	LR	LR	07 02 19.5	
	comp=Z,286nm,18.2s,baz=9.5,slow=34						
ERM	**Erimo**	**14.79**	**360**	*e*P	Pn	06 58 08.8	-5.8
ERM	**Erimo**	**14.79**	**360**	*e*Pn	Pn	06 58 08.8	-5.8
KSRS	**Korea Array**	**16.52**	**312**	Pn	**Pn**	**06 58 37.4**	**+0.2**
	1.2nm,0.3s,baz=122,slow=11,SNR=18						
KSRS				LR	LR	07 04 49.4	
	comp=Z,331nm,18.3s,baz=122,slow=36						
KS15	**Wonju Array Si**	**16.54**	**312**	*e*Pn	**P**	**06 58 38.8**	**-1.2**
KSAR	**Wonju Array Be**	**16.54**	**312**	P	**Pn**	**06 58 37.4**	**0.0**
KSAR	**Wonju Array Be**	**16.54**	**312**	Pn	**Pn**	**06 58 37.4**	**0.0**
KS01	**Wonju Array Si**	**16.54**	**312**	*e*Pn	**P**	**06 58 39.1**	**-1.1**
ASAJ	**Asahikawa**	**16.90**	**358**	Pn	**Pn**	**06 58 37.9**	**-4.1**
	2.7nm,0.3s,baz=222,slow=14,SNR=8.9						
ASAJ	**Asahikawa**	**16.90**	**358**	*e*Pn	**Pn**	**06 58 40.9**	**-1.0**
	36nm,1.1s						
INCN	**Inchon**	**17.41**	**310**	*e*Pn	**Pn**	**06 58 45.5**	**-2.8**
	39nm,0.8s						
KUR	**Kuril'sk**	**18.37**	**10**	*e*P	**Pn**	**06 59 02.0**	**+1.9**
KUR				*e*S	**Sn**	**07 02 26.7**	**+1.6**
KUR				pmax	pmax		
	comp=Z,17nm,1.1s						
KUR				pmax	pmax		
	comp=Z,261nm,8.0s						
KUR				smax	smax		
	comp=N,312nm,4.0s						
KUR				smax	smax		
	comp=E,146nm,2.0s						
KUR				MLR	MLR		
	comp=N,558nm,14.0s						
KUR				MLR	MLR		
	comp=E,668nm,14.0s						
KUR				MLR	MLR		
	comp=Z,536nm,14.0s						
VLA	**Vladivostok**	**18.40**	**333**	*c iP*	**Pn**	**06 59 02.1**	**+1.6**
YOJ	**Yonaguni jima**	**18.47**	**266**	*e*P	**P**	**06 59 01.1**	**-0.3**
YOJ				pmax	pmax		
	comp=Z,160nm,1.3s						
YOJ	**Yonaguni jima**	**18.47**	**266**	*e*P	**P**	**06 59 01.1**	**-0.3**
	comp=Z,160nm,1.3s						
USRK	**Ussuriysk Ar.**	**19.27**	**335**	P	**P**	**06 59 08.5**	**-1.5**
	comp=Z,1.0nm,0.3s,baz=151,slow=12,SNR=28						
YSS	**Yuzh-Sakhalins**	**19.73**	**359**‖	*e*P	**Pn**	**06 59 16.3**	**-0.2**
YSS				*e*S	**S**	**07 02 51.0**	**-6.1**
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
YSS				pmax	pmax		
	comp=Z,300nm,7.9s						
YSS				MLR	MLR		
	comp=Z,300nm,16.0s						
YSS	**Yuzh-Sakhalins**	**19.73**	**359**	*e*P	**Pn**	**06 59 16.6**	**+0.1**
	comp=Z,39nm,1.1s						
NACB	**Ninganchiao**	**19.79**	**266**	*e*P	**P**	**06 59 15.5**	**-0.4**
	comp=Z,50nm,0.9s						
YHNB	**Yeheng**	**19.88**	**268**	*e*P	**P**	**06 59 16.4**	**-0.5**
	comp=Z,44nm,0.7s						
YULB	**Yu-li**	**20.25**	**264**	*e*P	**P**	**06 59 20.8**	**-0.1**
	comp=Z,215nm,1.8s						
SSLB	**Suanglung**	**20.45**	**265**	*e*P	**P**	**06 59 23.5**	**+0.4**
	comp=Z,165nm,1.3s						
MDJ	**Mudanjiang**	**20.58**	**331**	P	**P**	**06 59 25.0**	**+0.7**
MDJ				pP	pP	06 59 28.0	-0.1
MDJ				sP	sP	06 59 29.3	-0.5
MDJ				S	**S**	**07 03 13.0**	**-1.2**
MDJ				pmax	pmax		
	comp=Z,32nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,120nm,4.8s						
MDJ				LR	LR		
	comp=Z,250nm,14.7s						
MDJ				LR	LR		
	comp=Z,540nm,13.0s						
MDJ				LR	LR		
	comp=Z,640nm,15.1s						
MDJ	**Mudanjiang**	**20.58**	**331**	*e*P	**P**	**06 59 25.4**	**+1.1**
	comp=Z,36nm,1.0s						
TWG	**Pinlang**	**20.61**	**263**	*e*P	**P**	**06 59 25.3**	**+0.6**
	comp=Z,218nm,0.6s						
TPUB	**Ta-pu**	**20.87**	**264**	*e*P	**P**	**06 59 28.0**	**+0.4**
	comp=Z,77nm,1.2s						
SNY	**Shenyang**	**21.78**	**317**	⇑P	**P**	**06 59 39.8**	**+2.6**
SNY				pmax	pmax		
	comp=Z,68nm,1.2s						
SNY				pmax	pmax		
	comp=Z,190nm,4.6s						
SNY				LR	LR		
	comp=Z,520nm,11.2s						
SNY				LR	LR		
	comp=Z,710nm,13.7s						
SNY				LR	LR		
	comp=Z,570nm,14.7s						
CN2	**Changchun**	**21.97**	**324**	*e*P	**P**	**06 59 42.5**	**+3.2**
CN2				*e*S	**S**	**07 03 37.5**	**-4.0**
CN2				pmax	pmax		
	comp=Z,20nm,0.8s						
CN2				pmax	pmax		
	comp=Z,100nm,5.0s						
CN2				LR	LR		
	comp=Z,700nm,15.0s						
CN2	

comp=Z,20nm,0.9s
NKL smax smax
comp=E,450nm,7.0s
NKL MLR MLR
comp=E,500nm,14.0s
NKL MLR MLR
comp=Z,450nm,17.0s
PETK Petropavlovsk- 28.02 19 P P 07 00 35.7 -0.7
comp=Z,3.0nm,0.8s,baz=180,slow=8.1,SNR=3.0
PETK LR LR 07 10 47.5
comp=Z,154nm,21.7s,baz=198,slow=34
HIA Hailar 28.57 327 *eP* **P 07 00 43.9 +2.6**
HIA pmax pmax
comp=Z,46nm,1.0s
HIA Hailar 28.57 327 *eP* **P 07 00 43.9 +2.6**
comp=Z,46nm,1.0s
HHC Hu-ho-hao-te 29.45 306 *eP* **P 07 00 52.3 +2.9**
HHC S **S 07 05 48.0 +4.7**
HHC pmax pmax
comp=Z,21nm,0.9s
HHC pmax pmax
comp=Z,83nm,8.1s
HHC LR LR
comp=Z,370nm,11.1s
HHC LR LR
comp=Z,380nm,13.6s
HHC LR LR
comp=Z,360nm,14.8s
ENH Enshi 29.75 284 *eP* **P 07 00 51.0 -1.0**
comp=Z,31nm,0.9s
XAN Xi'an 30.27 292 P **P 07 00 55.0 -1.6**
XAN S **S 07 06 01.0 +4.8**
XAN pmax pmax
comp=Z,43nm,0.7s
XAN LR LR
comp=Z,130nm,16.8s
XAN LR LR
comp=Z,370nm,16.4s
XAN LR LR
comp=Z,430nm,12.5s
QIZ Qiongzhong 31.76 262 P **P 07 01 10.0 +0.2**
QIZ S **S 07 06 19.8 +0.2**
QIZ pmax pmax
comp=Z,59nm,1.6s
GYA Guiyang 32.63 277 P **P 07 01 19.0 +1.4**
GYA PP **PnPn 07 02 26.8 +1.5**
GYA PcP **PcP 07 04 04.5 +0.8**
GYA S **S 07 06 33.3 -0.1**
GYA ScP **ScP 07 07 47.0 -0.4**
GYA SS **SnSn 07 08 29.8 +1.7**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=Z,540nm,16.6s
GYA LR LR
comp=Z,510nm,16.9s
GYA LR LR
comp=Z,520nm,17.0s
MA2 Magadan 32.78 7 LR LR 07 14 29.5
comp=Z,102nm,18.8s,baz=186,slow=36
LZH Lanzhou 34.55 295 *eP* **P 07 01 33.0 -1.3**
LZH pP pP 07 01 37.0 -1.3
LZH sP sP 07 01 39.3 -0.7
LZH pmax pmax
comp=Z,33nm,1.0s
LZH pmax pmax
comp=Z,140nm,4.2s
LZH LR LR
comp=Z,520nm,17.0s
LZH LR LR
comp=Z,710nm,17.8s
LZH LR LR
comp=Z,380nm,16.8s
CD2 Chengdu 34.65 286 *eP* **P 07 01 35.0 0.0**
CD2 pP pP 07 01 39.8 +0.8
CD2 PP **PP 07 02 53.5 0.0**
CD2 S **S 07 07 04.8 +0.4**
CD2 sS sS 07 07 12.8 +1.7
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.0s
CD2 LR LR
comp=Z,610nm,13.9s
CD2 LR LR
comp=Z,470nm,12.4s
CD2 LR LR
comp=Z,350nm,17.2s
SONA1 Songino Array 35.34 316 *eP* **P 07 01 41.0 +0.1**
SONM Songino Array 35.34 316 P **P 07 01 40.9 0.0**
comp=Z,12nm,1.0s,baz=122,slow=8.4,SNR=46
SONM PcP **PcP 07 04 11.2 +0.2**
comp=Z,1.3nm,0.9s,baz=57,slow=5.5,SNR=4.1
SONM LR LR 07 16 52.7
comp=Z,144nm,18.6s,baz=116,slow=38
YAK Yakutsk 36.01 349 P **P 07 01 45.8 -0.4**
comp=Z,18nm,0.4s,baz=132,slow=1.3,SNR=2.3
YAK Yakutsk 36.01 349 *eP* **P 07 01 48.8 +2.6**
YAK pmax pmax
comp=Z,22nm,1.1s
SEY Seymchan 36.24 7 P **P 07 01 48.5 +0.2**
comp=Z,3.8nm,0.8s,baz=195,slow=8.4,SNR=11
KMI Kunming 36.36 276 P **P 07 01 50.3 +0.3**
KMI pmax pmax
comp=Z,40nm,1.1s
KMI LR LR
comp=Z,120nm,16.2s
SKNT Sakolnakorn 37.69 263 P **P 07 02 01.7 +0.6**
comp=Z,90nm,1.7s
GTA Gaotai 38.00 300 P **P 07 02 02.8 -0.9**
GTA pP pP 07 02 08.3 +0.6
GTA sP sP 07 02 10.8 +1.5
GTA S **S 07 07 54.0 -1.7**
GTA sS sS 07 08 01.3 -1.0
GTA SS **SnSn 07 10 31.0 -6.7**
GTA pmax pmax
comp=Z,19nm,1.1s
GTA pmax pmax
comp=Z,100nm,4.6s
GTA LR LR
comp=Z,360nm,16.2s
GTA LR LR
comp=Z,260nm,15.8s
GTA LR LR
comp=Z,320nm,16.2s
NONG Nongkai 38.03 265 P **P 07 02 04.4 +0.4**
comp=Z,112nm,1.0s
ZAK Zakamensk 38.20 318 *eP* **P 07 02 05.5 +0.3**
ZAK *e* 07 02 21.1
ZAK pmax pmax
comp=Z,29nm,1.3s
ZAK pmax pmax
comp=Z,12nm,1.5s
ZAK pmax pmax
comp=Z,9.0nm,1.3s
IRK Irkutsk 38.38 321 *eP* **P 07 02 07.3 +0.7**
IRK pmax pmax
comp=Z,70nm,2.5s
TLY Talaya 38.50 320 P **P 07 02 08.1 +0.5**
comp=Z,18nm,0.9s,baz=147,slow=6.5,SNR=46
TLY Talaya 38.50 320 *eP* **P 07 02 09.0 +1.4**
TLY *eS* **S 07 08 01.7 -1.0**
TLY pmax pmax
comp=Z,52nm,1.3s
TLY MLR MLR
comp=Z,369nm,18.0s
TLY Talaya 38.50 320 *eP* **P 07 02 08.5 +0.9**
comp=Z,38nm,1.0s
SBUM Sibu 38.61 236 *eP* **P 07 02 07.7 -1.2**
comp=Z,28nm,1.6s
MOY Mondy 40.02 319 *eP* **P 07 02 21.2 +0.8**
UTTA Uttaradit 40.45 266 P **P 07 02 24.0 -0.2**
comp=Z,11nm,1.0s,comp=Z,152nm
PBKT Sadao Pong 40.51 264 P **P 07 02 24.9 +0.2**
comp=Z,118nm,1.0s
SRAK Srakaew 40.60 260 P **P 07 02 21.4 -4.1**
comp=Z,254nm,0.9s,comp=Z,2μm
COEN Coen 40.90 180 *eP* **P 07 02 27.2 -0.7**
comp=Z,32nm,1.1s
LAMP Lampang 40.99 267 P **P 07 02 28.7 0.0**
comp=Z,11nm,1.0s
SOEI Soe 41.11 209 *eP* **P 07 02 28.6 -1.0**
comp=Z,96nm,0.9s
SUKH Sukhothai 41.36 266 P **P 07 02 32.9 +1.2**
comp=Z,5.4nm,0.8s
CMMT Chiang Mai 41.50 268 P **P 07 02 32.2 -0.7**
comp=Z,42nm,1.1s
CHTO Chiang Mai 41.50 268 P **P 07 02 32.3 -0.6**
comp=Z,189nm,1.1s
CHTO Chiang Mai 41.50 268 *eP* **P 07 02 32.9 0.0**
CHTO pmax pmax
comp=Z,50nm,1.1s
CHTO Chiang Mai 41.50 268 P **P 07 02 32.6 -0.3**
SNR=5.7
CHTO Chiang Mai 41.50 268 P **P 07 02 32.6 -0.3**
SNR=5.7
CHTO P **P 07 02 32.6 -0.3**
SNR=5.7
CHTO Chiang Mai 41.50 268 *eP* **P 07 02 32.9 0.0**
comp=Z,50nm,1.1s
MTN Manton Dam 41.51 198 *eP* **P 07 02 31.4 -1.4**
comp=Z,38nm,0.9s
CM01 Chiang Mai Arr 41.62 268 *eP* **P 07 02 34.3 +0.4**
CMAR Chiang Mai Arr 41.63 268 P **P 07 02 33.4 -0.5**
comp=Z,15nm,1.0s,baz=59,slow=8.2,SNR=43
CMAR PcP **PcP 07 04 31.4 +0.5**
comp=Z,1.6nm,0.3s,baz=64,slow=2.3,SNR=5.3
CMAR LR LR 07 20 59.6
comp=Z,91nm,18.3s,baz=88,slow=38
CMAR Chiang Mai Arr 41.63 268 *i P* **P 07 02 33.7 -0.2**
CMAR pmax pmax
comp=Z,15nm,1.0s
UMPA Umpang Tak 42.52 265 P **P 07 02 43.0 +1.7**
comp=Z,15nm,1.0s,comp=Z,394nm
MHMT Maesarieng 42.62 268 P **P 07 02 42.4 +0.4**
comp=Z,23nm,2.0s
SRDT SRDT 43.03 262 P **P 07 02 46.6 +1.3**
comp=Z,164nm,1.5s
BILL Bilibino 43.15 12*ceP* **P 07 02 45.7 +0.1**
BILL *e* 07 04 27.5
BILL *i S* **S 07 09 18.0 +6.6**
BILL pmax pmax
comp=Z,7.0nm,0.8s
BILL MLR MLR
comp=Z,478nm,18.0s
PHET Kaeng Krachan 43.19 260 P **P 07 02 47.8 +1.1**
comp=Z,17nm,1.0s
SURA Surathani 44.92 255 P **P 07 03 02.2 +1.6**
comp=Z,40nm,1.2s,comp=Z,13μm
TIXI Tiksi 45.22 354 *eP* **P 07 03 03.5 +1.3**
TIXI pmax pmax
comp=Z,12nm,1.0s
TIXI Tiksi 45.22 354 *eP* **P 07 03 01.5 -0.7**
comp=Z,15nm,1.1s
WMQ Urumqi 47.33 306 P **P 07 03 19.8 +0.5**
WMQ pP sP 07 03 25.0 -0.1
WMQ S **S 07 10 13.0 +0.3**
WMQ ScS **ScS 07 13 14.3 +1.0**
WMQ pmax pmax
comp=Z,26nm,1.0s
WMQ pmax pmax
comp=Z,100nm,4.0s
WMQ LR LR
comp=Z,470nm,15.0s
WMQ LR LR
comp=Z,530nm,17.3s
WMQ LR LR
comp=Z,460nm,16.7s
WRAB Tennant Creek 47.64 191 *i P* **P 07 03 19.7 -2.1**
WRAB pmax pmax
comp=Z,137nm,1.0s
WRAB Tennant Creek 47.64 191 *eP* **P 07 03 20.7 -1.1**
comp=Z,59nm,0.6s
WB2 Warramunga Arr 47.65 191 *eP* **P 07 03 20.7 -1.2**
comp=Z,66nm,0.8s
WRA Warramunga Arr 47.65 191 P **P 07 03 20.6 -1.3**
comp=Z,46nm,0.6s,baz=13,slow=8.7,SNR=281
FITZ Fitzroy Crossi 48.17 203 LR LR 07 23 54.4
comp=Z,28nm,19.0s,baz=360,slow=36
FITZ Fitzroy Crossi 48.17 203 *eP* **P 07 03 25.4 -0.5**
comp=Z,28nm,0.9s
PSI Prapat 48.86 248 P **P 07 03 31.1 -0.5**
comp=Z,18nm,0.5s,baz=37,slow=4.6,SNR=19
PSI LR LR 07 25 10.4
comp=Z,92nm,18.1s,baz=41,slow=37
PSI Prapat 48.86 248 *eP* **P 07 03 31.0 -0.5**
comp=Z,23nm,0.7s
PSI *e*PcP **PcP 07 04 56.4 +0.3**
ZAA0 Zalesovo Array 50.07 319 *eP* **P 07 03 40.7 +0.6**
ZALV Zalesovo Beam 50.07 319 P **P 07 03 39.5 -0.6**
comp=Z,3.6nm,0.5s,baz=100,slow=6.8,SNR=17
ZALV PcP **PcP 07 04 59.4 -0.3**
comp=Z,5.5nm,0.6s,baz=115,slow=3.6,SNR=6.8
ZALV LR LR 07 24 53.0
comp=Z,88nm,19.4s,baz=70,slow=36
JIRN Jiri 50.29 284 *eP* **P 07 03 42.8 +0.1**
CHGN Chignik 50.33 38 *eP* **P 07 03 41.3 -0.7**
GUN Gumba 50.50 285 *eP* **P 07 03 44.5 +0.3**
comp=Z,166nm,0.9s
GSI Gunungsitoli 50.81 247 *eP* **P 07 03 45.8 -0.4**
comp=Z,138nm,1.4s
PKIN Phoki 51.00 285 *eP* **P 07 03 47.7 -0.2**
comp=Z,62nm,0.9s
KKN Kakani 51.05 285 *eP* **P 07 03 47.8 -0.4**
comp=Z,70nm,1.0s
NVS Novosibirsk 51.11 320 *eP* **P 07 03 48.1 +0.2**
NVS pmax pmax
comp=Z,64nm,2.4s
NVS pmax pmax
comp=N,6.0nm,1.4s
NVS pmax pmax
comp=E,25nm,2.0s
MK01 Makanchi Array 51.18 309 *eP* **P 07 03 48.5 -0.2**
MK31 Makanchi Array 51.18 310 *i P* **P 07 03 48.6 -0.1**
MK31 pmax pmax
comp=Z,4.0nm,0.7s
MK31 Makanchi Array 51.18 310 *eP* **P 07 03 49.0 +0.3**
MKAR Makanchi Array 51.18 310 P **P 07 03 48.6 -0.1**
comp=Z,2.6nm,0.5s,baz=89,slow=8.0,SNR=31
MKAR PcP **PcP 07 05 04.0 0.0**
comp=Z,2.1nm,0.6s,baz=85,slow=5.2,SNR=4.2
MKAR LR LR 07 27 53.5
comp=Z,175nm,18.2s,baz=88,slow=39
MKAR Makanchi Array 51.18 310 *eP* **P 07 03 49.0 +0.3**
MKAR PcP **PcP 07 05 04.0 0.0**
DMN Daman 51.24 285 *eP* **P 07 03 49.3 -0.4**
comp=Z,18nm,0.4s
AS01 Alice Springs 51.36 191 *eP* **P 07 03 48.7 -1.4**
AS31 Alice Springs 51.37 191 *eP* **P 07 03 48.8 -1.4**
comp=Z,3.8nm,0.6s
ASAR Alice Springs 51.37 191 P **P 07 03 48.6 -1.6**
comp=Z,6.1nm,0.7s,baz=9.9,slow=6.1,SNR=92
ASAR PcP **PcP 07 05 04.0 -0.9**
comp=Z,1.5nm,0.7s,baz=12,slow=4.7,SNR=4.8
MAKZ Makanchi 51.40 310 *eP* **P 07 03 50.8 +0.5**
MAKZ pmax pmax
comp=Z,13nm,0.9s
MAKZ Makanchi 51.40 310 *eP* **P 07 03 50.8 +0.5**
comp=Z,13nm,0.9s
GKN Gorkha 51.55 285 *eP* **P 07 03 51.5 -0.4**
comp=Z,133nm,1.2s
KOLN Koldanda 52.50 285 *eP* **P 07 03 58.7 -0.3**
comp=Z,67nm,1.0s
SVW2 Sparrevohn 52.68 32 *eP* **P 07 04 00.6 +1.0**
comp=Z,7.7nm,0.9s
EIDS Eidsvold 52.79 171 *eP* **P 07 03 59.0 -1.7**
comp=Z,30nm,1.5s
TT01 Tatalina 52.86 30 *eP* **P 07 04 01.1 +0.2**
NRIK Noril'sk 52.93 338 P **P 07 04 01.1 -0.2**
comp=Z,4.9nm,0.9s,baz=103,slow=6.8,SNR=6.8
NRIK PcP **PcP 07 05 09.6 -0.5**
comp=Z,8.9nm,0.8s,baz=88,slow=4.2,SNR=5.6
NRIK LR LR 07 29 06.1
comp=Z,210nm,18.1s,baz=116,slow=39
PYUN Piuthan 52.94 286 *eP* **P 07 04 02.0 -0.3**
comp=Z,105nm,0.9s
MBWA Marble Bar 53.21 208 *eP* **P 07 04 03.5 -0.4**
comp=Z,53nm,1.7s
OHAK Old Harbor 53.25 37 *eP* **P 07 04 03.5 -0.4**
comp=Z,49nm,1.6s
KURK Kurchatov 53.63 314*d iP* **P 07 04 06.8 +0.1**
KURK Kurchatov 53.63 314 *eP* **P 07 04 06.9 +0.2**
comp=Z,33nm,0.7s
KURBB Kurchatov Arra 53.69 314 P **P 07 04 07.4 +0.3**
comp=Z,30nm,0.5s,baz=90,slow=7.9,SNR=446
KDAK Kodiak Island 53.69 37 *i P* **P 07 04 06.4 -0.6**
KDAK Kodiak Island 53.69 37 *eP* **P 07 04 06.6 -0.4**
comp=Z,90nm,1.6s
DZM Mont Dzumac 53.84 153 P **P 07 04 05.1 -3.6**
comp=Z,11nm,0.8s,baz=3.9,slow=9.1,SNR=6.5
CNPM China Poot 54.58 35 *eP* **P 07 04 13.0 -0.6**
comp=Z,16nm,0.9s
CAST Castle Rocks 54.71 30 *eP* **P 07 04 15.4 +0.9**
comp=Z,12nm,0.8s
BRLK Bradley Lake 54.78 34 *eP* **P 07 04 14.2 -0.8**
comp=Z,9.7nm,0.8s
SUA Susitna One 55.04 32 *eP* **P 07 04 16.9 -0.1**
comp=Z,18nm,1.4s
BPAW Bear Paw Mtn. 55.30 29 *eP* **P 07 04 19.5 +0.8**
comp=Z,7.9nm,1.0s
RC01 Rabbit Creek A 55.48 33 *eP* **P 07 04 19.8 -0.2**
comp=Z,9.7nm,1.1s
SEW Seward 55.53 34 *eP* **P 07 04 19.9 -0.4**
comp=Z,17nm,0.8s
MLY Manley 55.56 28 *eP* **P 07 04 21.5 +0.9**
comp=Z,10nm,0.8s
PMR Palmer 55.82 32 *eP* **P 07 04 20.9 -1.5**
PMR pmax pmax
comp=Z,15nm,1.0s
PMR Palmer 55.82 32 *eP* **P 07 04 20.9 -1.5**
comp=Z,15nm,1.0s
RND Reindeer 56.15 30 *eP* **P 07 04 24.0 -0.8**
RND pmax pmax
comp=Z,10.0nm,0.8s
RND Reindeer 56.15 30 *eP* **P 07 04 24.0 -0.8**
comp=Z,9.9nm,0.8s
MCK McKinley 56.15 30 *eP* **P 07 04 24.6 -0.2**
MCK pmax pmax
comp=Z,20nm,1.1s
MCK McKinley 56.15 30 *eP* **P 07 04 24.6 -0.2**
comp=Z,20nm,1.1s
COLD Coldfoot 56.15 25 *eP* **P 07 04 26.0 +1.3**
comp=Z,12nm,0.9s
SML Sawmill 56.22 32 *eP* **P 07 04 25.3 -0.1**
SML pmax pmax
comp=Z,16nm,0.9s
SML Sawmill 56.22 32 *eP* **P 07 04 25.3 -0.1**
comp=Z,16nm,0.9s
KSH Kashi 56.39 301 *eP* **P 07 04 30.5 +3.5**
KSH *es*P sP 07 04 37.5 +4.7
KSH *e*PcP **PcP 07 05 26.5 +2.4**
KSH S **S 07 12 20.3 +2.8**
KSH pmax pmax
comp=Z,56nm,1.5s
KSH LR LR
comp=Z,110nm,10.6s
KSH LR LR
comp=Z,140nm,8.4s
KSH LR LR
comp=Z,140nm,7.3s
MDM Murphy Dome 56.60 28 *eP* **P 07 04 28.7 +0.7**
comp=Z,33nm,1.6s
SCM Sheep Creek Mo 56.70 32 *eP* **P 07 04 29.1 +0.3**
SCM pmax pmax
comp=Z,32nm,1.1s
SCM Sheep Creek Mo 56.70 32 *eP* **P 07 04 29.1 +0.3**
comp=Z,32nm,1.1s
CCB Clear Creek Bu 56.75 29 *eP* **P 07 04 29.2 +0.3**
comp=Z,3.9nm,1.0s
GLI Glacier Island 56.75 33 *eP* **P 07 04 29.0 -0.1**
comp=Z,13nm,0.7s
COLA College 56.75 28 *eP* **P 07 04 29.9 +0.9**
COLA pmax pmax
comp=Z,7.0nm,0.6s
COLA College 56.75 28 *eP* **P 07 04 29.9 +0.9**
comp=Z,6.8nm,0.6s
FRU Bishkek 56.91 305 *eP* **P 07 04 30.0 -0.5**
FRU pmax pmax
comp=Z,65nm,2.1s
AAK Ala-Archa 57.02 305 P **P 07 04 31.7 +0.2**
comp=Z,2.9nm,0.4s,baz=88,slow=6.4,SNR=9.0
AAK Ala-Archa 57.02 305 *eP* **P 07 04 30.5 -1.0**
AAK pmax pmax
comp=Z,14nm,1.0s
AAK Ala-Archa 57.02 305 P **P 07 04 32.0 +0.4**
SNR=5.4
AAK Ala-Archa 57.02 305 P **P 07 04 32.0 +0.4**
SNR=5.4
FID Port Fidalgo 57.04 33 *eP* **P 07 04 31.1 -0.1**
comp=Z,9.8nm,1.0s
HDA Harding Lake 57.09 29 *eP* **P 07 04 30.8 -0.7**
comp=Z,23nm,1.5s
ILAR Eielson Array 57.15 29 P **P 07 04 30.9 -1.0**
comp=Z,9.2nm,0.9s,baz=260,slow=5.8,SNR=58
ILAR LR LR 07 29 39.2
comp=Z,75nm,19.2s,baz=289,slow=37
ILB Eielson Array 57.15 29 *eP* **P 07 04 30.9 -1.0**
IL1 Eielson Array 57.15 29 *eP* **P 07 04 29.9 -2.0**
KLU Klutina 57.35 33 *eP* **P 07 04 33.6 +0.1**
comp=Z,9.2nm,0.6s
DIV Divide 57.41 33 *eP* **P 07 04 34.3 +0.5**
comp=Z,27nm,1.5s
PAX Paxson 57.64 31 *eP* **P 07 04 35.7 +0.3**
PAX pmax pmax
comp=Z,20nm,1.4s
PAX Paxson 57.64 31 *eP* **P 07 04 35.7 +0.3**
comp=Z,20nm,1.4s
NDI New Delhi 57.71 288 *eP* P 07 04 29.0 -7.4
ARMA Armidale 57.84 172 *eP* **P 07 04 36.0 -1.2**
comp=Z,26nm,1.6s
RAGM Ragged Mountai 57.92 34 *eP* **P 07 04 37.8 +0.4**
comp=Z,9.4nm,1.0s
BMRM Bremner River 57.97 33 *eP* **P 07 04 38.0 +0.2**
comp=Z,14nm,0.8s
FYU Fort Yukon 58.01 27 *eP* **P 07 04 39.4 +1.6**
comp=Z,14nm,0.8s
DOT Dot Lake 58.30 30 *eP* **P 07 04 40.0 0.0**
comp=Z,48nm,1.2s
MENT Mentasta 58.44 31 *eP* **P 07 04 41.6 +0.6**
comp=Z,7.4nm,1.1s
BVAR Borovoye Array 58.65 317 P **P 07 04 43.1 +0.5**
comp=Z,16nm,0.7s,baz=92,slow=8.0,SNR=46
CRQM Cirque 58.68 33 *eP* **P 07 04 43.4 +0.5**
comp=Z,20nm,0.9s
BRVK Borovoye 58.71 318 *i P* **P 07 04 42.6 -0.4**
BRVK pmax pmax
comp=Z,57nm,0.8s
BRVK Borovoye 58.71 318 *eP* **P 07 04 43.7 +0.7**
comp=Z,36nm,1.2s
STKA Stephens Creek 58.76 182 P **P 07 04 41.9 -1.5**
comp=Z,13nm,0.7s,baz=348,slow=6.9,SNR=25
STKA LR LR 07 31 09.1
comp=Z,56nm,18.6s,baz=22,slow=37
STKA Stephens Creek 58.76 182 *eP* **P 07 04 42.0 -1.5**
comp=Z,2.7nm,0.7s
BALM Baldy 59.07 33 *eP* **P 07 04 45.7 +0.2**
BALM pmax pmax
comp=Z,9.0nm,1.0s
BALM Baldy 59.07 33 *eP* **P 07 04 45.7 +0.2**
comp=Z,9.3nm,1.0s
FORT Forrest 59.46 195 *eP* **P 07 04 47.1 -1.2**
comp=Z,533nm,1.4s
EGAK Eagle 59.60 29 *eP* **P 07 04 49.0 0.0**
comp=Z,4.1nm,0.7s
KK31 Karatay Array 59.84 306 *i P* **P 07 04 51.2 +0.2**
KK31 pmax pmax
comp=Z,28nm,0.8s
KKAR Karatay Array 59.84 306 *eP* **P 07 04 51.5 +0.5**
KKAR Karatay Array 59.84 306 *eP* **P 07 04 51.5 +0.5**
BBOO Buckleboo 60.07 187 *eP* **P 07 04 51.0 -1.4**
comp=Z,108nm,1.9s
PCA Pinnacle 60.13 34 *eP* **P 07 04 53.3 +0.5**
comp=Z,34nm,1.0s
HYB Hyderabad 60.13 275 *i P* **P 07 04 54.0 +0.6**
DAWY Dawson 60.38 30 *eP* **P 07 04 54.9 +0.5**
comp=Z,10nm,0.9s
DHAK Deception Hill 61.24 35 *eP* **P 07 05 01.3 +0.9**
comp=Z,72nm,1.4s
HYT Haines Junctio 61.44 33 *eP* **P 07 05 03.0 +1.3**
comp=Z,12nm,1.0s
CAN Canberra 62.41 175 *eP* **P 07 05 07.9 -0.5**
CAN pmax pmax
comp=Z,45nm,1.8s
CAN Canberra 62.41 175 *eP* **P 07 05 07.9 -0.5**
comp=Z,45nm,1.8s
INK Inuvik 62.53 25 P **P 07 05 08.8 +0.1**
comp=Z,8.8nm,0.9s,baz=280,slow=6.6,SNR=7.7
INK Inuvik 62.53 25 *eP* **P 07 05 09.2 +0.4**
comp=Z,12nm,1.0s
SKAG Skagway 62.67 35 *eP* **P 07 05 10.9 +1.0**
comp=Z,9.4nm,1.0s
WHY Whitehorse 62.74 33 *eP* **P 07 05 11.5 +1.0**
comp=Z,6.3nm,0.8s
KBL Kabul 62.87 297 *eP* **P 07 05 11.2 -0.7**
KBL pmax pmax
comp=Z,15nm,0.9s
KBL Kabul 62.87 297 *eP* **P 07 05 11.2 -0.7**
comp=Z,15nm,0.9s

SVE	Sverdlovsk	63.76	323	⇑	*e*	P		P	07 05 17.1	0.0
SVE						pmax		pmax			
	comp=Z,21nm,1.2s										
NWAO	Narrogin (SRO)	64.72	204			LR		LR	07 32 59.5		
	comp=Z,82nm,19.8s,baz=82,slow=36										
ARU	Arti	64.96	322		*d i*	P		P	07 05 25.1	+0.1	
ARU									07 05 59.5		
ARU									07 07 43.6		
ARU						PPP		PPP	07 09 21.6		
ARU						S		S	07 15 17.5		
ARU						SS		SS	07 18 15.1	-2.4	
ARU						pmax		pmax			
	comp=Z,27nm,1.0s										
AB31	Akbulak array	65.74	314			P		P	07 05 30.3	+0.1	
AB31						pmax		pmax			
	comp=Z,15nm,0.7s										
GEYT	Alibeck	70.29	303			P		P	07 05 59.4	+0.3	
	comp=Z,6.1nm,0.2s,baz=56,slow=2.7,SNR=11										
YKA	Yellowknife Ar	71.58	29			P		P	07 06 06.1	-0.3	
	comp=Z,3.8nm,0.8s,baz=291,slow=5.8,SNR=12										
YKA	Yellowknife Ar	71.58	29		*i*	P		P	07 06 06.0	-0.4	
YKA						pmax		pmax			
	comp=Z,4.0nm,0.8s										
KLMR	Klimovskoe	73.00	330		*e*	P		P	07 06 13.7	-1.2	
KLMR						pmax		pmax			
	comp=Z,12nm,0.7s										
ARA0	ARCESS Array S	73.78	341		*e*	P		P	07 06 19.8	+0.4	
ARCES	ARCESS Array B	73.78	341			P		P	07 06 20.1	+0.7	
	comp=Z,2.0nm,0.7s,baz=63,slow=8.2,SNR=7.6										
ARCES						LR		LR	07 46 58.1		
	comp=Z,54nm,18.2s,baz=68,slow=42										
JCC	Jacoby Creek,	74.66	52		*e*	P		P	07 06 26.2	+1.2	
	comp=Z,180nm,1.4s										
B08A	Colville Reser	74.78	43		*e*	P		P	07 06 25.8	+0.1	
	comp=Z,9.3nm,1.0s										
YBH	Yreka Blue Hor	75.22	51		*e*	P		P	07 06 28.2	-0.2	
YBH						pmax		pmax			
	comp=Z,76nm,1.9s										
YBH	Yreka Blue Hor	75.22	51		*e*	P		P	07 06 28.2	-0.2	
	comp=Z,76nm,1.9s										
D08A	Wollman Farm,	75.56	44		*e*	P		P	07 06 33.0	+2.8	
	comp=Z,9.4nm,1.0s										
WDC	Whiskeytown Da	75.80	52		*e*	P		P	07 06 35.1	+3.5	
WDC						pmax		pmax			
	comp=Z,9.0nm,1.1s										
WDC	Whiskeytown Da	75.80	52		*e*	P		P	07 06 35.1	+3.5	
	comp=Z,9.2nm,1.1s										
K05A	Summer Lake	76.06	49		*e*	P		P	07 06 33.5	+0.2	
	comp=Z,19nm,1.0s										
NEW	Newport	76.16	43		*e*	P		P	07 06 34.0	+0.4	
NEW						pmax		pmax			
	comp=Z,10.0nm,1.0s										
NEW	Newport	76.16	43		*e*	P		P	07 06 34.0	+0.4	
	comp=Z,9.6nm,1.0s										
MOS	Moscow	76.19	326		*e*	P		P	07 06 33.6	+0.1	
MOS						pmax		pmax			
	comp=Z,39nm,0.9s										
HOQ	Hoqain	76.24	290			P		P	07 06 35.5	+1.1	
	SNR=6.8										
HOQ	Hoqain	76.24	290			P		P	07 06 35.5	+1.1	
	SNR=6.8										
G08A	Pilot Rock	76.27	46		*e*	P		P	07 06 34.6	+0.2	
	comp=Z,12nm,1.4s										
E09A	Wood Farm, Sta	76.28	45		*e*	P		P	07 06 36.8	+2.6	
	comp=Z,16nm,1.1s										
UOSS	Minazif	76.61	291		*e*	P		P	07 06 38.8	+2.3	
	comp=Z,16nm,1.0s										
MOD	Modoc Plateau	76.80	50		*e*	P		P	07 06 39.9	+2.5	
	comp=Z,9.7nm,1.1s										
ARQ	Araqi	77.00	290			P		P	07 06 39.9	+1.2	
	SNR=5.3										
ARQ	Araqi	77.00	290			P		P	07 06 39.9	+1.2	
	SNR=5.3										
OBN	Obninsk	77.02	326		*de*	P		P	07 06 38.3	+0.1	
OBN					*e*				07 09 34.0		
OBN					*e*	PPP		PPP	07 11 17.4		
OBN					*i*	S		S	07 16 26.9	+0.7	
OBN						pmax		pmax			
	comp=Z,9.0nm,0.4s										
OBN						MLR		MLR			
	comp=Z,179nm,16.0s										
F10A	Beach Ranch, E	77.08	45		*e*	P		P	07 06 41.7	+2.8	
	comp=Z,9.5nm,1.4s										
VSR	Storozhevoye	77.50	321		*e*	P		P	07 06 41.0	0.0	
VSR						pmax		pmax			
	comp=Z,20nm,1.2s										
BMO	Blue Mountains	77.52	46		*e*	P		P	07 06 41.5	+0.1	
BMO						pmax		pmax			
	comp=Z,8.0nm,1.0s										
BMO	Blue Mountains	77.52	46		*e*	P		P	07 06 41.5	+0.1	
	comp=Z,7.9nm,1.0s										
AFDM	Forest Hills D	77.57	53		*e*	P		P	07 06 41.4	-0.3	
	comp=Z,18nm,1.5s										
WVOR	Wild Horse Val	77.69	49		*e*	P		P	07 06 42.9	+0.5	
WVOR						pmax		pmax			
	comp=Z,10.0nm,1.2s										
WVOR	Wild Horse Val	77.69	49		*e*	P		P	07 06 42.9	+0.5	
	comp=Z,10nm,1.2s										
WALA	Waterton Lakes	77.72	41		*e*	P		P	07 06 43.2	+0.8	
	comp=Z,14nm,1.1s										
BSMT	Bassoo Peak	77.75	42		*e*	P		P	07 06 43.0	+0.3	
JTMT	Jette	78.10	42		*e*	P		P	07 06 45.3	+0.6	
YBMT	Yellow Bay	78.21	42		*e*	P		P	07 06 45.9	+0.6	
FIA1	FINESS Array S	78.30	334		*e*	P		P	07 06 45.4	+0.2	
FINES	FINESS Array B	78.30	334			P		P	07 06 45.1	-0.1	
	comp=Z,2.6nm,0.4s,baz=71,slow=4.0,SNR=21										
TBLG	Delisi	78.34	311			P		P	07 06 47.0	+1.1	
TBLG	Delisi	78.34	311			P		P	07 06 47.0	+1.1	
PAHR	Pah Rah Range	78.36	51		*e*	P		P	07 06 48.8	+2.6	
	comp=Z,14nm,1.2s										
CMB	Columbia Colle	78.37	53		*e*	P		P	07 06 46.6	+0.4	
CMB						pmax		pmax			
	comp=Z,12nm,0.9s										
CMB	Columbia Colle	78.37	53		*e*	P		P	07 06 46.6	+0.4	
	comp=Z,12nm,0.9s										
SWMT	Swartz Lake	78.38	42		*e*	P		P	07 06 46.4	+0.3	
ZEI	Tsey	78.43	312		*e*	P		P	07 06 45.8	-0.8	
ZEI						pmax		pmax			
	comp=Z,55nm,0.9s										
PNTR	Pine Nut	78.47	52		*e*	P		P	07 06 47.6	+0.6	
	comp=Z,12nm,1.2s										
KBZ	Khabaz	78.67	313			P		P	07 06 48.4	+0.7	
	comp=Z,23nm,0.9s,baz=75,slow=3.1,SNR=40										
KBZ						LR		LR	07 42 56.5		
	comp=Z,57nm,18.8s,baz=60,slow=37										
KIV	Kislovodsk	78.71	314		*de*	P		P	07 06 48.6	+0.6	
KIV					*e*				07 06 57.6		
KIV					*e*				07 09 49.2		
KIV					*e*	PPP		PPP	07 11 32.7		
KIV					*i*	S		S	07 16 46.2	+1.1	
KIV						pmax		pmax			
	comp=Z,84nm,2.5s										
KIV	Kislovodsk	78.71	314			P		P	07 06 49.6	+1.7	
	SNR=13										
KIV	Kislovodsk	78.71	314			P		P	07 06 49.6	+1.7	
	SNR=13										
KIV						P		P	07 06 49.6	+1.7	
	SNR=13										
KIV	Kislovodsk	78.71	314		*e*	P		P	07 06 50.2	+2.3	
	comp=Z,154nm,2.0s										
YERR	Yerington	78.77	52		*e*	P		P	07 06 48.7	+0.2	
	comp=Z,12nm,1.1s										
SLMT	Seeley Lake	78.81	43		*e*	P		P	07 06 49.2	+0.6	
PPT	Papeete	78.81	116			LR		LR	07 35 19.3		
	comp=Z,120nm,20.2s,baz=308,slow=31										
ONI	Oni	78.82	312			P		P	07 06 49.8	+1.2	
ONI	Oni	78.82	312			P		P	07 06 49.8	+1.2	
PPT2	Papeete2	78.82	116		*e*	LR		LR	07 31 26.0		
	comp=Z,145nm,22.2s										
WAKR	Walker	78.84	52		*e*	P		P	07 06 49.0	0.0	
	comp=Z,5.2nm,0.9s										
NEY	Neytrino	79.00	313		*e*	P		P	07 06 49.6	-0.1	
NEY						pmax		pmax			
	comp=Z,3.0nm,1.0s										
GNI	Garni	79.03	309		*e*	P		P	07 06 50.8	+0.9	
GNI						pmax		pmax			
	comp=Z,62nm,1.5s										
GNI	Garni	79.03	309			P		P	07 06 51.6	+1.7	
	SNR=8.7										
GNI	Garni	79.03	309			P		P	07 06 51.6	+1.7	
	SNR=8.7										
GNI						P		P	07 06 51.6	+1.7	
	SNR=8.7										
CHMT	Chamberlain Mo	79.11	43		*e*	P		P	07 06 52.7	+2.4	
MFID	Camas Ranch	79.11	47		*e*	P		P	07 06 50.0	-0.3	
	comp=Z,14nm,1.0s										
BGD	Bogdanovka	79.31	311			P		P	07 06 53.2	+1.6	
AKH	Akhalkalaki	79.32	311	⇓	*i*	P		P	07 06 53.0	+1.5	
AKH	Akhalkalaki	79.32	311			P		P	07 06 52.2	+0.7	
AKH	Akhalkalaki	79.32	311			P		P	07 06 52.2	+0.7	
TVH1	TV Hill, Hawth	79.34	52		*e*	P		P	07 06 51.9	0.0	
	comp=Z,11nm,1.1s										
TVH3	East Aurora ar	79.34	52		*e*	P		P	07 06 52.4	+0.7	
	comp=Z,10.0nm,1.1s										
TVH2	Borealis Mine	79.38	52		*e*	P		P	07 06 52.2	+0.3	
	comp=Z,5.2nm,1.0s										
PAGB	Antelope Grade	79.46	55		*e*	P		P	07 06 52.4	+0.2	
	comp=Z,24nm,1.4s										
VSU	Vasula	79.79	331		*d i*	P		P	07 06 53.7	+0.3	
VSU						pmax		pmax			
	comp=Z,79nm,1.0s										
HLID	Hailey	79.96	46		*e*	P		P	07 06 55.2	+0.2	
	comp=Z,4.8nm,1.0s										
HRY	Holter Researc	80.06	42		*e*	P		P	07 06 55.9	+0.5	
LRM	Limekiln Ridge	80.12	43		*e*	P		P	07 06 56.3	+0.4	
DLMT	Dillon	80.25	44		*e*	P		P	07 06 59.1	+2.7	
	comp=Z,9.7nm,1.3s										
BOZ	Bozeman (W)	80.70	43		*e*	P		P	07 06 58.9	0.0	
BOZ						pmax		pmax			
	comp=Z,7.0nm,1.1s										
BOZ	Bozeman (W)	80.70	43		*e*	P		P	07 06 58.9	0.0	
	comp=Z,7.0nm,1.1s										
FFC	Flin Flon	81.13	32		*e*	P		P	07 07 01.1	+0.3	
FFC						pmax		pmax			
	comp=Z,10.0nm,0.8s										
FFC	Flin Flon	81.13	32		*e*	P		P	07 07 01.1	+0.3	
	comp=Z,10nm,0.8s										
DAC	Darwin (Calif)	81.15	54		*e*	P		P	07 07 00.0	-1.5	
DAC						pmax		pmax			
	comp=Z,6.0nm,1.2s										
DAC	Darwin (Calif)	81.15	54		*e*	P		P	07 07 00.0	-1.5	
	comp=Z,6.3nm,1.2s										
QLMT	Earthquake Lak	81.23	44		*e*	P		P	07 07 02.2	+0.4	
YHB	Horse Butte	81.41	44		*e*	P		P	07 07 04.2	+1.4	
	comp=Z,14nm,0.9s										
R11A	Troy Canyon, C	81.61	51		*e*	P		P	07 07 03.8	-0.1	
	comp=Z,5.8nm,1.0s										
TPNV	Topopah Spring	81.80	53		*e*	P		P	07 07 04.2	-0.7	
TPNV						pmax		pmax			
	comp=Z,6.0nm,0.8s										
TPNV	Topopah Spring	81.80	53		*e*	P		P	07 07 04.2	-0.7	
	comp=Z,5.8nm,0.8s										
HVU	Hansel Valley	81.87	47		*e*	P		P	07 07 06.0	+0.8	
HVU						pmax		pmax			
	comp=Z,5.0nm,1.0s										
HVU	Hansel Valley	81.87	47		*e*	P		P	07 07 06.0	+0.8	
	comp=Z,5.1nm,1.0s										
H17A	Grant Village	81.97	44		*e*	P		P	07 07 07.4	+1.6	
	comp=Z,14nm,1.0s										
IMW	Indian Meadow	82.00	45		*e*	P		P	07 07 06.9	+1.0	
	comp=Z,8.9nm,0.9s										
FLWY	Flagg Ranch	82.06	44		*e*	P		P	07 07 08.0	+1.9	
	comp=Z,11nm,0.9s										
TBI	Tubuai	82.09	121		*e*	LR		LR	07 32 39.5		
	comp=Z,95nm,25.0s										
BGU	Big Grassy Mou	82.12	48		*e*	P		P	07 07 06.5	0.0	
	comp=Z,2.9nm,0.9s										
GSC	Goldstone, Bar	82.16	54		*e*	P		P	07 07 07.0	+0.3	
GSC						pmax		pmax			
	comp=Z,10.0nm,1.1s										
GSC	Goldstone, Bar	82.16	54		*e*	P		P	07 07 07.0	+0.3	
	comp=Z,9.8nm,1.1s										
MOOW	Moose Ponds	82.19	45		*e*	P		P	07 07 06.7	-0.2	
	comp=Z,6.4nm,1.2s										
TPAW	Ten Pass	82.19	45		*e*	P		P	07 07 06.9	-0.1	
	comp=Z,6.9nm,0.9s										
SPUT	South Promonto	82.31	47		*e*	P		P	07 07 08.1	+0.6	
	comp=Z,4.6nm,0.9s										
REDW	Red Top Meadow	82.32	45		*e*	P		P	07 07 07.9	+0.3	
	comp=Z,13nm,1.5s										
SNOW	Snow King Moun	82.33	45		*e*	P		P	07 07 11.1	+3.4	
	comp=Z,6.2nm,1.0s										
LOHW	Long Hollow	82.35	45		*e*	P		P	07 07 08.5	+0.8	
	comp=Z,3.9nm,0.9s										
RLMT	Red Lodge	82.41	43		*e*	P		P	07 07 09.0	+1.0	
	comp=Z,11nm,1.0s										
AHID	Auburn Hatcher	82.46	46		*e*	P		P	07 07 08.9	+0.6	
	comp=Z,8.4nm,0.9s										
DUG	Dugway, Tooele	82.62	49		*e*	P		P	07 07 09.3	+0.2	
DUG						pmax		pmax			
	comp=Z,8.0nm,0.8s										
DUG	Dugway, Tooele	82.62	49		*e*	P		P	07 07 09.3	+0.2	
	comp=Z,8.2nm,0.8s										
HWUT	Hardware Ranch	82.74	47		*e*	P		P	07 07 10.3	+0.5	
	comp=Z,9.6nm,1.0s										
SHPR	Sheep Range	82.78	53		*e*	P		P	07 07 10.5	+0.5	
	comp=Z,3.7nm,1.0s										
CTU	Camp Tracy	83.08	48		*e*	P		P	07 07 11.3	-0.2	
	comp=Z,7.0nm,1.0s										
AKASG	Malin Array Be	83.13	324			P		P	07 07 10.8	-0.5	
	comp=Z,6.8nm,0.7s,baz=51,slow=5.3,SNR=22										
AKBB	Malin Array Si	83.13	324		*e*	P		P	07 07 10.8	-0.5	
AKBB						pmax		pmax			
	comp=Z,12nm,0.7s										
AKBB	Malin Array Si	83.13	324		*e*	P		P	07 07 10.8	-0.5	
	comp=Z,12nm,0.7s										
KIEV	Kiev	83.14	324		*d i*	P		P	07 07 10.6	-0.7	
KIEV						pmax		pmax			
	comp=Z,10.0nm,0.9s										
KIEV	Kiev	83.14	324		*e*	P		P	07 07 10.7	-0.6	
	comp=Z,12nm,0.8s										
AK11	Malin Array Si	83.17	324		*e*	P		P	07 07 10.9	-0.6	
NLU	North Lily Min	83.23	49		*e*	P		P	07 07 12.6	+0.3	
	comp=Z,3.0nm,0.9s										
JLU	Jordanelle	83.32	48		*e*	P		P	07 07 13.4	+0.5	
	comp=Z,12nm,1.2s										
LAO	LASA Array	83.38	40		*e*	P		P	07 07 15.0	+2.2	
	comp=Z,25nm,1.3s										
BW06	Boulder Array	83.44	45		*e*	P		P	07 07 13.2	-0.2	
	comp=Z,7.9nm,1.4s										
PD31	Pinedale Array	83.44	45		*e*	P		P	07 07 13.2	-0.2	
PDAR	Pinedale Array	83.44	45			P		P	07 07 13.2	-0.2	
	comp=Z,5.5nm,1.1s,baz=285,slow=5.8,SNR=13										
PDAR						LR		LR	07 39 38.6		
	comp=Z,108nm,19.6s,baz=302,slow=32										
LDFC	Landfair	83.49	54		*e*	P		P	07 07 12.9	-0.8	
	comp=Z,14nm,1.0s										
CCUT	Cedar City	83.54	51		*e*	P		P	07 07 16.1	+2.1	
	comp=Z,17nm,1.7s										
SZCU	Shurtz Canyon	83.70	51		*e*	P		P	07 07 17.4	+2.6	
	comp=Z,15nm,1.9s										
MSU	Marysvale	83.88	50		*e*	P		P	07 07 15.8	+0.1	
MSU	Marysvale	83.88	50		*e*	P		P	07 07 15.8	+0.1	
LCMT	Little Creek M	83.88	52		*e*	P		P	07 07 16.5	+0.8	
	comp=Z,15nm,1.6s										
NB2	NORSAR Subarra	83.89	339			P		P	07 07 14.3	-0.8	
	comp=Z,3.0nm,0.7s,baz=44,slow=5.3										
NOA	NORSAR Array B	83.89	339			P		P	07 07 14.4	-0.7	
	comp=Z,2.1nm,0.8s,baz=48,slow=4.7,SNR=5.5										
TMUT	Trail Mountain	84.14	49		*e*	P		P	07 07 19.8	+2.6	
	comp=Z,4.8nm,1.0s										
KNB	Kanab	84.17	51		*e*	P		P	07 07 17.9	+0.7	
KNB						pmax		pmax			
	comp=Z,15nm,1.2s										
KNB	Kanab	84.17	51		*e*	P		P	07 07 17.9	+0.7	
	comp=Z,15nm,1.2s										
P17A	Butcher Ranch,	84.36	48		*e*	P		P	07 07 21.1	+3.0	
	comp=Z,11nm,1.0s										
W13A	Hualapai Mount	84.36	53		*e*	P		P	07 07 17.9	-0.3	
	comp=Z,3.6nm,1.0s										
SRU	San Rafael Swe	84.69	49		*e*	P		P	07 07 20.0	+0.2	
SRU						pmax		pmax			
	comp=Z,11nm,0.9s										
SRU	San Rafael Swe	84.69	49		*e*	P		P	07 07 20.0	+0.2	
	comp=Z,11nm,0.9s										
U15A	North Rim	84.83	52		*e*	P		P	07 07 20.7	0.0	
	comp=Z,5.9nm,1.1s										
KLNR	Kaliningrad	85.03	331		*e*	P		P	07 07 20.2	-0.7	
KLNR						pmax		pmax			
	comp=Z,32nm,0.9s										
SORM	Soroca	85.08	322	⇓	*i*	P		P	07 07 20.4	-0.9	
K22A	Casper	85.40	44		*e*	P		P	07 07 22.8	-0.4	
	comp=Z,7.6nm,1.0s										
113A	Mohawk Valley,	85.59	55		*e*	P		P	07 07 26.6	+2.5	
	comp=Z,4.7nm,1.0s										
O20A	White River Ci	85.66	47		*e*	P		P	07 07 24.5	-0.1	
	comp=Z,8.1nm,1.0s										
PV09	Paradox Valley	85.94	49		*e*	P		P	07 07 26.9	+0.8	
WUAZ	Wupatki	85.94	52		*e*	P		P	07 07 28.4	+2.4	
	comp=Z,7.0nm,0.9s										
PV10	Paradox Valley	86.06	49		*e*	P		P	07 07 27.4	+0.6	
RSSD	Black Hills	86.09	42		*e*	P		P	07 07 27.1	+0.4	
RSSD						pmax		pmax			
	comp=Z,8.0nm,1.2s										
RSSD	Black Hills	86.09	42		*e*	P		P	07 07 27.1	+0.4	
	comp=Z,7.7nm,1.2s										
PV04	Paradox Valley	86.14	49		*e*	P		P	07 07 26.4	-0.6	
PV05	Paradox Valley	86.18	49		*e*	P		P	07 07 29.5	+2.2	
X16A	Lo Mia Camp, P	86.45	53		*e*	P		P	07 07 31.4	+2.7	
	comp=Z,3.9nm,0.9s										
PV01	Paradox Valley	86.50	49		*e*	P		P	07 07 28.8	-0.1	
BR131	Keskin Array S	86.67	313		*e*	P		P	07 07 29.2	-0.3	
BRTR	Keskin Array B	86.67	313			P		P	07 07 29.1	-0.4	
	comp=Z,3.5nm,0.8s,baz=94,slow=3.7,SNR=10										
BRTR						LR		LR	07 51 54.5		
	comp=Z,28nm,18.2s,baz=66,slow=40										
BRTR	Keskin Array B	86.67	313		*i*	P		P	07 07 29.2	-0.3	
BRTR						pmax		pmax			
	comp=Z,4.0nm,0.8s										
214A	Organ Pipe Nat	86.69	56		*e*	P		P	07 07 29.9	+0.3	
	comp=Z,4nm,1.1s										
N23A	Red Feather La	86.72	45		*e*	P		P	07 07 32.6	+2.6	
	comp=Z,15nm,1.1s										
ULM	Lac du Bonnet	86.82	34			LR		LR	07 45 41.6		
	comp=Z,42nm,20.7s,baz=293,slow=35										
TESR	Tescani	86.98	322	⇓	*i*	P		P	07 07 30.1	-0.6	
SMCO	Snowmass	87.00	47		*e*	P		P	07 07 31.9	+0.4	
	comp=Z,6.8nm,1.1s										
BUR08	Bucovina Ar. S	87.07	323		*e*	P		P	07 07 30.8	-0.5	
BURAR	Bucovina Array	87.08	323	⇑	*i*	P		P	07 07 31.3	0.0	
BR231	Keskin MP Arra	87.16	314		*e*	P		P	07 07 29.5	-2.4	
TLB	Topalu	87.34	320	⇑	*i*	P		P	07 07 32.3	-0.2	
ISCO	Idaho Springs	87.54	46		*e*	P		P	07 07 36.9	+2.9	
ISCO						pmax		pmax			
	comp=Z,12nm,1.7s										
ISCO	Idaho Springs	87.54	46		*e*	P		P	07 07 36.9	+2.9	
	comp=Z,12nm,1.7s										
S22A	4UR Ranch, Cre	87.87	48		*e*	P		P	07 07 38.0	+2.4	
	comp=Z,4.3nm,1.3s										
UZH	Uzhgorod	87.96	325		*e*	P		P	07 07 32.3	-3.1	
UZH					*i*				07 07 39.9		
MLR	Muntele Rosu	87.99	321	⇓	*i*	P		P	07 07 36.2	+0.4	
TUC	Tucson	87.99	55		*e*	P		P	07 07 38.1	+2.1	
TUC						pmax		pmax			
	comp=Z,6.0nm,1.1s										
TUC	Tucson	87.99	55		*e*	P		P	07 07 38.1	+2.1	
	comp=Z,5.5nm,1.1s										
AGMN	Agassiz Nation	88.08	35		*e*	P		P	07 07 36.1	+0.1	
	comp=Z,7.1nm,0.8s										
CRVS	Cervenica-Dubn	88.20	326		*e*	P		P	07 07 36.7	+0.1	
CRVS	Cervenica-Dubn	88.20	326		*e*	P		P	07 07 36.6	0.0	
VOIR		88.52	322	⇓	*i*	P		P	07 07 37.9	-0.3	
SDCO	Great Sand Dun	88.75	48		*e*	P		P	07 07 41.0	+1.2	
	comp=Z,5.2nm,1.6s										
ARR	Arges	88.79	322	⇑	*i*	P		P	07 07 39.6	+0.1	
DRGR		88.92	324	⇓	*i*	P		P	07 07 39.7	-0.4	
KECS	Kecovo	88.96	326		*e*	P		P	07 07 39.3	-0.9	
KECS						pmax		pmax			
	comp=Z,3.0nm,0.8s										
KECS	Kecovo	88.96	326		*e*	P		P	07 07 39.2	-0.9	
LANS	Liptovska Anna	89.02	327		*e*	P		P	07 07 40.6	+0.1	
LANS	Liptovska Anna	89.02	327		*e*	P		P	07 07 40.6	+0.1	
MORC	Moravsky Berou	89.51	328	⇑	*i*	P		P	07 07 42.5	-0.3	
MORC	Moravsky Berou	89.51	328		*e*	P		P	07 07 42.3	-0.5	
MORC						pmax		pmax			
	comp=Z,18nm,1.1s										
MORC	Moravsky Berou	89.51	328		*e*	P		P	07 07 42.2	-0.5	
	comp=Z,18nm,1.1s										
PSZ	Piszkesteto	89.63	326		*e*	P		P	07 07 43.1	-0.3	
PSZ						pmax		pmax			
	comp=Z,10.0nm,1.2s										
PSZ	Piszkesteto	89.63	326		*e*	P		P	07 07 43.1	-0.3	
	comp=Z,9.6nm,1.2s										

PLCA	**Paso Flores**	**149.04**	**125**	*e*PKPbc	**PKPbc**	**07 14 33.9**	**+0.1**
PB01	**IPOC Station P**	**149.51**	**86**	*e*PKPbc	**PKPbc**	**07 14 35.7**	**+0.2**
HOPE	**Hope Point**	**152.93**	**180**	*e*PKPbc	**PKPbc**	**07 14 42.3**	**0.0**

IDC 30 07:10:18.5±5.0, 26°61′N×143°45′E, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.5/35, mbtmp3.8/3, MS3.5/2, Ms1 3.5/2, ms1mx2.8/39, Error ellipse: s-maj=333.4km s-min=32.3km az=86.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**47.11**	**192**	P	P	07 18 53.0	+0.5
	1.3nm,0.5s,baz=13,slow=8.6,SNR=17						
FITZ	**Fitzroy Crossi**	**47.69**	**203**	LR	LR	07 40 26.2	
	comp=Z,40nm,18.3s,baz=268,slow=38						
ASAR	**Alice Springs**	**50.83**	**191**	P	P	07 19 20.0	-1.0
	0.2nm,0.6s,baz=7.8,slow=7.5,SNR=4.9						
PPT	**Papeete**	**78.44**	**116**	LR	LR	07 49 17.9	
	comp=Z,32nm,20.7s,baz=322,slow=30						
FINES	**FINESS Array B**	**78.88**	**334**	P	P	07 22 23.3	0.0
	1.2nm,0.8s,baz=56,slow=3.5,SNR=4.7						

IDC 30 07:33:59.0±8.7, 17°05′S×178°81′W, h523km±89km, mb2.8/5, mb1 3.2/5, mb1mx2.9/30, mbtmp3.7/5, Error ellipse: s-maj=118.6km s-min=28.5km az=148.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**44.41**	**259**	P	P	07 41 22.9	-0.5
	0.4nm,0.7s,baz=94,slow=7.9,SNR=4.9						
WRA				PcP	PcP	07 42 55.5	-0.4
	0.8nm,1.0s,baz=93,slow=3.3,SNR=3.8						
ASAR	**Alice Springs**	**44.66**	**253**	P	P	07 41 25.3	+0.1
	1.5nm,0.5s,baz=87,slow=8.2,SNR=30						
ASAR				PcP	PcP	07 42 55.9	-0.8
	0.5nm,0.5s,baz=102,slow=3.4,SNR=5.6						
ILAR	**Eielson Array**	**85.14**	**13**	P	P	07 45 39.1	-0.2
	0.2nm,0.4s,baz=221,slow=5.1,SNR=4.5						
TXAR	**Lajitas Array**	**85.86**	**58**	P	P	07 45 43.8	+0.1
	0.3nm,0.8s,baz=222,slow=6.2,SNR=4.6						
PDAR	**Pinedale Array**	**87.00**	**44**	P	P	07 45 48.6	-0.3
	0.3nm,0.6s,baz=211,slow=1.1,SNR=2.7						
BRTR	**Keskin Array B**	**143.91**	**315**	PKP	PKPdf	07 52 35.7	+0.5
	0.9nm,0.8s,baz=31,slow=5.9,SNR=3.9						

WEL 30 07:37:57.1±1.0, 36°14′S×177°41′E, h186km±14km, ML3.5/7, 1D, Error ellipse: s-maj=15.6km s-min=15.0km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**1.59**	**153**	PN	Pn	07 38 30.3	0.0
MXZ				AML	AML	07 39 11.8	
PKGZ	**Pakihiroa**	**1.82**	**163**	PN	Pn	07 38 33.2	+0.5
RUGZ	**Raukumara Rang**	**1.83**	**173**	PN	Pn	07 38 32.7	-0.2
RUGZ				*e*SN	Sn	07 39 00.1	-0.8
WMGZ	**Waiomatatini S**	**1.86**	**155**	PN	Pn	07 38 33.1	+0.1
WMGZ				AML	AML	07 39 01.2	
WMGZ				AML	AML	07 39 01.6	
PUZ	**Puketiti**	**2.04**	**161**	PN	Pn	07 38 34.7	-0.2
TWGZ	**Tauwhareparae**	**2.08**	**168**	PN	Pn	07 38 36.0	+0.6
TWGZ				AML	AML	07 39 07.6	
TWGZ				AML	AML	07 39 09.2	
URZ	**Urewera**	**2.13**	**186**	PN	Pn	07 38 36.4	+0.5
URZ				SN	Sn	07 39 06.5	+0.2
MWZ	**Matawai**	**2.19**	**178**	⇓P	Pn	07 38 36.9	+0.3
MWZ				*e*SN	Sn	07 39 06.7	-0.9
RAGZ	**Rawiri**	**2.35**	**180**	PN	Pn	07 38 38.8	+0.4
SNGZ	**Shannon Statio**	**2.64**	**181**	PN	Pn	07 38 41.4	-0.2
KNZ	**Kokohu**	**2.88**	**176**	PN	Pn	07 38 43.7	-0.8
MRZ	**Mangatainoka R**	**4.74**	**197**	*e*PN	Pn	07 39 04.9	-2.8

MEX 30 07:47:04.3±0.9, 15°12N×95°24W, h20km±82km, MD4.0, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**1.05**	**308**	*e*P	Pb	07 47 20.8	-3.1
HUIG				*e*S	Sb	07 47 32.7	-4.5
VHO	**Vista Hermosa**	**2.41**	**324**	*e*P	Pn	07 47 40.0	-2.8
VHO				*e*S	Sn	07 48 09.2	-2.7
TGIG		**2.62**	**51**	*e*P	Pn	07 47 43.7	-1.9
TGIG				*e*S	Sn	07 48 12.9	-3.9
CCIG	**Comitan**	**3.21**	**69**	*i* P	Pn	07 47 51.4	-2.3
CCIG				*i* S	Sn	07 48 28.1	-3.3

IDC 30 07:56:53.5±2.9, 18°12S×174°65W, h150km±35km, mb3.5/4, mb1 3.7/5, mb1mx3.3/29, mbtmp4.0/5, Error ellipse: s-maj=49.6km s-min=22.2km az=122.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**5.01**	**34**	P	Pn	07 58 07.2	0.0
AFI				S	Sn	07 58 57.7	-6.9
URZ	**Urewera**	**21.32**	**198**	P	P	08 01 28.6	+0.1
	4.1nm,0.4s,baz=11,slow=5.2,SNR=7.0						
WRA	**Warramunga Arr**	**48.11**	**259**	P	P	08 05 18.1	-0.5
	0.5nm,0.3s,baz=98,slow=6.8,SNR=24						
ASAR	**Alice Springs**	**48.18**	**254**	P	P	08 05 19.3	+0.2
	1.4nm,0.5s,baz=90,slow=9.1,SNR=41						
ILAR	**Eielson Array**	**85.33**	**12**	P	P	08 09 13.2	0.0
	0.3nm,0.6s,baz=231,slow=6.5,SNR=6.1						

IDC 30 08:21:51.4±1.3, 2°92S×129°47E, h0km, mb3.9/3, mb1 4.0/5, mb1mx3.7/32, mbtmp3.9/5, ML3.7/2, Error ellipse: s-maj=47.4km s-min=24.1km az=79.0, Seram

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**2.72**	**41**	Pn	Pn	08 22 36.1	-0.2
	12nm,0.3s,baz=90,slow=20,SNR=1.2						
SIJI				Sn	Sn	08 23 05.3	-4.6
	10.0nm,0.3s,baz=270,slow=20,SNR=3.9						
WRA	**Warramunga Arr**	**17.57**	**165**	P	Pn	08 25 56.4	-1.5
	0.3nm,0.3s,baz=346,slow=12,SNR=11						
ASAR	**Alice Springs**	**21.06**	**169**	P	P	08 26 38.0	+0.8
	2.4nm,0.4s,baz=347,slow=11,SNR=30						
MKAR	**Makanchi Array**	**64.56**	**326**	P	P	08 32 30.7	+0.2
	0.8nm,0.8s,baz=126,slow=9.1,SNR=6.4						
ZALV	**Zalesovo Beam**	**67.72**	**333**	P	P	08 32 50.2	-0.3
	0.4nm,0.3s,baz=108,slow=7.7,SNR=1.9						

*SCB **30** 08:54:51.2±0.7, 24°46S×68°07W, h145km, Ml3.6/1, Error ellipse: s-maj=17.2km s-min=8.5km az=37.0*
*SJA **30** 08:54:54.6±0.5, 24°47S×67°85W, h175km±24km, ML3.1, MW3.3*
*ISCJB **30** 08:54:55.9±0.4, 24°49S±0°03×67°97W±0°04, h141km±5km, mb3.9/4, Error ellipse: s-maj=6.0km s-min=4.5km az=137.2*
*IDC **30** 08:54:57.0±1.5, 24°41S×67°73W, h125km±13km, mb3.7/4, mb1 3.8/10, mb1mx3.6/28, mbtmp4.1/10, MS2.7/1, Ms1 2.7/1, ms1mx2.3/18, Error ellipse: s-maj=21.1km s-min=15.8km az=65.0*
*GUC **30** 08:54:57.1±0.5, 24°42S×68°19W, h153km±12km, ML4.2*
ISC 30 08:54:56.6±0.8, 24°46S±0°05×67°95W±0°04, h129km±9km, n33, σ1°24/44, mb4.0/4, 4C-7D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**2.05**	**334**	P	Pn	**08 55 33.0**	**+1.5**
	947nm,0.3s,baz=132,slow=7.7,SNR=141						
LVC				S	Sn	**08 55 59.4**	**+1.2**
	3μm,0.3s,baz=325,slow=19,SNR=38						
LVC	**Limon Verde**	**2.05**	**334**	*i* S	Sn	**08 55 59.7**	**+1.5**
SLA	**San Lorenzo**	**2.24**	**97**	*i* P	Pn	**08 55 34.0**	**+0.4**
SLA				IAML		08 55 35.4	
	comp=Z,150nm,0.4s						
SLA				*i* S	Sn	**08 56 03.5**	**+1.5**
PB14	**IPOC Station P**	**2.24**	**265**	⇑*i*P	Pn	**08 55 34.1**	**+0.2**
PB14				*i* S	Sn	**08 56 02.5**	**+0.1**
PB14				IAML		08 56 04.0	
	comp=E,1μm,0.3s						
PB06	**IPOC Station P**	**2.30**	**319**	⇓*i*P	Pn	**08 55 35.3**	**+0.9**
PB06				*i* S	Sn	**08 56 04.4**	**+0.9**
PB06				IAML		08 56 06.3	
	comp=E,691nm,0.3s						
ANCH	**Antofagasta**	**2.38**	**289**	⇑*i*P	Pn	**08 55 36.5**	**+1.2**
ANCH				*i* S	Sn	**08 56 05.3**	**+0.3**
FSA	**Cafayete**	**2.42**	**133**	*i* P	Pn	**08 55 36.2**	**+0.3**
FSA				IAML		08 55 37.3	
	comp=Z,31nm,0.4s						
FSA				⇑*i*S	Sn	**08 56 07.4**	**+1.2**
PB10	**IPOC Station P**	**2.57**	**291**	⇓*i*P	Pn	**08 55 38.4**	**+0.8**
PB10				*i* S	Sn	**08 56 08.9**	**-0.3**
PB10				IAML		08 56 14.4	
	comp=N,2μm,0.6s						
AZAP	**Zapla**	**2.64**	**85**	*i* P	Pn	**08 55 38.9**	**+0.1**
PB04	**IPOC Station P**	**2.93**	**316**	⇓*i*P	Pn	**08 55 42.8**	**+0.3**
PB04				*i* S	Sn	**08 56 17.6**	**-0.3**
PB04				IAML		08 56 19.3	
	comp=E,459nm,0.3s						
AHML	**Horco Molle**	**3.30**	**135**	*i* P	Pn	**08 55 47.0**	**-0.2**
CPCH	**Copiapo**	**3.61**	**216**	⇓*i*P	Pn	**08 55 49.8**	**-1.3**
CPCH				*i* S	Sn	**08 56 31.9**	**-1.4**
MOCB	**Mochara**	**3.84**	**34**	*e*Pn	Pn	**08 55 55.4**	**+0.7**
VCA	**Vinchina**	**4.26**	**183**	*i* P	Pn	**08 56 00.2**	**+0.3**
BBOJ	**La Paz, Jacaqu**	**7.46**	**358**	*e*Pn	Pn	**08 56 43.7**	**+0.4**
BBOE	**La Paz, Chanca**	**7.61**	**360**	⇓*i*Pn	Pn	**08 56 45.2**	**-0.2**
BBOD	**La Paz, Gloria**	**7.81**	**355**	⇓*i*Pn	Pn	**08 56 48.3**	**+0.2**
LPAZ	**La Paz**	**8.14**	**359**	P	Pn	**08 56 52.2**	**-0.3**
LPAZ				S	Sn	**08 58 22.9**	**-0.4**
	baz=78,slow=20,SNR=2.1						
LPAZ	**La Paz**	**8.14**	**359**	⇓*e*Pn	Pn	**08 56 52.9**	**+0.3**
LPAZ				*e*Sn	Sn	**08 58 22.1**	**-1.2**
BBOB	**La Paz, Bander**	**8.28**	**359**	⇑*i*Pn	Pn	**08 56 54.6**	**+0.2**
BBOB				*e*Sn	Sn	**08 58 23.8**	**-2.9**
	comp=E,9.9nm,0.7s						
CPUP	**Villa Florida**	**9.78**	**103**	P	Pn	**08 57 13.6**	**-0.4**
	comp=E,0.1nm,0.3s,baz=278,slow=12,SNR=4.0						
SIV	**San Ignacio**	**10.61**	**39**	P	Pn	**08 57 22.2**	**-3.1**
	comp=E,6.9nm,0.3s,baz=259,slow=9.5,SNR=51						
SIV				LR	LR	09 01 54.3	
	comp=E,43nm,20.8s,baz=334,slow=40						
SIV	**San Ignacio**	**10.61**	**39**	*e*P	Pn	**08 57 21.1**	**-4.2**
NNA	**Nana**	**15.00**	**324**	P	Pn	**08 58 22.0**	**-0.2**
	comp=E,0.8nm,0.3s,baz=222,slow=15,SNR=2.7						
PLCA	**Paso Flores**	**16.37**	**187**	P	P	**08 58 39.8**	**+0.4**
	comp=E,0.1nm,0.3s,baz=5.7,slow=10,SNR=2.8						
PTGA	**Pitinga**	**24.83**	**19**	P	P	**09 00 06.3**	**-0.7**
	comp=E,3.5nm,0.2s,baz=243,slow=22,SNR=11						
SNAA	**Sanae**	**59.20**	**160**	P	P	**09 04 43.7**	**-0.1**
	comp=E,0.4nm,0.6s,baz=286,slow=10,SNR=7.9						
TXAR	**Lajitas Array**	**63.56**	**325**	P	P	**09 05 15.1**	**+1.5**
	comp=E,0.1nm,0.6s,baz=134,slow=6.4,SNR=2.8						
TORD	**Torodi Ar. Bea**	**77.54**	**69**	P	P	**09 06 38.4**	**-0.2**
	comp=E,13nm,0.7s,baz=258,slow=5.4,SNR=107						
ASAR	**Alice Springs**	**127.67**	**206**	PKP	PKPdf	**09 13 48.1**	**+0.8**
	comp=E,0.3nm,0.7s,baz=143,slow=2.6,SNR=4.5						
WRA	**Warramunga Arr**	**130.81**	**208**	PKP	PKPdf	**09 13 54.6**	**+1.3**
	comp=E,0.5nm,1.0s,baz=158,slow=2.1,SNR=3.6						
ZALV	**Zalesovo Beam**	**144.21**	**28**	PKP	PKPbc	09 14 16.1	+0.8
	comp=E,1.5nm,0.6s,baz=303,slow=4.7,SNR=5.4						
MKAR	**Makanchi Array**	**147.43**	**39**	PKPbc	**PKPbc**	**09 14 26.1**	**+0.8**
	comp=E,0.8nm,0.6s,baz=308,slow=2.9,SNR=6.3						

*NEIC **30** 09:07:46.6, 16°29N×96°06W, h69km, MD4.0(MEX), After MEX.*
MEX 30 09:07:45.2±0.8, 16°30N×95°99W, h75km±9km, MD4.1, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.54**	**192**	*e*P	Pn	09 07 57.2	-1.7
HUIG				*i* S	Sn	09 08 07.4	-1.5
HUIG	**Huatulco**	**0.54**	**192**	*e*P	Pn	09 07 57.2	-1.7
HUIG				*e*S	Sn	09 08 07.3	-1.5
OXBJ	**Oaxaca**	**1.04**	**318**	*e*P	Pn	09 08 03.8	-0.8
OXBJ				*e*S	Sn	09 08 17.2	-1.9
VHO	**Vista Hermosa**	**1.05**	**317**	*e*P	Pn	09 08 03.5	-1.3
VHO				*e*S	Sn	09 08 17.1	-2.2
VHO	**Vista Hermosa**	**1.05**	**317**	*e*P	Pn	09 08 03.5	-1.3
VHO				*e*S	Sn	09 08 17.2	-2.0
PNIG	**Pinotepa**	**2.05**	**273**	*e*P	Pn	09 08 16.9	-0.7
PNIG				*e*S	Sn	09 08 40.2	-2.2
PNIG	**Pinotepa**	**2.05**	**273**	*e*P	Pn	09 08 16.9	-0.7
PNIG				*e*S	Sn	09 08 38.9	-3.5
TPIG	**Tehuac#an**	**2.48**	**328**	*i* P	Pn	09 08 23.4	-0.2
TPIG				*i* S	Sn	09 08 50.6	-2.4
TPIG	**Tehuac#an**	**2.48**	**328**	*e*P	Pn	09 08 17.9	-5.7
TPIG				*e*S	Sn	09 09 07.6	+15
TLIG	**Tlapa**	**2.77**	**297**	*e*P	Pn	09 08 27.8	+0.3
TLIG				*i* S	Sn	09 08 58.9	-1.0
CCIG	**Comitan**	**3.70**	**90**	*i* P	Pn	09 08 40.0	-0.2
CCIG				*i* S	Sn	09 09 20.9	-1.9
CCIG	**Comitan**	**3.70**	**90**	*e*P	Pn	09 08 50.9	+11
CCIG				*e*S	Sn	09 09 22.8	0.0
MEIG	**Mezcala**	**3.83**	**296**	*i* P	Pn	09 08 43.1	+1.2
MEIG				*i* S	Sn	09 09 23.9	-1.7
MEIG	**Mezcala**	**3.83**	**296**	*e*P	Pn	09 08 36.8	-5.0
MEIG				*e*S	Sn	09 09 24.6	-1.0

*IDC **30** 09:11:47.9±0.5, 27°08N×143°45E, h0km, mb4.2/25, mb1 4.3/29, mb1mx4.2/66, mbtmp4.2/29, ML3.5/4, MS3.0/7, Ms1 3.0/7, ms1mx2.8/40, Error ellipse: s-maj=17.4km s-min=12.3km az=74.0*
*NEIC **30** 09:11:49.5±0.2, 27°07N×143°40E, h10km, mb4.6/13, Error ellipse: s-maj=5.2km s-min=4.7km az=60.0*
*ISCJB **30** 09:11:51.3±0.4, 27°11N±0°06×143°30E±0°07, h33km, mb4.4/41, MS3.1/3, Error ellipse: s-maj=9.3km s-min=7.7km az=148.0*
ISC 30 09:11:53.5±0.5, 27°20N±0°07×143°34E±0°10, h35km, n54, σ1s22/57, mb4.3/41, MS3.2/3, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**6.65**	**333**	Pn	Pn	**09 13 27.3**	**-1.5**
	3.2nm,0.3s,baz=271,slow=22,SNR=6.9						
JHJ				Sn	Sn	**09 14 39.1**	**-4.2**
	3.8nm,0.3s,baz=60,slow=18,SNR=3.3						
JHJ				LR	LR	09 16 41.2	
	comp=Z,67nm,18.6s,baz=107,slow=43						
MJAR	**Matsushiro Arr**	**10.28**	**336**	Pn	Pn	**09 14 17.9**	**-0.7**
	1.5nm,0.3s,baz=161,slow=12,SNR=7.8						
MJAR				Sn	Sn	**09 16 10.3**	**-2.3**
	0.3nm,0.3s,baz=126,slow=17,SNR=4.1						
MAJO	**Matsushiro**	**10.28**	**336**	*e*Pn	Pn	**09 14 19.2**	**+0.7**
	5.3nm,0.5s						
MAJO				*e*Sn	Sn	09 16 04.9	-7.7
MAT	**Matsushiro**	**10.28**	**336**	P	Pn	**09 14 17.9**	**-0.7**
MAT				S	Sn	**09 16 09.6**	**-3.0**
JOW	**Kunigami**	**13.44**	**272**	LR	LR	09 20 12.8	
	comp=Z,74nm,18.7s,baz=6.0,slow=37						
GUMO	**Guam**	**13.62**	**174**	LR	LR	09 19 40.0	
	comp=Z,57nm,18.8s,baz=38,slow=35						
KSRS	**Korea Array**	**16.54**	**312**	Pn	Pn	**09 15 43.8**	**+1.0**
	0.2nm,0.3s,baz=121,slow=12,SNR=7.7						
KSRS				LR	LR	09 22 11.6	
	comp=Z,49nm,20.1s,baz=136,slow=37						
KSAR	**Wonju Array Be**	**16.56**	**312**	Pn	Pn	**09 15 43.8**	**+0.8**
USRK	**Ussuriysk Ar.**	**19.27**	**335**	P	P	**09 16 15.5**	**+0.5**
	0.2nm,0.3s,baz=149,slow=11,SNR=14						
YULB	**Yu-li**	**20.28**	**264**	*e*P	P	**09 16 26.2**	**-0.1**
	8.1nm,0.7s						
SSLB	**Suanglung**	**20.49**	**265**	*e*P	P	**09 16 29.4**	**+0.8**
	29nm,1.0s						
KLR	**Kul'dur**	**23.75**	**341**	P	P	**09 17 02.9**	**+0.4**
	1.8nm,0.6s,baz=143,slow=9.0,SNR=6.6						
KLR				LR	LR	09 28 07.0	
	comp=Z,25nm,19.0s,baz=260,slow=41						
SONM	**Songino Array**	**35.35**	**316**	P	P	**09 18 45.9**	**+0.1**
	1.7nm,0.8s,baz=127,slow=8.8,SNR=8.2						
SEY	**Seymchan**	**36.23**	**7**	P	P	**09 18 52.8**	**0.0**
	0.9nm,0.5s,baz=172,slow=9.3,SNR=4.1						
TLY	**Talaya**	**38.51**	**320**	P	P	**09 19 13.6**	**+1.2**
	3.3nm,0.6s,baz=110,slow=23,SNR=3.7						
CMAR	**Chiang Mai Arr**	**41.66**	**268**	P	P	**09 19 38.5**	**-0.4**
	1.8nm,0.6s,baz=63,slow=8.0,SNR=8.8						
WRAB	**Tennant Creek**	**47.66**	**191**	*e*P	P	**09 20 24.9**	**-1.6**
	18nm,0.8s						
WRA	**Warramunga Arr**	**47.67**	**191**	P	P	**09 20 25.4**	**-1.2**
	4.6nm,0.8s,baz=13,slow=8.7,SNR=15						
FITZ	**Fitzroy Crossi**	**48.20**	**203**	P	P	**09 20 29.3**	**-1.5**
	2.8nm,0.9s,baz=45,slow=6.2,SNR=3.2						
ZALV	**Zalesovo Beam**	**50.08**	**319**	P	P	**09 20 45.5**	**+0.7**
	1.7nm,0.8s,baz=101,slow=7.2,SNR=4.2						
ZALV				PcP	PcP	**09 22 04.2**	**+0.1**
	0.7nm,0.4s,baz=108,slow=3.2,SNR=3.0						
MKAR	**Makanchi Array**	**51.20**	**310**	P	P	**09 20 53.9**	**+0.5**
	1.3nm,0.8s,baz=91,slow=9.1,SNR=8.2						
ASAR	**Alice Springs**	**51.38**	**191**	P	P	**09 20 53.4**	**-1.6**
	0.4nm,0.5s,baz=6.0,slow=5.5,SNR=8.8						
ASAR				PcP	PcP	**09 22 09.3**	**0.0**
	0.5nm,0.9s,baz=11,slow=5.2,SNR=3.3						
KURK	**Kurchatov**	**53.65**	**314**	*e*P	P	**09 21 11.8**	**+0.3**
	24nm,0.7s						
KURBB	**Kurchatov Arra**	**53.70**	**314**	P	P	**09 21 12.3**	**+0.5**
	5.3nm,0.6s,baz=90,slow=7.7,SNR=38						
COLD	**Coldfoot**	**56.13**	**25**	*e*P	P	**09 21 29.3**	**+0.1**
	4.0nm,0.8s						
ILAR	**Eielson Array**	**57.13**	**29**	P	P	**09 21 35.5**	**-0.8**
	2.5nm,0.8s,baz=259,slow=5.7,SNR=20						
BVAR	**Borovoye Array**	**58.66**	**317**	P	P	**09 21 47.7**	**+0.5**
	5.7nm,0.7s,baz=93,slow=8.0,SNR=24						
BRVK	**Borovoye**	**58.72**	**318**	*e*P	P	**09 21 48.1**	**+0.4**
	14nm,0.8s						
STKA	**Stephens Creek**	**58.77**	**182**	P	P	**09 21 46.1**	**-2.1**
	1.9nm,0.7s,baz=352,slow=3.3,SNR=5.1						
AFI	**Afiamalu**	**59.72**	**127**	P	P	**09 21 53.7**	**-1.4**
	52nm,0.9s,baz=156,slow=20,SNR=2.8						
KKAR	**Karatay Array**	**59.86**	**306**	*e*P	P	**09 21 56.4**	**+0.7**
	4.4nm,0.7s						
INK	**Inuvik**	**62.51**	**25**	P	P	**09 22 13.6**	**+0.4**
	4.9nm,1.0s,baz=273,slow=8.0,SNR=3.9						
ARU	**Arti**	**64.97**	**322**	P	P	**09 22 32.1**	**+2.5**
	3.3nm,0.4s,baz=218,slow=1.5,SNR=8.1						
ARU				LR	LR	09 53 23.5	
	comp=Z,18nm,19.0s,baz=105,slow=38						
ARU	**Arti**	**64.97**	**322**	*e*P	P	**09 22 30.2**	**+0.6**
	4.1nm,0.7s						
ABKAR	**Akbulak array**	**65.76**	**314**	*e*P	P	**09 22 35.5**	**+0.6**
	3.0nm,0.8s						
AKTO	**Aktyubinsk**	**66.67**	**316**	P	P	**09 22 41.4**	**+0.7**
	1.9nm,0.6s,baz=74,slow=15,SNR=5.1						
GEYT	**Alibeck**	**70.31**	**303**	P	P	**09 23 04.7**	**+1.0**
	1.3nm,0.4s,baz=267,slow=2.5,SNR=3.5						
YKA	**Yellowknife Ar**	**71.56**	**29**	P	P	**09 23 10.6**	**-0.2**
	1.6nm,0.8s,baz=296,slow=5.6,SNR=7.5						
BMO	**Blue Mountains**	**77.49**	**46**	*e*P	P	**09 23 46.0**	**+0.3**
	5.9nm,1.3s						
FINES	**FINESS Array B**	**78.30**	**334**	P	P	**09 23 50.8**	**+1.0**
	2.1nm,0.8s,baz=64,slow=3.2,SNR=3.0						
CMB	**Columbia Colle**	**78.34**	**53**	*e*P	P	**09 23 50.9**	**+0.4**
	46nm,1.2s						
KBZ	**Khabaz**	**78.69**	**313**	P	P	**09 23 52.9**	**+0.7**
	3.1nm,0.8s,baz=82,slow=4.4,SNR=5.0						
MFID	**Camas Ranch**	**79.08**	**47**	*e*P	P	**09 23 55.2**	**+0.7**
	3.1nm,0.9s						
IMW	**Indian Meadow**	**81.97**	**45**	*e*P	P	**09 24 11.6**	**+1.4**
	2.7nm,0.8s						
DUG	**Dugway, Tooele**	**82.59**	**49**	*e*P	P	**09 24 13.4**	**+0.1**
	4.4nm,0.7s						
HWUT	**Hardware Ranch**	**82.71**	**47**	*e*P	P	**09 24 14.8**	**+0.7**
	4.3nm,0.9s						
AKASG	**Malin Array Be**	**83.14**	**324**	P	P	**09 24 15.7**	**-0.1**
	0.4nm,0.4s,baz=52,slow=6.0,SNR=3.0						
PDAR	**Pinedale Array**	**83.41**	**45**	P	P	**09 24 17.2**	**-0.5**
	1.2nm,0.9s,baz=267,slow=3.0,SNR=9.9						
HFS	**Hagfors**	**83.73**	**337**	P	P	**09 24 19.7**	**+1.0**
	2.0nm,0.8s,baz=69,slow=7.9,SNR=2.9						
BRTR	**Keskin Array B**	**86.68**	**313**	P	P	**09 24 36.7**	**+2.7**
	1.4nm,0.8s,baz=103,slow=5.7,SNR=5.3						
SMCO	**Snowmass**	**86.97**	**47**	*e*P	P	**09 24 36.2**	**+0.4**
	5.1nm,1.3s						
MNTX	**Cornudas Mount**	**92.16**	**53**	*e*P	P	**09 24 59.9**	**+0.1**
	2.2nm,0.7s						
TXAR	**Lajitas Array**	**94.71**	**54**	P	P	**09 25 11.9**	**+0.2**
	0.7nm,0.6s,baz=316,slow=2.0,SNR=13						
TXAR				LR	LR	10 08 49.9	
	comp=Z,7.5nm,18.0s,baz=0.0,slow=36						
LPAZ	**La Paz**	**148.90**	**76**	PKPbc	**PKPbc**	**09 31 39.4**	**+0.3**
	4.2nm,0.8s,baz=279,slow=2.1,SNR=19						

*TIF **30** 09:20:24.2, 41°40N×43°89E, h13km±1km*
*DDA **30** 09:20:24.5, 41°37N×43°87E, h7km, Ml3.2*
*CSEM **30** 09:20:25.4±0.2, 41°37N×43°83E, h2km, ML2.7, Error ellipse: s-maj=4.9km s-min=3.8km az=144.0*
*MOS **30** 09:20:25.2±1.4, 41°31N×43°81E, h10km, mb3.9/1, Error ellipse: s-maj=11.6km s-min=5.7km az=85.8*
ISC 30 09:20:24.2±1.1, 41°37N±0°02×43°90E±0°02, h1km±9km, n61, σ1s60/110, 2C, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BGD	**Bogdanovka**	**0.25**	**246**	P	Pg	**09 20 29.7**	**+0.7**
BGD				S	Sg	**09 20 33.4**	**+1.2**
BGD	**Bogdanovka**	**0.25**	**246**	P	Pg	**09 20 29.7**	**+0.7**
BGD				S	Sg	**09 20 33.4**	**

VLKR				*e*S	**Sg**	**09 21 25.1**	**+3.8**
VLKR	**Vladikavkaz**	**1.78**	**19**	*e*Pn	**Pg**	**09 20 59.2**	**+0.9**
VLKR				*e*Sg	**Sg**	**09 21 25.1**	**+3.8**
ARNR	**Ardon**	**1.84**	**9**	*e*PN	**Pg**	**09 20 58.4**	**-1.0**
ARNR				*e*S	**Sg**	**09 21 24.8**	**+1.6**
ARNR	**Ardon**	**1.84**	**9**	*e*Pn	**Pg**	**09 20 58.4**	**-1.0**
ARNR				*e*Sg	**Sg**	**09 21 24.8**	**+1.6**
STDR	**Stavd-Durt**	**2.01**	**3**	*e*PN	**Pb**	**09 21 00.8**	**-0.7**
STDR	**Stavd-Durt**	**2.01**	**3**	*e*Pn	**Pb**	**09 21 00.8**	**-0.7**
NEY	**Neytrino**	**2.08**	**335**	*e*PN	**Pg**	**09 21 04.2**	**+0.2**
NEY	**Neytrino**	**2.08**	**335**	*e*Pn	**Pg**	**09 21 04.2**	**+0.2**
GROC	**Groznyy**	**2.31**	**37**	*e*PN	**Pg**	**09 21 07.6**	**-0.9**
GROC				*e*S	**Sg**	**09 21 40.0**	**+1.5**
GROC	**Groznyy**	**2.31**	**37**	*e*Pn	**Pg**	**09 21 07.6**	**-0.9**
GROC				*e*Sn	**Sg**	**09 21 40.0**	**+1.5**
GNBR	**Gunib**	**2.50**	**65**	*e*PN	**Pb**	**09 21 08.6**	**-1.5**
GNBR				*e*S	**Sg**	**09 21 42.7**	**-2.0**
GNBR	**Gunib**	**2.50**	**65**	*e*Pn	**Pb**	**09 21 08.6**	**-1.5**
GNBR				*e*Sn	**Sg**	**09 21 42.7**	**-2.0**
KIV	**Kislovodsk**	**2.74**	**341**⇑	*e*PN	**Pb**	**09 21 14.0**	**-0.1**
KIV				*i* S	**Sb**	**09 21 46.3**	**-1.9**
KIV				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KIV				smax	smax		
	comp=N,12nm,0.8s						
KIV	**Kislovodsk**	**2.74**	**341**	*e*Pn	**Pb**	**09 21 14.0**	**-0.1**
	comp=N,3.0nm,0.9s						
KIV				*i* Sn	**Sb**	**09 21 46.3**	**-1.9**
	comp=N,12nm,0.8s						
AKT	**Akhty**	**2.88**	**86**	*e*PN	**Pb**	**09 21 14.0**	**-2.5**
AKT				*e*S	**Sb**	**09 21 52.0**	**-0.3**
AKT	**Akhty**	**2.88**	**86**	*e*Pn	**Pb**	**09 21 14.0**	**-2.5**
AKT				*e*Sn	**Sb**	**09 21 52.0**	**-0.3**
KIEV	**Kiev**	**13.81**	**317**	*e*P	**Pn**	**09 23 42.5**	**+1.5**
KIEV	**Kiev**	**13.81**	**317**	*e*P	**Pn**	**09 23 42.5**	**+1.5**
OBN	**Obninsk**	**14.59**	**343**⇑	*e*P	**P**	**09 23 54.4**	**-3.9**
OBN				*e*S	**Sn**	**09 26 38.6**	**+4.8**
OBN				pmax	pmax		
	comp=Z,4.0nm,0.8s						
OBN				MLR	MLR		
	comp=Z,16nm,18.0s						
OBN	**Obninsk**	**14.59**	**343**	*e*P	**P**	**09 23 54.4**	**-3.9**
	comp=Z,16nm,18.0s						
OBN				*e*S	**Sn**	**09 26 38.6**	**+4.8**
BRVK	**Borovoye**	**21.27**	**48**	*e*P	**P**	**09 25 14.4**	**+2.6**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
BRVK	**Borovoye**	**21.27**	**48**	*e*P	**P**	**09 25 14.4**	**+2.6**
	comp=Z,3.0nm,0.9s						
KURK	**Kurchatov**	**25.64**	**57**	*e*P	**P**	**09 25 57.2**	**+2.0**
KURK	**Kurchatov**	**25.64**	**57**	*e*P	**P**	**09 25 57.2**	**+2.0**

*SOME **30** 09:46:13.1, 40°.32N×71°.93E, h0km*
*NNC **30** 09:46:16.5±4.2, 40°.44N×72°.19E, h0km, mb2.8, mpv2.4, Error ellipse: s-maj=38.4km s-min=29.4km az=160.0*

ISC 30 09:46:11.5±4.8, 39°.7N±0°.3×72°.1E±0°.1, h35km, n5, σ1♀**90**/7, **3C-3D, Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MNAS	**Manas**	**2.83**	**6**	⇓P*n*	**Pn**	**09 46 53.9**	**-0.4**
MNAS	2.9nm,0.8s			⇓L*g*	L*g*	09 47 22.7	
	2.1nm,0.3s						
IUG	**Iuzhnay**	**2.92**	**328**	*e*P	**Pn**	**09 46 57.1**	**+1.6**
IUG	7.1nm,0.6s			*e*S	**Sn**	**09 47 28.8**	**-0.6**
	9.5nm,0.5s						
MRKS	**Merke**	**3.19**	**15**	*e*P	**Pn**	**09 47 01.6**	**+2.4**
MRKS	5.5nm,0.4s			*e*S	**Sn**	**09 47 36.5**	**+0.5**
	5.3nm,0.4s						
AAK	**Ala-Archa**	**3.47**	**31**	⇓P*n*	**Pn**	**09 47 02.0**	**-1.2**
AAK	1.4nm,0.6s			⇑L*g*	L*g*	09 47 45.3	
	1.9nm,0.6s						
KK31	**Karatay Array**	**3.62**	**341**	⇑P*n*	**Pn**	**09 47 03.1**	**-2.0**
KK31	0.4nm,0.4s			⇑L*g*	L*g*	09 47 48.8	
	1.2nm,0.6s,baz=152,slow=30,SNR=5.2						

*YARS **30** 09:53:19.3±0.8, 56°.03N±0°.02×130°.07E±0°.05, h10km*
*SKHL **30** 09:53:22.2±0.6, 55°.85N×129°.91E, h8km±5km, mb3.7/5*

ISC 30 09:53:22.3±1.1, 55°.88N±0°.04×129°.86E±0°.04, h10km, n11, σ2♀**38/23, Southeastern Siberia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BMKR	**Bomnak**	**1.31**	**207**	*e*Pg	**Pn**	**09 53 46.2**	**-0.4**
BMKR	15nm,0.4s			AMB	AMB	09 53 46.7	
BMKR				*e*rx	rx	09 53 50.9	
BMKR				*e*Sg	**Sb**	**09 54 03.4**	**-0.3**
BMKR	464nm,0.4s			A	A	09 54 06.9	
BMKR	319nm,0.4s			A	A	09 54 06.9	
BMKR	293nm,0.4s			A	A	09 54 06.9	
KROS	**Kirovskiy**	**2.20**	**230**	*e*Pn	**Pn**	**09 53 58.5**	**-0.4**
KROS				*e*Pg	**Pb**	**09 54 02.0**	**-0.1**
KROS	19nm,0.4s			AMB	AMB	09 54 02.7	
KROS				*e*Sn	**Sn**	**09 54 26.9**	**+0.8**
KROS				*e*Sg	**Sb**	**09 54 31.2**	**+1.8**
KROS	80nm,0.5s			A	A	09 54 33.1	
KROS	84nm,0.5s			A	A	09 54 33.1	
ZEA	**Zeya**	**2.62**	**216**	*e*Pg	**Pb**	**09 54 08.8**	**-0.5**
ZEA	11nm,0.2s			AMB	AMB	09 54 13.2	
ZEA				*e*Sg	**Sb**	**09 54 43.0**	**+1.4**
ZEA	69nm,0.5s			A	A	09 54 44.2	
ZEA	58nm,0.5s			A	A	09 54 44.2	
ZEA	44nm,0.5s			A	A	09 54 44.2	
CLNS	**Chul'man**	**2.92**	**291**	*e*P	**Pb**	**09 54 12.9**	**-1.5**
CLNS				P*max*		09 54 12.9	
	comp=Z,4.0nm,0.6s						
CLNS				*e*S	**Sb**	**09 54 52.3**	**+2.1**
CLNS				S*max*		09 54 52.3	
	comp=E,89nm,0.8s						
CLNS	**Chul'man**	**2.92**	**291**	*e*Sg	**Sb**	**09 54 52.6**	**+2.4**
CLNS				A	A	09 54 56.7	
	comp=E,111nm,1.0s						
TNDR	**Tynda**	**3.01**	**258**	*e*P	**Pb**	**09 54 15.7**	**-0.2**
TNDR				P*max*		09 54 15.7	
	comp=Z,17nm,0.2s						
TNDR				*e*S	**Sg**	**09 54 57.0**	**-1.9**
TNDR				S*max*		09 54 57.0	
	comp=N,43nm,0.2s						
EKMR	**Ekimchan**	**3.35**	**146**	*e*Pg	**Pb**	**09 54 21.5**	**-0.1**
EKMR				AMB	AMB	09 54 25.0	
	comp=N,5.0nm,0.3s						
EKMR				*e*Sg	**Sb**	**09 55 04.2**	**+1.8**
EKMR				A	A	09 55 13.7	
	comp=N,20nm,0.5s						
ALDR	**Aldan**	**3.65**	**320**	*e*P	**Pb**	**09 54 25.3**	**-1.5**
ALDR				P*max*		09 54 25.3	
	comp=Z,3.0nm,0.6s						
ALDR				*e*S	**Sb**	**09 55 11.0**	**-0.1**
ALDR				S*max*		09 55 11.0	
	comp=E,12nm,0.3s						
KHN	**Khani**	**5.69**	**285**	*e*S	**Sb**	**09 56 14.2**	**+4.5**
KHN				S*max*		09 56 14.2	
	comp=E,21nm,0.9s						
TUP	**Tupik**	**5.86**	**260**	*e*Pn	**Pn**	**09 54 50.6**	**+1.4**
TUP				*e*Pg	**Pb**	**09 55 08.4**	**+3.9**
TUP				AMB	AMB	09 55 12.5	
	comp=E,4.0nm,0.4s						
TUP				*e*Sn	**Sn**	**09 55 56.4**	**0.0**
TUP				*e*Sg	**Sg**	**09 56 23.6**	**-6.7**
TUP				A	A	09 56 32.2	
	comp=E,13nm,1.0s						
YAK	**Yakutsk**	**6.17**	**359**	*e*S	**Sb**	**09 56 25.1**	**+1.7**

JMA 30 09:58:40.8, 37°.01N×140°.58E, h7km±1km, M1.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.40**	**181**	P	Pg	09 58 48.6	+0.1
JHO				S	Sg	09 58 54.1	+0.3
JFK	**Kawauchi**	**0.43**	**33**	P	Pg	09 58 49.0	-0.1
JFK				S	Sg	09 58 54.7	0.0
JFT	**Otama**	**0.54**	**339**	P	Pg	09 58 51.5	+0.2
JFY	**Yanaizu**	**0.80**	**300**	S	Sg	09 59 06.7	0.0

*ISCJB **30** 10:18:33.9±0.4, 47°.97N±0°.08×151°.2E±0°.1, h200km, mb3.4/11, Error ellipse: s-maj=15.1km s-min=3.4km az=43.2*
*SKHL **30** 10:18:35.4±0.2, 47°.86N×151°.52E, h193km±7km, mb4.4/6, msh5.2/4*
*MOS **30** 10:18:35.7±1.3, 48°.15N×151°.00E, h212km, mb4.0/3, Error ellipse: s-maj=21.2km s-min=8.7km az=67.0*
*JMA **30** 10:18:37.3±0.4, 46°.67N×152°.13E, h225km, M4.4*
*IDC **30** 10:18:37.8±1.8, 48°.12N×151°.05E, h221km±18km, mb3.3/10, mb1 3.5/16, mb1mx3.4/45, mbtmp3.9/16, Error ellipse: s-maj=18.0km s-min=10.5km az=131.0*

ISC 30 10:18:35.1±0.6, 47°.92N±0°.08×151°.16E±0°.09, h200km, n54, σ2♀**49/68, mb3.5/11, 1D, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**3.52**	**221**	*e*PN	**Pn**	**10 19 34.3**	**+3.4**
KUR				*e*S	**Sn**	**10 20 23.4**	**+8.8**
KUR				pmax	pmax		
	comp=Z,32nm,0.4s						
KUR				pmax	pmax		
	comp=E,28nm,0.2s						
KUR				pmax	pmax		
	comp=N,25nm,0.4s						
KUR				smax	smax		
	comp=N,26nm,0.2s						
KUR				smax	smax		
	comp=E,14nm,0.2s						
KUR	**Kuril'sk**	**3.52**	**221**	*e*P	**Pn**	**10 19 34.0**	**+3.1**
KUR				AMB	AMB	10 19 37.9	
	comp=E,30nm,0.4s						
KUR				*e*S	**Sn**	**10 20 19.5**	**+4.9**
KUR				A	A	10 20 31.2	
	comp=E,30nm,0.2s						
KUR				A	A	10 20 31.2	
	comp=E,10.0nm,0.2s						
SKR	**Severo-Kuril's**	**4.26**	**48**	*i* PN	**Pn**	**10 19 39.7**	**-0.4**
SKR	**Severo-Kuril's**	**4.26**	**48**	*e*P	**Pn**	**10 19 39.5**	**-0.6**
SKR				AMB	AMB	10 19 42.0	
	comp=E,10.0nm,0.6s						
SKR				*e*S	**Sn**	**10 20 28.9**	**-2.3**
SKR				A	A	10 20 32.0	
	comp=E,70nm,0.3s						
SHO	**Shikotan**	**5.05**	**218**	*e*P	**Pn**	**10 19 50.0**	**-0.2**
SHO				AMB	AMB	10 19 50.3	
	comp=E,10.0nm,0.5s						
SHO				*e*S	**Sn**	**10 20 46.8**	**-2.5**
SHO				A	A	10 20 50.4	
	comp=E,60nm,0.3s						
PAU	**Pauzhetka**	**5.11**	**44**	*e*P	**Pn**	**10 19 48.1**	**-2.6**
PAU				AMB	AMB	10 19 48.8	
	comp=E,30nm,0.6s						
PAU				*e*S	**Sn**	**10 20 47.5**	**-2.9**
YUK	**Yuzh-Kuril'sk**	**5.36**	**225**	*e*P	**Pn**	**10 19 56.0**	**+1.9**
YUK				AMB	AMB	10 19 56.8	
	comp=E,10.0nm,0.2s						
YUK				*e*S	**Sn**	**10 20 59.0**	**+2.7**
YUK				A	A	10 21 00.8	
	comp=E,20nm,0.3s						
JRA	**Rausu**	**5.79**	**229**	P	**Pn**	**10 20 01.0**	**+1.3**
NEM2	**Nemuro 2**	**5.93**	**222**	P	**Pn**	**10 20 00.5**	**-0.9**
NEM2				*e*S	**Sn**	**10 21 05.2**	**-4.4**
JNK	**Nakash**	**6.25**	**228**	P	**Pn**	**10 20 06.8**	**+1.2**
JTKR	**Abashiri--Toko**	**6.41**	**235**	P	**Pn**	**10 20 10.5**	**+2.8**
PETK	**Petropavlovsk-**	**6.66**	**36**	P	**Pn**	**10 20 10.2**	**-0.6**
	comp=E,2.9nm,0.3s,baz=196,slow=9.8,SNR=31						
JMP	**Maruseppu**	**6.70**	**237**	P	**Pn**	**10 20 15.0**	**+3.6**
JAK	**Akkeshi**	**6.70**	**225**	P	**Pn**	**10 20 10.9**	**-0.5**
JAK				*e*S	**Sn**	**10 21 24.1**	**-3.6**
PET	**Petropavlovsk**	**7.00**	**40**	*e*PN	**Pn**	**10 20 14.8**	**-0.3**
PET				P*max*	P*max*		
	comp=Z,16nm,0.7s						
PET	**Petropavlovsk**	**7.00**	**40**	*e*P	**Pn**	**10 20 14.5**	**-0.6**
PET				AMB	AMB	10 20 14.8	
	comp=Z,30nm,0.7s						
JKA	**Kamikawa-asahi**	**7.07**	**241**	*e*P	**Pn**	**10 20 20.3**	**+4.1**
ASAJ	**Asahikawa**	**7.07**	**241**	P	**Pn**	**10 20 20.3**	**+4.1**
	comp=Z,7.6nm,0.3s,baz=62,slow=14,SNR=38						
ASAJ	**Asahikawa**	**7.07**	**241**	P	**Pn**	**10 20 20.7**	**+4.5**
JKK2	**Kamakawa 2**	**7.13**	**238**	P	**Pn**	**10 20 20.6**	**+3.6**
JOB	**Onbets**	**7.19**	**228**	P	**Pn**	**10 20 18.0**	**+0.2**
JOB				*e*S	**Sn**	**10 21 36.8**	**-2.5**
JCH	**Churui**	**7.64**	**229**	P	**Pn**	**10 20 23.8**	**+0.2**
JCH				*e*S	**Sn**	**10 21 46.3**	**-3.6**
JNBK	**Urakawa-nobuka**	**8.19**	**230**	P	**Pn**	**10 20 30.4**	**-0.4**
JNBK				*e*S	**Sn**	**10 21 59.2**	**-3.8**
JNB	**Noboribetsu**	**8.98**	**236**	P	**Pn**	**10 20 41.9**	**+0.8**
JKB	**Kayabe**	**9.38**	**234**	P	**Pn**	**10 20 45.3**	**-0.9**
JKB				*e*S	**Sn**	**10 22 25.5**	**-5.6**
JYM2	**Yakumo 2**	**9.59**	**237**	P	**Pn**	**10 20 48.9**	**0.0**
JTM	**Tenmabayashi**	**10.14**	**229**	P	**Pn**	**10 20 53.8**	**-2.4**
JTM				*e*S	Sn	10 22 40.0	-9.5
USRK	**Ussuriysk Ar.**	**13.81**	**261**	P	**P**	**10 21 45.9**	**+1.1**
	comp=Z,1.0nm,0.3s,baz=64,slow=12,SNR=11						
MAJO	**Matsushiro**	**14.85**	**225**	P	**Pn**	**10 21 56.3**	**+0.8**
MJAR	**Matsushiro Arr**	**14.85**	**225**	P	**Pn**	**10 21 56.5**	**+1.0**
	comp=Z,0.3nm,0.3s,baz=22,slow=13,SNR=5.2						
SEY	**Seymchan**	**15.06**	**2**	P	**Pn**	**10 21 58.6**	**+0.9**
	comp=Z,0.4nm,0.3s,baz=177,slow=9.9,SNR=7.1						
SEY	**Seymchan**	**15.06**	**2**	P	**Pn**	**10 21 56.8**	**-1.0**
SEY	**Seymchan**	**15.06**	**2**	*e*P	**Pn**	**10 21 56.8**	**-1.0**
YAK	**Yakutsk**	**18.62**	**327**	*i* P	**P**	**10 22 34.3**	**-2.9**
YAK				P*max*	P*max*		
	comp=Z,10.0nm,0.8s						
KSRS	**Korea Array**	**19.95**	**247**	P	**P**	**10 22 54.3**	**+2.4**
	comp=Z,0.1nm,0.3s,baz=45,slow=12,SNR=3.2						
BILL	**Bilibino**	**21.58**	**15**⇓	*e*P	**P**	**10 23 08.5**	**-0.2**
BILL				*e**PP	**pP**	**10 23 42.2**	**-0.4**
BILL				*e*S	**S**	**10 26 52.7**	**-1.4**
BILL	**Bilibino**	**21.58**	**15**	*e*P	**P**	**10 23 08.5**	**-0.2**
COLA	**College**	**36.06**	**39**	*e*P	**P**	**10 25 20.0**	**+3.0**
COLA				P*max*	P*max*		
	comp=Z,8.0nm,2.6s						
ILAR	**Eielson Array**	**36.48**	**40**	P	**P**	**10 25 20.9**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=279,slow=6.0,SNR=13						
ZALV	**Zalesovo Beam**	**40.85**	**304**	P	**P**	**10 25 55.4**	**-1.6**
	comp=Z,0.6nm,0.4s,baz=103,slow=9.3,SNR=2.8						
MKAR	**Makanchi Array**	**45.23**	**295**	P	**P**	**10 26 31.1**	**-1.2**
	comp=Z,0.3nm,0.4s,baz=87,slow=5.2,SNR=3.6						
MKAR	**Makanchi Array**	**45.23**	**295**	*e*P	**P**	**10 26 33.2**	**+1.0**
MKAR	**Makanchi Array**	**45.23**	**295**	*e*P	**P**	**10 26 33.2**	**+1.0**
YKA	**Yellowknife Ar**	**50.78**	**37**	P	**P**	**10 27 14.3**	**-0.1**
	comp=Z,0.2nm,0.5s,baz=299,slow=6.8,SNR=3.1						
FINES	**FINESS Array B**	**62.41**	**334**	P	**P**	**10 28 35.0**	**-1.2**
	comp=Z,0.9nm,0.3s,baz=36,slow=7.6,SNR=20						
FINES	**FINESS Array B**	**62.41**	**334**	*e*P	**P**	**10 28 36.1**	**-0.1**
FINES				P*max*	P*max*		
	comp=Z,1.0nm,0.3s						
FINES	**FINESS Array B**	**62.41**	**334**	*e*P	**P**	**10 28 36.1**	**-0.1**
PDAR	**Pinedale Array**	**65.12**	**53**	P	**P**	**10 28 54.3**	**-0.3**
	comp=Z,0.4nm,0.6s,baz=245,slow=2.1,SNR=7.3						
NOA	**NORSAR Array B**	**66.68**	**340**	P	**P**	**10 29 02.9**	**-1.0**
	comp=Z,0.5nm,0.5s,baz=28,slow=6.5,SNR=4.0						
NOA	**NORSAR Array B**	**66.68**	**340**	*e*P	**P**	**10 29 03.5**	**-0.4**
WRA	**Warramunga Arr**	**69.22**	**197**	P	**P**	**10 29 20.6**	**+0.5**
	comp=Z,0.8nm,0.6s,baz=17,slow=6.9,SNR=12						
WRA	**Warramunga Arr**	**69.22**	**197**	*e*P	**P**	**10 29 21.3**	**+1.2**
ASAR	**Alice Springs**	**72.92**	**197**	P	**P**	**10 29 44.2**	**+1.9**
	comp=Z,0.6nm,0.5s,baz=11,slow=5.7,SNR=23						
TXAR	**Lajitas Array**	**78.06**	**59**	P	**P**	**10 30 12.1**	**+0.3**
	comp=Z,1.3nm,0.6s,baz=297,slow=4.6,SNR=26						

*JMA **30** 10:18:37.0±0.1, 39°.04N×142°.71E, h19km±2km, M3.4*
*ISCJB **30** 10:18:38.7±1.2, 39°.02N±0°.05×142°.6E±0°.1, h46km±16km, mb3.4/2, Error ellipse: s-maj=14.8km s-min=6.8km az=15.3*
*IDC **30** 10:18:41.1±3.4, 39°.07N×142°.63E, h48km±43km, mb3.1/2, mb1 3.5/6, mb1mx3.3/44, mbtmp3.6/6, ML3.1/4, Error ellipse: s-maj=76.9km s-min=20.7km az=106.0*

ISC 30 10:18:39.4±2.0, 39°.06N±0°.05×142°.62E±0°.08, h33km±5km,

n20, σ1♀**49/26, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.74**	**272**	P	**Pn**	**10 18 52.3**	**-1.2**
OFUJ				S	**Sn**	**10 19 03.1**	**-0.5**
MIYJ	**Miyakonagasawa**	**0.81**	**310**	P	**Pn**	**10 18 53.1**	**-1.3**
MIYJ				S	**Sn**	**10 19 04.6**	**-0.6**
JTH	**Tanohata**	**1.05**	**326**	P	**Pn**	**10 18 57.4**	**-0.4**
JMK	**Ichinoseki**	**1.10**	**265**	P	**Pn**	**10 18 58.0**	**-0.4**
JMK				S	**Sn**	**10 19 13.0**	**+0.6**
JOM	**Ohasama**	**1.11**	**292**	P	**Pn**	**10 18 58.5**	**-0.1**
JOM				S	**Sn**	**10 19 13.7**	**+1.0**
JIO	**Ouri**	**1.17**	**239**	P	**Pn**	**10 18 58.2**	**-1.1**
JIO				S	**Sn**	**10 19 14.2**	**+0.2**
JKZ	**Kuzumaki**	**1.36**	**313**	P	**Pn**	**10 19 02.3**	**+0.3**
JKZ				S	**Sb**	**10 19 20.9**	**-0.4**
JANG	**Nango**	**1.56**	**327**	P	**Pn**	**10 19 05.2**	**+0.4**
JANG				*e*S	**Sb**	**10 19 26.2**	**-0.9**
JRG	**Rokugo**	**1.58**	**283**	P	**Pn**	**10 19 06.4**	**+1.4**
JOU	**Okura**	**1.68**	**246**	P	**Pn**	**10 19 06.9**	**+0.5**
MJAR	**Matsushiro Arr**	**4.30**	**236**	P	**Pn**	**10 19 45.6**	**+3.1**
	0.9nm,0.3s,baz=47,slow=8.9,SNR=8.0						
MAT	**Matsushiro**	**4.31**	**236**	P	**Pn**	**10 19 45.9**	**+3.4**
MAT				*e*S	**Sn**	**10 20 30.9**	**-0.7**
ASAJ	**Asahikawa**	**5.05**	**360**	P	**Pn**	**10 19 54.7**	**+2.0**
	0.3nm,0.3s,baz=198,slow=20,SNR=2.9						
JHJ	**Hachijo jima 2**	**6.36**	**202**	P	**Pn**	**10 20 11.1**	**+0.4**
	1.1nm,0.3s,baz=131,slow=19,SNR=4.2						
JHJ				S	**Sn**	**10 21 18.5**	**-3.6**
	1.5nm,0.3s,baz=54,slow=19,SNR=3.0						
KLR	**Kul'dur**	**12.80**	**326**	P	**Pn**	**10 21 38.7**	**-0.2**
	0.4nm,0.3s,baz=152,slow=6.8,SNR=9.4						
H11N2	**WAKE ISLAND Hy**	**28.46**	**126**	T	T	10 54 15.5	
	baz=318,slow=76,SNR=14						
H11N1	**WAKE ISLAND Hy**	**28.47**	**126**	T	T	10 54 22.8	
	baz=318						
H11N3	**WAKE ISLAND Hy**	**28.48**	**126**	T	T	10 54 18.1	
	baz=318,slow=76,SNR=16						
ILAR	**Eielson Array**	**47.28**	**33**	P	**P**	**10 27 09.4**	**+0.3**
	0.2nm,0.7s,baz=265,slow=7.7,SNR=3.2						
WRA	**Warramunga Arr**	**59.20**	**189**	P	**P**	**10 28 37.2**	**0.0**
	0.3nm,0.4s,baz=7.1,slow=7.0,SNR=8.5						

*ISCJB **30** 10:20:51.9±0.7, 35°.19S±0°.05×71°.4W±0°.1, h97km±7km, Error ellipse: s-maj=14.9km s-min=5.1km az=23.7*
*GUC **30** 10:20:52.9±0.6, 35°.16S×71°.34W, h95km±3km, ML3.8*
*SJA **30** 10:20:56.1±0.5, 34°.73S×71°.28W, h142km±12km, ML3.2, MW3.5*

ISC 30 10:20:52.3±1.5, 35°.19S±0°.06×71°.38W±0°.09, h95km±10km, n17, σ0♀**60/28, Central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NICH	**Los Niches**	**0.22**	**34**	*i* P	**Pn**	**10 21 06.0**	**-0.1**
NICH				*i* S	**Sn**	**10 21 15.9**	**-0.3**
TALC	**Talca**	**0.30**	**224**	*i* P	**Pn**	**10 21 06.6**	**+0.3**
TALC				*i* S	**Sn**	**10 21 16.7**	**-0.1**
CHPI	**Pichilemu**	**0.94**	**327**	*i* P	**Pn**	**10 21 12.4**	**+0.7**
CHPI				*i* S	**Sn**	**10 21 26.4**	**+0.1**
COCH	**Cobquecura**	**1.48**	**230**	*e*P	**Pn**	**10 21 18.0**	**-0.1**
COCH				*e*S	**Sn**	**10 21 37.2**	**-0.4**
COCH				IAML		10 21 38.0	
	comp=N,990nm,0.3s						
CCHI	**Chillan**	**1.52**	**202**	*e*P	**Pn**	**10 21 19.1**	**+0.5**
CCHI				*e*S	**Sn**	**10 21 38.2**	**-0.3**
CCHI				IAML		10 21 42.3	
	comp=N,1μm,0.2s						
ANTU	**Antumapu**	**1.73**	**21**	*i* P	**Pn**	**10 21 21.7**	**+0.4**
ANTU				*i* S	**Sn**	**10 21 42.9**	**-0.4**
ANTU				IAML		10 21 44.8	
	comp=N,1μm,0.3s						
FSR	**Penalolen**	**1.84**	**23**	*i* P	**Pn**	**10 21 22.9**	**+0.2**
FSR				*i* S	**Sn**	**10 21 46.0**	**+0.1**
FCH	**Farellones**	**2.06**	**26**	*i* P	**Pn**	**10 21 26.3**	**+0.4**
FCH				*i* S	**Sn**	**10 21 51.3**	**-0.1**
FCH				IAML		10 21 53.2	
	comp=N,1μm,0.1s						
PEL	**Peldehue**	**2.12**	**16**	*i* P	**Pn**	**10 21 26.6**	**+0.3**
PEL				*i* S	**Sn**	**10 21 51.9**	**-0.4**
PEL				IAML		10 21 55.3	
	comp=E,566nm,0.3s						
ROC1	**El Roble**	**2.23**	**8**	*i* P	**Pn**	**10 21 29.0**	**+1.1**
ROC1				*i* S	**Sn**	**10 21 53.4**	**-1.7**
ROCH	**El Roble**	**2.23**	**8**	*i* P	**Pn**	**10 21 28.4**	**+0.4**
ROCH				*e*S	**Sn**	**10 21 54.6**	**-0.5**
ROCH				IAML		10 21 57.8	
	comp=N,722nm,0.3s						
ASAL	**Salagasta**	**3.34**	**40**	*i* P	**Pn**	**10 21 43.6**	**+0.9**
AUSP	**Uspallata**	**3.39**	**30**	*i* P	**Pn**	**10 21 44.4**	**+0.9**
RTLS	**Leoncito**	**3.80**	**28**	*i* P	**Pn**	**10 21 49.8**	**+0.7**
RTCV	**Cerro Valdivia**	**4.08**	**36**	*i* P	**Pn**	**10 21 52.5**	**0.0**
AMOG	**MOGNA**	**4.88**	**31**	*i* P	**Pn**	**10 22 03.2**	**-0.3**
ACCO	**Cerro Coronel**	**4.98**	**24**	*i* P	**Pn**	**10 22 04.8**	**-0.3**
ACCO				IAML		10 23 04.0	
	comp=Z,21nm,0.5s						

*IDC **30** 10:28:59.4±0.8, 27°.15N×143°.28E, h0km, mb3.7/9, mb1 3.9/11, mb1mx3.8/48, mbtmp3.7/11, ML3.2/2, MS4.0/1, Ms1 4.0/1, ms1mx2.3/38, Error ellipse: s-maj=32.0km s-min=18.3km az=85.0*
*NEIC **30** 10:29:01.0±0.5, 27°.16N×143°.32E, h10km, mb4.4/2, Error ellipse: s-maj=12.7km s-min=9.6km az=85.0*
*ISCJB **30** 10:29:02.3±0.7, 27°.20N±0°.08×143°.39E±0°.08, h33km, mb3.8/11, MS4.0/1, Error ellipse: s-maj=12.4km s-min=10.2km az=157.0*

ISC 30 10:29:04.8±0.9, 27°.2N±0°.1×143°.29E±0°.10, h35km, n16, σ0♀**88/16, mb3.7

ASAR	**Alice Springs**	**30.80**	**164**	P	**P**	**11 00 12.7**	**-0.6**
	0.3nm,0.5s,baz=344,slow=7.0,SNR=6.6						
MKAR	**Makanchi Array**	**54.71**	**325**	P	**P**	**11 03 26.5**	**-0.1**
	0.2nm,0.4s,baz=118,slow=8.6,SNR=2.7						

*ISCJB **30** 11:00:08.5±1.3,36°.47N×0°.04×141°.07E±0°.06,h9km±7km, mb3.5/5,MS3.2/1,Error ellipse: s-maj=8.4km s-min=6.3km az=26.9*
*IDC **30** 11:00:08.2±1.4,36°.51N×141°.01E,h0km,mb3.5/5, mb1 3.6/7,mb1mx3.4/45,mbtmp3.5/7,ML2.6/2,MS2.7/2, Ms1 2.7/2,ms1mx2.2/32,Error ellipse: s-maj=26.7km s-min=23.1km az=100.0*
*JMA **30** 11:00:10.3,36°.48N×140°.97E,h16km±1km,M3.4*

ISC 30 11:00:09.5±2.2,36°.54N±0°.04×140°.91E±0°.06,h5km±14km, n22,σ0°99/23,mb3.4/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.28**	**284**	P	**Pb**	**11 00 17.4**	**+0.3**
JHO				*eS*	**Sb**	**11 00 22.6**	**+0.5**
ONAJ	**Iwakimizuishiy**	**0.57**	**351**	P	**Pb**	**11 00 22.6**	**+0.6**
ONAJ				S	**Sb**	**11 00 31.9**	**+1.5**
JYT	**Yasato**	**0.66**	**242**	P	**Pb**	**11 00 23.2**	**-0.2**
JYT				S	**Sb**	**11 00 33.2**	**+0.3**
JFK	**Kawauchi**	**0.82**	**358**	P	**Pb**	**11 00 26.1**	**-0.3**
JSB	**Shiboa**	**0.90**	**299**	P	**Pn**	**11 00 28.9**	**0.0**
JFT	**Otama**	**1.08**	**335**	P	**Pn**	**11 00 31.5**	**+0.2**
JFT				S	**Sn**	**11 00 47.6**	**+0.9**
JAG	**Ashikaga**	**1.18**	**265**	P	**Pg**	**11 00 31.9**	**-0.2**
JAG				S	**Sb**	**11 00 48.4**	**+0.5**
MJAR	**Matsushiro Arr**	**2.17**	**271**	Pn	**Pn**	**11 00 47.1**	**+0.7**
	5.2nm,0.3s,baz=99,slow=8.9,SNR=32						
MJAR				Sn	**Sb**	**11 01 17.0**	**+0.4**
	8.0nm,0.3s,baz=77,slow=14,SNR=8.4						
MJAR				LR	LR	11 01 52.8	
	comp=Z,67nm,21.9s,baz=110,slow=47						
MAT	**Matsushiro**	**2.17**	**271**	P	**Pn**	**11 00 47.3**	**+0.9**
MAT				S	**Sb**	**11 01 16.3**	**-0.4**
JHJ	**Hachijo jima 2**	**3.54**	**195**	Pn	**Pn**	**11 01 06.4**	**+1.3**
	0.5nm,0.3s,baz=75,slow=20,SNR=2.5						
JHJ				Sn	**Sn**	**11 01 49.3**	**+2.0**
	4.3nm,0.3s,baz=73,slow=19,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**28.25**	**119**	T	T	11 35 26.3	
	baz=312,slow=75,SNR=57						
H11N1	**WAKE ISLAND Hy**	**28.26**	**119**	T	T	11 35 26.9	
	baz=312,slow=75,SNR=56						
H11N3	**WAKE ISLAND Hy**	**28.27**	**119**	T	T	11 35 27.6	
	baz=312,slow=75,SNR=80						
H11S1	**WAKE ISLAND Hy**	**28.94**	**121**	T	T	11 36 18.9	
	baz=314,slow=76,SNR=582						
H11S3	**WAKE ISLAND Hy**	**28.94**	**121**	T	T	11 36 17.7	
	baz=314,slow=76,SNR=606						
H11S2	**WAKE ISLAND Hy**	**28.96**	**121**	T	T	11 36 19.3	
	baz=314,slow=76,SNR=486						
ZALV	**Zalesovo Beam**	**41.95**	**313**	P	**P**	**11 08 00.3**	**-0.7**
	1.1nm,0.6s,baz=96,slow=8.1,SNR=3.5						
NRIK	**Noril'sk**	**43.55**	**336**	LR	LR	11 27 42.7	
	comp=Z,25nm,18.0s,baz=96,slow=38						
MKAR	**Makanchi Array**	**44.04**	**302**	P	**P**	**11 08 18.4**	**+0.2**
	0.2nm,0.7s,baz=87,slow=5.9,SNR=2.8						
KURBB	**Kurchatov Arra**	**45.99**	**308**	P	**P**	**11 08 32.8**	**-0.8**
	0.5nm,0.3s,baz=75,slow=8.1,SNR=4.0						
ILAR	**Eielson Array**	**50.13**	**32**	P	**P**	**11 09 05.6**	**+0.3**
	0.2nm,0.5s,baz=270,slow=5.2,SNR=4.9						
WRA	**Warramunga Arr**	**56.52**	**187**	P	**P**	**11 09 50.4**	**-2.4**
	0.3nm,0.7s,baz=0.8,slow=7.4,SNR=2.5						

TRN 30 11:04:19.8,13°.28N×61°.32W,h142km,MD3.5,1C-2D, Windward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SVB	**Belmont**	**0.06**	**95**	*i* P	Pn	11 04 39.6	+0.6
SVB				*eS*	Sn	11 04 55.3	+1.8
FCV	**Fort Charlotte**	**0.14**	**150**	*i* P	Pn	11 04 39.5	+0.4
FCV				*eS*	Sn	11 04 54.6	+0.9
MCLT	**Moule a Chique**	**0.56**	**40**	*eP*	Pn	11 04 42.8	+2.1
MCLT				*eS*	Sn	11 04 57.6	+1.1
GRHS	**Sauteurs**	**1.09**	**197**	*eP*	Pn	11 04 45.6	+0.9
GRHS				*eS*	Sn	11 05 05.0	+1.2
GRW	**Mount Saint Ca**	**1.16**	**197**	*eP*	Pn	11 04 46.8	+1.4
GRW				*eS*	Sn	11 05 06.7	+1.7
GRGR	**Grenville**	**1.19**	**196**	*eP*	Pn	11 04 45.9	+0.3
GRGR				*eS*	Sn	11 05 05.9	+0.6
MVM	**Montagne Vaucl**	**1.33**	**18**	*eP*	Pn	11 04 48.1	+1.0
FDF	**Fort de France**	**1.46**	**6**	*eP*	Pn	11 04 49.2	+0.8
FDF				*eS*	Sn	11 05 11.4	+1.1
BAMF	**Morne Balai**	**1.54**	**6**	*eP*	Pn	11 04 50.4	+1.1
BBGH	**Gun Hill**	**1.72**	**94**	*eP*	Pn	11 04 52.7	+1.5
BBGH				*eS*	Sn	11 05 16.0	+0.7
BBSP	**Saint Philip**	**1.82**	**95**	*eP*	Pn	11 04 54.1	+1.8
BBSP				*eS*	Sn	11 05 17.9	+0.6
TOSP	**Speyside**	**2.11**	**159**	*eP*	Pn	11 04 55.9	0.0
TOSP				*eS*	Sn	11 05 23.7	+0.2
TRN	**Trinidad (W)**	**2.62**	**182**	*eP*	Pn	11 05 03.5	+1.4
TRN				*eS*	Sn	11 05 34.4	-0.2

*ISCJB **30** 11:07:15.7±1.9,36°.83S±0°.07×73°.75W±0°.08,h8km±11km, mb3.9/8,MS3.6/2,Error ellipse: s-maj=13.0km s-min=8.2km az=137.4*
*IDC **30** 11:07:16.4±1.0,36°.77S×73°.44W,h0km,mb3.9/8, mb1 4.0/10,mb1mx3.9/30,mbtmp3.9/10,ML3.9/2,MS3.6/2, Ms1 3.6/2,ms1mx3.0/20,Error ellipse: s-maj=35.4km s-min=15.1km az=78.0*
*GUC **30** 11:07:19.2±0.5,36°.75S×73°.53W,h13km±4km,ML4.1*
*NEIC **30** 11:07:19.0,36°.75S×73°.53W,h13km,ML4.1(GUC),After GUC.*

ISC 30 11:07:20.2±1.5,36°.77S±0°.05×73°.50W±0°.08,h26km±10km, n19,σ1°07/23,mb3.8/7,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCSP	**San Pedro de C**	**0.32**	**104**	*i* P	**Pb**	**11 07 26.8**	**-0.8**
CCSP				*i* S	**Sb**	**11 07 32.7**	**+0.1**
CCSP				IAML		11 07 40.1	
	comp=N,30μm,0.3s						
COCH	**Cobquecura**	**0.85**	**42**	*i* P	**Pb**	**11 07 36.0**	**-0.4**
COCH				*i* S	**Sn**	**11 07 48.4**	**+0.3**
COCH				IAML		11 07 59.5	
	comp=E,12μm,0.5s						
CCHI	**Chillan**	**1.15**	**82**	*i* P	**Pb**	**11 07 41.6**	**+0.2**
CCHI				*i* S	**Sb**	**11 07 58.5**	**+2.6**
CCHI				IAML		11 08 10.8	
	comp=E,9μm,0.5s						
PSCH	**Puerto Saavedr**	**2.03**	**178**	*i* P	**Pb**	**11 07 55.5**	**-0.8**
PSCH				*i* S	**Sb**	**11 08 23.0**	**+1.8**
TALC	**Talca**	**2.04**	**48**	*i* P	**Pb**	**11 07 55.1**	**-1.4**
TALC				*i* S	**Sb**	**11 08 22.6**	**+1.2**
PLCA	**Paso Flores**	**4.58**	**151**	Pn	**Pn**	**11 08 27.9**	**+0.1**
	comp=E,1.1nm,0.3s,baz=147,slow=2.7,SNR=4.6						
PLCA				Lg	Lg	11 09 39.9	
	comp=E,3.0nm,0.3s,baz=64,slow=23,SNR=3.4						
TRQA	**Tornquist**	**9.25**	**101**	*eP*	**Pn**	**11 09 31.5**	**-0.4**
TRQA				*eS*	**Sn**	**11 11 13.8**	**-1.4**
CPUP	**Villa Florida**	**17.24**	**57**	P	**Pn**	**11 11 19.2**	**0.0**
	comp=E,0.1nm,0.3s,baz=212,slow=7.3,SNR=2.9						
LPAZ	**La Paz**	**20.95**	**15**	P	**P**	**11 12 03.0**	**+1.1**
	comp=E,2.4nm,0.8s,baz=170,slow=4.8,SNR=9.0						
SIV	**San Ignacio**	**23.45**	**31**	P	**P**	**11 12 27.4**	**-0.2**
	comp=E,1.9nm,0.9s,baz=263,slow=6.6,SNR=3.2						
SIV				LR	LR	11 23 28.4	
	comp=E,159nm,18.9s,baz=210,slow=42						
PMSA	**Palmer Station**	**28.61**	**172**	P	**P**	**11 13 14.7**	**+0.7**
	comp=E,5.0nm,0.4s,baz=40,slow=12,SNR=30						
SDV	**Santo Domingo**	**45.49**	**4**	P	**P**	**11 15 36.5**	**-1.1**
	comp=E,1.5nm,0.5s,baz=180,slow=7.1,SNR=3.5						
SNAA	**Sanae**	**49.49**	**157**	P	**P**	**11 16 07.4**	**-0.6**
	comp=E,3.3nm,1.1s,baz=284,slow=8.5,SNR=4.7						
MAW	**Mawson**	**70.86**	**164**	LR	LR	11 49 36.5	
	comp=E,37nm,18.4s,baz=241,slow=36						
TXAR	**Lajitas Array**	**71.60**	**332**	P	**P**	**11 18 39.7**	**+0.4**
	comp=E,0.6nm,0.9s,baz=156,slow=6.6,SNR=6.1						
PDAR	**Pinedale Array**	**85.71**	**334**	P	**P**	**11 19 57.6**	**+0.8**
	comp=E,0.1nm,0.4s,baz=126,slow=4.6,SNR=2.2						
TORD	**Torodi Ar. Bea**	**86.26**	**71**	P	**P**	**11 19 59.8**	**-0.1**
	comp=E,0.5nm,0.7s,baz=204,slow=5.6,SNR=2.9						
ABKAR	**Akbulak array**	**144.29**	**55**	*ePKPdf*	PKPbc	11 26 51.7	0.0
MKAR	**Makanchi Array**	**159.43**	**53**	PKPab	**PKPab**	**11 27 53.4**	**-0.5**
	comp=E,0.6nm,0.8s,baz=293,slow=7.2,SNR=4.2						

*IDC **30** 11:08:17.9±0.7,46°.16S×87°.80W,h0km,mb4.5/11, mb1 4.6/11,mb1mx4.3/30,mbtmp4.5/11,MS3.6/6, Ms1 3.5/6,ms1mx3.3/18,Error ellipse: s-maj=29.3km s-min=20.4km az=104.0*
*ISCJB **30** 11:08:18.3±1.0,46°.15S±0°.1×87°.7W±0°.3,h10km,mb4.5/11, MS3.6/5,Error ellipse: s-maj=27.9km s-min=20.6km az=169.0*

ISC 30 11:08:19.4±0.7,46°.2S±0°.1×87°.7W±0°.2,h10km,n23, σ0°74/20,mb4.5/11,MS3.6/5,Southern Pacific Ocean

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**13.61**	**73**	LR	LR	11 15 41.6	
	comp=Z,304nm,21.4s,baz=318,slow=32						
LVC	**Limon Verde**	**28.04**	**39**	P	**P**	**11 14 12.2**	**+1.0**
	16nm,0.7s,baz=286,slow=7.6,SNR=4.4						
CPUP	**Villa Florida**	**31.23**	**61**	P	**P**	**11 14 39.4**	**+0.4**
	5.0nm,0.9s,baz=258,slow=6.5,SNR=3.8						
CPUP				LR	LR	11 26 46.4	
	comp=Z,256nm,18.4s,baz=230,slow=36						
LPAZ	**La Paz**	**33.99**	**35**	P	**P**	**11 15 04.2**	**+0.2**
	3.3nm,0.9s,baz=194,slow=4.6,SNR=4.6						
SNAA	**Sanae**	**45.44**	**154**	P	**P**	**11 16 39.1**	**+1.1**
	5.3nm,1.1s,baz=230,slow=6.4,SNR=4.0						
VNDA	**Vanda**	**49.52**	**196**	LR	LR	11 33 57.4	
	comp=Z,50nm,20.8s,baz=116,slow=31						
ROSC	**El Rosal**	**52.17**	**17**	P	**P**	**11 17 31.5**	**+0.8**
	8.7nm,0.4s,baz=305,slow=0.2,SNR=5.0						
ROSC				LR	LR	11 35 58.5	
	comp=Z,74nm,19.7s,baz=172,slow=32						
SDV	**Santo Domingo**	**56.91**	**20**	P	**P**	**11 18 03.2**	**-1.6**
	1.9nm,0.4s,baz=264,slow=8.3,SNR=4.6						
TXAR	**Lajitas Array**	**76.53**	**346**	P	**P**	**11 20 09.9**	**+0.3**
	2.3nm,0.9s,baz=170,slow=7.3,SNR=12						
PFO	**Pinyon Flats O**	**83.55**	**336**	P	**P**	**11 20 47.8**	**+0.4**
	3.6nm,0.9s,baz=196,slow=4.1,SNR=3.8						
BOSA	**Boshof**	**84.04**	**126**	LR	LR	11 55 51.3	
	comp=Z,9.1nm,19.9s,baz=206,slow=34						
DBIC	**Dimbokro**	**89.86**	**80**	P	**P**	**11 21 18.2**	**-0.4**
	4.5nm,0.9s,baz=206,slow=6.2,SNR=3.6						
STKA	**Stephens Creek**	**90.42**	**220**	LR	LR	11 54 58.2	
	comp=Z,244nm,19.7s,baz=62,slow=31						
PDAR	**Pinedale Array**	**90.65**	**344**	P	**P**	**11 21 21.9**	**0.0**
	0.5nm,0.7s,baz=170,slow=5.5,SNR=4.6						
TORD	**Torodi Ar. Bea**	**98.97**	**80**	P	**P**	**11 21 59.4**	**-1.0**
	1.4nm,0.9s,baz=244,slow=3.6,SNR=4.9						
ASAR	**Alice Springs**	**100.90**	**218**	P	**Pdif**	**11 22 09.2**	**+0.2**
	0.4nm,0.7s,baz=146,slow=4.5,SNR=5.6						
MJAR	**Matsushiro Arr**	**144.63**	**271**	PKP	**PKPab**	**11 27 54.2**	**-0.3**
	1.4nm,0.5s,baz=163,slow=3.5,SNR=5.7						
GNI	**Garni**	**145.24**	**83**	PKPbc	**PKPab**	**11 27 57.0**	**+0.1**
	12nm,0.7s,baz=257,slow=0.8,SNR=5.9						
KBZ	**Khabaz**	**145.43**	**76**	PKPbc	**PKPab**	**11 27 57.4**	**+0.2**
	3.4nm,0.9s,baz=294,slow=3.2,SNR=6.6						
CMAR	**Chiang Mai Arr**	**151.81**	**194**	PKPbc	**PKPbc**	**11 28 14.4**	**-0.1**
	3.2nm,0.6s,baz=208,slow=3.3,SNR=12						
CMAR				PKPab	**PKPab**	**11 28 23.1**	**-0.3**
	3.0nm,0.6s,baz=204,slow=3.1,SNR=7.6						
KSRS	**Korea Array**	**152.22**	**265**	PKPbc	**PKPbc**	**11 28 14.8**	**-0.1**
	1.3nm,0.7s,baz=103,slow=3.3,SNR=2.9						
GEYT	**Alibeck**	**153.51**	**96**	PKPbc	**PKPbc**	**11 28 18.0**	**+0.2**
	1.6nm,0.5s,baz=134,slow=4.2,SNR=3.0						
MKAR	**Makanchi Array**	**173.09**	**81**	PKPab	**PKPab**	**11 29 54.3**	**-1.4**
	1.1nm,1.0s,baz=262,slow=3.7,SNR=4.0						

IDC 30 11:20:35.0±8.6,16°.91S×174°.09W,h0km,mb4.1/2, mb1 4.2/3,mb1mx3.8/27,mbtmp4.0/3,MS3.3/2,Ms1 3.3/2, ms1mx2.6/35,Error ellipse: s-maj=392.0km s-min=30.7km az=141.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**3.73**	**37**	Pn	Pn	11 21 32.8	-1.0
AFI				Sn	Sn	11 22 11.0	-7.6
RAR	**Rarotonga**	**14.19**	**110**	LR	LR	11 27 22.8	
	comp=Z,92nm,21.4s,baz=291,slow=29						
DZM	**Mont Dzumac**	**19.05**	**251**	LR	LR	11 30 58.6	
	comp=Z,101nm,18.9s,baz=80,slow=33						
DZM	**Mont Dzumac**	**19.05**	**251**	*eLR*	LR	11 30 30.3	
	99nm,24.6s						
PPT2	**Papeete2**	**23.42**	**95**	*eLR*	LR	11 31 12.7	
	68nm,24.8s						
TBI	**Tubuai**	**23.98**	**110**	*eLR*	LR	11 31 18.2	
	104nm,27.8s						
WRA	**Warramunga Arr**	**48.87**	**258**	P	P	11 29 22.3	-0.5
	0.5nm,0.4s,baz=96,slow=9.0,SNR=21						
ASAR	**Alice Springs**	**49.03**	**253**	P	P	11 29 23.9	-0.1
	4.5nm,0.7s,baz=89,slow=8.4,SNR=50						
BRTR	**Keskin Array B**	**146.88**	**319**	PKPbc	PKPbc	11 40 20.0	+0.2
	0.4nm,0.3s,baz=64,slow=3.4,SNR=4.3						

IDC 30 11:37:15.6±1.8,5°.09N×122°.85E,h0km,mb3.5/4, mb1 3.6/4,mb1mx3.4/42,mbtmp3.5/4,MS2.8/1,Ms1 2.8/1, ms1mx2.3/34,Error ellipse: s-maj=259.1km s-min=22.3km az=63.0,Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**23.21**	**173**	LR	LR	11 51 58.3	
	comp=Z,27nm,21.4s,baz=82,slow=38						
WRA	**Warramunga Arr**	**27.32**	**156**	P	P	11 43 02.0	-0.4
	0.6nm,1.1s,baz=333,slow=11,SNR=3.3						
ASAR	**Alice Springs**	**30.55**	**160**	P	P	11 43 31.5	+0.4
	0.1nm,0.3s,baz=338,slow=7.5,SNR=6.9						
MKAR	**Makanchi Array**	**54.27**	**327**	P	P	11 46 44.1	+0.6
	0.4nm,0.5s,baz=112,slow=8.0,SNR=5.3						
KURBB	**Kurchatov Arra**	**58.54**	**329**	P	P	11 47 13.1	-0.8
	0.4nm,0.4s,baz=130,slow=6.9,SNR=4.1						

*IDC **30** 11:47:47.3±0.8,27°.07N×143°.37E,h0km,mb3.9/12, mb1 4.1/17,mb1mx4.0/43,mbtmp4.0/17,ML3.3/4,MS3.1/2, Ms1 3.1/2,ms1mx2.5/33,Error ellipse: s-maj=25.9km s-min=16.1km az=82.0*
*NEIC **30** 11:47:49.0±0.5,27°.10N×143°.40E,h10km,mb4.5/2,Error ellipse: s-maj=9.9km s-min=9.0km az=108.0*
*ISCJB **30** 11:47:50.2±0.7,27°.11N±0°.08×143°.45E±0°.08,h33km, mb4.0/14,MS3.4/1,Error ellipse: s-maj=11.9km s-min=9.8km az=147.3*

ISC 30 11:47:53.2±0.8,27°.24N±0°.08×143°.32E±0°.10,h35km,n23, σ1°34/27,mb3.9/14,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**1.02**	**262**	*eP*	**Pn**	**11 48 10.0**	**-1.0**
CBIJ				*eS*	**Sn**	**11 48 24.1**	**0.0**
JHJ	**Hachijo jima 2**	**6.61**	**333**	Pn	**Pn**	**11 49 27.6**	**-0.3**
	1.6nm,0.3s,baz=65,slow=20,SNR=4.7						
JHJ				Sn	**Sn**	**11 50 38.5**	**-3.5**
	3.1nm,0.3s,baz=65,slow=12,SNR=2.7						
MJAR	**Matsushiro Arr**	**10.24**	**336**	Pn	**Pn**	**11 50 17.2**	**-0.5**
	0.6nm,0.3s,baz=218,slow=30,SNR=6.8						
KSRS	**Korea Array**	**16.50**	**312**	Pn	**Pn**	**11 51 44.0**	**+2.1**
	0.2nm,0.3s,baz=120,slow=10,SNR=5.3						
KSRS				LR	LR	11 58 02.1	
	comp=Z,33nm,19.0s,baz=205,slow=37						
KSAR	**Wonju Array Be**	**16.52**	**312**	Pn	**Pn**	**11 51 44.0**	**+1.8**
ASAJ	**Asahikawa**	**16.85**	**358**	P	**Pn**	**11 51 46.5**	**+0.2**
USRK	**Ussuriysk Ar.**	**19.23**	**335**	P	**Pn**	**11 52 15.7**	**+0.3**
	0.2nm,0.3s,baz=190,slow=9.7,SNR=4.5						
SSLB	**Suanglung**	**20.47**	**265**	*eP*	**P**	**11 52 28.4**	**+0.3**
	14nm,0.8s						
KLR	**Kul'dur**	**23.71**	**341**	P	**P**	**11 53 02.4**	**+0.6**
	1.1nm,0.6s,baz=152,slow=9.8,SNR=3.8						
SONM	**Songino Array**	**35.31**	**316**	P	**P**	**11 54 46.1**	**+1.0**
	1.1nm,0.7s,baz=131,slow=6.1,SNR=7.2						
CMAR	**Chiang Mai Arr**	**41.64**	**268**	P	**P**	**11 55 38.1**	**-0.3**
	1.5nm,0.8s,baz=59,slow=8.3,SNR=7.1						
WRA	**Warramunga Arr**	**47.70**	**191**	P	**P**	**11 56 24.6**	**-2.0**
	7.2nm,0.6s,baz=12,slow=8.6,SNR=63						
WRA				LR	LR	12 17 16.7	
	comp=Z,35nm,18.5s,baz=70,slow=37						
ZALV	**Zalesovo Beam**	**50.04**	**319**	P	**P**	**11 56 45.0**	**+0.8**
	0.6nm,0.3s,baz=90,slow=5.8,SNR=3.5						
ZALV				PcP	**PcP**	**11 58 01.3**	**-2.3**
	0.8nm,0.4s,baz=106,slow=5.2,SNR=3.5						
MKAR	**Makanchi Array**	**51.16**	**309**	P	**P**	**11 56 53.1**	**+0.3**
	0.4nm,0.6s,baz=96,slow=9.9,SNR=5.1						
MKAR				PcP	**PcP**	**11 58 07.6**	**-0.4**
	0.5nm,0.9s,baz=102,slow=4.9,SNR=2.2						
ASAR	**Alice Springs**	**51.42**	**191**	P	**P**	**11 56 52.7**	**-2.2**
	0.8nm,0.6s,baz=11,slow=6.2,SNR=22						

KURK	**Kurchatov**	**53.60**	**314**	*eP*		**P**	**11 57 11.1**	**+0.2**
	61nm,1.0s							
ILAR	**Eielson Array**	**57.10**	**29**	P		**P**	**11 57 35.2**	**-0.6**
	0.8nm,0.8s,baz=256,slow=6.1,SNR=11							
ABKAR	**Akbulak array**	**65.72**	**314**	*eP*		**P**	**11 58 34.6**	**+0.4**
	2.9nm,0.7s							
FINES	**FINESS Array B**	**78.26**	**334**	P		**P**	**11 59 49.9**	**+0.7**
	0.8nm,0.5s,baz=46,slow=5.5,SNR=7.2							
KBZ	**Khabaz**	**78.64**	**313**	P		**P**	**11 59 52.4**	**+0.7**
	3.3nm,0.8s,baz=119,slow=3.8,SNR=6.7							
AKASG	**Malin Array Be**	**83.09**	**324**	P		**P**	**12 00 15.3**	**0.0**
	0.9nm,0.5s,baz=46,slow=4.8,SNR=4.7							
PDAR	**Pinedale Array**	**83.40**	**45**	P		**P**	**12 00 19.3**	**+1.9**
	0.1nm,0.3s,baz=308,slow=3.3,SNR=2.3							
LPAZ	**La Paz**	**148.91**	**76**	PKPbc		**PKPbc**	**12 07 39.0**	**+0.2**
	1.1nm,0.8s,baz=247,slow=2.6,SNR=4.2							

GUC 30 11:59:21.1±0.6,19°.98S×69°.63W,h97km±3km,ML3.6,2C, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HMBC	**Humberstone**	**0.38**	**218**	*i* P	Pn	11 59 36.6	+0.6
HMBC				*i* S	Sn	11 59 47.9	+0.7
HMBC				IAML		11 59 49.1	
	comp=E,2μm,0.3s						
PB08	**IPOC Station P**	**0.48**	**110**	*i* P	Pn	11 59 37.5	+0.6
PB08				*i* S	Sn	11 59 49.9	+1.1
PSGC	**Pisagua**	**0.60**	**309**	*i* P	Pn	11 59 37.8	+0.3
PSGC				*i* S	Sn	11 59 50.2	+0.4
PSGC				IAML		11 59 51.4	
	comp=N,2μm,0.3s						
MNMC	**Minye Minye**	**0.84**	**2**	*i* P	Pn	11 59 40.5	+0.5
MNMC				*i* S	Sn	11 59 54.8	+0.7
MNMC				IAML		11 59 55.6	
	comp=N,5μm,0.2s						
PB01	**IPOC Station P**	**1.07**	**173**	*i* P	Pn	11 59 42.6	+0.4
PB01				*i* S	Sn	11 59 58.9	+0.8
PB01				IAML		11 59 59.8	
	comp=N,4μm,0.2s						
PB12	**IPOC Station P**	**1.51**	**334**	*ePKPdf*	Pn	11 59 47.0	-0.4
PB12				*eS*	Sn	12 00 06.2	-1.1
PB13	**IPOC Station P**	**1.64**	**4**	*i* P	Pn	11 59 51.0	+1.4
PB13				*i* S	Sn	12 00 13.2	+2.1
PB07	**IPOC Station P**	**1.76**	**188**	*i* P	Pn	11 59 51.1	+0.5
PB07				*eS*	Sn	12 00 13.2	+0.2
PB09	**IPOC Station P**	**1.85**	**169**	*eP*	Pn	11 59 52.2	+0.4
PB09				*eS*	Sn	12 00 15.9	+0.8
PB09				IAML		12 00 16.5	
	comp=N,771nm,0.4s						

*ISCJB **30** 12:00:42.9±0.9,17°.4S±0°.5×178°.8W±0°.2,h547km,mb4.0/7, Error ellipse: s-maj=70.9km s-min=9.5km az=156.1*
*IDC **30** 12:00:43.3±1.5,17°.54S×178°.69W,h548km±19km,mb3.6/7, mb1 3.8/9,mb1mx3.3/40,mbtmp4.5/9,Error ellipse: s-maj=70.9km s-min=12.4km az=153.0*

ISC 30 12:00:43.3±1.0,17°.5S±0°.5×178°.7W±0°.2,h547km,n10, σ0°74/11,mb4.1/7,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.56**	**63**	P	**P**	**12 02 37.2**	**+0.4**
	5.7nm,0.3s,baz=256,slow=5.2,SNR=9.1						
AFI				S	**S**	**12 04 09.3**	**-0.4**
	0.9nm,0.3s,baz=20,slow=18,SNR=2.1						
DZM	**Mont Dzumac**	**14.70**	**249**	P	**P**	**12 03 51.1**	**+1.1**
	0.9nm,0.3s,baz=79,slow=15,SNR=11						
CTA	**Charters Tower**	**33.24**	**260**	P	**P**	**12 06 36.0**	**+0.2**
	2.8nm,0.5s,baz=102,slow=11,SNR=7.2						
STKA	**Stephens Creek**	**38.59**	**241**	P	**P**	**12 07 19.1**	**-0.7**
	6.6nm,0.4s,baz=97,slow=10,SNR=12						
WRA	**Warramunga Arr**	**44.43**	**259**	P	**P**	**12 08 05.7**	**-0.5**
	3.5nm,0.5s,baz=96,slow=7.0,SNR=104						
ASAR	**Alice Springs**	**44.63**	**254**	P	**P**	**12 08 07.6**	**-0.1**
	30nm,0.6s,baz=88,slow=8.4,SNR=649						
ASAR				PcP	**PcP**	**12 09 37.5**	**-1.2**
	0.5nm,0.6s,baz=91,slow=4.1,SNR=3.0						
ILAR	**Eielson Array**	**85.53**	**13**	P	**P**	**12 12 23.1**	**-0.2**
	0.4nm,0.4s,baz=218,slow=5.5,SNR=7.6						
TXAR

KSAR **Wonju Array Be** 16.53 312 P **P** **12 05 42.6 +0.3**
KSAR **Wonju Array Be** 16.53 312 Pn **P** **12 05 42.5 +0.3**
ASAJ **Asahikawa** 16.88 358 Pn **Pn** **12 05 41.5 -2.5**
baz=206,slow=9.2
INCN **Inchon** 17.39 310 *e*Pn **P** **12 05 51.5 -0.3**
USRK **Ussuriysk Ar.** 19.25 335 P **P** **12 06 12.4 +0.2**
0.6nm,0.3s,baz=157,slow=11,SNR=19
YSS **Yuzh-Sakhalins** 19.72 359⇑ *e*P **P** **12 06 17.8 +0.5**
YSS pmax pmax
comp=Z,20nm,1.2s
YSS pmax pmax
comp=Z,300nm,5.2s
YSS MLR MLR
comp=E,700nm,19.0s
YSS MLR MLR
comp=Z,600nm,19.0s
YHNB **Yeheng** 19.87 268 *e*P **P** **12 06 19.0 -0.3**
comp=Z,17nm,0.6s
YULB **Yu-li** 20.25 264 *e*P **P** **12 06 23.5 +0.2**
comp=Z,17nm,0.6s
SSLB **Suanglung** 20.45 265 *e*P **P** **12 06 24.9 -0.6**
comp=Z,65nm,1.4s
MDJ **Mudanjiang** 20.57 331 P Pn 12 06 28.0 -0.8
MDJ S Sn 12 10 21.0 +0.1
MDJ pmax pmax
comp=Z,13nm,0.9s
MDJ pmax pmax
comp=Z,47nm,4.4s
MDJ LR LR
comp=Z,280nm,16.6s
MDJ LR LR
comp=Z,670nm,16.4s
MDJ LR LR
comp=Z,970nm,16.4s
TWG **Pinlang** 20.60 263 *e*P **P** **12 06 25.5 -1.7**
comp=Z,64nm,0.7s
SNY **Shenyang** 21.76 317 ⇓P **P** **12 06 43.0 +3.5**
SNY S **S** **12 10 39.3 -1.3**
SNY pmax pmax
comp=Z,24nm,1.0s
SNY pmax pmax
comp=Z,110nm,4.7s
SNY LR LR
comp=Z,320nm,15.1s
SNY LR LR
comp=Z,560nm,15.3s
SNY LR LR
comp=Z,690nm,18.0s
CN2 **Changchun** 21.95 324 *e*P **P** **12 06 45.0 +3.5**
CN2 *e*S **S** **12 10 38.8 -5.5**
CN2 pmax pmax
comp=Z,10.0nm,1.0s
CN2 LR LR
comp=Z,400nm,18.0s
CN2 LR LR
comp=Z,400nm,18.0s
CN2 LR LR
comp=Z,400nm,21.0s
HABR **Khabarovsk** 22.18 345 *e*P **P** **12 06 42.4 -1.5**
HABR *e**SP **sP** **12 06 46.5 +0.6**
HABR *e*PPP PPP 12 07 12.7
HABR 12 10 39.0
HABR *e*S **S** **12 10 47.8 -0.8**
HABR *e* 12 18 01.4
HABR MLR MLR
comp=Z,206nm,18.0s
KLR **Kul'dur** 23.73 341 P **P** **12 07 01.3 +1.3**
comp=Z,6.8nm,0.7s,baz=151,slow=8.0,SNR=28
TIA **Tai'an** 23.95 299 *e*P **P** **12 07 00.3 -2.0**
TIA pmax pmax
comp=Z,20nm,0.8s
TGY **Tagaytay City** 24.60 242 P **P** **12 07 09.3 +0.9**
comp=Z,127nm,0.4s,baz=90,slow=5.2,SNR=3.8
TGY LR LR 12 15 32.9
comp=Z,150nm,18.9s,baz=318,slow=34
WHN **Wuhan** 25.54 284 ⇑P **P** **12 07 15.5 -1.2**
BJI **Beijing** 25.85 307 P **P** **12 07 18.5 -0.9**
BJI S **S** **12 11 51.3 +1.7**
BJI pmax pmax
comp=Z,7.0nm,0.6s
BJI LR LR
comp=Z,200nm,14.5s
BJI LR LR
comp=Z,380nm,14.5s
BJI LR LR
comp=Z,210nm,23.2s
HHC **Hu-ho-hao-te** 29.43 306 *e*P **P** **12 07 51.0 -0.8**
HHC sP sP 12 07 58.0 +4.2
HHC S **S** **12 12 45.3 -1.1**
HHC pmax pmax
comp=Z,19nm,0.7s
HHC pmax pmax
comp=Z,95nm,6.5s
HHC LR LR
comp=Z,160nm,12.3s
HHC LR LR
comp=Z,420nm,13.6s
HHC LR LR
comp=Z,460nm,15.9s
JAY **Jayapura** 29.65 185 P **P** **12 07 51.9 -1.8**
comp=Z,0.5nm,0.5s,baz=262,slow=23,SNR=4.2
ENH **Enshi** 29.74 284 *e*P **P** **12 07 53.6 -0.9**
comp=Z,18nm,1.1s
ENH *e*PP **PP** **12 09 00.5 -1.0**
XAN **Xi'an** 30.26 291 P **P** **12 07 58.3 -0.7**
XAN pmax pmax
comp=Z,17nm,0.7s
XAN LR LR
comp=Z,140nm,17.4s
XAN LR LR
comp=Z,250nm,16.7s
XAN LR LR
comp=Z,280nm,17.0s
QIZ **Qiongzhong** 31.75 262 P **P** **12 08 13.5 +1.2**
QIZ S **S** **12 13 25.0 +2.1**
QIZ LR LR
comp=Z,110nm,18.9s
LZH **Lanzhou** 34.54 295 *e*P **P** **12 08 39.0 +2.3**
LZH pP sP 12 08 42.0 +3.2
LZH sP pP 12 08 43.8 +5.6
LZH pmax pmax
comp=Z,26nm,1.0s
LZH pmax pmax
comp=Z,89nm,4.5s
LZH LR LR
comp=Z,130nm,11.4s
LZH LR LR
comp=Z,440nm,14.4s
LZH LR LR
comp=Z,370nm,16.5s
CD2 **Chengdu** 34.64 286 *e*P **P** **12 08 36.3 -1.2**
SONA1 **Songino Array** 35.32 316 *e*P **P** **12 08 43.8 +0.5**
SONM **Songino Array** 35.32 316 P **P** **12 08 44.1 +0.8**
comp=Z,2.7nm,0.7s,baz=116,slow=8.2,SNR=16
SONM PcP **PcP** **12 11 14.3 +0.6**
comp=Z,0.8nm,0.7s,baz=101,slow=1.5,SNR=3.1
YAK **Yakutsk** 35.99 349 *e*P **P** **12 08 49.8 +1.2**
YAK pmax pmax
comp=Z,4.0nm,0.8s
SEY **Seymchan** 36.22 7 P **P** **12 08 52.0 +1.3**
comp=Z,1.5nm,0.7s,baz=192,slow=11,SNR=4.8
SEY **Seymchan** 36.22 7 *e*P **P** **12 08 50.5 -0.1**
KMI **Kunming** 36.35 276 P **P** **12 08 52.8 +0.3**
KMI pmax pmax
comp=Z,22nm,0.8s
GTA **Gaotai** 37.98 300 *e*P **P** **12 09 05.8 -0.3**
GTA pP sP 12 09 10.8 +2.6
GTA sP pP 12 09 14.0 +6.4
GTA S **S** **12 14 57.5 -1.3**
GTA sS sS 12 15 04.5 +3.2
GTA SS **SnSn** **12 17 33.8 -6.5**
GTA pmax pmax
comp=Z,8.0nm,0.9s
GTA pmax pmax
comp=Z,72nm,5.2s
GTA LR LR
comp=Z,180nm,19.5s
GTA LR LR
comp=Z,470nm,19.5s
GTA LR LR
comp=Z,510nm,19.5s
ZAK **Zakamensk** 38.18 318 *e*P **P** **12 09 09.0 +1.4**
ZAK pmax pmax
comp=Z,11nm,1.2s
TLY **Talaya** 38.48 320 *e*P **P** **12 09 11.8 +1.8**
TLY pmax pmax
comp=Z,12nm,0.8s
TLY MLR MLR
comp=Z,372nm,16.0s
CHTO **Chiang Mai** 41.50 268 *e*P **P** **12 09 34.6 -0.8**
CHTO pmax pmax
comp=Z,14nm,0.9s
CHTO **Chiang Mai** 41.50 268 *e*P **P** **12 09 34.6 -0.8**
comp=Z,14nm,0.9s
MTN **Manton Dam** 41.53 198 *e*P **P** **12 09 33.7 -1.8**
comp=Z,13nm,0.6s
CM01 **Chiang Mai Arr** 41.62 267 *e*P **P** **12 09 36.2 -0.2**
CMAR **Chiang Mai Arr** 41.62 268 P **P** **12 09 36.5 0.0**
comp=Z,4.0nm,0.9s,baz=58,slow=8.3,SNR=15
CMAR PcP **PcP** **12 11 33.0 -0.6**
comp=Z,0.8nm,0.4s,baz=82,slow=0.6,SNR=5.3
BILL **Bilibino** 43.13 12⇑ *e*P **P** **12 09 48.8 +0.7**
BILL *e* 12 11 28.7
BILL *e*PPP PPP 12 12 07.8
BILL pmax pmax
comp=Z,4.0nm,0.9s
BILL MLR MLR
comp=Z,152nm,17.0s
CTA **Charters Tower** 47.10 176 P **P** **12 10 17.7 -2.4**
comp=Z,2.3nm,0.8s,baz=126,slow=18,SNR=3.0
WMQ **Urumqi** 47.31 306 P **P** **12 10 22.5 +0.7**
WMQ pP sP 12 10 31.0 +7.1
WMQ pmax pmax
comp=Z,15nm,1.3s
WMQ pmax pmax
comp=Z,85nm,3.7s
WMQ LR LR
comp=Z,280nm,15.4s
WMQ LR LR
comp=Z,300nm,19.2s
WMQ LR LR
comp=Z,280nm,25.6s
WRAB **Tennant Creek** 47.66 191 *d i*P **P** **12 10 22.5 -2.0**
WRAB pmax pmax
comp=Z,51nm,0.9s
WRAB **Tennant Creek** 47.66 191 *e*P **P** **12 10 23.1 -1.4**
comp=Z,23nm,0.6s
WB2 **Warramunga Arr** 47.66 191 *e*P **P** **12 10 23.2 -1.3**
WRA **Warramunga Arr** 47.67 191 P **P** **12 10 23.1 -1.5**
comp=Z,21nm,0.8s,baz=12,slow=8.4,SNR=50
PSI **Prapat** 48.86 248 *e*P **P** **12 10 33.1 -1.0**
PSI pmax pmax
comp=Z,11nm,0.7s
PSI **Prapat** 48.86 248 *e*P **P** **12 10 33.1 -1.0**
comp=Z,11nm,0.7s
ZAA0 **Zalesovo Array** 50.05 319 *e*P **P** **12 10 42.8 +0.2**
ZALV **Zalesovo Beam** 50.05 319 P **P** **12 10 43.2 +0.7**
comp=Z,2.2nm,0.6s,baz=106,slow=7.5,SNR=8.5
ZALV PcP **PcP** **12 12 01.8 -0.5**
comp=Z,2.1nm,0.5s,baz=109,slow=3.5,SNR=6.7
GUN **Gumba** 50.49 285 *e*P **P** **12 10 46.8 +0.1**
comp=Z,76nm,0.8s
PKIN **Phulchoki** 50.99 285 *e*P **P** **12 10 50.3 -0.1**
comp=Z,24nm,0.8s
KKN **Kakani** 51.03 285 *e*P **P** **12 10 50.5 -0.2**
MK01 **Makanchi Array** 51.16 309 *e*P **P** **12 10 51.3 +0.2**
MK31 **Makanchi Array** 51.17 310 *e*P **P** **12 10 51.4 +0.2**
MK31 **Makanchi Array** 51.17 310 *e*P **P** **12 10 51.4 +0.2**
MKAR **Makanchi Array** 51.17 310 P **P** **12 10 51.6 +0.5**
comp=Z,1.2nm,0.4s,baz=86,slow=9.8,SNR=12
MKAR PcP **PcP** **12 12 06.0 -0.7**
comp=Z,1.1nm,0.8s,baz=110,slow=2.8,SNR=3.3
MKAR **Makanchi Array** 51.17 310 *ce*P **P** **12 10 51.5 +0.3**
MKAR pmax pmax
comp=Z,1.0nm,0.4s
MKAR **Makanchi Array** 51.17 310 *e*P **P** **12 10 51.2 +0.1**
MKAR PcP **PcP** **12 12 06.0 -0.7**
DMN **Daman** 51.23 285 *e*P **P** **12 10 52.0 -0.2**
comp=Z,7.5nm,0.4s
AS01 **Alice Springs** 51.37 191 *e*P **P** **12 10 50.6 -2.2**
AS31 **Alice Springs** 51.38 191 *e*P **P** **12 10 50.9 -2.0**
comp=Z,1.1nm,0.6s
ASAR **Alice Springs** 51.38 191 P **P** **12 10 51.0 -1.9**
comp=Z,2.1nm,0.8s,baz=7.8,slow=5.7,SNR=27
ASAR PcP **PcP** **12 12 07.1 -0.5**
comp=Z,0.8nm,0.8s,baz=21,slow=3.5,SNR=4.1
MAKZ **Makanchi** 51.38 310 *e*P **P** **12 10 53.4 +0.6**
MAKZ pmax pmax
comp=Z,14nm,1.4s
MAKZ **Makanchi** 51.38 310 *e*P **P** **12 10 53.4 +0.6**
comp=Z,14nm,1.4s
GKN **Gorkha** 51.54 285 *e*P **P** **12 10 54.2 -0.2**
KOLN **Koldanda** 52.48 285 *e*P **P** **12 11 01.3 -0.2**
comp=Z,23nm,0.9s
NRIK **Noril'sk** 52.91 338 P **P** **12 11 03.6 -0.1**
comp=Z,5.9nm,0.6s,baz=120,slow=4.7,SNR=5.2
PYUN **Piuthan** 52.93 286 *e*P **P** **12 11 04.7 -0.1**
comp=Z,24nm,0.6s
KURK **Kurchatov** 53.61 314 *e*P **P** **12 11 09.5 +0.3**
KURK pmax pmax
comp=Z,17nm,0.8s
KURK **Kurchatov** 53.61 314 *e*P **P** **12 11 09.5 +0.3**
comp=Z,17nm,0.8s
KDAK **Kodiak Island** 53.68 37 *ce*P **P** **12 11 10.2 +0.7**
SEW **Seward** 55.52 34 *e*P **P** **12 11 24.2 +1.3**
comp=Z,9.2nm,1.1s
PMR **Palmer** 55.81 32 *e*P **P** **12 11 25.9 +1.0**
PMR pmax pmax
comp=Z,7.0nm,1.0s
PMR **Palmer** 55.81 32 *e*P **P** **12 11 25.9 +1.0**
comp=Z,7.4nm,1.0s
RND **Reindeer** 56.13 30 *e*P **P** **12 11 27.6 +0.2**
RND pmax pmax
comp=Z,4.0nm,0.8s
RND **Reindeer** 56.13 30 *e*P **P** **12 11 27.6 +0.2**
comp=Z,4.0nm,0.8s
COLD **Coldfoot** 56.14 25 *e*P **P** **12 11 28.6 +1.3**
comp=Z,4.7nm,0.9s
SML **Sawmill** 56.21 32 *e*P **P** **12 11 29.3 +1.4**
SML pmax pmax
comp=Z,9.0nm,0.6s
SML **Sawmill** 56.21 32 *e*P **P** **12 11 29.3 +1.4**
comp=Z,9.3nm,0.6s
KSH **Kashi** 56.37 301 *e*P **P** **12 11 33.5 +4.0**
KSH *e*pP sP 12 11 38.0 +6.3
KSH *e*PP **PP** **12 13 41.0 +6.2**
KSH *e*ScP **ScP** **12 16 26.5 -0.3**
KSH S **S** **12 19 24.0 +3.2**
KSH pmax pmax
comp=Z,6.0nm,0.4s
KSH LR LR
comp=Z,160nm,10.1s
KSH LR LR
comp=Z,140nm,10.7s
KSH LR LR
comp=Z,170nm,16.0s
MDM **Murphy Dome** 56.59 28 *e*P **P** **12 11 31.8 +1.2**
comp=Z,2.9nm,0.8s
SCM **Sheep Creek Mo** 56.69 32 *e*P **P** **12 11 32.2 +0.9**
SCM pmax pmax
comp=Z,7.0nm,1.0s
SCM **Sheep Creek Mo** 56.69 32 *e*P **P** **12 11 32.2 +0.9**
comp=Z,7.4nm,1.0s
COLA **College** 56.74 28 *e*P **P** **12 11 33.7 +2.2**
COLA pmax pmax
comp=Z,1.0nm,0.8s
AAK **Ala-Archa** 57.01 305 *e*P **P** **12 11 33.3 -0.7**
AAK pmax pmax
comp=Z,5.0nm,1.0s
IL1 **Eielson Array** 57.14 29 *e*P **P** **12 11 33.9 -0.5**
ILAR **Eielson Array** 57.14 29 P **P** **12 11 32.8 -1.6**
comp=Z,2.9nm,0.9s,baz=261,slow=5.9,SNR=31
ILB **Eielson Array** 57.14 29 *e*P **P** **12 11 35.2 +0.8**
PAX **Paxson** 57.63 31 *e*P **P** **12 11 38.9 +0.9**
PAX pmax pmax
comp=Z,5.0nm,1.2s
PAX **Paxson** 57.63 31 *e*P **P** **12 11 38.9 +0.9**
comp=Z,5.4nm,1.2s
BRVK **Borovoye** 58.69 317 *d i*P **P** **12 11 46.1 +0.6**
BRVK pmax pmax
comp=Z,18nm,0.8s
BRVK **Borovoye** 58.69 317 *e*P **P** **12 11 46.4 +1.0**
comp=Z,13nm,1.1s
STKA **Stephens Creek** 58.78 182 P **P** **12 11 43.1 -3.1**
comp=Z,5.1nm,0.7s,baz=340,slow=11,SNR=9.5
KKAR **Karatay Array** 59.82 306 *e*P **P** **12 11 54.2 +0.7**
KKAR **Karatay Array** 59.82 306 *e*P **P** **12 11 54.2 +0.7**
DAWY **Dawson** 60.37 30 *e*P **P** **12 11 58.4 +1.5**
comp=Z,4.5nm,1.1s
HYT **Haines Junctio** 61.43 33 *e*P **P** **12 12 05.9 +1.6**
comp=Z,5.8nm,1.1s
SVE **Sverdlovsk** 63.74 323⇑ *e*P **P** **12 12 19.8 +0.2**
SVE pmax pmax
comp=Z,12nm,1.1s
ARU **Arti** 64.94 322 *d i*P **P** **12 12 27.8 +0.3**
ARU S **S** **12 21 12.0 +2.4**
ARU SS **SS** **12 25 22.2 +1.6**
ARU pmax pmax
comp=Z,13nm,1.0s
ARU MLR MLR
comp=Z,293nm,17.0s
ABKAR **Akbulak array** 65.73 314 *e*P **P** **12 12 33.2 +0.5**
comp=Z,7.9nm,0.6s
ABKAR *e*PcP **PcP** **12 13 03.5 -0.5**
YKA **Yellowknife Ar** 71.57 29 P **P** **12 13 09.1 +0.1**
comp=Z,1.6nm,0.7s,baz=299,slow=5.6,SNR=8.8
KLMR **Klimovskoe** 72.98 330 *e*P **P** **12 13 16.7 -0.7**
KLMR pmax pmax
comp=Z,6.0nm,0.7s
ARCES **ARCESS Array B** 73.76 341 P **P** **12 13 21.2 -0.6**
comp=Z,1.9nm,0.7s,baz=53,slow=8.2,SNR=6.8
NEW **Newport** 76.15 43 *e*P **P** **12 13 36.8 +0.6**
NEW pmax pmax
comp=Z,4.0nm,1.0s
NEW **Newport** 76.15 43 *e*P **P** **12 13 36.8 +0.6**
comp=Z,4.3nm,1.0s
OBN **Obninsk** 77.00 326⇓ *e*P **P** **12 13 41.6 +0.9**
OBN *e* 12 16 33.0
OBN pmax pmax
comp=Z,8.0nm,0.5s
OBN MLR MLR
comp=Z,173nm,16.0s
VSR **Storozhevoye** 77.48 321 *e*P **P** **12 13 42.4 -1.1**
VSR pmax pmax
comp=Z,6.0nm,1.0s
BMO **Blue Mountains** 77.51 46 *e*P **P** **12 13 44.3 +0.3**
comp=Z,3.7nm,1.1s
FINES **FINESS Array B** 78.28 334 P **P** **12 13 48.1 +0.3**
comp=Z,2.7nm,0.6s,baz=88,slow=6.1,SNR=14
CMB **Columbia Colle** 78.37 53 *e*P **P** **12 13 49.4 +0.6**
CMB pmax pmax
comp=Z,3.0nm,0.9s
CMB **Columbia Colle** 78.37 53 *e*P **P** **12 13 49.4 +0.6**
comp=Z,3.4nm,0.9s
KBZ **Khabaz** 78.66 313 P **P** **12 13 50.3 +0.1**
comp=Z,1.1nm,0.9s,baz=102,slow=1.5,SNR=20
KIV **Kislovodsk** 78.69 314 *de*P **P** **12 13 50.8 +0.3**
KIV *e* 12 16 44.0
KIV *e*S S 12 23 57.6 +9.1
KIV *e*SS **SS** **12 28 56.1 +4.3**
KIV pmax pmax
comp=Z,9.0nm,0.8s
YERR **Yerington** 78.77 52 *e*P **P** **12 13 51.2 0.0**
comp=Z,12nm,1.4s
NEY **Neytrino** 78.98 313 *e*P **P** **12 13 52.6 +0.3**
NEY pmax pmax
comp=Z,1.0nm,1.0s
GNI **Garni** 79.02 309⇑ *i*P **P** **12 13 52.5 0.0**
GNI pmax pmax
comp=Z,53nm,1.7s
MFID **Camas Ranch** 79.11 47 *e*P **P** **12 13 54.6 +1.7**
comp=Z,5.3nm,1.0s
TVH3 **East Aurora ar** 79.34 52 *e*P **P** **12 13 56.0 +1.6**
comp=Z,3.6nm,1.1s
TVH2 **Borealis Mine** 79.37 52 *e*P **P** **12 13 55.0 +0.5**
comp=Z,12nm,2.0s
HLID **Hailey** 79.95 46 *e*P **P** **12 13 58.9 +1.4**
comp=Z,1.6nm,0.9s
LRM **Limekiln Ridge** 80.11 43 *e*P **P** **12 13 59.0 +0.6**
BOZ **Bozeman (W)** 80.70 43 *e*P **P** **12 14 02.6 +1.1**
BOZ pmax pmax
comp=Z,3.0nm,0.9s
BOZ **Bozeman (W)** 80.70 43 *e*P **P** **12 14 02.5 +1.1**
comp=Z,2.5nm,0.9s
QLMT **Earthquake Lak** 81.22 44 *e*P **P** **12 14 05.2 +0.8**
YHB **Horse Butte** 81.41 44 *e*P **P** **12 14 05.8 +0.4**
comp=Z,7.4nm,1.0s
R11A **Troy Canyon, C** 81.61 51 *e*P **P** **12 14 07.3 +0.8**
comp=Z,14nm,1.9s
TPNV **Topopah Spring** 81.79 53 *e*P **P** **12 14 08.1 +0.6**
TPNV pmax pmax
comp=Z,2.0nm,0.7s
TPNV **Topopah Spring** 81.79 53 *e*P **P** **12 14 08.1 +0.6**
comp=Z,1.9nm,0.7s
HVU **Hansel Valley** 81.86 47 *e*P **P** **12 14 08.6 +0.8**
HVU pmax pmax
comp=Z,2.0nm,0.9s
HVU **Hansel Valley** 81.86 47 *e*P **P** **12 14 08.6 +0.8**
comp=Z,2.2nm,0.9s
IMW **Indian Meadow** 81.99 45 *e*P **P** **12 14 09.8 +1.2**
comp=Z,14nm,0.3s
FLWY **Flagg Ranch** 82.05 44 *e*P **P** **12 14 08.6 -0.1**
comp=Z,3.5nm,0.8s
TPAW **Teton Pass** 82.19 45 *e*P **P** **12 14 10.8 +1.2**
comp=Z,3.2nm,0.9s
RLMT **Red Lodge** 82.40 43 *e*P **P** **12 14 11.5 +1.0**
comp=Z,3.8nm,0.9s
DUG **Dugway, Tooele** 82.61 49 *e*P **P** **12 14 12.2 +0.5**
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG **Dugway, Tooele** 82.61 49 *e*P **P** **12 14 12.2 +0.5**
comp=Z,3.8nm,0.8s
AKASG **Malin Array Be** 83.11 324 P **P** **12 14 13.6 -0.2**
comp=Z,3.4nm,0.6s,baz=48,slow=6.3,SNR=11
AKBB **Malin Array Si** 83.11 324 *e*P **P** **12 14 13.3 -0.6**
AKBB **Malin Array Si** 83.11 324 *e*P **P** **12 14 13.2 -0.6**
KIEV **Kiev** 83.12 324 ⇑ *i*P **P** **12 14 13.5 -0.4**
KIEV pmax pmax
comp=Z,6.0nm,0.9s
KIEV **Kiev** 83.12 324 *e*P **P** **12 14 13.2 -0.7**
comp=Z,5.5nm,0.7s
AK11 **Malin Array Si** 83.15 324 *e*P **P** **12 14 14.0 -0.1**
BW06 **Boulder Array** 83.43 45 *e*P **P** **12 14 16.1 +0.1**
PDAR **Pinedale Array** 83.43 45 P **P** **12 14 15.3 -0.7**
comp=Z,7.7nm,0.7s,baz=295,slow=4.2,SNR=5.6
NB2 **NORSAR Subarra** 83.87 339 P **P** **12 14 17.5 -0.1**
comp=Z,2.2nm,1.0s,baz=46,slow=5.3
NOA **NORSAR Array B** 83.87 339 P **P** **12 14 17.3 -0.3**
comp=Z,1.8nm,0.9s,baz=45,slow=4.9,SNR=3.1
LCMT **Little Creek M** 83.88 52 *e*P **P** **12 14 18.4 +0.1**
comp=Z,1.9nm,0.8s
KNB **Kanab** 84.17 51 *e*P **P** **12 14 21.0 +1.2**
KNB pmax pmax
comp=Z,8.0nm,1.2s
KNB **Kanab** 84.17 51 *e*P **P** **12 14 21.0 +1.2**
comp=Z,8.0nm,1.2s
SRU **San Rafael Swe** 84.68 49 *e*P **P** **12 14 22.3 -0.1**
SRU pmax pmax
comp=Z,3.0nm,0.8s
SRU **San Rafael Swe** 84.68 49 *e*P **P** **12 14 22.2 -0.1**
comp=Z,3.3nm,0.8s
PV10 **Paradox Valley** 86.06 49 *e*P **P** **12 14 29.8 +0.5**
PV04 **Paradox Valley** 86.14 49 *e*P **P** **12 14 31.5 +1.8**
PV01 **Paradox Valley** 86.50 49 *e*P **P** **12 14 30.6 -1.0**
BRTR **Keskin Array B** 86.65 313 P **P** **12 14 32.4 +0.3**
comp=Z,1.9nm,0.8s,baz=96,slow=3.7,SNR=6.4
SMCO **Snowmass** 86.99 47 *e*P **P** **12 14 35.1 +0.9**
comp=Z,3.2nm,1.0s
BR231 **Keskin MP Arra** 87.14 314 *e*P **P** **12 14 32.4 -2.1**
OKC **Ostrava-Krasne** 89.16 328 AMS AMS 12 58 00.0
comp=Z,100nm,16.5s
ANMO **Albuquerque** 89.65 50 *i*P **P** **12 14 48.1 +1.5**
ANMO pmax pmax
comp=Z,1.0nm,0.8s
DPC **Dobruska-Polom** 89.65 329 AMS AMS 12 58 10.0
comp=Z,100nm,17.9s
UPC **Upice** 89.68 329 AMS AMS 12 58 10.0
VYHS **Vyhne** 89.75 327 *e*P **P** **12 14 46.6 +0.1**
VYHS pmax pmax
comp=Z,2.0nm,0.8s
VYHS **Vyhne** 89.75 327 *e*P **P** **12 14 46.6 +0.1**
PVCC **Panska Ves** 90.32 330 AMS AMS 12 59 00.0
comp=Z,100nm,16.4s
CLL **Collm** 90.43 331 *e*P **P** **12 14 49.0 -0.6**
CLL **Collm** 90.43 331 *e*P **P** **12 14 49.0 -0.6**
PRU **Pruhonice** 90.72 330 AMS AMS 12 59 00.0
comp=Z,100nm,11.8s
KHC **Kasperske Hory** 91.77 330 AMS AMS 12 59 30.0
comp=Z,100nm,15.8s
GERES **GERESS Array B** 91.92 329 P **P** **12 14 56.0 -0.7**
comp=Z,0.9nm,0.8s,baz=160,slow=5.0,SNR=3.6
MNTX **Cornudas Mount** 92.19 53 *e*P **P** **12 14 58.8 +0.6**
comp=Z,2.2nm,0.9s
TX31 **Lajitas Ar. Si** 94.74 54 *e*P **P** **12 15 10.5 +0.4**
TXAR **Lajitas Array** 94.74 54 P **P** **12 15 10.6 +0.5**
comp=Z,0.7nm,0.8s,baz=313,slow=1.8,SNR=9.4
TORD **Torodi Ar. Bea** 125.25 312 PKP **PKPdf** **12 20 48.8 -0.9**
comp=Z,0.4nm,0.5s,baz=42,slow=1.0,SNR=5.9

LPAZ	**La Paz**	**148.94**	**76**	PKP	**PKPdf**	**12 21 33.0**	**-0.6**
	comp=Z,6.9nm,1.0s,baz=262,slow=2.6,SNR=4.9						
LPAZ				PKPbc	**PKPbc**	**12 21 37.4**	**-0.1**
	comp=Z,4.6nm,0.7s,baz=289,slow=2.4,SNR=25						
SAML	**Samuel**	**149.08**	**59**	*e*PKPbc	**PKPbc**	**12 21 36.6**	**-0.6**

NIED ***30*** *12:08:00,39˚.10N×142˚.90E,h26km,Mw4.5 Best double couple: M₀6.12000×10¹⁵ NP1:φ₈163.00000°,δ17.00000°, λ48.00000°. NP2:φ₈27.00000°,δ78.00000°,λ102.00000°.*
ISCJB ***30*** *12:08:21.3±0.5,39˚.12N±0˚.04×143˚.03E±0˚.04,h16km, mb4.2/21,MS3.9/13,Error ellipse: s-maj=5.6km s-min=4.2km az=140.1*
JMA ***30*** *12:08:24.0±0.1,39˚.15N×142˚.90E,h25km±2km,M4.4*
JMA Felt I J1.
NEIC ***30*** *12:08:27.0±1.1,39˚.16N×142˚.88E,h44km±8km,mb4.4/4, Error ellipse: s-maj=13.6km s-min=6.7km az=114.0*
NEIC Recorded [1 JMA] in Iwate and Miyagi.
IDC ***30*** *12:08:26.4±2.5,39˚.11N×142˚.90E,h39km±22km,mb3.9/14, mb1 4.0/20,mb1mx3.8/49,mbtmp4.1/20,ML3.7/6,MS3.8/18, Ms1 3.8/18,ms1mx3.6/34,Error ellipse: s-maj=23.5km s-min=13.8km az=104.0*

ISC 30 12:08:22.8±0.7,39˚.10N±0˚.04×142˚.97E±0˚.06,h16km,n63, σ1§33/58,mb4.3/21,MS4.0/13,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.01**	**299**	P	**Pb**	**12 08 41.2**	**-0.7**
MIYJ				S	**Sb**	**12 08 53.6**	**-1.4**
OFUJ	**Ofunato**	**1.01**	**269**	P	**Pb**	**12 08 41.6**	**-0.3**
OFUJ				S	**Sb**	**12 08 53.7**	**-1.3**
JTH	**Tanohata**	**1.20**	**315**	P	**Pb**	**12 08 44.0**	**-1.1**
JOM	**Ohasama**	**1.35**	**287**	P	**Pn**	**12 08 46.8**	**-0.2**
JOM				*e*S	**Sb**	**12 09 03.3**	**-1.6**
JMK	**Ichinoseki**	**1.37**	**264**	P	**Pn**	**12 08 47.3**	**+0.1**
JMK				*e*S	**Sn**	**12 09 04.4**	**-0.6**
JIO	**Ouri**	**1.42**	**244**	P	**Pn**	**12 08 47.9**	**0.0**
JIO				*e*S	**Sn**	**12 09 05.1**	**-1.1**
JANG	**Nango**	**1.70**	**319**	P	**Pn**	**12 08 51.4**	**-0.4**
JRG	**Rokugo**	**1.84**	**280**	P	**Pn**	**12 08 54.5**	**+0.8**
JOU	**Okura**	**1.95**	**249**	P	**Pn**	**12 08 56.1**	**+0.9**
JYK	**Kaneyama**	**2.04**	**266**	P	**Pn**	**12 08 57.4**	**+0.9**
JYK				*e*S	**Sn**	**12 09 21.2**	**-0.4**
JMM	**Marumori**	**2.10**	**235**	P	**Pn**	**12 08 58.1**	**+0.8**
JAH	**Hinai**	**2.11**	**302**	P	**Pn**	**12 08 58.1**	**+0.8**
JAH				*e*S	**Sn**	**12 09 23.2**	**0.0**
JTM	**Tenmabayashi**	**2.23**	**320**	P	**Pn**	**12 08 59.1**	**0.0**
JFT	**Otama**	**2.60**	**234**	P	**Pn**	**12 09 05.6**	**+1.4**
MJAR	**Matsushiro Arr**	**4.55**	**237**	Pn	**Pn**	**12 09 33.8**	**+2.8**
	8.6nm,0.3s,baz=35,slow=13,SNR=113						
MJAR				LR	LR	12 11 25.9	
	comp=Z,871nm,20.1s,baz=45,slow=40						
MAJO	**Matsushiro**	**4.55**	**237**	*e*Pn	**Pn**	**12 09 34.4**	**+3.4**
MAT	**Matsushiro**	**4.55**	**237**	P	**Pn**	**12 09 34.2**	**+3.2**
MAT				S	**Sn**	**12 10 23.2**	**-0.4**
ASAJ	**Asahikawa**	**5.02**	**357**	Pn	**Pn**	**12 09 37.9**	**+0.4**
	3.6nm,0.3s,baz=235,slow=13,SNR=15						
ASAJ	**Asahikawa**	**5.02**	**357**	Pn	**Pn**	**12 09 37.9**	**+0.4**
ASAJ				*e*Sn	**Sn**	**12 10 34.3**	**-0.8**
JHJ	**Hachijo jima 2**	**6.50**	**204**	Pn	**Pn**	**12 09 58.4**	**+0.6**
	12nm,0.3s,baz=250,slow=20,SNR=18						
JHJ				Sn	**Sn**	**12 11 06.0**	**-5.6**
	16nm,0.3s,baz=72,slow=20,SNR=3.5						
JHJ				LR	LR	12 12 56.0	
	comp=Z,335nm,20.4s,baz=74,slow=42						
USRK	**Ussuriysk Ar.**	**9.67**	**305**	Pn	Pn	12 10 46.1	+5.0
	0.8nm,0.3s,baz=120,slow=15,SNR=9.0						
USRK				LR	LR	12 14 14.5	
	comp=Z,1µm,19.0s,baz=117,slow=36						
JNU	**Nakatsue**	**11.45**	**242**	Pn	**Pn**	**12 11 06.3**	**+0.7**
	0.2nm,0.3s,baz=108,slow=3.2,SNR=2.8						
KSRS	**Korea Array**	**11.94**	**267**	Pn	**Pn**	**12 11 14.6**	**+2.3**
	0.4nm,0.3s,baz=87,slow=12,SNR=7.5						
KSRS				LR	LR	12 15 22.8	
	comp=Z,459nm,20.1s,baz=80,slow=35						
KSAR	**Wonju Array Be**	**11.97**	**267**	Pn	**Pn**	**12 11 14.6**	**+1.8**
KLR	**Kul'dur**	**12.93**	**325**	Pn	**Pn**	**12 11 25.9**	**+0.2**
	0.3nm,0.3s,baz=144,slow=14,SNR=4.0						
PETK	**Petropavlovsk-**	**17.29**	**31**	LR	LR	12 20 03.9	
	comp=Z,75nm,18.0s,baz=217,slow=40						
MA2	**Magadan**	**21.09**	**11**	P	**P**	**12 13 06.2**	**-0.1**
	12nm,0.8s,baz=200,slow=11,SNR=9.0						
MA2	**Magadan**	**21.09**	**11**	*e*P	**P**	**12 13 06.8**	**+0.6**
YAK	**Yakutsk**	**24.36**	**345**	P	**P**	**12 13 39.1**	**-0.6**
	10nm,0.4s,baz=21,slow=2.5,SNR=4.5						
SEY	**Seymchan**	**24.54**	**10**	P	**P**	**12 13 43.1**	**+1.8**
	3.1nm,0.4s,baz=182,slow=9.1,SNR=16						
GUMO	**Guam**	**25.46**	**176**	LR	LR	12 22 38.7	
	comp=Z,85nm,21.9s,baz=12,slow=34						
SONM	**Songino Array**	**27.73**	**300**	P	**P**	**12 14 11.0**	**+0.5**
	1.6nm,0.7s,baz=96,slow=7.9,SNR=9.3						
SONM				LR	LR	12 25 37.1	
	comp=Z,396nm,19.4s,baz=82,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.26**	**126**	T	T	12 44 51.4	
	baz=318,slow=75,SNR=286						
H11N1	**WAKE ISLAND Hy**	**28.27**	**126**	T	T	12 44 52.1	
	baz=318,slow=75,SNR=290						
H11N3	**WAKE ISLAND Hy**	**28.28**	**126**	T	T	12 45 05.5	
	baz=318,slow=75,SNR=279						
ENH	**Enshi**	**28.78**	**262**	*e*P	**P**	**12 14 19.1**	**-0.7**
	14nm,1.0s						
H11S1	**WAKE ISLAND Hy**	**29.06**	**128**	T	T	12 45 53.7	
	baz=318,slow=76,SNR=28						
H11S3	**WAKE ISLAND Hy**	**29.06**	**128**	T	T	12 46 08.5	
	baz=318,slow=76,SNR=33						
H11S2	**WAKE ISLAND Hy**	**29.07**	**128**	T	T	12 45 59.5	
	baz=318,slow=76,SNR=28						
TLY	**Talaya**	**29.97**	**308**	LR	LR	12 27 10.7	
	comp=Z,392nm,18.2s,baz=99,slow=38						
ZALV	**Zalesovo Beam**	**41.47**	**311**	P	**P**	**12 16 08.8**	**+0.1**
	2.8nm,0.4s,baz=89,slow=6.8,SNR=9.7						
ZALV				PcP	**PcP**	**12 18 06.6**	**+0.5**
	1.0nm,0.5s,baz=108,slow=3.6,SNR=3.2						
CMAR	**Chiang Mai Arr**	**43.22**	**254**	P	**P**	**12 16 23.6**	**+0.2**
	0.9nm,0.7s,baz=57,slow=7.7,SNR=4.4						
CMAR				LR	LR	12 36 20.1	
	comp=Z,54nm,19.0s,baz=75,slow=39						
MKAR	**Makanchi Array**	**44.10**	**301**	P	**P**	**12 16 30.2**	**+0.1**
	5.6nm,0.9s,baz=82,slow=9.9,SNR=27						
MKAR				LR	LR	12 35 35.6	
	comp=Z,215nm,19.6s,baz=58,slow=37						
KURK	**Kurchatov**	**45.66**	**307**	*e*P	**P**	**12 16 42.0**	**-0.4**
	138nm,0.9s						
ILAR	**Eielson Array**	**47.10**	**33**	P	**P**	**12 16 54.8**	**+1.2**
	0.5nm,0.8s,baz=275,slow=5.8,SNR=7.0						
BRVK	**Borovoye**	**50.17**	**311**	*e*P	**P**	**12 17 17.0**	**-0.3**
	17nm,0.9s						
KKAR	**Karatay Array**	**53.17**	**299**	*e*P	**P**	**12 17 39.5**	**-0.4**
	0.8nm,0.6s						
ARU	**Arti**	**55.64**	**318**	*e*P	**P**	**12 17 57.5**	**-0.1**
	1.9nm,0.6s						
ABKAR	**Akbulak array**	**57.56**	**310**	*e*P	**P**	**12 18 11.1**	**-0.3**
	1.7nm,0.4s						
WRA	**Warramunga Arr**	**59.28**	**189**	P	**P**	**12 18 23.1**	**-0.5**
	0.7nm,0.6s,baz=8.5,slow=7.0,SNR=8.6						
ASAR	**Alice Springs**	**63.01**	**189**	P	**P**	**12 18 49.5**	**+0.6**
	0.4nm,0.7s,baz=20,slow=10,SNR=4.8						
GEYT	**Alibeck**	**63.92**	**299**	LR	LR	12 47 47.1	
	comp=Z,39nm,20.7s,baz=105,slow=37						
DZM	**Mont Dzumac**	**64.70**	**156**	LR	LR	12 43 28.8	
	comp=Z,83nm,20.1s,baz=49,slow=32						
FINES	**FINESS Array B**	**67.56**	**332**	P	**P**	**12 19 18.0**	**+0.1**
	1.1nm,0.8s,baz=29,slow=4.4,SNR=4.3						
KVAR	**Kislovodsk Arr**	**70.48**	**311**	LR	LR	12 53 16.2	
	comp=Z,100nm,18.5s,slow=38						
KIV	**Kislovodsk**	**70.48**	**311**	*e*P	**P**	**12 19 38.0**	**+1.4**
	16nm,0.9s						
KBZ	**Khabaz**	**70.49**	**311**	P	**P**	**12 19 35.6**	**-0.9**
	2.0nm,0.7s,baz=341,slow=5.4,SNR=4.4						
KBZ				LR	LR	12 55 30.3	
	comp=Z,112nm,18.5s,baz=42,slow=40						
NB2	**NORSAR Subarra**	**72.75**	**338**	P	**P**	**12 19 49.7**	**-0.2**
	comp=Z,5.6nm,1.2s,baz=37,slow=5.9						
NOA	**NORSAR Array B**	**72.75**	**338**	P	**P**	**12 19 49.7**	**-0.2**
	comp=Z,1.1nm,0.7s,baz=39,slow=6.0,SNR=4.6						
AKASG	**Malin Array Be**	**73.41**	**323**	P	**P**	**12 19 53.6**	**-0.3**
	comp=Z,0.6nm,0.4s,baz=47,slow=7.2,SNR=4.4						
AKASG				LR	LR	12 55 46.4	
	comp=Z,63nm,18.1s,baz=35,slow=39						
RAR	**Rarotonga**	**80.40**	**127**	LR	LR	12 49 55.4	
	comp=Z,139nm,20.5s,baz=288,slow=31						
PPT	**Papeete**	**84.48**	**118**	LR	LR	12 50 40.2	
	comp=Z,78nm,21.6s,baz=350,slow=30						
ESDC	**Sonseca Array**	**95.96**	**335**	LR	LR	13 08 47.0	
	comp=Z,28nm,18.9s,baz=5.0,slow=38						

IDC ***30*** *12:17:17.8±0.6,22˚.64S×174˚.88W,h0km,mb4.6/18, mb1 4.8/20,mb1mx4.7/27,mbtmp4.6/20,ML4.8/2,MS3.9/7, Ms1 3.9/7,ms1mx3.6/30,Error ellipse: s-maj=21.6km s-min=14.9km az=133.0*
ISCJB ***30*** *12:17:19.5±3.3,22˚.64S±0˚.05×174˚.98W±0˚.05, h17km±23km,mb4.9/133,MS4.0/7,Error ellipse: s-maj=8.9km s-min=7.1km az=143.0*
BJI ***30*** *12:17:23.0,22˚.87S×174˚.77W,h47km,mb5.1/19, mB5.4/17,Ms5.1/8,Ms7 4.8/7*
NEIC ***30*** *12:17:24.3±0.9,22˚.58S×174˚.99W,h40km±7km,mb5.0/102, Error ellipse: s-maj=5.9km s-min=4.0km az=144.0*

ISC 30 12:17:24.5±0.6,22˚.70S±0˚.06×174˚.92W±0˚.07,h42km±4km, h42km:pP-P,n363,σ1§07/373,mb5.0/132,MS4.0/7,15C-7D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**7.05**	**202**	Pn	**Pn**	**12 19 03.9**	**-1.3**
	36nm,0.3s,baz=252,slow=20,SNR=2.5						
RAO				Sn	**Sn**	**12 20 22.1**	**-2.0**
	108nm,0.3s,baz=282,slow=23,SNR=4.8						
RAO	**Raoul Island**	**7.05**	**202**	*e*Pn	**Pn**	**12 19 05.1**	**-0.1**
RAO				*e*Sn	**Sn**	**12 20 24.6**	**+0.5**
MSVF	**Nonsavu**	**8.24**	**306**	*e*Pn	**Pn**	**12 19 20.9**	**-0.7**
AFI	**Afiamalu**	**9.24**	**19**	Pn	Pn	12 19 27.1	-8.3
	9.5nm,0.3s,baz=120,slow=1.1,SNR=12						
AFI				Sn	Sn	12 20 59.2	-19
	12nm,0.3s,baz=114,slow=16,SNR=6.0						
AFI	**Afiamalu**	**9.24**	**19**	*e*Pn	Pn	12 19 26.6	-8.7
	94nm,0.8s						
AFI				*e*Sn	Sn	12 20 59.5	-19
RAR	**Rarotonga**	**14.14**	**87**	Pn	Pn	12 20 31.8	-10
	8.5nm,0.3s,baz=257,slow=8.4,SNR=24						
RAR				Sn	Sn	12 22 53.8	-24
	3.9nm,0.3s,baz=74,slow=7.4,SNR=4.5						
RAR				LR	LR	12 25 40.1	
	comp=Z,336nm,19.9s,baz=281,slow=36						
RAR	**Rarotonga**	**14.14**	**87**	*e*Pn	Pn	12 20 31.4	-11
RAR				Sn	Sn	12 22 53.8	-24
URZ	**Urewera**	**16.94**	**202**	P	**Pn**	**12 21 17.9**	**-0.5**
	1.8nm,0.3s,baz=306,slow=2.1,SNR=14						
URZ				S	Sn	12 24 11.3	-14
	1.1nm,0.3s,baz=113,slow=23,SNR=8.2						
URZ	**Urewera**	**16.94**	**202**	*e*Pn	**Pn**	**12 21 18.7**	**+0.3**
URZ				*e*Sn	Sn	12 24 00.9	-25
URZ				S	Sn	12 24 11.3	-14
DZM	**Mont Dzumac**	**17.25**	**269**	P	**P**	**12 21 25.7**	**+2.2**
	0.6nm,0.3s,baz=71,slow=18,SNR=6.2						
DZM	**Mont Dzumac**	**17.25**	**269**	*e*P	**P**	**12 21 28.1**	**+4.7**
	59nm,1.1s						
DZM				*e*LR	LR	12 25 38.3	
	535nm,22.2s						
DZM	**Mont Dzumac**	**17.25**	**269**	*e*Pn	**P**	**12 21 23.9**	**+0.5**
	25nm,1.0s						
BFZ	**Birch Farm**	**19.41**	**201**	*e*P	**Pn**	**12 21 49.4**	**+0.9**
	84nm,1.0s						
TBI	**Tubuai**	**23.44**	**97**	*e*LQ	LQ	12 27 00.0	
	534nm,27.0s						
TBI				*e*LR	LR	12 28 03.2	
	354nm,26.0s						
RPZ	**Rata Peaks**	**23.95**	**206**	P	**P**	**12 22 33.4**	**-1.3**
	20nm,1.1s,baz=82,slow=6.8,SNR=6.4						
PAE	**Paea**	**24.30**	**83**	*e*T	T	12 47 49.3	
	10nm,0.3s						
PPT2	**Papeete2**	**24.32**	**83**	*e*LQ	LQ	12 27 21.2	
	430nm,23.9s						
PPT2				*e*LR	LR	12 28 21.4	
	274nm,22.8s						
PPT2	**Papeete2**	**24.32**	**83**	*e*T	T	12 47 51.3	
	10nm,0.3s						
PPT	**Papeete**	**24.33**	**82**	LR	LR	12 30 31.0	
	comp=Z,165nm,18.3s,baz=260,slow=33						
HNR	**Honiara**	**27.46**	**295**	P	**P**	**12 23 07.2**	**+0.5**
	32nm,0.6s,baz=231,slow=3.8,SNR=2.6						
HNR				LR	LR	12 33 21.0	
	comp=Z,260nm,18.2s,baz=206,slow=35						
EIDS	**Eidsvold**	**31.11**	**258**	*e*P	**P**	**12 23 39.6**	**+0.5**
	2.2nm,0.6s						
CTA	**Charters Tower**	**36.17**	**267**	P	**P**	**12 24 23.5**	**+0.3**
	4.5nm,0.4s,baz=101,slow=11,SNR=14						
STKA	**Stephens Creek**	**39.49**	**247**	P	**P**	**12 24 50.5**	**-0.6**
	1.7nm,0.5s,baz=109,slow=8.4,SNR=7.3						
STKA				LR	LR	12 38 55.2	
	comp=Z,178nm,20.4s,baz=44,slow=33						
AS01	**Alice Springs**	**46.80**	**258**	*e*P	**P**	**12 25 50.0**	**-0.3**
AS31	**Alice Springs**	**46.84**	**258**	*e*P	**P**	**12 25 49.5**	**-1.1**
	3.6nm,1.1s						
ASAR	**Alice Springs**	**46.84**	**258**	P	**P**	**12 25 49.2**	**-1.3**
	5.7nm,0.7s,baz=98,slow=6.7,SNR=79						
ASAR				PcP	**PcP**	**12 27 22.6**	**-0.6**
	1.9nm,0.7s,baz=98,slow=5.2,SNR=3.9						
ASAR				S	**S**	**12 32 34.6**	**-3.8**
	0.8nm,0.8s,baz=104,slow=14,SNR=6.7						
WB2	**Warramunga Arr**	**47.15**	**263**	*e*P	**P**	**12 25 51.6**	**-1.4**
	11nm,1.0s						
WRAB	**Tennant Creek**	**47.15**	**263**	*e*P	**P**	**12 25 51.2**	**-1.9**
	17nm,1.4s						
WRA	**Warramunga Arr**	**47.16**	**263**	P	**P**	**12 25 51.4**	**-1.8**
	2.8nm,0.5s,baz=96,slow=8.5,SNR=79						
WRA				PcP	**PcP**	**12 27 24.3**	**0.0**
	1.7nm,0.7s,baz=99,slow=3.6,SNR=4.7						
WRA				S	**S**	**12 32 36.8**	**-6.3**
	0.3nm,0.8s,baz=92,slow=14,SNR=2.8						
MTN	**Manton Dam**	**52.06**	**271**	*e*P	**P**	**12 26 29.0**	**-1.4**
	9.8nm,0.6s						
FITZ	**Fitzroy Crossi**	**55.59**	**263**	P	**P**	**12 26 56.1**	**-0.2**
	1.8nm,0.5s,baz=90,slow=5.8,SNR=16						
SBA	**Scott Base**	**55.89**	**185**	*e*P	**P**	**12 27 00.9**	**+3.4**
	15nm,0.9s						
VNDA	**Vanda**	**56.00**	**186**	P	**P**	**12 27 00.6**	**+2.4**
	5.4nm,0.8s,baz=4.2,slow=6.3,SNR=24						
VNDA	**Vanda**	**56.00**	**186**	*e*P	**P**	**12 27 00.7**	**+2.4**
	6.6nm,0.8s						
CASY	**Casey**	**63.22**	**206**	*e*P	**P**	**12 27 49.3**	**+1.2**
	14nm,1.0s						
QSPA	**South Pole Qui**	**67.38**	**180**	*e*P	**P**	**12 28 16.2**	**+1.0**
	85nm,1.2s						
MJAR	**Matsushiro Arr**	**73.68**	**322**	P	**P**	**12 28 52.1**	**-1.8**
	1.2nm,0.6s,baz=156,slow=5.8,SNR=8.4						
MAT	**Matsushiro**	**73.69**	**322**	P	**P**	**12 28 53.0**	**-0.9**
MAT				S	**S**	**12 38 26.6**	**+5.0**
UNV	**Unalaska Valle**	**76.58**	**5**	*e*P	**P**	**12 29 08.4**	**-1.7**
	13nm,0.8s						
HJGM	**San Juan Grade**	**77.67**	**41**	*e*P	**P**	**12 29 13.9**	**-2.7**
SAO	**San Andreas Ge**	**77.72**	**41**	*e*P	**P**	**12 29 16.4**	**-0.6**
	14nm,1.0s						
PMPB	**Monarch Peak**	**77.77**	**42**	*e*P	**P**	**12 29 17.2**	**-0.1**
	45nm,1.7s						
ARVC	**Arvin**	**78.32**	**44**	P	**P**	**12 29 20.6**	**+0.3**
	baz=232						
MURC	**Murrieta**	**78.46**	**46**	P	**P**	**12 29 21.1**	**-0.1**
	baz=233						
BFSC	**Mount Baldy Ra**	**78.54**	**45**	P	**P**	**12 29 21.2**	**-0.5**
	baz=232						
MONP2	**Monument Peak**	**78.55**	**47**	P	**P**	**12 29 21.5**	**-0.4**
	baz=234						
VES	**Vestal, Richgr**	**78.60**	**43**	P	**P**	**12 29 21.8**	**0.0**
	baz=231						
IKP	**In-Ko-Pah, Jac**	**78.62**	**47**	P	**P**	**12 29 21.9**	**-0.2**
	baz=234						
KMRM	**Mail Ridge**	**78.69**	**37**	*e*P	**P**	**12 29 22.5**	**+0.2**
	33nm,0.9s						
EDW2	**Edwards Air Fo**	**78.71**	**45**	P	**P**	**12 29 22.7**	**+0.2**
	baz=232,SNR=7.8						
ISA	**Isabella, Lake**	**78.88**	**44**	P	**P**	**12 29 23.6**	**+0.1**
	baz=232,SNR=5.3						
ISA	**Isabella, Lake**	**78.88**	**44**	*e*P	**P**	**12 29 23.4**	**-0.1**
	40nm,1.8s						
PFO	**Pinyon Flats O**	**78.95**	**46**	P	**P**	**12 29 23.9**	**-0.1**
	baz=233						
TPFO	**Pinon Flats**	**78.95**	**46**	P	**P**	**12 29 24.1**	**+0.1**
	baz=233						
PEA0	**Petropavlovsk-**	**79.15**	**344**	*e*P	**P**	**12 29 23.7**	**-0.7**
PETK	**Petropavlovsk-**	**79.15**	**344**	P	**P**	**12 29 24.0**	**-0.4**
	4.9nm,0.7s,baz=122,slow=7.6,SNR=7.6						
CMB	**Columbia Colle**	**79.19**	**41**	*e*P	**P**	**12 29 24.9**	**-0.2**
	9.4nm,0.9s						
LRMC	**Laurel Mtn Rad**	**79.28**	**44**	P	**P**	**12 29 25.3**	**-0.4**
	baz=232,SNR=5.2						
AFDM	**Forest Hills D**	**79.43**	**40**	*e*P	**P**	**12 29 26.1**	**-0.3**
	6.8nm,0.9s						
BELC	**Belle Mtn. Jos**	**79.49**	**46**	P	**P**	**12 29 26.7**	**-0.2**
	baz=234						
WDC	**Whiskeytown Da**	**79.59**	**38**	*e*P	**P**	**12 29 27.3**	**+0.1**
	14nm,1.0s						
CWC	**Cottonwood Cre**	**79.61**	**43**	P	**P**	**12 29 27.3**	**-0.3**
	baz=232						
BC3	**Big Chuckawall**	**79.66**	**47**	P	**P**	**12 29 27.9**	**+0.1**
	baz=234						
GLA	**Glamis**	**79.73**	**48**	P	**P**	**12 29 27.8**	**-0.3**
	baz=234						
GSC	**Goldstone, Bar**	**79.74**	**45**	P	**P**	**12 29 27.9**	**-0.3**
	baz=233,SNR=5.8						
GSC	**Goldstone, Bar**	**79.74**	**45**	*e*P	**P**	**12 29 28.1**	**-0.1**
	5.7nm,0.9s						
MPMC	**Manual Prospec**	**79.75**	**44**	P	**P**	**12 29 28.3**	**-0.1**
	baz=232,SNR=13						
HEC	**Hector,Ludlow**	**79.76**	**46**	P	**P**	**12 29 28.0**	**-0.3**
	baz=233,SNR=7.7						
N02D	**Trinity Center**	**79.77**	**37**	P	**P**	**12 29 28.4**	**+0.2**
	baz=228						
O03D	**Paynes Creek**	**79.83**	**38**	P	**P**	**12 29 28.3**	**-0.2**
	baz=229						
M02C	**Callahan**	**79.96**	**37**	P	**P**	**12 29 29.5**	**+0.2**
	baz=228						
WAKR	**Walker**	**80.06**	**41**	*e*P	**P**	**12 29 30.2**	**+0.2**
	19nm,1.0s						
IRM	**Iron Mountain**	**80.16**	**47**	P	**P**	**12 29 30.6**	**+0.2**
	baz=234						
GMRC	**Granite Mounta**	**80.18**	**46**	P	**P**	**12 29 30.4**	**-0.3**
	baz=234						
YBH	**Yreka Blue Hor**	**80.27**	**37**	*e*P	**P**	**12 29 30.5**	**-0.4**
	15nm,0.8s						
113A	**Mohawk Valley,**	**80.29**	**48**	*e*P	**P**	**12 29 30.3**	**-0.8**
	7.1nm,1.0s						
PNTR	**Pine Nut**	**80.34**	**40**	*e*P	**P**	**12 29 31.7**	**+0.2**
	22nm,0.8s						
Y12C	**Blythe**	**80.34**	**47**	P	**P**	**12 29 31.3**	**0.0**
	baz=234						
TVH3	**East Aurora ar**	**80.34**	**41**	*e*P	**P**	**12 29 31.2**	**-0.3**
	10.0nm,1.1s						
TUQ	**Turquoise Moun**	**80.39**	**45**	P	**P**	**12 29 31.6**	**-0.2**
	baz=233						
FURC	**Furnace Creek,**	**80.41**	**44**	P	**P**	**12 29 31.8**	**+0.2**
	baz=233,SNR=5.7						
GRAC	**Grapevine Rang**	**80.41**	**43**	P	**P**	**12 29 31.9**	**+0.2**
	baz=232						
KSRS	**Korea Array**	**80.43**	**317**	P	**P**	**12 29 32.0**	**+0.3**
	4.1nm,0.9s,baz=128,slow=5.7,SNR=5.1						
TVH1	**TV Hill, Hawth**	**80.44**	**41**	*e*P	**P**	**12 29 31.6**	**-0.6**
	14nm,1.1s						
KSAR	**Wonju Array Be**	**80.45**	**317**	P	**P**	**12 29 32.0**	**+0.2**
MAW	**Mawson**	**80.45**	**199**	P	**P**	**12 29 32.8**	**+1.4**
	14nm,0.7s,baz=140,slow=6.0,SNR=31						
MAW				LR	LR	13 04 03.5	
	comp=Z,137nm,18.4s,baz=63,slow=35						
MAW	**Mawson**	**80.45**	**199**	*e*P	**P**	**12 29 33.3**	**+1.9**
	3.0nm,0.8s						
YERR	**Yerington**	**80.49**	**41**	*e*P	**P**	**12 29 31.9**	**-0.4**
	11nm,0.9s						
214A	**Organ Pipe Nat**	**80.50**	**50**	P	**P**	**12 29 32.1**	**-0.2**
	baz=236						
LDFC	**Landfair**	**80.72**	**46**	*e*P	**P**	**12 29 33.1**	**-0.4**
	21nm,1.1s						
HUMO	**Hull Mountain**	**80.72**	**36**	*e*P	**P**	**12 29 32.4**	**-0.9**
	15nm,1.3s						
M04C	**Macdoel**	**80.79**	**37**	P	**P**	**12 29 33.6**	**-0.1**
	baz=228						
PDMCI	**Parker Dam,Lak**	**80.92**	**47**	P	**P**	**12 29 34.7**	**+0.3**
	baz=235						
TPNV	**Topopah Spring**	**81.09**	**44**	P	**P**	**12 29 35.5**	**0.0**
	baz=233,SNR=11						
TPNV	**Topopah Spring**	**81.09**	**44**	*e*P	**P**	**12 29 35.5**	**0.0**
	8.4nm,0.8s						
SHPR	**Sheep Range**	**81.53**	**45**	*e*P	**P**	**12 29 38.4**	**+0.6**
	6.5nm,1.0s						
W13A	**Hualapai Mount**	**81.55**	**46**	*e*P	**P**	**12 29 38.0**	**0.0**
	12nm,1.5s						
J04D	**Umpqua Nationa**	**81.61**	**36**	P	**P**	**12 29 38.3**	**+0.1**
	baz=228						
MOD	**Modoc Plateau**	**81.73**	**38**	*e*P	**P**	**12 29 38.2**	**-0.6**
	50nm,1.9s						
I04A	**Tendick Farm,**	**81.82**	**35**	P	**P**	**12 29 39.0**	**-0.1**
	baz=228						
K05A	**Summer Lake**	**81.94**	**37**	*e*P	**P**	**12 29 40.5**	**+0.6**
	21nm,1.1s						
J05D	**Fort Rock, OR**	**82.12**	**36**	P	**P**	**12 29 41.3**	**+0.5**

	comp=Z,10.0nm,0.5s									
D08A	**Wollman Farm,** 9.2nm,1.0s	**85.81**	**35**	*e*P	**P**	**12 29 59.0**	**-0.4**			
LAZ	**Ladron**	**85.82**	**50**	*e*P	**P**	**12 30 00.3**	**+0.4**			
TX31	**Lajitas Ar. Si**	**85.87**	**56**	*e*P	**P**	**12 30 00.0**	**-0.1**			
TXAR	**Lajitas Array** 5.3nm,0.8s,baz=213,slow=8.4,SNR=57	**85.87**	**56**	P	**P**	**12 29 59.5**	**-0.7**			
TXAR				LR	LR	13 01 58.1				
	comp=Z,87nm,19.1s,baz=0.0,slow=31									
E09A	**Wood Farm, Sta** 12nm,1.1s	**85.88**	**35**	*e*P	**P**	**12 29 59.4**	**-0.2**			
SRU	**San Rafael Swe** 17nm,1.2s	**86.03**	**45**	*e*P	**P**	**12 30 00.5**	**-0.4**			
F10A	**Beach Ranch, E** 22nm,1.4s	**86.04**	**36**	*e*P	**P**	**12 29 59.2**	**-1.4**			
BNM	**Barren Site**	**86.06**	**51**	*e*P	**P**	**12 30 01.2**	**+0.1**			
P17A	**Butcher Ranch,** 11nm,1.1s	**86.08**	**44**	*e*P	**P**	**12 30 01.0**	**-0.1**			
HVU	**Hansel Valley** 31nm,1.9s	**86.11**	**42**	*e*P	**P**	**12 30 01.1**	**0.0**			
SUA	**Susitna One** 10nm,0.8s	**86.11**	**11**	*e*P	**P**	**12 30 00.0**	**-0.6**			
CTU	**Camp Tracy** 7.4nm,0.9s	**86.12**	**43**	*e*P	**P**	**12 30 01.3**	**+0.1**			
LPM	**Los Pinos Moun**	**86.14**	**50**	*e*P	**P**	**12 30 01.9**	**+0.4**			
HLID	**Hailey** baz=234	**86.16**	**39**	P	**P**	**12 30 01.2**	**-0.1**			
HLID	**Hailey** 4.3nm,0.8s	**86.16**	**39**	*e*P	**P**	**12 30 01.4**	**0.0**			
JLU	**Jordanelle** 3.3nm,1.0s	**86.26**	**43**	*e*P	**P**	**12 30 01.3**	**-0.7**			
MVCO	**Mesa Verde** baz=238	**86.34**	**47**	P	**P**	**12 30 02.2**	**-0.3**			
VNA1	**Neumayer--Stat**	**86.43**	**176**	P	**P**	**12 30 03.2**	**+1.2**			
B08A	**Colville Reser** 18nm,1.5s	**86.44**	**33**	*e*P	**P**	**12 30 01.4**	**-1.0**			
PMR	**Palmer** 21nm,1.7s	**86.53**	**12**	*e*P	**P**	**12 30 01.6**	**-0.8**			
TCUT	**Toone Canyon** 34nm,1.4s	**86.58**	**43**	*e*P	**P**	**12 30 03.1**	**-0.4**			
ANMO	**Albuquerque** baz=239	**86.58**	**50**	P	**P**	**12 30 03.5**	**-0.2**			
ANMO	**Albuquerque** 12nm,1.0s	**86.58**	**50**	*e*P	**P**	**12 30 03.7**	**+0.1**			
TT01	**Tatalina**	**86.63**	**9**	*e*P	**P**	**12 30 02.9**	**0.0**			
HWUT	**Hardware Ranch** 3.2nm,0.8s	**86.75**	**42**	*e*P	**P**	**12 30 03.3**	**-1.0**			
PV01	**Paradox Valley**	**86.79**	**46**	*e*P	**P**	**12 30 04.4**	**-0.2**			
DIV	**Divide** 22nm,1.4s	**86.80**	**14**	*e*P	**P**	**12 30 03.7**	**-0.2**			
BMRM	**Bremner River** 22nm,1.4s	**86.92**	**14**	*e*P	**P**	**12 30 04.7**	**+0.2**			
KLU	**Klutina** 6.0nm,1.0s	**87.09**	**13**	*e*P	**P**	**12 30 04.8**	**-0.5**			
SCM	**Sheep Creek Mo** 29nm,1.6s	**87.11**	**13**	*e*P	**P**	**12 30 05.6**	**+0.2**			
PPLA	**Purkeypile** 22nm,1.5s	**87.19**	**10**	*e*P	**P**	**12 30 06.1**	**+0.2**			
BALM	**Baldy** 29nm,1.7s	**87.51**	**15**	*e*P	**P**	**12 30 07.1**	**-0.3**			
NEW	**Newport** baz=232	**87.52**	**34**	P	**P**	**12 30 07.5**	**-0.2**			
S22A	**4UR Ranch, Cre** baz=239,SNR=8.8	**87.76**	**47**	P	**P**	**12 30 09.4**	**0.0**			
S22A	**4UR Ranch, Cre** 4.7nm,0.8s	**87.76**	**47**	*e*P	**P**	**12 30 09.4**	**0.0**			
O20A	**White River Ci** baz=238	**88.06**	**45**	P	**P**	**12 30 10.3**	**-0.4**			
O20A	**White River Ci** 4.8nm,0.8s	**88.06**	**45**	*e*P	**P**	**12 30 09.5**	**-1.2**			
SKAG	**Skagway** 32nm,1.6s	**88.08**	**19**	*e*P	**P**	**12 30 09.4**	**-0.6**			
REDW	**Red Top Meadow** 6.0nm,1.1s	**88.17**	**41**	*e*P	**P**	**12 30 10.5**	**-0.6**			
TPAW	**Teton Pass** 15nm,1.8s	**88.18**	**41**	*e*P	**P**	**12 30 10.8**	**-0.4**			
GSI	**Gunungsitoli** 31nm,0.8s	**88.19**	**272**	*e*P	**P**	**12 30 11.2**	**-0.5**			
RND	**Reindeer** 21nm,1.2s	**88.25**	**11**	*e*P	**P**	**12 30 10.4**	**-0.4**			
832A	**Faith Ranch, C** baz=243	**88.25**	**58**	P	**P**	**12 30 11.7**	**+0.1**			
SMCO	**Snowmass** 5.2nm,1.0s	**88.40**	**46**	*e*P	**P**	**12 30 11.2**	**-1.4**			
IMW	**Indian Meadow** 4.4nm,1.2s	**88.42**	**41**	*e*P	**P**	**12 30 11.2**	**-1.2**			
933A	**Laredo** baz=244	**88.50**	**59**	P	**P**	**12 30 12.2**	**-0.6**			
PAX	**Paxson** 6.3nm,1.2s	**88.51**	**13**	*e*P	**P**	**12 30 12.0**	**-0.1**			
MCK	**McKinley** 12nm,1.0s	**88.53**	**11**	*e*P	**P**	**12 30 11.9**	**-0.2**			
BW06	**Boulder Array** baz=237	**88.64**	**42**	P	**P**	**12 30 12.8**	**-0.6**			
BW06	**Boulder Array**	**88.64**	**42**	*e*P	**P**	**12 30 12.7**	**-0.6**			
PD31	**Pinedale Array**	**88.64**	**42**	*e*P	**P**	**12 30 12.7**	**-0.7**			
PDAR	**Pinedale Array** 2.3nm,0.7s,baz=209,slow=3.6,SNR=20	**88.64**	**42**	P	**P**	**12 30 12.1**	**-1.3**			
SDCO	**Great Sand Dun** baz=240,SNR=7.7	**88.66**	**48**	P	**P**	**12 30 13.4**	**-0.3**			
SDCO	**Great Sand Dun** 2.9nm,0.8s	**88.66**	**48**	*e*P	**P**	**12 30 13.3**	**-0.4**			
034A	**Hebbronville** baz=244	**88.73**	**60**	P	**P**	**12 30 14.3**	**+0.4**			
MSTX	**Muleshoe** baz=242	**88.75**	**52**	P	**P**	**12 30 13.5**	**-0.5**			
MSTX	**Muleshoe** 14nm,1.3s	**88.75**	**52**	*e*P	**P**	**12 30 13.8**	**-0.1**			
MENT	**Mentasta** 9.3nm,1.2s	**88.86**	**14**	*e*P	**P**	**12 30 14.3**	**+0.6**			
BOZ	**Bozeman (W)** baz=236	**88.99**	**39**	P	**P**	**12 30 14.8**	**-0.1**			
BOZ	**Bozeman (W)** 28nm,2.0s	**88.99**	**39**	*e*P	**P**	**12 30 14.8**	**-0.1**			
T25A	**Trinidad** baz=241	**89.11**	**49**	P	**P**	**12 30 15.2**	**-0.6**			
T25A	**Trinidad** 4.1nm,0.9s	**89.11**	**49**	*e*P	**P**	**12 30 15.5**	**-0.2**			
834A	**Tilden** baz=244	**89.30**	**59**	P	**P**	**12 30 16.3**	**-0.3**			
WRH	**Wood River Hil** 30nm,1.4s	**89.36**	**11**	*e*P	**P**	**12 30 15.9**	**-0.1**			
JCT	**Junction City** baz=243	**89.37**	**57**	P	**P**	**12 30 16.7**	**-0.2**			
633A	**Saathoff Ranch** baz=244	**89.40**	**58**	P	**P**	**12 30 16.7**	**-0.3**			
DOT	**Dot Lake** 74nm,1.6s	**89.41**	**13**	*e*P	**P**	**12 30 16.7**	**+0.5**			
BJI	**Beijing**	**89.47**	**314**	P	**P**	**12 30 19.0**	**+2.0**			
BJI				pmax	pmax					
	comp=Z,5.0nm,1.0s									
CCB	**Clear Creek Bu** 17nm,1.4s	**89.57**	**11**	*e*P	**P**	**12 30 16.6**	**-0.3**			
ISCO	**Idaho Springs** baz=240	**89.62**	**46**	P	**P**	**12 30 17.7**	**-0.4**			
ENH	**Enshi** 56nm,1.5s	**89.64**	**303**	*e*P	**P**	**12 30 19.5**	**+1.3**			
WALA	**Waterton Lakes** 12nm,1.1s	**89.69**	**35**	*e*P	**P**	**12 30 17.6**	**-0.4**			
COLA	**College** 14nm,1.1s	**89.77**	**11**	*e*P	**P**	**12 30 17.6**	**-0.2**			
MDM	**Murphy Dome** 18nm,1.3s	**89.78**	**11**	*e*P	**P**	**12 30 17.5**	**-0.4**			
ILAR	**Eielson Array** 6.4nm,1.1s,baz=218,slow=5.3,SNR=27	**89.85**	**12**	P	**P**	**12 30 17.6**	**-0.7**			
ILB	**Eielson Array**	**89.85**	**12**	*e*P	**P**	**12 30 17.8**	**-0.4**			
IL1	**Eielson Array**	**89.85**	**12**	*e*P	**P**	**12 30 17.4**	**-0.9**			
N23A	**Red Feather La** baz=240	**89.95**	**45**	P	**P**	**12 30 19.5**	**-0.1**			
433A	**Art** baz=244	**90.04**	**57**	P	**P**	**12 30 18.8**	**-1.2**			
534A	**Blanco** baz=244	**90.20**	**57**	P	**P**	**12 30 20.2**	**-0.5**			
GYA	**Guiyang**	**90.22**	**299**	*e*P	**P**	**12 30 21.0**	**0.0**			
GYA				pmax	pmax					
	comp=Z,10.0nm,1.0s									
ABTX	**Abilene, Hawle** baz=243	**90.45**	**55**	P	**P**	**12 30 21.4**	**-0.5**			
434A	**Burnet** baz=244	**90.70**	**57**	P	**P**	**12 30 22.7**	**-0.4**			
233A	**Rising Star** baz=244	**90.75**	**56**	P	**P**	**12 30 22.8**	**-0.4**			
DAWY	**Dawson** 9.2nm,0.9s	**90.82**	**15**	*e*P	**P**	**12 30 22.9**	**+0.1**			
334A	**Lometa** baz=244	**90.95**	**56**	P	**P**	**12 30 24.0**	**-0.2**			
EGAK	**Eagle** 9.9nm,1.1s	**91.02**	**14**	*e*P	**P**	**12 30 22.9**	**-0.7**			
234A	**Clairette** baz=244	**91.32**	**56**	P	**P**	**12 30 25.4**	**-0.5**			
EGMT	**Eagleton** baz=237	**91.38**	**38**	P	**P**	**12 30 25.5**	**-0.3**			
Z33A	**Whitaker Ranch** baz=244	**91.41**	**54**	P	**P**	**12 30 26.1**	**-0.2**			
X32A	**Elmer** baz=244	**91.52**	**53**	P	**P**	**12 30 26.6**	**-0.1**			
COLD	**Coldfoot** 3.6nm,0.9s	**91.55**	**9**	*e*P	**P**	**12 30 26.0**	**-0.1**			
XAN	**Xi'an**	**91.74**	**306**	P	**P**	**12 30 29.0**	**+1.2**			
XAN				pmax	pmax					
	comp=Z,13nm,0.9s									
XAN				pmax	pmax					
	comp=Z,130nm,5.6s									
WHTX	**Lake Whitney,** baz=244	**91.84**	**56**	P	**P**	**12 30 28.0**	**-0.3**			
W32A	**Sentinel** baz=244	**91.87**	**53**	P	**P**	**12 30 28.4**	**0.0**			
WMOK	**Wichita Mounta** baz=244	**92.04**	**53**	P	**P**	**12 30 28.9**	**-0.2**			
Y34A	**Reagan Ranch,** baz=244	**92.46**	**54**	P	**P**	**12 30 31.3**	**+0.2**			
236A	**Katherine and** baz=245	**92.55**	**56**	P	**P**	**12 30 31.2**	**-0.4**			
OGNE	**Ogallala** baz=242	**92.56**	**46**	P	**P**	**12 30 31.7**	**+0.1**			
Z35A	**Perchaven, San** baz=245	**92.57**	**55**	P	**P**	**12 30 31.2**	**-0.4**			
X34A	**Smith Ranch, M** baz=244	**92.68**	**54**	P	**P**	**12 30 32.2**	**0.0**			
LAO	**LASA Array** baz=240	**92.72**	**40**	P	**P**	**12 30 32.4**	**+0.3**			
LAO	**LASA Array** 15nm,0.9s	**92.72**	**40**	*e*P	**P**	**12 30 32.5**	**+0.5**			
136A	**Ennis** baz=245	**92.75**	**56**	P	**P**	**12 30 32.3**	**-0.2**			
RSSD	**Black Hills** baz=241	**92.78**	**43**	P	**P**	**12 30 32.2**	**-0.5**			
RSSD	**Black Hills** 11nm,1.1s	**92.78**	**43**	*e*P	**P**	**12 30 31.5**	**-1.1**			
438A	**Sam Houston St** baz=245	**92.85**	**58**	P	**P**	**12 30 33.6**	**+0.6**			
KMI	**Kunming**	**92.89**	**296**	P	**P**	**12 30 36.5**	**+2.9**			
KMI				pP	pP	12 30 47.3	+0.9			
KMI				sP	sP	12 30 53.0	+1.8			
KMI				pmax	pmax					
	comp=Z,15nm,1.0s									
HHC	**Hu-ho-hao-te**	**92.94**	**313**	*e*P	**P**	**12 30 33.8**	**+0.5**			
HHC				sP	pP	12 30 47.5	+1.4			
HHC				pmax	pmax					
	comp=Z,13nm,0.7s									
HHC				pmax	pmax					
	comp=Z,63nm,7.4s									
W34A	**Bridge Creek,** baz=244	**93.00**	**53**	P	**P**	**12 30 33.5**	**-0.1**			
T32A	**Huddler Ranch,** baz=244	**93.01**	**51**	P	**P**	**12 30 33.6**	**0.0**			
237A	**Washetta, Mont** baz=245	**93.11**	**57**	P	**P**	**12 30 34.0**	**-0.1**			
Z36A	**Blue Ridge** baz=245	**93.16**	**55**	P	**P**	**12 30 34.2**	**-0.1**			
X35A	**Drake** baz=245,SNR=5.7	**93.23**	**54**	P	**P**	**12 30 34.5**	**-0.2**			
CM01	**Chiang Mai Arr**	**93.51**	**288**	*e*P	**P**	**12 30 35.4**	**-0.9**			
CMAR	**Chiang Mai Arr** 2.5nm,0.8s,baz=115,slow=3.5,SNR=9.7	**93.53**	**288**	P	**P**	**12 30 37.0**	**+0.6**			
Y36A	**Durant** baz=245,SNR=6.6	**93.54**	**55**	P	**P**	**12 30 36.0**	**-0.1**			
W35A	**Tecumseh** baz=245	**93.63**	**53**	P	**P**	**12 30 36.5**	**0.0**			
238A	**Jacksonville** baz=246	**93.64**	**57**	P	**P**	**12 30 36.3**	**-0.3**			
U34A	**Anderson Ranch** baz=245	**93.69**	**52**	P	**P**	**12 30 36.3**	**-0.5**			
R32A	**Log Quarter,** baz=244	**93.71**	**50**	P	**P**	**12 30 36.6**	**-0.2**			
X36A	**Centrahoma** baz=245	**93.77**	**54**	P	**P**	**12 30 37.0**	**-0.1**			
V35A	**Meyer Ranch, C** baz=245	**93.91**	**53**	P	**P**	**12 30 37.6**	**-0.2**			
Q32A	**Meitler Ranch,** baz=244	**94.06**	**49**	P	**P**	**12 30 38.3**	**-0.1**			
W36A	**Wetumka** baz=245	**94.10**	**54**	P	**P**	**12 30 38.3**	**-0.3**			
139A	**Bunkhouse Ranc** baz=246	**94.48**	**57**	P	**P**	**12 30 40.2**	**-0.2**			
X37A	**Clayton** baz=246	**94.52**	**54**	P	**P**	**12 30 40.5**	**-0.1**			
V36A	**Jenks** baz=245	**94.58**	**53**	P	**P**	**12 30 40.6**	**-0.2**			
T35A	**Sooner Cattle** baz=245	**94.64**	**52**	P	**P**	**12 30 40.7**	**-0.4**			
R34A	**Isabella, Hill** baz=245	**94.69**	**50**	P	**P**	**12 30 41.4**	**+0.1**			
W37B	**Quinton** baz=246	**94.70**	**54**	P	**P**	**12 30 41.5**	**+0.1**			
TUL1	**Leonard** baz=246	**94.75**	**53**	P	**P**	**12 30 41.5**	**-0.1**			
DGMT	**Dagmar** baz=241	**94.80**	**39**	P	**P**	**12 30 41.7**	**+0.1**			
DGMT	**Dagmar** 2nm,1.0s	**94.80**	**39**	*e*P	**P**	**12 30 41.2**	**-0.3**			
X38A	**Whitesboro** baz=246,SNR=5.7	**94.96**	**55**	P	**P**	**12 30 42.2**	**-0.4**			
N32A	**Stulken Farm,** baz=244	**95.01**	**48**	P	**P**	**12 30 42.4**	**-0.3**			
J30A	**Dallas** baz=244	**95.33**	**45**	P	**P**	**12 30 44.0**	**-0.1**			
W38A	**Poteau** baz=246	**95.35**	**54**	P	**P**	**12 30 43.7**	**-0.7**			
X39A	**Fountain Ranch** baz=246	**95.43**	**55**	P	**P**	**12 30 44.5**	**-0.3**			
K31A	**O'Neill** baz=244	**95.51**	**46**	P	**P**	**12 30 45.1**	**+0.1**			
V38A	**Canehill** baz=246	**95.75**	**54**	P	**P**	**12 30 45.9**	**-0.4**			
T37A	**Cheneyville 18** baz=246	**95.89**	**52**	P	**P**	**12 30 46.5**	**-0.2**			
W39A	**Magazine** baz=247	**95.95**	**54**	P	**P**	**12 30 46.8**	**-0.3**			
T38A	**Redmond** baz=246	**96.31**	**53**	P	**P**	**12 30 48.4**	**-0.3**			
V39A	**Pettigrew** baz=247	**96.31**	**54**	P	**P**	**12 30 48.6**	**-0.2**			
R38A	**Fenwick Farm,** baz=247	**97.05**	**52**	P	**P**	**12 30 51.7**	**-0.3**			
H32A	**Carlson Farm,** baz=245	**97.18**	**45**	P	**P**	**12 30 52.0**	**-0.5**			
F31A	**Hecla** baz=245	**97.22**	**43**	P	**P**	**12 30 52.3**	**-0.4**			
MDND	**Maddock** baz=244	**97.24**	**41**	P	**P**	**12 30 52.3**	**-0.3**			
YKA	**Yellowknife Ar** 1.2nm,0.7s,baz=235,slow=4.6,SNR=10	**97.33**	**24**	P	**P**	**12 30 52.1**	**-0.5**			
ECSD	**EROS Data Cent** baz=246	**97.40**	**46**	P	**P**	**12 30 53.3**	**-0.2**			
ECSD	**EROS Data Cent** 8.7nm,1.1s	**97.40**	**46**	*e*P	**P**	**12 30 52.5**	**-1.0**			
H33A	**Prairie Diver Nor** baz=246	**97.70**	**45**	P	Pdif	12 30 54.9	0.0			
R39A	**Chumby, Stover** baz=247	**97.72**	**52**	P	**P**	**12 30 55.0**	**-0.1**			
E31A	**Nome** baz=245	**97.75**	**43**	P	Pdif	12 30 55.2	+0.2			
K37A	**Belmond** baz=248	**99.01**	**47**	P	**Pdif**	**12 31 00.6**	**-0.1**			
SONM	**Songino Array** 0.3nm,0.3s,baz=142,slow=7.3,SNR=3.1	**99.29**	**318**	P	**Pdif**	**12 31 02.7**	**+0.7**			
F36A	**Milaca** baz=248	**100.25**	**45**	P	**Pdif**	**12 31 05.9**	**-0.3**			
I38A	**Scanlan Farm,** baz=249	**100.37**	**47**	P	**Pdif**	**12 31 06.3**	**-0.5**			
D37A	**Cotton** baz=249	**101.43**	**44**	P	**Pdif**	**12 31 11.3**	**-0.1**			
WMQ	**Urumqi**	**110.53**	**310**	*e*PKP	**PKiKP**	**12 35 51.0**	**-1.4**			
WMQ				LR	LR					
	comp=Z,130nm,20.0s									
ZALV	**Zalesovo Beam** 0.8nm,0.7s,baz=184,slow=2.3,SNR=3.2	**114.00**	**320**	PKiKP	PKPdf	12 35 57.6	-1.0			
MKAR	**Makanchi Array** 0.8nm,0.6s,baz=204,slow=0.5,SNR=8.1	**114.79**	**312**	PKP	PKPdf	12 35 59.6	-0.8			
KSH	**Kashi**	**118.49**	**304**	*e*PKP	**PKPdf**	**12 36 08.8**	**+0.9**			
KSH				*es*PKP		12 36 24.0				
KSH				*e*PP	**PP**	**12 37 31.0**	**+5.5**			
KSH				PKS	**PKSdf**	**12 39 44.0**	**-0.6**			
KSH				SKS	**SKSdf**	**12 43 15.8**	**-0.9**			
KSH				SKKS	**SKKSac**	**12 44 19.3**	**-3.0**			
KSH				SS	**SS**	**12 53 43.0**	**+2.9**			
KSH				AMB	AMB					
	comp=Z,36nm,4.3s									
KSH				LR	LR					
	comp=N,170nm,9.7s									
KSH				LR	LR					
	comp=E,97nm,5.2s									
KSH				LR	LR					
	comp=Z,72nm,6.4s									
KKAR	**Karatay Array**	**122.85**	**308**	*e*PKPdf	**PKPdf**	**12 36 15.5**	**-0.5**			
ARCES	**ARCESS Array B** 2.0nm,0.6s,baz=356,slow=1.6,SNR=9.2	**131.57**	**351**	PKP	**PKPdf**	**12 36 30.6**	**-1.2**			
GEYT	**Alibeck** 1.8nm,0.6s,baz=183,slow=3.0,SNR=3.7	**132.37**	**301**	PKP	**PKPdf**	**12 36 34.4**	**0.0**			
FINES	**FINESS Array B** 1.9nm,1.0s,baz=278,slow=4.1,SNR=2.8	**138.66**	**345**	PKhKP	PKPpre	12 36 36.3				
FINES				PKP	**PKPdf**	**12 36 44.5**	**-0.7**			
	2.3nm,0.8s,baz=358,slow=4.4,SNR=4.5									
AKH	**Akhalkalaki**	**142.85**	**309**	*i*P	**PKPdf**	**12 36 50.9**	**-2.8**			
AKASG	**Malin Array Be** 5.3nm,0.6s,baz=43,slow=4.4,SNR=21	**146.31**	**332**	PKPbc	**PKPdf**	**12 36 59.4**	**+0.2**			
KIEV	**Kiev**	**146.32**	**332**	*e*PKPdf	**PKPbc**	**12 37 00.1**	**-0.2**			
SORM	**Soroca**	**148.56**	**330**	*i*P	**PKPbc**	**12 37 06.5**	**-0.1**			
OJC	**Ojcow**	**150.21**	**341**	*e*P	**PKPbc**	**12 37 11.1**	**+0.4**			
OJC	**Ojcow**	**150.21**	**341**	*e*PKPbc	**PKPbc**	**12 37 11.2**	**+0.6**			
BUR08	**Bucovina Ar. S**	**150.35**	**332**	*e*PKPbc	**PKPbc**	**12 37 12.2**	**+1.0**			
BURAR	**Bucovina Array**	**150.36**	**332**	*i*P	**PKPbc**	**12 37 12.5**	**+1.2**			
BR131	**Keskin Array S**	**150.43**	**312**	*e*PKPbc	**PKPbc**	**12 37 12.0**	**+0.2**			
BRTR	**Keskin Array B** 6.8nm,1.0s,baz=134,slow=3.6,SNR=21	**150.43**	**312**	PKPbc	**PKPbc**	**12 37 11.3**	**-0.5**			
STHS	**Stebnicka Huta**	**150.44**	**338**	*e*PKP	**PKPbc**	**12 37 12.3**	**+1.0**			
TESR	**Tescani**	**150.53**	**329**	*i*P	**PKPbc**	**12 37 11.7**	**+0.1**			
KSP	**Ksiaz**	**150.58**	**345**	*e*P	**PKPbc**	**12 37 12.5**	**+1.0**			
NIE	**Niedzica**	**150.75**	**339**	*e*P	**PKPbc**	**12 37 13.4**	**+1.3**			
CLL	**Collm** comp=Z,13nm,0.9s	**150.79**	**350**	*i*PKPbc	**PKPbc**	**12 37 12.2**	**+0.2**			
CLL				*e*PKPab	**PKPab**	**12 37 18.0**	**-1.1**			
	comp=Z,15nm,0.9s									
CLL				*ep*PKPab	**pPKPab**	**12 37 31.0**	**-1.1**			
CLL	**Collm**	**150.79**	**350**	*e*PKPbc	**PKPbc**	**12 37 12.2**	**+0.2**			
CRVS	**Cervenica-Dubn**	**150.80**	**338**	*e*PKP	**PKPbc**	**12 37 13.0**	**+0.8**			
VRI	**Vrincioaia**	**150.96**	**328**	*i*P	**PKPbc**	**12 37 12.7**	**+0.1**			
UPC	**Upice**	**150.96**	**346**	*e*PKP	**PKPbc**	**12 37 13.4**	**+0.9**			
BR231	**Keskin MP Arra**	**150.97**	**312**	*e*PKPbc	**PKPbc**	**12 37 12.5**	**-0.5**			
OKC	**Ostrava-Krasne**	**151.03**	**342**	*e*PKP	**PKPbc**	**12 37 13.1**	**+0.5**			
DPC	**Dobruska-Polom**	**151.03**	**345**	*e*PKP	**PKPbc**	**12 37 13.5**	**+0.8**			
DPC				*e*PKPAB	**PKPab**	**12 37 18.7**	**-1.6**			
BRG	**Berggiesshubel** comp=Z,9.9nm,0.8s	**151.04**	**348**	*i* PKP	**PKPbc**	**12 37 13.0**	**+0.3**			
TLB	**Topalu**	**151.17**	**325**	*i*P	**PKPbc**	**12 37 13.6**	**+0.5**			
MORC	**Moravsky Berou**	**151.25**	**343**	*i*P	**PKPbc**	**12 37 13.0**	**-0.2**			
MORC	**Moravsky Berou**	**151.25**	**343**	*e*PKPbc	**PKPbc**	**12 37 14.0**	**+0.8**			
LANS	**Liptovska Anna**	**151.25**	**340**	*e*PKP	**PKPbc**	**12 37 14.5**	**+1.3**			
LANS				*e*		12 37 21.9				
PVCC	**Panska Ves**	**151.25**	**347**	*e*PKP	**PKPbc**	**12 37 13.9**	**+0.8**			
PVCC				*e*PKPAB	**PKPab**	**12 37 20.4**	**-0.7**			
KECS	**Kecovo**	**151.50**	**338**	*e*PKP	**PKPbc**	**12 37 14.2**	**+0.4**			
DOPR	**Dopca**	**151.53**	**329**	*i*P	**PKPbc**	**12 37 14.9**	**+0.9**			
MLR	**Muntele Rosu**	**151.61**	**328**	*i*P	**PKPbc**	**12 37 14.3**	**0.0**			
MLR	**Muntele Rosu**	**151.61**	**328**	*e*PKPbc	**PKPbc**	**12 37 14.0**	**-0.3**			
PRU	**Pruhonice**	**151.77**	**347**	*e*PKP	**PKPbc**	**12 37 14.9**	**+0.6**			
PRU				*e*PKPAB	**PKPab**	**12 37 23.2**	**-0.1**			
PRU				*ep*PKP	**pPKPdf**	**12 37 29.7**	**+8.5**			
VRAC	**Vranov**	**151.93**	**344**	*i*P	**PKPbc**	**12 37 16.4**	**+1.6**			
VYHS	**Vyhne**	**152.03**	**340**	*e*PKP	**PKPdf**	**12 37 08.4**	**0.0**			
VYHS				*e*		12 37 15.5				
DRGR		**152.07**	**334**	*i*P	**PKPbc**	**12 37 15.5**	**+0.3**			
VOIR		**152.08**	**329**	*i*P	**PKPbc**	**12 37 16.1**	**+0.8**			
SNF	**Seneffe**	**152.24**	**1**	PKPab	**PKPab**	**12 37 24.4**	**-0.8**			
ARR	**Arges**	**152.33**	**329**	*i*P	**PKPbc**	**12 37 16.9**	**+1.1**			
BCLA	**Clavier**	**152.34**	**360**	PKPab	**PKPab**	**12 37 25.5**	**-0.1**			
DOU	**Dourbes**	**152.66**	**1**	PKPbc	**PKPbc**	**12 37 16.5**	**+0.2**			
KHC	**Kasperske Hory**	**152.78**	**348**	*e*PKP	**PKPbc**	**12 37 16.9**	**+0.2**			
KHC				*ep*PKP	**pPKPdf**	**12 37 23.5**	**+0.7**			
KHC				*e*PKPAB	**PKPab**	**12 37 25.8**	**-1.8**			
KHC				*ex*	x	12 37 31.0				
GERES	**GERESS Array B** comp=Z,1.1nm,0.8s,baz=76,slow=0.6,SNR=3.8	**153.03**	**347**	PKPbc	**PKPbc**	**12 37 16.4**	**-0.9**			
GEA0	**GERESS Array S**	**153.04**	**347**	*e*PKPbc	**PKPbc**	**12 37 17.1**	**-0.2**			
WLF	**Walferdange**	**153.08**	**358**	PKPbc	**PKPbc**	**12 37 17.0**	**-0.3**			
CONA	**Conrad Observa** comp=Z,1.9nm,0.7s	**153.39**	**344**	*e*PKPbc	**PKPbc**	**12 37 15.8**	**-2.3**			
CONA				*i* sPKPdf	**sPKPdf**	**12 37 26.1**	**-2.4**			
	comp=Z,3.7nm,0.7s									
BZS	**Buzias**	**153.47**	**333**	*i*P	**PKPbc**	**12 37 18.2**	**0.0**			
SOKA	**Soboth** comp=Z,8.9nm,1.2s	**154.76**	**344**	*i* PKPab	**PKPab**	**12 37 36.2**	**+0.1**			
ES19	**SONSECA Array**	**161.42**	**22**	*e*PKPab	**PKPab**	**12 38 05.3**	**+0.2**			
ESDC	**Sonseca Array** comp=Z,0.8nm,0.7s,baz=5.5,slow=4.0,SNR=6.2	**161.42**	**22**	PKP	**PKPdf**	**12 37 21.0**	**+0.2**			
ESDC				PKPab	**PKPab**	**12 38 04.6**	**-0.4**			
	comp=Z,0.7nm,0.6s,baz=322,slow=4.4,SNR=7.4									
TORD	**Torodi Ar. Bea** comp=Z,0.9nm,0.9s,baz=254,slow=1.8,SNR=4.3	**169.97**	**161**	PKP	**PKPdf**	**12 37 27.4**	**-1.0**			
TORD				PKPab	**PKPab**	**12 38 43.1**	**-0.1**			
	comp=Z,1.6nm,0.8s,baz=212,slow=3.9,SNR=6.6									

*ISCJB **30** 12:52:43.7±0.7, 38°.69N±0'.04×29°.28E±0'.05, h7km±11km, Error ellipse: s-maj=9.0km s-min=4.7km az=44.8*
*CSEM **30** 12:52:43.6±0.3, 38°.68N×29°.29E, h10km, MD2.5, Error ellipse: s-maj=7.9km s-min=5.3km az=136.0*
*ISK **30

3.8nm,0.3s,baz=37,slow=21,SNR=7.4
JHJ Sn **Sn** **12 57 11.1 -1.6**
8.8nm,0.3s,baz=258,slow=20,SNR=3.9
MJAR Matsushiro Arr 10.19 336 Pn **Pn** **12 56 48.6 -0.3**
1.9nm,0.3s,baz=157,slow=11,SNR=12
MJAR Sn **Sn** **12 58 40.8 -1.2**
0.6nm,0.3s,baz=140,slow=14,SNR=6.3
MAJO Matsushiro 10.19 336 *e*Pn **Pn** **12 56 48.9 0.0**
8.9nm,0.6s
MAJO *e*Sn **Sn** **12 58 39.7 -2.3**
MAT Matsushiro 10.19 336 P **Pn** **12 56 48.0 -0.9**
MAT S **Sn** **12 58 41.0 -1.0**
JOW Kunigami 13.35 272 Pn **Pn** **12 57 28.6 -3.4**
0.3nm,0.3s,baz=135,slow=20,SNR=2.3
KSRS Korea Array 16.43 312 Pn **P** **12 58 15.2 -0.2**
0.3nm,0.3s,baz=122,slow=11,SNR=9.9
KSAR Wonju Array Be 16.45 312 Pn **P** **12 58 15.2 -0.4**
USRK Ussuriysk Ar. 19.18 335 P **Pn** **12 58 47.5 +0.7**
0.3nm,0.3s,baz=161,slow=12,SNR=10
YULB Yu-li 20.20 264 *e*P **P** **12 58 57.9 +0.9**
8.6nm,0.7s
SSLB Suanglung 20.40 265 *e*P **P** **12 58 58.4 -0.8**
14nm,0.8s
MDJ Mudanjiang 20.50 331 *e*P **P** **12 59 00.5 +0.6**
11nm,0.9s
KLR Kul'dur 23.66 341 P **P** **12 59 34.6 +1.4**
2.4nm,0.7s,baz=144,slow=8.8,SNR=8.7
SONM Songino Array 35.25 316 P **P** **13 01 17.3 +0.8**
1.6nm,0.7s,baz=118,slow=7.6,SNR=9.1
CMAR Chiang Mai Arr 41.57 267 P **P** **13 02 10.0 +0.3**
1.8nm,0.8s,baz=49,slow=8.7,SNR=8.1
WRAB Tennant Creek 47.70 191 *e*P **P** **13 02 57.1 -1.4**
5.1nm,0.5s
WRA Warramunga Arr 47.71 191 P **P** **13 02 57.5 -1.0**
8.1nm,0.6s,baz=12,slow=8.7,SNR=84
ZALV Zalesovo Beam 49.98 319 P **P** **13 03 17.0 +1.4**
1.2nm,0.5s,baz=115,slow=6.7,SNR=7.7
MKAR Makanchi Array 51.09 309 P **P** **13 03 25.2 +1.0**
0.6nm,0.5s,baz=93,slow=8.1,SNR=7.0
ASAR Alice Springs 51.42 191 P **P** **13 03 25.1 -1.7**
1.0nm,0.6s,baz=8.0,slow=5.7,SNR=20
KURK Kurchatov 53.54 314 *e*P **P** **13 03 43.4 +1.1**
28nm,0.5s
ILAR Eielson Array 57.12 29 P **P** **13 04 07.5 -0.3**
1.1nm,0.8s,baz=265,slow=5.7,SNR=16
BMRM Bremner River 57.94 33 *e*P **P** **13 04 12.6 -1.2**
5.1nm,0.6s
BRVK Borovoye 58.62 317 *e*P **P** **13 04 20.0 +1.5**
9.1nm,0.6s
STKA Stephens Creek 58.83 182 P **P** **13 04 18.2 -1.9**
2.5nm,0.7s,baz=326,slow=6.8,SNR=5.2
KKAR Karatay Array 59.75 306 *e*P **P** **13 04 28.0 +1.4**
6.3nm,0.6s
ARU Arti 64.87 322 *e*P **P** **13 05 00.5 0.0**
5.6nm,0.8s
ABKAR Akbulak array 65.65 314 *e*P **P** **13 05 06.8 +1.0**
5.3nm,0.8s
YKA Yellowknife Ar 71.55 29 P **P** **13 05 42.3 0.0**
0.5nm,0.8s,baz=295,slow=5.5,SNR=3.2
ARCES ARCESS Array B 73.69 341 P **P** **13 05 56.8 +1.8**
1.9nm,0.9s,baz=39,slow=19,SNR=3.5
FINES FINESS Array B 78.21 334 P **P** **13 06 22.1 +1.3**
1.3nm,0.6s,baz=101,slow=6.0,SNR=12
KBZ Khabaz 78.58 313 P **P** **13 06 24.0 +0.8**
3.5nm,0.8s,baz=98,slow=4.8,SNR=8.3
AKASG Malin Array Be 83.04 324 P **P** **13 06 46.8 -0.1**
1.0nm,0.4s,baz=51,slow=4.9,SNR=4.6
BRTR Keskin Array B 86.58 313 P **P** **13 07 05.3 +0.2**
0.7nm,0.8s,baz=98,slow=3.2,SNR=2.9
TXAR Lajitas Array 94.75 54 P **P** **13 07 44.1 +0.6**
0.2nm,0.5s,baz=244,slow=0.8,SNR=4.6
LPAZ La Paz 148.97 76 PKPbc **PKPbc** **13 14 11.2 +0.4**
1.1nm,0.7s,baz=153,slow=1.1,SNR=4.7

*SOME **30** 13:06:04.2, 44.˚73N×82.˚10E, h0km*
*NNC **30** 13:06:05.4±0.6, 44.˚66N×81.˚90E, h0km, mb3.2, mpv2.8, Error ellipse: s-maj=8.1km s-min=3.0km az=119.0*
*ISCJB **30** 13:06:06.3±1.3, 44.˚64N±0.˚06×82.˚4E±0.˚1, h10km, Error ellipse: s-maj=13.8km s-min=5.3km az=31.0*
ISC 30 13:06:05.8±1.4, 44.˚71N±0.˚05×82.˚08E±0.˚07, h10km, n11, σ1§29/21, 4C-2D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**1.68**	**258**	*e*P	**Pg**	**13 06 37.3**	**-0.7**
	9.1nm,0.2s						
DJR				*e*S	**Sg**	**13 07 01.0**	**+1.2**
	6.5nm,0.3s						
KTMS	**Ketmen**	**1.77**	**225**	*e*P	**Pb**	**13 06 38.5**	**0.0**
	5.3nm,0.1s						
KTMS				*e*S	**Sg**	**13 07 03.1**	**+0.3**
	18nm,0.3s						
KAPS	**Kapalarasan**	**2.01**	**288**	*e*P	**Pb**	**13 06 43.0**	**+0.5**
	2.3nm,0.1s						
KAPS				*e*S	**Sg**	**13 07 10.8**	**+0.4**
	6.9nm,0.3s						
MK31	**Makanchi Array**	**2.09**	**4**	⇑Pn	**Pb**	**13 06 42.7**	**-1.0**
	6.0nm,0.3s,baz=189,slow=16,SNR=91						
MK31				⇓Sn	**Sb**	**13 07 10.8**	**+1.0**
	3.6nm,0.3s,baz=187,slow=27,SNR=15						
MAKZ	**Makanchi**	**2.10**	**358**	⇓Pn	**Pn**	**13 06 42.2**	**+1.2**
	4.0nm,0.5s						
MAKZ				⇑Sn	**Sb**	**13 07 11.0**	**+0.9**
	9.5nm,0.5s						
SHLS	**Shalkode**	**2.22**	**226**	*e*P	**Pb**	**13 06 46.2**	**+0.1**
	5.8nm,0.1s						
SHLS				*e*S	**Sg**	**13 07 16.7**	**-0.4**
	15nm,0.3s						
PDGK	**Podgornoye**	**2.33**	**234**	⇑Pg	**Pn**	**13 06 45.4**	**+1.4**
	0.7nm,0.3s						
PDGK				⇑Lg	Lg	13 07 15.6	
	1.7nm,0.4s						
MNBS	**Baschi**	**2.71**	**258**	*e*P	**Pb**	**13 06 53.8**	**-0.6**
	1.3nm,0.1s						
MNBS				*e*S	**Sb**	**13 07 29.3**	**+1.6**
	12nm,0.3s						
KPKS	**Kokpek**	**2.74**	**244**	*e*P	**Pb**	**13 06 55.4**	**+0.4**
	9.2nm,0.1s						
KPKS				*e*S	**Sg**	**13 07 31.6**	**-2.3**
	16nm,0.2s						
ARXS	**Arharly**	**3.08**	**262**	*e*P	**Pb**	**13 07 01.5**	**+0.8**
	1.9nm,0.2s						
ARXS				*e*S	**Sg**	**13 07 42.8**	**-2.0**
	8.1nm,0.2s						
CHKK	**Chushkaly**	**3.74**	**259**	*e*P	**Pg**	**13 07 14.7**	**-2.8**
	0.8nm,0.1s						
CHKK				*e*S	**Sg**	**13 08 05.2**	**-0.7**
	5.5nm,0.2s						

*NIED **30** 13:10:00, 36.˚10N×142.˚20E, h11km, Mw4.6 Best double couple: M0:8.01000×10^15 NP1:φs:214.00000°, δ35.00000°, λ108.00000°. NP2:φs:12.00000°, δ57.00000°, λ78.00000°.*
*IDC **30** 13:10:26.1±0.6, 36.˚06N×142.˚23E, h0km, mb4.2/26, mb1 4.3/32, mb1mx4.3/50, mbtmp4.2/32, ML3.7/5, MS3.7/1, Ms1 3.7/1, ms1mx3.0/36, Error ellipse: s-maj=15.7km s-min=13.3km az=127.0*
*NEIC **30** 13:10:27.2±0.4, 36.˚07N×142.˚26E, h10km, mb4.8/9, Error ellipse: s-maj=9.6km s-min=7.0km az=143.0*
*ISCJB **30** 13:10:27.7±0.3, 36.˚13N±0.˚03×142.˚22E±0.˚04, h23km, mb4.5/59, MS4.3/5, Error ellipse: s-maj=5.6km s-min=4.1km az=135.5*
*JMA **30** 13:10:28.6±0.2, 36.˚13N×142.˚22E, h68km±5km, M4.6*
*MOS **30** 13:10:29.7±1.1, 36.˚19N×142.˚16E, h33km, mb5.0/24, MS4.0/5, Error ellipse: s-maj=9.7km s-min=5.5km az=120.0*
*BJI **30** 13:10:37.6, 36.˚26N×140.˚95E, h35km, mb4.8/33, mB5.0/20, Ms4.6/17, Ms7 4.4/18*
ISC 30 13:10:29.6±0.5, 36.˚15N±0.˚05×142.˚14E±0.˚05, h23km, n130, σ1§63/141, mb4.6/60, MS4.3/5, 8C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.13**	**247**	P	**Pn**	**13 10 49.7**	**-0.3**
CHOJ				*e*S	**Sn**	**13 11 04.7**	**0.0**
JHO	**Hitachi**	**1.35**	**291**	P	**Pn**	**13 10 52.4**	**-0.6**
ONAJ	**Iwakimizuishiy**	**1.44**	**312**	P	**Pn**	**13 10 53.7**	**-0.6**
JFK	**Kawauchi**	**1.58**	**321**	P	**Pn**	**13 10 55.7**	**-0.6**
JFK				*e*S	**Sn**	**13 11 16.2**	**+0.1**
BSO1	**Boso 1**	**1.77**	**213**	P	**Pn**	**13 10 57.6**	**-0.6**
BSO3	**Boso 3**	**1.89**	**225**	P	**Pn**	**13 10 59.6**	**-0.6**
JFT	**Otama**	**1.99**	**314**	P	**Pn**	**13 11 02.4**	**+0.5**

JMM	**Marumori**	**2.02**	**328**	P	**Pn**	**13 11 01.6 -0.7**
JAG	**Ashikaga**	**2.19**	**278**	P	**Pn**	**13 11 04.4 -0.1**
JRY	**Ryogami san**	**2.62**	**268**	P	**Pn**	**13 11 10.5 -0.1**
JOD2	**Odawara 2**	**2.63**	**251**	P	**Pn**	**13 11 10.8 +0.1**
JMK	**Ichinoseki**	**2.89**	**346**	P	**Pn**	**13 11 13.7 -0.6**
JYN	**Shimob**	**2.99**	**259**	P	**Pn**	**13 11 16.1 +0.4**
MJAR	**Matsushiro Arr**	**3.19**	**278**	Pn	**Pn**	**13 11 19.0 +0.6**
	18nm,0.3s,baz=99,slow=7.8,SNR=179					
MAJO	**Matsushiro**	**3.20**	**278**	*e*P	**Pn**	**13 11 19.8 +1.3**
MAJO				*e*		13 11 57.7
MAJO	**Matsushiro**	**3.20**	**278**	*e*Pn	**Pn**	**13 11 19.8 +1.3**
MAJO				*e*Sn	**Sn**	**13 11 57.7 +1.9**
MAT	**Matsushiro**	**3.20**	**278**	P	**Pn**	**13 11 19.4 +0.9**
MAT				S	**Sn**	**13 12 01.1 +5.2**
JHJ	**Hachijo jima 2**	**3.59**	**213**	Pn	**Pn**	**13 11 22.1 -1.7**
	65nm,0.3s,baz=312,slow=22,SNR=55					
JHJ				Sn	**Sn**	**13 12 03.0 -2.5**
	261nm,0.3s,baz=238,slow=23,SNR=14					
ASAJ	**Asahikawa**	**7.97**	**2**	*e*Pn	**Pn**	**13 12 23.0 -1.0**
	11nm,0.8s					
ASAJ				*e*Sn	**Sn**	**13 13 53.2 -0.2**
JNU	**Nakatsue**	**9.75**	**255**	Pn	**Pn**	**13 12 50.0 +1.5**
	0.5nm,0.3s,baz=102,slow=5.8,SNR=9.4					
KUR	**Kuril'sk**	**10.06**	**24**	*e*P	Pn	13 12 42.8 -10
VLA	**Vladivostok**	**10.53**	**315**	*e*P	**Pn**	**13 13 00.8 +1.8**
MSHR	**Mys Shultsa**	**10.65**	**310**	*i* P	**Pn**	**13 13 02.5 +1.8**
YSS	**Yuzh-Sakhalins**	**10.81**	**2⇑**	*e*P	**Pn**	**13 13 01.9 -0.9**
YSS				*e*S	**Sn**	**13 15 01.2 -1.8**
YSS				pmax	pmax	
	comp=Z,10.0nm,1.0s					
YSS				pmax	pmax	
	comp=N,20nm,1.1s					
YSS				smax	smax	
	comp=N,20nm,2.2s					
YSS				MLR	MLR	
	comp=Z,1μm,17.0s					
YSS				MLR	MLR	
	comp=N,900nm,16.0s					
YSS	**Yuzh-Sakhalins**	**10.81**	**2**	*e*Pn	**Pn**	**13 13 01.6 -1.3**
	comp=N,31nm,0.9s					
USRK	**Ussuriysk Ar.**	**11.17**	**319**	Pn	**Pn**	**13 13 09.8 +2.0**
	comp=N,0.2nm,0.3s,baz=131,slow=13,SNR=8.2					
KSRS	**Korea Array**	**11.47**	**281**	Pn	**Pn**	**13 13 14.5 +2.6**
	comp=N,0.2nm,0.3s,baz=96,slow=14,SNR=23					
KSRS				LR	LR	13 17 42.6
	comp=N,375nm,19.0s,baz=76,slow=38					
KSAR	**Wonju Array Be**	**11.50**	**281**	P	**Pn**	**13 13 14.5 +2.1**
KSAR	**Wonju Array Be**	**11.50**	**281**	Pn	**Pn**	**13 13 14.5 +2.1**
HABR	**Khabarovsk**	**13.38**	**339**	*e*P	**Pn**	**13 13 36.6 -1.3**
HABR				*e*S	**Sn**	**13 16 02.2 -3.6**
HABR				pmax	pmax	
	comp=N,20nm,1.5s					
HABR				pmax	pmax	
	comp=E,18nm,1.5s					
HABR				pmax	pmax	
	comp=Z,27nm,1.5s					
HABR				MLR	MLR	
	comp=Z,420nm,15.0s					
CN2	**Changchun**	**14.89**	**306**	*e*P	**P**	**13 14 04.5 +0.4**
CN2				*e*S	S	13 17 21.0 +21
CN2				pmax	pmax	
	comp=Z,10.0nm,0.8s					
CN2				pmax	pmax	
	comp=Z,100nm,4.0s					
CN2				LR	LR	
	comp=N,900nm,14.0s					
CN2				LR	LR	
	comp=E,500nm,14.0s					
CN2				LR	LR	
	comp=Z,800nm,13.0s					
KLR	**Kul'dur**	**15.12**	**333**	Pn	**Pn**	**13 14 02.3 +0.6**
	comp=Z,0.1nm,0.3s,baz=136,slow=6.2,SNR=4.5					
PETK	**Petropavlovsk-**	**20.18**	**28**	P	Pn	13 15 03.2 -1.1
	comp=Z,4.0nm,1.1s,baz=144,slow=12,SNR=3.1					
TIA	**Tai'an**	**20.18**	**278**	*e*P	P	13 14 54.8 -7.7
TIA				pmax	pmax	
	comp=Z,10.0nm,1.6s					
HIA	**Hailar**	**20.94**	**316**	*e*P	**P**	**13 15 12.1 +1.4**
HIA				pmax	pmax	
	comp=Z,15nm,1.1s					
CLNS	**Chul'man**	**23.73**	**336**	*e*P	**P**	**13 15 38.2 -1.6**
CLNS				pmax	pmax	
	comp=E,6.0nm,0.8s					
CLNS				pmax	pmax	
	comp=Z,22nm,1.1s					
CLNS				pmax	pmax	
	comp=N,13nm,1.1s					
MA2	**Magadan**	**24.11**	**11**	P	**P**	**13 15 42.9 -0.4**
	comp=N,4.0nm,0.7s,baz=164,slow=16,SNR=3.9					
HHC	**Hu-ho-hao-te**	**24.32**	**290**	*e*P	**P**	**13 15 45.8 +0.2**
HHC				S	**S**	**13 19 57.0 -6.4**
HHC				SS	**SnSn**	**13 20 43.0 -3.9**
HHC				pmax	pmax	
	comp=N,27nm,1.2s					
HHC				pmax	pmax	
	comp=N,68nm,3.6s					
HHC				LR	LR	
	comp=N,370nm,12.5s					
HHC				LR	LR	
	comp=N,280nm,7.9s					
HHC				LR	LR	
	comp=N,480nm,10.3s					
YAK	**Yakutsk**	**27.06**	**347**	P	**P**	**13 16 10.3 +0.3**
	comp=N,4.2nm,0.4s,baz=28,slow=3.8,SNR=6.0					
YAK	**Yakutsk**	**27.06**	**347**	*e*P	**P**	**13 16 10.0 0.0**
YAK				*e*		13 16 55.0
YAK				*e*		13 19 25.8
YAK				*e*S	**S**	**13 20 41.4 -4.9**
YAK				*e*SS	**SnSn**	**13 21 52.1 -1.3**
YAK				*e*		13 26 55.5
YAK				pmax	pmax	
	comp=E,4.0nm,1.5s					
YAK				pmax	pmax	
	comp=Z,16nm,1.0s					
YAK				pmax	pmax	
	comp=N,15nm,1.6s					
YAK				pmax	pmax	
	comp=E,40nm,3.0s					
YAK				pmax	pmax	
	comp=Z,34nm,1.4s					
YAK				pmax	pmax	
	comp=N,27nm,1.3s					
YAK				smax	smax	
	comp=E,87nm,5.0s					
YAK				smax	smax	
	comp=N,33nm,2.9s					
YAK	**Yakutsk**	**27.06**	**347**	P	**P**	**13 16 10.3 +0.3**
	comp=N,1.5nm,1.0s					
XAN	**Xi'an**	**27.19**	**275**	P	**P**	**13 16 11.5 0.0**
XAN				pmax	pmax	
	comp=N,30nm,1.4s					
XAN				LR	LR	
	comp=N,230nm,13.9s					
XAN				LR	LR	
	comp=N,430nm,14.4s					
XAN				LR	LR	
	comp=N,630nm,17.4s					
H11N2	**WAKE ISLAND Hy**	**27.20**	**120**	T	T	13 44 49.8
	baz=312,slow=75,SNR=10.0					
H11N1	**WAKE ISLAND Hy**	**27.20**	**120**	T	T	13 44 36.5
	baz=312,slow=75,SNR=9.0					
H11N3	**WAKE ISLAND Hy**	**27.21**	**120**	T	T	13 44 42.5
	baz=312,slow=75,SNR=7.3					
SEY	**Seymchan**	**27.55**	**10**	P	**P**	**13 16 15.6 +1.1**
	comp=N,3.2nm,1.0s,baz=177,slow=7.5,SNR=6.1					
SEY	**Seymchan**	**27.55**	**10**	*e*P	**P**	**13 16 15.0 +0.6**
ENH	**Enshi**	**27.85**	**267**	*e*P	**P**	**13 16 15.9 -1.6**
	comp=N,32nm,0.8s					
H11S1	**WAKE ISLAND Hy**	**27.89**	**123**	T	T	13 45 34.5
	baz=314,slow=76,SNR=14					
H11S3	**WAKE ISLAND Hy**	**27.89**	**123**	T	T	13 45 33.0
	baz=314,slow=76,SNR=14					
H11S2	**WAKE ISLAND Hy**	**27.91**	**123**	T	T	13 45 28.7
	baz=314,slow=76,SNR=9.6					
SONM	**Songino Array**	**28.77**	**305**	P	**P**	**13 16 26.5 +0.9**
	comp=N,12nm,0.8s,baz=103,slow=9.4,SNR=66					
LZH	**Lanzhou**	**30.80**	**281**	*e*P	**P**	**13 16 44.0 +0.2**
LZH				pP	sP	13 16 57.0 +3.5
LZH				sP	pP	13 17 02.0 +11
LZH				pmax	pmax	
	comp=N,31nm,1.2s					
ZAK	**Zakamensk**	**31.28**	**309**	*e*P	**P**	**13 16 48.1 +0.4**
ZAK				pmax	pmax	
	comp=Z,13nm,1.2s					
TLY	**Talaya**	**31.35**	**312**	P	**P**	**13 16 49.6 +1.5**
	comp=Z,7.1nm,0.8s,baz=115,slow=7.0,SNR=3.9					

TLY	**Talaya**	**31.35**	**312**	*e*P	**P**	**13 16 49.6 +1.3**
TLY				pmax	pmax	
	comp=Z,24nm,1.4s					
TLY				MLR	MLR	
	comp=Z,475nm,14.0s					
GTA	**Gaotai**	**33.39**	**289**	*e*P	**P**	**13 17 07.5 +1.1**
GTA				pP	sP	13 17 18.0 +1.8
GTA				sP	pP	13 17 22.0 +8.7
GTA				pmax	pmax	
	comp=Z,34nm,1.0s					
BILL	**Bilibino**	**34.72**	**16⇑**	*e*P	**P**	**13 17 18.3 +0.9**
BILL				*e*		13 18 36.6
BILL				*e*PPP	PPP	13 18 48.2
BILL				pmax	pmax	
	comp=Z,5.0nm,1.1s					
TIXI	**Tiksi**	**36.24**	**353**	*e*P	**P**	**13 17 31.0 +0.6**
TIXI				pmax	pmax	
	comp=Z,9.0nm,1.0s					
CHTO	**Chiang Mai**	**41.65**	**257**	*e*P	**P**	**13 18 15.3 -1.1**
CHTO				pmax	pmax	
	comp=Z,3.0nm,0.8s					
CHTO	**Chiang Mai**	**41.65**	**257**	*e*P	**P**	**13 18 15.3 -1.1**
	comp=Z,2.8nm,0.8s					
CMAR	**Chiang Mai Arr**	**41.85**	**257**	P	**P**	**13 18 18.6 +0.6**
	comp=Z,2.8nm,0.8s,baz=50,slow=6.7,SNR=11					
ZALV	**Zalesovo Beam**	**42.94**	**313**	P	**P**	**13 18 27.5 +1.0**
	comp=Z,5.7nm,0.8s,baz=89,slow=6.4,SNR=24					
ZALV				PcP	**PcP**	**13 20 17.1 +0.4**
	comp=Z,2.0nm,0.8s,baz=121,slow=3.6,SNR=3.0					
NVS	**Novosibirsk**	**43.87**	**314**	*e*P	**P**	**13 18 34.8 +0.8**
NVS				pmax	pmax	
	comp=E,17nm,1.2s					
NVS				pmax	pmax	
	comp=Z,11nm,1.2s					
MK31	**Makanchi Array**	**45.09**	**303**	*i* P	**P**	**13 18 44.6 +0.8**
MK31				pmax	pmax	
	comp=Z,23nm,0.9s					
MKAR	**Makanchi Array**	**45.09**	**303**	P	**P**	**13 18 44.6 +0.8**
	comp=Z,14nm,0.8s,baz=91,slow=9.3,SNR=40					
KURK	**Kurchatov**	**46.94**	**309**	*c* *i*P	**P**	**13 18 58.6 +0.3**
KURK				pmax	pmax	
	comp=Z,133nm,1.2s					
KURK	**Kurchatov**	**46.94**	**309**	P	**P**	**13 18 59.5 +1.2**
	comp=Z,8.7nm,1.0s					
KURBB	**Kurchatov Arra**	**47.01**	**309**	P	**P**	**13 18 59.5 +0.7**
	comp=Z,16nm,0.9s,baz=83,slow=8.3,SNR=5.2					
COLA	**College**	**49.52**	**32**	*e*P	**P**	**13 19 18.5 +0.5**
COLA				pmax	pmax	
	comp=Z,2.0nm,0.9s					
ILAR	**Eielson Array**	**49.94**	**32**	P	**P**	**13 19 21.8 +0.6**
	comp=Z,1.0nm,0.9s,baz=263,slow=6.5,SNR=8.5					
FRU	**Bishkek**	**51.28**	**299**	*e*P	**P**	**13 19 31.0 -0.8**
KSH	**Kashi**	**51.30**	**295**	*e*P	P	13 19 37.8 +5.7
KSH				*e*PcP	PcP	13 20 54.8 +8.0
KSH				S	**S**	**13 26 42.8 -7.1**
KSH				pmax	pmax	
	comp=Z,31nm,3.0s					
KSH				LR	LR	
	comp=Z,130nm,6.5s					
KSH				LR	LR	
	comp=Z,270nm,8.1s					
KSH				LR	LR	
	comp=Z,150nm,7.8s					
AAK	**Ala-Archa**	**51.42**	**299**	*e*P	**P**	**13 19 32.2 -0.8**
AAK				pmax	pmax	
	comp=Z,10.0nm,0.9s					
BRVK	**Borovoye**	**51.66**	**313**	*c* *i*P	**P**	**13 19 34.9 +0.6**
BRVK				pmax	pmax	
	comp=Z,14nm,1.0s					
BRVK	**Borovoye**	**51.66**	**313**	*e*P	**P**	**13 19 32.1 -2.2**
	comp=Z,11nm,0.8s					
KK31	**Karatay Array**	**54.07**	**301**	*i* P	**P**	**13 19 53.0 +0.6**
KK31				pmax	pmax	
	comp=Z,20nm,1.3s					
KKAR	**Karatay Array**	**54.07**	**301**	*e*P	**P**	**13 19 52.5 +0.1**
KKAR				pmax	pmax	
	comp=Z,11nm,0.9s					
KKAR	**Karatay Array**	**54.07**	**301**	*e*P	**P**	**13 19 52.5 +0.1**
	comp=Z,11nm,0.9s					
INK	**Inuvik**	**54.91**	**27**	P	**P**	**13 19 58.1 +0.1**
	comp=Z,1.4nm,0.7s,baz=295,slow=4.8,SNR=3.1					
SVE	**Sverdlovsk**	**56.20**	**319⇓**	*e*P	**P**	**13 20 08.2 +0.8**
SVE				pmax	pmax	
	comp=Z,13nm,0.9s					
WRAB	**Tennant Creek**	**56.26**	**189**	*e*P	**P**	**13 20 10.8 +2.6**
WRAB				pmax	pmax	
	comp=Z,18nm,1.1s					
WRAB	**Tennant Creek**	**56.26**	**189**	*e*P	**P**	**13 20 06.4 -1.8**
	comp=Z,1.8nm,0.6s					
WRA	**Warramunga Arr**	**56.27**	**189**	P	**P**	**13 20 07.5 -0.8**
	comp=Z,0.8nm,0.5s,baz=5.8,slow=7.0,SNR=28					
ARU	**Arti**	**57.41**	**319**	*c* *i*P	**P**	**13 20 16.8 +0.8**
ARU				*PP	**sP**	**13 20 30.5 +4.4**
ARU						13 22 20.6
ARU				S	**S**	**13 28 11.7 +0.3**
ARU				SS	**SS**	**13 31 59.7 -0.8**
ARU				pmax	pmax	
	comp=Z,25nm,1.7s					
ARU	**Arti**	**57.41**	**319**	*e*P	**P**	**13 20 15.7 -0.3**
	comp=Z,15nm,1.1s					
AB31	**Akbulak array**	**58.96**	**311**	*i* P	**P**	**13 20 27.0 0.0**
AB31				pmax	pmax	
	comp=Z,5.0nm,0.7s					
ABKAR	**Akbulak array**	**58.96**	**311**	*e*P	**P**	**13 20 26.1 -0.9**
	comp=Z,6.3nm,0.8s					
AKTO	**Aktyubinsk**	**59.70**	**313**	P	**P**	**13 20 32.6 +0.5**
	comp=Z,6.9nm,0.9s,baz=68,slow=10,SNR=5.0					
ASAR	**Alice Springs**	**60.00**	**189**	P	**P**	**13 20 33.9 -0.5**
	comp=Z,0.5nm,0.5s,baz=3.0,slow=6.9,SNR=10					
YKA	**Yellowknife Ar**	**64.28**	**30**	P	**P**	**13 21 03.5 +0.9**
	comp=Z,0.8nm,0.9s,baz=299,slow=6.1,SNR=4.3					
YKA	**Yellowknife Ar**	**64.28**	**30**	*c*e P	**P**	**13 21 04.5 +1.8**
YKA				pmax	pmax	
	comp=Z,1.0nm,0.6s					
GEYT	**Alibeck**	**64.78**	**300**	P	**P**	**13 21 06.1 -0.3**
	comp=Z,0.9nm,0.3s,baz=62,slow=10.0,SNR=3.7					
KLMR	**Klimovskoe**	**64.81**	**328**	*e*P	**P**	**13 21 04.5 -1.7**
KLMR				*e*		13 23 27.6
KLMR				pmax	pmax	
	comp=Z,9.0nm,1.0s					
ARCES	**ARCESS Array B**	**65.03**	**340**	P	**P**	**13 21 08.2 +0.8**
	comp=Z,1.8nm,0.8s,baz=53,slow=6.0,SNR=4.0					
OBN	**Obninsk**	**69.15**	**324⇑**	*e*P	**P**	**13 21 32.9 -0.9**
OBN				*e*		13 22 00.0
OBN				*e*		13 24 02.7
OBN				*e*PPP	PPP	13 25 49.2
OBN				*e*S	S	13 30 26.8 -11
OBN				pmax	pmax	
	comp=Z,8.0nm,1.2s					
OBN				MLR	MLR	
	comp=Z,196nm,16.0s					
FINES	**FINESS Array B**	**69.87**	**333**	P	**P**	**13 21 38.4 +0.3**
	comp=Z,7.1nm,1.0s,baz=102,slow=14,SNR=8.4					
VSR	**Storozhevoye**	**69.98**	**319**	*e*P	**P**	**13 21 38.6 -0.4**
VSR				pmax	pmax	
	comp=Z,9.0nm,0.9s					
VSU	**Vasula**	**71.51**	**330**	*e*P	**P**	**13 21 49.2 +1.0**
VSU				pmax	pmax	
	comp=Z,62nm,1.5s					
KBZ	**Khabaz**	**71.92**	**311**	P	**P**	**13 21 52.2 +1.3**
	comp=Z,5.4nm,0.9s,baz=95,slow=2.3,SNR=9.9					
KIV	**Kislovodsk**	**71.93**	**311**	*c*e P	**P**	**13 21 51.9 +0.8**
KIV				*e*		13 22 08.1
KIV				*e*		13 24 30.6
KIV				*e*PPP	PPP	13 26 13.0
KIV				*e*S	**S**	**13 31 07.4 -3.5**
KIV				pmax	pmax	
	comp=Z,17nm,1.0s					
KIV				MLR	MLR	
	comp=Z,86nm,17.0s					
KIV	**Kislovodsk**	**71.93**	**311**	*e*P	**P**	**13 21 51.0 -0.1**
	comp=Z,11nm,0.9s					

	comp=Z,5.0nm,1.0s								
DUG	**Dugway, Tooele**	**77.50**	**49**	*e*P		**P**	**13 22 20.9**	**-2.7**
DUG				pmax	pmax				
	comp=Z,19nm,1.8s								
DUG	**Dugway, Tooele**	**77.50**	**49**	*e*P		**P**	**13 22 20.9**	**-2.7**
	comp=Z,19nm,1.8s								
PDAR	**Pinedale Array**	**77.87**	**46**	P		**P**	**13 22 26.7**	**+0.9**
	comp=Z,0.3nm,0.5s,baz=276,slow=4.2,SNR=3.6								
BRTR	**Keskin Array B**	**79.88**	**312**	P		**P**	**13 22 38.0**	**+1.3**
	comp=Z,2.5nm,0.9s,baz=97,slow=4.2,SNR=11								
BRTR	**Keskin Array B**	**79.88**	**312**	P		**P**	**13 22 38.0**	**+1.3**
STHS	**Stebnicka Huta**	**80.02**	**325**	*e*P		**P**	**13 22 39.1**	**+2.0**
STHS				pmax	pmax				
	comp=Z,3.0nm,1.2s								
STHS	**Stebnicka Huta**	**80.02**	**325**	*e*P		**P**	**13 22 39.1**	**+2.0**
DPC	**Dobruska-Polom**	**81.52**	**328**	*e*P		**P**	**13 22 46.6**	**+1.5**
DPC				*ex*		x	13 22 53.1		
DPC	**Dobruska-Polom**	**81.52**	**328**	*e*P		**P**	**13 22 46.6**	**+1.5**
DPC				*e*			13 22 53.1		
VYHS	**Vyhne**	**81.78**	**326**	*e*P		**P**	**13 22 48.1**	**+1.6**
VYHS				pmax	pmax				
	comp=Z,2.0nm,1.1s								
VYHS	**Vyhne**	**81.78**	**326**	*e*P		**P**	**13 22 48.1**	**+1.6**
BRG	**Berggiesshubel**	**82.11**	**330**	*e*P		**P**	**13 22 49.0**	**+0.9**
	comp=Z,3.8nm,0.9s								
BRG	**Berggiesshubel**	**82.11**	**330**	*e*P		**P**	**13 22 49.0**	**+0.9**
BRG				pmax	pmax				
	comp=Z,4.0nm,0.9s								
CLL	**Collm**	**82.15**	**331**	⇓ *i*P		**P**	**13 22 49.0**	**+0.7**
	comp=Z,6.0nm,1.1s								
CLL				*e*pP		**sP**	**13 23 00.0**	**+1.4**
CLL				*e*sP		pP	13 23 06.0	+10	
CLL	**Collm**	**82.15**	**331**	⇓ *i*P		**P**	**13 22 49.0**	**+0.7**
CLL				*e**PP		**sP**	**13 23 00.0**	**+1.4**
CLL				pmax	pmax				
	comp=Z,6.0nm,1.1s								
KHC	**Kasperske Hory**	**83.60**	**329**	*e*P		**P**	**13 22 56.7**	**+0.7**
KHC				*e*pP		**pP**	**13 23 03.6**	**+0.1**
KHC				*ex*		x	13 23 08.1		
KHC	**Kasperske Hory**	**83.60**	**329**	*e*P		**P**	**13 22 56.7**	**+0.7**
KHC				*e*			13 23 08.1		
GERES	**GERESS Array B**	**83.77**	**329**	P		**P**	**13 22 57.4**	**+0.4**
	comp=Z,1.1nm,0.8s,baz=33,slow=8.0,SNR=4.4								
TXAR	**Lajitas Array**	**90.20**	**53**	P		**P**	**13 23 29.1**	**+0.5**
	comp=Z,0.3nm,0.6s,baz=305,slow=4.4,SNR=4.8								
LPAZ	**La Paz**	**146.62**	**62**	PKPbc		**PKPbc**	**13 30 10.1**	**-0.4**
	comp=Z,0.6nm,0.5s,baz=17,slow=11,SNR=3.4								

*JMA **30** 13:15:34.6±0.4, 36.˚16N×142.˚27E, h0km, M3.5*
*ISCJB **30** 13:15:36.5±0.9, 36.˚13N±0.˚05×142.˚40E±0.˚08, h23km, mb3.7/6, Error ellipse: s-maj=9.3km s-min=6.4km az=15.4*
*IDC **30** 13:15:36.2±1.8, 36.˚01N×142.˚22E, h0km, mb3.8/6, mb1 3.7/8, mb1mx3.5/52, mbtmp3.7/8, ML3.4/2, Error ellipse: s-maj=45.9km s-min=19.6km az=72.0*
ISC 30 13:15:38.5±1.2, 36.˚10N±0.˚05×142.˚37E±0.˚10, h23km, n25, σ1§26/23, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BSO1	**Boso 1**	**1.84**	**219**	P		**Pn**	**13 16 08.4**	**+0.2**
BSO1				S		**Sb**	**13 16 32.6**	**-0.8**
JFT	**Otama**	**2.16**	**312**	P		**Pn**	**13 16 11.7**	**-1.4**
JMM	**Marumori**	**2.17**	**325**	P		**Pn**	**13 16 11.2**	**-2.0**
JAG	**Ashikaga**	**2.38**	**279**	P		**Pn**	**13 16 14.8**	**-1.3**
JOD2	**Odawara 2**	**2.80**	**254**	P		**Pn**	**13 16 20.8**	**-1.1**
JOD2				*e*S		**Sn**	**13 16 54.9**	**0.0**
JRY	**Ryogami san**	**2.81**	**269**	P		**Pn**	**13 16 20.5**	**-1.6**
JYN	**Shimob**	**3.16**	**260**	P		**Pn**	**13 16 26.0**	**-1.0**
JYN				*e*S		**Sn**	**13 17 04.4**	**+0.3**
MJAR	**Matsushiro Arr**	**3.39**	**279**	Pn		**Pn**	**13 16 29.0**	**-1.0**
	2.3nm,0.3s,baz=87,slow=16,SNR=8.2							
MAT	**Matsushiro**	**3.39**	**279**	P		**Pn**	**13 16 29.7**	**-0.3**
MAT				*e*S		**Sn**	**13 17 11.1**	**+1.6**
MAT	**Matsushiro**	**3.39**	**279**	P		**Pn**	**13 16 29.5**	**-0.5**
JOM	**Ohasama**	**3.47**	**346**	S		**Sn**	**13 17 10.7**	**-0.9**
JHJ	**Hachijo jima 2**	**3.66**	**216**	Pn		**Pn**	**13 16 32.8**	**-0.9**
	13nm,0.3s,baz=238,slow=19,SNR=5.7							
JHJ				Sn		**Sn**	**13 17 13.2**	**-2.9**
	39nm,0.3s,baz=102,slow=23,SNR=9.4							
USRK	**Ussuriysk Ar.**	**11.33**	**319**	Pn		Pn	13 18 26.0	+7.1
	0.2nm,0.3s,baz=128,slow=13,SNR=2.6							
H11N2	**WAKE ISLAND Hy**	**27.01**	**121**	T		T	13 49 48.4	
	baz=318							
H11N1	**WAKE ISLAND Hy**	**27.02**	**121**	T		T	13 49 42.1	
	baz=318							
H11N3	**WAKE ISLAND Hy**	**27.03**	**121**	T		T	13 49 53.2	
	baz=318							
H11S1	**WAKE ISLAND Hy**	**27.71**	**123**	T		T	13 50 35.8	
	baz=305							
H11S3	**WAKE ISLAND Hy**	**27.71**	**123**	T		T	13 50 33.8	
	baz=305							
H11S2	**WAKE ISLAND Hy**	**27.73**	**123**	T		T	13 50 36.2	
	baz=305							
SONM	**Songino Array**	**28.95**	**305**	P		**P**	**13 21 37.3**	**+1.2**
	0.8nm,0.6s,baz=99,slow=8.9,SNR=4.2							
ZALV	**Zalesovo Beam**	**43.11**	**313**	P		**P**	**13 23 38.1**	**+1.4**
	0.7nm,0.5s,baz=90,slow=5.8,SNR=2.9							
MKAR	**Makanchi Array**	**45.27**	**303**	P		**P**	**13 23 54.2**	**0.0**
	0.8nm,0.6s,baz=82,slow=11,SNR=5.4							
KURBB	**Kurchatov Arra**	**47.18**	**309**	P		**P**	**13 24 09.5**	**+0.3**
	2.4nm,0.2s,baz=83,slow=8.6,SNR=3.2							
WRA	**Warramunga Arr**	**56.25**	**189**	P		**P**	**13 25 17.4**	**+0.2**
	0.6nm,1.0s,baz=5.2,slow=7.0,SNR=5.1							
ASAR	**Alice Springs**	**59.98**	**189**	P		**P**	**13 25 43.9**	**+0.7**
	0.1nm,0.5s,baz=9.2,slow=7.5,SNR=2.9							

*NIED **30** 13:21:00, 34.˚90N×142.˚20E, h11km, Mw5.1 Best double couple: M0 4.81000×10¹⁶ NP1:φ339.00000°, δ55.00000°, λ37.00000°. NP2:φ226.00000°, δ61.00000°, λ139.00000°.*
*JMA **30** 13:21:27.5±0.5, 34.˚87N×142.˚23E, h55km, M5.2*
*IDC **30** 13:21:29.2±0.5, 34.˚89N×141.˚78E, h0km, mb4.6/36, mb1 4.7/40, mb1mx4.6/51, mbtmp4.6/40, ML3.7/4, MS4.6/29, Ms1 4.7/29, ms1mx4.5/44, Error ellipse: s-maj=13.8km s-min=12.1km az=102.0*
*MOS **30** 13:21:33.1±0.9, 35.˚15N×141.˚65E, h26km, mb5.2/57, MS5.1/20, Error ellipse: s-maj=7.5km s-min=4.2km az=115.0*
*ISCJB **30** 13:21:33.7±0.4, 34.˚95N±0.˚02×141.˚62E±0.˚02, h37km±3km, mb4.9/191, MS4.9/60, Error ellipse: s-maj=3.7km s-min=3.0km az=150.6*
*GCMT **30** 13:21:34.6±0.4, 34.˚78N×142.˚30E, h30km, MW5.0/76, Moment Tensor Solution. s47,c64; s76,c114; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr3.26±.18; Mθθ-0.65±.11; Mφφ-2.60±.11; Mrθ0.65±.15; Mφθ-0.99±.06; Mφr2.21±.14; Best double couple: M0 3.89300×10¹⁶ NP1:φ19.00000°, δ63.00000°, λ87.00000°. NP2: φ206.00000°, δ27.00000°, λ96.00000°. Principal axes: T 4.0200, Plg72.0000°, Azm282.0000°; N -0.2470, Plg3.0000°, Azm21.0000°; P -3.7650, Plg18.0000°, Azm111.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **30** 13:21:34.6±0.2, 34.˚83N×141.˚60E, h35km, mb4.9/94 Error ellipse: s-maj=4.8km s-min=3.2km az=160.0*
*BJI **30** 13:21:35.5, 35.˚15N×141.˚28E, h44km, mb4.9/66, mB5.3/53, Ms5.3/78, MS7 5.1/74*
ISC 30 13:21:33.5±0.5, 34.˚90N±0.˚03×141.˚62E±0.˚03, h26km±2km, h25km:pP-P, n492, σ1§71/566, mb4.9/201, MS5.1/60, 57C-14D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BSO1	**Boso 1**	**0.58**	**245**	⇑P		**Pn**	**13 21 46.3**	**+0.7**
BSO3	**Boso 3**	**0.92**	**264**	P		**Pb**	**13 21 51.9**	**+1.3**
BSO3				*e*S		**Sn**	**13 22 10.1**	**+7.4**
CHOJ	**Chosi**	**1.02**	**322**	P		**Pn**	**13 21 51.4**	**-0.6**
BSO4	**Boso 4**	**1.06**	**275**	⇑P		**Pb**	**13 21 54.1**	**+1.1**
KTR	**Katsuura**	**1.10**	**283**	P		**Pb**	**13 21 54.1**	**+0.3**
JCN	**Nagara**	**1.27**	**294**	⇑P		**Pb**	**13 21 56.7**	**-0.1**
JIM2	**Oshima 3**	**1.81**	**265**	⇑P		**Pn**	**13 22 03.4**	**+0.4**
JOD2	**Odawara 2**	**2.11**	**281**	P		**Pn**	**13 22 07.5**	**+0.4**
JOD2				*e*S		**Sb**	**13 22 36.0**	**-0.8**
JKO	**Kozu shima**	**2.17**	**252**	P		**Pn**	**13 22 09.1**	**+1.2**
JIZS	**Izushimoda**	**2.27**	**266**	⇑P		**Pn**	**13 22 09.7**	**+0.5**
JHJ2	**Mitsune**	**2.33**	**221**	P		**Pn**	**13 22 10.0**	**-0.1**
JHJ2				*e*S		**Sn**	**13 22 39.4**	**+1.5**
JHJ2	**Mitsune**	**2.33**	**221**	*e*Pn		**Pn**	**13 22 10.3**	**+0.2**
JHJ2				*e*Sn		**Sn**	**13 22 36.3**	**-1.6**
JAG	**Ashikaga**	**2.33**	**311**	⇑P		**Pn**	**13 22 10.6**	**+0.5**
JAG				*e*S		**Sb**	**13 22 40.7**	**-2.4**
JHJ	**Hachijo jima 2**	**2.34**	**221**	Pn		**Pn**	**13 22 10.1**	**-0.2**
	12nm,0.3s,baz=67,slow=5.6,SNR=14							
JHJ				Sn		**Sn**	**13 22 40.1**	**+1.9**
	279nm,0.3s,baz=76,slow=22,SNR=13							
JHJ				LR		LR	13 23 06.8	
	comp=Z,6μm,19.5s,baz=252,slow=40							
JRY	**Ryogami san**	**2.48**	**297**	⇑P		**Pn**	**13 22 13.2**	**+0.9**
JSB	**Shiboa**	**2.48**	**327**	P		**Pn**	**13 22 11.9**	**-0.3**
JFK	**Kawauchi**	**2.54**	**346**	P		**Pn**	**13 22 10.2**	**-2.8**
JFK				*e*S		**Sn**	**13 22 39.5**	**-3.5**
JYN	**Shimob**	**2.59**	**284**	⇑P		**Pn**	**13 22 14.6**	**+0.9**
JKT	**Katashina**	**2.68**	**315**	P		**Pn**	**13 22 15.5**	**+0.5**
JFT	**Otama**	**2.81**	**339**	P		**Pn**	**13 22 15.6**	**-1.1**
JFT				*e*S		**Sn**	**13 22 48.9**	**-0.9**
MJAR	**Matsushiro Arr**	**3.22**	**302**	Pn		**Pn**	**13 22 23.2**	**+0.8**
	14nm,0.3s,baz=104,slow=12,SNR=186							
MJAR				Sn		**Sn**	**13 23 01.3**	**+1.3**
	14nm,0.3s,baz=130,slow=11,SNR=7.2							
MAJO	**Matsushiro**	**3.23**	**302**	*c i*P		**Pn**	**13 22 23.6**	**+1.2**
MAJO	**Matsushiro**	**3.23**	**302**	*e*Pn		**Pn**	**13 22 23.7**	**+1.3**
MAJO				*e*Sn		**Sn**	**13 23 00.6**	**+0.6**
MAT	**Matsushiro**	**3.23**	**302**	P		**Pn**	**13 22 23.4**	**+1.0**
MAT				S		**Sb**	**13 23 05.3**	**-3.6**
MAT	**Matsushiro**	**3.23**	**302**	P		**Pn**	**13 22 23.6**	**+1.2**
MJB9	**Matsu-Tunnel**	**3.23**	**302**	*e*Pn		**Pn**	**13 22 23.6**	**+1.1**
JNS	**Sasagawa**	**3.46**	**328**	P		**Pn**	**13 22 26.7**	**+1.1**
JGN	**Niukaw**	**3.75**	**292**	⇑P		**Pn**	**13 22 31.6**	**+1.9**
JGN				S		**Sb**	**13 23 22.0**	**-2.0**
INU	**Inuyama**	**3.80**	**278**	*e*Pn		**Pn**	**13 22 32.2**	**+1.9**
JKN2	**Miekihoku**	**4.46**	**263**	P		**Pn**	**13 22 42.0**	**+2.6**
JOM	**Ohasama**	**4.57**	**357**	P		**Pn**	**13 22 38.6**	**-2.3**
JFM	**Mihama**	**4.66**	**279**	S		**Sn**	**13 23 39.5**	**+4.2**
JNU	**Nakatsue**	**9.09**	**262**	Pn		**Pn**	**13 23 45.5**	**+2.5**
	1.7nm,0.3s,baz=72,slow=8.0,SNR=34							
JNU	**Nakatsue**	**9.09**	**262**	P		**Pn**	**13 23 46.0**	**+2.9**
JNU	**Nakatsue**	**9.09**	**262**	Pn		**Pn**	**13 23 43.7**	**+0.6**
ASAJ	**Asahikawa**	**9.24**	**4**	Pn		**Pn**	**13 23 40.9**	**-4.0**
ASAJ				*e*Sn		**Sn**	**13 25 28.9**	**+1.0**
JIU2	**Izumi 2**	**9.30**	**258**	P		**Pn**	**13 23 49.4**	**+3.5**
VLA	**Vladivostok**	**11.16**	**320**	*c i*P		**Pn**	**13 24 11.8**	**+0.5**
MSHR	**Mys Shultsa**	**11.20**	**316**	*c i*P		**Pn**	**13 24 12.4**	**+0.6**
KSRS	**Korea Array**	**11.36**	**287**	Pn		**Pn**	**13 24 18.7**	**+4.7**
	0.2nm,0.3s,baz=98,slow=12,SNR=21							
KSRS				LR		LR	13 29 12.7	
	comp=Z,5μm,18.2s,baz=85,slow=40							
KSRS	**Korea Array**	**11.36**	**287**	P		**Pn**	**13 24 18.7**	**+4.7**
KSRS				MLR		MLR		
	comp=Z,5μm,18.2s							
KUR	**Kuril'sk**	**11.37**	**23**	*e*P		**Pn**	**13 24 14.6**	**+0.5**
KUR				pmax		pmax		
	comp=Z,14nm,1.0s							
KS01	**Wonju Array Si**	**11.39**	**287**	*e*Pn		**Pn**	**13 24 14.7**	**+0.3**
KS15	**Wonju Array Si**	**11.39**	**287**	*e*Pn		**Pn**	**13 24 17.3**	**+2.9**
KSAR	**Wonju Array Be**	**11.39**	**287**	P		**Pn**	**13 24 18.7**	**+4.3**
KSAR	**Wonju Array Be**	**11.39**	**287**	Pn		**Pn**	**13 24 18.7**	**+4.3**
USRK	**Ussuriysk Ar.**	**11.89**	**324**	Pn		**Pn**	**13 24 21.4**	**+0.2**
	comp=Z,0.6nm,0.3s,baz=137,slow=12,SNR=39							
USRK				LR		LR	13 29 22.2	
	comp=Z,5μm,18.5s,baz=129,slow=40							
YSS	**Yuzh-Sakhalins**	**12.07**	**4**	⇑*e*P		**Pn**	**13 24 19.3**	**-4.4**
YSS				*e*S		Sn	13 26 26.5	-11
YSS				pmax		pmax		
	comp=Z,20nm,1.1s							
YSS				pmax		pmax		
	comp=N,60nm,1.2s							
YSS				smax		smax		
	comp=N,200μm,1.3s							
YSS				smax		smax		
	comp=E,170nm,1.4s							
YSS				smax		smax		
	comp=E,1μm,2.1s							
YSS				MLR		MLR		
	comp=Z,4μm,15.0s							
YSS				MLR		MLR		
	comp=N,6μm,16.0s							
YSS	**Yuzh-Sakhalins**	**12.07**	**4**	*e*Pn		**Pn**	**13 24 19.3**	**-4.4**
MDJ	**Mudanjiang**	**13.39**	**320**	P		**Pn**	**13 24 40.3**	**-1.5**
MDJ				S		**Sn**	**13 27 11.8**	**+2.0**
MDJ				pmax		pmax		
	comp=N,10.0nm,1.1s							
MDJ				pmax		pmax		
	comp=N,520nm,10.2s							
MDJ				LR		LR		
	comp=N,4μm,15.5s							
MDJ				LR		LR		
	comp=N,7μm,13.3s							
MDJ				LR		LR		
	comp=N,6μm,13.9s							
MDJ	**Mudanjiang**	**13.39**	**320**	*e*Pn		**Pn**	**13 24 40.8**	**-0.9**
	comp=N,55nm,1.2s							
JOW	**Kunigami**	**13.99**	**239**	Pn		**Pn**	**13 24 53.4**	**+3.4**
	comp=N,0.2nm,0.3s,baz=16,slow=13,SNR=4.1							
JOW	**Kunigami**	**13.99**	**239**	*e*Pn		**Pn**	**13 24 49.8**	**-0.3**
	comp=N,21nm,1.6s							
UGL	**Uglegorsk**	**14.17**	**1**	*e*P		**Pn**	**13 24 51.0**	**-1.3**
UGL				*e*S		**Sn**	**13 27 30.0**	**+1.4**
UGL				pmax		pmax		
	comp=Z,90nm,1.0s							
UGL				smax		smax		
	comp=N,1μm,12.0s							
UGL				smax		smax		
	comp=E,1μm,12.0s							
UGL				MLR		MLR		
	comp=N,9μm,14.0s							
UGL				MLR		MLR		
	comp=E,5μm,14.0s							
UGL				MLR		MLR		
	comp=Z,6μm,14.0s							
HABR	**Khabarovsk**	**14.41**	**342**	*ce*P		**Pn**	**13 24 54.5**	**-1.2**
HABR				*e*S		**Sn**	**13 27 35.1**	**+0.6**
HABR				pmax		pmax		
	comp=Z,15nm,1.0s							
HABR				pmax		pmax		
	comp=E,32nm,1.3s							
HABR				MLR		MLR		
	comp=Z,2μm,12.0s							
CN2	**Changchun**	**15.33**	**310**	*e*P		**Pn**	**13 25 06.5**	**-1.5**
CN2				*e*S		**Sn**	**13 27 58.0**	**+1.2**
CN2				pmax		pmax		
	comp=Z,10.0nm,1.4s							
CN2				pmax		pmax		
	comp=Z,700nm,10.0s							
CN2				LR		LR		
	comp=Z,7μm,15.0s							
CN2				LR		LR		
	comp=Z,5μm,15.0s							
CN2				LR		LR		
	comp=Z,4μm,14.0s							
SNY	**Shenyang**	**15.74**	**301**	⇓P		**Pn**	**13 25 11.0**	**-2.3**
SNY				S		**Sn**	**13 28 04.8**	**-2.0**
SNY				pmax		pmax		
	comp=Z,19nm,1.5s							
SNY				pmax		pmax		
	comp=Z,590nm,3.6s							
SNY				LR		LR		
	comp=Z,4μm,13.9s							
SNY				LR		LR		
	comp=Z,4μm,16.3s							
SNY				LR		LR		
	comp=Z,7μm,14.9s							
KLR	**Kul'dur**	**16.07**	**336**	Pn		**Pn**	**13 25 14.2**	**-3.2**
	comp=Z,0.2nm,0.3s,baz=138,slow=11,SNR=11							
KLR				LR		LR	13 31 10.4	
	comp=Z,611nm,21.8s,baz=153,slow=36							
NKL	**Nikolayevsk**	**18.26**	**358**	*e*P		**Pn**	**13 25 44.0**	**-0.8**
NKL				*e*S		**Sn**	**13 29 10.0**	**+2.3**
NKL				pmax		pmax		
	comp=N,50nm,1.1s							
NKL				pmax		pmax		
	comp=Z,60nm,1.1s							
NKL				smax		smax		
	comp=E,1μm,17.0s							
NKL				MLR		MLR		
	comp=N,3μm,15.0s							
NKL				MLR		MLR		
	comp=E,2μm,15.0s							
NKL				MLR		MLR		
	comp=Z,5μm,15.0s							
SKR	**Severo-Kuril's**	**18.97**	**29**	*e*P		**Pn**	**13 25 53.7**	**+0.3**
NJ2	**Nanjing**	**19.20**	**268**	*e*P		**P**	**13 25 54.5**	**-0.8**
NJ2				pmax		pmax		
	comp=Z,14nm,0.5s							
TIA	**Tai'an**	**19.97**	**281**	*e*P		**P**	**13 26 00.5**	**-3.2**
TIA				S		**S**	**13 29 45.0**	**-2.0**
TIA				pmax		pmax		
	comp=Z,960nm,11.0s							
TIA				LR		LR		
	comp=Z,4μm,15.0s							
TIA				LR		LR		
	comp=Z,7μm,14.0s							
TIA				LR		LR		
	comp=Z,7μm,14.5s							
BJI	**Beijing**	**20.81**	**292**	P		**P**	**13 26 10.3**	**-2.5**
BJI				pP		**pP**	**13 26 20.5**	**+0.6**
BJI				S		**S**	**13 30 00.5**	**-3.1**
BJI				pmax		pmax		
	comp=Z,25nm,2.6s							
BJI				pmax		pmax		
	comp=Z,960nm,13.0s							
BJI				LR		LR		
	comp=Z,5μm,15.7s							
BJI				LR		LR		
	comp=Z,2μm,18.4s							
BJI				LR		LR		
	comp=Z,2μm,17.0s							
BJT	**Baijiatuau**	**20.81**	**292**	P		**P**	**13 26 10.2**	**-2.6**
BJT				pmax		pmax		
	comp=Z,225nm,1.9s							
BJT	**Baijiatuau**	**20.81**	**292**	P		**P**	**13 26 10.2**	**-2.6**
	comp=Z,225nm,1.9s							
GUMO	**Guam**	**21.42**	**171**	P		**P**	**13 26 17.1**	**-2.4**
	comp=Z,44nm,0.6s,baz=17,slow=20,SNR=2.6							
GUMO				LR		LR	13 36 26.1	
	comp=Z,640nm,18.7s,baz=8.0,slow=42							
PETK	**Petropavlovsk-**	**21.48**	**27**	P		**P**	**13 26 22.3**	**+2.4**
	comp=Z,2.0nm,0.8s,baz=270,slow=3.0,SNR=6.0							
PETK				LR		LR	13 37 41.8	
	comp=Z,380nm,18.2s,baz=206,slow=45							
HIA	**Hailar**	**21.57**	**318**	*c i*P		**P**	**13 26 21.3**	**+0.4**
HIA				pmax		pmax		
	comp=Z,14nm,1.0s							
PET	**Petropavlovsk**	**21.78**	**28**	*e*P		**P**	**13 26 25.7**	**+2.7**
PET				*e*S		**S**	**13 30 18.7**	**-3.8**
PET				pmax		pmax		
	comp=Z,25nm,1.3s							
PET				MLR		MLR		
	comp=Z,1μm,13.0s							
PET				MLR		MLR		
	comp=Z,1μm,14.0s							
QZH	**Quanzhou**	**22.25**	**250**	P		**P**	**13 26 32.0**	**+3.7**
QZH				S		**S**	**13 30 25.3**	**-6.5**
QZH				LR		LR		
	comp=Z,7μm,17.8s							
QZH				LR		LR		
	comp=Z,8μm,18.1s							
QZH				LR		LR		
	comp=Z,5μm,17.5s							
WHN	**Wuhan**	**23.32**	**267**	⇓ *i*P		**P**	**13 26 38.3**	**-1.2**
WHN				pP		**sP**	**13 26 48.5**	**-1.6**
WHN				S		**S**	**13 30 49.8**	**-0.8**
WHN				LR		LR		
	comp=Z,5μm,11.0s							
WHN				LR		LR		
	comp=Z,10μm,13.0s							
WHN				LR		LR		
	comp=Z,15μm,17.0s							
TIY	**Taiyuan**	**23.65**	**285**	*e*P		**P**	**13 26 44.3**	**+1.5**
TIY				LR		LR		
	comp=Z,2μm,14.0s							
TIY				LR		LR		
	comp=Z,4μm,14.3s							
TIY				LR		LR		
	comp=Z,6μm,16.3s							
HHC	**Hu-ho-hao-te**	**24.39**	**293**	*e*P		**P**	**13 26 49.3**	**-0.4**
HHC				sP		sP	13 27 02.0	+1.5
HHC				S		**S**	**13 31 04.0**	**-3.8**
HHC				pmax		pmax		
	comp=Z,46nm,1.2s							
HHC				LR		LR		
	comp=Z,2μm,13.3s							
HHC				LR		LR		
	comp=Z,2μm,12.4s							
HHC				LR		LR		
	comp=Z,3μm,14.1s							
CLNS	**Chul'man**	**24.71**	**338**	*e*P		**P**	**13 26 50.9**	**-1.4**
CLNS				*e**PP		**pP**	**13 27 00.1**	**+0.1**
CLNS				*e*			13 27 20.9	
CLNS				*e*			13 30 30.2	
CLNS				*e*S		**S**	**13 31 07.7**	**-4.8**
CLNS				*e*SS		**SnSn**	**13 32 09.6**	**+10**
CLNS				pmax		pmax		
	comp=Z,71nm,1.1s							
CLNS				pmax		pmax		
	comp=N,50nm,1.1s							
CLNS				pmax		pmax		
	comp=E,21nm,1.2s							
CLNS				pmax		pmax		
	comp=E,13nm,0.8s							
CLNS				pmax		pmax		
	comp=N,21nm,0.9s							
CLNS				pmax		pmax		
	comp=Z,12nm,0.7s							
CLNS				smax		smax		
	comp=E,571nm,11.5s							
CLNS				smax		smax		
	comp=N,1μm,12.4s							
CLNS				MLR		MLR		
	comp=E,2μm,14.0s							
CLNS				MLR		MLR		
	comp=Z,2μm,15.0s							
CLNS				MLR		MLR		
	comp=N,1μm,13.0s							
MA2	**Magadan**	**25.41**	**11**	P		**P**	**13 26 56.7**	**-1.8**
	comp=N,9.5nm,0.9s,baz=171,slow=19,SNR=4.0							
BTO	**Baotou**	**25.54**	**292**	*e*P		**P**	**13 26 58.8**	**-1.3**
CIT	**Chita**	**26.37**	**319**	*e*P		**P**	**13 27 07.7**	**+0.3**
CIT				*e*			13 27 18.9	
CIT				pmax		pmax		
	comp=Z,160nm,1.3s							
XAN	**Xi'an**	**26.91**	**278**	P		**P**	**13 27 10.5**	**-2.0**
XAN				pmax		pmax		
	comp=Z,33nm,1.3s							
XAN				LR		LR		
	comp=Z,3μm,14.9s							
XAN				LR		LR		
	comp=Z,3μm,14.0s							
XAN				LR		LR		
	comp=Z,7μm,14.4s							
H11N2	**WAKE ISLAND Hy**	**26.96**	**117**	T		T	13 55 21.6	
	baz=309,slow=74,SNR=8.5							
H11N1	**WAKE ISLAND Hy**	**26.97**	**118**	T		T

comp=N,864nm,5.3s
YAK MLR MLR
comp=Z,4µm,14.0s
YAK MLR MLR
comp=N,3µm,13.0s
YAK MLR MLR
comp=E,2µm,15.0s
YAK Yakutsk 28.19 348 *e*P **P 13 27 21.1 -2.4**
comp=E,40nm,0.9s
SEY Seymchan 28.85 10 P **P 13 27 29.2 -0.3**
comp=E,2.9nm,0.9s,baz=182,slow=7.5,SNR=8.8
SEY Seymchan 28.85 10 *i* P **P 13 27 29.6 +0.1**
SONA1 Songino Array 29.16 307 *e*P **P 13 27 33.0 +0.4**
SONM Songino Array 29.16 307 P **P 13 27 34.3 +1.7**
comp=E,38nm,1.1s,baz=110,slow=8.2,SNR=120
SONM ScP **ScP 13 34 20.9 +1.5**
comp=E,2.8nm,1.2s,baz=94,slow=2.0,SNR=5.7
SONM LR LR 13 39 23.6
comp=E,1µm,20.0s,baz=98,slow=37
LZH Lanzhou 30.66 283 *e*P **P 13 27 46.5 +0.5**
LZH pP pP 13 27 55.0 +1.3
LZH sP sP 13 27 59.0 +2.1
LZH PP **PnPn 13 28 47.0 +1.2**
LZH *e*S **S 13 32 45.0 -2.0**
LZH sS sS 13 32 59.5 -0.2
LZH pmax pmax
comp=E,59nm,1.0s
LZH pmax pmax
comp=E,270nm,4.1s
LZH LR LR
comp=E,5µm,15.5s
LZH LR LR
comp=E,4µm,14.3s
LZH LR LR
comp=E,5µm,15.6s
GYA Guiyang 31.10 264 P **P 13 27 50.5 +0.6**
GYA pP sP 13 28 01.3 +0.5
GYA PP **PnPn 13 28 53.0 +1.4**
GYA PcP **PcP 13 30 46.5 +1.5**
GYA ScP **ScP 13 34 24.0 -2.1**
GYA SS **SnSn 13 34 38.3 +2.2**
GYA pmax pmax
comp=E,20nm,0.8s
GYA pmax pmax
comp=E,120nm,5.2s
GYA LR LR
comp=E,560nm,17.2s
GYA LR LR
comp=E,510nm,16.9s
GYA LR LR
comp=E,540nm,17.0s
IRK Irkutsk 31.69 315 *e*P **P 13 27 54.7 0.0**
IRK *e* 13 28 07.0
IRK pmax pmax
comp=Z,65nm,3.0s
ZAK Zakamensk 31.76 311 *e*P **P 13 27 55.5 +0.1**
ZAK pmax pmax
comp=Z,30nm,1.4s
TLY Talaya 31.89 314 P **P 13 27 57.9 +1.4**
comp=Z,18nm,1.0s,baz=123,slow=7.8,SNR=28
TLY Talaya 31.89 314*c i*P **P 13 27 57.2 +0.7**
TLY *e*S **S 13 33 03.5 -2.2**
TLY pmax pmax
comp=Z,60nm,1.5s
TLY MLR MLR
comp=Z,2µm,14.0s
TLY Talaya 31.89 314 P **P 13 27 57.9 +1.4**
comp=Z,5.2nm,1.4s
CD2 Chengdu 31.91 274 P **P 13 27 55.8 -1.1**
CD2 pP sP 13 28 06.5 -1.3
CD2 sP pP 13 28 11.5 +6.9
CD2 S **S 13 33 04.0 -2.5**
CD2 sS sS 13 33 22.8 +3.6
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,260nm,6.1s
CD2 LR LR
comp=Z,6µm,16.3s
CD2 LR LR
comp=Z,8µm,17.3s
CD2 LR LR
comp=Z,8µm,15.7s
QIZ Qiongzhong 32.26 249 P **P 13 27 56.3 -3.7**
QIZ S **S 13 33 12.5 +0.5**
QIZ LR LR
comp=Z,2µm,17.6s
QIZ LR LR
comp=Z,2µm,18.8s
QIZ LR LR
comp=Z,2µm,18.8s
GTA Gaotai 33.41 290 ⇑P **P 13 28 10.3 +0.3**
GTA pP sP 13 28 21.0 +0.1
GTA sP pP 13 28 25.5 +7.8
GTA PP **PP 13 29 24.5 -1.2**
GTA S **S 13 33 28.0 -1.8**
GTA sS sS 13 33 44.8 +2.3
GTA ScP **ScP 13 34 34.3 +0.5**
GTA pmax pmax
comp=Z,29nm,1.4s
GTA pmax pmax
comp=Z,340nm,5.6s
GTA LR LR
comp=Z,1µm,14.7s
GTA LR LR
comp=Z,3µm,13.7s
GTA LR LR
comp=Z,4µm,14.7s
MOY Mondy 33.48 313 *e*P **P 13 28 11.0 +0.5**
MOY pmax pmax
comp=Z,55nm,3.1s
KMI Kunming 34.87 264 P **P 13 28 23.3 +0.4**
KMI pP sP 13 28 34.0 +0.2
KMI PP **PP 13 29 42.0 -0.1**
KMI S **S 13 33 49.3 -3.4**
KMI sS sS 13 34 08.8 +3.3
KMI SS **SnSn 13 36 03.5 -4.3**
KMI pmax pmax
comp=Z,17nm,1.2s
KMI pmax pmax
comp=Z,120nm,6.3s
KMI LR LR
comp=Z,4µm,18.5s
KMI LR LR
comp=Z,2µm,19.1s
KMI LR LR
comp=Z,3µm,14.1s
KDM Kudat 36.00 225 ⇑P **P 13 28 30.9 -1.6**
BILL Bilibino 36.03 15⇑*e*P **P 13 28 31.9 -0.2**
BILL *e* 13 29 54.9
BILL *e*PPP PPP 13 30 07.4
BILL *i* S **S 13 34 08.8 -0.4**
BILL pmax pmax
comp=Z,14nm,1.2s
BILL MLR MLR
comp=Z,1µm,16.0s
MYLDM Lahad Datu 36.49 221 ⇑P **P 13 28 36.4 -0.2**
SDKM Sandakan 36.83 223 ⇑P **P 13 28 39.2 -0.4**
KRAR Krasnoyarsk 39.14 318 *e*P **P 13 28 59.2 +0.6**
UTTA Uttaradit 40.26 256 P **P 13 29 08.5 +0.1**
comp=Z,13nm,1.0s,comp=Z,117nm
LAMP Lampang 40.58 257 P **P 13 29 11.5 +0.5**
comp=Z,10.0nm,1.1s
PBKT Sadao Pong 40.58 254 P **P 13 29 11.0 0.0**
comp=Z,68nm,1.1s,comp=Z,2µm
CMMT Chiang Mai 40.98 258 P **P 13 29 14.0 -0.3**
comp=Z,20nm,1.4s
CHTO Chiang Mai 40.98 258 P **P 13 29 14.1 -0.2**
comp=Z,89nm,1.4s
CHTO Chiang Mai 40.98 258 *e*P **P 13 29 11.2 -3.1**
CHTO pmax pmax
comp=Z,34nm,1.3s
CHTO Chiang Mai 40.98 258 *e*P **P 13 29 11.2 -3.1**
comp=Z,34nm,1.3s
SUKH Sukhothai 41.14 256 P **P 13 29 16.0 +0.4**
comp=Z,10nm,1.0s,comp=Z,96nm
CMAR Chiang Mai Arr 41.17 258 P **P 13 29 15.6 -0.3**
comp=Z,6.0nm,0.8s,baz=48,slow=7.4,SNR=15
CMAR LR LR 13 47 54.5
comp=Z,920nm,18.5s,baz=70,slow=38
CM01 Chiang Mai Arr 41.17 258 *e*P **P 13 29 14.9 -1.0**
SRAK Srakaew 41.24 250 P **P 13 29 13.7 -2.8**
comp=Z,60nm,1.0s
WMQ Urumqi 41.99 299 P **P 13 29 24.5 +2.1**
WMQ pP sP 13 29 33.0 -0.4
WMQ sP pP 13 29 39.0 +8.7
WMQ PcP **PcP 13 31 12.5 -4.8**
WMQ pmax pmax
comp=Z,70nm,1.7s
WMQ pmax pmax
comp=Z,370nm,4.8s
WMQ LR LR
comp=Z,3µm,20.1s
WMQ LR LR
comp=Z,1µm,12.9s
WMQ LR LR
comp=Z,1µm,19.8s
SBUM Sibu 42.30 227 *e*P **P 13 29 23.6 -1.5**
comp=Z,26nm,1.1s
ZAA0 Zalesovo Array 43.50 314 *e*P **P 13 29 34.2 -0.2**
ZALV Zalesovo Beam 43.50 314 P **P 13 29 34.8 +0.4**
comp=Z,7.7nm,0.7s,baz=94,slow=6.5,SNR=38
ZALV PcP **PcP 13 31 22.2 +0.2**
comp=Z,3.8nm,0.7s,baz=116,slow=2.8,SNR=3.7
ZALV ScP **ScP 13 35 13.8 +2.0**
comp=Z,1.3nm,0.7s,baz=94,slow=4.5,SNR=5.5
ZALV LR LR 13 47 04.3
comp=Z,468nm,19.3s,baz=70,slow=35
PHET Kaeng Krachan 43.77 251 P **P 13 29 38.6 +1.5**
comp=Z,15nm,1.1s
KSM Kuching 44.23 228 *e*P **P 13 29 37.7 -3.0**
comp=Z,41nm,1.3s
NVS Novosibirsk 44.45 315⇑*i*P **P 13 29 42.5 +0.5**
NVS *e* 13 39 38.1
NVS pmax pmax
comp=N,8.0nm,1.6s
NVS pmax pmax
comp=E,36nm,1.6s
NVS pmax pmax
comp=Z,50nm,1.6s
NRIK Noril'sk 45.28 336 P **P 13 29 48.0 -0.4**
comp=Z,5.8nm,0.7s,baz=116,slow=7.2,SNR=9.4
NRIK LR LR 13 50 48.5
comp=Z,1µm,18.1s,baz=104,slow=39
NRIK Noril'sk 45.28 336 P **P 13 29 48.0 -0.4**
NRIK pmax pmax
comp=Z,6.0nm,0.7s
NRIK MLR MLR
comp=Z,1µm,18.1s
MK01 Makanchi Array 45.42 304 *e*P **P 13 29 49.3 -0.6**
MK31 Makanchi Array 45.42 304*ce*P **P 13 29 50.1 +0.2**
MK31 pmax pmax
comp=Z,14nm,0.9s
MK31 Makanchi Array 45.42 304 *e*P **P 13 29 49.9 -0.1**
MKAR Makanchi Array 45.42 304 P **P 13 29 50.9 +0.9**
comp=Z,7.3nm,0.7s,baz=90,slow=9.7,SNR=49
MKAR ScP **ScP 13 35 21.5 +1.7**
comp=Z,0.9nm,1.0s,baz=65,slow=3.8,SNR=4.3
MKAR LR LR 13 48 49.4
comp=Z,412nm,19.6s,baz=91,slow=36
MKAR Makanchi Array 45.42 304*ce*P **P 13 29 50.4 +0.5**
MKAR pmax pmax
comp=Z,7.0nm,0.7s
MKAR Makanchi Array 45.42 304 *e*P **P 13 29 49.8 -0.1**
MKAR ScP **ScP 13 35 21.5 +1.7**
MAKZ Makanchi 45.63 304 *e*P **P 13 29 50.3 -1.3**
MAKZ pmax pmax
comp=Z,23nm,1.3s
MAKZ Makanchi 45.63 304 *e*P **P 13 29 50.3 -1.3**
comp=Z,23nm,1.3s
MMRI Maumere 47.02 207 *e*P **P 13 30 01.5 -1.2**
comp=Z,86nm,1.0s
KRAB Krabi 47.04 246 P **P 13 30 03.1 +0.1**
comp=Z,127nm,1.6s,comp=Z,10µm
TT01 Tatalina 47.08 34 *e*P **P 13 30 06.2 +3.5**
SVW2 Sparrevohn 47.13 36 *e*P **P 13 30 03.4 +0.3**
comp=Z,19nm,1.0s
SOEI Soe 47.35 204 *e*P **P 13 30 04.2 -1.2**
comp=Z,97nm,1.0s
KURK Kurchatov 47.40 310*c i*P **P 13 30 05.6 +0.2**
KURK pmax pmax
comp=Z,161nm,1.0s
KURK Kurchatov 47.40 310 *e*P **P 13 30 05.4 +0.1**
comp=Z,38nm,0.9s
KURK ScP **ScP 13 35 29.3 +1.4**
JIRN Jiri 47.42 277 *e*P **P 13 30 06.6 +0.3**
comp=Z,739nm,0.9s
KURBB Kurchatov Arra 47.47 310 P **P 13 30 05.8 -0.1**
comp=Z,27nm,1.0s,baz=84,slow=8.2,SNR=85
KURBB ScP **ScP 13 35 29.3 +1.1**
comp=Z,0.6nm,0.8s,baz=95,slow=3.7,SNR=5.6
GUN Gumba 47.57 278 *e*P **P 13 30 08.0 +0.6**
comp=Z,32nm,0.6s
SHLS Shalkode 47.70 299 *e*P **P 13 30 05.9 -2.2**
comp=Z,169nm,1.4s
SHLS *e*S **S 13 37 00.0 -2.7**
SHLS *i* LR LR 13 50 05.0
comp=Z,241nm,13.9s
PDGK Podgornoye 47.95 300 *i* P **P 13 30 10.2 +0.5**
PDGK pmax pmax
comp=Z,72nm,1.0s
PKIN Phulchoki 48.09 278 *e*P **P 13 30 12.2 +0.8**
comp=Z,36nm,0.7s
KKN Kakani 48.11 278 *e*P **P 13 30 11.7 +0.3**
comp=Z,74nm,1.0s
IPM Ipoh 48.21 240 *e*P **P 13 30 09.9 -2.1**
comp=Z,21nm,0.8s
DMN Daman 48.32 278 *e*P **P 13 30 13.5 +0.4**
comp=Z,66nm,1.2s
RSO Redoubt South 48.48 37 *e*P **P 13 30 13.7 -0.2**
MTN Manton Dam 48.51 194 *e*P **P 13 30 13.6 -0.7**
comp=Z,76nm,1.6s
GKN Gorkha 48.55 278 *e*P **P 13 30 15.1 +0.3**
comp=Z,377nm,1.4s
KDAK Kodiak Island 48.59 41 *i* P **P 13 30 14.1 -0.3**
PPLA Purkeypile 48.83 34 *e*P P 13 30 21.9 +5.4
comp=Z,75nm,1.7s
SPU Mount Spurr 48.84 36 *e*P **P 13 30 15.4 -1.0**
BPAW Bear Paw Mtn. 49.42 32 *e*P **P 13 30 22.0 +1.2**
comp=Z,17nm,1.5s
SUA Susitna One 49.48 36 *e*P **P 13 30 20.4 -1.0**
comp=Z,16nm,1.0s
KOLN Koldanda 49.48 279 *e*P **P 13 30 22.6 +0.6**
comp=Z,160nm,1.4s
MDOK Medeo 49.73 300 *e*P **P 13 30 22.6 -1.0**
comp=Z,204nm,1.2s
MDOK *e*S **S 13 37 29.4 -1.8**
MDOK *i* LR LR 13 51 38.4
comp=Z,798nm,15.1s
AAA Alma-Ata 49.77 300 *e*P **P 13 30 25.8 +2.0**
AAA *i* S **S 13 37 35.1 +3.5**
AAA pmax pmax
comp=Z,300nm,2.7s
AAA smax smax
comp=E,800nm,15.7s
AAA MLR MLR
comp=Z,2µm,14.0s
PYUN Piuthan 49.85 279 *e*P **P 13 30 25.4 +0.6**
comp=Z,446nm,1.1s
COLD Coldfoot 49.94 28 *e*P **P 13 30 25.3 +0.7**
comp=Z,9.2nm,1.3s
KUU Kurty 50.06 301 *e*P **P 13 30 23.4 -2.6**
comp=Z,174nm,0.8s
KUU *e*S **S 13 37 32.4 -3.2**
KUU *i* LR LR 13 51 50.6
comp=Z,692nm,14.8s
SEW Seward 50.14 38 *e*P **P 13 30 26.1 -0.1**
comp=Z,30nm,1.2s
PMR Palmer 50.25 36 *e*P **P 13 30 26.1 -0.9**
PMR pmax pmax
comp=Z,20nm,1.1s
PMR Palmer 50.25 36 *e*P **P 13 30 26.1 -0.9**
comp=Z,20nm,1.1s
MCK McKinley 50.32 33 *e*P **P 13 30 28.1 +0.5**
MCK pmax pmax
comp=Z,40nm,1.7s
MCK McKinley 50.32 33 *e*P **P 13 30 28.1 +0.5**
comp=Z,40nm,1.7s
RND Reindeer 50.36 33 *e*P **P 13 30 27.7 -0.3**
RND pmax pmax
comp=Z,15nm,1.0s
RND Reindeer 50.36 33 *e*P **P 13 30 27.7 -0.3**
comp=Z,15nm,1.0s
SML Sawmill 50.62 35 *e*P **P 13 30 30.4 +0.4**
SML pmax pmax
comp=Z,20nm,0.9s
SML Sawmill 50.62 35 *e*P **P 13 30 30.4 +0.4**
comp=Z,20nm,0.9s
MDM Murphy Dome 50.64 31 *e*P **P 13 30 30.7 +0.7**
comp=Z,24nm,1.0s
WRH Wood River Hil 50.70 32 *e*P **P 13 30 30.8 +0.4**
comp=Z,15nm,1.0s
BMNS Besmoynak 50.72 300 *e*P **P 13 30 28.6 -2.5**
comp=Z,705nm,1.1s
BMNS *e*S **S 13 37 41.5 -3.5**
BMNS *i* LR LR 13 52 04.2
comp=Z,372nm,13.8s
COLA College 50.80 31 *e*P **P 13 30 31.6 +0.4**
COLA pmax pmax
comp=Z,9.0nm,0.8s
COLA College 50.80 31 *e*P **P 13 30 31.6 +0.4**
comp=Z,8.9nm,0.8s
TKM2 Tokmak 2 50.82 300 *i* P **P 13 30 32.4 +0.5**
TKM2 pmax pmax
comp=Z,93nm,1.4s
CCB Clear Creek Bu 50.82 32 *e*P **P 13 30 31.0 -0.3**
comp=Z,6.8nm,0.9s
SCM Sheep Creek Mo 51.10 35 *e*P **P 13 30 32.4 -1.2**
SCM pmax pmax
comp=Z,27nm,1.1s
SCM Sheep Creek Mo 51.10 35 *e*P **P 13 30 32.4 -1.2**
comp=Z,27nm,1.1s
HDA Harding Lake 51.19 32 *e*P **P 13 30 33.5 -0.6**
comp=Z,10nm,0.9s
ILAR Eielson Array 51.21 31 P **P 13 30 33.8 -0.5**
comp=Z,14nm,1.2s,baz=267,slow=6.4,SNR=49
ILB Eielson Array 51.21 31 *e*P **P 13 30 33.6 -0.7**
IL1 Eielson Array 51.21 31 *e*P **P 13 30 33.2 -1.1**
BRZS Berezniki 51.27 309 *i* P **P 13 30 33.0 -2.0**
comp=Z,64nm,1.7s
BRZS *i* S **S 13 37 49.5 -2.6**
BRZS *i* LR LR 13 52 30.6
comp=Z,222nm,14.6s
BTLS Baital 51.39 303 *e*P **P 13 30 33.6 -2.4**
comp=Z,109nm,1.7s
BTLS *e*S **S 13 37 50.8 -3.1**
BTLS *i* LR LR 13 52 27.8
comp=Z,347nm,13.4s
KSH Kashi 51.45 296 *e*P P 13 30 41.5 +4.8
KSH *e*pP sP 13 30 54.5 +6.7
KSH *e*sP pP 13 30 59.5 +15
KSH PcS **PcS 13 35 50.5 +1.7**
KSH S **S 13 38 00.0 +4.8**
KSH pmax pmax
comp=Z,20nm,1.1s
KSH LR LR
comp=Z,2µm,15.4s
KSH LR LR
comp=Z,1µm,15.1s
KSH LR LR
comp=Z,2µm,16.0s
FRU Bishkek 51.54 300 *e*P **P 13 30 37.0 -0.1**
FRU *e* 13 30 44.0
FRU pmax pmax
comp=Z,115nm,1.8s
FRU pmax pmax
comp=E,2µm,16.0s
FID Port Fidalgo 51.57 37 *e*P **P 13 30 37.4 +0.3**
comp=E,24nm,1.2s
AAK Ala-Archa 51.67 300 P **P 13 30 39.1 +0.8**
comp=E,7.9nm,0.9s,baz=91,slow=9.3,SNR=20
AAK Ala-Archa 51.67 300*c i*P **P 13 30 38.3 0.0**
AAK pmax pmax
comp=Z,26nm,1.1s
AAK Ala-Archa 51.67 300 *e*P **P 13 30 38.6 +0.3**
comp=Z,84nm,2.0s
KLU Klutina 51.79 36 *e*P **P 13 30 39.1 +0.4**
comp=Z,20nm,1.1s
DIV Divide 51.89 36 *e*P **P 13 30 40.1 +0.6**
comp=Z,27nm,1.1s
PAX Paxson 51.90 34 *e*P **P 13 30 38.5 -1.1**
PAX pmax pmax
comp=Z,18nm,1.3s
PAX Paxson 51.90 34 *e*P **P 13 30 38.5 -1.1**
comp=Z,18nm,1.3s
BVA0 Borovoye Array 52.15 314 *i* P **P 13 30 41.1 -0.4**
BVA0 pmax pmax
comp=Z,37nm,1.2s
BVAR Borovoye Array 52.15 314 P **P 13 30 41.7 +0.2**
comp=Z,18nm,0.9s,baz=79,slow=7.7,SNR=81
BRVK Borovoye 52.20 314 *e*P **P 13 30 42.0 +0.1**
BRVK pmax pmax
comp=Z,32nm,0.9s
BRVK Borovoye 52.20 314 *e*P **P 13 30 42.0 +0.1**
comp=Z,32nm,0.9s
BMRM Bremner River 52.47 36 *e*P **P 13 30 44.2 +0.5**
comp=Z,32nm,1.1s
MENT Mentasta 52.70 34 *e*P **P 13 30 45.5 0.0**
comp=Z,13nm,0.9s
GSI Gunungsitoli 52.88 241 *e*P **P 13 30 46.5 -0.8**
comp=Z,256nm,1.2s
MNAS Manas 53.13 300 *i* P **P 13 30 48.7 -0.4**
MNAS pmax pmax
comp=Z,48nm,1.1s
CRQM Cirque 53.20 36 *e*P **P 13 30 49.8 +0.5**
comp=Z,35nm,1.2s
BALM Baldy 53.55 36 *e*P **P 13 30 52.1 +0.3**
BALM pmax pmax
comp=Z,14nm,1.2s
BALM Baldy 53.55 36 *e*P **P 13 30 52.1 +0.3**
comp=Z,14nm,1.2s
EGAK Eagle 53.66 31 *e*P **P 13 30 51.6 -0.8**
comp=Z,5.5nm,0.8s
NDI New Delhi 54.27 283 *e*P P 13 30 50.0 -7.4
DAWY Dawson 54.51 32 *e*P **P 13 30 57.6 -1.1**
comp=Z,11nm,1.2s
FITZ Fitzroy Crossi 54.85 199 LR LR 13 53 07.3
comp=Z,163nm,20.7s,baz=22,slow=35
FITZ Fitzroy Crossi 54.85 199 *e*P **P 13 31 02.6 +1.1**
comp=Z,20nm,1.1s
WRAB Tennant Creek 54.97 188 *i* P **P 13 31 01.2 -1.2**
WRAB pmax pmax
comp=Z,80nm,1.2s
WRAB Tennant Creek 54.97 188 *e*P **P 13 30 59.9 -2.5**
comp=Z,41nm,1.1s
WB2 Warramunga Arr 54.98 188 *e*P **P 13 31 01.5 -0.9**
WRA Warramunga Arr 54.98 188 P **P 13 31 02.5 0.0**
comp=Z,8.9nm,0.9s,baz=6.2,slow=7.6,SNR=50
HYT Haines Junctio 55.92 36 *e*P **P 13 31 10.4 +1.4**
comp=Z,49nm,1.7s
INK Inuvik 56.21 26 P **P 13 31 11.3 +0.6**
comp=Z,2.9nm,1.0s,baz=181,slow=6.7,SNR=3.8
INK Inuvik 56.21 26 *e*P **P 13 31 14.6 +3.8**
comp=Z,21nm,1.3s
SVE Sverdlovsk 56.87 320*d i*P **P 13 31 15.4 -0.3**
SVE *e*S **S 13 39 08.4 +1.0**
SVE pmax pmax
comp=Z,78nm,1.3s
SVE MLR MLR
comp=Z,1µm,15.0s
WHY Whitehorse 57.21 36 *e*P **P 13 31 19.1 +0.9**
comp=Z,26nm,1.5s
SKAG Skagway 57.28 37 P **P 13 31 18.7 +0.2**
comp=Z,10nm,1.4s
ARU Arti 58.08 319 P **P 13 31 24.6 +0.4**
comp=Z,34nm,0.9s,baz=88,slow=4.3,SNR=69
ARU Arti 58.08 319*c i*P **P 13 31 24.0 -0.2**
ARU 13 32 15.9
ARU 13 33 30.1
ARU S **S 13 39 23.6 +0.3**
ARU 13 41 08.4
ARU SS **SS 13 43 11.0 -3.3**
ARU pmax pmax
comp=Z,92nm,1.2s
ARU MLR MLR
comp=Z,1µm,16.0s
HYB Hyderabad 58.34 270 *i* P **P 13 31 27.0 +0.4**
KBL Kabul 58.36 292 *e*P **P 13 31 24.8 -2.0**
KBL pmax pmax
comp=Z,37nm,1.4s
KBL Kabul 58.36 292 *e*P **P 13 31 24.8 -2.0**
comp=Z,37nm,1.4s
AS01 Alice Springs 58.70 188 *e*P **P 13 31 26.8 -2.0**
ASAR Alice Springs 58.70 188 P **P 13 31 29.0 +0.1**
comp=Z,3.0nm,0.7s,baz=14,slow=9.4,SNR=12
ASAR LR LR 13 56 27.1
comp=Z,238nm,20.4s,baz=1.0,slow=36
ASAR Alice Springs 58.70 188 P **P 13 31 29.0 +0.1**
AB31 Akbulak array 59.45 311*ce*P **P 13 31 33.4 -0.5**
AB31 pmax pmax
comp=Z,9.0nm,0.6s
AKTO Aktyubinsk 60.24 313 P **P 13 31 39.1 -0.2**
baz=71,slow=12
AKTO Aktyubinsk 60.24 313 *i* P **P 13 31 38.0 -1.3**
AKTO pmax pmax
comp=Z,17nm,0.9s
DZM Mont Dzumac 61.37 154 *e*S **S 13 40 05.4 -1.1**
comp=Z,240nm,23.8s

DZM eLR LR 13 49 55.4
comp=Z,713nm,23.6s
LVZ Lovozero 64.12 336 eP **P** **13 32 04.8 -0.3**
LVZ pmax pmax
comp=Z,14nm,1.2s
APA Apatity 64.70 336⇓ iP **P** **13 32 13.0 +4.2**
APA MLR MLR
comp=Z,1μm,15.0s
GEYT Alibeck 65.03 300 P **P** **13 32 12.7 +1.2**
comp=Z,15nm,0.9s,baz=46,slow=4.3,SNR=26
GEYT LR LR 14 02 25.2
comp=Z,568nm,18.2s,baz=40,slow=38
YKA Yellowknife Ar 65.57 30 P **P** **13 32 13.3 -1.1**
comp=Z,2.7nm,1.2s,baz=299,slow=6.0,SNR=4.2
YKA LR LR 14 05 13.0
comp=Z,16nm,18.0s,baz=0.0,slow=40
YKA Yellowknife Ar 65.57 30 i P **P** **13 32 14.0 -0.5**
YKA pmax pmax
comp=Z,3.0nm,1.2s
KLMR Klimovskoe 65.65 328 eP **P** **13 32 12.3 -2.7**
KLMR e 13 34 35.2
KLMR pmax pmax
comp=Z,30nm,1.3s
ARCES ARCESS Array B 66.05 340 P **P** **13 32 17.2 -0.3**
comp=Z,3.8nm,0.8s,baz=57,slow=6.6,SNR=10
ARCES LR LR 14 04 03.4
comp=Z,754nm,21.7s,baz=48,slow=39
STKA Stephens Creek 66.42 180 P **P** **13 32 23.3 +3.0**
comp=Z,3.4nm,0.8s,baz=349,slow=8.1,SNR=5.9
DAG Danmarks Havn 67.91 355 i P **P** **13 32 28.7 -0.5**
comp=Z,11nm,1.0s
DAG Danmarks Havn 67.91 355 i P **P** **13 32 28.7 -0.5**
DAG pmax pmax
comp=Z,11nm,1.0s
VRH Novokhopyorsk 69.28 318 eP **P** **13 32 36.9 -1.2**
VRH pmax pmax
comp=Z,10.0nm,0.5s
OBN Obninsk 69.91 324 P **P** **13 32 41.9 -0.1**
comp=Z,13nm,0.3s,baz=39,slow=3.8,SNR=15
OBN Obninsk 69.91 324⇑ eP **P** **13 32 41.3 -0.6**
OBN e 13 33 04.9
OBN e 13 35 16.2
OBN ePPP PPP 13 36 57.6
OBN i S **S** **13 41 54.9 +4.9**
OBN i SS **SS** **13 46 25.0 +6.7**
OBN pmax pmax
comp=Z,75nm,1.7s
OBN MLR MLR
comp=Z,1μm,16.0s
B08A Colville Reser 70.23 44 eP **P** **13 32 44.1 0.0**
comp=Z,18nm,1.3s
VSR Storozhevoye 70.65 319 eP **P** **13 32 44.8 -1.8**
VSR pmax pmax
comp=Z,30nm,1.2s
FIA1 FINESS Array S 70.78 333 eP **P** **13 32 47.5 +0.4**
FINES FINESS Array B 70.78 333 P **P** **13 32 47.5 +0.3**
comp=Z,4.8nm,0.7s,baz=69,slow=10,SNR=17
FINES LR LR 14 07 44.8
comp=Z,1μm,18.1s,baz=40,slow=39
C09A Chrisman Ranch 71.13 45 eP **P** **13 32 49.8 +0.2**
comp=Z,12nm,1.1s
NEW Newport 71.55 44 eP **P** **13 32 52.2 +0.1**
NEW pmax pmax
comp=Z,15nm,1.3s
NEW Newport 71.55 44 eP **P** **13 32 52.2 +0.1**
comp=Z,15nm,1.3s
GOF Gofitskoye 71.65 312⇑ eP **P** **13 32 53.8 +1.1**
GOF pmax pmax
comp=Z,42nm,1.4s
BANOM Banah 72.06 289 P **P** **13 32 56.4 +0.8**
TBLG Delisi 72.30 309 P **P** **13 32 57.2 +0.4**
TBLG Delisi 72.30 309 P **P** **13 32 57.2 +0.4**
VSU Vasula 72.38 330 c iP **P** **13 32 56.6 -0.2**
VSU pmax pmax
comp=Z,133nm,1.7s
KBZ Khabaz 72.43 311 P **P** **13 32 58.3 +0.9**
comp=Z,13nm,1.2s,baz=64,slow=3.6,SNR=22
KBZ LR LR 14 06 52.6
comp=Z,865nm,18.2s,baz=50,slow=38
KIV Kislovodsk 72.44 312 i P **P** **13 32 58.4 +0.7**
SNR=11
KIV Kislovodsk 72.44 312 c iP **P** **13 32 58.0 +0.4**
KIV e 13 33 17.8
KIV e 13 35 35.1
KIV ePPP PPP 13 37 24.5
KIV i S **S** **13 42 24.8 +4.8**
KIV i SS **SS** **13 47 06.0 +8.1**
KIV pmax pmax
comp=Z,62nm,1.7s
KIV Kislovodsk 72.44 312 eP **P** **13 32 58.8 +1.1**
comp=Z,62nm,1.4s
ONI Oni 72.67 310 P **P** **13 32 59.9 +0.9**
ONI Oni 72.67 310 P **P** **13 32 59.9 +0.9**
HATD Hatta, Dubai 72.75 288 P **P** **13 33 00.2 +0.5**
NEY Neytrino 72.79 311 eP **P** **13 33 00.4 +0.6**
NEY pmax pmax
comp=Z,3.0nm,1.2s
SUMG Summit 72.81 0 i P **P** **13 32 59.2 -0.5**
comp=Z,7.3nm,1.0s
SUMG Summit 72.81 0 i P **P** **13 32 59.2 -0.5**
SUMG pmax pmax
comp=Z,7.0nm,1.0s
ASHO Ashiyiah 72.88 288 P **P** **13 33 01.0 +0.5**
WALA Waterton Lakes 72.91 42 eP **P** **13 33 00.7 +0.4**
comp=Z,12nm,1.1s
GNI Garni 73.12 307 P **P** **13 33 03.3 +1.5**
comp=Z,7.5nm,0.7s,baz=184,slow=4.1,SNR=13
GNI Garni 73.12 307 i P **P** **13 33 03.1 +1.3**
SNR=5.9
GNI Garni 73.12 307 c iP **P** **13 33 02.7 +0.9**
GNI pmax pmax
comp=Z,128nm,1.7s
FAQ Al Faqa, Dubai 73.21 289 P **P** **13 33 02.5 +0.1**
BMO Blue Mountains 73.26 47 eP **P** **13 33 02.9 +0.4**
BMO pmax pmax
comp=Z,13nm,1.6s
BMO Blue Mountains 73.26 47 eP **P** **13 33 02.9 +0.4**
comp=Z,13nm,1.6s
JTMT Jette 73.43 43 eP **P** **13 33 04.0 +0.5**
SWMT Swartz Lake 73.72 43 eP **P** **13 33 05.6 +0.4**
WVOR Wild Horse Val 73.74 49 eP **P** **13 33 05.6 +0.2**
WVOR pmax pmax
comp=Z,14nm,1.4s
WVOR Wild Horse Val 73.74 49 eP **P** **13 33 05.5 +0.2**
comp=Z,14nm,1.4s
SLMT Seeley Lake 74.16 43 eP **P** **13 33 07.4 -0.4**
SCO Scoresbysund 74.25 354 i P **P** **13 33 04.1 -3.6**
comp=Z,3.1nm,0.7s
SCO Scoresbysund 74.25 354 eP **P** **13 33 04.1 -3.6**
SCO pmax pmax
comp=Z,3.0nm,0.7s
MICGM Minsk 74.36 326 eP **P** **13 33 09.0 +0.4**
MICGM eS **S** **13 42 42.0 +0.9**
MICGM eLR LR 14 08 24.0
MNK Minsk 74.36 326 eP **P** **13 33 09.0 +0.4**
MNK eS **S** **13 42 42.0 +0.9**
RAO Raoul Island 74.36 144 LR LR 14 02 00.0
comp=Z,246nm,18.9s,baz=191,slow=33
PNTR Pine Nut 74.93 53 eP **P** **13 33 12.9 +0.4**
comp=Z,12nm,1.2s
MFID Camas Ranch 74.94 47 eP **P** **13 33 12.7 +0.4**
comp=Z,14nm,1.4s
CMB Columbia Colle 74.98 54 eP **P** **13 33 12.6 0.0**
CMB pmax pmax
comp=Z,9.0nm,1.0s
CMB Columbia Colle 74.98 54 eP **P** **13 33 12.6 0.0**
comp=Z,8.9nm,1.0s
ANN Anapa 75.14 314 eP **P** **13 33 11.9 -1.4**
ANN eS **S** **13 42 48.7 -1.4**
ANN pmax pmax
comp=Z,55nm,1.6s
YERR Yerington 75.22 53 eP **P** **13 33 14.6 +0.4**
comp=Z,10nm,1.1s
WAKR Walker 75.35 53 eP **P** **13 33 14.6 -0.3**
comp=Z,8.4nm,1.1s
HRY Holter Researc 75.39 43 eP **P** **13 33 14.5 -0.4**
LRM Limekiln Ridge 75.56 44 eP **P** **13 33 16.3 +0.3**
HLID Hailey 75.70 47 eP **P** **13 33 17.3 +0.5**
comp=Z,10.0nm,1.6s
BMN Battle Mountai 75.73 51 eP **P** **13 33 16.4 -0.6**
BMN pmax pmax
comp=Z,12nm,1.4s
BMN Battle Mountai 75.73 51 eP **P** **13 33 16.4 -0.6**
comp=Z,12nm,1.4s
DLMT Dillon 75.74 44 eP **P** **13 33 17.3 +0.4**
comp=Z,26nm,1.5s
EGMT Eagleton 75.76 41 eP **P** **13 33 17.6 +0.7**
comp=Z,24nm,1.3s
TVH3 East Aurora ar 75.84 53 eP **P** **13 33 16.9 -0.8**
comp=Z,7.4nm,1.0s
NC405 NORSAR Array S 76.00 337 eP **P** **13 33 18.6 +0.6**
AKASG Malin Array Be 76.09 323 P **P** **13 33 18.4 -0.2**
comp=Z,3.4nm,0.6s,baz=46,slow=6.3,SNR=36
AKASG LR LR 14 10 21.2
comp=Z,801nm,19.9s,baz=50,slow=38
AKASG Malin Array Be 76.09 323 ce P **P** **13 33 18.3 -0.3**
AKASG pmax pmax
comp=Z,3.0nm,0.6s
AKBB Malin Array Si 76.09 323 eP **P** **13 33 18.6 0.0**
AKBB Malin Array Si 76.09 323 eP **P** **13 33 18.6 0.0**
KIEV Kiev 76.10 323 eP **P** **13 33 18.2 -0.5**
KIEV pmax pmax
comp=Z,64nm,1.7s
KIEV Kiev 76.10 323 eP **P** **13 33 18.1 -0.5**
comp=Z,64nm,1.7s
BOZ Bozeman (W) 76.13 44 eP **P** **13 33 19.6 +0.5**
BOZ pmax pmax
comp=Z,6.0nm,1.0s
BOZ Bozeman (W) 76.13 44 eP **P** **13 33 19.6 +0.5**
comp=Z,5.8nm,1.0s
NC204 NORSAR Array S 76.18 338 eP **P** **13 33 19.3 +0.3**
NB201 NORSAR Array S 76.19 338 eP **P** **13 33 19.4 +0.4**
NB2 NORSAR Subarra 76.22 338 P **P** **13 33 18.6 -0.6**
comp=Z,19nm,1.1s,baz=41,slow=5.9
NB2 NORSAR Subarra 76.22 338 P **P** **13 33 18.6 -0.6**
baz=41,slow=5.9
NOA NORSAR Array B 76.22 338 P **P** **13 33 19.5 +0.3**
comp=Z,6.2nm,0.8s,baz=39,slow=5.7,SNR=21
NOA LR LR 14 10 36.4
comp=Z,825nm,19.4s,baz=30,slow=39
PAGB Antelope Grade 76.31 56 eP **P** **13 33 20.9 +0.7**
comp=Z,27nm,1.4s
NBO02 NORSAR Array S 76.32 338 eP **P** **13 33 19.9 +0.1**
YHB Horse Butte 76.90 44 eP **P** **13 33 23.0 -0.7**
comp=Z,7.2nm,1.0s
KLNR Kaliningrad 77.64 329 eP **P** **13 33 28.2 +0.9**
KLNR pmax pmax
comp=Z,18nm,1.0s
REDW Red Top Meadow 77.93 45 eP **P** **13 33 30.4 +1.0**
comp=Z,10nm,1.2s
R11A Troy Canyon, C 77.95 52 eP **P** **13 33 30.0 +0.4**
comp=Z,8.8nm,1.4s
BGU Big Grassy Mou 78.06 48 eP **P** **13 33 31.0 +0.9**
comp=Z,6.5nm,1.1s
TPNV Topopah Spring 78.31 53 eP **P** **13 33 31.9 +0.3**
TPNV pmax pmax
comp=Z,6.0nm,1.0s
TPNV Topopah Spring 78.31 53 eP **P** **13 33 31.9 +0.3**
comp=Z,5.5nm,1.0s
HWUT Hardware Ranch 78.55 47 eP **P** **13 33 33.2 +0.4**
comp=Z,16nm,1.4s
KIS Kishinev 78.63 320 eP P 13 33 28.0 -4.9
KIS LRM MLR 14 11 56.0
comp=Z,2μm,16.0s
KIS Kishinev 78.63 320 eP P 13 33 28.0 -4.9
KIS e 13 33 40.0
KIS e 13 43 30.0
KIS MLR MLR
comp=Z,3μm,15.0s
KIS MLR MLR
comp=N,2μm,16.0s
KIS MLR MLR
comp=E,2μm,15.0s
KIS MLR MLR
comp=Z,3μm,16.0s
RAR Rarotonga 78.78 126 LR LR 14 02 29.7
comp=Z,308nm,19.5s,baz=246,slow=31
BW06 Boulder Array 79.04 45 eP **P** **13 33 34.6 -1.0**
PDAR Pinedale Array 79.04 45 P **P** **13 33 35.5 -0.2**
comp=Z,0.6nm,0.7s,baz=228,slow=1.8,SNR=6.0
LVV L'vov 79.20 324 eP **P** **13 33 36.6 +0.6**
LVV eS **S** **13 43 34.8 +0.6**
LVV MLR MLR
comp=E,600nm,15.0s
LVV MLR MLR
comp=N,700nm,16.0s
LVV MLR MLR
comp=Z,1μm,15.0s
SHPR Sheep Range 79.28 53 eP **P** **13 33 37.8 +0.8**
comp=Z,8.4nm,1.3s
BEL Belsk 79.32 327 eP **P** **13 33 37.2 +0.6**
BEL Belsk 79.32 327 eP **P** **13 33 37.2 +0.6**
IMU Iron Mountain 79.33 50 eP **P** **13 33 34.3 -2.9**
CCUT Cedar City 79.84 51 eP **P** **13 33 41.0 +0.9**
comp=Z,14nm,1.4s
KWP Kalwaria Pacla 79.96 325 eP **P** **13 33 41.2 +1.0**
KWP Kalwaria Pacla 79.96 325 eP **P** **13 33 41.2 +1.0**
MSU Marysvale 80.02 50 eP **P** **13 33 42.2 +1.2**
MSU Marysvale 80.02 50 eP **P** **13 33 42.2 +1.2**
BUR08 Bucovina Ar. S 80.08 322 eP **P** **13 33 42.0 +1.0**
TESR Tescani 80.08 321⇓ iP P 13 33 54.5 +14
BURAR Bucovina Array 80.09 322⇑ iP **P** **13 33 42.3 +1.3**
BURAR Bucovina Array 80.09 322⇑ P **P** **13 33 42.3 +1.3**
CFR Carcaliu 80.16 319⇓ iP P 13 33 49.8 +8.5
CFR Carcaliu 80.16 319 P P 13 33 49.8 +8.5
LCMT Little Creek M 80.23 52 eP **P** **13 33 42.9 +0.8**
comp=Z,18nm,1.5s
MTPU Mount Pierson 80.30 50 eP **P** **13 33 44.0 +1.3**
comp=Z,8.1nm,1.1s
P17A Butcher Ranch, 80.34 48 eP **P** **13 33 44.1 +1.5**
comp=Z,16nm,1.3s
BR131 Keskin Array S 80.39 312 eP **P** **13 33 43.5 +0.7**
BRTR Keskin Array B 80.39 312 P **P** **13 33 43.6 +0.7**
comp=Z,2.7nm,0.8s,baz=91,slow=5.4,SNR=16
BRTR LR LR 14 12 15.6
comp=Z,316nm,18.8s,baz=26,slow=38
VRI Vrincioaia 80.46 320⇓ iP **P** **13 33 42.7 -0.3**
VRI Vrincioaia 80.46 320⇓ P **P** **13 33 42.7 -0.3**
TIRR Tirgusor 80.47 318⇑ iP **P** **13 33 45.4 +2.4**
TIRR Tirgusor 80.47 318⇑ P **P** **13 33 45.4 +2.4**
KNB Kanab 80.50 51 eP **P** **13 33 44.6 +1.1**
KNB pmax pmax
comp=Z,24nm,1.2s
KNB Kanab 80.50 51 eP **P** **13 33 44.6 +1.1**
comp=Z,24nm,1.2s
SRU San Rafael Swe 80.69 49 eP **P** **13 33 45.1 +0.6**
SRU pmax pmax
comp=Z,10.0nm,0.9s
SRU San Rafael Swe 80.69 49 eP **P** **13 33 45.1 +0.6**
comp=Z,9.7nm,0.9s
STHS Stebnicka Huta 80.80 325 eP **P** **13 33 46.1 +1.4**
STHS pmax pmax
comp=Z,8.0nm,1.1s
STHS Stebnicka Huta 80.80 325 eP **P** **13 33 46.1 +1.4**
UZH Uzhgorod 80.85 324 eP **P** **13 33 44.7 -0.2**
UZH e 13 33 55.1
BR231 Keskin MP Arra 80.85 312 eP **P** **13 33 44.2 -1.1**
OJC Ojcow 80.91 326 eP **P** **13 33 45.7 +0.4**
OJC Ojcow 80.91 326 eP **P** **13 33 46.1 +0.9**
OJC pmax pmax
comp=Z,57nm,1.6s
OJC Ojcow 80.91 326 eP **P** **13 33 46.1 +0.9**
comp=Z,57nm,1.6s
W13A Hualapai Mount 80.95 54 eP **P** **13 33 46.4 +0.3**
CRVS Cervenica-Dubn 81.06 325 eP **P** **13 33 47.0 +0.9**
CRVS Cervenica-Dubn 81.06 325 eP **P** **13 33 47.0 +0.9**
TRPA Tarpa 81.07 324⇑ eP **P** **13 33 47.0 +0.9**
DOPR Dopca 81.10 321⇑ iP **P** **13 33 47.0 +0.6**
MLR Muntele Rosu 81.12 320 P **P** **13 33 47.2 +0.6**
comp=Z,1.4nm,1.2s,baz=295,slow=3.9,SNR=3.8
MLR Muntele Rosu 81.12 320⇓ iP **P** **13 33 45.9 -0.7**
MLR Muntele Rosu 81.12 320⇓ P **P** **13 33 45.9 -0.7**
MLR Muntele Rosu 81.12 320 eP **P** **13 33 47.5 +0.8**
U15A North Rim 81.20 52 eP **P** **13 33 48.2 +0.8**
comp=Z,13nm,1.3s
NIE Niedzica 81.24 326 eP **P** **13 33 47.7 +0.7**
NIE Niedzica 81.24 326 eP **P** **13 33 47.7 +0.7**
O20A White River Ci 81.45 47 eP **P** **13 33 49.4 +0.9**
comp=Z,13nm,1.3s
VOIR 81.63 320⇑ iP **P** **13 33 50.0 +0.7**
VOIR 81.63 320⇑ P **P** **13 33 50.0 +0.7**
LANS Liptovska Anna 81.81 326 ePP PP 13 36 56.1 -0.6
ARR Arges 81.89 321⇑ iP **P** **13 33 51.6 +1.0**
DRGR 81.91 323⇑ iP **P** **13 33 51.2 +0.5**
DRGR 81.91 323⇑ P **P** **13 33 51.2 +0.5**
OKC Ostrava-Krasne 81.92 327 eP **P** **13 33 51.6 +1.0**
OKC ePP **PP** **13 36 59.8 +2.3**
OKC eS **S** **13 44 05.8 +3.2**
OKC AMS AMS 14 14 30.0
comp=Z,1μm,15.9s
KSP Ksiaz 82.00 329 eP **P** **13 33 51.5 +0.5**
KSP Ksiaz 82.00 329 eP **P** **13 33 51.5 +0.5**
PV10 Paradox Valley 82.06 48 eP **P** **13 33 53.3 +1.4**
PV05 Paradox Valley 82.20 49 eP **P** **13 33 53.5 +0.8**
MORC Moravsky Berou 82.24 327⇑ iP **P** **13 33 53.6 +1.3**
MORC Moravsky Berou 82.24 327⇑ P **P** **13 33 53.6 +1.3**
MORC Moravsky Berou 82.24 327 eP **P** **13 33 53.3 +0.9**
comp=Z,106nm,1.6s
N23A Red Feather La 82.32 45 eP **P** **13 33 54.2 +0.9**
WUAZ Wupatki 82.34 52 eP **P** **13 33 54.1 +0.8**
comp=Z,9.6nm,1.0s
DPC Dobruska-Polom 82.35 328 eP **P** **13 33 53.6 +0.7**
DPC epP **sP** **13 34 05.8 +1.4**
DPC ePP **PP** **13 37 00.2 -0.9**
DPC AMS AMS 14 15 30.0
comp=Z,1μm,15.9s
DPC Dobruska-Polom 82.35 328 eP **P** **13 33 53.6 +0.7**
DPC e 13 34 05.8
DPC e 13 37 00.2
DPC MLR MLR
comp=Z,1μm,15.9s
UPC Upice 82.37 328 eS **S** **13 44 09.1 +1.8**
UPC AMS AMS 14 15 40.0
comp=Z,1μm,15.0s
PSZ Piszkesteto 82.49 325⇓ iP **P** **13 33 54.5 +0.8**
PSZ Piszkesteto 82.49 325⇓ P **P** **13 33 54.5 +0.8**
PSZ Piszkesteto 82.49 325 eP **P** **13 33 54.8 +1.1**
comp=Z,30nm,1.4s
PSZ Piszkesteto 82.49 325⇑ eP **P** **13 33 54.5 +0.8**
PV01 Paradox Valley 82.50 48 eP **P** **13 33 54.7 +0.6**
VYHS Vyhne 82.58 326 eP **P** **13 33 54.7 +0.6**
VYHS e 13 34 06.9
VYHS pmax pmax
comp=Z,16nm,1.8s
VYHS Vyhne 82.58 326 eP **P** **13 33 54.7 +0.6**
VYHS e 13 34 06.9
SMCO Snowmass 82.81 47 eP **P** **13 33 56.7 +0.7**
comp=Z,15nm,1.5s
GZR Gura Zlata 82.83 322⇑ iP **P** **13 33 55.7 +0.1**
GZR Gura Zlata 82.83 322⇑ P **P** **13 33 55.7 +0.1**
ASF Jabal al Asfar 82.84 304 P **P** **13 33 56.8 +0.9**
comp=Z,2.3nm,0.7s,baz=170,slow=5.2,SNR=8.4
X16A Lo Mia Camp, P 82.96 53 eP **P** **13 33 57.5 +0.9**
PVCC Panska Ves 82.97 329 eP **P** **13 33 57.2 +1.1**
PVCC AMS AMS 14 17 40.0
comp=Z,1μm,16.5s
PVCC Panska Ves 82.97 329 eP **P** **13 33 57.2 +1.1**
PVCC MLR MLR
comp=Z,1μm,16.5s
BRG Berggiesshubel 82.97 330 eP **P** **13 33 56.2 +0.1**
comp=Z,18nm,1.6s
BRG e 13 34 08.2
comp=Z,22nm,1.6s
comp=N,960nm,13.7s
comp=E,1μm,14.2s
comp=Z,1μm,15.2s
BRG Berggiesshubel 82.97 330 eP **P** **13 33 56.2 +0.1**
BRG e 13 34 08.2
BRG pmax pmax
comp=Z,18nm,1.6s
BRG MLR MLR
comp=N,960nm,13.7s
BRG MLR MLR
comp=E,1μm,14.2s
BRG MLR MLR
comp=Z,1μm,15.2s
VRAC Vranov 83.00 327 P **P** **13 33 57.0 +0.7**
comp=Z,1.3nm,0.3s,baz=38,slow=4.8,SNR=15
VRAC Vranov 83.00 327⇑ iP **P** **13 33 57.6 +1.3**
VRAC Vranov 83.00 327⇑ P **P** **13 33 57.6 +1.3**
CLL Collm 83.03 330⇑ iP **P** **13 33 56.2 -0.1**
comp=Z,69nm,2.3s
CLL i 13 34 08.0
comp=Z,38nm,1.9s
CLL i 13 34 12.2
CLL i 13 34 16.5
CLL ePP **PP** **13 37 06.0 -0.5**
CLL eS **S** **13 44 14.0 +0.1**
CLL eSS **SS** **13 49 36.0 -0.5**
CLL eSSS SSS 13 53 24.0
CLL e 13 54 18.0
CLL Collm 83.03 330⇑ iP **P** **13 33 56.2 -0.1**
CLL i 13 34 08.0
CLL eS **S** **13 44 14.0 +0.1**
CLL pmax pmax
comp=Z,69nm,2.3s
CLL Collm 83.03 330 eP **P** **13 33 56.6 +0.3**
comp=Z,10nm,1.0s
MVCO Mesa Verde 83.12 49 eP **P** **13 33 58.0 +0.6**
comp=Z,22nm,1.4s
BZS Buzias 83.27 322⇓ iP **P** **13 33 58.2 +0.5**
BZS Buzias 83.27 322⇓ P **P** **13 33 58.2 +0.5**
GOPC GO Pecny, Ondr 83.34 329 eP **P** **13 33 59.0 +1.0**
GOPC eS **S** **13 44 19.6 +2.4**
GOPC AMS AMS 14 18 10.0
comp=Z,1μm,15.6s
GOPC GO Pecny, Ondr 83.34 329 eP **P** **13 33 59.0 +1.0**
GOPC eS **S** **13 44 19.6 +2.4**
GOPC MLR MLR
comp=Z,1μm,15.6s
MMAI Mount Meron Ar 83.34 306 P **P** **13 33 59.2 +0.8**
comp=Z,8.4nm,0.9s,baz=21,slow=7.2,SNR=13
PRU Pruhonice 83.39 329 eP **P** **13 33 58.8 +0.6**
PRU eS **S** **13 44 19.3 +1.7**
PRU AMS AMS 14 15 20.0
comp=Z,1μm,17.0s
PRU Pruhonice 83.39 329 eP **P** **13 33 58.8 +0.6**
PRU eS **S** **13 44 19.3 +1.7**
PRU MLR MLR
comp=Z,1μm,17.0s
PPT Papeete 83.53 116 LR LR 14 08 23.1
comp=Z,315nm,18.4s,baz=336,slow=34
PPT2 Papeete2 83.55 116 eLR LR 13 59 59.3
comp=Z,201nm,23.2s
MPEP Malo Peshtene 83.73 320 i P **P** **13 34 00.3 +0.2**
MDVR Moldovita 83.80 322⇑ iP **P** **13 34 00.3 -0.2**
S22A 4UR Ranch, Cre 83.81 48 eP **P** **13 34 02.1 +1.1**
comp=Z,11nm,1.1s
KDZ Kurdzhali 83.97 317 i P **P** **13 34 01.5 +0.1**
NKC Novy Kostel 84.08 330 AMS AMS 14 15 50.0
comp=Z,1μm,15.3s
SOP Sopron 84.22 326⇑ eP **P** **13 34 03.4 +0.9**
RZN Rozhen 84.33 318 i P **P** **13 34 03.4 -0.1**
CONA Conrad Observa 84.35 327 i PcP **P** **13 34 04.1 +0.8**
comp=Z,12nm,1.0s,SNR=9.4
CONA i sP **sP** **13 34 17.7 +3.0**
comp=Z,19nm,1.2s
KHC Kasperske Hory 84.45 329 eP **P** **13 34 03.9 +0.2**
KHC epP **sP** **13 34 14.1 -1.1**
KHC eS **S** **13 44 26.6 -1.8**
KHC AMS AMS 14 15 50.0
comp=Z,1μm,14.7s
KHC Kasperske Hory 84.45 329 eP **P** **13 34 03.9 +0.2**
KHC e 13 34 14.1
KHC e 13 34 16.1
KHC eS **S** **13 44 26.6 -1.8**
KHC MLR MLR
comp=Z,1μm,14.7s
VTS Vitosha 84.53 319 i P **P** **13 34 08.7 +4.3**
GEC2 GERESS Array S 84.61 328 eP **P** **13 34 05.0 +0.3**
GEC2 GERESS Array S 84.61 328 eP **P** **13 34 05.0 +0.3**
GERES GERESS Array B 84.61 328 P **P** **13 34 04.5 -0.1**
comp=Z,2.7nm,0.8s,baz=35,slow=4.9,SNR=12
GERES LR LR 14 16 02.5
comp=Z,817nm,18.1s,baz=30,slow=39
SDCO Great Sand Dun 84.61 47 eP **P** **13 34 05.9 +0.8**
comp=Z,46nm,1.9s
GEA0 GERESS Array S 84.62 328 eP **P** **13 34 04.2 -0.4**
TUC Tucson 84.69 54 eP **P** **13 34 05.8 +0.5**
TUC pmax pmax
comp=Z,13nm,1.5s
TUC Tucson 84.69 54 eP **P** **13 34 05.8 +0.5**
comp=Z,13nm,1.5s
MMB Musomiste 84.94 318 i P **P** **13 34 07.0 +0.6**
ARSA Arzberg 85.01 326 i PcP **P** **13 34 07.1 +0.5**
comp=Z,6.7nm,1.3s,SNR=5.5
KKB Krupnik 85.10 319 i P **P** **13 34 07.1 0.0**
MOA Molln 85.12 327 i PcP **P** **13 34 07.8 +0.7**
comp=Z,9.4nm,0.9s

ECSD	**EROS Data Cent**	**85.49**	**38**	*e*P		**P**	**13 34 12.6**	**+3.6**
	comp=Z,18nm,1.5s								
SOKA	**Soboth**	**85.66**	**326**	*i* PcP		**P**	**13 34 10.0**	**+0.1**
	comp=Z,7.9nm,0.9s,SNR=9.6								
SOKA				*i* PP		**PP**	**13 37 30.6**	**+2.4**
	comp=Z,7.1nm,1.4s								
T25A	**Trinidad**	**85.67**	**47**	*e*P		**P**	**13 34 10.9**	**+0.7**
	comp=Z,41nm,1.8s								
EIL	**Elat**	**85.68**	**303**	P		**P**	**13 34 11.1**	**+0.9**
	comp=Z,5.3nm,1.0s,baz=13,slow=2.7,SNR=3.6								
LAZ	**Ladron**	**85.75**	**51**	*e*P		**P**	**13 34 11.5**	**+0.7**
ANMO	**Albuquerque**	**85.83**	**50**	*c i*P		**P**	**13 34 11.8**	**+0.6**
ANMO				pmax	pmax				
	comp=Z,10.0nm,1.2s								
ANMO	**Albuquerque**	**85.83**	**50**	*e*P		**P**	**13 34 11.7**	**+0.6**
	comp=Z,11nm,1.3s								
BNM	**Barren Site**	**86.23**	**51**	*e*P		**P**	**13 34 13.8**	**+0.6**
MEM	**Membach**	**86.29**	**333**	P		**P**	**13 34 12.6**	**-0.2**
	comp=Z,8.1nm,1.6s								
MEM				AP		**sP**	**13 34 25.2**	**+0.9**
MYKA	**Terra Mystica**	**86.32**	**327**	*i* PcP		**P**	**13 34 16.0**	**+2.8**
	comp=Z,9.5nm,1.6s								
ABTA	**Abfaltersbach**	**86.73**	**328**	*i* PcP		**P**	**13 34 15.2**	**0.0**
	comp=Z,3.8nm,0.9s								
ABTA				*i* sP		**sP**	**13 34 27.0**	**+0.3**
	comp=Z,8.0nm,1.2s								
RETA	**Reutte**	**86.91**	**329**	*i* PcP		**P**	**13 34 15.9**	**-0.1**
	comp=Z,12nm,1.3s								
SNF	**Seneffe**	**87.00**	**334**	P		**P**	**13 34 16.6**	**+0.4**
SNF				AP		**sP**	**13 34 28.2**	**+0.5**
WLF	**Walferdange**	**87.01**	**333**	P		**P**	**13 34 17.0**	**+0.6**
	comp=Z,21nm,1.8s								
WLF				AP		**sP**	**13 34 28.7**	**+0.9**
BFO	**Black Forest**	**87.25**	**331**	*i* P		**P**	**13 34 17.8**	**+0.2**
BFO	**Black Forest**	**87.25**	**331**	*e*P		**P**	**13 34 16.6**	**-1.0**
	comp=Z,11nm,1.1s								
COWI	**Conover**	**87.29**	**33**	*e*P		**P**	**13 34 21.7**	**+3.8**
TBI	**Tubuai**	**87.29**	**121**	*e*LR		LR	14 01 50.3		
	comp=Z,300nm,20.5s								
FETA	**Feichten**	**87.29**	**329**	*i* PcP		**P**	**13 34 18.8**	**+0.8**
	comp=Z,6.0nm,1.3s								
SCHQ	**Schefferville**	**87.34**	**16**	LR		LR	14 14 07.3		
	comp=Z,298nm,21.8s,baz=344,slow=36								
DAVA	**Damuels**	**87.44**	**329**	*i* PcP		**P**	**13 34 19.5**	**+0.8**
	comp=Z,13nm,1.4s								
WMOK	**Wichita Mounta**	**90.64**	**46**	*e*P		**P**	**13 34 35.3**	**+1.4**
WMOK	**Wichita Mounta**	**90.64**	**46**	*e*P		**P**	**13 34 35.3**	**+1.4**
TX31	**Lajitas Ar. Si**	**91.28**	**53**	*e*P		**P**	**13 34 36.8**	**-0.3**
TXAR	**Lajitas Array**	**91.29**	**53**	P		**P**	**13 34 37.4**	**+0.4**
	comp=Z,1.2nm,0.9s,baz=297,slow=3.6,SNR=12								
TXAR				LR		LR	14 14 51.4		
	comp=Z,302nm,18.4s,baz=0.0,slow=35								
HHAR	**Hobbs**	**92.29**	**42**	*e*P		**P**	**13 34 41.5**	**+0.1**
	comp=Z,7.7nm,0.8s								
MIAR	**Mount Ida**	**93.77**	**43**	*e*P		**P**	**13 34 48.5**	**+0.2**
MIAR				pmax	pmax				
	comp=Z,8.0nm,1.0s								
MIAR	**Mount Ida**	**93.77**	**43**	*e*P		**P**	**13 34 48.5**	**+0.2**
	comp=Z,8.3nm,1.0s								
X201	**Greenbrier Sit**	**93.89**	**42**	*e*P		**P**	**13 34 53.4**	**+4.6**
	comp=Z,16nm,1.4s								
WHAR	**Wooly Hollow**	**93.93**	**42**	*e*P		**P**	**13 34 49.1**	**+0.1**
	comp=Z,33nm,1.6s								
KEST	**Kesra**	**96.82**	**323**	LR		LR	14 24 20.4		
	comp=Z,544nm,18.0s,baz=330,slow=39								
ESDC	**Sonseca Array**	**99.28**	**334**	LR		LR	14 24 40.7		
	comp=Z,501nm,19.3s,baz=75,slow=38								
LPAZ	**La Paz**	**147.57**	**63**	PKPbc		**PKPbc**	**13 41 16.8**	**+0.2**
	comp=Z,4.0nm,0.8s,baz=5.4,slow=8.7,SNR=13								

*WAR **30** 13:31:05.6,51.54N×16.14E,h1km*
*PRU **30** 13:31:05.8,51.53N×16.09E,h0km*
*CSEM **30** 13:31:05.0±1.0,51.55N×16.10E,h1km,ML2.6/4, Error ellipse: s-maj=14.9km s-min=9.3km az=13.0*
ISC 30 13:31:06.4±2.1,51.50N±0.09×16.06E±0.07,h0km,n16, σ0.59 s/29, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.67**	**167**	*e*Pg	**Pg**	**13 31 18.9**	**-0.4**
KSP				*e*Sg	**Sg**	**13 31 28.4**	**+0.4**
KSP	**Ksiaz**	**0.67**	**167**	*e*Pg	**Pg**	**13 31 18.9**	**-0.4**
KSP				*e*Sg	**Sg**	**13 31 28.4**	**+0.4**
UPC	**Upice**	**0.99**	**182**	*e*PG	**Pg**	**13 31 26.1**	**+0.7**
UPC				*e*SG	**Sg**	**13 31 38.8**	**+0.5**
	comp=Z,6.7nm,0.2s						
UPC	**Upice**	**0.99**	**182**	Pg	**Pg**	**13 31 26.1**	**+0.7**
UPC				Sg	**Sg**	**13 31 38.8**	**+0.5**
	6.7nm,0.2s						
DPC	**Dobruska-Polom**	**1.16**	**172**	*e*PG	**Pg**	**13 31 27.6**	**-1.1**
DPC				*e*SG	**Sg**	**13 31 43.4**	**-0.3**
	comp=Z,2.8nm,0.2s						
DPC	**Dobruska-Polom**	**1.16**	**172**	Pg	**Pg**	**13 31 27.6**	**-1.1**
DPC				Sg	**Sg**	**13 31 43.4**	**-0.3**
	2.8nm,0.2s						
PVCC	**Panska Ves**	**1.35**	**225**	*e*PG	**Pb**	**13 31 32.5**	**-0.1**
PVCC				*e*SG	**Sn**	**13 31 51.5**	**+0.3**
	comp=Z,13nm,0.2s						
PVCC	**Panska Ves**	**1.35**	**225**	Pg	**Pb**	**13 31 32.5**	**-0.1**
PVCC				Sg	**Sn**	**13 31 51.5**	**+0.3**
	13nm,0.2s						
BRG	**Berggiesshubel**	**1.47**	**246**	PG	**Pn**	**13 31 34.0**	**-0.2**
BRG				SG	**Sn**	**13 31 54.5**	**+0.4**
	12nm,0.4s						
GOPC	**GO Pecny, Ondr**	**1.78**	**207**	*e*SG	**Sg**	**13 32 03.8**	**+0.2**
GOPC	**GO Pecny, Ondr**	**1.78**	**207**	Sg	**Sg**	**13 32 03.8**	**+0.2**
PRU	**Pruhonice**	**1.79**	**213**	*e*PG	**Pn**	**13 31 39.4**	**+0.8**
PRU				*e*SG	**Sg**	**13 32 03.6**	**-0.4**
	comp=Z,2.5nm,0.4s						
PRU	**Pruhonice**	**1.79**	**213**	Pg	**Pn**	**13 31 39.4**	**+0.8**
PRU				Sg	**Sg**	**13 32 03.6**	**-0.4**
	2.5nm,0.4s						
CLL	**Collm**	**1.92**	**265**	*e*Pg	**Pn**	**13 31 41.0**	**+0.6**
CLL				*e*Sg	**Sg**	**13 32 08.0**	**-0.1**
	comp=Z,5.0nm,0.6s						
KHC	**Kasperske Hory**	**2.85**	**215**	*e*SN	**Sn**	**13 32 27.6**	**-0.7**
KHC				*e*SG	**Sg**	**13 32 37.0**	**-1.0**
KHC	**Kasperske Hory**	**2.85**	**215**	Sn	**Sn**	**13 32 27.6**	**-0.7**

JMA 30 13:33:17.0±0.1,38.33N×144.47E,h32km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.32**	**290**	P	Pn	13 33 54.4	+1.5
OFUJ				*e*S	Sn	13 34 22.1	+1.8
MIYJ	**Miyakonagasawa**	**2.41**	**302**	P	Pn	13 33 55.6	+1.4
MIYJ				*e*S	Sn	13 34 24.0	+1.3
JIO	**Ouri**	**2.46**	**274**	P	Pn	13 33 56.1	+1.3
JIO				*e*S	Sn	13 34 24.8	+1.1
JMK	**Ichinoseki**	**2.62**	**285**	P	Pn	13 33 58.7	+1.6
JMK				*e*S	Sn	13 34 30.2	+2.5
JOM	**Ohasama**	**2.73**	**296**	P	Pn	13 34 00.4	+1.8
JOM				*e*S	Sn	13 34 32.6	+2.1
JOU	**Okura**	**2.99**	**272**	P	Pn	13 34 04.3	+2.1
JOU				*e*S	Sn	13 34 39.6	+2.6
JANG	**Nango**	**3.07**	**313**	P	Pn	13 34 04.6	+1.4
JRG	**Rokugo**	**3.18**	**291**	P	Pn	13 34 07.2	+2.5
JRG				*e*S	Sn	13 34 44.8	+3.3
JYK	**Kaneyama**	**3.27**	**282**	P	Pn	13 34 08.2	+2.1
JYK				*e*S	Sn	13 34 46.8	+2.9
JFT	**Otama**	**3.37**	**257**	P	Pn	13 34 09.2	+1.8
JFT				*e*S	Sn	13 34 48.1	+1.9
JAH	**Hinai**	**3.51**	**303**	P	Pn	13 34 11.5	+2.2
JAH				*e*S	Sn	13 34 52.3	+2.6
JTM	**Tenmabayashi**	**3.60**	**314**	*e*S	Sn	13 34 52.8	+1.0
JCH	**Churui**	**4.36**	**349**	P	Pn	13 34 21.1	+0.1
JCH				*e*S	Sn	13 35 09.0	-1.7
JRY	**Ryogami san**	**5.01**	**244**	P	Pn	13 34 30.7	+0.7
JRY				*e*S	Sn	13 35 24.8	-2.0
NEM2	**Nemuro 2**	**5.12**	**10**	P	Pn	13 34 28.7	-2.7
NEM2				*e*S	Sn	13 35 22.6	-6.8
JTKR	**Abashiri--Toko**	**5.65**	**356**	P	Pn	13 34 38.6	-0.1
JTKR				*e*S	Sn	13 35 38.7	-3.8

MEX 30 13:43:58.2±0.3,13.91N×92.26W,h15km,MD3.9, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.36**	**3**	*e*P	Pn	13 44 33.4	-3.2
CCIG				*e*S	Sn	13 45 01.1	-4.3
TGIG		**2.97**	**344**	*e*P	Pn	13 44 42.0	-2.9
TGIG				*i* S	Sn	13 45 17.1	-3.2

*IDC **30** 13:55:19.1±1.0,27.11N×143.52E,h0km,mb3.8/7, mb1 4.0/9,mb1mx3.6/44,mbtmp3.8/9,ML3.2/2, Error ellipse: s-maj=33.7km s-min=24.8km az=69.0*
ISC 30 13:55:24.7±0.9,27.3N±0.1×143.3E±0.2,h35km,n10, σ1.64 s/12,mb3.9/7,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**6.57**	**333**	Pn	**Pn**	**13 56 59.1**	**+0.3**
	0.9nm,0.3s,baz=239,slow=19,SNR=4.6						
JHJ				Sn	**Sn**	**13 58 10.1**	**-2.4**
	2.3nm,0.3s,baz=73,slow=19,SNR=2.9						
MJAR	**Matsushiro Arr**	**10.20**	**336**	Pn	**Pn**	**13 57 49.8**	**+1.2**
	0.3nm,0.3s,baz=157,slow=13,SNR=3.8						
MJAR				Sn	**Sn**	**13 59 39.6**	**-2.1**
	0.2nm,0.3s,baz=303,slow=37,SNR=2.9						
WRA	**Warramunga Arr**	**47.74**	**191**	P	**P**	**14 03 56.5**	**-1.9**
	0.9nm,0.4s,baz=12,slow=8.6,SNR=6.1						
KURBB	**Kurchatov Arra**	**53.62**	**314**	P	**P**	**14 04 43.5**	**+1.1**
	0.7nm,0.4s,baz=91,slow=7.7,SNR=17						
ILAR	**Eielson Array**	**57.07**	**29**	P	**P**	**14 05 06.2**	**-0.8**
	0.7nm,0.9s,baz=260,slow=5.1,SNR=6.2						
BVAR	**Borovoye Array**	**58.58**	**317**	P	**P**	**14 05 19.9**	**+2.0**
	0.5nm,0.5s,baz=92,slow=8.9,SNR=4.9						
FINES	**FINESS Array B**	**78.22**	**334**	P	**P**	**14 07 22.2**	**+1.8**
	1.3nm,0.3s,baz=86,slow=5.7,SNR=3.5						
PDAR	**Pinedale Array**	**83.38**	**45**	P	**P**	**14 07 48.8**	**+0.1**
	0.4nm,0.7s,baz=262,slow=2.7,SNR=3.1						
TXAR	**Lajitas Array**	**94.69**	**54**	P	**P**	**14 08 42.8**	**0.0**
	0.2nm,0.6s,baz=297,slow=2.9,SNR=2.9						
LPAZ	**La Paz**	**148.91**	**76**	PKPbc	**PKPbc**	**14 15 09.7**	**-0.5**
	0.7nm,0.6s,baz=314,slow=2.0,SNR=3.3						

IDC 30 13:57:02.8±6.8,3.92S×151.72E,h202km±47km,mb3.7/3, mb1 3.8/4,mb1mx3.1/35,mbtmp4.2/4,Error ellipse: s-maj=92.8km s-min=49.3km az=119.0,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.08**	**219**	P	Pn	13 58 44.9	+0.7
	0.8nm,0.3s,baz=145,slow=16,SNR=3.2						
PMG				S	S	14 00 04.3	-0.3
	1.5nm,0.3s,baz=207,slow=16,SNR=4.8						
WRA	**Warramunga Arr**	**23.25**	**225**	P	P	14 01 52.6	+0.2
	6.6nm,0.6s,baz=49,slow=9.4,SNR=152						
ASAR	**Alice Springs**	**26.10**	**220**	P	P	14 02 18.1	-0.1
	0.6nm,0.5s,baz=57,slow=8.2,SNR=15						
FITZ	**Fitzroy Crossi**	**29.16**	**239**	P	P	14 02 45.3	0.0
	3.3nm,0.4s,baz=64,slow=6.2,SNR=38						
TORD	**Torodi Ar. Bea**	**149.00**	**289**	PKPbc	PKPbc	14 16 27.3	-0.6
	0.2nm,0.4s,baz=94,slow=2.5,SNR=3.9						

*JMA **30** 14:04:36.2±0.2,34.77N×141.17E,h42km±2km,M3.2*
*IDC **30** 14:04:37.5±1.3,34.62N×140.71E,h0km,mb3.5/5, mb1 3.6/6,mb1mx3.4/32,mbtmp3.4/6,ML2.7/1, Error ellipse: s-maj=31.7km s-min=17.5km az=85.0*
*ISCJB **30** 14:04:38.2±1.2,34.74N±0.05×141.02E±0.09,h33km±6km, mb3.5/5,Error ellipse: s-maj=12.7km s-min=6.6km az=160.3*
ISC 30 14:04:39.1±1.3,34.77N±0.05×141.01E±0.08,h26km±8km, n21,σ1.48 s/20,mb3.5/5,1C-3D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.12**	**193**	⇓P	**Pb**	**14 04 43.5**	**+0.1**
BSO1				X		14 04 49.9	
BSO3	**Boso 3**	**0.41**	**274**	⇓P	**Pb**	**14 04 47.7**	**0.0**
BSO3				*e*X		14 04 57.2	
BSO4	**Boso 4**	**0.59**	**292**	⇑P	**Pb**	**14 04 50.7**	**-0.1**
BSO4				X		14 05 01.3	
KTR	**Katsuura**	**0.68**	**303**	P	**Pb**	**14 04 51.4**	**-1.0**
KTR				*e*S	**Sb**	**14 05 02.2**	**+0.8**
JCN	**Nagara**	**0.92**	**314**	P	**Pn**	**14 04 55.1**	**-1.3**
JCN				S	**Sb**	**14 05 08.9**	**+0.6**
CHOJ	**Chosi**	**0.94**	**352**	P	**Pn**	**14 04 53.7**	**-2.8**
JIM2	**Oshima 3**	**1.30**	**268**	⇓P	**Pn**	**14 04 59.8**	**-1.8**
JIM2				S	**Sn**	**14 05 16.8**	**-1.4**
JHJ	**Hachijo jima 2**	**1.94**	**212**	Pn	**Pn**	**14 05 09.1**	**-1.3**
	35nm,0.3s,baz=336,slow=21,SNR=105						
JHJ				Sn	**Sn**	**14 05 31.8**	**-2.0**
	28nm,0.3s,baz=63,slow=22,SNR=5.6						
MJAR	**Matsushiro Arr**	**2.88**	**309**	Pn	**Pn**	**14 05 22.5**	**-0.8**
	1.2nm,0.3s,baz=128,slow=16,SNR=19						
MJAR				Sn	**Sn**	**14 05 57.4**	**+0.1**
	2.6nm,0.3s,baz=54,slow=36,SNR=6.9						
MAT	**Matsushiro**	**2.89**	**309**	P	**Pn**	**14 05 22.3**	**-1.1**
MAT				S	**Sn**	**14 05 57.5**	**+0.2**
H11N2	**WAKE ISLAND Hy**	**27.35**	**116**	T	T	14 38 55.7	
	baz=310,slow=75						
H11N1	**WAKE ISLAND Hy**	**27.36**	**117**	T	T	14 39 00.5	
	baz=310,slow=75						
H11N3	**WAKE ISLAND Hy**	**27.37**	**116**	T	T	14 39 12.8	
	baz=310,slow=75,SNR=13						
H11S3	**WAKE ISLAND Hy**	**27.98**	**119**	T	T	14 39 41.3	
	baz=311,slow=74						
H11S1	**WAKE ISLAND Hy**	**27.98**	**119**	T	T	14 39 39.8	
	baz=311,slow=74						
H11S2	**WAKE ISLAND Hy**	**28.00**	**119**	T	T	14 39 53.1	
	baz=311						
MKAR	**Makanchi Array**	**45.08**	**304**	P	**P**	**14 12 55.5**	**+2.7**
	0.2nm,0.6s,baz=86,slow=8.8,SNR=3.2						
KURBB	**Kurchatov Arra**	**47.16**	**310**	P	**P**	**14 13 09.8**	**+0.7**
	0.4nm,0.5s,baz=87,slow=7.5,SNR=3.0						
ILAR	**Eielson Array**	**51.58**	**31**	P	P	14 13 47.7	+5.1
	0.3nm,0.9s,baz=259,slow=7.9,SNR=2.9						
WRA	**Warramunga Arr**	**54.78**	**188**	P	**P**	**14 14 06.4**	**-0.3**
	0.9nm,0.8s,baz=5.0,slow=7.6,SNR=10						
ASAR	**Alice Springs**	**58.51**	**188**	P	**P**	**14 14 34.9**	**+1.8**
	0.3nm,0.7s,baz=16,slow=11,SNR=4.6						

*ISCJB **30** 14:13:06.7±0.6,32.21N±0.05×105.14E±0.08,h15km, mb3.5/7,Error ellipse: s-maj=10.8km s-min=5.9km az=24.8*
*IDC **30** 14:13:06.2±1.0,32.30N×105.16E,h0km,mb3.6/7, mb1 3.8/8,mb1mx3.5/43,mbtmp3.6/8,ML3.1/1, Error ellipse: s-maj=39.4km s-min=19.0km az=61.0*
*BJI **30** 14:13:08.8,32.35N×105.06E,h5km,ML3.5/15,Ms3.5/2, Ms7 3.4/1*
ISC 30 14:13:09.0±0.8,32.31N±0.05×105.12E±0.05,h15km,n11, σ0.98/17,mb3.6/7,Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CD2	**Chengdu**	**1.81**	**220**	Pg	**Pb**	**14 13 41.5**	**-0.4**
CD2				Sg	**Sb**	**14 14 05.5**	**+1.1**
CD2				smax	smax		
	comp=N,1μm,0.5s						
CD2				smax	smax		
	comp=E,2μm,0.5s						
XAN	**Xi'an**	**3.63**	**61**	Pn	**Pn**	**14 14 04.5**	**-0.2**
XAN				Pg	**Pb**	**14 14 13.5**	**+0.6**
XAN				Sg	**Sb**	**14 14 57.5**	**+0.7**
XAN				smax	smax		
	comp=N,250nm,0.6s						
XAN				smax	smax		
	comp=E,260nm,0.5s						
LZH	**Lanzhou**	**3.92**	**345**	*e*Pn	**Pn**	**14 14 10.8**	**+2.0**
LZH				Pg	**Pb**	**14 14 16.8**	**-1.0**
LZH				Sn	**Sn**	**14 14 56.0**	**+1.5**
LZH				Sg	**Sb**	**14 15 04.0**	**-1.1**
LZH				smax	smax		
	comp=N,230nm,1.0s						
LZH				smax	smax		
	comp=E,280nm,0.6s						
LZH				LR	LR		
	comp=N,430nm,4.8s						
LZH				LR	LR		
	comp=E,400nm,5.0s						
LZH				LR	LR		
	comp=Z,380nm,7.4s						
SONM	**Songino Array**	**15.54**	**3**	Pn	**Pn**	**14 16 47.8**	**+0.2**
	0.1nm,0.3s,baz=186,slow=13,SNR=3.6						
MKAR	**Makanchi Array**	**22.67**	**316**	P	**P**	**14 18 09.8**	**0.0**
	0.8nm,0.7s,baz=119,slow=10.0,SNR=7.3						
ZALV	**Zalesovo Beam**	**26.04**	**332**	P	**P**	**14 18 40.3**	**-1.1**
	0.4nm,0.4s,baz=134,slow=12,SNR=2.6						
KLR	**Kul'dur**	**26.12**	**42**	P	**P**	**14 18 41.9**	**-0.3**
	1.1nm,0.7s,baz=253,slow=6.1,SNR=4.6						
KURBB	**Kurchatov Arra**	**26.82**	**321**	P	**P**	**14 18 48.8**	**+0.2**
	0.9nm,0.8s,baz=123,slow=11,SNR=5.5						
WRA	**Warramunga Arr**	**59.01**	**148**	P	**P**	**14 23 07.6**	**-0.6**
	1.0nm,0.7s,baz=342,slow=7.8,SNR=13						
ASAR	**Alice Springs**	**62.09**	**150**	P	**P**	**14 23 28.8**	**-0.4**
	0.3nm,0.7s,baz=345,slow=6.8,SNR=4.4						
YKA	**Yellowknife Ar**	**80.29**	**18**	P	**P**	**14 25 18.2**	**-0.7**
	0.6nm,0.5s,baz=327,slow=5.1,SNR=9.4						

*NIED **30** 14:38:00,36.30N×141.10E,h20km,Mw4.0 Best double couple: M1.03000×10^15 NP1:φ=26.00000°,δ=33.00000°, λ=-90.00000°. NP2:φ=206.00000°,δ=57.00000°, λ=-90.00000°.*
*IDC **30** 14:38:12.9±0.7,36.20N×141.08E,h0km,mb3.8/14, mb1 4.0/17,mb1mx3.8/63,mbtmp3.8/17,ML3.0/3,MS3.0/5, Ms1 3.0/5,ms1mx2.7/37, Error ellipse: s-maj=16.8km s-min=15.2km az=110.0*
*ISCJB **30** 14:38:15.1±0.8,36.26N±0.03×141.11E±0.05,h25km±5km, mb3.8/16,MS3.3/2, Error ellipse: s-maj=7.4km s-min=5.3km az=5.4*
*JMA **30** 14:38:15.7,36.23N×141.06E,h41km±1km,M3.7*
JMA Felt I J1.
*NEIC **30** 14:38:18.0±0.4,36.17N×141.05E,h35km,mb4.2/2, Error ellipse: s-maj=11.3km s-min=7.1km az=168.0*
ISC 30 14:38:14.2±2.2,36.30N±0.05×141.09E±0.06,h7km±14km, n39,σ1.03 s/39,mb3.9/16,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.52**	**307**	P	**Pn**	**14 38 26.8**	**-1.3**
JHO				S	**Sb**	**14 38 34.9**	**+1.4**
CHOJ	**Chosi**	**0.62**	**197**	P	**Pb**	**14 38 27.0**	**-0.4**
CHOJ				*e*S	**Sg**	**14 38 34.6**	**+0.3**
JYT	**Yasato**	**0.73**	**265**	P	**Pb**	**14 38 29.1**	**-0.1**
JYT				S	**Sb**	**14 38 38.3**	**-1.0**
ONAJ	**Iwakimizuishiy**	**0.83**	**344**	P	**Pn**	**14 38 31.8**	**-0.7**
JFK	**Kawauchi**	**1.08**	**351**	P	**Pn**	**14 38 35.0**	**-0.8**
JFK				S	**Sb**	**14 38 48.2**	**-1.4**
MJAR	**Matsushiro Arr**	**2.33**	**277**	Pn	**Pn**	**14 38 53.1**	**0.0**
	21nm,0.3s,baz=100,slow=8.6,SNR=162						
MJAR				Sn	**Sn**	**14 39 22.6**	**+0.6**
	10nm,0.3s,baz=75,slow=14,SNR=7.0						
MJAR				LR	LR	14 39 58.7	
	comp=Z,164nm,19.8s,baz=120,slow=46						
MAJO	**Matsushiro**	**2.34**	**277**	*e*Pn	**Pn**	**14 38 52.7**	**-0.4**
MAJO				*e*Sg	**Sg**	**14 39 28.7**	**-0.6**
MAT	**Matsushiro**	**2.34**	**277**	P	**Pn**	**14 38 53.1**	**0.0**
MAT				S	**Sn**	**14 39 21.0**	**-1.1**
JHJ	**Hachijo jima 2**	**3.35**	**199**	Pn	**Pn**	**14 39 07.1**	**+0.2**
	5.0nm,0.3s,baz=336,slow=19,SNR=31						
JHJ				Sn	**Sn**	**14 39 46.6**	**-0.4**
	19nm,0.3s,baz=90,slow=20,SNR=5.0						
JNU	**Nakatsue**	**8.98**	**252**	Pn	**Pn**	**14 40 25.1**	**+0.7**
	0.1nm,0.3s,baz=340,slow=13,SNR=2.6						
USRK	**Ussuriysk Ar.**	**10.51**	**321**	Pn	Pn	14 40 50.6	+5.3
	0.2nm,0.3s,baz=139,slow=14,SNR=3.8						
KSRS	**Korea Array**	**10.61**	**280**	Pn	**Pn**	**14 40 49.6**	**+3.0**
	0.1nm,0.3s,baz=86,slow=14,SNR=3.8						
KSRS				LR	LR	14 44 43.4	
	comp=Z,54nm,19.9s,baz=345,slow=37						
KSAR	**Wonju Array Be**	**10.64**	**280**	Pn	**Pn**	**14 40 49.6**	**+2.6**
KLR	**Kul'dur**	**14.61**	**335**	LR	LR	14 47 06.8	
	comp=Z,62nm,20.2s,baz=334,slow=36						
SEY	**Seymchan**	**27.56**	**11**	P	**P**	**14 44 03.3**	**+1.8**
	1.2nm,0.8s,baz=178,slow=12,SNR=4.5						
SONM	**Songino Array**	**27.99**	**305**	P	**P**	**14 44 04.8**	**-0.9**
	0.6nm,0.6s,baz=80,slow=7.9,SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**28.01**	**119**	T	T	15 13 24.1	
	baz=311,slow=75,SNR=37						
H11N1	**WAKE ISLAND Hy**	**28.02**	**119**	T	T	15 13 25.6	
	baz=311,slow=75,SNR=40						
H11N3	**WAKE ISLAND Hy**	**28.02**	**119**	T	T	15 13 22.9	
	baz=311,slow=75,SNR=38						
H11S1	**WAKE ISLAND Hy**	**28.69**	**121**	T	T	15 14 13.7	
	baz=314,slow=76,SNR=202						
H11S3	**WAKE ISLAND Hy**	**28.69**	**121**	T	T	15 14 11.9	
	baz=314,slow=76,SNR=141						
H11S2	**WAKE ISLAND Hy**	**28.71**	**121**	T	T	15 14 15.0	
	baz=314,slow=76,SNR=110						
ZALV	**Zalesovo Beam**	**42.22**	**313**	P	**P**	**14 46 07.8**	**+0.2**
	2.8nm,0.7s,baz=95,slow=6.5,SNR=14						
MKAR	**Makanchi Array**	**44.29**	**303**	P	**P**	**14 46 24.8**	**+0.2**
	0.4nm,0.3s,baz=89,slow=10,SNR=6.2						
KURK	**Kurchatov**	**46.18**	**309**	P	**P**	**14 46 39.4**	**0.0**
KURBB	**Kurchatov Arra**	**46.25**	**309**	P	**P**	**14 46 39.4**	**-0.6**
	1.7nm,0.6s,baz=83,slow=7.7,SNR=18						
SML	**Sawmill**	**49.74**	**36**	P	**P**	**14 47 07.0**	**+0.1**
	2.5nm,0.9s						
ILAR	**Eielson Array**	**50.25**	**32**	P	**P**	**14 47 11.2**	**+0.5**
	1.4nm,0.7s,baz=266,slow=6.6,SNR=15						
BVAR	**Borovoye Array**	**50.88**	**313**	P	**P**	**14 47 15.6**	**0.0**
	0.6nm,0.5s,baz=59,slow=9.0,SNR=2.9					

ARXS	**Arharly**	**3.03**	**262**	*e*P	**Pg**	**14 39 25.7**	**-2.4**
	1.3nm,0.2s						
ARXS				*e*S	**Sg**	**14 40 07.4**	**0.0**
	5.8nm,0.3s						

IDC ***30*** *14:40:45.8±11.0, 14°.08N×91°.69W, h0km, mb3.5/2, mb1 3.8/4, mb1mx3.5/46, mbtmp3.4/4, ML3.6/2, Error ellipse: s-maj=290.2km s-min=73.6km az=24.0*

MEX 30 14:40:54.8±0.3, 14°.15N×92°.33W, h15km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.13**	**5**	*e*P	Pn	14 41 27.8	-2.2
CCIG				*i* S	Sn	14 41 51.7	-4.6
TGIG		**2.72**	**344**	*e*P	Pn	14 41 35.0	-3.1
TGIG				*i* S	Sn	14 42 07.6	-3.3
CMIG	**Matias Romero**	**3.82**	**320**	Pn	Pn	14 41 51.0	-2.2
	3.9nm,0.3s,baz=147,slow=12,SNR=18						
CMIG				Sn	Sn	14 42 37.3	-0.5
	8.6nm,0.3s,baz=191,slow=14,SNR=5.5						
TXAR	**Lajitas Array**	**18.40**	**327**	P	P	14 45 08.9	-0.6
	0.0nm,0.3s,baz=150,slow=11,SNR=5.4						
YKA	**Yellowknife Ar**	**50.81**	**347**	P	P	14 49 48.8	-5.5
	0.3nm,0.5s,baz=146,slow=7.4,SNR=3.7						
ILAR	**Eielson Array**	**62.58**	**337**	P	P	14 51 13.6	-4.4
	0.5nm,0.9s,baz=103,slow=7.5,SNR=3.8						

ISCJB ***30*** *14:42:02.5±0.4, 39°.11N±0°.03×27°.93E±0°.04, h11km, Error ellipse: s-maj=4.2km s-min=3.9km az=140.4*
CSEM ***30*** *14:42:02.5±0.1, 39°.11N×27°.95E, h8km, MD2.9, Error ellipse: s-maj=2.9km s-min=2.7km az=62.0*
ISK ***30*** *14:42:02.0, 39°.13N×27°.94E, h7km, MD2.9*
DDA ***30*** *14:42:08.3, 38°.82N×28°.30E, h7km, Md2.8*

ISC 30 14:42:02.6±0.8, 39°.12N±0°.02×27°.95E±0°.02, h11km, n48, σ0°58/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKS	**Akhisar**	**0.26**	**203**	*e*PG	**Pg**	**14 42 07.9**	**-0.1**
AKS				*e*SG	**Sg**	**14 42 12.1**	**+0.5**
AKS	**Akhisar**	**0.26**	**203**	*e*Pg	**Pg**	**14 42 07.9**	**-0.1**
AKS				*e*Sg	**Sg**	**14 42 12.1**	**+0.5**
BALB	**Balikesir**	**0.52**	**354**	*e*PG	**Pg**	**14 42 12.7**	**-0.1**
BALB	**Balikesir**	**0.52**	**354**	*e*Pg	**Pg**	**14 42 12.7**	**-0.1**
DEMI	**Demirci**	**0.60**	**97**	*i* P	**Pg**	**14 42 14.8**	**+0.5**
DEMI				*i* S	**Sg**	**14 42 22.7**	**+0.3**
DEMI	**Demirci**	**0.60**	**97**	P	**Pg**	**14 42 14.9**	**+0.5**
DEMI				S	**Sg**	**14 42 22.7**	**+0.3**
DST	**Dursunbey**	**0.71**	**47**	*e*PG	**Pg**	**14 42 16.1**	**-0.3**
DST	**Dursunbey**	**0.71**	**47**	*e*Pg	**Pg**	**14 42 16.1**	**-0.3**
MANT	**Manisa**	**0.79**	**143**	*i* P	**Pg**	**14 42 16.7**	**-1.2**
MANT				*i* S	**Sg**	**14 42 27.4**	**-0.9**
MANT	**Manisa**	**0.79**	**143**	P	**Pg**	**14 42 16.7**	**-1.2**
MANT				S	**Sg**	**14 42 27.4**	**-0.9**
DKL	**Dikili**	**0.81**	**267**	*e*PG	**Pg**	**14 42 18.0**	**-0.3**
DKL	**Dikili**	**0.81**	**267**	*e*Pg	**Pg**	**14 42 18.0**	**-0.3**
KULA	**Kula-Manisa**	**0.82**	**137**	*e*PG	**Pg**	**14 42 18.5**	**0.0**
KULA	**Kula-Manisa**	**0.82**	**137**	*e*Pg	**Pg**	**14 42 18.5**	**0.0**
IZM	**Izmir**	**0.90**	**217**	*e*PG	**Pg**	**14 42 19.7**	**-0.2**
IZM	**Izmir**	**0.90**	**217**	*e*Pg	**Pg**	**14 42 19.7**	**-0.2**
GONE	**Gonen-Balikesi**	**0.95**	**348**	*e*PG	**Pg**	**14 42 20.0**	**-0.9**
GONE	**Gonen-Balikesi**	**0.95**	**348**	*e*Pg	**Pg**	**14 42 20.0**	**-0.9**
AYDB	**Zeytinkoy-Aydi**	**1.17**	**182**	*e*PN	**Pb**	**14 42 24.6**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.17**	**182**	*e*Pn	**Pb**	**14 42 24.6**	**-0.4**
KCTX	**Karacabey (Bur**	**1.19**	**15**	*e*PN	**Pb**	**14 42 24.9**	**-0.3**
KCTX	**Karacabey (Bur**	**1.19**	**15**	*e*Pn	**Pb**	**14 42 24.9**	**-0.3**
GDZ	**Gediz**	**1.20**	**91**	*i* P	**Pg**	**14 42 25.9**	**+0.3**
GDZ				*i* S	**Sn**	**14 42 41.9**	**+0.2**
GDZ	**Gediz**	**1.20**	**91**	P	**Pg**	**14 42 25.9**	**+0.3**
GDZ				S	**Sn**	**14 42 41.9**	**+0.2**
TVSB	**Tavsanli**	**1.22**	**74**	*e*PN	**Pn**	**14 42 26.0**	**+0.2**
TVSB	**Tavsanli**	**1.22**	**74**	*e*Pn	**Pn**	**14 42 26.0**	**+0.2**
EDC	**Edincik**	**1.23**	**357**	*e*PN	**Pn**	**14 42 25.2**	**-0.5**
EDC	**Edincik**	**1.23**	**357**	*e*Pn	**Pn**	**14 42 25.2**	**-0.5**
KRBG	**Karabiga-Canak**	**1.37**	**339**	*e*PN	**Pn**	**14 42 27.8**	**+0.2**
KRBG	**Karabiga-Canak**	**1.37**	**339**	*e*Pn	**Pn**	**14 42 27.8**	**+0.2**
MRMT	**Marmara Adasi**	**1.50**	**350**	*e*PN	**Pn**	**14 42 29.8**	**+0.2**
MRMT	**Marmara Adasi**	**1.50**	**350**	*e*Pn	**Pn**	**14 42 29.8**	**+0.2**
ARMT	**Armutlu**	**1.61**	**26**	*e*PN	**Pn**	**14 42 31.6**	**+0.6**
ARMT	**Armutlu**	**1.61**	**26**	*e*Pn	**Pn**	**14 42 31.6**	**+0.6**
SIGR	**SIGRI**	**1.63**	**274**	*e*PN	**Pn**	**14 42 31.9**	**+0.7**
SIGR	**SIGRI**	**1.63**	**274**	*e*Pn	**Pn**	**14 42 31.9**	**+0.7**
CHOS	**Chios island**	**1.65**	**244**	*e*PN	**Pn**	**14 42 32.1**	**+0.5**
CHOS	**Chios island**	**1.65**	**244**	*e*Pn	**Pn**	**14 42 32.1**	**+0.5**
RKY	**Sarkoy-Tekirda**	**1.67**	**340**	*e*PN	**Pn**	**14 42 32.2**	**+0.3**
RKY	**Sarkoy-Tekirda**	**1.67**	**340**	*e*Pn	**Pn**	**14 42 32.2**	**+0.3**
IZI	**Iznik**	**1.69**	**44**	*e*PN	**Pb**	**14 42 33.5**	**-0.3**
IZI	**Iznik**	**1.69**	**44**	*e*Pn	**Pb**	**14 42 33.5**	**-0.3**
ERIK	**Erikli-Kesan**	**1.90**	**325**	*e*PN	**Pn**	**14 42 35.9**	**+0.9**
ERIK	**Erikli-Kesan**	**1.90**	**325**	*e*Pn	**Pn**	**14 42 35.9**	**+0.9**
GADA	**Gvkgeada**	**1.91**	**305**	*e*PN	**Pn**	**14 42 35.3**	**+0.2**
GADA	**Gvkgeada**	**1.91**	**305**	*e*Pn	**Pn**	**14 42 35.3**	**+0.2**
ALN	**Alexandroupoli**	**2.30**	**321**	*e*PN	**Pn**	**14 42 41.9**	**+1.5**
ALN	**Alexandroupoli**	**2.30**	**321**	*e*Pn	**Pn**	**14 42 41.9**	**+1.5**

IDC 30 14:42:48.3±8.2, 7°.89S×119°.71E, h258km±100km, mb2.8/2, mb1 2.9/4, mb1mx2.7/43, mbtmp3.5/4, Error ellipse: s-maj=171.2km s-min=32.1km az=48.0, Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.68**	**151**	P	Pn	14 45 27.9	+0.2
	0.0nm,0.3s,baz=324,slow=17,SNR=2.6						
FITZ				S	S	14 47 22.6	-16
	0.1nm,0.3s,baz=182,slow=18,SNR=3.5						
WRA	**Warramunga Arr**	**18.56**	**132**	P	P	14 46 46.3	-0.3
	0.1nm,0.3s,baz=307,slow=13,SNR=7.9						
ASAR	**Alice Springs**	**20.77**	**141**	P	P	14 47 10.2	+0.1
	1.1nm,0.5s,baz=315,slow=8.9,SNR=33						
MKAR	**Makanchi Array**	**63.80**	**332**	P	P	14 52 53.3	0.0
	0.2nm,0.4s,baz=144,slow=5.4,SNR=2.7						

IDC ***30*** *14:49:17.7±1.3, 52°.95N×173°.50E, h0km, mb3.4/7, mb1 3.7/7, mb1mx3.5/52, mbtmp3.4/7, Error ellipse: s-maj=41.9km s-min=26.0km az=160.0*
ISCJB ***30*** *14:49:18.7±1.1, 53°.0N±0°.2×173°.4E±0°.3, h18km, mb3.5/7, Error ellipse: s-maj=33.7km s-min=20.7km az=160.8*

ISC 30 14:49:20.6±1.1, 53°.0N±0°.2×173°.5E±0°.2, h18km, n10, σ1°15/7, mb3.5/7, Near Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILAR	**Eielson Array**	**23.18**	**44**	P	**P**	**14 54 26.4**	**+0.5**
	0.8nm,0.3s,baz=238,slow=9.4,SNR=15						
H11N2	**WAKE ISLAND Hy**	**33.57**	**191**	T	T	15 31 49.9	
	baz=8.9						
H11N3	**WAKE ISLAND Hy**	**33.58**	**191**	T	T	15 31 47.3	
	baz=8.9						
H11N1	**WAKE ISLAND Hy**	**33.59**	**191**	T	T	15 31 42.8	
	baz=8.9						
YKA	**Yellowknife Ar**	**37.56**	**46**	P	**P**	**14 56 34.3**	**+1.0**
	0.3nm,0.7s,baz=287,slow=7.1,SNR=2.7						
PDAR	**Pinedale Array**	**50.24**	**69**	P	**P**	**14 58 13.7**	**-1.9**
	0.3nm,0.5s,baz=324,slow=2.6,SNR=3.6						
MKAR	**Makanchi Array**	**55.27**	**303**	P	**P**	**14 58 52.2**	**-0.2**
	0.1nm,0.2s,baz=59,slow=7.9,SNR=2.6						
TXAR	**Lajitas Array**	**62.98**	**77**	P	**P**	**14 59 46.8**	**+0.6**
	0.2nm,0.5s,baz=316,slow=5.0,SNR=3.7						
FINES	**FINESS Array B**	**63.04**	**343**	P	**P**	**14 59 45.7**	**-0.2**
	1.3nm,0.8s,baz=34,slow=5.7,SNR=2.3						
WRA	**Warramunga Arr**	**80.15**	**217**	P	**P**	**15 01 29.8**	**+0.4**
	0.1nm,0.5s,baz=28,slow=5.8,SNR=3.2						

ISCJB ***30*** *14:56:35.9±0.9, 12°.23N±0°.07×145°.4E±0°.2, h33km, mb3.7/7, MS3.0/4, Error ellipse: s-maj=27.8km s-min=9.8km az=171.5*
IDC ***30*** *14:56:39.2±0.8, 12°.37N×145°.33E, h48km±7km, mb3.5/7, mb1 3.7/7, mb1mx3.4/44, mbtmp3.7/7, MS3.2/4, Ms1 3.2/4, ms1mx2.8/21, Error ellipse: s-maj=23.2km s-min=8.0km az=79.0*

ISC 30 14:56:37.7±0.8, 12°.29N±0°.09×145°.4E±0°.2, h35km, n19, σ0°86/13, mb3.7/7, MS3.0/4, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.38**	**339**	P	**Pn**	**14 57 00.6**	**0.0**
	247nm,0.3s,baz=158,slow=23,SNR=84						
GUMO				S	**Sn**	**14 57 16.9**	**-0.8**
	415nm,0.3s,baz=158,slow=22,SNR=8.3						
GUMO				LR	LR	14 58 29.6	
	comp=Z,357nm,18.5s,baz=118,slow=85						
JHJ	**Hachijo jima 2**	**21.36**	**347**	LR	LR	15 09 11.7	
	comp=Z,62nm,19.4s,baz=62,slow=35						
H11S3	**WAKE ISLAND Hy**	**21.45**	**71**	T	T	15 22 41.3	
	baz=262						
H11S1	**WAKE ISLAND Hy**	**21.46**	**71**	T	T	15 22 43.1	
	baz=262						
H11S2	**WAKE ISLAND Hy**	**21.46**	**71**	T	T	15 22 45.4	
	baz=262						
JOW	**Kunigami**	**21.62**	**315**	LR	LR	15 09 08.2	
	comp=Z,62nm,19.5s,baz=258,slow=35						
H11N1	**WAKE ISLAND Hy**	**21.95**	**68**	T	T	15 23 23.8	
	baz=258						
H11N2	**WAKE ISLAND Hy**	**21.96**	**68**	T	T	15 23 29.2	
	baz=258						
H11N3	**WAKE ISLAND Hy**	**21.96**	**68**	T	T	15 23 20.9	
	baz=258						
MJAR	**Matsushiro Arr**	**25.00**	**346**	LR	LR	15 11 23.0	
	comp=Z,45nm,19.8s,baz=145,slow=36						
HNR	**Honiara**	**25.99**	**145**	LR	LR	15 11 21.4	
	comp=Z,45nm,19.9s,baz=150,slow=34						
WRA	**Warramunga Arr**	**33.82**	**199**	P	**P**	**15 03 16.3**	**-0.5**
	1.3nm,0.7s,baz=22,slow=9.6,SNR=26						
WRA				pP	**sP**	**15 03 30.6**	**-0.6**
	1.4nm,0.6s,baz=23,slow=9.8,SNR=8.7						
ASAR	**Alice Springs**	**37.45**	**197**	P	**P**	**15 03 48.2**	**+0.1**
	0.3nm,0.6s,baz=33,slow=9.5,SNR=9.1						
ASAR				pP	**sP**	**15 04 02.4**	**0.0**
	0.4nm,0.6s,baz=24,slow=8.5,SNR=3.5						
KLR	**Kul'dur**	**38.52**	**346**	P	**P**	**15 03 57.8**	**+1.1**
	0.5nm,0.5s,baz=193,slow=7.8,SNR=3.7						
CMAR	**Chiang Mai Arr**	**45.09**	**284**	P	**P**	**15 04 50.5**	**-0.4**
	0.3nm,0.3s,baz=70,slow=7.8,SNR=2.8						
MKAR	**Makanchi Array**	**62.77**	**316**	P	**P**	**15 07 00.5**	**+0.9**
	0.5nm,0.6s,baz=93,slow=8.5,SNR=4.8						
ILAR	**Eielson Array**	**69.53**	**25**	P	**P**	**15 07 42.1**	**-0.5**
	1.6nm,0.8s,baz=249,slow=5.7,SNR=22						
ILAR				pP	**sP**	**15 07 55.9**	**-1.7**
	0.9nm,0.7s,baz=256,slow=5.3,SNR=6.1						
YKA	**Yellowknife Ar**	**83.78**	**27**	P	**P**	**15 09 03.6**	**+0.4**
	0.3nm,0.5s,baz=284,slow=4.9,SNR=3.2						
LPAZ	**La Paz**	**147.31**	**101**	PKPbc	**PKPdf**	**15 16 17.9**	**+0.9**
	1.1nm,0.8s,baz=333,slow=2.3,SNR=3.1						

IDC ***30*** *15:06:35.0±2.2, 36°.87N×140°.82E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.3/37, mbtmp3.5/4, ML3.4/2, Error ellipse: s-maj=38.2km s-min=23.1km az=65.0*
ISCJB ***30*** *15:06:36.5±0.9, 36°.87N±0°.04×140°.80E±0°.07, h15km±10km, mb3.4/2, Error ellipse: s-maj=9.7km s-min=6.7km az=29.3*
JMA ***30*** *15:06:37.5, 36°.90N×140°.66E, h9km±1km, M3.5 Broadband fault plane solution: P waves. NP1: ϕs341.00000°, δ55.00000°, λ-82.00000°. NP2: ϕs147.00000°, δ36.00000°, λ-102.00000°. Principal axes: T Plg10.0000°, Azm65.0000°; N Plg7.0000°, Azm156.0000°; P Plg78.0000°, Azm280.0000°;*
JMA Felt I J1.

ISC 30 15:06:37.4±1.1, 36°.90N±0°.04×140°.72E±0°.05, h12km±8km, n17, σ0°82/18, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**16**	↑P	**Pg**	**15 06 42.2**	**+0.2**
ONAJ				S	**Sg**	**15 06 45.8**	**+0.7**
JHO	**Hitachi**	**0.31**	**204**	↑P	**Pg**	**15 06 43.3**	**-0.4**
JFK	**Kawauchi**	**0.48**	**14**	↑P	**Pg**	**15 06 46.8**	**-0.1**
JFK				S	**Sg**	**15 06 53.6**	**+0.3**
JSB	**Shiboa**	**0.65**	**276**	↑P	**Pg**	**15 06 49.6**	**-0.4**
JSB				S	**Sg**	**15 06 58.0**	**-0.5**
JFT	**Otama**	**0.69**	**334**	↓P	**Pg**	**15 06 50.4**	**-0.4**
JMM	**Marumori**	**0.97**	**3**	↑P	**Pg**	**15 06 55.1**	**-0.9**
JMM				S	**Sg**	**15 07 07.9**	**-0.8**
MJAR	**Matsushiro Arr**	**2.05**	**261**	Pn	**Pn**	**15 07 12.0**	**+0.2**
	24nm,0.3s,baz=81,slow=16,SNR=71						
MJAR				Sn	**Sn**	**15 07 38.9**	**+1.6**
	19nm,0.3s,baz=85,slow=26,SNR=14						
MAT	**Matsushiro**	**2.05**	**261**	P	**Pn**	**15 07 12.2**	**+0.4**
MAT				S	**Sn**	**15 07 38.9**	**+1.6**
JHJ	**Hachijo jima 2**	**3.85**	**192**	Pn	**Pn**	**15 07 37.0**	**+0.6**
	3.3nm,0.3s,baz=127,slow=20,SNR=6.7						
JHJ				Sn	**Sn**	**15 08 22.0**	**+0.4**
	4.0nm,0.3s,baz=17,slow=19,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	15 42 19.1	
	baz=312,slow=75,SNR=50						
H11N1	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	15 42 20.9	
	baz=312,slow=75,SNR=47						
H11N3	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	15 42 21.7	
	baz=312,slow=75,SNR=37						
H11S1	**WAKE ISLAND Hy**	**29.25**	**122**	T	T	15 43 12.0	
	baz=314,slow=76,SNR=88						
H11S3	**WAKE ISLAND Hy**	**29.25**	**122**	T	T	15 43 12.1	
	baz=314,slow=76,SNR=107						
H11S2	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	15 43 13.2	
	baz=314,slow=76,SNR=78						
MKAR	**Makanchi Array**	**43.72**	**302**	P	**P**	**15 14 42.1**	**-0.3**
	0.2nm,0.4s,baz=110,slow=6.6,SNR=2.8						
WRA	**Warramunga Arr**	**56.85**	**187**	P	**P**	**15 16 21.1**	**-0.8**
	0.5nm,0.7s,baz=3.5,slow=7.2,SNR=14						

SJA 30 15:09:32.6±0.7, 31°.43S×68°.74W, h104km±3km, ML3.5, MW4.0, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJA	**San Juan**	**0.18**	**123**	*i* P	Pn	15 09 48.3	+1.0
SJA				IAML		15 09 49.2	
	comp=Z,2μm,0.2s						
SJA				*i* S	Sn	15 09 59.4	+1.0
RTLL	**Cerro Villicun**	**0.24**	**66**	*i* P	Pn	15 09 48.1	+0.5
RTCV	**Cerro Valdivia**	**0.46**	**159**	*i* P	Pn	15 09 49.7	+1.0
RTLS	**Leoncito**	**0.60**	**232**	*i* P	Pn	15 09 50.9	+0.9
ACCO	**Cerro Coronel**	**0.89**	**341**	*i* P	Pn	15 09 53.8	+1.2
ACCO				*i* S	Sn	15 10 09.6	+2.0
ACCO				IAML		15 10 11.6	
	comp=Z,570nm,0.3s						
AUSP	**Upsallata**	**0.96**	**215**	*i* P	Pn	15 09 54.4	+1.1
ACDV	**Cuesta del Vie**	**1.30**	**345**	*i* P	Pn	15 09 58.3	+1.4
AVFE	**Valle Fertil**	**1.34**	**55**	*i* P	Pn	15 09 58.5	+1.2
AROD	**Rodeo**	**1.41**	**333**	*i* P	Pn	15 09 59.8	+1.4
ACHE	**Chepes**	**1.79**	**82**	*i* P	Pn	15 10 03.8	+0.9

IDC ***30*** *15:58:51.2±2.8, 6°.61S×147°.43E, h86km±22km, mb3.7/7, mb1 3.8/10, mb1mx3.5/40, mbtmp4.0/10, MS3.1/1, Ms1 3.3/1, ms1mx2.4/25, Error ellipse: s-maj=42.2km s-min=16.9km az=81.0*

ISC 30 15:58:48.9±1.3, 6°.58S±0°.08×147°.5E±0°.2, h63km, n13, σ2°38/14, mb4.0/7, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.83**	**186**	P	**Pn**	**15 59 35.0**	**+3.3**
	128nm,0.3s,baz=7.1,slow=8.1,SNR=498						
PMG				S	**Sn**	**16 00 07.1**	**+2.5**
	28nm,0.3s,baz=213,slow=20,SNR=5.8						
PMG				LR	LR	16 00 13.9	
	comp=Z,25nm,22.0s,baz=240,slow=30						
JAY	**Jayapura**	**7.86**	**301**	P	**Pn**	**16 00 42.9**	**+2.3**
	0.4nm,0.3s,baz=98,slow=19,SNR=9.2						
CTA	**Charters Tower**	**13.48**	**185**	P	**P**	**16 02 01.9**	**-2.6**
	0.9nm,0.3s,baz=353,slow=13,SNR=13						
WRA	**Warramunga Arr**	**18.41**	**223**	P	**P**	**16 02 58.6**	**-0.5**
	0.5nm,0.3s,baz=50,slow=11,SNR=31						
WRA				S	Sn	16 06 13.5	-12
	0.1nm,0.3s,baz=40,slow=23,SNR=3.0						
ASAR	**Alice Springs**	**21.42**	**216**	P	**P**	**16 03 31.9**	**+0.1**
	1.5nm,0.5s,baz=52,slow=9.0,SNR=63						
ASAR				S	**S**	**16 07 20.8**	**-5.4**
	0.9nm,1.0s,baz=38,slow=24,SNR=4.2						
FITZ	**Fitzroy Crossi**	**24.17**	**240**	P	**P**	**16 03 58.8**	**-0.7**
	3.0nm,0.5s,baz=73,slow=10,SNR=19						
STKA	**Stephens Creek**	**25.76**	**192**	P	**P**	**16 04 13.6**	**-0.2**
	2.9nm,0.6s,baz=1.8,slow=10,SNR=12						
RAO	**Raoul Island**	**39.66**	**129**	LR	LR	16 19 17.2	
	comp=Z,232nm,18.7s,baz=210,slow=31						
KSRS	**Korea Array**	**47.45**	**339**	P	**P**	**16 07 16.8**	**-0.6**
	1.6nm,0.9s,baz=158,slow=8.2,SNR=3.1						
CMAR	**Chiang Mai Arr**	**53.93**	**298**	P	**P**	**16 08 07.1**	**+0.5**
	1.7nm,0.5s,baz=122,slow=5.6,SNR=10						
CMAR				LR	LR	16 32 39.9	
	comp=Z,17nm,18.1s,baz=170,slow=38						
MKAR	**Makanchi Array**	**78.23**	**320**	P	**P**	**16 10 41.5**	**-0.4**
	0.2nm,0.2s,baz=113,slow=6.7,SNR=3.6						
ZALV	**Zalesovo Beam**	**79.74**	**328**	P	**P**	**16 10 48.8**	**-1.2**
	0.8nm,0.5s,baz=97,slow=5.6,SNR=5.5						
TORD	**Torodi Ar. Bea**	**145.68**	**284**	PKPbc	**PKPab**	**16 18 21.6**	**-0.4**
	1.4nm,0.4s,baz=80,slow=3.3,SNR=14						

IDC 30 16:03:35.2±9.5, 28°.17S×177°.27W, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.5/30, mbtmp3.5/3, Error ellipse: s-maj=173.8km s-min=30.1km az=92.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.22**	**208**	Pn	Pn	16 03 59.6	0.0
	103nm,0.3s,baz=78,slow=23,SNR=4.0						
RAO				Sn	Sn	16 04 17.4	+0.6
	156nm,0.3s,baz=54,slow=23,SNR=4.4						
STKA	**Stephens Creek**	**35.66**	**254**	P	P	16 10 35.3	+0.1
	1.1nm,0.7s,baz=111,slow=8.6,SNR=2.9						
ASAR	**Alice Springs**	**43.92**	**264**	P	P	16 11 43.8	-0.3
	0.2nm,0.5s,baz=99,slow=6.2,SNR=8.1						
WRA	**Warramunga Arr**	**44.71**	**270**	P	P	16 11 50.3	-0.1
	0.2nm,0.3s,baz=114,slow=8.0,SNR=14						

ISCJB ***30*** *16:07:57.8±0.2, 62°.13N±0°.03×124°.11W±0°.05, h5km, mb4.1/19, MS3.2/8, Error ellipse: s-maj=4.2km s-min=3.0km az=36.9*
PGC ***30*** *16:08:00.6, 62°.07N×124°.15W, h1km, ML4.4/4, 155km west of Fort Simpson, Nt Nw Territories - Nunavut, Canada*
NEIC ***30*** *16:08:00.6, 62°.07N×124°.15W, h1km, mb4.0/29, MW4.1, ML4.4(OTT), Moment Tensor Solution. s18 Moment tensor: Scale 10^15 Nm; Mrr 1.47; Mθθ -0.29; Mϕϕ -1.17; Mrθ 0.04; Mϕθ 0.59; Mϕr -0.27; Best double couple: M0 1.5000×10^15 NP1:ϕs330.00000°, δ40.00000°, λ85.00000°. NP2:ϕs157.00000°, δ50.00000°, λ94.00000°. Principal axes: T 1.5000, Plg84.0000°, Azm96.0000°; N 0.0000, Plg3.0000°, Azm334.0000°; P -1.4900, Plg5.0000°, Azm243.0000°; After OTT.*
IDC ***30*** *16:08:05.5±1.4, 62°.24N×123°.86W, h35km±13km, mb3.7/7, mb1 4.1/13, mb1mx3.7/47, mbtmp4.1/13, ML3.6/6, MS3.2/12, Ms1 3.2/12, ms1mx2.9/43 Error ellipse: s-maj=14.6km s-min=8.4km az=23.0*

ISC 30 16:07:59.7±0.4, 62°.13N±0°.04×124°.09W±0°.04, h5km, n99, σ1°86/107, mb4.1/19, MS3.2/8, Northwest Territories

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FNBB	**Fort Nelson**	**3.30**	**170**	Pn	**Pn**	**16 08 51.6**	**-0.4**
FNBB				Pg	**Pb**	**16 08 57.9**	**-0.8**
FNBB				Sn	**Sn**	**16 09 31.7**	**+0.2**
FNBB				Sg	**Sb**	**16 09 40.5**	**+1.5**
YKW3	**Yellowknife Ar**	**4.43**	**80**	Pn	**Pn**	**16 09 08.8**	**+1.3**
YKW3				Sn	**Sn**	**16 10 00.0**	**+0.6**
YKW3				Sg	**Sg**	**16 10 20.2**	**-1.8**
YKA	**Yellowknife Ar**	**4.44**	**81**	Pn	**Pn**	**16 09 08.1**	**+0.5**
	2.7nm,0.3s,baz=266,slow=13,SNR=69						
YKA				Pg	**Pg**	**16 09 23.4**	**-1.3**
	37nm,0.3s,baz=268,slow=16,SNR=101						
YKA				Lg	Lg	16 10 19.6	
	39nm,0.3s,baz=268,slow=29,SNR=10						
YKA				LR	LR	16 11 01.0	
	comp=Z,44nm,19.9s,baz=0.0,slow=41						
CLVN	**Colville Lake**	**5.00**	**351**	Pn	**Pn**	**16 09 15.9**	**+0.7**
DHRN	**Dharma Camp**	**5.30**	**20**	Pn	**Pn**	**16 09 20.4**	**+1.1**
DHRN				Sn	**Sn**	**16 10 19.6**	**-1.1**
DHRN				Sg	**Sg**	**16 10 48.1**	**-1.5**
WHY	**Whitehorse**	**5.39**	**259**	Pn	**Pn**	**16 09 20.4**	**-0.4**
WHY				Sn	**Sn**	**16 10 20.5**	**-2.8**
WHY				Sg	**Sb**	**16 10 45.1**	**+5.7**
WHY	**Whitehorse**	**5.39**	**259**	*e*Pn	**Pn**	**16 09 20.2**	**-0.6**
SKAG	**Skagway**	**6.12**	**249**	*e*Pn	**Pn**	**16 09 30.1**	**-0.5**
HYT	**Haines Junctio**	**6.56**	**264**	Pn	**Pn**	**16 09 37.1**	**+0.3**
HYT				Sn	**Sn**	**16 10 47.9**	**-4.1**
HYT				Sg	**Sg**	**16 11 23.6**	**-6.5**
HYT	**Haines Junctio**	**6.56**	**264**	*e*Pn	**Pn**	**16 09 36.9**	**+0.1**
PLBC	**Pleasant Camp**	**6.58**	**251**	Pn	**Pn**	**16 09 37.0**	**0.0**
PLBC				Sn	**Sn**	**16 10 48.7**	**-3.6**
YUK5	**Granite Creek**	**6.64**	**267**	P

MFID	**Camas Ranch** 6.3nm,1.0s	**19.37**	**162**	*e*P	**Pn**	**16 12 26.6**	**-0.7**
HLID	**Hailey** 3.0nm,0.8s	**19.46**	**158**	*e*P	**P**	**16 12 27.5**	**+0.3**
ULM	**Lac du Bonnet** 0.5nm,0.3s,baz=317,slow=12,SNR=7.8	**19.50**	**115**	P	**P**	**16 12 27.2**	**-0.2**
ULM	0.8nm,0.3s,baz=350,slow=11,SNR=4.7			S	Sn	16 15 48.8	-19
ULM	0.4nm,0.3s,baz=26,slow=18,SNR=3.9			Lg	Lg	16 18 01.9	
ULM	comp=Z,67nm,18.1s,baz=270,slow=37			LR	LR	16 20 09.2	
ULM	**Lac du Bonnet** 10nm,0.8s	**19.50**	**115**	*e*P	**P**	**16 12 26.3**	**-1.0**
K05A	**Summer Lake** 19nm,1.3s	**19.53**	**173**	*e*P	**Pn**	**16 12 30.1**	**+0.9**
FLWY	**Flagg Ranch** 9.2nm,1.2s	**19.71**	**150**	*e*P	**Pn**	**16 12 31.3**	**-0.1**
IMW	**Indian Meadow** 3.3nm,0.8s	**19.83**	**151**	P	**Pn**	**16 12 32.5**	**-0.4**
WVOR	**Wild Horse Val** 6.4nm,1.0s	**20.00**	**168**	*e*P	**P**	**16 12 33.6**	**+0.6**
MOOW	**Moose Ponds** 5.3nm,0.9s	**20.02**	**151**	*e*P	**Pn**	**16 12 35.7**	**+0.7**
LOHW	**Long Hollow** 3.3nm,0.7s	**20.18**	**151**	*e*P	**P**	**16 12 34.2**	**-0.9**
TPAW	**Teton Pass** 16nm,1.4s	**20.22**	**151**	*e*P	Pn	16 12 37.0	-0.4
REDW	**Red Top Meadow** 8.3nm,1.1s	**20.36**	**151**	*e*P	**P**	**16 12 37.5**	**+0.4**
MOD	**Modoc Plateau** 3.9nm,0.9s	**20.39**	**172**	*e*P	Pn	16 12 39.1	-0.2
AGMN	**Agassiz Nation** 4.0nm,0.6s	**21.00**	**118**	*e*P	**P**	**16 12 43.1**	**-0.6**
BW06	**Boulder Array** 7.2nm,1.1s	**21.23**	**149**	*e*P	**P**	**16 12 46.2**	**-0.2**
PDAR	**Pinedale Array** 2.4nm,0.7s,baz=350,slow=7.5,SNR=11	**21.23**	**149**	P	**P**	**16 12 48.1**	**+1.7**
RSSD	**Black Hills** 12nm,0.9s	**21.52**	**138**	*e*P	**P**	**16 12 50.6**	**+1.1**
HWUT	**Hardware Ranch** 6.7nm,1.0s	**21.89**	**154**	*e*P	**P**	**16 12 55.0**	**+1.6**
SPUT	**South Promonto** 8.8nm,1.2s	**22.00**	**156**	*e*P	**P**	**16 12 55.5**	**+0.9**
K22A	**Casper** 12nm,0.8s	**22.12**	**144**	*e*P	**P**	**16 12 56.3**	**+0.4**
DUG	**Dugway, Tooele** 2.1nm,0.6s	**23.01**	**157**	*e*P	**P**	**16 13 05.6**	**+0.3**
EYMN	**Ely** 46nm,2.0s	**23.13**	**113**	*e*P	**P**	**16 13 07.5**	**+1.1**
P17A	**Butcher Ranch,** 11nm,1.1s	**24.11**	**154**	*e*P	**P**	**16 13 18.4**	**+2.2**
ECSD	**EROS Data Cent** 4.8nm,0.8s	**24.45**	**126**	*e*P	**P**	**16 13 18.1**	**-1.1**
FRB	**Frobisher Bay** comp=Z,113nm,21.0s,baz=245,slow=36	**24.65**	**62**	LR	LR	16 22 53.4	
ISCO	**Idaho Springs** 2.3nm,0.9s	**25.02**	**145**	P	**P**	**16 13 23.1**	**-1.6**
SCHQ	**Schefferville** comp=Z,94nm,18.3s,baz=276,slow=37	**29.88**	**78**	LR	LR	16 26 13.4	
TXAR	**Lajitas Array** 1.0nm,1.1s,baz=12,slow=7.7,SNR=5.8	**35.44**	**148**	P	**P**	**16 14 57.7**	**+1.1**
TXAR	0.6nm,1.0s,baz=350,slow=2.2,SNR=3.6			PcP	**PcP**	**16 17 27.5**	**+1.3**
TXAR	comp=Z,31nm,18.3s,baz=0.0,slow=36			LR	LR	16 29 27.0	
LPIG	**La Paz** comp=Z,36nm,19.1s,baz=220,slow=39	**39.15**	**160**	LR	LR	16 33 30.9	
ARCES	**ARCESS Array B** comp=Z,30nm,20.3s,baz=17,slow=36	**46.86**	**14**	LR	LR	16 36 28.0	
NOA	**NORSAR Array B** comp=Z,12nm,21.8s,baz=100,slow=34	**52.51**	**26**	LR	LR	16 37 54.8	
FINES	**FINESS Array B** 1.7nm,0.8s,baz=353,slow=9.8,SNR=4.2	**54.67**	**17**	P	**P**	**16 17 29.4**	**+0.5**
FINES	comp=Z,17nm,18.9s,baz=4.5,slow=38			LR	LR	16 42 32.4	
ZALV	**Zalesovo Beam** 0.4nm,0.3s,baz=359,slow=7.1,SNR=4.3	**62.04**	**341**	P	**P**	**16 18 21.1**	**+0.7**
AKASG	**Malin Array Be** 1.4nm,0.5s,baz=345,slow=6.7,SNR=7.0	**65.52**	**18**	P	**P**	**16 18 44.3**	**+0.9**
AKASG	comp=Z,20nm,20.6s,baz=335,slow=35			LR	LR	16 46 12.5	
HHC	**Hu-ho-hao-te**	**68.03**	**318**	*e*P	**P**	**16 19 01.8**	**+2.0**
HHC	comp=Z,18nm,0.7s			pmax	pmax		
HHC	comp=Z,59nm,7.2s			pmax	pmax		
WMQ	**Urumqi**	**71.34**	**336**	*e*P	**P**	**16 19 22.0**	**+1.9**
BRTR	**Keskin Array B** comp=Z,0.8nm,0.8s,baz=29,slow=2.8,SNR=3.7	**76.90**	**17**	P	**P**	**16 19 53.9**	**+1.2**
LPAZ	**La Paz** comp=Z,0.5nm,0.5s,baz=342,slow=3.2,SNR=3.6		**89.62**	**127**	P	**P**	**16 20 58.7**	**-0.2**
VNDA	**Vanda** comp=Z,1.5nm,0.7s,baz=27,slow=2.9,SNR=11		**146.46**	**202**	PKPbc	**PKPab**	**16 27 41.1**	**+0.3**

*ISCJB **30** 16:08:59.6±0.6,35˚.40N±0˚.05×33˚.07E±0˚.06,h10km, Error ellipse: s-maj=8.5km s-min=4.7km az=44.7*
*ISK **30** 16:08:59.4,35˚.42N×33˚.01E,h6km,MD2.8*
*CSEM **30** 16:09:00.0±0.3,35˚.38N×33˚.07E,h10km,ML2.9, Error ellipse: s-maj=8.7km s-min=4.8km az=132.0*
*NIC **30** 16:09:02.1±0.2,35˚.12N×33˚.04E,h30km,ML2.9*

ISC 30 16:08:59.2±0.9,35˚.39N±0˚.03×33˚.05E±0˚.04,h10km,n22, σ0s90/27,Cyprus region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MAMC	**Mammari** baz=252	**0.26**	**148**	P	**Pg**	**16 09 06.0**	**+1.6**
MAMC	**Mammari**	**0.26**	**148**	P	**Pg**	**16 09 06.0**	**+1.6**
LEF	**Lefka**	**0.30**	**206**	*e*PG	**Pb**	**16 09 06.7**	**+0.1**
LEF				*e*SG	**Sb**	**16 09 11.3**	**-0.3**
LEF	**Lefka**	**0.30**	**206**	*e*Pg	**Pb**	**16 09 06.7**	**+0.1**
LEF				*e*Sg	**Sb**	**16 09 11.3**	**-0.3**
LFK	**Lefkose**	**0.41**	**105**	*e*PG	**Pg**	**16 09 08.5**	**+1.3**
LFK	**Lefkose**	**0.41**	**105**	*e*Pg	**Pg**	**16 09 08.5**	**+1.3**
ALFC	**Alefka** baz=95	**0.44**	**238**	P	**Pb**	**16 09 08.8**	**-0.2**
ALFC				S	**Sg**	**16 09 14.4**	**+0.9**
ALFC	**Alefka**	**0.44**	**238**	P	**Pb**	**16 09 08.8**	**-0.2**
ALFC				S	**Sg**	**16 09 14.4**	**+0.9**
CSS	**Mathiatis** baz=303	**0.48**	**152**	P	**Pg**	**16 09 08.3**	**-0.3**
CSS				S	**Sg**	**16 09 12.3**	**-2.6**
CSS	**Mathiatis**	**0.48**	**152**	P	**Pg**	**16 09 08.3**	**-0.3**
SZAC	**Souni** baz=18	**0.65**	**193**	P	**Pg**	**16 09 11.6**	**-0.1**
SZAC	**Souni**	**0.65**	**193**	P	**Pg**	**16 09 11.6**	**-0.1**
AKMC	**Akamas** baz=80	**0.69**	**239**	P	**Pg**	**16 09 12.8**	**+0.2**
AKMC	**Akamas**	**0.69**	**239**	P	**Pg**	**16 09 12.8**	**+0.2**
PPCY	**Paphos** baz=67	**0.77**	**229**	P	**Pn**	**16 09 16.1**	**+0.1**
PPCY	**Paphos**	**0.77**	**229**	P	**Pn**	**16 09 16.1**	**+0.1**
AKKU	**Akkuyu-Mersin**	**0.87**	**28**	*e*PG	**Pb**	**16 09 16.9**	**+0.5**
AKKU	**Akkuyu-Mersin**	**0.87**	**28**	*e*Pg	**Pb**	**16 09 16.9**	**+0.5**
IKL	**Isikli**	**0.99**	**31**	*e*PG	**Pg**	**16 09 18.1**	**-0.2**
IKL	**Isikli**	**0.99**	**31**	*e*Pg	**Pg**	**16 09 18.1**	**-0.2**
MERS	**Mersin**	**1.90**	**38**	*e*PN	**Pb**	**16 09 33.2**	**-0.7**
MERS	**Mersin**	**1.90**	**38**	*e*Pn	**Pb**	**16 09 33.2**	**-0.7**

*NIED **30** 16:09:00,37˚.50N×142˚.00E,h38km,Mw3.9 Best double couple: M0 7.81000×10^14 NP1:φs190.00000°,δ17.00000°, λ-6.00000°. NP2:φs285.00000°,δ88.00000°, λ-107.00000°.*
*JMA **30** 16:09:05.7±0.2,37˚.45N×141˚.88E,h39km±3km,M4.0*
JMA Felt II J1.
*IDC **30** 16:09:07.4±2.9,37˚.33N×141˚.96E,h53km±26km,mb3.6/11, mb1 3.7/14,mb1mx3.6/42,mbtmp3.9/14,ML2.9/2,MS2.8/8, Ms1 2.8/8,ms1mx2.6/39, Error ellipse: s-maj=28.3km s-min=13.3km az=86.0*

ISC 30 16:09:02.8±1.8,37˚.44N±0˚.05×141˚.95E±0˚.06,h15km±10km, n36,σ1s05/33,mb3.7/11,MS2.8/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.86**	**265**	P	**Pn**	**16 09 20.7**	**+0.3**
JFK				S	**Sb**	**16 09 31.1**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.98**	**250**	P	**Pn**	**16 09 22.4**	**+0.3**
ONAJ				S	**Sb**	**16 09 34.2**	**-0.1**
JMM	**Marumori**	**1.01**	**295**	P	**Pn**	**16 09 22.9**	**+0.4**
JMM				S	**Sg**	**16 09 35.1**	**-0.5**
JIO	**Ouri**	**1.12**	**335**	P	**Pg**	**16 09 24.4**	**0.0**
JIO				S	**Sb**	**16 09 37.0**	**-1.2**
JFT	**Otama**	**1.28**	**274**	P	**Pg**	**16 09 27.7**	**+0.1**
JFT				S	**Sn**	**16 09 43.2**	**-0.1**
JOU	**Okura**	**1.37**	**313**	S	**Sn**	**16 09 45.3**	**-0.1**
JMK	**Ichinoseki**	**1.61**	**339**	P	**Pb**	**16 09 31.9**	**-0.4**
JYS	**Shirataka**	**1.68**	**298**	P	**Pb**	**16 09 34.0**	**+0.5**
JYS				S	**Sb**	**16 09 54.2**	**-0.3**
JFY	**Yanaizu**	**1.79**	**270**	P	**Pb**	**16 09 34.8**	**-0.5**
JYK	**Kaneyama**	**1.93**	**320**	P	**Pb**	**16 09 36.7**	**-1.1**
MJAR	**Matsushiro Arr** 6.0nm,0.3s,baz=79,slow=14,SNR=28	**3.13**	**254**	P	**Pn**	**16 09 53.7**	**+2.1**
MJAR	8.6nm,0.3s,baz=81,slow=30,SNR=5.4			S	**Sb**	**16 10 34.0**	**-2.1**
MJAR	comp=Z,153nm,19.4s,baz=75,slow=44			LR	LR	16 11 22.6	
MAT	**Matsushiro**		**3.13**	**254**	P	**Pn**	**16 09 54.0**	**+2.4**
MAT					S	**Sb**	**16 10 34.9**	**-1.2**
JHJ	**Hachijo jima 2** 97nm,0.3s,baz=78,slow=23,SNR=92		**4.66**	**203**	P	**Pn**	**16 10 13.8**	**+1.0**
JHJ	27nm,0.3s,baz=90,slow=20,SNR=3.2				S	**Sn**	**16 11 05.0**	**-1.5**
JHJ	comp=Z,65nm,18.2s,baz=112,slow=34				LR	LR	16 11 40.5	
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=122,slow=13,SNR=3.5		**10.12**	**315**	P	Pn	16 11 32.8	+5.2
KLR	**Kul'dur** comp=Z,49nm,19.0s,baz=119,slow=36		**13.91**	**331**	LR	LR	16 17 32.5	
JOW	**Kunigami** comp=Z,28nm,19.0s,baz=78,slow=33		**15.67**	**231**	LR	LR	16 17 37.6	
PETK	**Petropavlovsk-** comp=Z,17nm,20.8s,baz=185,slow=35		**19.12**	**30**	LR	LR	16 20 11.8	
MA2	**Magadan** comp=Z,39nm,21.0s,baz=194,slow=35		**22.87**	**12**	LR	LR	16 22 22.7	
SEY	**Seymchan** 1.5nm,0.6s,baz=217,slow=10,SNR=5.7		**26.31**	**11**	P	**P**	**16 14 39.5**	**+1.8**
SONM	**Songino Array** 0.2nm,0.3s,baz=102,slow=9.2,SNR=3.3		**27.92**	**303**	P	**P**	**16 14 53.5**	**+1.1**
H11N2	**WAKE ISLAND Hy** baz=314,slow=75,SNR=137		**28.00**	**122**	T	T	16 44 36.7	
H11N1	**WAKE ISLAND Hy** baz=314,slow=75,SNR=141		**29.00**	**122**	T	T	16 44 36.1	
H11N3	**WAKE ISLAND Hy** baz=314,slow=75,SNR=166		**28.01**	**122**	T	T	16 44 34.2	
H11S1	**WAKE ISLAND Hy** baz=316,slow=76,SNR=92		**28.73**	**124**	T	T	16 45 27.4	
H11S3	**WAKE ISLAND Hy** baz=316,slow=76,SNR=47		**28.73**	**124**	T	T	16 45 22.8	
H11S2	**WAKE ISLAND Hy** baz=316,slow=76,SNR=36		**28.75**	**124**	T	T	16 45 28.6	
TLY	**Talaya** comp=Z,15nm,19.5s,baz=193,slow=39		**30.39**	**310**	LR	LR	16 28 47.2	
ZALV	**Zalesovo Beam** 0.6nm,0.6s,baz=76,slow=6.1,SNR=3.1		**41.96**	**312**	P	**P**	**16 16 53.4**	**+0.5**
MKAR	**Makanchi Array** 0.2nm,0.3s,baz=87,slow=8.0,SNR=3.3		**44.27**	**302**	P	**P**	**16 17 11.9**	**+0.2**
ILAR	**Eielson Array** 0.6nm,0.6s,baz=273,slow=5.6,SNR=4.7		**48.92**	**33**	P	**P**	**16 17 48.3**	**+0.4**
WRA	**Warramunga Arr** 0.7nm,0.5s,baz=6.5,slow=7.3,SNR=90		**57.52**	**188**	P	**P**	**16 18 51.2**	**-0.5**
ASAR	**Alice Springs** 0.4nm,0.7s,baz=0.9,slow=5.2,SNR=7.2		**61.25**	**188**	P	**P**	**16 19 16.9**	**-0.5**
FINES	**FINESS Array B** 3.6nm,1.2s,baz=39,slow=9.0,SNR=3.8		**68.65**	**332**	P	**P**	**16 20 05.0**	**-0.1**
NOA	**NORSAR Array B** 0.5nm,0.7s,baz=38,slow=5.9,SNR=3.3		**73.97**	**337**	P	**P**	**16 20 37.7**	**+0.3**
NOA	comp=Z,9.9nm,18.0s,baz=40,slow=39				LR	LR	16 57 32.1	
AKASG	**Malin Array Be** 0.3nm,0.4s,baz=48,slow=6.1,SNR=4.1		**74.23**	**322**	P	**P**	**16 20 39.0**	**0.0**
SCHQ	**Schefferville** 3.9nm,0.6s,baz=18,slow=6.4,SNR=4.2		**84.83**	**16**	P	**P**	**16 21 34.9**	**-1.7**

*IDC **30** 16:21:54.5±2.9,36˚.93N×141˚.19E,h0km,mb3.8/3, mb1 3.8/4,mb1mx3.5/39,mbtmp3.8/4,ML3.3/1,MS2.2/1, Ms1 2.2/1,ms1mx2.0/25, Error ellipse: s-maj=50.2km s-min=32.5km az=130.0*
*ISCJB **30** 16:21:56.8±1.2,37˚.08N±0˚.04×141˚.01E±0˚.08,h8km±5km, mb3.7/3, Error ellipse: s-maj=11.4km s-min=6.1km az=16.3*
*JMA **30** 16:21:58.8,37˚.09N×140˚.86E,h10km,M3.4*
JMA Felt II J1.

ISC 30 16:21:57.4±1.9,37˚.05N±0˚.07×140˚.96E±0˚.09,h7km±9km, n17,σ0s81/17,mb3.7/3,2C-2D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**291**	P	**Pg**	**16 22 00.8**	**+0.4**
ONAJ				S	**Sg**	**16 22 02.1**	**-0.4**
JFK	**Kawauchi**	**0.32**	**347**	↓P	**Pg**	**16 22 04.5**	**+0.7**
JHO	**Hitachi**	**0.54**	**216**	P	**Pb**	**16 22 08.9**	**-0.3**
JHO				S	**Sb**	**16 22 16.3**	**-0.9**
JFT	**Otama**	**0.68**	**313**	↑P	**Pg**	**16 22 10.6**	**0.0**
JFT				S	**Sg**	**16 22 18.8**	**-0.7**
JMM	**Marumori**	**0.82**	**351**	↓P	**Pg**	**16 22 13.4**	**+0.1**
JMM				S	**Sg**	**16 22 24.0**	**0.0**
JSB	**Shiboa**	**0.84**	**265**	↑P	**Pg**	**16 22 14.0**	**+0.4**
MJAR	**Matsushiro Arr** 7.3nm,0.3s,baz=80,slow=16,SNR=83	**2.27**	**258**	Pn	**Pn**	**16 22 36.1**	**+0.8**
MJAR	8.9nm,0.3s,baz=80,slow=30,SNR=15			Sn	**Sn**	**16 23 05.0**	**+1.5**
MJAR	comp=Z,46nm,18.1s,baz=70,slow=43			LR	LR	16 23 37.5	
MAT	**Matsushiro**		**2.27**	**258**	P	**Pn**	**16 22 36.6**	**+1.3**
MAT					S	**Sb**	**16 23 06.0**	**-1.0**
H11N2	**WAKE ISLAND Hy** baz=313,slow=75,SNR=62		**28.47**	**120**	T	T	16 57 36.6	
H11N1	**WAKE ISLAND Hy** baz=313,slow=75,SNR=59		**28.48**	**120**	T	T	16 57 43.1	
H11N3	**WAKE ISLAND Hy** baz=313,slow=75,SNR=44		**28.48**	**120**	T	T	16 57 37.9	
H11S1	**WAKE ISLAND Hy** baz=314,slow=75,SNR=23		**29.17**	**122**	T	T	16 58 31.0	
H11S3	**WAKE ISLAND Hy** baz=314,slow=75,SNR=17		**29.17**	**122**	T	T	16 58 31.6	
H11S2	**WAKE ISLAND Hy** baz=314,slow=75,SNR=19		**29.19**	**122**	T	T	16 58 37.1	
ZALV	**Zalesovo Beam** 0.6nm,0.3s,baz=93,slow=8.7,SNR=3.6		**41.64**	**312**	P	**P**	**16 29 45.7**	**-0.4**
MKAR	**Makanchi Array** 0.2nm,0.3s,baz=82,slow=9.8,SNR=3.6		**43.80**	**302**	P	**P**	**16 30 03.1**	**-0.7**
FINES	**FINESS Array B** 2.4nm,1.1s,baz=53,slow=12,SNR=2.8		**68.63**	**332**	P	**P**	**16 33 00.5**	**-0.3**

IDC 30 16:24:03.6±20.0,22˚.51S×179˚.94W,h216km±196km, mb3.8/4,mb1 4.0/5,mb1mx3.4/35,mbtmp4.4/5,ML4.4/1, Error ellipse: s-maj=111.9km s-min=28.8km az=5.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera** 1.3nm,0.3s,baz=0.0,slow=20,SNR=9.6		**15.90**	**189**	P	Pn	16 27 35.8	-0.1
STKA	**Stephens Creek** 1.1nm,0.4s,baz=86,slow=9.9,SNR=7.9		**35.31**	**246**	P	P	16 30 37.8	-0.5
ASAR	**Alice Springs** 3.1nm,0.4s,baz=96,slow=7.4,SNR=185		**42.33**	**259**	P	P	16 31 36.5	-0.2
WRA	**Warramunga Arr** 3.5nm,0.3s,baz=94,slow=8.3,SNR=413		**42.57**	**265**	P	P	16 31 38.7	+0.1
TXAR	**Lajitas Array** 0.5nm,0.6s,baz=207,slow=6.3,SNR=8.8		**89.65**	**58**	P	P	16 36 37.1	-0.3
FINES	**FINESS Array B** 1.5nm,0.9s,baz=70,slow=1.6,SNR=2.7		**137.15**	**342**	PKP	PKPdf	16 42 59.6	-0.7
BRTR	**Keskin Array B** 0.9nm,0.6s,baz=81,slow=3.7,SNR=4.7		**146.77**	**309**	PKPbc	PKPbc	16 43 20.0	-0.5

*IDC **30** 16:57:13.7±1.3,12˚.45N×120˚.69E,h0km,mb3.5/3, mb1 3.7/3,mb1mx3.3/39,mbtmp3.5/3,MS2.7/2,Ms1 2.7/2, ms1mx2.3/32, Error ellipse: s-maj=48.4km s-min=12.6km az=89.0*

ISC 30 16:57:16.8±1.2,12˚.7N±0˚.1×121˚.1E±0˚.2,h23km,n9, σ0s60/7,mb3.6/3,3C,Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.84**	**353**	↑*e*P	**Pb**	**16 57 32.6**	**-0.2**
PGP				*i* S	Sn	16 57 55.0	+10
TGY	**Tagaytay City** 173nm,0.3s,baz=195,slow=20,SNR=21		**1.44**	**355**	Pg	**Pb**	**16 57 43.8**	**+0.9**
TGY	45nm,0.3s,baz=165,slow=20,SNR=7.6				Lg	Lg	16 58 06.2	
LQP	**Lukban**		**1.51**	**18**	↑*e*P	**Pb**	**16 57 44.2**	**-0.1**
RCP	**Roxas**		**1.98**	**123**	↑*e*P	**Pb**	**16 57 52.5**	**+0.4**
GUMO	**Guam** comp=Z,14nm,21.4s,baz=188,slow=34		**23.20**	**85**	LR	LR	17 10 41.9	
KSRS	**Korea Array** comp=Z,20nm,19.8s,baz=188,slow=38		**25.44**	**13**	LR	LR	17 13 22.4	
WRA	**Warramunga Arr** 0.6nm,0.7s,baz=336,slow=9.6,SNR=6.1		**34.94**	**158**	P	**P**	**17 04 06.5**	**-0.7**
ASAR	**Alice Springs** 0.5nm,0.5s,baz=340,slow=7.1,SNR=14		**38.23**	**161**	P	**P**	**17 04 35.2**	**0.0**
MKAR	**Makanchi Array** 0.5nm,0.8s,baz=122,slow=8.7,SNR=4.8		**47.07**	**324**	P	**P**	**17 05 46.9**	**+0.1**

MEX 30 17:02:28.4±0.4,13˚.81N×91˚.92W,h15km,MD3.8,Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**		**2.47**	**355**	*e*P	Pn	17 03 04.5	-3.8
CCIG					*i* S	Sn	17 03 34.8	-3.5
TGIG			**3.17**	**339**	*i* P	Pn	17 03 14.7	-3.2
TGIG					*e*S	Sn	17 03 52.2	-3.3

*IDC **30** 17:07:51.6±56.0,19˚.36S×178˚.16W,h0km,mb3.8/3, mb1 3.9/3,mb1mx3.6/25,mbtmp3.8/3, Error ellipse: s-maj=1033.0km s-min=161.5km az=81.0*
*ISCJB **30** 17:08:35.0±0.5,20˚.04S±0˚.09×177˚.6W±0˚.1,h500km, mb4.4/13, Error ellipse: s-maj=16.3km s-min=8.1km az=43.1*
*NEIC **30** 17:08:37.1±0.9,20˚.03S×177˚.71W,h504km±14km, mb4.9/10, Error ellipse: s-maj=18.6km s-min=12.8km az=134.0*

ISC 30 17:08:36.0±0.7,20˚.2S±0˚.1×177˚.5W±0˚.1,h500km,n21, σ1s84/22,mb4.6/13,1D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSVF	**Nonsavu**		**4.84**	**299**	*e*P	**P**	**17 10 02.5**	**+0.8**
AFI	**Afiamalu**		**8.28**	**42**	*e*P	**P**	**17 10 35.5**	**-0.1**
AFI					*e*S	**S**	**17 12 10.6**	**-2.9**
BKZ	**Black Stump Fm** 146nm,1.9s		**19.65**	**194**	*e*P	**P**	**17 12 27.4**	**-4.0**
THZ	**Tophouse** 171nm,1.7s		**23.03**	**199**	*e*P	**P**	**17 13 02.0**	**+0.1**
KHZ	**Kahutara** 29nm,1.1s		**23.45**	**197**	*e*P	**P**	**17 13 08.4**	**+2.8**
LTZ	**Lake Taylor** 97nm,1.8s		**24.15**	**199**	*e*P	**P**	**17 13 14.1**	**+2.2**
OXZ	**Oxford** 69nm,1.7s		**24.72**	**198**	*e*P	**P**	**17 13 17.7**	**+0.8**
CAN	**Canberra** 29nm,1.7s		**33.09**	**236**	*e*P	**P**	**17 14 29.5**	**-0.4**
STKA	**Stephens Creek** 0.6nm,0.4s,baz=86,slow=15,SNR=3.5		**38.35**	**244**	P	**P**	**17 15 13.1**	**-0.6**
STKA	**Stephens Creek** 4.0nm,1.7s		**38.35**	**244**	*e*P	**P**	**17 15 13.4**	**-0.2**
BBOO	**Buckleboo** 40nm,1.4s		**43.11**	**243**	*e*P	**P**	**17 15 50.7**	**-1.0**
AS01	**Alice Springs**		**45.00**	**256**	*e*P	**P**	**17 16 06.5**	**0.0**
AS31	**Alice Springs** 3.2nm,1.5s		**45.04**	**256**	*e*P	**P**	**17 16 06.9**	**0.0**
ASAR	**Alice Springs** 1.1nm,0.8s,baz=95,slow=7.1,SNR=21		**45.05**	**256**	P	**P**	**17 16 06.2**	**-0.7**
WB2	**Warramunga Arr** 37nm,1.9s		**45.09**	**262**	*e*P	**P**	**17 16 07.0**	**-0.3**
WR1	**Warramunga Arr** 25nm,1.6s		**45.10**	**262**	*e*P	**P**	**17 16 06.0**	**-1.3**
WRA	**Warramunga Arr** 0.3nm,0.3s,baz=97,slow=7.7,SNR=16		**45.10**	**262**	P	**P**	**17 16 06.0**	**-1.3**
KEKH	**Kekaha** 349nm,1.6s		**45.34**	**24**	*e*P	**P**	**17 16 08.7**	**-0.3**
QSPA	**South Pole Qui**		**69.92**	**180**	*e*P	**P**	**17 18 57.3**	**+1.1**
EMT	**Emmet**		**77.62**	**43**	*e*P	**P**	**17 19 44.2**	**+3.8**
SYO	**Syowa Base**		**87.17**	**193**	↓*e*P	**P**	**17 20 26.0**	**-2.1**

IDC 30 17:13:00.1±2.1,1˚.41N×126˚.10E,h0km,mb3.6/3, mb1 3.8/3,mb1mx3.4/31,mbtmp3.6/3, Error ellipse: s-maj=189.8km s-min=26.2km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr** 0.8nm,0.4s,baz=338,slow=11,SNR=21		**22.71**	**160**	P	P	17 18 03.0	-0.8
ASAR	**Alice Springs** 0.5nm,0.4s,baz=346,slow=12,SNR=17		**26.06**	**164**	P	P	17 18 36.1	+0.6
MKAR	**Makanchi Array** 0.3nm,0.5s,baz=120,slow=8.5,SNR=4.2		**59.10**	**326**	P	P	17 23 02.3	-0.1

IDC 30 17:24:27.2±5.1,26˚.63N×143˚.78E,h0km,mb3.7/3, mb1 3.9/3,mb1mx3.4/24,mbtmp3.7/3, Error ellipse: s-maj=340.8km s-min=31.5km az=86.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr** 0.8nm,0.7s,baz=13,slow=8.6,SNR=7.7		**47.19**	**192**	P	P	17 33 02.7	+0.9
ASAR	**Alice Springs** 0.3nm,1.1s,baz=8.9,slow=6.6,SNR=2.5		**50.90**	**192**	P	P	17 33 28.8	-1.5
FINES	**FINESS Array B** 0.9nm,0.6s,baz=64,slow=4.4,SNR=7.4		**78.99**	**334**	P	P	17 36 32.7	0.0

*CSEM **30** 17:43:22.6±0.5,50˚.28N×19˚.00E,h1km, Error ellipse: s-maj=11.3km s-min=4.9km az=7.0*

PRU 30 17:43:23.7,50˚.23N×19˚.04E,h0km,Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OJC	**Ojcow**	**0.49**	**91**	*e*Pg	Pg	17 43 32.7	-0.3
OJC				*e*Sg	Sg	17 43 39.2	-0.2
OJC	**Ojcow**	**0.49**	**91**	*e*Pg	Pg	17 43 32.7	-0.3
OJC				*e*Sg	Sg	17 43 39.2	-0.1
OKC	**Ostrava-Krasne**	**0.70**	**236**	*e*SG	Sg	17 43 46.6	+0.5
OKC	**Ostrava-Krasne**	**0.70**	**236**	Sg	Sg	17 43 46.6	+0.5
MORC	**Moravsky Berou**	**1.07**	**245**	*e*Pg	Pg	17 43 44.3	+0.2
LANS	**Liptovska Anna**	**1.12**	**165**	*e*Pg	Pg	17 43 45.3	+0.2
LANS	**Liptovska Anna**	**1.12**	**165**	*e*PG	Pg	17 43 45.3	+0.2
LANS				*e*SG	Sg	17 43 58.2	-1.3
NIE	**Niedzica**	**1.15**	**134**	*e*Pg	Pg	17 43 46.1	+0.3
NIE				*e*Sg	Sg	17 44 01.1	+0.4
NIE	**Niedzica**	**1.15**	**134**	*e*Pg	Pg	17 43 46.1	+0.4
NIE				*e*S

Azm151.0000°; P -2.1500, Plg67.0000°, Azm341.0000°;
*ISCJB **30** 17:48:52.5±0.4, 12°.89N±0°.02×143°.24E±0°.02, h139km±3km, mb5.3/381 Error ellipse: s-maj=3.0km s-min=2.7km az=164.5*
*MOS **30** 17:48:52.9±0.9, 12°.94N×143°.22E, h143km, mb5.5/84, MS4.6/15, Error ellipse: s-maj=6.7km s-min=4.2km az=105.4*
*GCMT **30** 17:48:52.0±0.1, 12°.74N×143°.15E, h128km, MW5.5/134, Moment Tensor Solution. s126,c221; s134,c305; Duration: 1s4 Moment tensor: Scale 10^{17}Nm; M_{rr}=2.19±.02; $M_{\theta\theta}$=0.05±.03; $M_{\phi\phi}$=2.24±.03; $M_{r\theta}$=0.92±.02; $M_{\theta\phi}$=0.93±.03; $M_{\phi r}$=0.11±.03; Best double couple: M_o=2.57600×10^{17} NP1:ϕ_s140.00000°, δ52.00000°, λ-119.00000°. NP2:ϕ_s1.00000°, δ47.00000°, λ-59.00000°. Principal axes: T 2.5820, Plg3.0000°, Azm250.0000°; N -0.0110, Plg22.0000°, Azm159.0000°; P -2.5700, Plg68.0000°, Azm346.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*IDC **30** 17:48:54.8±0.7, 12°.88N×143°.37E, h148km±6km, mb4.9/50, mb1 4.9/52, mb1mx4.9/56, mbtmp5.3/52, MS4.4/13, Ms1 4.4/13, ms1mx4.1/37 Error ellipse: s-maj=9.8km s-min=5.9km az=83.0*
*DJA **30** 17:48:55.6±0.7, 13°.N±3°.×14°.3E±°, h144km±7km, M5.3/62, mb5.3/62, mB5.8/40, Mw(mB)5.3/40*
ISC 30 17:48:52.1±0.2, 12°.91N±0°.03×143°.25E±0°.03, h124km±1km, h124km:pP-P, n896, σ1.49/1063, mb5.4/378, 16C-34D, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.72**	**67**	P		**Pn**	**17 49 25.0**	**+2.7**
	3μm,0.3s,baz=236,slow=8.8,SNR=381							
GUMO				S		**Sn**	**17 49 49.1**	**+3.7**
	3μm,0.3s,baz=229,slow=23,SNR=21							
GUMO	**Guam**	**1.72**	**67**	*e*Pn		**Pn**	**17 49 24.8**	**+2.5**
GUMO				*e*Sn		**Sn**	**17 49 47.6**	**+2.3**
ANA2	**Anatahan**	**4.16**	**35**	*e*Pn		**Pn**	**17 49 58.4**	**+4.5**
SARN	**Sarigan**	**4.49**	**33**	*e*Pn		**Pn**	**17 50 02.9**	**+4.5**
CBIJ	**Chichi jima**	**14.14**	**356**	*e*Pn		**P**	**17 52 09.7**	**-0.9**
MANU	**Manus Island**	**15.41**	**164**	*e*Pn		**P**	**17 52 24.6**	**-0.2**
	127nm,1.1s							
JAY	**Jayapura**	**15.53**	**190**	P		**P**	**17 52 26.1**	**-0.1**
	0.0nm,0.3s,baz=88,slow=23,SNR=6.3							
JAY				S		**Sn**	**17 55 17.6**	**+0.7**
	0.2nm,0.3s,baz=90,slow=20,SNR=4.8							
JAY	**Jayapura**	**15.53**	**190**	P		**P**	**17 52 26.5**	**+0.3**
	44nm,0.9s,618nm							
GENI	**Genyem**	**15.71**	**191**	P		**P**	**17 52 28.7**	**+0.7**
	150nm,0.8s,5μm							
PATS	**Pohnpei**	**16.02**	**111**	*e*Pn		**P**	**17 52 31.4**	**-0.1**
	162nm,0.6s							
SIJI	**Sorong**	**18.13**	**222**	P		**Pn**	**17 52 57.4**	**+1.3**
	12nm,0.3s,baz=178,slow=11,SNR=2.6							
SIJI				S		**Sn**	**17 56 22.2**	**+2.9**
	baz=93,slow=22,SNR=1.9							
DAV	**Davao City (W)**	**18.34**	**253**	*e*P		**Pn**	**17 52 58.5**	**0.0**
	4μm,1.5s							
CGP	**Cagayan de Oro**	**18.76**	**258**	↓*e*P		**Pn**	**17 53 02.8**	**-0.7**
KCP	**Kidapawan**	**18.81**	**254**	↓*e*P		**P**	**17 53 03.0**	**+0.7**
LLP	**Lapu-Lapu**	**19.06**	**264**	↓*e*P		**Pn**	**17 53 06.5**	**-0.6**
LLP				*e*S		**S**	**17 56 33.0**	**-1.8**
FAKI	**Fak Fak**	**19.15**	**216**	P		**Pn**	**17 53 07.7**	**-0.4**
	632nm,1.2s,8μm							
FAKI	**Fak Fak**	**19.15**	**216**	*e*P		**P**	**17 53 05.8**	**-0.1**
	624nm,1.1s							
RABL	**Rabaul**	**19.16**	**152**	*e*P		**Pn**	**17 53 08.3**	**0.0**
	582nm,1.2s							
JOW	**Kunigami**	**19.72**	**317**	P		**Pn**	**17 53 15.3**	**+0.7**
	88nm,0.3s,baz=145,slow=10,SNR=540							
JOW	**Kunigami**	**19.72**	**317**	*e*P		**Pn**	**17 53 14.5**	**-0.2**
	362nm,0.6s							
RCP	**Roxas**	**20.08**	**268**	⇑*e*P		Pn	17 53 17.5	-1.4
JHJ2	**Mitsune**	**20.35**	**352**	*e*P		Pn	17 53 20.7	-1.3
	1μm,1.7s							
JHJ	**Hachijo jima 2**	**20.36**	**352**	P		Pn	17 53 20.6	-1.4
	111nm,0.6s,baz=72,slow=22,SNR=10							
LBMI	**Labuha**	**20.62**	**230**	P		**P**	**17 53 22.9**	**+1.1**
	274nm,2.5s,5μm							
MSAI	**Masohi**	**21.52**	**222**	P		**P**	**17 53 33.7**	**+2.3**
	86nm,0.6s,1μm							
TGY	**Tagaytay City**	**21.72**	**276**	P		**P**	**17 53 36.1**	**+2.4**
	734nm,0.9s,baz=323,slow=5.2,SNR=8.0							
YOJ	**Yonaguni jima**	**22.31**	**304**	*e*P		**P**	**17 53 40.3**	**+0.7**
YOJ				pmax	pmax			
	comp=Z,1μm,1.8s							
YOJ	**Yonaguni jima**	**22.31**	**304**	*e*P		**P**	**17 53 40.2**	**+0.7**
	comp=Z,1μm,1.8s							
PMG	**Port Moresby**	**22.51**	**170**	P		**P**	**17 53 41.7**	**+0.1**
	comp=Z,73nm,1.0s,baz=344,slow=5.2,SNR=18							
PMG	**Port Moresby**	**22.51**	**170**	*c i*P		**P**	**17 53 41.9**	**+0.3**
PMG				pmax	pmax			
	comp=Z,787nm,1.7s							
PMG	**Port Moresby**	**22.51**	**170**	*e*P		**P**	**17 53 41.0**	**-0.6**
	comp=Z,165nm,1.3s							
NLAI	**Namlea**	**22.68**	**226**	P		P	17 53 52.2	+8.9
INU	**Inuyama**	**23.04**	**347**	*e*P		**P**	**17 53 46.5**	**0.0**
	comp=Z,361nm,1.8s							
JNU	**Nakatsue**	**23.07**	**333**	P		**P**	**17 53 48.3**	**+1.4**
	comp=Z,129nm,0.5s,baz=143,slow=2.4,SNR=301							
JNU				PcP		**PcP**	**17 57 32.5**	**+0.3**
	comp=Z,3.9nm,0.5s,baz=185,slow=3.5,SNR=5.2							
JNU	**Nakatsue**	**23.07**	**333**	*e*P		**P**	**17 53 48.4**	**+1.4**
	comp=Z,212nm,0.8s							
JNU				PcP		**PcP**	**17 57 32.5**	**+0.3**
TWG	**Pinlang**	**23.26**	**298**	*e*P		**P**	**17 53 48.3**	**-0.4**
	comp=Z,179nm,0.6s							
YULB	**Yu-li**	**23.28**	**300**	*e*P		**P**	**17 53 48.9**	**0.0**
	comp=Z,393nm,1.6s							
NACB	**Ninganchiao**	**23.35**	**302**	*e*P		**P**	**17 53 49.5**	**-0.1**
	comp=Z,576nm,2.0s							
WAKE	**Wake Island**	**23.35**	**71**	*e*P		**P**	**17 53 49.3**	**-0.3**
	comp=Z,1116nm,0.8s							
GTOI	**Gorontalo**	**23.47**	**240**	P		**P**	**17 53 51.6**	**+0.9**
SSLB	**Suanglung**	**23.73**	**300**	*e*P		**P**	**17 53 53.5**	**+0.5**
	comp=Z,713nm,1.6s							
YHNB	**Yeheng**	**23.74**	**303**	*e*P		**P**	**17 53 53.8**	**+0.6**
	comp=Z,131nm,1.0s							
TATO	**Taipei**	**23.78**	**303**	*e*P		**P**	**17 53 54.5**	**+1.1**
	comp=Z,285nm,1.5s							
TPUB	**Ta-pu**	**23.82**	**299**	*e*P		**P**	**17 53 54.0**	**+0.2**
	comp=Z,134nm,1.1s							
MJAR	**Matsushiro Arr**	**23.96**	**350**	P		**P**	**17 53 55.1**	**+0.1**
	comp=Z,56nm,0.6s,baz=158,slow=9.7,SNR=425							
MJAR				PcP		**PcP**	**17 57 34.5**	**+0.5**
	comp=Z,16nm,0.7s,baz=167,slow=3.6,SNR=17							
MJAR				ScP		**ScP**	**18 00 59.9**	**-1.2**
	comp=Z,7.0nm,1.0s,baz=167,slow=3.0,SNR=11							
MJAR				LR		LR	18 02 35.4	
	comp=Z,539nm,18.2s,baz=155,slow=34							
MAJO	**Matsushiro**	**23.96**	**350**	*d i*P		**P**	**17 53 54.9**	**-0.1**
MAJO				pmax	pmax			
	comp=Z,965nm,0.9s							
MAJO	**Matsushiro**	**23.96**	**350**	*e*P		**P**	**17 53 54.8**	**-0.1**
	comp=Z,185nm,0.8s							
MAT	**Matsushiro**	**23.96**	**350**	P		**P**	**17 53 54.6**	**-0.3**
MAT				S		**S**	**17 58 03.6**	**+0.9**
MJB9	**Matsu-Tunnel**	**23.96**	**350**	*e*P		**P**	**17 53 54.8**	**-0.2**
	comp=Z,46nm,0.8s							
KWAJ	**Kwajalein Atol**	**24.27**	**97**	*e*P		**P**	**17 53 58.5**	**+0.5**
KWAJ				pmax	pmax			
	comp=Z,504nm,1.3s							
KWAJ	**Kwajalein Atol**	**24.27**	**97**	*e*P		**P**	**17 53 58.5**	**+0.5**
	comp=Z,504nm,1.3s							
MRSI	**Marisa**	**24.47**	**241**	P		**P**	**17 54 00.9**	**+1.2**
LUWI	**Luwuk**	**24.59**	**237**	P		**P**	**17 54 01.7**	**+0.8**
LUWI	**Luwuk**	**24.59**	**237**	*e*P		**P**	**17 54 00.3**	**-0.6**
	comp=Z,708nm,1.0s							
MYLDM	**Lahad Datu**	**25.60**	**255**	*e*P		**P**	**17 54 11.0**	**+1.0**
	comp=Z,211nm,1.2s							
QZH	**Quanzhou**	**26.16**	**301**	↓*i*P		**P**	**17 54 15.0**	**0.0**
QZH				sP		**sP**	**17 54 51.3**	**-4.7**
QZH				S		**S**	**17 58 33.0**	**-4.7**
QZH				pmax	pmax			
	comp=Z,90nm,0.7s							
QZH				pmax	pmax			
	comp=Z,2μm,5.5s							
COEN	**Coen**	**26.70**	**180**	*e*P		**P**	**17 54 20.4**	**+0.5**
	comp=Z,90nm,1.2s							
SSE	**Sheshan**	**27.21**	**315**	P		**P**	**17 54 24.8**	**+0.5**
SSE				sP		**sP**	**17 55 04.5**	**-1.0**
SSE				S		**S**	**17 58 55.0**	**+0.8**
SSE				pmax	pmax			
	comp=Z,60nm,1.0s							
SSE				pmax	pmax			
	comp=Z,370nm,9.3s							
SSE				LR	LR			
	comp=Z,680nm,14.5s							
SSE				LR	LR			
	comp=Z,750nm,14.5s							
SSE				LR	LR			
	comp=Z,570nm,11.5s							
KKM	**Kota Kinabalu**	**27.50**	**258**	*e*P		**P**	**17 54 27.5**	**+0.2**
	comp=Z,39nm,1.1s							
HNR	**Honiara**	**27.71**	**142**	P		**P**	**17 54 27.6**	**-1.4**
	comp=Z,27nm,0.3s,baz=348,slow=22,SNR=7.1							
HNR	**Honiara**	**27.71**	**142**	P		**P**	**17 54 33.0**	**+4.1**
HNR	**Honiara**	**27.71**	**142**	*e*P		**P**	**17 54 26.5**	**-2.5**
HNR				pmax	pmax			
	comp=Z,139nm,0.9s							
HNR	**Honiara**	**27.71**	**142**	*e*P		**P**	**17 54 26.5**	**-2.5**
	comp=Z,139nm,0.9s							
KSRS	**Korea Array**	**28.02**	**333**	P		**P**	**17 54 32.4**	**+1.0**
	comp=Z,34nm,0.6s,baz=137,slow=8.8,SNR=75							
KSRS				PcP		**PcP**	**17 57 44.2**	**+1.0**
	comp=Z,7.2nm,0.7s,baz=142,slow=2.3,SNR=10							
KSRS				LR		LR	18 04 17.3	
	comp=Z,386nm,21.5s,baz=140,slow=33							
KS15	**Wonju Array Si**	**28.02**	**333**	*e*P		**P**	**17 54 32.2**	**+0.7**
KS15				*e*PcP		**PcP**	**17 57 44.1**	**+0.7**
KSAR	**Wonju Array Be**	**28.02**	**333**	P		**P**	**17 54 32.4**	**+0.9**
KSAR							17 57 44.3	
KSAR	**Wonju Array Be**	**28.02**	**333**	P		**P**	**17 54 32.4**	**+0.9**
KSAR				PcP		**PcP**	**17 57 44.2**	**+0.9**
KS01	**Wonju Array Si**	**28.05**	**333**	*e*P		**P**	**17 54 31.8**	**+0.1**
KS01				*e*PcP		**PcP**	**17 57 43.5**	**+0.1**
MTN	**Manton Dam**	**28.27**	**206**	*e*P		**P**	**17 54 33.6**	**-0.2**
	comp=Z,74nm,1.3s							
INCN	**Inchon**	**28.62**	**332**	P		**P**	**17 54 37.9**	**+1.0**
	SNR=7.5							
INCN	**Inchon**	**28.62**	**332**	P		**P**	**17 54 37.9**	**+1.0**
	SNR=7.5							
INCN	**Inchon**	**28.62**	**332**	*e*P		**P**	**17 54 37.4**	**+0.6**
	comp=Z,371nm,1.8s							
SPSI	**Sidrap Palu**	**28.72**	**236**	P		**P**	**17 54 39.7**	**+1.8**
ERM	**Erimo**	**28.99**	**360**	*e*P		**P**	**17 54 40.3**	**+0.3**
ERM				pmax	pmax			
	comp=Z,28nm,0.8s							
ERM	**Erimo**	**28.99**	**360**	*e*P		**P**	**17 54 40.3**	**+0.3**
	comp=Z,28nm,0.8s							
SOEI	**Soe**	**29.37**	**221**	*e*P		**P**	**17 54 42.6**	**-1.2**
	comp=Z,253nm,1.7s							
NJ2	**Nanjing**	**29.39**	**314**	*e*P		**P**	**17 54 44.5**	**+0.9**
NJ2				S		**S**	**17 59 29.3**	**+0.9**
NJ2				pmax	pmax			
	comp=Z,44nm,1.4s							
NJ2				LR	LR			
	comp=Z,1μm,15.2s							
NJ2				LR	LR			
	comp=Z,1μm,14.4s							
NJ2				LR	LR			
	comp=Z,2μm,28.7s							
MMRI	**Maumere**	**29.90**	**225**	*e*P		**P**	**17 54 46.3**	**-2.0**
	comp=Z,83nm,1.0s							
ASAJ	**Asahikawa**	**31.10**	**359**	P		**P**	**17 55 00.0**	**+1.4**
	comp=Z,31nm,0.6s,baz=224,slow=8.7,SNR=49							
ASAJ	**Asahikawa**	**31.10**	**359**	*e*P		**P**	**17 54 59.1**	**+0.6**
	comp=Z,36nm,0.8s							
MSHR	**Mys Shultsa**	**31.36**	**343**	*e*P		**P**	**17 55 01.4**	**+0.5**
TARA	**Tarawa**	**31.56**	**109**	*e*P		**P**	**17 55 02.4**	**-0.6**
VLA	**Vladivostok**	**31.66**	**344**	*c i*P		**P**	**17 55 04.3**	**+0.8**
VLA				pmax	pmax			
	comp=Z,105nm,1.6s							
WHN	**Wuhan**	**31.92**	**308**	↓*i*P		**P**	**17 55 08.0**	**+2.0**
WHN				PP		**PP**	**17 56 22.3**	**+1.8**
WHN				S		**S**	**18 00 08.8**	**+0.7**
WHN				pmax	pmax			
	comp=Z,400nm,1.5s							
WHN				LR	LR			
	comp=Z,2μm,12.4s							
SBUM	**Sibu**	**32.41**	**254**	⇑P		**P**	**17 55 12.8**	**+2.3**
SBUM	**Sibu**	**32.41**	**254**	*e*P		**P**	**17 55 10.6**	**+0.1**
	comp=Z,76nm,1.4s							
KUR	**Kuril'sk**	**32.45**	**6**	↓*i*P		**P**	**17 55 11.8**	**+1.4**
KUR				*i* S		**S**	**18 00 16.8**	**+0.9**
KUR				*e*SS		**SnSn**	**18 02 23.7**	**+0.2**
KUR				pmax	pmax			
	comp=Z,87nm,1.7s							
KUR				pmax	pmax			
	comp=N,142nm,20.0s							
KUR				pmax	pmax			
	comp=E,178nm,20.0s							
KUR				pmax	pmax			
	comp=Z,201nm,20.0s							
USRK	**Ussuriysk Ar.**	**32.64**	**345**	P		**P**	**17 55 13.7**	**+1.6**
	comp=Z,59nm,0.8s,baz=171,slow=9.6,SNR=90							
USRK				PcP		**PcP**	**17 57 56.1**	**+0.9**
	comp=Z,3.2nm,0.6s,baz=193,slow=5.9,SNR=3.8							
QIZ	**Qiongzhong**	**32.65**	**285**	P		**P**	**17 55 12.0**	**-0.5**
QIZ				sP		**sP**	**17 55 52.0**	**-1.9**
QIZ				S		**S**	**18 00 19.0**	**-0.7**
QIZ				sS		**sS**	**18 01 06.3**	**-0.7**
QIZ				pmax	pmax			
	comp=Z,460nm,6.0s							
QIZ				LR	LR			
	comp=Z,870nm,14.0s							
QIZ				LR	LR			
	comp=Z,800nm,14.0s							
QIZ	**Qiongzhong**	**32.65**	**285**	*e*P		**P**	**17 55 14.4**	**+1.9**
	comp=Z,346nm,1.9s							
CTA	**Charters Tower**	**32.93**	**175**	P		**P**	**17 55 15.6**	**+0.7**
	comp=Z,43nm,0.5s,baz=356,slow=9.9,SNR=111							
CTAO	**Charters Tower**	**32.93**	**175**	*e*P		**P**	**17 55 15.7**	**+0.8**
CTAO	**Charters Tower**	**32.93**	**175**	*e*P		**P**	**17 55 15.7**	**+0.8**
TIA	**Tai'an**	**33.01**	**319**	↓P		**P**	**17 55 16.5**	**+1.1**
TIA				S		**S**	**18 00 26.5**	**+1.6**
TIA				sS		**sS**	**18 01 14.8**	**+2.6**
TIA				pmax	pmax			
	comp=Z,70nm,1.4s							
TIA				pmax	pmax			
	comp=Z,800nm,4.0s							
TIA				LR	LR			
	comp=Z,1μm,13.0s							
TIA				LR	LR			
	comp=Z,610nm,14.0s							
TIA				LR	LR			
	comp=Z,930nm,13.5s							
SNY	**Shenyang**	**33.52**	**333**	↓P		**P**	**17 55 20.5**	**+0.8**
SNY				S		**S**	**18 00 34.8**	**+2.3**
SNY				pmax	pmax			
	comp=Z,33nm,1.1s							
SNY				pmax	pmax			
	comp=Z,690nm,3.9s							
SNY				LR	LR			
	comp=Z,730nm,14.5s							
SNY				LR	LR			
	comp=Z,510nm,12.8s							
SNY				LR	LR			
	comp=Z,680nm,24.3s							
MDJ	**Mudanjiang**	**33.69**	**342**	P		**P**	**17 55 22.5**	**+1.3**
MDJ				pP		pP	17 55 49.0	+0.6
MDJ				sP		sP	17 56 02.8	+0.1
MDJ				PP		**PP**	**17 56 39.5**	**-0.4**
MDJ				PcP		**PcP**	**17 57 58.8**	**+0.6**
MDJ				S		**S**	**18 00 33.8**	**-1.3**
MDJ				ScP		**ScP**	**18 01 32.0**	**+0.4**
MDJ				PcS		**PcS**	**18 01 45.0**	**+0.9**
MDJ				ScS		**ScS**	**18 05 34.5**	**+1.4**
MDJ				pmax	pmax			
	comp=Z,47nm,1.4s							
MDJ				pmax	pmax			
	comp=Z,380nm,7.7s							
MDJ				LR	LR			
	comp=Z,400nm,18.0s							
MDJ				LR	LR			
	comp=Z,230nm,16.2s							
MDJ				LR	LR			
	comp=Z,570nm,16.2s							
MDJ	**Mudanjiang**	**33.69**	**342**	*e*P		**P**	**17 55 22.0**	**+0.8**
	comp=Z,83nm,1.1s							
WRAB	**Tennant Creek**	**33.79**	**195**	*d i*P		**P**	**17 55 22.6**	**+0.2**
WRAB				pmax	pmax			
	comp=Z,267nm,0.9s							
WRAB	**Tennant Creek**	**33.79**	**195**	*e*P		**P**	**17 55 22.5**	**+0.2**
	comp=Z,121nm,0.6s							
WB2	**Warramunga Arr**	**33.80**	**195**	*e*P		**P**	**17 55 20.7**	**-1.8**
WR1	**Warramunga Arr**	**33.80**	**195**	*e*P		**P**	**17 55 22.7**	**+0.2**
	comp=Z,139nm,0.8s							
WR1				*e*PcP		**PcP**	**17 57 59.8**	**+0.8**
WR1				*e*S		**S**	**18 00 34.9**	**-2.5**
WR1				*e*ScP		**ScP**	**18 01 30.8**	**-1.6**
WR1				*e*ScS		ScS	18 05 22.7	-12
WR1				*e*			18 08 22.4	
WR1				*e*			18 26 26.6	
WR1				*e*			18 27 47.3	
WRA	**Warramunga Arr**	**33.81**	**195**	P		**P**	**17 55 22.7**	**+0.2**
	comp=Z,71nm,0.5s,baz=19,slow=9.4,SNR=371							
WRA				PcP		**PcP**	**17 57 59.8**	**+0.8**
	comp=Z,25nm,1.2s,baz=14,slow=3.5,SNR=8.1							
WRA				S		**S**	**18 00 34.9**	**-2.5**
	comp=Z,20nm,1.0s,baz=13,slow=16,SNR=12							
WRA				ScP		**ScP**	**18 01 30.8**	**-1.6**
	comp=Z,10nm,0.9s,baz=11,slow=3.6,SNR=10							
WRA				PKiKP		**PKiKP**	**18 05 22.7**	**-0.9**
	comp=Z,1.1nm,0.4s,baz=324,slow=1.4,SNR=22							
WRA				LR		LR	18 08 22.4	
	comp=Z,674nm,21.5s,baz=30,slow=34							
WRA				P3KPbc			18 26 26.7	
	comp=Z,0.3nm,0.6s,baz=199,slow=4.3,SNR=3.8							
WRA				P3KP			18 27 47.3	
	comp=Z,0.7nm,0.7s,baz=127,slow=3.0,SNR=5.2							
YSS	**Yuzh-Sakhalins**	**33.94**	**359**	⇑*i*P		**P**	**17 55 23.9**	**+0.6**
YSS				*e*			17 56 43.0	
YSS				*e*SS		SS	18 02 57.0	-14
YSS				pmax	pmax			
	comp=N,30nm,0.5s							
YSS				pmax	pmax			
	comp=Z,40nm,0.5s							
YSS				pmax	pmax			
	comp=Z,400nm,6.5s							
YSS				pmax	pmax			
	comp=E,100nm,3.6s							
YSS				MLR	MLR			
	comp=Z,400nm,19.0s							
YSS				MLR	MLR			
	comp=N,400nm,18.0s							
YSS	**Yuzh-Sakhalins**	**33.94**	**359**	*e*P		**P**	**17 55 23.8**	**+0.5**
	comp=N,38nm,0.7s							
STKI	**Sintang**	**33.98**	**250**	P		**P**	**17 55 24.8**	**+0.6**
CN2	**Changchun**	**34.38**	**337**	*e*P		**P**	**17 55 28.3**	**+1.1**
CN2				pmax	pmax			
	comp=N,10.0nm,0.6s							
CN2				pmax	pmax			
	comp=N,500nm,6.0s							
CN2				LR	LR			
	comp=N,600nm,15.0s							
CN2				LR	LR			
	comp=N,800nm,15.0s							
CN2				LR	LR			
	comp=N,500nm,13.0s							
KSM	**Kuching**	**34.54**	**253**	⇓P		**P**	**17 55 30.3**	**+1.4**
KSM	**Kuching**	**34.54**	**253**	*e*P		**P**	**17 55 27.6**	**-1.3**
	comp=N,81nm,1.2s							
KSM				*e*PcP		**PcP**	**17 58 01.3**	**0.0**
FITZ	**Fitzroy Crossi**	**35.38**	**210**	*e*P		**P**	**17 55 35.8**	**-0.2**
	comp=N,36nm,1.0s							
ENH	**Enshi**	**35.64**	**304**	*e*P		**P**	**17 55 39.5**	**+1.2**
	comp=N,126nm,0.8s							
ENH				*e*PcP		**PcP**	**17 58 04.2**	**-0.1**
ENH				*e*S		**S**	**18 01 04.8**	**-0.9**
JAGI	**Jajag, Banyuwa**	**35.87**	**235**	*e*P		**P**	**17 55 39.1**	**-1.2**
	comp=N,127nm,1.4s							
BJT	**Baijiatuan**	**36.01**	**324**	*e*P		**P**	**17 55 42.1**	**+0.9**
BJT				pmax	pmax			
	comp=Z,214nm,0.7s							
BJT	**Baijiatuan**	**36.01**	**324**	*e*P		**P**	**17 55 42.0**	**+0.9**
	comp=Z,214nm,0.7s							
BJI	**Beijing**	**36.02**	**324**	P		**P**	**17 55 42.8**	**+1.5**
BJI				pP		**pP**	**17 56 09.0**	**+0.3**
BJI				sP		**sP**	**17 56 22.3**	**-0.7**
BJI				PP		**PnPn**	**17 57 07.0**	**+0.6**
BJI				PcP		**PcP**	**17 58 06.0**	**+0.9**
BJI				S		**S**	**18 01 11.8**	**+0.8**
BJI				sS		**sS**	**18 01 58.3**	**-0.5**
BJI				pmax	pmax			
	comp=Z,290nm,1.2s							
HABR	**Khabarovsk**	**36.10**	**351**	*de*P		**P**	**17 55 40.3**	**-1.5**
HABR				*e**PP		**pP**	**17 56 08.8**	**-0.5**
HABR				*e**SP		**sP**	**17 56 23.9**	**+0.4**
HABR				*e*			17 57 04.8	
HABR				*e*			17 58 03.5	
HABR				*e*S		**S**	**18 01 10.1**	**-1.9**
HABR				*e**SS		**sS**	**18 02 00.5**	**+0.7**
HABR				*e*			18 05 43.3	
HABR				pmax	pmax			
	comp=E,17nm,1.4s							
HABR				pmax	pmax			
	comp=N,27nm,1.4s							
HABR				pmax	pmax			
	comp=Z,91nm,1.4s							
HABR				MLR	MLR			
	comp=Z,411nm,18.0s							
GYA	**Guiyang**	**36.84**	**297**	⇑*i*P		**P**	**17 55 50.8**	**+2.1**
GYA				pP		pP	17 56 17.0	+0.8
GYA				PP		**PnPn**	**17 57 19.5**	**+2.8**
GYA				PcP		**PcP**	**17 58 09.0**	**+0.9**
GYA				S		**S**	**18 01 25.3**	**+1.1**
GYA				ScP		**ScP**	**18 01 44.0**	**+0.4**
GYA				pmax	pmax			
	comp=Z,60nm,1.1s							
GYA				pmax	pmax			
	comp=Z,150nm,6.2s							
TIY	**Taiyuan**	**36.93**	**317**	*e*P		**P**	**17 55 51.0**	**+1.8**
TIY				PP		**PnPn**	**17 57 23.0**	**+5.4**
TIY				S		**S**	**18 01 26.0**	**+0.9**
TIY				sS		**sS**	**18 02 18.5**	**+5.5**
TIY				pmax	pmax			
	comp=Z,150nm,0.9s							
TIY				pmax	pmax			
	comp=Z,590nm,6.5s							
TIY				LR	LR			
	comp=Z,640nm,13.1s							
TIY				LR	LR			
	comp=Z,390nm,13.8s							
TIY				LR	LR			
	comp=Z,710nm,18.7s							
KLR	**Kul'dur**	**37.44**	**348**	P		**P**	**17 55 54.6**	**+1.4**
	comp=Z,53nm,0.6s,baz=156,slow=6.4,SNR=255							
KLR				PcP		**PcP**	**17 58 09.9**	**+0.7**
	comp=Z,14nm,0.8s,baz=171,slow=3.0,SNR=5.8							
AS01	**Alice Springs**	**37.47**	**194**	*e*P		**P**	**17 55 53.9**	**0.0**

SKR *e* 17 58 15.7
SKR *eS* **S** **18 01 56.4 -0.9**
SKR pmax pmax
comp=Z,600nm,4.3s
SKR MLR MLR
comp=Z,500nm,17.0s
HHC Hu-ho-hao-te 39.27 321 *eP* **P** **17 56 10.3 +1.4**
HHC pP pP 17 56 36.0 -0.6
HHC sP sP 17 56 48.5 -2.3
HHC S **S** **18 02 02.5 +2.0**
HHC sS sS 18 02 52.0 +3.3
HHC SS **SS** **18 04 55.8 -3.1**
HHC pmax pmax
comp=Z,86nm,1.4s
HHC pmax pmax
comp=Z,700nm,6.4s
MIDW Midway 39.69 61 *eP* **P** **17 56 13.9 +1.6**
comp=Z,79nm,0.9s
CHBT CHBT 39.86 274 P **P** **17 56 16.6 +2.7**
comp=Z,100nm,1.6s
KMI Kunming 40.02 294 P **P** **17 56 17.5 +2.1**
KMI pP pP 17 56 47.0 +3.7
KMI sP sP 17 56 59.5 +2.1
KMI PP **PP** **17 57 49.5 -0.4**
KMI PcP **PcP** **17 58 19.5 +1.3**
KMI S **S** **18 02 12.8 +0.5**
KMI sS sS 18 03 02.5 +1.9
KMI pmax pmax
comp=Z,93nm,1.4s
KMI pmax pmax
comp=Z,600nm,6.3s
KMI LR LR
comp=Z,380nm,13.4s
KMI LR LR
comp=Z,420nm,11.0s
KMI LR LR
comp=Z,420nm,16.8s
BTO Baotou 40.10 320 *eP* **P** **17 56 16.5 +0.8**
BTO pmax pmax
comp=Z,37nm,0.5s
NKL Nikolayevsk 40.19 358 *i* P **P** **17 56 16.0 0.0**
NKL *e* 17 56 52.8
NKL *i* S **S** **18 02 14.0 +0.5**
NKL pmax pmax
comp=N,450nm,2.0s
NKL pmax pmax
comp=Z,900nm,2.0s
NKL pmax pmax
comp=N,160nm,1.5s
NKL pmax pmax
comp=Z,260nm,1.3s
NKL smax smax
comp=N,400nm,5.0s
NKL smax smax
comp=E,600nm,5.0s
NKL MLR MLR
comp=Z,500nm,18.0s
KTGM Kuala Trenggan 40.27 263 ⇓P **P** **17 56 18.8 +1.5**
CD2 Chengdu 40.51 303 ⇓P **P** **17 56 20.0 +0.8**
CD2 pP pP 17 56 47.3 +0.2
CD2 sP sP 17 57 01.0 -0.2
CD2 PcS **PcS** **18 02 11.0 +0.6**
CD2 S **S** **18 02 20.8 +1.7**
CD2 sS sS 18 03 08.5 +1.0
CD2 pmax pmax
comp=Z,320nm,0.6s
CD2 pmax pmax
comp=Z,600nm,6.3s
CD2 LR LR
comp=Z,1μm,11.8s
CD2 LR LR
comp=Z,700nm,11.6s
CD2 LR LR
comp=Z,1μm,11.8s
MYKOM Kota Tinggi 40.53 257 ⇓P **P** **17 56 21.8 +2.3**
MYKOM Kota Tinggi 40.53 257 *eP* **P** **17 56 18.1 -1.4**
comp=Z,278nm,1.5s
CISI Cisompet, Garu 40.65 242 P **P** **17 56 18.2 -2.3**
CISI Cisompet, Garu 40.65 242 *eP* **P** **17 56 18.2 -2.3**
comp=Z,105nm,1.2s
KGM Kluang 40.97 258 ⇑P **P** **17 56 25.2 +2.1**
MBWA Marble Bar 40.99 215 *eP* **P** **17 56 22.4 -0.6**
comp=Z,32nm,0.9s
PBKT Sadao Pong 40.99 280 P **P** **17 56 25.1 +1.9**
comp=Z,131nm,1.2s,comp=Z,3μm
HIA Hailar 41.11 337 *eP* **P** **17 56 24.8 +1.1**
HIA pmax pmax
comp=Z,98nm,0.7s
HIA Hailar 41.11 337 *eP* **P** **17 56 24.8 +1.1**
comp=Z,98nm,0.7s
UTTA Uttaradit 41.39 282 P **P** **17 56 27.6 +1.2**
comp=Z,15nm,1.3s,comp=Z,183nm
DZM Mont Dzumac 41.55 147 *eP* **P** **17 56 28.7 +1.0**
comp=Z,494nm,1.3s
DZM *eS* **S** **18 02 28.0 -6.6**
comp=Z,445nm,28.8s
DZM *e*LR LR 18 07 45.8
comp=Z,1μm,30.6s
DZM Mont Dzumac 41.55 147 *eP* **P** **17 56 27.9 +0.2**
comp=Z,142nm,0.8s
FUNA Funafuti 41.58 119 *eP* **P** **17 56 28.4 +0.4**
comp=Z,216nm,1.1s
PEA0 Petropavlovsk- 41.72 13 *eP* **P** **17 56 29.4 +0.7**
PEA0B Petropavlovsk- 41.72 13 *eP* **P** **17 56 29.4 +0.8**
comp=Z,37nm,1.2s
PETK Petropavlovsk- 41.72 13 P **P** **17 56 29.3 +0.6**
comp=Z,3.7nm,0.6s,baz=186,slow=5.4,SNR=17
PETK PcP **PcP** **17 58 22.9 +0.1**
comp=Z,5.7nm,0.8s,baz=116,slow=3.3,SNR=5.5
PETK LR LR 18 11 12.0
comp=Z,465nm,20.8s,baz=203,slow=32
PEA1 Petropavlovsk- 41.73 13 *eP* **P** **17 56 29.3 +0.6**
PEA1 *e*PcP **PcP** **17 58 22.9 +0.1**
PEA1 *e* 18 11 11.9
PET Petropavlovsk 41.86 14 *eP* **P** **17 56 26.2 -3.5**
PET *e**PP **pP** **17 56 56.0 -1.8**
PET *e**SP **sP** **17 57 10.9 -1.0**
PET *e* 17 58 08.6
PET *eS* **S** **18 02 34.3 -3.9**
PET *e**SS **sS** **18 03 25.8 -1.1**
PET *e*SS **SS** **18 05 41.0 -8.4**
PET pmax pmax
comp=Z,500nm,4.3s
PET pmax pmax
comp=Z,300nm,15.4s
PET Petropavlovsk 41.86 14 *eP* **P** **17 56 30.0 +0.3**
comp=Z,85nm,1.7s
CGJI Cibinong 42.05 245 P **P** **17 56 31.6 -0.3**
comp=Z,66nm,0.5s
KLSI 42.07 248 P **P** **17 56 32.7 +0.7**
comp=Z,66nm,1.7s,comp=Z,1μm
LZH Lanzhou 42.23 310 *eP* **P** **17 56 35.0 +1.8**
LZH pP pP 17 57 03.5 +2.2
LZH sP sP 17 57 16.0 +0.6
LZH PP **PP** **17 58 14.0 +0.5**
LZH *eS* **S** **18 02 45.0 +0.5**
LZH sS sS 18 03 37.0 +3.8
LZH pmax pmax
comp=Z,160nm,1.0s
LZH pmax pmax
comp=Z,980nm,4.2s
LZH LR LR
comp=Z,2μm,10.8s
LZH LR LR
comp=Z,2μm,12.9s
LZH LR LR
comp=Z,5μm,18.2s
SUKH Sukhothai 42.27 282 P **P** **17 56 35.3 +1.7**
comp=Z,18nm,1.2s,comp=Z,198nm
LAMP Lampang 42.27 283 P **P** **17 56 35.2 +1.6**
comp=Z,16nm,0.7s,comp=Z,173nm
SKLT Songkhla 42.32 266 P **P** **17 56 36.0 +2.0**
comp=Z,146nm,1.0s
PHET Kaeng Krachan 42.47 275 P **P** **17 56 38.4 +3.1**
comp=Z,17nm,1.2s,comp=Z,204nm
IPM Ipoh 42.51 262 *eP* **P** **17 56 36.1 +0.5**
comp=Z,48nm,0.7s
IPM *e*PcP **PcP** **17 58 26.9 +0.7**
KULM Kulim 42.69 264 *eP* **P** **17 56 38.3 +1.3**
comp=Z,105nm,0.9s
KULM *e*PcP **PcP** **17 58 27.5 +0.7**
LWLI Liwa 42.81 248 P P 17 56 48.7 +11
LHSI Lahat 42.81 250 P **P** **17 56 39.0 +1.0**
comp=Z,141nm,1.2s,comp=Z,2μm
SRDT SRDT 42.86 277 P **P** **17 56 41.1 +2.7**
comp=Z,218nm,1.8s
CMAI Chiengmai2 42.87 285 P **P** **17 56 40.9 +2.2**
comp=Z,1μm,1.1s,comp=Z,70μm
CM01 Chiang Mai Arr 42.91 283 *eP* **P** **17 56 39.4 +0.6**
CM01 *e*PP **PcP** **17 58 28.6 +1.1**
CM31 Chiang Mai Arr 42.93 283 *eP* **P** **17 56 40.3 +1.3**
CM31 *e*PP **PcP** **17 58 28.9 +1.4**
CMAR Chiang Mai Arr 42.93 283 P **P** **17 56 40.7 +1.8**
comp=Z,32nm,0.5s,baz=75,slow=7.1,SNR=301
CMAR PcP **PcP** **17 58 28.9 +1.4**
comp=Z,16nm,0.5s,baz=98,slow=1.7,SNR=42
CMMT Chiang Mai 42.93 284 P **P** **17 56 40.3 +1.3**
comp=Z,38nm,1.5s
CHTO Chiang Mai 42.93 284 P **P** **17 56 40.4 +1.4**
comp=Z,147nm,1.3s
CHTO Chiang Mai 42.93 284 *eP* **P** **17 56 39.9 +0.9**
CHTO *e* 17 58 28.6
CHTO pmax pmax
comp=Z,123nm,1.8s
CHTO Chiang Mai 42.93 284 *eP* **P** **17 56 39.9 +0.9**
comp=Z,123nm,1.8s
CHTO *e*PP **PcP** **17 58 28.6 +1.1**
SURA Surathani 42.93 270 P **P** **17 56 41.9 +2.9**
comp=Z,38nm,1.4s
UMPA Umpang Tak 43.02 280 P **P** **17 56 42.7 +2.9**
comp=Z,23nm,1.3s,comp=Z,242nm
MNAI Manna 43.54 249 *eP* **P** **17 56 43.5 -0.4**
comp=Z,2μm,1.7s
KSI Kapahiang 43.60 251 P **P** **17 56 45.0 +0.6**
comp=Z,164nm,0.8s,comp=Z,3μm
BKNI Bangkinang 43.66 257 P **P** **17 56 46.1 +1.3**
comp=Z,189nm,1.2s,comp=Z,2μm
BKNI Bangkinang 43.66 257 *eP* **P** **17 56 44.6 -0.3**
comp=Z,227nm,1.2s
SDSI Sungai Dareh 43.70 255 P **P** **17 56 46.6 +1.4**
comp=Z,64nm,1.0s,comp=Z,64μm
SURT Suratani 43.78 270 P **P** **17 56 48.6 +2.8**
comp=Z,33nm,1.1s
ARMA Armidale 43.83 170 *eP* **P** **17 56 46.3 +0.3**
comp=Z,124nm,1.3s
XMIS Christmas Isla 43.97 240 *eP* **P** **17 56 45.9 -1.4**
comp=Z,192nm,1.4s
PKDT Phuket 44.41 268 P **P** **17 56 54.1 +3.3**
comp=Z,110nm,1.7s
STKA Stephens Creek 44.56 182 P **P** **17 56 51.5 -0.2**
comp=Z,97nm,0.8s,baz=352,slow=8.6,SNR=91
STKA PcP **PcP** **17 58 32.1 -0.6**
comp=Z,13nm,0.7s,baz=355,slow=4.4,SNR=3.8
STKA LR LR 18 16 37.2
comp=Z,637nm,20.3s,baz=350,slow=37
STKA Stephens Creek 44.56 182 *eP* **P** **17 56 51.4 -0.3**
comp=Z,21nm,0.9s
STKA *e*PcP **PcP** **17 58 32.8 +0.1**
STKA *e* 18 16 37.1
PDSI Padang 44.60 255 P **P** **17 56 51.8 -0.6**
comp=Z,68nm,0.8s,comp=Z,21μm
MNSI Mandailing Nat 44.90 258 P **P** **17 56 55.1 +0.3**
PSI Prapat 44.97 261 *eP* **P** **17 56 54.6 -0.8**
PSI *e* 17 58 34.5
PSI pmax pmax
comp=Z,84nm,0.9s
PSI Prapat 44.97 261 *eP* **P** **17 56 54.6 -0.8**
comp=Z,84nm,0.9s
PSI *e*PcP **PcP** **17 58 34.5 -0.2**
JOHN Johnston Islan 45.73 79 *eP* **P** **17 57 01.4 +0.2**
comp=Z,264nm,1.2s
CIT Chita 45.73 335 *eP* **P** **17 57 02.6 +1.8**
CIT *e* 17 57 35.7
CIT *e* 17 58 37.0
CIT pmax pmax
comp=Z,383nm,1.8s
FORT Forrest 45.83 198 *eP* **P** **17 57 02.5 +0.8**
KCSI Kotacane, Aceh 45.89 262 P **P** **17 57 03.2 +0.6**
comp=Z,177nm,1.3s,comp=Z,4μm
MSVF Nonsavu 45.91 131 *eP* **P** **17 57 03.7 +1.0**
MSVF *e* 17 58 40.2
MSVF pmax pmax
comp=Z,82nm,1.1s
MSVF Nonsavu 45.91 131 *eP* **P** **17 57 03.7 +1.0**
comp=Z,82nm,1.1s
MSVF *e*PcP **PcP** **17 58 40.2 +2.4**
BBOO Buckleboo 45.98 188 *eP* **P** **17 57 02.9 0.0**
comp=Z,195nm,1.0s
LHMI Lhok Sumawe 46.29 265 P **P** **17 57 08.5 +2.8**
comp=Z,352nm,1.1s,comp=Z,4μm
LHMI Lhok Sumawe 46.29 265 *eP* **P** **17 57 07.0 +1.3**
comp=Z,650nm,1.4s
LHMI *e*PcP **PcP** **17 58 38.6 -0.5**
SONA0 Songino Array 46.39 326 *eP* **P** **17 57 07.7 +1.6**
comp=Z,329nm,1.6s
SONA0 *e*PcP **PcP** **17 58 38.8 -0.2**
SONA0 *e*ScP **ScP** **18 02 18.0 -3.1**
SONA0 *e* 18 18 47.9
SONM Songino Array 46.39 326 P **P** **17 57 07.7 +1.6**
comp=Z,49nm,0.5s,baz=140,slow=7.5,SNR=257
SONM PcP **PcP** **17 58 38.8 -0.2**
comp=Z,9.1nm,0.6s,baz=156,slow=4.7,SNR=4.4
SONM ScP **ScP** **18 02 18.0 -3.1**
comp=Z,2.4nm,1.0s,baz=134,slow=4.3,SNR=4.7
SONM LR LR 18 18 47.9
comp=Z,456nm,19.5s,baz=125,slow=39
SONA1 Songino Array 46.39 326 *eP* **P** **17 57 07.0 +0.8**
SONA1 *e*PcP **PcP** **17 58 39.2 +0.1**
GTA Gaotai 46.45 313 ⇓P **P** **17 57 08.5 +1.7**
GTA pP pP 17 57 35.5 +0.2
GTA sP sP 17 57 49.0 -0.3
GTA PcP **PcP** **17 58 41.0 +1.5**
GTA PP **PP** **17 59 00.0 +2.2**
GTA ScP **ScP** **18 02 20.5 -1.1**
GTA S **S** **18 03 45.3 -0.3**
GTA sS sS 18 04 37.3 +2.4
GTA ScS **ScS** **18 06 47.5 -2.0**
GTA SS **SS** **18 07 06.3 -6.7**
GTA pmax pmax
comp=Z,93nm,1.2s
GTA pmax pmax
comp=Z,760nm,6.1s
GTA LR LR
comp=Z,690nm,16.2s
GTA LR LR
comp=Z,550nm,17.1s
GTA LR LR
comp=Z,460nm,16.6s
TPTI 46.53 262 P **P** **17 57 07.6 0.0**
comp=Z,44nm,1.4s
GSI Gunungsitoli 46.67 259 P **P** **17 57 08.2 -0.5**
comp=Z,195nm,1.1s
GSI Gunungsitoli 46.67 259 *eP* **P** **17 57 07.8 -0.8**
comp=Z,136nm,0.8s
GSI *e*PcP **PcP** **17 58 41.1 +0.6**
LHI Lord Howe Isla 46.71 161 *eP* **P** **17 57 08.4 -0.2**
comp=Z,157nm,1.4s
MA2 Magadan 46.91 5 P **P** **17 57 10.4 +0.6**
comp=Z,22nm,0.7s,baz=191,slow=8.2,SNR=26
CAN Canberra 48.28 174 *eP* **P** **17 57 21.4 +0.7**
CAN pmax pmax
comp=Z,122nm,1.3s
CAN Canberra 48.28 174 *eP* **P** **17 57 21.4 +0.7**
comp=Z,122nm,1.3s
ZAK Zakamensk 49.53 327 *eP* **P** **17 57 31.2 +0.9**
ZAK pmax pmax
comp=Z,120nm,1.4s
ZAK pmax pmax
comp=Z,28nm,1.1s
SHL Shillong 49.82 293 *eP* **P** **17 57 34.0 +1.1**
SHL *eS* **S** **18 04 32.0 -1.5**
YAK Yakutsk 50.01 352 P **P** **17 57 34.1 +0.6**
comp=Z,251nm,0.6s,baz=179,slow=0.7,SNR=92
YAK LR LR 18 17 33.2
comp=Z,279nm,19.4s,baz=100,slow=34
YAK Yakutsk 50.01 352 *d* *i*P **P** **17 57 34.0 +0.5**
YAK *e**PP **sP** **17 58 09.6 -6.6**
YAK *e* 17 58 51.8
YAK *e* 17 59 29.7
YAK *e*PPP PPP 18 00 27.9
YAK *eS* **S** **18 04 32.5 -2.1**
YAK *e* 18 07 08.8
YAK *e*SS **SS** **18 08 05.2 -3.8**
YAK pmax pmax
comp=Z,198nm,0.8s
YAK pmax pmax
comp=E,23nm,0.8s
YAK pmax pmax
comp=N,129nm,1.7s
YAK pmax pmax
comp=Z,33nm,1.4s
YAK pmax pmax
comp=N,36nm,1.3s
YAK pmax pmax
comp=E,31nm,1.5s
YAK smax smax
comp=E,192nm,2.2s
YAK smax smax
comp=N,83nm,1.4s
YAK Yakutsk 50.01 352 *eP* **P** **17 57 33.9 +0.5**
comp=N,296nm,0.6s
TLY Talaya 50.10 329 *eP* **P** **17 57 36.0 +1.6**
TLY *e* 17 59 33.9
TLY *eS* **S** **18 04 44.1 +7.8**
TLY pmax pmax
comp=Z,128nm,1.5s
TLY MLR MLR
comp=Z,352nm,17.0s
TLY Talaya 50.10 329 *eP* **P** **17 57 35.6 +1.2**
comp=Z,236nm,1.6s
TLY *e*PcP **PcP** **17 58 53.0 +0.8**
IRK Irkutsk 50.12 330 *eP* **P** **17 57 34.9 +0.4**
IRK pmax pmax
comp=Z,228nm,2.1s
SEY Seymchan 50.37 5 P **P** **17 57 37.2 +1.0**
comp=Z,11nm,0.7s,baz=186,slow=6.2,SNR=33
LSA Lhasa 50.90 298 *eP* **P** **17 57 43.1 +1.7**
LSA pmax pmax
comp=Z,199nm,1.5s
LSA Lhasa 50.90 298 *eP* **P** **17 57 43.1 +1.7**
comp=Z,199nm,1.5s
MOY Mondy 51.45 328 *eP* **P** **17 57 46.2 +1.5**
MOY pmax pmax
comp=Z,204nm,3.2s
AFI Afiamalu 51.92 119 *eP* **P** **17 57 49.5 +0.9**
AFI pmax pmax
comp=Z,149nm,1.1s
AFI Afiamalu 51.92 119 *eP* **P** **17 57 49.5 +0.9**
comp=Z,149nm,1.1s
COCO West Island 52.36 243 *eP* **P** **17 57 51.7 0.0**
COCO pmax pmax
comp=Z,218nm,0.6s
COCO West Island 52.36 243 *eP* **P** **17 57 51.7 0.0**
comp=Z,218nm,0.6s
JIRN Jiri 55.05 295 *eP* **P** **17 58 12.8 +1.1**
NIKH Nikolski High 55.10 33 *eP* **P** **17 58 12.5 +1.3**
comp=Z,53nm,1.4s
GUN Gumba 55.34 295 *eP* **P** **17 58 14.7 +0.9**
comp=Z,238nm,0.4s
TAU Tasmania Unive 55.67 176 *eP* **P** **17 58 16.6 +1.3**
TAU pmax pmax
comp=Z,121nm,1.3s
TAU Tasmania Unive 55.67 176 *eP* **P** **17 58 16.6 +1.3**
comp=Z,121nm,1.3s
PKIN Phulchoki 55.75 295 *eP* **P** **17 58 17.1 +0.5**
comp=Z,65nm,0.5s
OUZ Omahuta 55.84 150 *eP* **P** **17 58 18.7 +2.0**
comp=Z,178nm,1.2s
OUZ *e*PcP **PcP** **17 59 17.0 +2.9**
KKN Kakani 55.86 295 *eP* **P** **17 58 17.9 +0.5**
comp=Z,84nm,0.5s
DMN Daman 56.01 295 *eP* **P** **17 58 18.9 +0.4**
comp=Z,118nm,0.6s
GKN Gorkha 56.44 295 *eP* **P** **17 58 22.0 +0.6**
comp=Z,166nm,0.4s
WMQ Urumqi 56.47 314 ⇓ *i*P **P** **17 58 23.3 +2.1**
WMQ pP pP 17 58 53.0 +2.3
WMQ PcP **PcP** **17 59 17.3 +0.6**
WMQ PP **PP** **18 00 30.0 +1.9**
WMQ S **S** **18 06 04.3 +1.5**
WMQ sS sS 18 06 58.3 +4.6
WMQ pmax pmax
comp=Z,140nm,1.2s
WMQ pmax pmax
comp=Z,490nm,3.6s
WMQ LR LR
comp=Z,610nm,14.7s
WMQ LR LR
comp=Z,430nm,14.7s
WMQ LR LR
comp=Z,650nm,22.0s
KIP Kipapa 56.49 73 *eP* **P** **17 58 21.5 -0.2**
KIP pmax pmax
comp=Z,61nm,0.8s
KIP Kipapa 56.49 73 *eP* **P** **17 58 21.5 -0.2**
comp=Z,61nm,0.8s
HON Honolulu 56.51 73 *eP* **P** **17 58 21.4 -0.3**
HON pmax pmax
comp=Z,661nm,1.6s
HON Honolulu 56.51 73 *eP* **P** **17 58 21.4 -0.3**
comp=Z,661nm,1.6s
UNV Unalaska Valle 56.75 33 *eP* **P** **17 58 22.0 -0.9**
comp=Z,14nm,0.8s
BILL Bilibino 57.09 10 *d* *i*P **P** **17 58 25.3 +0.2**
BILL *e**PP **pP** **17 58 55.4 +0.7**
BILL *e* 18 00 33.9
BILL *e*PPP PPP 18 01 55.1
BILL *i* S **S** **18 06 15.8 +5.7**
BILL pmax pmax
comp=Z,74nm,2.5s
BILL Bilibino 57.09 10 *eP* **P** **17 58 25.5 +0.4**
comp=Z,46nm,1.0s
AKUT Akutan 57.27 33 *eP* **P** **17 58 26.5 0.0**
comp=Z,80nm,1.5s
KOLN Koldanda 57.35 295 *eP* **P** **17 58 28.5 +0.6**
comp=Z,52nm,0.3s
KRAR Krasnoyarsk 57.79 329 *d* *i*P **P** **17 58 30.9 +0.7**
PYUN Piuthan 57.90 295 *eP* **P** **17 58 32.3 +0.6**
comp=Z,129nm,0.6s
KKH Kailua Kona 58.44 75 *eP* **P** **17 58 35.6 +0.3**
KKH Kailua Kona 58.44 75 *eP* **P** **17 58 35.6 +0.3**
HPAH Hawaii Prepara 58.72 74 *eP* **P** **17 58 37.4 +0.1**
comp=Z,87nm,1.1s
POHA Pohakuloa 58.89 75 *eP* **P** **17 58 39.5 +0.8**
comp=Z,191nm,1.4s
HIZ Hauiti 59.09 151 *eP* **P** **17 58 40.2 +0.8**
comp=Z,233nm,1.4s
TIXI Tiksi 59.35 355 P **P** **17 58 40.8 +0.1**
comp=Z,16nm,0.7s,baz=125,slow=8.9,SNR=9.4
TIXI Tiksi 59.35 355 *d* *i*P **P** **17 58 40.4 -0.3**
TIXI pmax pmax
comp=Z,23nm,1.0s
TIXI Tiksi 59.35 355 *eP* **P** **17 58 40.2 -0.5**
comp=Z,15nm,0.7s
VRZ Vera Road 59.53 152 PN **P** **17 58 44.7 +2.2**
URZ Urewera 59.97 150 *eP* **P** **17 58 45.4 -0.1**
comp=Z,172nm,1.4s
URZ Urewera 59.97 150 *ePN* **P** **17 58 45.7 +0.3**
MXZ Matakaoa Point 60.04 148 *eP* **P** **17 58 46.0 +0.1**
comp=Z,68nm,0.9s
MXZ Matakaoa Point 60.04 148 *ePN* **P** **17 58 46.3 +0.4**
MWZ Matawai 60.24 149 *ePN* **P** **17 58 47.8 +0.5**
BKZ Black Stump Fm 60.38 151 *eP* **P** **17 58 47.5 -0.8**
comp=Z,46nm,0.8s
BKZ Black Stump Fm 60.38 151 *ePN* **P** **17 58 48.6 +0.2**
SDPT Sand Point 60.56 33 *eP* **P** **17 58 50.2 +0.9**
comp=Z,49nm,0.9s
NNZ Nelson 60.63 154 PN **P** **17 58 50.0 +0.1**
MK01 Makanchi Array 60.87 317 *eP* **P** **17 58 52.5 +0.8**
MK31 Makanchi Array 60.88 317 *i* P **P** **17 58 52.9 +1.2**
MK31 pmax pmax
comp=Z,67nm,0.9s
MK31 Makanchi Array 60.88 317 *eP* **P** **17 58 52.7 +1.0**
MK32 Makanchi Array 60.88 317 *eP* **P** **17 58 53.0 +1.4**
MK32 *e* 18 26 32.9
MK32 *eP'P'ab P'P'ab 18 28 15.8 -14
MKAR Makanchi Array 60.88 317 P **P** **17 58 53.0 +1.4**
comp=Z,35nm,0.6s,baz=92,slow=8.7,SNR=327
MKAR LR LR 18 26 32.9
comp=Z,292nm,20.6s,baz=108,slow=37
MKAR PKP2bc 18 28 15.8
comp=Z,11nm,1.1s,baz=321,slow=1.6,SNR=23
MKAR Makanchi Array 60.88 317 *eP* **P** **17 58 52.7 +1.0**
MKAR pmax pmax
comp=Z,291nm,0.6s
MKAR Makanchi Array 60.88 317 *eP* **P** **17 58 52.7 +1.0**
comp=Z,291nm,0.6s
MKAR ⇑ *e* 18 28 15.8
THZ Tophouse 60.89 155 *eP* **P** **17 58 51.6 -0.1**
comp=Z,36nm,0.9s
MAKZ Makanchi 61.10 317 *eP* **P** **17 58 54.1 +1.0**
MAKZ pmax pmax
comp=Z,412nm,1.8s
MAKZ Makanchi 61.10 317 *eP* **P** **17 58 54.1 +1.0**
comp=Z,412nm,1.8s
FOZ Fox Glacier 61.19 158 *eP* **P** **17 58 53.5 -0.1**
comp=Z,87nm,1.4s
ZAA0 Zalesovo Array 61.26 325 *eP* **P** **17 58 53.9 -0.1**

ZAA0 ePcP **PcP** **17 59 34.2 -1.1**
ZALV Zalesovo Beam 61.26 325 P **P** **17 58 54.7 +0.7**
comp=Z,77nm,0.5s,baz=112,slow=7.0,SNR=455
ZALV PcP **PcP** **17 59 34.8 -0.6**
comp=Z,32nm,0.5s,baz=121,slow=4.0,SNR=12
ZALV LR LR 18 27 59.7
comp=Z,397nm,19.3s,baz=70,slow=38
ZALV PKPPKP **P'P'df** **18 28 08.8 0.0**
comp=Z,1.7nm,0.7s,baz=272,slow=4.2,SNR=5.4
ZAA1 Zalesovo Array 61.26 325 eP **P** **17 58 54.7 +0.7**
ZAA1 ePcP **PcP** **17 59 34.8 -0.6**
ZAA1 e 18 27 59.7
ZAA1 eP'P'ab P'P'ab 18 28 08.8 -19
BFZ Birch Farm 61.47 152 eP **P** **17 58 54.3 -1.3**
comp=Z,132nm,1.2s
LTZ Lake Taylor 61.48 156 eP **P** **17 58 55.0 -0.6**
comp=Z,43nm,0.8s
KHZ Kahutara 61.69 155 eP **P** **17 58 56.7 -0.3**
comp=Z,39nm,0.8s
KHZ Kahutara 61.69 155 ePN **P** **17 58 56.4 -0.5**
PALK Pallekele 61.71 271 eP **P** **17 58 57.6 -0.2**
PALK pmax pmax
comp=Z,68nm,1.1s
PALK Pallekele 61.71 271 eP **P** **17 58 57.5 -0.2**
comp=Z,68nm,1.1s
RPZ Rata Peaks 61.81 157 eP **P** **17 58 57.1 -0.7**
comp=Z,166nm,1.2s
OXZ Oxford 61.85 157 eP **P** **17 58 57.2 -0.8**
comp=Z,222nm,1.4s
OXZ Oxford 61.85 157 ePN **P** **17 58 57.5 -0.6**
SHLS Shalkode 61.89 312 eP **P** **17 58 57.0 -1.7**
comp=Z,348nm,1.3s
SHLS eS **S** **18 07 10.3 -2.8**
CHGN Chignik 61.99 33 eP **P** **17 58 58.7 -0.1**
DCZ Deep Cove 62.00 161 eP **P** **17 58 59.5 +0.6**
comp=Z,72nm,1.2s
LBZ Lake Benmore 62.07 158 eP **P** **17 58 59.6 +0.1**
comp=Z,125nm,1.3s
PDGK Podgornoye 62.20 312 P **P** **17 59 01.4 +0.9**
PDGK pmax pmax
comp=Z,123nm,1.6s
MLZ Mavora Lakes 62.22 160 eP **P** **17 59 00.2 -0.3**
comp=Z,87nm,1.1s
CRLZ Canterbury Las 62.29 156 eP **P** **17 59 01.1 +0.2**
comp=Z,244nm,1.4s
HYB Hyderabad 62.35 283 *i* P **P** **17 59 02.0 -0.1**
HYB epP **pP** **17 59 33.0 +0.9**
HYB ePcP **PcP** **17 59 41.0 +0.4**
MQZ McQueen's Vall 62.41 156 eP **P** **17 59 01.9 +0.1**
comp=Z,82nm,1.1s
MQZ McQueen's Vall 62.41 156 ePN **P** **17 59 02.4 +0.7**
NVS Novosibirsk 62.42 326⇓ eP **P** **17 59 02.9 +1.2**
NVS eS **S** **18 07 21.6 +2.8**
NVS pmax pmax
comp=N,92nm,1.4s
NVS pmax pmax
comp=E,81nm,1.4s
NVS pmax pmax
comp=Z,233nm,1.4s
NVS smax smax
comp=N,21nm,2.1s
NVS smax smax
comp=E,25nm,2.1s
WHZ Wether Hill Ro 62.63 161 eP **P** **17 59 03.1 -0.1**
comp=E,54nm,1.3s
KPKS Kokpek 62.80 312 eP **P** **17 59 03.2 -1.5**
comp=E,439nm,0.4s
KPKS eS **S** **18 07 21.5 -2.7**
KPKS LRM MLR 18 29 00.5
comp=E,147nm,13.3s
ODZ Otahua Downs 62.80 158 eP **P** **17 59 01.7 -2.7**
comp=E,44nm,1.3s
TDK Taldyqorghan 63.22 314 eP **P** **17 59 06.0 -1.3**
comp=E,548nm,0.6s
TDK eS **S** **18 07 26.9 -2.4**
TDK LRM MLR 18 28 55.0
comp=E,119nm,20.0s
MDOK Medeo 63.94 312 eP **P** **17 59 10.9 -1.4**
comp=E,447nm,1.5s
MDOK eS **S** **18 07 35.9 -2.7**
MDOK LRM MLR 18 30 19.7
comp=E,100nm,17.5s
AAA Alma-Ata 64.03 312 eP **P** **17 59 11.5 -1.2**
comp=E,752nm,1.3s
AAA eS **S** **18 07 37.2 -2.2**
AAA LRM MLR 18 28 08.8
comp=E,247nm,16.9s
KURK Kurchatov 64.08 320*d i*P **P** **17 59 13.5 +0.7**
KURK pmax pmax
comp=Z,682nm,1.0s
KURK Kurchatov 64.08 320 eP **P** **17 59 13.3 +0.4**
comp=Z,858nm,1.6s
KURBB Kurchatov Arra 64.12 320 P **P** **17 59 13.9 +0.8**
comp=Z,101nm,0.5s,baz=104,slow=7.4,SNR=14
KSH Kashi 64.40 308⇓ *i*P **P** **17 59 19.0 +3.7**
KSH epP PcP 17 59 49.5 +0.8
KSH esP sP 18 00 03.8 +4.8
KSH ePP **PP** **18 01 45.0 +6.7**
KSH PcS 18 03 53.5
KSH S **S** **18 07 45.8 +1.5**
KSH ScS **SKSac** **18 08 58.0 -0.1**
KSH SS **SS** **18 12 02.5 +6.1**
KSH pmax pmax
comp=Z,23nm,0.6s
KSH pmax pmax
comp=Z,480nm,3.5s
KSH LR LR
comp=Z,490nm,14.7s
KSH LR LR
comp=Z,170nm,8.4s
KSH LR LR
comp=Z,290nm,18.7s
KUU Kurty 64.54 313 eP **P** **17 59 14.8 -1.2**
comp=Z,1μm,1.2s
KUU eS **S** **18 07 43.2 -2.5**
KUU LRM MLR 18 30 30.4
comp=Z,192nm,15.0s
BMNS Besmoynak 64.94 312 eP **P** **17 59 17.3 -1.5**
comp=Z,569nm,1.3s
BMNS eS **S** **18 07 48.2 -2.7**
OHAK Old Harbor 64.96 32 eP **P** **17 59 18.5 +0.1**
TKM2 Tokmak 2 64.97 311 P **P** **17 59 20.0 +0.9**
TKM2 pmax pmax
comp=Z,78nm,1.7s
SVW2 Sparrevohn 65.01 28 eP **P** **17 59 18.9 +0.2**
comp=Z,11nm,0.6s
RAR Rarotonga 65.43 121 LR LR 18 23 50.4
comp=Z,250nm,18.5s,baz=287,slow=32
TT01 Tatalina 65.44 26 eP **P** **17 59 21.1 -0.3**
TTA Tatalina 65.45 26 eP **P** **17 59 21.4 -0.2**
TTA pmax pmax
comp=Z,8.0nm,1.0s
TTA Tatalina 65.45 26 eP **P** **17 59 21.4 -0.2**
comp=Z,8.2nm,1.0s
KDAK Kodiak Island 65.48 32 *i* P **P** **17 59 22.8 +1.1**
KDAK Kodiak Island 65.48 32 eP **P** **17 59 22.9 +1.2**
comp=Z,29nm,1.1s
FRU Bishkek 65.68 311⇓ eP **P** **17 59 24.0 +0.6**
FRU pmax pmax
comp=Z,300nm,2.3s
AAK Ala-Archa 65.76 311 P **P** **17 59 24.7 +0.7**
comp=Z,6.7nm,0.7s,baz=102,slow=5.5,SNR=33
AAK Ala-Archa 65.76 311 P **P** **17 59 24.9 +0.8**
AAK pmax pmax
comp=Z,53nm,1.7s
AAK Ala-Archa 65.76 311 P **P** **17 59 25.1 +1.0**
SNR=17
AAK Ala-Archa 65.76 311 P **P** **17 59 25.1 +1.0**
SNR=17
AAK Ala-Archa 65.76 311 eP **P** **17 59 23.8 -0.3**
comp=Z,36nm,1.3s
RSO Redoubt South 66.13 29 eP **P** **17 59 27.4 +1.2**
NRIK Noril'sk 66.26 341 P **P** **17 59 27.1 +0.6**
comp=Z,47nm,0.7s,baz=116,slow=7.4,SNR=65
NRIK LR LR 18 28 41.1
comp=Z,259nm,19.1s,baz=114,slow=36
BTLS Baital 66.29 314 eP **P** **17 59 26.0 -1.2**
comp=Z,190nm,1.4s
BTLS eS **S** **18 08 04.7 -2.2**
BTLS LRM MLR 18 30 12.8
comp=Z,134nm,15.5s
CNPM China Poot 66.61 30 eP **P** **17 59 28.5 -0.4**
comp=Z,47nm,0.6s
SPU Mount Spurr 66.66 28 eP **P** **17 59 29.8 +0.5**
BRLK Bradley Lake 66.84 30 eP **P** **17 59 29.1 -1.4**
comp=Z,24nm,0.6s

PPLA Purkeypile 67.10 27 eP **P** **17 59 31.6 -0.6**
comp=Z,53nm,1.6s
MNAS Manas 67.21 311 P **P** **17 59 34.3 +1.0**
MNAS pmax pmax
comp=Z,94nm,1.8s
CAST Castle Rocks 67.30 26 eP **P** **17 59 32.9 -0.4**
comp=Z,20nm,0.6s
SUA Susitna One 67.35 28 eP **P** **17 59 32.3 -1.5**
comp=Z,21nm,0.8s
SEW Seward 67.63 30 eP **P** **17 59 34.8 -0.5**
comp=Z,25nm,0.7s
RC01 Rabbit Creek A 67.72 29 eP **P** **17 59 35.4 -0.5**
comp=Z,37nm,0.6s
BRZS Berezniki 67.73 319 eP **P** **17 59 35.0 -1.2**
comp=Z,118nm,1.4s
BRZS eS **S** **18 08 21.7 -2.3**
KTH Kantishna Hill 67.83 26 eP **P** **17 59 36.2 -0.5**
comp=Z,18nm,0.8s
BPAW Bear Paw Mtn. 67.96 26 eP **P** **17 59 37.0 -0.4**
comp=Z,16nm,0.9s
TRF Thorofare Moun 68.08 26 eP **P** **17 59 36.7 -1.7**
comp=Z,14nm,0.9s
PMR Palmer 68.13 28 eP **P** **17 59 37.4 -1.0**
PMR pmax pmax
comp=Z,32nm,0.6s
PMR Palmer 68.13 28 eP **P** **17 59 37.4 -1.0**
comp=Z,32nm,0.6s
MLY Manley 68.33 25 eP **P** **17 59 39.5 -0.3**
comp=Z,40nm,1.3s
SML Sawmill 68.55 28 eP **P** **17 59 40.3 -0.9**
SML pmax pmax
comp=Z,28nm,0.6s
SML Sawmill 68.55 28 eP **P** **17 59 40.3 -0.9**
comp=Z,28nm,0.6s
BWN Browne 68.62 26 eP **P** **17 59 40.3 -1.3**
comp=Z,69nm,1.0s
RND Reindeer 68.69 27 eP **P** **17 59 40.6 -1.4**
RND pmax pmax
comp=Z,25nm,1.3s
RND Reindeer 68.69 27 eP **P** **17 59 40.6 -1.4**
comp=Z,25nm,1.3s
MCK McKinley 68.74 26 eP **P** **17 59 40.8 -1.5**
MCK pmax pmax
comp=Z,11nm,0.9s
MCK McKinley 68.74 26 eP **P** **17 59 40.8 -1.5**
comp=Z,11nm,0.9s
GLI Glacier Island 68.93 29 eP **P** **17 59 43.1 -0.4**
comp=Z,21nm,0.7s
SCM Sheep Creek Mo 69.02 28 eP **P** **17 59 43.6 -0.5**
SCM pmax pmax
comp=Z,43nm,1.0s
SCM Sheep Creek Mo 69.02 28 eP **P** **17 59 43.6 -0.5**
comp=Z,43nm,1.0s
IUG Iuzhnay 69.03 310 eP **P** **17 59 43.5 -1.1**
comp=Z,338nm,1.0s
IUG eS **S** **18 08 37.7 -2.3**
COLD Coldfoot 69.17 22 eP **P** **17 59 45.4 +0.5**
comp=Z,26nm,1.0s
FID Port Fidalgo 69.20 30 eP **P** **17 59 44.6 -0.5**
comp=Z,41nm,0.7s
DHY Denali Highway 69.27 27 eP **P** **17 59 45.1 -0.6**
comp=Z,12nm,0.8s
WRH Wood River Hil 69.28 26 eP **P** **17 59 44.9 -0.6**
comp=Z,14nm,0.8s
MDM Murphy Dome 69.34 25 eP **P** **17 59 46.0 0.0**
comp=Z,16nm,1.0s
CCB Clear Creek Bu 69.44 25 eP **P** **17 59 45.1 -1.4**
comp=Z,20nm,1.3s
COLA College 69.47 25 eP **P** **17 59 46.4 -0.3**
COLA pmax pmax
comp=Z,27nm,0.3s
COLA College 69.47 25 eP **P** **17 59 46.4 -0.3**
comp=Z,27nm,0.3s
BVA0 Borovoye Array 69.48 322 *i* P **P** **17 59 47.9 +0.9**
BVA0 pmax pmax
comp=Z,110nm,0.6s
BVAR Borovoye Array 69.48 322 P **P** **17 59 47.8 +0.7**
comp=Z,123nm,0.5s,baz=105,slow=7.9,SNR=39
EYAK Cordova Ski Ar 69.52 30 eP **P** **17 59 47.0 -0.1**
comp=Z,20nm,0.6s
BRVK Borovoye 69.55 322*d i*P **P** **17 59 48.0 +0.6**
BRVK pmax pmax
comp=Z,186nm,0.9s
BRVK Borovoye 69.55 322 eP **P** **17 59 48.2 +0.8**
comp=Z,143nm,0.6s
KLU Klutina 69.61 29 eP **P** **17 59 47.4 -0.4**
comp=Z,19nm,0.7s
DIV Divide 69.61 29 eP **P** **17 59 47.6 -0.2**
comp=Z,20nm,0.6s
HDA Harding Lake 69.75 26 eP **P** **17 59 47.3 -1.2**
comp=Z,15nm,0.8s
IL1 Eielson Array 69.85 25 eP **P** **17 59 47.1 -2.0**
ILAR Eielson Array 69.85 25 P **P** **17 59 47.8 -1.2**
comp=Z,7.6nm,0.5s,baz=248,slow=6.2,SNR=106
ILAR PKP2bc 18 27 50.1
comp=Z,1.6nm,1.1s,baz=96,slow=1.7,SNR=9.2
ILB Eielson Array 69.85 25 eP **P** **17 59 47.5 -1.6**
KBL Kabul 69.85 302 eP **P** **17 59 49.8 -0.2**
KBL pmax pmax
comp=Z,84nm,1.2s
KBL Kabul 69.85 302 eP **P** **17 59 49.8 -0.2**
comp=Z,84nm,1.2s
RAGM Ragged Mountai 70.02 30 eP **P** **17 59 50.3 +0.1**
comp=Z,22nm,1.0s
PAX Paxson 70.10 27 eP **P** **17 59 50.2 -0.5**
PAX pmax pmax
comp=Z,19nm,0.7s
PAX Paxson 70.10 27 eP **P** **17 59 50.2 -0.5**
comp=Z,19nm,0.7s
BMRM Bremner River 70.15 30 eP **P** **17 59 51.1 0.0**
comp=Z,20nm,0.9s
CRQM Cirque 70.82 30 eP **P** **17 59 55.7 +0.4**
comp=Z,29nm,0.7s
DOT Dot Lake 70.84 27 eP **P** **17 59 54.8 -0.4**
comp=Z,53nm,0.7s
FYU Fort Yukon 70.91 24 eP **P** **17 59 55.5 +0.1**
comp=Z,70nm,1.3s
BALM Baldy 71.25 30 eP **P** **17 59 57.5 -0.3**
BALM pmax pmax
comp=Z,20nm,0.8s
BALM Baldy 71.25 30 eP **P** **17 59 57.5 -0.3**
comp=Z,20nm,0.8s
PCA Pinnacle 72.17 31 eP **P** **18 00 03.4 +0.1**
comp=Z,80nm,0.8s
EGAK Eagle 72.27 26 eP **P** **18 00 03.5 -0.1**
comp=Z,17nm,1.0s
PPT Papeete 72.89 113 LR LR 18 25 58.9
comp=Z,498nm,19.3s,baz=298,slow=31
PPT2 Papeete2 72.90 113 eP **P** **18 00 11.6 +3.3**
PPT2 eS **S** **18 09 21.4 -3.8**
comp=Z,127nm,1.4s
PPT2 Papeete2 72.90 113 eLR LR 18 22 12.0
comp=Z,389nm,27.0s
PAE Paea 72.92 113 eP **P** **18 00 11.3 +3.0**
comp=Z,689nm,21.5s
DAWY Dawson 72.95 27 eP **P** **18 00 08.0 +0.2**
comp=Z,26nm,1.2s
TIAR Tiarei 73.10 113 eP **P** **18 00 12.7 +3.3**
comp=Z,24nm,0.9s
DHAK Deception Hill 73.13 32 eP **P** **18 00 09.3 +0.4**
comp=Z,43nm,1.2s
TVO Taravao 73.26 113 eP **P** **18 00 13.8 +3.4**
comp=Z,27nm,0.6s
HYT Haines Junctio 73.58 30 eP **P** **18 00 12.7 +1.1**
comp=Z,82nm,1.3s
MEH Mehetia 74.35 113 eP **P** **18 00 19.8 +3.1**
comp=Z,27nm,1.2s
SKAG Skagway 74.62 32 eP **P** **18 00 17.7 +0.2**
comp=Z,67nm,1.2s
WHY Whitehorse 74.86 30 eP **P** **18 00 18.3 -0.7**
comp=Z,15nm,0.8s
TBI Tubuai 75.03 119 eS **S** **18 09 44.0 -4.7**
comp=Z,15nm,0.9s
TBI Tubuai 75.03 119 eLR LR 18 23 08.8
comp=Z,245nm,29.0s
SVE Sverdlovsk 75.26 326*c i*P **P** **18 00 21.5 +0.3**
comp=Z,431nm,35.2s
SVE pmax pmax
comp=Z,152nm,1.5s
INK Inuvik 75.59 22 P **P** **18 00 22.3 -0.6**
comp=Z,7.3nm,0.7s,baz=304,slow=4.9,SNR=20
INK Inuvik 75.59 22 eP **P** **18 00 22.3 -0.6**
INK pmax pmax
comp=Z,15nm,0.8s
INK Inuvik 75.59 22 eP **P** **18 00 22.3 -0.6**
comp=Z,15nm,0.8s
AB31 Akbulak array 75.98 318 P **P** **18 00 25.7 +0.2**

AB31 pmax pmax
comp=Z,25nm,0.7s
ABKAR Akbulak array 75.98 318 eP **P** **18 00 25.6 +0.1**
comp=Z,301nm,0.5s
WRAK Wrangell Islan 76.27 35 eP **P** **18 00 27.6 +0.7**
comp=Z,24nm,0.7s
ARU Arti 76.42 325 P **P** **18 00 23.7 -4.1**
comp=Z,31nm,0.5s,baz=90,slow=20,SNR=1.9
ARU Arti 76.42 325*d i*P **P** **18 00 28.1 +0.2**
ARU *PP **pP** **18 00 58.8 -0.2**
ARU 18 03 18.3
ARU PPP PPP 18 05 07.3
ARU S **S** **18 10 04.0 +1.0**
ARU *SS sS 18 11 06.1 +10
ARU SS **SS** **18 14 53.3 -6.4**
ARU pmax pmax
comp=Z,178nm,1.7s
ARU MLR MLR
comp=Z,575nm,20.0s
ARU Arti 76.42 325 eP **P** **18 00 28.0 +0.2**
comp=Z,176nm,1.4s
AKTO Aktyubinsk 77.14 319 P **P** **18 00 32.1 +0.1**
comp=Z,13nm,0.5s,baz=94,slow=8.3,SNR=66
AKTO Aktyubinsk 77.14 319 P **P** **18 00 31.9 -0.1**
AKTO pmax pmax
comp=Z,24nm,0.7s
GEYT Alibeck 78.38 306 P **P** **18 00 40.0 +0.7**
comp=Z,24nm,1.0s,baz=64,slow=3.4,SNR=57
TAOE Nuku Hiva Isla 79.09 102 eLR LR 18 25 09.2
comp=Z,566nm,27.9s
WSAR Wadi Sarin 80.14 292 P **P** **18 00 49.5 +0.5**
comp=Z,11nm,0.8s,baz=141,slow=4.7,SNR=17
BIDO Bidbid 80.55 292 P **P** **18 00 51.6 +0.5**
SNR=24
BIDO Bidbid 80.55 292 P **P** **18 00 51.6 +0.5**
SNR=24
SMDO Samad 80.69 292 P **P** **18 00 52.1 0.0**
SNR=7.4
SMDO Samad 80.69 292 P **P** **18 00 52.1 0.0**
SNR=7.4
JMDO Jabal Madar 80.77 291 P **P** **18 00 52.2 -0.1**
SNR=5.1
JMDO Jabal Madar 80.77 291 P **P** **18 00 52.2 -0.1**
SNR=5.1
HOQ Hoqain 81.27 292 P **P** **18 00 55.2 +0.2**
SNR=34
HOQ Hoqain 81.27 292 P **P** **18 00 55.2 +0.2**
SNR=34
BANOM Banah 81.76 295 *i* P **P** **18 00 58.4 +0.8**
SNR=13
UOSS Minazif 82.02 294 eP **P** **18 00 58.6 -0.4**
comp=Z,118nm,1.3s
ARQ Araqi 82.03 292 P **P** **18 00 59.4 +0.3**
SNR=28
ARQ Araqi 82.03 292 P **P** **18 00 59.4 +0.3**
SNR=28
HATD Hatta, Dubai 82.11 294 *i* P **P** **18 00 59.6 +0.1**
SNR=14
ASHO Ashiyiah 82.20 293 *i* P **P** **18 01 00.2 +0.2**
SNR=23
ASHO Ashiyiah 82.20 293 P **P** **18 01 00.2 +0.2**
SNR=9.8
ASHO Ashiyiah 82.20 293 P **P** **18 01 00.2 +0.2**
SNR=9.8
NAZ Nazwa, Dubai 82.50 294 *i* P **P** **18 01 01.5 +0.1**
SNR=14
NLWA Neilton Lookou 82.56 43 eP **P** **18 01 02.2 +0.9**
comp=Z,94nm,1.6s
CASY Casey 82.60 193 eP **P** **18 01 00.7 -0.2**
comp=Z,100nm,1.4s
FAQ Al Faqa, Dubai 82.60 294 *i* P **P** **18 01 02.2 +0.2**
SNR=7.1
E03A Lebam 82.92 44 eP **P** **18 01 03.8 +0.7**
comp=Z,82nm,1.6s
F03A Seaside 83.05 45 eP **P** **18 01 07.1 +3.2**
comp=Z,246nm,1.6s
LLLB Lillooet 83.20 40 eP **P** **18 01 05.8 +1.1**
comp=Z,73nm,2.0s
G03D McMinnville, O 83.39 45 P **P** **18 01 06.9 +1.3**
baz=282
B05A Bryant 83.55 42 P **P** **18 01 07.3 +0.9**
baz=282
I03D Drain, OR 83.64 47 P **P** **18 01 07.7 +0.8**
baz=282
F04A Amboy 83.82 44 eP **P** **18 01 08.6 +0.8**
comp=Z,149nm,1.8s
D05A Enumclaw 83.85 43 eP **P** **18 01 09.1 +1.2**
comp=Z,24nm,0.8s
LON Longmire 84.06 44 eP **P** **18 01 09.0 -0.1**
LON pmax pmax
comp=Z,33nm,1.8s
LON Longmire 84.06 44 eP **P** **18 01 09.0 -0.1**
comp=Z,33nm,1.8s
HUMO Hull Mountain 84.14 48 eP **P** **18 01 10.4 +0.9**
comp=Z,51nm,1.5s
YKW3 Yellowknife Ar 84.16 27 eP **P** **18 01 08.8 -0.3**
comp=Z,39nm,1.6s
YKA Yellowknife Ar 84.18 27 P **P** **18 01 09.0 -0.3**
comp=Z,3.5nm,0.5s,baz=286,slow=5.0,SNR=39
YKA PKiKP **PKiKP** **18 06 22.7 -0.4**
comp=Z,0.5nm,0.6s,baz=300,slow=1.6,SNR=6.3
YKB5 Yellowknife Ar 84.18 27 eP **P** **18 01 08.9 -0.3**
I04A Tendick Farm, baz=282 84.28 47 P **P** **18 01 10.6 +0.4**
SPA0 Spitsbergen Ar 84.45 350 eP **P** **18 01 10.6 +0.2**
M02C Callahan baz=282 84.47 49 P **P** **18 01 12.4 +1.1**
YBH Yreka Blue Hor 84.50 49 eP **P** **18 01 11.9 +0.4**
YBH pmax pmax
comp=Z,101nm,1.6s
YBH Yreka Blue Hor 84.50 49 eP **P** **18 01 11.9 +0.4**
comp=Z,101nm,1.6s
J04D Umpqua Nationa baz=283 84.61 47 P **P** **18 01 13.0 +0.9**
KBS Kingsbay 84.64 352 eP **P** **18 01 11.3 0.0**
KBS pmax pmax
comp=Z,24nm,0.7s
KBS Kingsbay 84.64 352 eP **P** **18 01 11.3 0.0**
comp=Z,24nm,0.7s
N02D Trinity Center baz=282 84.67 49 P **P** **18 01 13.2 +0.9**
G05D Wamic, OR baz=283 84.73 45 P **P** **18 01 13.3 +0.8**
WDC Whiskeytown Da 84.88 50 eP **P** **18 01 13.7 +0.5**
WDC pmax pmax
comp=Z,76nm,1.8s
WDC Whiskeytown Da 84.88 50 eP **P** **18 01 13.7 +0.5**
comp=Z,76nm,1.8s
LVZ Lovozero 84.96 339*d i*P **P** **18 01 12.4 -0.7**
LVZ pmax pmax
comp=Z,88nm,1.7s
LVZ Lovozero 84.96 339 eP **P** **18 01 12.5 -0.6**
comp=Z,167nm,1.7s
GDXM Geysers 85.07 51 eP **P** **18 01 14.2 -0.2**
comp=Z,51nm,1.5s
M04C Macdoel baz=283,SNR=7.8 85.13 48 P **P** **18 01 15.5 +0.8**
G06A Carlson Farm, 85.20 45 eP **P** **18 01 15.2 +0.4**
comp=Z,80nm,1.9s
J05D Fort Rock, OR 85.23 47 P **P** **18 01 16.0 +0.9**
baz=283,SNR=11
RBK Rabkut 85.30 287 P **P** **18 01 16.2 +0.4**
SNR=5.6
RBK Rabkut 85.30 287 P **P** **18 01 16.2 +0.4**
SNR=5.6
B08A Colville Reser 85.33 42 eP **P** **18 01 14.9 -0.5**
comp=Z,163nm,1.8s
HSPB Hornsund (broa 85.34 350 eP **P** **18 01 15.4 +0.6**
KLMR Klimovskoe 85.39 332 eP **P** **18 01 13.1 -2.2**
KLMR *e* 18 04 34.0
KLMR pmax pmax
comp=Z,44nm,0.9s
O03D Paynes Creek baz=283,SNR=7.8 85.49 50 P **P** **18 01 17.2 +0.7**
APA Apatity 85.52 339⇓ *i*P **P** **18 01 14.5 -1.4**
APA *i* 18 04 36.0
APA *i*S **S** **18 11 33.0 -3.9**
APA pmax pmax
comp=Z,28nm,0.9s
APA MLR MLR
comp=Z,200nm,16.0s
RES Resolute Bay 85.57 13 P **P** **18 01 15.9 -0.1**
comp=Z,18nm,1.0s,baz=322,slow=4.2,SNR=3.3
RES Resolute Bay 85.57 13 eP **P** **18 01 15.7 -0.3**
RES pmax pmax
comp=Z,32nm,1.0s
RES Resolute Bay 85.57 13 eP **P** **18 01 15.7 -0.3**

comp=Z,32nm,1.0s
K05A Summer Lake 85.60 47 *e*P **P 18 01 17.3 +0.3**
comp=Z,190nm,1.9s
HAWA Hanford 85.67 44 *e*P **P 18 01 17.8 +0.7**
comp=Z,76nm,1.5s
ORV Oroville 85.88 51 *e*P **P 18 01 18.2 -0.1**
ORV pmax pmax
comp=Z,45nm,1.5s
ORV Oroville 85.88 51 *e*P **P 18 01 18.2 -0.1**
comp=Z,45nm,1.5s
D08A Wollman Farm, 85.92 43 *e*P **P 18 01 18.6 +0.4**
comp=Z,98nm,1.5s
C09A Chrisman Ranch 86.16 42 *e*P **P 18 01 19.8 +0.3**
comp=Z,98nm,1.5s
DPW Davenport 86.18 42 *e*P **P 18 01 21.2 +1.5**
DPW Davenport 86.18 42 *e*P **P 18 01 21.2 +1.5**
G08A Pilot Rock 86.33 44 *e*P **P 18 01 21.1 +0.5**
comp=Z,74nm,1.7s
AFDM Forest Hills D 86.42 51 *e*P **P 18 01 21.4 +0.4**
comp=Z,52nm,1.7s
SAO San Andreas Ge 86.57 53 *e*P **P 18 01 22.3 +0.6**
SAO pmax pmax
comp=Z,38nm,1.6s
SAO San Andreas Ge 86.57 53 *e*P **P 18 01 22.3 +0.6**
comp=Z,38nm,1.6s
E09A Wood Farm, Sta 86.57 43 *e*P **P 18 01 21.8 +0.3**
comp=Z,122nm,1.6s
NEW Newport 86.78 41 P **P 18 01 22.4 -0.1**
comp=Z,9.1nm,0.6s,baz=276,slow=3.5,SNR=22
NEW Newport 86.78 41 P **P 18 01 22.9 +0.4**
baz=286
NEW Newport 86.78 41 *e*P **P 18 01 22.3 -0.2**
comp=Z,92nm,1.7s
CMB Columbia Colle 87.08 52 *e*P **P 18 01 24.4 +0.2**
CMB pmax pmax
comp=Z,50nm,1.6s
CMB Columbia Colle 87.08 52 *e*P **P 18 01 24.4 +0.2**
comp=Z,50nm,1.6s
VRH Novokhopyorsk 87.13 322 *e*P **P 18 01 22.3 -1.8**
VRH pmax pmax
comp=Z,60nm,0.6s
PMPB Monarch Peak 87.20 54 *e*P **P 18 01 25.5 +0.7**
comp=Z,61nm,1.6s
ARA0 ARCESS Array S 87.23 342 *e*P **P 18 01 23.8 -0.5**
ARA0 *e*PP **pP 18 01 54.6 -1.5**
ARCES ARCESS Array B 87.23 342 P **P 18 01 24.2 0.0**
comp=Z,18nm,0.8s,baz=72,slow=6.7,SNR=48
ARCES PKiKP **PKiKP 18 06 28.1 +0.1**
comp=Z,2.4nm,0.6s,baz=126,slow=1.6,SNR=8.4
ARCES PKKPbc **PKKPbc 18 19 14.0 -3.2**
comp=Z,0.9nm,0.5s,baz=258,slow=2.6,SNR=7.2
ARE0 ARCESS Array S 87.23 342 *e*P **P 18 01 23.6 -0.6**
comp=Z,89nm,1.3s
WVOR Wild Horse Val 87.29 47 *e*P **P 18 01 25.7 +0.5**
WVOR pmax pmax
comp=Z,97nm,1.7s
WVOR Wild Horse Val 87.29 47 *e*P **P 18 01 25.7 +0.5**
comp=Z,97nm,1.7s
F10A Beach Ranch, E 87.33 44 *e*P **P 18 01 25.8 +0.5**
comp=Z,64nm,1.6s
MIR Mirnyy 87.36 198 *i* P **P 18 01 24.5 -0.1**
MIR pmax pmax
comp=Z,6.0nm,1.4s
PNTR Pine Nut 87.42 51 *e*P **P 18 01 28.4 +2.3**
comp=Z,92nm,1.7s
PAHR Pah Rah Range 87.43 50 *e*P **P 18 01 27.1 +1.1**
comp=Z,69nm,1.6s
BMO Blue Mountains 87.58 45 *e*P **P 18 01 26.8 +0.3**
BMO pmax pmax
comp=Z,110nm,1.6s
BMO Blue Mountains 87.58 45 *e*P **P 18 01 26.7 +0.1**
comp=Z,107nm,1.6s
WAKR Walker 87.69 51 *e*P **P 18 01 28.6 +1.2**
comp=Z,80nm,1.8s
YERR Yerington 87.72 51 *e*P **P 18 01 28.3 +0.8**
comp=Z,70nm,1.5s
GUDG Gudauri 87.74 313 P **P 18 01 27.3 -0.2**
TBLG Delisi 87.75 312 P **P 18 01 26.3 -1.0**
TBLG Delisi 87.75 312 P **P 18 01 26.3 -1.0**
PAGB Antelope Grade 87.75 54 *e*P **P 18 01 28.0 +0.6**
comp=Z,77nm,1.4s
MOS Moscow 88.02 327 *e*P **P 18 01 26.2 -2.0**
MOS *e**PP **pP 18 01 58.4 -1.7**
MOS *e* 18 04 56.1
MOS *e* 18 11 40.7
MOS pmax pmax
comp=Z,300nm,1.8s
MOS pmax pmax
comp=Z,136nm,0.9s
GOF Gofitskoye 88.04 316⇑ *e*P **P 18 01 29.0 +0.4**
GOF pmax pmax
comp=Z,147nm,1.8s
SMMC Simmler 88.06 54 P **P 18 01 30.1 +1.2**
baz=284
ZEI Tsey 88.07 313 *e*P **P 18 01 26.3 -2.7**
ZEI pmax pmax
comp=Z,122nm,1.4s
GNI Garni 88.16 311 P **P 18 01 29.5 0.0**
comp=Z,4.1nm,0.5s,baz=207,slow=2.3,SNR=16
GNI Garni 88.16 311 *i* P **P 18 01 29.4 0.0**
SNR=8.0
GNI Garni 88.16 311 P **P 18 01 29.5 0.0**
SNR=11
GNI Garni 88.16 311 P **P 18 01 29.5 0.0**
SNR=11
GNI Garni 88.16 311 *e*P **P 18 01 29.2 -0.2**
comp=Z,78nm,1.5s
TVH3 East Aurora ar 88.20 51 *e*P **P 18 01 30.4 +0.6**
comp=Z,71nm,1.8s
TVH3 *e*pP **pP 18 02 01.1 -0.6**
TVH1 TV Hill, Hawth 88.22 51 *e*P **P 18 01 31.0 +1.0**
comp=Z,30nm,1.2s
PKM Mcpherson Peak 88.31 55 P **P 18 01 31.1 +0.8**
baz=284
BSMT Bassoo Peak 88.40 41 *e*P **P 18 01 30.8 +0.4**
ONI Oni 88.44 313 P **P 18 01 29.6 -1.0**
ONI Oni 88.44 313 P **P 18 01 29.6 -1.0**
KBZ Khabaz 88.51 314 P **P 18 01 29.9 -0.8**
comp=Z,2.4nm,0.7s,baz=74,slow=4.8,SNR=15
KBZ Khabaz 88.51 314 *e*P **P 18 01 30.0 -0.8**
WALA Waterton Lakes 88.58 40 *e*P **P 18 01 32.4 +1.2**
comp=Z,66nm,1.8s
KVAR Kislovodsk Arr 88.59 315 P **P 18 01 31.1 -0.2**
comp=Z,4.2nm,0.6s,baz=46,slow=9.6,SNR=9.3
KIV Kislovodsk 88.59 315 *i* P **P 18 01 30.2 -1.1**
SNR=5.9
KIV Kislovodsk 88.59 315 *e*P **P 18 01 30.1 -1.2**
KIV Kislovodsk 88.59 315 P **P 18 01 30.3 -1.1**
SNR=8.0
KIV Kislovodsk 88.59 315 P **P 18 01 30.3 -1.1**
SNR=8.0
KIV Kislovodsk 88.59 315 *e*P **P 18 01 30.1 -1.2**
KIV *e*pP **pP 18 02 01.6 -1.7**
BLMT Blacktail Moun 88.62 41 *e*P **P 18 01 31.6 +0.1**
VES Vestal, Richgr 88.64 54 P **P 18 01 31.8 +0.2**
baz=285,SNR=6.7
VSR Storozhevoye 88.66 322 *e*P **P 18 01 29.6 -1.7**
VSR pmax pmax
comp=Z,100nm,1.2s
AKH Akhalkalaki 88.73 312⇓ *i*P **P 18 01 32.1 -0.1**
AKH Akhalkalaki 88.73 312 P **P 18 01 31.7 -0.5**
AKH Akhalkalaki 88.73 312 P **P 18 01 31.7 -0.5**
NEY Neytrino 88.77 314 *e*P **P 18 01 32.0 -0.3**
NEY pmax pmax
comp=Z,2.0nm,1.1s
OBN Obninsk 88.80 327 P **P 18 01 31.0 -0.9**
comp=Z,22nm,0.4s,baz=56,slow=2.8,SNR=38
OBN Obninsk 88.80 327 *d i*P **P 18 01 31.0 -0.9**
OBN *e**PP **pP 18 02 04.2 +0.4**
OBN *e* 18 05 04.6
OBN *e*PPP PPP 18 07 02.7
OBN *i* S **SKSac 18 11 46.5 -3.3**
OBN *e*SSS SSS 18 21 43.7
OBN pmax pmax
comp=Z,182nm,1.7s
OBN Obninsk 88.80 327 *e*P **P 18 01 31.0 -0.9**
comp=Z,149nm,1.3s
BMN Battle Mountai 88.84 49 *e*P **P 18 01 32.9 +0.2**
BMN pmax pmax
comp=Z,46nm,1.5s
BMN Battle Mountai 88.84 49 *e*P **P 18 01 32.9 +0.2**
comp=Z,46nm,1.5s
MFID Camas Ranch 89.00 46 *e*P **P 18 01 33.4 +0.1**
comp=Z,122nm,1.6s
SWMT Swartz Lake 89.01 41 *e*P **P 18 01 33.6 +0.3**
CWC Cottonwood Cre 89.27 53 P **P 18 01 35.4 +0.6**
baz=286
GRAC Grapevine Rang 89.67 52 P **P 18 01 37.5 +1.0**
baz=286
CHMT Chamberlain Mo 89.68 42 *e*P **P 18 01 36.2 -0.4**
DAC Darwin (Calif) 89.69 53 *e*P **P 18 01 37.5 +0.7**
DAC pmax pmax
comp=Z,40nm,1.5s
DAC Darwin (Calif) 89.69 53 *e*P **P 18 01 37.5 +0.7**
comp=Z,40nm,1.5s
EDW2 Edwards Air Fo 89.75 54 P **P 18 01 37.9 +1.0**
baz=286,SNR=14
PASC Pasadena Art C 89.79 55 *e*P **P 18 01 37.9 +0.8**
comp=Z,92nm,1.6s
MPMC Manual Prospec 89.83 53 P **P 18 01 38.0 +0.6**
baz=286,SNR=19
LRMC Laurel Mtn Rad 89.84 54 P **P 18 01 38.2 +0.7**
baz=286,SNR=16
DAG Danmarks Havn 89.85 356 *i* P **P 18 01 35.5 -0.9**
comp=Z,5.4nm,0.5s
DAG Danmarks Havn 89.85 356 *i* P **P 18 01 35.5 -0.9**
DAG pmax pmax
comp=Z,4.0nm,0.5s
MWC Mount Wilson 89.88 55 *e*P **P 18 01 38.4 +0.7**
MWC pmax pmax
comp=Z,92nm,1.5s
MWC Mount Wilson 89.88 55 *e*P **P 18 01 38.4 +0.7**
comp=Z,92nm,1.5s
HLID Hailey 89.94 45 P **P 18 01 38.5 +0.7**
baz=288
HLID Hailey 89.94 45 *e*P **P 18 01 38.0 +0.3**
comp=Z,23nm,1.1s
FURC Furnace Creek, 90.21 53 P **P 18 01 39.9 +1.0**
baz=286,SNR=10
TPNV Topopah Spring 90.55 52 P **P 18 01 41.3 +0.6**
baz=287,SNR=12
TPNV Topopah Spring 90.55 52 *e*P **P 18 01 41.1 +0.4**
TPNV pmax pmax
comp=Z,24nm,1.1s
TPNV Topopah Spring 90.55 52 *e*P **P 18 01 41.1 +0.4**
comp=Z,24nm,1.1s
TPNV *e*pP **pP 18 02 12.4 -0.3**
LRM Limekiln Ridge 90.56 43 *e*P **P 18 01 40.0 -0.7**
GSC Goldstone, Bar 90.58 54 P **P 18 01 41.5 +0.7**
baz=286,SNR=15
GSC Goldstone, Bar 90.58 54 *e*P **P 18 01 41.3 +0.5**
GSC pmax pmax
comp=Z,47nm,1.3s
GSC Goldstone, Bar 90.58 54 *e*P **P 18 01 41.2 +0.5**
comp=Z,47nm,1.3s
DLMT Dillon 90.61 43 *e*P **P 18 01 40.9 +0.1**
comp=Z,60nm,1.9s
MCMT McKenzie Canyo 90.61 44 *e*P **P 18 01 41.2 +0.2**
R11A Troy Canyon, C 90.65 50 P **P 18 01 41.6 +0.5**
baz=287,SNR=17
R11A Troy Canyon, C 90.65 50 *e*P **P 18 01 42.3 +1.1**
comp=Z,53nm,1.7s
MURC Murrieta 90.73 55 P **P 18 01 42.1 +0.6**
baz=286
SOC Sochi 90.76 315 *e*P **P 18 01 39.5 -1.8**
SOC *e* 18 05 14.5
SOC *e*PPP PPP 18 07 18.6
SOC *e*S **SKSac 18 11 57.8 -3.9**
SOC pmax pmax
comp=Z,21nm,0.5s
SHOC Shoshone, Teco 90.82 53 P **P 18 01 42.9 +1.1**
baz=287,SNR=6.0
VNDA Vanda 90.90 176 P **P 18 01 41.2 +0.1**
comp=Z,25nm,1.0s,baz=323,slow=5.7,SNR=61
VNDA Vanda 90.90 176 *e*P **P 18 01 41.7 +0.6**
VNDA pmax pmax
comp=Z,49nm,1.1s
VNDA Vanda 90.90 176 *e*P **P 18 01 41.7 +0.6**
comp=Z,48nm,1.1s
109C Camp Elliot, M 91.00 56 P **P 18 01 43.4 +0.8**
baz=286
HEC Hector,Ludlow 91.08 54 P **P 18 01 43.8 +0.7**
baz=286,SNR=11
FIA1 FINESS Array S 91.10 335 *e*P **P 18 01 41.1 -1.4**
FIA1 *e*pP **pP 18 02 13.4 -1.1**
FIA0 FINESS Array S 91.10 335 *e*P **P 18 01 41.6 -0.9**
FIA0 FINESS Array S 91.10 335 *e*P **P 18 01 41.5 -0.9**
FIA0 *e*PP **PP 18 05 12.5 -7.7**
FIA0 *e*PKKPdf **PKKPdf 18 19 05.1 +2.2**
FINES FINESS Array B 91.10 335 P **P 18 01 41.5 -0.9**
comp=Z,21nm,0.4s,baz=68,slow=5.1,SNR=423
FINES PP **PP 18 05 12.5 -7.7**
comp=Z,3.3nm,0.6s,baz=72,slow=9.2,SNR=5.5
FINES PKKPbc **PKKPdf 18 19 05.1 +2.2**
comp=Z,0.9nm,0.4s,baz=278,slow=3.6,SNR=14
BOZ Bozeman (W) 91.16 43 P **P 18 01 43.7 +0.4**
baz=290
BOZ Bozeman (W) 91.16 43 *e*P **P 18 01 43.5 +0.1**
BOZ pmax pmax
comp=Z,22nm,1.4s
BOZ Bozeman (W) 91.16 43 *e*P **P 18 01 43.5 +0.1**
comp=Z,22nm,1.4s
TUQ Turquoise Moun 91.23 53 P **P 18 01 44.7 +0.8**
baz=287,SNR=13
PFO Pinyon Flats O 91.32 55 P **P 18 01 44.8 +0.5**
baz=286,SNR=8.4
PFO Pinyon Flats O 91.32 55 *e*P **P 18 01 45.0 +0.7**
PFO pmax pmax
comp=Z,44nm,1.4s
PFO Pinyon Flats O 91.32 55 *e*P **P 18 01 45.0 +0.7**
comp=Z,44nm,1.4s
TPFO Pinon Flats 91.33 55 P **P 18 01 45.0 +0.6**
baz=286,SNR=9.0
BAR Barrett 91.41 56 *e*P **P 18 01 45.3 +0.7**
comp=Z,48nm,1.4s
SHPR Sheep Range 91.51 52 *e*P **P 18 01 46.9 +1.7**
comp=Z,58nm,1.9s
EGMT Eagleton 91.53 40 P **P 18 01 45.2 +0.3**
baz=291
MONP2 Monument Peak 91.55 56 P **P 18 01 46.1 +0.6**
baz=286,SNR=10
QLMT Earthquake Lak 91.57 43 *e*P **P 18 01 45.9 +0.6**
BELC Belle Mtn. Jos 91.58 55 P **P 18 01 45.9 +0.4**
baz=287,SNR=10
SBA Scott Base 91.58 175 *e*P **P 18 01 46.1 +1.8**
SBA pmax pmax
comp=Z,99nm,1.4s
SBA Scott Base 91.58 175 *e*P **P 18 01 46.1 +1.8**
comp=Z,99nm,1.4s
GMRC Granite Mounta 91.62 54 P **P 18 01 46.6 +0.9**
baz=287,SNR=15
HVU Hansel Valley 91.65 47 *e*P **P 18 01 46.8 +1.1**
HVU pmax pmax
comp=Z,44nm,1.4s
HVU Hansel Valley 91.65 47 *e*P **P 18 01 46.8 +1.1**
comp=Z,44nm,1.4s
BGU Big Grassy Mou 91.74 47 *e*P **P 18 01 46.6 +0.4**
comp=Z,15nm,1.5s
YHB Horse Butte 91.75 43 *e*P **P 18 01 47.2 +0.9**
comp=Z,29nm,1.1s
IKP In-Ko-Pah, Jac 91.88 56 P **P 18 01 47.7 +0.8**
baz=287
ANN Anapa 91.90 317 *e*P **P 18 01 45.1 -1.5**
ANN pmax pmax
comp=Z,57nm,1.4s
YMR Madison River 91.93 43 *e*P **P 18 01 47.9 +0.8**
comp=Z,29nm,1.0s
YHH Holmes Hill 91.97 43 *e*P **P 18 01 48.6 +1.3**
comp=Z,74nm,1.9s
LDFC Landfair 91.97 53 *e*P **P 18 01 48.4 +1.1**
comp=Z,127nm,1.7s
SPUT South Promonto 92.03 47 *e*P **P 18 01 47.9 +0.3**
comp=Z,45nm,1.6s
SWSC Sam W. Stewart 92.04 56 P **P 18 01 48.1 +0.6**
baz=287
YFT Old Faithful 92.09 44 *e*P **P 18 01 50.2 +2.3**
comp=Z,96nm,1.9s
BC3 Big Chuckawall 92.11 55 P **P 18 01 48.8 +0.8**
baz=287,SNR=14
DUG Dugway, Tooele 92.13 48 P **P 18 01 48.4 +0.5**
baz=289
DUG Dugway, Tooele 92.13 48 *e*P **P 18 01 48.3 +0.3**
DUG pmax pmax
comp=Z,15nm,1.1s
DUG Dugway, Tooele 92.13 48 *e*P **P 18 01 48.3 +0.3**
comp=Z,15nm,1.1s
YPP Pitchstone Pla 92.18 44 *e*P **P 18 01 49.9 +1.6**
comp=Z,8.1nm,1.0s
IRM Iron Mountain 92.21 54 P **P 18 01 49.1 +0.8**
baz=287,SNR=13
IMW Indian Meadow 92.22 44 *e*P **P 18 01 48.3 -0.2**
comp=Z,19nm,1.2s
VSU Vasula 92.28 332 *d i*P **P 18 01 47.0 -1.0**
VSU pmax pmax
comp=Z,170nm,1.1s
H17A Grant Village 92.29 44 *e*P **P 18 01 50.1 +1.4**
comp=Z,23nm,1.0s
FLWY Flagg Ranch 92.31 44 *e*P **P 18 01 49.3 +0.5**
comp=Z,25nm,0.9s
TPAW Teton Pass 92.35 44 *e*P **P 18 01 49.6 +0.5**
comp=Z,20nm,1.2s
GCMT Greycliff 92.40 42 *e*P **P 18 01 49.8 +0.8**
MOOW Moose Ponds 92.40 44 *e*P **P 18 01 49.8 +0.6**
comp=Z,19nm,1.4s
REDW Red Top Meadow 92.46 45 *e*P **P 18 01 50.2 +0.7**
comp=Z,19nm,1.3s
LOHW Long Hollow 92.54 44 *e*P **P 18 01 50.4 +0.5**
comp=Z,14nm,1.3s
HWUT Hardware Ranch 92.56 46 *e*P **P 18 01 50.0 +0.1**
comp=Z,11nm,0.9s
CCUT Cedar City 92.56 51 *e*P **P 18 01 51.1 +1.0**
comp=Z,19nm,1.5s
SZCU Shurtz Canyon 92.76 51 *e*P **P 18 01 50.9 -0.1**
comp=Z,10nm,1.2s
GLA Glamis 92.79 55 P **P 18 01 51.8 +0.8**
baz=287,SNR=6.7
GLA Glamis 92.79 55 *e*P **P 18 01 52.2 +1.1**
GLA pmax pmax
comp=Z,26nm,1.1s
GLA Glamis 92.79 55 *e*P **P 18 01 52.1 +1.1**
comp=Z,26nm,1.1s
LCMT Little Creek M 92.82 51 *e*P **P 18 01 52.3 +1.1**
comp=Z,13nm,1.4s
Y12C Blythe 92.83 55 P **P 18 01 51.7 +0.6**
baz=288
Y12C Blythe 92.83 55 *e*P **P 18 01 51.6 +0.5**
comp=Z,16nm,0.9s
RLMT Red Lodge 92.90 43 P **P 18 01 51.9 +0.4**
baz=291
RLMT Red Lodge 92.90 43 *e*P **P 18 01 52.5 +1.0**
comp=Z,16nm,0.9s
W13A Hualapai Mount 92.92 53 *e*P **P 18 01 52.5 +0.7**
comp=Z,18nm,1.3s
PDMCI Parker Dam,Lak 92.96 54 P **P 18 01 52.6 +0.9**
baz=288
JLU Jordanelle 92.98 47 *e*P **P 18 01 52.0 0.0**
comp=Z,19nm,1.2s
BW06 Boulder Array 93.56 45 P **P 18 01 54.7 +0.1**
baz=291
BW06 Boulder Array 93.56 45 *e*P **P 18 01 53.8 -0.8**
comp=Z,11nm,1.4s
PD31 Pinedale Array 93.56 45 *e*P **P 18 01 54.0 -0.7**
PDAR Pinedale Array 93.56 45 P **P 18 01 53.6 -1.0**
comp=Z,1.1nm,0.6s,baz=252,slow=2.5,SNR=11
MICGM Minsk 93.62 328 *e*P **P 18 01 54.0 -0.3**
MNK Minsk 93.62 328 *e*P **P 18 01 54.0 -0.3**
113A Mohawk Valley, 93.73 55 *e*P **P 18 01 55.8 +0.5**
comp=Z,21nm,1.3s
U15A North Rim 93.73 52 *e*P **P 18 01 56.0 +0.4**
comp=Z,8.7nm,1.3s
SRU San Rafael Swe 94.16 48 *e*P **P 18 01 56.3 -1.1**
SRU pmax pmax
comp=Z,11nm,1.2s
SRU San Rafael Swe 94.16 48 *e*P **P 18 01 56.3 -1.1**
comp=Z,11nm,1.2s
LAO LASA Array 94.26 40 P **P 18 01 58.0 +0.5**
baz=294
LAO LASA Array 94.26 40 *e*P **P 18 01 57.6 +0.1**
comp=Z,109nm,1.8s
AKASG Malin Array Be 94.65 324 P **P 18 01 57.5 -1.5**
comp=Z,0.9nm,0.4s,baz=52,slow=5.2,SNR=22
AKASG PP **PP 18 05 50.9 +2.5**
comp=Z,0.3nm,0.3s,baz=57,slow=8.1,SNR=6.4
AKASG PKKPbc **PKKPdf 18 18 55.9 -0.6**
comp=Z,2.9nm,0.4s,baz=267,slow=2.8,SNR=20
AKBB Malin Array Si 94.65 324 *e*P **P 18 01 57.2 -1.9**
AKBB pmax pmax
comp=Z,58nm,1.9s
AKBB Malin Array Si 94.65 324 *e*P **P 18 01 57.0 -2.1**
comp=Z,58nm,1.9s
AKBB *e*PP **PP 18 05 42.5 -5.9**
KIEV Kiev 94.66 324 *d i*P **P 18 01 57.4 -1.7**
KIEV pmax pmax
comp=Z,9.0nm,1.4s
KIEV Kiev 94.66 324 *e*P **P 18 01 57.0 -2.2**
comp=Z,58nm,1.9s
KIEV *e*pP **pP 18 02 30.2 -0.9**
AK11 Malin Array Si 94.69 324 *e*P **P 18 01 57.4 -1.8**
AK11 *e*pP **pP 18 02 30.6 -0.7**
SUMG Summit 94.70 1 *i* P **P 18 02 02.2 +2.8**
comp=Z,4.7nm,1.0s
SUMG Summit 94.70 1 *i* P **P 18 02 02.2 +2.8**
SUMG pmax pmax
comp=Z,5.0nm,1.0s
WUAZ Wupatki 94.73 52 P **P 18 02 00.6 +0.5**
baz=290
214A Organ Pipe Nat 94.75 56 P **P 18 02 00.6 +0.6**
baz=288
X16A Lo Mia Camp, P 95.05 53 *e*P **P 18 02 02.6 +1.1**
comp=Z,20nm,1.8s
DAMY Dhamar 95.15 286 *e*P **P 18 02 02.5 0.0**
comp=Z,45nm,1.3s
K22A Casper 95.67 44 *e*P **P 18 02 04.2 0.0**
comp=Z,53nm,1.9s
PV01 Paradox Valley 95.94 49 *e*P **P 18 02 05.3 -0.2**
TUC Tucson 96.26 55 P **P 18 02 07.4 +0.4**
baz=290
BR101 Keskin Array S 96.37 313 *e*P **P 18 02 05.9 -1.5**
BR101 *e*PP **PP 18 05 56.2 -6.0**
BRTR Keskin Array B 96.37 313 P **P 18 02 05.9 -1.4**
comp=Z,1.4nm,0.6s,baz=73,slow=4.3,SNR=5.4
BRTR PP **PP 18 05 56.2 -6.0**
comp=Z,1.2nm,0.6s,baz=85,slow=7.2,SNR=3.9
BRTR Keskin Array B 96.37 313 *i* P **P 18 02 06.0 -1.4**
BRTR pmax pmax
comp=Z,1.0nm,0.6s
ASF Jabal al Asfar 96.61 305 P **P 18 02 06.9 -1.6**
comp=Z,12nm,1.2s,baz=289,slow=0.3,SNR=16
RSSD Black Hills 96.73 42 *e*P **P 18 02 09.1 +0.1**
RSSD pmax pmax
comp=Z,9.0nm,1.3s
RSSD Black Hills 96.73 42 *e*P **P 18 02 09.1 +0.1**
comp=Z,8.7nm,1.3s
N23A Red Feather La 96.77 46 P **P 18 02 09.4 +0.1**
baz=294
N23A Red Feather La 96.77 46 *e*P **P 18 02 09.9 +0.6**
comp=Z,20nm,1.3s
NC405 NORSAR Array S 96.88 339 *e*P **P 18 02 07.7 -1.3**
NC303 NORSAR Array S 96.93 339 *e*P **P 18 02 07.5 -1.7**
NB201 NORSAR Array S 97.07 339 *e*P **P 18 02 08.2 -1.8**
NC204 NORSAR Array S 97.11 339 *e*P **P 18 02 07.9 -2.2**
NB2 NORSAR Subarra 97.11 339 PKP **P 18 02 08.3 -1.8**
comp=Z,3.9nm,0.7s,baz=39,slow=3.4
NB200 NORSAR Array S 97.11 339 *e*P **P 18 02 08.7 -1.5**
NB200 *e*PP **PP 18 06 03.7 -3.3**
NB200 *e*PKKPbc **PKKPbc 18 18 50.0 -1.8**
NOA NORSAR Array B 97.11 339 P **P 18 02 08.7 -1.5**
comp=Z,5.0nm,0.6s,baz=49,slow=4.8,SNR=23
NOA PP **PP 18 06 03.7 -3.3**
comp=Z,2.4nm,0.6s,baz=46,slow=7.9,SNR=10
NOA PKKPbc **PKKPbc 18 18 50.0 -1.8**
comp=Z,2.0nm,0.8s,baz=227,slow=2.9,SNR=3.8
NBO02 NORSAR Array S 97.23 339 *e*P **P 18 02 09.0 -1.6**
S22A 4UR Ranch, Cre 97.36 49 P **P 18 02 12.0 -0.1**
baz=292
S22A 4UR Ranch, Cre 97.36 49 *e*P Pdif 18 02 12.3 +0.2
comp=Z,4.9nm,1.3s
MMAI Mount Meron Ar 97.50 306 P **P 18 02 11.8 -0.7**
comp=Z,7.7nm,0.9s,baz=55,slow=7.4,SNR=10
TESR Tescani 98.10 321⇓ *i*P **P 18 02 12.9 -1.9**
MAW Mawson 98.20 202 P Pdif 18 02 14.6 0.0
comp=Z,8.9nm,1.2s,baz=89,slow=3.8,SNR=5.3
MAW Mawson 98.20 202 *e*P Pdif 18 02 15.2 +0.6
MAW pmax pmax
comp=Z,3.0nm,1.2s
MAW Mawson 98.20 202 *e*P Pdif 18 02 14.7 0.0
comp=Z,2.5nm,1.2s
VRI Vrincioaia 98.36 321⇑ *i*P **P 18 02 15.4 -0.6**
LAZ Ladron 98.38 52 *e*P **P 18 02 16.0 -0.7**
BUR08 Bucovina Ar. S 98.42 323 *e*P **P 18 02 14.4 -2.0**
BURAR Bucovina Array 98.42 323⇑ *i*P **P 18 02 15.7 -0.7**
BEL Belsk 98.66 328 *e*P Pdif 18 02 17.4 +0.2
BEL Belsk 98.66 328 *e*P Pdif 18 02 17.4 +0.2
ANMO Albuquerque 98.70 51 P Pdif 18 02 19.1 +1.0
baz=292
ANMO Albuquerque 98.70 51 *i* P Pdif 18 02 18.7 +0.6
ANMO pmax pmax
comp=Z,2.0nm,1.3s
EIL Elat 99.03 303 P **Pdif 18 02 18.3 -1.1**

comp=Z,4.9nm,1.1s,baz=78,slow=2.3,SNR=4.6
UZH Uzhgorod 99.59 325 *e*P **Pdif 18 02 19.3 -2.1**
UZH *e* 18 02 59.3
ABPO Ambohimpanom 99.71 253 *e*P **Pdif 18 02 21.7 -1.0**
ABPO pmax pmax
comp=Z,18nm,1.3s
ABPO Ambohimpanom 99.71 253 *e*Pdif **Pdif 18 02 21.7 -1.0**
comp=Z,18nm,1.3s
STHS Stebnicka Huta 99.75 326 *e*P **Pdif 18 02 22.7 +0.5**
STHS Stebnicka Huta 99.75 326 *e*PDIFF **Pdif 18 02 22.7 +0.5**
ARR Arges 99.88 321⇑ *i*P **Pdif 18 02 22.4 -0.5**
CRVS Cervenica-Dubn 99.91 325 *e*P **Pdif 18 02 22.7 -0.2**
CRVS Cervenica-Dubn 99.91 325 *e*PDIFF **Pdif 18 02 22.7 -0.2**
OJC Ojcow 100.08 327 *e*P **Pdif 18 02 23.1 -0.5**
OJC Ojcow 100.08 327 *e*P **Pdif 18 02 22.9 -0.7**
OJC Ojcow 100.08 327 *e*Pdif **Pdif 18 02 22.5 -1.1**
NIE Niedzica 100.26 326 *e*P **Pdif 18 02 24.5 0.0**
NIE Niedzica 100.26 326 *e*P **Pdif 18 02 24.5 0.0**
DRGR 100.31 323⇓ *i*P **Pdif 18 02 24.4 -0.4**
KECS Kecovo 100.68 325 *e*P **Pdif 18 02 26.1 -0.2**
KECS *e* 18 06 38.1
KECS Kecovo 100.68 325 *e*PDIFF **Pdif 18 02 26.1 -0.2**
KECS *e*PP **PP 18 06 38.1 +3.6**
MNTX Cornudas Mount 100.76 54 P **Pdif 18 02 28.1 +1.1**
baz=292
MNTX Cornudas Mount 100.76 54 *e*Pdif **Pdif 18 02 27.8 +0.7**
LANS Liptovska Anna 100.86 326 *e*P **Pdif 18 02 26.7 -0.5**
LANS Liptovska Anna 100.86 326 *e*PDIFF **Pdif 18 02 26.7 -0.5**
OKC Ostrava-Krasne 101.17 327 *e*PDIFF **Pdif 18 02 28.0 -0.4**
OKC AMS AMS 18 54 50.0
comp=Z,400nm,18.3s
OKC Ostrava-Krasne 101.17 327 *e*P **Pdif 18 02 28.0 -0.4**
OKC MLR MLR
comp=Z,400nm,18.3s
MORC Moravsky Berou 101.53 328⇑ *i*P **Pdif 18 02 29.4 -0.6**
MORC Moravsky Berou 101.53 328 *e*P **Pdif 18 02 29.5 -0.6**
MORC Moravsky Berou 101.53 328 *e*Pdif **Pdif 18 02 29.5 -0.6**
KSP Ksiaz 101.53 329 *e*P **Pdif 18 02 29.2 -0.8**
KSP Ksiaz 101.53 329 *e*P **Pdif 18 02 29.2 -0.8**
VYHS Vyhne 101.58 326 *e*PDIFF **Pdif 18 02 29.6 -0.7**
VYHS *e*PP **PP 18 06 44.6 +3.3**
DPC Dobruska-Polom 101.81 328 *e*PDIFF **Pdif 18 02 31.0 -0.4**
DPC *e*pP pP 18 03 03.8 +0.1
DPC *e*x x 18 05 40.8
DPC *e*x x 18 05 52.6
DPC *e*PP **PP 18 06 38.4 -4.6**
DPC *e*PKKP **PKKPbc 18 18 37.6 -0.6**
DPC *e*x x 18 19 01.4
DPC AMS AMS 18 54 50.0
comp=Z,300nm,14.7s
DPC Dobruska-Polom 101.81 328 *e*P **Pdif 18 02 31.0 -0.4**
DPC *e* 18 06 38.4
DPC MLR MLR
comp=Z,300nm,14.7s
UPC Upice 101.88 329 *e*PDIFF **Pdif 18 02 31.6 0.0**
UPC *e*PP **PP 18 06 44.0 +0.6**
UPC AMS AMS 18 55 50.0
comp=Z,200nm,14.6s
UPC Upice 101.88 329 *e*P **Pdif 18 02 31.6 0.0**
UPC *e* 18 06 44.0
UPC MLR MLR
comp=Z,200nm,14.6s
PVCC Panska Ves 102.59 329 *e*PP PP 18 06 50.3 +1.6
PVCC AMS AMS 18 52 40.0
comp=Z,200nm,22.2s
BRG Berggiesshubel 102.68 330 *e*PDIFF **Pdif 18 02 34.2 -0.9**
comp=Z,4.8nm,0.9s
BRG *e* 18 05 54.9
comp=Z,4.7nm,1.1s
BRG *e* 18 06 06.5
comp=Z,13nm,1.7s
BRG *e* 18 06 47.0
comp=N,255nm,22.0s
comp=E,219nm,17.5s
comp=Z,344nm,17.0s
BRG Berggiesshubel 102.68 330 *e*P **Pdif 18 02 34.2 -0.9**
BRG *e* 18 06 47.0
BRG pmax pmax
comp=Z,5.0nm,0.9s
BRG MLR MLR
comp=N,255nm,22.0s
BRG MLR MLR
comp=E,219nm,17.5s
BRG MLR MLR
comp=Z,344nm,17.0s
CLL Collm 102.86 331⇓ *i*Pdif **Pdif 18 02 34.8 -1.1**
comp=Z,21nm,1.8s
CLL *e* 18 02 43.0
CLL *e* 18 06 43.0
CLL *e*PP **PP 18 06 49.0 -1.7**
CLL *e*PKiKP **PKiKP 18 06 54.0 -1.7**
comp=Z,14nm,1.3s
CLL *e*PPS PPS 18 16 48.0
CLL Lm MLR 18 53 00.0
comp=Z,400nm,20.4s
CLL Collm 102.86 331 *i*P **Pdif 18 02 34.8 -1.1**
CLL pmax pmax
comp=Z,21nm,1.8s
GOPC GO Pecny, Ondr 102.86 329 AMS AMS 18 56 10.0
comp=Z,300nm,18.7s
PRU Pruhonice 102.94 329 *e*PDIFF **Pdif 18 02 36.1 -0.2**
PRU *e*PP **PP 18 06 49.3 -2.0**
PRU *e*PS **PS 18 16 05.7 +3.4**
PRU *e*PKKP **PKKPbc 18 18 33.6 -1.2**
PRU *e*x x 18 18 56.5
PRU AMS AMS 18 56 20.0
comp=Z,200nm,13.3s
PRU Pruhonice 102.94 329 *e*P **Pdif 18 02 36.1 -0.2**
PRU *e* 18 06 49.3
PRU *e* 18 16 05.7
PRU MLR MLR
comp=Z,200nm,13.3s
TX31 Lajitas Ar. Si 103.04 56 *e*Pdif **Pdif 18 02 37.4 0.0**
LTX Lajitas 103.04 56 *e*P **Pdif 18 02 37.9 +0.5**
LTX *e* 18 06 58.0
LTX Lajitas 103.04 56 *e*Pdif **Pdif 18 02 37.9 +0.5**
LTX *e*PP **PKiKP 18 06 58.0 +1.2**
LTX *e*PKKPbc **PKKPbc 18 18 34.0 0.0**
TXAR Lajitas Array 103.04 56 Pdiff **Pdif 18 02 37.8 +0.5**
comp=Z,0.7nm,0.9s,baz=298,slow=2.7,SNR=6.7
TXAR PKiKP **PKiKP 18 06 58.0 +1.2**
comp=Z,0.4nm,0.7s,baz=263,slow=0.7,SNR=4.1
TXAR PKKPbc **PKKPbc 18 18 34.0 0.0**
comp=Z,1.5nm,1.0s,baz=123,slow=4.6,SNR=7.8
CONA Conrad Observa 103.52 327 *i*Pdiff **Pdif 18 02 39.0 0.0**
comp=Z,3.6nm,0.5s
CONA PKiKP **PKiKP 18 06 57.6 +0.5**
comp=Z,49nm,12.7s
CONA *e*PKKPbc **PKKPbc 18 18 31.9 -1.3**
comp=Z,3.5nm,0.9s
NKC Novy Kostel 103.82 330 AMS AMS 18 54 00.0
comp=Z,400nm,15.8s
KHC Kasperske Hory 103.97 329 *e*PDIFF **Pdif 18 02 40.3 -0.7**
KHC *e*x x 18 02 48.8
KHC *e*PP **PKiKP 18 06 54.4 -3.4**
KHC *e*PS **PS 18 16 14.4 +1.2**
KHC *e*PKKP **PKKPbc 18 18 29.9 -1.9**
KHC *e*x x 18 18 49.0
KHC AMS AMS 18 56 00.0
comp=Z,300nm,22.1s
KHC Kasperske Hory 103.97 329 *e*P **Pdif 18 02 40.3 -0.7**
KHC *e* 18 06 54.4
KHC *e* 18 16 14.4
KHC MLR MLR
comp=Z,300nm,22.1s
GERES GERESS Array B 104.09 328 Pdiff **Pdif 18 02 40.5 -1.1**
comp=Z,0.8nm,0.7s,baz=19,slow=4.5,SNR=4.2
GERES PKiKP **PKiKP 18 06 58.0 -0.1**
comp=Z,1.3nm,0.6s,baz=66,slow=1.6,SNR=6.6
GERES PKKPbc **PKKPbc 18 18 30.2 -1.3**
comp=Z,2.2nm,0.6s,baz=202,slow=1.6,SNR=15
GEA0 GERESS Array S 104.09 328 *e*Pdif **Pdif 18 02 40.3 -1.2**
ARSA Arzberg 104.11 326 *e*Pdiff **Pdif 18 02 41.3 -0.3**
comp=Z,2.6nm,0.5s
ARSA *i* PKiKP **PKiKP 18 06 56.1 -2.0**
comp=Z,40nm,12.9s
MOA Molln 104.42 327 *e*Pdiff **Pdif 18 02 42.9 0.0**
comp=Z,1.5nm,0.6s
MOA PKiKP **PKiKP 18 06 58.6 -0.1**
comp=Z,56nm,13.7s
MOA *e*PKKPbc **PKKPbc 18 18 29.1 -1.3**
comp=Z,5.0nm,0.4s
IDI Anoyia 104.55 312 PKiKP **PKiKP 18 06 59.9 +0.6**
comp=Z,8.7nm,0.9s,baz=72,slow=6.4,SNR=5.9
SOKA Soboth 104.73 326 *e*Pdiff **Pdif 18 02 44.0 -0.5**
comp=Z,12nm,1.1s
SOKA PKiKP **PKiKP 18 06 59.3 -0.1**
comp=Z,44nm,13.7s
OBKA Obir 105.10 326 *e*Pdiff **Pdif 18 02 45.5 -0.6**
comp=Z,1.2nm,0.4s
OBKA PKiKP **PKiKP 18 07 01.2 +1.2**
comp=Z,64nm,14.5s
MYKA Terra Mystica 105.51 327 *e*Pdiff **Pdif 18 02 47.2 -0.7**
comp=Z,2.0nm,0.5s
MYKA *e*PKKPbc **PKKPbc 18 18 26.0 -1.1**
comp=Z,4.0nm,0.5s
ABTA Abfaltersbach 106.04 327 *e*Pdiff **Pdif 18 02 48.4 -1.9**
comp=Z,4.9nm,1.3s
ABTA PKiKP **PKiKP 18 07 01.7 -0.1**
comp=Z,38nm,13.2s
ABTA *e*PKKPbc **PKKPbc 18 18 25.2 -0.4**
comp=Z,5.1nm,1.1s
MOTA Moosalm 106.39 328 *e*PKKPbc PKKPbc 18 18 23.6 -1.0
comp=Z,3.6nm,0.8s
SQTA Sankt Quirin 106.41 328 *e*PKKPbc PKKPbc 18 18 23.9 -0.6
RETA Reutte 106.47 329 *e*PKKPbc PKKPbc 18 18 23.5 -0.8
comp=Z,5.1nm,1.0s
MEM Membach 106.56 333 P **PP 18 07 19.2 +1.2**
BEBN Eben Emael 106.56 333 P **PP 18 07 19.2 +1.2**
FETA Feichten 106.79 328 Pdiff **Pdif 18 02 52.1 -1.6**
comp=Z,3.0nm,1.0s
FETA *e*PKKPbc **PKKPbc 18 18 23.0 -0.4**
comp=Z,9.6nm,1.2s
BCLA Clavier 107.00 333 P **PP 18 07 22.4 +1.1**
DAVA Damuels 107.05 329 *e*PKKPbc PKKPbc 18 18 21.8 -0.8
comp=Z,5.5nm,0.8s
WLF Walferdange 107.17 332 P **PP 18 07 23.5 +1.0**
SNF Seneffe 107.38 334 P **PP 18 07 24.3 +0.3**
DOU Dourbes 107.55 333 P **PP 18 07 26.4 +1.2**
T40A Mansfield 107.74 44 P **PKiKP 18 07 04.7 -0.5**
baz=302
P42A Winchester 107.84 41 P **PKiKP 18 07 05.3 +0.1**
baz=305
R41A Rosebud 107.88 42 P **PKiKP 18 07 04.9 -0.4**
baz=303
U40A Yellville 107.94 45 P **PKiKP 18 07 05.0 -0.6**
baz=302
035A Encino 108.50 56 P **PKiKP 18 07 06.2 -0.6**
baz=296
537A Green Hill Far 108.51 52 P **PKiKP 18 07 06.2 -0.6**
baz=298
S42A Caledonia 108.56 43 P **PKiKP 18 07 06.2 -0.5**
baz=304
U41A Viola 108.58 44 P **PKiKP 18 07 06.4 -0.3**
baz=302
Y47A UCPARC, Winfie 112.71 45 P **PKiKP 18 07 14.1 -0.5**
baz=305
KEST Kesra 114.90 320 PKiKP PKPdf 18 07 18.9 0.0
comp=Z,3.3nm,0.5s,baz=242,slow=1.1,SNR=6.8
KEST PKKPbc **PKKPbc 18 17 57.1 +0.6**
comp=Z,1.3nm,0.5s,baz=211,slow=1.1,SNR=4.2
KMSC Kings Mountain 116.23 40 *e*PKPdf **PKPdf 18 07 21.2 -0.1**
LSZ Lusaka 117.17 259 *e*PKiKP **PKPdf 18 07 24.1 +0.4**
LSZ Lusaka 117.17 259 P **PKPdf 18 07 24.6 +0.9**
SNR=6.4
LSZ Lusaka 117.17 259 *e*PKPdf **PKPdf 18 07 24.1 +0.4**
SNAA Sanae 117.82 192 PKP **PKPdf 18 07 23.1 -0.3**
SNAA Sanae 117.82 192 *e*PKiKP **PKPdf 18 07 22.5 -0.8**
SNAA Sanae 117.82 192 *e*PKPdf **PKPdf 18 07 22.5 -0.8**
PBRG Braganca 118.93 335 *e*PKPdf **PKPdf 18 07 26.7 +0.3**
ES19 SONSECA Array 119.38 331 *e*PKPdf **PKPdf 18 07 27.1 -0.2**
ES19 *e*PP **PP 18 08 42.8 -6.4**
PGAV Gavieira, Arco 119.42 336 *e*PKPdf **PKPdf 18 07 28.0 +0.6**
PGAV Gavieira, Arco 119.42 336 *e*PP PP 18 08 52.0 +2.6
ESDC Sonseca Array 119.43 331 PKP **PKPdf 18 07 27.6 +0.2**
comp=Z,1.5nm,0.5s,baz=9.1,slow=2.3,SNR=14
ESDC PP **PP 18 08 50.2 +0.6**
comp=Z,2.2nm,0.6s,baz=24,slow=6.9,SNR=13
ESDC PKKPbc **PKKPbc 18 17 40.3 -0.4**
comp=Z,2.9nm,0.9s,baz=229,slow=4.4,SNR=9.8
MVO Moncorvo 119.58 335 *e*PKPdf **PKPdf 18 07 28.3 +0.6**
MVO Moncorvo 119.58 335 *e*PP PP 18 08 51.2 +0.7
VNA1 Neumayer--Stat 119.67 191 PKP **PKPdf 18 07 27.0 +0.2**
POLO Lamas de Olo 119.73 335 *e*PKPdf **PKPdf 18 07 28.8 +0.8**
PVRL Vila Real 119.78 335 *e*PKPdf **PKPdf 18 07 28.7 +0.7**
LBTB Lobatse 120.26 249 *e*PKiKP **PKPdf 18 07 29.2 -0.2**
LBTB Lobatse 120.26 249 *e*PKPdf **PKPdf 18 07 29.2 -0.2**
PVIS Viseu 120.32 335 *e*PKPdf **PKPdf 18 07 29.7 +0.6**
MTE Manteigas 120.44 334 *e*PKPdf **PKPdf 18 07 30.2 +0.8**
MTE Manteigas 120.44 334 *e*PP PP 18 09 00.1 +3.7
MTE Manteigas 120.44 334 *e*PKPdf **PKPdf 18 07 30.1 +0.7**
BOSA Boshof 120.54 244 PKP **PKPdf 18 07 30.0 +0.1**
comp=Z,6.3nm,0.4s,baz=114,slow=2.2,SNR=37
BOSA Boshof 120.54 244 *e*PKPdf **PKPdf 18 07 29.4 -0.5**
BOSA *e*PKPdf **PKPdf 18 07 30.0 +0.1**
PCBR Castelo Branco 120.87 334 *e*PKPdf **PKPdf 18 07 30.9 +0.8**
PCBR Castelo Branco 120.87 334 *e*PP PP 18 09 00.0 +0.8
PCAS Casmilo, Conde 121.12 335 *e*PKPdf **PKPdf 18 07 31.1 +0.5**
PCAS Casmilo, Conde 121.12 335 *e*PP PP 18 09 01.6 +0.6
PMRV Marv??o 121.18 334 *e*PKPdf **PKPdf 18 07 29.5 -1.2**
PMRV Marv??o 121.18 334 *e*PP PP 18 09 01.9 +0.5
PTOM Tomar 121.45 335 *e*PKPdf **PKPdf 18 07 32.1 +0.9**
PTOM Tomar 121.45 335 *e*PP PP 18 09 03.4 +0.2
PESTR Estremoz 121.73 335 *e*PKPdf **PKPdf 18 07 32.2 +0.4**
PESTR Estremoz 121.73 335 *e*PP PP 18 09 05.4 +0.3
PBAR Barrancos 122.06 333 *e*PKPdf **PKPdf 18 07 33.2 +0.8**
PBAR Barrancos 122.06 333 *e*PP PP 18 09 08.0 +0.7
EVO Evora 122.19 334 *e*PKPdf **PKPdf 18 07 33.6 +0.9**
EVO Evora 122.19 334 *e*PP PP 18 09 08.0 -0.2
PBEJ Beja 122.55 333 *e*PKPdf **PKPdf 18 07 34.3 +0.9**
PBEJ Beja 122.55 333 *e*PP PP 18 09 08.3 -2.3
PNCL Nicolau / Gran 122.77 334 *e*PKPdf **PKPdf 18 07 34.7 +0.9**
PNCL Nicolau / Gran 122.77 334 *e*PP PP 18 09 13.3 +1.2
MESJ Messejana 122.86 333 *e*PP PP 18 09 13.8 +1.0
MESJ Messejana 122.86 333 *e*PKPdf **PKPdf 18 07 35.0 +1.0**
MESJ Messejana 122.86 333 *e*PP PP 18 09 14.1 +1.4
PCVE Castro Verde 122.95 333 *e*PKPdf **PKPdf 18 07 34.7 +0.5**
PCVE Castro Verde 122.95 333 *e*PP PP 18 09 14.1 +0.7
PVAQ Vaqueiros 122.99 333 *e*PP PP 18 09 15.7 +2.0
MORF Marmelete 123.49 333 *e*PP PP 18 09 18.0 +0.9
PFVI Vila Bisbo 123.71 333 *e*PKPdf **PKPdf 18 07 36.7 +1.1**
PFVI Vila Bisbo 123.71 333 *e*PP PP 18 09 16.8 -1.7
PMSA Palmer Station 124.89 166 *e*PKPdf **PKPdf 18 07 36.4 -0.5**
TAM Tamanrasset 125.47 310 *e*PKiKP **PKPdf 18 07 40.6 +1.0**
TAM Tamanrasset 125.47 310 *e*PKPdf **PKPdf 18 07 40.9 +1.3**
TAM *e*pPKPdf **pPKPdf 18 08 13.1 +0.1**
TSUM Tsumeb 127.58 256 *e*PKPdf **PKPdf 18 07 43.9 +0.3**
TOA1 Torodi Ar. Sit 133.92 303 *e*PKPpre PKPpre 18 07 38.2
TOA1 *e*PKPdf **PKPdf 18 07 55.9 +0.3**
TOA1 *e*PP **PP 18 10 27.5 +1.1**
TOA0 Torodi Ar. Sit 133.92 303 *e*PKPpre PKPpre 18 07 41.6
TOA0 *e*PKPpre PKPpre 18 07 46.9
TOA0 *e*PKPdf **PKPdf 18 07 55.3 -0.3**
TOA0 *e*PKPdf **PKiKP 18 07 56.0 -1.0**
TORD Torodi Ar. Bea 133.92 303 PKhKP PKPpre 18 07 38.2
comp=Z,1.0nm,0.8s,baz=90,slow=0.9,SNR=8.9
TORD PKP **PKPdf 18 07 55.9 +0.3**
comp=Z,4.4nm,0.4s,baz=43,slow=2.3,SNR=25
TORD PP **PP 18 10 27.5 +1.1**
comp=Z,1.7nm,0.8s,baz=31,slow=4.9,SNR=4.1
SJCC San Jacinto, C 135.62 61 *e*P **PKPdf 18 08 01.5 +2.6**
IDE Isla Desecheo 136.58 45 *e*PKPdf **PKPdf 18 07 58.8 -1.7**
OTAV Otavalo 136.65 76 *e*P **PKPdf 18 07 59.6 -1.7**
CMBC Cumbal 137.00 74 *e*P **PKPdf 18 08 01.3 -0.7**
CODC Agust´›n Codaz 137.07 60 *e*P PKPpre 18 07 49.4
GUYC Guyana, Colomb 137.60 67 *e*P PKPpre 18 07 56.8
NORC Norcasia 137.92 66 *e*P PKPpre 18 07 53.0
OCAC Ocana 138.03 62 *e*P **PKPdf 18 08 05.5 +2.0**
PRAC Prado 138.68 69 *e*P PKPpre 18 07 55.5
PRAC Prado 138.68 69 *e*PKPpre PKPpre 18 07 55.3
PRAC *e*PKPdf **PKPdf 18 08 05.3 +0.7**
ROSC El Rosal 138.72 67 PKP **PKPdf 18 08 04.6 -0.4**
comp=Z,8.6nm,0.4s,baz=158,slow=5.4,SNR=6.4
ROSC El Rosal 138.72 67 *e*PKPdf **PKPdf 18 08 04.8 -0.2**
GRMC Gramalote, San 138.73 62 *e*P PKPpre 18 07 53.8
FLOC Florencia 138.80 72 *e*P **PKPdf 18 08 04.6 -0.2**
BARC Barichara 138.94 64 *e*P PKPpre 18 07 55.9
PAMC Pamplona, Colo 139.01 63 *e*P PKPpre 18 08 00.3
CHIC Chingaza 139.34 67 *e*P PKPpre 18 07 57.2
RUSC La Rusia 139.36 65 *e*P PKPpre 18 07 58.8
RUSC La Rusia 139.36 65 *e*PKPpre PKPpre 18 07 58.4
RUSC *e*PKPdf **PKPdf 18 08 06.6 +0.3**
PLCA Paso Flores 139.47 139 PKhKP PKPpre 18 07 56.9
comp=Z,3.1nm,0.5s,baz=270,slow=4.5,SNR=16
PLCA PKP **PKPdf 18 08 05.4 +0.2**
comp=Z,11nm,0.5s,baz=287,slow=2.2,SNR=18
PLCA Paso Flores 139.47 139 *e*PKPpre PKPpre 18 07 56.6
PLCA *e*PKPdf **PKiKP 18 08 06.6 -1.0**
SDV Santo Domingo 139.98 59 *e*P PKPpre 18 07 59.6
SDV Santo Domingo 139.98 59 *e*PKPpre PKPpre 18 07 59.8
SDV *e*PKPdf **PKPdf 18 08 07.8 +0.7**
NNA Nana 140.87 93 *e*PKiKP **PKPdf 18 08 08.0 -0.5**
NNA Nana 140.87 93 *e*PKPpre PKPpre 18 07 59.2
NNA *e*PKPdf **PKPdf 18 08 07.8 -0.6**
DBIC Dimbokro 142.81 300 PKhKP PKPpre 18 08 08.1
comp=Z,29nm,0.6s,baz=35,slow=3.6,SNR=35
DBIC Dimbokro 142.81 300 *e*PKPpre PKPpre 18 08 08.1
DBIC *e*pPKPdf pPKPdf 18 08 40.5 -4.9
KIC Kosan Boka 142.87 299 *e*PKP1 **PKPdf 18 08 08.7 -3.4**
comp=Z,32nm,0.5s
TIC Toumodi 142.96 300 *e*PKP1 **PKPdf 18 08 08.8 -3.4**
LIC Lamto 143.19 299 *e*PKP1 PKPbc 18 08 09.6 -0.3
comp=Z,369nm,1.0s
SVB Belmont 144.41 44 *e*PKPdf PKPbc 18 08 13.5 +0.1
LCO Las Campanas 144.65 122 *e*PKPdf **PKPdf 18 08 15.4 +0.3**
LCO *e*pPKPdf **pPKPdf 18 08 44.5 -4.0**
PB10 IPOC Station P 146.29 113 *e*PKPdf **PKPdf 18 08 17.0 -0.7**
TRQA Tornquist 146.37 143 *e*PKPdf **PKPdf 18 08 18.1 +0.6**
TRQA *e*pPKPdf **pPKPdf 18 08 50.5 -0.4**
PB04 IPOC Station P 146.89 111 *e*PKPdf **PKPdf 18 08 19.9 +1.0**
PB01 IPOC Station P 147.72 109 *e*PKPdf **PKPdf 18 08 21.6 +1.3**
PB11 IPOC Station P 147.74 107 *e*PKPdf **PKPdf 18 08 21.0 +0.6**
LVC Limon Verde 147.96 112 *e*PKPdf **PKPbc 18 08 22.9 -1.2**
SACV Santiago Islan 149.39 334 *e*PKPbc **PKPbc 18 08 28.5 +1.0**
LPAZ La Paz 149.47 100 PKPbc **PKPdf 18 08 25.6 +1.8**
comp=Z,17nm,0.5s,baz=341,slow=1.3,SNR=53
LPAZ La Paz 149.47 100 *e*PKHKP PKPpre 18 08 25.3
LPAZ La Paz 149.47 100 *e*PKPdf **PKPdf 18 08 24.6 +0.7**
SAML Samuel 153.76 84 *e*PKPdf **PKPdf 18 08 29.6 0.0**
SAML *e*PKPbc **PKiKP 18 08 38.0 +0.3**
SAML *e*PKPab **PKPab 18 08 50.5 -0.4**
SAML *e*pPKPab **pPKPab 18 09 21.8 -1.5**
PTGA Pitinga 154.01 64 *e*PKPdf **PKPdf 18 08 30.9 +0.8**
PTGA *e*PKPbc **PKPbc 18 08 38.0 -0.1**
CPUP Villa Florida 156.52 128 PKP **PKPdf 18 08 32.4 -0.6**
comp=Z,6.8nm,1.1s,baz=216,slow=1.7,SNR=6.6
CPUP PKPpc PKPbc 18 08 42.9
comp=Z,5.3nm,0.8s,baz=267,slow=3.3,SNR=5.8
CPUP PKPab **PKPab 18 09 03.1 +0.8**
comp=Z,27nm,0.8s,baz=250,slow=4.0,SNR=18
CPUP Villa Florida 156.52 128 *e*PKiKP **PKPdf 18 08 33.9 +0.9**
CPUP Villa Florida 156.52 128 *e*PKPdf **PKPdf 18 08 33.9 +0.9**
CPUP PKPbc PKPbc 18 08 42.9
CPUP *e*PKPab **PKPab 18 09 03.6 +1.2**

MEX 30 17:48:53.7±0.5, 18°37N×100°70W, h62km±5km, MD3.9, Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARIG	**Puente Sto Nin**	**0.35**	**104**	*e*P	Pn	17 49 02.9	-1.5
ARIG				*e*S	Sn	17 49 10.3	-1.9
ZIIG	**Zihuatanejo**	**1.05**	**224**	*e*P	Pn	17 49 10.4	-2.0
ZIIG				*e*S	Sn	17 49 24.7	-1.6
MEIG	**Mezcala**	**1.12**	**113**	*e*P	Pn	17 49 12.4	-1.0
MEIG				*i* S	Sn	17 49 26.4	-1.7
PLIG	**Platanillo**	**1.14**	**88**	*e*P	Pn	17 49 13.1	-0.7
PLIG				*e*S	Sn	17 49 26.1	-2.5
CAIG	**El Cayaco**	**1.37**	**162**	*e*P	Pn	17 49 15.4	-1.4
CAIG				*e*S	Sn	17 49 31.3	-2.7
YAIG	**Yautepec**	**1.63**	**72**	*i* P	Pn	17 49 18.9	-1.4
YAIG				*i* S	Sn	17 49 39.1	-1.2
TLIG	**Tlapa**	**2.18**	**111**	*e*P	Pn	17 49 26.4	-1.5
TLIG				*e*S	Sn	17 49 52.5	-1.3

MAN 30 17:50:11, 12°66N×120°95E, h1km, mb4.1, ML2.9, MS2.7, 2C-2D, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.84**	**0**⇓	*e*P	Pg	17 50 26.8	-0.3
PGP				*i* S	Sb	17 50 39.4	-0.8
TGY	**Tagaytay City**	**1.44**	**360**⇓	*i*P	Pn	17 50 38.4	+0.1
TGY				*i* S	Sn	17 50 59.7	+1.9
LQP	**Lukban**	**1.56**	**22**⇑	*e*P	Pn	17 50 40.1	+0.1
RCP	**Roxas**	**2.07**	**122**⇑	*e*P	Pb	17 50 48.2	-1.2

MEX 30 17:56:13.0±1.2, 16°90N×94°18W, h148km±25km, MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGIG		**1.02**	**97**	*i* P	Pn	17 56 37.3	-0.5
TGIG				*e*S	Sn	17 56 54.5	-2.2
HUIG	**Huatulco**	**2.17**	**239**	*e*P	Pn	17 56 47.6	-2.5
HUIG				*e*S	Sn	17 57 17.3	-1.3
VHO	**Vista Hermosa**	**2.45**	**274**	*e*P	Pn	17 56 53.0	-0.6
VHO				*e*S	Sn	17 57 22.7	-2.3

CASC 30 17:58:35.1±3.0, 10°02N×84°58W, h61km±11km, MD3.9, ML4.1, 1C-1D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CGA2	**Cerro Gallo 2**	**0.12**	**91**	*e*P	Pn	17 58 44.6	+0.1
CGA2				*e*S	Sn	17 58 54.2	+2.9
JCR	**Jicaral**	**0.55**	**252**⇓	*i*P	Pn	17 58 47.9	+0.1
JCR				*e*S	Sn	17 58 57.6	+0.7
QCR	**Quepos**	**0.72**	**145**⇑	*i*P	Pn	17 58 49.2	+0.5
QCR				*e*S	Sn	17 59 01.3	+1.0
VCR	**Vista de Mar**	**1.04**	**276**	*e*P	Pn	17 58 54.0	+0.2
VCR				*e*S	Sn	17 59 07.4	-0.3
CONN	**Concepcion**	**1.85**	**326**	*e*P	Pn	17 59 06.2	+1.6
ACON	**Acoyapa**	**2.02**	**343**	*e*P	Pn	17 59 08.2	+1.3
ACON				AML	AML	17 59 34.5	
comp=E,481nm,0.4s							
ESPN	**Las Esperanzas**	**2.18**	**7**	*e*P	Pn	17 59 10.3	+1.2
ESPN				*e*S	Sn	17 59 35.8	+0.8
BRU2	**Volcan**	**2.23**	**123**	*e*P	Pn	17 59 07.7	-2.2
BRU2				*i* S	Sn	17 59 38.0	+1.6
TBS2		**2.26**	**122**	*i* P	Pn	17 59 11.2	+1.0
TBS2				*i* S	Sn	17 59 37.5	+0.5
BOAB	**BOACO BROADBAN**	**2.64**	**336**	*e*P	Pn	17 59 16.4	+1.1
BOAB				*e*S	Sn	17 59 47.2	+1.0
CNGN	**Cerro Negro**	**3.22**	**320**	*e*P	Pn	17 59 25.1	+1.7

MAN 30 18:10:58, 9°48N×122°28E, h14km, mb4.4, ML3.3, MS3.1, 2C-3D, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNPH	**Sibulan**	**0.96**	**98**⇓	*i*P	Pb	18 11 16.1	-0.4
SNPH				*i* S	Sn	18 11 31.8	+1.2
LLP	**Lapu-Lapu**	**1.86**	**63**⇓	*e*P	Pn	18 11 29.3	-0.2
LLP				*i* S	Sb	18 11 55.4	+0.3
RCP	**Roxas**	**2.12**	**13**⇑	*e*P	Pn	18 11 34.1	+1.0
RCP				*e*S	Sn	18 12 00.8	+1.5
CGP	**Cagayan de Oro**	**2.59**	**113**⇑	*e*P	Pn	18 11 41.7	+2.1
CGP				*e*S	Sn	18 12 11.9	+1.0
CTBH	**Cotabato--PC H**	**2.97**	**139**⇓	*i*P	Pn	18 11 46.5	+1.8

IDC 30 18:15:07.2±2.1, 1°54N×126°70E, h0km, mb3.2/3, mb1 3.4/3, mb1mx3.2/43, mbtmp3.2/3, Error ellipse: s-maj=183.8km s-min=24.8km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.63**	**161**	P	P	18 20 09.9	0.0
0.4nm,0.3s,baz=340,slow=11,SNR=9.9							
ASAR	**Alice Springs**	**26.02**	**165**	P	P	18 20 42.3	+0.1
0.2nm,0.5s,baz=348,slow=10,SNR=7.2							
MKAR	**Makanchi Array**	**59.33**	**326**	P	P	18 25 11.1	-0.1
0.1nm,0.4s,baz=117,slow=7.2,SNR=2.9							

DDA 30 18:36:47.8, 39°22N×28°96E, h7km, Md2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.25**	**227**	*i* P	Pb	18 36 54.1	-0.7
DEMI				*i* S	Sg	18 36 57.4	+1.2
GDZ	**Gediz**	**0.43**	**107**	*i* P	Pg	18 36 56.6	+0.5
GDZ				*i* S	Sg	18 37 02.0	+0.3
MANT	**Manisa**	**0.79**	**203**	*i* P	Pg	18

MANT *i* S Sg 18 37 10.5 -2.7

JMA 30 18:52:38.1±0.2, 31°.14N×131°.37E, h41km±2km, M0.5, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTSR	**Tashiro 2**	**0.39**	**274**	P	Pn	18 52 47.4	-0.1
JTSR				S	Sn	18 52 54.4	+0.4
JNAR	**Kushima--Naru**	**0.39**	**348**	P	Pn	18 52 47.4	-0.2
JNAR				S	Sn	18 52 54.3	+0.1

NIED ***30*** *18:53:00, 36°.90N×141°.20E, h56km, Mw6.4 Best double couple: M0 4.15000×10^18 NP1:φs 33.00000°, δ35.00000°, λ112.00000°. NP2:φs 186.00000°, δ58.00000°, λ75.00000°.*

BJI ***30*** *18:53:47.1, 36°.90N×141°.30E, h45km, mb6.0/75, mB6.1/68, Ms6.4/97, Ms7 6.3/89*

GCMT ***30*** *18:53:49.7±0.0, 37°.00N×141°.16E, h53km, MW6.4/151, Moment Tensor Solution. s150,c357; s151,c584; Duration: 3s7 Moment tensor: Scale 10^18Nm; Mrr3.86±.02; Mθθ 0.10±.02; Mφφ -3.95±.02; Mrθ 0.84±.02; Mrφ -1.22±.01; Mθφ -1.41±.02; Best double couple: M0 4.40800×10^18 NP1:φs 180.00000°, δ55.00000°, λ70.00000°. NP2:φs 32.00000°, δ40.00000°, λ116.00000°. Principal axes: T 4.3650, Plg72.0000°, Azm39.0000°; N 0.0890, Plg16.0000°, Azm191.0000°; P -4.4500, Plg8.0000°, Azm284.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

MOS ***30*** *18:53:49.6±1.1, 36°.96N×141°.12E, h40km, mb6.4/131, MS6.2/115 Error ellipse: s-maj=5.6km s-min=3.6km az=99.8*

NEIC ***30*** *18:53:49.7±0.0, 36°.74N×141°.22E, h50km, Moment Tensor Solution. s101 Moment tensor: Scale 10^18Nm; Mrr 3.33; Mθθ -0.77; Mφφ -2.56; Mrθ 0.80; Mθφ -0.76; Mφr -0.39; Best double couple: M0 3.20000×10^18 NP1:φs 188.00000°, δ47.00000°, λ73.00000°. NP2:φs 32.00000°, δ45.00000°, λ107.00000°. Principal axes: T 3.5200, Plg77.0000°, Azm23.0000°; N -0.6900, Plg12.0000°, Azm199.0000°; P -2.8400, Plg0.0000°, Azm289.0000°;*

JMA ***30*** *18:53:50.6±0.1, 36°.90N×141°.22E, h57km±1km, M6.5 Broadband fault plane solution: P waves. NP1: φs 165.00000°, δ52.00000°, λ64.00000°. NP2:φs 24.00000°, δ45.00000°, λ120.00000°. Principal axes: T Plg69.0000°, Azm13.0000°; N Plg21.0000°, Azm181.0000°; P Plg4.0000°, Azm273.0000°;*

NEIC ***30*** *18:53:50.7±0.1, 36°.94N×140°.96E, h38km, mb6.4/295, ME6.2, MS6.0/298, MW6.3, MW6.5, MW6.3 Error ellipse: s-maj=2.2km s-min=1.7km az=137.0, Moment Tensor Solution. s10 Moment tensor: Scale 10^18Nm; Mrr 5.98; Mθθ -1.43; Mφφ -4.55; Mrθ 0.74; Mθφ -1.40; Mφr -1.96; Best double couple: M0 6.00000×10^18 NP1:φs 189.00000°, δ54.00000°, λ77.00000°. NP2:φs 30.00000°, δ38.00000°, λ107.00000°. Principal axes: T 6.4600, Plg77.0000°, Azm56.0000°; N -1.1400, Plg10.0000°, Azm197.0000°; P -5.3100, Plg8.0000°, Azm288.0000°; Broadband fault plane solution: P waves. NP1:φs 29.00000°, δ31.00000°, λ107.00000°. NP2:φs 190.00000°, δ60.00000°, λ80.00000°. Principal axes: T Plg73.0000°, Azm75.0000°; N Plg0.0000°, Azm0.0000°; P Plg14.0000°, Azm287.0000°; Complex earthquake, with at least one event following the initial onset observed on broadband displacement seismograms. Depth from synthetics of broadband displacement seismograms based on first event. Energy computed from BB mechanism.*

NEIC Recorded [5U JMA] in Fukushima.

ISCJB ***30*** *18:53:52.0±0.2, 36°.95N±0°.01×141°.06E±0°.01, h58km±1km, mb6.2/614, MS6.1/579 Error ellipse: s-maj=2.0km s-min=1.6km az=154.6*

IDC ***30*** *18:53:54.3±0.7, 36°.90N×141°.05E, h72km±5km, mb5.5/42, mb1 5.5/49, mb1mx5.5/50, mbtmp5.7/49, MS6.1/51, Ms1 6.1/51, ms1mx6.0/61, Error ellipse: s-maj=6.0km s-min=4.9km az=78.0*

NEIC ***30*** *18:54:10.1±0.0, 37°.28N×141°.46E, h47km, Moment Tensor Solution. s86 Moment tensor: Scale 10^18Nm; Mrr 4.01; Mθθ -0.30; Mφφ -3.70; Mrθ 0.53; Mθφ -1.36; Mφr 0.13; Best double couple: M0 4.10000×10^18 NP1:φs 193.00000°, δ43.00000°, λ80.00000°. NP2:φs 26.00000°, δ47.00000°, λ99.00000°. Principal axes: T 4.0700, Plg83.0000°, Azm3.0000°; N 0.1200, Plg7.0000°, Azm200.0000°; P -4.1900, Plg2.0000°, Azm109.0000°;*

ISC 30 18:53:51.9±0.3, 36°.96N±0°.02×141°.08E±0°.02, h48km±1km, h48km:pP-P, n2457, σ1°.54/2664, mb6.2/636, MS6.1/586, 225C-62D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.26**	**302**	⇑P	**Pn**	**18 54 01.1**	**+0.5**
ONAJ				S	Sn	18 54 08.7	+2.0
JFK	**Kawauchi**	**0.43**	**338**	⇑P	**Pn**	18 54 02.7	+0.4
JHO	**Hitachi**	**0.54**	**229**	⇑P	**Pn**	18 54 03.4	-0.1
JHO				S	Sn	18 54 12.9	+1.1
JFT	**Otama**	**0.81**	**313**	⇓P	**Pn**	18 54 08.6	+1.6
JFT				S	Sn	18 54 21.3	+3.3
JSB	**Shiboa**	**0.93**	**271**	⇓P	**Pn**	18 54 09.7	+1.1
JSB				S	Sn	18 54 24.0	+3.1
JMM	**Marumori**	**0.93**	**346**	⇓P	**Pn**	18 54 08.9	+0.3
JMM				S	Sn	18 54 22.6	+1.8
JFY	**Yanaizu**	**1.18**	**292**	⇓P	**Pn**	18 54 13.1	+1.1
JFY				*e*S	Sn	18 54 30.1	+3.1
JAG	**Ashikaga**	**1.41**	**248**	⇓P	**Pn**	18 54 15.6	+0.5
JAG				*e*S	Sn	18 54 34.8	+2.2
JOU	**Okura**	**1.44**	**347**	⇓P	**Pn**	18 54 16.2	+0.7
JKT	**Katashina**	**1.48**	**263**	⇓P	**Pn**	18 54 17.5	+1.3
JYS	**Shirataka**	**1.49**	**328**	⇓P	**Pn**	18 54 17.5	+1.3
JIO	**Ouri**	**1.50**	**8**	⇑P	**Pn**	18 54 16.2	-0.2
JIO				*e*S	Sn	18 54 35.1	+3.3
JNS	**Sasagawa**	**1.64**	**302**	⇓P	**Pn**	18 54 19.4	+1.1
TOK	**Tokyo**	**1.66**	**220**	P	**Pn**	18 54 19.2	+0.7
TOK				S	Sn	18 54 41.9	+3.3
JHK	**Hiroka**	**1.67**	**280**	⇓P	**Pn**	18 54 20.2	+1.5
I30JP	**ISUMI INFRASON**	**1.77**	**201**	P	**Pn**	18 54 21.4	+1.4
	baz=48,slow=19,SNR=7.4						
I30JP				*i*		19 05 10.0	
	baz=12,slow=309,SNR=0.4						
JYA	**Atsumi**	**1.95**	**327**	⇓P	**Pn**	18 54 24.0	+1.5
JIZZ	**Izumozaki**	**1.97**	**287**	⇓P	**Pn**	18 54 25.2	+2.4
JRY	**Ryogami san**	**1.99**	**242**	⇓P	**Pn**	18 54 23.5	+0.4
JRY				S	Sn	18 54 48.2	+1.3
JGK	**Kuni**	**2.00**	**259**	⇓P	**Pn**	18 54 25.0	+1.8
BSO4	**Boso 4**	**2.06**	**197**	P	**Pn**	18 54 25.1	+1.2
JAW	**Awa shima**	**2.08**	**316**	P	**Pn**	18 54 26.3	+2.0
BSO3	**Boso 3**	**2.21**	**192**	P	**Pn**	18 54 25.7	-0.1
JJN	**Nakama**	**2.34**	**274**	⇓P	**Pn**	18 54 29.7	+1.9
MJAR	**Matsushiro Arr**	**2.34**	**260**	P	**Pn**	18 54 29.8	+1.9
	854nm,0.3s,baz=82,slow=15,SNR=1915						
MJAR				S	Sn	18 54 58.3	+2.8
	1μm,0.3s,baz=86,slow=14,SNR=7.4						
MJAR				LR	LR	18 55 31.7	
	comp=Z,510μm,20.4s,baz=80,slow=43						
MAJO	**Matsushiro**	**2.34**	**261**	*d*/*P*	**Pn**	18 54 29.9	+2.0
MAJO	**Matsushiro**	**2.34**	**261**	*e*Pn	**Pn**	18 54 29.3	+1.4
MAT	**Matsushiro**	**2.34**	**261**	P	**Pn**	18 54 29.8	+1.9
MAT				S	Sn	18 55 00.1	+4.6
MAT	**Matsushiro**	**2.34**	**261**	P	**Pn**	18 54 29.8	+1.9
MJB9	**Matsu-Tunnel**	**2.34**	**261**	*e*Pn	**Pn**	18 54 29.7	+1.8
JRG	**Rokugo**	**2.45**	**352**	⇑P	**Pn**	18 54 31.0	+1.6
JNG	**Nsakai**	**2.46**	**258**	⇓P	**Pn**	18 54 31.3	+1.8
JSD	**Sado**	**2.48**	**296**	⇓P	**Pn**	18 54 30.5	+0.7
AJI	**Ajiro2**	**2.50**	**221**	P	**Pn**	18 54 30.8	+0.7
JYN	**Shimob**	**2.52**	**235**	⇓P	**Pn**	18 54 31.6	+1.2
JNT	**Takato**	**2.61**	**246**	⇓P	**Pn**	18 54 33.7	+2.1
JIZS	**Izushimoda**	**2.87**	**219**	P	**Pn**	18 54 35.6	+0.5
SHZ3	**Shizuoka 3**	**3.00**	**232**	P	**Pn**	18 54 39.2	+2.2
JSZ	**Suzu**	**3.00**	**280**	⇓P	**Pn**	18 54 38.1	+1.2
JTT	**Ttatey**	**3.03**	**264**	P	**Pn**	18 54 41.3	+4.0
JNY	**Yasuok**	**3.06**	**239**	⇓P	**Pn**	18 54 40.3	+2.6
JGN	**Niukaw**	**3.12**	**257**	P	**Pn**	18 54 41.0	+2.4
JKO	**Kozu shima**	**3.19**	**210**	P	**Pn**	18 54 40.0	+0.5
JGF	**Kuroka**	**3.30**	**247**	P	**Pn**	18 54 43.8	+2.7
JYZW	**Yoshizawa**	**3.35**	**235**	P	**Pn**	18 54 43.9	+2.2
JHG	**Hegura jima**	**3.43**	**286**	⇓P	**Pn**	**18 54 44.2**	**+1.5**
JJH	**Hakui**	**3.44**	**271**	P	**Pn**	18 54 45.3	+2.4
HMMJ	**Hamamatsu 2**	**3.44**	**233**	⇓P	**Pn**	18 54 45.3	+2.3
JAO	**Obara**	**3.53**	**242**	P	**Pn**	18 54 47.4	+3.2
INU	**Inuyama**	**3.66**	**245**	*e*Pn	**Pn**	18 54 48.2	+2.2
JKG	**Kaga**	**3.88**	**261**	P	**Pn**	18 54 51.8	+2.9
JAA	**Atsumi**	**3.96**	**235**	P	**Pn**	18 54 52.8	+2.8
JHJ	**Hachijo jima 2**	**3.98**	**196**	P	**Pn**	18 54 50.2	-0.2
	711nm,0.3s,baz=324,slow=14,SNR=335						
JHJ				S	Sn	18 55 35.4	-0.4
	6μm,0.3s,baz=17,slow=19,SNR=8.0						
JHJ				LR	LR	18 56 30.2	
	comp=Z,260μm,20.5s,baz=35,slow=40						
JHJ2	**Mitsune**	**3.98**	**195**	P	**Pn**	18 54 49.9	-0.5
JHJ2	**Mitsune**	**3.98**	**195**	*e*Pn	**Pn**	18 54 49.2	-1.1
JHJ2				*e*Sn	Sn	18 55 34.6	-1.1
JFM	**Mihama**	**4.36**	**252**	P	**Pn**	18 54 58.9	+3.3
TSUJ	**Tsu 2**	**4.40**	**241**	P	**Pn**	18 54 59.2	+3.1
JKN2	**Miekihoku**	**4.77**	**237**	P	**Pn**	18 55 03.0	+1.9
ERM	**Erimo**	**5.29**	**17**	*e*P	**Pn**	18 55 06.4	-1.9
ERM				*e*		18 56 08.9	
ERM	**Erimo**	**5.29**	**17**	*e*Pn	**Pn**	18 55 06.4	-1.9
ERM				*e*Sn	Sn	18 56 08.9	+0.9
ASAJ	**Asahikawa**	**7.24**	**9**	*e*Pn	**Pn**	18 55 33.8	-1.2
ASAJ				*e*Sn	Sn	18 56 54.7	-1.1
JTY	**Toyota**	**8.59**	**255**	P	Pn	18 55 59.1	+5.6
JNU	**Nakatsue**	**9.20**	**248**	P	**Pn**	18 56 04.1	+2.1
	8.8nm,0.3s,baz=66,slow=6.1,SNR=144						
JNU				S	Sn	18 57 46.1	+2.0
	7.6nm,0.3s,baz=94,slow=13,SNR=1.6						
JNU				LR	LR	19 00 03.1	
	comp=Z,483nm,18.8s,baz=78,slow=40						
JNU	**Nakatsue**	**9.20**	**248**	*e*Pn	**Pn**	18 56 02.7	+0.7
JNU				S	Sn	18 57 46.1	+2.0
VLA	**Vladivostok**	**9.35**	**314**	*d*/*P*	**Pn**	18 56 07.1	+3.2
MSHR	**Mys Shultsa**	**9.47**	**309**	*d*/*P*	**Pn**	18 56 07.8	+2.2
KUR	**Kuril'sk**	**9.72**	**30**	⇑*P*	**Pn**	18 56 07.3	-1.6
KUR				*i*	S	18 57 49.5	-7.1
KUR				pmax	pmax		
	comp=N,202nm,0.6s						
KUR				pmax	pmax		
	comp=E,246nm,0.6s						
KUR				pmax	pmax		
	comp=Z,630nm,0.6s						
KUR				pmax	pmax		
	comp=Z,8μm,3.5s						
KUR				smax	smax		
	comp=N,1μm,0.7s						
KUR				smax	smax		
	comp=E,4μm,0.7s						
KUR				smax	smax		
	comp=E,23μm,4.5s						
KUR				smax	smax		
	comp=N,13μm,3.4s						
CBIJ	**Chichi jima**	**9.88**	**174**	*e*Pn	**Pn**	18 56 07.3	-4.0
CBIJ				*e*Sn	Sn	18 57 49.8	-11
USRK	**Ussuriysk Ar.**	**10.00**	**319**	P	**Pn**	18 56 15.8	+3.1
	comp=N,21nm,0.3s,baz=133,slow=9.8,SNR=145						
USRK				S	Sn	18 58 07.1	+3.7
	baz=119,slow=15,SNR=1.6						
USRK				LR	LR	18 59 52.2	
	comp=N,201μm,21.8s,baz=124,slow=36						
I45RU	**USSURIYSK INFR**	**10.00**	**319**	*i*		19 43 00.0	
	baz=132,slow=328,SNR=3.1						
YSS	**Yuzh-Sakhalins**	**10.06**	**7**	*αe*P	**Pn**	18 56 12.9	-0.7
YSS				*e*S	Sn	18 58 04.3	-0.7
YSS				pmax	pmax		
	comp=Z,550nm,0.7s						
YSS				pmax	pmax		
	comp=N,670nm,0.6s						
YSS				pmax	pmax		
	comp=Z,6μm,5.1s						
YSS				pmax	pmax		
	comp=N,5μm,5.3s						
YSS				pmax	pmax		
	comp=E,2μm,5.2s						
YSS				smax	smax		
	comp=E,3.0nm,1.3s						
YSS				smax	smax		
	comp=E,2.0nm,1.1s						
YSS				MLR	MLR		
	comp=Z,61μm,15.0s						
YSS				MLR	MLR		
	comp=N,53μm,17.0s						
YSS	**Yuzh-Sakhalins**	**10.06**	**7**	*e*Pn	**Pn**	18 56 12.2	-1.4
JTSR	**Tashiro 2**	**10.21**	**238**	P	**Pn**	18 56 20.3	+4.5
JHHJ	**Haha-jima-NKT**	**10.35**	**175**	P	**Pn**	18 56 14.7	-2.9
KSRS	**Korea Array**	**10.51**	**277**	P	**Pn**	18 56 24.4	+4.7
	comp=N,25nm,0.3s,baz=88,slow=13,SNR=108						
KSRS				S	Sn	18 58 26.0	+10
	baz=88,slow=12,SNR=1.9						
KSRS				LR	LR	19 00 21.3	
	comp=N,155μm,20.0s,baz=74,slow=37						
KSRS				PcP	**PcP**	**19 02 21.6**	**+0.3**
	baz=89,slow=1.5,SNR=4.0						
KS01	**Wonju Array Si**	**10.53**	**277**	*e*Pn	**Pn**	18 56 23.2	+3.1
KS15	**Wonju Array Si**	**10.54**	**277**	*e*Pn	**Pn**	18 56 23.6	+3.5
KSAR	**Wonju Array Be**	**10.54**	**277**	P	**Pn**	18 56 24.5	+4.3
KSAR				S	Sn	18 58 26.0	+9.2
KSAR	**Wonju Array Be**	**10.54**	**277**	P	**Pn**	18 56 24.4	+4.3
KSAR				S	Sn	18 58 25.9	+9.2
KSAR				PcP	**PcP**	**19 02 21.6**	**+0.2**
INCN	**Inchon**	**11.53**	**277**	Pn	Pn	18 56 38.9	+5.1
	SNR=59						
INCN	**Inchon**	**11.53**	**277**	P	Pn	18 56 38.9	+5.1
	SNR=59						
INCN	**Inchon**	**11.53**	**277**	Pn	Pn	18 56 38.9	+5.1
	SNR=59						
INCN	**Inchon**	**11.53**	**277**	*e*Pn	**Pn**	**18 56 36.9**	**+3.1**
MDJ	**Mudanjiang**	**11.58**	**315**	P	**Pn**	18 56 37.0	+2.6
MDJ				S	Sn	18 58 43.5	+1.4
MDJ				PcP	**PcP**	**19 02 23.5**	**+1.1**
MDJ				ScP	**ScP**	**19 05 51.5**	**+0.4**
MDJ				PcS	**PcS**	**19 05 57.3**	**+1.1**
MDJ				pmax	pmax		
	comp=N,100nm,1.9s						
MDJ				pmax	pmax		
	comp=N,15μm,8.8s						
MDJ				LR	LR		
	comp=N,85μm,24.3s						
MDJ				LR	LR		
	comp=N,86μm,22.5s						
MDJ				LR	LR		
	comp=N,122μm,17.6s						
MDJ	**Mudanjiang**	**11.58**	**315**	*e*Pn	**Pn**	18 56 37.5	+3.1
UGL	**Uglegorsk**	**12.13**	**3**	*e*P	**Pn**	18 56 40.0	-1.8
UGL				pmax	pmax		
	comp=Z,291nm,1.0s						
UGL				pmax	pmax		
	comp=Z,4μm,5.0s						
UGL				pmax	pmax		
	comp=N,5μm,6.0s						
UGL				pmax	pmax		
	comp=E,2μm,8.0s						
UGL				MLR	MLR		
	comp=Z,52μm,18.0s						
UGL				MLR	MLR		
	comp=N,52μm,16.0s						
UGL				MLR	MLR		
	comp=E,74μm,16.0s						
HABR	**Khabarovsk**	**12.32**	**341**	*c*/*P*	**Pn**	18 56 43.3	-1.2
HABR				*e*S	Sn	18 59 00.3	+0.1
HABR				pmax	pmax		
	comp=N,179nm,2.0s						
HABR				pmax	pmax		
	comp=E,117nm,2.0s						
HABR				pmax	pmax		
	comp=Z,348nm,2.0s						
HABR				MLR	MLR		
	comp=Z,36μm,11.0s						
CN2	**Changchun**	**13.72**	**305**	*e*P	**Pn**	18 57 05.3	+1.6
CN2				*e*pP	P	18 57 14.0	+3.0
CN2				*e*sP		18 57 20.8	
CN2				*e*S	Sn	18 59 35.5	+1.1
CN2				pmax	pmax		
	comp=Z,90nm,1.5s						
CN2				pmax	pmax		
	comp=Z,13μm,9.0s						
CN2				LR	LR		
	comp=Z,77μm,18.0s						
CN2				LR	LR		
	comp=Z,102μm,18.0s						
CN2				LR	LR		
	comp=Z,98μm,24.0s						
KLR	**Kul'dur**	**14.01**	**334**	P	**Pn**	18 57 08.6	+1.0
	comp=Z,4.0nm,0.3s,baz=145,slow=13,SNR=42						
KLR				S	Sn	18 59 44.6	+3.1
	baz=207,slow=12,SNR=1.1						
KLR				LR	LR	19 02 29.0	
	comp=Z,110μm,19.5s,baz=147,slow=37						
SNY	**Shenyang**	**14.37**	**295**	⇓P	**Pn**	**18 57 13.8**	**+1.4**
SNY				S	**S**	**19 00 01.8**	**-6.5**
SNY				pmax	pmax		
	comp=Z,1μm,1.5s						
SNY				LR	LR		
	comp=Z,107μm,14.2s						
SNY				LR	LR		
	comp=Z,158μm,15.1s						
SNY				LR	LR		
	comp=Z,211μm,15.3s						
JOW	**Kunigami**	**14.83**	**231**	P	**Pn**	**18 57 18.3**	**-0.2**
	comp=Z,3.6nm,0.3s,baz=51,slow=12,SNR=44						
JOW				S	**Sn**	**19 00 02.3**	**+0.8**
	comp=Z,1.1nm,0.3s,baz=253,slow=19,SNR=1.4						
JOW				LR	LR	19 03 06.9	
	comp=Z,44μm,21.2s,baz=56,slow=37						
JOW	**Kunigami**	**14.83**	**231**	*e*Pn	**Pn**	**18 57 17.4**	**-1.1**
JOW				S	**Sn**	**19 00 02.3**	**+0.8**
NKL	**Nikolayevsk**	**16.19**	**359**	*i* P	**Pn**	**18 57 32.0**	**-3.8**
NKL				*e*S	**Sn**	**19 00 32.0**	**-2.2**
NKL				pmax	pmax		
	comp=N,290nm,1.3s						
NKL				pmax	pmax		
	comp=Z,340nm,1.3s						
NKL				pmax	pmax		
	comp=N,4μm,4.0s						
NKL				pmax	pmax		
	comp=Z,4μm,4.5s						
NKL				smax	smax		
	comp=N,12μm,7.0s						
NKL				smax	smax		
	comp=E,12μm,9.5s						
NKL				MLR	MLR		
	comp=E,52μm,15.0s						
NKL				MLR	MLR		
	comp=N,47μm,20.0s						
NKL				MLR	MLR		
	comp=Z,78μm,20.0s						
OKH	**Okha**	**16.64**	**4**	⇑*iP*	**Pn**	**18 57 40.0**	**-1.5**
OKH				*e*S	**Sn**	**19 00 42.4**	**-2.7**
OKH				pmax	pmax		
	comp=Z,11μm,10.0s						
OKH				smax	smax		
	comp=E,23μm,6.4s						
OKH				smax	smax		
	comp=Z,41μm,21.0s						
SKR	**Severo-Kuril's**	**17.44**	**33**	*e*P	**Pn**	**18 57 50.9**	**-0.5**
SKR				*e*S	**Sn**	**19 01 03.5**	**-1.0**
SKR				pmax	pmax		
	comp=Z,3μm,2.3s						
SKR				pmax	pmax		
	comp=Z,27μm,4.0s						
SKR				MLR	MLR		
	comp=Z,50μm,17.0s						
SSE	**Sheshan**	**17.48**	**256**	P	**Pn**	**18 57 52.3**	**+0.1**
SSE				S	**Sn**	**19 01 07.0**	**+1.1**
SSE				pmax	pmax		
	comp=Z,360nm,1.0s						
SSE				pmax	pmax		
	comp=Z,16μm,11.8s						
SSE				LR	LR		
	comp=Z,56μm,17.0s						
SSE				LR	LR		
	comp=Z,74μm,17.0s						
SSE				LR	LR		
	comp=Z,106μm,23.2s						
NJ2	**Nanjing**	**18.95**	**262**	*e*P	**Pn**	**18 58 10.0**	**0.0**
NJ2				pP	**pP**	**18 58 22.8**	**+2.8**
NJ2				sP	**sP**	**18 58 28.5**	**+2.4**
NJ2				S	**Sn**	**19 01 41.5**	**+0.3**
NJ2				pmax	pmax		
	comp=Z,310nm,0.8s						
NJ2				pmax	pmax		
	comp=Z,10μm,5.8s						
NJ2				LR	LR		
	comp=Z,39μm,19.5s						
NJ2				LR	LR		
	comp=Z,104μm,16.3s						
NJ2				LR	LR		
	comp=Z,109μm,18.4s						
TIA	**Tai'an**	**19.24**	**275**	⇓P	**P**	**18 58 12.0**	**-0.2**
TIA				PP	**sP**	**18 58 30.0**	**+0.6**
TIA				S	**S**	**19 01 42.5**	**-5.0**
TIA				pmax	pmax		
	comp=Z,2μm,1.0s						
TIA				pmax	pmax		
	comp=Z,7μm,4.0s						
TIA				LR	LR		
	comp=Z,38μm,15.0s						
TIA				LR	LR		
	comp=Z,54μm,16.0s						
TIA				LR	LR		
	comp=Z,88μm,18.0s						
BJI	**Beijing**	**19.71**	**287**	P	**P**	**18 58 17.5**	**+0.3**
BJI				pP	**pP**	**18 58 26.3**	**-2.1**
BJI				sP	**sP**	**18 58 32.5**	**-2.0**
BJI				S	S	19 01 46.0	-11
BJI				sS	**sS**	**19 02 10.8**	**-4.0**
BJI				pmax	pmax		
	comp=Z,450nm,1.3s						
BJI				LR	LR		
	comp=Z,28μm,15.8s						
BJI				LR	LR		
	comp=Z,36μm,23.9s						
BJI				LR	LR		
	comp=Z,87μm,32.0s						
BJT	**Baijiatuau**	**19.72**	**287**	*e*P	**P**	**18 58 16.5**	**-0.8**
BJT				pmax	pmax		
	comp=Z,751nm,0.7s						
BJT	**Baijiatuau**	**19.72**	**287**	*e*P	**P**	**18 58 16.5**	**-0.8**
	comp=Z,751nm,0.7s						
HIA	**Hailar**	**19.76**	**315**	*e*P	**P**	**18 58 15.3**	**-2.4**
HIA				pmax	pmax		
	comp=Z,194nm,1.0s						
HIA	**Hailar**	**19.76**	**315**	*e*P	**P**	**18 58 15.3**	**-2.4**
	comp=Z,194nm,1.0s						
YOJ	**Yonaguni jima**	**19.87**	**236**	*e*P	**P**	**18 58 16.9**	**-2.2**
YOJ				pmax	pmax		
	comp=Z,266nm,0.9s						
YOJ	**Yonaguni jima**	**19.87**	**236**	*e*P	**P**	**18 58 16.9**	**-2.2**
	comp=Z,266nm,0.9s						
PEA0	**Petropavlovsk-**	**19.88**	**30**	*e*P	**P**	**18 58 18.8**	**-0.2**
PEA0B	**Petropavlovsk-**	**19.88**	**30**	*e*P	**P**	**18 58 19.4**	**+0.5**
	comp=Z,6μm,2.0s						
PETK	**Petropavlovsk-**	**19.88**	**30**	P	**P**	**18 58 19.8**	**+0.8**
	comp=Z,7.7nm,0.3s,baz=216,slow=6.2,SNR=106						
PETK				S	**S**	**19 02 00.8**	**+0.8**
	baz=224,slow=8.1,SNR=2.1						
PETK				LR	LR	19 06 17.0	
	comp=Z,28μm,21.5s,baz=220,slow=37						
PETK				PKiKP	**PKiKP**	**19 10 22.8**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=98,slow=3.1,SNR=4.8						
PEA1	**Petropavlovsk-**	**19.89**	**30**	*e*P	**P**	**18 58 19.8**	**+0.8**
PEA1				*e*S	**S**	**19 02 00.8**	**+0.7**
PEA1				*e*		19 10 22.8	
PET	**Petropavlovsk**	**20.22**	**32**	*c*/*P*	**P**	**18 58 22.4**	**-0.2**
PET				*e*S	**S**	**19 02 03.7**	**-2.9**
PET				pmax	pmax		
	comp=Z,38μm,4.6s						
PET				pmax	pmax		
	comp=Z,2μm,1.6s						
PET				pmax	pmax		
	comp=Z,24μm,11.0s						
PET				MLR	MLR		
	comp=Z,23μm,16.0s						
PET				MLR	MLR		
	comp=Z,21μm,16.0s						
PET	**Petropavlovsk**	**20.22**	**32**	*e*P	**P**	**18 58 23.3**	**+0.8**
	comp=Z,6μm,1.6s						
PET				LR	LR		
	comp=Z,70μm,22.0s						
TATO	**Taipei**	**20.57**	**240**	P	**P**	**18 58 27.6**	**+1.0**
	SNR=11						
TATO	**Taipei**	**20.57**	**240**	P	**P**	**18 58 27.6**	**+1.0**
	SNR=11						
TATO	**Taipei**	**20.57**	**240**	P	**P**	**18 58 27.6**	**+1.0**
	SNR=11						
TATO	**Taipei**	**20.57**	**240**	*e*P	**P**	**18 58 26.4**	**-0.2**
	comp=

comp=Z,168nm,0.8s
YHNB LR LR
comp=Z,54μm,21.0s
ANA2 Anatahan 20.95 167 eP P 18 58 29.9 -0.9
NACB Ninganchiao 21.02 238 eP P 18 58 30.7 -0.7
comp=Z,137nm,0.9s
NACB LR LR
comp=Z,50μm,22.0s
SSLB Suanglung 21.71 238 eP P 18 58 37.6 -1.4
comp=Z,144nm,0.9s
SSLB LR LR
comp=Z,40μm,19.0s
YULB Yu-li 21.75 237 eP P 18 58 36.8 -2.5
comp=Z,136nm,0.9s
YULB LR LR
comp=Z,15μm,20.0s
TPUB Ta-pu 22.26 238 eP P 18 58 42.6 -2.2
comp=Z,290nm,0.9s
TPUB LR LR
comp=Z,40μm,19.0s
TWG Pinlang 22.29 236 eP P 18 58 42.6 -2.5
comp=Z,1μm,0.7s
TWG LR LR
comp=Z,73μm,20.0s
CLNS Chul'man 22.64 337 eP P 18 58 46.9 -1.7
CLNS e*PP **pP** **18 58 56.9 -3.0**
CLNS e 18 59 10.7
CLNS e 19 02 36.3
CLNS eS **S** **19 02 55.1 +2.1**
CLNS eSS **SnSn** **19 03 26.7 +0.9**
CLNS e 19 09 55.5
CLNS pmax pmax
comp=Z,224nm,1.4s
CLNS pmax pmax
comp=N,217nm,1.4s
CLNS pmax pmax
comp=E,92nm,1.5s
CLNS pmax pmax
comp=Z,270nm,1.4s
CLNS pmax pmax
comp=N,215nm,1.0s
CLNS pmax pmax
comp=E,217nm,1.1s
CLNS smax smax
comp=E,19μm,11.3s
CLNS smax smax
comp=N,31μm,10.4s
CLNS MLR MLR
comp=Z,63μm,16.0s
CLNS MLR MLR
comp=E,14μm,18.0s
CLNS MLR MLR
comp=N,52μm,15.0s
QZH Quanzhou 22.64 244⇓ iP P 18 58 48.0 -0.9
QZH pP **pP** **18 58 59.0 -1.2**
QZH PP **PnPn** **18 59 20.8 +6.8**
QZH S **S** **19 02 47.5 -6.0**
QZH pmax pmax
comp=N,810nm,0.8s
QZH pmax pmax
comp=N,5μm,5.4s
QZH LR LR
comp=N,47μm,19.3s
QZH LR LR
comp=N,47μm,15.0s
QZH LR LR
comp=N,108μm,27.0s
TIY Taiyuan 22.75 281 eP P 18 58 50.5 +0.4
TIY S **S** **19 02 51.8 -3.6**
TIY pmax pmax
comp=N,490nm,0.9s
TIY pmax pmax
comp=N,7μm,6.4s
TIY LR LR
comp=N,23μm,14.8s
TIY LR LR
comp=N,61μm,14.5s
TIY LR LR
comp=N,100μm,18.3s
WHN Wuhan 23.08 262 ⇓P P 18 58 51.0 -2.4
WHN pP **pP** **18 59 04.3 -0.6**
WHN S **S** **19 02 58.3 -2.6**
WHN pmax pmax
comp=N,4μm,4.5s
WHN LR LR
comp=N,112μm,15.5s
WHN LR LR
comp=N,196μm,19.8s
WHN LR LR
comp=N,252μm,22.7s
HHC Hu-ho-hao-te 23.24 289 eP P 18 58 54.5 -0.5
HHC pP pP 18 59 05.5 -1.1
HHC sP sP 18 59 11.8 -0.8
HHC S **S** **19 02 58.5 -5.0**
HHC SS **SnSn** **19 03 46.5 +5.7**
HHC pmax pmax
comp=N,87nm,0.8s
HHC pmax pmax
comp=N,2μm,7.0s
HHC LR LR
comp=N,16μm,14.8s
HHC LR LR
comp=N,12μm,14.8s
HHC LR LR
comp=N,14μm,13.6s
MA2 Magadan 23.48 12 P P 18 58 57.2 +0.3
comp=N,733nm,0.8s,baz=202,slow=9.6,SNR=293
MA2 S **S** **19 03 06.9 +0.1**
comp=N,21nm,0.7s,baz=189,slow=19,SNR=3.3
MA2 LR LR 19 08 01.8
comp=N,36μm,21.6s,baz=192,slow=36
GUMO Guam 23.52 171 P P 18 58 56.6 -1.0
comp=N,390nm,0.8s,baz=82,slow=4.0,SNR=17
GUMO S **S** **19 03 07.9 -0.3**
comp=N,33nm,0.3s,baz=43,slow=18,SNR=2.1
GUMO LR LR 19 11 00.8
comp=N,15μm,18.1s,baz=8.0,slow=44
GUMO Guam 23.52 171 eP P 18 58 55.6 -2.1
comp=N,2μm,1.1s
GUMO eS **S** **19 03 07.9 -0.3**
BTO Baotou 24.41 288 eP P 18 59 05.8 -0.1
CIT Chita 24.54 317 eP P 18 59 06.1 -0.8
CIT e 18 59 19.0
CIT e 18 59 44.3
CIT eS **S** **19 03 24.2 0.0**
CIT pmax pmax
comp=Z,754nm,1.7s
YAK Yakutsk 26.08 348 P P 18 59 21.1 +0.5
comp=Z,833nm,0.8s,baz=145,slow=6.5,SNR=97
YAK S **S** **19 03 48.7 +0.5**
comp=Z,113nm,0.9s,baz=322,slow=17,SNR=5.9
YAK LR LR 19 10 02.1
comp=Z,50μm,18.6s,baz=141,slow=37
YAK Yakutsk 26.08 348 i P P 18 59 19.1 -1.5
YAK e*PP **pP** **18 59 29.5 -3.5**
YAK ePPP PPP 19 00 08.7
YAK e 19 02 45.8
YAK eS **S** **19 03 47.3 -0.9**
YAK e*SS **sS** **19 04 07.0 -2.3**
YAK e 19 10 11.2
YAK pmax pmax
comp=N,823nm,1.1s
YAK pmax pmax
comp=E,304nm,1.1s
YAK pmax pmax
comp=Z,2μm,1.1s
YAK pmax pmax
comp=Z,2μm,2.2s
YAK pmax pmax
comp=N,3μm,2.8s
YAK pmax pmax
comp=E,695nm,1.5s
YAK smax smax
comp=E,42μm,5.6s
YAK smax smax
comp=N,63μm,3.6s
YAK MLR MLR
comp=N,48μm,22.0s
YAK MLR MLR
comp=E,25μm,17.0s
YAK MLR MLR
comp=Z,49μm,19.0s
YAK Yakutsk 26.08 348 eP P 18 59 20.9 +0.3
comp=Z,1μm,0.9s
YAK eS **S** **19 03 47.9 -0.3**
XAN Xi'an 26.27 273 P P 18 59 22.0 -0.8
XAN S **S** **19 03 44.0 -8.0**
XAN pmax pmax
comp=Z,300nm,1.1s
XAN pmax pmax
comp=Z,4μm,8.8s
XAN LR LR
comp=Z,21μm,30.7s
XAN LR LR
comp=Z,37μm,31.1s
XAN LR LR
comp=Z,61μm,28.5s
SEY Seymchan 26.91 11 P P 18 59 28.7 +0.6
comp=Z,310nm,0.9s,baz=202,slow=7.2,SNR=266
SEY S **S** **19 04 02.5 +1.1**
comp=Z,31nm,1.1s,baz=143,slow=20,SNR=1.9
SEY LR LR 19 11 16.0
comp=Z,40μm,20.0s,baz=206,slow=39
SEY Seymchan 26.91 11 c iP P 18 59 28.1 0.0
ENH Enshi 27.06 265 eP P 18 59 29.0 -0.8
comp=Z,412nm,0.7s
ENH LR LR
comp=Z,65μm,20.0s
GZH Guangzhou 27.59 248 P P 18 59 33.0 -1.6
GZH PcP **PcP** **19 02 52.0 +0.7**
GZH S **S** **19 04 07.0 -5.8**
GZH pmax pmax
comp=Z,2μm,5.4s
SONA1 Songino Array 27.60 304 eP P 18 59 33.0 -1.6
SONA0 Songino Array 27.60 304 eP P 18 59 34.4 -0.2
comp=Z,364nm,1.0s
SONA0 ePcP **PcP** **19 02 51.8 +0.6**
SONA0 eS **S** **19 04 13.8 +0.9**
SONA0 e 19 32 05.1
SONM Songino Array 27.60 304 P P 18 59 34.4 -0.2
comp=Z,51nm,0.8s,baz=101,slow=8.5,SNR=112
SONM PcP **PcP** **19 02 51.8 +0.6**
comp=Z,11nm,0.6s,baz=103,slow=2.3,SNR=4.9
SONM S **S** **19 04 13.8 +0.9**
comp=Z,7.4nm,1.0s,baz=108,slow=12,SNR=1.8
SONM LR LR 19 10 59.2
comp=Z,54μm,18.9s,baz=93,slow=37
SONM P3KPbc 19 32 05.1
comp=Z,1.1nm,0.9s,baz=289,slow=4.4,SNR=7.0
PCPH Palayan 27.73 225⇑ eP P 18 59 35.9 0.0
SMY Shemya 27.91 45 eP P 18 59 39.0 +1.9
SMY pmax pmax
comp=Z,2μm,1.6s
SMY MLR MLR
comp=Z,33μm,22.0s
SMY Shemya 27.91 45 eP P 18 59 39.0 +1.9
comp=Z,2μm,1.6s
SMY LR LR
comp=Z,33μm,22.0s
H11N2 WAKE ISLAND Hy 28.34 120 P P 18 59 41.3 +0.2
baz=280,slow=9.9,SNR=8.1
H11N2 T T 19 29 48.4
baz=313,slow=75,SNR=1679
H11N1 WAKE ISLAND Hy 28.35 120 P P 18 59 41.7 +0.6
baz=280,slow=9.9,SNR=9.3
H11N1 T T 19 29 48.7
baz=313,slow=75,SNR=2402
H11N3 WAKE ISLAND Hy 28.36 120 P P 18 59 43.9 +2.6
baz=280,slow=9.9,SNR=8.9
H11N3 T T 19 29 36.2
baz=313,slow=75,SNR=2085
WAKE Wake Island 28.48 121 eP P 18 59 43.3 +0.7
comp=Z,1μm,1.4s
WAKE LR LR
comp=Z,68μm,22.0s
TGY Tagaytay City 29.01 224 P P 18 59 47.3 0.0
comp=Z,453nm,0.6s,baz=325,slow=12,SNR=8.8
H11S1 WAKE ISLAND Hy 29.05 122 T T 19 30 40.4
baz=314,slow=76,SNR=3472
H11S3 WAKE ISLAND Hy 29.05 122 T T 19 30 40.1
baz=314,slow=76,SNR=779
H11S2 WAKE ISLAND Hy 29.07 122 T T 19 30 40.8
baz=314,slow=76,SNR=1072
PLP Palo 29.50 214⇓ eP P 18 59 51.1 -0.5
LZH Lanzhou 29.81 280 eP P 18 59 55.3 +0.8
LZH pP pP 19 00 03.5 -3.5
LZH sP sP 19 00 05.8 -6.9
LZH PP **PnPn** **19 00 53.5 +1.8**
LZH eS **S** **19 04 43.0 -4.9**
LZH SS **SnSn** **19 06 27.3 +5.9**
LZH pmax pmax
comp=Z,220nm,1.0s
LZH pmax pmax
comp=Z,1μm,4.0s
LZH LR LR
comp=Z,69μm,14.0s
LZH LR LR
comp=Z,87μm,14.4s
LZH LR LR
comp=Z,107μm,16.2s
IRK Irkutsk 29.95 312 eP P 18 59 57.0 +1.7
IRK eS **S** **19 04 53.9 +4.5**
IRK pmax pmax
comp=Z,262nm,2.4s
ZAK Zakamensk 30.10 309 eP P 18 59 58.0 +1.2
ZAK pmax pmax
comp=Z,99nm,1.3s
TLY Talaya 30.17 311 P P 18 59 56.6 -0.7
comp=Z,24nm,0.7s,baz=114,slow=9.9,SNR=18
TLY S **S** **19 04 50.9 -2.1**
comp=Z,14nm,0.8s,baz=11,slow=10,SNR=2.0
TLY LR LR 19 12 31.5
comp=Z,67μm,19.9s,baz=104,slow=37
TLY Talaya 30.17 311 eP P 18 59 58.3 +1.0
TLY e 19 01 13.9
TLY e 19 02 58.4
TLY eS **S** **19 04 51.0 -2.0**
TLY pmax pmax
comp=Z,151nm,1.0s
TLY MLR MLR
comp=Z,45μm,16.0s
RCP Roxas 30.20 218⇑ eP P 18 59 59.9 +2.1
LLP Lapu-Lapu 30.70 215⇑ eP P 19 00 04.5 +2.3
LLP eS **S** **19 05 00.2 -1.6**
GYA Guiyang 30.94 260⇑ iP P 19 00 06.5 +2.0
GYA pmax pmax
comp=Z,70nm,1.0s
GYA LR LR
comp=Z,34μm,18.3s
GYA LR LR
comp=Z,52μm,22.2s
GYA LR LR
comp=Z,79μm,22.2s
CD2 Chengdu 31.40 270 P P 19 00 08.5 +0.1
CD2 pP pP 19 00 20.3 -0.7
CD2 sP sP 19 00 25.8 -0.9
CD2 S **S** **19 05 13.3 +0.6**
CD2 sS sS 19 05 33.5 -0.4
CD2 pmax pmax
comp=Z,270nm,0.7s
CD2 LR LR
comp=Z,40μm,15.9s
CD2 LR LR
comp=Z,63μm,15.7s
CD2 LR LR
comp=Z,86μm,15.5s
MOY Mondy 31.78 310 eP P 19 00 12.5 +0.9
MOY pmax pmax
comp=Z,232nm,2.6s
SNPH Sibulan 31.90 215 eP P 19 00 16.0 +3.2
CGP Cagayan de Oro 32.04 212⇓ eP P 19 00 14.0 0.0
GTA Gaotai 32.33 287 P P 19 00 17.8 +1.3
GTA pP pP 19 00 28.0 -1.1
GTA sP sP 19 00 32.5 -2.3
GTA PP **PnPn** **19 01 26.5 +2.3**
GTA PcP **PcP** **19 03 06.8 +3.3**
GTA S **S** **19 05 27.3 +0.2**
GTA sS sS 19 05 48.3 0.0
GTA ScP **ScP** **19 06 45.3 +2.1**
GTA PcS **PcS** **19 06 49.5 +0.9**
GTA SS **SnSn** **19 07 24.5 +2.2**
GTA ScS **ScS** **19 10 42.0 -0.5**
GTA pmax pmax
comp=Z,40nm,0.7s
GTA pmax pmax
comp=Z,2μm,5.8s
GTA LR LR
comp=Z,23μm,17.3s
GTA LR LR
comp=Z,27μm,15.9s
GTA LR LR
comp=Z,22μm,16.1s
QIZ Qiongzhong 32.66 245 P P 19 00 21.8 +2.4
QIZ pP **pP** **19 00 31.0 -1.0**
QIZ S **S** **19 05 33.8 +1.5**
QIZ pmax pmax
comp=Z,60nm,1.2s
QIZ pmax pmax
comp=Z,3μm,8.7s
QIZ LR LR
comp=Z,24μm,19.8s
QIZ LR LR
comp=Z,26μm,21.1s
QIZ Qiongzhong 32.66 245 eP P 19 00 21.1 +1.7
comp=Z,129nm,1.1s
QIZ LR LR
comp=Z,30μm,22.0s
DAV Davao City (W) 32.94 209 PFAKE 19 00 30.0 +8.1
DAV LR LR
comp=Z,12μm,19.0s
CTBH Cotabato—PC H 33.34 212⇓ iP P 19 00 26.0 +0.6
GSTR Great Sitkin T 33.55 49 eP P 19 00 30.4 +3.4
GSTR eS **S** **19 05 45.0 -0.7**
PATS Pohnpei 33.86 148 eP P 19 00 29.8 -0.1
comp=Z,630nm,1.5s
PATS LR LR
comp=Z,28μm,20.0s
BILL Bilibino 34.17 17 c iP P 19 00 32.3 +0.2
BILL e 19 01 47.8
BILL i S **S** **19 05 59.0 +4.2**
BILL i SS **SS** **19 08 37.8 +14**
BILL pmax pmax
comp=Z,1μm,2.5s
BILL MLR MLR
comp=Z,16μm,19.0s
BILL Bilibino 34.17 17 eP P 19 00 31.7 -0.4
comp=Z,608nm,1.4s
BILL LR LR
comp=Z,18μm,20.0s
KMI Kunming 34.69 261 P P 19 00 39.0 +1.7
KMI pP pP 19 00 46.0 -4.0
KMI sP sP 19 00 49.3 -6.3
KMI PP **PP** **19 01 58.8 +2.3**
KMI S **S** **19 05 59.5 -4.5**
KMI SS **SnSn** **19 08 14.0 -6.0**
KMI pmax pmax
comp=Z,280nm,1.2s
KMI pmax pmax
comp=Z,1μm,3.8s
KMI LR LR
comp=Z,36μm,22.1s
KMI LR LR
comp=Z,52μm,23.1s
KMI LR LR
comp=Z,83μm,23.2s
TIXI Tiksi 35.33 353 P P 19 00 42.0 0.0
comp=Z,153nm,0.6s,baz=160,slow=9.1,SNR=111
TIXI S **S** **19 06 08.6 -3.9**
comp=Z,48nm,1.3s,baz=127,slow=5.6,SNR=2.6
TIXI Tiksi 35.33 353 d iP P 19 00 41.9 -0.1
TIXI pmax pmax
comp=Z,482nm,1.7s
TIXI MLR MLR
comp=Z,28μm,19.0s
TIXI Tiksi 35.33 353 eP P 19 00 41.0 -1.0
comp=Z,196nm,0.8s
TIXI LR LR
comp=Z,29μm,19.0s
MIDW Midway 35.85 92 eP P 19 00 46.7 -0.3
comp=Z,1μm,1.8s
MIDW LR LR
comp=Z,43μm,21.0s
KWAJ Kwajalein Atol 36.94 133 eP P 19 00 57.8 +1.4
KWAJ pmax pmax
comp=Z,900nm,1.3s
KWAJ Kwajalein Atol 36.94 133 eP P 19 00 57.5 +1.1
comp=Z,898nm,1.4s
KWAJ LR LR
comp=Z,38μm,22.0s
KDM Kudat 37.19 222 ⇑P P 19 01 00.4 +1.9
KRAR Krasnoyarsk 37.33 316 d iP P 19 01 01.3 +2.1
KRAR MLR MLR
comp=Z,487μm,23.0s
MYLDM Lahad Datu 37.79 219 ⇑P P 19 01 06.1 +2.5
MYLDM Lahad Datu 37.79 219 eP P 19 01 05.2 +1.7
comp=Z,624nm,1.1s
MYLDM LR LR
comp=Z,32μm,20.0s
SPIA Saint Paul Isl 37.80 42 eP P 19 01 04.7 +1.5
comp=Z,2μm,1.5s
NIKH Nikolski High 38.02 49 eP P 19 01 04.0 -1.1
comp=Z,365nm,0.8s
NIKH LR LR
comp=Z,39μm,22.0s
SDKM Sandakan 38.06 221 ⇓P P 19 01 06.4 +0.5
KKM Kota Kinabalu 38.25 222 ⇓P P 19 01 10.1 +2.6
KKM Kota Kinabalu 38.25 222 eP P 19 01 07.3 -0.2
comp=Z,326nm,1.4s
KKM LR LR
comp=Z,14μm,20.0s
UBPT Khong Chiam 38.26 245 P P 19 01 10.4 +2.9
comp=Z,412nm,1.6s,comp=Z,6μm
SKNT Sakolnakorn 38.27 249 P P 19 01 10.2 +2.5
comp=Z,382nm,1.8s,comp=Z,6μm
TSM Tawau 38.86 219 ⇑P P 19 01 14.9 +2.3
GAMB Gambell 38.91 31 eP P 19 01 13.2 +0.8
comp=Z,383nm,1.6s
GAMB LR LR
comp=Z,8μm,21.0s
MANU Manus Island 39.25 170 eP P 19 01 14.9 -0.9
comp=Z,284nm,0.9s
MANU LR LR
comp=Z,23μm,22.0s
JAY Jayapura 39.28 181 LR LR 19 14 49.1
comp=Z,535nm,21.5s,baz=357,slow=32
JAY Jayapura 39.28 181 P P 19 01 16.4 +0.3
GENI Genyem 39.36 181 P P 19 01 17.5 +0.8
LBMI Labuha 39.48 202 P P 19 01 18.1 +0.4
UNV Unalaska Valle 39.49 48 eP P 19 01 15.9 -1.6
comp=Z,69nm,1.1s
UNV LR LR
comp=Z,17μm,20.0s
GTOI Gorontalo 39.83 209 P P 19 01 20.2 -0.4
comp=Z,366nm,1.1s,comp=Z,7μm
AKUT Akutan 39.94 47 eP P 19 01 20.1 -1.0
comp=Z,108nm,1.0s
AKUT LR LR
comp=Z,18μm,20.0s
CMAI Chiengmai2 40.30 257 P P 19 01 26.8 +2.0
comp=Z,1μm,1.1s,comp=Z,26μm
MRSI Marisa 40.39 210 P P 19 01 25.8 +0.5
comp=Z,287nm,1.2s,comp=Z,10μm
UTTA Uttaradit 40.40 253 P P 19 01 27.4 +2.1
comp=Z,49nm,0.8s,comp=Z,350nm
FAKI Fak Fak 40.52 194 P P 19 01 27.3 +0.9
comp=Z,223nm,0.8s,comp=Z,10μmcomp=Z,21μm
FAKI Fak Fak 40.52 194 eP P 19 01 25.9 -0.4
comp=Z,239nm,0.9s
FAKI LR LR
comp=Z,35μm,21.0s
WMQ Urumqi 40.63 297⇑ iP P 19 01 28.8 +1.7
WMQ pP pP 19 01 39.0 -1.0
WMQ PcP **PcP** **19 03 30.5 +2.2**
WMQ S **S** **19 07 34.5 +1.0**
WMQ SS **SS** **19 10 35.8 +1.0**
WMQ pmax pmax
comp=Z,500nm,0.9s
WMQ pmax pmax
comp=Z,7μm,6.0s
WMQ LR LR
comp=Z,29μm,16.5s
WMQ LR LR
comp=Z,33μm,17.6s
WMQ LR LR
comp=Z,53μm,26.6s
LAMP Lampang 40.65 255 P P 19 01 29.7 +2.2
comp=Z,65nm,0.9s,comp=Z,508nm
PBKT Sadao Pong 40.78 251 P P 19 01 30.6 +2.0
comp=Z,200nm,1.4s,comp=Z,4μm
CMMT Chiang Mai 41.01 256 P P 19 01 31.9 +1.4
comp=Z,125nm,0.8s,comp=Z,2μm
CHTO Chiang Mai 41.01 256 P P 19 01 32.0 +1.5
comp=Z,464nm,0.9s,comp=Z,10μm
CHTO Chiang Mai 41.01 256 eP P 19 01 30.8 +0.3
CHTO pmax pmax
comp=Z,98nm,0.8s
CHTO MLR MLR
comp=Z,32μm,20.0s

CHTO Chiang Mai 41.01 256 P **P** **19 01 31.7 +1.2**
SNR=16
CHTO Chiang Mai 41.01 256 P **P** **19 01 31.7 +1.2**
SNR=16
CHTO P **P** **19 01 31.7 +1.2**
SNR=16
CHTO Chiang Mai 41.01 256 P **P** **19 01 31.7 +1.2**
SNR=16
CHTO Chiang Mai 41.01 256 *e*P **P** **19 01 30.8 +0.3**
comp=Z,98nm,0.8s
CHTO LR LR
comp=Z,32µm,20.0s
CM31 Chiang Mai Arr 41.22 255 *e*P **P** **19 01 32.3 +0.1**
CMAR Chiang Mai Arr 41.22 255 P **P** **19 01 33.3 +1.2**
comp=Z,17nm,0.7s,baz=44,slow=8.1,SNR=69
CMAR S **S** **19 07 40.2 -2.4**
comp=Z,7.1nm,1.1s,baz=38,slow=6.0,SNR=2.9
CMAR LR LR 19 20 59.2
comp=Z,37µm,19.1s,baz=64,slow=40
CM01 Chiang Mai Arr 41.23 255 *e*P **P** **19 01 32.9 +0.6**
SUKH Sukhothai 41.26 253 P **P** **19 01 34.7 +2.3**
comp=Z,46nm,0.9s,comp=Z,421nm
SANI Sanana 41.27 203 P **P** **19 01 32.5 0.0**
comp=Z,435nm,0.9s,comp=Z,10µm
LUWI Luwuk 41.45 208 P P 19 01 39.6 +5.6
LUWI Luwuk 41.45 208 *e*P **P** **19 01 33.1 -0.9**
comp=Z,647nm,1.1s
LUWI LR LR
comp=Z,12µm,22.0s
MSAI Masohi 41.67 198 P P 19 01 42.5 +6.7
ZAA1 Zalesovo Array 41.76 312 *e*P **P** **19 01 36.3 +0.2**
ZAA1 *e*PcP **PcP** **19 03 31.9 +0.2**
ZAA1 *e*S **S** **19 07 47.4 -2.5**
ZAA1 *e* 19 33 19.7
ZAA0 Zalesovo Array 41.76 312 *e*P **P** **19 01 34.8 -1.4**
ZALV Zalesovo Beam 41.76 312 P **P** **19 01 36.3 +0.2**
comp=Z,70nm,0.4s,baz=100,slow=7.6,SNR=259
ZALV PcP **PcP** **19 03 31.9 +0.2**
comp=Z,31nm,0.6s,baz=103,slow=2.7,SNR=5.1
ZALV S **S** **19 07 47.4 -2.5**
comp=Z,4.5nm,0.8s,baz=84,slow=15,SNR=2.0
ZALV LR LR 19 19 49.8
comp=Z,43µm,18.2s,baz=93,slow=37
ZALV PKPPKP P'P'df 19 33 19.7 -29
comp=Z,0.7nm,0.5s,baz=291,slow=3.2,SNR=3.1
LSA Lhasa 41.95 275 P **P** **19 01 40.0 +1.4**
LSA S **S** **19 07 46.5 -7.6**
LSA pmax pmax
comp=Z,160nm,1.2s
LSA LR LR
comp=Z,6µm,24.7s
LSA LR LR
comp=Z,17µm,29.0s
LSA LR LR
comp=Z,44µm,30.7s
LSA Lhasa 41.95 275 *e*P **P** **19 01 39.5 +0.9**
LSA pmax pmax
comp=Z,179nm,0.8s
LSA MLR MLR
comp=Z,30µm,18.0s
LSA Lhasa 41.95 275 *e*P **P** **19 01 39.5 +0.9**
comp=Z,179nm,0.8s
LSA LR LR
comp=Z,30µm,18.0s
NLAI Namlea 42.06 201 P **P** **19 01 41.2 +2.2**
comp=Z,270nm,1.1s,comp=Z,7µmcomp=Z,21µm
CHBT CHBT 42.20 245 P **P** **19 01 43.3 +3.1**
comp=Z,406nm,1.4s,comp=Z,5µm
RABL Rabaul 42.23 163 *e*P **P** **19 01 40.2 -0.2**
comp=Z,374nm,0.8s
BTM Bintulu 42.33 224 ⇓P **P** **19 01 42.8 +1.6**
PCI Palu 42.52 212 P **P** **19 01 42.8 +0.1**
comp=Z,397nm,1.6s,comp=Z,6µmcomp=Z,19µm
UMPA Umpang Tak 42.61 252 P **P** **19 01 47.4 +3.9**
comp=Z,72nm,1.0s,comp=Z,500nm
NVS Novosibirsk 42.69 314⇑ *i*P **P** **19 01 44.3 +0.6**
NVS *e*S **S** **19 08 07.2 +3.7**
NVS *e* 19 11 39.3
NVS pmax pmax
comp=N,84nm,1.4s
NVS pmax pmax
comp=E,445nm,1.4s
NVS pmax pmax
comp=Z,626nm,1.4s
NVS smax smax
comp=N,389nm,2.6s
NVS smax smax
comp=E,752nm,2.6s
SDPT Sand Point 43.04 45 *e*P **P** **19 01 45.3 -1.3**
comp=E,205nm,0.8s
SDPT LR LR
comp=Z,16µm,20.0s
SHL Shillong 43.14 269 *e*P **P** **19 01 48.8 +0.8**
SHL *e*S **S** **19 08 13.0 +1.9**
SHL IAMs_20 IAMs_20 19 22 17.2
comp=Z,25µm,15.5s
PATY Pattaya 43.16 247 P **P** **19 01 51.5 +3.5**
comp=Z,39nm,1.6s,comp=Z,788nm
NRIK Noril'sk 43.22 335 P **P** **19 01 47.5 -0.2**
comp=Z,92nm,0.5s,baz=115,slow=7.4,SNR=84
NRIK S **S** **19 08 07.7 -3.2**
comp=Z,29nm,1.1s,baz=287,slow=20,SNR=9.1
NRIK LR LR 19 20 53.2
comp=Z,36µm,18.1s,baz=109,slow=37
NRIK Noril'sk 43.22 335 P **P** **19 01 47.6 -0.2**
NRIK S **S** **19 08 07.7 -3.2**
NRIK pmax pmax
comp=Z,92nm,0.5s
NRIK smax smax
comp=N,29nm,1.1s
NRIK MLR MLR
comp=Z,36µm,18.1s
SBUM Sibu 43.42 225 ⇓P **P** **19 01 52.7 +2.6**
SBUM Sibu 43.42 225 *e*P **P** **19 01 50.1 0.0**
comp=Z,349nm,1.3s
SBUM LR LR
comp=Z,12µm,22.0s
SRDT SRDT 43.55 250 P **P** **19 01 54.5 +3.4**
comp=Z,967nm,0.9s,comp=Z,9µm
MK01 Makanchi Array 43.92 302 *e*P **P** **19 01 53.6 -0.2**
MK31 Makanchi Array 43.93 302 *e*P **P** **19 01 54.2 +0.3**
MK31 pmax pmax
comp=Z,308nm,1.1s
MK31 Makanchi Array 43.93 302 *e*P **P** **19 01 54.0 +0.1**
MK32 Makanchi Array 43.93 302 *e*P **P** **19 01 53.9 +0.1**
MK32 *e*S **S** **19 08 18.7 -3.2**
MK32 *e* 19 33 13.4
MK32 *e* 19 39 48.0
MKAR Makanchi Array 43.93 302 P **P** **19 01 53.9 +0.1**
comp=Z,112nm,0.8s,baz=87,slow=9.3,SNR=147
MKAR S **S** **19 08 18.7 -3.2**
comp=Z,3.2nm,0.8s,baz=90,slow=19,SNR=1.9
MKAR LR LR 19 20 37.3
comp=Z,38µm,21.5s,baz=84,slow=36
MKAR PKPPKP P'P'df 19 33 13.4 -32
comp=Z,1.1nm,0.9s,baz=266,slow=4.3,SNR=4.0
MKAR P4KPbc 19 39 48.0
comp=Z,0.4nm,0.7s,baz=88,slow=5.6,SNR=4.9
MKAR Makanchi Array 43.93 302 *i*P **P** **19 01 53.7 -0.2**
MKAR pmax pmax
comp=Z,114nm,0.7s
MKAR Makanchi Array 43.93 302 *e*P **P** **19 01 54.0 +0.1**
comp=Z,2µm,1.0s
MKAR S **S** **19 08 18.7 -3.2**
MKAR P'P' 19 33 13.4
MKAR *e* 19 39 48.0
PHET Kaeng Krachan 44.09 248 P **P** **19 01 57.0 +1.6**
comp=Z,135nm,0.9s,comp=Z,1µm
MAKZ Makanchi 44.14 302 *e*P **P** **19 01 55.6 0.0**
MAKZ pmax pmax
comp=Z,280nm,1.0s
MAKZ Makanchi 44.14 302 *e*P **P** **19 01 55.9 +0.4**
comp=Z,280nm,1.0s
MAKZ LR LR
comp=Z,49µm,21.0s
KDI Kendari 44.20 207 P **P** **19 01 58.3 +2.0**
comp=Z,192nm,2.4s,comp=Z,6µm
CHGN Chignik 44.20 44 *e*P **P** **19 01 55.0 -0.8**
MTKI Muara Teweh, K 44.85 219 P **P** **19 02 03.7 +2.2**
comp=Z,612nm,1.4s,comp=Z,13µm
SPSI Sidrap Palu 45.31 211 P **P** **19 02 05.5 +0.4**
comp=Z,242nm,1.1s,comp=Z,5µm
KSM Kuching 45.31 226 ⇑P **P** **19 02 07.5 +2.4**
KSM Kuching 45.31 226 *e*P **P** **19 02 05.7 +0.5**
comp=Z,298nm,0.7s
TT01 Tatalina 45.63 35 *e*P **P** **19 02 07.5 +0.3**

TTA Tatalina 45.63 35 *e*P **P** **19 02 07.6 +0.3**
TTA pmax pmax
comp=Z,598nm,1.5s
TTA Tatalina 45.63 35 *e*P **P** **19 02 07.6 +0.3**
comp=Z,598nm,1.5s
SAUI Saumlaki 45.64 194 *e*P **P** **19 02 08.2 +0.5**
comp=Z,1µm,1.3s
SVW2 Sparrevohn 45.74 37 *e*P **P** **19 02 08.9 +0.9**
comp=Z,424nm,1.0s
KURK Kurchatov 45.76 308*c* *i*P **P** **19 02 08.1 -0.2**
KURK pmax pmax
comp=Z,1µm,1.0s
KURK MLR MLR
comp=Z,154µm,21.0s
KURK Kurchatov 45.76 308 *e*P **P** **19 02 07.9 -0.5**
comp=Z,530nm,0.8s
KURK LR LR
comp=Z,47µm,21.0s
STKI Sintang 45.81 224 P **P** **19 02 11.2 +2.1**
comp=Z,330nm,1.3s,comp=Z,6µm
KURBB Kurchatov Arra 45.83 308 P **P** **19 02 08.9 +0.1**
comp=Z,400nm,1.0s,baz=84,slow=7.8,SNR=383
KURBB S **S** **19 08 44.9 -4.4**
comp=Z,4.9nm,1.0s,baz=85,slow=5.9,SNR=3.6
KURBB PKPPKP P'P'df 19 33 17.7 -26
comp=Z,0.3nm,0.7s,baz=276,slow=1.8,SNR=3.7
TARA Tarawa 46.03 133 *e*P **P** **19 02 11.1 +0.2**
comp=Z,2µm,1.8s
TARA LR LR
comp=Z,36µm,22.0s
KAPI Kappang 46.27 210 LR LR 19 22 28.8
comp=Z,4µm,19.1s,baz=48,slow=37
KAPI Kappang 46.27 210 *e*P **P** **19 02 12.8 +0.1**
comp=Z,361nm,0.8s
SHLS Shalkode 46.33 298⇓ *i*P **P** **19 02 11.7 -1.5**
comp=Z,625nm,0.7s
SHLS *i*S **S** **19 08 56.9 -0.2**
SHLS LR LR 19 21 49.9
comp=Z,21µm,14.2s
PMG Port Moresby 46.48 172 P **P** **19 02 13.7 -0.5**
comp=Z,53nm,0.8s,baz=356,slow=7.5,SNR=11
PMG S **S** **19 08 57.3 -1.7**
comp=Z,11nm,0.9s,baz=7.9,slow=19,SNR=2.6
PMG LR LR 19 24 52.2
comp=Z,2µm,18.3s,baz=356,slow=40
PMG Port Moresby 46.48 172*c* *i*P **P** **19 02 14.5 +0.3**
PMG pmax pmax
comp=Z,314nm,1.0s
PMG MLR MLR
comp=Z,25µm,19.0s
PMG Port Moresby 46.48 172 *e*P **P** **19 02 14.3 0.0**
comp=Z,299nm,1.0s
PMG S **S** **19 08 57.3 -1.7**
SURA Surathani 46.56 244 P **P** **19 02 17.9 +2.9**
comp=Z,117nm,1.2s
PDGK Podgornoye 46.57 298 P **P** **19 02 15.8 +1.0**
PDGK pmax pmax
comp=Z,436nm,0.9s
JIRN Jiri 46.76 275 *e*P **P** **19 02 17.3 +0.4**
KTGM Kuala Trenggan 46.83 237⇑P **P** **19 02 20.0 +2.9**
GUN Gumba 46.89 276 *e*P **P** **19 02 18.6 +0.6**
comp=Z,1µm,0.7s
TDK Taldygorghan 46.93 300 *i*P **P** **19 02 17.2 -0.5**
comp=Z,695nm,1.0s
TDK *i*S **S** **19 09 05.6 +0.3**
TDK *e*SS **SS** **19 12 34.6 +2.4**
TDK LR LR 19 22 09.8
comp=Z,14µm,16.9s
UZB Uzynbulak 46.95 298 *i*P **P** **19 02 16.2 -1.7**
comp=Z,1µm,1.5s
UZB *i*S **S** **19 09 05.5 -0.3**
UZB LR LR 19 22 15.5
comp=Z,14µm,13.8s
OHAK Old Harbor 46.99 43 *e*P **P** **19 02 18.3 +0.4**
comp=Z,2µm,1.8s
OHAK LR LR
comp=Z,30µm,20.0s
BBKI Banjar Baru 47.06 217 P **P** **19 02 19.7 +0.8**
comp=Z,340nm,1.4s,comp=Z,9µm
KPKS Kokpek 47.10 298 *i*P **P** **19 02 17.8 -1.3**
comp=Z,2µm,1.5s
KPKS *i*S **S** **19 09 08.2 +0.3**
KPKS LR LR 19 22 19.7
comp=Z,20µm,14.2s
RSO Redoubt South 47.12 38 *e*P **P** **19 02 19.6 +0.5**
SURT Suratani 47.31 245 P **P** **19 02 24.2 +3.3**
comp=Z,76nm,1.3s,comp=Z,2µm
KDAK Kodiak Island 47.33 42 *i*P **P** **19 02 20.0 -0.5**
KDAK Kodiak Island 47.33 42 *e*P **P** **19 02 20.3 -0.2**
comp=Z,510nm,0.8s
KDAK LR LR
comp=Z,26µm,20.0s
PPLA Purkeypile 47.38 35 *e*P **P** **19 02 22.1 +1.1**
comp=Z,2µm,1.6s
PPLA LR LR
comp=Z,9µm,21.0s
SATY Saty 47.40 298 *i*P **P** **19 02 20.0 -1.5**
comp=Z,350nm,0.9s
SATY *i*S **S** **19 09 12.3 0.0**
SATY LR LR 19 22 23.4
comp=Z,8µm,12.8s
KKN Kakani 47.42 276 *e*P **P** **19 02 22.0 0.0**
comp=Z,1µm,1.0s
PKIN Phulchoki 47.42 275 *e*P **P** **19 02 21.6 -0.4**
comp=Z,258nm,0.7s
CAST Castle Rocks 47.43 34 *e*P **P** **19 02 22.6 +1.3**
comp=Z,836nm,1.3s
SPU Mount Spurr 47.45 37 *e*P **P** **19 02 22.6 +1.2**
KRAB Krabi 47.52 244 P **P** **19 02 24.3 +1.8**
comp=Z,453nm,0.8s,comp=Z,4µm
HOM Homer 47.71 39 *e*P **P** **19 02 24.2 +0.8**
comp=Z,632nm,1.0s
HOM LR LR
comp=Z,10µm,20.0s
GKN Gorkha 47.84 276 *e*P **P** **19 02 25.4 +0.3**
comp=Z,1µm,0.8s
JOHN Johnston Islan 47.87 101 *e*P **P** **19 02 25.9 +0.7**
comp=Z,850nm,1.0s
JOHN LR LR
comp=Z,41µm,22.0s
CNPM China Poot 47.92 39 *e*P **P** **19 02 25.6 +0.5**
comp=Z,252nm,1.1s
CNPM LR LR
comp=Z,15µm,21.0s
BPAW Bear Paw Mtn. 47.93 33 *e*P **P** **19 02 25.6 +0.5**
comp=Z,2µm,1.8s
BPAW LR LR
comp=Z,11µm,22.0s
KTH Kantishna Hill 47.95 34 *e*P **P** **19 02 26.6 +1.2**
comp=Z,4µm,2.0s
PBKI Pangkalan Bun 48.02 221 P P 19 02 32.3 +6.0
MLY Manley 48.05 32 *e*P **P** **19 02 27.0 +0.9**
comp=Z,508nm,1.1s
MLY LR LR
comp=Z,8µm,22.0s
SUA Susitna One 48.08 37 *e*P **P** **19 02 26.5 +0.1**
comp=Z,612nm,1.4s
SUA LR LR
comp=Z,12µm,22.0s
BRLK Bradley Lake 48.09 39 *e*P **P** **19 02 26.5 +0.1**
comp=Z,708nm,1.4s
BRLK LR LR
comp=Z,12µm,21.0s
TRF Thorofare Moun 48.24 34 *e*P **P** **19 02 28.4 +0.7**
comp=Z,487nm,1.2s
TRF LR LR
comp=Z,11µm,21.0s
MDOK Medeo 48.34 298 *i*P **P** **19 02 27.2 -1.5**
comp=Z,715nm,0.9s
MDOK *i*S **S** **19 09 25.4 -0.1**
MDOK LR LR 19 21 44.6
comp=Z,15µm,15.1s
COLD Coldfoot 48.34 29 *e*P **P** **19 02 29.8 +1.5**
comp=Z,116nm,1.0s
PKDT Phuket 48.36 244 P **P** **19 02 31.9 +2.9**
comp=Z,358nm,1.0s
AAA Alma-Ata 48.38 298 *i*P **P** **19 02 31.3 +2.4**
AAA *i*S **S** **19 09 24.8 -1.1**
AAA pmax pmax
comp=Z,5µm,7.3s
AAA smax smax
comp=E,26µm,10.2s
AAA MLR MLR
comp=Z,107µm,16.0s
AAA Alma-Ata 48.38 298 *i*P **P** **19 02 28.0 -0.9**
comp=Z,729nm,0.8s
AAA *i*S **S** **19 09 26.6 +0.7**

AAA LR LR 19 22 53.1
comp=Z,16µm,15.4s
KULM Kulim 48.55 239⇑P **P** **19 02 33.3 +2.9**
KULM Kulim 48.55 239 *e*P **P** **19 02 31.5 +1.0**
comp=Z,260nm,1.5s
KULM LR LR
comp=Z,14µm,19.0s
RC01 Rabbit Creek A 48.58 37 *e*P **P** **19 02 30.4 +0.3**
comp=Z,3µm,2.0s
RC01 LR LR
comp=Z,13µm,22.0s
BWN Browne 48.60 33 *e*P **P** **19 02 31.9 +1.6**
comp=Z,4µm,1.5s
BWN LR LR
comp=Z,8µm,21.0s
KUU Kurty 48.64 299 *i*P **P** **19 02 29.6 -1.4**
comp=Z,540nm,1.2s
KUU *i*S **S** **19 09 29.5 0.0**
KUU LR LR 19 23 27.2
comp=Z,16µm,15.1s
MMRI Maumere 48.68 205 P **P** **19 02 33.3 +1.9**
comp=Z,489nm,0.8s,comp=Z,10µm
MMRI Maumere 48.68 205 *e*P **P** **19 02 31.3 -0.1**
comp=Z,381nm,0.9s
KOLN Koldanda 48.77 277 *e*P **P** **19 02 32.6 +0.3**
comp=Z,345nm,0.6s
BOK Bokaro 48.78 271 *e*P **P** **19 02 31.9 -0.3**
BOK IAmb IAmb 19 02 35.9
comp=Z,2µm,1.4s
SEW Seward 48.78 39 *e*P **P** **19 02 32.6 +0.9**
comp=Z,1µm,1.5s
SEW LR LR
comp=Z,18µm,20.0s
MCK McKinley 48.84 34 *e*P **P** **19 02 32.9 +0.8**
MCK pmax pmax
comp=Z,1µm,1.4s
MCK McKinley 48.84 34 *e*P **P** **19 02 33.1 +1.0**
comp=Z,1µm,1.4s
MCK LR LR
comp=Z,13µm,20.0s
PMR Palmer 48.84 37 *e*P **P** **19 02 32.2 +0.1**
PMR pmax pmax
comp=Z,580nm,1.3s
PMR Palmer 48.84 37 *e*P **P** **19 02 32.7 +0.6**
comp=Z,578nm,1.4s
PMR LR LR
comp=Z,13µm,22.0s
IPM Ipoh 48.88 238⇓P **P** **19 02 35.7 +2.7**
IPM Ipoh 48.88 238 *e*P **P** **19 02 32.9 -0.1**
comp=Z,163nm,0.9s
RND Reindeer 48.89 34 *e*P **P** **19 02 32.4 -0.2**
RND Reindeer 48.89 34 *e*P **P** **19 02 33.1 +0.6**
comp=Z,1µm,1.5s
RND LR LR
comp=Z,12µm,21.0s
DGPR DIGLIPUR 48.99 254 *e*P **P** **19 02 34.6 +0.8**
DGPR IAmb IAmb 19 02 41.8
comp=Z,349nm,0.6s
MYKOM Kota Tinggi 49.00 233⇑P **P** **19 02 36.9 +3.0**
MYKOM Kota Tinggi 49.00 233 *e*P **P** **19 02 34.2 +0.3**
comp=Z,191nm,1.5s
MYKOM LR LR
comp=Z,8µm,18.0s
SOEI Soe 49.08 202 P **P** **19 02 36.0 +1.4**
comp=Z,946nm,1.2s,comp=Z,13µmcomp=Z,26µm
SOEI Soe 49.08 202 *e*P **P** **19 02 34.4 -0.2**
comp=Z,848nm,0.9s
SOEI *e*S **S** **19 09 40.4 +4.1**
SOEI LR LR
comp=Z,19µm,22.0s
PYUN Piuthan 49.11 277 *e*P **P** **19 02 35.4 +0.5**
comp=Z,3µm,1.1s
MDM Murphy Dome 49.12 32 *e*P **P** **19 02 34.6 +0.4**
comp=Z,976nm,1.2s
MDM LR LR
comp=Z,14µm,22.0s
KGM Kluang 49.17 234⇓P **P** **19 02 37.8 +2.5**
WRH Wood River Hil 49.19 33 *e*P **P** **19 02 34.9 +0.2**
WRH *e*PcP **PcP** **19 03 58.4 +1.1**
WRH LR LR
comp=Z,8µm,22.0s
SML Sawmill 49.21 36 *e*P **P** **19 02 35.2 +0.2**
SML pmax pmax
comp=Z,2µm,1.7s
SML MLR MLR
comp=Z,13µm,21.0s
SML Sawmill 49.21 36 *e*P **P** **19 02 35.2 +0.2**
comp=Z,2µm,1.7s
SML LR LR
comp=Z,13µm,21.0s
TPRI Tanjung Pinang 49.24 232 P **P** **19 02 39.9 +4.1**
COLA College 49.28 32 *i*P **P** **19 02 35.0 -0.4**
COLA pmax pmax
comp=Z,238nm,1.0s
COLA College 49.28 32 *e*P **P** **19 02 36.3 +0.9**
comp=Z,258nm,0.9s
COLA LR LR
comp=Z,8µm,21.0s
CCB Clear Creek Bu 49.31 32 *e*P **P** **19 02 36.1 +0.5**
comp=Z,90nm,0.9s
CCB LR LR
comp=Z,11µm,22.0s
BMNS Besmoynak 49.32 299 *i*P **P** **19 02 34.8 -1.5**
comp=Z,3µm,0.8s
BMNS *i*S **S** **19 09 39.5 +0.1**
BMNS LR LR 19 23 28.9
comp=Z,14µm,16.5s
FRIM Kepong 49.38 237⇑P **P** **19 02 39.8 +3.0**
TKM2 Tokmak 2 49.43 298 P **P** **19 02 37.7 +0.5**
TKM2 pmax pmax
comp=Z,289nm,0.8s
HNR Honiara 49.44 155 P **P** **19 02 36.0 -1.1**
comp=Z,29nm,0.4s,baz=14,slow=8.6,SNR=8.3
HNR LR LR 19 21 37.7
comp=Z,23µm,21.9s,baz=323,slow=34
HNR Honiara 49.44 155 P **P** **19 02 37.0 -0.1**
HNR Honiara 49.44 155 *e*P **P** **19 02 36.0 -1.1**
HNR MLR MLR
comp=Z,23µm,21.0s
HNR Honiara 49.44 155 *e*P **P** **19 02 36.0 -1.1**
HNR LR LR
comp=Z,23µm,21.0s
DHY Denali Highway 49.57 35 *e*P **P** **19 02 38.2 +0.3**
comp=Z,2µm,1.9s
DHY LR LR
comp=Z,13µm,22.0s
SCM Sheep Creek Mo 49.68 36 *e*P **P** **19 02 38.9 +0.2**
SCM pmax pmax
comp=Z,1µm,1.6s
SCM MLR MLR
comp=Z,15µm,22.0s
SCM Sheep Creek Mo 49.68 36 *e*P **P** **19 02 38.9 +0.2**
comp=Z,1µm,1.6s
SCM LR LR
comp=Z,15µm,22.0s
HDA Harding Lake 49.69 33 *e*P **P** **19 02 38.4 -0.2**
comp=Z,501nm,1.2s
HDA LR LR
comp=Z,10µm,20.0s
IL1 Eielson Array 49.70 32 *e*P **P** **19 02 38.7 +0.1**
ILAR Eielson Array 49.70 32 P **P** **19 02 38.5 -0.2**
comp=Z,164nm,0.8s,baz=268,slow=6.1,SNR=372
ILAR S **S** **19 09 43.1 -0.6**
comp=Z,1.2nm,1.1s,baz=281,slow=15,SNR=2.6
ILAR LR LR 19 25 10.3
comp=Z,6µm,21.2s,baz=280,slow=38
ILAR PKPPKP P'P'df 19 33 10.5 -28
comp=Z,0.7nm,0.8s,baz=130,slow=1.4,SNR=3.6
ILAR P4KPbc 19 40 11.6
comp=Z,0.9nm,0.6s,baz=271,slow=4.6,SNR=4.9
ILB Eielson Array 49.70 32 *e*P **P** **19 02 38.7 +0.1**
GLI Glacier Island 49.88 37 *e*P **P** **19 02 40.4 +0.3**
comp=Z,2µm,1.9s
GLI LR LR
comp=Z,15µm,20.0s
BTLS Baital 49.92 301 *i*P **P** **19 02 39.4 -1.2**
comp=Z,335nm,1.0s
BTLS *i*S **S** **19 09 47.5 +0.1**
BTLS LR LR 19 23 45.5
comp=Z,11µm,14.9s
PBA Port Blair 50.07 253 *e*P P 19 02 40.7 -1.4
FRU Bishkek 50.14 299⇑ *e*P **P** **19 02 42.0 -0.4**
FRU *i* 19 02 49.0
FRU *e* 19 04 34.0
FRU *i*S **S** **19 09 46.0 -4.6**
FRU pmax pmax
comp=Z,1µm,2.5s

FRU smax smax
comp=E,21µm,15.0s
FRU smax smax
comp=E,2µm,3.2s
FRU MLR MLR
comp=E,68µm,17.0s
KSH Kashi 50.19 294 P **P** **19 02 47.5 +4.6**
KSH *e*sP sP 19 03 04.5 +2.8
KSH *e*PP **PP** **19 04 44.5 +6.2**
KSH *e*ScP **ScP** **19 07 56.5 +3.1**
KSH PcS **PcS** **19 08 01.0 +2.2**
KSH S **S** **19 09 55.8 +4.3**
KSH ScS **ScS** **19 12 31.3 +1.3**
KSH pmax pmax
comp=E,69nm,0.8s
KSH LR LR
comp=E,45µm,17.1s
KSH LR LR
comp=E,27µm,15.2s
KSH LR LR
comp=E,56µm,17.3s
FID Port Fidalgo 50.19 38 *e*P **P** **19 02 42.3 -0.1**
comp=E,2µm,1.8s
FID LR LR
comp=Z,13µm,20.0s
AAK Ala-Archa 50.28 298 P **P** **19 02 44.2 +0.6**
comp=Z,21nm,0.4s,baz=76,slow=7.1,SNR=43
AAK S **S** **19 09 51.9 -1.0**
comp=Z,4.9nm,0.8s,baz=180,slow=5.1,SNR=2.3
AAK LR LR 19 25 29.0
comp=Z,101µm,19.4s,baz=58,slow=38
AAK Ala-Archa 50.28 298*c i*P **P** **19 02 44.7 +1.1**
AAK pmax pmax
comp=Z,260nm,1.0s
AAK MLR MLR
comp=Z,218µm,19.0s
AAK Ala-Archa 50.28 298 P **P** **19 02 44.9 +1.2**
SNR=92
AAK Ala-Archa 50.28 298 P **P** **19 02 44.9 +1.2**
SNR=92
AAK P **P** **19 02 44.9 +1.2**
SNR=92
AAK Ala-Archa 50.28 298 P **P** **19 02 44.9 +1.2**
SNR=92
AAK Ala-Archa 50.28 298 *e*P **P** **19 02 44.0 +0.4**
comp=Z,133nm,0.9s
AAK *e*S **S** **19 09 51.9 -1.0**
FYU Fort Yukon 50.30 30 *e*P **P** **19 02 44.7 +1.5**
comp=Z,4µm,1.7s
FYU LR LR
comp=Z,11µm,19.0s
KLU Klutina 50.38 37 *e*P **P** **19 02 44.4 +0.4**
comp=Z,292nm,1.0s
KLU LR LR
comp=Z,14µm,21.0s
MTN Manton Dam 50.42 193 *e*P **P** **19 02 43.8 -0.8**
comp=Z,306nm,1.0s
MTN LR LR
comp=Z,7µm,22.0s
BVA0 Borovoye Array 50.42 312 P **P** **19 02 44.4 +0.1**
BVA0 pmax pmax
comp=Z,86nm,1.0s
BVAR Borovoye Array 50.42 312 P **P** **19 02 44.3 0.0**
comp=Z,76nm,0.6s,baz=78,slow=8.0,SNR=173
BVAR S **S** **19 09 52.7 -1.4**
comp=Z,1.9nm,0.8s,baz=50,slow=19,SNR=1.7
BVAR PKPPKP P'P'df 19 33 19.0 -18
comp=Z,1.4nm,0.9s,baz=230,slow=3.7,SNR=5.0
BVAR P4KPbc 19 40 15.1
comp=Z,1.2nm,0.6s,baz=114,slow=3.7,SNR=7.7
MID Middleton Isla 50.42 39 *e*P **P** **19 02 45.1 +1.0**
MID pmax pmax
comp=Z,2µm,1.7s
MID MLR MLR
comp=Z,14µm,22.0s
MID Middleton Isla 50.42 39 *e*P **P** **19 02 45.1 +1.0**
comp=Z,2µm,1.7s
MID LR LR
comp=Z,14µm,22.0s
PAX Paxson 50.45 35 *e*P **P** **19 02 44.4 0.0**
PAX pmax pmax
comp=Z,910nm,1.8s
PAX Paxson 50.45 35 *e*P **P** **19 02 44.9 +0.5**
comp=Z,912nm,1.9s
PAX LR LR
comp=Z,10µm,21.0s
BRVK Borovoye 50.48 312*c i*P **P** **19 02 45.3 +0.6**
BRVK pmax pmax
comp=Z,197nm,0.9s
BRVK MLR MLR
comp=Z,98µm,18.0s
BRVK Borovoye 50.48 312 *e*P **P** **19 02 44.6 -0.1**
comp=Z,236nm,1.1s
BRVK LR LR
comp=Z,45µm,19.0s
DIV Divide 50.49 37 *e*P **P** **19 02 45.5 +0.7**
comp=Z,2µm,1.7s
DIV LR LR
comp=Z,16µm,20.0s
PLAI Plampang 50.52 210 P **P** **19 02 45.2 -0.2**
comp=Z,318nm,0.8s,comp=Z,7µmcomp=Z,21µm
EYAK Cordova Ski Ar 50.57 38 *e*P **P** **19 02 46.2 +0.9**
comp=Z,867nm,1.4s
EYAK LR LR
comp=Z,26µm,22.0s
BWNR Bhubaneshwar 50.60 267 *e*P **P** **19 02 47.5 +1.4**
BWNR IAmb IAmb 19 02 53.3
comp=Z,502nm,1.8s
PPBI Pangkal Pinang 50.68 228 P **P** **19 02 49.2 +2.6**
comp=Z,175nm,0.9s,comp=Z,4µm
PTH Pithoragarh 50.68 280 *e*P **P** **19 02 49.8 +3.0**
PTH *e*S **S** **19 10 04.3 +5.6**
COEN Coen 50.69 177 *e*P **P** **19 02 45.9 -0.7**
comp=Z,779nm,1.1s
TWSI Taliwang, Sumb 50.81 212 P **P** **19 02 47.9 +0.3**
comp=Z,194nm,0.8s,comp=Z,6µm
SRBI Singaraja 50.95 214 P P 19 02 53.5 +4.9
DOT Dot Lake 51.01 34 *e*P **P** **19 02 48.5 -0.1**
comp=Z,969nm,1.1s
DOT LR LR
comp=Z,32µm,20.0s
BMRM Bremner River 51.08 37 *e*P **P** **19 02 49.8 +0.6**
comp=Z,2µm,1.8s
BMRM LR LR
comp=Z,22µm,22.0s
RAGM Ragged Mountai 51.12 38 *e*P **P** **19 02 50.3 +0.8**
comp=Z,2µm,1.9s
RAGM LR LR
comp=Z,20µm,21.0s
LHMI Lhok Sumawe 51.19 243 P **P** **19 02 54.2 +3.7**
comp=Z,416nm,1.4s,comp=Z,8µm
LHMI Lhok Sumawe 51.19 243 *e*P **P** **19 02 50.6 +0.1**
comp=Z,406nm,1.1s
LHMI LR LR
comp=Z,22µm,22.0s
MENT Mentasta 51.24 35 *e*P **P** **19 02 51.2 +0.8**
comp=Z,1µm,1.5s
MENT LR LR
comp=Z,11µm,19.0s
PSI Prapat 51.53 239 *e*P **P** **19 02 52.7 -0.5**
PSI pmax pmax
comp=Z,130nm,0.9s
PSI Prapat 51.53 239 *e*P **P** **19 02 53.4 +0.2**
comp=Z,133nm,0.9s
PSI LR LR
comp=Z,9µm,19.0s
MNAS Manas 51.73 299 P **P** **19 02 54.4 -0.1**
MNAS pmax pmax
comp=Z,230nm,0.9s
JAGI Jajag, Banyuwa 51.77 215 *e*P **P** **19 02 55.0 +0.2**
comp=Z,204nm,0.9s
JAGI LR LR
comp=Z,7µm,22.0s
JMBI JAMBI 51.77 231 P P 19 03 01.9 +7.1
KCSI Kotacane, Aceh 51.81 241 P **P** **19 02 55.9 +0.7**
comp=Z,125nm,0.9s,comp=Z,3µm
CRQM Cirque 51.82 37 *e*P **P** **19 02 55.6 +0.8**
comp=Z,3µm,1.9s
CRQM LR LR
comp=Z,15µm,22.0s
GMJI Gumukmas 51.92 216 P P 19 03 01.9 +6.0
BKNI Bangkinang 51.93 235 P **P** **19 02 57.9 +1.9**
comp=Z,414nm,1.0s,comp=Z,6µm
BKNI Bangkinang 51.93 235 *e*P **P** **19 02 56.5 +0.4**
comp=Z,604nm,1.0s
BKNI LR LR
comp=Z,8µm,21.0s

DDI Dehra Dun 52.05 282 *e*P **P** **19 02 57.3 +0.4**
DDI IAmb IAmb 19 03 08.8
PMBI Palembang 52.10 229 P P 19 03 03.8 +6.5
EGAK Eagle 52.14 32 *e*P **P** **19 02 57.9 +0.9**
EGAK LR LR
comp=Z,11µm,20.0s
BALM Baldy 52.16 37 *e*P **P** **19 02 58.0 +0.7**
BALM pmax pmax
comp=Z,360nm,1.1s
BALM Baldy 52.16 37 *e*P **P** **19 02 58.2 +0.9**
comp=Z,360nm,1.1s
BALM LR LR
comp=Z,6µm,20.0s
CMBY CAMPBELL BAY 52.17 247 *e*P **P** **19 02 56.1 -1.7**
SDNR Sundarnagar 52.41 284 *e*P **P** **19 03 00.6 +1.1**
SDNR *e*S **S** **19 10 24.0 +1.9**
SMLA Simla 52.41 284 *e*P **P** **19 02 59.6 +0.1**
TPTI 52.41 241 P **P** **19 03 01.4 +1.8**
comp=Z,50nm,0.8s,comp=Z,1µm
MNSI Mandailing Nat 52.55 237 P **P** **19 03 00.9 +0.3**
comp=Z,126nm,1.1s,comp=Z,4µm
SDSI Sungai Dareh 52.63 233 P **P** **19 03 02.7 +1.5**
comp=Z,290nm,1.4s,comp=Z,30µm
JWA Jwalamukhi 52.75 285 *e*P **P** **19 03 01.0 -0.9**
BHK Bhakra 52.87 284 *e*P **P** **19 03 04.0 +1.1**
KEKH Kekaha 52.89 89 *e*P **P** **19 03 03.4 +0.3**
comp=Z,704nm,1.7s
KEKH LR LR
comp=Z,10µm,22.0s
CHLP Challavanipeta 52.94 266 *e*P **P** **19 03 05.4 +1.9**
CHLP IAmb IAmb 19 03 10.3
comp=Z,156nm,0.8s
CHLP *e*S **S** **19 10 28.6 -1.0**
CHLP IVMs_BB IVMs_BB 19 25 34.6
comp=Z,10µm,25.1s
DAWY Dawson 53.01 33 *e*P **P** **19 03 03.9 +0.4**
comp=Z,1µm,1.8s
DAWY LR LR
comp=Z,17µm,21.0s
UGM Wanagama 53.03 219 P **P** **19 03 06.9 +2.7**
comp=Z,1µm,1.1s,comp=Z,11µm
UGM Wanagama 53.03 219 *e*P **P** **19 03 02.8 -1.4**
comp=Z,907nm,1.0s
UGM LR LR
comp=Z,11µm,22.0s
PDSI Padang 53.24 234 P **P** **19 03 08.9 +3.1**
comp=Z,45nm,0.8s,comp=Z,9µm
PCA Pinnacle 53.34 38 *e*P **P** **19 03 06.8 +0.8**
comp=Z,705nm,1.5s
PCA LR LR
comp=Z,24µm,22.0s
NDI New Delhi 53.42 281 *e*P P 19 03 00.0 -7.0
NDI *e*S **S** **19 10 28.0 -7.9**
GSI Gunungsitoli 53.53 239 P **P** **19 03 08.7 +0.8**
comp=Z,1µm,1.2s,comp=Z,13µm
GSI Gunungsitoli 53.53 239 *e*P **P** **19 03 08.2 +0.3**
comp=Z,898nm,1.0s
GSI LR LR
comp=Z,16µm,20.0s
KLSI 53.53 227 P **P** **19 03 09.0 +1.1**
comp=Z,277nm,0.7s,comp=Z,6µm
LHSI Lahat 53.57 229 P **P** **19 03 09.5 +1.4**
comp=Z,389nm,0.9s,comp=Z,8µm
IUG Iuzhnay 53.58 299 *i* P **P** **19 03 06.7 -1.4**
comp=Z,748nm,1.0s
IUG *i* S **S** **19 10 38.2 +0.3**
IUG LR LR 19 26 07.5
comp=Z,8µm,14.3s
YKU2 Yakutat 53.76 38 *e*P **P** **19 03 09.8 +0.9**
comp=Z,931nm,1.3s
YKU2 LR LR
comp=Z,11µm,21.0s
BLSI Bandar Lampung 53.78 226 P **P** **19 03 10.5 +0.8**
comp=Z,405nm,0.8s,comp=Z,6µm
SBJI Serang 53.88 225 P P 19 03 17.1 +6.7
DBJI Dramaga 53.89 224 P **P** **19 03 13.3 +2.8**
comp=Z,205nm,1.3s,comp=Z,6µm
VIS Vishakhapatnam 53.95 266 *e*P **P** **19 03 11.8 +0.9**
KSI Kapahiang 54.00 230 P **P** **19 03 14.7 +3.4**
comp=Z,240nm,0.8s,comp=Z,5µm
CISI Cisompet, Garu 54.14 222 P **P** **19 03 14.5 +2.2**
comp=Z,321nm,1.0s,comp=Z,8µm
CISI Cisompet, Garu 54.14 222 *e*P **P** **19 03 11.6 -0.7**
comp=Z,250nm,0.9s
CISI LR LR
comp=Z,10µm,21.0s
LWLI Liwa 54.19 228 P **P** **19 03 14.3 +1.5**
comp=Z,566nm,0.7s,comp=Z,5µm
CNJI Cibinong 54.31 223 P P 19 03 23.6 +10
MNAI Manna 54.33 229 *e*P **P** **19 03 13.0 -0.7**
comp=Z,1µm,1.6s
KASI Kota Agung 54.34 227 P **P** **19 03 14.8 +1.1**
comp=Z,209nm,1.3s,comp=Z,4µm
SKJI Sukabumi 54.37 224 P **P** **19 03 14.3 +0.3**
comp=Z,342nm,1.1s,comp=Z,4µmcomp=Z,13µm
OPA Opana 54.40 88 *e*P **P** **19 03 14.9 +0.7**
OPA pmax pmax
comp=Z,443nm,1.0s
OPA Opana 54.40 88 *e*P **P** **19 03 14.9 +0.7**
comp=Z,443nm,1.0s
HYT Haines Junctio 54.51 37 *e*P **P** **19 03 15.8 +1.1**
comp=Z,4µm,1.9s
HYT LR LR
comp=Z,21µm,22.0s
KIP Kipapa 54.53 89*c i*P **P** **19 03 13.5 -1.6**
KIP pmax pmax
comp=Z,837nm,0.9s
KIP MLR MLR
comp=Z,47µm,18.0s
KIP Kipapa 54.53 89 *e*P **P** **19 03 16.2 +1.1**
comp=Z,1µm,2.0s
KIP LR LR
comp=Z,9µm,21.0s
CGJI Cibinong 54.53 225 P **P** **19 03 18.2 +3.1**
comp=Z,152nm,0.6s,comp=Z,3µm
INK Inuvik 54.57 27 P **P** **19 03 14.7 0.0**
comp=Z,169nm,0.8s,baz=283,slow=8.1,SNR=180
INK S **S** **19 10 50.2 -0.1**
comp=Z,4.3nm,0.9s,baz=38,slow=4.0,SNR=3.4
INK LR LR 19 29 09.1
comp=Z,14µm,20.3s,baz=268,slow=39
INK Inuvik 54.57 27 *e*P **P** **19 03 15.2 +0.5**
comp=Z,470nm,1.2s
INK S **S** **19 10 50.2 -0.1**
DHAK Deception Hill 54.58 39 *e*P **P** **19 03 16.1 +1.1**
comp=Z,2µm,1.8s
DHAK LR LR
comp=Z,11µm,22.0s
HON Honolulu 54.59 89 *e*P **P** **19 03 16.0 +0.4**
HON MLR MLR
comp=Z,10µm,21.0s
HON Honolulu 54.59 89 *e*P **P** **19 03 16.0 +0.4**
HON LR LR
comp=Z,10µm,21.0s
PPSI Pulau Pagai 54.94 233 P **P** **19 03 22.3 +4.2**
SVE Sverdlovsk 55.02 319*d i*P **P** **19 03 19.1 +0.9**
SVE *e*PPP PPP 19 06 32.0
SVE *e*S **S** **19 10 56.9 +0.2**
SVE *e* 19 12 59.7
SVE *e*SS **SS** **19 14 35.7 -4.6**
SVE pmax pmax
comp=Z,481nm,1.6s
SVE pmax pmax
comp=Z,2µm,15.8s
SVE MLR MLR
comp=Z,36µm,16.0s
SVE MLR MLR
comp=E,32µm,16.0s
NGP Nagpur 55.57 272 *e*P **P** **19 03 21.8 -0.9**
NGP IAmb IAmb 19 03 25.1
PVM Polavaram 55.57 266 *e*P **P** **19 03 23.3 +0.7**
PVM IAmb IAmb 19 03 28.6
comp=Z,140nm,1.0s
PVM *e*S **S** **19 11 07.0 +2.0**
PVM IVMs_BB IVMs_BB 19 26 50.7
comp=Z,8µm,26.7s
WHY Whitehorse 55.80 36 *e*P **P** **19 03 24.6 +0.8**
comp=Z,1µm,1.6s
WHY LR LR
comp=Z,12µm,22.0s
BHPL Bhopal 55.81 275 *e*P **P** **19 03 23.8 -0.6**
SKAG Skagway 55.91 38 *e*P **P** **19 03 25.5 +1.0**
comp=Z,2µm,1.9s
SKAG LR LR
comp=Z,9µm,20.0s
ARU Arti 56.23 319 P **P** **19 03 26.8 -0.1**

comp=Z,117nm,0.6s,baz=80,slow=5.2,SNR=195
ARU S **S** **19 11 12.6 -0.3**
comp=Z,10.0nm,0.8s,baz=131,slow=21,SNR=6.7
ARU PKPPKP P'P'df 19 33 14.3 -15
comp=Z,0.6nm,0.2s,baz=241,slow=4.7,SNR=2.6
ARU Arti 56.23 319*c i*P **P** **19 03 26.0 -0.9**
ARU *PP **pP** **19 03 41.9 +1.6**
ARU 19 04 23.2
ARU 19 05 29.7
ARU *e*S **S** **19 11 12.5 -0.3**
ARU *SS **sS** **19 11 35.9 +0.7**
ARU 19 13 07.6
ARU SS **SS** **19 14 54.7 -4.7**
ARU SSS SSS 19 17 06.7
ARU pmax pmax
comp=Z,689nm,1.7s
ARU MLR MLR
comp=Z,27µm,18.0s
ARU Arti 56.23 319 *e*P **P** **19 03 26.4 -0.4**
comp=Z,2µm,2.0s
ARU S **S** **19 11 12.6 -0.3**
ARU P'P' 19 33 14.3
ARU LR LR
comp=Z,28µm,21.0s
HLK Haleakala 56.29 88 *e*P **P** **19 03 28.5 +0.4**
comp=Z,382nm,1.1s
RPR Rampur 56.57 269 *e*P **P** **19 03 30.2 +0.4**
RPR IAmb IAmb 19 03 39.6
comp=Z,169nm,0.8s
RPR *e*S **S** **19 11 19.1 +0.9**
RPR IVMs_BB IVMs_BB 19 30 18.2
comp=Z,6µm,22.2s
FITZ Fitzroy Crossi 56.67 198 S **S** **19 11 17.4 -1.9**
comp=Z,5.9nm,1.0s,baz=322,slow=19,SNR=1.8
FITZ Fitzroy Crossi 56.67 198 *e*P **P** **19 03 30.4 0.0**
comp=Z,439nm,1.5s
FITZ S **S** **19 11 17.4 -1.9**
WB0 Warramunga Arr 56.78 188 PFAKE 19 03 40.0 +8.9
WB0 LR LR
comp=Z,7µm,22.0s
WB9 Warramunga Arr 56.80 188 PFAKE 19 03 40.0 +8.7
WB9 LR LR
comp=Z,18µm,22.0s
WB8 Warramunga Arr 56.82 188 PFAKE 19 03 40.0 +8.6
WB8 LR LR
comp=Z,9µm,22.0s
WB6 Warramunga Arr 56.87 188 PFAKE 19 03 40.0 +8.3
WB6 LR LR
comp=Z,10µm,22.0s
WB5 Warramunga Arr 56.89 188 PFAKE 19 03 40.0 +8.1
WB5 LR LR
comp=Z,10µm,22.0s
WB4 Warramunga Arr 56.91 188 PFAKE 19 03 40.0 +7.9
WB4 LR LR
comp=Z,10µm,22.0s
WB3 Warramunga Arr 56.94 188 PFAKE 19 03 40.0 +7.8
WB3 LR LR
comp=Z,10µm,22.0s
WC2 Warramunga Arr 56.94 188 PFAKE 19 03 40.0 +7.8
WC2 LR LR
comp=Z,12µm,22.0s
WC1 Warramunga Arr 56.94 188 PFAKE 19 03 40.0 +7.8
WC1 LR LR
comp=Z,8µm,22.0s
WRAB Tennant Creek 56.95 188*c i*P **P** **19 03 31.0 -1.3**
WRAB pmax pmax
comp=Z,462nm,0.9s
WRAB MLR MLR
comp=Z,17µm,20.0s
WRAB Tennant Creek 56.95 188 *e*P **P** **19 03 30.6 -1.7**
comp=Z,553nm,1.3s
WRAB LR LR
comp=Z,9µm,21.0s
WR0 Warramunga Arr 56.95 187 PFAKE 19 03 40.0 +7.7
WR0 LR LR
comp=Z,10µm,22.0s
WR8 Warramunga Arr 56.95 187 PFAKE 19 03 40.0 +7.7
WR8 LR LR
comp=Z,10µm,22.0s
WR9 Warramunga Arr 56.95 187 PFAKE 19 03 40.0 +7.7
WR9 LR LR
comp=Z,10µm,22.0s
CTA Charters Tower 56.95 174 S **S** **19 11 21.2 -1.8**
comp=Z,4.2nm,0.9s,baz=180,slow=20,SNR=2.0
CTAO Charters Tower 56.95 174 *e*P **P** **19 03 31.0 -1.3**
CTAO pmax pmax
comp=Z,202nm,1.2s
CTAO MLR MLR
comp=Z,12µm,22.0s
CTAO Charters Tower 56.95 174 *e*P **P** **19 03 31.0 -1.3**
comp=Z,202nm,1.2s
CTAO LR LR
comp=Z,12µm,22.0s
WR7 Warramunga Arr 56.95 187 PFAKE 19 03 40.0 +7.7
WR7 LR LR
comp=Z,10µm,22.0s
WB2 Warramunga Arr 56.95 188 *e*P **P** **19 03 30.0 -2.3**
WB2 LR LR
comp=Z,10µm,21.0s
WR6 Warramunga Arr 56.95 187 PFAKE 19 03 40.0 +7.7
WR6 LR LR
comp=Z,10µm,22.0s
WR1 Warramunga Arr 56.96 188 *e*P **P** **19 03 31.1 -1.3**
comp=Z,2µm,1.9s
WR1 *e*S **S** **19 11 18.2 -4.8**
WR1 *e* 19 33 11.9
WR1 *e* 19 40 43.6
WR4 Warramunga Arr 56.96 187 PFAKE 19 03 40.0 +7.6
WR4 LR LR
comp=Z,10µm,22.0s
WR5 Warramunga Arr 56.96 187 PFAKE 19 03 40.0 +7.7
WR5 LR LR
comp=Z,10µm,22.0s
WRA Warramunga Arr 56.96 188 P **P** **19 03 31.1 -1.3**
comp=Z,203nm,0.8s,baz=4.6,slow=7.3,SNR=316
WRA S **S** **19 11 18.2 -4.8**
comp=Z,4.1nm,1.1s,baz=4.9,slow=12,SNR=4.8
WRA LR LR 19 25 21.8
comp=Z,7µm,20.4s,baz=350,slow=33
WRA PKPPKP **P'P'df** **19 33 11.9 -5.8**
comp=Z,1.4nm,0.9s,baz=163,slow=2.3,SNR=4.5
WRA P4KPbc 19 40 43.6
comp=Z,1.9nm,1.1s,baz=3.7,slow=4.6,SNR=5.6
WR3 Warramunga Arr 56.96 188 PFAKE 19 03 40.0 +7.6
WR3 LR LR
comp=Z,11µm,22.0s
WR2 Warramunga Arr 56.96 188 PFAKE 19 03 40.0 +7.6
WR2 LR LR
comp=Z,10µm,22.0s
WC3 Warramunga Arr 56.97 188 *e*P **P** **19 03 31.2 -1.2**
comp=Z,634nm,1.3s
WC3 LR LR
comp=Z,11µm,22.0s
WC4 Warramunga Arr 56.98 188 PFAKE 19 03 40.0 +7.5
WC4 LR LR
comp=Z,11µm,22.0s
KKH Kailua Kona 57.04 89 *e*P **P** **19 03 35.8 +2.7**
KKH Kailua Kona 57.04 89 *e*P **P** **19 03 33.0 -0.1**
HPAH Hawaii Prepara 57.10 89 *e*P **P** **19 03 34.6 +1.0**
comp=Z,148nm,0.9s
KBL Kabul 57.19 291 *e*P **P** **19 03 34.0 -0.3**
KBL pmax pmax
comp=Z,192nm,0.9s
KBL MLR MLR
comp=Z,23µm,21.0s
KBL Kabul 57.19 291 *e*P **P** **19 03 34.0 -0.3**
comp=Z,192nm,0.9s
KBL LR LR
comp=Z,23µm,21.0s
SRSP Sriramsagar 57.29 270 *e*P **P** **19 03 35.5 +0.6**
SRSP IAmb IAmb 19 03 45.3
comp=Z,265nm,0.8s
SRSP *e*S **S** **19 11 28.4 +0.5**
SRSP IVMs_BB IVMs_BB 19 30 42.3
comp=Z,6µm,21.8s
POHA Pohakuloa 57.38 89 *e*P **P** **19 03 36.2 +0.4**
comp=Z,3µm,1.9s
MLOA Mauna Loa Obse 57.46 89 *e*P **P** **19 03 37.5 +0.9**
comp=Z,3µm,2.0s
FUNA Funafuti 57.65 134 *e*P **P** **19 03 38.5 +1.1**
comp=Z,1µm,1.8s
ADKI Addanki 57.66 266 *e*P **P** **19 03 38.8 +1.3**
ADKI IAmb IAmb 19 03 41.0
comp=Z,452nm,2.1s
ADKI *e*S **S** **19 11 33.5 +0.8**
ADKI IVMs_BB IVMs_BB 19 27 19.9

comp=Z,9µm,30.7s
XMIS Christmas Isla 57.74 222 *e*P P 19 03 38.3 +0.3
comp=Z,194nm,1.0s
XMIS LR LR
comp=Z,4µm,22.0s
UWE Uwekahuna 57.75 89 *e*P P 19 03 39.5 +1.2
comp=Z,2µm,1.9s
UWE LR LR
comp=Z,16µm,21.0s
AB31 Akbulak array 57.78 310 *i* P P 19 03 37.4 -0.5
AB31 pmax pmax
comp=Z,169nm,0.9s
ABKAR Akbulak array 57.78 310 *e*P P 19 03 37.2 -0.7
comp=Z,1µm,0.6s
NJS Nagarjunasagar 57.80 267 *e*P P 19 03 39.1 +0.6
NJS IAmb IAmb 19 03 54.3
comp=Z,108nm,1.1s
NJS *e*S S 19 11 33.8 -0.7
NJS IVMs_BB IVMs_BB 19 28 24.0
comp=Z,7µm,22.9s
HYB Hyderabad 57.93 268 *i* P P 19 03 41.0 +1.5
comp=Z,140nm,1.0s
HYB *e*pP pP 19 03 49.0 -3.9
HYB *e*sP sP 19 03 53.5 -4.9
HYB *e*PcP PcP 19 04 30.0 -1.3
HYB *e* 19 06 01.0
HYB *e*S S 19 11 34.0 -2.3
HYB *e*SS SS 19 15 28.0 +0.3
HYB LR LR
comp=Z,31nm,24.0s
HYB Hyderabad 57.93 268 *e*P P 19 03 39.0 -0.5
HYB IAmb IAmb 19 03 42.2
comp=Z,139nm,0.4s
HYBB Hyderabad (bro 57.93 268 *e*P P 19 03 40.4 +0.9
HYBB IAmb IAmb 19 03 50.1
comp=Z,182nm,0.8s
HYBB *e*S S 19 11 37.2 +0.9
HYBB IVMs_BB IVMs_BB 19 28 33.9
comp=Z,6µm,26.3s
CRAG Craig 58.29 42 *e*P P 19 03 43.0 +1.6
comp=Z,452nm,1.4s
CRAG LR LR
comp=Z,13µm,22.0s
WRAK Wrangell Islan 58.37 41 *e*P P 19 03 43.2 +1.2
comp=Z,1µm,1.8s
SRLM Srisailam 58.38 267 *e*P P 19 03 42.9 +0.3
SRLM IAmb IAmb 19 03 50.4
comp=Z,65nm,0.9s
SRLM *e*S S 19 11 41.0 -1.2
SRLM IVMs_BB IVMs_BB 19 28 11.7
comp=Z,7µm,26.9s
AKTO Aktyubinsk 58.52 312 P P 19 03 43.0 0.0
comp=Z,46nm,0.6s,baz=68,slow=6.2,SNR=96
AKTO S S 19 11 41.0 -2.1
comp=Z,3.7nm,0.9s,baz=267,slow=16,SNR=4.7
AKTO P4KPbc 19 40 51.5
comp=Z,1.7nm,0.7s,baz=85,slow=5.2,SNR=8.3
AKTO Aktyubinsk 58.52 312 P P 19 03 43.1 0.0
AKTO pmax pmax
comp=Z,242nm,1.3s
RCLA Racherla 58.69 266 *e*P P 19 03 45.8 +1.0
RCLA IAmb IAmb 19 03 52.0
comp=Z,102nm,0.9s
RCLA *e*S S 19 11 45.3 -0.8
RCLA IVMs_BB IVMs_BB 19 26 48.5
comp=Z,8µm,31.7s
MDRS Chennai 59.01 263 *e*P P 19 03 47.1 +0.1
MDRS IAmb IAmb 19 03 51.3
comp=Z,215nm,1.4s
MDRS *e*x x 19 34 47.8
SKHT Srikalahasti 59.05 264 *e*P P 19 03 48.6 +1.4
SKHT IAmb IAmb 19 03 53.6
comp=Z,112nm,0.7s
SKHT *e*S S 19 11 53.4 +2.6
SKHT IVMs_BB IVMs_BB 19 25 09.5
comp=Z,4µm,39.7s
KLRI Killari 59.15 270 *e*P P 19 03 47.4 -0.6
KLRI IAmb IAmb 19 03 58.4
comp=Z,397nm,0.7s
KLRI *e*S S 19 11 52.0 -0.1
KLRI IVMs_BB IVMs_BB 19 31 56.1
comp=Z,11µm,19.3s
DIB Dawson Inlet, 59.46 44 *e*P P 19 03 50.9 +1.3
comp=Z,957nm,2.0s
DIB LR LR
comp=Z,10µm,21.0s
HOPEN Hopen 60.04 346⇑ *i*P P 19 03 54.6 +1.4
HOPEN IVmB_BB 19 03 55.7
comp=Z,9µm,2.2s
HOPEN *e*S S 19 12 02.3 +0.4
HOPEN IVMsBB 19 32 42.9
comp=Z,5µm,16.6s
URV Uravakonda 60.33 267 *e*P P 19 03 56.6 +0.5
URV IAmb IAmb 19 03 58.8
comp=Z,662nm,2.3s
URV *e*S S 19 12 10.5 +3.2
URV IVMs_BB IVMs_BB 19 29 19.6
comp=Z,7µm,27.8s
SPB1 Spitsbergen Ar 60.53 349 *e*P P 19 03 57.7 +1.1
SPA1 Spitsbergen Ar 60.54 349 *e*P P 19 03 57.3 +0.7
SPB5 Spitsbergen Ar 60.54 349 *e*P P 19 03 57.4 +0.8
SPA0 Spitsbergen Ar 60.54 349⇑ *i*P P 19 03 57.6 +1.0
SPA0 IVmBBB 19 03 58.7
comp=Z,7µm,2.6s
SPA0 *e*S S 19 12 08.7 +0.4
SPA0 IVMs_BB IVMs_BB 19 27 53.9
comp=Z,4µm,22.9s
SPA0 Spitsbergen Ar 60.54 349 *e*P P 19 03 57.0 +0.4
SPA2 Spitsbergen Ar 60.54 349 *e*P P 19 03 56.7 +0.1
SPB2 Spitsbergen Ar 60.54 349 *e*P P 19 03 57.0 +0.5
SPITS Spitsbergen Ar 60.54 349 P P 19 03 56.9 +0.4
comp=Z,28nm,0.7s,baz=90,slow=8.3,SNR=29
SPITS LR LR 19 33 50.6
comp=Z,9µm,18.4s,baz=50,slow=40
SPA3 Spitsbergen Ar 60.54 349 *e*P P 19 03 57.0 +0.4
SPB4 Spitsbergen Ar 60.54 349 *e*P P 19 03 56.8 +0.2
SPB3 Spitsbergen Ar 60.54 349 *e*P P 19 03 56.8 +0.2
AS01 Alice Springs 60.68 187 *e*P P 19 03 57.0 -1.1
KBS Kingsbay 60.68 350⇑ *i*P P 19 03 59.0 +1.5
KBS IVmB_BB 19 03 59.9
comp=Z,6µm,2.9s
KBS *e*S S 19 12 10.8 +0.7
KBS IVMs_BB IVMs_BB 19 25 48.2
comp=Z,3µm,37.3s
KBS Kingsbay 60.68 350 *e*P P 19 03 58.5 +1.0
KBS pmax pmax
comp=Z,558nm,1.5s
KBS MLR MLR
comp=Z,9µm,20.0s
KBS Kingsbay 60.68 350 *e*P P 19 03 58.5 +1.0
comp=Z,558nm,1.5s
KBS LR LR
comp=Z,9µm,20.0s
AS31 Alice Springs 60.68 188 *e*P P 19 03 56.9 -1.3
comp=Z,30nm,0.6s
AS31 LR LR
comp=Z,100nm,20.0s
ASAR Alice Springs 60.68 188 P P 19 03 57.5 -0.7
comp=Z,76nm,0.8s,baz=12,slow=6.5,SNR=244
ASAR S S 19 12 06.0 -5.4
comp=Z,2.1nm,0.9s,baz=12,slow=4.7,SNR=2.6
ASAR LR LR 19 27 37.7
comp=Z,7µm,21.3s,baz=7.5,slow=33
ASAR PKPPKP P'P'df 19 33 08.4 -3.6
comp=Z,2.1nm,0.9s,baz=148,slow=2.8,SNR=6.7
ASAR PKP2bc 19 33 20.5
comp=Z,2.8nm,0.8s,baz=166,slow=2.2,SNR=9.1
ASAR P4KPbc 19 41 02.2
comp=Z,1.6nm,0.8s,baz=14,slow=5.2,SNR=12
POO Poona 61.10 272 *e*P P 19 04 00.3 -1.1
POO IAMs_20 IAMs_20 19 32 29.1
comp=Z,18µm,21.9s
MBWA Marble Bar 61.22 203 P P 19 04 01.5 -0.4
SNR=9.7
MBWA Marble Bar 61.22 203 P P 19 04 01.5 -0.4
SNR=9.7
MBWA Marble Bar 61.22 203 P P 19 04 01.5 -0.4
SNR=9.7
MBWA Marble Bar 61.22 203 *e*P P 19 04 00.9 -0.9
comp=Z,136nm,0.7s
HSPB Hornsund (broa 61.46 348⇑ *i*P P 19 04 04.1 +1.3
HSPB IVmB_BB 19 04 05.1
comp=Z,9µm,2.5s
HSPB *e*S S 19 12 19.5 -0.5
HSPB IVMs_BB IVMs_BB 19 33 04.3
comp=Z,8µm,18.7s
HSPB Hornsund (broa 61.46 348⇑ *i*P P 19 04 04.2 +1.4
HSPB *e*S S 19 12 18.2 -1.8
HSPB MLR MLR
comp=Z,21µm,25.2s
LVZ Lovozero 62.06 336 *c i*P P 19 04 07.2 +0.2
LVZ pmax pmax
comp=Z,422nm,2.5s
LVZ Lovozero 62.06 336 *e*P P 19 04 07.3 +0.2
comp=Z,666nm,1.9s
LVZ LR LR
comp=Z,34µm,20.0s
PALK Pallekele 62.09 257 P P 19 04 09.9 +1.9
PALK Pallekele 62.09 257 P P 19 04 09.9 +1.9
PALK Pallekele 62.09 257 *i* P P 19 04 11.3 +3.3
PALK Pallekele 62.09 257 *e*P P 19 04 08.1 0.0
comp=Z,124nm,1.0s
PALK LR LR
comp=Z,17µm,20.0s
BBB Bella Bella 62.30 44 *e*P P 19 04 09.4 +0.6
comp=Z,1µm,1.8s
BJO Bjornoya 62.42 345⇑ *i*P P 19 04 10.4 +1.1
BJO IVmB_BB 19 04 12.9
comp=Z,4µm,8.3s
BJO *e*S S 19 12 33.0 +0.8
BJO IVMs_BB IVMs_BB 19 33 11.0
comp=Z,8µm,20.7s
APA Apatity 62.64 336⇑ *i*P P 19 04 11.3 +0.4
APA *i* 19 06 34.1
APA *i* PPP PPP 19 08 06.0
APA *i* S S 19 12 35.0 -0.1
APA *i* PS PnS 19 12 54.0 -2.0
APA *i* 19 13 56.0
APA MLR MLR
comp=Z,38µm,19.0s
EIDS Eidsvold 62.71 170 *e*P P 19 04 11.6 -0.2
comp=Z,459nm,1.0s
EIDS LR LR
comp=Z,10µm,21.0s
RES Resolute Bay 62.73 14 LR LR 19 33 08.8
comp=Z,9µm,21.8s,baz=311,slow=38
RES Resolute Bay 62.73 14 *e*P P 19 04 11.4 0.0
RES pmax pmax
comp=Z,152nm,0.8s
RES Resolute Bay 62.73 14 *e*P P 19 04 11.4 0.0
comp=Z,152nm,0.8s
DZM Mont Dzumac 63.41 154 *e*P P 19 04 16.8 +0.2
comp=Z,939nm,1.4s
DZM *e*S S 19 12 44.0 -1.9
comp=Z,22µm,30.1s
DZM Mont Dzumac 63.41 154 *e*LR LR 19 23 19.3
comp=Z,44µm,21.4s
DZM Mont Dzumac 63.41 154 *e*P P 19 04 16.2 -0.4
comp=Z,377nm,1.1s
DZM LR LR
comp=Z,31µm,21.0s
KEV Kevo 63.41 339 PFAKE 19 04 30.0 +14
KEV LR LR
comp=Z,25µm,21.0s
GEYT Alibeck 63.63 299 P P 19 04 18.0 0.0
comp=Z,63nm,0.9s,baz=33,slow=3.5,SNR=92
GEYT LR LR 19 33 13.2
comp=Z,15µm,21.6s,baz=50,slow=37
KLMR Klimovskoe 63.67 328 *e*P P 19 04 17.8 0.0
KLMR *e* 19 06 38.8
KLMR *e*S S 19 12 48.1 -0.1
KLMR pmax pmax
comp=Z,323nm,1.4s
HAMF Hammerfest 63.79 341⇑ *i*P P 19 04 19.3 +0.8
HAMF IVmB_BB 19 04 20.0
comp=Z,5µm,2.2s
HAMF *e*S S 19 12 48.2 -1.2
HAMF IVMs_BB IVMs_BB 19 37 40.1
comp=Z,9µm,15.9s
ARA0 ARCESS Array S 63.97 339 *e*P P 19 04 19.6 0.0
ARCES ARCESS Array B 63.97 339 P P 19 04 19.7 +0.1
comp=Z,46nm,0.8s,baz=61,slow=5.8,SNR=61
ARCES S S 19 12 50.9 -0.8
comp=Z,1.3nm,0.8s,baz=58,slow=10,SNR=2.4
ARCES PKPPKP P'P'df 19 33 05.5 -12
comp=Z,1.5nm,0.8s,baz=298,slow=1.9,SNR=3.9
ARCES LR LR 19 36 28.5
comp=Z,17µm,18.2s,baz=50,slow=40
ARE0 ARCESS Array S 63.97 339⇑ *i*P P 19 04 20.7 +1.0
ARE0 IVmB_BB 19 04 21.6
comp=Z,5µm,2.4s
ARE0 *e*S S 19 12 51.4 -0.3
ARE0 IVMs_BB IVMs_BB 19 36 16.2
comp=Z,6µm,16.5s
ARE0 ARCESS Array S 63.97 339 *e*P P 19 04 19.6 0.0
comp=Z,234nm,1.4s
ARE0 LR LR
comp=Z,18µm,18.0s
YKA Yellowknife Ar 64.00 30 P P 19 04 19.7 -0.2
comp=Z,63nm,0.8s,baz=303,slow=6.8,SNR=140
YKA PKPPKP P'P'df 19 32 58.7 -18
comp=Z,0.7nm,0.7s,baz=128,slow=2.0,SNR=3.1
YKA LR LR 19 34 22.7
comp=Z,561nm,21.6s,baz=0.0,slow=38
YKB5 Yellowknife Ar 64.00 30 *e*P P 19 04 19.7 -0.3
YKB5 *e* 19 32 58.7
COCO West Island 64.19 229 *e*P P 19 04 21.3 -0.4
COCO pmax pmax
comp=Z,603nm,1.4s
COCO West Island 64.19 229 *e*P P 19 04 21.3 -0.4
comp=Z,603nm,1.4s
TRD Trivandrum 64.29 261 *e*P P 19 04 21.7 -0.9
TRD IAMs_20 IAMs_20 19 34 47.3
comp=Z,12µm,19.2s
MSVF Nonsavu 64.62 141 *e*P P 19 04 25.9 +1.3
MSVF pmax pmax
comp=Z,295nm,1.2s
MSVF Nonsavu 64.62 141 *e*P P 19 04 25.9 +1.3
comp=Z,295nm,1.2s
TRO Tromso 65.69 341⇑ *i*P P 19 04 32.3 +1.5
TRO IVmB_BB 19 04 33.2
comp=Z,5µm,2.2s
TRO *e*S S 19 13 14.6 +1.8
TRO IVMs_BB IVMs_BB 19 37 45.0
comp=Z,7µm,18.2s
DAG Danmarks Havn 65.82 355⇑ *i*P P 19 04 32.1 +0.6
comp=Z,188nm,1.0s
DAG *i* S S 19 13 14.3 +0.1
DAG *e* 19 33 04.4
comp=Z,6µm,20.0s
DAG Danmarks Havn 65.82 355⇑ *i*P P 19 04 32.1 +0.6
DAG *i* S S 19 13 14.3 +0.1
DAG pmax pmax
comp=Z,190nm,1.0s
DAG MLR MLR
comp=Z,6µm,20.0s
XMAS Kiritimati 66.21 106 *e*P P 19 04 35.3 +0.4
comp=Z,493nm,1.3s
XMAS LR LR
comp=Z,33µm,21.0s
C03A Quillayute Air 66.28 47 *e*P P 19 04 38.0 +3.1
LLLB Lillooet 66.49 44 *e*P P 19 04 36.4 +0.1
comp=Z,1µm,1.8s
LLLB LR LR
comp=Z,12µm,21.0s
PGC Sidney 66.58 46 *e*P P 19 04 37.4 +0.6
comp=Z,146nm,1.0s
NLWA Neilton Lookou 66.96 47 *e*P P 19 04 40.8 +1.4
comp=Z,1µm,1.4s
A04D Lummi Island 66.97 46 P P 19 04 40.8 +1.4
baz=300
MOS Moscow 67.14 323 *α i*P P 19 04 40.5 +0.2
MOS *e* 19 05 08.6
MOS *e* 19 07 09.3
MOS *i* S S 19 13 30.4 -0.4
MOS *e* 19 14 30.1
MOS pmax pmax
comp=Z,4µm,3.1s
MOS pmax pmax
comp=N,1µm,3.2s
MOS pmax pmax
comp=E,2µm,4.4s
MOS pmax pmax
comp=Z,641nm,1.8s
MOS pmax pmax
comp=N,203nm,1.9s
MOS pmax pmax
comp=E,157nm,1.8s
MOS smax smax
comp=E,12µm,4.8s
MOS smax smax
comp=N,8µm,4.2s
AFI Afiamalu 67.30 129 *e*P P 19 04 42.2 +0.3
AFI pmax pmax
comp=Z,231nm,1.3s
AFI MLR MLR
comp=Z,17µm,21.0s
AFI Afiamalu 67.30 129 *e*P P 19 04 42.2 +0.3
comp=Z,231nm,1.3s
AFI LR LR
comp=Z,17µm,21.0s
VRH Novokhopyorsk 67.45 318 *e*P P 19 04 42.2 -0.1
VRH *e*S S 19 13 31.5 -3.1
VRH pmax pmax
comp=Z,110nm,0.6s
VRH pmax pmax
comp=Z,80nm,0.7s
VRH smax smax
comp=N,2µm,2.8s
VRH MLR MLR
comp=Z,590nm,14.0s
GNW Green Mountain 67.48 47 *e*P P 19 04 43.8 +1.2
B05A Bryant 67.55 46 P P 19 04 44.0 +1.0
baz=301
E03A Lebam 67.57 48 *e*P P 19 04 43.9 +0.8
comp=Z,381nm,1.2s
JCW Jim Creek 67.68 46 *e*P P 19 04 44.9 +1.0
TUM Tumwater 67.72 47 PFAKE 19 04 50.0 +5.9
TUM LR LR
comp=Z,5µm,19.0s
ARMA Armidale 67.76 170 *e*P P 19 04 44.9 +0.4
comp=Z,530nm,1.0s
ARMA LR LR
comp=Z,7µm,20.0s
B06A Marblemount 67.77 45 *e*P P 19 04 44.9 +0.5
comp=Z,862nm,1.6s
B06A LR LR
comp=Z,7µm,20.0s
F03A Seaside 67.88 49 *e*P P 19 04 46.5 +1.3
comp=Z,914nm,1.4s
OBN Obninsk 67.99 323 P P 19 04 45.6 0.0
comp=Z,54nm,0.7s,baz=52,slow=4.4,SNR=57
OBN LR LR 19 37 09.7
comp=Z,11µm,18.2s,baz=62,slow=38
OBN Obninsk 67.99 323 *c i*P P 19 04 46.0 +0.4
OBN *e* 19 05 13.5
OBN *e* 19 07 14.8
OBN *e*PPP PPP 19 08 56.6
OBN *i* S S 19 13 34.4 -6.5
OBN pmax pmax
comp=Z,145nm,1.2s
OBN MLR MLR
comp=Z,14µm,23.0s
OBN Obninsk 67.99 323 *e*P P 19 04 45.5 -0.1
comp=Z,1µm,2.0s
KULLO Kullorsuaq 68.07 5⇑ *i*P P 19 04 46.5 +0.6
comp=Z,12µm,17.0s
KULLO Kullorsuaq 68.07 5⇑ *i*P P 19 04 46.5 +0.6
KULLO MLR MLR
comp=Z,12µm,17.0s
F04D Rainier, OR 68.13 48 P P 19 04 47.9 +1.2
baz=301
LOF Lofoten 68.14 341⇑ *i*P P 19 04 46.4 0.0
LOF IVmB_BB 19 04 47.8
comp=Z,4µm,3.1s
LOF *e*S S 19 13 42.5 +0.2
LOF IVMs_BB IVMs_BB 19 39 03.9
comp=Z,9µm,17.3s
D05A Enumclaw 68.17 47 *e*P P 19 04 48.1 +1.2
comp=Z,2µm,1.9s
PNT Penticton 68.41 44 *e*P P 19 04 48.6 +0.1
PNT Penticton 68.41 44 *e*P P 19 04 48.6 +0.1
C06D Leavenworth 68.42 46 P P 19 04 49.7 +1.2
baz=302
G03D McMinnville, O 68.43 49 P P 19 04 49.2 +0.6
baz=301
TDL Tradedollar La 68.47 48 *e*P P 19 04 50.5 +1.5
FORT Forrest 68.48 192 *e*P P 19 04 48.5 -0.5
comp=Z,4µm,0.8s
STKA Stephens Creek 68.49 180 P P 19 04 48.4 -0.5
comp=Z,52nm,0.8s,baz=342,slow=7.5,SNR=54
STKA S S 19 13 44.7 -2.5
comp=Z,2.3nm,0.9s,baz=158,slow=19,SNR=1.6
STKA LR LR 19 34 42.6
comp=Z,4µm,21.1s,baz=5.2,slow=36
STKA Stephens Creek 68.49 180 *e*P P 19 04 48.5 -0.4
comp=Z,53nm,1.0s
STKA S S 19 13 44.7 -2.5
LON Longmire 68.50 47 *e*P P 19 04 49.6 +0.5
LON pmax pmax
comp=Z,350nm,1.7s
LON Longmire 68.50 47 *e*P P 19 04 49.5 +0.5
comp=Z,350nm,1.7s
VORR Voronezh 68.54 319 *e*P P 19 04 48.0 -1.2
VORR pmax pmax
comp=Z,550nm,2.0s
F04A Amboy 68.56 48 *e*P P 19 04 50.1 +0.7
comp=Z,2µm,1.9s
COR Corvallis 68.73 50 *e*P P 19 04 52.3 +1.8
COR pmax pmax
comp=Z,565nm,1.1s
COR Corvallis 68.73 50 *e*P P 19 04 52.3 +1.8
comp=Z,565nm,1.1s
FIA1 FINESS Array S 68.75 332 *e*P P 19 04 50.0 -0.2
FIA0 FINESS Array S 68.75 332 *e*P P 19 04 50.4 +0.1
FIA0 *e*S S 19 13 48.9 -0.9
FIA0 FINESS Array S 68.75 332 *e*P P 19 04 50.4 +0.1
FIA0 *e*S S 19 13 48.9 -0.9
FIA0 *e*P'P'df P'P'df 19 32 56.7 -12
FIA0 *e* 19 37 23.2
FINES FINESS Array B 68.75 332 P P 19 04 50.4 +0.1
comp=Z,95nm,0.7s,baz=56,slow=7.1,SNR=140
FINES S S 19 13 48.9 -0.9
comp=Z,4.6nm,1.1s,baz=139,slow=6.6,SNR=2.3
FINES PKP2bc 19 32 56.7
comp=Z,2.4nm,0.8s,baz=237,slow=4.8,SNR=5.8
FINES LR LR 19 37 23.2
comp=Z,29µm,18.9s,baz=46,slow=38
VSR Storozhevoye 68.81 319 *e*P P 19 04 50.7 -0.1
VSR *e*S S 19 13 43.9 -6.9
VSR pmax pmax
comp=Z,340nm,1.5s
VSR pmax pmax
comp=Z,580nm,1.2s
VSR smax smax
comp=N,4µm,4.1s
VSR MLR MLR
comp=Z,39µm,17.0s
LTY Liberty 68.90 46 *e*P P 19 04 51.6 0.0
comp=Z,690nm,2.0s
ETW Entiat 68.91 46 *e*P P 19 04 52.4 +0.7
B08A Colville Reser 69.08 45 *e*P P 19 04 52.9 +0.2
comp=Z,2µm,2.0s
B08A LR LR
comp=Z,7µm,21.0s
I03D Drain, OR 69.16 51 P P 19 04 54.6 +1.4
baz=302
GROC Groznyy 69.24 309 *e*P P 19 04 53.4 -0.3
GROC *e*S S 19 13 55.4 -0.8
GROC pmax pmax
comp=Z,133nm,1.3s
BBOO Buckleboo 69.57 185 *e*P P 19 04 55.2 -0.5
comp=Z,213nm,1.0s
BBOO LR LR
comp=Z,10µm,22.0s
G05D Wamic, OR 69.58 48 P P 19 04 56.9 +1.0
baz=302
STOK Stokkvaagen 69.61 340 *e*P P 19 04 55.6 +0.1
STOK IVmB_BB 19 04 56.4
comp=Z,4µm,2.8s
STOK IVMs_BB IVMs_BB 19 39 51.9
comp=Z,10µm,17.2s
IRO Indian Ridge 69.67 50 *e*P P 19 04 57.8 +1.3
I04A Tendick Farm, 69.69 50 P P 19 04 57.5 +0.9
baz=302
E07A Sunnyside 69.74 47 *e*P P 19 04 57.3 +0.5
comp=Z,693nm,1.5s
L02D Cave Junction, 69.81 52 P P 19 04 58.4 +1.1
baz=302
GOF Gofitskoye 69.94 312⇑ *e*P P 19 05 00.0 +2.0
GOF *e*S S 19 14 05.7 +1.3
GOF pmax pmax
comp=Z,443nm,1.4s
GOF pmax pmax
comp=N,267nm,2.4s
KRMB Red Mountain 69.95 53 *e*P P 19 04 59.6 +1.4
comp=N,897nm,1.7s
C09A Chrisman Ranch 69.97 45 *e*P P 19 04 58.5 +0.3

comp=N,954nm,1.6s
DPW Davenport 69.98 45 *e*P **P 19 05 00.7 +2.4**
DPW Davenport 69.98 45 *e*P **P 19 05 00.7 +2.4**
HUMO Hull Mountain 69.98 51 *e*P **P 19 04 59.6 +1.3**
comp=N,455nm,1.9s
HUMO LR LR
comp=Z,6µm,20.0s
G06A Carlson Farm, 69.99 48 *e*P **P 19 04 59.4 +1.0**
comp=Z,1µm,1.9s
D08A Wollman Farm, 70.01 46 *e*P **P 19 04 58.9 +0.5**
comp=Z,183nm,1.0s
D08A LR LR
comp=Z,7µm,22.0s
HAWA Hanford 70.02 47 *e*P **P 19 04 59.1 +0.6**
comp=Z,373nm,1.4s
I05D Terrebonne, OR 70.05 49 P **P 19 04 59.9 +1.1**
baz=302
JMIC Jan Mayen 70.17 350⇑ *i*P **P 19 05 01.0 +2.1**
JMIC IVmB_BB 19 05 01.9
comp=Z,6µm,2.7s
JMIC *e*S **S 19 14 11.2 +5.0**
JMIC IVMsBB 19 33 00.6
comp=Z,2µm,4.4s
J04D Umpqua Nationa 70.17 50 P **P 19 05 00.5 +0.8**
baz=302
LHI Lord Howe Isla 70.18 164 *e*P **P 19 05 00.7 +1.3**
comp=Z,1µm,1.8s
LHI LR LR
comp=Z,6µm,21.0s
JCC Jacoby Creek, 70.24 53 *e*P **P 19 05 02.2 +2.3**
comp=Z,605nm,1.4s
NEW Newport 70.36 44 P **P 19 05 01.3 +0.7**
baz=304
NEW Newport 70.36 44 *e*P **P 19 05 01.1 +0.5**
NEW pmax pmax
comp=Z,885nm,1.8s
NEW Newport 70.36 44 *e*P **P 19 05 01.1 +0.5**
comp=Z,885nm,1.8s
VSU Vasula 70.38 329*c i*P **P 19 05 00.5 +0.1**
VSU pmax pmax
comp=Z,1µm,2.0s
VSU MLR MLR
comp=Z,48µm,19.0s
KHMM Horse Mountain 70.41 53 *e*P **P 19 05 02.6 +1.5**
comp=Z,965nm,1.7s
GUDG Gudauri 70.45 309 P **P 19 05 02.6 +1.1**
DUS Dusheti 70.51 308 P P 19 05 06.7 +5.0
DUS Dusheti 70.51 308 P P 19 05 06.7 +5.1
YBH Yreka Blue Hor 70.60 52 *e*P **P 19 05 03.4 +1.2**
YBH pmax pmax
comp=Z,921nm,1.6s
YBH Yreka Blue Hor 70.60 52 *e*P **P 19 05 03.4 +1.2**
comp=Z,921nm,1.6s
ZEI Tsey 70.64 309 *e*P **P 19 05 02.2 -0.3**
ZEI *e*S **S 19 14 08.5 -4.5**
ZEI *e* 19 14 54.9
ZEI pmax pmax
comp=Z,163nm,0.9s
ZEI pmax pmax
comp=N,193nm,0.8s
ZEI pmax pmax
comp=E,327nm,1.0s
ZEI MLR MLR
comp=Z,19µm,14.0s
ZEI MLR MLR
comp=N,17µm,15.0s
ZEI MLR MLR
comp=E,15µm,17.0s
TBLG Delisi 70.68 308 P **P 19 05 03.2 +0.6**
TBLG Delisi 70.68 308 P **P 19 05 03.2 +0.6**
J05D Fort Rock, OR 70.68 50 P **P 19 05 04.6 +1.8**
baz=303
M02C Callahan 70.69 52 P **P 19 05 04.9 +2.1**
baz=303
K04D Chiloquin, OR 70.72 51 P **P 19 05 04.4 +1.4**
baz=303
KBZ Khabaz 70.74 311 P **P 19 05 03.6 +0.8**
comp=E,94nm,0.8s,baz=52,slow=6.9,SNR=94
KBZ S **S 19 14 12.9 -0.8**
comp=E,2.7nm,0.9s,baz=216,slow=19,SNR=4.9
KBZ PKP2bc 19 32 54.4
comp=E,1.5nm,0.6s,baz=230,slow=3.3,SNR=19
KBZ LR LR 19 40 51.8
comp=E,21µm,18.8s,baz=56,slow=40
KIV Kislovodsk 70.75 311 *i*P **P 19 05 04.0 +0.9**
SNR=124
KIV Kislovodsk 70.75 311 *i*P **P 19 05 04.0 +0.9**
SNR=124
KIV Kislovodsk 70.75 311*c i*P **P 19 05 04.3 +1.3**
KIV *e* 19 05 20.0
KIV *e* 19 07 38.2
KIV *e*PPP PPP 19 09 22.3
KIV *i*S **S 19 14 07.5 -6.6**
KIV *i*SS **SS 19 18 54.9 +8.8**
KIV pmax pmax
comp=Z,210nm,1.2s
KIV MLR MLR
comp=Z,18µm,22.0s
KIV Kislovodsk 70.75 311 P **P 19 05 04.4 +1.3**
SNR=148
KIV Kislovodsk 70.75 311 P **P 19 05 04.4 +1.3**
SNR=148
KIV P **P 19 05 04.4 +1.3**
SNR=148
KIV Kislovodsk 70.75 311 P **P 19 05 04.4 +1.3**
SNR=148
KIV Kislovodsk 70.75 311 *e*P **P 19 05 03.4 +0.3**
comp=Z,524nm,1.1s
KIV LR LR
comp=Z,18µm,20.0s
SUMG Summit 70.75 360⇑ *i*P **P 19 05 04.6 +1.6**
comp=Z,618nm,1.5s
SUMG *i*S **S 19 14 15.8 +1.9**
SUMG *e* 19 32 55.3
comp=Z,26µm,21.0s
SUMG Summit 70.75 360⇑ *i*P **P 19 05 04.6 +1.6**
SUMG *i*S **S 19 14 15.8 +1.9**
SUMG pmax pmax
comp=Z,620nm,1.5s
SUMG MLR MLR
comp=Z,26µm,21.0s
SUMG Summit 70.75 360 *e*P **P 19 05 03.5 +0.5**
comp=Z,913nm,1.8s
SUMG LR LR
comp=Z,27µm,21.0s
E09A Wood Farm, Sta 70.76 46 *e*P **P 19 05 03.5 +0.5**
comp=Z,348nm,1.2s
E09A LR LR
comp=Z,7µm,22.0s
KMRM Mail Ridge 70.77 54 *e*P **P 19 05 05.1 +1.8**
comp=Z,180nm,1.2s
BIDO Bidbid 70.86 285 P **P 19 05 05.6 +1.6**
SNR=33
BIDO Bidbid 70.86 285 P **P 19 05 05.6 +1.6**
SNR=33
BIDO Bidbid 70.86 285 P **P 19 05 05.6 +1.6**
SNR=33
G08A Pilot Rock 70.96 47 *e*P **P 19 05 05.0 +0.6**
comp=Z,870nm,2.0s
BANOM Banah 70.97 288 *i*P **P 19 05 05.8 +1.2**
SNR=15
BANOM Banah 70.97 288 *i*P **P 19 05 05.8 +1.2**
SNR=15
BANOM Banah 70.97 288 P **P 19 05 06.2 +1.6**
SNR=10.0
BANOM Banah 70.97 288 P **P 19 05 06.2 +1.6**
SNR=10.0
BANOM P **P 19 05 06.2 +1.6**
SNR=10.0
BANOM Banah 70.97 288 P **P 19 05 06.2 +1.6**
SNR=10.0
N02D Trinity Center 71.01 53 P **P 19 05 06.6 +1.9**
baz=303
ONI Oni 71.02 309 P **P 19 05 05.9 +1.2**
ONI Oni 71.02 309 P **P 19 05 05.9 +1.2**
NEY Neytrino 71.11 310*c i*P **P 19 05 06.3 +0.9**
NEY pmax pmax
comp=Z,11nm,0.9s
NEY MLR MLR
comp=Z,15µm,25.0s
M04C Macdoel 71.12 52 P **P 19 05 07.1 +1.7**
baz=303
KIPM Iron Peak 71.14 54 *e*P **P 19 05 07.0 +1.5**
SMDO Samad 71.17 285 P **P 19 05 06.8 +0.8**
SNR=30
SMDO Samad 71.17 285 P **P 19 05 06.8 +0.8**
SNR=30
SMDO Samad 71.17 285 P **P 19 05 06.8 +0.8**
SNR=30
K05A Summer Lake 71.20 50 *e*P **P 19 05 07.2 +1.3**
comp=Z,3µm,2.0s
WDC Whiskeytown Da 71.33 53 *e*P **P 19 05 07.5 +1.0**
WDC pmax pmax
comp=Z,961nm,1.9s
WDC Whiskeytown Da 71.33 53 *e*P **P 19 05 07.5 +1.0**
comp=Z,961nm,1.9s
HOQ Hoqain 71.46 286 P **P 19 05 08.8 +1.2**
SNR=51
HOQ Hoqain 71.46 286 P **P 19 05 08.8 +1.2**
SNR=51
HOQ Hoqain 71.46 286 P **P 19 05 08.8 +1.2**
SNR=51
JMDO Jabal Madar 71.50 284 P **P 19 05 08.5 +0.7**
SNR=18
JMDO Jabal Madar 71.50 284 P **P 19 05 08.5 +0.7**
SNR=18
JMDO Jabal Madar 71.50 284 P **P 19 05 08.5 +0.7**
SNR=18
GNI Garni 71.53 307 *i*P **P 19 05 09.4 +1.4**
SNR=26
GNI Garni 71.53 307 *i*P **P 19 05 09.4 +1.4**
SNR=26
GNI Garni 71.53 307*c i*P **P 19 05 09.4 +1.4**
GNI pmax pmax
comp=Z,295nm,1.5s
GNI MLR MLR
comp=Z,30µm,18.0s
GNI Garni 71.53 307 P **P 19 05 09.7 +1.8**
SNR=67
GNI Garni 71.53 307 P **P 19 05 09.7 +1.8**
SNR=67
GNI P **P 19 05 09.7 +1.8**
SNR=67
GNI Garni 71.53 307 P **P 19 05 09.7 +1.8**
SNR=67
GNI Garni 71.53 307 *e*P **P 19 05 09.1 +1.1**
comp=Z,312nm,1.3s
GNI LR LR
comp=Z,17µm,20.0s
UOSS Minazif 71.57 288 *e*P **P 19 05 08.8 +0.5**
comp=Z,140nm,1.0s
UOSS LR LR
comp=Z,9µm,21.0s
F10A Beach Ranch, E 71.59 46 *e*P **P 19 05 08.4 +0.3**
comp=Z,380nm,1.6s
F10A LR LR
comp=Z,6µm,21.0s
AKH Akhalkalaki 71.64 308⇑ *i*P **P 19 05 09.5 +0.9**
AKH Akhalkalaki 71.64 308 P **P 19 05 10.3 +1.7**
AKH Akhalkalaki 71.64 308 P **P 19 05 10.3 +1.7**
BGD Bogdanovka 71.65 308 P **P 19 05 10.1 +1.4**
WALA Waterton Lakes 71.67 42 *e*P **P 19 05 09.0 +0.4**
comp=Z,650nm,1.6s
WALA LR LR
comp=Z,8µm,22.0s
HATD Hatta, Dubai 71.69 288 *i*P **P 19 05 10.4 +1.4**
SNR=41
HATD Hatta, Dubai 71.69 288 *i*P **P 19 05 10.4 +1.4**
SNR=41
CHVG Ch'k'valeri 71.79 310 P **P 19 05 11.2 +1.9**
ASHO Ashiyiah 71.83 287 *i*P **P 19 05 10.7 +0.9**
SNR=34
ASHO Ashiyiah 71.83 287 *i*P **P 19 05 10.7 +0.9**
SNR=34
ASHO Ashiyiah 71.83 287 P **P 19 05 11.1 +1.3**
SNR=29
ASHO Ashiyiah 71.83 287 P **P 19 05 11.1 +1.3**
SNR=29
ASHO P **P 19 05 11.1 +1.3**
SNR=29
ASHO Ashiyiah 71.83 287 P **P 19 05 11.1 +1.3**
SNR=29
HOPS Hopland Field 71.84 55 *e*P **P 19 05 10.2 +0.5**
comp=Z,770nm,1.8s
HOPS LR LR
comp=Z,14µm,21.0s
BSMT Bassoo Peak 71.89 43 *e*P **P 19 05 10.7 +0.7**
O03D Paynes Creek 71.95 53 P **P 19 05 11.5 +1.1**
baz=303
EAK Akyaka 71.96 308 *i*P **P 19 05 09.4 -1.2**
NAZ Nazwa, Dubai 71.96 288 *i*P **P 19 05 11.8 +1.2**
SNR=23
NAZ Nazwa, Dubai 71.96 288 *i*P **P 19 05 11.8 +1.2**
SNR=23
MOD Modoc Plateau 72.01 51 *e*P **P 19 05 11.3 +0.5**
comp=Z,162nm,1.1s
BLMT Blacktail Moun 72.03 43 *e*P **P 19 05 11.7 +0.8**
EPOS Posof 72.07 309 *i*P **P 19 05 11.1 0.0**
GDXM Geysers 72.13 55 PFAKE 19 05 20.0 +8.6
GDXM LR LR
comp=Z,16µm,22.0s
FAQ Al Faqa, Dubai 72.15 288 *i*P **P 19 05 12.6 +0.9**
SNR=28
FAQ Al Faqa, Dubai 72.15 288 *i*P **P 19 05 12.6 +0.9**
SNR=28
SCO Scoresbysund 72.15 354⇑ *i*P **P 19 05 12.7 +1.8**
comp=Z,266nm,1.3s
SCO *i*S **S 19 14 32.8 +3.6**
SCO Scoresbysund 72.15 354⇑ *i*P **P 19 05 12.7 +1.8**
SCO *i*S **S 19 14 32.8 +3.6**
SCO pmax pmax
comp=Z,270nm,1.3s
BMO Blue Mountains 72.17 47 *e*P **P 19 05 11.9 +0.2**
comp=Z,235nm,1.1s
BMO LR LR
comp=Z,7µm,22.0s
ARQ Araqi 72.20 286 P **P 19 05 13.3 +1.3**
SNR=32
ARQ Araqi 72.20 286 P **P 19 05 13.3 +1.3**
SNR=32
ARQ Araqi 72.20 286 P **P 19 05 13.3 +1.3**
SNR=32
JTMT Jette 72.23 43 *e*P **P 19 05 12.8 +0.8**
DIGO Kars 72.26 307 *i*P **P 19 05 11.5 -0.9**
CAN Canberra 72.30 173 *e*P **P 19 05 11.8 -0.4**
CAN pmax pmax
comp=Z,438nm,1.2s
CAN MLR MLR
comp=Z,12µm,21.0s
CAN Canberra 72.30 173 *e*P **P 19 05 11.8 -0.4**
comp=Z,438nm,1.2s
CAN LR LR
comp=Z,12µm,21.0s
YBMT Yellow Bay 72.31 43 *e*P **P 19 05 13.0 +0.5**
IZAR Zarasai 72.32 327 *e*P **P 19 05 13.2 +1.0**
IZAR IAmb IAmb 19 05 16.2
comp=Z,38nm,0.9s
NMTM Middletown 72.36 55 *e*P **P 19 05 13.8 +1.0**
IDID Didziasalis 72.39 327 *e*P **P 19 05 13.6 +1.0**
IDID IAmb IAmb 19 05 16.5
comp=Z,58nm,1.0s
MICGM Minsk 72.40 326⇑ *e*P **P 19 05 14.0 +1.3**
MICGM PM 19 05 15.0
comp=Z,13nm,4.0s
MICGM PM 19 05 16.0
comp=Z,1.1nm,1.6s
MICGM PM 19 05 17.0
comp=N,0.9nm,1.8s
MICGM PM 19 05 17.0
comp=E,0.8nm,2.0s
MICGM *e*pP **pP 19 05 26.0 -0.5**
MICGM *e* 19 05 44.0
MICGM *e*PP **PP 19 07 54.0 +0.5**
MICGM *e*PPP PPP 19 09 50.0
MICGM *e*S **S 19 14 33.0 +0.5**
MICGM SM 19 14 35.0
comp=E,12nm,6.0s
MICGM *e*sS **sS 19 14 56.0 +0.3**
MICGM *e*SS **SS 19 19 20.0 +9.4**
MICGM *e*SSS SSS 19 22 10.0
MICGM *e*LR LR 19 29 50.0
MICGM LRM MLR 19 39 02.0
comp=Z,29nm,16.0s
MICGM LRM MLR 19 39 06.0
comp=E,12nm,14.0s
MNK Minsk 72.40 326⇑ *e*P **P 19 05 14.0 +1.3**
MNK *e*PP **pP 19 05 26.0 -0.5**
MNK *e* 19 07 54.0
MNK *e*S **S 19 14 33.0 +0.5**
MNK pmax pmax
comp=Z,13µm,4.0s
MNK pmax pmax
comp=Z,1µm,1.6s
MNK pmax pmax
comp=E,760nm,2.0s
MNK pmax pmax
comp=N,910nm,1.8s
MNK smax smax
comp=E,12µm,6.0s
MNK MLR MLR
comp=Z,30µm,16.0s
MNK MLR MLR
comp=E,12µm,14.0s
MCCM Marconi Confer 72.43 55 *e*P **P 19 05 13.3 +0.1**
comp=E,279nm,0.9s
MCCM LR LR
comp=Z,11µm,22.0s
ISAL Salakas 72.49 327 *e*P **P 19 05 14.2 +1.0**
ISAL IAmb IAmb 19 05 17.3
comp=Z,98nm,1.0s
SWMT Swartz Lake 72.52 43 *e*P **P 19 05 14.5 +0.8**
DYDN Diyadin 72.54 307 *i*P **P 19 05 15.7 +1.7**
ORV Oroville 72.56 53 *e*P **P 19 05 13.7 -0.2**
ORV pmax pmax
comp=Z,842nm,1.8s
ORV Oroville 72.56 53 *e*P **P 19 05 13.7 -0.2**
comp=Z,842nm,1.8s
NACGM Naroch 72.63 327 *e*P **P 19 05 14.0 0.0**
NACGM *e*pP **PcP 19 05 30.0 -1.3**
NACGM *e*sP sP 19 05 46.0 +13
NACGM *e*PP **PP 19 07 55.0 -0.5**
NACGM *e*PPP PPP 19 09 44.0
NACGM *e*S **S 19 14 34.0 -1.2**
NACGM *e*sS **SKSac 19 15 10.0 -4.9**
NACGM *e*PS PnS 19 15 31.0 +20
NACGM *e*SS SS 19 19 02.0 -12
NACGM *e*SSS SSS 19 22 34.0
NACGM *e*LQ LQ 19 29 55.0
NACGM *e*LR LR 19 37 50.0
NACGM LRM MLR 19 40 09.0
comp=Z,45nm,17.0s
SOC Sochi 72.74 312*c i*P **P 19 05 15.4 +0.5**
SOC *e**PP **pP 19 05 28.4 -0.3**
SOC *e**SP **sP 19 05 33.8 -0.4**
SOC *e* 19 07 55.5
SOC *e*PPP PPP 19 09 48.5
SOC *e*S **S 19 14 36.5 -0.3**
SOC pmax pmax
comp=Z,182nm,1.3s
SOC MLR MLR
comp=Z,20µm,17.0s
ARTV Artvin 72.74 309 *i*P **P 19 05 14.2 -1.1**
WVOR Wild Horse Val 72.74 50 *e*P **P 19 05 15.7 +0.6**
WVOR pmax pmax
comp=Z,1µm,1.8s
WVOR Wild Horse Val 72.74 50 *e*P **P 19 05 15.7 +0.6**
comp=Z,1µm,1.8s
DBOC Borcka 72.82 309 *i*P **P 19 05 15.0 -0.4**
MSO Missoula 72.95 44 P **P 19 05 16.7 +0.4**
baz=306
MSO Missoula 72.95 44 *e*P **P 19 05 16.7 +0.4**
comp=Z,967nm,1.9s
SLMT Seeley Lake 72.96 43 *e*P **P 19 05 16.7 +0.3**
NWAO Narrogin (SRO) 73.01 201 *e*P **P 19 05 16.2 -0.2**
NWAO pmax pmax
comp=Z,714nm,2.0s
NWAO MLR MLR
comp=Z,6µm,22.0s
NWAO Narrogin (SRO) 73.01 201 *e*P **P 19 05 16.2 -0.2**
comp=Z,714nm,2.0s
NWAO LR LR
comp=Z,6µm,22.0s
DDEM Demirkent 73.02 309 *i*P **P 19 05 16.9 +0.2**
TUTA Tutak 73.18 307 *i*P **P 19 05 19.8 +1.9**
AFDM Forest Hills D 73.23 54 *e*P **P 19 05 18.3 +0.3**
comp=Z,1µm,2.0s
AFDM LR LR
comp=Z,8µm,22.0s
CHMT Chamberlain Mo 73.29 44 *e*P **P 19 05 18.6 +0.3**
TVAN Van 73.29 306 *i*P **P 19 05 23.1 +4.6**
ANN Anapa 73.38 314 *e*P **P 19 05 19.2 +0.6**
HOMI Horasan 73.40 308 *i*P **P 19 05 20.1 +0.9**
HAKT HAKKARI 73.63 305 *i*P **P 19 05 18.3 -2.3**
GEVA Gevas 73.64 306 *i*P **P 19 05 20.5 0.0**
EKAR Karacoban 73.74 307 *i*P **P 19 05 23.4 +2.2**
ILULI Ilulissat 73.75 5⇑ *i*P **P 19 05 21.5 +1.1**
comp=Z,493nm,1.5s
comp=Z,10µm,22.0s
ILULI Ilulissat 73.75 5⇑ *i*P **P 19 05 21.5 +1.1**
ILULI pmax pmax
comp=Z,490nm,1.5s
ILULI MLR MLR
comp=Z,10µm,22.0s
ERZM Erzurum 73.82 308 *i*P **P 19 05 22.5 +0.8**
PAHR Pah Rah Range 73.82 52 *e*P **P 19 05 21.8 +0.2**
comp=Z,352nm,1.3s
MFID Camas Ranch 73.87 48 *e*P **P 19 05 22.4 +0.7**
comp=Z,929nm,1.5s
FFC Flin Flon 73.91 33 *e*P **P 19 05 21.6 0.0**
FFC pmax pmax
comp=Z,336nm,1.2s
FFC MLR MLR
comp=Z,6µm,22.0s
FFC Flin Flon 73.91 33 *e*P **P 19 05 21.6 0.0**
comp=Z,336nm,1.2s
FFC LR LR
comp=Z,6µm,22.0s
NC405 NORSAR Array S 73.93 337 *e*P **P 19 05 21.5 -0.1**
NC303 NORSAR Array S 73.95 337 *e*P **P 19 05 21.9 +0.2**
DOMB Dombas 74.01 339⇑ *i*P **P 19 05 23.2 +1.1**
DOMB IVmB_BB 19 05 24.1
comp=Z,5µm,2.1s
DOMB *e*S **S 19 14 50.7 +0.1**
DOMB IVMs_BB IVMs_BB 19 40 44.9
comp=Z,12µm,19.1s
MOL Molde 74.03 340⇑ *i*P **P 19 05 23.6 +1.5**
MOL IVmB_BB 19 05 24.4
comp=Z,5µm,2.8s
MOL *e*S **S 19 14 51.0 +0.3**
MOL IVMs_BB IVMs_BB 19 41 01.3
comp=Z,7µm,17.4s
PNTR Pine Nut 74.04 53 *e*P **P 19 05 23.8 +0.9**
comp=Z,714nm,1.6s
TATV Tatvan 74.04 306 *i*P **P 19 05 24.0 +1.1**
NC204 NORSAR Array S 74.10 337 *e*P **P 19 05 22.6 0.0**
NB201 NORSAR Array S 74.11 337 *e*P **P 19 05 22.7 0.0**
FRP Fremont Peak 74.13 56 *e*P **P 19 05 23.5 +0.2**
FRP Fremont Peak 74.13 56 *e*P **P 19 05 23.5 +0.2**
CMB Columbia Colle 74.13 54 *e*P **P 19 05 23.5 +0.3**
CMB Columbia Colle 74.13 54 *e*P **P 19 05 23.7 +0.4**
comp=Z,458nm,1.4s
CMB LR LR
comp=Z,12µm,21.0s
NB2 NORSAR Subarra 74.15 337 P **P 19 05 22.7 -0.2**
comp=Z,265nm,1.1s,baz=40,slow=6.2
NB2 NORSAR Subarra 74.15 337 P **P 19 05 22.7 -0.2**
baz=40,slow=6.2
NB200 NORSAR Array S 74.15 337 *e*P **P 19 05 23.0 +0.1**
NB200 *e*S **S 19 14 50.0 -2.2**
NOA NORSAR Array B 74.15 337 P **P 19 05 23.0 +0.1**
comp=Z,50nm,0.7s,baz=39,slow=5.8,SNR=182
NOA S **S 19 14 50.0 -2.2**
comp=Z,1.2nm,0.8s,baz=91,slow=4.9,SNR=3.0
NOA LR LR 19 41 11.9
comp=Z,26µm,19.9s,baz=40,slow=38
SAO San Andreas Ge 74.15 56 *e*P **P 19 05 23.8 +0.5**
SAO pmax pmax
comp=Z,265nm,1.3s
SAO MLR MLR
comp=Z,7µm,20.0s
SAO San Andreas Ge 74.15 56 *e*P **P 19 05 23.8 +0.5**
comp=Z,265nm,1.3s
SAO LR LR
comp=Z,7µm,20.0s
FCC Fort Churchill 74.18 26 *e*P **P 19 05 23.0 -0.1**
FCC pmax pmax
comp=Z,480nm,1.3s
FCC MLR MLR
comp=Z,13µm,21.0s
FCC Fort Churchill 74.18 26 *e*P **P 19 05 23.0 -0.1**
comp=Z,480nm,1.3s
FCC LR LR
comp=Z,13µm,21.0s
AKASG Malin Array Be 74.19 322 P **P 19 05 22.5 -0.7**
comp=Z,28nm,0.3s,baz=47,slow=6.2,SNR=138
AKASG S **S 19 14 50.6 -2.3**
comp=Z,1.1nm,0.4s,baz=335,slow=9.1,SNR=7.1
AKASG PKPPKP **P'P'df 19 32 57.0 -2.2**

comp=Z,0.6nm,0.5s,baz=209,slow=1.2,SNR=4.2
AKASG LR LR 19 40 21.2

comp=Z,32μm,21.1s,baz=45,slow=38
AKBB Malin Array Si 74.19 322 *e*P **P 19 05 22.5 -0.8**
AKBB pmax pmax

comp=Z,190nm,1.1s
AKBB MLR MLR

comp=Z,35μm,21.0s
AKBB Malin Array Si 74.19 322 *e*P **P 19 05 22.5 -0.8**
comp=Z,190nm,1.1s
AKBB LR LR

comp=Z,35μm,21.0s
HRY Holter Researc 74.19 43 *e*P **P 19 05 24.3 +0.8**
KIEV Kiev 74.20 322*c i*P **P 19 05 22.5 -0.8**
KIEV pmax pmax

comp=Z,93nm,0.9s
KIEV MLR MLR

comp=Z,34μm,21.0s
KIEV Kiev 74.20 322 *e*P **P 19 05 22.1 -1.2**
comp=Z,960nm,2.0s
KIEV LR LR

comp=Z,34μm,21.0s
MACK Trabzon 74.22 309 *i*P **P 19 05 24.0 +0.2**
AK11 Malin Array Si 74.23 322 *e*P **P 19 05 22.5 -1.0**
ECAT Cat-ERZURUM 74.24 308 *i*P **P 19 05 22.8 -1.3**
NBO02 NORSAR Array S 74.25 337 *e*P **P 19 05 22.0 -1.5**
NC602 NORSAR Array S 74.28 337⇑*i*P **P 19 05 24.2 +0.6**
NC602 IVmB_BB 19 05 25.0

comp=Z,5μm,2.6s
NC602 *e*S **S 19 14 52.1 -1.4**
NC602 IVMs_BB IVMs_BB 19 40 42.7

comp=Z,16μm,19.2s
NC602 NORSAR Array S 74.28 337 *e*P **P 19 05 23.8 +0.2**
NBO00 NORSAR Array S 74.29 337 *e*P **P 19 05 23.6 -0.1**
KOPT Kop Dagi 74.30 308 *i*P **P 19 05 25.6 +1.1**
YERR Yerington 74.33 53 *e*P **P 19 05 25.2 +0.7**
comp=Z,461nm,1.2s
LRM Limekiln Ridge 74.38 44 *e*P **P 19 05 25.1 +0.2**
NAO01 NORSAR Array S 74.40 337 *e*P **P 19 05 24.0 -0.4**
EMT Emmet 74.44 56 *e*P **P 19 05 25.7 +0.7**
WAKR Walker 74.47 53 *e*P **P 19 05 25.8 +0.4**
comp=Z,363nm,1.4s
WAKR LR LR

comp=Z,10μm,21.0s
AKN Aaknes 74.49 340⇑*i*P **P 19 05 26.4 +1.5**
AKN IVmB_BB 19 05 27.2

comp=Z,5μm,2.4s
AKN *e*S **S 19 14 57.7 +1.7**
AKN IVMs_BB IVMs_BB 19 41 22.1

comp=Z,8μm,18.0s
EGMT Eagleton 74.50 41 P **P 19 05 25.9 +0.6**
baz=308
EGMT Eagleton 74.50 41 *e*P **P 19 05 25.6 +0.3**
comp=Z,2μm,1.8s
EGMT LR LR

comp=Z,6μm,21.0s
BNGL BINGOL 74.50 307 *i*P **P 19 05 27.4 +1.8**
SIRN S¨–rnak 74.52 305 *i*P **P 19 05 25.8 +0.2**
SBT San Benito 74.54 56 *e*P **P 19 05 26.8 +1.2**
DLMT Dillon 74.58 45 *e*P **P 19 05 26.3 +0.4**
comp=Z,415nm,1.1s
HLID Hailey 74.61 47 P **P 19 05 27.2 +1.1**
baz=307
HLID Hailey 74.61 47 *e*P **P 19 05 26.6 +0.5**
comp=Z,376nm,1.5s
HLID LR LR

comp=Z,5μm,21.0s
LCCM Lewis and Clar 74.69 44 *e*P **P 19 05 27.2 +0.7**
MCMT McKenzie Canyo 74.76 45 *e*P **P 19 05 26.8 -0.2**
BMN Battle Mountai 74.76 51 *e*P **P 19 05 27.2 +0.2**
BMN pmax pmax

comp=Z,406nm,1.4s
BMN Battle Mountai 74.76 51 *e*P **P 19 05 27.2 +0.2**
comp=Z,406nm,1.4s
PMPB Monarch Peak 74.89 56 *e*P **P 19 05 28.4 +0.6**
comp=Z,316nm,1.3s
PMPB LR LR

comp=Z,12μm,22.0s
TVH1 TV Hill, Hawth 74.93 53 *e*P **P 19 05 28.9 +0.6**
comp=Z,2μm,1.9s
BOZ Bozeman (W) 74.95 44 P **P 19 05 29.2 +1.2**
baz=308
BOZ Bozeman (W) 74.95 44 *e*P **P 19 05 28.5 +0.5**
BOZ Bozeman (W) 74.95 44 *e*P **P 19 05 28.7 +0.7**
comp=Z,307nm,1.1s
BOZ LR LR

comp=Z,5μm,22.0s
TVH3 East Aurora ar 74.96 53 *e*P **P 19 05 29.2 +0.9**
comp=Z,314nm,1.2s
TVH3 LR LR

comp=Z,6μm,22.0s
BGMT Barton Gulch 74.97 44 *e*P **P 19 05 29.0 +0.7**
TVH2 Borealis Mine 74.98 53 *e*P **P 19 05 29.9 +1.4**
comp=Z,1μm,2.0s
TVH2 LR LR

comp=Z,6μm,21.0s
EUZM Uzumlu 74.98 308 *i*P **P 19 05 28.6 +0.4**
KELT Kelkit 75.00 309 *i*P **P 19 05 27.9 -0.6**
BTMN Batman 75.03 306 *i*P **P 19 05 30.5 +2.0**
OSL Oslo 75.16 337⇑*i*P **P 19 05 29.4 +0.7**
OSL IVmB_BB 19 05 30.8

comp=Z,6μm,2.2s
OSL *e*S **S 19 15 04.4 +1.1**
OSL IVMs_BB IVMs_BB 19 41 18.4

comp=Z,13μm,18.2s
SIM Simferopol' 75.19 315 *e*P **P 19 05 29.9 +0.7**
SIM *i*S **S 19 15 00.0 -4.3**
SIM MLR MLR

comp=N,11μm,17.0s
MLAC Mammoth, Mammo 75.36 54 P **P 19 05 32.4 +1.7**
baz=306
ORDU Ordu-Boztepe 75.37 310 *i*P **P 19 05 30.7 +0.3**
TNCL Tunceli-Merkez 75.43 308 *i*P **P 19 05 29.8 -1.1**
FOO Floro 75.51 340⇑*i*P **P 19 05 32.0 +1.4**
FOO IVmB_BB 19 05 32.9

comp=Z,5μm,2.4s
FOO *e*S **S 19 15 08.6 +1.4**
FOO IVMs_BB IVMs_BB 19 42 05.1

comp=Z,7μm,17.2s
PAGB Antelope Grade 75.53 56 *e*P **P 19 05 32.0 +0.7**
comp=Z,560nm,1.2s
PAGB LR LR

comp=Z,13μm,22.0s
QLMT Earthquake Lak 75.56 44 *e*P **P 19 05 32.5 +0.9**
SUSE Susehri 75.62 310 *i*P **P 19 05 31.2 -0.7**
KLNR Kaliningrad 75.65 329*c i*P **P 19 05 32.4 +0.8**
KLNR pmax pmax

comp=Z,219nm,1.2s
KLNR MLR MLR

comp=Z,57μm,17.0s
MARD Mardin 75.69 306 *i*P **P 19 05 32.1 -0.3**
KONO Kongsberg 75.74 337⇑*e*P **P 19 05 33.0 +1.0**
KONO IVmB_BB 19 05 33.9

comp=Z,5μm,2.6s
KONO *e*S **S 19 15 11.1 +1.3**
KONO IVMs_BB IVMs_BB 19 41 46.6

comp=Z,12μm,17.8s
KONO Kongsberg 75.74 337*c i*P **P 19 05 33.0 +1.0**
KONO pmax pmax

comp=Z,282nm,1.1s
KONO MLR MLR

comp=Z,193μm,19.0s
KONO Kongsberg 75.74 337 *e*P **P 19 05 32.2 +0.2**
comp=Z,170nm,1.4s
KONO LR LR

comp=Z,36μm,19.0s
YHB Horse Butte 75.74 44 *e*P **P 19 05 33.7 +1.0**
comp=Z,269nm,1.1s
YHB LR LR

comp=Z,5μm,22.0s
REFA Refahiye_ERZ¨ 75.75 309 *i*P **P 19 05 31.4 -1.4**
DIYA Diyarbakir 75.75 307 *i*P **P 19 05 33.9 +1.2**
YMC Maple Creek 75.84 44 *e*P **P 19 05 34.6 +1.4**
RCTC Rector, Farmer 75.87 55 P **P 19 05 34.6 +1.4**
baz=306
CRMT Chrome Mountai 75.89 43 *e*P **P 19 05 34.3 +0.7**
YHH Holmes Hill 75.91 44 *e*P **P 19 05 34.8 +1.1**
comp=Z,754nm,2.0s
YHH LR LR

comp=Z,5μm,21.0s
YMR Madison River 75.92 44 *e*P **P 19 05 34.8 +1.2**
comp=Z,454nm,1.3s
YMR LR LR

comp=Z,4μm,19.0s
GCMT Greycliff 75.94 43 *e*P **P 19 05 33.3 -0.3**
SMMC Simmler 75.94 56 P **P 19 05 35.2 +1.5**
baz=306
SFJD Kangerlussuaq 75.98 5⇑*i*P **P 19 05 34.3 +1.0**
comp=Z,7μm,20.0s
SFJD Kangerlussuaq 75.98 5⇑*i*P **P 19 05 34.3 +1.0**
SFJD MLR MLR

comp=Z,8μm,20.0s
SFJD Kangerlussuaq 75.98 5 *e*P **P 19 05 34.2 +1.0**
comp=Z,399nm,1.4s
SFJD LR LR

comp=Z,9μm,20.0s
KEMA Kemaliye 76.00 309 *i*P **P 19 05 32.4 -1.6**
SUE Sulen 76.03 340⇑*i*P **P 19 05 35.1 +1.4**
SUE IVmB_BB 19 05 35.9

comp=Z,5μm,2.6s
SUE *e*S **S 19 15 14.6 +1.7**
SUE IVMs_BB IVMs_BB 19 42 20.4

comp=Z,7μm,16.1s
YNR Norris Junctio 76.05 44 PFAKE 19 05 40.0 +5.5
YNR LR LR

comp=Z,5μm,21.0s
MCID Moose Creek 76.09 45 *e*P **P 19 05 36.8 +2.1**
TIN Tinemaha, Big 76.09 54 P **P 19 05 36.3 +1.6**
baz=306
YFT Old Faithful 76.13 45 *e*P **P 19 05 37.4 +2.5**
comp=Z,464nm,1.3s
SAMS Samsun-Alacam 76.16 311 *i*P **P 19 05 35.9 +1.1**
VES Vestal, Richgr 76.24 56 P **P 19 05 36.0 +0.6**
baz=306
YPP Pitchstone Pla 76.26 45 *e*P **P 19 05 36.9 +1.2**
comp=Z,380nm,1.5s
YPP LR LR

comp=Z,5μm,22.0s
RAO Raoul Island 76.28 144 PFAKE 19 05 50.0 +15
RAO LR LR

comp=Z,11μm,21.0s
LKWY Lake 76.30 44 *e*P **P 19 05 38.3 +2.4**
LKWY pmax pmax

comp=Z,322nm,1.1s
LKWY Lake 76.30 44 *e*P **P 19 05 38.3 +2.4**
comp=Z,322nm,1.1s
H17A Grant Village 76.31 44 P **P 19 05 38.6 +2.7**
baz=309
H17A Grant Village 76.31 44 *e*P **P 19 05 37.8 +1.9**
comp=Z,417nm,1.1s
H17A LR LR

comp=Z,6μm,20.0s
PKM Mcpherson Peak 76.31 57 P **P 19 05 37.4 +1.4**
baz=306
ASK Askoy 76.38 339 *e*P **P 19 05 36.7 +1.0**
ASK IVmB_BB 19 05 38.2

comp=Z,5μm,2.1s
ASK *e*S **S 19 15 20.2 +3.4**
IMW Indian Meadow 76.41 45 *e*P **P 19 05 37.6 +1.0**
comp=Z,333nm,1.1s
IMW LR LR

comp=Z,6μm,22.0s
YMS Mount Sheridan 76.42 45 *e*P **P 19 05 38.9 +2.2**
BER Bergen 76.42 339⇑*e*P **P 19 05 37.4 +1.5**
BER IVmB_BB 19 05 38.3

comp=Z,5μm,2.6s
BER *e*S **S 19 15 18.9 +1.6**
BER IVMs_BB IVMs_BB 19 42 20.5

comp=Z,9μm,16.7s
FLWY Flagg Ranch 76.43 45 *e*P **P 19 05 38.4 +1.8**
comp=Z,723nm,1.4s
FLWY LR LR

comp=Z,3μm,21.0s
ODD1 Odda 76.43 338⇑*i*P **P 19 05 37.5 +1.5**
ODD1 IVmB_BB 19 05 39.6

comp=Z,5μm,9.4s
ODD1 *e*S **S 19 15 19.4 +1.8**
ODD1 IVMs_BB IVMs_BB 19 40 49.2

comp=Z,10μm,26.1s
YTP The Promontory 76.47 44 *e*P **P 19 05 39.2 +2.3**
SCER sogukcermik 76.49 310 *i*P **P 19 05 36.7 -0.2**
CWC Cottonwood Cre 76.55 55 P **P 19 05 39.0 +1.7**
baz=306
RLMT Red Lodge 76.58 43 P **P 19 05 38.9 +1.5**
baz=309
RLMT Red Lodge 76.58 43 *e*P **P 19 05 37.9 +0.5**
comp=Z,1μm,1.8s
RLMT LR LR

comp=Z,6μm,21.0s
CUKAN kangal_SIVAS 76.61 309 *i*P **P 19 05 38.6 +1.0**
TOKA Tokat 76.61 310 *i*P **P 19 05 36.4 -1.0**
HAVZ Havza 76.61 311 *i*P **P 19 05 38.1 +0.7**
MOOW Moose Ponds 76.61 45 *e*P **P 19 05 39.0 +1.4**
comp=Z,922nm,1.8s
MOOW LR LR

comp=Z,4μm,21.0s
MZRK Al-Mazaregh 76.64 305 *e*P **P 19 05 39.0 +1.4**
SBC Santa Barbara 76.64 57 P **P 19 05 39.1 +1.5**
baz=306
HVU Hansel Valley 76.65 48 *e*P **P 19 05 38.6 +0.8**
HVU pmax pmax

comp=Z,227nm,0.9s
HVU MLR MLR

comp=Z,6μm,20.0s
HVU Hansel Valley 76.65 48 *e*P **P 19 05 38.6 +0.8**
comp=Z,227nm,0.9s
HVU LR LR

comp=Z,6μm,20.0s
TPAW Teton Pass 76.66 45 *e*P **P 19 05 39.4 +1.5**
comp=Z,320nm,1.1s
TPAW LR LR

comp=Z,6μm,22.0s
GRAC Grapevine Rang 76.69 54 P **P 19 05 38.9 +1.0**
baz=306
ISA Isabella, Lake 76.75 55 P **P 19 05 38.3 -0.1**
baz=306
ISA Isabella, Lake 76.75 55 *e*P **P 19 05 38.2 -0.1**
ISA pmax pmax

comp=Z,122nm,0.9s
ISA Isabella, Lake 76.75 55 *e*P **P 19 05 38.1 -0.2**
comp=Z,122nm,0.9s
KIS Kishinev 76.77 319⇑*i*P **P 19 05 36.0 -2.1**
comp=Z,1μm,2.0s
KIS Kishinev 76.77 319 *i* PcP **PcP 19 05 54.0 +4.7**
KIS Kishinev 76.77 319 *e*PP PP 19 08 36.0 +5.3
KIS Kishinev 76.77 319α*i*P **P 19 05 36.0 -2.1**
KIS *i* 19 05 54.0
KIS *e* 19 08 36.0
KIS *i*S **S 19 15 18.0 -3.6**
KIS *i* 19 15 46.0
KIS *i*PS **PnS 19 15 58.0 -6.7**
KIS pmax pmax

comp=Z,1μm,2.0s
KIS pmax pmax

comp=E,400nm,2.0s
KIS pmax pmax

comp=Z,3μm,10.0s
KIS pmax pmax

comp=N,1μm,4.0s
KIS pmax pmax

comp=E,1μm,4.0s
KIS smax smax

comp=N,6μm,8.0s
KIS smax smax

comp=E,6μm,10.0s
KIS MLR MLR

comp=N,26μm,16.0s
KIS MLR MLR

comp=E,24μm,16.0s
KIS MLR MLR

comp=Z,47μm,16.0s
KIS MLR MLR

comp=Z,48μm,18.0s
LOHW Long Hollow 76.78 45 *e*P **P 19 05 39.0 +0.5**
comp=Z,130nm,1.2s
LOHW LR LR

comp=Z,6μm,22.0s
SNOW Snow King Moun 76.79 45 *e*P **P 19 05 39.6 +0.9**
comp=Z,250nm,1.2s
SNOW LR LR

comp=Z,8μm,22.0s
REDW Red Top Meadow 76.79 45 *e*P **P 19 05 39.6 +1.0**
comp=Z,1μm,2.0s
REDW LR LR

comp=Z,8μm,22.0s
ARVC Arvin 76.83 56 P **P 19 05 39.5 +0.8**
baz=306
BLS5 Blasjo 76.88 338⇑*i*P **P 19 05 40.0 +1.4**
BLS5 IVmB_BB 19 05 42.1

comp=Z,4μm,9.0s
BLS5 *e*S **S 19 15 24.0 +1.5**
BLS5 IVMs_BB IVMs_BB 19 42 00.4

comp=Z,8μm,19.7s
MTUT Morton Thiokol 76.89 47 *e*P **P 19 05 40.3 +1.2**
BOYT Boyabat 76.89 312 *i*P **P 19 05 40.0 +1.0**
SCZ2 Santa Cruz Isl 76.95 57 P **P 19 05 40.4 +0.9**
baz=306
DAC Darwin (Calif) 76.96 54 PFAKE 19 05 50.0 +10
DAC LR LR

comp=Z,8μm,20.0s
R11A Troy Canyon, C 77.02 52 P **P 19 05 40.9 +1.0**
baz=307
R11A Troy Canyon, C 77.02 52 *e*P **P 19 05 40.5 +0.5**
comp=Z,382nm,1.3s
AHID Auburn Hatcher 77.02 46 *e*P **P 19 05 40.5 +0.6**
comp=Z,220nm,1.0s
AHID LR LR

comp=Z,11μm,22.0s
BGU Big Grassy Mou 77.03 48 *e*P **P 19 05 40.6 +0.7**
comp=Z,222nm,1.4s
BGU LR LR

comp=Z,5μm,22.0s
DGMT Dagmar 77.06 38 P **P 19 05 40.7 +0.9**
baz=312
DGMT Dagmar 77.06 38 *e*P **P 19 05 40.7 +0.9**
comp=Z,2μm,1.7s
DGMT LR LR

comp=Z,7μm,22.0s
CUALT Altinyayla-SIV 77.07 309 *i*P **P 19 05 40.3 +0.1**
LTU Little Mountai 77.08 47 *e*P **P 19 05 40.9 +0.7**
SPUT South Promonto 77.14 48 *e*P **P 19 05 41.7 +1.2**
comp=Z,1μm,1.9s
SPUT LR LR

comp=Z,4μm,20.0s
MPMC Manual Prospec 77.16 55 P **P 19 05 41.1 +0.3**
baz=306
HOMB Homborsund 77.18 336⇑*i*P **P 19 05 41.2 +1.0**
HOMB IVmB_BB 19 05 42.0

comp=Z,5μm,2.5s
HOMB *e*S **S 19 15 25.5 0.0**
HOMB IVMs_BB IVMs_BB 19 42 28.6

comp=Z,15μm,17.6s
OSI Osito Audit: C 77.20 56 P **P 19 05 42.0 +1.2**
baz=306
OSI Osito Audit: C 77.20 56 *e*P **P 19 05 41.6 +0.8**
comp=Z,271nm,0.8s
OSI LR LR

comp=Z,18μm,22.0s
LAO LASA Array 77.20 41 P **P 19 05 41.7 +1.0**
baz=311
LAO LASA Array 77.20 41 *e*P **P 19 05 41.5 +0.8**
comp=Z,986nm,1.5s
LAO LR LR

comp=Z,7μm,22.0s
HDU Hyde Park 77.23 47 *e*P **P 19 05 42.2 +1.1**
BLG Laguna Peak, P 77.27 57 P **P 19 05 41.9 +0.7**
baz=306
LVV L'vov 77.28 324*d i*P **P 19 05 42.1 +1.2**
LVV *e*S **S 19 15 27.1 +0.1**
LVV *e*SS **SS 19 20 23.6 -1.1**
LVV MLR MLR

comp=E,15μm,16.0s
LVV MLR MLR

comp=N,13μm,17.0s
LVV MLR MLR

comp=Z,20μm,16.0s
IAS Iasi 77.29 320⇑*i*P **P 19 05 41.8 +0.7**
CUSAR Sarkisla-SIVAS 77.30 310 *i*P **P 19 05 42.2 +0.8**
FURC Furnace Creek, 77.32 54 P **P 19 05 42.3 +0.9**
baz=307
SURC SANLIURFA_SURC 77.34 307 *i*P **P 19 05 41.1 -0.5**
BEL Belsk 77.36 327 *e*P **P 19 05 42.6 +1.3**
BEL *e*PP **PP 19 08 35.0 -0.4**
BEL *e*S **S 19 15 28.4 +0.6**
BEL LMZ LR 19 41 01.8

comp=Z,18μm,22.2s
BEL Belsk 77.36 327⇑*e*P **P 19 05 42.6 +1.3**
BEL *e* 19 08 35.0
BEL *e*S **S 19 15 28.4 +0.6**
BEL MLR MLR

comp=Z,18μm,22.2s
SNUT Stansbury Nort 77.36 48 *e*P **P 19 05 43.2 +1.4**
LRMC Laurel Mtn Rad 77.38 55 P **P 19 05 42.3 +0.4**
baz=307
BSD Bornholm Skovb 77.38 332⇑*i*P **P 19 05 42.1 +0.7**
BSD *i*S **S 19 15 26.0 -1.9**

comp=Z,12μm,20.0s
BSD Bornholm Skovb 77.38 332⇑*i*P **P 19 05 42.1 +0.7**
BSD *i*S **S 19 15 26.0 -1.9**
BSD MLR MLR

comp=Z,12μm,20.0s
KMY Karmoy 77.41 338 *e*P **P 19 05 42.9 +1.5**
KMY IVmB_BB 19 05 43.8

comp=Z,520nm,2.2s
CTAK Corum_Osmancik 77.43 312 *i*P **P 19 05 42.2 0.0**
TPNV Topopah Spring 77.43 53 P **P 19 05 43.0 +0.7**
baz=307
TPNV Topopah Spring 77.43 53 *e*P **P 19 05 42.6 +0.3**
TPNV pmax pmax

comp=Z,451nm,1.2s
TPNV MLR MLR

comp=Z,11μm,21.0s
TPNV Topopah Spring 77.43 53 *e*P **P 19 05 42.6 +0.3**
comp=Z,451nm,1.2s
TPNV LR LR

comp=Z,11μm,21.0s
BMUT Black Mountain 77.45 47 *e*P **P 19 05 43.7 +1.3**
SNCC San Nicolas Is 77.46 58 P **P 19 05 42.7 +0.5**
baz=306
SNCC San Nicolas Is 77.46 58 *e*P **P 19 05 42.5 +0.2**
comp=Z,554nm,1.3s
SNCC LR LR

comp=Z,16μm,21.0s
HWUT Hardware Ranch 77.47 47 *e*P **P 19 05 43.4 +1.0**
comp=Z,601nm,1.4s
STAV Stavanger 77.51 338⇑*i*P **P 19 05 43.2 +1.2**
STAV IVmB_BB 19 05 44.2

comp=Z,5μm,2.6s
STAV *e*S **S 19 15 29.7 +0.6**
STAV IVMs_BB IVMs_BB 19 42 48.3

comp=Z,8μm,18.6s
EDW2 Edwards Air Fo 77.53 56 P **P 19 05 43.1 +0.4**
baz=306
RSUT Red Spur Mount 77.54 47 *e*P **P 19 05 44.1 +1.1**
FSU Fish Springs 77.54 50 *e*P **P 19 05 43.6 +0.8**
COAL Corum-Alaca 77.56 311 *i*P **P 19 05 42.2 -0.6**
MCU Monte Cristo P 77.60 47 *e*P **P 19 05 44.5 +1.2**
DUG Dugway, Tooele 77.60 49 P **P 19 05 44.0 +0.9**
baz=308
DUG Dugway, Tooele 77.60 49 *e*P **P 19 05 44.1 +0.9**
DUG Dugway, Tooele 77.60 49 *e*P **P 19 05 44.1 +0.9**
DECC Green Verdugo 77.67 56 P **P 19 05 44.1 +0.6**
baz=306
BORG Borgarnes 77.68 352 *e*P **P 19 05 44.3 +1.4**
BORG pmax pmax

comp=Z,256nm,1.1s
BORG Borgarnes 77.68 352 *e*P **P 19 05 44.3 +1.4**
comp=Z,256nm,1.1s
DGAR Diego Garcia 77.72 251 PFAKE 19 05 50.0 +6.1
DGAR LR LR

comp=Z,8μm,22.0s
PASC Pasadena Art C 77.82 56 *e*P **P 19 05 45.0 +0.8**
comp=Z,158nm,1.2s
PASC LR LR

comp=Z,22μm,21.0s
ILGA Ilgaz 77.82 312 *i*P **P 19 05 45.2 +0.7**
GKP Gorka Klasztor 77.83 329 *e*P **P 19 05 45.0 +1.0**
GKP *e*PP **PP 19 08 39.9 +0.6**
GKP *e*S **S 19 15 32.1 -0.8**
GKP LMZ LR 19 45 24.8

comp=Z,27μm,21.1s
GKP Gorka Klasztor 77.83 329⇑*e*P **P 19 05 45.0 +1.0**
GKP *e* 19 08 39.9
GKP *e*S **S 19 15 32.1 -0.8**
GKP MLR MLR

comp=Z,27μm,21.1s
RBU Red Butte Cany 77.84 48 *e*P **P 19 05 45.6 +1.1**
PRAR RASCA 77.86 321⇑*i*P **P 19 05 46.4 +2.1**
COP Copenhagen 77.86 333⇑*i*P **P 19 05 45.4 +1.3**
comp=Z,171nm,1.1s
COP *i*S **S 19 15 32.4 -0.7**

comp=Z,12μm,18.0s
COP Copenhagen 77.86 333⇑*i*P **P 19 05 45.4 +1.3**
COP *i*S **S 19 15 32.4 -0.7**
COP pmax pmax

comp=Z,170nm,1.1s
COP MLR MLR

comp=Z,12μm,18.0s
MWC Mount Wilson 77.87 56 *e*P **P 19 05 44.1 -0.7**

MWC pmax pmax
comp=Z,1µm,2.0s
MWC MLR MLR
comp=Z,24µm,22.0s
MWC Mount Wilson 77.87 56 *eP* **P 19 05 44.1 -0.7**
comp=Z,1µm,2.0s
MWC LR LR
comp=Z,24µm,22.0s
TCUT Toone Canyon 77.87 47 *eP* **P 19 05 45.5 +0.7**
comp=Z,453nm,0.9s
BW06 Boulder Array 77.91 45 P **P 19 05 45.1 +0.2**
baz=310
BW06 Boulder Array 77.91 45 *eP* **P 19 05 44.8 -0.1**
BW06 LR LR
comp=Z,7µm,21.0s
PD31 Pinedale Array 77.91 45 *eP* **P 19 05 44.9 0.0**
PDAR Pinedale Array 77.91 45 P **P 19 05 44.6 -0.3**
comp=Z,87nm,0.7s,baz=266,slow=2.4,SNR=151
PDAR S **S 19 15 33.5 -1.1**
comp=Z,0.2nm,0.4s,baz=12,slow=4.6,SNR=2.3
PDAR LR LR 19 36 17.9
comp=Z,6µm,21.5s,baz=326,slow=33
OUZ Omahuta 77.92 153 *eP* **P 19 05 45.9 +1.4**
comp=Z,192nm,1.2s
OUZ LR LR
comp=Z,19µm,21.0s
CTU Camp Tracy 77.93 48 *eP* **P 19 05 45.3 +0.3**
comp=Z,1µm,2.0s
CTU LR LR
comp=Z,4µm,22.0s
TLCR 77.95 318⇑ *iP* **P 19 05 45.2 +0.4**
SOFL Sornfelli, Far 77.98 345⇑ *eP* **P 19 05 46.7 +2.0**
SOFL Sornfelli, Far 77.98 345 *eP* **P 19 05 46.4 +1.7**
SOFL AMS AMS 19 36 28.8
comp=Z,9µm,29.7s
PSUT Pine Spring 77.98 51 *eP* **P 19 05 46.4 +1.0**
comp=Z,1µm,2.0s
GMU Granite Mounta 78.00 48 *eP* **P 19 05 46.3 +0.9**
FMP Fort Macarthur 78.02 57 P **P 19 05 46.0 +0.7**
baz=307
KWP Kalwaria Pacla 78.03 324 *eP* **P 19 05 46.9 +1.7**
KWP *eS* **S 19 15 35.7 +0.5**
KWP LMZ LR 19 40 49.9
comp=Z,17µm,27.0s
KWP Kalwaria Pacla 78.03 324⇑ *eP* **P 19 05 46.9 +1.7**
KWP *eS* **S 19 15 35.7 +0.5**
KWP MLR MLR
comp=Z,17µm,27.0s
C25A Freed Ranch, W 78.04 38 P **P 19 05 46.2 +0.9**
baz=313
SHOC Shoshone, Teco 78.04 54 P **P 19 05 46.3 +0.8**
baz=307
GSC Goldstone, Bar 78.06 55 P **P 19 05 46.7 +1.0**
baz=307,SNR=90
GSC Goldstone, Bar 78.06 55 *eP* **P 19 05 45.7 0.0**
GSC pmax pmax
comp=Z,530nm,1.6s
GSC Goldstone, Bar 78.06 55 *eP* **P 19 05 45.7 0.0**
comp=Z,530nm,1.6s
CIS Catalina Islan 78.12 57 P **P 19 05 47.7 +1.7**
baz=307,SNR=13
BFSC Mount Baldy Ra 78.13 56 P **P 19 05 47.0 +0.9**
baz=307,SNR=43
JLU Jordanelle 78.17 48 *eP* **P 19 05 47.0 +0.6**
comp=Z,801nm,1.6s
BUR08 Bucovina Ar. S 78.19 322 *eP* **P 19 05 45.8 -0.4**
RRX Edison Barstow 78.19 55 P **P 19 05 48.3 +2.0**
baz=307
NLU North Lily Min 78.20 49 *eP* **P 19 05 47.2 +0.6**
comp=Z,252nm,1.2s
BURAR Bucovina Array 78.20 322⇓ *iP* **P 19 05 47.1 +0.8**
TESR Tescani 78.22 320⇑ *iP* **P 19 05 46.9 +0.7**
LLD Lille Linde 78.22 333 *iP* **P 19 05 47.1 +1.1**
comp=Z,210nm,1.0s
LLD Lille Linde 78.22 333 *iP* **P 19 05 47.1 +1.1**
LLD pmax pmax
comp=Z,210nm,1.0s
DCU Deer Creek Res 78.24 48 *eP* **P 19 05 47.8 +1.0**
SCI2 San Clemente I 78.28 58 P **P 19 05 48.5 +1.7**
baz=307,SNR=7.4
BTIN Bart`–n 78.31 314 *iP* **P 19 05 46.1 -0.7**
CDAG Cicekdag 78.32 311 *iP* **P 19 05 47.2 +0.2**
CFR Carcaliu 78.32 318⇑ *iP* **P 19 05 47.2 +0.4**
ELDT Eldivan 78.34 312 *iP* **P 19 05 48.0 +0.8**
IMU Iron Mountain 78.36 50 *eP* **P 19 05 48.5 +1.1**
ANDN Andirin 78.36 308 *iP* **P 19 05 47.1 -0.2**
LRW Lerwick 78.38 342⇑ *eP* **P 19 05 48.3 +1.5**
LRW Lerwick 78.38 342 *eP* **P 19 05 48.2 +1.3**
LRW AMB AMB 19 05 49.3
comp=Z,284nm,2.6s
LRW AMS AMS 19 37 41.3
comp=Z,9µm,27.0s
KUZU Kuzuini 78.39 307 *iP* **P 19 05 48.7 +1.2**
SHPR Sheep Range 78.40 53 *eP* **P 19 05 48.7 +1.0**
comp=Z,298nm,1.2s
SHPR LR LR
comp=Z,13µm,22.0s
DAU Daniels Canyon 78.40 48 *eP* **P 19 05 48.9 +1.1**
DAU Daniels Canyon 78.40 48 *eP* **P 19 05 48.9 +1.1**
MUD Monsted U'grnd 78.40 335⇑ *eP* **P 19 05 48.2 +1.2**
MUD Monsted U'grnd 78.40 335⇑ *iP* **P 19 05 48.2 +1.2**
MUD *iS* **S 19 15 38.2 -0.7**
comp=Z,27µm,21.0s
MUD Monsted U'grnd 78.40 335⇑ *iP* **P 19 05 48.2 +1.2**
MUD *iS* **S 19 15 38.2 -0.7**
MUD MLR MLR
comp=Z,27µm,21.0s
RGN Rugen 78.41 332 *eP* **P 19 05 48.6 +1.6**
comp=Z,496nm,1.4s
RGN LR LR
comp=Z,21µm,18.0s
MPU Maple Canyon 78.42 48 *eP* **P 19 05 48.3 +0.5**
comp=Z,2µm,2.0s
ODBI Odobesti 78.50 319⇑ *iP* **P 19 05 49.9 +2.1**
AVNS Nevsehir-Avano 78.53 310 *iP* **P 19 05 48.6 +0.3**
TUQ Turquoise Moun 78.55 54 P **P 19 05 49.2 +0.7**
baz=307,SNR=193
BBRC Big Bear Solar 78.60 56 P **P 19 05 50.5 +1.5**
baz=307
VRI Vrincioaia 78.61 320⇑ *iP* **P 19 05 49.6 +1.2**
LEVU Levan 78.63 49 *eP* **P 19 05 49.8 +0.8**
TIRR Tirgusor 78.64 318⇑ *iP* **P 19 05 49.0 +0.4**
TIRR Tirgusor 78.64 318 *eP* **P 19 05 49.0 +0.4**
TIRR pmax pmax
comp=Z,102nm,1.1s
TIRR MLR MLR
comp=Z,30µm,20.0s
TIRR Tirgusor 78.64 318 *eP* **P 19 05 49.0 +0.4**
comp=Z,102nm,1.1s
TIRR LR LR
comp=Z,30µm,20.0s
HEC Hector,Ludlow 78.65 55 P **P 19 05 49.7 +0.8**
baz=307,SNR=88
YAHY KAYSERI_Yahyal 78.66 309 *iP* **P 19 05 50.0 +1.1**
BR101 Keskin Array S 78.69 311 *eP* **P 19 05 49.6 +0.4**
BR101 *e*PKKPbc **PKKPbc 19 24 43.1 +0.6**
BR101 *e*P'P'df **P'P'df 19 32 51.3 +0.2**
BR131 Keskin Array S 78.69 311 *eP* **P 19 05 49.2 0.0**
BRTR Keskin Array B 78.70 311 P **P 19 05 49.6 +0.4**
comp=Z,27nm,0.6s,baz=80,slow=3.6,SNR=54
BRTR PKKPbc **PKKPbc 19 24 43.1 +0.6**
comp=Z,1.2nm,1.0s,baz=207,slow=4.2,SNR=4.1
BRTR PKPPKP **P'P'df 19 32 51.3 +0.2**
comp=Z,1.0nm,0.9s,baz=31,slow=3.2,SNR=4.3
BRTR LR LR 19 45 09.8
comp=Z,6µm,18.8s,baz=49,slow=39
BRTR Keskin Array B 78.70 311 *iP* **P 19 05 49.7 +0.5**
BRTR pmax pmax
comp=Z,28nm,0.6s
ARUT Antelope Range 78.70 51 *eP* **P 19 05 50.5 +1.2**
ARUT Antelope Range 78.70 51 *eP* **P 19 05 50.5 +1.2**
DRWC Darouich 78.74 307 *eP* **P 19 05 51.1 +1.7**
HARR Harsova 78.75 318⇓ *iP* **P 19 05 49.9 +0.7**
TLB Topalu 78.76 318⇑ *iP* **P 19 05 50.0 +0.8**
DWU Dry Willow Pea 78.78 51 *eP* **P 19 05 50.5 +0.7**
GRER 78.80 319⇑ *iP* **P 19 05 51.5 +2.0**
WCU Willow Creek 78.80 50 *eP* **P 19 05 51.2 +1.2**
MURC Murrieta 78.82 56 P **P 19 05 50.5 +0.7**
baz=307,SNR=22
STHS Stebnicka Huta 78.86 325 *eP* **P 19 05 50.9 +1.1**
STHS pmax pmax
comp=Z,118nm,1.1s
STHS Stebnicka Huta 78.86 325 *eP* **P 19 05 50.9 +1.1**
CCUT Cedar City 78.89 51 *eP* **P 19 05 51.1 +0.7**
comp=Z,585nm,1.5s

SNO Snow College 78.92 49 *eP* **P 19 05 52.0 +1.4**
UZH Uzhgorod 78.92 324⇑ *eP* **P 19 05 49.9 -0.1**
UZH *i* 19 06 02.3
UZH *i* 19 08 46.5
UZH *e* 19 10 43.7
UZH *iS* **S 19 15 41.5 -3.2**
UZH *e* 19 16 05.0
UZH *e* 19 16 21.5
UZH MLR MLR
comp=N,36µm,16.0s
UZH MLR MLR
comp=E,28µm,16.0s
UZH MLR MLR
comp=Z,24µm,16.0s
SGU Sterling 78.94 49 *eP* **P 19 05 52.3 +1.6**
OJC Ojcow 78.95 326 *eP* **P 19 05 51.3 +1.1**
OJC *e* 19 08 49.5
OJC *eS* **S 19 15 44.4 -0.6**
OJC MLR MLR
comp=Z,16µm,25.3s
OJC Ojcow 78.95 326⇑ *eP* **P 19 05 51.3 +1.1**
OJC *e* 19 08 49.5
OJC *eS* **S 19 15 44.4 -0.6**
OJC MLR MLR
comp=Z,16µm,25.3s
OJC Ojcow 78.95 326 *eP* **P 19 05 50.8 +0.6**
comp=Z,289nm,1.1s
ARCR ARCALIA 78.99 322⇑ *iP* **P 19 05 52.9 +2.4**
BMR Baia Mare 79.01 322⇑ *iP* **P 19 05 51.9 +1.3**
MSU Marysvale 79.03 50 *eP* **P 19 05 52.0 +0.8**
MSU Marysvale 79.03 50 *eP* **P 19 05 52.0 +0.8**
SZCU Shurtz Canyon 79.04 51 *eP* **P 19 05 51.1 -0.1**
comp=Z,344nm,1.3s
PGOR Pogoanele 79.11 319⇓ *iP* **P 19 05 52.5 +1.4**
GMRC Granite Mounta 79.12 55 P **P 19 05 52.1 +0.5**
baz=308,SNR=157
CRVS Cervenica-Dubn 79.12 324 *eP* **P 19 05 52.2 +1.0**
CRVS *eS* **S 19 15 46.0 -0.9**
CRVS *eSS* **SS 19 20 52.9 +0.4**
CRVS Cervenica-Dubn 79.12 324 *eP* **P 19 05 52.2 +1.0**
CRVS *eS* **S 19 15 46.0 -0.9**
CRVS *eSS* **SS 19 20 52.9 +0.4**
TMUT Trail Mountain 79.13 49 *eP* **P 19 05 52.2 +0.4**
comp=Z,339nm,1.4s
TMUT LR LR
comp=Z,4µm,20.0s
BR231 Keskin MP Arra 79.14 312 *eP* **P 19 05 50.3 -1.3**
TRPA Tarpa 79.15 323⇑ *eP* **P 19 05 53.1 +1.8**
ARGU Argyle Ridge 79.20 48 *eP* **P 19 05 53.2 +1.0**
ISR Istrita 79.20 319⇑ *iP* **P 19 05 53.2 +1.4**
MLR Muntele Rosu 79.26 320⇑ *iP* **P 19 05 52.8 +0.6**
MLR Muntele Rosu 79.26 320 *eP* **P 19 05 52.6 +0.4**
MLR pmax pmax
comp=Z,282nm,1.5s
MLR MLR
comp=Z,42µm,18.0s
MLR Muntele Rosu 79.26 320 *eP* **P 19 05 52.6 +0.4**
comp=Z,282nm,1.5s
MLR LR LR
comp=Z,42µm,18.0s
NIE Niedzica 79.29 325 *eP* **P 19 05 53.6 +1.5**
NIE *e*PP **PP 19 08 54.4 +2.7**
NIE *eS* **S 19 15 49.8 +1.0**
NIE LMZ LR 19 43 31.2
comp=Z,11µm,21.9s
NIE Niedzica 79.29 325⇑ *eP* **P 19 05 53.7 +1.5**
NIE *e* 19 08 54.4
NIE *eS* **S 19 15 49.8 +1.0**
NIE MLR MLR
comp=Z,11µm,21.9s
AKSY AKSARAY - Alti 79.30 310 *iP* **P 19 05 52.9 +0.4**
LDFC Landfair 79.30 54 *eP* **P 19 05 52.6 +0.1**
comp=Z,399nm,1.2s
P17A Butcher Ranch, 79.30 48 *eP* **P 19 05 53.5 +0.9**
comp=Z,3µm,2.0s
P17A LR LR
comp=Z,6µm,20.0s
PFO Pinyon Flats O 79.30 56 S **S 19 15 48.4 -1.2**
comp=Z,1.9nm,0.9s,baz=211,slow=19,SNR=2.5
PFO Pinyon Flats O 79.30 56 P **P 19 05 53.5 +0.9**
baz=307,SNR=65
PFO Pinyon Flats O 79.30 56 *eP* **P 19 05 52.6 0.0**
PFO *eS* **S 19 15 48.4 -1.2**
PFO pmax pmax
comp=Z,1µm,1.9s
PFO MLR MLR
comp=Z,22µm,21.0s
PFO Pinyon Flats O 79.30 56 *eP* **P 19 05 52.5 0.0**
comp=Z,1µm,1.9s
PFO *eS* **S 19 15 48.4 -1.2**
PFO LR LR
comp=Z,22µm,21.0s
LCMT Little Creek M 79.30 52 *eP* **P 19 05 53.4 +0.8**
comp=Z,356nm,1.2s
109C Camp Elliot, M 79.31 57 P **P 19 05 54.1 +1.6**
baz=307,SNR=18
TPFO Pinon Flats 79.31 56 P **P 19 05 53.5 +0.9**
baz=307,SNR=71
MTPU Mount Pierson 79.32 50 *eP* **P 19 05 54.3 +1.4**
comp=Z,352nm,0.9s
OWUT Old Woman Plat 79.33 49 *eP* **P 19 05 54.6 +1.7**
BELC Belle Mtn. Jos 79.37 55 P **P 19 05 53.4 +0.4**
baz=308,SNR=86
KKUL Konya-Kulu 79.48 311 *iP* **P 19 05 52.7 -0.7**
P18A Preston Nutter 79.50 48 PFAKE 19 06 00.0 +6.2
P18A LR LR
comp=Z,6µm,22.0s
SECR 79.51 319⇑ *iP* **P 19 05 55.2 +1.8**
KNB Kanab 79.56 51 *eP* **P 19 05 55.2 +1.2**
KNB pmax pmax
comp=Z,3µm,1.9s
KNB Kanab 79.56 51 *eP* **P 19 05 55.2 +1.2**
comp=Z,3µm,1.9s
PKCU Pink Cliffs 79.62 51 *eP* **P 19 05 56.4 +1.9**
comp=Z,143nm,0.8s
CJR Cluj-Napoca 79.62 322⇑ *iP* **P 19 05 55.1 +1.1**
SAHE Sakarya_HENDEK 79.62 314 *iP* **P 19 05 52.6 -1.5**
SULR 79.65 319⇓ *iP* **P 19 05 55.0 +0.9**
ARNB Al Arnab 79.65 307 *eP* **P 19 05 56.6 +2.2**
SRU San Rafael Swe 79.66 49 *eP* **P 19 05 55.2 +0.7**
SRU pmax pmax
comp=Z,381nm,0.7s
SRU MLR MLR
comp=Z,4µm,19.0s
SRU San Rafael Swe 79.66 49 *eP* **P 19 05 55.2 +0.7**
comp=Z,381nm,0.7s
SRU LR LR
comp=Z,4µm,19.0s
K22A Casper 79.69 44 P **P 19 05 55.3 +0.7**
baz=311,SNR=92
K22A Casper 79.69 44 *eP* **P 19 05 54.8 +0.2**
comp=Z,604nm,1.3s
K22A LR LR
comp=Z,4µm,22.0s
TAU Tasmania Unive 79.70 175 *eP* **P 19 05 56.0 +1.9**
TAU pmax pmax
comp=Z,502nm,1.8s
TAU MLR MLR
comp=Z,9µm,21.0s
TAU Tasmania Unive 79.70 175 *eP* **P 19 05 56.0 +1.9**
comp=Z,502nm,1.8s
TAU LR LR
comp=Z,9µm,21.0s
ULM Lac du Bonnet 79.71 33 P **P 19 05 54.0 -0.3**
comp=Z,59nm,0.6s,baz=321,slow=6.0,SNR=67
ULM S **S 19 15 51.3 -1.7**
comp=Z,1.3nm,0.5s,baz=18,slow=16,SNR=1.8
ULM LR LR 19 42 20.8
comp=Z,5µm,21.3s,baz=332,slow=36
ULM Lac du Bonnet 79.71 33 *eP* **P 19 05 53.8 -0.6**
comp=Z,1µm,1.8s
ULM S **S 19 15 51.3 -1.7**
BTAS Taskesti 79.72 313 *iP* **P 19 05 53.9 -0.8**
BAR Barrett 79.72 57 *eP* **P 19 05 55.1 +0.3**
comp=Z,250nm,1.0s
BAR LR LR
comp=Z,11µm,21.0s
MDND Maddock 79.73 37 P **P 19 05 55.4 +0.9**
baz=315,SNR=42
MDND Maddock 79.73 37 *eP* **P 19 05 55.0 +0.5**
comp=Z,3µm,1.9s
MDND LR LR
comp=Z,11µm,22.0s
EKU East Kanab 79.73 51 *eP* **P 19 05 56.4 +1.5**

RAC Raciborz 79.76 327 *eP* **P 19 05 55.1 +0.5**
RAC *eS* **S 19 15 53.3 -0.2**
RAC MLR MLR
comp=Z,14µm,18.0s
MONP2 Monument Peak 79.76 57 P **P 19 05 55.7 +0.4**
baz=308,SNR=52
VOIR 79.76 320⇑ *iP* **P 19 05 56.2 +1.4**
MMU Miners Mountai 79.77 50 *eP* **P 19 05 55.6 +0.4**
NEE2 Needles Airpor 79.81 54 P **P 19 05 55.9 +0.8**
baz=308,SNR=17
IRM Iron Mountain 79.84 55 P **P 19 05 55.9 +0.5**
baz=308,SNR=168
ROOS tl_alroos 79.84 305 *eP* **P 19 05 56.7 +1.3**
KERG Konya-Eregli 79.85 309 *iP* P 19 05 50.6 -4.9
LANS Liptovska Anna 79.86 325 *eP* **P 19 05 57.0 +1.7**
LANS *eS* **S 19 15 53.4 -1.4**
LANS Liptovska Anna 79.86 325 *eP* **P 19 05 57.0 +1.7**
LANS *eS* **S 19 15 53.4 -1.4**
KECS Kecovo 79.88 324 *eP* **P 19 05 56.7 +1.4**
KECS pmax pmax
comp=Z,16µm,11.0s
KECS Kecovo 79.88 324 *eP* **P 19 05 56.7 +1.4**
KECS *eS* **S 19 15 54.2 -0.7**
MTUR Matau 79.90 320⇓ *iP* **P 19 05 55.3 -0.3**
BC3 Big Chuckawall 79.94 55 P **P 19 05 56.4 +0.4**
baz=308,SNR=127
CBX Cerro Bola 79.95 57 *eP* **P 19 05 56.7 +0.6**
CBX S **pP 19 06 09.2 -1.0**
H25A Fruitdale 79.95 41 P **P 19 05 56.6 +0.7**
baz=313,SNR=23
OKC Ostrava-Krasne 79.96 327 *eP* **P 19 05 56.6 +0.9**
OKC *e*pP **PcP 19 06 06.6 +3.5**
OKC *e*PP **PP 19 08 58.8 +1.6**
OKC *eS* **S 19 15 55.3 -0.4**
OKC AMS AMS 19 44 20.0
comp=Z,13µm,15.4s
OKC Ostrava-Krasne 79.96 327 *eP* **P 19 05 56.6 +0.9**
OKC *e* 19 06 06.6
OKC *e* 19 08 58.8
OKC *eS* **S 19 15 55.3 -0.4**
OKC MLR MLR
comp=Z,13µm,15.4s
DRGR 80.00 322⇓ *iP* **P 19 05 56.8 +0.7**
KSP Ksiaz 80.02 328 *eP* **P 19 05 57.0 +1.0**
KSP *eS* **S 19 15 55.6 -0.7**
KSP *eSS* **SS 19 20 59.2 -6.6**
KSP LMZ LR 19 44 35.5
comp=Z,20µm,19.8s
KSP Ksiaz 80.02 328⇑ *eP* **P 19 05 57.0 +1.0**
KSP *eS* **S 19 15 55.6 -0.7**
KSP MLR MLR
comp=Z,20µm,19.8s
ARR Arges 80.02 320⇓ *iP* **P 19 05 58.1 +1.9**
RSSD Black Hills 80.06 42 P **P 19 05 57.1 +0.5**
baz=313
RSSD Black Hills 80.06 42 *eP* **P 19 05 56.7 +0.1**
RSSD pmax pmax
comp=Z,933nm,1.9s
RSSD MLR MLR
comp=Z,6µm,21.0s
RSSD Black Hills 80.06 42 *eP* **P 19 05 56.7 +0.1**
comp=Z,933nm,1.9s
RSSD LR LR
comp=Z,6µm,21.0s
W13A Hualapai Mount 80.08 54 *eP* **P 19 05 57.2 +0.3**
comp=Z,61nm,0.9s
A31A Linda, St. Vin 80.08 35 P **P 19 05 57.0 +0.6**
baz=316
IKP In-Ko-Pah, Jac 80.12 57 P **P 19 05 57.6 +0.6**
baz=308,SNR=51
SWSC Sam W. Stewart 80.14 56 P **P 19 05 57.7 +0.7**
baz=308,SNR=42
B31A Greenbush Farm 80.23 35 P **P 19 05 57.4 +0.2**
baz=316,SNR=38
U15A North Rim 80.26 52 *eP* **P 19 05 58.6 +0.6**
comp=Z,396nm,1.0s
MORC Moravsky Berou 80.27 327⇑ *iP* **P 19 05 58.5 +1.1**
MORC Moravsky Berou 80.27 327 *eP* **P 19 05 58.0 +0.5**
MORC pmax pmax
comp=Z,670nm,1.1s
MORC MLR MLR
comp=Z,61µm,20.0s
MORC Moravsky Berou 80.27 327 *eP* **P 19 05 58.0 +0.5**
comp=Z,670nm,1.1s
MORC LR LR
comp=Z,61µm,20.0s
RAR Rarotonga 80.34 126 LR LR 19 34 05.8
comp=Z,16µm,21.7s,baz=312,slow=30
O20A White River Ci 80.35 47 P **P 19 05 58.6 +0.3**
baz=311,SNR=139
O20A White River Ci 80.35 47 *eP* **P 19 05 58.5 +0.3**
comp=Z,290nm,1.1s
DPC Dobruska-Polom 80.37 328 *eP* **P 19 05 58.5 +0.5**
DPC *e*pP **pP 19 06 08.8 -3.2**
DPC *ex* x 19 06 29.3
DPC *e*PP **PP 19 09 02.1 +1.5**
DPC *eS* **S 19 15 59.8 -0.3**
DPC *ex* x 19 21 03.1
DPC *e*PKPPKP P'P'df 19 32 40.3 -7.9
DPC AMS AMS 19 47 30.0
comp=Z,17µm,14.5s
DPC Dobruska-Polom 80.37 328 *eP* **P 19 05 58.5 +0.5**
DPC *e* 19 06 08.8
DPC *e* 19 09 02.1
DPC *eS* **S 19 15 59.8 -0.3**
DPC MLR MLR
comp=Z,17µm,14.5s
KDHN Kadinhani 80.37 311 *iP* **P 19 05 56.0 -2.3**
KRLC Kraliky 80.38 327 *eS* **S 19 16 00.6 +0.4**
UPC Upice 80.39 328 *eP* **P 19 05 58.9 +0.9**
UPC *e*PP **PP 19 09 02.1 +1.4**
UPC *eS* **S 19 15 59.6 -0.6**
UPC *ex* x 19 21 00.7
UPC AMS AMS 19 46 40.0
comp=Z,23µm,17.9s
UPC Upice 80.39 328 *eP* **P 19 05 58.9 +0.9**
UPC *e* 19 09 02.1
UPC *eS* **S 19 15 59.6 -0.6**
UPC MLR MLR
comp=Z,23µm,17.9s
PDMCI Parker Dam,Lak 80.40 54 P **P 19 05 59.0 +0.6**
baz=308,SNR=41
A32A Rocking H Ranc 80.41 34 P **P 19 05 58.3 +0.1**
baz=317,SNR=44
LOT Lotru 80.41 321⇓ *iP* **P 19 05 58.5 +0.1**
HUMR Humele 80.42 319⇓ *iP* **P 19 05 58.5 +0.2**
KIZK Mersin 80.42 309 *iP* **P 19 05 55.4 -3.0**
MARH Ras Al Marh 80.45 305 *eP* **P 19 06 00.2 +1.1**
BORA Eskisehir 80.49 313 *iP* **P 19 05 58.2 -0.6**
ESKT Eskisehir 80.49 313 *iP* **P 19 05 58.7 -0.2**
Y12C Blythe 80.49 55 P **P 19 05 59.6 +0.7**
baz=308,SNR=76
Y12C Blythe 80.49 55 *eP* **P 19 05 59.4 +0.5**
comp=Z,1µm,2.0s
Y12C LR LR
comp=Z,16µm,22.0s
BIGH Upper Bighouse 80.50 342 *eP* **P 19 05 59.3 +0.9**
BIGH AMS AMS 19 42 59.1
comp=Z,15µm,21.2s
ISK Istanbul-Kandi 80.52 315 P **P 19 05 58.4 -0.4**
ISK Istanbul-Kandi 80.52 315 P **P 19 05 58.4 -0.4**
ISK Istanbul-Kandi 80.52 315 P **P 19 05 58.4 -0.4**
MLA1 Latheron 80.53 342 *eP* **P 19 05 59.3 +0.7**
DEV Deva 80.54 321⇑ *iP* **P 19 06 00.9 +2.0**
PSZ Piszkesteto 80.56 324⇑ *iP* **P 19 06 00.3 +1.2**
PSZ Piszkesteto 80.56 324 *eP* **P 19 05 59.5 +0.4**
PSZ pmax pmax
comp=Z,294nm,1.2s
PSZ MLR MLR
comp=Z,18µm,19.0s
PSZ Piszkesteto 80.56 324 *eP* **P 19 05 59.5 +0.4**
comp=Z,294nm,1.2s
PSZ LR LR
comp=Z,18µm,19.0s
PSZ Piszkesteto 80.56 324⇑ *eP* **P 19 06 00.7 +1.6**
ZALF Zalf 80.57 304 *eP* **P 19 06 01.9 +2.5**
VYHS Vyhne 80.63 325 *eP* **P 19 06 00.2 +0.8**
VYHS pmax pmax
comp=Z,357nm,2.2s
VYHS Vyhne 80.63 325 *eP* **P 19 06 00.2 +0.8**
VYHS *e*PP **PP 19 09 01.1 -1.7**
VYHS *eS* **S 19 16 02.3 -0.5**
VYHS *eSS* **SS 19 21 19.5 +4.5**
VYHS *eL* L 19 45 42.6

HWQ	**Hawqa**	80.64	306	*e*P		**P**		19 06 00.5	+0.6
C31A	**Landman Farms,**	80.65	36	P		**P**		19 05 59.5	+0.1
	baz=316,SNR=54								
KMER	**Konya-Meram**	80.70	310	*i* P		**P**		19 06 01.1	+1.0
GLA	**Glamis**	80.72	56	P		**P**		19 06 00.9	+0.7
	baz=308,SNR=42								
GLA	**Glamis**	80.72	56	*e*P		**P**		19 06 00.5	+0.3
GLA				pmax	pmax				
	comp=Z,1µm,1.9s								
GLA				MLR	MLR				
	comp=Z,18µm,22.0s								
GLA	**Glamis**	80.72	56	*e*P		**P**		19 06 00.5	+0.3
	comp=Z,1µm,1.9s								
GLA				LR	LR				
	comp=Z,18µm,22.0s								
B32A	**Ashes, Strandq**	80.77	35	P		**P**		19 05 59.4	-0.7
	baz=317,SNR=43								
ZIMR		80.81	319	⇓*i* P		**P**		19 06 01.6	+1.2
ELBA	**Catalca**	80.82	315	*i* P		**P**		19 05 59.9	-0.6
TOZ	**Tahuroa Road**	80.85	153	*e*PN		**P**		19 06 01.0	+0.7
PV09	**Paradox Valley**	80.89	48	*e*P		**P**		19 06 01.9	+0.6
A33A	**Warroad**	80.89	34	P		**P**		19 06 00.4	-0.3
	baz=318,SNR=76								
SIRR	**Siria**	80.89	322	⇑*i* P		**P**		19 06 01.7	+0.9
GZR	**Gura Zlata**	80.95	321	⇑*i* P		**P**		19 06 01.8	+0.6
BRG	**Berggiesshubel**	80.97	329	*i* P		**P**		19 06 01.8	+0.7
	comp=Z,1µm,2.2s								
BRG				*e*PP		**PP**		19 09 04.6	-1.0
	comp=Z,271nm,2.0s								
BRG				S		**S**		19 16 05.0	-1.3
BRG				SS		**SS**		19 21 12.0	-8.0
BRG				PKPPKP		P'P'df		19 32 33.9	-13
	comp=Z,18nm,2.1s								
	comp=N,18µm,16.3s								
	comp=E,15µm,17.8s								
	comp=Z,27µm,17.3s								
BRG	**Berggiesshubel**	80.97	329	*i* P		**P**		19 06 01.8	+0.7
BRG				*e*				19 09 04.6	
BRG				S		**S**		19 16 05.0	-1.3
BRG				SS		**SS**		19 21 12.0	-8.0
BRG				pmax	pmax				
	comp=Z,1µm,2.2s								
BRG				MLR	MLR				
	comp=N,18µm,16.3s								
BRG				MLR	MLR				
	comp=E,15µm,17.8s								
BRG				MLR	MLR				
	comp=Z,27µm,17.3s								
PVCC	**Panska Ves**	80.98	329	*e*P		**P**		19 06 02.1	+0.9
PVCC				*e*pP		**pP**		19 06 12.1	-3.1
PVCC				*e*PP		**PP**		19 09 06.5	+0.9
PVCC				*e*S		**S**		19 16 04.9	-1.4
PVCC				*e*SS		**SS**		19 21 17.2	-2.9
PVCC				AMS	AMS			19 44 50.0	
	comp=Z,21µm,17.3s								
PVCC	**Panska Ves**	80.98	329	*e*P		**P**		19 06 02.1	+0.9
PVCC				*e*				19 09 06.5	
PVCC				*e*S		**S**		19 16 04.9	-1.4
PVCC				*e*SS		**SS**		19 21 17.2	-2.9
PVCC				MLR	MLR				
	comp=Z,21µm,17.3s								
PV10	**Paradox Valley**	81.02	48	*e*P		**P**		19 06 03.0	+1.1
CLL	**Collm**	81.02	330	⇑*i* P		**P**		19 06 01.8	+0.4
	comp=Z,998nm,2.1s								
CLL				*e*Pmax				19 06 03.0	
CLL				*e*Plp				19 06 04.0	
	comp=Z,3µm,22.1s								
CLL				*i*				19 06 11.0	
CLL				*i*				19 06 14.3	
CLL				*i*				19 08 29.1	
	comp=Z,82nm,1.0s								
CLL				*e*PP		**PP**		19 09 10.0	+4.1
CLL				*e*PPP		PPP		19 11 00.0	
CLL				*e*S		**S**		19 16 06.0	-0.7
CLL				*e*sS		**sS**		19 16 33.0	+2.8
CLL				*e*				19 16 40.0	
CLL				*e*				19 17 32.0	
CLL				*i*				19 17 41.7	
CLL				*e*SS		**SS**		19 21 24.0	+3.4
CLL				*e*SSS		SSS		19 24 54.0	
CLL				*e*				19 26 00.0	
CLL				*e*SSSS				19 27 24.0	
CLL				*e*PKPPKPd		P'P'df		19 32 38.0	-8.9
CLL				Lmax				19 48 00.0	
CLL	**Collm**	81.02	330	⇑*i* P		**P**		19 06 01.8	+0.4
CLL				*e*S		**S**		19 16 06.0	-0.7
CLL				pmax	pmax				
	comp=Z,998nm,2.1s								
CLL				MLR	MLR				
	comp=Z,20µm,17.5s								
CLL	**Collm**	81.02	330	*e*P		**P**		19 06 01.3	-0.1
	comp=Z,152nm,1.0s								
CLL				LR	LR				
	comp=Z,20µm,21.0s								
VRAC	**Vranov**	81.03	327	⇓*i* P		**P**		19 06 02.7	+1.2
F29A	**Eureka**	81.04	38	P		**P**		19 06 02.4	+0.8
	baz=315,SNR=28								
BHL	**Bhannes**	81.07	306	*e*P		**P**		19 06 02.8	+0.7
ERMK	**Ermenek**	81.09	309	*i* P		**P**		19 06 00.3	-1.9
SALA	**Sala**	81.10	304	*e*P		**P**		19 06 03.2	+0.8
MCD	**Coleburn Disti**	81.14	341	⇑*i* P		**P**		19 06 03.0	+1.2
AGMN	**Agassiz Nation**	81.14	34	P		**P**		19 06 01.4	-0.7
	baz=317,SNR=60								
AGMN	**Agassiz Nation**	81.14	34	*e*P		**P**		19 06 01.4	-0.7
	comp=Z,372nm,1.4s								
AGMN				LR	LR				
	comp=Z,12µm,21.0s								
N23A	**Red Feather La**	81.17	45	P		**P**		19 06 03.6	+0.9
	baz=312,SNR=105								
N23A	**Red Feather La**	81.17	45	*e*P		**P**		19 06 03.2	+0.5
	comp=Z,487nm,1.3s								
N23A				LR	LR				
	comp=Z,6µm,21.0s								
PHWY	**Pilot Hill**	81.18	44	*e*P		**P**		19 06 03.1	+0.3
	comp=Z,438nm,1.4s								
PV05	**Paradox Valley**	81.18	49	*e*P		**P**		19 06 03.2	+0.4
C32A	**Crookston**	81.19	35	P		**P**		19 06 02.5	+0.1
	baz=317,SNR=9.2								
D31A	**Mcclaflin, Tow**	81.19	36	P		**P**		19 06 02.9	+0.5
	baz=316,SNR=17								
SRE	**Strehaia**	81.24	320	⇑*i* P		**P**		19 06 04.1	+1.4
SMOL	**Smolenice**	81.25	326	*e*P		**P**		19 06 04.3	+1.6
SMOL	**Smolenice**	81.25	326	*e*P		**P**		19 06 04.2	+1.6
BUD	**Budapest**	81.28	324	⇑*e*P		**P**		19 06 03.7	+0.9
B33A	**Robert and Kas**	81.29	34	P		**P**		19 06 03.5	+0.6
	baz=318,SNR=13								
EDRB	**Edirne**	81.29	316	P		**P**		19 06 01.1	-1.9
EDRB	**Edirne**	81.29	316	P		**P**		19 06 01.1	-1.9
MME1	**Meikle Cairn**	81.31	341	⇑*e*P		**P**		19 06 03.6	+0.9
HIZ	**Hauiti**	81.32	154	*e*P		**P**		19 06 04.3	+1.5
	comp=Z,355nm,1.1s								
HIZ				LR	LR				
	comp=Z,13µm,21.0s								
ASF	**Jabal al Asfar**	81.32	304	LR		LR		19 46 03.8	
	comp=Z,9µm,19.5s,slow=38								
GOPC	**GO Pecny, Ondr**	81.35	328	*e*P		**P**		19 06 03.4	+0.2
GOPC				*e*S		**S**		19 16 10.1	-0.2
GOPC				*ex*		x		19 21 14.9	
GOPC				AMS		AMS		19 48 10.0	
	comp=Z,23µm,16.1s								
GOPC	**GO Pecny, Ondr**	81.35	328	*e*P		**P**		19 06 03.4	+0.2
GOPC				*e*S		**S**		19 16 10.1	-0.2
GOPC				MLR	MLR				
	comp=Z,23µm,16.1s								
BZS	**Buzias**	81.37	322	⇓*i* P		**P**		19 06 03.6	+0.3
PRU	**Pruhonice**	81.40	328	*e*P		**P**		19 06 04.2	+0.8
PRU				*ex*		x		19 06 31.1	
PRU				*e*PP		**PP**		19 06 10.2	+1.1
PRU				*e*S		**S**		19 16 10.1	-0.6
PRU				*ex*		x		19 21 15.8	
PRU				*e*PKPPKP		P'P'df		19 32 36.4	-10
PRU				AMS		AMS		19 48 20.0	
	comp=Z,21µm,17.1s								
PRU	**Pruhonice**	81.40	328	*e*P		**P**		19 06 04.2	+0.8
PRU				*e*				19 06 31.1	
PRU				*e*				19 09 10.2	
PRU				*e*S		**S**		19 16 10.1	-0.6
PRU				MLR	MLR				
	comp=Z,21µm,17.1s								
WUAZ	**Wupatki**	81.42	52	P		**P**		19 06 04.9	+0.9
	baz=310,SNR=116								
WUAZ	**Wupatki**	81.42	52	*e*P		**P**		19 06 04.3	+0.3
	comp=Z,332nm,1.1s								
PHNC	**Paralimni**	81.42	307	P		**P**		19 06 04.0	+0.2
PV01	**Paradox Valley**	81.46	48	*e*P		**P**		19 06 04.7	+0.4
D32A	**Dogwood Acres,**	81.46	36	P		**P**		19 06 03.5	-0.3
	baz=317,SNR=20								
E31A	**Nome**	81.47	37	P		**P**		19 06 04.2	+0.4
	baz=316,SNR=51								
TIM	**Timisoara**	81.48	322	⇓*i* P		**P**		19 06 05.8	+1.9
SPX	**San Pedro Mart**	81.53	58	*e*P		**P**		19 06 04.9	0.0
DRUM	**Mains of Drumt**	81.53	341	*e*P		**P**		19 06 04.8	+0.8
DRUM				AMS		AMS		19 39 56.4	
	comp=Z,12µm,27.6s								
MDO	**Dochfour**	81.55	342	*e*P		**P**		19 06 04.9	+0.9
GDZ	**Gediz**	81.57	313	*i* P		**P**		19 06 01.8	-2.9
C33A	**Trail**	81.58	35	P		**P**		19 06 04.5	0.0
	baz=318,SNR=27								
113A	**Mohawk Valley,**	81.60	55	*e*P		**P**		19 06 05.0	+0.2
	comp=Z,151nm,1.3s								
113A				LR		LR			
	comp=Z,15µm,22.0s								
TCHB	**Talchebab**	81.63	305	*e*P		**P**		19 06 06.2	+1.2
SMCO	**Snowmass**	81.72	47	*e*P		**P**		19 06 06.2	+0.4
	comp=Z,1µm,2.0s								
SMCO				LR		LR			
	comp=Z,5µm,22.0s								
KAC	**Achnashellach**	81.72	342	*e*P		**P**		19 06 05.8	+0.8
BANR	**Banloc**	81.78	322	⇑*i* P		**P**		19 06 06.8	+1.4
ISP	**Isparta**	81.78	311	P		**P**		19 06 04.1	-1.7
ISP	**Isparta**	81.78	311	*e*P		**P**		19 06 04.1	-1.7
ISP				MLR		MLR			
	comp=Z,11µm,21.0s								
ISP	**Isparta**	81.78	311	*e*P		**P**		19 06 04.1	-1.7
ISP				LR		LR			
	comp=Z,11µm,21.0s								
MMAI	**Mount Meron Ar**	81.78	305	LR		LR		19 45 59.3	
	comp=Z,17µm,21.1s,baz=45,slow=38								
F31A	**Hecla**	81.79	37	P		**P**		19 06 06.3	+0.8
	baz=316,SNR=24								
E32A	**Braaten, Kindr**	81.83	36	P		**P**		19 06 06.6	+0.9
	baz=317,SNR=8.5								
SART	**Tekirdag**	81.83	315	*i* P		**P**		19 06 06.2	+0.3
MAMC	**Mammari**	81.83	308	P		**P**		19 06 06.3	+0.3
CSS	**Mathiatis**	81.89	308	P		**P**		19 06 06.6	+0.3
CSS	**Mathiatis**	81.89	308	P		**P**		19 06 05.6	-0.7
CSS	**Mathiatis**	81.89	308	*e*P		**P**		19 06 06.3	0.0
	comp=Z,29nm,1.0s								
CSS				LR		LR			
	comp=Z,4µm,21.0s								
URZ	**Urewera**	81.91	152	LR		LR		19 38 34.3	
	comp=Z,11µm,21.6s,baz=339,slow=33								
URZ	**Urewera**	81.91	152	*e*P		**P**		19 06 04.9	-1.1
	comp=Z,165nm,1.1s								
URZ	**Urewera**	81.91	152	*e*PN		**P**		19 06 04.0	-2.0
MDVR	**Moldovita**	81.92	321	⇑*i* P		**P**		19 06 06.7	+0.4
KPL	**Plockton**	81.95	343	⇑*e*P		**P**		19 06 07.5	+1.3
KPL	**Plockton**	81.95	343	*e*P		**P**		19 06 07.3	+1.2
KPL				AMB		AMB		19 06 10.0	
	comp=Z,423nm,2.7s								
KPL				AMS		AMS		19 41 35.8	
	comp=Z,6µm,25.2s								
EDU	**Dundee**	82.00	341	*e*P		**P**		19 06 06.8	+0.4
D33A	**AnnSam, Waubun**	82.00	35	P		**P**		19 06 07.3	+0.6
	baz=318,SNR=21								
KESN	**Edirne-Kesan**	82.02	316	*i* P		**P**		19 06 07.7	+0.4
DEMI	**Demirci**	82.05	313	*i* P		**P**		19 06 04.9	-2.3
B35A	**Bob, Littlefor**	82.05	33	P		**P**		19 06 06.7	-0.2
	baz=319,SNR=83								
C34A	**RKJ Ranch, Bem**	82.06	34	P		**P**		19 06 07.4	+0.5
	baz=318,SNR=7.4								
X16A	**Lo Mia Camp, P**	82.07	53	*e*P		**P**		19 06 08.2	+0.7
	comp=Z,199nm,1.0s								
NKC	**Novy Kostel**	82.08	330	*e*P		**P**		19 06 07.8	+0.8
NKC				*ex*		x		19 06 38.1	
NKC				*ex*		x		19 06 48.7	
NKC				*e*PP		**PP**		19 09 15.5	+0.9
NKC				*e*S		**S**		19 16 16.2	-1.6
NKC				*ex*		x		19 21 21.1	
NKC				AMS		AMS		19 45 30.0	
	comp=Z,18µm,16.8s								
NKC	**Novy Kostel**	82.08	330	*e*P		**P**		19 06 07.8	+0.8
NKC				*e*				19 06 38.1	
NKC				*e*				19 06 48.7	
NKC				*e*				19 09 15.5	
NKC				*e*S		**S**		19 16 16.2	-1.6
NKC				MLR		MLR			
	comp=Z,18µm,16.8s								
NRS	**Narsarsuaq**	82.08	3	⇑*i* P		**P**		19 06 07.6	+0.9
	comp=Z,968nm,2.3s								
NRS	**Narsarsuaq**	82.08	3	⇑*i* P		**P**		19 06 07.6	+0.9
NRS				pmax	pmax				
	comp=Z,970nm,2.3s								
ISCO	**Idaho Springs**	82.09	46	P		**P**		19 06 08.3	+0.7
	baz=312,SNR=174								
ISCO	**Idaho Springs**	82.09	46	*e*P		**P**		19 06 07.8	+0.1
ISCO				pmax	pmax				
	comp=Z,104nm,0.9s								
ISCO				MLR		MLR			
	comp=Z,7µm,21.0s								
ISCO	**Idaho Springs**	82.09	46	*e*P		**P**		19 06 07.8	+0.1
	comp=Z,104nm,0.9s								
ISCO				LR		LR			
	comp=Z,7µm,21.0s								
MVCO	**Mesa Verde**	82.10	49	P		**P**		19 06 08.1	+0.5
	baz=311,SNR=170								
MVCO	**Mesa Verde**	82.10	49	*e*P		**P**		19 06 07.8	+0.1
	comp=Z,296nm,0.8s								
ALFC	**Alefka**	82.23	308	P		**P**		19 06 08.8	+0.7
SOP	**Sopron**	82.26	326	⇑*e*P		**P**		19 06 09.8	+1.8
G31A	**Conde**	82.27	38	P		**P**		19 06 08.6	+0.5
	baz=316,SNR=22								
SZAC	**Souni**	82.31	308	P		**P**		19 06 09.3	+0.8
ALN	**Alexandroupoli**	82.32	316	P		**P**		19 06 06.6	-1.8
ALN	**Alexandroupoli**	82.32	316	P		**P**		19 06 06.6	-1.8
ALN	**Alexandroupoli**	82.32	316	P		**P**		19 06 06.6	-1.8
F32A	**Veblen**	82.33	37	P		**P**		19 06 09.1	+0.7
	baz=317,SNR=10								
D34A	**Park Rapids**	82.34	35	P		**P**		19 06 08.6	+0.1
	baz=318,SNR=26								
ENEZ	**Enez**	82.37	316	P		**P**		19 06 08.8	+0.1
CONA	**Conrad Observa**	82.39	326	*e*P		**P**		19 06 09.5	+0.8
	comp=Z,180nm,1.3s,SNR=147								
CONA				*i* SKSac		**SKSac**		19 16 25.4	-0.3
	comp=Z,5.8nm,1.4s								
E33A	**Westby DABS, E**	82.40	36	P		**P**		19 06 09.3	+0.6
	baz=317,SNR=27								
KORT	**Korkueli**	82.42	311	*i* P		**P**		19 06 06.5	-2.7
KULA	**Kula-Manisa**	82.43	313	P		**P**		19 06 08.4	-0.8
KULA	**Kula-Manisa**	82.43	313	P		**P**		19 06 08.4	-0.8
C35A	**Jirik Farms, M**	82.44	34	P		**P**		19 06 08.8	-0.1
	baz=319,SNR=84								
ESY	**Stoneypath**	82.44	340	*e*P		**P**		19 06 09.3	+0.5
SUSD	**Miller**	82.46	39	P		**P**		19 06 09.5	+0.4
	baz=316,SNR=18								
KHC	**Kasperske Hory**	82.46	328	*e*P		**P**		19 06 09.0	-0.1
KHC				*e*pP		**pP**		19 06 19.7	-3.4
KHC				*ex*		x		19 06 36.5	
KHC				*e*S		**S**		19 16 22.4	+0.6
KHC				*e*SS		**SS**		19 21 43.2	+1.0
KHC				*e*PKKP		**PKKPbc**		19 24 34.7	+0.4
KHC				*e*PKPPKP		P'P'df		19 32 32.0	-12
KHC				AMS		AMS		19 48 50.0	
	comp=Z,19µm,15.7s								
KHC	**Kasperske Hory**	82.46	328	*e*P		**P**		19 06 09.0	-0.1
KHC				*e*				19 06 36.5	
KHC				*e*S		**S**		19 16 22.4	+0.6
KHC				*e*SS		**SS**		19 21 43.2	+1.0
KHC				MLR		MLR			
	comp=Z,19µm,15.7s								
KHC	**Kasperske Hory**	82.46	328	*e*P		**P**		19 06 08.6	-0.5
	comp=Z,67nm,1.1s								
KHC				LR		LR			
	comp=Z,7µm,19.0s								
AKMC	**Akamas**	82.48	308	P		**P**		19 06 09.6	+0.2
BKZ	**Black Stump Fm**	82.48	153	*e*P		**P**		19 06 08.6	-0.5
	comp=Z,121nm,1.1s								
BKZ				LR		LR			
	comp=Z,19µm,22.0s								
MANT	**Manisa**	82.51	313	*i* P		**P**		19 06 09.2	-0.5
PPCY	**Paphos**	82.56	308	P		**P**		19 06 10.2	+0.4
EDI	**Edinburgh**	82.59	341	⇑*e*P		**P**		19 06 10.5	+1.0
EDI	**Edinburgh**	82.59	341	*e*P		**P**		19 06 09.2	-0.3
EDI				AMB		AMB		19 06 11.7	
	comp=Z,226nm,3.2s								
EDI				AMS		AMS		19 40 12.9	
	comp=Z,11µm,26.4s								
G32A	**Webster**	82.59	37	P		**P**		19 06 10.4	+0.6
	baz=317,SNR=12								
QRZ	**Quartz Range**	82.61	156	*e*PN		**P**		19 06 09.5	-0.1
GEC2	**GERESS Array S**	82.63	328	*e*P		**P**		19 06 09.5	-0.5
GEC2				pmax	pmax				
	comp=Z,90nm,1.0s								
GEC2				MLR	MLR				
	comp=Z,20µm,20.0s								
GEC2	**GERESS Array S**	82.63	328	*e*P		**P**		19 06 09.5	-0.5
	comp=Z,90nm,1.0s								
GEC2				LR	LR				
	comp=Z,20µm,20.0s								
GERES	**GERESS Array B**	82.63	328	P		**P**		19 06 10.1	+0.1
	comp=Z,20nm,0.5s,baz=38,slow=6.3,SNR=57								
GERES				S		**S**		19 16 21.4	-2.3
	comp=Z,0.5nm,0.8s,baz=226,slow=8.1,SNR=2.7								
GERES				PKKPbc		**PKKPbc**		19 24 33.2	-0.8
	comp=Z,3.2nm,0.9s,baz=182,slow=6.4,SNR=7.3								
GERES				LR		LR		19 48 40.8	
	comp=Z,11µm,18.4s,baz=49,slow=40								
GEA0	**GERESS Array S**	82.63	328	*e*P		**P**		19 06 09.1	-0.9
EAB	**Aberfoyle**	82.66	341	*e*P		**P**		19 06 10.6	+0.7
H31A	**Wolsey**	82.67	38	P		**P**		19 06 10.6	+0.4
	baz=316,SNR=13								
W18A	**Petrified Fore**	82.70	51	P		**P**		19 06 11.8	+1.0
	baz=310,SNR=20								
W18A	**Petrified Fore**	82.70	51	*e*P		**P**		19 06 12.1	+1.4
	comp=Z,833nm,1.7s								
W18A				LR		LR			
	comp=Z,7µm,21.0s								
214A	**Organ Pipe Nat**	82.74	55	P		**P**		19 06 11.4	+0.6
	baz=309,SNR=98								
GOLH	**Golhisar**	82.74	312	*i* P		**P**		19 06 09.0	-1.9
F33A	**5 Mile Ranch,**	82.75	36	P		**P**		19 06 10.7	+0.1
	baz=317,SNR=61								
S22A	**4UR Ranch, Cre**	82.75	48	P		**P**		19 06 12.1	+1.0
	baz=312,SNR=508								
S22A	**4UR Ranch, Cre**	82.75	48	*e*P		**P**		19 06 12.2	+1.0
	comp=Z,320nm,1.2s								
S22A				LR		LR			
	comp=Z,6µm,22.0s								
E34A	**Wadena**	82.78	35	P		**P**		19 06 11.5	+0.8
	baz=318,SNR=11								
WTSB	**Winterswijk**	82.85	333	*e*P		**P**		19 06 11.5	+0.6
	comp=Z,2µm,3.1s								
D35A	**Remer**	82.87	34	P		**P**		19 06 11.1	0.0
	baz=319,SNR=39								
GADA	**Gvkgeada**	82.89	316	P		**P**		19 06 09.6	-1.8
GADA	**Gvkgeada**	82.89	316	*e*P		**P**		19 06 09.6	-1.8
EZN	**Ezine**	82.89	315	P		**P**		19 06 11.7	+0.3
EZN	**Ezine**	82.89	315	*e*P		**P**		19 06 11.7	+0.3
EZN	**Ezine**	82.89	315	*e*P		**P**		19 06 11.7	+0.3
C36A	**Pine Crest Far**	82.90	33	P		**P**		19 06 11.4	+0.1
	baz=319,SNR=86								
SMTH	**Samothraki Isl**	82.90	316	P		**P**		19 06 10.2	-1.3
SMTH	**Samothraki Isl**	82.90	316	*e*P		**P**		19 06 10.2	-1.3
Q24A	**Divide**	82.92	46	P		**P**		19 06 12.4	+0.4
	baz=313,SNR=83								
Q24A	**Divide**	82.92	46	*e*P		**P**		19 06 12.3	+0.4
	comp=Z,129nm,0.8s								
X18A	**Snowflake**	82.94	52	*e*P		**P**		19 06 12.6	+0.6
	comp=Z,876nm,1.8s								
X18A				LR		LR			
	comp=Z,8µm,20.0s								
I31A	**Royce, Wessing**	82.97	39	P		**P**		19 06 12.2	+0.4
	baz=316								
J30A	**Dallas**	82.98	40	P		**P**		19 06 12.5	+0.6
	baz=316,SNR=27								
GRFO	**Grafenberg**	83.00	330	*e*P		**P**		19 06 12.3	+0.5
GRFO				pmax	pmax				
	comp=Z,2µm,2.0s								
GRFO				MLR	MLR				
	comp=Z,16µm,18.0s								
GRFO	**Grafenberg**	83.00	330	*e*P		**P**		19 06 12.3	+0.5
	comp=Z,2µm,2.0s								
GRFO				LR		LR			
	comp=Z,16µm,18.0s								
PGBU	**Glenifferbraes**	83.03	341	*e*P		**P**		19 06 12.1	+0.3
PGBU				AMB		AMB		19 06 14.2	
	comp=Z,514nm,2.7s								
PGBU				AMS		AMS		19 40 21.0	
	comp=Z,8µm,25.9s								
BOZC	**Bozcaada**	83.04	315	*i* P		**P**		19 06 10.8	-1.4
AYVA	**Ayvalik**	83.04	315	*i* P		**P**		19 06 10.1	-2.1
ARSA	**Arzberg**	83.05	326	*e*PcP		**P**		19 06 12.9	+0.7
	comp=Z,127nm,1.6s,SNR=92								
ARSA				*i* SKSac		**SKSac**		19 16 31.0	+1.0
	comp=Z,13nm,1.8s								
ARSA	**Arzberg**	83.05	326	*i* PKKPbc		PKKPbc		19 24 35.1	+2.2
	comp=Z,6.1nm,1.2s								
BEHE	**Becsehely**	83.06	325	⇑*e*P		**P**		19 06 13.1	+0.9
TSZ	**Takapari Road**	83.08	154	*e*PN		**P**		19 06 11.8	-0.3
KAVA	**Kavala**	83.10	317	P		**P**		19 06 11.2	-1.2
KAVA	**Kavala**	83.10	317	*e*P		**P**		19 06 11.2	-1.2
E35A	**Pequot Lakes**	83.10	35	P		**P**		19 06 12.2	-0.2
	baz=318,SNR=14								
EKA	**Eskdalemuir Ar**	83.11	340	LR		LR		19 47 02.5	
	comp=Z,10µm,18.5s,baz=20,slow=38								
ESK	**Eskdalemuir**	83.13	340	*e*P		**P**		19 06 11.9	-0.4

SRS **Serrai** 83.52 318 *e*P P 19 06 13.5 -1.1
SRS **Serrai** 83.52 318 *e*P P 19 06 13.5 -1.1
SDCO **Great Sand Dun** 83.53 47 P P 19 06 15.2 +0.1
baz=312,SNR=227
SDCO **Great Sand Dun** 83.53 47 *e*P P 19 06 15.2 +0.1
comp=Z,270nm,1.2s
SDCO LR LR
comp=Z,5µm,22.0s
D37A **Cotton** 83.54 34 P P 19 06 14.4 -0.2
baz=320,SNR=44
F35A **Swanville** 83.54 35 P P 19 06 14.2 -0.5
baz=318,SNR=23
TURN **Turunc** 83.56 312 *i* P P 19 06 13.8 -1.1
SIGR **SIGRI** 83.58 315 P P 19 06 15.1 +0.2
SIGR **SIGRI** 83.58 315 *e*P P 19 06 15.1 +0.2
THZ **Tophouse** 83.58 157 *e*P P 19 06 13.2 -1.5
comp=Z,212nm,1.0s
THZ LR LR
comp=Z,12µm,22.0s
THZ **Tophouse** 83.58 157 *e*PN P 19 06 13.4 -1.2
C38A **Sawbill Land.** 83.61 33 P P 19 06 14.6 -0.4
baz=320,SNR=137
ANWZ **Angora Road** 83.62 154 *e*PN P 19 06 14.8 0.0
E36A **McGregor** 83.65 34 P P 19 06 15.1 -0.1
baz=319,SNR=56
PERS **Pernice** 83.70 326 *i* P P 19 06 16.1 +0.6
PERS *e*S S 19 16 32.2 -2.2
SOKA **Soboth** 83.70 326 *e*P P 19 06 15.9 +0.3
comp=Z,197nm,1.1s,SNR=139
SOKA PP PP 19 09 30.2 +2.1
comp=Z,39nm,1.6s
SOKA *i* S S 19 16 33.6 -0.9
comp=Z,11nm,2.0s
GMK **Mull of Kintyr** 83.73 342 *e*P P 19 06 16.2 +0.8
BFZ **Birch Farm** 83.73 154 *e*P P 19 06 15.4 0.0
comp=Z,143nm,0.9s
BFZ LR LR
comp=Z,9µm,21.0s
URLA **Izmir** 83.74 314 *i* P P 19 06 14.8 -1.0
KESW **Keswick, Cumbr** 83.75 340 *e*P P 19 06 16.0 +0.5
KESW AMB AMB 19 06 19.3
comp=Z,541nm,2.3s
KESW AMS AMS 19 47 12.6
comp=Z,11µm,18.4s
SNZO **South Karori** 83.76 155 PFAKE 19 06 30.0 +15
SNZO LR LR
comp=Z,11µm,20.0s
J32A **Parkston** 83.79 39 P P 19 06 15.8 -0.2
baz=316,SNR=19
I33A **Coleman** 83.82 38 P P 19 06 16.3 +0.2
baz=317,SNR=22
TUC **Tucson** 83.84 54 P P 19 06 17.6 +1.1
baz=310
TUC **Tucson** 83.84 54 *e*P P 19 06 16.9 +0.4
TUC pmax pmax
comp=Z,242nm,1.2s
TUC MLR MLR
comp=Z,14µm,22.0s
TUC **Tucson** 83.84 54 *e*P P 19 06 16.9 +0.4
comp=Z,242nm,1.2s
TUC LR LR
comp=Z,14µm,22.0s
OUR **Ouranopolis** 83.85 317 P P 19 06 16.4 +0.1
OUR **Ouranopolis** 83.85 317 *e*P P 19 06 16.4 +0.1
OUR **Ouranopolis** 83.85 317 *e*P P 19 06 16.4 +0.1
SOH **Sokhos** 83.85 317 P P 19 06 15.5 -0.9
SOH **Sokhos** 83.85 317 *e*P P 19 06 15.5 -0.9
SOH **Sokhos** 83.85 317 *e*P P 19 06 15.5 -0.9
KNT **Kendrikon** 83.86 318 P P 19 06 15.5 -0.9
KNT **Kendrikon** 83.86 318 P P 19 06 15.5 -0.9
KNT **Kendrikon** 83.86 318 P P 19 06 15.5 -0.9
H34A **Spellman Lake,** 83.86 37 P P 19 06 16.4 +0.1
baz=318,SNR=32
K31A **O'Neill** 83.86 40 P P 19 06 16.7 +0.3
baz=316,SNR=24
VAY **Valandovo** 83.92 318 P P 19 06 17.4 +0.7
VAY **Valandovo** 83.92 318 *i* P P 19 06 17.1 +0.5
VAY **Valandovo** 83.92 318 *e*P P 19 06 17.4 +0.7
VAY **Valandovo** 83.92 318 *e*P P 19 06 17.4 +0.7
GAL1 **Galloway** 83.93 341 *e*P P 19 06 16.3 -0.2
GAL1 AMB AMB 19 06 18.8
comp=Z,175nm,2.0s
GAL1 AMS AMS 19 47 21.6
comp=Z,5µm,19.9s
GOLS **Golise** 83.94 325 *e*P P 19 06 17.0 +0.3
LMK **Market Rasen** 83.94 338 *e*P P 19 06 15.3 -1.2
LMK AMB AMB 19 06 19.9
comp=Z,692nm,2.0s
LMK AMS AMS 19 45 05.7
comp=Z,15µm,22.3s
SISC **Sisak** 84.00 324 P P 19 06 18.0 +1.0
E37A **Wrenshall** 84.00 34 P P 19 06 17.5 +0.5
baz=320
C39A **Grand Marais** 84.02 32 P P 19 06 16.4 -0.6
baz=321,SNR=66
F36A **Milaca** 84.03 35 P P 19 06 16.8 -0.3
baz=319,SNR=28
CHOS **Chios island** 84.03 314 P P 19 06 15.8 -1.6
CHOS **Chios island** 84.03 314 P P 19 06 15.8 -1.6
SMG **Samos** 84.04 313 P P 19 06 16.7 -0.7
SMG **Samos** 84.04 313 P P 19 06 16.7 -0.7
OBKA **Obir** 84.05 326 *e*P P 19 06 17.5 +0.2
comp=Z,57nm,1.4s,SNR=24
OBKA PP PP 19 09 33.3 +2.4
comp=Z,52nm,1.4s
OBKA *i* S S 19 16 39.6 +1.6
comp=Z,9.0nm,1.2s
OBKA **Obir** 84.05 326 *i* PKKPbc PKKPbc 19 24 33.2 +2.5
comp=Z,3.5nm,0.8s
SKO **Skopje** 84.06 319 P P 19 06 18.6 +1.2
SKO **Skopje** 84.06 319 *i* P P 19 06 18.4 +1.0
SKO **Skopje** 84.06 319 *e*P P 19 06 18.6 +1.2
SKO **Skopje** 84.06 319 *e*P P 19 06 18.6 +1.2
G35A **Watkins** 84.06 36 P P 19 06 17.6 +0.3
baz=318,SNR=25
WVZ **Waitaha Valley** 84.11 159 *e*PN P 19 06 16.7 -0.5
PLG **Polygyros** 84.11 317 P P 19 06 17.1 -0.6
PLG **Polygyros** 84.11 317 P P 19 06 17.1 -0.6
PLG **Polygyros** 84.11 317 P P 19 06 17.1 -0.6
BDRM **Kayabasi** 84.12 313 *i* P P 19 06 17.2 -0.6
PLE **Pljevlja** 84.12 321 ⇑*i* P P 19 06 18.4 +0.6
ECSD **EROS Data Cent** 84.14 38 P P 19 06 17.5 -0.2
baz=317,SNR=153
ECSD **EROS Data Cent** 84.14 38 *e*P P 19 06 17.3 -0.5
comp=Z,247nm,1.0s
ECSD LR LR
comp=Z,8µm,21.0s
KBA **Koelnbreinsper** 84.14 327 *e*PcP P 19 06 18.7 +0.8
comp=Z,98nm,1.1s,SNR=31
KBA PP PP 19 09 33.3 +1.5
comp=Z,71nm,1.1s
KBA *i* S S 19 16 39.8 +0.6
comp=Z,4.4nm,1.0s
L31A **Butterfield Fa** 84.14 40 P P 19 06 18.2 +0.3
baz=316,SNR=31
HORT **Hortiatis** 84.14 317 P P 19 06 17.3 -0.6
HORT **Hortiatis** 84.14 317 P P 19 06 17.3 -0.6
HGN **Heimansgroeve** 84.15 333 *e*P P 19 06 18.2 +0.6
comp=Z,1µm,2.2s
HGN *e*S S 19 16 13.8 -25
HGN *e*SS SS 19 22 25.8 +19
PDKS **Podkum** 84.19 326 *e*P P 19 06 18.3 +0.3
EIL **Elat** 84.19 303 LR LR 19 47 48.4
comp=Z,10µm,21.0s,baz=65,slow=38
THE **Thessaloniki** 84.19 318 P P 19 06 18.5 +0.5
THE **Thessaloniki** 84.19 318 *e*P P 19 06 18.5 +0.5
THE **Thessaloniki** 84.19 318 *e*P P 19 06 18.5 +0.5
BODT **Bodrum** 84.20 313 P P 19 06 18.7 +0.5
BODT **Bodrum** 84.20 313 *e*P P 19 06 18.7 +0.5
IVA **Berane** 84.20 321 ⇑*i*P P 19 06 19.3 +1.1
BEBN **Eben Emael** 84.22 333 P P 19 06 18.7 +0.7
comp=Z,130nm,2.7s
K32A **Verdigre** 84.24 39 P P 19 06 18.4 +0.1
baz=316,SNR=14
MEM **Membach** 84.25 333 P P 19 06 18.3 +0.2
comp=Z,156nm,2.5s
J33A **Davis** 84.27 38 P P 19 06 18.5 +0.1
baz=317,SNR=19
GRG **Griva** 84.27 318 P P 19 06 17.6 -0.9
GRG **Griva** 84.27 318 *e*P P 19 06 17.6 -0.9
GRG **Griva** 84.27 318 *e*P P 19 06 17.6 -0.9
FOZ **Fox Glacier** 84.27 159 *e*P P 19 06 18.6 +0.6
comp=Z,200nm,1.2s
FOZ LR LR
comp=Z,11µm,22.0s

ARG **Arkhangelos** 84.28 312 P P 19 06 19.1 +0.5
ARG **Arkhangelos** 84.28 312 P P 19 06 19.1 +0.5
ARG **Arkhangelos** 84.28 312 P P 19 06 19.1 +0.5
I34A **Hadley** 84.28 37 P P 19 06 18.9 +0.4
baz=318,SNR=15
WACR **West Acre** 84.28 337 *e*P P 19 06 16.9 -1.4
WACR AMB AMB 19 06 20.0
comp=Z,384nm,2.9s
H35A **Sunnyside Ranc** 84.29 36 P P 19 06 18.6 +0.1
baz=318,SNR=93
VNDS **Vrh nad Dolski** 84.29 326 *e*P P 19 06 18.7 +0.2
PAIG **Paliouri** 84.30 317 P P 19 06 18.3 -0.3
PAIG **Paliouri** 84.30 317 *e*P P 19 06 18.3 -0.3
PAIG **Paliouri** 84.30 317 *e*P P 19 06 18.3 -0.3
LTZ **Lake Taylor** 84.31 157 *e*P P 19 06 18.9 +0.6
comp=Z,142nm,1.2s
LTZ LR LR
comp=Z,16µm,22.0s
OZLJ **Ozalj** 84.31 325 P P 19 06 19.0 +0.5
KSCO **Kaye Shedlock'** 84.32 45 P P 19 06 19.4 +0.5
baz=314,SNR=41
KSCO **Kaye Shedlock'** 84.32 45 *e*P P 19 06 19.0 +0.1
comp=Z,711nm,1.6s
KSCO LR LR
comp=Z,8µm,22.0s
MYKA **Terra Mystica** 84.36 327 *e*P P 19 06 18.5 -0.4
comp=Z,84nm,1.0s,SNR=35
MYKA S S 19 16 40.2 -0.9
comp=Z,16nm,1.8s
MYKA **Terra Mystica** 84.36 327 *i* PKKPbc PKKPbc 19 24 30.9 +1.0
comp=Z,3.1nm,0.6s
PVY **Plav** 84.37 321 ⇑*i*P P 19 06 20.1 +1.0
KHZ **Kahutara** 84.37 156 *e*P P 19 06 17.3 -1.2
comp=Z,221nm,1.3s
KHZ LR LR
comp=Z,15µm,22.0s
G36A **St. Michael** 84.39 35 P P 19 06 19.4 +0.4
baz=319,SNR=17
LJU **Ljubljana** 84.41 326 *e*P P 19 06 19.5 +0.4
IDGL **Inch Island, C** 84.45 342 *e*P P 19 06 18.9 -0.1
IDGL AMB AMB 19 06 22.3
comp=Z,654nm,2.1s
VISS **Visnje** 84.45 325 *i* P P 19 06 19.4 +0.1
VISS *e*S S 19 16 37.5 -4.5
UPM **Unac-Piva** 84.46 322 ⇑*i*P P 19 06 20.1 +0.5
JCZ **Jackson Bay** 84.49 160 *e*PN P 19 06 19.8 +0.6
BOJS **Bojanci** 84.49 325 *i* P P 19 06 20.2 +0.7
BOJS *e*S S 19 16 38.4 -3.9
STU **Stuttgart** 84.53 330 *e*P P 19 06 19.8 +0.1
STU pmax pmax
comp=Z,253nm,1.2s
STU MLR MLR
comp=Z,13µm,19.0s
STU **Stuttgart** 84.53 330 *e*P P 19 06 19.8 +0.1
comp=Z,253nm,1.2s
STU LR LR
comp=Z,13µm,19.0s
WIM **Isle of Man** 84.57 341 ⇑*e*P P 19 06 20.4 +0.7
T25A **Trinidad** 84.58 47 P P 19 06 21.1 +0.6
baz=313,SNR=226
T25A **Trinidad** 84.58 47 *e*P P 19 06 21.0 +0.6
comp=Z,428nm,1.1s
NIS1 **Nisyros Isl.** 84.59 312 P P 19 06 19.3 -0.9
NIS1 **Nisyros Isl.** 84.59 312 *e*P P 19 06 19.3 -0.9
NISR **Nisiros** 84.61 312 P P 19 06 18.9 -1.3
NISR **Nisiros** 84.61 312 *e*P P 19 06 18.9 -1.3
BCLA **Clavier** 84.66 333 P P 19 06 20.2 0.0
comp=Z,176nm,2.4s
M31A **Lambtecht Ranc** 84.67 41 P P 19 06 20.8 +0.2
baz=316,SNR=11
UCC **Uccle** 84.68 334 P P 19 06 20.8 +0.5
L32A **Elgin** 84.69 40 P P 19 06 21.2 +0.6
baz=316,SNR=11
NKY **Niksic** 84.70 321 ⇑*i*P P 19 06 20.9 +0.2
WATA **Walderalm** 84.70 328 *e*PcP P 19 06 20.8 +0.1
comp=Z,38nm,0.9s,SNR=26
WATA *i* S S 19 16 48.8 +4.2
AOS **Alonnisos** 84.72 316 P P 19 06 19.7 -1.0
AOS **Alonnisos** 84.72 316 *e*P P 19 06 19.7 -1.0
OXZ **Oxford** 84.73 158 *e*P P 19 06 19.6 -0.8
comp=Z,282nm,1.2s
OXZ **Oxford** 84.73 158 *e*PN P 19 06 20.0 -0.4
JAVS **Javornik** 84.73 326 *e*P P 19 06 20.2 -0.6
JAVS *e*S S 19 16 39.2 -5.7
NKME **Niksic** 84.75 321 ⇑*i*P P 19 06 21.6 +0.7
ABTA **Abfaltersbach** 84.76 327 *e*P P 19 06 20.5 -0.4
comp=Z,53nm,1.0s,SNR=33
ABTA PP PP 19 09 38.6 +1.9
comp=Z,35nm,1.3s
ABTA *i* S S 19 16 43.5 -1.7
comp=Z,16nm,1.4s
ABTA **Abfaltersbach** 84.76 327 *i* PKKPdf PKKPdf 19 24 25.4 +5.7
comp=Z,5.9nm,1.3s
K33A **Hardington** 84.77 39 P P 19 06 21.6 +0.6
baz=317,SNR=21
LAZ **Ladron** 84.78 50 *e*P P 19 06 22.1 +0.7
J34A **George** 84.79 38 P P 19 06 21.3 +0.3
baz=318,SNR=6.7
RPZ **Rata Peaks** 84.79 159 LR LR 19 39 39.1
comp=Z,10µm,22.0s,baz=324,slow=32
RPZ **Rata Peaks** 84.79 159 *e*P P 19 06 20.9 +0.2
comp=Z,271nm,1.7s
H36A **Jessenland, He** 84.81 36 P P 19 06 21.8 +0.7
baz=319,SNR=37
STNC **Stoke** 84.82 339 *e*P P 19 06 21.4 +0.4
STNC AMB AMB 19 06 23.4
comp=Z,447nm,2.6s
STNC AMS AMS 19 43 44.2
comp=Z,18µm,25.1s
GMM **Mts of Mourne** 84.82 341 *e*P P 19 06 21.5 +0.6
LIT **Litokhoron** 84.83 317 P P 19 06 20.7 -0.6
LIT **Litokhoron** 84.83 317 *e*P P 19 06 20.7 -0.6
LIT **Litokhoron** 84.83 317 *e*P P 19 06 20.7 -0.6
ANMO **Albuquerque** 84.84 50 P P 19 06 22.2 +0.5
baz=312
ANMO **Albuquerque** 84.84 50 *c i*P P 19 06 20.3 -1.4
ANMO pmax pmax
comp=Z,112nm,1.0s
ANMO MLR MLR
comp=Z,4µm,20.0s
ANMO **Albuquerque** 84.84 50 *e*P P 19 06 22.4 +0.7
comp=Z,204nm,1.0s
ANMO LR LR
comp=Z,5µm,22.0s
SPMN **Marine on St.** 84.84 35 P P 19 06 21.7 +0.4
baz=320,SNR=25
SPMN **Marine on St.** 84.84 35 *e*P P 19 06 21.0 -0.3
comp=Z,304nm,1.3s
SPMN LR LR
comp=Z,12µm,22.0s
I35A **Creekview Farm** 84.84 37 P P 19 06 21.4 +0.1
baz=318,SNR=16
PPT **Papeete** 84.84 116 P P 19 06 22.3 +0.7
comp=Z,39nm,0.7s,baz=270,slow=1.0,SNR=2.7
PPT LR LR 19 38 15.8
comp=Z,14µm,20.3s,baz=302,slow=31
PDG **Podgorica** 84.85 321 P P 19 06 21.5 +0.2
PDG **Podgorica** 84.85 321 ⇓*i*P P 19 06 21.8 +0.5
TTG **Podgorica** 84.85 321 ⇑*i*P P 19 06 22.3 +1.0
TTG **Podgorica** 84.85 321 P P 19 06 21.5 +0.2
TTG **Podgorica** 84.85 321 P P 19 06 21.5 +0.2
PPT2 **Papeete2** 84.86 116 *e*P P 19 06 22.3 +0.6
comp=Z,138nm,1.1s
PPT2 **Papeete2** 84.86 116 *e*PP PP 19 09 37.3 -1.6
comp=Z,2µm,27.5s
PPT2 *e*S S 19 16 46.5 -0.2
comp=Z,22µm,34.5s
PPT2 *e*SS SS 19 22 27.2 +6.8
comp=Z,4µm,28.6s
PPT2 **Papeete2** 84.86 116 *e*LR LR 19 32 58.9
comp=Z,57µm,28.5s,baz=315
PPT2 **Papeete2** 84.86 116 *e*T T 20 39 36.1
comp=Z,19nm,0.3s
CWF **Charnwood Fore** 84.86 338 *e*P P 19 06 20.6 -0.5
CWF AMB AMB 19 06 23.2
comp=Z,395nm,2.3s
CWF AMS AMS 19 45 43.7
comp=Z,19µm,23.3s
CWF **Charnwood Fore** 84.86 338 *e*P P 19 06 21.5 +0.4
comp=Z,1µm,2.0s
CWF LR LR
comp=Z,20µm,22.0s
BRY **Bratogost** 84.86 322 ⇑*i*P P 19 06 21.5 -0.1
MOTA **Moosalm** 84.89 328 *e*PcP P 19 06 21.7 0.0
comp=Z,36nm,0.8s,SNR=39
MOTA *i* SKSac SKSac 19 16 40.9 -1.3

comp=Z,1.3nm,0.7s
PAE **Paea** 84.90 116 *e*P P 19 06 22.0 +0.2
comp=Z,15nm,0.9s
PAE **Paea** 84.90 116 *e*T T 20 39 33.3
comp=Z,4.2nm,0.3s
LANF **Langenberg** 84.91 331 ⇑*e*P P 19 06 22.7 +1.1
RETA **Reutte** 84.92 329 *e*PcP P 19 06 22.1 +0.4
comp=Z,176nm,1.4s,SNR=132
RETA *i* S S 19 16 47.9 +1.2
CEME **Cevo** 84.93 321 ⇑*i*P P 19 06 22.2 +0.3
FNA **Florina** 84.94 319 P P 19 06 21.8 -0.1
FNA **Florina** 84.94 319 P P 19 06 21.8 -0.1
FNA **Florina** 84.94 319 P P 19 06 21.8 -0.1
SKIA **Skiathos** 84.95 316 P P 19 06 21.1 -0.8
SNF **Seneffe** 84.95 334 P P 19 06 21.9 +0.3
L33A **Hoskins** 84.95 39 P P 19 06 22.2 +0.3
baz=317,SNR=11
XOR **Xorichti** 84.96 317 P P 19 06 20.4 -1.6
XOR **Xorichti** 84.96 317 P P 19 06 20.4 -1.6
WLF **Walferdange** 84.97 332 P P 19 06 23.0 +1.2
comp=Z,394nm,2.4s
WLF **Walferdange** 84.97 332 *e*P P 19 06 22.4 +0.6
WLF pmax pmax
comp=Z,1µm,2.0s
WLF MLR MLR
comp=Z,27µm,18.0s
WLF **Walferdange** 84.97 332 *e*P P 19 06 22.4 +0.6
comp=Z,1µm,2.0s
WLF LR LR
comp=Z,27µm,18.0s
NEO **Neokhori** 84.98 316 P P 19 06 20.6 -1.5
NEO **Neokhori** 84.98 316 P P 19 06 20.6 -1.5
UDBI **Udbina** 84.99 324 P P 19 06 22.7 +0.6
TIAR **Tiarei** 85.00 116 *e*P P 19 06 22.6 +0.2
comp=Z,55nm,1.1s
TIAR **Tiarei** 85.00 116 *e*T T 20 39 45.0
comp=Z,18nm,0.3s
OHR **Ohrid** 85.01 319 *i* P P 19 06 22.7 +0.4
TRI **Trieste** 85.01 326 *e*P P 19 06 21.0 -1.1
TRI pmax pmax
comp=Z,141nm,1.2s
TRI MLR MLR
comp=Z,22µm,21.0s
TRI **Trieste** 85.01 326 *e*P P 19 06 21.0 -1.1
comp=Z,141nm,1.2s
TRI LR LR
comp=Z,22µm,21.0s
N31A **Bailey Ranch,** 85.05 41 P P 19 06 22.8 +0.3
baz=316,SNR=8.4
BGNE **Belgrade** 85.05 40 P P 19 06 22.7 +0.2
baz=316,SNR=29
BGNE **Belgrade** 85.05 40 *e*P P 19 06 22.4 0.0
comp=Z,4µm,2.0s
BGNE LR LR
comp=Z,7µm,22.0s
DRME **Dracevica, Mon** 85.06 321 ⇑*i*P P 19 06 23.1 +0.7
KZN **Kozani** 85.07 318 P P 19 06 20.2 -2.4
KZN **Kozani** 85.07 318 P P 19 06 20.2 -2.4
KZN **Kozani** 85.07 318 P P 19 06 20.2 -2.4
J35A **Milford** 85.10 38 P P 19 06 23.4 +0.7
baz=318,SNR=6.8
BUM **Brajici-Budva** 85.12 321 ⇑*i*P P 19 06 23.6 +0.8
Y22D **IRIS PASSCAL I** 85.13 51 P P 19 06 24.9 +1.7
baz=312,SNR=5.2
Y22D **IRIS PASSCAL I** 85.13 51 PFAKE 19 06 30.0 +6.9
Y22D LR LR
comp=Z,10µm,21.0s
CRLZ **Canterbury Las** 85.13 158 *e*P P 19 06 22.8 +0.4
comp=Z,794nm,2.0s
CRLZ LR LR
comp=Z,13µm,22.0s
WME **Myndd Eilian** 85.14 340 *e*P P 19 06 22.5 0.0
WPM1 **Penmaenmawr** 85.15 340 *e*P P 19 06 21.7 -0.9
LPM **Los Pinos Moun** 85.15 50 *e*P P 19 06 23.6 +0.3
LBZ **Lake Benmore** 85.16 160 *e*P P 19 06 22.5 0.0
comp=Z,222nm,1.0s
LBZ LR LR
comp=Z,13µm,22.0s
K34A **Le Mars** 85.16 38 P P 19 06 23.2 +0.3
baz=318,SNR=19
DOU **Dourbes** 85.18 334 P P 19 06 22.9 0.0
comp=Z,146nm,2.5s
I36A **Fitzsimmons Fa** 85.19 36 P P 19 06 24.2 +1.2
baz=319,SNR=15.2
WPS **Cemaes, Angles** 85.19 340 ⇑*e*P P 19 06 21.9 -0.9
WPS AMB AMB 19 06 24.9
comp=Z,360nm,2.3s
WPS AMS AMS 19 47 47.5
comp=Z,12µm,19.6s
ULC **Ulcinj** 85.19 321 ⇑*i*P P 19 06 23.3 +0.2
KARY **Karystos** 85.20 315 P P 19 06 22.4 -0.8
TVO **Taravao** 85.22 116 *e*P P 19 06 24.0 +0.5
comp=Z,33nm,1.0s
HCY **Herceg Novi** 85.22 321 ⇑*i*P P 19 06 23.6 +0.4
BFO **Black Forest** 85.23 331 *i* P P 19 06 23.5 +0.3
BFO **Black Forest** 85.23 331 *e*P P 19 06 22.7 -0.5
comp=Z,347nm,1.3s
BFO LR LR
comp=Z,16µm,19.0s
APE **Apeiranthos** 85.23 314 P P 19 06 21.5 -1.9
APE **Apeiranthos** 85.23 314 ⇑*i*P P 19 06 22.6 -0.8
APE **Apeiranthos** 85.23 314 *c i*P P 19 06 22.6 -0.8
APE pmax pmax
comp=Z,73nm,0.9s
APE **Apeiranthos** 85.23 314 *e*P P 19 06 21.5 -1.9
STR **Strasbourg** 85.25 331 ⇑*e*P P 19 06 24.5 +1.3
WKZ **Wanaka** 85.25 160 *e*P P 19 06 25.1 +2.2
comp=Z,98nm,1.2s
WKZ LR LR
comp=Z,8µm,22.0s
WLF1 **Llynfaes** 85.26 340 *e*P P 19 06 22.3 -0.8
WLF1 AMS AMS 19 47 48.5
comp=Z,23µm,20.5s
MQZ **McQueen's Vall** 85.26 158 *e*P P 19 06 24.6 +1.7
comp=Z,299nm,1.5s
MQZ LR LR
comp=Z,12µm,22.0s
BNM **Barren Site** 85.26 50 *e*P P 19 06 23.6 -0.3
H37A **Dierke Farm, C** 85.28 35 P P 19 06 24.5 +1.1
baz=320,SNR=27
FOEL **Foel Wylfa** 85.28 339 *e*P P 19 06 21.8 -1.5
FOEL AMB AMB 19 06 25.7
comp=Z,519nm,2.2s
FOEL AMS AMS 19 43 01.8
comp=Z,12µm,27.6s
SMIA **Simia** 85.29 316 P P 19 06 22.2 -1.5
FETA **Feichten** 85.30 328 *e*PcP P 19 06 24.0 +0.2
comp=Z,67nm,1.2s,SNR=36
FETA PP PP 19 09 42.0 +0.8
comp=Z,63nm,1.5s
FETA *i* S S 19 16 52.0 +1.3
comp=Z,25nm,1.8s
FETA **Feichten** 85.30 328 *i* PKKPbc PKKPbc 19 24 29.9 +2.0
comp=Z,4.6nm,1.1s
KARP **Karpathos** 85.31 312 P P 19 06 23.3 -0.5
KARP **Karpathos** 85.31 312 *e*P P 19 06 23.0 -0.8
comp=Z,148nm,1.1s
KARP LR LR
comp=Z,4µm,20.0s
TIR **Tirane** 85.32 320 ⇓*i*P P 19 06 24.5 +0.8
TIR **Tirane** 85.32 320 *e*P P 19 06 23.9 +0.2
TIR pmax pmax
comp=Z,230nm,1.1s
TIR MLR MLR
comp=Z,51µm,19.0s
TIR **Tirane** 85.32 320 *e*P P 19 06 23.9 +0.2
comp=Z,230nm,1.1s
TIR LR LR
comp=Z,51µm,19.0s
O31A **Woolen Ranch,** 85.33 42 P P 19 06 24.4 +0.6
baz=316,SNR=20
DCZ **Deep Cove** 85.36 162 *e*P P 19 06 22.7 -0.7
comp=Z,112nm,1.3s
DCZ LR LR
comp=Z,7µm,22.0s
NVLJ **Novalja** 85.38 325 P P 19 06 23.8 -0.1
319A **Douglas** 85.42 54 *e*P P 19 06 24.9 +0.3
comp=Z,223nm,1.0s
319A LR LR
comp=Z,16µm,22.0s
M33A **Taylor Creek F** 85.42 40 P P 19 06 24.7 +0.4
baz=317,SNR=18
N32A **Stulken Farm,** 85.44 41 P P 19 06 25.1 +0.7
baz=316,SNR=6.7
DAVA **Damuels** 85.44 329 *e*PcP P 19 06 24.8 +0.3
comp=Z,186nm,1.1s,SNR=56

DAVA *i* SKSac **SKSac** 19 16 45.7 0.0
DAVA **Damuels** **85.44 329** PKKPbc PKKPbc 19 24 30.5 +2.9
comp=Z,9,6nm,0.9s
LLW **Llanuwychllyn** **85.45 339** *e*P **P** **19 06 23.1 -1.0**
LLW AMB AMB 19 06 26.4
comp=Z,2µm,2.5s
LLW AMS AMS 19 42 00.8
comp=Z,164µm,28.1s
THL **Klokotos Trika** **85.46 317** P **P** **19 06 22.6 -1.9**
ELSH **Elham, Standar** **85.47 336** *e*P **P** **19 06 23.7 -0.6**
ELSH AMS AMS 19 48 06.0
comp=Z,22µm,19.6s
SCHQ **Schefferville** **85.48 16** P **P** **19 06 24.4 +0.1**
comp=Z,69nm,0.7s,baz=346,slow=5.0,SNR=37
SCHQ S **S** 19 16 44.5 -7.3
comp=Z,4.1nm,0.8s,baz=156,slow=13,SNR=2.6
SCHQ LR LR 19 45 58.9
comp=Z,13µm,21.9s,baz=340,slow=36
SCHQ **Schefferville** **85.48 16** *e*P **P** **19 06 24.4 +0.1**
comp=Z,139nm,0.9s
SCHQ S **S** 19 16 44.5 -7.3
I37A **Lemond, Waseca** **85.48 36** P **P** **19 06 25.5 +1.0**
baz=319,SNR=51
PENT **Pentalofos** **85.48 318** P **P** **19 06 23.3 -1.4**
PTL **Penteli** **85.51 315** P **P** **19 06 22.0 -2.8**
PTL **Penteli** **85.51 315** *e*P **P** **19 06 22.0 -2.8**
MLZ **Mavora Lakes** **85.51 161** *e*P **P** **19 06 24.6 +0.3**
comp=Z,63nm,1.0s
MLZ LR LR
comp=Z,12µm,20.0s
HLM1 **Long Mynd** **85.52 339** *e*P **P** **19 06 23.9 -0.6**
HLM1 AMB AMB 19 06 26.7
comp=Z,328nm,2.4s
HLM1 AMS AMS 19 43 23.4
comp=Z,16µm,26.7s
ATAL **Atalanti** **85.53 316** P **P** **19 06 23.1 -1.7**
ATAL **Atalanti** **85.53 316** *e*P **P** **19 06 23.1 -1.7**
KPRO **Kipourio** **85.54 318** P **P** **19 06 23.5 -1.4**
J36A **Seneca 1, Swea** **85.55 37** P **P** **19 06 25.2 +0.4**
baz=319,SNR=13
L34A **Svendsen Farm,** **85.55 39** P **P** **19 06 25.6 +0.7**
baz=318,SNR=31
K35A **Storm Lake** **85.56 38** P **P** **19 06 25.2 +0.3**
baz=318,SNR=22
LKR **Lokris** **85.57 316** P **P** **19 06 23.9 -1.1**
LKR **Lokris** **85.57 316** P **P** **19 06 23.9 -1.1**
SKP1 **Kophill** **85.59 337** *e*P **P** **19 06 24.8 -0.1**
121A **Cookes Peak, D** **85.61 52** P **P** **19 06 26.5 +0.9**
baz=312,SNR=81
MENF **Mencas** **85.64 335** *e*P **P** **19 06 25.8 +0.7**
AGG **Agios Georgios** **85.68 317** P **P** **19 06 23.5 -2.1**
AGG **Agios Georgios** **85.68 317** *e*P **P** **19 06 23.5 -2.1**
AGG MLR MLR
comp=Z,42µm,19.0s
AGG **Agios Georgios** **85.68 317** *e*P **P** **19 06 23.5 -2.1**
AGG LR LR
comp=Z,42µm,19.0s
VLY **Voula,Athens** **85.69 315** P **P** **19 06 21.1 -4.5**
VLY **Voula,Athens** **85.69 315** P **P** **19 06 21.1 -4.5**
SSW **Stow on the Wo** **85.70 338**⇑ *e*P **P** **19 06 26.1 +0.8**
VILL **Villia** **85.74 316** P **P** **19 06 24.2 -1.7**
SANT **Santorini** **85.76 313** P **P** **19 06 23.7 -2.3**
SANT **Santorini** **85.76 313** *e*P **P** **19 06 24.3 -1.7**
comp=Z,308nm,1.4s
SANT LR LR
comp=Z,6µm,19.0s
ECH **Echery** **85.78 331**⇑ *e*P **P** **19 06 26.3 +0.4**
M34A **Aspy Farms, Fr** **85.79 40** P **P** **19 06 26.9 +0.8**
baz=317
COWI **Conover** **85.79 32** *e*P **P** **19 06 25.8 -0.2**
COWI LR LR
comp=Z,9µm,20.0s
O32A **Brockman Farm,** **85.81 41** P **P** **19 06 26.5 +0.2**
baz=316,SNR=9.2
FUORN **Ofenpass-Fuorn** **85.82 328** *e*P **P** **19 06 26.5 0.0**
comp=Z,1µm,2.0s
DSB **Dublin** **85.83 341** *e*P **P** **19 06 25.5 -0.5**
comp=Z,897nm,2.0s
DSB LR LR
comp=Z,8µm,21.0s
HSIG **85.84 57** *e*P **P** **19 06 26.7 +0.2**
comp=Z,132nm,1.1s
HSIG LR LR
comp=Z,11µm,20.0s
L35A **Bielow Farm, R** **85.86 39** P **P** **19 06 27.1 +0.7**
baz=318,SNR=22
ODZ **Otahua Downs** **85.89 159** *e*P **P** **19 06 26.7 +0.6**
comp=Z,438nm,1.8s
ODZ LR LR
comp=Z,9µm,21.0s
N33A **J Bar K, Exete** **85.90 41** P **P** **19 06 26.8 +0.1**
baz=317
PYZ **Puysegur Point** **85.90 162** *e*P **P** **19 06 26.4 +0.3**
comp=Z,141nm,1.0s
PYZ LR LR
comp=Z,5µm,21.0s
J37A **Redenius Farm,** **85.94 37** P **P** **19 06 27.1 +0.3**
baz=319,SNR=65
STRD **Stroud** **85.96 338** *e*P **P** **19 06 25.8 -0.9**
STRD AMB AMB 19 06 29.7
comp=Z,924nm,2.1s
STRD AMS AMS 19 45 12.1
comp=Z,19µm,25.9s
WHZ **Wether Hill Ro** **85.96 162** PFAKE 19 06 40.0 +14
WHZ LR LR
comp=Z,8µm,21.0s
I38A **Scanlan Farm,** **85.96 35** P **P** **19 06 26.8 -0.1**
baz=320,SNR=50
HMNX **Herstmonceux** **85.97 336** *e*P **P** **19 06 26.7 -0.1**
HMNX AMS AMS 19 49 07.3
comp=Z,16µm,17.9s
MCH1 **Michaelchurch** **86.01 339** *e*P **P** **19 06 26.3 -0.7**
MCH1 AMB AMB 19 06 30.3
comp=Z,560nm,1.9s
MCH1 AMS AMS 19 44 19.8
comp=Z,18µm,25.0s
EVR **Evrytania** **86.04 317** P **P** **19 06 26.1 -1.4**
EVR **Evrytania** **86.04 317** P **P** **19 06 26.1 -1.4**
SRIG **Santa Rosalia** **86.06 59** *e*P **P** **19 06 27.4 -0.2**
comp=Z,754nm,1.7s
SRIG LR LR
comp=Z,11µm,21.0s
CBKS **Cedar Bluff** **86.06 43** P **P** **19 06 27.3 -0.2**
baz=316,SNR=20
CBKS **Cedar Bluff** **86.06 43** *e*P **P** **19 06 27.1 -0.4**
CBKS pmax pmax
comp=Z,1µm,1.9s
CBKS MLR MLR
comp=Z,4µm,20.0s
CBKS **Cedar Bluff** **86.06 43** *e*P **P** **19 06 27.1 -0.4**
comp=Z,1µm,1.9s
CBKS LR LR
comp=Z,4µm,20.0s
WOL **Wolverton** **86.08 337** *e*P **P** **19 06 26.3 -1.0**
WOL AMB AMB 19 06 30.2
comp=Z,489nm,1.9s
WOL AMS AMS 19 48 53.3
comp=Z,16µm,18.6s
SWN1 **Swindon** **86.08 338** *e*P **P** **19 06 26.8 -0.5**
SWN1 AMB AMB 19 06 30.7
comp=Z,937nm,1.9s
SWN1 AMS AMS 19 46 32.4
comp=Z,17µm,22.7s
MOF **Molkenrain** **86.09 331**⇑ *e*P **P** **19 06 28.1 +0.6**
MONM **Monmouth** **86.09 338** *e*P **P** **19 06 26.5 -0.8**
MONM AMB AMB 19 06 29.3
comp=Z,519nm,2.8s
MONM AMS AMS 19 44 21.2
comp=Z,20µm,25.8s
P32A **Huiting Farm,** **86.10 42** P **P** **19 06 27.0 -0.7**
baz=316,SNR=103
MEH **Mehetia** **86.13 116** *e*T T 20 41 09.9
comp=Z,129nm,0.2s
OLDB **Oldbury-Upon-S** **86.17 338** *e*P **P** **19 06 26.4 -1.3**
OLDB AMB AMB 19 06 29.7
comp=Z,377nm,2.3s
OLDB AMS AMS 19 44 38.3
comp=Z,20µm,26.1s
THAL **Thalero** **86.19 316** P **P** **19 06 25.0 -3.1**
ANX **Ano Chora** **86.21 317** P **P** **19 06 27.4 -0.9**
LPW **Lampeter** **86.21 339** *e*P **P** **19 06 27.6 -0.4**
LPW AMB AMB 19 06 29.9
comp=Z,390nm,2.7s
LPW AMS AMS 19 49 12.5
comp=Z,11µm,18.4s
THEF **They Montfort** **86.22 332**⇑ *e*P **P** **19 06 28.7 +0.6**

KALE **Kalithea** **86.23 316** P **P** **19 06 26.1 -2.3**
KALE **Kalithea** **86.23 316** *e*P **P** **19 06 26.1 -2.3**
DID **Didima** **86.24 315** P **P** **19 06 25.0 -3.4**
DID **Didima** **86.24 315** P **P** **19 06 25.0 -3.4**
SERG **Sergoula** **86.26 316** P **P** **19 06 26.5 -2.0**
M35A **Neola** **86.27 39** P **P** **19 06 28.7 +0.3**
baz=318,SNR=50
DSL **Palaion Diasel** **86.27 318** P **P** **19 06 27.0 -1.5**
DSL **Palaion Diasel** **86.27 318** *e*P **P** **19 06 27.0 -1.5**
BATH **Bath** **86.30 338** *e*P **P** **19 06 27.7 -0.7**
BATH AMB AMB 19 06 30.2
comp=Z,439nm,2.4s
BATH AMS AMS 19 45 22.6
comp=Z,17µm,25.1s
L36A **Harm Buss Farm** **86.31 38** P **P** **19 06 29.0 +0.4**
baz=319,SNR=17
K37A **Belmond** **86.31 37** P **P** **19 06 28.6 0.0**
baz=319,SNR=110
O33A **Hebron** **86.31 41** P **P** **19 06 28.9 +0.2**
baz=317,SNR=14
TUE **Stuetta** **86.32 329** *e*P **P** **19 06 28.4 -0.5**
comp=Z,630nm,2.0s
TUE LR LR
comp=Z,28µm,19.0s
N34A **Lincoln** **86.32 40** P **P** **19 06 28.6 -0.1**
baz=318,SNR=46
SGD **Sagiada** **86.39 318** P **P** **19 06 28.1 -0.9**
IGT **Igoumenitsa** **86.39 318** P **P** **19 06 27.4 -1.7**
IGT **Igoumenitsa** **86.39 318** *e*P **P** **19 06 27.4 -1.7**
IGT **Igoumenitsa** **86.39 318** *e*P **P** **19 06 27.4 -1.7**
PVO **Paravola** **86.41 317** P **P** **19 06 28.9 -0.2**
IGLA **Glengowla, Co** **86.41 343** *e*P **P** **19 06 27.1 -1.7**
IGLA AMB AMB 19 06 31.3
comp=Z,265nm,2.6s
TAOE **Nuku Hiva Isla** **86.42 104** *e*S **S** **19 17 01.2 -1.0**
comp=Z,13µm,30.0s
TAOE **Nuku Hiva Isla** **86.42 104** *e*LR LR 19 34 05.4
comp=Z,49µm,22.9s,baz=315
TAOE **Nuku Hiva Isla** **86.42 104** PFAKE 19 06 40.0 +10
TAOE LR LR
comp=Z,26µm,22.0s
LAKA **Lakka** **86.43 316** P **P** **19 06 27.4 -1.9**
LAKA **Lakka** **86.43 316** *e*P **P** **19 06 27.4 -1.9**
NPS **Neapolis** **86.43 312** P **P** **19 06 27.6 -1.8**
NPS **Neapolis** **86.43 312** P **P** **19 06 27.6 -1.8**
NPS **Neapolis** **86.43 312** P **P** **19 06 27.6 -1.8**
J38A **Wedel Dairy, R** **86.44 36** P **P** **19 06 29.3 +0.1**
baz=320,SNR=70
TUZ **Tuapeka** **86.45 160** *e*PN **P** **19 06 30.7 +1.9**
KLV **Kalavryta, Ach** **86.47 316** P **P** **19 06 27.8 -1.8**
KLV **Kalavryta, Ach** **86.47 316** *e*P **P** **19 06 27.8 -1.8**
KEK **Kerkira** **86.55 319** P **P** **19 06 29.4 -0.4**
KEK **Kerkira** **86.55 319** P **P** **19 06 29.4 -0.4**
LAST **Lasithi** **86.58 312** P **P** **19 06 30.1 -0.1**
LAST **Lasithi** **86.58 312** P **P** **19 06 30.1 -0.1**
Q32A **Meitler Ranch,** **86.58 42** P **P** **19 06 30.4 +0.3**
baz=316,SNR=23
DAMY **Dhmar** **86.59 286** *e*P **P** **19 06 32.1 +1.3**
comp=Z,390nm,1.6s
DAMY LR LR
comp=Z,16µm,19.0s
PDO **Prodromos** **86.61 317** P **P** **19 06 29.2 -0.9**
LOMF **Lomont** **86.62 331**⇑ *e*P **P** **19 06 30.7 +0.6**
O34A **Beatrice** **86.70 40** P **P** **19 06 29.7 -0.9**
baz=317,SNR=42
P33A **Williams Farm,** **86.72 42** P **P** **19 06 30.5 -0.2**
baz=317,SNR=30
M36A **Felix, Anita** **86.72 39** P **P** **19 06 31.0 +0.3**
baz=319,SNR=35
L37A **Phoenix Point,** **86.74 38** P **P** **19 06 30.7 -0.1**
baz=319,SNR=47
N35A **Tabor** **86.74 39** P **P** **19 06 31.3 +0.5**
baz=318,SNR=87
LKD2 **Lefkada island** **86.75 318** P **P** **19 06 28.5 -2.4**
LKD2 **Lefkada island** **86.75 318** P **P** **19 06 28.5 -2.4**
DRO **Drossia** **86.78 316** P **P** **19 06 30.3 -0.7**
J39A **Decorah** **86.79 36** P **P** **19 06 30.8 -0.2**
baz=320,SNR=63
K38A **Parkersburg** **86.82 37** P **P** **19 06 31.8 +0.7**
baz=320,SNR=9.1
VLX **Vlachokerasia** **86.82 316** P **P** **19 06 28.3 -3.0**
VLX **Vlachokerasia** **86.82 316** *e*P **P** **19 06 28.3 -3.0**
IDI **Anoyia** **86.84 313** LR LR 19 50 20.9
comp=Z,5µm,19.6s,baz=50,slow=39
IDI **Anoyia** **86.84 313** P **P** **19 06 29.8 -1.6**
IDI **Anoyia** **86.84 313** *e*P **P** **19 06 31.4 0.0**
comp=Z,143nm,0.9s
RLS **Riolos of Patr** **86.84 317** P **P** **19 06 31.3 0.0**
RLS **Riolos of Patr** **86.84 317** P **P** **19 06 31.3 0.0**
SYZ **Scrubby Hill** **86.86 161** PN **P** **19 06 32.9 +2.1**
R32A **Long Quarter,** **86.91 43** P **P** **19 06 31.8 +0.2**
baz=316,SNR=17
Q33A **Connelly Farm,** **86.96 42** P **P** **19 06 31.8 -0.1**
baz=317,SNR=65
VLI **Veliai** **86.97 315** P **P** **19 06 29.4 -2.5**
VLI **Veliai** **86.97 315** *e*P **P** **19 06 29.4 -2.5**
O35A **Humboldt** **87.04 40** P **P** **19 06 32.3 0.0**
baz=318,SNR=23
SIVA **Sivas** **87.07 313** P **P** **19 06 32.2 -0.3**
SIVA **Sivas** **87.07 313** P **P** **19 06 32.2 -0.3**
P34A **Walnut Farm, R** **87.10 41** P **P** **19 06 31.5 -1.0**
baz=317,SNR=128
L38A **Oak Wood Farm,** **87.11 37** P **P** **19 06 32.5 0.0**
baz=320,SNR=66
N36A **Muff Farm, Cla** **87.12 39** P **P** **19 06 32.9 +0.3**
baz=318,SNR=122
M37A **Trindle Farm,** **87.13 38** P **P** **19 06 33.2 +0.5**
baz=319,SNR=29
VAM **Vamos** **87.16 313** P **P** **19 06 31.8 -1.1**
VAM **Vamos** **87.16 313** P **P** **19 06 31.8 -1.1**
VAM **Vamos** **87.16 313** P **P** **19 06 31.8 -1.1**
SCIA **State Center** **87.16 37** *e*P **P** **19 06 33.1 +0.3**
comp=Z,710nm,1.4s
SCIA LR LR
comp=Z,8µm,22.0s
J40A **Soldiers Grove** **87.19 35** P **P** **19 06 32.7 -0.2**
baz=321,SNR=40
K39A **Oelwein** **87.19 36** P **P** **19 06 33.2 +0.2**
baz=320,SNR=22
ITM **Ithomi** **87.21 316** P **P** **19 06 31.4 -1.7**
ITM **Ithomi** **87.21 316** P **P** **19 06 31.4 -1.7**
VLS **Valsamata** **87.23 317** P **P** **19 06 31.4 -1.8**
SENIN **Lac Senin/Sane** **87.24 330** *e*P **P** **19 06 33.0 -0.3**
comp=Z,44nm,0.9s
IMMV **Iera Moni Meta** **87.25 313** P **P** **19 06 32.5 -0.8**
S32A **Newby Ranch, P** **87.30 43** P **P** **19 06 33.9 +0.3**
baz=316,SNR=32
HTL **Hartland** **87.33 339** *e*P **P** **19 06 32.4 -1.0**
HTL AMB AMB 19 06 35.7
comp=Z,182nm,2.4s
HTL AMS AMS 19 43 18.2
comp=Z,6µm,27.5s
R33A **Olander Ranch,** **87.38 42** P **P** **19 06 34.1 +0.1**
baz=317,SNR=21
Q34A **Chapman** **87.50 41** P **P** **19 06 34.6 +0.1**
baz=317,SNR=46
OG01 **Vacheresse** **87.51 330**⇑ *e*P **P** **19 06 35.0 +0.5**
PYL **PYLOS** **87.52 316** P **P** **19 06 32.9 -1.7**
PYL **PYLOS** **87.52 316** *e*P **P** **19 06 32.9 -1.7**
P35A **Duane Minner,** **87.53 41** P **P** **19 06 34.4 -0.2**
baz=318,SNR=40
KSU1 **Kansas State U** **87.54 41** P **P** **19 06 34.4 -0.3**
baz=316,SNR=70
KSU1 **Kansas State U** **87.54 41** *e*P **P** **19 06 34.4 -0.3**
comp=Z,290nm,0.8s
KSU1 LR LR
comp=Z,4µm,19.0s
N37A **Lee Faris, Mou** **87.54 39** P **P** **19 06 35.2 +0.6**
baz=319,SNR=61
M38A **Pleasantville** **87.54 38** P **P** **19 06 35.4 +0.8**
baz=320,SNR=74
K40A **Colesburg** **87.55 36** P **P** **19 06 34.5 -0.2**
baz=321,SNR=101
J41A **Loganville** **87.55 35** P **P** **19 06 34.5 -0.1**
baz=322,SNR=49
L39A **Vinton** **87.58 37** P **P** **19 06 34.9 +0.1**
baz=320,SNR=108
O36A **Bolckow** **87.63 40** P **P** **19 06 35.5 +0.4**
baz=318,SNR=77
DYA **Yadsworthy** **87.67 338** *e*P **P** **19 06 33.8 -1.2**
DYA AMB AMB 19 06 36.9
comp=Z,374nm,2.2s
DYA AMS AMS 19 44 26.3
comp=Z,13µm,26.1s
DYA **Yadsworthy** **87.67 338** *e*P **P** **19 06 35.3 +0.3**
comp=Z,457nm,1.5s
DYA LR LR
comp=Z,13µm,21.0s
T32A **Huddler Ranch,** **87.68 44** P **P** **19 06 35.5 +0.1**
baz=316,SNR=52
MNTX **Cornudas Mount** **87.68 51** P **P** **19 06 35.5 -0.1**
baz=313,SNR=119
MNTX **Cornudas Mount** **87.68 51** *e*P **P** **19 06 35.3 -0.2**
comp=Z,560nm,1.8s
MNTX LR LR
comp=Z,6µm,22.0s
VLC **Villacollemand** **87.72 327** *e*P **P** **19 06 35.8 +0.3**
comp=Z,615nm,2.0s
VLC LR LR
comp=Z,17µm,20.0s
MSTX **Muleshoe** **87.73 48** P **P** **19 06 36.7 +0.8**
baz=314,SNR=29
MSTX **Muleshoe** **87.73 48** *e*P **P** **19 06 35.5 -0.3**
comp=Z,365nm,1.5s
AMTX **Amarillo** **87.74 47** P **P** **19 06 36.4 +0.6**
baz=315
AMTX **Amarillo** **87.74 47** *e*P **P** **19 06 35.9 0.0**
comp=Z,402nm,1.2s
AMTX LR LR
comp=Z,5µm,20.0s
AQU **L'Aquila** **87.76 324** *e*P **P** **19 06 36.6 +0.8**
AQU pmax pmax
comp=Z,191nm,1.1s
AQU MLR MLR
comp=Z,21µm,22.0s
AQU **L'Aquila** **87.76 324** *e*P **P** **19 06 36.5 +0.8**
comp=Z,191nm,1.1s
AQU LR LR
comp=Z,21µm,22.0s
R34A **Isabella, Hill** **87.78 42** P **P** **19 06 36.4 +0.5**
baz=317,SNR=29
JFWS **Jewell Farm** **87.79 35** *e*P **P** **19 06 35.1 -0.7**
JFWS pmax pmax
comp=Z,117nm,1.0s
JFWS MLR MLR
comp=Z,11µm,21.0s
JFWS **Jewell Farm** **87.79 35** *e*P **P** **19 06 35.1 -0.7**
comp=Z,117nm,1.0s
JFWS LR LR
comp=Z,11µm,21.0s
P36A **Good Intent, A** **87.89 40** P **P** **19 06 36.5 +0.2**
baz=318,SNR=83
S33A **Kaszmaul Farm,** **87.89 43** P **P** **19 06 37.1 +0.7**
baz=317,SNR=14
VAL **Valentia** **87.98 343**⇑ *i*P **P** **19 06 36.9 +0.4**
VAL **Valentia** **87.98 343** ⇓ *i*S **S** **19 17 16.9 +0.9**
VAL *e*SS **SS** **19 23 10.5 +7.7**
M39A **Webster** **88.00 37** P **P** **19 06 37.5 +0.7**
baz=320,SNR=39
N38A **Joes South For** **88.00 38** P **P** **19 06 38.0 +1.1**
baz=320
L40A **Anamosa** **88.00 36** P **P** **19 06 36.6 -0.2**
baz=321,SNR=57
K41A **Shullsburg** **88.01 35** P **P** **19 06 36.7 -0.2**
baz=321,SNR=73
O37A **Wolven Farm, M** **88.02 39** P **P** **19 06 37.4 +0.5**
baz=319,SNR=52
Q35A **Mercer Eighty,** **88.02 41** P **P** **19 06 36.6 -0.4**
baz=318,SNR=91
T33A **Patterson Ranc** **88.13 43** P **P** **19 06 38.3 +0.8**
baz=317,SNR=20
JQE **Queens East** **88.18 337**⇑ *e*P **P** **19 06 37.6 +0.1**
JQE ⇑ *e*P **P** **19 06 37.7 +0.2**
JRS **Jersey** **88.20 337** *e*P **P** **19 06 37.2 -0.4**
U32A **Winter Ranch,** **88.21 44** P **P** **19 06 39.0 +1.0**
baz=316,SNR=14
JSA **Saint Aubin** **88.23 337** *e*P **P** **19 06 35.7 -2.0**
JSA AMB AMB 19 06 39.7
comp=Z,338nm,2.2s
JSA AMS AMS 19 50 30.6
comp=Z,18µm,17.7s
Q36A **Arnold C. Orve** **88.24 41** P **P** **19 06 38.5 +0.4**
baz=318,SNR=13
CCA1 **Carnmenellis** **88.27 339** *e*P **P** **19 06 37.0 -0.9**
CCA1 AMB AMB 19 06 39.8
comp=Z,325nm,2.4s
CCA1 AMS AMS 19 51 15.7
comp=Z,10µm,16.3s
N39A **Derby Farms, D** **88.30 38** P **P** **19 06 38.6 +0.3**
baz=320,SNR=58
S34A **Willow Spring** **88.30 42** P **P** **19 06 39.1 +0.8**
baz=317,SNR=29
R35A **Emporia Munici** **88.33 41** P **P** **19 06 39.4 +0.9**
baz=318,SNR=21
L41A **Preston** **88.33 36** P **P** **19 06 38.4 0.0**
baz=321,SNR=63
P37A **Lathrop** **88.35 40** P **P** **19 06 38.7 +0.2**
baz=319,SNR=39
O38A **Galt** **88.39 39** P **P** **19 06 39.3 +0.6**
baz=319,SNR=15
CUC **Castrocucco** **88.39 321** *e*P **P** **19 06 37.4 -1.4**
comp=Z,39nm,1.0s
TIP **Timpagrande** **88.53 320** P **P** **19 06 38.6 -0.8**
TIP **Timpagrande** **88.53 320** *e*P **P** **19 06 38.6 -0.8**
TIP LR LR
comp=Z,31µm,22.0s
VLDQ **Val d'Or** **88.60 25** *e*P **P** **19 06 38.1 -1.4**
comp=Z,514nm,1.5s
VLDQ LR LR
comp=Z,10µm,21.0s
GDM **Grand'Maison** **88.66 330**⇑ *e*P **P** **19 06 40.9 +0.8**
V32A **Arapaho** **88.66 45** P **P** **19 06 41.3 +1.2**
baz=316,SNR=39
U33A **Lingo Farm, Me** **88.67 44** P **P** **19 06 40.9 +0.8**
baz=317,SNR=27
R36A **Gordon, Harris** **88.69 41** P **P** **19 06 40.7 +0.5**
baz=318,SNR=56
GLMI **Grayling** **88.71 31** *e*P **P** **19 06 41.0 +0.8**
comp=Z,409nm,0.9s
GLMI LR LR
comp=Z,7µm,20.0s
TBI **Tubuai** **88.72 121** *e*PP PP 19 10 06.8 -3.2
comp=Z,1µm,32.0s
TBI *e*S **S** **19 17 22.7 -1.0**
comp=Z,3µm,27.0s
TBI **Tubuai** **88.72 121** *e*LR LR 19 34 21.4
comp=Z,48µm,26.0s,baz=316
P38A **Dawn** **88.73 39** P **P** **19 06 40.6 +0.3**
baz=319,SNR=85
S35A **Otter Creek Ra** **88.74 42** P **P** **19 06 40.6 +0.3**
baz=318,SNR=54
O39A **Kirksville** **88.75 38** P **P** **19 06 41.3 +0.9**
baz=320
T34A **McClaskey Farm** **88.75 43** P **P** **19 06 40.7 +0.3**
baz=317,SNR=44
GRN **Grenoble** **88.78 330**⇑ *e*P **P** **19 06 41.6 +1.1**
Q37A **Longview Farm,** **88.83 40** P **P** **19 06 41.0 +0.3**
baz=319,SNR=9.5
W32A **Sentinel** **88.98 45** P **P** **19 06 42.4 +0.8**
baz=316,SNR=66
U34A **Anderson Ranch** **88.99 44** P **P** **19 06 42.3 +0.8**
baz=317,SNR=55
U34A **Anderson Ranch** **88.99 44** *e*P **P** **19 06 41.9 +0.3**
comp=Z,2µm,2.0s
U34A LR LR
comp=Z,4µm,19.0s
PLDF **La Plantade** **89.00 332** *e*P **P** **19 06 42.4 +0.9**
V33A **Lossen Ranch,** **89.02 44** P **P** **19 06 42.2 +0.4**
baz=317,SNR=25
R37A **Teagarden Farm** **89.06 41** P **P** **19 06 42.1 +0.3**
baz=319,SNR=20
S36A **Lake Cedric, C** **89.09 41** P **P** **19 06 42.5 +0.4**
baz=318,SNR=34
AGO **Saint Agoulin** **89.11 332** *e*P **P** **19 06 43.4 +1.4**
O40A **La Belle** **89.18 38** P **P** **19 06 42.9 +0.5**
baz=320,SNR=62
Q38A **Cooks Store, C** **89.19 40** P **P** **19 06 42.4 -0.1**
baz=319
T35A **Sooner Cattle** **89.20 43** P **P** **19 06 42.7 +0.1**
baz=318,SNR=50
SSB **Saint Sauveur** **89.22 331**⇑ *e*P **P** **19 06 43.2 +0.6**
SSB **Saint Sauveur** **89.22 331** *e*P **P** **19 06 42.5 -0.1**
SSB pmax pmax
comp=Z,92nm,1.6s
SSB MLR MLR
comp=Z,12µm,19.0s
SSB **Saint Sauveur** **89.22 331** *e*P **P** **19 06 42.5 -0.1**
comp=Z,92nm,1.6s
SSB LR LR
comp=Z,12µm,19.0s
P39B **Salisbury** **89.23 39** P **P** **19 06 42.7 +0.1**
baz=320,SNR=61

MSEY **Mahe Island** 89.27 264 *i* P P 19 06 44.7 +1.5
SNR=5.5
MSEY **Mahe Island** 89.27 264 *i* P P 19 06 44.7 +1.5
SNR=5.5
W33A **Caddo, Fort Co** 89.40 45 P P 19 06 44.2 +0.7
baz=316,SNR=18
PYM **Petit Puy Mans** 89.41 332 *e*P P 19 06 44.3 +0.8
T36A **Boggs Farm, Ca** 89.43 42 P P 19 06 44.3 +0.7
baz=318,SNR=37
V34A **Guthrie** 89.44 44 P P 19 06 44.3 +0.6
baz=317,SNR=60
V34A **Guthrie** 89.44 44 *e*P P 19 06 43.7 0.0
comp=Z,376nm,0.9s
V34A LR LR
comp=Z,7μm,22.0s
Q39A **Willow Grove F** 89.45 39 P P 19 06 43.5 -0.2
baz=320,SNR=102
X32A **Elmer** 89.46 46 P P 19 06 44.4 +0.5
baz=316,SNR=60
S37A **Fort Scott** 89.47 41 P P 19 06 43.7 -0.1
baz=319,SNR=100
U35A **Pawnee** 89.48 43 P P 19 06 44.5 +0.7
baz=318,SNR=14
WMOK **Wichita Mounta** 89.52 45 P P 19 06 44.2 +0.1
baz=316,SNR=79
WMOK **Wichita Mounta** 89.52 45 *e*P P 19 06 44.2 +0.1
WMOK pmax pmax
comp=Z,816nm,1.9s
WMOK **Wichita Mounta** 89.52 45 *e*P P 19 06 44.2 +0.1
comp=Z,816nm,1.9s
P40A **Paris** 89.55 38 P P 19 06 44.4 +0.2
baz=320,SNR=112
R38A **Fenwick Farm,** 89.63 40 P P 19 06 44.5 -0.1
baz=319,SNR=38
CEL **Celeste** 89.66 320 *e*P P 19 06 44.3 -0.5
comp=Z,148nm,1.0s
CEL LR LR
comp=Z,25μm,21.0s
O41A **Passleys Farm,** 89.67 37 P P 19 06 44.7 0.0
baz=321,SNR=70
W34A **Bridge Creek,** 89.73 44 P P 19 06 45.7 +0.6
baz=317,SNR=36
W34A **Bridge Creek,** 89.73 44 *e*P P 19 06 45.3 +0.2
comp=Z,2μm,1.9s
LBL **Lubilhac** 89.76 332 *e*P P 19 06 45.6 +0.5
X33A **Lawton** 89.82 45 P P 19 06 46.2 +0.7
baz=316,SNR=20
V35A **Meyer Ranch, C** 89.86 44 P P 19 06 46.3 +0.6
baz=317,SNR=30
FRNF **Fournols** 89.89 332⇑ *e*P P 19 06 47.8 +2.1
T37A **Cheneyville 18** 89.90 41 P P 19 06 45.8 -0.1
baz=319,SNR=60
P41A **Barry, Barry** 89.92 38 P P 19 06 46.0 +0.1
baz=321,SNR=71
Q40A **Laux Farm, Aux** 89.95 39 P P 19 06 46.6 +0.6
baz=320,SNR=44
SLBS **Sierra La Lagu** 89.98 60 *e*P P 19 06 47.8 +1.3
comp=Z,681nm,1.8s
SLBS LR LR
comp=Z,7μm,22.0s
R39A **Chumby, Stover** 89.98 40 P P 19 06 45.8 -0.4
baz=320,SNR=68
O42A **Bath** 89.99 37 P P 19 06 46.9 +0.7
baz=322,SNR=5.8
U36A **Ologah** 90.00 42 P P 19 06 46.4 0.0
baz=318,SNR=37
S38A **Stockton** 90.05 41 P P 19 06 46.4 -0.2
baz=319,SNR=24
HDIL **Hopedale** 90.08 36 P P 19 06 47.5 +0.9
baz=322,SNR=24
HDIL **Hopedale** 90.08 36 *e*P P 19 06 47.0 +0.3
comp=Z,351nm,1.3s
HDIL LR LR
comp=Z,9μm,21.0s
Y33A **Hilltop Ranch,** 90.13 46 P P 19 06 47.5 +0.5
baz=316,SNR=50
X34A **Smith Ranch, M** 90.16 45 P P 19 06 48.2 +1.1
baz=317,SNR=43
LEPF **PUYLOUBIER** 90.22 329 *e*P P 19 06 45.6 -1.6
W35A **Tecumseh** 90.29 44 P P 19 06 48.4 +0.7
baz=317,SNR=73
T38A **Diamond** 90.29 41 P P 19 06 47.5 -0.2
baz=319,SNR=159
S39A **Bolivar** 90.31 40 P P 19 06 47.6 -0.1
baz=320,SNR=84
U37A **Salina** 90.33 42 P P 19 06 47.6 -0.2
baz=318,SNR=86
TUL1 **Leonard** 90.33 43 P P 19 06 48.4 +0.5
baz=318,SNR=70
TUL1 **Leonard** 90.33 43 *e*P P 19 06 47.6 -0.3
comp=Z,204nm,0.8s
TUL1 LR LR
comp=Z,4μm,20.0s
V36A **Jenks** 90.34 43 P P 19 06 48.4 +0.5
baz=318,SNR=53
P42A **Winchester** 90.34 37 P P 19 06 47.8 0.0
baz=321,SNR=57
TX31 **Lajitas Ar. Si** 90.38 52 *e*P P 19 06 48.1 -0.2
LTX **Lajitas** 90.38 52 *e*P P 19 06 48.2 -0.1
LTX **Lajitas** 90.38 52 *e*P P 19 06 48.2 -0.1
LTX *e*SKSac **SKSac** 19 17 14.7 -1.2
LTX *e*PKKPdf **PKKPbc** 19 24 16.1 +0.9
LTX *e*P'P'df **P'P'df** 19 32 24.3 -5.0
TXAR **Lajitas Array** 90.38 52 P P 19 06 48.2 -0.1
comp=Z,84nm,0.6s,baz=296,slow=3.0,SNR=255
TXAR S **SKSac** 19 17 14.7 -1.2
comp=Z,0.2nm,0.5s,baz=141,slow=3.0,SNR=2.5
TXAR PKKPbc **PKKPbc** 19 24 16.1 +0.9
comp=Z,1.3nm,0.7s,baz=151,slow=5.8,SNR=8.5
TXAR PKPPKP **P'P'df** 19 32 24.3 -5.0
comp=Z,0.7nm,1.0s,baz=194,slow=2.6,SNR=4.0
TXAR LR LR 19 41 20.0
comp=Z,9μm,21.9s,baz=0.0,slow=32
R40A **Maddies Statio** 90.39 39 P P 19 06 47.8 -0.2
baz=320,SNR=71
ABTX **Abilene, Hawle** 90.53 47 P P 19 06 49.5 +0.6
baz=316,SNR=70
ABTX **Abilene, Hawle** 90.53 47 *e*P P 19 06 48.8 -0.1
comp=Z,308nm,1.1s
ABTX LR LR
comp=Z,6μm,21.0s
Z33A **Whitaker Ranch** 90.57 46 P P 19 06 49.5 +0.4
baz=316,SNR=71
W36A **Wetumka** 90.66 44 P P 19 06 49.4 0.0
baz=318,SNR=50
Y34A **Reagan Ranch,** 90.67 45 P P 19 06 49.4 0.0
baz=317,SNR=47
U38A **Gravette** 90.69 42 P P 19 06 49.4 -0.2
baz=319,SNR=114
V37A **Hulbert** 90.70 42 P P 19 06 49.5 -0.1
baz=318,SNR=122
HPIG **Hopedale** 90.72 55 *e*P P 19 06 50.6 +0.5
comp=Z,131nm,1.0s
HPIG LR LR
comp=Z,14μm,20.0s
Q42A **Golden Eagle** 90.77 38 P P 19 06 50.2 +0.4
baz=321,SNR=34
T39A **Clever** 90.78 41 P P 19 06 50.3 +0.3
baz=320,SNR=42
X35A **Drake** 90.79 45 P P 19 06 49.6 -0.4
baz=317,SNR=87
S40A **Lebanon** 90.80 40 P P 19 06 50.2 +0.2
baz=320,SNR=41
R41A **Rosebud** 90.83 39 P P 19 06 50.2 +0.1
baz=321
SADO **Sadowa** 90.88 27 *e*P P 19 06 50.2 0.0
comp=Z,478nm,1.8s
SADO LR LR
comp=Z,7μm,21.0s
133A **Hamilton Ranch** 90.97 47 P P 19 06 51.4 +0.4
baz=316,SNR=50
Z34A **Collier Ranch,** 91.00 46 P P 19 06 51.5 +0.4
baz=317,SNR=54
X36A **Centrahoma** 91.01 44 P P 19 06 51.3 +0.3
baz=318,SNR=102
HHAR **Hobbs** 91.05 41 *e*P P 19 06 50.4 -0.8
comp=Z,148nm,0.9s
HHAR LR LR
comp=Z,5μm,21.0s
W37B **Quinton** 91.10 43 P P 19 06 51.7 +0.3
baz=318,SNR=52
Y35A **Marietta** 91.11 45 P P 19 06 52.0 +0.4
baz=317,SNR=16
V38A **Canehill** 91.11 42 P P 19 06 51.4 -0.1
baz=319,SNR=160
T40A **Mansfield** 91.13 40 P P 19 06 51.3 -0.3
baz=320,SNR=32
R42A **Luebbering** 91.14 38 P P 19 06 52.1 +0.5
baz=321
Q43A **New Douglas** 91.16 37 P P 19 06 52.2 +0.5
baz=322,SNR=12
AAM **Ann Arbor** 91.18 31 *e*P P 19 06 51.9 +0.2
AAM pmax pmax
comp=Z,216nm,1.4s
AAM MLR MLR
comp=Z,5μm,19.0s
AAM **Ann Arbor** 91.18 31 *e*P P 19 06 51.9 +0.2
comp=Z,216nm,1.4s
AAM LR LR
comp=Z,5μm,19.0s
S41A **Jillco Farms,** 91.19 39 P P 19 06 52.1 +0.3
baz=320,SNR=38
TRQ **Mont Tremblant** 91.21 24 *e*P P 19 06 51.1 -0.7
U39A **Green Forest** 91.21 41 P P 19 06 51.6 -0.4
baz=319,SNR=179
SFIN **Lafayette** 91.24 35 P P 19 06 52.3 +0.3
baz=324,SNR=43
SFIN **Lafayette** 91.24 35 *e*P P 19 06 51.6 -0.4
comp=Z,254nm,1.2s
SFIN LR LR
comp=Z,10μm,22.0s
LMQ **La Malbaie** 91.30 21 *e*P P 19 06 52.6 +0.5
LMQ LR LR
comp=Z,9μm,22.0s
PLVO **Plevna** 91.39 26 *e*P P 19 06 52.8 +0.2
comp=Z,656nm,1.9s
PLVO LR LR
comp=Z,10μm,18.0s
233A **Rising Star** 91.41 47 P P 19 06 53.5 +0.5
baz=316,SNR=84
Z35A **Perchaven, San** 91.41 45 P P 19 06 53.0 0.0
baz=317,SNR=70
134A **White-Moore Ra** 91.48 46 P P 19 06 53.6 +0.4
baz=317,SNR=51
Q44A **Meyer Farm, Va** 91.52 37 P P 19 06 53.7 +0.4
baz=322,SNR=18
S42A **Caledonia** 91.53 39 P P 19 06 53.5 +0.1
baz=321
V39A **Pettigrew** 91.54 42 P P 19 06 53.5 -0.1
baz=319,SNR=105
X37A **Clayton** 91.54 43 P P 19 06 53.7 +0.2
baz=318,SNR=71
Y36A **Durant** 91.54 44 P P 19 06 53.9 +0.4
baz=318,SNR=58
CLTB **Caltabellotta** 91.55 321 PFAKE 19 07 00.0 +6.4
CLTB LR LR
comp=Z,30μm,20.0s
U40A **Yellville** 91.56 41 P P 19 06 53.5 -0.1
baz=320,SNR=239
T41A **Mountain View** 91.60 40 P P 19 06 53.5 -0.2
baz=320,SNR=63
W38A **Poteau** 91.65 43 P P 19 06 54.5 +0.5
baz=319,SNR=38
X38A **Whitesboro** 91.78 43 P P 19 06 54.8 +0.2
baz=319,SNR=104
333A **Richland Sprin** 91.85 48 P P 19 06 55.5 +0.5
baz=316,SNR=171
234A **Clairette** 91.86 47 P P 19 06 55.9 +0.8
baz=317,SNR=31
135A **Vickery Place,** 91.88 46 P P 19 06 55.8 +0.7
baz=317,SNR=29
VSL **Villasalto** 91.89 325 *e*P P 19 06 54.9 -0.2
comp=Z,164nm,1.9s
VSL LR LR
comp=Z,12μm,21.0s
Z36A **Blue Ridge** 91.92 45 P P 19 06 55.4 +0.1
baz=318,SNR=35
W39A **Magazine** 91.95 42 P P 19 06 56.1 +0.7
baz=319,SNR=41
JCT **Junction City** 91.97 49 P P 19 06 55.7 +0.1
baz=316,SNR=59
JCT **Junction City** 91.97 49 *e*P P 19 06 55.5 -0.1
JCT pmax pmax
comp=Z,193nm,0.8s
JCT MLR MLR
comp=Z,8μm,22.0s
JCT **Junction City** 91.97 49 *e*P P 19 06 55.5 -0.1
comp=Z,193nm,0.8s
JCT LR LR
comp=Z,8μm,22.0s
LRDF **Laroque-de-Fa** 91.97 331⇑ *e*P P 19 06 56.5 +1.2
V40A **Witts Springs** 92.00 41 P P 19 06 55.3 -0.3
baz=320,SNR=40
R44A **Waltonville** 92.00 37 P P 19 06 56.2 +0.6
baz=322,SNR=13
S43A **Fulton Ridge,** 92.04 38 P P 19 06 56.4 +0.6
baz=322,SNR=14
U41A **Viola** 92.06 40 P P 19 06 56.0 +0.1
baz=320,SNR=28
OLIL **Olney** 92.09 36 *e*P P 19 06 55.9 0.0
comp=Z,183nm,1.3s
OLIL LR LR
comp=Z,8μm,22.0s
433A **Art** 92.20 48 P P 19 06 57.3 +0.7
baz=316,SNR=25
WDD **Wied Dalam** 92.21 319 PFAKE 19 07 10.0 +13
WDD LR LR
comp=Z,14μm,20.0s
SJAF **Saint Jean de** 92.22 330 *e*P P 19 06 57.4 +0.9
WHTX **Lake Whitney,** 92.27 46 P P 19 06 57.5 +0.6
baz=317,SNR=66
WHTX **Lake Whitney,** 92.27 46 *e*P P 19 06 57.4 +0.5
comp=Z,320nm,1.1s
WHTX LR LR
comp=Z,6μm,22.0s
FILF **Fillols** 92.28 331⇑ *e*P P 19 06 57.7 +0.8
X39A **Fountain Ranch** 92.29 43 P P 19 06 57.2 +0.2
baz=319,SNR=95
334A **Lometa** 92.29 47 P P 19 06 57.3 +0.3
baz=317,SNR=126
T43A **Greenville** 92.32 39 P P 19 06 57.5 +0.5
baz=321
CARF **Carcanieres** 92.33 331⇑ *e*P P 19 06 57.7 +0.6
W40A **Ferguson Farm,** 92.33 42 P P 19 06 57.4 +0.2
baz=320,SNR=66
S44A **Carbondale** 92.35 38 P P 19 06 57.5 +0.4
baz=322,SNR=25
SIUC **Southern Illin** 92.35 38 *e*P P 19 06 57.1 0.0
comp=Z,165nm,1.1s
SIUC LR LR
comp=Z,7μm,21.0s
H06N1 **SOCORRO T-PHAS** 92.36 64 T T 20 49 18.7
SNR=55
V41A **Mountainview** 92.36 41 P P 19 06 57.0 -0.3
baz=320,SNR=73
Y38A **Idabel** 92.38 44 P P 19 06 57.7 +0.3
baz=319,SNR=12
U42A **Revenden** 92.40 40 P P 19 06 57.7 +0.2
baz=321,SNR=20
Z37A **Pogue Cattle C** 92.43 45 P P 19 06 58.4 +0.8
baz=318,SNR=13
136A **Ennis** 92.45 46 P P 19 06 58.6 +0.9
baz=318,SNR=15
H06E1 **SOCORRO T-PHAS** 92.46 64 T T 20 49 20.3
SNR=25
H06S1 **SOCORRO T** 92.46 64 T T 20 49 23.9
SNR=12
BLO **Bloomington** 92.47 35 *e*P P 19 06 57.6 -0.1
BLO pmax pmax
comp=Z,502nm,2.0s
BLO MLR MLR
comp=Z,10μm,21.0s
BLO **Bloomington** 92.47 35 *e*P P 19 06 57.6 -0.1
comp=Z,502nm,2.0s
BLO LR LR
comp=Z,10μm,21.0s
PBMO **Poplar Bluff** 92.48 39 *e*P P 19 06 57.7 -0.1
comp=Z,186nm,1.3s
PBMO LR LR
comp=Z,5μm,22.0s
MIAR **Mount Ida** 92.55 42 P P 19 06 58.5 +0.3
baz=319,SNR=120
MIAR **Mount Ida** 92.55 42 *e*P P 19 06 58.3 +0.1
MIAR pmax pmax
comp=Z,129nm,0.8s
MIAR MLR MLR
comp=Z,8μm,22.0s
MIAR **Mount Ida** 92.55 42 *e*P P 19 06 58.3 +0.1
comp=Z,129nm,0.8s
MIAR LR LR
comp=Z,8μm,22.0s
DRLN **Deer Lake** 92.58 12 *e*P P 19 06 58.7 +0.7
comp=Z,307nm,1.9s
DRLN LR LR
comp=Z,13μm,20.0s
LONY **Lake Ozonia** 92.61 25 *e*P P 19 06 58.1 -0.2
comp=Z,332nm,2.0s
LONY LR LR
comp=Z,9μm,21.0s
VALF **Valcebollere** 92.63 331⇑ *e*P P 19 06 59.7 +1.1
X201 **Greenbrier Sit** 92.63 41 *e*P P 19 06 58.0 -0.5
comp=Z,124nm,0.8s
X201 LR LR
comp=Z,4μm,21.0s
434A **Burnet** 92.64 48 P P 19 06 58.5 -0.2
baz=317,SNR=37
X301 **Greenbrier Sit** 92.65 41 *e*P P 19 06 58.5 -0.1
comp=Z,158nm,1.2s
X301 LR LR
comp=Z,5μm,20.0s
T44A **Benton** 92.66 38 P P 19 06 59.4 +0.8
baz=322
WHAR **Wooly Hollow** 92.67 41 *e*P P 19 06 58.6 -0.1
comp=Z,133nm,0.8s
WHAR LR LR
comp=Z,6μm,22.0s
S45A **Carrier Mills** 92.69 37 P P 19 06 59.5 +0.8
baz=322,SNR=16
533A **Kerrville** 92.72 49 P P 19 06 59.8 +0.7
baz=316,SNR=36
Y39A **Lockesburg** 92.73 43 P P 19 06 59.2 +0.3
baz=319,SNR=65
V42A **Cord** 92.75 40 P P 19 06 59.2 +0.1
baz=321,SNR=28
Z38A **Mt. Pleasant** 92.75 44 P P 19 06 59.6 +0.6
baz=318,SNR=8.3
FRNY **Flat Rock** 92.75 24 *e*P P 19 06 59.6 +0.7
comp=Z,261nm,1.9s
FRNY LR LR
comp=Z,12μm,22.0s
W41A **Tony Mavity, V** 92.78 41 P P 19 06 59.3 +0.1
baz=320
W41B **Gary Mavity, V** 92.78 41 P P 19 06 59.4 +0.2
baz=320,SNR=42
236A **Katherine and** 92.80 46 P P 19 07 00.2 +0.8
baz=318,SNR=15
335A **Moody** 92.80 47 P P 19 06 60.0 +0.6
baz=317,SNR=24
U43A **Rector** 92.81 39 P P 19 06 59.8 +0.5
baz=321
LABF **Labassere** 92.81 332⇑ *e*P P 19 06 59.9 +0.6
ERPA **Erie** 92.82 29 *e*P P 19 07 00.8 +1.5
comp=Z,786nm,1.9s
ERPA LR LR
comp=Z,6μm,20.0s
USIN **University of** 92.90 37 *e*P P 19 07 00.1 +0.4
comp=Z,124nm,1.5s
USIN LR LR
comp=Z,7μm,21.0s
PARMO **Parma** 92.91 39 *e*P P 19 07 00.1 +0.4
RESF **Ens** 92.92 332⇑ *e*P P 19 07 01.3 +1.4
REYF **Montagne du Re** 92.97 333⇑ *e*P P 19 07 00.7 +0.7
VIEF **Viey** 92.97 332⇑ *e*P P 19 07 01.6 +1.5
X40A **Basin Creek Fa** 92.99 42 P P 19 07 00.6 +0.4
baz=320,SNR=67
UALR **University of** 93.04 41 *e*P P 19 07 00.7 +0.3
comp=Z,51nm,1.0s
UALR LR LR
comp=Z,6μm,20.0s
ORDF **Ordiarp** 93.04 333⇑ *e*P P 19 07 01.0 +0.8
ATE **Arette** 93.06 333⇑ *e*P P 19 07 01.0 +0.6
336A **Riesel** 93.06 47 P P 19 07 01.2 +0.6
baz=317,SNR=15
435B **Jarrell** 93.07 47 P P 19 07 01.3 +0.7
baz=317,SNR=11
633A **Saathoff Ranch** 93.07 49 P P 19 07 01.3 +0.6
baz=316,SNR=9.7
534A **Blanco** 93.09 48 P P 19 07 00.4 -0.3
baz=316,SNR=50
MMNY **Mt. Morris Dam** 93.09 28 *e*P P 19 07 00.3 -0.2
Y40A **Okolona** 93.11 43 P P 19 07 01.4 +0.6
baz=320,SNR=7.8
OSSF **Osses** 93.12 333⇑ *e*P P 19 07 01.0 +0.4
138A **Matatall Enter** 93.13 45 P P 19 07 02.3 +1.4
baz=318,SNR=15
PVMO **Portageville** 93.13 39 PFAKE 19 07 10.0 +9.2
PVMO LR LR
comp=Z,8μm,22.0s
ALLY **Alegheny Colle** 93.16 30 *e*P P 19 07 01.6 +0.7
comp=Z,80nm,1.0s
ALLY LR LR
comp=Z,2μm,20.0s
X41A **Kaden, Bauxite** 93.16 42 P P 19 07 02.0 +1.0
baz=320,SNR=11
ACSO **Alum Creek Sta** 93.18 32 *e*P P 19 07 01.1 +0.1
comp=Z,93nm,0.8s
V43A **Jonesboro** 93.19 40 P P 19 07 01.6 +0.5
baz=321
Z39A **Irene McRaven,** 93.20 44 P P 19 07 02.2 +1.1
baz=319,SNR=8.4
237A **Washetta, Mont** 93.21 45 P P 19 07 02.2 +1.0
baz=318,SNR=9.0
LARF **Larrau** 93.21 333⇑ *e*P P 19 07 02.1 +1.0
NCB **Newcomb** 93.31 25 *e*P P 19 07 01.9 +0.4
comp=Z,3.9nm,1.8s
NCB LR LR
comp=Z,100nm,21.0s
WCI **Wyandotte Cave** 93.34 35 *e*P P 19 07 02.0 +0.2
WCI pmax pmax
comp=Z,179nm,1.7s
WCI MLR MLR
comp=Z,11μm,22.0s
WCI **Wyandotte Cave** 93.34 35 *e*P P 19 07 02.0 +0.2
comp=Z,180nm,1.7s
WCI LR LR
comp=Z,11μm,22.0s
832A **Faith Ranch, C** 93.42 51 P P 19 07 03.6 +1.3
baz=316,SNR=28
WLAR **White Oak Lake** 93.45 43 *e*P P 19 07 02.5 +0.1
comp=Z,605nm,1.6s
WLAR LR LR
comp=Z,5μm,20.0s
M54A **Oil Creek Stat** 93.47 29 P P 19 07 03.2 +0.9
baz=329,SNR=13
733A **Divot King Ran** 93.53 50 P P 19 07 04.0 +1.2
baz=316,SNR=14
436A **Wall Ranch, Ga** 93.54 47 P P 19 07 04.0 +1.3
baz=317,SNR=22
Y41A **Eaglette Beard** 93.58 42 P P 19 07 03.6 +0.7
baz=320
Z40A **Long Farm, Mag** 93.62 43 P P 19 07 04.4 +1.3
baz=319
535A **Dale** 93.63 48 P P 19 07 03.9 +0.7
baz=317
MDV **Middlebury** 93.63 24 *e*P P 19 07 00.5 -2.4
PKME **Peaks-Kenny Pk** 93.68 21 *e*P P 19 07 04.1 +1.0
comp=Z,413nm,1.9s
PKME LR LR
comp=Z,10μm,19.0s
HALT **Halls** 93.71 39 PFAKE 19 07 10.0 +6.5
HALT LR LR
comp=Z,7220μm,21.0s
833A **Chaparral WMA,** 93.75 50 P P 19 07 05.3 +1.5
baz=316,SNR=13
N54A **Moraine State** 93.80 30 P P 19 07 04.2 +0.4
baz=328,SNR=18
LBNH **Lisbon** 93.81 23 *e*P P 19 07 05.4 +1.6
LBNH pmax pmax
comp=Z,210nm,1.5s
LBNH MLR MLR
comp=Z,10μm,22.0s
LBNH **Lisbon** 93.81 23 *e*P P 19 07 05.4 +1.6
comp=Z,210nm,1.5s
LBNH LR LR
comp=Z,10μm,22.0s
437A **Phantom Ranch,** 93.88 46 P P 19 07 05.5 +1.1
baz=318,SNR=7.8
734A **La Parita Cree** 93.89 49 P P 19 07 06.1 +1.7
baz=316,SNR=11
536A **Bastrop** 93.89 48 P P 19 07 05.3 +0.8
baz=317,SNR=11
Z41A **Richland Creek** 93.94 43 P P 19 07 05.9 +1.3
baz=320,SNR=7.1
239A **Gary** 93.96 45 P P 19 07 06.0 +1.3
baz=319,SNR=5.4
635A **Leesville** 93.97 48 P P 19 07 05.2 +0.5
baz=317,SNR=17
CCAR **Cane Creek** 94.00 42 *e*P P 19 07 05.6 +0.8
comp=Z,311nm,1.5s
CCAR LR LR
comp=Z,7μm,20.0s
ACCN **Adirondack Com** 94.02 25 *e*P P 19 07 05.5 +0.8
comp=Z,250nm,1.7s
ACCN LR LR

comp=Z,9µm,22.0s
MET Memphis--Engin 94.02 40 PFAKE 19 07 20.0 +15
MET LR LR
comp=Z,5µm,20.0s
NATX Nacogdoches 94.04 45 P **P 19 07 05.8 +0.7**
baz=319
NATX Nacogdoches 94.04 45 *e*P **P 19 07 06.1 +1.0**
comp=Z,173nm,1.4s
NATX LR LR
comp=Z,11µm,22.0s
Y42A Garnett, Star 94.05 42 P **P 19 07 06.0 +0.9**
baz=320,SNR=13
HNH Hanover 94.18 24 PFAKE 19 07 20.0 +15
HNH LR LR
comp=Z,19µm,21.0s
WVL Waterville 94.21 21 PFAKE 19 07 20.0 +14
WVL LR LR
comp=Z,14µm,22.0s
BINY Binghamton 94.26 27 *e*P **P 19 07 06.8 +0.8**
comp=Z,131nm,1.6s
BINY LR LR
comp=Z,11µm,20.0s
WVT Waverly 94.28 38 *e*P **P 19 07 05.8 -0.3**
WVT pmax pmax
comp=Z,51nm,1.3s
WVT MLR MLR
comp=Z,8µm,22.0s
WVT Waverly 94.28 38 *e*P **P 19 07 05.8 -0.3**
comp=Z,51nm,1.3s
WVT LR LR
comp=Z,8µm,22.0s
LMN Caledonia Moun 94.33 18 *e*P **P 19 07 06.7 +0.5**
comp=Z,152nm,1.4s
LMN LR LR
comp=Z,14µm,22.0s
438A Sam Houston St 94.33 46 P **P 19 07 06.8 +0.4**
baz=318
537A Green Hill Far 94.33 47 P **P 19 07 07.6 +1.2**
baz=318
636A Smothers Creek 94.33 48 P **P 19 07 08.0 +1.6**
baz=317
933A Laredo 94.33 51 P **P 19 07 08.1 +1.6**
baz=316
735A Kenedy 94.34 49 P **P 19 07 08.1 +1.6**
baz=317
Z42A Norrel Spur, H 94.39 42 P **P 19 07 06.8 +0.2**
baz=320
834A Tilden 94.41 50 P **P 19 07 08.3 +1.5**
baz=316
FURI Furi 94.47 285 *e*P P 19 07 16.6 +8.9
FURI *i* S S 19 17 52.1 -25
FURI Furi 94.47 285 *e*P P 19 07 16.0 +8.3
comp=Z,146nm,1.2s
GGN Saint George 94.49 19 *e*P **P 19 07 07.7 +0.9**
comp=Z,104nm,1.4s
GGN LR LR
comp=Z,8µm,20.0s
FFD Franklin Falls 94.59 23 PFAKE 19 07 20.0 +13
FFD LR LR
comp=Z,13µm,20.0s
TRY Troy 94.59 25 PFAKE 19 07 20.0 +13
TRY LR LR
comp=Z,17µm,21.0s
439A Center Grove, 94.70 46 P **P 19 07 09.5 +1.4**
baz=318
736A Circle Diamond 94.71 48 P **P 19 07 09.8 +1.6**
baz=317
835A Beeville 94.73 49 P **P 19 07 08.7 +0.4**
baz=317
OXF Oxford 94.77 40 *e*P **P 19 07 07.8 -0.5**
OXF pmax pmax
comp=Z,97nm,1.0s
OXF Oxford 94.77 40 *e*P **P 19 07 07.8 -0.5**
comp=Z,97nm,1.0s
Y44A Strider, Charl 94.78 41 P **P 19 07 09.1 +0.6**
baz=321
637A Eagle Lake 94.79 48 P **P 19 07 10.1 +1.5**
baz=318
934A Benavides 94.81 50 P **P 19 07 10.7 +2.1**
baz=316
KSPA Keystone Colle 94.90 27 PFAKE 19 07 20.0 +11
KSPA LR LR
comp=Z,12µm,20.0s
SSPA Standing Stone 94.91 29 *e*P **P 19 07 09.3 +0.4**
comp=Z,318nm,1.9s
SSPA LR LR
comp=Z,5µm,22.0s
KEST Kesra 94.91 322 P **P 19 07 08.7 -0.5**
comp=Z,22nm,1.0s,baz=19,slow=1.9,SNR=15
KEST LR LR 19 53 35.2
comp=Z,9µm,21.8s,baz=340,slow=38
KEST Kesra 94.91 322 *e*P **P 19 07 08.9 -0.2**
comp=Z,48nm,1.1s
O56A Blue Knob Stat 94.96 29 P **P 19 07 08.5 -0.7**
baz=329
MCWV Mont Chateau 94.97 31 *e*P **P 19 07 10.0 +0.8**
comp=Z,39nm,0.9s
MCWV LR LR
comp=Z,2µm,20.0s
034A Hebbronville 95.09 51 P **P 19 07 11.6 +1.6**
baz=316
CMAH Djebel Manchou 95.12 324 P **P 19 07 09.7 -0.3**
Z44A Pea Ridge, Bel 95.20 41 P **P 19 07 11.6 +1.2**
baz=321
341A Kurthwood 95.20 44 P **P 19 07 11.5 +1.1**
baz=319
Y45A Yeager Farm, C 95.20 40 P **P 19 07 11.3 +0.9**
baz=322
638A Rosharon 95.33 47 P **P 19 07 12.6 +1.6**
baz=318
ABSA Djebel Ababsia 95.37 324 P **P 19 07 11.7 +0.5**
QUA2 Belchertown 95.44 24 PFAKE 19 07 20.0 +8.8
QUA2 LR LR
comp=Z,10µm,22.0s
N59A State Game Lan 95.46 27 P **P 19 07 12.3 +0.9**
baz=331
HRV Adam Dziewonsk 95.49 24 PFAKE 19 07 20.0 +8.5
HRV LR LR
comp=Z,7µm,21.0s
035A Encino 95.54 50 P **P 19 07 13.6 +1.6**
baz=316
Y46A Houston 95.55 40 P **P 19 07 11.9 0.0**
baz=322
ZAIG Zacatecas 95.61 56 *e*P **P 19 07 13.8 +1.0**
comp=Z,138nm,1.3s
ZAIG LR LR
comp=Z,13µm,22.0s
CKFL Kef-Lekhel 95.62 325 P **P 19 07 12.4 0.0**
WES Weston 95.68 24 PFAKE 19 07 20.0 +7.7
WES LR LR
comp=Z,14µm,22.0s
936A North Padre Is 95.68 50 P **P 19 07 13.6 +1.0**
baz=317
243A Waterproof 95.71 43 P **P 19 07 13.8 +1.1**
baz=320
ODNJ Ogdensburg 95.73 26 *e*P **P 19 07 13.3 +0.7**
comp=Z,32nm,1.4s
ODNJ LR LR
comp=Z,5µm,20.0s
BCX Boston College 95.77 23 PFAKE 19 07 20.0 +7.3
BCX LR LR
comp=Z,22µm,22.0s
LUPA Lehigh Univers 95.88 27 *e*P **P 19 07 13.8 +0.4**
comp=Z,139nm,1.9s
LUPA LR LR
comp=Z,12µm,20.0s
DFRA Djebel Bou Aff 95.89 325 P **P 19 07 16.7 +3.1**
035Z Hargill 95.90 51 P **P 19 07 15.4 +1.8**
baz=316
SWET Sewanee 95.94 37 *e*P **P 19 07 12.8 -1.0**
comp=Z,26nm,1.2s
SWET LR LR
comp=Z,3µm,22.0s
VBMS Vicksburg 95.97 42 P **P 19 07 14.6 +0.8**
baz=321
VBMS Vicksburg 95.97 42 PFAKE 19 07 20.0 +6.1
VBMS LR LR
comp=Z,5µm,22.0s
TZTN Tazewell 95.97 35 *e*P **P 19 07 13.5 -0.4**
comp=Z,52nm,0.8s
TZTN LR LR
comp=Z,12µm,22.0s
145A Houston Renfro 95.99 41 P **P 19 07 14.1 +0.2**
baz=321
244A Avery, Jackson 96.02 42 P **P 19 07 14.9 +0.8**
baz=321
BRYW Bryant College 96.03 24 PFAKE 19 07 20.0 +6.0
BRYW LR LR
comp=Z,16µm,22.0s
MVL Millersville 96.04 28 *e*P **P 19 07 15.3 +1.3**
comp=Z,58nm,1.6s
MVL LR LR
comp=Z,7µm,20.0s
Y47A UCPARC, Winfie 96.04 39 P **P 19 07 14.2 0.0**
baz=323
Z46A Louisville 96.04 40 P **P 19 07 14.9 +0.7**
baz=322
PAL Palisades 96.04 26 *e*P **P 19 07 12.6 -1.4**
PAL pmax pmax
comp=Z,245nm,1.8s
PAL MLR MLR
comp=Z,9µm,22.0s
PAL Palisades 96.04 26 *e*P **P 19 07 12.6 -1.4**
comp=Z,245nm,1.8s
PAL LR LR
comp=Z,9µm,22.0s
442A Mamou 96.08 44 P **P 19 07 16.5 +2.1**
baz=320
BRNJ Basking Ridge 96.10 26 *e*P **P 19 07 14.3 +0.1**
comp=Z,134nm,1.4s
BRNJ LR LR
comp=Z,7µm,20.0s
YLE Yale 96.10 25 PFAKE 19 07 20.0 +5.7
YLE LR LR
comp=Z,11µm,22.0s
CPNY Central Park 96.22 26 PFAKE 19 07 30.0 +15
CPNY LR LR
comp=Z,6µm,20.0s
PBRG Braganca 96.27 336ĥ *e*P **P 19 07 15.7 +0.6**
comp=Z,79nm,1.7s
PBRG Braganca 96.27 336 *e*PP PP 19 11 09.2 +1.4
PBRG *e*SKS S 19 18 12.1 -19
SDMD Soldier's Deli 96.37 29 PFAKE 19 07 30.0 +14
SDMD LR LR
comp=Z,3µm,19.0s
SET Setif 96.40 325 P **P 19 07 19.0 +3.1**
CPCT Cooper Cave 96.42 36 *e*P **P 19 07 15.1 -0.8**
comp=Z,15nm,1.0s
CPCT LR LR
comp=Z,5µm,22.0s
PSUB Penn St. - Bra 96.44 27 *e*P **P 19 07 15.9 +0.1**
comp=Z,171nm,2.0s
PSUB LR LR
comp=Z,14µm,21.0s
245A Little AP, Sta 96.45 42 P **P 19 07 16.9 +0.8**
baz=321
344A Westbrook Farm 96.45 43 P **P 19 07 16.8 +0.8**
baz=321
Z47A Carrollton 96.49 40 P **P 19 07 16.6 +0.4**
baz=323
CKHR Kef el Ahmar 96.50 325 P **P 19 07 16.7 +0.3**
TKL Tuckaleechee C 96.60 35 *e*P **P 19 07 16.1 -0.6**
TKL pmax pmax
comp=Z,57nm,0.8s
TKL MLR MLR
comp=Z,8µm,21.0s
TKL Tuckaleechee C 96.60 35 *e*P **P 19 07 16.1 -0.6**
comp=Z,56nm,0.8s
TKL LR LR
comp=Z,8µm,21.0s
PGAV Gavieira, Arco 96.60 337ĥ *e*P **P 19 07 16.9 +0.2**
comp=Z,90nm,1.8s
PGAV Gavieira, Arco 96.60 337 *e*PP PP 19 11 14.4 +4.0
PGAV *e*SKS S 19 18 13.2 -21
PGAV Gavieira, Arco 96.60 337 *e*LR LR 19 41 49.7
comp=Z,10µm,20.0s
Z48A Northport 96.61 39 P **P 19 07 17.0 +0.3**
baz=323
147A Livingston 96.80 40 P **P 19 07 17.9 +0.3**
baz=322
BLA Blacksburg 96.80 32 *e*P **P 19 07 19.0 +1.4**
BLA pmax pmax
comp=Z,49nm,0.9s
BLA MLR MLR
comp=Z,8µm,21.0s
BLA Blacksburg 96.80 32 *e*P **P 19 07 19.0 +1.4**
comp=Z,50nm,0.9s
BLA LR LR
comp=Z,8µm,21.0s
MVO Moncorvo 96.94 336ĥ *e*P **P 19 07 18.6 +0.4**
comp=Z,70nm,1.7s
MVO Moncorvo 96.94 336 *e*PP PP 19 11 16.0 +3.0
MVO *e*SKS S 19 18 14.5 -22
MVO Moncorvo 96.94 336 *e*LQ LQ 19 36 46.2
MVO *e*LR LR 19 42 42.8
comp=Z,13µm,20.0s
POLO Lamas de Olo 96.99 337ĥ *e*P **P 19 07 18.6 +0.1**
comp=Z,27nm,1.4s
POLO Lamas de Olo 96.99 337 *e*PP PP 19 11 17.1 +3.6
POLO *e*SKS S 19 18 14.1 -23
PVRL Vila Real 97.06 337ĥ *e*P Pdif 19 07 19.1 +0.3
comp=Z,76nm,1.7s
PVRL Vila Real 97.06 337 *e*PP PP 19 11 17.0 +3.1
LRAL Lakeview Retre 97.16 39 *e*P **P 19 07 17.8 -1.5**
comp=Z,43nm,1.8s
LRAL LR LR
comp=Z,6µm,21.0s
ES19 SONSECA Array 97.19 333 *e*P **P 19 07 18.6 -0.8**
CBN Corbin Frederi 97.20 30 PFAKE 19 07 30.0 +11
CBN LR LR
comp=Z,6µm,21.0s
ESDC Sonseca Array 97.23 334 P **P 19 07 19.2 -0.3**
comp=Z,2.8nm,0.6s,baz=17,slow=4.2,SNR=28
ESDC PP PP 19 10 56.1 -19
comp=Z,5.0nm,1.0s,baz=17,slow=7.0,SNR=4.3
ESDC PKKPbc **PKKPbc 19 23 57.1 -0.6**
comp=Z,0.5nm,0.6s,baz=216,slow=2.9,SNR=4.0
ESDC LR LR 19 54 40.1
comp=Z,14µm,22.0s,baz=30,slow=38
ESLA Sonseca Array 97.23 334 *e*P **P 19 07 18.9 -0.6**
comp=Z,28nm,1.3s
ESLA LR LR
comp=Z,19µm,22.0s
PAB San Pablo 97.48 334 *e*P **P 19 07 20.6 -0.1**
PAB pmax pmax
comp=Z,44nm,1.4s
PAB MLR MLR
comp=Z,17µm,21.0s
PAB San Pablo 97.48 334 *e*P **P 19 07 20.6 -0.1**
comp=Z,44nm,1.4s
PAB LR LR
comp=Z,17µm,21.0s
PVIS Viseu 97.62 337 *e*P **P 19 07 21.2 -0.1**
comp=Z,51nm,2.4s
PVIS Viseu 97.62 337 *e*PP PP 19 11 22.9 +4.7
347A Saraland 97.66 41 P Pdif 19 07 22.4 +0.8
baz=322
URVA University of 97.69 30 *e*P Pdif 19 07 22.2 +0.6
MTE Manteigas 97.80 336ĥ *e*P Pdif 19 07 22.6 +0.5
comp=Z,64nm,1.7s
MTE Manteigas 97.80 336 *e*PP PP 19 11 23.1 +3.5
MTE *e*SKS **SKSac 19 17 55.4 -0.4**
MTE Manteigas 97.80 336 *e*LQ LQ 19 36 47.2
MTE *e*LR LR 19 42 28.5
comp=Z,12µm,20.0s
MTE Manteigas 97.80 336 *e*P Pdif 19 07 23.1 +0.9
comp=Z,148nm,2.0s
MTE LR LR
comp=Z,13µm,19.0s
447A Lucedale 98.08 42 P Pdif 19 07 23.5 +0.1
baz=322
KMSC Kings Mountain 98.14 34 P Pdif 19 07 23.8 +0.1
baz=327
KMSC Kings Mountain 98.14 34 *e*P **P 19 07 23.2 -0.4**
comp=Z,38nm,1.0s
KMSC LR LR
comp=Z,9µm,21.0s
PCBR Castelo Branco 98.28 336 *e*P **P 19 07 24.2 0.0**
comp=Z,34nm,1.8s
PCBR Castelo Branco 98.28 336 *e*PP PP 19 11 27.7 +4.5
PCAS Casmilo, Conde 98.42 337ĥ *e*P Pdif 19 07 25.2 +0.4
comp=Z,76nm,1.6s
PCAS Casmilo, Conde 98.42 337 *e*PP PP 19 11 28.3 +4.0
PCAS *e*SKS S 19 18 19.6 -30
GOGA Godfrey 98.59 36 *e*P Pdif 19 07 25.8 +0.1
GOGA pmax pmax
comp=Z,140nm,1.8s
GOGA MLR MLR
comp=Z,6µm,21.0s
GOGA Godfrey 98.59 36 *e*P Pdif 19 07 25.8 +0.1
comp=Z,140nm,1.8s
GOGA LR LR
comp=Z,6µm,21.0s
BRAL Brewton 98.62 40 PFAKE 19 07 40.0 +14
BRAL LR LR
comp=Z,6µm,21.0s
PMRV Marv??o 98.63 336ĥ *e*P Pdif 19 07 25.9 +0.1
comp=Z,48nm,1.6s
PMRV Marv??o 98.63 336 *e*PP PP 19 11 28.9 +3.0
PMRV *e*SKS **SKSac 19 17 58.5 -1.4**
PMRV Marv??o 98.63 336 *e*LQ LQ 19 37 29.7
PMRV *e*LR LR 19 43 28.4
comp=Z,11µm,20.0s
MOIG Morelia 98.67 58 PFAKE 19 07 40.0 +13
MOIG LR LR
comp=Z,9µm,22.0s
PTOM Tomar 98.78 337 *e*P Pdif 19 07 26.5 +0.1
comp=Z,35nm,1.6s
PTOM Tomar 98.78 337 *e*PP PP 19 11 27.9 +0.8
JSC Jenkinsville 98.89 34 *e*P Pdif 19 07 27.6 +0.6
JSC pmax pmax
comp=Z,30nm,1.1s
JSC MLR MLR
comp=Z,10µm,21.0s
JSC Jenkinsville 98.89 34 *e*P Pdif 19 07 27.6 +0.6
comp=Z,30nm,1.1s
JSC LR LR
comp=Z,10µm,21.0s
RKT Rikitea 98.98 112 *e*PP PP 19 11 28.8 -1.4
comp=Z,1µm,31.0s
RKT *e*SKSac **SKSac 19 18 01.3 -0.4**
comp=Z,3µm,27.2s
RKT *e*SP **SP 19 20 23.4 +2.8**
comp=Z,3µm,37.5s
RKT *e*SS **SS 19 25 49.0 +5.8**
comp=Z,4µm,35.0s
RKT Rikitea 98.98 112 *e*LR LR 19 39 23.0
comp=Z,43µm,25.5s,baz=308
PESTR Estremoz 99.20 336ĥ *e*P **Pdif 19 07 28.3 0.0**
PESTR Estremoz 99.20 336 *e*PP PP 19 11 33.6 +3.3
PESTR *e*SKS S 19 18 25.5 -31
PBAR Barrancos 99.64 335ĥ *e*P **Pdif 19 07 30.8 +0.5**
PBAR Barrancos 99.64 335 *e*PP PP 19 11 36.4 +2.8
PBAR *e*SKS **SKSac 19 18 04.7 -0.3**
EVO Evora 99.64 336ĥ *e*P **Pdif 19 07 30.8 +0.5**
EVO Evora 99.64 336 *e*PP PP 19 11 37.0 +3.4
PMAFR Mafra 99.66 337 *e*P **Pdif 19 07 31.5 +1.1**
PMAFR Mafra 99.66 337 *e*PP PP 19 11 37.0 +3.2
PMAFR *e*SKS **SKSac 19 18 10.4 +5.3**
PMST Lisbon--Monsan 99.83 337 *e*P **Pdif 19 07 31.4 +0.3**
PMST Lisbon--Monsan 99.83 337 *e*PP PP 19 11 37.8 +2.8
LIS Lisbon 99.84 337 *e*P **Pdif 19 07 31.6 +0.5**
LIS *e*PP **PP 19 11 36.6 +1.5**
LIS AMS AMS 19 56 55.8
comp=Z,14µm,20.3s
LIS Lisbon 99.84 337 *e*P **Pdif 19 07 32.0 +0.9**
LIS Lisbon 99.84 337 *e*PP PP 19 11 38.7 +3.6
LIS Lisbon 99.84 337 *e*P **Pdif 19 07 31.6 +0.5**
LIS *e* 19 11 36.6
PBEJ Beja 100.05 336ĥ *e*P **Pdif 19 07 32.6 +0.5**
PBEJ Beja 100.05 336 *e*PP PP 19 11 37.9 +1.1
TIGA Tifton 100.14 38 PFAKE 19 07 40.0 +7.4
TIGA LR LR
comp=Z,8µm,22.0s
PNCL Nicolau / Gran 100.19 336 *e*P **Pdif 19 07 31.4 -1.3**
PNCL Nicolau / Gran 100.19 336 *e*PP PP 19 11 41.2 +3.4
PNCL *e*SKS SKSac 19 18 20.2 +13
UNM Universidad Na 100.27 56 PFAKE 19 07 40.0 +6.3
UNM LR LR
comp=Z,7µm,21.0s
MESJ Messejana 100.34 336 *e*P **Pdif 19 07 33.9 +0.5**
MESJ *e*PP **PP 19 11 40.2 +1.3**
MESJ *e*S **SKSac 19 18 08.8 +0.4**
MESJ AMS AMS 19 58 30.6
comp=Z,13µm,16.3s
MESJ Messejana 100.34 336ĥ *e*P **Pdif 19 07 33.7 +0.3**
MESJ Messejana 100.34 336 *e*PP PP 19 11 41.8 +2.9
MESJ Messejana 100.34 336 *e*P **Pdif 19 07 33.9 +0.5**
MESJ *e* 19 11 40.2
NHSC New Hope 100.36 34 *e*Pdif **Pdif 19 07 34.3 +0.7**
NHSC LR LR
comp=Z,12µm,22.0s
PCVE Castro Verde 100.47 336ĥ *e*P **Pdif 19 07 34.5 +0.5**
PCVE Castro Verde 100.47 336 *e*PP PP 19 11 36.8 -3.1
PCVE *e*SKS 19 18 31.7
PVAQ Vaqueiros 100.57 335ĥ *e*P **Pdif 19 07 34.9 +0.5**
PVAQ Vaqueiros 100.57 335 *e*PP PP 19 11 42.6 +1.9
PVAQ *e*SKS 19 18 09.0
PVAQ Vaqueiros 100.57 335 *e*LQ LQ 19 40 39.9
PVAQ *e*LR LR 19 45 04.7
comp=Z,18µm,20.0s
PTEO Sao Teotonio 100.77 336 *e*P **Pdif 19 07 37.1 +1.8**
PTEO Sao Teotonio 100.77 336 *e*PP PP 19 11 46.6 +4.4
MORF Marmelete 100.97 336 *e*P **Pdif 19 07 36.5 +0.2**
MORF *e*PP **PP 19 11 45.0 +1.3**
MORF *e*S **SKSac 19 18 12.3 +0.7**
MORF AMS AMS 19 59 14.6
comp=Z,12µm,15.0s
MORF Marmelete 100.97 336ĥ *e*P **Pdif 19 07 37.0 +0.7**
MORF Marmelete 100.97 336 *e*PP PP 19 11 46.4 +2.7
MORF *e*SKS 19 18 35.0
MORF Marmelete 100.97 336 *e*P **Pdif 19 07 36.5 +0.2**
MORF *e* 19 11 45.1
PFVI Vila Bisbo 101.18 336ĥ *e*P **Pdif 19 07 38.1 +1.0**
PFVI Vila Bisbo 101.18 336 *e*PP PP 19 11 48.5 +3.2
PFVI *e*SKS 19 18 36.0
PFVI Vila Bisbo 101.18 336 PFAKE 19 07 50.0 +13
PFVI LR LR
comp=Z,12µm,21.0s
KMBO Kilima Mbogo 101.72 277 P **Pdif 19 07 40.0 -0.2**
comp=Z,1.2nm,0.4s,baz=302,slow=2.9,SNR=4.4
KMBO PP **PP 19 11 45.7 -5.4**
comp=Z,0.9nm,0.4s,baz=19,slow=7.7,SNR=3.6
KMBO Kilima Mbogo 101.72 277 *e*P **Pdif 19 07 40.0 -0.2**
KMBO MLR MLR
comp=Z,9µm,22.0s
KMBO Kilima Mbogo 101.72 277 *e*Pdif **Pdif 19 07 40.0 -0.2**
KMBO *e*PP **PP 19 11 45.7 -5.4**
KMBO LR LR
comp=Z,9µm,22.0s
TLIG Tlapa 101.92 57 PFAKE 19 07 50.0 +9.1
TLIG LR LR
comp=Z,4µm,21.0s
H07S1 FLORES T-PHASB 103.70 354 *e*Pdif **Pdif 19 07 47.8 -0.6**
H07S1 FLORES T-PHASB 103.70 354 *e*PP PP 19 12 05.0 +1.0
H07S1 FLORES T-PHASB 103.70 354 *e*LQ LQ 19 36 48.4
PGRA Graciosa 103.71 351 *e*Pdif **Pdif 19 07 50.6 +2.2**
PTCN Pitcairn Islan 103.74 111 PFAKE 19 08 00.0 +11
PTCN LR LR
comp=Z,16µm,22.0s
DWPF Disney Wildern 103.94 38 PFAKE 19 08 00.0 +10
DWPF LR LR
comp=Z,6µm,21.0s
ROSA Rosais 104.05 351 *e*Pdif **Pdif 19 07 50.6 +0.7**
ROSA Rosais 104.05 351 *e*PP PP 19 12 08.0 +1.4
ROSA Rosais 104.05 351 *e*LQ LQ 19 36 52.6
ROSA Rosais 104.05 351 PFAKE 19 08 00.0 +10
ROSA LR LR
comp=Z,6µm,21.0s
ABPO Ambohimpanom 104.17 257 PFAKE 19 08 00.0 +9.2
ABPO LR LR
comp=Z,5µm,22.0s
PSET Sete Cidades 104.59 349 *e*Pdif **Pdif 19 07 52.3 0.0**
PSET Sete Cidades 104.59 349 *e*PP PP 19 12 11.7 +1.1
CMLA Cha da Macela 104.62 349 *e*Pdif **Pdif 19 07 52.9 +0.5**
CMLA Cha da Macela 104.62 349 *e*PP PP 19 12 12.2 +1.4
CMLA Cha da Macela 104.62 349 *e*LQ LQ 19 37 45.6
CMLA Cha da Macela 104.62 349 PFAKE 19 08 00.0 +7.6
CMLA LR LR
comp=Z,4µm,19.0s
CMIG Matias Romero 104.71 55 PKKPbc PKKPbc 19 23 35.5 -0.3
comp=Z,2.6nm,0.8s,baz=92,slow=4.7,SNR=3.7
PSMN Pico do Norte, 105.29 349 *e*Pdif **Pdif 19 07 55.7 +0.2**
PSMN Pico do Norte, 105.29 349 *e*PP PP 19 12 16.6 +0.8
PSMN Pico do Norte, 105.29 349 *e*LQ LQ 19 37 15.9
CASY Casey 105.57 192 PFAKE 19 12 20.0
CASY LR LR
comp=Z,3µm,22.0s
TEIG Tepich 106.51 48 PFAKE 19 12 20.0
TEIG LR LR
comp=Z,4µm,20.0s
MBAR Mbarara 106.54 282 PFAKE 19 12 20.0
MBAR LR LR
comp=Z,8µm,20.0s
BBSR BB Station 106.94 23 PFAKE 19 12 20.0
BBSR LR LR
comp=Z,3µm,20.0s

CCIG	**Comitan**	**107.08**	**54**	PFAKE			19 12 20.0		
CCIG				LR	LR				
	comp=Z,12µm,22.0s								
PMPS	**Porto Santo**	**107.22**	**340**	*e*PP	PP		19 12 33.3	+3.2	
TAM	**Tamanrasset**	**107.28**	**317**	PFAKE			19 12 20.0		
TAM				LR	LR				
	comp=Z,6µm,21.0s								
PMOZ	**Porto Moniz, M**	**107.67**	**341**	*e*PP	PP		19 12 37.4	+3.8	
PMOZ	**Porto Moniz, M**	**107.67**	**341**	*e*LR	LR		19 46 49.0		
	comp=Z,6µm,20.0s								
PMAR	**Madeira**	**107.69**	**341**	*e*P	**Pdif**		**19 08 05.0**	**-1.4**	
PMAR	**Madeira**	**107.69**	**341**	*e*PP	PP		19 12 37.3	+3.5	
FUL	**Funchal**	**107.75**	**341**	*e*PP	PP		19 12 36.8	+2.8	
TGUH	**Tegucigalpa,Un**	**111.84**	**51**	PFAKE			19 12 30.0		
TGUH				LR	LR				
	comp=Z,4µm,21.0s								
GTBY	**Guantanamo Bay**	**113.91**	**37**	PFAKE			19 12 40.0		
GTBY				LR	LR				
	comp=Z,6µm,22.0s								
MTDJ	**Mount Denham**	**114.12**	**41**	PFAKE			19 12 40.0	+14	
MTDJ				LR	LR				
	comp=Z,6µm,21.0s								
GRTK	**Grand Turk**	**114.38**	**33**	PFAKE			19 12 40.0	+13	
GRTK				LR	LR				
	comp=Z,9µm,21.0s								
VNDA	**Vanda**	**114.93**	**175**	PKP	PKPdf		19 12 25.5	-0.5	
	comp=Z,9.9nm,0.8s,baz=316,slow=4.8,SNR=23								
VNDA				PKKPbc	**PKKPbc**		**19 23 04.5**	**0.0**	
	comp=Z,1.4nm,0.7s,baz=184,slow=4.4,SNR=11								
VNDA				PKKP	**PKKPdf**		**19 23 28.2**	**-0.5**	
	comp=Z,6.0nm,1.2s,baz=117,slow=12,SNR=6.0								
VNDA	**Vanda**	**114.93**	**175**	*e*PKiKP	**PKiKP**		**19 12 26.1**	**+0.2**	
VNDA				*e*PKKPdf	**PKKPdf**		**19 23 28.2**	**-0.5**	
SBA	**Scott Base**	**115.61**	**174**	*e*PKiKP	**PKPdf**		**19 12 27.3**	**0.0**	
SBA				MLR	MLR				
	comp=Z,2µm,19.0s								
SBA	**Scott Base**	**115.61**	**174**	*e*PKPdf	**PKPdf**		**19 12 27.3**	**0.0**	
SBA				LR	LR				
	comp=Z,2µm,19.0s								
SDDR	**Presa de Saban**	**116.53**	**34**	PFAKE			19 12 40.0	+9.0	
SDDR				LR	LR				
	comp=Z,7µm,19.0s								
HDC	**Heredia**	**116.92**	**52**	PFAKE			19 12 40.0	+8.1	
HDC				LR	LR				
	comp=Z,4µm,22.0s								
TOA1	**Torodi Ar. Sit**	**117.19**	**315**	*e*PKPdf	**PKPdf**		**19 12 30.8**	**-1.4**	
TOA1				*e*PP	**PP**		**19 13 37.4**	**-4.8**	
TOA1				*e*PKKPbc	**PKKPbc**		**19 22 54.9**	**-0.3**	
TOA0	**Torodi Ar. Sit**	**117.19**	**315**	*e*PKPdf	**PKPdf**		**19 12 30.7**	**-1.5**	
TORD	**Torodi Ar. Bea**	**117.19**	**315**	PKP	**PKPdf**		**19 12 30.8**	**-1.4**	
	comp=Z,7.1nm,0.5s,baz=13,slow=1.5,SNR=34								
TORD				PP	**PP**		**19 13 37.4**	**-4.8**	
	comp=Z,7.9nm,0.8s,baz=29,slow=6.3,SNR=4.5								
TORD				PKKPbc	**PKKPbc**		**19 22 54.9**	**-0.3**	
	comp=Z,7.8nm,0.8s,baz=226,slow=2.6,SNR=13								
LSZ	**Lusaka**	**117.22**	**271**	*e*PKiKP	**PKPdf**		**19 12 31.9**	**-0.5**	
LSZ				MLR	MLR				
	comp=Z,6µm,20.0s								
LSZ	**Lusaka**	**117.22**	**271**	*e*PKPdf	**PKPdf**		**19 12 31.9**	**-0.5**	
LSZ				LR	LR				
	comp=Z,6µm,20.0s								
SDD	**Santo Domingo**	**117.60**	**33**	PFAKE			19 12 40.0	+7.1	
SDD				LR	LR				
	comp=Z,8µm,21.0s								
IDE	**Isla Desecheo**	**118.71**	**31**	*e*PKPdf	**PKPdf**		**19 12 35.2**	**0.0**	
AGP	**Aguadilla**	**118.83**	**31**	PFAKE			19 12 50.0	+15	
AGP				LR	LR				
	comp=Z,6µm,20.0s								
MPR	**Mayaguez**	**119.00**	**31**	PFAKE			19 12 50.0	+14	
MPR				LR	LR				
	comp=Z,5µm,22.0s								
MAW	**Mawson**	**119.36**	**205**	PKP	**PKPdf**		**19 12 34.4**	**-0.3**	
	comp=Z,9.0nm,0.7s,baz=97,slow=3.8,SNR=27								
MAW				PKKPbc	**PKKPbc**		**19 22 48.0**	**-0.4**	
	comp=Z,7.4nm,0.7s,baz=258,slow=5.5,SNR=6.7								
MAW	**Mawson**	**119.36**	**205**	*e*PKPdf	**PKPdf**		**19 12 34.6**	**-0.1**	
MAW				*e*PKKPbc	**PKKPbc**		**19 22 48.3**	**-0.1**	
MAW				LR	LR				
	comp=Z,600nm,21.0s								
CBYP	**Canovanas**	**119.47**	**30**	PFAKE			19 12 50.0	+13	
CBYP				LR	LR				
	comp=Z,7µm,21.0s								
SJG	**San Juan**	**119.50**	**30**	PFAKE			19 12 50.0	+13	
SJG				LR	LR				
	comp=Z,5µm,21.0s								
HUMP	**Col San Antoni**	**119.59**	**30**	PFAKE			19 12 50.0	+13	
HUMP				LR	LR				
	comp=Z,7µm,22.0s								
ABVI	**Anegada Island**	**119.64**	**28**	PFAKE			19 12 50.0	+13	
ABVI				LR	LR				
	comp=Z,4µm,22.0s								
STVI	**Saint Thomas**	**119.75**	**29**	*e*PKPdf	**PKPdf**		**19 12 35.8**	**-1.3**	
STVI				LR	LR				
	comp=Z,6µm,22.0s								
PAYG	**Puerto Ayora**	**120.47**	**65**	PFAKE			19 12 50.0	+11	
PAYG				LR	LR				
	comp=Z,11µm,21.0s								
RPN	**Rapa Nui**	**120.72**	**102**	PFAKE			19 12 50.0	+11	
RPN				LR	LR				
	comp=Z,16µm,20.0s								
SMRT	**St. Maarten**	**120.72**	**27**	PFAKE			19 12 50.0	+11	
SMRT				LR	LR				
	comp=Z,7µm,22.0s								
SABA	**Saba**	**121.06**	**27**	PFAKE			19 12 50.0	+10	
SABA				LR	LR				
	comp=Z,6µm,22.0s								
SEUS	**St. Eustatius**	**121.27**	**27**	PFAKE			19 12 50.0	+10	
SEUS				LR	LR				
	comp=Z,5µm,21.0s								
ANWB	**Willy Bob**	**121.53**	**26**	PFAKE			19 12 50.0	+9.5	
ANWB				LR	LR				
	comp=Z,5µm,22.0s								
SJCC	**San Jacinto, C**	**122.28**	**44**	*e*P	**PKPdf**		**19 12 42.0**	**-0.1**	
CODC	**Agust´›n Codaz**	**123.20**	**42**	*e*P	**PKPdf**		**19 12 42.0**	**-1.8**	
LBTB	**Lobatse**	**124.36**	**263**	PKKPbc	PKKPbc		19 22 30.1	+1.6	
	comp=Z,4.2nm,0.6s,baz=250,slow=2.8,SNR=13								
LBTB	**Lobatse**	**124.36**	**263**	*e*PKiKP	**PKPdf**		**19 12 45.9**	**+0.1**	
LBTB	**Lobatse**	**124.36**	**263**	*e*PKPdf	**PKPdf**		**19 12 45.9**	**+0.1**	
LBTB				PKKPbc	**PKKPab**		**19 22 30.1**	**+1.5**	
FDF	**Fort de France**	**124.47**	**26**	*e*PKiKP	**PKPdf**		**19 12 45.7**	**-0.6**	
FDF				MLR	MLR				
	comp=Z,7µm,22.0s								
FDF	**Fort de France**	**124.47**	**26**	*e*PKPdf	**PKPdf**		**19 12 45.7**	**-0.6**	
FDF				LR	LR				
	comp=Z,7µm,22.0s								
OCAC	**Ocana**	**124.67**	**43**	*e*P	**PKPdf**		**19 12 48.0**	**+1.1**	
HELC	**Santa Helena**	**125.11**	**46**	*e*P	**PKPdf**		**19 12 43.2**	**-4.8**	
HELC	**Santa Helena**	**125.11**	**46**	*e*PKPdf	**PKPdf**		**19 12 46.5**	**-1.5**	
HELC				LR	LR				
	comp=Z,8µm,20.0s								
GRMC	**Gramalote, San**	**125.39**	**43**	*e*P	**PKPdf**		**19 12 47.9**	**-0.3**	
CBRI	**Barrientos, No**	**125.39**	**43**	*e*P	**PKPdf**		**19 12 46.7**	**-1.5**	
BRRC	**Barranca, Sant**	**125.39**	**44**	*e*P	**PKPdf**		**19 12 50.2**	**+2.2**	
SDV	**Santo Domingo**	**125.55**	**40**	PKP	**PKPdf**		**19 12 47.5**	**-1.1**	
	comp=Z,90nm,0.9s,baz=344,slow=0.9,SNR=48								
SDV	**Santo Domingo**	**125.55**	**40**	*e*PKPdf	**PKPdf**		**19 12 47.3**	**-1.3**	
SDV				LR	LR				
	comp=Z,5µm,22.0s								
MALC	**Bahia Malaga**	**125.76**	**50**	*e*P	**PKPdf**		**19 12 49.2**	**+0.4**	
SVB	**Belmont**	**125.79**	**27**	PFAKE			19 13 00.0	+11	
SVB				LR	LR				
	comp=Z,5µm,22.0s								
GUYC	**Guyana, Colomb**	**125.97**	**47**	*e*P	**PKPdf**		**19 12 49.1**	**-0.7**	
NORC	**Norcasia**	**126.00**	**46**	*e*P	**PKPdf**		**19 12 49.1**	**-0.2**	
GRGC	**Isla de Gorgon**	**126.04**	**51**	*e*P	**PKPdf**		**19 12 49.1**	**-0.2**	
BARC	**Barichara**	**126.11**	**44**	*e*P	**PKPdf**		**19 12 50.2**	**+0.5**	
DBIC	**Dimbokro**	**126.16**	**316**	PKP	**PKPdf**		**19 12 48.9**	**-0.7**	
	comp=Z,41nm,0.6s,baz=15,slow=2.6,SNR=59								
DBIC	**Dimbokro**	**126.16**	**316**	*e*PKPdf	**PKPdf**		**19 12 49.0**	**-0.5**	
TIC	**Toumodi**	**126.27**	**317**	*e*PKiKP	**PKPdf**		**19 12 49.3**	**-0.5**	
BOSA	**Boshof**	**126.30**	**259**	PKP	**PKPdf**		**19 12 48.9**	**-0.6**	
	comp=Z,35nm,0.8s,baz=70,slow=1.4,SNR=28								
BOSA	**Boshof**	**126.30**	**259**	*e*PKPpre	PKPpre		19 12 41.6		
BOSA				*e*PKPdf	**PKPdf**		**19 12 48.9**	**-0.6**	
BOSA				*e*PKPdf	**PKiKP**		**19 12 49.6**	**-0.3**	
KIC	**Kosan Boka**	**126.35**	**316**	*e*PKiKP	**PKPdf**		**19 12 49.6**	**-0.3**	
	comp=Z,148nm,1.0s								
SACV	**Santiago Islan**	**126.36**	**342**	*e*PKPdf	**PKPdf**		**19 12 51.1**	**+1.2**	
SACV				LR	LR				
	comp=Z,2µm,20.0s								
BBGH	**Gun Hill**	**126.50**	**25**	PFAKE			19 13 00.0	+10	
BBGH				LR	LR				
	comp=Z,9µm,22.0s								
TOLC	**Tolima**	**126.52**	**47**	*e*P	**PKPdf**		**19 12 52.1**	**+1.5**	
LIC	**Lamto**	**126.62**	**316**	*e*PKiKP	**PKPdf**		**19 12 50.0**	**-0.4**	
	comp=Z,173nm,1.0s								
GRGR	**Grenville**	**126.69**	**28**	PFAKE			19 13 00.0	+9.5	
GRGR				LR	LR				
	comp=Z,4µm,21.0s								
QSPA	**South Pole Qui**	**126.71**	**180**	PFAKE			19 13 00.0	+11	
QSPA				LR	LR				
	comp=Z,7µm,22.0s								
RUSC	**La Rusia**	**126.74**	**44**	*e*P	**PKPdf**		**19 12 50.2**	**-1.0**	
RUSC	**La Rusia**	**126.74**	**44**	*e*PKPdf	**PKPdf**		**19 12 50.5**	**-0.8**	
RUSC				LR	LR				
	comp=Z,2µm,22.0s								
ROSC	**El Rosal**	**126.90**	**46**	PKP	**PKPdf**		**19 12 51.6**	**+0.2**	
	comp=Z,27nm,0.7s,baz=84,slow=1.3,SNR=23								
ROSC	**El Rosal**	**126.90**	**46**	*e*P	**PKPdf**		**19 12 50.2**	**-1.2**	
ROSC	**El Rosal**	**126.90**	**46**	*e*PKPdf	**PKPdf**		**19 12 51.9**	**+0.4**	
ROSC				LR	LR				
	comp=Z,500nm,21.0s								
PCRV	**Puerto La Cruz**	**127.25**	**32**	PKP	**PKPdf**		**19 12 50.7**	**-1.0**	
	comp=Z,25nm,0.6s,baz=334,slow=2.8,SNR=13								
POPC	**Popayan, Colom**	**127.32**	**50**	*e*P	**PKPdf**		**19 12 51.4**	**-0.6**	
PRAC	**Prado**	**127.47**	**48**	*e*P	**PKPdf**		**19 12 51.4**	**-0.7**	
PRAC	**Prado**	**127.47**	**48**	*e*PKPdf	**PKPdf**		**19 12 51.4**	**-0.7**	
PRAC				LR	LR				
	comp=Z,2µm,21.0s								
CMBC	**Cumbal**	**127.84**	**53**	*e*P	**PKPdf**		**19 12 51.4**	**-1.9**	
TSUM	**Tsumeb**	**127.84**	**274**	*e*PKPdf	**PKPdf**		**19 12 52.4**	**-0.3**	
TSUM				LR	LR				
	comp=Z,7µm,22.0s								
CRUC	**La Cruz**	**127.91**	**51**	*e*P	**PKPdf**		**19 12 46.8**	**-6.5**	
OTAV	**Otavalo**	**127.97**	**54**	*e*PKPdf	**PKPdf**		**19 12 52.2**	**-1.4**	
OTAV				LR	LR				
	comp=Z,6µm,22.0s								
SYO	**Syowa Base**	**128.02**	**207**	‖*e*X	**PKPdf**		**19 12 49.0**	**-2.3**	
SYO	**Syowa Base**	**128.02**	**207**	‖*e*PP	PP		19 14 54.5	-0.9	
SJAC	**San Juan de Ar**	**128.38**	**47**	*e*P	**PKPdf**		**19 12 51.5**	**-2.4**	
SUR	**Sutherland**	**131.35**	**257**	PFAKE			19 13 10.0	+11	
SUR				LR	LR				
	comp=Z,7µm,20.0s								
ATAH	**Atahualpa**	**133.43**	**60**	PKhKP	PKPpre		19 12 58.4		
	comp=Z,12nm,0.6s,baz=211,slow=5.9,SNR=4.8								
NVL	**N'lazarevskaya**	**137.12**	**202**	*e*PKiKP	**PKPdf**		**19 13 09.8**	**+1.4**	
NVL				*e*			19 15 54.9		
NVL				*e*SS	SS		19 33 56.3	+1.0	
NVL				MLR	MLR				
	comp=Z,7µm,29.0s								
NNA	**Nana**	**137.88**	**64**	PKhKP	PKPpre		19 13 01.8		
	comp=Z,13nm,0.6s,baz=298,slow=3.3,SNR=7.0								
NNA	**Nana**	**137.88**	**64**	*i* PKiKP	**PKPdf**		**19 13 14.5**	**+2.9**	
NNA	**Nana**	**137.88**	**64**	*e*PKPpre	PKPpre		19 13 01.8		
NNA				*e*PKPpre	PKPpre		19 13 02.6		
NNA				*e*PKPdf	**PKPdf**		**19 13 11.9**	**+0.3**	
NNA				LR	LR				
	comp=Z,5µm,20.0s								
PTGA	**Pitinga**	**139.03**	**33**	PKhKP	PKPpre		19 13 04.7		
	comp=Z,13nm,0.7s,baz=353,slow=4.4,SNR=16								
PTGA	**Pitinga**	**139.03**	**33**	*e*PKPpre	PKPpre		19 13 06.1		
PTGA				*e*PKPdf	**PKPdf**		**19 13 14.4**	**+0.7**	
PTGA				LR	LR				
	comp=Z,6µm,22.0s								
SNAA	**Sanae**	**140.60**	**197**	PKP	PKPpre		19 13 06.6		
SNAA	**Sanae**	**140.60**	**197**	PKhKP	PKPpre		19 13 06.3		
	comp=Z,22nm,0.7s,baz=153,slow=3.5,SNR=34								
SNAA	**Sanae**	**140.60**	**197**	*e*PKHKP	PKPpre		19 13 06.5		
SNAA	**Sanae**	**140.60**	**197**	*e*PKPpre	PKPpre		19 13 06.5		
VNA1	**Neumayer--Stat**	**142.57**	**196**	PKP	PKPpre		19 13 14.2		
ASCN	**Ascension**	**143.48**	**316**	PFAKE			19 13 30.0	+8.3	
ASCN				LR	LR				
	comp=Z,3µm,20.0s								
SHEL	**Horse Pasture**	**143.95**	**297**	*e*PKiKP	PKPab		19 13 19.9	+0.2	
SHEL				MLR	MLR				
	comp=Z,5µm,21.0s								
SHEL	**Horse Pasture**	**143.95**	**297**	*e*PKPpre	PKPpre		19 13 19.9		
SHEL				LR	LR				
	comp=Z,5µm,21.0s								
SAML	**Samuel**	**144.49**	**44**	PFAKE			19 13 30.0	+6.6	
SAML				LR	LR				
	comp=Z,2µm,22.0s								
PB12	**IPOC Station P**	**146.96**	**65**	⇑*i*P	**PKPdf**		**19 13 28.5**	**+0.9**	
PB12				*e*P	**PKPab**		**19 13 30.6**	**-0.5**	
LPAZ	**La Paz**	**146.96**	**59**	PKPbc	**PKPdf**		**19 13 29.2**	**+0.9**	
	comp=Z,267nm,0.6s,baz=338,slow=2.4,SNR=208								
LPAZ	**La Paz**	**146.96**	**59**	⇑*i*P	**PKPbc**		**19 13 29.6**	**-0.7**	
LPAZ	**La Paz**	**146.96**	**59**	*e*PKiKP	**PKPdf**		**19 13 28.7**	**+0.4**	
LPAZ	**La Paz**	**146.96**	**59**	*e*PKPdf	**PKPdf**		**19 13 28.7**	**+0.4**	
PB13	**IPOC Station P**	**147.37**	**64**	⇑*i*P	**PKPbc**		**19 13 31.1**	**-0.4**	
PSGC	**Pisagua**	**147.73**	**66**	⇑*i*P	**PKPdf**		**19 13 30.1**	**+1.2**	
MNMC	**Minye Minye**	**147.82**	**65**	⇑*i*P	**PKPbc**		**19 13 31.1**	**-1.1**	
PB11	**IPOC Station P**	**148.17**	**66**	⇑*i*P	**PKPdf**		**19 13 31.3**	**+1.6**	
PB11				*e*P	**PKiKP**		**19 13 34.2**	**-0.5**	
PB11	**IPOC Station P**	**148.17**	**66**	*e*PKPdf	**PKPdf**		**19 13 30.0**	**+0.3**	
PB11				LR	LR				
	comp=Z,12µm,20.0s								
HMBC	**Humberstone**	**148.32**	**67**	*e*P	**PKPdf**		**19 13 29.8**	**-0.1**	
PMSA	**Palmer Station**	**148.40**	**160**	PKPbc	**PKPbc**		**19 13 30.3**	**-1.6**	
	comp=Z,20nm,0.8s,baz=189,slow=1.1,SNR=21								
PMSA	**Palmer Station**	**148.40**	**160**	*e*PKPdf	**PKPdf**		**19 13 28.5**	**+0.1**	
PMSA				*e*PKPdf	**PKPbc**		**19 13 30.3**	**-1.6**	
PMSA				LR	LR				
	comp=Z,6µm,22.0s								
PB08	**IPOC Station P**	**148.78**	**66**	⇑*i*P	**PKPdf**		**19 13 32.1**	**+1.2**	
RCBR	**Riachuelo**	**148.89**	**354**	*e*PKPdf	**PKPdf**		**19 13 29.8**	**-1.1**	
RCBR				LR	LR				
	comp=Z,4µm,22.0s								
PB01	**IPOC Station P**	**149.09**	**68**	⇑*i*P	**PKPdf**		**19 13 32.6**	**+1.5**	
PB01	**IPOC Station P**	**149.09**	**68**	*e*PKPdf	**PKPdf**		**19 13 31.5**	**+0.4**	
PB01				LR	LR				
	comp=Z,13µm,21.0s								
PB07	**IPOC Station P**	**149.20**	**69**	⇑*i*P	**PKPdf**		**19 13 32.6**	**+1.3**	
PB04	**IPOC Station P**	**149.36**	**70**	*e*P	**PKPdf**		**19 13 32.6**	**+1.1**	
PB04	**IPOC Station P**	**149.36**	**70**	*e*PKPdf	**PKPdf**		**19 13 32.3**	**+0.8**	
PB04				*e*PKPbc	**PKiKP**		**19 13 36.9**	**-0.2**	
PB04				LR	LR				
	comp=Z,10µm,22.0s								
PB10	**IPOC Station P**	**149.72**	**73**	⇑*i*P	**PKPdf**		**19 13 33.4**	**+1.5**	
PB10	**IPOC Station P**	**149.72**	**73**	*e*PKPdf	**PKPdf**		**19 13 31.9**	**+0.1**	
PB10				*e*PKPbc	**PKiKP**		**19 13 37.5**	**-0.1**	
PB10				LR	LR				
	comp=Z,8µm,21.0s								
PB09	**IPOC Station P**	**149.72**	**69**	⇑*i*P	**PKPdf**		**19 13 33.9**	**+1.8**	
PB06	**IPOC Station P**	**150.01**	**70**	⇑*i*P	**PKPdf**		**19 13 33.8**	**+1.2**	
PB06				*e*P	**PKPbc**		**19 13 37.9**	**+0.3**	
PB14	**IPOC Station P**	**150.43**	**74**	⇑*i*P	**PKPdf**		**19 13 34.7**	**+1.3**	
LVC	**Limon Verde**	**150.45**	**69**	PKPbc	**PKPbc**		**19 13 38.0**	**-0.9**	
	comp=Z,815nm,0.8s,baz=283,slow=3.1,SNR=47								
LVC	**Limon Verde**	**150.45**	**69**	⇑*i*P	**PKPdf**		**19 13 35.1**	**+1.6**	
LVC	**Limon Verde**	**150.45**	**69**	*e*PKPdf	**PKPdf**		**19 13 34.6**	**+1.0**	
LVC				*e*PKPbc	**PKPbc**		**19 13 38.0**	**-0.9**	
LVC				*e*PKPbc	**PKiKP**		**19 13 40.2**	**+0.6**	
LVC				LR	LR				
	comp=Z,12µm,22.0s								
SIV	**San Ignacio**	**151.33**	**49**	PKP	**PKPdf**		**19 13 34.6**	**0.0**	
	comp=Z,32nm,0.9s,baz=126,slow=0.8,SNR=26								
SIV				PKPbc	**PKPbc**		**19 13 40.3**	**-0.4**	
	comp=Z,118nm,0.6s,baz=298,slow=1.7,SNR=82								
USHA	**Ushuaia**	**153.08**	**141**	PKP	**PKPdf**		**19 13 35.8**	**-0.1**	
	comp=Z,34nm,0.9s,baz=104,slow=2.3,SNR=3.0								
USHA				PKPbc	**PKPbc**		**19 13 43.0**	**-0.3**	
	comp=Z,330nm,0.9s,baz=246,slow=2.1,SNR=19								
CHRN	**Cochrane**	**153.18**	**123**	*e*PKPdf	**PKPdf**		**19 13 36.1**	**-0.3**	
CHRN				*e*PKPbc	**PKiKP**		**19 13 45.1**	**+1.2**	
ROC1	**El Roble**	**153.47**	**91**	*e*PKPdf	**PKPdf**		**19 13 36.3**	**-1.4**	
ROC1				*e*PKPbc	**PKPbc**		**19 13 44.6**	**-0.7**	
ROCH	**El Roble**	**153.47**	**91**	*e*P	**PKPdf**		**19 13 38.0**	**+0.4**	
PEL	**Peldehue**	**153.79**	**91**	⇑*i*P	**PKPdf**		**19 13 38.0**	**+0.2**	
CLCH	**Cerro Calan**	**153.98**	**92**	⇑*i*P	**PKPdf**		**19 13 38.1**	**0.0**	
PLCA	**Paso Flores**	**155.15**	**108**	PKP	**PKPdf**		**19 13 40.0**	**+0.5**	
	comp=Z,5.9nm,1.1s,baz=93,slow=1.1,SNR=8.3								
PLCA				PKPbc	PKPbc		19 13 49.1		
	comp=Z,7.3nm,0.6s,baz=263,slow=2.6,SNR=7.2								
PLCA				PKPab	**PKPab**		**19 14 04.4**	**-0.1**	
	comp=Z,40nm,0.8s,baz=277,slow=2.9,SNR=18								
PLCA	**Paso Flores**	**155.15**	**108**	*e*PKiKP	**PKPdf**		**19 13 39.3**	**-0.2**	
PLCA				*e*			19 14 05.4		
PLCA	**Paso Flores**	**155.15**	**108**	*e*PKPdf	**PKPdf**		**19 13 39.3**	**-0.2**	
PLCA				*e*PKPbc	PKPbc		19 13 49.3		
PLCA				*e*PKPab	**PKPab**		**19 14 05.4**	**+0.9**	
TRIS	**Tristan da Cun**	**158.77**	**262**	PFAKE			19 13 50.0	+5.9	
TRIS				LR	LR				
	comp=Z,6µm,22.0s								
EFI	**East Falkland**	**159.99**	**143**	*e*PKiKP	**PKPdf**		**19 13 46.7**	**+1.7**	
EFI				*e*			19 14 25.6		
EFI				MLR	MLR				
	comp=Z,6µm,21.0s								
EFI	**East Falkland**	**159.99**	**143**	*e*PKPdf	**PKPdf**		**19 13 46.7**	**+1.7**	
EFI				*e*PKPab	**PKPab**		**19 14 25.6**	**+0.8**	
EFI				LR	LR				
	comp=Z,6µm,21.0s								
CPUP	**Villa Florida**	**161.11**	**61**	PKP	**PKPdf**		**19 13 46.8**	**-0.2**	
	comp=Z,5.2nm,0.7s,baz=275,slow=1.4,SNR=16								
CPUP				PKPab	**PKPab**		**19 14 30.0**	**-0.5**	
	comp=Z,11nm,0.6s,baz=320,slow=3.2,SNR=12								
CPUP	**Villa Florida**	**161.11**	**61**	*e*PKPdf	**PKPdf**		**19 13 47.1**	**+0.1**	
CPUP				*e*PKPab	**PKPab**		**19 14 31.2**	**+0.7**	
TRQA	**Tornquist**	**161.68**	**100**	*e*PKPdf	**PKPdf**		**19 13 48.0**	**+0.6**	
TRQA				*e*PKPab	**PKPab**		**19 14 33.1**	**+0.3**	
LPA	**La Plata**	**164.46**	**88**	*ce*PKiKP	**PKPdf**		**19 13 53.0**	**+2.9**	
LPA	**La Plata**	**164.46**	**88**	PKP	**PKPab**		**19 14 47.0**	**+1.9**	
LPA				PP	**PP**		**19 18 32.0**	**+0.2**	
LPA				pPP			19 21 10.0		
	comp=Z,7µm,21.0s								
SPB	**Sao Paulo**	**164.79**	**31**	*e*PKPdf	**PKPdf**		**19 13 52.0**	**+1.3**	
SPB				*e*PKPab	**PKPab**		**19 14 47.3**	**+0.7**	

*CSEM **30** 19:04:44.0, 38.20N×21.68E, h23km, ML1.6/6*
ATH 30 19:04:44.0, 38.20N×21.68E, h23km±2km, ML1.6/6, Error ellipse: s-maj=2.5km s-min=1.0km az=117.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.12**	**44**	P	Pb	19 04 48.4	-0.1
UPR				S	Sb	19 04 51.2	-0.4
UPR	**University Cam**	**0.12**	**44**	P	Pb	19 04 48.4	-0.1
UPR				S	Sb	19 04 51.1	-0.5
RLS	**Riolos of Patr**	**0.22**	**230**	P	Pb	19 04 49.9	+0.2
RLS				S	Sb	19 04 54.4	+0.9
RLS	**Riolos of Patr**	**0.22**	**230**	AML	AML	19 04 54.3	
	comp=N,466µm,0.1s						
RLS				S	Sb	19 04 54.4	+0.9
RLS				AML	AML	19 04 54.5	
	comp=E,295µm,0.3s						
LAKA	**Lakka**	**0.24**	**80**	P	Pb	19 04 50.0	0.0
LAKA	**Lakka**	**0.24**	**80**	P	Pb	19 04 50.0	+0.1
DRO	**Drossia**	**0.25**	**175**	P	Pb	19 04 50.1	0.0
DRO				S	Sb	19 04 55.4	+1.2
DRO	**Drossia**	**0.25**	**175**	P	Pb	19 04 50.1	0.0
DRO				AML	AML	19 04 55.0	
	comp=N,504µm,0.2s						
DRO				AML	AML	19 04 55.2	
	comp=E,828µm,0.3s						
DRO				S	Sb	19 04 55.4	+1.1
TRIZ	**Trizonia**	**0.35**	**61**	P	Pb	19 04 51.5	-0.1
TRIZ				S	Sb	19 04 57.3	+0

GDZ					*i* S		**Sg**	**19 23 02.8**	**0.0**
GDZ	**Gediz**	**0.34**	**87**		P		**Pg**	**19 22 58.3**	**+0.1**
GDZ					S		**Sg**	**19 23 02.8**	**0.0**
TVSB	**Tavsanli**	**0.50**	**40**	*e*PG			**Pg**	**19 23 01.0**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**40**	*e*Pg			**Pg**	**19 23 01.0**	**-0.1**
KULA	**Kula-Manisa**	**0.63**	**209**	*e*PG			**Pb**	**19 23 04.6**	**+0.2**
KULA	**Kula-Manisa**	**0.63**	**209**	*e*Pg			**Pb**	**19 23 04.6**	**+0.2**
MANT	**Manisa**	**0.69**	**214**	*i* P			**Pg**	**19 23 04.5**	**-0.4**
MANT				*i* S			**Sg**	**19 23 13.8**	**-0.2**
MANT	**Manisa**	**0.69**	**214**	P			**Pg**	**19 23 04.5**	**-0.4**
MANT				S			**Sg**	**19 23 13.8**	**-0.2**
KHL	**Karahalli**	**0.83**	**153**	*e*PG			**Pb**	**19 23 08.5**	**+0.7**
KHL	**Karahalli**	**0.83**	**153**	*e*Pg			**Pb**	**19 23 08.5**	**+0.7**
AKS	**Akhisar**	**0.98**	**259**	*e*PG			**Pn**	**19 23 11.2**	**+0.2**
AKS	**Akhisar**	**0.98**	**259**	*e*Pg			**Pn**	**19 23 11.2**	**+0.2**
BALB	**Balikesir**	**1.07**	**302**	*e*PG			**Pn**	**19 23 12.8**	**+0.7**
BALB	**Balikesir**	**1.07**	**302**	*e*Pg			**Pn**	**19 23 12.9**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*PN			**Pg**	**19 23 17.0**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*Pn			**Pg**	**19 23 17.0**	**+0.6**
IZI	**Iznik**	**1.31**	**14**	*e*PN			**Pg**	**19 23 17.0**	**+0.5**
IZI	**Iznik**	**1.31**	**14**	*e*Pn			**Pg**	**19 23 17.0**	**+0.5**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*PN			**Pg**	**19 23 17.6**	**+1.1**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*Pn			**Pg**	**19 23 17.6**	**+1.1**
BORA	**Eskisehir**	**1.35**	**53**	*i* P			**Pn**	**19 23 16.4**	**+0.2**
BORA				*i* S			**Sg**	**19 23 35.0**	**0.0**
BORA	**Eskisehir**	**1.35**	**53**	P			**Pn**	**19 23 16.4**	**+0.2**
BORA				S			**Sg**	**19 23 35.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*PN			**Pg**	**19 23 19.4**	**+0.5**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*Pn			**Pg**	**19 23 19.4**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**219**	*e*PN			**Pg**	**19 23 19.7**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**219**	*e*Pn			**Pg**	**19 23 19.7**	**+0.6**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*PN			**Pg**	**19 23 19.7**	**+0.3**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*Pn			**Pg**	**19 23 19.7**	**+0.3**
ESKT	**Eskisehir**	**1.47**	**72**	*e*PN			**Pg**	**19 23 20.2**	**+0.6**
ESKT	**Eskisehir**	**1.47**	**72**	*e*Pn			**Pg**	**19 23 20.2**	**+0.6**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN			**Pg**	**19 23 20.3**	**+0.1**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn			**Pg**	**19 23 20.3**	**+0.1**
EDC	**Edincik**	**1.57**	**325**	*e*PN			**Pg**	**19 23 21.5**	**0.0**
EDC	**Edincik**	**1.57**	**325**	*e*Pn			**Pg**	**19 23 21.5**	**0.0**
GULT	**Gulveren**	**1.77**	**39**	*e*PN			**Pb**	**19 23 24.1**	**+0.3**
GULT	**Gulveren**	**1.77**	**39**	*e*Pn			**Pb**	**19 23 24.1**	**+0.3**
HRT	**Hereke**	**1.81**	**15**	*e*PN			**Pb**	**19 23 24.7**	**+0.2**
HRT	**Hereke**	**1.81**	**15**	*e*Pn			**Pb**	**19 23 24.7**	**+0.2**
KRBG	**Karabiga-Canak**	**1.89**	**315**	*e*PN			**Pb**	**19 23 25.9**	**+0.1**
KRBG	**Karabiga-Canak**	**1.89**	**315**	*e*Pn			**Pb**	**19 23 25.9**	**+0.1**
MRMT	**Marmara Adasi**	**1.90**	**324**	*e*PN			**Pb**	**19 23 26.1**	**+0.1**
MRMT	**Marmara Adasi**	**1.90**	**324**	*e*Pn			**Pb**	**19 23 26.1**	**+0.1**
MDUB	**Mudurnu**	**2.17**	**49**	*e*PN			**Pb**	**19 23 29.6**	**-1.0**
MDUB	**Mudurnu**	**2.17**	**49**	*e*Pn			**Pb**	**19 23 29.6**	**-1.0**
KLYT	**Kilyos**	**2.18**	**360**	*e*PN			**Pb**	**19 23 30.1**	**-0.6**
KLYT	**Kilyos**	**2.18**	**360**	*e*Pn			**Pb**	**19 23 30.1**	**-0.6**
CTKS	**Kestanelik-??a**	**2.20**	**349**	*e*PN			**Pb**	**19 23 30.4**	**-0.7**
CTKS	**Kestanelik-??a**	**2.20**	**349**	*e*Pn			**Pb**	**19 23 30.4**	**-0.7**

*MOS **30** 19:23:38.5±1.3,43.°01N×146.°47E,h52km,mb4.2/8, Error ellipse: s-maj=20.1km s-min=11.5km az=93.7*
*ISCJB **30** 19:23:41.0±0.9,43.°23N±0.°07×146.°63E±0.°07,h59km±6km, mb3.8/10,Error ellipse: s-maj=13.4km s-min=5.1km az=148.4*
*JMA **30** 19:23:41.5±0.1,43.°18N×146.°61E,h53km±1km,M4.0*
JMA Felt I J1.
*SKHL **30** 19:23:42.6±0.7,43.°29N×146.°61E,h67km±3km,mb4.2/4*
*IDC **30** 19:23:51.1±14.0,43.°60N×146.°47E,h119km±114km, mb3.5/8,mb1 3.6/9,mb1mx3.3/51,mbtmp3.8/9,ML3.5/1, Error ellipse: s-maj=88.1km s-min=21.4km az=172.0*

ISC 30 19:23:41.3±1.5,43.°18N±0.°09×146.°65E±0.°07,h49km±12km, n41,σ0°96/47,mb3.8/10,2C,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NEM2	**Nemuro 2**	**0.69**	**286**	P	**Pn**	**19 23 55.0**	**+0.2**
NEM2				*e*S	**Sn**	**19 24 04.5**	**0.0**
SHO	**Shikotan**	**0.70**	**11**	*i* P	**Pn**	**19 23 54.8**	**-0.2**
SHO				AMB	AMB	19 23 55.1	
	350nm,0.4s						
SHO				*i* S	**Sn**	**19 24 04.2**	**-0.7**
SHO				A	A	19 24 05.1	
	2μm,0.4s						
SHO				A	A	19 24 05.1	
	2μm,0.4s						
YUK	**Yuzh-Kuril'sk**	**1.03**	**326**	*i* PN	**Pn**	**19 23 58.9**	**-0.4**
YUK	**Yuzh-Kuril'sk**	**1.03**	**326**	*i* P	**Pn**	**19 23 58.9**	**-0.4**
YUK				AMB	AMB	19 23 59.4	
	170nm,0.3s						
YUK				*i* S	**Sn**	**19 24 11.4**	**-1.2**
YUK				A	A	19 24 14.3	
	470nm,0.3s						
YUK				A	A	19 24 14.3	
	300nm,0.3s						
JRA	**Rausu**	**1.34**	**305**	P	**Pn**	**19 24 04.0**	**+0.4**
JRA				*e*S	**Sn**	**19 24 20.8**	**+0.5**
JAK	**Akkeshi**	**1.44**	**263**	P	**Pn**	**19 24 05.3**	**+0.4**
JAK				*e*S	**Sn**	**19 24 22.6**	**-0.1**
JNK	**Nakash**	**1.46**	**287**	P	**Pn**	**19 24 05.2**	**-0.1**
JNK				*e*S	**Sn**	**19 24 23.2**	**-0.1**
JOB	**Onbets**	**2.08**	**263**	P	**Pn**	**19 24 14.4**	**+0.7**
JOB				*e*S	**Sn**	**19 24 38.8**	**+0.4**
JAR	**Ashorobuto**	**2.11**	**274**	P	**Pn**	**19 24 14.8**	**+0.7**
JAR				*e*S	**Sn**	**19 24 39.8**	**+0.8**
JTKR	**Abashiri--Toko**	**2.14**	**293**	P	**Pn**	**19 24 15.7**	**+1.2**
JTKR				*e*S	**Sn**	**19 24 40.9**	**+1.0**
KUR	**Kuril'sk**	**2.23**	**23**	*e*PN	**Pn**	**19 24 16.5**	**+0.8**
KUR				*e*S	**Sn**	**19 24 41.2**	**-0.9**
KUR				pmax	pmax		
	comp=N,13nm,0.3s						
KUR				pmax	pmax		
	comp=E,15nm,0.3s						
KUR				pmax	pmax		
	comp=Z,25nm,0.3s						
KUR				smax	smax		
	comp=E,164nm,0.4s						
KUR				smax	smax		
	comp=N,94nm,0.3s						
KUR	**Kuril'sk**	**2.23**	**23**	*e*P	**Pn**	**19 24 17.0**	**+1.3**
KUR				AMB	AMB	19 24 17.7	
	comp=N,10.0nm,0.3s						
KUR				AMB	AMB	19 24 17.7	
	comp=N,20nm,0.3s						
KUR				AMB	AMB	19 24 17.7	
	comp=N,30nm,0.3s						
KUR				*e*S	**Sn**	**19 24 42.2**	**+0.1**
KUR				A	A	19 24 44.6	
	comp=N,80nm,0.2s						
KUR				A	A	19 24 44.6	
	comp=N,60nm,0.2s						
JCH	**Churui**	**2.48**	**258**	P	**Pn**	**19 24 19.5**	**+0.3**
JCH				*e*S	**Sn**	**19 24 47.4**	**-0.8**
JMP	**Maruseppu**	**2.53**	**290**	P	**Pn**	**19 24 21.2**	**+1.4**
HRK	**Horoka**	**2.58**	**278**	*e*P	**Pn**	**19 24 22.3**	**+1.7**
YSS	**Yuzh-Sakhalins**	**4.67**	**325**	*i* PN	**Pn**	**19 24 50.8**	**+1.6**
YSS	**Yuzh-Sakhalins**	**4.67**	**325**	*e*P	**Pn**	**19 24 50.5**	**+1.3**
YSS				AMB	AMB	19 24 50.9	
	comp=N,10.0nm,0.4s						
VLA	**Vladivostok**	**10.79**	**275**	⇑*i* PN	**Pn**	**19 26 09.6**	**-3.4**
SEY	**Seymchan**	**20.07**	**8**	P	**P**	**19 28 10.3**	**+0.1**
	comp=N,0.1nm,0.3s,baz=192,slow=17,SNR=3.5						
SEY	**Seymchan**	**20.07**	**8**	⇑*i* P	**P**	**19 28 10.8**	**+0.6**
SEY	**Seymchan**	**20.07**	**8**	*e*P	**P**	**19 28 10.8**	**+0.6**
H11N2	**WAKE ISLAND Hy**	**28.92**	**138**	T	T	20 00 23.2	
	baz=329,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy**	**28.93**	**138**	T	T	20 00 30.7	
	baz=329,slow=75,SNR=25						
H11N3	**WAKE ISLAND Hy**	**28.94**	**138**	T	T	20 00 25.0	
	baz=329,slow=75,SNR=8.3						
H11S1	**WAKE ISLAND Hy**	**29.87**	**139**	T	T	20 01 32.1	
	baz=330,slow=76,SNR=38						
H11S3	**WAKE ISLAND Hy**	**29.87**	**139**	T	T	20 01 39.7	
	baz=330,slow=76,SNR=46						
H11S2	**WAKE ISLAND Hy**	**29.89**	**139**	T	T	20 01 34.4	
	baz=330,slow=76,SNR=30						
KDAK	**Kodiak Island**	**39.90**	**47**	*i* P	**P**	**19 31 10.8**	**+0.7**
COLA	**College**	**41.75**	**36**	*i* P	**P**	**19 31 23.5**	**-1.7**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ILAR	**Eielson Array**	**42.16**	**36**	P	**P**	**19 31 29.1**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=255,slow=6.3,SNR=3.9						
MKAR	**Makanchi Array**	**44.53**	**298**	P	**P**	**19 31 48.0**	**+0.1**
	comp=Z,0.8nm,0.5s,baz=81,slow=8.3,SNR=8.2						
KURK	**Kurchatov**	**45.55**	**304**	P	**P**	**19 31 56.4**	**+0.5**
KURK				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KURBB	**Kurchatov Arra**	**45.63**	**304**	P	**P**	**19 31 56.4**	**-0.1**
	comp=Z,0.7nm,0.5s,baz=74,slow=8.6,SNR=8.8						
INK	**Inuvik**	**47.08**	**30**	P	**P**	**19 32 07.9**	**+0.2**
	comp=Z,2.3nm,0.6s,baz=286,slow=8.0,SNR=9.2						
INK	**Inuvik**	**47.08**	**30**	*e*P	**P**	**19 32 07.8**	**+0.1**
FINES	**FINESS Array B**	**65.21**	**333**	P	**P**	**19 34 16.3**	**-0.8**
	comp=Z,1.2nm,0.7s,baz=44,slow=8.3,SNR=7.3						
NB2	**NORSAR Subarra**	**70.00**	**339**	P	**P**	**19 34 46.6**	**-0.8**
	comp=Z,0.4nm,0.4s,baz=32,slow=6.5						
NOA	**NORSAR Array B**	**70.00**	**339**	P	**P**	**19 34 46.8**	**-0.6**
	comp=Z,0.5nm,0.4s,baz=33,slow=6.6,SNR=5.5						
AKASG	**Malin Array Be**	**71.82**	**324**	P	**P**	**19 34 58.0**	**-0.5**
	comp=Z,0.4nm,0.4s,baz=40,slow=6.2,SNR=4.0						
AKASG	**Malin Array Be**	**71.82**	**324**	*i* P	**P**	**19 34 57.5**	**-1.0**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
TXAR	**Lajitas Array**	**83.27**	**56**	P	**P**	**19 36 03.9**	**+1.0**
	comp=Z,0.5nm,0.7s,baz=311,slow=4.6,SNR=5.8						

IDC 30 19:30:52.6±5.1,55.°76S×141.°85W,h0km,mb3.8/2, mb1 4.1/2,mb1mx3.7/29,mbtmp3.8/2,Error ellipse: s-maj=680.8km s-min=108.5km az=166.0, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**67.59**	**261**	P	P	19 41 51.4	+0.4
	0.7nm,0.7s,baz=142,slow=6.9,SNR=10						
WRA	**Warramunga Arr**	**70.31**	**263**	P	P	19 42 07.4	-0.4
	1.0nm,0.7s,baz=143,slow=5.2,SNR=11						
MKAR	**Makanchi Array**	**151.41**	**270**	PKPbc	PKPbc	19 50 47.2	-0.1
	0.2nm,0.5s,baz=134,slow=4.2,SNR=3.7						

JMA 30 19:33:12.3±0.1,36.°94N×141.°17E,h53km±1km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.34**	**299**	P	Pn	19 33 21.9	-0.2
ONAJ				*e*S	Sn	19 33 28.7	-0.5
JFK	**Kawauchi**	**0.49**	**331**	P	Pn	19 33 23.5	-0.2
JFK				*e*S	Sn	19 33 31.2	-0.6
JHO	**Hitachi**	**0.58**	**236**	P	Pn	19 33 24.5	-0.2
JHO				S	Sn	19 33 33.3	-0.4
JFT	**Otama**	**0.88**	**311**	P	Pn	19 33 29.5	+1.0
JFT				*e*S	Sn	19 33 41.4	+0.9
JMM	**Marumori**	**0.97**	**342**	P	Pn	19 33 29.7	0.0
JMM				*e*S	Sn	19 33 42.3	-0.3
JFY	**Yanaizu**	**1.26**	**292**	P	Pn	19 33 34.1	+0.5
JAG	**Ashikaga**	**1.47**	**250**	P	Pn	19 33 36.8	+0.3
JOU	**Okura**	**1.48**	**344**	P	Pn	19 33 37.4	+0.8
JIO	**Ouri**	**1.52**	**5**	P	Pn	19 33 36.9	-0.2
JKT	**Katashina**	**1.55**	**264**	P	Pn	19 33 38.1	+0.5
JYS	**Shirataka**	**1.55**	**326**	P	Pn	19 33 38.6	+1.0
MAT	**Matsushiro**	**2.41**	**261**	P	Pn	19 33 50.9	+1.6
MAT				S	Sn	19 34 21.2	+3.5

*ISCJB **30** 19:36:09.7±0.7,38.°26N±0.°03×26.°59E±0.°05,h14km±6km, Error ellipse: s-maj=6.5km s-min=4.9km az=149.0*
*ATH **30** 19:36:09.2,38.°21N×26.°51E,h32km±1km,ML2.3/3, Error ellipse: s-maj=3.0km s-min=1.1km az=239.0*
*CSEM **30** 19:36:09.7±0.2,38.°26N×26.°61E,h15km,ML2.3, Error ellipse: s-maj=4.6km s-min=3.8km az=50.0*
*ISK **30** 19:36:10.0,38.°30N×26.°61E,h22km,MD2.8*

ISC 30 19:36:09.6±0.8,38.°25N±0.°03×26.°61E±0.°03,h15km±6km, n35,σ0°56/44,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URLA	**Izmir**	**0.11**	**356**	*i* P	**Pg**	**19 36 13.1**	**0.0**
URLA				*i* S	**Sg**	**19 36 15.2**	**-0.1**
URLA	**Izmir**	**0.11**	**356**	P	**Pg**	**19 36 13.1**	**0.0**
URLA				S	**Sg**	**19 36 15.2**	**-0.1**
CHOS	**Chios island**	**0.45**	**287**	*e*PG	**Pg**	**19 36 19.4**	**+0.8**
CHOS	**Chios island**	**0.45**	**287**	P	**Pg**	**19 36 18.5**	**-0.2**
CHOS	**Chios island**	**0.45**	**287**	*e*Pg	**Pg**	**19 36 19.5**	**+0.8**
CHOS				S	**Sg**	**19 36 24.9**	**+0.1**
CHOS	**Chios island**	**0.45**	**287**	P	**Pg**	**19 36 18.5**	**-0.2**
CHOS				S	**Sg**	**19 36 24.9**	**+0.1**
CHOS				AML	AML	19 36 25.2	
	comp=N,571μm,0.2s						
CHOS				AML	AML	19 36 25.9	
	comp=E,711μm,0.4s						
IZM	**Izmir**	**0.54**	**74**	*e*PG	**Pb**	**19 36 21.3**	**+0.6**
IZM				*e*SG	**Sn**	**19 36 29.7**	**-1.9**
IZM	**Izmir**	**0.54**	**74**	*e*Pg	**Pb**	**19 36 21.3**	**+0.6**
SMG	**Samos**	**0.57**	**161**	P	**Pg**	**19 36 21.4**	**+0.5**
SMG				S	**Sb**	**19 36 29.7**	**+0.4**
SMG	**Samos**	**0.57**	**161**	P	**Pg**	**19 36 21.4**	**+0.5**
SMG				S	**Sb**	**19 36 29.7**	**+0.4**
SMG				AML	AML	19 36 32.7	
	comp=N,861μm,0.2s						
SMG				AML	AML	19 36 32.8	
	comp=E,805μm,0.2s						
DKL	**Dikili**	**0.85**	**16**	*e*PG	**Pb**	**19 36 25.9**	**-0.1**
DKL	**Dikili**	**0.85**	**16**	*e*Pg	**Pb**	**19 36 26.0**	**-0.1**
PRK	**Paraskevi**	**1.03**	**345**	P	**Pb**	**19 36 28.8**	**-0.3**
PRK				S	**Sn**	**19 36 43.9**	**+0.4**
PRK	**Paraskevi**	**1.03**	**345**	P	**Pb**	**19 36 28.8**	**-0.3**
PRK				S	**Sn**	**19 36 43.9**	**+0.4**
PRK				AML	AML	19 36 45.2	
	comp=E,395μm,0.8s						
PRK				AML	AML	19 36 45.4	
	comp=N,282μm,0.4s						
AYDB	**Zeytinkoy-Aydi**	**1.06**	**106**	*e*PG	**Pb**	**19 36 29.6**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.06**	**106**	*e*Pg	**Pb**	**19 36 29.6**	**-0.1**
SIGR	**SIGRI**	**1.12**	**329**	*e*PN	**Pn**	**19 36 30.8**	**+0.1**
SIGR	**SIGRI**	**1.12**	**329**	P	**Pn**	**19 36 30.2**	**-0.5**
SIGR	**SIGRI**	**1.12**	**329**	*e*Pn	**Pn**	**19 36 30.8**	**+0.1**
SIGR	**SIGRI**	**1.12**	**329**	P	**Pn**	**19 36 30.2**	**-0.5**
AKS	**Akhisar**	**1.14**	**56**	*e*PN	**Pn**	**19 36 30.1**	**-0.8**
AKS	**Akhisar**	**1.14**	**56**	*e*Pn	**Pn**	**19 36 30.1**	**-0.8**
BODT	**Bodrum**	**1.31**	**155**	*e*PN	**Pb**	**19 36 34.4**	**+0.4**
BODT	**Bodrum**	**1.31**	**155**	*e*Pn	**Pb**	**19 36 34.4**	**+0.4**
APE	**Apeiranthos**	**1.46**	**216**	*e*PN	**Pb**	**19 36 36.6**	**+0.3**
APE	**Apeiranthos**	**1.46**	**216**	P	**Pn**	**19 36 34.1**	**-1.3**
APE	**Apeiranthos**	**1.46**	**216**	*e*Pn	**Pb**	**19 36 36.7**	**+0.3**
APE	**Apeiranthos**	**1.46**	**216**	P	**Pn**	**19 36 34.1**	**-1.3**
EZN	**Ezine**	**1.59**	**352**	*e*PN	**Pn**	**19 36 37.0**	**-0.1**
EZN	**Ezine**	**1.59**	**352**	*e*Pn	**Pn**	**19 36 37.0**	**-0.1**
KULA	**Kula-Manisa**	**1.64**	**80**	*e*PN	**Pn**	**19 36 38.0**	**+0.1**
KULA	**Kula-Manisa**	**1.64**	**80**	*e*Pn	**Pn**	**19 36 38.0**	**+0.1**
LIA	**Limnos Island**	**1.98**	**326**	P	**Pn**	**19 36 42.7**	**+0.2**
KRBG	**Karabiga-Canak**	**2.20**	**14**	*e*PN	**Pn**	**19 36 45.9**	**+0.3**
KRBG	**Karabiga-Canak**	**2.20**	**14**	*e*Pn	**Pn**	**19 36 45.9**	**+0.3**

*IDC **30** 19:50:08.3±1.5,3.°26S×140.°96E,h0km,mb3.3/4, mb1 3.7/5,mb1mx3.4/40,mbtmp3.5/5,ML3.8/1, Error ellipse: s-maj=47.0km s-min=10.0km az=79.0*
*ISCJB **30** 19:50:10.4±2.9,3.°4S±0.°1×141.°2E±0.°7,h33km,mb3.3/4, Error ellipse: s-maj=97.2km s-min=19.2km az=5.3*

ISC 30 19:50:13.3±1.6,3.°4S±0.°2×141.°1E±0.°4,h35km,n7,σ0°72/6, mb3.4/4,New Guinea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**0.93**	**338**	Pg	Pn	19 50 23.4	-6.5
	11nm,0.3s,baz=105,slow=20,SNR=494						
JAY				Lg	Lg	19 50 34.1	
	20nm,0.3s,baz=270,slow=20,SNR=22						
WRA	**Warramunga Arr**	**17.71**	**201**	P	**Pn**	**19 54 17.1**	**-0.3**
	0.3nm,0.3s,baz=24,slow=12,SNR=13						
FITZ	**Fitzroy Crossi**	**21.02**	**225**	P	**P**	**19 54 54.8**	**+0.7**
	1.3nm,0.8s,baz=30,slow=14,SNR=3.8						
ASAR	**Alice Springs**	**21.32**	**198**	P	**P**	**19 54 56.9**	**-0.4**
	0.4nm,0.6s,baz=28,slow=10,SNR=11						
MKAR	**Makanchi Array**	**71.75**	**322**	P	**P**	**20 01 32.5**	**+0.3**
	0.2nm,0.5s,baz=116,slow=6.6,SNR=3.7						
BVAR	**Borovoye Array**	**81.20**	**325**	P	**P**	**20 02 24.8**	**-0.6**
	0.4nm,0.6s,baz=109,slow=8.1,SNR=2.7						
LPAZ	**La Paz**	**145.16**	**125**	PKPbc	**PKPab**	**20 09 49.2**	**+0.5**
	1.2nm,0.9s,baz=290,slow=3.4,SNR=5.3						

*IDC **30** 19:53:27.3±1.2,38.°00N×143.°50E,h0km,mb3.9/10, mb1 4.0/14,mb1mx3.8/48,mbtmp3.9/14,ML3.8/3, Error ellipse: s-maj=27.9km s-min=19.6km az=116.0*
*ISCJB **30** 19:53:28.6±0.4,38.°04N±0.°04×143.°43E±0.°05,h19km, mb4.2/21,Error ellipse: s-maj=6.1km s-min=4.8km az=152.8*
*JMA **30** 19:53:30.6±0.2,38.°08N×143.°36E,h39km,M3.9*
*NEIC **30** 19:53:30.4±1.7,38.°02N×143.°52E,h21km±11km,mb4.7/12, Error ellipse: s-maj=7.6km s-min=5.1km az=109.0*

ISC 30 19:53:30.8±0.7,38.°05N±0.°05×143.°34E±0.°08,h19km,n55, σ1°75/64,mb4.3/21,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.62**	**285**	P	**Pn**	**19 53 57.8**	**-0.5**
JIO				*e*S	**Sn**	**19 54 17.2**	**-1.4**
JMK	**Ichinoseki**	**1.89**	**299**	S	**Sn**	**19 54 24.9**	**-0.4**
JMM	**Marumori**	**2.02**	**266**	P	**Pn**	**19 54 03.5**	**-0.3**
JMM				S	**Sn**	**19 54 27.4**	**-1.1**
JOM	**Ohasama**	**2.14**	**312**	P	**Pn**	**19 54 05.3**	**-0.2**
JOM				*e*S	**Sn**	**19 54 30.9**	**-0.6**
JFT	**Otama**	**2.44**	**258**	P	**Pn**	**19 54 10.4**	**+0.9**
JFT				S	**Sn**	**19 54 39.1**	**+0.3**
JYK	**Kaneyama**	**2.50**	**291**	P	**Pn**	**19 54 10.6**	**+0.3**
JAG	**Ashikaga**	**3.50**	**244**	P	**Pn**	**19 54 24.3**	**+0.2**
ERM	**Erimo**	**3.96**	**358**	*e*Pn	**Pn**	**19 54 30.4**	**-0.1**
ERM				*e*Sn	**Sn**	**19 55 10.9**	**-5.5**
MJAR	**Matsushiro Arr**	**4.36**	**251**	Pn	**Pn**	**19 54 37.3**	**+1.3**
	3.2nm,0.3s,baz=76,slow=14,SNR=20						
MJAR				Sn	**Sn**	**19 55 29.2**	**+3.0**
	4.7nm,0.3s,baz=66,slow=30,SNR=7.7						
MAJO	**Matsushiro**	**4.36**	**251**	*e*Pn	**Pn**	**19 54 37.6**	**+1.6**
MAT	**Matsushiro**	**4.36**	**251**	P	**Pn**	**19 54 37.6**	**+1.6**
MAT				S	**Sn**	**19 55 28.7**	**+2.4**
MJB9	**Matsu-Tunnel**	**4.36**	**251**	*e*Pn	**Pn**	**19 54 37.6**	**+1.6**
JHJ2	**Mitsune**	**5.70**	**211**	*e*Pn	**Pn**	**19 54 53.2**	**-1.2**
JHJ2				*e*Sn	**Sn**	**19 55 52.8**	**-6.5**
JHJ	**Hachijo jima 2**	**5.71**	**212**	Pn	**Pn**	**19 54 52.9**	**-1.6**
	27nm,0.3s,baz=58,slow=15,SNR=23						
JHJ				Sn	**Sn**	**19 55 53.0**	**-6.5**
	46nm,0.3s,baz=73,slow=19,SNR=11						
INU	**Inuyama**	**5.75**	**244**	*e*Pn	**Pn**	**19 54 56.9**	**+1.8**
ASAJ	**Asahikawa**	**6.09**	**355**	Pn	**Pn**	**19 54 59.6**	**-0.1**
	1.4nm,0.3s,baz=217,slow=12,SNR=10						
ASAJ				Sn	**Sn**	**19 56 05.1**	**-3.7**
	0.6nm,0.3s,baz=148,slow=19,SNR=4.3						
USRK	**Ussuriysk Ar.**	**10.53**	**309**	Pn	**Pn**	**19 56 01.9**	**+1.3**
	0.2nm,0.3s,baz=108,slow=13,SNR=3.3						
YULB	**Yu-li**	**23.84**	**239**	*e*P	**P**	**19 58 42.0**	**-0.8**
	19nm,1.5s						
H11N2	**WAKE ISLAND Hy**	**27.41**	**125**	T	T	20 28 01.5	
	baz=317,slow=76,SNR=15						
H11N1	**WAKE ISLAND Hy**	**27.42**	**125**	T	T	20 28 09.1	
	baz=317,slow=76,SNR=11						
H11N3	**WAKE ISLAND Hy**	**27.43**	**125**	T	T	20 28 20.0	
	baz=317,slow=76,SNR=12						
WAKE	**Wake Island**	**27.58**	**126**	*e*P	**P**	**19 59 14.6**	**-2.1**
	50nm,0.6s						
SONA1	**Songino Array**	**28.51**	**302**	*e*P	**P**	**19 59 26.2**	**+1.2**
SONA0	**Songino Array**	**28.52**	**302**	*e*P	**P**	**19 59 25.9**	**+0.9**
	9.9nm,1.8s						
SONM	**Songino Array**	**28.52**	**302**	P	**P**	**19 59 25.9**	**+0.9**
	1.3nm,0.6s,baz=93,slow=8.9,SNR=10						
ENH	**Enshi**	**28.95**	**265**	*e*P	**P**	**19 59 30.1**	**+1.2**
	25nm,1.8s						
ZAA0	**Zalesovo Array**	**42.38**	**312**	*e*P	**P**	**20 01 22.4**	**-1.1**
ZAA1	**Zalesovo Array**	**42.38**	**312**	*e*P	**P**	**20 01 23.8**	**+0.2**
ZAA1				*e*PcP	**PcP**	**20 03 16.5**	**-0.1**

146nm,1.9s
MBWA Marble Bar 23.46 196 *e*P **P 20 01 36.7 -0.8**
33nm,1.4s
YHNB Yeheng 23.59 348 *e*P **P 20 01 39.1 +0.3**
80nm,2.0s
ANA2 Anatahan 23.98 51 *e*P **P 20 01 43.6 +1.2**
JOW Kunigami 25.26 4 P **P 20 01 55.2 +1.3**
7.1nm,0.7s,baz=196,slow=16,SNR=5.6
JOW Kunigami 25.26 4 *e*P **P 20 01 55.5 +1.5**
9.7nm,0.9s
AS31 Alice Springs 26.00 164 *e*P **P 20 02 01.3 +0.6**
2.7nm,0.5s
ASAR Alice Springs 26.00 164 P **P 20 02 00.7 -0.1**
3.6nm,0.7s,baz=344,slow=7.5,SNR=53
ASAR PcP **PcP 20 05 28.6 +0.3**
0.8nm,0.6s,baz=351,slow=2.2,SNR=5.0
AS01 Alice Springs 26.01 164 *e*P **P 20 02 01.4 +0.6**
GSI Gunungsitoli 28.95 270 *e*P **P 20 02 28.9 +1.6**
23nm,1.1s
CHTO Chiang Mai 32.06 304 *e*P **P 20 02 54.8 0.0**
24nm,1.9s
BBOO Buckleboo 35.27 166 *e*P **P 20 03 22.8 +0.4**
104nm,1.9s
STKA Stephens Creek 36.12 158 P **P 20 03 29.7 0.0**
5.8nm,0.8s,baz=324,slow=8.1,SNR=9.5
STKA Stephens Creek 36.12 158 *e*P **P 20 03 29.8 0.0**
2.2nm,1.1s
ARMA Armidale 39.73 145 *e*P **P 20 04 00.8 +0.4**
18nm,1.5s
LSA Lhasa 43.80 313 *e*P **P 20 04 35.9 +1.8**
2.4nm,0.8s
KLR Kul'dur 47.78 5 P **P 20 05 05.3 +0.7**
1.0nm,0.5s,baz=180,slow=7.1,SNR=4.2
SONA0 Songino Array 49.36 342 *e*P **P 20 05 16.7 -0.2**
2.5nm,1.2s
SONM Songino Array 49.36 342 P **P 20 05 16.7 -0.2**
0.5nm,0.5s,baz=149,slow=8.9,SNR=4.0
SONA1 Songino Array 49.37 342 *e*P **P 20 05 15.9 -1.1**
PEA0 Petropavlovsk- 57.58 22 *e*P **P 20 06 18.6 +1.6**
PETK Petropavlovsk- 57.58 22 P **P 20 06 17.8 +0.9**
1.0nm,0.5s,baz=177,slow=4.5,SNR=3.5
PEA1 Petropavlovsk- 57.58 22 *e*P **P 20 06 17.8 +0.8**
MK01 Makanchi Array 59.27 326 *e*P **P 20 06 27.5 -1.5**
MK31 Makanchi Array 59.29 326 *e*P **P 20 06 29.6 +0.5**
MK32 Makanchi Array 59.29 326 *e*P **P 20 06 28.0 -1.1**
MKAR Makanchi Array 59.29 326 P **P 20 06 28.0 -1.1**
1.7nm,0.5s,baz=118,slow=7.5,SNR=21
MKAR Makanchi Array 59.29 326 *e*P **P 20 06 29.4 +0.4**
21nm,0.6s
MAKZ Makanchi 59.48 326 *e*P **P 20 06 30.7 +0.4**
2.0nm,0.6s
YAK Yakutsk 60.45 2 *e*P **P 20 06 37.1 +0.5**
6.6nm,0.9s
ZAA0 Zalesovo Array 62.50 334 *e*P **P 20 06 50.2 -0.5**
ZALV Zalesovo Beam 62.50 334 P **P 20 06 49.6 -1.0**
0.6nm,0.4s,baz=128,slow=5.9,SNR=3.5
ZAA1 Zalesovo Array 62.50 334 *e*P **P 20 06 49.6 -1.0**
KBL Kabul 62.74 308 *e*P **P 20 06 55.0 +2.0**
22nm,1.8s
KURK Kurchatov 63.53 328 *e*P **P 20 06 56.9 -0.6**
CASY Casey 68.57 187 *e*P **P 20 07 28.0 -1.6**
28nm,2.0s
BVAR Borovoye Array 69.09 328 P **P 20 07 31.9 -1.2**
0.7nm,0.6s,baz=102,slow=5.4,SNR=6.8
BRVK Borovoye 69.17 328 *e*P **P 20 07 33.5 -0.1**
NRIK Noril'sk 72.56 346 P **P 20 07 53.8 -0.1**
5.3nm,0.6s,baz=126,slow=6.3,SNR=4.9
ABKAR Akbulak array 73.77 321 *e*P **P 20 07 59.5 -1.9**
11nm,0.8s
ARU Arti 76.73 328 *e*P **P 20 08 16.9 -1.3**
2.2nm,0.7s
VNDA Vanda 81.23 173 P **P 20 08 41.5 -1.1**
1.5nm,0.6s,baz=321,slow=4.7,SNR=11
VNDA Vanda 81.23 173 *e*P **P 20 08 41.5 -1.1**
VNDA *e*PcP **PcP 20 08 42.9 -5.7**
ILAR Eielson Array 87.21 25 P **P 20 09 12.5 -0.6**
0.2nm,0.6s,baz=249,slow=5.3,SNR=3.8
BR101 Keskin Array S 91.30 310 *e*P **P 20 09 33.0 -0.1**
BRTR Keskin Array B 91.30 310 P **P 20 09 33.1 -0.1**
0.6nm,0.8s,baz=104,slow=6.1,SNR=3.7
ARCES ARCESS Array B 92.48 340 P **P 20 09 37.1 -0.7**
1.4nm,0.8s,baz=76,slow=5.4,SNR=4.8
FIA0 FINESS Array S 93.71 332 *e*P **P 20 09 41.9 -1.7**
FINES FINESS Array B 93.71 332 P **P 20 09 41.9 -1.7**
2.9nm,1.0s,baz=60,slow=8.2,SNR=2.4
TORD Torodi Ar. Bea 123.40 287 PKP **PKPdf 20 15 24.8 -0.3**
0.4nm,0.8s,baz=34,slow=2.3,SNR=4.1
TOA1 Torodi Ar. Sit 123.40 287 *e*PKPdf **PKPdf 20 15 24.8 -0.3**

*CSEM **30** 20:20:31.3, 42.°84N×46.°88E, h10km, mb3.8*
*MOS **30** 20:20:31.3±1.6, 42.°84N×46.°88E, h10km, mb3.8/1, Error ellipse: s-maj=2.9km s-min=0.0km az=31.9*
ISC 30 20:20:33.0±0.7, **42.°83N**±0.°02×**46.°85E**±0.°02, **h6**km±5km, **n68**, σ1§51/118, **4C-2D, Eastern Caucasus**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KRNR	**Karanay**	**0.04**	**92**	*i*Pg	**Pg**	**20 20 32.0**	**-2.4**
KRNR				pmax	pmax		
	comp=Z,181nm,0.2s						
KRNR	**Karanay**	**0.04**	**92**	*i* Pg	**Pg**	**20 20 32.0**	**-2.4**
	comp=Z,181nm,0.2s						
UNCR	**Uncukul**	**0.12**	**201**	*i*PG	**Pg**	**20 20 34.5**	**-1.1**
UNCR				*i* S	**Sg**	**20 20 39.3**	**+2.0**
UNCR				pmax	pmax		
	comp=Z,547nm,0.3s						
UNCR	**Uncukul**	**0.12**	**201**	*i* Pg	**Pg**	**20 20 34.5**	**-1.1**
	comp=Z,547nm,0.3s						
UNCR				*i* Sg	**Sg**	**20 20 39.3**	**+2.0**
BUJR	**Buynaksk**	**0.19**	**91**	*i* PG	**Pg**	**20 20 34.3**	**-2.4**
BUJR				*i* S	**Sg**	**20 20 38.7**	**-0.5**
BUJR				pmax	pmax		
	comp=Z,69nm,0.3s						
BUJR	**Buynaksk**	**0.19**	**91**	*i* Pg	**Pg**	**20 20 34.3**	**-2.4**
	comp=Z,69nm,0.3s						
BUJR				*i* Sg	**Sg**	**20 20 38.7**	**-0.5**
DBC	**Dubki**	**0.19**	**355**	*i*PG	**Pg**	**20 20 39.0**	**+2.1**
DBC				*i* S	**Sg**	**20 20 40.9**	**+1.4**
DBC				pmax	pmax		
	comp=Z,880nm,0.1s						
DBC	**Dubki**	**0.19**	**355**	*i* Pg	**Pg**	**20 20 39.0**	**+2.1**
	comp=Z,880nm,0.1s						
DBC				*i* Sg	**Sg**	**20 20 40.9**	**+1.4**
ARKR	**Arakani**	**0.25**	**155**	*e*PG	**Pg**	**20 20 37.0**	**-0.9**
ARKR				*e*S	**Sb**	**20 20 43.0**	**+1.8**
ARKR				pmax	pmax		
	comp=Z,119nm,0.2s						
ARKR	**Arakani**	**0.25**	**155**	*e*Pg	**Pg**	**20 20 37.0**	**-0.9**
	comp=Z,119nm,0.2s						
ARKR				*e*Sg	**Sb**	**20 20 43.0**	**+1.8**
DLMR	**Dylym**	**0.29**	**326**	*i*PG	Pg	20 20 33.5	-5.2
DLMR				pmax	pmax		
	comp=Z,214nm,0.2s						
DLMR	**Dylym**	**0.29**	**326**	*i* Pg	Pg	20 20 33.5	-5.2
	comp=Z,214nm,0.2s						
XNZR	**Khunzakh**	**0.31**	**201**	*e*PG	**Pg**	**20 20 38.5**	**-0.5**
XNZR				*e*S	**Sb**	**20 20 46.0**	**-0.4**
XNZR				pmax	pmax		
	comp=Z,67nm,0.1s						
XNZR	**Khunzakh**	**0.31**	**201**	*e*Pg	**Pg**	**20 20 38.5**	**-0.5**
	comp=Z,67nm,0.1s						
XNZR				*e*Sg	**Sb**	**20 20 46.0**	**-0.4**
GNBR	**Gunib**	**0.45**	**169**	*i*PG	**Pg**	**20 20 41.2**	**-0.4**
GNBR				*i* S	**Sb**	**20 20 49.9**	**-0.4**
GNBR				pmax	pmax		
	comp=Z,65nm,0.1s						
GNBR	**Gunib**	**0.45**	**169**	*i* Pg	**Pg**	**20 20 41.2**	**-0.4**
	comp=Z,65nm,0.1s						
GNBR				*i* Sg	**Sb**	**20 20 49.9**	**-0.4**
KMKR	**Kumukh**	**0.72**	**165**	PG	**Pb**	**20 20 47.0**	**-1.1**
KMKR				*i* S	**Sn**	**20 20 59.3**	**-2.1**
KMKR				pmax	pmax		
	comp=Z,35nm,0.2s						
KMKR	**Kumukh**	**0.72**	**165**	Pg	**Pb**	**20 20 47.0**	**-1.1**
	comp=Z,35nm,0.2s						
KMKR				*i* Sg	**Sn**	**20 20 59.3**	**-2.1**
GROC	**Groznyy**	**0.86**	**296**	*e*PG	**Pg**	**20 20 47.2**	**-2.3**
GROC				*e*		20 20 59.1	
GROC				pmax	pmax		
	comp=Z,9.0nm,0.2s						
GROC				smax	smax		
	comp=N,29nm,0.3s						
GROC				smax	smax		
	comp=E,40nm,0.4s						
GROC				smax	smax		
	comp=E,34nm,0.4s						
GROC	**Groznyy**	**0.86**	**296**	*e*Pg	**Pg**	**20 20 47.2**	**-2.3**
	comp=E,9.0nm,0.2s						
GROC				*e*Sg	**Sg**	**20 20 59.1**	**-1.6**
	comp=E,29nm,0.3s						
URKR	**Urkarakh**	**0.88**	**139**	*e*PG	**Pg**	**20 20 48.5**	**-1.4**
URKR				*e*S	**Sn**	**20 21 04.0**	**-1.2**
URKR				pmax	pmax		
	comp=Z,54nm,0.2s						
URKR	**Urkarakh**	**0.88**	**139**	*e*Pg	**Pg**	**20 20 48.5**	**-1.4**
	comp=Z,54nm,0.2s						
URKR				*e*Sg	**Sn**	**20 21 04.0**	**-1.2**
AKT	**Akhty**	**1.50**	**154**	*e*PG	**Pn**	**20 20 59.2**	**-1.4**
AKT				*e*S	**Sg**	**20 21 21.3**	**+0.2**
AKT	**Akhty**	**1.50**	**154**	*e*Pg	**Pn**	**20 20 59.2**	**-1.4**
AKT				*e*Sg	**Sg**	**20 21 21.3**	**+0.2**
KSMR	**Kasumkent**	**1.55**	**142**	*e*PG	**Pb**	**20 21 01.5**	**-0.6**
KSMR				*e*S	**Sg**	**20 21 26.0**	**+3.3**
KSMR				pmax	pmax		
	comp=Z,59nm,0.1s						
KSMR	**Kasumkent**	**1.55**	**142**	*e*Pg	**Pb**	**20 21 01.5**	**-0.6**
	comp=Z,59nm,0.1s						
KSMR				*e*Sg	**Sg**	**20 21 26.0**	**+3.3**
VLKR	**Vladikavkaz**	**1.61**	**279**	*e*PN	**Pn**	**20 21 01.5**	**-0.6**
VLKR				*e*S	**Sg**	**20 21 24.8**	**0.0**
VLKR	**Vladikavkaz**	**1.61**	**279**	*e*Pn	**Pn**	**20 21 01.5**	**-0.6**
VLKR				*e*Sg	**Sg**	**20 21 24.8**	**0.0**
DUS	**Dusheti**	**1.75**	**246**	P	**Sg**	**20 21 33.8**	**+4.4**
BTKR	**Batakoyurt**	**1.78**	**289**	*e*PN	**Pn**	**20 21 03.1**	**-1.3**
BTKR				*e*S	**Sb**	**20 21 27.5**	**-1.1**
BTKR	**Batakoyurt**	**1.78**	**289**	*e*Pn	**Pn**	**20 21 03.1**	**-1.3**
BTKR				*e*Sg	**Sb**	**20 21 27.5**	**-1.1**
TRKR	**Terskaya**	**1.79**	**301**	*e*PN	**Pn**	**20 21 03.4**	**-1.1**
TRKR				*e*S	**Sb**	**20 21 27.6**	**-1.3**
TRKR	**Terskaya**	**1.79**	**301**	*e*Pn	**Pn**	**20 21 03.4**	**-1.1**
TRKR				*e*Sg	**Sb**	**20 21 27.6**	**-1.3**
GUDG	**Gudauri**	**1.79**	**259**	P	**Pn**	**20 21 03.9**	**-0.8**
GUDG				S	**Sg**	**20 21 30.2**	**+0.4**
LACR	**Lac**	**1.88**	**271**	*e*PN	**Pn**	**20 21 04.0**	**-1.9**
LACR				*e*S	**Sb**	**20 21 30.5**	**-1.2**
LACR	**Lac**	**1.88**	**271**	*e*Pn	**Pn**	**20 21 04.0**	**-1.9**
LACR				*e*Sg	**Sb**	**20 21 30.5**	**-1.2**
TBLG	**Delisi**	**1.92**	**236**	P	**Pb**	**20 21 06.8**	**-1.6**
TBLG				S	**Sg**	**20 21 35.9**	**+1.4**
TBLG	**Delisi**	**1.92**	**236**	PN	**Pb**	**20 21 06.8**	**-1.6**
TBLG				S	**Sg**	**20 21 35.9**	**+1.4**
TBLG	**Delisi**	**1.92**	**236**	Pn	**Pb**	**20 21 06.8**	**-1.6**
TBLG				Sg	**Sg**	**20 21 35.9**	**+1.4**
ARNR	**Ardon**	**1.92**	**281**	*e*PN	**Pn**	**20 21 05.9**	**-0.4**
ARNR				*e*S	**Sb**	**20 21 32.3**	**-0.3**
ARNR	**Ardon**	**1.92**	**281**	*e*Pn	**Pn**	**20 21 05.9**	**-0.4**
ARNR				*e*Sg	**Sb**	**20 21 32.3**	**-0.3**
KORR	**Kora**	**2.06**	**278**	*e*PN	**Pn**	**20 21 07.7**	**-0.6**
KORR				*e*S	**Sb**	**20 21 35.7**	**-1.1**
KORR	**Kora**	**2.06**	**278**	*e*Pn	**Pn**	**20 21 07.7**	**-0.6**
KORR				*e*Sb	**Sb**	**20 21 35.7**	**-1.1**
PRTR	**Priterechnaya**	**2.09**	**297**	*e*PN	**Pn**	**20 21 08.0**	**-0.6**
PRTR				*e*S	**Sb**	**20 21 35.8**	**-1.8**
PRTR	**Priterechnaya**	**2.09**	**297**	*e*Pn	**Pn**	**20 21 08.0**	**-0.6**
PRTR				*e*Sb	**Sb**	**20 21 35.8**	**-1.8**
STDR	**Stavd-Durt**	**2.11**	**286**	*e*PN	**Pn**	**20 21 08.4**	**-0.6**
STDR				*e*S	**Sb**	**20 21 36.5**	**-1.8**
STDR	**Stavd-Durt**	**2.11**	**286**	*e*Pn	**Pn**	**20 21 08.4**	**-0.6**
STDR				*e*Sb	**Sb**	**20 21 36.5**	**-1.8**
ZEI	**Tsey**	**2.17**	**270**	*e*PN	**Pn**	**20 21 09.4**	**-0.5**
ZEI				*e*S	**Sb**	**20 21 39.3**	**-0.9**
ZEI	**Tsey**	**2.17**	**270**	*e*Pn	**Pn**	**20 21 09.4**	**-0.5**
ZEI				*e*Sn	**Sb**	**20 21 39.3**	**-0.9**
LSNR	**Lesken**	**2.26**	**282**	*e*PN	**Pn**	**20 21 11.0**	**-0.1**
LSNR				*e*S	**Sb**	**20 21 41.3**	**-1.3**
LSNR	**Lesken**	**2.26**	**282**	*e*Pn	**Pn**	**20 21 11.0**	**-0.1**
LSNR				*e*Sn	**Sb**	**20 21 41.3**	**-1.3**
DIGR	**Digorskoe uzhe**	**2.41**	**273**	*e*PN	**Pn**	**20 21 12.8**	**-0.4**
DIGR				*e*S	**Sb**	**20 21 44.7**	**-2.2**
DIGR	**Digorskoe uzhe**	**2.41**	**273**	*e*Pn	**Pn**	**20 21 12.8**	**-0.4**
DIGR				*e*Sn	**Sb**	**20 21 44.7**	**-2.2**
ONI	**Oni**	**2.52**	**266**	P	**Sg**	**20 21 51.7**	**-2.2**
NEY	**Neytrino**	**3.06**	**279**	*e*PN	**Pn**	**20 21 20.9**	**-1.2**
NEY				*e*S	**Sn**	**20 21 59.6**	**+0.5**
NEY	**Neytrino**	**3.06**	**279**	*e*Pn	**Pn**	**20 21 20.9**	**-1.2**
NEY				*e*Sn	**Sn**	**20 21 59.6**	**+0.5**
GNI	**Garni**	**3.11**	**211**	*e*PN	**Pn**	**20 21 23.5**	**+0.7**
GNI	**Garni**	**3.11**	**211**	*e*Pn	**Pn**	**20 21 23.5**	**+0.7**
KIV	**Kislovodsk**	**3.24**	**292**	*e*PN	**Pn**	**20 21 25.5**	**+1.0**
KIV	**Kislovodsk**	**3.24**	**292**	*e*Pn	**Pn**	**20 21 25.5**	**+1.0**
OBN	**Obninsk**	**14.01**	**335**	*e*P	**Pn**	**20 23 54.2**	**+2.3**
OBN				*e*S	**Sn**	**20 26 30.8**	**+3.3**
OBN				pmax	pmax		
	comp=Z,2.0nm,0.6s						
OBN				MLR	MLR		
	comp=Z,557nm,16.0s						
OBN	**Obninsk**	**14.01**	**335**	*e*P	**Pn**	**20 23 54.2**	**+2.3**
	comp=Z,557nm,16.0s						
OBN				*e*S	**Sn**	**20 26 30.8**	**+3.3**
KIEV	**Kiev**	**14.40**	**309**	*e*P	**Pn**	**20 23 57.9**	**+0.6**
KIEV				pmax	pmax		
	comp=Z,2.0nm,1.0s						
KIEV	**Kiev**	**14.40**	**309**	*e*P	**Pn**	**20 23 57.9**	**+0.6**
	comp=Z,2.0nm,1.0s						
KLMR	**Klimovskoe**	**18.59**	**349**	*e*P	**P**	**20 24 49.0**	**-1.7**
KLMR				*e*		20 28 16.5	
KLMR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KLMR	**Klimovskoe**	**18.59**	**349**	*e*P	**P**	**20 24 49.0**	**-1.7**
	comp=Z,2.0nm,0.6s						
KLMR				*e*S	**Sn**	**20 28 16.5**	**-2.2**
BRVK	**Borovoye**	**18.65**	**49**	*e*P	**Pn**	**20 24 53.0**	**+1.3**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BRVK	**Borovoye**	**18.65**	**49**	*e*P	**Pn**	**20 24 53.0**	**+1.3**
	comp=Z,2.0nm,0.8s						

*ISCJB **30** 20:22:38.5±0.8, 25.°20S±0.°09×179.°8E±0.°2, h507km, mb3.8/10, Error ellipse: s-maj=19.1km s-min=12.0km az=176.5*
*IDC **30** 20:22:40.9±4.4, 25.°04S×179.°71E, h521km±44km, mb3.4/10, mb1 3.6/11, mb1mx3.3/34, mbtmp4.3/11, Error ellipse: s-maj=28.1km s-min=17.5km az=69.0*
ISC 30 20:22:39.2±0.7, **25.°05S**±0.°2×**179.°8E**±0.°1, **h507**km, **n24**, σ1§16/23, **mb3.8**/10, **South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**12.62**	**281**	P	**P**	**20 25 25.1**	**+0.7**
	0.6nm,0.3s,baz=139,slow=22,SNR=7.4						
URZ	**Urewera**	**13.38**	**189**	P	P	20 25 26.3	-5.7
	0.9nm,0.3s,baz=264,slow=3.5,SNR=6.4						
URZ				S	S	20 27 48.2	-6.4
	0.3nm,0.3s,baz=52,slow=18,SNR=3.4						
STKA	**Stephens Creek**	**34.15**	**250**	P	**P**	**20 28 41.5**	**-0.1**
	1.9nm,0.4s,baz=96,slow=12,SNR=15						
ASAR	**Alice Springs**	**41.70**	**262**	P	**P**	**20 29 43.0**	**-0.3**
	5.9nm,0.6s,baz=92,slow=7.3,SNR=198						
WRA	**Warramunga Arr**	**42.17**	**267**	P	**P**	**20 29 46.5**	**-0.7**
	4.6nm,0.6s,baz=99,slow=6.8,SNR=236						
FITZ	**Fitzroy Crossi**	**50.58**	**267**	P	**P**	**20 30 51.1**	**0.0**
	4.7nm,0.6s,baz=125,slow=7.8,SNR=29						
VNDA	**Vanda**	**53.23**	**185**	P	**P**	**20 31 10.8**	**+1.6**
	0.5nm,0.4s,baz=12,slow=7.8,SNR=11						
MJAR	**Matsushiro Arr**	**72.74**	**326**	P	**P**	**20 33 14.9**	**-0.6**
	0.9nm,0.8s,baz=162,slow=6.3,SNR=4.8						
MAW	**Mawson**	**76.62**	**201**	P	**P**	**20 33 36.0**	**-0.8**
	1.9nm,0.6s,baz=115,slow=7.9,SNR=8.6						
PETK	**Petropavlovsk-**	**80.17**	**347**	P	**P**	**20 33 56.4**	**+0.4**
	2.2nm,0.6s,baz=140,slow=6.7,SNR=4.1						
CMAR	**Chiang Mai Arr**	**89.76**	**290**	P	**P**	**20 34 45.0**	**+1.3**
	0.9nm,0.7s,baz=140,slow=3.8,SNR=5.7						
TXAR	**Lajitas Array**	**91.18**	**58**	P	**P**	**20 34 51.0**	**+1.0**
	0.5nm,0.7s,baz=201,slow=6.7,SNR=4.6						
MKAR	**Makanchi Array**	**112.80**	**312**	PKiKP	**PKiKP**	**20 40 16.8**	**-1.1**
	0.2nm,0.5s,baz=101,slow=1.1,SNR=3.5						
KURBB	**Kurchatov Arra**	**115.95**	**316**	PKP	**PKPdf**	**20 40 22.5**	**-1.2**
	0.4nm,0.7s,baz=91,slow=2.0,SNR=5.6						
BVAR	**Borovoye Array**	**121.18**	**318**	PKP	**PKPdf**	**20 40 33.4**	**-0.4**
	0.6nm,0.4s,baz=176,slow=2.3,SNR=5.1						
ARCES	**ARCESS Array B**	**132.97**	**348**	PKP	**PKPdf**	**20 40 56.0**	**+0.2**
	0.9nm,0.6s,baz=57,slow=3.3,SNR=4.6						
ARCES				SKP		20 43 40.2	
	1.6nm,0.7s,baz=64,slow=4.1,SNR=5.9						
FINES	**FINESS Array B**	**139.47**	**341**	PKhKP	PKPpre	20 40 59.6	
	4.2nm,1.2s,baz=52,slow=2.3,SNR=7.2						
FINES				SKPbc	**SKiKP**	**20 43 59.4**	**+1.1**
	2.4nm,0.9s,baz=76,slow=5.9,SNR=4.7						
NB2	**NORSAR Subarra1**	**43.18**	**351**	PKP	**PKPdf**	**20 41 12.6**	**-2.1**
	comp=Z,0.7nm,0.5s,baz=15,slow=3.2						
NOA	**NORSAR Array B**	**143.18**	**351**	PKP	**PKPdf**	**20 41 12.4**	**-2.3**
	comp=Z,2.2nm,0.8s,baz=16,slow=4.9,SNR=6.2						
AKASG	**Malin Array Be**	**145.83**	**326**	PKPbc	**PKPdf**	**20 41 20.3**	**+0.8**
	comp=Z,1.4nm,0.4s,baz=42,slow=5.0,SNR=8.6						
ASF	**Jabal al Asfar**	**146.80**	**291**	PKPbc	**PKPbc**	**20 41 25.7**	**+1.1**
	comp=Z,2.4nm,0.8s,baz=18,slow=3.2,SNR=3.9						
MMAI	**Mount Meron Ar**	**148.00**	**293**	PKPbc	**PKPbc**	**20 41 28.7**	**+1.0**
	comp=Z,2.5nm,0.4s,baz=46,slow=4.2,SNR=9.4						
BRTR	**Keskin Array B**	**148.12**	**306**	PKPbc	**PKPbc**	**20 41 27.8**	**-0.1**
	comp=Z,0.8nm,0.6s,baz=133,slow=2.8,SNR=6.2						
TORD	**Torodi Ar. Bea**	**168.03**	**189**	PKPab	**PKPab**	**20 42 57.2**	**-1.7**
	comp=Z,0.5nm,0.6s,baz=160,slow=4.6,SNR=5.2						

*IDC **30** 20:28:55.8±2.6, 23.°80S×179.°89E, h501km±23km, mb3.3/5, mb1 3.6/6, mb1mx3.0/35, mbtmp4.3/6, Error ellipse: s-maj=39.6km s-min=26.1km az=176.0*
ISC 30 20:28:58.1±1.3, **23.°9S**±0.°1×**179.°9E**±0.°2, **h526**km, **n6**, σ1§37/9, **mb3.6**/5, **South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**14.49**	**189**	P	**P**	**20 32 02.2**	**-0.2**
	1.7nm,0.3s,baz=19,slow=1.8,SNR=12						
URZ				S	**S**	**20 34 34.5**	**0.0**
	0.1nm,0.3s,baz=349,slow=8.0,SNR=3.7						
CTA	**Charters Tower**	**31.36**	**270**	P	**P**	**20 34 35.8**	**0.0**
	7.6nm,0.4s,baz=107,slow=9.3,SNR=28						
ASAR	**Alice Springs**	**41.92**	**261**	P	**P**	**20 36 02.2**	**-0.5**
	0.9nm,0.5s,baz=95,slow=7.3,SNR=31						
ASAR				ScP	**ScP**	**20 40 48.5**	**+2.1**
	1.0nm,1.0s,baz=108,slow=4.4,SNR=8.1						
WRA	**Warramunga Arr**	**42.29**	**266**	P	**P**	**20 36 04.4**	**-1.3**
	0.9nm,0.3s,baz=103,slow=8.4,SNR=36						
WRA				ScP	**ScP**	**20 40 50.1**	**+2.2**
	1.2nm,1.1s,baz=104,slow=3.3,SNR=4.7						
FITZ	**Fitzroy Crossi**	**50.72**	**266**	P	**P**	**20 37 09.2**	**-0.3**
	2.3nm,1.0s,baz=90,slow=7.1,SNR=6.1						
TXAR	**Lajitas Array**	**90.53**	**58**	P	**P**	**20 41 03.8**	**-0.4**
	0.4nm,0.7s,baz=218,slow=5.7,SNR=5.7						

IDC 30 20:30:33.3±1.5, **1.°51N×126.°37E, h0**km, **mb3.6**/4, **mb1 3.8**/5, **mb1mx3.4**/55, **mbtmp3.6**/5, **ML3.5**/1, **Error ellipse: s-maj=114.8km s-min=19.1km az=69.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**19.50**	**182**	P	Pn	20 35 03.0	-0.4
	0.1nm,0.3s,baz=5.2,slow=11,SNR=4.3						
WRA	**Warramunga Arr**	**22.71**	**160**	P	P	20 35 36.7	-0.2
	4.0nm,0.7s,baz=338,slow=11,SNR=22						
ASAR	**Alice Springs**	**26.08**	**164**	P	P	20 36 08.5	-0.3
	0.6nm,0.7s,baz=345,slow=8.6,SNR=11						
MKAR	**Makanchi Array**	**59.17**	**326**	P	P	20 40 36.2	+0.1
	0.3nm,0.5s,baz=120,slow=6.9,SNR=5.0						
KURBB	**Kurchatov Arra**	**63.41**	**328**	P	P	20 41 04.5	-0.1
	0.4nm,0.6s,baz=130,slow=6.2,SNR=9.0						

*TIR **30** 20:37:48.7±7.0, 39.°81N×20.°40E, h8km±999km, ML3.0*
*ISCJB **30** 20:37:56.1±0.5, 39.°85N±0.°02×20.°37E±0.°04, h9km±5km, Error ellipse: s-maj=5.2km s-min=3.3km az=162.7*
*CSEM **30** 20:37:56.6±0.1, 39.°80N×20.°44E, h2km, ML2.8, Error ellipse: s-maj=3.9km s-min=2.9km az=83.0*
*THE **30** 20:37:56.3, 39.°82N×20.°42E, h0km±2km, mL3.0/6, Error ellipse: s-maj=2.2km s-min=0.6km az=330.0*
*ATH **30** 20:37:56.3, 39.°80N×20.°45E, h18km±1km, ML2.8/7, Error ellipse: s-maj=1.5km s-min=0.6km az=285.0*
ISC 30 20:37:56.4±0.9, **39.°80N**±0.°02×**20.°43E**±0.°02, **h13**km±7km, **n95**, σ1§06/127, **2C-3D, Greece-Albania border region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SGD	**Sagiada**	**0.24**	**219**	P	**Pg**	**20 38 01.4**	**-0.1**
SGD				S	**Sg**	**20 38 05.0**	**0.0**
SGD	**Sagiada**	**0.24**	**219**	P	**Pg**	**20 38 01.4**	**-0.1**
SGD				S	**Sg**	**20 38 05.0**	**0.0**
SGD	**Sagiada**	**0.24**	**219**	P	**Pg**	**20 38 01.3**	**-0.2**
SGD				S	**Sg**	**20 38 07.2**	**+2.2**
IGT	**Igoumenitsa**	**0.28**	**196**	P	**Pg**	**20 38 01.7**	**-0.5**
IGT				S	**Sg**	**20 38 06.6**	**+0.5**
IGT	**Igoumenitsa**	**0.28**	**196**	P	**Pg**	**20 38 01.7**	**-0.5**
IGT				S	**Sg**	**20 38 06.6**	**+0.5**
IGT	**Igoumenitsa**	**0.28**	**196**	P	**Pg**	**20 38 00.9**	**-1.4**
IGT				S	**Sb**	**20 38 07.7**	**-0.3**
IGT				AML	AML	20 38 08.3	
	comp=N,12730μm,0.4s						
IGT				AML	AML	20 38 08.3	
	comp=E,10768μm,0.3s						
KEK	**Kerkira**	**0.49**	**260**	P	**Pg**	**20 38 06.2**	**0.0**
KEK				S	**Sg**	**20 38 12.9**	**+0.1**
KEK	**Kerkira**	**0.49**	**260

PVO				S	Sg	20 38 44.6	+1.3
PVO	**Paravola**	**1.46**	**144**	P	Pb	20 38 23.9	+0.5
TIR	**Tirane**	**1.60**	**345**	*i* PG	Pb	20 38 26.4	+0.4
TIR				*i* SG	Sn	20 38 42.3	-2.9
TIR	**Tirane**	**1.60**	**345**	*i* Pg	Pb	20 38 26.4	+0.4
TIR				*i* Sg	Sn	20 38 42.3	-2.9
LIT	**Litokhoron**	**1.61**	**79**	P	Pb	20 38 26.1	0.0
LIT	**Litokhoron**	**1.61**	**79**	P	Pb	20 38 26.1	0.0
LIT	**Litokhoron**	**1.61**	**79**	P	Pg	20 38 27.6	+0.3
VLS	**Valsamata**	**1.62**	**176**	P	Pn	20 38 24.8	0.0
VLS	**Valsamata**	**1.62**	**176**	P	Pg	20 38 27.2	-0.4
AGG	**Agios Georgios**	**1.66**	**117**	P	Pb	20 38 26.5	-0.5
AGG				S	Sg	20 38 49.9	-0.1
AGG	**Agios Georgios**	**1.66**	**117**	P	Pb	20 38 26.8	-0.2
AGG				S	Sg	20 38 49.9	-0.1
AGG	**Agios Georgios**	**1.66**	**117**	P	Pb	20 38 26.8	-0.2
ANX	**Ano Chora**	**1.67**	**136**	P	Pb	20 38 27.1	0.0
ANX	**Ano Chora**	**1.67**	**136**	P	Pb	20 38 27.1	0.0
SERG	**Sergoula**	**1.88**	**137**	P	Pb	20 38 30.2	-0.4
GRG	**Griva**	**1.90**	**52**	P	Pn	20 38 29.8	+1.2
GRG	**Griva**	**1.90**	**52**	P	Pn	20 38 29.8	+1.2
GRG	**Griva**	**1.90**	**52**	P	Pn	20 38 29.8	+1.2
KALE	**Kalithea**	**1.94**	**136**	P	Pb	20 38 31.0	-0.7
KALE	**Kalithea**	**1.94**	**136**	P	Pb	20 38 31.0	-0.7
DRO	**Drossia**	**2.10**	**151**	P	Pn	20 38 31.7	+0.3
DRO	**Drossia**	**2.10**	**151**	P	Pn	20 38 31.7	+0.3
DSF	**Desfina**	**2.14**	**130**	P	Pb	20 38 34.0	-1.1
DSF	**Desfina**	**2.14**	**130**	P	Pb	20 38 34.0	-1.1
XOR	**Xorichti**	**2.18**	**101**	P	Pb	20 38 34.8	-0.9
XOR	**Xorichti**	**2.18**	**101**	P	Pb	20 38 34.8	-0.9
HORT	**Hortiatis**	**2.19**	**68**	P	Pb	20 38 35.3	-0.8
HORT	**Hortiatis**	**2.19**	**68**	P	Pb	20 38 35.3	-0.8
KLV	**Kalavryta, Ach**	**2.21**	**142**	P	Pn	20 38 34.2	+1.3
KLV	**Kalavryta, Ach**	**2.21**	**142**	P	Pn	20 38 34.2	+1.3
NEO	**Neokhori**	**2.21**	**102**	P	Pn	20 38 32.6	-0.3
NEO	**Neokhori**	**2.21**	**102**	P	Pn	20 38 32.6	-0.3
VAY	**Valandovo**	**2.23**	**46**	*e*Pn	Pb	20 38 35.1	-1.4
VAY	**Valandovo**	**2.23**	**46**	*e*Pn	Pb	20 38 35.1	-1.5
ATAL	**Atalanti**	**2.29**	**118**	P	Pb	20 38 37.2	-0.5
ATAL	**Atalanti**	**2.29**	**118**	P	Pb	20 38 37.2	-0.5
SKO	**Skopje**	**2.30**	**19**	*e*Pn	Pb	20 38 36.8	-1.0
SKO	**Skopje**	**2.30**	**19**	*e*Pn	Pb	20 38 36.8	-1.0
KNT	**Kendrikon**	**2.32**	**53**	P	Pn	20 38 36.0	+1.6
KNT	**Kendrikon**	**2.32**	**53**	P	Pn	20 38 36.0	+1.6
PLG	**Polygyros**	**2.38**	**75**	P	Pn	20 38 35.2	-0.1
PLG	**Polygyros**	**2.38**	**75**	P	Pn	20 38 35.2	-0.1
SKIA	**Skiathos**	**2.43**	**104**	P	Pb	20 38 38.4	-1.7
SKIA	**Skiathos**	**2.43**	**104**	P	Pb	20 38 38.4	-1.7
PAIG	**Paliouri**	**2.50**	**86**	P	Pn	20 38 37.4	+0.5
PAIG	**Paliouri**	**2.50**	**86**	P	Pn	20 38 37.4	+0.5
VIL2	**Platees**	**2.72**	**125**	P	Pn	20 38 42.0	+2.1
AOS	**Alonnisos**	**2.74**	**102**	P	Pn	20 38 40.7	+0.5
AOS	**Alonnisos**	**2.74**	**102**	P	Pn	20 38 40.7	+0.5
VILL	**Villia**	**2.78**	**125**	P	Pn	20 38 42.0	+1.3
DID	**Didima**	**3.17**	**135**	P	Pn	20 38 46.2	0.0
DID	**Didima**	**3.17**	**135**	P	Pn	20 38 46.2	0.0
BARS	**Barje**	**3.19**	**19**	⇑*i* Pn	Pn	20 38 48.4	+2.1
GRUS	**Gruza**	**4.09**	**3**	*e*Pn	Pn	20 39 00.1	+1.4
BBLS	**Lazići**	**4.13**	**350**	*e*Pn	Pn	20 39 00.9	+1.5
BOLS	**Boljevac**	**4.18**	**15**	⇓*i* Pn	Pn	20 39 01.0	+1.0
DIVS	**Divibare**	**4.31**	**356**	⇓*i* Pn	Pn	20 39 02.8	+1.0
TRUS	**Trudelj**	**4.42**	**360**	⇓*i* Pn	Pn	20 39 05.6	+2.4
TEKS	**Tekeris**	**4.79**	**352**	⇑*i* Pn	Pn	20 39 09.2	+0.8
UDBI	**Udbina**	**5.86**	**325**	*e*Pn	Pn	20 39 24.3	+1.2
UDBI				Sn	Sn	20 40 28.9	-1.2
NVLJ	**Novalja**	**6.30**	**321**	*e*Pn	Pn	20 39 29.1	+0.1
NVLJ				Sn	Sn	20 40 37.5	-3.4
OZLJ	**Ozalj**	**6.87**	**329**	*i* Pn	Pn	20 39 36.9	+0.1

IDC 30 20:44:54.5±2.3, 30°03S×176°30W, h0km, mb3.4/2, mb1 3.8/3, mb1mx3.6/32, mbtmpg3.7/3, ML3.5/1, Error ellipse: s-maj=72.1km s-min=41.0km az=135.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.61**	**298**	Sn	Sg	20 45 49.4	+3.2
	236nm,0.3s,baz=28,slow=22,SNR=7.6						
URZ	**Urewera**	**9.86**	**212**	Pn	Pn	20 47 17.2	-0.3
	0.4nm,0.3s,baz=257,slow=2.6,SNR=3.4						
URZ				Sn	Sn	20 49 02.2	-6.6
	0.4nm,0.3s,baz=211,slow=2.4,SNR=4.6						
ASAR	**Alice Springs**	**44.60**	**266**	P	P	20 53 09.1	+0.3
	0.3nm,0.6s,baz=103,slow=6.8,SNR=7.5						
WRA	**Warramunga Arr**	**45.56**	**271**	P	P	20 53 15.9	-0.5
	0.5nm,0.6s,baz=111,slow=7.7,SNR=8.5						
KURBB	**Kurchatov Arra**	**121.90**	**314**	PKP	PKPdf	21 03 49.4	-0.9
	0.2nm,0.7s,baz=114,slow=2.0,SNR=4.7						
FINES	**FINESS Array B**	**145.28**	**341**	PKPbc	PKPbc	21 04 33.1	-0.2
	0.6nm,0.5s,baz=50,slow=2.4,SNR=9.4						

*DDA **30** 21:08:13.1, 40°.00N×35°.78E, h7km, Md2.9*
*CSEM **30** 21:08:14.4±0.2, 40°.09N×35°.82E, h2km, MD2.8, Error ellipse: s-maj=5.3km s-min=3.7km az=173.0*
*ISK **30** 21:08:14.1, 40°.11N×35°.83E, h4km, MD2.8*
ISC 30 21:08:14.4±1.2, 40°.07N±0°.03×35°.83E±0°.02, h4km±12km, n24, σ1s15/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOZ	**Yozgat**	**0.58**	**222**	*e*PG	**Pg**	**21 08 25.6**	**0.0**
YOZ	**Yozgat**	**0.58**	**222**	*e*Pg	**Pg**	**21 08 25.6**	**0.0**
TOKT	**Tokat**	**0.60**	**66**	*e*PG	**Pg**	**21 08 25.9**	**-0.1**
TOKT				*e*SG	**Sb**	**21 08 34.9**	**-1.6**
TOKT	**Tokat**	**0.60**	**66**	*e*Pg	**Pg**	**21 08 25.9**	**-0.1**
TOKT				*e*Sg	**Sb**	**21 08 34.9**	**-1.6**
COAL	**Corum-Alaca**	**0.67**	**286**	*i* P	**Pg**	**21 08 26.1**	**-1.2**
COAL				*i* S	**Sb**	**21 08 38.0**	**-0.4**
COAL	**Corum-Alaca**	**0.67**	**286**	P	**Pg**	**21 08 26.1**	**-1.2**
COAL				S	**Sb**	**21 08 38.0**	**-0.4**
SVSK	**Karacayir**	**0.91**	**100**	*e*PG	**Pb**	**21 08 32.2**	**-0.6**
SVSK	**Karacayir**	**0.91**	**100**	*e*Pg	**Pb**	**21 08 32.2**	**-0.6**
CORM	**Corum**	**0.92**	**277**	*e*PG	**Pb**	**21 08 32.8**	**-0.3**
CORM	**Corum**	**0.92**	**277**	*e*Pg	**Pb**	**21 08 32.8**	**-0.3**
KVT	**Kavak**	**1.02**	**9**	*e*PG	**Pg**	**21 08 33.6**	**-0.4**
KVT	**Kavak**	**1.02**	**9**	*e*Pg	**Pg**	**21 08 33.6**	**-0.4**
BNN	**Bunyan**	**1.22**	**179**	*e*PN	**Pn**	**21 08 38.9**	**+0.5**
BNN	**Bunyan**	**1.22**	**179**	*e*Pn	**Pn**	**21 08 38.9**	**+0.5**
SAMS	**Samsun-Alacam**	**1.31**	**12**	*i* P	**Pn**	**21 08 38.9**	**-0.7**
SAMS				*i* S	**Sn**	**21 08 59.6**	**+2.1**
SAMS	**Samsun-Alacam**	**1.31**	**12**	P	**Pn**	**21 08 38.9**	**-0.7**
SAMS				S	**Sn**	**21 08 59.7**	**+2.1**
CUKAN	**kangal_SIVAS**	**1.47**	**120**	*i* P	**Pn**	**21 08 41.3**	**-0.7**
CUKAN				*i* S	**Sg**	**21 09 02.5**	**+0.7**
CUKAN	**kangal_SIVAS**	**1.47**	**120**	P	**Pn**	**21 08 41.3**	**-0.7**
CUKAN				S	**Sg**	**21 09 02.5**	**+0.7**
BOYT	**Boyabat**	**1.52**	**333**	*i* P	Pn	21 08 36.8	-5.6
BOYT				*i* S	**Sg**	**21 09 05.5**	**+2.3**
SARI	**SarD1z-Kayseri**	**1.73**	**164**	*e*PN	**Pb**	**21 08 46.3**	**-0.6**
KAMT	**Kaman**	**1.78**	**247**	*e*PN	**Pb**	**21 08 46.5**	**-1.1**
KAMT	**Kaman**	**1.78**	**247**	*e*Pn	**Pb**	**21 08 46.6**	**-1.1**
SUSE	**Susehri**	**1.83**	**85**	*i* P	**Pb**	**21 08 47.5**	**-1.0**
SUSE				*i* S	**Sg**	**21 09 15.2**	**+2.1**
SUSE	**Susehri**	**1.83**	**85**	P	**Pb**	**21 08 47.5**	**-1.0**
SUSE				S	**Sg**	**21 09 15.2**	**+2.1**

*CSEM **30** 21:11:12.2, 38°.31N×21°.75E, h9km, ML0.9/1*
ATH 30 21:11:12.2, 38°.31N×21°.75E, h9km±2km, ML0.9, Error ellipse: s-maj=2.4km s-min=0.9km az=161.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.04**	**140**	P	Pg	21 11 13.7	-0.3
UPR				S	Sg	21 11 15.3	+0.1
UPR	**University Cam**	**0.04**	**140**	P	Pg	21 11 13.7	-0.3
UPR				S	Sg	21 11 15.3	0.0
TRIZ	**Trizonia**	**0.26**	**78**	P	Pg	21 11 17.5	+0.2
TRIZ				S	Sg	21 11 21.5	+0.7
SERG	**Sergoula**	**0.26**	**67**	P	Pg	21 11 17.4	0.0
SERG				S	Sg	21 11 21.8	+0.9
ANX	**Ano Chora**	**0.31**	**25**	P	Pg	21 11 17.9	-0.5
ANX				S	Sg	21 11 22.6	+0.1
KALE	**Kalithea**	**0.31**	**76**	P	Pg	21 11 18.1	-0.3
KALE				S	Sg	21 11 23.5	+0.9
KALE	**Kalithea**	**0.31**	**76**	P	Pg	21 11 18.1	-0.3
KALE				S	Sg	21 11 23.5	+0.9
RLS	**Riolos of Patr**	**0.34**	**222**	P	Pg	21 11 19.3	+0.4
PVO	**Paravola**	**0.35**	**329**	P	Pg	21 11 18.9	-0.2
PVO				S	Sg	21 11 24.8	+1.0
PVO	**Paravola**	**0.35**	**329**	P	Pg	21 11 18.9	-0.2
PVO				S	Sg	21 11 24.8	+0.9
DRO	**Drossia**	**0.36**	**186**	P	Pg	21 11 19.5	+0.2
DRO				S	Sg	21 11 25.1	+1.0
DRO	**Drossia**	**0.36**	**186**	P	Pg	21 11 19.4	+0.1
DRO				S	Sg	21 11 25.1	+0.9
KLV	**Kalavryta, Ach**	**0.41**	**131**	P	Pg	21 11 20.0	-0.3
KLV				S	Sg	21 11 25.6	-0.1
KLV	**Kalavryta, Ach**	**0.41**	**131**	P	Pg	21 11 20.0	-0.3
KLV				S	Sg	21 11 25.6	-0.1

*IDC **30** 21:11:17.5±45.0, 16°.91S×171°.94W, h0km, mb4.4/3, mb1 4.6/3, mb1mx3.7/31, mbtmp4.4/3, Error ellipse: s-maj=870.9km s-min=177.2km az=80.0*
*ISCJB **30** 21:11:18.8±0.8, 16°.9S±0°.1×172°.1W±0°.1, h20km, mb4.3/11, Error ellipse: s-maj=19.5km s-min=13.0km az=26.9*
*NEIC **30** 21:11:22.9±0.5, 16°.89S×172°.04W, h35km, mb4.5/7, Error ellipse: s-maj=14.4km s-min=9.5km az=116.0*
ISC 30 21:11:20.7±0.8, 16°.9S±0°.1×172°.0W±0°.1, h20km, n15, σ0s58/15, mb4.5/11, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FUNA	**Funafuti**	**11.93**	**313**	*e*Pn	**Pn**	**21 14 09.8**	**-0.1**
RAO	**Raoul Island**	**13.45**	**203**	*e*Pn	**Pn**	**21 14 29.7**	**-0.8**
HNR	**Honiara**	**28.26**	**282**	*e*P	**P**	**21 17 12.1**	**-0.8**
	19nm,0.5s						
STKA	**Stephens Creek**	**44.48**	**242**	P	**P**	**21 19 31.5**	**+0.6**
	1.8nm,0.5s,baz=82,slow=10,SNR=5.5						
MIDW	**Midway**	**45.13**	**353**	P	**P**	**21 19 36.2**	**+0.4**
	38nm,0.8s						
WRAB	**Tennant Creek**	**50.81**	**258**	*e*P	**P**	**21 20 20.4**	**+0.2**
	1.4nm,0.6s						
WRA	**Warramunga Arr**	**50.82**	**258**	P	**P**	**21 20 20.4**	**0.0**
	1.4nm,0.5s,baz=97,slow=6.7,SNR=56						
ASAR	**Alice Springs**	**50.94**	**253**	P	**P**	**21 20 21.4**	**+0.3**
	7.9nm,0.6s,baz=90,slow=8.6,SNR=181						
CASY	**Casey**	**69.63**	**205**	*e*P	**P**	**21 22 29.2**	**+0.9**
	0.2nm,0.8s						
CMB	**Columbia Colle**	**73.01**	**40**	*e*P	**P**	**21 22 48.5**	**-0.7**
	2.4nm,0.5s						
PMR	**Palmer**	**80.31**	**11**	*e*P	**P**	**21 23 29.6**	**-0.3**
	2.8nm,0.4s						
NEW	**Newport**	**81.19**	**34**	*e*P	**P**	**21 23 35.3**	**+0.3**
	1.2nm,0.9s						
COLA	**College**	**83.57**	**10**	*e*P	**P**	**21 23 46.7**	**-0.3**
	3.2nm,0.9s						
LSA	**Lhasa**	**103.97**	**297**	*e*Pdif	**Pdif**	**21 25 23.5**	**+0.3**
KIV	**Kislovodsk**	**140.19**	**320**	*e*PKPdf	**PKPdf**	**21 30 48.9**	**+0.6**

*CSEM **30** 21:12:28.3±0.4, 43°.92N×18°.34E, h5km, ML1.3, Error ellipse: s-maj=8.2km s-min=7.1km az=12.0*
BEO 30 21:12:29.4±0.4, 43°.94N×18°.33E, h0km, M1.3/3, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBLS	**Lazići**	**0.78**	**95**	*e*Pg	Pg	21 12 44.4	0.0
BBLS	**Lazići**	**0.78**	**95**	*e*Pg	Pg	21 12 44.4	0.0
TEKS	**Tekeris**	**1.05**	**54**	*e*Pg	Pg	21 12 48.3	-1.3
TEKS				*e*Sg	Sg	21 13 04.3	-0.6
TEKS	**Tekeris**	**1.05**	**54**	*e*Pg	Pg	21 12 48.3	-1.3
TEKS				*e*Sg	Sb	21 13 04.3	-0.6
BLY	**Banja Luka**	**1.15**	**315**	*e*Pg	Pg	21 12 50.6	-0.9
BLY				*e*Sg	Sg	21 13 06.7	+0.2
BLY	**Banja Luka**	**1.15**	**315**	*e*Pg	Pg	21 12 50.6	-0.9
BLY				*e*Sg	Sg	21 13 06.7	+0.2
DIVS	**Divibare**	**1.21**	**82**	*e*Pg	Pg	21 12 50.7	-1.9
DIVS				*e*Sg	Sg	21 13 06.7	-1.5
DIVS	**Divibare**	**1.21**	**82**	*e*Pg	Pg	21 12 50.7	-1.9
DIVS				*e*Sg	Sg	21 13 06.7	-1.5
TREB	**Trebinje**	**1.22**	**179**	*e*Pg	Pg	21 12 50.6	-2.2
TREB				*e*Sg	Sg	21 13 08.7	+0.1
TREB	**Trebinje**	**1.22**	**179**	*e*Pg	Pg	21 12 50.6	-2.2
TREB				*e*Sg	Sg	21 13 08.7	+0.1
UDBI	**Udbina**	**1.94**	**289**	*i* Pn	Pn	21 13 03.5	-0.1
UDBI				Sn	Sn	21 13 28.5	-0.2
UDBI	**Udbina**	**1.94**	**289**	Sn	Sn	21 13 28.5	-0.2

*NIED **30** 21:25:00, 37°.40N×142°.00E, h5km, Mw4.3 Best double couple: M0 3.05000×10^15 NP1:φs197.00000°, δ44.00000°, λ-126.00000°. NP2:φs62.00000°, δ56.00000°, λ-60.00000°.*
*JMA **30** 21:25:19.1±0.2, 37°.45N×141°.94E, h21km±3km, M4.2*
JMA Felt I J1.
*IDC **30** 21:25:24.1±2.6, 37°.41N×141°.83E, h41km±25km, mb3.6/16, mb1 3.9/19, mb1mx3.8/41, mbtmp3.9/19, ML3.1/3, MS2.8/1, Ms1 2.8/1, ms1mx2.6/43, Error ellipse: s-maj=20.2km s-min=13.4km az=93.0*
ISC 30 21:25:18.6±1.9, 37°.44N±0°.05×141°.89E±0°.06, h3km±11km, n40, σ0s83/44, mb3.9/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.81**	**265**	P	**Pb**	**21 25 35.0**	**-0.4**
JFK				*e*S	**Sb**	**21 25 46.7**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.94**	**249**	P	**Pg**	**21 25 36.8**	**+0.3**
ONAJ				*e*S	**Sb**	**21 25 50.0**	**-0.3**
JMM	**Marumori**	**0.97**	**296**	P	**Pg**	**21 25 37.1**	**-0.1**
JMM				*e*S	**Sg**	**21 25 49.9**	**+0.2**
JIO	**Ouri**	**1.10**	**337**	P	**Pg**	**21 25 39.3**	**-0.3**
JIO				*e*S	**Sg**	**21 25 53.2**	**-0.6**
JFT	**Otama**	**1.24**	**274**	P	**Pn**	**21 25 42.2**	**-0.6**
JFT				*e*S	**Sg**	**21 25 58.8**	**+0.4**
JOU	**Okura**	**1.34**	**314**	P	**Pn**	**21 25 43.8**	**-0.4**
JOU				*e*S	**Sb**	**21 26 01.2**	**-0.7**
JHO	**Hitachi**	**1.35**	**232**	P	**Pn**	**21 25 43.0**	**-1.2**
JMK	**Ichinoseki**	**1.60**	**341**	P	**Pn**	**21 25 47.0**	**-0.7**
JYS	**Shirataka**	**1.64**	**299**	P	**Pn**	**21 25 48.6**	**+0.3**
JYS				*e*S	**Sb**	**21 26 10.7**	**+0.1**
JFY	**Yanaizu**	**1.74**	**269**	P	**Pb**	**21 25 50.4**	**-0.8**
JFY				*e*S	**Sb**	**21 26 12.9**	**-0.6**
JYK	**Kaneyama**	**1.91**	**321**	P	**Pn**	**21 25 51.8**	**-0.1**
MJAR	**Matsushiro Arr**	**3.08**	**254**	P	**Pn**	**21 26 09.5**	**+1.3**
	3.5nm,0.3s,baz=84,slow=16,SNR=32						
MJAR				S	**Sb**	**21 26 52.5**	**+0.4**
	10nm,0.3s,baz=57,slow=22,SNR=5.8						
MAT	**Matsushiro**	**3.08**	**254**	P	**Pn**	**21 26 09.5**	**+1.3**
MAT				S	**Sn**	**21 26 44.7**	**-0.9**
JHJ	**Hachijo jima 2**	**4.65**	**202**	P	**Pn**	**21 26 30.0**	**+0.4**
	14nm,0.3s,baz=348,slow=23,SNR=12						
JHJ				S	**Sn**	**21 27 23.0**	**-1.0**
	22nm,0.3s,baz=90,slow=20,SNR=4.4						
USRK	**Ussuriysk Ar.**	**10.09**	**315**	P	**Pn**	**21 27 47.4**	**+3.1**
	0.2nm,0.3s,baz=124,slow=14,SNR=7.0						
SEY	**Seymchan**	**26.32**	**11**	P	**P**	**21 30 55.9**	**+0.7**
	4.2nm,0.9s,baz=192,slow=11,SNR=7.8						
SONM	**Songino Array**	**27.88**	**303**	P	**P**	**21 31 10.1**	**+0.6**
	1.0nm,0.7s,baz=96,slow=7.5,SNR=6.2						
H11N2	**WAKE ISLAND Hy**	**28.03**	**122**	T	T	22 00 31.3	
	baz=314,slow=75,SNR=271						
H11N1	**WAKE ISLAND Hy**	**28.04**	**122**	T	T	22 00 32.8	
	baz=314,slow=75,SNR=230						
H11N3	**WAKE ISLAND Hy**	**28.05**	**122**	T	T	22 00 33.4	
	baz=314,slow=75,SNR=195						
H11S1	**WAKE ISLAND Hy**	**28.77**	**124**	T	T	22 01 27.1	
	baz=316,slow=76,SNR=186						
H11S3	**WAKE ISLAND Hy**	**28.77**	**124**	T	T	22 01 25.1	
	baz=316,slow=76,SNR=177						
H11S2	**WAKE ISLAND Hy**	**28.78**	**124**	T	T	22 01 27.2	
	baz=316,slow=76,SNR=129						
JAY	**Jayapura**	**39.77**	**182**	LR	LR	21 48 56.5	
	comp=Z,14nm,19.0s,baz=182,slow=36						
ZALV	**Zalesovo Beam**	**41.92**	**312**	P	**P**	**21 33 09.6**	**-0.6**
	1.1nm,0.6s,baz=97,slow=6.2,SNR=5.6						
CMAR	**Chiang Mai Arr**	**41.97**	**255**	P	**P**	**21 33 11.8**	**+0.8**
	0.3nm,0.8s,baz=57,slow=6.6,SNR=3.0						
MKAR	**Makanchi Array**	**44.23**	**302**	P	**P**	**21 33 28.9**	**-0.1**
	1.6nm,0.7s,baz=84,slow=9.0,SNR=9.2						
ILAR	**Eielson Array**	**48.94**	**33**	P	**P**	**21 34 05.7**	**0.0**
	0.7nm,0.7s,baz=265,slow=5.8,SNR=9.8						
INK	**Inuvik**	**53.85**	**27**	P	**P**	**21 34 44.2**	**+1.9**
	1.0nm,0.4s,baz=236,slow=11,SNR=4.2						
WRA	**Warramunga Arr**	**57.52**	**188**	P	**P**	**21 35 08.9**	**-0.3**
	1.3nm,0.6s,baz=6.4,slow=7.4,SNR=13						
ASAR	**Alice Springs**	**61.25**	**188**	P	**P**	**21 35 35.0**	**+0.1**
	0.8nm,0.8s,baz=12,slow=5.9,SNR=3.6						
YKA	**Yellowknife Ar**	**63.26**	**30**	P	**P**	**21 35 47.6**	**-0.4**
	0.7nm,0.7s,baz=302,slow=6.2,SNR=3.5						
FINES	**FINESS Array B**	**68.63**	**332**	P	**P**	**21 36 22.2**	**-0.3**
	2.9nm,0.9s,baz=46,slow=9.0,SNR=5.5						
NB2	**NORSAR Subarra**	**73.96**	**337**	P	**P**	**21 36 54.7**	**-0.1**
	comp=Z,1.3nm,0.7s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**73.96**	**337**	P	**P**	**21 36 54.8**	**-0.1**
	comp=Z,1.2nm,0.7s,baz=39,slow=5.8,SNR=4.7						
AKASG	**Malin Array Be**	**74.21**	**322**	P	**P**	**21 36 56.2**	**-0.3**
	comp=Z,0.3nm,0.2s,baz=46,slow=6.1,SNR=3.0						
PDAR	**Pinedale Array**	**77.11**	**46**	P	**P**	**21 37 13.9**	**+0.3**
	comp=Z,0.9nm,0.7s,baz=267,slow=0.7,SNR=6.7						
GERES	**GERESS Array B**	**82.56**	**328**	P	**P**	**21 37 41.8**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=14,slow=4.5,SNR=2.8						
TXAR	**Lajitas Array**	**89.57**	**53**	P	**P**	**21 38 17.9**	**+0.1**
	comp=Z,0.3nm,0.6s,baz=309,slow=3.9,SNR=4.4						
LPAZ	**La Paz**	**146.16**	**60**	PKPbc	**PKPbc**	**21 45 01.1**	**-0.3**
	comp=Z,4.8nm,1.3s,baz=342,slow=3.1,SNR=5.9						

*IDC **30** 21:41:31.8±1.9, 9°.77S×107°.91E, h0km, mb4.1/5, mb1 4.2/6, mb1mx3.7/36, mbtmp4.0/6, ML4.1/1, Error ellipse: s-maj=98.9km s-min=19.3km az=50.0*
*ISCJB **30** 21:41:32.0±0.5, 10°.03S±0°.05×107°.67E±0°.05, h23km, mb4.4/16, Error ellipse: s-maj=8.1km s-min=6.2km az=142.4*
*DJA **30** 21:41:33.3±2.1, 10°S±5°×10°8E±°, h21km±20km, M4.5/13, mb4.7/3, MLv4.4/13*
*NEIC **30** 21:41:35.6±0.5, 9°.95S×107°.67E, h35km, mb4.2/8, Error ellipse: s-maj=11.7km s-min=9.1km az=223.0*
ISC 30 21:41:33.8±0.6, 9°.95S±0°.06×107°.65E±0°.06, h23km, n35, σ1s24/38, mb4.1/16, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
XMIS	**Christmas Isla**	**2.03**	**255**	*e*Pn	**Pn**	**21 42 05.6**	**-1.1**
CMJI	**Cimerak**	**2.30**	**20**	P	**Pn**	**21 42 11.3**	**+1.0**
CISI	**Cisompet, Garu**	**2.39**	**4**	P	**Pn**	**21 42 11.8**	**+0.2**
CISI	**Cisompet, Garu**	**2.39**	**4**	*e*Pn	**Pn**	**21 42 11.5**	**-0.1**
CISI				*e*Sg	**Sb**	**21 42 42.8**	**-2.4**
CNJI	**Cibinong**	**2.68**	**349**	P	**Pn**	**21 42 15.9**	**+0.4**
LEMI	**Lembang**	**3.11**	**359**	P	**Pn**	**21 42 30.1**	**+1.6**
SKJI	**Sukabumi**	**3.12**	**340**	P	**Pn**	**21 42 22.6**	**+1.0**
UGM	**Wanagama**	**3.49**	**55**	P	**Pn**	**21 42 27.1**	**+0.3**
CGJI	**Cibinong**	**3.84**	**330**	P	**Pn**	**21 42 33.0**	**+1.5**
PCJI	**Pacitan**	**3.90**	**64**	P	**Pn**	**21 42 32.9**	**+0.6**
PWJI	**Pagerwojo**	**4.53**	**65**	P	**Pn**	**21 42 41.2**	**+0.2**
KASI	**Kota Agung**	**5.39**	**324**	P	**Pn**	**21 42 52.9**	**0.0**
	37nm,0.6s,0.3nm						
GMJI	**Gumukmas**	**5.96**	**74**	P	**Pn**	**21 43 01.4**	**+0.7**
JAGI	**Jajag, Banyuwa**	**6.59**	**78**	P	**Pn**	**21 43 09.5**	**+0.2**
JAGI	**Jajag, Banyuwa**	**6.59**	**78**	*e*Pn	**Pn**	**21 43 08.1**	**-1.3**
	67nm,0.6s						
COCO	**West Island**	**10.84**	**257**	Pn	**Pn**	**21 44 04.2**	**-3.4**
KSM	**Kuching**	**11.66**	**13**	Pn	**Pn**	**21 44 15.5**	**-3.4**
FITZ	**Fitzroy Crossi**	**19.23**	**117**	P	**Pn**	**21 45 57.7**	**+0.1**
	0.4nm,0.3s,baz=306,slow=7.0,SNR=12						
FITZ				S	Sn	21 49 13.2	-20
	0.3nm,0.3s,baz=225,slow=12,SNR=6.2						
WRA	**Warramunga Arr**	**27.59**	**114**	P	**P**	**21 47 19.5**	**-0.1**
	2.2nm,0.8s,baz=286,slow=11,SNR=18						
WRA				PcP	**PcP**	**21 50 38.0**	**+0.9**
	0.

s-min=16.8km az=65.0
ISC 30 21:58:45.4±1.0, 23°93N±0°03×122°65E±0°02, h32km±8km, n93, σ1824/128, mb3.9/15, 3D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID	ISC	Time h m s	Res ISC
				Op			
JYNG	**Yonagunijimaku**	**0.58**	**27**	P	**Pb**	**21 58 56.5**	**-0.7**
JYNG				S	**Sb**	**21 59 03.8**	**-1.5**
YOJ	**Yonaguni jima**	**0.62**	**32**	P	**Pb**	**21 58 57.1**	**-0.7**
YOJ				S	**Sb**	**21 59 05.0**	**-1.4**
ENA	**Nanau**	**0.97**	**301**	⇓*i* P	**Pb**	**21 59 03.6**	**0.0**
	baz=296						
ENA				*e*S	**Sb**	**21 59 17.5**	**+1.4**
	baz=296						
TWD	**Chiawan**	**0.98**	**279**	P	**Pb**	**21 59 03.4**	**-0.3**
	baz=275						
TWC	**Suao**	**0.99**	**313**	P	**Pb**	**21 59 03.6**	**-0.5**
	baz=308						
TWC				*e*S	**Sb**	**21 59 16.7**	**-0.2**
	baz=308						
HATJ	**Hateruma jima**	**1.06**	**83**	P	**Pb**	**21 59 05.1**	**-0.1**
HATJ				*e*S	**Sb**	**21 59 19.9**	**+1.1**
IRIF	**Iriomote-Funau**	**1.06**	**68**	P	**Pb**	**21 59 04.6**	**-0.6**
IRIF				*e*S	**Sn**	**21 59 17.9**	**+0.1**
EGS		**1.12**	**324**	*e*P	**Pb**	**21 59 05.6**	**-0.6**
	baz=320						
EGS				*e*S	**Sb**	**21 59 22.5**	**+2.0**
	baz=320						
ESL	**Shilin**	**1.12**	**264**	*e*P	**Pn**	**21 59 05.3**	**+0.4**
	baz=262						
ILA	**Ilan**	**1.17**	**315**	*e*P	**Pb**	**21 59 07.7**	**+0.7**
	baz=311						
TWE	**Neicheng**	**1.19**	**311**	*i* P	**Pb**	**21 59 07.1**	**-0.3**
	baz=307						
TWE				*e*S	**Sb**	**21 59 23.5**	**+1.0**
	baz=307						
ENTT	**Nioudou**	**1.22**	**306**	*i* P	**Pb**	**21 59 07.6**	**-0.2**
	baz=302						
ENTT				*e*S	**Sb**	**21 59 24.8**	**+1.6**
	baz=302						
TWB1	**Santiao Chiao**	**1.23**	**331**	*e*P	**Pb**	**21 59 06.9**	**-1.1**
	baz=327						
NNS	**Nan Shan**	**1.27**	**294**	*e*P	**Pb**	**21 59 08.3**	**-0.5**
	baz=290						
JKRS	**Kuro-shima**	**1.28**	**76**	P	**Pb**	**21 59 08.3**	**-0.5**
JKRS				S	**Sb**	**21 59 25.3**	**+0.4**
WHF	**Hehuan Shan**	**1.28**	**280**	*i* P	**Pb**	**21 59 08.4**	**-0.8**
	baz=277						
WHF				*e*S	**Sb**	**21 59 24.8**	**-0.8**
	baz=277						
EHY	**Hungye**	**1.29**	**251**	P	**Pb**	**21 59 08.4**	**-0.7**
	baz=249						
TWF1	**Yuli**	**1.37**	**245**	*e*P	**Pb**	**21 59 09.5**	**-0.9**
	baz=244						
NWF	**Wu-fen Shan**	**1.38**	**325**	*i* P	**Pb**	**21 59 09.6**	**-1.1**
	baz=321						
TWT	**Tachien**	**1.39**	**284**	P	**Pb**	**21 59 10.6**	**-0.2**
	baz=280						
NSK	**Sanguang**	**1.39**	**302**	⇓*i* P	**Pb**	**21 59 10.1**	**-0.8**
	baz=299						
NSK				*e*S	**Sb**	**21 59 30.3**	**+2.0**
	baz=299						
TWA	**Mucha**	**1.43**	**317**	*e*P	**Pb**	**21 59 11.6**	**+0.2**
	baz=314						
JIJ	**Ishigaki jima**	**1.43**	**72**	P	**Pn**	**21 59 09.8**	**+0.7**
JIJ				S	**Sb**	**21 59 28.0**	**-1.2**
CHKT	**Chengkung**	**1.44**	**235**	*e*P	**Pn**	**21 59 09.9**	**+0.6**
	baz=234						
TAP1	**Taipei**	**1.51**	**317**	*e*P	**Pb**	**21 59 12.1**	**-0.6**
	baz=313						
TAP1				*e*S	**Sb**	**21 59 33.1**	**+1.6**
	baz=313						
TAP	**Taipei**	**1.52**	**317**	*e*P	**Pb**	**21 59 12.1**	**-0.9**
	baz=313						
SMLT	**Sun Moon Lake**	**1.60**	**269**	P	**Pb**	**21 59 13.5**	**-1.0**
	baz=266						
YUS	**Yu-Shan**	**1.62**	**255**	*e*P	**Pb**	**21 59 14.2**	**-0.8**
	baz=253						
TYC	**Yuchr**	**1.64**	**269**	P	**Pb**	**21 59 13.9**	**-1.2**
	baz=267						
TYC				*e*S	**Sb**	**21 59 38.2**	**+2.8**
	baz=267						
TWY	**Chenhua**	**1.65**	**325**	*e*P	**Pb**	**21 59 13.3**	**-1.7**
	baz=321						
JISG	**Ishigakijimahi**	**1.65**	**66**	P	**Pn**	**21 59 12.6**	**+0.5**
JISG				*e*S	**Sn**	**21 59 32.7**	**+0.5**
NSTT	**Nanjuang**	**1.66**	**295**	*e*P	**Pb**	**21 59 14.7**	**-0.6**
	baz=292						
NCU	**National Centr**	**1.69**	**308**	*e*P	**Pb**	**21 59 17.2**	**+1.4**
	baz=305						
ALS	**Alishan**	**1.74**	**256**	*e*P	**Pb**	**21 59 16.0**	**-0.9**
	baz=255						
TWQ1	**Liyutan**	**1.77**	**284**	P	**Pb**	**21 59 16.7**	**-0.4**
	baz=281						
TWQ1				*e*S	**Sb**	**21 59 39.9**	**+1.0**
	baz=281						
PCYT	**Pengchaiyu**	**1.77**	**343**	*e*P	**Pb**	**21 59 14.5**	**+0.7**
	baz=340						
NSY	**Sanyi**	**1.79**	**286**	*e*P	**Pb**	**21 59 17.2**	**-0.4**
	baz=283						
NSY				*e*S	**Sb**	**21 59 38.8**	**-0.9**
	baz=283						
WNT	**Mingjian**	**1.80**	**269**	*e*P	**Pb**	**21 59 17.7**	**0.0**
	baz=266						
WNT				*e*S	**Sb**	**21 59 40.0**	**+0.1**
	baz=266						
TCU	**Taichung**	**1.82**	**277**	*e*P	**Pb**	**21 59 17.7**	**-0.4**
	baz=275						
TCU				*e*S	**Sb**	**21 59 41.3**	**+0.9**
	baz=275						
TWG	**Pinlang**	**1.82**	**233**	*e*P	**Pn**	**21 59 15.7**	**+1.1**
	baz=232						
CHN5	**Tsauling**	**1.84**	**260**	P	**Pb**	**21 59 17.7**	**-0.8**
	baz=258						
STYT	**Tauyuan**	**1.90**	**247**	*e*P	**Pb**	**21 59 18.3**	**-1.1**
	baz=245						
WTP	**Ta-pu**	**1.99**	**250**	*e*P	**Pb**	**21 59 19.8**	**-1.2**
	baz=249						
JTJ	**Tarama**	**2.00**	**69**	P	**Pn**	**21 59 17.8**	**+0.8**
JTJ				*e*S	**Sn**	**21 59 42.3**	**+1.4**
CHN2	**Minshiung**	**2.03**	**259**	*e*P	**Pb**	**21 59 21.3**	**-0.4**
	baz=257						
ECL	**Taimali**	**2.05**	**230**	*e*P	**Pn**	**21 59 18.5**	**+0.8**
	baz=229						
SGST	**Jiashian**	**2.08**	**246**	*e*P	**Pb**	**21 59 22.2**	**-0.3**
	baz=245						
SGST				*e*S	**Sb**	**21 59 47.9**	**0.0**
	baz=245						
CHN1	**Nanshi**	**2.09**	**250**	P	**Pb**	**21 59 21.7**	**-0.9**
	baz=248						
CHN1				*e*S	**Sb**	**21 59 48.2**	**+0.1**
	baz=248						
TWK	**Hsinying**	**2.09**	**252**	*e*P	**Pb**	**21 59 21.9**	**-0.8**
	baz=250						
TWK				*e*S	**Sb**	**21 59 48.5**	**+0.2**
	baz=250						
LAY	**Lan-yu**	**2.14**	**209**	*e*P	**Pn**	**21 59 19.0**	**+0.1**
	baz=209						
WTCT	**Ta-ch'eng**	**2.17**	**269**	*e*P	**Pb**	**21 59 22.4**	**-1.6**
	baz=267						
WTCT				*e*S	**Sb**	**21 59 49.9**	**-0.6**
	baz=267						
SSD	**Sandimen**	**2.20**	**238**	*e*P	**Pb**	**21 59 24.1**	**-0.4**
	baz=237						
WSF	**Szhu**	**2.25**	**263**	*e*P	**Pb**	**21 59 23.6**	**-1.7**
	baz=261						
WSF				*e*S	**Sb**	**21 59 52.2**	**-0.4**
	baz=261						
EAST	**Anshuo**	**2.27**	**227**	*e*P	**Pn**	**21 59 21.9**	**+1.2**
	baz=227						
CHN8	**Yiju**	**2.31**	**256**	*e*S	**Sb**	**21 59 53.1**	**-1.4**
	baz=254						
TWM1	**Shoushan**	**2.33**	**242**	*e*P	**Pb**	**21 59 24.5**	**-2.2**
	baz=241						
SCZT	**Fangliau**	**2.43**	**231**	*e*P	**Pb**	**21 59 27.2**	**-1.2**
	baz=230						
JIRB	**Irabujima**	**2.47**	**68**	P	**Pn**	**21 59 24.3**	**+0.9**
JIRB				S	**Sn**	**21 59 53.6**	**+1.2**
JIKM	**Ikemajima**	**2.56**	**67**	P	**Pn**	**21 59 25.6**	**+0.9**
JIKM				S	**Sn**	**21 59 56.0**	**+1.2**
JMJ	**Miyako jima 2**	**2.56**	**69**	P	**Pn**	**21 59 26.3**	**+1.6**
JMJ				*e*S	**Sn**	**21 59 57.0**	**+2.1**
TWK1	**Hengchun**	**2.61**	**221**	*e*P	**Pn**	**21 59 28.1**	**+2.7**
	baz=220						
JOGS	**Gusukube**	**2.64**	**71**	P	**Pn**	**21 59 27.7**	**+1.9**
JOGS				S	**Sn**	**21 59 59.4**	**+2.6**
PNG	**Penghu**	**2.86**	**263**	P	**Pn**	**21 59 31.1**	**+2.3**
	baz=261						
PNG				*e*S	**Sn**	**22 00 04.2**	**+2.0**
	baz=261						
QZH	**Quanzhou**	**3.83**	**286**	⇓Pn	**Pn**	**21 59 42.8**	**+0.6**
QZH				Sn	**Sn**	**22 00 22.5**	**-3.7**
QZH				smax	smax		
	comp=N,210nm,0.6s						
QZH				smax	smax		
	comp=E,150nm,0.8s						
JKE	**Kume jima 2**	**4.44**	**57**	P	**Pn**	**21 59 50.9**	**+0.4**
JKE				*e*S	**Sn**	**22 00 41.3**	**+0.1**
JAGN	**Aguni-jima**	**4.93**	**57**	P	**Pn**	**21 59 57.8**	**+0.6**
JAGN				*e*S	**Sn**	**22 00 53.5**	**+0.4**
JNTH	**Nagotoyohara**	**5.50**	**61**	P	**Pn**	**22 00 05.2**	**+0.1**
JIH	**Iheya**	**5.71**	**56**	P	**Pn**	**22 00 07.8**	**-0.2**
JOW	**Kunigami**	**5.85**	**59**	P	**Pn**	**22 00 09.3**	**-0.7**
	4.8nm,0.3s,baz=149,slow=19,SNR=28						
JOW				S	**Sn**	**22 01 13.7**	**-2.2**
	0.8nm,0.3s,baz=150,slow=27,SNR=2.7						
JOW	**Kunigami**	**5.85**	**59**	P	**Pn**	**22 00 09.2**	**-0.7**
JOKE	**Okinoerabujima**	**6.34**	**56**	P	**Pn**	**22 00 15.2**	**-1.5**
JTK	**Tokunoshima**	**6.85**	**55**	P	**Pn**	**22 00 21.7**	**-1.9**
JAMN	**Amaminishikomi**	**7.27**	**52**	P	**Pn**	**22 00 27.6**	**-1.8**
JAM	**Amami Oshima**	**7.67**	**53**	P	**Pn**	**22 00 33.2**	**-1.8**
KSRS	**Korea Array**	**14.21**	**17**	P	**Pn**	**22 02 07.0**	**+2.5**
	1.1nm,0.3s,baz=196,slow=11,SNR=23						
USRK	**Ussuriysk Ar.**	**21.62**	**18**	P	**P**	**22 03 30.5**	**-2.2**
	3.5nm,0.7s,baz=198,slow=13,SNR=7.2						
GTA	**Gaotai**	**24.72**	**314**	*e*P	**P**	**22 04 04.3**	**+0.3**
GTA				pP	pP	22 04 08.8	-4.3
GTA				sP	sP	22 04 11.5	-5.4
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KLR	**Kul'dur**	**26.25**	**14**	P	**P**	**22 04 16.0**	**-1.5**
	1.0nm,0.4s,baz=217,slow=4.8,SNR=9.3						
SONM	**Songino Array**	**27.14**	**336**	P	**P**	**22 04 24.6**	**-1.2**
	1.4nm,0.6s,baz=151,slow=9.3,SNR=8.9						
MKAR	**Makanchi Array**	**39.45**	**316**	P	**P**	**22 06 12.5**	**-0.1**
	1.2nm,0.6s,baz=98,slow=9.7,SNR=17						
ZALV	**Zalesovo Beam**	**41.19**	**327**	P	**P**	**22 06 25.1**	**-1.8**
	0.9nm,0.5s,baz=113,slow=8.8,SNR=5.2						
ZALV				PcP	**PcP**	**22 08 24.8**	**-0.7**
	0.7nm,0.5s,baz=136,slow=4.6,SNR=3.3						
KURBB	**Kurchatov Arra**	**43.17**	**320**	P	**P**	**22 06 42.2**	**-0.9**
	1.1nm,0.2s,baz=108,slow=9.8,SNR=5.4						
WRA	**Warramunga Arr**	**45.07**	**164**	P	**P**	**22 07 00.0**	**+1.4**
	1.3nm,0.6s,baz=345,slow=8.8,SNR=5.6						
ASAR	**Alice Springs**	**48.56**	**166**	P	**P**	**22 07 28.3**	**+2.4**
	0.4nm,0.5s,baz=347,slow=8.1,SNR=4.3						
BVAR	**Borovoye Array**	**48.72**	**321**	P	**P**	**22 07 26.4**	**-0.4**
	0.6nm,0.5s,baz=113,slow=8.0,SNR=9.8						
BVAR				PcP	**PcP**	**22 08 51.5**	**-0.1**
	1.3nm,0.5s,baz=109,slow=3.3,SNR=10						
HNR	**Honiara**	**49.27**	**128**	LR	LR	22 28 12.2	
	comp=Z,71nm,18.6s,baz=341,slow=36						
AKTO	**Aktyubinsk**	**55.89**	**316**	LR	LR	22 31 44.3	
	comp=Z,63nm,20.7s,baz=56,slow=35						
GEYT	**Alibeck**	**56.08**	**301**	P	**P**	**22 08 23.6**	**+1.9**
	3.1nm,0.7s,baz=45,slow=4.4,SNR=9.2						
ARCES	**ARCESS Array B**	**70.27**	**338**	P	**P**	**22 09 53.6**	**-1.7**
	0.7nm,0.6s,baz=58,slow=4.7,SNR=3.8						
FINES	**FINESS Array B**	**72.34**	**330**	P	**P**	**22 10 07.1**	**-0.7**
	0.8nm,0.5s,baz=54,slow=5.8,SNR=11						
BRTR	**Keskin Array B**	**74.40**	**307**	P	**P**	**22 10 21.3**	**+0.7**
	0.7nm,0.5s,baz=92,slow=5.4,SNR=5.5						
NB2	**NORSAR Subarra**	**79.07**	**333**	P	**P**	**22 10 44.7**	**-1.7**
	comp=Z,0.6nm,0.5s,baz=52,slow=5.9						
NOA	**NORSAR Array B**	**79.07**	**333**	P	**P**	**22 10 45.3**	**-1.1**
	comp=Z,0.8nm,0.6s,baz=54,slow=5.7,SNR=5.1						

*IDC **30** 21:59:22.2±0.6, 9°53N×122°10E, h0km, mb4.0/13, mb1 4.1/13, mb1mx3.8/45, mbtmp4.0/13, Error ellipse: s-maj=31.3km s-min=14.4km az=69.0*
*MAN **30** 21:59:22, 9°54N×121°85E, h14km, mb4.8, ML3.7, MS3.7*
*NEIC **30** 21:59:23.6±0.3, 9°51N×122°05E, h10km, mb4.5/18, Error ellipse: s-maj=9.0km s-min=6.5km az=65.0*
*ISCJB **30** 21:59:25.5±0.3, 9°45N±0°04×121°94E±0°04, h37km, mb4.3/31, Error ellipse: s-maj=6.2km s-min=5.2km az=32.7*
ISC 30 21:59:27.3±0.5, 9°50N±0°05×121°94E±0°06, h37km, n50, σ1°35/55, mb4.2/30, 4C-3D, Sulu Sea

Code	Station Name	Δ°	AZ°	Phase ID	ISC	Time h m s	Res ISC
				Op			
SNPH	**Sibulan**	**1.29**	**97**	⇓*i* P	**Pn**	**21 59 47.3**	**-1.6**
SNPH				*i* S	**Sn**	**22 00 06.4**	**+1.4**
DCPH	**Dipolog City**	**1.67**	**123**	⇓*e* P	**Pn**	**21 59 52.0**	**-2.0**
TBP	**Tagbilaran**	**1.91**	**84**	*i* P	**Pn**	**22 00 00.9**	**+3.5**
LLP	**Lapu-Lapu**	**2.16**	**68**	⇑*e* P	**Pn**	**21 59 59.7**	**-1.1**
LLP				*e*S	**Sn**	**22 00 27.1**	**+0.8**
RCP	**Roxas**	**2.20**	**21**	⇑*e* P	**Pn**	**21 59 59.2**	**-2.1**
RCP				*e*S	**Sn**	**22 00 29.4**	**+2.1**
CGP	**Cagayan de Oro**	**2.92**	**111**	⇑*e* P	**Pn**	**22 00 10.9**	**-0.3**
CGP				*i* S	**Sn**	**22 00 47.9**	**+2.9**
CTBH	**Cotabato--PC H**	**3.21**	**134**	⇑*i* P	**Pn**	**22 00 14.9**	**-0.4**
PLP	**Palo**	**3.42**	**61**	⇓*i* P	**Pn**	**22 00 17.6**	**-0.6**
DAV	**Davao City (W)**	**4.34**	**123**	Pn	**Pn**	**22 00 30.7**	**-0.1**
KKM	**Kota Kinabalu**	**6.62**	**239**	*e*Pn	**Pn**	**22 01 03.0**	**+0.7**
NACB	**Ninganchiao**	**14.60**	**359**	*e*Pn	**Pn**	**22 02 52.5**	**+1.1**
TATO	**Taipei**	**15.40**	**358**	*e*Pn	**Pn**	**22 03 01.1**	**-0.8**
	12nm,0.6s						
GUMO	**Guam**	**22.83**	**78**	*e*P	**P**	**22 04 25.9**	**-1.5**
	33nm,0.4s						
CMAR	**Chiang Mai Arr**	**24.00**	**294**	P	**P**	**22 04 39.9**	**+1.1**
	2.1nm,1.0s,baz=118,slow=7.7,SNR=6.5						
INCN	**Inchon**	**28.18**	**8**	*e*P	**P**	**22 05 16.0**	**-0.5**
	7.6nm,0.4s						
MAJO	**Matsushiro**	**30.71**	**26**	*e*P	**P**	**22 05 39.0**	**+0.2**
	1.2nm,0.5s						
PMG	**Port Moresby**	**31.36**	**126**	*e*P	**P**	**22 05 43.7**	**-1.0**
	13nm,0.7s						
WRAB	**Tennant Creek**	**31.70**	**157**	*e*P	**P**	**22 05 47.1**	**-0.6**
	3.9nm,0.6s						
WRA	**Warramunga Arr**	**31.70**	**157**	P	**P**	**22 05 46.8**	**-0.9**
	4.0nm,0.7s,baz=339,slow=9.2,SNR=42						
WRA				PcP	**PcP**	**22 08 39.8**	**+0.7**
	0.8nm,0.8s,baz=335,slow=2.6,SNR=5.3						
ASAR	**Alice Springs**	**34.98**	**161**	P	**P**	**22 06 16.2**	**0.0**
	2.2nm,0.7s,baz=339,slow=7.5,SNR=28						
ASAR				PcP	**PcP**	**22 08 48.9**	**+0.7**
	0.7nm,0.7s,baz=339,slow=2.6,SNR=6.7						
LSA	**Lhasa**	**35.10**	**309**	P	**P**	**22 06 18.7**	**+0.9**
	2.3nm,1.0s						
USRK	**Ussuriysk Ar.**	**35.66**	**12**	P	**P**	**22 06 21.7**	**-0.1**
	2.0nm,0.7s,baz=185,slow=10.0,SNR=3.9						
HIA	**Hailar**	**39.69**	**358**	P	**P**	**22 06 55.8**	**-0.1**
	4.3nm,0.5s						
SONM	**Songino Array**	**40.41**	**344**	P	**P**	**22 07 01.8**	**-0.2**
	0.2nm,0.4s,baz=152,slow=6.5,SNR=2.6						
STKA	**Stephens Creek**	**45.23**	**156**	P	**P**	**22 07 41.1**	**0.0**
	2.6nm,0.7s,baz=346,slow=10,SNR=8.2						
MKAR	**Makanchi Array**	**50.13**	**325**	P	**P**	**22 08 20.1**	**+1.1**
	2.7nm,0.7s,baz=126,slow=6.9,SNR=18						
PETK	**Petropavlovsk-**	**52.17**	**26**	P	**P**	**22 08 34.9**	**+0.7**
	1.1nm,0.7s,baz=244,slow=6.3,SNR=2.5						
PET	**Petropavlovsk**	**52.53**	**27**	*e*P	**P**	**22 08 36.4**	**-0.5**
	13nm,1.1s						
AAK	**Ala-Archa**	**52.92**	**317**	*e*P	**P**	**22 08 41.2**	**+1.1**
	1.2nm,0.5s						
KURBB	**Kurchatov Arra**	**54.35**	**327**	P	**P**	**22 08 51.7**	**+1.5**
	1.2nm,0.2s,baz=121,slow=8.9,SNR=6.5						
KURK	**Kurchatov**	**54.35**	**328**	P	**P**	**22 08 51.7**	**+1.5**
ARU	**Arti**	**67.55**	**327**	*e*P	**P**	**22 10 20.3**	**+0.5**
	0.9nm,0.6s						
UNV	**Unalaska Valle**	**71.53**	**36**	*e*P	**P**	**22 10 43.6**	**-0.7**
	3.4nm,0.4s						
KIV	**Kislovodsk**	**75.74**	**313**	*e*P	**P**	**22 11 11.0**	**+1.5**
	3.0nm,1.0s						
PMR	**Palmer**	**81.22**	**29**	*e*P	**P**	**22 11 38.2**	**-1.0**
	1.6nm,0.5s						
SML	**Sawmill**	**81.58**	**29**	*e*P	**P**	**22 11 38.3**	**-2.9**
	0.5nm,0.8s						
ILAR	**Eielson Array**	**81.99**	**26**	P	**P**	**22 11 41.7**	**-1.5**
	0.4nm,0.7s,baz=261,slow=4.5,SNR=4.3						
BRTR	**Keskin Array B**	**82.71**	**309**	P	**P**	**22 11 48.0**	**+0.3**
	0.7nm,0.9s,baz=64,slow=6.6,SNR=3.5						
PAX	**Paxson**	**82.80**	**27**	*e*P	**P**	**22 11 43.4**	**-4.2**
	63nm,0.8s						
FINES	**FINESS Array B**	**84.53**	**331**	P	**P**	**22 11 56.8**	**+0.4**
	0.8nm,0.5s,baz=43,slow=6.3,SNR=4.9						
INK	**Inuvik**	**86.56**	**21**	P	**P**	**22 12 05.1**	**-1.2**
	1.5nm,0.8s,baz=309,slow=6.5,SNR=3.5						
INK	**Inuvik**	**86.56**	**21**	*e*P	**P**	**22 12 05.9**	**-0.4**
PSZ	**Piszkesteto**	**90.98**	**319**	*e*P	**P**	**22 12 26.6**	**-1.2**
	1.5nm,0.8s						
RES	**Resolute Bay**	**92.97**	**9**	P	**P**	**22 12 36.6**	**+0.3**
	3.6nm,0.7s						
STU	**Stuttgart**	**97.43**	**322**	*e*P	Pdif	22 12 58.2	+0.9
	4.1nm,0.5s						
NEW	**Newport**	**102.53**	**36**	*e*Pdif	**Pdif**	**22 13 19.4**	**-0.7**
WALA	**Waterton Lakes**	**103.94**	**34**	*e*Pdif	**Pdif**	**22 13 26.5**	**+0.1**
CMB	**Columbia Colle**	**105.15**	**46**	*e*Pdif	**Pdif**	**22 13 32.2**	**+0.2**
TXAR	**Lajitas Array**	**121.52**	**47**	PKP	**PKPdf**	**22 18 18.4**	**+0.6**
	0.3nm,0.8s,baz=321,slow=1.3,SNR=4.2						
PLCA	**Paso Flores**	**146.98**	**162**	PKPbc	**PKPab**	**22 19 07.7**	**-0.2**
	1.5nm,0.6s,baz=224,slow=2.7,SNR=5.5						

*ISCJB **30** 22:13:52.1±0.4, 33°07N±0°02×35°64E±0°04, h9km±4km, Error ellipse: s-maj=6.0km s-min=2.7km az=26.0*
*CSEM **30** 22:13:52.1±0.1, 33°07N×35°66E, h5km, MD2.4, Error ellipse: s-maj=7.0km s-min=2.2km az=98.0*
*GII **30** 22:13:52.3±0.0, 33°01N×35°60E, h4km, MD2.4/8*
*NSSC **30** 22:13:52.3±1.0, 33°02N×35°69E, h12km±6km, ML2.4*
*GRAL **30** 22:13:53.0±0.3, 33°07N×35°65E, h0km±2km, MD3.3*
ISC 30 22:13:51.4±1.0, 33°06N±0°02×35°64E±0°03, h15km±9km, n39, σ0°59/55, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID	ISC	Time h m s	Res ISC
				Op			
KSDI	**Kefar Szold**	**0.13**	**8**	Pg	**Pb**	**22 13 56.1**	**+0.5**
KSDI	**Kefar Szold**	**0.13**	**8**	Pg	**Pb**	**22 13 56.1**	**+0.5**
KSHT	**Keshet**	**0.17**	**119**	Pg	**Pb**	**22 13 57.5**	**+1.3**
MMA0B	**Mount Meron ar**	**0.20**	**256**	Pg	**Pb**	**22 13 57.1**	**+0.2**
MMA0B				Sg	**Sb**	**22 14 00.8**	**+0.3**
NAQL	**Naqoura**	**0.42**	**277**	*e*P	**Pb**	**22 14 00.6**	**+0.1**
NAQL	**Naqoura**	**0.42**	**277**	*e*P	**Pb**	**22 14 00.6**	**+0.1**
BRBR	**Barbar**	**0.43**	**37**	*e*P	**Pb**	**22 14 01.1**	**+0.2**
BRBR				*e*S	**Sb**	**22 14 07.5**	**+0.1**
BRBR				AML	AML	22 14 09.1	
	comp=N,440nm,0.2s						
BRBR				AML	AML	22 14 09.3	
	comp=E,284nm,0.4s						
RCY	**Rachaya**	**0.46**	**21**	*e*P	**Pb**	**22 14 01.1**	**-0.3**
RCY				*e*S	**Sg**	**22 14 07.1**	**0.0**
BLGI	**Bet Lehem HaGe**	**0.50**	**229**	Pg	**Pb**	**22 14 01.9**	**0.0**
DQRL	**Deir Qamar**	**0.64**	**355**	*e*P	**Pb**	**22 14 04.4**	**0.0**
DQRL				*e*S	**Sg**	**22 14 12.7**	**0.0**
DQRL	**Deir Qamar**	**0.64**	**355**	*e*P	**Pb**	**22 14 04.4**	**0.0**
DQRL				*e*S	**Sg**	**22 14 12.7**	**0.0**
MMLI	**Mount Malkishu**	**0.65**	**196**	Pg	**Pb**	**22 14 04.6**	**+0.1**
OFRI	**'Ofer**	**0.71**	**231**	Pg	**Pb**	**22 14 05.5**	**+0.1**
QASN	**Qassioun**	**0.71**	**49**	*e*P	**Pb**	**22 14 06.1**	**+0.6**
QASN				*e*S	**Sn**	**22 14 16.9**	**-0.8**
QASN				AML	AML	22 14 21.4	
	comp=E,423nm,0.5s						
QASN				AML	AML	22 14 22.9	
	comp=N,277nm,0.5s						
TOTH	**TOTAH**	**0.72**	**66**	*e*P	**Pn**	**22 14 06.4**	**-0.8**
HMDT	**Nahal Hemdat**	**0.81**	**187**	Pg	**Pb**	**22 14 07.6**	**+0.3**
HMDT				Sg	**Sn**	**22 14 19.2**	**-0.9**
HMDT	**Nahal Hemdat**	**0.81**	**187**	Pg	**Pb**	**22 14 07.6**	**+0.3**
HMDT				Sg	**Sn**	**22 14 19.2**	**-0.9**
BEYL	**Beirut**	**0.81**	**351**	*e*P	**Pb**	**22 14 07.5**	**+0.2**
BEYL	**Beirut**	**0.81**	**351**	*e*P	**Pb**	**22 14 07.4**	**+0.2**
BHL	**Bhannes**	**0.84**	**1**	*e*P	**Pb**	**22 14 07.7**	**0.0**
BHL	**Bhannes**	**0.84**	**1**	*e*P	**Pb**	**22 14 07.7**	**0.0**
SLTI	**Sal'it**	**0.96**	**212**	Pg	**Pb**	**22 14 09.9**	**+0.1**
SLTI				Sg	**Sn**	**22 14 23.9**	**+0.1**
SALA	**Sala**	**0.99**	**111**	*e*P	**Pg**	**22 14 10.4**	**-0.2**
SALA				*e*S	**Sb**	**22 14 22.1**	**-1.0**
SALA				AML	AML	22 14 25.5	
	comp=N,128nm,0.3s						
SALA				AML	AML	22 14 28.3	
	comp=E,22nm,0.3s						
MARH	**Ras Al Marh**	**1.19**	**36**	*e*P	**Pg**	**22 14 14.8**	**+0.3**
MARH				*e*S	**Sg**	**22 14 30.2**	**+0.1**
MARH				AML	AML	22 14 36.7	
	comp=E,96nm,0.2s						
MARH				AML	AML	22 14 41.6	
	comp=N,71nm,0.3s						
HWQ	**Hawqa**	**1.24**	**12**	*e*P	**Pg**	**22 14 15.1**	**-0.3**
HWQ	**Hawqa**	**1.24**	**12**	*e*P	**Pg**	**22 14 15.1**	**-0.3**
FKH	**Fakeheh**	**1.34**	**28**	*e*P	**Pb**	**22 14 16.6**	**+0.3**
FKH	**Fakeheh**	**1.34**	**28**	*e*P	**Pb**	**22 14 16.6**	**+0.3**
DSI	**Dead Sea**	**1.51**	**188**	Pn	**Pg**	**22 14 18.4**	**+0.6**
DSI				Sn	**Sg**	**22

	74nm,0.2s								
KOSI	**Kohlern**	**0.79**	**324**	Pg		**Pg**	**22 33 44.8**	**-0.3**
KOSI				Sg		**Sg**	**22 33 55.5**	**+0.2**
	30nm,0.4s								
KOSI	**Kohlern**	**0.79**	**324**	Pg		**Pg**	**22 33 44.8**	**-0.3**
KOSI				Sg		**Sg**	**22 33 55.5**	**+0.2**
	30nm,0.4s								
APPI	**Appiano**	**0.86**	**319**	Pg		**Pg**	**22 33 46.2**	**-0.3**
APPI				Sg		**Sg**	**22 33 57.8**	**+0.1**
	2µm,4.5s								
APPI	**Appiano**	**0.86**	**319**	Pg		**Pg**	**22 33 46.2**	**-0.3**
APPI				Sg		**Sg**	**22 33 57.8**	**+0.1**
	2µm,4.5s								
BALD	**Monte Baldo**	**0.87**	**261**	*e*Pg		**Pg**	**22 33 46.3**	**-0.4**
BALD	**Monte Baldo**	**0.87**	**261**	*e*P		**Pg**	**22 33 46.3**	**-0.4**
OZOL	**Ozolo**	**0.90**	**310**	*e*Pg		**Pb**	**22 33 47.4**	**-0.5**
OZOL	**Ozolo**	**0.90**	**310**	*e*P		**Pb**	**22 33 47.4**	**-0.5**
FVI	**Forni Avoltri**	**0.93**	**33**	Pg		**Pb**	**22 33 48.4**	**0.0**
FVI	**Forni Avoltri**	**0.93**	**33**	Pg		**Pb**	**22 33 48.4**	**0.0**
VINO	**Villanova**	**0.96**	**63**	Pg		**Pg**	**22 33 47.3**	**-1.2**
VINO				Sg		**Sb**	**22 34 02.4**	**+0.4**
VINO	**Villanova**	**0.96**	**63**	Pg		**Pg**	**22 33 47.3**	**-1.2**
VINO				Sg		**Sb**	**22 34 02.4**	**+0.4**
ZOU	**Zoufplan**	**0.97**	**41**	*e*Pg		**Pg**	**22 33 48.5**	**-0.2**
ABTA	**Abfaltersbach**	**0.98**	**19**	Pg		**Pg**	**22 33 48.5**	**-0.2**
	1.0nm,0.1s,SNR=8.9								
ABTA				Sg		**Sn**	**22 34 03.6**	**-0.7**
	8.9nm,0.4s								
RNI	**Roncone**	**1.00**	**279**	*e*Pg		**Pg**	**22 33 48.6**	**-0.6**
ABSI	**Aberstueckl**	**1.03**	**331**	Pg		**Pg**	**22 33 49.1**	**-0.6**
	46nm,0.3s								
ABSI	**Aberstueckl**	**1.03**	**331**	Pg		**Pg**	**22 33 49.1**	**-0.6**
	46nm,0.3s								
PTCC	**Patocco-Chiusa**	**1.08**	**57**	Pg		**Pg**	**22 33 50.2**	**-0.5**
PTCC				Sg		**Sb**	**22 34 05.9**	**+0.6**
	19nm,0.4s								
PTCC	**Patocco-Chiusa**	**1.08**	**57**	Pg		**Pg**	**22 33 50.2**	**-0.5**
PTCC				Sg		**Sb**	**22 34 05.9**	**+0.6**
	19nm,0.4s								
MABI	**Malga Bissina**	**1.09**	**283**	Pg		**Pg**	**22 33 50.3**	**-0.6**
	15nm,0.4s								
MABI	**Malga Bissina**	**1.09**	**283**	Pg		**Pg**	**22 33 50.3**	**-0.6**
	15nm,0.4s								
SABO	**M.te Sabotino**	**1.10**	**81**	Pg		**Pg**	**22 33 50.3**	**-0.7**
SABO				Sg		**Sb**	**22 34 06.5**	**+0.6**
	43nm,0.3s								
SABO	**M.te Sabotino**	**1.10**	**81**	*e*Pg		**Pb**	**22 33 51.2**	**-0.1**
SABO	**M.te Sabotino**	**1.10**	**81**	Pg		**Pg**	**22 33 50.3**	**-0.7**
SABO	**M.te Sabotino**	**1.10**	**81**	*e*P		**Pb**	**22 33 51.2**	**-0.1**
SABO				Sg		**Sb**	**22 34 06.5**	**+0.6**
	43nm,0.3s								
RISI	**Rein**	**1.12**	**1**	Pg		**Pb**	**22 33 51.8**	**0.0**
	40nm,0.3s								
RISI	**Rein**	**1.12**	**1**	Pg		**Pb**	**22 33 51.8**	**0.0**
	40nm,0.3s								
DRE	**Drenchia**	**1.17**	**72**	*e*Pg		**Pg**	**22 33 52.2**	**-0.2**
DRE	**Drenchia**	**1.17**	**72**	*e*P		**Pg**	**22 33 52.2**	**-0.2**
ACOM	**Acomizza, Ital**	**1.25**	**54**	Pg		**Pn**	**22 33 53.0**	**-1.0**
ACOM				Sg		**Sg**	**22 34 10.5**	**+0.3**
	28nm,0.4s								
ACOM	**Acomizza, Ital**	**1.25**	**54**	*e*Pg		**Pn**	**22 33 53.8**	**-0.2**
ACOM	**Acomizza, Ital**	**1.25**	**54**	Pg		**Pn**	**22 33 53.0**	**-1.0**
ACOM	**Acomizza, Ital**	**1.25**	**54**	*e*P		**Pn**	**22 33 53.8**	**-0.2**
ACOM				Sg		**Sg**	**22 34 10.5**	**+0.3**
	28nm,0.4s								
MOSI	**Grossmontoni**	**1.30**	**308**	Pg		**Pg**	**22 33 54.6**	**-0.3**
	41nm,0.4s								
MOSI	**Grossmontoni**	**1.30**	**308**	Pg		**Pg**	**22 33 54.6**	**-0.3**
	41nm,0.4s								
BRMO	**Bormio**	**1.33**	**300**	Pg		**Pg**	**22 33 55.0**	**-0.4**
	11nm,0.4s								
BRMO	**Bormio**	**1.33**	**300**	Pg		**Pg**	**22 33 55.0**	**-0.4**
	11nm,0.4s								
MYKA	**Terra Mystica**	**1.37**	**54**	Pg		**Pb**	**22 33 56.1**	**+0.1**
	4.0nm,0.2s,SNR=6.6								
MYKA				Sg		**Sg**	**22 34 15.4**	**+1.4**
	5.9nm,0.2s								
FUORN	**Ofenpass-Fuorn**	**1.47**	**303**	Pg		**Pn**	**22 33 56.7**	**-0.4**
	8.0nm,0.5s								
FUORN	**Ofenpass-Fuorn**	**1.47**	**303**	Pg		**Pn**	**22 33 56.7**	**-0.4**
	8.0nm,0.5s								
FETA	**Feichten**	**1.50**	**323**	Pg		**Pb**	**22 33 57.9**	**-0.3**
	0.8nm,0.1s,SNR=5.1								
FETA				Sg		**Sg**	**22 34 17.7**	**-0.5**
	1.4nm,0.1s								
KBA	**Koelnbreinsper**	**1.54**	**35**	Pg		**Pg**	**22 33 59.3**	**-0.2**
	3.2nm,0.3s								
KBA				Sg		**Sg**	**22 34 21.0**	**+1.5**
	6.4nm,0.3s								
WATA	**Walderalm**	**1.54**	**348**	Pg		**Pg**	**22 33 59.9**	**+0.4**
	5.0nm,0.2s,SNR=14								
WATA				Sg		**Sg**	**22 34 22.0**	**+2.5**
	3.4nm,0.1s								
MOTA	**Moosalm**	**1.65**	**337**	Pg		**Pg**	**22 34 01.1**	**-0.5**
	3.3nm,0.3s,SNR=13								
MOTA				Sg		**Sg**	**22 34 24.3**	**+1.3**
	6.2nm,0.2s								
OBKA	**Obir**	**1.87**	**68**	Pg		**Pb**	**22 34 04.9**	**-0.4**
	1.2nm,0.2s								
OBKA				Sg		**Sg**	**22 34 31.3**	**+1.2**
	3.8nm,0.3s								
RETA	**Reutte**	**1.88**	**333**	Pg		**Pg**	**22 34 05.4**	**-0.6**
	1.4nm,0.2s								
RETA				Sg		**Sg**	**22 34 32.3**	**+2.0**
	3.5nm,0.2s,SNR=5.9								
DAVA	**Damuels**	**2.09**	**315**	Pg		**Pb**	**22 34 08.3**	**+0.1**
	0.8nm,0.2s								
DAVA				Sg		**Sg**	**22 34 36.7**	**-0.3**
	6.3nm,0.5s								
SOKA	**Soboth**	**2.24**	**67**	Pg		**Pb**	**22 34 11.9**	**+1.1**
	0.6nm,0.3s								
SOKA				Sg		**Sg**	**22 34 44.3**	**+2.3**
	1.2nm,0.2s								
NVLJ	**Novalja**	**2.37**	**121**	*e*Pn		**Pn**	**22 34 08.3**	**-0.9**
NVLJ				Sn		**Sn**	**22 34 36.5**	**-1.9**
NVLJ	**Novalja**	**2.37**	**121**	*e*Pn		**Pn**	**22 34 08.2**	**-0.9**
NVLJ				Sn		**Sn**	**22 34 36.5**	**-1.9**
OZLJ	**Ozalj**	**2.41**	**94**	*e*Pn		**Pn**	**22 34 11.2**	**+1.4**
OZLJ				Sn		**Sn**	**22 34 39.7**	**+0.3**
OZLJ	**Ozalj**	**2.41**	**94**	*e*Pn		**Pn**	**22 34 11.1**	**+1.4**
OZLJ				Sn		**Sn**	**22 34 39.7**	**+0.3**
MOA	**Molln**	**2.53**	**36**	Pn		**Pn**	**22 34 13.1**	**+1.6**
	0.2nm,0.1s								
MOA				Sg		**Sg**	**22 34 52.2**	**+0.9**
	1.4nm,0.2s								
UDBI	**Udbina**	**2.94**	**115**	*e*Pn		**Pn**	**22 34 17.1**	**0.0**
UDBI				Sn		**Sn**	**22 34 52.0**	**-0.6**
UDBI	**Udbina**	**2.94**	**115**	*e*Pn		**Pn**	**22 34 17.0**	**0.0**
UDBI				Sn		**Sn**	**22 34 52.0**	**-0.6**
KHC	**Kasperske Hory**	**3.46**	**17**	*e*PG		**Pg**	**22 34 34.5**	**-1.8**
KHC				*e*SN		**Sn**	**22 35 06.4**	**+0.8**
KHC				*e*SG		**Sg**	**22 35 22.2**	**+1.0**
KHC	**Kasperske Hory**	**3.46**	**17**	Pg		**Pg**	**22 34 34.5**	**-1.8**
KHC				Sn		**Sn**	**22 35 06.4**	**+0.8**
KHC				Sg		**Sg**	**22 35 22.2**	**+1.0**
DPC	**Dobruska-Polom**	**5.36**	**31**	*e*SG		**Sg**	**22 36 19.8**	**-2.1**

*IDC **30** 22:48:21.9±2.0, 40˚.01N×143˚.90E, h0km, mb3.5/5, mb1 3.5/7, mb1mx3.4/36, mbtmp3.5/7, ML3.0/2, Error ellipse: s-maj=55.8km s-min=21.4km az=77.0*
*ISCJB **30** 22:48:22.7±0.9, 40˚.01N±0˚.05×143˚.83E±0˚.09, h16km, mb3.5/5, Error ellipse: s-maj=11.2km s-min=4.8km az=27.4*
*JMA **30** 22:48:22.6±0.4, 40˚.09N×143˚.67E, h2km±4km, M3.5*
ISC 30 22:48:24.8±1.2, 40˚.04N±0˚.06×143˚.73E±0˚.09, h16km, n24, σ0§88/28, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.43**	**267**	P	**Pn**	**22 48 48.6**	**-1.6**
MIYJ	**Miyakonagasawa**	**1.54**	**253**	P	**Pn**	**22 48 50.8**	**-0.8**
MIYJ				*e*S	**Sn**	**22 49 10.2**	**-1.1**
JANG	**Nango**	**1.73**	**282**	P	**Pn**	**22 48 52.9**	**-1.3**
JOM	**Ohasama**	**1.96**	**254**	P	**Pn**	**22 48 57.2**	**-0.2**
JEM	**Erimo**	**2.02**	**348**	P	**Pn**	**22 48 57.3**	**-0.9**
JTM	**Tenmabayashi**	**2.16**	**291**	P	**Pn**	**22 48 59.8**	**-0.4**
JMK	**Ichinoseki**	**2.22**	**242**	P	**Pn**	**22 49 00.6**	**-0.4**
JMK				*e*S	**Sn**	**22 49 28.9**	**+0.8**
JNBK	**Urakawa-nobuka**	**2.35**	**342**	P	**Pn**	**22 49 03.3**	**+0.5**
JAH	**Hinai**	**2.37**	**275**	P	**Pn**	**22 49 03.1**	**0.0**
JOT	**Ohata**	**2.44**	**304**	P	**Pn**	**22 49 03.6**	**-0.3**
JRG	**Rokugo**	**2.47**	**256**	P	**Pn**	**22 49 05.3**	**+0.9**
JCH	**Churui**	**2.59**	**354**	P	**Pn**	**22 49 05.1**	**-0.9**
JCH				*e*S	**Sn**	**22 49 35.5**	**-1.6**
JKB	**Kayabe**	**2.75**	**313**	P	**Pn**	**22 49 08.4**	**+0.2**
JYK	**Kaneyama**	**2.84**	**248**	P	**Pn**	**22 49 09.5**	**+0.1**
JOU	**Okura**	**2.91**	**236**	P	**Pn**	**22 49 10.3**	**-0.1**
JAK	**Akkeshi**	**3.04**	**14**	P	**Pn**	**22 49 12.5**	**+0.3**
JAR	**Ashorobuto**	**3.25**	**1**	P	**Pn**	**22 49 13.8**	**-1.4**
ASAJ	**Asahikawa**	**4.16**	**349**	Pn	**Pn**	**22 49 27.9**	**+0.3**
	0.7nm,0.3s,baz=189,slow=14,SNR=6.9						
ASAJ				Sn	**Sn**	**22 50 17.9**	**+2.0**
MJAR	**Matsushiro Arr**	**5.57**	**233**	Pn	**Pn**	**22 49 47.2**	**+0.2**
	0.4nm,0.3s,baz=45,slow=13,SNR=9.0						
SONM	**Songino Array**	**27.77**	**299**	P	**P**	**22 54 13.6**	**+0.7**
	0.6nm,0.6s,baz=86,slow=8.8,SNR=3.3						
ZALV	**Zalesovo Beam**	**41.30**	**310**	P	**P**	**22 56 09.5**	**+0.2**
	2.1nm,1.1s,baz=99,slow=9.2,SNR=3.6						
MKAR	**Makanchi Array**	**44.13**	**300**	P	**P**	**22 56 32.9**	**+0.5**
	0.4nm,0.7s,baz=80,slow=8.1,SNR=3.8						
WRA	**Warramunga Arr**	**60.31**	**190**	P	**P**	**22 58 32.1**	**-0.6**
	0.3nm,0.7s,baz=8.1,slow=7.0,SNR=5.1						
ASAR	**Alice Springs**	**64.04**	**190**	P	**P**	**22 58 57.4**	**-0.3**
	0.3nm,0.7s,baz=2.0,slow=7.9,SNR=2.7						

*DJA **30** 23:27:35.7±0.4, 10˚S±3˚×10˚8E±˚, h10km, M4.7/14, mB5.8/1, mb4.8/3, MLv4.6/14, Mw(mB)5.3/1*
*IDC **30** 23:27:35.5±0.9, 9.51S×108.57E, h0km, mb4.2/14, mb1 4.3/15, mb1mx4.0/41, mbtmp4.2/15, ML3.8/1, MS3.5/2, Ms1 3.4/2, ms1mx2.7/39, Error ellipse: s-maj=36.3km s-min=15.1km az=50.0*
*ISCJB **30** 23:27:36.9±0.4, 9.85S±0.04×108.36E±0.04, h27km, mb4.5/30, MS3.8/5, Error ellipse: s-maj=6.8km s-min=5.0km az=28.9*
*NEIC **30** 23:27:38.0±2.9, 9.79S×108.35E, h21km±20km, mb4.6/8, Error ellipse: s-maj=14.5km s-min=9.2km az=213.0*
ISC 30 23:27:38.6±0.5, 9.84S±0.06×108.30E±0.05, h27km, n72, σ1§97/80, mb4.6/30, MS4.1/5, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.04**	**4**	P	**Pn**	**23 28 10.5**	**-0.7**
CMJI				S	**Sn**	**23 28 36.0**	**+0.1**
CISI	**Cisompet, Garu**	**2.32**	**348**	P	**Pn**	**23 28 14.8**	**-0.2**
CISI				S	**Sn**	**23 28 43.3**	**+0.6**
CISI	**Cisompet, Garu**	**2.32**	**348**	*e*Pn	**Pn**	**23 28 14.8**	**-0.2**
XMIS	**Christmas Isla**	**2.68**	**256**	*e*Pn	**Pn**	**23 28 17.9**	**-2.1**
CNJI	**Cibinong**	**2.76**	**335**	P	**Pn**	**23 28 20.8**	**-0.3**
CNJI				S	**Sn**	**23 28 54.2**	**+0.6**
UGM	**Wanagama**	**2.91**	**49**	P	**Pn**	**23 28 22.6**	**-0.6**
UGM				S	**Sn**	**23 28 55.1**	**-2.3**
UGM	**Wanagama**	**2.91**	**49**	*e*Pn	**Pn**	**23 28 20.8**	**-2.5**
LEM	**Lembang**	**3.06**	**347**	P	**Pb**	**23 28 32.7**	**+0.2**
PCJI	**Pacitan**	**3.28**	**60**	P	**Pn**	**23 28 26.6**	**-1.6**
SKJI	**Sukabumi**	**3.30**	**328**	P	**Pn**	**23 28 28.7**	**+0.2**
PWJI	**Pagerwojo**	**3.91**	**63**	P	**Pn**	**23 28 35.2**	**-1.6**
NGJI	**Ngawi**	**3.98**	**52**	P	**Pn**	**23 28 40.1**	**+2.3**
CGJI	**Cibinong**	**4.11**	**321**	P	**Pn**	**23 28 39.5**	**-0.1**
GMJI	**Gumukmas**	**5.32**	**73**	P	**Pn**	**23 28 56.0**	**-0.2**
BLJI	**Banyuglugur**	**5.63**	**69**	P	**Pn**	**23 28 59.6**	**-1.0**
KASI	**Kota Agung**	**5.71**	**318**	P	**Pn**	**23 29 00.6**	**-1.0**
JAGI	**Jajag, Banyuwa**	**5.94**	**77**	P	**Pn**	**23 29 02.4**	**-2.4**
JAGI	**Jajag, Banyuwa**	**5.94**	**77**	*e*Pn	**Pn**	**23 29 03.9**	**-0.9**
GSI	**Gunungsitoli**	**15.38**	**315**	*e*Pn	**Pn**	**23 31 15.8**	**+1.9**
	25nm,0.8s						
FITZ	**Fitzroy Crossi**	**18.71**	**118**	P	**Pn**	**23 31 56.7**	**+0.9**
	0.2nm,0.3s,baz=284,slow=9.5,SNR=5.4						
FITZ				S	Sn	23 35 02.9	-22
	0.3nm,0.3s,baz=156,slow=23,SNR=4.3						
NWAO	**Narrogin (SRO)**	**24.41**	**162**	LR	LR	23 41 04.7	
	comp=Z,115nm,21.8s,baz=21,slow=33						
WRA	**Warramunga Arr**	**27.06**	**115**	P	**P**	**23 33 17.9**	**-1.2**
	1.1nm,0.9s,baz=287,slow=11,SNR=3.8						
ASAR	**Alice Springs**	**28.05**	**123**	P	**P**	**23 33 30.4**	**+2.5**
	0.4nm,0.7s,baz=301,slow=9.0,SNR=7.5						
ASAR				PcP	**PcP**	**23 36 42.0**	**-0.4**
	0.4nm,0.8s,baz=307,slow=3.4,SNR=3.5						
CM01	**Chiang Mai Arr**	**29.55**	**342**	*e*P	**P**	**23 33 42.0**	**+0.8**
CM31	**Chiang Mai Arr**	**29.59**	**342**	*e*P	**P**	**23 33 41.9**	**+0.4**
CMAR	**Chiang Mai Arr**	**29.59**	**342**	P	**P**	**23 33 42.3**	**+0.8**
	6.3nm,0.8s,baz=176,slow=8.5,SNR=28						
CHTO	**Chiang Mai**	**29.93**	**342**	*e*P	**P**	**23 33 45.6**	**+1.1**
	9.0nm,0.9s						
KMI	**Kunming**	**35.17**	**351**	P	**P**	**23 34 33.0**	**+2.4**
KMI				pP	sP	23 34 43.0	+1.1
KMI				pmax	pmax		
	comp=Z,7.0nm,0.9s						
SSLB	**Suanglung**	**35.63**	**20**	*e*P	**P**	**23 34 33.8**	**-0.6**
	comp=Z,18nm,0.7s						
GYA	**Guiyang**	**36.11**	**358**	*e*P	**P**	**23 34 41.8**	**+3.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
STKA	**Stephens Creek**	**37.82**	**130**	P	**P**	**23 34 53.9**	**+1.0**
	comp=Z,3.1nm,0.8s,baz=327,slow=5.0,SNR=5.6						
STKA				LR	LR	23 51 13.1	
	comp=Z,57nm,19.4s,baz=222,slow=38						
MANU	**Manus Island**	**39.59**	**81**	*e*P	**P**	**23 35 10.0**	**+2.0**
	comp=Z,228nm,0.1s						
CD2	**Chengdu**	**40.75**	**354**	*e*P	**P**	**23 35 19.0**	**+1.6**
LSA	**Lhasa**	**42.64**	**338**	*e*P	**P**	**23 35 34.5**	**+1.1**
	comp=Z,6.4nm,0.6s						
GUN	**Gumba**	**43.35**	**331**	*e*P	**P**	**23 35 40.3**	**+1.2**
	comp=Z,31nm,0.7s						
DMN	**Daman**	**43.48**	**329**	*e*P	**P**	**23 35 40.5**	**+0.5**
	comp=Z,29nm,0.9s						
KKN	**Kakani**	**43.54**	**330**	*e*P	**P**	**23 35 41.2**	**+0.7**
XAN	**Xi'an**	**43.64**	**1**	P	**P**	**23 35 40.0**	**-0.9**
XAN				pmax	pmax		
	comp=Z,10.0nm,1.3s						
GKN	**Gorkha**	**44.04**	**329**	*e*P	**P**	**23 35 45.0**	**+0.6**
	comp=Z,39nm,1.1s						
KOLN	**Koldanda**	**44.38**	**328**	*e*P	**P**	**23 35 47.4**	**+0.2**
	comp=Z,15nm,0.7s						
PYUN	**Piuthan**	**44.97**	**328**	*e*P	**P**	**23 35 52.6**	**+0.7**
LZH	**Lanzhou**	**45.87**	**355**	*e*P	**P**	**23 36 01.8**	**+3.0**
LZH				pP	sP	23 36 10.8	+0.5
LZH				sP	pP	23 36 14.3	+7.3
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
GTA	**Gaotai**	**49.62**	**351**	*e*P	**P**	**23 36 30.8**	**+2.9**
GTA				pP	sP	23 36 40.8	+1.4
GTA				sP	pP	23 36 44.5	+8.4
GTA				S	**S**	**23 43 38.0**	**+3.2**
GTA				pmax	pmax		
	comp=Z,8.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,61nm,5.1s						
GTA				LR	LR		
	comp=N,120nm,18.1s						
GTA				LR	LR		
	comp=E,140nm,17.1s						
GTA				LR	LR		
	comp=Z,140nm,17.1s						
KSAR	**Wonju Array Be**	**50.49**	**20**	P	**P**	**23 36 31.2**	**-3.1**
KSRS	**Korea Array**	**50.51**	**20**	P	**P**	**23 36 31.2**	**-3.3**
	comp=Z,0.5nm,0.4s,baz=218,slow=7.7,SNR=3.5						
HHC	**Hu-ho-hao-te**	**50.52**	**3**	*e*P	**P**	**23 36 38.3**	**+3.7**
HHC				sP	sP	23 36 51.5	+5.4
HHC				S	S	23 42 51.0	-56
HHC				pmax	pmax		
	comp=Z,13nm,0.8s						
HHC				pmax	pmax		
	comp=Z,38nm,5.8s						
HHC				LR	LR		
	comp=N,100nm,12.3s						
HHC				LR	LR		
	comp=E,190nm,12.1s						
HHC				LR	LR		
	comp=Z,140nm,13.6s						
MJAR	**Matsushiro Arr**	**54.03**	**30**	P	**P**	**23 36 57.0**	**-3.7**
	comp=Z,1.4nm,0.8s,baz=207,slow=7.7,SNR=4.8						
WMQ	**Urumqi**	**56.59**	**342**	P	**P**	**23 37 20.5**	**+1.4**
WMQ				pP	sP	23 37 31.3	+0.7
WMQ				sP	pP	23 37 35.0	+7.6
WMQ				pmax	pmax		
	comp=Z,11nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,73nm,3.9s						
WMQ				LR	LR		
	comp=N,160nm,22.3s						
WMQ				LR	LR		
	comp=E,150nm,24.2s						
WMQ				LR	LR		
	comp=Z,170nm,27.8s						
SONM	**Songino Array**	**57.44**	**358**	P	**P**	**23 37 24.9**	**-0.1**
	comp=Z,3.0nm,0.6s,baz=178,slow=7.3,SNR=23						
SONA1	**Songino Array**	**57.45**	**358**	*e*P	**P**	**23 37 25.3**	**+0.1**
KSH	**Kashi**	**57.55**	**331**	*e*P	**P**	**23 37 25.3**	**-0.7**
KSH				*e*pP	pP	23 37 35.5	+1.1
KSH				*e*PP	**PP**	**23 39 34.0**	**0.0**
KSH				PcS	**PcS**	**23 42 20.0**	**-0.5**
KSH				S	**S**	**23 45 15.5**	**-6.7**
KSH				ScS	**ScS**	**23 47 08.5**	**-5.4**
KSH	**Kashi**	**57.55**	**331**	SS	**SS**	**23 49 05.5**	**-7.3**
KSH				pmax	pmax		
	comp=Z,5.0nm,0.7s						
KSH				pmax	pmax		
	comp=Z,28nm,2.1s						
KSH				LR	LR		
	comp=N,61nm,8.5s						
KSH				LR	LR		
	comp=E,74nm,7.0s						
KSH				LR	LR		
	comp=Z,83nm,6.0s						
USRK	**Ussuriysk Ar.**	**57.92**	**20**	P	**P**	**23 37 26.5**	**-1.8**
	comp=Z,2.7nm,0.8s,baz=194,slow=5.5,SNR=3.4						
MK01	**Makanchi Array**	**60.95**	**340**	*e*P	**P**	**23 37 49.5**	**+0.3**
MK31	**Makanchi Array**	**60.97**	**340**	*e*P	**P**	**23 37 50.2**	**+0.8**
MKAR	**Makanchi Array**	**60.97**	**340**	P	**P**	**23 37 49.8**	**+0.4**
	comp=Z,3.9nm,0.6s,baz=142,slow=7.9,SNR=47						
MKAR	**Makanchi Array**	**60.97**	**340**	*e*P	**P**	**23 37 50.2**	**+0.8**
MAKZ	**Makanchi**	**61.09**	**340**	*e*P	**P**	**23 37 50.5**	**+0.3**
	comp=Z,3.4nm,1.1s						
KLR	**Kul'dur**	**62.32**	**17**	P	**P**	**23 37 56.5**	**-1.9**
	comp=Z,3.7nm,0.7s,baz=198,slow=6.5,SNR=10						
KURK	**Kurchatov**	**65.59**	**340**	*e*P	**P**	**23 38 20.5**	**+0.7**
	comp=Z,5.1nm,0.9s						
ZALV	**Zalesovo Beam**	**66.58**	**345**	P	**P**	**23 38 25.4**	**-0.8**
	comp=Z,2.3nm,0.6s,baz=160,slow=4.6,SNR=14						
GEYT	**Alibeck**	**66.72**	**319**	P	**P**	**23 38 28.1**	**+0.6**
	comp=Z,2.4nm,0.6s,baz=142,slow=7.4,SNR=8.4						
BRVK	**Borovoye**	**70.53**	**337**	*e*P	**P**	**23 38 51.7**	**+0.9**
	comp=Z,12nm,1.5s						
ABKAR	**Akbulak array**	**72.49**	**329**	*e*P	**P**	**23 39 03.5**	**+0.7**
ARU	**Arti**	**77.72**	**334**	*e*P	**P**	**23 39 33.0**	**+0.2**
	comp=Z,13nm,1.4s						
BRTR	**Keskin Array B**	**84.66**	**312**	P	**P**	**23 40 10.3**	**0.0**
	comp=Z,1.3nm,0.7s,baz=148,slow=7.5,SNR=11						
ARCES	**ARCESS Array B**	**96.63**	**339**	P	**P**	**23 41 06.1**	**+0.4**
	comp=Z,1.7nm,0.9s,baz=108,slow=5.8,SNR=5.2						
YKA	**Yellowknife Ar**	**119.04**	**21**	PKP	**PKPdf**	**23 46 24.1**	**-0.4**
	comp=Z,0.4nm,0.6s,baz=332,slow=2.2,SNR=4.4						
PDAR	**Pinedale Array**	**133.46**	**39**	PKP	**PKPdf**	**23 46 53.6**	**+0.6**
	comp=Z,0.3nm,0.6s,baz=321,slow=1.3,SNR=2.8						
TXAR	**Lajitas Array**	**144.37**	**53**	PKP	PKPbc	23 47 11.9	+0.5
	comp=Z,0.9nm,0.7s,baz=253,slow=2.3,SNR=4.4						
WMOK	**Wichita Mounta**	**144.98**	**41**	*e*PKPab	**PKPab**	**23 47 12.8**	**-0.3**
JCT	**Junction City**	**146.74**	**48**	*e*PKPdf	**PKPdf**	**23 47 17.5**	**+0.5**

*NIED **30** 23:37:00, 38˚.10N×143˚.40E, h20km, Mw4.2 Best double couple: M0 1.95000×10^15 NP1:φs96.00000°, δ37.00000°, λ25.00000°. NP2:φs346.00000°, δ75.00000°, λ125.00000°.*
*IDC **30** 23:37:11.3±0.8, 37.99N×143.59E, h0km, mb4.2/14, mb1 4.2/22, mb1mx4.1/44, mbtmp4.1/22, ML3.7/6, MS3.2/12, Ms1 3.3/12, ms1mx3.1/41, Error ellipse: s-maj=21.5km s-min=15.0km az=101.0*
*NEIC **30** 23:37:13.8±2.6, 38˚.03N×143˚.58E, h15km±15km, mb4.6/5, Error ellipse: s-maj=11.0km s-min=5.6km az=124.0*
*ISCJB **30** 23:37:14.5±1.2, 38˚.05N±0˚.03×143˚.38E±0˚.04, h26km±9km, mb4.4/32, MS3.4/9, Error ellipse: s-maj=6.2km s-min=4.5km az=138.6*
*MOS **30** 23:37:15.8±1.0, 38˚.02N×143˚.46E, h41km, mb4.7/10, Error ellipse: s-maj=9.6km s-min=7.8km az=105.1*
*JMA **30** 23:37:15.1±0.2, 38˚.08N×143˚.37E, h38km, M4.2*
ISC 30 23:37:13.7±2.1, 38˚.05N±0˚.05×143˚.36E±0˚.07, h7km±13km, n96, σ1§73/111, mb4.4/32, MS3.4/9, 5C-1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.63**	**285**	P	**Pn**	**23 37 42.4**	**-0.4**
JIO				*e*S	**Sn**	**23 38 02.1**	**-1.9**
OFUJ	**Ofunato**	**1.67**	**308**	P	**Pn**	**23 37

H11N3 WAKE ISLAND Hy 27.43 125 T T 00 11 40.4
baz=317,slow=74,SNR=23

SONM Songino Array 28.52 302 P **P** **23 43 10.8 +0.8**
comp=Z,3.4nm,0.6s,baz=96,slow=9.0,SNR=13

SONM Songino Array 28.52 302 *e*P **P** **23 43 11.0 +1.0**
SONM pmax pmax
comp=Z,3.0nm,0.6s

ENH Enshi 28.96 265 *e*P **P** **23 43 14.7 +0.9**
comp=Z,13nm,0.7s

ZAK Zakamensk 30.88 307 *e*P **P** **23 43 31.4 +0.7**
ZAK pmax pmax
comp=Z,5.0nm,1.4s

GTA Gaotai 33.75 286 *e*P **P** **23 43 57.3 +1.2**
GTA pP pP 23 44 00.8 +2.6
GTA sP sP 23 44 03.3 +4.2
GTA pmax pmax
comp=Z,11nm,0.9s

ZALV Zalesovo Beam 42.38 312 P **P** **23 45 08.3 -0.2**
comp=Z,2.3nm,0.4s,baz=90,slow=7.4,SNR=13
ZALV PcP **PcP** **23 47 01.3 -0.3**
comp=Z,1.8nm,0.6s,baz=119,slow=3.2,SNR=5.2

NRIK Noril'sk 43.00 335 LR LR 00 04 09.0
comp=Z,72nm,19.1s,baz=71,slow=38

CMAR Chiang Mai Arr 43.24 256 P **P** **23 45 16.1 +0.2**
comp=Z,1.0nm,0.3s,baz=44,slow=7.6,SNR=7.7
CMAR LR LR 00 05 11.1
comp=Z,20nm,20.1s,baz=210,slow=39

CMAR Chiang Mai Arr 43.24 256 *e*P **P** **23 45 16.6 +0.7**
CMAR pmax pmax
comp=Z,1.0nm,0.3s

LSA Lhasa 43.65 275 *e*P **P** **23 45 20.8 +1.1**
LSA pmax pmax
comp=Z,4.0nm,0.4s

LSA Lhasa 43.65 275 *e*P **P** **23 45 20.8 +1.1**
comp=Z,3.7nm,0.4s

MKAR Makanchi Array 44.89 302 P **P** **23 45 28.7 -0.1**
comp=Z,3.2nm,0.9s,baz=85,slow=9.7,SNR=20

MKAR Makanchi Array 44.89 302 *e*P **P** **23 45 29.1 +0.2**
MKAR pmax pmax
comp=Z,3.0nm,0.9s

KURK Kurchatov 46.52 308 *e*P **P** **23 45 41.4 -0.2**
KURK Kurchatov 46.52 308 *e*P **P** **23 45 41.4 -0.2**
comp=Z,100nm,0.6s

ILAR Eielson Array 47.80 33 P **P** **23 45 50.4 -1.1**
comp=Z,0.6nm,0.7s,baz=265,slow=6.4,SNR=9.4

GUN Gumba 48.59 276 *e*P **P** **23 45 59.3 +0.9**
comp=Z,28nm,0.6s

KKN Kakani 49.12 276 *e*P **P** **23 46 02.4 +0.1**
comp=Z,19nm,0.6s

PKIN Phulchoki 49.12 276 *e*P **P** **23 46 01.8 -0.6**
comp=Z,4.2nm,0.5s

GKN Gorkha 49.52 277 *e*P **P** **23 46 05.5 +0.1**
comp=Z,34nm,1.0s

KOLN Koldanda 50.44 277 *e*P **P** **23 46 11.3 -1.1**
comp=Z,6.7nm,0.4s

PYUN Piuthan 50.77 278 *e*P **P** **23 46 15.2 +0.3**
BRVK Borovoye 51.09 312⇑ *i*P **P** **23 46 16.4 -0.3**
BRVK pmax pmax
comp=Z,4.0nm,1.2s

AAK Ala-Archa 51.37 298⇑ *i*P **P** **23 46 19.4 +0.3**
AAK pmax pmax
comp=Z,6.0nm,1.0s

AAK Ala-Archa 51.37 298 *e*P **P** **23 46 19.1 -0.1**
comp=Z,2.6nm,0.7s

KSH Kashi 51.40 294 *e*P **P** **23 46 24.0 +4.6**
KSH *e*pP sP 23 46 38.0 +16
KSH *e*PP PP 23 48 25.5 +9.2
KSH PcS **PcS** **23 51 38.5 +6.6**
KSH S **S** **23 53 40.0 +0.6**
KSH pmax pmax
comp=Z,10.0nm,2.5s
KSH LR LR
comp=N,94nm,5.2s
KSH LR LR
comp=E,91nm,4.3s
KSH LR LR
comp=Z,75nm,6.1s

PSI Prapat 53.64 240 LR LR 00 09 31.0
comp=Z,27nm,18.8s,slow=36

SVE Sverdlovsk 55.41 319 *e*P **P** **23 46 48.4 0.0**
SVE pmax pmax
comp=Z,6.0nm,0.8s

ARU Arti 56.62 319*c* *i*P **P** **23 46 56.9 -0.2**
ARU 23 47 53.3
ARU 23 48 58.9
ARU S **S** **23 54 49.0 -0.2**
ARU SS **SS** **23 58 31.1 -5.0**
ARU pmax pmax
comp=Z,6.0nm,1.2s

WRAB Tennant Creek 58.30 190 *i* P P 23 47 18.8 +10
WRAB pmax pmax
comp=Z,42nm,1.7s

WRA Warramunga Arr 58.31 190 P **P** **23 47 07.7 -1.6**
comp=Z,2.9nm,0.6s,baz=8.5,slow=7.1,SNR=40

ABKAR Akbulak array 58.46 310 *e*P **P** **23 47 09.8 -0.4**
comp=Z,1.7nm,0.5s

AKTO Aktyubinsk 59.14 312 LR LR 00 14 17.9
comp=Z,36nm,18.4s,baz=113,slow=38

ASAR Alice Springs 62.03 190 P **P** **23 47 32.9 -1.9**
comp=Z,0.5nm,0.6s,baz=15,slow=7.3,SNR=8.3

ARCES ARCESS Array B 63.58 340 P **P** **23 47 44.2 -0.4**
comp=Z,2.0nm,0.8s,baz=61,slow=9.4,SNR=4.9

ARCES ARCESS Array B 63.58 340 *e*P **P** **23 47 45.1 +0.5**
ARCES pmax pmax
comp=Z,2.0nm,0.8s

GEYT Alibeck 64.69 299 P **P** **23 47 51.8 -0.7**
comp=Z,2.8nm,0.8s,baz=46,slow=4.2,SNR=7.6

VRH Novokhopyorsk 67.85 318 *e*P **P** **23 48 12.3 -0.1**
VRH pmax pmax
comp=Z,40nm,0.9s

OBN Obninsk 68.20 324⇑ *e*P **P** **23 48 13.5 -1.0**
OBN *e* 23 48 40.3
OBN *e* 23 50 40.3
OBN *e*PPP PPP 23 52 19.0
OBN *e*S **PnS** **23 57 40.0 +3.0**
OBN pmax pmax
comp=Z,8.0nm,1.7s
OBN MLR MLR
comp=Z,34nm,15.0s

FINES FINESS Array B 68.62 333 P **P** **23 48 16.8 -0.3**
comp=Z,3.5nm,0.6s,baz=39,slow=9.8,SNR=22
FINES LR LR 00 21 46.6
comp=Z,34nm,19.4s,baz=62,slow=39

VSR Storozhevoye 69.17 319 *e*P **P** **23 48 20.3 -0.4**
VSR pmax pmax
comp=Z,6.0nm,0.9s

KIV Kislovodsk 71.40 312⇓ *e*P **P** **23 48 35.7 +1.1**
KIV *e* 23 48 53.2
KIV *e* 23 51 09.5
KIV *e*PPP PPP 23 52 52.4
KIV *e*S **SKSac** **23 58 42.2 +3.9**
KIV pmax pmax
comp=Z,9.0nm,0.8s
KIV MLR MLR
comp=Z,14nm,15.0s

KIV Kislovodsk 71.40 312 *e*P **P** **23 48 35.5 +0.9**
comp=Z,9.1nm,1.0s

KBZ Khabaz 71.40 311 P **P** **23 48 34.6 +0.1**
comp=Z,3.2nm,0.8s,baz=40,slow=5.4,SNR=5.8

NB2 NORSAR Subarra 73.83 338 P **P** **23 48 48.1 -0.6**
comp=Z,2.6nm,0.8s,baz=37,slow=6.2

NOA NORSAR Array B 73.83 338 P **P** **23 48 48.2 -0.5**
comp=Z,1.8nm,0.7s,baz=38,slow=5.9,SNR=8.0
NOA LR LR 00 25 44.8
comp=Z,15nm,19.1s,baz=140,slow=39

NOA NORSAR Array B 73.83 338 *e*P **P** **23 48 48.4 -0.3**
NOA pmax pmax
comp=Z,2.0nm,0.7s

AKASG Malin Array Be 74.42 323 P **P** **23 48 50.9 -1.4**
comp=Z,1.0nm,0.6s,baz=46,slow=6.6,SNR=6.2
AKASG LR LR 00 24 10.8
comp=Z,16nm,19.2s,baz=70,slow=38

KIEV Kiev 74.44 323⇑ P **P** **23 48 52.8 +0.5**
KIEV pmax pmax
comp=Z,3.0nm,0.7s

DPC Dobruska-Polom 80.40 329 *e*P **P** **23 49 26.2 +0.3**
DPC Dobruska-Polom 80.40 329 *e*P **P** **23 49 26.2 +0.3**
VYHS Vyhne 80.75 326 *e*P **P** **23 49 28.0 +0.3**
VYHS pmax pmax
comp=Z,2.0nm,1.3s

VYHS Vyhne 80.75 326 *e*P **P** **23 49 28.0 +0.3**
CLL Collm 80.97 331 *e*P **P** **23 49 28.0 -0.8**
CLL Collm 80.97 331 *e*P **P** **23 49 28.0 -0.8**
GERES GERESS Array B 82.64 329 P **P** **23 49 36.9 -0.9**
comp=Z,0.2nm,0.4s,baz=33,slow=5.8,SNR=3.1

CASC 30 23:47:21.2±1.0, 9°37N×84°23W, h37km±4km, MD3.6, 1C-3D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
QCR	**Quepos**	**0.09**	**51**	⇓*i*	P	23 47 27.6	+0.2
QCR				*e*	S	23 47 32.1	+0.3
BUS	**Buena Vista**	**0.50**	**68**	⇓*e*	P	23 47 32.1	-0.2
BUS				*e*	S	23 47 40.9	+0.9
CGA2	**Cerro Gallo 2**	**0.68**	**340**	⇑*e*	P	23 47 34.7	+0.1
CGA2				*e*	S	23 47 45.0	+1.1
JCR	**Jicaral**	**0.99**	**299**	⇓*e*	P	23 47 38.6	0.0
JCR				*e*	S	23 47 51.7	+0.3
BRU2	**Volcan**	**1.63**	**110**	*e*	P	23 47 47.6	+0.2
TBS2		**1.66**	**110**	*e*	P	23 47 48.2	+0.3

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*DDA **30** 23:51:54.5, 38°.35N×26°.97E, h7km, Md2.4*
*ISCJB **30** 23:51:56.0±0.6, 38°.44N±0°.06×26°.87E±0°.04, h12km, Error ellipse: s-maj=8.8km s-min=4.3km az=179.1*
*ISK **30** 23:51:55.6, 38°.44N×26°.86E, h5km, MD2.6*
*CSEM **30** 23:51:56.0±0.2, 38°.44N×26°.87E, h5km, MD2.6, Error ellipse: s-maj=6.9km s-min=4.2km az=11.0*

ISC 30 23:51:56.0±0.9, 38°44N±0°.05×26°87E±0°.02, h12km, n20, σ0°59/26, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URLA	**Izmir**	**0.23**	**250**	*i* P		**Pg**	**23 52 00.9**	**0.0**
URLA				*i* S		**Sg**	**23 52 04.9**	**+0.7**
URLA	**Izmir**	**0.23**	**250**	P		**Pg**	**23 52 00.9**	**0.0**
URLA				S		**Sg**	**23 52 04.9**	**+0.7**
IZM	**Izmir**	**0.31**	**98**	*e*PG		**Pg**	**23 52 02.6**	**+0.3**
IZM				*e*SG		**Sg**	**23 52 07.3**	**+0.8**
IZM	**Izmir**	**0.31**	**98**	*e*Pg		**Pg**	**23 52 02.6**	**+0.3**
IZM				*e*Sg		**Sg**	**23 52 07.3**	**+0.8**
DKL	**Dikili**	**0.63**	**2**	*e*PG		**Pg**	**23 52 08.2**	**-0.1**
DKL	**Dikili**	**0.63**	**2**	*e*Pg		**Pg**	**23 52 08.2**	**-0.1**
CHOS	**Chios island**	**0.65**	**266**	*e*PG		**Pg**	**23 52 08.6**	**+0.1**
CHOS	**Chios island**	**0.65**	**266**	*e*Pg		**Pg**	**23 52 08.6**	**+0.1**
AKS	**Akhisar**	**0.86**	**59**	*e*PG		**Pg**	**23 52 12.8**	**+0.2**
AKS	**Akhisar**	**0.86**	**59**	*e*Pg		**Pg**	**23 52 12.8**	**+0.2**
AYVA	**Ayvalik**	**0.88**	**351**	*i* P		**Pb**	**23 52 13.4**	**+0.2**
AYVA	**Ayvalik**	**0.88**	**351**	P		**Pb**	**23 52 13.4**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.94**	**121**	*e*PG		**Pg**	**23 52 14.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.94**	**121**	*e*Pg		**Pg**	**23 52 14.0**	**-0.1**
SIGR	**SIGRI**	**1.11**	**314**	*e*PN		**Pb**	**23 52 16.9**	**-0.2**
SIGR	**SIGRI**	**1.11**	**314**	*e*Pn		**Pb**	**23 52 16.9**	**-0.2**
MANT	**Manisa**	**1.32**	**87**	*i* P		**Pn**	**23 52 20.8**	**+0.3**
MANT				*i* S		**Sb**	**23 52 36.3**	**-1.6**
MANT	**Manisa**	**1.32**	**87**	P		**Pn**	**23 52 20.8**	**+0.3**
MANT				S		**Sb**	**23 52 36.3**	**-1.6**
KULA	**Kula-Manisa**	**1.41**	**86**	*e*PN		**Pg**	**23 52 23.0**	**0.0**
KULA	**Kula-Manisa**	**1.41**	**86**	*e*Pn		**Pg**	**23 52 23.0**	**0.0**

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*IDC **30** 23:57:01.4±1.2, 20°.29S×168°.35E, h0km, mb4.0/8, mb1 4.2/9, mb1mx4.0/27, mbtmp4.0/9, ML3.5/1, MS3.4/4, Ms1 3.4/4, ms1mx2.9/22, Error ellipse: s-maj=39.5km s-min=22.1km az=131.0*
*NEIC **30** 23:57:02.9±0.3, 20°.29S×168°.33E, h10km, mb4.5/14, Error ellipse: s-maj=10.1km s-min=8.1km az=178.0*
*ISCJB **30** 23:57:03.6±0.4, 20°.30S±0°.07×168°.29E±0°.07, h26km, mb4.4/21, MS3.3/3, Error ellipse: s-maj=10.9km s-min=7.9km az=142.4*

ISC 30 23:57:05.3±0.5, 20°.34S±0°.09×168°.30E±0°.08, h26km, n40, σ1s04/41, mb4.3/21, MS3.3/3, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.45**	**225**	Pn		**Pn**	**23 57 43.0**	**-0.8**
	11nm,0.3s,baz=62,slow=12,SNR=284						
DZM				Sn		**Sn**	**23 58 12.6**	**-0.2**
	45nm,0.3s,baz=138,slow=5.0,SNR=6.9						
DZM				LR		LR	23 58 42.6	
	comp=Z,851nm,18.1s,baz=40,slow=40						
DZM	**Mont Dzumac**	**2.45**	**225**	*e*Pn		**Pn**	**23 57 42.1**	**-1.7**
DZM				*e*Sn		**Sn**	**23 58 12.9**	**0.0**
RAO	**Raoul Island**	**15.33**	**128**	*e*Pn		**Pn**	**00 00 40.4**	**+0.4**
	171nm,0.9s						
CTA	**Charters Tower**	**20.69**	**267**	P		Pn	00 01 45.8	-0.4
	7.0nm,0.8s,baz=92,slow=13,SNR=3.5						
CTAO	**Charters Tower**	**20.69**	**267**	*e*P		**P**	**00 01 44.5**	**+0.8**
	20nm,0.8s						
PMG	**Port Moresby**	**23.11**	**295**	*e*P		**P**	**00 02 09.8**	**+0.3**
	12nm,0.8s						
STKA	**Stephens Creek**	**26.52**	**239**	P		**P**	**00 02 43.0**	**+2.0**
	2.2nm,0.7s,baz=65,slow=9.1,SNR=4.9						
STKA				LR		LR	00 12 17.1	
	comp=Z,100nm,19.9s,baz=24,slow=34						
RAR	**Rarotonga**	**29.84**	**97**	*e*P		**P**	**00 03 10.2**	**-0.5**
	8.1nm,0.6s						
WRAB	**Tennant Creek**	**31.85**	**265**	*e*P		**P**	**00 03 28.3**	**-0.2**
	0.9nm,0.5s						
WRA	**Warramunga Arr**	**31.86**	**265**	P		**P**	**00 03 27.3**	**-1.2**
	0.5nm,0.5s,baz=91,slow=8.5,SNR=11						
WRA				PcP		**PcP**	**00 06 18.9**	**-0.2**
	0.6nm,0.8s,baz=109,slow=3.8,SNR=3.9						
ASAR	**Alice Springs**	**32.02**	**258**	P		**P**	**00 03 29.5**	**-0.5**
	2.6nm,0.7s,baz=88,slow=8.9,SNR=50						
ASAR				LR		LR	00 15 37.2	
	comp=Z,54nm,21.2s,baz=104,slow=35						
VNDA	**Vanda**	**57.31**	**182**	LR		LR	00 27 41.1	
	comp=Z,26nm,20.6s,baz=221,slow=32						
SBA	**Scott Base**	**57.56**	**180**	*e*P		**P**	**00 06 53.1**	**+0.8**
	2.5nm,1.0s						
MJAR	**Matsushiro Arr**	**63.32**	**333**	P		**P**	**00 07 30.8**	**-1.3**
	0.4nm,0.5s,baz=156,slow=5.8,SNR=2.9						
MAJO	**Matsushiro**	**63.32**	**333**	*e*P		**P**	**00 07 31.4**	**-0.7**
	1.5nm,0.6s						
TATO	**Taipei**	**64.04**	**313**	*e*P		**P**	**00 07 37.1**	**+0.1**
	7.0nm,0.4s						
COCO	**West Island**	**68.65**	**264**	*e*P		**P**	**00 08 06.5**	**-0.3**
	156nm,0.5s						
QSPA	**South Pole Qui**	**69.72**	**180**	*e*P		**P**	**00 08 13.3**	**+0.4**
	11nm,0.9s						
MDJ	**Mudanjiang**	**73.67**	**332**	*e*P		**P**	**00 08 36.5**	**-0.1**
	2.8nm,0.5s						
MAW	**Mawson**	**77.09**	**202**	P		**P**	**00 08 56.9**	**+0.9**
	2.5nm,0.9s,baz=100,slow=9.4,SNR=4.2						
CMAR	**Chiang Mai Arr**	**78.16**	**295**	P		**P**	**00 09 04.3**	**+1.5**
	0.9nm,0.5s,baz=107,slow=5.8,SNR=3.5						
SNAA	**Sanae**	**88.03**	**183**	*e*P		**P**	**00 09 51.9**	**-1.1**
	144nm,0.9s						
CMB	**Columbia Colle**	**88.54**	**48**	*e*P		**P**	**00 09 55.9**	**0.0**
	1.4nm,0.3s						
MCK	**McKinley**	**90.16**	**18**	P		**P**	**00 10 03.0**	**+0.2**
	0.6nm,0.5s						
ILAR	**Eielson Array**	**91.54**	**18**	P		**P**	**00 10 10.1**	**+0.9**
	0.2nm,0.5s,baz=234,slow=5.9,SNR=5.2						
NEW	**Newport**	**95.18**	**40**	*e*P		**P**	**00 10 26.8**	**+0.4**
	0.8nm,0.5s						
ANMO	**Albuquerque**	**97.64**	**56**	*e*P		**P**	**00 10 37.6**	**-0.5**
	0.3nm,0.4s						
ARCES	**ARCESS Array B**	**125.89**	**345**	PKP		**PKPdf**	**00 16 03.7**	**-0.5**
	2.0nm,0.7s,baz=27,slow=2.2,SNR=5.1						
FINES	**FINESS Array B**	**131.25**	**337**	PKP		**PKPdf**	**00 16 14.8**	**+0.2**
	0.9nm,0.7s,baz=48,slow=2.1,SNR=3.6						
CONA	**Conrad Observa**	**144.61**	**328**	*i* PKPdf		**PKPdf**	**00 16 39.9**	**+0.2**
	5.2nm,1.5s						
GERES	**GERESS Array B**	**145.02**	**330**	PKPbc		**PKPbc**	**00 16 39.4**	**-0.3**
	0.4nm,0.6s,baz=29,slow=2.2,SNR=4.9						
ARSA	**Arzberg**	**145.23**	**327**	*i* PKPdf		**PKPdf**	**00 16 41.3**	**+0.7**
	2.4nm,1.0s						
MOA	**Molln**	**145.45**	**329**	*i* PKPab		**PKPab**	**00 16 41.3**	**0.0**
	1.6nm,0.6s						
SOKA	**Soboth**	**145.86**	**327**	*i* PKPab		**PKPbc**	**00 16 42.0**	**-0.4**
	4.1nm,1.1s						
OBKA	**Obir**	**146.22**	**327**	*i* pPKPbc		**PKPab**	**00 16 45.7**	**+1.5**
	6.9nm,1.4s						
MYKA	**Terra Mystica**	**146.60**	**328**	*i* PKPbc		**PKPbc**	**00 16 44.3**	**-0.4**
	5.3nm,0.9s						
WATA	**Walderalm**	**147.10**	**330**	*i* PKPdf		**PKPdf**	**00 16 39.8**	**-4.2**
	0.6nm,0.4s						
MOTA	**Moosalm**	**147.31**	**331**	*i* pPKPdf		**PKPbc**	**00 16 46.6**	**-0.1**
	2.6nm,0.8s						
FETA	**Feichten**	**147.72**	**331**	*i* pPKPbc		**PKPab**	**00 16 50.8**	**+0.5**
	4.4nm,1.1s						
DAVA	**Damuels**	**147.90**	**332**	*i* sPKPdf		**PKPbc**	**00 16 49.3**	**+1.0**
	4.7nm,1.2s						

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*CSEM **31** 00:04:19.6±0.3, 41°.33N×43°.83E, h10km, ML1.7, Error ellipse: s-maj=8.4km s-min=5.5km az=147.0*
*TIF **31** 00:04:19.9, 41°.41N×43°.88E, h8km±1km*
*DDA **31** 00:04:19.2, 41°.28N×43°.81E, h7km, Md2.7*
*ISCJB **31** 00:04:20.4±0.6, 41°.31N±0°.04×43°.81E±0°.05, h21km±7km, Error ellipse: s-maj=6.5km s-min=5.3km az=44.5*

ISC 31 00:04:19.9±1.0, 41°31N±0°.03×43°80E±0°.03, h24km±6km, n16, σ0°75/30, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BGD	**Bogdanovka**	**0.16**	**255**	P		**Pb**	**00 04 25.4**	**+0.1**
BGD				S		**Sb**	**00 04 28.4**	**-0.4**
BGD	**Bogdanovka**	**0.16**	**255**	P		**Pb**	**00 04 25.4**	**+0.1**
BGD				S		**Sb**	**00 04 29.0**	**+0.2**
AKH	**Akhalkalaki**	**0.26**	**294**	P		**Pb**	**00 04 26.1**	**-0.3**
AKH				S		**Sb**	**00 04 30.2**	**-0.6**
AKH	**Akhalkalaki**	**0.26**	**294**	P		**Pb**	**00 04 26.1**	**-0.3**
AKH				S		**Sb**	**00 04 30.2**	**-0.6**
EAK	**Akyaka**	**0.64**	**193**	*i* P		**Pn**	**00 04 34.2**	**+0.6**
EAK	**Akyaka**	**0.64**	**193**	P		**Pn**	**00 04 34.2**	**+0.6**
TBLG	**Delisi**	**0.82**	**59**	P		**Pb**	**00 04 34.7**	**-0.8**
TBLG				S		**Sb**	**00 04 45.0**	**-1.2**
TBLG	**Delisi**	**0.82**	**59**	P		**Pb**	**00 04 34.7**	**-0.8**
TBLG				S		**Sb**	**00 04 45.0**	**-1.2**
EPOS	**Posof**	**0.83**	**284**	*i* P		**Pb**	**00 04 35.5**	**-0.3**
EPOS				*i* S		**Sn**	**00 04 48.0**	**+0.1**
EPOS	**Posof**	**0.83**	**284**	P		**Pb**	**00 04 35.5**	**-0.3**
EPOS				S		**Sn**	**00 04 48.0**	**+0.1**
DIGO	**Kars**	**0.95**	**200**	*i* P		**Pb**	**00 04 36.7**	**-1.2**
DIGO				*i* S		**Sb**	**00 04 50.2**	**+0.1**
DIGO	**Kars**	**0.95**	**200**	P		**Pb**	**00 04 36.7**	**-1.2**
DIGO				S		**Sb**	**00 04 50.2**	**+0.1**
DGRG	**David-gareji**	**1.19**	**83**	P		**Pb**	**00 04 42.2**	**+0.4**
DGRG				S		**Sb**	**00 04 58.9**	**+2.1**
GUDG	**Gudauri**	**1.26**	**23**	P		**Pn**	**00 04 42.6**	**+0.4**
GUDG				S		**Sb**	**00 04 59.0**	**-0.1**
GUDG	**Gudauri**	**1.26**	**23**	P		**Pn**	**00 04 42.6**	**+0.4**
GUDG				S		**Sb**	**00 04 59.0**	**-0.1**
ONI	**Oni**	**1.31**	**349**	P		**Pb**	**00 04 43.4**	**-0.5**
ONI				S		**Sb**	**00 05 01.1**	**+0.9**

IDC 31 00:08:31.9±46.0, 15°.57S×173°.20W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.6/28, mbtmp3.9/3, MS3.2/1, Ms1 3.2/1, ms1mx2.5/29, Error ellipse: s-maj=888.8km s-min=179.7km az=78.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RPZ	**Rata Peaks**	**31.09**	**202**	LR	LR	00 25 35.4	
	comp=Z,46nm,21.3s,baz=112,slow=33						
STKA	**Stephens Creek**	**44.12**	**240**	P	P	00 16 43.0	+0.6
	0.9nm,0.4s,baz=91,slow=5.4,SNR=4.7						
WRA	**Warramunga Arr**	**50.00**	**257**	P	P	00 17 27.8	-0.7
	0.2nm,0.2s,baz=95,slow=8.1,SNR=12						
ASAR	**Alice Springs**	**50.24**	**252**	P	P	00 17 30.2	-0.1
	2.8nm,0.6s,baz=88,slow=8.0,SNR=45						

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*NEIC **31** 00:37:30.7, 16°.57N×98°.94W, h20km, MD4.2(MEX), After MEX.*

MEX 31 00:37:26.3±0.6, 16°43N×98°90W, h15km±9km, MD4.2, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ACX	**Acapulco**	**1.01**	**296**	*e*P		Pb	00 37 43.0	-2.6
ACX				*i* S		Sb	00 37 55.7	-3.0
ACX	**Acapulco**	**1.01**	**296**	*e*P		Pb	00 37 44.1	-1.5
ACX				*e*S		Sb	00 37 58.0	-0.8
TLIG	**Tlapa**	**1.18**	**16**	*e*P		Pn	00 37 44.3	-4.1
TLIG				*e*S		Sb	00 37 59.5	-4.0
CAIG	**El Cayaco**	**1.45**	**295**	*e*P		Pn	00 37 49.1	-2.8
CAIG				*i* S		Sn	00 38 05.5	-5.1
CAIG	**El Cayaco**	**1.45**	**295**	*e*P		Pn	00 37 50.1	-1.8
CAIG				*e*S		Sn	00 38 08.1	-2.5
MEIG	**Mezcala**	**1.64**	**335**	*e*P		Pn	00 37 51.0	-3.7
MEIG				*e*S		Sn	00 38 10.2	-5.4
MEIG	**Mezcala**	**1.64**	**335**	*e*P		Pn	00 37 51.8	-2.9
MEIG				*e*S		Sn	00 38 11.5	-4.1
PLIG	**Platanillo**	**2.04**	**344**	*e*P		Pn	00 37 57.2	-3.0
PLIG				*i* S		Sn	00 38 20.4	-5.0
PLIG	**Platanillo**	**2.04**	**344**	*e*P		Pn	00 37 57.2	-3.0
PLIG				*e*S		Sn	00 38 25.8	+0.4
VHO	**Vista Hermosa**	**2.18**	**73**	*e*P		Pn	00 37 58.6	-3.6
VHO				*e*S		Sn	00 38 25.1	-3.9
VHO	**Vista Hermosa**	**2.18**	**73**	*e*P		Pn	00 38 02.6	+0.5
VHO				*e*S		Sn	00 38 28.9	-0.1
ARIG	**Puente Sto Nin**	**2.30**	**323**	*e*P		Pn	00 38 00.9	-2.8
ARIG				*i* S		Sn	00 38 27.3	-4.6
YAIG	**Yautepec**	**2.43**	**356**	*e*P		Pn	00 38 03.0	-2.6
YAIG				*e*S		Sn	00 38 30.7	-4.4
YAIG	**Yautepec**	**2.43**	**356**	*e*P		Pn	00 38 04.5	-1.1
YAIG				*e*S		Sn	00 38 35.2	+0.1
ZIIG	**Zihuatanejo**	**2.72**	**296**	*e*P		Pn	00 38 07.4	-2.0
ZIIG				*i* S		Sn	00 38 37.6	-4.4
ZIIG	**Zihuatanejo**	**2.72**	**296**	*e*P		Pn	00 38 11.4	+2.0
ZIIG				*e*S		Sb	00 38 49.2	+1.5
HUIG	**Huatulco**	**2.77**	**103**	*e*P		Pn	00 38 07.5	-2.7
HUIG				*i* S		Sn	00 38 38.7	-4.6
HUIG	**Huatulco**	**2.77**	**103**	*e*P		Pn	00 38 12.4	+2.3
HUIG				*e*S		Sn	00 38 45.5	+2.2

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*ISCJB **31** 00:42:10.5±0.6, 13°.31S±0°.06×76°.76W±0°.08, h59km, mb4.0/10, Error ellipse: s-maj=12.9km s-min=6.1km az=152.6*
*NEIC **31** 00:42:11.0, 13°.30S×76°.80W, h54km, mb4.0/8, After ARE.*
NEIC Felt [III] at San Vicente de Canete and [II] at Chincha Alta and Tambo de Mora.
*IDC **31** 00:42:15.5±1.6, 13°.16S×76°.35W, h58km±15km, mb3.5/5, mb1 3.9/9, mb1mx3.7/25, mbtmp3.9/9, MS2.8/1, Ms1 3.0/1, ms1mx2.6/11, Error ellipse: s-maj=18.0km s-min=14.0km az=66.0*

ISC 31 00:42:13.7±0.7, 13°22S±0°.07×76°62W±0°.09, h59km, n31, σ2s13/30, mb3.9/10, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NNA	**Nana**	**1.25**	**350**	P		**Pn**	**00 42 36.0**	**+1.0**
	76nm,0.3s,baz=161,slow=13,SNR=64						
NNA				S		**Sn**	**00 42 49.5**	**-1.4**
	333nm,0.3s,baz=238,slow=15,SNR=26						
NNA				LR		LR	00 43 09.4	
	comp=Z,200nm,21.5s,baz=188,slow=43						
NNA	**Nana**	**1.25**	**350**	*e*Pn		**Pn**	**00 42 35.4**	**+0.4**
NNA				*e*Sn		**Sn**	**00 42 50.5**	**-0.4**
ATAH	**Atahualpa**	**6.29**	**344**	P		**Pn**	**00 43 47.7**	**+3.4**
	2.1nm,0.3s,baz=167,slow=3.9,SNR=18						
ATAH				S		Sn	00 45 05.0	+10
	2.5nm,0.3s,baz=326,slow=7.3,SNR=2.0						
LPAZ	**La Paz**	**8.76**	**111**	P		**Pn**	**00 44 19.0**	**+0.7**
	1.2nm,0.3s,baz=310,slow=8.9,SNR=26						
LPAZ				S		**Sn**	**00 46 01.6**	**+5.7**
	0.2nm,0.3s,baz=52,slow=19,SNR=1.6						
LPAZ				LR		LR	00 47 58.7	
	comp

0.6nm,0.6s
HWUT Hardware Ranch 63.37 331 *e*P **P 00 52 35.1 -1.9**
0.6nm,0.5s
PDAR Pinedale Array 63.38 333 P **P 00 52 39.6 +2.4**
0.1nm,0.3s,baz=94,slow=6.3,SNR=2.8
CMB Columbia Colle 65.42 323 *e*P **P 00 52 48.1 -2.3**
3.8nm,0.8s
WALA Waterton Lakes 70.22 335 *e*P **P 00 53 18.2 -2.2**
2.5nm,0.7s
NEW Newport 70.99 333 *e*P **P 00 53 23.2 -1.8**
1.1nm,0.7s
YKA Yellowknife Ar 81.08 343 pP pP 00 54 38.3 -0.3
1.0nm,1.0s,baz=141,slow=3.6,SNR=5.2
SUMG Summit 89.20 11 *e*P **P 00 55 01.4 -1.6**
2.5nm,0.8s
H11N3 WAKE ISLAND Hyl 19.02 285 T T 03 11 15.7
baz=96,slow=74,SNR=9.4
H11N2 WAKE ISLAND Hyl 19.03 285 T T 03 11 17.5
baz=96,slow=74,SNR=9.8
H11N1 WAKE ISLAND Hyl 19.04 285 T T 03 11 17.1
baz=96,slow=74,SNR=10
H11S2 WAKE ISLAND Hyl 19.11 284 T T 03 11 18.2
baz=95,slow=75,SNR=13
H11S1 WAKE ISLAND Hyl 19.12 284 T T 03 11 18.3
baz=95,slow=75,SNR=24
H11S3 WAKE ISLAND Hyl 19.13 284 T T 03 11 21.9
baz=95,slow=75,SNR=16
ASAR Alice Springs 132.72 219 PKP **PKPdf 01 01 24.4 +1.6**
0.3nm,0.8s,baz=135,slow=2.7,SNR=5.2
WRA Warramunga Arr 135.12 223 PKP **PKPdf 01 01 29.1 +1.7**
1.0nm,0.9s,baz=128,slow=2.0,SNR=7.1
SONM Songino Array 145.40 356 PKPbc **PKPab 01 01 47.3 +1.9**
2.5nm,0.8s,baz=360,slow=2.4,SNR=12
SONM pPKPbc pPKPbc 01 02 02.6 +0.2
1.8nm,0.7s,baz=344,slow=4.7,SNR=5.3

ISCJB ***31*** *01:04:19.4±0.6,32.°40N±0.°04×131.°83E±0.°04, h29km, mb3.4/2, Error ellipse: s-maj=6.6km s-min=4.3km az=144.5*
JMA ***31*** *01:04:19.6,32.°40N×131.°78E, h35km±1km, M3.3 Broadband fault plane solution: P waves. NP1: ϕs51.00000°, δ83.00000°, λ71.00000°. NP2:ϕs300.00000°, δ20.00000°, λ158.00000°. Principal axes: T Plg49.0000°, Azm300.0000°; N Plg19.0000°, Azm53.0000°; P Plg35.0000°, Azm157.0000°;*
JMA Felt I J1.
IDC ***31*** *01:04:19.1±1.5,32.°49N×131.°11E, h116km±7km, mb3.1/2, mb1 2.9/4, mb1mx2.8/39, mbtmp3.4/4 Error ellipse: s-maj=33.2km s-min=15.3km az=102.0*
ISC 31 01:04:18.4±1.1,32.°36N±0.°04×131.°82E±0.°05, h29km, n15, σ1s31/21, 2C-4D, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTSN	**Tsuno**	**0.29**	**246**	⇓P	**Pn**	**01 04 27.1**	**+0.4**
JTSN				S	**Sn**	**01 04 32.7**	**+0.7**
JKIT	**Kitakata**	**0.40**	**310**	⇓P	**Pn**	**01 04 28.1**	**-0.2**
JKIT				S	**Sn**	**01 04 34.3**	**-0.6**
JUS	**Usuki**	**0.70**	**355**	⇓P	**Pn**	**01 04 32.6**	**+0.2**
JUS				S	**Sn**	**01 04 42.3**	**0.0**
JTZ	**Takazaki**	**0.77**	**234**	P	**Pn**	**01 04 34.3**	**+1.0**
JTZ				S	**Sn**	**01 04 45.6**	**+1.7**
JIU2	**Izumi 2**	**0.87**	**282**	⇑P	**Pb**	**01 04 35.0**	**+0.1**
JIU2				S	**Sn**	**01 04 46.4**	**+0.1**
JNAR	**Kushima--Naru**	**0.95**	**209**	⇑P	**Pb**	**01 04 37.4**	**+1.1**
JTO	**Tosashimizu**	**0.97**	**59**	⇑P	**Pn**	**01 04 36.3**	**+0.3**
JTO				S	**Sn**	**01 04 49.0**	**+0.2**
UWA2	**Uwa jima 2**	**1.09**	**39**	P	**Pn**	**01 04 37.9**	**+0.2**
JNU	**Nakatsue**	**1.09**	**314**	P	**Pb**	**01 04 38.4**	**-0.3**
	109nm,0.3s,baz=139,slow=6.1,SNR=1023						
JNU				S	**Sb**	**01 04 53.1**	**+0.5**
	baz=41,slow=20						
JNA	**Nagahama**	**1.31**	**25**	P	**Pn**	**01 04 41.6**	**+0.8**
KSRS	**Korea Array**	**6.00**	**329**	P	**Pn**	**01 05 46.4**	**+1.2**
	0.8nm,0.3s,baz=149,slow=15,SNR=6.4						
KSRS				S	**Sn**	**01 06 51.8**	**-1.1**
	0.4nm,0.3s,baz=172,slow=17,SNR=3.8						
JOW	**Kunigami**	**6.32**	**210**	P	**Pn**	**01 05 46.0**	**-3.6**
	baz=68,slow=19,SNR=3.1						
JOW				S	**Sn**	**01 06 57.9**	**-2.9**
	0.5nm,0.3s,baz=60,slow=20,SNR=3.2						
MJAR	**Matsushiro Arr**	**6.73**	**50**	P	Pn	01 06 01.0	+5.8
	0.5nm,0.3s,baz=244,slow=16,SNR=5.8						
SONM	**Songino Array**	**24.68**	**316**	P	P	01 09 23.2	-14
	0.8nm,0.7s,baz=122,slow=7.4,SNR=4.3						
MKAR	**Makanchi Array**	**40.14**	**306**	P	P	01 11 40.3	-11
	0.5nm,0.6s,baz=94,slow=8.6,SNR=5.7						

ISCJB ***31*** *01:19:00.5±0.3,18.°49N±0.°04×72.°84W±0.°03, h6km, mb3.9/21, MS3.1/5, Error ellipse: s-maj=5.3km s-min=4.2km az=169.5*
IDC ***31*** *01:19:01.2±0.8,18.°68N×72.°80W, h0km, mb3.7/10, mb1 4.1/15, mb1mx3.9/33, mbtmp3.9/15, ML3.4/5, MS2.9/8, Ms1 2.9/8, ms1mx2.7/32, Error ellipse: s-maj=22.6km s-min=15.7km az=48.0*
NEIC ***31*** *01:19:02.7±0.3,18.°52N×72.°83W, h10km, mb4.1/13, Error ellipse: s-maj=6.7km s-min=5.5km az=20.0*
JSN ***31*** *01:19:50.6±0.4,18.°36N×76.°27W, h19km±5km*
ISC 31 01:19:01.9±0.5,18.°47N±0.°05×72.°86W±0.°04, h6km, n50, σ2s05/53, mb3.8/21, MS3.1/5, 1C-2D, Haiti region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NQUSE	**US Embassy, Po**	**0.59**	**81**	*i* P	**Pg**	**01 19 12.0**	**-1.3**
SDDR	**Presa de Saban**	**1.57**	**71**	*e*Pn	**Pn**	**01 19 29.8**	**-0.7**
SDDR				*e*Sn	**Sn**	**01 19 50.0**	**-1.2**
GTBY	**Guantanamo Bay**	**2.57**	**305**	*e*Pn	**Pn**	**01 19 42.6**	**-1.5**
SDD	**Santo Domingo**	**2.80**	**90**	*e*Pn	**Pn**	**01 19 47.8**	**+0.6**
CMJ	**Castle Mountai**	**3.35**	**265**	⇑*i*P	**Pn**	**01 19 56.0**	**+1.1**
GRTK	**Grand Turk**	**3.44**	**28**	*e*Pn	**Pn**	**01 19 55.6**	**-0.4**
GRTK				*e*Sn	**Sn**	**01 20 36.0**	**-1.0**
YHJ	**Yallahs**	**3.50**	**261**	*i* P	**Pn**	**01 20 00.2**	**+3.3**
HOJ	**Hope**	**3.73**	**263**	*i* P	**Pn**	**01 20 01.4**	**+1.4**
STH	**Stony Hill**	**3.77**	**265**	*i* P	**Pn**	**01 20 01.0**	**+0.3**
BBJ	**Bamboo Saint A**	**4.18**	**270**	⇓*i*P	**Pn**	**01 20 07.2**	**+0.8**
MTDJ	**Mount Denham**	**4.45**	**268**	*e*Pn	**Pn**	**01 20 10.6**	**+0.6**
MCJ	**Malvern**	**4.62**	**264**	⇓*i*P	**Pn**	**01 20 13.9**	**+1.5**
CELP	**Cerrillos**	**5.98**	**93**	*e*Pn	**Pn**	**01 20 31.7**	**+0.7**
SJG	**San Juan**	**6.38**	**92**	Pn	**Pn**	**01 20 37.0**	**+0.5**
	0.7nm,0.3s,baz=270,slow=10,SNR=1.8						
SJG				Sn	**Sn**	**01 21 54.6**	**+4.8**
	baz=270,slow=0.9,SNR=3.5						
SJG				LR	LR	01 22 18.0	
	comp=Z,19nm,20.2s,baz=266,slow=31						
SJG	**San Juan**	**6.38**	**92**	*e*Pn	**Pn**	**01 20 36.8**	**+0.3**
SDV	**Santo Domingo**	**9.77**	**167**	Pn	**Pn**	**01 21 24.0**	**+0.8**
	3.1nm,0.3s,baz=36,slow=10,SNR=10						
SDV				Sn	**Sn**	**01 23 08.4**	**-5.0**
	0.7nm,0.3s,baz=330,slow=18,SNR=3.4						
SDV				LR	LR	01 25 35.0	
	comp=Z,47nm,21.4s,baz=46,slow=40						
PCRV	**Puerto La Cruz**	**11.46**	**135**	Pn	**Pn**	**01 21 47.0**	**+0.8**
	2.0nm,0.3s,baz=322,slow=4.3,SNR=10						
PCRV				Sn	**Sn**	**01 23 50.3**	**-4.4**
	0.5nm,0.3s,baz=194,slow=19,SNR=3.2						
HELC	**Santa Helena**	**12.48**	**192**	*e*Pn	**Pn**	**01 22 01.1**	**+0.6**
HELC				*e*Sn	**Sn**	**01 24 12.6**	**-7.5**
RUSC	**La Rusia**	**12.50**	**181**	*e*Pn	**Pn**	**01 22 01.6**	**+0.7**
ROSC	**El Rosal**	**13.62**	**186**	Pn	**Pn**	**01 22 19.1**	**+3.0**
	1.1nm,0.3s,baz=164,slow=21,SNR=5.0						
ROSC				Sn	**Sn**	**01 24 47.2**	**-0.9**
	1.0nm,0.3s,baz=135,slow=19,SNR=2.2						
ROSC	**El Rosal**	**13.62**	**186**	*e*Pn	**Pn**	**01 22 16.8**	**+0.7**
CCIG	**Comitan**	**18.53**	**266**	*e*P	**Pn**	**01 23 21.3**	**+1.7**
	14nm,0.8s						
OTAV	**Otavalo**	**18.93**	**197**	*e*P	**Pn**	**01 23 25.4**	**+0.6**
	5.4nm,1.0s						
TKL	**Tuckaleechee C**	**19.66**	**333**	P	**P**	**01 23 29.8**	**-1.8**
	0.1nm,0.3s,baz=123,slow=17,SNR=2.9						
TKL				S	S	01 26 57.2	-17
	0.1nm,0.3s,baz=219,slow=14,SNR=2.3						
TKL				LR	LR	01 31 34.2	
	comp=Z,21nm,20.6s,baz=54,slow=39						
BLA	**Blacksburg**	**19.82**	**342**	*e*P	**Pn**	**01 23 34.5**	**-0.4**
	8.5nm,0.8s						
CMIG	**Matias Romero**	**21.02**	**270**	P	**P**	**01 23 48.1**	**+1.7**
	1.4nm,0.3s,baz=1.0,slow=24,SNR=7.1						
PTGA	**Pitinga**	**22.91**	**145**	P	**P**	**01 24 09.1**	**+2.4**
	5.1nm,0.8s,baz=344,slow=13,SNR=7.7						
ATAH	**Atahualpa**	**26.02**	**193**	LR	LR	01 35 51.1	
	comp=Z,36nm,21.3s,baz=359,slow=38						
SADO	**Sadowa**	**26.75**	**350**	LR	LR	01 34 06.2	
	comp=Z,51nm,18.9s,baz=180,slow=34						
WMOK	**Wichita Mounta**	**28.16**	**310**	*e*P	**P**	**01 24 55.7**	**+0.6**
	1.4nm,0.8s						
JFWS	**Jewell Farm**	**28.47**	**333**	*e*P	**P**	**01 24 59.1**	**+1.4**
	8.8nm,0.6s						
TXAR	**Lajitas Array**	**30.08**	**297**	P	**P**	**01 25 13.0**	**+0.6**
	0.6nm,0.8s,baz=118,slow=7.4,SNR=8.0						
MNTX	**Corrundas Mount**	**32.13**	**301**	*e*P	**P**	**01 25 30.5**	**+0.2**
	2.0nm,0.8s						
LPAZ	**La Paz**	**34.85**	**172**	LR	LR	01 40 27.3	
	comp=Z,45nm,19.6s,baz=334,slow=37						
319A	**Douglas**	**35.27**	**298**	*e*P	**P**	**01 25 57.2**	**-0.6**
	6.3nm,0.7s						
SCHQ	**Schefferville**	**36.59**	**6**	LR	LR	01 40 53.9	
	comp=Z,36nm,21.0s,baz=352,slow=36						
TUC	**Tucson**	**36.73**	**300**	*e*P	**P**	**01 26 10.9**	**+0.7**
	1.1nm,0.7s						
PDAR	**Pinedale Array**	**39.34**	**316**	P	**P**	**01 26 32.3**	**0.0**
	0.2nm,0.5s,baz=106,slow=6.7,SNR=2.4						
SZCU	**Shurtz Canyon**	**39.92**	**307**	*e*P	**P**	**01 26 34.7**	**-2.5**
	4.9nm,0.3s						
LOHW	**Long Hollow**	**40.40**	**317**	*e*P	**P**	**01 26 41.2**	**+0.2**
	1.7nm,0.8s						
DUG	**Dugway, Tooele**	**40.56**	**311**	*e*P	**P**	**01 26 41.6**	**-0.7**
	2.5nm,1.0s						
TPAW	**Teton Pass**	**40.57**	**316**	*e*P	**P**	**01 26 43.7**	**+1.1**
	3.3nm,0.9s						
NEW	**Newport**	**46.49**	**320**	*e*P	**P**	**01 27 29.8**	**-0.2**
	2.6nm,0.9s						
YKA	**Yellowknife Ar**	**52.58**	**337**	P	**P**	**01 28 14.3**	**-1.7**
	0.7nm,0.7s,baz=130,slow=7.6,SNR=6.1						
PLCA	**Paso Flores**	**58.94**	**178**	P	**P**	**01 29 03.4**	**+1.3**
	1.5nm,0.9s,baz=352,slow=7.1,SNR=2.3						
ESDC	**Sonseca Array**	**62.36**	**54**	P	**P**	**01 29 24.7**	**-0.9**
	0.4nm,0.6s,baz=282,slow=7.4,SNR=5.2						
ILAR	**Eielson Array**	**66.64**	**333**	P	**P**	**01 29 50.7**	**-2.4**
	0.4nm,0.8s,baz=116,slow=4.1,SNR=4.1						
KEST	**Kesra**	**73.27**	**57**	P	**P**	**01 30 34.9**	**+0.3**
	2.1nm,0.8s,baz=260,slow=6.1,SNR=3.8						
GERES	**GERESS Array B**	**74.10**	**43**	P	**P**	**01 30 38.3**	**-0.8**
	0.2nm,0.3s,baz=285,slow=8.0,SNR=2.5						
GERES				LR	LR	01 57 26.3	
	comp=Z,14nm,21.2s,baz=301,slow=31						
BRTR	**Keskin Array B**	**90.43**	**48**	P	**P**	**01 32 07.9**	**+3.0**
	0.4nm,0.8s,baz=258,slow=6.2,SNR=3.9						

ISK ***31*** *01:21:43.2,39.°31N×41.°38E, h12km, MD2.5*
DDA ***31*** *01:21:43.6,39.°27N×41.°48E, h7km, Md2.2*
CSEM ***31*** *01:21:43.4±0.6,39.°26N×41.°42E, h10km, MD2.5, Error ellipse: s-maj=16.1km s-min=10.6km az=49.0*
ISCJB ***31*** *01:21:44.2±0.6,39.°26N±0.°04×41.°43E±0.°05, h15km±9km, Error ellipse: s-maj=6.8km s-min=5.9km az=170.8*
ISC 31 01:21:43.6±1.0,39.°24N±0.°04×41.°44E±0.°03, h17km±6km, n15, σ1s19/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VRTB	**Varto-Mus**	**0.08**	**169**	*e*PG	**Pg**	**01 21 47.1**	**-0.1**
VRTB				*e*SG	**Sg**	**01 21 50.3**	**+0.7**
VRTB	**Varto-Mus**	**0.08**	**169**	*e*Pg	**Pg**	**01 21 47.1**	**-0.1**
VRTB				*e*Sg	**Sg**	**01 21 50.3**	**+0.7**
BNGL	**BINGOL**	**0.37**	**218**	*i* P	**Pg**	**01 21 51.7**	**+0.3**
BNGL				*i* S	**Sb**	**01 21 58.5**	**+1.2**
EKAR	**Karacoban**	**0.49**	**88**	*i* P	**Pg**	**01 21 54.1**	**+0.6**
EKAR				*i* S	**Sb**	**01 22 02.3**	**+1.5**
EKAR	**Karacoban**	**0.49**	**88**	P	**Pg**	**01 21 54.1**	**+0.6**
EKAR				S	**Sb**	**01 22 02.3**	**+1.5**
ECAT	**Cat-ERZURUM**	**0.51**	**316**	*i* P	**Pb**	**01 21 54.1**	**-0.1**
ECAT				*i* S	**Sb**	**01 22 02.3**	**+0.8**
BNGB	**Bing˜¶l**	**0.64**	**247**	*e*PG	**Pg**	**01 21 55.6**	**-0.6**
ERZM	**Erzurum**	**0.66**	**355**	*i* P	**Pb**	**01 21 55.6**	**-1.4**
ERZM				*i* S	**Sb**	**01 22 05.7**	**-0.2**
EZM	**Erzurum**	**0.66**	**355**	*e*PG	**Pb**	**01 21 55.5**	**-1.4**
YEDI	**Yedisu-Bingol**	**0.72**	**286**	*e*PG	**Pb**	**01 21 56.8**	**-1.0**
YEDI	**Yedisu-Bingol**	**0.72**	**286**	*e*Pg	**Pb**	**01 21 56.8**	**-1.0**
TATV	**Tatvan**	**0.98**	**138**	*i* P	**Pb**	**01 22 00.1**	**-2.2**
TATV	**Tatvan**	**0.98**	**138**	P	**Pb**	**01 22 00.1**	**-2.2**
SVAN	**Silvan-Diyarba**	**1.11**	**190**	*e*PN	**Pg**	**01 22 06.0**	**+0.9**
SVAN	**Silvan-Diyarba**	**1.11**	**190**	*e*Pn	**Pg**	**01 22 06.0**	**+0.9**

IDC ***31*** *01:24:58.2±2.2,3.°60N×93.°70E, h0km, mb3.7/5, mb1 3.9/7, mb1mx3.5/43, mbtmp3.7/7, ML3.7/2, Error ellipse: s-maj=71.7km s-min=21.6km az=57.0*
ISCJB ***31*** *01:25:00.7±1.3,3.°7N±0.°2×94.°0E±0.°1, h19km, mb3.7/5, Error ellipse: s-maj=25.9km s-min=10.9km az=35.0*
ISC 31 01:25:02.8±1.8,3.°9N±0.°2×94.°0E±0.°2, h19km, n13, σ1s35/8, mb3.7/5, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PSI	**Prapat**	**4.99**	**102**	Pn	**Pn**	**01 26 18.1**	**+1.3**
	2.6nm,0.3s,baz=253,slow=11,SNR=8.1						
PSI				Sn	**Sn**	**01 27 13.1**	**-1.1**
	3.0nm,0.3s,baz=0.0,slow=20,SNR=5.6						
CMAR	**Chiang Mai Arr**	**15.28**	**18**	Pn	**P**	**01 28 42.0**	**-0.5**
	0.1nm,0.3s,baz=203,slow=16,SNR=3.6						
H08S2	**Diego Garcia H**	**24.34**	**242**	T	T	01 54 57.9	
	baz=62,slow=76,SNR=336						
H08S3	**Diego Garcia H**	**24.34**	**242**	T	T	01 54 58.1	
	baz=62,slow=76,SNR=186						
H08S1	**Diego Carcia H**	**24.36**	**242**	T	T	01 55 02.9	
	baz=62,slow=76,SNR=186						
H01W3	**Cape Leeuwin H**	**42.92**	**155**	T	T	02 18 20.7	
	baz=330,slow=76,SNR=15						
H01W2	**Cape Leeuwin H**	**42.93**	**156**	T	T	02 18 19.6	
	baz=330,slow=76,SNR=18						
H01W1	**Cape Leeuwin H**	**42.94**	**155**	T	T	02 18 21.1	
	baz=330,slow=76,SNR=14						
MKAR	**Makanchi Array**	**43.97**	**348**	P	**P**	**01 33 07.5**	**-1.3**
	0.3nm,0.4s,baz=176,slow=8.7,SNR=2.4						
SONM	**Songino Array**	**45.09**	**12**	P	**P**	**01 33 17.7**	**-0.1**
	0.4nm,0.5s,baz=182,slow=9.6,SNR=2.6						
WRA	**Warramunga Arr**	**46.11**	**122**	P	**P**	**01 33 26.1**	**-0.2**
	1.8nm,0.6s,baz=299,slow=8.9,SNR=5.1						
ASAR	**Alice Springs**	**47.51**	**127**	P	**P**	**01 33 36.3**	**-0.8**
	0.8nm,0.6s,baz=294,slow=7.8,SNR=3.3						
ZALV	**Zalesovo Beam**	**50.50**	**353**	P	**P**	**01 34 01.4**	**+1.9**
	0.3nm,0.3s,baz=166,slow=6.7,SNR=2.8						

ISK ***31*** *01:30:21.5,39.°46N×39.°68E, h5km, MD2.7*
DDA ***31*** *01:30:21.5,39.°55N×39.°66E, h3km, Md2.7*
CSEM ***31*** *01:30:22.3±0.2,39.°53N×39.°67E, h2km, MD2.7, Error ellipse: s-maj=6.2km s-min=4.7km az=172.0*
ISC 31 01:30:21.8±1.1,39.°51N±0.°02×39.°69E±0.°02, h3km±11km, n26, σ0s84/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EUZM	**Uzumlu**	**0.20**	**1**	*i* P	**Pg**	**01 30 25.3**	**-0.4**
EUZM				*i* S	**Sg**	**01 30 28.0**	**-0.2**
EUZM	**Uzumlu**	**0.20**	**1**	P	**Pg**	**01 30 25.3**	**-0.4**
EUZM				S	**Sg**	**01 30 28.0**	**-0.2**
TNCL	**Tunceli-Merkez**	**0.41**	**196**	*i* P	**Pg**	**01 30 29.8**	**0.0**
TNCL				*i* S	**Sb**	**01 30 37.4**	**-1.1**
TNCL	**Tunceli-Merkez**	**0.41**	**196**	P	**Pg**	**01 30 29.8**	**0.0**
TNCL				S	**Sb**	**01 30 37.4**	**-1.1**
PTK	**Pertek**	**0.66**	**201**	*e*PG	**Pg**	**01 30 34.9**	**+0.4**
YEDI	**Yedisu-Bingol**	**0.66**	**96**	*e*PG	**Pb**	**01 30 35.4**	**-0.7**
YEDI				*e*SG	**Sb**	**01 30 46.1**	**+0.4**
YEDI	**Yedisu-Bingol**	**0.66**	**96**	*e*Pg	**Pb**	**01 30 35.4**	**-0.7**
YEDI				*e*Sg	**Sb**	**01 30 46.2**	**+0.4**
KELT	**Kelkit**	**0.72**	**332**	*i* P	**Pg**	**01 30 34.9**	**-0.7**
KELT				*i* S	**Sg**	**01 30 44.4**	**-0.6**
KELT	**Kelkit**	**0.72**	**332**	P	**Pg**	**01 30 34.9**	**-0.7**
KELT				S	**Sg**	**01 30 44.4**	**-0.6**
REFA	**Refahiye_ERZ˜**	**0.73**	**261**	*i* P	**Pn**	**01 30 40.9**	**+1.8**
REFA				*i* S	**Sn**	**01 30 48.6**	**-2.1**
KOPT	**Kop Dagi**	**0.80**	**51**	*i* P	**Pg**	**01 30 37.0**	**-0.2**
KOPT				*i* S	**Sb**	**01 30 48.8**	**-1.0**
KOPT	**Kop Dagi**	**0.80**	**51**	P	**Pg**	**01 30 37.0**	**-0.2**
KOPT				S	**Sb**	**01 30 48.8**	**-1.0**
BNGB	**Bing˜¶l**	**0.93**	**124**	*e*PG	**Pg**	**01 30 39.6**	**0.0**
KEMA	**Kemaliye**	**0.96**	**256**	*i* P	**Pg**	**01 30 39.8**	**-0.4**
KEMA				*i* S	**Sb**	**01 30 53.5**	**-0.8**
KEMA	**Kemaliye**	**0.96**	**256**	P	**Pg**	**01 30 39.8**	**-0.4**
KEMA				S	**Sb**	**01 30 53.5**	**-0.8**
SVRC	**Sivrice-ELAZID**	**1.17**	**195**	*e*PN	**Pg**	**01 30 43.0**	**-1.3**
SVRC	**Sivrice-ELAZID**	**1.17**	**195**	*e*Pn	**Pg**	**01 30 43.0**	**-1.3**
SUSE	**Susehri**	**1.34**	**302**	*i* P	**Pb**	**01 30 48.1**	**+0.4**
SUSE				*i* S	**Sn**	**01 31 06.0**	**+0.1**
SUSE	**Susehri**	**1.34**	**302**	P	**Pb**	**01 30 48.1**	**+0.4**
SUSE				S	**Sn**	**01 31 06.0**	**+0.1**
EZM	**Erzurum**	**1.35**	**73**	*e*PN	**Pb**	**01 30 48.5**	**+0.7**
ERZM	**Erzurum**	**1.35**	**73**	*i* P	**Pb**	**01 30 48.3**	**+0.5**
ERZM	**Erzurum**	**1.35**	**73**	P	**Pb**	**01 30 48.3**	**+0.5**
ESPY	**Espiye-Giresun**	**1.59**	**333**	*e*PN	**Pg**	**01 30 52.2**	**0.0**
ESPY	**Espiye-Giresun**	**1.59**	**333**	*e*Pn	**Pg**	**01 30 52.2**	**0.0**
CUKAN	**kangal_SIVAS**	**1.73**	**264**	*i* P	**Pg**	**01 30 54.5**	**-0.5**
CUKAN				*i* S	**Sg**	**01 31 19.6**	**+2.1**
CUKAN	**kangal_SIVAS**	**1.73**	**264**	P	**Pg**	**01 30 54.5**	**-0.5**

IDC 31 01:49:07.0±2.0,1.°09N×125.°53E, h0km, mb3.7/3, mb1 4.0/3, mb1mx3.5/42, mbtmp3.8/3, MS2.5/1, Ms1 2.5/1, ms1mx2.2/36, Error ellipse: s-maj=181.9km s-min=26.1km az=64.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.62**	**158**	P	P	01 54 09.2	-0.5
	1.4nm,0.3s,baz=336,slow=11,SNR=14						
ASAR	**Alice Springs**	**25.92**	**162**	P	P	01 54 41.4	+0.3
	0.8nm,0.4s,baz=341,slow=7.1,SNR=6.5						
MJAR	**Matsushiro Arr**	**37.18**	**17**	LR	LR	02 09 53.1	
	comp=Z,8.1nm,21.5s,baz=125,slow=34						
MKAR	**Makanchi Array**	**59.06**	**327**	P	P	01 59 09.0	0.0
	0.3nm,0.3s,baz=122,slow=7.8,SNR=4.8						

CSEM ***31*** *01:50:50.9±0.2,43.°04N×47.°06E, h2km, mb4.3, Error ellipse: s-maj=5.6km s-min=3.0km az=42.0*
AZER ***31*** *01:50:50.8±2.0,43.°06N×46.°82E, h24km, Error ellipse: s-maj=3.2km s-min=2.9km az=350.0*
MOS ***31*** *01:50:50.3±2.1,43.°08N×47.°08E, h20km, mb4.3/1, Error ellipse: s-maj=5.9km s-min=5.3km az=110.4*
MOS Felt (III) at Chirkey.
ISC 31 01:50:51.4±0.9,43.°05N±0.°02×47.°01E±0.°02, h13km±6km, n103, σ1s45/175, 16C-17D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DBC	**Dubki**	**0.13**	**258**	PG	Pb	01 51 01.0	+5.1
DBC	**Dubki**	**0.13**	**258**	Pg	Pb	01 51 01.0	+5.1
KRNR	**Karanay**	**0.23**	**198**	⇑*i*PG	**Pg**	**01 50 55.0**	**-1.4**
KRNR				pmax	pmax		
	comp=Z,310nm,0.2s						
KRNR	**Karanay**	**0.23**	**198**	*i* Pg	**Pg**	**01 50 55.0**	**-1.4**
	comp=Z,310nm,0.2s						
BUJR	**Buynaksk**	**0.24**	**162**	*i* PG	**Pg**	**01 50 56.3**	**-0.1**
BUJR				*e*S	**Sg**	**01 51 00.0**	**+0.2**
BUJR	**Buynaksk**	**0.24**	**162**	*i* Pg	**Pg**	**01 50 56.3**	**-0.1**
BUJR				*e*Sg	**Sg**	**01 51 00.0**	**+0.2**
DLMR	**Dylym**	**0.28**	**274**	⇑*i*PG	**Pg**	**01 50 56.2**	**-1.0**
DLMR				pmax	pmax		
	comp=Z,638nm,0.3s						
DLMR	**Dylym**	**0.28**	**274**	*i* Pg	**Pg**	**01 50 56.2**	**-1.0**
	comp=Z,638nm,0.3s						
UNCR	**Uncukul**	**0.37**	**205**	*i* PG	**Pg**	**01 50 57.0**	**-1.8**
UNCR				pmax	pmax		
	comp=Z,2μm,0.2s						
UNCR	**Uncukul**	**0.37**	**205**	*i* Pg	**Pg**	**01 50 57.0**	**-1.8**
	comp=Z,2μm,0.2s						
ARKR	**Arakani**	**0.45**	**181**	*e*PG	**Pg**	**01 50 59.0**	**-1.2**
ARKR				pmax	pmax		
	comp=Z,249nm,0.2s						
ARKR	**Arakani**	**0.45**	**181**	*e*Pg	**Pg**	**01 50 59.0**	**-1.2**
	comp=Z,249nm,0.2s						
XNZR	**Khunzakh**	**0.55**	**204**	*e*PG	**Pg**	**01 51 00.0**	**-2.3**
XNZR				*e*S	**Sg**	**01 51 08.0**	**-1.6**
XNZR	**Khunzakh**	**0.55**	**204**	*e*Pg	**Pg**	**01 51 00.0**	**-2.3**
XNZR				*e*Sg	**Sg**	**01 51 08.0**	**-1.6**
GNBR	**Gunib**	**0.66**	**183**	⇓*i*PG	**Pg**	**01 51 03.3**	**-1.0**
GNBR				*i* S	**Sg**	**01 51 12.2**	**-0.8**
GNBR				pmax	pmax		
	comp=Z,126nm,0.1s						
GNBR	**Gunib**	**0.66**	**183**	*i* Pg	**Pg**	**01 51 03.3**	**-1.0**
	comp=Z,126nm,0.1s						
GNBR				*i* Sg	**Sg**	**01 51 12.2**	**-0.8**
SGKR	**Sergokala**	**0.76**	**141**	*e*PG	**Pn**	**01 51 07.0**	**-0.9**
SGKR				S	**Sn**	**01 51 20.5**	**+1.3**
SGKR	**Sergokala**	**0.76**	**141**

ARNR	**Ardon**	**2.00 275**	*e*Pn		**Pb**	**01 51 26.7**	**-0.9**
ARNR			*e*Sg		**Sb**	**01 51 54.2**	**+1.8**
LACR	**Lac**	**2.00 265**	⇓*i*PN		**Pn**	**01 51 24.8**	**-0.3**
LACR	**Lac**	**2.00 265**	*i* Pn		**Pn**	**01 51 24.8**	**-0.3**
QUBA	**Quba, Azerbaij** SNR=4.0	**2.02 146**	⇓Pg		**Pb**	**01 51 28.6**	**+0.6**
QUBA			⇑Sg		**Sg**	**01 51 57.7**	**+1.3**
QUBA	**Quba, Azerbaij** SNR=4.0	**2.02 146**	Pg		**Pb**	**01 51 28.6**	**+0.6**
QUBA			Sg		**Sg**	**01 51 57.7**	**+1.3**
XNQ	**Khinaliq** SNR=16	**2.06 155**	⇓Pg		**Pb**	**01 51 28.9**	**+0.1**
XNQ			⇓Sg		**Sg**	**01 51 57.8**	**+0.3**
XNQ	**Khinaliq** SNR=16	**2.06 155**	Pg		**Pb**	**01 51 28.9**	**+0.1**
XNQ			Sg		**Sg**	**01 51 57.8**	**+0.3**
SEAG	**Tbilisi Sea**	**2.08 233**	P		**Pb**	**01 51 28.8**	**-0.2**
SEAG			S		**Sg**	**01 51 57.3**	**-0.8**
SEAG	**Tbilisi Sea**	**2.08 233**	P		**Pb**	**01 51 28.8**	**-0.2**
PRTR	**Priterechnaya**	**2.11 290**	*e*PN		**Pb**	**01 51 28.8**	**-0.7**
PRTR			*e*S		**Sb**	**01 51 57.2**	**+1.7**
PRTR	**Priterechnaya**	**2.11 290**	*e*Pn		**Pb**	**01 51 28.8**	**-0.7**
PRTR			*e*Sb		**Sb**	**01 51 57.2**	**+1.7**
TBLG	**Delisi**	**2.14 233**	P		**Pb**	**01 51 29.3**	**-0.7**
TBLG			S		**Sb**	**01 51 58.0**	**+1.6**
TBLG	**Delisi**	**2.14 233**	PN		**Pb**	**01 51 29.3**	**-0.7**
TBLG			S		**Sb**	**01 51 58.0**	**+1.6**
TBLG	**Delisi**	**2.14 233**	P		**Pb**	**01 51 29.3**	**-0.7**
TBLG			S		**Sb**	**01 51 58.0**	**+1.6**
KORR	**Kora**	**2.15 272**	*e*PN		**Pb**	**01 51 29.0**	**-1.3**
KORR			*e*S		**Sb**	**01 51 58.2**	**+1.2**
KORR	**Kora**	**2.15 272**	*e*Pn		**Pb**	**01 51 29.0**	**-1.3**
KORR			*e*Sn		**Sb**	**01 51 58.2**	**+1.2**
STDR	**Stavd-Durt**	**2.18 279**	⇓*i*PN		**Pn**	**01 51 29.2**	**+1.8**
STDR			*e*S		**Sb**	**01 51 58.7**	**+1.1**
STDR	**Stavd-Durt**	**2.18 279**	*i* Pn		**Pn**	**01 51 29.2**	**+1.8**
STDR			*e*Sn		**Sb**	**01 51 58.7**	**+1.1**
QBL	**Gabala** SNR=6.6	**2.19 163**	⇑Pg		**Pb**	**01 51 31.7**	**+0.8**
QBL			⇑Sg		**Sg**	**01 52 01.5**	**-0.3**
QBL	**Gabala** SNR=6.6	**2.19 163**	Pg		**Pb**	**01 51 31.7**	**+0.8**
QBL			Sg		**Sg**	**01 52 01.5**	**-0.3**
ZEI	**Tsey**	**2.30 265**	*e*PN		**Pn**	**01 51 30.9**	**+1.7**
ZEI			*e*S		**Sb**	**01 52 01.2**	**0.0**
ZEI	**Tsey**	**2.30 265**	*e*Pn		**Pn**	**01 51 30.9**	**+1.7**
ZEI			*e*Sn		**Sb**	**01 52 01.2**	**0.0**
QZX	**Qazax, Azerbai** SNR=8.0	**2.33 212**	⇓Pg		**Pb**	**01 51 31.6**	**-1.7**
QZX			⇑Sg		**Sb**	**01 52 02.4**	**+0.3**
QZX	**Qazax, Azerbai** SNR=8.0	**2.33 212**	Pg		**Pb**	**01 51 31.6**	**-1.7**
QZX			Sg		**Sb**	**01 52 02.4**	**+0.3**
LSNR	**Lesken**	**2.34 277**	*e*PN		**Pb**	**01 51 32.4**	**-1.1**
LSNR			*e*S		**Sb**	**01 52 03.5**	**+1.2**
SIZA	**Siyzn** SNR=3.1	**2.42 144**	⇑Pg		**Pb**	**01 51 35.4**	**+0.5**
SIZA			⇑Sg		**Sg**	**01 52 10.4**	**+1.2**
SIZA	**Siyzn** SNR=3.1	**2.42 144**	Pg		**Pb**	**01 51 35.4**	**+0.5**
SIZA			Sg		**Sg**	**01 52 10.4**	**+1.2**
GANJ	**Ganja** SNR=5.0	**2.46 192**	⇑Pn		**Pn**	**01 51 32.1**	**+0.9**
GANJ			⇓Sn		**Sn**	**01 52 03.1**	**+2.0**
GANJ	**Ganja** SNR=5.0	**2.46 192**	Pn		**Pn**	**01 51 32.1**	**+0.9**
GANJ			Sn		**Sn**	**01 52 03.1**	**+2.0**
GDB	**GEDABAY**	**2.51 202**	⇓Pn		**Pn**	**01 51 32.1**	**0.0**
GDB			⇑Sn		**Sn**	**01 52 04.5**	**+1.9**
GDB	**GEDABAY**	**2.51 202**	Pn		**Pn**	**01 51 32.1**	**0.0**
GDB			Sn		**Sn**	**01 52 04.5**	**+1.9**
DIGR	**Digorskoe uzhe**	**2.52 268**	*e*PN		**Pn**	**01 51 34.4**	**+2.1**
DIGR			*e*S		**Sb**	**01 52 07.3**	**-0.3**
DIGR	**Digorskoe uzhe**	**2.52 268**	*e*Pn		**Pn**	**01 51 34.4**	**+2.1**
DIGR			*e*Sn		**Sb**	**01 52 07.3**	**-0.3**
ATGJ	**Altiaghaj**	**2.62 146**	⇓Pn		**Pb**	**01 51 35.8**	**-2.4**
ATGJ			⇓Sn		**Sb**	**01 52 10.2**	**-0.1**
ATGJ	**Altiaghaj**	**2.62 146**	Pn		**Pb**	**01 51 35.8**	**-2.4**
ATGJ			Sn		**Sb**	**01 52 10.2**	**-0.1**
ONI	**Oni**	**2.66 261**	P		**Pn**	**01 51 36.2**	**+2.2**
ONI	**Oni**	**2.66 261**	PN		**Pn**	**01 51 36.2**	**+2.2**
ONI	**Oni**	**2.66 261**	Pn		**Pn**	**01 51 36.2**	**+2.2**
NEY	**Neytrino**	**3.14 275**	*e*PN		**Pn**	**01 51 40.0**	**-0.8**
NEY			*e*S		**Sn**	**01 52 18.0**	**-0.3**
NEY	**Neytrino**	**3.14 275**	*e*Pn		**Pn**	**01 51 40.0**	**-0.8**
NEY			*e*Sn		**Sn**	**01 52 18.0**	**-0.3**
KIV	**Kislovodsk**	**3.27 288**	*de*PN		**Pn**	**01 51 42.1**	**-0.4**
KIV			*i*			01 51 53.6	
KIV			*i* S		**Sn**	**01 52 23.3**	**+2.0**
KIV			*e*			01 52 34.0	
KIV			*i*			01 52 39.0	
KIV	comp=Z,4.0nm,0.5s		pmax	pmax			
KIV	comp=Z,9.0nm,0.5s		pmax	pmax			
KIV	comp=E,33nm,0.8s		smax	smax			
KIV	**Kislovodsk** comp=E,4.0nm,0.5s	**3.27 288**	*e*Pn		**Pn**	**01 51 42.1**	**-0.4**
KIV			*i* Sn		**Sn**	**01 52 23.3**	**+2.0**
KIV			*e*Sb		**Sg**	**01 52 34.0**	**-2.5**
KIV			*i* Sg		Sb	01 52 39.0	+10
ANN	**Anapa**	**7.13 287**	*e*P		**Pn**	**01 52 35.0**	**-0.4**
ANN			*e*			01 53 57.4	
ANN	comp=Z,13nm,0.5s		pmax	pmax			
ANN	**Anapa** comp=Z,13nm,0.5s	**7.13 287**	*e*P		**Pn**	**01 52 35.0**	**-0.4**
ANN			*e*S		**Sn**	**01 53 57.4**	**+1.2**
AKTO	**Aktyubinsk**	**10.56 42**	P		**Pn**	**01 53 26.5**	**+4.2**
AKTO			⇓S		**Sn**	**01 55 12.8**	**-7.6**
AKTO	**Aktyubinsk** comp=Z,1.6nm,0.7s	**10.56 42**	P		**Pn**	**01 53 26.5**	**+4.2**
AKTO			S		**Sn**	**01 55 12.8**	**-7.6**
AB31	**Akbulak array** comp=Z,0.2nm,0.3s,baz=237,slow=14,SNR=14	**10.90 51**	P		**Pn**	**01 53 27.9**	**+0.8**
AB31	comp=Z,1.4nm,0.4s,baz=239,slow=20		⇓S		Sn	01 55 19.1	-10
AB31	**Akbulak array** comp=Z,0.2nm,0.3s,SNR=14	**10.90 51**	P		**Pn**	**01 53 27.9**	**+0.8**
AB31	comp=Z,1.4nm,0.4s		S		Sn	01 55 19.1	-10
OBN	**Obninsk**	**13.86 334**	*e*P		**Pn**	**01 54 08.7**	**+1.4**
OBN	comp=Z,2.0nm,0.9s		pmax	pmax			
OBN	**Obninsk** comp=Z,2.0nm,0.9s	**13.86 334**	*e*P		**Pn**	**01 54 08.7**	**+1.4**
KIEV	**Kiev**	**14.35 308**	*e*P		**Pn**	**01 54 13.6**	**-0.6**
KIEV	**Kiev**	**14.35 308**	*e*P		**Pn**	**01 54 13.6**	**-0.6**
BRVK	**Borovoye**	**18.42 49**	*e*P		**P**	**01 55 05.3**	**-1.0**
BRVK	comp=Z,2.0nm,0.9s		pmax	pmax			
BRVK	**Borovoye** comp=Z,2.0nm,0.9s	**18.42 49**	*e*P		**P**	**01 55 05.3**	**-1.0**
KURK	**Kurchatov**	**22.79 59**	*e*P		**P**	**01 55 53.2**	**-0.4**
KURK	**Kurchatov**	**22.79 59**	*e*P		**P**	**01 55 53.2**	**-0.4**

*IDC **31** 01:51:36.8±1.3,34°.93N×141°.77E, h0km,mb3.5/3, mb1 3.6/5,mb1mx3.3/44,mbtmp3.4/5,ML3.0/2,MS3.5/3, Ms1 3.5/3,ms1mx2.7/27, Error ellipse: s-maj=33.1km s-min=25.3km az=105.0*
*JMA **31** 01:51:37.5±0.5,34°.92N×141°.94E,h63km±4km,M2.9*
*ISCJB **31** 01:51:38.9±1.0,34°.89N±0°.07×141°.79E±0°.09, h29km, mb3.5/3,MS3.9/2, Error ellipse: s-maj=10.2km s-min=9.9km az=141.2*

ISC 31 01:51:40.8±1.3,34°.93N±0°.07×141°.8E±0°.1, h29km, n20, σ1.9°23/14, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BSO1	**Boso 1**	**0.69**	**247**	P		**Pn**	**01 51 53.6**	**-0.5**
BSO3	**Boso 3**	**1.02**	**263**	P		**Pn**	**01 51 58.4**	**-0.5**
CHOJ	**Chosi**	**1.06**	**317**	P		**Pn**	**01 51 58.3**	**-1.3**
BSO4	**Boso 4**	**1.16**	**273**	P		**Pn**	**01 52 00.8**	**-0.1**
JOD2	**Odawara 2**	**2.21**	**279**	P		**Pn**	**01 52 14.1**	**-1.3**
JOD2				*e*S		**Sn**	**01 52 41.1**	**-0.6**
JHJ	**Hachijo jima 2** 6.6nm,0.3s,baz=166,slow=23,SNR=10.0	**2.44**	**223**	Pn		**Pn**	**01 52 18.6**	**+0.1**
JHJ	16nm,0.3s,baz=15,slow=20,SNR=5.8			Sn		**Sn**	**01 52 45.2**	**-2.2**

JNY	**Yasuok**	**3.21 279**	P		**Pn**	**01 52 30.0**	**+0.7**
JNY			*e*S		**Sn**	**01 53 08.9**	**+2.2**
MJAR	**Matsushiro Arr** 1.5nm,0.3s,baz=111,slow=12,SNR=13	**3.30 300**	Pn		**Pn**	**01 52 29.2**	**-1.2**
KSRS	**Korea Array** comp=Z,46nm,18.3s,baz=190,slow=41	**11.45 287**	LR		LR	01 59 24.6	
H11N2	**WAKE ISLAND Hy** baz=312	**26.89 118**	T		T	02 25 34.9	
H11N1	**WAKE ISLAND Hy** baz=312	**26.89 118**	T		T	02 25 35.1	
H11N3	**WAKE ISLAND Hy** baz=312	**26.90 118**	T		T	02 25 35.6	
H11S1	**WAKE ISLAND Hy** baz=312	**27.53 120**	T		T	02 26 25.5	
H11S3	**WAKE ISLAND Hy** baz=312	**27.53 120**	T		T	02 26 25.1	
H11S2	**WAKE ISLAND Hy** baz=312	**27.55 120**	T		T	02 26 25.0	
MKAR	**Makanchi Array** 0.5nm,0.8s,baz=101,slow=7.6,SNR=2.4	**45.49 304**	P		**P**	**01 59 57.6**	**+0.3**
WRA	**Warramunga Arr** 0.4nm,0.8s,baz=5.9,slow=7.6,SNR=3.1	**55.02 189**	P		**P**	**02 01 09.8**	**+0.1**
YKA	**Yellowknife Ar** 0.4nm,0.7s,baz=292,slow=5.9,SNR=2.9	**65.49 30**	P		**P**	**02 02 21.5**	**+0.7**
STKA	**Stephens Creek** comp=Z,38nm,19.1s,baz=203,slow=36	**66.46 180**	LR		LR	02 31 50.5	
NEW	**Newport** comp=Z,142nm,21.9s,baz=171,slow=33	**71.45 44**	LR		LR	02 30 34.9	

*TIF **31** 01:52:01.6, 42°.50N×43°.19E, h7km*
*ISCJB **31** 01:52:02.5±1.0, 42°.51N±0°.06×43°.22E±0°.05, h5km±13km, Error ellipse: s-maj=10.5km s-min=5.8km az=23.4*
*CSEM **31** 01:52:02.3±0.3, 42°.50N×43°.24E, h2km, ML2.3, Error ellipse: s-maj=7.0km s-min=5.5km az=32.0*
*DDA **31** 01:52:24.1, 41°.43N×42°.27E, h7km, Md2.7*

ISC 31 01:52:02.3±0.9, 42°.49N±0°.04×43°.21E±0°.03, h14km±9km, n18, σ1.9°27/34, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ONI	**Oni**	**0.21**	**60**	P		**Pg**	**01 52 06.7**	**-0.4**
ONI				S		**Sg**	**01 52 10.0**	**-0.2**
ONI	**Oni**	**0.21**	**60**	P		**Pg**	**01 52 06.7**	**-0.4**
ONI				S		**Sg**	**01 52 10.0**	**-0.2**
CHVG	**Ch'k'valeri**	**0.86**	**286**	P		**Pg**	**01 52 18.4**	**-0.6**
CHVG				S		**Sb**	**01 52 31.5**	**+1.0**
CHVG	**Ch'k'valeri**	**0.86**	**286**	P		**Pg**	**01 52 17.9**	**-1.1**
CHVG				S		**Sb**	**01 52 31.5**	**+1.0**
EPOS	**Posof**	**1.04**	**200**	*i* P		**Pg**	**01 52 21.8**	**-0.6**
EPOS				*i* S		**Sb**	**01 52 36.8**	**+1.0**
AKH	**Akhalkalaki**	**1.10**	**169**	P		**Pg**	**01 52 23.2**	**-0.3**
AKH				S		**Sb**	**01 52 38.9**	**+1.5**
AKH	**Akhalkalaki**	**1.10**	**169**	P		**Pg**	**01 52 23.2**	**-0.3**
AKH				S		**Sb**	**01 52 38.9**	**+1.5**
BGD	**Bogdanovka**	**1.25**	**166**	P		**Pg**	**01 52 25.9**	**-0.6**
BGD				S		**Sb**	**01 52 43.4**	**+1.4**
BGD	**Bogdanovka**	**1.25**	**166**	P		**Pg**	**01 52 25.9**	**-0.6**
BGD				S		**Sb**	**01 52 43.4**	**+1.4**
TBLG	**Delisi**	**1.37**	**123**	P		**Pn**	**01 52 27.7**	**+0.7**
TBLG				S		**Sg**	**01 52 46.7**	**+0.4**
TBLG	**Delisi**	**1.37**	**123**	P		**Pn**	**01 52 27.7**	**+0.7**
TBLG				S		**Sb**	**01 52 44.0**	**-1.0**
SEAG	**Tbilisi Sea**	**1.39**	**121**	P		**Pn**	**01 52 28.4**	**+1.1**
ARTV	**Artvin**	**1.61**	**217**	*i* P		**Pb**	**01 52 32.0**	**0.0**
ARTV				*i* S		**Sb**	**01 52 53.6**	**+1.3**
DBOC	**Borcka**	**1.62**	**226**	*i* P		**Pn**	**01 52 31.8**	**+1.3**
DBOC				*i* S		**Sg**	**01 52 53.9**	**-0.5**
EAK	**Akyaka**	**1.82**	**170**	*i* P		**Pn**	**01 52 35.1**	**+1.7**
EAK				*i* S		**Sn**	**01 52 52.0**	**-4.4**
EAK	**Akyaka**	**1.82**	**170**	P		**Pn**	**01 52 35.1**	**+1.7**
DDEM	**Demirkent**	**1.93**	**215**	*i* P		**Pb**	**01 52 37.8**	**+0.5**
DDEM				*i* S		**Sg**	**01 53 03.4**	**-0.9**
DDEM	**Demirkent**	**1.93**	**215**	P		**Pb**	**01 52 37.8**	**+0.5**
DDEM				S		**Sg**	**01 53 03.4**	**-0.9**

IDC 31 01:59:10.4±1.8, 25°.05S×175°.59W, h0km, mb3.7/3, mb1 4.2/4, mb1mx3.8/30, mbtmp3.9/4, ML4.5/1, MS2.9/1, Ms1 2.9/1, ms1mx2.4/28, Error ellipse: s-maj=59.8km s-min=33.2km az=150.0, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RAO	**Raoul Island** 23nm,0.3s,baz=90,slow=20,SNR=2.5	**4.67**	**206**	Pn		Pn	02 00 21.1	-1.1
RAO	113nm,0.3s,baz=278,slow=23,SNR=4.7			Sn		Sn	02 01 11.3	-5.7
RPZ	**Rata Peaks** comp=Z,32nm,19.6s,baz=356,slow=35	**21.58**	**207**	LR		LR	02 11 40.7	
ASAR	**Alice Springs** 0.5nm,0.4s,baz=93,slow=6.8,SNR=16	**45.81**	**261**	P		P	02 07 35.1	+0.7
WRA	**Warramunga Arr** 0.6nm,0.5s,baz=103,slow=7.6,SNR=8.3	**46.33**	**266**	P		P	02 07 37.6	-0.9
TXAR	**Lajitas Array** 0.3nm,0.8s,baz=231,slow=7.9,SNR=4.3	**87.68**	**56**	P		P	02 12 01.3	+0.1

IDC 31 02:10:48.4±3.9, 12°.03N×143°.34E, h0km, mb4.0/3, mb1 4.1/4, mb1mx3.6/42, mbtmp3.9/4, ML3.4/1, Error ellipse: s-maj=176.5km s-min=26.6km az=122.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
GUMO	**Guam** 11nm,0.3s,baz=337,slow=18,SNR=6.4	**2.14**	**44**	Pn		Pn	02 11 25.6	+0.1
GUMO	76nm,0.3s,baz=108,slow=20,SNR=2.2			Sn		Sn	02 11 46.8	-6.1
WRA	**Warramunga Arr** 2.2nm,0.6s,baz=17,slow=9.6,SNR=32	**32.99**	**196**	P		P	02 17 25.7	+0.3
ASAR	**Alice Springs** 0.7nm,0.6s,baz=20,slow=13,SNR=23	**36.66**	**195**	P		P	02 17 57.3	+0.2
STKA	**Stephens Creek** 1.4nm,0.5s,baz=354,slow=10,SNR=3.2	**43.69**	**182**	P		P	02 18 54.1	-1.2

IDC 31 02:48:16.8±4.7, 30°.32S×179°.04W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/17, mbtmp3.5/2, Error ellipse: s-maj=241.1km s-min=72.2km az=167.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ASAR	**Alice Springs** 0.3nm,0.5s,baz=110,slow=7.7,SNR=4.2	**42.22**	**267**	P		P	02 56 11.2	-0.6
WRA	**Warramunga Arr** 0.4nm,0.3s,baz=112,slow=7.9,SNR=16	**43.20**	**273**	P		P	02 56 20.0	+0.3
FINES	**FINESS Array B** 0.9nm,0.7s,baz=46,slow=4.0,SNR=5.1	**144.76**	**339**	PKP		PKPbc	03 07 54.1	+0.3

*ISCJB **31** 03:06:10.6±0.6, 50°.25N±0°.04×18°.81E±0°.03, h0km, Error ellipse: s-maj=5.5km s-min=2.6km az=13.6*
*IPEC **31** 03:06:11.5±0.2, 50°.25N×18°.90E, h1km±2km, ML1.5/3, Error ellipse: s-maj=2.6km s-min=1.1km az=168.0*
*CSEM **31** 03:06:11.5±0.2, 50°.26N×18°.85E, h2km, ML2.5/8, Error ellipse: s-maj=5.2km s-min=2.4km az=9.0*
*PRU **31** 03:06:12.2, 50°.24N×18°.84E, h0km*

ISC 31 03:06:11.4±0.9, 50°.19N±0°.05×18°.86E±0°.02, h0km, n29, σ0.6°62/46, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OKC	**Ostrava-Krasne**	**0.58**	**233**	*e*PG		**Pb**	**03 06 24.2**	**-0.2**
OKC	comp=Z,6.0nm,0.3s			*e*SG		**Sb**	**03 06 31.9**	**-1.3**
OKC	**Ostrava-Krasne** 6.0nm,0.3s	**0.58**	**233**	Pg		**Pb**	**03 06 24.2**	**-0.2**
OKC				Sg		**Sb**	**03 06 31.9**	**-1.3**
OJC	**Ojcow**	**0.60**	**87**	*e*Pg		**Pg**	**03 06 22.6**	**-0.4**
OJC				*e*Sg		**Sg**	**03 06 30.6**	**-0.2**
OJC	**Ojcow**	**0.60**	**87**	*e*Pg		**Pg**	**03 06 22.6**	**-0.4**
OJC				*e*Sg		**Sg**	**03 06 30.6**	**-0.2**
MORC	**Moravsky Berou** baz=61	**0.94**	**245**	*e*Pg		**Pb**	**03 06 30.6**	**-0.1**
MORC	8.0nm,0.3s,baz=61			*e*Sg		**Sg**	**03 06 42.7**	**+1.0**
LANS	**Liptovska Anna**	**1.11**	**159**	*e*PG		**Pn**	**03 06 34.0**	**-0.3**
LANS				*e*SG		**Sb**	**03 06 49.5**	**+0.9**
NIE	**Niedzica**	**1.21**	**129**	*e*Pg		**Pn**	**03 06 35.5**	**-0.1**
NIE				*e*Sg		**Sn**	**03 06 53.6**	**+0.8**
NIE	**Niedzica**	**1.21**	**129**	*e*Pg		**Pn**	**03 06 35.5**	**-0.1**

NIE			*e*Sg		**Sn**	**03 06 53.6**	**+0.8**
KRLC	**Kraliky**	**1.34**	**266**	*e*SG	**Sb**	**03 06 55.3**	**+0.1**
KRLC	**Kraliky**	**1.34**	**266**	Sg	**Sb**	**03 06 55.3**	**+0.1**
DPC	**Dobruska-Polom**	**1.64**	**277**	*e*PG	**Pn**	**03 06 41.4**	**-0.1**
DPC			*e*SG		**Sg**	**03 07 04.2**	**+0.3**
DPC	**Dobruska-Polom** 5.8nm,0.4s	**1.64**	**277**	Pg	**Pn**	**03 06 41.4**	**-0.1**
DPC			Sg		**Sg**	**03 07 04.2**	**+0.3**
VYHS	**Vyhne**	**1.70**	**181**	*e*Pn	**Pn**	**03 06 42.6**	**+0.3**
VYHS			*e*Sn		**Sn**	**03 07 05.1**	**+0.4**
VYHS	**Vyhne**	**1.70**	**181**	*e*PN	**Pn**	**03 06 42.6**	**+0.3**
VYHS			*e*SN		**Sn**	**03 07 05.1**	**+0.4**
VYHS			*e*LG		Lg	03 07 11.6	
VRAC	**Vranov** baz=57	**1.71**	**240**	*e*Pn	**Pb**	**03 06 43.4**	**-0.4**
VRAC	4.8nm,0.3s,baz=57		*e*Sg		**Sg**	**03 07 06.6**	**+0.2**
STHS	**Stebnicka Huta**	**1.73**	**116**	*e*Pn	**Pg**	**03 06 44.3**	**-0.2**
STHS	**Stebnicka Huta**	**1.73**	**116**	*e*PN	**Pg**	**03 06 44.2**	**-0.2**
STHS			*e*LG		Lg	03 07 12.8	
KSP	**Ksiaz**	**1.76**	**293**	*e*Pg	**Pg**	**03 06 44.9**	**-0.3**
KSP			*e*Sg		**Sg**	**03 07 08.0**	**0.0**
KSP	**Ksiaz**	**1.76**	**293**	*e*Pg	**Pg**	**03 06 44.9**	**-0.3**
KSP			*e*Sg		**Sg**	**03 07 08.0**	**0.0**
UPC	**Upice**	**1.85**	**281**	*e*SG	**Sg**	**03 07 11.7**	**+0.9**
UPC	**Upice**	**1.85**	**281**	Sg	**Sg**	**03 07 11.7**	**+0.9**
KRUC	**Moravsky** baz=53	**1.96**	**236**	*e*Pn	**Pn**	**03 06 46.8**	**+0.9**
KRUC	2.5nm,0.2s,baz=53		*e*Sg		**Sg**	**03 07 14.3**	**0.0**
GOPC	**GO Pecny, Ondr** comp=Z,2.6nm,0.3s	**2.64**	**266**	*e*SG	**Sg**	**03 07 35.6**	**-0.5**
GOPC	**GO Pecny, Ondr** 2.6nm,0.3s	**2.64**	**266**	Sg	**Sg**	**03 07 35.6**	**-0.5**
PVCC	**Panska Ves** comp=Z,3.2nm,0.2s	**2.77**	**279**	*e*SG	**Sg**	**03 07 41.2**	**+0.9**
PVCC	**Panska Ves** 3.2nm,0.2s	**2.77**	**279**	Sg	**Sg**	**03 07 41.2**	**+0.9**
PRU	**Pruhonice** comp=Z,1.6nm,0.4s	**2.79**	**268**	*e*SG	**Sg**	**03 07 40.3**	**-0.6**
PRU	**Pruhonice** 1.6nm,0.4s	**2.79**	**268**	Sg	**Sg**	**03 07 40.3**	**-0.6**
KHC	**Kasperske Hory** comp=Z,1.8nm,0.3s	**3.59**	**255**	*e*PG	**Pb**	**03 07 15.9**	**+0.1**
KHC			*e*SG		**Sg**	**03 08 05.0**	**-1.7**

*NIED **31** 03:06:00, 38°.70N×142°.00E, h47km, Mw4.1 Best double couple: M0 1.69000×10^15 NP1:φs189.00000°, δ22.00000°, λ70.00000°. NP2:φs30.00000°, δ69.00000°, λ98.00000°.*
*MOS **31** 03:06:54.8±1.1, 38°.78N×142°.05E, h49km, mb4.4/17, Error ellipse: s-maj=12.1km s-min=8.7km az=91.6*
*JMA **31** 03:06:55.3±0.1, 38°.66N×142°.03E, h45km±1km, M4.0*
JMA Felt II J1.
*IDC **31** 03:06:57.8±1.7, 38°.66N×141°.97E, h63km±14km, mb3.7/17, mb1 3.9/22, mb1mx3.8/38, mbtmp4.0/22, MS3.2/12, Ms1 3.2/12, ms1mx2.9/42, Error ellipse: s-maj=17.1km s-min=9.6km az=116.0*

ISC 31 03:06:53.0±1.0, 38°.66N±0°.05×142°.15E±0°.06, h26km±6km, n83, σ1.9°65/89, mb4.2/36, MS3.3/8, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OFUJ	**Ofunato**	**0.56**	**319**	P		**Pn**	**03 07 06.5**	**+1.1**
OFUJ				*e*S		**Sn**	**03 07 14.2**	**+0.3**
JIO	**Ouri**	**0.66**	**252**	P		**Pn**	**03 07 07.0**	**+0.3**
JIO				*e*S		**Sb**	**03 07 15.1**	**+0.5**
JMK	**Ichinoseki**	**0.78**	**292**	P		**Pn**	**03 07 09.0**	**+0.6**
JMK				*e*S		**Sn**	**03 07 18.8**	**-0.5**
JOM	**Ohasama**	**1.05**	**321**	P		**Pb**	**03 07 13.2**	**+0.6**
JOU	**Okura**	**1.20**	**256**	P		**Pb**	**03 07 14.8**	**-0.3**
JOU				*e*S		**Sn**	**03 07 29.2**	**-0.4**
JMM	**Marumori**	**1.33**	**234**	P		**Pn**	**03 07 16.3**	**+0.4**
JMM				*e*S		**Sn**	**03 07 31.5**	**-1.2**
JRG	**Rokugo**	**1.39**	**303**	P		**Pb**	**03 07 17.6**	**-0.7**
JYK	**Kaneyama**	**1.42**	**281**	P		**Pn**	**03 07 17.9**	**+0.7**
JFK	**Kawauchi**	**1.63**	**218**	P		**Pn**	**03 07 21.3**	**+1.1**
JFK				*e*S		**Sn**	**03 07 39.3**	**-1.1**
JYS	**Shirataka**	**1.69**	**256**	P		**Pn**	**03 07 21.8**	**+0.9**
MJA0	**Matsu Arr-Jizo**	**3.75**	**237**	*e*P		**Pn**	**03 07 52.1**	**+2.9**
MJA0	comp=Z,11nm,0.3s			pmax		pmax		
MJAR	**Matsushiro Arr** comp=Z,11nm,0.3s,baz=39,slow=12,SNR=116	**3.77**	**237**	P		**Pn**	**03 07 52.2**	**+2.6**
MJAR	comp=Z,3.9nm,0.3s,baz=69,slow=16,SNR=5.1			S		**Sn**	**03 08 35.1**	**+2.0**
MJAR	comp=Z,161nm,18.2s,baz=55,slow=44			LR		LR	03 09 37.4	
MAT	**Matsushiro**	**3.77**	**237**	P		**Pn**	**03 07 51.9**	**+2.3**
MAT				*e*S		**Sn**	**03 08 39.1**	**+5.9**
ASAJ	**Asahikawa** baz=187,slow=7.5	**5.46**	**3**	P		**Pn**	**03 08 15.1**	**+2.4**
ASAJ	comp=Z,1.0nm,0.3s,baz=229,slow=20,SNR=2.8			S		**Sn**	**03 09 18.4**	**+3.6**
JHJ	**Hachijo jima 2** comp=Z,8.4nm,0.3s,baz=92,slow=23,SNR=8.3	**5.85**	**200**	P		**Pn**	**03 08 20.1**	**+2.0**
JHJ	comp=Z,32nm,0.3s,baz=78,slow=23,SNR=7.1			S		**Sn**	**03 09 21.4**	**-2.9**
KUR	**Kuril'sk**	**7.83**	**31**	P		**Pn**	**03 08 45.4**	**+0.2**
KUR				S		**Sn**	**03 10 11.9**	**-1.1**
KUR	comp=N,25nm,0.6s			smax		smax

KURK	Kurchatov	45.40	307	*c iP*	P	03 15 08.6	-0.7
ILAR	Eielson Array	47.82	33	P	P	03 15 29.2	+1.2
	comp=Z,0.8nm,0.7s,baz=271,slow=6.7,SNR=16						
BRVK	Borovoye	49.98	311	*‖i*P	P	03 15 44.7	0.0
BRVK				*e**PP	sP	03 15 54.8	-0.9
BRVK				pmax	pmax		
	comp=Z,12nm,2.5s						
INK	Inuvik	52.68	28	P	P	03 16 06.4	+1.7
	comp=Z,2.1nm,0.9s,baz=303,slow=5.3,SNR=3.0						
SVE	Sverdlovsk	54.32	318	*e*P	P	03 16 16.2	-0.8
SVE				pmax	pmax		
	comp=Z,8.0nm,0.9s						
ARU	Arti	55.54	318	LR	LR	03 42 02.3	
	comp=Z,33nm,20.6s,baz=2.0,slow=38						
ARU	Arti	55.54	318	*d iP*	P	03 16 25.4	-0.3
ARU						03 18 25.6	
ARU				S	S	03 24 11.2	+1.9
ARU				SS	SS	03 27 50.5	-3.3
ARU				pmax	pmax		
	comp=Z,5.0nm,1.2s						
AKTO	Aktyubinsk	58.03	311	LR	LR	03 42 21.9	
	comp=Z,21nm,18.3s,slow=37						
WRA	Warramunga Arr	58.75	189	P	P	03 16 48.3	-0.4
	comp=Z,0.6nm,0.4s,baz=5.7,slow=7.0,SNR=14						
WRA	Warramunga Arr	58.75	189	*e*P	P	03 16 48.8	0.0
WRA				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ASAR	Alice Springs	62.48	189	P	P	03 17 14.2	0.0
	comp=Z,0.5nm,0.8s,baz=15,slow=6.4,SNR=5.1						
ASAR	Alice Springs	62.48	189	*e*P	P	03 17 15.9	+1.7
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
FINES	FINESS Array B	67.65	332	P	P	03 17 46.9	-0.4
	comp=Z,3.6nm,0.7s,baz=39,slow=9.8,SNR=9.3						
FINES				LR	LR	03 48 23.7	
	comp=Z,26nm,21.1s,baz=65,slow=37						
FINES	FINESS Array B	67.65	332	*e*P	P	03 17 47.2	-0.1
FINES				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KIV	Kislovodsk	70.28	311	*‖e*P	P	03 18 05.1	+0.9
KIV				*e*		03 18 23.4	
KIV				*e*S	S	03 27 00.3	-14
KIV				SSS	SSS	03 34 52.0	
KIV				pmax	pmax		
	comp=Z,6.0nm,0.8s						
KBZ	Khabaz	70.29	311	P	P	03 18 04.2	+0.2
	comp=Z,2.1nm,0.7s,baz=92,slow=1.9,SNR=5.9						
NB2	NORSAR Subarra	72.91	337	P	P	03 18 19.1	-0.5
	comp=Z,1.8nm,0.7s,baz=39,slow=6.2						
NOA	NORSAR Array B	72.91	337	P	P	03 18 19.1	-0.5
	comp=Z,2.2nm,0.9s,baz=38,slow=6.0,SNR=7.2						
NOA				LR	LR	03 53 07.3	
	comp=Z,15nm,20.7s,baz=65,slow=38						
NOA	NORSAR Array B	72.91	337	*e*P	P	03 18 19.4	-0.2
NOA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
AKASG	Malin Array Be	73.37	322	P	P	03 18 21.8	-0.6
	comp=Z,1.3nm,0.5s,baz=48,slow=6.4,SNR=6.0						
PDAR	Pinedale Array	76.12	46	P	P	03 18 39.6	+0.7
	comp=Z,0.5nm,0.6s,baz=226,slow=2.8,SNR=6.3						
BRTR	Keskin Array B	78.21	312	P	P	03 18 49.9	-0.7
	comp=Z,0.5nm,0.4s,baz=110,slow=3.9,SNR=8.6						
DPC	Dobruska-Polom	79.39	328	*e*P	P	03 18 57.2	+0.5
DPC	Dobruska-Polom	79.39	328	*e*P	P	03 18 57.2	+0.5
CLL	Collm	79.98	330	*i* P	P	03 18 59.4	-0.4
	comp=Z,4.0nm,0.8s						
CLL	Collm	79.98	330	*i* P	P	03 18 59.4	-0.4
CLL				pmax	pmax		
	comp=Z,4.0nm,0.8s						
PRU	Pruhonice	80.40	329	*e*P	P	03 19 02.9	+0.8
PRU	Pruhonice	80.40	329	*e*P	P	03 19 02.9	+0.8
CONA	Conrad Observa	81.44	327	*i* P	P	03 19 08.0	+0.2
	comp=Z,1.6nm,0.9s						
KHC	Kasperske Hory	81.46	329	*e*P	P	03 19 07.9	+0.1
KHC	Kasperske Hory	81.46	329	*e*P	P	03 19 07.9	+0.1
GERES	GERESS Array B	81.64	328	P	P	03 19 08.3	-0.5
	comp=Z,0.6nm,0.6s,baz=5.7,slow=5.4,SNR=5.6						
GERES				LR	LR	03 59 41.2	
	comp=Z,24nm,18.8s,baz=330,slow=39						
ARSA	Arzberg	82.11	326	*i* P	P	03 19 08.3	-3.0
	comp=Z,3.5nm,1.2s						
MOA	Molln	82.18	328	*i* PcP	P	03 19 12.6	+1.0
	comp=Z,2.3nm,1.0s						
SOKA	Soboth	82.77	326	*i* P	P	03 19 14.3	-0.5
	comp=Z,3.2nm,0.9s						
OBKA	Obir	83.11	327	*i* P	P	03 19 14.5	-2.0
	comp=Z,5.5nm,1.4s						
MYKA	Terra Mystica	83.40	327	*i* P	P	03 19 15.7	-2.4
	comp=Z,2.4nm,0.4s						
WATA	Walderalm	83.70	329	*i* PcP	P	03 19 20.5	+0.9
	comp=Z,0.8nm,0.4s						
ABTA	Abfaltersbach	83.79	328	*i* PcP	P	03 19 20.6	+0.5
	comp=Z,0.8nm,0.6s						
MOTA	Moosalm	83.89	329	*i* P	P	03 19 19.6	-1.0
	comp=Z,2.2nm,0.9s						
RETA	Reutte	83.91	329	*i* PcP	P	03 19 20.9	+0.2
	comp=Z,0.5nm,0.3s						
FETA	Feichten	84.30	329	*i* P	P	03 19 22.3	-0.5
	comp=Z,0.4nm,0.4s						
DAVA	Damuels	84.42	330	*i* PcP	P	03 19 23.5	+0.1
	comp=Z,1.9nm,0.7s						
TXAR	Lajitas Array	88.68	53	P	P	03 19 45.2	+0.8
	comp=Z,0.2nm,0.6s,baz=295,slow=3.3,SNR=5.0						
TXAR	Lajitas Array	88.68	53	*e*P	P	03 19 45.3	+0.9
LPAZ	La Paz	145.36	58	PKPbc	PKPdf	03 26 30.0	+0.2
	comp=Z,0.6nm,0.5s,baz=56,slow=3.6,SNR=4.4						

IDC 31 03:30:55.0±6.5, 24.39S×179.78E, h552km±71km, mb3.2/6, mb1 3.4/7, mb1mx3.1/27, mbtmp4.2/7, Error ellipse: s-maj=89.0km s-min=33.6km az=157.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	12.48	278	P	P	03 33 38.2	-0.5
	0.3nm,0.3s,baz=90,slow=17,SNR=3.4						
CTA	Charters Tower	31.28	271	P	P	03 36 31.4	+0.8
	6.3nm,0.6s,baz=104,slow=10.0,SNR=13						
STKA	Stephens Creek	34.36	249	P	P	03 36 55.8	-0.7
	0.9nm,0.4s,baz=96,slow=9.6,SNR=6.5						
ASAR	Alice Springs	41.76	261	P	P	03 37 56.5	-0.3
	0.9nm,0.5s,baz=93,slow=6.6,SNR=15						
WRA	Warramunga Arr	42.18	267	P	P	03 37 59.8	-0.2
	2.6nm,0.5s,baz=102,slow=7.9,SNR=37						
FITZ	Fitzroy Crossi	50.59	266	P	P	03 39 03.2	-0.4
	4.5nm,1.0s,baz=127,slow=9.7,SNR=5.3						
TXAR	Lajitas Array	90.86	58	P	P	03 43 00.2	-0.1
	0.2nm,0.6s,baz=220,slow=6.6,SNR=5.0						

CSEM 31 03:57:22.8, 38.36N×26.80E, h6km, MD2.6
ISK 31 03:57:22.8, 38.36N×26.80E, h6km, MD2.6, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IZM	Izmir	0.37	84	*e*PG	Pg	03 57 30.4	+0.4
IZM	Izmir	0.37	84	*e*Pg	Pg	03 57 30.4	+0.5
CHOS	Chios island	0.58	273	*e*PG	Pb	03 57 35.0	-0.5
CHOS				*e*SG	Sb	03 57 43.1	-0.9
CHOS	Chios island	0.58	273	*e*Pg	Pb	03 57 35.0	-0.5
CHOS				*e*Sg	Sb	03 57 43.1	-1.0
DKL	Dikili	0.71	7	*e*PG	Pb	03 57 37.2	-0.4
DKL	Dikili	0.71	7	*e*Pg	Pb	03 57 37.2	-0.5
SIGR	SIGRI	1.12	319	*e*PN	Pg	03 57 44.4	0.0
SIGR	SIGRI	1.12	319	*e*Pn	Pg	03 57 44.4	0.0

CSEM 31 03:57:24.7, 43.18N×10.94E, h10km, MD2.0/5
ROM 31 03:57:24.7±0.2, 43.18N×10.94E, h10km±2km, Md2.0/5, Ml1.1/2, Error ellipse: s-maj=4.4km s-min=2.3km az=125.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TRIF	Trifonti	0.07	202	Pg	Pg	03 57 27.0	+0.1
TRIF				Sg	Sg	03 57 28.8	+0.4
	293nm,0.2s						
TRIF	Trifonti	0.07	202	Pg	Pg	03 57 27.0	+0.1
TRIF				Sg	Sg	03 57 28.8	+0.4
	293nm,0.2s						
FROS	Frosini	0.16	79	Pg	Pg	03 57 29.1	+0.9
FROS				Sg	Sg	03 57 32.2	+1.5
	61nm,0.4s						
FROS	Frosini	0.16	79	Pg	Pg	03 57 29.1	+0.9
FROS				Sg	Sg	03 57 32.2	+1.5
	61nm,0.4s						
CASP	Castiglione de	0.39	188	Pg	Pb	03 57 33.3	-0.5
CASP				Sg	Sb	03 57 39.3	-0.5
CASP	Castiglione de	0.39	188	Pg	Pb	03 57 33.3	-0.5
CASP				Sg	Sb	03 57 39.3	-0.5
CSNT	Castellina Chi	0.39	41	Pg	Pg	03 57 32.6	+0.2
CSNT				Sg	Sg	03 57 38.2	+0.6
	13nm,0.6s						
CSNT	Castellina Chi	0.39	41	Pg	Pg	03 57 32.6	+0.2
CSNT				Sg	Sg	03 57 38.2	+0.6
	13nm,0.6s						
POPM	Popiglio	0.88	351	Pg	Pg	03 57 41.7	+0.1
POPM				Sg	Sg	03 57 52.4	-0.6
POPM	Popiglio	0.88	351	Pg	Pg	03 57 41.7	+0.1
POPM				Sg	Sg	03 57 52.4	-0.6

IDC 31 04:08:53.9±0.8, 26.33S×177.63W, h136km±6km, mb4.4/20, mb1 4.5/23, mb1mx4.4/33, mbtmp4.8/23, MS3.3/10, Ms1 3.3/10, ms1mx3.1/26, Error ellipse: s-maj=12.8km s-min=12.4km az=122.0
ISCJB 31 04:08:55.5±0.9, 26.49S±0.05×177.81W±0.05, h157km±8km, mb4.7/95, Error ellipse: s-maj=8.9km s-min=6.9km az=168.1
MOS 31 04:08:56.5±2.0, 26.42S×177.89W, h159km, mb4.8/20, Error ellipse: s-maj=11.2km s-min=9.7km az=108.4
NEIC 31 04:08:56.4±0.8, 26.45S×177.75W, h156km±7km, mb4.7/66, Error ellipse: s-maj=6.5km s-min=4.7km az=161.0
ISC 31 04:08:55.4±0.4, 26.46S±0.05×177.63W±0.06, h150km±3km, h149km; pP-P, n327, σ1948/350, mb4.7/95, 20C-27D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	2.79	185	P	Pn	04 09 40.2	+0.1
	131nm,0.3s,baz=195,slow=20,SNR=10.0						
RAO				S	Sn	04 10 16.7	+2.0
	695nm,0.3s,baz=88,slow=22,SNR=15						
RAO	Raoul Island	2.79	185	*e*P	Pn	04 09 40.1	0.0
RAO				*e*		04 10 15.6	
RAO	Raoul Island	2.79	185	*e*Pn	Pn	04 09 40.1	0.0
RAO				*e*Sn	Sn	04 10 15.6	+0.9
MSVF	Nonsavu	9.57	334	*e*P	Pn	04 11 11.4	+1.6
MSVF	Nonsavu	9.57	334	*e*Pn	Pn	04 11 11.4	+1.6
OUZ	Omahuta	11.53	219	*e*Pn	P	04 11 40.7	-2.3
URZ	Urewera	12.57	199	P	Pn	04 11 44.4	-4.6
	0.4nm,0.3s,baz=11,slow=16,SNR=4.3						
URZ				S	Sn	04 13 56.9	-11
	2.0nm,0.3s,baz=317,slow=20,SNR=6.8						
URZ	Urewera	12.57	199	*e*Pn	Pn	04 11 45.9	-3.1
URZ				S	Sn	04 13 56.9	-11
AFI	Afiamalu	13.64	25	P	Pn	04 11 52.7	-10
	6.9nm,0.3s,baz=146,slow=3.6,SNR=8.3						
AFI				S	Sn	04 14 11.3	-23
	13nm,0.3s,baz=247,slow=23,SNR=6.3						
AFI	Afiamalu	13.64	25	*e*P	Pn	04 11 53.9	-9.0
AFI	Afiamalu	13.64	25	*e*Pn	Pn	04 11 53.9	-9.1
AFI				*e*Sn	Sn	04 14 10.9	-23
DZM	Mont Dzumac	15.17	283	P	P	04 12 25.5	+1.8
	1.0nm,0.3s,baz=97,slow=16,SNR=23						
DZM				LR	LR	04 16 19.9	
	comp=Z,135nm,20.0s,baz=216,slow=30						
DZM	Mont Dzumac	15.17	283	*e*P	P	04 12 25.2	+1.5
	207nm,1.1s						
DZM				*e*LR	LR	04 15 20.6	
	288nm,28.9s						
DZM	Mont Dzumac	15.17	283	*e*Pn	P	04 12 26.0	+2.3
	189nm,0.8s						
RAR	Rarotonga	17.14	76	P	P	04 12 44.5	-0.9
	3.0nm,0.3s,baz=300,slow=18,SNR=2.3						
RAR				S	S	04 15 39.5	-17
	1.9nm,0.3s,baz=239,slow=19,SNR=2.4						
RPZ	Rata Peaks	19.51	205	P	P	04 13 10.9	-0.1
	0.3nm,0.3s,baz=53,slow=17,SNR=2.0						
RPZ				S	S	04 16 27.5	-16
	0.2nm,0.3s,baz=315,slow=20,SNR=2.9						
RPZ				LR	LR	04 20 02.3	
	comp=Z,93nm,19.8s,baz=12,slow=34						
LHI	Lord Howe Isla	20.99	251	*e*P	Pn	04 13 30.5	-1.1
	271nm,1.5s						
TBI	Tubuai	25.71	89	*e*LR	LR	04 20 28.7	
	230nm,36.0s						
PPT2	Papeete2	27.41	77	*e*S	S	04 18 49.0	-7.7
	78nm,27.2s						
PPT2				*e*LR	LR	04 21 09.9	
	329nm,31.8s						
PPT	Papeete	27.42	77	LR	LR	04 22 57.1	
	comp=Z,84nm,20.1s,baz=258,slow=31						
EIDS	Eidsvold	28.14	265	*e*P	P	04 14 34.8	+1.2
	34nm,1.4s						
CAN	Canberra	29.86	245	*e*P	P	04 14 48.2	-0.6
CAN				pmax	pmax		
	comp=Z,15nm,1.3s						
CAN	Canberra	29.86	245	*e*P	P	04 14 48.1	-0.6
	comp=Z,15nm,1.3s						
CTA	Charters Tower	33.70	273	P	P	04 15 23.2	+0.7
	comp=Z,17nm,0.7s,baz=102,slow=11,SNR=23						
CTAO	Charters Tower	33.70	273	*e*P	P	04 15 23.4	+0.9
CTAO				pmax	pmax		
	comp=Z,17nm,0.7s						
CTAO	Charters Tower	33.70	273	*e*P	P	04 15 23.4	+0.9
	comp=Z,17nm,0.7s						
STKA	Stephens Creek	35.86	252	P	P	04 15 41.0	+0.1
	comp=Z,4.0nm,0.9s,baz=89,slow=10.0,SNR=6.8						
STKA				pP	pP	04 16 11.0	-2.2
	comp=Z,2.8nm,0.9s,baz=109,slow=8.6,SNR=2.3						
STKA				PcP	PcP	04 18 06.1	+1.1
	comp=Z,11nm,0.7s,baz=110,slow=4.8,SNR=14						
STKA				LR	LR	04 29 15.6	
	comp=Z,63nm,18.4s,baz=136,slow=34						
PMG	Port Moresby	37.38	290	P	P	04 15 54.1	+0.1
	comp=Z,36nm,0.7s,baz=109,slow=4.5,SNR=8.8						
PMG	Port Moresby	37.38	290	*e*P	P	04 15 52.8	-1.1
PMG				pmax	pmax		
	comp=Z,92nm,0.7s						
PMG	Port Moresby	37.38	290	*e*P	P	04 15 53.5	-0.4
	comp=Z,39nm,0.7s						
COEN	Coen	38.68	281	*e*P	P	04 16 04.5	-0.3
	comp=Z,12nm,0.8s						
AS01	Alice Springs	43.75	263	*e*P	P	04 16 44.8	-1.4
AS31	Alice Springs	43.79	263	*e*P	P	04 16 46.2	-0.4
	comp=Z,6.4nm,0.9s						
ASAR	Alice Springs	43.79	263	P	P	04 16 45.8	-0.8
	comp=Z,18nm,0.9s,baz=111,slow=8.0,SNR=77						
ASAR				PcP	PcP	04 18 30.4	-0.2
	comp=Z,6.1nm,0.8s,baz=111,slow=3.5,SNR=8.1						
ASAR				ScP	ScP	04 22 10.3	+2.1
	comp=Z,0.4nm,0.7s,baz=114,slow=4.1,SNR=4.2						
WB2	Warramunga Arr	44.41	268	*e*P	P	04 16 50.8	-0.7
	comp=Z,23nm,1.0s						
WRAB	Tennant Creek	44.42	268	*e*P	P	04 16 49.6	-1.9
WRAB				pmax	pmax		
	comp=Z,21nm,1.0s						
WRAB	Tennant Creek	44.42	268	*e*P	P	04 16 50.2	-1.3
	comp=Z,9.1nm,0.8s						
WRAB				*e*pP	pP	04 17 27.2	+2.3
WRAB				*e*PcP	PcP	04 18 32.7	-0.1
WRA	Warramunga Arr	44.42	268	P	P	04 16 50.5	-1.1
	comp=Z,9.7nm,0.8s,baz=107,slow=7.3,SNR=36						
WRA				PcP	PcP	04 18 32.9	+0.1
	comp=Z,16nm,0.9s,baz=104,slow=3.7,SNR=16						
JAY	Jayapura	46.51	294	P	P	04 17 07.1	-0.9
	comp=Z,1.6nm,0.7s,baz=92,slow=22,SNR=5.1						
FORT	Forrest	47.49	251	*e*P	P	04 17 13.8	-1.6
	comp=Z,596nm,1.2s						
SBA	Scott Base	51.97	184	*e*P	P	04 17 51.9	+3.3
SBA				pmax	pmax		
	comp=Z,13nm,0.8s						
SBA	Scott Base	51.97	184	*e*P	P	04 17 51.9	+3.3
	comp=Z,13nm,0.8s						
VNDA	Vanda	52.03	186	P	P	04 17 50.4	+1.4
	comp=Z,2.4nm,0.8s,baz=6.1,slow=7.2,SNR=16						
VNDA	Vanda	52.03	186	*e*P	P	04 17 51.4	+2.4
VNDA				pmax	pmax		
	comp=Z,25nm,1.6s						
VNDA	Vanda	52.03	186	*e*P	P	04 17 51.4	+2.4
	comp=Z,25nm,1.6s						
FITZ	Fitzroy Crossi	52.80	267	P	P	04 17 55.0	-0.7
	baz=116,slow=8.2						
FITZ	Fitzroy Crossi	52.80	267	*e*P	P	04 17 54.8	-0.9
	comp=Z,21nm,1.1s						
FITZ				*e*PcP	PcP	04 19 02.6	-0.4
MBWA	Marble Bar	57.08	261	*e*P	P	04 18 24.6	-1.7
	comp=Z,82nm,2.0s						
SOEI	Soe	57.22	275	*e*P	P	04 18 28.4	+0.9
CASY	Casey	58.78	207	*e*P	P	04 18 36.1	-1.3
	comp=Z,6.5nm,0.8s						
LUWI	Luwuk	62.52	284	*e*P	P	04 19 04.3	+0.8
KAPI	Kappang	63.31	278	*e*P	P	04 19 08.7	-0.1
	comp=Z,10nm,0.7s						
QSPA	South Pole Qui	63.63	180	*e*P	P	04 19 11.8	+1.5
KKM	Kota Kinabalu	71.70	287	*e*P	P	04 20 00.8	-0.8
	comp=Z,28nm,1.1s						
JOW	Kunigami	74.30	311	P	P	04 20 15.0	-1.4
	comp=Z,28nm,0.7s,baz=160,slow=7.4,SNR=13						
JOW	Kunigami	74.30	311	*e*P	P	04 20 15.3	-1.2
	comp=Z,25nm,0.7s						
KSM	Kuching	74.66	280	*e*P	P	04 20 18.6	-0.2
	comp=Z,44nm,0.9s						
MJAR	Matsushiro Arr	75.22	325	P	P	04 20 20.4	-1.2
	comp=Z,8.6nm,0.8s,baz=160,slow=5.6,SNR=20						
MJAR				LR	LR	04 50 40.7	
	comp=Z,7.3nm,20.9s,baz=35,slow=33						
MAJO	Matsushiro	75.22	325	*e*P	P	04 20 21.0	-0.6
MAJO				pmax	pmax		
	comp=Z,18nm,1.0s						
MAJO	Matsushiro	75.22	325	*e*P	P	04 20 21.0	-0.6
	comp=Z,18nm,1.0s						
MAT	Matsushiro	75.22	325	P	P	04 20 20.8	-0.8
MAT				*e*S	S	04 29 51.4	+3.1
MJB9	Matsu-Tunnel	75.23	325	*e*P	P	04 20 21.0	-0.6
	comp=Z,4.5nm,1.0s						
PMSA	Palmer Station	75.71	156	*e*P	P	04 20 24.8	+0.8
	comp=Z,3.1nm,0.8s						
MAW	Mawson	76.10	200	P	P	04 20 26.9	+0.7
	comp=Z,19nm,0.7s,baz=132,slow=7.1,SNR=60						
MAW	Mawson	76.10	200	*e*P	P	04 20 26.8	+0.7
MAW				pmax	pmax		
	comp=Z,4.0nm,0.7s						
MAW	Mawson	76.10	200	*e*P	P	04 20 26.8	+0.6
	comp=Z,4.4nm,0.7s						
YOJ	Yonaguni jima	76.48	306	*e*P	P	04 20 27.6	-1.3
YOJ				pmax	pmax		
	comp=Z,64nm,1.1s						
YOJ	Yonaguni jima	76.48	306	*e*P	P	04 20 27.6	-1.3
	comp=Z,64nm,1.1s						
JNU	Nakatsue	76.86	318	*e*P	P	04 20 30.3	-0.7
	comp=Z,3.4nm,0.8s						
TPUB	Ta-pu	77.54	304	*e*P	P	04 20 32.8	-2.1
	comp=Z,20nm,0.8s						
SSLB	Suanglung	77.58	305	*e*P	P	04 20 33.2	-2.0
	comp=Z,14nm,0.7s						
YHNB	Yeheng	77.80	306	*e*P	P	04 20 36.0	-0.4
	comp=Z,9.2nm,0.8s						
MNAI	Manna	78.60	271	*e*P	P	04 20 41.3	+0.2
ASAJ	Asahikawa	79.12	332	*e*P	P	04 20 44.1	+1.0
	comp=Z,33nm,1.0s						
SYO	Syowa Base	81.01	193	*‖e*P	P	04 20 51.6	-1.4
YSS	Yuzh-Sakhalins	81.37	334	*‖i*P	P	04 20 56.0	+1.0
YSS				pmax	pmax		
	comp=Z,40nm,0.9s						
YSS	Yuzh-Sakhalins	81.37	334	*e*P	P	04 20 56.0	+1.0
	comp=Z,41nm,1.0s						
KSRS	Korea Array	81.58	319	P	P	04 20 56.9	+0.4
	comp=Z,9.4nm,0.7s,baz=134,slow=5.7,SNR=18						
KSRS				LR	LR	04 56 20.5	
	comp=Z,10.0nm,18.4s,baz=285,slow=35						
KSAR	Wonju Array Be	81.60	319	P	P	04 20 56.9	+0.4
KSAR	Wonju Array Be	81.60	319	P	P	04 20 56.9	+0.4
SNAA	Sanae	82.07	178	P	P	04 20 58.8	+0.1
SNAA	Sanae	82.07	178	*e*P	P	04 20 58.7	+0.1
SNAA	Sanae	82.07	178	*e*P	P	04 20 58.8	+0.1
	comp=Z,12nm,1.0s						
PEA0	Petropavlovsk-	82.10	345	*e*P	P	04 20 58.5	-0.3
PEA0B	Petropavlovsk-	82.10	345	*e*P	P	04 21 03.0	+4.2
	comp=Z,59nm,1.5s						
PETK	Petropavlovsk-	82.10	345	P	P	04 20 58.6	-0.2
	comp=Z,14nm,0.7s,baz=110,slow=6.2,SNR=7.6						
LPIG	La Paz	82.19	58	LR	LR	04 50 12.0	
	comp=Z,28nm,19.2s,baz=241,slow=30						
VNA1	Neumayer--Stat	82.86	176	P	P	04 21 03.2	+0.5
CMB	Columbia Colle	83.62	42	*e*P	P	04 21 07.4	+0.3
CMB				pmax	pmax		
	comp=Z,6.0nm,0.9s						
CMB	Columbia Colle	83.62	42	*e*P	P	04 21 07.4	+0.3
	comp=Z,5.5nm,0.9s						
AFDM	Forest Hills D	83.87	41	*e*P	P	04 21 08.9	+0.6
	comp=Z,4.1nm,1.0s						
WDC	Whiskeytown Da	84.06	39	*e*P	P	04 21 09.9	+0.8
WDC				pmax	pmax		
	comp=Z,7.0nm,0.9s						
WDC	Whiskeytown Da	84.06	39	*e*P	P	04 21 09.9	+0.8
	comp=Z,6.6nm,0.9s						
USRK	Ussuriysk Ar.	84.08	326	P	P	04 21 09.4	+0.3
	comp=Z,7.5nm,0.6s,baz=139,slow=3.3,SNR=18						
IPM	Ipoh	84.26	278	*e*P	P	04 21 10.4	-0.4
	comp=Z,23nm,0.9s						
WAKR	Walker	84.50	42	*e*P	P	04 21 12.8	+1.2
	comp=Z,4.9nm,0.8s						
113A	Mohawk Valley,	84.61	49	*e*P	P	04 21 13.3	+1.2
TVH3	East Aurora ar	84.77	42	*e*P	P	04 21 14.1	+1.0
	comp=Z,4.7nm,1.0s						
PNTR	Pine Nut	84.78	42	*e*P	P	04 21 14.1	+1.0
	comp=Z,11nm,0.8s						
TVH2	Borealis Mine	84.83	42	*e*P	P	04 21 14.2	+0.8
	comp=Z,3.6nm,0.9s						
YERR	Yerington	84.92	42	*e*P	P	04 21 14.5	+0.7
	comp=Z,5.2nm,0.9s						
PLCA	Paso Flores	84.94	133	P	P	04 21 14.6	+0.6
	comp=Z,4.6nm,0.9s,baz=248,slow=4.0,SNR=9.2						
PLCA				LR	LR	04 51 05.1	
	comp=Z,24nm,20.9s,baz=333,slow=30						
KULM	Kulim	84.96	278	*e*P	P	04 21 13.9	-0.4
	comp=Z,15nm,0.7s						
LDFC	Landfair	85.08	47	*e*P	P	04 21 16.3	+1.7
	comp=Z,10nm,0.8s						
PAHR	Pah Rah Range	85.30	41

	comp=Z,50nm,1.0s								
ZAIG	**Zacatecas**	**87.55**	**63**	*eP*		**P**		**04 21 28.2**	**+1.1**
	comp=Z,5.0nm,0.9s								
CCUT	**Cedar City**	**87.69**	**46**	*eP*		**P**		**04 21 28.9**	**+1.5**
	comp=Z,4.6nm,1.3s								
KNB	**Kanab**	**87.72**	**46**	*eP*		**P**		**04 21 29.1**	**+1.6**
KNB				pmax	pmax				
	comp=Z,26nm,2.0s								
KNB	**Kanab**	**87.72**	**46**	*eP*		**P**		**04 21 29.1**	**+1.6**
	comp=Z,26nm,2.0s								
U15A	**North Rim**	**87.73**	**47**	*eP*		**P**		**04 21 29.1**	**+1.5**
LON	**Longmire**	**88.60**	**35**	*eP*		**P**		**04 21 32.1**	**+0.9**
LON				pmax	pmax				
	comp=Z,9.0nm,1.5s								
LON	**Longmire**	**88.60**	**35**	*eP*		**P**		**04 21 32.1**	**+0.9**
	comp=Z,8.6nm,1.5s								
MTPU	**Mount Pierson**	**88.73**	**46**	*eP*		**P**		**04 21 33.9**	**+1.5**
	comp=Z,3.3nm,0.9s								
D05A	**Enumclaw**	**88.80**	**34**	*eP*		**P**		**04 21 34.1**	**+2.0**
	comp=Z,17nm,0.9s								
G08A	**Pilot Rock**	**89.14**	**37**	*eP*		**P**		**04 21 34.7**	**+0.9**
	comp=Z,7.6nm,1.0s								
PHET	**Kaeng Krachan**	**89.31**	**285**	P		**P**		**04 21 37.3**	**+2.1**
	comp=Z,22nm,0.8s,comp=Z,188nm								
ENH	**Enshi**	**89.66**	**304**	*eP*		**P**		**04 21 37.4**	**+0.8**
	comp=Z,58nm,0.9s								
PBKT	**Sadao Pong**	**89.84**	**289**	P		**P**		**04 21 39.2**	**+1.6**
	comp=Z,33nm,1.0s								
MNTX	**Cornudas Mount**	**89.93**	**54**	*eP*		**P**		**04 21 37.8**	**0.0**
	comp=Z,3.6nm,0.8s								
TX31	**Lajitas Ar. Si**	**89.98**	**57**	*eP*		**P**		**04 21 39.1**	**+1.0**
TXAR	**Lajitas Array**	**89.98**	**57**	P		**P**		**04 21 38.4**	**+0.2**
	comp=Z,1.9nm,0.9s,baz=210,slow=7.2,SNR=19								
TXAR				pP		**pP**		**04 22 12.4**	**-3.7**
	comp=Z,0.9nm,1.0s,baz=235,slow=3.2,SNR=2.5								
TXAR				PKKPbc		**PKKPbc**		**04 39 09.1**	**-0.1**
	comp=Z,0.2nm,0.6s,baz=98,slow=2.5,SNR=3.7								
TXAR				LR	LR			04 55 26.3	
	comp=Z,18nm,19.1s,baz=0.0,slow=31								
TMUT	**Trail Mountain**	**90.08**	**45**	*eP*		**P**		**04 21 39.9**	**+1.3**
	comp=Z,9.8nm,1.2s								
LAZ	**Ladron**	**90.10**	**51**	*eP*		**P**		**04 21 40.1**	**+1.3**
BJT	**Baijiatuan**	**90.35**	**315**	*eP*		**P**		**04 21 39.8**	**+0.3**
BJT				pmax	pmax				
	comp=Z,6.0nm,0.6s								
BJT	**Baijiatuan**	**90.35**	**315**	*eP*		**P**		**04 21 39.8**	**+0.3**
	comp=Z,6.4nm,0.6s								
BJI	**Beijing**	**90.36**	**315**	P		**P**		**04 21 40.0**	**+0.5**
BJI				pmax	pmax				
	comp=Z,21nm,1.1s								
BJI				pmax	pmax				
	comp=Z,100nm,4.2s								
SRU	**San Rafael Swe**	**90.41**	**46**	*eP*		**P**		**04 21 40.8**	**+0.8**
SRU				pmax	pmax				
	comp=Z,6.0nm,0.8s								
SRU	**San Rafael Swe**	**90.41**	**46**	*eP*		**P**		**04 21 40.8**	**+0.8**
	comp=Z,6.1nm,0.8s								
HVU	**Hansel Valley**	**90.53**	**43**	*eP*		**P**		**04 21 41.2**	**+0.7**
HVU				pmax	pmax				
	comp=Z,7.0nm,1.4s								
HVU	**Hansel Valley**	**90.53**	**43**	*eP*		**P**		**04 21 41.2**	**+0.7**
	comp=Z,6.6nm,1.4s								
HLID	**Hailey**	**90.61**	**40**	*eP*		**P**		**04 21 41.7**	**+0.9**
	comp=Z,1.8nm,0.9s								
UTTA	**Uttaradit**	**90.73**	**289**	P		**P**		**04 21 43.8**	**+2.1**
	comp=Z,6.7nm,1.1s								
ANMO	**Albuquerque**	**90.86**	**51**	*eP*		**P**		**04 21 43.2**	**+0.9**
ANMO				pmax	pmax				
	comp=Z,3.0nm,0.9s								
ANMO	**Albuquerque**	**90.86**	**51**	*eP*		**P**		**04 21 43.2**	**+0.9**
	comp=Z,2.8nm,0.9s								
TIY	**Taiyuan**	**91.50**	**312**	*eP*		**P**		**04 21 46.8**	**+1.8**
LAMP	**Lampang**	**91.86**	**290**	P		**P**		**04 21 48.8**	**+1.8**
	comp=Z,20nm,0.9s,comp=Z,152nm								
XAN	**Xi'an**	**92.00**	**307**	P		**P**		**04 21 48.0**	**+0.6**
XAN				pP	pP			04 22 12.8	-13
XAN				pmax	pmax				
	comp=Z,27nm,1.0s								
S22A	**4UR Ranch, Cre**	**92.09**	**49**	*eP*		**P**		**04 21 48.9**	**+0.9**
SEY	**Seymchan**	**92.23**	**347**	P		**P**		**04 21 47.5**	**-0.1**
	comp=Z,4.9nm,0.7s,baz=165,slow=4.6,SNR=10								
SEY	**Seymchan**	**92.23**	**347**	*eP*		**P**		**04 21 47.1**	**-0.5**
KMI	**Kunming**	**92.35**	**297**	P		**P**		**04 21 50.8**	**+1.4**
KMI				pP	pP			04 22 05.8	-22
KMI				pmax	pmax				
	comp=Z,36nm,0.9s								
CM01	**Chiang Mai Arr**	**92.39**	**289**	*eP*		**P**		**04 21 50.7**	**+1.3**
CMAR	**Chiang Mai Arr**	**92.42**	**289**	P		**P**		**04 21 50.9**	**+1.3**
	comp=Z,5.0nm,0.6s,baz=146,slow=3.2,SNR=26								
RND	**Reindeer**	**92.42**	**13**	*eP*		**P**		**04 21 49.3**	**+0.7**
RND	**Reindeer**	**92.42**	**13**	*eP*		**P**		**04 21 49.3**	**+0.7**
CMMT	**Chiang Mai**	**92.57**	**290**	P		**P**		**04 21 51.8**	**+1.5**
	comp=Z,30nm,1.1s								
CHTO	**Chiang Mai**	**92.58**	**290**	P		**P**		**04 21 51.8**	**+1.5**
	comp=Z,135nm,1.1s								
CHTO	**Chiang Mai**	**92.58**	**290**	*eP*		**P**		**04 21 51.2**	**+0.9**
CHTO				pmax	pmax				
	comp=Z,24nm,1.0s								
CHTO	**Chiang Mai**	**92.58**	**290**	*eP*		**P**		**04 21 51.1**	**+0.9**
	comp=Z,24nm,1.0s								
MSTX	**Muleshoe**	**92.97**	**53**	*eP*		**P**		**04 21 52.2**	**+0.3**
	comp=Z,5.2nm,0.7s								
CMAI	**Chiengmai2**	**93.00**	**291**	P		**P**		**04 21 53.8**	**+1.4**
	comp=Z,283nm,1.0s,comp=Z,10µm								
BW06	**Boulder Array**	**93.06**	**43**	*eP*		**P**		**04 21 52.1**	**-0.1**
PD31	**Pinedale Array**	**93.06**	**43**	*eP*		**P**		**04 21 52.1**	**-0.1**
PDAR	**Pinedale Array**	**93.06**	**43**	P		**P**		**04 21 51.6**	**-0.6**
	comp=Z,1.7nm,0.7s,baz=200,slow=2.8,SNR=18								
WRH	**Wood River Hil**	**93.53**	**12**	*eP*		**P**		**04 21 53.0**	**-0.5**
CCB	**Clear Creek Bu**	**93.74**	**12**	*eP*		**P**		**04 21 53.8**	**-0.8**
HHC	**Hu-ho-hao-te**	**93.74**	**314**	*eP*		**P**		**04 21 56.5**	**+1.2**
HHC				pmax	pmax				
	comp=Z,25nm,1.1s								
HHC				pmax	pmax				
	comp=Z,56nm,4.3s								
ILAR	**Eielson Array**	**94.03**	**13**	P		**P**		**04 21 54.9**	**-1.0**
	comp=Z,0.5nm,0.6s,baz=227,slow=5.8,SNR=7.5								
BILL	**Bilibino**	**94.98**	**354**	*eP*		**P**		**04 22 00.0**	**-0.1**
BILL				pmax	pmax				
	comp=Z,4.0nm,1.0s								
LZH	**Lanzhou**	**96.64**	**307**	*eP*		**P**		**04 22 11.0**	**+2.3**
LZH				pP	pP			04 22 51.0	+4.2
LZH				sP	sP			04 23 08.0	+5.6
LZH				pmax	pmax				
	comp=Z,21nm,1.3s								
LPAZ	**La Paz**	**99.42**	**113**	LR		LR		04 57 45.3	
	comp=Z,10nm,19.9s,baz=232,slow=30								
SONM	**Songino Array**	**100.44**	**318**	P		**Pdif**		**04 22 25.0**	**-0.4**
	comp=Z,0.4nm,0.4s,baz=155,slow=4.9,SNR=3.9								
GTA	**Gaotai**	**100.97**	**309**	*eP*		**Pdif**		**04 22 28.8**	**+0.8**
GTA				pP	pP			04 23 11.0	+4.9
GTA				sP	sP			04 23 28.0	+6.1
GTA				pmax	pmax				
	comp=Z,2.0nm,0.8s								
ZALV	**Zalesovo Beam**	**115.29**	**320**	PKP		**PKPdf**		**04 27 17.2**	**-1.4**
	comp=Z,0.8nm,0.5s,baz=175,slow=2.1,SNR=4.1								
MKAR	**Makanchi Array**	**115.46**	**311**	Pdiff		**Pdif**		**04 23 30.4**	**-1.7**
	comp=Z,0.1nm,0.2s,baz=101,slow=4.6,SNR=2.1								
MKAR				PKP		**PKPdf**		**04 27 17.9**	**-1.4**
	comp=Z,0.8nm,0.5s,baz=69,slow=4.0,SNR=8.4								
KSH	**Kashi**	**118.47**	**302**	*e*PKP		**PKPdf**		**04 27 26.5**	**+1.0**
KSH				*es*PKP				04 28 25.5	
KSH				*e*PP		**PP**		**04 28 49.5**	**+4.7**
KSH				PKS		**PKSdf**		**04 31 01.8**	**-0.4**
KSH				SKKS				04 35 24.3	
KSH				AMB	AMB				
	comp=Z,97nm,5.8s								
KSH				LR	LR				
	comp=N,56nm,7.7s								
KSH				LR	LR				
	comp=E,75nm,6.5s								
KSH				LR	LR				
	comp=Z,120nm,6.1s								
KURK	**Kurchatov**	**118.53**	**315**	*e*PKIKP		**PKPdf**		**04 27 23.8**	**-1.2**
KURK				*e*				04 28 03.9	
KURK	**Kurchatov**	**118.53**	**315**	*e*PKPdf		**PKPdf**		**04 27 23.8**	**-1.2**
KURK				*es*PKPdf		**pPKPdf**		**04 28 03.9**	**-0.8**
KURK				PP		**PP**		**04 28 40.0**	**-4.7**
KURBB	**Kurchatov Arra**	**118.58**	**315**	PKP		**PKPdf**		**04 27 23.9**	**-1.2**
	comp=Z,1.3nm,0.7s,baz=101,slow=2.0,SNR=20								
KURBB				pPKP		**pPKPdf**		**04 28 01.1**	**-3.8**
	comp=Z,1.0nm,0.8s,baz=81,slow=2.2,SNR=3.1								
KURBB				PP		**PP**		**04 28 40.0**	**-5.0**
	comp=Z,0.9nm,0.8s,baz=98,slow=5.9,SNR=5.7								
SUR	**Sutherland**	**118.90**	**198**	*e*PKPdf		**PKPdf**		**04 27 26.7**	**-0.1**
AAK	**Ala-Archa**	**120.15**	**306**	*i* PKIKP		**PKPdf**		**04 27 27.2**	**-1.4**
BOSA	**Boshof**	**120.99**	**204**	PKP		**PKPdf**		**04 27 31.0**	**+0.2**
	comp=Z,2.1nm,0.6s,baz=165,slow=2.7,SNR=8.0								
BOSA	**Boshof**	**120.99**	**204**	PKIKP		**PKPdf**		**04 27 31.0**	**+0.2**
BVAR	**Borovoye Array**	**123.78**	**318**	PKP		**PKPdf**		**04 27 34.5**	**-0.5**
	comp=Z,2.1nm,0.6s,baz=50,slow=2.3,SNR=12								
BRVK	**Borovoye**	**123.84**	**318**	*i* PKIKP		**PKPdf**		**04 27 34.4**	**-0.8**
ARU	**Arti**	**130.22**	**323**	PKP		**PKPdf**		**04 27 46.9**	**-0.3**
	comp=Z,3.6nm,0.6s,baz=122,slow=1.4,SNR=7.7								
ARU	**Arti**	**130.22**	**323**	*i* PKIKP		**PKPdf**		**04 27 47.3**	**+0.1**
ABKAR	**Akbulak array**	**130.53**	**313**	*e*PKPdf		**PKPdf**		**04 27 48.6**	**+0.5**
LSZ	**Lusaka**	**131.51**	**214**	*e*PKIKP		**PKPdf**		**04 27 51.8**	**+0.7**
LSZ	**Lusaka**	**131.51**	**214**	*e*PKPdf		**PKPdf**		**04 27 51.8**	**+0.7**
AKTO	**Aktyubinsk**	**131.63**	**315**	PKP		**PKPdf**		**04 27 50.0**	**-0.1**
	comp=Z,1.6nm,0.7s,baz=101,slow=3.5,SNR=6.3								
AKTO	**Aktyubinsk**	**131.63**	**315**	PKIKP		**PKPdf**		**04 27 50.0**	**-0.1**
GEYT	**Alibeck**	**132.09**	**298**	SKPbc		**SKPab**		**04 31 06.5**	**+1.4**
	comp=Z,3.1nm,0.7s,baz=132,slow=2.2,SNR=6.5								
TSUM	**Tsumeb**	**132.26**	**200**	*e*PKPdf		**PKPdf**		**04 27 53.2**	**+0.7**
ARCES	**ARCESS Array B**	**134.82**	**349**	PKP		**PKPdf**		**04 27 54.8**	**-0.8**
	comp=Z,3.0nm,0.7s,baz=22,slow=1.0,SNR=12								
ARE0	**ARCESS Array S**	**134.82**	**349**	*e*P		**PKPdf**		**04 27 55.4**	**-0.2**
TRO	**Tromso**	**135.73**	**352**	*e*P		**PKPdf**		**04 27 58.6**	**+1.4**
FINES	**FINESS Array B**	**141.55**	**342**	PKhKP		PKPpre		04 28 01.4	
	comp=Z,1.8nm,0.5s,baz=54,slow=4.6,SNR=21								
FINES				PKP		**PKPdf**		**04 28 08.8**	**+0.7**
	comp=Z,3.4nm,0.7s,baz=43,slow=3.9,SNR=12								
OBN	**Obninsk**	**142.07**	**328**	*i* PKIKP		**PKPdf**		**04 28 09.3**	**+0.1**
KBZ	**Khabaz**	**143.06**	**308**	PKP		PKPbc		04 28 09.6	+0.9
	comp=Z,6.0nm,1.2s,baz=90,slow=5.6,SNR=4.2								
KIV	**Kislovodsk**	**143.15**	**309**	*e*PKIKP		PKPbc		04 28 09.2	+0.1
KIV				pmax	pmax				
	comp=Z,6.0nm,0.7s								
NEY	**Neytrino**	**143.30**	**308**	*i* PKIKP		**PKPdf**		**04 28 11.7**	**-0.4**
DOMB	**Dombas**	**144.15**	**355**	*e*P		**PKPab**		**04 28 10.7**	**-0.1**
AKN	**Aaknes**	**144.16**	**356**	*e*P		**PKPab**		**04 28 11.1**	**+0.2**
AKN				*ep*PKPdf		**pPKPdf**		**04 28 57.5**	**+5.0**
FOO	**Floro**	**144.83**	**358**	*e*P		PKPbc		04 28 12.9	-0.3
NB2	**NORSAR Subarra**	**144.91**	**353**	PKP		PKPbc		04 28 13.0	-0.7
	comp=Z,17nm,0.8s,baz=11,slow=3.6								
NOA	**NORSAR Array B**	**144.91**	**353**	PKP		PKPbc		04 28 12.6	-1.1
	comp=Z,3.8nm,0.6s,baz=14,slow=2.3,SNR=52								
NOA				pPKP		pPKPdf		04 28 50.2	-3.7
	comp=Z,13nm,1.0s,baz=14,slow=2.4,SNR=4.3								
NC602	**NORSAR Array S**	**145.17**	**352**	*e*P		**PKPbc**		**04 28 13.9**	**-0.5**
NC602				*ep*PKPbc		pPKPbc		04 28 53.5	-0.2
SUE	**Sulen**	**145.38**	**358**	*e*P		**PKPdf**		**04 28 14.7**	**-0.1**
SUE				*e*				04 35 33.5	
ASK	**Askoy**	**145.94**	**358**	*e*P		**PKPbc**		**04 28 16.5**	**-0.2**
BER	**Bergen**	**146.03**	**357**	*e*P		**PKPdf**		**04 28 15.7**	**-0.3**
OSL	**Oslo**	**146.05**	**352**	*e*P		**PKPbc**		**04 28 16.9**	**-0.2**
LRW	**Lerwick**	**146.25**	**3**	*e*P		**PKPbc**		**04 28 17.4**	**-0.3**
MICGM	**Minsk**	**146.29**	**333**	*e*		PKPab		04 28 34.0	+15
NACGM	**Naroch**	**146.44**	**334**	*e*		PKPab		04 28 34.0	+14
ODD1	**Odda**	**146.44**	**356**	*e*P		**PKPbc**		**04 28 17.9**	**-0.4**
KONO	**Kongsberg**	**146.45**	**353**	*e*P		**PKPbc**		**04 28 17.7**	**-0.6**
KONO				*ep*PKPdf		**pPKPdf**		**04 28 57.3**	**+0.8**
KONO	**Kongsberg**	**146.45**	**353**	*e*PKIKP		**PKPbc**		**04 28 17.6**	**-0.7**
KONO	**Kongsberg**	**146.45**	**353**	*e*PKPbc		**PKPbc**		**04 28 17.6**	**-0.7**
BLS5	**Blasjo**	**146.94**	**356**	*e*P		**PKPbc**		**04 28 19.6**	**-0.2**
KMY	**Karmoy**	**147.21**	**357**	*e*P		**PKPbc**		**04 28 20.2**	**-0.2**
HOMB	**Homborsund**	**147.92**	**354**	*e*P		**PKPbc**		**04 28 22.3**	**-0.1**
HOMB				*ep*PKPdf		**pPKPdf**		**04 29 02.6**	**+3.6**
AKASG	**Malin Array Be**	**148.28**	**327**	PKPbc		**PKPbc**		**04 28 22.7**	**-0.9**
	comp=Z,4.6nm,0.5s,baz=51,slow=4.0,SNR=18								
KIEV	**Kiev**	**148.29**	**327**	*e*PKIKP		**PKPbc**		**04 28 22.8**	**-0.8**
KIEV	**Kiev**	**148.29**	**327**	*e*PKPbc		**PKPbc**		**04 28 22.8**	**-0.8**
KPL	**Plockton**	**148.62**	**8**	*e*P		**PKPbc**		**04 28 24.2**	**0.0**
COP	**Copenhagen**	**149.90**	**349**	*i* P		**PKPbc**		**04 28 27.2**	**-0.2**
	comp=Z,10nm,0.6s								
COP	**Copenhagen**	**149.90**	**349**	*i* PKHKP		**PKPbc**		**04 28 27.2**	**-0.2**
COP				pmax	pmax				
	comp=Z,10.0nm,0.6s								
BSD	**Bornholm Skovb**	**149.94**	**346**	*i* P		**PKPbc**		**04 28 26.9**	**-0.7**
	comp=Z,9.7nm,0.6s								
BSD	**Bornholm Skovb**	**149.94**	**346**	*i* PKHKP		**PKPbc**		**04 28 26.9**	**-0.7**
BSD				pmax	pmax				
	comp=Z,10.0nm,0.6s								
KIS	**Kishinev**	**150.75**	**321**	*e*PKP		**PKPbc**		**04 28 27.0**	**-2.8**
KIS	**Kishinev**	**150.75**	**321**	*e*PKIKP		**PKPbc**		**04 28 27.0**	**-2.8**
KIS				*e*				04 28 35.0	
BRTR	**Keskin Array B**	**150.82**	**305**	PKPbc		**PKPbc**		**04 28 29.8**	**-0.6**
	comp=Z,2.6nm,0.6s,baz=141,slow=5.4,SNR=16								
BRTR				PKPab		**PKPab**		**04 28 37.9**	**-0.3**
	comp=Z,10nm,0.8s,baz=87,slow=2.3,SNR=20								
ESK	**Eskdalemuir**	**150.89**	**7**	*e*PKIKP		**PKPbc**		**04 28 29.1**	**-0.7**
ESK	**Eskdalemuir**	**150.89**	**7**	*e*PKPbc		**PKPbc**		**04 28 29.1**	**-0.7**
GKP	**Gorka Klasztor**	**151.02**	**341**	*e*PKP		**PKPbc**		**04 28 30.4**	**+0.3**
GKP	**Gorka Klasztor**	**151.02**	**341**	*e*PKIKP		**PKPbc**		**04 28 30.4**	**+0.3**
BEL	**Belsk**	**151.08**	**336**	*e*PKP		**PKPbc**		**04 28 30.9**	**+0.5**
BEL	**Belsk**	**151.08**	**336**	*e*PKIKP		**PKPbc**		**04 28 30.9**	**+0.5**
LVV	**L'vov**	**151.32**	**330**	*e*PKIKP		**PKPbc**		**04 28 30.5**	**-0.5**
ANTO	**Ankara**	**151.39**	**306**	*e*PKIKP		**PKPbc**		**04 28 31.6**	**0.0**
ANTO				*e*				04 28 39.3	
ANTO	**Ankara**	**151.39**	**306**	*e*PKPbc		**PKPbc**		**04 28 31.6**	**0.0**
ANTO				*e*PKPab		**PKPab**		**04 28 39.3**	**-1.1**
KWP	**Kalwaria Pacla**	**152.04**	**331**	*e*PKP		**PKPbc**		**04 28 33.0**	**+0.3**
KWP	**Kalwaria Pacla**	**152.04**	**331**	*e*PKIKP		**PKPbc**		**04 28 33.0**	**+0.3**
CSS	**Mathiatis**	**152.16**	**295**	*e*PKPbc		**PKPbc**		**04 28 32.9**	**-0.5**
CSS				*e*PKPab		**PKPab**		**04 28 43.6**	**-0.1**
CFR	**Carcaliu**	**152.17**	**319**	↑*i*P		**PKPbc**		**04 28 33.2**	**+0.1**
CFR	**Carcaliu**	**152.17**	**319**	↑PKIKP		**PKPbc**		**04 28 33.2**	**+0.1**
TESR	**Tescani**	**152.24**	**322**	↓*i*P		**PKPab**		**04 28 43.4**	**-0.2**
BURAR	**Bucovina Array**	**152.29**	**326**	↓*i*P		**PKPbc**		**04 28 33.9**	**+0.5**
BURAR	**Bucovina Array**	**152.29**	**326**	↓PKIKP		**PKPbc**		**04 28 33.9**	**+0.5**
TIRR	**Tirgusor**	**152.39**	**317**	↑*i*P		**PKPbc**		**04 28 35.2**	**+1.6**
TIRR	**Tirgusor**	**152.39**	**317**	↑PKIKP		**PKPbc**		**04 28 35.2**	**+1.6**
VRI	**Vrincioaia**	**152.59**	**321**	↓*i*P		**PKPab**		**04 28 46.0**	**+0.9**
PLOR	**Plostina**	**152.64**	**321**	↓*i*P		**PKPab**		**04 28 46.3**	**+0.9**
OJC	**Ojcow**	**152.76**	**335**	*e*PKP		**PKPbc**		**04 28 34.4**	**+0.2**
OJC	**Ojcow**	**152.76**	**335**	*e*PKIKP		**PKPbc**		**04 28 34.4**	**+0.2**
STHS	**Stebnicka Huta**	**152.83**	**332**	*e*PKIKP		**PKPbc**		**04 28 35.0**	**+0.6**
STHS	**Stebnicka Huta**	**152.83**	**332**	*e*PKP		**PKPbc**		**04 28 35.0**	**+0.6**
CRVS	**Cervenica-Dubn**	**153.13**	**331**	*e*PKIKP		**PKPbc**		**04 28 35.6**	**+0.5**
CRVS				*e*				04 28 47.5	
CRVS	**Cervenica-Dubn**	**153.13**	**331**	*e*PKP		**PKPbc**		**04 28 35.6**	**+0.5**
CRVS				*e*				04 28 47.5	
NIE	**Niedzica**	**153.21**	**334**	*e*PKP		**PKPbc**		**04 28 35.9**	**+0.6**
NIE	**Niedzica**	**153.21**	**334**	*e*PKIKP		**PKPbc**		**04 28 35.9**	**+0.6**
MLR	**Muntele Rosu**	**153.25**	**321**	↑*i*P		**PKPbc**		**04 28 37.8**	**+2.1**
MLR	**Muntele Rosu**	**153.25**	**321**	↑PKIKP		**PKPbc**		**04 28 37.8**	**+2.1**
DOPR	**Dopca**	**153.26**	**323**	↑*i*P		**PKPbc**		**04 28 36.3**	**+0.8**
KSP	**Ksiaz**	**153.43**	**340**	*e*PKP		**PKPbc**		**04 28 36.2**	**+0.5**
KSP	**Ksiaz**	**153.43**	**340**	*e*PKIKP		**PKPbc**		**04 28 36.2**	**+0.5**
CJR	**Cluj-Napoca**	**153.71**	**326**	↓*i*P		**PKPbc**		**04 28 39.1**	**+2.6**
CJR	**Cluj-Napoca**	**153.71**	**326**	↓PKIKP		**PKPbc**		**04 28 39.1**	**+2.6**
VOIR		**153.78**	**322**	↓*i*P		**PKPbc**		**04 28 37.2**	**+0.5**
VOIR		**153.78**	**322**	↓PKIKP		**PKPbc**		**04 28 37.2**	**+0.5**
UPC	**Upice**	**153.81**	**340**	*e*PKP		**PKPbc**		**04 28 36.8**	**+0.3**
UPC				*ex*	x			04 28 55.3	
UPC	**Upice**	**153.81**	**340**	*e*PKIKP		**PKPbc**		**04 28 36.8**	**+0.3**
DPC	**Dobruska-Polom**	**153.85**	**339**	↑*e*PKP		**PKPbc**		**04 28 37.1**	**+0.4**
DPC				*ex*	x			04 28 42.6	
DPC				*e*PKPAB		**PKPab**		**04 28 51.0**	**+0.7**
DPC				*ex*	x			04 28 55.7	
DPC	**Dobruska-Polom**	**153.85**	**339**	*e*PKIKP		**PKPbc**		**04 28 37.1**	**+0.4**
DPC				*e*				04 28 51.0	
KECS	**Kecovo**	**153.87**	**332**	*e*PKP2		**PKPab**		**04 28 50.8**	**+0.4**
KECS	**Kecovo**	**153.87**	**332**	*e*PKP		**PKPab**		**04 28 50.8**	**+0.4**
CLL	**Collm**	**153.90**	**345**	↓*i*PKPbc		**PKPbc**		**04 28 36.7**	**0.0**
	comp=Z,7.0nm,0.7s								
CLL				*i*				04 28 40.7	
CLL				*i*				04 28 44.6	
	comp=Z,6.0nm,0.9s								
CLL				*i* PKPab		**PKPab**		**04 28 49.6**	**-0.8**
	comp=Z,7.0nm,1.1s								
CLL				*ep*PKPbc		**pPKPbc**		**04 29 17.0**	**+0.7**
CLL				*ep*PKPab		**pPKPab**		**04 29 30.0**	**+1.3**
CLL				*e*PP		**PP**		**04 32 26.0**	**+1.0**
CLL	**Collm**	**153.90**	**345**	↓*i*PKIKP		**PKPbc**		**04 28 36.7**	**0.0**
CLL				*i*				04 28 49.6	
CLL				*e*				04 29 17.0	
CLL				pmax	pmax				
	comp=Z,7.0nm,0.7s								
MORC	**Moravsky Berou**	**153.94**	**337**	↓*i*P		**PKPbc**		**04 28 37.0**	**+0.1**
MORC	**Moravsky Berou**	**153.94**	**337**	↓PKIKP		**PKPbc**		**04 28 37.0**	**+0.1**
ARR	**Arges**	**154.05**	**322**	↑*i*P		**PKPbc**		**04 28 38.1**	**+0.8**
BRG	**Berggiesshubel**	**154.07**	**343**	*e*PKP		**PKPbc**		**04 28 37.2**	**+0.1**
	comp=Z,5.0nm,0.7s								
BRG				*e*				04 28 50.9	
	comp=Z,8.7nm,1.2s								
BRG	**Berggiesshubel**	**154.07**	**343**	*e*PKIKP		**PKPbc**		**04 28 37.2**	**+0.1**
BRG				*e*				04 28 50.9	
BRG				pmax	pmax				
	comp=Z,5.0nm,0.7s								
DRGR		**154.10**	**327**	↑*i*P		**PKPbc**		**04 28 37.3**	**-0.1**
DRGR		**154.10**	**327**	↑PKIKP		**PKPbc**		**04 28 37.3**	**-0.1**
PVCC	**Panska Ves**	**154.22**	**342**	*e*PKP		**PKPbc**		**04 28 37.8**	**+0.4**
PVCC				*ex*	x			04 28 57.4	
PVCC	**Panska Ves**	**154.22**	**342**	*e*PKIKP		**PKPbc**		**04 28 37.8**	**+0.4**
VYHS	**Vyhne**	**154.53**	**334**	*e*PKP2		**PKPab**		**04 28 52.6**	**-0.6**
VYHS	**Vyhne**	**154.53**	**334**	*e*PKP		**PKPab**		**04 28 52.6**	**-0.6**
PSZ	**Piszkesteto**	**154.55**	**332**	↓*i*P		**PKPab**		**04 28 55.7**	**+2.3**
PSZ	**Piszkesteto**	**154.55**	**332**	↓PKP2		**PKPab**		**04 28 55.7**	**+2.3**
VRAC	**Vranov**	**154.67**	**338**	↓*i*P		**PKPab**		**04 28 54.3**	**+0.5**
VRAC	**Vranov**	**154.67**	**338**	↓PKP2		**PKPab**		**04 28 54.3**	**+0.5**
PRU	**Pruhonice**	**154.71**	**341**	↑*e*PKP		**PKPbc**		**04 28 38.6**	**+0.2**
PRU				*e*

JOU				*e*S		Sn	04 58 49.9	+0.7
JMM	**Marumori**	**1.29**	**246**	P		Pn	04 58 33.3	-0.2
JMM				*e*S		Sn	04 58 49.1	-0.6
JOM	**Ohasama**	**1.31**	**324**	P		Pn	04 58 34.5	+0.7
JOM				*e*S		Sb	04 58 51.4	-1.1
JYK	**Kaneyama**	**1.59**	**289**	P		Pb	04 58 39.1	-1.4
JRG	**Rokugo**	**1.62**	**308**	P		Pb	04 58 40.2	-0.9
JRG				*e*S		Sb	04 59 00.4	-0.7

ISCJB ***31*** *05:12:26.9±1.6, 32.48S±0.09×70.9W±0.1, h89km±16km, Error ellipse: s-maj=17.6km s-min=9.9km az=136.4*
SJA ***31*** *05:12:26.5±0.7, 32.31S×70.83W, h25km±3km, MD3.0*
GUC ***31*** *05:12:27.7±0.6, 32.51S×70.80W, h75km±6km, ML2.3*

ISC 31 05:12:27.1±3.1, 32.47S±0.10×70.9W±0.1, h86km±24km, n10, σ0°44/19, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROCH	**El Roble**	**0.51**	**187**	*i* P	**Pn**	**05 12 42.3**	**+0.5**
ROCH				*i* S	**Sn**	**05 12 53.2**	**+0.4**
ROCH				IAML		05 12 56.0	
	comp=E,145nm,0.2s						
PEL	**Peldehue**	**0.71**	**163**	*i* P	**Pn**	**05 12 43.3**	**-0.2**
PEL				*i* S	**Sn**	**05 12 55.2**	**-0.4**
PEL				IAML		05 12 56.6	
	comp=N,113nm,0.1s						
CLCH	**Cerro Calan**	**0.99**	**160**	*i* P	**Pn**	**05 12 46.6**	**+0.1**
CLCH				*i* S	**Sn**	**05 13 00.8**	**-0.2**
CLCH				IAML		05 13 01.6	
	comp=E,113nm,0.3s						
FCH	**Farellones**	**1.02**	**148**	*i* P	**Pn**	**05 12 47.2**	**0.0**
FCH				*i* S	**Sn**	**05 13 01.6**	**-0.4**
FCH				IAML		05 13 02.9	
	comp=E,326nm,0.2s						
RCDM	**Rinconada Maip**	**1.03**	**174**	*i* P	**Pn**	**05 12 47.0**	**0.0**
RCDM				*i* S	**Sn**	**05 13 01.8**	**0.0**
ANTU	**Antumapu**	**1.13**	**167**	*i* P	**Pn**	**05 12 48.1**	**-0.1**
ANTU				*i* S	**Sn**	**05 13 03.8**	**-0.2**
ANTU				IAML		05 13 06.0	
	comp=E,143nm,0.2s						
AUSP	**Uspallata**	**1.33**	**80**	*e*P	**Pn**	**05 12 50.9**	**0.0**
AUSP				*e*S	**Sn**	**05 13 07.9**	**-0.9**
ASAL	**Salagasta**	**1.78**	**95**	*e*P	**Pn**	**05 12 56.9**	**+0.5**
ASAL				*e*S	**Sn**	**05 13 19.6**	**+0.9**
RTCV	**Cerro Valdivia**	**2.12**	**74**	*e*P	**Pn**	**05 13 01.1**	**+0.2**
RTCV				*e*S	**Sn**	**05 13 26.8**	**+0.2**
AMOG	**MOGNA**	**2.58**	**54**	*e*P	**Pn**	**05 13 06.7**	**-0.3**

IDC 31 05:17:37.1±2.5, 20.11S×66.20E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.6/43, mbtmp3.7/6, MS3.3/4, Ms1 3.3/4, ms1mx2.9/30, Error ellipse: s-maj=97.7km s-min=26.2km az=41.0, Mauritius-Reunion region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H08S1	**Diego Garcia H**	**13.80**	**27**	T	T	05 34 48.3	
	baz=204,slow=76,SNR=98						
H08S2	**Diego Garcia H**	**13.81**	**27**	T	T	05 34 43.8	
	baz=204,slow=76,SNR=58						
H08S3	**Diego Garcia H**	**13.82**	**27**	T	T	05 34 49.8	
	baz=204,slow=76,SNR=96						
H08N3	**Diego Garcia H**	**14.45**	**19**	T	T	05 35 53.5	
	baz=198,slow=76,SNR=17						
H08N1	**Diego Garcia H**	**14.46**	**20**	T	T	05 35 53.0	
	baz=198,slow=76,SNR=16						
H08N2	**Diego Garcia H**	**14.47**	**19**	T	T	05 35 58.6	
	baz=198,slow=76,SNR=20						
OPO	**Ambohidratompo**	**18.00**	**272**	LR	LR	05 27 07.6	
	comp=Z,102nm,19.3s,baz=2.0,slow=32						
BOSA	**Boshof**	**38.09**	**249**	LR	LR	05 38 24.9	
	comp=Z,22nm,18.3s,baz=139,slow=33						
ASAR	**Alice Springs**	**62.40**	**107**	P	P	05 28 02.0	-0.3
	0.8nm,0.8s,baz=268,slow=6.6,SNR=6.5						
ASAR				LR	LR	05 51 55.5	
	comp=Z,47nm,18.6s,baz=288,slow=33						
WRA	**Warramunga Arr**	**63.58**	**103**	P	P	05 28 10.3	+0.2
	0.6nm,0.9s,baz=264,slow=5.0,SNR=4.7						
BRTR	**Keskin Array B**	**66.84**	**333**	P	P	05 28 30.1	-0.8
	0.5nm,0.7s,baz=165,slow=2.8,SNR=3.3						
ZALV	**Zalesovo Beam**	**75.48**	**11**	P	P	05 29 23.1	+0.4
	0.4nm,0.3s,baz=205,slow=6.4,SNR=2.9						
SONM	**Songino Array**	**76.64**	**27**	P	P	05 29 29.5	-0.2
	0.3nm,0.6s,baz=212,slow=6.8,SNR=2.4						
AKASG	**Malin Array Be**	**77.66**	**337**	P	P	05 29 36.1	+0.9
	0.3nm,0.3s,baz=150,slow=3.9,SNR=3.9						
KSRS	**Korea Array**	**81.53**	**45**	LR	LR	06 05 46.4	
	comp=Z,16nm,18.6s,baz=201,slow=36						

NIED ***31*** *05:20:00, 41.00N×142.00E, h68km, Mw4.3 Best double couple: M0 2.92000×10^15 NP1: φ,δ 167.00000°, δ20.00000°, λ 49.00000°. NP2: φ,δ 30.00000°, δ75.00000°, λ 103.00000°.*
BJI ***31*** *05:20:18.7, 40.83N×142.55E, h59km, mb4.6/32, mB4.8/21, Ms4.2/10, Ms7 4.1/11*
MOS ***31*** *05:20:24.4±1.1, 41.03N×141.98E, h70km, mb4.7/34, Error ellipse: s-maj=8.6km s-min=5.7km az=100.1*
ISCJB ***31*** *05:20:24.0±0.3, 40.98N±0.03×141.94E±0.04, h67km±2km, mb4.3/66, Error ellipse: s-maj=6.4km s-min=3.6km az=33.4*
JMA ***31*** *05:20:24.3±0.1, 40.97N×142.00E, h57km±2km, M4.0 Broadband fault plane solution: P waves. NP1: φ,δ 26.00000°, δ76.00000°, λ 96.00000°. NP2: φ,δ 183.00000°, δ15.00000°, λ 68.00000°. Principal axes: T Plg58.0000°, Azm303.0000°; N Plg5.0000°, Azm204.0000°; P Plg31.0000°, Azm111.0000°;*
JMA Felt III J1.
NEIC ***31*** *05:20:25.9±0.5, 41.02N×141.98E, h70km±5km, mb4.6/13 Error ellipse: s-maj=7.6km s-min=4.7km az=122.0*
NEIC Recorded [3 JMA] in Aomori, Honshu.
IDC ***31*** *05:20:25.3±0.8, 40.95N×141.95E, h69km±6km, mb4.0/25, mb1 4.1/31, mb1mx4.0/51, mbtmp4.3/31, MS3.1/15, Ms1 3.1/15, ms1mx2.9/36, Error ellipse: s-maj=14.0km s-min=10.9km az=116.0*

ISC 31 05:20:23.7±0.4, 40.98N±0.04×142.00E±0.04, h48km±3km, h48km:pP-P, n174, σ1s77/191, mb4.4/67, MS3.3/13, 13C-17D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JANG	**Nango**	**0.70**	**212**	⇓P	**Pn**	**05 20 38.3**	**+0.9**
JANG				S	**Sn**	**05 20 48.3**	**+1.0**
JTM	**Tenmabayashi**	**0.73**	**255**	⇓P	**Pn**	**05 20 38.8**	**+1.1**
JTM				S	**Sn**	**05 20 49.2**	**+1.3**
JOT	**Ohata**	**0.82**	**300**	⇓P	**Pn**	**05 20 39.7**	**+0.8**
JKB	**Kayabe**	**1.17**	**322**	⇓P	**Pn**	**05 20 44.3**	**+0.8**
JKB				*e*S	**Sn**	**05 20 58.9**	**+0.6**
JAH	**Hinai**	**1.30**	**233**	⇓P	**Pn**	**05 20 46.5**	**+1.1**
JAH				S	**Sn**	**05 21 03.6**	**+2.0**
JSR	**Shiriuchi**	**1.31**	**295**	⇓P	**Pn**	**05 20 46.5**	**+0.9**
ERM	**Erimo**	**1.36**	**40**	*d*iP	**Pn**	**05 20 47.8**	**+1.7**
ERM	**Erimo**	**1.36**	**40**	*e*Pn	**Pn**	**05 20 48.1**	**+1.9**
ERM				*e*Sn	**Sn**	**05 21 05.1**	**+2.2**
JEM	**Erimo**	**1.36**	**40**	P	**Pn**	**05 20 48.0**	**+1.9**
JEM				S	**Sn**	**05 21 06.2**	**+3.2**
JNBK	**Urakawa-nobuka**	**1.42**	**23**	P	**Pn**	**05 20 49.3**	**+2.3**
JIW	**Iwasaki**	**1.56**	**256**	⇓P	**Pn**	**05 20 49.8**	**+0.9**
JOM	**Ohasama**	**1.59**	**200**	⇑P	**Pn**	**05 20 50.5**	**+1.1**
JOM				*e*S	**Sn**	**05 21 09.6**	**+0.8**
JNB	**Noboribetsu**	**1.66**	**335**	⇓P	**Pn**	**05 20 50.5**	**+0.2**
JYM2	**Yakumo 2**	**1.67**	**314**	⇓P	**Pn**	**05 20 51.5**	**+1.0**
ASAJ	**Asahikawa**	**3.17**	**8**	P	**Pn**	**05 21 12.9**	**+1.9**
	baz=90,slow=20						
ASAJ				S	**Sn**	**05 21 51.6**	**+4.0**
	baz=91,slow=16						
MJA0	**Matsu Arr-Jizo**	**5.31**	**215**	*e*P	Pn	05 21 45.4	+5.0
MJA0				pmax	pmax		
	comp=Z,3.0nm,0.3s						
MJB9	**Matsu-Tunnel**	**5.32**	**215**	*e*Pn	**Pn**	**05 21 43.1**	**+2.5**
MAJO	**Matsushiro**	**5.33**	**215**	*e*P	**Pn**	**05 21 43.0**	**+2.4**
MAJO	**Matsushiro**	**5.33**	**215**	*e*Pn	**Pn**	**05 21 43.0**	**+2.4**
MJAR	**Matsushiro Arr**	**5.33**	**215**	P	**Pn**	**05 21 43.6**	**+3.0**
	comp=Z,2.7nm,0.3s,baz=35,slow=11,SNR=30						
MJAR				LR	LR	05 24 11.2	
	comp=Z,54nm,20.1s,baz=40,slow=43						
YSS	**Yuzh-Sakhalins**	**6.00**	**5**	*e*P	**Pn**	**05 21 51.8**	**+2.0**
YSS				pmax	pmax		
	comp=Z,10.0nm,0.8s						
YSS	**Yuzh-Sakhalins**	**6.00**	**5**	*e*Pn	**Pn**	**05 21 51.2**	**+1.4**
	comp=Z,5.0nm,0.8s						
CHTO	**Chiang Mai**	**42.82**	**252**	*e*P	**P**	**05 28 17.3**	**+0.3**
	comp=Z,5.2nm,0.8s						
CMAR	**Chiang Mai Arr**	**43.05**	**252**	P	**P**	**05 28 18.7**	**-0.1**
	comp=Z,2.4nm,0.7s,baz=43,slow=7.5,SNR=12						
CMAR	**Chiang Mai Arr**	**43.05**	**252**	*e*P	**P**	**05 28 19.2**	**+0.4**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
CM01	**Chiang Mai Arr**	**43.07**	**252**	*e*P	**P**	**05 28 18.7**	**-0.2**
KURK	**Kurchatov**	**43.95**	**305**	*c* iP	**P**	**05 28 24.7**	**-1.0**
KURK				pmax	pmax		
	comp=Z,38nm,1.2s						
KURK	**Kurchatov**	**43.95**	**305**	*e*P	**P**	**05 28 24.9**	**-0.8**
	comp=Z,8.9nm,0.7s						
KURK				pP	**sP**	**05 28 42.2**	**-2.0**
KURK				PcP	**PcP**	**05 30 10.2**	**-0.6**
KURBB	**Kurchatov Arra**	**44.03**	**305**	P	**P**	**05 28 25.4**	**-0.9**
	comp=Z,8.5nm,0.6s,baz=78,slow=8.8,SNR=25						
KURBB				pP	**sP**	**05 28 42.2**	**-2.7**
	comp=Z,3.1nm,0.7s,baz=77,slow=8.7,SNR=3.6						
KURBB				PcP	**PcP**	**05 30 10.2**	**-0.9**
	comp=Z,1.3nm,0.6s,baz=88,slow=3.1,SNR=4.6						
BPAW	**Bear Paw Mtn.**	**44.22**	**35**	*e*P	**P**	**05 28 24.7**	**-3.0**
PDGK	**Podgornoye**	**45.44**	**295**	*i* P	**P**	**05 28 36.9**	**-0.7**
PDGK				pmax	pmax		
	comp=Z,5.0nm,0.6s						
IL1	**Eielson Array**	**45.96**	**34**	*e*P	**P**	**05 28 41.4**	**-0.1**
IL1				*e*pP	**pP**	**05 28 57.2**	**+2.8**
ILAR	**Eielson Array**	**45.96**	**34**	P	**P**	**05 28 41.8**	**+0.4**
	comp=Z,1.2nm,0.7s,baz=268,slow=6.1,SNR=24						
ILAR				pP	**sP**	**05 28 58.3**	**-1.8**
	comp=Z,2.8nm,0.9s,baz=272,slow=6.1,SNR=9.4						
ILB	**Eielson Array**	**45.96**	**34**	*e*P	**P**	**05 28 41.8**	**+0.4**
FYU	**Fort Yukon**	**46.50**	**32**	*e*P	**P**	**05 28 47.5**	**+1.9**
	comp=Z,7.1nm,0.8s						
GUN	**Gumba**	**47.33**	**272**	*e*P	**P**	**05 28 52.9**	**-0.2**
	comp=Z,104nm,0.6s						
KKN	**Kakani**	**47.85**	**273**	*e*P	**P**	**05 28 56.8**	**-0.2**
	comp=Z,44nm,0.7s						
PKIN	**Phulchoki**	**47.87**	**272**	*e*P	**P**	**05 28 57.1**	**-0.1**
	comp=Z,22nm,0.6s						
DMN	**Daman**	**48.08**	**272**	*e*P	**P**	**05 28 58.3**	**-0.5**
	comp=Z,12nm,0.5s						
GKN	**Gorkha**	**48.23**	**273**	*e*P	**P**	**05 28 59.3**	**-0.5**
	comp=Z,23nm,0.5s						
TKM2	**Tokmak 2**	**48.25**	**296**	*i* P	**P**	**05 28 59.2**	**-0.7**
TKM2				pmax	pmax		
	comp=Z,8.0nm,0.5s						
BVA0	**Borovoye Array**	**48.33**	**310**	P	**P**	**05 28 58.9**	**-1.2**
BVA0				pmax	pmax		
	comp=Z,4.0nm,0.5s						
BRVK	**Borovoye**	**48.38**	**310**	*e*P	**P**	**05 29 00.0**	**-0.5**
BRVK				pmax	pmax		
	comp=Z,4.0nm,0.5s						
BRVK	**Borovoye**	**48.38**	**310**	*e*P	**P**	**05 28 60.0**	**-0.5**
	comp=Z,4.4nm,0.5s						
FRU	**Bishkek**	**48.95**	**296**	*e*P	**P**	**05 29 09.0**	**+3.9**
AAK	**Ala-Archa**	**49.11**	**296**	*de*P	**P**	**05 29 08.3**	**+1.9**
AAK				pmax	pmax		
	comp=Z,10.0nm,0.6s						
AAK	**Ala-Archa**	**49.11**	**296**	*e*P	**P**	**05 29 08.4**	**+2.0**
	comp=Z,5.2nm,0.6s						
KOLN	**Koldanda**	**49.13**	**274**	*e*P	**P**	**05 29 06.4**	**-0.4**
	comp=Z,16nm,0.5s						
KSH	**Kashi**	**49.31**	**291**	*e*P	P	05 29 13.0	+5.0
KSH				*e*pP	sP	05 29 28.3	+1.6
KSH				*e*sP	pP	05 29 35.5	+14
KSH				*e*PP	**PP**	**05 31 08.5**	**+6.5**
KSH				PcS	**PcS**	**05 34 29.5**	**+2.7**
KSH				S	**S**	**05 36 15.5**	**+4.6**
KSH				ScS	**ScS**	**05 38 56.0**	**+0.3**
KSH				pmax	pmax		
	comp=Z,49nm,2.5s						
KSH				LR	LR		
	comp=Z,75nm,6.5s						
PYUN	**Piuthan**	**49.42**	**274**	*e*P	**P**	**05 29 09.0**	**0.0**
	comp=Z,19nm,0.5s						
INK	**Inuvik**	**50.69**	**29**	P	**P**	**05 29 18.2**	**+0.4**
	comp=Z,4.2nm,0.7s,baz=290,slow=7.1,SNR=9.4						
HYT	**Haines Junctio**	**50.90**	**39**	*e*P	**P**	**05 29 21.3**	**+1.6**
	comp=Z,9.2nm,1.1s						
SVE	**Sverdlovsk**	**52.54**	**317**	⇑*e*P	**P**	**05 29 31.5**	**-0.3**
SVE				pmax	pmax		
	comp=Z,18nm,0.9s						
ARU	**Arti**	**53.76**	**317**	*c* iP	**P**	**05 29 40.1**	**-0.6**
ARU						05 30 42.5	
ARU						05 31 40.5	
ARU				S	**S**	**05 37 14.1**	**+2.7**
ARU				SS	**SKiKP**	**05 40 43.1**	**-7.0**
ARU				pmax	pmax		
	comp=Z,11nm,0.8s						
ARU	**Arti**	**53.76**	**317**	*e*P	**P**	**05 29 40.3**	**-0.4**
	comp=Z,7.0nm,0.8s						
AB31	**Akbulak array**	**55.80**	**308**	*i* P	**P**	**05 29 55.0**	**-0.6**
AB31				pmax	pmax		
	comp=Z,6.0nm,0.5s						
ABKAR	**Akbulak array**	**55.80**	**308**	*e*P	**P**	**05 29 55.0**	**-0.7**
	comp=Z,9.0nm,0.5s						
YKA	**Yellowknife Ar**	**60.19**	**31**	P	**P**	**05 30 26.1**	**-0.1**
	comp=Z,0.9nm,0.8s,baz=306,slow=5.9,SNR=3.5						
ARCES	**ARCESS Array B**	**60.48**	**339**	P	**P**	**05 30 27.1**	**-0.9**
	comp=Z,0.9nm,0.5s,baz=56,slow=7.5,SNR=13						
ARCES				LR	LR	06 01 50.9	
	comp=Z,16nm,21.2s,baz=58,slow=41						
ARCES	**ARCESS Array B**	**60.48**	**339**	*e*P	**P**	**05 30 27.5**	**-0.6**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KLMR	**Klimovskoe**	**60.69**	**327**	*e*P	**P**	**05 30 27.9**	**-1.7**
KLMR				pmax	pmax		
	comp=Z,10.0nm,1.1s						
WRA	**Warramunga Arr**	**61.02**	**188**	P	**P**	**05 30 30.5**	**-1.8**
	comp=Z,1.3nm,0.5s,baz=5.5,slow=7.0,SNR=30						
WRA	**Warramunga Arr**	**61.02**	**188**	*i* P	**P**	**05 30 30.0**	**-2.2**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GEYT	**Alibeck**	**62.38**	**297**	P	**P**	**05 30 40.0**	**-1.3**
	comp=Z,3.8nm,0.7s,baz=5.0,slow=3.4,SNR=6.0						
ASAR	**Alice Springs**	**64.75**	**188**	P	**P**	**05 30 56.0**	**-0.9**
	comp=Z,1.5nm,0.8s,baz=8.5,slow=8.0,SNR=19						
ASAR	**Alice Springs**	**64.75**	**188**	*e*P	**P**	**05 30 56.2**	**-0.8**
ASAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
VRH	**Novokhopyorsk**	**64.99**	**317**	*e*P	**P**	**05 30 57.0**	**-1.3**
VRH				pmax	pmax		
	comp=Z,20nm,0.5s						
OBN	**Obninsk**	**65.23**	**322**	*ce*P	**P**	**05 30 59.0**	**-0.8**
OBN						05 31 29.0	
OBN				pmax	pmax		
	comp=Z,5.0nm,0.5s						
OBN				MLR	MLR		
	comp=Z,34nm,18.0s						
FINES	**FINESS Array B**	**65.55**	**332**	P	**P**	**05 31 01.0**	**-0.8**
	comp=Z,19nm,0.7s,baz=49,slow=7.3,SNR=118						
FINES				LR	LR	06 01 17.6	
	comp=Z,32nm,20.4s,baz=357,slow=37						
VSR	**Storozhevoye**	**66.29**	**318**	*e*P	**P**	**05 31 03.8**	**-2.9**
VSR				pmax	pmax		
	comp=Z,9.0nm,0.7s						
GOF	**Gofitskoye**	**67.83**	**311**	⇑*e*P	**P**	**05 31 16.4**	**-0.2**
KIV	**Kislovodsk**	**68.69**	**310**	*ce*P	**P**	**05 31 22.0**	**-0.1**
KIV				*SP	**sP**	**05 31 40.0**	**-1.3**
KIV						05 31 46.0	
KIV				pmax	pmax		
	comp=Z,13nm,1.0s						
KIV				MLR	MLR		
	comp=Z,13nm,15.0s						
KIV	**Kislovodsk**	**68.69**	**310**	*e*P	**P**	**05 31 21.9**	**-0.3**
	comp=Z,9.5nm,0.8s						
KBZ	**Khabaz**	**68.71**	**310**	P	**P**	**05 31 22.1**	**0.0**
	comp=Z,4.0nm,0.6s,baz=49,slow=2.2,SNR=12						
KBZ				LR	LR	06 06 51.1	
	comp=Z,27nm,18.3s,baz=30,slow=41						
NEY	**Neytrino**	**69.10**	**309**	⇑*e*P	**P**	**05 31 25.9**	**+1.1**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.8s						
NB2	**NORSAR Subarra**	**70.74**	**337**	P	**P**	**05 31 33.2**	**-1.1**
	comp=Z,5.3nm,0.8s,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**70.74**	**337**	P	**P**	**05 31 33.5**	**-0.8**
	comp=Z,4.3nm,0.7s,baz=38,slow=6.1,SNR=31						
NOA				LR	LR	06 07 11.1	
	comp=Z,6.6nm,18.8s,baz=270,slow=40						
AKASG	**Malin Array Be**	**71.47**	**322**	P	**P**	**05 31 38.1**	**-0.8**
	comp=Z,3.1nm,0.4s,baz=46,slow=6.6,SNR=20						
AKASG				pP	**sP**	**05 31 56.3**	**-1.8**
	comp=Z,1.0nm,0.5s,baz=46,slow=6.2,SNR=2.6						
KIEV	**Kiev**	**71.48**	**322**	⇑*e*P	**P**	**05 31 38.0**	**-1.0**
	comp=Z,5.0nm,0.8s						
CHTO	**Chiang Mai**	**42.82**	**252**	*e*P	**P**	**05 28 17.3**	**+0.3**
	comp=Z,5.2nm,0.8s						
CMAR	**Chiang Mai Arr**	**43.05**	**252**	P	**P**	**05 28 18.7**	**-0.1**
	comp=Z,2.4nm,0.7s,baz=43,slow=7.5,SNR=12						
CMAR	**Chiang Mai Arr**	**43.05**	**252**	*e*P	**P**	**05 28 19.2**	**+0.4**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
CM01	**Chiang Mai Arr**	**43.07**	**252**	*e*P	**P**	**05 28 18.7**	**-0.2**
KURK	**Kurchatov**	**43.95**	**305**	*c* iP	**P**	**05 28 24.7**	**-1.0**
KURK				pmax	pmax		
	comp=Z,38nm,1.2s						
KURK	**Kurchatov**	**43.95**	**305**	*e*P	**P**	**05 28 24.9**	**-0.8**
	comp=Z,8.9nm,0.7s						
KURK				pP	**sP**	**05 28 42.2**	**-2.0**
KURK				PcP	**PcP**	**05 30 10.2**	**-0.6**
KURBB	**Kurchatov Arra**	**44.03**	**305**	P	**P**	**05 28 25.4**	**-0.9**
	comp=Z,8.5nm,0.6s,baz=78,slow=8.8,SNR=25						
KURBB				pP	**sP**	**05 28 42.2**	**-2.7**
	comp=Z,3.1nm,0.7s,baz=77,slow=8.7,SNR=3.6						
KURBB				PcP	**PcP**	**05 30 10.2**	**-0.9**
	comp=Z,1.3nm,0.6s,baz=88,slow=3.1,SNR=4.6						
BPAW	**Bear Paw Mtn.**	**44.22**	**35**	*e*P	**P**	**05 28 24.7**	**-3.0**
PDGK	**Podgornoye**	**45.44**	**295**	*i* P	**P**	**05 28 36.9**	**-0.7**
PDGK				pmax	pmax		
	comp=Z,5.0nm,0.6s						
IL1	**Eielson Array**	**45.96**	**34**	*e*P	**P**	**05 28 41.4**	**-0.1**
IL1				*e*pP	**pP**	**05 28 57.2**	**+2.8**
ILAR	**Eielson Array**	**45.96**	**34**	P	**P**	**05 28 41.8**	**+0.4**
	comp=Z,1.2nm,0.7s,baz=268,slow=6.1,SNR=24						
ILAR				pP	**sP**	**05 28 58.3**	**-1.8**
	comp=Z,2.8nm,0.9s,baz=272,slow=6.1,SNR=9.4						
ILB	**Eielson Array**	**45.96**	**34**	*e*P	**P**	**05 28 41.8**	**+0.4**
FYU	**Fort Yukon**	**46.50**	**32**	*e*P	**P**	**05 28 47.5**	**+1.9**
	comp=Z,7.1nm,0.8s						
GUN	**Gumba**	**47.33**	**272**	*e*P	**P**	**05 28 52.9**	**-0.2**
	comp=Z,104nm,0.6s						
KKN	**Kakani**	**47.85**	**273**	*e*P	**P**	**05 28 56.8**	**-0.2**
	comp=Z,44nm,0.7s						
PKIN	**Phulchoki**	**47.87**	**272**	*e*P	**P**	**05 28 57.1**	**-0.1**
	comp=Z,22nm,0.6s						
DMN	**Daman**	**48.08**	**272**	*e*P	**P**	**05 28 58.3**	**-0.5**
	comp=Z,12nm,0.5s						
GKN	**Gorkha**	**48.23**	**273**	*e*P	**P**	**05 28 59.3**	**-0.5**
	comp=Z,23nm,0.5s						
TKM2	**Tokmak 2**	**48.25**	**296**	*i* P	**P**	**05 28 59.2**	**-0.7**
TKM2				pmax	pmax		
	comp=Z,8.0nm,0.5s						
BVA0	**Borovoye Array**	**48.33**	**310**	P	**P**	**05 28 58.9**	**-1.2**
BVA0				pmax	pmax		
	comp=Z,4.0nm,0.5s						
BRVK	**Borovoye**	**48.38**	**310**	*e*P	**P**	**05 29 00.0**	**-0.5**
BRVK				pmax	pmax		
	comp=Z,4.0nm,0.5s						
BRVK	**Borovoye**	**48.38**	**310**	*e*P	**P**	**05 28 60.0**	**-0.5**
	comp=Z,4.4nm,0.5s						
FRU	**Bishkek**	**48.95**	**296**	*e*P	**P**	**05 29 09.0**	**+3.9**
AAK	**Ala-Archa**	**49.11**	**296**	*de*P	**P**	**05 29 08.3**	**+1.9**
AAK				pmax	pmax		
	comp=Z,10.0nm,0.6s						
AAK	**Ala-Archa**	**49.11**	**296**	*e*P	**P**	**05 29 08.4**	**+2.0**
	comp=Z,5.2nm,0.6s						
KOLN	**Koldanda**	**49.13**	**274**	*e*P	**P**	**05 29 06.4**	**-0.4**
	comp=Z,16nm,0.5s						
KSH	**Kashi**	**49.31**	**291**	*e*P	P	05 29 13.0	+5.0
KSH				*e*pP	sP	05 29 28.3	+1.6
KSH				*e*sP	pP	05 29 35.5	+14
KSH				*e*PP	**PP**	**05 31 08.5**	**+6.5**
KSH				PcS	**PcS**	**05 34 29.5**	**+2.7**
KSH				S	**S**	**05 36 15.5**	**+4.6**
KSH				ScS	**ScS**	**05 38 56.0**	**+0.3**
KSH				pmax	pmax		
	comp=Z,49nm,2.5s						
KSH				LR	LR		
	comp=Z,75nm,6.5s						
PYUN	**Piuthan**	**49.42**	**274**	*e*P	**P**	**05 29 09.0**	**0.0**
	comp=Z,19nm,0.5s						
INK	**Inuvik**	**50.69**	**29**	P	**P**	**05 29 18.2**	**+0.4**
	comp=Z,4.2nm,0.7s,baz=290,slow=7.1,SNR=9.4						
HYT	**Haines Junctio**	**50.90**	**39**	*e*P	**P**	**05 29 21.3**	**+1.6**
	comp=Z,9.2nm,1.1s						
SVE	**Sverdlovsk**	**52.54**	**317**	⇑*e*P	**P**	**05 29 31.5**	**-0.3**
SVE				pmax	pmax		
	comp=Z,18nm,0.9s						
ARU	**Arti**	**53.76**	**317**	*c* iP	**P**	**05 29 40.1**	**-0.6**
ARU						05 30 42.5	
ARU						05 31 40.5	
ARU				S	**S**	**05 37 14.1**	**+2.7**
ARU				SS	**SKiKP**	**05 40 43.1**	**-7.0**
ARU				pmax	pmax		
	comp=Z,11nm,0.8s						
ARU	**Arti**	**53.76**	**317**	*e*P	**P**	**05 29 40.3**	**-0.4**
	comp=Z,7.0nm,0.8s						
AB31	**Akbulak array**	**55.80**	**308**	*i* P	**P**	**05 29 55.0**	**-0.6**
AB31				pmax	pmax		
	comp=Z,6.0nm,0.5s						
ABKAR	**Akbulak array**	**55.80**	**308**	*e*P	**P**	**05 29 55.0**	**-0.7**
	comp=Z,9.0nm,0.5s						
**YKA

KIEV				pmax	pmax			
	comp=Z,7.0nm,0.8s							
PDAR	**Pinedale Array**	**74.60**	**46**	P		**P**	**05 31 57.5**	**-0.4**
	comp=Z,0.6nm,0.7s,baz=283,slow=2.8,SNR=9.0							
BURAR	**Bucovina Array**	**75.51**	**321**	*iP*		**P**	**05 32 02.6**	**-0.2**
STHS	**Stebnicka Huta**	**76.01**	**325**	*eP*		**P**	**05 32 05.7**	**+0.2**
STHS				pmax	pmax			
	comp=Z,3.0nm,0.9s							
STHS	**Stebnicka Huta**	**76.01**	**325**	*eP*		**P**	**05 32 05.7**	**+0.2**
BRTR	**Keskin Array B**	**76.59**	**311**	P		**P**	**05 32 08.6**	**-0.6**
	comp=Z,0.7nm,0.6s,baz=93,slow=3.4,SNR=4.2							
BRTR	**Keskin Array B**	**76.59**	**311**	*eP*		**P**	**05 32 10.1**	**+0.9**
BRTR				pmax	pmax			
	comp=Z,1.0nm,0.8s							
VOIR		**77.16**	**320**	*iP*		**P**	**05 32 13.0**	**+0.8**
MORC	**Moravsky Berou**	**77.31**	**327**	*iP*		**P**	**05 32 13.4**	**+0.5**
DPC	**Dobruska-Polom**	**77.37**	**328**	*eP*		**P**	**05 32 13.7**	**+0.5**
DPC				*epP*		**sP**	**05 32 31.9**	**-0.7**
DPC	**Dobruska-Polom**	**77.37**	**328**	*eP*		**P**	**05 32 13.7**	**+0.5**
DPC				*e*			05 32 31.9	
UPC	**Upice**	**77.37**	**328**	*eP*		**P**	**05 32 13.3**	**+0.1**
UPC	**Upice**	**77.37**	**328**	*eP*		**P**	**05 32 13.3**	**+0.1**
VYHS	**Vyhne**	**77.75**	**325**	*eP*		**P**	**05 32 15.3**	**0.0**
VYHS				pmax	pmax			
	comp=Z,1.0nm,0.9s							
VYHS	**Vyhne**	**77.75**	**325**	*eP*		**P**	**05 32 15.3**	**0.0**
PVCC	**Panska Ves**	**77.93**	**329**	*eP*		**P**	**05 32 16.4**	**+0.1**
PVCC	**Panska Ves**	**77.93**	**329**	*eP*		**P**	**05 32 16.4**	**+0.1**
VRAC	**Vranov**	**78.07**	**327**	P		**P**	**05 32 17.3**	**+0.2**
	comp=Z,2.5nm,0.6s,baz=53,slow=10,SNR=5.2							
VRAC	**Vranov**	**78.07**	**327**	*iP*		**P**	**05 32 17.3**	**+0.2**
KHC	**Kasperske Hory**	**79.43**	**328**	*eP*		**P**	**05 32 24.7**	**+0.1**
KHC				*ePCP*		**PcP**	**05 32 29.1**	**-3.5**
KHC				*epP*		**sP**	**05 32 42.9**	**-1.1**
KHC	**Kasperske Hory**	**79.43**	**328**	*eP*		**P**	**05 32 24.7**	**+0.1**
KHC				*e*			05 32 29.1	
KHC				*e*			05 32 42.9	
KHC	**Kasperske Hory**	**79.43**	**328**	*eP*		**P**	**05 32 24.6**	**+0.1**
	comp=Z,1.9nm,1.0s							
CONA	**Conrad Observa**	**79.45**	**326**	*iP*		**P**	**05 32 22.7**	**-2.1**
	comp=Z,2.6nm,1.0s							
EKA	**Eskdalemuir Ar**	**79.57**	**341**	P		**P**	**05 32 24.5**	**-0.7**
	comp=Z,2.0nm,0.6s,baz=29,slow=5.1,SNR=9.0							
GERES	**GERESS Array B**	**79.61**	**328**	P		**P**	**05 32 25.2**	**-0.4**
	comp=Z,0.9nm,0.5s,baz=39,slow=6.8,SNR=7.5							
ARSA	**Arzberg**	**80.12**	**326**	*iP*		**P**	**05 32 27.9**	**-0.5**
	comp=Z,3.0nm,1.1s							
MOA	**Molln**	**80.17**	**327**	*ipP*		pP	05 32 46.1	+3.5
	comp=Z,2.2nm,1.1s							
SOKA	**Soboth**	**80.78**	**326**	*iP*		**P**	**05 32 31.8**	**-0.2**
	comp=Z,3.7nm,0.7s							
OBKA	**Obir**	**81.12**	**326**	*iPcP*		**P**	**05 32 37.8**	**+4.0**
	comp=Z,3.8nm,0.9s							
KBA	**Koelnbreinsper**	**81.16**	**327**	*ipP*		pP	05 32 48.8	+0.6
	comp=Z,2.7nm,0.5s							
MYKA	**Terra Mystica**	**81.40**	**327**	*iP*		**P**	**05 32 35.0**	**-0.3**
	comp=Z,3.9nm,0.9s							
WATA	**Walderalm**	**81.67**	**328**	*iPcP*		**P**	**05 32 38.8**	**+2.0**
ABTA	**Abfaltersbach**	**81.77**	**328**	*iP*		P	05 32 32.2	-5.1
	comp=Z,4.5nm,1.2s							
MOTA	**Moosalm**	**81.85**	**329**	*iP*		**P**	**05 32 36.5**	**-1.2**
	comp=Z,2.5nm,0.6s							
RETA	**Reutte**	**81.86**	**329**	*iPcP*		**P**	**05 32 38.8**	**+1.1**
PDG	**Podgorica**	**82.19**	**321**	*ipP*		**P**	**05 32 39.2**	**-0.2**
FETA	**Feichten**	**82.26**	**329**	*iP*		**P**	**05 32 40.0**	**+0.1**
	comp=Z,2.8nm,1.0s							
DAVOX	**Davos/Dischmat**	**82.79**	**329**	P		**P**	**05 32 42.2**	**-0.5**
	comp=Z,1.5nm,0.5s,baz=319,slow=9.3,SNR=3.6							
DAVOX	**Davos/Dischmat**	**82.79**	**329**	P		**P**	**05 32 42.2**	**-0.5**
DAVOX				pmax	pmax			
	comp=Z,1.0nm,0.6s							
ESDC	**Sonseca Array**	**93.95**	**334**	P		**P**	**05 33 35.4**	**-0.9**
	comp=Z,0.2nm,0.5s,baz=7.9,slow=4.2,SNR=4.2							

IDC 31 05:22:52.8±2.4, 54°13.N×86°36.E, h0km, mb1 3.4/2, mb1mx3.1/56, mbtmp3.4/2, ML3.2/2, Error ellipse: s-maj=19.2km s-min=11.7km az=60.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
I46RU	**ZALESOVO INFRA**	**0.93**	**259**	*i*			05 29 11.1	
	baz=77,slow=311,SNR=4.8							
ZALV	**Zalesovo Beam**	**0.93**	**259**	Pg		Pg	05 23 09.4	-1.2
	3.4nm,0.3s,baz=76,slow=17,SNR=12							
ZALV				Lg		Lg	05 23 24.3	
	7.9nm,0.3s,baz=78,slow=28,SNR=16							
KURBB	**Kurchatov Arra**	**5.94**	**237**	Pn		Pn	05 24 23.1	+1.1
	0.4nm,0.3s,baz=54,slow=13,SNR=19							
KURBB				Lg		Lg	05 25 59.1	
	0.0nm,0.3s,baz=52,slow=34,SNR=2.7							
MKAR	**Makanchi Array**	**7.79**	**201**	Pn		Pn	05 24 48.5	+1.1
	0.5nm,0.3s,baz=24,slow=14,SNR=7.7							
MKAR				Sn		Sn	05 26 14.5	-1.8
	0.2nm,0.3s,baz=18,slow=24,SNR=2.7							
MKAR				Lg		Lg	05 26 59.2	
	0.1nm,0.3s,baz=19,slow=30,SNR=3.7							

IDC 31 05:27:56.1±1.7, 15°93.N×145°66.E, h207km±13km, mb3.1/6, mb1 3.3/7, mb1mx3.1/43, mbtmp3.7/7, Error ellipse: s-maj=40.2km s-min=16.1km az=91.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
GUMO	**Guam**	**2.45**	**198**	P		Pn	05 28 40.8	+0.9
	19nm,0.3s,baz=8.0,slow=19,SNR=12							
GUMO				S		S	05 29 14.3	+0.7
	27nm,0.3s,baz=30,slow=20,SNR=9.8							
H11S3	**WAKE ISLAND Hy**	**0.25**	**80**	T		T	05 53 33.5	
	baz=258,slow=74							
H11S1	**WAKE ISLAND Hy**	**0.26**	**80**	T		T	05 53 33.1	
	baz=258							
H11S2	**WAKE ISLAND Hy**	**0.26**	**80**	T		T	05 53 33.0	
	baz=258,slow=74							
H11N1	**WAKE ISLAND Hy**	**0.56**	**76**	T		T	05 53 52.3	
	baz=264							
H11N2	**WAKE ISLAND Hy**	**0.56**	**76**	T		T	05 53 52.7	
	baz=264							
H11N3	**WAKE ISLAND Hy**	**0.57**	**76**	T		T	05 53 50.9	
	baz=264							
KSRS	**Korea Array**	**26.57**	**327**	P		P	05 33 15.3	+0.3
	1.9nm,0.8s,baz=139,slow=9.6,SNR=4.1							
WRA	**Warramunga Arr**	**37.34**	**198**	P		P	05 34 48.3	-0.6
	0.3nm,0.5s,baz=10.0,slow=8.6,SNR=8.0							
FITZ	**Fitzroy Crossi**	**39.15**	**211**	P		P	05 35 04.3	+0.3
	1.4nm,0.9s,baz=7.1,slow=8.1,SNR=9.8							
SONM	**Songino Array**	**45.30**	**323**	P		P	05 35 53.5	0.0
	0.6nm,0.8s,baz=104,slow=6.1,SNR=3.0							
MKAR	**Makanchi Array**	**60.37**	**315**	P		P	05 37 43.4	0.0
	0.5nm,0.5s,baz=88,slow=8.7,SNR=6.4							
ILAR	**Eielson Array**	**66.14**	**26**	P		P	05 38 20.4	-0.6
	0.2nm,0.3s,baz=252,slow=5.7,SNR=4.1							

*ISCJB **31** 05:28:34.3±0.6, 58°.45N±0°.08×31°.6W±0°.1, h10km, mb3.7/15, MS3.1/10, Error ellipse: s-maj=11.2km s-min=9.8km az=157.6*

*IDC **31** 05:28:34.5±0.7, 58°.40N×31°.67W, h0km, mb3.7/15, mb1 3.9/16, mb1mx3.8/41, mbtmp3.8/16, ML3.4/1, MS3.2/15, Ms1 3.2/15, ms1mx3.0/39, Error ellipse: s-maj=21.4km s-min=14.0km az=20.0*

ISC 31 05:28:36.0±0.7, 58°.38N±0°.10×31°.69W±0°.09, h10km, n31, σ0s86/20, mb3.8/15, MS3.2/10, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BORG	**Borgarnes**	**8.07**	**33**	Pn		**Pn**	**05 30 35.0**	**+2.0**
	0.9nm,0.3s,baz=196,slow=12,SNR=4.3							
BORG				Sn		**Sn**	**05 32 02.7**	**-1.5**
	0.3nm,0.3s,baz=270,slow=20,SNR=3.1							
BORG				LR		LR	05 32 47.9	
	comp=Z,117nm,21.6s,baz=166,slow=32							
SFJD	**Kangerlussuaq**	**12.20**	**323**	LR		LR	05 35 27.9	
	comp=Z,279nm,18.7s,baz=130,slow=34							
EKA	**Eskdalemuir Ar**	**15.84**	**89**	Pn		**Pn**	**05 32 18.4**	**-0.3**
	baz=292,slow=14,SNR=3.5							
JMIC	**Jan Mayen**	**15.90**	**28**	LR		LR	05 36 35.9	
	comp=Z,29nm,18.9s,baz=273,slow=30							
FRB	**Frobisher Bay**	**18.42**	**302**	LR		LR	05 39 01.5	
	comp=Z,228nm,19.1s,baz=36,slow=34							
SCHQ	**Schefferville**	**19.52**	**275**	LR		LR	05 39 22.8	
	comp=Z,112nm,18.2s,baz=26,slow=33							
NOA	**NORSAR Array B**	**21.51**	**65**	P		**P**	**05 33 24.5**	**-0.2**
	3.0nm,1.0s,baz=282,slow=9.4,SNR=2.6							
NOA				LR		LR	05 40 30.2	
	comp=Z,27nm,20.6s,baz=270,slow=33							
ESDC	**Sonseca Array**	**25.79**	**124**	P		**P**	**05 34 07.3**	**+0.4**
	0.5nm,0.6s,baz=326,slow=9.1,SNR=5.7							
ARCES	**ARCESS Array B**	**26.36**	**42**	P		**P**	**05 34 10.7**	**-1.0**
	1.6nm,0.8s,baz=278,slow=6.3,SNR=4.7							
DAVOX	**Davos/Dischmat**	**27.34**	**97**	LR		LR	05 44 49.8	
	comp=Z,48nm,18.0s,baz=266,slow=36							
GERES	**GERESS Array B**	**28.05**	**90**	LR		LR	05 45 19.4	
	comp=Z,57nm,20.0s,baz=314,slow=36							
RES	**Resolute Bay**	**28.05**	**330**	LR		LR	05 44 33.0	
	comp=Z,38nm,18.0s,baz=122,slow=34							
FINES	**FINESS Array B**	**28.30**	**59**	P		**P**	**05 34 29.1**	**-0.1**
	0.8nm,0.6s,baz=267,slow=3.8,SNR=3.6							
VRAC	**Vranov**	**29.30**	**87**	LR		LR	05 46 22.1	
	comp=Z,58nm,18.8s,baz=320,slow=36							
AKASG	**Malin Array Be**	**35.03**	**75**	P		**P**	**05 35 27.2**	**-1.1**
	0.2nm,0.3s,baz=309,slow=8.5,SNR=2.7							
KEST	**Kesra**	**35.16**	**112**	LR		LR	05 48 15.1	
	comp=Z,88nm,20.6s,baz=223,slow=34							
ULM	**Lac du Bonnet**	**36.97**	**286**	LR		LR	05 49 41.1	
	comp=Z,45nm,18.8s,baz=12,slow=34							
YKA	**Yellowknife Ar**	**38.47**	**312**	P		**P**	**05 35 57.5**	**0.0**
	1.7nm,0.8s,baz=52,slow=9.7,SNR=4.5							
YKA				LR		LR	05 50 51.4	
	comp=Z,8.3nm,19.6s,baz=0.0,slow=35							
INK	**Inuvik**	**41.51**	**327**	P		**P**	**05 36 23.3**	**+0.7**
	3.0nm,1.0s,baz=7.6,slow=8.5,SNR=2.6							
BRTR	**Keskin Array B**	**44.71**	**85**	P		**P**	**05 36 49.6**	**+0.5**
	0.7nm,0.8s,baz=328,slow=5.1,SNR=3.2							
ILAR	**Eielson Array**	**47.79**	**328**	P		**P**	**05 37 11.9**	**-0.9**
	1.0nm,0.9s,baz=35,slow=7.3,SNR=6.4							
ILAR					PcP	**PcP**	**05 38 41.4**	**-0.2**
	0.4nm,0.6s,baz=27,slow=2.2,SNR=4.7							
PDAR	**Pinedale Array**	**48.96**	**287**	P		**P**	**05 37 21.8**	**-0.7**
	1.0nm,0.6s,baz=39,slow=7.2,SNR=5.9							
PDAR				LR		LR	05 56 16.6	
	comp=Z,39nm,21.5s,baz=54,slow=34							
TORD	**Torodi Ar. Bea**	**51.64**	**137**	P		**P**	**05 37 42.3**	**-0.3**
	1.3nm,0.8s,baz=336,slow=7.0,SNR=8.2							
DBIC	**Dimbokro**	**55.59**	**147**	P		**P**	**05 38 12.0**	**+0.4**
	2.5nm,0.9s,baz=328,slow=9.5,SNR=2.4							
TXAR	**Lajitas Array**	**56.18**	**272**	P		**P**	**05 38 16.2**	**+0.4**
	0.2nm,0.7s,baz=44,slow=5.3,SNR=3.4							
TXAR				LR		LR	06 01 34.4	
	comp=Z,35nm,18.3s,baz=0.0,slow=35							
MKAR	**Makanchi Array**	**61.93**	**45**	P		**P**	**05 38 55.8**	**+0.3**
	1.6nm,0.6s,baz=338,slow=5.6,SNR=20							
H10S1	**ASCENSION HYDR**	**68.50**	**162**	T		T	06 53 53.7	
	baz=349							
H10S3	**ASCENSION HYDR**	**68.51**	**162**	T		T	06 54 07.1	
	baz=349							
H10S2	**ASCENSION HYDR**	**68.52**	**162**	T		T	06 54 00.1	
	baz=349							
SONM	**Songino Array**	**68.66**	**29**	P		**P**	**05 39 39.8**	**+0.7**
	0.3nm,0.5s,baz=330,slow=5.3,SNR=4.5							
WRA	**Warramunga Arr**	**140.28**	**21**	PKP		**PKPdf**	**05 48 03.9**	**-0.9**
	0.4nm,0.8s,baz=342,slow=2.6,SNR=4.0							

*NEIC **31** 05:32:41.4, 60°.07N×136°.86W, h5km, ML2.7(OTT), ML2.6(AEIC), After OTT.*

*PGC **31** 05:32:41.4, 60°.07N×136°.86W, h5km, ML2.7/6, 84km southeast of Haines Jct., Yt Southern Yukon Territory, Canada*

ISC 31 05:32:40.1±1.2, 60°.07N±0°.03×136°.87W±0°.03, h2km±11km, n25, σ0s83/37, Southern Yukon Territory

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PLBC	**Pleasant Camp**	**0.67**	**157**	P		**Pg**	**05 32 53.2**	**+0.3**
PLBC				S		**Sg**	**05 33 01.9**	**+0.5**
PLBC	**Pleasant Camp**	**0.67**	**157**	P		**Pg**	**05 32 53.1**	**+0.3**
PLBC				S		**Sg**	**05 33 01.9**	**+0.5**
YUK7	**Dusty Glacier**	**0.78**	**307**	P		**Pg**	**05 32 55.3**	**+0.2**
YUK7				S		**Sg**	**05 33 05.6**	**+0.3**
HYT	**Haines Junctio**	**0.82**	**338**	P		**Pg**	**05 32 55.5**	**-0.3**
HYT				S		**Sg**	**05 33 06.7**	**+0.2**
HYT	**Haines Junctio**	**0.82**	**338**	P		**Pg**	**05 32 55.5**	**-0.3**
SKAG	**Skagway**	**0.99**	**127**	P		**Pg**	**05 32 59.0**	**-0.1**
SKAG				S		**Sg**	**05 33 11.9**	**0.0**
WHY	**Whitehorse**	**1.15**	**58**	P		**Pb**	**05 33 02.2**	**-0.7**
WHY				S		**Sg**	**05 33 17.3**	**+0.1**
WHY	**Whitehorse**	**1.15**	**58**	P		**Pb**	**05 33 02.1**	**-0.7**
WHY				S		**Sb**	**05 33 17.8**	**-0.5**
DHAK	**Deception Hill**	**1.19**	**215**	P		**Pb**	**05 33 02.8**	**-0.7**
DHAK				S		**Sn**	**05 33 19.4**	**-1.3**
YKU2	**Yakutat**	**1.52**	**250**	P		**Pn**	**05 33 08.1**	**-0.2**
PCA	**Pinnacle**	**1.70**	**272**	Pn		**Pb**	**05 33 11.9**	**-0.1**
PCA				Sn		**Sg**	**05 33 34.4**	**-0.2**
PCA	**Pinnacle**	**1.70**	**272**	P		**Pn**	**05 33 11.1**	**+0.3**
TABL	**Table Mountain**	**2.16**	**282**	P		**Pn**	**05 33 17.7**	**+0.4**
RKAV	**Rock Avalanche**	**2.25**	**278**	P		**Pn**	**05 33 18.9**	**+0.5**
CTGM	**Chitina Glacie**	**2.38**	**294**	Pn		**Pn**	**05 33 21.1**	**+0.8**
CTGM				Sn		**Sn**	**05 33 50.0**	**-0.1**
YUK3	**Moose Creek**	**2.45**	**316**	Pn		**Pn**	**05 33 21.6**	**+0.3**
YUK3				Sn		**Sn**	**05 33 52.5**	**+0.6**
KIAG	**Kiagna River**	**2.85**	**290**	P		**Pn**	**05 33 27.5**	**+0.8**
WAX	**Waxell Ridge**	**3.00**	**280**	P		**Pn**	**05 33 29.4**	**+0.7**
BVCY	**Beaver Creek**	**3.04**	**322**	Pg		**Pb**	**05 33 35.1**	**+0.2**
BVCY				Sg		**Sg**	**05 34 16.0**	**-1.8**
BVCY	**Beaver Creek**	**3.04**	**322**	P		**Pn**	**05 33 30.1**	**+0.8**
BCA3	**Beaver Creek A**	**3.81**	**324**	P		**Pn**	**05 33 40.0**	**+0.1**
BMRM	**Bremner River**	**3.93**	**287**	P		**Pn**	**05 33 42.5**	**+1.1**
DAWY	**Dawson**	**4.18**	**345**	Pn		**Pn**	**05 33 44.4**	**-0.5**
DAWY	**Dawson**	**4.18**	**345**	P		**Pn**	**05 33 45.5**	**+0.5**
EGAK	**Eagle**	**5.13**	**339**	P		**Pn**	**05 34 01.0**	**+3.2**
	4.6nm,0.5s							

*DDA **31** 05:33:30.8, 37°.22N×28°.26E, h7km, Md2.8, Suspected Mining explosion.*

*ISCJB **31** 05:33:32.0±0.5, 37°.27N±0°.03×28°.22E±0°.04, h0km, Error ellipse: s-maj=4.7km s-min=4.4km az=166.3*

*ISK **31** 05:33:32.3, 37°.28N×28°.20E, h6km, MD2.6*

*CSEM **31** 05:33:32.4±0.2, 37°.30N×28°.19E, h2km, MD2.6, Error ellipse: s-maj=4.3km s-min=4.2km az=3.0, Suspected Mining explosion.*

ISC 31 05:33:32.1±0.8, 37°.28N±0°.03×28°.22E±0°.03, h0km, n19, σ0s94/30, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MLSB	**Milas**	**0.35**	**273**	*ePg*		**Pg**	**05 33 38.8**	**-0.2**
MLSB	**Milas**	**0.35**	**273**	*ePg*		**Pg**	**05 33 38.8**	**-0.2**
TURN	**Turunc**	**0.51**	**143**	*iP*		**Pg**	**05 33 40.2**	**-1.7**
TURN				*iS*		**Sg**	**05 33 46.0**	**-2.5**
DALY	**Dalyan (Mu˘la**	**0.58**	**143**	*ePG*		**Pg**	**05 33 43.9**	**+0.7**
DALY	**Dalyan (Mu˘la**	**0.58**	**143**	*ePg*		**Pg**	**05 33 43.9**	**+0.7**
BDRM	**Kayabasi**	**0.66**	**251**	*iP*		**Pg**	**05 33 43.9**	**-0.8**
BDRM				*iS*		**Sg**	**05 33 53.7**	**+0.5**
BDRM	**Kayabasi**	**0.66**	**251**	P		**Pg**	**05 33 43.9**	**-0.8**
BDRM				S		**Sg**	**05 33 53.7**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**0.71**	**339**	*ePG*		**Pg**	**05 33 46.1**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.71**	**339**	*ePg*		**Pg**	**05 33 46.1**	**+0.2**
BODT	**Bodrum**	**0.76**	**254**	*ePG*		**Pg**	**05 33 46.5**	**-0.2**
BODT				*eSG*		**Sb**	**05 33 58.5**	**-0.6**
BODT	**Bodrum**	**0.76**	**254**	*ePg*		**Pg**	**05 33 46.5**	**-0.2**
BODT				*eSg*		**Sb**	**05 33 58.5**	**-0.6**
FETY	**Fethiye**	**0.94**	**133**	*ePG*		**Pb**	**05 33 51.3**	**-0.1**
FETY	**Fethiye**	**0.94**	**133**	*ePg*		**Pb**	**05 33 51.3**	**-0.1**
MANT	**Manisa**	**1.24**	**12**	*iP*		**Pg**	**05 33 55.2**	**-0.7**
MANT				*iS*		**Sb**	**05 34 12.8**	**-0.3**
MANT	**Manisa**	**1.24**	**12**	P		**Pg**	**05 33 55.2**	**-0.7**
MANT				S		**Sb**	**05 34 12.8**	**-0.3**
KULA	**Kula-Manisa**	**1.28**	**16**	*ePN*		**Pn**	**05 33 57.4**	**0.0**
KULA				*eSN*		**Sn**	**05 34 16.1**	**+0.8**
KULA	**Kula-Manisa**	**1.28**	**16**	*ePn*		**Pn**	**05 33 57.4**	**0.0**
KULA				*eSn*		**Sn**	**05 34 16.1**	**+0.8**
AKAS	**Kas**	**1.53**	**133**	*iP*		**Pg**	**05 34 01.5**	**+0.1**
AKAS				*iS*		**Sn**	**05 34 23.6**	**+2.1**
AKAS	**Kas**	**1.53**	**133**	P		**Pg**	**05 34 01.5**	**+0.1**
AKAS				S		**Sn**	**05 34 23.5**	**+2.1**

*NIED **31** 06:02:00, 38°.80N×144°.00E, h5km, Mw3.4 Best double couple: M0 1.64000×10^14 NP1:φs17.00000°, δ22.00000°, λ-87.00000°. NP2:φs194.00000°, δ68.00000°, λ-91.00000°.*

*IDC **31** 06:02:38.2±2.1, 38°.69N×144°.44E, h0km, mb3.4/2, mb1 3.7/5, mb1mx3.4/35, mbtmp3.7/5, ML3.6/3, MS2.6/1, Ms1 2.6/1, ms1mx2.1/26, Error ellipse: s-maj=52.8km s-min=32.0km az=90.0*

*ISCJB **31** 06:02:40.0±1.0, 38°.72N±0°.08×144°.24E±0°.09, h23km, mb3.5/2, MS2.5/1, Error ellipse: s-maj=12.2km s-min=8.3km az=37.8*

*JMA **31** 06:02:41.3±0.3, 38°.84N×144°.02E, h6km, M3.5*

ISC 31 06:02:40.0±1.5, 38°.71N±0°.06×144°.3E±0°.1, h23km, n14, σ2s41/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OFUJ	**Ofunato**	**2.10**	**281**	P		**Pn**	**06 03 14.3**	**+0.6**
OFUJ				*eS*		**Sn**	**06 03 37.5**	**-1.6**
MIYJ	**Miyakonagasawa**	**2.13**	**295**	P		**Pn**	**06 03 14.4**	**+0.3**
MIYJ				*eS*		**Sn**	**06 03 38.3**	**-1.5**
JIO	**Ouri**	**2.34**	**265**	P		**Pn**	**06 03 17.5**	**+0.5**
JIO				*eS*		**Sn**	**06 03 44.1**	**-0.9**
JMK	**Ichinoseki**	**2.43**	**277**	P		**Pn**	**06 03 19.2**	**+0.9**
JOM	**Ohasama**	**2.48**	**289**	P		**Pn**	**06 03 19.8**	**+0.9**
JOM				*eS*		**Sn**	**06 03 47.7**	**-0.7**
JYK	**Kaneyama**	**3.10**	**275**	P		**Pn**	**06 03 28.8**	**+1.3**
JFT	**Otama**	**3.36**	**250**	P		**Pn**	**06 03 32.5**	**+1.5**
MJAR	**Matsushiro Arr**	**5.31**	**248**	Pn		**Pn**	**06 04 00.2**	**+2.3**
	3.8nm,0.3s,baz=58,slow=12,SNR=40							
MAT	**Matsushiro**	**5.31**	**248**	P		**Pn**	**06 04 00.2**	**+2.3**
MAT				*eS*		**Sn**	**06 04 55.5**	**-2.9**
ASAJ	**Asahikawa**	**5.55**	**347**	Pn		**Pn**	**06 04 02.6**	**+1.4**
	0.6nm,0.3s,baz=202,slow=19,SNR=2.6							
ASAJ				Sn		**Sn**	**06 05 00.1**	**-4.2**
	0.2nm,0.3s,baz=157,slow=15,SNR=2.3							
JHJ	**Hachijo jima 2**	**6.68**	**215**	Pn		**Pn**	**06 04 16.9**	**+0.2**
	17nm,0.3s,baz=259,slow=23,SNR=11							
JHJ				Sn		**Sn**	**06 05 25.8**	**-6.4**
	3.1nm,0.3s,baz=68,slow=19,SNR=2.4							
YAK	**Yakutsk**	**25.02**	**344**	LR		LR	06 18 15.5	
	comp=Z,15nm,20.1s,baz=64,slow=37							
WRA	**Warramunga Arr**	**59.09**	**191**	P		**P**	**06 12 40.1**	**+1.7**
	0.6nm,0.8s,baz=8.6,slow=7.0,SNR=6.5							
ASAR	**Alice Springs**	**62.81**	**191**	P		**P**	**06 13 05.8**	**+2.0**
	0.3nm,1.0s,baz=18,slow=10,SNR=3.0							

*NEIC **31** 06:15:30.9, 17°.13N×101°.35W, h18km, MD4.0(MEX), After MEX.*

MEX 31 06:15:32.2±0.5, 17°.26N×101°.22W, h11km±14km, MD4.0, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ZIIG	**Zihuatanejo**	**0.41**	**326**	*eP*		Pg	06 15 39.8	-0.6
ZIIG				*iS*		Sg	06 15 46.2	+0.3
ZIIG	**Zihuatanejo**	**0.41**	**326**	*eP*		Pg	06 15 39.7	-0.6
ZIIG				*eS*		Sg	06 15 45.4	-0.4
CAIG	**El Cayaco**	**0.94**	**103**	*eP*		Pg	06 15 47.1	-3.1
CAIG				*eS*		Sg	06 15 59.4	-3.1
CAIG	**El Cayaco**	**0.94**	**103**	*eP*		Pg	06 15 47.1	-3.1
CAIG				*eS*		Sg	06 15 59.4	-3.1
ARIG	**Puente Sto Nin**	**1.31**	**39**	*eP*		Pn	06 15 52.6	-3.9
ARIG				*eS*		Sb	06 16 08.5	-5.2
ACX	**Acapulco**	**1.36**	**107**	*iP*		Pn	06 15 55.0	-2.3
ACX				*eS*		Sb	06 16 10.8	-4.5
MEIG	**Mezcala**	**1.66**	**66**	*eP*		Pn	06 15 58.2	-3.2
MEIG				*iS*		Sn	06 16 18.8	-4.1
MEIG	**Mezcala**	**1.66**	**66**	*eP*		Pn	06 15 58.2	-3.2
MEIG				*eS*		Sn	06 16 19.7	-3.2
PLIG	**Platanillo**	**1.98**	**55**	*eP*		Pn	06 16 03.2	-2.7
PLIG				*iS*		Sn	06 16 26.5	-4.3
PLIG	**Platanillo**	**1.98**	**55**	*eP*		Pn	06 16 03.6	-2.3
PLIG				*eS*		Sn

H11N2	**WAKE ISLAND Hy** baz=172,slow=76,SNR=11	**36.77**	**353**	T	T	07 29 58.4	
VNDA	**Vanda** comp=Z,47nm,18.2s,baz=359,slow=33	**60.75**	**182**	LR	LR	07 17 03.4	
MJAR	**Matsushiro Arr** comp=Z,15nm,21.4s,baz=100,slow=33	**61.84**	**330**	LR	LR	07 17 19.2	
KSRS	**Korea Array** comp=Z,15nm,19.8s,baz=186,slow=33	**67.93**	**324**	LR	LR	07 21 10.3	
PETK	**Petropavlovsk-** 2.5nm,0.9s,baz=164,slow=7.5,SNR=3.0	**70.82**	**351**	P	**P**	**06 55 03.2**	**-0.5**
PETK	comp=Z,32nm,19.7s,baz=154,slow=32			LR	LR	07 21 36.6	
MAW	**Mawson** comp=Z,28nm,19.2s,baz=237,slow=33	**81.32**	**202**	LR	LR	07 28 58.9	
ILAR	**Eielson Array** 0.9nm,0.8s,baz=237,slow=6.2,SNR=5.5	**87.45**	**17**	P	**P**	**06 56 33.0**	**-1.4**
ILAR	comp=Z,34nm,18.4s,baz=206,slow=34			LR	LR	07 33 18.8	
PDAR	**Pinedale Array** comp=Z,15nm,18.3s,baz=262,slow=36	**93.50**	**46**	LR	LR	07 39 44.9	
TXAR	**Lajitas Array** 0.4nm,0.8s,baz=218,slow=5.0,SNR=4.5	**93.78**	**61**	P	**P**	**06 57 05.8**	**+1.0**
TXAR	comp=Z,27nm,21.6s,baz=0.0,slow=30			LR	LR	07 30 29.3	
MKAR	**Makanchi Array** 0.1nm,0.6s,baz=106,slow=5.1,SNR=2.4	**101.66**	**315**	P	**Pdif**	**06 57 40.3**	**+0.3**
ARCES	**ARCESS Array B** 1.1nm,0.8s,baz=40,slow=2.9,SNR=4.7	**123.42**	**346**	PKP	**PKPdf**	**07 02 43.6**	**-0.2**
CONA	**Conrad Observa** 2.8nm,1.0s	**143.25**	**332**	*i* PKPdf	**PKPdf**	**07 03 21.0**	**-0.6**
MOA	**Molln** 6.3nm,2.0s	**144.00**	**334**	*i* PKPdf	**PKPdf**	**07 03 22.4**	**-0.5**
SOKA	**Soboth** 4.8nm,1.0s	**144.56**	**332**	*i* PKPdf	**PKPdf**	**07 03 23.7**	**-0.2**
OBKA	**Obir** 5.0nm,1.5s	**144.91**	**332**	*i* SPKPdf	**PKPdf**	**07 03 29.3**	**+4.8**
KBA	**Koelnbreinsper** 2.3nm,0.8s	**144.99**	**334**	*i* pPKPdf	**PKPdf**	**07 03 27.1**	**+2.3**
MYKA	**Terra Mystica** 4.2nm,1.0s	**145.22**	**333**	*i* PKPdf	**PKPdf**	**07 03 25.4**	**+0.4**
WLF	**Walferdange**	**145.32**	**343**	*e*PKPbc	**PKPdf**	**07 03 26.6**	**+1.6**
WATA	**Walderalm** 3.6nm,0.8s	**145.51**	**336**	*i* pPKPbc	**PKPab**	**07 03 26.9**	**+1.0**
ABTA	**Abfaltersbach** 8.5nm,0.8s	**145.60**	**334**	*i* PKPab	**PKPbc**	**07 03 26.2**	**+0.2**
MOTA	**Moosalm** 4.9nm,0.9s	**145.69**	**336**	*i* pPKPbc	**PKPab**	**07 03 27.4**	**+0.7**
RETA	**Reutte** 8.7nm,1.4s	**145.70**	**337**	*i* PKPab	**PKPab**	**07 03 27.1**	**+0.5**
BFO	**Black Forest**	**145.85**	**340**	*e*PKPbc	**PKPab**	**07 03 27.8**	**+0.8**
FETA	**Feichten** 5.1nm,0.9s	**146.10**	**336**	*i* PKPab	**PKPbc**	**07 03 27.5**	**-0.1**
DAVA	**Damuels** 8.7nm,1.2s	**146.20**	**337**	*i* PKPab	**PKPbc**	**07 03 27.9**	**0.0**

IDC 31 06:56:27.5±29.0, 18°.54N×145°.52E, h380km±331km, mb2.6/5, mb1 2.8/5, mb1mx2.7/30, mbtmp3.3/5, Error ellipse: s-maj=56.0km s-min=33.4km az=49.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**39.78**	**197**	P	P	07 03 25.7	+0.2
ASAR	0.1nm,0.3s,baz=15,slow=8.4,SNR=4.6 **Alice Springs**	**43.45**	**196**	P	P	07 03 54.2	-0.7
MKAR	0.1nm,0.4s,baz=12,slow=6.6,SNR=4.1 **Makanchi Array**	**58.45**	**314**	P	P	07 05 45.1	0.0
ILAR	0.1nm,0.4s,baz=86,slow=6.7,SNR=3.1 **Eielson Array**	**63.86**	**26**	P	P	07 06 20.5	-0.1
YKA	0.2nm,0.5s,baz=242,slow=6.5,SNR=5.8 **Yellowknife Ar** 0.3nm,0.5s,baz=287,slow=6.0,SNR=2.6	**78.21**	**28**	P	P	07 07 45.8	0.0

*ISCJB **31** 07:31:14.1±1.1,24°.03S×0°.06×66°.97W×0°.08, h178km, mb3.7/1, Error ellipse: s-maj=10.6km s-min=8.4km az=1.7*
*GUC **31** 07:31:15.8±0.5,23°.96S×67°.43W, h219km±10km, ML4.1*
*IDC **31** 07:31:16.0±3.6,23°.94S×67°.34W, h198km±31km, mb3.7/1, mb1 3.4/3, mb1mx3.1/18, mbtmp3.8/3, Error ellipse: s-maj=102.6km s-min=28.9km az=89.0*
ISC 31 07:31:14.2±1.3, 24°.00S±0°.08×66°.94W±0°.10, h178km, n11, σ1s48/19, 2C, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.28**	**307**	*i* P	**Pn**	**07 31 56.5**	**+1.9**
LVC				*i* S	**Sn**	**07 32 27.9**	**+2.0**
PB06	**IPOC Station P**	**2.74**	**297**	⇑*i* P	**Pn**	**07 32 01.4**	**+1.6**
PB06				*i* S	**Sn**	**07 32 35.3**	**+0.1**
PB06	comp=N,452nm,0.2s			IAML		07 32 37.2	
PB09	**IPOC Station P**	**3.05**	**315**	*i* P	**Pn**	**07 32 05.4**	**+1.8**
PB09				*i* S	**Sn**	**07 32 43.2**	**+1.2**
PB09	comp=E,233nm,0.2s			IAML		07 32 45.6	
PB14	**IPOC Station P**	**3.22**	**258**	*i* P	**Pn**	**07 32 06.6**	**+0.8**
PB14				*i* S	**Sn**	**07 32 45.0**	**-1.0**
PB14	comp=E,374nm,0.3s			IAML		07 32 47.1	
PB10	**IPOC Station P**	**3.34**	**278**	*i* P	**Pn**	**07 32 07.4**	**+0.4**
PB10				*i* S	**Sn**	**07 32 46.0**	**-2.2**
PB04	**IPOC Station P**	**3.38**	**299**	*i* P	**Pn**	**07 32 08.5**	**+0.8**
PB04				*i* S	**Sn**	**07 32 48.1**	**-1.3**
PB04	comp=N,289nm,0.3s			IAML		07 32 51.5	
PB07	**IPOC Station P**	**3.53**	**309**	⇑*i* P	**Pn**	**07 32 10.3**	**+0.7**
PB07				*i* S	**Sn**	**07 32 51.1**	**-1.6**
PB07	comp=E,140nm,0.3s			IAML		07 32 53.1	
LPAZ	**La Paz** comp=E,0.7nm,0.3s,baz=166,slow=8.2,SNR=32	**7.75**	**351**	P	**Pn**	**07 33 05.3**	**+0.4**
LPAZ				S	**Sn**	**07 34 30.0**	**-2.3**
PLCA	comp=E,0.1nm,0.3s,baz=42,slow=18,SNR=4.2 **Paso Flores** comp=E,0.1nm,0.3s,baz=22,slow=11,SNR=3.9	**16.96**	**189**	P	**P**	**07 35 00.6**	**+0.4**
ULM	**Lac du Bonnet** comp=E,1.0nm,0.5s,baz=162,slow=6.4,SNR=2.9	**78.24**	**342**	P	**P**	**07 42 52.5**	**-1.4**
MKAR	**Makanchi Array** comp=E,0.7nm,0.7s,baz=290,slow=3.6,SNR=7.1	**146.49**	**40**	PKPbc	**PKPdf**	**07 50 33.5**	**+0.8**

KRSC 31 07:42:33.8±1.0, 55°.17N×164°.33E, h48km±27km, ML3.6, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**0.94**	**87**	*i* P	Pn	07 42 52.0	+1.4
BKI				*e*S	Sn	07 43 03.4	+0.4
KBG	**Krutoberegovo**	**1.43**	**321**	*e*P	Pn	07 42 57.5	+0.3
KBG				*e*S	Sn	07 43 14.2	-0.6
MKZ	**Mys Kozlova**	**1.62**	**249**	*e*P	Pn	07 43 03.0	+3.1
MKZ				*e*S	Sn	07 43 21.9	+2.3
SMKR	**Semkarok**	**2.15**	**313**	*e*P	Pn	07 43 09.9	+2.7
ZLN	**Zelenaya**	**2.18**	**295**	*e*P	Pn	07 43 11.1	+3.5
ZLN				*e*S	Sn	07 43 36.1	+2.7
BDR	**Baidarnaya**	**2.25**	**310**	*e*P	Pn	07 43 11.1	+2.5
LGNR	**Loginova**	**2.26**	**295**	*e*P	Pn	07 43 11.5	+2.6
SRKR	**Sorokina**	**2.32**	**311**	*e*P	Pn	07 43 12.1	+2.5
KLY	**Klyuchi**	**2.38**	**300**	*e*P	Pn	07 43 12.1	+1.9
KLY				*e*S	Sn	07 43 38.8	+0.7
KIRR	**Kirishev**	**2.40**	**291**	*e*P	Pn	07 43 14.8	+4.1
KIRR				*e*S	Sn	07 43 42.9	+4.0
TUMR	**Tumrok**	**2.40**	**275**	*e*P	Pn	07 43 14.7	+4.0
TUMR				*e*S	Sn	07 43 42.7	+3.8
KMNR	**Kamenistaya**	**2.41**	**286**	*e*P	Pn	07 43 15.0	+4.3
KMNR				*e*S	Sn	07 43 42.9	+3.9
KPT	**Kopyto**	**2.47**	**291**	*e*P	Pn	07 43 15.2	+3.6
KPT				*e*S	Sn	07 43 42.9	+2.4
KOZ	**Kozyrevsk**	**2.68**	**291**	*e*P	Pn	07 43 18.4	+3.9
KOZ				*e*S	Sn	07 43 48.9	+3.2
SPN	**Mys Shipunski**	**3.27**	**233**	*e*P	Pn	07 43 26.7	+4.2
SPN				*e*S	Sn	07 44 02.2	+2.0
NLC	**Nalytchevo**	**3.55**	**238**	*e*S	Sn	07 44 10.3	+3.4
SDLR	**Sedlovina**	**3.71**	**242**	*e*P	Pn	07 43 33.4	+4.7
SDLR				*e*S	Sn	07 44 13.9	+2.7
KRER	**Koryakskii**	**3.77**	**243**	*eg*		07 43 34.6	
KRER				*e*S	Sn	07 44 16.6	+3.9
UGLR	**Uglovaya**	**3.78**	**241**	*e*P	Pn	07 43 34.6	+5.0
AVH	**Avacha**	**3.80**	**242**	*e*P	Pn	07 43 35.0	+5.2
AVH				*e*S	Sn	07 44 17.1	+3.9
DALK	**Dalny**	**3.92**	**239**	*e*P	Pn	07 43 36.4	+5.0
DALK				*e*S	Sn	07 44 19.0	+3.0
GNL	**Ganaly**	**4.01**	**251**	*e*P	Pn	07 43 38.3	+5.5
KRMR	**Karymshinskiy**	**4.34**	**240**	*e*S	Sn	07 44 30.7	+4.2
RUS	**Russkaya**	**4.40**	**234**	*e*P	Pn	07 43 42.2	+4.2
RUS				*e*S	Sn	07 44 29.9	+1.9
ASAK	**Asacha**	**4.72**	**236**	*e*P	Pn	07 43 46.6	+4.1

*ISCJB **31** 07:47:28.9±0.9, 31°.56S±0°.04×69°.51W±0°.06, h113km±9km, Error ellipse: s-maj=9.9km s-min=4.6km az=27.8*
*GUC **31** 07:47:28.3±0.4, 31°.47S×70°.01W, h128km±41km, ML2.8*
*SJA **31** 07:47:28.9±0.8, 31°.53S×69°.52W, h101km±5km, ML2.5, MW3.2*
ISC 31 07:47:29.6±1.6, 31°.55S±0°.04×69°.53W±0°.06, h106km±13km, n14, σ0s73/27, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	**Leoncito**	**0.32**	**142**	*e*P	**Pn**	**07 47 45.2**	**-0.1**
RTLS				*e*S	**Sn**	**07 47 57.3**	**+0.1**
AUSP	**Uspallata**	**0.68**	**170**	*e*P	**Pn**	**07 47 47.7**	**-0.1**
AUSP				*e*S	**Sn**	**07 48 01.2**	**-0.2**
RTCV	**Cerro Valdivia**	**0.90**	**111**	*e*P	**Pn**	**07 47 49.5**	**0.0**
RTCV				*e*S	**Sn**	**07 48 04.2**	**-0.2**
RTLL	**Cerro Villicun**	**0.93**	**76**	*e*P	**Pn**	**07 47 49.2**	**-0.5**
RTLL				*e*S	**Sn**	**07 48 04.8**	**-0.1**
ACCO	**Cerro Coronel**	**1.04**	**23**	*e*P	**Pn**	**07 47 51.2**	**-0.1**
ACCO				*e*S	**Sn**	**07 48 07.9**	**+0.3**
ACCO	comp=Z,114nm,0.2s			IAML		07 48 11.6	
AMOG	**MOGNA**	**1.08**	**56**	*e*P	**Pn**	**07 47 51.0**	**-0.4**
ASAL	**Salagasta**	**1.19**	**151**	*e*P	**Pn**	**07 47 52.9**	**+0.2**
ASAL				*e*S	**Sn**	**07 48 11.0**	**+0.9**
AROD	**Rodeo**	**1.38**	**2**	*e*P	**Pn**	**07 47 55.6**	**+0.5**
AROD				*e*S	**Sn**	**07 48 14.9**	**+0.5**
PEL	**Peldehue**	**1.87**	**211**	*i* P	**Pn**	**07 48 00.1**	**-0.7**
PEL				*i* S	**Sn**	**07 48 23.9**	**-0.6**
PEL	comp=N,84nm,0.4s			IAML		07 48 25.2	
FCH	**Farellones**	**1.89**	**200**	*i* P	**Pn**	**07 48 01.9**	**+0.6**
FCH				*i* S	**Sn**	**07 48 27.9**	**+2.5**
FCH	comp=E,89nm,0.2s			IAML		07 48 31.2	
ROCH	**El Roble**	**1.89**	**221**	*i* P	**Pn**	**07 48 00.2**	**-1.1**
ROCH				*i* S	**Sn**	**07 48 24.5**	**-1.0**
ROCH	comp=E,89nm,0.3s			IAML		07 48 26.3	
AVFE	**Valle Fertil**	**1.99**	**64**	*e*P	**Pn**	**07 48 01.8**	**-0.6**
AVFE				*e*S	**Sn**	**07 48 27.1**	**-0.2**
AVFE	comp=Z,25nm,0.2s			IAML		07 48 27.4	
CLCH	**Cerro Calan**	**2.03**	**205**	*i* P	**Pn**	**07 48 02.7**	**-0.2**
CLCH				*i* S	**Sn**	**07 48 28.6**	**+0.4**
CLCH	comp=E,79nm,0.4s			IAML		07 48 31.0	
AGUA	**GUANDACOL**	**2.24**	**24**	*e*P	**Pn**	**07 48 06.0**	**+0.3**
AGUA				*e*S	**Sn**	**07 48 33.2**	**-0.1**

*ISCJB **31** 07:47:58.8±0.7, 32°.67N±0°.05×140°.3E±0°.1, h134km±5km, mb3.5/4, Error ellipse: s-maj=15.0km s-min=8.4km az=176.3*
*IDC **31** 07:47:59.6±0.8, 32°.53N×140°.13E, h120km±7km, mb3.2/4, mb1 3.4/5, mb1mx3.1/45, mbtmp3.5/5, Error ellipse: s-maj=35.4km s-min=18.5km az=92.0*
*JMA **31** 07:48:00.5±0.1, 32°.69N×140°.38E, h121km±2km, M3.5*
ISC 31 07:48:00.1±1.0, 32°.66N±0°.07×140°.3E±0°.1, h128km±7km, n25, σ1s08/30, mb3.7/4, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHCJ	**Hachijojimakas**	**0.59**	**315**	P	**Pn**	**07 48 19.4**	**0.0**
JHCJ				S	**Sn**	**07 48 33.6**	**-0.4**
JHJ2	**Mitsune**	**0.60**	**319**	P	**Pn**	**07 48 19.8**	**+0.3**
JHJ2				S	**Sn**	**07 48 34.1**	**-0.1**
JHJ	**Hachijo jima 2** 262nm,0.3s,baz=62,slow=21,SNR=439	**0.63**	**318**	P	**Pn**	**07 48 19.9**	**+0.2**
JHJ	429nm,0.3s,baz=72,slow=19,SNR=25			S	**Sn**	**07 48 34.0**	**-0.5**
JKO	**Kozu shima**	**1.81**	**328**	*e*S	**Sn**	**07 48 57.1**	**+1.5**
BSO1	**Boso 1**	**2.08**	**16**	P	**Pn**	**07 48 34.7**	**+0.4**
BSO1				*e*S	**Sn**	**07 49 00.3**	**-0.3**
BSO3	**Boso 3**	**2.15**	**5**	P	**Pn**	**07 48 35.7**	**+0.2**
BSO3				S	**Sn**	**07 49 02.1**	**-0.6**
JIM2	**Oshima 3**	**2.18**	**341**	P	**Pn**	**07 48 36.1**	**0.0**
JIM2				*e*S	**Sn**	**07 49 02.6**	**-1.2**
JIZS	**Izushimoda**	**2.37**	**331**	P	**Pn**	**07 48 39.0**	**+0.5**
JOD2	**Odawara 2**	**2.79**	**339**	P	**Pn**	**07 48 44.2**	**+0.4**
JOD2				*e*S	**Sn**	**07 49 16.5**	**-1.1**
JYN	**Shimob**	**3.18**	**333**	P	**Pn**	**07 48 50.0**	**+1.0**
JYN				*e*S	**Sn**	**07 49 29.1**	**+2.2**
JRY	**Ryogami san**	**3.54**	**341**	P	**Pn**	**07 48 54.3**	**+0.6**
JRY				*e*S	**Sn**	**07 49 35.5**	**+0.2**
JAG	**Ashikaga**	**3.82**	**350**	P	**Pn**	**07 48 56.3**	**-1.1**
MJAR	**Matsushiro Arr** 2.0nm,0.3s,baz=159,slow=10,SNR=13	**4.24**	**337**	P	**Pn**	**07 49 03.0**	**0.0**
MJAR	0.9nm,0.3s,baz=170,slow=24,SNR=4.6			S	**Sn**	**07 49 49.3**	**-2.5**
MAT	**Matsushiro**	**4.24**	**337**	P	**Pn**	**07 49 03.4**	**+0.4**
MAT				*e*S	**Sn**	**07 49 49.3**	**-2.5**
H11N2	**WAKE ISLAND Hy** baz=305	**27.04**	**112**	T	T	08 22 49.4	
H11N1	**WAKE ISLAND Hy** baz=305	**27.04**	**112**	T	T	08 22 47.2	
H11N3	**WAKE ISLAND Hy** baz=305	**27.05**	**112**	T	T	08 22 51.4	
H11S3	**WAKE ISLAND Hy** baz=305	**27.58**	**114**	T	T	08 22 37.7	
H11S1	**WAKE ISLAND Hy** baz=305	**27.58**	**114**	T	T	08 22 31.8	
H11S2	**WAKE ISLAND Hy** baz=305	**27.59**	**114**	T	T	08 22 55.2	
MKAR	**Makanchi Array** 0.6nm,0.5s,baz=89,slow=10.0,SNR=7.5	**45.79**	**306**	P	**P**	**07 56 08.8**	**-0.1**
WRA	**Warramunga Arr** 0.7nm,0.4s,baz=3.4,slow=7.5,SNR=29	**52.61**	**187**	P	**P**	**07 56 59.8**	**-1.1**
ILAR	**Eielson Array** 0.2nm,0.8s,baz=262,slow=6.3,SNR=3.4	**53.70**	**31**	P	**P**	**07 57 09.6**	**+1.2**
ASAR	**Alice Springs** 0.5nm,0.5s,baz=1.3,slow=6.3,SNR=16	**56.34**	**187**	P	**P**	**07 57 26.9**	**-0.8**
LPAZ	**La Paz** 0.5nm,0.8s,baz=329,slow=5.9,SNR=3.3	**149.56**	**64**	PKPbc	**PKPbc**	**08 07 36.5**	**+0.7**

IDC 31 08:24:59.7±2.6, 4°.89S×130°.12E, h185km±40km, mb2.8/1, mb1 2.9/4, mb1mx2.8/33, mbtmp3.4/4, Error ellipse: s-maj=81.9km s-min=17.8km az=86.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong** 11nm,0.3s,baz=187,slow=20,SNR=1.2	**4.15**	**16**	P	Pn	08 26 04.2	+1.2
SIJI	17nm,0.3s,baz=87,slow=24,SNR=1.5			S	Sn	08 26 52.2	-0.4
FITZ	**Fitzroy Crossi** 0.1nm,0.3s,baz=34,slow=12,SNR=1.7	**13.84**	**198**	P	Pn	08 28 06.4	-1.9
FITZ	0.1nm,0.3s,baz=292,slow=22,SNR=1.2			S	Sn	08 30 26.7	-16
WRA	**Warramunga Arr** 0.1nm,0.3s,baz=349,slow=11,SNR=2.8	**15.52**	**165**	P	Pn	08 28 29.0	+0.1
WRA	0.2nm,0.3s,baz=338,slow=22,SNR=2.5			S	S	08 31 08.5	-13
ASAR	**Alice Springs** 0.2nm,0.3s,baz=345,slow=10,SNR=7.0	**19.02**	**169**	P	P	08 29 07.7	0.0
MKAR	**Makanchi Array** 0.1nm,0.4s,baz=121,slow=6.9,SNR=1.7	**66.54**	**326**	P	P	08 35 30.1	+0.4

*NIED **31** 08:28:00, 38°.90N×142°.10E, h47km, Mw3.9 Best double couple: M0 7.52000×10^14 NP1:φs179.00000°, δ22.00000°, λ65.00000°. NP2:φs25.00000°, δ70.00000°, λ100.00000°.*
*ISCJB **31** 08:28:52.4±0.9, 38°.82N±0°.04×142°.1E±0°.1, h49km±7km, mb3.8/11, MS2.8/2, Error ellipse: s-maj=14.2km s-min=5.6km az=19.1*
*JMA **31** 08:28:53.3±0.1, 38°.85N×142°.09E, h45km±1km, M3.8*
JMA Felt I J1.
*IDC **31** 08:28:54.5±0.7, 38°.77N×142°.24E, h56km±6km, mb3.6/11, mb1 3.7/14, mb1mx3.6/38, mbtmp3.8/14, MS2.8/5, Ms1 2.8/5, ms1mx2.5/45, Error ellipse: s-maj=15.6km s-min=11.3km az=126.0*
ISC 31 08:28:53.5±0.8, 38°.86N±0°.05×142°.17E±0°.08, h42km±5km, n34, σ1s62/40, mb3.8/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.45**	**300**	P	**Pn**	**08 29 03.1**	**-0.5**
OFUJ				S	**Sn**	**08 29 09.9**	**-0.9**
JMK	**Ichinoseki**	**0.75**	**278**	P	**Pn**	**08 29 06.7**	**-0.9**
JMK				S	**Sn**	**08 29 16.1**	**-1.6**
JIO	**Ouri**	**0.76**	**238**	P	**Pn**	**08 29 06.6**	**-1.1**
JIO				S	**Sn**	**08 29 15.7**	**-2.3**
JOM	**Ohasama**	**0.92**	**312**	P	**Pn**	**08 29 09.5**	**-0.4**
JOM				S	**Sn**	**08 29 21.1**	**-0.9**
JTH	**Tanohata**	**1.10**	**348**	P	**Pn**	**08 29 12.1**	**-0.4**
JTH				*e*S	**Sn**	**08 29 26.3**	**-0.2**
JOU	**Okura**	**1.28**	**248**	P	**Pn**	**08 29 13.9**	**-1.0**
JOU				*e*S	**Sn**	**08 29 30.1**	**-0.7**
JRG	**Rokugo**	**1.31**	**295**	P	**Pn**	**08 29 14.7**	**-0.6**
JYK	**Kaneyama**	**1.41**	**273**	P	**Pn**	**08 29 16.0**	**-0.7**
JMM	**Marumori**	**1.47**	**228**	P	**Pn**	**08 29 16.2**	**-1.2**
JMM				*e*S	**Sn**	**08 29 33.7**	**-1.7**
JANG	**Nango**	**1.60**	**342**	P	**Pn**	**08 29 19.0**	**-0.2**
JANG				*e*S	**Sn**	**08 29 39.1**	**+0.5**
MJAR	**Matsushiro Arr** 3.4nm,0.3s,baz=36,slow=13,SNR=41	**3.90**	**235**	P	**Pn**	**08 29 51.4**	**+0.5**
MJAR	1.7nm,0.3s,baz=0.4,slow=17,SNR=4.0			S	**Sn**	**08 30 40.3**	**+4.9**
MJAR	comp=Z,65nm,19.3s,baz=40,slow=40			LR	LR	08 31 30.2	
MAT	**Matsushiro**	**3.90**	**235**	P	**Pn**	**08 29 51.9**	**+1.0**
MAT				*e*S	**Sn**	**08 30 39.3**	**+3.9**
USRK	**Ussuriysk Ar.** 0.4nm,0.3s,baz=120,slow=15,SNR=11	**9.31**	**308**	P	**Pn**	**08 31 08.2**	**+3.1**
KSRS	**Korea Array** 0.2nm,0.3s,baz=74,slow=14,SNR=5.5	**11.31**	**267**	P	**Pn**	**08 31 34.7**	**+2.3**
KSRS	comp=Z,49nm,21.1s,baz=50,slow=34			LR	LR	08 35 18.8	
KLR	**Kul'dur** comp=Z,48nm,21.4s,baz=167,slow=35	**12.78**	**328**	LR	LR	08 36 22.9	
YAK	**Yakutsk** comp=Z,16nm,18.4s,baz=246,slow=41	**24.44**	**346**	LR	LR	08 45 43.4	
SEY	**Seymchan** 2.0nm,0.8s,baz=220,slow=14,SNR=5.1	**24.89**	**11**	P	**P**	**08 34 13.4**	**+1.5**
SONM	**Songino Array** 0.3nm,0.3s,baz=111,slow=8.1,SNR=3.8	**27.31**	**301**	P	**P**	**08 34 34.1**	**-0.2**
H11N2	**WAKE ISLAND Hy** baz=317,slow=75,SNR=1719	**28.63**	**125**	T	T	09 05 06.6	
H11N1	**WAKE ISLAND Hy** baz=317,slow=75,SNR=1867	**28.64**	**125**	T	T	09 05 11.9	
H11N3	**WAKE ISLAND Hy** baz=317,slow=75,SNR=1645	**28.65**	**125**	T	T	09 05 12.6	
H11S1	**WAKE ISLAND Hy** baz=318,slow=76,SNR=145	**29.41**	**127**	T	T	09 06 08.0	
H11S3	**WAKE ISLAND Hy** baz=318,slow=76,SNR=172	**29.42**	**127**	T	T	09 06 08.8	
H11S2	**WAKE ISLAND Hy** baz=318,slow=76,SNR=135	**29.42**	**127**	T	T	09 06 05.1	
TLY	**Talaya** comp=Z,38nm,20.5s,baz=176,slow=37	**29.63**	**308**	LR	LR	08 47 06.3	
ZALV	**Zalesovo Beam** 2.2nm,0.5s,baz=86,slow=8.4,SNR=10	**41.15**	**311**	P	**P**	**08 36 32.7**	**-0.7**
ZALV	2.1nm,0.5s,baz=91,slow=8.1,SNR=4.7			pP	**sP**	**08 36 48.5**	**-1.4**
MKAR	**Makanchi Array** 2.9nm,0.7s,baz=85,slow=10,SNR=22	**43.68**	**301**	P	**P**	**08 36 53.2**	**-0.9**
MKAR	0.7nm,0.6s,baz=74,slow=8.9,SNR=4.0			pP	**pP**	**08 37 08.6**	**+2.8**
ILAR	**Eielson Array** 0.6nm,0.6s,baz=263,slow=5.8,SNR=12	**47.64**	**33**	P	**P**	**08 37 25.8**	**+0.7**
ILAR	0.6nm,0.6s,baz=269,slow=6.2,SNR=6.2			pP	**sP**	**08 37 41.5**	**-0.3**
INK	**Inuvik** 1.8nm,1.0s,baz=326,slow=3.6,SNR=3.3	**52.49**	**28**	P	**P**	**08 38 02.5**	**+0.7**
WRA	**Warramunga Arr** 0.7nm,0.5s,baz=6.7,slow=7.1,SNR=23	**58.95**	**189**	P	**P**	**08 38 47.1**	**-1.4**
WRA	0.6nm,0.5s,baz=5.9,slow=7.1,SNR=4.3			pP	**pP**	**08 39 00.7**	**0.0**
ASAR	**Alice Springs** 0.3nm,0.6s,baz=356,slow=4.1,SNR=6.7	**62.68**	**189**	P	**P**	**08 39 13.1**	**-0.8**
ASAR	0.6nm,0.7s,baz=12,slow=6.2,SNR=3.4			pP	**pP**	**08 39 26.3**	**+0.2**
FINES	**FINESS Array B** 1.3nm,0.6s,baz=51,slow=15,SNR=6.0	**67.48**	**332**	P	**P**	**08 39 43.5**	**-1.2**
AKASG	**Malin Array Be** 0.5nm,0.4s,baz=46,slow=6.6,SNR=4.1	**73.22**	**322**	P	**P**	**08 40 18.5**	**-1.4**
TXAR	**Lajitas Array** 0.3nm,0.8s,baz=297,slow=4.0,SNR=3.1	**88.54**	**53**	P	**P**	**08 41 42.3**	**+0.3**

*ISCJB **31** 08:42:00.6±0.6, 36°.01N±0°.04×140°.13E±0°.06, h75km±4km, mb3.6/9, Error ellipse: s-maj=8.7km s-min=6.7km az=170.6*
*JMA **31** 08:42:02.0±0.1, 36°.03N×140°.09E, h63km±1km, M3.3 Broadband fault plane solution: P waves. NP1: φs358.00000°, δ62.00000°, λ84.00000°. NP2: φs190.00000°, δ28.00000°, λ101.00000°. Principal axes: T Plg72.0000°, Azm255.0000°; N Plg5.0000°, Azm0.0000°; P Plg17.0000°, Azm92.0000°;*
JMA Felt I J1.
*IDC **31** 08:42:03.5±2.2, 36°.02N×140°.06E, h87km±17km, mb3.4/9, mb1 3.5/10, mb1mx3.3/40, mbtmp3.7/10 Error ellipse: s-maj=27.5km s-min=13.6km az=65.0*
ISC 31 08:42:01.8±0.8, 36°.03N±0°.04×140°.07E±0°.06, h68km±7km, n20, σ1s21/30, mb3.8/9, 1C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.22**	**27**	⇑P	**Pn**	**08 42 12.1**	**-0.1**
JYT				S	**Sn**	**08 42 19.4**	**-0.4**
JAG	**Ashikaga**	**0.64**	**308**	⇓P	**Pn**	**08 42 16.2**	**+0.4**
JAG				S	**Sn**	**08 42 26.4**	**+0.2**
JRY	**Ryogami san**	**0.95**	**269**	⇓P	**Pn**	**08 42 20.0**	**+0.4**
JRY				*e*S	**Sn**	**08 42 33.3**	**+0.5**
JKT	**Katashina**	**0.99**	**318**	⇓P	**Pn**	**08 42 20.4**	**+0.3**
JKT				*e*S	**Sn**	**08 42 34.2**	**+0.5**
JOD2	**Odawara 2**	**1.11**	**226**	⇓P	**Pn**	**08 42 21.5**	**-0.1**
JOD2				S	**Sn**	**08 42 35.2**	**-1.2**
BSO3	**Boso 3**	**1.28**	**164**	P	**Pn**	**08 42 24.0**	**+0.4**
BSO3				S	**Sn**	**08 42 43.5**	**+3.6**
JYN	**Shimob**	**1.35**	**247**	⇓P	**Pn**	**08 42 25.4**	**+0.6**
JYN				S	**Sn**	**08 42 42.7**	**+0.6**
JIM2	**Oshima 3**	**1.42**	**202**	P	**Pn**	**08 42 24.8**	**-0.8**
JIM2				S	**Sn**	**08 42 41.7**	**-1.8**
MJAR	**Matsushiro Arr** 46nm,0.3s,baz=86,slow=9.9,SNR=392	**1.59**	**289**	P	**Pn**	**08 42 28.

Ms4.0/11,Ms7 3.9/11
*NEIC **31** 08:46:29.8±0.5,39.01°N×142.32°E,h60km±5km,mb4.6/14, Error ellipse: s-maj=7.5km s-min=4.1km az=125.0*
NEIC Recorded [1 JMA] in Iwate and Miyagi.
*IDC **31** 08:46:30.5±2.3,38.95°N×142.43°E,h70km±21km,mb3.9/15, mb1 4.0/20,mb1mx3.8/45,mbtmp4.2/20,MS3.2/15, Ms1 3.3/15,ms1mx3.1/48,Error ellipse: s-maj=19.2km s-min=13.1km az=97.0*
ISC 31 08:46:26.8±0.8,38.97N±0.04°×142.41E±0.05,h33km±3km, n120,σ1s74/119,mb4.4/36,MS3.4/10,3C-8D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
OFUJ	**Ofuuto**	**0.58**	**282**	P		**Pn**		**08 46 38.2**	**-0.6**
OFUJ				S		**Sb**		**08 46 46.6**	**-0.3**
MIYJ	**Miyakonagasawa**	**0.76**	**323**	P		**Pn**		**08 46 39.9**	**-1.3**
MIYJ				S		**Sn**		**08 46 49.9**	**-1.7**
JMK	**Ichinoseki**	**0.93**	**270**	P		**Pn**		**08 46 43.3**	**-0.1**
JMK				S		**Sn**		**08 46 55.7**	**+0.1**
JIO	**Ouri**	**0.97**	**239**	P		**Pn**		**08 46 43.5**	**-0.6**
JIO				S		**Sb**		**08 46 56.0**	**-1.7**
JOM	**Ohasama**	**1.00**	**301**	P		**Pn**		**08 46 44.3**	**-0.2**
JOM				S		**Sn**		**08 46 57.6**	**+0.1**
JTH	**Tanohata**	**1.06**	**337**	P		**Pn**		**08 46 44.1**	**-1.2**
JKZ	**Kuzumaki**	**1.31**	**321**	P		**Pn**		**08 46 48.8**	**-0.1**
JKZ				S		**Sn**		**08 47 05.2**	**-0.1**
JRG	**Rokugo**	**1.44**	**288**	P		**Pn**		**08 46 51.3**	**+0.7**
JOU	**Okura**	**1.49**	**247**	P		**Pn**		**08 46 51.5**	**+0.2**
JOU				*e*S		**Sb**		**08 47 11.0**	**-1.4**
JANG	**Nango**	**1.56**	**334**	P		**Pn**		**08 46 52.1**	**-0.2**
JANG				*e*S		**Sn**		**08 47 11.4**	**0.0**
JYK	**Kaneyama**	**1.60**	**269**	P		**Pn**		**08 46 53.2**	**+0.5**
ERM	**Erimo**	**3.10**	**10**	*e*P		**Pn**		**08 47 12.9**	**-0.4**
ERM	**Erimo**	**3.10**	**10**	*e*Pn		**Pn**		**08 47 14.9**	**+1.5**
ERM				*e*Sn		**Sn**		**08 47 51.0**	**+1.8**
MAJO	**Matsushiro**	**4.11**	**235**	*e*P		**Pn**		**08 47 30.9**	**+3.6**
MAJO	**Matsushiro**	**4.11**	**235**	*e*Pn		**Pn**		**08 47 30.0**	**+2.6**
MAT	**Matsushiro**	**4.11**	**235**	P		**Pn**		**08 47 30.8**	**+3.5**
MAT				S		**Sb**		**08 48 22.5**	**-5.2**
MJAR	**Matsushiro Arr**	**4.11**	**235**	P		**Pn**		**08 47 30.6**	**+3.3**
	14nm,0.3s,baz=34,slow=14,SNR=81								
MJAR				LR		LR		08 49 19.1	
	comp=Z,510nm,19.0s,baz=60,slow=41								
MJB9	**Matsu-Tunnel**	**4.11**	**235**	*e*Pn		**Pn**		**08 47 30.8**	**+3.4**
ASAJ	**Asahikawa**	**5.15**	**2**	*e*Pn		**Pn**		**08 47 42.9**	**+1.4**
INU	**Inuyama**	**5.62**	**232**	*e*Pn		**Pn**		**08 47 50.7**	**+2.7**
JHJ2	**Mitsune**	**6.21**	**201**	*e*Pn		Pn		08 47 60.0	+3.9
JHJ	**Hachijo jima 2**	**6.21**	**201**	P		**Pn**		**08 47 58.1**	**+2.0**
	15nm,0.3s,baz=307,slow=23,SNR=9.6								
JHJ				S		**Sn**		**08 49 04.2**	**-1.8**
	9.1nm,0.3s,baz=92,slow=23,SNR=3.0								
JHJ				LR		LR		08 50 43.4	
	comp=Z,289nm,21.5s,baz=97,slow=41								
KUR	**Kuril'sk**	**7.46**	**31**	*e*P		**Pn**		**08 48 11.3**	**-1.9**
KUR				*e*S		Sn		08 49 29.6	-7.1
KUR				smax		smax			
	comp=N,37nm,0.8s								
KUR				smax		smax			
	comp=E,27nm,0.8s								
KUR				smax		smax			
	comp=N,165nm,3.1s								
KUR				smax		smax			
	comp=E,111nm,3.1s								
YSS	**Yuzh-Sakhalins**	**7.99**	**2**	*e*P		**Pn**		**08 48 20.4**	**-0.1**
YSS				pmax		pmax			
	comp=Z,10.0nm,1.1s								
YSS				MLR		MLR			
	comp=Z,200nm,15.0s								
YSS	**Yuzh-Sakhalins**	**7.99**	**2**	*e*Pn		**Pn**		**08 48 22.2**	**+1.7**
USRK	**Ussuriysk Ar.**	**9.39**	**307**	P		**Pn**		**08 48 44.2**	**+4.5**
	comp=Z,0.4nm,0.3s,baz=120,slow=16,SNR=8.2								
USRK				LR		LR		08 52 07.1	
	comp=Z,95nm,19.5s,baz=221,slow=36								
JNU	**Nakatsue**	**11.00**	**242**	P		**Pn**		**08 49 05.2**	**+3.4**
	comp=Z,0.3nm,0.3s,baz=71,slow=8.1,SNR=7.0								
JNU	**Nakatsue**	**11.00**	**242**	*e*Pn		**Pn**		**08 49 03.1**	**+1.3**
KSRS	**Korea Array**	**11.50**	**267**	P		Pn		08 49 14.2	+5.6
	comp=Z,0.3nm,0.3s,baz=83,slow=14,SNR=9.9								
KSRS				LR		LR		08 53 16.0	
	comp=Z,78nm,19.1s,baz=65,slow=35								
KS15	**Wonju Array Si**	**11.53**	**267**	*e*Pn		**Pn**		**08 49 10.1**	**+1.1**
KSAR	**Wonju Array Be**	**11.53**	**267**	P		Pn		08 49 14.2	+5.2
KSAR	**Wonju Array Be**	**11.53**	**267**	P		Pn		08 49 14.2	+5.2
KLR	**Kul'dur**	**12.79**	**327**	P		**P**		**08 49 36.5**	**-0.2**
	comp=Z,0.5nm,0.3s,baz=142,slow=9.2,SNR=12								
KLR				LR		LR		08 54 16.8	
	comp=Z,79nm,19.8s,baz=140,slow=36								
PETK	**Petropavlovsk-**	**17.63**	**32**	LR		LR		08 58 36.9	
	comp=Z,60nm,18.0s,baz=214,slow=41								
BJT	**Baijiatuan**	**20.26**	**281**	*e*P		**P**		**08 50 59.3**	**0.0**
BJT				pmax		pmax			
	comp=Z,10.0nm,1.4s								
BJT	**Baijiatuan**	**20.26**	**281**	*e*P		**P**		**08 50 59.3**	**0.0**
	comp=Z,9.5nm,1.4s								
MA2	**Magadan**	**21.30**	**12**	P		**P**		**08 51 10.2**	**-0.2**
	comp=Z,18nm,0.7s,baz=199,slow=10,SNR=8.2								
TATO	**Taipei**	**22.50**	**238**	*e*P		**P**		**08 51 23.1**	**-0.4**
	comp=Z,165nm,1.8s								
YHNB	**Yeheng**	**22.78**	**237**	*e*P		**P**		**08 51 25.8**	**-0.8**
	comp=Z,48nm,1.8s								
HHC	**Hu-ho-hao-te**	**23.68**	**284**	*e*P		**P**		**08 51 34.8**	**-0.7**
HHC				S		S		08 55 36.8	-11
HHC				pmax		pmax			
	comp=Z,16nm,0.9s								
HHC				pmax		pmax			
	comp=Z,63nm,4.3s								
HHC				LR		LR			
	comp=Z,100nm,9.3s								
HHC				LR		LR			
	comp=Z,130nm,8.3s								
HHC				LR		LR			
	comp=Z,70nm,8.3s								
YULB	**Yu-li**	**23.73**	**235**	*e*P		**P**		**08 51 35.4**	**-0.6**
	comp=Z,24nm,1.7s								
YAK	**Yakutsk**	**24.38**	**345**	P		**P**		**08 51 41.0**	**-0.6**
	comp=Z,12nm,0.5s,baz=331,slow=2.7,SNR=4.8								
YAK	**Yakutsk**	**24.38**	**345**	*e*P		**P**		**08 51 40.3**	**-1.3**
YAK				pmax		pmax			
	comp=Z,20nm,1.0s								
YAK				pmax		pmax			
	comp=N,9.0nm,1.2s								
YAK	**Yakutsk**	**24.38**	**345**	*e*P		**P**		**08 51 40.7**	**-0.9**
	comp=N,19nm,0.8s								
SEY	**Seymchan**	**24.75**	**11**	P		**P**		**08 51 45.0**	**0.0**
	comp=N,3.2nm,0.8s,baz=197,slow=3.7,SNR=7.4								
SEY	**Seymchan**	**24.75**	**11**	*e*P		**P**		**08 51 46.3**	**+1.4**
GUMO	**Guam**	**25.37**	**174**	LR		LR		09 01 33.6	
	comp=N,34nm,21.2s,baz=10,slow=36								
XAN	**Xi'an**	**27.27**	**270**	P		**P**		**08 52 08.8**	**+0.7**
XAN				pmax		pmax			
	comp=N,7.0nm,1.2s								
XAN				pmax		pmax			
	comp=N,120nm,4.7s								
SONA1	**Songino Array**	**27.41**	**301**	*e*P		**P**		**08 52 09.0**	**-0.4**
SONM	**Songino Array**	**27.42**	**301**	P		**P**		**08 52 10.9**	**+1.5**
	comp=N,0.5nm,0.4s,baz=90,slow=8.4,SNR=4.4								
ENH	**Enshi**	**28.32**	**262**	*e*P		**P**		**08 52 15.7**	**-1.8**
	comp=N,7.2nm,0.8s								
H11N2	**WAKE ISLAND Hy**	**28.54**	**125**	T		T		09 22 43.6	
	baz=318,slow=75,SNR=244								
H11N1	**WAKE ISLAND Hy**	**28.55**	**125**	T		T		09 22 45.9	
	baz=318,slow=75,SNR=260								
H11N3	**WAKE ISLAND Hy**	**28.56**	**125**	T		T		09 22 45.8	
	baz=318,slow=75,SNR=281								
H11S1	**WAKE ISLAND Hy**	**29.32**	**127**	T		T		09 23 42.5	
	baz=319,slow=76,SNR=36								
H11S3	**WAKE ISLAND Hy**	**29.33**	**127**	T		T		09 23 55.6	
	baz=319,slow=76,SNR=15								
H11S2	**WAKE ISLAND Hy**	**29.34**	**127**	T		T		09 23 45.8	
	baz=319,slow=76,SNR=34								
ZAK	**Zakamensk**	**29.74**	**305**	*e*P		**P**		**08 52 28.7**	**-1.3**
ZAK				pmax		pmax			
	comp=Z,2.0nm,1.0s								
LZH	**Lanzhou**	**30.57**	**277**	*e*P		**P**		**08 52 41.8**	**+4.3**
LZH				pP		sP		08 52 53.0	+1.9
LZH				sP		pP		08 52 59.3	+12
LZH				pmax		pmax			
	comp=Z,24nm,1.0s								
GYA	**Guiyang**	**32.35**	**258**	*e*P		**P**		**08 52 54.0**	**+0.7**
GYA				pmax		pmax			
	comp=Z,10.0nm,0.8s								
CD2	**Chengdu**	**32.49**	**268**	*e*P		**P**		**08 52 53.8**	**-0.6**
WMQ	**Urumqi**	**40.70**	**295**	*e*P		**P**		**08 54 05.5**	**+1.3**
WMQ				pP		sP		08 54 18.0	+0.1
WMQ				pmax		pmax			
	comp=Z,9.0nm,0.7s								
WMQ				pmax		pmax			
	comp=Z,79nm,4.1s								
ZAA0	**Zalesovo Array**	**41.22**	**311**	*e*P		**P**		**08 54 08.2**	**-0.1**
ZALV	**Zalesovo Beam**	**41.22**	**311**	P		**P**		**08 54 08.2**	**0.0**
	comp=Z,2.9nm,0.6s,baz=90,slow=7.6,SNR=12								
NRIK	**Nori'sk**	**41.86**	**334**	LR		LR		09 12 32.6	
	comp=Z,69nm,20.9s,baz=311,slow=37								
CMAR	**Chiang Mai Arr**	**42.76**	**254**	LR		LR		09 12 40.6	
	comp=Z,28nm,18.2s,baz=205,slow=37								
MK01	**Makanchi Array**	**43.78**	**301**	*e*P		**P**		**08 54 29.1**	**-0.1**
MK31	**Makanchi Array**	**43.78**	**301**	*e*P		**P**		**08 54 29.2**	**0.0**
MK31	**Makanchi Array**	**43.78**	**301**	*e*P		**P**		**08 54 29.2**	**0.0**
MKAR	**Makanchi Array**	**43.78**	**301**	P		**P**		**08 54 29.2**	**0.0**
	comp=Z,3.5nm,0.7s,baz=83,slow=9.9,SNR=27								
MAKZ	**Makanchi**	**43.99**	**301**	*e*P		**P**		**08 54 30.6**	**-0.3**
MAKZ				pmax		pmax			
	comp=Z,3.0nm,0.8s								
MAKZ	**Makanchi**	**43.99**	**301**	*e*P		**P**		**08 54 30.6**	**-0.3**
	comp=Z,3.4nm,0.8s								
KURK	**Kurchatov**	**45.38**	**307**	*d*P		**P**		**08 54 41.4**	**-0.4**
KURK				pmax		pmax			
	comp=Z,65nm,1.2s								
KURK	**Kurchatov**	**45.38**	**307**	*e*P		**P**		**08 54 41.5**	**-0.3**
	comp=Z,14nm,0.9s								
BWN	**Browne**	**46.35**	**34**	*e*P		**P**		**08 54 51.3**	**+1.9**
	comp=Z,16nm,1.0s								
RND	**Reindeer**	**46.65**	**35**	*e*P		**P**		**08 54 51.7**	**0.0**
RND				pmax		pmax			
	comp=Z,3.0nm,0.8s								
RND	**Reindeer**	**46.65**	**35**	*e*P		**P**		**08 54 51.7**	**0.0**
	comp=Z,3.0nm,0.8s								
IL1	**Eielson Array**	**47.45**	**33**	*e*P		**P**		**08 54 57.8**	**-0.1**
ILAR	**Eielson Array**	**47.45**	**33**	P		**P**		**08 54 58.0**	**+0.1**
	comp=Z,3.6nm,0.7s,baz=270,slow=6.4,SNR=50								
ILAR	**Eielson Array**	**47.45**	**33**	P		**P**		**08 54 58.0**	**+0.1**
ILAR				pmax		pmax			
	comp=Z,4.0nm,0.7s								
ILB	**Eielson Array**	**47.45**	**33**	*e*P		**P**		**08 54 58.0**	**+0.1**
MENT	**Mentasta**	**49.01**	**36**	*e*P		**P**		**08 55 10.7**	**+0.7**
	comp=Z,11nm,1.4s								
BRVK	**Borovoye**	**49.92**	**311**	*e*P		**P**		**08 55 16.2**	**-0.9**
BRVK				pmax		pmax			
	comp=Z,9.0nm,0.9s								
KSH	**Kashi**	**50.35**	**293**	*e*P		**P**		**08 55 24.8**	**+4.1**
KSH				*e*pP		sP		08 55 37.8	+3.3
KSH				*e*sP		pP		08 55 44.0	+13
KSH				*e*PP		**PP**		**08 57 21.5**	**+5.3**
KSH				S		**S**		**09 02 32.8**	**+1.2**
KSH				LR		LR			
	comp=Z,110nm,7.6s								
KSH				LR		LR			
	comp=Z,86nm,5.5s								
KSH				LR		LR			
	comp=Z,97nm,6.1s								
HYT	**Haines Junctio**	**52.29**	**38**	*e*P		**P**		**08 55 36.7**	**+1.9**
INK	**Inuvik**	**52.31**	**28**	P		**P**		**08 55 34.9**	**+0.2**
	comp=Z,3.6nm,0.8s,baz=302,slow=7.2,SNR=9.6								
INK	**Inuvik**	**52.31**	**28**	*e*P		**P**		**08 55 35.2**	**+0.4**
	comp=Z,2.4nm,0.6s								
SVE	**Sverdlovsk**	**54.23**	**318**	*e*P		**P**		**08 55 48.7**	**-0.3**
ARU	**Arti**	**55.45**	**318**	LR		LR		09 21 54.2	
	comp=Z,41nm,19.0s,baz=170,slow=38								
ARU	**Arti**	**55.45**	**318**	*d*P		**P**		**08 55 57.5**	**-0.3**
ARU				*PP		**sP**		**08 56 10.4**	**-1.3**
ARU								08 57 59.5	
ARU				S		**S**		**09 03 40.4**	**+0.2**
ARU				SS		**SS**		**09 07 15.6**	**-8.9**
ARU				pmax		pmax			
	comp=Z,9.0nm,1.2s								
ABKAR	**Akbulak array**	**57.31**	**309**	*e*P		**P**		**08 56 10.7**	**-0.5**
WRAB	**Tennant Creek**	**59.07**	**189**	*e*P		**P**		**08 56 23.3**	**-0.4**
WRAB				pmax		pmax			
	comp=Z,28nm,1.9s								
WRAB	**Tennant Creek**	**59.07**	**189**	*e*P		**P**		**08 56 23.3**	**-0.4**
	comp=Z,28nm,1.9s								
WRA	**Warramunga Arr**	**59.08**	**189**	P		**P**		**08 56 23.0**	**-0.8**
	comp=Z,1.8nm,0.5s,baz=6.6,slow=7.0,SNR=29								
WRA	**Warramunga Arr**	**59.08**	**189**	P		**P**		**08 56 23.0**	**-0.8**
WRA				pmax		pmax			
	comp=Z,2.0nm,0.5s								
BBB	**Bella Bella**	**60.14**	**45**	LR		LR		09 18 51.9	
	comp=Z,15nm,21.1s,baz=257,slow=32								
ARCES	**ARCESS Array B**	**62.47**	**339**	LR		LR		09 28 40.5	
	comp=Z,26nm,18.6s,baz=88,slow=40								
ASAR	**Alice Springs**	**62.81**	**189**	P		**P**		**08 56 48.8**	**-0.4**
	comp=Z,0.9nm,0.7s,baz=2.4,slow=4.9,SNR=13								
FINES	**FINESS Array B**	**67.47**	**332**	P		**P**		**08 57 17.5**	**-1.4**
	comp=Z,1.8nm,0.8s,baz=40,slow=15,SNR=5.1								
FINES				LR		LR		09 28 13.8	
	comp=Z,40nm,21.2s,baz=22,slow=37								
AFI	**Afiamalu**	**67.79**	**131**	LR		LR		09 25 51.2	
	comp=Z,11nm,18.4s,baz=91,slow=35								
KIV	**Kislovodsk**	**70.24**	**311**	*e*P		**P**		**08 57 37.9**	**+1.3**
KIV				*e**PP		**sP**		**08 57 52.8**	**+2.1**
KIV				*SP		**PcP**		**08 57 58.0**	**-0.2**
KIV								08 58 01.0	
KIV				pmax		pmax			
	comp=Z,12nm,1.2s								
KIV				MLR		MLR			
	comp=Z,23nm,17.0s								
NB2	**NORSAR Subarra**	**72.71**	**337**	P		**P**		**08 57 50.4**	**-0.7**
	comp=Z,0.6nm,0.7s,baz=38,slow=5.9								
NOA	**NORSAR Array B**	**72.71**	**337**	P		**P**		**08 57 50.7**	**-0.4**
	comp=Z,1.0nm,0.7s,baz=39,slow=6.1,SNR=5.0								
NOA				LR		LR		09 34 59.4	
	comp=Z,22nm,18.6s,baz=50,slow=40								
NOA	**NORSAR Array B**	**72.71**	**337**	P		**P**		**08 57 50.7**	**-0.4**
NOA				pmax		pmax			
	comp=Z,2.0nm,0.9s								
NOA				MLR		MLR			
	comp=Z,22nm,18.6s								
AKASG	**Malin Array Be**	**73.25**	**322**	P		**P**		**08 57 53.8**	**-0.6**
	comp=Z,3.3nm,0.6s,baz=41,slow=6.2,SNR=7.6								
AKASG	**Malin Array Be**	**73.25**	**322**	*i* P		**P**		**08 57 53.7**	**-0.7**
AKASG				pmax		pmax			
	comp=Z,2.0nm,0.6s								
KIEV	**Kiev**	**73.26**	**322**	*e*P		**P**		**08 57 53.8**	**-0.7**
KIEV				pmax		pmax			
	comp=Z,5.0nm,1.2s								
KIEV	**Kiev**	**73.26**	**322**	*e*P		**P**		**08 57 54.1**	**-0.3**
	comp=Z,3.0nm,0.8s								
LAO	**LASA Array**	**75.01**	**42**	*e*P		**P**		**08 58 04.3**	**-0.5**
	comp=Z,12nm,1.2s								
PDAR	**Pinedale Array**	**75.76**	**46**	P		**P**		**08 58 09.2**	**-0.3**
	comp=Z,0.5nm,0.6s,baz=283,slow=1.8,SNR=8.5								
BURAR	**Bucovina Array**	**77.28**	**322**	*e*P		**P**		**08 58 17.8**	**0.0**
DOPR	**Dopca**	**78.36**	**321**	*e*P		P		08 58 31.6	+7.9
MLR	**Muntele Rosu**	**78.42**	**320**	*e*P		**P**		**08 58 25.9**	**+1.7**
DPC	**Dobruska-Polom**	**79.24**	**328**	*e*P		**P**		**08 58 29.4**	**+0.9**
DPC	**Dobruska-Polom**	**79.24**	**328**	*e*P		**P**		**08 58 29.4**	**+0.9**
KHC	**Kasperske Hory**	**81.30**	**329**	*e*P		**P**		**08 58 40.0**	**+0.3**
KHC	**Kasperske Hory**	**81.30**	**329**	*e*P		**P**		**08 58 40.0**	**+0.3**
PDG	**Podgorica**	**83.95**	**321**	*e*P		**P**		**08 58 53.3**	**-0.2**
TXAR	**Lajitas Array**	**88.33**	**53**	P		**P**		**08 59 15.2**	**-0.2**
	comp=Z,0.3nm,0.5s,baz=288,slow=3.4,SNR=7.0								
LPAZ	**La Paz**	**145.03**	**58**	PKPbc		**PKPbc**		**09 06 00.8**	**-0.4**
	comp=Z,0.5nm,0.6s,baz=4.2,slow=14,SNR=2.1								

*IDC **31** 08:47:24.1±1.6,29.01°×176.75W,h0km,mb3.8/4, mb1 4.0/5,mb1mx3.8/32,mbtmp3.9/5,ML4.1/1,MS3.2/2, Ms1 3.2/2,ms1mx2.7/25,Error ellipse: s-maj=37.6km s-min=25.4km az=174.0*
*ISCJB **31** 08:47:26.0±1.6,28.9S±0.2×176.6W±0.1,h36km,mb3.8/4, Error ellipse: s-maj=29.7km s-min=15.8km az=179.0*
ISC 31 08:47:29.2±1.4,29.0S±0.2×176.7W±0.1,h36km,n10, σ0s80/9,mb3.9/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
RAO	**Raoul Island**	**1.06**	**257**	Pn		**Pn**		**08 47 47.2**	**-0.3**
	187nm,0.3s,baz=263,slow=24,SNR=7.8								
RAO				Sn		**Sn**		**08 48 01.6**	**+0.6**
	555nm,0.3s,baz=271,slow=24,SNR=9.5								
DZM	**Mont Dzumac**	**16.68**	**291**	LR		LR		08 56 17.7	
	comp=Z,115nm,21.0s,baz=22,slow=32								
RAR	**Rarotonga**	**17.20**	**67**	LR		LR		08 56 59.3	
	comp=Z,62nm,18.9s,baz=266,slow=33								
RPZ	**Rata Peaks**	**17.62**	**210**	P		**Pn**		**08 51 31.9**	**+0.1**
	0.6nm,0.3s,baz=348,slow=9.3,SNR=4.4								
STKA	**Stephens Creek**	**35.88**	**255**	P		**P**		**08 54 26.2**	**+0.4**
	1.4nm,0.6s,baz=71,slow=9.5,SNR=4.8								
ASAR	**Alice Springs**	**44.31**	**265**	P		**P**		**08 55 35.1**	**-0.7**
	0.7nm,0.6s,baz=101,slow=6.4,SNR=12								
WRA	**Warramunga Arr**	**45.18**	**270**	P		**P**		**08 55 41.8**	**-0.9**
	1.2nm,0.7s,baz=110,slow=8.1,SNR=20								
VNDA	**Vanda**	**49.57**	**186**	P		**P**		**08 56 15.9**	**-0.2**
	0.5nm,0.4s,baz=282,slow=9.3,SNR=7.3								
FINES	**FINESS Array B**	**144.22**	**341**	PKP		**PKPdf**		**09 07 00.2**	**-0.3**
	2.0nm,0.7s,baz=222,slow=2.6,SNR=5.3								
AKASG	**Malin Array Be**	**150.84**	**325**	PKPbc		**PKPbc**		**09 07 18.8**	**+1.4**
	0.9nm,0.5s,baz=38,slow=2.7,SNR=5.2								

IDC 31 08:53:55.4±3.1,29.45N×142.05E,h0km,mb3.7/5, mb1 3.7/7,mb1mx3.4/46,mbtmp3.7/7,ML3.3/2,MS3.3/1, Ms1 3.3/1,ms1mx2.3/39,Error ellipse: s-maj=141.2km s-min=19.7km az=76.0,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
JHJ	**Hachijo jima 2**	**4.14**	**333**	Pn		Pn		08 54 59.7	-0.3
	4.2nm,0.3s,baz=49,slow=21,SNR=4.9								
JHJ				Sn		Sn		08 55 45.6	-3.5
	6.7nm,0.3s,baz=321,slow=23,SNR=6.0								
MJAR	**Matsushiro Arr**	**7.78**	**336**	Pn		Pn		08 55 50.3	+0.4
	0.6nm,0.3s,baz=303,slow=20,SNR=4.5								
WRA	**Warramunga Arr**	**49.66**	**190**	P		P		09 02 48.8	-0.3
	0.3nm,0.4s,baz=7.5,slow=7.8,SNR=12								
WRA				LR		LR		09 25 07.9	
	comp=Z,28nm,18.1s,baz=265,slow=38								
KURBB	**Kurchatov Arra**	**51.34**	**313**	P		P		09 03 01.2	-0.2
	0.5nm,0.5s,baz=90,slow=8.2,SNR=8.7								
ASAR	**Alice Springs**	**53.39**	**189**	P		P		09 03 17.1	+0.2
	0.1nm,0.5s,baz=358,slow=5.2,SNR=4.0								
BVAR	**Borovoye Array**	**56.25**	**316**	P		P		09 03 37.6	+0.1
	1.2nm,0.6s,baz=72,slow=9.8,SNR=5.0								
FINES	**FINESS Array B**	**75.80**	**334**	P		P		09 05 42.6	-0.4
	1.1nm,0.8s,baz=68,slow=10,SNR=3.7								

*NIED **31** 09:05:00,36.90N×141.20E,h44km,Mw3.4 Best double couple: M0 1.51000×10^14 NP1:φs77.00000°,δ12.00000°, λ170.00000°. NP2:φs177.00000°,δ88.00000°,λ78.00000°.*
*ISCJB **31** 09:05:04.2±0.8,36.87N±0.04°×141.31E±0.07,h55km±6km, mb3.6/5,Error ellipse: s-maj=9.9km s-min=5.3km az=18.4*
*JMA **31** 09:05:05.6±0.1,36.90N×141.19E,h56km±1km,M3.9*
JMA Felt II J1.
*IDC **31** 09:05:07.7±4.1,36.76N×141.22E,h76km±35km,mb3.3/5, mb1 3.5/7,mb1mx3.2/53,mbtmp3.6/7,ML3.4/2,MS1.9/1, Ms1 1.9/1,ms1mx1.8/23,Error ellipse: s-maj=36.5km s-min=12.8km az=58.0*
ISC 31 09:05:04.9±1.3,36.89N±0.04°×141.31E±0.08,h46km±11km, n24,σ0s87/31,mb3.5/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.46**	**298**	P		**Pn**		**09 05 15.8**	**+0.2**
ONAJ				S		**Sn**		**09 05 23.0**	**-0.1**
JFK	**Kawauchi**	**0.59**	**324**	P		**Pn**		**09 05 17.4**	**+0.2**
JFK				S		**Sn**		**09 05 25.8**	**-0.2**
JHO	**Hitachi**	**0.65**	**245**	P		**Pn**		**09 05 18.0**	**+0.1**
JHO				S		**Sn**		**09 05 26.8**	**-0.5**
JFT	**Otama**	**1.00**	**309**	P		**Pn**		**09 05 23.3**	**+0.7**
JFT				*e*S		**Sn**		**09 05 36.0**	**+0.4**
JMM	**Marumori**	**1.06**	**337**	P		**Pn**		**09 05 23.6**	**+0.2**
JMM				S		**Sn**		**09 05 36.9**	**-0.2**
JFY	**Yanaizu**	**1.38**	**293**	P		**Pn**		**09 05 28.1**	**+0.3**
JFY				*e*S		**Sn**		**09 05 44.7**	**-0.2**
JAG	**Ashikaga**	**1.56**	**253**	P		**Pn**		**09 05 30.3**	**+0.1**
JAG				S		**Sn**		**09 05 48.4**	**-0.9**
JOU	**Okura**	**1.56**	**341**	P		**Pn**		**09 05 30.9**	**+0.6**
JOU				*e*S		**Sn**		**09 05 49.9**	**+0.5**
JIO	**Ouri**	**1.57**	**1**	P		**Pn**		**09 05 30.9**	**+0.6**
JIO				S		**Sn**		**09 05 49.3**	**-0.1**
JYS	**Shirataka**	**1.66**	**324**	P		**

KUR					AMB	AMB	09 10 28.1		
	comp=E,20nm,0.3s								
KUR					*e*S	**S**	**09 11 23.5**	**-0.5**	
KUR					A	A	09 11 26.8		
	comp=E,30nm,0.4s								
KUR					A	A	09 11 38.2		
	comp=E,300nm,4.0s								
RUS	**Russkaya**	**5.50**	**48**		PN	**Pn**	**09 10 37.7**	**-1.1**	
RUS					S	**S**	**09 11 38.7**	**-5.4**	
RUS	**Russkaya**	**5.50**	**48**	*e*P		**Pn**	**09 10 37.7**	**-1.1**	
RUS					*e*S	**S**	**09 11 38.7**	**-5.4**	
PETK	**Petropavlovsk-**	**5.58**	**39**		P	**Pn**	**09 10 39.3**	**-0.5**	
	comp=E,1.7nm,0.3s,baz=210,slow=9.4,SNR=23								
PET	**Petropavlovsk**	**5.94**	**43**	*e*P	N	**Pn**	**09 10 44.7**	**+0.5**	
PET	**Petropavlovsk**	**5.94**	**43**	*e*P		**Pn**	**09 10 44.8**	**+0.5**	
PET					AMB	AMB	09 10 46.3		
	comp=E,20nm,0.4s								
PET					AMB	AMB	09 10 48.4		
	comp=E,100nm,2.7s								
PET					*e*S	**S**	**09 11 54.0**	**0.0**	
PET					A	A	09 11 54.8		
	comp=E,10.0nm,0.4s								
PET					A	A	09 11 55.0		
	comp=E,100nm,3.0s								
GNL	**Ganaly**	**6.12**	**36**		PN	**Pn**	**09 10 46.2**	**-0.4**	
GNL	**Ganaly**	**6.12**	**36**	*e*P		**Pn**	**09 10 46.2**	**-0.4**	
SHO	**Shikotan**	**6.13**	**217**	*d*	PN	**Pn**	**09 10 46.9**	**+0.1**	
SHO				*i*	S	**S**	**09 11 55.4**	**-3.1**	
SHO					pmax	pmax			
	comp=Z,72nm,0.3s								
SHO					pmax	pmax			
	comp=N,19nm,0.2s								
SHO					pmax	pmax			
	comp=E,32nm,0.2s								
SHO					smax	smax			
	comp=N,41nm,0.5s								
SHO					smax	smax			
	comp=E,81nm,0.6s								
SHO	**Shikotan**	**6.13**	**217**	*e*P		**Pn**	**09 10 47.2**	**+0.4**	
SHO					AMB	AMB	09 10 48.2		
	comp=E,40nm,0.4s								
SHO					AMB	AMB	09 10 50.6		
	comp=E,200nm,2.4s								
SHO					*e*S	**S**	**09 11 55.7**	**-2.8**	
SHO					A	A	09 11 58.2		
	comp=E,200nm,2.1s								
SHO					A	A	09 11 59.4		
	comp=E,40nm,0.6s								
SHO					A	A	09 11 59.4		
	comp=E,80nm,0.6s								
UGLR	**Uglovaya**	**6.14**	**43**		PN	**Pn**	**09 10 47.5**	**+0.6**	
UGLR	**Uglovaya**	**6.14**	**43**	*e*P		**Pn**	**09 10 47.5**	**+0.6**	
SPN	**Mys Shipunski**	**6.63**	**48**		PN	**Pn**	**09 10 50.6**	**-2.3**	
SPN	**Mys Shipunski**	**6.63**	**48**	*e*P		**Pn**	**09 10 50.6**	**-2.3**	
NEM2	**Nemuro 2**	**6.99**	**220**		P	**Pn**	**09 10 57.0**	**-0.6**	
NEM2					*e*S	**S**	**09 12 10.6**	**-7.6**	
JTKR	**Abashiri--Toko**	**7.39**	**231**		P	**Pn**	**09 11 06.1**	**+3.5**	
JMP	**Maruseppu**	**7.66**	**233**		P	**Pn**	**09 11 10.2**	**+4.2**	
JAK	**Akkeshi**	**7.74**	**223**		P	**Pn**	**09 11 07.1**	**+0.1**	
JAK					*e*S	**S**	**09 12 29.1**	**-6.5**	
JAR	**Ashorobuto**	**7.95**	**228**		P	**Pn**	**09 11 12.5**	**+2.8**	
ASAJ	**Asahikawa**	**8.00**	**237**		P	Pn	09 11 15.6	+5.4	
JKK2	**Kamakawa 2**	**8.07**	**235**		P	**Pn**	**09 11 15.9**	**+4.7**	
JOB	**Onbets**	**8.21**	**226**		P	**Pn**	**09 11 14.0**	**+1.0**	
JOB					*e*S	**S**	**09 12 42.3**	**-4.2**	
MKZ	**Mys Kozlova**	**8.32**	**43**		PN	**Pn**	**09 11 11.3**	**-2.9**	
MKZ	**Mys Kozlova**	**8.32**	**43**	*e*P		**Pn**	**09 11 11.3**	**-2.9**	
JFR	**Furan**	**8.64**	**232**		P	**Pn**	**09 11 22.0**	**+3.6**	
JCH	**Churui**	**8.66**	**227**		P	**Pn**	**09 11 18.6**	**0.0**	
JCH					*e*S	**S**	**09 12 51.0**	**-5.8**	
MYR	**Moyori**	**8.94**	**226**	*e*P		**Pn**	**09 11 21.4**	**-0.8**	
JBT2	**Biratori 2**	**9.03**	**231**		P	**Pn**	**09 11 24.7**	**+1.3**	
JNBK	**Urakawa-nobuka**	**9.21**	**227**		P	**Pn**	**09 11 24.7**	**-0.9**	
JNBK					*e*S	**S**	**09 13 01.2**	**-8.3**	
ERM	**Erimo**	**9.22**	**225**	⇓*e*	PN	**Pn**	**09 11 26.5**	**+0.8**	
ERM	**Erimo**	**9.22**	**225**	*e*P		**Pn**	**09 11 26.5**	**+0.8**	
JKB	**Kayabe**	**10.36**	**231**		P	**Pn**	**09 11 39.9**	**-0.2**	
JYM2	**Yakumo 2**	**10.54**	**234**		P	**Pn**	**09 11 43.5**	**+1.1**	
BKI	**Bering**	**10.71**	**49**		PN	**Pn**	**09 11 41.2**	**-3.1**	
BKI	**Bering**	**10.71**	**49**	*e*P		**Pn**	**09 11 41.2**	**-3.1**	
HABR	**Khabarovsk**	**11.14**	**274**	*e*PN		**Pn**	**09 11 47.8**	**-1.9**	
HABR					*e*S	**S**	**09 13 51.3**	**-3.0**	
HABR					pmax	pmax			
	comp=N,7.0nm,0.9s								
HABR					pmax	pmax			
	comp=E,24nm,1.8s								
HABR					pmax	pmax			
	comp=Z,13nm,1.8s								
HABR					MLR	MLR			
	comp=Z,12nm,15.0s								
JTM	**Tenmabayashi**	**11.16**	**227**		P	**Pn**	**09 11 48.7**	**-1.4**	
JANG	**Nango**	**11.27**	**225**		P	**Pn**	**09 11 49.8**	**-1.7**	
KLR	**Kul'dur**	**13.21**	**279**		P	**P**	**09 12 17.7**	**+0.9**	
	comp=Z,0.1nm,0.3s,baz=79,slow=12,SNR=4.9								
SEY	**Seymchan**	**14.06**	**1**	⇓*e*	P	**Pn**	**09 12 24.9**	**-0.7**	
SEY	**Seymchan**	**14.06**		*e*P		**Pn**	**09 12 24.9**	**-0.7**	
BMKR	**Bomnak**	**15.35**	**301**	*e*P		**Pn**	**09 12 43.0**	**+1.8**	
MJA0	**Matsu Arr-Jizo**	**15.88**	**224**	*e*P		**Pn**	**09 12 51.4**	**+3.7**	
MJA0					pmax	pmax			
	comp=Z,1.0nm,0.3s								
MJAR	**Matsushiro Arr**	**15.89**	**224**		P	**Pn**	**09 12 50.5**	**+2.6**	
	comp=Z,1.2nm,0.3s,baz=21,slow=12,SNR=10								
MJAR	**Matsushiro Arr**	**15.89**	**224**	*e*P		**Pn**	**09 12 51.4**	**+3.6**	
ILAR	**Eielson Array**	**35.41**	**40**		P	**P**	**09 15 49.6**	**+0.7**	
	comp=Z,0.5nm,0.7s,baz=263,slow=5.3,SNR=7.5								
INK	**Inuvik**	**40.30**	**34**		P	**P**	**09 16 30.5**	**+1.0**	
	comp=Z,0.7nm,0.4s,baz=295,slow=8.3,SNR=9.1								
INK	**Inuvik**	**40.30**	**34**	*e*P		**P**	**09 16 30.3**	**+0.8**	
ZALV	**Zalesovo Beam**	**40.70**	**303**		P	**P**	**09 16 33.6**	**+0.5**	
	comp=Z,0.7nm,0.3s,baz=62,slow=7.9,SNR=3.3								
MKAR	**Makanchi Array**	**45.25**	**295**		PcP	**PcP**	**09 18 45.3**	**+0.5**	
	comp=Z,0.5nm,0.4s,baz=68,slow=3.8,SNR=4.2								
MKAR	**Makanchi Array**	**45.25**	**295**	*i*	P	**P**	**09 17 09.6**	**+0.1**	
MKAR	**Makanchi Array**	**45.25**	**295**	*e*P		**P**	**09 17 09.6**	**+0.1**	
KURK	**Kurchatov**	**45.51**	**301**		P	**P**	**09 17 12.7**	**+1.3**	
KURBB	**Kurchatov Arra**	**45.60**	**301**		P	**P**	**09 17 12.7**	**+0.6**	
	comp=Z,1.7nm,0.7s,baz=65,slow=8.3,SNR=5.5								
BVAR	**Borovoye Array**	**48.87**	**308**		P	**P**	**09 17 38.2**	**+0.9**	
	comp=Z,2.2nm,0.5s,baz=62,slow=6.9,SNR=6.7								
YKA	**Yellowknife Ar**	**49.70**	**37**		P	**P**	**09 17 44.4**	**+1.0**	
	comp=Z,0.6nm,0.4s,baz=300,slow=7.0,SNR=3.7								
ARU	**Arti**	**52.87**	**316**		P	**P**	**09 18 07.1**	**+0.2**	
	comp=Z,2.0nm,0.4s,baz=327,slow=6.1,SNR=3.7								
ARU	**Arti**	**52.87**	**316**	*c*	*i*P	**P**	**09 18 06.9**	**0.0**	
ARU							09 20 05.4		
ARU					S	**S**	**09 25 16.1**	**+0.5**	
ARU					SS	**SS**	**09 28 54.2**	**-3.2**	
ARU					pmax	pmax			
	comp=Z,6.0nm,1.7s								
FINES	**FINESS Array B**	**61.74**	**334**		P	**P**	**09 19 07.9**	**-0.6**	
	comp=Z,1.6nm,0.3s,baz=34,slow=7.5,SNR=27								
PDAR	**Pinedale Array**	**64.15**	**54**		P	**P**	**09 19 26.5**	**+1.5**	
	comp=Z,0.7nm,0.7s,baz=283,slow=1.3,SNR=9.8								
WRA	**Warramunga Arr**	**70.30**	**198**		P	**P**	**09 20 04.2**	**+0.8**	
	comp=Z,0.4nm,0.6s,baz=17,slow=6.7,SNR=6.6								
WRA	**Warramunga Arr**	**70.30**	**198**	*i*	P	**P**	**09 20 04.9**	**+1.5**	
WRA	**Warramunga Arr**	**70.30**	**198**	*e*P		**P**	**09 20 04.9**	**+1.5**	
ASAR	**Alice Springs**	**74.01**	**197**		P	**P**	**09 20 28.3**	**+3.1**	
	comp=Z,0.3nm,0.4s,baz=97,slow=6.0,SNR=12								
ASAR	**Alice Springs**	**74.01**	**197**	*e*P		**P**	**09 20 28.8**	**+3.6**	
ASAR	**Alice Springs**	**74.01**	**197**	*e*P		**P**	**09 20 28.8**	**+3.6**	
TXAR	**Lajitas Array**	**77.14**	**60**		P	**P**	**09 20 45.0**	**+1.7**	
	comp=Z,0.4nm,0.6s,baz=301,slow=5.1,SNR=7.2								
PLCA	**Paso Flores**	**149.15**	**91**		PKPbc	**PKPbc**	**09 28 36.6**	**+1.3**	
	comp=Z,1.3nm,0.6s,baz=287,slow=1.8,SNR=6.1								

*ISCJB **31** 09:14:08.8±0.8,37.16N±0.06×71.67E±0.07,h106km, mb3.7/4,Error ellipse: s-maj=8.8km s-min=7.3km az=138.1*
*IDC **31** 09:14:10.0±4.1,37.11N×71.72E,h117km±28km,mb3.5/4, mb1 3.6/9,mb1mx3.2/49,mbtmp4.0/9,Error ellipse: s-maj=41.7km s-min=17.2km az=164.0*
*NNC **31** 09:14:15.0±16.0,37.42N×71.65E,h116km±363km,mb3.5, mpv4.3,Error ellipse: s-maj=143.9km s-min=127.2km az=32.0*

ISC 31 09:14:09.3±0.8,37.13N±0.07×71.67E±0.07,h106km,n18, σ2ᵖ49/25,mb3.8/4,6C-4D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MNAS	**Manas**	**5.39**	**7**	⇑P	**Pn**	**09 15 30.4**	**+3.0**
MNAS				⇑S	**Sn**	**09 16 27.2**	**-1.0**
	32nm,0.3s						
AAK	**Ala-Archa**	**5.91**	**21**	P	**Pn**	**09 15 37.3**	**+2.8**
	10nm,0.3s,baz=166,slow=6.4,SNR=24						
AAK				S	**Sn**	**09 16 41.5**	**+0.6**
	4.0nm,0.3s,baz=333,slow=19,SNR=14						
AAK	**Ala-Archa**	**5.91**	**21**	⇓P	**Pn**	**09 15 37.1**	**+2.6**
	14nm,0.5s						
AAK				⇓S	**Sn**	**09 16 40.4**	**-0.6**
	40nm,0.6s						
KK31	**Karatay Array**	**6.03**	**352**	⇓P	**Pn**	**09 15 38.9**	**+2.9**
	10nm,0.3s,baz=181,slow=14,SNR=257						
KK31				⇑S	**Sn**	**09 16 43.2**	**-0.4**
	49nm,0.3s,baz=160,slow=21						
TKM2	**Tokmak 2**	**6.52**	**26**	⇑P	**Pn**	**09 15 45.2**	**+2.4**
	17nm,0.7s						
SDNR	**Sundarnagar**	**7.12**	**141**	*e*P	**Pn**	**09 15 52.0**	**+1.1**
SDNR				*e*S	**Sn**	**09 17 07.0**	**-3.4**
GEYT	**Alibeck**	**10.80**	**278**	P	**Pn**	**09 16 41.1**	**+0.4**
	0.9nm,0.3s,baz=95,slow=16,SNR=2.2						
GEYT				S	**Sn**	**09 18 40.1**	**+0.6**
	1.4nm,0.3s,baz=108,slow=14,SNR=3.5						
MKAR	**Makanchi Array**	**12.46**	**36**	P	**Pn**	**09 17 03.4**	**+0.5**
	0.1nm,0.3s,baz=226,slow=16,SNR=6.5						
KURBB	**Kurchatov Arra**	**14.35**	**18**	P	**P**	**09 17 30.3**	**-1.0**
	0.1nm,0.3s,baz=205,slow=11,SNR=4.3						
AB31	**Akbulak array**	**14.81**	**329**	P	**Pn**	**09 17 34.6**	**+1.5**
	0.4nm,0.2s,baz=163,slow=11,SNR=4.0						
AB31				⇑S	Sn	09 20 04.0	-12
	9.9nm,0.7s,baz=160,slow=21						
AKTO	**Aktyubinsk**	**16.52**	**328**	P	**P**	**09 17 55.7**	**+0.5**
	0.6nm,0.3s,baz=139,slow=7.2,SNR=8.0						
AKTO	**Aktyubinsk**	**16.52**	**328**	⇓P	**P**	**09 17 56.3**	**+1.1**
	2.8nm,0.9s						
AKTO				⇑S	**Sn**	**09 20 48.8**	**-8.8**
	4.7nm,0.8s						
ZALV	**Zalesovo Beam**	**19.12**	**24**	P	**P**	**09 18 23.3**	**-0.4**
	1.5nm,0.3s,baz=212,slow=9.7,SNR=17						
SONM	**Songino Array**	**27.53**	**56**	P	**P**	**09 19 45.1**	**-0.9**
	0.6nm,0.4s,baz=282,slow=9.4,SNR=3.5						
FINES	**FINESS Array B**	**37.27**	**325**	P	**P**	**09 21 10.7**	**+0.3**
	0.6nm,0.4s,baz=116,slow=12,SNR=7.3						
ARCES	**ARCESS Array B**	**40.77**	**337**	P	**P**	**09 21 39.4**	**-0.1**
	0.7nm,0.5s,baz=106,slow=8.9,SNR=9.8						
NB2	**NORSAR Subarra**	**44.20**	**323**	P	**P**	**09 22 07.0**	**-0.5**
	comp=Z,0.8nm,0.5s,baz=93,slow=7.9						
NOA	**NORSAR Array B**	**44.20**	**323**	P	**P**	**09 22 07.0**	**-0.5**
	comp=Z,1.0nm,0.5s,baz=94,slow=7.7,SNR=7.3						

*ISCJB **31** 09:22:28.8±0.5,6.82N±0.04×73.07W±0.05,h159km±5km, Error ellipse: s-maj=9.4km s-min=3.9km az=40.6*
*FUNV **31** 09:22:29.7,6.76N×73.17W,h164km,MW3.1*
*RSNC **31** 09:22:32.1±0.7,6.79N×73.16W,h139km±5km,ML2.8*

ISC 31 09:22:28.6±1.3,6.81N±0.05×73.06W±0.05,h161km±8km, n26,σ1ᵖ20/41,1C-2D,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.25**	**210**	*i*P	**Pn**	**09 22 50.9**	**+0.2**
BARC				*e*S	**Sn**	**09 23 05.8**	**-1.8**
BARC				*i*		09 23 06.7	
	comp=Z,171nm,0.2s						
PAMC	**Pamplona, Colo**	**0.64**	**34**	*e*P	**Pn**	**09 22 53.8**	**+1.2**
PAMC				*e*S	**Sn**	**09 23 10.2**	**-0.7**
BRRC	**Barranca, Sant**	**0.71**	**295**	⇓*i*P	**Pn**	**09 22 52.8**	**+0.4**
BRRC				*i*		09 23 14.1	
	comp=Z,163nm,0.1s						
RUSC	**La Rusia**	**0.91**	**182**	*e*P	**Pn**	**09 22 54.9**	**+0.5**
RUSC				*e*S	**Sn**	**09 23 12.9**	**-1.2**
RUSC				*i*		09 23 15.2	
	comp=Z,89nm,0.3s						
CBRI	**Barrientos, No**	**0.94**	**16**	*e*P	**Pn**	**09 22 55.5**	**+1.3**
CBRI				*e*S	**Sn**	**09 23 13.6**	**-0.3**
CBRI				*i*		09 23 15.8	
	comp=Z,136nm,0.3s						
CAPV	**Capacho**	**1.28**	**35**	⇑*i*P	**Pn**	**09 22 59.0**	**+1.8**
CAPV				*e*S	**Sn**	**09 23 20.2**	**+1.0**
OCAC	**Ocana**	**1.45**	**350**	*e*P	**Pn**	**09 22 59.8**	**+1.0**
OCAC				*e*S	**Sn**	**09 23 21.1**	**-0.8**
OCAC				*i*		09 23 24.9	
	comp=Z,109nm,0.4s						
NORC	**Norcasia**	**2.18**	**236**	*e*P	**Pn**	**09 23 07.6**	**+1.0**
NORC				*e*S	**Sn**	**09 23 34.7**	**-1.3**
CHIC	**Chingaza**	**2.26**	**197**	*e*P	**Pn**	**09 23 08.9**	**+1.0**
CHIC				*e*S	**Sn**	**09 23 38.1**	**-0.3**
CHIC				*i*		09 23 42.1	
	comp=Z,35nm,0.3s						
ROSC	**El Rosal**	**2.32**	**213**	*e*S	**Sn**	**09 23 39.1**	**-0.4**
ROSC				*i*		09 23 45.1	
	comp=Z,67nm,0.4s						
HELC	**Santa Helena**	**2.53**	**256**	*e*P	**Pn**	**09 23 11.5**	**+0.5**
HELC				*e*S	**Sn**	**09 23 42.0**	**-1.7**
SOCV	**Socops**	**2.63**	**56**	*e*P	**Pn**	**09 23 13.4**	**+1.4**
SOCV				*e*S	**Sn**	**09 23 45.3**	**-0.1**
GUYC	**Guyana, Colomb**	**2.80**	**236**	*e*P	**Pn**	**09 23 16.0**	**+1.5**
GUYC				*e*S	**Sn**	**09 23 49.5**	**-0.4**
DBBC	**Dabeiba**	**3.13**	**274**	*e*P	**Pn**	**09 23 19.8**	**+1.6**
DBBC				*i*		09 23 57.6	
	comp=Z,5.9nm,0.2s						
PRAC	**Prado**	**3.57**	**211**	*e*P	**Pn**	**09 23 24.5**	**+0.8**
PRAC				*e*S	**Sn**	**09 24 06.1**	**-0.5**
VIRV	**Villa del Rosa**	**3.73**	**10**	*e*P	**Pn**	**09 23 25.9**	**+0.2**
VIRV				*e*S	**Sn**	**09 24 08.2**	**-2.1**
QARV	**Quebrada Arrib**	**4.21**	**36**	*e*P	**Pn**	**09 23 33.4**	**+1.4**
SANV	**Sanarito**	**4.40**	**52**	*e*P	**Pn**	**09 23 35.6**	**+1.1**
CURV	**Curarigua**	**4.42**	**44**	*e*P	**Pn**	**09 23 36.0**	**+1.2**
CURV				*e*S	**Sn**	**09 24 24.8**	**-1.6**
DABV	**Dabajuro**	**4.74**	**30**	*e*P	**Pn**	**09 23 40.3**	**+1.5**
TEPV	**Terepaima**	**4.95**	**50**	⇓*i*P	**Pn**	**09 23 43.0**	**+1.4**
SIQV	**Siquisique**	**4.99**	**40**	*e*P	**Pn**	**09 23 42.2**	**+0.1**
BAUV	**El Baul**	**5.40**	**67**	*e*P	**Pn**	**09 23 47.5**	**-0.1**
BAUV				*e*S	**Sn**	**09 24 46.9**	**-2.5**
MAPV	**Macapo**	**5.46**	**56**	*e*P	**Pn**	**09 23 49.4**	**+1.1**
MONV	**Montecano**	**5.95**	**31**	*e*P	**Pn**	**09 23 54.6**	**-0.3**
TURV	**Turiamo**	**6.30**	**55**	*e*P	**Pn**	**09 23 59.8**	**+0.4**

*NIED **31** 09:34:00,37.60N×141.30E,h38km,Mw3.4 Best double couple: Mo1.36000×10¹⁴ NP1:φ₀279.00000°,δ61.00000°, λ-161.00000°. NP2:φ₀180.00000°,δ74.00000°, λ-30.00000°.*

JMA 31 09:34:15.8±0.1,37.54N×141.33E,h27km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.40**	**245**	P	Pb	09 34 24.4	-0.1
JFK				S	Sb	09 34 30.2	-0.3
JMM	**Marumori**	**0.54**	**308**	P	Pb	09 34 26.2	-0.5
JMM				S	Sb	09 34 33.7	-0.4
ONAJ	**Iwakimizuishiy**	**0.61**	**224**	P	Pb	09 34 27.3	-0.6
ONAJ				S	Sb	09 34 35.8	-0.4
JFT	**Otama**	**0.79**	**269**	P	Pb	09 34 30.9	-0.1
JFT				S	Sb	09 34 41.3	0.0
JIO	**Ouri**	**0.91**	**1**	P	Pn	09 34 32.0	-0.9
JIO				S	Sb	09 34 43.3	-1.5
JOU	**Okura**	**0.98**	**328**	P	Pn	09 34 33.7	-0.1
JOU				S	Sb	09 34 46.5	-0.2
JYS	**Shirataka**	**1.21**	**305**	P	Pb	09 34 37.6	-0.4
JYS				S	Sb	09 34 53.5	+0.2
JFY	**Yanaizu**	**1.30**	**265**	P	Pb	09 34 39.1	-0.5
JFY				S	Sb	09 34 56.0	+0.1
JMK	**Ichinoseki**	**1.41**	**357**	P	Pn	09 34 39.7	0.0
JMK				S	Sn	09 34 58.8	-0.6
MAT	**Matsushiro**	**2.69**	**249**	P	Pn	09 34 58.9	+1.6
MAT				S	Sb	09 35 33.9	-1.9

*ISCJB **31** 09:47:03.7±0.6,31.83N±0.02×115.02W±0.04,h16km±9km, Error ellipse: s-maj=6.4km s-min=4.0km az=172.1*
*NEIC **31** 09:47:03.5,31.83N×114.89W,h2km,ML2.8(PAS), ML2.7(ECX),After ECX.*
*ECX **31** 09:47:03.4±0.4,31.83N×114.89W,h12km,MD2.7,ML2.9*
*MEX **31** 09:47:04.6±0.6,31.81N×114.95W,h4km±8km,MD3.8*

ISC 31 09:47:02.0±1.0,31.84N±0.03×114.88W±0.03, h26km±11km,n35,σ0ᵖ89/48,2C-1D,Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ECBX	**El Chinero**	**0.39**	**202**	⇓*e*P	**Pb**	**09 47 10.4**	**0.0**
ECBX				*i* P	**Pb**	**09 47 10.4**	**0.0**
ECBX				*i* S	**Sb**	**09 47 15.8**	**-0.4**
ECBX				*i* S	**Sb**	**09 47 15.8**	**-0.4**
ECBX				AMP		09 47 16.1	
ECBX				IAML		09 47 16.2	
	comp=E,1μm,0.6s						
MBIG	**Mexicali**	**0.63**	**335**	*i* P	**Pn**	**09 47 16.6**	**+1.3**
MBIG				*i* S	**Sn**	**09 47 24.9**	**+0.4**
CPBX	**Cerro Prieto**	**0.68**	**328**	*e*P	**Pn**	**09 47 15.8**	**-0.2**
CPBX				*e*S	**Sn**	**09 47 24.9**	**-0.9**
CPBX	**Cerro Prieto**	**0.68**	**328**	*e*P	**Pb**	**09 47 15.0**	**-0.3**
CPBX				*e*S	**Sn**	**09 47 25.4**	**-0.4**
EMSC	**East Mesa**	**0.90**	**354**	*e*P	**Pn**	**09 47 19.1**	**0.0**
EMSC	**East Mesa**	**0.90**	**354**	*e*P	**Pn**	**09 47 19.1**	**0.0**
SPX	**San Pedro Mart**	**0.93**	**212**	IAML		09 47 33.4	
	comp=N,163nm,0.2s						
SPX	**San Pedro Mart**	**0.93**	**212**	*e*P	**Pb**	**09 47 19.4**	**-0.4**
SPX				*e*S	**Sb**	**09 47 31.7**	**-0.2**
SPIG	**San Pedro Mart**	**0.94**	**213**	*e*P	**Pn**	**09 47 20.1**	**+0.3**
SPIG				*e*S	**Sb**	**09 47 32.4**	**+0.5**
SPIG	**San Pedro Mart**	**0.94**	**213**	*e*P	**Pn**	**09 47 20.0**	**+0.3**
SPIG	**San Pedro Mart**	**0.94**	**213**	*e*P	**Pn**	**09 47 20.5**	**+0.8**
SPIG				*e*S	**Sn**	**09 47 32.9**	**+0.4**
SGL	**Mount Signal**	**1.08**	**319**	*e*P	**Pn**	**09 47 22.2**	**+0.7**
SGL	**Mount Signal**	**1.08**	**319**	*e*P	**Pn**	**09 47 22.2**	**+0.7**
WESC	**Westside Schoo**	**1.17**	**322**	*e*P	**Pb**	**09 47 24.0**	**+0.5**
WESC	**Westside Schoo**	**1.17**	**322**	*e*P	**Pb**	**09 47 24.0**	**+0.5**
YUH	**Yuha Desert**	**1.20**	**313**	⇑*i*P	**Pb**	**09 47 24.1**	**0.0**
YUH	**Yuha Desert**	**1.20**	**313**	*i* P	**Pb**	**09 47 24.1**	**0.0**
GLA	**Glamis**	**1.21**	**2**	P	**Pb**	**09 47 23.3**	**-1.0**
	baz=182,SNR=128						
IKP	**In-Ko-Pah, Jac**	**1.32**	**308**	Pb	**Pb**	**09 47 26.2**	**+0.1**
	baz=128,SNR=22						
IKP				S	**Sb**	**09 47 42.2**	**-0.5**
	baz=128						
IKP	**In-Ko-Pah, Jac**	**1.32**	**308**	⇑*e*P	**Pb**	**09 47 26.2**	**+0.1**
ECNX	**Esteban Cantu**	**1.47**	**263**	*e*P	**Pb**	**09 47 28.3**	**-0.5**
ECNX	**Esteban Cantu**	**1.47**	**263**	*e*P	**Pb**	**09 47 28.3**	**-0.5**
PBX	**Punta Banda**	**1.57**	**267**	*e*P	**Pb**	**09 47 30.1**	**-0.3**
PBX	**Punta Banda**	**1.57**	**267**	*e*P	**Pb**	**09 47 30.1**	**-0.3**
CBX	**Cerro Bola**	**1.59**	**288**	*e*P	**Pn**	**09 47 29.1**	**+0.6**
CBX				*e*S	**Sn**	**09 47 48.0**	**-0.3**
CBX	**Cerro Bola**	**1.59**	**288**	*e*P	**Pb**	**09 47 30.2**	**-0.5**
CBX				IAML		09 47 54.1	
	comp=N,205nm,0.7s						
CBX	**Cerro Bola**	**1.59**	**288**	*e*P	**Pb**	**09 47 30.2**	**-0.5**
CBX				*e*S	**Sn**	**09 47 48.0**	**-0.3**
TJIG	**Tijuana**	**1.63**	**292**	*e*P	**Pn**	**09 47 28.9**	**-0.2**
TJIG				*i* S	**Sn**	**09 47 48.7**	**-0.7**
TJIG	**Tijuana**	**1.63**	**292**	*e*P	**Pb**	**09 47 30.8**	**-0.7**
MONP2	**Monument Peak**	**1.68**	**309**	Pb	**Pb**	**09 47 32.6**	**+0.3**
	baz=129,SNR=14						
214A	**Organ Pipe Nat**	**1.76**	**86**	P	**Pb**	**09 47 32.5**	**-1.2**
	baz=266						
214A	**Organ Pipe Nat**	**1.76**	**86**	*e*Pn	**Pb**	**09 47 32.3**	**-1.3**
214A				*e*Sn	**Sb**	**09 47 59.4**	**+4.0**
109C	**Camp Elliot, M**	**2.15**	**300**	P	Pn	**09 47 37.0**	**+0.7**
	baz=119,SNR=6.9						
PFO	**Pinyon Flats O**	**2.21**	**323**	*e*Pn	**Pb**	**09 47 39.8**	**-1.6**
TUC	**Tucson**	**3.51**	**81**	*e*Pn	**Pb**	**09 48 01.9**	**-1.6**
TUC				*e*Sn	Sb	09 48 54.1	+8.4

*ISCJB **31** 09:48:04.8±1.7,52.1N±0.4×174.9E±0.2,h33km,mb3.7/8, MS2.5/1,Error ellipse: s-maj=52.3km s-min=14.0km az=178.2*
*IDC **31** 09:48:09.2±4.7,52.26N×174.90E,h54km±42km,mb3.4/8, mb1 3.7/9,mb1mx3.4/48,mbtmp3.7/9,ML2.6/1,MS2.7/3, Ms1 2.7/3,ms1mx2.4/32,Error ellipse: s-maj=59.2km s-min=19.1km az=2.0*

**ISC 31 09:48:07.7±1.9,52.4N±0.4×174.84E±0.09,h35km,n17, σ

σ2^{s}80/69, mb4.4/21, MS3.7/9, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FAKI	**Fak Fak**	**2.59**	**326**	*e*Pn	**Pn**	**09 49 58.2**	**-2.0**
FAKI				*e*Sn	**Sn**	09 50 28.9	**-2.0**
SAUI	**Saumlaki**	**3.73**	**219**	*e*Pn	**Pn**	**09 50 19.6**	**+3.7**
SAUI				*e*Sn	**Sb**	09 51 08.0	**-1.9**
SIJI	**Sorong** 31nm,0.3s,baz=190,slow=5.6,SNR=2.8	**4.84**	**330**	Pn	**Pn**	**09 50 29.1**	**-2.0**
SIJI				Sn	**Sn**	09 51 18.2	**-8.3**
JAY	**Jayapura** 0.3nm,0.3s,baz=260,slow=22,SNR=7.3	**7.45**	**70**	Pn	**Pn**	**09 51 06.0**	**-1.1**
JAY				Sn	**Sn**	09 52 28.2	**-2.6**
MTN	**Manton Dam** 0.1nm,0.3s,baz=266,slow=23,SNR=3.4	**8.11**	**198**	*e*Pn	**Pn**	**09 51 18.1**	**+2.0**
SOEI	**Soe**	**10.43**	**243**	*e*Pn	**Pn**	**09 51 48.3**	**+0.2**
SOEI				*e*Sn	**Sn**	09 53 48.4	**+4.0**
LUWI	**Luwuk**	**11.62**	**290**	*e*Pn	**Pn**	**09 52 02.5**	**-1.7**
COEN	**Coen**	**12.85**	**134**	*e*Pn	**Pn**	**09 52 18.9**	**-2.1**
PMG	**Port Moresby** comp=Z,580nm,18.5s,baz=298,slow=44	**14.03**	**109**	LR	LR	09 59 37.5	
WRAB	**Tennant Creek**	**14.77**	**178**	*e*Pn	**Pn**	**09 52 45.0**	**-2.3**
WRA	**Warramunga Arr** 1.2nm,0.3s,baz=358,slow=13,SNR=46	**14.78**	**178**	Pn	**Pn**	**09 52 44.7**	**-2.7**
WRA				Sn	**Sn**	09 55 24.6	**-5.9**
WB2	**Warramunga Arr** 2.1nm,0.3s,baz=360,slow=22,SNR=11	**14.78**	**178**	*e*Pn	**Pn**	**09 52 45.1**	**-2.3**
WC3	**Warramunga Arr**	**14.80**	**177**	*e*Pn	**Pn**	**09 52 44.9**	**-2.7**
FITZ	**Fitzroy Crossi** 3.2nm,0.3s,baz=33,slow=10,SNR=45	**15.14**	**211**	Pn	**Pn**	**09 52 49.6**	**-2.6**
FITZ				Sn	**Sn**	09 55 30.7	**-8.6**
FITZ	**Fitzroy Crossi** 4.0nm,0.3s,baz=153,slow=10,SNR=29	**15.14**	**211**	*e*Pn	**Pn**	**09 52 50.0**	**-2.3**
FITZ				LR	LR	09 59 41.9	
FITZ	**Fitzroy Crossi** comp=Z,188nm,18.6s,baz=28,slow=41 32nm,1.4s	**15.14**	**211**	*e*Pn	**Pn**	**09 52 50.0**	**-2.3**
FITZ				Sn	**Sn**	09 55 30.7	**-8.6**
AS01	**Alice Springs**	**18.47**	**179**	*e*P	**P**	**09 53 34.8**	**+0.8**
AS31	**Alice Springs** 6.9nm,0.8s	**18.47**	**179**	*e*P	**P**	**09 53 34.7**	**+0.6**
ASAR	**Alice Springs** 1.0nm,0.3s,baz=3.6,slow=9.2,SNR=84	**18.47**	**179**	P	**P**	**09 53 34.5**	**+0.4**
ASAR				S	**Sn**	09 56 53.0	**-7.2**
ASAR	0.7nm,0.3s,baz=3.4,slow=26,SNR=9.2			LR	LR	10 02 06.0	
CTA	**Charters Tower** 0.8nm,0.3s,baz=322,slow=11,SNR=10	**19.28**	**142**	P	**Pn**	**09 53 44.4**	**+0.4**
CTAO	**Charters Tower** 30nm,1.3s	**19.28**	**142**	*e*P	**Pn**	**09 53 44.9**	**+0.9**
JAGI	**Jajag, Banyuwa** 43nm,1.0s	**19.69**	**259**	*e*P	**Pn**	**09 53 48.8**	**-0.2**
KKM	**Kota Kinabalu** 22nm,1.2s	**20.66**	**302**	*e*P	**P**	**09 53 57.6**	**-0.5**
MBWA	**Marble Bar** 17nm,0.9s	**20.95**	**219**	*e*P	**P**	**09 54 03.4**	**+2.3**
GUMO	**Guam** comp=Z,77nm,18.7s,baz=210,slow=37	**21.62**	**31**	LR	LR	10 02 30.2	
SBUM	**Sibu** 14nm,1.0s	**22.72**	**289**	*e*P	**P**	**09 54 20.1**	**0.0**
KSM	**Kuching** 15nm,1.0s	**24.25**	**285**	*e*P	**P**	**09 54 35.5**	**+0.4**
FORT	**Forrest** 341nm,1.0s	**26.10**	**191**	*e*P	**P**	**09 54 56.7**	**+4.9**
HNR	**Honiara** comp=Z,195nm,18.8s,baz=286,slow=39	**26.39**	**101**	LR	LR	10 06 16.0	
STKA	**Stephens Creek** 2.0nm,0.5s,baz=346,slow=11,SNR=7.2	**27.66**	**165**	P	**P**	**09 55 07.5**	**+1.7**
STKA	**Stephens Creek** 4.7nm,1.5s	**27.66**	**165**	*e*P	**P**	**09 55 07.2**	**+1.4**
ARMA	**Armidale** 32nm,1.9s	**30.34**	**148**	*e*P	**P**	**09 55 32.8**	**+3.0**
NWAO	**Narrogin (SRO)** comp=Z,310nm,21.5s,baz=224,slow=40	**31.67**	**207**	LR	LR	10 10 13.0	
CM01	**Chiang Mai Arr**	**41.45**	**305**	*e*P	**P**	**09 57 04.8**	**-0.2**
MJAR	**Matsushiro Arr** comp=Z,103nm,19.6s,baz=170,slow=33	**41.63**	**5**	LR	LR	10 12 16.8	
XAN	**Xi'an** comp=Z,6.0nm,1.5s	**45.41**	**331**	P	**P**	**09 57 33.5**	**-3.2**
XAN				pmax	pmax		
USRK	**Ussuriysk Ar.** comp=Z,2.5nm,0.6s,baz=184,slow=7.1,SNR=5.7	**49.09**	**358**	P	**P**	**09 58 04.7**	**-0.4**
HHC	**Hu-ho-hao-te** comp=Z,20nm,1.1s	**50.01**	**338**	*e*P	**P**	**09 58 14.0**	**+1.6**
HHC				pmax	pmax		
RPZ	**Rata Peaks** comp=Z,223nm,18.6s,baz=316,slow=37	**50.60**	**145**	LR	LR	10 20 33.8	
KLR	**Kul'dur** comp=Z,1.4nm,0.6s,baz=307,slow=5.2,SNR=6.2	**54.12**	**358**	P	**P**	**09 58 42.8**	**+0.1**
GTA	**Gaotai**	**54.20**	**328**	*e*P	**P**	**09 58 44.3**	**+0.7**
GTA				pP	pP	09 58 51.8	+0.4
GTA				sP	sP	09 58 55.3	+0.9
GTA				pmax	pmax		
SONM	**Songino Array** comp=Z,0.2nm,0.4s,baz=141,slow=7.3,SNR=2.8	**57.91**	**339**	P	**P**	**09 59 08.4**	**-1.6**
SONM				LR	LR	10 24 01.3	
PEA0	**Petropavlovsk-** comp=Z,56nm,21.0s,baz=100,slow=36	**61.42**	**16**	*e*P	**P**	**09 59 34.7**	**+0.7**
PETK	**Petropavlovsk-** comp=Z,1.1nm,0.7s,baz=134,slow=4.3,SNR=3.9	**61.42**	**16**	P	**P**	**09 59 34.1**	**+0.2**
WMQ	**Urumqi**	**63.38**	**320**	*e*P	**P**	**09 59 52.5**	**+1.8**
MK01	**Makanchi Array**	**68.70**	**325**	*e*P	**P**	**10 00 21.8**	**+0.4**
MK31	**Makanchi Array**	**68.72**	**325**	*e*P	**P**	**10 00 22.4**	**+0.9**
MKAR	**Makanchi Array** comp=Z,0.4nm,0.3s,baz=111,slow=8.6,SNR=10	**68.72**	**325**	P	**P**	**10 00 22.0**	**+0.5**
MKAR	**Makanchi Array**	**68.72**	**325**	*e*P	**P**	**10 00 22.4**	**+0.9**
MAKZ	**Makanchi** comp=Z,6.0nm,1.2s	**68.91**	**325**	*e*P	**P**	**10 00 23.6**	**+0.9**
KSH	**Kashi**	**69.16**	**316**	*e*P	**P**	**10 00 27.8**	**+3.2**
KSH				*es*P	sP	10 00 39.0	+3.5
KSH				PcS		10 04 56.0	
KSH				S	**S**	**10 09 30.0**	**+0.9**
KSH				ScS	**SKSac**	**10 10 23.0**	**-0.3**
KSH				pmax	pmax		
SEY	**Seymchan** comp=Z,2.7nm,0.9s,baz=123,slow=3.7,SNR=5.9	**69.31**	**9**	P	**P**	**10 00 25.1**	**+0.3**
ZALV	**Zalesovo Beam** comp=Z,0.9nm,0.6s,baz=131,slow=6.5,SNR=4.2	**71.57**	**332**	P	**P**	**10 00 37.7**	**-1.1**
VNDA	**Vanda** comp=Z,1.5nm,0.9s,baz=295,slow=4.7,SNR=4.1	**73.92**	**174**	P	**P**	**10 00 53.4**	**+1.0**
VNDA	**Vanda** comp=Z,18nm,1.8s	**73.92**	**174**	*e*P	**P**	**10 00 54.4**	**+2.0**
PPT	**Papeete** comp=Z,32nm,18.2s,baz=310,slow=36	**75.85**	**107**	LR	LR	10 34 31.3	
MAW	**Mawson** comp=Z,2.5nm,0.9s,baz=8.2,slow=7.3,SNR=3.7	**78.07**	**202**	P	**P**	**10 01 19.4**	**+3.3**
MAW				LR	LR	10 33 02.3	
NRIK	**Noril'sk** comp=Z,72nm,21.4s,baz=142,slow=37	**80.64**	**345**	LR	LR	10 38 21.9	
GEYT	**Alibeck** comp=Z,1.9nm,0.8s,baz=111,slow=6.3,SNR=2.7	**81.82**	**309**	P	**P**	**10 01 38.4**	**+1.3**
TT01	**Tatalina**	**85.67**	**26**	*e*P	**P**	**10 01 57.1**	**+0.9**
CAST	**Castle Rocks** comp=Z,3.6nm,0.7s	**87.53**	**26**	*e*P	**P**	**10 02 06.8**	**+1.4**
ILAR	**Eielson Array** comp=Z,0.4nm,0.8s,baz=264,slow=4.5,SNR=4.4	**90.07**	**25**	P	**P**	**10 02 17.5**	**+0.2**
CRVS	**Cervenica-Dubn**	**108.35**	**320**	*e*PDIFF	**Pdif**	**10 03 39.3**	**-0.9**
TX31	**Lajitas Ar. Si**	**120.80**	**59**	*e*PKPdf	**PKPdf**	**10 08 11.5**	**+0.7**
TORD	**Torodi Ar. Bea** comp=Z,0.7nm,0.7s,baz=9.5,slow=1.2,SNR=4.8	**132.00**	**283**	PKP	**PKPdf**	**10 08 34.4**	**+2.1**
CPUP	**Villa Florida** comp=Z,3.1nm,0.9s,baz=355,slow=2.0,SNR=5.9	**146.99**	**162**	PKPbc	**PKPab**	**10 09 03.0**	**+0.5**
LPAZ	**La Paz** comp=Z,2.1nm,0.8s,baz=140,slow=0.9,SNR=10.0	**149.72**	**135**	PKPbc	**PKPbc**	**10 09 11.0**	**+1.7**

IDC 31 10:10:49.1±2.2, 5.75S×153.74E, h0^{km}, mb3.4/3, mb1 3.7/3, mb1mx3.4/30, mbtmp3.4/3, Error ellipse: s-maj=145.4km s-min=29.8km az=129.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr** 0.7nm,0.7s,baz=58,slow=10,SNR=6.5	**23.55**	**231**	P	P	10 16 01.8	+0.3
ASAR	**Alice Springs** 0.4nm,0.7s,baz=60,slow=8.9,SNR=9.6	**26.11**	**225**	P	P	10 16 24.9	-0.2
ILAR	**Eielson Array** 0.3nm,0.7s,baz=255,slow=5.5,SNR=4.6	**82.68**	**22**	P	P	10 23 14.3	-0.1

MEX 31 10:19:45.2±0.6, 19°32N×103°83W, h49^{km}±8^{km}, MD3.5, Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
R15V		**0.20**	**223**	*e*P	Pn	10 19 52.1	-1.5
R15V				*e*S	Sn	10 19 57.8	-1.8
EZ5V		**0.27**	**54**	*e*P	Pn	10 19 53.2	-1.2
EZ5V				*e*S	Sn	10 19 58.8	-2.1
ANIG	**Ahuacatlan**	**1.84**	**340**	*e*P	Pn	10 20 12.0	-2.5
ANIG				*e*S	Sn	10 20 34.6	-2.0

KRSC 31 10:26:39.6±1.1, 55.34N×166.06E, h35^{km}±10^{km}, ML3.7, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**0.15**	**199**	*e*P	Pn	10 26 46.1	+0.2
BKI				*e*S	Sn	10 26 51.2	+0.9
MKZ	**Mys Kozlova**	**2.62**	**254**	*e*P	Pn	10 27 22.8	+3.5
MKZ				*e*S	Sn	10 27 54.5	+4.7
SMKR	**Semkarok**	**2.86**	**298**	*e*P	Pn	10 27 25.2	+2.4
BDR	**Baidarnaya**	**2.99**	**296**	*e*P	Pn	10 27 27.4	+2.9
TUMR	**Tumrok**	**3.38**	**271**	*e*P	Pn	10 27 34.7	+4.8
SPN	**Mys Shipunski**	**4.20**	**240**	*e*P	Pn	10 27 45.0	+4.0
SPN				*e*S	Sn	10 28 32.9	+4.2
SDLR	**Sedlovina**	**4.68**	**247**	*e*P	Pn	10 27 52.8	+5.0
KRER	**Koryakskii**	**4.74**	**247**	*e*P	Pn	10 27 53.6	+4.9
UGLR	**Uglovaya**	**4.75**	**246**	*e*P	Pn	10 27 53.7	+5.0
AVH	**Avacha**	**4.76**	**247**	*e*P	Pn	10 27 54.0	+5.1
GNL	**Ganaly**	**5.01**	**254**	*e*P	Pn	10 27 57.7	+5.4
RUS	**Russkaya**	**5.33**	**240**	*e*P	Pn	10 28 00.9	+4.3
ASAK	**Asacha**	**5.66**	**242**	*e*P	Pn	10 28 06.7	+5.4

*ISCJB **31** 10:32:23.8±0.7, 34.82S±0.04×71.92W±0.09, h53^{km}±7^{km}, mb3.6/3, Error ellipse: s-maj=12.7km s-min=5.6km az=15.0*
*GUC **31** 10:32:24.7±0.5, 34.82S×71.84W, h44km±1^{km}, ML4.1*
*NEIC **31** 10:32:24.0, 34.82S×71.84W, h44^{km}, MG4.1(GUC), After GUC.*
NEIC Felt [IV] at Curico and Romeral; [III] at Duao, Iloca, Molina, Pencahue and Rio Claro; [II] at Talca.
*IDC **31** 10:32:24.4±1.4, 34.89S×69.70W, h0^{km}, mb3.6/3, mb1 3.9/5, mb1mx3.7/21, mbtmp3.6/5, ML4.0/2, MS2.5/1, Ms1 2.5/1, ms1mx2.2/21, Error ellipse: s-maj=54.5km s-min=21.0km az=96.0*
ISC 31 10:32:24.2±1.0, 34.80S±0.04×71.91W±0.08, h50^{km}±11^{km}, n20, σ1^{s}26/25, mb3.6/3, 5C-6D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.42**	**349**	↑*i*P	**Pn**	**10 32 34.4**	**0.0**
CHPI				*i* S	**Sn**	**10 32 42.2**	**+0.4**
TALC	**Talca**	**0.64**	**159**	↑*i*P	**Pn**	**10 32 36.8**	**-0.3**
TALC				*i* S	**Sn**	**10 32 45.9**	**-0.5**
COCH	**Cobquecura**	**1.51**	**208**	↑*i*P	**Pn**	**10 32 49.4**	**+0.8**
COCH				↓*i*P	**Pn**	**10 32 49.6**	**+0.8**
RCDM	**Rinconada Maip**	**1.60**	**35**	↓*i*P	**Pn**	**10 32 50.2**	**+0.1**
RCDM				*i* S	**Sn**	**10 33 09.5**	**0.0**
ANTU	**Antumapu**	**1.62**	**41**	↓*i*P	**Pn**	**10 32 50.9**	**+0.5**
ANTU				*i* S	**Sn**	**10 33 10.4**	**+0.3**
ANTU	comp=E,4μm,0.3s			IAML		10 33 13.8	
FSR	**Penalolen**	**1.75**	**41**	↓*i*P	**Pn**	**10 32 52.9**	**+0.7**
FSR				*i* S	**Sn**	**10 33 14.8**	**+1.5**
CCHI	**Chillan** comp=E,2μm,0.7s	**1.80**	**184**	IAML		10 33 27.6	
CLCH	**Cerro Calan**	**1.81**	**39**	↑*i*P	**Pn**	**10 32 53.4**	**+0.5**
CLCH				*i* S	**Sn**	**10 33 15.7**	**+1.0**
CLCH	comp=N,4μm,0.3s			IAML		10 33 20.0	
YECH	**El Yeso** comp=N,2μm,0.6s	**1.89**	**54**	IAML		10 33 15.6	
PEL	**Peldehue**	**1.94**	**32**	↑*i*P	**Pn**	**10 32 55.6**	**+0.8**
PEL				*i* S	**Sn**	**10 33 19.2**	**+1.2**
PEL	comp=N,3μm,0.2s			IAML		10 33 25.9	
ROCH	**El Roble**	**1.97**	**23**	↓*i*P	**Pn**	**10 32 56.3**	**+1.0**
ROCH	comp=N,2μm,0.5s			IAML		10 33 25.6	
FCH	**Farellones**	**1.99**	**43**	↓*i*P	**Pn**	**10 32 56.2**	**+0.5**
FCH				*i* S	**Sn**	**10 33 20.5**	**+0.9**
FCH	comp=N,3μm,0.2s			IAML		10 33 24.3	
LCO	**Las Campanas**	**5.86**	**10**	*e*Pn	**Pn**	**10 33 48.4**	**-0.4**
LCO				*e*Sn	Sn	10 35 08.2	+13
PLCA	**Paso Flores** comp=N,1.0nm,0.3s,baz=357,slow=11,SNR=7.9	**6.02**	**170**	Pn	**Pn**	**10 33 52.7**	**+2.0**
PLCA				Lg	Lg	10 35 28.5	
	baz=280,slow=22,SNR=1.7						
TRQA	**Tornquist**	**8.64**	**115**	*e*Pn	**Pn**	**10 34 27.6**	**+1.1**
CPUP	**Villa Florida** comp=N,19nm,19.6s,baz=226,slow=37	**15.12**	**60**	LR	LR	10 40 47.8	
LPAZ	**La Paz** comp=N,0.2nm,0.3s,baz=167,slow=5.7,SNR=5.5	**18.75**	**11**	P	**Pn**	**10 36 41.7**	**+1.3**
SIV	**San Ignacio** comp=N,1.9nm,0.6s,baz=219,slow=9.7,SNR=3.7	**21.11**	**30**	P	**P**	**10 37 00.7**	**-4.0**
TXAR	**Lajitas Array** comp=N,0.3nm,0.5s,baz=156,slow=8.6,SNR=5.8	**70.48**	**331**	P	P	10 43 47.4	+14
TORD	**Torodi Ar. Bea** comp=N,0.6nm,0.8s,baz=239,slow=3.8,SNR=3.7	**84.38**	**70**	P	**P**	**10 44 51.5**	**+0.1**

*ISCJB **31** 10:47:08.5±0.1, 23.82S±0.04×179.89E±0.05, h526^{km}, mb4.4/136, Error ellipse: s-maj=6.2km s-min=3.7km az=35.9*
*NEIC **31** 10:47:08.6±0.5, 23.82S×179.96E, h519^{km}±5^{km}, mb4.5/131, Error ellipse: s-maj=5.3km s-min=3.8km az=128.0*
*IDC **31** 10:47:08.6±1.4, 23.65S×179.96E, h517^{km}±14^{km}, mb3.7/16, mb1 3.8/18, mb1mx3.6/44, mbtmp4.5/18, Error ellipse: s-maj=14.8km s-min=12.0km az=156.0*
ISC 31 10:47:09.0±0.3, 23.86S±0.06×179.97W±0.07, h526^{km}, n259, σ1^{s}11/273, mb4.5/136, 18C-14D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island** 108nm,0.3s,baz=256,slow=24,SNR=4.1	**5.67**	**162**	P	**P**	**10 48 42.8**	**-0.4**
RAO				S	**S**	**10 49 55.1**	**-5.3**
	39nm,0.3s,baz=58,slow=17,SNR=2.4						
RAO	**Raoul Island**	**5.67**	**162**	*e*P	**P**	**10 48 45.2**	**+1.9**
MSVF	**Nonsavu**	**6.38**	**343**	*e*P	**P**	**10 48 48.3**	**-1.9**
OUZ	**Omahuta**	**12.62**	**205**	*e*P	**P**	**10 49 56.9**	**+3.1**
DZM	**Mont Dzumac** 0.7nm,0.3s,baz=184,slow=19,SNR=8.5	**12.65**	**275**	P	**P**	**10 49 55.1**	**+0.6**
MXZ	**Matakaoa Point**	**13.73**	**186**	*e*P	**P**	**10 50 04.5**	**-0.9**
URZ	**Urewera** 6.6nm,0.3s,baz=359,slow=3.3,SNR=36	**14.56**	**189**	P	**P**	**10 50 11.7**	**-2.4**
URZ				S	**S**	**10 52 44.3**	**-2.5**
	1.0nm,0.3s,baz=71,slow=22,SNR=11						
URZ	**Urewera**	**14.56**	**189**	*e*P	**P**	**10 50 11.5**	**-2.6**
URZ				*e*S	**S**	**10 52 47.2**	**+0.4**
BKZ	**Black Stump Fm** 17nm,0.8s	**15.55**	**190**	*e*P	**P**	**10 50 21.8**	**-2.6**
BFZ	**Birch Farm** 57nm,1.3s	**17.07**	**190**	*e*P	**P**	**10 50 38.8**	**-0.5**
SNZO	**South Karori** 53nm,1.1s	**17.96**	**193**	*e*P	**P**	**10 50 47.0**	**-0.4**
THZ	**Tophouse** 21nm,0.5s	**18.81**	**197**	*e*P	**P**	**10 50 56.2**	**+0.9**
KHZ	**Kahutara** 131nm,1.8s	**19.27**	**195**	*e*P	**P**	**10 50 59.3**	**-0.1**
LTZ	**Lake Taylor** 32nm,0.5s	**19.93**	**197**	*e*P	**P**	**10 51 05.5**	**0.0**
OXZ	**Oxford** 27nm,0.8s	**20.50**	**197**	*e*P	**P**	**10 51 10.3**	**-0.3**
CRLZ	**Canterbury Las** 176nm,1.8s	**20.59**	**195**	*e*P	**P**	**10 51 12.1**	**+0.7**
MQZ	**McQueen's Vall** 70nm,1.7s	**20.70**	**195**	*e*P	**P**	**10 51 11.9**	**-0.4**
RPZ	**Rata Peaks** 11nm,0.5s,baz=20,slow=1.6,SNR=16	**21.13**	**198**	P	**P**	**10 51 18.6**	**+2.3**
RPZ	**Rata Peaks** 20nm,1.1s	**21.13**	**198**	*e*P	**P**	**10 51 16.6**	**+0.3**
FOZ	**Fox Glacier** 74nm,1.5s	**21.35**	**201**	*e*P	**P**	**10 51 18.9**	**+0.7**
LBZ	**Lake Benmore** 84nm,1.8s	**22.00**	**199**	*e*P	**P**	**10 51 23.1**	**-1.0**
ODZ	**Otahua Downs**	**22.47**	**198**	*e*P	**P**	**10 51 28.1**	**-0.2**
	62nm,1.6s						
WKZ	**Wanaka** 189nm,1.9s	**22.76**	**201**	*e*P	**P**	**10 51 30.5**	**-0.5**
MLZ	**Mavora Lakes** 143nm,1.9s	**23.54**	**201**	*e*P	**P**	**10 51 38.8**	**+1.0**
DCZ	**Deep Cove** 187nm,1.9s	**23.95**	**203**	*e*P	**P**	**10 51 42.6**	**+1.1**
HNR	**Honiara** 64nm,0.9s	**23.96**	**303**	*e*P	**P**	**10 51 40.5**	**-1.5**
WHZ	**Wether Hill Ro** 85nm,1.7s	**24.05**	**201**	*e*P	**P**	**10 51 43.5**	**+1.1**
ARMA	**Armidale** 22nm,1.8s	**26.07**	**249**	*e*P	**P**	**10 52 01.2**	**+0.7**
EIDS	**Eidsvold** 27nm,1.6s	**26.34**	**261**	*e*P	**P**	**10 52 03.9**	**+0.9**
CTA	**Charters Tower** 20nm,0.3s,baz=95,slow=11,SNR=110	**31.51**	**270**	P	**P**	**10 52 48.5**	**+0.6**
CTAO	**Charters Tower** 23nm,0.4s	**31.51**	**270**	*e*P	**P**	**10 52 48.5**	**+0.6**
STKA	**Stephens Creek** 0.8nm,0.4s,baz=103,slow=13,SNR=3.0	**34.77**	**248**	P	**P**	**10 53 16.3**	**+0.9**
STKA	1.4nm,0.4s,baz=56,slow=4.5,SNR=5.2			PcP	**PcP**	**10 55 35.1**	**+1.1**
STKA	**Stephens Creek** 5.2nm,1.8s	**34.77**	**248**	*e*P	**P**	**10 53 16.2**	**+0.9**
COEN	**Coen** 45nm,1.6s	**36.14**	**279**	*e*P	**P**	**10 53 27.8**	**+0.8**
BBOO	**Buckleboo** 101nm,1.8s	**39.49**	**247**	*e*P	**P**	**10 53 54.2**	**+0.1**
AS01	**Alice Springs**	**42.03**	**261**	*e*P	**P**	**10 54 15.2**	**+0.7**
AS31	**Alice Springs** 2.5nm,1.4s	**42.07**	**261**	*e*P	**P**	**10 54 15.2**	**+0.3**
ASAR	**Alice Springs** 4.3nm,1.0s,baz=95,slow=7.5,SNR=73	**42.07**	**261**	P	**P**	**10 54 14.8**	**-0.1**
ASAR	0.9nm,0.7s,baz=94,slow=5.3,SNR=4.4			PcP	**PcP**	**10 55 57.4**	**-0.2**
ASAR	4.9nm,0.8s,baz=109,slow=4.3,SNR=28			ScP	**ScP**	**10 59 01.1**	**+3.2**
WB2	**Warramunga Arr** 31nm,1.8s	**42.43**	**266**	*e*P	**P**	**10 54 17.4**	**-0.3**
WB2				*e*S	**S**	**10 59 58.6**	**-2.8**
WRAB	**Tennant Creek** 42nm,1.9s	**42.43**	**266**	*e*P	**P**	**10 54 17.1**	**-0.6**
WRA	**Warramunga Arr** 2.5nm,0.3s,baz=90,slow=5.9,SNR=275	**42.44**	**266**	P	**P**	**10 54 17.2**	**-0.5**
WRA	0.6nm,0.5s,baz=94,slow=3.7,SNR=5.0			PcP	**PcP**	**10 55 59.2**	**+0.4**
WRA	3.2nm,0.8s,baz=100,slow=4.0,SNR=13			ScP	**ScP**	**10 59 02.9**	**+3.4**
WRA	2.2nm,0.9s,baz=101,slow=14,SNR=5.9			S	**S**	**10 59 58.4**	**-3.2**
FORT	**Forrest** 433nm,1.4s	**46.35**	**250**	*e*P	**P**	**10 54 47.6**	**-0.2**
MTN	**Manton Dam** 24nm,1.5s	**47.48**	**274**	*e*P	**P**	**10 54 55.4**	**-1.2**
HPAH	**Hawaii Prepara** 131nm,1.2s	**49.63**	**30**	*e*P	**P**	**10 55 12.1**	**-0.3**
FITZ	**Fitzroy Crossi** 26nm,1.7s	**50.86**	**266**	*e*P	**P**	**10 55 22.0**	**+0.6**
MBWA	**Marble Bar** 30nm,1.4s	**55.41**	**260**	*e*P	**P**	**10 55 53.8**	**-0.1**
CASY	**Casey** 9.9nm,1.0s	**60.16**	**206**	*e*P	**P**	**10 56 25.7**	**+0.4**
QSPA	**South Pole Qui**	**66.22**	**180**	*e*P	**P**	**10 57 06.6**	**+2.2**
MYLDM	**Lahad Datu** 34nm,1.3s	**66.52**	**287**	*e*P	**P**	**10 57 06.7**	**-0.2**
JOW	**Kunigami** 17nm,1.1s	**70.99**	**312**	*e*P	**P**	**10 57 33.4**	**-0.3**
MJAR	**Matsushiro Arr** 1.4nm,0.7s,baz=163,slow=6.1,SNR=7.0	**71.89**	**326**	P	**P**	**10 57 38.0**	**-0.8**
KSM	**Kuching** 20nm,1.5s	**72.13**	**280**	*e*P	**P**	**10 57 41.1**	**+0.4**
NIKH	**Nikolski High** 35nm,0.6s	**77.12**	**7**	*e*P	**P**	**10 58 06.6**	**-1.1**
MAW	**Mawson** 3.2nm,0.6s,baz=120,slow=5.3,SNR=7.8	**77.79**	**200**	P	**P**	**10 58 13.2**	**+1.9**
MAW	**Mawson** 0.8nm,0.7s	**77.79**	**200**	*e*P	**P**	**10 58 12.8**	**+1.4**
UNV	**Unalaska Valle** 59nm,1.5s	**78.26**	**8**	*e*P	**P**	**10 58 12.4**	**-1.5**
KS01	**Wonju Array Si**	**78.27**	**320**	*e*P	**P**	**10 58 15.2**	**+0.8**
AKUT	**Akutan** 132nm,1.4s	**78.64**	**8**	*e*P	**P**	**10 58 14.6**	**-1.3**
PMSA	**Palmer Station** 2.7nm,0.6s,baz=227,slow=7.1,SNR=3.9	**78.93**	**157**	P	**P**	**10 58 19.2**	**+1.7**
PMSA	**Palmer Station** 5.0nm,0.5s	**78.93**	**157**	*e*P	**P**	**10 58 18.7**	**+1.2**
PEA0	**Petropavlovsk-**	**79.07**	**347**	*e*P	**P**	**10 58 17.8**	**-0.5**
PEA0B	**Petropavlovsk-** 18nm,1.3s	**79.07**	**347**	*e*P	**P**	**10 58 18.3**	**0.0**
PETK	**Petropavlovsk-** 3.8nm,0.7s,baz=126,slow=6.9,SNR=6.0	**79.07**	**347**	P	**P**	**10 58 17.7**	**-0.6**
SAO	**San Andreas Ge** 4.1nm,0.8s	**81.71**	**44**	*e*P	**P**	**10 58 33.4**	**+1.0**
KHMM	**Horse Mountain** 34nm,1.2s	**82.90**	**39**	*e*P	**P**	**10 58 39.5**	**+1.0**
SYO	**Syowa Base**	**83.05**	**193**	↓*e*X	**P**	**10 58 35.4**	**-3.3**
CMB	**Columbia Colle** 8.0nm,0.8s	**83.15**	**43**	*e*P	**P**	**10 58 40.2**	**+0.5**
PFO	**Pinyon Flats O** 3.4nm,0.6s,baz=355,slow=4.4,SNR=4.2	**83.16**	**49**	P	**P**	**10 58 39.8**	**-0.2**
AFDM	**Forest Hills D** 7.4nm,1.0s	**83.34**	**42**	*e*P	**P**	**10 58 41.1**	**+0.5**
WDC	**Whiskeytown Da** 11nm,1.1s	**83.41**	**40**	*e*P	**P**	**10 58 41.9**	**+1.0**
GSC	**Goldstone, Bar** 8.9nm,0.5s	**83.88**	**47**	*e*P	**P**	**10 58 44.4**	**+0.9**
WAKR	**Walker** 9.4nm,1.0s	**84.03**	**43**	*e*P	**P**	**10 58 45.2**	**+0.9**
PNTR	**Pine Nut** 12nm,0.9s	**84.28**	**43**	*e*P	**P**	**10 58 46.3**	**+0.7**
TVH3	**East Aurora ar** 4.1nm,1.0s	**84.33**	**44**	*e*P	**P**	**10 58 46.9**	**+1.1**
TVH2	**Borealis Mine** 3.6nm,1.1s	**84.39**	**44**	*e*P	**P**	**10 58 46.7**	**+0.6**
TVH1	**TV Hill, Hawth** 4.9nm,1.3s	**84.43**	**44**	*e*P	**P**	**10 58 47.0**	**+0.5**
YERR	**Yerington** 5.6nm,0.9s	**84.44**	**43**	*e*P	**

	8.6nm,0.8s								
WUAZ	**Wupatki**	**87.71**	**49**	*e*P		**P**	**10 59 02.9**	**+0.9**
	6.4nm,1.3s								
HPIG		**87.71**	**59**	*e*P		**P**	**10 59 02.4**	**+0.2**
	5.7nm,0.9s								
D05A	**Enumclaw**	**87.89**	**35**	*e*P		**P**	**10 59 02.6**	**+0.4**
	28nm,1.2s								
PKCU	**Pink Cliffs**	**88.08**	**47**	*e*P		**P**	**10 59 03.2**	**-0.6**
	4.3nm,0.8s								
RC01	**Rabbit Creek A**	**88.12**	**14**	*e*P		**P**	**10 59 03.0**	**0.0**
	8.8nm,1.0s								
BBB	**Bella Bella**	**88.21**	**29**	*e*P		**P**	**10 59 04.4**	**+0.7**
	56nm,1.6s								
SUA	**Susitna One**	**88.24**	**14**	*e*P		**P**	**10 59 02.8**	**-0.9**
	9.2nm,0.7s								
ZAIG	**Zacatecas**	**88.31**	**64**	*e*P		**P**	**10 59 06.6**	**+1.4**
	5.2nm,1.0s								
G08A	**Pilot Rock**	**88.38**	**38**	*e*P		**P**	**10 59 05.4**	**+0.6**
	7.6nm,0.8s								
MTPU	**Mount Pierson**	**88.48**	**47**	*e*P		**P**	**10 59 07.3**	**+1.6**
	5.2nm,0.7s								
TT01	**Tatalina**	**88.54**	**11**	*e*P		**P**	**10 59 04.6**	**-0.4**
EYAK	**Cordova Ski Ar**	**88.60**	**16**	*e*P		**P**	**10 59 06.9**	**+1.7**
	18nm,1.0s								
LTY	**Liberty**	**88.63**	**36**	*e*P		**P**	**10 59 06.2**	**+0.3**
	5.5nm,0.8s								
PMR	**Palmer**	**88.70**	**14**	*e*P		**P**	**10 59 05.0**	**-0.7**
	5.1nm,1.0s								
HAWA	**Hanford**	**88.72**	**37**	*e*P		**P**	**10 59 07.0**	**+0.9**
	7.2nm,0.8s								
MSU	**Marysvale**	**88.74**	**47**	*e*P		**P**	**10 59 08.0**	**+1.3**
RAGM	**Ragged Mountai**	**88.74**	**17**	*e*P		**P**	**10 59 06.5**	**+0.5**
	24nm,0.6s								
XAN	**Xi'an**	**88.74**	**308**	P		**P**	**10 59 06.8**	**+0.1**
XAN				pmax		pmax			
	comp=Z,5.0nm,0.6s								
XAN				pmax		pmax			
	comp=Z,94nm,4.9s								
121A	**Cookes Peak, D**	**88.78**	**54**	*e*P		**P**	**10 59 07.8**	**+0.8**
	comp=Z,3.6nm,0.9s								
BMO	**Blue Mountains**	**89.07**	**39**	*e*P		**P**	**10 59 08.1**	**+0.1**
	comp=Z,3.6nm,1.0s								
MFID	**Camas Ranch**	**89.11**	**41**	*e*P		**P**	**10 59 08.8**	**+0.6**
	comp=Z,8.2nm,0.9s								
SEY	**Seymchan**	**89.24**	**348**	P		**P**	**10 59 07.9**	**-0.3**
	comp=Z,2.8nm,0.6s,baz=276,slow=21,SNR=8.8								
SCM	**Sheep Creek Mo**	**89.33**	**15**	*e*P		**P**	**10 59 08.2**	**-0.6**
	comp=Z,9.2nm,0.6s								
D08A	**Wollman Farm,**	**89.46**	**37**	*e*P		**P**	**10 59 10.3**	**+0.7**
	comp=Z,5.5nm,0.9s								
CMAR	**Chiang Mai Arr**	**89.54**	**290**	P		**P**	**10 59 11.8**	**+1.1**
	comp=Z,0.5nm,0.4s,baz=148,slow=2.7,SNR=5.2								
NLU	**North Lily Min**	**89.57**	**45**	*e*P		**P**	**10 59 11.3**	**+0.8**
	comp=Z,3.0nm,1.0s								
F10A	**Beach Ranch, E**	**89.76**	**38**	*e*P		**P**	**10 59 11.1**	**-0.1**
	comp=Z,4.9nm,0.8s								
TMUT	**Trail Mountain**	**89.79**	**46**	*e*P		**P**	**10 59 13.1**	**+1.3**
	comp=Z,14nm,0.7s								
B08A	**Colville Reser**	**90.02**	**36**	*e*P		**P**	**10 59 12.1**	**-0.1**
	comp=Z,2.3nm,0.7s								
SPUT	**South Promonto**	**90.05**	**44**	*e*P		**P**	**10 59 12.7**	**0.0**
	comp=Z,5.9nm,0.9s								
HLID	**Hailey**	**90.05**	**41**	*e*P		**P**	**10 59 13.5**	**+0.8**
	comp=Z,3.6nm,0.8s								
HVU	**Hansel Valley**	**90.09**	**44**	*e*P		**P**	**10 59 13.5**	**+0.6**
	comp=Z,7.3nm,0.7s								
TRF	**Thorofare Moun**	**90.11**	**13**	*e*P		**P**	**10 59 12.1**	**-0.4**
	comp=Z,4.8nm,0.8s								
SRU	**San Rafael Swe**	**90.15**	**47**	*e*P		**P**	**10 59 13.8**	**+0.5**
	comp=Z,9.9nm,0.7s								
MNTX	**Cornudas Mount**	**90.17**	**55**	*e*P		**P**	**10 59 14.0**	**+0.7**
	comp=Z,4.0nm,0.9s								
CTU	**Camp Tracy**	**90.17**	**45**	*e*P		**P**	**10 59 13.8**	**+0.6**
	comp=Z,6.1nm,0.9s								
P17A	**Butcher Ranch,**	**90.19**	**46**	*e*P		**P**	**10 59 14.8**	**+1.3**
	comp=Z,9.4nm,1.2s								
JLU	**Jordanelle**	**90.31**	**45**	*e*P		**P**	**10 59 14.6**	**+0.6**
	comp=Z,3.4nm,0.9s								
RND	**Reindeer**	**90.37**	**13**	*e*P		**P**	**10 59 12.7**	**-0.9**
	comp=Z,5.0nm,1.0s								
TX31	**Lajitas Ar. Si**	**90.39**	**58**	*e*P		**P**	**10 59 15.6**	**+1.2**
TXAR	**Lajitas Array**	**90.39**	**58**	P		**P**	**10 59 15.6**	**+1.1**
	comp=Z,3.8nm,0.7s,baz=215,slow=6.5,SNR=63								
DHY	**Denali Highway**	**90.41**	**14**	*e*P		**P**	**10 59 14.1**	**+0.3**
	comp=Z,17nm,1.9s								
BNM	**Barren Site**	**90.41**	**53**	*e*P		**P**	**10 59 15.5**	**+0.9**
HHC	**Hu-ho-hao-te**	**90.42**	**315**	*e*P		**P**	**10 59 17.5**	**+3.2**
HHC				pmax		pmax			
	comp=Z,19nm,1.0s								
HHC				pmax		pmax			
	comp=Z,92nm,4.7s								
TCUT	**Toone Canyon**	**90.61**	**45**	*e*P		**P**	**10 59 16.2**	**+0.8**
	comp=Z,15nm,0.9s								
MCK	**McKinley**	**90.64**	**13**	*e*P		**P**	**10 59 15.1**	**+0.4**
	comp=Z,11nm,1.6s								
HWUT	**Hardware Ranch**	**90.77**	**44**	*e*P		**P**	**10 59 16.2**	**+0.1**
	comp=Z,4.0nm,0.6s								
ANMO	**Albuquerque**	**90.91**	**52**	*e*P		**P**	**10 59 17.4**	**+0.6**
	comp=Z,4.1nm,1.1s								
PV01	**Paradox Valley**	**90.98**	**48**	*e*P		**P**	**10 59 17.6**	**+0.4**
MENT	**Mentasta**	**91.15**	**16**	*e*P		**P**	**10 59 16.5**	**-0.6**
	comp=Z,2.2nm,0.8s								
NEW	**Newport**	**91.15**	**36**	*e*P		**P**	**10 59 17.2**	**-0.2**
	comp=Z,7.8nm,1.7s								
AHID	**Auburn Hatcher**	**91.67**	**43**	*e*P		**P**	**10 59 20.8**	**+0.6**
	comp=Z,4.6nm,0.8s								
MCMT	**McKenzie Canyo**	**91.68**	**41**	*e*P		**P**	**10 59 20.1**	**-0.2**
CCB	**Clear Creek Bu**	**91.69**	**13**	*e*P		**P**	**10 59 18.0**	**-1.4**
	comp=Z,3.0nm,1.0s								
ROC1	**El Roble**	**91.83**	**127**	*e*P		**P**	**10 59 21.7**	**+0.3**
	comp=Z,14nm,1.2s								
S22A	**4UR Ranch, Cre**	**91.99**	**49**	*e*P		**P**	**10 59 22.6**	**+0.7**
	comp=Z,4.9nm,1.0s								
ILAR	**Eielson Array**	**91.99**	**14**	P		**P**	**10 59 19.3**	**-1.6**
	comp=Z,0.6nm,0.7s,baz=205,slow=6.7,SNR=9.9								
REDW	**Red Top Meadow**	**92.13**	**43**	*e*P		**P**	**10 59 22.7**	**+0.4**
	comp=Z,6.7nm,1.4s								
SNOW	**Snow King Moun**	**92.24**	**43**	*e*P		**P**	**10 59 22.8**	**-0.1**
	comp=Z,6.5nm,1.3s								
IMW	**Indian Meadow**	**92.35**	**42**	*e*P		**P**	**10 59 23.9**	**+0.5**
	comp=Z,7.7nm,1.6s								
LOHW	**Long Hollow**	**92.42**	**43**	*e*P		**P**	**10 59 24.4**	**+0.8**
	comp=Z,8.4nm,1.6s								
SMCO	**Snowmass**	**92.58**	**48**	*e*P		**P**	**10 59 24.6**	**-0.1**
	comp=Z,3.3nm,0.8s								
BW06	**Boulder Array**	**92.64**	**44**	*e*P		**P**	**10 59 24.5**	**-0.2**
	comp=Z,11nm,1.5s								
PD31	**Pinedale Array**	**92.64**	**44**	*e*P		**P**	**10 59 24.8**	**0.0**
PDAR	**Pinedale Array**	**92.64**	**44**	P		**P**	**10 59 24.4**	**-0.4**
	comp=Z,1.5nm,0.6s,baz=221,slow=3.5,SNR=17								
SDCO	**Great Sand Dun**	**92.92**	**50**	*e*P		**P**	**10 59 26.3**	**+0.2**
	comp=Z,2.5nm,0.8s								
DAWY	**Dawson**	**93.18**	**17**	*e*P		**P**	**10 59 26.0**	**-0.5**
	comp=Z,3.0nm,0.8s								
EGAK	**Eagle**	**93.31**	**16**	*e*P		**P**	**10 59 26.4**	**-0.5**
	comp=Z,2.6nm,0.8s								
Q24A	**Divide**	**93.73**	**49**	*e*P		**P**	**10 59 30.2**	**+0.4**
	comp=Z,2.6nm,0.8s								
MKAR	**Makanchi Array**	**112.15**	**313**	PKiKP		**PKiKP**	**11 04 43.5**	**-1.0**
	comp=Z,0.5nm,0.4s,baz=211,slow=1.0,SNR=7.4								
MKAR				PKKPbc		**PKKPbc**	**11 15 38.1**	**+0.1**
	comp=Z,0.2nm,0.2s,baz=338,slow=2.9,SNR=3.8								
KURK	**Kurchatov**	**115.20**	**316**	*e*PKPdf		**PKPdf**	**11 04 49.6**	**-0.6**
KURBB	**Kurchatov Arra**	**115.24**	**316**	PKP		**PKPdf**	**11 04 49.2**	**-1.1**
	comp=Z,1.2nm,0.6s,baz=104,slow=1.9,SNR=17								
PTGA	**Pitinga**	**116.91**	**104**	*e*PKPdf		**PKPdf**	**11 04 54.3**	**-0.4**
BVAR	**Borovoye Array**	**120.43**	**319**	PKP		**PKPdf**	**11 04 59.6**	**-0.7**
	comp=Z,2.1nm,0.3s,baz=90,slow=1.8,SNR=16								
SUR	**Sutherland**	**120.65**	**200**	PKP		**PKPdf**	**11 05 02.2**	**+0.5**
	comp=Z,0.2nm,0.5s,baz=163,slow=3.5,SNR=6.0								
SUR	**Sutherland**	**120.65**	**200**	*e*PKPdf		**PKPdf**	**11 05 02.4**	**+0.7**
PKME	**Peaks-Kenny Pk**	**120.87**	**50**	*e*PKPdf		**PKPdf**	**11 05 00.5**	**-0.8**
BOSA	**Boshof**	**122.45**	**206**	*e*PKPdf		**PKPdf**	**11 05 05.5**	**+0.3**
LMN	**Caledonia Moun**	**124.04**	**50**	*e*PKPdf		**PKPdf**	**11 05 06.9**	**-0.5**
ARU	**Arti**	**126.87**	**324**	PKP		**PKPdf**	**11 05 12.3**	**-0.1**
	comp=Z,3.2nm,0.4s,baz=111,slow=5.9,SNR=6.6								
ARCES	**ARCESS Array B**	**131.86**	**348**	PKP		**PKPdf**	**11 05 20.9**	**-0.7**
	comp=Z,1.7nm,0.5s,baz=48,slow=1.8,SNR=9.4								
TSUM	**Tsumeb**	**133.90**	**203**	*e*PKPdf		**PKPdf**	**11 05 29.3**	**+2.2**
FINES	**FINESS Array B**	**138.42**	**341**	PKhKP		PKPpre	11 05 25.5		
	comp=Z,0.6nm,0.4s,baz=31,slow=4.0,SNR=7.9								
FINES				PKP		**PKPdf**	**11 05 34.3**	**+0.4**
	comp=Z,1.0nm,0.3s,baz=85,slow=3.3,SNR=8.4								
NOA	**NORSAR Array B**	**142.05**	**351**	PKhKP		PKPpre	11 05 36.1		
	comp=Z,2.4nm,0.7s,baz=16,slow=4.6,SNR=12								
KONO	**Kongsberg**	**143.61**	**352**	*e*PKPdf		PKPab	11 05 41.2	-0.8	
AKASG	**Malin Array Be**	**144.96**	**327**	PKP		**PKPdf**	**11 05 45.3**	**-0.6**
	comp=Z,4.7nm,0.5s,baz=47,slow=4.5,SNR=20								

AKBB	**Malin Array Si**	**144.96**	**327**	*e*PKPdf		**PKPdf**	**11 05 45.5**	**-0.4**	
AKBB				*e*PKPbc		PKPbc	11 05 45.9	-0.7	
KIEV	**Kiev**	**144.97**	**327**	*e*PKPdf		**PKPdf**	**11 05 45.4**	**-0.5**	
KIEV				*e*PKPbc		PKPbc	11 05 45.8	-0.8	
AK11	**Malin Array Si**	**145.00**	**327**	*e*PKPdf		**PKPdf**	**11 05 45.5**	**-0.4**	
SORM	**Soroca**	**146.99**	**324**	⇓*i*P		**PKPbc**	**11 05 51.9**	**-0.5**	
BR131	**Keskin Array S**	**147.58**	**307**	*e*PKPbc		**PKPbc**	**11 05 54.2**	**-0.2**	
BRTR	**Keskin Array B**	**147.58**	**307**	PKPbc		**PKPbc**	**11 05 54.0**	**-0.4**	
	comp=Z,2.1nm,0.6s,baz=133,slow=4.5,SNR=9.6								
BR231	**Keskin MP Arra**	**148.17**	**308**	*e*PKPbc		**PKPbc**	**11 05 54.8**	**-1.0**	
TLCR		**148.42**	**319**	⇑*i*P		**PKPbc**	**11 05 56.4**	**+0.3**	
ESK	**Eskdalemuir**	**148.49**	**4**	*e*PKPbc		**PKPbc**	**11 05 55.2**	**-0.8**	
CFR	**Carcaliu**	**148.82**	**320**	⇓*i*P		**PKPbc**	**11 05 57.2**	**+0.1**	
TESR	**Tescani**	**148.90**	**323**	⇓*i*P		**PKPbc**	**11 05 57.0**	**-0.3**	
BUR08	**Bucovina Ar. S**	**148.95**	**326**	*e*PKPbc		**PKPbc**	**11 05 57.9**	**+0.3**	
BURAR	**Bucovina Array**	**148.96**	**326**	⇑*i*P		**PKPbc**	**11 05 58.7**	**+1.2**	
CSS	**Mathiatis**	**149.09**	**299**	*e*PKPbc		**PKPbc**	**11 05 58.3**	**+0.1**	
TLB	**Topalu**	**149.21**	**319**	⇑*i*P		**PKPbc**	**11 05 58.3**	**+0.2**	
HARR	**Harsova**	**149.22**	**319**	⇑*i*P		**PKPbc**	**11 05 58.6**	**+0.5**	
VRI	**Vrincioaia**	**149.24**	**322**	⇑*i*P		**PKPbc**	**11 05 58.1**	**-0.1**	
OJC	**Ojcow**	**149.52**	**335**	*e*PKPbc		**PKPbc**	**11 05 58.6**	**-0.1**	
STHS	**Stebnicka Huta**	**149.55**	**332**	*e*PKP		**PKPbc**	**11 05 59.4**	**+0.6**	
CRVS	**Cervenica-Dubn**	**149.84**	**331**	*e*PKP		**PKPbc**	**11 05 59.7**	**+0.2**	
MLR	**Muntele Rosu**	**149.91**	**322**	⇑*i*P		**PKPbc**	**11 05 59.7**	**-0.2**	
MLR	**Muntele Rosu**	**149.91**	**322**	*e*PKPbc		**PKPbc**	**11 05 59.5**	**-0.4**	
DOPR	**Dopca**	**149.92**	**323**	⇓*i*P		**PKPbc**	**11 06 00.3**	**+0.5**	
DSB	**Dublin**	**150.26**	**8**	*e*PKPbc		**PKPbc**	**11 05 59.6**	**-0.6**	
CJR	**Cluj-Napoca**	**150.38**	**326**	⇓*i*P		**PKPbc**	**11 06 01.4**	**+0.5**	
VOIR		**150.44**	**323**	⇑*i*P		**PKPbc**	**11 06 00.9**	**-0.2**	
OKC	**Ostrava-Krasne**	**150.46**	**336**	*e*PKP		**PKPbc**	**11 06 00.7**	**-0.2**	
LANS	**Liptovska Anna**	**150.49**	**334**	*e*PKP		**PKPbc**	**11 06 01.9**	**+0.9**	
ISP	**Isparta**	**150.51**	**305**	⇑*i*P		**PKPbc**	**11 06 00.3**	**-1.2**	
ISP	**Isparta**	**150.51**	**305**	*e*PKPbc		**PKPbc**	**11 06 00.7**	**-0.9**	
UPC	**Upice**	**150.65**	**339**	⇑*e*PKP		**PKPbc**	**11 06 01.6**	**+0.3**	
DPC	**Dobruska-Polom**	**150.68**	**338**	⇑*i*PKP		**PKPbc**	**11 06 01.8**	**+0.4**	
DPC				*e*PKPAB		**PKPab**	**11 06 11.1**	**+0.4**	
ARR	**Arges**	**150.71**	**323**	⇓*i*P		**PKPbc**	**11 06 02.8**	**+1.1**	
MORC	**Moravsky Berou**	**150.73**	**336**	⇑*i*P		**PKPbc**	**11 06 01.6**	**0.0**	
MORC	**Moravsky Berou**	**150.73**	**336**	*e*PKPbc		**PKPbc**	**11 06 01.8**	**+0.2**	
KRLC	**Kraliky**	**150.75**	**338**	⇑*e*PKP		**PKPbc**	**11 06 01.7**	**+0.1**	
DRGR		**150.78**	**327**	⇓*i*P		**PKPbc**	**11 06 01.7**	**-0.1**	
CLL	**Collm**	**150.83**	**343**	⇑*i*PKPbc		**PKPbc**	**11 06 01.6**	**-0.1**	
	comp=Z,17nm,0.8s								
CLL				⇓*i*PKPab		**PKPab**	**11 06 10.7**	**-0.5**	
	comp=Z,5.0nm,0.7s								
CLL				*i* pPKPbc		**pPKPbc**	**11 08 06.9**	**+2.2**	
	comp=Z,8.0nm,1.2s								
CLL	**Collm**	**150.83**	**343**	*e*PKPbc		**PKPbc**	**11 06 01.8**	**+0.1**	
BRG	**Berggiesshubel**	**150.96**	**342**	*e*PKP		**PKPdf**	**11 05 55.7**	**0.0**	
	comp=Z,1.6nm,0.7s								
BRG				*i*			11 06 02.0		
	comp=Z,13nm,0.5s								
BRG				*e*			11 06 08.6		
	comp=Z,3.4nm,1.0s								
BRG				*e*pPKP		**pPKPdf**	**11 08 03.1**	**+3.1**	
	comp=Z,3.5nm,1.0s								
PVCC	**Panska Ves**	**151.08**	**341**	⇑*e*PKP		**PKPbc**	**11 06 02.6**	**+0.3**	
VYHS	**Vyhne**	**151.27**	**334**	*e*PKP		**PKPbc**	**11 06 02.3**	**-0.5**	
VYHS				*e*			11 06 13.2		
PSZ	**Piszkesteto**	**151.27**	**332**	⇓*i*P		**PKPbc**	**11 06 02.1**	**-0.8**	
PSZ	**Piszkesteto**	**151.27**	**332**	*e*PKPbc		**PKPbc**	**11 06 02.8**	**-0.1**	
VRAC	**Vranov**	**151.46**	**337**	⇑*i*P		**PKPbc**	**11 06 06.0**	**+2.8**	
PRU	**Pruhonice**	**151.57**	**340**	⇑*e*PKP		**PKPbc**	**11 06 03.2**	**-0.2**	
SIRR	**Siria**	**151.66**	**327**	⇓*i*P		**PKPbc**	**11 06 03.9**	**+0.1**	
GZR	**Gura Zlata**	**151.69**	**325**	⇓*i*P		**PKPbc**	**11 06 03.6**	**-0.3**	
BZS	**Buzias**	**152.14**	**326**	⇓*i*P		**PKPbc**	**11 06 04.7**	**-0.1**	
KHC	**Kasperske Hory**	**152.62**	**340**	⇑*e*PKP		**PKPbc**	**11 06 05.6**	**-0.2**	
KHC				*e*PKPAB		**PKPab**	**11 06 19.1**	**+0.1**	
KHC	**Kasperske Hory**	**152.62**	**340**	*e*PKPbc		**PKPbc**	**11 06 05.7**	**-0.2**	
MDVR	**Modovita**	**152.66**	**325**	⇓*i*P		**PKPbc**	**11 06 05.7**	**-0.3**	
GRFO	**Grafenberg**	**152.77**	**344**	*e*PKPbc		**PKPbc**	**11 06 06.8**	**+0.8**	
GERES	**GERESS Array B**	**152.83**	**340**	PKPbc		**PKPbc**	**11 06 06.0**	**-0.3**	
	comp=Z,1.1nm,0.6s,baz=40,slow=2.3,SNR=8.7								
GEA0	**GERESS Array S**	**152.84**	**340**	*e*PKPbc		**PKPbc**	**11 06 05.6**	**-0.7**	
CONA	**Conrad Observa**	**152.89**	**336**	*i* PKPbc		**PKPbc**	**11 06 06.3**	**-0.2**	
	comp=Z,2.9nm,0.8s								
DYA	**Yadsworthy**	**153.30**	**6**	*e*PKPbc		**PKPbc**	**11 06 06.8**	**-0.3**	
MOA	**Molln**	**153.52**	**338**	*i* PKPbc		**PKPbc**	**11 06 06.6**	**-1.1**	
	comp=Z,2.0nm,1.0s								
ARSA	**Arzberg**	**153.58**	**336**	*i* PKPab		**PKPab**	**11 06 21.2**	**-1.9**	
	comp=Z,2.4nm,0.9s								
SOKA	**Soboth**	**154.24**	**336**	*i* PKPdf		**PKPdf**	**11 05 59.6**	**-1.1**	
	comp=Z,2.5nm,1.4s								
KBA	**Koelnbreinsper**	**154.50**	**339**	*i* PKPdf		**PKPdf**	**11 05 59.9**	**-1.3**	
	comp=Z,3.0nm,1.1s								
OBKA	**Obir**	**154.56**	**336**	*i* PKPdf		**PKPdf**	**11 05 56.6**	**-4.6**	
	comp=Z,4.5nm,1.2s								
WATA	**Walderalm**	**154.82**	**341**	*i* PKPab		**PKPab**	**11 06 26.3**	**-2.3**	
	comp=Z,1.1nm,0.4s								
RETA	**Reutte**	**154.92**	**343**	*i* PKPab		**PKPab**	**11 06 27.8**	**-1.0**	
	comp=Z,2.3nm,0.6s								
MOTA	**Moosalm**	**154.95**	**342**	*i* PKPab		**PKPab**	**11 06 28.3**	**-0.8**	
	comp=Z,2.4nm,0.6s								
ABTA	**Abfaltersbach**	**155.06**	**339**	*i* PKPab		**PKPab**	**11 06 27.4**	**-2.1**	
	comp=Z,2.4nm,1.0s								
DAVA	**Damuels**	**155.34**	**344**	*i* PKPab		**PKPab**	**11 06 30.1**	**-0.7**	
	comp=Z,3.2nm,0.7s								
FETA	**Feichten**	**155.35**	**342**	*i* PKPdf		**PKPdf**	**11 06 00.9**	**-1.4**	
	comp=Z,3.0nm,1.1s								
FUORN	**Ofenpass-Fuorn**	**155.85**	**343**	*e*PKPab		**PKPab**	**11 06 33.6**	**+0.5**	
ES19	**SONSECA Array**	**163.86**	**11**	*e*PKPab		**PKPab**	**11 07 07.6**	**-0.5**	
ESDC	**Sonseca Array**	**163.88**	**11**	PKPab		**PKPab**	**11 07 07.3**	**-0.8**	
	comp=Z,0.8nm,0.7s,baz=346,slow=4.4,SNR=5.9								

GUC 31 10:51:43.4±0.4, 38°48S×73°36W, h13km±3km, ML3.9, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PSCH	**Puerto Saavedr**	**0.32**	**184**	*i* P		Pb	10 51 50.4	-0.5
PSCH				*i* S		Sb	10 51 56.0	0.0
CCHI	**Chillan**	**2.14**	**29**	*i* P		Pb	10 52 20.9	-1.1
CCHI				*i* S		Sb	10 52 49.4	+1.0
CCHI				IAML			10 52 53.5	
	comp=N,1μm,0.4s							
COCH	**Cobquecura**	**2.39**	**11**	*e*P		Pn	10 52 17.3	-5.0
COCH				*e*S		Sn	10 52 52.6	+1.1
COCH				IAML			10 53 03.0	
	comp=E,758nm,0.8s							

*ISCJB **31** 11:17:52.5±0.7, 35°08N±0°05×139°82E±0°07, h84km±5km, mb3.4/2, Error ellipse: s-maj=11.1km s-min=6.3km az=146.4*
*JMA **31** 11:17:52.9±0.2, 35°11N×139°86E, h80km±2km, M2.6*
*IDC **31** 11:17:55.5±1.6, 34°81N×138°83E, h73km±22km, mb3.1/2, mb1 3.4/2, mb1mx2.9/44, mbtmp3.4/2, Error ellipse: s-maj=71.7km s-min=12.1km az=69.0*

ISC 31 11:17:53.5±1.1, 35°09N±0°05×139°82E±0°06, h77km±7km, n20, σ0°61/23, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
TATJ	**Tateyama 2**	**0.08**	**134**	P		**Pn**	**11 18 04.6**	**0.0**
TATJ				S		**Sn**	**11 18 13.6**	**+0.9**
JYO	**Yokosk**	**0.18**	**317**	P		**Pn**	**11 18 05.1**	**+0.2**
JYO				S		**Sn**	**11 18 14.0**	**+0.8**
JIM2	**Oshima 3**	**0.49**	**221**	P		**Pn**	**11 18 06.4**	**-0.5**
JIM2				S		**Sn**	**11 18 15.7**	**-1.1**
JOD2	**Odawara 2**	**0.62**	**286**	P		**Pn**	**11 18 07.6**	**-0.5**
JOD2				S		**Sn**	**11 18 18.2**	**-0.8**
BSO3	**Boso 3**	**0.64**	**117**	P		**Pn**	**11 18 07.9**	**-0.1**
BSO3				X			11 18 19.6	
JIZS	**Izushimoda**	**0.86**	**245**	P		**Pn**	**11 18 10.7**	**+0.1**
JIZS				S		**Sn**	**11 18 24.0**	**+0.6**
BSO1	**Boso 1**	**1.05**	**114**	P		**Pn**	**11 18 11.9**	**-0.5**
JYN	**Shimob**	**1.12**	**292**	P		**Pn**	**11 18 14.0**	**+0.1**
JYN				S		**Sn**	**11 18 29.8**	**+0.7**
JRY	**Ryogami san**	**1.19**	**321**	P		**Pn**	**11 18 14.8**	**+0.1**
JRY				S		**Sn**	**11 18 30.4**	**-0.2**
MJAR	**Matsushiro Arr**	**1.95**	**318**	P		**Pn**	**11 18 24.0**	**-0.6**
	10nm,0.3s,baz=155,slow=12,SNR=129							
MAT	**Matsushiro**	**1.95**	**318**	P		**Pn**	**11 18 25.4**	**+0.7**
MAT				S		**Sn**	**11 18 48.5**	**+0.1**
JHJ	**Hachijo jima 2**	**1.97**	**181**	P		**Pn**	**11 18 25.7**	**+0.8**
	20nm,0.3s,baz=326,slow=15,SNR=34							
JHJ				S		**Sn**	**11 18 48.7**	**0.0**
	48nm,0.3s,baz=291,slow=24,SNR=15							
H11N2	**WAKE ISLAND Hy**	**28.37**	**116**	T		T	11 53 23.1	
	baz=308,slow=75,SNR=4.2							
H11N1	**WAKE ISLAND Hy**	**28.38**	**116**	T		T	11 53 17.2	
	baz=308,slow=75,SNR=5.6							
H11N3	**WAKE ISLAND Hy**	**28.39**	**116**	T		T	11 53 16.2	
	baz=308,slow=75,SNR=4.8							
H11S3	**WAKE ISLAND Hy**	**29.00**	**118**	T		T	11 54 10.8	
	baz=316							
H11S1	**WAKE ISLAND Hy**	**29.00**	**118**	T		T	11 54 15.5	
	baz=316							
H11S2	**WAKE ISLAND Hy**	**29.01**	**118**	T		T	11 54 14.2	
	baz=316							
WRA	**Warramunga Arr**	**54.98**	**186**	P		**P**	**11 27 16.1**	**-0.6**
	0.5nm,1.0s,baz=0.4,slow=7.5,SNR=2.7							
ASAR	**Alice Springs**	**58.70**	**186**	P		**P**	**11 27 43.5**	**+0.3**
	0.2nm,0.7s,baz=355,slow=10,SNR=4.1							

KRSC 31 11:21:34.9±1.4, 50°42N×157°11E, h41km±16km, ML3.7, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.69**	**293**	*e*P		Pn	11 21 48.8	+0.6
SKR				*e*S		Sn	11 21 57.6	-0.1
ASAK	**Asacha**	**2.03**	**14**	*e*P		Pn	11 22 09.8	+3.2
RUS	**Russkaya**	**2.20**	**23**	*e*P		Pn	11 22 11.5	+2.6
RUS				*e*S		Sn	11 22 37.9	+3.1
KRMR	**Karymshinskiy**	**2.50**	**14**	*e*S		Sn	11 22 45.6	+3.4
UGLR	**Uglovaya**	**2.99**	**20**	*e*P		Pn	11 22 23.2	+3.4
**

baz=273
NSK Sanguang 0.59 322 ⇑*i* P **Pb 12 21 54.4 -0.5**
baz=323
NSK *i* S **Sg 12 22 01.9 -0.2**
baz=323
EGS 0.66 14 *e*P **Pg 12 21 55.7 +0.3**
baz=25
WDT Danda 0.73 232 P **Pb 12 21 57.0 -0.3**
baz=229
WDT S **Sb 12 22 07.3 0.0**
baz=229
TWA Mucha 0.79 348 *e*P **Pb 12 21 58.2 0.0**
baz=350
EHY Hungye 0.80 210 *e*P **Pb 12 21 58.7 +0.2**
baz=208
NSTT Nanjuang 0.81 302 P **Pn 12 21 58.8 -1.0**
baz=301
NSTT S **Sb 12 22 08.8 -0.7**
baz=301
TWB1 Santiao Chiao 0.82 15 *e*P **Pg 12 21 58.8 +0.2**
baz=17
TWB1 *e*S **Sg 12 22 08.9 -0.6**
baz=17
SMLT Sun Moon Lake 0.85 248 *i* P **Pb 12 21 59.2 -0.1**
baz=237
SMLT *e*S **Sb 12 22 09.9 -0.8**
baz=237
NWF Wu-fen Shan 0.86 1 *e*P **Pg 12 21 58.0 -1.4**
baz=354
NWF *e*S **Sg 12 22 11.1 +0.4**
baz=354
TYC Yuchr 0.88 250 P **Pb 12 21 59.4 -0.3**
baz=239
TYC *e*S **Sn 12 22 12.2 -1.0**
baz=239
TWQ1 Liyutan 0.91 279 *e*P **Pn 12 22 01.7 +0.6**
baz=278
NCU National Centr 0.92 326 *e*P **Pn 12 22 01.3 0.0**
baz=321
NSY Sanyi 0.93 283 *e*P **Pn 12 22 01.7 +0.2**
baz=282
NSY *e*S **Sn 12 22 15.2 +0.5**
baz=282
TWS1 Kuangyinshan 0.94 341 *e*P **Pn 12 22 02.3 +0.7**
baz=350
TWS1 *e*S **Sn 12 22 15.7 +0.8**
baz=350
TWF1 Yuli 0.95 207 *e*P **Pg 12 22 00.3 -0.7**
baz=215
TWF1 *e*S **Sn 12 22 14.8 -0.4**
baz=215
TCU Taichung 0.99 267 *e*P **Pn 12 22 03.6 +1.4**
baz=265
TCU *e*S **Sn 12 22 17.9 +1.8**
baz=265
YUS Yu-Shan 1.03 226 *e*P **Pn 12 22 02.5 -0.7**
baz=225
YUS *e*S **Sn 12 22 16.9 -0.8**
baz=225
WNT Mingjian 1.04 252 *e*P **Pn 12 22 03.8 +0.9**
baz=241
TWY Chenhua 1.07 352 *e*P **Pg 12 22 03.8 +0.4**
baz=353
TWY *e*S **Sn 12 22 18.7 +0.6**
baz=353
ALS Alishan 1.11 232 P **Pn 12 22 04.0 -0.2**
baz=217
ALS *e*S **Sn 12 22 20.1 +0.5**
baz=217
CHKT Chengkung 1.16 198 *e*P **Pg 12 22 05.7 +0.7**
baz=182
CHN5 Tsauling 1.16 239 *e*P **Pg 12 22 05.6 +0.6**
baz=238
CHN5 *e*S **Sn 12 22 22.6 +2.2**
baz=238
YOJ Yonaguni jima 1.17 77 P **Pn 12 22 04.8 +0.1**
YOJ *e*S **Sn 12 22 21.5 +1.0**
YOJ Yonaguni jima 1.17 77 *e*P **Pn 12 22 04.5 -0.2**
baz=67
WGK Gukeng 1.21 245 *e*P **Pg 12 22 06.4 +0.4**
baz=244
ELDTW Lidau 1.22 214 *e*P **Pg 12 22 05.6 -0.6**
baz=226
ELDTW *e*S **Sn 12 22 22.4 +0.4**
baz=226
STYT Tauyuan 1.39 222 *e*P **Pb 12 22 08.1 -0.4**
baz=222
STYT *e*S **Sg 12 22 27.7 +0.3**
baz=222
CHY Chiayi 1.41 240 *e*P **Pg 12 22 09.9 +0.2**
baz=225
WTP Ta-pu 1.42 228 *e*P **Pg 12 22 09.8 -0.1**
baz=228
WTP *e*S **Sg 12 22 30.4 +2.0**
baz=228
PCYT Pengchaiyu 1.45 11 *e*P **Pn 12 22 08.2 -0.3**
baz=11
TWK Hsinying 1.49 231 *e*P **Pg 12 22 11.6 +0.2**
baz=232
TWK *e*S **Sg 12 22 32.5 +1.7**
baz=232
TWG Pinlang 1.52 205 *e*P **Pg 12 22 11.0 -0.8**
baz=189
CHN1 Nanshi 1.52 228 *e*P **Pg 12 22 11.7 -0.1**
baz=229
CHN1 *e*S **Sg 12 22 32.1 +0.5**
baz=229
SGST Jiashian 1.55 224 *e*P **Pg 12 22 13.0 +0.5**
baz=223
SSD Sandimen 1.78 216 *e*P **Pg 12 22 16.0 -0.9**
baz=216
IRIF Iriomote-Funau 1.80 86 P **Pn 12 22 13.6 +0.2**
JIJ Ishigaki jima 2.18 85 *e*S **Sn 12 22 45.7 +0.2**
JISG Ishigakijimahi 2.36 80 *e*S **Sn 12 22 50.1 +0.3**
JTJ Tarama 2.72 80 S **Sn 12 22 59.9 +1.2**

*IDC **31** 12:39:43.9±0.8,9.°81S×107.°86E,h0km,mb4.2/10, mb1 4.3/10,mb1mx4.0/45,mbtmp4.2/10,MS3.3/4, Ms1 3.3/4,ms1mx2.8/42,Error ellipse: s-maj=31.3km s-min=15.7km az=66.0*
*ISCJB **31** 12:39:44.8±0.5,9.°89S±0.°06×107.°70E±0.°06,h22km, mb4.3/17,MS3.4/3, Error ellipse: s-maj=9.2km s-min=7.5km az=31.6*
*NEIC **31** 12:39:49.6±0.5,9.°76S×107.°85E,h35km,mb4.2/10,Error ellipse: s-maj=15.1km s-min=8.7km az=61.0*
ISC 31 12:39:47.2±0.6,9.83S±0.08×107.70E±0.09,h22km,n34, σ1§39/30,mb4.4/17,MS3.6/3,South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
XMIS	**Christmas Isla**	**2.12**	**252**	*e*Pn		Pn	12 40 16.6	-4.7
XMIS				eSn		Sn	12 40 38.9	-8.1
CISI	**Cisompet, Garu**	**2.26**	**3**	*e*Pn		**Pn**	**12 40 21.8**	**-1.5**
JAGI	**Jajag, Banyuwa** 36nm,0.4s	**6.51**	**79**	*e*Pn		**Pn**	**12 41 21.6**	**-0.2**
JAGI				*e*Sn		**Sn**	**12 42 37.5**	**+2.1**
KAPI	**Kappang** comp=Z,63nm,19.8s,baz=250,slow=42	**12.87**	**69**	LR		LR	12 48 39.6	
IPM	**Ipoh** 19nm,1.1s	**15.69**	**335**	*e*P		**P**	**12 43 30.3**	**-0.7**
MBWA	**Marble Bar** 34nm,0.9s	**16.15**	**136**	*e*P		**Pn**	**12 43 29.2**	**-3.8**
MBWA				*e*S		Sn	12 46 12.7	-19
KKM	**Kota Kinabalu** 12nm,1.0s	**17.90**	**29**	*e*P		**Pn**	**12 43 53.2**	**-1.9**
FITZ	**Fitzroy Crossi** 0.4nm,0.3s,baz=310,slow=8.2,SNR=12	**19.24**	**117**	P		**Pn**	**12 44 11.2**	**0.0**
FITZ				S		Sn	12 47 31.3	-15
FITZ	**Fitzroy Crossi** 0.1nm,0.3s,baz=115,slow=19,SNR=5.2 4.7nm,0.9s	**19.24**	**117**	*e*P		**Pn**	**12 44 12.2**	**+1.0**
FITZ				S		Sn	12 47 31.3	-15
WRA	**Warramunga Arr** 1.6nm,0.9s,baz=286,slow=11,SNR=11	**27.60**	**114**	P		**P**	**12 45 31.7**	**-1.5**
WRA				PcP		**PcP**	**12 48 50.9**	**+0.1**
WRAB	**Tennant Creek** 3.6nm,0.9s	**27.61**	**114**	*e*P		**P**	**12 45 33.0**	**-0.2**
ASAR	**Alice Springs** 1.4nm,0.6s,baz=298,slow=8.2,SNR=24	**28.55**	**122**	P		**P**	**12 45 41.4**	**-0.3**
ASAR				PcP		**PcP**	**12 48 53.5**	**+0.4**
CMAR	**Chiang Mai Arr** 1.2nm,0.6s,baz=171,slow=7.7,SNR=6.4 0.9nm,0.6s,baz=291,slow=2.0,SNR=12	**29.40**	**343**	P		**P**	**12 45 49.5**	**+0.3**
CMAR				LR		LR	12 59 29.1	

comp=Z,27nm,19.1s,baz=275,slow=40
H08S2 Diego Garcia H 34.86 271 T T 13 24 43.8
baz=94
H08S3 Diego Garcia H 34.87 271 T T 13 24 59.7
baz=94
H08S1 Diego Garcia H 34.88 271 T T 13 24 39.4
baz=94
STKA Stephens Creek 38.27 130 P **P 12 47 05.2 -0.9**
5.0nm,0.8s,baz=298,slow=7.4,SNR=7.2
LSA Lhasa 42.41 338 *e*P **P 12 47 41.5 +0.7**
6.5nm,0.6s
BJT Baijiatuan 50.21 8 *e*P **P 12 48 43.0 +1.6**
13nm,0.7s
MJAR Matsushiro Arr 54.32 30 P **P 12 49 10.2 -1.9**
0.5nm,0.6s,baz=212,slow=6.4,SNR=4.5
CASY Casey 56.41 179 *e*P **P 12 49 28.2 +1.6**
0.9nm,0.6s
SONM Songino Array 57.42 359 P **P 12 49 34.7 +0.5**
1.1nm,0.6s,baz=178,slow=7.1,SNR=5.4
MKAR Makanchi Array 60.76 340 P **P 12 49 57.3 0.0**
2.3nm,0.5s,baz=144,slow=7.2,SNR=12
KLR Kul'dur 62.49 18 P **P 12 50 08.1 -0.8**
3.0nm,0.6s,baz=206,slow=4.5,SNR=14
MAW Mawson 64.89 197 P **P 12 50 24.4 -0.1**
1.8nm,0.5s,baz=65,slow=6.2,SNR=13
KURK Kurchatov 65.38 340 *e*P **P 12 50 29.5 +1.7**
26nm,0.8s
ZALV Zalesovo Beam 66.43 345 P **P 12 50 36.4 +1.9**
1.0nm,0.3s,baz=156,slow=6.4,SNR=4.8
ABKAR Akbulak array 72.18 329 *e*P **P 12 51 10.2 -0.1**
1.7nm,0.8s
ARU Arti 77.45 335 LR LR 13 30 13.1
comp=Z,31nm,19.2s,baz=297,slow=39
QSPA South Pole Qui 80.18 180 *e*P **P 12 51 55.2 -0.5**
15nm,1.2s
TIXI Tiksi 82.51 7 LR LR 13 34 44.0
comp=Z,29nm,18.0s,baz=218,slow=40
TXAR Lajitas Array 144.82 52 PKP **PKPdf 12 59 23.2 -0.1**
0.6nm,0.6s,baz=244,slow=1.3,SNR=9.3
WMOK Wichita Mounta 145.35 40 *e*PKPdf **PKPdf 12 59 26.3 +2.3**
MIAR Mount Ida 148.62 35 *e*PKPbc **PKPbc 12 59 33.8 +0.7**

*BJI **31** 12:39:59.0,38.°71N×142.°31E,h35km,mb4.4/10,mB4.8/5, Ms4.5/3,Ms7 4.3/3*
*NIED **31** 12:40:00,38.°60N×141.°90E,h50km,Mw4.3 Best double couple: M₀2.70000×10¹⁵ NP1:φ₈169.00000°,δ23.00000°, λ56.00000°. NP2:φ₈26.00000°,δ72.00000°,λ103.00000°.*
*ISCJB **31** 12:40:03.0±0.5,38.°63N±0.°03×141.°98E±0.°06,h52km±3km, mb4.3/47,MS3.3/14,Error ellipse: s-maj=7.8km s-min=4.0km az=19.0*
*MOS **31** 12:40:04.3±1.1,38.°75N×141.°91E,h56km,mb4.6/24,Error ellipse: s-maj=9.3km s-min=6.6km az=99.4*
*JMA **31** 12:40:04.4±0.1,38.°64N×141.°91E,h49km±1km,M4.1*
JMA Felt II J1.
*IDC **31** 12:40:05.6±2.2,38.°61N×141.°86E,h58km±19km,mb3.9/21, mb1 4.0/26,mb1mx3.9/52,mbtmp4.1/26,ML3.4/5,MS3.2/20, Ms1 3.2/20,ms1mx3.1/43,Error ellipse: s-maj=17.5km s-min=14.0km az=91.0*
*NEIC **31** 12:40:05.3±0.6,38.°64N×141.°93E,h56km±5km,mb4.5/10, Error ellipse: s-maj=7.9km s-min=4.6km az=117.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
ISC 31 12:40:04.5±0.7,38.63N±0.04×141.98E±0.06,h51km±5km, n123,σ1§32/134,mb4.3/50,MS3.4/15,9C-5D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.51**	**332**	P		**Pn**	**12 40 15.4**	**-0.5**
OFUJ				S		**Sn**	**12 40 23.1**	**-0.9**
JIO	**Ouri**	**0.52**	**250**	P		**Pn**	**12 40 15.3**	**-0.7**
JIO				S		**Sn**	**12 40 22.6**	**-1.7**
JMK	**Ichinoseki**	**0.67**	**298**	P		**Pn**	**12 40 17.3**	**-0.6**
JMK				S		**Sn**	**12 40 26.4**	**-1.2**
JOM	**Ohasama**	**0.99**	**328**	P		**Pn**	**12 40 21.8**	**-0.3**
JOU	**Okura**	**1.06**	**256**	P		**Pn**	**12 40 22.3**	**-0.8**
JOU				*e*S		**Sn**	**12 40 35.5**	**-1.4**
JMM	**Marumori**	**1.21**	**231**	P		**Pn**	**12 40 24.0**	**-1.0**
JMM				S		**Sn**	**12 40 38.6**	**-1.6**
JRG	**Rokugo**	**1.29**	**306**	P		**Pn**	**12 40 25.6**	**-0.6**
JRG				*e*S		**Sn**	**12 40 41.1**	**-1.3**
JYK	**Kaneyama**	**1.29**	**283**	P		**Pn**	**12 40 25.6**	**-0.6**
JFK	**Kawauchi**	**1.54**	**215**	P		**Pn**	**12 40 28.9**	**-0.6**
JFK				S		**Sn**	**12 40 46.6**	**-1.7**
JYS	**Shirataka**	**1.56**	**255**	P		**Pn**	**12 40 29.4**	**-0.4**
ERM	**Erimo**	**3.50**	**15**	⇑*e*P		**Pn**	**12 40 56.3**	**0.0**
ERM	**Erimo**	**3.50**	**15**	*e*Pn		**Pn**	**12 40 56.7**	**+0.5**
ERM				*e*Sn		**Sn**	**12 41 36.9**	**+0.5**
MJA0	**Matsu Arr-Jizo**	**3.62**	**236**	*e*P		**Pn**	**12 40 59.6**	**+1.5**
MJA0				pmax		pmax		
	comp=Z,6.0nm,0.3s							
MAJO	**Matsushiro**	**3.65**	**236**	*e*P		**Pn**	**12 40 59.7**	**+1.2**
MAJO	**Matsushiro**	**3.65**	**236**	*e*Pn		**Pn**	**12 40 59.7**	**+1.2**
MAT	**Matsushiro**	**3.65**	**236**	P		**Pn**	**12 40 59.7**	**+1.2**
MAT				*e*S		**Sn**	**12 41 44.9**	**+4.7**
MJAR	**Matsushiro Arr**	**3.65**	**236**	P		**Pn**	**12 40 59.6**	**+1.2**
	comp=Z,5.8nm,0.3s,baz=40,slow=12,SNR=83							
MJAR				LR		LR	12 42 45.3	
	comp=Z,197nm,19.7s,baz=60,slow=45							
ASAJ	**Asahikawa** comp=Z,12nm,0.7s	**5.50**	**5**	*e*Pn		**Pn**	**12 41 23.9**	**+0.1**
JHJ2	**Mitsune**	**5.78**	**198**	*e*Pn		**Pn**	**12 41 27.3**	**-0.4**
JHJ2				*e*Sn		**Sn**	**12 42 33.1**	**+0.4**
JHJ	**Hachijo jima 2**	**5.78**	**199**	P		**Pn**	**12 41 26.9**	**-0.8**
	comp=Z,8.8nm,0.3s,baz=286,slow=23,SNR=16							
JHJ				S		**Sn**	**12 42 29.3**	**-3.4**
	comp=Z,24nm,0.3s,baz=57,slow=23,SNR=6.0							
JHJ				LR		LR	12 43 15.7	
	comp=Z,26nm,20.0s,baz=350,slow=33							
KUR	**Kuril'sk**	**7.92**	**32**	*e*P		**Pn**	**12 41 56.7**	**-0.2**
KUR				*i* S		**Sn**	**12 43 20.8**	**-4.3**
KUR				pmax		pmax		
	comp=N,9.0nm,0.3s							
KUR				pmax		pmax		
	comp=E,3.0nm,0.3s							
KUR				pmax		pmax		
	comp=Z,11nm,0.3s							
KUR				pmax		pmax		
	comp=Z,135nm,4.2s							
KUR				smax		smax		
	comp=N,46nm,0.6s							
KUR				smax		smax		
	comp=E,54nm,0.6s							
KUR				smax		smax		
	comp=E,51nm,3.1s							
KUR				smax		smax		
	comp=N,141nm,3.8s							
YSS	**Yuzh-Sakhalins**	**8.34**	**4**	⇓*e*P		**Pn**	**12 42 02.8**	**+0.2**
YSS				*e*S		**Sn**	**12 43 35.3**	**+0.1**
YSS				pmax		pmax		
	comp=Z,20nm,1.2s							
YSS	**Yuzh-Sakhalins** comp=Z,25nm,0.9s	**8.34**	**4**	*e*Pn		**Pn**	**12 42 02.7**	**+0.2**
VLA	**Vladivostok**	**8.86**	**304**	⇓*e*P		**Pn**	**12 42 12.9**	**+3.1**
VLA				pmax		pmax		
	comp=Z,41nm,1.0s							
USRK	**Ussuriysk Ar.**	**9.34**	**310**	P		**Pn**	**12 42 16.6**	**+0.4**
	comp=Z,0.9nm,0.3s,baz=119,slow=14,SNR=6.6							
USRK				LR		LR	12 45 52.0	
	comp=Z,142nm,18.0s,baz=157,slow=37							
JNU	**Nakatsue** comp=Z,0.3nm,0.3s,baz=111,slow=6.1,SNR=6.9	**10.55**	**242**	P		**Pn**	**12 42 32.8**	**-0.2**
KSRS	**Korea Array** comp=Z,0.4nm,0.3s,baz=77,slow=14,SNR=10	**11.15**	**268**	P		**Pn**	**12 42 44.3**	**+3.2**
KSRS				LR		LR	12 46 37.4	
	comp=Z,119nm,19.7s,baz=86,slow=35							
KSAR	**Wonju Array Be**	**11.18**	**268**	P		**Pn**	**12 42 44.3**	**+2.8**
KSAR	**Wonju Array Be**	**11.18**	**268**	P		**Pn**	**12 42 44.3**	**+2.8**
KLR	**Kul'dur** comp=Z,0.2nm,0.3s,baz=151,slow=14,SNR=4.0	**12.89**	**329**	P		**Pn**	**12 43 04.7**	**-0.2**
KLR				LR		LR	12 47 58.6	
	comp=Z,138nm,19.1s,baz=126,slow=37							
PETK	**Petropavlovsk-** comp=Z,25nm,18.1s,baz=231,slow=40	**18.09**	**32**	LR		LR	12 52 10.8	
MA2	**Magadan** comp=Z,7.4nm,0.8s,baz=174,slow=10,SNR=3.5	**21.70**	**12**	P		**P**	**12 44 51.4**	**+0.5**
MA2				LR		LR	12 53 27.6	
	comp=Z,30nm,18.4s,baz=194,slow=37							
YAK	**Yakutsk** comp=Z,7.5nm,0.3s,baz=349,slow=2.8,SNR=7.4	**24.62**	**346**	P		**P**	**12 45 19.4**	**-0.3**
YAK				LR		LR	12 55 19.2	
	comp=Z,54nm,18.2s,baz=200,slow=37							
YAK	**Yakutsk**	**24.62**	**346**	*e*P		**P**	**12 45 19.1**	**-0.6**

YAK *e**PP **pP** **12 45 33.5 +0.8**
YAK *e* 12 45 51.9
YAK *e* 12 49 00.0
YAK *e*S **S** **12 49 35.4 -1.8**
YAK *e**SS **sS** **12 50 00.5 +1.6**
YAK *e*SS **SnSn** **12 50 25.0 -1.4**
YAK *e* 12 56 17.0
YAK pmax pmax
comp=Z,10.0nm,0.8s
YAK pmax pmax
comp=Z,24nm,3.0s
YAK pmax pmax
comp=N,17nm,2.3s
YAK pmax pmax
comp=E,26nm,2.5s
YAK smax smax
comp=N,46nm,2.8s
YAK smax smax
comp=E,12nm,1.9s
YAK Yakutsk 24.62 346 *e*P **P 12 45 19.2 -0.5**
comp=E,9.2nm,0.5s
GUMO Guam 25.08 173 LR LR 12 53 36.9
comp=E,42nm,21.6s,baz=12,slow=32
SEY Seymchan 25.14 11 P **P 12 45 26.1 +1.7**
comp=E,5.3nm,0.6s,baz=207,slow=7.5,SNR=17
SEY Seymchan 25.14 11 ⇓*e*P **P 12 45 26.4 +2.0**
SONM Songino Array 27.30 301 P **P 12 45 43.9 -0.4**
comp=E,1.0nm,0.5s,baz=92,slow=10,SNR=6.0
SONM LR LR 12 56 16.8
comp=E,34nm,18.4s,baz=170,slow=36
SONM Songino Array 27.30 301 *e*P **P 12 45 45.3 +1.0**
SONM pmax pmax
comp=Z,1.0nm,0.5s
ENH Enshi 27.95 263 *e*P **P 12 45 49.3 -0.8**
comp=Z,15nm,0.6s
H11N2 WAKE ISLAND Hy 28.63 124 T T 13 16 22.6
baz=317,slow=75,SNR=5622
H11N1 WAKE ISLAND Hy 28.64 124 T T 13 16 23.4
baz=317,slow=75,SNR=6120
H11N3 WAKE ISLAND Hy 28.65 124 T T 13 16 24.0
baz=317,slow=75,SNR=3974
H11S1 WAKE ISLAND Hy 29.40 126 T T 13 17 21.5
baz=319,slow=76,SNR=775
H11S3 WAKE ISLAND Hy 29.40 126 T T 13 17 21.7
baz=319,slow=76,SNR=758
H11S2 WAKE ISLAND Hy 29.41 126 T T 13 17 24.3
baz=319,slow=76,SNR=249
TLY Talaya 29.65 309 P **P 12 46 05.7 +0.7**
comp=Z,4.2nm,0.8s,baz=133,slow=3.5,SNR=7.7
TLY LR LR 12 58 38.2
comp=E,61nm,18.8s,baz=170,slow=38
ZAK Zakamensk 29.66 306 *e*P **P 12 46 03.5 -1.7**
ZAK pmax pmax
comp=Z,4.0nm,0.9s
ZALV Zalesovo Beam 41.18 311 P **P 12 47 44.0 +0.2**
comp=Z,4.3nm,0.4s,baz=89,slow=7.3,SNR=24
ZALV PcP **PcP** **12 49 42.2 +0.2**
comp=Z,1.2nm,0.3s,baz=98,slow=2.9,SNR=4.2
ZALV LR LR 13 05 33.5
comp=E,38nm,18.8s,baz=250,slow=37
NRIK Noril'sk 42.01 334 LR LR 13 06 13.6
comp=Z,78nm,18.9s,baz=107,slow=37
NVS Novosibirsk 42.07 312 *e*P **P 12 47 50.8 -0.2**
MKAR Makanchi Array 43.66 301 P **P 12 48 04.3 +0.2**
comp=Z,2.4nm,0.6s,baz=83,slow=9.9,SNR=22
MKAR LR LR 13 06 59.2
comp=Z,23nm,19.8s,baz=122,slow=37
KURK Kurchatov 45.31 307*c i*P **P 12 48 16.5 -0.6**
KURK pmax pmax
comp=Z,95nm,1.0s
KURK Kurchatov 45.31 307 *e*P **P 12 48 16.6 -0.6**
comp=Z,130nm,0.6s
ILAR Eielson Array 47.91 33 P **P 12 48 37.9 +0.6**
comp=Z,1.0nm,0.6s,baz=268,slow=6.1,SNR=18
ILAR Eielson Array 47.91 33 *e*P **P 12 48 38.3 +1.0**
ILAR pmax pmax
comp=Z,1.0nm,0.6s
DOT Dot Lake 49.23 34 *e*P **P 12 48 48.3 +0.8**
comp=Z,2.2nm,0.6s
BVAR Borovoye Array 49.84 311 P **P 12 48 52.0 -0.2**
baz=67,slow=8.4
BRVK Borovoye 49.89 311 ⇓*i*P **P 12 48 52.8 +0.2**
BRVK pmax pmax
comp=Z,8.0nm,0.7s
KSH Kashi 50.17 293 *e*P P 12 48 59.0 +3.9
KSH *e*PP PP 12 50 57.5 +7.0
KSH S **S** **12 56 02.5 -0.9**
KSH LR LR
comp=Z,160nm,6.7s
KSH LR LR
comp=Z,260nm,15.2s
KSH LR LR
comp=Z,86nm,8.9s
HNR Honiara 50.67 157 LR LR 13 08 58.0
comp=Z,33nm,19.0s,baz=82,slow=34
KKAR Karatay Array 52.72 299 *e*P **P 12 49 13.2 -0.8**
KKAR pmax pmax
comp=Z,3.0nm,0.8s
KKAR Karatay Array 52.72 299 *e*P **P 12 49 13.2 -0.8**
comp=Z,2.7nm,0.8s
INK Inuvik 52.76 28 *e*P **P 12 49 15.2 +1.4**
INK pmax pmax
comp=Z,13nm,1.6s
INK Inuvik 52.76 28 *e*P **P 12 49 15.2 +1.4**
comp=Z,13nm,1.6s
SVE Sverdlovsk 54.25 318 *e*P **P 12 49 24.3 -0.6**
SVE pmax pmax
comp=Z,12nm,0.8s
ARU Arti 55.47 318*c i*P **P 12 49 33.4 -0.3**
ARU 12 50 31.8
ARU 12 51 35.3
ARU S **S** **12 57 16.0 +1.3**
ARU SS **SS** **13 00 55.0 -4.4**
ARU pmax pmax
comp=Z,9.0nm,1.0s
ARU Arti 55.47 318 *e*P **P 12 49 33.5 -0.2**
comp=Z,2.8nm,0.8s
ABKAR Akbulak array 57.26 310 *e*P **P 12 49 46.0 -0.5**
comp=Z,3.3nm,0.6s
WRAB Tennant Creek 58.70 188 *e*P **P 12 49 57.1 +0.2**
WRAB pmax pmax
comp=Z,2.0nm,0.7s
WRAB Tennant Creek 58.70 188 *e*P **P 12 49 57.1 +0.2**
comp=Z,2.2nm,0.7s
WRA Warramunga Arr 58.70 188 P **P 12 49 56.9 0.0**
comp=Z,1.0nm,0.8s,baz=6.7,slow=7.2,SNR=7.4
WRA Warramunga Arr 58.70 188*c e*P **P 12 50 00.6 +3.7**
WRA pmax pmax
comp=Z,1.0nm,0.5s
ASAR Alice Springs 62.43 188 P **P 12 50 21.8 -0.5**
comp=Z,0.4nm,0.9s,baz=358,slow=4.2,SNR=4.1
ASAR Alice Springs 62.43 188 *e*P **P 12 50 25.4 +3.1**
ARCES ARCESS Array B 62.66 339 P **P 12 50 23.4 +0.1**
comp=Z,1.4nm,0.7s,baz=62,slow=8.4,SNR=7.0
ARCES ARCESS Array B 62.66 339 *e*P **P 12 50 23.4 +0.1**
ARCES pmax pmax
comp=Z,2.0nm,0.8s
GEYT Alibeck 63.46 298 P **P 12 50 28.2 -0.9**
comp=Z,0.7nm,0.3s,baz=73,slow=5.1,SNR=4.0
FINES FINESS Array B 67.61 332 P **P 12 50 55.3 -0.1**
comp=Z,4.0nm,0.8s,baz=35,slow=7.0,SNR=9.8
FINES LR LR 13 21 43.7
comp=Z,28nm,19.6s,baz=36,slow=37
FINES FINESS Array B 67.61 332 *e*P P 12 50 59.4 +4.0
FINES pmax pmax
comp=Z,1.0nm,0.5s
SUMG Summit 69.09 0 *e*P **P 12 51 05.1 +0.1**
SUMG pmax pmax
comp=Z,4.0nm,0.7s
SUMG Summit 69.09 0 *e*P **P 12 51 05.1 +0.1**
comp=Z,4.3nm,0.7s
GOF Gofitskoye 69.36 312 ⇑*e*P **P 12 51 06.5 -0.2**
KVAR Kislovodsk Arr 70.19 311 P **P 12 51 11.9 0.0**
comp=Z,4.8nm,0.6s,baz=301,slow=5.9,SNR=3.7
KIV Kislovodsk 70.20 311 ⇑*e*P **P 12 51 13.2 +1.2**
KIV *e**PP **pP** **12 51 24.1 -2.2**
KIV *e* 12 51 31.5
KIV pmax pmax
comp=Z,8.0nm,0.8s
KBZ Khabaz 70.20 310 P **P 12 51 12.2 +0.4**
comp=Z,4.0nm,0.9s,baz=32,slow=4.0,SNR=5.4
KBZ LR LR 13 25 02.1
comp=Z,18nm,18.1s,baz=50,slow=38
NEY Neytrino 70.58 310 ⇑*e*P **P 12 51 15.8 +1.4**
NEY pmax pmax
comp=Z,1.0nm,0.8s

NB2	**NORSAR Subarra**	**72.88**	**337**	P	**P**	**12 51 27.2**	**-0.6**
	comp=Z,2.9nm,0.7s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.88**	**337**	P	**P**	**12 51 27.9**	**+0.1**
	comp=Z,2.3nm,0.7s,baz=38,slow=6.0,SNR=12						
NOA				LR	LR	13 26 06.1	
	comp=Z,30nm,21.5s,baz=55,slow=38						
NOA	**NORSAR Array B**	**72.88**	**337**	*e*P	**P**	**12 51 27.9**	**+0.1**
NOA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
AKASG	**Malin Array Be**	**73.31**	**322**	P	**P**	**12 51 30.0**	**-0.4**
	comp=Z,1.1nm,0.4s,baz=46,slow=6.9,SNR=6.4						
AKASG				LR	LR	13 26 39.1	
	comp=Z,26nm,18.2s,baz=145,slow=38						
KIEV	**Kiev**	**73.32**	**322**	⇓*e*P	**P**	**12 51 30.2**	**-0.2**
KIEV				pmax	pmax		
	comp=Z,5.0nm,1.0s						
KIEV	**Kiev**	**73.32**	**322**	*e*P	**P**	**12 51 29.7**	**-0.7**
	comp=Z,1.8nm,0.8s						
PDAR	**Pinedale Array**	**76.23**	**46**	P	**P**	**12 51 49.0**	**+1.2**
	comp=Z,0.7nm,0.6s,baz=288,slow=2.0,SNR=8.6						
BRTR	**Keskin Array B**	**78.12**	**312**	P	**P**	**12 51 59.0**	**+0.7**
	comp=Z,0.6nm,0.4s,baz=35,slow=5.3,SNR=4.5						
BRTR	**Keskin Array B**	**78.12**	**312**	P	**P**	**12 51 59.0**	**+0.7**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
DPC	**Dobruska-Polom**	**79.34**	**328**	*e*P	**P**	**12 52 05.9**	**+1.2**
DPC	**Dobruska-Polom**	**79.34**	**328**	*e*P	**P**	**12 52 05.9**	**+1.2**
BRG	**Berggiesshubel**	**79.90**	**330**	*e*P	**P**	**12 52 07.7**	**0.0**
	comp=Z,2.9nm,0.8s						
BRG	**Berggiesshubel**	**79.90**	**330**	*e*P	**P**	**12 52 07.7**	**0.0**
BRG				pmax	pmax		
	comp=Z,3.0nm,0.8s						
CLL	**Collm**	**79.93**	**330**	⇑*i*P	**P**	**12 52 07.6**	**-0.2**
	comp=Z,4.0nm,0.8s						
CLL				*e*		12 52 17.0	
CLL	**Collm**	**79.93**	**330**	⇑*i*P	**P**	**12 52 07.6**	**-0.2**
CLL				pmax	pmax		
	comp=Z,4.0nm,0.8s						
CONA	**Conrad Observa**	**81.39**	**327**	*i* P	**P**	**12 52 16.3**	**+0.5**
	comp=Z,1.3nm,0.7s						
KHC	**Kasperske Hory**	**81.41**	**329**	*e*P	**P**	**12 52 16.6**	**+0.8**
KHC				*e*PCP	**PcP**	**12 52 21.8**	**0.0**
KHC	**Kasperske Hory**	**81.41**	**329**	*e*P	**P**	**12 52 16.6**	**+0.8**
GERES	**GERESS Array B**	**81.59**	**328**	P	**P**	**12 52 16.8**	**-0.1**
	comp=Z,0.5nm,0.4s,baz=35,slow=5.4,SNR=8.4						
GERES				LR	LR	13 30 38.5	
	comp=Z,29nm,21.2s,baz=327,slow=37						
GERES	**GERESS Array B**	**81.59**	**328**	*e*P	**P**	**12 52 16.9**	**+0.1**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ARSA	**Arzberg**	**82.06**	**326**	*i* P	**P**	**12 52 19.6**	**+0.4**
	comp=Z,1.4nm,0.7s						
MOA	**Molln**	**82.13**	**327**	*i* PcP	**P**	**12 52 21.0**	**+1.4**
	comp=Z,1.6nm,0.7s						
SOKA	**Soboth**	**82.71**	**326**	*i* P	**P**	**12 52 22.9**	**+0.2**
	comp=Z,2.6nm,0.8s						
OBKA	**Obir**	**83.06**	**326**	*i* P	**P**	**12 52 23.3**	**-1.3**
	comp=Z,2.5nm,1.1s						
KBA	**Koelnbreinsper**	**83.12**	**327**	*i* PcP	**P**	**12 52 25.7**	**+0.7**
	comp=Z,1.1nm,0.8s						
MYKA	**Terra Mystica**	**83.35**	**327**	*i* P	**P**	**12 52 25.9**	**-0.1**
	comp=Z,4.0nm,1.0s						
ABTA	**Abfaltersbach**	**83.73**	**328**	*i* P	**P**	**12 52 27.9**	**-0.1**
	comp=Z,2.9nm,1.0s						
MOTA	**Moosalm**	**83.84**	**329**	*i* P	**P**	**12 52 27.8**	**-0.9**
	comp=Z,1.5nm,0.6s						
RETA	**Reutte**	**83.86**	**329**	*i* PcP	**P**	**12 52 29.2**	**+0.5**
	comp=Z,3.7nm,0.7s						
BFO	**Black Forest**	**84.12**	**331**	*i* P	**P**	**12 52 31.1**	**+1.2**
FETA	**Feichten**	**84.25**	**329**	*i* P	**P**	**12 52 30.3**	**-0.4**
	comp=Z,2.4nm,0.7s						
DAVA	**Damuels**	**84.38**	**329**	*i* P	**P**	**12 52 29.1**	**-2.3**
	comp=Z,6.3nm,1.0s						
TXAR	**Lajitas Array**	**88.80**	**53**	P	**P**	**12 52 54.5**	**+1.3**
	comp=Z,0.2nm,0.6s,baz=292,slow=4.8,SNR=4.5						
MSEY	**Mahe Island**	**90.15**	**264**	*i* P	**P**	**12 52 57.6**	**-2.0**
LPAZ	**La Paz**	**145.49**	**58**	PKPbc	**PKPab**	**12 59 38.3**	**-0.1**
	comp=Z,0.5nm,0.4s,baz=324,slow=4.1,SNR=3.8						

*PGC **31** 12:55:54.4±0.6,57.74N×137.19W,h1km,ML3.3/6, 135km Wnw of Sitka, Ak Off Coast Of Southeastern Alaska*
*NEIC **31** 12:55:54.4,57.74N×137.19W,h1km,ML3.3(OTT), ML2.9(AEIC),After OTT.*
ISC 31 12:55:54.2±1.9,57°59N±0'.04×137°19W±0'.05, h23km±18km,n29,σ1°15/49,Off coast of southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BESE	**Bessie Mountai**	**1.59**	**50**	P	**Pn**	**12 56 21.7**	**+0.8**
BESE				S	**Sn**	**12 56 41.0**	**+0.3**
DHAK	**Deception Hill**	**1.60**	**341**	P	**Pn**	**12 56 21.2**	**+0.2**
DHAK				S	**Sn**	**12 56 39.5**	**-1.4**
PLBC	**Pleasant Camp**	**1.92**	**13**	Pn	**Pn**	**12 56 25.0**	**-0.3**
PLBC				Sn	**Sn**	**12 56 49.9**	**+1.1**
PLBC	**Pleasant Camp**	**1.92**	**13**	P	**Pn**	**12 56 25.1**	**-0.3**
PLBC				S	**Sn**	**12 56 49.7**	**+0.9**
SKAG	**Skagway**	**2.11**	**27**	P	**Pn**	**12 56 28.2**	**+0.2**
SKAG				S	**Sn**	**12 56 52.8**	**-0.7**
WRAK	**Wrangell Islan**	**2.90**	**112**	*e*Pn	**Pb**	**12 56 44.6**	**-0.5**
WRAK				S	**Sn**	**12 57 10.5**	**-2.3**
PCA	**Pinnacle**	**2.98**	**329**	Pn	**Pn**	**12 56 40.3**	**+0.4**
PCA				Sn	**Sn**	**12 57 14.7**	**-0.3**
PCA	**Pinnacle**	**2.98**	**329**	P	**Pn**	**12 56 40.4**	**+0.4**
YUK7	**Dusty Glacier**	**2.99**	**351**	Pn	**Pn**	**12 56 41.1**	**+0.8**
YUK7				Sn	**Sn**	**12 57 15.3**	**-0.1**
YUK7	**Dusty Glacier**	**2.99**	**351**	Pn	**Pn**	**12 56 41.1**	**+0.8**
YUK7				Sn	**Sn**	**12 57 15.3**	**-0.1**
CRAG	**Craig**	**3.10**	**132**	P	**Pn**	**12 56 40.8**	**-0.7**
CRAG				S	**Sn**	**12 57 16.6**	**-1.2**
HYT	**Haines Junctio**	**3.25**	**357**	Pn	**Pn**	**12 56 44.1**	**+0.3**
HYT	**Haines Junctio**	**3.25**	**357**	Pn	**Pn**	**12 56 44.1**	**+0.3**
WHY	**Whitehorse**	**3.30**	**20**	Pn	**Pn**	**12 56 44.9**	**+0.5**
WHY				Sn	**Sn**	**12 57 22.6**	**-0.3**
WHY				Sg	**Sb**	**12 57 32.1**	**+0.4**
WHY	**Whitehorse**	**3.30**	**20**	P	**Pn**	**12 56 44.8**	**+0.4**
WHY				S	**Sn**	**12 57 22.3**	**-0.7**
TABL	**Table Mountain**	**3.51**	**326**	P	**Pn**	**12 56 47.6**	**+0.1**
MESA	**MESA**	**3.58**	**318**	P	**Pn**	**12 56 48.6**	**+0.2**
BARK	**Barkley Ridge**	**3.93**	**318**	P	**Pn**	**12 56 52.4**	**-0.7**
CTGM	**Chitina Glacie**	**4.00**	**330**	Pn	**Pn**	**12 56 54.7**	**+0.7**
CTGM				Sn	**Sn**	**12 57 39.4**	**-0.8**
CTGM	**Chitina Glacie**	**4.00**	**330**	P	**Pn**	**12 56 54.0**	**-0.1**
NDB	**Naden**	**4.36**	**145**	Pn	**Pn**	**12 56 59.9**	**+0.9**
NDB				Sn	**Sn**	**12 57 51.5**	**+2.4**
NDB	**Naden**	**4.36**	**145**	Pn	**Pn**	**12 56 59.9**	**+0.9**
NDB				Sn	**Sn**	**12 57 51.5**	**+2.4**
KAIM	**Kayak Island**	**4.43**	**305**	P	**Pn**	**12 56 59.4**	**-0.5**
GOAT	**Goat Mountain**	**4.91**	**311**	P	**Pn**	**12 57 06.0**	**-0.5**
VIB	**Van Inlet**	**5.09**	**147**	Pn	**Pn**	**12 57 11.7**	**+2.7**
VIB				Sn	**Sn**	**12 58 05.3**	**-1.8**
VIB	**Van Inlet**	**5.09**	**147**	Pn	**Pn**	**12 57 11.7**	**+2.7**
VIB				Sn	**Sn**	**12 58 05.3**	**-1.8**
DIB	**Dawson Inlet,**	**5.15**	**147**	Pn	**Pn**	**12 57 10.3**	**+0.6**
DIB				Sn	**Sn**	**12 58 06.7**	**-1.7**
DIB	**Dawson Inlet,**	**5.15**	**147**	Pn	**Pn**	**12 57 10.3**	**+0.6**
DIB				Sn	**Sn**	**12 58 06.8**	**-1.7**
DAWY	**Dawson**	**6.58**	**352**	*e*Pn	**Pn**	**12 57 30.2**	**+0.7**
	1.5nm,0.6s						

*MOS **31** 12:59:54.4±2.5,55.40N×113.79E,h10km,mb4.0/1,Error ellipse: s-maj=23.3km s-min=18.9km az=94.3*
*BYKL **31** 12:59:54.2±0.3,55.41N×113.82E*
ISC 31 12:59:52.7±0.8,55°35N±0'.03×113°78E±0'.02,h10km,n33, σ2°57/60,3C-3D,East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SVKR	**Severomuysk**	**0.78**	**351**	*e*Pg	**Pb**	**13 00 08.4**	**0.0**
SVKR				*e*Sg	**Sb**	**13 00 18.8**	**-0.2**
SVKR				*e*Sb	**Sn**	**13 00 23.3**	**+1.7**
SVKR				Pmax			
	342nm,0.2s						
SVKR				Smax			
	2µm,0.7s						
SVKR	**Severomuysk**	**0.78**	**351**	*e*PG	**Pb**	**13 00 08.4**	**0.0**
SVKR				*e*		13 00 18.4	
SVKR				pmax	pmax		
	comp=Z,378nm,0.2s						
SVKR				smax	smax		
	comp=E,2µm,0.7s						
YOA	**Uoyan**	**1.40**	**305**	⇑*i*Pg	**Pg**	**13 00 19.2**	**-0.4**
YOA				*e*Sg	**Sg**	**13 00 38.7**	**+0.9**
YOA				Pmax			
	comp=E,512nm,0.3s						
YOA				Smax			
	comp=E,2µm,0.4s						
YOA	**Uoyan**	**1.40**	**305**	*e*PG	**Pg**	**13 00 19.2**	**-0.4**
YOA				*e*		13 00 38.7	
YOA				pmax	pmax		
	comp=Z,493nm,0.2s						
YOA				smax	smax		
	comp=E,2µm,0.4s						
KMO	**Kumora**	**1.56**	**291**	⇑*i*Pg	**Pb**	**13 00 21.8**	**+0.1**
	comp=E,15nm,0.6s						
KMO				⇓*i*Pg	**Pb**	**13 00 21.8**	**+0.1**
	comp=E,26nm,0.6s						
KMO				⇑*i*Pg	**Pb**	**13 00 21.8**	**+0.1**
	comp=E,155nm,0.6s						
KMO				*e*Sg	**Sg**	**13 00 41.9**	**-0.9**
KMO				*e*		13 00 44.3	
KMO				Pmax			
	comp=E,122nm,0.4s						
KMO				max			
	comp=E,474nm,0.8s						
KMO	**Kumora**	**1.56**	**291**	*e*PG	**Pb**	**13 00 21.7**	**+0.1**
KMO				*e*		13 00 41.2	
KMO				pmax	pmax		
	comp=Z,189nm,0.4s						
KMO				smax	smax		
	comp=N,377nm,1.0s						
NLYR	**Nelyaty**	**1.57**	**43**	*e*Pg	**Pb**	**13 00 21.7**	**-0.2**
NLYR				*e*		13 00 27.6	
NLYR				*e*Sg	**Sb**	**13 00 41.5**	**-0.4**
NLYR				max			
	comp=N,162nm,0.7s						
NLYR				Smax			
	comp=N,249nm,1.1s						
YLYR	**Ulyunkhan**	**1.58**	**254**	⇓*i*Pg	**Pg**	**13 00 22.8**	**-0.2**
YLYR				*e*Sg	**Sg**	**13 00 45.1**	**+1.7**
YLYR				*e*Sb	**Sb**	**13 00 46.1**	**+4.1**
YLYR				Pmax			
	comp=N,40nm,0.4s						
YLYR				max			
	comp=N,441nm,0.1s						
YLYR	**Ulyunkhan**	**1.58**	**254**	⇓*i*PN	**Pg**	**13 00 22.9**	**-0.1**
YLYR				*e*		13 00 44.9	
YLYR				pmax	pmax		
	comp=Z,40nm,0.3s						
YLYR				smax	smax		
	comp=E,446nm,0.2s						
NIZ	**Nizh Angarsk**	**2.44**	**282**	*e*Pn	**Pb**	**13 00 34.8**	**-1.9**
NIZ				*e*Pg	**Pg**	**13 00 37.4**	**-2.1**
NIZ				*e*		13 00 40.4	
NIZ				*e*Sn	**Sn**	**13 01 03.8**	**+1.2**
NIZ				*e*Sg	**Sb**	**13 01 08.8**	**+1.9**
NIZ				max			
	comp=E,26nm,0.3s						
NIZ				Smax			
	comp=E,124nm,0.3s						
BOD	**Bodaibo**	**2.48**	**3**	*e*Pg	**Pb**	**13 00 36.6**	**-0.7**
BOD				*e*		13 00 57.8	
BOD				*e*Sg	**Sb**	**13 01 08.8**	**+1.0**
BOD				Pmax			
	comp=E,35nm,0.6s						
BOD				Smax			
	comp=E,168nm,0.9s						
SYVR	**Suvo**	**2.78**	**234**	*e*	**Pn**	**13 00 36.2**	**-1.1**
SYVR				*e*Pg	**Pg**	**13 00 45.4**	**-0.6**
SYVR				*e*		13 01 07.6	
SYVR				*e*Sg	**Sg**	**13 01 22.0**	**0.0**
SYVR				Pmax			
	comp=E,10.0nm,0.1s						
SYVR				Smax			
	comp=E,172nm,1.0s						
SYVR	**Suvo**	**2.78**	**234**	*e*PN	**Pb**	**13 00 42.8**	**+0.3**
SYVR				*e*		13 01 22.0	
SYVR				pmax	pmax		
	comp=Z,9.0nm,0.1s						
SYVR				smax	smax		
	comp=N,176nm,0.7s						
CRS	**Chara**	**2.95**	**56**	*e*Pg	**Pb**	**13 00 46.5**	**+1.0**
CRS				*e*Sg	**Sg**	**13 01 24.7**	**-2.8**
CRS				Pmax			
	comp=N,28nm,0.9s						
CRS				Smax			
	comp=N,120nm,1.1s						
CRS	**Chara**	**2.95**	**56**	*e*PN	**Pg**	**13 00 48.4**	**-0.9**
CRS				*e*		13 01 24.4	
CRS				pmax	pmax		
	comp=Z,29nm,0.8s						
CRS				smax	smax		
	comp=E,111nm,1.2s						
CIT	**Chita**	**3.34**	**182**	*e*Sg	**Sg**	**13 01 39.3**	**-0.6**
CIT				Smax			
	comp=E,197nm,0.2s						
MXMB	**Maximikha**	**3.62**	**237**	*e*Sg	**Sg**	**13 01 48.7**	**0.0**
TUP	**Tupik**	**3.69**	**102**	*e*Pn	**Pn**	**13 00 50.9**	**+1.2**
TUP				*e*		13 00 54.3	
TUP				*e*Pg	**Pb**	**13 01 00.1**	**+2.2**
TUP				*e*Sn	**Sn**	**13 01 32.9**	**-0.3**
TUP				*e*Sg	**Sg**	**13 01 48.0**	**-3.0**
TUP				*e*		13 01 52.5	
TUP				Pmax			
	comp=E,18nm,0.4s						
TUP				max			
	comp=E,178nm,0.7s						
TUP	**Tupik**	**3.69**	**102**	*e*PN	**Pn**	**13 00 51.0**	**+1.2**
TUP				*e*		13 01 00.3	
TUP				*e*		13 01 48.3	
TUP				pmax	pmax		
	comp=Z,19nm,0.6s						
TUP				smax	smax		
	comp=N,179nm,0.6s						
OGRR	**Ongureny**	**3.99**	**247**	*e*Pn	**Pn**	**13 00 56.0**	**+2.1**
OGRR				*e*Pg	**Pb**	**13 01 05.8**	**+2.7**
OGRR				*e*Sg	**Sg**	**13 01 57.6**	**-3.2**
OGRR				Pmax			
	comp=N,5.0nm,0.4s						
OGRR				Smax			
	comp=N,35nm,0.9s						
KELR	**Kotokel**	**4.24**	**235**	*e*	**Pb**	**13 01 06.4**	**-1.0**
KELR				*e*Pg	**Pg**	**13 01 12.3**	**-1.7**
KELR				*e*Sg	**Sg**	**13 02 08.7**	**-0.2**
ZRHB	**Zarechye**	**4.81**	**237**	*e*Sg	**Sg**	**13 02 24.8**	**-2.3**
ZRHB				*e*		13 02 29.8	
ZRHB				max			
	comp=N,107nm,0.4s						
UUDB	**Ulan-Yde**	**5.04**	**229**	*e*	Pg	13 01 39.3	+10
UUDB				*e*Sg	**Sg**	**13 02 32.7**	**-1.8**
UUDB				Smax			
	comp=N,58nm,1.3s						
TRG	**Tyrgan**	**5.09**	**242**	*e*	**Pb**	**13 01 24.7**	**+2.9**
TRG				*e*		13 01 32.5	
TRG				*e*Sg	**Sg**	**13 02 33.1**	**-2.9**
TRG				max			
	comp=N,4.0nm,0.3s						
TRG				Smax			
	comp=N,24nm,1.0s						
STDB	**Stepnoy Dvoret**	**5.43**	**237**	*e*Sg	**Sg**	**13 02 44.8**	**-2.1**
HRMR	**Khuramsha**	**5.52**	**230**	*e*Pn	**Pb**	**13 01 29.2**	**0.0**
HRMR				*e*		13 01 35.3	
HRMR				*e*Sg	**Sg**	**13 02 48.0**	**-1.9**
HRMR				max			
	comp=N,9.0nm,0.5s						
HRMR				Smax			
	comp=N,91nm,1.1s						
KPC	**Khapcheranga**	**5.72**	**189**	*e*Pn	**Pn**	**13 01 20.7**	**+3.0**
KPC				*e*		13 01 35.8	
KPC				*e*		13 02 36.0	
KPC				*e*Sg	**Sg**	**13 02 51.7**	**-4.5**
KPC				max			
	comp=N,2.0nm,0.3s						
KPC				Smax			
	comp=N,50nm,0.9s						
LSTR	**Listvyanka**	**6.36**	**240**	*e*	Pg	13 02 16.6	+22
LSTR				*e*Sg	**Sg**	**13 03 14.3**	**-2.6**
LSTR				Smax			
	comp=N,16nm,2.3s						
IVK	**Ivanovka**	**6.61**	**241**	*e*Sg	**Sg**	**13 03 19.1**	**-5.7**
IVK				Smax			
	comp=N,20nm,2.3s						
TLY	**Talaya**	**7.07**	**243**	*e*	**Pb**	**13 02 00.0**	**+4.4**
TLY				*e*		13 03 30.1	
TLY				*e*Sg	**Sg**	**13 03 34.8**	**-4.7**
TLY				Smax			
	comp=N,8.0nm,0.6s						
ZAK	**Zakamensk**	**8.07**	**236**	*e*Sg	**Sg**	**13 04 06.4**	**-5.0**
ZAK				Smax			
	comp=N,10.0nm,1.2s						
MOY	**Mondy**	**8.46**	**249**	*e*	Pb	13 02 26.9	+7.6
MOY				*e*		13 03 53.2	
MOY				*e*Sg	**Sg**	**13 04 17.0**	**-7.2**
MOY				Smax			
	comp=N,19nm,1.6s						
ORL	**Orlik**	**8.71**	**257**	*e*Pn	Pn	13 02 12.0	+13
ORL				*e*		13 03 40.1	
ORL				*e*Sg	**Sg**	**13 04 24.1**	**-7.8**
ORL				*e*		13 04 27.3	
ORL				max			
	comp=N,2.0nm,0.7s						
ORL				max			
	comp=N,19nm,1.3s						

KRSC 31 13:07:19.0±1.7,52°47N×160°76E,h16km±15km,ML3.8, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SPN	**Mys Shipunski**	**0.77**	**325**	*e*P	Pb	13 07 34.3	+0.3
SPN				*e*S	Sg	13 07 43.3	-0.8
NLC	**Nalytchevo**	**1.11**	**310**	*e*P	Pg	13 07 40.4	+0.1
NLC				*e*S	Sb	13 07 53.1	-0.8
DALK	**Dalny**	**1.34**	**295**	*e*P	Pb	13 07 44.1	+0.4
DALK				*e*S	Sn	13 07 59.5	-1.0
RUS	**Russkaya**	**1.37**	**269**	*e*P	Pn	13 07 43.7	+0.2
RUS				*e*S	Sn	13 08 00.2	-1.1
UGLR	**Uglovaya**	**1.39**	**303**	*e*S	Sn	13 08 01.5	-0.3
SDLR	**Sedlovina**	**1.39**	**306**	*e*P	Pn	13 07 43.8	-0.1
SDLR				*e*S	Sb	13 08 02.5	+0.2
SMAR	**Somma**	**1.43**	**305**	*e*S	Sb	13 08 03.2	-0.1
AVH	**Avacha**	**1.46**	**304**	*e*S	Sb	13 08 05.0	+0.8
KRER	**Koryakskii**	**1.48**	**305**	*e*S	Sg	13 08 05.7	-0.8
KOK	**Koryaka**	**1.52**	**303**	*e*S	Sn	13 08 05.2	-0.1
KRX	**Arik**	**1.56**	**306**	*e*S	Sn	13 08 05.7	-0.4
KRMR	**Karymshinskiy**	**1.64**	**284**	*e*P	Pb	13 07 48.7	-0.1
KRMR				*e*S	Sn	13 08 07.4	-0.5
ASAK	**Asacha**	**1.75**	**268**	*e*S	Sb	13 08 12.8	+0.2
GNL	**Ganaly**	**2.09**	**307**	*e*P	Pb	13 07 55.6	-1.0
GNL				*e*S	Sb	13 08 20.9	-1.5
MKZ	**Mys Kozlova**	**2.17**	**15**	*e*P	Pb	13 07 57.2	-0.6
MKZ				*e*S	Sb	13 08 24.7	+0.3
TUMD	**Tumrok D**	**2.75**	**356**	*e*S	Sb	13 08 38.9	-2.2
BKI	**Bering**	**4.13**	**46**	*e*P	Pn	13 08 25.7	+4.4
BKI				*e*S	Sn	13 09 11.4	+2.2
SMKR	**Semkarok**	**4.14**	**5**	*e*P	Pn	13 08 24.5	+2.9

*IDC **31** 13:14:44.1±0.9,22.56S×68.33W,h108km±9km,mb3.5/2, mb1 3.8/6,mb1mx3.5/29,mbtmp4.0/6,Error ellipse: s-maj=26.0km s-min=21.7km az=111.0*
*ISCJB **31** 13:14:45.1±0.5,22.41S±0'.04×68.69W±0'.06,h128km±6km, mb3.7/2,Error ellipse: s-maj=9.4km s-min=5.6km az=165.4*
*SJA **31** 13:14:45.9±0.6,22°36S×68°53W,h107km±14km,ML3.2*
*GUC **31** 13:14:45.7±0.7,22°36S×68°74W,h126km±5km,ML4.2*
ISC 31 13:14:45.5±0.9,22°42S±0'.04×68°68W±0'.06,h123km±7km, n23,σ0°99/33,4C-6D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**0.28**	**229**	*e*P	**Pn**	**13 15 03.2**	**+0.1**
LVC				*e*S	**Sn**	**13 15 15.8**	**-0.7**
LVC	**Limon Verde**	**0.28**	**229**	P	**Pn**	**13 15 03.3**	**+0.1**
	10µm,0.3s,baz=66,slow=3.2,SNR=4337						
LVC				S	**Sn**	**13 15 15.7**	**-0.7**
	36µm,0.3s,baz=218,slow=19,SNR=34						
PB09	**IPOC Station P**	**0.81**	**320**	⇓*i*P	**Pn**	**13 15 06.8**	**+0.6**
PB09				*i* S	**Sn**	**13 15 22.1**	**+0.2**
PB09				IAML		13 15 25.1	
	comp=N,9µm,0.2s						
PB06	**IPOC Station P**	**0.87**	**251**	⇑*i*P	**Pn**	**13 15 07.5**	**+0.8**
PB06				*i* S	**Sn**	**13 15 23.6**	**+0.8**
PB06				IAML		13 15 25.1	
	comp=E,5µm,0.2s						
PB07	**IPOC Station P**	**1.32**	**301**	⇑*i*P	**Pn**	**13 15 11.7**	**+0.5**
PB07				*i* S	**Sn**	**13 15 31.1**	**+0.4**
PB07				IAML		13 15 31.6	
	comp=N,9µm,0.4s						
PB04	**IPOC Station P**	**1.36**	**273**	⇓*i*P	**Pn**	**13 15 12.2**	**+0.4**
PB04				*i* S	**Sn**	**13 15 32.5**	**+0.8**
PB04				IAML		13 15 34.6	
	comp=N,5µm,0.2s						
PB01	**IPOC Station P**	**1.56**	**331**	⇑*i*P	**Pn**	**13 15 14.0**	**0.0**
PB01				*i* S	**Sn**	**13 15 35.1**	**-0.5**
PB01				IAML		13 15 36.4	
	comp=E,2µm,0.3s						
PB10	**IPOC Station P**	**2.04**	**237**	⇑*i*P	**Pn**	**13 15 20.0**	**+0.4**
PB10				*i* S	**Sn**	**13 15 45.1**	**-0.6**
PB10				IAML		13 15 46.9	
	comp=E,2µm,0.5s						
PB08	**IPOC Station P**	**2.31**	**349**	⇓*i*P	**Pn**	**13 15 24.2**	**+0.8**
PB08				*i* S	**Sn**	**13 15 53.5**	**+1.1**
PB08				IAML		13 15 55.2	
	comp=E,927nm,0.9s						
HMBC	**Humberstone**	**2.41**	**332**	⇓*i*P	**Pn**	**13 15 23.7**	**-0.7**
HMBC				*i* S	**Sn**	**13 15 54.1**	**-0.1**
PB11	**IPOC Station P**	**2.80**	**341**	⇓*i*P	**Pn**	**13 15 28.7**	**-0.8**
PB11				*i* S	**Sn**	**13 16 02.7**	**-0.6**
MNMC	**Minye Minye**	**3.38**	**345**	⇓*i*P	**Pn**	**13 15 36.7**	**-0.5**
MNMC				*i* S	**Sn**	**13 16 17.4**	**+0.3**
SLA	**San Lorenzo**	**3.71**	**129**	*e*P	**Pn**	**13 15 42.5**	**+1.2**
SLA				IAML		13 15 45.5	
	comp=Z,41nm,0.5s						
AZAP	**Zapla**	**3.77**	**119**	*e*P	**Pn**	**13 15 42.7**	**+0.4**
ASTB	**Santa Barbara**	**4.17**	**112**	*e*P	**Pn**	**13 15 47.7**	**+0.1**
AHML	**Horco Molle**	**5.30**	**146**	*e*P	**Pn**	**13 16 03.4**	**+0.8**
LPAZ	**La Paz**	**6.12**	**5**	P	**Pn**	**13 16 15.6**	**+1.4**
	comp=Z,2.4nm,0.3s,baz=192,slow=4.7,SNR=73						
SIV	**San Ignacio**	**9.62**	**50**	P	Pn	13 16 56.5	-4.3
	comp=Z,2.4nm,0.3s,baz=244,slow=8.2,SNR=27						
SIV				S	Sn	13 18 31.3	-16
	comp=Z,0.4nm,0.3s,baz=264,slow=19,SNR=1.1						
CPUP	**Villa Florida**	**11.05**	**113**	P	Pn	13 17 14.1	-5.9
	comp=Z,0.1nm,0.3s,baz=291,slow=12,SNR=5.3						
PLCA	**Paso Flores**	**18.33**	**185**	P	**P**	**13 18 47.2**	**-3.1**
	comp=Z,0.8nm,0.3s,baz=307,slow=8.0,SNR=38		

	baz=258							
ENA	**Nanau**	**0.76**	**238**	P	**Pb**	**13**	**16**	**55.6 +0.2**
	baz=235							
ENA				*e*S	**Sn**	**13**	**17**	**06.7 -1.1**
	baz=235							
TWA	**Mucha**	**0.80**	**281**	*e*P	**Pb**	**13**	**16**	**56.4 +0.3**
	baz=278							
ENTT	**Nioudou**	**0.82**	**257**	*e*P	**Pb**	**13**	**16**	**57.1 +0.5**
	baz=254							
ENTT				*e*S	**Sb**	**13**	**17**	**08.2 +0.7**
	baz=254							
PCYT	**Pengchaiyu**	**0.86**	**337**	P	**Pg**	**13**	**16**	**56.7 -0.7**
	baz=335							
TWY	**Chenhua**	**0.89**	**300**	*e*P	**Pg**	**13**	**16**	**57.8 0.0**
	baz=297							
TWY				*e*S	**Sg**	**13**	**17**	**09.5 -0.1**
	baz=297							
NSK	**Sanguang**	**1.00**	**261**	*e*P	**Pg**	**13**	**16**	**59.8 -0.3**
	baz=259							
NSK				*e*S	**Sn**	**13**	**17**	**13.6 -0.3**
	baz=259							
NNS	**Nan Shan**	**1.05**	**248**	*e*P	**Pg**	**13**	**17**	**00.7 -0.3**
	baz=246							
NNS				*e*S	**Sn**	**13**	**17**	**15.3 +0.1**
	baz=246							
IRIF	**Iriomote-Funau**	**1.27**	**113**	P	**Pb**	**13**	**17**	**04.5 +0.4**
WHF	**Hehuan Shan**	**1.28**	**238**	*e*P	**Pg**	**13**	**17**	**04.9 -0.4**
	baz=236							
WHF				*e*S	**Sg**	**13**	**17**	**22.2 +0.2**
	baz=236							
NSTT	**Nanjuang**	**1.33**	**262**	*e*P	**Pb**	**13**	**17**	**05.5 +0.3**
	baz=259							
NSTT				*e*S	**Sg**	**13**	**17**	**24.1 +0.4**
	baz=259							
JKRS	**Kuro-shima**	**1.54**	**112**	P	**Pb**	**13**	**17**	**09.1 +0.4**
TWQ1	**Liyutan**	**1.60**	**253**	*e*P	**Pb**	**13**	**17**	**10.3 +0.5**
	baz=251							
WDT	**Danda**	**1.61**	**229**	*e*P	**Pb**	**13**	**17**	**10.0 -0.1**
	baz=227							
JIJ	**Ishigaki jima**	**1.61**	**107**	P	**Pb**	**13**	**17**	**10.4 +0.4**
JISG	**Ishigakijimahi**	**1.71**	**98**	*e*S	**Sb**	**13**	**17**	**33.4 +0.5**
TYC	**Yuchr**	**1.72**	**238**	*e*P	**Pb**	**13**	**17**	**12.3 +0.5**
	baz=236							

*ISCJB **31** 13:19:00.3±1.2,36°.30N±0°.05×142°.2E±0°.1,h10km, mb3.4/5,Error ellipse: s-maj=13.7km s-min=6.5km az=8.3*
*JMA **31** 13:19:02.4±0.3,36°.33N×142°.18E,h74km,M3.0*
*IDC **31** 13:19:20.5±1.2,34°.83N×137°.37E,h0km,mb3.4/5, mb1 3.5/5,mb1mx3.3/52,mbtmp3.4/5,Error ellipse: s-maj=30.7km s-min=20.5km az=66.0*
ISC 31 13:19:01.5±1.5,36°.29N±0°.05×142°.2E±0°.1,h10km,n18, σ1§61/20,**mb3.5/5,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.26**	**243**	P			**Pn**	**13 19 24.4**	**-0.8**
JHO	**Hitachi**	**1.38**	**284**	P			**Pn**	**13 19 25.2**	**-1.6**
ONAJ	**Iwakimizuishiy**	**1.41**	**306**	P			**Pn**	**13 19 25.6**	**-1.7**
BSO1	**Boso 1**	**1.93**	**212**	P			**Pn**	**13 19 33.5**	**-0.4**
BSO1				S			**Sn**	**13 19 57.5**	**-0.4**
JMM	**Marumori**	**1.95**	**324**	P			**Pn**	**13 19 32.9**	**-1.8**
JFT	**Otama**	**1.95**	**309**	P			**Pn**	**13 19 34.2**	**-0.5**
BSO3	**Boso 3**	**2.04**	**224**	P			**Pn**	**13 19 35.6**	**-0.1**
BSO3				*e*S			**Sn**	**13 20 01.6**	**+0.5**
JAG	**Ashikaga**	**2.25**	**274**	P			**Pn**	**13 19 38.0**	**-0.8**
JRY	**Ryogami san**	**2.71**	**265**	P			**Pn**	**13 19 44.2**	**-1.0**
JMK	**Ichinoseki**	**2.78**	**343**	P			**Pn**	**13 19 44.7**	**-1.3**
MJAR	**Matsushiro Arr**	**3.25**	**276**	Pn			**Pn**	**13 19 52.2**	**-0.4**
	2.0nm,0.3s,baz=207,slow=30,SNR=12								
MAT	**Matsushiro**	**3.26**	**276**	P			**Pn**	**13 19 53.0**	**+0.3**
MAT				*e*S			**Sn**	**13 20 31.3**	**-0.2**
JHJ	**Hachijo jima 2**	**3.75**	**213**	Pn			**Pn**	**13 19 58.3**	**-1.2**
	8.0nm,0.3s,baz=325,slow=23,SNR=21								
JHJ				Sn			**Sn**	**13 20 39.6**	**-4.1**
	17nm,0.3s,baz=329,slow=24,SNR=7.5								
SONM	**Songino Array**	**28.75**	**305**	P			**P**	**13 24 58.9**	**-0.4**
	0.3nm,0.4s,baz=106,slow=9.2,SNR=2.7								
MKAR	**Makanchi Array**	**45.07**	**303**	P			**P**	**13 27 19.4**	**+1.8**
	0.5nm,0.6s,baz=85,slow=9.8,SNR=6.7								
KURBB	**Kurchatov Arra**	**46.98**	**309**	P			**P**	**13 27 35.5**	**+3.0**
	0.3nm,0.5s,baz=83,slow=7.8,SNR=3.2								
WRA	**Warramunga Arr**	**56.42**	**189**	P			P	13 28 49.3	+6.0
	0.2nm,0.6s,baz=1.7,slow=7.8,SNR=5.2								
ASAR	**Alice Springs**	**60.15**	**189**	P			P	13 29 17.1	+7.7
	0.2nm,0.5s,baz=6.9,slow=8.9,SNR=5.7								

*MOS **31** 13:29:33.1±0.8,31°.18S×178°.24W,h35km,mb5.4/52, MS4.6/5,Error ellipse: s-maj=10.6km s-min=8.4km az=77.5*
*ISCJB **31** 13:29:34.0±0.1,31°.65S±0°.03×178°.29W±0°.04,h54km, mb5.2/118,MS4.4/20,Error ellipse: s-maj=6.0km s-min=2.3km az=30.2*
*IDC **31** 13:29:34.9±1.7,31°.12S×178°.13W,h44km±14km,mb4.6/20, mb1 4.6/20,mb1mx4.5/35,mbtmp4.8/20,MS4.3/17, Ms1 4.3/17,ms1mx4.1/27,Error ellipse: s-maj=12.8km s-min=10.6km az=62.0*
*BJI **31** 13:29:35.7,30°.51S×177°.56W,h60km,mb5.1/25, mB5.4/24,Ms5.0/14,Ms7 4.7/15*
*NEIC **31** 13:29:36.5±0.4,31°.27S×178°.29W,h58km±3km,mb5.1/95, Error ellipse: s-maj=6.8km s-min=4.4km az=154.0*
*GCMT **31** 13:29:36.5±0.2,31°.29S×177°.93W,h41km,MW5.2/100, Moment Tensor Solution. s83,c131; s100,c149; Duration: 0 Moment tensor: Scale 10^16^Nm; Mrr6.17±.17; Mθθ-0.56±.12; Mφφ-5.62±.11; Mr0.08±.12; Mθφ-1.47±.10; Mφr3.31±.12; Best double couple: M0 6.93300×10^16^ NP1:φs9.00000°,δs59.00000°,λ84.00000°. NP2: φs201.00000°,δs31.00000°,λ100.00000°. Principal axes: T 7.0470, Plg75.0000°, Azm261.0000°; N -0.2350, Plg5.0000°, Azm12.0000°; P -6.8190, Plg14.0000°, Azm103.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 31 13:29:34.6±0.4,31°.49S±0°.03×178°.18W±0°.04,h49km±3km,
h48km:pP-P,n560,σ1§65/563,**mb5.2**/114,**MS4.5**/20,
32C-27D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.24**	**6**	P			Pn	13 30 04.5	-4.8
	739nm,0.3s,baz=91,slow=9.9,SNR=24								
RAO				S			Sn	13 30 26.6	-9.2
	2μm,0.3s,baz=90,slow=20,SNR=15								
RAO						LR	LR	13 30 57.5	
	comp=Z,8μm,20.6s,baz=182,slow=44								
RAO	**Raoul Island**	**2.24**	**6**	*e*Pn			Pn	13 30 04.9	-4.4
RAO				*e*Sn			Sn	13 30 25.7	-10
RAO				*e*Sn			Sn	13 30 29.7	-6.1
MXZ	**Matakaoa Point**	**6.71**	**205**	*e*Pn			**Pn**	**13 31 08.2**	**-2.4**
MXZ				*e*Sn			**Sn**	**13 32 30.1**	**+4.3**
MXZ	**Matakaoa Point**	**6.71**	**205**	PN			**Pn**	**13 31 08.7**	**-1.9**
MXZ				SN			**Sn**	**13 32 29.2**	**+3.4**
WMGZ	**Waiomatatini S**	**6.91**	**203**	PN			**Pn**	**13 31 12.3**	**-1.0**
WMGZ				SN			**Sn**	**13 32 32.2**	**+1.7**
HAZ	**Te Kaha**	**7.08**	**207**	PN			**Pn**	**13 31 14.6**	**-1.0**
PKGZ	**Pakihiroa**	**7.09**	**205**	PN			**Pn**	**13 31 13.9**	**-1.8**
PKGZ				SN			**Sn**	**13 32 36.4**	**+1.4**
GRZ	**Great Barrier**	**7.11**	**226**	PN			**Pn**	**13 31 18.9**	**+2.9**
PUZ	**Puketiti**	**7.19**	**203**	PN			**Pn**	**13 31 15.4**	**-1.8**
PUZ				SN			**Sn**	**13 32 38.0**	**+0.6**
KUZ	**Kuaotunu**	**7.28**	**222**	PN			Pn	13 31 22.7	+4.3
RUGZ	**Raukumara Rang**	**7.30**	**207**	PN			**Pn**	**13 31 17.3**	**-1.5**
TWGZ	**Tauwhareparae**	**7.38**	**204**	PN			**Pn**	**13 31 18.0**	**-1.7**
TWGZ				SN			**Sn**	**13 32 43.0**	**+0.9**
CNGZ	**Carnagh Statio**	**7.58**	**202**	PN			**Pn**	**13 31 20.4**	**-2.1**
CNGZ				SN			**Sn**	**13 32 49.6**	**+2.6**
WCZ	**Waipu Caves**	**7.65**	**233**	PN			Pn	13 31 29.5	+6.2
TKGZ	**Te Karaka**	**7.66**	**204**	PN			**Pn**	**13 31 20.8**	**-2.8**
WIAZ	**Waiheke Island**	**7.66**	**225**	PN			Pn	13 31 27.8	+4.2
OPRZ	**Ohinepanea**	**7.68**	**213**	PN			**Pn**	**13 31 24.0**	**+0.2**
MWZ	**Matawai**	**7.68**	**206**	PN			**Pn**	**13 31 21.3**	**-2.6**
MWZ				SN			**Sn**	**13 32 49.9**	**+0.3**
TGRZ	**Tauranga**	**7.73**	**215**	PN			**Pn**	**13 31 27.1**	**+2.7**
URZ	**Urewera**	**7.78**	**209**	P			**Pn**	**13 31 23.4**	**-1.8**
	3.8nm,0.3s,baz=278,slow=2.5,SNR=52								
URZ				S			**Sn**	**13 32 50.3**	**-1.6**
	82nm,0.3s,baz=146,slow=17,SNR=16								
URZ	**Urewera**	**7.78**	**209**	*e*Pn			**Pn**	**13 31 23.2**	**-2.1**
URZ				*e*Sn			**Sn**	**13 32 52.3**	**+0.4**
URZ	**Urewera**	**7.78**	**209**	PN			**Pn**	**13 31 23.1**	**-2.1**

OUZ	**Omahuta**	**7.82**	**239**	*e*Pn			Pn	13 31 31.6 +5.8
OUZ	**Omahuta**	**7.82**	**239**	PN			Pn	13 31 31.1 +5.3
MKAZ	**Moumakai**	**7.85**	**223**	PN			Pn	13 31 30.7 +4.4
RAGZ	**Rawiri**	**7.87**	**206**	PN			**Pn**	**13 31 25.1 -1.4**
RIGZ	**Rimuhau**	**7.93**	**204**	PN			**Pn**	**13 31 24.8 -2.5**
RIGZ				SN			**Sn**	**13 32 56.4 +0.8**
PRGZ	**Paritu Road**	**8.08**	**202**	PN			**Pn**	**13 31 26.4 -3.0**
PRGZ				SN			**Sn**	**13 32 59.9 +0.5**
RRRZ	**Republican Roa**	**8.10**	**211**	PN			**Pn**	**13 31 29.1 -0.6**
TOZ	**Tahuroa Road**	**8.12**	**218**	PN			**Pn**	**13 31 33.0 +3.2**
SNGZ	**Shannon Statio**	**8.15**	**206**	PN			**Pn**	**13 31 28.2 -2.1**
KNZ	**Kokohu**	**8.24**	**203**	PN			Pn	13 31 27.8 -3.7
PRRZ	**Plateau Road**	**8.29**	**211**	PN			**Pn**	**13 31 31.5 -0.7**
NMHZ	**Naumai**	**8.62**	**207**	PN			**Pn**	**13 31 33.9 -3.0**
ARHZ	**Aropaoanui**	**8.70**	**206**	PN			**Pn**	**13 31 35.4 -2.4**
BKZ	**Black Stump Fm**	**8.81**	**208**	*e*Pn			**Pn**	**13 31 36.0 -3.4**
BKZ				*e*Sn			**Sn**	**13 33 15.6 -1.6**
BKZ	**Black Stump Fm**	**8.81**	**208**	PN			**Pn**	**13 31 36.4 -3.0**
MCHZ	**McNeill Hill**	**8.97**	**206**	PN			**Pn**	**13 31 38.5 -3.0**
HIZ	**Hauiti**	**9.04**	**217**	*e*Pn			**Pn**	**13 31 43.4 +1.0**
HIZ	**Hauiti**	**9.04**	**217**	PN			Pn	13 31 46.6 +4.1
KAHZ	**Kahuranaki**	**9.21**	**205**	PN			Pn	13 31 40.2 -4.6
KRHZ	**Kereru**	**9.26**	**207**	PN			Pn	13 31 41.8 -3.8
WNVZ	**Wahianoa**	**9.32**	**211**	PN			**Pn**	**13 31 44.5 -2.0**
PXZ	**Pawanui**	**9.42**	**204**	PN			Pn	13 31 43.4 -4.3
PNHZ	**Pukenui**	**9.56**	**207**	PN			Pn	13 31 45.3 -4.4
PRHZ	**Porangahau**	**9.71**	**204**	PN			Pn	13 31 47.8 -3.9
TSZ	**Takapari Road**	**9.78**	**207**	PN			Pn	13 31 48.3 -4.3
DVHZ	**Dannevirke**	**9.91**	**206**	PN			**Pn**	**13 31 50.8 -3.6**
ANWZ	**Angora Road**	**9.94**	**204**	PN			Pn	13 31 50.2 -4.6
PRWZ	**Pori Road**	**10.21**	**206**	PN			**Pn**	**13 31 56.0 -2.5**
BFZ	**Birch Farm**	**10.22**	**205**	*e*Pn			Pn	13 31 52.4 -6.2
BFZ				*e*Sn			**Sn**	**13 33 48.4 -3.3**
BFZ	**Birch Farm**	**10.22**	**205**	PN			Pn	13 31 53.6 -5.0
TIWZ	**Tintock**	**10.43**	**206**	PN			**Pn**	**13 31 58.7 -2.8**
MRZ	**Mangatainoka R**	**10.45**	**207**	PN			Pn	13 31 56.1 -5.7
HOWZ	**Holdsworth Sta**	**10.68**	**207**	PN			Pn	13 31 59.9 -4.9
TMWZ	**Te Maipa**	**10.72**	**205**	PN			Pn	13 31 60.0 -5.5
OGWZ	**Otaki Gorge**	**10.74**	**208**	PN			Pn	13 32 00.9 -4.8
KIW	**Kapiti Island**	**10.89**	**209**	PN			Pn	13 32 01.8 -5.9
MTW	**Mount Morrison**	**10.91**	**206**	PN			Pn	13 32 02.9 -5.2
TUWZ	**Tuamarina**	**11.77**	**210**	PN			Pn	13 32 14.7 -5.1
NNZ	**Nelson**	**11.85**	**213**	PN			Pn	13 32 15.0 -5.8
CTZ	**Chatham Island**	**12.29**	**175**	PN			**Pn**	**13 32 25.0 -1.8**
THZ	**Tophouse**	**12.49**	**212**	*e*Pn			Pn	13 32 24.8 -5.0
THZ	**Tophouse**	**12.49**	**212**	PN			Pn	13 32 25.3 -4.5
KHZ	**Kahutara**	**12.75**	**209**	*e*Pn			Pn	13 32 26.3 -6.8
KHZ	**Kahutara**	**12.75**	**209**	PN			Pn	13 32 27.5 -5.6
DSZ	**Denniston Nort**	**13.01**	**215**	PN			**Pn**	**13 32 35.2 -1.5**
DSZ				SN			Sn	13 34 51.7 -8.2
LTZ	**Lake Taylor**	**13.59**	**211**	*e*Pn			Pn	13 32 40.4 -4.3
LTZ	**Lake Taylor**	**13.59**	**211**	PN			Pn	13 32 40.0 -4.7
INZ	**Inchbonnie**	**13.92**	**213**	PN			Pn	13 32 45.3 -3.9
CRLZ	**Canterbury Las**	**14.09**	**209**	*e*Pn			Pn	13 32 47.7 -3.6
MSVF	**Nonsavu**	**14.12**	**345**	*e*P			Pn	13 32 47.1 -4.9
MSVF	**Nonsavu**	**14.12**	**345**	*e*Pn			Pn	13 32 47.1 -4.9
OXZ	**Oxford**	**14.13**	**211**	*e*Pn			Pn	13 32 45.6 -6.3
OXZ	**Oxford**	**14.13**	**211**	PN			Pn	13 32 45.5 -6.4
MQZ	**McQueen's Vall**	**14.18**	**208**	*e*Pn			Pn	13 32 47.1 -5.5
MQZ	**McQueen's Vall**	**14.18**	**208**	PN			Pn	13 32 45.9 -6.7
RPZ	**Rata Peaks**	**14.87**	**212**	P			Pn	13 32 55.7 -6.1
	0.6nm,0.3s,baz=68,slow=16,SNR=5.6								
RPZ				S			Sn	13 35 32.6	-13
	5.9nm,0.3s,baz=332,slow=4.0,SNR=13								
RPZ						LR	LR	13 39 31.3	
	comp=Z,1μm,20.1s,baz=45,slow=39								
RPZ	**Rata Peaks**	**14.87**	**212**	*e*Pn			Pn	13 32 54.5	-7.2
RPZ				S			Sn	13 35 32.6	-13
FOZ	**Fox Glacier**	**15.32**	**215**	*e*Pn			**Pn**	**13 33 03.9**	**-3.6**
	30nm,0.9s								
ODZ	**Otahua Downs**	**16.11**	**210**	*e*Pn			**Pn**	**13 33 14.2**	**-3.4**
	58nm,1.2s								
ODZ	**Otahua Downs**	**16.11**	**210**	PN			**Pn**	**13 33 15.7**	**-2.0**
DZM	**Mont Dzumac**	**16.61**	**301**	P			**P**	**13 33 28.5**	**+2.4**
	0.5nm,0.3s,baz=96,slow=17,SNR=10								
DZM						LR	LR	13 38 44.2	
	comp=Z,3μm,18.7s,baz=137,slow=33								
DZM	**Mont Dzumac**	**16.61**	**301**	*e*P			**P**	**13 33 28.6**	**+2.4**
	403nm,1.4s								
DZM				*e*LR			LR	13 37 21.5	
	5μm,24.8s								
DZM	**Mont Dzumac**	**16.61**	**301**	*e*P			**P**	**13 33 26.0**	**-0.1**
	122nm,1.0s								
AFI	**Afiamalu**	**18.46**	**20**	*e*P			**P**	**13 33 41.8**	**-4.7**
AFI						pmax	pmax		
	comp=Z,185nm,1.1s								
AFI	**Afiamalu**	**18.46**	**20**	*e*P			**P**	**13 33 41.8**	**-4.7**
	comp=Z,185nm,1.1s								
RAR	**Rarotonga**	**19.39**	**63**	P			**P**	**13 33 57.6**	**+1.1**
	comp=Z,2.7nm,0.3s,baz=214,slow=5.6,SNR=3.6								
RAR						LR	LR	13 40 40.4	
	comp=Z,666nm,18.9s,baz=244,slow=35								
ARMA	**Armidale**	**25.88**	**264**	*e*P			**P**	**13 35 05.5**	**+3.4**
	comp=Z,45nm,1.0s								
TBI	**Tubuai**	**26.69**	**79**	*e*S			**S**	**13 39 39.1**	**-2.3**
	comp=Z,450nm,30.2s								
TBI				*e*LQ			LQ	13 40 23.9	
	comp=Z,1μm,25.8s								
TBI				*e*LR			LR	13 41 42.3	
	comp=Z,2μm,27.5s,baz=245								
TBI	**Tubuai**	**26.69**	**79**	*e*T			T	14 02 42.0	
	comp=Z,69nm,0.4s								
CAN	**Canberra**	**27.59**	**253**	*e*P			**P**	**13 35 19.8**	**+2.4**
CAN						pmax	pmax		
	comp=Z,57nm,1.2s								
CAN	**Canberra**	**27.59**	**253**	*e*P			**P**	**13 35 19.8**	**+2.4**
	comp=Z,57nm,1.2s								
EIDS	**Eidsvold**	**27.66**	**275**	*e*P			**P**	**13 35 19.4**	**+1.5**
	comp=Z,36nm,1.0s								
PAE	**Paea**	**29.32**	**69**	*e*T			T	14 05 29.8	
	comp=Z,20nm,0.3s								
PPT2	**Papeete2**	**29.36**	**69**	*e*S			**S**	**13 40 23.4**	**-0.3**
	comp=Z,325nm,26.5s								
PPT2				*e*LQ			LQ	13 41 22.3	
	comp=Z,982nm,25.8s								
PPT2				*e*LR			LR	13 43 02.4	
	comp=Z,2μm,26.5s,baz=232								
PPT2	**Papeete2**	**29.36**	**69**	*e*T			T	14 05 33.9	
	comp=Z,17nm,0.3s								
PPT	**Papeete**	**29.38**	**69**	LR			LR	13 46 42.7	
	comp=Z,609nm,18.4s,baz=242,slow=35								
HNR	**Honiara**	**29.91**	**313**	LR			LR	13 45 57.8	
	comp=Z,659nm,19.9s,baz=162,slow=33								
MEH	**Mehetia**	**30.42**	**71**	*e*T			T	14 06 56.9	
	comp=Z,36nm,0.3s								
VAH	**Vaihoa**	**32.23**	**67**	*e*T			T	14 09 02.8	
	comp=Z,92nm,0.2s								
CTA	**Charters Tower**	**33.84**	**281**	P			**P**	**13 36 14.3**	**+1.8**
	comp=Z,176nm,1.1s,baz=108,slow=11,SNR=59								
CTAO	**Charters Tower**	**33.84**	**281**	*e*P			**P**	**13 36 15.0**	**+2.5**
CTAO	**Charters Tower**	**33.84**	**281**	*e*P			**P**	**13 36 15.0**	**+2.5**
STKA	**Stephens Creek**	**34.10**	**259**	P			**P**	**13 36 17.1**	**+2.5**
	comp=Z,74nm,0.8s,baz=95,slow=9.9,SNR=109								
STKA						LR	LR	13 48 53.1	
	comp=Z,649nm,19.1s,baz=80,slow=34								
STKA	**Stephens Creek**	**34.10**	**259**	*e*P			**P**	**13 36 16.9**	**+2.3**
	comp=Z,23nm,1.0s								
BBOO	**Buckleboo**	**38.54**	**256**	*e*P			**P**	**13 36 52.9**	**+0.3**
	comp=Z,168nm,1.4s								
PMG	**Port Moresby**	**38.95**	**297**	P			**P**	**13 36 56.9**	**+0.8**
	comp=Z,20nm,0.9s,baz=307,slow=20,SNR=4.5								
RKT	**Rikitea**	**39.08**	**89**	*e*S			**S**	**13 42 49.3**	**-4.1**
	comp=Z,418nm,32.8s								
RKT						*e*LR	LR	13 47 26.7	
	comp=Z,2μm,27.5s,baz=249								
RKT	**Rikitea**	**39.08**	**89**	*e*T			T	14 18 33.4	
	comp=Z,2.8nm,0.3s								
COEN	**Coen**	**39.44**	**287**	*e*P			**P**	**13 37 00.9**	**+0.7**
	comp=Z,91nm,1.0s								
TAOE	**Nuku Hiva Isla**	**41.88**	**66**	*e*S			**S**	**13 43 31.8**	**-3.7**
	comp=Z,289nm,26.8s								
TAOE						*e*LR	LR	13 48 50.2	
	comp=Z,1μm,27.1s								
AS01	**Alice Springs**	**42.87**	**268**	*e*P			**P**	**13 37 28.8**	**+0.3**
AS31	**Alice Springs**	**42.91**	**268**	*e*P			**P**	**13 37 29.5**	**+0.7**
	comp=Z,43nm,0.9s								
ASAR	**Alice Springs**	**42.91**	**268**	P			**P**	**13 37 29.8**	**+1.0**
	comp=Z,116nm,0.8s,baz=105,slow=7.5,SNR=1231								
ASAR						S	**S**	**13 43 51.9**	**+1.5**
	comp=Z,2.0nm,1.1s,baz=108,slow=16,SNR=4.2								
ASAR						LR	LR	13 54 59.8	
	comp=Z,511nm,19.1s,baz=110,slow=36								
WB2	**Warramunga Arr**	**43.99**	**273**	*e*P			**P**	**13 37 37.7**	**+0.3**
WRAB	**Tennant Creek**	**43.99**	**273**	*c i*P			**P**	**13 37 38.4**	**+0.9**

WRAB	**Tennant Creek**	**43.99**	**273**	*e*P			**P**	**13 37 38.0 +0.5**
	comp=Z,221nm,0.8s							
WRA	**Warramunga Arr**	**44.00**	**273**	P			**P**	**13 37 38.5 +1.0**
	comp=Z,271nm,0.9s,baz=113,slow=7.9,SNR=954							
WRA					S		**S**	**13 44 06.5 +0.2**
	comp=Z,1.8nm,1.0s,baz=112,slow=13,SNR=3.0							
WRA					LR		LR	13 55 12.6
	comp=Z,566nm,18.3s,baz=115,slow=35							
WRA	**Warramunga Arr**	**44.00**	**273**		P		**P**	**13 37 38.5 +1.0**
WRA					S		**S**	**13 44 06.5 +0.2**
WRA					pmax	pmax		
	comp=Z,275nm,0.9s							
WRA					smax	smax		
	comp=N,2.0nm,1.0s							
WRA					MLR	MLR		
	comp=Z,566nm,18.3s							
FORT	**Forrest**	**45.63**	**256**	*e*P			**P**	**13 37 47.5 -2.9**
SBA	**Scott Base**	**46.94**	**184**	*e*P			**P**	**13 38 04.0 +4.0**
SBA					pmax	pmax		
	comp=Z,42nm,1.0s							
SBA	**Scott Base**	**46.94**	**184**	*e*P			**P**	**13 38 04.0 +4.0**
	comp=Z,42nm,1.0s							
VNDA	**Vanda**	**47.00**	**186**	P			**P**	**13 38 04.7 +4.2**
	comp=Z,3.3nm,0.8s,baz=31,slow=5.0,SNR=8.0							
VNDA					LR		LR	13 55 48.0
	comp=Z,179nm,19.5s,baz=22,slow=33							
VNDA	**Vanda**	**47.00**	**186**	*e*P			**P**	**13 38 04.2 +3.8**
VNDA					pmax	pmax		
	comp=Z,20nm,1.4s							
VNDA	**Vanda**	**47.00**	**186**	*e*P			**P**	**13 38 04.2 +3.8**
	comp=Z,20nm,1.4s							
MTN	**Manton Dam**	**50.01**	**280**	*e*P			**P**	**13 38 23.3 -1.1**
	comp=Z,22nm,0.6s							
FITZ	**Fitzroy Crossi**	**52.21**	**271**	*e*P			**P**	**13 38 40.9 -0.1**
	comp=Z,165nm,1.5s							
CASY	**Casey**	**54.11**	**208**	*e*P			**P**	**13 38 54.8 +0.7**
	comp=Z,14nm,0.8s							
GUMO	**Guam**	**57.15**	**316**	LR			LR	13 59 44.7
	comp=Z,322nm,21.5s,baz=125,slow=32							
SOEI	**Soe**	**57.37**	**279**	*e*P			**P**	**13 39 22.8 +4.4**
	comp=Z,46nm,0.9s							
QSPA	**South Pole Qui**	**58.62**	**180**	*e*P			**P**	**13 39 30.3 +3.8**
MAW	**Mawson**	**71.24**	**201**	P			**P**	**13 40 49.9 +1.6**
	comp=Z,15nm,0.8s,baz=113,slow=6.2,SNR=21							
MAW					LR		LR	14 11 09.9
	comp=Z,392nm,19.6s,baz=64,slow=35							
MAW	**Mawson**	**71.24**	**201**	*e*P			**P**	**13 40 49.9 +1.6**
	comp=Z,7.3nm,1.2s							
PMSA	**Palmer Station**	**71.34**	**156**	P			**P**	**13 40 50.3 +1.5**
	comp=Z,2.6nm,0.8s,baz=254,slow=4.0,SNR=4.7							
PMSA	**Palmer Station**	**71.34**	**156**	*e*P			**P**	**13 40 50.2 +1.4**
	comp=Z,7.0nm,1.4s							
SBUM	**Sibu**	**74.01**	**283**	*e*P			**P**	**13 41 04.6 -1.0**
	comp=Z,24nm,1.4s							
KSM	**Kuching**	**75.08**	**281**	*e*P			**P**	**13 41 11.0 -0.8**
	comp=Z,47nm,1.8s							
SYO	**Syowa Base**	**76.02**	**193**	*i*P			**P**	**13 41 16.6 +0.3**
SYO	**Syowa Base**	**76.02**	**193**	*i*pP			pP	13 41 31.2 +0.9
SNAA	**Sanae**	**77.07**	**178**	P			**P**	**13 41 24.5 +2.2**
SNAA	**Sanae**

PFO	**Pinyon Flats O**	**87.06**	**47**	*e*P		**P**		**13 42 16.2**	**+1.1**
PFO				pmax		pmax				
	comp=Z,31nm,1.6s									
PFO	**Pinyon Flats O**	**87.06**	**47**	*e*P		**P**		**13 42 16.2**	**+1.1**
	comp=Z,31nm,1.6s									
RCTC	**Rector, Farmer**	**87.15**	**44**	P		**P**		**13 42 17.3**	**+1.9**
	baz=227									
ISA	**Isabella, Lake**	**87.18**	**45**	P		**P**		**13 42 17.1**	**+1.5**
	baz=228,SNR=9.0									
ISA	**Isabella, Lake**	**87.18**	**45**	*e*P		**P**		**13 42 16.8**	**+1.2**
ISA				pmax		pmax				
	comp=Z,19nm,1.0s									
ISA	**Isabella, Lake**	**87.18**	**45**	*e*P		**P**		**13 42 16.8**	**+1.2**
	comp=Z,19nm,1.0s									
LRMC	**Laurel Mtn Rad**	**87.53**	**45**	P		**P**		**13 42 18.8**	**+1.4**
	baz=228,SNR=18									
BELC	**Belle Mtn. Jos**	**87.60**	**47**	P		**P**		**13 42 18.8**	**+1.0**
	baz=229,SNR=11									
CMB	**Columbia Colle**	**87.67**	**42**	*e*P		**P**		**13 42 18.5**	**+0.6**
CMB				pmax		pmax				
	comp=Z,9.0nm,0.9s									
CMB	**Columbia Colle**	**87.67**	**42**	*e*P		**P**		**13 42 18.5**	**+0.6**
	comp=Z,8.7nm,0.9s									
BC3	**Big Chuckawall**	**87.72**	**48**	P		**P**		**13 42 20.2**	**+1.9**
	baz=230,SNR=12									
GLA	**Glamis**	**87.73**	**49**	P		**P**		**13 42 20.0**	**+1.7**
	baz=230,SNR=5.5									
GLA	**Glamis**	**87.73**	**49**	*e*P		**P**		**13 42 19.6**	**+1.3**
GLA				pmax		pmax				
	comp=Z,26nm,1.4s									
GLA	**Glamis**	**87.73**	**49**	*e*P		**P**		**13 42 19.6**	**+1.3**
	comp=Z,26nm,1.4s									
HSIG		**87.78**	**54**	*e*P		**P**		**13 42 19.1**	**+0.5**
	comp=Z,5.5nm,0.9s									
SDPT	**Sand Point**	**87.81**	**10**	*e*P		**P**		**13 42 18.1**	**+0.1**
	comp=Z,80nm,1.1s									
HEC	**Hector,Ludlow**	**87.93**	**47**	P		**P**		**13 42 21.1**	**+1.8**
	baz=229,SNR=7.5									
CWC	**Cottonwood Cre**	**87.94**	**44**	P		**P**		**13 42 21.0**	**+1.6**
	baz=228									
GSC	**Goldstone, Bar**	**87.95**	**46**	P		**P**		**13 42 21.0**	**+1.6**
	baz=229,SNR=11									
GSC	**Goldstone, Bar**	**87.95**	**46**	*e*P		**P**		**13 42 20.3**	**+0.9**
GSC				pmax		pmax				
	comp=Z,14nm,1.0s									
GSC	**Goldstone, Bar**	**87.95**	**46**	*e*P		**P**		**13 42 20.3**	**+0.9**
	comp=Z,14nm,1.0s									
AFDM	**Forest Hills D**	**87.97**	**41**	*e*P		**P**		**13 42 19.4**	**+0.1**
	comp=Z,8.3nm,1.1s									
USRK	**Ussuriysk Ar.**	**87.98**	**327**	P		**P**		**13 42 18.9**	**-0.2**
	comp=Z,4.4nm,0.8s,baz=114,slow=5.4,SNR=7.0									
MPMC	**Manual Prospec**	**88.04**	**45**	P		**P**		**13 42 21.1**	**+1.2**
	baz=228,SNR=13									
ORV	**Oroville**	**88.10**	**40**	*e*P		**P**		**13 42 19.9**	**0.0**
ORV				pmax		pmax				
	comp=Z,9.0nm,1.2s									
ORV	**Oroville**	**88.10**	**40**	*e*P		**P**		**13 42 19.9**	**0.0**
	comp=Z,9.4nm,1.2s									
113A	**Mohawk Valley,**	**88.23**	**49**	*e*P		**P**		**13 42 21.2**	**+0.5**
	comp=Z,15nm,1.3s									
IRM	**Iron Mountain**	**88.24**	**48**	P		**P**		**13 42 22.5**	**+1.8**
	baz=230,SNR=20									
WDC	**Whiskeytown Da**	**88.26**	**39**	*e*P		**P**		**13 42 20.5**	**-0.1**
WDC				pmax		pmax				
	comp=Z,12nm,1.1s									
WDC	**Whiskeytown Da**	**88.26**	**39**	*e*P		**P**		**13 42 20.5**	**-0.1**
	comp=Z,12nm,1.1s									
GMRC	**Granite Mounta**	**88.32**	**47**	P		**P**		**13 42 22.3**	**+1.1**
	baz=229,SNR=5.7									
Y12C	**Blythe**	**88.37**	**48**	P		**P**		**13 42 22.9**	**+1.6**
	baz=230									
Y12C	**Blythe**	**88.37**	**48**	*e*P		**P**		**13 42 22.1**	**+0.9**
	comp=Z,30nm,1.4s									
N02D	**Trinity Center**	**88.45**	**39**	P		**P**		**13 42 22.7**	**+1.1**
	baz=225									
O03D	**Paynes Creek**	**88.45**	**40**	P		**P**		**13 42 22.4**	**+0.7**
	baz=226									
WAKR	**Walker**	**88.54**	**42**	*e*P		**P**		**13 42 22.8**	**+0.6**
	comp=Z,28nm,1.4s									
SPIA	**Saint Paul Isl**	**88.58**	**4**	*e*P		**P**		**13 42 21.7**	**+0.1**
	comp=Z,180nm,1.1s									
TUQ	**Turquoise Moun**	**88.58**	**46**	P		**P**		**13 42 24.1**	**+1.6**
	baz=229									
M02C	**Callahan**	**88.67**	**38**	P		**P**		**13 42 23.9**	**+1.3**
	baz=225									
SHOC	**Shoshone, Teco**	**88.67**	**46**	P		**P**		**13 42 23.9**	**+1.3**
	baz=229									
FURC	**Furnace Creek,**	**88.69**	**45**	P		**P**		**13 42 23.8**	**+1.2**
	baz=229									
GRAC	**Grapevine Rang**	**88.73**	**44**	P		**P**		**13 42 24.4**	**+1.4**
	baz=228,SNR=6.1									
SKNT	**Sakolnakorn**	**88.78**	**291**	P		**P**		**13 42 24.8**	**+1.2**
	comp=Z,28nm,1.0s									
PNTR	**Pine Nut**	**88.84**	**42**	*e*P		**P**		**13 42 24.3**	**+0.6**
	comp=Z,17nm,0.8s									
LDFC	**Landfair**	**88.86**	**47**	*e*P		**P**		**13 42 25.2**	**+1.5**
	comp=Z,41nm,0.9s									
TVH1	**TV Hill, Hawth**	**88.89**	**43**	*e*P		**P**		**13 42 21.1**	**-3.0**
	comp=Z,16nm,1.4s									
PDMCI	**Parker Dam,Lak**	**88.97**	**48**	P		**P**		**13 42 26.0**	**+2.0**
	baz=230,SNR=8.4									
YERR	**Yerington**	**88.98**	**42**	*e*P		**P**		**13 42 24.8**	**+0.6**
	comp=Z,14nm,1.2s									
TYV	**Tymovskoe**	**88.99**	**336**	*e*P		**P**		**13 42 23.2**	**-0.5**
TYV				pmax		pmax				
	comp=Z,22nm,1.0s									
CHGN	**Chignik**	**89.05**	**11**	*e*P		**P**		**13 42 24.1**	**+0.2**
TPNV	**Topopah Spring**	**89.37**	**45**	P		**P**		**13 42 27.3**	**+1.1**
	baz=229,SNR=10									
TPNV	**Topopah Spring**	**89.37**	**45**	*e*P		**P**		**13 42 27.2**	**+1.1**
TPNV				pmax		pmax				
	comp=Z,22nm,1.4s									
TPNV	**Topopah Spring**	**89.37**	**45**	*e*P		**P**		**13 42 27.2**	**+1.1**
	comp=Z,22nm,1.4s									
PAHR	**Pah Rah Range**	**89.39**	**41**	*e*P		**P**		**13 42 26.6**	**+0.5**
	comp=Z,8.4nm,1.0s									
HUMO	**Hull Mountain**	**89.48**	**37**	*e*P		**P**		**13 42 27.7**	**+1.4**
	comp=Z,33nm,1.6s									
M04C	**Macdoel**	**89.48**	**38**	P		**P**		**13 42 27.8**	**+1.3**
	baz=225									
W13A	**Hualapai Mount**	**89.64**	**48**	*e*P		**P**		**13 42 28.5**	**+1.0**
	comp=Z,12nm,1.1s									
SHPR	**Sheep Range**	**89.75**	**46**	*e*P		**P**		**13 42 29.1**	**+1.2**
	comp=Z,13nm,1.2s									
CHAI	**Chaiyaphum**	**89.80**	**289**	P		**P**		**13 42 29.5**	**+1.1**
	comp=Z,7.5nm,0.9s,comp=Z,101nm									
TUC	**Tucson**	**89.91**	**51**	P		**P**		**13 42 30.6**	**+2.0**
	baz=232									
TUC	**Tucson**	**89.91**	**51**	*e*P		**P**		**13 42 29.5**	**+0.8**
TUC				pmax		pmax				
	comp=Z,16nm,1.1s									
TUC	**Tucson**	**89.91**	**51**	*e*P		**P**		**13 42 29.5**	**+0.8**
	comp=Z,16nm,1.1s									
I03D	**Drain, OR**	**90.05**	**36**	P		**P**		**13 42 30.3**	**+1.4**
	baz=224									
319A	**Douglas**	**90.36**	**53**	*e*P		**P**		**13 42 33.4**	**+2.6**
MOD	**Modoc Plateau**	**90.39**	**39**	*e*P		**P**		**13 42 31.3**	**+0.6**
	comp=Z,16nm,1.3s									
TLIG	**Tlapa**	**90.51**	**70**	*e*pP		pP		13 42 50.1	+3.9
I04A	**Tendick Farm,**	**90.60**	**37**	P		**P**		**13 42 32.6**	**+1.1**
	baz=225,SNR=5.9									
TIA	**Tai'an**	**90.60**	**313**	⇓P		**P**		**13 42 32.3**	**+0.6**
TIA				pmax		pmax				
	comp=Z,10.0nm,0.9s									
K05A	**Summer Lake**	**90.64**	**38**	*e*P		**P**		**13 42 32.7**	**+0.8**
	comp=Z,30nm,1.3s									
R11A	**Troy Canyon, C**	**90.69**	**44**	P		**P**		**13 42 33.3**	**+1.0**
	baz=229									
R11A	**Troy Canyon, C**	**90.69**	**44**	*e*P		**P**		**13 42 33.3**	**+1.0**
	comp=Z,4.7nm,1.5s									
X16A	**Lo Mia Camp, P**	**90.78**	**49**	*e*P		**P**		**13 42 34.0**	**+1.2**
	comp=Z,14nm,0.9s									
OHAK	**Old Harbor**	**90.84**	**13**	*e*P		**P**		**13 42 32.7**	**+0.5**
	comp=Z,21nm,1.0s									
J05D	**Fort Rock, OR**	**90.85**	**38**	P		**P**		**13 42 34.0**	**+1.1**
	baz=226,SNR=5.4									
CN2	**Changchun**	**90.92**	**323**	*e*P		**P**		**13 42 31.0**	**-1.9**
CN2				*e*pP		pP		13 42 47.8	+0.5
CN2				pmax		pmax				
	comp=Z,10.0nm,1.1s									
PBKT	**Sadao Pong**	**90.98**	**289**	P		**P**		**13 42 36.4**	**+2.6**
BMN	**Battle Mountai**	**91.10**	**42**	*e*P		**P**		**13 42 34.6**	**+0.5**
BMN				pmax		pmax				
	comp=Z,14nm,1.3s									
BMN	**Battle Mountai**	**91.10**	**42**	*e*P		**P**		**13 42 34.5**	**+0.5**
	comp=Z,14nm,1.3s									
LCMT	**Little Creek M**	**91.25**	**46**	*e*P		**P**		**13 42 36.2**	**+1.3**
	comp=Z,8.6nm,0.9s									
U15A	**North Rim**	**91.48**	**47**	*e*P		**P**		**13 42 37.6**	**+1.5**
	comp=Z,14nm,0.8s									
WUAZ	**Wupatki**	**91.50**	**49**	P		**P**		**13 42 37.7**	**+1.7**
	baz=232									
WUAZ	**Wupatki**	**91.50**	**49**	*e*P		**P**		**13 42 37.4**	**+1.4**
	comp=Z,9.8nm,0.9s									
KNB	**Kanab**	**91.52**	**47**	*e*P		**P**		**13 42 37.4**	**+1.2**
KNB				pmax		pmax				
	comp=Z,10.0nm,0.9s									
KNB	**Kanab**	**91.52**	**47**	*e*P		**P**		**13 42 37.4**	**+1.2**
	comp=Z,10nm,0.9s									
CCUT	**Cedar City**	**91.52**	**46**	*e*P		**P**		**13 42 37.5**	**+1.3**
	comp=Z,11nm,1.4s									
I05D	**Terrebonne, OR**	**91.53**	**37**	P		**P**		**13 42 36.9**	**+1.1**
	baz=226,SNR=7.3									
WVOR	**Wild Horse Val**	**91.65**	**40**	*e*P		**P**		**13 42 36.7**	**+0.1**
WVOR				pmax		pmax				
	comp=Z,14nm,1.4s									
WVOR	**Wild Horse Val**	**91.65**	**40**	*e*P		**P**		**13 42 36.7**	**+0.1**
	comp=Z,14nm,1.4s									
X18A	**Snowflake**	**91.82**	**50**	*e*P		**P**		**13 42 37.9**	**+0.3**
	comp=Z,6.7nm,0.9s									
KLR	**Kul'dur**	**91.90**	**330**	P		**P**		**13 42 37.6**	**+0.3**
	comp=Z,4.5nm,0.6s,baz=133,slow=4.8									
GYA	**Guiyang**	**91.96**	**300**	P		**P**		**13 42 40.3**	**+1.9**
GYA				pP		sP		13 42 56.3	-1.8
GYA				PP		**PP**		**13 46 22.0**	**+3.3**
GYA				SKS		**SKSac**		**13 53 07.5**	**-0.1**
GYA				S		**S**		**13 53 33.5**	**-3.1**
GYA				pmax		pmax				
	comp=Z,20nm,1.0s									
GYA				pmax		pmax				
	comp=Z,120nm,7.8s									
ENH	**Enshi**	**92.09**	**304**	*e*P		**P**		**13 42 38.0**	**-0.8**
G06A	**Carlson Farm,**	**92.52**	**37**	*e*P		**P**		**13 42 41.0**	**+0.7**
	comp=Z,11nm,1.0s									
MTPU	**Mount Pierson**	**92.56**	**46**	*e*P		**P**		**13 42 42.9**	**+1.7**
	comp=Z,17nm,1.4s									
MSU	**Marysvale**	**92.85**	**46**	*e*P		**P**		**13 42 43.6**	**+1.2**
MSU	**Marysvale**	**92.85**	**46**	*e*P		**P**		**13 42 43.6**	**+1.2**
TX31	**Lajitas Ar. Si**	**93.10**	**57**	*e*P		**P**		**13 42 44.3**	**+0.8**
TXAR	**Lajitas Array**	**93.10**	**57**	P		**P**		**13 42 44.8**	**+1.2**
	comp=Z,2.2nm,1.2s,baz=221,slow=5.0,SNR=8.9									
TXAR				PKKPbc		**PKKPbc**		**13 59 52.6**	**+0.3**
	comp=Z,0.1nm,0.4s,baz=98,slow=6.5,SNR=3.4									
TXAR				LR		LR		14 19 44.6		
	comp=Z,249nm,18.1s,baz=0.0,slow=32									
MNTX	**Cornudas Mount**	**93.23**	**55**	P		**P**		**13 42 44.6**	**+0.6**
	baz=235									
MNTX	**Cornudas Mount**	**93.23**	**55**	*e*P		**P**		**13 42 44.4**	**+0.4**
MNTX				*e*pP		**pP**		**13 42 59.4**	**+1.1**
G08A	**Pilot Rock**	**93.42**	**37**	*e*P		**P**		**13 42 44.9**	**+0.3**
	comp=Z,15nm,1.3s									
DUG	**Dugway, Tooele**	**93.52**	**44**	P		**P**		**13 42 46.2**	**+0.9**
	baz=231									
LVC	**Limon Verde**	**93.54**	**119**	P		**P**		**13 42 47.3**	**+1.1**
	comp=Z,18nm,0.8s,baz=236,slow=6.4,SNR=4.1									
LVC	**Limon Verde**	**93.54**	**119**	*e*P		**P**		**13 42 47.3**	**+1.1**
	comp=Z,22nm,1.5s									
CM01	**Chiang Mai Arr**	**93.58**	**289**	*e*P		**P**		**13 42 44.9**	**-1.0**
CMAR	**Chiang Mai Arr**	**93.62**	**289**	P		**P**		**13 42 47.4**	**+1.4**
	comp=Z,1.1nm,0.4s,baz=143,slow=4.1,SNR=6.6									
CMAR				PP		**PP**		**13 46 30.5**	**-1.1**
	comp=Z,2.0nm,1.0s,baz=122,slow=9.7,SNR=4.1									
MFID	**Camas Ranch**	**93.85**	**40**	*e*P		**P**		**13 42 46.9**	**+0.2**
	comp=Z,6.6nm,0.9s									
TMUT	**Trail Mountain**	**93.93**	**46**	*e*P		**P**		**13 42 48.2**	**+0.8**
	comp=Z,6.9nm,0.9s									
BMO	**Blue Mountains**	**93.99**	**39**	*e*P		**P**		**13 42 48.0**	**+0.8**
	comp=Z,7.7nm,0.4s									
MPU	**Maple Canyon**	**94.12**	**45**	*e*pP		pP		13 43 05.0	+2.6
SRU	**San Rafael Swe**	**94.24**	**46**	*e*P		**P**		**13 42 48.7**	**+0.1**
SRU				pmax		pmax				
	comp=Z,5.0nm,0.8s									
SRU	**San Rafael Swe**	**94.24**	**46**	*e*P		**P**		**13 42 48.7**	**+0.1**
	comp=Z,5.0nm,0.8s									
ANMO	**Albuquerque**	**94.38**	**51**	P		**P**		**13 42 50.2**	**+0.8**
	baz=235									
ANMO	**Albuquerque**	**94.38**	**51**	*e*P		**P**		**13 42 50.0**	**+0.6**
ANMO				*e**PP		**pP**		**13 43 02.6**	**-1.2**
ANMO				pmax		pmax				
	comp=Z,2.0nm,0.9s									
ANMO	**Albuquerque**	**94.38**	**51**	*e*P		**P**		**13 42 50.0**	**+0.6**
	comp=Z,2.3nm,0.9s									
ANMO				*e*pP		**pP**		**13 43 02.6**	**-1.2**
HVU	**Hansel Valley**	**94.54**	**43**	*e*P		**P**		**13 42 50.4**	**+0.5**
HVU				pmax		pmax				
	comp=Z,6.0nm,0.9s									
HVU	**Hansel Valley**	**94.54**	**43**	*e*P		**P**		**13 42 50.4**	**+0.5**
	comp=Z,6.4nm,0.9s									
D08A	**Wollman Farm,**	**94.63**	**36**	*e*P		**P**		**13 42 51.2**	**+1.2**
	comp=Z,4.1nm,0.8s									
HLID	**Hailey**	**94.73**	**41**	P		**P**		**13 42 51.8**	**+1.0**
	baz=230									
HLID	**Hailey**	**94.73**	**41**	*e*P		**P**		**13 42 51.4**	**+0.6**
	comp=Z,7.0nm,1.2s									
PV01	**Paradox Valley**	**94.87**	**48**	*e*pP		pP		13 43 07.6	+1.6
RC01	**Rabbit Creek A**	**95.12**	**13**	*e*P		**P**		**13 42 51.2**	**-0.7**
	comp=Z,7.6nm,1.1s									
SUA	**Susitna One**	**95.27**	**13**	*e*P		**P**		**13 42 52.8**	**+0.1**
	comp=Z,13nm,0.5s									
TT01	**Tatalina**	**95.73**	**10**	*e*P		**P**		**13 42 54.5**	**-0.1**
S22A	**4UR Ranch, Cre**	**95.76**	**49**	P		**P**		**13 42 56.0**	**+0.3**
	baz=235									
MCMT	**McKenzie Canyo**	**96.40**	**41**	*e*P		**P**		**13 42 59.0**	**+0.6**
CD2	**Chengdu**	**96.54**	**302**	*e*P		**P**		**13 42 59.0**	**-0.2**
CD2				pP		sP		13 43 17.3	-1.6
CD2				sP		pP		13 43 24.8	+11
CD2				SKS		**SKSac**		**13 53 29.5**	**-2.5**
CD2				S		**S**		**13 54 13.8**	**-2.6**
CD2				sS		sS		13 54 45.8	+5.2
CD2				SS		**SS**		**14 00 49.8**	**-1.9**
CD2				pmax		pmax				
	comp=Z,10.0nm,0.5s									
CD2				pmax		pmax				
	comp=Z,120nm,5.2s									
REDW	**Red Top Meadow**	**96.63**	**43**	*e*P		**P**		**13 42 59.3**	**-0.2**
	comp=Z,8.8nm,1.3s									
REDW				*e*pP		**pP**		**13 43 15.5**	**+1.6**
CAST	**Castle Rocks**	**96.84**	**11**	*e*P		**P**		**13 42 57.9**	**-1.9**
	comp=Z,4.7nm,0.8s									
DLMT	**Dillon**	**96.87**	**40**	*e*P		**P**		**13 43 00.4**	**-0.1**
	comp=Z,6.1nm,1.3s									
HHC	**Hu-ho-hao-te**	**96.88**	**314**	*e*P		**P**		**13 43 00.8**	**+0.2**
HHC				S		**S**		**13 54 14.3**	**-4.7**
HHC				SS		**SS**		**14 00 53.0**	**-3.4**
HHC				pmax		pmax				
	comp=Z,20nm,0.9s									
HHC				pmax		pmax				
	comp=Z,93nm,4.8s									
HHC				LR		LR				
	comp=Z,120nm,13.6s									
HHC				LR		LR				
	comp=Z,130nm,13.6s									
HHC				LR		LR				
	comp=Z,140nm,16.0s									
IMW	**Indian Meadow**	**96.91**	**42**	*e*P		**P**		**13 43 01.5**	**+0.7**
	comp=Z,1.6nm,0.7s									
SEY	**Seymchan**	**97.00**	**347**	P		**P**		**13 42 58.8**	**-1.6**
	comp=Z,3.7nm,0.8s,baz=140,slow=4.6,SNR=7.8									
SEY	**Seymchan**	**97.00**	**347**	⇑*e*P		**P**		**13 42 59.4**	**-1.0**
PDAR	**Pinedale Array**	**97.03**	**44**	P		**P**		**13 43 01.8**	**+0.4**
	comp=Z,0.5nm,0.7s,baz=229,slow=5.7,SNR=5.0									
PDAR				PKKPbc		**PKKPbc**		**13 59 43.0**	**+0.3**
	comp=Z,1.1nm,0.7s,baz=88,slow=4.8,SNR=12									
PDAR				LR		LR		14 22 48.2		
	comp=Z,157nm,18.2s,baz=200,slow=33									
RND	**Reindeer**	**97.41**	**13**	*e*P		**P**		**13 43 02.1**	**-0.2**
RND				pmax		pmax				
	comp=Z,12nm,1.2s									
RND	**Reindeer**	**97.41**	**13**	*e*P		**P**		**13 43 02.1**	**-0.2**
	comp=Z,12nm,1.2s									
BOZ	**Bozeman (W)**	**97.58**	**40**	P		Pdif		13 43 04.5	+0.8
	baz=232									
BOZ	**Bozeman (W)**	**97.58**	**40**	*e*P		**P**		**13 43 03.9**	**+0.2**
BOZ				pmax		pmax				
	comp=Z,7.0nm,1.3s									
BOZ	**Bozeman (W)**	**97.58**	**40**	*e*P		**P**		**13 43 03.9**	**+0.2**
	comp=Z,6.6nm,1.3s									
LPAZ	**La Paz**	**97.84**	**114**	P		Pdif		13 43 08.3	+2.1
	comp=Z,0.8nm,0.6s,baz=239,slow=5.9,SNR=4.4									
LPAZ				LR		LR		14 16 45.8		
	comp=Z,48nm,19.7s,baz=226,slow=29									
MENT	**Mentasta**	**98.05**	**15**	*e*P		Pdif		13 43 05.9	+0.7
	comp=Z,2.9nm,0.7s									
DOT	**Dot Lake**	**98.60**	**15**	*e*P		**P**		**13 43 07.5**	**-0.2**
	comp=Z,20nm,1.2s									
HDA	**Harding Lake**	**98.68**	**13**	*e*P		**P**		**13 43 07.4**	**-0.5**
	comp=Z,4.3nm,0.7s									
CCB	**Clear Creek Bu**	**98.73**	**13**	*e*P		**P**		**13 43 06.9**	**-1.2**
	comp=Z,2.8nm,0.8s									
COLA	**College**	**98.93**	**13**	*e*P		**P**		**13 43 08.2**	**-0.8**
COLA				pmax		pmax				
	comp=Z,5.0nm,0.8s									
COLA	**College**	**98.93**	**13**	*e*P		**P**		**13 43 08.2**	**-0.8**
	comp=Z,4.8nm,0.8s									
MDM	**Murphy Dome**	**98.94**	**12**	*e*P		**Pdif**		**13 43 08.2**	**-0.9**
	comp=Z,7.9nm,1.2s									
IL1	**Eielson Array**	**99.02**	**13**	*e*P		**Pdif**		**13 43 08.4**	**-1.1**
ILAR	**Eielson Array**	**99.02**	**13**	P		**Pdif**		**13 43 08.8**	**-0.6**
	comp=Z,1.4nm,0.8s,baz=218,slow=5.3,SNR=15									
ILAR				PP		**PP**		**13 47 07.5**	**-5.0**
	comp=Z,1.8nm,1.1s,baz=218,slow=7.4,SNR=6.9									
LZH	**Lanzhou**	**99.25**	**307**	*e*P		**Pdif**		**13 43 14.0**	**+2.6**
LZH				pP		sP		13 43 28.8	-2.3
LZH				sP		pP		13 43 34.8	+9.0
LZH				pmax		pmax				
	comp=Z,16nm,1.5s									
YKA	**Yellowknife Ar**	**106.49**	**26**	PKKPbc		PKKPbc		13 59 21.9	+6.8
	comp=Z,2.0nm,0.8s,baz=70,slow=5.3,SNR=3.9									
WMQ	**Urumqi**	**113.78**	**308**	*e*PKP		**PKiKP**		**13 48 10.5**	**+2.8**
WMQ				PP		**PP**		**13 49 07.0**	**+5.3**
WMQ				SS		SS		14 04 46.8	-0.3
WMQ				AMB		AMB				
	comp=Z,100nm,7.2s									
WMQ				LR		LR				
	comp=Z,310nm,23.2s									
WMQ				LR		LR				
	comp=Z,240nm,25.0s									
WMQ				LR		LR				
	comp=Z,260nm,25.8s									
BOSA	**Boshof**	**116.20**	**203**	PKP		**PKPdf**		**13 48 14.4**	**+1.3**
	comp=Z,3.7nm,0.9s,baz=192,slow=4.7,SNR=3.7									
MK01	**Makanchi Array**	**118.34**	**310**	*e*PKPdf		**PKPdf**		**13 48 15.4**	**-1.0**
MK31	**Makanchi Array**	**118.35**	**310**	PKIKP		**PKPdf**		**13 48 15.3**	**-1.1**
MK31				pmax		pmax				
	comp=Z,4.0nm,0.7s									
MK31	**Makanchi Array**	**118.35**	**310**	*e*PKPdf		**PKPdf**		**13 48 15.5**	**-0.9**
MKAR	**Makanchi Array**	**118.35**	**310**	PKP		**PKPdf**		**13 48 15.8**	**-0.6**
	comp=Z,6.2nm,0.8s,baz=70,slow=2.2,SNR=51									
MKAR				PKKPbc		**PKKPab**		**13 58 38.9**	**+3.4**
	comp=Z,0.1nm,0.2s,baz=319,slow=3.5,SNR=4.9									
MKAR	**Makanchi Array**	**118.35**	**310**	*e*PKPdf		**PKPdf**		**13 48 15.5**	**-0.9**
MKAR				PKKPbc		**PKKPab**		**13 58 38.9**	**+3.4**
MAKZ	**Makanchi**	**118.56**	**310**	*e*PKIKP		**PKPdf**		**13 48 15.8**	**-1.0**
MAKZ	**Makanchi**	**118.56**	**310**	*e*PKPdf		**PKPdf**		**13 48 15.8**	**-1.0**
ZAA0	**Zalesovo Array**	**118.74**	**318**	*e*PKPdf		**PKPdf**		**13 48 15.1**	**-1.7**
ZAA0				*e*PKPdf		**PKiKP**		**13 48 15.4**	**-1.5**
ZALV	**Zalesovo Beam**	**118.74**	**318**	PKP		**PKPdf**		**13 48 16.1**	**-0.7**
	comp=Z,3.4nm,0.7s,baz=164,slow=1.4,SNR=16									
PDGK	**Podgornoye**	**119.25**	**305**	PKIKP		**PKPdf**		**13 48 17.2**	**-0.9**
PDGK				pmax		pmax				
	comp=Z,16nm,1.0s									
NVS	**Novosibirsk**	**119.86**	**319**	*e*PKIKP		**PKPdf**		**13 48 17.6**	**-1.3**
NRIK	**Noril'sk**	**120.57**	**336**	PKP		**PKPdf**		**13 48 19.8**	**-0.1**
	comp=Z,8.8nm,0.7s,baz=51,slow=2.8,SNR=7.2									
KSH	**Kashi**	**120.66**	**300**	*e*PKP	

FINES	FINES Array B	146.11 339	PKPbc	PKPdf	13 49 08.0	+0.4		
	comp=Z,105nm,0.9s,baz=64,slow=4.4,SNR=206							
FINES	FINES Array B	146.11 339	PKP2	PKPdf	13 49 08.0	+0.4		
FINES			pmax	pmax				
	comp=Z,105nm,0.9s							
VSR	Storozhevoye	146.23 317	*e*PKP2	PKPdf	13 49 08.8	+0.7		
VSR			pmax	pmax				
	comp=Z,100nm,1.0s							
CHVG	Ch'k'valeri	146.28 301	P	PKPbc	13 49 09.9	+0.2		
VSU	Vasula	148.15 335	*c i* PKP2	PKPbc	13 49 14.3	-0.1		
MOL	Molde	148.69 355	*e*PKPbc	PKPbc	13 49 15.6	-0.1		
DOMB	Dombas	149.08 353	*e*PKPdf	PKPdf	13 49 13.4	+0.8		
DOMB			*e*PKPbc	PKPbc	13 49 16.5	-0.2		
AKN	Aaknes	149.12 355	*e*PKPbc	PKPbc	13 49 17.1	+0.3		
NC303	NORSAR Array S	149.60 351	*e*PKPdf	PKPdf	13 49 13.8	+0.5		
NC303			*e*PKPbc	PKPbc	13 49 17.9	-0.2		
NC204	NORSAR Array S	149.63 351	*e*PKPdf	PKPdf	13 49 13.7	+0.1		
NC204			*e*PKPbc	PKPbc	13 49 17.7	-0.4		
NC405	NORSAR Array S	149.66 350	*e*PKPbc	PKPbc	13 49 17.6	-0.6		
NB201	NORSAR Array S	149.78 351	*e*PKPbc	PKPbc	13 49 18.3	-0.2		
NB2	NORSAR Subarra	149.80 351	PKP	PKPbc	13 49 18.5	-0.1		
	comp=Z,184nm,1.4s,baz=17,slow=2.7							
NB2	NORSAR Subarra	149.80 351	PKP	PKPbc	13 49 18.5	-0.1		
	baz=17,slow=2.7							
NOA	NORSAR Array B	149.80 351	PKP	PKPdf	13 49 14.3	+0.5		
	comp=Z,20nm,1.1s,baz=59,slow=9.0,SNR=15							
NOA			PKPbc	PKPbc	13 49 18.4	-0.1		
	comp=Z,32nm,0.8s,baz=14,slow=4.2,SNR=80							
FOO	Floro	149.81 357	*e*PKPbc	PKPbc	13 49 18.6	+0.1		
FOO			*ep*PKPdf	pPKPdf	13 49 28.8	+0.3		
FOO			*ep*PKPbc	pPKPbc	13 49 33.5	+0.3		
NBO02	NORSAR Array S	149.84 351	*e*PKPdf	PKPdf	13 49 13.6	-0.2		
NBO02			*e*PKPbc	PKPbc	13 49 18.5	-0.2		
NBO00	NORSAR Array S	149.87 351	*e*PKPdf	PKPdf	13 49 13.8	0.0		
NBO00			*e*PKPbc	PKPbc	13 49 18.6	-0.1		
NAO01	NORSAR Array S	150.03 351	*e*PKPbc	PKPbc	13 49 18.8	-0.3		
NC602	NORSAR Array S	150.05 350	*e*PKPbc	PKPbc	13 49 19.0	-0.1		
NC602			*ep*PKPdf	pPKPdf	13 49 28.9	0.0		
NC602	NORSAR Array S	150.05 350	*e*PKPbc	PKPbc	13 49 18.7	-0.4		
IZAR	Zarasai	150.29 332	*e*P	PKPbc	13 49 20.0	+0.2		
IZAR			IAmb	IAmb	13 49 21.3			
	comp=Z,6.6nm,0.5s							
SUE	Sulen	150.36 357	*e*PKPbc	PKPbc	13 49 20.1	+0.3		
SUE			*e*PKPab	PKPab	13 49 26.0	-0.3		
IDID	Didziasalis	150.39 331	*e*P	PKPbc	13 49 20.1	0.0		
IDID			IAmb	IAmb	13 49 22.0			
	comp=Z,30nm,1.0s							
MICGM	Minsk	150.44 329	*e*P	PKPbc	13 49 19.0	-1.2		
MICGM			PM		13 49 20.0			
	comp=Z,0.3nm,1.0s							
MNK	Minsk	150.44 329	*e*PKIKP	PKPbc	13 49 19.0	-1.2		
MNK			pmax	pmax				
	comp=Z,300nm,1.0s							
ISAL	Salakas	150.46 332	*e*P	PKPbc	13 49 20.2	-0.1		
ISAL			IAmb	IAmb	13 49 22.2			
	comp=Z,34nm,1.1s							
IIGN	Ignalina	150.58 331	*e*P	PKPbc	13 49 20.4	-0.1		
IIGN			IAmb	IAmb	13 49 22.2			
	comp=Z,34nm,0.9s							
NACGM	Naroch	150.65 330	*e*	PKPbc	13 49 20.0	-0.7		
ASK	Askoy	150.92 357	*e*PKPbc	PKPbc	13 49 21.3	+0.1		
OSL	Oslo	150.93 351	*e*PKPdf	PKPdf	13 49 16.1	+0.7		
OSL			*e*PKPbc	PKPbc	13 49 21.2	0.0		
OSL			*e*PKPab	PKPab	13 49 28.2	-0.5		
BER	Bergen	151.01 356	*e*PKPbc	PKPbc	13 49 21.9	+0.5		
KONO	Kongsberg	151.36 352	*e*PKPbc	PKPbc	13 49 22.3	+0.1		
KONO	Kongsberg	151.36 352	*e*PKIKP	PKPbc	13 49 22.1	-0.1		
KONO	Kongsberg	151.36 352	*e*PKPbc	PKPbc	13 49 22.1	-0.1		
ODD1	Odda	151.39 355	*e*PKPdf	PKPdf	13 49 16.9	+0.6		
ODD1			*e*PKPbc	PKPbc	13 49 22.8	+0.4		
SIM	Simferopol'	151.50 307	*i* PKIKP	PKPbc	13 49 24.0	+1.0		
SIM			*e*		13 49 40.0			
SIM			pmax	pmax				
	comp=Z,84nm,1.1s							
BLS5	Blasjo	151.89 355	*e*PKPdf	PKPdf	13 49 17.9	+0.9		
BLS5			*e*PKPbc	PKPbc	13 49 24.1	+0.6		
AKASG	Malin Array Be	152.06 321	PKP	PKPdf	13 49 17.0	-0.5		
	comp=Z,0.6nm,0.5s,baz=53,slow=1.9,SNR=8.8							
AKASG			PKPbc	PKPbc	13 49 23.8	-0.3		
	comp=Z,50nm,0.9s,baz=53,slow=2.8,SNR=92							
AKBB	Malin Array Si	152.06 321	*e*PKIKP	PKPbc	13 49 23.5	-0.6		
AKBB	Malin Array Si	152.06 321	*e*PKPbc	PKPbc	13 49 23.5	-0.6		
KIEV	Kiev	152.08 321	*c i* PKIKP	PKPbc	13 49 24.1	0.0		
KIEV	Kiev	152.08 321	*e*PKPbc	PKPbc	13 49 23.7	-0.4		
AK11	Malin Array Si	152.11 321	*e*PKPdf	PKPdf	13 49 16.6	-0.9		
AK11			*e*PKPbc	PKPbc	13 49 23.7	-0.5		
KMY	Karmoy	152.18 356	*e*PKPbc	PKPbc	13 49 24.3	+0.3		
STAV	Stavanger	152.43 356	*e*PKPbc	PKPbc	13 49 25.0	+0.4		
HOMB	Homborsund	152.84 352	*e*PKPbc	PKPbc	13 49 26.1	+0.5		
BR131	Keskin Array S	152.97 297	*e*PKPdf	PKPdf	13 49 18.8	-0.6		
BR131			*e*PKPbc	PKPbc	13 49 26.2	-0.5		
BRTR	Keskin Array B	152.97 297	PKP	PKPdf	13 49 19.1	-0.3		
	comp=Z,2.5nm,1.0s,baz=108,slow=2.7,SNR=10							
BRTR			PKPbc	PKPbc	13 49 26.5	-0.2		
	comp=Z,11nm,0.9s,baz=129,slow=3.7,SNR=30							
BRTR			PKPab	PKPab	13 49 38.7	+0.5		
	comp=Z,6.8nm,0.7s,baz=101,slow=6.4,SNR=11							
KLNR	Kaliningrad	153.44 336	*c i* PKIKP	PKPbc	13 49 27.0	0.0		
CSS	Mathiatis	153.47 286	*e*PKPbc	PKPbc	13 49 27.6	-0.3		
BR231	Keskin MP Arra	153.61 297	*e*PKPdf	PKPdf	13 49 19.4	-0.9		
BR231			*e*PKPbc	PKPbc	13 49 27.1	-1.0		
SORM	Soroca	153.89 317	⇓*i*P	PKPbc	13 49 28.3	+0.1		
SORM	Soroca	153.89 317	⇓PKIKP	PKPbc	13 49 28.3	+0.1		
LIC	Lamto	154.06 164	*e*PKP1	PKPbc	13 49 30.5	+0.9		
	comp=Z,52nm,0.9s							
KIC	Kosan Boka	154.25 165	*e*PKP1	PKPbc	13 49 30.8	+0.7		
	comp=Z,42nm,0.8s							
TIC	Toumodi	154.47 164	*e*PKP1	PKPbc	13 49 31.5	+1.0		
DBIC	Dimbokro	154.53 164	PKPbc	PKPbc	13 49 30.9	+0.3		
	comp=Z,6.0nm,0.9s,baz=167,slow=3.9,SNR=5.2							
DBIC			PKPab	PKPab	13 49 47.0	+2.0		
	comp=Z,4.6nm,0.8s,baz=160,slow=3.6,SNR=3.2							
BSD	Bornholm Skovb	154.62 342	⇑*i*P	PKPbc	13 49 29.6	+0.1		
	comp=Z,25nm,0.8s							
BSD	Bornholm Skovb	154.62 342	⇑*i*PKIKP	PKPbc	13 49 29.6	+0.1		
BSD			pmax	pmax				
	comp=Z,25nm,0.8s							
COP	Copenhagen	154.68 346	*i* P	PKPbc	13 49 30.6	+1.0		
	comp=Z,13nm,0.7s							
COP	Copenhagen	154.68 346	*e*PKIKP	PKPbc	13 49 30.6	+1.0		
COP			pmax	pmax				
	comp=Z,13nm,0.7s							
TLCR		154.94 311	⇑*i*P	PKPbc	13 49 31.3	+0.8		
TLCR		154.94 311	⇑PKIKP	PKPbc	13 49 31.3	+0.8		
LLD	Lille Linde	155.06 346	*i* P	PKPdf	13 49 30.9	+9.3		
	comp=Z,41nm,0.7s							
LLD	Lille Linde	155.06 346	*i* PKIKP	PKPdf	13 49 30.9	+9.3		
LLD			pmax	pmax				
	comp=Z,41nm,0.7s							
LVV	L'vov	155.28 324	*e*PKIKP	PKPdf	13 49 21.4	-0.7		
CFR	Carcaliu	155.38 311	⇓*i*P	PKPdf	13 49 22.4	0.0		
CFR	Carcaliu	155.38 311	⇓PKIKP	PKPdf	13 49 22.4	0.0		
TIRR	Tirgusor	155.49 309	⇓*i*P	PKPdf	13 49 32.4	+10		
TIRR	Tirgusor	155.49 309	⇓PKIKP	PKPdf	13 49 32.4	+10		
ISP	Isparta	155.62 293	⇓*i*P	PKPdf	13 49 34.6	+11		
ISP	Isparta	155.62 293	⇓PKIKP	PKPdf	13 49 34.6	+11		
TLB	Topalu	155.68 310	⇑*i*P	PKPdf	13 49 30.4	+7.6		
TLB	Topalu	155.68 310	⇑PKIKP	PKPdf	13 49 30.4	+7.6		
TESR	Tescani	155.70 315	⇓*i*P	PKPdf	13 49 34.2	+11		
BURAR	Bucovina Array	155.96 319	⇑*i*P	PKPdf	13 49 34.4	+11		
BURAR	Bucovina Array	155.96 319	⇑PKIKP	PKPdf	13 49 34.4	+11		
VRI	Vrincioaia	155.96 314	⇑*i*P	PKPab	13 49 51.5	+1.0		
VRI	Vrincioaia	155.96 314	⇑PKP2	PKPab	13 49 51.5	+1.0		
PLOR	Plostina	156.02 314	⇑*i*P	PKPdf	13 49 36.6	+13		
PLOR	Plostina	156.02 314	⇑PKIKP	PKPdf	13 49 36.6	+13		
MLR	Muntele Rosu	156.62 314	⇑*i*P	PKPdf	13 49 26.7	+2.5		
MLR	Muntele Rosu	156.62 314	⇑PKIKP	PKPdf	13 49 26.7	+2.5		
STHS	Stebnicka Huta	156.90 326	*e*PKIKP	PKPdf	13 49 25.5	+1.2		
STHS	Stebnicka Huta	156.90 326	*e*PKP	PKPdf	13 49 25.5	+1.2		
STHS			*e*		13 49 54.7			
CRVS	Cervenica-Dubn	157.15 325	*e*PKIKP	PKPdf	13 49 25.4	+0.8		
CRVS	Cervenica-Dubn	157.15 325	*e*PKP	PKPdf	13 49 25.4	+0.8		
CRVS			*e*		13 49 55.0			
VOIR		157.20 314	⇑*i*P	PKPdf	13 49 27.4	+2.5		
VOIR		157.20 314	⇑PKIKP	PKPdf	13 49 27.4	+2.5		
ARR	Arges	157.49 314	⇓*i*P	PKPdf	13 49 26.8	+1.5		
DRGR		157.83 320	⇑*i*P	PKPdf	13 49 26.1	+0.5		
DRGR		157.83 320	⇑PKIKP	PKPdf	13 49 26.1	+0.5		
KECS	Kecovo	157.91 326	*e*PKP2	PKPab	13 49 57.9	-0.9		
KECS	Kecovo	157.91 326	*e*PKP	PKPab	13 49 57.9	-0.9		
LANS	Liptovska Anna	157.91 328	*e*PKIKP	PKPdf	13 49 27.0	+1.4		
LANS	Liptovska Anna	157.91 328	*e*PKP	PKPdf	13 49 27.0	+1.4		

UPC	Upice	158.26 335	*e*PKPAB	PKPab	13 50 00.0	-0.2		
UPC	Upice	158.26 335	*e*PKP2	PKPab	13 50 00.0	-0.2		
MORC	Moravsky Berou	158.26 332	⇑*i*P	PKPdf	13 49 27.1	+1.1		
MORC	Moravsky Berou	158.26 332	⇑PKIKP	PKPdf	13 49 27.1	+1.1		
MORC	Moravsky Berou	158.26 332	*e*PKPdf	PKPdf	13 49 26.2	+0.2		
DPC	Dobruska-Polom	158.28 334	*e*PKPDF	PKPdf	13 49 26.6	+0.6		
DPC			*ex*	x	13 49 31.6			
DPC			*ex*	x	13 49 37.7			
DPC			*ep*PKP	pPKPdf	13 49 46.6	+5.7		
DPC			*e*PKPAB	PKPab	13 50 00.3	-0.1		
DPC			*es*PKP		13 50 23.2			
DPC	Dobruska-Polom	158.28 334	*e*PKIKP	PKPdf	13 49 26.6	+0.6		
DPC			*e*		13 49 37.7			
DPC			*e*		13 50 00.3			
CLL	Collm	158.54 341	*e*PKPdf	PKPdf	13 49 26.0	-0.2		
	comp=Z,17nm,1.8s							
CLL			*i* PKPdiff	PKPdf	13 49 38.7	+12		
	comp=Z,13nm,1.3s							
CLL			*i*		13 49 43.3			
CLL			⇓*i*PKPab	PKPab	13 50 00.8	-0.6		
	comp=Z,14nm,1.0s							
CLL			*i*		13 50 08.4			
CLL			*i*		13 50 14.1			
CLL			*i*		13 50 20.7			
CLL			*e*PP	PP	13 53 45.0	+3.6		
CLL			*e*PPP	PPP	13 57 42.0			
CLL			*e*PPS	PPS	14 06 59.0			
CLL			Lm	MLR	14 57 00.0			
	comp=Z,300nm,18.1s							
CLL	Collm	158.54 341	⇓*e*PKIKP	PKPdf	13 49 26.0	-0.2		
CLL			*i*		13 49 38.7			
CLL			*i*		13 50 00.8			
CLL			pmax	pmax				
	comp=Z,17nm,1.8s							
CLL			MLR	MLR				
	comp=Z,300nm,18.1s							
CLL	Collm	158.54 341	*e*PKPdf	PKPdf	13 49 25.2	-1.1		
CLL			*e*PKPab	PKPab	13 50 01.1	-1.3		
PSZ	Piszkesteto	158.58 325	⇓*i*P	PKPdf	13 49 26.3	-0.2		
PSZ	Piszkesteto	158.58 325	⇓PKIKP	PKPdf	13 49 26.3	-0.2		
PSZ	Piszkesteto	158.58 325	*e*PKPdf	PKPdf	13 49 25.8	-0.8		
GZR	Gura Zlata	158.59 316	⇓*i*P	PKPdf	13 49 27.6	+1.0		
GZR	Gura Zlata	158.59 316	⇓PKIKP	PKPdf	13 49 27.6	+1.0		
BRG	Berggiesshubel	158.65 339	*e*PKP	PKPdf	13 49 26.6	+0.2		
	comp=Z,14nm,1.4s							
BRG			*e*		13 49 36.2			
	comp=Z,5.9nm,1.2s							
BRG	Berggiesshubel	158.65 339	*e*PKIKP	PKPdf	13 49 26.6	+0.2		
BRG			*e*		13 49 36.2			
BRG			pmax	pmax				
	comp=Z,14nm,1.4s							
VYHS	Vyhne	158.67 328	*e*PKIKP	PKPdf	13 49 26.4	-0.1		
VYHS			*e*		13 50 01.6			
VYHS	Vyhne	158.67 328	*e*PKP	PKPdf	13 49 26.4	-0.1		
VYHS			*e*		13 50 01.5			
PVCC	Panska Ves	158.75 337	*e*PKPDF	PKPdf	13 49 27.3	+0.8		
PVCC	Panska Ves	158.75 337	*e*PKIKP	PKPdf	13 49 27.3	+0.8		
VRAC	Vranov	159.01 332	⇓*i*P	PKPdf	13 49 33.8	+6.9		
VRAC	Vranov	159.01 332	⇓PKIKP	PKPdf	13 49 33.8	+6.9		
BZS	Buzias	159.14 318	⇓*i*P	PKPdf	13 49 26.9	-0.2		
BZS	Buzias	159.14 318	⇓PKIKP	PKPdf	13 49 26.9	-0.2		
PRU	Pruhonice	159.21 336	*e*PKPAB	PKPab	13 50 04.1	-0.2		
PRU	Pruhonice	159.21 336	*e*PKP2	PKPab	13 50 04.1	-0.2		
MDVR	Moldovita	159.56 316	⇓*i*P	PKPdf	13 49 27.6	-0.1		
NKC	Novy Kostel	159.66 340	*e*PKPAB	PKPab	13 50 06.1	-0.2		
NKC	Novy Kostel	159.66 340	*e*PKP2	PKPab	13 50 06.1	-0.2		
KHC	Kasperske Hory	160.27 337	*e*PKPDF	PKPdf	13 49 28.0	-0.4		
KHC			*ex*	x	13 49 34.8			
KHC			*ex*	x	13 49 42.6			
KHC			*e*PKPAB	PKPab	13 50 08.8	-0.2		
KHC			*es*PKP		13 50 32.0			
KHC	Kasperske Hory	160.27 337	*e*PKIKP	PKPdf	13 49 28.0	-0.4		
KHC			*e*		13 49 34.8			
KHC			*e*		13 49 42.6			
KHC			*e*		13 50 08.8			
KHC	Kasperske Hory	160.27 337	*e*PKPdf	PKPdf	13 49 27.7	-0.7		
CONA	Conrad Observa	160.40 331	*i* PKPdf	PKPdf	13 49 29.0	+0.3		
	comp=Z,5.3nm,1.5s							
GEC2	GERESS Array S	160.47 336	*e*PKIKP	PKPdf	13 49 27.9	-0.8		
GEC2	GERESS Array S	160.47 336	*e*PKPdf	PKPdf	13 49 27.9	-0.8		
GERES	GERESS Array B	160.47 336	PKP	PKPdf	13 49 28.6	-0.1		
	comp=Z,0.5nm,0.6s,baz=338,slow=1.4,SNR=6.7							
GERES			PKPab	PKPab	13 50 08.7	-1.3		
	comp=Z,1.1nm,0.7s,baz=7.6,slow=4.0,SNR=4.1							
GEA0	GERESS Array S	160.48 336	*e*PKPdf	PKPdf	13 49 27.4	-1.3		
BCLA	Clavier	160.91 353	PKPab	PKPab	13 50 11.0	-0.7		
SNF	Seneffe	160.91 355	PKPab	PKPab	13 50 11.3	-0.4		
ARSA	Arzberg	161.08 330	*i* PKPdf	PKPdf	13 49 29.0	-0.3		
	comp=Z,8.2nm,2.1s							
MOA	Molln	161.10 333	*i* PKPdf	PKPdf	13 49 28.8	-0.6		
	comp=Z,4.1nm,1.5s							
DOU	Dourbes	161.30 354	PKPab	PKPab	13 50 13.0	-0.4		
WLF	Walferdange	161.56 351	PKPab	PKPab	13 50 15.1	+0.6		
SOKA	Soboth	161.73 330	*i* PKPdf	PKPdf	13 49 29.8	-0.3		
	comp=Z,6.4nm,1.3s							
TORD	Torodi Ar. Bea	161.74 180	PKP	PKPdf	13 49 31.9	+1.0		
	comp=Z,3.8nm,1.2s,baz=195,slow=0.3,SNR=9.8							
TORD			PKPab	PKPab	13 50 17.8	+1.6		
	comp=Z,13nm,0.9s,baz=171,slow=3.9,SNR=14							
TORD			PP	PP	13 53 56.7	-1.7		
	comp=Z,1.6nm,1.1s,baz=231,slow=4.6,SNR=3.3							
OBKA	Obir	162.07 330	*i* PKPdf	PKPdf	13 49 30.8	+0.3		
	comp=Z,3.9nm,1.1s							
KBA	Koelnbreinsper	162.09 334	*i* PKPdf	PKPdf	13 49 31.1	+0.5		
	comp=Z,6.6nm,1.3s							
PDG	Podgorica	162.34 313	⇓*i*P	PKPdf	13 49 31.6	+0.9		
MYKA	Terra Mystica	162.35 332	*i* PKPdf	PKPdf	13 49 30.1	-0.6		
	comp=Z,4.6nm,1.1s							
MOTA	Moosalm	162.64 338	*i* PKPdf	PKPdf	13 49 30.9	-0.2		
	comp=Z,1.8nm,0.6s							
ABTA	Abfaltersbach	162.68 335	*i* PKPdf	PKPdf	13 49 30.9	-0.2		
	comp=Z,11nm,1.4s							
FETA	Feichten	163.05 339	*i* PKPdf	PKPdf	13 49 31.4	-0.1		
	comp=Z,8.6nm,1.3s							
DAVA	Damuels	163.06 341	*i* PKPdf	PKPdf	13 49 29.6	-1.9		
	comp=Z,9.5nm,1.3s							
FUORN	Ofenpass-Fuorn	163.55 339	*e*PKPab	PKPab	13 50 23.3	-0.4		
TUE	Stuetta	163.95 341	*e*PKPdf	PKPdf	13 49 32.4	-0.1		
TUE			*e*PKPab	PKPab	13 50 24.9	-0.5		
TIP	Timpagrande	165.61 306	*e*PKPdf	PKPdf	13 49 34.7	+0.8		
PAB	San Pablo	170.52 30	*e*PKIKP	PKPdf	13 49 38.8	+1.5		
PAB	San Pablo	170.52 30	*e*PKPdf	PKPdf	13 49 38.8	+1.5		
ESDC	Sonseca Array	170.58 28	PKP	PKPdf	13 49 38.5	+1.2		
	comp=Z,0.9nm,0.8s,baz=4.6,slow=2.4,SNR=9.6							
ESDC			PKPab	PKPab	13 50 54.8	+0.1		
	comp=Z,2.2nm,0.9s,baz=330,slow=3.8,SNR=7.0							
ESDC			PP	PP	13 54 42.8	-1.9		
	comp=Z,0.1nm,0.4s,baz=333,slow=5.9,SNR=4.2							
ES19	SONSECA Array	170.58 28	*e*PKPdf	PKPdf	13 49 37.9	+0.7		
ES19			*e*PKPab	PKPab	13 50 54.1	-0.6		

NIED ***31*** *13:30:00,38.˚10N×143.˚40E,h20km,Mw3.5 Best double couple: M₀1.85000×10¹⁴ NP1:φ₅46.00000°,δ82.00000°, λ-1.00000°. NP2:φ₅137.00000°,δ89.00000°, λ-172.00000°.*

JMA 31 13:30:05.1±0.2,38.˚14N×143.˚44E,h39km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.68**	**281**	P	Pn	13 30 32.9	+1.0
JIO				S	Sn	13 30 53.0	+0.9
OFUJ	**Ofunato**	**1.68**	**305**	P	Pn	13 30 32.8	+0.9
OFUJ				S	Sn	13 30 53.8	+1.7
JMK	**Ichinoseki**	**1.92**	**296**	P	Pn	13 30 36.5	+1.3
JMK				S	Sn	13 30 59.6	+1.5
JMM	**Marumori**	**2.11**	**263**	P	Pn	13 30 38.9	+1.1
JMM				S	Sn	13 31 04.7	+1.9
JOM	**Ohasama**	**2.14**	**309**	P	Pn	13 30 40.0	+1.7
JOM				S	Sn	13 31 05.5	+1.9
JFK	**Kawauchi**	**2.17**	**250**	P	Pn	13 30 39.1	+0.3
JFK				S	Sn	13 31 05.0	+0.5
JOU	**Okura**	**2.20**	**277**	P	Pn	13 30 40.9	+1.8
JOU				S	Sn	13 31 07.2	+2.2
JFT	**Otama**	**2.53**	**257**	P	Pn	13 30 45.6	+1.9
JFT				S	Sn	13 31 16.1	+2.8
JYK	**Kaneyama**	**2.54**	**289**	P	Pn	13 30 45.8	+2.1
JYK				S	Sn	13 31 16.0	+2.6
JAG	**Ashikaga**	**3.61**	**243**	P	Pn	13 30 59.7	+1.2
JOT	**Ohata**	**3.73**	**331**	P	Pn	13 31 02.2	+2.2

NIED ***31*** *13:32:00,37.˚20N×141.˚80E,h11km,Mw3.4 Best double couple: M₀1.62000×10¹⁴ NP1:φ₅258.00000°,δ49.00000°, λ-45.00000°. NP2:φ₅21.00000°,δ58.00000°, λ-129.00000°.*

IDC ***31*** *13:32:17.2±2.1,37.˚23N×141.˚95E,h0km,mb3.4/3, mb1 3.5/5,mb1mx3.3/45,mbtmp3.4/5,ML3.2/2,MS2.7/1, Ms1 2.7/1,ms1mx2.1/33,Error ellipse: s-maj=42.5km s-min=26.9km az=141.0*

JMA ***31*** *13:32:19.9±0.2,37.˚23N×141.˚77E,h40km±3km,M3.7*

ISC 31 13:32:16.8±2.1,37.˚25N±0.˚05×141.˚90E±0.˚07,h4km±11km, n22,σ1ᵖ63/25,mb3.2/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.83**	**279**	P	**Pg**	**13 32 33.8**	**+1.1**
JFK				S	**Sg**	**13 32 43.6**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.89**	**261**	P	**Pg**	**13 32 34.6**	**+0.7**
ONAJ				S	**Sg**	**13 32 45.2**	**-0.3**
JMM	**Marumori**	**1.07**	**305**	P	**Pg**	**13 32 37.7**	**+0.3**
JMM				S	**Sg**	**13 32 50.6**	**-0.8**
JHO	**Hitachi**	**1.24**	**240**	P	**Pb**	**13 32 39.4**	**-1.4**
JHO				S	**Sb**	**13 32 53.6**	**-3.6**
JFT	**Otama**	**1.27**	**283**	P	**Pb**	**13 32 41.3**	**-0.1**
JFT				S	**Sb**	**13 32 56.8**	**-1.4**
JIO	**Ouri**	**1.28**	**340**	P	**Pn**	**13 32 40.7**	**-0.9**
JIO				S	**Sb**	**13 32 55.4**	**-3.0**
JOU	**Okura**	**1.48**	**319**	P	**Pn**	**13 32 44.3**	**-0.1**
JFY	**Yanaizu**	**1.76**	**276**	P	**Pn**	**13 32 48.4**	**+0.3**
JFY				S	**Sn**	**13 33 09.5**	**-1.5**
MJAR	**Matsushiro Arr**	**3.04**	**258**	Pn	**Pn**	**13 33 06.9**	**+1.1**
MJAR	1.3nm,0.3s,baz=86,slow=15,SNR=7.8			Sn	**Sn**	**13 33 44.6**	**+2.0**
	3.3nm,0.3s,baz=117,slow=18,SNR=6.9						
MAT	**Matsushiro**	**3.04**	**258**	P	**Pn**	**13 33 07.0**	**+1.2**
MAT				S	**Sn**	**13 33 42.9**	**+0.2**
JHJ	**Hachijo jima 2**	**4.47**	**203**	Pn	**Pn**	**13 33 26.0**	**+0.6**
JHJ	9.8nm,0.3s,baz=136,slow=23,SNR=6.2			Sn	**Sn**	**13 34 14.8**	**-3.0**
	12nm,0.3s,baz=253,slow=19,SNR=2.0						
PETK	**Petropavlovsk-**	**19.31**	**30**	LR	LR	13 45 10.2	
	comp=Z,20nm,19.6s,baz=312,slow=40						
H11N2	**WAKE ISLAND Hy**	**27.93**	**122**	T	T	14 07 37.4	
	baz=314,slow=75,SNR=63						
H11N1	**WAKE ISLAND Hy**	**27.93**	**122**	T	T	14 07 37.8	
	baz=314,slow=75,SNR=29						
H11N3	**WAKE ISLAND Hy**	**27.94**	**122**	T	T	14 07 39.5	
	baz=314,slow=75,SNR=24						
SONM	**Songino Array**	**27.99**	**304**	P	**P**	**13 38 09.0**	**+0.3**
	0.6nm,0.4s,baz=111,slow=8.2,SNR=5.7						
H11S1	**WAKE ISLAND Hy**	**28.65**	**124**	T	T	14 08 35.3	
	baz=316,slow=76,SNR=16						
H11S3	**

GUVC	**San Jose del G**	**1.56**	**266**	*eP*	**Pn**	**13 42 41.5**	**-1.1**
GUVC				*eS*	**Sn**	**13 42 59.8**	**-1.9**
SJAC	**San Juan de Ar**	**2.94**	**282**	*eP*	**Pn**	**13 43 01.9**	**+0.3**
SJAC				*eS*	**Sn**	**13 43 34.8**	**-1.1**
SJAC				*i*		13 43 44.6	
	comp=Z,1μm,0.5s						
VILC	**Villavicencio,**	**2.99**	**299**	*eP*	**Pn**	**13 43 02.9**	**+0.6**
VILC				*eS*	**Sn**	**13 43 37.1**	**+0.1**
VILC				*i*		13 43 53.5	
	comp=Z,705nm,0.4s						
CHIC	**Chingaza**	**3.30**	**306**	*eP*	**Pn**	**13 43 07.3**	**+0.4**
CHIC				*eS*	**Sn**	**13 43 44.9**	**-0.2**
CHIC				*i*		13 44 02.9	
	comp=Z,564nm,0.7s						
RUSC	**La Rusia**	**3.79**	**328**	*eP*	**Pn**	**13 43 15.2**	**+1.6**
RUSC				*eS*	**Sn**	**13 43 58.3**	**+1.1**
RUSC				*i*		13 44 17.8	
	comp=Z,125nm,0.4s						
ROSC	**El Rosal**	**3.90**	**304**	Pn	**Pn**	**13 43 16.3**	**+1.2**
	comp=Z,5.2nm,0.3s,baz=126,slow=19,SNR=13						
ROSC				Lg	Lg	13 44 20.2	
	comp=Z,24nm,0.3s,baz=60,slow=20,SNR=4.0						
ROSC	**El Rosal**	**3.90**	**304**	*eP*	**Pn**	**13 43 15.2**	**+0.2**
ROSC				*i*		13 44 26.4	
	comp=Z,151nm,0.4s						
PRAC	**Prado**	**3.95**	**285**	*eP*	**Pn**	**13 43 16.2**	**+0.7**
TOLC	**Tolima**	**4.66**	**294**	*eP*	**Pn**	**13 43 26.1**	**+0.7**
FLOC	**Florencia**	**4.71**	**257**	*eP*	**Pn**	**13 43 27.0**	**+1.1**
NORC	**Norcasia**	**4.76**	**307**	*eP*	**Pn**	**13 43 26.5**	**-0.2**
GUYC	**Guyana, Colomb**	**5.01**	**301**	*eP*	**Pn**	**13 43 31.5**	**+1.1**
GUYC				*i*		13 44 54.1	
	comp=Z,104nm,0.3s						
HELC	**Santa Helena**	**5.66**	**308**	*eP*	**Pn**	**13 43 39.4**	**+0.1**
SDV	**Santo Domingo**	**6.20**	**4**	Pn	**Pn**	**13 43 46.5**	**0.0**
	comp=Z,6.9nm,0.3s,baz=209,slow=3.8,SNR=31						
SDV				Sn	**Sn**	**13 44 51.5**	**-4.7**
	comp=Z,9.5nm,0.3s,baz=332,slow=8.3,SNR=3.4						
SDV				Lg	Lg	13 45 31.4	
	comp=Z,8.6nm,0.3s,baz=260,slow=22,SNR=6.4						
PCRV	**Puerto La Cruz**	**9.82**	**40**	Pn	**Pn**	**13 44 37.0**	**+0.8**
	comp=Z,0.6nm,0.3s,baz=246,slow=10.0,SNR=1.5						
PCRV				Sn	**Sn**	**13 46 23.2**	**-2.1**
	comp=Z,1.4nm,0.3s,baz=333,slow=22,SNR=6.2						
PCRV				Lg	Lg	13 47 26.6	
	comp=Z,1.6nm,0.3s,baz=354,slow=19,SNR=2.0						
PTGA	**Pitinga**	**11.60**	**107**	Pn	**Pn**	**13 45 01.0**	**+0.6**
	comp=Z,0.3nm,0.3s,baz=16,slow=19,SNR=1.9						
PTGA				Sn	**Sn**	**13 47 08.5**	**-0.3**
	comp=Z,1.1nm,0.3s,baz=343,slow=20,SNR=2.7						
PTGA				Lg	Lg	13 48 19.9	
	comp=Z,3.8nm,0.3s,baz=195,slow=23,SNR=12						
PTGA				LR	LR	13 50 00.4	
	comp=Z,23nm,20.1s,baz=256,slow=40						
LPAZ	**La Paz**	**19.05**	**171**	P	**P**	**13 46 35.9**	**-1.4**
	baz=41,slow=20,SNR=1.6						
LPAZ				Lg	Lg	13 52 12.9	
	comp=Z,0.1nm,0.3s,baz=82,slow=4.8,SNR=3.6						
SIV	**San Ignacio**	**21.00**	**152**	P	**P**	**13 46 58.2**	**+0.3**
	comp=Z,0.8nm,0.3s,baz=348,slow=6.6,SNR=2.1						
SIV				Lg	Lg	13 53 07.3	
	comp=Z,2.6nm,0.7s,baz=73,slow=19,SNR=1.9						
LVC	**Limon Verde**	**25.21**	**175**	P	**P**	**13 47 40.4**	**+0.2**
	comp=Z,8.4nm,0.7s,baz=90,slow=16,SNR=2.1						
DBIC	**Dimbokro**	**66.07**	**84**	P	**P**	**13 53 02.4**	**+1.0**
	comp=Z,2.2nm,0.6s,baz=255,slow=2.8,SNR=3.0						
TORD	**Torodi Ar. Bea**	**72.61**	**77**	P	**P**	**13 53 42.0**	**+0.2**
	comp=Z,0.4nm,0.5s,baz=281,slow=6.2,SNR=2.1						
ASAR	**Alice Springs**	**148.07**	**227**	PKPbc	**PKPbc**	**14 01 59.9**	**-0.3**
	comp=Z,0.4nm,0.7s,baz=119,slow=3.6,SNR=6.8						
WRA	**Warramunga Arr**	**149.83**	**233**	PKPbc	**PKPbc**	**14 02 04.4**	**-0.3**
	comp=Z,0.4nm,0.7s,baz=109,slow=3.0,SNR=7.8						

*IDC **31** 13:45:41.6±2.0, 36°.78N×141°.39E, h0km, mb3.6/4, mb1 3.7/6, mb1mx3.5/35, mbtmp3.6/6, ML3.2/2, Error ellipse: s-maj=53.8km s-min=22.3km az=65.0*
*ISCJB **31** 13:45:43.9±1.2, 36°.64N±0°.04×141°.22E±0°.07, h19km±8km, mb3.5/4, Error ellipse: s-maj=10.0km s-min=7.2km az=14.1*
*JMA **31** 13:45:45.9±0.1, 36°.65N×141°.06E, h29km±1km, M3.3*
ISC 31 13:45:43.6±2.0, 36°.69N±0°.05×141°.16E±0°.07, h5km±12km, n19, σ0°90/21, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.48**	**260**	P	**Pb**	**13 45 54.2**	**-0.4**
JHO				S	**Sg**	**13 46 00.3**	**+1.1**
ONAJ	**Iwakimizuishiy**	**0.50**	**325**	P	**Pb**	**13 45 55.9**	**+0.9**
ONAJ				S	**Sb**	**13 46 03.1**	**+0.5**
JFK	**Kawauchi**	**0.71**	**341**	P	**Pb**	**13 45 58.4**	**-0.1**
JYT	**Yasato**	**0.91**	**239**	P	**Pg**	**13 46 00.7**	**-0.3**
JYT				*eS*	**Sg**	**13 46 11.3**	**-1.5**
JSB	**Shiboa**	**1.03**	**286**	P	**Pb**	**13 46 04.4**	**+0.4**
JSB				S	**Sb**	**13 46 17.9**	**0.0**
JFT	**Otama**	**1.05**	**322**	P	**Pn**	**13 46 05.0**	**-0.1**
JFT				S	**Sb**	**13 46 18.9**	**+0.4**
MJAR	**Matsushiro Arr**	**2.38**	**267**	Pn	**Pn**	**13 46 23.7**	**+0.4**
	3.4nm,0.3s,baz=82,slow=11,SNR=34						
MJAR				Sn	**Sn**	**13 46 52.6**	**-0.2**
	4.5nm,0.3s,baz=81,slow=32,SNR=5.8						
MAT	**Matsushiro**	**2.38**	**267**	P	**Pn**	**13 46 23.8**	**+0.5**
MAT				S	**Sn**	**13 46 54.3**	**+1.4**
JHJ	**Hachijo jima 2**	**3.74**	**198**	Pn	**Pn**	**13 46 44.1**	**+2.1**
	5.5nm,0.3s,baz=340,slow=22,SNR=6.2						
JHJ				Sn	**Sn**	**13 47 26.4**	**0.0**
	3.8nm,0.3s,baz=90,slow=20,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.15**	**120**	T	T	14 21 04.7	
	baz=312,slow=75,SNR=193						
H11N1	**WAKE ISLAND Hy**	**28.16**	**120**	T	T	14 21 05.4	
	baz=312,slow=75,SNR=256						
H11N3	**WAKE ISLAND Hy**	**28.17**	**120**	T	T	14 21 06.1	
	baz=312,slow=75,SNR=129						
H11S1	**WAKE ISLAND Hy**	**28.85**	**122**	T	T	14 21 56.0	
	baz=314,slow=76,SNR=151						
H11S3	**WAKE ISLAND Hy**	**28.85**	**122**	T	T	14 21 58.0	
	baz=314,slow=76,SNR=155						
H11S2	**WAKE ISLAND Hy**	**28.86**	**122**	T	T	14 21 59.9	
	baz=314,slow=76,SNR=91						
ZALV	**Zalesovo Beam**	**41.99**	**313**	P	**P**	**13 53 34.9**	**-0.6**
	0.5nm,0.4s,baz=104,slow=6.1,SNR=3.6						
MKAR	**Makanchi Array**	**44.13**	**302**	P	**P**	**13 53 52.6**	**-0.4**
	0.1nm,0.2s,baz=92,slow=8.7,SNR=2.2						
WRA	**Warramunga Arr**	**56.70**	**188**	P	**P**	**13 55 27.5**	**-0.7**
	0.7nm,0.6s,baz=4.4,slow=7.5,SNR=17						
ASAR	**Alice Springs**	**60.42**	**188**	P	**P**	**13 55 53.3**	**-0.8**
	0.4nm,0.8s,baz=9.3,slow=9.5,SNR=6.8						

*ISCJB **31** 14:07:29.2±0.4, 45°.04S±0°.04×167°.55E±0°.07, h109km±4km, mb4.5/10, Error ellipse: s-maj=9.6km s-min=4.9km az=34.1*
*WEL **31** 14:07:29.8±0.1, 45°.09S×167°.31E, h100km±1km, ML4.9/25, Mw4.6, Error ellipse: s-maj=1.6km s-min=1.0km az=90.0*
WEL Felt from Canterbury to Southland, maximum reported intensity MM 4.
*IDC **31** 14:07:29.5±2.2, 44°.93S×167°.45E, h94km±21km, mb3.9/7, mb1 4.0/9, mb1mx3.9/18, mbtmp4.2/9, MS3.3/4, Ms1 3.3/4, ms1mx3.0/26, Error ellipse: s-maj=21.1km s-min=16.3km az=29.0*
*NEIC **31** 14:07:29.9, 45°.12S×167°.32E, h100km, mb4.9/2, ML4.9(WEL), After WEL.*
NEIC Felt in Fiordland.
ISC 31 14:07:30.1±0.7, 45°.05S±0°.05×167°.47E±0°.05, h101km±5km, n95, σ1§19/104, mb4.3/10, 12C-13D, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.47**	**208**	Pn	**Pn**	**14 07 44.6**	**-1.1**
DCZ				Sn	**Sn**	**14 07 55.3**	**-2.2**
DCZ	**Deep Cove**	**0.47**	**208**	⇓PN	**Pn**	**14 07 44.6**	**-1.1**
DCZ				SN	**Sn**	**14 07 55.3**	**-2.2**
DCZ				AML	AML	14 07 56.1	
DCZ				AML	AML	14 07 56.1	
DCZ				AML	AML	14 07 56.3	
MSZ	**Milford Sound**	**0.50**	**41**	⇑Pn	**Pn**	**14 07 46.7**	**+0.7**
MSZ	**Milford Sound**	**0.50**	**41**	⇑PN	**Pn**	**14 07 46.7**	**+0.7**
MSZ				SN	**Sn**	**14 07 58.6**	**+0.8**
MSZ				AML	AML	14 08 00.7	
MSZ				AML	AML	14 08 00.7	
MSZ				AML	AML	14 08 00.8	
MLZ	**Mavora Lakes**	**0.56**	**125**	⇓Pn	**Pn**	**14 07 46.5**	**0.0**
MLZ				SN	**Sn**	**14 07 58.4**	**-0.3**
MLZ				AML	AML	14 07 58.9	
WHZ	**Wether Hill Ro**	**0.91**	**158**	⇓Pn	**Pn**	**14 07 49.2**	**-0.4**
WHZ	**Wether Hill Ro**	**0.91**	**158**	⇓PN	**Pn**	**14 07 49.2**	**-0.4**
WHZ				AML	AML	14 08 03.5	
WHZ				AML	AML	14 08 04.6	
WKZ	**Wanaka**	**1.12**	**79**	Pn	**Pn**	**14 07 52.7**	**+0.7**
WKZ	**Wanaka**	**1.12**	**79**	⇑PN	**Pn**	**14 07 53.0**	**+1.0**
WKZ				AML	AML	14 08 13.1	
WKZ				AML	AML	14 08 13.1	
WKZ				AML	AML	14 08 14.0	
WKZ				AML	AML	14 08 14.0	
EAZ	**Earnscleugh**	**1.32**	**99**	⇓Pn	**Pn**	**14 07 55.0**	**+0.8**
EAZ	**Earnscleugh**	**1.32**	**99**	⇓PN	**Pn**	**14 07 55.0**	**+0.8**
EAZ				AML	AML	14 07 56.1	
EAZ				AML	AML	14 08 13.3	
EAZ				AML	AML	14 08 14.4	
EAZ				AML	AML	14 08 14.4	
JCZ	**Jackson Bay**	**1.36**	**44**	⇑Pn	**Pn**	**14 07 55.3**	**+0.6**
JCZ				Sn	**Sn**	**14 08 13.8**	**+0.3**
JCZ	**Jackson Bay**	**1.36**	**44**	⇑PN	**Pn**	**14 07 55.3**	**+0.6**
JCZ				SN	**Sn**	**14 08 13.8**	**+0.3**
JCZ				AML	AML	14 08 19.3	
TUZ	**Tuapeka**	**1.77**	**121**	⇓Pn	**Pn**	**14 08 00.0**	**+0.3**
TUZ	**Tuapeka**	**1.77**	**121**	⇓PN	**Pn**	**14 08 00.0**	**+0.3**
TUZ				AML	AML	14 08 21.4	
TUZ				AML	AML	14 08 21.4	
TUZ				AML	AML	14 08 24.3	
TUZ				AML	AML	14 08 24.4	
APZ	**The Paps**	**1.82**	**169**	Pn	**Pn**	**14 07 59.5**	**-0.9**
APZ	**The Paps**	**1.82**	**169**	PN	**Pn**	**14 07 59.6**	**-0.9**
APZ				AML	AML	14 08 26.1	
APZ				AML	AML	14 08 26.1	
SYZ	**Scrubby Hill**	**1.89**	**142**	Pn	**Pn**	**14 08 01.1**	**-0.1**
SYZ	**Scrubby Hill**	**1.89**	**142**	⇑PN	**Pn**	**14 08 01.1**	**-0.1**
SYZ				AML	AML	14 08 25.1	
SYZ				AML	AML	14 08 25.1	
SYZ				AML	AML	14 08 28.6	
SYZ				AML	AML	14 08 34.0	
LBZ	**Lake Benmore**	**2.05**	**72**	Pn	**Pn**	**14 08 02.9**	**-0.4**
LBZ	**Lake Benmore**	**2.05**	**72**	⇑PN	**Pn**	**14 08 03.1**	**-0.2**
LBZ				AML	AML	14 08 28.7	
LBZ				AML	AML	14 08 28.7	
LBZ				AML	AML	14 08 28.9	
LBZ				AML	AML	14 08 29.0	
ODZ	**Otahua Downs**	**2.25**	**91**	⇓Pn	**Pn**	**14 08 06.1**	**+0.2**
ODZ	**Otahua Downs**	**2.25**	**91**	⇓PN	**Pn**	**14 08 06.1**	**+0.2**
ODZ				AML	AML	14 08 32.3	
ODZ				AML	AML	14 08 33.1	
ODZ				AML	AML	14 08 33.1	
ODZ				AML	AML	14 08 33.5	
FOZ	**Fox Glacier**	**2.27**	**49**	Pn	**Pn**	**14 08 05.9**	**-0.3**
FOZ				Sn	**Sn**	**14 08 33.9**	**+0.1**
FOZ	**Fox Glacier**	**2.27**	**49**	⇑PN	**Pn**	**14 08 05.8**	**-0.3**
FOZ				SN	**Sn**	**14 08 33.9**	**+0.1**
FOZ				AML	AML	14 08 35.7	
FOZ				AML	AML	14 08 36.2	
FOZ				AML	AML	14 08 54.4	
HHSZ	**Highcliff Hill**	**2.36**	**112**	Pn	**Pn**	**14 08 07.6**	**+0.3**
HHSZ	**Highcliff Hill**	**2.36**	**112**	⇓PN	**Pn**	**14 08 07.8**	**+0.5**
HHSZ				AML	AML	14 08 36.8	
HHSZ				AML	AML	14 08 36.9	
RPZ	**Rata Peaks**	**2.90**	**64**	P	**Pn**	**14 08 13.7**	**-0.8**
	64nm,0.3s,baz=225,slow=5.9,SNR=401						
RPZ				S	**Sn**	**14 08 47.2**	**-1.5**
	244nm,0.3s,baz=199,slow=6.8,SNR=8.9						
RPZ				LR	LR	14 08 54.9	
	comp=Z,201nm,19.4s,baz=220,slow=30						
RPZ	**Rata Peaks**	**2.90**	**64**	Pn	**Pn**	**14 08 13.4**	**-1.1**
RPZ				P	**Pn**	**14 08 13.8**	**-0.8**
RPZ				S	**Sn**	**14 08 47.2**	**-1.5**
RPZ	**Rata Peaks**	**2.90**	**64**	⇑PN	**Pn**	**14 08 13.7**	**-0.8**
RPZ				AML	AML	14 08 48.0	
RPZ				AML	AML	14 08 48.2	
WVZ	**Waitaha Valley**	**3.08**	**51**	Pn	**Pn**	**14 08 16.0**	**-0.8**
WVZ	**Waitaha Valley**	**3.08**	**51**	PN	**Pn**	**14 08 16.0**	**-0.8**
WVZ				AML	AML	14 08 53.7	
WVZ				AML	AML	14 08 53.7	
INZ	**Inchbonnie**	**3.70**	**52**	Pn	**Pn**	**14 08 24.2**	**-1.0**
OXZ	**Oxford**	**3.71**	**64**	Pn	**Pn**	**14 08 23.7**	**-1.7**
OXZ	**Oxford**	**3.71**	**64**	PN	**Pn**	**14 08 23.7**	**-1.7**
OXZ				AML	AML	14 09 06.9	
OXZ				AML	AML	14 09 07.0	
OXZ				AML	AML	14 09 08.1	
OXZ				AML	AML	14 09 08.1	
MQZ	**McQueen's Vall**	**3.95**	**72**	Pn	**Pn**	**14 08 27.3**	**-1.3**
MQZ	**McQueen's Vall**	**3.95**	**72**	PN	**Pn**	**14 08 27.3**	**-1.3**
MQZ				AML	AML	14 09 11.8	
MQZ				AML	AML	14 09 12.0	
CRLZ	**Canterbury Las**	**3.98**	**70**	Pn	**Pn**	**14 08 27.9**	**-1.0**
CRLZ	**Canterbury Las**	**3.98**	**70**	PN	**Pn**	**14 08 27.9**	**-1.0**
CRLZ				AML	AML	14 09 23.5	
CRLZ				AML	AML	14 09 27.0	
LTZ	**Lake Taylor**	**4.15**	**59**	Pn	**Pn**	**14 08 29.8**	**-1.5**
LTZ	**Lake Taylor**	**4.15**	**59**	PN	**Pn**	**14 08 29.8**	**-1.5**
LTZ				AML	AML	14 09 08.8	
DSZ	**Denniston Nort**	**4.57**	**45**	Pn	**Pn**	**14 08 36.1**	**-0.9**
DSZ				Sn	**Sn**	**14 09 27.1**	**-1.9**
DSZ	**Denniston Nort**	**4.57**	**45**	⇑PN	**Pn**	**14 08 36.1**	**-0.9**
DSZ				SN	**Sn**	**14 09 27.1**	**-1.9**
DSZ				AML	AML	14 09 28.0	
DSZ				AML	AML	14 09 29.1	
DSZ				AML	AML	14 09 29.1	
KHZ	**Kahutara**	**5.13**	**61**	Pn	**Pn**	**14 08 43.2**	**-1.2**
KHZ	**Kahutara**	**5.13**	**61**	PN	**Pn**	**14 08 43.2**	**-1.2**
KHZ				AML	AML	14 09 54.1	
THZ	**Tophouse**	**5.15**	**52**	Pn	**Pn**	**14 08 43.4**	**-1.5**
THZ	**Tophouse**	**5.15**	**52**	⇑PN	**Pn**	**14 08 43.4**	**-1.5**
THZ				AML	AML	14 09 43.1	
THZ				AML	AML	14 09 43.9	
QRZ	**Quartz Range**	**5.62**	**43**	PN	**Pn**	**14 08 50.9**	**-0.3**
QRZ				SN	**Sn**	**14 09 51.1**	**-3.4**
QRZ				AML	AML	14 09 56.9	
QRZ				AML	AML	14 09 56.9	
QRZ				AML	AML	14 10 06.9	
NNZ	**Nelson**	**5.78**	**51**	PN	**Pn**	**14 08 54.5**	**+1.2**
NNZ				SN	**Sn**	**14 09 56.2**	**-2.0**
NNZ				AML	AML	14 09 59.5	
TUWZ	**Tuamarina**	**5.96**	**55**	PN	**Pn**	**14 08 57.2**	**+1.5**
TCW	**Tory Channel**	**6.29**	**55**	PN	**Pn**	**14 09 01.5**	**+1.3**
CAW	**Cannon Point**	**6.82**	**57**	PN	**Pn**	**14 09 06.4**	**-1.1**
MTW	**Mount Morrison**	**7.05**	**59**	PN	**Pn**	**14 09 08.7**	**-1.9**
OGWZ	**Otaki Gorge**	**7.06**	**56**	PN	**Pn**	**14 09 09.7**	**-1.0**
MRZ	**Mangatainoka R**	**7.40**	**56**	PN	**Pn**	**14 09 12.7**	**-2.6**
NWEZ	**Newall Road**	**7.47**	**42**	PN	**Pn**	**14 09 17.4**	**+1.0**
KHEZ	**Kahui Hut**	**7.53**	**42**	PN	**Pn**	**14 09 18.2**	**+1.0**
PREZ	**Palmer Road**	**7.56**	**43**	PN	**Pn**	**14 09 19.2**	**+1.6**
PKE	**Pukeiti**	**7.60**	**42**	PN	**Pn**	**14 09 20.2**	**+2.1**
VRZ	**Vera Road**	**8.03**	**45**	PN	**Pn**	**14 09 25.1**	**+1.2**
HIZ	**Hauiti**	**8.55**	**43**	PN	**Pn**	**14 09 31.9**	**+1.0**
URZ	**Urewera**	**9.90**	**50**	P	**Pn**	**14 09 48.1**	**-1.3**
	0.4nm,0.3s,baz=225,slow=7.1,SNR=5.0						
URZ				S	Sn	14 11 28.3	-10
	1.3nm,0.3s,baz=65,slow=20,SNR=3.1						
RAO	**Raoul Island**	**19.56**	**41**	LR	LR	14 18 24.6	
	comp=Z,50nm,21.4s,baz=312,slow=34						
EIDS	**Eidsvold**	**23.68**	**321**	*eP*	**P**	**14 12 33.8**	**+1.4**
	22nm,0.9s						
STKA	**Stephens Creek**	**24.03**	**294**	P	**P**	**14 12 34.2**	**-1.4**
	3.3nm,0.6s,baz=126,slow=8.9,SNR=10						
STKA				LR	LR	14 19 54.9	
	comp=Z,146nm,21.1s,baz=9.2,slow=31						
VNDA	**Vanda**	**32.66**	**182**	P	**P**	**14 13 51.5**	**-0.4**
	0.9nm,0.8s,baz=316,slow=9.1,SNR=2.6						
VNDA				LR	LR	14 25 01.1	
	comp=Z,76nm,18.1s,baz=1.5,slow=32						
ASAR	**Alice Springs**	**34.60**	**297**	P	**P**	**14 14 08.7**	**-0.7**
	1.1nm,0.6s,baz=136,slow=8.5,SNR=35						
ASAR				PcP	**PcP**	**14 16 41.0**	**-0.6**
	0.9nm,0.7s,baz=135,slow=4.5,SNR=6.5						
WRA	**Warramunga Arr**	**37.10**	**302**	P	**P**	**14 14 30.5**	**-0.2**
	1.2nm,0.5s,baz=136,slow=7.9,SNR=40						
WRA				PcP	**PcP**	**14 16 48.8**	**-0.3**
	1.4nm,0.7s,baz=141,slow=2.9,SNR=15						
H01W1	**Cape Leeuwin H**	**41.43**	**265**	T	T	14 59 16.1	
	baz=120,slow=75,SNR=28						
H01W2	**Cape Leeuwin H**	**41.44**	**265**	T	T	14 59 16.6	
	baz=120,slow=75,SNR=48						
H01W3	**Cape Leeuwin H**	**41.45**	**265**	T	T	14 59 06.0	
	baz=120,slow=75,SNR=49						
QSPA	**South Pole Qui**	**45.08**	**180**	*eP*	**P**	**14 15 37.0**	**+1.3**
	46nm,0.8s						
MAW	**Mawson**	**54.33**	**207**	P	**P**	**14 16 46.7**	**+1.1**
	7.5nm,0.8s,baz=118,slow=8.9,SNR=13						
SYO	**Syowa Base**	**59.92**	**199**	‖*eP*	**P**	**14 17 23.8**	**-1.0**
SYO	**Syowa Base**	**59.92**	**199**	‖*ep*	pP	14 17 48.0	-1.7
SNAA	**Sanae**	**63.38**	**183**	P	**P**	**14 17 48.9**	**+0.7**
SNAA	**Sanae**	**63.38**	**183**	*eP*	**P**	**14 17 48.4**	**+0.3**
	1μm,1.2s						
VNA1	**Neumayer--Stat**	**64.57**	**182**	P	**P**	**14 17 56.6**	**+0.8**
PLCA	**Paso Flores**	**80.03**	**139**	P	**P**	**14 19 30.0**	**+1.6**
	3.1nm,0.7s,baz=249,slow=4.9,SNR=8.7						
H08S2	**Diego Garcia H**	**88.15**	**261**	T	T	15 57 49.8	
	baz=135,slow=76,SNR=56						
H08S1	**Diego Garcia H**	**88.16**	**261**	T	T	15 57 50.6	
	baz=135,slow=76,SNR=50						
H08S3	**Diego Garcia H**	**88.17**	**261**	T	T	15 57 49.7	
	baz=135,slow=76,SNR=56						
CMAR	**Chiang Mai Arr**	**88.60**	**298**	P	**P**	**14 20 12.0**	**+0.3**
	1.9nm,0.8s,baz=142,slow=2.8,SNR=8.7						
CMAR	**Chiang Mai Arr**	**88.60**	**298**	P	**P**	**14 20 12.0**	**+0.3**
ILAR	**Eielson Array**	**115.14**	**20**	PKP	**PKPdf**	**14 25 56.4**	**-1.8**
	0.4nm,0.8s,baz=288,slow=3.9,SNR=5.0						
ILAR				PKKPab	**PKKPab**	**14 36 40.0**	**+3.7**
	0.4nm,0.7s,baz=12,slow=4.5,SNR=5.5						
MKAR	**Makanchi Array**	**118.14**	**309**	PKP	**PKPdf**	**14 26 02.9**	**-1.6**
	0.8nm,0.9s,baz=180,slow=1.0,SNR=4.3						
DBIC	**Dimbokro**	**141.19**	**192**	PKhKP	PKPpre	14 26 42.2	
	2.2nm,0.6s,baz=156,slow=5.6,SNR=5.1						
BRTR	**Keskin Array B**	**145.85**	**278**	PKPbc	**PKPbc**	**14 26 57.6**	**+0.2**
	2.5nm,0.8s,baz=138,slow=5.5,SNR=12						
TORD	**Torodi Ar. Bea**	**145.97**	**205**	PKPbc	**PKPbc**	**14 26 57.9**	**-0.3**
	14nm,0.7s,baz=153,slow=2.1,SNR=84						
ARCES	**ARCESS Array B**	**148.94**	**335**	PKPbc	**PKPbc**	**14 27 04.8**	**0.0**
	3.2nm,0.8s,baz=86,slow=1.6,SNR=13						
AKASG	**Malin Array Be**	**151.72**	**297**	PKPbc	**PKPbc**	**14 27 11.0**	**-0.9**
	0.4nm,0.3s,baz=80,slow=2.4,SNR=10						
FINES	**FINESS Array B**	**152.22**	**320**	PKPbc	**PKPbc**	**14 27 12.7**	**0.0**
	4.1nm,0.7s,baz=91,slow=2.6,SNR=16						
GERES	**GERESS Array B**	**161.73**	**291**	PKPab	**PKPab**	**14 28 04.6**	**0.0**
	0.3nm,0.6s,baz=100,slow=5.1,SNR=3.2						
ESDC	**Sonseca Array**	**171.69**	**233**	PKPab	**PKPab**	**14 28 48.5**	**-0.2**
	1.6nm,0.9s,baz=139,slow=4.1,SNR=7.8						

*SOME **31** 14:14:42.6, 47°.43N×83°.35E, h15km*
NNC 31 14:14:42.1±1.7, 46°.96N×83°.85E, h0km, mb2.3, mpv2.7, 1C-3D, Error ellipse: s-maj=15.9km s-min=10.3km az=172.0, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MK31	**Makanchi Array**	**1.08**	**262**	P	Pg	14 15 02.7	-0.2
	4.2nm,0.5s,baz=80,slow=18,SNR=194						
MK31				⇓S	Sb	14 15 17.7	-0.8
	2.8nm,0.2s						
MAKZ	**Makanchi**	**1.29**	**264**	⇓P	Pg	14 15 06.4	-0.5
	2.9nm,0.4s						
MAKZ				⇓S	Sb	14 15 24.4	-0.1
	12nm,0.5s						
KAPS	**Kapalarasan**	**3.55**	**243**	*eP*	Pb	14 15 46.1	+0.3
	0.4nm,0.1s						
KAPS				*eS*	Sb	14 16 31.4	+2.1
	2.4nm,0.2s						
DJR	**Jarkent**	**3.88**	**229**	*eP*	Pb	14 15 53.2	+1.8
	0.6nm,0.1s						
DJR				*eS*	Sg	14 16 43.8	-2.8
	1.9nm,0.1s						
KURBB	**Kurchatov Arra**	**5.08**	**318**	⇑Lg	Lg	14 17 20.1	
	10nm,0.7s						

*IDC **31** 14:28:55.6±1.1, 3°.28N×93°.71E, h0km, mb3.9/11, mb1 4.0/13, mb1mx3.7/62, mbtmp3.9/13, ML3.8/1, MS4.5/1, Ms1 4.5/1, ms1mx3.2/60, Error ellipse: s-maj=42.1km s-min=16.1km az=48.0*
*ISCJB **31** 14:28:57.0±0.7, 3°.27N±0°.08×93°.77E±0°.06, h19km, mb4.1/13, MS4.5/1, Error ellipse: s-maj=13.4km s-min=6.9km az=29.6*
*NEIC **31** 14:29:00.8±0.7, 3°.28N×93°.78E, h35km, mb4.4/4, Error ellipse: s-maj=13.9km s-min=8.3km az=222.0*
ISC 31 14:28:58.8±0.9, 3°.3N±0°.1×93°.77E±0°.09, h19km, n30, σ1§03/25, mb4.0/13, Off west coast of northern Sumatera

| Code | Station Name | Δ° | A

ϕ_s251.00000°, δ62.00000°, λ-157.00000°. NP2: ϕ_s150.00000°, δ70.00000°, λ-30.00000°. Principal axes: T Plg5.0000°, Azm202.0000°; N Plg0.0000°, Azm0.0000°; P Plg35.0000°, Azm108.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.

*GCMT **31** 14:34:47.3±0.1, 17.02S×171.49E, h12km, MW6.1/146, Moment Tensor Solution. s144,c323; s146,c558; Duration: 28 Moment tensor: Scale 10^{18}Nm; M_{rr}-1.68±.01; $M_{\theta\theta}$1.59±.01; $M_{\phi\phi}$0.08±.01; $M_{r\theta}$-0.18±.03; $M_{\theta\phi}$-1.00±.01; $M_{r\phi}$0.18±.03; Best double couple: M_o1.90200×10^{18} NP1:ϕ_s120.00000°, δ49.00000°, λ-85.00000°. NP2:ϕ_s293.00000°, δ41.00000°, λ-95.00000°. Principal axes: T 2.1040, Plg4.0000°, Azm207.0000°; N -0.4090, Plg4.0000°, Azm297.0000°; P -1.7010, Plg85.0000°, Azm71.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*ISCJB **31** 14:34:47.4±1.4, 17.04S±0.03×171.58E±0.02, h17km±9km, mb5.7/339, MS5.7/550 Error ellipse: s-maj=4.3km s-min=3.3km az=169.6*

*MOS **31** 14:34:49.8±0.9, 17.04S×171.61E, h33km, mb5.7/89, MS5.8/83, Error ellipse: s-maj=6.7km s-min=6.2km az=126.8*

*NEIC **31** 14:34:49.0±0.0, 16.89S×171.63E, h15km, Moment Tensor Solution. s35 Moment tensor: Scale 10^{18}Nm; M_{rr}-1.47; $M_{\theta\theta}$1.27; $M_{\phi\phi}$0.19; $M_{r\theta}$0.10; $M_{\theta\phi}$-0.75; $M_{r\phi}$0.34; Best double couple: M_o1.60000×10^{18} NP1:ϕ_s131.00000°, δ48.00000°, λ-70.00000°. NP2:ϕ_s283.00000°, δ46.00000°, λ-110.00000°. Principal axes: T 1.6600, Plg1.0000°, Azm207.0000°; N -0.1000, Plg14.0000°, Azm297.0000°; P -1.5600, Plg75.0000°, Azm112.0000°;*

ISC 31 14:34:49.3±0.4, 17.09S±0.04×171.68E±0.03, h23km±2km, h23km:pP-P, n1496, σ1929/1304, mb5.7/339, MS5.7/557, 40C-68D, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**6.12**	**97**	*e*P		**Pn**	**Pn**	**14 36 20.9**	**+2.5**
MSVF	**Nonsavu**	**6.12**	**97**	*e*Pn		**Pn**	**Pn**	**14 36 20.9**	**+2.5**
DZM	**Mont Dzumac**	**7.00**	**224**	Pn		**Pn**	**Pn**	**14 36 29.3**	**-1.2**
	13nm,0.3s,baz=95,slow=9.9,SNR=128								
DZM				Sn		**Sn**	**Sn**	**14 37 49.0**	**-0.4**
	baz=287,slow=19,SNR=3.1								
DZM	**Mont Dzumac**	**7.00**	**224**	*e*Pn		**Pn**	**Pn**	**14 36 27.4**	**-3.1**
	1μm,1.2s								
DZM				*e*LR		LR	LR	14 38 04.0	
	238μm,27.7s								
DZM	**Mont Dzumac**	**7.00**	**224**	*e*Pn		**Pn**	**Pn**	**14 36 27.7**	**-2.7**
DZM				Sn		**Sn**	**Sn**	**14 37 49.0**	**-0.4**
FUNA	**Funafuti**	**11.23**	**42**	*e*Pn		**Pn**	**Pn**	**14 37 26.3**	**-2.2**
NFK	**Norfolk Island**	**12.39**	**195**	P		**Pn**	**Pn**	**14 37 47.1**	**+2.8**
	baz=13,SNR=10								
HNR	**Honiara**	**13.72**	**302**	Pn		**Pn**	**Pn**	**14 38 04.3**	**+1.8**
	2.6nm,0.3s,baz=146,slow=8.7,SNR=29								
HNR				LR		LR	LR	14 42 49.1	
	comp=Z,13μm,19.9s,baz=138,slow=35								
HNR	**Honiara**	**13.72**	**302**	*e*P		**Pn**	**Pn**	**14 38 04.0**	**+1.4**
HNR	**Honiara**	**13.72**	**302**	*e*P		**Pn**	**Pn**	**14 38 03.9**	**+1.4**
HNR	**Honiara**	**13.72**	**302**	*e*Pn		**Pn**	**Pn**	**14 38 03.7**	**+1.2**
RAO	**Raoul Island**	**15.42**	**144**	Pn		**P**	**P**	**14 38 32.9**	**+3.1**
	28nm,0.3s,baz=132,slow=5.0,SNR=6.0								
RAO				LR		LR	LR	14 43 04.1	
	comp=Z,14μm,19.1s,baz=312,slow=32								
RAO	**Raoul Island**	**15.42**	**144**	*e*P		**P**	**P**	**14 38 28.4**	**-1.4**
RAO				pmax		pmax	pmax		
	comp=Z,5μm,2.0s								
RAO	**Raoul Island**	**15.42**	**144**	*e*Pn		**Pn**	**Pn**	**14 38 27.5**	**+2.1**
	comp=Z,5μm,2.0s								
AFI	**Afiamalu**	**16.25**	**81**	Pn		**P**	**P**	**14 38 42.2**	**+3.0**
	comp=Z,1.0nm,0.3s,baz=256,slow=23,SNR=5.3								
AFI	**Afiamalu**	**16.25**	**81**	*e*P		**P**	**P**	**14 38 39.9**	**+0.6**
AFI				pmax		pmax	pmax		
	comp=Z,170nm,1.1s								
AFI	**Afiamalu**	**16.25**	**81**	*e*Pn		**P**	**P**	**14 38 38.7**	**-0.6**
	comp=Z,170nm,1.1s								
OUZ	**Omahuta**	**18.14**	**175**	*e*Pn		**P**	**P**	**14 39 01.4**	**+1.5**
	comp=Z,206nm,1.0s								
TARA	**Tarawa**	**18.36**	**4**	*e*P		**P**	**P**	**14 39 02.2**	**-0.4**
	comp=Z,891nm,1.6s								
LHI	**Lord Howe Isla**	**18.38**	**216**	P		**Pn**	**P**	**14 39 04.0**	**+1.3**
	baz=19,SNR=4.7								
LHI	**Lord Howe Isla**	**18.38**	**216**	*e*P		**Pn**	**P**	**14 39 02.8**	**+0.1**
	comp=Z,1μm,1.6s								
EIDS	**Eidsvold**	**20.88**	**243**	P		Pn	P	14 39 31.5	-1.0
	baz=21,SNR=19								
EIDS	**Eidsvold**	**20.88**	**243**	*e*P		**P**	**P**	**14 39 30.9**	**+1.0**
	comp=Z,279nm,1.2s								
EIDS				LR		LR	LR		
	comp=Z,24μm,22.0s								
MXZ	**Matakaoa Point**	**21.22**	**165**	*e*P		**P**	**P**	**14 39 34.7**	**+1.2**
	comp=Z,242nm,1.1s								
MXZ				LR		LR	LR		
	comp=Z,18μm,18.0s								
HIZ	**Hauiti**	**21.53**	**173**	*e*P		**P**	**P**	**14 39 39.1**	**+2.3**
	comp=Z,868nm,1.7s								
URZ	**Urewera**	**21.63**	**168**	P		**P**	**P**	**14 39 40.3**	**+2.4**
	comp=Z,81nm,1.0s,baz=17,slow=2.6,SNR=18								
URZ	**Urewera**	**21.63**	**168**	*e*P		**P**	**P**	**14 39 39.7**	**+1.9**
	comp=Z,700nm,1.5s								
URZ				LR		LR	LR		
	comp=Z,19μm,20.0s								
BKZ	**Black Stump Fm**	**22.40**	**170**	*e*P		**P**	**P**	**14 39 47.6**	**+1.4**
	comp=Z,526nm,1.6s								
ARMA	**Armidale**	**22.60**	**230**	P		**P**	**P**	**14 39 49.8**	**+1.3**
	baz=23,SNR=57								
ARMA	**Armidale**	**22.60**	**230**	*e*P		**P**	**P**	**14 39 48.9**	**+0.4**
	comp=Z,289nm,1.3s								
ARMA				LR		LR	LR		
	comp=Z,37μm,21.0s								
RABL	**Rabaul**	**23.03**	**302**	*e*P		**P**	**P**	**14 39 51.4**	**-1.7**
	comp=Z,619nm,1.4s								
RABL				LR		LR	LR		
	comp=Z,16μm,20.0s								
RMQ	**Roma**	**23.22**	**242**	P		**P**	**P**	**14 39 56.4**	**+1.6**
	baz=23,SNR=68								
BFZ	**Birch Farm**	**23.84**	**171**	*e*P		**P**	**P**	**14 40 00.5**	**-0.3**
	comp=Z,2μm,2.0s								
BFZ				LR		LR	LR		
	comp=Z,22μm,19.0s								
CTA	**Charters Tower**	**24.27**	**259**	P		**P**	**P**	**14 40 06.3**	**+1.2**
	comp=Z,172nm,0.9s,baz=80,slow=12,SNR=32								
CTA				LR		LR	LR	14 48 32.7	
	comp=Z,13μm,20.3s,baz=88,slow=34								
CTAO	**Charters Tower**	**24.27**	**259**	*e*P		**P**	**P**	**14 40 05.8**	**+0.7**
CTAO				pmax		pmax	pmax		
	comp=Z,308nm,1.0s								
CTAO				MLR		MLR	MLR		
	comp=Z,15μm,20.0s								
CTAO	**Charters Tower**	**24.27**	**259**	*e*P		**P**	**P**	**14 40 05.8**	**+0.7**
	comp=Z,308nm,1.0s								
CTAO				LR		LR	LR		
	comp=Z,15μm,20.0s								
SNZO	**South Karori**	**24.28**	**174**	*e*P		**P**	**P**	**14 40 05.0**	**+0.1**
	comp=Z,279nm,0.9s								
SNZO				LR		LR	LR		
	comp=Z,40μm,22.0s								
MGCD	**Mangrove Creek**	**24.51**	**225**	P		**P**	**P**	**14 40 08.9**	**+1.8**
	baz=25,SNR=26								
THZ	**Tophouse**	**24.62**	**178**	*e*P		**P**	**P**	**14 40 08.4**	**+0.4**
	comp=Z,261nm,1.3s								
THZ				LR		LR	LR		
	comp=Z,22μm,19.0s								
RIV	**Riverview**	**24.85**	**224**	P		**P**	**P**	**14 40 12.1**	**+2.0**
	baz=25								
PMG	**Port Moresby**	**25.04**	**285**	P		**P**	**P**	**14 40 12.1**	**+0.1**
	comp=Z,102nm,0.9s,baz=93,slow=7.8,SNR=7.3								
PMG				LR		LR	LR	14 48 44.4	
	comp=Z,14μm,18.4s,baz=75,slow=33								
PMG	**Port Moresby**	**25.04**	**285**	*e*P		**P**	**P**	**14 40 14.1**	**+2.1**
PMG				pmax		pmax	pmax		
	comp=Z,483nm,1.0s								
PMG				MLR		MLR	MLR		
	comp=Z,67μm,17.0s								
PMG	**Port Moresby**	**25.04**	**285**	*e*P		**P**	**P**	**14 40 11.2**	**-0.8**
	comp=Z,135nm,1.0s								
KHZ	**Kahutara**	**25.30**	**177**	*e*P		**P**	**P**	**14 40 13.5**	**-0.5**
	comp=Z,252nm,1.3s								
KHZ				LR		LR	LR		
	comp=Z,32μm,18.0s								
LTZ	**Lake Taylor**	**25.62**	**179**	*e*P		**P**	**P**	**14 40 17.6**	**+0.6**
	comp=Z,242nm,1.5s								
LTZ				LR		LR			
	comp=Z,23μm,20.0s								
MTSU	**Mount Surprise**	**26.09**	**264**	P		**P**		**14 40 23.7**	**+2.1**
	baz=26,SNR=88								
OXZ	**Oxford**	**26.16**	**179**	*e*P		**P**		**14 40 22.0**	**+0.1**
	comp=Z,120nm,1.3s								
OXZ				LR		LR			
	comp=Z,22μm,19.0s								
FOZ	**Fox Glacier**	**26.41**	**183**	*e*P		**P**		**14 40 23.5**	**-0.6**
	comp=Z,92nm,1.0s								
CRLZ	**Canterbury Las**	**26.42**	**178**	*e*P		**P**		**14 40 23.9**	**-0.3**
	comp=Z,251nm,1.6s								
CRLZ				LR		LR			
	comp=Z,16μm,22.0s								
MQZ	**McQueen's Vall**	**26.55**	**178**	*e*P		**P**		**14 40 25.0**	**-0.3**
	comp=Z,129nm,1.4s								
MQZ				LR		LR			
	comp=Z,16μm,22.0s								
RPZ	**Rata Peaks**	**26.55**	**181**	P		**P**		**14 40 27.3**	**+1.9**
	comp=Z,37nm,1.1s,baz=116,slow=6.8,SNR=8.5								
RPZ				LR		LR		14 49 19.8	
	comp=Z,17μm,19.4s,baz=1.0,slow=33								
RPZ	**Rata Peaks**	**26.55**	**181**	*e*P		**P**		**14 40 26.5**	**+1.1**
	comp=Z,106nm,1.2s								
CNB	**Canberra Magne**	**26.92**	**223**	P		**P**		**14 40 30.1**	**+1.1**
	baz=27,SNR=50								
YNG	**Young**	**26.99**	**226**	P		**P**		**14 40 31.7**	**+2.2**
	baz=27,SNR=16								
QLP	**Quilpie**	**27.12**	**245**	P		**P**		**14 40 31.6**	**+0.8**
	baz=27,SNR=23								
CAN	**Canberra**	**27.16**	**224**	P		**P**		**14 40 32.1**	**+1.0**
	baz=27								
CAN	**Canberra**	**27.16**	**224**	*e*P		**P**		**14 40 31.6**	**+0.5**
CAN				pmax		pmax			
	comp=Z,97nm,1.2s								
CAN	**Canberra**	**27.16**	**224**	*e*P		**P**		**14 40 31.6**	**+0.5**
	comp=Z,96nm,1.2s								
PATS	**Pohnpei**	**27.20**	**330**	P		**P**		**14 40 32.2**	**+0.7**
	baz=27,SNR=6.4								
PATS	**Pohnpei**	**27.20**	**330**	*e*P		**P**		**14 40 30.7**	**-0.8**
	comp=Z,287nm,1.2s								
PATS				LR		LR			
	comp=Z,10μm,21.0s								
LBZ	**Lake Benmore**	**27.24**	**182**	PFAKE				14 40 40.0	+8.3
LBZ				LR		LR			
	comp=Z,18μm,20.0s								
RAR	**Rarotonga**	**27.26**	**103**	P		**P**		**14 40 31.5**	**-0.5**
	comp=Z,35nm,0.8s,baz=253,slow=6.1,SNR=6.0								
RAR				LR		LR		14 50 39.9	
	comp=Z,2μm,18.1s,baz=268,slow=35								
RAR	**Rarotonga**	**27.26**	**103**	*e*P		**P**		**14 40 32.0**	**0.0**
RAR				pmax		pmax			
	comp=Z,450nm,1.5s								
RAR	**Rarotonga**	**27.26**	**103**	*e*P		**P**		**14 40 32.0**	**0.0**
	comp=Z,446nm,1.5s								
CMSA	**Cobar Meteorol**	**27.62**	**234**	P		**P**		**14 40 35.7**	**+0.5**
	baz=28,SNR=53								
COEN	**Coen**	**27.63**	**272**	P		**P**		**14 40 35.8**	**+0.3**
	baz=28,SNR=12								
COEN	**Coen**	**27.63**	**272**	*e*P		**P**		**14 40 35.3**	**-0.1**
	comp=Z,175nm,1.2s								
COEN				LR		LR			
	comp=Z,8μm,20.0s								
WKZ	**Wanaka**	**27.75**	**184**	PFAKE				14 40 50.0	+14
WKZ				LR		LR			
	comp=Z,27μm,21.0s								
ODZ	**Otahua Downs**	**27.89**	**182**	*e*P		**P**		**14 40 38.6**	**+1.2**
	comp=Z,242nm,1.9s								
ODZ				LR		LR			
	comp=Z,14μm,20.0s								
MILA	**Mila**	**28.12**	**221**	P		**P**		**14 40 41.1**	**+1.4**
	baz=28,SNR=7.2								
MANU	**Manus Island**	**28.19**	**299**	*e*P		**P**		**14 40 39.5**	**-0.9**
	comp=Z,208nm,1.1s								
MLZ	**Mara Lakes**	**28.35**	**185**	*e*P		**P**		**14 40 42.5**	**+0.9**
	comp=Z,89nm,1.3s								
MLZ				LR		LR			
	comp=Z,21μm,20.0s								
DCZ	**Deep Cove**	**28.55**	**187**	*e*P		**P**		**14 40 44.8**	**+1.6**
	comp=Z,119nm,1.3s								
WHZ	**Wether Hill Ro**	**28.89**	**185**	*e*P		**P**		**14 40 48.8**	**+2.5**
	comp=Z,287nm,2.0s								
QIS	**Mount Isa**	**30.53**	**258**	P		**P**		**14 41 02.3**	**+1.1**
	baz=31,SNR=17								
TOO	**Toolangi**	**30.77**	**223**	P		**P**		**14 41 04.6**	**+1.5**
	baz=31,SNR=9.0								
STKA	**Stephens Creek**	**30.96**	**236**	P		**P**		**14 41 05.6**	**+0.7**
	comp=Z,32nm,0.9s,baz=64,slow=9.0,SNR=41								
STKA				LR		LR		14 52 35.4	
	comp=Z,20μm,20.0s,baz=63,slow=34								
STKA	**Stephens Creek**	**30.96**	**236**	P		**P**		**14 41 05.5**	**+0.7**
	baz=31,SNR=38								
STKA	**Stephens Creek**	**30.96**	**236**	*e*P		**P**		**14 41 05.5**	**+0.7**
	comp=Z,34nm,1.5s								
MOO	**Moorlands**	**32.80**	**215**	P		**P**		**14 41 22.3**	**+1.5**
	baz=33,SNR=8.0								
ARPS	**Mount Arapiles**	**32.84**	**227**	P		**P**		**14 41 22.4**	**+1.1**
	baz=33,SNR=17								
TAU	**Tasmania Unive**	**33.05**	**214**	PFAKE				14 41 40.0	+17
TAU				LR		LR			
	comp=Z,14μm,20.0s								
HTT	**Hallett**	**33.62**	**235**	P		**P**		**14 41 29.6**	**+1.3**
	baz=34,SNR=10								
WR0	**Warramunga Arr**	**35.28**	**259**	PFAKE				14 41 50.0	+7.2
WR0				LR		LR			
	comp=Z,9μm,20.0s								
WR9	**Warramunga Arr**	**35.31**	**259**	PFAKE				14 41 50.0	+7.0
WR9				LR		LR			
	comp=Z,9μm,19.0s								
WR8	**Warramunga Arr**	**35.32**	**259**	PFAKE				14 41 50.0	+6.9
WR8				LR		LR			
	comp=Z,9μm,19.0s								
WR7	**Warramunga Arr**	**35.35**	**259**	PFAKE				14 41 50.0	+6.7
WR7				LR		LR			
	comp=Z,9μm,19.0s								
WR6	**Warramunga Arr**	**35.37**	**259**	PFAKE				14 41 50.0	+6.5
WR6				LR		LR			
	comp=Z,10μm,20.0s								
WR5	**Warramunga Arr**	**35.39**	**259**	PFAKE				14 41 50.0	+6.3
WR5				LR		LR			
	comp=Z,9μm,20.0s								
WR4	**Warramunga Arr**	**35.41**	**259**	PFAKE				14 42 00.0	+16
WR4				LR		LR			
	comp=Z,9μm,20.0s								
WB0	**Warramunga Arr**	**35.43**	**260**	PFAKE				14 42 00.0	+16
WB0				LR		LR			
	comp=Z,9μm,20.0s								
WR3	**Warramunga Arr**	**35.43**	**259**	PFAKE				14 42 00.0	+16
WR3				LR		LR			
	comp=Z,9μm,19.0s								
WB9	**Warramunga Arr**	**35.44**	**260**	PFAKE				14 42 00.0	+16
WB9				LR		LR			
	comp=Z,17μm,20.0s								
WB8	**Warramunga Arr**	**35.44**	**260**	PFAKE				14 42 00.0	+16
WB8				LR		LR			
	comp=Z,9μm,18.0s								
WC3	**Warramunga Arr**	**35.44**	**259**	PFAKE				14 42 00.0	+16
WC3				LR		LR			
	comp=Z,10μm,20.0s								
WC2	**Warramunga Arr**	**35.45**	**260**	PFAKE				14 42 00.0	+16
WC2				LR		LR			
	comp=Z,11μm,21.0s								
WB6	**Warramunga Arr**	**35.45**	**260**	PFAKE				14 42 00.0	+16
WB6				LR		LR			
	comp=Z,9μm,19.0s								
WR2	**Warramunga Arr**	**35.45**	**259**	PFAKE				14 42 00.0	+16
WR2				LR		LR			
	comp=Z,9μm,19.0s								
WB4	**Warramunga Arr**	**35.46**	**260**	PFAKE				14 42 00.0	+16
WB4				LR		LR			
	comp=Z,9μm,19.0s								
WB3	**Warramunga Arr**	**35.46**	**260**	PFAKE				14 42 00.0	+16
WB3				LR		LR			
	comp=Z,9μm,19.0s								
WB2	**Warramunga Arr**	**35.46**	**259**	*e*P		**P**		**14 41 43.2**	**-1.1**
WB2	comp=Z,82nm,1.1s			LR		LR			
	comp=Z,10μm,18.0s								
WRAB	**Tennant Creek**	**35.47**	**260**	*ce*P		**P**		**14 41 43.8**	**-0.5**
WRAB				pmax		pmax			
	comp=Z,189nm,1.0s								
WRAB				MLR		MLR			
	comp=Z,14μm,15.0s								
WRAB	**Tennant Creek**	**35.47**	**260**	*e*P		**P**		**14 41 43.3**	**-1.0**
	comp=Z,75nm,1.0s								
WRAB				LR		LR			
	comp=Z,10μm,18.0s								
WC4	**Warramunga Arr**	**35.47**	**259**	PFAKE				14 42 00.0	+16
WC4				LR		LR			
	comp=Z,10μm,18.0s								
WR1	**Warramunga Arr**	**35.48**	**259**	PFAKE				14 42 00.0	+16
WR1				LR		LR			
	comp=Z,10μm,18.0s								
WRA	**Warramunga Arr**	**35.48**	**259**	P		**P**		**14 41 43.6**	**-0.8**
	comp=Z,37nm,1.0s,baz=90,slow=8.1,SNR=96								
WRA				PcP		**PcP**		**14 44 14.0**	**+0.2**
	comp=Z,5.1nm,0.9s,baz=76,slow=3.5,SNR=3.4								
WRA				LR		LR		14 55 42.6	
	comp=Z,9μm,18.9s,baz=100,slow=35								
WC1	**Warramunga Arr**	**35.48**	**260**	PFAKE				14 42 00.0	+16
WC1				LR		LR			
	comp=Z,7μm,19.0s								
BBOO	**Buckleboo**	**35.69**	**237**	P		**P**		**14 41 46.4**	**+0.4**
	baz=36,SNR=20								
BBOO	**Buckleboo**	**35.69**	**237**	*e*P		**P**		**14 41 46.0**	**0.0**
	comp=Z,127nm,1.1s								
BBOO				LR		LR			
	comp=Z,19μm,20.0s								
H11S2	**WAKE ISLAND Hy**	**35.69**	**352**	T		T		15 19 30.9	
	baz=171,slow=76,SNR=82								
H11S3	**WAKE ISLAND Hy**	**35.70**	**352**	T		T		15 19 26.1	
	baz=171,slow=76,SNR=41								
H11S1	**WAKE ISLAND Hy**	**35.71**	**352**	T		T		15 19 33.1	
	baz=171,slow=76,SNR=48								
AS01	**Alice Springs**	**35.89**	**253**	*e*P		**P**		**14 41 47.3**	**-0.7**
XMAS	**Kiritimati**	**35.90**	**61**	PFAKE				14 42 00.0	+12
XMAS				LR		LR			
	comp=Z,15μm,22.0s								
AS31	**Alice Springs**	**35.93**	**253**	*e*P		**P**		**14 41 47.7**	**-0.7**
	comp=Z,77nm,0.9s								
AS31				LR		LR			
	comp=Z,200nm,18.0s								
ASAR	**Alice Springs**	**35.93**	**253**	P		**P**		**14 41 48.4**	**0.0**
	comp=Z,190nm,0.8s,baz=82,slow=8.4,SNR=509								
ASAR				LR		LR		14 55 44.5	
	comp=Z,13nm,19.9s,baz=88,slow=35								
WAKE	**Wake Island**	**36.48**	**352**	PFAKE				14 42 00.0	+7.2
WAKE				LR		LR			
	comp=Z,13μm,20.0s								
H11N1	**WAKE ISLAND Hy**	**36.87**	**352**	T		T		15 21 00.7	
	baz=173,slow=76,SNR=92								
H11N3	**WAKE ISLAND Hy**	**36.87**	**352**	T		T		15 20 53.9	
	baz=173,slow=76,SNR=99								
H11N2	**WAKE ISLAND Hy**	**36.89**	**352**	T		T		15 20 54.8	
	baz=173,slow=76,SNR=94								
TBI	**Tubuai**	**36.91**	**106**	*e*S		**S**		**14 47 43.4**	**+2.9**
	comp=Z,1μm,29.0s								
TBI				*e*LQ		LQ		14 50 23.4	
	comp=Z,11μm,30.0s								
TBI				*e*LR		LR		14 52 03.2	
	comp=Z,7μm,25.8s								
PAE	**Paea**	**36.94**	**97**	*e*P		**P**		**14 41 56.2**	**-0.7**
	comp=Z,24nm,1.2s								
PPT2	**Papeete2**	**36.95**	**97**	*e*P		**P**		**14 41 56.6**	**-0.5**
	comp=Z,147nm,1.3s								
PPT2				*e*S		**S**		**14 47 42.2**	**+1.0**
	comp=Z,2μm,24.8s								
PPT2				*e*LQ		LQ		14 50 26.6	
	comp=Z,43μm,27.8s								
PPT2				*e*LR		LR		14 51 57.9	
	comp=Z,16μm,29.5s,baz=279								
PPT	**Papeete**	**36.95**	**97**	P		**P**		**14 41 57.4**	**+0.4**
	comp=Z,65nm,0.9s,baz=197,slow=7.4,SNR=3.6								
PPT				LR		LR		14 53 59.6	
	comp=Z,3μm,18.6s,baz=261,slow=31								
TIAR	**Tiarei**	**37.17**	**97**	*e*P		**P**		**14 41 59.0**	**+0.1**
KDU	**Kakadu**	**38.10**	**271**	P		**P**		**14 42 05.8**	**-0.9**
	baz=38,SNR=6.4								
MEH	**Mehetia**	**38.35**	**97**	*e*P		**P**		**14 42 08.5**	**-0.4**
	comp=Z,75nm,1.2s								
JOHN	**Johnston Islan**	**38.37**	**30**	PFAKE				14 42 20.0	+11
JOHN				LR		LR			
	comp=Z,9μm,21.0s								
MCQ	**Macquarie Isla**	**38.61**	**192**	PFAKE				14 42 20.0	+9.5
MCQ				LR		LR			
	comp=Z,13μm,21.0s								
VAH	**Vaihoa**	**39.08**	**93**	*e*P		**P**		**14 42 14.3**	**-0.7**
	comp=Z,196nm,1.2s								
MTN	**Manton Dam**	**39.35**	**270**	P		**P**		**14 42 17.2**	**-0.1**
	baz=40,SNR=42								
MTN	**Manton Dam**	**39.35**	**270**	*e*P		**P**		**14 42 16.3**	**-0.9**
	comp=Z,143nm,0.8s								
MTN				LR		LR			
	comp=Z,6μm,18.0s								
WRKA	**Warakurna**	**41.11**	**251**	P		**P**		**14 42 32.0**	**+0.1**
	baz=41,SNR=53								
KNRA	**Kununurra**	**41.14**	**266**	P		**P**		**14 42 32.1**	**0.0**
	baz=41,SNR=15								
FAKI	**Fak Fak**	**41.19**	**286**	*e*P		**P**		**14 42 31.4**	**-1.1**
	comp=Z,161nm,1.4s								
FAKI				LR		LR			
	comp=Z,6μm,21.0s								
FORT	**Forrest**	**41.88**	**243**	P		**P**		**14 42 38.5**	**+0.6**
	baz=42								
FORT	**Forrest**	**41.88**	**243**	*e*P		**P**		**14 42 38.7**	**+0.7**
FITZ	**Fitzroy Crossi**	**43.81**	**261**	P		**P**		**14 42 54.5**	**+0.7**
	baz=44,SNR=94								
FITZ	**Fitzroy Crossi**	**43.81**	**261**	*e*P		**P**		**14 42 54.0**	**+0.1**
	comp=Z,209nm,1.0s								
MIDW	**Midway**	**46.27**	**13**	PFAKE				14 43 20.0	+7.0
MIDW				LR		LR			
	comp=Z,8μm,20.0s								
SOEI	**Soe**	**46.59**	**273**	*e*P		**P**		**14 43 16.6**	**+0.5**
	comp=Z,249nm,1.0s								
KMBL	**Kambalda**	**47.21**	**243**	P		**P**		**14 43 21.2**	**+0.6**
	baz=47,SNR=8.4								
TAOE	**Nuku Hiva Isla**	**47.55**	**86**

comp=Z,18μm,20.0s
MORW Morawa 52.14 246 P **P** **14 43 58.9 +0.6**
baz=52,SNR=6.1
KAPI Kappang 52.20 277 P **P** **14 43 58.3 -0.5**
comp=Z,45nm,0.9s,baz=158,slow=5.7,SNR=9.4
KAPI Kappang 52.20 277 *e*P **P** **14 43 58.9 0.0**
comp=Z,136nm,1.2s
CTBH Cotabato--PC H 52.74 293 ⇓*i*P **P** **14 44 02.6 -0.2**
GIRL Giralia 54.04 254 P **P** **14 44 13.9 +1.6**
baz=54,SNR=5.6
RCP Roxas 56.11 297 ⇓*e*P **P** **14 44 27.4 +0.1**
JAGI Jajag, Banyuwa 56.58 271 *e*P **P** **14 44 29.5 -1.3**
comp=Z,81nm,0.9s
JAGI LR LR
comp=Z,3μm,20.0s
MYLDM Lahad Datu 57.00 288 *e*P **P** **14 44 36.1 +2.4**
comp=Z,312nm,1.4s
TSM Tawau 57.21 287 ⇓P **P** **14 44 36.2 +1.0**
SDKM Sandakan 58.37 288 ⇓P **P** **14 44 44.2 +0.8**
JHJ2 Mitsune 58.47 329 PFAKE 14 45 00.0 +16
JHJ2 LR LR
comp=Z,4μm,21.0s
TGY Tagaytay City 58.90 299 P **P** **14 44 47.1 +0.1**
comp=Z,819nm,1.0s,baz=321,slow=4.8,SNR=14
KDM Kudat 59.22 289 ⇑P **P** **14 44 50.3 +1.2**
KKM Kota Kinabalu 59.42 288 ⇑P **P** **14 44 50.9 +0.1**
KKM Kota Kinabalu 59.42 288 *e*P **P** **14 44 49.8 -1.0**
comp=Z,379nm,1.6s
KKM LR LR
comp=Z,2μm,22.0s
VNDA Vanda 60.66 182 P **P** **14 44 57.5 -0.6**
comp=Z,4.6nm,0.7s,baz=356,slow=6.9,SNR=18
VNDA PKP2bc 15 14 24.4
comp=Z,1.6nm,0.9s,baz=180,slow=3.0,SNR=4.4
VNDA Vanda 60.66 182 *e*P **P** **14 44 57.8 -0.3**
VNDA pmax pmax
comp=Z,63nm,1.4s
VNDA Vanda 60.66 182 *e*P **P** **14 44 57.8 -0.3**
comp=Z,63nm,1.4s
VNDA ⇑*e* 15 14 24.4
JOW Kunigami 60.67 315 P **P** **14 44 59.7 +0.7**
comp=Z,75nm,0.9s,baz=145,slow=6.3,SNR=9.6
JOW Kunigami 60.67 315 *e*P **P** **14 44 59.1 +0.1**
comp=Z,145nm,1.1s
JOW LR LR
comp=Z,5μm,21.0s
SBA Scott Base 60.84 181 *e*P **P** **14 44 59.6 +0.2**
SBA pmax pmax
comp=Z,504nm,2.0s
SBA MLR MLR
comp=Z,6μm,21.0s
SBA Scott Base 60.84 181 *e*P **P** **14 44 59.6 +0.2**
comp=Z,504nm,2.0s
SBA LR LR
comp=Z,6μm,21.0s
BTM Bintulu 61.22 284 ⇑P **P** **14 45 04.1 +1.1**
INU Inuyama 61.65 328 PFAKE 14 45 20.0 +15
INU LR LR
comp=Z,2μm,20.0s
SBUM Sibu 61.76 282 ⇑P **P** **14 45 08.1 +1.5**
SBUM Sibu 61.76 282 *e*P **P** **14 45 07.5 +0.9**
comp=Z,28nm,1.2s
MJAR Matsushiro Arr 62.01 330 P **P** **14 45 06.9 -0.9**
comp=Z,19nm,1.1s,baz=161,slow=7.0,SNR=31
MJAR LR LR 15 08 19.3
comp=Z,2μm,21.5s,baz=140,slow=32
MJAR PKP2bc 15 14 24.6
comp=Z,0.6nm,0.8s,baz=335,slow=8.6,SNR=4.3
MJAR Matsushiro Arr 62.01 330 P **P** **14 45 06.9 -0.9**
MJAR pmax pmax
comp=Z,21nm,1.1s
MAJO Matsushiro 62.01 330 *e*P **P** **14 45 07.3 -0.5**
MAJO pmax pmax
comp=Z,70nm,1.3s
MAJO MLR MLR
comp=Z,6μm,21.0s
MAJO Matsushiro 62.01 330 *e*P **P** **14 45 07.3 -0.5**
comp=Z,70nm,1.3s
MAJO LR LR
comp=Z,6μm,21.0s
MAT Matsushiro 62.01 330 P **P** **14 45 07.2 -0.6**
MAT S **S** **14 53 31.0 -0.1**
MJB9 Matsu-Tunnel 62.01 330 *e*P **P** **14 45 07.4 -0.4**
comp=Z,19nm,1.3s
MJB9 LR LR
comp=Z,2μm,21.0s
CISI Cisompet, Garu 62.88 270 *e*P **P** **14 45 11.9 -2.3**
comp=Z,179nm,1.2s
YOJ Yonaguni jima 62.91 310 *e*P **P** **14 45 12.8 -1.3**
YOJ pmax pmax
comp=Z,140nm,1.1s
YOJ MLR MLR
comp=Z,2μm,19.0s
YOJ Yonaguni jima 62.91 310 *e*P **P** **14 45 12.8 -1.3**
comp=Z,140nm,1.1s
YOJ LR LR
comp=Z,2μm,19.0s
CASY Casey 63.01 203 *e*P **P** **14 45 14.2 +0.1**
comp=Z,113nm,1.3s
CASY LR LR
comp=Z,3μm,21.0s
KSM Kuching 63.21 281 *e*P **P** **14 45 15.5 -0.8**
comp=Z,72nm,1.1s
JNU Nakatsue 63.34 322 P **P** **14 45 16.9 +0.1**
comp=Z,32nm,1.1s,baz=63,slow=2.3
JNU Nakatsue 63.34 322 *e*P **P** **14 45 16.3 -0.5**
comp=Z,63nm,1.2s
YULB Yu-li 63.57 308 *e*P **P** **14 45 16.7 -1.8**
comp=Z,40nm,1.0s
NACB Ninganchiao 63.79 309 *e*P **P** **14 45 18.8 -1.2**
comp=Z,144nm,1.1s
TPUB Ta-pu 64.03 307 *e*P **P** **14 45 20.0 -1.5**
comp=Z,165nm,1.2s
TPUB LR LR
comp=Z,2μm,20.0s
SSLB Suanglung 64.06 308 *e*P **P** **14 45 20.4 -1.3**
comp=Z,74nm,1.1s
SSLB LR LR
comp=Z,2μm,19.0s
XMIS Christmas Isla 64.22 266 *e*P **P** **14 45 22.2 -0.8**
comp=Z,203nm,1.0s
YHNB Yeheng 64.24 309 *e*P **P** **14 45 22.3 -0.7**
comp=Z,161nm,1.1s
YHNB LR LR
comp=Z,2μm,20.0s
TATO Taipei 64.33 309 *e*P **P** **14 45 22.3 -1.1**
comp=Z,189nm,1.3s
TATO LR LR
comp=Z,2μm,21.0s
ERM Erimo 64.44 337 ⇑*e*P **P** **14 45 25.2 +1.5**
ERM Erimo 64.44 337 PFAKE 14 45 40.0 +16
ERM LR LR
comp=Z,9μm,21.0s
KUR Kuril'sk 65.69 342 *d i*P **P** **14 45 32.4 +0.6**
KUR *e* 14 45 58.0
KUR *i* S **S** **14 54 22.0 +5.5**
KUR pmax pmax
comp=N,45nm,1.8s
KUR pmax pmax
comp=E,26nm,1.8s
KUR pmax pmax
comp=Z,136nm,1.8s
KUR pmax pmax
comp=Z,533nm,7.6s
ASAJ Asahikawa 66.46 338 P **P** **14 45 37.7 +0.9**
comp=Z,28nm,0.9s,baz=218,slow=4.4
ASAJ Asahikawa 66.46 338 *e*P **P** **14 45 37.6 +0.8**
comp=Z,94nm,1.3s
ASAJ LR LR
comp=Z,5μm,22.0s
QZH Quanzhou 66.48 308 ⇓*i*P **P** **14 45 37.8 +0.4**
QZH S **S** **14 54 28.3 +1.4**
QZH pmax pmax
comp=Z,100nm,0.8s
QZH pmax pmax
comp=Z,2μm,3.9s
QZH LR LR
comp=Z,1μm,13.2s
QZH LR LR
comp=Z,2μm,16.9s
QZH LR LR
comp=Z,5μm,25.6s
KSRS Korea Array 68.10 324 P **P** **14 45 47.7 +0.3**
comp=Z,22nm,1.1s,baz=144,slow=6.3,SNR=17
KSRS LR LR 15 12 43.6
comp=Z,809nm,20.8s,baz=130,slow=33
KSRS PKP2bc 15 14 05.2
comp=Z,2.8nm,1.0s,baz=300,slow=3.8,SNR=5.0
KS15 Wonju Array Si 68.12 324 *e*P **P** **14 45 47.8 +0.4**
KSAR Wonju Array Be 68.12 324 P **P** **14 45 47.7 +0.2**
KSAR Wonju Array Be 68.12 324 P **P** **14 45 47.7 +0.2**
KSAR ⇑*e* 15 14 05.2
KS01 Wonju Array Si 68.14 324 *e*P **P** **14 45 47.4 -0.2**
SSE Sheshan 68.17 315 P **P** **14 45 47.5 -0.4**
SSE sP **pP** **14 45 55.5 +0.3**
SSE S **S** **14 54 49.8 +2.8**
SSE sS **sS** **14 55 00.5 +1.5**
SSE pmax pmax
comp=Z,39nm,0.8s
SSE pmax pmax
comp=Z,430nm,6.7s
SSE LR LR
comp=Z,3μm,36.0s
SSE LR LR
comp=Z,3μm,36.0s
SSE LR LR
comp=Z,3μm,20.9s
HKC Hong Kong Obse 68.55 303 ⇓P **P** **14 45 52.0 +1.5**
SKR Severo-Kuril's 68.85 349 *d i*P **P** **14 45 51.5 -0.2**
SKR *e* 14 48 23.8
SKR *e*PPP PPP 14 50 06.4
SKR *e*S **S** **14 54 49.4 -4.8**
SKR *e* 14 55 27.7
SKR *e*SS **SS** **14 59 23.9 +3.7**
SKR pmax pmax
comp=Z,75nm,1.6s
SKR pmax pmax
comp=Z,900nm,6.0s
SKR pmax pmax
comp=Z,700nm,8.5s
YSS Yuzh-Sakhalins 68.86 339 κ *i*P **P** **14 45 53.0 +1.1**
YSS *e**SP **sP** **14 46 01.7 -0.2**
YSS *e* 14 46 12.6
YSS *e*S **S** **14 54 55.0 +0.5**
YSS *e*PS **PnS** **14 55 23.0 +2.1**
YSS *e*PPS PPS 14 55 49.0
YSS pmax pmax
comp=Z,30nm,1.2s
YSS pmax pmax
comp=N,400nm,14.0s
YSS pmax pmax
comp=Z,1μm,14.0s
YSS pmax pmax
comp=E,200nm,8.0s
YSS smax smax
comp=N,2μm,9.0s
YSS smax smax
comp=E,2μm,14.0s
YSS MLR MLR
comp=Z,2μm,18.0s
YSS MLR MLR
comp=N,700nm,12.0s
YSS Yuzh-Sakhalins 68.86 339 *e*P **P** **14 45 53.1 +1.3**
comp=N,161nm,1.6s
YSS LR LR
comp=Z,3μm,20.0s
INCN Inchon 68.86 323 *e*P **P** **14 45 52.9 +0.7**
comp=Z,208nm,1.6s
INCN LR LR
comp=Z,2μm,21.0s
MYKOM Kota Tinggi 69.41 279 *e*P **P** **14 45 55.0 -1.1**
comp=Z,42nm,1.2s
SMY Shemya 69.55 2 *e*P **P** **14 45 55.7 -0.4**
SMY pmax pmax
comp=Z,230nm,1.4s
SMY MLR MLR
comp=Z,3μm,22.0s
SMY Shemya 69.55 2 *e*P **P** **14 45 55.6 -0.4**
comp=Z,230nm,1.4s
SMY LR LR
comp=Z,3μm,22.0s
GZH Guangzhou 69.61 303 P **P** **14 45 57.8 +0.8**
GZH PP **PP** **14 48 36.8 +5.5**
GZH S **S** **14 55 07.0 +2.7**
GZH pmax pmax
comp=Z,1μm,4.9s
MIR Mirnyy 69.95 205 *i* P **P** **14 45 59.0 +0.6**
MIR pmax pmax
comp=Z,20nm,1.8s
MSHR Mys Shultsa 70.12 329 *c*e P **P** **14 46 02.6 +2.8**
VLA Vladivostok 70.17 330 ⇓*e*P **P** **14 46 00.1 0.0**
VLA pmax pmax
comp=Z,69nm,1.5s
NJ2 Nanjing 70.33 314 *e*P **P** **14 46 01.8 +0.5**
NJ2 pP **pP** **14 46 08.5 -0.2**
NJ2 sP **sP** **14 46 11.8 +0.4**
NJ2 S **S** **14 55 15.8 +3.3**
NJ2 pmax pmax
comp=Z,110nm,1.0s
NJ2 pmax pmax
comp=Z,950nm,7.8s
NJ2 LR LR
comp=Z,2μm,19.5s
NJ2 LR LR
comp=Z,2μm,21.1s
NJ2 LR LR
comp=Z,4μm,20.6s
QIZ Qiongzhong 70.58 298 P **P** **14 46 04.5 +1.3**
QIZ pP **pP** **14 46 09.3 -1.2**
QIZ S **S** **14 55 16.8 +0.8**
QIZ pmax pmax
comp=Z,39nm,1.4s
QIZ LR LR
comp=Z,990nm,19.1s
QIZ LR LR
comp=Z,2μm,23.9s
QIZ Qiongzhong 70.58 298 *e*P **P** **14 46 04.2 +1.0**
comp=Z,58nm,1.1s
QIZ LR LR
comp=Z,1μm,19.0s
PET Petropavlovsk 70.72 352 κ *i*P **P** **14 46 03.2 0.0**
PET *e*S **S** **14 55 13.2 -3.0**
PET pmax pmax
comp=Z,85nm,1.7s
PET pmax pmax
comp=Z,1μm,10.9s
PET pmax pmax
comp=Z,1μm,15.4s
PET MLR MLR
comp=Z,3μm,18.0s
PET MLR MLR
comp=Z,3μm,20.0s
PET Petropavlovsk 70.72 352 *e*P **P** **14 46 03.4 +0.1**
comp=Z,347nm,1.9s
PET LR LR
comp=Z,5μm,22.0s
PEA0 Petropavlovsk- 70.94 351 *e*P **P** **14 46 04.5 -0.1**
PEA0B Petropavlovsk- 70.94 351 *e*P **P** **14 46 05.0 +0.4**
comp=Z,230nm,1.4s
PEA0B LR LR
comp=Z,6μm,20.0s
PETK Petropavlovsk- 70.94 351 P **P** **14 46 05.1 +0.5**
comp=Z,31nm,0.9s,baz=140,slow=8.6,SNR=41
PETK LR LR 15 12 27.4
comp=Z,5μm,20.2s,baz=151,slow=32
USRK Ussuriysk Ar. 70.94 331 P **P** **14 46 05.5 +0.7**
comp=Z,23nm,0.9s,baz=130,slow=5.0,SNR=26
USRK LR LR 15 12 47.5
comp=Z,3μm,21.8s,baz=127,slow=32
BKNI Bangkinang 71.61 276 *e*P **P** **14 46 10.1 +0.5**
comp=Z,361nm,1.7s
BKNI LR LR
comp=Z,3μm,21.0s
NIKH Nikolski High 71.77 12 *e*P **P** **14 46 09.2 -0.4**
comp=Z,244nm,0.9s
NIKH LR LR
comp=Z,6μm,21.0s
TYV Tymovskoe 72.30 341 *e*P **P** **14 46 13.5 +0.7**
TYV *e*S **S** **14 55 30.0 -4.5**
TYV pmax pmax
comp=Z,196nm,1.4s
TYV smax smax
comp=N,2μm,11.0s
MDJ Mudanjiang 72.39 330 P **P** **14 46 14.5 +1.0**
MDJ pP sP 14 46 26.3 +2.7
MDJ PP **PP** **14 48 52.0 -2.9**
MDJ S **S** **14 55 39.5 +3.7**
MDJ ScS **SKSac** **14 56 16.3 -0.5**
MDJ pmax pmax
comp=N,43nm,1.0s
MDJ pmax pmax
comp=N,680nm,7.5s
MDJ LR LR
comp=N,2μm,25.6s
MDJ LR LR
comp=N,3μm,23.3s
MDJ LR LR
comp=N,4μm,28.0s
MDJ Mudanjiang 72.39 330 *e*P **P** **14 46 14.1 +0.6**
comp=N,52nm,1.0s
MDJ LR LR
comp=Z,2μm,21.0s
WHN Wuhan 72.68 310 P **P** **14 46 15.3 -0.2**
WHN S **S** **14 55 42.5 +2.8**
WHN pmax pmax
comp=Z,230nm,1.2s
WHN LR LR
comp=Z,2μm,13.3s
WHN LR LR
comp=Z,5μm,23.8s
WHN LR LR
comp=Z,5μm,22.9s
DL2 Dalian 72.75 321 ⇓*i*P **P** **14 46 16.3 +0.5**
DL2 S **S** **14 55 43.5 +3.3**
DL2 SS **SS** **15 00 23.5 +2.9**
DL2 pmax pmax
comp=Z,130nm,1.0s
DL2 pmax pmax
comp=Z,1μm,6.0s
DL2 LR LR
comp=Z,2μm,16.9s
DL2 LR LR
comp=Z,1μm,17.7s
DL2 LR LR
comp=Z,3μm,32.5s
UBPT Khong Chiam 72.79 292 P **P** **14 46 17.7 +1.2**
comp=Z,55nm,1.7s,comp=Z,2μm
IPM Ipoh 72.95 280 *e*P **P** **14 46 17.4 -0.1**
comp=Z,200nm,1.3s
QSPA South Pole Qui 72.96 180 *e*P **P** **14 46 16.7 -0.1**
comp=Z,168nm,1.0s
QSPA LR LR
comp=Z,6μm,22.0s
HABR Khabarovsk 72.97 335 *de*P **P** **14 46 16.0 -0.8**
HABR *e**SP **pP** **14 46 23.1 -1.1**
HABR *e* 14 46 32.8
HABR *e* 14 48 58.4
HABR *e*PPP PPP 14 50 43.3
HABR *e*S **S** **14 55 43.1 +0.8**
HABR *e* 14 56 23.4
HABR SS **SS** **15 00 24.8 +1.2**
HABR pmax pmax
comp=E,8.0nm,1.3s
HABR pmax pmax
comp=N,9.0nm,1.3s
HABR pmax pmax
comp=Z,18nm,1.3s
HABR pmax pmax
comp=Z,241nm,1.5s
HABR MLR MLR
comp=Z,1μm,17.0s
UNV Unalaska Valle 73.09 13 *e*P **P** **14 46 16.6 -0.8**
comp=Z,58nm,1.0s
UNV LR LR
comp=Z,6μm,22.0s
AKUT Akutan 73.52 14 *e*P **P** **14 46 18.8 -1.1**
comp=Z,200nm,1.4s
AKUT LR LR
comp=Z,6μm,22.0s
SNY Shenyang 73.54 325 ⇓P **P** **14 46 20.5 +0.1**
SNY S **SKiKP** **14 55 54.0 +4.3**
SNY pmax pmax
comp=Z,31nm,2.1s
SNY pmax pmax
comp=Z,950nm,8.2s
SNY LR LR
comp=Z,1μm,26.1s
SNY LR LR
comp=Z,2μm,20.2s
SNY LR LR
comp=Z,4μm,23.0s
KULM Kulim 73.57 281 *e*P **P** **14 46 21.2 0.0**
comp=Z,175nm,1.5s
KULM LR LR
comp=Z,1μm,20.0s
CN2 Changchun 73.88 327 *e*P **P** **14 46 21.5 -0.8**
CN2 *e*PP **PP** **14 49 08.5 +0.9**
CN2 *e*S **SKiKP** **14 55 51.0 +0.8**
CN2 *e*SS **SS** **15 00 38.0 +0.3**
CN2 pmax pmax
comp=Z,40nm,1.5s
CN2 pmax pmax
comp=Z,700nm,5.0s
CN2 LR LR
comp=Z,1μm,21.0s
CN2 LR LR
comp=Z,2μm,21.0s
CN2 LR LR
comp=Z,2μm,22.0s
TIA Tai'an 73.93 317 ⇓P **P** **14 46 22.8 0.0**
TIA S **S** **14 55 56.5 +2.8**
TIA pmax pmax
comp=Z,80nm,1.0s
TIA pmax pmax
comp=Z,1μm,8.8s
TIA LR LR
comp=Z,2μm,18.5s
TIA LR LR
comp=Z,2μm,18.5s
TIA LR LR
comp=Z,1μm,19.4s
SKLT Songkhla 74.23 283 P **P** **14 46 26.1 +1.1**
comp=Z,78nm,1.3s,comp=Z,2μm
PSI Prapat 74.39 278 P **P** **14 46 25.4 -0.8**
comp=Z,83nm,1.2s,baz=163,slow=4.5,SNR=31
PSI Prapat 74.39 278 *e*P **P** **14 46 25.3 -0.9**
PSI Prapat 74.39 278 *e*P **P** **14 46 25.1 -1.1**
comp=Z,127nm,1.2s
SKNT Sakolnakorn 74.77 293 P **P** **14 46 28.4 +0.3**
comp=Z,138nm,1.1s
KLR Kul'dur 74.91 334 P **P** **14 46 29.3 +1.1**
comp=Z,12nm,0.8s,baz=132,slow=2.1,SNR=38
GSI Gunungsitoli 75.21 276 *e*P **P** **14 46 30.9 +0.2**
comp=Z,133nm,1.2s
TRTT Trang 75.32 283 P **P** **14 46 32.6 +1.3**
comp=Z,86nm,1.4s,comp=Z,2μm
SPIA Saint Paul Isl 75.51 10 PFAKE 14 46 40.0 +8.6
SPIA LR LR
comp=Z,6μm,22.0s
KRAB Krabi 75.91 283 P **P** **14 46 35.8 +1.1**
comp=Z,87nm,0.9s,comp=Z,5μm
SDPT Sand Point 75.92 16 *e*P **P** **14 46 32.8 -1.1**
comp=Z,95nm,1.0s
SDPT LR LR
comp=Z,4μm,20.0s
NONG Nongkai 75.94 294 P **P** **14 46 35.4 +0.6**
comp=Z,93nm,1.3s,comp=Z,11μm
CHAI Chaiyaphum 76.12 292 P **P** **14 46 36.9 +1.0**
comp=Z,9.8nm,1.2s,comp=Z,101nm
ENH Enshi 76.14 308 *e*P **P** **14 46 35.5 -0.3**
comp=Z,98nm,1.1s
ENH LR LR
comp=Z,1μm,20.0s
GYA Guiyang 76.54 303 ⇓*i*P **P** **14 46 38.3 +0.1**
GYA pP sP 14 46 48.0 -0.3
GYA PcP **PcP** **14 46 52.0 +2.2**
GYA PP **PP** **14 49 33.3 +2.6**
GYA S **S** **14 56 26.8 +3.4**
GYA SKS **SKSac** **14 56 45.8 -3.2**
GYA SS **SS** **15 01 21.0 +2.0**
GYA pmax pmax
comp=Z,40nm,1.1s
GYA LR LR
comp=Z,900nm,24.3s
GYA LR LR
comp=Z,1μm,25.2s
GYA LR LR
comp=Z,2μm,21.8s
PKDT Phuket 76.60 283 P P 14 46 44.8 +6.1
comp=Z,91nm,1.1s,comp=Z,6μm
BJT Baijiatuau 76.77 319 *e*P **P** **14 46 39.7 +0.7**
BJT pmax pmax
comp=Z,131nm,1.3s
BJT MLR MLR
comp=Z,4μm,21.0s
BJT Baijiatuau 76.77 319 *e*P **P** **14 46 39.7 +0.7**
comp=Z,131nm,1.3s
BJT LR LR
comp=Z,4μm,21.0s
BJI Beijing 76.78 319 P **P** **14 46 39.8 +0.7**

BJI S **S** **14 56 27.0 +1.9**
BJI SS **SS** **15 01 23.0 +1.2**
BJI pmax pmax
comp=Z,56nm,1.4s
BJI pmax pmax
comp=Z,1μm,5.8s
BJI LR LR
comp=Z,2μm,21.4s
BJI LR LR
comp=Z,2μm,23.4s
BJI LR LR
comp=Z,3μm,22.9s
PBKT Sadao Pong 77.28 292 P **P** **14 46 43.5 +1.1**
comp=Z,73nm,1.1s,comp=Z,2μm
CHGN Chignik 77.31 17 *e*P **P** **14 46 40.9 -0.7**
TIY Taiyuan 77.88 316 *e*P **P** **14 46 47.0 +1.6**
TIY S **S** **14 56 42.5 +5.2**
TIY pmax pmax
comp=Z,63nm,0.9s
TIY pmax pmax
comp=Z,950nm,6.7s
TIY LR LR
comp=Z,1μm,14.8s
TIY LR LR
comp=Z,370nm,11.5s
TIY LR LR
comp=Z,4μm,26.8s
SRDT SRDT 78.12 289 P **P** **14 46 51.3 +4.2**
comp=Z,281nm,1.2s
MA2 Magadan 78.27 349 P **P** **14 46 46.7 -0.2**
comp=Z,21nm,0.8s,baz=142,slow=3.5,SNR=8.2
XAN Xi'an 78.41 311 P **P** **14 46 48.8 +0.4**
XAN S **S** **14 56 45.0 +1.8**
XAN SS **SS** **15 01 43.0 -3.9**
XAN pmax pmax
comp=Z,78nm,1.3s
XAN pmax pmax
comp=Z,1μm,5.4s
XAN LR LR
comp=Z,1μm,26.0s
XAN LR LR
comp=Z,2μm,24.1s
XAN LR LR
comp=Z,3μm,24.1s
SUKH Sukhothai 78.80 292 P **P** **14 46 52.9 +2.1**
comp=Z,9.6nm,1.1s,comp=Z,86nm
UMPA Umpang Tak 79.02 291 P **P** **14 46 54.4 +2.3**
comp=Z,13nm,1.0s
KMI Kunming 79.15 301 P **P** **14 46 54.0 +1.1**
KMI pP pP 14 47 00.0 -0.3
KMI S **S** **14 56 54.8 +3.0**
KMI SS **SS** **15 02 00.5 +1.9**
KMI pmax pmax
comp=Z,38nm,1.2s
KMI pmax pmax
comp=Z,870nm,8.8s
KMI LR LR
comp=Z,1μm,18.2s
KMI LR LR
comp=Z,890nm,18.2s
KMI LR LR
comp=Z,2μm,19.6s
LAMP Lampang 79.19 293 P **P** **14 46 55.1 +2.1**
comp=Z,16nm,0.9s
OHAK Old Harbor 79.58 19 *e*P **P** **14 46 54.3 +0.2**
comp=Z,119nm,1.1s
OHAK LR LR
comp=Z,4μm,22.0s
CM01 Chiang Mai Arr 79.75 293 *e*P **P** **14 46 56.4 +0.3**
CM31 Chiang Mai Arr 79.77 293 *e*P **P** **14 46 57.1 +0.9**
CMAR Chiang Mai Arr 79.77 293 P **P** **14 46 57.0 +0.9**
comp=Z,21nm,1.1s,baz=124,slow=3.7,SNR=48
CMAR PKKPbc **PKKPbc** **15 05 43.3 +0.4**
comp=Z,2.1nm,1.1s,baz=296,slow=4.6,SNR=5.1
CMAR PKPPKP **P'P'df** **15 13 53.4 +6.8**
comp=Z,2.1nm,1.1s,baz=308,slow=4.4,SNR=5.1
CMAR LR LR 15 17 14.2
comp=Z,460nm,21.6s,baz=142,slow=32
CMMT Chiang Mai 79.90 293 P **P** **14 46 57.6 +0.7**
comp=Z,64nm,0.9s,comp=Z,1μm
CHTO Chiang Mai 79.91 293 P **P** **14 46 57.0 +0.8**
comp=Z,163nm,1.9s,comp=Z,6μm
CHTO Chiang Mai 79.91 293 *e*P **P** **14 46 57.6 +0.7**
CHTO pmax pmax
comp=Z,74nm,1.4s
CHTO MLR MLR
comp=Z,1μm,22.0s
CHTO Chiang Mai 79.91 293 *e*P **P** **14 46 57.6 +0.7**
comp=Z,74nm,1.4s
CHTO LR LR
comp=Z,1μm,22.0s
HHC Hu-ho-hao-te 80.14 318 *e*P **P** **14 46 58.5 +0.7**
HHC S **S** **14 57 00.0 -1.4**
HHC SS **SS** **15 02 07.5 -5.2**
HHC pmax pmax
comp=Z,54nm,0.9s
HHC pmax pmax
comp=Z,810nm,7.8s
HHC LR LR
comp=Z,1μm,17.7s
HHC LR LR
comp=Z,2μm,18.4s
HHC LR LR
comp=Z,3μm,24.7s
CMAI Chiengmai2 80.23 294 P **P** **14 47 00.6 +1.8**
comp=Z,494nm,0.9s
KDAK Kodiak Island 80.25 19 *i* P **P** **14 46 58.1 +0.3**
KDAK Kodiak Island 80.25 19 *e*P **P** **14 46 58.2 +0.4**
comp=Z,83nm,1.1s
KDAK LR LR
comp=Z,4μm,22.0s
HIA Hailar 80.47 328 *e*P **P** **14 46 59.8 +0.5**
HIA pmax pmax
comp=Z,85nm,1.4s
HIA MLR MLR
comp=Z,2μm,22.0s
HIA Hailar 80.47 328 *e*P **P** **14 46 59.8 +0.5**
comp=Z,85nm,1.4s
HIA LR LR
comp=Z,2μm,22.0s
CD2 Chengdu 80.81 306 ‖P **P** **14 47 02.0 +0.5**
CD2 pP PcP 14 47 08.5 +0.4
CD2 PP **PP** **14 50 06.0 -0.2**
CD2 S **S** **14 57 10.5 +1.8**
CD2 sS sS 14 57 20.8 -0.2
CD2 SS **SS** **15 02 24.5 +1.6**
CD2 pmax pmax
comp=Z,60nm,0.9s
CD2 pmax pmax
comp=Z,990nm,5.2s
CD2 LR LR
comp=Z,2μm,21.8s
CD2 LR LR
comp=Z,2μm,19.9s
CD2 LR LR
comp=Z,2μm,20.9s
BTO Baotou 81.00 317 *e*P **P** **14 47 02.8 +0.4**
BTO pmax pmax
comp=Z,11nm,1.4s
SEY Seymchan 81.18 351 P **P** **14 47 03.0 +0.3**
comp=Z,31nm,0.9s,baz=154,slow=5.8,SNR=44
SEY Seymchan 81.18 351 *d* P **P** **14 47 02.7 0.0**
MAW Mawson 81.28 202 P **P** **14 47 04.0 +0.7**
comp=Z,26nm,1.0s,baz=105,slow=7.2,SNR=34
MAW LR LR 15 18 34.2
comp=Z,3μm,19.9s,baz=102,slow=32
MAW Mawson 81.28 202 P **P** **14 47 04.2 +0.9**
baz=81,SNR=24
GAMB Gambell 81.63 7 *e*P **P** **14 47 05.6 +0.6**
comp=Z,124nm,1.3s
GAMB LR LR
comp=Z,4μm,22.0s
HOM Homer 82.08 18 PFAKE **14 47 20.0 +13**
HOM LR LR
comp=Z,5μm,22.0s
CNPM China Poot 82.09 18 *e*P **P** **14 47 08.3 +0.7**
comp=Z,293nm,1.5s
CNPM LR LR
comp=Z,4μm,22.0s
SVW2 Sparrevohn 82.21 15 *e*P **P** **14 47 08.7 +0.5**
comp=Z,150nm,1.9s
SVW2 LR LR
comp=Z,4μm,20.0s
MCCM Marconi Confer 82.31 46 *e*P **P** **14 47 09.7 +0.5**
comp=Z,77nm,1.1s
MCCM LR LR
comp=Z,4μm,20.0s

BRLK Bradley Lake 82.39 18 *e*P **P** **14 47 09.2 +0.1**
comp=Z,178nm,1.1s
BRLK LR LR
comp=Z,4μm,22.0s
RSO Redoubt South 82.42 17 *e*P **P** **14 47 08.9 -0.6**
RSO *e*S **S** **14 57 23.8 -0.6**
SNCC San Nicolas Is 82.50 52 PFAKE 14 47 20.0 +10
SNCC LR LR
comp=Z,4μm,22.0s
HOPS Hopland Field 82.58 46 *e*P **P** **14 47 11.2 +0.5**
comp=Z,146nm,1.3s
HOPS LR LR
comp=Z,3μm,20.0s
SAO San Andreas Ge 82.67 48 *e*P **P** **14 47 11.8 +0.6**
SAO pmax pmax
comp=Z,62nm,1.2s
SAO MLR MLR
comp=Z,5μm,22.0s
SAO San Andreas Ge 82.67 48 *e*P **P** **14 47 11.8 +0.6**
comp=Z,62nm,1.2s
SAO LR LR
comp=Z,5μm,22.0s
GDXM Geysers 82.69 46 *e*P **P** **14 47 12.1 +0.8**
comp=Z,51nm,1.2s
GDXM LR LR
comp=Z,3μm,20.0s
KMRM Mail Ridge 82.75 44 *e*P **P** **14 47 12.7 +1.0**
comp=Z,148nm,1.2s
KMRM LR LR
comp=Z,6μm,22.0s
JCC Jacoby Creek, 82.83 44 PFAKE 14 47 20.0 +8.1
JCC LR LR
comp=Z,5μm,22.0s
PMPB Monarch Peak 82.88 49 *e*P **P** **14 47 13.6 +1.2**
comp=Z,204nm,1.5s
PMPB LR LR
comp=Z,5μm,20.0s
PKM Mcpherson Peak 83.00 50 P **P** **14 47 14.8 +1.6**
baz=244
LZH Lanzhou 83.05 311 *e*P **P** **14 47 15.3 +1.9**
LZH *e*S **S** **14 57 32.5 +0.7**
LZH SS **SS** **15 02 50.8 -5.5**
LZH pmax pmax
comp=Z,250nm,1.3s
LZH pmax pmax
comp=Z,940nm,4.6s
LZH LR LR
comp=Z,410nm,16.0s
LZH LR LR
comp=Z,1μm,15.0s
LZH LR LR
comp=Z,3μm,17.8s
KHMM Horse Mountain 83.06 44 *e*P **P** **14 47 14.1 +0.8**
comp=Z,75nm,1.2s
KHMM LR LR
comp=Z,6μm,22.0s
SMMC Simmler 83.06 50 P **P** **14 47 14.7 +1.5**
baz=244
PAGB Antelope Grade 83.06 49 *e*P **P** **14 47 14.2 +0.9**
comp=Z,214nm,1.9s
PAGB LR LR
comp=Z,4μm,20.0s
SEW Seward 83.09 18 *e*P **P** **14 47 12.8 +0.1**
comp=Z,129nm,1.1s
SEW LR LR
comp=Z,3μm,21.0s
SCI2 San Clemente I 83.12 53 P **P** **14 47 15.1 +1.5**
baz=245
SPU Mount Spurr 83.21 17 *e*P **P** **14 47 12.8 -0.7**
BLG Laguna Peak, P 83.22 51 P **P** **14 47 15.2 +1.1**
baz=244
KRMB Red Mountain 83.26 43 *e*P **P** **14 47 16.7 +2.4**
comp=Z,184nm,1.9s
KRMB LR LR
comp=Z,5μm,20.0s
CLNS Chul'man 83.34 336 *e*P **P** **14 47 14.6 +0.4**
CLNS *e**PP **sP** **14 47 26.3 +1.9**
CLNS *e* 14 50 23.6
CLNS *e*PPP PPP 14 52 16.3
CLNS *e*S **S** **14 57 30.6 -3.0**
CLNS *e* 14 58 21.1
CLNS pmax pmax
comp=Z,73nm,1.2s
CLNS pmax pmax
comp=E,14nm,1.1s
CLNS pmax pmax
comp=N,48nm,1.4s
CLNS pmax pmax
comp=Z,5.0nm,1.0s
CLNS pmax pmax
comp=N,9.0nm,0.9s
CLNS pmax pmax
comp=E,8.0nm,0.7s
CLNS smax smax
comp=N,1μm,10.0s
CLNS smax smax
comp=E,2μm,12.8s
DGPR DIGLIPUR 83.36 286 *e*P **P** **14 47 14.7 -0.4**
DGPR IAMs_20 IAMs_20 15 39 46.4
comp=Z,8μm,1.0s
MID Middleton Isla 83.54 20 PFAKE 14 47 30.0 +15
MID LR LR
comp=Z,2μm,18.0s
TT01 Tatalina 83.65 14 *e*P **P** **14 47 16.3 +0.7**
TTA Tatalina 83.67 14 *e*P **P** **14 47 16.3 +0.4**
TTA pmax pmax
comp=Z,135nm,1.0s
TTA Tatalina 83.67 14 *e*P **P** **14 47 16.3 +0.4**
comp=Z,135nm,1.0s
OSI Osito Audit: C 83.69 51 P **P** **14 47 17.8 +1.2**
baz=244
OSI Osito Audit: C 83.69 51 *e*P **P** **14 47 17.6 +1.0**
comp=Z,141nm,1.5s
OSI LR LR
comp=Z,4μm,22.0s
WDC Whiskeytown Da 83.71 44 *e*P **P** **14 47 16.8 +0.4**
WDC pmax pmax
comp=Z,129nm,1.5s
WDC MLR MLR
comp=Z,6μm,22.0s
WDC Whiskeytown Da 83.71 44 *e*P **P** **14 47 16.8 +0.4**
comp=Z,129nm,1.5s
WDC LR LR
comp=Z,6μm,22.0s
L02D Cave Junction, 83.78 43 P **P** **14 47 18.0 +1.3**
baz=240
N02D Trinity Center 83.79 44 P **P** **14 47 18.5 +1.5**
baz=241,SNR=22
RC01 Rabbit Creek A 83.80 18 *e*P **P** **14 47 16.4 0.0**
comp=Z,210nm,1.2s
RC01 LR LR
comp=Z,4μm,22.0s
SUA Susitna One 83.81 17 *e*P **P** **14 47 16.4 -0.3**
comp=Z,227nm,1.4s
SUA LR LR
comp=Z,4μm,22.0s
DECC Green Verdugo 83.83 52 P **P** **14 47 17.9 +0.7**
baz=245,SNR=5.6
ARVC Arvin 83.83 51 P **P** **14 47 18.1 +0.9**
baz=244,SNR=16
M02C Callahan 83.89 44 P **P** **14 47 18.9 +1.5**
baz=241,SNR=16
PASC Pasadena Art C 83.91 52 *e*P **P** **14 47 17.9 +0.3**
comp=Z,82nm,1.3s
PASC LR LR
comp=Z,4μm,20.0s
ORV Oroville 83.92 46 *e*P **P** **14 47 17.9 +0.4**
ORV Oroville 83.92 46 *e*P **P** **14 47 18.0 +0.4**
comp=Z,77nm,1.4s
ORV LR LR
comp=Z,3μm,22.0s
VES Vestal, Richgr 83.96 50 P **P** **14 47 18.3 +0.5**
baz=244,SNR=21
CMB Columbia Colle 84.00 47 *e*P **P** **14 47 18.4 +0.3**
CMB pmax pmax
comp=Z,67nm,1.2s
CMB MLR MLR
comp=Z,6μm,21.0s
CMB Columbia Colle 84.00 47 *e*P **P** **14 47 18.4 +0.3**
comp=Z,67nm,1.2s
CMB LR LR
comp=Z,6μm,21.0s
AFDM Forest Hills D 84.01 46 *e*P **P** **14 47 18.3 +0.3**
comp=Z,74nm,1.2s
AFDM LR LR
comp=Z,3μm,20.0s
H06E1 SOCORRO T-PHAS 84.01 68 T T 16 19 50.3

MWC Mount Wilson 84.02 52 *e*P **P** **14 47 18.6 +0.2**
MWC pmax pmax
comp=Z,125nm,1.3s
MWC MLR MLR
comp=Z,4μm,22.0s
MWC Mount Wilson 84.02 52 *e*P **P** **14 47 18.6 +0.2**
comp=Z,125nm,1.3s
MWC LR LR
comp=Z,4μm,22.0s
O03D Paynes Creek 84.07 45 P **P** **14 47 19.0 +0.6**
baz=242,SNR=36
YBH Yreka Blue Hor 84.15 43 *e*P **P** **14 47 19.5 +0.7**
YBH pmax pmax
comp=Z,148nm,1.4s
YBH MLR MLR
comp=Z,8μm,21.0s
YBH Yreka Blue Hor 84.15 43 *e*P **P** **14 47 19.5 +0.7**
comp=Z,148nm,1.4s
YBH LR LR
comp=Z,8μm,21.0s
109C Camp Elliot, M 84.19 53 P **P** **14 47 20.3 +1.2**
baz=246,SNR=5.8
BFSC Mount Baldy Ra 84.33 52 P **P** **14 47 20.9 +0.9**
baz=245,SNR=21
ISA Isabella, Lake 84.33 50 *e*P **P** **14 47 20.4 +0.6**
ISA Isabella, Lake 84.33 50 *e*P **P** **14 47 20.4 +0.6**
comp=Z,9μm,1.8s
EDW2 Edwards Air Fo 84.35 51 P **P** **14 47 21.3 +1.4**
baz=245,SNR=66
PMR Palmer 84.37 18 *e*P **P** **14 47 19.0 -0.2**
PMR pmax pmax
comp=Z,450nm,1.7s
PMR Palmer 84.37 18 *e*P **P** **14 47 19.1 -0.2**
comp=Z,454nm,1.8s
PMR LR LR
comp=Z,4μm,22.0s
MURC Murrieta 84.41 53 P **P** **14 47 21.2 +1.0**
baz=245,SNR=15
HUMO Hull Mountain 84.41 42 *e*P **P** **14 47 20.1 +0.1**
comp=Z,63nm,1.4s
HUMO LR LR
comp=Z,7μm,22.0s
BAR Barrett 84.43 54 *e*P **P** **14 47 20.9 +0.6**
comp=Z,60nm,1.3s
BAR LR LR
comp=Z,2μm,22.0s
FID Port Fidalgo 84.52 19 *e*P **P** **14 47 19.6 -0.5**
comp=Z,120nm,1.1s
FID LR LR
comp=Z,4μm,22.0s
PPLA Purkeypile 84.59 16 *e*P **P** **14 47 19.5 -1.1**
comp=Z,102nm,1.6s
PPLA LR LR
comp=Z,4μm,21.0s
EYAK Cordova Ski Ar 84.59 20 *e*P **P** **14 47 19.8 -0.6**
comp=Z,67nm,1.1s
EYAK LR LR
comp=Z,4μm,21.0s
I03D Drain, OR 84.69 41 P **P** **14 47 22.4 +1.1**
baz=240,SNR=11
MONP2 Monument Peak 84.71 53 P **P** **14 47 23.0 +1.0**
baz=246,SNR=34
M04C Macdoel 84.75 44 P **P** **14 47 22.8 +0.9**
baz=242,SNR=15
SML Sawmill 84.78 18 *e*P **P** **14 47 21.4 0.0**
SML pmax pmax
comp=Z,375nm,1.9s
SML MLR MLR
comp=Z,3μm,22.0s
SML Sawmill 84.78 18 *e*P **P** **14 47 21.4 0.0**
comp=Z,375nm,1.9s
SML LR LR
comp=Z,3μm,22.0s
RAGM Ragged Mountai 84.82 20 PFAKE 14 47 30.0 +8.3
RAGM LR LR
comp=Z,3μm,19.0s
LRMC Laurel Mtn Rad 84.83 51 P **P** **14 47 23.8 +1.3**
baz=245,SNR=32
H02N1 VAN INLET T-PH 84.85 30 T T 16 21 06.2
DIB Dawson Inlet, 84.85 30 *e*P **P** **14 47 22.9 +1.1**
comp=Z,66nm,1.1s
DIB LR LR
comp=Z,4μm,20.0s
H02S1 DAWSON INLET T 84.85 30 T T 16 21 00.9
IKP In-Ko-Pah, Jac 84.85 54 P **P** **14 47 23.8 +1.3**
baz=246,SNR=16
WAKR Walker 84.88 47 *e*P **P** **14 47 23.6 +0.9**
comp=Z,175nm,1.3s
WAKR LR LR
comp=Z,10μm,22.0s
BBRC Big Bear Solar 84.89 52 P **P** **14 47 24.2 +1.3**
baz=246
MLAC Mammoth, Mammo 84.92 48 P **P** **14 47 24.4 +1.5**
baz=244,SNR=12
CWC Cottonwood Cre 84.95 50 P **P** **14 47 24.3 +1.2**
baz=245
BILL Bilibino 84.97 358 *d* iP **P** **14 47 21.9 -0.4**
BILL *e**SP **sP** **14 47 31.3 -1.1**
BILL *e* 14 47 34.0
BILL *i* 14 50 42.6
BILL *i* S **S** **14 57 51.1 +1.6**
BILL *i* PS **PnS** **14 58 47.6 +1.0**
BILL *e*SS **SS** **15 03 20.2 -3.0**
BILL *e*SSS SSS 15 06 54.8
BILL pmax pmax
comp=Z,129nm,1.7s
BILL MLR MLR
comp=Z,1μm,19.0s
BILL Bilibino 84.97 358 *e*P **P** **14 47 21.8 -0.4**
comp=Z,122nm,1.4s
PFO Pinyon Flats O 84.98 53 P **P** **14 47 24.4 +1.2**
baz=246,SNR=16
PFO Pinyon Flats O 84.98 53 *e*P **P** **14 47 23.5 +0.3**
PFO pmax pmax
comp=Z,73nm,1.4s
PFO MLR MLR
comp=Z,3μm,21.0s
PFO Pinyon Flats O 84.98 53 *e*P **P** **14 47 23.5 +0.3**
comp=Z,73nm,1.4s
PFO LR LR
comp=Z,3μm,21.0s
TPFO Pinon Flats 84.98 53 P **P** **14 47 24.4 +1.2**
baz=246,SNR=18
PNTR Pine Nut 85.02 47 *e*P **P** **14 47 24.4 +0.9**
comp=Z,166nm,1.3s
PNTR LR LR
comp=Z,4μm,20.0s
DIV Divide 85.03 19 *e*P **P** **14 47 22.8 0.0**
comp=Z,88nm,1.0s
DIV LR LR
comp=Z,4μm,20.0s
CAST Castle Rocks 85.05 15 PFAKE 14 47 30.0 +7.2
CAST LR LR
comp=Z,3μm,20.0s
RRX Edison Barstow 85.09 51 P **P** **14 47 24.9 +1.3**
baz=245
SCM Sheep Creek Mo 85.09 18 *e*P **P** **14 47 23.1 0.0**
SCM pmax pmax
comp=Z,83nm,1.0s
SCM MLR MLR
comp=Z,2μm,22.0s
SCM Sheep Creek Mo 85.09 18 *e*P **P** **14 47 23.1 0.0**
comp=Z,83nm,1.0s
SCM LR LR
comp=Z,2μm,22.0s
TIN Tinemaha, Big 85.10 49 P **P** **14 47 25.2 +1.4**
baz=244
COR Corvallis 85.16 41 *e*P **P** **14 47 24.4 +0.7**
COR pmax pmax
comp=Z,64nm,1.2s
COR MLR MLR
comp=Z,5μm,21.0s
COR Corvallis 85.16 41 *e*P **P** **14 47 24.4 +0.7**
comp=Z,64nm,1.2s
COR LR LR
comp=Z,5μm,21.0s
K04D Chiloquin, OR 85.20 43 P **P** **14 47 25.2 +1.1**
baz=242
SWSC Sam W. Stewart 85.21 54 P **P** **14 47 25.6 +1.4**
baz=246,SNR=27
MPMC Manual Prospec 85.22 50 P **P** **14 47 25.2 +0.7**
baz=245,SNR=44
YERR Yerington 85.23 47 *e*P **P** **14 47 24.9 +0.5**
comp=Z,126nm,1.3s
YERR LR LR
comp=Z,5μm,20.0s
TVH3 East Aurora ar 85.25 48 *e*P **P** **14 47 25.1 +0.5**

	comp=Z,97nm,1.4s								
TVH3					LR	LR			
	comp=Z,5µm,22.0s								
CIT	**Chita**	**85.27**	**328**	*e*P		**P**	**14 47 24.6**	**+0.5**
CIT				*e*			14 47 40.8		
CIT					pmax	pmax			
	comp=Z,191nm,1.4s								
BMRM	**Bremner River**	**85.28**	**20**	*e*P		**P**	**14 47 24.0**	**0.0**	
	comp=Z,270nm,1.8s								
BMRM					LR	LR			
	comp=Z,3µm,22.0s								
TVH2	**Borealis Mine**	**85.30**	**48**	*e*P		**P**	**14 47 25.5**	**+0.6**	
	comp=Z,79nm,1.4s								
TVH2					LR	LR			
	comp=Z,4µm,22.0s								
TVH1	**TV Hill, Hawth**	**85.33**	**48**	*e*P		**P**	**14 47 25.7**	**+0.5**	
	comp=Z,164nm,1.5s								
TVH1					LR	LR			
	comp=Z,7µm,21.0s								
I04A	**Tendick Farm,**	**85.34**	**42**	P		**P**	**14 47 25.4**	**+0.7**	
	baz=241,SNR=13								
GSC	**Goldstone, Bar**	**85.41**	**51**	P		**P**	**14 47 26.0**	**+0.7**	
	baz=246,SNR=26								
GSC	**Goldstone, Bar**	**85.41**	**51**	*e*P		**P**	**14 47 25.6**	**+0.3**	
GSC					pmax	pmax			
	comp=Z,79nm,1.4s								
GSC					MLR	MLR			
	comp=Z,3µm,22.0s								
GSC	**Goldstone, Bar**	**85.41**	**51**	*e*P		**P**	**14 47 25.6**	**+0.3**	
	comp=Z,79nm,1.4s								
GSC					LR	LR			
	comp=Z,3µm,22.0s								
PAHR	**Pah Rah Range**	**85.45**	**46**	*e*P		**P**	**14 47 26.3**	**+0.8**	
	comp=Z,130nm,1.4s								
PAHR					LR	LR			
	comp=Z,3µm,21.0s								
KTH	**Kantishna Hill**	**85.46**	**16**	*e*P		**P**	**14 47 24.1**	**-0.7**	
	comp=Z,38nm,1.0s								
KTH					LR	LR			
	comp=Z,4µm,21.0s								
BELC	**Belle Mtn. Jos**	**85.48**	**53**	P		**P**	**14 47 26.6**	**+0.9**	
	baz=246,SNR=68								
G03D	**McMinnville, O**	**85.49**	**40**	P		**P**	**14 47 26.3**	**+1.0**	
	baz=240,SNR=5.6								
TRF	**Thorofare Moun**	**85.55**	**16**	*e*P		**P**	**14 47 24.9**	**-0.5**	
	comp=Z,50nm,1.1s								
TRF					LR	LR			
	comp=Z,4µm,21.0s								
YAK	**Yakutsk**	**85.55**	**342**	P		**P**	**14 47 25.1**	**-0.1**	
	comp=Z,59nm,0.8s,baz=62,slow=0.7,SNR=63								
YAK	**Yakutsk**	**85.55**	**342**	*d i*P		**P**	**14 47 25.1**	**-0.1**	
YAK				*e**PP		**sP**	**14 47 36.3**	**+0.9**	
YAK				*e*			14 50 42.8		
YAK				*e*PPP		PPP	14 52 36.0		
YAK				*e*S		S	14 57 45.9	-9.4	
YAK				*e*SS		**SS**	**15 03 25.1**	**-6.7**	
YAK				*e*SSS		SSS	15 06 59.0		
YAK					pmax	pmax			
	comp=Z,90nm,0.9s								
YAK					pmax	pmax			
	comp=N,39nm,1.3s								
YAK					pmax	pmax			
	comp=E,28nm,1.4s								
YAK					pmax	pmax			
	comp=Z,96nm,3.2s								
YAK					pmax	pmax			
	comp=N,41nm,1.6s								
YAK					pmax	pmax			
	comp=E,38nm,4.2s								
YAK					smax	smax			
	comp=N,485nm,4.4s								
YAK					smax	smax			
	comp=E,288nm,5.4s								
YAK	**Yakutsk**	**85.55**	**342**	*e*P		**P**	**14 47 24.8**	**-0.4**	
	comp=E,158nm,1.1s								
YAK					LR	LR			
	comp=Z,3µm,21.0s								
HEC	**Hector,Ludlow**	**85.57**	**52**	P		**P**	**14 47 26.8**	**+0.7**	
	baz=246,SNR=22								
CRQM	**Cirque**	**85.61**	**20**	*e*P		**P**	**14 47 26.3**	**+0.5**	
	comp=Z,86nm,1.2s								
CRQM					LR	LR			
	comp=Z,3µm,21.0s								
F03A	**Seaside**	**85.67**	**39**		PFAKE		14 47 40.0	+14	
F03A					LR	LR			
	comp=Z,4µm,20.0s								
GRAC	**Grapevine Rang**	**85.70**	**49**	P		**P**	**14 47 27.6**	**+1.0**	
	baz=245,SNR=23								
BC3	**Big Chuckawall**	**85.76**	**53**	P		**P**	**14 47 28.2**	**+1.1**	
	baz=246,SNR=37								
K05A	**Summer Lake**	**85.81**	**43**	*e*P		**P**	**14 47 27.9**	**+0.6**	
	comp=Z,326nm,1.9s								
K05A					LR	LR			
	comp=Z,5µm,21.0s								
MOD	**Modoc Plateau**	**85.82**	**44**	*e*P		**P**	**14 47 27.6**	**+0.3**	
	comp=Z,92nm,1.3s								
MOD					LR	LR			
	comp=Z,4µm,20.0s								
J05D	**Fort Rock, OR**	**85.85**	**42**	P		**P**	**14 47 28.4**	**+1.0**	
	baz=242,SNR=16								
FURC	**Furnace Creek,**	**85.85**	**50**	P		**P**	**14 47 28.3**	**+1.0**	
	baz=245,SNR=28								
BPAW	**Bear Paw Mtn.**	**85.89**	**15**	*e*P		**P**	**14 47 25.9**	**-1.0**	
	comp=Z,29nm,1.3s								
BPAW					LR	LR			
	comp=Z,4µm,20.0s								
RND	**Reindeer**	**85.90**	**17**	*e*P		**P**	**14 47 26.1**	**-0.9**	
RND					pmax	pmax			
	comp=Z,82nm,1.2s								
RND					MLR	MLR			
	comp=Z,3µm,19.0s								
RND	**Reindeer**	**85.90**	**17**	*e*P		**P**	**14 47 26.1**	**-0.9**	
	comp=Z,82nm,1.2s								
RND					LR	LR			
	comp=Z,3µm,19.0s								
SRIG	**Santa Rosalia**	**85.91**	**60**	*e*P		**P**	**14 47 27.8**	**0.0**	
	comp=Z,65nm,1.3s								
SRIG					LR	LR			
	comp=Z,3µm,21.0s								
YKU2	**Yakutat**	**85.93**	**23**		PFAKE		14 47 40.0	+13	
YKU2					LR	LR			
	comp=Z,5µm,20.0s								
CRAG	**Craig**	**85.94**	**28**		PFAKE		14 47 40.0	+13	
CRAG					LR	LR			
	comp=Z,4µm,20.0s								
E03A	**Lebam**	**85.97**	**39**	*e*P		**P**	**14 47 28.3**	**+0.6**	
	comp=Z,65nm,1.0s								
E03A					LR	LR			
	comp=Z,5µm,22.0s								
GLA	**Glamis**	**86.00**	**54**	P		**P**	**14 47 29.5**	**+1.3**	
	baz=247,SNR=32								
GLA	**Glamis**	**86.00**	**54**	*e*P		**P**	**14 47 29.3**	**+1.1**	
GLA					pmax	pmax			
	comp=Z,127nm,1.3s								
GLA					MLR	MLR			
	comp=Z,3µm,22.0s								
GLA	**Glamis**	**86.00**	**54**	*e*P		**P**	**14 47 29.3**	**+1.1**	
	comp=Z,127nm,1.3s								
GLA					LR	LR			
	comp=Z,3µm,22.0s								
SHOC	**Shoshone, Teco**	**86.05**	**51**	P		**P**	**14 47 29.2**	**+0.9**	
	baz=246,SNR=24								
DHY	**Denali Highway**	**86.05**	**17**	*e*P		**P**	**14 47 27.1**	**-0.8**	
	comp=Z,47nm,1.2s								
DHY					LR	LR			
	comp=Z,5µm,22.0s								
GMRC	**Granite Mounta**	**86.06**	**52**	P		**P**	**14 47 29.5**	**+0.9**	
	baz=246,SNR=26								
TUQ	**Turquoise Moun**	**86.12**	**51**	P		**P**	**14 47 29.6**	**+0.8**	
	baz=246,SNR=24								
PCA	**Pinnacle**	**86.13**	**22**	*e*P		**P**	**14 47 27.7**	**-0.5**	
	comp=Z,119nm,1.3s								
PCA					LR	LR			
	comp=Z,8µm,22.0s								
MCK	**McKinley**	**86.14**	**16**	*e*P		**P**	**14 47 27.1**	**-1.0**	
MCK					pmax	pmax			
	comp=Z,72nm,1.4s								
MCK					MLR	MLR			
	comp=Z,4µm,20.0s								
MCK	**McKinley**	**86.14**	**16**	*e*P		**P**	**14 47 27.1**	**-1.0**	
	comp=Z,72nm,1.4s								
MCK					LR	LR			
	comp=Z,4µm,20.0s								
DHAK	**Deception Hill**	**86.18**	**23**	*e*P		**P**	**14 47 28.9**	**+0.4**	
	comp=Z,113nm,1.2s								
DHAK					LR	LR			
	comp=Z,8µm,22.0s								
IRM	**Iron Mountain**	**86.20**	**53**	P		**P**	**14 47 30.2**	**+1.1**	
	baz=247,SNR=65								
NLWA	**Neilton Lookou**	**86.22**	**38**	*e*P		**P**	**14 47 29.5**	**+0.6**	
	comp=Z,35nm,1.2s								
NLWA					LR	LR			
	comp=Z,4µm,22.0s								
I05D	**Terrebonne, OR**	**86.27**	**41**	P		**P**	**14 47 30.1**	**+0.8**	
	baz=242,SNR=11								
BWN	**Browne**	**86.34**	**16**	*e*P		**P**	**14 47 28.1**	**-1.0**	
	comp=Z,78nm,0.9s								
BWN					LR	LR			
	comp=Z,3µm,21.0s								
F04A	**Amboy**	**86.36**	**40**	*e*P		**P**	**14 47 29.9**	**+0.3**	
	comp=Z,49nm,1.1s								
F04A					LR	LR			
	comp=Z,4µm,20.0s								
BBB	**Bella Bella**	**86.42**	**32**	LR		LR	15 17 39.8		
	comp=Z,4µm,22.0s,baz=256,slow=30								
BBB	**Bella Bella**	**86.42**	**32**	*e*P		**P**	**14 47 30.8**	**+1.1**	
	comp=Z,50nm,1.1s								
TPNV	**Topopah Spring**	**86.50**	**50**	P		**P**	**14 47 31.5**	**+0.7**	
	baz=246,SNR=57								
TPNV	**Topopah Spring**	**86.50**	**50**	*e*P		**P**	**14 47 31.1**	**+0.4**	
TPNV					pmax	pmax			
	comp=Z,111nm,1.4s								
TPNV					MLR	MLR			
	comp=Z,5µm,22.0s								
TPNV	**Topopah Spring**	**86.50**	**50**	*e*P		**P**	**14 47 31.1**	**+0.4**	
	comp=Z,111nm,1.4s								
TPNV					LR	LR			
	comp=Z,5µm,22.0s								
Y12C	**Blythe**	**86.51**	**53**	P		**P**	**14 47 31.8**	**+1.2**	
	baz=247,SNR=21								
Y12C	**Blythe**	**86.51**	**53**	*e*P		**P**	**14 47 31.5**	**+0.8**	
	comp=Z,83nm,1.2s								
Y12C					LR	LR			
	comp=Z,3µm,22.0s								
PAX	**Paxson**	**86.53**	**18**	*e*P		**P**	**14 47 29.2**	**-1.0**	
PAX					pmax	pmax			
	comp=Z,21nm,1.2s								
PAX					MLR	MLR			
	comp=Z,2µm,20.0s								
PAX	**Paxson**	**86.53**	**18**	*e*P		**P**	**14 47 29.2**	**-1.0**	
	comp=Z,21nm,1.2s								
PAX					LR	LR			
	comp=Z,2µm,20.0s								
SLBS	**Sierra La Lagu**	**86.56**	**64**	*e*P		**P**	**14 47 31.9**	**+0.7**	
	comp=Z,246nm,1.5s								
SLBS					LR	LR			
	comp=Z,7µm,22.0s								
LDFC	**Landfair**	**86.59**	**52**	*e*P		**P**	**14 47 31.9**	**+0.7**	
	comp=Z,173nm,1.3s								
LDFC					LR	LR			
	comp=Z,4µm,22.0s								
MLY	**Manley**	**86.71**	**15**	*e*P		**P**	**14 47 29.7**	**-1.2**	
	comp=Z,14nm,0.9s								
MLY					LR	LR			
	comp=Z,4µm,20.0s								
113A	**Mohawk Valley,**	**86.72**	**54**	*e*P		**P**	**14 47 32.3**	**+0.6**	
	comp=Z,95nm,1.5s								
113A					LR	LR			
	comp=Z,3µm,22.0s								
G05D	**Wamic, OR**	**86.72**	**41**	P		**P**	**14 47 32.3**	**+0.9**	
	baz=242,SNR=5.3								
SONM	**Songino Array**	**86.92**	**322**	P		**P**	**14 47 33.1**	**+0.6**	
	comp=Z,16nm,1.2s,baz=139,slow=4.0,SNR=56								
SONM					PKPPKP	**P'P'df**	**15 13 33.5**	**+2.8**	
	comp=Z,0.3nm,0.3s,baz=35,slow=3.6,SNR=4.0								
SONM					LR	LR	15 24 25.8		
	comp=Z,1µm,21.0s,baz=112,slow=34								
SONA1	**Songino Array**	**86.93**	**322**	*e*P		**P**	**14 47 32.0**	**-0.6**	
WRH	**Wood River Hil**	**86.95**	**16**	*e*P		**P**	**14 47 30.4**	**-1.6**	
	comp=Z,24nm,1.0s								
WRH					LR	LR			
	comp=Z,4µm,20.0s								
PDMCI	**Parker Dam,Lak**	**87.02**	**53**	P		**P**	**14 47 34.1**	**+1.0**	
	baz=247,SNR=24								
MENT	**Mentasta**	**87.03**	**19**	*e*P		**P**	**14 47 32.0**	**-0.6**	
	comp=Z,27nm,1.0s								
MENT					LR	LR			
	comp=Z,3µm,22.0s								
PGC	**Sidney**	**87.09**	**37**	*e*P		**P**	**14 47 33.1**	**+0.1**	
PGC					LR	LR			
	comp=Z,6µm,22.0s								
SHPR	**Sheep Range**	**87.12**	**51**	*e*P		**P**	**14 47 34.9**	**+1.1**	
	comp=Z,91nm,1.5s								
SHPR					LR	LR			
	comp=Z,4µm,22.0s								
LON	**Longmire**	**87.13**	**39**		PFAKE		14 47 40.0	+6.6	
LON					LR	LR			
	comp=Z,4µm,22.0s								
G06A	**Carlson Farm,**	**87.14**	**41**	*e*P		**P**	**14 47 33.6**	**+0.1**	
	comp=Z,124nm,1.9s								
G06A					LR	LR			
	comp=Z,4µm,20.0s								
214A	**Organ Pipe Nat**	**87.16**	**55**	P		**P**	**14 47 35.1**	**+1.2**	
	baz=248,SNR=23								
WVOR	**Wild Horse Val**	**87.16**	**44**	*e*P		**P**	**14 47 34.3**	**+0.5**	
WVOR					pmax	pmax			
	comp=Z,144nm,1.5s								
WVOR					MLR	MLR			
	comp=Z,4µm,21.0s								
WVOR	**Wild Horse Val**	**87.16**	**44**	*e*P		**P**	**14 47 34.3**	**+0.5**	
	comp=Z,144nm,1.5s								
WVOR					LR	LR			
	comp=Z,4µm,21.0s								
CCB	**Clear Creek Bu**	**87.16**	**16**	*e*P		**P**	**14 47 31.7**	**-1.4**	
	comp=Z,24nm,1.0s								
CCB					LR	LR			
	comp=Z,4µm,20.0s								
HDA	**Harding Lake**	**87.21**	**17**	*e*P		**P**	**14 47 32.3**	**-1.1**	
	comp=Z,51nm,1.0s								
HDA					LR	LR			
	comp=Z,4µm,21.0s								
D05A	**Enumclaw**	**87.23**	**39**	*e*P		**P**	**14 47 34.9**	**+1.1**	
	comp=Z,137nm,1.4s								
D05A					LR	LR			
	comp=Z,4µm,22.0s								
BMN	**Battle Mountai**	**87.26**	**46**	*e*P		**P**	**14 47 34.9**	**+0.5**	
BMN					pmax	pmax			
	comp=Z,152nm,1.4s								
BMN					MLR	MLR			
	comp=Z,3µm,22.0s								
BMN	**Battle Mountai**	**87.26**	**46**	*e*P		**P**	**14 47 34.9**	**+0.5**	
	comp=Z,152nm,1.4s								
BMN					LR	LR			
	comp=Z,3µm,22.0s								
MDM	**Murphy Dome**	**87.30**	**16**	*e*P		**P**	**14 47 32.2**	**-1.6**	
	comp=Z,36nm,1.0s								
MDM					LR	LR			
	comp=Z,3µm,21.0s								
COLA	**College**	**87.33**	**16**	*e*P		**P**	**14 47 32.9**	**-1.0**	
COLA	**College**	**87.33**	**16**	*e*P		**P**	**14 47 32.5**	**-1.4**	
	comp=Z,43nm,0.9s								
COLA					LR	LR			
	comp=Z,3µm,22.0s								
GTA	**Gaotai**	**87.36**	**313**	⇓P		**P**	**14 47 35.8**	**+0.9**	
GTA					pP	pP	14 47 41.8	-0.6	
GTA					sP	sP	14 47 45.0	0.0	
GTA					SKS	**SKSac**	**14 58 01.3**	**-0.1**	
GTA					S	**S**	**14 58 13.8**	**-0.5**	
GTA					sS	sS	14 58 25.5	-1.2	
GTA					SS	**SS**	**15 04 01.8**	**+2.1**	
GTA					pmax	pmax			
	comp=Z,100nm,1.6s								
GTA					pmax	pmax			
	comp=Z,840nm,6.7s								
GTA					LR	LR			
	comp=Z,910nm,20.4s								
GTA					LR	LR			
	comp=Z,1µm,23.3s								
GTA					LR	LR			
	comp=Z,2µm,23.8s								
DOT	**Dot Lake**	**87.46**	**18**	*e*P		**P**	**14 47 33.7**	**-0.9**	
	comp=Z,96nm,1.1s								
DOT					LR	LR			
	comp=Z,7µm,22.0s								
IL1	**Eielson Array**	**87.51**	**16**	*e*P		**P**	**14 47 33.0**	**-1.8**	
ILAR	**Eielson Array**	**87.51**	**16**	P		**P**	**14 47 33.1**	**-1.7**	
	comp=Z,23nm,0.8s,baz=235,slow=5.3,SNR=106								
ILAR					PKKPbc	**PKKPbc**	**15 05 28.2**	**+1.2**	
	comp=Z,0.4nm,0.8s,baz=5.7,slow=3.6,SNR=4.6								
ILAR					PKPPKP	**P'P'df**	**15 13 30.6**	**+2.7**	
	comp=Z,1.0nm,1.2s,baz=335,slow=3.0,SNR=6.6								
ILAR					LR	LR	15 21 26.7		
	comp=Z,4µm,20.2s,baz=243,slow=32								
ILB	**Eielson Array**	**87.51**	**16**	*e*P		**P**	**14 47 32.9**	**-1.9**	
W13A	**Hualapai Mount**	**87.52**	**52**	*e*P		**P**	**14 47 36.2**	**+0.4**	
	comp=Z,64nm,1.4s								
W13A					LR	LR			
	comp=Z,4µm,22.0s								
SKAG	**Skagway**	**87.54**	**24**	*e*P		**P**	**14 47 34.3**	**-0.7**	
	comp=Z,49nm,1.4s								
SKAG					LR	LR			
	comp=Z,7µm,22.0s								
R11A	**Troy Canyon, C**	**87.55**	**49**	P		**P**	**14 47 36.4**	**+0.6**	
	baz=246,SNR=45								
R11A	**Troy Canyon, C**	**87.55**	**49**	*e*P		**P**	**14 47 36.0**	**+0.1**	
	comp=Z,74nm,1.6s								
R11A					LR	LR			
	comp=Z,4µm,22.0s								
A04D	**Lummi Island**	**87.55**	**37**	P		**P**	**14 47 36.4**	**+1.1**	
	baz=241								
HSIG		**87.58**	**59**	*e*P		**P**	**14 47 36.3**	**+0.3**	
	comp=Z,49nm,1.3s								
HSIG					LR	LR			
	comp=Z,3µm,20.0s								
HYT	**Haines Junctio**	**87.62**	**22**	*e*P		**P**	**14 47 35.5**	**0.0**	
	comp=Z,11nm,1.0s								
HYT					LR	LR			
	comp=Z,6µm,22.0s								
SYO	**Syowa Base**	**87.63**	**196**	⇑*i*P		**P**	**14 47 33.0**	**-2.4**	
SYO	**Syowa Base**	**87.63**	**196**	⇓*i*PcP		**P**	**14 47 35.2**	**-0.2**	
B05A	**Bryant**	**87.69**	**38**	P		**P**	**14 47 36.9**	**+0.9**	
	baz=241								
LTY	**Liberty**	**88.06**	**39**		PFAKE		14 47 50.0	+12	
LTY					LR	LR			
	comp=Z,4µm,22.0s								
PMSA	**Palmer Station**	**88.11**	**159**	*e*P		**P**	**14 47 37.6**	**-0.2**	
	comp=Z,195nm,1.6s								
B06A	**Marblemount**	**88.17**	**38**	*e*P		**P**	**14 47 38.3**	**0.0**	
	comp=Z,101nm,1.9s								
B06A					LR	LR			
	comp=Z,4µm,22.0s								
G08A	**Pilot Rock**	**88.22**	**41**	*e*P		**P**	**14 47 39.1**	**+0.3**	
	comp=Z,223nm,2.0s								
G08A					LR	LR			
	comp=Z,6µm,22.0s								
E07A	**Sunnyside**	**88.23**	**40**		PFAKE		14 47 50.0	+11	
E07A					LR	LR			
	comp=Z,4µm,22.0s								
HAWA	**Hanford**	**88.35**	**40**	*e*P		**P**	**14 47 40.5**	**+1.3**	
	comp=Z,149nm,1.7s								
HAWA					LR	LR			
	comp=Z,4µm,20.0s								
SHL	**Shillong**	**88.41**	**297**	*e*P		**P**	**14 47 40.0**	**-0.2**	
SHL				*ex*		x	14 58 12.0		
BOD	**Bodaibo**	**88.45**	**333**	*e*P		**P**	**14 47 39.2**	**-0.2**	
BOD					pmax	pmax			
	comp=Z,82nm,1.7s								
WHY	**Whitehorse**	**88.48**	**23**	*e*P		**P**	**14 47 39.2**	**-0.4**	
	comp=Z,11nm,0.9s								
WHY					LR	LR			
	comp=Z,7µm,21.0s								
COLD	**Coldfoot**	**88.63**	**14**	*e*P		**P**	**14 47 39.7**	**-0.3**	
	comp=Z,21nm,1.1s								
COLD					LR	LR			
	comp=Z,4µm,21.0s								
LCMT	**Little Creek M**	**88.73**	**51**	*e*P		**P**	**14 47 41.9**	**+0.4**	
	comp=Z,96nm,1.4s								
LCMT					LR	LR			
	comp=Z,3µm,22.0s								
CCUT	**Cedar City**	**88.85**	**50**	*e*P		**P**	**14 47 42.8**	**+0.7**	
	comp=Z,102nm,1.3s								
CCUT					LR	LR			
	comp=Z,5µm,21.0s								
PSUT	**Pine Spring**	**88.87**	**49**		PFAKE		14 47 50.0	+7.8	
PSUT					LR	LR			
	comp=Z,2µm,22.0s								
TUC	**Tucson**	**88.89**	**56**	P		**P**	**14 47 43.4**	**+1.2**	
	baz=249								
TUC	**Tucson**	**88.89**	**56**	*e*P		**P**	**14 47 43.0**	**+0.8**	
TUC					pmax	pmax			
	comp=Z,47nm,1.4s								
TUC					MLR	MLR			
	comp=Z,2µm,19.0s								
TUC	**Tucson**	**88.89**	**56**	*e*P		**P**	**14 47 43.0**	**+0.8**	
	comp=Z,47nm,1.4s								
TUC					LR	LR			
	comp=Z,2µm,19.0s								
LLLB	**Lillooet**	**88.94**	**36**	*e*P		**P**	**14 47 43.0**	**+1.1**	
	comp=Z,138nm,1.9s								
LLLB					LR	LR			
	comp=Z,4µm,22.0s								
D08A	**Wollman Farm,**	**89.03**	**40**	*e*P		**P**	**14 47 42.9**	**+0.5**	
	comp=Z,125nm,1.6s								
D08A					LR	LR			
	comp=Z,3µm,20.0s								
KNB	**Kanab**	**89.05**	**51**	*e*P		**P**	**14 47 44.1**	**+1.1**	
KNB					pmax	pmax			
	comp=Z,160nm,1.5s								
KNB					MLR	MLR			
	comp=Z,3µm,22.0s								
KNB	**Kanab**	**89.05**	**51**	*e*P		**P**	**14 47 44.1**	**+1.1**	
	comp=Z,160nm,1.5s								
KNB					LR	LR			
	comp=Z,3µm,22.0s								
SZCU	**Shurtz Canyon**	**89.07**	**50**		PFAKE		14 47 50.0	+6.9	
SZCU					LR	LR			
	comp=Z,4µm,21.0s								
BMO	**Blue Mountains**	**89.08**	**42**	*e*P		**P**	**14 47 43.1**	**+0.2**	
BMO					pmax	pmax			
	comp=Z,113nm,1.5s								
BMO					MLR	MLR			
	comp=Z,6µm,21.0s								
BMO	**Blue Mountains**	**89.08**	**42**	*e*P		**P**	**14 47 43.1**	**+0.2**	
	comp=Z,113nm,1.5s								
BMO					LR	LR			
	comp=Z,6µm,21.0s								
X16A	**Lo Mia Camp, P**	**89.13**	**54**	*e*P		**P**	**14 47 44.4**	**+0.9**	
	comp=Z,68nm,1.3s								
X16A					LR	LR			
	comp=Z,3µm,22.0s								
EGAK	**Eagle**	**89.15**	**18**	*e*P		**P**	**14 47 41.9**	**-0.7**	
	comp=Z,33nm,0.9s								
EGAK					LR	LR			
	comp=Z,2µm,20.0s								
DAWY	**Dawson**	**89.20**	**19**	*e*P		**P**	**14 47 42.0**	**-0.9**	
	comp=Z,59nm,1.6s								
DAWY					LR	LR			
	comp=Z,2µm,21.0s								
U15A	**North Rim**	**89.22**	**52**	*e*P		**P**	**14 47 44.9**	**+1.0**	
	comp=Z,143nm,1.4s								
U15A					LR	LR			
	comp=Z,3µm,22.0s								
E09A	**Wood Farm, Sta**	**89.27**	**41**	*e*P		**P**	**14 47 43.9**	**+0.3**	
	comp=Z,142nm,1.5s								
E09A					LR	LR			
	comp=Z,4µm,22.0s								
FYU	**Fort Yukon**	**89.33**	**16**	*e*P		**P**	**14 47 44.1**	**+0.8**	
	comp=Z,37nm,1.5s								
FYU					LR	LR			
	comp=Z,4µm,20.0s								
B08A	**Colville Reser**	**89.36**	**39**	*e*P		**P**	**14 47 43.7**	**-0.3**	
	comp=Z,108nm,1.6s								
B08A					LR	LR			
	comp=Z,3µm,22.0s								
MFID	**Camas Ranch**	**89.45**	**44**	*e*P		**P**	**14 47 45.0**	**+0.4**	
	comp=Z,84nm,1.2s								
MFID					LR	LR			
	comp=Z,5µm,22.0s								
WUAZ	**Wupatki**	**89.58**	**53**	P		**P**	**14 47 46.7**	**+1.2**	
	baz=249								
WUAZ	**Wupatki**	**89.58**	**53**	*e*P		**P**	**14 47 46.3**	**+0.8**	
	comp=Z,110nm,1.3s								
WUAZ					LR	LR			
	comp=Z,3µm,22.0s								
PKCU	**Pink Cliffs**	**89.58**	**51**	*e*P		**P**	**14 47 47.1**	**+1.5**	
	comp=Z,120nm,1.4s								
PKCU					LR	LR			

TCRU Three Creeks R 89.92 49 PFAKE 14 48 00.0 +13
TCRU LR LR
comp=Z,4µm,20.0s
ZAK Zakamensk 89.94 323 *e*P **P 14 47 46.6 -0.1**
ZAK pmax pmax
comp=Z,3.0nm,1.6s
MSU Marysvale 90.08 50 *e*P **P 14 47 48.9 +1.1**
MSU Marysvale 90.08 50 *e*P **P 14 47 48.9 +1.1**
IRK Irkutsk 90.25 325 *e*P **P 14 47 46.8 -1.2**
IRK *e* 14 51 29.7
IRK pmax pmax
comp=Z,101nm,1.7s
DUG Dugway, Tooele 90.25 48 P **P 14 47 49.2 +0.7**
baz=248
DUG Dugway, Tooele 90.25 48 *e*P **P 14 47 49.2 +0.7**
DUG pmax pmax
comp=Z,82nm,1.5s
DUG MLR MLR
comp=Z,6µm,21.0s
DUG Dugway, Tooele 90.25 48 *e*P **P 14 47 49.2 +0.7**
comp=Z,82nm,1.5s
DUG LR LR
comp=Z,6µm,21.0s
X18A Snowflake 90.32 54 *e*P **P 14 47 49.6 +0.6**
comp=Z,81nm,1.3s
X18A LR LR
comp=Z,2µm,22.0s
TLY Talaya 90.33 325 P **P 14 47 48.5 +0.1**
comp=Z,5.4nm,0.8s,baz=151,slow=3.8,SNR=34
TLY Talaya 90.33 325 *e*P **P 14 47 47.6 -0.8**
TLY *e*S **SKSac 14 58 18.5 +0.3**
TLY pmax pmax
comp=Z,63nm,1.7s
TLY MLR MLR
comp=Z,1µm,20.0s
BGU Big Grassy Mou 90.38 47 *e*P **P 14 47 49.5 +0.4**
comp=Z,51nm,1.4s
BGU LR LR
comp=Z,3µm,21.0s
LSA Lhasa 90.40 301 *e*P **P 14 47 48.9 -1.0**
LSA pmax pmax
comp=Z,17nm,1.3s
LSA MLR MLR
comp=Z,1µm,22.0s
LSA Lhasa 90.40 301 *e*P **P 14 47 48.9 -1.0**
comp=Z,17nm,1.3s
LSA LR LR
comp=Z,1µm,22.0s
HLID Hailey 90.45 44 P **P 14 47 50.4 +1.0**
baz=247,SNR=45
HLID Hailey 90.45 44 *e*P **P 14 47 50.2 +0.9**
comp=Z,46nm,1.2s
HLID LR LR
comp=Z,4µm,20.0s
MMU Miners Mountai 90.61 50 *e*P **P 14 47 51.5 +1.1**
NEW Newport 90.65 39 P **P 14 47 50.2 +0.2**
comp=Z,14nm,1.0s,baz=240,slow=3.2,SNR=24
NEW Newport 90.65 39 P **P 14 47 50.6 +0.6**
baz=245
NEW Newport 90.65 39 *e*P **P 14 47 50.6 +0.6**
NEW pmax pmax
comp=Z,30nm,1.1s
NEW MLR MLR
comp=Z,3µm,22.0s
NEW Newport 90.65 39 *e*P **P 14 47 50.6 +0.6**
comp=Z,30nm,1.1s
NEW LR LR
comp=Z,3µm,22.0s
NLU North Lily Min 90.69 48 *e*P **P 14 47 51.1 +0.5**
comp=Z,60nm,1.4s
NLU LR LR
comp=Z,5µm,22.0s
W18A Petrified Fore 90.69 53 P **P 14 47 51.8 +1.1**
baz=250
W18A Petrified Fore 90.69 53 *e*P **P 14 47 51.6 +0.9**
comp=Z,108nm,1.3s
W18A LR LR
comp=Z,3µm,22.0s
HVU Hansel Valley 90.88 46 *e*P **P 14 47 52.1 +0.7**
HVU pmax pmax
comp=Z,95nm,1.4s
HVU MLR MLR
comp=Z,2µm,21.0s
HVU Hansel Valley 90.88 46 *e*P **P 14 47 52.1 +0.7**
comp=Z,95nm,1.4s
HVU LR LR
comp=Z,2µm,21.0s
SPUT South Promonto 90.93 47 *e*P **P 14 47 52.1 +0.5**
comp=Z,117nm,1.8s
SPUT LR LR
comp=Z,2µm,21.0s
MPU Maple Canyon 91.03 48 *e*P **P 14 47 52.7 +0.6**
comp=Z,63nm,1.4s
MPU LR LR
comp=Z,5µm,22.0s
TMUT Trail Mountain 91.07 49 *e*P **P 14 47 53.4 +0.9**
comp=Z,96nm,1.5s
TMUT LR LR
comp=Z,4µm,22.0s
CTU Camp Tracy 91.19 48 *e*P **P 14 47 53.5 +0.6**
comp=Z,53nm,1.2s
CTU LR LR
comp=Z,5µm,21.0s
NVL N'lazarevskaya 91.26 187 *e*P **P 14 47 52.3 -0.2**
NVL *e*S **SKSac 14 58 21.0 -2.1**
NVL *e*PS **PS 14 59 56.3 -4.1**
NVL *e*SS SS 15 05 07.0 +14
NVL *e*SSS SSS 15 08 29.6
HPIG 91.28 62 *e*P **P 14 47 54.5 +0.8**
comp=Z,43nm,1.5s
HPIG LR LR
comp=Z,4µm,20.0s
121A Cookes Peak, D 91.34 56 P **P 14 47 55.1 +1.3**
baz=251
121A Cookes Peak, D 91.34 56 *e*P **P 14 47 55.0 +1.2**
comp=Z,36nm,1.0s
JLU Jordanelle 91.37 48 *e*P **P 14 47 54.5 +0.7**
comp=Z,70nm,1.4s
JLU LR LR
comp=Z,6µm,20.0s
SNAA Sanae 91.39 182 P **P 14 47 52.2 -0.9**
SNAA Sanae 91.39 182 *d iP* **P 14 47 52.3 -0.9**
SNAA Sanae 91.39 182 *e*P **P 14 47 51.8 -1.4**
comp=Z,149nm,1.3s
SNAA LR LR
comp=Z,7µm,22.0s
P17A Butcher Ranch, 91.47 49 *e*P **P 14 47 54.9 +0.7**
comp=Z,102nm,2.0s
P17A LR LR
comp=Z,4µm,22.0s
SRU San Rafael Swe 91.50 50 *e*P **P 14 47 54.8 +0.4**
SRU pmax pmax
comp=Z,58nm,1.4s
SRU MLR MLR
comp=Z,5µm,22.0s
SRU San Rafael Swe 91.50 50 *e*P **P 14 47 54.8 +0.4**
comp=Z,58nm,1.4s
SRU LR LR
comp=Z,5µm,22.0s
TCUT Toone Canyon 91.58 47 *e*P **P 14 47 55.4 +0.6**
comp=Z,94nm,1.3s
TCUT LR LR
comp=Z,7µm,22.0s
HWUT Hardware Ranch 91.65 47 *e*P **P 14 47 54.8 -0.3**
comp=Z,29nm,1.4s
HWUT LR LR
comp=Z,2µm,21.0s
MOY Mondy 91.80 324 *e*P **P 14 47 55.9 +0.5**
MOY pmax pmax
comp=Z,75nm,1.9s
P18A Preston Nutter 91.88 49 PFAKE 14 48 10.0 +14
P18A LR LR
comp=Z,5µm,22.0s
BSMT Bassoo Peak 91.91 40 *e*P **P 14 47 55.6 -0.5**
MCMT McKenzie Canyo 91.97 44 *e*P **P 14 47 56.7 +0.1**
MSO Missoula 92.03 41 P **P 14 47 56.5 0.0**
baz=247
MSO Missoula 92.03 41 *e*P **P 14 47 56.7 +0.1**
comp=Z,16nm,1.2s
MSO LR LR
comp=Z,3µm,21.0s
BWNR Bhubaneshwar 92.07 290 *e*P **P 14 47 57.0 -0.1**
JTMT Jette 92.18 40 *e*P **P 14 47 56.6 -0.7**
PV05 Paradox Valley 92.19 51 *e*P **P 14 47 58.5 +0.9**
BLMT Blacktail Moun 92.23 40 *e*P **P 14 47 57.2 -0.4**
SWMT Swartz Lake 92.26 41 *e*P **P 14 47 57.0 -0.6**
PV09 Paradox Valley 92.31 50 *e*P **P 14 47 58.5 +0.2**

PV10 Paradox Valley 92.33 51 *e*P **P 14 47 58.0 -0.4**
DLMT Dillon 92.34 43 *e*PKPdf **P 14 47 58.2 +0.1**
comp=Z,38nm,1.3s
DLMT LR LR
comp=Z,7µm,21.0s
MVCO Mesa Verde 92.34 52 P **P 14 47 58.9 +0.5**
baz=250
MVCO Mesa Verde 92.34 52 *e*P **P 14 47 57.7 -0.7**
comp=Z,36nm,1.6s
MVCO LR LR
comp=Z,3µm,22.0s
AHID Auburn Hatcher 92.39 46 *e*P **P 14 47 58.9 +0.5**
comp=Z,83nm,1.9s
AHID LR LR
comp=Z,2µm,22.0s
PV04 Paradox Valley 92.44 51 *e*P **P 14 47 59.0 +0.3**
LAZ Ladron 92.47 55 *e*P **P 14 47 59.5 +0.5**
SLMT Seeley Lake 92.47 41 *e*P **P 14 47 57.5 -1.2**
VNA1 Neumayer--Stat 92.49 180 P **P 14 47 57.4 -0.8**
CHMT Chamberlain Mo 92.50 42 *e*P **P 14 47 58.4 -0.5**
Y22D IRIS PASSCAL I 92.53 55 *e*P **P 14 48 00.4 +1.2**
comp=Z,87nm,1.3s
Y22D LR LR
comp=Z,2µm,22.0s
PV01 Paradox Valley 92.60 51 *e*P **P 14 47 59.9 +0.3**
LRM Limekiln Ridge 92.61 43 *e*P **P 14 47 59.5 0.0**
ZAIG Zacatecas 92.69 67 *e*P **P 14 48 01.6 +1.2**
comp=Z,44nm,1.4s
TPAW Teton Pass 92.75 45 *e*P **P 14 48 00.5 +0.3**
comp=Z,47nm,1.6s
TPAW LR LR
comp=Z,3µm,22.0s
REDW Red Top Meadow 92.78 45 *e*P **P 14 48 00.5 +0.2**
comp=Z,34nm,1.3s
REDW LR LR
comp=Z,2µm,21.0s
BNM Barren Site 92.78 55 *e*P **P 14 48 01.0 +0.5**
LPM Los Pinos Moun 92.83 55 *e*P **P 14 48 00.6 -0.1**
SNOW Snow King Moun 92.88 45 *e*P **P 14 48 01.8 +1.0**
comp=Z,50nm,1.8s
SNOW LR LR
comp=Z,3µm,22.0s
IMW Indian Meadow 92.91 45 *e*P **P 14 48 01.4 +0.5**
comp=Z,25nm,1.3s
IMW LR LR
comp=Z,3µm,22.0s
QLMT Earthquake Lak 92.91 44 *e*P **P 14 48 01.7 +0.9**
WALA Waterton Lakes 92.92 39 *e*P **P 14 48 01.1 +0.5**
WALA LR LR
comp=Z,3µm,20.0s
MOOW Moose Ponds 92.99 45 *e*P **P 14 48 01.4 +0.2**
comp=Z,14nm,1.4s
MOOW LR LR
comp=Z,3µm,22.0s
MNTX Cornudas Mount 93.01 58 P **P 14 48 02.3 +1.0**
baz=252
MNTX Cornudas Mount 93.01 58 *e*P **P 14 48 02.0 +0.7**
comp=Z,30nm,1.1s
MNTX LR LR
comp=Z,3µm,21.0s
BOK Bokaro 93.03 294 *e*P **P 14 48 03.3 +1.7**
PALK Pallekele 93.03 277 P **P 14 48 02.8 +0.9**
comp=Z,48nm,1.0s,baz=115,slow=4.7,SNR=7.3
PALK Pallekele 93.03 277 *i* P **P 14 48 03.6 +1.8**
PALK Pallekele 93.03 277 *e*P **P 14 48 02.4 +0.5**
comp=Z,85nm,1.1s
PALK LR LR
comp=Z,2µm,20.0s
LOHW Long Hollow 93.03 45 *e*P **P 14 48 01.1 -0.3**
comp=Z,14nm,1.3s
LOHW LR LR
comp=Z,3µm,22.0s
YHB Horse Butte 93.04 44 *e*P **P 14 48 01.6 +0.2**
comp=Z,28nm,1.2s
YHB LR LR
comp=Z,4µm,22.0s
BOZ Bozeman (W) 93.08 43 P **P 14 48 02.4 +0.9**
baz=249,SNR=22
BOZ Bozeman (W) 93.08 43 *e*P **P 14 48 02.0 +0.5**
BOZ pmax pmax
comp=Z,38nm,1.4s
BOZ MLR MLR
comp=Z,7µm,22.0s
BOZ Bozeman (W) 93.08 43 *e*P **P 14 48 02.0 +0.5**
comp=Z,38nm,1.4s
BOZ LR LR
comp=Z,7µm,22.0s
CHLP Challavanipeta 93.12 288 *e*P **P 14 48 00.8 -1.2**
CHLP *e*SKSac **SKSac 14 58 36.9 +1.6**
YPP Pitchstone Pla 93.13 45 PFAKE 14 48 10.0 +8.1
YPP LR LR
comp=Z,4µm,21.0s
FLWY Flagg Ranch 93.14 45 *e*P **P 14 48 02.1 +0.3**
comp=Z,21nm,1.3s
FLWY LR LR
comp=Z,4µm,22.0s
TIXI Tiksi 93.14 348 P **P 14 48 00.0 -0.9**
comp=Z,7.5nm,0.9s,baz=117,slow=8.3,SNR=6.4
TIXI Tiksi 93.14 348 *d iP* **P 14 47 59.8 -1.1**
TIXI pmax pmax
comp=Z,27nm,1.3s
TIXI MLR MLR
comp=Z,1µm,20.0s
TIXI Tiksi 93.14 348 P **P 14 48 00.0 -0.9**
TIXI LR LR
comp=Z,4µm,21.0s
YMR Madison River 93.17 44 PFAKE 14 48 10.0 +8.0
YMR LR LR
comp=Z,4µm,22.0s
ANMO Albuquerque 93.17 55 P **P 14 48 03.1 +0.9**
baz=252
ANMO Albuquerque 93.17 55 *e*P **P 14 48 02.7 +0.5**
ANMO Albuquerque 93.17 55 *e*P **P 14 48 02.4 +0.1**
comp=Z,38nm,1.2s
ANMO LR LR
comp=Z,2µm,21.0s
YFT Old Faithful 93.17 44 PFAKE 14 48 10.0 +7.9
YFT LR LR
comp=Z,4µm,22.0s
YHH Holmes Hill 93.28 44 PFAKE 14 48 10.0 +7.4
YHH LR LR
comp=Z,5µm,22.0s
H17A Grant Village 93.33 45 P **P 14 48 04.3 +1.6**
baz=250
H17A Grant Village 93.33 45 *e*PKPdf **P 14 48 03.7 +0.9**
comp=Z,13nm,1.1s
H17A LR LR
comp=Z,4µm,22.0s
YNR Norris Junctio 93.37 44 PFAKE 14 48 10.0 +7.0
YNR LR LR
comp=Z,5µm,22.0s
BW06 Boulder Array 93.46 46 P **P 14 48 04.0 +0.6**
baz=250,SNR=10
BW06 Boulder Array 93.46 46 *e*P **P 14 48 03.3 -0.1**
comp=Z,22nm,1.5s
BW06 LR LR
comp=Z,2µm,20.0s
PD31 Pinedale Array 93.46 46 *e*P **P 14 48 03.2 -0.2**
PDAR Pinedale Array 93.46 46 P **P 14 48 03.2 -0.2**
comp=Z,5.4nm,1.2s,baz=224,slow=3.9,SNR=22
PDAR PP **PP 14 51 45.5 -2.6**
comp=Z,0.4nm,0.8s,baz=258,slow=4.5,SNR=3.2
PDAR PKKPbc **PKKPdf 15 05 08.6 -1.7**
comp=Z,0.4nm,0.7s,baz=104,slow=1.8,SNR=5.6
LKWY Lake 93.51 44 PFAKE 14 48 10.0 +6.4
LKWY LR LR
comp=Z,5µm,22.0s
O20A White River Ci 93.51 49 P **P 14 48 04.1 +0.4**
baz=251
O20A White River Ci 93.51 49 *e*P **P 14 48 03.6 0.0**
comp=Z,29nm,1.2s
O20A LR LR
comp=Z,6µm,22.0s
VIS Vishakhapatnam 93.56 287 *e*P **P 14 48 03.6 -0.5**
TX31 Lajitas Ar. Si 93.70 61 *e*P **P 14 48 04.7 +0.1**
TXAR Lajitas Array 93.70 61 P **P 14 48 05.7 +1.1**
comp=Z,10nm,0.9s,baz=235,slow=4.4,SNR=89
TXAR LR LR 15 21 18.9
comp=Z,4µm,21.8s,baz=0.0,slow=30
S22A 4UR Ranch, Cre 93.78 52 P **P 14 48 06.1 +1.0**
baz=252
S22A 4UR Ranch, Cre 93.78 52 *e*P **P 14 48 06.0 +1.0**
comp=Z,33nm,1.4s
S22A LR LR
comp=Z,3µm,21.0s
INK Inuvik 93.79 18 P **P 14 48 02.7 -1.3**
comp=Z,9.6nm,1.0s,baz=222,slow=6.3,SNR=10

INK Inuvik 93.79 18 *e*P **P 14 48 03.1 -0.9**
INK Inuvik 93.79 18 *e*P **P 14 48 03.9 0.0**
comp=Z,19nm,1.1s
INK LR LR
comp=Z,4µm,21.0s
SMCO Snowmass 94.12 50 *e*P **P 14 48 06.9 +0.1**
comp=Z,11nm,1.1s
SMCO LR LR
comp=Z,3µm,22.0s
GCMT Greyclift 94.42 43 *e*P **P 14 48 08.5 +0.9**
RLMT Red Lodge 94.45 44 P **P 14 48 08.8 +0.9**
baz=250,SNR=6.8
RLMT Red Lodge 94.45 44 *e*P **P 14 48 09.1 +1.2**
comp=Z,22nm,1.4s
RLMT LR LR
comp=Z,6µm,21.0s
UNM Universidad Na 94.74 71 PFAKE 14 48 20.0 +10
UNM LR LR
comp=Z,2µm,21.0s
SDCO Great Sand Dun 94.78 52 P **P 14 48 09.9 +0.2**
baz=252
SDCO Great Sand Dun 94.78 52 *e*P **P 14 48 10.4 +0.7**
comp=Z,13nm,1.5s
SDCO LR LR
comp=Z,3µm,21.0s
TLIG Tlapa 94.80 73 *e*P **P 14 48 11.7 +1.7**
comp=Z,56nm,1.4s
PVM Polavaram 94.99 286 *e*P **P 14 48 09.0 -1.6**
PVM *e*SKSac **SKSac 14 58 47.2 +1.7**
MDRS Chennai 95.10 282 *e*P **P 14 48 09.5 -1.7**
EGMT Eagleton 95.11 41 P **P 14 48 11.4 +0.7**
baz=250
EGMT Eagleton 95.11 41 *e*P **P 14 48 11.5 +0.8**
comp=Z,20nm,1.4s
EGMT LR LR
comp=Z,2µm,20.0s
ISCO Idaho Springs 95.32 50 P **P 14 48 12.8 +0.7**
baz=252
ISCO Idaho Springs 95.32 50 *e*P **P 14 48 13.2 +1.1**
ISCO pmax pmax
comp=Z,4.0nm,1.1s
ISCO MLR MLR
comp=Z,2µm,21.0s
ISCO Idaho Springs 95.32 50 *e*P **P 14 48 13.2 +1.1**
comp=Z,4.5nm,1.1s
ISCO LR LR
comp=Z,2µm,21.0s
Q24A Divide 95.41 51 P **P 14 48 13.3 +0.8**
baz=253
Q24A Divide 95.41 51 PFAKE 14 48 20.0 +7.5
Q24A LR LR
comp=Z,2µm,22.0s
N23A Red Feather La 95.41 49 P **P 14 48 13.3 +0.8**
baz=252,SNR=7.3
N23A Red Feather La 95.41 49 *e*P **P 14 48 12.9 +0.5**
comp=Z,18nm,1.2s
N23A LR LR
comp=Z,7µm,21.0s
T25A Trinidad 95.42 53 *e*P **P 14 48 12.8 +0.3**
comp=Z,15nm,1.5s
T25A LR LR
comp=Z,2µm,22.0s
K22A Casper 95.53 47 P **P 14 48 13.2 +0.4**
baz=252
K22A Casper 95.53 47 *e*P **P 14 48 12.9 +0.1**
comp=Z,22nm,1.4s
K22A LR LR
comp=Z,2µm,20.0s
MSTX Muleshoe 95.78 56 P **P 14 48 14.4 +0.3**
baz=254
MSTX Muleshoe 95.78 56 *e*P **P 14 48 14.3 +0.1**
comp=Z,19nm,1.0s
MSTX LR LR
comp=Z,3µm,20.0s
SKHT Srikalahasti 95.79 283 *e*P **P 14 48 13.5 -0.8**
SKHT *e*SKSac **SKSac 14 58 48.8 -1.1**
PHWY Pilot Hill 95.88 49 *e*P **P 14 48 14.6 0.0**
comp=Z,13nm,1.4s
PHWY LR LR
comp=Z,6µm,21.0s
ADKI Addanki 96.12 285 *e*P **P 14 48 15.3 -0.6**
ADKI *e*SKSac **SKSac 14 58 51.3 -0.3**
832A Faith Ranch, C 96.51 63 P **P 14 48 18.2 +0.8**
baz=254,SNR=7.2
DGAR Diego Garcia 96.58 260 PFAKE 14 48 30.0 +12
DGAR LR LR
comp=Z,6µm,20.0s
AMTX Amarillo 96.90 56 P **P 14 48 19.3 +0.2**
baz=254
AMTX Amarillo 96.90 56 *e*P **P 14 48 19.6 +0.4**
comp=Z,17nm,1.1s
AMTX LR LR
comp=Z,1µm,20.0s
933A Laredo 96.92 63 P **P 14 48 20.5 +1.2**
baz=254,SNR=5.2
NJS Nagarjunasagar 96.93 285 *e*P **P 14 48 17.9 -1.6**
NJS *e*SKSac **SKSac 14 58 57.0 +1.2**
TRD Trivandrum 96.94 277 *ex* P 14 48 13.3 -6.3
TRD IAMs_20 IAMs_20 15 31 11.0
comp=Z,3µm,23.2s
RCLA Racherla 96.96 284 *e*P **P 14 48 18.4 -1.2**
RCLA *e*SKSac **SKSac 14 58 54.8 -1.2**
LAO LASA Array 96.97 43 P **P 14 48 19.7 +0.6**
baz=253
LAO LASA Array 96.97 43 *e*P **P 14 48 20.5 +1.4**
comp=Z,28nm,1.4s
LAO LR LR
comp=Z,5µm,20.0s
SRLM Srisailam 97.19 285 *e*P **P 14 48 19.1 -1.6**
SRLM *e*SKSac **SKSac 14 59 00.3 +3.1**
JCT Junction City 97.24 60 *e*P Pdif 14 48 21.3 +0.5
JCT pmax pmax
comp=Z,15nm,1.3s
JCT MLR MLR
comp=Z,4µm,22.0s
JCT Junction City 97.24 60 *e*P Pdif 14 48 21.2 +0.4
comp=Z,16nm,1.3s
JCT LR LR
comp=Z,4µm,22.0s
034A Hebbronville 97.28 64 P **P 14 48 20.9 -0.1**
baz=255
KSCO Kaye Shedlock' 97.30 52 PFAKE 14 48 30.0 +9.0
KSCO LR LR
comp=Z,3µm,22.0s
WMQ Urumqi 97.41 313 ⇓ *i*P Pdif 14 48 21.8 +0.5
WMQ sP sP 14 48 31.5 +0.1
WMQ PP **PP 14 52 18.3 -0.2**
WMQ S **S 14 59 41.8 -2.6**
WMQ SS **SS 15 06 24.3 +0.6**
WMQ pmax pmax
comp=Z,50nm,1.5s
WMQ pmax pmax
comp=Z,650nm,5.1s
WMQ LR LR
comp=Z,3µm,20.8s
WMQ LR LR
comp=Z,2µm,21.8s
WMQ LR LR
comp=Z,2µm,25.4s
PAYG Puerto Ayora 97.48 93 PFAKE 14 48 30.0 +7.7
PAYG LR LR
comp=Z,1µm,19.0s
RPR Rampur 97.56 287 *e*P **P 14 48 21.1 -1.3**
RPR *e*SKSac **SKSac 14 58 59.8 +0.8**
934A Benavides 97.56 64 P Pdif 14 48 22.3 0.0
baz=255
RSSD Black Hills 97.70 46 P Pdif 14 48 22.9 +0.1
baz=254
RSSD Black Hills 97.70 46 *e*P **P 14 48 22.2 -0.5**
RSSD pmax pmax
comp=Z,13nm,1.1s
RSSD MLR MLR
comp=Z,2µm,21.0s
RSSD Black Hills 97.70 46 *e*P **P 14 48 22.2 -0.5**
comp=Z,13nm,1.1s
RSSD LR LR
comp=Z,2µm,21.0s
YKA Yellowknife Ar 97.71 27 P **P 14 48 21.8 -0.1**
comp=Z,11nm,0.9s,baz=251,slow=4.6,SNR=17
YKA LR LR 15 25 53.0
comp=Z,462nm,20.3s,baz=180,slow=31
YKB5 Yellowknife Ar 97.71 27 *e*P **P 14 48 21.7 -0.3**
YKW3 Yellowknife Ar 97.73 27 *e*P **P 14 48 22.0 -0.1**
comp=Z,32nm,1.2s
HYB Hyderabad 97.86 286 *e*P **P 14 48 22.5 -1.3**
HYBB Hyderabad (bro 97.86 286 *e*P **P 14 48 21.4 -2.4**

HYBB eSKSac **SKSac** **14 59 01.6 +1.0**
KRAR Krasnoyarsk 97.89 326 *e*P Pdif 14 48 24.7 +1.7
433A Art 97.90 60 P **P** **14 48 23.4 -0.3**
baz=255,SNR=7.7
ABTX Abilene, Hawle 97.94 58 P Pdif 14 48 24.3 +0.5
baz=255,SNR=5.1
ABTX Abilene, Hawle 97.94 58 *e*P **P** **14 48 23.8 0.0**
comp=Z,26nm,1.3s
ABTX LR LR
comp=Z,2μm,20.0s
KVTX Kingsville 98.09 64 PFAKE 14 48 40.0 +15
KVTX LR LR
comp=Z,2μm,22.0s
333A Richland Sprin 98.14 60 P **P** **14 48 24.5 -0.2**
baz=255
534A Blanco 98.23 61 P Pdif 14 48 25.7 +0.5
baz=255
OGNE Ogallala 98.26 50 PFAKE 14 48 40.0 +15
OGNE LR LR
comp=Z,4μm,22.0s
NGP Nagpur 98.38 290 *e*P Pdif 14 48 26.3 +0.2
233A Rising Star 98.39 59 P Pdif 14 48 26.0 +0.1
baz=255
URV Uravakonda 98.40 283 *e*P **P** **14 48 25.0 -1.2**
URV eSKSac **SKSac** **14 59 06.2 +2.8**
SRSP Sriramsagar 98.44 287 *e*P **P** **14 48 25.3 -1.0**
SRSP eSKSac **SKSac** **14 59 06.0 +2.5**
133A Hamilton Ranch 98.52 59 P Pdif 14 48 26.7 +0.3
baz=255
PLCA Paso Flores 98.56 137 P Pdif 14 48 26.8 +0.2
comp=Z,8.3nm,1.2s,baz=262,slow=6.5,SNR=4.7
PLCA PKKPbc **PKKPbc** **15 04 56.0 -0.7**
comp=Z,2.6nm,1.0s,baz=117,slow=9.0,SNR=3.8
PLCA Paso Flores 98.56 137 *e*P **P** **14 48 25.6 -1.1**
comp=Z,65nm,1.8s
PLCA PKKPbc **PKKPbc** **15 04 56.0 -0.7**
434A Burnet 98.60 60 P Pdif 14 48 27.2 +0.3
baz=255
X32A Elmer 98.69 57 P Pdif 14 48 27.3 +0.2
baz=255,SNR=5.5
334A Lometa 98.76 60 P **P** **14 48 27.5 0.0**
baz=255
DGMT Dagmar 98.79 42 PFAKE 14 48 40.0 +13
DGMT LR LR
comp=Z,2μm,20.0s
Z33A Whitaker Ranch 98.82 58 P Pdif 14 48 27.9 +0.2
baz=256
W32A Sentinel 98.89 56 P **P** **14 48 28.0 0.0**
baz=256,SNR=9.5
EFI East Falkland 99.00 151 PFAKE 14 48 40.0 +12
EFI LR LR
comp=Z,2μm,22.0s
234A Clairette 99.01 59 P **Pdif** **14 48 28.6 0.0**
baz=256
WMOK Wichita Mounta 99.17 57 P **Pdif** **14 48 29.1 -0.2**
baz=256
WMOK Wichita Mounta 99.17 57 PFAKE 14 48 40.0 +11
WMOK LR LR
comp=Z,2μm,19.0s
134A White-Moore Ra 99.20 59 P **Pdif** **14 48 30.2 +0.8**
baz=256
CBKS Cedar Bluff 99.43 52 PFAKE 14 48 40.0 +10
CBKS LR LR
comp=Z,3μm,22.0s
W33A Caddo, Fort Co 99.52 56 P **Pdif** **14 48 31.0 +0.2**
baz=256
WHTX Lake Whitney, 99.57 59 PFAKE 14 48 40.0 +8.9
WHTX LR LR
comp=Z,3μm,21.0s
KLRI Killari 99.82 286 *e*Pdif **Pdif** **14 48 31.4 -1.1**
KLRI eSKSac **SKSac** **14 59 08.9 -1.6**
W34A Bridge Creek, 100.09 56 PFAKE 14 48 50.0 +17
W34A LR LR
comp=Z,2μm,20.0s
R32A Long Quarter, 100.11 53 P **Pdif** **14 48 33.8 +0.4**
baz=256
BHPL Bhopal 100.36 291 *e*P **Pdif** **14 48 34.4 -0.4**
CCIG Comitan 100.39 76 PFAKE 14 48 50.0 +15
CCIG LR LR
comp=Z,2μm,22.0s
V34A Guthrie 100.43 56 PFAKE 14 48 50.0 +15
V34A LR LR
comp=Z,2μm,21.0s
X35A Drake 100.53 57 P **Pdif** **14 48 35.5 +0.2**
baz=257
U34A Anderson Ranch 100.56 55 PFAKE 14 48 50.0 +15
U34A LR LR
comp=Z,2μm,20.0s
BGNE Belgrade 101.22 50 PFAKE 14 48 50.0 +12
BGNE LR LR
comp=Z,4μm,22.0s
DDI Dehra Dun 101.47 298 *e*P **Pdif** **14 48 39.3 -0.3**
MDND Maddock 101.62 43 PFAKE 14 48 50.0 +10
MDND LR LR
comp=Z,5μm,22.0s
FFC Flin Flon 101.68 36 PFAKE 14 48 50.0 +10
FFC LR LR
comp=Z,4μm,22.0s
ZALV Zalesovo Beam 101.80 323 P **Pdif** **14 48 40.4 -0.1**
comp=Z,14nm,1.0s,baz=104,slow=4.7,SNR=38
ZALV PP **PP** **14 52 52.2 +0.7**
comp=Z,0.6nm,0.2s,baz=87,slow=7.6,SNR=3.5
TUL1 Leonard 101.82 56 PFAKE 14 48 50.0 +9.0
TUL1 LR LR
comp=Z,2μm,20.0s
NATX Nacogdoches 101.83 60 PFAKE 14 48 50.0 +8.9
NATX LR LR
comp=Z,3μm,20.0s
MKAR Makanchi Array 101.84 315 P **Pdif** **14 48 41.5 +0.7**
comp=Z,5.6nm,0.8s,baz=100,slow=6.5,SNR=46
MKAR PP **PP** **14 52 50.6 -1.5**
comp=Z,1.5nm,1.0s,baz=112,slow=8.0,SNR=3.7
MKAR PKKPbc **PKKPbc** **15 04 43.9 -3.9**
comp=Z,0.5nm,0.7s,baz=264,slow=3.7,SNR=4.0
KSU1 Kansas State U 101.87 53 PFAKE 14 48 50.0 +8.9
KSU1 LR LR
comp=Z,2μm,20.0s
MAKZ Makanchi 102.05 315 PFAKE 14 48 50.0 +8.2
MAKZ LR LR
comp=Z,2μm,22.0s
SMLA Simla 102.40 299 *e*P **Pdif** **14 48 44.7 +1.0**
SMLA IAMs_20 IAMs_20 15 40 44.2
comp=Z,1μm,16.4s
POO Poona 102.47 286 *e*P **Pdif** **14 48 43.1 -1.2**
POO IAMs_20 IAMs_20 15 39 48.3
comp=Z,943nm,14.5s
ECSD EROS Data Cent 102.81 48 PFAKE 14 49 00.0 +15
ECSD LR LR
comp=Z,4μm,22.0s
NVS Novosibirsk 102.90 324 *e*P **Pdif** **14 48 45.5 +0.2**
NVS *e* 14 52 57.2
NVS *e* 14 59 25.2
NVS pmax pmax
comp=E,16nm,1.8s
MIAR Mount Ida 103.31 58 PFAKE 14 49 00.0 +12
MIAR LR LR
comp=Z,3μm,21.0s
DHRM DHARAMSHALA 103.36 300 *e*P **Pdif** **14 48 48.8 +0.5**
HHAR Hobbs 103.36 56 PFAKE 14 49 00.0 +12
HHAR LR LR
comp=Z,2μm,22.0s
WLAR White Oak Lake 103.51 59 PFAKE 14 49 00.0 +11
WLAR LR LR
comp=Z,3μm,20.0s
NRIK Noril'sk 103.78 339 Pdiff **Pdif** **14 48 48.9 -0.1**
comp=Z,8.3nm,1.0s,baz=95,slow=4.2,SNR=9.3
NRIK PP **PP** **14 53 04.9 -1.1**
comp=Z,1.0nm,0.4s,baz=133,slow=6.6,SNR=4.9
AGMN Agassiz Nation 104.17 43 PFAKE 14 49 00.0 +8.9
AGMN LR LR
comp=Z,5μm,22.0s
UALR University of 104.35 58 PFAKE 14 49 00.0 +7.8
UALR LR LR
comp=Z,2μm,20.0s
X301 Greenbrier Sit 104.39 57 PFAKE 14 49 00.0 +7.6
X301 LR LR
comp=Z,3μm,20.0s
X201 Greenbrier Sit 104.43 57 PFAKE 14 49 00.0 +7.4
X201 LR LR
comp=Z,3μm,21.0s
ULM Lac du Bonnet 104.48 41 PFAKE 14 49 00.0 +7.5
ULM LR LR
comp=Z,2μm,20.0s
WHAR Wooly Hollow 104.49 57 PFAKE 14 49 00.0 +7.1
WHAR LR LR
comp=Z,3μm,20.0s

CCAR Cane Creek 104.65 59 PFAKE 14 49 10.0 +16
CCAR LR LR
comp=Z,3μm,21.0s
KURK Kurchatov 104.94 319 *e*P **Pdif** **14 48 54.4 -0.1**
KURK 14 53 14.4
KURK pmax pmax
comp=Z,110nm,1.6s
KURK MLR MLR
comp=Z,2μm,20.0s
KURK Kurchatov 104.94 319 *e*Pdif **Pdif** **14 48 54.4 -0.1**
comp=Z,110nm,1.6s
KURK PP **PP** **14 53 14.4 -0.7**
KURK PKKPbc **PKKPbc** **15 04 36.8 -1.8**
KURK LR LR
comp=Z,2μm,20.0s
SCIA State Center 104.94 50 PFAKE 14 49 10.0 +15
SCIA LR LR
comp=Z,2μm,22.0s
HOPE Hope Point 104.94 163 PFAKE 14 53 20.0
HOPE LR LR
comp=Z,2μm,20.0s
KURBB Kurchatov Arra 104.98 319 Pdiff **Pdif** **14 48 54.2 -0.5**
comp=Z,0.8nm,0.9s,baz=110,slow=3.5,SNR=8.0
KURBB PP **PP** **14 53 14.4 -1.0**
comp=Z,6.2nm,1.1s,baz=103,slow=5.7,SNR=7.4
KURBB PKKPbc **PKKPbc** **15 04 36.8 -1.7**
comp=Z,2.3nm,1.0s,baz=278,slow=3.9,SNR=9.9
VBMS Vicksburg 105.37 61 PFAKE 14 53 20.0
VBMS LR LR
comp=Z,2μm,20.0s
TRQA Tornquist 105.56 139 PFAKE 14 53 20.0
TRQA LR LR
comp=Z,1μm,21.0s
SPMN Marine on St. 105.76 47 PFAKE 14 53 20.0
SPMN LR LR
comp=Z,2μm,21.0s
PBMO Poplar Bluff 106.23 56 PFAKE 14 53 20.0
PBMO LR LR
comp=Z,2μm,21.0s
HDC Heredia 106.36 84 PFAKE 14 53 30.0
HDC LR LR
comp=Z,1μm,21.0s
MET Memphis--Engin 106.36 58 PFAKE 14 53 20.0
MET LR LR
comp=Z,2μm,20.0s
NNA Nana 106.40 108 PFAKE 14 53 30.0
NNA LR LR
comp=Z,1μm,20.0s
AAK Ala-Archa 106.58 310 PFAKE 14 53 20.0
AAK LR LR
comp=Z,2μm,22.0s
FCC Fort Churchill 106.62 33 PFAKE 14 53 20.0
FCC LR LR
comp=Z,3μm,20.0s
OXF Oxford 106.68 58 PFAKE 14 53 20.0
OXF LR LR
comp=Z,2μm,20.0s
PVMO Portageville 106.75 56 PFAKE 14 53 20.0
PVMO LR LR
comp=Z,3μm,21.0s
HALT Halls 106.96 57 PFAKE 14 53 30.0
HALT LR LR
comp=Z,2056μm,20.0s
EYMN Ely 107.01 44 PFAKE 14 53 30.0
EYMN LR LR
comp=Z,6μm,22.0s
RES Resolute Bay 107.26 16 PFAKE 14 53 20.0
RES LR LR
comp=Z,2μm,22.0s
JFWS Jewell Farm 107.27 50 PFAKE 14 53 30.0
JFWS LR LR
comp=Z,5μm,22.0s
BHJ Bhuj 107.33 290 *e*P **Pdif** **14 49 03.8 -1.9**
BHJ IAMs_20 IAMs_20 15 44 54.6
comp=Z,1μm,14.0s
SIUC Southern Illin 107.33 55 PFAKE 14 53 30.0
SIUC LR LR
comp=Z,3μm,20.0s
HDIL Hopedale 107.67 52 PFAKE 14 53 30.0
HDIL LR LR
comp=Z,3μm,20.0s
WVT Waverly 108.20 57 PFAKE 14 53 30.0
WVT LR LR
comp=Z,2μm,21.0s
OLIL Olney 108.34 54 PFAKE 14 53 30.0
OLIL LR LR
comp=Z,2μm,21.0s
COWI Conover 108.42 46 PFAKE 14 53 30.0
COWI LR LR
comp=Z,3μm,21.0s
LRAL Lakeview Retre 108.43 60 PFAKE 14 53 30.0
LRAL LR LR
comp=Z,2μm,21.0s
USIN University of 108.58 55 PFAKE 14 53 30.0
USIN LR LR
comp=Z,2μm,19.0s
OTAV Otavalo 109.04 96 PFAKE 14 53 30.0
OTAV LR LR
comp=Z,1μm,20.0s
SFIN Lafayette 109.31 53 PFAKE 14 53 30.0
SFIN LR LR
comp=Z,2μm,21.0s
PB11 IPOC Station P 109.51 119 PFAKE 14 53 30.0
PB11 LR LR
comp=Z,1μm,19.0s
KKAR Karatay Array 109.54 310 *e*PKiKP **PKiKP** **14 53 16.4 -1.8**
SWET Sewanee 109.61 58 PFAKE 14 53 30.0
SWET LR LR
comp=Z,900nm,20.0s
BLO Bloomington 109.62 54 PFAKE 14 53 30.0
BLO LR LR
comp=Z,3μm,21.0s
WCI Wyandotte Cave 109.69 55 PFAKE 14 53 30.0
WCI LR LR
comp=Z,3μm,20.0s
KBL Kabul 109.73 301 PFAKE 14 53 30.0
KBL LR LR
comp=Z,800nm,21.0s
BVAR Borovoye Array 110.23 321 Pdiff **Pdif** **14 49 18.7 +0.7**
comp=Z,1.7nm,0.9s,baz=76,slow=6.3,SNR=9.5
BVAR PKiKP **PKiKP** **14 53 19.0 -0.2**
comp=Z,1.5nm,0.7s,baz=94,slow=2.1,SNR=8.0
BVAR PKKPab **PKKPab** **15 04 29.8 -0.5**
comp=Z,0.4nm,0.5s,baz=325,slow=40,SNR=3.6
BRVK Borovoye 110.30 321 *i*PKIKP **PKiKP** **14 53 19.2 -0.1**
BRVK pmax pmax
comp=Z,25nm,1.7s
BRVK MLR MLR
comp=Z,3μm,19.0s
BRVK Borovoye 110.30 321 PFAKE 14 53 30.0
BRVK LR LR
comp=Z,1μm,20.0s
CPCT Cooper Cave 110.78 58 PFAKE 14 53 30.0
CPCT LR LR
comp=Z,2μm,20.0s
TIGA Tifton 111.07 62 PFAKE 14 53 30.0
TIGA LR LR
comp=Z,1μm,20.0s
TKL Tuckaleechee C 111.41 58 PFAKE 14 53 30.0
TKL LR LR
comp=Z,2μm,21.0s
GOGA Godfrey 111.42 60 PFAKE 14 53 30.0
GOGA LR LR
comp=Z,3μm,22.0s
GLMI Grayling 111.49 48 PFAKE 14 53 30.0
GLMI LR LR
comp=Z,2μm,19.0s
TZTN Tazewell 111.69 57 PFAKE 14 53 30.0
TZTN LR LR
comp=Z,2μm,20.0s
AAM Ann Arbor 112.05 51 PFAKE 14 53 30.0
AAM LR LR
comp=Z,2μm,20.0s
LPAZ La Paz 112.36 116 PKiKP **PKiKP** **14 53 25.0 -0.1**
comp=Z,1.9nm,1.0s,baz=68,slow=4.6,SNR=5.2
ACSO Alum Creek Sta 112.43 53 PFAKE 14 53 40.0
ACSO LR LR
comp=Z,2μm,20.0s
DWPF Disney Wildern 112.48 66 PFAKE 14 53 40.0
DWPF LR LR
comp=Z,1μm,22.0s
JSC Jenkinsville 113.33 60 PFAKE 14 53 40.0
JSC LR LR
comp=Z,3μm,22.0s
KMSC Kings Mountain 113.35 59 PFAKE 14 53 40.0
KMSC LR LR
comp=Z,3μm,20.0s
MSEY Mahe Island 113.41 257 PFAKE 14 53 40.0
MSEY LR LR
comp=Z,10μm,20.0s
PRAC Prado 113.48 93 PFAKE 14 53 40.0
PRAC LR LR
comp=Z,1μm,22.0s
NHSC New Hope 114.12 61 PFAKE 14 53 40.0 +13
NHSC LR LR
comp=Z,2μm,22.0s
BLA Blacksburg 114.24 56 PFAKE 14 53 40.0 +13
BLA LR LR
comp=Z,2μm,22.0s
ABPO Ambohimpanom 114.66 239 PFAKE 14 53 40.0 +11
ABPO LR LR
comp=Z,4μm,22.0s
MCWV Mont Chateau 114.81 54 PFAKE 14 53 40.0 +12
MCWV LR LR
comp=Z,2μm,20.0s
SADO Sadowa 115.39 48 PFAKE 14 53 40.0 +11
SADO LR LR
comp=Z,3μm,22.0s
SVE Sverdlovsk 115.64 325 *i*PKIKP **PKPdf** **14 53 28.7 -0.7**
SVE pmax pmax
comp=Z,33nm,1.3s
SVE MLR MLR
comp=Z,2μm,20.0s
CPUP Villa Florida 115.73 131 PKP **PKPdf** **14 53 29.8 -0.8**
comp=Z,2.9nm,1.1s,baz=288,slow=6.4,SNR=2.5
CPUP PP **PP** **14 54 30.6 -2.4**
comp=Z,1.3nm,0.8s,baz=237,slow=7.8,SNR=2.6
CPUP PKKPbc **PKKPbc** **15 04 02.6 -0.2**
comp=Z,1.9nm,1.0s,baz=72,slow=9.6,SNR=2.5
RUSC La Rusia 115.81 92 *e*PKPdf **PKPdf** **14 53 31.1 -0.5**
CNNC Cliffs of the 116.17 59 PFAKE 14 53 40.0 +9.0
CNNC LR LR
comp=Z,3μm,20.0s
SSPA Standing Stone 116.33 53 PFAKE 14 53 40.0 +8.8
SSPA LR LR
comp=Z,2μm,19.0s
VLDQ Val d'Or 116.43 44 PFAKE 14 53 40.0 +8.9
VLDQ LR LR
comp=Z,3μm,22.0s
CBN Corbin Frederi 116.69 55 PFAKE 14 53 40.0 +8.0
CBN LR LR
comp=Z,2μm,20.0s
ARU Arti 116.83 325 PKP **PKPdf** **14 53 30.5 -1.1**
comp=Z,14nm,0.9s,baz=84,slow=2.1,SNR=5.7
ARU PKKPbc **PKKPbc** **15 03 55.3 -4.4**
comp=Z,2.4nm,0.7s,baz=280,slow=7.17,SNR=4.1
ARU Arti 116.83 325 *i* PKIKP **PKPdf** **14 53 30.7 -1.0**
ARU 14 54 41.3
ARU PPP PPP 14 57 05.6
ARU 15 00 22.5
ARU SP SP 15 04 26.8 +6.7
ARU MLR MLR
comp=Z,2μm,21.0s
PLVO Plevna 116.85 48 PFAKE 14 53 40.0 +7.9
PLVO LR LR
comp=Z,4μm,22.0s
ABKAR Akbulak array 116.91 317 *e*PKPdf **PKPdf** **14 53 30.9 -1.1**
ABKAR *e*PKPdf **PKiKP** **14 53 31.5 -0.6**
SDMD Soldier's Deli 117.13 54 PFAKE 14 53 40.0 +7.2
SDMD LR LR
comp=Z,2μm,21.0s
WSAR Wadi Sarin 117.32 288 PP PP 14 54 43.6 -1.4
comp=Z,5.3nm,1.0s,baz=113,slow=14,SNR=2.2
KBS Kingsbay 117.38 356 IVMs_BB IVMs_BB 15 32 35.6
comp=Z,711nm,27.8s
KBS Kingsbay 117.38 356 PFAKE 14 53 40.0 +7.8
KBS LR LR
comp=Z,1μm,21.0s
MVL Millersville 117.50 53 PFAKE 14 53 50.0 +17
MVL LR LR
comp=Z,2μm,20.0s
BINY Binghamton 117.74 51 PFAKE 14 53 50.0 +16
BINY LR LR
comp=Z,2μm,20.0s
KSPA Keystone Colle 117.92 52 PFAKE 14 53 50.0 +16
KSPA LR LR
comp=Z,3μm,22.0s
AKTO Aktyubinsk 118.03 318 PKP **PKPdf** **14 53 34.0 -0.2**
comp=Z,5.6nm,0.9s,baz=83,slow=2.5,SNR=16
AKTO PP **PP** **14 54 48.8 -0.2**
comp=Z,0.9nm,0.4s,baz=60,slow=13,SNR=3.6
AKTO PKKPbc **PKKPbc** **15 03 49.8 -5.4**
comp=Z,1.0nm,0.6s,baz=254,slow=4.0,SNR=4.2
HOPEN Hopen 118.13 352 *e*PP PP 14 54 48.6 -0.2
HOPEN IVMs_BB IVMs_BB 15 36 27.4
comp=Z,1μm,25.4s
PSUB Penn St. - Bra 118.20 54 PFAKE 14 53 50.0 +15
PSUB LR LR
comp=Z,3μm,20.0s
LUPA Lehigh Univers 118.25 53 PFAKE 14 53 50.0 +15
LUPA LR LR
comp=Z,4μm,22.0s
LONY Lake Ozonia 118.64 48 PFAKE 14 53 50.0 +14
LONY LR LR
comp=Z,4μm,22.0s
GEYT Alibeck 118.75 304 PKP **PKPdf** **14 53 35.3 -0.7**
comp=Z,4.5nm,0.9s,baz=294,slow=1.5,SNR=12
GEYT PP **PP** **14 54 53.2 -1.4**
comp=Z,2.5nm,0.9s,baz=48,slow=8.9,SNR=3.6
ODNJ Ogdensburg 118.81 52 PFAKE 14 53 50.0 +14
ODNJ LR LR
comp=Z,1μm,21.0s
HSPB Hornsund (broa 118.84 354 *e*PP PP 14 54 53.2 -0.6
HSPB IVMs_BB IVMs_BB 15 32 35.6
comp=Z,515nm,35.9s
BRNJ Basking Ridge 118.86 53 PFAKE 14 53 50.0 +14
BRNJ LR LR
comp=Z,3μm,21.0s
SDV Santo Domingo 118.94 89 *e*PKPdf **PKPdf** **14 53 36.1 -1.1**
FRNY Flat Rock 119.33 48 PFAKE 14 53 50.0 +13
FRNY LR LR
comp=Z,7μm,22.0s
PAL Palisades 119.34 52 PFAKE 14 53 50.0 +13
PAL LR LR
comp=Z,3μm,22.0s
ACCN Adirondack Com 119.39 50 PFAKE 14 53 50.0 +13
ACCN LR LR
comp=Z,4μm,20.0s
TRY Troy 119.43 50 PFAKE 14 53 50.0 +13
TRY LR LR
comp=Z,5μm,21.0s
UOSS Minazif 119.73 289 PFAKE 14 53 50.0 +12
UOSS LR LR
comp=Z,900nm,21.0s
SAML Samuel 119.92 111 PFAKE 14 53 50.0 +11
SAML LR LR
comp=Z,500nm,20.0s
YLE Yale 120.06 52 PFAKE 14 53 50.0 +12
YLE LR LR
comp=Z,2μm,22.0s
HNH Hanover 120.36 49 PFAKE 14 53 50.0 +11
HNH LR LR
comp=Z,6μm,20.0s
SDDR Presa de Saban 120.38 78 PFAKE 14 53 50.0 +10
SDDR LR LR
comp=Z,1μm,22.0s
QUA2 Belchertown 120.43 51 PFAKE 14 53 50.0 +11
QUA2 LR LR
comp=Z,3μm,20.0s
LBNH Lisbon 120.57 48 PFAKE 14 53 50.0 +11
LBNH LR LR
comp=Z,4μm,22.0s
BJO Bjornoya 120.62 352 IVMs_BB IVMs_BB 15 37 59.0
comp=Z,735nm,24.0s
FFD Franklin Falls 120.84 49 PFAKE 14 53 50.0 +10
FFD LR LR
comp=Z,6μm,20.0s
HRV Adam Dziewonsk 121.00 50 PFAKE 14 53 50.0 +10
HRV LR LR
comp=Z,3μm,21.0s
BRYW Bryant College 121.06 51 PFAKE 14 53 50.0 +10
BRYW LR LR
comp=Z,5μm,21.0s
WES Weston 121.19 51 PFAKE 14 53 50.0 +10
WES LR LR
comp=Z,6μm,21.0s
LMQ La Malbaie 121.26 44 PFAKE 14 53 50.0 +9.5
LMQ LR LR
comp=Z,4μm,21.0s
SDD Santo Domingo 121.59 79 PFAKE 14 53 50.0 +8.1

SDD LR LR
comp=Z,1µm,21.0s
SCHQ Schefferville 121.82 35 PKP **PKPdf 14 53 40.4 -1.0**
comp=Z,6.4nm,1.0s,baz=248,slow=11,SNR=2.6
SCHQ Schefferville 121.82 35 PKP **PKPdf 14 53 40.4 -1.0**
SCHQ LR LR
comp=Z,6µm,21.0s
SUMG Summit 121.85 10 *i* P **PKPdf 14 53 42.1 +0.7**
comp=Z,33nm,1.3s
SUMG Summit 121.85 10 *i* PKIKP **PKPdf 14 53 42.1 +0.7**
SUMG pmax pmax
comp=Z,33nm,1.3s
SUMG Summit 121.85 10 *e*PKPdf **PKPdf 14 53 41.1 -0.3**
SUMG LR LR
comp=Z,2µm,20.0s
WVL Waterville 122.15 48 PFAKE 14 53 50.0 +7.7
WVL LR LR
comp=Z,12µm,22.0s
PKME Peaks-Kenny Pk 122.31 47 *e*PKPdf **PKPdf 14 53 41.9 -0.7**
PKME LR LR
comp=Z,3µm,21.0s
LVZ Lovozero 122.35 342 *d* PKIKP **PKPdf 14 53 40.9 -1.1**
LVZ pmax pmax
comp=Z,41nm,1.7s
LVZ MLR MLR
comp=Z,2µm,20.0s
LVZ Lovozero 122.35 342 PFAKE 14 53 50.0 +8.0
LVZ LR LR
comp=Z,2µm,21.0s
APA Apatity 122.93 342 ⇓ *i* PKIKP **PKPdf 14 53 41.7 -1.4**
APA *i* 14 55 19.0
APA *i* 14 58 01.0
APA *i* 15 00 54.0
APA *i* PS **PS 15 05 17.0 -1.0**
APA *i* SS SS 15 12 03.0 -0.6
APA pmax pmax
comp=Z,17nm,1.0s
KEV Kevo 123.05 346 *e*PKIKP **PKPdf 14 53 42.8 -0.4**
KEV MLR MLR
comp=Z,4µm,22.0s
KEV Kevo 123.05 346 *e*PKPdf **PKPdf 14 53 42.8 -0.4**
KEV LR LR
comp=Z,4µm,22.0s
HAMF Hammerfest 123.08 348 *e*P **PKPdf 14 53 41.9 -1.4**
HAMF *e*PP **PP 14 55 22.0 -0.7**
HAMF IVMs_BB IVMs_BB 15 41 33.0
comp=Z,1µm,23.3s
SFJD Kangerlussuaq 123.13 18 PFAKE 14 54 00.0 +17
SFJD LR LR
comp=Z,6µm,21.0s
ARA0 ARCESS Array S 123.56 346 *e*PKPdf **PKPdf 14 53 43.7 -0.5**
ARCES ARCESS Array B 123.56 346 PKP **PKPdf 14 53 43.7 -0.6**
comp=Z,27nm,0.9s,baz=5.7,slow=1.2,SNR=71
ARE0 ARCESS Array S 123.56 346 *e*P **PKPdf 14 53 43.8 -0.5**
ARE0 *e*PP **PP 14 55 25.2 -0.8**
ARE0 IVMs_BB IVMs_BB 15 43 24.2
comp=Z,1µm,24.0s
ARE0 ARCESS Array S 123.56 346 *e*PKPdf **PKPdf 14 53 43.6 -0.7**
ARE0 LR LR
comp=Z,3µm,21.0s
GGN Saint George 124.04 47 PFAKE 14 54 00.0 +14
GGN LR LR
comp=Z,3µm,22.0s
BOSA Boshof 124.16 216 PKP **PKPdf 14 53 45.8 -1.1**
comp=Z,9.5nm,1.1s,baz=16,slow=4.0,SNR=6.1
BOSA Boshof 124.16 216 *e*PKIKP **PKPdf 14 53 46.4 -0.5**
BOSA Boshof 124.16 216 *e*PKPdf **PKPdf 14 53 46.4 -0.5**
SPB Sao Paulo 124.38 135 PFAKE 14 54 00.0 +13
SPB LR LR
comp=Z,2µm,22.0s
KLMR Klimovskoe 124.67 334 *e*PKIKP **PKPdf 14 53 43.2 -3.4**
KLMR pmax pmax
comp=Z,113nm,1.4s
TRO Tromso 124.83 349 *e*P **PKPdf 14 53 45.2 -1.4**
TRO IVMs_BB IVMs_BB 15 40 29.6
comp=Z,812nm,23.4s
SJG San Juan 125.07 80 *e*PKIKP **PKPdf 14 53 47.8 -0.8**
SJG San Juan 125.07 80 *e*PKPdf **PKPdf 14 53 47.8 -0.8**
LMN Caledonia Moun 125.31 46 *e*PKPdf **PKPdf 14 53 47.5 -0.8**
LMN LR LR
comp=Z,3µm,22.0s
HUMP Col San Antoni 125.36 80 *e*PKPdf **PKPdf 14 53 48.3 -0.9**
SCO Scoresbysund 125.97 6 ⇓ *i* P **PKPdf 14 53 49.0 +0.2**
comp=Z,26nm,1.1s
SCO Scoresbysund 125.97 6 ⇓ *i* PKIKP **PKPdf 14 53 49.0 +0.2**
SCO pmax pmax
comp=Z,28nm,1.1s
JMIC Jan Mayen 126.11 0 *e*PP PP 14 55 41.8 -1.1
JMIC IVMsBB 15 35 07.6
comp=Z,752nm,32.1s
PTGA Pitinga 126.14 104 *e*PKPdf **PKPdf 14 53 50.1 -0.7**
PTGA LR LR
comp=Z,1µm,20.0s
LOF Lofoten 127.11 350 *e*P **PKPdf 14 53 49.8 -1.3**
LOF *e*PP **PP 14 55 49.2 -0.3**
LOF IVMs_BB IVMs_BB 15 37 46.2
comp=Z,752nm,32.0s
BBSR BB Station 127.14 62 PFAKE 14 54 00.0 +7.8
BBSR LR LR
comp=Z,1µm,22.0s
SABA Saba 127.74 81 PFAKE 14 54 10.0 +16
SABA LR LR
comp=Z,1µm,20.0s
VRH Novokhoporsk 127.84 322 *e*PKIKP **PKPdf 14 53 53.0 +0.1**
VRH pmax pmax
comp=Z,30nm,1.3s
SMRT St. Maarten 127.95 80 PFAKE 14 54 10.0 +16
SMRT LR LR
comp=Z,800nm,22.0s
MOS Moscow 128.09 329 *i* PKIKP **PKPdf 14 53 51.6 -1.7**
MOS *e* 14 54 01.7
MOS *i* 14 55 56.7
MOS pmax pmax
comp=Z,114nm,1.4s
MOS pmax pmax
comp=Z,200nm,1.7s
DGRG David-gareji 128.19 310 P **PKPdf 14 53 54.7 +0.7**
DGRG David-gareji 128.19 310 PKIKP **PKPdf 14 53 54.7 +0.7**
TBLG Delisi 128.60 310 P **PKPdf 14 53 54.6 -0.2**
TBLG Delisi 128.60 310 PKIKP **PKPdf 14 53 54.6 -0.2**
STOK Stokkvaagen 128.81 349 *e*P **PKPdf 14 53 54.1 -0.3**
GNI Garni 128.91 308 PKP **PKPdf 14 53 56.2 +0.6**
comp=Z,6.2nm,0.7s,baz=234,slow=5.4
GNI Garni 128.91 308 *e*PKIKP **PKPdf 14 53 55.9 +0.3**
GNI MLR MLR
comp=Z,1µm,21.0s
GNI Garni 128.91 308 *e*PKPdf **PKPdf 14 53 55.9 +0.3**
GNI LR LR
comp=Z,1µm,21.0s
OBN Obninsk 128.93 329 PKP **PKPdf 14 53 55.0 +0.1**
comp=Z,37nm,0.9s,baz=92,slow=16,SNR=3.7
OBN Obninsk 128.93 329 *d* PKIKP **PKPdf 14 53 54.3 -0.6**
OBN *i* 14 54 03.3
OBN *e* 14 54 07.1
OBN *i* 14 56 06.2
OBN *e*PPP PPP 14 58 49.6
OBN *i* PS **PS 15 06 09.2 -1.9**
OBN *i* SS SS 15 13 21.8 +2.5
OBN *e*SSS SSS 15 18 05.3
OBN pmax pmax
comp=Z,138nm,1.4s
OBN MLR MLR
comp=Z,2µm,21.0s
OBN Obninsk 128.93 329 *e*PKPdf **PKPdf 14 53 54.8 -0.1**
OBN LR LR
comp=Z,2µm,20.0s
GOF Gofitskoye 128.99 315 ⇑ *e*PKIKP **PKPdf 14 53 55.6 +0.2**
GOF pmax pmax
comp=Z,58nm,1.6s
DRLN Deer Lake 129.06 40 PFAKE 14 54 10.0 +15
DRLN LR LR
comp=Z,4µm,22.0s
VORR Voronezh 129.10 324 *e*PKIKP **PKPdf 14 53 53.0 -2.3**
VORR pmax pmax
comp=Z,250nm,1.4s
ANWB Willy Bob 129.12 81 PFAKE 14 54 10.0 +14
ANWB LR LR
comp=Z,600nm,20.0s
VSR Storozhevoye 129.31 323 *e*PKIKP **PKPdf 14 53 56.1 +0.3**
VSR pmax pmax
comp=Z,90nm,1.4s
ONI Oni 129.34 311 P **PKPdf 14 53 56.4 +0.2**
ONI Oni 129.34 311 PKIKP **PKPdf 14 53 56.4 +0.2**
DAMY Dhamar 129.35 275 PFAKE 14 54 10.0 +13
DAMY LR LR
comp=Z,3µm,20.0s
FIA1 FINESS Array S 129.44 339 *e*PKPdf **PKPdf 14 53 55.1 -0.5**
FINES FINESS Array B 129.44 339 PKP **PKPdf 14 53 55.5 -0.2**
comp=Z,31nm,1.1s,baz=82,slow=2.7,SNR=34
KBZ Khabaz 129.45 313 PKP **PKPdf 14 53 56.8 +0.6**
comp=Z,1.6nm,0.5s,baz=90,slow=3.2,SNR=8.1
KVAR Kislovodsk Arr 129.53 313 PKP **PKPdf 14 53 56.9 +0.3**
comp=Z,24nm,1.2s,baz=305,slow=3.3,SNR=13
KVAR PP **PP 14 56 06.6 -0.1**
comp=Z,4.2nm,0.4s,baz=45,slow=8.5,SNR=5.0
KIV Kislovodsk 129.54 313 *d* PKIKP **PKPdf 14 53 55.7 -0.9**
KIV *e* 14 54 03.0
KIV *e* 14 54 08.7
KIV *i* 14 56 07.5
KIV *e*PPP PPP 14 59 02.2
KIV *e* 15 00 53.2
KIV *i* PS **PS 15 06 16.3 -1.0**
KIV *e* 15 07 56.9
KIV *e*SS SS 15 13 27.2 -1.0
KIV *e*SSS SSS 15 18 14.0
KIV pmax pmax
comp=Z,38nm,1.4s
KIV MLR MLR
comp=Z,1µm,21.0s
KIV Kislovodsk 129.54 313 *e*PKPdf **PKPdf 14 53 56.1 -0.4**
KIV LR LR
comp=Z,1µm,20.0s
AKH Akhalkalaki 129.58 310 P **PKPdf 14 53 57.1 +0.2**
AKH Akhalkalaki 129.58 310 PKIKP **PKPdf 14 53 57.1 +0.2**
NEY Neytrino 129.70 312 *c* PKIKP **PKPdf 14 53 58.1 +1.1**
VSU Vasula 131.29 336 *de*PKIKP **PKPdf 14 53 58.9 -0.4**
VSU MLR MLR
comp=Z,4µm,20.0s
BORG Borgarnes 131.57 7 PP PP 14 56 18.0 -0.6
comp=Z,5.7nm,0.7s,baz=341,slow=18,SNR=2.5
KMBO Kilima Mbogo 131.58 253 PKhKP PKPpre 14 53 59.0
comp=Z,1.1nm,0.4s,baz=62,slow=17,SNR=3.1
KMBO Kilima Mbogo 131.58 253 *i* PKIKP **PKPdf 14 54 04.4 +2.8**
KMBO pmax pmax
comp=Z,2.0nm,0.7s
KMBO Kilima Mbogo 131.58 253 PKPpre PKPpre 14 53 59.0
KMBO LR LR
comp=Z,2µm,22.0s
SOC Sochi 131.71 314 *e*PKIKP **PKPdf 14 53 59.1 -1.5**
SOC *e* 14 56 20.7
SOC *e*SS SS 15 13 56.0 +1.5
SOC pmax pmax
comp=Z,15nm,0.6s
SOC MLR MLR
comp=Z,2µm,22.0s
LSZ Lusaka 131.72 230 PFAKE 14 54 10.0 +8.4
LSZ LR LR
comp=Z,3µm,21.0s
ANN Anapa 132.86 316 *i* PKIKP **PKPdf 14 54 01.5 -1.2**
ANN *e* 14 56 27.3
ANN *e*PPP PPP 14 59 21.7
ANN *e* 15 01 10.2
ANN pmax pmax
comp=Z,56nm,1.1s
ANN MLR MLR
comp=N,2µm,24.0s
ANN MLR MLR
comp=Z,1µm,24.0s
ANN MLR MLR
comp=E,777nm,24.0s
MOL Molde 133.22 350 *e*P **PKPdf 14 54 02.4 -0.4**
MOL IVMs_BB IVMs_BB 15 42 17.8
comp=Z,881nm,31.5s
IDID Didziasalis 133.40 333 *e*P **PKPdf 14 54 03.9 +0.5**
IDID IAmb IAmb 14 54 06.3
comp=Z,17nm,1.0s
MICGM Minsk 133.42 332 *e* **PKPdf 14 54 03.0 -0.4**
MICGM *e*LR LR 15 43 20.0
MICGM LRM MLR 15 50 30.0
comp=Z,3.3nm,20.0s
MNK Minsk 133.42 332 *e*PKIKP **PKPdf 14 54 03.0 -0.4**
MNK MLR MLR
comp=Z,3µm,20.0s
DOMB Dombas 133.45 349 *e*P **PKPdf 14 54 02.9 -0.4**
DOMB *e*PP **PP 14 56 29.5 -1.3**
DOMB IVMs_BB IVMs_BB 15 42 41.4
comp=Z,1µm,33.0s
ISAL Salakas 133.50 334 *e*P **PKPdf 14 54 03.9 +0.3**
ISAL IAmb IAmb 14 54 06.6
comp=Z,12nm,1.0s
IIGN Ignalina 133.60 333 *e*P **PKPdf 14 54 04.0 +0.2**
IIGN IAmb IAmb 14 54 06.4
comp=Z,18nm,0.8s
NACGM Naroch 133.65 333 *e*P **PKPdf 14 54 04.0 +0.1**
NACGM *e*LQ LQ 15 37 50.0
NACGM *e*LR LR 15 44 10.0
NACGM LRM MLR 15 48 36.0
comp=Z,4.3nm,25.0s
AKN Aaknes 133.68 350 *e*P **PKPdf 14 54 03.6 -0.2**
AKN *e*PP **PP 14 56 32.5 +0.2**
AKN IVMs_BB IVMs_BB 15 47 23.1
comp=Z,795nm,20.8s
NC303 NORSAR Array S 133.73 347 *e*PKPdf **PKPdf 14 54 03.0 -0.8**
NB2 NORSAR Subarra1 133.93 347 PKPdf **PKPdf 14 54 03.3 -1.0**
comp=Z,20nm,1.4s,baz=31,slow=1.9
NB2 NORSAR Subarra1 133.93 347 PKPdf **PKPdf 14 54 03.3 -1.0**
baz=31,slow=1.9
NOA NORSAR Array B 133.93 347 PKP **PKPdf 14 54 03.5 -0.8**
comp=Z,3.5nm,0.7s,baz=33,slow=2.0,SNR=15
NBO02 NORSAR Array S 134.00 347 *e*PKPpre PKPpre 14 53 57.8
NBO02 *e*PKPdf **PKPdf 14 54 03.5 -0.8**
NBO00 NORSAR Array S 134.03 347 *e*PKPdf **PKPdf 14 54 03.5 -1.0**
NC602 NORSAR Array S 134.13 347 *e*P **PKPdf 14 54 02.0 -2.6**
NC602 *e*PP **PP 14 56 34.0 -1.1**
NC602 IVMs_BB IVMs_BB 15 45 42.1
comp=Z,1µm,28.6s
NC602 NORSAR Array S 134.13 347 *e*PKPdf **PKPdf 14 54 04.1 -0.5**
NAO01 NORSAR Array S 134.18 347 *e*PKPdf **PKPdf 14 54 04.5 -0.2**
FOO Floro 134.54 351 *e*P **PKPdf 14 54 04.4 -0.9**
FOO *e*PP **PP 14 56 37.1 -0.4**
FOO IVMs_BB IVMs_BB 15 41 54.9
comp=Z,833nm,21.0s
OSL Oslo 135.03 347 *e*P **PKPdf 14 54 05.5 -0.8**
AKASG Malin Array Be 135.04 327 PKhKP PKPpre 14 53 54.7
comp=Z,0.1nm,0.3s,baz=61,slow=3.2,SNR=4.3
AKASG PKP **PKPdf 14 54 06.2 -0.4**
comp=Z,21nm,1.1s,baz=49,slow=2.3,SNR=30
AKASG PP **PP 14 56 41.0 -0.3**
comp=Z,2.2nm,1.0s,baz=53,slow=4.8,SNR=4.9
AKASG SKPbc **SKPab 14 57 41.0 +1.2**
comp=Z,1.8nm,0.5s,baz=39,slow=3.7,SNR=5.4
AKBB Malin Array Si 135.04 327 *e*PKIKP PKPpre 14 53 59.5
AKBB *e* 14 54 06.0
AKBB MLR MLR
comp=Z,4µm,22.0s
AKBB Malin Array Si 135.04 327 *e*PKPpre PKPpre 14 53 59.5
AKBB *e*PKPdf **PKPdf 14 54 06.0 -0.6**
AKBB LR LR
comp=Z,4µm,22.0s
KIEV Kiev 135.05 327 *d* PKIKP **PKPdf 14 54 04.9 -1.7**
KIEV MLR MLR
comp=Z,3µm,22.0s
KIEV Kiev 135.05 327 *e*PKPpre PKPpre 14 53 58.9
KIEV *e*PKPdf **PKPdf 14 54 06.0 -0.6**
KIEV LR LR
comp=Z,4µm,22.0s
AK11 Malin Array Si 135.08 327 *e*PKPpre PKPpre 14 53 58.9
AK11 *e*PKPdf **PKPdf 14 54 06.0 -0.7**
SUE Sulen 135.10 351 *e*P **PKPdf 14 54 06.0 -0.4**
SUE *e*PP **PP 14 56 41.4 +0.3**
SUE IVMsBB 15 42 23.6
comp=Z,873nm,34.1s
KONO Kongsberg 135.53 347 *e*P **PKPdf 14 54 06.4 -0.8**
KONO *e*PP **PP 14 56 43.3 -0.7**
KONO IVMs_BB IVMs_BB 15 44 57.8
comp=Z,1µm,29.0s
KONO Kongsberg 135.53 347 *e*PKIKP **PKPdf 14 54 06.7 -0.6**
KONO MLR MLR
comp=Z,2µm,21.0s
KONO Kongsberg 135.53 347 *e*PKPdf **PKPdf 14 54 06.7 -0.6**
KONO LR LR
comp=Z,2µm,21.0s
BER Bergen 135.65 350 *e*P **PKPdf 14 54 07.4 0.0**
BER *e*PP **PP 14 56 45.3 +0.7**
BER IVMs_BB IVMs_BB 15 42 56.9
comp=Z,848nm,28.5s
TSUM Tsumeb 135.85 216 PFAKE 14 54 20.0 +11
TSUM LR LR
comp=Z,3µm,20.0s
ODD1 Odda 135.87 349 *e*P **PKPdf 14 54 07.7 -0.3**
BLS5 Blasjo 136.36 349 *e*P **PKPdf 14 54 08.6 -0.2**
BLS5 *e*PP **PP 14 56 50.5 +1.3**
BLS5 IVMs_BB IVMs_BB 15 43 49.5
comp=Z,944nm,27.8s
KLNR Kaliningrad 136.58 336 ⇓ *i* PKIKP **PKPdf 14 54 10.0 +0.7**
KLNR MLR MLR
comp=Z,882nm,19.0s
SORM Soroca 136.94 324 ⇑ *i* P **PKPdf 14 54 09.6 -0.6**
SORM Soroca 136.94 324 ⇑ PKIKP **PKPdf 14 54 09.7 -0.5**
STAV Stavanger 136.96 349 *e*P **PKPdf 14 54 11.2 +1.3**
STAV *e*PP **PP 14 56 54.3 +1.5**
STAV IVMsBB 15 50 07.5
comp=Z,926nm,25.8s
HOMB Homborsund 137.03 347 *e*P **PKPdf 14 54 09.7 -0.3**
HOMB IVMs_BB IVMs_BB 15 45 54.5
comp=Z,1µm,26.9s
BRTR Keskin Array B 137.25 311 PKhKP PKPpre 14 54 03.9
comp=Z,1.0nm,0.7s,baz=128,slow=2.0,SNR=5.3
BRTR PKP **PKPdf 14 54 10.8 -0.5**
comp=Z,3.4nm,1.0s,baz=125,slow=2.0,SNR=14
BRTR PP **PP 14 56 56.9 +0.7**
comp=Z,8.8nm,1.2s,baz=98,slow=2.7,SNR=8.5
KIS Kishinev 137.29 322 *e*PKP **PKPdf 14 54 10.0 -0.9**
KIS Kishinev 137.29 322 *e*PsP 14 54 25.0
KIS Kishinev 137.29 322 *e*PP PP 14 56 50.0 -5.7
KIS *e*SKP 14 57 40.0
KIS Kishinev 137.29 322 *e*PPP PPP 15 00 02.0
KIS *e*SKS **SKSdf 15 01 20.0 -0.3**
KIS *e*SKKS **SKKSac 15 03 50.0 +0.8**
KIS Kishinev 137.29 322 *e*PKIKP **PKPdf 14 54 10.0 -0.9**
KIS *e* 14 54 25.0
KIS *e* 14 56 50.0
KIS *e* 15 01 20.0
KIS MLR MLR
comp=Z,1µm,20.0s
KIS MLR MLR
comp=Z,2µm,24.0s
MBAR Mbarara 137.69 249 PFAKE 14 54 20.0 +7.1
MBAR LR LR
comp=Z,2µm,19.0s
ANTO Ankara 137.82 311 *e*PKIKP **PKPdf 14 54 12.0 -0.2**
ANTO Ankara 137.82 311 *e*PKPdf **PKPdf 14 54 12.0 -0.2**
BR231 Keskin MP Arra 137.84 311 *e*PKPpre PKPpre 14 54 04.7
BR231 *e*PKPdf **PKPdf 14 54 12.0 -0.3**
BSD Bornholm Skovb 138.07 340 ⇓ *i* P **PKPdf 14 54 12.0 -0.1**
comp=Z,37nm,1.1s
comp=Z,4µm,22.0s
BSD Bornholm Skovb 138.07 340 ⇓ *i* PKIKP **PKPdf 14 54 12.0 -0.1**
BSD pmax pmax
comp=Z,37nm,1.1s
BSD MLR MLR
comp=Z,4µm,22.0s
LVV L'vov 138.23 329 *e*PKIKP **PKPdf 14 54 11.1 -1.5**
LVV *e* 14 56 59.8
LVV *e* 15 01 15.0
LVV *e*PS PS 15 07 12.4 -18
BEL Belsk 138.37 333 *e*PKP **PKPdf 14 54 13.1 +0.3**
BEL Belsk 138.37 333 *e*PKIKP **PKPdf 14 54 13.1 +0.3**
MUD Monsted U'grnd 138.53 345 *i* P **PKPdf 14 54 16.3 +3.5**
MUD Monsted U'grnd 138.53 345 *e*PKIKP **PKPdf 14 54 16.3 +3.5**
CFR Carcaliu 138.63 321 ⇑ *i* P **PKPdf 14 54 13.5 +0.1**
CFR Carcaliu 138.63 321 ⇑ PKIKP **PKPdf 14 54 13.5 +0.1**
GKP Gorka Klasztor 138.74 337 *e*PKP **PKPdf 14 54 13.4 +0.1**
GKP Gorka Klasztor 138.74 337 *e*PKIKP **PKPdf 14 54 13.5 +0.1**
TESR Tescani 138.80 323 ⇓ *i* P **PKPdf 14 54 13.0 -0.7**
TIRR Tirgusor 138.83 319 ⇓ *i* P **PKPdf 14 54 16.3 +2.5**
TIRR Tirgusor 138.83 319 ⇓ PKIKP **PKPdf 14 54 16.3 +2.5**
TIRR Tirgusor 138.83 319 *e*PKPdf **PKPdf 14 54 13.7 -0.1**
TIRR LR LR
comp=Z,2µm,20.0s
PETR Petresti 138.89 322 ⇑ *i* P **PKPdf 14 54 14.5 +0.6**
CSS Mathiatis 138.90 304 PFAKE 14 54 30.0 +16
CSS LR LR
comp=Z,400nm,22.0s
BUR08 Bucovina Ar. S 138.96 325 *e*PKPpre PKPpre 14 54 08.0
BUR08 *e*PKPdf **PKPdf 14 54 14.3 +0.2**
BURAR Bucovina Array 138.97 325 ⇑ *i* P **PKPdf 14 54 16.4 +2.3**
BURAR Bucovina Array 138.97 325 ⇑ PKIKP **PKPdf 14 54 16.4 +2.3**
KWP Kalwaria Pacla 139.00 329 *e*PKP **PKPdf 14 54 16.6 +2.6**
KWP Kalwaria Pacla 139.00 329 *e*PKIKP **PKPdf 14 54 16.6 +2.6**
HARR Harsova 139.01 320 ⇑ *i* P **PKPdf 14 54 15.1 +1.0**
HARR Harsova 139.01 320 ⇑ PKIKP **PKPdf 14 54 15.1 +1.0**
RGN Rugen 139.05 341 PFAKE 14 54 30.0 +16
RGN LR LR
comp=Z,3µm,22.0s
VRI Vrincioaia 139.11 322 ⇓ *i* P **PKPdf 14 54 14.7 +0.4**
VRI Vrincioaia 139.11 322 ⇓ PKIKP **PKPdf 14 54 14.7 +0.4**
PLOR Plostina 139.17 322 ⇑ *i* P PKPpre 14 54 08.9
PLOR Plostina 139.17 322 ⇑ PKIKP PKPpre 14 54 08.9
PSN Preselentsi 139.35 319 *i* P **PKPdf 14 54 14.9 +0.1**
ISR Istrita 139.62 321 ⇑ *i* P **PKPdf 14 54 16.4 +1.1**
ISR Istrita 139.62 321 ⇑ PKIKP **PKPdf 14 54 16.4 +1.1**
MLR Muntele Rosu 139.78 322 PKhKP PKPpre 14 54 09.7
comp=Z,1.0nm,0.8s,baz=45,slow=4.3,SNR=3.6
MLR PKP **PKPdf 14 54 13.5 -2.2**
comp=Z,3.2nm,1.1s,baz=0.0,slow=0.0,SNR=4.9
MLR Muntele Rosu 139.78 322 ⇓ *i* P **PKPdf 14 54 15.2 -0.5**
MLR Muntele Rosu 139.78 322 ⇓ PKIKP **PKPdf 14 54 15.2 -0.5**
MLR Muntele Rosu 139.78 322 PKPpre PKPpre 14 54 09.7
MLR *e*PKPdf **PKPdf 14 54 15.1 -0.5**
MLR LR LR
comp=Z,3µm,21.0s
DOPR Dopca 139.83 323 ⇑ *i* P **PKPdf 14 54 13.9 -1.8**
STHS Stebnicka Huta 139.85 330 *e*PKIKP PKPpre 14 54 10.3
STHS *e* 14 54 18.8
STHS Stebnicka Huta 139.85 330 *e*PKP PKPpre 14 54 10.3
STHS *e* 14 54 18.8
BMR Baia Mare 139.86 326 ⇓ *i* P **PKPdf 14 54 19.6 +4.0**
BMR Baia Mare 139.86 326 ⇓ PKIKP **PKPdf 14 54 19.6 +4.0**
OJC Ojcow 139.97 332 *e*PKP **PKPdf 14 54 15.6 -0.2**
OJC Ojcow 139.97 332 *e*PKIKP **PKPdf 14 54 15.2 -0.5**
OJC Ojcow 139.97 332 *e*PKPdf **PKPdf 14 54 15.2 -0.5**
PRD Provadia 140.08 318 *i* P PKPpre 14 54 07.1
CRVS Cervenica-Dubn 140.10 329 *e*PKHKP PKPpre 14 54 09.0
CRVS *e* 14 54 15.1
CRVS Cervenica-Dubn 140.10 329 *e*PKP PKPpre 14 54 09.0
CRVS *e* 14 54 15.1
CRVS *e* 14 57 54.5
ISP Isparta 140.19 309 PFAKE 14 54 30.0 +13
ISP LR LR
comp=Z,2µm,21.0s
NIE Niedzica 140.30 331 *e*PKPac **PKPdf 14 54 16.4 0.0**
NIE Niedzica 140.30 331 *e*PKIKP **PKPdf 14 54 16.4 0.0**
VOIR 140.33 323 ⇑ *i* P PKPpre 14 54 12.7
VOIR 140.33 323 ⇑ PKIKP PKPpre 14 54 12.7
CJR Cluj-Napoca 140.40 325 ⇑ *i* P PKPpre 14 54 10.0
CJR Cluj-Napoca 140.40 325 ⇑ PKHKP PKPpre 14 54 10.0
ARR Arges 140.61 323 ⇓ *i* P PKPpre 14 54 12.1
DRGR 140.83 326 ⇓ *i* P PKPpre 14 54 11.6
DRGR 140.83 326 ⇓ PKIKP PKPpre 14 54 11.6
KECS Kecovo 140.86 329 *e*PKIKP PKPpre 14 54 12.6
KECS Kecovo 140.86 329 *e*PKP PKPpre 14 54 12.6
LANS Liptovska Anna 140.88 331 *e*PKIKP PKPpre 14 54 13.3
LANS Liptovska Anna 140.88 331 *e*PKP PKPpre 14 54 13.3
LANS *e* 14 54 17.2
JMB Yambol 140.97 318 *i* P PKPpre 14 54 13.0
SZH Strazhica 140.97 319 *i* P **PKPdf 14 54 16.2 -1.6**
OKC Ostrava-Krasne 140.98 333 *e*PKP PKPpre 14 54 12.6
OKC *ex* x 14 54 16.6
OKC *e*PP **PP 14 57 22.8 +4.7**
OKC AMS AMS 15 53 20.0
comp=Z,3µm,23.8s
OKC Ostrava-Krasne 140.98 333 *e*PKIKP PKPpre 14 54 12.6
OKC *e* 14 57 22.8
OKC MLR MLR
comp=Z,3µm,23.8s
KSP Ksiaz 140.99 335 *e*PKPdf PKPpre 14 54 11.7
KSP *e*PKPac 14 54 17.8
KSP Ksiaz 140.99 335 *e*PKIKP **PKPdf 14 54 17.8 +0.2**
DEV Deva 141.28 325 ⇑ *i* P **PKPdf 14 54 19.3 +1.1**
DEV Deva 141.28 325 ⇑ PKIKP **PKPdf 14 54 19.3 +1.1**
MORC Moravsky Berou 141.28 333 ⇓ *i* P **PKPdf 14 54 18.1 -0.1**
MORC Moravsky Berou 141.28 333 ⇓ PKIKP **PKPdf 14 54 18.1 -0.1**
MORC Moravsky Berou 141.28 333 PFAKE 14 54 30.0 +12
MORC LR LR
comp=Z,12µm,21.0s
DPC Dobruska-Polom 141.36 335 *e*PKP PKPpre 14 54 11.6
DPC *ex* x 14 54 18.0
DPC *e*PP **PP 14 57 25.5 +5.0**
DPC AMS AMS 15 55 10.0

comp=Z,4µm,22.5s
DPC Dobruska-Polom 141.36 335 *e*PKHKP PKPpre 14 54 11.6
DPC *e* 14 54 18.0
DPC *e* 14 57 25.5
DPC MLR MLR
comp=Z,4µm,22.5s
UPC Upice 141.37 335 *e*PKP PKPpre 14 54 11.4
UPC *ex* x 14 54 15.5
UPC *e*PP **PP** **14 57 19.9 -0.5**
UPC *e*SS SS 15 15 47.0 -1.3
UPC AMS AMS 15 54 50.0
comp=Z,5µm,22.7s
UPC Upice 141.37 335 *e*PKHKP PKPpre 14 54 11.4
UPC *e* 14 54 15.5
UPC *e* 14 57 19.9
UPC MLR MLR
comp=Z,5µm,22.7s
PVL Pavlikeni 141.38 320 *i* P **PKPdf** **14 54 18.4 -0.1**
PSZ Piszkesteto 141.53 329 ⇑*i*P PKPpre 14 54 15.4
PSZ Piszkesteto 141.53 329 ⇑PKIKP PKPpre 14 54 15.4
PSZ Piszkesteto 141.53 329 *e*PKPpre PKPpre 14 54 14.9
PSZ LR LR
comp=Z,2µm,21.0s
PSZ Piszkesteto 141.53 329 *e*S PKPpre 14 54 13.3
EKA Eskdalemuir Ar 141.62 355 PKhKP PKPpre 14 54 14.8
comp=Z,6.9nm,0.9s,baz=3.8,slow=2.1,SNR=3.7
EKA PKP **PKPdf** **14 54 17.7 -0.9**
comp=Z,12nm,1.0s,baz=356,slow=2.1,SNR=4.1
VYHS Vyhne 141.64 331 *e*PKIKP PKPpre 14 54 14.1
VYHS *e* 14 54 22.1
VYHS Vyhne 141.64 331 *e*PKP PKPpre 14 54 14.1
VYHS *e* 14 54 22.1
ESK Eskdalemuir 141.64 355 PFAKE 14 54 30.0 +11
ESK LR LR
comp=Z,2µm,21.0s
GZR Gura Zlata 141.65 324 ⇑*i*P PKPpre 14 54 14.2
GZR Gura Zlata 141.65 324 ⇑PKHKP PKPpre 14 54 14.2
SIRR Siria 141.72 326 ||*i*P PKPpre 14 54 14.9
CLL Collm 141.87 338 *e*PKPpre PKPpre 14 54 14.0
comp=Z,31nm,1.9s
CLL *i* PKPdf **PKPdf** **14 54 18.4 -0.7**
comp=Z,54nm,1.4s
CLL *i* pPKPdf **PKiKP** **14 54 22.7 +0.7**
CLL *e* 14 54 32.0
CLL *e* 14 56 32.0
CLL *e*PP **PP** **14 57 29.0 +5.7**
CLL *e*PPP PPP 15 00 30.0
CLL *e*PSKS 15 07 45.0
CLL *e*PPS PPS 15 09 48.0
CLL *e* 15 11 30.0
CLL *e*SS SS 15 15 54.0 +0.2
CLL *e*SSS SSS 15 21 12.0
CLL Collm 141.87 338 *e*PKIKP PKPpre 14 54 14.0
CLL *i* 14 54 18.4
CLL pmax pmax
comp=Z,31nm,1.9s
CLL pmax pmax
comp=Z,54nm,1.4s
CLL Collm 141.87 338 *e*PKPpre PKPpre 14 54 12.2
CLL LR LR
comp=Z,2µm,21.0s
BRG Berggiesshubel 141.88 337 *e*PKP PKPpre 14 54 13.6
comp=Z,19nm,1.6s
BRG *i* 14 54 19.8
comp=Z,64nm,1.4s
BRG SS SS 15 17 04.0 +70
comp=N,4µm,25.1s
comp=E,1µm,19.5s
comp=Z,5µm,25.4s
BRG Berggiesshubel 141.88 337 *e*PKIKP PKPpre 14 54 13.6
BRG *i* 14 54 19.8
BRG pmax pmax
comp=Z,19nm,1.6s
BRG MLR MLR
comp=N,4µm,25.1s
BRG MLR MLR
comp=E,1µm,19.5s
BRG MLR MLR
comp=Z,5µm,25.4s
PVCC Panska Ves 141.92 336 *e*PKP PKPpre 14 54 14.1
PVCC *e*PP **PP** **14 57 25.3 +1.6**
PVCC AMS AMS 15 51 10.0
comp=Z,4µm,26.6s
PVCC Panska Ves 141.92 336 *e*PKIKP PKPpre 14 54 14.1
PVCC *e* 14 57 25.3
PVCC MLR MLR
comp=Z,4µm,26.6s
VRAC Vranov 142.04 333 PKhKP PKPpre 14 54 15.0
comp=Z,8.0nm,0.9s,baz=46,slow=2.8,SNR=13
VRAC Vranov 142.04 333 ||*i*P PKPpre 14 54 15.7
VRAC Vranov 142.04 333 ||PKIKP PKPpre 14 54 15.7
ALN Alexandroupoli 142.08 316 *i*P PKPpre 14 54 12.0
KDZ Kurdzhali 142.13 317 *i*P PKPpre 14 54 15.1
BZS Buzias 142.16 325 ||*i*P PKPpre 14 54 15.5
BZS Buzias 142.16 325 ||PKIKP PKPpre 14 54 15.5
BUD Budapest 142.26 329 *e*PKPdf PKPpre 14 54 15.8
GOPC GO Pecny, Ondr 142.32 335 *e*PKP PKPpre 14 54 15.4
GOPC *ex* x 14 54 19.0
GOPC *e*PP **PP** **14 57 29.4 +3.2**
GOPC AMS AMS 15 57 10.0
comp=Z,2µm,20.9s
GOPC GO Pecny, Ondr 142.32 335 *e*PKIKP PKPpre 14 54 15.4
GOPC *e* 14 57 29.4
GOPC MLR MLR
comp=Z,2µm,20.9s
PLD Plovdiv 142.35 318 *i*P PKPpre 14 54 15.6
PRU Pruhonice 142.36 336 *e*PKP PKPpre 14 54 15.8
PRU *ex* x 14 54 19.4
PRU *e*PP **PP** **14 57 31.7 +5.3**
PRU *e*SS SS 15 15 54.7 -5.1
PRU AMS AMS 15 52 00.0
comp=Z,4µm,23.1s
PRU Pruhonice 142.36 336 *e*PKIKP PKPpre 14 54 15.8
PRU *e* 14 57 31.7
PRU *e*SS SS 15 15 54.7 -5.1
PRU MLR MLR
comp=Z,4µm,23.1s
GADA Gvkgeada 142.51 315 P PKPpre 14 54 13.9
TREC Trest 142.52 334 *e*PKP PKPpre 14 54 15.6
TREC AMS AMS 15 55 20.0
comp=Z,4µm,21.5s
TREC Trest 142.52 334 *e*PKIKP PKPpre 14 54 15.6
TREC MLR MLR
comp=Z,4µm,21.5s
RZN Rozhen 142.56 318 *i*P PKPpre 14 54 16.0
MDVR Moldovita 142.62 324 ⇑*i*P PKPpre 14 54 16.6
SMTH Samothraki Isl 142.63 316 P PKPpre 14 54 13.7
PRK Paraskevi 142.69 313 P PKPpre 14 54 15.6
CSKK Cs˙ˇkako 142.71 330 *e*SKSac **PKPdf** **14 54 17.0 -3.8**
BODT Bodrum 142.85 309 P PKPpre 14 54 16.8
BODT Bodrum 142.85 309 P PKPpre 14 54 16.8
SMG Samos 142.94 311 P PKPpre 14 54 16.5
SMG Samos 142.94 311 P PKPpre 14 54 16.5
NKC Novy Kostel 142.95 338 *e*PKP **PKPdf** **14 54 17.5 -3.6**
NKC *ex* x 14 54 21.8
NKC Novy Kostel 142.95 338 *e*PKIKP **PKPdf** **14 54 17.5 -3.6**
NKC *e* 14 54 21.8
NKC *e* 14 54 32.3
SIGR SIGRI 142.99 314 P PKPpre 14 54 16.1
VTS Vitosha 143.03 320 *i*P **PKPdf** **14 54 20.6 -1.1**
LIA Limnos Island 143.14 315 P PKPab 14 54 16.1 -1.1
WTSB Winterswijk 143.19 344 *e*PKP PKPbc 14 54 18.1 -0.3
comp=Z,72nm,1.1s
CHOS Chios island 143.22 312 P PKPab 14 54 15.3 -2.4
MMB Musomiste 143.25 318 *i*P PKPbc 14 54 18.5 -0.4
NVR Nevrokopi 143.28 318 P PKPab 14 54 16.6 -1.3
CONA Conrad Observa 143.41 332 *i*PKPdf PKPbc 14 54 19.6 +0.4
comp=Z,118nm,1.4s,SNR=88
KHC Kasperske Hory 143.42 336 *e*PKP PKPbc 14 54 19.4 +0.2
KHC *e*pPKP **PKiKP** **14 54 25.3 0.0**
KHC *e*SS SS 15 16 20.1 +8.0
KHC AMS AMS 15 51 20.0
comp=Z,5µm,27.0s
KHC Kasperske Hory 143.42 336 *e*PKIKP PKPbc 14 54 19.4 +0.2
KHC *e* 14 54 25.3
KHC MLR MLR
comp=Z,5µm,27.0s
KHC Kasperske Hory 143.42 336 *e*PKPpre PKPpre 14 54 18.9
KHC LR LR
comp=Z,800nm,19.0s
KARP Karpathos 143.52 307 PFAKE 14 54 30.0 +7.4
KARP LR LR
comp=Z,400nm,21.0s

SRS Serrai 143.58 318 P PKPab 14 54 18.2 -0.8
SRS Serrai 143.58 318 PKIKP PKPab 14 54 18.2 -0.8
SRS Serrai 143.58 318 P PKPab 14 54 18.2 -0.8
GEC2 GERESS Array S 143.60 335 *e*PKIKP PKPbc 14 54 19.6 -0.2
GEC2 MLR MLR
comp=Z,2µm,20.0s
GEC2 GERESS Array S 143.60 335 *e*PKPpre PKPbc 14 54 19.6 -0.2
GEC2 LR LR
comp=Z,2µm,20.0s
GERES GERESS Array B 143.60 335 PKP PKPbc 14 54 20.9 +1.1
comp=Z,11nm,0.9s,baz=40,slow=2.3,SNR=74
OUR Ouranopolis 143.73 316 P PKPab 14 54 17.0 -2.5
GRFO Grafenberg 143.84 338 *e*PKIKP PKPbc 14 54 20.6 +0.3
GRFO MLR MLR
comp=Z,2µm,22.0s
GRFO Grafenberg 143.84 338 *e*PKPdf PKPbc 14 54 20.6 +0.3
GRFO LR LR
comp=Z,2µm,22.0s
DSB Dublin 143.88 358 PFAKE 14 54 30.0 +7.4
DSB LR LR
comp=Z,800nm,20.0s
SOH Sokhos 143.89 317 P PKPab 14 54 19.5 -0.7
SOH Sokhos 143.89 317 PKIKP PKPab 14 54 19.5 -0.7
SOH Sokhos 143.89 317 P PKPab 14 54 19.5 -0.7
CWF Charnwood Fore 144.00 353 *e*P **PKPab** **14 54 20.1 -0.1**
CWF AMS AMS 15 45 04.5
comp=Z,1µm,29.4s
CWF Charnwood Fore 144.00 353 *e*PKPdf PKPbc 14 54 20.5 -0.2
CWF LR LR
comp=Z,2µm,20.0s
KNT Kendrikon 144.00 318 P **PKPab** **14 54 19.5 -1.1**
KNT Kendrikon 144.00 318 PKIKP **PKPab** **14 54 19.5 -1.1**
KNT Kendrikon 144.00 318 P **PKPab** **14 54 19.5 -1.1**
DIVS Divibare 144.01 324 P PKPbc 14 54 21.7 +0.5
FOEL Foel Wylfa 144.05 355 *e*P **PKPab** **14 54 18.3 -2.1**
FOEL AMS AMS 15 55 08.8
comp=Z,2µm,23.6s
BEHE Becsehely 144.06 330 ||*e*SKSac **PKPab** **14 54 20.5 -0.1**
ARSA Arzberg 144.07 332 *i* PKPdf PKPbc 14 54 21.9 +0.7
comp=Z,68nm,1.5s,SNR=39
VAY Valandovo 144.12 319 P **PKPab** **14 54 19.2 -1.8**
VAY Valandovo 144.12 319 ||*i*P **PKPab** **14 54 21.0 0.0**
VAY Valandovo 144.12 319 PKIKP **PKPab** **14 54 19.2 -1.8**
VAY Valandovo 144.12 319 P **PKPab** **14 54 19.2 -1.8**
LLW Llanuwchllyn 144.13 355 *e*P **PKPab** **14 54 18.1 -2.5**
PAIG Paliouri 144.13 316 P **PKPab** **14 54 19.9 -1.2**
PAIG Paliouri 144.13 316 PKIKP **PKPab** **14 54 19.9 -1.2**
PAIG Paliouri 144.13 316 P **PKPab** **14 54 19.9 -1.2**
APE Apeiranthos 144.15 310 ⇑*i*P PKPpre 14 54 12.9
APE Apeiranthos 144.15 310 ⇑PKHKP PKPpre 14 54 12.9
MOA Molln 144.16 334 *i* PKPdf PKPbc 14 54 22.1 +0.7
comp=Z,57nm,1.3s,SNR=36
HORT Hortiatis 144.17 317 P **PKPab** **14 54 20.2 -1.1**
HORT Hortiatis 144.17 317 P **PKPab** **14 54 20.2 -1.1**
AOS Alonnisos 144.37 315 P **PKPab** **14 54 19.9 -2.1**
AOS Alonnisos 144.37 315 P **PKPab** **14 54 19.9 -2.1**
HLM1 Long Mynd 144.39 354 *e*P **PKPab** **14 54 20.9 -0.7**
HLM1 AMS AMS 15 46 15.6
comp=Z,2µm,29.5s
GRG Griva 144.43 318 P **PKPab** **14 54 21.4 -0.8**
GRG Griva 144.43 318 PKIKP **PKPab** **14 54 21.4 -0.8**
GRG Griva 144.43 318 P **PKPab** **14 54 21.4 -0.8**
SKO Skopje 144.46 320 P PKPbc 14 54 22.4 -0.1
SKO Skopje 144.46 320 ||*i*P PKPbc 14 54 23.2 +0.7
SKO Skopje 144.46 320 PKIKP PKPbc 14 54 22.4 -0.1
SKO Skopje 144.46 320 P PKPbc 14 54 22.4 -0.1
RCBR Riachuelo 144.48 128 *e*PKPdf **PKPab** **14 54 21.8 -1.4**
RCBR LR LR
comp=Z,2µm,18.0s
SANT Santorini 144.49 309 P **PKPab** **14 54 21.5 -1.1**
SANT Santorini 144.49 309 *e*PKPpre PKPpre 14 54 21.6
SANT LR LR
comp=Z,1µm,21.0s
HGN Heimansgroeve 144.51 344 *e*PKP **PKPab** **14 54 22.0 -0.1**
comp=Z,149nm,1.5s
THR3 Thira Island, 144.52 310 P **PKPab** **14 54 21.4 -1.2**
THR3 Thira Island, 144.52 310 P **PKPab** **14 54 21.4 -1.2**
BEBN Eben Emael 144.55 345 PKP PKPbc 14 54 22.7 +0.3
MEM Membach 144.64 344 PKP PKPbc 14 54 23.0 +0.2
SKIA Skiathos 144.65 315 P **PKPab** **14 54 21.9 -1.2**
PERS Pernice 144.71 332 *i* PKPdf **PKPab** **14 54 22.9 -0.2**
SOKA Soboth 144.72 332 *i* PKPdf **PKPab** **14 54 23.1 -0.1**
comp=Z,195nm,1.4s,SNR=142
XOR Xorichti 144.74 315 P **PKPab** **14 54 21.2 -2.2**
XOR Xorichti 144.74 315 P **PKPab** **14 54 21.2 -2.2**
NEO Neokhori 144.75 315 P **PKPab** **14 54 21.7 -1.8**
NEO Neokhori 144.75 315 P **PKPab** **14 54 21.7 -1.8**
NPS Neapolis 144.81 308 P **PKPab** **14 54 22.9 -0.9**
NPS Neapolis 144.81 308 PKIKP **PKPab** **14 54 22.9 -0.9**
NPS Neapolis 144.81 308 P **PKPab** **14 54 22.9 -0.9**
LIT Litokhoron 144.83 317 P **PKPab** **14 54 22.2 -1.5**
LIT Litokhoron 144.83 317 PKIKP **PKPab** **14 54 22.2 -1.5**
LIT Litokhoron 144.83 317 P **PKPab** **14 54 22.2 -1.5**
UCC Uccle 144.87 346 PKP PKPbc 14 54 23.9 +0.4
FYTO Fytoko, Volos 144.89 316 P **PKPab** **14 54 23.9 0.0**
FYTO Fytoko, Volos 144.89 316 P **PKPab** **14 54 23.9 0.0**
LPW Lampeter 144.89 355 *e*P **PKPab** **14 54 21.2 -2.3**
LPW AMS AMS 15 46 16.2
comp=Z,1µm,31.9s
PTL Penteli 144.91 313 P **PKPab** **14 54 21.7 -2.4**
PTL Penteli 144.91 313 P **PKPab** **14 54 21.7 -2.4**
MCH1 Michaelchurch 144.91 354 *e*P **PKPab** **14 54 22.1 -1.5**
MCH1 AMS AMS 15 46 30.5
comp=Z,2µm,30.2s
LAST Lasithi 144.94 307 P **PKPab** **14 54 22.6 -1.8**
LAST Lasithi 144.94 307 P **PKPab** **14 54 22.6 -1.8**
SISC Sisak 144.98 329 P **PKPdf** **14 54 24.6 -0.1**
BCLA Clavier 144.99 345 PKP PKPbc 14 54 24.1 +0.1
ATHU Athens Univers 145.01 313 P **PKPbc** **14 54 21.6 -2.8**
ATHU Athens Univers 145.01 313 P **PKPbc** **14 54 21.6 -2.8**
MONM Monmouth 145.05 354 *e*P **PKPbc** **14 54 23.5 -0.6**
MONM AMS AMS 15 47 04.9
comp=Z,2µm,33.1s
ATH Athens Observa 145.05 313 P **PKPbc** **14 54 23.0 -1.5**
ATH Athens Observa 145.05 313 PKIKP **PKPbc** **14 54 23.0 -1.5**
ATH Athens Observa 145.05 313 P **PKPbc** **14 54 23.0 -1.5**
VLY Voula,Athens 145.05 313 P **PKPbc** **14 54 22.1 -2.5**
VLY Voula,Athens 145.05 313 P **PKPbc** **14 54 22.1 -2.5**
OBKA Obir 145.07 332 *i* PKPdf **PKPab** **14 54 24.7 +0.2**
comp=Z,88nm,1.1s,SNR=34
MHLO Agia Marina, M 145.13 311 P **PKPbc** **14 54 23.9 -0.9**
KBA Koelnbreinsper 145.15 334 *i* PKPdf **PKPbc** **14 54 24.3 -0.5**
comp=Z,142nm,1.2s,SNR=92
SNF Seneffe 145.15 346 PKP **PKPdf** **14 54 24.8 -0.1**
FNA Florina 145.17 319 P **PKPbc** **14 54 23.4 -1.5**
FNA Florina 145.17 319 PKIKP **PKPbc** **14 54 23.4 -1.5**
FNA Florina 145.17 319 P **PKPbc** **14 54 23.4 -1.5**
KZN Kozani 145.18 318 P **PKPbc** **14 54 23.2 -1.8**
KZN Kozani 145.18 318 PKIKP **PKPbc** **14 54 23.2 -1.8**
KZN Kozani 145.18 318 P **PKPbc** **14 54 23.2 -1.8**
ATAL Atalanti 145.19 315 P **PKPbc** **14 54 22.7 -2.3**
ATAL Atalanti 145.19 315 P **PKPbc** **14 54 22.7 -2.3**
ELSH Elham, Standar 145.19 350 *e*P **PKPbc** **14 54 24.0 -0.5**
ELSH AMS AMS 15 49 31.4
comp=Z,2µm,25.8s
VAL Valentia 145.19 2 ||*i*P **PKPab** **14 54 24.6 0.0**
OLDB Oldbury-Upon-S 145.20 354 *e*P **PKPbc** **14 54 23.0 -1.5**
OLDB AMS AMS 15 46 54.6
comp=Z,2µm,31.3s
LKR Lokris 145.22 314 P **PKPbc** **14 54 23.1 -2.0**
LKR Lokris 145.22 314 P **PKPbc** **14 54 23.1 -2.0**
VILL Villia 145.24 314 P **PKPbc** **14 54 23.1 -2.1**
HGH Gray Hill 145.25 354 *e*P **PKPbc** **14 54 23.8 -0.9**
SWN1 Swindon 145.26 353 *e*P **PKPbc** **14 54 23.8 -1.0**
SWN1 AMS AMS 15 46 58.2
comp=Z,2µm,27.6s
OZLJ Ozalj 145.31 330 P **PKPbc** **14 54 24.8 -0.3**
STU Stuttgart 145.32 340 *e*PKIKP **PKPdf** **14 54 25.6 +0.3**
STU MLR MLR
comp=Z,2µm,22.0s
STU Stuttgart 145.32 340 *e*PKPbc **PKPdf** **14 54 25.6 +0.3**
STU LR LR
comp=Z,2µm,22.0s
IDI Anoyia 145.34 308 PKPbc **PKPbc** **14 54 25.5 -0.2**
baz=76,slow=4.2
IDI Anoyia 145.34 308 P **PKPbc** **14 54 24.6 -1.1**
IDI Anoyia 145.34 308 *e*PKPbc **PKPbc** **14 54 25.0 -0.7**
IDI LR LR
comp=Z,1µm,22.0s
OHR Ohrid 145.35 320 ||*i*P **PKPab** **14 54 25.6 -0.1**
MYKA Terra Mystica 145.37 333 *i* PKPdf **PKPbc** **14 54 24.8 -0.6**
comp=Z,248nm,1.6s,SNR=118

WOL Wolverton 145.39 352 *e*P **PKPbc** **14 54 24.0 -1.1**
WOL AMS AMS 15 54 50.9
comp=Z,1µm,24.9s
BATH Bath 145.39 353 *e*P **PKPbc** **14 54 24.4 -0.8**
THL Klokotos Trika 145.42 317 P **PKPbc** **14 54 23.2 -2.5**
LJU Ljubljana 145.43 332 *e*PKPdf **PKPbc** **14 54 25.5 0.0**
WLF Walferdange 145.46 343 PKP **PKPab** **14 54 26.6 +1.0**
WLF Walferdange 145.46 343 *e*PKIKP **PKPab** **14 54 26.3 +0.6**
WLF MLR MLR
comp=Z,4µm,22.0s
WLF Walferdange 145.46 343 *e*PKPbc **PKPab** **14 54 26.3 +0.6**
WLF LR LR
comp=Z,4µm,22.0s
DOU Dourbes 145.46 345 PKP **PKPab** **14 54 25.7 0.0**
VISS Visnje 145.47 331 *i* PKPdf **PKPdf** **14 54 25.1 -0.5**
PDG Podgorica 145.48 323 P **PKPab** **14 54 27.6 +1.6**
PDG Podgorica 145.48 323 ||*i*P **PKPbc** **14 54 25.8 +0.1**
TTG Podgorica 145.48 323 PKIKP **PKPab** **14 54 27.6 +1.6**
TTG Podgorica 145.48 323 P **PKPab** **14 54 27.6 +1.6**
AGG Agios Georgios 145.49 315 P **PKPdf** **14 54 23.8 -2.1**
AGG Agios Georgios 145.49 315 *e*PKIKP **PKPdf** **14 54 24.6 -1.3**
AGG MLR MLR
comp=Z,5µm,22.0s
AGG Agios Georgios 145.49 315 *e*PKPbc **PKPdf** **14 54 24.6 -1.3**
AGG LR LR
comp=Z,5µm,22.0s
BOJS Bojanci 145.49 330 *e*PKPdf **PKPdf** **14 54 25.3 -0.4**
SIVA Sivas 145.51 308 P **PKPdf** **14 54 25.6 -0.4**
SIVA Sivas 145.51 308 P **PKPdf** **14 54 25.6 -0.4**
TMBK Timbaki Herakl 145.52 308 P **PP** **14 57 47.3 +0.9**
LTK Loutraki 145.55 314 P **PKPdf** **14 54 23.1 -2.9**
LTK Loutraki 145.55 314 P **PKPdf** **14 54 23.1 -2.9**
LOUT Loutraki 145.56 313 P **PKPdf** **14 54 23.6 -2.4**
MENF Mencas 145.56 348 PKP **PKPab** **14 54 26.1 +0.1**
LANF Langenberg 145.59 341 PKP **PKPbc** **14 54 25.9 0.0**
HMNX Herstmonceux 145.59 350 *e*P **PKPdf** **14 54 25.3 -0.4**
HMNX AMS AMS 15 50 12.0
comp=Z,1µm,22.3s
DID Didima 145.60 313 P **PKPdf** **14 54 25.4 -0.8**
DID Didima 145.60 313 P **PKPdf** **14 54 25.4 -0.8**
PENT Pentalofos 145.65 318 P **PKPdf** **14 54 25.1 -1.1**
DSF Desfina 145.66 314 P **PKPdf** **14 54 23.6 -2.7**
DSF Desfina 145.66 314 P **PKPdf** **14 54 23.6 -2.7**
WATA Walderalm 145.66 336 *i* PKPab **PKPdf** **14 54 26.2 +0.1**
comp=Z,153nm,1.0s,SNR=55
JAVS Javornik 145.75 332 *i* PKPdf **PKPdf** **14 54 25.5 -0.7**
THAL Thalero 145.75 314 P **PKPdf** **14 54 24.6 -1.7**
ABTA Abfaltersbach 145.76 334 *i* PKPbc **PKPdf** **14 54 25.2 -1.0**
comp=Z,290nm,1.0s,SNR=187
TIR Tirane 145.78 321 ||*i*P **PKPab** **14 54 27.0 -0.1**
TIR Tirane 145.78 321 ||PKIKP **PKPab** **14 54 27.0 -0.1**
TIR Tirane 145.78 321 PFAKE 14 54 40.0 +13
TIR LR LR
comp=Z,3µm,20.0s
VAM Vamos 145.81 309 P **PKPbc** **14 54 27.2 +0.1**
VAM Vamos 145.81 309 PKIKP **PKPbc** **14 54 27.2 +0.1**
VAM Vamos 145.81 309 P **PKPbc** **14 54 27.2 +0.1**
MOTA Moosalm 145.84 336 *i* PKPab **PKPdf** **14 54 26.5 +0.1**
comp=Z,273nm,1.0s,SNR=116
RETA Reutte 145.85 337 *i* PKPab **PKPdf** **14 54 26.1 -0.2**
comp=Z,224nm,1.3s,SNR=102
EVR Evrytania 145.89 316 P **PKPdf** **14 54 24.6 -2.1**
EVR Evrytania 145.89 316 P **PKPdf** **14 54 24.6 -2.1**
KALE Kalithea 145.94 315 P **PKPdf** **14 54 26.0 -0.7**
KALE Kalithea 145.94 315 P **PKPdf** **14 54 26.0 -0.7**
STR Strasbourg 145.95 341 PKP **PKPab** **14 54 27.3 -0.2**
IMMV Iera Moni Meta 145.95 309 P **PKPdf** **14 54 26.8 0.0**
UDBI Udbina 145.96 329 P **PKPdf** **14 54 26.0 -0.6**
SERG Sergoula 145.98 315 P **PKPab** **14 54 28.1 +0.1**
ANX Ano Chora 145.98 315 P **PKPab** **14 54 28.2 +0.1**
BFO Black Forest 145.99 340 *i* PKIKP **PKPdf** **14 54 26.8 +0.3**
BFO Black Forest 145.99 340 *e*PKPdf **PKPdf** **14 54 26.4 -0.1**
BFO LR LR
comp=Z,3µm,22.0s
TRI Trieste 146.03 332 *e*PKIKP **PKPdf** **14 54 25.6 -1.0**
TRI MLR MLR
comp=Z,4µm,22.0s
TRI Trieste 146.03 332 *e*PKPdf **PKPdf** **14 54 25.6 -1.0**
TRI LR LR
comp=Z,4µm,22.0s
HTL Hartland 146.03 356 *e*P **PKPdf** **14 54 25.8 -0.6**
HTL AMS AMS 15 46 48.2
comp=Z,1µm,29.5s
KLV Kalavryta, Ach 146.10 314 P **PKPdf** **14 54 26.3 -0.7**
KLV Kalavryta, Ach 146.10 314 P **PKPdf** **14 54 26.3 -0.7**
LAKA Lakka 146.12 315 P **PKPdf** **14 54 26.0 -1.0**
LAKA Lakka 146.12 315 P **PKPdf** **14 54 26.0 -1.0**
VLI Veliai 146.18 311 P **PKPdf** **14 54 25.8 -1.3**
VLI Veliai 146.18 311 P **PKPdf** **14 54 25.8 -1.3**
PVO Paravola 146.24 315 P **PKPdf** **14 54 27.0 -0.1**
DSL Palaion Diasel 146.25 317 P **PKPdf** **14 54 27.5 +0.3**
DSL Palaion Diasel 146.25 317 P **PKPdf** **14 54 27.5 +0.3**
FETA Feichten 146.25 336 *i* PKPbc **PKPdf** **14 54 26.8 -0.3**
comp=Z,190nm,1.0s,SNR=118
VLX Vlachokerasia 146.27 313 P **PKPdf** **14 54 27.7 +0.3**
VLX Vlachokerasia 146.27 313 P **PKPdf** **14 54 27.7 +0.3**
ANKY Antikythira Is 146.29 310 P **PKPbc** **14 54 28.4 -0.1**
ANKY Antikythira Is 146.29 310 P **PKPbc** **14 54 28.4 -0.1**
KYTH Kithira 146.30 311 P **PKPdf** **14 54 27.5 +0.1**
KYTH Kithira 146.30 311 P **PKPdf** **14 54 27.5 +0.1**
DAVA Damuels 146.35 337 *i* PKPbc **PKPdf** **14 54 26.8 -0.4**
comp=Z,325nm,1.7s,SNR=102
NVLJ Novalja 146.37 329 P **PKPdf** **14 54 26.2 -0.9**
DRO Drossia 146.45 314 P **PKPdf** **14 54 27.8 +0.2**
ECH Echery 146.47 341 PKP **PKPdf** **14 54 27.2 -0.1**
PDO Prodromos 146.48 316 P **PKPdf** **14 54 27.3 -0.3**
IGT Igoumenitsa 146.53 318 P **PKPdf** **14 54 27.7 +0.1**
IGT Igoumenitsa 146.53 318 PKP2 **PKPdf** **14 54 27.7 +0.1**
IGT Igoumenitsa 146.53 318 P **PKPdf** **14 54 27.7 +0.1**
DYA Yadsworthy 146.54 355 *e*P **PKPdf** **14 54 26.7 -0.6**
DYA AMS AMS 15 47 19.2
comp=Z,1µm,27.3s
DYA Yadsworthy 146.54 355 *e*PKPdf **PKPbc** **14 54 28.7 -0.1**
DYA LR LR
comp=Z,1µm,22.0s
SGD Sagiada 146.55 318 P **PKPdf** **14 54 28.2 +0.6**
RLS Riolos of Patr 146.56 315 P **PKPbc** **14 54 29.6 +0.4**
RLS Riolos of Patr 146.56 315 P **PKPbc** **14 54 29.6 +0.4**
AMT Artemida-Makis 146.66 314 P **PKPbc** **14 54 28.0 +0.1**
ITM Ithomi 146.68 313 P **PKPdf** **14 54 28.7 +0.7**
ITM Ithomi 146.68 313 P **PKPdf** **14 54 28.7 +0.7**
LKD2 Lefkada island 146.72 316 P **PKPbc** **14 54 29.2 -0.5**
LKD2 Lefkada island 146.72 316 P **PKPbc** **14 54 29.2 -0.5**
FUORN Ofenpass-Fuorn 146.76 336 *e*PKPdf **PKPdf** **14 54 27.8 -0.3**
FUORN *e*PKPbc **PKPab** **14 54 30.9 -0.2**
FUORN LR LR
comp=Z,2µm,21.0s
KEK Kerkira 146.77 318 P **PKPdf** **14 54 27.5 -0.5**
KEK Kerkira 146.77 318 P **PKPdf** **14 54 27.5 -0.5**
DAVOX Davos/Dischmat 146.78 337 PKPbc **PKPdf** **14 54 28.4 +0.4**
comp=Z,118nm,0.9s,baz=39,slow=3.8,SNR=51
MOF Molkenrain 146.79 341 PKP **PKPdf** **14 54 27.8 -0.1**
THEF They Montfort 146.81 342 PKP **PKPdf** **14 54 27.7 -0.1**
CCA1 Carnmenellis 146.89 356 *e*P **PKPdf** **14 54 27.2 -0.6**
CCA1 AMS AMS 15 47 25.9
comp=Z,2µm,30.5s
PYL PYLOS 146.94 313 P **PKPdf** **14 54 27.7 -0.7**
PYL PYLOS 146.94 313 P **PKPdf** **14 54 27.7 -0.7**
KFL Anninata 147.00 315 P **PKPbc** **14 54 29.7 -0.8**
SHEL Horse Pasture 147.07 185 *e*PKIKP **PKPbc** **14 54 31.4 +0.1**
SHEL Horse Pasture 147.07 185 *e*PKPbc **PKPbc** **14 54 31.4 +0.1**
VLS Valsamata 147.09 315 P **PKPdf** **14 54 29.4 +0.8**
VLS Valsamata 147.09 315 PKP2 **PKPdf** **14 54 29.4 +0.8**
VLS Valsamata 147.09 315 P **PKPdf** **14 54 29.4 +0.8**
ZKS Zakynthos 147.21 315 P **PKPbc** **14 54 30.6 -0.5**
TUE Stuetta 147.23 337 *e*PKPdf **PKPdf** **14 54 28.3 -0.6**
TUE *e*PKPbc **PKPbc** **14 54 31.9 +0.8**
TUE LR LR
comp=Z,2µm,21.0s
LOMF Lomont 147.34 341 PKP **PKPdf** **14 54 28.8 0.0**
JSA Saint Aubin 147.59 352 *e*P **PKPdf** **14 54 27.4 -1.6**
JSA AMS AMS 15 56 00.5
comp=Z,2µm,22.6s
SENIN Lac Senin/Sane 148.05 339 *e*PKPdf **PKPdf** **14 54 29.7 -0.5**
SENIN *e*PKPbc **PKPbc** **14 54 33.8 +0.4**
SENIN LR LR
comp=Z,2µm,22.0s
AQU L'Aquila 148.72 328 *e*PKP2 **PKPdf** **14 54 32.6 +1.4**
AQU L'Aquila 148.72 328 *e*PKPdf **PKPdf** **14 54 32.6 +1.4**
VLC Villacollemand 148.73 334 *e*PKPdf **PKPdf** **14 54 30.6 -0.5**
VLC LR LR
comp=Z,2µm,22.0s

TIP	**Timpagrande**	**148.98**	**320**	P	**PKPdf**	**14 54 31.8**	**0.0**
TIP	**Timpagrande**	**148.98**	**320**	*e*PKPdf	**PKPdf**	**14 54 31.4**	**-0.4**
TIP				*e*PKPbc	**PKPbc**	**14 54 36.1**	**+0.2**
TIP				LR	LR		
	comp=Z,1μm,20.0s						
CUC	**Castrocucco**	**149.03**	**322**	*e*PKPbc	**PKPbc**	**14 54 34.7**	**-1.2**
CUC				LR	LR		
	comp=Z,1μm,20.0s						
GDM	**Grand'Maison**	**149.47**	**340**	PKP	**PKPdf**	**14 54 33.0**	**+0.5**
PLM	**La Plantade**	**149.53**	**343**	PKP	**PKPdf**	**14 54 32.5**	**0.0**
GRN	**Grenoble**	**149.55**	**340**	PKP	**PKPdf**	**14 54 32.8**	**+0.3**
AGO	**Saint Agoulin**	**149.58**	**344**	PKP	**PKPdf**	**14 54 32.4**	**-0.1**
SSB	**Saint Sauveur**	**149.90**	**342**	PKP	**PKPdf**	**14 54 33.0**	**0.0**
SSB	**Saint Sauveur**	**149.90**	**342**	*e*PKIKP	**PKPdf**	**14 54 32.6**	**-0.4**
SSB				*e*		14 54 38.5	
SSB				MLR	MLR		
	comp=Z,2μm,22.0s						
SSB	**Saint Sauveur**	**149.90**	**342**	*e*PKPdf	**PKPdf**	**14 54 32.6**	**-0.4**
SSB				*e*PKPbc	**PKiKP**	**14 54 38.5**	**-0.3**
SSB				LR	LR		
	comp=Z,2μm,22.0s						
COLF	**Collangettes**	**149.92**	**343**	PKP	**PKPdf**	**14 54 31.9**	**-1.2**
VERF	**Verneugheol**	**150.03**	**345**	PKP	**PKPdf**	**14 54 32.4**	**-0.8**
CEL	**Celeste**	**150.08**	**320**	*e*PKPbc	**PKPbc**	**14 54 37.9**	**-0.7**
CEL				LR	LR		
	comp=Z,1μm,22.0s						
H07S1	**FLORES T-PHASE**	**150.16**	**37**	*e*PKPdf	**PKPdf**	**14 54 34.6**	**+1.0**
LUCF	**Luceram**	**150.17**	**337**	PKP	**PKPdf**	**14 54 33.5**	**-0.1**
MVIF	**Mont Vial**	**150.24**	**337**	PKP	**PKPdf**	**14 54 33.5**	**-0.2**
REVF	**Revere**	**150.29**	**337**	P	**PKPdf**	**14 54 34.0**	**+0.3**
LBL	**Lubilhac**	**150.31**	**343**	PKP	**PKPdf**	**14 54 34.1**	**+0.4**
FRNF	**Fournols**	**150.35**	**344**	PKP	**PKPdf**	**14 54 34.8**	**+1.1**
VAE	**Valguarnera**	**151.49**	**320**	PKPab	**PKPab**	**14 54 49.0**	**-1.2**
	comp=Z,49nm,0.9s,baz=69,slow=14,SNR=2.6						
CLTB	**Caltabellotta**	**152.15**	**321**	*e*PKPdf	**PKPdf**	**14 54 36.5**	**-0.2**
WDD	**Wied Dalam**	**152.42**	**317**	PFAKE		14 54 50.0	-4.1
WDD				LR	LR		
	comp=Z,2μm,21.0s						
LRDF	**Laroque-de-Fa**	**152.62**	**342**	PKP	**PKPdf**	**14 54 36.0**	**-1.2**
VSL	**Villasalto**	**152.87**	**329**	*e*PKPdf	**PKPdf**	**14 54 40.1**	**+2.4**
VSL				*e*PKPbc	**PKPbc**	**14 54 44.9**	**0.0**
VSL				LR	LR		
	comp=Z,2μm,21.0s						
ADH	**Angra Heroismo**	**152.88**	**34**	*e*PKPdf	**PKPdf**	**14 54 36.8**	**-0.9**
CARF	**Carcanieres**	**152.95**	**343**	PKP	**PKPdf**	**14 54 37.5**	**-0.3**
LABF	**Labassere**	**153.15**	**346**	PKP	**PKPdf**	**14 54 37.5**	**-0.5**
ORDF	**Ordiarp**	**153.21**	**348**	PKP	**PKPdf**	**14 54 38.0**	**0.0**
OSSF	**Osses**	**153.23**	**348**	PKP	**PKPdf**	**14 54 37.7**	**-0.4**
REYF	**Montagne du Re**	**153.24**	**347**	PKP	**PKPdf**	**14 54 38.2**	**0.0**
VALF	**Valcebollere**	**153.26**	**343**	PKP	**PKPdf**	**14 54 38.2**	**-0.2**
ATE	**Arette**	**153.28**	**348**	PKP	**PKPdf**	**14 54 37.8**	**-0.4**
RES	**Ens**	**153.32**	**346**	PKP	**PKPdf**	**14 54 38.7**	**+0.3**
VIEF	**Viey**	**153.32**	**346**	PKP	**PKPdf**	**14 54 38.7**	**+0.4**
LARF	**Larrau**	**153.39**	**348**	PKP	**PKPdf**	**14 54 38.8**	**+0.4**
PSET	**Sete Cidades**	**154.29**	**33**	*e*PKPdf	**PKPdf**	**14 54 38.9**	**-0.9**
CMLA	**Cha da Macela**	**154.44**	**33**	*e*PKPdf	**PKPdf**	**14 54 38.5**	**-1.5**
BART	**Pico Bartolome**	**154.62**	**32**	*e*PKPdf	**PKPdf**	**14 54 40.1**	**-0.2**
PGAV	**Gavieira, Arco**	**155.20**	**360**	*e*PKPdf	**PKPdf**	**14 54 40.6**	**-0.4**
PGAV	**Gavieira, Arco**	**155.20**	**360**	*e*PKPab	**PKPab**	**14 55 10.7**	**+5.0**
PGAV	**Gavieira, Arco**	**155.20**	**360**	*e*LR	LR	15 47 43.0	
	comp=Z,1μm,20.0s						
PSMA	**Santa Maria**	**155.23**	**34**	*e*PKPdf	**PKPdf**	**14 54 39.9**	**-1.2**
PSMN	**Pico do Norte,**	**155.25**	**33**	*e*PKPdf	**PKPdf**	**14 54 40.3**	**-0.8**
PBRG	**Braganca**	**155.33**	**357**	*e*PKPdf	**PKPdf**	**14 54 41.0**	**-0.1**
PBRG	**Braganca**	**155.33**	**357**	*e*PKPab	**PKPab**	**14 55 06.6**	**+0.4**
KEST	**Kesra**	**155.68**	**323**	PKP	**PKPdf**	**14 54 42.0**	**+0.2**
	comp=Z,2.9nm,1.0s,baz=121,slow=5.3,SNR=2.7						
KEST				PKPab	**PKPab**	**14 55 08.2**	**+0.2**
	comp=Z,38nm,1.1s,baz=360,slow=4.1,SNR=10						
KEST	**Kesra**	**155.68**	**323**	PKP	**PKPdf**	**14 54 42.0**	**+0.2**
KEST				PKPab	**PKPab**	**14 55 08.2**	**+0.2**
KEST				LR	LR		
	comp=Z,3μm,22.0s						
POLO	**Lamas de Olo**	**155.79**	**359**	*e*PKPdf	**PKPdf**	**14 54 39.8**	**-2.0**
POLO	**Lamas de Olo**	**155.79**	**359**	*e*PKPab	**PKPab**	**14 55 08.4**	**+0.1**
POLO	**Lamas de Olo**	**155.79**	**359**	*e*SS	SS	15 18 29.1	-0.4
PVRL	**Vila Real**	**155.89**	**359**	*e*PKPdf	**PKPdf**	**14 54 42.7**	**+0.8**
PVRL	**Vila Real**	**155.89**	**359**	*e*PKPab	**PKPab**	**14 55 09.5**	**+0.9**
MVO	**Moncorvo**	**155.98**	**358**	*e*PKPdf	**PKPdf**	**14 54 42.0**	**-0.1**
MVO	**Moncorvo**	**155.98**	**358**	*e*PKPab	**PKPab**	**14 55 10.0**	**+1.0**
MVO	**Moncorvo**	**155.98**	**358**	*e*LR	LR	15 47 44.1	
	comp=Z,2μm,20.0s						
CMAH	**Djebel Manchou**	**156.06**	**327**	P	**PKPdf**	**14 54 41.9**	**-0.4**
CAEH	**'Ain El Ouahch**	**156.23**	**329**	P	**PKPdf**	**14 54 45.0**	**+2.6**
ABSA	**Djebel Ababsia**	**156.30**	**327**	P	**PKPdf**	**14 54 42.7**	**0.0**
PVIS	**Viseu**	**156.45**	**359**	*e*PKPdf	**PKPdf**	**14 54 42.4**	**-0.3**
PVIS	**Viseu**	**156.45**	**359**	*e*PKPab	**PKPab**	**14 55 11.9**	**+0.8**
CKFL	**Kef-Lekhel**	**156.59**	**328**	P	**PKPdf**	**14 54 43.2**	**+0.1**
MTE	**Manteigas**	**156.76**	**358**	*e*PKPdf	**PKPdf**	**14 54 42.9**	**-0.2**
MTE	**Manteigas**	**156.76**	**358**	*e*PKPab	**PKPab**	**14 55 13.7**	**+1.3**
MTE	**Manteigas**	**156.76**	**358**	*e*LR	LR	15 48 32.1	
	comp=Z,2μm,20.0s						
MTE	**Manteigas**	**156.76**	**358**	*e*PKPdf	**PKPdf**	**14 54 42.8**	**-0.2**
MTE				LR	LR		
	comp=Z,2μm,21.0s						
DFRA	**Djebel Bou Aff**	**156.90**	**330**	P	**PKPdf**	**14 54 44.1**	**+0.6**
PCAS	**Casmilo, Conde**	**157.11**	**0**	*e*PKPdf	**PKPdf**	**14 54 43.1**	**-0.4**
PCAS	**Casmilo, Conde**	**157.11**	**0**	*e*PKPab	**PKPab**	**14 55 14.8**	**+0.9**
PCAS	**Casmilo, Conde**	**157.11**	**0**	*e*SS	SS	15 18 35.1	-8.4
ES19	**SONSECA Array**	**157.14**	**351**	*e*PKPdf	**PKPdf**	**14 54 42.9**	**-0.7**
ES19				*e*PKPab	**PKPab**	**14 55 14.8**	**+0.7**
ESDC	**Sonseca Array**	**157.18**	**351**	PKP	**PKPdf**	**14 54 43.9**	**+0.2**
	comp=Z,4.8nm,1.1s,baz=353,slow=3.0,SNR=23						
ESDC				PKPab	**PKPab**	**14 55 15.1**	**+0.8**
	comp=Z,17nm,1.0s,baz=9.2,slow=4.0,SNR=29						
ESDC				PP	**PP**	**14 58 53.1**	**+1.3**
	comp=Z,1.5nm,0.9s,baz=12,slow=6.6,SNR=4.9						
ESLA	**Sonseca Array**	**157.18**	**351**	*e*PKPdf	**PKPdf**	**14 54 42.3**	**-1.3**
ESLA				*e*PKPab	**PKPab**	**14 55 14.6**	**+0.4**
ESLA				LR	LR		
	comp=Z,2μm,22.0s						
PCBR	**Castelo Branco**	**157.31**	**358**	*e*PKPdf	**PKPdf**	**14 54 43.6**	**-0.1**
PCBR	**Castelo Branco**	**157.31**	**358**	*e*PKPab	**PKPab**	**14 55 15.2**	**+0.5**
PAB	**San Pablo**	**157.35**	**352**	*e*PKIKP	**PKPdf**	**14 54 43.8**	**-0.1**
PAB				MLR	MLR		
	comp=Z,3μm,21.0s						
PAB	**San Pablo**	**157.35**	**352**	*e*PKPdf	**PKPdf**	**14 54 43.8**	**-0.1**
PAB				*e*PKPab	**PKPab**	**14 55 15.3**	**+0.3**
PAB				LR	LR		
	comp=Z,3μm,21.0s						
PTOM	**Tomar**	**157.55**	**0**	*e*PKPdf	**PKPdf**	**14 54 44.0**	**0.0**
PTOM	**Tomar**	**157.55**	**0**	*e*PKPdf	**PKPdf**	**14 54 44.4**	**+0.4**
PTOM	**Tomar**	**157.55**	**0**	*e*PKPab	**PKPab**	**14 55 16.3**	**+0.6**
PTOM	**Tomar**	**157.55**	**0**	*e*PKPab	**PKPab**	**14 55 16.3**	**+0.6**
PMRV	**Marv??o**	**157.72**	**358**	*e*PKPdf	**PKPdf**	**14 54 44.0**	**-0.3**
PMRV	**Marv??o**	**157.72**	**358**	*e*PKPab	**PKPab**	**14 55 17.4**	**+0.9**
PMRV	**Marv??o**	**157.72**	**358**	*e*LR	LR	15 48 55.1	
	comp=Z,2μm,22.0s						
PMAFR	**Mafra**	**158.19**	**2**	*e*PKPdf	**PKPdf**	**14 54 44.9**	**+0.1**
PMAFR	**Mafra**	**158.19**	**2**	*e*PKPab	**PKPab**	**14 55 22.7**	**+4.1**
PESTR	**Estremoz**	**158.29**	**358**	*e*PKPdf	**PKPdf**	**14 54 44.5**	**-0.5**
PESTR	**Estremoz**	**158.29**	**358**	*e*PKPab	**PKPab**	**14 55 19.6**	**+0.6**
PESTR	**Estremoz**	**158.29**	**358**	*e*SS	SS	15 19 15.5	+19
PMST	**Lisbon--Monsan**	**158.42**	**2**	*e*PKPdf	**PKPdf**	**14 54 45.0**	**-0.1**
LIS	**Lisbon**	**158.44**	**2**	*e*P	**PKPdf**	**14 54 44.6**	**-0.5**
LIS				AMS	AMS	16 00 55.0	
	comp=Z,3μm,19.3s						
LIS	**Lisbon**	**158.44**	**2**	*e*PKPdf	**PKPdf**	**14 54 46.6**	**+1.5**
LIS	**Lisbon**	**158.44**	**2**	*e*PKIKP	**PKPdf**	**14 54 44.6**	**-0.5**
EVO	**Evora**	**158.63**	**359**	*e*PKPdf	**PKPdf**	**14 54 45.2**	**-0.2**
EVO	**Evora**	**158.63**	**359**	*e*PKPab	**PKPab**	**14 55 21.3**	**+0.9**
PBAR	**Barrancos**	**158.96**	**357**	*e*PKPdf	**PKPdf**	**14 54 45.7**	**-0.1**
PBAR	**Barrancos**	**158.96**	**357**	*e*PKPab	**PKPab**	**14 55 22.8**	**+0.9**
PBAR	**Barrancos**	**158.96**	**357**	*e*SS	SS	15 19 11.3	+8.1
PNCL	**Nicolau / Gran**	**159.05**	**0**	*e*PKPdf	**PKPdf**	**14 54 46.0**	**+0.1**
PNCL	**Nicolau / Gran**	**159.05**	**0**	*e*PKPab	**PKPab**	**14 55 23.2**	**+0.9**
PBEJ	**Beja**	**159.13**	**359**	*e*PKPdf	**PKPdf**	**14 54 46.0**	**0.0**
PBEJ	**Beja**	**159.13**	**359**	*e*PKPab	**PKPab**	**14 55 23.6**	**+1.0**
MESJ	**Messejana**	**159.32**	**360**	*e*P	**PKPdf**	**14 54 45.7**	**-0.5**
MESJ				AMS	AMS	16 02 06.1	
	comp=Z,3μm,13.8s						
MESJ	**Messejana**	**159.32**	**360**	*e*PKPdf	**PKPdf**	**14 54 44.6**	**-1.6**
MESJ	**Messejana**	**159.32**	**360**	*e*PKPab	**PKPab**	**14 55 24.5**	**+1.1**
MESJ	**Messejana**	**159.32**	**360**	*e*PKIKP	**PKPdf**	**14 54 45.7**	**-0.5**
PCVE	**Castro Verde**	**159.53**	**359**	*e*PKPdf	**PKPdf**	**14 54 46.5**	**0.0**
PCVE	**Castro Verde**	**159.53**	**359**	*e*PKPab	**PKPab**	**14 55 25.0**	**+0.6**
PTEO	**Sao Teotonio**	**159.62**	**1**	*e*PKPdf	**PKPdf**	**14 54 47.7**	**+1.2**
PTEO	**Sao Teotonio**	**159.62**	**1**	*e*PKPab	**PKPab**	**14 55 29.7**	**+5.0**
PVAQ	**Vaqueiros**	**159.75**	**359**	*e*PKPdf	**PKPdf**	**14 54 46.8**	**+0.1**
PVAQ	**Vaqueiros**	**159.75**	**359**	*e*PKPab	**PKPab**	**14 55 26.1**	**+0.8**
PVAQ	**Vaqueiros**	**159.75**	**359**	*e*LR	LR	15 49 30.6	
	comp=Z,2μm,20.0s						
MORF	**Marmelete**	**159.85**	**1**	*e*P	**PKPdf**	**14 54 46.4**	**-0.5**
MORF				AMS	AMS	16 01 27.9	
	comp=Z,2μm,20.7s						
MORF	**Marmelete**	**159.85**	**1**	*e*PKPdf	**PKPdf**	**14 54 47.1**	**+0.2**
MORF	**Marmelete**	**159.85**	**1**	*e*PKPab	**PKPab**	**14 55 26.0**	**+0.1**
MORF	**Marmelete**	**159.85**	**1**	*e*PKIKP	**PKPdf**	**14 54 46.4**	**-0.5**
PFVI	**Vila Bisbo**	**160.03**	**1**	*e*PKPdf	**PKPdf**	**14 54 45.8**	**-1.2**
PMOZ	**Porto Moniz, M**	**162.40**	**25**	*e*PKPdf	**PKPdf**	**14 54 52.1**	**+2.3**
PMOZ	**Porto Moniz, M**	**162.40**	**25**	*e*LR	LR	15 50 11.5	
	comp=Z,2μm,20.0s						
PMPS	**Porto Santo**	**162.53**	**23**	*e*PKPdf	**PKPdf**	**14 54 51.2**	**+1.4**
PMAR	**Madeira**	**162.60**	**25**	*e*PKPdf	**PKPdf**	**14 54 51.8**	**+1.7**
FUL	**Funchal**	**162.68**	**25**	*e*PKPdf	**PKPdf**	**14 54 51.0**	**+1.1**
LIC	**Lamto**	**168.74**	**197**	*e*P	**PKPab**	**14 56 03.3**	**-2.0**
	comp=Z,202nm,1.7s						
KIC	**Kosan Boka**	**168.78**	**199**	*e*P	**PKPab**	**14 56 04.8**	**-0.8**
	comp=Z,405nm,1.8s						
DBIC	**Dimbokro**	**169.11**	**199**	PKP	**PKPdf**	**14 54 54.1**	**-1.5**
	comp=Z,4.1nm,0.9s,baz=171,slow=5.1,SNR=5.7						
DBIC				PKPab	**PKPab**	**14 56 07.1**	**+0.2**
	comp=Z,28nm,1.0s,baz=151,slow=4.3,SNR=12						
DBIC	**Dimbokro**	**169.11**	**199**	*e*PKPdf	**PKPdf**	**14 54 54.2**	**-1.4**
DBIC				*e*PKPab	**PKPab**	**14 56 07.0**	**0.0**
TIC	**Toumodi**	**169.13**	**198**	*e*P	**PKPab**	**14 56 06.0**	**-1.1**
TOA0	**Torodi Ar. Sit**	**169.57**	**249**	*e*PKPdf	**PKPdf**	**14 54 53.3**	**-2.6**
TOA0				*e*PKPdf	PKPdf	14 54 53.7	-2.2
TOA0				*e*PKPab	**PKPab**	**14 56 08.3**	**-1.1**
TOA0				*e*PKPab	PKPab	14 56 08.6	-0.7
TORD	**Torodi Ar. Bea**	**169.57**	**249**	PKP	**PKPdf**	**14 54 54.6**	**-1.3**
	comp=Z,12nm,1.1s,baz=70,slow=0.5,SNR=36						
TORD				PKPab	**PKPab**	**14 56 09.4**	**0.0**
	comp=Z,15nm,1.1s,baz=98,slow=2.0,SNR=9.0						
TORD				PP	**PP**	**14 59 58.5**	**-0.8**
	comp=Z,2.4nm,1.0s,baz=141,slow=9.9,SNR=4.0						

***IDC 31** 14:38:03.9±1.3,**23°.59S**×**176°.28W**,**h0**km,**mb4.1**/5,*
mb1 4.4**/7,**mb1mx4.1**/37,**mbtmp4.3**/7,**ML4.2**/3,**Error
ellipse: s-maj=42.3km s-min=23.6km az=144.0,South
of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**5.83**	**194**	Pn	Pn	14 39 32.6	+1.0
	42nm,0.3s,baz=321,slow=18,SNR=2.1						
RAO				Sn	Sn	14 40 36.6	-2.5
	209nm,0.3s,baz=43,slow=22,SNR=10						
AFI	**Afiamalu**	**10.53**	**25**	Pn	Pn	14 40 38.0	+1.8
	1.3nm,0.3s,baz=186,slow=10,SNR=2.3						
AFI				Sn	Sn	14 42 27.3	-7.6
	1.8nm,0.3s,baz=330,slow=20,SNR=1.4						
RAR	**Rarotonga**	**15.45**	**84**	Pn	Pn	14 41 42.2	-1.0
	1.7nm,0.3s,baz=174,slow=9.2,SNR=1.1						
RAR				Sn	Sn	14 44 20.5	-15
	1.3nm,0.3s,baz=69,slow=14,SNR=1.8						
URZ	**Urewera**	**15.68**	**200**	Pn	Pn	14 41 39.6	-6.5
	0.2nm,0.3s,baz=48,slow=17,SNR=1.1						
URZ				Sn	Sn	14 44 18.8	-22
	0.5nm,0.3s,baz=239,slow=19,SNR=2.1						
CTA	**Charters Tower**	**34.88**	**268**	P	P	14 44 57.8	+0.5
	2.0nm,0.3s,baz=92,slow=9.8,SNR=6.3						
ASAR	**Alice Springs**	**45.44**	**259**	P	P	14 46 24.7	-0.2
	1.3nm,0.9s,baz=99,slow=7.1,SNR=1.3						
WRA	**Warramunga Arr**	**45.83**	**265**	P	P	14 46 27.1	-0.8
	1.4nm,0.7s,baz=100,slow=6.8,SNR=7.1						
PETK	**Petropavlovsk-**	**79.65**	**344**	P	P	14 50 13.4	+0.5
	3.1nm,0.8s,baz=104,slow=9.3,SNR=3.6						
PDAR	**Pinedale Array**	**90.13**	**43**	P	P	14 51 05.8	-0.4
	0.6nm,0.8s,baz=224,slow=2.5,SNR=3.6						
AKASG	**Malin Array Be**	**146.47**	**330**	PKPbc	PKPdf	14 57 45.6	+0.2
	1.8nm,0.6s,baz=42,slow=3.8,SNR=8.7						

*IDC **31** 14:48:42.2±2.4,39°.04N×142°.75E,h0km,mb3.6/3,*
mb1 3.6/4,mb1mx3.3/65,mbtmp3.4/4,ML2.9/1,Error
ellipse: s-maj=49.9km s-min=31.9km az=81.0
*ISCJB **31** 14:48:50.4±1.3,38°.78N±0°.05×142°.0E±0°.1,h55km±8km,*
mb3.5/3,Error ellipse: s-maj=18.9km s-min=8.0km
az=14.8
*JMA **31** 14:48:51.5±0.1,38°.81N×142°.00E,h47km±1km,M3.4*
JMA Felt I J1.
ISC 31 14:48:50.5±1.9,38°.79N±0°.05×142°.1E±0°.1,h43km±15km,
n20,σ1°.23/20,mb3.5/3,Near east coast of eastern
Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.45**	**311**	P	**Pn**	**14 49 01.2**	**+0.5**
OFUJ				S	**Sn**	**14 49 07.9**	**0.0**
JIO	**Ouri**	**0.68**	**241**	P	**Pn**	**14 49 03.9**	**+0.2**
JIO				S	**Sn**	**14 49 12.4**	**-0.7**
JMK	**Ichinoseki**	**0.71**	**284**	P	**Pn**	**14 49 04.2**	**+0.1**
JMK				S	**Sn**	**14 49 13.2**	**-0.7**
JOM	**Ohasama**	**0.93**	**318**	P	**Pn**	**14 49 07.4**	**+0.3**
JOM				S	**Sn**	**14 49 18.9**	**-0.4**
JOU	**Okura**	**1.20**	**250**	P	**Pn**	**14 49 11.1**	**+0.2**
JOU				S	**Sn**	**14 49 25.6**	**-0.4**
JRG	**Rokugo**	**1.29**	**298**	P	**Pn**	**14 49 12.3**	**+0.2**
JYK	**Kaneyama**	**1.37**	**276**	P	**Pn**	**14 49 13.2**	**+0.1**
JMM	**Marumori**	**1.38**	**229**	P	**Pn**	**14 49 13.3**	**0.0**
JMM				S	**Sn**	**14 49 29.5**	**-0.8**
JANG	**Nango**	**1.65**	**344**	P	**Pn**	**14 49 17.6**	**+0.6**
MJAR	**Matsushiro Arr**	**3.82**	**235**	Pn	**Pn**	**14 49 50.7**	**+3.9**
	0.6nm,0.3s,baz=38,slow=13,SNR=9.5						
MJAR				Sn	Sn	14 50 41.1	+11
	0.2nm,0.3s,baz=88,slow=29,SNR=2.2						
JHJ	**Hachijo jima 2**	**5.96**	**199**	Sn	**Sn**	**14 51 20.9**	**-2.3**
	3.6nm,0.3s,baz=234,slow=19,SNR=2.0						
H11N2	**WAKE ISLAND Hy**	**28.64**	**124**	T	T	15 25 09.0	
	baz=317,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	**28.64**	**125**	T	T	15 25 11.2	
	baz=317,slow=75,SNR=27						
H11N3	**WAKE ISLAND Hy**	**28.65**	**124**	T	T	15 25 10.7	
	baz=317,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**29.41**	**126**	T	T	15 26 06.4	
	baz=318,slow=76,SNR=20						
H11S3	**WAKE ISLAND Hy**	**29.41**	**126**	T	T	15 26 08.1	
	baz=318,slow=76,SNR=22						
H11S2	**WAKE ISLAND Hy**	**29.43**	**126**	T	T	15 26 08.2	
	baz=318,slow=76,SNR=19						
MKAR	**Makanchi Array**	**43.67**	**301**	P	**P**	**14 56 50.4**	**-0.5**
	0.7nm,0.8s,baz=76,slow=6.1,SNR=2.8						
KURBB	**Kurchatov Arra**	**45.37**	**307**	P	**P**	**14 57 04.3**	**-0.1**
	1.0nm,0.4s,baz=81,slow=8.1,SNR=9.7						
WRA	**Warramunga Arr**	**58.87**	**189**	P	**P**	**14 58 44.9**	**0.0**
	0.1nm,0.5s,baz=5.2,slow=7.0,SNR=4.8						

*ATH **31** 14:51:57.8,39°.41N×26°.31E,h18km±1km,ML2.0/6,Error*
ellipse: s-maj=2.9km s-min=1.0km az=251.0
*DDA **31** 14:51:57.5,39°.44N×26°.31E,h7km,Md2.8*
*ISCJB **31** 14:51:58.6±0.4,39°.42N±0°.02×26°.25E±0°.03,h6km±4km,*
Error ellipse: s-maj=4.5km s-min=2.9km az=176.0
*CSEM **31** 14:51:58.6±0.2,39°.44N×26°.25E,h2km,ML2.0,Error*
ellipse: s-maj=5.0km s-min=3.6km az=91.0
*ISK **31** 14:51:58.5,39°.49N×26°.13E,h6km,MD2.9*
ISC 31 14:51:58.5±0.8,39°.42N±0°.02×26°.27E±0°.02,h12km±7km,
n53,σ0°.77/76,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PRK	**Paraskevi**	**0.18**	**179**	P	**Pg**	**14 52 02.5**	**+0.1**
PRK				S	**Sg**	**14 52 04.7**	**-0.4**
PRK	**Paraskevi**	**0.18**	**179**	P	**Pg**	**14 52 02.5**	**+0.1**
PRK				S	**Sg**	**14 52 04.7**	**-0.4**
PRK				AML	AML	14 52 05.8	
	comp=N,4477μm,0.2s						
PRK				AML	AML	14 52 06.1	
	comp=E,2102μm,0.2s						
AYVA	**Ayvalik**	**0.35**	**109**	*i* P	**Pg**	**14 52 05.3**	**-0.2**
AYVA				*i* S	**Sg**	**14 52 09.9**	**-0.2**
AYVA	**Ayvalik**	**0.35**	**109**	P	**Pg**	**14 52 05.3**	**-0.2**
AYVA				S	**Sg**	**14 52 09.9**	**-0.2**
SIGR	**SIGRI**	**0.38**	**237**	*e*PG	**Pg**	**14 52 06.4**	**+0.3**
SIGR	**SIGRI**	**0.38**	**237**	*e*Pg	**Pg**	**14 52 06.4**	**+0.3**
SIGR	**SIGRI**	**0.38**	**237**	P	**Pg**	**14 52 06.9**	**+0.8**
SIGR				S	**Sg**	**14 52 12.2**	**+1.1**
SIGR	**SIGRI**	**0.38**	**237**	P	**Pg**	**14 52 06.9**	**+0.8**
SIGR				AML	AML	14 52 12.2	
	comp=E,394μm,0.3s						
SIGR				S	**Sg**	**14 52 12.2**	**+1.1**
SIGR				AML	AML	14 52 12.4	
	comp=N,666μm,0.4s						

EZN	**Ezine**	**0.41**	**6**	*e*PG	**Pg**	**14 52 06.4**	**-0.1**
EZN				*e*SG	**Sg**	**14 52 12.6**	**+0.7**
EZN	**Ezine**	**0.41**	**6**	*e*Pg	**Pg**	**14 52 06.4**	**-0.1**
EZN				*e*Sg	**Sg**	**14 52 12.6**	**+0.7**
BOZC	**Bozcaada**	**0.45**	**339**	*i* P	**Pg**	**14 52 07.7**	**+0.4**
BOZC				*i* S	**Sg**	**14 52 13.4**	**+0.1**
DKL	**Dikili**	**0.61**	**125**	*e*PG	**Pn**	**14 52 12.9**	**0.0**
DKL	**Dikili**	**0.61**	**125**	*e*Pg	**Pn**	**14 52 12.9**	**0.0**
GADA	**Gvkgeada**	**0.82**	**340**	*e*PG	**Pg**	**14 52 12.1**	**-2.2**
GADA	**Gvkgeada**	**0.82**	**340**	*e*Pg	**Pg**	**14 52 12.1**	**-2.2**
LIA	**Limnos Island**	**0.96**	**300**	P	**Pb**	**14 52 17.7**	**+0.6**
LIA				S	**Sg**	**14 52 29.8**	**+0.3**
GELI	**Tayfur-Gelibol**	**0.99**	**9**	*e*PG	**Pg**	**14 52 17.2**	**-0.3**
GELI	**Tayfur-Gelibol**	**0.99**	**9**	*e*Pg	**Pg**	**14 52 17.2**	**-0.3**
CHOS	**Chios island**	**1.05**	**189**	*e*PN	**Pn**	**14 52 19.9**	**+0.8**
CHOS	**Chios island**	**1.05**	**189**	P	**Pb**	**14 52 19.2**	**+0.6**
CHOS	**Chios island**	**1.05**	**189**	*e*Pn	**Pn**	**14 52 19.9**	**+0.8**
CHOS				S	**Sg**	**14 52 32.0**	**-0.3**
CHOS	**Chios island**	**1.05**	**189**	P	**Pb**	**14 52 19.2**	**+0.6**
CHOS				S	**Sg**	**14 52 32.0**	**-0.3**
CHOS				AML	AML	14 52 37.5	
	comp=N,164μm,0.4s						
CHOS				AML	AML	14 52 37.8	
	comp=E,242μm,0.2s						
URLA	**Izmir**	**1.09**	**166**	*i* P	**Pb**	**14 52 17.7**	**-1.6**
URLA				*i* S	**Sg**	**14 52 33.2**	**-0.5**
URLA	**Izmir**	**1.09**	**166**	P	**Pb**	**14 52 17.7**	**-1.6**
URLA				S	**Sg**	**14 52 33.8**	**-0.5**
SMTH	**Samothraki Isl**	**1.19**	**332**	P	**Pb**	**14 52 21.3**	**+0.3**
SMTH				S	**Sb**	**14 52 36.9**	**+0.6**
SMTH	**Samothraki Isl**	**1.19**	**332**	P	**Pb**	**14 52 21.3**	**+0.3**
SMTH				S	**Sb**	**14 52 36.9**	**+0.6**
SMTH				AML	AML	14 52 37.9	

ENTT				*e*S	**Sb**	**14 58 34.5**	**+0.3**
	baz=296							
NNS	**Nan Shan**	**1.53**	**303**	*e*P	**Pg**	**14 58 16.4**	**-0.5**
	baz=298							
NNS				*e*S	**Sn**	**14 58 34.1**	**+0.1**
	baz=298							
TWB1	**Santiao Chiao**	**1.57**	**333**	*e*P	**Pn**	**14 58 13.6**	**-1.1**
	baz=328							
TWB1				*e*S	**Sn**	**14 58 34.5**	**-0.4**
	baz=328							
TWT	**Tachien**	**1.60**	**294**	*e*P	**Pb**	**14 58 16.3**	**-0.6**
	baz=281							
ELDTW	**Lidau**	**1.67**	**256**	P	**Pb**	**14 58 17.9**	**0.0**
	baz=253							
ELDTW				*e*S	**Sb**	**14 58 38.7**	**-0.1**
	baz=253							
YUS	**Yu-Shan**	**1.68**	**267**	*e*P	**Pg**	**14 58 19.1**	**-0.7**
	baz=263							
NSK	**Sanguang**	**1.68**	**310**	*e*P	**Pb**	**14 58 18.3**	**+0.2**
	baz=305							
NSK				*e*S	**Sn**	**14 58 37.8**	**+0.1**
	baz=305							
JISG	**Ishigakijimahi**	**1.71**	**55**	P	**Pn**	**14 58 17.1**	**+0.5**
JISG				S	**Sn**	**14 58 35.8**	**-2.4**
NWF	**Wu-fen Shan**	**1.72**	**328**	*e*P	**Pb**	**14 58 18.8**	**0.0**
	baz=323							
NWF				*e*S	**Sn**	**14 58 38.9**	**+0.2**
	baz=323							
TTN	**Taitung**	**1.72**	**241**	*e*P	**Pn**	**14 58 17.5**	**+0.7**
	baz=239							
TTN				*e*S	**Sb**	**14 58 40.8**	**+0.7**
	baz=239							
SMLT	**Sun Moon Lake**	**1.74**	**280**	P	**Pb**	**14 58 19.4**	**+0.2**
	baz=275							
SMLT				*e*S	**Sb**	**14 58 41.0**	**+0.1**
	baz=275							
TWG	**Pinlang**	**1.75**	**244**	P	**Pb**	**14 58 19.2**	**-0.1**
	baz=233							
TWG				S	**Sn**	**14 58 39.5**	**+0.3**
	baz=233							
TYC	**Yuchr**	**1.79**	**280**	*e*P	**Pb**	**14 58 20.1**	**+0.3**
	baz=276							
TYC				*e*S	**Sb**	**14 58 42.4**	**+0.4**
	baz=276							
ALS	**Alishan**	**1.81**	**268**	P	**Pg**	**14 58 21.5**	**-0.8**
	baz=263							
ALS				*e*S	**Sb**	**14 58 44.3**	**+1.2**
	baz=263							
STYT	**Tauyuan**	**1.91**	**257**	*e*P	**Pb**	**14 58 22.2**	**+0.2**
	baz=247							
STYT				*e*S	**Sb**	**14 58 45.8**	**+0.2**
	baz=247							
NSTT	**Nanjuang**	**1.92**	**303**	*i* P	**Pb**	**14 58 22.5**	**+0.4**
	baz=288							
NSTT				*i* S	**Sb**	**14 58 44.9**	**-1.0**
	baz=288							
LAY	**Lan-yu**	**1.93**	**216**	*e*P	**Pn**	**14 58 20.9**	**+1.3**
	baz=225							
LAY				*e*S	**Sn**	**14 58 42.1**	**-1.5**
	baz=225							
CHN5	**Tsauling**	**1.93**	**270**	*e*P	**Pb**	**14 58 23.2**	**+1.0**
	baz=266							
CHN5				*e*S	**Sb**	**14 58 46.1**	**-0.1**
	baz=266							
ECL	**Taimali**	**1.96**	**240**	P	**Pb**	**14 58 21.7**	**-1.0**
	baz=248							
ECL				*e*S	**Sn**	**14 58 43.9**	**-0.4**
	baz=248							
TWQ1	**Liyutan**	**1.98**	**292**	*e*P	**Pg**	**14 58 24.3**	**-1.1**
	baz=288							
TWQ1				*e*S	**Sb**	**14 58 48.4**	**+0.8**
	baz=288							
TCU	**Taichung**	**2.00**	**286**	*e*P	**Pb**	**14 58 24.2**	**+0.7**
	baz=282							
TCU				*e*S	**Sb**	**14 58 48.5**	**+0.3**
	baz=282							
NSY	**Sanyi**	**2.02**	**294**	*e*P	**Pb**	**14 58 24.8**	**+1.0**
	baz=289							
NSY				*e*S	**Sb**	**14 58 49.5**	**+0.9**
	baz=289							
WTP	**Ta-pu**	**2.02**	**260**	*e*P	**Pb**	**14 58 24.4**	**+0.6**
	baz=263							
WTP				*e*S	**Sb**	**14 58 49.4**	**+0.6**
	baz=263							
WGK	**Gukeng**	**2.03**	**273**	*e*P	**Pb**	**14 58 24.8**	**+0.7**
	baz=269							
WGK				*e*S	**Sb**	**14 58 49.7**	**+0.5**
	baz=269							
JTJ	**Tarama**	**2.04**	**59**	P	**Pn**	**14 58 22.3**	**+1.1**
JTJ				*e*S	**Sn**	**14 58 45.5**	**-0.8**
SGST	**Jiashian**	**2.08**	**256**	*e*P	**Pb**	**14 58 25.3**	**+0.4**
	baz=253							
SGST				*e*S	**Sb**	**14 58 50.1**	**-0.5**
	baz=253							
CHN1	**Nanshi**	**2.11**	**259**	*e*P	**Pb**	**14 58 25.2**	**-0.1**
	baz=256							
CHN1				*e*S	**Sb**	**14 58 51.8**	**+0.4**
	baz=256							
TWK	**Hsinying**	**2.13**	**261**	*e*P	**Pb**	**14 58 26.1**	**+0.4**
	baz=258							
TWK				*e*S	**Sb**	**14 58 50.9**	**-1.1**
	baz=258							
SSD	**Sandimen**	**2.15**	**247**	*e*P	**Pb**	**14 58 25.8**	**-0.3**
	baz=240							
SSD				*e*S	**Sn**	**14 58 49.4**	**+0.2**
	baz=240							
EAST	**Anshuo**	**2.15**	**236**	*e*P	**Pb**	**14 58 24.9**	**-1.2**
	baz=243							
EAST				*e*S	**Sn**	**14 58 50.6**	**+1.4**
	baz=243							
SCZT	**Fangliau**	**2.34**	**239**	*e*P	**Pb**	**14 58 29.4**	**+0.2**
	baz=237							
SCZT				*e*S	**Sb**	**14 58 57.0**	**-0.9**
	baz=237							
TWK1	**Hengchun**	**2.46**	**228**	*e*P	**Pb**	**14 58 32.2**	**+1.0**
	baz=227							
TWK1				*e*S	**Sb**	**14 59 01.0**	**-0.4**
	baz=227							
JIRB	**Irabujima**	**2.50**	**60**	*e*S	**Sn**	**14 58 56.7**	**-1.1**
JIKM	**Ikemajima**	**2.61**	**59**	S	**Sn**	**14 58 59.6**	**-0.8**
JOGS	**Gusukube**	**2.66**	**64**	*e*S	**Sn**	**14 59 01.5**	**-0.2**
PNG	**Penghu**	**2.96**	**270**	*e*P	**Pb**	**14 58 37.2**	**-2.6**
	baz=267							

WEL 31 15:16:07.0±0.1, 43.58S×172.63E, h7km, ML3.6/14, 6C-4D, Error ellipse: s-maj=0.5km s-min=0.3km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.01**	**297**	⇑PG	Pg	15 16 08.1	-0.2
CRLZ				SG	Sg	15 16 09.0	-0.2
CRLZ				AML	AML	15 16 09.0	
CRLZ				AML	AML	15 16 09.0	
CRLZ				AML	AML	15 16 09.1	
MQZ	**McQueen's Vall**	**0.13**	**173**	⇑PG	Pg	15 16 10.1	+0.2
MQZ				SG	Sg	15 16 12.3	+0.6
MQZ				AML	AML	15 16 12.3	
OXZ	**Oxford**	**0.50**	**300**	⇑P*	Pg	15 16 16.7	0.0
OXZ				SG	Sg	15 16 24.1	+0.9
OXZ				AML	AML	15 16 24.6	
OXZ				AML	AML	15 16 26.4	
OXZ				AML	AML	15 16 26.6	
LTZ	**Lake Taylor**	**0.84**	**342**	⇓P*	Pg	15 16 23.3	+0.2
LTZ				S*	Sb	15 16 35.2	-0.3
LTZ				AML	AML	15 16 36.1	
RPZ	**Rata Peaks**	**1.15**	**263**	⇓P*	Pg	15 16 28.2	-1.0
RPZ				AML	AML	15 16 46.3	
RPZ				AML	AML	15 16 52.2	
INZ	**Inchbonnie**	**1.22**	**314**	P*	Pb	15 16 29.2	-1.2
KHZ	**Kahutara**	**1.34**	**30**	⇑PN	Pn	15 16 30.2	-1.9
WVZ	**Waitaha Valley**	**1.47**	**289**	⇓PN	Pn	15 16 33.1	-0.8
WVZ				AML	AML	15 16 56.0	
THZ	**Tophouse**	**1.83**	**6**	⇑PN	Pn	15 16 37.3	-1.6
THZ				AML	AML	15 17 07.4	
THZ				AML	AML	15 17 19.5	
DSZ	**Denniston Nort**	**1.93**	**341**	⇓PN	Pn	15 16 39.2	-1.1
DSZ				AML	AML	15 17 05.2	
DSZ				AML	AML	15 17 14.3	
DSZ				AML	AML	15 17 15.2	
DSZ				AML	AML	15 17 15.3	
LBZ	**Lake Benmore**	**1.94**	**245**	PN	Pn	15 16 39.7	-0.7
LBZ				AML	AML	15 17 16.7	
LBZ				AML	AML	15 17 19.3	
ODZ	**Otahua Downs**	**2.04**	**224**	PN	Pn	15 16 40.5	-1.4
ODZ				AML	AML	15 17 12.8	
ODZ				AML	AML	15 17 12.8	
ODZ				AML	AML	15 17 21.4	
ODZ				AML	AML	15 17 21.4	
FOZ	**Fox Glacier**	**2.05**	**270**	PN	Pn	15 16 42.1	+0.2
BSWZ	**Blackbirch Sta**	**2.08**	**27**	PN	Pn	15 16 40.8	-1.5
TUWZ	**Tuamarina**	**2.36**	**25**	PN	Pn	15 16 44.8	-1.3
NNZ	**Nelson**	**2.42**	**13**	PN	Pn	15 16 45.9	-1.1
TCW	**Tory Channel**	**2.66**	**28**	PN	Pn	15 16 48.4	-1.9
HHSZ	**Highcliff Hill**	**2.72**	**211**	PN	Pn	15 16 50.1	-1.1
QRZ	**Quartz Range**	**2.75**	**358**	PN	Pn	15 16 50.2	-1.3
WEL	**Wellington**	**2.79**	**35**	PN	Pn	15 16 50.0	-2.0
PLWZ	**Palliser**	**2.79**	**45**	PN	Pn	15 16 49.6	-2.5
JCZ	**Jackson Bay**	**2.83**	**259**	PN	Pn	15 16 52.2	-0.5
WKZ	**Wanaka**	**2.88**	**243**	PN	Pn	15 16 52.3	-1.1
WKZ				AML	AML	15 17 48.7	
EAZ	**Earnscleugh**	**2.90**	**234**	PN	Pn	15 16 52.3	-1.2
EAZ				AML	AML	15 17 41.0	
EAZ				AML	AML	15 17 42.4	
EAZ				AML	AML	15 17 45.5	
EAZ				AML	AML	15 17 45.6	
CAW	**Cannon Point**	**3.06**	**37**	PN	Pn	15 16 53.2	-2.5
TUZ	**Tuapeka**	**3.19**	**221**	PN	Pn	15 16 56.3	-1.4
TUZ				AML	AML	15 17 54.7	
TUZ				AML	AML	15 17 56.7	
KIW	**Kapiti Island**	**3.20**	**33**	PN	Pn	15 16 56.0	-1.8
MTW	**Mount Morrison**	**3.22**	**42**	PN	Pn	15 16 55.2	-2.8
OGWZ	**Otaki Gorge**	**3.34**	**35**	PN	Pn	15 16 57.5	-2.2
MSZ	**Milford Sound**	**3.56**	**250**	AML	AML	15 18 07.1	
MRZ	**Mangatainoka R**	**3.65**	**38**	⇑PN	Pn	15 17 01.3	-2.6
SYZ	**Scrubby Hill**	**3.86**	**219**	PN	Pn	15 17 06.0	-0.7
BFZ	**Birch Farm**	**3.95**	**44**	PN	Pn	15 17 05.0	-3.1
WHZ	**Wether Hill Ro**	**4.06**	**234**	PN	Pn	15 17 07.6	-1.9
PREZ	**Palmer Road**	**4.38**	**16**	PN	Pn	15 17 13.5	-0.5
NWEZ	**Newall Road**	**4.40**	**13**	PN	Pn	15 17 14.6	+0.4
VRZ	**Vera Road**	**4.73**	**20**	PN	Pn	15 17 19.0	+0.3
WNVZ	**Wahianoa**	**4.80**	**29**	PN	Pn	15 17 19.2	-0.6

*ISCJB **31** 15:27:33.2±0.7, 36.92N±0.03×141.31E±0.07, h46km±6km, mb3.6/11, MS4.0/1, Error ellipse: s-maj=9.9km s-min=4.9km az=21.2*
*JMA **31** 15:27:34.8±0.1, 36.94N×141.14E, h51km±1km, M3.9*
JMA Felt II J1.
*IDC **31** 15:27:36.0±2.3, 36.91N×141.11E, h54km±21km, mb3.4/11, mb1 3.6/15, mb1mx3.5/37, mbtmp3.8/15, ML3.4/3, MS4.0/1, Ms1 4.0/1, ms1mx3.1/33, Error ellipse: s-maj=21.9km s-min=14.8km az=95.0*

ISC 31 15:27:34.5±0.9, 36.94N±0.05×141.28E±0.10, h40km±8km, n35, σ1s14/41, mb3.7/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.42**	**293**	P	**Pn**	**15 27 44.0**	**-0.2**
ONAJ				S	**Sn**	**15 27 50.4**	**-0.7**
JFK	**Kawauchi**	**0.54**	**323**	P	**Pn**	**15 27 45.6**	**-0.2**
JFK				S	**Sn**	**15 27 53.1**	**-0.6**
JHO	**Hitachi**	**0.66**	**240**	P	**Pn**	**15 27 46.7**	**-0.7**
JHO				S	**Sn**	**15 27 55.1**	**-1.6**
JFT	**Otama**	**0.95**	**308**	P	**Pn**	**15 27 51.6**	**+0.2**
JFT				S	**Sn**	**15 28 03.4**	**-0.4**
JMM	**Marumori**	**1.00**	**337**	P	**Pn**	**15 27 51.9**	**-0.2**
JMM				*e*S	**Sn**	**15 28 04.4**	**-0.6**
JFY	**Yanaizu**	**1.34**	**291**	P	**Pn**	**15 27 56.3**	**-0.5**
JOU	**Okura**	**1.50**	**341**	P	**Pn**	**15 27 59.2**	**+0.2**
JOU				*e*S	**Sn**	**15 28 16.6**	**-0.8**
JIO	**Ouri**	**1.51**	**2**	P	**Pn**	**15 27 59.3**	**+0.2**
JIO				S	**Sn**	**15 28 17.4**	**-0.2**
JAG	**Ashikaga**	**1.56**	**251**	P	**Pn**	**15 27 58.9**	**-0.8**
JAG				*e*S	**Sn**	**15 28 16.5**	**-2.2**
MJAR	**Matsushiro Arr**	**2.50**	**262**	P	**Pn**	**15 28 13.1**	**+0.4**
	19nm,0.3s,baz=84,slow=15,SNR=279						
MJAR				S	**Sn**	**15 28 43.5**	**+1.5**
	11nm,0.3s,baz=135,slow=14,SNR=6.9						
MAT	**Matsushiro**	**2.50**	**262**	P	**Pn**	**15 28 13.2**	**+0.5**
MAT				*e*S	**Sn**	**15 28 43.9**	**+1.9**
JHJ	**Hachijo jima 2**	**4.01**	**198**	P	**Pn**	**15 28 34.0**	**+0.6**
	21nm,0.3s,baz=326,slow=21,SNR=45						
JHJ				S	**Sn**	**15 29 18.7**	**-0.4**
	37nm,0.3s,baz=91,slow=23,SNR=6.6						
ASAJ	**Asahikawa**	**7.24**	**8**	P	**Pn**	**15 29 18.0**	**+0.3**
	baz=210,slow=14						
ASAJ				S	**Sn**	**15 30 37.2**	**-1.4**
	baz=24,slow=18						
JNU	**Nakatsue**	**9.34**	**249**	P	**Pn**	**15 29 48.7**	**+2.0**
	0.1nm,0.3s,baz=315,slow=2.9,SNR=3.3						
USRK	**Ussuriysk Ar.**	**10.12**	**319**	P	**Pn**	**15 29 59.0**	**+1.7**
	0.4nm,0.3s,baz=140,slow=13,SNR=16						
KSRS	**Korea Array**	**10.67**	**277**	P	**Pn**	**15 30 08.0**	**+3.2**
	0.1nm,0.3s,baz=86,slow=14,SNR=3.2						
KLR	**Kul'dur**	**14.11**	**334**	P	**P**	**15 30 57.5**	**-1.1**
	0.1nm,0.3s,baz=147,slow=9.6,SNR=5.9						
YAK	**Yakutsk**	**26.14**	**348**	P	**P**	**15 33 03.8**	**-0.7**
	2.8nm,0.3s,baz=199,slow=1.5,SNR=5.2						
SONM	**Songino Array**	**27.75**	**304**	P	**P**	**15 33 19.0**	**-0.5**
	0.7nm,0.5s,baz=96,slow=10,SNR=4.5						
H11N2	**WAKE ISLAND Hy**	**28.19**	**120**	T	T	16 03 59.3	
	baz=315,slow=75,SNR=154						
H11N1	**WAKE ISLAND Hy**	**28.20**	**120**	T	T	16 04 03.4	
	baz=315,slow=75,SNR=146						
H11N3	**WAKE ISLAND Hy**	**28.21**	**120**	T	T	16 03 58.6	
	baz=315,slow=75,SNR=167						
H11S1	**WAKE ISLAND Hy**	**28.90**	**123**	T	T	16 04 26.2	
	baz=319						
H11S3	**WAKE ISLAND Hy**	**28.90**	**123**	T	T	16 05 04.1	
	baz=319,slow=74						
H11S2	**WAKE ISLAND Hy**	**28.91**	**123**	T	T	16 05 08.1	
	baz=319,slow=74						
ZALV	**Zalesovo Beam**	**41.90**	**312**	P	**P**	**15 35 20.1**	**-0.7**
	1.3nm,0.5s,baz=84,slow=7.6,SNR=6.5						
MKAR	**Makanchi Array**	**44.08**	**302**	P	**P**	**15 35 36.7**	**-1.9**
	0.4nm,0.6s,baz=84,slow=9.5,SNR=5.0						
ILAR	**Eielson Array**	**49.63**	**32**	P	**P**	**15 36 22.5**	**+0.8**
	0.8nm,0.9s,baz=266,slow=7.3,SNR=8.2						
INK	**Inuvik**	**54.52**	**27**	P	**P**	**15 36 57.8**	**-0.1**
	1.4nm,0.9s,baz=300,slow=8.6,SNR=2.3						
WRA	**Warramunga Arr**	**56.95**	**188**	P	**P**	**15 37 14.7**	**-1.2**
	0.2nm,0.4s,baz=2.7,slow=7.2,SNR=8.3						
WRA				LR	LR	16 01 46.2	
	comp=Z,126nm,19.1s,baz=255,slow=36						
ASAR	**Alice Springs**	**60.68**	**188**	P	**P**	**15 37 41.2**	**-0.5**
	0.2nm,0.7s,baz=0.1,slow=7.6,SNR=4.2						
FINES	**FINESS Array B**	**68.85**	**332**	P	**P**	**15 38 34.7**	**+0.2**
	0.4nm,0.5s,baz=47,slow=8.2,SNR=2.8						
PDAR	**Pinedale Array**	**77.81**	**45**	P	**P**	**15 39 29.4**	**+1.4**
	0.3nm,0.8s,baz=300,slow=6.1,SNR=2.7						
TXAR	**Lajitas Array**	**90.26**	**52**	P	**P**	**15 40 32.0**	**+0.6**
	0.2nm,0.5s,baz=290,slow=3.5,SNR=3.6						
LPAZ	**La Paz**	**146.83**	**60**	PKPbc	**PKPbc**	**15 47 14.1**	**+0.4**
	0.7nm,0.7s,baz=304,slow=3.6,SNR=3.2						

IDC 31 15:41:39.4±3.1, 5.96S×133.62E, h0km, mb3.6/1, mb1 3.8/3, mb1mx3.5/28, mbtmp3.6/3, ML3.4/2, Error ellipse: s-maj=134.1km s-min=19.9km az=81.0, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**13.92**	**177**	Pn	Pn	15 44 56.9	-1.2
	0.2nm,0.3s,baz=356,slow=13,SNR=11						
WRA				Sn	Sn	15 47 33.0	-0.4
	0.1nm,0.3s,baz=0.1,slow=23,SNR=4.8						
ASAR	**Alice Springs**	**17.61**	**179**	P	Pn	15 45 46.7	+0.3
	0.2nm,0.3s,baz=1.9,slow=9.4,SNR=19						
ASAR				S	Sn	15 49 04.8	+1.5
	0.1nm,0.3s,baz=356,slow=29,SNR=5.2						
MKAR	**Makanchi Array**	**69.39**	**325**	P	P	15 52 49.3	+0.1
	0.6nm,1.0s,baz=116,slow=6.6,SNR=3.8						

IDC 31 16:34:38.0±2.9, 5.57S×128.94E, h363km±29km, mb3.0/2, mb1 3.3/4, mb1mx2.9/25, mbtmp4.0/4, Error ellipse: s-maj=103.6km s-min=13.2km az=68.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**15.22**	**160**	P	P	16 37 54.0	-0.5
	1.4nm,0.3s,baz=332,slow=12,SNR=116						
WRA				S	S	16 40 36.6	-0.9
	0.3nm,0.3s,baz=343,slow=21,SNR=7.3						
ASAR	**Alice Springs**	**18.62**	**166**	P	P	16 38 30.6	-0.4
	0.8nm,0.3s,baz=344,slow=11,SNR=104						
ASAR				S	S	16 41 44.7	+0.7
	0.3nm,0.3s,baz=345,slow=20,SNR=23						
STKA	**Stephens Creek**	**28.73**	**157**	P	P	16 40 03.9	+0.5
	0.5nm,0.3s,baz=338,slow=7.5,SNR=11						
STKA				S	S	16 44 26.0	+0.3
	3.7nm,1.1s,baz=330,slow=20,SNR=2.4						
MKAR	**Makanchi Array**	**66.46**	**327**	P	P	16 44 49.5	-0.1
	0.2nm,0.4s,baz=117,slow=8.3,SNR=7.2						

KRSC 31 16:49:21.6±1.9, 52.72N×160.94E, h41km±17km, ML3.6, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPN	**Mys Shipunski**	**0.67**	**304**	*i* P	Pn	16 49 35.1	+0.5
SPN				*e*S	Sn	16 49 43.0	-1.0
NLC	**Nalytchevo**	**1.07**	**296**	*e*P	Pn	16 49 40.9	+0.9
NLC				*e*S	Sn	16 49 53.5	-0.1
DALK	**Dalny**	**1.36**	**284**	*e*P	Pn	16 49 46.1	+2.0
DALK				*e*S	Sn	16 50 01.5	+0.6
SDLR	**Sedlovina**	**1.36**	**295**	*e*P	Pn	16 49 45.9	+1.7
UGLR	**Uglovaya**	**1.37**	**292**	*e*P	Pn	16 49 46.1	+1.8
AVH	**Avacha**	**1.44**	**293**	*e*P	Pn	16 49 47.2	+2.0
KRER	**Koryakskii**	**1.45**	**295**	*e*P	Pn	16 49 47.5	+2.1
KOK	**Koryaka**	**1.51**	**293**	*e*P	Pn	16 49 48.7	+2.6
RUS	**Russkaya**	**1.51**	**260**	*e*P	Pn	16 49 47.9	+1.8
RUS				*e*S	Sn	16 50 05.1	+0.6
KRX	**Arik**	**1.52**	**296**	*e*P	Pn	16 49 48.6	+2.2
KRX				*e*S	Sn	16 50 06.1	+1.0
KII	**Karymskiy**	**1.59**	**326**	*e*P	Pn	16 49 50.8	+3.5
KII				*e*S	Sn	16 50 10.0	+3.3
KRMR	**Karymshinskiy**	**1.71**	**275**	*e*P	Pn	16 49 51.2	+2.3
KRMR				*e*S	Sn	16 50 10.9	+1.4
ASAK	**Asacha**	**1.89**	**261**	*e*P	Pn	16 49 54.7	+3.3
ASAK				*e*S	Sn	16 50 16.8	+2.8
MKZ	**Mys Kozlova**	**1.90**	**14**	*e*S	Sn	16 50 18.1	+4.1
GNL	**Ganaly**	**2.05**	**300**	*e*P	Pn	16 49 57.4	+3.8
GNL				*e*S	Sn	16 50 22.6	+4.6
BKI	**Bering**	**3.87**	**48**	*e*P	Pn	16 50 22.7	+4.2
BKI				*e*S	Sn	16 51 04.5	+1.8

*DDA **31** 16:51:12.8, 39.73N×38.96E, h7km, Md3.1*
*CSEM **31** 16:51:12.8±0.3, 39.73N×38.96E, h2km, MD3.1, Error ellipse: s-maj=5.6km s-min=4.9km az=149.0*
*ISCJB **31** 16:51:13.0±0.5, 39.72N±0.03×38.97E±0.04, h10km, Error ellipse: s-maj=4.2km s-min=3.7km az=143.7*
*ISK **31** 16:51:13.4, 39.68N×38.96E, h6km, MD3.0*

ISC 31 16:51:13.2±0.8, 39.70N±0.02×38.94E±0.02, h10km, n24, σ1s29/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
REFA	**Refahiye_ERZ**	**0.34**	**204**	*i* P	**Pg**	**16 51 17.6**	**-2.3**
REFA				*i* S	**Sg**	**16 51 21.4**	**-3.0**
REFA	**Refahiye_ERZ**	**0.34**	**204**	P	**Pg**	**16 51 17.6**	**-2.3**
ILIC	**ilic-Erzincan**	**0.38**	**229**	*e*PG	**Pg**	**16 51 20.9**	**+0.1**
ILIC				*e*SG	**Sb**	**16 51 27.2**	**-0.9**
ILIC	**ilic-Erzincan**	**0.38**	**229**	*e*Pg	**Pg**	**16 51 20.9**	**+0.1**
ILIC				*e*Sg	**Sb**	**16 51 27.2**	**-0.9**
KELT	**Kelkit**	**0.51**	**28**	*i* P	**Pg**	**16 51 21.2**	**-1.9**
KELT				*i* S	**Sg**	**16 51 28.1**	**-1.8**
KELT	**Kelkit**	**0.51**	**28**	P	**Pg**	**16 51 21.2**	**-1.9**
KELT				S	**Sg**	**16 51 28.1**	**-1.8**
KEMA	**Kemaliye**	**0.55**	**219**	*i* P	**Pg**	**16 51 23.9**	**-0.1**
KEMA				*i* S	**Sb**	**16 51 33.0**	**-0.1**
KEMA	**Kemaliye**	**0.55**	**219**	P	**Pg**	**16 51 23.9**	**-0.1**
KEMA				S	**Sb**	**16 51 33.0**	**-0.1**
EUZM	**Uzumlu**	**0.58**	**89**	*i* P	**Pg**	**16 51 24.1**	**-0.5**
EUZM				*i* S	**Sb**	**16 51 33.8**	**-0.2**
EUZM	**Uzumlu**	**0.58**	**89**	P	**Pg**	**16 51 24.1**	**-0.5**
EUZM				S	**Sb**	**16 51 33.8**	**-0.2**
TNCL	**Tunceli-Merkez**	**0.75**	**141**	*i* P	**Pg**	**16 51 27.7**	**0.0**
TNCL				*i* S	**Sb**	**16 51 38.0**	**-0.7**
TNCL	**Tunceli-Merkez**	**0.75**	**141**	P	**Pg**	**16 51 27.7**	**0.0**
TNCL				S	**Sb**	**16 51 38.0**	**-0.7**
SUSE	**Susehri**	**0.76**	**312**	*i* P	**Pg**	**16 51 27.4**	**-0.4**
SUSE				*i* S	**Sb**	**16 51 39.1**	**0.0**
SUSE	**Susehri**	**0.76**	**312**	P	**Pg**	**16 51 27.5**	**-0.4**
SUSE				S	**Sb**	**16 51 39.1**	**0.0**
PTK	**Pertek**	**0.88**	**156**	*e*PG	**Pb**	**16 51 30.3**	**-0.4**
PTK				*e*SG	**Sb**	**16 51 42.6**	**0.0**
PTK	**Pertek**	**0.88**	**156**	*e*Pg	**Pb**	**16 51 30.3**	**-0.4**
PTK				*e*Sg	**Sb**	**16 51 42.6**	**0.0**
KOPT	**Kop Dagi**	**1.24**	**75**	*i* P	**Pg**	**16 51 36.7**	**-0.3**
KOPT				*i* S	**Sn**	**16 51 58.2**	**+4.4**
KOPT	**Kop Dagi**	**1.24**	**75**	P	**Pg**	**16 51 36.7**	**-0.3**
MACK	**Trabzon**	**1.39**	**27**	*i* P	Pg	16 51 48.5	+8.6
SVSK	**Karacayir**	**1.51**	**279**	*e*PN	**Pg**	**16 51 42.1**	**-0.1**
SVSK	**Karacayir**	**1.51**	**279**	*e*Pn	**Pg**	**16 51 42.1**	**-0.1**
DARE	**Darende-Malaty**	**1.60**	**226**	*e*PN	**Pb**	**16 51 42.6**	**-0.3**
DARE	**Darende-Malaty**	**1.60**	**226**	*e*Pn	**Pb**	**16 51 42.6**	**-0.3**
SARI	**SarD1z-Kayseri**	**2.35**	**237**	*e*PN	**Pn**	**16 51 53.7**	**+1.7**

*IDC **31** 16:51:58.2±1.9, 5.26N×124.88E, h0km, mb3.3/4, mb1 3.6/4, mb1mx3.3/31, mbtmp3.4/4, Error ellipse: s-maj=123.2km s-min=23.7km az=68.0*

ISC 31 16:52:06.7±1.3, 4.8N±0.1×124.0E±0.2, h50km, n7, σ1s63/7, mb3.3/4, 1C-1D, Celebes Sea

| Code | Station Name | Δ° | AZ° |

ONAJ			S		Sn	17 08 58.0	-0.3
JYT	**Yasato**	**0.74 247**	P		**Pn**	**17 08 50.9**	**-0.3**
JYT			S		**Sn**	**17 08 59.8**	**-1.6**
JFK	**Kawauchi**	**0.85 351**	P		**Pn**	**17 08 53.0**	**+0.1**
JFK			S		**Sn**	**17 09 03.6**	**-0.6**
JFT	**Otama**	**1.14 331**	P		**Pn**	**17 08 57.8**	**+1.0**
JFT			S		**Sn**	**17 09 11.5**	**+0.2**
JAG	**Ashikaga**	**1.28 266**	P		**Pn**	**17 08 58.3**	**-0.4**
JAG			S		**Sn**	**17 09 12.5**	**-2.2**
JFY	**Yanaizu**	**1.39 310**	P		**Pn**	**17 09 00.8**	**+0.7**
JFY			S		**Sn**	**17 09 17.0**	**-0.3**
MJAR	**Matsushiro Arr**	**2.28 271**	P		**Pn**	**17 09 12.9**	**+0.5**
	8.5nm,0.3s,baz=80,slow=11,SNR=86						
MJAR			S		**Sn**	**17 09 39.4**	**+0.1**
	11nm,0.3s,baz=84,slow=26,SNR=18						
MAT	**Matsushiro**	**2.28 271**	P		**Pn**	**17 09 13.3**	**+0.9**
MAT			S		**Sn**	**17 09 40.6**	**+1.3**
JHJ	**Hachijo jima 2**	**3.55 197**	P		**Pn**	**17 09 30.8**	**+1.0**
	2.2nm,0.3s,baz=233,slow=20,SNR=2.9						
JHJ			S		**Sn**	**17 10 11.7**	**+1.2**
	7.4nm,0.3s,baz=359,slow=16,SNR=3.4						
ASAJ	**Asahikawa**	**7.68 8**	P		**Pn**	**17 10 26.5**	**0.0**
	baz=218,slow=13						
SONM	**Songino Array**	**27.83 305**	P		**P**	**17 14 24.5**	**+1.7**
	0.4nm,0.5s,baz=116,slow=8.6,SNR=3.9						
H11N2	**WAKE ISLAND Hy 28.15 119**		T		T	17 44 07.5	
	baz=312,slow=75,SNR=6.8						
H11N1	**WAKE ISLAND Hy 28.16 119**		T		T	17 44 08.9	
	baz=312,slow=75,SNR=6.8						
H11N3	**WAKE ISLAND Hy 28.17 119**		T		T	17 44 05.8	
	baz=312,slow=75,SNR=7.3						
H11S1	**WAKE ISLAND Hy 28.84 122**		T		T	17 45 05.9	
	baz=314,slow=75,SNR=15						
H11S3	**WAKE ISLAND Hy 28.84 122**		T		T	17 45 08.2	
	baz=314,slow=75,SNR=7.6						
H11S2	**WAKE ISLAND Hy 28.86 122**		T		T	17 45 06.2	
	baz=314,slow=75,SNR=4.3						
ZALV	**Zalesovo Beam**	**42.04 313**	P		**P**	**17 16 24.6**	**0.0**
	0.4nm,0.5s,baz=108,slow=9.4,SNR=3.1						
ILAR	**Eielson Array**	**50.09 32**	P		**P**	**17 17 27.4**	**-0.4**
	0.2nm,0.7s,baz=246,slow=6.8,SNR=3.0						
INK	**Inuvik**	**54.98 27**	P		**P**	**17 18 02.1**	**-1.8**
	1.2nm,0.7s,baz=118,slow=2.4,SNR=3.7						
WRA	**Warramunga Arr**	**56.51 188**	P		**P**	**17 18 15.3**	**-0.2**
	0.4nm,0.6s,baz=5.3,slow=7.4,SNR=6.3						
ASAR	**Alice Springs**	**60.24 188**	P		**P**	**17 18 41.5**	**+0.1**
	0.3nm,0.9s,baz=7.9,slow=9.8,SNR=3.9						

RSNC 31 17:10:25.5±1.3, 4.35N×73.72W, h4km±9km, ML3.1, 1C, Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VILC	**Villavicencio,**	**0.24**	**175**	*i* P	Pg	17 10 30.7	+0.5
VILC				*e*S	Sg	17 10 33.8	+0.3
VILC				*i*		17 10 40.6	
	comp=Z,2μm,0.5s						
CHIC	**Chingaza**	**0.27**	**356**	*i* P	Pg	17 10 30.9	-0.1
CHIC				*e*S	Sg	17 10 34.7	0.0
CHIC				*i*		17 10 36.3	
	comp=Z,3μm,0.2s						
ROSC	**El Rosal**	**0.77**	**309**	*e*P	Pg	17 10 40.3	-0.1
ROSC				*e*S	Sg	17 10 50.9	+0.4
ROSC				*i*		17 10 59.4	
	comp=Z,207nm,0.5s						
SJAC	**San Juan de Ar**	**1.10**	**192**	*e*P	Pg	17 10 45.2	-1.5
SJAC				*e*S	Sg	17 10 59.4	-1.5
SJAC				*i*		17 11 06.0	
	comp=Z,808nm,0.4s						
PRAC	**Prado**	**1.33**	**241**	*e*P	Pn	17 10 48.1	-2.8
PRAC				*e*S	Sg	17 11 06.3	-2.0
TOLC	**Tolima**	**1.62**	**278**	*e*P	Pn	17 10 53.7	-1.4
NORC	**Norcasia**	**1.66**	**316**	*e*P	Pn	17 10 54.6	-0.9
NORC				*e*S	Sn	17 11 16.3	-1.0
GUYC	**Guyana, Colomb**	**1.88**	**297**	*e*P	Pn	17 10 58.4	-0.5
GUYC				*e*S	Sn	17 11 21.3	-1.9
GUYC				*i*		17 11 26.8	
	comp=Z,181nm,0.4s						

*NEIC **31** 17:10:34.4, 18.95N×67.71W, h22km, MD3.3(RSPR), After RSPR.*

RSPR 31 17:10:34.4, 18.95N×67.71W, h22km±10km, MD3.3/9, 24C-16D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**0.60**	**158**	*e*P	Pb	17 10 44.9	-1.4
IDE	**Isla Desecheo**	**0.60**	**158**	*e*P	Pb	17 10 44.9	-1.4
IDE	**Isla Desecheo**	**0.60**	**158**	*e*S	Sb	17 10 53.3	-1.1
IDE	**Isla Desecheo**	**0.60**	**158**	*e*P	Pb	17 10 44.9	-1.4
IDE	**Isla Desecheo**	**0.60**	**158**	*e*S	Sb	17 10 53.3	-1.1
IDE	**Isla Desecheo**	**0.60**	**158**	*e*P	Pb	17 10 44.9	-1.4
IDE				*e*S	Sb	17 10 53.2	-1.3
AGPR	**Aguadilla, PR**	**0.74**	**130**	*e*P	Pb	17 10 46.8	-1.9
AGPR	**Aguadilla, PR**	**0.74**	**130**	*e*P	Pb	17 10 46.8	-1.9
AGPR	**Aguadilla, PR**	**0.74**	**130**	*e*S	Sb	17 10 57.2	-1.2
AGPR	**Aguadilla, PR**	**0.74**	**130**	*e*P	Pb	17 10 47.2	-1.5
AGPR	**Aguadilla, PR**	**0.74**	**130**	*e*P	Pb	17 10 46.8	-1.9
AGPR				*e*S	Sb	17 10 56.7	-1.7
LSP	**Las Mesas**	**0.97**	**142**	*e*P	Pb	17 10 50.3	-2.2
LSP	**Las Mesas**	**0.97**	**142**	*e*P	Pb	17 10 50.7	-1.9
LSP	**Las Mesas**	**0.97**	**142**	*e*S	Sb	17 11 05.0	0.0
LSP	**Las Mesas**	**0.97**	**142**	*e*P	Pb	17 10 50.7	-1.9
LSP	**Las Mesas**	**0.97**	**142**	*e*S	Sb	17 11 04.0	-1.0
LSP	**Las Mesas**	**0.97**	**142**	*e*P	Pb	17 10 50.3	-2.2
LSP				*e*S	Sb	17 11 04.0	-1.0
AOPR	**Arecibo Observ**	**1.09**	**123**	*e*P	Pn	17 10 51.7	-2.7
AOPR	**Arecibo Observ**	**1.09**	**123**	*e*P	Pn	17 10 52.1	-2.3
AOPR	**Arecibo Observ**	**1.09**	**123**	*e*P	Pn	17 10 52.1	-2.3
AOPR	**Arecibo Observ**	**1.09**	**123**	*e*P	Pn	17 10 51.7	-2.7
AOPR				*e*S	Sb	17 11 05.6	-2.8
CRPR	**Cabo Rojo, PR**	**1.10**	**148**	*e*P	Pn	17 10 52.0	-2.5
CRPR	**Cabo Rojo, PR**	**1.10**	**148**	*e*P	Pn	17 10 53.1	-1.4
CRPR	**Cabo Rojo, PR**	**1.10**	**148**	*e*S	Sb	17 11 07.9	-0.7
CRPR	**Cabo Rojo, PR**	**1.10**	**148**	*e*P	Pn	17 10 53.1	-1.4
CRPR	**Cabo Rojo, PR**	**1.10**	**148**	*e*S	Sb	17 11 06.6	-1.9
CRPR	**Cabo Rojo, PR**	**1.10**	**148**	*e*P	Pn	17 10 52.0	-2.5
CRPR				*e*S	Sb	17 11 05.6	-3.0
CRPR				*e*S	Sn	17 11 06.6	-2.4
CELP	**Cerrillos**	**1.38**	**129**	*e*P	Pn	17 10 56.1	-2.3
CELP				*e*S	Sn	17 11 12.7	-3.4
CELP	**Cerrillos**	**1.38**	**129**	*i*P	Pn	17 10 57.0	-1.4
CELP	**Cerrillos**	**1.38**	**129**	*i*P	Pn	17 10 57.0	-1.4
CELP	**Cerrillos**	**1.38**	**129**	*e*P	Pn	17 10 56.1	-2.3
OBIP	**Obispado Ponce**	**1.39**	**130**	*e*P	Pn	17 10 56.0	-2.5
OBIP	**Obispado Ponce**	**1.39**	**130**	*e*P	Pn	17 10 56.9	-1.6
OBIP	**Obispado Ponce**	**1.39**	**130**	*e*S	Sn	17 11 14.8	-1.2
OBIP	**Obispado Ponce**	**1.39**	**130**	*e*P	Pn	17 10 56.9	-1.6
OBIP	**Obispado Ponce**	**1.39**	**130**	*e*S	Sn	17 11 14.8	-1.2
OBIP	**Obispado Ponce**	**1.39**	**130**	*e*P	Pn	17 10 56.0	-2.5
OBIP				*e*S	Sn	17 11 12.8	-3.3
SJG	**San Juan**	**1.70**	**119**	*e*P	Pn	17 11 00.6	-2.2
SJG	**San Juan**	**1.70**	**119**	*e*P	Pn	17 11 01.3	-1.4
SJG	**San Juan**	**1.70**	**119**	*e*P	Pn	17 11 01.3	-1.4
SJG	**San Juan**	**1.70**	**119**	*e*P	Pn	17 11 00.6	-2.2
SJG				*e*S	Sn	17 11 20.7	-3.2
CBYP	**Canovanas**	**1.89**	**111**	*e*P	Pn	17 11 02.9	-2.5
CBYP	**Canovanas**	**1.89**	**111**	*e*P	Pn	17 11 04.6	-0.8
CBYP	**Canovanas**	**1.89**	**111**	*e*P	Pn	17 11 04.6	-0.8
CBYP	**Canovanas**	**1.89**	**111**	*e*P	Pn	17 11 02.9	-2.5
HUMP	**Col San Antoni**	**1.94**	**114**	*e*P	Pn	17 11 03.8	-2.3
HUMP	**Col San Antoni**	**1.94**	**114**	*e*S	Sn	17 11 28.8	-1.1
HUMP	**Col San Antoni**	**1.94**	**114**	*e*P	Pn	17 11 05.0	-1.1
HUMP	**Col San Antoni**	**1.94**	**114**	*e*S	Sn	17 11 28.8	-1.1
HUMP	**Col San Antoni**	**1.94**	**114**	*e*P	Pn	17 11 05.0	-1.1
HUMP	**Col San Antoni**	**1.94**	**114**	*e*P	Pn	17 11 03.8	-2.3
HUMP				*e*S	Sn	17 11 26.9	-3.0

*ISCJB **31** 17:21:58.1±0.5, 45.66N±0.05×151.69E±0.07, h32km, mb3.5/9, Error ellipse: s-maj=9.1km s-min=4.1km az=140.5*

*SKHL **31** 17:21:59.2±0.9, 45.58N×151.93E, h59km±9km, mb4.4/6*

*JMA **31** 17:21:59.8±0.6, 45.96N×151.62E, h30km, M4.6*

*MOS **31** 17:22:01.3±0.9, 45.90N×151.46E, h66km, mb4.1/5, Error ellipse: s-maj=13.3km s-min=10.9km az=54.3*

*IDC **31** 17:22:04.2±3.3, 46.01N×151.39E, h70km±29km, mb3.3/9, mb1 3.6/13, mb1mx3.4/45, mbtmp3.7/13, Error ellipse: s-maj=24.0km s-min=17.5km az=126.0*

ISC 31 17:21:58.6±0.7, 45.62N±0.08×151.78E±0.07, h32km, n74, σ2934/85, mb3.7/9, 1C-5D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**2.78**	**264**	*d* iPN	**Pn**	**17 22 42.2**	**+1.3**
KUR				*i* S	**Sn**	**17 23 13.0**	**-0.4**
KUR				pmax	pmax		
	comp=Z,264nm,0.4s						
KUR				pmax	pmax		
	comp=N,86nm,0.3s						
KUR				pmax	pmax		
	comp=E,74nm,0.2s						
KUR				smax	smax		
	comp=N,511nm,0.3s						
KUR				smax	smax		
	comp=E,248nm,0.3s						
KUR	**Kuril'sk**	**2.78**	**264**	*e*P	**Pn**	**17 22 42.3**	**+1.3**
KUR				AMB	AMB	17 22 45.5	
	comp=E,20nm,0.2s						
KUR				*e*S	**Sn**	**17 23 14.5**	**+1.1**
KUR				A	A	17 23 17.3	
	comp=E,370nm,0.5s						
SHO	**Shikotan**	**3.94**	**245**	*d* iPN	**Pn**	**17 22 58.3**	**+1.5**
SHO				*i* S	**Sn**	**17 23 40.1**	**-1.7**
SHO				pmax	pmax		
	comp=Z,86nm,0.4s						
SHO				pmax	pmax		
	comp=N,31nm,0.3s						
SHO				pmax	pmax		
	comp=E,29nm,0.3s						
SHO				smax	smax		
	comp=N,158nm,0.8s						
SHO				smax	smax		
	comp=E,269nm,0.5s						
SHO	**Shikotan**	**3.94**	**245**	*e*P	**Pn**	**17 22 58.3**	**+1.5**
SHO				AMB	AMB	17 22 59.5	
	comp=E,60nm,0.6s						
SHO				AMB	AMB	17 22 59.5	
	comp=E,50nm,0.6s						
SHO				AMB	AMB	17 22 59.5	
	comp=E,70nm,0.6s						
SHO				*e*S	**Sn**	**17 23 43.3**	**+1.5**
SHO				A	A	17 23 50.4	
	comp=E,90nm,0.3s						
SHO				A	A	17 23 50.4	
	comp=E,20nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**4.50**	**252**	*d* iPN	**Pn**	**17 23 07.3**	**+2.8**
YUK				*i* S	**Sn**	**17 23 56.7**	**+1.1**
YUK				pmax	pmax		
	comp=Z,138nm,0.1s						
YUK				pmax	pmax		
	comp=N,120nm,0.2s						
YUK				pmax	pmax		
	comp=E,108nm,0.3s						
YUK				smax	smax		
	comp=N,218nm,0.6s						
YUK				smax	smax		
	comp=E,226nm,0.6s						
YUK	**Yuzh-Kuril'sk**	**4.50**	**252**	*i* P	**Pn**	**17 23 07.1**	**+2.6**
YUK				AMB	AMB	17 23 08.0	
	comp=E,20nm,0.3s						
YUK				*i* S	**Sn**	**17 23 57.4**	**+1.8**
YUK				A	A	17 24 04.0	
	comp=E,30nm,0.4s						
YUK				A	A	17 24 04.0	
	comp=E,40nm,0.4s						
NEM2	**Nemuro 2**	**4.87**	**245**	P	**Pn**	**17 23 10.9**	**+1.3**
NEM2				*e*S	**Sn**	**17 24 03.4**	**-1.4**
JRA	**Rausu**	**5.03**	**253**	P	**Pn**	**17 23 14.9**	**+3.1**
JNK	**Nakash**	**5.43**	**251**	P	**Pn**	**17 23 20.1**	**+2.7**
JNK				*e*S	**Sn**	**17 24 20.1**	**+1.3**
JAK	**Akkeshi**	**5.72**	**245**	P	**Pn**	**17 23 22.6**	**+1.4**
JAK				*e*S	**Sn**	**17 24 24.3**	**-1.4**
JTKR	**Abashiri--Toko**	**5.84**	**256**	P	**Pn**	**17 23 26.3**	**+3.4**
SKR	**Severo-Kuril's**	**5.84**	**28**	*e*P	**Pn**	**17 23 24.0**	**+1.1**
SKR				AMB	AMB	17 23 25.5	
	comp=E,60nm,1.0s						
SKR				AMB	AMB	17 23 25.5	
	comp=E,50nm,1.0s						
SKR				AMB	AMB	17 23 25.5	
	comp=E,90nm,1.0s						
SKR				*e*S	**Sn**	**17 24 25.5**	**-3.2**
SKR				A	A	17 24 29.5	
	comp=E,50nm,0.3s						
SKR				A	A	17 24 29.5	
	comp=E,40nm,0.3s						
JAR	**Ashorobuto**	**6.18**	**251**	P	**Pn**	**17 23 30.6**	**+2.9**
JMP	**Maruseppu**	**6.20**	**258**	P	**Pn**	**17 23 31.8**	**+3.9**
JOB	**Onbets**	**6.32**	**247**	P	**Pn**	**17 23 31.8**	**+2.3**
JOB				*e*S	**Sn**	**17 24 39.4**	**-1.1**
YSS	**Yuzh-Sakhalins**	**6.40**	**285**	*i* PN	**Pn**	**17 23 32.5**	**+1.9**
YSS				pmax	pmax		
	comp=Z,10.0nm,0.4s						
YSS				MLR	MLR		
	comp=Z,200nm,15.0s						
YSS	**Yuzh-Sakhalins**	**6.40**	**285**	*e*P	**Pn**	**17 23 32.5**	**+1.9**
YSS				AMB	AMB	17 23 34.2	
	comp=Z,10.0nm,0.4s						
HRK	**Horoka**	**6.54**	**254**	*e*P	**Pn**	**17 23 36.2**	**+3.5**
JKK2	**Kamakawa 2**	**6.66**	**258**	P	**Pn**	**17 23 38.4**	**+4.1**
ASAJ	**Asahikawa**	**6.70**	**260**	P	**Pn**	**17 23 38.8**	**+4.1**
JCH	**Churui**	**6.76**	**247**	P	**Pn**	**17 23 36.9**	**+1.3**
JCH				*e*S	**Sn**	**17 24 49.7**	**-1.7**
MYR	**Moyori**	**6.97**	**245**	*e*P	**Pn**	**17 23 40.4**	**+1.9**
MYR				*e*S	**Sn**	**17 24 55.3**	**-1.3**
JFR	**Furan**	**7.02**	**253**	P	**Pn**	**17 23 42.3**	**+3.1**
ERM	**Erimo**	**7.20**	**243**	*de*PN	**Pn**	**17 23 45.4**	**+3.8**
ERM	**Erimo**	**7.20**	**243**	*e*P	**Pn**	**17 23 45.4**	**+3.8**
JNBK	**Urakawa-nobuka**	**7.32**	**246**	P	**Pn**	**17 23 44.3**	**+1.1**
JBT2	**Biratori 2**	**7.34**	**251**	P	**Pn**	**17 23 45.2**	**+1.7**
TYV	**Tymovskoe**	**8.04**	**314**	*e*P	**Pn**	**17 23 54.4**	**+1.3**
JNB	**Noboribetsu**	**8.35**	**252**	P	**Pn**	**17 23 59.0**	**+1.6**
JNB				*e*S	**Sn**	**17 25 27.8**	**-2.8**
PETK	**Petropavlovsk-**	**8.43**	**25**	P	**Pn**	**17 24 00.7**	**+2.2**
	comp=Z,0.3nm,0.3s,baz=196,slow=13,SNR=7.9						
JKB	**Kayabe**	**8.62**	**248**	P	**Pn**	**17 24 02.2**	**+1.1**
JKB				*e*S	**Sn**	**17 25 32.2**	**-5.0**
JSH	**Shimam**	**8.95**	**255**	P	**Pn**	**17 24 09.1**	**+3.5**
JYM2	**Yakumo 2**	**8.95**	**251**	P	**Pn**	**17 24 06.9**	**+1.3**
JANG	**Nango**	**9.16**	**239**	P	**Pn**	**17 24 07.8**	**-0.7**
JANG				*e*S	**Sn**	**17 25 43.2**	**-7.3**
JTM	**Tenmabayashi**	**9.19**	**242**	P	**Pn**	**17 24 09.2**	**+0.3**
JTM				*e*S	**Sn**	**17 25 44.5**	**-6.6**
JOSM	**Okushiri--Mats**	**9.56**	**253**	P	**Pn**	**17 24 15.4**	**+1.4**
OFUJ	**Ofunato**	**9.93**	**232**	P	**Pn**	**17 24 18.8**	**-0.2**
JRG	**Rokugo**	**10.31**	**237**	P	**Pn**	**17 24 25.1**	**+0.9**
HABR	**Khabarovsk**	**11.77**	**290**	*e*PN	**Pn**	**17 24 44.4**	**+0.3**
HABR				*e*S	**Sn**	**17 26 53.9**	**-0.3**
HABR				pmax	pmax		
	comp=Z,6.0nm,1.3s						
HABR				pmax	pmax		
	comp=N,8.0nm,1.3s						
HABR				pmax	pmax		
	comp=E,12nm,1.3s						
HABR				MLR	MLR		
	comp=Z,71nm,17.0s						
HABR	**Khabarovsk**	**11.77**	**290**	*e*P	**Pn**	**17 24 44.4**	**+0.3**
MJAR	**Matsushiro Arr**	**13.66**	**233**	P	**Pn**	**17 25 09.9**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=36,slow=12,SNR=3.4						
MA2	**Magadan**	**14.00**	**358**	P	**Pn**	**17 25 14.0**	**-0.5**
	comp=Z,0.8nm,0.3s,baz=150,slow=17,SNR=5.2						
MA2	**Magadan**	**14.00**	**358**	P	**Pn**	**17 25 14.0**	**-0.5**
MA2				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MA2	**Magadan**	**14.00**	**358**	*e*P	**Pn**	**17 25 14.0**	**-0.5**
USRK	**Ussuriysk Ar.**	**14.10**	**271**	P	**Pn**	**17 25 15.6**	**-0.4**
	comp=Z,0.1nm,0.3s,baz=79,slow=15,SNR=2.4						
EKMR	**Ekimchan**	**14.34**	**308**	*e*P	**Pn**	**17 25 21.4**	**+2.2**
SEY	**Seymchan**	**17.36**	**1**	P	**P**	**17 26 00.8**	**+1.6**
	comp=Z,0.3nm,0.3s,baz=182,slow=23,SNR=6.7						
SEY	**Seymchan**	**17.36**	**1**	*e*P	**P**	**17 26 01.2**	**+2.0**
KSRS	**Korea Array**	**19.58**	**254**	P	**Pn**	**17 26 25.7**	**+0.3**
	comp=Z,0.1nm,0.3s,baz=56,slow=11,SNR=5.3						
KSRS	**Korea Array**	**19.58**	**254**	*e*P	**Pn**	**17 26 26.8**	**+1.5**
YAK	**Yakutsk**	**20.81**	**330**	*i* P	Pn	17 26 40.3	+0.8
YAK				pmax	pmax		
	comp=Z,15nm,0.7s						
YAK	**Yakutsk**	**20.81**	**330**	*e*P	Pn	17 26 40.3	+0.8
H11N2	**WAKE ISLAND Hy**	**28.68**	**149**	T	T	17 58 29.3	
	baz=338,slow=75,SNR=337						
H11N1	**WAKE ISLAND Hy**	**28.69**	**149**	T	T	17 58 30.3	
	baz=338,slow=75,SNR=364						
H11N3	**WAKE ISLAND Hy**	**28.69**	**149**	T	T	17 58 30.5	
	baz=338,slow=75,SNR=277						
H11S1	**WAKE ISLAND Hy**	**29.74**	**150**	T	T	17 59 50.5	
	baz=339,slow=76,SNR=315						
H11S3	**WAKE ISLAND Hy**	**29.75**	**151**	T	T	17 59 51.9	
	baz=339,slow=76,SNR=334						
H11S2	**WAKE ISLAND Hy**	**29.75**	**150**	T	T	17 59 50.7	
	baz=339,slow=76,SNR=285						
ILAR	**Eielson Array**	**38.01**	**38**	P	**P**	**17 29 13.4**	**+0.1**
	comp=Z,0.1nm,0.4s,baz=258,slow=8.5,SNR=2.9						
ZALV	**Zalesovo Beam**	**42.53**	**306**	PcP	**PcP**	**17 31 42.5**	**-0.3**
	comp=Z,0.2nm,0.3s,baz=88,slow=3.5,SNR=3.5						
MKAR	**Makanchi Array**	**46.65**	**298**	P	**P**	**17 30 22.8**	**-1.0**
	comp=Z,0.5nm,0.6s,baz=64,slow=7.3,SNR=7.2						
MKAR				PcP	**PcP**	**17 31 57.7**	**+0.5**
	comp=Z,0.2nm,0.5s,baz=90,slow=1.4,SNR=3.1						
MKAR	**Makanchi Array**	**46.65**	**298**	*e*P	**P**	**17 30 24.9**	**+1.1**
FINES	**FINESS Array B**	**64.67**	**334**	P	**P**	**17 32 30.0**	**-2.8**
	comp=Z,1.4nm,0.9s,baz=7.8,slow=4.2,SNR=5.1						
FINES	**FINESS Array B**	**64.67**	**334**	*i* P	**P**	**17 32 31.2**	**-1.6**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.9s						
FINES	**FINESS Array B**	**64.67**	**334**	*e*P	**P**	**17 32 31.2**	**-1.6**
WRA	**Warramunga Arr**	**67.14**	**198**	P	**P**	**17 32 51.2**	**+2.0**
	comp=Z,0.8nm,0.8s,baz=14,slow=6.7,SNR=4.5						
WRA	**Warramunga Arr**	**67.14**	**198**	*i* P	**P**	**17 32 51.0**	**+1.8**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
WRA	**Warramunga Arr**	**67.14**	**198**	*e*P	**P**	**17 32 51.0**	**+1.8**
NOA	**NORSAR Array B**	**69.00**	**341**	P	**P**	**17 32 59.0**	**-1.5**
	comp=Z,0.2nm,0.5s,baz=55,slow=13,SNR=2.4						
NOA	**NORSAR Array B**	**69.00**	**341**	P	**P**	**17 32 59.0**	**-1.5**
ASAR	**Alice Springs**	**70.84**	**197**	P	**P**	**17 33 15.4**	**+3.3**
	comp=Z,0.4nm,0.8s,baz=10.0,slow=5.9,SNR=7.3						
AKASG	**Malin Array Be**	**71.97**	**326**	P	**P**	**17 33 15.7**	**-3.0**
	comp=Z,0.3nm,0.3s,baz=37,slow=6.2,SNR=2.9						
TXAR	**Lajitas Array**	**78.86**	**59**	P	**P**	**17 34 00.5**	**+1.7**
	comp=Z,0.3nm,0.9s,baz=338,slow=3.9,SNR=2.8						
GERES	**GERESS Array B**	**79.06**	**333**	P	**P**	**17 33 58.2**	**-1.3**
	comp=Z,0.3nm,0.3s,baz=33,slow=5.9,SNR=5.0						

*NIED **31** 17:32:00, 36.70N×141.20E, h8km, Mw4.2 Best double couple: M₀2.63000×10¹⁵ NP1:φs3.00000°, δ46.00000°, λ-113.00000°. NP2:φs215.00000°, δ48.00000°, λ-67.00000°.*

*IDC **31** 17:32:19.0±0.6, 36.69N×140.96E, h0km, mb4.1/20, mb1 4.2/26, mb1mx4.1/52, mbtmp4.1/26, ML3.1/5, MS4.7/1, Ms1 4.7/1, ms1mx3.4/31, Error ellipse: s-maj=15.5km s-min=12.1km az=101.0*

*ISCJB **31** 17:32:21.0±0.8, 36.65N±0.04×141.09E±0.05, h26km±5km, mb4.2/28, MS4.7/1, Error ellipse: s-maj=8.0km s-min=5.0km az=31.2*

*JMA **31** 17:32:21.5±0.1, 36.64N×141.05E, h27km±1km, M4.3*

JMA Felt II J1.

*NEIC **31** 17:32:22.7±2.9, 36.72N×140.98E, h25km±20km, mb4.5/8, Error ellipse: s-maj=12.4km s-min=8.1km az=132.0*

NEIC Recorded [2 JMA] in Ibaraki.

ISC 31 17:32:22.4±0.9, 36.69N±0.04×141.00E±0.06, h22km±5km, n59, σ1810/65, mb4.3/28, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.36**	**258**	P	**Pb**	**17 32 29.7**	**-0.5**
JHO				S	**Sb**	**17 32 35.5**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.45**	**338**	S	**Sb**	**17 32 38.8**	**+0.8**
JFK	**Kawauchi**	**0.69**	**351**	P	**Pb**	**17 32 34.7**	**-1.1**
JFK				S	**Sb**	**17 32 44.9**	**0.0**
JYT	**Yasato**	**0.80**	**235**	P	**Pb**	**17 32 36.2**	**-1.4**
JYT				S	**Sb**	**17 32 47.8**	**-0.1**
JSB	**Shiboa**	**0.92**	**288**	P	**Pn**	**17 32 39.8**	**-0.2**
JSB				S	**Sn**	**17 32 53.9**	**+1.4**
MJAR	**Matsushiro Arr**	**2.25**	**267**	Pn	**Pn**	**17 32 58.9**	**+0.5**
	15nm,0.3s,baz=82,slow=11,SNR=198						
MJAR				Sn	**Sn**	**17 33 26.4**	**+0.9**
	24nm,0.3s,baz=89,slow=16,SNR=8.6						
MAJO	**Matsushiro**	**2.25**	**267**	*e*Pn	**Pn**	**17 32 59.2**	**+0.8**
MAJO				*e*Sn	**Sn**	**17 33 25.1**	**-0.4**
MAT	**Matsushiro**	**2.25**	**267**	P	**Pn**	**17 32 59.2**	**+0.8**
MAT				S	**Sb**	**17 33 31.3**	**+1.4**
JHJ	**Hachijo jima 2**	**3.70**	**196**	Pn	**Pn**	**17 33 18.8**	**+0.6**
	13nm,0.3s,baz=341,slow=21,SNR=12						
JHJ				Sn	**Sn**	**17 34 00.8**	**-0.2**
	26nm,0.3s,baz=73,slow=19,SNR=2.8						
ASAJ	**Asahikawa**	**7.52**	**9**	Pn	**Pn**	**17 34 10.5**	**-0.2**
	baz=225,slow=9.2						
JNU	**Nakatsue**	**9.04**	**250**	Pn	**Pn**	**17 34 32.3**	**+0.6**
	0.1nm,0.8s,baz=21,sl

comp=Z,2.7nm,1.0s
PVCC Panska Ves 81.19 329 *e*P **P** **17 44 37.6 +1.4**
PVCC *e*pP **pP** **17 44 43.9 +0.4**
CLL Collm 81.23 330⇑ *i*PKPbc **P** **17 44 36.9 +0.5**
comp=Z,7.0nm,1.0s
CLL *i* PKPab **pP** **17 44 43.4 -0.3**
comp=Z,4.0nm,0.9s
PRU Pruhonice 81.61 328 *e*P **P** **17 44 39.6 +1.2**
WUAZ Wupatki 81.63 52 *e*P **P** **17 44 38.6 -0.4**
comp=Z,6.6nm,1.0s
KHC Kasperske Hory 82.67 328 *e*P **P** **17 44 44.9 +0.9**
KHC *e*PCP **PcP** **17 44 48.5 -0.5**
KHC *e*pP **pP** **17 44 51.3 -0.1**
GERES GERESS Array B 82.83 328 P **P** **17 44 45.6 +0.6**
comp=Z,1.0nm,0.6s,baz=34,slow=3.6,SNR=12
TXAR Lajitas Array 90.59 52 P **P** **17 45 24.5 +1.2**
comp=Z,0.9nm,0.9s,baz=308,slow=4.1,SNR=8.5
LPAZ La Paz 147.15 60 PKPbc **PKPbc** **17 52 05.5 +0.6**
comp=Z,2.2nm,0.6s,baz=353,slow=4.1,SNR=3.4

WEL 31 17:35:28.1±0.4,**36.50S**×**176.80E**,**h210**km±6km,**ML3.8**/11,
1C-1D,**Error ellipse: s-maj=8.4km s-min=7.7km az=0.0,**
Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.48**	**148**	PN		Pn	Pn	17 36 02.6	+0.3
HAZ				SN		S		17 36 29.1	+0.1
HAZ				AML		AML		17 36 35.9	
MXZ	**Matakaoa Point**	**1.60**	**132**	PN		Pn	Pn	17 36 03.7	+0.2
MXZ				SN		S		17 36 30.8	0.0
RUGZ	**Raukumara Rang**	**1.62**	**155**	PN		Pn	Pn	17 36 03.6	-0.2
PKGZ	**Pakihiroa**	**1.72**	**144**	PN		Pn	Pn	17 36 04.9	+0.3
PKGZ				SN		S		17 36 32.4	-0.5
URZ	**Urewera**	**1.77**	**172**	PN		Pn	Pn	17 36 05.4	+0.4
WMGZ	**Waiomatatini S**	**1.84**	**136**	PN		Pn	Pn	17 36 05.8	+0.1
WMGZ				SN		S		17 36 33.5	-1.2
WMGZ				AML		AML		17 36 36.1	
MWZ	**Matawai**	**1.92**	**163**	PN		Pn	Pn	17 36 06.7	+0.2
TWGZ	**Tauwhareparae**	**1.92**	**151**	PN		Pn	Pn	17 36 07.1	+0.6
TWGZ				AML		AML		17 36 38.6	
TWGZ				AML		AML		17 36 38.8	
PUZ	**Puketiti**	**1.95**	**144**	⇓PN		Pn	Pn	17 36 06.6	-0.2
PUZ				SN		S		17 36 34.4	-2.3
MUGZ	**Murupara**	**1.97**	**181**	PN		Pn	Pn	17 36 07.7	+0.7
TKGZ	**Te Karaka**	**2.10**	**157**	PN		Pn	Pn	17 36 08.2	-0.1
TKGZ				AML		AML		17 36 38.2	
TKGZ				AML		AML		17 36 40.2	
CNGZ	**Carnagh Statio**	**2.27**	**151**	⇑PN		Pn	Pn	17 36 10.0	-0.1
SNGZ	**Shannon Statio**	**2.31**	**169**	PN		Pn	Pn	17 36 10.6	0.0
SNGZ				AML		AML		17 36 47.1	
SNGZ				AML		AML		17 36 48.3	
RIGZ	**Rimuhau**	**2.33**	**161**	PN		Pn	Pn	17 36 10.5	-0.2
RIGZ				AML		AML		17 36 44.8	
RIGZ				AML		AML		17 36 48.9	
NMHZ	**Naumai**	**2.59**	**180**	PN		Pn	Pn	17 36 14.1	+0.5
NMHZ				AML		AML		17 36 52.5	
NMHZ				AML		AML		17 37 02.5	
KNZ	**Kokohu**	**2.61**	**165**	PN		Pn	Pn	17 36 12.8	-0.9
BKZ	**Black Stump Fm**	**2.67**	**185**	PN		Pn	Pn	17 36 14.0	-0.5
ARHZ	**Aropaoanui**	**2.76**	**177**	PN		Pn	Pn	17 36 15.2	-0.2
ARHZ				AML		AML		17 36 53.8	
ARHZ				AML		AML		17 36 55.3	
MHGZ	**Mahia Peninsul**	**2.79**	**162**	PN		Pn	Pn	17 36 15.1	-0.6
KWHZ	**Kaweka Forest**	**2.93**	**186**	PN		Pn	Pn	17 36 17.4	0.0
KWHZ				AML		AML		17 37 01.7	
KWHZ				AML		AML		17 37 08.4	
MCHZ	**McNeill Hill**	**2.94**	**182**	PN		Pn	Pn	17 36 17.3	-0.2
WNVZ	**Wahianoa**	**2.97**	**198**	PN		Pn	Pn	17 36 18.4	+0.4
MTVZ	**Mangateitei**	**3.06**	**200**	PN		Pn	Pn	17 36 20.0	+1.0
KRHZ	**Kereru**	**3.15**	**186**	PN		Pn	Pn	17 36 19.2	-0.8
CKHZ	**Cape Kidnapper**	**3.16**	**176**	PN		Pn	Pn	17 36 19.0	-0.9
KAHZ	**Kahuranaki**	**3.29**	**179**	PN		Pn	Pn	17 36 20.5	-1.1
PNHZ	**Pukenui**	**3.44**	**188**	PN		Pn	Pn	17 36 21.8	-1.6
PXZ	**Pawanui**	**3.52**	**179**	PN		Pn	Pn	17 36 22.5	-1.8
PXZ				SN		S		17 37 04.1	-4.0
WAZ	**Wanganui**	**3.55**	**203**	PN		Pn	Pn	17 36 24.9	+0.2
TSZ	**Takapari Road**	**3.61**	**190**	PN		Pn	Pn	17 36 23.9	-1.6
PRHZ	**Porangahau**	**3.76**	**182**	PN		Pn	Pn	17 36 24.9	-2.3
DVHZ	**Dannevirke**	**3.82**	**187**	PN		Pn	Pn	17 36 25.7	-2.3
ANWZ	**Angora Road**	**3.96**	**184**	PN		Pn	Pn	17 36 27.5	-2.1
ANWZ				AML		AML		17 37 17.9	
ANWZ				AML		AML		17 37 20.3	
PRWZ	**Pori Road**	**4.10**	**189**	PN		Pn	Pn	17 36 29.5	-1.8
BFZ	**Birch Farm**	**4.19**	**186**	PN		Pn	Pn	17 36 29.9	-2.7
MRZ	**Mangatainoka R**	**4.26**	**193**	PN		Pn	Pn	17 36 30.7	-2.6
TIWZ	**Tintock**	**4.33**	**189**	PN		Pn	Pn	17 36 32.1	-2.1
OGWZ	**Otaki Gorge**	**4.49**	**196**	PN		Pn	Pn	17 36 33.7	-2.6
OGWZ				AML		AML		17 37 31.5	
HOWZ	**Holdsworth Sta**	**4.50**	**192**	PN		Pn	Pn	17 36 33.6	-2.8
KIW	**Kapiti Island**	**4.59**	**198**	PN		Pn	Pn	17 36 35.1	-2.4
MTW	**Mount Morrison**	**4.76**	**192**	PN		Pn	Pn	17 36 36.8	-2.8
CAW	**Cannon Point**	**4.79**	**196**	PN		Pn	Pn	17 36 37.1	-2.9
MSWZ	**Moikau Station**	**5.05**	**193**	PN		Pn	Pn	17 36 40.2	-3.1
TCW	**Tory Channel**	**5.09**	**202**	PN		Pn	Pn	17 36 41.6	-2.2
PLWZ	**Palliser**	**5.20**	**193**	PN		Pn	Pn	17 36 41.9	-3.3
TUWZ	**Tuamarina**	**5.40**	**203**	PN		Pn	Pn	17 36 45.0	-2.6
NNZ	**Nelson**	**5.41**	**208**	PN		Pn	Pn	17 36 45.0	-2.8
QRZ	**Quartz Range**	**5.46**	**216**	PN		Pn	Pn	17 36 46.2	-2.2
THZ	**Tophouse**	**6.06**	**209**	PN		Pn	Pn	17 36 54.0	-2.2
DSZ	**Denniston Nort**	**6.51**	**215**	PN		Pn	Pn	17 36 59.8	-2.3

NIED ***31*** *17:35:00,41.70N×143.00E,h35km,Mw5.4 Best double couple: M0 1.49000×10 17 NP1:*ϕ_s*165.00000°,*δ*9.00000°,*λ*-42.00000°. NP2:*ϕ_s*297.00000°,*δ*84.00000°,*λ*-97.00000°.*

BJI ***31*** *17:35:53.6,41.53N×143.16E,h35km,mb5.0/77,mB5.2/61, Ms5.1/89,Ms7 4.9/84*

MOS ***31*** *17:35:55.9±1.0,41.79N×142.90E,h33km,mb5.6/102, MS5.0/60,Error ellipse: s-maj=6.7km s-min=4.4km az=99.5*

JMA ***31*** *17:35:57.1±0.2,41.71N×143.01E,h37km±2km,M5.5 Broadband fault plane solution: P waves. NP1:*
**ϕ_s*265.00000°,*δ*80.00000°,*λ*-107.00000°. NP2:*
*ϕ_s*145.00000°,*δ*19.00000°,*λ*-31.00000°. Principal axes:*
T Plg33.0000°, Azm9.0000°; N Plg16.0000°, Azm268.0000°; P Plg52.0000°, Azm156.0000°;

JMA Felt IV J1.

ISCJB ***31*** *17:35:57.5±0.2,41.78N±0.02×142.89E±0.02,h43km±2km, mb5.3/332,MS5.0/186 Error ellipse: s-maj=2.9km s-min=1.8km az=149.0*

NEIC ***31*** *17:35:57.9±0.7,41.80N×142.83E,h32km±4km,mb5.5/226, MS5.0/123,Error ellipse: s-maj=3.5km s-min=2.2km az=141.0*

NEIC Felt at Misawa, Honshu. Recorded [4 JMA] in southern Hokkaido.

IDC ***31*** *17:35:57.8±2.0,41.78N×142.90E,h36km±15km,mb4.8/33, mb1 5.0/40,mb1mx4.9/54,mbtmp5.1/40,ML4.8/5,MS4.8/26, Ms1 4.8/26,ms1mx4.7/34,Error ellipse: s-maj=12.1km s-min=9.5km az=113.0*

ISC 31 17:35:57.8±0.3,**41.82N**±0.03×**142.91E**±0.03,**h35**km±2km,
h35km:**pP-P**,**n1182**,**s1956**/1231,**mb5.4**/363,**MS5.0**/189,
51C-51D,**Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ERM	**Erimo**	**0.27**	**44**	*c* *i*P		**Pn**	**Pn**	**17 36 05.3**	**-0.1**
ERM	**Erimo**	**0.27**	**44**	*e*Pg		**Pn**	**Pn**	**17 36 05.2**	**-0.1**
ERM				*e*Sg		**Sn**	**Sn**	**17 36 11.3**	**+0.6**
JEM	**Erimo**	**0.27**	**43**	P		**Pn**	**Pn**	**17 36 05.3**	**-0.1**
JEM				*e*S		**Sn**	**Sn**	**17 36 11.2**	**+0.5**
JNBK	**Urakawa-nobuka**	**0.47**	**346**	⇓P		**Pn**	**Pn**	**17 36 08.9**	**+0.8**
JNBK				*e*S		**Sn**	**Sn**	**17 36 18.3**	**+3.0**
JCH	**Churui**	**0.86**	**23**	⇑P		**Pn**	**Pn**	**17 36 14.2**	**+0.7**
JBT2	**Biratori 2**	**1.04**	**337**	⇓P		**Pn**	**Pn**	**17 36 17.3**	**+1.4**
JOB	**Onbets**	**1.28**	**32**	⇑P		**Pn**	**Pn**	**17 36 21.1**	**+1.9**
JFR	**Furan**	**1.36**	**350**	⇑P		**Pn**	**Pn**	**17 36 21.5**	**+1.1**
JKB	**Kayabe**	**1.40**	**273**	⇑P		**Pn**	**Pn**	**17 36 21.5**	**+0.7**
JKB				*e*S		**Sn**	**Sn**	**17 36 40.1**	**+2.0**
JOT	**Ohata**	**1.46**	**253**	⇑P		**Pn**	**Pn**	**17 36 22.3**	**+0.7**
JOT				*e*S		**Sn**	**Sn**	**17 36 41.6**	**+2.1**
JEW	**Eniwo**	**1.49**	**314**	P		**Pn**	**Pn**	**17 36 24.5**	**+2.5**
JTM	**Tenmabayashi**	**1.73**	**234**	⇑P		**Pn**	**Pn**	**17 36 26.4**	**+1.1**
JSI2	**Shiura 2**	**2.02**	**249**	⇑P		**Pn**	**Pn**	**17 36 30.9**	**+1.5**
JNK	**Nakash**	**2.21**	**37**	⇑P		**Pn**	**Pn**	**17 36 32.3**	**+0.3**
ASAJ	**Asahikawa**	**2.31**	**354**	Pn		**Pn**	**Pn**	**17 36 36.0**	**+2.7**
	baz=180,slow=0.3								
ASAJ	**Asahikawa**	**2.31**	**354**	*e*Pn		**Pn**	**Pn**	**17 36 36.4**	**+3.1**
ASAJ				*e*Sn		**Sn**	**Sn**	**17 36 53.1**	**-7.3**
OFUJ	**Ofunato**	**2.89**	**199**	P		**Pn**	**Pn**	**17 36 41.1**	**-0.3**
YUK	**Yuzh-Kuril'sk**	**3.10**	**43**	*i* P		**Pn**	**Pn**	**17 36 44.7**	**+0.5**
JOU	**Okura**	**3.85**	**207**	⇓P		**Pn**	**Pn**	**17 36 55.1**	**+0.5**
JYA	**Atsumi**	**4.04**	**218**	⇓P		**Pn**	**Pn**	**17 36 59.0**	**+1.8**
JYS	**Shirataka**	**4.20**	**212**	⇓P		**Pn**	**Pn**	**17 37 00.8**	**+1.4**
JAW	**Awa shima**	**4.37**	**221**	⇓P		**Pn**	**Pn**	**17 37 03.6**	**+1.9**
JNS	**Sasagawa**	**4.86**	**216**	P		**Pn**	**Pn**	**17 37 10.1**	**+1.7**
KUR	**Kuril'sk**	**4.97**	**45**	*c* *i*P		**Pn**	**Pn**	**17 37 11.4**	**+1.6**
KUR				*i* S		**Sn**	**Sn**	**17 38 06.8**	**+0.8**
KUR				pmax	pmax				
	comp=N,250nm,1.0s								
KUR				pmax	pmax				
	comp=E,282nm,1.0s								
KUR				pmax	pmax				
	comp=Z,2μm,1.0s								
KUR				smax	smax				
	comp=N,869nm,1.1s								
KUR				smax	smax				
	comp=E,410nm,1.1s								
YSS	**Yuzh-Sakhalins**	**5.14**	**359**	*c* *i*P		**Pn**	**Pn**	**17 37 15.2**	**+3.1**
YSS				*e*S		**Sn**	**Sn**	**17 38 18.4**	**+8.3**
YSS				pmax	pmax				
	comp=Z,410nm,1.2s								
YSS				smax	smax				
	comp=E,490nm,1.2s								
YSS				MLR	MLR				
	comp=Z,14μm,13.0s								
YSS				MLR	MLR				
	comp=N,12μm,12.0s								
YSS	**Yuzh-Sakhalins**	**5.14**	**359**	*e*Pn		**Pn**	**Pn**	**17 37 14.8**	**+2.6**
JSD	**Sado**	**5.20**	**225**	⇓P		**Pn**	**Pn**	**17 37 15.1**	**+2.1**
JIZZ	**Izumozaki**	**5.37**	**218**	⇓P		**Pn**	**Pn**	**17 37 17.9**	**+2.6**
JSB	**Shiboa**	**5.37**	**206**	P		**Pn**	**Pn**	**17 37 16.4**	**+1.0**
JHK	**Hiroka**	**5.46**	**215**	⇓P		**Pn**	**Pn**	**17 37 18.3**	**+1.6**
JJN	**Nakama**	**5.97**	**219**	⇓P		**Pn**	**Pn**	**17 37 26.0**	**+2.4**
JAG	**Ashikaga**	**6.02**	**208**	P		**Pn**	**Pn**	**17 37 24.7**	**+0.4**
JHG	**Hegura jima**	**6.08**	**231**	⇓P		**Pn**	**Pn**	**17 37 27.8**	**+2.7**
JSZ	**Suzu**	**6.11**	**226**	⇓P		**Pn**	**Pn**	**17 37 27.9**	**+2.3**
MJB9	**Matsu-Tunnel**	**6.41**	**216**	*e*Pn		**Pn**	**Pn**	**17 37 31.4**	**+1.7**
MAJO	**Matsushiro**	**6.41**	**216**	*e*P		**Pn**	**Pn**	**17 37 31.4**	**+1.7**
MAJO	**Matsushiro**	**6.41**	**216**	*e*Pn		**Pn**	**Pn**	**17 37 31.4**	**+1.7**
MAT	**Matsushiro**	**6.41**	**216**	P		**Pn**	**Pn**	**17 37 31.4**	**+1.7**
MAT				*e*S		**Sn**	**Sn**	**17 38 43.1**	**+1.5**
MAT	**Matsushiro**	**6.41**	**216**	P		**Pn**	**Pn**	**17 37 31.3**	**+1.6**
MJAR	**Matsushiro Arr**	**6.41**	**216**	Pn		**Pn**	**Pn**	**17 37 31.3**	**+1.6**
	comp=N,33nm,0.3s,baz=34,slow=13,SNR=106								
MJAR				Sn		**Sn**	**Sn**	**17 38 43.9**	**+2.3**
	baz=34,slow=13,SNR=1.8								
MJAR				LR	LR			17 40 24.7	
	comp=N,21μm,21.9s,baz=35,slow=42								
JNG	**Nsakai**	**6.57**	**216**	⇓P		**Pn**	**Pn**	**17 37 33.8**	**+1.8**
JTT	**Ttatey**	**6.77**	**222**	P		**Pn**	**Pn**	**17 37 37.0**	**+2.4**
JJH	**Hakui**	**6.81**	**226**	P		**Pn**	**Pn**	**17 37 37.7**	**+2.5**
JNT	**Takato**	**7.00**	**214**	P		**Pn**	**Pn**	**17 37 38.8**	**+0.8**
JGN	**Niukaw**	**7.08**	**220**	P		**Pn**	**Pn**	**17 37 41.2**	**+2.2**
JYN	**Shimob**	**7.17**	**210**	S		**Sn**	**Sn**	**17 39 00.8**	**+0.3**
BSO3	**Boso 3**	**7.25**	**196**	P		**Pn**	**Pn**	**17 37 39.2**	**-1.8**
UGL	**Uglegorsk**	**7.28**	**356**	*i* P		**Pn**	**Pn**	**17 37 44.0**	**+2.4**
UGL				*e*				17 39 12.0	
UGL				pmax	pmax				
	comp=N,2μm,4.0s								
UGL				pmax	pmax				
	comp=E,500nm,4.0s								
UGL				pmax	pmax				
	comp=Z,2μm,4.0s								
UGL				smax	smax				
	comp=N,6μm,7.0s								
UGL				smax	smax				
	comp=E,7μm,7.0s								
UGL				MLR	MLR				
	comp=Z,8μm,19.0s								
UGL				MLR	MLR				
	comp=N,12μm,20.0s								
UGL				MLR	MLR				
	comp=E,8μm,22.0s								
JGF	**Kuroka**	**7.57**	**217**	P		**Pn**	**Pn**	**17 37 47.1**	**+1.4**
JIZS	**Izushimoda**	**7.76**	**205**	S		**Sn**	**Sn**	**17 39 11.6**	**-3.3**
INU	**Inuyama**	**7.93**	**217**	*e*Pn		**Pn**	**Pn**	**17 37 51.7**	**+1.1**
VLA	**Vladivostok**	**8.25**	**283**	*e*P		**Pn**	**Pn**	**17 37 58.8**	**+3.9**
USRK	**Ussuriysk Ar.**	**8.35**	**290**	Pn		**Pn**	**Pn**	**17 38 00.6**	**+4.4**
	comp=E,1.6nm,0.3s,baz=95,slow=15,SNR=21								
USRK				LR	LR			17 41 26.7	
	comp=E,4μm,20.0s,baz=98,slow=39								
JAA	**Atsumi**	**8.48**	**214**	P		**Pn**	**Pn**	**17 37 59.9**	**+1.7**
HABR	**Khabarovsk**	**8.66**	**323**	*e*P		**Pn**	**Pn**	**17 37 59.6**	**-0.9**
HABR				*e*				17 39 37.9	
HABR				pmax	pmax				
	comp=N,24nm,1.4s								
HABR				pmax	pmax				
	comp=E,25nm,1.4s								
HABR				pmax	pmax				
	comp=Z,56nm,1.4s								
HABR				MLR	MLR				
	comp=Z,10μm,14.0s								
MSHR	**Mys Shultsa**	**8.76**	**279**	⇑*e*P		**Pn**	**Pn**	**17 38 04.9**	**+3.1**
JIE	**Ise**	**8.88**	**215**	S		**Sn**	**Sn**	**17 39 43.3**	**+1.0**
JHJ	**Hachijo jima 2**	**9.03**	**197**	Pn		**Pn**	**Pn**	**17 38 03.3**	**-2.4**
	comp=Z,153nm,0.3s,baz=259,slow=19,SNR=34								
JHJ				Sn		**Sn**	**Sn**	**17 39 37.9**	**-8.2**
	comp=Z,101nm,0.3s,baz=260,slow=22,SNR=7.4								
JHJ2	**Mitsune**	**9.03**	**197**	*e*Pn		**Pn**	**Pn**	**17 38 03.2**	**-2.5**
TYV	**Tymovskoe**	**9.05**	**359**	*e*P		**Pn**	**Pn**	**17 38 08.2**	**+2.4**
TYV				*e*S		**Sn**	**Sn**	**17 39 49.0**	**+2.6**
TYV				pmax	pmax				
	comp=Z,260nm,1.0s								
TYV				pmax	pmax				
	comp=E,2μm,5.0s								
TYV				smax	smax				
	comp=E,4μm,9.0s								
TYV				MLR	MLR				
	comp=N,11μm,16.0s								
MDJ	**Mudanjiang**	**10.11**	**291**	P		Pn	Pn	17 38 26.3	+5.9
MDJ				S		**Sn**	**Sn**	**17 40 17.8**	**+5.2**
MDJ				pmax	pmax				
	comp=N,12nm,1.3s								
MDJ				pmax	pmax				
	comp=N,290nm,5.5s								
MDJ				LR	LR				
	comp=N,2μm,13.8s								
MDJ				LR	LR				
	comp=N,4μm,14.9s								
MDJ				LR	LR				
	comp=N,6μm,14.9s								
MDJ	**Mudanjiang**	**10.11**	**291**	*e*Pn		Pn	Pn	17 38 25.8	+5.4
	comp=N,89nm,1.1s								
KLR	**Kul'dur**	**10.77**	**317**	Pn		**Pn**	**Pn**	**17 38 28.6**	**-0.8**
	comp=N,0.1nm,0.3s,baz=156,slow=20,SNR=2.5								
KLR				LR	LR			17 43 11.8	
	comp=N,11μm,19.0s,baz=133,slow=40								
KSRS	**Korea Array**	**12.34**	**254**	Pn		**Pn**	**Pn**	**17 38 51.7**	**+0.7**
	comp=N,8.0nm,0.3s,baz=62,slow=13,SNR=77								
KSRS				Sn		**Sn**	**Sn**	**17 41 10.6**	**+3.4**
	baz=67,slow=24,SNR=2.7								
KSRS				LR	LR			17 43 12.7	
	comp=N,7μm,21.2s,baz=64,slow=35								
KS01	**Wonju Array Si**	**12.35**	**254**	*e*Pn		**Pn**	**Pn**	**17 38 54.4**	**+3.3**
KS01				*e*Sn		Sn	Sn	17 41 17.1	+10
KS15	**Wonju Array Si**	**12.38**	**254**	*e*Pn		**Pn**	**Pn**	**17 38 54.9**	**+3.5**
KSAR	**Wonju Array Be**	**12.38**	**254**	P		**Pn**	**Pn**	**17 38 51.7**	**+0.3**
KSAR								17 41 10.6	
KSAR	**Wonju Array Be**	**12.38**	**254**	Pn		**Pn**	**Pn**	**17 38 51.7**	**+0.3**
KSAR				Sn		**Sn**	**Sn**	**17 41 10.6**	**+2.5**
SKR	**Severo-Kuril's**	**12.72**	**41**	*e*P		**Pn**	**Pn**	**17 38 52.8**	**-3.2**
SKR				pmax	pmax				
	comp=Z,2μm,2.1s								
SKR				pmax	pmax				
	comp=Z,477nm,1.3s								
SKR				MLR	MLR				
	comp=Z,3μm,19.0s								
JNU	**Nakatsue**	**12.90**	**232**	Pn		**Pn**	**Pn**	**17 38 57.8**	**-0.8**
	comp=Z,1.6nm,0.3s,baz=74,slow=5.8,SNR=26								
JNU				LR	LR			17 43 59.0	
	comp=Z,34nm,18.7s,baz=52,slow=37								
JNU	**Nakatsue**	**12.90**	**232**	*e*Pn		**Pn**	**Pn**	**17 38 59.6**	**+1.0**
CN2	**Changchun**	**12.97**	**285**	*e*P		**Pn**	**Pn**	**17 39 01.3**	**+1.8**
CN2				*e*sP		P	P	17 39 13.3	+3.7
CN2				*e*S		**Sn**	**Sn**	**17 41 23.5**	**+0.9**
CN2				*e*SS		**S**	**S**	**17 41 41.0**	**-6.2**
CN2				pmax	pmax				
	comp=Z,20nm,1.0s								
CN2				pmax	pmax				
	comp=Z,200nm,4.0s								
CN2				LR	LR				
	comp=Z,4μm,17.0s								
CN2				LR	LR				
	comp=Z,3μm,17.0s								
CN2				LR	LR				
	comp=Z,3μm,17.0s								
INCN	**Inchon**	**13.26**	**256**	*e*Pn		**Pn**	**Pn**	**17 39 06.9**	**+3.3**
INCN				*e*Sn		Sn	Sn	17 41 41.1	+11
SNY	**Shenyang**	**14.42**	**276**	⇑P		**Pn**	**Pn**	**17 39 21.5**	**+2.3**
SNY				S		**Sn**	**Sn**	**17 42 04.8**	**+7.1**
SNY				pmax	pmax				
	comp=Z,17nm,1.3s								
SNY				pmax	pmax				
	comp=Z,510nm,8.6s								
SNY				LR	LR				
	comp=Z,2μm,10.2s								
SNY				LR	LR				
	comp=Z,3μm,13.5s								
SNY				LR	LR				
	comp=Z,5μm,21.1s								
CBIJ	**Chichi jima**	**14.70**	**183**	*e*Pn		**Pn**	**Pn**	**17 39 19.0**	**-4.2**
CBIJ				*e*Sn		Sn	Sn	17 41 52.2	-13
PEA0	**Petropavlovsk-**	**15.05**	**36**	*e*Pn		**Pn**	**Pn**	**17 39 23.0**	**-4.7**
PEA0B	**Petropavlovsk-**	**15.05**	**36**	*e*Pn		**Pn**	**Pn**	**17 39 23.2**	**-4.5**
	comp=Z,210nm,1.0s								
PETK	**Petropavlovsk-**	**15.05**	**36**	Pn		**Pn**	**Pn**	**17 39 23.0**	**-4.7**
	comp=Z,1.0nm,0.3s,baz=210,slow=7.8,SNR=44								
PETK				LR	LR			17 45 24.0	
	comp=Z,8μm,18.9s,baz=242,slow=38								
PET	**Petropavlovsk**	**15.43**	**38**	*c* *i*P		**Pn**	**Pn**	**17 39 28.4**	**-4.2**
PET				*e*S		**Sn**	**Sn**	**17 42 17.5**	**-4.7**
PET				pmax	pmax				
	comp=Z,800nm,14.6s								
PET				pmax	pmax				
	comp=Z,152nm,1.5s								
PET				pmax	pmax				
	comp=Z,1μm,9.7s								
PET				MLR	MLR				
	comp=Z,8μm,19.0s								
PET				MLR	MLR				
	comp=Z,7μm,19.0s								
PET	**Petropavlovsk**	**15.43**	**38**	*e*Pn		**Pn**	**Pn**	**17 39 27.5**	**-5.1**
	comp=Z,327nm,1.5s								
DL2	**Dalian**	**16.47**	**267**	⇓*i*P		**Pn**	**Pn**	**17 39 45.5**	**-0.6**
DL2				S		**Sn**	**Sn**	**17 42 49.8**	**+2.1**
DL2				pmax	pmax				
	comp=Z,150nm,1.1s								
DL2				pmax	pmax				
	comp=Z,620nm,5.2s								
DL2				LR	LR				
	comp=Z,2μm,12.7s								
DL2				LR	LR				
	comp=Z,2μm,18.7s								
DL2				LR	LR				
	comp=Z,3μm,19.6s								
HIA	**Hailar**	**17.81**	**303**	*e*P		**P**	**P**	**17 40 03.1**	**-0.1**
HIA				pmax	pmax				
	comp=Z,83nm,1.3s								
HIA	**Hailar**	**17.81**	**303**	*e*Pn		**P**	**P**	**17 40 03.1**	**-0.1**
	comp=Z,83nm,1.3s								
MA2	**Magadan**	**18.44**	**13**	P		**P**	**P**	**17 40 09.2**	**-0.9**
	comp=Z,4.9nm,0.3s,baz=198,slow=11,SNR=42								
CLNS	**Chul'man**	**18.98**	**328**	*e*P		**Pn**	**Pn**	**17 40 16.5**	**-0.4**
CLNS				*e*S		**Sn**	**Sn**	**17 43 46.9**	**-1.3**
CLNS				pmax	pmax				
	comp=Z,44nm,1.1s								
CLNS				pmax	pmax				
	comp=N,46nm,0.9s								
CLNS				pmax	pmax				
	comp=E,12nm,1.2s								
CLNS				smax	smax				
	comp=N,182nm,12.6s								
CLNS				smax	smax				
	comp=E,398nm,12.2s								
CLNS				MLR	MLR				
	comp=Z,1μm,13.0s								
CLNS				MLR	MLR				
	comp=N,5μm,15.0s								
CLNS				MLR	MLR				
	comp=E,5μm,15.0s								
JOW	**Kunigami**	**19.18**	**223**	P		**P**	**P**	**17 40 17.1**	**-1.3**
	comp=E,4.4nm,0.3s,baz=19,slow=9.1,SNR=27								
JOW				LR	LR			17 48 26.2	
	comp=E,8μm,20.3

CIT eS S 17 44 51.4 -4.6
CIT pmax pmax
comp=Z,62nm,1.4s
HHC Hu-ho-hao-te 23.49 278 eP P 17 41 02.3 -2.1
HHC PP PnPn 17 41 34.0 +2.4
HHC S S 17 45 08.0 -7.7
HHC sS sS 17 45 24.5 -7.8
HHC SS SnSn 17 45 58.5 +5.4
HHC pmax pmax
comp=Z,16nm,0.8s
HHC pmax pmax
comp=Z,160nm,5.8s
HHC LR LR
comp=Z,1µm,10.6s
HHC LR LR
comp=Z,2µm,17.7s
HHC LR LR
comp=Z,3µm,18.6s
SMY Shemya 23.63 52 eP P 17 41 06.4 +1.0
SMY pmax pmax
comp=Z,975nm,1.4s
SMY Shemya 23.63 52 eP P 17 41 06.4 +1.0
comp=Z,975nm,1.4s
YOJ Yonaguni jima 23.93 230 eP P 17 41 04.0 -4.5
YOJ pmax pmax
comp=Z,76nm,1.3s
YOJ Yonaguni jima 23.93 230 eP P 17 41 04.0 -4.5
comp=Z,76nm,1.3s
BOD Bodaibo 24.31 321 eP P 17 41 08.1 -3.6
BOD pmax pmax
comp=Z,28nm,1.3s
TATO Taipei 24.43 233 P P 17 41 11.3 -1.8
SNR=9.9
TATO Taipei 24.43 233 P P 17 41 11.3 -1.8
SNR=9.9
TATO P P 17 41 11.3 -1.8
SNR=9.9
TATO Taipei 24.43 233 eP P 17 41 12.7 -0.4
comp=Z,1µm,2.0s
YHNB Yeheng 24.73 233 eP P 17 41 14.0 -2.0
comp=Z,52nm,0.7s
YHNB LR LR
comp=Z,4µm,19.0s
WHN Wuhan 25.53 253 P P 17 41 21.0 -2.1
WHN S S 17 45 42.8 -5.5
WHN pmax pmax
comp=Z,300nm,1.3s
WHN LR LR
comp=Z,6µm,14.2s
WHN LR LR
comp=Z,5µm,13.6s
WHN LR LR
comp=Z,9µm,19.7s
TPUB Ta-pu 26.20 232 eP P 17 41 25.9 -3.3
comp=Z,39nm,0.9s
QZH Quanzhou 26.24 238⇓ iP P 17 41 29.5 0.0
QZH S S 17 46 00.3 +0.8
QZH LR LR
comp=Z,3µm,11.8s
QZH LR LR
comp=Z,2µm,13.4s
QZH LR LR
comp=Z,6µm,14.1s
SONA1 Songino Array 26.40 296 eP P 17 41 31.1 +0.1
SONM Songino Array 26.41 296 P P 17 41 31.5 +0.4
comp=Z,6.3nm,0.5s,baz=95,slow=9.2,SNR=42
SONM ScP ScP 17 48 32.0 -0.8
comp=Z,4.3nm,1.1s,baz=90,slow=1.4,SNR=6.6
SONM LR LR 17 53 01.6
comp=Z,2µm,20.1s,baz=92,slow=39
XAN Xi'an 27.77 265 P P 17 41 42.0 -1.3
XAN pP pP 17 41 51.3 -2.1
XAN S S 17 46 18.0 -5.7
XAN pmax pmax
comp=Z,66nm,1.8s
XAN pmax pmax
comp=Z,280nm,9.5s
XAN LR LR
comp=Z,950nm,14.0s
XAN LR LR
comp=Z,2µm,14.0s
XAN LR LR
comp=Z,3µm,14.3s
IRK Irkutsk 28.01 305 eP P 17 41 45.5 +0.3
IRK eS S 17 46 28.6 +1.6
IRK pmax pmax
comp=Z,189nm,2.3s
GUMO Guam 28.18 176 PFAKE 17 42 00.0 +13
GUMO LR LR
comp=Z,3µm,20.0s
TLY Talaya 28.34 304 P P 17 41 48.8 +0.6
comp=Z,8.2nm,0.8s,baz=94,slow=6.5,SNR=17
TLY LR LR 17 54 03.1
comp=Z,2µm,18.9s,baz=94,slow=38
TLY Talaya 28.34 304*c iP* P 17 41 49.3 +1.1
TLY *e* 17 42 37.0
TLY eS S 17 46 33.0 +0.7
TLY eSSS SSS 17 47 50.7
TLY pmax pmax
comp=Z,34nm,1.1s
TLY MLR MLR
comp=Z,2µm,16.0s
ZAK Zakamensk 28.49 301 eP P 17 41 49.2 -0.5
ZAK pmax pmax
comp=Z,22nm,1.6s
BILL Bilibino 29.12 18*d iP* P 17 41 53.0 -1.9
BILL *i* *PP pP 17 42 04.7 -0.3
BILL *i* *SP sP 17 42 11.5 +2.3
BILL eS S 17 46 45.3 +1.1
BILL pmax pmax
comp=Z,55nm,1.2s
BILL MLR MLR
comp=Z,4µm,21.0s
BILL Bilibino 29.12 18 P P 17 41 52.8 -2.2
comp=Z,94nm,1.4s
BILL LR LR
comp=Z,4µm,22.0s
ENH Enshi 29.20 258 eP P 17 41 54.0 -2.1
comp=Z,28nm,0.4s
ENH LR LR
comp=Z,2µm,20.0s
H11N2 WAKE ISLAND Hy 29.98 130 T T 18 13 20.2
baz=323,slow=76,SNR=1587
MOY Mondy 29.98 304 eP P 17 42 04.0 +1.1
MOY pmax pmax
comp=Z,55nm,2.9s
H11N1 WAKE ISLAND Hy 29.99 130 T T 18 13 26.9
baz=323,slow=76,SNR=1466
H11N3 WAKE ISLAND Hy 29.99 130 T T 18 13 27.4
baz=323,slow=76,SNR=1699
TIXI Tiksi 30.71 351*ce* P P 17 42 05.7 -3.2
TIXI pmax pmax
comp=Z,25nm,1.9s
LZH Lanzhou 30.72 272 eP P 17 42 09.8 +0.2
LZH pP pP 17 42 20.5 +0.8
LZH sP sP 17 42 26.0 +2.1
LZH PP PnPn 17 43 06.5 -3.5
LZH eS S 17 47 10.5 +0.2
LZH sS sS 17 47 26.0 -0.9
LZH pmax pmax
comp=Z,36nm,1.2s
LZH pmax pmax
comp=Z,170nm,4.2s
LZH LR LR
comp=Z,1µm,14.2s
LZH LR LR
comp=Z,2µm,14.1s
LZH LR LR
comp=Z,3µm,16.4s
H11S1 WAKE ISLAND Hy 30.84 132 T T 18 14 26.9
baz=324,slow=76,SNR=2390
H11S3 WAKE ISLAND Hy 30.84 132 T T 18 14 35.5
baz=324,slow=76,SNR=3106
H11S2 WAKE ISLAND Hy 30.86 132 T T 18 14 27.9
baz=324,slow=76,SNR=1697
GZH Guangzhou 30.94 242 P P 17 42 07.5 -3.9
GZH PP PnPn 17 43 11.8 -1.0
GZH S S 17 47 08.5 -4.9
GZH pmax pmax
comp=Z,760nm,4.4s
GTA Gaotai 32.55 280 P P 17 42 26.8 +1.2
GTA pP pP 17 42 37.3 +1.6
GTA sP sP 17 42 41.5 +1.5
GTA PcP PcP 17 45 11.5 -0.1
GTA S S 17 47 39.5 +0.8
GTA sS sS 17 47 54.8 -0.6
GTA ScP ScP 17 48 54.0 +1.4
GTA PcS PcS 17 48 57.5 +0.7
GTA SS SnSn 17 49 38.0 +3.9
GTA ScS ScS 17 52 51.3 -0.9
GTA pmax pmax
comp=Z,17nm,1.3s
GTA pmax pmax
comp=Z,220nm,6.5s
GTA LR LR
comp=Z,2µm,20.2s
GTA LR LR
comp=Z,2µm,17.6s
GTA LR LR
comp=Z,3µm,20.4s
CD2 Chengdu 33.09 264 P P 17 42 29.5 -0.9
CD2 pP pP 17 42 38.5 -2.0
CD2 sP sP 17 42 42.5 -2.2
CD2 PP PP 17 43 44.5 -0.9
CD2 S S 17 47 47.0 -0.1
CD2 sS sS 17 48 02.0 -1.8
CD2 pmax pmax
comp=Z,50nm,0.5s
CD2 pmax pmax
comp=Z,230nm,6.2s
CD2 LR LR
comp=Z,2µm,13.9s
CD2 LR LR
comp=Z,2µm,15.3s
CD2 LR LR
comp=Z,2µm,14.1s
SPIA Saint Paul Isl 33.33 46 eP P 17 42 33.6 +1.6
comp=Z,414nm,1.4s
GYA Guiyang 33.40 254⇑ *iP* P 17 42 32.0 -1.2
GYA pP pP 17 42 44.0 +0.7
GYA PP PP 17 43 47.5 -1.5
GYA PcP PcP 17 45 16.8 +2.7
GYA S S 17 47 52.5 +0.4
GYA ScP ScP 17 48 57.3 +1.5
GYA SS SnSn 17 49 55.0 -0.1
GYA ScS ScS 17 52 56.0 -1.0
GYA pmax pmax
comp=Z,40nm,1.1s
GYA pmax pmax
comp=Z,160nm,5.6s
GYA LR LR
comp=Z,2µm,17.8s
GYA LR LR
comp=Z,3µm,18.0s
GYA LR LR
comp=Z,3µm,18.4s
MIDW Midway 34.94 100 PFAKE 17 43 00.0 +14
MIDW LR LR
comp=Z,541nm,19.0s
KRAR Krasnoyarsk 34.99 311⇓ *iP* P 17 42 48.0 +1.6
QIZ Qiongzhong 36.11 241 P P 17 42 56.8 +0.4
QIZ sP sP 17 43 09.8 -1.0
QIZ S S 17 48 35.8 +2.2
QIZ sS sS 17 48 52.0 +1.6
QIZ pmax pmax
comp=Z,33nm,2.0s
QIZ pmax pmax
comp=Z,330nm,7.8s
QIZ LR LR
comp=Z,2µm,19.0s
QIZ LR LR
comp=Z,2µm,18.1s
KMI Kunming 37.03 256 P P 17 43 04.8 +0.2
KMI pP pP 17 43 12.5 -2.2
KMI sP sP 17 43 17.0 -1.9
KMI S S 17 48 46.0 -2.1
KMI sS sS 17 49 03.5 -1.4
KMI SS SnSn 17 51 14.3 -8.9
KMI pmax pmax
comp=Z,67nm,1.7s
KMI pmax pmax
comp=Z,570nm,4.4s
KMI LR LR
comp=Z,2µm,16.5s
KMI LR LR
comp=Z,1µm,22.6s
KMI LR LR
comp=Z,2µm,20.9s
DAV Davao City (W) 37.87 209 PFAKE 17 43 20.0 +8.6
DAV LR LR
comp=Z,2µm,22.0s
CTBH Cotabato--PC H 38.22 211⇓ *iP* P 17 43 15.5 +1.1
NRIK Noril'sk 39.48 333 P P 17 43 23.2 -1.1
comp=Z,5.6nm,0.4s,baz=109,slow=6.2,SNR=15
ZAA0 Zalesovo Array 39.70 308 eP P 17 43 27.1 +0.7
ZALV Zalesovo Beam 39.70 308 P P 17 43 26.7 +0.3
comp=Z,22nm,0.8s,baz=88,slow=7.1,SNR=63
ZALV PcP PcP 17 45 32.5 +0.1
comp=Z,7.4nm,0.7s,baz=93,slow=4.6,SNR=3.6
ZALV ScP ScP 17 49 17.6 -0.8
comp=Z,5.2nm,1.1s,baz=98,slow=2.9,SNR=4.7
ZALV LR LR 18 00 59.7
comp=Z,1µm,20.1s,baz=71,slow=38
ZALV Zalesovo Beam 39.70 308 P P 17 43 26.7 +0.3
ZALV 17 45 32.6
ZALV 17 49 17.7
ZALV pmax pmax
comp=Z,21nm,0.8s
ZALV pmax pmax
comp=Z,7.0nm,0.7s
ZALV pmax pmax
comp=N,5.0nm,1.1s
ZALV MLR MLR
comp=Z,1µm,20.1s
CHGN Chignik 39.82 48 eP P 17 43 27.0 -0.3
WMQ Urumqi 39.91 292 P P 17 43 29.5 +1.1
WMQ pP pP 17 43 39.0 +0.4
WMQ sP sP 17 43 42.3 -0.5
WMQ PP PP 17 45 02.0 +1.7
WMQ S S 17 49 30.0 -0.9
WMQ sS sS 17 49 53.5 +5.7
WMQ SS SS 17 52 22.5 -5.5
WMQ ScS ScS 17 53 30.8 -1.8
WMQ pmax pmax
comp=Z,79nm,1.0s
WMQ pmax pmax
comp=Z,260nm,3.7s
WMQ LR LR
comp=Z,3µm,18.4s
WMQ LR LR
comp=Z,2µm,18.4s
WMQ LR LR
comp=Z,3µm,25.8s
NVS Novosibirsk 40.52 310 eP P 17 43 33.1 0.0
NVS eS S 17 49 30.0 -10
NVS *e* 17 53 33.4
NVS pmax pmax
comp=Z,96nm,2.0s
NVS pmax pmax
comp=N,52nm,2.3s
NVS pmax pmax
comp=E,49nm,1.9s
NVS smax smax
comp=E,68nm,2.4s
TT01 Tatalina 40.88 38 eP P 17 43 36.6 +0.6
TTA Tatalina 40.88 38 eP P 17 43 36.6 +0.4
TTA pmax pmax
comp=Z,83nm,1.3s
TTA Tatalina 40.88 38 eP P 17 43 36.6 +0.4
comp=Z,83nm,1.3s
SVW2 Sparrevohn 41.08 41 eP P 17 43 38.9 +1.2
comp=Z,115nm,1.3s
NONG Nongkai 41.29 247 P P 17 43 41.2 +1.3
comp=Z,63nm,1.2s
SKNT Sakolnakorn 41.47 245 P P 17 43 42.0 +0.6
comp=Z,84nm,2.0s
UBPT Khong Chiam 41.69 242 P P 17 43 44.5 +1.3
comp=Z,30nm,1.5s,comp=Z,1µm
MYLDM Lahad Datu 42.48 218 eP P 17 43 51.2 +1.6
comp=Z,125nm,1.2s
RSO Redoubt South 42.49 41 eP P 17 43 50.5 +1.0
OHAK Old Harbor 42.53 46 eP P 17 43 49.2 -0.4
comp=Z,271nm,1.4s
PPLA Purkeypile 42.63 38 eP P 17 43 51.9 +1.3
comp=Z,307nm,1.4s
CAST Castle Rocks 42.67 37 eP P 17 43 51.6 +1.0
comp=Z,143nm,1.3s
SDKM Sandakan 42.68 220⇓ P P 17 43 52.3 +0.9
MK01 Makanchi Array 42.72 298 eP P 17 43 51.0 -0.4
MK31 Makanchi Array 42.72 298 *i P* P 17 43 51.2 -0.2
MK31 pmax pmax
comp=Z,11nm,0.5s
MK31 Makanchi Array 42.72 298 eP P 17 43 51.6 +0.2
MKAR Makanchi Array 42.72 298 P P 17 43 51.2 -0.1
comp=Z,18nm,0.8s,baz=84,slow=9.8,SNR=74
MKAR LR LR 18 01 57.9
comp=Z,298nm,18.4s,baz=82,slow=36
MKAR Makanchi Array 42.72 298 *i P* P 17 43 51.5 +0.2
MKAR pmax pmax
comp=Z,18nm,0.7s
MKAR Makanchi Array 42.72 298 eP P 17 43 51.6 +0.2
SPU Mount Spurr 42.78 40 eP P 17 43 52.5 +0.8
KKM Kota Kinabalu 42.81 221 PFAKE 17 44 00.0 +7.6
KKM LR LR
comp=Z,1µm,20.0s
KDAK Kodiak Island 42.84 45 *i P* P 17 43 51.5 -0.6
KDAK Kodiak Island 42.84 45 eP P 17 43 51.9 -0.2
comp=Z,269nm,1.2s
KDAK LR LR
comp=Z,554nm,19.0s
MAKZ Makanchi 42.92 298 eP P 17 43 53.3 +0.3
MAKZ pmax pmax
comp=Z,42nm,1.0s
MAKZ Makanchi 42.92 298 eP P 17 43 53.3 +0.3
comp=Z,42nm,1.0s
CMAI Chiengmai2 42.93 253 P P 17 43 55.2 +1.7
comp=Z,400nm,1.5s,comp=Z,22µm
LSA Lhasa 43.11 271 eP P 17 43 55.3 +0.1
LSA pmax pmax
comp=Z,94nm,1.4s
LSA MLR MLR
comp=Z,2µm,19.0s
LSA Lhasa 43.11 271 eP P 17 43 55.3 +0.1
comp=Z,94nm,1.4s
LSA LR LR
comp=Z,2µm,19.0s
BPAW Bear Paw Mtn. 43.14 36 eP P 17 43 55.1 +0.7
comp=Z,107nm,1.4s
KTH Kantishna Hill 43.18 37 eP P 17 43 55.7 +0.8
comp=Z,355nm,1.3s
MLY Manley 43.22 35 eP P 17 43 55.7 +0.5
comp=Z,78nm,1.2s
CNPM China Poot 43.34 43 eP P 17 43 54.8 -1.4
comp=Z,96nm,1.4s
SUA Susitna One 43.39 40 eP P 17 43 56.5 -0.2
comp=Z,104nm,1.1s
LAMP Lampang 43.44 251 P P 17 44 00.2 +2.8
comp=Z,9.8nm,0.7s
COLD Coldfoot 43.44 31 eP P 17 43 56.8 -0.1
comp=Z,18nm,0.9s
COLD eS S 17 50 24.9 +2.4
TRF Thorofare Moun 43.47 37 eP P 17 43 57.4 +0.1
comp=Z,61nm,1.2s
CMMT Chiang Mai 43.73 252 P P 17 44 00.3 +0.5
comp=Z,38nm,1.2s,comp=Z,674nm
CHTO Chiang Mai 43.73 252 P P 17 44 00.4 +0.6
comp=Z,138nm,0.8s,comp=Z,3µm
CHTO Chiang Mai 43.73 252 eP P 17 44 00.2 +0.4
CHTO pmax pmax
comp=Z,63nm,1.3s
CHTO MLR MLR
comp=Z,1µm,20.0s
CHTO Chiang Mai 43.73 252 P P 17 44 00.1 +0.4
SNR=8.9
CHTO Chiang Mai 43.73 252 P P 17 44 00.1 +0.4
SNR=8.9
CHTO P P 17 44 00.1 +0.4
SNR=8.9
CHTO Chiang Mai 43.73 252 eP P 17 44 00.2 +0.4
comp=Z,63nm,1.3s
CHTO LR LR
comp=Z,1µm,20.0s
BWN Browne 43.80 36 eP P 17 44 01.3 +1.6
comp=Z,727nm,1.3s
PBKT Sadao Pong 43.82 248 P P 17 44 02.2 +1.8
comp=Z,19nm,2.7s,comp=Z,2µm
RC01 Rabbit Creek A 43.91 40 eP P 17 44 00.8 +0.1
comp=Z,196nm,1.3s
CM31 Chiang Mai Arr 43.97 252 eP P 17 44 00.1 -1.6
CMAR Chiang Mai Arr 43.97 252 P P 17 44 01.8 +0.2
comp=Z,5.5nm,0.5s,baz=39,slow=6.8,SNR=12
CMAR LR LR 18 03 30.2
comp=Z,1µm,18.7s,baz=58,slow=38
CMAR Chiang Mai Arr 43.97 252 *i P* P 17 44 04.4 +2.7
CMAR pmax pmax
comp=Z,6.0nm,0.5s
CM01 Chiang Mai Arr 43.98 252 eP P 17 44 01.9 +0.2
KURK Kurchatov 44.03 305*d iP* P 17 44 01.7 -0.1
KURK pmax pmax
comp=Z,102nm,0.8s
KURK Kurchatov 44.03 305 eP P 17 44 02.0 +0.2
comp=Z,79nm,0.9s
KURK LR LR
comp=Z,989nm,20.0s
MCK McKinley 44.06 36 eP P 17 44 02.0 +0.1
MCK pmax pmax
comp=Z,130nm,1.2s
MCK McKinley 44.06 36 eP P 17 44 02.0 +0.1
comp=Z,130nm,1.2s
KURBB Kurchatov Arra 44.11 304 P P 17 44 02.6 +0.2
comp=Z,15nm,0.4s,baz=77,slow=8.8,SNR=46
RND Reindeer 44.12 37 eP P 17 44 02.2 -0.2
RND pmax pmax
comp=Z,164nm,1.2s
RND Reindeer 44.12 37 eP P 17 44 02.2 -0.2
comp=Z,164nm,1.2s
SUKH Sukhothai 44.13 250 P P 17 44 04.3 +1.4
comp=Z,8.3nm,1.0s,comp=Z,81nm
PMR Palmer 44.15 40 eP P 17 44 02.8 +0.2
PMR pmax pmax
comp=Z,70nm,1.1s
PMR Palmer 44.15 40 eP P 17 44 02.8 +0.2
comp=Z,70nm,1.1s
SEW Seward 44.16 42 eP P 17 44 02.3 -0.4
comp=Z,143nm,1.2s
MDM Murphy Dome 44.29 35 eP P 17 44 04.3 +0.6
comp=Z,106nm,1.2s
WRH Wood River Hil 44.38 35 eP P 17 44 04.6 +0.2
comp=Z,60nm,1.1s
COLA College 44.46 35 eP P 17 44 05.4 +0.4
COLA pmax pmax
comp=Z,169nm,1.1s
COLA MLR MLR
comp=Z,2µm,22.0s
COLA College 44.46 35 eP P 17 44 05.4 +0.4
comp=Z,169nm,1.1s
COLA LR LR
comp=Z,2µm,22.0s
CCB Clear Creek Bu 44.49 35 eP P 17 44 05.4 +0.1
comp=Z,48nm,1.2s
SML Sawmill 44.51 39 eP P 17 44 05.8 +0.3
SML pmax pmax
comp=Z,233nm,1.1s
SML Sawmill 44.51 39 eP P 17 44 05.8 +0.3
comp=Z,233nm,1.1s
SHL Shillong 44.78 265 eP P 17 44 10.0 +1.7
SHL eS S 17 50 45.0 +1.7
DHY Denali Highway 44.81 37 eP P 17 44 08.0 -0.1
comp=Z,137nm,1.2s
ILAR Eielson Array 44.87 35 P P 17 44 08.1 -0.3
comp=Z,97nm,1.1s,baz=268,slow=5.8,SNR=165
ILB Eielson Array 44.87 35 eP P 17 44 08.1 -0.3
IL1 Eielson Array 44.88 35 eP P 17 44 07.0 -1.4
SCM Sheep Creek Mo 44.98 39 eP P 17 44 09.6 +0.3
SCM pmax pmax
comp=Z,153nm,1.2s
SCM Sheep Creek Mo 44.98 39 eP P 17 44 09.6 +0.3
comp=Z,152nm,1.2s
FYU Fort Yukon 45.42 32 eP P 17 44 13.6 +1.0
comp=Z,304nm,1.6s
SHLS Shalkode 45.50 294 eP P 17 44 11.8 -2.1
comp=Z,61nm,0.9s
SHLS eS S 17 50 52.0 -1.4
SHLS LR LR 18 03 33.1
comp=Z,511nm,16.1s
FID Port Fidalgo 45.53 40 eP P 17 44 13.7 +0.1
comp=Z,154nm,1.2s
FAKI Fak Fak 45.57 195 eP P 17 44 14.2 -0.2
comp=Z,182nm,1.4s
PAX Paxson 45.69 37 eP P 17 44 15.3 +0.4
PAX pmax pmax
comp=Z,33nm,1.0s
PAX Paxson 45.69 37 eP P 17 44 15.3 +0.4
comp=Z,33nm,1.0s
PDGK Podgornoye 45.71 294 *i P* P 17 44 14.4 -0.9
PDGK pmax pmax
comp=Z,27nm,0.9s
DIV Divide 45.81 40 eP P 17 44 16.6 +0.7

comp=Z,256nm,1.2s
EYAK Cordova Ski Ar 45.92 41 *e*P P 17 44 17.5 +0.9
comp=Z,120nm,1.2s
KPKS Kokpek 46.21 295 *i* P P 17 44 17.5 -1.8
comp=Z,285nm,1.2s
KPKS *e*S **S** **17 51 02.2 -1.1**
KPKS LR LR 18 04 01.6
comp=Z,933nm,14.0s
DOT Dot Lake 46.23 36 *e*P P 17 44 18.8 -0.3
comp=Z,64nm,0.8s
LUWI Luwuk 46.39 208 *e*P P 17 44 18.8 -2.1
comp=Z,253nm,1.6s
BMRM Bremner River 46.40 40 *e*P P 17 44 21.4 +0.9
comp=Z,163nm,1.2s
MENT Mentasta 46.48 37 *e*P P 17 44 22.2 +1.0
comp=Z,268nm,1.7s
CRQM Cirque 47.15 40 *e*P P 17 44 27.8 +1.2
comp=Z,427nm,1.2s
PHET Kaeng Krachan 47.30 245 P P 17 44 38.1 +10
EGAK Eagle 47.31 34 *e*P P **17 44 27.5 0.0**
comp=Z,150nm,1.3s
EGAK LR LR
comp=Z,2μm,22.0s
MDOK Medeo 47.43 295 *e*P P 17 44 27.3 -1.7
comp=Z,112nm,1.3s
MDOK *e*S **S** **17 51 19.8 -1.2**
MDOK LR LR 18 04 10.7
comp=Z,1μm,17.9s
AAA Alma-Ata 47.46 295 *e*P P 17 44 31.2 +2.2
AAA *e*S **S** **17 51 23.5 +2.4**
AAA pmax pmax
comp=Z,200nm,3.1s
AAA smax smax
comp=E,200nm,4.8s
AAA MLR MLR
comp=Z,2μm,15.0s
AAA Alma-Ata 47.46 295 *e*P P 17 44 27.7 -1.4
comp=Z,112nm,0.8s
AAA *e*S **S** **17 51 21.2 +0.1**
AAA LR LR 18 04 23.1
comp=Z,872nm,16.1s
KUU Kurty 47.63 296 *e*P P 17 44 28.7 -1.6
comp=Z,223nm,1.0s
KUU *e*S **S** **17 51 23.0 -0.5**
KUU LR LR 18 04 43.0
comp=Z,849nm,13.6s
JIRN Jiri 47.89 272 *e*P P 17 44 33.3 +0.4
comp=Z,250nm,0.4s
SBUM Sibu 47.90 223 ⇓P P 17 44 33.4 +0.8
SBUM Sibu 47.90 223 *e*P P 17 44 32.7 +0.1
comp=Z,38nm,1.5s
GUN Gumba 47.98 272 *e*P P 17 44 33.9 +0.2
comp=Z,146nm,0.4s
DAWY Dawson 48.19 35 *e*P P 17 44 34.3 -0.1
comp=Z,22nm,1.1s
BVA0 Borovoye Array 48.31 310 P P 17 44 36.1 +0.6
BVA0 pmax pmax
comp=Z,25nm,0.9s
BVAR Borovoye Array 48.31 310 P P 17 44 36.0 +0.5
comp=Z,9.5nm,0.4s,baz=69,slow=8.1,SNR=65
BVAR Borovoye Array 48.31 310 P P 17 44 36.0 +0.5
BVAR pmax pmax
comp=Z,10.0nm,0.4s
BRVK Borovoye 48.37 310 *de*P P 17 44 36.4 +0.6
BRVK pmax pmax
comp=Z,64nm,1.2s
BRVK Borovoye 48.37 310 *e*P P 17 44 36.5 +0.6
comp=Z,42nm,1.0s
BRVK LR LR
comp=Z,1μm,21.0s
BMNS Besmoynak 48.38 295 *i* P P 17 44 34.5 -1.8
comp=Z,352nm,1.3s
BMNS *e*S **S** **17 51 33.3 -1.1**
BMNS LR LR 18 05 33.1
comp=Z,749nm,14.9s
KKN Kakani 48.50 272 *e*P P 17 44 37.8 +0.3
comp=Z,53nm,0.5s
TKM2 Tokmak 2 48.51 295 *i* P P 17 44 38.1 +0.8
TKM2 pmax pmax
comp=Z,52nm,0.9s
PKIN Phulchoki 48.52 272 *e*P P 17 44 38.1 +0.4
comp=Z,94nm,0.7s
PCA Pinnacle 48.69 41 *e*P P 17 44 38.5 +0.2
comp=Z,134nm,1.2s
DMN Daman 48.72 272 *e*P P 17 44 39.6 +0.3
BTLS Baital 48.73 298 *e*P P 17 44 35.2 -3.6
comp=Z,42nm,1.1s
BTLS *i* S **S** **17 51 36.4 -2.6**
BTLS LR LR 18 05 20.8
comp=Z,384nm,14.3s
GKN Gorkha 48.86 273 *e*P P 17 44 40.4 +0.2
comp=Z,61nm,0.5s
FRU Bishkek 49.20 295 *e*P P 17 44 44.0 +1.5
FRU *e*S **S** **17 51 48.0 +2.3**
FRU pmax pmax
comp=Z,90nm,2.1s
AAK Ala-Archa 49.36 295 P P 17 44 43.8 -0.1
comp=Z,2.5nm,0.3s,baz=86,slow=4.9,SNR=10
AAK Ala-Archa 49.36 295 P P 17 44 45.1 +1.2
AAK pmax pmax
comp=Z,24nm,1.2s
AAK Ala-Archa 49.36 295 P P 17 44 43.8 -0.1
SNR=12
AAK Ala-Archa 49.36 295 P P 17 44 43.8 -0.1
AAK P P 17 44 43.8 -0.1
SNR=12
AAK Ala-Archa 49.36 295 *e*P P 17 44 44.5 +0.7
comp=Z,23nm,1.2s
AAK LR LR
comp=Z,2μm,20.0s
INK Inuvik 49.63 29 P P 17 44 45.0 -0.2
comp=Z,14nm,0.5s,baz=305,slow=9.7,SNR=43
INK Inuvik 49.63 29 *e*P P 17 44 45.3 0.0
INK pmax pmax
comp=Z,52nm,1.2s
INK Inuvik 49.63 29 *e*P P 17 44 45.3 0.0
comp=Z,52nm,1.2s
KSH Kashi 49.64 291 P P **17 44 50.5 +4.5**
KSH *ep*P sP 17 45 00.5 -0.1
KSH *es*P pP 17 45 04.0 +7.6
KSH *e*PP **PP** **17 46 46.0 +5.6**
KSH S **S** **17 51 56.0 +3.9**
KSH ScS **ScS** **17 54 36.0 +1.1**
KSH LR LR
comp=Z,2μm,15.0s
KSH LR LR
comp=Z,1μm,14.1s
KSH LR LR
comp=Z,3μm,16.0s
KSM Kuching 49.72 225 *e*P P 17 44 47.0 +0.4
comp=Z,144nm,1.6s
KSM LR LR
comp=Z,577nm,20.0s
KOLN Koldanda 49.76 273 *e*P P 17 44 47.7 +0.6
comp=Z,58nm,0.4s
HYT Haines Junctio 49.81 39 *e*P P 17 44 49.0 +2.0
comp=Z,545nm,1.2s
DHAK Deception Hill 49.96 41 *e*P P 17 44 48.8 +0.8
comp=Z,117nm,1.1s
PYUN Piuthan 50.04 274 *e*P P 17 44 49.6 +0.4
comp=Z,99nm,0.6s
MNAS Manas 50.77 296 *i* P P 17 44 54.5 0.0
MNAS pmax pmax
comp=Z,33nm,0.8s
SKLT Songkhla 50.87 239 P P 17 44 57.0 +1.7
comp=Z,38nm,1.0s
WHY Whitehorse 51.10 39 *e*P P 17 44 58.2 +1.5
comp=Z,128nm,1.2s
PMG Port Moresby 51.12 175 LR LR 18 04 04.5
comp=Z,400nm,21.6s,baz=340,slow=33
PMG Port Moresby 51.12 175⇓*e*P P 17 44 58.0 +0.9
PMG pmax pmax
comp=Z,179nm,1.2s
KAPI Kappang 51.17 210 P P 17 44 55.7 -1.8
comp=Z,18nm,1.1s,baz=20,slow=7.8,SNR=9.8
KAPI LR LR 18 06 50.8
comp=Z,352nm,21.7s,baz=35,slow=36
KAPI Kappang 51.17 210 *e*P P 17 44 56.1 -1.4
comp=Z,194nm,1.8s
SKAG Skagway 51.26 40 *e*P P 17 44 58.5 +0.8
comp=Z,108nm,1.2s
KK31 Karatay Array 51.84 297 *i* P P 17 45 02.2 -0.2
KK31 pmax pmax
comp=Z,9.0nm,0.5s
KKAR Karatay Array 51.84 297 *e*P P 17 45 02.3 -0.1
KKAR Karatay Array 51.84 297 *e*P P 17 45 02.3 -0.1

KULM Kulim 52.28 238 *e*P P 17 45 07.1 +1.2
comp=Z,29nm,1.1s
KULM LR LR
comp=Z,683nm,19.0s
SVE Sverdlovsk 52.40 317⇑*i*P P 17 45 07.2 +1.0
SVE *e*S **S** **17 52 28.8 -0.7**
SVE pmax pmax
comp=Z,55nm,1.0s
SVE MLR MLR
comp=Z,3μm,18.0s
IUG Iuzhnay 52.57 296 *e*P P 17 45 06.0 -1.9
comp=Z,125nm,1.6s
IUG *e*S **S** **17 52 31.3 -1.2**
IUG LR LR 18 07 51.7
comp=Z,246nm,11.9s
HNR Honiara 53.35 159 PFAKE 17 45 30.0 +16
HNR LR LR
comp=Z,1μm,20.0s
ARU Arti 53.61 317*d i*P P **17 45 15.3 +0.1**
ARU 17 46 20.2
ARU 17 47 17.5
ARU PPP PPP 17 48 24.1
ARU *e*S **S** **17 52 48.7 +2.7**
ARU *e* 17 54 58.9
ARU SS **SS** **17 56 23.7 -2.4**
ARU SSS SSS 17 58 17.5
ARU pmax pmax
comp=Z,56nm,1.2s
ARU MLR MLR
comp=Z,4μm,17.0s
ARU Arti 53.61 317 *e*P P **17 45 14.6 -0.6**
comp=Z,51nm,1.0s
MMRI Maumere 53.67 206 *e*P P 17 45 14.8 -1.2
comp=Z,142nm,1.2s
CRAG Craig 53.79 45 *e*P P 17 45 18.3 +1.8
comp=Z,76nm,1.3s
WRAK Wrangell Islan 53.82 43 *e*P P 17 45 18.6 +1.9
comp=Z,68nm,1.3s
SOEI Soe 54.10 203 *e*P P 17 45 18.3 -1.0
comp=Z,181nm,1.1s
CHLP Challavanipeta 54.80 264 *e*P P 17 45 24.5 +0.2
CHLP IAmb IAmb 17 45 29.5
comp=Z,66nm,1.6s
DIB Dawson Inlet, 55.05 47 *e*P P **17 45 27.3 +1.6**
comp=Z,65nm,1.2s
PSI Prapat 55.29 238 LR LR 18 11 29.3
comp=Z,524nm,19.3s,baz=20,slow=38
MTN Manton Dam 55.46 194 *e*P P **17 45 28.1 -0.9**
comp=Z,182nm,1.5s
COEN Coen 55.49 180 *e*P P **17 45 29.7 +0.5**
comp=Z,176nm,1.4s
HOPEN Hopen 55.69 345 *e*P P **17 45 29.7 -0.3**
HOPEN IAmb IAmb 17 45 43.9
comp=Z,80nm,1.1s
HOPEN *e*S **S** **17 53 15.4 +2.0**
HOPEN IVMs_BB IVMs_BB 18 10 50.9
comp=Z,744nm,21.1s
AB31 Akbulak array 55.82 308 *i* P P **17 45 31.5 +0.2**
AB31 pmax pmax
comp=Z,27nm,0.8s
ABKAR Akbulak array 55.82 308 *e*P P **17 45 31.7 +0.4**
POHA Pohakuloa 56.05 93 PFAKE 17 45 50.0 +16
POHA LR LR
comp=Z,1μm,20.0s
KBS Kingsbay 56.15 350 *e*P P **17 45 33.5 +0.3**
KBS IAmb IAmb 17 45 34.4
comp=Z,65nm,1.2s
KBS *e*S **S** **17 53 21.6 +2.1**
KBS IVMs_BB IVMs_BB 18 11 22.9
comp=Z,448nm,21.4s
KBS Kingsbay 56.15 350 *e*P P **17 45 33.5 +0.3**
KBS pmax pmax
comp=Z,72nm,1.3s
KBS MLR MLR
comp=Z,1μm,20.0s
KBS Kingsbay 56.15 350 *e*P P **17 45 33.5 +0.3**
comp=Z,72nm,1.3s
KBS LR LR
comp=Z,1μm,20.0s
HSPB Hornsund (broa 57.02 348 *e*P P **17 45 39.7 +0.3**
HSPB IAmb IAmb 17 45 41.7
comp=Z,134nm,1.3s
HSPB *ep*P **pP** **17 45 50.0 0.0**
HSPB *e*S **S** **17 53 31.1 0.0**
HSPB IVMs_BB IVMs_BB 18 07 53.6
comp=Z,584nm,24.4s
HSPB Hornsund (broa 57.02 348 *e*P P **17 45 39.8 +0.3**
GSI Gunungsitoli 57.29 238 *e*P P **17 45 39.6 -2.5**
comp=Z,29nm,1.0s
PVM Polavaram 57.38 264 *e*P P **17 45 42.9 +0.1**
PVM IAmb IAmb 17 45 44.3
comp=Z,81nm,1.9s
RES Resolute Bay 57.69 15 P P **17 45 43.7 -0.4**
comp=Z,33nm,0.8s,baz=308,slow=5.5,SNR=22
RES Resolute Bay 57.69 15 *e*P P **17 45 43.7 -0.4**
comp=Z,58nm,1.1s
BBB Bella Bella 57.88 47 *e*P P **17 45 46.7 +0.9**
comp=Z,72nm,1.1s
BJO Bjornoya 58.11 345 *e*P P **17 45 47.6 +0.5**
BJO IAmb IAmb 17 46 09.0
comp=Z,115nm,1.9s
BJO IVMsBB 18 13 02.9
comp=Z,693nm,31.2s
RPR Rampur 58.13 267 *e*P P **17 45 48.5 +0.5**
RPR IAmb IAmb 17 45 49.1
comp=Z,134nm,1.9s
LVZ Lovozero 58.25 335*d i*P P **17 45 48.0 -0.2**
LVZ pmax pmax
comp=Z,39nm,1.4s
LVZ Lovozero 58.25 335 *e*P P **17 45 48.6 +0.3**
comp=Z,41nm,1.3s
LVZ LR LR
comp=Z,961nm,20.0s
SRSP Sriramsagar 58.80 268 *e*P P **17 45 52.5 -0.3**
SRSP IAmb IAmb 17 45 56.1
comp=Z,26nm,0.8s
APA Apatity 58.83 335⇑*i*P P **17 45 52.3 +0.1**
APA pmax pmax
comp=Z,14nm,1.4s
APA MLR MLR
comp=Z,2μm,27.0s
YKA Yellowknife Ar 59.12 32 P P **17 45 53.8 -0.5**
comp=Z,64nm,1.1s,baz=301,slow=7.1,SNR=44
YKA Yellowknife Ar 59.12 32 *i* P P **17 45 54.5 +0.2**
YKA pmax pmax
comp=Z,64nm,1.1s
KEV Kevo 59.40 339 *e*P P **17 45 54.8 -1.3**
KEV pmax pmax
comp=Z,41nm,1.2s
KEV MLR MLR
comp=Z,2μm,21.0s
KEV Kevo 59.40 339 *e*P P **17 45 54.8 -1.3**
comp=Z,41nm,1.2s
KEV LR LR
comp=Z,2μm,21.0s
ADKI Addanki 59.50 264 *e*P P **17 45 57.6 0.0**
ADKI IAmb IAmb 17 45 59.3
comp=Z,202nm,2.2s
NJS Nagarjunasagar 59.55 265 *e*P P **17 45 56.6 -1.3**
NJS IAmb IAmb 17 45 58.0
comp=Z,242nm,2.7s
HYBB Hyderabad (bro 59.57 267 *e*P P **17 45 57.3 -0.9**
HYBB IAmb IAmb 17 45 58.2
comp=Z,9.0nm,0.7s
HYB Hyderabad 59.57 267 *i* P P **17 45 58.0 -0.1**
HYB *e* 17 46 11.5
HAMF Hammerfest 59.70 340 *e*P P **17 45 58.5 +0.3**
HAMF *e*S **S** **17 54 04.5 -1.5**
HAMF IVMs_BB IVMs_BB 18 14 48.0
comp=Z,556nm,25.1s
ARA0 ARCESS Array S 59.94 339 *e*P P **17 45 60.0 0.0**
ARCES ARCESS Array B 59.94 339 P P **17 45 59.6 -0.3**
comp=Z,4.3nm,0.6s,baz=46,slow=6.4,SNR=30
ARE0 ARCESS Array S 59.94 339 *e*P P **17 45 59.3 -0.7**
ARE0 IAmb IAmb 17 46 02.0
comp=Z,40nm,1.3s
ARE0 *e*S **S** **17 54 08.0 -1.3**
ARE0 IVMs_BB IVMs_BB 18 16 32.8
comp=Z,659nm,20.1s
ARE0 ARCESS Array S 59.94 339 *e*P P **17 46 00.2 +0.3**
comp=Z,55nm,1.5s
FUNA Funafuti 60.13 138 PFAKE 17 46 10.0 +8.2
FUNA LR LR
comp=Z,5μm,20.0s
SRLM Srisailam 60.14 265 *e*P P **17 46 01.4 -0.6**
SRLM IAmb IAmb 17 46 02.1

comp=Z,25nm,1.2s
KLMR Klimovskoe 60.36 327 *e*P P **17 46 03.2 +0.3**
KLMR *e* 17 48 16.8
KLMR pmax pmax
comp=Z,63nm,1.3s
RCLA Racherla 60.50 265 *e*P P **17 46 04.4 -0.1**
RCLA IAmb IAmb 17 46 04.8
comp=Z,50nm,1.4s
KLRI Killari 60.63 268 *e*P P **17 46 04.5 -0.9**
KLRI IAmb IAmb 17 46 08.6
comp=Z,36nm,1.0s
SKHT Srikalahasti 61.03 262 *e*P P **17 46 08.5 +0.4**
SKHT IAmb IAmb 17 46 09.9
comp=Z,129nm,1.9s
DAG Danmarks Havn 61.11 355⇑*i*P P **17 46 07.1 -0.7**
comp=Z,71nm,1.3s
DAG *i* 17 46 17.7
DAG Danmarks Havn 61.11 355⇑*i*P P **17 46 07.1 -0.7**
DAG *i* 17 46 17.7
DAG pmax pmax
comp=Z,140nm,1.3s
TRO Tromso 61.58 341 *e*P P **17 46 11.4 +0.4**
TRO IAmb IAmb 17 46 12.9
comp=Z,58nm,1.1s
TRO *e*S **S** **17 54 29.0 -1.0**
TRO IVMs_BB IVMs_BB 18 17 08.1
comp=Z,598nm,17.0s
CTAO Charters Tower 61.67 176 *e*P P **17 46 11.3 -0.8**
CTAO pmax pmax
comp=Z,67nm,1.4s
CTAO MLR MLR
comp=Z,2μm,21.0s
CTAO Charters Tower 61.67 176 *e*P P **17 46 11.3 -0.8**
comp=Z,67nm,1.4s
CTAO LR LR
comp=Z,2μm,21.0s
FITZ Fitzroy Crossi 61.72 199 *e*P P **17 46 12.4 -0.1**
comp=Z,95nm,1.5s
WRAB Tennant Creek 61.95 189*d i*P P **17 46 12.7 -1.3**
WRAB pmax pmax
comp=Z,281nm,1.3s
WRAB Tennant Creek 61.95 189 *e*P P **17 46 13.1 -1.0**
comp=Z,138nm,1.4s
WRAB LR LR
comp=Z,1μm,19.0s
WB2 Warramunga Arr 61.96 189 *e*P P **17 46 13.1 -1.0**
comp=Z,143nm,1.4s
WRA Warramunga Arr 61.96 189 P P **17 46 12.7 -1.4**
comp=Z,81nm,1.2s,baz=7.0,slow=6.9,SNR=116
WRA LR LR 18 14 11.4
comp=Z,368nm,18.8s,baz=20,slow=37
WRA Warramunga Arr 61.96 189 *i* P P **17 46 13.1 -1.0**
WRA pmax pmax
comp=Z,81nm,1.2s
LLLB Lillooet 62.05 46 *e*P P **17 46 15.4 +0.9**
comp=Z,81nm,1.2s
URV Uravakonda 62.08 265 *e*P P **17 46 14.6 -0.7**
URV IAmb IAmb 17 46 16.5
comp=Z,53nm,1.6s
PGC Sidney 62.24 48 *e*P P **17 46 16.5 +0.8**
comp=Z,56nm,1.0s
GEYT Alibeck 62.59 297 P P **17 46 17.4 -1.0**
comp=Z,2.2nm,0.6s,baz=165,slow=2.3,SNR=9.1
GEYT LR LR 18 15 17.1
comp=Z,1μm,20.8s,baz=45,slow=38
NLWA Neilton Lookou 62.69 50 *e*P P **17 46 19.9 +1.0**
comp=Z,79nm,1.1s
NLWA LR LR
comp=Z,996nm,22.0s
B05A Bryant 63.21 48 P P **17 46 23.2 +0.9**
baz=304,SNR=22
E03A Lebam 63.33 50 *e*P P **17 46 24.5 +1.4**
comp=Z,151nm,1.0s
B06A Marblemount 63.41 48 *e*P P **17 46 24.1 +0.5**
comp=Z,85nm,1.1s
D05A Enumclaw 63.87 49 *e*P P **17 46 28.3 +1.7**
comp=Z,110nm,1.1s
F04D Rainier, OR 63.90 51 P P **17 46 28.3 +1.4**
baz=304
LOF Lofoten 64.00 341 *e*P P **17 46 26.9 -0.2**
LOF IAmb IAmb 17 46 43.3
comp=Z,19nm,0.9s
LOF *e*S **S** **17 54 59.3 -1.2**
LOF IVMs_BB IVMs_BB 18 12 51.2
comp=Z,581nm,23.8s
MOS Moscow 64.12 323 *e*P P **17 46 27.9 -0.2**
MOS *e* 17 46 44.5
MOS *e* 17 50 31.8
MOS *i* S **S** **17 54 59.7 -2.6**
MOS pmax pmax
comp=Z,67nm,0.7s
MOS smax smax
comp=N,300nm,2.3s
MOS smax smax
comp=E,200μm,2.1s
MOS MLR MLR
comp=N,2μm,19.0s
MOS MLR MLR
comp=E,2μm,19.0s
MOS MLR MLR
comp=Z,3μm,19.0s
LON Longmire 64.22 50 *e*P P **17 46 30.0 +1.0**
LON pmax pmax
comp=Z,37nm,1.2s
LON Longmire 64.22 50 *e*P P **17 46 30.0 +1.0**
comp=Z,37nm,1.2s
G03D McMinnville, O 64.24 52 P P **17 46 30.4 +1.3**
baz=304,SNR=5.4
F04A Amboy 64.33 51 *e*P P **17 46 31.0 +1.3**
comp=Z,126nm,1.0s
COR Corvallis 64.57 52 *e*P P **17 46 33.2 +1.9**
COR pmax pmax
comp=Z,131nm,1.1s
COR Corvallis 64.57 52 *e*P P **17 46 33.1 +1.9**
comp=Z,131nm,1.1s
B08A Colville Reser 64.68 47 *e*P P **17 46 32.7 +0.7**
comp=Z,89nm,1.3s
VRH Novokhopyorsk 64.84 317 *e*P P **17 46 34.2 +1.3**
VRH pmax pmax
comp=Z,20nm,0.7s
VRH MLR MLR
comp=Z,70nm,17.0s
OBN Obninsk 64.98 323*c i*P P **17 46 33.9 +0.1**
OBN *i* *PP **pP** **17 46 45.1 +0.6**
OBN *i* *SP **sP** **17 46 51.0 +2.4**
OBN *e* 17 47 03.2
OBN *i* S **S** **17 55 10.7 -2.2**
OBN *e* 17 55 49.9
OBN *e* 17 56 23.5
OBN *e*SS **SS** **17 59 24.9 +0.7**
OBN pmax pmax
comp=Z,50nm,1.2s
OBN MLR MLR
comp=Z,3μm,17.0s
OBN Obninsk 64.98 323 *e*P P **17 46 33.9 +0.1**
comp=Z,136nm,1.5s
OBN LR LR
comp=Z,3μm,19.0s
I03D Drain, OR 65.05 53 P P **17 46 35.9 +1.5**
baz=305,SNR=28
FIA1 FINESS Array S 65.14 332 *e*P P **17 46 34.8 +0.2**
FINES FINESS Array B 65.14 332 P P **17 46 34.6 0.0**
comp=Z,29nm,0.7s,baz=50,slow=7.2,SNR=90
G05D Wamic, OR 65.36 51 P P **17 46 37.3 +0.9**
baz=305,SNR=8.5
E07A Sunnyside 65.43 49 *e*P P **17 46 37.8 +0.9**
comp=Z,122nm,1.2s
STOK Stokkvaagen 65.53 340 *e*P P **17 46 37.7 +0.6**
STOK IAmb IAmb 17 46 38.9
comp=Z,26nm,1.1s
I04A Tendick Farm, 65.55 52 P P **17 46 38.8 +1.1**
baz=305,SNR=57
C09A Chrisman Ranch 65.58 47 *e*P P **17 46 38.6 +0.8**
comp=Z,86nm,1.0s
D08A Wollman Farm, 65.66 48 *e*P P **17 46 39.0 +0.6**
comp=Z,79nm,1.1s
AS01 Alice Springs 65.68 189 *e*P P **17 46 37.4 -1.1**
AS31 Alice Springs 65.68 189 *e*P P **17 46 38.2 -0.4**
comp=Z,7.5nm,0.8s
ASAR Alice Springs 65.68 189 P P **17 46 38.2 -0.4**
comp=Z,18nm,1.0s,baz=7.0,slow=7.5,SNR=94
ASAR LR LR 18 14 43.6
comp=Z,559nm,21.9s,baz=350,slow=35
ASAR PKP2bc 18 15 21.4
comp=Z,1.4nm,1.0s,baz=193,slow=5.1,SNR=5.4
HAWA Hanford 65.71 49 *e*P P **17 46 39.7 +1.0**
comp=Z,71nm,1.1s

HAWA LR LR
comp=Z,846nm,22.0s
G06A Carlson Farm, 65.75 50 *e*P **P 17 46 40.0 +1.0**
comp=Z,65nm,1.2s
L02D Cave Junction, 65.77 54 P **P 17 46 40.3 +1.1**
baz=305,SNR=8.3
I05D Terrebonne, OR 65.86 51 P **P 17 46 40.9 +1.1**
baz=306,SNR=27
SUMG Summit 65.90 0⇑ *i*P **P 17 46 40.7 +0.7**
comp=Z,2µm,17.0s
SUMG Summit 65.90 0 *e*P **P 17 46 40.7 +0.7**
SUMG pmax pmax
comp=Z,80nm,1.1s
SUMG Summit 65.90 0 *e*P **P 17 46 40.7 +0.7**
comp=Z,80nm,1.1s
HUMO Hull Mountain 65.91 54 *e*P **P 17 46 41.4 +1.3**
comp=Z,45nm,1.4s
NEW Newport 65.94 46 P **P 17 46 40.8 +0.6**
baz=306,SNR=54
NEW Newport 65.94 46 *e*P **P 17 46 40.7 +0.6**
NEW pmax pmax
comp=Z,69nm,1.1s
NEW MLR MLR
comp=Z,749nm,21.0s
NEW Newport 65.94 46 *e*P **P 17 46 40.7 +0.6**
comp=Z,69nm,1.1s
NEW LR LR
comp=Z,749nm,21.0s
VSR Storozhevoye 66.12 318 *e*P **P 17 46 41.9 +0.7**
VSR pmax pmax
comp=Z,20nm,0.6s
VSR MLR MLR
comp=Z,2µm,20.0s
MBWA Marble Bar 66.23 204 *e*P **P 17 46 41.9 -0.3**
comp=Z,97nm,1.4s
E09A Wood Farm, Sta 66.41 48 *e*P **P 17 46 44.2 +1.0**
comp=Z,135nm,1.1s
J05D Fort Rock, OR 66.54 52 P **P 17 46 45.4 +1.2**
baz=306,SNR=18
K04D Chiloquin, OR 66.62 53 P **P 17 46 46.0 +1.3**
baz=306
M02C Callahan 66.67 55 P **P 17 46 46.5 +1.5**
baz=306,SNR=20
VSU Vasula 66.93 329 *ce*P **P 17 46 46.6 +0.4**
VSU pmax pmax
comp=Z,138nm,1.2s
N02D Trinity Center 67.01 55 P **P 17 46 48.7 +1.6**
baz=306,SNR=26
M04C Macdoel 67.06 54 P **P 17 46 48.9 +1.4**
baz=306,SNR=34
WALA Waterton Lakes 67.16 44 *e*P **P 17 46 46.8 -1.2**
comp=Z,77nm,1.2s
DZM Mont Dzumac 67.20 156 *e*P **P 17 46 49.2 +0.8**
comp=Z,85nm,1.4s
DZM *e*S **S 17 55 39.3 -1.3**
comp=Z,935nm,29.1s
DZM Mont Dzumac 67.20 156 *e*LR LR 18 07 17.8
comp=Z,2µm,23.2s
F10A Beach Ranch, E 67.25 48 *e*P **P 17 46 49.5 +0.8**
comp=Z,37nm,1.2s
EIDS Eidsvold 67.28 172 *e*P **P 17 46 49.1 +0.4**
comp=Z,38nm,1.1s
WDC Whiskeytown Da 67.34 55 *e*P **P 17 46 50.4 +1.2**
WDC pmax pmax
comp=Z,58nm,1.1s
WDC Whiskeytown Da 67.34 55 *e*P **P 17 46 50.4 +1.2**
comp=Z,58nm,1.1s
BSMT Bassoo Peak 67.44 45 *e*P **P 17 46 50.9 +1.0**
SCO Scoresbysund 67.47 355⇑ *i*P **P 17 46 49.7 +0.2**
comp=Z,38nm,1.3s
SCO Scoresbysund 67.47 355⇑ *i*P **P 17 46 49.7 +0.2**
SCO pmax pmax
comp=Z,38nm,1.3s
BLMT Blacktail Moun 67.56 45 *e*P **P 17 46 51.8 +1.1**
MSVF Nonsavu 67.58 144 PFAKE 17 47 00.0 +9.1
MSVF LR LR
comp=Z,1µm,22.0s
JTMT Jette 67.77 45 *e*P **P 17 46 53.0 +1.0**
GOF Gofitskoye 67.80 311⇓ *i*P **P 17 46 52.8 +0.8**
GOF *e*S **S 17 55 48.2 +0.8**
GOF pmax pmax
comp=Z,38nm,0.9s
GOF smax smax
comp=E,69nm,1.8s
YBMT Yellow Bay 67.84 45 *e*P **P 17 46 53.9 +1.5**
BMO Blue Mountains 67.88 49 *e*P **P 17 46 53.6 +0.9**
comp=E,41nm,1.0s
BMO LR LR
comp=Z,1µm,22.0s
MOD Modoc Plateau 67.91 53 *e*P **P 17 46 53.9 +0.9**
comp=Z,31nm,0.9s
HOPS Hopland Field 67.95 57 *e*P **P 17 46 54.6 +1.5**
comp=Z,57nm,1.2s
O03D Paynes Creek 67.96 55 P **P 17 46 53.6 +0.4**
baz=307,SNR=61
SWMT Swartz Lake 68.07 45 *e*P **P 17 46 54.6 +0.8**
SLMT Seeley Lake 68.50 45 *e*P **P 17 46 57.2 +0.6**
MSO Missoula 68.52 46 P **P 17 46 57.1 +0.5**
baz=309,SNR=30
MSO Missoula 68.52 46 *e*P **P 17 46 57.2 +0.5**
comp=Z,57nm,1.2s
WVOR Wild Horse Val 68.58 52 *e*P **P 17 46 58.1 +1.0**
WVOR pmax pmax
comp=Z,50nm,1.1s
WVOR Wild Horse Val 68.58 52 *e*P **P 17 46 58.1 +1.0**
comp=Z,50nm,1.1s
ORV Oroville 68.59 56 *e*P **P 17 46 57.4 +0.4**
ORV pmax pmax
comp=Z,44nm,0.9s
ORV Oroville 68.59 56 *e*P **P 17 46 57.4 +0.4**
comp=Z,44nm,0.9s
KIV Kislovodsk 68.67 310 *i* P **P 17 46 58.7 +1.1**
SNR=13
KIV Kislovodsk 68.67 310 *di*P **P 17 46 58.6 +1.1**
KIV *e* 17 47 05.4
KIV *i* *PP **sP 17 47 11.0 -1.5**
KIV *e* 17 47 25.6
KIV *i* S **S 17 55 57.2 -0.9**
KIV *i* 17 56 37.5
KIV *e* 17 56 56.9
KIV eSS **SS 18 00 19.8 -2.4**
KIV *e*SSS SSS 18 03 21.7
KIV pmax pmax
comp=Z,51nm,1.0s
KIV Kislovodsk 68.67 310 P **P 17 46 58.7 +1.1**
SNR=20
KIV Kislovodsk 68.67 310 P **P 17 46 58.7 +1.1**
SNR=20
KIV P **P 17 46 58.7 +1.1**
SNR=20
KIV Kislovodsk 68.67 310 *e*P **P 17 46 58.1 +0.5**
comp=Z,67nm,0.9s
KIV LR LR
comp=Z,2µm,19.0s
ZEI Tsey 68.69 309 *e*P **P 17 46 57.9 +0.1**
ZEI pmax pmax
comp=Z,35nm,0.5s
KBZ Khabaz 68.69 310 P **P 17 46 58.7 +1.2**
comp=Z,12nm,0.8s,baz=70,slow=2.7,SNR=17
KBZ LR LR 18 22 33.6
comp=Z,1µm,18.0s,baz=30,slow=41
CHMT Chamberlain Mo 68.84 46 *e*P **P 17 46 59.3 +0.6**
TBLG Delisi 68.84 307 P pP 17 47 11.7 +2.3
TBLG Delisi 68.84 307 P pP 17 47 11.7 +2.3
ONI Oni 69.07 309 P **P 17 46 57.0 -3.1**
ONI Oni 69.07 309 P **P 17 46 57.0 -3.1**
FFC Flin Flon 69.08 34 *e*P **P 17 47 00.3 +0.5**
FFC pmax pmax
comp=Z,165nm,1.3s
FFC MLR MLR
comp=Z,1µm,22.0s
FFC Flin Flon 69.08 34 *e*P **P 17 47 00.3 +0.5**
comp=Z,165nm,1.3s
FFC LR LR
comp=Z,1µm,22.0s
NEY Neytrino 69.09 310‖ *e*P **P 17 47 02.8 +2.5**
ISAL Salakas 69.18 327 *e*P **P 17 47 00.8 +0.5**
ISAL IAmb IAmb 17 47 02.7
comp=Z,20nm,1.2s
MICGM Minsk 69.20 326 *e*P **P 17 47 01.0 +0.5**
MICGM *e*PcP **PcP 17 47 25.0 +0.8**
MICGM *e*S **S 17 56 02.0 -1.7**
MICGM *e*PS **PnS 17 56 20.0 -12**
MICGM *e*LR LR 18 15 04.0
MICGM LRM MLR 18 19 58.0
comp=Z,3.4nm,18.0s
MNK Minsk 69.20 326 *e*P **P 17 47 01.0 +0.5**
MNK *e* 17 47 25.0
MNK *e*S **S 17 56 02.0 -1.7**
MNK MLR MLR
comp=Z,3µm,18.0s
FCC Fort Churchill 69.22 28 *e*P **P 17 47 01.2 +0.6**
FCC pmax pmax
comp=Z,157nm,1.1s
FCC Fort Churchill 69.22 28 *e*P **P 17 47 01.2 +0.6**
comp=Z,157nm,1.1s
AFDM Forest Hills D 69.28 56 *e*P **P 17 47 02.3 +0.9**
comp=Z,50nm,1.1s
IIGN Ignalina 69.30 327 *e*P **P 17 47 01.6 +0.5**
IIGN IAmb IAmb 17 47 03.2
comp=Z,11nm,0.8s
NACGM Naroch 69.38 326 *e*P **P 17 47 02.0 +0.4**
NACGM *e*S **S 17 56 05.0 -0.8**
NACGM *e*LQ LQ 18 16 35.0
NACGM *e*LR LR 18 18 06.0
MFID Camas Ranch 69.60 50 *e*P **P 17 47 04.3 +0.9**
comp=Z,46nm,1.2s
HRY Holter Researc 69.72 45 *e*P **P 17 47 05.0 +0.9**
AKH Akhalkalaki 69.77 308⇑ *i*P **P 17 47 06.4 +1.8**
PAHR Pah Rah Range 69.80 55 *e*P **P 17 47 05.7 +1.0**
comp=Z,97nm,1.1s
GNI Garni 69.80 306 P **P 17 47 06.0 +1.3**
GNI Garni 69.80 306 *e*P **P 17 47 07.5 +2.7**
GNI pmax pmax
comp=Z,97nm,1.4s
GNI MLR MLR
comp=Z,724nm,20.0s
GNI Garni 69.80 306 *e*P **P 17 47 07.5 +2.7**
comp=Z,97nm,1.4s
GNI LR LR
comp=Z,724nm,20.0s
EGMT Eagleton 69.95 43 P **P 17 47 06.1 +0.6**
baz=311,SNR=31
EGMT Eagleton 69.95 43 *e*P **P 17 47 06.0 +0.6**
comp=Z,88nm,1.1s
EGMT LR LR
comp=Z,985nm,22.0s
LRM Limekiln Ridge 69.96 46 *e*P **P 17 47 06.4 +0.7**
MOL Molde 69.97 340 IVMs_BB IVMs_BB 18 23 08.7
comp=Z,626nm,23.8s
NC405 NORSAR Array S 70.02 337 *e*P **P 17 47 05.8 +0.3**
NC303 NORSAR Array S 70.03 337 *e*P **P 17 47 06.2 +0.6**
PNTR Pine Nut 70.05 55 *e*P **P 17 47 07.6 +1.3**
comp=Z,81nm,1.0s
NC204 NORSAR Array S 70.16 338 *e*P **P 17 47 05.8 -0.6**
DLMT Dillon 70.17 47 *e*P **P 17 47 08.0 +1.1**
comp=Z,134nm,1.4s
NB201 NORSAR Array S 70.19 337 *e*P **P 17 47 06.8 +0.2**
CMB Columbia Colle 70.21 56 *e*P **P 17 47 08.1 +1.0**
CMB pmax pmax
comp=Z,69nm,1.0s
CMB Columbia Colle 70.21 56 *e*P **P 17 47 08.1 +1.0**
comp=Z,69nm,1.0s
NB2 NORSAR Subarra 70.22 337 P **P 17 47 06.5 -0.3**
comp=Z,47nm,1.1s,baz=37,slow=6.2
NB2 NORSAR Subarra 70.22 337 P **P 17 47 06.5 -0.3**
baz=37,slow=6.2
NOA NORSAR Array B 70.22 337 P **P 17 47 06.2 -0.6**
comp=Z,26nm,1.0s,baz=36,slow=6.1,SNR=41
HLID Haiy 70.31 49 P **P 17 47 08.7 +0.9**
baz=309,SNR=47
HLID Hailey 70.31 49 *e*P **P 17 47 08.6 +0.7**
comp=Z,30nm,0.9s
HLID LR LR
comp=Z,696nm,22.0s
SAO San Andreas Ge 70.32 58 *e*P **P 17 47 08.5 +0.7**
SAO pmax pmax
comp=Z,27nm,1.1s
SAO San Andreas Ge 70.32 58 *e*P **P 17 47 08.5 +0.7**
comp=Z,27nm,1.1s
NBO02 NORSAR Array S 70.32 337 *e*P **P 17 47 07.3 0.0**
YERR Yerington 70.33 55 *e*P **P 17 47 09.2 +1.2**
comp=Z,152nm,1.0s
NBO00 NORSAR Array S 70.36 337 *e*P **P 17 47 07.9 +0.3**
NC602 NORSAR Array S 70.38 337 *e*P **P 17 47 08.2 +0.5**
NC602 IAmb IAmb 17 47 19.7
comp=Z,21nm,1.3s
NC602 *e*SKSac **SKSac 17 57 06.2 0.0**
NC602 IVMs_BB IVMs_BB 18 21 22.4
comp=Z,778nm,20.0s
NC602 NORSAR Array S 70.38 337 *e*P **P 17 47 08.4 +0.7**
MCMT McKenzie Canyo 70.38 47 *e*P **P 17 47 09.1 +0.8**
AKN Aaknes 70.44 340 *e*P **P 17 47 08.3 +0.3**
AKN IAmb IAmb 17 47 58.9
comp=Z,19nm,1.0s
AKN IVMs_BB IVMs_BB 18 22 16.7
comp=Z,701nm,14.6s
NAO01 NORSAR Array S 70.48 337 *e*P **P 17 47 09.3 +1.0**
WAKR Walker 70.50 56 *e*P **P 17 47 10.5 +1.4**
comp=Z,61nm,1.0s
BOZ Bozeman (W) 70.51 46 P **P 17 47 09.9 +1.0**
baz=310,SNR=72
BOZ Bozeman (W) 70.51 46 *e*P **P 17 47 10.1 +1.1**
BOZ pmax pmax
comp=Z,45nm,0.8s
BOZ MLR MLR
comp=Z,654nm,19.0s
BOZ Bozeman (W) 70.51 46 *e*P **P 17 47 10.1 +1.1**
comp=Z,45nm,0.8s
BOZ LR LR
comp=Z,654nm,19.0s
BMN Battle Mountai 70.65 53 *e*P **P 17 47 11.2 +1.3**
BMN pmax pmax
comp=Z,54nm,1.1s
BMN Battle Mountai 70.65 53 *e*P **P 17 47 11.2 +1.3**
comp=Z,54nm,1.1s
BANOM Banah 70.81 288 P **P 17 47 11.3 +0.3**
TVH3 East Aurora ar 70.98 55 *e*P **P 17 47 13.4 +1.4**
comp=Z,81nm,1.1s
TVH2 Borealis Mine 71.00 55 *e*P **P 17 47 13.6 +1.4**
comp=Z,43nm,1.0s
SFJD Kangerlussuaq 71.02 6 P **P 17 47 11.2 -0.2**
comp=Z,30nm,0.9s,baz=349,slow=8.2,SNR=7.5
SFJD Kangerlussuaq 71.02 6 *e*P **P 17 47 12.0 +0.5**
SFJD pmax pmax
comp=Z,70nm,1.2s
SFJD Kangerlussuaq 71.02 6 *e*P **P 17 47 12.0 +0.5**
comp=Z,70nm,1.2s
ANN Anapa 71.06 313 *e*P P 17 47 03.9 -8.2
ANN *e**PP pP 17 47 15.1 -7.9
ANN *e* 17 49 48.0
ANN *e*PPP PPP 17 51 30.7
ANN *e*SS SS 18 00 57.7 -0.9
ANN pmax pmax
comp=Z,104nm,1.3s
ANN MLR MLR
comp=N,1µm,21.0s
ANN MLR MLR
comp=E,805nm,21.0s
ANN MLR MLR
comp=Z,805nm,21.0s
PMPB Monarch Peak 71.06 58 *e*P **P 17 47 13.8 +1.4**
comp=Z,32nm,1.1s
QLMT Earthquake Lak 71.15 46 *e*P **P 17 47 13.9 +1.0**
AKASG Malin Array Be 71.23 322 P **P 17 47 12.9 -0.1**
comp=Z,9.6nm,0.7s,baz=43,slow=6.5,SNR=46
AKASG LR LR 18 21 33.7
comp=Z,3µm,18.7s,baz=35,slow=38
AKASG Malin Array Be 71.23 322 *i* P **P 17 47 13.1 +0.1**
AKASG pmax pmax
comp=Z,9.0nm,0.7s
AKBB Malin Array Si 71.23 322 *e*P **P 17 47 13.3 +0.3**
AKBB pmax pmax
comp=Z,23nm,0.9s
AKBB Malin Array Si 71.23 322 *e*P **P 17 47 13.3 +0.3**
comp=Z,23nm,0.9s
KIEV Kiev 71.24 322 *e*P **P 17 47 13.2 +0.1**
KIEV pmax pmax
comp=Z,21nm,0.9s
KIEV MLR MLR
comp=Z,3µm,19.0s
KIEV Kiev 71.24 322 *e*P **P 17 47 13.2 +0.1**
comp=Z,21nm,0.9s
KIEV LR LR
comp=Z,3µm,19.0s
OSL Oslo 71.26 337 *e*P **P 17 47 13.9 +0.9**
OSL IAmb IAmb 17 47 14.7
comp=Z,31nm,1.0s
AK11 Malin Array Si 71.27 322 *e*P **P 17 47 13.8 +0.5**
YHB Horse Butte 71.33 46 *e*P **P 17 47 15.5 +1.4**
comp=Z,58nm,1.1s
MLAC Mammoth, Mammo 71.42 56 P **P 17 47 16.3 +1.6**
baz=309,SNR=7.5
FOO Floro 71.43 340 IAmb IAmb 17 47 15.1
comp=Z,35nm,1.3s
FOO *e*P **P 17 47 15.1 +1.0**
FOO *e*S **S 17 56 30.7 +1.1**
FOO IVMs_BB IVMs_BB 18 22 24.4
comp=Z,562nm,19.9s
GCMT Greycliff 71.46 45 *e*P **P 17 47 15.8 +1.1**
UOSS Minazif 71.48 287 *e*P **P 17 47 15.3 +0.4**
comp=Z,20nm,0.7s
YHH Holmes Hill 71.49 46 *e*P **P 17 47 16.4 +1.3**
comp=Z,44nm,1.1s
YMR Madison River 71.50 46 *e*P **P 17 47 16.9 +1.8**
comp=Z,56nm,1.2s
HOQ Hoqain 71.52 285 P **P 17 47 15.8 +0.5**
SNR=6.2
HOQ Hoqain 71.52 285 P **P 17 47 15.8 +0.5**
SNR=6.2
HATD Hatta, Dubai 71.60 287 *i* P **P 17 47 16.2 +0.4**
SNR=8.8
HATD Hatta, Dubai 71.60 287 P **P 17 47 16.2 +0.4**
SNR=6.1
HATD Hatta, Dubai 71.60 287 P **P 17 47 16.2 +0.4**
SNR=6.1
MCID Moose Creek 71.70 47 *e*P **P 17 47 18.1 +1.8**
PAGB Antelope Grade 71.72 58 *e*P **P 17 47 17.6 +1.3**
comp=Z,95nm,1.0s
ASHO Ashiyiah 71.74 287 *i* P **P 17 47 17.0 +0.3**
SNR=8.8
ASHO Ashiyiah 71.74 287 P **P 17 47 16.8 +0.2**
SNR=7.5
ASHO Ashiyiah 71.74 287 P **P 17 47 16.8 +0.2**
SNR=7.5
KONO Kongsberg 71.83 337 *e*P **P 17 47 17.1 +0.7**
KONO IAmb IAmb 17 47 44.3
comp=Z,16nm,1.1s
KONO *e*S **S 17 56 33.5 -0.7**
KONO IVMs_BB IVMs_BB 18 22 17.4
comp=Z,844nm,17.5s
KONO Kongsberg 71.83 337 *e*P **P 17 47 17.8 +1.3**
KONO pmax pmax
comp=Z,16nm,1.1s
KONO MLR MLR
comp=Z,2µm,19.0s
KONO Kongsberg 71.83 337 *e*P **P 17 47 17.8 +1.3**
comp=Z,16nm,1.1s
KONO LR LR
comp=Z,2µm,19.0s
YPP Pitchstone Pla 71.85 47 *e*P **P 17 47 19.4 +2.1**
comp=Z,38nm,1.2s
FRB Frobisher Bay 71.86 14 P **P 17 47 16.9 +0.4**
comp=Z,58nm,1.0s,baz=347,slow=6.4,SNR=10
LKWY Lake 71.88 46 *e*P **P 17 47 20.5 +3.1**
LKWY pmax pmax
comp=Z,68nm,1.4s
LKWY MLR MLR
comp=Z,1µm,19.0s
LKWY Lake 71.88 46 *e*P **P 17 47 20.5 +3.1**
comp=Z,68nm,1.4s
LKWY LR LR
comp=Z,1µm,19.0s
H17A Grant Village 71.89 46 P **P 17 47 19.7 +2.2**
baz=311,SNR=18
H17A Grant Village 71.89 46 *e*P **P 17 47 20.5 +3.0**
comp=Z,96nm,1.1s
SUE Sulen 71.97 340 *e*P **P 17 47 17.8 +0.6**
SUE IAmb IAmb 17 47 45.0
comp=Z,31nm,1.1s
SUE *e*S **S 17 56 37.0 +1.3**
SUE IVMsBB 18 23 30.6
comp=Z,727nm,14.5s
IMW Indian Meadow 72.02 47 *e*P **P 17 47 19.9 +1.5**
comp=Z,56nm,1.0s
FLWY Flagg Ranch 72.03 47 *e*P **P 17 47 20.1 +1.8**
comp=Z,62nm,1.3s
RLMT Red Lodge 72.11 45 P **P 17 47 19.7 +1.0**
baz=312,SNR=17
RLMT Red Lodge 72.11 45 *e*P **P 17 47 19.8 +1.0**
comp=Z,55nm,1.3s
RLMT LR LR
comp=Z,1µm,22.0s
TIN Tinemaha, Big 72.16 56 P **P 17 47 20.3 +1.3**
baz=309
KLNR Kaliningrad 72.22 329 *de*P **P 17 47 20.7 +1.8**
KLNR pmax pmax
comp=Z,228nm,2.0s
MOOW Moose Ponds 72.23 47 *e*P **P 17 47 20.8 +1.4**
comp=Z,67nm,1.1s
TPAW Teton Pass 72.28 47 *e*P **P 17 47 21.4 +1.5**
comp=Z,92nm,1.3s
ARMA Armidale 72.33 172 *e*P **P 17 47 20.7 +0.8**
comp=Z,63nm,1.4s
ASK Askoy 72.34 340 *e*P **P 17 47 20.8 +1.3**
ASK IAmb IAmb 17 47 21.4
comp=Z,30nm,1.2s
HVU Hansel Valley 72.38 49 *e*P **P 17 47 21.5 +1.1**
HVU pmax pmax
comp=Z,35nm,1.0s
HVU Hansel Valley 72.38 49 *e*P **P 17 47 21.5 +1.1**
comp=Z,34nm,1.0s
VES Vestal, Richgr 72.39 58 P **P 17 47 20.8 +0.5**
baz=309,SNR=9.5
BER Bergen 72.39 339 *e*P **P 17 47 20.0 +0.2**
BER IAmb IAmb 17 47 40.6
comp=Z,63nm,1.5s
BER *e*S **S 17 56 39.9 -0.7**
BER IVMs_BB IVMs_BB 18 23 13.1
comp=Z,738nm,21.1s
LOHW Long Hollow 72.39 47 *e*P **P 17 47 21.8 +1.3**
comp=Z,53nm,1.4s
DGMT Dagmar 72.41 40 P **P 17 47 20.6 +0.4**
baz=314,SNR=8.9
DGMT Dagmar 72.41 40 *e*P **P 17 47 20.7 +0.5**
comp=Z,65nm,0.9s
DGMT LR LR
comp=Z,1µm,21.0s
SNOW Snow King Moun 72.41 47 *e*P **P 17 47 22.6 +1.9**
comp=Z,54nm,1.2s
REDW Red Top Meadow 72.42 47 *e*P **P 17 47 21.9 +1.3**
comp=Z,60nm,1.1s
ODD1 Odda 72.44 339 *e*P **P 17 47 21.4 +1.1**
ODD1 IAmb IAmb 17 47 49.3
comp=Z,22nm,1.1s
PKM Mcpherson Peak 72.52 59 P **P 17 47 22.5 +1.2**
baz=309,SNR=22
LAO LASA Array 72.63 42 P **P 17 47 22.3 +0.7**
baz=313,SNR=21
LAO LASA Array 72.63 42 *e*P **P 17 47 22.5 +0.8**
comp=Z,82nm,1.2s
LAO LR LR
comp=Z,1µm,19.0s
AHID Auburn Hatcher 72.68 48 *e*P **P 17 47 23.1 +0.9**
comp=Z,33nm,1.0s
AHID LR LR
comp=Z,789nm,22.0s
GRAC Grapevine Rang 72.73 56 P **P 17 47 23.8 +1.4**
baz=310,SNR=106
BGU Big Grassy Mou 72.79 50 *e*P **P 17 47 24.0 +1.2**
comp=Z,24nm,1.2s
SPUT South Promonto 72.88 50 *e*P **P 17 47 25.0 +1.7**
comp=Z,36nm,1.0s
ISA Isabella, Lake 72.88 57 P **P 17 47 23.4 +0.1**
baz=310,SNR=12
ISA Isabella, Lake 72.88 57 *e*P **P 17 47 23.4 +0.1**
ISA pmax pmax
comp=Z,31nm,1.1s
ISA Isabella, Lake 72.88 57 *e*P **P 17 47 23.4 +0.1**
comp=Z,31nm,1.1s
BLS5 Blasjo 72.91 338 *e*P **P 17 47 22.2 -0.7**
BLS5 IAmb IAmb 17 47 52.8
comp=Z,26nm,1.2s
BLS5 *e*S **S 17 56 46.6 0.0**
BLS5 IVMs_BB IVMs_BB 18 20 20.2
comp=Z,549nm,25.2s
R11A Troy Canyon, C 72.95 54 P **P 17 47 24.7 +0.9**
baz=310,SNR=120
R11A Troy Canyon, C 72.95 54 *e*P **P 17 47 24.8 +0.9**
comp=Z,65nm,1.1s
ARVC Arvin 73.00 58 P **P 17 47 24.2 +0.3**
baz=310,SNR=5.6
HWUT Hardware Ranch 73.18 49 *e*P **P 17 47 26.3 +1.2**
comp=Z,75nm,1.2s
HWUT LR LR
comp=Z,498nm,21.0s
RSUT Red Spur Mount 73.24 49 *e*P **P 17 47 26.9 +1.2**
MPMC Manual Prospec 73.25 57 P **P 17 47 26.4 +0.8**
baz=310,SNR=63

HOMB Hombersund 73.29 337 *e*P **P** **17 47 24.9 -0.3**
HOMB IAmb IAmb 17 47 43.0
comp=Z,26nm,1.1s
HOMB *e*S **S** **17 56 50.5 -0.4**
HOMB IVMs_BB IVMs_BB 18 22 58.8
comp=Z,874nm,19.7s
STKA Stephens Creek 73.34 181 P **P** **17 47 26.0 +0.3**
comp=Z,32nm,1.1s,baz=350,slow=8.3,SNR=19
STKA LR LR 18 25 04.1
comp=Z,238nm,19.2s,baz=351,slow=40
STKA Stephens Creek 73.34 181 *e*P **P** **17 47 26.0 +0.3**
comp=Z,10nm,1.2s
FURC Furnace Creek, 73.38 56 P **P** **17 47 27.4 +1.3**
baz=310,SNR=95
OSI Osito Audit: C 73.39 58 P **P** **17 47 27.5 +1.2**
baz=310,SNR=5.2
OSI Osito Audit: C 73.39 58 *e*P **P** **17 47 28.0 +1.7**
comp=Z,58nm,1.0s
DUG Dugway, Tooele 73.39 51 P **P** **17 47 27.5 +1.1**
baz=311,SNR=56
DUG Dugway, Tooele 73.39 51 *e*P **P** **17 47 27.5 +1.1**
DUG pmax pmax
comp=Z,58nm,1.1s
DUG MLR MLR
comp=Z,457nm,21.0s
DUG Dugway, Tooele 73.39 51 *e*P **P** **17 47 27.5 +1.1**
comp=Z,58nm,1.1s
DUG LR LR
comp=Z,457nm,21.0s
SORM Soroca 73.43 321 ⇓*i*P **P** **17 47 26.6 +0.4**
SORM Soroca 73.43 321 ⇓P **P** **17 47 26.6 +0.4**
TPNV Topopah Spring 73.45 55 P **P** **17 47 27.8 +1.1**
baz=310,SNR=133
TPNV Topopah Spring 73.45 55 *e*P **P** **17 47 27.9 +1.1**
TPNV pmax pmax
comp=Z,84nm,0.9s
TPNV Topopah Spring 73.45 55 *e*P **P** **17 47 27.9 +1.1**
comp=Z,84nm,0.9s
BLG Laguna Peak, P 73.49 59 P **P** **17 47 27.2 +0.4**
baz=310
LRMC Laurel Mtn Rad 73.50 57 P **P** **17 47 27.8 +0.7**
baz=310,SNR=8.5
FORT Forrest 73.53 193 *e*P **P** **17 47 27.0 +0.3**
comp=Z,1μm,1.3s
BW06 Boulder Array 73.53 47 P **P** **17 47 27.8 +0.5**
baz=312,SNR=56
BW06 Boulder Array 73.53 47 *e*P **P** **17 47 27.7 +0.5**
comp=Z,48nm,1.0s
BW06 LR LR
comp=Z,500nm,21.0s
PD31 Pinedale Array 73.53 47 *e*P **P** **17 47 27.7 +0.5**
PDAR Pinedale Array 73.53 47 P **P** **17 47 27.6 +0.4**
comp=Z,14nm,0.6s,baz=273,slow=2.5,SNR=115
PDAR LR LR 18 20 22.0
comp=Z,461nm,21.6s,baz=347,slow=36
STAV Stavanger 73.53 338 *e*P **P** **17 47 28.1 +1.6**
STAV IAmb IAmb 17 48 07.3
comp=Z,22nm,1.1s
STAV IVMs_BB IVMs_BB 18 23 35.9
comp=Z,479nm,15.6s
TCUT Toone Canyon 73.59 49 *e*P **P** **17 47 28.8 +1.2**
comp=Z,75nm,0.9s
CTU Camp Tracy 73.68 50 *e*P **P** **17 47 29.4 +1.3**
comp=Z,27nm,1.0s
EDW2 Edwards Air Fo 73.68 58 P **P** **17 47 29.0 +1.0**
baz=310,SNR=40
BSD Bornholm Skovb 73.78 332 *i* P **P** **17 47 28.7 +0.6**
comp=Z,33nm,1.2s
comp=Z,2μm,20.0s
BSD Bornholm Skovb 73.78 332 *e*P **P** **17 47 28.7 +0.6**
BSD pmax pmax
comp=Z,33nm,1.2s
BSD MLR MLR
comp=Z,2μm,20.0s
DECC Green Verdugo 73.87 58 P **P** **17 47 29.6 +0.5**
baz=310
JLU Jordanelle 73.91 50 *e*P **P** **17 47 30.5 +1.0**
comp=Z,44nm,1.2s
NLU North Lily Min 73.98 51 *e*P **P** **17 47 30.9 +1.0**
comp=Z,34nm,1.0s
KIS Kishinev 74.01 319 *e*P **P** **17 47 34.0 +4.4**
KIS Kishinev 74.01 319 *e*PcP **PcP** **17 47 42.0 -2.8**
KIS Kishinev 74.01 319 *e*PP PP 17 50 30.0 +16
KIS *e*S **SKiKP** **17 56 54.0 -0.9**
KIS Kishinev 74.01 319 *e*P **P** **17 47 34.0 +4.4**
KIS *e* 17 47 42.0
KIS *e*S **SKiKP** **17 56 54.0 -0.9**
KIS *e*PS **PnS** **17 57 24.0 -11**
KIS MLR MLR
comp=N,500nm,16.0s
KIS MLR MLR
comp=Z,800nm,16.0s
KIS MLR MLR
comp=E,800nm,20.0s
KIS MLR MLR
comp=Z,900nm,20.0s
PASC Pasadena Art C 74.01 58 *e*P **P** **17 47 31.0 +1.1**
comp=Z,45nm,1.1s
MWC Mount Wilson 74.06 58 *e*P **P** **17 47 31.6 +1.2**
MWC pmax pmax
comp=Z,70nm,1.1s
MWC Mount Wilson 74.06 58 *e*P **P** **17 47 31.6 +1.2**
comp=Z,70nm,1.1s
BEL Belsk 74.08 327 *e*P **P** **17 47 31.0 +1.1**
BEL LMZ LR 18 22 47.1
comp=Z,2μm,19.2s
BEL Belsk 74.08 327 *e*P **P** **17 47 31.0 +1.1**
BEL MLR MLR
comp=Z,2μm,19.2s
GSC Goldstone, Bar 74.16 57 P **P** **17 47 31.7 +0.9**
baz=310,SNR=22
GSC Goldstone, Bar 74.16 57 *e*P **P** **17 47 31.7 +0.9**
GSC pmax pmax
comp=Z,47nm,1.2s
GSC Goldstone, Bar 74.16 57 *e*P **P** **17 47 31.7 +0.9**
comp=Z,47nm,1.2s
COP Copenhagen 74.17 333 *i* P **P** **17 47 31.2 +0.8**
comp=Z,19nm,0.9s
comp=Z,1μm,19.0s
COP Copenhagen 74.17 333 *i* P **P** **17 47 31.2 +0.8**
COP pmax pmax
comp=Z,19nm,0.9s
COP MLR MLR
comp=Z,1μm,19.0s
LVV L'vov 74.20 324 *e*P **P** **17 47 31.4 +0.7**
LVV *e* 17 50 19.1
LVV *e*S **S** **17 57 00.9 -0.6**
LVV *e*PS **PnS** **17 57 40.7 +2.9**
LVV MLR MLR
comp=N,1μm,17.0s
LVV MLR MLR
comp=E,2μm,17.0s
LVV MLR MLR
comp=Z,2μm,17.0s
BFSC Mount Baldy Ra 74.31 58 P **P** **17 47 32.4 +0.7**
baz=310,SNR=18
SHPR Sheep Range 74.40 55 *e*P **P** **17 47 33.6 +1.3**
comp=Z,66nm,1.0s
BBOO Buckleboo 74.53 186 *e*P **P** **17 47 34.0 +1.4**
comp=Z,92nm,1.4s
TUQ Turquoise Moun 74.62 56 P **P** **17 47 34.6 +1.0**
baz=311,SNR=26
HEC Hector,Ludlow 74.76 57 P **P** **17 47 35.3 +1.0**
baz=311,SNR=38
CCUT Cedar City 74.80 53 *e*P **P** **17 47 36.0 +1.2**
comp=Z,52nm,1.3s
ULM Lac du Bonnet 74.89 35 P **P** **17 47 34.6 -0.1**
comp=Z,15nm,0.9s,baz=320,slow=8.2,SNR=15
ULM Lac du Bonnet 74.89 35 *e*P **P** **17 47 34.4 -0.3**
TMUT Trail Mountain 74.92 51 *e*P **P** **17 47 36.4 +1.0**
comp=Z,36nm,1.1s
KWP Kalwaria Pacla 74.92 324 *e*P **P** **17 47 36.2 +1.3**
KWP *e*S **S** **17 57 09.8 +0.3**
KWP LMZ LR 18 23 50.6
comp=Z,3μm,17.5s
KWP Kalwaria Pacla 74.92 324 *e*P **P** **17 47 36.2 +1.3**
KWP *e*S **S** **17 57 09.8 +0.3**
KWP MLR MLR
comp=Z,3μm,17.5s
SZCU Shurtz Canyon 74.94 53 *e*P **P** **17 47 37.0 +1.4**
comp=Z,36nm,1.2s
PRAR RASCA 74.99 321 ⇓*i*P P 17 47 41.2 +5.9
MURC Murrieta 75.01 58 P **P** **17 47 36.5 +0.8**
baz=310,SNR=11
MDND Maddock 75.02 38 P **P** **17 47 36.0 +0.5**
baz=317,SNR=6.9
MDND Maddock 75.02 38 *e*P **P** **17 47 36.6 +1.1**
comp=Z,85nm,0.6s
P17A Butcher Ranch, 75.07 50 *e*P **P** **17 47 37.3 +1.1**
comp=Z,64nm,1.0s
MTPU Mount Pierson 75.18 52 *e*P **P** **17 47 38.7 +1.7**
comp=Z,48nm,1.2s
GMRC Granite Mounta 75.21 57 P **P** **17 47 37.7 +0.7**
baz=311,SNR=23
LCMT Little Creek M 75.23 53 *e*P **P** **17 47 38.6 +1.5**
comp=Z,57nm,1.2s
K22A Casper 75.25 46 P **P** **17 47 37.4 +0.3**
baz=314,SNR=16
K22A Casper 75.25 46 *e*P **P** **17 47 37.5 +0.4**
comp=Z,116nm,1.4s
BUR08 Bucovina Ar. S 75.26 322 *e*P **P** **17 47 38.0 +1.0**
BURAR Bucovina Array 75.28 322 ⇑*i*P **P** **17 47 37.9 +0.8**
BURAR Bucovina Array 75.28 322 ⇑P **P** **17 47 37.9 +0.8**
TLCR 75.29 318 ⇑*i*P sP 17 47 54.6 +2.6
TLCR 75.29 318 ⇑P sP 17 47 54.6 +2.6
A31A Linda, St. Vin 75.31 36 P **P** **17 47 37.1 -0.1**
baz=318
LDFC Landfair 75.36 56 *e*P **P** **17 47 38.7 +0.8**
comp=Z,111nm,1.1s
H25A Fruitdale 75.39 43 P **P** **17 47 37.8 0.0**
baz=315
TESR Tescani 75.40 320 ⇓*i*P **P** **17 47 38.8 +1.1**
SRU San Rafael Swe 75.43 50 *e*P **P** **17 47 39.2 +0.9**
SRU San Rafael Swe 75.43 50 *e*P **P** **17 47 39.2 +0.9**
PFO Pinyon Flats O 75.47 58 P **P** **17 47 39.1 +0.6**
baz=311
PFO Pinyon Flats O 75.47 58 *e*P **P** **17 47 39.1 +0.6**
PFO pmax pmax
comp=Z,42nm,1.1s
PFO MLR MLR
comp=Z,857nm,22.0s
PFO Pinyon Flats O 75.47 58 *e*P **P** **17 47 39.1 +0.6**
comp=Z,42nm,1.1s
PFO LR LR
comp=Z,857nm,22.0s
TPFO Pinon Flats 75.48 58 P **P** **17 47 38.8 +0.2**
baz=311
KNB Kanab 75.48 53 *e*P **P** **17 47 40.1 +1.5**
KNB pmax pmax
comp=Z,66nm,1.2s
KNB Kanab 75.48 53 *e*P **P** **17 47 40.1 +1.5**
comp=Z,66nm,1.2s
PKCU Pink Cliffs 75.50 53 *e*P **P** **17 47 41.2 +2.4**
comp=Z,41nm,1.2s
BELC Belle Mtn. Jos 75.51 57 P **P** **17 47 38.9 +0.2**
baz=311
RSSD Black Hills 75.52 43 P **P** **17 47 39.0 +0.2**
baz=315
RSSD Black Hills 75.52 43 *e*P **P** **17 47 38.9 +0.2**
RSSD pmax pmax
comp=Z,45nm,1.0s
RSSD Black Hills 75.52 43 *e*P **P** **17 47 38.9 +0.2**
comp=Z,45nm,1.0s
MMU Miners Mountai 75.60 52 *e*P **P** **17 47 40.7 +1.4**
A32A Rocking H Ranc 75.63 36 P **P** **17 47 38.7 -0.2**
baz=318,SNR=6.5
CFR Carcaliu 75.64 318 ⇓*i*P **P** **17 47 40.0 +1.0**
CFR Carcaliu 75.64 318 ⇓P **P** **17 47 40.0 +1.0**
PETR Petresti 75.69 319 ⇑*i*P **P** **17 47 42.5 +3.2**
OJC Ojcow 75.71 326 *e*P **P** **17 47 40.3 +0.9**
OJC *e*S **S** **17 57 17.1 -1.2**
OJC LMZ LR 18 23 49.6
comp=Z,3μm,20.4s
OJC Ojcow 75.71 326 *e*P **P** **17 47 40.3 +0.9**
OJC *e*S **S** **17 57 17.1 -1.2**
OJC MLR MLR
comp=Z,3μm,20.4s
OJC Ojcow 75.71 326 *e*P **P** **17 47 40.8 +1.3**
comp=Z,27nm,0.9s
VRI Vrincioaia 75.83 320 ⇑*i*P **P** **17 47 42.7 +2.5**
VRI Vrincioaia 75.83 320 ⇑P **P** **17 47 42.7 +2.5**
UZH Uzhgorod 75.85 324 *e*P P 17 47 45.0 +4.8
UZH *e* 17 47 54.6
PLOR Plostina 75.88 320 ⇑*i*P pP 17 47 51.2 -0.2
PLOR Plostina 75.88 320 ⇑P pP 17 47 51.2 -0.2
C31A Landman Farms, 75.91 37 P **P** **17 47 40.5 -0.2**
baz=318,SNR=11
BAR Barrett 75.94 59 *e*P **P** **17 47 42.2 +1.1**
comp=Z,31nm,1.2s
IRM Iron Mountain 75.94 57 P **P** **17 47 41.8 +0.7**
baz=311
MONP2 Monument Peak 75.96 58 P **P** **17 47 42.1 +0.6**
baz=311
B32A Ashes, Strandq 76.00 36 P **P** **17 47 40.8 -0.3**
baz=319,SNR=18
CRVS Cervenica-Dubn 76.00 325 *e*P **P** **17 47 42.1 +0.9**
CRVS Cervenica-Dubn 76.00 325 *e*P **P** **17 47 42.0 +0.9**
TIRR Tirgusor 76.01 318 ⇑*i*P P 17 47 46.3 +5.1
TIRR Tirgusor 76.01 318 ⇑P P 17 47 46.3 +5.1
O20A White River Ci 76.03 48 P **P** **17 47 42.1 +0.4**
baz=313,SNR=18
O20A White River Ci 76.03 48 *e*P **P** **17 47 42.3 +0.6**
comp=Z,56nm,1.1s
BC3 Big Chuckawall 76.08 57 P **P** **17 47 42.7 +0.8**
baz=311
A33A Warroad 76.09 35 P **P** **17 47 41.4 -0.2**
baz=319,SNR=9.4
W13A Hualapai Mount 76.10 55 *e*P **P** **17 47 43.1 +0.9**
TLB Topalu 76.11 318 ⇓*i*P **P** **17 47 41.7 0.0**
TLB Topalu 76.11 318 ⇓P **P** **17 47 41.7 0.0**
NIE Niedzica 76.11 325 *e*P **P** **17 47 43.4 +1.6**
NIE LMZ LR 18 24 18.0
comp=Z,2μm,19.2s
NIE Niedzica 76.11 325 *e*P **P** **17 47 43.4 +1.6**
NIE MLR MLR
comp=Z,2μm,19.2s
IKP In-Ko-Pah, Jac 76.32 58 P **P** **17 47 44.0 +0.7**
baz=311
SWSC Sam W. Stewart 76.32 58 P **P** **17 47 43.7 +0.5**
baz=311
AGMN Agassiz Nation 76.37 36 P **P** **17 47 42.8 -0.4**
baz=319,SNR=15
AGMN Agassiz Nation 76.37 36 *e*P **P** **17 47 43.1 -0.1**
comp=Z,24nm,0.8s
AGMN LR LR
comp=Z,668nm,20.0s
F29A Eureka 76.38 40 P **P** **17 47 43.3 0.0**
baz=317,SNR=6.1
DOPR Dopca 76.40 320 ⇓*i*P **P** **17 47 46.1 +2.6**
C32A Crookston 76.43 37 P **P** **17 47 43.1 -0.4**
baz=319
ISR Istrita 76.46 319 ⇑*i*P **P** **17 47 46.1 +2.2**
ISR Istrita 76.46 319 ⇑P **P** **17 47 46.1 +2.2**
D31A Mcclaflin, Tow 76.47 38 P **P** **17 47 43.6 -0.2**
baz=318
MLR Muntele Rosu 76.48 320 ⇑*i*P **P** **17 47 45.9 +1.8**
MLR Muntele Rosu 76.48 320 ⇑P **P** **17 47 45.9 +1.8**
MLR Muntele Rosu 76.48 320 *e*P **P** **17 47 45.5 +1.5**
comp=Z,27nm,1.4s
BR131 Keskin Array S 76.55 312 *e*P **P** **17 47 45.5 +0.9**
BRTR Keskin Array B 76.55 312 P **P** **17 47 44.7 +0.2**
comp=Z,1.8nm,0.9s,baz=64,slow=2.9,SNR=9.6
BRTR Keskin Array B 76.55 312 *i* P **P** **17 47 45.2 +0.6**
BRTR pmax pmax
comp=Z,2.0nm,0.8s
Y12C Blythe 76.60 57 P **P** **17 47 45.5 +0.8**
baz=312
Y12C Blythe 76.60 57 *e*P **P** **17 47 46.0 +1.2**
comp=Z,54nm,1.1s
KSP Ksiaz 76.64 328 *e*P **P** **17 47 45.6 +0.9**
KSP *e*S **S** **17 57 27.4 -1.1**
KSP LMZ LR 18 24 37.3
comp=Z,1μm,20.0s
KSP Ksiaz 76.64 328 *e*P **P** **17 47 45.6 +0.9**
KSP *e*S **S** **17 57 27.4 -1.1**
KSP MLR MLR
comp=Z,1μm,20.0s
PV09 Paradox Valley 76.65 50 *e*P **P** **17 47 46.9 +1.5**
LANS Liptovska Anna 76.67 326 *e*P **P** **17 47 47.4 +2.5**
LANS Liptovska Anna 76.67 326 *e*P **P** **17 47 47.4 +2.5**
PSN Preselentsi 76.68 317 *i* P sP 17 48 02.6 +2.6
OKC Ostrava-Krasne 76.69 327 *e*P **P** **17 47 46.2 +1.2**
OKC *ex* x 17 47 51.9
OKC *ex* x 17 47 55.7
OKC *e*S **S** **17 57 29.2 +0.2**
OKC AMS AMS 18 24 30.0
comp=Z,2μm,19.2s
OKC Ostrava-Krasne 76.69 327 *e*P **P** **17 47 46.2 +1.2**
OKC *e* 17 47 51.9
OKC *e* 17 47 55.7
OKC *e*S **S** **17 57 29.2 +0.2**
OKC MLR MLR
comp=Z,2μm,19.2s
CJR Cluj-Napoca 76.69 322 ⇑*i*P **P** **17 47 47.6 +2.5**
CJR Cluj-Napoca 76.69 322 ⇑P **P** **17 47 47.6 +2.5**
D32A Dogwood Acres, 76.73 37 P **P** **17 47 45.0 -0.2**
baz=318
KECS Kecovo 76.75 325 *e*P **P** **17 47 46.2 +0.9**
KECS pmax pmax
comp=Z,3.0nm,0.8s
KECS Kecovo 76.75 325 *e*P **P** **17 47 46.2 +0.9**
B34A Aery, Baudette 76.75 35 P **P** **17 47 44.9 -0.5**
baz=320,SNR=11
PHWY Pilot Hill 76.75 46 *e*P **P** **17 47 46.8 +0.9**
comp=Z,49nm,1.3s
E31A Nome 76.76 38 P **P** **17 47 45.2 -0.3**
baz=318,SNR=11
N23A Red Feather La 76.78 47 P **P** **17 47 47.0 +1.0**
baz=314,SNR=36
N23A Red Feather La 76.78 47 *e*P **P** **17 47 47.0 +1.0**
comp=Z,75nm,1.2s
PV10 Paradox Valley 76.78 50 *e*P **P** **17 47 47.8 +1.7**
C33A Trail 76.81 36 P **P** **17 47 45.5 -0.3**
baz=319,SNR=7.5
PV04 Paradox Valley 76.85 50 *e*P **P** **17 47 46.6 +0.2**
GLA Glamis 76.87 57 P **P** **17 47 47.8 +1.4**
baz=312
GLA Glamis 76.87 57 *e*P **P** **17 47 48.0 +1.7**
GLA pmax pmax
comp=Z,52nm,1.1s
GLA Glamis 76.87 57 *e*P **P** **17 47 48.0 +1.7**
comp=Z,52nm,1.1s
ANTO Ankara 76.92 312 P **P** **17 47 45.1 -1.5**
ANTO pmax pmax
comp=Z,76nm,0.8s
ANTO MLR MLR
comp=Z,554nm,20.0s
ANTO Ankara 76.92 312 P **P** **17 47 45.1 -1.5**
comp=Z,76nm,0.8s
ANTO LR LR
comp=Z,554nm,20.0s
BR231 Keskin MP Arra 76.95 312 *e*P **P** **17 47 45.6 -1.2**
PV05 Paradox Valley 76.95 50 *e*P **P** **17 47 48.0 +1.0**
CAN Canberra 76.97 175 *e*P **P** **17 47 47.7 +1.2**
CAN pmax pmax
comp=Z,77nm,1.4s
CAN MLR MLR
comp=Z,759nm,22.0s
CAN Canberra 76.97 175 *e*P **P** **17 47 47.7 +1.2**
comp=Z,77nm,1.4s
CAN LR LR
comp=Z,759nm,22.0s
MORC Moravsky Berou 76.98 327 ⇑*i*P **P** **17 47 47.9 +1.2**
MORC Moravsky Berou 76.98 327 *e*P **P** **17 47 47.9 +1.2**
MORC pmax pmax
comp=Z,256nm,1.7s
MORC Moravsky Berou 76.98 327 *e*P **P** **17 47 47.9 +1.2**
comp=Z,256nm,1.7s
UPC Upice 77.02 328 *e*P **P** **17 47 48.2 +1.4**
UPC *ex* x 17 47 53.6
UPC *ep*P **PcP** **17 47 57.6 -0.1**
UPC *e*S **S** **17 57 33.2 +0.6**
UPC AMS AMS 18 25 00.0
comp=Z,2μm,17.9s
UPC Upice 77.02 328 *e*P **P** **17 47 48.2 +1.4**
UPC *e* 17 47 53.6
UPC *e* 17 47 57.6
UPC *e*S **S** **17 57 33.2 +0.6**
UPC MLR MLR
comp=Z,2μm,17.9s
DPC Dobruska-Polom 77.02 328 *e*P **P** **17 47 48.2 +1.3**
DPC *ex* x 17 47 53.9
DPC *ep*P **pP** **17 47 59.1 +1.3**
DPC *e*S **S** **17 57 33.7 +1.0**
DPC AMS AMS 18 25 10.0
comp=Z,1μm,16.2s
DPC Dobruska-Polom 77.02 328 *e*P **P** **17 47 48.2 +1.3**
DPC *e* 17 47 53.9
DPC *e* 17 47 59.1
DPC *e*S **S** **17 57 33.7 +1.0**
DPC MLR MLR
comp=Z,1μm,16.2s
F31A Hecla 77.10 39 P **P** **17 47 47.4 0.0**
baz=318,SNR=7.5
E32A Braaten, Kindr 77.11 38 P **P** **17 47 47.3 -0.1**
baz=318
ARR Arges 77.20 320 ⇓*i*P **P** **17 47 50.3 +2.3**
PV01 Paradox Valley 77.22 50 *e*P **P** **17 47 49.3 +0.8**
B35A Bob, Littlefor 77.25 35 P **P** **17 47 47.9 -0.2**
baz=320,SNR=22
D33A AnnSam, Waubun 77.25 37 P **P** **17 47 47.5 -0.8**
baz=319
C34A RKJ Ranch, Bem 77.28 36 P **P** **17 47 47.7 -0.7**
baz=320
WUAZ Wupatki 77.35 54 P **P** **17 47 50.4 +1.2**
baz=313
WUAZ Wupatki 77.35 54 *e*P **P** **17 47 50.7 +1.5**
comp=Z,54nm,1.1s
SMCO Snowmass 77.40 48 *e*P **P** **17 47 50.5 +0.8**
comp=Z,47nm,1.1s
PSZ Piszkesteto 77.43 325 ⇓*i*P **P** **17 47 51.3 +2.0**
PSZ Piszkesteto 77.43 325 ⇓P **P** **17 47 51.3 +2.0**
PSZ Piszkesteto 77.43 325 *e*P **P** **17 47 51.1 +1.8**
comp=Z,36nm,1.4s
PSZ LR LR
comp=Z,4μm,19.0s
PSZ Piszkesteto 77.43 325 ⇑*e*PP **P** **17 47 51.0 +1.7**
VYHS Vyhne 77.44 326 *e*P **P** **17 47 50.5 +1.2**
VYHS pmax pmax
comp=Z,30nm,1.9s
VYHS Vyhne 77.44 326 *e*P **P** **17 47 50.5 +1.2**
VYHS *e*S **S** **17 57 31.9 -5.4**
BRG Berggiesshubel 77.52 330 *i* P **P** **17 47 50.3 +0.7**
comp=Z,9.2nm,1.1s
BRG *i* 17 48 07.3
comp=Z,23nm,1.3s
BRG PP **PP** **17 50 43.0 -0.9**
BRG S **S** **17 57 38.0 0.0**
comp=N,1μm,17.9s
comp=E,1μm,16.7s
comp=Z,2μm,17.9s
BRG Berggiesshubel 77.52 330 *i* P **P** **17 47 50.3 +0.7**
BRG *i* 17 48 07.3
BRG 17 50 43.0
BRG S **S** **17 57 38.0 0.0**
BRG pmax pmax
comp=Z,9.0nm,1.1s
BRG MLR MLR
comp=N,1μm,17.9s
BRG MLR MLR
comp=E,1μm,16.7s
BRG MLR MLR
comp=Z,2μm,17.9s
CLL Collm 77.52 330 *i* P **P** **17 47 50.1 +0.5**
comp=Z,21nm,1.0s
CLL *ep*max 17 47 53.0
CLL *e* 17 47 56.0
CLL *e* 17 47 59.0
CLL *i* 17 48 07.6
comp=Z,33nm,1.0s
CLL *e*S **S** **17 57 38.0 0.0**
CLL *ep*PS PPS 17 58 39.0
CLL *e*(SS) 18 03 18.0
CLL *e* 18 07 12.0
CLL *e*SSSS 18 08 24.0
CLL Lmax 18 25 00.0
CLL Lm MLR 18 26 00.0
comp=N,1μm,20.3s
CLL Lm MLR 18 26 00.0
comp=E,900nm,18.0s
CLL Lm MLR 18 26 00.0
comp=Z,2μm,19.1s
CLL Collm 77.52 330 *e*P **P** **17 47 50.1 +0.5**
CLL pmax pmax
comp=Z,28nm,1.0s
CLL Collm 77.52 330 *e*P **P** **17 47 50.1 +0.5**
comp=Z,28nm,1.0s
PVCC Panska Ves 77.56 329 *e*P **P** **17 47 51.1 +1.3**
PVCC AMS AMS 18 27 20.0
comp=Z,2μm,16.3s
PVCC Panska Ves 77.56 329 *e*P **P** **17 47 51.1 +1.3**
PVCC MLR MLR
comp=Z,2μm,16.3s
D34A Park Rapids 77.58 36 P **P** **17 47 49.7 -0.4**
baz=320,SNR=8.2
G31A Conde 77.60 39 P **P** **17 47 50.3 +0.1**
baz=318

F32A Veblen 77.62 38 P P 17 47 50.1 -0.2
baz=319
C35A Jirik Farms, M 77.64 35 P P 17 47 49.7 -0.7
baz=320,SNR=19
ISCO Idaho Springs 77.72 47 P P 17 47 52.3 +0.9
baz=315
ISCO Idaho Springs 77.72 47 eP P 17 47 52.5 +1.1
ISCO pmax pmax
comp=Z,39nm,1.1s
ISCO MLR MLR
comp=Z,674nm,22.0s
ISCO Idaho Springs 77.72 47 eP P 17 47 52.5 +1.1
comp=Z,39nm,1.1s
ISCO LR LR
comp=Z,674nm,22.0s
VRAC Vranov 77.73 327 ⇓iP P 17 47 52.6 +1.7
VRAC Vranov 77.73 327 ⇓P P 17 47 52.6 +1.7
SUSD Miller 77.82 40 P P 17 47 51.2 -0.3
baz=318
MVCO Mesa Verde 77.89 51 P P 17 47 52.9 +0.6
baz=314
MVCO Mesa Verde 77.89 51 eP P 17 47 53.2 +0.9
comp=Z,48nm,1.1s
MVCO LR LR
comp=Z,735nm,22.0s
G32A Webster 77.91 39 P P 17 47 51.8 -0.1
baz=318,SNR=10
SIRR Siria 77.91 323 ⇓iP P 17 47 53.3 +1.4
GOPC GO Pecny, Ondr 77.97 329 eP P 17 47 53.7 +1.5
GOPC epP PcP 17 48 01.9 +0.1
GOPC ePP PP 17 50 46.5 -1.2
GOPC eS S 17 57 42.9 0.0
GOPC AMS AMS 18 27 00.0
comp=Z,1μm,17.5s
GOPC GO Pecny, Ondr 77.97 329 eP P 17 47 53.7 +1.5
GOPC e 17 48 01.9
GOPC e 17 50 46.5
GOPC eS S 17 57 42.9 0.0
GOPC MLR MLR
comp=Z,1μm,17.5s
PRU Pruhonice 78.00 329 eP P 17 47 53.4 +1.1
PRU ex x 17 47 58.7
PRU ePP PP 17 50 46.5 -1.4
PRU eS S 17 57 42.9 -0.4
PRU AMS AMS 18 27 00.0
comp=Z,2μm,17.7s
PRU Pruhonice 78.00 329 eP P 17 47 53.4 +1.1
PRU e 17 47 58.7
PRU e 17 50 46.5
PRU eS S 17 57 42.9 -0.4
PRU MLR MLR
comp=Z,2μm,17.7s
E34A Wadena 78.03 37 P P 17 47 52.2 -0.3
baz=320
F33A 5 Mile Ranch, 78.03 38 P P 17 47 52.3 -0.2
baz=319,SNR=9.1
X16A Lo Mia Camp, P 78.05 54 eP P 17 47 54.7 +1.6
X16A Lo Mia Camp, P 78.05 54 eP P 17 47 54.7 +1.6
comp=Z,46nm,1.0s
GZR Gura Zlata 78.05 321 ⇓iP P 17 47 54.1 +1.3
GZR Gura Zlata 78.05 321 ⇓P P 17 47 54.1 +1.3
D35A Remer 78.09 36 P P 17 47 52.3 -0.6
baz=320,SNR=6.9
C36A Pine Crest Far 78.09 35 P P 17 47 52.7 -0.2
baz=321,SNR=18
TREC Trest 78.18 328 eP P 17 47 54.0 +0.6
TREC AMS AMS 18 25 40.0
comp=Z,2μm,16.6s
TREC Trest 78.18 328 eP P 17 47 54.0 +0.6
TREC MLR MLR
comp=Z,2μm,16.6s
E35A Pequot Lakes 78.33 36 P P 17 47 53.5 -0.8
baz=320
J30A Dallas 78.38 41 P P 17 47 54.6 0.0
baz=318,SNR=18
C37A Embarrass 78.39 34 P P 17 47 54.1 -0.4
baz=321,SNR=24
D36A Goodland 78.40 35 P P 17 47 53.9 -0.7
baz=321,SNR=5.5
BZS Buzias 78.42 322 ⇓iP P 17 47 55.7 +1.0
BZS Buzias 78.42 322 ⇓P P 17 47 55.7 +1.0
G33A Ortonville 78.45 38 P P 17 47 55.0 +0.1
baz=319,SNR=22
S22A 4UR Ranch, Cre 78.48 49 P P 17 47 56.3 +0.8
baz=314,SNR=40
S22A 4UR Ranch, Cre 78.48 49 eP P 17 47 56.4 +0.8
H32A Carlson Farm, 78.50 39 P P 17 47 54.8 -0.4
baz=319,SNR=7.2
EYMN Ely 78.51 34 P P 17 47 54.9 -0.3
baz=322,SNR=26
EYMN Ely 78.51 34 eP P 17 47 55.1 -0.1
comp=Z,54nm,1.0s
EYMN LR LR
comp=Z,1μm,22.0s
F34A Alexandria 78.53 37 P P 17 47 55.3 -0.1
baz=320
Q24A Divide 78.57 48 P P 17 47 56.8 +0.8
baz=315,SNR=22
Q24A Divide 78.57 48 eP P 17 47 57.1 +1.1
comp=Z,27nm,0.8s
NKC Novy Kostel 78.60 330 AMS AMS 18 25 20.0
comp=Z,2μm,20.9s
W18A Petrified Fore 78.60 53 eP P 17 47 56.2 0.0
comp=Z,23nm,1.0s
H33A Prehn Over Nor 78.69 39 P P 17 47 56.3 0.0
baz=319,SNR=31
D37A Cotton 78.73 35 P P 17 47 56.1 -0.3
baz=321,SNR=8.1
J31A Geddes 78.78 41 P P 17 47 56.6 -0.2
baz=318,SNR=22
C38A Sawbill Land. 78.78 34 P P 17 47 56.3 -0.4
baz=322,SNR=36
G34A Benson 78.78 38 P P 17 47 56.7 0.0
baz=320,SNR=22
F35A Swanville 78.80 37 P P 17 47 56.4 -0.4
baz=320,SNR=7.2
OGNE Ogallala 78.83 44 P P 17 47 57.5 +0.3
baz=316,SNR=9.1
OGNE Ogallala 78.83 44 eP P 17 47 58.1 +0.9
comp=Z,121nm,1.0s
OGNE LR LR
comp=Z,622nm,21.0s
I32A Karley and Nic 78.84 40 P P 17 47 56.9 -0.2
baz=319
E36A McGregor 78.87 36 P P 17 47 56.8 -0.4
baz=321,SNR=17
MDVR Moldovita 79.01 322 ⇓iP P 17 47 59.1 +1.0
ESK Eskdalemuir 79.03 341 PFAKE 17 48 10.0 +12
ESK LR LR
comp=Z,681nm,20.0s
KHC Kasperske Hory 79.06 329 eP P 17 47 59.4 +1.1
KHC ex x 17 48 05.0
KHC ex x 17 48 09.6
KHC ePP PP 17 50 51.3 -5.6
KHC eS S 17 57 54.0 -0.8
KHC AMS AMS 18 27 10.0
comp=Z,2μm,16.9s
KHC Kasperske Hory 79.06 329 eP P 17 47 59.4 +1.1
KHC e 17 48 05.0
KHC e 17 48 09.6
KHC eS S 17 57 54.0 -0.8
KHC MLR MLR
comp=Z,2μm,16.9s
KHC Kasperske Hory 79.06 329 eP P 17 47 58.8 +0.5
comp=Z,33nm,1.8s
CONA Conrad Observa 79.12 327 iP P 17 47 59.6 +1.0
comp=Z,6.5nm,0.9s,SNR=7.5
I33A Coleman 79.14 39 P P 17 47 58.8 0.0
baz=319,SNR=8.6
H34A Spellman Lake, 79.16 38 P P 17 47 58.9 +0.2
baz=320,SNR=16
C39A Grand Marais 79.18 33 P P 17 47 58.7 -0.1
baz=323
SDCO Great Sand Dun 79.23 49 P P 17 48 00.1 +0.4
baz=315
SDCO Great Sand Dun 79.23 49 PFAKE 17 48 10.0 +10
SDCO LR LR
comp=Z,431nm,20.0s
GEC2 GERESS Array S 79.25 329 eP P 17 48 00.3 +1.0
GEC2 GERESS Array S 79.25 329 eP P 17 48 00.3 +1.0
GERES GERESS Array B 79.25 329 P P 17 47 59.9 +0.6
comp=Z,2.4nm,0.7s,baz=35,slow=4.9,SNR=25
GEA0 GERESS Array S 79.25 329 eP P 17 47 59.8 +0.5
F36A Milaca 79.26 36 P P 17 47 59.1 -0.2
baz=321,SNR=12
K31A O'Neill 79.26 41 P P 17 47 59.3 -0.1
baz=318,SNR=16
RAO Raoul Island 79.43 146 LR LR 18 19 26.2
comp=Z,374nm,19.2s,baz=83,slow=33
ECSD EROS Data Cent 79.47 39 P P 17 47 59.9 -0.6
baz=319,SNR=55
ECSD EROS Data Cent 79.47 39 eP P 17 47 59.9 -0.6
comp=Z,59nm,1.0s
ECSD LR LR
comp=Z,1μm,22.0s
ECSD EROS Data Cent 79.47 39 eP P 17 47 59.9 -0.6
comp=Z,59nm,1.0s
GRFO Grafenberg 79.50 330 eP P 17 48 02.2 +1.6
GRFO pmax pmax
comp=Z,54nm,1.4s
GRFO Grafenberg 79.50 330 eP P 17 48 02.1 +1.6
comp=Z,54nm,1.4s
H35A Sunnyside Ranc 79.57 38 P P 17 48 01.2 +0.2
baz=320,SNR=31
ISP Isparta 79.62 312 PFAKE 17 48 10.0 +8.4
ISP LR LR
comp=Z,621nm,19.0s
G36A St. Michael 79.64 37 P P 17 48 02.0 +0.5
baz=321
ARSA Arzberg 79.80 327 iP P 17 48 03.4 +1.1
comp=Z,8.3nm,1.2s
MOA Molln 79.83 328 iP P 17 48 03.2 +0.7
comp=Z,9.9nm,1.1s
TUC Tucson 79.89 56 P P 17 48 04.0 +0.9
baz=313
CSS Mathiatis 80.02 308 PFAKE 17 48 20.0 +16
CSS LR LR
comp=Z,107nm,22.0s
J34A George 80.12 39 P P 17 48 03.8 -0.3
baz=320
I35A Creekview Farm 80.14 38 P P 17 48 04.2 +0.1
baz=320
T25A Trinidad 80.27 48 P P 17 48 05.4 +0.2
baz=316
L33A Hoskins 80.33 41 P P 17 48 05.3 +0.1
baz=319
J35A Milford 80.41 39 P P 17 48 05.5 -0.1
baz=320
SCHQ Schefferville 80.43 17 P P 17 48 06.4 +0.9
comp=Z,50nm,0.9s,baz=352,slow=5.1,SNR=18
SCHQ Schefferville 80.43 17 eP P 17 48 06.2 +0.7
MMB Musomiste 80.45 318 iP P 17 48 07.1 +1.2
PERS Pernice 80.46 326 eP P 17 48 06.6 +0.7
SOKA Soboth 80.46 327 iP P 17 48 06.8 +0.9
comp=Z,19nm,1.3s,SNR=14
I36A Fitzsimmons Fa 80.46 38 P P 17 48 05.8 -0.1
baz=321
BGNE Belgrade 80.47 42 P P 17 48 05.9 -0.1
baz=319
BEBN Eben Emael 80.49 334 P P 17 48 06.9 +1.0
comp=Z,6.5nm,1.2s
MEM Membach 80.55 334 P P 17 48 06.9 +0.7
comp=Z,13nm,1.5s
LAZ Ladron 80.64 52 eP P 17 48 09.3 +2.0
ANMO Albuquerque 80.66 51 P P 17 48 08.4 +1.0
baz=315
ANMO Albuquerque 80.66 51 PFAKE 17 48 20.0 +13
ANMO LR LR
comp=Z,589nm,22.0s
OBKA Obir 80.79 327 iP P 17 48 08.3 +0.5
comp=Z,5.4nm,0.7s
M33A Taylor Creek F 80.82 41 P P 17 48 08.0 +0.1
baz=319
KBA Koelnbreinsper 80.82 328 iP P 17 48 08.7 +0.8
comp=Z,11nm,1.1s,SNR=8.3
J36A Seneca 1, Swea 80.85 38 P P 17 48 07.9 -0.1
baz=321
N32A Stulken Farm, 80.88 42 P P 17 48 07.8 -0.4
baz=319
BCLA Clavier 80.94 334 P P 17 48 09.0 +0.7
comp=Z,12nm,1.7s
COWI Conover 80.96 34 PFAKE 17 48 20.0 +11
COWI LR LR
comp=Z,988nm,21.0s
STU Stuttgart 81.00 331 eP P 17 48 10.0 +1.3
STU pmax pmax
comp=Z,37nm,1.3s
STU Stuttgart 81.00 331 eP P 17 48 10.0 +1.3
comp=Z,38nm,1.3s
MYKA Terra Mystica 81.06 327 iP P 17 48 09.0 -0.2
baz=320
M34A Aspy Farms, Fr 81.17 41 P P 17 48 09.7 0.0
baz=320
SNF Seneffe 81.19 335 P P 17 48 10.6 +1.0
I38A Scanlan Farm, 81.21 37 P P 17 48 09.7 -0.2
baz=322
J37A Redenius Farm, 81.22 38 P P 17 48 09.9 0.0
baz=321
VISS Visnje 81.24 326 eP P 17 48 10.2 +0.2
WATA Walderalm 81.30 329 iP P 17 48 11.9 +1.4
comp=Z,7.5nm,0.8s,SNR=6.3
BOJS Bojanci 81.31 326 eP P 17 48 10.7 +0.3
WLF Walferdange 81.31 333 PFAKE 17 48 20.0 +10
WLF LR LR
comp=Z,2μm,20.0s
LANF Langenberg 81.32 332 eP P 17 48 11.1 +0.7
ABTA Abfaltersbach 81.42 328 iP P 17 48 11.9 +0.9
comp=Z,6.0nm,1.1s
DOU Dourbes 81.45 334 P P 17 48 11.8 +0.8
comp=Z,8.6nm,1.9s
MOTA Moosalm 81.48 329 iP P 17 48 13.1 +1.6
comp=Z,21nm,0.9s
JAVS Javornik 81.49 327 eP P 17 48 11.2 -0.3
RETA Reutte 81.49 329 iP P 17 48 12.8 +1.4
comp=Z,21nm,1.2s,SNR=11
121A Cookes Peak, D 81.56 54 P P 17 48 13.5 +1.3
baz=315
P32A Huiting Farm, 81.58 43 P P 17 48 11.0 -0.9
baz=318
CBKS Cedar Bluff 81.59 45 P P 17 48 11.9 -0.1
baz=318
CBKS Cedar Bluff 81.59 45 PFAKE 17 48 20.0 +8.0
CBKS LR LR
comp=Z,536nm,20.0s
K37A Belmond 81.61 38 P P 17 48 11.9 -0.1
baz=321
M35A Neola 81.63 40 P P 17 48 12.3 +0.1
baz=320
L36A Harm Buss Farm 81.64 39 P P 17 48 12.3 +0.1
baz=320
BFO Black Forest 81.68 331 iP P 17 48 13.7 +1.4
BFO Black Forest 81.68 331 eP P 17 48 13.4 +1.1
BFO LR LR
comp=Z,984nm,20.0s
J38A Wedel Dairy, R 81.71 37 P P 17 48 12.3 -0.3
baz=322
O33A Hebron 81.75 42 P P 17 48 11.6 -1.3
baz=319
FETA Feichten 81.89 329 iP P 17 48 14.5 +0.9
comp=Z,12nm,0.9s,SNR=11
PDG Podgorica 81.96 322 ⇑iP P 17 48 14.3 +0.5
DAVA Damuels 81.99 330 iP P 17 48 15.4 +1.2
comp=Z,21nm,1.1s,SNR=10
J39A Decorah 82.04 37 P P 17 48 13.7 -0.6
baz=322
L37A Phoenix Point, 82.05 39 P P 17 48 14.6 +0.2
baz=321
Q32A Meitler Ranch, 82.07 44 P P 17 48 14.2 -0.4
baz=319
M36A Felix, Anita 82.07 40 P P 17 48 14.5 0.0
baz=320
RAR Rarotonga 82.09 128 LR LR 18 15 39.9
comp=Z,330nm,21.6s,baz=310,slow=29
K38A Parkersburg 82.10 38 P P 17 48 14.4 -0.2
baz=322
O34A Beatrice 82.12 42 P P 17 48 13.8 -0.9
baz=320
N35A Tabor 82.12 41 P P 17 48 14.1 -0.6
baz=320
P33A Williams Farm, 82.18 43 P P 17 48 14.3 -0.8
baz=319
ECH Echery 82.20 332 eP P 17 48 15.7 +0.7
FUORN Ofenpass-Fuorn 82.40 329 eP P 17 48 17.4 +1.0
L38A Oak Wood Farm, 82.41 38 P P 17 48 16.3 +0.1
baz=322
DAVOX Davos/Dischmat 82.41 330 P P 17 48 17.1 +0.7
comp=Z,4.4nm,0.6s,baz=53,slow=2.0,SNR=8.5
R32A Long Quarter, 82.41 44 P P 17 48 15.8 -0.5
baz=319
Q33A Connelly Farm, 82.44 43 P P 17 48 15.6 -0.8
baz=319
O35A Humboldt 82.44 41 P P 17 48 15.6 -0.8
baz=320
K39A Oelwein 82.46 37 P P 17 48 15.5 -1.0
baz=322
M37A Trindle Farm, 82.47 40 P P 17 48 16.3 -0.3
baz=321
N36A Muff Farm, Cla 82.49 40 P P 17 48 16.9 +0.2
baz=320
TIR Tirane 82.51 320 PFAKE 17 48 30.0 +13
TIR LR LR
comp=Z,1μm,20.0s
MOF Molkenrain 82.52 332 eP P 17 48 17.2 +0.4
P34A Walnut Farm, R 82.53 42 P P 17 48 16.1 -0.8
baz=320
THEF They Montfort 82.60 333 eP P 17 48 17.9 +0.8
J41A Loganville 82.77 36 P P 17 48 18.0 -0.1
baz=323
K40A Colesburg 82.80 37 P P 17 48 17.9 -0.4
baz=323
S32A Newby Ranch, P 82.83 45 P P 17 48 16.2 -2.4
baz=318
M38A Pleasantville 82.86 39 P P 17 48 18.7 +0.1
baz=321
L39A Vinton 82.86 38 P P 17 48 18.4 -0.2
baz=322
TUE Stuetta 82.87 330 eP P 17 48 18.2 -0.6
TUE LR LR
comp=Z,2μm,20.0s
R33A Olander Ranch, 82.88 44 P P 17 48 16.3 -2.5
baz=319
N37A Lee Faris, Mou 82.89 40 P P 17 48 17.9 -0.8
baz=321
Q34A Chapman 82.95 43 P P 17 48 17.1 -2.0
baz=320
P35A Duane Minner, 82.95 42 P P 17 48 17.6 -1.5
baz=320
KSU1 Kansas State U 82.98 43 P P 17 48 17.1 -2.1
baz=320
KSU1 Kansas State U 82.98 43 eP P 17 48 18.6 -0.6
comp=Z,46nm,0.9s
KSU1 LR LR
comp=Z,2μm,21.0s
O36A Bolckow 83.01 41 P P 17 48 19.1 -0.3
baz=320
JFWS Jewell Farm 83.03 36 PFAKE 17 48 30.0 +11
JFWS LR LR
comp=Z,1μm,22.0s
LOMF Lomont 83.05 332 eP P 17 48 20.5 +0.9
K41A Shullsburg 83.25 37 P P 17 48 19.8 -0.8
baz=323
L40A Anamosa 83.27 37 P P 17 48 20.2 -0.5
baz=323
MNTX Cornudas Mount 83.59 53 P P 17 48 23.4 +0.9
baz=316
MNTX Cornudas Mount 83.59 53 PFAKE 17 48 30.0 +7.5
MNTX LR LR
comp=Z,465nm,20.0s
N39A Derby Farms, D 83.61 39 P P 17 48 22.4 0.0
baz=322
T33A Patterson Ranc 83.66 45 P P 17 48 22.8 0.0
baz=319
Q36A Arnold C. Orve 83.67 42 P P 17 48 22.0 -0.8
baz=320
SENIN Lac Senin/Sane 83.72 331 eP P 17 48 23.6 +0.4
P37A Lathrop 83.73 41 P P 17 48 23.2 +0.1
baz=321
O38A Galt 83.74 40 P P 17 48 23.1 0.0
baz=321
R35A Emporia Munici 83.78 43 P P 17 48 23.7 +0.3
baz=320
S34A Willow Spring 83.79 44 P P 17 48 23.3 -0.2
baz=320
O39A Kirksville 84.08 39 P P 17 48 25.3 +0.4
baz=322
P38A Dawn 84.10 40 P P 17 48 25.3 +0.3
baz=321
R36A Gordon, Harris 84.13 42 P P 17 48 25.2 0.0
baz=320
S35A Otter Creek Ra 84.21 43 P P 17 48 26.1 +0.5
baz=320
U33A Lingo Farm, Me 84.22 45 P P 17 48 26.2 +0.5
baz=319
V32A Arapaho 84.26 46 P P 17 48 26.3 +0.4
baz=319
T34A McClaskey Farm 84.26 44 P P 17 48 25.9 +0.1
baz=320
VLC Villacollemand 84.40 328 PFAKE 17 48 40.0 +14
VLC LR LR
comp=Z,785nm,21.0s
R37A Teagarden Farm 84.48 42 P P 17 48 26.7 -0.3
baz=321
O40A La Belle 84.50 39 P P 17 48 27.4 +0.4
baz=322
U34A Anderson Ranch 84.52 45 P P 17 48 27.7 +0.5
baz=319
U34A Anderson Ranch 84.52 45 eP P 17 48 27.4 +0.2
comp=Z,65nm,1.1s
S36A Lake Cedric, C 84.55 43 P P 17 48 27.6 +0.3
baz=320
IDI Anoyia 84.56 313 P P 17 48 27.1 -0.3
comp=Z,13nm,0.9s,baz=33,slow=6.6
IDI Anoyia 84.56 313 eP P 17 48 27.3 -0.2
Q38A Cooks Store, C 84.58 41 P P 17 48 27.3 -0.1
baz=321
P39B Salisbury 84.58 40 P P 17 48 27.4 0.0
baz=322
V33A Lossen Ranch, 84.59 46 P P 17 48 27.6 +0.1
baz=319
W32A Sentinel 84.59 47 P P 17 48 27.7 +0.1
baz=319
AQU L'Aquila 84.64 325 PFAKE 17 48 40.0 +12
AQU LR LR
comp=Z,3μm,19.0s
T35A Sooner Cattle 84.69 44 P P 17 48 28.2 +0.1
baz=320
Q39A Willow Grove F 84.82 40 P P 17 48 28.4 -0.2
baz=322
P40A Paris 84.89 39 P P 17 48 29.1 +0.1
baz=322
S37A Fort Scott 84.91 42 P P 17 48 28.5 -0.6
baz=321
T36A Boggs Farm, Ca 84.91 43 P P 17 48 29.4 +0.3
baz=320
O41A Passleys Farm, 84.97 38 P P 17 48 29.1 -0.3
baz=323
V34A Guthrie 84.99 45 P P 17 48 29.4 -0.1
baz=319
U35A Pawnee 84.99 44 P P 17 48 29.6 +0.1
baz=320
BNI Bardonecchia 85.07 331 eP P 17 48 28.1 -1.9
BNI pmax pmax
comp=Z,20nm,1.1s
BNI MLR MLR
comp=Z,1μm,20.0s
BNI Bardonecchia 85.07 331 eP P 17 48 28.1 -1.9
comp=Z,20nm,1.1s
BNI LR LR
comp=Z,1μm,20.0s
X32A Elmer 85.09 47 P P 17 48 30.1 0.0
baz=319
WMOK Wichita Mounta 85.13 47 P P 17 48 30.7 +0.4
baz=319
GDM Grand'Maison 85.14 331 eP P 17 48 31.3 +0.9
P41A Barry, Barry 85.24 39 P P 17 48 30.8 +0.1
baz=323
GRN Grenoble 85.25 331 eP P 17 48 31.7 +0.9
Q40A Laux Farm, Aux 85.30 40 P P 17 48 30.9 -0.1
baz=322
W34A Bridge Creek, 85.30 46 P P 17 48 31.5 +0.4
baz=319
W34A Bridge Creek, 85.30 46 eP P 17 48 32.6 +1.5
HDIL Hopedale 85.34 37 P P 17 48 31.3 0.0
baz=324
HDIL Hopedale 85.34 37 PFAKE 17 48 40.0 +8.8
HDIL LR LR
comp=Z,1μm,22.0s

T37A	**Cheneyville 18**	**85.35**	**43**	P		**P**	**17 48 31.5**	**+0.1**
	baz=321								
PLDF	**La Plantade**	**85.36**	**333**	*eP*		**P**	**17 48 30.7**	**-0.6**
R39A	**Chumby, Stover**	**85.36**	**41**	P		**P**	**17 48 31.1**	**-0.3**
	baz=322								
V35A	**Meyer Ranch, C**	**85.40**	**45**	P		**P**	**17 48 31.9**	**+0.3**
	baz=320								
X33A	**Lawton**	**85.43**	**47**	P		**P**	**17 48 31.7**	**-0.1**
	baz=319								
AGO	**Saint Agoulin**	**85.45**	**333**	*eP*		**P**	**17 48 33.0**	**+1.3**
S38A	**Stockton**	**85.47**	**42**	P		**P**	**17 48 31.0**	**-0.9**
	baz=321								
CUC	**Castrocucco**	**85.47**	**322**		PFAKE		17 48 40.0	+8.0
CUC					LR	LR			
	comp=Z,795nm,19.0s								
U36A	**Oologah**	**85.50**	**44**	P		**P**	**17 48 32.3**	**+0.2**
	baz=320								
URZ	**Urewera**	**85.58**	**154**	LR		LR	18 22 13.5		
	comp=Z,236nm,21.0s,baz=322,slow=32								
SSB	**Saint Sauveur**	**85.64**	**332**	*eP*		**P**	**17 48 33.9**	**+1.2**
SSB					MLR	MLR			
	comp=Z,1µm,20.0s								
SSB	**Saint Sauveur**	**85.64**	**332**	*eP*		**P**	**17 48 33.9**	**+1.2**
SSB					LR	LR			
	comp=Z,1µm,20.0s								
P42A	**Winchester**	**85.64**	**38**	P		**P**	**17 48 33.1**	**+0.4**
	baz=323								
TIP	**Timpagrande**	**85.68**	**321**		PFAKE		17 48 40.0	+7.0
TIP					LR	LR			
	comp=Z,731nm,20.0s								
T38A	**Diamond**	**85.74**	**42**	P		**P**	**17 48 33.4**	**+0.1**
	baz=321								
X34A	**Smith Ranch, M**	**85.75**	**46**	P		**P**	**17 48 34.2**	**+0.8**
	baz=319								
R40A	**Maddies Statio**	**85.75**	**40**	P		**P**	**17 48 33.7**	**+0.4**
	baz=322								
Y33A	**Hilltop Ranch,**	**85.77**	**47**	P		**P**	**17 48 33.8**	**+0.3**
	baz=319								
PPT	**Papeete**	**85.79**	**118**	LR		LR	18 18 51.1		
	comp=Z,238nm,21.1s,baz=326,slow=30								
U37A	**Salina**	**85.80**	**43**	P		**P**	**17 48 33.3**	**-0.3**
	baz=321								
PPT2	**Papeete2**	**85.81**	**118**	*e*LQ		LQ	18 11 50.4		
	comp=Z,1µm,30.0s								
PPT2					*e*LR	LR	18 15 41.0		
	comp=Z,866nm,23.8s								
PPT2	**Papeete2**	**85.81**	**118**	*e*T		T	19 22 57.1		
	comp=Z,31nm,0.3s								
LUCF	**Luceram**	**85.81**	**329**	*eP*		**P**	**17 48 33.7**	**+0.1**
TUL1	**Leonard**	**85.83**	**44**	P		**P**	**17 48 34.0**	**+0.2**
	baz=320								
W35A	**Tecumseh**	**85.84**	**45**	P		**P**	**17 48 33.9**	**+0.1**
	baz=320								
V36A	**Jenks**	**85.85**	**44**	P		**P**	**17 48 34.2**	**+0.3**
	baz=320								
MVIF	**Mont Vial**	**85.88**	**330**	*eP*		**P**	**17 48 34.2**	**+0.2**
REVF	**Revere**	**85.93**	**329**	*eP*		**P**	**17 48 34.7**	**+0.6**
TIAR	**Tiarei**	**85.94**	**118**	*e*T		T	19 23 06.0		
	comp=Z,14nm,0.3s								
Q42A	**Golden Eagle**	**86.09**	**39**	P		**P**	**17 48 35.4**	**+0.4**
	baz=323								
LBL	**Lubilhac**	**86.13**	**333**	*eP*		**P**	**17 48 36.7**	**+1.5**
U38A	**Gravette**	**86.15**	**43**	P		**P**	**17 48 35.7**	**+0.4**
	baz=321								
R41A	**Rosebud**	**86.18**	**40**	P		**P**	**17 48 35.4**	**0.0**
	baz=323								
S40A	**Lebanon**	**86.19**	**41**	P		**P**	**17 48 35.5**	**0.0**
	baz=322								
V37A	**Hulbert**	**86.19**	**44**	P		**P**	**17 48 35.9**	**+0.3**
	baz=321								
W36A	**Wetumka**	**86.20**	**45**	P		**P**	**17 48 35.9**	**+0.3**
	baz=320								
T39A	**Clever**	**86.20**	**42**	P		**P**	**17 48 35.4**	**-0.2**
	baz=322								
Z33A	**Whitaker Ranch**	**86.23**	**48**	P		**P**	**17 48 36.4**	**+0.6**
	baz=319								
ABTX	**Abilene, Hawle**	**86.24**	**49**	P		**P**	**17 48 36.6**	**+0.7**
	baz=318								
TAOE	**Nuku Hiva Isla**	**86.26**	**105**	*e*LR		LR	18 16 03.0		
	comp=Z,623nm,23.7s								
TAOE	**Nuku Hiva Isla**	**86.26**	**105**	*e*T		T	19 23 29.8		
	comp=Z,68nm,0.2s								
Y34A	**Reagan Ranch,**	**86.28**	**47**	P		**P**	**17 48 36.1**	**+0.1**
	baz=319								
TXAR	**Lajitas Array**	**86.31**	**53**	P		**P**	**17 48 37.4**	**+1.0**
	comp=Z,19nm,0.9s,baz=289,slow=3.8,SNR=25								
AAM	**Ann Arbor**	**86.32**	**33**	*eP*		**P**	**17 48 37.6**	**+1.6**
AAM					MLR	MLR			
	comp=Z,1µm,22.0s								
AAM	**Ann Arbor**	**86.32**	**33**	*eP*		**P**	**17 48 37.6**	**+1.6**
AAM					LR	LR			
	comp=Z,1µm,22.0s								
X35A	**Drake**	**86.36**	**46**	P		**P**	**17 48 36.4**	**0.0**
	baz=320								
SFIN	**Lafayette**	**86.47**	**36**	P		**P**	**17 48 36.6**	**-0.2**
	baz=325								
R42A	**Luebbering**	**86.47**	**39**	P		**P**	**17 48 37.1**	**+0.3**
	baz=323								
T40A	**Mansfield**	**86.53**	**41**	P		**P**	**17 48 36.7**	**-0.5**
	baz=322								
S41A	**Jillco Farms,**	**86.56**	**40**	P		**P**	**17 48 37.3**	**-0.1**
	baz=322								
X36A	**Centrahoma**	**86.57**	**45**	P		**P**	**17 48 37.9**	**+0.5**
	baz=320								
V38A	**Canehill**	**86.59**	**43**	P		**P**	**17 48 37.3**	**-0.1**
	baz=321								
W37B	**Quinton**	**86.61**	**44**	P		**P**	**17 48 37.9**	**+0.2**
	baz=321								
DAMY	**Dhamar**	**86.62**	**286**	*eP*		**P**	**17 48 39.6**	**+1.3**
U39A	**Green Forest**	**86.65**	**42**	P		**P**	**17 48 37.8**	**-0.1**
	baz=322								
Q44A	**Meyer Farm, Va**	**86.80**	**38**	P		**P**	**17 48 38.3**	**-0.2**
	baz=324								
HPIG		**86.82**	**56**	*eP*		**P**	**17 48 40.1**	**+1.1**
CEL	**Celeste**	**86.82**	**321**		PFAKE		17 48 50.0	+11
CEL					LR	LR			
	comp=Z,856nm,19.0s								
S42A	**Caledonia**	**86.88**	**40**	P		**P**	**17 48 38.8**	**-0.1**
	baz=323								
T41A	**Mountain View**	**86.98**	**41**	P		**P**	**17 48 39.1**	**-0.3**
	baz=322								
U40A	**Yellville**	**86.99**	**42**	P		**P**	**17 48 39.2**	**-0.2**
	baz=322								
V39A	**Pettigrew**	**86.99**	**43**	P		**P**	**17 48 39.3**	**-0.3**
	baz=322								
MEH	**Mehetia**	**87.01**	**117**	*e*T		T	19 24 26.7		
	comp=Z,87nm,0.3s								
Z35A	**Perchaven, San**	**87.03**	**47**	P		**P**	**17 48 39.7**	**0.0**
	baz=320								
233A	**Rising Star**	**87.11**	**49**	P		**P**	**17 48 40.1**	**0.0**
	baz=319								
Y36A	**Durant**	**87.11**	**46**	P		**P**	**17 48 40.2**	**+0.2**
	baz=320								
W38A	**Poteau**	**87.14**	**44**	P		**P**	**17 48 40.2**	**0.0**
	baz=321								
134A	**White-Moore Ra**	**87.14**	**48**	P		**P**	**17 48 40.6**	**+0.3**
	baz=319								
R44A	**Waltonville**	**87.30**	**38**	P		**P**	**17 48 41.3**	**+0.5**
	baz=324								
OLIL	**Olney**	**87.36**	**37**	*eP*		**P**	**17 48 41.4**	**+0.3**
S43A	**Fulton Ridge,**	**87.38**	**39**	P		**P**	**17 48 40.8**	**-0.5**
	baz=324								
U41A	**Viola**	**87.46**	**41**	P		**P**	**17 48 41.5**	**-0.2**
	baz=322								
THZ	**Tophouse**	**87.51**	**158**	*eP*		**P**	**17 48 42.3**	**+0.8**
Z36A	**Blue Ridge**	**87.51**	**46**	P		**P**	**17 48 42.0**	**0.0**
	baz=320								
234A	**Clairette**	**87.54**	**48**	P		**P**	**17 48 42.7**	**+0.5**
	baz=319								
333A	**Richland Sprin**	**87.58**	**49**	P		**P**	**17 48 42.7**	**+0.3**
	baz=319								
LONY	**Lake Ozonia**	**87.62**	**26**		PFAKE		17 48 50.0	+7.6
LONY					LR	LR			
	comp=Z,786nm,21.0s								
S44A	**Carbondale**	**87.67**	**39**	P		**P**	**17 48 42.9**	**+0.2**
	baz=324								
SIUC	**Southern Illin**	**87.67**	**39**	*eP*		**P**	**17 48 43.9**	**+1.3**
JCT	**Junction City**	**87.74**	**50**	P		**P**	**17 48 43.5**	**+0.3**
	baz=318								
JCT	**Junction City**	**87.74**	**50**		PFAKE		17 49 00.0	+17
JCT					LR	LR			
	comp=Z,685nm,22.0s								
V41A	**Mountainview**	**87.78**	**42**	P		**P**	**17 48 43.2**	**-0.1**
	baz=322								
WHTX	**Lake Whitney,**	**87.93**	**48**	P		**P**	**17 48 44.9**	**+0.8**
	baz=320								
433A	**Art**	**87.94**	**50**	P		**P**	**17 48 44.5**	**+0.3**
	baz=319								
334A	**Lometa**	**87.99**	**49**	P		**P**	**17 48 45.2**	**+0.8**
	baz=319								
S45A	**Carrier Mills**	**88.00**	**38**	P		**P**	**17 48 45.0**	**+0.8**
	baz=324								
Z37A	**Pogue Cattle C**	**88.00**	**46**	P		**P**	**17 48 45.2**	**+0.8**
	baz=320								
MIAR	**Mount Ida**	**88.04**	**44**	P		**P**	**17 48 45.3**	**+0.8**
	baz=322								
MIAR	**Mount Ida**	**88.04**	**44**		PFAKE		17 49 00.0	+16
MIAR					LR	LR			
	comp=Z,1µm,21.0s								
W41B	**Gary Mavity, V**	**88.22**	**42**	P		**P**	**17 48 46.1**	**+0.7**
	baz=322								
Y39A	**Lockesburg**	**88.24**	**44**	P		**P**	**17 48 46.0**	**+0.6**
	baz=321								
ALLY	**Alegheny Colle**	**88.26**	**31**	*eP*		**P**	**17 48 47.1**	**+1.6**
NCB	**Newcomb**	**88.32**	**26**	*eP*		**P**	**17 48 46.9**	**+1.2**
ACSO	**Alum Creek Sta**	**88.34**	**33**		PFAKE		17 49 00.0	+14
ACSO					LR	LR			
	comp=Z,804nm,20.0s								
X40A	**Basin Creek Fa**	**88.46**	**43**	P		**P**	**17 48 47.1**	**+0.6**
	baz=322								
533A	**Kerrville**	**88.49**	**50**	P		**P**	**17 48 47.5**	**+0.7**
	baz=319								
M54A	**Oil Creek Stat**	**88.56**	**31**	P		**P**	**17 48 47.5**	**+0.7**
	baz=330								
CLTB	**Caltabellotta**	**88.62**	**322**		PFAKE		17 49 00.0	+13
CLTB					LR	LR			
	comp=Z,556nm,20.0s								
PKME	**Peaks-Kenny Pk**	**88.65**	**22**		PFAKE		17 49 00.0	+13
PKME					LR	LR			
	comp=Z,678nm,20.0s								
VSL	**Villasalto**	**88.71**	**326**		PFAKE		17 49 00.0	+12
VSL					LR	LR			
	comp=Z,890nm,21.0s								
OXZ	**Oxford**	**88.72**	**159**	*eP*		**P**	**17 48 48.3**	**+1.1**
RPZ	**Rata Peaks**	**88.83**	**160**	LR		LR	18 25 00.6		
	comp=Z,521nm,20.9s,baz=330,slow=33								
534A	**Blanco**	**88.84**	**50**	P		**P**	**17 48 48.3**	**-0.1**
	baz=319								
633A	**Saathoff Ranch**	**88.86**	**50**	P		**P**	**17 48 49.1**	**+0.6**
	baz=319								
N54A	**Moraine State**	**88.91**	**31**	P		**P**	**17 48 48.9**	**+0.4**
	baz=330								
ACCN	**Adirondack Com**	**89.03**	**26**	*eP*		**P**	**17 48 49.8**	**+0.8**
Y41A	**Eaglette Beard**	**89.05**	**43**	P		**P**	**17 48 49.7**	**+0.4**
	baz=322								
BINY	**Binghamton**	**89.30**	**28**		PFAKE		17 49 00.0	+10
BINY					LR	LR			
	comp=Z,917nm,19.0s								
733A	**Divot King Ran**	**89.35**	**51**	P		**P**	**17 48 51.6**	**+0.9**
	baz=319								
WDD	**Wied Dalam**	**89.42**	**320**		PFAKE		17 49 00.0	+9.0
WDD					LR	LR			
	comp=Z,437nm,20.0s								
CCAR	**Cane Creek**	**89.45**	**43**	*eP*		**P**	**17 48 53.2**	**+2.1**
NATX	**Nacogdoches**	**89.63**	**46**		PFAKE		17 49 00.0	+8.0
NATX					LR	LR			
	comp=Z,788nm,19.0s								
141A	**Papa Simpson,**	**89.90**	**44**	P		**P**	**17 48 54.7**	**+1.4**
	baz=322								
SSPA	**Standing Stone**	**89.98**	**30**	*eP*		**P**	**17 48 52.9**	**-0.7**
TBI	**Tubuai**	**90.02**	**122**	*e*LQ		LQ	18 13 44.0		
	comp=Z,515nm,32.5s								
TBI					*e*LR	LR	18 17 06.3		
	comp=Z,312nm,23.0s								
TBI	**Tubuai**	**90.02**	**122**	*e*T		T	19 28 12.3		
	comp=Z,105nm,0.3s								
O56A	**Blue Knob Stat**	**90.05**	**30**	P		**P**	**17 48 54.4**	**+0.5**
	baz=330								
636A	**Smothers Creek**	**90.06**	**49**	P		**P**	**17 48 55.8**	**+1.8**
	baz=320								
933A	**Laredo**	**90.19**	**52**	P		**P**	**17 48 56.2**	**+1.4**
	baz=319								
142A	**Monroe**	**90.44**	**44**	P		**P**	**17 48 57.3**	**+1.6**
	baz=322								
736A	**Circle Diamond**	**90.45**	**49**	P		**P**	**17 48 57.7**	**+1.8**
	baz=320								
N59A	**State Game Lan**	**90.51**	**28**	P		**P**	**17 48 56.5**	**+0.6**
	baz=332								
Y45A	**Yeager Farm, C**	**90.61**	**41**	P		**P**	**17 48 57.2**	**+0.6**
	baz=324								
WES	**Weston**	**90.67**	**25**	*eP*		**P**	**17 48 58.5**	**+1.8**
WES	**Weston**	**90.67**	**25**	*eP*		**P**	**17 48 58.5**	**+1.8**
341A	**Kurthwood**	**90.76**	**45**	P		**P**	**17 48 58.4**	**+1.1**
	baz=322								
LUPA	**Lehigh Univers**	**90.93**	**28**	*eP*		**P**	**17 48 59.4**	**+1.4**
Y46A	**Houston**	**90.93**	**41**	P		**P**	**17 48 58.8**	**+0.8**
	baz=324								
Z45A	**Winona**	**90.93**	**42**	P		**P**	**17 48 59.2**	**+1.1**
	baz=324								
034A	**Hebbronville**	**90.95**	**52**	P		**P**	**17 48 59.8**	**+1.5**
	baz=319								
KVTX	**Kingsville**	**91.04**	**51**		PFAKE		17 49 10.0	+11
KVTX					LR	LR			
	comp=Z,538nm,19.0s								
MSEY	**Mahe Island**	**91.16**	**265**		PFAKE		17 49 10.0	+11
MSEY					LR	LR			
	comp=Z,700nm,22.0s								
TKL	**Tuckaleechee C**	**91.84**	**36**	P		**P**	**17 49 03.1**	**+0.9**
	comp=Z,16nm,1.0s,baz=3.1,slow=1.6,SNR=4.8								
BLA	**Blacksburg**	**91.95**	**33**		PFAKE		17 49 10.0	+7.2
BLA					LR	LR			
	comp=Z,803nm,19.0s								
CBN	**Corbin Frederi**	**92.30**	**31**		PFAKE		17 49 20.0	+16
CBN					LR	LR			
	comp=Z,990nm,21.0s								
PAB	**San Pablo**	**93.72**	**335**		PFAKE		17 49 20.0	+9.1
PAB					LR	LR			
	comp=Z,1µm,22.0s								
GOGA	**Godfrey**	**93.86**	**37**		PFAKE		17 49 20.0	+8.4
GOGA					LR	LR			
	comp=Z,865nm,22.0s								
MTE	**Manteigas**	**93.88**	**338**		PFAKE		17 49 20.0	+8.3
MTE					LR	LR			
	comp=Z,733nm,21.0s								
BRAL	**Brewton**	**94.02**	**41**		PFAKE		17 49 20.0	+7.7
BRAL					LR	LR			
	comp=Z,852nm,22.0s								
CNNC	**Cliffs of the**	**94.68**	**32**		PFAKE		17 49 30.0	+15
CNNC					LR	LR			
	comp=Z,1µm,22.0s								
NHSC	**New Hope**	**95.57**	**35**		PFAKE		17 49 30.0	+11
NHSC					LR	LR			
	comp=Z,1µm,22.0s								
RKT	**Rikitea**	**99.50**	**112**	*e*LR		LR	18 22 05.0		
	comp=Z,367nm,23.2s								
CMLA	**Cha da Macela**	**100.09**	**351**		PFAKE		17 49 50.0	+10
CMLA					LR	LR			
	comp=Z,522nm,19.0s								
BBSR	**BB Station**	**101.92**	**24**		PFAKE		17 50 00.0	+12
BBSR					LR	LR			
	comp=Z,487nm,20.0s								
KMBO	**Kilima Mbogo**	**102.39**	**280**		PFAKE		17 50 00.0	+9.4
KMBO					LR	LR			
	comp=Z,324nm,19.0s								
TAM	**Tamanrasset**	**104.58**	**320**		PFAKE		17 50 10.0	+10
TAM					LR	LR			
	comp=Z,347nm,21.0s								
ABPO	**Ambohimpanom**	**106.57**	**259**		PFAKE		17 54 30.0		
ABPO					LR	LR			
	comp=Z,164nm,21.0s								
MBAR	**Mbarara**	**106.80**	**285**		PFAKE		17 54 30.0		
MBAR					LR	LR			
	comp=Z,551nm,22.0s								
GTBY	**Guantanamo Bay**	**109.21**	**38**		PFAKE		17 54 40.0		
GTBY					LR	LR			
	comp=Z,587nm,21.0s								
MTDJ	**Mount Denham**	**109.52**	**41**		PFAKE		17 54 40.0		
MTDJ					LR	LR			
	comp=Z,615nm,21.0s								
GRTK	**Grand Turk**	**109.55**	**34**		PFAKE		17 54 40.0		
GRTK					LR	LR			
	comp=Z,1µm,22.0s								
CASY	**Casey**	**110.61**	**193**		PFAKE		17 54 40.0		
CASY					LR	LR			
	comp=Z,88nm,20.0s								
ANWB	**Willy Bob**	**116.56**	**26**		PFAKE		17 54 50.0	+12
ANWB					LR	LR			
	comp=Z,398nm,19.0s								
LSZ	**Lusaka**	**118.40**	**275**		PFAKE		17 54 50.0	+8.0
LSZ					LR	LR			
	comp=Z,375nm,21.0s								
FDF	**Fort de France**	**119.51**	**27**		PFAKE		17 55 00.0	+16
FDF					LR	LR			
	comp=Z,373nm,19.0s								
GRGR	**Grenville**	**121.75**	**29**		PFAKE		17 55 00.0	+12
GRGR					LR	LR			
	comp=Z,747nm,22.0s								
SACV	**Santiago Islan**	**122.14**	**345**		PFAKE		17 55 00.0	+11
SACV					LR	LR			
	comp=Z,132nm,22.0s								
OTAV	**Otavalo**	**123.94**	**53**		PFAKE		17 55 10.0	+17
OTAV					LR	LR			
	comp=Z,204nm,19.0s								
NNA	**Nana**	**134.38**	**61**		PFAKE		17 55 20.0	+7.5
NNA					LR	LR			
	comp=Z,192nm,20.0s								
ASCN	**Ascension**	**140.71**	**323**		PFAKE		17 55 40.0	+16
ASCN					LR	LR			
	comp=Z,637nm,20.0s								
LPAZ	**La Paz**	**143.15**	**56**		PKP	**PKPdf**	**17 55 27.7**	**-1.5**
	comp=Z,2.1nm,0.8s,baz=50,slow=3.3,SNR=3.6								
SNAA	**Sanae**	**145.65**	**198**		PKP	**PKPdf**	**17 55 30.7**	**-0.4**
SNAA	**Sanae**	**145.65**	**198**	*e*	PKP2	**PKPdf**	**17 55 30.8**	**-0.4**
SNAA	**Sanae**	**145.65**	**198**	*e*	PKPdf	**PKPdf**	**17 55 30.8**	**-0.4**
LVC	**Limon Verde**	**147.23**	**64**	*e*	PKPbc	**PKPbc**	**17 55 38.4**	**+0.4**
LVC					LR	LR			
	comp=Z,294nm,21.0s								
VNA1	**Neumayer--Stat**	**147.62**	**197**		PKP	**PKPdf**	**17 55 35.4**	**+1.0**
LCO	**Las Campanas**	**149.97**	**76**	*e*	PKPbc	**PKPbc**	**17 55 45.4**	**+0.6**
PMSA	**Palmer Station**	**152.34**	**155**	*e*	PKPbc	**PKPbc**	**17 55 48.5**	**-0.3**
PMSA					LR	LR			
	comp=Z,353nm,20.0s								
PLCA	**Paso Flores**	**154.92**	**99**		PKPab	**PKPab**	**17 56 12.2**	**+1.3**
	comp=Z,4.7nm,0.8s,baz=319,slow=3.0,SNR=5.8								
SPB	**Sao Paulo**	**159.88**	**29**		PFAKE		17 56 00.0	+6.8
SPB					LR	LR			
	comp=Z,493nm,19.0s								
EFI	**East Falkland**	**162.63**	**132**		PFAKE		17 56 10.0	+15
EFI					LR	LR			
	comp=Z,792nm,21.0s								

*ISCJB **31** 17:36:26.8±0.2, 27.79S±0.02×66.73W±0.03, h154km±2km, mb5.4/194, Error ellipse: s-maj=4.6km s-min=2.8km az=165.2*

*SJA **31** 17:36:27.8±1.1, 27.94S×66.79W, h178km±5km, ML5.4, MW5.0*

*MOS **31** 17:36:27.1±1.2, 27.78S×66.76W, h150km, mb5.3/25, Error ellipse: s-maj=13.1km s-min=7.2km az=95.3*

*GUC **31** 17:36:28.8±0.5, 27.92S×66.88W, h135km±98km, MW5.2*

*IDC **31** 17:36:29.8±0.4, 27.77S×66.62W, h168km±3km, mb5.3/20, mb1 5.3/24, mb1mx5.2/29, mbtmp5.7/24, MS4.1/2, Ms1 4.1/2, ms1mx3.4/20, Error ellipse: s-maj=9.8km s-min=6.2km az=84.0*

*GCMT **31** 17:36:30.2±0.2, 28.12S×66.74W, h181km±1km, MW5.4/122, Moment Tensor Solution. s65,c83; s122,c210; Duration: 1s3 Moment tensor: Scale 10^{17} Nm; M_{rr}-0.74±.03; $M_{\theta\theta}$-0.30±.03; $M_{\phi\phi}$1.04±.04; $M_{r\theta}$1.02±.02; $M_{\theta\phi}$-1.03±.03; $M_{\phi r}$-0.16±.03; Best double couple: $M_0$1.72600×10^{17} NP1:ϕ_s296.00000°, δ72.00000°, λ-134.00000°. NP2:ϕ_s188.00000°, δ47.00000°, λ-25.00000°. Principal axes: T 1.7740, Plg15.0000°, Azm57.0000°; N -0.0910, Plg41.0000°, Azm312.0000°; P -1.6780, Plg45.0000°, Azm162.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*BJI **31** 17:36:30.4, 28.13S×67.39W, h180km, mB5.4/20*

*NEIC **31** 17:36:30.2±0.1, 27.77S×66.57W, mb5.3/120, Error ellipse: s-maj=6.3km s-min=3.7km az=79.0*

ISC 31 17:36:29.8±0.3, 27.83S±0.03×66.70W±0.04, h169km±2km, h169km:pP-P, n816, σ1±54/939, mb5.4/193, 19C-47D, Catamarca Province

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CYA	**Choya**	**1.00**	**128**	⇓*eP*			**Pn**	**17 36 56.5**	**+0.1**
CYA				IAML				17 36 56.8	
	comp=Z,9µm,0.4s								
CYA				*eS*			**Sn**	**17 37 16.0**	**-1.0**
AHML	**Horco Molle**	**1.60**	**50**	⇓*eP*			**Pn**	**17 37 02.6**	**+0.7**
AHML				IAML				17 37 03.3	
	comp=Z,9µm,0.6s								
VCA	**Vinchina**	**1.61**	**236**	*eP*			**Pn**	**17 37 00.3**	**-1.8**
VCA				⇓*eS*			**Sn**	**17 37 24.7**	**-2.4**
VCA				IAML				17 37 26.4	
	comp=Z,21µm,0.4s								
FSA	**Cafayete**	**1.83**	**21**	⇓*eP*			**Pn**	**17 37 05.7**	**+1.3**
FSA				*eS*			**Sn**	**17 37 32.3**	**+1.0**
FSA				IAML				17 37 35.2	
	comp=Z,5µm,0.7s								
AGUA	**GUANDACOL**	**2.28**	**223**	*eP*			**Pn**	**17 37 07.4**	**-2.0**
AVFE	**Valle Fertil**	**2.90**	**193**	⇓*eP*			**Pn**	**17 37 14.3**	**-2.4**
AVFE				⇓*eS*			**Sn**	**17 37 48.0**	**-5.3**
AVFE				IAML				17 37 51.0	
	comp=Z,12µm,0.8s								
ACDV	**Cuesta del Vie**	**3.15**	**222**	⇓*eP*			**Pn**	**17 37 18.0**	**-2.0**
CPCH	**Copiapo**	**3.28**	**277**	⇑*eP*			**Pn**	**17 37 17.8**	**-3.7**
CPCH				*i* S			**Sn**	**17 37 55.1**	**-6.5**
ACHE	**Chepes**	**3.32**	**180**	*eP*			**Pn**	**17 37 19.2**	**-1.9**
AROD	**Rodeo**	**3.37**	**226**	⇓*eP*			**Pn**	**17 37 20.9**	**-1.9**
ACCO	**Cerro Coronel**	**3.44**	**216**	⇓*eP*			**Pn**	**17 37 21.1**	**-2.6**
AMOG	**MOGNA**	**3.47**	**206**	⇓*eP*			**Pn**	**17 37 21.1**	**-2.8**
RTLL	**Cerro Villicun**	**3.82**	**204**	*eP*			**Pn**	**17 37 25.4**	**-2.8**
TCA	**Tanti**	**3.94**	**153**	*eP*			**Pn**	**17 37 28.6**	**-1.3**
TCA				⇓*eS*			**Sn**	**17 38 12.9**	**-4.0**
TCA				IAML				17 38 14.4	
	comp=Z,9µm,0.5s								
SJA	**San Juan**	**4.03**	**203**	⇓*eP*			**Pn**	**17 37 28.4**	**-2.5**
SJA				IAML				17 37 29.2	
	comp=Z,8µm,0.3s								
RTCV	**Cerro Valdivia**	**4.33**	**201**	*eP*			**Pn**	**17 37 31.9**	**-2.9**
ASTB	**Santa Barbara**	**4.36**	**28**	⇓*eP*			**Pn**	**17 37 36.8**	**+1.4**
ACAN	**Cantantal**	**4.45**	**185**	⇓*eP*			**Pn**	**17 37 34.2**	**-2.2**
PIL	**Pilar**	**4.54**	**148**	*eP*			**Pn**	**17 37 36.6**	**-0.9**
RTLS	**Leoncito**	**4.55

CPUP MLR MLR
comp=Z,1µm,19.1s
CPUP Villa Florida 8.48 82 *e*Pn **Pn 17 38 28.0 -1.5**
PSGC Pisagua 8.78 338 *jj i*P **Pn 17 38 28.9 -4.6**
MNMC Minye Minye 9.06 342 *jj i*P **Pn 17 38 35.0 -2.4**
PB12 IPOC Station P 9.76 339 *jj i*P **Pn 17 38 42.1 -4.4**
PB13 IPOC Station P 9.80 344 *e*P **Pn 17 38 46.9 -0.6**
LPA La Plata 10.29 135 *de*P **Pn 17 38 52.0 -1.2**
LPA S **Sn 17 40 45.0 -2.3**
LPA PCS **PcS 17 48 17.0 -0.9**
LPA SCS **ScS 17 51 32.0 -3.7**
TRQA Tornquist 10.94 160 *e*P **Pn 17 38 58.8 -2.9**
TRQA Tornquist 10.94 160 *e*Pn **Pn 17 38 58.8 -2.9**
LPAZ La Paz 11.56 353 *jj e*P **Pn 17 39 09.7 -0.8**
LPAZ La Paz 11.56 353 P **Pn 17 39 08.5 -2.1**
comp=Z,14nm,0.3s,baz=179,slow=6.8,SNR=107
LPAZ S **Sn 17 41 12.2 -6.9**
comp=Z,2.4nm,0.3s,baz=146,slow=15,SNR=2.3
SIV San Ignacio 12.88 25 P **Pn 17 39 25.4 -1.5**
comp=Z,15nn,0.3s,baz=225,slow=14,SNR=715
PLCA Paso Flores 13.26 193 P **Pn 17 39 28.4 -3.2**
comp=Z,3.2nn,0.3s,baz=31,slow=11,SNR=95
PLCA S **Sn 17 41 55.8 -2.8**
comp=Z,0.2nn,0.3s,baz=27,slow=18,SNR=1.5
PLCA ScP **ScP 17 48 05.9 +0.8**
comp=Z,0.5nn,0.3s,baz=86,slow=2.1,SNR=3.5
SPB Sao Paulo 17.86 81 *e*P **P 17 40 26.5 +0.3**
comp=Z,519nm,0.9s
NNA Nana 18.41 327 P **P 17 40 32.7 +0.5**
comp=Z,1.0nm,0.3s,baz=148,slow=11,SNR=4.1
NNA ScP **ScP 17 48 16.0 +0.7**
comp=Z,0.7nm,0.3s,baz=187,slow=6.3,SNR=3.9
NNA Nana 18.41 327 *e*P **Pn 17 40 33.9 -0.5**
comp=Z,157nm,1.5s
NNA ScP **ScP 17 48 16.0 +0.7**
SAML Samuel 19.07 11 *e*P **P 17 40 39.0 -0.5**
comp=Z,623nm,0.8s
CHRN Cochrane 19.93 192 *e*P **P 17 40 47.0 -1.4**
comp=Z,656nm,0.8s
BDFB Brasilia 21.14 59 P **P 17 41 01.7 0.0**
comp=Z,4µm,0.3s,baz=167,slow=0.6,SNR=2.1
ATAH Atahualpa 23.38 330 P **P 17 41 23.5 -0.3**
comp=Z,9.8nm,0.8s,baz=180,slow=12,SNR=4.8
ATAH PP **PnPn 17 42 01.3 -0.8**
comp=Z,23nm,0.8s,baz=164,slow=7.3,SNR=5.3
EFI East Falkland 24.69 167 *d i*P **P 17 41 34.3 -0.6**
EFI East Falkland 24.69 167 *e*P **P 17 41 34.2 -0.7**
comp=Z,1µm,0.8s
EFI *e*PcP **PcP 17 45 08.1 +0.8**
USHA Ushuaia 27.01 182 P **P 17 41 54.9 -0.9**
comp=Z,182nm,0.4s,baz=354,slow=8.0,SNR=64
PTGA Pitinga 27.71 15 P **P 17 42 01.4 -1.0**
comp=Z,516nm,0.6s,baz=198,slow=9.8,SNR=717
PTGA S **S 17 46 31.5 -0.7**
comp=Z,18nm,0.8s,baz=325,slow=19,SNR=3.7
PTGA Pitinga 27.71 15 *e*P **P 17 42 01.6 -0.8**
comp=Z,555nm,0.6s
PTGA S **S 17 46 31.5 -0.7**
OTAV Otavalo 30.10 336 *e*P **P 17 42 25.2 +1.1**
OTAV Otavalo 30.10 336 *e*P **P 17 42 24.8 +0.7**
comp=Z,16nm,0.8s
FLOC Florencia 30.49 342 *e*P **P 17 42 26.8 -0.2**
CMBC Cumbal 30.54 338 *e*P **P 17 42 30.1 +2.2**
POPC Popayan, Colom 31.69 341 *e*P **P 17 42 40.2 +2.4**
PRAC Prado 32.34 345 *e*P **P 17 42 41.6 -1.6**
PRAC Prado 32.34 345 *e*P **P 17 42 43.1 -0.1**
comp=Z,42nm,0.8s
CHIC Chingaza 32.98 347 *e*P **P 17 42 48.6 -0.6**
MALC Bahia Malaga 33.28 340 *e*P **P 17 42 54.0 +2.7**
ROSC El Rosal 33.30 346 P **P 17 42 51.1 -0.9**
comp=Z,17nm,0.8s,baz=171,slow=11,SNR=12
ROSC LR LR 17 56 29.5
comp=Z,327nm,20.1s,baz=226,slow=36
ROSC El Rosal 33.30 346 *e*P **P 17 42 53.1 +1.1**
comp=Z,23nm,0.9s
GUYC Guyana, Colomb 33.92 344 *e*P **P 17 42 55.6 -1.8**
RUSC La Rusia 34.09 349 *e*P **P 17 42 56.8 -2.0**
RUSC La Rusia 34.09 349 *e*P **P 17 42 58.6 -0.3**
comp=Z,75nm,0.6s
NORC Norcasia 34.12 345 *e*P **P 17 42 58.0 -0.6**
HOPE Hope Point 34.41 149 *e*P **P 17 43 01.0 +0.3**
comp=Z,414nm,1.3s
BARC Barichara 34.79 349 *e*P **P 17 43 01.8 -2.9**
HELC Santa Helena 34.88 345 *e*P **P 17 43 03.4 -2.2**
HELC Santa Helena 34.88 345 *e*P **P 17 43 04.5 -1.1**
comp=Z,283nm,0.9s
BRRC Barranca, Sant 35.39 348 *e*P **P 17 43 06.7 -2.8**
PAMC Pamplona, Colo 35.44 350 *e*P **P 17 43 09.2 -1.3**
CBRI Barrientos, No 35.83 350 *e*P **P 17 43 11.3 -2.1**
GRMC Gramalote, San 35.83 350 *e*P **P 17 43 16.2 +2.8**
OCAC Ocana 36.42 349 *e*P **P 17 43 15.0 -3.5**
RCBR Riachuelo 36.51 59 P **P 17 43 18.1 -1.1**
comp=Z,224nm,0.8s,baz=220,slow=10,SNR=46
RCBR Riachuelo 36.51 59 *e*P **P 17 43 18.3 -0.8**
comp=Z,205nm,0.8s
SDV Santo Domingo 36.70 353 P **P 17 43 19.6 -1.2**
comp=Z,74nm,0.5s,baz=174,slow=8.8,SNR=104
SDV PP **PP 17 44 46.3 -1.8**
comp=Z,25nm,0.9s,baz=200,slow=12,SNR=2.7
SDV ScP **ScP 17 49 11.8 +1.2**
comp=Z,24nm,1.0s,baz=288,slow=5.6,SNR=6.2
SDV Santo Domingo 36.70 353 *e*P **P 17 43 18.2 -2.6**
PMSA Palmer Station 36.99 178 P **P 17 43 22.6 +0.1**
comp=Z,133nm,0.7s,baz=5.1,slow=6.7,SNR=290
PMSA PcP **PcP 17 45 40.3 +0.6**
comp=Z,14nm,0.6s,baz=85,slow=1.7,SNR=4.3
PMSA S **S 17 48 57.5 +2.6**
comp=Z,3.6nm,0.6s,baz=297,slow=16,SNR=5.2
PMSA Palmer Station 36.99 178 *e*P **P 17 43 22.5 0.0**
comp=Z,172nm,0.8s
PMSA PcP **PcP 17 45 40.3 +0.6**
PMSA S **S 17 48 57.5 +2.6**
PCRV Puerto La Cruz 37.83 3 P **P 17 43 30.0 -0.1**
comp=Z,68nm,0.6s,baz=170,slow=3.9,SNR=47
PCRV S **S 17 49 09.2 +0.5**
comp=Z,3.2nn,0.6s,baz=174,slow=19,SNR=1.8
CODC Agust`›n Codaz 38.11 349 *e*P **P 17 43 28.9 -3.5**
SJCC San Jacinto, C 38.39 346 *e*P **P 17 43 39.0 +4.1**
GRGR Grenville 40.02 8 *e*P **P 17 43 47.9 -0.4**
comp=Z,1µm,0.6s
SVB Belmont 41.20 8 *e*P **P 17 43 57.0 -0.9**
comp=Z,536nm,0.3s
FDF Fort de France 42.65 8 *e*P **P 17 44 08.7 -1.0**
FDF Fort de France 42.65 8 *e*P **P 17 44 08.7 -1.0**
comp=Z,417nm,0.7s
GDHS Morne Mazeau, 44.10 7 *e*P **P 17 44 20.0 -1.4**
SABA Saba 45.30 5 *e*P **P 17 44 29.5 -1.3**
comp=Z,374nm,0.7s
CDVI St. Croix 45.35 3 *e*P **P 17 44 30.6 -0.5**
comp=Z,168nm,0.6s
ANWB Willy Bob 45.48 7 *e*P **P 17 44 29.7 -2.4**
comp=Z,370nm,0.5s
CELP Cerrillos 45.63 0 *e*P **P 17 44 31.2 -2.2**
SJG San Juan 45.67 1 P **P 17 44 31.6 -2.1**
comp=Z,42nm,0.6s,baz=155,slow=7.5,SNR=26
SJG PP **PP 17 46 22.0 -2.2**
comp=Z,60nm,0.8s,baz=163,slow=6.5,SNR=6.9
SJG San Juan 45.67 1 *e*P **P 17 44 31.9 -1.8**
comp=Z,84nm,0.6s
SJG PP **PP 17 46 22.0 -2.2**
HUMP Col San Antoni 45.71 1 *e*P **P 17 44 31.0 -2.9**
comp=Z,42nm,0.7s
SMRT St. Maarten 45.74 5 *e*P **P 17 44 31.4 -2.8**
comp=Z,74nm,0.8s
MPR Mayaguez 45.77 359 *e*P **P 17 44 32.2 -2.3**
comp=Z,43nm,0.6s
CBYP Canovanas 45.84 1 *e*P **P 17 44 32.8 -2.2**
comp=Z,180nm,1.2s
STVI Saint Thomas 45.94 2 *e*P **P 17 44 33.6 -2.2**
comp=Z,59nm,0.6s
IDE Isla Desecheo 45.95 359 *e*P **P 17 44 33.9 -2.0**
AGP Aguadilla 45.97 359 *e*P **P 17 44 34.0 -2.0**
comp=Z,94nm,0.4s
TGUH Tegucigalpa,Un 46.17 332 *e*P **P 17 44 38.5 +0.9**
comp=Z,44nm,0.8s
ABVI Anegada Island 46.34 3 *e*P **P 17 44 36.9 -2.0**
comp=Z,270nm,0.8s
SDDR Presa de Saban 46.75 354 *e*P **P 17 44 41.8 -0.4**
comp=Z,34nm,0.8s
MTDJ Mount Denham 46.97 346 *e*P **P 17 44 44.7 +0.8**
comp=Z,239nm,0.8s
MTDJ *e*pP **pP 17 45 23.2 +1.6**
GTBY Guantanamo Bay 48.17 349 *e*P **P 17 44 53.2 +0.2**
comp=Z,106nm,0.8s
GRTK Grand Turk 49.24 355 *e*P **P 17 45 01.1 0.0**
comp=Z,138nm,0.8s

CMIG Matias Romero 52.34 325 P **P 17 45 23.2 -1.2**
comp=Z,1.7nm,0.6s,baz=204,slow=0.7,SNR=2.2
CMIG pP **pP 17 46 02.9 +0.1**
comp=Z,14nm,1.1s,baz=140,slow=6.1,SNR=4.8
H10N3 ASCENSION HYDR 53.07 78 P **P 17 45 30.6 +1.0**
baz=225,slow=6.5,SNR=3.2
H10N1 ASCENSION HYDR 53.09 78 P **P 17 45 30.7 +1.0**
baz=225,slow=6.5,SNR=7.7
H10N2 ASCENSION HYDR 53.09 78 P **P 17 45 30.7 +1.0**
baz=225,slow=6.5,SNR=4.8
ASCN Ascension 53.15 78 P **P 17 45 29.0 -1.6**
comp=Z,206nm,0.6s
VNA1 Neumayer--Stat 53.67 159 P **P 17 45 34.4 +0.9**
SNAA Sanae 55.67 160 P **P 17 45 48.2 +0.2**
SNAA Sanae 55.67 160 P **P 17 45 48.0 +0.1**
comp=Z,246nm,0.6s,baz=282,slow=7.5,SNR=1348
SNAA Sanae 55.67 160 *d i*P **P 17 45 47.7 -0.2**
SNAA Sanae 55.67 160 *e*P **P 17 45 48.0 +0.1**
comp=Z,302nm,0.7s
DWPF Disney Wildern 57.39 345 *e*P **P 17 45 59.7 -0.8**
DWPF Disney Wildern 57.39 345 *e*P **P 17 46 01.2 +0.7**
comp=Z,72nm,1.0s
BBSR BB Station 59.90 2 *e*P **P 17 46 17.3 -0.4**
comp=Z,62nm,0.8s
NVL N'lazarevskaya 60.23 158 *e*P **P 17 46 20.4 +0.8**
ZAIG Zacatecas 61.07 322 *e*P **P 17 46 28.3 +2.0**
ZAIG *e*pP **PcP 17 47 08.6 +0.9**
TIGA Tifton 61.10 344 P **P 17 46 25.7 -0.2**
baz=163
RGRS Roger Stewart 61.75 347 *e*P **P 17 46 30.9 +0.7**
comp=Z,508nm,0.8s
BRAL Brewton 61.80 340 *e*P **P 17 46 30.8 +0.2**
BRAL *e*pP **pP 17 47 11.4 +1.2**
NHSC New Hope 61.94 347 *e*P **P 17 46 32.6 +1.2**
NHSC *e*pP **pP 17 47 12.4 +1.3**
347A Saraland 62.48 339 P **P 17 46 34.9 -0.2**
baz=158
034A Hebbronville 62.64 328 P **P 17 46 37.6 +1.3**
baz=148
GOGA Godfrey 62.95 344 *e*P **P 17 46 37.8 -0.4**
GOGA *e**PP **pP 17 47 17.4 -0.5**
GOGA P pmax pmax
comp=Z,19nm,0.9s
GOGA Godfrey 62.95 344 *e*P **P 17 46 37.8 -0.4**
comp=Z,19nm,0.9s
GOGA *e*pP **pP 17 47 17.4 -0.5**
JSC Jenkinsville 63.30 347 *e*P **P 17 46 40.9 +0.4**
JSC pmax pmax
comp=Z,21nm,0.8s
JSC Jenkinsville 63.30 347 *e*P **P 17 46 40.9 +0.4**
comp=Z,21nm,0.8s
933A Laredo 63.38 328 P **P 17 46 42.4 +1.2**
baz=148
834A Tilden 63.47 329 P **P 17 46 43.4 +1.7**
baz=148
245A Little AP, Sta 63.50 338 P **P 17 46 42.6 +0.7**
baz=157
736A Circle Diamond 63.52 330 P **P 17 46 43.8 +1.8**
baz=150,SNR=9.1
LRAL Lakeview Retre 63.53 341 *e*P **P 17 46 41.6 -0.4**
comp=Z,25nm,1.1s
342A Flagon Creek P 63.74 336 P **P 17 46 44.8 +1.4**
baz=155,SNR=8.6
146A Union 63.78 339 P **P 17 46 44.2 +0.5**
baz=158
243A Waterproof 63.90 337 P **P 17 46 45.7 +1.3**
baz=156
636A Smothers Creek 63.97 331 P **P 17 46 46.4 +1.5**
baz=150
Z47A Carrollton 64.00 340 P **P 17 46 44.7 -0.4**
baz=159,SNR=9.8
Z48A Northport 64.01 341 P **P 17 46 44.5 -0.7**
baz=159,SNR=14
145A Houston Renfro 64.03 338 P **P 17 46 45.8 +0.5**
baz=157,SNR=6.4
833A Chaparral WMA, 64.03 328 P **P 17 46 46.4 +1.0**
baz=148,SNR=9.1
734A La Parita Cree 64.09 329 P **P 17 46 46.7 +0.9**
baz=149
KMSC Kings Mountain 64.14 347 P **P 17 46 46.1 +0.2**
baz=166,SNR=12
KMSC Kings Mountain 64.14 347 *e*P **P 17 46 46.0 0.0**
comp=Z,24nm,0.9s
439A Center Grove, 64.16 333 P **P 17 46 47.8 +1.6**
baz=152,SNR=6.9
537A Green Hill Far 64.17 332 P **P 17 46 47.5 +1.3**
baz=151
144A Alexander Plac 64.22 338 P **P 17 46 47.8 +1.2**
baz=157
Z46A Louisville 64.26 339 P **P 17 46 47.3 +0.5**
baz=158,SNR=5.1
832A Faith Ranch, C 64.27 328 P **P 17 46 48.1 +1.1**
baz=147,SNR=10.0
242A Grayson 64.30 336 P **P 17 46 48.3 +1.3**
baz=155
536A Bastrop 64.48 331 P **P 17 46 49.2 +0.9**
baz=150
241A Mo Tay, Goldon 64.55 335 P **P 17 46 50.1 +1.4**
baz=154,SNR=5.2
339A Huntington 64.55 334 P **P 17 46 50.0 +1.3**
baz=153
Y47A UCPARC, Winfie 64.59 341 P **P 17 46 48.6 -0.3**
baz=159,SNR=36
143A Socs Landing, 64.62 337 P **P 17 46 50.1 +1.0**
baz=156,SNR=9.4
Z45A Winona 64.66 339 P **P 17 46 50.1 +0.7**
baz=157
Z44A Pea Ridge, Bel 64.82 338 P **P 17 46 50.9 +0.5**
baz=157,SNR=7.3
Y46A Houston 64.87 340 P **P 17 46 50.2 -0.5**
baz=158,SNR=12
240A Hunter Patters 64.88 335 P **P 17 46 52.3 +1.5**
baz=154
633A Saathoff Ranch 64.89 329 P **P 17 46 51.8 +0.8**
baz=148,SNR=10
NATX Nacogdoches 64.97 334 P **P 17 46 52.5 +1.1**
baz=155,SNR=5.1
NATX Nacogdoches 64.97 334 *e*P **P 17 46 52.7 +1.3**
NATX *e*pP **pP 17 47 33.0 +1.6**
534A Blanco 65.06 330 P **P 17 46 51.9 -0.2**
baz=149
141A Papa Simpson, 65.06 336 P **P 17 46 53.2 +1.2**
baz=154,SNR=5.7
337A Centerville 65.07 333 P **P 17 46 53.5 +1.5**
baz=152
Y45A Yeager Farm, C 65.07 339 P **P 17 46 52.3 +0.3**
baz=158,SNR=11
CPCT Cooper Cave 65.15 344 *e*P **P 17 46 52.2 -0.3**
comp=Z,17nm,0.8s
TKL Tuckaleechee C 65.17 345 P **P 17 46 52.2 -0.5**
comp=Z,22nm,0.8s,baz=163,slow=7.4,SNR=38
TKL pP **pP 17 47 32.1 -0.5**
comp=Z,21nm,0.9s,baz=162,slow=8.2,SNR=4.2
TKL Tuckaleechee C 65.17 345 *e*P **P 17 46 52.2 -0.5**
comp=Z,31nm,1.0s
TKL *e*pP **pP 17 47 32.1 -0.5**
TKL *es*P **sP 17 47 49.4 -1.5**
SWET Sewanee 65.29 343 *e*P **P 17 46 53.3 -0.2**
comp=Z,15nm,0.8s
140A Cam and Jess, 65.34 335 P **P 17 46 55.0 +1.3**
baz=154
533A Kerrville 65.35 329 P **P 17 46 54.9 +0.9**
baz=149
X45A UM Field Stati 65.54 339 P **P 17 46 55.0 0.0**
baz=158,SNR=5.5
Y43A Makayla and Ka 65.56 338 P **P 17 46 55.8 +0.6**
baz=156
Z41A Richland Creek 65.61 336 P **P 17 46 56.3 +0.8**
baz=155
237A Washetta, Mont 65.64 333 P **P 17 46 56.8 +1.1**
baz=152
434A Burnet 65.64 330 P **P 17 46 56.0 +0.2**
baz=149
Y42A Garnett, Star 65.78 337 P **P 17 46 57.2 +0.7**
baz=156
Z40A Long Farm, Mag 65.83 336 P **P 17 46 58.2 +1.2**
baz=154,SNR=8.9
URVA University of 65.85 351 *e*P **P 17 46 57.5 +0.6**
CCAR Cane Creek 65.85 337 *e*P **P 17 46 58.2 +1.2**
comp=Z,125nm,1.4s
236A Katherine and 65.93 332 P **P 17 46 58.7 +1.1**
baz=151
433A Art 65.95 330 P **P 17 46 58.3 +0.5**
baz=149,SNR=23
TZTN Tazewell 65.97 345 *e*P **P 17 46 57.2 -0.6**
comp=Z,38nm,1.4s
BLA Blacksburg 65.97 348 *e*P **P 17 46 58.5 +0.7**

BLA pmax pmax
comp=Z,36nm,0.7s
BLA Blacksburg 65.97 348 *e*P **P 17 46 58.5 +0.7**
comp=Z,36nm,0.7s
JCT Junction City 66.04 329 P **P 17 46 59.1 +0.7**
baz=148,SNR=9.7
JCT Junction City 66.04 329 *e*P **P 17 46 59.1 +0.7**
JCT pmax pmax
comp=Z,25nm,0.8s
JCT Junction City 66.04 329 *e*P **P 17 46 59.1 +0.7**
comp=Z,25nm,0.8s
334A Lometa 66.07 331 P **P 17 46 59.0 +0.5**
baz=150,SNR=8.4
X43A Marvell 66.10 338 P **P 17 46 59.3 +0.7**
baz=157,SNR=5.3
Y41A Eaglette Beard 66.11 337 P **P 17 46 59.5 +0.8**
baz=155
WLAR White Oak Lake 66.11 336 *e*P **P 17 47 00.1 +1.4**
comp=Z,197nm,1.2s
137A Heron Place, G 66.14 333 P **P 17 46 59.8 +0.9**
baz=152,SNR=5.5
W45A Hickory Valley 66.15 340 P **P 17 46 58.4 -0.5**
baz=158,SNR=7.9
WHTX Lake Whitney, 66.31 332 P **P 17 47 00.4 +0.4**
baz=150,SNR=6.2
WHTX Lake Whitney, 66.31 332 *e*P **P 17 47 00.6 +0.6**
WHTX *e*pP **pP 17 47 41.5 +1.4**
333A Richland Sprin 66.39 330 P **P 17 47 01.1 +0.5**
baz=149,SNR=24
Z38A Mt. Pleasant 66.42 334 P **P 17 47 01.5 +0.9**
baz=153
Y40A Okolona 66.47 336 P **P 17 47 01.7 +0.8**
baz=154,SNR=9.6
234A Clairette 66.61 331 P **P 17 47 02.5 +0.6**
baz=150,SNR=14
V45A Humboldt 66.63 340 P **P 17 47 01.9 0.0**
baz=158
WVT Waverly 66.66 341 *e*P **P 17 47 01.6 -0.6**
WVT *e**PP **pP 17 47 41.8 -0.5**
WVT pmax pmax
comp=Z,74nm,0.7s
WVT Waverly 66.66 341 *e*P **P 17 47 01.6 -0.6**
comp=Z,74nm,0.7s
WVT *e*pP **pP 17 47 41.8 -0.5**
Y39A Lockesburg 66.69 335 P **P 17 47 03.1 +0.7**
baz=154,SNR=16
X40A Basin Creek Fa 66.74 337 P **P 17 47 03.2 +0.6**
baz=155
UALR University of 66.83 337 *e*P **P 17 47 03.4 +0.2**
comp=Z,19nm,0.8s
UALR *e*pP **pP 17 47 43.7 +0.3**
Y38A Idabel 66.92 335 P **P 17 47 04.3 +0.5**
baz=153
233A Rising Star 66.95 331 P **P 17 47 04.6 +0.5**
baz=149,SNR=9.8
TX31 Lajitas Ar. Si 66.95 325 *e*P **P 17 47 04.9 +0.6**
TXAR Lajitas Array 66.95 325 P **P 17 47 04.8 +0.5**
comp=Z,1.7nm,0.6s,baz=153,slow=8.2,SNR=19
TXAR PKPPKP **P'P'df 18 15 30.4 +0.8**
comp=Z,1.3nm,0.8s,baz=298,slow=2.7,SNR=8.9
W42A Bald Knob 67.00 338 P **P 17 47 04.3 0.0**
baz=156
Z36A Blue Ridge 67.00 333 P **P 17 47 05.0 +0.6**
baz=152,SNR=9.0
MIAR Mount Ida 67.05 336 P **P 17 47 04.9 +0.2**
baz=154,SNR=14
MIAR Mount Ida 67.05 336 *e*P **P 17 47 04.9 +0.2**
MIAR *e**PP **pP 17 47 45.7 +0.8**
MIAR Mount Ida 67.05 336 *e*P **P 17 47 04.9 +0.2**
MIAR *e*pP **pP 17 47 45.7 +0.8**
134A White-Moore Ra 67.07 331 P **P 17 47 05.2 +0.4**
baz=150,SNR=6.7
W41B Gary Mavity, V 67.16 337 P **P 17 47 05.4 +0.1**
baz=156,SNR=15
UTMT University of 67.16 341 *e*P **P 17 47 05.6 +0.4**
comp=Z,152nm,1.0s
X39A Fountain Ranch 67.22 336 P **P 17 47 06.5 +0.8**
baz=154,SNR=35
GLAT Glass 67.22 340 *e*P **P 17 47 06.1 +0.5**
X301 Greenbrier Sit 67.27 337 *e*P **P 17 47 06.3 +0.3**
comp=Z,79nm,1.5s
WHAR Wooly Hollow 67.27 337 *e*P **P 17 47 06.5 +0.5**
comp=Z,43nm,1.0s
X201 Greenbrier Sit 67.30 337 *e*P **P 17 47 06.8 +0.6**
X201 *e*pP **pP 17 47 47.2 +0.8**
X201 *es*P **sP 17 48 06.3 +1.7**
Z35A Perchaven, San 67.39 333 P **P 17 47 05.7 +0.7**
baz=151,SNR=6.7
V42A Cord 67.44 338 P **P 17 47 06.8 -0.3**
baz=156,SNR=10
W40A Ferguson Farm, 67.45 337 P **P 17 47 07.9 +0.8**
baz=155,SNR=13
133A Hamilton Ranch 67.46 331 P **P 17 47 08.0 +0.7**
baz=149
SDMD Soldier's Deli 67.56 352 *e*P **P 17 47 08.9 +1.2**
comp=Z,16nm,0.8s
X38A Whitesboro 67.62 335 P **P 17 47 09.2 +0.9**
baz=153,SNR=9.7
U43A Rector 67.65 339 P **P 17 47 08.8 +0.5**
baz=157
V41A Mountainview 67.68 338 P **P 17 47 08.6 0.0**
baz=156,SNR=28
Z34A Collier Ranch, 67.70 332 P **P 17 47 09.4 +0.6**
baz=150,SNR=14
W39A Magazine 67.71 336 P **P 17 47 09.6 +0.8**
baz=154,SNR=20
PARMO Parma 67.72 340 *e*P **P 17 47 09.6 +0.8**
X37A Clayton 67.75 335 P **P 17 47 09.6 +0.5**
baz=153,SNR=15
ABTX Abilene, Hawle 67.79 330 P **P 17 47 10.1 +0.7**
baz=149
ABTX Abilene, Hawle 67.79 330 *e*P **P 17 47 10.1 +0.7**
comp=Z,48nm,1.2s
Y35A Marietta 67.80 333 P **P 17 47 10.1 +0.7**
baz=151,SNR=5.8
W38A Poteau 67.86 336 P **P 17 47 10.7 +1.0**
baz=154,SNR=16
U42A Revenden 67.90 339 P **P 17 47 09.7 -0.2**
baz=157,SNR=15
PSUB Penn St. - Bra 67.90 353 *e*P **P 17 47 10.8 +1.0**
PSUB *e*pP **pP 17 47 51.1 +0.9**
V40A Witts Springs 67.92 337 P **P 17 47 10.1 0.0**
baz=155,SNR=20
Z33A Whitaker Ranch 67.98 331 P **P 17 47 11.1 +0.6**
baz=150,SNR=19
PBMO Poplar Bluff 68.03 340 *e*P **P 17 47 10.8 +0.1**
comp=Z,66nm,0.8s
T44A Benton 68.06 340 P **P 17 47 11.0 +0.1**
baz=158
MVL Millersville 68.08 352 *e*P **P 17 47 12.1 +1.1**
comp=Z,27nm,1.0s
U41A Viola 68.11 338 P **P 17 47 11.3 0.0**
baz=156,SNR=22
X36A Centrahoma 68.11 334 P **P 17 47 11.4 +0.1**
baz=152,SNR=23
Y34A Reagan Ranch, 68.14 332 P **P 17 47 11.9 +0.4**
baz=150,SNR=8.7
X35A Drake 68.21 333 P **P 17 47 11.8 -0.2**
baz=151,SNR=21
WCI Wyandotte Cave 68.23 343 *e*P **P 17 47 11.1 -0.9**
WCI pmax pmax
comp=Z,26nm,0.5s
WCI Wyandotte Cave 68.23 343 *e*P **P 17 47 11.1 -0.9**
comp=Z,26nm,0.5s
V39A Pettigrew 68.24 337 P **P 17 47 12.6 +0.5**
baz=154,SNR=34
W37B Quinton 68.26 335 P **P 17 47 12.9 +0.7**
baz=153,SNR=16
T43A Greenville 68.27 340 P **P 17 47 12.0 -0.2**
baz=158
S45A Carrier Mills 68.32 341 P **P 17 47 11.9 -0.7**
baz=159,SNR=6.3
LIC Lamto 68.42 70 *e*P **P 17 47 12.7 -1.0**
comp=Z,203nm,0.7s
U40A Yellville 68.43 338 P **P 17 47 13.2 0.0**
baz=155,SNR=24
S44A Carbondale 68.53 341 P **P 17 47 13.3 -0.5**
baz=158,SNR=6.3
V38A Canehill 68.53 336 P **P 17 47 14.1 +0.2**
baz=154,SNR=36
SIUC Southern Illin 68.54 341 *e*P **P 17 47 13.4 -0.4**
comp=Z,90nm,0.9s
BRNJ Basking Ridge 68.56 354 *e*P **P 17 47 15.2 +1.4**
comp=Z,72nm,1.2s
LUPA Lehigh Univers 68.56 353 *e*P **P 17 47 14.9 +1.0**
LUPA *e*pP **pP 17 47 55.9 +1.6**
W36A Wetumka 68.56 334 P **P 17 47 13.9 -0.2**

baz=152
O56A **Blue Knob Stat** 68.64 350 P P 17 47 14.6 +0.1
baz=169,SNR=16
TIC **Toumodi** 68.65 70 eP P 17 47 14.3 -0.9
S43A **Fulton Ridge,** 68.66 340 P P 17 47 14.0 -0.6
baz=158,SNR=14
U39A **Green Forest** 68.67 337 P P 17 47 14.9 +0.1
baz=155,SNR=28
T41A **Mountain View** 68.70 339 P P 17 47 15.0 +0.1
baz=156,SNR=51
X34A **Smith Ranch, M** 68.73 333 P P 17 47 15.7 +0.5
baz=150,SNR=13
KIC **Kosan Boka** 68.73 70 eP P 17 47 14.7 -0.9
comp=Z,266nm,0.7s
HHAR **Hobbs** 68.74 337 eP P 17 47 15.4 +0.2
comp=Z,62nm,1.3s
DBIC **Dimbokro** 68.80 70 P P 17 47 15.3 -0.7
comp=Z,92nm,0.5s,baz=213,slow=6.9,SNR=228
DBIC S S 17 56 04.7 -1.7
comp=Z,6.0nm,1.0s,baz=327,slow=17,SNR=4.5
DBIC **Dimbokro** 68.80 70 eP P 17 47 15.4 -0.7
comp=Z,120nm,0.8s
DBIC S S 17 56 04.7 -1.7
V37A **Hulbert** 68.82 335 P P 17 47 15.9 +0.2
baz=153,SNR=23
W35A **Tecumseh** 68.83 334 P P 17 47 15.3 -0.4
baz=152,SNR=5.9
SSPA **Standing Stone** 68.91 351 eP P 17 47 16.9 +0.8
comp=Z,45nm,1.1s
N59A **State Game Lan** 68.92 353 P P 17 47 17.2 +1.1
baz=171,SNR=18
ODNJ **Ogdensburg** 68.95 354 eP P 17 47 17.1 +0.8
comp=Z,37nm,1.2s
R44A **Waltonville** 68.99 341 P P 17 47 15.8 -0.8
baz=159,SNR=6.9
V36A **Jenks** 69.03 335 P P 17 47 16.8 -0.2
baz=152,SNR=17
U38A **Gravette** 69.04 336 P P 17 47 17.3 +0.2
baz=154,SNR=18
T40A **Mansfield** 69.04 338 P P 17 47 17.0 0.0
baz=156,SNR=18
S42A **Caledonia** 69.06 340 P P 17 47 16.4 -0.7
baz=157
TUL1 **Leonard** 69.08 335 P P 17 47 17.5 +0.2
baz=152,SNR=7.2
TUL1 **Leonard** 69.08 335 eP P 17 47 17.6 +0.2
comp=Z,117nm,1.5s
X32A **Elmer** 69.17 332 P P 17 47 18.3 +0.4
baz=149
OLIL **Olney** 69.18 342 eP P 17 47 16.5 -1.3
comp=Z,42nm,0.9s
BLO **Bloomington** 69.18 344 eP P 17 47 17.2 -0.6
BLO pmax pmax
comp=Z,52nm,1.2s
BLO **Bloomington** 69.18 344 eP P 17 47 17.2 -0.6
comp=Z,52nm,1.2s
S41A **Jillco Farms,** 69.19 339 P P 17 47 18.0 +0.1
baz=156,SNR=83
T39A **Clever** 69.22 337 P P 17 47 18.1 0.0
baz=155,SNR=13
WMOK **Wichita Mounta** 69.23 332 P P 17 47 18.2 -0.1
baz=150,SNR=11
WMOK **Wichita Mounta** 69.23 332 eP P 17 47 18.2 -0.1
WMOK pmax pmax
comp=Z,34nm,1.1s
WMOK **Wichita Mounta** 69.23 332 eP P 17 47 18.2 -0.1
comp=Z,34nm,1.1s
U37A **Salina** 69.27 336 P P 17 47 18.7 +0.3
baz=153,SNR=20
V35A **Meyer Ranch, C** 69.35 334 P P 17 47 19.0 +0.1
baz=152,SNR=11
ACSO **Alum Creek Sta** 69.39 347 eP P 17 47 19.1 0.0
comp=Z,47nm,1.0s
S40A **Lebanon** 69.44 338 P P 17 47 19.8 +0.3
baz=156,SNR=38
W33A **Caddo, Fort Co** 69.46 333 P P 17 47 20.7 +1.1
baz=150,SNR=13
U36A **Oologah** 69.49 335 P P 17 47 20.0 +0.3
baz=153
R42A **Luebbering** 69.53 340 P P 17 47 19.9 0.0
baz=157
T38A **Diamond** 69.54 337 P P 17 47 20.4 +0.3
baz=154,SNR=22
BRYW **Bryant College** 69.54 356 eP P 17 47 21.2 +1.2
comp=Z,71nm,0.8s
BRYW epP pP 17 48 00.9 +0.5
N54A **Moraine State** 69.55 349 P P 17 47 20.7 +0.6
baz=167,SNR=22
Q44A **Meyer Farm, Va** 69.59 342 P P 17 47 19.3 -0.9
baz=159
V34A **Guthrie** 69.68 334 P P 17 47 21.0 0.0
baz=151
V34A **Guthrie** 69.68 334 eP P 17 47 21.4 +0.5
comp=Z,72nm,1.0s
R41A **Rosebud** 69.72 339 P P 17 47 21.1 -0.1
baz=157
MNTX **Cornudas Mount** 69.73 325 P P 17 47 21.6 +0.2
baz=144,SNR=7.9
MNTX **Cornudas Mount** 69.73 325 eP P 17 47 21.4 0.0
comp=Z,30nm,1.1s
W32A **Sentinel** 69.76 332 P P 17 47 22.1 +0.6
baz=150,SNR=18
S39A **Bolivar** 69.80 338 P P 17 47 22.0 +0.3
baz=155,SNR=52
Q43A **New Douglas** 69.82 341 P P 17 47 21.2 -0.5
baz=158
T37A **Cheneyville 18** 69.84 336 P P 17 47 22.4 +0.5
baz=154,SNR=20
U35A **Pawnee** 69.84 335 P P 17 47 22.2 +0.3
baz=152
SYO **Syowa Base** 69.90 158 i P P 17 47 20.8 -1.1
SYO **Syowa Base** 69.90 158 i PcP PcP 17 47 40.0 -3.2
S38A **Stockton** 69.94 337 P P 17 47 22.7 +0.1
baz=154,SNR=32
QUA2 **Belchertown** 69.95 356 eP P 17 47 23.4 +0.9
comp=Z,19nm,1.0s
V33A **Lossen Ranch,** 69.97 333 P P 17 47 23.2 +0.5
baz=150
SBA **Scott Base** 69.99 190 eP P 17 47 23.7 +1.4
SBA pmax pmax
comp=Z,60nm,0.8s
SBA **Scott Base** 69.99 190 eP P 17 47 23.7 +1.4
comp=Z,60nm,0.8s
WES **Weston** 70.00 356 eP P 17 47 23.7 +1.0
WES pmax pmax
comp=Z,39nm,1.0s
WES **Weston** 70.00 356 eP P 17 47 23.7 +1.0
comp=Z,39nm,1.0s
R40A **Maddies Statio** 70.00 339 P P 17 47 22.8 0.0
baz=156,SNR=18
M54A **Oil Creek Stat** 70.03 350 P P 17 47 23.3 +0.3
baz=168,SNR=19
Q42A **Golden Eagle** 70.03 340 P P 17 47 22.8 -0.3
baz=158,SNR=9.1
HRV **Adam Dziewonsk** 70.13 356 eP P 17 47 24.8 +1.3
HRV pmax pmax
comp=Z,47nm,0.9s
HRV **Adam Dziewonsk** 70.13 356 eP P 17 47 24.8 +1.3
comp=Z,47nm,0.9s
T36A **Boggs Farm, Ca** 70.13 335 P P 17 47 23.9 +0.2
baz=153,SNR=6.4
V32A **Arapaho** 70.19 332 P P 17 47 25.2 +1.1
baz=150
BINY **Binghamton** 70.21 353 eP P 17 47 24.8 +0.8
comp=Z,96nm,1.5s
U34A **Anderson Ranch** 70.21 334 P P 17 47 24.7 +0.5
baz=151
U34A **Anderson Ranch** 70.21 334 eP P 17 47 24.9 +0.7
comp=Z,79nm,1.0s
T35A **Sooner Cattle** 70.24 335 P P 17 47 24.7 +0.4
baz=152
ALLY **Alegheny Colle** 70.24 349 eP P 17 47 24.6 +0.3
comp=Z,74nm,1.1s
R39A **Chumby, Stover** 70.27 338 P P 17 47 24.8 +0.3
baz=155,SNR=13
MSTX **Muleshoe** 70.33 329 P P 17 47 25.5 +0.4
baz=146,SNR=9.8
MSTX **Muleshoe** 70.33 329 eP P 17 47 25.6 +0.4
comp=Z,31nm,1.0s
S37A **Fort Scott** 70.38 337 P P 17 47 25.4 +0.2
baz=154,SNR=20
R38A **Fenwick Farm,** 70.44 338 P P 17 47 25.5 0.0
baz=154,SNR=22
SFIN **Lafayette** 70.46 344 P P 17 47 24.3 -1.2
baz=161,SNR=10
SFIN **Lafayette** 70.46 344 eP P 17 47 24.6 -1.0
comp=Z,24nm,0.8s
SFIN epP pP 17 48 05.6 -0.6

TRY **Troy** 70.50 355 eP P 17 47 27.0 +1.2
comp=Z,86nm,1.0s
TRY epP pP 17 48 07.4 +1.0
Q40A **Laux Farm, Aux** 70.58 339 P P 17 47 26.2 -0.2
baz=156,SNR=12
T34A **McClaskey Farm** 70.59 334 P P 17 47 26.9 +0.5
baz=152
P42A **Winchester** 70.60 341 P P 17 47 25.9 -0.5
baz=158,SNR=12
AMTX **Amarillo** 70.60 330 eP P 17 47 27.3 +0.6
comp=Z,38nm,1.4s
S36A **Lake Cedric, C** 70.62 336 P P 17 47 27.0 +0.3
baz=153,SNR=6.5
HSIG 70.64 320 eP P 17 47 28.5 +1.5
HSIG epP pP 17 48 09.0 +1.5
ERPA **Erie** 70.67 350 eP P 17 47 27.6 +0.7
comp=Z,81nm,0.6s
ERPA epP pP 17 48 08.5 +1.0
U32A **Winter Ranch,** 70.74 333 P P 17 47 28.3 +0.9
baz=150,SNR=5.1
S35A **Otter Creek Ra** 70.84 335 P P 17 47 28.4 +0.4
baz=152,SNR=7.2
R37A **Teagarden Farm** 70.87 337 P P 17 47 28.4 +0.2
baz=154
P41A **Barry, Barry** 70.89 340 P P 17 47 27.8 -0.4
baz=157
Q39A **Willow Grove F** 70.91 339 P P 17 47 28.5 +0.1
baz=155,SNR=15
MMNY **Mt. Morris Dam** 70.97 351 eP P 17 47 29.4 +0.8
VNDA **Vanda** 70.99 190 P P 17 47 29.6 +1.2
comp=Z,65nm,0.8s,baz=134,slow=5.3,SNR=238
VNDA **Vanda** 70.99 190 eP P 17 47 29.6 +1.2
comp=Z,72nm,0.8s
Q38A **Cooks Store, C** 71.05 338 P P 17 47 29.4 +0.2
baz=155,SNR=14
T33A **Patterson Ranc** 71.05 334 P P 17 47 30.4 +1.1
baz=151
P40A **Paris** 71.06 340 P P 17 47 29.2 0.0
baz=156,SNR=23
O42A **Bath** 71.09 341 P P 17 47 29.2 -0.2
baz=158
FFD **Franklin Falls** 71.10 356 eP P 17 47 31.0 +1.7
comp=Z,72nm,0.9s
R36A **Gordon, Harris** 71.12 336 P P 17 47 30.1 +0.5
baz=153
ACCN **Adirondack Com** 71.15 355 eP P 17 47 30.9 +1.2
comp=Z,45nm,1.4s
HDIL **Hopedale** 71.20 342 P P 17 47 29.6 -0.4
baz=159,SNR=5.3
HDIL **Hopedale** 71.20 342 eP P 17 47 29.7 -0.4
comp=Z,59nm,0.9s
P39B **Salisbury** 71.24 339 P P 17 47 30.3 -0.1
baz=156,SNR=16
O41A **Passleys Farm,** 71.25 341 P P 17 47 29.6 -0.7
baz=157,SNR=6.6
Q37A **Longview Farm,** 71.25 337 P P 17 47 30.4 0.0
baz=154,SNR=6.8
HNH **Hanover** 71.37 356 eP P 17 47 32.4 +1.4
comp=Z,73nm,1.0s
R35A **Emporia Munici** 71.37 336 P P 17 47 31.6 +0.5
baz=153
T32A **Huddler Ranch,** 71.40 333 P P 17 47 32.5 +1.1
baz=150
319A **Douglas** 71.51 322 eP P 17 47 34.3 +2.0
comp=Z,38nm,1.0s
O40A **La Belle** 71.55 340 P P 17 47 32.1 -0.1
baz=157,SNR=12
P38A **Dawn** 71.62 338 P P 17 47 32.4 -0.2
baz=155,SNR=7.8
121A **Cookes Peak, D** 71.62 324 eP P 17 47 31.2 -1.8
comp=Z,36nm,1.0s
MDV **Middlebury** 71.72 355 eP P 17 47 33.8 +0.7
NCB **Newcomb** 71.78 354 eP P 17 47 34.1 +0.6
comp=Z,0.2nm,0.8s
Q35A **Mercer Eighty,** 71.79 336 P P 17 47 33.7 0.0
baz=153
P37A **Lathrop** 71.86 338 P P 17 47 33.6 -0.4
baz=154,SNR=5.2
O39A **Kirksville** 71.88 339 P P 17 47 34.0 -0.1
baz=156
LBNH **Lisbon** 71.88 356 eP P 17 47 35.3 +1.3
LBNH pmax pmax
comp=Z,31nm,0.8s
LBNH **Lisbon** 71.88 356 eP P 17 47 35.3 +1.3
comp=Z,31nm,0.8s
WVL **Warwille** 72.09 358 eP P 17 47 36.8 +1.5
comp=Z,37nm,0.7s
WVL epP pP 17 48 17.5 +1.5
Q34A **Chapman** 72.17 336 P P 17 47 36.0 +0.1
baz=152
P36A **Good Intent, A** 72.17 337 P P 17 47 35.6 -0.3
baz=154
EMMW **East Machias** 72.19 359 eP P 17 47 37.0 +1.2
comp=Z,52nm,0.9s
KSU1 **Kansas State U** 72.21 336 P P 17 47 36.2 0.0
baz=152
KSU1 **Kansas State U** 72.21 336 eP P 17 47 36.5 +0.4
KSU1 epP pP 17 48 17.8 +0.9
O37A **Wolven Farm, M** 72.31 338 P P 17 47 36.4 -0.3
baz=155
R32A **Long Quarter,** 72.40 334 P P 17 47 38.1 +0.8
baz=150
N39A **Derby Farms, D** 72.43 340 P P 17 47 37.1 -0.3
baz=156,SNR=13
LONY **Lake Ozonia** 72.46 354 eP P 17 47 38.2 +0.8
comp=Z,25nm,1.0s
O36A **Bolckow** 72.55 338 P P 17 47 37.7 -0.4
baz=154,SNR=5.4
FRNY **Flat Rock** 72.59 355 eP P 17 47 39.0 +0.8
comp=Z,26nm,0.8s
GGN **Saint George** 72.60 360 eP P 17 47 39.8 +1.5
comp=Z,37nm,0.9s
GGN epP pP 17 48 19.4 +0.4
P34A **Walnut Farm, R** 72.68 336 P P 17 47 39.4 +0.5
baz=152,SNR=12
PKME **Peaks-Kenny Pk** 72.78 358 eP P 17 47 40.4 +1.0
comp=Z,34nm,0.7s
PKME epP pP 17 48 20.4 +0.2
Q32A **Meitler Ranch,** 72.83 334 P P 17 47 40.3 +0.5
baz=151
ANMO **Albuquerque** 72.88 327 P P 17 47 41.7 +1.3
baz=144
ANMO **Albuquerque** 72.88 327 eP P 17 47 41.8 +1.3
ANMO **Albuquerque** 72.88 327 eP P 17 47 41.9 +1.4
comp=Z,23nm,1.0s
M39A **Webster** 72.88 340 P P 17 47 39.6 -0.5
baz=156
L41A **Preston** 72.95 342 P P 17 47 40.1 -0.3
baz=158,SNR=13
TUC **Tucson** 73.05 322 P P 17 47 42.3 +0.9
baz=140
TUC **Tucson** 73.05 322 eP P 17 47 43.0 +1.6
TUC pmax pmax
comp=Z,25nm,1.1s
TUC **Tucson** 73.05 322 eP P 17 47 43.0 +1.6
comp=Z,25nm,1.1s
PLVO **Plevna** 73.14 352 eP P 17 47 42.2 +0.8
comp=Z,21nm,0.6s
SADO **Sadowa** 73.14 351 P P 17 47 41.4 -0.1
comp=Z,14nm,0.6s,baz=194,slow=5.6,SNR=15
SADO **Sadowa** 73.14 351 eP P 17 47 41.3 -0.1
comp=Z,36nm,1.2s
M38A **Pleasantville** 73.14 339 P P 17 47 41.2 -0.4
baz=156,SNR=16
L40A **Anamosa** 73.14 341 P P 17 47 41.3 -0.2
baz=157,SNR=31
N36A **Muff Farm, Cla** 73.16 338 P P 17 47 41.7 0.0
baz=154
O34A **Beatrice** 73.19 336 P P 17 47 42.5 +0.6
baz=152
LMN **Caledonia Moun** 73.35 1 eP P 17 47 43.6 +0.9
comp=Z,58nm,1.0s
K41A **Shullsburg** 73.39 342 P P 17 47 42.8 -0.2
baz=158,SNR=9.5
M37A **Trindle Farm,** 73.40 339 P P 17 47 43.4 +0.3
baz=155,SNR=16
O33A **Hebron** 73.42 336 P P 17 47 43.7 +0.5
baz=152,SNR=10.0
L39A **Vinton** 73.42 341 P P 17 47 42.8 -0.4
baz=157,SNR=13
N35A **Tabor** 73.43 337 P P 17 47 43.2 -0.1
baz=153
SCIA **State Center** 73.59 340 eP P 17 47 44.3 +0.1
comp=Z,82nm,1.0s
JFWS **Jewell Farm** 73.66 342 eP P 17 47 44.6 0.0
JFWS pmax pmax
comp=Z,47nm,0.6s
JFWS **Jewell Farm** 73.66 342 eP P 17 47 44.6 0.0
comp=Z,47nm,0.6s
M36A **Felix, Anita** 73.68 338 P P 17 47 44.7 -0.1
baz=154,SNR=7.4
T25A **Trinidad** 73.70 329 P P 17 47 47.1 +1.9
baz=146
T25A **Trinidad** 73.70 329 eP P 17 47 46.8 +1.5
comp=Z,52nm,1.0s
K40A **Colesburg** 73.71 341 P P 17 47 44.5 -0.3
baz=158,SNR=9.0
N34A **Lincoln** 73.71 337 P P 17 47 44.8 -0.1
baz=153,SNR=6.5
L38A **Oak Wood Farm,** 73.73 340 P P 17 47 44.6 -0.3
baz=156,SNR=8.9
SUR **Sutherland** 73.73 118 eP P 17 47 47.4 +1.7
comp=Z,28nm,0.6s
O32A **Brockman Farm,** 73.83 335 P P 17 47 46.1 +0.4
baz=151,SNR=7.5
214A **Organ Pipe Nat** 73.90 320 P P 17 47 48.0 +1.7
baz=138
K39A **Oelwein** 73.92 341 P P 17 47 45.6 -0.5
baz=157,SNR=17
L37A **Phoenix Point,** 73.96 339 P P 17 47 46.0 -0.4
baz=155,SNR=8.0
M35A **Neola** 73.99 338 P P 17 47 47.0 +0.5
baz=153
J41A **Loganville** 74.02 343 P P 17 47 46.4 -0.2
baz=159,SNR=10
TRQ **Mont Tremblant** 74.05 354 eP P 17 47 47.1 +0.3
K38A **Parkersburg** 74.13 340 P P 17 47 46.9 -0.4
baz=156
O31A **Woolen Ranch,** 74.13 335 P P 17 48 00.4 +13
baz=150
L36A **Harm Buss Farm** 74.22 339 P P 17 47 47.8 0.0
baz=154,SNR=9.3
X18A **Snowflake** 74.31 324 eP P 17 47 51.3 +2.5
comp=Z,27nm,1.1s
M34A **Aspy Farms, Fr** 74.33 337 P P 17 47 48.8 +0.3
baz=153
MEH **Mehetia** 74.44 258 eP P 17 47 51.3 +1.5
comp=Z,38nm,0.9s
J39A **Decorah** 74.45 341 P P 17 47 48.8 -0.3
baz=157,SNR=16
K37A **Belmond** 74.50 340 P P 17 47 49.1 -0.3
baz=155
L35A **Bielow Farm, R** 74.52 338 P P 17 47 49.6 0.0
baz=154,SNR=17
N31A **Bailey Ranch,** 74.58 335 P P 17 47 51.3 +1.3
baz=151
M33A **Taylor Creek F** 74.60 337 P P 17 48 02.4 +12
baz=152
H07S1 **FLORES T-PHASE** 74.61 28 eP P 17 47 51.5 +1.3
W18A **Petrified Fore** 74.65 325 eP P 17 47 53.8 +3.1
comp=Z,26nm,1.1s
J38A **Wedel Dairy, R** 74.66 341 P P 17 47 49.9 -0.5
baz=156,SNR=7.3
L34A **Svendsen Farm,** 74.67 337 P P 17 47 50.7 +0.2
baz=153,SNR=5.4
SDCO **Great Sand Dun** 74.69 329 P P 17 47 52.5 +1.4
baz=145
SDCO **Great Sand Dun** 74.69 329 eP P 17 47 52.5 +1.4
comp=Z,27nm,1.2s
BGNE **Belgrade** 74.79 336 P P 17 47 52.3 +1.1
baz=151,SNR=8.6
BGNE **Belgrade** 74.79 336 eP P 17 47 51.8 +0.6
comp=Z,180nm,1.0s
K35A **Storm Lake** 74.96 339 P P 17 47 52.2 0.0
baz=154
J37A **Redenius Farm,** 74.97 340 P P 17 47 51.9 -0.3
baz=156,SNR=6.8
PCAN **Candelaria** 75.01 30 eP P 17 47 52.8 +0.3
comp=Z,317nm,1.1s
PCED **Cedros** 75.05 30 eP P 17 47 53.6 +0.9
comp=Z,218nm,0.7s
PICO **Pico** 75.07 30 eP P 17 47 53.9 +1.0
comp=Z,379nm,1.1s
LMQ **La Malbaie** 75.10 357 eP P 17 47 53.6 +0.8
VAH **Vaihoa** 75.17 260 eP P 17 47 55.4 +1.5
comp=Z,185nm,1.2s
J36A **Seneca 1, Swea** 75.23 340 P P 17 47 53.5 -0.1
baz=155,SNR=9.3
I38A **Scanlan Farm,** 75.28 341 P P 17 47 53.6 -0.3
baz=157,SNR=12
PMAN **Manadas** 75.33 30 eP P 17 47 54.2 -0.1
comp=Z,588nm,1.1s
ROSA **Rosais** 75.33 30 eP P 17 47 54.9 +0.6
comp=Z,392nm,1.2s
ROSA **Rosais** 75.33 30 eP P 17 47 56.5 +2.2
comp=Z,262nm,0.7s
PSMA **Santa Maria** 75.39 33 eP P 17 47 55.0 +0.3
comp=Z,103nm,0.7s
PSMN **Pico do Norte,** 75.43 33 eP P 17 47 54.9 0.0
comp=Z,213nm,0.8s
TVO **Taravao** 75.50 257 eP P 17 47 57.3 +1.4
comp=Z,32nm,1.0s
I37A **Lemond, Waseca** 75.57 340 P P 17 47 55.9 +0.4
baz=156
PGRA **Graciosa** 75.70 30 eP P 17 47 56.2 -0.2
comp=Z,197nm,0.8s
J34A **George** 75.70 338 P P 17 47 56.0 -0.3
baz=153
L31A **Butterfield Fa** 75.72 336 P P 17 47 57.3 +0.9
baz=151,SNR=11
PDA **Ponta Delgada** 75.73 32 eP P 17 47 56.5 -0.1
comp=Z,149nm,0.6s
I36A **Fitzsimmons Fa** 75.75 340 P P 17 47 56.7 +0.1
baz=155
PSET **Sete Cidades** 75.77 32 eP P 17 47 56.5 -0.3
comp=Z,99nm,0.6s
GRON **Grota Negra** 75.81 33 eP P 17 47 57.1 0.0
comp=Z,74nm,0.6s
CMLA **Cha da Macela** 75.81 33 i P P 17 47 59.8 +2.7
CMLA **Cha da Macela** 75.81 33 eP P 17 47 56.9 -0.2
comp=Z,326nm,0.8s
CMLA **Cha da Macela** 75.81 33 P P 17 47 56.5 -0.6
comp=Z,156nm,0.8s
PAE **Paea** 75.84 257 eP P 17 47 59.0 +1.3
comp=Z,33nm,1.0s
PPT2 **Papeete2** 75.87 257 eP P 17 47 59.3 +1.3
comp=Z,162nm,1.0s
PPT **Papeete** 75.88 257 P P 17 47 58.9 +0.9
comp=Z,159nm,0.9s,baz=207,slow=2.1,SNR=8.1
H37A **Dierke Farm, C** 75.94 341 P P 17 47 57.7 +0.1
baz=156
BART **Pico Bartolome** 75.99 33 eP P 17 47 58.0 -0.2
comp=Z,251nm,0.8s
J33A **Davis** 76.07 338 P P 17 47 58.5 +0.1
baz=153,SNR=10.0
VLDQ **Val d'Or** 76.21 353 eP P 17 47 59.8 +0.8
comp=Z,80nm,1.0s
H36A **Jessenland, He** 76.24 340 P P 17 47 59.6 +0.3
baz=155,SNR=9.2
COWI **Conover** 76.35 344 eP P 17 48 00.1 +0.2
comp=Z,41nm,1.3s
TSUM **Tsumeb** 76.39 105 eP P 17 48 01.4 +0.3
TSUM **Tsumeb** 76.39 105 eP P 17 48 01.4 +0.3
comp=Z,28nm,0.8s
PMOZ **Porto Moniz, M** 76.48 41 eP P 17 48 02.3 +1.2
comp=Z,146nm,1.1s
SPMN **Marine on St.** 76.50 341 P P 17 48 00.8 0.0
baz=156,SNR=7.1
SPMN **Marine on St.** 76.50 341 eP P 17 48 00.5 -0.2
comp=Z,42nm,1.1s
FUL **Funchal** 76.53 42 eP P 17 48 03.0 +1.8
comp=Z,282nm,1.0s
H34A **Spellman Lake,** 76.88 339 P P 17 48 03.4 +0.5
baz=154
DRLN **Deer Lake** 77.17 6 eP P 17 48 05.5 +1.0
comp=Z,81nm,0.8s
H32A **Carlson Farm,** 77.28 338 P P 17 48 05.2 0.0
baz=152
F36A **Milaca** 77.29 341 P P 17 48 05.1 -0.1
baz=156
MAW **Mawson** 77.72 162 P P 17 48 07.9 +0.5
comp=Z,250nm,0.8s,baz=216,slow=6.5,SNR=303
MAW PKKPbc PKKPbc 18 07 10.0 +0.5
comp=Z,4.3nm,0.3s,baz=305,slow=20,SNR=20
MAW **Mawson** 77.72 162 eP P 17 48 07.9 +0.5
comp=Z,53nm,0.8s
MAW PKKPbc PKKPbc 18 07 10.0 +0.5
E36A **McGregor** 77.81 342 P P 17 48 08.4 +0.3
baz=156
D37A **Cotton** 78.17 342 P P 17 48 10.4 +0.4
baz=157
C39A **Grand Marais** 78.19 344 P P 17 48 09.9 -0.2
baz=159
D36A **Goodland** 78.39 342 P P 17 48 11.6 +0.4
baz=156
D35A **Remer** 78.55 341 P P 17 48 12.9 +0.7

baz=155
F31A Hecla 78.74 338 P **P** 17 48 13.6 +0.4
baz=152
BOSA Boshof 78.77 116 P **P** 17 48 14.5 +0.4
comp=Z,103nm,0.8s,baz=247,slow=4.4,SNR=217
BOSA S **S** 17 57 55.2 -2.8
BOSA comp=Z,4.2nm,1.0s,baz=151,slow=21,SNR=8.5
PKKPbc **PKKPbc** 18 07 06.9 +0.7
comp=Z,1.9nm,1.1s,baz=179,slow=1.9,SNR=3.6
BOSA Boshof 78.77 116 *e*P **P** 17 48 14.6 +0.4
comp=Z,79nm,0.8s
BOSA S **S** 17 57 55.2 -2.8
BOSA PKKPbc **PKKPbc** 18 07 06.9 +0.7
E32A Braaten, Kindr 79.01 339 P **P** 17 48 15.1 +0.5
baz=153
C35A Jirik Farms, M 79.09 342 P **P** 17 48 15.4 +0.3
baz=156
F29A Eureka 79.25 337 P **P** 17 48 16.5 +0.5
baz=150
B35A Bob, Littlefor 79.62 342 P **P** 17 48 18.0 +0.1
baz=156
C33A Trail 79.66 341 P **P** 17 48 18.3 +0.2
baz=154
AGMN Agassiz Nation 80.17 341 P **P** 17 48 21.1 +0.3
baz=154
C31A Landman Farms, 80.29 339 P **P** 17 48 21.9 +0.4
baz=152
B32A Ashes, Strandq 80.46 340 P **P** 17 48 22.7 +0.3
baz=153
PDAR Pinedale Array 80.57 329 P **P** 17 48 23.0 -0.4
comp=Z,3.2nm,0.6s,baz=180,slow=3.6,SNR=3.1
PDAR PKKPbc **PKKPbc** 18 07 02.6 -2.2
comp=Z,2.4nm,0.6s,baz=173,slow=1.5,SNR=15
LBTB Lobatse 80.61 113 *e*P **P** 17 48 24.7 +0.6
LBTB pmax pmax
comp=Z,96nm,0.9s
LBTB Lobatse 80.61 113 *e*P **P** 17 48 24.7 +0.6
comp=Z,96nm,0.9s
B31A Greenbush Farm 80.82 340 P **P** 17 48 24.7 +0.4
baz=152
MDND Maddock 80.93 338 P **P** 17 48 25.8 +0.8
baz=151
A31A Linda, St. Vin 81.13 340 P **P** 17 48 26.4 +0.5
baz=153
ULM Lac du Bonnet 81.93 342 P **P** 17 48 29.2 -0.9
comp=Z,12nm,0.7s,baz=141,slow=4.8,SNR=7.9
ULM PKKPbc **PKKPbc** 18 06 58.8 -3.0
comp=Z,6.8nm,0.6s,baz=328,slow=0.6,SNR=7.2
ULM Lac du Bonnet 81.93 342 *e*P **P** 17 48 30.4 +0.3
comp=Z,41nm,1.4s
ULM PKKPbc **PKKPbc** 18 06 58.8 -3.0
LAO LASA Array 82.33 334 P **P** 17 48 33.4 +1.0
baz=145
DGMT Dagmar 83.05 336 P **P** 17 48 37.6 +1.6
baz=147
HLID Hailey 83.44 327 P **P** 17 48 39.7 +1.4
baz=139
MCMT McKenzie Canyo 83.67 329 *e*P **P** 17 48 40.4 +0.9
MCMT *ep*P **pP** 17 49 23.9 +2.5
ORV Oroville 84.26 321 *e*P **P** 17 48 43.1 +0.8
ORV Oroville 84.26 321 *e*P **P** 17 48 43.1 +0.8
ORV *ep*P **pP** 17 49 27.5 +3.2
MDT Midelt 84.34 48 P **P** 17 48 44.4 +1.3
comp=Z,72nm,0.9s,baz=240,slow=5.2,SNR=93
MORF Marmelete 84.64 43 *e*P **P** 17 48 44.7 +0.4
MORF AMb AMB 17 48 48.3
comp=Z,81nm,1.4s
MORF Marmelete 84.64 43 *e*P **P** 17 48 47.2 +2.9
comp=Z,78nm,1.7s
MORF Marmelete 84.64 43 *e*S **S** 17 58 59.1 +1.7
MORF Marmelete 84.64 43 *e*P **P** 17 48 44.7 +0.4
MIR Mirnyy 84.65 172 *i* P **P** 17 48 43.5 -0.5
MIR pmax pmax
comp=Z,12nm,1.4s
PTEO Sao Teotonio 84.75 43 *e*P **P** 17 48 46.6 +1.8
comp=Z,164nm,1.2s
PCVE Castro Verde 85.22 43 *e*P **P** 17 48 48.8 +1.7
comp=Z,67nm,1.7s
PCVE Castro Verde 85.22 43 *e*S **S** 17 59 00.6 -2.3
PNCL Nicolau / Gran 85.24 42 *e*P **P** 17 48 48.6 +1.4
comp=Z,58nm,1.0s
PNCL Nicolau / Gran 85.24 42 *e*S **S** 17 58 59.0 -4.1
MESJ Messejana 85.24 43 *e*P **P** 17 48 47.8 +0.6
MESJ AMb AMB 17 48 50.8
comp=Z,78nm,1.0s
MESJ *e*S **S** 17 58 55.8 -7.4
MESJ Messejana 85.24 43 *e*P **P** 17 48 48.8 +1.5
comp=Z,75nm,1.2s
MESJ Messejana 85.24 43 *e*P **P** 17 48 47.8 +0.6
MESJ *e*S **S** 17 58 55.8 -7.4
PMST Lisbon--Monsan 85.26 41 *e*P **P** 17 48 50.0 +2.7
comp=Z,164nm,1.2s
PVAQ Vaqueiros 85.26 43 *e*P **P** 17 48 49.1 +1.7
comp=Z,96nm,1.3s
PVAQ Vaqueiros 85.26 43 *e*S **S** 17 59 00.9 -2.5
PMAFR Mafra 85.35 41 *e*P **P** 17 48 49.4 +1.6
comp=Z,131nm,2.0s
PMAFR Mafra 85.35 41 *e*S **S** 17 58 59.8 -4.4
PBEJ Beja 85.58 43 *e*P **P** 17 48 50.3 +1.4
comp=Z,65nm,1.5s
EVO Evora 85.82 42 *e*P **P** 17 48 51.3 +1.2
comp=Z,74nm,0.9s
TAM Tamanrasset 85.94 62 *e*P **P** 17 48 51.8 +0.5
TAM pmax pmax
comp=Z,84nm,0.7s
TAM Tamanrasset 85.94 62 *e*P **P** 17 48 51.8 +0.5
comp=Z,84nm,0.7s
CASY Casey 86.17 179 *e*P **P** 17 48 51.9 +0.4
comp=Z,135nm,0.8s
PBAR Barrancos 86.17 43 *e*P **P** 17 48 53.1 +1.3
comp=Z,125nm,1.2s
PBAR Barrancos 86.17 43 *e*S **S** 17 59 06.8 -5.4
PESTR Estremoz 86.29 42 *e*P **P** 17 48 53.7 +1.3
comp=Z,122nm,1.1s
PESTR Estremoz 86.29 42 *e*S **S** 17 59 05.7 -7.7
PTOM Tomar 86.29 41 *e*P **P** 17 48 54.0 +1.6
comp=Z,276nm,0.9s
PCAS Casmilo, Conde 86.53 41 *e*P **P** 17 48 55.1 +1.6
comp=Z,170nm,0.7s
PCAS Casmilo, Conde 86.53 41 *e*S S 17 59 05.6 -10
PMRV Marv??o 86.77 42 *e*P **P** 17 48 55.6 +0.9
comp=Z,100nm,0.9s
PMRV Marv??o 86.77 42 *e*S S 17 59 07.2 -11
PCBR Castelo Branco 86.98 41 *e*P **P** 17 48 57.0 +1.3
comp=Z,130nm,0.7s
MTE Manteigas 87.31 41 *e*P **P** 17 48 59.4 +2.0
comp=Z,138nm,1.3s
MTE Manteigas 87.31 41 *e*S **S** 17 59 17.5 -5.7
MTE Manteigas 87.31 41 *e*P **P** 17 48 58.3 +0.9
comp=Z,109nm,0.7s
PVIS Viseu 87.31 41 *e*P **P** 17 48 59.0 +1.6
comp=Z,53nm,2.0s
I05D Terrebonne, OR 87.46 324 P **P** 17 48 59.0 +1.0
baz=134
PVRL Vila Real 87.78 40 *e*P **P** 17 49 01.6 +2.0
comp=Z,148nm,0.8s
POLO Lamas de Olo 87.80 40 *e*P **P** 17 49 01.5 +1.8
comp=Z,41nm,1.1s
POLO Lamas de Olo 87.80 40 *e*S S 17 59 15.3 -13
PGAV Gavieira, Arco 87.91 39 *e*P **P** 17 49 02.0 +1.8
comp=Z,68nm,0.9s
PGAV Gavieira, Arco 87.91 39 *e*S S 17 59 13.8 -15
MVO Moncorvo 88.10 41 *e*P **P** 17 49 02.1 +1.0
comp=Z,83nm,1.5s
MVO Moncorvo 88.10 41 *e*S S 17 59 15.6 -15
PAB San Pablo 88.66 43 *e*P **P** 17 49 04.9 +1.1
comp=Z,47nm,1.3s
PBRG Braganca 88.68 40 *e*P **P** 17 49 05.1 +1.3
comp=Z,39nm,1.9s
ESDC Sonseca Array 88.98 43 P **P** 17 49 06.2 +0.9
comp=Z,111nm,0.6s,baz=240,slow=4.2,SNR=69
ESLA Sonseca Array 88.98 43 *e*P **P** 17 49 06.5 +1.2
comp=Z,16nm,0.7s
ES19 SONSECA Array 89.03 43 *e*P **P** 17 49 06.1 +0.5
BFZ Birch Farm 90.28 223 *e*P **P** 17 49 13.6 +2.2
comp=Z,159nm,0.5s
MQZ McQueen's Vall 90.44 219 *e*P **P** 17 49 13.1 +1.0
comp=Z,36nm,0.8s
CRLZ Canterbury Las 90.54 219 *e*P **P** 17 49 13.9 +1.3
comp=Z,186nm,1.6s
ODZ Otahua Downs 90.65 217 *e*P **P** 17 49 14.3 +1.2
comp=Z,41nm,0.9s
KHZ Kahutara 90.77 220 *e*P **P** 17 49 14.9 +1.2
comp=Z,83nm,0.8s
MXZ Matakaoa Point 90.89 226 *e*P **P** 17 49 17.5 +3.1
comp=Z,49nm,1.1s
LTZ Lake Taylor 91.25 219 *e*P **P** 17 49 17.5 +1.5
comp=Z,139nm,0.9s
RPZ Rata Peaks 91.31 218 *e*P **P** 17 49 16.9 +0.7
comp=Z,128nm,1.1s
LBZ Lake Benmore 91.33 217 *e*P **P** 17 49 17.3 +0.9
comp=Z,42nm,0.9s
WHZ Wether Hill Ro 91.47 215 *e*P **P** 17 49 17.9 +1.0
comp=Z,82nm,1.2s
THZ Tophouse 91.55 220 *e*P **P** 17 49 19.1 +1.7
comp=Z,157nm,0.5s
KEST Kesra 95.52 52 P **P** 17 49 36.6 +1.0
comp=Z,22nm,0.9s,baz=247,slow=4.4,SNR=15
KEST Kesra 95.52 52 *e*P **P** 17 49 37.7 +2.1
comp=Z,27nm,0.8s
SSB Saint Sauveur 97.34 42 *e*P **P** 17 49 43.4 -0.2
SSB Saint Sauveur 97.34 42 *e*P **P** 17 49 43.4 -0.2
YKA Yellowknife Ar 97.80 340 P Pdif 17 49 45.4 +0.3
comp=Z,3.0nm,0.7s,baz=134,slow=4.1,SNR=5.6
YKA PKKPbc **PKKPbc** 18 06 19.2 -2.5
comp=Z,1.4nm,0.5s,baz=319,slow=4.0,SNR=6.4
EKA Eskdalemuir Ar 98.95 31 P **P** 17 49 50.4 -0.1
comp=Z,2.2nm,0.4s,baz=229,slow=4.8,SNR=14
EKA PP **PP** 17 53 53.3 -1.7
comp=Z,2.1nm,0.7s,baz=240,slow=6.7,SNR=5.0
EKA PKKPbc **PKKPbc** 18 06 16.8 -1.5
comp=Z,1.8nm,0.7s,baz=48,slow=4.0,SNR=6.2
DAVOX Davos/Dischmat 101.31 43 P **Pdif** 17 50 01.9 +0.6
comp=Z,17nm,0.7s,baz=206,slow=5.8,SNR=12
DAVOX PKKPbc **PKKPbc** 18 06 10.8 -0.6
comp=Z,3.7nm,0.6s,baz=142,slow=22,SNR=7.5
DAVOX Davos/Dischmat 101.31 43 P **Pdif** 17 50 02.0 +0.6
DAVOX pmax pmax
comp=Z,4.0nm,0.6s
DAVA Damuels 101.55 43 *i* Pdiff **Pdif** 17 50 03.9 +1.5
comp=Z,17nm,0.9s
FETA Feichten 101.93 43 *i* Pdiff **Pdif** 17 50 04.6 +0.4
comp=Z,16nm,1.0s
RETA Rette 102.17 43 *i* Pdiff **Pdif** 17 50 06.9 +1.8
comp=Z,10nm,0.9s
MOTA Moosalm 102.31 43 *i* Pdiff **Pdif** 17 50 08.4 +2.5
comp=Z,13nm,0.7s
WATA Walderalm 102.59 43 *i* Pdiff **Pdif** 17 50 09.2 +2.1
comp=Z,8.4nm,0.9s
ABTA Abfaltersbach 102.89 44 *i* Pdiff **Pdif** 17 50 10.6 +2.2
comp=Z,15nm,0.8s
MYKA Terra Mystica 103.54 44 *i* Pdiff **Pdif** 17 50 14.2 +3.0
comp=Z,7.8nm,0.9s
KBA Koelnbreinsper 103.55 44 *i* Pdiff **Pdif** 17 50 16.5 +5.1
comp=Z,13nm,1.2s
OBKA Obir 104.05 45 *i* Pdiff **Pdif** 17 50 15.2 +1.7
comp=Z,6.4nm,0.8s
NKC Novy Kostel 104.41 41 *e*PP PP 17 54 32.3 -3.8
SOKA Soboth 104.42 45 *i* Pdiff **Pdif** 17 50 18.5 +3.3
comp=Z,6.8nm,1.1s
MOA Molln 104.45 43 *i* Pdiff **Pdif** 17 50 18.5 +3.3
comp=Z,7.5nm,0.8s
GERES GERESS Array B 104.54 42 PP PP 17 54 34.6 -2.6
comp=Z,3.0nm,1.0s,baz=217,slow=6.4,SNR=3.6
GERES PKKPbc **PKKPbc** 18 06 01.1 -0.7
comp=Z,1.6nm,0.8s,baz=70,slow=1.6,SNR=16
GERES PKKPab **PKKPab** 18 06 19.8 +2.3
comp=Z,1.4nm,0.7s,baz=69,slow=4.4,SNR=9.5
KHC Kasperske Hory 104.59 42 *e*PP PP 17 54 34.3 -3.2
KHC *e*PKKP **PKKPbc** 18 06 01.0 -0.5
KHC *ex* x 18 06 20.1
ARSA Arzberg 104.97 44 *i* Pdiff **Pdif** 17 50 19.3 +1.8
comp=Z,6.0nm,1.5s
CLL Collm 105.19 40 *e*PP PP 17 54 38.0 -3.9
CLL ⇓ *i*PKKPab **PKKPab** 18 06 16.5 +2.2
comp=Z,5.0nm,1.0s
CONA Conrad Observa 105.46 44 *i* Pdiff **Pdif** 17 50 22.1 +2.4
comp=Z,5.4nm,1.3s
PRU Pruhonice 105.52 41 *e*PDIFF **Pdif** 17 50 22.6 +2.8
PRU *e*PP **PP** 17 54 38.5 -5.8
PRU *e*PKKP **PKKPbc** 18 05 58.1 -0.5
PRU *ex* x 18 06 15.5
PRU Pruhonice 105.52 41 *e*P **Pdif** 17 50 22.6 +2.8
BRG Berggiesshubel 105.55 40 *e*PKKP **PKKPab** 18 06 15.2 +2.4
comp=Z,5.7nm,1.0s
GOPC GO Pecny, Ondr 105.64 42 *e*PKKP **PKKPbc** 18 05 58.1 -0.2
VRAC Vranov 106.46 43 PP PP 17 54 48.0 -3.2
comp=Z,3.2nm,0.8s,baz=242,slow=8.8,SNR=4.0
VRAC PKKPab **PKKPab** 18 06 11.3 +2.5
comp=Z,0.9nm,0.3s,baz=134,slow=7.4,SNR=3.2
DPC Dobruska-Polom 106.72 42 *e*PDIFF **Pdif** 17 50 29.0 +3.8
DPC *e*PKKP **PKKPbc** 18 05 55.1 +0.1
DPC *ex* x 18 06 10.5
DPC Dobruska-Polom 106.72 42 *e*P **Pdif** 17 50 29.0 +3.8
MORC Moravsky Berou 107.22 42 *i* P **PKKPbc** 18 05 53.4 -0.1
INK Inuvik 107.55 339 PKKPbc PKKPbc 18 05 51.2 -1.7
comp=Z,9.1nm,0.7s,baz=338,slow=3.7,SNR=19
INK PKKP **PKKPdf** 18 06 05.6 -0.7
comp=Z,4.8nm,0.8s,baz=310,slow=8.8,SNR=7.5
PSZ Piszkesteto 107.95 45 ⇓ *i*P **PKKPbc** 18 05 51.4 +0.3
MDVR Moldovita 107.97 48 ⇓ *i*P **PKKPdf** 18 06 04.9 0.0
NB2 NORSAR Subarra 108.39 30 PP PP 17 54 48.6 -16
comp=Z,1.0nm,0.6s,baz=246,slow=7.4
NOA NORSAR Array B 108.39 30 PP PP 17 55 04.1 -0.9
comp=Z,0.7nm,0.8s,baz=233,slow=6.6,SNR=4.4
NOA PKKPbc **PKKPbc** 18 05 47.6 -2.6
comp=Z,0.6nm,0.6s,baz=264,slow=2.9,SNR=3.4
NOA PKKP **PKKPab** 18 06 01.1 +1.1
comp=Z,3.9nm,0.8s,baz=67,slow=4.6,SNR=14
ILAR Eielson Array 110.79 333 PKKPbc PKKPbc 18 05 40.1 -2.3
comp=Z,1.6nm,0.7s,baz=288,slow=2.9,SNR=11
DOPR Dopca 110.81 48 ⇓ *i*P **PKKPab** 18 05 52.3 +2.4
MLR Muntele Rosu 111.03 49 PP PP 17 55 21.4 -3.2
comp=Z,2.2nm,1.1s,baz=264,slow=7.1,SNR=6.5
MLR PKKPab **PKKPab** 18 05 51.3 +2.2
comp=Z,1.3nm,1.0s,baz=110,slow=2.8,SNR=6.3
MLR Muntele Rosu 111.03 49 ⇑ *i*P **PKKPab** 18 05 51.3 +2.2
BURAR Bucovina Array 111.22 47 ⇓ *i*P **PKKPab** 18 05 50.5 +2.4
PLOR Plostina 111.61 49 ⇓ *i*P **PKKPab** 18 05 48.2 +1.8
VRI Vrincioaia 111.67 49 ⇓ *i*P **PKKPab** 18 05 49.5 +3.4
TESR Tescani 111.81 48 ⇑ *i*P **PKKPab** 18 05 47.4 +2.0
TLB Topalu 112.16 50 ⇑ *i*P **PKKPab** 18 05 46.0 +2.1
KIEV Kiev 114.60 44 *c i*PKIKP PKPdf 17 54 48.6 -0.8
KIEV pmax pmax
comp=Z,3.0nm,0.6s
AKASG Malin Array Be 114.61 44 PKP PKPdf 17 54 48.5 -0.9
comp=Z,0.5nm,0.5s,baz=262,slow=2.7,SNR=6.6
AKASG pPKP pPKP 17 55 31.9
comp=Z,2.1nm,0.9s,baz=267,slow=2.2,SNR=1.9
AKASG PP **PP** 17 55 46.2 -3.5
comp=Z,3.0nm,0.9s,baz=254,slow=7.6,SNR=5.2
AKASG PKKPbc **PKKPbc** 18 05 28.2 -0.9
comp=Z,2.2nm,0.6s,baz=60,slow=4.0,SNR=8.0
AKASG PKKPab **PKKPab** 18 05 33.8 +1.0
comp=Z,1.3nm,0.5s,baz=60,slow=4.3,SNR=8.6
BRTR Keskin Array B 114.72 57 PKP PKPdf 17 54 49.4 -0.8
comp=Z,0.8nm,0.8s,baz=236,slow=2.7,SNR=4.0
BRTR PKKPbc **PKKPbc** 18 05 28.8 +0.1
comp=Z,2.7nm,0.7s,baz=119,slow=1.5,SNR=4.5
BRTR PKKPab **PKKPab** 18 05 34.6 +1.5
comp=Z,3.1nm,0.7s,baz=107,slow=4.2,SNR=15
STKA Stephens Creek 114.80 206 PKP PKPdf 17 54 49.7 -0.9
comp=Z,4.2nm,0.8s,baz=50,slow=2.9,SNR=8.3
FINES FINESS Array B 115.33 32 PKP **PKPdf** 17 54 48.9 -1.6
comp=Z,1.4nm,0.8s,baz=237,slow=29,SNR=2.7
FINES PKKPbc **PKKPbc** 18 05 25.5 -1.5
comp=Z,6.6nm,0.7s,baz=49,slow=4.1,SNR=8.9
FINES PKKPab **PKKPab** 18 05 30.3 +1.1
comp=Z,6.6nm,0.7s,baz=90,slow=6.1,SNR=13
FINES FINESS Array B 115.33 32 PKIKP **PKPdf** 17 54 48.9 -1.6
FINES 18 05 25.5
FINES 18 05 30.3
FINES pmax pmax
comp=Z,2.0nm,1.0s
FINES pmax pmax
comp=Z,7.0nm,0.7s
FINES pmax pmax
comp=Z,7.0nm,0.7s
ARCES ARCESS Array B 116.53 23 PKP **PKPdf** 17 54 54.3 +1.6
comp=Z,1.4nm,0.7s,baz=248,slow=4.8,SNR=3.5
ARCES PP **PP** 17 55 58.4 -4.2
comp=Z,3.4nm,0.9s,baz=251,slow=7.6,SNR=5.3
ARCES PKKPbc **PKKPbc** 18 05 21.3 -1.7
comp=Z,4.1nm,0.6s,baz=101,slow=3.8,SNR=15
OBN Obninsk 119.79 40 *c i*PKIKP **PKPdf** 17 54 59.7 +0.5
OBN *e* 17 55 43.2
OBN pmax pmax
comp=Z,11nm,0.9s
KLMR Klimovskoe 121.74 34 *e*PKIKP **PKPdf** 17 55 02.2 -0.6
KLMR pmax pmax
comp=Z,9.0nm,0.6s
KIV Kislovodsk 122.24 54 ⇓ *i*PKIKP **PKPdf** 17 55 05.7 +1.2
KIV *i* 17 55 49.3
KIV *e* 17 56 04.2
KIV 17 56 42.0
KIV pmax pmax
comp=Z,14nm,1.5s
KBZ Khabaz 122.36 54 PKP **PKPdf** 17 55 04.7 +0.2
comp=Z,4.5nm,0.9s,baz=240,slow=2.2,SNR=5.2
KBZ pPKP **pPKPdf** 17 55 49.1 +0.2
comp=Z,8.3nm,0.9s,baz=201,slow=3.6,SNR=4.3
KBZ PKKPbc **PKKPbc** 18 05 01.5 +0.6
comp=Z,4.1nm,0.8s,baz=124,slow=3.5,SNR=8.0
AKH Akhalkalaki 122.41 57 ⇑ *i*P **PKKPbc** 18 05 02.4 +1.5
GOF Gofitskoye 122.66 52 ⇑ *e*PKIKP **PKPdf** 17 55 06.3 +1.2
GOF pmax pmax
comp=Z,19nm,0.7s
CTA Charters Tower 122.68 217 PKP **PKPdf** 17 55 05.9 -0.1
comp=Z,15nm,0.9s,baz=107,slow=2.9
AS01 Alice Springs 125.07 203 *e*PKPdf **PKPdf** 17 55 08.6 -2.0
AS31 Alice Springs 125.08 203 *e*PKPdf **PKPdf** 17 55 10.1 -0.6
ASAR Alice Springs 125.08 203 PKP **PKPdf** 17 55 10.0 -0.6
comp=Z,44nm,0.7s,baz=133,slow=1.7,SNR=261
ASAR PKKPbc **PKKPbc** 18 04 50.5 0.0
comp=Z,0.6nm,0.5s,baz=335,slow=3.1,SNR=6.8
WB2 Warramunga Arr 128.32 206 *e*PKPdf **PKPdf** 17 55 16.7 -0.2
WRA Warramunga Arr 128.33 205 PKP **PKPdf** 17 55 16.4 -0.5
comp=Z,55nm,0.6s,baz=166,slow=1.6,SNR=206
WRA pPKP **pPKPdf** 17 55 59.5 -1.7
comp=Z,6.1nm,0.8s,baz=175,slow=1.8,SNR=2.1
WRA SKPbc SKPbc 17 58 20.8
comp=Z,1.6nm,0.6s,baz=157,slow=3.7,SNR=4.6
WRAB Tennant Creek 128.33 206 *c i*PKIKP **PKPdf** 17 55 14.8 -2.1
WRAB Tennant Creek 128.33 206 *e*PKPdf **PKPdf** 17 55 16.2 -0.7
BILL Bilibino 129.12 337 *d i*PKIKP **PKPdf** 17 55 17.4 +0.6
BILL *e* 17 56 01.5
BILL *e* 17 56 16.9
BILL *e* 18 07 13.5
BILL pmax pmax
comp=Z,12nm,0.9s
BILL Bilibino 129.12 337 *e*PKPdf **PKPdf** 17 55 17.8 +1.0
UOSS Minazif 129.16 79 *e*PKPdf **PKPdf** 17 55 18.4 +0.2
COEN Coen 129.37 219 *e*PKPdf **PKPdf** 17 55 19.1 +0.2
PMG Port Moresby 130.56 226 ⇓ *i*PKIKP **PKPdf** 17 55 21.0 -0.2
MBWA Marble Bar 130.90 188 *e*PKPdf **PKPdf** 17 55 21.6 -0.1
ARU Arti 132.08 38 *i* PKIKP **PKPdf** 17 55 24.3 +1.6
ARU 17 57 46.2
FITZ Fitzroy Crossi 132.80 196 PKP **PKPdf** 17 55 25.2 -0.1
comp=Z,34nm,0.7s,baz=206,slow=2.7,SNR=72
FITZ SKPbc **SKPbc** 17 58 36.8 -0.2
comp=Z,24nm,1.0s,baz=174,slow=3.4,SNR=10
FITZ Fitzroy Crossi 132.80 196 *e*PKPdf **PKPdf** 17 55 25.7 +0.4
FITZ SKPbc **SKPbc** 17 58 36.8 -0.2
GEYT Alibeck 133.16 63 PKhKP PKPpre 17 55 18.5
comp=Z,0.7nm,0.4s,baz=288,slow=1.4,SNR=2.8
GEYT SKPab **SKPab** 17 58 39.9 +0.1
comp=Z,7.2nm,0.9s,baz=263,slow=7.2,SNR=8.8
ABKAR Akbulak array 134.20 47 *e*PKPpre PKPpre 17 55 19.3
MTN Manton Dam 136.03 205 *e*PKPpre PKPpre 17 55 18.7
SEY Seymchan 136.67 335 PKP **PKPdf** 17 55 32.3 +1.1
comp=Z,13nm,0.8s,baz=127,slow=2.8,SNR=23
SEY pPKP **pPKPdf** 17 56 16.3 +0.7
comp=Z,5.5nm,0.8s,baz=141,slow=1.4,SNR=2.4
SEY SKP 17 58 49.7
comp=Z,8.7nm,0.8s,baz=356,slow=2.7,SNR=9.7
COCO West Island 137.13 156 *i* PKIKP **PKPdf** 17 55 31.6 -1.9
PEA0 Petropavlovsk- 138.77 320 *e*PKPdf **PKPdf** 17 55 36.2 +0.9
PEA0B Petropavlovsk- 138.77 320 *e*PKPdf **PKPdf** 17 55 36.9 +1.6
PETK Petropavlovsk- 138.77 320 PKhKP PKPpre 17 55 30.2
comp=Z,3.2nm,0.8s,baz=86,slow=8.8,SNR=5.9
PETK PKP **PKPdf** 17 55 36.2 +0.9
comp=Z,14nm,0.9s,baz=81,slow=5.6,SNR=12
PETK pPKP pPKPdf 17 56 20.5 +0.7
comp=Z,10.0nm,0.9s,baz=104,slow=6.3,SNR=3.5
PETK SKPbc **SKPbc** 17 58 54.3 0.0
comp=Z,10nm,1.0s,baz=89,slow=9.0,SNR=9.2
BRVK Borovoye 139.56 39 *d i*PKIKP **PKPdf** 17 55 38.0 +1.3
BRVK Borovoye 139.56 39 *e*PKPdf **PKPdf** 17 55 36.5 -0.3
BVA0 Borovoye Array 139.63 39 PKIKP **PKPdf** 17 55 35.5 -1.4
BVA0 pmax pmax
comp=Z,7.0nm,1.0s
SOEI Soe 141.16 197 *e*PKPpre PKPpre 17 55 36.6
SOEI *e*PKPdf **PKPdf** 17 55 41.0 0.0
KK31 Karatay Array 142.39 55 PKHKP PKPpre 17 55 37.4
KK31 pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 142.39 55 *e*PKHKP PKPpre 17 55 38.4
KKAR *e* 17 55 41.9
KKAR Karatay Array 142.39 55 *e*PKPpre PKPpre 17 55 38.4
KKAR *e*PKPdf **PKPdf** 17 55 41.9 -0.3
MMRI Maumere 142.73 195 *e*PKPpre PKPpre 17 55 39.2
PALK Pallekele 142.99 117 PKP PKPbc 17 55 41.6
comp=Z,22nm,0.7s,baz=117,slow=1.8,SNR=6.5
PALK Pallekele 142.99 117 *i* PKIKP **PKPdf** 17 55 46.0 +1.8
JAGI Jajag, Banyuwa 143.91 181 *e*PKPdf **PKPdf** 17 55 45.0 -0.8
MNAS Manas 143.94 55 PKIKP PKPbc 17 55 44.1 +0.7
MNAS pmax pmax
comp=Z,8.0nm,0.7s
YAK Yakutsk 144.11 347 PKP PKPbc 17 55 43.4 +0.4
comp=Z,50nm,0.6s,baz=333,slow=0.6,SNR=42
UGM Wanagama 144.37 175 *e*PKPdf PKPbc 17 55 45.8 +0.4
FAKI Fak Fak 144.40 214 *e*PKPdf PKPbc 17 55 45.5 0.0
CISI Cisompet, Garu 144.42 171 *e*PKPdf **PKPab** 17 55 45.4 +0.1
KURK Kurchatov 145.23 39 *c i*PKP2 **PKPab** 17 55 48.2 +1.0
KURK Kurchatov 145.23 39 *e*PKPdf **PKPab** 17 55 48.4 +1.2
NVS Novosibirsk 145.30 31 *e*PKP2 **PKPab** 17 55 48.5 +1.2
NVS *i* 17 59 04.7
NVS pmax pmax
comp=N,24nm,0.5s
NVS pmax pmax
comp=Z,77nm,0.5s
AAK Ala-Archa 145.35 54 *c i*PKP2 **PKPab** 17 55 49.6 +1.4
AAK Ala-Archa 145.35 54 *e*PKPdf **PKPab** 17 55 49.7 +1.4
TKM2 Tokmak 2 146.08 54 PKP2 **PKPbc** 17 55 49.8 -0.3
TKM2 pmax pmax
comp=Z,94nm,0.6s
HYB Hyderabad 146.40 100 *i* PKP **PKPbc** 17 55 51.0 -0.5
HYB *e* 17 55 58.5
HYB *ep*PKP **pPKPdf** 17 56 35.5 +1.1
HYB *e* 17 56 47.0
ZAA0 Zalesovo Array 146.59 31 *e*PKPdf **PKPdf** 17 55 49.8 +0.8
ZAA0 *e*PKPdf **PKPbc** 17 55 50.0 -0.8
ZALV Zalesovo Beam 146.59 31 PKPbc **PKPbc** 17 55 50.4 -0.5
comp=Z,46nm,0.5s,baz=308,slow=3.2,SNR=127
ZALV pPKPbc pPKPbc 17 56 33.8 -1.0
comp=Z,52nm,0.7s,baz=306,slow=4.9,SNR=3.0
ZALV SKPbc **SKiKP** 17 59 15.2 +1.5
comp=Z,9.6nm,0.7s,baz=292,slow=2.8,SNR=7.0
KAPI Kappang 146.76 192 PKPbc **PKPdf** 17 55 51.1 +0.5
comp=Z,188nm,0.7s,baz=170,slow=0.5,SNR=103
KAPI PP **PP** 17 59 16.8 +0.8
comp=Z,17nm,1.0s,baz=199,slow=5.3,SNR=4.6
KAPI Kappang 146.76 192 *e*PKPdf **PKPbc** 17 55 51.7 -0.8
KAPI PP **PP** 17 59 16.8 +0.8
KSH Kashi 147.04 60 PKPbc PKPbc 17 55 52.0 -0.8
KSH *ep*PKP pPKPdf 17 56 35.0 0.0
KSH *es*PKP 17 56 52.0
KSH *e*PP **PP** 17 59 25.3 +5.9
KSH SKS **SKSdf** 18 02 43.0 -0.4
KSH SKKS **SKKSac** 18 05 57.0 +2.7
KSH LR LR
comp=Z,76nm,6.3s
KSH LR LR
comp=Z,59nm,6.0s
KSH LR LR
comp=Z,88nm,7.8s
GUMO Guam 147.37 251 PKPbc **PKPdf** 17 55 51.9 +0.3
comp=Z,263nm,0.8s,baz=197,slow=8.1,SNR=12
ANA2 Anatahan 147.97 256 *e*PKPbc **PKPbc** 17 55 55.5 -0.3
TYV Tymovskoe 148.04 324 *e*PKIKP **PKPdf** 17 55 53.0 +1.4
TYV pmax pmax
comp=E,22nm,1.0s
TYV pmax pmax
comp=Z,31nm,0.8s
KRAR Krasnoyarsk 148.25 22 ⇑ *i*PKP2 **PKPbc** 17 55 56.4 +1.1
NDI New Delhi 148.28 80 *e*P **PKPdf** 17 55 50.0 -2.7
SDNR Sundarnagar 148.31 74 *e*P **PKPab** 17 56 00.6 +0.6
PDGK Podgornoye 148.70 51 PKP2 **PKPab** 17 56 01.0 -0.1
PDGK pmax pmax
comp=Z,66nm,0.6s
MAKZ Makanchi 149.00 44 *e*PKIKP **PKPdf** 17 55 54.1 +0.8
MAKZ Makanchi 149.00 44 *e*PKPdf **PKPdf** 17 55 54.1 +0.8
MK31 Makanchi Array 149.20 44 *i* PKP2 **PKPbc** 17 55 58.5 +0.4
MK31 pmax pmax
comp=Z,39nm,0.4s
MK31 Makanchi Array 149.20 44 *e*PKPdf **PKPdf** 17 55 54.7 +1.0
MKAR Makanchi Array 149.20 44 PKP **PKPdf** 17 55 53.6 0.0

comp=Z,16nm,0.6s,baz=337,slow=1.2,SNR=112
MKAR PKPbc **PKiKP** **17 55 59.3 +0.1**
comp=Z,16nm,0.6s,baz=290,slow=3.2,SNR=132
MKAR PKPab **PKPab** **17 56 05.0 +1.9**
comp=Z,94nm,0.4s,baz=305,slow=3.0,SNR=55
MKAR pPKPbc **pPKPbc** **17 56 40.7 -1.5**
comp=Z,35nm,0.9s,baz=0.0,slow=2.4,SNR=1.8
MKAR PP **PP** **17 59 28.1 -3.1**
comp=Z,3.9nm,0.7s,baz=278,slow=5.5,SNR=4.9
MKAR Makanchi Array 149.20 44 *e*PKIKP **PKPdf** **17 55 54.7 +1.0**
MKAR 17 59 28.1
MKAR Makanchi Array 149.20 44 *e*PKPdf **PKPdf** **17 55 54.7 +1.0**
MKAR PKPab **PKPab** **17 56 05.0 +1.9**
MKAR pPKPbc **pPKPbc** **17 56 40.7 -1.5**
MKAR PP **PP** **17 59 28.1 -3.1**
MK01 Makanchi Array 149.21 44 *e*PKPdf **PKPdf** **17 55 54.2 +0.5**
YUK Yuzh-Kuril'sk 149.32 310 *e*PKP2 **PKPbc** **17 55 58.9 +0.5**
GSI Gunungsitoli 149.63 148 *e*PKPdf **PKPdf** **17 55 56.8 +1.5**
LUWI Luwuk 149.89 199 *e*PKPbc **PKPbc** **17 56 01.6 +0.8**
YSS Yuzh-Sakhalins 150.07 318 *i* PKP2 **PKPbc** **17 56 00.4 +0.3**
YSS pmax pmax
comp=Z,80nm,0.8s
YSS Yuzh-Sakhalins 150.07 318 *e*PKPbc **PKPbc** **17 56 00.5 +0.3**
BKNI Bangkinang 150.23 155 *e*PKPbc **PKPbc** **17 56 01.0 -0.5**
ASAJ Asahikawa 151.46 312 PKP **PKPdf** **17 55 57.8 +0.5**
comp=Z,8.9nm,0.9s
ASAJ PKPbc **PKiKP** **17 56 04.1 +0.2**
PSI Prapat 151.57 149 PKP **PKPdf** **17 55 58.4 -0.1**
comp=Z,6.0nm,0.4s,baz=181,slow=3.5,SNR=8.6
PSI PKPbc **PKPbc** **17 56 04.6 -0.2**
comp=Z,112nm,0.6s,baz=195,slow=2.6,SNR=78
PSI PKPab **PKPab** **17 56 14.1 +0.2**
comp=Z,73nm,0.5s,baz=213,slow=6.1,SNR=7.2
PSI Prapat 151.57 149 *e*PKPdf **PKPdf** **17 55 58.8 +0.3**
PSI PKPbc **PKPbc** **17 56 04.6 -0.2**
PSI PKPab **PKPab** **17 56 14.1 +0.2**
ERM Erimo 151.89 308 *e*PKIKP **PKPbc** **17 56 05.5 +1.0**
ERM Erimo 151.89 308 *e*PKPbc **PKPbc** **17 56 05.5 +1.0**
MYKOM Kota Tinggi 152.57 159 *e*PKPdf **PKPdf** **17 56 00.4 +0.5**
LHMI Lhok Sumawe 152.66 142 *e*PKPbc **PKPbc** **17 56 07.0 -0.1**
PYUN Piuthan 153.25 82 *e*P **PKPdf** **17 56 01.2 +0.5**
comp=Z,163nm,0.5s
HABR Khabarovsk 153.39 327 *ce*PKIKP **PKPdf** **17 55 58.7 -1.2**
HABR *e* 17 56 19.6
HABR *e* 17 56 43.5
HABR *e* 17 56 51.6
HABR *e* 17 59 55.1
HABR *e* 18 02 49.6
HABR *e*PPP PPP 18 03 23.8
HABR *e*SS SS 18 19 16.9 +1.7
HABR *e*SSS SSS 18 25 09.5
KSM Kuching 153.63 173 *e*PKPdf **PKPdf** **17 56 01.2 -0.2**
KOLN Koldanda 153.75 83 *e*P **PKPdf** **17 56 01.7 +0.3**
comp=Z,96nm,0.6s
WMQ Urumqi 153.96 45 PKPbc **PKPdf** **17 56 02.5 +1.5**
WMQ PKPab **PKPab** **17 56 25.3 +2.1**
WMQ PP **PP** **18 00 00.3 +1.8**
WMQ AMB AMB
comp=Z,220nm,9.1s
IPM Ipoh 154.00 151 *e*PKPdf **PKPdf** **17 56 02.0 +0.1**
IPM *e*PKPbc **PKiKP** **17 56 10.2 +0.1**
KLR Kul'dur 154.35 331 PKP **PKPdf** **17 56 01.1 -0.1**
comp=Z,9.6nm,1.1s,baz=20,slow=3.0,SNR=16
KLR PKPbc **PKPbc** **17 56 09.5 -0.1**
comp=Z,8.6nm,0.6s,baz=74,slow=3.2,SNR=22
KLR pPKP **pPKPdf** **17 56 45.0 -0.9**
comp=Z,4.5nm,1.1s,baz=40,slow=4.6,SNR=1.8
KLR pPKPbc **pPKPbc** **17 56 53.4 -0.6**
comp=Z,5.5nm,0.7s,baz=70,slow=7.3,SNR=3.5
MOY Mondy 154.45 18 *e*PKIKP **PKPdf** **17 56 04.5 +3.0**
MOY pmax pmax
comp=Z,30nm,2.6s
KULM Kulim 154.56 149 *e*PKPdf **PKPdf** **17 56 03.1 +0.5**
GKN Gorkha 154.69 83 *e*P **PKPdf** **17 56 02.5 -0.1**
comp=Z,114nm,0.6s
SBUM Sibu 154.74 177 *e*PKPdf **PKPdf** **17 56 03.5 +0.6**
DMN Daman 155.06 84 *e*P **PKPdf** **17 56 03.3 0.0**
comp=Z,98nm,0.6s
TLY Talaya 155.09 14 pPKPab pPKPab 17 57 11.4 +1.0
comp=Z,7.3nm,0.9s,baz=342,slow=7.9,SNR=2.3
TLY Talaya 155.09 14 *e*PKIKP **PKPdf** **17 56 09.0 +6.8**
TLY pmax pmax
comp=Z,14nm,0.9s
KKN Kakani 155.23 83 *e*P **PKPdf** **17 56 03.8 +0.4**
comp=Z,69nm,0.6s
CIT Chita 155.84 360 *e*PKIKP **PKPdf** **17 56 04.6 +1.3**
CIT *e* 17 56 31.8
JIRN Jiri 156.02 84 *e*P **PKPdf** **17 56 04.8 +0.1**
comp=Z,324nm,0.6s
ZAK Zakamensk 156.22 16 *e*PKIKP **PKPdf** **17 56 03.9 0.0**
ZAK *e* 18 00 11.1
ZAK pmax pmax
comp=Z,6.0nm,1.1s
ZAK pmax pmax
comp=Z,6.0nm,2.0s
MJAR Matsushiro Arr 157.25 299 PKP **PKPdf** **17 56 05.3 -0.3**
comp=Z,1.4nm,0.8s,baz=135,slow=0.9,SNR=7.4
MJAR PKPab **PKPab** **17 56 37.9 +0.4**
comp=Z,10.0nm,0.7s,baz=83,slow=4.9,SNR=20
MJAR pPKPab **pPKPab** **17 57 21.0 +0.8**
comp=Z,5.0nm,0.9s,baz=103,slow=1.6,SNR=3.4
MAJO Matsushiro 157.25 299 *e*PKIKP **PKPdf** **17 56 05.8 +0.2**
MAJO Matsushiro 157.25 299 *e*PKPdf **PKPdf** **17 56 05.8 +0.2**
MAJO *e*PKPab **PKPab** **17 56 38.0 +0.5**
MJB9 Matsu-Tunnel 157.25 299 *e*PKPdf **PKPdf** **17 56 06.3 +0.7**
MJB9 *e*PKPab **PKPab** **17 56 38.0 +0.5**
SONA1 Songino Array 159.30 13 *e*PKPdf **PKPdf** **17 56 08.2 +0.4**
SONM Songino Array 159.31 13 PKP **PKPdf** **17 56 08.5 +0.7**
comp=Z,8.3nm,1.0s,baz=271,slow=0.3,SNR=40
SONM PKPab **PKPab** **17 56 44.2 -1.9**
comp=Z,5.7nm,0.7s,baz=315,slow=2.1,SNR=11
SONM pPKPab **pPKPab** **17 57 29.0 +0.2**
comp=Z,3.3nm,0.9s,baz=304,slow=3.0,SNR=1.7
CN2 Changchun 161.30 332 *e*PKP **PKPdf** **17 56 07.0 -3.0**
CM01 Chiang Mai Arr 163.83 122 *e*PKPdf **PKPdf** **17 56 13.7 +0.5**
CM01 *e*PKPab **PKPab** **17 57 06.2 -0.4**
CMAR Chiang Mai Arr 163.84 122 PKP **PKPdf** **17 56 13.9 +0.8**
comp=Z,5.8nm,0.9s,baz=251,slow=2.2,SNR=23
CMAR pPKP **pPKPdf** **17 56 59.0 +1.0**
comp=Z,8.2nm,1.1s,baz=246,slow=2.9,SNR=4.3
CMAR PKPab **PKPab** **17 57 06.8 +0.2**
comp=Z,10nm,0.9s,baz=235,slow=4.3,SNR=12
CMAR pPKPab **pPKPab** **17 57 49.6 +0.4**
comp=Z,4.1nm,1.0s,baz=224,slow=3.6,SNR=2.4
CMAR Chiang Mai Arr 163.84 122 PKIKP **PKPdf** **17 56 14.0 +0.8**
CMAR 17 56 59.0
CMAR pmax pmax
comp=Z,6.0nm,0.9s
CMAR pmax pmax
comp=Z,8.0nm,1.1s
GTA Gaotai 163.91 41 PKP **PKPdf** **17 56 13.8 +0.9**
GTA pPKP pPKPdf 17 56 57.5 -0.1
GTA PKPab **PKPab** **17 57 08.0 +1.5**
GTA sPKP 17 57 16.5
GTA PP **PP** **18 00 54.0 +1.6**
JNU Nakatsue 163.96 293 PKP **PKPdf** **17 56 13.2 +0.2**
comp=Z,2.2nm,0.7s,baz=48,slow=4.5,SNR=3.3
JNU PKPab **PKPab** **17 57 06.1 -0.8**
comp=Z,8.2nm,0.9s,baz=57,slow=5.6,SNR=7.1
CHTO Chiang Mai 164.06 121 *e*PKIKP **PKPdf** **17 56 14.2 +0.8**
CHTO Chiang Mai 164.06 121 *e*PKPdf **PKPdf** **17 56 14.2 +0.8**
KSRS Korea Array 164.41 312 PKP **PKPdf** **17 56 13.5 +0.4**
comp=Z,7.1nm,0.9s,baz=105,slow=1.1,SNR=13
KSRS pPKP **pPKPdf** **17 56 58.3 +0.5**
comp=Z,3.6nm,0.9s,baz=107,slow=0.7,SNR=3.0
KSRS PKPab **PKPab** **17 57 08.9 +0.3**
comp=Z,3.7nm,0.8s,baz=40,slow=5.2,SNR=6.0
KS01 Wonju Array Si 164.41 312 *e*PKPdf **PKPdf** **17 56 13.4 +0.3**
KSAR Wonju Array Be 164.44 312 PKIKP **PKPdf** **17 56 13.5 +0.3**
KSAR 17 56 58.3
KSAR 17 57 08.9
KSAR Wonju Array Be 164.44 312 PKP **PKPdf** **17 56 13.5 +0.3**
KSAR pPKP **pPKPdf** **17 56 58.3 +0.4**
KSAR PKPab **PKPab** **17 57 08.9 +0.2**
HHC Hu-ho-hao-te 166.93 6 *e*PKP **PKPdf** **17 56 18.5 +3.2**
HHC PP PP 18 01 15.3 +8.1
HHC AMB AMB
comp=Z,120nm,8.1s
HHC LR LR
comp=Z,90nm,13.6s
HHC LR LR
comp=Z,140nm,14.8s
HHC LR LR
comp=Z,66nm,13.6s

LZH Lanzhou 168.50 42 *e*PKP **PKPdf** **17 56 17.0 +0.4**
LZH pPKP pPKPdf 17 57 02.5 +1.1
LZH sPKP 17 57 16.3
LZH PP **PP** **18 01 20.8 +4.7**
LZH SKS **SKSdf** **18 03 01.8 -2.8**
LZH SS **SS** **18 21 57.3 +3.4**
LZH AMB AMB
comp=Z,230nm,5.1s
CD2 Chengdu 171.12 67 PKP **PKPdf** **17 56 17.0 -1.1**
CD2 pPKP pPKPdf 17 57 01.0 -1.9
CD2 sPKP 17 57 18.3
CD2 SKS **SKSdf** **18 03 04.3 -1.0**
CD2 SKKS **SKKSac** **18 07 58.5 -1.8**
CD2 SS **SS** **18 22 20.0 -1.2**
CD2 AMB AMB
comp=Z,120nm,5.8s
NACB Ninganchiao 171.70 246 *e*PKPab **PKPab** **17 57 42.0 +0.7**
TPUB Ta-pu 172.00 237 *e*PKPdf **PKPdf** **17 56 20.1 +1.4**
SSLB Suanglung 172.02 241 *e*PKPdf **PKPdf** **17 56 19.8 +1.1**
XAN Xi'an 172.76 30 PKP **PKPdf** **17 56 19.3 +0.5**
NJ2 Nanjing 173.61 312 *e*PKP **PKPdf** **17 56 20.3 +1.2**
GYA Guiyang 173.93 101 *e*PKP **PKPdf** **17 56 19.3 -0.3**
GYA pPKP pPKPdf 17 57 03.0 -1.3
GYA sPKP 17 57 20.8
GYA PKS **PKSdf** **17 59 49.5 -2.5**
GYA PP **PP** **18 01 45.3 +1.3**
GYA AMB AMB
comp=Z,130nm,7.9s

WEL 31 17:51:56.8±0.1, 40°36S×174°27E, h85km, 2km, ML3.5/38, 18C-11D, Error ellipse: s-maj=0.9km s-min=0.4km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DUWZ	**D'Urville Isla**	**0.52**	**211**	PN	Pn	17 52 10.9	-0.4
DUWZ				SN	Sn	17 52 21.3	-0.6
KIW	**Kapiti Island**	**0.70**	**136**	↑PN	Pn	17 52 12.4	-0.5
KIW				SN	Sn	17 52 23.7	-1.2
KIW				AML	AML	17 52 25.3	
OHWZ	**Ohakea**	**0.81**	**79**	PN	Pn	17 52 14.3	+0.3
WAZ	**Wanganui**	**0.82**	**42**	↑PN	Pn	17 52 14.3	+0.1
OGWZ	**Otaki Gorge**	**0.82**	**124**	PN	Pn	17 52 14.0	-0.2
OGWZ				SN	Sn	17 52 26.5	-0.7
OGWZ				AML	AML	17 52 28.9	
TCW	**Tory Channel**	**0.85**	**180**	↑PN	Pn	17 52 14.4	0.0
TCW				SN	Sn	17 52 27.5	-0.2
TCW				AML	AML	17 52 28.6	
LREZ	**Lake Rotokare**	**0.91**	**7**	↑PN	Pn	17 52 15.1	0.0
LREZ				SN	Sn	17 52 29.4	+0.7
CAW	**Cannon Point**	**0.96**	**141**	PN	Pn	17 52 15.5	-0.3
CAW				AML	AML	17 52 29.5	
CAW				AML	AML	17 52 32.1	
NMEZ	**Namu Road**	**0.99**	**342**	PN	Pn	17 52 15.6	-0.5
NMEZ				SN	Sn	17 52 30.1	-0.4
WEL	**Wellington**	**1.00**	**158**	PN	Pn	17 52 16.3	+0.2
WEL				AML	AML	17 52 30.6	
WEL				AML	AML	17 52 30.6	
WEL				AML	AML	17 52 31.1	
WEL				AML	AML	17 52 35.0	
PREZ	**Palmer Road**	**1.02**	**355**	↑PN	Pn	17 52 16.3	-0.2
MRZ	**Mangatainoka R**	**1.04**	**107**	↑PN	Pn	17 52 16.2	-0.4
MRZ				AML	AML	17 52 34.9	
MRZ				AML	AML	17 52 35.6	
KHEZ	**Kahui Hut**	**1.08**	**349**	↑PN	Pn	17 52 16.9	-0.4
HOWZ	**Holdsworth Sta**	**1.09**	**120**	PN	Pn	17 52 16.9	-0.3
HOWZ				AML	AML	17 52 38.3	
HOWZ				AML	AML	17 52 40.0	
NNZ	**Nelson**	**1.09**	**218**	↑PN	Pn	17 52 17.2	0.0
NNZ				eSN	Sn	17 52 32.6	0.0
TUWZ	**Tuamarina**	**1.10**	**193**	↑PN	Pn	17 52 17.0	-0.3
TUWZ				AML	AML	17 52 33.6	
TUWZ				AML	AML	17 52 34.3	
NWEZ	**Newall Road**	**1.13**	**344**	↑PN	Pn	17 52 17.4	-0.3
BHW	**Baring Head**	**1.14**	**157**	PN	Pn	17 52 17.7	-0.2
BHW				AML	AML	17 52 39.5	
BHW				AML	AML	17 52 40.7	
POWZ	**Post Office Ro**	**1.15**	**92**	PN	Pn	17 52 17.9	0.0
POWZ				AML	AML	17 52 39.4	
POWZ				AML	AML	17 52 39.9	
DREZ	**Durham Road**	**1.17**	**357**	PN	Pn	17 52 18.1	-0.2
PKE	**Pukeiti**	**1.19**	**349**	↑PN	Pn	17 52 18.0	-0.5
MTW	**Mount Morrison**	**1.23**	**131**	PN	Pn	17 52 18.3	-0.7
MTW				AML	AML	17 52 41.1	
MTW				AML	AML	17 52 46.0	
MHEZ	**Mangahewa**	**1.28**	**2**	PN	Pn	17 52 19.6	0.0
MSWZ	**Moikau Station**	**1.29**	**145**	PN	Pn	17 52 19.5	-0.2
MSWZ				AML	AML	17 52 42.9	
MSWZ				AML	AML	17 52 43.2	
VRZ	**Vera Road**	**1.29**	**17**	↓PN	Pn	17 52 19.5	-0.2
TIWZ	**Tintock**	**1.30**	**109**	PN	Pn	17 52 19.9	+0.1
TIWZ				AML	AML	17 52 43.8	
TIWZ				AML	AML	17 52 44.0	
PRWZ	**Pori Road**	**1.31**	**99**	PN	Pn	17 52 20.2	+0.3
PRWZ				AML	AML	17 52 45.7	
PRWZ				AML	AML	17 52 45.8	
TSZ	**Takapari Road**	**1.33**	**77**	PN	Pn	17 52 19.6	-0.6
TSZ				AML	AML	17 52 37.6	
TSZ				AML	AML	17 52 42.6	
MTVZ	**Mangateitei**	**1.34**	**44**	PN	Pn	17 52 20.3	-0.1
PAWZ	**Paruwai Farm**	**1.34**	**140**	PN	Pn	17 52 20.2	-0.2
PAWZ				AML	AML	17 52 36.9	
PAWZ				AML	AML	17 52 45.9	
PKVZ	**Pokaka**	**1.35**	**38**	PN	Pn	17 52 20.4	-0.1
BSWZ	**Blackbirch Sta**	**1.39**	**192**	PN	Pn	17 52 21.3	+0.4
BSWZ				AML	AML	17 52 41.2	
BSWZ				AML	AML	17 52 41.3	
CMWZ	**Cape Campbell**	**1.39**	**182**	PN	Pn	17 52 21.8	+0.9
CMWZ				AML	AML	17 52 46.6	
CMWZ				AML	AML	17 52 46.8	
QRZ	**Quartz Range**	**1.41**	**250**	↓PN	Pn	17 52 20.3	-0.8
PLWZ	**Palliser**	**1.42**	**149**	PN	Pn	17 52 20.9	-0.5
PLWZ				AML	AML	17 52 48.6	
PLWZ				AML	AML	17 52 50.2	
TMWZ	**Te Maipa**	**1.44**	**122**	↓PN	Pn	17 52 21.5	-0.1
TMWZ				AML	AML	17 52 48.0	
TMWZ				AML	AML	17 52 48.3	
TRVZ	**Turoa**	**1.45**	**43**	PN	Pn	17 52 21.7	-0.2
DVHZ	**Dannevirke**	**1.45**	**88**	PN	Pn	17 52 21.0	-0.7
DVHZ				AML	AML	17 52 47.6	
DVHZ				AML	AML	17 52 47.6	
WNVZ	**Wahianoa**	**1.45**	**45**	PN	Pn	17 52 21.7	-0.2
DRZ	**Dome Shelter**	**1.47**	**43**	PN	Pn	17 52 22.7	+0.4
WHWZ	**Whangaehu Hut**	**1.48**	**44**	↓PN	Pn	17 52 22.3	0.0
FWVZ	**Far West T-bar**	**1.48**	**42**	PN	Pn	17 52 22.1	-0.2
MOVZ	**Moawhango**	**1.49**	**51**	↓PN	Pn	17 52 21.9	-0.4
TRWZ	**Traveller**	**1.49**	**134**	PN	Pn	17 52 22.2	0.0
TRWZ				AML	AML	17 52 42.5	
TRWZ				AML	AML	17 52 53.6	
TUVZ	**Tukino**	**1.53**	**45**	PN	Pn	17 52 22.8	0.0
BFZ	**Birch Farm**	**1.54**	**103**	PN	Pn	17 52 22.5	-0.4
BFZ				AML	AML	17 52 40.3	
BFZ				AML	AML	17 52 40.3	
BFZ				AML	AML	17 52 49.5	
BFZ				AML	AML	17 52 49.5	
PNHZ	**Pukenui**	**1.54**	**74**	PN	Pn	17 52 22.2	-0.8
PNHZ				AML	AML	17 52 45.2	
PNHZ				AML	AML	17 52 45.2	
NGZ	**Ngauruhoe**	**1.57**	**41**	↓PN	Pn	17 52 23.3	0.0
CPWZ	**Castlepoint**	**1.57**	**111**	PN	Pn	17 52 23.5	+0.3
CPWZ				AML	AML	17 52 50.2	
CPWZ				AML	AML	17 52 52.1	
TWVZ	**Taurewa**	**1.57**	**35**	PN	Pn	17 52 23.1	-0.3
WTVZ	**West Tongariro**	**1.61**	**40**	↓PN	Pn	17 52 23.7	-0.2
OTVZ	**Oturere**	**1.61**	**42**	PN	Pn	17 52 23.8	-0.1
KRVZ	**Karewarewa**	**1.65**	**40**	PN	Pn	17 52 24.0	-0.3
ANWZ	**Angora Road**	**1.69**	**94**	PN	Pn	17 52 24.2	-0.5
ANWZ				AML	AML	17 52 45.5	
ANWZ				AML	AML	17 52 46.2	
WPHZ	**Waipukurau**	**1.69**	**81**	PN	Pn	17 52 24.1	-0.7
WPHZ				AML	AML	17 52 52.8	
WPHZ				AML	AML	17 52 56.2	
THZ	**Tophouse**	**1.74**	**216**	↑PN	Pn	17 52 25.9	+0.3
KRHZ	**Kereru**	**1.77**	**67**	PN	Pn	17 52 24.9	-0.9
KRHZ				AML	AML	17 52 54.9	
KRHZ				AML	AML	17 52 57.1	
KATZ	**Kakaramea**	**1.77**	**39**	PN	Pn	17 52 26.1	+0.1
PRHZ	**Porangahau**	**1.81**	**88**	PN	Pn	17 52 25.6	-0.7
PRHZ				AML	AML	17 52 48.3	
PRHZ				AML	AML	17 53 17.1	
RATZ	**Rangitukua**	**1.89**	**38**	PN	Pn	17 52 28.0	+0.5
HIZ	**Hauiti**	**1.90**	**14**	PN	Pn	17 52 27.1	-0.5
KWHZ	**Kaweka Forest**	**1.90**	**61**	PN	Pn	17 52 28.3	+0.7
KWHZ				AML	AML	17 52 59.4	
KWHZ				AML	AML	17 53 00.2	
WATZ	**Wairara**	**2.00**	**35**	PN	Pn	17 52 29.3	+0.4
PXZ	**Pawanui**	**2.01**	**81**	PN	Pn	17 52 27.9	-1.1
KAHZ	**Kahuranaki**	**2.08**	**75**	PN	Pn	17 52 29.0	-1.0
MCHZ	**McNeill Hill**	**2.08**	**65**	PN	Pn	17 52 28.9	-1.0
MCHZ				AML	AML	17 53 07.3	
MCHZ				AML	AML	17 53 12.6	
BKZ	**Black Stump Fm**	**2.09**	**56**	PN	Pn	17 52 28.9	-1.2
BKZ				AML	AML	17 53 04.4	
BKZ				AML	AML	17 53 05.5	
KHZ	**Kahutara**	**2.13**	**195**	↓PN	Pn	17 52 30.5	0.0
KHZ				AML	AML	17 52 31.0	
KHZ				AML	AML	17 52 31.0	
TLZ	**Tolley Road**	**2.25**	**26**	PN	Pn	17 52 31.8	-0.5
DSZ	**Denniston Nort**	**2.32**	**233**	PN	Pn	17 52 32.9	-0.3
NMHZ	**Naumai**	**2.33**	**58**	↑PN	Pn	17 52 32.2	-1.1
NMHZ				AML	AML	17 53 02.0	
NMHZ				AML	AML	17 53 15.6	
TOZ	**Tahuroa Road**	**2.79**	**20**	↑PN	Pn	17 52 39.2	-0.3
LTZ	**Lake Taylor**	**2.85**	**211**	↑PN	Pn	17 52 39.5	-0.7
SNGZ	**Shannon Statio**	**2.85**	**57**	AML	AML	17 53 18.0	
SNGZ				AML	AML	17 53 29.3	
KNZ	**Kokohu**	**2.95**	**64**	PN	Pn	17 52 38.8	-2.6
URZ	**Urewera**	**3.04**	**47**	PN	Pn	17 52 40.1	-2.7
MHGZ	**Mahia Peninsul**	**3.05**	**68**	PN	Pn	17 52 40.6	-2.4
PRGZ	**Paritu Road**	**3.14**	**64**	PN	Pn	17 52 41.4	-2.7
RIGZ	**Rimuhau**	**3.17**	**60**	PN	Pn	17 52 42.0	-2.5
RIGZ				AML	AML	17 53 20.4	
MWZ	**Matawai**	**3.24**	**52**	↓PN	Pn	17 52 42.7	-2.8
KBAZ	**Karaka Road Bo**	**3.30**	**9**	PN	Pn	17 52 46.4	+0.2
AWAZ	**Awhitu Peninsu**	**3.31**	**5**	↑PN	Pn	17 52 46.1	-0.3
MKAZ	**Moumakai**	**3.33**	**12**	PN	Pn	17 52 46.2	-0.4
OXZ	**Oxford**	**3.40**	**209**	PN	Pn	17 52 45.6	-2.1
WTAZ	**Waiatarua**	**3.43**	**4**	PN	Pn	17 52 48.0	-0.1
CRLZ	**Canterbury Las**	**3.44**	**200**	PN	Pn	17 52 46.2	-1.9
ETAZ	**East Tamaki Re**	**3.44**	**9**	↑PN	Pn	17 52 47.9	-0.3
MQZ	**McQueen's Vall**	**3.55**	**199**	↓PN	Pn	17 52 47.3	-2.4
RUGZ	**Raukumara Rang**	**3.57**	**49**	PN	Pn	17 52 46.7	-3.4
RVAZ	**Riverhead Bore**	**3.59**	**4**	PN	Pn	17 52 49.9	-0.4
MTAZ	**Motutapu**	**3.60**	**8**	PN	Pn	17 52 50.0	-0.4
TWGZ	**Tauwhareparae**	**3.61**	**54**	PN	Pn	17 52 48.3	-2.3
TWGZ				AML	AML	17 53 31.9	
TWGZ				AML	AML	17 53 32.5	
WIAZ	**Waiheke Island**	**3.63**	**11**	PN	Pn	17 52 50.5	-0.3
HAZ	**Te Kaha**	**3.77**	**48**	PN	Pn	17 52 49.1	-3.6
ABZ	**Army Bay**	**3.78**	**7**	PN	Pn	17 52 52.6	-0.2
KUZ	**Kuaotunu**	**3.79**	**18**	PN	Pn	17 52 52.1	-0.7
WVZ	**Waitaha Valley**	**3.79**	**223**	PN	Pn	17 52 51.8	-1.0
PUZ	**Puketiti**	**3.85**	**55**	PN	Pn	17 52 50.3	-3.4
PKGZ	**Pakihiroa**	**3.85**	**51**	PN	Pn	17 52 50.8	-3.1
WMGZ	**Waiomatatini S**	**4.10**	**53**	PN	Pn	17 52 53.8	-3.3
WMGZ				AML	AML	17 53 41.1	
WMGZ				AML	AML	17 53 43.5	
RPZ	**Rata Peaks**	**4.12**	**214**	PN	Pn	17 52 55.7	-1.7
GRZ	**Great Barrier**	**4.21**	**13**	PN	Pn	17 52 57.9	-0.7
WCZ	**Waipu Caves**	**4.42**	**1**	↓PN	Pn	17 53 01.3	-0.2
FOZ	**Fox Glacier**	**4.59**	**225**	PN	Pn	17 53 02.1	-1.6
LBZ	**Lake Benmore**	**5.03**	**216**	PN	Pn	17 53 07.5	-2.3
OUZ	**Omahuta**	**5.16**	**354**	PN	Pn	17 53 11.1	-0.4
ODZ	**Otahua Downs**	**5.39**	**209**	↑PN	Pn	17 53 12.2	-2.5
JCZ	**Jackson Bay**	**5.51**	**226**	PN	Pn	17 53 14.1	-2.2
EAZ	**Earnscleugh**	**6.08**	**215**	PN	Pn	17 53 22.1	-2.0
TUZ	**Tuapeka**	**6.54**	**210**	PN	Pn	17 53 28.4	-1.8
CTZ	**Chatham Island**	**7.57**	**119**	PN	Pn	17 53 43.9	-0.5

IDC 31 17:54:50.2±1.1, 5°15N×126°13E, h0km, mb3.9/6, mb1 4.1/6, mb1mx3.6/52, mbtmp3.9/6, Error ellipse: s-maj=64.8km s-min=20.1km az=76.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**23.11**	**181**	P	P	17 59 57.1	-0.9
	6.9nm,1.1s,baz=14,slow=8.3,SNR=3.1						
WRA	**Warramunga Arr**	**26.21**	**162**	P	P	18 00 26.2	-0.8
	3.0nm,0.5s,baz=343,slow=9.9,SNR=13						
ASAR	**Alice Springs**	**29.63**	**165**	P	P	18 00 57.2	-0.3
	0.6nm,0.8s,baz=340,slow=8.6,SNR=3.0						
STKA	**Stephens Creek**	**39.66**	**159**	P	P	18 02 25.4	+1.4
	2.3nm,0.7s,baz=339,slow=7.9,SNR=9.6						
MKAR	**Makanchi Array**	**56.06**	**325**	P	P	18 04 31.0	-0.1
	1.1nm,0.8s,baz=123,slow=5.3,SNR=3.5						
ILAR	**Eielson Array**	**84.09**	**25**	P	P	18 07 22.6	-0.2
	0.4nm,0.6s,baz=253,slow=2.7,SNR=4.1						

IDC 31 17:54:57.9±1.3, 27°10N×143°43E, h0km, mb3.6/3, mb1 3.9/5, mb1mx3.5/56, mbtmp3.8/5, ML3.6/2, Error ellipse: s-maj=59.9km s-min=22.8km az=91.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**6.78**	**333**	Pn	Pn	17 56 38.0	-0.7
	3.1nm,0.3s,baz=345,slow=20,SNR=2.0						
JHJ				Sn	Sn	17 57 47.9	-8.7
	2.5nm,0.3s,baz=108,slow=20,SNR=1.8						
MJAR	**Matsushiro Arr**	**10.41**	**336**	Pn	Pn	17 57 28.6	+0.2
	0.6nm,0.3s,baz=157,slow=12,SNR=6.6						
WRA	**Warramunga Arr**	**47.59**	**192**	P	P	18 03 35.7	+0.1
	1.2nm,0.6s,baz=13,slow=8.6,SNR=4.9						
ASAR	**Alice Springs**	**51.30**	**191**	P	P	18 04 03.6	-0.3
	0.4nm,0.8s,baz=1.1,slow=5.0,SNR=4.2						
ILAR	**Eielson Array**	**57.18**	**29**	P	P	18 04 46.1	-0.2
	0.7nm,0.9s,baz=260,slow=5.4,SNR=4.6						

ISCJB ***31*** *18:10:32.9±0.7, 47°58N±0°07×154°1E±0°1, h31km, mb3.6/8, Error ellipse: s-maj=14.6km s-min=4.8km az=44.0*
MOS ***31*** *18:10:35.0±2.0, 47°58N×154°07E, h60km, mb4.1/3, Error ellipse: s-maj=12.5km s-min=8.6km az=68.5*
SKHL ***31*** *18:10:36.5±0.3, 47°60N×154°12E, h70km±9km, mb4.5/5*
IDC ***31*** *18:10:38.2±4.0, 47°64N×153°92E, h65km

PETK	**Petropavlovsk-**	**6.02**	**20**	*e*PN	**Pn**	**18 12 03.4**	**+2.3**
	comp=E,2.1nm,0.3s,baz=169,slow=12,SNR=36						
PET	**Petropavlovsk**	**6.19**	**25**	*e*PN	**Pn**	**18 12 04.8**	**+1.4**
PET	**Petropavlovsk**	**6.19**	**25**	*e*P	**Pn**	**18 12 04.8**	**+1.4**
PET				*e*S	**Sn**	**18 13 11.3**	**-1.7**
SHO	**Shikotan**	**6.36**	**238**	*e*PN	**Pn**	**18 12 03.5**	**-2.2**
SHO				pmax	pmax		
	comp=E,5.0nm,0.5s						
SHO				pmax	pmax		
	comp=N,7.0nm,0.3s						
SHO				pmax	pmax		
	comp=E,2.0nm,0.5s						
SHO	**Shikotan**	**6.36**	**238**	*e*P	**Pn**	**18 12 07.5**	**+1.8**
SHO				AMB	AMB	18 12 08.9	
	comp=E,20nm,0.8s						
SHO				*e*S	**Sn**	**18 13 15.0**	**-2.2**
SHO				A	A	18 13 15.6	
	comp=E,15nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**6.83**	**242**	*e*PN	**Pn**	**18 12 10.6**	**-1.6**
YUK				pmax	pmax		
	comp=N,35nm,0.5s						
YUK				pmax	pmax		
	comp=E,30nm,0.4s						
YUK				pmax	pmax		
	comp=Z,38nm,0.5s						
YUK	**Yuzh-Kuril'sk**	**6.83**	**242**	*e*P	**Pn**	**18 12 13.4**	**+1.2**
YSS	**Yuzh-Sakhalins**	**7.86**	**270**	*e*PN	**Pn**	**18 12 29.9**	**+3.6**
YSS	**Yuzh-Sakhalins**	**7.86**	**270**	*e*P	**Pn**	**18 12 27.7**	**+1.4**
YSS				AMB	AMB	18 12 31.1	
	comp=Z,10.0nm,0.3s						
TYV	**Tymovskoe**	**8.32**	**298**	*e*PN	**Pn**	**18 12 36.2**	**+3.6**
TYV	**Tymovskoe**	**8.32**	**298**	*e*P	**Pn**	**18 12 33.2**	**+0.6**
ERM	**Erimo**	**9.62**	**239**‖	*e*PN	Pn	18 12 56.0	+5.5
ERM	**Erimo**	**9.62**	**239**	*e*P	Pn	18 12 56.0	+5.5
MA2	**Magadan**	**12.26**	**352**	P	**Pn**	**18 13 28.7**	**+2.2**
	comp=Z,1.8nm,0.3s,baz=172,slow=13,SNR=13						
HABR	**Khabarovsk**	**12.91**	**281**	*e*PN	**Pn**	**18 13 34.7**	**-0.8**
HABR				pmax	pmax		
	comp=N,7.0nm,1.5s						
HABR				pmax	pmax		
	comp=E,5.0nm,1.5s						
HABR				pmax	pmax		
	comp=Z,10.0nm,1.5s						
HABR				MLR	MLR		
	comp=Z,39nm,11.0s						
EKMR	**Ekimchan**	**14.70**	**300**	*e*rx	rx	18 14 03.9	
BMKR	**Bomnak**	**17.45**	**304**	*e*rx	rx	18 14 38.0	
H11N2	**WAKE ISLAND Hy**	**29.56**	**155**	T	T	18 47 38.7	
	baz=343,slow=76,SNR=79						
H11N1	**WAKE ISLAND Hy**	**29.57**	**155**	T	T	18 47 48.5	
	baz=343,slow=76,SNR=130						
H11N3	**WAKE ISLAND Hy**	**29.57**	**155**	T	T	18 47 45.3	
	baz=343,slow=76,SNR=107						
H11S1	**WAKE ISLAND Hy**	**30.66**	**156**	T	T	18 49 03.9	
	baz=344,slow=76,SNR=208						
H11S3	**WAKE ISLAND Hy**	**30.67**	**156**	T	T	18 49 12.1	
	baz=344,slow=76,SNR=298						
H11S2	**WAKE ISLAND Hy**	**30.68**	**156**	T	T	18 49 01.2	
	baz=344,slow=76,SNR=233						
ILAR	**Eielson Array**	**35.46**	**39**	P	**P**	**18 17 27.8**	**+0.5**
	comp=Z,0.2nm,0.6s,baz=242,slow=8.1,SNR=4.0						
MKAR	**Makanchi Array**	**47.30**	**297**	P	**P**	**18 19 02.5**	**-2.1**
	comp=Z,0.1nm,0.3s,baz=57,slow=5.8,SNR=2.6						
PDAR	**Pinedale Array**	**63.66**	**55**	P	**P**	**18 21 03.5**	**+0.9**
	comp=Z,0.4nm,0.6s,baz=308,slow=2.2,SNR=4.0						
FINES	**FINESS Array B**	**63.69**	**335**	P	**P**	**18 21 00.2**	**-1.8**
	comp=Z,0.5nm,0.4s,baz=17,slow=8.0,SNR=5.2						
NOA	**NORSAR Array B**	**67.76**	**342**	P	**P**	**18 21 27.4**	**-1.1**
	comp=Z,0.3nm,0.5s,baz=26,slow=6.4,SNR=3.3						
AKASG	**Malin Array Be**	**71.35**	**327**	P	**P**	**18 21 49.3**	**-1.3**
	comp=Z,0.2nm,0.3s,baz=35,slow=6.2,SNR=2.9						
ASAR	**Alice Springs**	**73.19**	**199**	P	**P**	**18 22 02.1**	**+0.2**
	comp=Z,0.6nm,0.6s,baz=13,slow=5.7,SNR=12						
ASAR	**Alice Springs**	**73.19**	**199**	*e*P	**P**	**18 22 02.3**	**+0.4**
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ASAR	**Alice Springs**	**73.19**	**199**	*e*P	**P**	**18 22 02.3**	**+0.4**
TXAR	**Lajitas Array**	**76.43**	**61**	P	**P**	**18 22 21.8**	**+0.9**
	comp=Z,0.8nm,0.5s,baz=298,slow=4.5,SNR=16						

IDC 31 18:17:01.1±6.0, 27.°01N×143.°19E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.2/37, mbtmp3.4/3, ML3.3/1, Error ellipse: s-maj=284.4km s-min=36.0km az=79.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**10.40**	**337**	Pn	Pn	18 19 31.1	-0.6
	0.2nm,0.3s,baz=160,slow=12,SNR=4.4						
WRA	**Warramunga Arr**	**47.45**	**191**	P	P	18 25 38.8	+1.1
	0.7nm,0.5s,baz=13,slow=8.7,SNR=16						
ASAR	**Alice Springs**	**51.17**	**191**	P	P	18 26 04.8	-1.4
	0.2nm,0.7s,baz=6.0,slow=7.2,SNR=4.0						

*IDC **31** 18:29:36.0±0.6, 27.°08N×143.°45E, h0km, mb4.2/25, mb1 4.3/28, mb1mx4.2/44, mbtmp4.2/28, ML3.6/3, MS3.5/3, Ms1 3.5/3, ms1mx3.0/44, Error ellipse: s-maj=17.8km s-min=14.3km az=80.0*

*NEIC **31** 18:29:37.5±0.2, 27.°07N×143.°36E, h10km, mb4.7/54, Error ellipse: s-maj=5.9km s-min=3.9km az=164.0*

*BJI **31** 18:29:38.9, 26.°86N×143.°13E, h29km, mb4.5/40, mB4.8/22, Ms4.2/12, Ms7 3.9/12*

*MOS **31** 18:29:39.7±1.1, 27.°06N×143.°39E, h37km, mb4.6/37, Error ellipse: s-maj=11.0km s-min=6.4km az=102.2*

*ISCJB **31** 18:29:40.0±0.3, 27.°23N±0.°05×143.°28E±0.°04, h33km, mb4.5/93, MS3.5/4, Error ellipse: s-maj=6.6km s-min=4.4km az=168.1*

*JMA **31** 18:29:41.5, 27.°19N×143.°00E, h95km±3km, M4.2*

ISC 31 18:29:41.7±0.5, 27.°19N±0.°06×143.°35E±0.°06, h35km, n159, σ1§66/170, mb4.6/93, MS3.5/4, 10C-1D, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**1.04**	**265**	P	**Pn**	**18 29 58.8**	**-1.0**
CBIJ	**Chichi jima**	**1.04**	**265**	*e*Pn	**Pn**	**18 29 59.0**	**-0.8**
CBIJ				*e*Sn	**Sn**	**18 30 13.8**	**+0.6**
JHHJ	**Haha-jima-NKT**	**1.19**	**242**	P	**Pn**	**18 30 00.7**	**-1.1**
JHJ	**Hachijo jima 2**	**6.67**	**333**	Pn	**Pn**	**18 31 15.4**	**-1.7**
	7.8nm,0.3s,baz=244,slow=18,SNR=2.8						
JHJ				Sn	**Sn**	**18 32 25.8**	**-6.1**
	8.8nm,0.3s,baz=238,slow=19,SNR=3.5						
BSO4	**Boso 4**	**8.19**	**342**	P	**Pn**	**18 31 36.8**	**-1.1**
JOD2	**Odawara 2**	**8.83**	**337**	P	**Pn**	**18 31 45.8**	**-1.1**
JHU	**Hanno**	**9.30**	**339**	P	**Pn**	**18 31 51.9**	**-1.4**
JHU				*e*S	**Sn**	**18 33 29.8**	**-6.9**
JYT	**Yasato**	**9.40**	**344**	P	**Pn**	**18 31 54.0**	**-0.6**
JRY	**Ryogami san**	**9.58**	**338**	P	**Pn**	**18 31 56.5**	**-0.6**
JHO	**Hitachi**	**9.68**	**347**	P	**Pn**	**18 31 55.7**	**-2.8**
JHO				*e*S	Sn	18 33 36.1	-10
JAG	**Ashikaga**	**9.78**	**341**	*e*S	**Sn**	**18 33 42.0**	**-6.5**
ERM	**Erimo**	**14.79**	**359**	*e*P	**Pn**	**18 33 09.5**	**+1.3**
ERM	**Erimo**	**14.79**	**359**	*e*Pn	**Pn**	**18 33 09.4**	**+1.3**
KSRS	**Korea Array**	**16.55**	**312**	Pn	**P**	**18 33 33.0**	**-0.3**
	0.5nm,0.3s,baz=122,slow=9.8,SNR=8.8						
KSRS				LR	LR	18 39 03.1	
	comp=Z,120nm,19.7s,baz=355,slow=34						
KSAR	**Wonju Array Be**	**16.57**	**312**	P	**P**	**18 33 33.0**	**-0.5**
KSAR	**Wonju Array Be**	**16.57**	**312**	Pn	**P**	**18 33 33.0**	**-0.5**
KUR	**Kuril'sk**	**18.36**	**10**	*e*P	**Pn**	**18 33 55.2**	**+1.8**
USRK	**Ussuriysk Ar.**	**19.29**	**335**	P	**Pn**	**18 34 04.9**	**+0.4**
	0.3nm,0.3s,baz=170,slow=10,SNR=4.8						
YSS	**Yuzh-Sakhalins**	**19.73**	**359**	*e*P	**Pn**	**18 34 10.7**	**+0.8**
YSS				pmax	pmax		
	comp=Z,12nm,1.3s						
YHNB	**Yeheng**	**19.92**	**268**	*e*P	**P**	**18 34 08.4**	**-2.1**
	comp=Z,16nm,0.6s						
YULB	**Yu-li**	**20.29**	**264**	*e*P	**P**	**18 34 13.4**	**-1.2**
	comp=Z,24nm,1.2s						
SSLB	**Suanglung**	**20.50**	**265**	*e*P	Pn	18 34 16.1	-3.0
	comp=Z,21nm,0.9s						
NJ2	**Nanjing**	**21.82**	**289**	*e*P	**P**	**18 34 28.8**	**-2.1**
NJ2				pmax	pmax		
	comp=Z,17nm,0.8s						
HABR	**Khabarovsk**	**22.21**	**345**	*e*P	**P**	**18 34 33.9**	**-1.0**
HABR				*e**PP	**pP**	**18 34 42.8**	**-1.4**
HABR				*e**SP	**sP**	**18 34 47.3**	**-1.3**
HABR				*e*PPP	PPP	18 35 05.6	
HABR				*e*		18 38 28.3	
HABR				*e*S	**S**	**18 38 38.1**	**+0.8**
HABR				*e**SS	**sS**	**18 38 53.6**	**+1.2**
HABR				*e*SSS	SSS	18 39 22.1	
HABR				*e*		18 45 48.1	
HABR				pmax	pmax		
	comp=N,8.0nm,1.4s						
HABR				pmax	pmax		
	comp=Z,17nm,1.3s						
HABR				pmax	pmax		
	comp=E,19nm,1.4s						
HABR				MLR	MLR		
	comp=Z,48nm,16.0s						
KLR	**Kul'dur**	**23.76**	**341**	P	**P**	**18 34 51.6**	**+0.9**
	comp=Z,2.6nm,0.6s,baz=143,slow=5.9,SNR=11						
WHN	**Wuhan**	**25.58**	**284**	P	**P**	**18 35 07.8**	**+0.2**
PETK	**Petropavlovsk-**	**28.01**	**19**	LR	LR	18 46 34.8	
	comp=Z,70nm,21.8s,baz=121,slow=36						
HHC	**Hu-ho-hao-te**	**29.48**	**306**	*e*P	**P**	**18 35 43.8**	**+1.3**
HHC				S	**S**	**18 40 35.3**	**+0.6**
HHC				pmax	pmax		
	comp=Z,7.0nm,1.5s						
HHC				pmax	pmax		
	comp=Z,92nm,4.9s						
HHC				LR	LR		
	comp=Z,130nm,11.3s						
HHC				LR	LR		
	comp=Z,140nm,13.4s						
HHC				LR	LR		
	comp=Z,74nm,11.3s						
ENH	**Enshi**	**29.79**	**284**	*e*P	**P**	**18 35 43.4**	**-1.9**
	comp=Z,6.3nm,0.8s						
XAN	**Xi'an**	**30.31**	**292**	P	**P**	**18 35 49.0**	**-0.9**
XAN				pmax	pmax		
	comp=Z,12nm,0.6s						
GYA	**Guiyang**	**32.67**	**277**	*e*P	**P**	**18 36 11.0**	**+0.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
LZH	**Lanzhou**	**34.59**	**295**	*e*P	**P**	**18 36 25.8**	**-1.7**
LZH				pP	pP	18 36 33.8	-3.8
LZH				sP	sP	18 36 37.5	-4.4
LZH				pmax	pmax		
	comp=Z,11nm,1.0s						
CD2	**Chengdu**	**34.69**	**286**	*e*P	**P**	**18 36 26.5**	**-1.7**
CD2				pP	pP	18 36 35.5	-2.9
CD2				sP	sP	18 36 39.5	-3.1
CD2				S	**S**	**18 41 54.5**	**-1.4**
CD2				sS	sS	18 42 10.0	-2.6
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,120nm,5.0s						
SONA1	**Songino Array**	**35.37**	**316**	*e*P	**P**	**18 36 34.1**	**+0.1**
SONM	**Songino Array**	**35.37**	**316**	P	**P**	**18 36 34.6**	**+0.6**
	comp=Z,1.1nm,0.6s,baz=117,slow=8.8,SNR=11						
YAK	**Yakutsk**	**36.01**	**349**	*e*P	**P**	**18 36 39.6**	**+0.5**
YAK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
SEY	**Seymchan**	**36.23**	**7**	P	**P**	**18 36 41.1**	**+0.1**
	comp=Z,2.3nm,0.6s,baz=134,slow=9.3,SNR=6.4						
SEY	**Seymchan**	**36.23**	**7**‖	*e*P	**P**	**18 36 42.5**	**+1.5**
KMI	**Kunming**	**36.40**	**276**	P	**P**	**18 36 42.5**	**-0.7**
KMI				pmax	pmax		
	comp=Z,9.0nm,1.2s						
GTA	**Gaotai**	**38.03**	**300**	P	**P**	**18 36 56.0**	**-0.8**
GTA				pP	pP	18 37 06.3	-0.7
GTA				sP	sP	18 37 10.5	-0.7
GTA				pmax	pmax		
	comp=Z,4.0nm,1.1s						
ZAK	**Zakamensk**	**38.23**	**318**	*e*P	**P**	**18 36 57.3**	**-1.0**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.2s						
TLY	**Talaya**	**38.52**	**320**	*e*P	**P**	**18 37 02.3**	**+1.6**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.8s						
CHTO	**Chiang Mai**	**41.54**	**268**	*e*P	**P**	**18 37 25.0**	**-1.1**
CHTO				pmax	pmax		
	comp=Z,31nm,1.8s						
CHTO	**Chiang Mai**	**41.54**	**268**	*e*P	**P**	**18 37 25.0**	**-1.1**
	comp=Z,31nm,1.8s						
CM01	**Chiang Mai Arr**	**41.66**	**268**	*e*P	**P**	**18 37 26.0**	**-1.1**
CMAR	**Chiang Mai Arr**	**41.67**	**268**	P	**P**	**18 37 26.1**	**-1.0**
	comp=Z,1.8nm,0.6s,baz=82,slow=4.8,SNR=13						
CMAR	**Chiang Mai Arr**	**41.67**	**268**	*c*e*P	**P**	**18 37 26.8**	**-0.3**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BILL	**Bilibino**	**43.14**	**12**‖	*e*P	**P**	**18 37 39.2**	**+0.8**
BILL				*e*		18 37 53.5	
BILL				pmax	pmax		
	comp=Z,5.0nm,0.8s						
WMQ	**Urumqi**	**47.36**	**306**	*e*P	**P**	**18 38 14.3**	**+1.9**
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.7s						
WRAB	**Tennant Creek**	**47.65**	**191**‖	*i*P	**P**	**18 38 13.8**	**-0.8**
WRAB				pmax	pmax		
	comp=Z,51nm,1.7s						
WRAB	**Tennant Creek**	**47.65**	**191**	*e*P	**P**	**18 38 13.0**	**-1.6**
	comp=Z,28nm,0.8s						
WB2	**Warramunga Arr**	**47.66**	**191**	*e*P	**P**	**18 38 13.4**	**-1.3**
WRA	**Warramunga Arr**	**47.66**	**191**	P	**P**	**18 38 13.8**	**-1.0**
	comp=Z,4.1nm,0.5s,baz=13,slow=8.7,SNR=59						
ZALV	**Zalesovo Beam**	**50.10**	**319**	P	**P**	**18 38 33.6**	**+0.5**
	comp=Z,1.1nm,0.5s,baz=95,slow=8.4,SNR=7.0						
ZALV				PcP	**PcP**	**18 39 52.3**	**0.0**
	comp=Z,0.8nm,0.6s,baz=103,slow=2.5,SNR=2.6						
MK01	**Makanchi Array**	**51.21**	**309**	*e*P	**P**	**18 38 41.0**	**-0.7**
MKAR	**Makanchi Array**	**51.22**	**310**	P	**P**	**18 38 42.1**	**+0.4**
	comp=Z,1.6nm,0.8s,baz=92,slow=9.1,SNR=13						
ASAR	**Alice Springs**	**51.38**	**191**	P	**P**	**18 38 41.6**	**-1.4**
	comp=Z,0.5nm,0.5s,baz=4.3,slow=6.3,SNR=13						
MAKZ	**Makanchi**	**51.43**	**310**	*e*P	**P**	**18 38 43.0**	**-0.3**
MAKZ				pmax	pmax		
	comp=Z,3.0nm,0.9s						
MAKZ	**Makanchi**	**51.43**	**310**	*e*P	**P**	**18 38 43.0**	**-0.3**
	comp=Z,2.9nm,0.9s						
KURK	**Kurchatov**	**53.66**	**314**	*c i*P	**P**	**18 39 00.0**	**+0.3**
KURK				pmax	pmax		
	comp=Z,29nm,1.7s						
KURK	**Kurchatov**	**53.66**	**314**	*e*P	**P**	**18 38 59.0**	**-0.7**
	comp=Z,5.1nm,0.8s						
KDAK	**Kodiak Island**	**53.67**	**37**	*c*e*P	**P**	**18 38 59.2**	**-0.4**
KURBB	**Kurchatov Arra**	**53.72**	**314**	P	**P**	**18 39 00.8**	**+0.7**
	comp=Z,4.6nm,0.4s,baz=91,slow=7.3,SNR=50						
CAST	**Castle Rocks**	**54.69**	**30**	*e*P	**P**	**18 39 06.7**	**-0.4**
	comp=Z,6.1nm,0.8s						
BPAW	**Bear Paw Mtn.**	**55.28**	**29**	*e*P	**P**	**18 39 10.9**	**-0.4**
TRF	**Thorofare Moun**	**55.49**	**30**	*e*P	**P**	**18 39 11.8**	**-1.2**
	comp=Z,6.9nm,1.0s						
MLY	**Manley**	**55.54**	**28**	*e*P	**P**	**18 39 12.9**	**-0.2**
	comp=Z,5.4nm,0.9s						
RND	**Reindeer**	**56.12**	**30**	*e*P	**P**	**18 39 15.8**	**-1.6**
RND				pmax	pmax		
	comp=Z,6.0nm,0.8s						
RND	**Reindeer**	**56.12**	**30**	*e*P	**P**	**18 39 15.8**	**-1.6**
	comp=Z,5.8nm,0.8s						
MCK	**McKinley**	**56.13**	**30**	*e*P	**P**	**18 39 16.2**	**-1.2**
MCK				pmax	pmax		
	comp=Z,12nm,1.2s						
MCK	**McKinley**	**56.13**	**30**	*e*P	**P**	**18 39 16.2**	**-1.2**
	comp=Z,12nm,1.2s						
COLD	**Coldfoot**	**56.14**	**25**	*e*P	**P**	**18 39 17.8**	**+0.4**
	comp=Z,7.6nm,1.0s						
KSH	**Kashi**	**56.42**	**301**	*e*P	P	18 39 24.5	+4.5
KSH				*e*pP	sP	18 39 34.0	-0.7
KSH				PcS	**PcS**	**18 44 19.3**	**+1.8**
KSH				S	**S**	**18 47 13.8**	**+5.2**
KSH				ScS	**ScS**	**18 49 07.0**	**+0.2**
KSH				pmax	pmax		
	comp=Z,4.0nm,1.1s						
KSH				LR	LR		
	comp=Z,100nm,4.8s						
KSH				LR	LR		
	comp=Z,140nm,5.0s						
KSH				LR	LR		
	comp=Z,120nm,8.3s						
MDM	**Murphy Dome**	**56.58**	**28**	*e*P	**P**	**18 39 21.0**	**+0.4**
	comp=Z,4.0nm,0.7s						
AAK	**Ala-Archa**	**57.05**	**305**‖	*e*P	**P**	**18 39 25.0**	**+0.5**
AAK				pmax	pmax		
	comp=Z,13nm,1.6s						
ILAR	**Eielson Array**	**57.13**	**29**	P	**P**	**18 39 23.6**	**-0.9**
	comp=Z,3.7nm,0.9s,baz=263,slow=5.9,SNR=35						
ILB	**Eielson Array**	**57.13**	**29**	*e*P	**P**	**18 39 22.9**	**-1.6**
IL1	**Eielson Array**	**57.13**	**29**	*e*P	**P**	**18 39 23.5**	**-1.0**
PAX	**Paxson**	**57.62**	**31**	*e*P	**P**	**18 39 28.0**	**0.0**
PAX				pmax	pmax		
	comp=Z,11nm,1.5s						
PAX	**Paxson**	**57.62**	**31**	*e*P	**P**	**18 39 28.0**	**0.0**
	comp=Z,11nm,1.5s						
DOT	**Dot Lake**	**58.28**	**30**	*e*P	**P**	**18 39 32.5**	**-0.2**
	comp=Z,9.1nm,0.8s						
BVAR	**Borovoye Array**	**58.67**	**317**	P	**P**	**18 39 36.3**	**+0.8**
	comp=Z,4.0nm,0.7s,baz=96,slow=8.1,SNR=31						
BRVK	**Borovoye**	**58.74**	**318**‖	*e*P	**P**	**18 39 37.6**	**+1.7**
BRVK				pmax	pmax		
	comp=Z,9.0nm,0.7s						
BRVK	**Borovoye**	**58.74**	**318**	*e*P	**P**	**18 39 37.2**	**+1.3**
	comp=Z,3.6nm,0.7s						
STKA	**Stephens Creek**	**58.76**	**182**	P	**P**	**18 39 34.5**	**-1.6**
	comp=Z,1.4nm,0.8s,baz=343,slow=7.4,SNR=3.3						
KKAR	**Karatay Array**	**59.87**	**306**	*e*P	**P**	**18 39 44.0**	**+0.1**
KKAR	**Karatay Array**	**59.87**	**306**	*e*P	**P**	**18 39 44.0**	**+0.1**
DAWY	**Dawson**	**60.36**	**30**	*e*P	**P**	**18 39 47.3**	**+0.4**
	comp=Z,6.4nm,0.9s						
HYT	**Haines Junctio**	**61.42**	**33**	*e*P	**P**	**18 39 55.6**	**+1.3**
	comp=Z,8.6nm,1.2s						
INK	**Inuvik**	**62.51**	**25**	P	**P**	**18 40 01.4**	**+0.1**
	comp=Z,3.3nm,0.8s,baz=251,slow=4.6,SNR=6.1						
INK	**Inuvik**	**62.51**	**25**	P	**P**	**18 40 01.4**	**+0.1**
INK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
SVE	**Sverdlovsk**	**63.78**	**323**	*e*P	**P**	**18 40 12.7**	**+2.7**
ARU	**Arti**	**64.98**	**322**	P	**P**	**18 40 18.8**	**+1.0**
	comp=Z,3.6nm,0.5s,baz=70,slow=2.8,SNR=7.9						
ARU	**Arti**	**64.98**	**322**	*c i*P	**P**	**18 40 20.7**	**+2.9**
ARU						18 40 51.5	
ARU						18 42 44.1	
ARU				S	**S**	**18 49 04.7**	**+7.5**
ARU				SS	**SS**	**18 53 18.0**	**+9.2**
ARU				pmax	pmax		
	comp=Z,10.0nm,1.7s						
ARU	**Arti**	**64.98**	**322**	*e*P	**P**	**18 40 17.9**	**+0.1**
	comp=Z,4.5nm,0.7s						
ABKAR	**Akbulak array**	**65.77**	**314**	*e*P	**P**	**18 40 22.5**	**-0.6**
	comp=Z,1.8nm,0.6s						
AKTO	**Aktyubinsk**	**66.69**	**316**	P	**P**	**18 40 29.7**	**+0.7**
	comp=Z,1.3nm,0.5s,baz=88,slow=9.6,SNR=5.3						
GEYT	**Alibeck**	**70.32**	**303**	P	**P**	**18 40 51.6**	**-0.3**
	comp=Z,1.3nm,0.5s,baz=64,slow=3.4,SNR=5.2						
YKA	**Yellowknife Ar**	**71.56**	**29**	P	**P**	**18 40 58.5**	**-0.4**
	comp=Z,1.8nm,0.8s,baz=289,slow=5.8,SNR=3.6						
ARCES	**ARCESS Array B**	**73.79**	**341**	P	**P**	**18 41 12.9**	**+0.9**
	comp=Z,1.5nm,0.9s,baz=71,slow=6.8,SNR=2.6						
ARCES	**ARCESS Array B**	**73.79**	**341**	P	**P**	**18 41 13.0**	**+0.9**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.9s						
B08A	**Colville Reser**	**74.75**	**43**	*e*P	**P**	**18 41 18.3**	**+0.2**
	comp=Z,7.6nm,1.3s						
K05A	**Summer Lake**	**76.03**	**49**	*e*P	**P**	**18 41 26.2**	**+0.5**
	comp=Z,12nm,1.1s						
NEW	**Newport**	**76.13**	**43**	LR	LR	19 13 16.3	
	comp=Z,56nm,18.6s,baz=10.0,slow=34						
NEW	**Newport**	**76.13**	**43**	*e*P	**P**	**18 41 26.8**	**+0.8**
NEW				pmax	pmax		
	comp=Z,7.0nm,1.3s						
NEW	**Newport**	**76.13**	**43**	*e*P	**P**	**18 41 26.8**	**+0.8**
	comp=Z,6.9nm,1.3s						
BMO	**Blue Mountains**	**77.49**	**46**	*e*P	**P**	**18 41 33.9**	**0.0**
BMO				pmax	pmax		
	comp=Z,10.0nm,1.4s						
BMO	**Blue Mountains**	**77.49**	**46**	*e*P	**P**	**18 41 33.9**	**0.0**
	comp=Z,10.0nm,1.4s						
VSR	**Storozhevoye**	**77.52**	**321**	*e*P	**P**	**18 41 34.3**	**+0.6**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.0s						
FINES	**FINESS Array B**	**78.32**	**334**	P	**P**	**18 41 38.4**	**+0.4**
	comp=Z,0.8nm,0.3s,baz=72,slow=4.7,SNR=15						
PAHR	**Pah Rah Range**	**78.33**	**51**	*e*P	**P**	**18 41 38.7**	**+0.1**
	comp=Z,5.2nm,1.2s						
CMB	**Columbia Colle**	**78.34**	**53**	*e*P	**P**	**18 41 38.9**	**+0.3**
CMB				pmax	pmax		
	comp=Z,6.0nm,0.8s						
CMB	**Columbia Colle**	**78.34**	**53**	*e*P	**P**	**18 41 38.9**	**+0.3**
	comp=Z,5.7nm,0.8s						
SWMT	**Swartz Lake**	**78.35**	**42**	*e*P	**P**	**18 41 38.4**	**-0.2**
PNTR	**Pine Nut**	**78.44**	**52**	*e*P	**P**	**18 41 39.8**	**+0.4**
	comp=Z,6.3nm,0.9s						
KBZ	**Khabaz**	**78.70**	**313**	P	**P**	**18 41 42.5**	**+2.1**
	comp=Z,2.5nm,0.8s,baz=83,slow=5.7,SNR=5.2						
YERR	**Yerington**	**78.74**	**52**	*e*P	**P**	**18 41 41.6**	**+0.6**
	comp=Z,18nm,1.6s						
MFID	**Camas Ranch**	**79.08**	**47**	*e*P	**P**	**18 41 43.5**	**+0.8**
	comp=Z,9.3nm,1.1s						
TVH1	**TV Hill, Hawth**	**79.30**	**52**	*e*P	**P**	**18 41 45.1**	**+0.7**
	comp=Z,20nm,1.7s						
TVH3	**East Aurora ar**	**79.31**	**52**	*e*P	**P**	**18 41 44.7**	**+0.5**
	comp=Z,4.8nm,0.9s						
LRM	**Limekiln Ridge**	**80.09**	**43**	*e*P	**P**	**18 41 49.0**	**+0.7**
BOZ	**Bozeman (W)**	**80.68**	**43**	*e*P	**P**	**18 41 52.1**	**+0.8**
BOZ				pmax	pmax		
	comp=Z,9.0nm,1.6s						
BOZ	**Bozeman (W)**	**80.68**	**43**	*e*P	**P**	**18 41 52.1**	**+0.8**
	comp=Z,9.3nm,1.6s						
FFC	**Flin Flon**	**81.11**	**32**	*e*P	**P**	**18 41 53.4**	**+0.2**
FFC		

TX31	**Lajitas Ar. Si**	**94.71**	**54**	*e*P	**P**	**18 43 00.7**	**+0.9**
TXAR	**Lajitas Array**	**94.71**	**54**	P	**P**	**18 43 00.1**	**+0.2**
	comp=Z,1.0nm,0.7s,baz=304,slow=1.9,SNR=12						
LPAZ	**La Paz**	**148.89**	**76**	PKPbc	**PKPab**	**18 49 27.7**	**-3.5**
	comp=Z,3.9nm,0.7s,baz=314,slow=2.1,SNR=15						

*CSEM **31** 18:33:45.7±0.2, 38.59N×39.70E, h15km, MD2.6, Error ellipse: s-maj=5.7km s-min=3.2km az=68.0*
*ISK **31** 18:33:45.7, 38.60N×39.60E, h23km, MD2.6*
*ISCJB **31** 18:33:46.6±0.6, 38.59N±0.03×39.66E±0.06, h9km±8km, Error ellipse: s-maj=8.4km s-min=4.5km az=157.0*
*DDA **31** 18:33:47.2, 38.64N×39.61E, h7km, Md2.4*

ISC 31 18:33:46.3±1.4, **38.59N**±0.03×**39.63E**±0.05, **h17**km±11km, **n16**, σ0§**70**/**28**, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SVRC	**Sivrice-ELAZID**	**0.33**	**229**	*e*PG	**Pb**	**18 33 53.0**	**-0.8**
SVRC				*e*SG	**Sb**	**18 33 59.1**	**+0.2**
SVRC	**Sivrice-ELAZID**	**0.33**	**229**	*e*Pg	**Pb**	**18 33 53.0**	**-0.8**
SVRC				*e*Sg	**Sb**	**18 33 59.1**	**+0.2**
PTK	**Pertek**	**0.35**	**329**	*e*PG	**Pb**	**18 33 53.6**	**-0.5**
PTK				*e*SG	**Sb**	**18 33 59.2**	**-0.3**
PTK	**Pertek**	**0.35**	**329**	*e*Pg	**Pb**	**18 33 53.6**	**-0.5**
PTK				*e*Sg	**Sb**	**18 33 59.2**	**-0.3**
TNCL	**Tunceli-Merkez**	**0.52**	**353**	*i* P	**Pb**	**18 33 56.9**	**-0.2**
TNCL				*i* S	**Sb**	**18 34 04.4**	**0.0**
TNCL	**Tunceli-Merkez**	**0.52**	**353**	P	**Pb**	**18 33 56.9**	**-0.2**
TNCL				S	**Sb**	**18 34 04.4**	**0.0**
DYBB	**Diyarbakir**	**0.76**	**148**	*e*PG	**Pn**	**18 34 01.6**	**+0.6**
DIYA	**Diyarbakir**	**0.78**	**150**	*i* P	**Pn**	**18 34 03.9**	**+1.4**
DIYA				*i* S	**Sn**	**18 34 14.1**	**+0.3**
DIYA	**Diyarbakir**	**0.78**	**150**	P	**Pn**	**18 34 03.9**	**+1.4**
DIYA				S	**Sn**	**18 34 14.1**	**+0.3**
DIY	**Diyarbakir**	**0.84**	**146**	*e*Pg	**Pb**	**18 34 01.6**	**-0.9**
KEMA	**Kemaliye**	**1.11**	**308**	*i* P	**Pg**	**18 34 07.9**	**+0.1**
KEMA				*i* S	**Sn**	**18 34 23.0**	**+0.9**
KEMA	**Kemaliye**	**1.11**	**308**	P	**Pg**	**18 34 07.9**	**+0.1**
KEMA				S	**Sn**	**18 34 23.0**	**+0.9**
MAZI	**Mazidag**	**1.31**	**150**	*e*PN	**Pn**	**18 34 09.3**	**-0.5**
MAZI	**Mazidag**	**1.31**	**150**	*e*Pn	**Pn**	**18 34 09.3**	**-0.5**
KELT	**Kelkit**	**1.58**	**350**	*i* P	**Pn**	**18 34 12.9**	**-0.8**
KELT				*i* S	**Sg**	**18 34 37.8**	**+0.5**
KELT	**Kelkit**	**1.58**	**350**	P	**Pn**	**18 34 12.9**	**-0.8**
KELT				S	**Sg**	**18 34 37.8**	**+0.5**

*PRU **31** 18:40:03.8, 51.59N×16.11E, h0km*
*CSEM **31** 18:40:04.3±0.5, 51.56N×16.10E, h2km, ML2.6/4, Error ellipse: s-maj=6.4km s-min=3.9km az=13.0*

ISC 31 18:40:03.8±2.4, **51.59N**±0.10×**16.08E**±0.07, **h0**km, **n15**, σ0§**40**/**27**, **Poland**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.76**	**170**	*e*Pg	**Pg**	**18 40 18.4**	**+0.2**
KSP				*e*Sg	**Sg**	**18 40 28.0**	**0.0**
KSP	**Ksiaz**	**0.76**	**170**	*e*Pg	**Pg**	**18 40 18.4**	**+0.2**
KSP				*e*Sg	**Sg**	**18 40 28.0**	**0.0**
UPC	**Upice**	**1.08**	**182**	*e*PG	**Pg**	**18 40 24.6**	**+0.1**
UPC				*e*SG	**Sg**	**18 40 39.0**	**+0.5**
	comp=Z,8.2nm,0.2s						
UPC	**Upice**	**1.08**	**182**	Pg	**Pg**	**18 40 24.6**	**+0.1**
UPC				Sg	**Sg**	**18 40 39.0**	**+0.5**
	8.2nm,0.2s						
DPC	**Dobruska-Polom**	**1.25**	**173**	*e*PG	**Pg**	**18 40 27.4**	**-0.2**
DPC				*e*SG	**Sg**	**18 40 42.9**	**-0.9**
	comp=Z,1.7nm,0.2s						
DPC	**Dobruska-Polom**	**1.25**	**173**	Pg	**Pg**	**18 40 27.4**	**-0.2**
DPC				Sg	**Sg**	**18 40 42.9**	**-0.9**
	1.7nm,0.2s						
PVCC	**Panska Ves**	**1.43**	**223**	*e*PG	**Pb**	**18 40 31.4**	**+0.2**
PVCC				*e*SG	**Sb**	**18 40 50.0**	**+0.1**
	comp=Z,11nm,0.2s						
PVCC	**Panska Ves**	**1.43**	**223**	Pg	**Pb**	**18 40 31.4**	**+0.2**
PVCC				Sg	**Sb**	**18 40 50.0**	**+0.1**
	11nm,0.2s						
BRG	**Berggiesshubel**	**1.52**	**243**	PG	**Pg**	**18 40 33.1**	**+0.1**
BRG				SG	**Sn**	**18 40 53.0**	**+0.3**
	3.1nm,0.5s						
KRLC	**Kraliky**	**1.58**	**163**	*e*SG	**Sn**	**18 40 54.1**	**0.0**
KRLC	**Kraliky**	**1.58**	**163**	Sg	**Sn**	**18 40 54.1**	**0.0**
PRU	**Pruhonice**	**1.88**	**212**	*e*SG	**Sg**	**18 41 03.3**	**-0.7**
	comp=Z,2.4nm,0.3s						
PRU	**Pruhonice**	**1.88**	**212**	Sg	**Sg**	**18 41 03.3**	**-0.7**
	2.4nm,0.3s						
CLL	**Collm**	**1.95**	**263**	*e*Pg	**Pb**	**18 40 40.0**	**-0.1**
CLL				*e*Sg	**Sg**	**18 41 06.0**	**-0.3**
KHC	**Kasperske Hory**	**2.94**	**214**	*e*PG	**Pb**	**18 40 57.2**	**+0.2**
KHC				*e*SN	**Sn**	**18 41 27.9**	**+0.2**
KHC				*e*SG	**Sg**	**18 41 37.6**	**-0.4**

JMA 31 18:45:23.7±0.1, **41.74N**×**142.98E**, **h34**km±1km, **M3.5, 1D, Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JEM	**Erimo**	**0.31**	**26**	⇓P	Pb	18 45 31.2	-0.4
JEM				*e*S	Sn	18 45 36.5	+0.2
JNBK	**Urakawa-nobuka**	**0.57**	**343**	P	Pn	18 45 34.7	-0.6
JCH	**Churui**	**0.92**	**18**	*e*S	Sb	18 45 52.7	-0.5
JBT2	**Biratori 2**	**1.13**	**336**	P	Pb	18 45 44.4	-0.4
JOB	**Onbets**	**1.32**	**28**	P	Pb	18 45 46.9	-1.1
JFR	**Furan**	**1.45**	**349**	P	Pn	18 45 48.3	+0.8
JKB	**Kayabe**	**1.46**	**276**	P	Pn	18 45 48.6	+0.9
JKB				*e*S	Sn	18 46 06.6	+1.0

KRSC 31 18:56:11.9±1.2, **55.38N**×**163.70E**, **h48**km±24km, **ML3.7, Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBG	**Krutoberegovo**	**1.04**	**328**	*e*P	Pn	18 56 29.2	-0.9
KBG				*e*S	Sn	18 56 41.9	-1.6
BKI	**Bering**	**1.31**	**97**	*e*P	Pn	18 56 35.2	+1.4
BKI				*e*S	Sn	18 56 51.8	+1.7
MKZ	**Mys Kozlova**	**1.40**	**235**	*e*P	Pn	18 56 37.3	+2.3
MKZ				*e*S	Sn	18 56 54.8	+2.5
BDR	**Baidarnaya**	**1.84**	**311**	*e*P	Pn	18 56 42.7	+1.6
SRKR	**Sorokina**	**1.91**	**313**	*e*P	Pn	18 56 44.1	+2.1
SRKR				*e*S	Sn	18 57 08.0	+3.1
KLY	**Klyuchi**	**1.96**	**300**	*e*P	Pn	18 56 43.6	+1.0
KLY				*e*S	Sn	18 57 07.0	+1.1
KZV	**Kizimen**	**1.97**	**264**	*e*P	Pn	18 56 45.6	+2.7
KIRR	**Kirishev**	**1.98**	**288**	*e*P	Pn	18 56 45.9	+2.7
KMNR	**Kamenistaya**	**2.00**	**282**	*e*P	Pn	18 56 46.9	+3.6
KMNR				*e*S	Sn	18 57 10.9	+3.7
TUMR	**Tumrok**	**2.03**	**269**	*e*P	Pn	18 56 47.1	+3.4
KPT	**Kopyto**	**2.05**	**288**	*e*P	Pn	18 56 47.6	+3.6
KPT				*e*S	Sn	18 57 12.6	+4.1
KOZ	**Kozyrevsk**	**2.27**	**289**	*e*P	Pn	18 56 50.9	+4.0
ESO	**Esso**	**2.88**	**283**	*e*P	Pn	18 56 58.5	+3.2
SPN	**Mys Shipunski**	**3.14**	**225**	*e*P	Pn	18 57 00.7	+1.8
SPN				*e*S	Sn	18 57 36.0	+0.9
NLC	**Nalytchevo**	**3.38**	**231**	*e*S	Sn	18 57 43.3	+2.5
SDLR	**Sedlovina**	**3.52**	**235**	*e*P	Pn	18 57 08.6	+4.5
SDLR				*e*S	Sn	18 57 47.9	+3.4
KRER	**Koryakskii**	**3.56**	**236**	*e*P	Pn	18 57 09.4	+4.5
UGLR	**Uglovaya**	**3.59**	**235**	*e*P	Pn	18 57 08.9	+3.8
AVH	**Avacha**	**3.59**	**236**	*e*P	Pn	18 57 09.9	+4.8
DALK	**Dalny**	**3.74**	**233**	*e*P	Pn	18 57 11.2	+4.2
DALK				*e*S	Sn	18 57 52.5	+2.8
GNL	**Ganaly**	**3.75**	**246**	*e*P	Pn	18 57 11.9	+4.5
KRMR	**Karymshinskiy**	**4.15**	**234**	*e*P	Pn	18 57 17.6	+4.9
RUS	**Russkaya**	**4.25**	**228**	*e*P	Pn	18 57 17.6	+3.5
ASAK	**Asacha**	**4.56**	**231**	*e*P	Pn	18 57 23.9	+5.5

*ISK **31** 19:19:42.5, 39.09N×29.04E, h4km, MD3.0*
*CSEM **31** 19:19:43.1±0.1, 39.09N×29.05E, h2km, MD3.0, Error ellipse: s-maj=2.3km s-min=2.0km az=9.0*
*DDA **31** 19:19:43.0, 39.14N×29.09E, h7km, Ml3.4*

ISC 31 19:19:43.2±1.0, **39.10N**±0.02×**29.06E**±0.02, **h5**km±12km, **n90**, σ0§**62**/108, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.27**	**258**	*i* P	**Pg**	**19 19 48.8**	**+0.3**
DEMI				*i* S	**Sg**	**19 19 51.6**	**-0.5**
GEDZ	**Gediz**	**0.28**	**101**	*e*PG	**Pg**	**19 19 48.8**	**+0.1**
GEDZ				*e*SG	**Sg**	**19 19 53.3**	**+0.9**
GEDZ	**Gediz**	**0.28**	**101**	*e*Pg	**Pg**	**19 19 48.8**	**+0.1**
GEDZ				*e*Sg	**Sg**	**19 19 53.3**	**+0.9**
GDZ	**Gediz**	**0.33**	**92**	*i* P	**Pg**	**19 19 49.4**	**-0.3**
GDZ				*i* S	**Sg**	**19 19 54.1**	**0.0**
GDZ	**Gediz**	**0.33**	**92**	P	**Pg**	**19 19 49.4**	**-0.3**
GDZ				S	**Sg**	**19 19 54.1**	**0.0**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**19 19 51.8**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**19 19 51.8**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**19 19 56.1**	**+0.1**
KULA				*e*SG	**Sg**	**19 20 04.8**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**19 19 56.1**	**+0.1**
KULA				*e*Sg	**Sg**	**19 20 04.8**	**+0.2**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**19 19 56.1**	**-1.0**
MANT				*i* S	**Sg**	**19 20 05.7**	**-0.8**
MANT	**Manisa**	**0.72**	**213**	P	**Pg**	**19 19 56.1**	**-1.0**
MANT				S	**Sg**	**19 20 05.7**	**-0.8**
KHL	**Karahalli**	**0.86**	**155**	*e*PG	**Pg**	**19 19 59.7**	**0.0**
KHL	**Karahalli**	**0.86**	**155**	*e*Pg	**Pg**	**19 19 59.7**	**0.0**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pg**	**19 20 01.4**	**-0.9**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pg**	**19 20 01.4**	**-0.9**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pb**	**19 20 03.8**	**-0.3**
BALB				*e*SG	**Sb**	**19 20 18.1**	**-0.2**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pb**	**19 20 03.8**	**-0.3**
BALB				*e*Sg	**Sb**	**19 20 18.1**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**19 20 07.1**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**19 20 07.1**	**-0.6**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pb**	**19 20 07.9**	**+0.1**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pb**	**19 20 07.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pg**	**19 20 07.3**	**-0.6**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pg**	**19 20 07.3**	**-0.6**
SHUT	**Suhut-Afyon**	**1.29**	**115**	*e*PN	**Pg**	**19 20 07.1**	**-0.8**
SHUT	**Suhut-Afyon**	**1.29**	**115**	*e*Pn	**Pg**	**19 20 07.1**	**-0.8**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pn**	**19 20 07.4**	**-1.2**
BORA				*i* S	**Sg**	**19 20 25.9**	**-0.2**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pn**	**19 20 07.4**	**-1.2**
BORA				S	**Sg**	**19 20 25.9**	**-0.2**
GEMT	**Gemlik**	**1.34**	**4**	*e*PN	**Pn**	**19 20 08.7**	**+0.1**
GEMT	**Gemlik**	**1.34**	**4**	*e*Pn	**Pn**	**19 20 08.7**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pn**	**19 20 09.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pn**	**19 20 09.8**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN	**Pb**	**19 20 10.3**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn	**Pb**	**19 20 10.3**	**-0.1**
ESKT	**Eskisehir**	**1.45**	**73**	*e*PN	**Pn**	**19 20 10.3**	**0.0**
ESKT	**Eskisehir**	**1.45**	**73**	*i* P	**Pg**	**19 20 11.0**	**-0.1**
ESKT	**Eskisehir**	**1.45**	**73**	*e*Pn	**Pn**	**19 20 10.3**	**0.0**
SEYT	**Eskypehyr**	**1.45**	**73**	P	**Pg**	**19 20 11.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*PN	**Pn**	**19 20 10.3**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*Pn	**Pn**	**19 20 10.3**	**-0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**19 20 10.5**	**0.0**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**19 20 10.5**	**0.0**
BOLV	**Bolvadin**	**1.52**	**104**	*i* P	**Pg**	**19 20 12.3**	**-0.2**
BOLV				*i* S	**Sg**	**19 20 32.9**	**+0.6**
BOLV	**Bolvadin**	**1.52**	**104**	P	**Pg**	**19 20 12.3**	**-0.2**
BOLV				S	**Sg**	**19 20 32.9**	**+0.6**
SBT5	**Esenkoy-Cinarc**	**1.54**	**355**	*e*PN	**Pn**	**19 20 11.7**	**+0.5**
SBT5	**Esenkoy-Cinarc**	**1.54**	**355**	*e*Pn	**Pn**	**19 20 11.7**	**+0.5**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pn**	**19 20 11.9**	**+0.4**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pn**	**19 20 11.9**	**+0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**19 20 14.7**	**+0.5**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**19 20 14.7**	**+0.5**
HRT	**Hereke**	**1.78**	**15**	*e*PN	**Pn**	**19 20 15.6**	**+0.8**
HRT	**Hereke**	**1.78**	**15**	*e*Pn	**Pn**	**19 20 15.6**	**+0.8**
SBT2	**Guzelce-Avcila**	**1.83**	**347**	*e*PN	**Pn**	**19 20 15.8**	**+0.6**
SBT2	**Guzelce-Avcila**	**1.83**	**347**	*e*Pn	**Pn**	**19 20 15.8**	**+0.6**
AYVA	**Ayvalik**	**1.85**	**277**	*i* P	**Pg**	**19 20 18.6**	**-0.1**
AYVA				*i* S	**Sg**	**19 20 44.6**	**+1.9**
AYVA	**Ayvalik**	**1.85**	**277**	P	**Pg**	**19 20 18.6**	**-0.1**
AYVA				S	**Sg**	**19 20 44.6**	**+1.9**
KRBG	**Karabiga-Canak**	**1.87**	**314**	*e*PN	**Pn**	**19 20 16.4**	**+0.4**
KRBG	**Karabiga-Canak**	**1.87**	**314**	*e*Pn	**Pn**	**19 20 16.4**	**+0.4**
MRMT	**Marmara Adasi**	**1.88**	**324**	*e*PN	**Pn**	**19 20 16.4**	**+0.3**
MRMT	**Marmara Adasi**	**1.88**	**324**	*e*Pn	**Pn**	**19 20 16.4**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	**Pn**	**19 20 17.4**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	**Pn**	**19 20 17.4**	**+0.4**
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*PN	**Pn**	**19 20 18.2**	**+1.0**
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*Pn	**Pn**	**19 20 18.2**	**+1.0**
SBT3	**Marmara-Eregli**	**1.97**	**335**	*e*PN	**Pn**	**19 20 18.0**	**+0.9**
SBT3	**Marmara-Eregli**	**1.97**	**335**	*e*Pn	**Pn**	**19 20 18.0**	**+0.9**
SBT4	**Kumbag-Tekirda**	**2.09**	**326**	*e*PN	**Pn**	**19 20 18.9**	**+0.2**
SBT4	**Kumbag-Tekirda**	**2.09**	**326**	*e*Pn	**Pn**	**19 20 18.9**	**+0.2**
SILT	**Sile**	**2.10**	**12**	*e*PN	**Pn**	**19 20 19.6**	**+0.5**
SILT	**Sile**	**2.10**	**12**	*e*Pn	**Pn**	**19 20 19.6**	**+0.5**
MDUB	**Mudurnu**	**2.14**	**50**	*e*PN	**Pn**	**19 20 20.3**	**+0.5**
MDUB	**Mudurnu**	**2.14**	**50**	*e*Pn	**Pn**	**19 20 20.3**	**+0.5**
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*PN	**Pn**	**19 20 20.6**	**+0.8**
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*Pn	**Pn**	**19 20 20.6**	**+0.8**
KLYT	**Kilyos**	**2.15**	**360**	*e*PN	**Pn**	**19 20 20.3**	**+0.6**
KLYT	**Kilyos**	**2.15**	**360**	*e*Pn	**Pn**	**19 20 20.3**	**+0.6**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	*i* S	**Sg**	**19 20 52.5**	**-0.6**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	S	**Sg**	**19 20 52.5**	**-0.6**
CTKS	**Kestanelik-??a**	**2.18**	**349**	*e*PN	**Pn**	**19 20 20.9**	**+0.8**
CTKS	**Kestanelik-??a**	**2.18**	**349**	*e*Pn	**Pn**	**19 20 20.9**	**+0.8**
LPK	**Lapseki**	**2.18**	**306**	*e*PN	**Pn**	**19 20 20.9**	**+0.7**
LPK	**Lapseki**	**2.18**	**306**	*e*Pn	**Pn**	**19 20 20.9**	**+0.7**
SUTC	**Sutluce-Ispart**	**2.23**	**136**	*e*PN	**Pn**	**19 20 21.4**	**+0.5**
SUTC	**Sutluce-Ispart**	**2.23**	**136**	*e*Pn	**Pn**	**19 20 21.4**	**+0.5**
GELI	**Tayfur-Gelibol**	**2.38**	**304**	*e*PN	**Pn**	**19 20 23.8**	**+0.9**
GELI	**Tayfur-Gelibol**	**2.38**	**304**	*e*Pn	**Pn**	**19 20 23.8**	**+0.9**
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*PN	**Pn**	**19 20 24.6**	**+0.8**
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*Pn	**Pn**	**19 20 24.6**	**+0.8**
KESN	**Edirne-Kesan**	**2.51**	**314**	*i* P	**Pn**	**19 20 24.6**	**-0.5**
KESN	**Edirne-Kesan**	**2.51**	**314**	P	**Pn**	**19 20 24.6**	**-0.5**

*IDC **31** 19:22:21.8±8.2, 18.08S×168.54E, h150km±80km, mb3.3/2, mb1 3.5/3, mb1mx3.1/43, mbtmp3.7/3, Error ellipse: s-maj=93.6km s-min=40.0km az=167.0*

ISC 31 19:22:20.9±1.4, **18.1S**±0.2×**168.6E**±0.3, **h150**km, **n16**, σ1§**48**/16, **Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.49**	**207**	P	**Pn**	**19 23 28.0**	**+0.3**
	4.9nm,0.3s,baz=45,slow=11,SNR=56						
DZM				S	**Sn**	**19 24 19.5**	**-0.2**
	8.8nm,0.3s,baz=315,slow=20,SNR=9.8						
WRA	**Warramunga Arr**	**32.45**	**261**	P	**P**	**19 28 36.7**	**-0.5**
	0.2nm,0.5s,baz=80,slow=6.3,SNR=16						
ASAR	**Alice Springs**	**32.88**	**254**	P	**P**	**19 28 41.3**	**+0.4**
	1.4nm,0.5s,baz=80,slow=8.9,SNR=38						
ARCES	**ARCESS Array B**	**123.78**	**345**	PKP	**PKPdf**	**19 41 00.0**	**-0.3**
	0.8nm,0.8s,baz=65,slow=1.3,SNR=5.9						
CONA	**Conrad Observa**	**142.84**	**329**	*i* PKPbc	**PKPdf**	**19 41 32.0**	**-4.6**
	0.6nm,0.6s						
SOKA	**Soboth**	**144.11**	**329**	*i* PKPdf	PKPbc	19 41 38.1	+0.8
	1.0nm,0.6s						
OBKA	**Obir**	**144.47**	**329**	*i* PKPab	**PKPdf**	**19 41 40.0**	**+0.5**
	0.9nm,0.5s						
KBA	**Koelnbreinsper**	**144.64**	**330**	*i* PKiKP	**PKiKP**	**19 41 43.4**	**-0.3**
	1.4nm,0.5s						
MYKA	**Terra Mystica**	**144.82**	**330**	*i* PKPbc	**PKPab**	**19 41 40.0**	**+0.5**
	0.8nm,0.3s						
WATA	**Walderalm**	**145.26**	**332**	*i* PKPbc	**PKPbc**	**19 41 40.8**	**-0.1**
	1.3nm,0.5s						
ABTA	**Abfaltersbach**	**145.27**	**331**	*i* PKPbc	**PKPdf**	**19 41 41.4**	**+0.5**
	2.2nm,0.7s						
MOTA	**Moosalm**	**145.46**	**333**	*i* PKPbc	**PKPdf**	**19 41 42.2**	**+0.9**
	1.4nm,0.6s						
RETA	**Reutte**	**145.50**	**333**	*i* PKPdf	**PKPdf**	**19 41 39.9**	**-1.4**
	0.3nm,0.4s						
FETA	**Feichten**	**145.87**	**333**	*i* PKPbc	**PKPab**	**19 41 44.3**	**+0.7**
	1.1nm,0.6s						
DAVA	**Damuels**	**146.03**	**334**	*i* PKPbc	**PKPdf**	**19 41 43.6**	**+1.3**
	3.7nm,1.3s						
DAVOX	**Davos/Dischmat**	**146.43**	**333**	PKPbc	**PKPbc**	**19 41 45.5**	**+0.9**
	1.6nm,0.5s,baz=346,slow=4.9,SNR=5.3						

*IDC **31** 19:28:53.9±1.1, 14.95N×147.16E, h0km, mb4.1/15, mb1 4.1/16, mb1mx3.9/56, mbtmp4.1/16, ML4.2/1, Error ellipse: s-maj=30.4km s-min=16.4km az=98.0*
*ISCJB **31** 19:28:56.9±0.9, 15.00N±0.09×147.1E±0.1, h32km, mb4.1/16, Error ellipse: s-maj=19.1km s-min=9.1km az=33.6*
*NEIC **31** 19:28:59.2±0.7, 14.93N×147.11E, h35km, mb4.2/1, Error ellipse: s-maj=18.6km s-min=10.8km az=100.0*

ISC 31 19:28:58.7±1.1, **15.0N**±0.1×**147.1E**±0.2, **h32**km, **n20**, σ0§**87**/21, **mb4.2**/16, **Mariana Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**2.58**	**239**	Pn	**Pn**	**19 29 38.0**	**-0.2**
	43nm,0.3s,baz=103,slow=5.3,SNR=13						
GUMO				Sn	**Sn**	**19 30 09.0**	**+0.5**
	41nm,0.3s,baz=13,slow=22,SNR=6.9						
JOW	**Kunigami**	**21.18**	**307**	P	**P**	**19 33 42.5**	**+1.0**
	5.7nm,0.3s,baz=118,slow=22,SNR=18						
KSRS	**Korea Array**	**28.16**	**326**	P	**P**	**19 34 46.5**	**-1.6**
	3.3nm,0.9s,baz=146,slow=8.5,SNR=4.3						
KSAR	**Wonju Array Be**	**28.17**	**326**	P	**P**	**19 34 46.5**	**-1.7**
KLR	**Kul'dur**	**36.43**	**343**	P	**P**	**19 36 00.1**	**-0.2**
	2.4nm,0.6s,baz=152,slow=4.9,SNR=11						
WRA	**Warramunga Arr**	**36.89**	**200**	P	**P**	**19 36 04.6**	**+0.1**
	1.9nm,0.8s,baz=23,slow=9.7,SNR=11						
ENH	**Enshi**	**37.75**	**300**	*e*P	**P**	**19 36 11.8**	**-0.1**
	2.7nm,0.7s						
ASAR	**Alice Springs**	**40.50**	**199**	P	**P**	**19 36 34.4**	**-0.5**
	0.8nm,0.8s,baz=20,slow=7.2,SNR=10.0						
SONM	**Songino Array**	**46.93**	**323**	P	**P**	**19 37 27.2**	**+0.7**
	1.6nm,0.7s,baz=134,slow=5.9,SNR=6.4						
ZALV	**Zalesovo Beam**	**61.82**	**324**	P	**P**	**19 39 15.0**	**+0.6**
	0.5nm,0.4s,baz=98,slow=7.6,SNR=4.2						
MKAR	**Makanchi Array**	**62.06**	**315**	P	**P**	**19 39 17.1**	**+0.8**
	1.2nm,0.4s,baz=91,slow=8.3,SNR=29						
KURK	**Kurchatov**	**64.98**	**319**	*e*P	**P**	**19 39 33.9**	**-1.5**
KURBB	**Kurchatov Arra**	**65.02**	**319**	P	**P**	**19 39 36.0**	**+0.2**
	3.4nm,0.6s,baz=98,slow=6.9,SNR=36						
ILAR	**Eielson Array**	**66.41**	**25**	P	**P**	**19 39 44.7**	**+0.3**
	0.3nm,0.6s,baz=243,slow=6.1,SNR=4.5						
BVAR	**Borovoye Array**	**70.23**	**321**	P	**P**	**19 40 08.7**	**+0.1**
	1.2nm,0.5s,baz=112,slow=7.4,SNR=15						
ARU	**Arti**	**76.91**	**325**	P	**P**	**19 40 47.6**	**-0.1**
	0.9nm,0.4s,baz=83,slow=8.1,SNR=3.3						
GEYT	**Alibeck**	**80.21**	**307**	P	**P**	**19 41 05.9**	**-0.4**
	1.7nm,0.9s,baz=79,slow=7.5,SNR=5.1						
ARCES	**ARCESS Array B**	**86.46**	**343**	P	**P**	**19 41 39.4**	**+1.5**
	1.1nm,0.8s,baz=86,slow=6.4,SNR=5.7						
FINES	**FINESS Array B**	**90.84**	**336**	P	**P**	**19 41 59.1**	**+0.3**
	1.3nm,0.8s,baz=81

MDJ pmax pmax
comp=Z,37nm,0.9s
MDJ pmax pmax
comp=Z,89nm,5.6s
MDJ LR LR
comp=Z,130nm,10.5s
MDJ LR LR
comp=Z,260nm,14.4s
MDJ LR LR
comp=Z,400nm,17.0s
KSRS Korea Array 11.49 268 P **Pn 19 36 34.2 +4.2**
comp=Z,0.9nm,0.3s,baz=82,slow=13,SNR=16
KSRS LR LR 19 40 39.1
comp=Z,272nm,19.0s,baz=72,slow=36
KSAR Wonju Array Be 11.52 268 P **Pn 19 36 34.3 +3.8**
KSAR Wonju Array Be 11.52 268 P **Pn 19 36 34.2 +3.8**
TYV Tymovskoe 12.13 1 *e*P **Pn 19 36 37.2 -1.6**
TYV pmax pmax
comp=Z,15nm,0.8s
KLR Kul'dur 12.99 327 P **Pn 19 36 50.1 -0.4**
comp=Z,0.5nm,0.3s,baz=133,slow=12,SNR=9.5
KLR LR LR 19 41 45.1
comp=Z,370nm,19.6s,baz=142,slow=37
CN2 Changchun 13.72 297 *e*P **Pn 19 37 04.0 +3.5**
CN2 *e*PP **PnPn 19 37 15.5 +7.1**
CN2 *e*S **Sn 19 39 33.0 +1.5**
CN2 pmax pmax
comp=Z,10.0nm,0.9s
CN2 pmax pmax
comp=Z,100nm,4.0s
CN2 LR LR
comp=Z,200nm,17.0s
CN2 LR LR
comp=Z,200nm,17.0s
CN2 LR LR
comp=Z,200nm,17.0s
SNY Shenyang 14.70 288 ⇑P **P 19 37 20.0 +0.8**
SNY pmax pmax
comp=Z,140nm,6.7s
SNY LR LR
comp=Z,290nm,15.3s
SNY LR LR
comp=Z,400nm,16.3s
DL2 Dalian 16.20 277 P **Pn 19 37 34.3 +1.1**
DL2 pP **pP 19 37 44.8 -1.0**
DL2 *e*S **Sn 19 40 31.0 -0.8**
DL2 pmax pmax
comp=Z,37nm,1.0s
DL2 LR LR
comp=Z,230nm,15.4s
DL2 LR LR
comp=Z,390nm,13.8s
DL2 LR LR
comp=Z,370nm,13.1s
JOW Kunigami 16.77 229 LR LR 19 43 58.4
comp=Z,115nm,20.9s,baz=125,slow=36
PETK Petropavlovsk- 17.83 31 P **Pn 19 37 51.8 -1.6**
comp=Z,0.1nm,0.3s,baz=224,slow=6.0,SNR=3.2
BJI Beijing 20.30 282 P **P 19 38 20.0 -0.9**
BJI S **S 19 42 03.0 -3.2**
BJI pmax pmax
comp=Z,14nm,1.2s
BJI pmax pmax
comp=Z,140nm,4.6s
BJI LR LR
comp=Z,100nm,8.1s
BJI LR LR
comp=Z,300nm,13.8s
BJI LR LR
comp=Z,130nm,16.3s
MA2 Magadan 21.54 12 P **P 19 38 34.4 +0.4**
comp=Z,20nm,0.7s,baz=204,slow=8.1,SNR=10
MA2 LR LR 19 46 37.6
comp=Z,80nm,20.8s,baz=188,slow=36
HHC Hu-ho-hao-te 23.74 285 *e*P **P 19 38 58.0 +0.9**
HHC S **S 19 43 02.8 -6.8**
HHC pmax pmax
comp=Z,26nm,0.9s
HHC LR LR
comp=Z,64nm,11.4s
HHC LR LR
comp=Z,280nm,11.5s
HHC LR LR
comp=Z,280nm,13.3s
CIT Chita 24.05 313 *e*P **P 19 38 58.6 -1.2**
CIT *e* 19 39 09.0
CIT pmax pmax
comp=Z,57nm,1.2s
TPUB Ta-pu 24.10 237 *e*P **P 19 38 60.0 -0.5**
comp=Z,23nm,1.0s
WHN Wuhan 24.42 259 P **P 19 39 06.0 +2.7**
YAK Yakutsk 24.61 346 P **P 19 39 03.5 -1.1**
comp=Z,23nm,0.5s,baz=89,slow=0.5,SNR=15
YAK LR LR 19 49 21.1
comp=Z,80nm,18.6s,baz=207,slow=38
YAK Yakutsk 24.61 346 *e*P **P 19 39 03.6 -1.1**
YAK *e**PP **pP 19 39 14.4 -1.4**
YAK *e*PPP PPP 19 39 44.9
YAK *e* 19 42 41.6
YAK *e*S **S 19 43 22.8 0.0**
YAK *e**SS **sS 19 43 40.0 -1.2**
YAK *e*SS **SnSn 19 44 11.0 +0.4**
YAK *e* 19 50 03.9
YAK pmax pmax
comp=Z,18nm,0.9s
YAK pmax pmax
comp=N,5.0nm,0.9s
YAK pmax pmax
comp=Z,54nm,3.0s
YAK pmax pmax
comp=N,24nm,1.6s
YAK pmax pmax
comp=E,19nm,1.4s
YAK smax smax
comp=N,75nm,2.5s
YAK smax smax
comp=E,58nm,2.8s
YAK Yakutsk 24.61 346 *e*P **P 19 39 02.1 -2.5**
comp=E,25nm,0.7s
SEY Seymchan 24.98 11 P **P 19 39 09.4 +1.4**
comp=E,30nm,0.9s,baz=201,slow=6.4,SNR=48
SEY Seymchan 24.98 11 *de*P **P 19 39 10.3 +2.3**
GUMO Guam 25.14 174 LR LR 19 51 31.4
comp=E,34nm,18.2s,baz=356,slow=42
BOD Bodaibo 26.55 325 *e*P **P 19 39 21.5 -0.8**
BOD pmax pmax
comp=Z,9.0nm,0.8s
XAN Xi'an 27.27 271 P **P 19 39 28.3 -0.8**
XAN pmax pmax
comp=Z,9.0nm,0.9s
XAN pmax pmax
comp=Z,70nm,4.5s
XAN LR LR
comp=Z,63nm,17.3s
XAN LR LR
comp=Z,140nm,16.8s
XAN LR LR
comp=Z,160nm,12.4s
SONA1 Songino Array 27.54 301 *e*P **P 19 39 30.7 -0.8**
SONM Songino Array 27.54 301 P **P 19 39 31.5 -0.1**
comp=Z,2.7nm,0.6s,baz=97,slow=8.8,SNR=14
SONM LR LR 19 50 51.0
comp=Z,123nm,18.8s,baz=102,slow=37
H11N2 WAKE ISLAND Hy 28.40 125 T T 20 10 05.4
baz=317,slow=75,SNR=7945
H11N1 WAKE ISLAND Hy 28.41 125 T T 20 10 07.1
baz=317,slow=75,SNR=8665
H11N3 WAKE ISLAND Hy 28.42 125 T T 20 10 04.6
baz=317,slow=75,SNR=6888
H11S1 WAKE ISLAND Hy 29.18 127 T T 20 10 58.9
baz=318,slow=76,SNR=989
H11S3 WAKE ISLAND Hy 29.18 127 T T 20 11 01.3
baz=318,slow=76,SNR=1292
H11S2 WAKE ISLAND Hy 29.20 127 T T 20 11 00.2
baz=318,slow=76,SNR=842
TLY Talaya 29.86 308 LR LR 19 52 27.6
comp=Z,206nm,18.9s,baz=99,slow=38
ZAK Zakamensk 29.88 306 *e*P **P 19 39 51.2 -1.0**
ZAK pmax pmax
comp=Z,10.0nm,1.0s
LZH Lanzhou 30.60 277 *e*P **P 19 40 02.5 +3.7**
LZH pmax pmax
comp=Z,33nm,1.2s
LZH pmax pmax
comp=Z,75nm,4.4s
LZH LR LR
comp=Z,150nm,13.5s
LZH LR LR
comp=Z,270nm,15.3s
LZH LR LR
comp=Z,280nm,16.2s
MOY Mondy 31.48 308 *e*P **P 19 40 06.6 +0.2**
BILL Bilibino 32.18 17‖ *e*P **P 19 40 13.0 +0.8**
BILL *e**SP **pP 19 40 25.1 +1.7**
BILL 19 41 16.0
BILL pmax pmax
comp=Z,11nm,1.0s
GYA Guiyang 32.31 258 *e*P **P 19 40 14.3 +0.4**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 32.49 268 *e*P **P 19 40 13.8 -1.6**
CD2 pP pP 19 40 27.3 +0.7
CD2 sP sP 19 40 33.8 +2.3
CD2 S **S 19 45 24.3 -3.3**
CD2 sS sS 19 45 47.5 +1.2
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,120nm,5.2s
GTA Gaotai 32.85 285 P **P 19 40 18.3 -0.3**
GTA pP pP 19 40 30.5 +0.7
GTA sP sP 19 40 35.8 +1.1
GTA PcP **PcP 19 43 03.3 +0.7**
GTA S **S 19 45 31.0 -2.3**
GTA pmax pmax
comp=Z,5.0nm,1.0s
GTA pmax pmax
comp=Z,79nm,5.2s
GTA LR LR
comp=Z,85nm,17.1s
GTA LR LR
comp=Z,220nm,17.6s
GTA LR LR
comp=Z,230nm,18.2s
KRAR Krasnoyarsk 36.81 315⇑ *e*P **P 19 40 52.3 0.0**
WMQ Urumqi 40.80 295 P **P 19 41 27.0 +1.0**
WMQ pP pP 19 41 39.3 +1.8
WMQ S **S 19 47 35.5 +1.4**
WMQ pmax pmax
comp=Z,14nm,0.7s
WMQ pmax pmax
comp=Z,82nm,3.6s
WMQ LR LR
comp=Z,240nm,18.4s
WMQ LR LR
comp=Z,300nm,19.5s
WMQ LR LR
comp=Z,340nm,19.5s
ZAA0 Zalesovo Array 41.38 311 *e*P **P 19 41 30.1 -0.4**
ZALV Zalesovo Beam 41.38 311 P **P 19 41 30.4 -0.1**
comp=Z,14nm,0.7s,baz=90,slow=7.8,SNR=51
ZALV PcP **PcP 19 43 28.0 0.0**
comp=Z,2.0nm,0.5s,baz=87,slow=3.3,SNR=4.7
ZALV LR LR 19 59 22.6
comp=Z,148nm,18.6s,baz=70,slow=37
NRIK Noril'sk 42.07 334 P **P 19 41 35.7 -0.3**
comp=Z,4.2nm,0.5s,baz=109,slow=9.8,SNR=4.4
NRIK LR LR 19 59 59.2
comp=Z,184nm,19.9s,baz=120,slow=37
NVS Novosibirsk 42.26 312 *e*P **P 19 41 37.0 -0.7**
CMAR Chiang Mai Arr 42.70 254 P **P 19 41 41.4 -0.3**
comp=Z,0.5nm,0.5s,baz=45,slow=6.7,SNR=3.4
CMAR LR LR 20 00 42.3
comp=Z,25nm,19.6s,baz=185,slow=38
SVW2 Sparrevohn 43.70 38 *e*P **P 19 41 50.9 +1.6**
comp=Z,12nm,0.9s
MK01 Makanchi Array 43.91 301 *e*P **P 19 41 50.8 -0.3**
MK31 Makanchi Array 43.91 301 *i* P **P 19 41 50.9 -0.3**
MK31 pmax pmax
comp=Z,2.0nm,0.4s
MK31 Makanchi Array 43.91 301 *e*P **P 19 41 51.1 -0.1**
MKAR Makanchi Array 43.91 301 P **P 19 41 50.9 -0.3**
comp=Z,3.7nm,0.5s,baz=84,slow=9.3,SNR=26
MKAR Makanchi Array 43.91 301 *e*P **P 19 41 51.2 0.0**
MAKZ Makanchi 44.12 301 *e*P **P 19 41 52.2 -0.6**
MAKZ pmax pmax
comp=Z,9.0nm,1.0s
MAKZ Makanchi 44.12 301 *e*P **P 19 41 52.2 -0.6**
comp=Z,8.8nm,1.0s
KDAK Kodiak Island 45.32 43 *i* P **P 19 42 03.1 +0.9**
KURK Kurchatov 45.53 307 *c i*P **P 19 42 03.3 -0.6**
KURK Kurchatov 45.53 307 *e*P **P 19 42 03.6 -0.4**
KURBB Kurchatov Arra 45.60 307 P **P 19 42 04.1 -0.4**
comp=Z,28nm,0.7s,baz=81,slow=8.1,SNR=108
BPAW Bear Paw Mtn. 45.88 34 *e*P **P 19 42 08.4 +1.8**
comp=Z,16nm,1.7s
KTH Kantishna Hill 45.91 35 *e*P **P 19 42 08.8 +2.0**
comp=Z,12nm,1.0s
MLY Manley 46.00 33 *e*P **P 19 42 09.4 +1.9**
comp=Z,10nm,1.0s
TRF Thorofare Moun 46.19 35 *e*P **P 19 42 11.3 +2.1**
comp=Z,6.5nm,0.9s
COLD Coldfoot 46.29 30 *e*P **P 19 42 11.0 +1.3**
comp=Z,6.2nm,1.3s
BWN Browne 46.55 34 *e*P **P 19 42 13.3 +1.5**
comp=Z,34nm,1.0s
PDGK Podgornoye 46.70 297 *i* P **P 19 42 12.5 -0.8**
PDGK pmax pmax
comp=Z,11nm,1.2s
MCK McKinley 46.79 35 *e*P **P 19 42 14.1 +0.4**
MCK pmax pmax
comp=Z,8.0nm,1.0s
MCK McKinley 46.79 35 *e*P **P 19 42 14.1 +0.4**
comp=Z,7.6nm,1.0s
PMR Palmer 46.80 38 *e*P **P 19 42 14.8 +1.0**
PMR pmax pmax
comp=Z,9.0nm,1.0s
PMR Palmer 46.80 38 *e*P **P 19 42 14.8 +1.0**
comp=Z,9.3nm,1.0s
RND Reindeer 46.84 35 *e*P **P 19 42 14.8 +0.6**
RND pmax pmax
comp=Z,10.0nm,1.0s
RND Reindeer 46.84 35 *e*P **P 19 42 14.8 +0.6**
comp=Z,10.0nm,1.0s
MDM Murphy Dome 47.06 33 *e*P **P 19 42 15.7 -0.2**
comp=Z,19nm,1.2s
SML Sawmill 47.16 37 *e*P **P 19 42 17.6 +0.9**
SML pmax pmax
comp=Z,17nm,1.0s
SML Sawmill 47.16 37 *e*P **P 19 42 17.6 +0.9**
comp=Z,17nm,1.0s
CCB Clear Creek Bu 47.25 33 *e*P **P 19 42 18.7 +1.4**
comp=Z,15nm,1.6s
DHY Denali Highway 47.52 36 *e*P **P 19 42 19.8 +0.2**
comp=Z,5.2nm,1.0s
HDA Harding Lake 47.63 34 *e*P **P 19 42 21.0 +0.7**
comp=Z,9.2nm,0.9s
IL1 Eielson Array 47.64 33 *e*P **P 19 42 20.7 +0.4**
ILAR Eielson Array 47.64 33 P **P 19 42 21.4 +1.1**
comp=Z,5.5nm,0.7s,baz=268,slow=6.4,SNR=67
ILB Eielson Array 47.64 33 *e*P **P 19 42 20.1 -0.3**
GUN Gumba 47.79 275 *e*P **P 19 42 22.3 -0.1**
comp=Z,30nm,0.5s
KKN Kakani 48.31 275 *e*P **P 19 42 26.4 +0.1**
comp=Z,12nm,0.4s
PKIN Phulchoki 48.32 275 *e*P **P 19 42 27.1 +0.7**
comp=Z,12nm,0.6s
GKN Gorkha 48.71 275 *e*P **P 19 42 28.6 -0.7**
comp=Z,53nm,1.3s
TKM2 Tokmak 2 49.53 297 *i* P **P 19 42 35.1 -0.4**
TKM2 pmax pmax
comp=Z,7.0nm,0.7s
KOLN Koldanda 49.63 276 *e*P **P 19 42 36.2 -0.2**
comp=Z,12nm,0.5s
PYUN Piuthan 49.95 276 *e*P **P 19 42 38.7 -0.1**
BVAR Borovoye Array 50.03 311 P **P 19 42 38.5 -0.3**
comp=Z,5.6nm,0.6s,baz=68,slow=8.0,SNR=28
BVAR PcP **PcP 19 43 58.4 +0.2**
comp=Z,3.2nm,0.6s,baz=74,slow=2.0,SNR=6.3
BVAR Borovoye Array 50.03 311 P **P 19 42 38.5 -0.3**
BVAR 19 43 58.4
BVAR pmax pmax
comp=Z,7.0nm,0.7s
BVAR pmax pmax
comp=Z,3.0nm,0.6s
BRVK Borovoye 50.08 311 *c i*P **P 19 42 38.8 -0.4**
BRVK pmax pmax
comp=Z,13nm,0.6s
BRVK Borovoye 50.08 311 *e*P **P 19 42 39.1 -0.1**
comp=Z,8.2nm,0.9s
EGAK Eagle 50.09 33 *e*P **P 19 42 38.4 -0.6**
comp=Z,4.8nm,0.7s
AAK Ala-Archa 50.39 297 P **P 19 42 41.7 -0.3**
comp=Z,1.9nm,0.3s,baz=125,slow=3.2,SNR=4.3
AAK Ala-Archa 50.39 297‖ *e*P **P 19 42 42.0 +0.1**
AAK pmax pmax
comp=Z,9.0nm,1.0s
KSH Kashi 50.45 293 *e*P **P 19 42 46.5 +4.1**
KSH *e*pP sP 19 42 59.5 +0.7
KSH *e*sP pP 19 43 04.3 +10
KSH S **S 19 49 54.5 +1.3**
KSH ScS **ScS 19 52 30.5 +0.5**
KSH pmax pmax
comp=Z,3.0nm,0.9s
KSH LR LR
comp=Z,120nm,6.2s
KSH LR LR
comp=Z,63nm,5.4s
KSH LR LR
comp=Z,150nm,6.1s
MNAS Manas 51.82 298 *i* P **P 19 42 52.3 -0.4**
MNAS pmax pmax
comp=Z,13nm,1.3s
HYT Haines Junctio 52.47 37 *e*P **P 19 43 00.1 +3.0**
comp=Z,11nm,0.9s
INK Inuvik 52.52 28 P **P 19 42 58.3 +1.1**
comp=Z,2.9nm,0.5s,baz=284,slow=7.1,SNR=16
INK Inuvik 52.52 28 *e*P **P 19 42 58.6 +1.4**
INK pmax pmax
comp=Z,8.0nm,1.1s
INK Inuvik 52.52 28 *e*P **P 19 42 58.5 +1.4**
comp=Z,7.5nm,1.1s
KKAR Karatay Array 52.97 299 *e*P **P 19 43 00.7 -0.3**
KKAR Karatay Array 52.97 299 *e*P **P 19 43 00.7 -0.3**
PSI Prapat 53.34 239 P **P 19 43 04.5 +0.4**
comp=Z,2.6nm,0.4s,baz=113,slow=15,SNR=2.9
SVE Sverdlovsk 54.41 318‖ *e*P **P 19 43 10.9 -0.3**
SVE pmax pmax
comp=Z,25nm,0.9s
SVE MLR MLR
comp=Z,211nm,18.0s
ARU Arti 55.62 318 P **P 19 43 19.8 -0.3**
comp=Z,7.5nm,0.6s,baz=72,slow=3.6,SNR=21
ARU Arti 55.62 318 *c i*P **P 19 43 19.7 -0.3**
ARU 19 45 22.1
ARU S **S 19 51 05.1 +2.3**
ARU SS **SS 19 54 43.5 -4.2**
ARU pmax pmax
comp=Z,28nm,1.7s
ARU MLR MLR
comp=Z,201nm,18.0s
AB31 Akbulak array 57.46 310 *i* P **P 19 43 31.6 -1.6**
AB31 pmax pmax
comp=Z,8.0nm,0.6s
ABKAR Akbulak array 57.46 310 *e*P **P 19 43 31.5 -1.7**
comp=Z,7.7nm,0.6s
FITZ Fitzroy Crossi 58.68 199 P **P 19 43 42.0 0.0**
comp=Z,2.2nm,0.7s,baz=5.0,slow=6.5,SNR=8.5
WRAB Tennant Creek 58.84 189‖ *i*P **P 19 43 42.8 -0.3**
WRAB pmax pmax
comp=Z,42nm,1.7s
WRAB Tennant Creek 58.84 189 *e*P **P 19 43 42.5 -0.6**
comp=Z,10nm,0.8s
WB2 Warramunga Arr 58.85 189 *e*P **P 19 43 42.5 -0.7**
WRA Warramunga Arr 58.85 189 P **P 19 43 42.5 -0.7**
comp=Z,9.4nm,0.7s,baz=6.8,slow=6.9,SNR=74
YKA Yellowknife Ar 61.95 31 P **P 19 44 04.6 +0.8**
comp=Z,1.3nm,0.7s,baz=298,slow=6.9,SNR=3.4
AS01 Alice Springs 62.57 189 *e*P **P 19 44 07.5 -0.9**
AS31 Alice Springs 62.58 189 *e*P **P 19 44 08.6 +0.1**
comp=Z,1.2nm,0.6s
ASAR Alice Springs 62.58 189 P **P 19 44 08.3 -0.2**
comp=Z,3.6nm,0.7s,baz=10,slow=5.5,SNR=55
ARCES ARCESS Array B 62.69 339 P **P 19 44 08.9 +0.2**
comp=Z,1.7nm,0.5s,baz=49,slow=8.2,SNR=18
KLMR Klimovskoe 62.75 328 *e*P **P 19 44 06.3 -2.9**
KLMR *e* 19 44 44.7
KLMR pmax pmax
comp=Z,15nm,1.2s
GEYT Alibeck 63.71 299 P **P 19 44 15.8 -0.3**
comp=Z,7.6nm,0.7s,baz=33,slow=3.5,SNR=18
GEYT LR LR 20 13 48.0
comp=Z,97nm,18.8s,baz=0.0,slow=38
DAG Danmarks Havn 64.15 355 *i* P **P 19 44 17.3 -0.9**
comp=Z,13nm,1.2s
DAG Danmarks Havn 64.15 355 *i* P **P 19 44 17.3 -0.9**
DAG pmax pmax
comp=Z,21nm,1.2s
COCO West Island 66.14 230 *i* P **P 19 44 31.4 -0.5**
VRH Novokhopyorsk 66.86 318 *e*P **P 19 44 35.4 -0.7**
VRH pmax pmax
comp=Z,10.0nm,0.5s
G04A Mulino 66.96 50 *e*P **P 19 44 38.2 +1.4**
OBN Obninsk 67.21 323 *d i*P **P 19 44 38.4 +0.1**
OBN *e**PP **pP 19 44 47.8 -2.5**
OBN *e* 19 44 55.9
OBN 19 45 03.0
OBN pmax pmax
comp=Z,39nm,2.5s
OBN MLR MLR
comp=Z,72nm,15.0s
FIA1 FINESS Array S 67.68 332 *e*P **P 19 44 40.8 -0.3**
comp=Z,14nm,0.8s
FINES FINESS Array B 67.68 332 P **P 19 44 40.9 -0.3**
comp=Z,15nm,0.9s,baz=53,slow=7.4,SNR=28
FINES LR LR 20 15 53.4
comp=Z,77nm,21.8s,baz=20,slow=37
C09A Chrisman Ranch 67.99 46 *e*P **P 19 44 44.7 +1.4**
VSR Storozhevoye 68.18 319 *e*P **P 19 44 44.0 -0.4**
VSR pmax pmax
comp=Z,10.0nm,0.9s
YBH Yreka Blue Hor 68.69 53 *e*P **P 19 44 49.3 +1.3**
YBH pmax pmax
comp=Z,27nm,1.5s
YBH Yreka Blue Hor 68.69 53 *e*P **P 19 44 49.3 +1.3**
comp=Z,27nm,1.5s
SUMG Summit 68.99 0 *i* P **P 19 44 49.8 +0.1**
comp=Z,9.4nm,0.8s
SUMG Summit 68.99 0 *i* P **P 19 44 49.8 +0.1**
SUMG pmax pmax
comp=Z,9.0nm,0.8s
SUMG Summit 68.99 0 *e*P **P 19 44 49.5 -0.1**
comp=Z,12nm,1.0s
VSU Vasula 69.39 330 *c i*P **P 19 44 51.8 -0.1**
VSU pmax pmax
comp=Z,16nm,0.8s
GOF Gofitskoye 69.55 312⇑ *i*P **P 19 44 53.4 +0.3**
GOF pmax pmax
comp=Z,27nm,0.7s
STKA Stephens Creek 70.25 181 P **P 19 44 57.8 +0.5**
comp=Z,2.4nm,1.0s,baz=63,slow=1.8,SNR=3.8
STKA LR LR 20 19 32.1
comp=Z,40nm,19.1s,baz=203,slow=39
KIV Kislovodsk 70.39 311 *c i*P **P 19 44 58.6 +0.2**
KIV *e**SP **pP 19 45 11.4 +0.8**
KIV *e* 19 45 14.8
KIV 19 45 22.0
KIV pmax pmax
comp=Z,39nm,1.0s
KIV MLR MLR
comp=Z,35nm,17.0s
KIV Kislovodsk 70.39 311 *e*P **P 19 44 58.8 +0.4**
comp=Z,33nm,0.9s
KBZ Khabaz 70.40 311 P **P 19 44 58.6 +0.3**
comp=Z,12nm,0.9s,baz=80,slow=4.6,SNR=15
KBZ LR LR 20 20 54.1
comp=Z,45nm,18.3s,baz=100,slow=40
SWMT Swartz Lake 70.52 44 *e*P **P 19 45 00.9 +1.7**
NEY Neytrino 70.78 310‖ *e*P **P 19 45 01.5 +0.6**
NEY pmax pmax
comp=Z,1.0nm,0.8s
WVOR Wild Horse Val 70.81 51 *e*P **P 19 45 02.6 +1.6**
WVOR pmax pmax
comp=Z,4.0nm,0.9s
WVOR Wild Horse Val 70.81 51 *e*P **P 19 45 02.5 +1.6**
comp=Z,3.6nm,0.9s
AKH Akhalkalaki 71.37 308⇑ *i*P **P 19 45 05.9 +1.4**
PAHR Pah Rah Range 71.92 53 *e*P **P 19 45 08.9 +1.1**
comp=Z,9.1nm,1.0s
CMB Columbia Colle 72.25 55 *e*P **P 19 45 11.0 +1.3**
CMB pmax pmax
comp=Z,3.0nm,0.9s
CMB Columbia Colle 72.25 55 *e*P **P 19 45 11.0 +1.3**
comp=Z,3.3nm,0.9s
LRM Limekiln Ridge 72.39 45 *e*P **P 19 45 11.6 +1.0**
YERR Yerington 72.43 54 *e*P **P 19 45 12.6 +1.7**
comp=Z,8.4nm,1.0s
DLMT Dillon 72.59 46 *e*P **P 19 45 12.9 +1.2**
comp=Z,4.9nm,0.9s

HLID	**Hailey**	**72.64**	**48**	*eP*	**P**	**19 45 12.9**	**+0.8**
	comp=Z,2.3nm,0.9s							
NC405	**NORSAR Array S**	**72.72**	**337**	*eP*	**P**	**19 45 11.8**	**-0.3**
NC303	**NORSAR Array S**	**72.73**	**338**	*eP*	**P**	**19 45 11.6**	**-0.5**
BMN	**Battle Mountai**	**72.84**	**52**	*eP*	**P**	**19 45 13.9**	**+0.6**
BMN				pmax	pmax			
	comp=Z,5.0nm,0.8s							
BMN	**Battle Mountai**	**72.84**	**52**	*eP*	**P**	**19 45 13.9**	**+0.6**
	comp=Z,4.9nm,0.8s							
NC204	**NORSAR Array S**	**72.87**	**338**	*eP*	**P**	**19 45 13.0**	**0.0**
NB201	**NORSAR Array S**	**72.89**	**337**	*eP*	**P**	**19 45 12.7**	**-0.4**
ANN	**Anapa**	**72.92**	**314**	*eP*	P	19 45 06.0	-7.5
ANN				*e*PP	pP	19 45 18.6	-7.1
ANN				*eS*	S	19 54 25.7	-11
ANN				pmax	pmax			
	comp=Z,75nm,1.3s							
NB2	**NORSAR Subarra**	**72.93**	**337**	P	**P**	**19 45 12.9**	**-0.4**
	comp=Z,6.2nm,0.7s,baz=38,slow=6.2							
NOA	**NORSAR Array B**	**72.93**	**337**	P	**P**	**19 45 13.2**	**-0.1**
	comp=Z,5.5nm,0.7s,baz=38,slow=6.0,SNR=36							
NOA				LR	LR	20 19 51.3		
	comp=Z,60nm,21.6s,baz=25,slow=38							
BOZ	**Bozeman (W)**	**72.95**	**45**	*eP*	**P**	**19 45 15.4**	**+1.5**
BOZ				pmax	pmax			
	comp=Z,3.0nm,0.8s							
BOZ	**Bozeman (W)**	**72.95**	**45**	*eP*	**P**	**19 45 15.4**	**+1.5**
	comp=Z,3.4nm,0.8s							
NBO02	**NORSAR Array S**	**73.03**	**338**	*eP*	**P**	**19 45 13.8**	**0.0**
NBO00	**NORSAR Array S**	**73.06**	**338**	*eP*	**P**	**19 45 13.9**	**-0.2**
AKASG	**Malin Array Be**	**73.44**	**322**	P	**P**	**19 45 16.0**	**-0.4**
	comp=Z,7.5nm,0.6s,baz=45,slow=6.3,SNR=26							
AKASG				LR	LR	20 20 26.0		
	comp=Z,87nm,18.7s,baz=50,slow=38							
AKBB	**Malin Array Si**	**73.44**	**322**	*eP*	**P**	**19 45 16.1**	**-0.3**
AKBB				pmax	pmax			
	comp=Z,16nm,0.9s							
AKBB	**Malin Array Si**	**73.44**	**322**	*eP*	**P**	**19 45 16.1**	**-0.3**
	comp=Z,16nm,0.9s							
KIEV	**Kiev**	**73.45**	**322**	*c iP*	**P**	**19 45 15.9**	**-0.6**
KIEV				pmax	pmax			
	comp=Z,17nm,1.0s							
KIEV	**Kiev**	**73.45**	**322**	*eP*	**P**	**19 45 16.0**	**-0.4**
	comp=Z,17nm,1.0s							
AK11	**Malin Array Si**	**73.48**	**322**	*eP*	**P**	**19 45 15.4**	**-1.2**
PAGB	**Antelope Grade**	**73.68**	**57**	*eP*	**P**	**19 45 19.0**	**+0.9**
	comp=Z,15nm,1.4s							
IMW	**Indian Meadow**	**74.42**	**46**	*eP*	**P**	**19 45 24.4**	**+1.7**
	comp=Z,4.6nm,0.9s							
MOOW	**Moose Ponds**	**74.63**	**46**	*eP*	**P**	**19 45 25.2**	**+1.4**
	comp=Z,4.7nm,1.0s							
TPAW	**Teton Pass**	**74.67**	**46**	*eP*	**P**	**19 45 25.9**	**+1.8**
	comp=Z,6.0nm,1.1s							
HVU	**Hansel Valley**	**74.69**	**49**	*eP*	**P**	**19 45 25.7**	**+1.5**
HVU				pmax	pmax			
	comp=Z,5.0nm,0.8s							
HVU	**Hansel Valley**	**74.69**	**49**	*eP*	**P**	**19 45 25.7**	**+1.5**
	comp=Z,4.9nm,0.8s							
LOHW	**Long Hollow**	**74.79**	**46**	*eP*	**P**	**19 45 25.4**	**+0.6**
	comp=Z,5.5nm,1.5s							
REDW	**Red Top Meadow**	**74.81**	**46**	*eP*	**P**	**19 45 26.2**	**+1.3**
	comp=Z,6.6nm,1.3s							
BGU	**Big Grassy Mou**	**75.07**	**49**	*eP*	**P**	**19 45 28.4**	**+2.1**
	comp=Z,2.5nm,0.9s							
R11A	**Troy Canyon, C**	**75.10**	**53**	*eP*	**P**	**19 45 27.8**	**+1.2**
	comp=Z,4.2nm,1.0s							
LAO	**LASA Array**	**75.18**	**42**	*eP*	**P**	**19 45 28.1**	**+1.4**
	comp=Z,9.3nm,1.0s							
HWUT	**Hardware Ranch**	**75.51**	**48**	*eP*	**P**	**19 45 30.5**	**+1.6**
	comp=Z,8.6nm,1.1s							
TPNV	**Topopah Spring**	**75.54**	**54**	*eP*	**P**	**19 45 30.6**	**+1.5**
TPNV				pmax	pmax			
	comp=Z,4.0nm,0.8s							
TPNV	**Topopah Spring**	**75.54**	**54**	*eP*	**P**	**19 45 30.6**	**+1.5**
	comp=Z,4.0nm,0.8s							
SORM	**Soroca**	**75.58**	**321**	*i*P	**P**	**19 45 27.7**	**-1.2**
DUG	**Dugway, Tooele**	**75.66**	**50**	*eP*	**P**	**19 45 31.4**	**+1.7**
DUG				pmax	pmax			
	comp=Z,8.0nm,1.0s							
DUG	**Dugway, Tooele**	**75.66**	**50**	*eP*	**P**	**19 45 31.4**	**+1.7**
	comp=Z,8.5nm,1.0s							
TCUT	**Toone Canyon**	**75.91**	**48**	*eP*	**P**	**19 45 32.9**	**+1.6**
	comp=Z,25nm,1.2s							
BW06	**Boulder Array**	**75.92**	**46**	*eP*	**P**	**19 45 31.9**	**+0.7**
PD31	**Pinedale Array**	**75.92**	**46**	*eP*	**P**	**19 45 31.9**	**+0.6**
PDAR	**Pinedale Array**	**75.92**	**46**	P	**P**	**19 45 32.0**	**+0.8**
	comp=Z,3.1nm,0.6s,baz=265,slow=2.1,SNR=40							
NLU	**North Lily Min**	**76.25**	**50**	*eP*	**P**	**19 45 33.5**	**+0.3**
	comp=Z,5.0nm,1.0s							
BSD	**Bornholm Skovb**	**76.32**	**332**	*i*P	**P**	**19 45 32.7**	**-0.3**
	comp=Z,19nm,1.0s							
BSD	**Bornholm Skovb**	**76.32**	**332**	*i*P	**P**	**19 45 32.7**	**-0.3**
BSD				pmax	pmax			
	comp=Z,19nm,1.0s							
BEL	**Belsk**	**76.46**	**327**	*eP*	**P**	**19 45 34.4**	**+0.6**
BEL	**Belsk**	**76.46**	**327**	*eP*	**P**	**19 45 34.4**	**+0.6**
LVV	**L'vov**	**76.47**	**324**	*eP*	**P**	**19 45 33.7**	**-0.3**
SHPR	**Sheep Range**	**76.50**	**54**	*eP*	**P**	**19 45 36.0**	**+1.4**
	comp=Z,5.6nm,1.1s							
COP	**Copenhagen**	**76.77**	**334**	*i* P	**P**	**19 45 35.8**	**+0.4**
	comp=Z,12nm,0.6s							
COP	**Copenhagen**	**76.77**	**334**	*eP*	**P**	**19 45 35.8**	**+0.4**
COP				pmax	pmax			
	comp=Z,12nm,0.6s							
GKP	**Gorka Klasztor**	**76.85**	**330**	*eP*	**P**	**19 45 36.2**	**+0.2**
GKP	**Gorka Klasztor**	**76.85**	**330**	*eP*	**P**	**19 45 36.2**	**+0.2**
CCUT	**Cedar City**	**76.97**	**52**	*eP*	**P**	**19 45 38.9**	**+1.6**
	comp=Z,4.9nm,1.0s							
KWP	**Kalwaria Pacla**	**77.21**	**325**	*eP*	**P**	**19 45 38.8**	**+0.7**
KWP	**Kalwaria Pacla**	**77.21**	**325**	*eP*	**P**	**19 45 38.8**	**+0.7**
P17A	**Butcher Ranch,**	**77.35**	**49**	*eP*	**P**	**19 45 40.4**	**+1.0**
	comp=Z,10nm,0.9s							
LCMT	**Little Creek M**	**77.39**	**53**	*eP*	**P**	**19 45 41.1**	**+1.6**
	comp=Z,6.1nm,1.0s							
MTPU	**Mount Pierson**	**77.39**	**51**	*eP*	**P**	**19 45 41.6**	**+1.8**
	comp=Z,5.2nm,0.9s							
BUR08	**Bucovina Ar. S**	**77.45**	**322**	*eP*	**P**	**19 45 40.1**	**+0.4**
BURAR	**Bucovina Array**	**77.47**	**322**	*i*P	**P**	**19 45 39.9**	**+0.2**
TESR	**Tescani**	**77.53**	**320**	*i*P	**P**	**19 45 39.3**	**-0.7**
ULM	**Lac du Bonnet**	**77.66**	**34**	P	**P**	**19 45 40.7**	**+0.1**
	comp=Z,2.6nm,0.9s,baz=325,slow=4.5,SNR=3.3							
CFR	**Carcaliu**	**77.70**	**319**	*i*P	**P**	**19 45 41.0**	**+0.1**
SRU	**San Rafael Swe**	**77.71**	**50**	*eP*	**P**	**19 45 42.8**	**+1.4**
SRU				pmax	pmax			
	comp=Z,10.0nm,0.8s							
SRU	**San Rafael Swe**	**77.71**	**50**	*eP*	**P**	**19 45 42.8**	**+1.4**
	comp=Z,10nm,0.8s							
VRI	**Vrincioaia**	**77.94**	**320**	*i*P	**P**	**19 45 42.2**	**-0.1**
OJC	**Ojcow**	**78.07**	**326**	*eP*	**P**	**19 45 43.4**	**+0.4**
OJC	**Ojcow**	**78.07**	**326**	*eP*	**P**	**19 45 43.3**	**+0.4**
OJC				pmax	pmax			
	comp=Z,19nm,1.1s							
OJC	**Ojcow**	**78.07**	**326**	*eP*	**P**	**19 45 43.3**	**+0.4**
	comp=Z,19nm,1.1s							
TLB	**Topalu**	**78.15**	**318**	*i*P	**P**	**19 45 42.8**	**-0.6**
CRVS	**Cervenica-Dubn**	**78.30**	**325**	*eP*	**P**	**19 45 44.5**	**+0.3**
CRVS	**Cervenica-Dubn**	**78.30**	**325**	*eP*	**P**	**19 45 44.5**	**+0.3**
BR131	**Keskin Array S**	**78.31**	**312**	*eP*	**P**	**19 45 44.9**	**+0.2**
BRTR	**Keskin Array B**	**78.31**	**312**	P	**P**	**19 45 44.6**	**0.0**
	comp=Z,1.9nm,0.5s,baz=104,slow=3.1,SNR=16							
BRTR				LR	LR	20 24 24.9		
	comp=Z,23nm,18.4s,baz=106,slow=39							
BRTR	**Keskin Array B**	**78.31**	**312**	*i* P	**P**	**19 45 44.9**	**+0.2**
BRTR				pmax	pmax			
	comp=Z,2.0nm,0.5s							
U15A	**North Rim**	**78.35**	**53**	*eP*	**P**	**19 45 46.8**	**+1.8**
	comp=Z,15nm,1.5s							
O20A	**White River Ci**	**78.38**	**48**	*eP*	**P**	**19 45 45.1**	**0.0**
	comp=Z,9nm,0.7s							
NIE	**Niedzica**	**78.44**	**326**	*eP*	**P**	**19 45 46.0**	**+1.0**
NIE	**Niedzica**	**78.44**	**326**	*eP*	**P**	**19 45 46.0**	**+1.0**
DOPR	**Dopca**	**78.54**	**321**	*i*P	**P**	**19 45 46.5**	**+0.9**
ISR	**Istrita**	**78.56**	**319**	*i*P	**P**	**19 45 46.8**	**+1.0**
MLR	**Muntele Rosu**	**78.60**	**320**	*i*P	**P**	**19 45 46.9**	**+0.8**
BR231	**Keskin MP Arra**	**78.74**	**312**	*eP*	**P**	**19 45 45.1**	**-1.9**
LANS	**Liptovska Anna**	**79.01**	**326**	*eP*	**P**	**19 45 49.2**	**+1.1**
LANS	**Liptovska Anna**	**79.01**	**326**	*eP*	**P**	**19 45 49.2**	**+1.1**
KECS	**Kecovo**	**79.05**	**325**	*eP*	**P**	**19 45 49.0**	**+0.7**
KECS				pmax	pmax			
	comp=Z,3.0nm,0.9s							
KECS	**Kecovo**	**79.05**	**325**	*eP*	**P**	**19 45 49.0**	**+0.7**
OKC	**Ostrava-Krasne**	**79.06**	**327**	*eP*	**P**	**19 45 48.9**	**+0.5**
OKC				AMS	AMS	20 23 50.0		
	comp=Z,100nm,13.8s							
OKC	**Ostrava-Krasne**	**79.06**	**327**	*eP*	**P**	**19 45 48.9**	**+0.5**
OKC				MLR	MLR			
	comp=Z,100nm,13.8s							
PV10	**Paradox Valley**	**79.07**	**49**	*eP*	**P**	**19 45 51.0**	**+2.1**
KSP	**Ksiaz**	**79.07**	**329**	*eP*	**P**	**19 45 49.0**	**+0.6**
KSP	**Ksiaz**	**79.07**	**329**	*eP*	**P**	**19 45 49.0**	**+0.6**
ARR	**Arges**	**79.34**	**321**	*i*P	**P**	**19 45 51.3**	**+1.2**
MORC	**Moravsky Berou**	**79.37**	**327**	*i*P	**P**	**19 45 50.5**	**+0.5**
MORC	**Moravsky Berou**	**79.37**	**327**	*eP*	**P**	**19 45 50.6**	**+0.5**
MORC				pmax	pmax			
	comp=Z,42nm,1.0s							
MORC	**Moravsky Berou**	**79.37**	**327**	*eP*	**P**	**19 45 50.6**	**+0.5**
	comp=Z,42nm,1.0s							
DPC	**Dobruska-Polom**	**79.44**	**328**	*eP*	**P**	**19 45 51.4**	**+0.9**
DPC				*e*pP	**sP**	**19 46 05.7**	**-1.8**
DPC	**Dobruska-Polom**	**79.44**	**328**	*eP*	**P**	**19 45 51.4**	**+0.9**
DPC				*e*		19 46 05.7		
UPC	**Upice**	**79.44**	**328**	*eP*	**P**	**19 45 51.2**	**+0.7**
UPC				AMS	AMS	20 23 30.0		
	comp=Z,100nm,17.3s							
UPC	**Upice**	**79.44**	**328**	*eP*	**P**	**19 45 51.2**	**+0.7**
UPC				MLR	MLR			
	comp=Z,100nm,17.3s							
WUAZ	**Wupatki**	**79.50**	**53**	*eP*	**P**	**19 45 53.0**	**+1.7**
	comp=Z,5.5nm,0.8s							
PV01	**Paradox Valley**	**79.50**	**49**	*eP*	**P**	**19 45 52.6**	**+1.3**
PSZ	**Piszkesteto**	**79.73**	**325**	*i*P	**P**	**19 45 52.8**	**+0.6**
PSZ	**Piszkesteto**	**79.73**	**325**	*eP*	**P**	**19 45 51.3**	**-0.9**
PSZ				pmax	pmax			
	comp=Z,13nm,1.1s							
PSZ	**Piszkesteto**	**79.73**	**325**	*eP*	**P**	**19 45 51.3**	**-0.9**
	comp=Z,13nm,1.1s							
VYHS	**Vyhne**	**79.78**	**326**	*eP*	**P**	**19 45 52.8**	**+0.5**
VYHS				pmax	pmax			
	comp=Z,4.0nm,1.3s							
VYHS	**Vyhne**	**79.78**	**326**	*eP*	**P**	**19 45 52.8**	**+0.5**
BRG	**Berggiesshubel**	**79.99**	**330**	*i* P	**P**	**19 45 53.5**	**+0.1**
	comp=Z,7.0nm,0.8s							
BRG				*e*		19 46 07.5		
	comp=Z,3.7nm,0.8s							
BRG	**Berggiesshubel**	**79.99**	**330**	*i* P	**P**	**19 45 53.5**	**+0.1**
BRG				*e*		19 46 07.5		
BRG				pmax	pmax			
	comp=Z,7.0nm,0.8s							
PVCC	**Panska Ves**	**80.01**	**329**	*eP*	**P**	**19 45 54.2**	**+0.7**
PVCC				*e*PCP	**PcP**	**19 45 57.1**	**-3.8**
PVCC				*e*pP	**sP**	**19 46 08.7**	**-1.8**
PVCC				AMS	AMS	20 24 10.0		
PVCC	**Panska Ves**	**80.01**	**329**	*eP*	**P**	**19 45 54.2**	**+0.7**
PVCC				*e*		19 45 57.1		
PVCC				*e*		19 46 08.7		
CLL	**Collm**	**80.02**	**330**	*i*P	**P**	**19 45 53.6**	**+0.1**
	comp=Z,14nm,0.9s							
CLL				*i*		19 46 07.9		
CLL	**Collm**	**80.02**	**330**	*eP*	**P**	**19 45 53.6**	**+0.1**
CLL				pmax	pmax			
	comp=Z,13nm,0.8s							
CLL	**Collm**	**80.02**	**330**	*eP*	**P**	**19 45 53.5**	**+0.1**
	comp=Z,13nm,0.8s							
ISCO	**Idaho Springs**	**80.11**	**46**	*eP*	**P**	**19 45 54.9**	**+0.2**
ISCO				pmax	pmax			
	comp=Z,1.0nm,0.6s							
ISCO	**Idaho Springs**	**80.11**	**46**	*eP*	**P**	**19 45 54.9**	**+0.2**
	comp=Z,1.3nm,0.6s							
VRAC	**Vranov**	**80.12**	**327**	*i*P	**P**	**19 45 54.7**	**+0.5**
GZR	**Gura Zlata**	**80.23**	**322**	*i*P	**P**	**19 45 55.0**	**+0.1**
GOPC	**GO Pecny, Ondr**	**80.40**	**329**	*eP*	**P**	**19 45 56.1**	**+0.4**
GOPC				AMS	AMS	20 24 00.0		
GOPC	**GO Pecny, Ondr**	**80.40**	**329**	*eP*	**P**	**19 45 56.1**	**+0.4**
PRU	**Pruhonice**	**80.44**	**329**	*eP*	**P**	**19 45 56.3**	**+0.4**
PRU				*e*pP	**pP**	**19 46 10.1**	**+1.9**
PRU				AMS	AMS	20 24 20.0		
PRU	**Pruhonice**	**80.44**	**329**	*eP*	**P**	**19 45 56.3**	**+0.4**
PRU				*e*		19 46 10.1		
BZS	**Buzias**	**80.63**	**322**	*i*P	**P**	**19 45 57.1**	**+0.2**
NKC	**Novy Kostel**	**81.08**	**330**	*eP*	**P**	**19 45 59.6**	**+0.3**
NKC	**Novy Kostel**	**81.08**	**330**	*eP*	**P**	**19 45 59.6**	**+0.3**
CONA	**Conrad Observa**	**81.50**	**327**	*i* P	**P**	**19 46 02.4**	**+0.8**
	comp=Z,6.5nm,0.8s,SNR=9.6							
KHC	**Kasperske Hory**	**81.51**	**329**	*i* P	**P**	**19 46 02.0**	**+0.4**
KHC				*e*PCP	**PcP**	**19 46 04.9**	**-2.6**
KHC				*e*pP	**pP**	**19 46 16.4**	**+2.4**
KHC				*ex*	x	19 46 20.3		
KHC	**Kasperske Hory**	**81.51**	**329**	*i* P	**P**	**19 46 02.0**	**+0.4**
KHC				*e*		19 46 16.4		
KHC	**Kasperske Hory**	**81.51**	**329**	*eP*	**P**	**19 46 01.9**	**+0.2**
	comp=Z,3.8nm,0.9s							
GEC2	**GERESS Array S**	**81.68**	**329**	*eP*	**P**	**19 46 02.1**	**-0.5**
GEC2				pmax	pmax			
	comp=Z,7.0nm,1.2s							
GEC2	**GERESS Array S**	**81.68**	**329**	*eP*	**P**	**19 46 02.1**	**-0.5**
	comp=Z,6.9nm,1.2s							
GERES	**GERESS Array B**	**81.68**	**329**	P	**P**	**19 46 02.6**	**0.0**
	comp=Z,2.2nm,0.6s,baz=38,slow=5.0,SNR=28							
GERES				LR	LR	20 25 26.8		
	comp=Z,83nm,18.5s,baz=7.0,slow=38							
GERES	**GERESS Array B**	**81.68**	**329**	P	**P**	**19 46 02.6**	**0.0**
GERES				pmax	pmax			
	comp=Z,3.0nm,0.7s							
GERES				MLR	MLR			
	comp=Z,83nm,18.5s							
GEA0	**GERESS Array S**	**81.69**	**329**	*eP*	**P**	**19 46 02.5**	**-0.2**
GRFO	**Grafenberg**	**81.99**	**330**	*eP*	**P**	**19 46 04.8**	**+0.7**
GRFO				pmax	pmax			
	comp=Z,15nm,0.9s							
GRFO	**Grafenberg**	**81.99**	**330**	*eP*	**P**	**19 46 04.8**	**+0.7**
	comp=Z,15nm,0.9s							
ECSD	**EROS Data Cent**	**82.10**	**39**	*eP*	**P**	**19 46 05.5**	**+0.7**
	comp=Z,4.9nm,0.9s							
ARSA	**Arzberg**	**82.17**	**327**	*i* P	**P**	**19 46 05.5**	**+0.5**
	comp=Z,3.4nm,0.9s							
MOA	**Molln**	**82.23**	**328**	*i* P	**P**	**19 46 06.1**	**+0.6**
	comp=Z,5.3nm,1.1s							
T25A	**Trinidad**	**82.61**	**48**	*eP*	**P**	**19 46 09.4**	**+1.5**
	comp=Z,6.3nm,0.8s							
PERS	**Pernice**	**82.82**	**326**	*i* P	**P**	**19 46 08.6**	**+0.1**
SOKA	**Soboth**	**82.82**	**327**	*i* P	**P**	**19 46 09.1**	**+0.5**
	comp=Z,9.4nm,0.8s,SNR=6.4							
ANMO	**Albuquerque**	**82.90**	**51**	*eP*	**P**	**19 46 11.2**	**+1.9**
ANMO				pmax	pmax			
	comp=Z,7.0nm,1.2s							
ANMO	**Albuquerque**	**82.90**	**51**	*eP*	**P**	**19 46 11.2**	**+1.9**
	comp=Z,6.6nm,1.2s							
MEM	**Membach**	**83.15**	**334**	P	**P**	**19 46 10.2**	**+0.2**
	comp=Z,4.3nm,1.0s							
OBKA	**Obir**	**83.16**	**327**	*i* P	**P**	**19 46 10.2**	**-0.2**
	comp=Z,3.6nm,0.8s							
KBA	**Koblbreinsper**	**83.22**	**328**	*i* P	**P**	**19 46 11.0**	**+0.3**
	comp=Z,8.0nm,0.8s,SNR=5.5							
MYKA	**Terra Mystica**	**83.45**	**327**	*i* P	**P**	**19 46 11.4**	**-0.5**
	comp=Z,4.6nm,0.6s							
319A	**Douglas**	**83.53**	**55**	*eP*	**P**	**19 46 14.3**	**+1.7**
	comp=Z,8.6nm,0.8s							
BCLA	**Clavier**	**83.55**	**334**	P	**P**	**19 46 12.2**	**+0.1**
	comp=Z,6.9nm,2.2s							
WATA	**Walderalm**	**83.75**	**329**	*i* P	**P**	**19 46 13.5**	**+0.1**
	comp=Z,8.8nm,0.7s							
SNF	**Seneffe**	**83.82**	**335**	P	**P**	**19 46 13.4**	**0.0**
ABTA	**Abfaltersbach**	**83.83**	**328**	*i* P	**P**	**19 46 12.8**	**-1.1**
	comp=Z,6.3nm,1.2s							
WLF	**Walferdange**	**83.89**	**333**	P	**P**	**19 46 14.5**	**+0.6**
	comp=Z,11nm,1.9s							
MOTA	**Moosalm**	**83.93**	**329**	*i* PcP	**P**	**19 46 14.6**	**+0.3**
	comp=Z,5.7nm,0.8s,SNR=8.4							
RETA	**Reutte**	**83.95**	**329**	*i* P	**P**	**19 46 14.6**	**+0.3**
	comp=Z,7.1nm,1.0s,SNR=11							
EIL	**Elat**	**84.11**	**303**	LR	LR	20 26 48.0		
	comp=Z,34nm,18.0s,baz=110,slow=38							
PDG	**Podgorica**	**84.14**	**321**	*i*P	**P**	**19 46 15.2**	**-0.1**
BFO	**Black Forest**	**84.21**	**331**	*i* P	**P**	**19 46 16.0**	**+0.4**
BFO	**Black Forest**	**84.21**	**331**	*eP*	**P**	**19 46 15.9**	**+0.4**
	comp=Z,9.7nm,1.0s							
FETA	**Feichten**	**84.34**	**329**	*i* PcP	**P**	**19 46 16.6**	**+0.2**
	comp=Z,6.5nm,0.9s,SNR=5.9							
DAVA	**Damuels**	**84.47**	**330**	*i* PcP	**P**	**19 46 17.2**	**+0.2**
	comp=Z,6.6nm,0.7s,SNR=9.0							
PPT	**Papeete**	**84.70**	**117**	LR	LR	20 14 48.1		
	comp=Z,51nm,21.8s,baz=354,slow=29							
ECH	**Echery**	**84.74**	**332**	*eP*	**P**	**19 46 18.3**	**0.0**
FUORN	**Ofenpass-Fuorn**	**84.86**	**329**	*eP*	**P**	**19 46 19.5**	**+0.3**
	comp=Z,15nm,0.8s							
DAVOX	**Davos/Dischmat**	**84.88**	**329**	P	**P**	**19 46 19.6**	**+0.4**
	comp=Z,4.6nm,0.8s,baz=56,slow=4.3,SNR=8.3							
DAVOX				LR	LR	20 27 35.6		
	comp=Z,84nm,18.4s,baz=34,slow=38							
MOF	**Molkenrain**	**85.05**	**332**	*eP*	**P**	**19 46 19.4**	**-0.5**
THEF	**They Montfort**	**85.16**	**332**	*eP*	**P**	**19 46 21.2**	**+0.8**
TUE	**Stuetta**	**85.34**	**330**	*eP*	**P**	**19 46 21.8**	**+0.3**
	comp=Z,6.3nm,0.9s							
LOMF	**Lomont**	**85.58**	**331**	*eP*	**P**	**19 46 22.4**	**-0.2**
MNTX	**Cornudas Mount**	**85.77**	**52**	*eP*	**P**	**19 46 25.0**	**+1.3**
	comp=Z,2.1nm,0.8s							
SENIN	**Lac Senin/Sane**	**86.23**	**331**	*eP*	**P**	**19 46 25.9**	**-0.1**
	comp=Z,4.7nm,0.8s							
WMOK	**Wichita Mounta**	**87.53**	**46**	*eP*	**P**	**19 46 33.2**	**+0.9**
WMOK				pmax	pmax			
	comp=Z,5.0nm,1.1s							
WMOK	**Wichita Mounta**	**87.53**	**46**	*eP*	**P**	**19 46 33.2**	**+0.9**
	comp=Z,4.5nm,1.1s							
TXAR	**Lajitas Array**	**88.47**	**53**	P	**P**	**19 46 37.8**	**+0.8**
	comp=Z,2.0nm,0.6s,baz=298,slow=3.2,SNR=35							
ESDC	**Sonseca Array**	**96.11**	**335**	P	**P**	**19 47 11.7**	**-0.3**
	comp=Z,0.1nm,0.3s,baz=352,slow=3.6,SNR=4.5							
ESDC				LR	LR	20 37 30.0		
	comp=Z,28nm,18.5s,baz=295,slow=40							
MAW	**Mawson**	**121.41**	**206**	PKP	**PKPdf**	**19 52 36.1**	**-0.1**
	comp=Z,1.5nm,0.9s,baz=52,slow=6.5,SNR=4.0							
MAW	**Mawson**	**121.41**	**206**	PKIKP	**PKPdf**	**19 52 36.1**	**-0.1**
MAW				pmax	pmax			
	comp=Z,1.0nm,0.6s							
LPAZ	**La Paz**	**145.15**	**59**	PKPbc	**PKPbc**	**19 53 21.3**	**-1.1**
	comp=Z,2.5nm,0.6s,baz=338,slow=1.6,SNR=9.4							
PLCA	**Paso Flores**	**154.65**	**105**	PKPab	**PKPab**	**19 54 01.5**	**+1.6**
	comp=Z,2.6nm,1.1s,baz=232,slow=3.9,SNR=3.2							

IDC 31 20:11:39.9±1.2, 31.86N×137.45E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.4/60, mbtmp3.8/5, Error ellipse: s-maj=49.8km s-min=23.4km az=97.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PETK	**Petropavlovsk-**	**25.80**	**29**	P	P	20 17 12.5	0.0
	3.1nm,0.4s,baz=193,slow=4.4,SNR=2.4						
MKAR	**Makanchi Array**	**44.30**	**306**	P	P	20 19 51.3	-0.2
	0.1nm,0.5s,baz=79,slow=7.6,SNR=3.0						
FITZ	**Fitzroy Crossi**	**50.95**	**195**	P	P	20 20 44.8	+1.6
	1.7nm,0.9s,baz=0.0,slow=8.1,SNR=2.8						
WRA	**Warramunga Arr**	**51.59**	**184**	P	P	20 20 47.5	-0.5
	0.9nm,0.5s,baz=1.7,slow=7.6,SNR=9.8						
ASAR	**Alice Springs**	**55.31**	**184**	P	P	20 21 14.7	-0.7
	0.4nm,0.6s,baz=358,slow=6.0,SNR=13						

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*IDC **31** 20:12:32.6±1.8, 17.46S×179.63W, h0km, mb3.9/5, mb1 4.0/6, mb1mx3.7/42, mbtmp4.0/6, ML3.8/1, Error ellipse: s-maj=52.2km s-min=31.2km az=162.0*
*ISCJB **31** 20:12:34.8±1.0, 17.4S±0.3×179.6W±0.2, h33km, mb3.8/5, Error ellipse: s-maj=41.0km s-min=15.8km az=156.3*
ISC 31 20:12:37.1±1.1, 17.4S±0.3×179.6W±0.2, h35km, n6, σ1s00/6, mb3.9/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**8.29**	**66**	Pn	**Pn**	**20 14 35.0**	**0.0**
	1.2nm,0.3s,baz=252,slow=13,SNR=2.5						
RPZ	**Rata Peaks**	**27.41**	**195**	P	**P**	**20 18 19.5**	**+0.1**
	7.8nm,1.0s,baz=358,slow=12,SNR=3.1						
STKA	**Stephens Creek**	**37.89**	**240**	P	**P**	**20 19 50.9**	**-0.1**
	2.3nm,0.9s,baz=81,slow=8.3,SNR=2.3						
**WRA

WRA	**Warramunga Arr**	**16.92 199**	Pn	Pn	20 46 53.0	+1.0
	0.2nm,0.3s,baz=23,slow=12,SNR=10					
FITZ	**Fitzroy Crossi**	**20.07 224**	P	P	20 47 27.7	-1.0
	1.3nm,0.9s,baz=45,slow=11,SNR=1.8					
ASAR	**Alice Springs**	**20.55 197**	P	P	20 47 32.7	-1.3
	0.3nm,0.5s,baz=30,slow=9.8,SNR=9.9					
TGY	**Tagaytay City**	**26.24 313**	LR	LR	20 58 09.8	
	comp=Z,132nm,21.5s,baz=160,slow=35					
VNDA	**Vanda**	**74.43 175**	P	P	20 54 33.6	+0.5
	0.8nm,0.5s,baz=310,slow=7.9,SNR=7.9					

IDC 31 20:48:53.0±6.5, 1°94'S×128°34'E, h339km±99km, mb2.9/2, mb1 2.9/5, mb1mx2.7/34, mbtmp3.5/5, Error ellipse: s-maj=66.3km s-min=19.6km az=75.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	**Kappang**	**9.10**	**250**	P	Pn	20 50 58.6	-1.6
	0.2nm,0.3s,baz=73,slow=17,SNR=4.3						
KAPI				S	S	20 52 47.0	+2.7
	1.0nm,0.3s,baz=72,slow=20,SNR=6.3						
FITZ	**Fitzroy Crossi**	**16.28**	**189**	P	P	20 52 23.3	+1.2
	0.1nm,0.3s,baz=354,slow=9.2,SNR=3.0						
WRA	**Warramunga Arr**	**18.83**	**162**	P	P	20 52 49.8	+0.4
	0.2nm,0.3s,baz=338,slow=11,SNR=40						
ASAR	**Alice Springs**	**22.26**	**166**	P	P	20 53 21.8	-0.7
	0.6nm,1.0s,baz=349,slow=8.1,SNR=3.8						
MJAR	**Matsushiro Arr**	**39.37**	**13**	P	P	20 55 50.8	0.0
	1.4nm,0.3s,baz=194,slow=8.6,SNR=6.8						

*IDC **31** 21:00:30.3±2.7, 19°.92S×176°.50W, h204km±25km, mb3.6/10, mb1 3.9/12, mb1mx3.7/27, mbtmp4.2/12, Error ellipse: s-maj=22.0km s-min=13.9km az=127.0*

*ISCJB **31** 21:00:35.8±0.7, 20°.11S±0°.09×176°.5W±0°.1, h263km, mb3.7/10, Error ellipse: s-maj=18.7km s-min=11.7km az=21.1*

ISC 31 21:00:36.8±0.6, 20°.2S±0°.1×176°.4W±0°.2, h263km, n52, σ0°.95/52, mb3.9/10, 5C-8D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.66**	**36**	P	Pn	21 02 16.4	-10
	2.1nm,0.3s,baz=217,slow=10,SNR=3.1						
AFI				S	S	21 03 37.6	-16
	5.9nm,0.3s,baz=232,slow=19,SNR=4.3						
DZM	**Mont Dzumac**	**16.09**	**260**	P	**Pn**	**21 04 10.8**	**+1.3**
	1.1nm,0.3s,baz=73,slow=19,SNR=8.9						
URZ	**Urewera**	**18.88**	**196**	P	**P**	**21 04 37.1**	**-0.8**
	1.2nm,0.3s,baz=5.2,slow=11,SNR=3.6						
URZ				S	**S**	**21 07 56.4**	**-1.7**
	1.5nm,0.3s,baz=53,slow=20,SNR=6.3						
RPZ	**Rata Peaks**	**25.70**	**201**	P	**P**	**21 05 43.8**	**+0.7**
	2.5nm,0.4s,baz=330,slow=8.1,SNR=3.8						
STKA	**Stephens Creek**	**39.25**	**244**	P	**P**	**21 07 40.1**	**-0.1**
	1.3nm,0.8s,baz=72,slow=9.6,SNR=3.3						
ASAR	**Alice Springs**	**46.02**	**256**	P	**P**	**21 08 34.0**	**-0.7**
	7.3nm,0.6s,baz=92,slow=8.2,SNR=114						
ASAR				PcP	**PcP**	**21 10 06.3**	**-0.3**
	0.7nm,0.7s,baz=98,slow=3.8,SNR=4.0						
ASAR				ScP	**ScP**	**21 13 36.9**	**+2.5**
	0.5nm,1.0s,baz=76,slow=4.2,SNR=3.5						
WRA	**Warramunga Arr**	**46.10**	**261**	P	**P**	**21 08 34.1**	**-1.1**
	2.7nm,0.4s,baz=94,slow=7.9,SNR=225						
VNDA	**Vanda**	**58.37**	**185**	P	**P**	**21 10 06.0**	**+1.7**
	2.4nm,0.8s,baz=10,slow=7.5,SNR=10						
MAW	**Mawson**	**82.37**	**199**	P	**P**	**21 12 29.1**	**+0.1**
	1.0nm,0.5s,baz=124,slow=3.6,SNR=4.6						
TXAR	**Lajitas Array**	**85.65**	**57**	P	**P**	**21 12 46.9**	**+0.6**
	1.4nm,0.8s,baz=235,slow=7.6,SNR=14						
ILAR	**Eielson Array**	**87.68**	**12**	P	**P**	**21 12 54.7**	**-0.5**
	0.3nm,0.8s,baz=201,slow=4.8,SNR=3.0						
PDAR	**Pinedale Array**	**87.72**	**43**	P	**P**	**21 12 56.4**	**+0.2**
	0.3nm,0.5s,baz=220,slow=5.5,SNR=3.3						
CMAR	**Chiang Mai Arr**	**91.39**	**289**	P	**P**	**21 13 14.4**	**+0.9**
	0.5nm,0.3s,baz=86,slow=2.8,SNR=3.8						
MKAR	**Makanchi Array**	**112.04**	**313**	PKiKP	**PKiKP**	**21 18 39.3**	**-1.4**
	0.4nm,0.5s,baz=102,slow=1.4,SNR=9.3						
BVAR	**Borovoye Array**	**119.77**	**320**	PKP	**PKPdf**	**21 18 54.2**	**-1.1**
	0.8nm,0.5s,baz=103,slow=3.0,SNR=6.2						
ARCES	**ARCESS Array B**	**128.85**	**350**	PKP	**PKPdf**	**21 19 10.9**	**-1.4**
	1.6nm,0.8s,baz=2.9,slow=2.4,SNR=12						
FINES	**FINESS Array B**	**135.86**	**345**	PKhKP	PKPpre	21 19 21.2	
	0.8nm,0.8s,baz=352,slow=2.8,SNR=3.0						
FINES				PKP	**PKPdf**	**21 19 25.6**	**-0.1**
	2.1nm,1.0s,baz=17,slow=6.1,SNR=4.1						
NOA	**NORSAR Array B**	**138.81**	**354**	PKhKP	PKPpre	21 19 24.7	
	baz=18,slow=6.1						
AKASG	**Malin Array Be**	**143.42**	**332**	PKhKP	PKPpre	21 19 35.8	
	0.7nm,0.5s,baz=38,slow=3.9,SNR=3.3						
AKASG				PKP	**PKPdf**	**21 19 40.5**	**+0.8**
	0.6nm,0.5s,baz=38,slow=3.5,SNR=3.5						
BURAR	**Bucovina Array**	**147.47**	**332**	⇓*i* P	**PKPbc**	**21 19 50.1**	**+0.3**
BRTR	**Keskin Array B**	**147.69**	**314**	PKPbc	**PKPbc**	**21 19 50.0**	**-0.7**
	0.8nm,0.5s,baz=50,slow=2.3,SNR=5.4						
CLL	**Collm**	**148.05**	**349**	⇑*i* PKP	**PKPbc**	**21 19 50.7**	**-0.4**
	comp=Z,5.0nm,0.7s						
CLL				⇓*i*		21 19 53.8	
	comp=Z,5.0nm,1.1s						
VRI	**Vrincioaia**	**148.07**	**329**	⇓*i* P	**PKPbc**	**21 19 51.6**	**+0.3**
OKC	**Ostrava-Krasne**	**148.20**	**342**	*e*PKP	**PKPbc**	**21 19 51.3**	**-0.2**
DPC	**Dobruska-Polom**	**148.23**	**344**	*e*PKP	**PKPbc**	**21 19 51.9**	**+0.2**
BRG	**Berggiesshubel**	**148.28**	**347**	*e*PKP	**PKPbc**	**21 19 51.4**	**-0.3**
	comp=Z,3.1nm,0.8s						
MORC	**Moravsky Berou**	**148.43**	**343**	⇓*i* P	**PKPbc**	**21 19 52.3**	**+0.1**
DOPR	**Dopca**	**148.64**	**330**	⇓*i* P	**PKPbc**	**21 19 53.2**	**+0.4**
MLR	**Muntele Rosu**	**148.72**	**329**	⇓*i* P	**PKPbc**	**21 19 53.7**	**+0.5**
PRU	**Pruhonice**	**148.99**	**346**	*e*PKP	**PKPbc**	**21 19 53.5**	**0.0**
GOPC	**GO Pecny, Ondr**	**149.00**	**346**	*e*PKP	**PKPbc**	**21 19 53.7**	**+0.1**
PSZ	**Piszkesteto**	**149.32**	**336**	P	PKPdf	21 19 41.7	-8.2
ARR	**Arges**	**149.44**	**330**	⇓*i* P	**PKPbc**	**21 19 55.6**	**+0.7**
KHC	**Kasperske Hory**	**150.01**	**347**	*e*PKP	**PKPbc**	**21 19 56.1**	**0.0**
KHC				*ex*	x	21 19 59.7	
SIRR	**Siria**	**150.03**	**334**	⇑*i* P	**PKPbc**	**21 19 55.8**	**-0.4**
GERES	**GERESS Array B**	**150.25**	**346**	PKPbc	**PKPbc**	**21 19 56.1**	**-0.6**
	comp=Z,2.2nm,0.7s,baz=38,slow=2.4,SNR=25						
GZR	**Gura Zlata**	**150.26**	**332**	⇑*i* P	**PKPbc**	**21 19 56.1**	**-0.7**
CONA	**Conrad Observa**	**150.57**	**343**	*i* PKPbc	**PKPbc**	**21 19 57.6**	**+0.1**
	comp=Z,3.6nm,0.6s						
BZS	**Buzias**	**150.58**	**334**	⇑*i* P	**PKPbc**	**21 19 57.0**	**-0.5**
MOA	**Molln**	**151.06**	**345**	*i* PKPdf	**PKPbc**	**21 19 57.5**	**-1.1**
	comp=Z,0.7nm,0.6s						
MDVR	**Moldovita**	**151.21**	**333**	⇓*i* P	**PKPbc**	**21 19 58.8**	**-0.2**
ARSA	**Arzberg**	**151.28**	**343**	*i* PKPbc	**PKPbc**	**21 20 01.5**	**+2.4**
	comp=Z,0.9nm,0.6s						
SOKA	**Soboth**	**151.94**	**343**	*i* PKPdf	**PKPbc**	**21 19 59.3**	**-1.4**
	comp=Z,1.8nm,1.0s						
KBA	**Koelnbreinsper**	**152.00**	**346**	*i* PKPbc	**PKPbc**	**21 20 00.5**	**-0.5**
	comp=Z,2.0nm,0.6s						
WATA	**Walderalm**	**152.13**	**348**	*i* PKPbc	**PKPbc**	**21 20 00.3**	**-0.9**
	comp=Z,1.4nm,0.5s						
RETA	**Reutte**	**152.13**	**350**	*i* PKPbc	**PKPbc**	**21 20 01.0**	**-0.1**
	comp=Z,2.1nm,1.1s						
MOTA	**Moosalm**	**152.21**	**349**	*i* PKPbc	**PKPbc**	**21 20 00.4**	**-1.0**
	comp=Z,1.0nm,0.5s						
OBKA	**Obir**	**152.23**	**344**	*i* PKPdf	**PKPbc**	**21 19 59.8**	**-1.6**
	comp=Z,6.4nm,1.6s						
MYKA	**Terra Mystica**	**152.35**	**345**	*i* PKPbc	**PKPbc**	**21 20 00.4**	**-1.2**
	comp=Z,2.5nm,0.8s						
DAVA	**Damuels**	**152.47**	**351**	*i* PKPbc	**PKPbc**	**21 20 01.8**	**-0.2**
	comp=Z,2.9nm,1.1s						
ABTA	**Abfaltersbach**	**152.50**	**347**	*i* PKPbc	**PKPbc**	**21 20 00.7**	**-1.2**
	comp=Z,2.4nm,0.6s						
FETA	**Feichten**	**152.58**	**349**	*i* PKPbc	**PKPbc**	**21 20 02.8**	**+0.5**
	comp=Z,5.4nm,1.4s						

*ISCJB **31** 21:29:53.3±0.8, 2°.95S±0°.09×128°.03E±0°.09, h38km, mb3.7/4, Error ellipse: s-maj=15.4km s-min=8.7km az=44.8*

*IDC **31** 21:29:57.4±2.0, 2°.91S×128°.10E, h73km±21km, mb3.5/4, mb1 3.7/8, mb1mx3.4/35, mbtmp3.9/8, Error ellipse: s-maj=18.0km s-min=11.3km az=88.0*

ISC 31 21:29:55.1±0.9, 3°.04S±0°.09×128°.10E±0°.10, h38km, n8, σ1°29/11, mb3.8/4, Seram

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**3.83**	**56**	P	**Pn**	**21 30 51.6**	**0.0**
	30nm,0.3s,baz=90,slow=23,SNR=11						
SIJI				S	**Sn**	**21 31 36.8**	**+1.4**
	11nm,0.3s,baz=88,slow=23,SNR=4.0						
KAPI	**Kappang**	**8.55**	**257**	P	**Pn**	**21 31 58.3**	**+1.9**
	0.5nm,0.3s,baz=85,slow=12,SNR=3.3						
FITZ	**Fitzroy Crossi**	**15.16**	**189**	P	**P**	**21 33 30.0**	**-1.2**
	0.1nm,0.3s,baz=29,slow=10,SNR=2.7						
WRA	**Warramunga Arr**	**17.87**	**161**	P	**Pn**	**21 34 00.8**	**-0.1**
	0.5nm,0.3s,baz=341,slow=11,SNR=34						
WRA				S	**S**	**21 37 24.8**	**+0.1**
	0.0nm,0.3s,baz=331,slow=24,SNR=3.1						
ASAR	**Alice Springs**	**21.26**	**165**	P	**P**	**21 34 38.5**	**+0.3**
	4.5nm,0.9s,baz=348,slow=12,SNR=26						
ASAR				S	**S**	**21 38 32.1**	**-0.4**
	0.3nm,0.6s,baz=348,slow=22,SNR=3.1						
STKA	**Stephens Creek**	**31.37**	**158**	P	**P**	**21 36 12.1**	**-0.3**
	0.8nm,0.5s,baz=354,slow=11,SNR=3.3						
MKAR	**Makanchi Array**	**63.90**	**327**	P	**P**	**21 40 21.9**	**-2.3**
	0.4nm,0.7s,baz=124,slow=8.2,SNR=4.9						
VNDA	**Vanda**	**76.58**	**173**	P	**P**	**21 41 42.0**	**+0.8**
	0.7nm,0.6s,baz=311,slow=9.3,SNR=6.3						

*ISCJB **31** 21:30:41.9±0.7, 39°.11N±0°.05×28°.97E±0°.06, h18km±11km, Error ellipse: s-maj=9.8km s-min=6.3km az=145.9*

*CSEM **31** 21:30:41.6±0.3, 39°.14N×28°.93E, h5km, MD2.5, Error ellipse: s-maj=9.4km s-min=5.9km az=124.0*

*ISK **31** 21:30:41.0, 39°.15N×28°.84E, h5km, MD2.6*

*DDA **31** 21:30:41.9, 39°.15N×28°.99E, h7km, Md2.5*

ISC 31 21:30:41.6±1.1, 39°.10N±0°.04×28°.98E±0°.03, h19km±3km, n14, σ0°34/22, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.21**	**255**	*i* P	**Pg**	**21 30 47.1**	**+0.2**
DEMI				*i* S	**Sg**	**21 30 50.5**	**+0.1**
DEMI	**Demirci**	**0.21**	**255**	P	**Pg**	**21 30 47.1**	**+0.2**
DEMI				S	**Sg**	**21 30 50.5**	**+0.1**
GDZ	**Gediz**	**0.39**	**91**	*i* P	**Pg**	**21 30 49.9**	**0.0**
GDZ				*i* S	**Sg**	**21 30 55.6**	**+0.1**
GDZ	**Gediz**	**0.39**	**91**	P	**Pg**	**21 30 49.9**	**0.0**
GDZ				S	**Sg**	**21 30 55.6**	**+0.1**
TVSB	**Tavsanli**	**0.52**	**47**	*e*PG	**Pb**	**21 30 52.4**	**+0.3**
TVSB	**Tavsanli**	**0.52**	**47**	*e*Pg	**Pb**	**21 30 52.4**	**+0.3**
KULA	**Kula-Manisa**	**0.63**	**203**	*e*PG	**Pb**	**21 30 54.2**	**+0.1**
KULA				*e*SG	**Sb**	**21 31 03.3**	**+0.7**
KULA	**Kula-Manisa**	**0.63**	**203**	*e*Pg	**Pb**	**21 30 54.2**	**+0.1**
KULA				*e*Sg	**Sb**	**21 31 03.3**	**+0.7**
MANT	**Manisa**	**0.69**	**208**	*i* P	**Pb**	**21 30 55.0**	**-0.1**
MANT				*i* S	**Sb**	**21 31 04.1**	**-0.2**
MANT	**Manisa**	**0.69**	**208**	P	**Pb**	**21 30 55.0**	**-0.1**
MANT				S	**Sb**	**21 31 04.1**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**338**	*e*PN	**Pn**	**21 31 03.8**	**-0.5**
KCTX	**Karacabey (Bur**	**1.26**	**338**	*e*Pn	**Pn**	**21 31 03.8**	**-0.5**
ARMT	**Armutlu**	**1.47**	**357**	*e*PN	**Pb**	**21 31 08.5**	**+0.2**
ARMT	**Armutlu**	**1.47**	**357**	*e*Pn	**Pb**	**21 31 08.5**	**+0.2**

MEX 31 21:32:31.1±0.8, 16°.88N×95°.38W, h120km±13km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OXBJ	**Oaxaca**	**1.29**	**278**	*e*P	Pn	21 32 55.7	-0.7
OXBJ				*e*S	Sn	21 33 13.4	-2.2
VHO	**Vista Hermosa**	**1.30**	**278**	*e*P	Pn	21 32 55.8	-0.7
VHO				*e*S	Sn	21 33 13.8	-2.0
HUIG	**Huatulco**	**1.31**	**212**	*e*P	Pn	21 32 55.0	-1.4
HUIG				*e*S	Sn	21 33 14.1	-1.4
TGIG		**2.17**	**92**	*e*P	Pn	21 33 06.3	-0.4
TGIG				*e*S	Sn	21 33 31.8	-2.1
PNIG	**Pinotepa**	**2.67**	**260**	*e*P	Pn	21 33 11.3	-1.9
PNIG				*i* S	Sn	21 33 43.4	-2.2

IDC 31 21:48:08.8±2.2, 1°.28N×126°.26E, h0km, mb3.2/3, mb1 3.4/3, mb1mx3.2/25, mbtmp3.2/3, Error ellipse: s-maj=174.8km s-min=28.5km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.54**	**160**	P	P	21 53 11.0	+0.4
	0.2nm,0.3s,baz=338,slow=11,SNR=12						
ASAR	**Alice Springs**	**25.89**	**164**	P	P	21 53 42.3	-0.4
	0.4nm,0.7s,baz=345,slow=12,SNR=2.9						
MKAR	**Makanchi Array**	**59.30**	**326**	P	P	21 58 12.5	-0.1
	0.2nm,0.5s,baz=116,slow=6.7,SNR=2.2						

IDC 31 21:56:24.4±2.6, 4°.52S×135°.55E, h0km, mb3.9/1, mb1 4.2/3, mb1mx3.6/29, mbtmp4.0/3, ML3.9/2, Error ellipse: s-maj=103.6km s-min=30.3km az=79.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**15.37**	**184**	Pn	Pn	22 00 00.9	-2.0
	0.5nm,0.3s,baz=6.0,slow=13,SNR=24						
WRA				Sn	Sn	22 02 38.5	-15
	0.3nm,0.3s,baz=0.4,slow=24,SNR=4.8						
ASAR	**Alice Springs**	**19.10**	**185**	P	Pn	22 00 49.7	0.0
	0.6nm,0.3s,baz=3.5,slow=10,SNR=42						
ASAR				S	Sn	22 04 08.3	-16
	0.1nm,0.3s,baz=357,slow=26,SNR=4.2						
MKAR	**Makanchi Array**	**69.34**	**324**	P	P	22 07 33.9	0.0
	0.8nm,0.6s,baz=120,slow=7.7,SNR=9.6						

*ISK **31** 22:06:10.8, 39°.89N×39°.37E, h5km, MD2.7*

*CSEM **31** 22:06:12.7±0.4, 39°.81N×39°.17E, h15km, MD2.8, Error ellipse: s-maj=9.4km s-min=7.5km az=76.0*

*DDA **31** 22:06:12.4, 39°.79N×39°.15E, h7km, Md2.8*

ISC 31 22:06:10.6±1.4, 39°.82N±0°.03×39°.23E±0°.05, h3km±13km, n15, σ1°42/27, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KELT	**Kelkit**	**0.33**	**4**	*i* P	**Pb**	**22 06 20.1**	**+0.8**
KELT				*i* S	**Sb**	**22 06 25.3**	**+0.3**
KELT	**Kelkit**	**0.33**	**4**	P	**Pb**	**22 06 20.1**	**+0.8**
KELT				S	**Sb**	**22 06 25.3**	**+0.3**
EUZM	**Uzumlu**	**0.38**	**107**	*i* P	**Pn**	**22 06 22.2**	**-0.9**
EUZM	**Uzumlu**	**0.38**	**107**	P	**Pn**	**22 06 22.2**	**-0.9**
REFA	**Refahiye_ERZ**	**0.56**	**220**	*i* P	**Pg**	**22 06 18.9**	**-2.4**
REFA				*i* S	**Sg**	**22 06 23.9**	**-4.6**
KEMA	**Kemaliye**	**0.79**	**226**	*i* P	**Pg**	**22 06 26.5**	**+0.7**
KEMA				*i* S	**Sg**	**22 06 37.2**	**+1.1**
KEMA	**Kemaliye**	**0.79**	**226**	P	**Pg**	**22 06 26.5**	**+0.7**
KEMA				S	**Sg**	**22 06 37.2**	**+1.1**
SUSE	**Susehri**	**0.88**	**297**	*i* P	**Pb**	**22 06 29.1**	**+0.5**
SUSE				*i* S	**Sb**	**22 06 41.0**	**+0.2**
SUSE	**Susehri**	**0.88**	**297**	P	**Pb**	**22 06 29.1**	**+0.5**
SUSE				S	**Sb**	**22 06 41.0**	**+0.2**
PTK	**Pertek**	**0.94**	**172**	*e*PG	**Pb**	**22 06 30.6**	**+1.0**
PTK				*e*SG	**Sb**	**22 06 44.1**	**+1.7**
PTK	**Pertek**	**0.94**	**172**	*e*Pg	**Pb**	**22 06 30.6**	**+1.0**
PTK				*e*Sg	**Sb**	**22 06 44.1**	**+1.7**
ESPY	**Espiye-Giresun**	**1.16**	**341**	*e*PN	**Pg**	**22 06 33.0**	**+0.1**
ESPY				*e*SN	**Sn**	**22 06 49.2**	**-0.9**
ESPY	**Espiye-Giresun**	**1.16**	**341**	*e*Pn	**Pg**	**22 06 33.0**	**+0.1**
ESPY				*e*Sn	**Sn**	**22 06 49.2**	**-0.9**
SVSK	**Karacayir**	**1.72**	**274**	*e*PN	**Pg**	**22 06 43.7**	**+0.1**
SVSK				*e*SN	**Sg**	**22 07 07.6**	**+1.7**
SVSK	**Karacayir**	**1.72**	**274**	*e*Pn	**Pg**	**22 06 43.7**	**+0.1**

*JMA **31** 22:06:57.6±0.1, 22°.59N×121°.72E, h33km, M2.9*

*TAP **31** 22:06:58.0, 22°.52N×121°.66E, h26km, ML3.3, C*

ISC 31 22:06:56.7±1.3, 22°.51N±0°.03×121°.72E±0°.03, h21km±4km, n48, σ0°81/92, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LAY	**Lan-yu**	**0.49**	**198**	*i* P	**Pb**	**22 07 06.9**	**+0.2**
	baz=191						
LAY				S	**Sb**	**22 07 14.3**	**+0.9**
	baz=191						
TTN	**Taitung**	**0.58**	**295**	*e*P	**Pb**	**22 07 07.5**	**-0.8**
	baz=305						
TTN				*e*S	**Sb**	**22 07 16.4**	**+0.3**
	baz=305						
CHKT	**Chengkung**	**0.67**	**331**	P	**Pb**	**22 07 09.5**	**-0.3**
	baz=345						
CHKT				*i* S	**Sb**	**22 07 18.0**	**-0.7**
	baz=345						
TWG	**Pinlang**	**0.67**	**298**	*e*P	**Pb**	**22 07 09.5**	**-0.3**
	baz=307						
TWG				S	**Sb**	**22 07 18.6**	**-0.1**
	baz=307						
ECL	**Taimali**	**0.71**	**277**	*i* P	**Pb**	**22 07 10.4**	**0.0**
	baz=278						
ECL				S	**Sb**	**22 07 19.0**	**-0.8**
	baz=278						
TAW	**Tawu**	**0.77**	**259**	*e*P	**Pb**	**22 07 11.5**	**+0.1**
	baz=258						
TAW				*e*S	**Sb**	**22 07 21.2**	**-0.3**
	baz=258						
EAST	**Anshuo**	**0.81**	**261**	P	**Pb**	**22 07 12.0**	**-0.2**
	baz=260						
EAST				S	**Sb**	**22 07 21.9**	**-0.8**
	baz=260						
TWF1	**Yuli**	**0.92**	**335**	*e*P	**Pb**	**22 07 13.6**	**-0.4**
	baz=345						
TWF1				S	**Sb**	**22 07 25.6**	**-0.3**
	baz=345						
ELDTW	**Lidau**	**0.93**	**316**	P	**Pb**	**22 07 13.7**	**-0.6**
	baz=319						
ELDTW				S	**Sb**	**22 07 25.0**	**-1.3**
	baz=319						
TWK1	**Hengchun**	**1.01**	**236**	P	**Pn**	**22 07 15.4**	**-0.3**
	baz=234						
TWK1				*e*S	**Sb**	**22 07 27.6**	**-0.8**
	baz=234						
SCZT	**Fangliau**	**1.02**	**262**	*e*P	**Pn**	**22 07 15.5**	**-0.3**
	baz=262						
SCZT				S	**Sb**	**22 07 28.8**	**+0.1**
	baz=262						
SSD	**Sandimen**	**1.03**	**283**	*e*P	**Pn**	**22 07 15.3**	**-0.6**
	baz=284						
SSD				*e*S	**Sn**	**22 07 29.3**	**-0.3**
	baz=284						
HEN	**Hengchun**	**1.04**	**241**	*e*P	**Pb**	**22 07 16.3**	**+0.4**
	baz=232						
HEN				*e*S	**Sb**	**22 07 29.1**	**0.0**
	baz=232						
EHY	**Hungye**	**1.06**	**340**	*e*P	**Pn**	**22 07 16.1**	**-0.2**
	baz=348						
EHY				*e*S	**Sb**	**22 07 29.1**	**-0.6**
	baz=348						
STYT	**Tauyuan**	**1.10**	**306**	P	**Pb**	**22 07 16.6**	**-0.3**
	baz=308						
STYT				S	**Sb**	**22 07 30.5**	**-0.4**
	baz=308						
SGST	**Jiashian**	**1.19**	**299**	*e*P	**Pb**	**22 07 19.5**	**+0.9**
	baz=304						
SGST				*e*S	**Sb**	**22 07 34.0**	**+0.4**
	baz=304						
YUS	**Yu-Shan**	**1.20**	**324**	*e*P	**Pn**	**22 07 18.7**	**0.0**
	baz=335						
YUS				*e*S	**Sn**	**22 07 33.7**	**-0.9**
	baz=335						
TWM1	**Shoushan**	**1.23**	**285**	*e*P	**Pb**	**22 07 19.1**	**-0.2**
	baz=280						
TWM1				*e*S	**Sb**	**22 07 35.0**	**+0.2**
	baz=280						
WTP	**Ta-pu**	**1.25**	**306**	P	**Pb**	**22 07 20.1**	**+0.4**
	baz=308						
WTP				*e*S	**Sb**	**22 07 36.2**	**+0.8**
	baz=308						
CHN1	**Nanshi**	**1.28**	**302**	*e*P	**Pb**	**22 07 21.1**	**+0.9**
	baz=310						
CHN1				*e*S	**Sb**	**22 07 37.1**	**+0.8**
	baz=310						
ALS	**Alishan**	**1.30**	**320**	*e*P	**Pb**	**22 07 20.7**	**+0.1**
	baz=327						
ALS				*e*S	**Sb**	**22 07 37.7**	**+0.7**
	baz=327						
ESL	**Shilin**	**1.32**	**349**	*e*P	**Pn**	**22 07 20.2**	**+0.3**
	baz=360						
ESL				*e*S	**Sn**	**22 07 35.9**	**-1.1**
	baz=360						
TWK	**Hsinying**	**1.36**	**304**	*e*P	**Pb**	**22 07 22.1**	**+0.6**
	baz=315						
TWK				*e*S	**Sb**	**22 07 38.6**	**+0.1**
	baz=315						
CHN5	**Tsauling**	**1.44**	**319**	*e*P	**Pb**	**22 07 23.4**	**+0.4**
	baz=329						
CHN5				*e*S	**Sb**	**22 07 41.2**	**+0.3**
	baz=329						
CHN2	**Minshiung**	**1.53**	**312**	*e*P	**Pb**	**22 07 25.8**	**+1.4**
	baz=315						
CHN2				*e*S	**Sb**	**22 07 45.6**	**+2.3**
	baz=315						
CHY	**Chiayi**	**1.54**	**310**	*e*P	**Pb**	**22 07 25.9**	**+1.4**
	baz=313						
CHY				*e*S	**Sb**	**22 07 45.3**	**+1.6**
	baz=313						
SMLT	**Sun Moon Lake**	**1.56**	**331**	*e*P	**Pb**	**22 07 25.8**	**+0.8**
	baz=340						
SMLT				*e*S	**Sb**	**22 07 44.5**	**+0.3**
	baz=340						
TWD	**Chiawan**	**1.57**	**356**	*e*P	**Pn**	**22 07 23.9**	**+0.6**
	baz=6.0						
TWD				*e*S	**Sn**	**22 07 42.6**	**-0.3**
	baz=6.0						
WGK	**Gukeng**	**1.58**	**318**	*e*P	**Pb**	**22 07 26.0**	**+0.8**
	baz=321						
WGK				*e*S	**Sb**	**22 07 46.5**	**+1.7**
	baz=321	

BCAM				*i* S		**Sg**	**22 25 16.3**	**+1.2**
BCAM	**Yenicaga**	**0.53**	**354**	P		**Pg**	**22 25 08.0**	**-0.2**
BCAM				S		**Sg**	**22 25 16.3**	**+1.2**
LOD	**Lodumlu**	**0.62**	**130**	*e*PG		**Pg**	**22 25 09.5**	**-0.3**
LOD				*e*SG		**Sg**	**22 25 18.1**	**+0.2**
LOD	**Lodumlu**	**0.62**	**130**	*e*Pg		**Pg**	**22 25 09.5**	**-0.3**
LOD				*e*Sg		**Sg**	**22 25 18.1**	**+0.2**
MDUB	**Mudurnu**	**0.74**	**285**	*e*PG		**Pb**	**22 25 13.1**	**-0.2**
MDUB	**Mudurnu**	**0.74**	**285**	*e*Pg		**Pb**	**22 25 13.1**	**-0.2**
BTAS	**Taskesti**	**0.92**	**288**	*i* P		**Pg**	**22 25 14.8**	**-0.7**
BTAS				*i* S		**Sg**	**22 25 28.0**	**+0.6**
BTAS	**Taskesti**	**0.92**	**288**	P		**Pg**	**22 25 14.8**	**-0.7**
BTAS				S		**Sg**	**22 25 28.0**	**+0.6**
SVRH	**Sivrihisar-ESK**	**0.97**	**210**	*e*PG		**Pg**	**22 25 16.1**	**-0.3**
SVRH	**Sivrihisar-ESK**	**0.97**	**210**	*e*Pg		**Pg**	**22 25 16.1**	**-0.3**
SAFT	**Safranbolu**	**1.04**	**23**	*e*PG		**Pn**	**22 25 18.5**	**-0.4**
SAFT	**Safranbolu**	**1.04**	**23**	*e*Pg		**Pn**	**22 25 18.5**	**-0.4**
AFSR	**Af˙ar-Bala (A**	**1.10**	**139**	*e*PG		**Pb**	**22 25 18.8**	**-0.6**
SAHE	**Sakarya_HENDEK**	**1.13**	**300**	*i* P		**Pg**	**22 25 18.8**	**-0.8**
SAHE				*i* S		**Sn**	**22 25 36.1**	**0.0**
SAHE	**Sakarya_HENDEK**	**1.13**	**300**	P		**Pg**	**22 25 18.8**	**-0.8**
SAHE				S		**Sn**	**22 25 36.1**	**0.0**
GULT	**Gulveren**	**1.25**	**277**	*e*PN		**Pg**	**22 25 22.4**	**+0.5**
GULT	**Gulveren**	**1.25**	**277**	*e*Pn		**Pg**	**22 25 22.4**	**+0.5**
ESKT	**Eskisehir**	**1.26**	**233**	*i* P		**Pg**	**22 25 22.0**	**+0.1**
ESKT				*i* S		**Sn**	**22 25 39.2**	**-0.1**
SEYT	**Eskypehyr**	**1.26**	**233**	P		**Pg**	**22 25 22.0**	**+0.1**
SEYT				S		**Sn**	**22 25 39.2**	**0.0**
KKUL	**Konya-Kulu**	**1.26**	**152**	*i* P		**Pn**	**22 25 21.3**	**-0.8**
KKUL				*i* S		**Sn**	**22 25 42.9**	**+3.4**
KKUL	**Konya-Kulu**	**1.26**	**152**	P		**Pn**	**22 25 21.3**	**-0.8**
BORA	**Eskisehir**	**1.36**	**253**	*i* P		**Pg**	**22 25 23.9**	**-0.1**
BORA				*i* S		**Sg**	**22 25 42.4**	**+0.9**
BORA	**Eskisehir**	**1.36**	**253**	P		**Pg**	**22 25 23.9**	**-0.1**
BORA				S		**Sg**	**22 25 42.4**	**+0.9**
KIZT	**Kizilcal**	**1.42**	**188**	*e*PN		**Pn**	**22 25 23.6**	**-0.7**
KIZT	**Kizilcal**	**1.42**	**188**	*e*Pn		**Pn**	**22 25 23.6**	**-0.7**

IDC ***31*** *22:26:13.8±2.5,35˚.13N×141˚.10E,h0km,mb3.4/2, mb1 3.4/4,mb1mx3.2/41,mbtmp3.3/4,ML3.0/2,MS3.1/3, Ms1 3.2/3,ms1mx2.5/28,Error ellipse: s-maj=55.6km s-min=24.1km az=76.0*

ISCJB ***31*** *22:26:16.4±1.3,35˚.20N±0˚.05×141˚.2E±0˚.1,h35km, mb3.5/2,MS3.4/2,Error ellipse: s-maj=16.5km s-min=6.2km az=171.0*

JMA ***31*** *22:26:16.3±0.1,35˚.26N×141˚.23E,h38km±2km,M2.8*

ISC 31 22:26:16.9±1.6,35˚.22N±0˚.05×141˚.3E±0˚.1,h35km,n18, σ1§35/13,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.59**	**325**	P	**Pn**	**22 26 27.3**	**-1.5**
CHOJ				*e*S	**Sn**	**22 26 35.5**	**-1.6**
BSO1	**Boso 1**	**0.62**	**203**	P	**Pn**	**22 26 28.7**	**-0.1**
BSO1				X		22 26 38.9	
BSO3	**Boso 3**	**0.76**	**236**	P	**Pn**	**22 26 30.5**	**-0.4**
BSO3				*e*X		22 26 41.4	
BSO4	**Boso 4**	**0.80**	**253**	P	**Pn**	**22 26 31.5**	**-0.2**
BSO4				*e*X		22 26 42.3	
JYT	**Yasato**	**1.33**	**319**	P	**Pn**	**22 26 38.5**	**-0.5**
JHJ	**Hachijo jima 2** 11nm,0.3s,baz=54,slow=19,SNR=2.9	**2.44**	**211**	Pn	**Pn**	**22 26 53.6**	**-0.6**
JHJ				Sn	**Sn**	**22 27 20.8**	**-2.0**
	12nm,0.3s,baz=90,slow=11,SNR=3.0						
MJAR	**Matsushiro Ar** 1.8nm,0.3s,baz=125,slow=9.0,SNR=9.0	**2.82**	**299**	Pn	**Pn**	**22 27 00.4**	**+0.9**
MJAR				LR	LR	22 28 25.2	
	comp=Z,65nm,19.0s,baz=130,slow=49						
MAT	**Matsushiro**	**2.82**	**299**	P	**Pn**	**22 27 01.7**	**+2.2**
MAT				*e*S	**Sn**	**22 27 31.3**	**-0.9**
H11N2	**WAKE ISLAND Hy 27.36** baz=310,slow=75,SNR=18	**118**		T	T	23 00 43.5	
H11N1	**WAKE ISLAND Hy 27.37** baz=310,slow=75,SNR=11	**118**		T	T	23 01 01.9	
H11N3	**WAKE ISLAND Hy 27.38** baz=310,slow=75,SNR=12	**118**		T	T	23 01 01.7	
H11S3	**WAKE ISLAND Hy 28.01** baz=312,slow=76,SNR=31	**120**		T	T	23 01 52.0	
H11S1	**WAKE ISLAND Hy 28.02** baz=312,slow=76,SNR=57	**120**		T	T	23 01 52.4	
H11S2	**WAKE ISLAND Hy 28.03** baz=312,slow=76,SNR=30	**120**		T	T	23 01 46.7	
CMAR	**Chiang Mai Arr** comp=Z,97nm,18.0s,baz=136,slow=37	**40.96**	**257**	LR	LR	22 51 28.9	
MKAR	**Makanchi Array** 0.4nm,0.8s,baz=97,slow=6.4,SNR=2.6	**45.01**	**304**	P	**P**	**22 34 29.3**	**+0.4**
WRA	**Warramunga Arr** 0.4nm,0.4s,baz=2.6,slow=7.7,SNR=14	**55.26**	**188**	P	**P**	**22 35 47.9**	**+1.2**
FINES	**FINESS Array B** comp=Z,10nm,18.3s,baz=132,slow=39	**70.36**	**333**	LR	LR	23 11 42.4	

ISCJB ***31*** *22:28:12.2±0.4,24˚.83N±0˚.02×122˚.12E±0˚.02,h10km±3km, Error ellipse: s-maj=3.7km s-min=3.1km az=159.3*

TAP ***31*** *22:28:12.3,24˚.84N×122˚.07E,h11km,ML3.1,D*

JMA ***31*** *22:28:12.7,24˚.79N×122˚.03E,h37km,M2.6*

ISC 31 22:28:12.2±0.9,24˚.84N±0˚.02×122˚.09E±0˚.02,h14km±6km, n29,σ0§54/57,1D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EGS		**0.14**	**273**	P	**Pg**	**22 28 15.9**	**-0.1**
	baz=271						
EGS				*i* S	**Sg**	**22 28 18.4**	**-0.1**
	baz=271						
TWB1	**Santiao Chiao** baz=339	**0.20**	**331**	*i* P	**Pg**	**22 28 16.8**	**+0.1**
TWB1				S	**Sb**	**22 28 20.3**	**-0.9**
	baz=339						
TWC	**Suao** baz=219	**0.32**	**224**	P	**Pg**	**22 28 18.5**	**-0.3**
TWC				S	**Sg**	**22 28 23.5**	**+0.2**
	baz=219						
ILA	**Ilan** baz=254	**0.32**	**257**	*e*P	**Pb**	**22 28 19.1**	**-0.6**
ILA				*e*S	**Sb**	**22 28 26.2**	**+1.4**
	baz=254						
NWF	**Wu-fen Shan** baz=311	**0.37**	**310**	*i* P	**Pb**	**22 28 20.4**	**-0.2**
NWF				*i* S	**Sb**	**22 28 25.8**	**-0.4**
	baz=311						
TWE	**Neicheng** baz=250	**0.40**	**253**	P	**Pg**	**22 28 20.2**	**-0.2**
TWE				S	**Sb**	**22 28 26.7**	**-0.4**
	baz=250						
TWA	**Mucha** baz=287	**0.48**	**287**	*e*P	**Pb**	**22 28 22.4**	**-0.1**
TWA				S	**Sb**	**22 28 28.9**	**-0.5**
	baz=287						
ENTT	**Nioudou** baz=245	**0.52**	**248**	P	**Pb**	**22 28 23.0**	**-0.1**
ENTT				S	**Sb**	**22 28 30.2**	**-0.2**
	baz=245						
ENA	**Nanau** baz=214	**0.52**	**218**	P	**Pb**	**22 28 22.9**	**-0.2**
ENA				*e*S	**Sg**	**22 28 29.1**	**-0.3**
	baz=214						
TWY	**Chenhua** baz=316	**0.62**	**315**	*e*P	**Pb**	**22 28 25.1**	**+0.2**
TWY				*e*S	**Sb**	**22 28 33.5**	**-0.1**
	baz=316						
TWS1	**Kuangyinshan** baz=294	**0.67**	**293**	*e*P	**Pb**	**22 28 25.5**	**-0.1**
TWS1				*e*S	**Sb**	**22 28 35.0**	**+0.3**
	baz=294						
NSK	**Sanguang** baz=255	**0.69**	**257**	*e*P	**Pb**	**22 28 25.6**	**-0.4**
NSK				S	**Sb**	**22 28 35.5**	**+0.2**
	baz=255						
NNS	**Nan Shan** baz=237	**0.76**	**239**	*e*P	**Pb**	**22 28 27.5**	**+0.1**
NNS				*e*S	**Sb**	**22 28 37.9**	**+0.2**
	baz=237						
PCYT	**Pengchaiyu**	**0.79**	**359**	*e*P	**Pb**	**22 28 28.3**	**+0.5**
PCYT				*e*S	**Sg**	**22 28 38.2**	**+0.2**
JYNG	**Yonagunijimaku**	**0.87**	**116**	P	**Pg**	**22 28 29.0**	**0.0**
JYNG				S	**Sg**	**22 28 41.0**	**+0.6**
TWD	**Chiawan** baz=209	**0.88**	**211**	P	**Pb**	**22 28 29.5**	**+0.3**
TWD				*e*S	**Sn**	**22 28 41.8**	**-0.8**
	baz=209						
YOJ	**Yonaguni jima**	**0.92**	**114**	P	**Pb**	**22 28 30.1**	**+0.2**
YOJ				*e*S	**Sg**	**22 28 42.4**	**+0.4**
NSTT	**Nanjuang** baz=257	**1.01**	**259**	*e*P	**Pn**	**22 28 32.1**	**+0.1**
NSTT				*e*S	**Sn**	**22 28 45.8**	**-0.2**
	baz=257						
WHF	**Hehuan Shan** baz=226	**1.02**	**228**	P	**Pb**	**22 28 31.9**	**0.0**
WHF				S	**Sb**	**22 28 45.8**	**+0.4**
	baz=226						
ESL	**Shilin** baz=209	**1.18**	**211**	*e*P	**Pn**	**22 28 34.4**	**+0.1**
ESL				*e*S	**Sn**	**22 28 51.1**	**+0.9**
	baz=209						
TYC	**Yuchr** baz=229	**1.46**	**231**	*e*P	**Pb**	**22 28 39.1**	**0.0**
TYC				*e*S	**Sb**	**22 28 57.6**	**0.0**
	baz=229						
EHY	**Hungye** baz=206	**1.50**	**208**	*e*P	**Pb**	**22 28 39.5**	**-0.4**
EHY				*e*S	**Sb**	**22 28 59.5**	**+0.8**
	baz=206						
IRIF	**Iriomote-Funau**	**1.57**	**108**	P	**Pn**	**22 28 38.9**	**-0.8**
IRIF				*e*S	**Sn**	**22 28 58.8**	**-1.0**
TWF1	**Yuli** baz=205	**1.65**	**206**	*e*P	**Pb**	**22 28 41.6**	**-0.7**
TWF1				*e*S	**Sb**	**22 29 02.8**	**-0.2**
	baz=205						
CHN5	**Tsauling** baz=225	**1.79**	**227**	*e*P	**Pb**	**22 28 44.2**	**-0.6**
CHN5				*e*S	**Sb**	**22 29 06.8**	**-0.3**
	baz=225						
JKRS	**Kuro-shima**	**1.85**	**108**	P	**Pn**	**22 28 43.5**	**+0.1**
JKRS				*e*S	**Sn**	**22 29 06.1**	**-0.5**
JIJ	**Ishigaki jima**	**1.93**	**104**	P	**Pn**	**22 28 44.8**	**+0.2**
STYT	**Tauyuan** baz=215	**2.06**	**216**	*e*P	**Pb**	**22 28 48.4**	**-1.1**
STYT				*e*S	**Sn**	**22 29 13.3**	**+1.2**
	baz=215						
TWG	**Pinlang** baz=204	**2.21**	**205**	*e*P	**Pn**	**22 28 49.8**	**+1.2**
TWG				*e*S	**Sn**	**22 29 15.6**	**-0.1**
	baz=204						

IDC 31 22:29:43.3±4.1,17˚.38S×168˚.32E,h0km,mb3.6/3, mb1 3.7/4,mb1mx3.5/37,mbtmp3.6/4,ML3.3/1,Error ellipse: s-maj=88.6km s-min=34.5km az=100.0,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac** 1.2nm,0.3s,baz=107,slow=11,SNR=9.6	**4.99**	**200**	Pn	Pn	22 30 59.2	-0.4
DZM				Sn	Sn	22 31 57.5	-0.7
	0.7nm,0.3s,baz=139,slow=19,SNR=2.9						
WRA	**Warramunga Arr** 0.3nm,1.0s,baz=85,slow=8.0,SNR=3.0	**32.26**	**260**	P	P	22 36 14.1	+0.2
ASAR	**Alice Springs** 0.7nm,0.5s,baz=78,slow=8.8,SNR=14	**32.77**	**253**	P	P	22 36 18.4	0.0
SONM	**Songino Array** 0.2nm,0.3s,baz=129,slow=3.9,SNR=3.0	**85.21**	**323**	P	P	22 42 21.8	+0.1

IDC ***31*** *22:36:39.1±0.6,3˚.72N×126˚.52E,h0km,mb4.0/19, mb1 4.2/20,mb1mx4.1/38,mbtmp4.1/20,ML4.6/1,MS3.4/2, Ms1 3.4/2,ms1mx2.7/34,Error ellipse: s-maj=28.4km s-min=12.1km az=73.0*

ISCJB ***31*** *22:36:45.6±0.9,3˚.70N±0˚.04×126˚.80E±0˚.05,h66km±9km, mb4.3/39,Error ellipse: s-maj=8.8km s-min=5.6km az=147.2*

NEIC ***31*** *22:36:48.5±1.1,3˚.69N×126˚.68E,h77km±10km,mb4.6/23, Error ellipse: s-maj=10.2km s-min=5.3km az=63.0*

ISC 31 22:36:47.5±1.1,3˚.67N±0˚.06×126˚.71E±0˚.06,h67km±10km, n70,σ1§36/78,mb4.3/39,1D,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**3.56**	**342**	*e*Pn	Pn	22 37 34.5	-5.8
CTBH	**Cotabato--PC H**	**4.30**	**325**	‖ *i*P	**Pn**	**22 37 52.5**	**+2.1**
LUWI	**Luwuk**	**6.12**	**220**	*e*Pn	**Pn**	**22 38 17.7**	**+2.4**
LUWI				*e*Sn	**Sn**	**22 39 26.9**	**+3.0**
SIJI	**Sorong** 11nm,0.3s,baz=270,slow=14,SNR=2.7	**6.40**	**135**	Pn	**Pn**	**22 38 19.2**	**-0.1**
SIJI				Sn	**Sn**	**22 39 29.6**	**-1.4**
	21nm,0.3s,baz=339,slow=1.3,SNR=2.7						
MYLDM	**Lahad Datu**	**8.33**	**281**	*e*Pn	**Pn**	**22 38 46.3**	**+0.8**
MYLDM				*e*Sn	**Sn**	**22 40 15.3**	**-2.8**
FAKI	**Fak Fak**	**8.57**	**140**	*e*Pn	**Pn**	**22 38 49.6**	**+0.7**
KKM	**Kota Kinabalu**	**10.72**	**283**	*e*Pn	**Pn**	**22 39 18.5**	**0.0**
SBUM	**Sibu**	**14.52**	**266**	*e*Pn	**Pn**	**22 40 11.3**	**+1.7**
KSM	**Kuching** 11nm,0.9s	**16.53**	**263**	*e*Pn	**Pn**	**22 40 34.8**	**-0.4**
MTN	**Manton Dam** 57nm,1.7s	**16.98**	**165**	*e*Pn	**Pn**	**22 40 37.1**	**-3.7**
JAGI	**Jajag, Banyuwa** 52nm,1.2s	**17.39**	**226**	*e*Pn	**P**	**22 40 48.0**	**+1.8**
TPUB	**Ta-pu** 42nm,1.4s	**20.39**	**344**	*e*P	**P**	**22 41 16.8**	**-2.1**
FITZ	**Fitzroy Crossi** 1.2nm,0.4s,baz=334,slow=7.9,SNR=6.7	**21.66**	**183**	P	**P**	**22 41 32.1**	**-0.5**
FITZ	**Fitzroy Crossi** 32nm,1.8s	**21.66**	**183**	*e*P	**P**	**22 41 32.6**	**0.0**
WRAB	**Tennant Creek** 42nm,1.7s	**24.62**	**163**	*e*P	**P**	**22 42 01.8**	**0.0**
WR1	**Warramunga Arr** 8.0nm,0.8s	**24.63**	**163**	*e*P	**P**	**22 42 01.5**	**-0.3**
WR1				*e*PcP	**PcP**	**22 45 39.8**	**+1.6**
WRA	**Warramunga Arr** 2.6nm,0.4s,baz=344,slow=10.0,SNR=51	**24.63**	**163**	P	**P**	**22 42 01.5**	**-0.3**
WRA				PcP	**PcP**	**22 45 39.8**	**+1.6**
	0.5nm,0.7s,baz=335,slow=3.4,SNR=3.2						
WRA				S	**S**	**22 46 20.3**	**+1.7**
	0.8nm,0.7s,baz=350,slow=16,SNR=3.6						
WB2	**Warramunga Ar**	**24.63**	**163**	*e*P	**P**	**22 42 01.8**	**-0.1**
AS31	**Alice Springs** 1.2nm,0.6s	**28.06**	**166**	*e*P	**P**	**22 42 32.7**	**0.0**
AS31				*e*PcP	**PcP**	**22 45 46.9**	**+0.7**
ASAR	**Alice Springs** 0.8nm,0.4s,baz=341,slow=12,SNR=17	**28.06**	**166**	P	**P**	**22 42 33.4**	**+0.6**
ASAR				PcP	**PcP**	**22 45 46.9**	**+0.7**
	0.3nm,0.6s,baz=45,slow=2.1,SNR=4.3						
AS01	**Alice Springs**	**28.07**	**166**	*e*P	**P**	**22 42 33.0**	**+0.2**
GSI	**Gununguitoli** 25nm,1.1s	**29.20**	**266**	*e*P	**P**	**22 42 40.4**	**-2.6**
CMAR	**Chiang Mai Arr** 0.9nm,0.6s,baz=114,slow=7.1,SNR=5.2	**30.89**	**301**	P	**P**	**22 42 56.6**	**-1.3**
KS15	**Wonju Array Si**	**33.63**	**2**	*e*P	**P**	**22 43 20.3**	**-1.3**
KSAR	**Wonju Array Be**	**33.63**	**2**	P	**P**	**22 43 20.3**	**-1.3**
KSRS	**Korea Array** 0.9nm,0.5s,baz=180,slow=9.3,SNR=3.9	**33.64**	**2**	P	**P**	**22 43 20.3**	**-1.4**
BBOO	**Buckleboo** 61nm,1.4s	**37.34**	**167**	*e*P	**P**	**22 43 52.3**	**-1.3**
BJT	**Baijiatuang** 20nm,1.1s	**37.42**	**347**	*e*P	**P**	**22 43 53.9**	**-0.3**
BJI	**Beijing**	**37.44**	**347**	P	**P**	**22 43 55.5**	**+1.2**
BJI				pmax	pmax		
	comp=Z,17nm,0.8s						
BJI				pmax	pmax		
	comp=Z,200nm,4.4s						
NWAO	**Narrogin (SRO)** comp=Z,116nm,1.4s	**37.49**	**193**	*e*P	**P**	**22 43 52.2**	**-2.5**
STKA	**Stephens Creek** comp=Z,27nm,0.5s,baz=326,slow=11,SNR=9.1	**38.08**	**159**	P	**P**	**22 44 00.5**	**+0.7**
STKA	**Stephens Creek** comp=Z,5.2nm,1.8s	**38.08**	**159**	*e*P	**P**	**22 44 00.7**	**+1.0**
HHC	**Hu-ho-hao-te**	**39.45**	**342**	*e*P	**P**	**22 44 12.5**	**+1.2**
HHC				pmax	pmax		
	comp=Z,23nm,0.8s						
HHC				pmax	pmax		
	comp=Z,95nm,5.1s						
USRK	**Ussuriysk Ar.** comp=Z,0.6nm,0.5s,baz=195,slow=10,SNR=3.3	**40.63**	**6**	P	**P**	**22 44 20.8**	**-0.1**
LSA	**Lhasa** comp=Z,3.2nm,0.8s	**42.47**	**311**	*e*P	**P**	**22 44 37.0**	**+0.3**
KLR	**Kul˙dur** comp=Z,1.9nm,0.7s,baz=207,slow=4.4,SNR=5.9	**45.60**	**5**	P	**P**	**22 44 59.6**	**-1.3**
SONA0	**Songino Array** comp=Z,11nm,2.0s	**47.35**	**341**	*e*P	**P**	**22 45 14.8**	**-0.1**
SONM	**Songino Array** comp=Z,0.6nm,0.4s,baz=153,slow=8.6,SNR=5.8	**47.35**	**341**	P	**P**	**22 45 14.8**	**-0.1**
SONM				LR	LR	23 05 39.0	
	comp=Z,40nm,19.3s,baz=154,slow=37						
SONA1	**Songino Array**	**47.36**	**341**	*e*P	**P**	**22 45 14.4**	**-0.5**
WMQ	**Urumqi**	**52.77**	**325**	*e*P	**P**	**22 45 57.5**	**+1.7**
WMQ				pmax	pmax		
	comp=Z,6.0nm,1.1s						
PETK	**Petropavlovsk-** comp=Z,2.3nm,0.7s,baz=202,slow=3.1,SNR=3.3	**55.49**	**22**	P	**P**	**22 46 17.1**	**+1.7**
PEA1	**Petropavlovsk-**	**55.50**	**22**	*e*P	**P**	**22 46 17.1**	**+1.6**
MK01	**Makanchi Array**	**57.58**	**325**	*e*P	**P**	**22 46 30.5**	**+0.1**
MK31	**Makanchi Array**	**57.60**	**325**	*e*P	**P**	**22 46 31.4**	**+0.9**
MK32	**Makanchi Array**	**57.60**	**325**	*e*P	**P**	**22 46 30.3**	**-0.2**
MKAR	**Makanchi Array** comp=Z,1.7nm,0.4s,baz=119,slow=7.1,SNR=32	**57.60**	**325**	P	**P**	**22 46 30.3**	**-0.2**
MKAR	**Makanchi Array** comp=Z,25nm,0.4s	**57.60**	**325**	*e*P	**P**	**22 46 30.9**	**+0.4**
MAKZ	**Makanchi** comp=Z,11nm,1.7s	**57.78**	**325**	*e*P	**P**	**22 46 31.6**	**-0.2**
KSH	**Kashi**	**58.08**	**315**	*e*P	**P**	**22 46 36.0**	**+1.9**
KSH				*e*pP	pP	22 46 50.8	-0.9
KSH				S	**S**	**22 54 31.5**	**+1.2**
KSH				ScS	**ScS**	**22 56 15.5**	**-2.5**
KSH	comp=Z,36nm,3.4s			pmax	pmax		
ZALV	**Zalesovo Beam** comp=Z,0.4nm,0.3s,baz=124,slow=7.7,SNR=3.1	**60.64**	**333**	P	**P**	**22 46 49.1**	**-2.3**
ZAA1	**Zalesovo Array**	**60.64**	**333**	*e*P	**P**	**22 46 49.0**	**-2.3**
FOZ	**Fox Glacier** comp=Z,86nm,1.8s	**60.90**	**145**	*e*P	**P**	**22 46 52.5**	**-0.8**
LBZ	**Lake Benmore** comp=Z,43nm,1.4s	**61.64**	**146**	*e*P	**P**	**22 47 00.4**	**+2.1**
KURK	**Kurchatov** comp=Z,6.5nm,0.6s	**61.78**	**328**	*e*P	**P**	**22 46 59.0**	**-0.1**
GSTR	**Great Sitkin T**	**67.46**	**34**	*e*P	**P**	**22 47 38.3**	**+2.1**
NRIK	**Noril˙sk** comp=Z,1.9nm,0.6s,baz=123,slow=5.4,SNR=3.9	**70.49**	**346**	P	**P**	**22 47 55.9**	**+1.3**
CASY	**Casey** comp=Z,4.9nm,1.0s	**70.75**	**187**	*e*P	**P**	**22 47 56.0**	**-0.1**
GEYT	**Alibeck** comp=Z,1.8nm,0.8s,baz=85,slow=6.1,SNR=4.3	**70.92**	**309**	P	**P**	**22 47 58.6**	**+0.7**
ABKAR	**Akbulak array** comp=Z,18nm,0.6s	**72.19**	**321**	*e*P	**P**	**22 48 05.5**	**+0.3**
AKTO	**Aktyubinsk** comp=Z,28nm,18.5s,baz=113,slow=38	**73.70**	**322**	LR	LR	23 23 06.8	
ARU	**Arti** comp=Z,2.5nm,0.9s	**74.98**	**328**	*e*P	**P**	**22 48 21.2**	**-0.2**
ILAR	**Eielson Array** comp=Z,0.2nm,0.5s,baz=238,slow=5.2,SNR=2.9	**85.17**	**25**	P	**P**	**22 49 16.9**	**+0.7**
ILB	**Eielson Array**	**85.17**	**25**	*e*P	**P**	**22 49 16.9**	**+0.7**
BR101	**Keskin Array S**	**90.05**	**310**	*e*P	**P**	**22 49 40.0**	**-0.4**
BRTR	**Keskin Array B** comp=Z,0.6nm,0.8s,baz=79,slow=6.4,SNR=4.2	**90.05**	**310**	P	**P**	**22 49 40.0**	**-0.4**
ARCES	**ARCESS Array B** comp=Z,1.5nm,0.6s,baz=84,slow=6.1,SNR=12	**90.50**	**340**	P	**P**	**22 49 41.2**	**-0.5**
FIA0	**FINESS Array S**	**91.88**	**332**	*e*P	**P**	**22 49 48.1**	**0.0**
FINES	**FINESS Array B** comp=Z,1.4nm,0.9s,baz=98,slow=8.6,SNR=3.4	**91.88**	**332**	P	**P**	**22 49 48.1**	**0.0**
AKASG	**Malin Array Be** comp=Z,0.3nm,0.3s,baz=73,slow=4.6,SNR=3.5	**91.93**	**321**	P	**P**	**22 49 48.3**	**-0.3**
AKBB	**Malin Array Si** comp=Z,3.3nm,0.6s	**91.93**	**321**	*e*P	**P**	**22 49 48.3**	**-0.3**

IDC ***31*** *22:48:53.6±2.6,35˚.90N×142˚.09E,h0km,mb3.4/3, mb1 3.5/4,mb1mx3.3/32,mbtmp3.3/4,ML3.1/1,Error ellipse: s-maj=77.7km s-min=27.1km az=62.0*

ISCJB ***31*** *22:49:01.1±1.2,35˚.23N±0˚.06×141˚.30E±0˚.09,h27km, mb3.4/3,Error ellipse: s-maj=11.2km s-min=7.8km az=163.4*

JMA ***31*** *22:49:02.1±0.1,35˚.25N×141˚.21E,h31km±3km,M3.0*

ISC 31 22:49:01.1±1.4,35˚.26N±0˚.06×141˚.29E±0˚.09,h27km,n18, σ1§75/15,mb3.4/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.56**	**321**	P	**Pb**	**22 49 12.8**	**+0.3**
CHOJ				S	**Sb**	**22 49 20.4**	**+0.1**
BSO1	**Boso 1**	**0.66**	**203**	P	**Pb**	**22 49 14.2**	**+0.5**
BSO1				X		22 49 23.7	
BSO3	**Boso 3**	**0.79**	**235**	P	**Pb**	**22 49 15.9**	**-0.2**
BSO3				*e*X		22 49 27.3	
KTR	**Katsuura**	**0.81**	**262**	S	**Sb**	**22 49 25.9**	**-1.2**
BSO4	**Boso 4**	**0.83**	**251**	P	**Pb**	**22 49 16.7**	**-0.2**
BSO4				X		22 49 27.6	
JCN	**Nagara**	**0.91**	**280**	P	**Pn**	**22 49 17.9**	**-0.2**
JCN				*e*S	**Sn**	**22 49 31.1**	**+0.8**
JYT	**Yasato**	**1.31**	**318**	P	**Pn**	**22 49 24.0**	**+0.3**
MJAR	**Matsushiro Arr** 2.1nm,0.3s,baz=102,slow=14,SNR=16	**2.81**	**298**	Pn	**Pn**	**22 49 46.0**	**+1.7**
MAT	**Matsushiro**	**2.81**	**298**	P	**Pn**	**22 49 47.4**	**+3.0**
MAT				*e*S	**Sb**	**22 50 25.8**	**+1.1**
H11N2	**WAKE ISLAND Hy 27.37** baz=310,slow=75,SNR=34	**118**		T	T	23 23 48.3	
H11N1	**WAKE ISLAND Hy 27.38** baz=310,slow=75,SNR=36	**118**		T	T	23 23 57.8	
H11N3	**WAKE ISLAND Hy 27.39** baz=310,slow=75,SNR=27	**118**		T	T	23 23 49.9	
H11S3	**WAKE ISLAND Hy 28.02** baz=312,slow=76,SNR=81	**120**		T	T	23 24 25.5	
H11S1	**WAKE ISLAND Hy 28.02** baz=312,slow=76,SNR=72	**120**		T	T	23 24 26.1	
H11S2	**WAKE ISLAND Hy 28.04** baz=312,slow=76,SNR=52	**120**		T	T	23 24 21.6	
ZALV	**Zalesovo Beam** 0.3nm,0.4s,baz=93,slow=10,SNR=2.8	**43.05**	**314**	P	**P**	**22 56 54.6**	**-3.7**
MKAR	**Makanchi Array** 0.2nm,0.6s,baz=76,slow=6.1,SNR=2.6	**45.00**	**304**	P	**P**	**22 57 12.1**	**-2.0**
WRA	**Warramunga Arr** 0.6nm,0.6s,baz=1.9,slow=7.6,SNR=16	**55.30**	**188**	P	**P**	**22 58 34.0**	**+1.7**

ISCJB ***31*** *22:53:23.8±0.8,38˚.05N±0˚.04×29˚.25E±0˚.07,h0km±12km, Error ellipse: s-maj=11.0km s-min=4.9km az=148.5*

DDA ***31*** *22:53:23.4,38˚.04N×29˚.22E,h7km,Md2.9*

CSEM ***31*** *22:53:24.2±0.2,38˚.04N×29˚.27E,h5km,MD2.7,Error ellipse: s-maj=4.6km s-min=3.3km az=74.0*

ISK ***31*** *22:53:24.2,38˚.06N×29˚.25E,h8km,MD2.7*

**ISC 31 22:53:24.3±1.0,38˚.05N±0˚.02×29˚.25E±0˚.04,h

PSI **Prapat** 0.38 315 P Pn 23 18 18.4 +0.2
315nm,0.3s,baz=147,slow=3.1,SNR=1012
PSI S Sn 23 18 35.5 -0.5
187nm,0.3s,baz=208,slow=23,SNR=8.8
GSI Gunungsitoli 2.03 233 *e*Pn Pn 23 18 32.0 +0.3
GSI *e*Sn Sn 23 18 58.9 -1.1
FRIM Kepong 2.53 74 ⇑P Pn 23 18 38.6 +1.1
IPM Ipoh 2.66 43 ⇓P Pn 23 18 40.2 +1.1
IPM Ipoh 2.66 43 *e*Pn Pn 23 18 40.3 +1.1
BKNI Bangkinang 2.87 140 *e*Pn Pn 23 18 43.6 +2.0
KULM Kulim 3.10 28 ⇓P Pn 23 18 44.6 +0.2
KULM Kulim 3.10 28 *e*Pn Pn 23 18 44.6 +0.2
KULM *e*Sn Sn 23 19 22.8 -0.1
LHMI Lhok Sumawe 3.49 320 *e*Pn Pn 23 18 49.6 +0.3
KGM Kluang 4.16 97 ⇑P Pn 23 18 59.7 +1.8
MYKOM Kota Tinggi 4.71 99 ⇑P Pn 23 19 07.4 +2.2
TRTT Trang 5.29 5 P Pn 23 19 12.1 -0.5
179nm,0.8s,2μm0.6nm
PKDT Phuket 5.39 351 P Pn 23 19 14.0 0.0
105nm,0.8s,3μm0.4nm
KSM Kuching 11.16 95 *e*Pn Pn 23 20 30.1 0.0
SBUM Sibu 13.02 90 ⇑P P 23 20 57.4 -0.8
CHAI Chaiyaphum 13.56 12 P P 23 21 05.8 +1.6
4.3nm,0.8s
PBKT Sadao Pong 14.05 7 P P 23 21 11.9 +2.3
15nm,0.9s
COCO West Island 14.82 189 *e*Pn P 23 21 17.6 -0.4
SUKH Sukhothai 14.86 2 P P 23 21 20.7 +2.2
4.9nm,0.8s
SKNT Sakolnakorn 15.10 18 P P 23 21 22.1 +0.9
28nm,0.9s
CMAR Chiang Mai Arr 15.82 359 P P 23 21 30.3 +1.0
1.2nm,0.3s,baz=189,slow=10,SNR=23
NONG Nongkai 15.91 14 P P 23 21 31.5 +1.3
56nm,1.0s
CHTO Chiang Mai 16.18 359 *e*P Pn 23 21 32.7 -0.5
KKM Kota Kinabalu 17.33 78 *e*P Pn 23 21 47.4 +0.3
32nm,0.8s
PALK Pallekele 19.01 285 *e*P P 23 22 05.0 +0.8
8.1nm,0.7s
QIZ Qiongzhong 19.43 32 *e*P P 23 22 08.6 -0.1
13nm,1.5s
KAPI Kappang 21.87 110 *e*P P 23 22 34.9 +0.2
102nm,1.0s
H08S2 Diego Garcia H 28.49 249 T T 23 51 55.7
baz=73,slow=75,SNR=11
H08S3 Diego Garcia H 28.50 249 T T 23 51 57.6
baz=73,slow=75,SNR=13
H08S1 Diego Garcia H 28.51 249 T T 23 51 58.6
baz=73,slow=75,SNR=25
ENH Enshi 29.26 18 *e*P P 23 23 40.7 -0.8
7.0nm,0.7s
MBWA Marble Bar 30.97 140 *e*P P 23 23 57.1 +0.5
9.5nm,0.4s
FITZ Fitzroy Crossi 33.16 129 P P 23 24 15.5 -0.3
6.1nm,0.7s,baz=309,slow=5.4,SNR=11
FITZ Fitzroy Crossi 33.16 129 *e*P P 23 24 15.8 0.0
BJT Baijiatuau 40.37 20 *e*P P 23 25 16.4 0.0
8.5nm,0.7s
WRA Warramunga Arr 41.10 125 P P 23 25 22.9 +0.2
3.7nm,0.3s,baz=304,slow=8.9,SNR=57
WRA PcP PcP 23 27 19.4 +0.2
0.7nm,0.4s,baz=316,slow=2.7,SNR=5.1
WRA ScP ScP 23 30 51.7 -1.5
1.0nm,1.0s,baz=312,slow=3.4,SNR=3.8
WRA S S 23 31 17.4 -5.8
2.3nm,0.9s,baz=294,slow=16,SNR=8.0
WRAB Tennant Creek 41.10 125 *e*P P 23 25 23.8 +1.1
11nm,0.8s
KSH Kashi 42.43 333 P P 23 25 32.8 -0.6
KSH pmax pmax
comp=Z,5.0nm,0.4s
ASAR Alice Springs 42.66 130 P P 23 25 35.5 +0.1
comp=Z,3.6nm,0.5s,baz=300,slow=8.0,SNR=59
ASAR PcP PcP 23 27 24.7 +0.4
comp=Z,0.8nm,0.7s,baz=299,slow=2.9,SNR=2.8
ASAR ScP ScP 23 30 57.8 -1.6
comp=Z,0.6nm,1.0s,baz=304,slow=4.1,SNR=4.0
ASAR S S 23 31 40.2 -5.8
comp=Z,0.9nm,1.0s,baz=298,slow=14,SNR=4.8
KSAR Wonju Array Be 43.60 34 P P 23 25 42.5 -0.1
KSAR pP pP 23 26 19.6 -0.1
KSRS Korea Array 43.63 34 P P 23 25 42.5 -0.3
comp=Z,2.7nm,0.8s,baz=225,slow=8.8,SNR=8.4
KSRS pP pP 23 26 19.6 -0.3
comp=Z,3.5nm,0.8s,baz=221,slow=9.3,SNR=6.0
SONM Songino Array 45.55 7 P P 23 25 58.4 +0.3
comp=Z,4.1nm,0.7s,baz=186,slow=9.6,SNR=22
SONM pP pP 23 26 35.6 +0.2
comp=Z,1.8nm,0.7s,baz=183,slow=9.2,SNR=4.2
SONM PcP PcP 23 27 34.2 +0.4
comp=Z,1.1nm,0.8s,baz=187,slow=3.5,SNR=4.2
SONM ScP ScP 23 31 10.9 0.0
comp=Z,1.2nm,1.0s,baz=179,slow=2.6,SNR=5.5
MKAR Makanchi Array 46.47 344 P P 23 26 05.5 +0.2
comp=Z,1.7nm,0.5s,baz=153,slow=7.8,SNR=23
MKAR pP pP 23 26 43.8 +1.2
comp=Z,1.8nm,0.8s,baz=151,slow=7.7,SNR=4.1
TLY Talaya 49.12 4 *e*P P 23 26 25.9 +0.4
comp=Z,2.1nm,0.7s
USRK Ussuriysk Ar. 50.61 30 P P 23 26 38.2 +1.4
comp=Z,1.7nm,0.7s,baz=96,slow=3.8,SNR=4.5
USRK pP pP 23 27 15.0 +0.2
comp=Z,1.9nm,0.7s,baz=160,slow=6.1,SNR=2.6
KURK Kurchatov 51.06 343 *e*P P 23 26 40.0 0.0
comp=Z,21nm,1.0s
GEYT Alibeck 51.51 318 P P 23 26 44.5 +0.8
comp=Z,1.0nm,0.5s,baz=175,slow=8.5,SNR=4.7
GEYT pP pP 23 27 20.9 -0.8
comp=Z,4.6nm,0.9s,baz=148,slow=8.7,SNR=6.7
ZALV Zalesovo Beam 52.59 349 P P 23 26 51.2 0.0
comp=Z,1.5nm,0.4s,baz=176,slow=5.8,SNR=9.6
ZALV pP pP 23 27 29.2 -0.4
comp=Z,1.4nm,0.6s,baz=185,slow=8.2,SNR=2.7
STKA Stephens Creek 52.81 134 P P 23 26 53.3 0.0
comp=Z,4.0nm,0.7s,baz=318,slow=6.4,SNR=9.1
BVAR Borovoye Array 55.68 339 P P 23 27 13.5 -0.2
comp=Z,1.2nm,0.5s,baz=145,slow=10,SNR=3.3
ABKAR Akbulak array 57.31 330 *e*P P 23 27 25.1 -0.1
comp=Z,1.2nm,0.4s
YSS Yuzh-Sakhalins 58.13 34 *e*P P 23 27 31.7 +0.6
comp=Z,12nm,0.6s
KMBO Kilima Mbogo 62.03 267 P P 23 28 00.1 +1.6
comp=Z,3.4nm,0.7s,baz=52,slow=11,SNR=8.6
YAK Yakutsk 63.60 15 P P 23 28 07.2 -0.4
comp=Z,12nm,0.7s
NRIK Noril'sk 67.15 356 P P 23 28 30.0 -0.3
comp=Z,1.0nm,0.2s,baz=151,slow=3.3,SNR=5.0
CASY Casey 69.14 175 *e*P P 23 28 43.0 +0.3
comp=Z,0.4nm,0.7s
PETK Petropavlovsk- 69.53 33 P P 23 28 45.5 0.0
comp=Z,2.8nm,0.7s,baz=203,slow=6.4,SNR=5.2
BRTR Keskin Array B 69.70 312 P P 23 28 46.8 -0.3
comp=Z,0.8nm,0.6s,baz=122,slow=5.5,SNR=6.0
BRTR pP pP 23 29 25.9 -1.5
comp=Z,0.6nm,0.5s,baz=138,slow=7.6,SNR=2.8
SEY Seymchan 71.77 23 P P 23 28 58.9 +0.2
comp=Z,5.2nm,0.8s,baz=254,slow=4.8,SNR=12
LSZ Lusaka 72.40 253 *e*P P 23 29 02.9 -0.7
comp=Z,0.9nm,0.9s
MAW Mawson 74.46 194 P P 23 29 16.3 +1.8
comp=Z,0.9nm,0.5s,baz=56,slow=7.3,SNR=4.1
AKASG Malin Array Be 75.43 322 P P 23 29 21.2 +0.8
comp=Z,0.2nm,0.3s,baz=114,slow=4.1,SNR=4.0
AKASG pP pP 23 29 59.6 -1.7
comp=Z,0.9nm,0.6s,baz=85,slow=5.0,SNR=2.6
BOSA Boshof 77.17 240 P P 23 29 31.6 +0.8
comp=Z,1.2nm,0.6s,baz=52,slow=5.2,SNR=7.0
FINES FINESS Array B 79.75 332 P P 23 29 43.8 -0.2
comp=Z,1.2nm,0.6s,baz=106,slow=6.5,SNR=12
ARCES ARCESS Array B 81.96 340 P P 23 29 55.7 0.0
comp=Z,1.2nm,0.7s,baz=116,slow=5.5,SNR=6.1
NOA NORSAR Array B 86.81 331 P P 23 30 19.9 -0.4
comp=Z,0.5nm,0.6s,baz=93,slow=4.8,SNR=3.3
NOA pP pP 23 31 02.6 +0.2
comp=Z,0.5nm,0.7s,baz=61,slow=1.7,SNR=3.0
MCK McKinley 97.25 25 *e*P P 23 31 08.4 -0.2
comp=Z,1.8nm,0.6s
TXAR Lajitas Array 141.48 33 PKhKP PKPpre 23 37 02.7
comp=Z,0.2nm,0.6s,baz=285,slow=1.2,SNR=4.8
TXAR PKP PKPdf 23 37 07.5 +0.5
comp=Z,0.7nm,0.8s,baz=0.0,slow=1.3,SNR=3.6
CPUP Villa Florida 147.32 221 PKPbc PKPbc 23 37 19.6 0.0
comp=Z,0.5nm,0.4s,baz=117,slow=4.5,SNR=3.0
CPUP pPKPbc pPKPbc 23 38 02.2 -1.2
comp=Z,2.5nm,0.9s,baz=138,slow=3.8,SNR=3.0

ISCJB ***31*** *23:38:53.3±0.8, 3.˚48S±0.˚02×144.˚95E±0.˚02, h2km±5km, mb6.0/206, MS6.6/205, Error ellipse: s-maj=3.6km s-min=3.2km az=150.0*

BJI ***31*** *23:38:54.5, 3.˚50S×144.˚80E, h10km, mb5.7/79, mB6.5/74, Ms6.8/95, Ms7 6.8/89*

IDC ***31*** *23:38:54.9±0.4, 3.˚50S×144.˚74E, h0km, mb5.2/30, mb1 5.2/33, mb1mx5.2/38, mbtmp5.2/33, ML4.7/3, MS6.6/27, Ms1 6.6/27, ms1mx6.4/35, Error ellipse: s-maj=13.0km s-min=7.1km az=101.0*

GCMT ***31*** *23:38:56.6±0.0, 3.˚39S×144.˚63E, h12km, MW6.6/149, Moment Tensor Solution. s146,c366; s149,c662; Duration: 4s9 Moment tensor: Scale 10¹⁹Nm; Mrr=0.05±.00; Mθθ=0.09±.00; Mϕϕ=0.13±.00; Mrθ=0.06±.01; Mθϕ=1.03±.00; Mϕr=0.09±.01; Best double couple: M₀=1.04100×10¹⁹ NP1:ϕs357.00000°, δ87.00000°, λ176.00000°. NP2:ϕs87.00000°, δ86.00000°, λ3.00000°. Principal axes: T 1.0690, Plg5.0000°, Azm312.0000°; N -0.0560, Plg85.0000°, Azm143.0000°; P -1.0130, Plg1.0000°, Azm42.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.*

MOS ***31*** *23:38:56.5±1.5, 3.˚47S×144.˚86E, h17km, mb6.2/40, MS6.5/36 Error ellipse: s-maj=8.2km s-min=4.6km az=104.9*

NEIC ***31*** *23:38:56.6±0.1, 3.˚52S×144.˚83E, h10km, mb6.2/104, ME7.2, MS6.6/147, MW6.6, MW6.6, MW6.5, Error ellipse: s-maj=3.3km s-min=2.9km az=87.0, Moment Tensor Solution. s53 Moment tensor: Scale 10¹⁸Nm; Mrr=2.46; Mθθ=-1.05; Mϕϕ=0.50; Mrθ=1.03; Mϕθ=6.59; Mϕr=0.04; Best double couple: M₀=6.70000×10¹⁸ NP1:ϕs357.00000°, δ81.00000°, λ179.00000°. NP2:ϕs87.00000°, δ89.00000°, λ9.00000°. Principal axes: T 6.4500, Plg7.0000°, Azm312.0000°; N 0.5400, Plg81.0000°, Azm92.0000°; P -6.9900, Plg6.0000°, Azm221.0000°; Broadband fault plane solution: P waves. NP1:ϕs92.00000°, δ88.00000°, λ3.00000°. NP2:ϕs2.00000°, δ87.00000°, λ178.00000°. Principal axes: T Plg4.0000°, Azm317.0000°; N Plg0.0000°, Azm0.0000°; P Plg1.0000°, Azm227.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt [III] at Port Moresby. Also felt at Goroka, Tari and Wewak. Felt at Rabaul, New Britain.

NEIC ***31*** *23:38:57.0±0.0, 3.˚27S×144.˚54E, h17km, Moment Tensor Solution. s40 Moment tensor: Scale 10¹⁸Nm; Mrr=2.46; Mθθ=0.42; Mϕϕ=2.04; Mrθ=0.51; Mθϕ=8.97; Mϕr=2.21; Best double couple: M₀=9.50000×10¹⁸ NP1:ϕs179.00000°, δ82.00000°, λ-163.00000°. NP2:ϕs86.00000°, δ73.00000°, λ-8.00000°. Principal axes: T 10.4000, Plg5.0000°, Azm311.0000°; N -2.0000, Plg71.0000°, Azm204.0000°; P -8.4000, Plg17.0000°, Azm43.0000°;*

NEIC ***31*** *23:39:19.8±0.0, 3.˚20S×144.˚79E, h10km, Moment Tensor Solution. s78 Moment tensor: Scale 10¹⁹Nm; Mrr=0.12; Mθθ=0.03; Mϕϕ=0.15; Mrθ=0.16; Mθϕ=1.04; Mϕr=0.02; Best double couple: M₀=1.10000×10¹⁹ NP1:ϕs178.00000°, δ81.00000°, λ-177.00000°. NP2:ϕs87.00000°, δ87.00000°, λ-9.00000°. Principal axes: T 1.1100, Plg4.0000°, Azm133.0000°; N -0.1000, Plg80.0000°, Azm250.0000°; P -1.0100, Plg9.0000°, Azm42.0000°;*

ISC 31 23:38:58.1±0.3, 3.˚52S±0.˚03×144.˚97E±0.˚03, h20km±1km, h20km:pP-P, n1522, s2≥91/1339, mb6.1/227, MS6.6/218, 60C-43D, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MANU	**Manus Island**	**2.81**	**59**	*e*Pn		**Pn**	**23 39 41.1**	**-0.8**
JAY	**Jayapura**	**4.37**	**283**	Pn		**Pn**	**23 39 58.8**	**-4.7**
JAY	5.9nm,0.3s,baz=89,slow=21,SNR=115			Sn		**Sn**	**23 40 49.1**	**-4.8**
JAY	7.8nm,0.3s,baz=99,slow=23,SNR=5.2			LR		LR	23 41 27.8	
PMG	comp=Z,41μm,19.7s,baz=356,slow=37 **Port Moresby**	**6.25**	**160**	Pn		**Pn**	**23 40 28.4**	**-0.8**
PMG	31nm,0.3s,baz=300,slow=11,SNR=23			Sn		**Sn**	**23 41 44.7**	**+4.6**
PMG	59nm,0.3s,baz=314,slow=22,SNR=4.3 **Port Moresby**	**6.25**	**160**	*ce*P		**Pn**	**23 40 29.3**	**+0.1**
PMG	comp=Z,1μm,1.0s			pmax	pmax			
RABL	**Rabaul**	**7.21**	**96**	*e*Pn		**Pn**	**23 40 44.8**	**+2.2**
COEN	**Coen**	**10.53**	**190**	*e*Pn		**Pn**	**23 41 28.6**	**+0.6**
FAKI	**Fak Fak**	**12.71**	**272**	*e*Pn		**Pn**	**23 41 56.7**	**-1.2**
SAUI	**Saumlaki**	**14.30**	**251**	*e*Pn		**Pn**	**23 42 19.5**	**-0.2**
MTSU	**Mount Surprise**	**14.54**	**182**	P		**Pn**	**23 42 25.5**	**+2.5**
KDU	baz=15,SNR=13 **Kakadu**	**15.35**	**233**	P		**Pn**	**23 42 31.7**	**-2.1**
HNR	baz=15,SNR=41 **Honiara**	**16.00**	**112**	Pn		**Pn**	**23 42 41.7**	**-0.5**
HNR	comp=Z,8.9nm,0.3s,baz=154,slow=9.5,SNR=14			LR		LR	23 48 12.7	
HNR	comp=Z,45μm,20.6s,baz=277,slow=34 **Honiara**	**16.00**	**112**	*e*P		**Pn**	**23 42 41.0**	**-1.2**
HNR	**Honiara**	**16.00**	**112**	*e*P		**Pn**	**23 42 42.9**	**+0.7**
HNR	**Honiara**	**16.00**	**112**	*e*Pn		**Pn**	**23 42 42.9**	**+0.7**
CTA	**Charters Tower**	**16.52**	**176**	Pn		**P**	**23 42 51.2**	**-0.1**
CTA	comp=Z,1.2nm,0.3s,baz=6.1,slow=15,SNR=16			LR		LR	23 50 00.4	
CTAO	comp=Z,136μm,19.2s,baz=359,slow=40 **Charters Tower**	**16.52**	**176**	*e*P		**Pn**	**23 42 49.5**	**+0.7**
CTAO	comp=Z,519nm,1.3s			pmax	pmax			
CTAO	**Charters Tower**	**16.52**	**176**	*e*Pn		**Pn**	**23 42 49.5**	**+0.7**
MTN	comp=Z,519nm,1.3s **Manton Dam**	**16.52**	**235**	P		**Pn**	**23 42 47.3**	**-1.6**
MTN	baz=16,SNR=103 **Manton Dam**	**16.52**	**235**	*e*Pn		**Pn**	**23 42 46.8**	**-2.1**
PATS	comp=Z,1μm,1.2s **Pohnpei**	**16.83**	**52**	P		**P**	**23 42 53.9**	**-0.9**
PATS	baz=17,SNR=23 **Pohnpei**	**16.83**	**52**	*e*Pn		**Pn**	**23 42 52.8**	**0.0**
GUMO	comp=Z,3μm,1.5s **Guam**	**16.99**	**360**	Pn		**P**	**23 42 55.8**	**-0.8**
GUMO	comp=Z,4.3nm,0.3s,baz=154,slow=5.5,SNR=6.5 **Guam**	**16.99**	**360**	*e*P		**P**	**23 42 56.7**	**+0.1**
GUMO	comp=Z,2μm,1.3s			pmax	pmax			
QIS	**Mount Isa**	**17.73**	**197**	P		**Pn**	**23 43 03.6**	**-0.4**
WRAB	baz=18,SNR=15 **Tennant Creek**	**19.33**	**212**	*d iP*		**P**	**23 43 19.3**	**-3.0**
WRAB	comp=Z,900nm,1.7s			pmax	pmax			
WRAB	**Tennant Creek**	**19.33**	**212**	*e*P		**P**	**23 43 20.0**	**-2.3**
WB2	comp=Z,1μm,1.1s **Warramunga Arr**	**19.34**	**212**	*e*P		**P**	**23 43 20.5**	**-1.9**
WRA	**Warramunga Arr**	**19.34**	**212**	P		**P**	**23 43 20.8**	**-1.7**
WRA	comp=Z,5.1nm,0.3s,baz=32,slow=11,SNR=243			S		**Sn**	**23 46 57.5**	**-2.7**
WRA	comp=Z,1.0nm,0.3s,baz=29,slow=18,SNR=5.4			LR		LR	23 52 06.9	
WRA	comp=Z,656μm,18.8s,baz=35,slow=41 **Warramunga Arr**	**19.34**	**212**	*i* P		**P**	**23 43 19.5**	**-3.0**
WRA	comp=Z,61nm,0.6s			pmax	pmax			
KNRA	**Kununurra**	**20.01**	**232**	P		**P**	**23 43 27.1**	**-2.7**
SOEI	baz=20,SNR=87 **Soe**	**21.46**	**252**	*e*P		**P**	**23 43 43.6**	**-2.1**
BIPH	comp=Z,6μm,1.0s **Bislig**	**21.89**	**302**	⇑*e*P		**P**	**23 43 52.8**	**+2.6**
DMPH	**Davao City--Mi**	**22.09**	**298**	⇑*e*P		**P**	**23 43 55.1**	**+2.8**
LUWI	**Luwuk**	**22.31**	**276**	*e*P		**P**	**23 43 54.5**	**-0.2**
EIDS	comp=Z,18μm,1.8s **Eidsvold**	**22.51**	**165**	P		**P**	**23 43 57.6**	**+0.9**
EIDS	baz=23,SNR=32 **Eidsvold**	**22.51**	**165**	*e*P		**P**	**23 43 57.1**	**+0.4**
AS01	comp=Z,2μm,1.9s **Alice Springs**	**22.68**	**207**	*e*P		**P**	**23 43 57.4**	**-1.2**
AS31	**Alice Springs**	**22.71**	**207**	*e*P		**P**	**23 43 57.1**	**-1.8**
ASAR	comp=Z,317nm,1.1s **Alice Springs**	**22.71**	**207**	P		**P**	**23 43 57.6**	**-1.3**
ASAR	comp=Z,50nm,0.7s,baz=39,slow=8.0,SNR=314			S		**S**	**23 48 08.1**	**+1.6**
ASAR	comp=Z,72nm,1.1s,baz=22,slow=15,SNR=5.2			LR		LR	23 53 39.4	
QLP	comp=Z,833μm,21.7s,baz=33,slow=39 **Quilpie**	**22.95**	**182**	P		**P**	**23 44 01.0**	**-0.3**
RMQ	baz=23,SNR=82 **Roma**	**23.13**	**171**	P		**P**	**23 44 04.2**	**+1.0**
MMRI	baz=23,SNR=96 **Maumere**	**23.16**	**256**	*e*P		**P**	**23 43 60.0**	**-3.6**
CTBH	comp=Z,1μm,1.0s **Cotabato--PC H**	**23.27**	**297**	⇓*e*P		**P**	**23 44 03.1**	**-1.5**
CGP	**Cagayan de Oro**	**23.45**	**301**	⇓*e*P		**P**	**23 44 11.0**	**+4.5**
FITZ	**Fitzroy Crossi**	**23.84**	**231**	P		**P**	**23 44 07.4**	**-2.8**
FITZ	comp=Z,438nm,0.7s,baz=51,slow=8.2,SNR=358			S		**S**	**23 48 26.2**	**+0.8**
FITZ	comp=Z,242nm,1.1s,baz=73,slow=15,SNR=3.9			LR		LR	23 54 08.4	
PLP	comp=Z,395μm,18.4s,baz=52,slow=39 **Palo**	**24.66**	**306**	⇓*e*P		**P**	**23 44 14.4**	**-3.4**
LLP	**Lapu-Lapu**	**25.02**	**304**	⇓*e*P		**P**	**23 44 21.5**	**+0.4**
LLP				*e*S		S	23 49 18.9	+34
SNPH	**Sibulan**	**25.14**	**301**	⇑*e*P		**P**	**23 44 23.3**	**+1.0**
KAPI	**Kappang**	**25.19**	**266**	*e*P		**P**	**23 44 23.5**	**+0.9**
KAPI	comp=Z,871nm,1.2s			LR		LR		
KWAJ	comp=Z,87μm,20.0s **Kwajalein Atol**	**25.68**	**61**	P		**P**	**23 44 26.4**	**-0.7**
KWAJ	comp=Z,4μm,1.9s			pmax	pmax			
KWAJ	**Kwajalein Atol**	**25.68**	**61**	P		**P**	**23 44 26.4**	**-0.7**
RCP	comp=Z,4μm,1.9s **Roxas**	**26.70**	**304**	⇑*e*P		**P**	**23 44 35.5**	**-0.8**
ARMA	**Armidale**	**27.49**	**167**	P		**P**	**23 44 45.4**	**+2.0**
ARMA	baz=28,SNR=20 **Armidale**	**27.49**	**167**	*e*P		**P**	**23 44 43.0**	**-0.4**
MYLDM	comp=Z,327nm,1.4s **Lahad Datu**	**27.81**	**288**	⇑P		**P**	**23 44 50.6**	**+4.3**
MYLDM	**Lahad Datu**	**27.81**	**288**	*e*P		**P**	**23 44 49.3**	**+2.9**
DZM	comp=Z,6μm,1.7s **Mont Dzumac**	**27.83**	**133**	P		**P**	**23 44 47.9**	**+1.4**
DZM	comp=Z,34nm,1.0s,baz=350,slow=8.5,SNR=8.3 **Mont Dzumac**	**27.83**	**133**	*e*P		**P**	**23 44 45.3**	**-1.2**
DZM	comp=Z,419nm,1.4s			*e*S		**S**	**23 49 23.0**	**-6.0**
DZM	comp=Z,51μm,26.9s			*e*LR		LR	23 51 51.8	
DZM	comp=Z,146μm,23.1s **Mont Dzumac**	**27.83**	**133**	P		**P**	**23 44 47.9**	**+1.4**
CMSA	comp=Z,16nm,1.8s **Cobar Meteorol**	**27.88**	**179**	P		**P**	**23 44 48.0**	**+1.2**
TSM	baz=28,SNR=50 **Tawau**	**28.16**	**286**	⇓P		**P**	**23 44 53.5**	**+4.0**
GQP	**Guinayangan**	**28.26**	**308**	⇑*e*P		**P**	**23 44 50.6**	**+0.3**
TARA	**Tarawa**	**28.36**	**81**	PFAKE			23 45 00.0	+8.8
TARA	comp=Z,3μm,21.0s			LR		LR		
STKA	**Stephens Creek**	**28.39**	**186**	P		**P**	**23 44 51.0**	**-0.3**
STKA	comp=Z,47nm,0.8s,baz=354,slow=8.3,SNR=36			LR		LR	23 56 23.4	
STKA	comp=Z,177μm,18.5s,baz=1.7,slow=37 **Stephens Creek**	**28.39**	**186**	P		**P**	**23 44 50.8**	**-0.6**
STKA	baz=28,SNR=24 **Stephens Creek**	**28.39**	**186**	*e*P		**P**	**23 44 51.1**	**-0.2**
STKA	**Stephens Creek**	**28.39**	**186**	*e*P		**P**	**23 44 51.1**	**-0.2**
SDKM	**Sandakan**	**29.19**	**288**	⇓P		**P**	**23 45 02.9**	**+4.2**
KDM	**Kudat**	**29.93**	**290**	⇑P		**P**	**23 45 09.8**	**+4.6**
MGCD	**Mangrove Creek**	**30.10**	**170**	P		**P**	**23 45 07.1**	**+0.7**
MBWA	baz=30,SNR=11 **Marble Bar**	**30.16**	**232**	P		**P**	**23 45 04.5**	**-2.7**
MBWA	SNR=11 **Marble Bar**	**30.16**	**232**	P		**P**	**23 45 04.5**	**-2.7**
MBWA	SNR=11 **Marble Bar**	**30.16**	**232**	*e*P		**P**	**23 45 04.7**	**-2.4**
MBWA	comp=Z,410nm,1.2s			LR		LR		
KKM	comp=Z,192μm,19.0s **Kota Kinabalu**	**30.24**	**288**	⇓P		**P**	**23 45 10.1**	**+2.0**
KKM	**Kota Kinabalu**	**30.24**	**288**	*e*P		**P**	**23 45 06.9**	**-1.1**
KKM	comp=Z,378nm,1.3s			LR		LR		
HTT	comp=Z,87μm,21.0s **Hallett**	**30.29**	**190**	P		**P**	**23 45 07.2**	**-1.0**
BBOO	baz=30,SNR=51 **Buckleboo**	**30.32**	**195**	P		**P**	**23 45 07.5**	**-0.9**
BBOO	baz=30,SNR=57 **Buckleboo**	**30.32**	**195**	*e*P		**P**	**23 45 07.2**	**-1.1**
CBIJ	comp=Z,594nm,0.9s **Chichi jima**	**30.55**	**355**	*e*P		**P**	**23 45 10.2**	**-0.3**
H11S3	comp=Z,329nm,0.8s **WAKE ISLAND Hy**	**30.60**	**44**	T		T	00 17 46.2	
H11S2	baz=227,slow=76,SNR=934 **WAKE ISLAND Hy**	**30.61**	**44**	T		T	00 17 46.9	
H11S1	baz=227,slow=76,SNR=397 **WAKE ISLAND Hy**	**30.61**	**44**	T		T	00 17 46.0	
YNG	baz=227,slow=76,SNR=434 **Young**	**30.79**	**174**	P		**P**	**23 45 14.7**	**+2.0**
LHI	baz=31,SNR=38 **Lord Howe Isla**	**30.86**	**156**	*e*P		**P**	**23 45 12.2**	**-1.0**
JAGI	comp=Z,671nm,1.9s **Jajag, Banyuwa**	**31.03**	**259**	*e*P		**P**	**23 45 12.7**	**-2.2**
WAKE	comp=Z,334nm,1.3s **Wake Island**	**31.12**	**42**	PFAKE			23 45 30.0	+14
WAKE	comp=Z,38μm,20.0s			LR		LR		
FORT	**Forrest**	**31.47**	**209**	P		**P**	**23 45 17.1**	**-1.5**
FORT	baz=32,SNR=32 **Forrest**	**31.47**	**209**	*e*P		**P**	**23 45 17.4**	**-1.1**
H11N1	comp=Z,6μm,1.0s **WAKE ISLAND Hy**	**31.58**	**42**	T		T	00 18 58.2	
H11N3	baz=226,slow=76,SNR=189 **WAKE ISLAND Hy**	**31.59**	**42**	T		T	00 18 59.2	
H11N2	baz=226,slow=76,SNR=556 **WAKE ISLAND Hy**	**31.59**	**42**	T		T	00 18 59.1	
CAN	baz=226,slow=76,SNR=1457 **Canberra**	**31.87**	**174**	*e*P		**P**	**23 45 21.4**	**-0.7**
CAN	comp=Z,643nm,1.6s			pmax	pmax			
CAN	comp=Z,66μm,19.0s			MLR		MLR		
CAN	**Canberra**	**31.87**	**174**	*e*P		**P**	**23 45 21.4**	**-0.7**
CAN	comp=Z,643nm,1.6s			LR		LR		
CNB	comp=Z,66μm,19.0s **Canberra Magne**	**31.90**	**173**	P		**P**	**23 45 24.5**	**+2.0**
BTM	baz=32,SNR=22 **Bintulu**	**32.55**	**281**	⇓P		**P**	**23 45 30.9**	**+2.6**
ARPS	**Mount Arapiles**	**33.22**	**185**	P		**P**	**23 45 35.1**	**+1.3**
SBUM	baz=33,SNR=27 **Sibu**	**33.26**	**280**	⇓P		**P**	**23 45 34.8**	**+0.3**
SBUM	**Sibu**	**33.26**	**280**	*e*P		**P**	**23 45 34.5**	**-0.1**
TOO	comp=Z,346nm,1.3s **Toolangi**	**33.90**	**179**	P		**P**	**23 45 41.1**	**+1.3**
MEEK	baz=34,SNR=24 **Meekatharra**	**34.13**	**225**	P		**P**	**23 45 39.6**	**-2.4**
JOW	baz=34,SNR=59 **Kunigami**	**34.21**	**333**	*e*P		**P**	**23 45 43.0**	**+0.4**
FUNA	comp=Z,255nm,1.1s **Funafuti**	**34.39**	**100**	PFAKE			23 46 00.0	+16
FUNA	comp=Z,26μm,19.0s			LR		LR		
KSM	**Kuching**	**34.99**	**278**	⇓P		**P**	**23 45 51.9**	**+2.3**
KSM	**Kuching**	**34.99**	**278**	*e*P		**P**	**23 45 49.2**	**-0.4**
KSM	comp=Z,513nm,1.2s			LR		LR		
YOJ	comp=Z,39μm,19.0s **Yonaguni jima**	**35.06**	**324**	*e*P		**P**	**23 45 50.3**	**+0.3**
YOJ	comp=Z,2μm,1.6s			pmax	pmax			
YOJ	**Yonaguni jima**	**35.06**	**324**	*e*P		**P**	**23 45 50.3**	**+0.3**
KMBL	comp=Z,2μm,1.6s **Kambalda**	**35.22**	**216**	P		**P**	**23 45 51.0**	**-0.2**
GIRL	baz=35,SNR=21 **Giralia**	**35.32**	**235**	P		**P**	**23 45 51.6**	**-0.7**
YULB	baz=35,SNR=22 **Yu-li**	**35.32**	**320**	*e*P		**P**	**23 45 51.2**	**-1.0**
MSVF	comp=Z,307nm,1.1s **Nonsavu**	**35.36**	**116**	*e*P		**P**	**23 45 53.2**	**+0.4**
MSVF	comp=Z,731nm,1.6s			pmax	pmax			
MSVF	comp=Z,42μm,20.0s			MLR		MLR		
MSVF	**Nonsavu**	**35.36**	**116**	*e*P		**P**	**23 45 53.2**	**+0.4**
MSVF	comp=Z,731nm,1.6s			LR		LR		
TPUB	comp=Z,42μm,20.0s **Ta-pu**	**35.69**	**320**	*e*P		**P**	**23 45 53.5**	**-1.9**
NACB	comp=Z,1μm,1.9s **Ninganchiao**	**35

comp=Z,203µm,22.0s
TATO Taipei 36.36 322 P **P** **23 46 01.6 +0.5**
SNR=86
TATO Taipei 36.36 322 P **P** **23 46 01.6 +0.5**
SNR=86
TATO Taipei 36.36 322 *e*P **P** **23 46 01.2 +0.1**
comp=Z,3µm,1.4s
TATO LR LR
comp=Z,220µm,20.0s
CISI Cisompet, Garu 37.18 262 *e*P **P** **23 46 05.9 -2.5**
comp=Z,640nm,0.9s
QZH Quanzhou 38.16 319⇑*i*P **P** **23 46 15.0 -1.4**
QZH PP **PnPn** **23 47 48.0 +2.5**
QZH S **S** **23 52 02.0 -6.9**
QZH pmax pmax
comp=Z,16µm,4.8s
QZH LR LR
comp=Z,46µm,15.0s
QZH LR LR
comp=Z,145µm,16.8s
QZH LR LR
comp=Z,377µm,24.7s
JNU Nakatsue 38.80 341 P **P** **23 46 20.8 -1.0**
comp=Z,29nm,1.0s,baz=144,slow=7.5,SNR=16
JNU Nakatsue 38.80 341 *e*P **P** **23 46 21.3 -0.5**
MOO Moorlands 38.81 177 P **P** **23 46 23.1 +1.4**
baz=39,SNR=13
NWAO Narrogin (SRO) 39.11 218 P **P** **23 46 23.2 -1.1**
comp=Z,78nm,0.9s,baz=277,slow=6.1,SNR=16
NWAO LR LR 00 02 27.3
comp=Z,153µm,18.5s,baz=276,slow=36
NWAO Narrogin (SRO) 39.11 218 P **P** **23 46 23.9 -0.4**
baz=39,SNR=10
NWAO P **P** **23 46 23.9 -0.4**
baz=39,SNR=10
NWAO Narrogin (SRO) 39.11 218 *e*P **P** **23 46 23.8 -0.5**
NWAO Narrogin (SRO) 39.11 218 P **P** **23 46 24.5 +0.2**
SNR=7.4
NWAO Narrogin (SRO) 39.11 218 P **P** **23 46 24.5 +0.2**
SNR=7.4
NWAO Narrogin (SRO) 39.11 218 *e*P **P** **23 46 23.8 -0.5**
TAU Tasmania Unive 39.28 177 *e*P **P** **23 46 27.2 +1.6**
TAU pmax pmax
comp=Z,213nm,1.1s
TAU MLR MLR
comp=Z,103µm,19.0s
TAU Tasmania Unive 39.28 177 *e*P **P** **23 46 27.2 +1.6**
comp=Z,213nm,1.1s
TAU LR LR
comp=Z,103µm,19.0s
INU Inuyama 39.37 350 *e*P **P** **23 46 27.8 +1.3**
comp=Z,337nm,1.6s
HKC Hong Kong Obse 39.55 312 ⇑P **P** **23 46 31.0 +2.9**
XMIS Christmas Isla 39.60 258 *e*P **P** **23 46 27.7 -1.0**
comp=Z,216nm,1.1s
MCO Taipa Grande 39.90 311 P **P** **23 46 35.0 +3.9**
MJAR Matsushiro Arr 40.35 352 P **P** **23 46 32.2 -2.3**
comp=Z,67nm,1.1s,baz=179,slow=9.4,SNR=26
MJAR Matsushiro Arr 40.35 352 P **P** **23 46 32.2 -2.3**
MJAR pmax pmax
comp=Z,40nm,1.1s
MAJO Matsushiro 40.35 352 *e*P **P** **23 46 34.0 -0.5**
MAJO pmax pmax
comp=Z,409nm,1.6s
MAJO MLR MLR
comp=Z,65µm,19.0s
MAJO Matsushiro 40.35 352 *e*P **P** **23 46 34.0 -0.5**
comp=Z,408nm,1.6s
MAJO LR LR
comp=Z,65µm,19.0s
MAT Matsushiro 40.35 352 P **P** **23 46 33.8 -0.7**
MAT S **S** **23 52 40.8 -0.7**
MJB9 Matsu-Tunnel 40.35 352 *e*P **P** **23 46 34.0 -0.5**
comp=Z,105nm,1.6s
RKGY Rocky Gully 40.41 217 P **P** **23 46 35.6 +0.4**
baz=40,SNR=6.3
GZH Guangzhou 40.63 312 P **P** **23 46 37.5 +0.5**
GZH PP **PnPn** **23 48 16.5 +1.6**
GZH S **S** **23 52 51.8 +5.7**
GZH pmax pmax
comp=Z,18µm,7.8s
QIZ Qiongzhong 41.18 304 P **P** **23 46 42.3 +0.6**
QIZ sP **pP** **23 46 47.0 -0.8**
QIZ S **S** **23 52 55.3 +0.8**
QIZ pmax pmax
comp=Z,130nm,1.5s
QIZ pmax pmax
comp=Z,6µm,10.3s
QIZ LR LR
comp=Z,59µm,19.1s
QIZ LR LR
comp=Z,120µm,24.2s
QIZ Qiongzhong 41.18 304 *e*P **P** **23 46 42.0 +0.3**
comp=Z,886nm,1.7s
OUZ Omahuta 41.21 143 *e*P **P** **23 46 43.2 +1.5**
comp=Z,781nm,1.7s
SSE Sheshan 41.21 328 P **P** **23 46 42.0 +0.3**
SSE sP **sP** **23 46 50.8 +0.5**
SSE S **S** **23 52 58.0 +3.5**
SSE sS **sS** **23 53 07.0 +2.4**
SSE pmax pmax
comp=Z,27nm,0.6s
SSE pmax pmax
comp=Z,5µm,7.1s
SSE LR LR
comp=Z,88µm,21.5s
SSE LR LR
comp=Z,52µm,21.5s
SSE LR LR
comp=Z,134µm,20.9s
MYKOM Kota Tinggi 41.43 277 ⇑P **P** **23 46 46.7 +2.8**
MYKOM Kota Tinggi 41.43 277 *e*P **P** **23 46 42.7 -1.2**
comp=Z,644nm,1.8s
KGM Kluang 41.99 277 ⇑P **P** **23 46 51.1 +2.6**
KTGM Kuala Trenggan 42.70 282 ⇓P **P** **23 46 54.0 -0.2**
NJ2 Nanjing 43.20 327 *e*P **P** **23 47 00.3 +2.3**
NJ2 pP **pP** **23 47 04.8 +0.7**
NJ2 sP **sP** **23 47 08.5 +2.0**
NJ2 S **S** **23 53 31.0 +7.1**
NJ2 sS **sS** **23 53 34.5 +0.5**
NJ2 pmax pmax
comp=Z,69nm,1.1s
NJ2 LR LR
comp=Z,124µm,32.5s
NJ2 LR LR
comp=Z,78µm,22.8s
NJ2 LR LR
comp=Z,121µm,26.0s
UBPT Khong Chiam 43.33 297 P **P** **23 46 59.9 +0.7**
comp=Z,380nm,2.1s,comp=Z,12µm
RAO Raoul Island 43.52 130 PFAKE 23 47 10.0 +9.4
RAO LR LR
comp=Z,21µm,20.0s
KSRS Korea Array 43.73 340 P **P** **23 47 02.2 +0.1**
comp=Z,39nm,0.7s,baz=160,slow=8.0,SNR=27
KSRS LR LR 00 02 16.9
comp=Z,148µm,21.9s,baz=160,slow=32
KS15 Wonju Array Si 43.73 340 *e*P **P** **23 47 01.4 -0.7**
KSAR Wonju Array Be 43.73 340 P **P** **23 47 02.2 0.0**
KSAR Wonju Array Be 43.73 340 P **P** **23 47 02.2 0.0**
KS01 Wonju Array Si 43.76 340 *e*P **P** **23 47 00.5 -1.9**
FRIM Kepong 43.83 278 ⇓P **P** **23 47 06.4 +3.0**
AFI Afiamalu 43.91 106 PFAKE 23 47 20.0 +16
AFI LR LR
comp=Z,18µm,19.0s
BKNI Bangkinang 44.06 274 *e*P **P** **23 47 04.2 -1.1**
comp=Z,1µm,1.2s
INCN Inchon 44.21 339 P **P** **23 47 06.2 +0.2**
SNR=22
INCN Inchon 44.21 339 P **P** **23 47 06.2 +0.2**
SNR=22
INCN Inchon 44.21 339 *e*P **P** **23 47 08.5 +2.5**
comp=Z,369nm,1.4s
INCN LR LR
comp=Z,56µm,20.0s
IPM Ipoh 44.62 280 ⇓P **P** **23 47 12.6 +2.9**
IPM Ipoh 44.62 280 *e*P **P** **23 47 09.2 -0.5**
comp=Z,418nm,1.5s
WHN Wuhan 44.74 321 P **P** **23 47 10.3 0.0**
WHN S **S** **23 53 50.3 +3.9**
WHN LR LR
comp=Z,88µm,15.2s
WHN LR LR
comp=Z,301µm,30.9s
WHN LR LR
comp=Z,162µm,18.1s

KULM Kulim 45.12 281 *e*P **P** **23 47 12.8 -0.9**
comp=Z,816nm,2.0s
KULM LR LR
comp=Z,32µm,20.0s
SKNT Sakolnakorn 45.30 298 P **P** **23 47 14.6 -0.4**
comp=Z,841nm,1.7s,comp=Z,14µm
CHBT CHBT 45.33 292 P **P** **23 47 17.0 +1.8**
comp=Z,446nm,2.2s,comp=Z,13µm
URZ Urewera 45.34 144 P **P** **23 47 15.0 0.0**
comp=Z,15nm,0.8s,baz=288,slow=5.3,SNR=7.2
URZ Urewera 45.34 144 *e*P **P** **23 47 15.0 0.0**
comp=Z,317nm,1.6s
ERM Erimo 45.34 358*c i*P **P** **23 47 15.7 +0.8**
ERM Erimo 45.34 358 *e*P **P** **23 47 16.4 +1.4**
comp=Z,385nm,1.3s
ERM LR LR
comp=Z,48µm,19.0s
SKLT Songkhla 45.51 284 P **P** **23 47 17.0 +0.2**
comp=Z,405nm,1.4s,comp=Z,8µm
THZ Tophouse 45.56 151 *e*P **P** **23 47 17.0 +0.2**
comp=Z,394nm,1.7s
BKZ Black Stump Fm 45.60 145 *e*P **P** **23 47 17.3 +0.1**
comp=Z,154nm,0.9s
MXZ Matakaoa Point 45.60 142 *e*P **P** **23 47 18.0 +0.9**
comp=Z,617nm,1.5s
LTZ Lake Taylor 46.04 152 *e*P **P** **23 47 21.7 +1.1**
comp=Z,193nm,1.1s
SNZO South Karori 46.14 149 PFAKE 23 47 30.0 +8.8
SNZO LR LR
comp=Z,29µm,20.0s
RPZ Rata Peaks 46.22 154 P **P** **23 47 23.6 +1.7**
comp=Z,28nm,0.9s,baz=25,slow=3.8,SNR=12
RPZ Rata Peaks 46.22 154 *e*P **P** **23 47 23.8 +1.9**
OXZ Oxford 46.35 153 *e*P **P** **23 47 23.9 +1.0**
comp=Z,62nm,0.7s
KHZ Kahutara 46.37 151 *e*P **P** **23 47 23.3 +0.2**
comp=Z,1µm,1.6s
PSI Prapat 46.44 277 LR LR 00 11 17.5
comp=Z,40µm,20.1s,baz=130,slow=42
PSI Prapat 46.44 277 *e*P **P** **23 47 22.4 -1.9**
PSI pmax pmax
comp=Z,2µm,1.5s
PSI Prapat 46.44 277 *e*P **P** **23 47 22.4 -1.9**
comp=Z,2µm,1.5s
NONG Nongkai 46.46 299 P **P** **23 47 24.6 +0.5**
comp=Z,447nm,1.4s
BFZ Birch Farm 46.51 147 *e*P **P** **23 47 24.6 +0.3**
comp=Z,664nm,1.5s
TRTT Trang 46.55 284 P **P** **23 47 25.2 +0.2**
comp=Z,315nm,1.4s,comp=Z,9µm
CHAI Chaiyaphum 46.68 296 P **P** **23 47 25.6 -0.3**
comp=Z,98nm,1.0s,comp=Z,933nm
WHZ Wether Hill Ro 46.73 158 *e*P **P** **23 47 26.5 +0.6**
comp=Z,176nm,0.8s
PATY Pattaya 46.74 291 P P 23 47 32.2 +5.8
comp=Z,41nm,1.0s,comp=Z,936nm
CRLZ Canterbury Las 46.81 152 *e*P **P** **23 47 27.0 +0.5**
comp=Z,1µm,1.9s
SURA Surathani 46.91 286 P **P** **23 47 30.5 +2.8**
comp=Z,171nm,1.3s
MQZ McQueen's Vall 46.93 153 *e*P **P** **23 47 27.6 +0.2**
comp=Z,466nm,1.5s
ODZ Otahua Downs 47.10 155 *e*P **P** **23 47 29.7 +0.9**
comp=Z,522nm,2.2s
TIA Tai'an 47.31 329 ⇑P **P** **23 47 28.3 -2.3**
TIA PP **PP** **23 49 17.0 -4.9**
TIA S **S** **23 54 23.3 0.0**
TIA pmax pmax
comp=Z,60nm,1.1s
TIA LR LR
comp=Z,112µm,20.6s
TIA LR LR
comp=Z,79µm,20.0s
TIA LR LR
comp=Z,157µm,19.4s
YUK Yuzh-Kuril'sk 47.34 1 *e*P **P** **23 47 32.9 +2.3**
DL2 Dalian 47.39 335⇑*i*P **P** **23 47 29.3 -1.8**
DL2 PP **PP** **23 49 16.8 -5.8**
DL2 S **S** **23 54 24.5 +0.2**
DL2 pmax pmax
comp=Z,210nm,1.5s
DL2 pmax pmax
comp=Z,6µm,7.9s
DL2 LR LR
comp=Z,65µm,22.9s
DL2 LR LR
comp=Z,39µm,20.5s
DL2 LR LR
comp=Z,114µm,24.3s
ASAJ Asahikawa 47.46 358 P **P** **23 47 32.1 +0.5**
comp=Z,75nm,1.1s,baz=214,slow=9.9,SNR=12
ASAJ Asahikawa 47.46 358 P **P** **23 47 32.1 +0.5**
ASAJ pmax pmax
comp=Z,47nm,0.8s
ASAJ Asahikawa 47.46 358 *e*P **P** **23 47 32.1 +0.5**
comp=Z,614nm,1.3s
GYA Guiyang 47.53 311⇑*i*P **P** **23 47 32.0 -0.6**
GYA PP **PP** **23 49 25.5 +1.3**
GYA ScP **ScP** **23 52 55.3 -0.6**
GYA S **S** **23 54 31.8 +4.9**
GYA ScS **ScS** **23 57 25.5 -0.5**
GYA SS **SS** **23 57 50.0 -5.2**
GYA pmax pmax
comp=Z,150nm,1.0s
GYA pmax pmax
comp=Z,8µm,9.6s
GYA LR LR
comp=Z,46µm,21.2s
GYA LR LR
comp=Z,41µm,22.4s
GYA LR LR
comp=Z,53µm,23.4s
GSI Gunungsitoli 47.61 275 *e*P **P** **23 47 30.7 -2.5**
comp=Z,421nm,1.0s
SURT Suratani 47.66 285 P **P** **23 47 37.0 +3.4**
comp=Z,211nm,1.5s,comp=Z,3µm
ENH Enshi 47.73 317 *e*P **P** **23 47 33.8 -0.2**
comp=Z,1µm,1.6s
PBKT Sadao Pong 47.83 296 P **P** **23 47 37.4 +2.6**
comp=Z,238nm,2.1s,comp=Z,9µm
PKDT Phuket 47.88 284 P **P** **23 47 38.2 +2.9**
comp=Z,337nm,1.3s,comp=Z,8µm
PHET Kaeng Krachan 47.88 291 P **P** **23 47 37.1 +1.8**
comp=Z,95nm,0.9s
VLA Vladivostok 47.90 347*c i*P **P** **23 47 37.5 +2.5**
VLA pmax pmax
comp=Z,192nm,1.8s
VLA MLR MLR
comp=Z,42µm,17.0s
MIDW Midway 48.04 46 PFAKE 23 47 50.0 +14
MIDW LR LR
comp=Z,13µm,20.0s
COCO West Island 48.38 257 *e*P **P** **23 47 38.6 -0.6**
COCO MLR MLR
comp=Z,28µm,19.0s
COCO West Island 48.38 257 *e*P **P** **23 47 38.6 -0.6**
comp=Z,3µm,1.0s
COCO LR LR
comp=Z,28µm,19.0s
PHIT Phitsanulok 48.54 297 P **P** **23 47 44.9 +4.5**
comp=Z,243nm,1.2s,comp=Z,2µm
KUR Kuril'sk 48.60 3 *e*P **P** **23 47 41.0 +0.7**
KUR *e*PPP PPP 23 50 23.5
KUR *e*S **S** **23 54 42.8 +1.6**
KUR pmax pmax
comp=Z,4µm,3.9s
KUR pmax pmax
comp=Z,893nm,1.7s
KUR pmax pmax
comp=N,175nm,1.8s
KUR pmax pmax
comp=E,124nm,1.8s
LHMI Lhok Sumawe 48.75 280 *e*P **P** **23 47 42.2 +0.2**
comp=E,974nm,1.1s
SRDT SRDT 48.78 292 P **P** **23 47 45.5 +3.2**
comp=E,1µm,1.9s,comp=E,26µm
USRK Ussuriysk Ar. 48.91 348 P **P** **23 47 42.0 -0.8**
comp=E,40nm,1.1s,baz=172,slow=5.5,SNR=19
USRK LR LR 00 06 20.5
comp=E,36µm,20.2s,baz=153,slow=34
SNY Shenyang 49.14 339 ⇑P **P** **23 47 43.0 -1.6**
SNY S **S** **23 54 47.5 -1.4**
SNY pmax pmax
comp=E,4µm,8.0s
SNY LR LR
comp=E,82µm,23.0s
SNY LR LR
comp=E,84µm,21.1s
SNY LR LR
comp=E,189µm,20.8s
JOHN Johnston Islan 49.24 64 *e*P **P** **23 47 45.8 +0.1**
comp=E,50nm,1.0s
JOHN LR LR
comp=Z,2µm,21.0s
SUKH Sukhothai 49.35 297 P **P** **23 47 48.9 +2.4**
comp=Z,80nm,1.5s,comp=Z,994nm
UMPA Umpang Tak 49.61 295 P **P** **23 47 50.3 +1.7**
comp=Z,100nm,1.4s,comp=Z,1µm
LAMP Lampang 49.72 298 P **P** **23 47 50.5 +1.1**
comp=Z,128nm,1.1s,comp=Z,1µm
MDJ Mudanjiang 49.85 346 P **P** **23 47 53.0 +3.0**
MDJ pP pP 23 47 56.8 +0.6
MDJ sP sP 23 47 58.0 -0.6
MDJ S **S** **23 55 04.0 +5.2**
MDJ pmax pmax
comp=Z,45nm,1.3s
MDJ pmax pmax
comp=Z,1µm,5.3s
MDJ LR LR
comp=Z,15µm,14.6s
MDJ LR LR
comp=Z,14µm,14.6s
MDJ LR LR
comp=Z,22µm,15.3s
MDJ Mudanjiang 49.85 346 *e*P **P** **23 47 50.4 +0.4**
comp=Z,548nm,2.1s
KMI Kunming 49.89 307 P **P** **23 47 50.5 -0.4**
KMI pP pP 23 47 54.0 -3.1
KMI S **S** **23 54 59.0 -1.4**
KMI pmax pmax
comp=Z,260nm,1.6s
KMI LR LR
comp=Z,39µm,22.8s
KMI LR LR
comp=Z,34µm,25.3s
KMI LR LR
comp=Z,80µm,24.1s
CN2 Changchun 50.27 342 *e*P **P** **23 47 53.5 +0.4**
CN2 *es*P pP 23 48 00.5 +1.1
CN2 PcP **PcP** **23 49 11.0 -0.9**
CN2 *e*S **S** **23 55 05.5 +0.9**
CN2 SS **SS** **23 58 36.3 -2.2**
CN2 pmax pmax
comp=Z,20nm,1.4s
CN2 pmax pmax
comp=Z,2µm,5.0s
CN2 LR LR
comp=Z,59µm,17.0s
CN2 LR LR
comp=Z,21µm,17.0s
CN2 LR LR
comp=Z,62µm,19.0s
CM01 Chiang Mai Arr 50.28 297 *e*P **P** **23 47 51.6 -2.1**
YSS Yuzh-Sakhalins 50.29 358⇑*e*P **P** **23 47 51.0 -2.2**
YSS *e* 23 49 18.0
YSS *e* 23 49 47.0
YSS *e*S **S** **23 55 05.0 +0.2**
YSS *e*SSS SSS 00 00 03.0
YSS pmax pmax
comp=Z,4µm,6.0s
YSS pmax pmax
comp=N,2µm,5.0s
YSS pmax pmax
comp=E,1µm,3.0s
YSS smax smax
comp=N,6µm,17.0s
YSS smax smax
comp=E,19µm,18.0s
YSS MLR MLR
comp=Z,30µm,17.0s
YSS MLR MLR
comp=N,30µm,16.0s
YSS MLR MLR
comp=E,15µm,14.0s
YSS Yuzh-Sakhalins 50.29 358 *e*P **P** **23 47 54.2 +1.0**
comp=E,378nm,1.3s
CM31 Chiang Mai Arr 50.30 297 *e*P **P** **23 47 54.9 +1.0**
CMAR Chiang Mai Arr 50.30 297 P **P** **23 47 53.1 -0.7**
comp=E,42nm,1.0s,baz=121,slow=6.4,SNR=46
CMAR LR LR 00 06 28.3
comp=E,36µm,21.9s,baz=112,slow=33
CMMT Chiang Mai 50.43 298 P **P** **23 47 54.9 +0.1**
comp=E,522nm,1.8s,comp=E,10µm
CHTO Chiang Mai 50.43 298 P **P** **23 47 55.0 +0.2**
comp=E,2µm,1.8s,comp=E,47µm
CHTO Chiang Mai 50.43 298 *e*P **P** **23 47 54.4 -0.4**
CHTO pmax pmax
comp=Z,844nm,1.3s
CHTO MLR MLR
comp=Z,34µm,21.0s
CHTO Chiang Mai 50.43 298 P **P** **23 47 54.0 -0.8**
SNR=128
CHTO Chiang Mai 50.43 298 P **P** **23 47 54.0 -0.8**
SNR=128
CHTO Chiang Mai 50.43 298 *e*P **P** **23 47 54.4 -0.4**
comp=Z,844nm,1.3s
CHTO LR LR
comp=Z,34µm,21.0s
XAN Xi'an 50.49 321 P **P** **23 47 53.3 -1.7**
XAN PP **PP** **23 49 47.0 -4.0**
XAN S **S** **23 55 09.0 +0.9**
XAN pmax pmax
comp=Z,750nm,1.7s
XAN pmax pmax
comp=Z,6µm,8.7s
XAN LR LR
comp=Z,31µm,28.4s
XAN LR LR
comp=Z,54µm,27.0s
XAN LR LR
comp=Z,110µm,26.3s
BJT Baijiatuau 50.75 331 *e*P **P** **23 47 56.1 -0.7**
BJT pmax pmax
comp=Z,469nm,1.5s
BJT Baijiatuau 50.75 331 *e*P **P** **23 47 56.1 -0.7**
comp=Z,469nm,1.5s
CMAI Chiengmai2 50.76 299 P **P** **23 47 59.5 +2.1**
comp=Z,3µm,1.8s,comp=Z,82µm
BJI Beijing 50.76 331 P **P** **23 47 54.5 -2.4**
BJI S **S** **23 55 11.3 -0.3**
BJI pmax pmax
comp=Z,38nm,2.0s
BJI pmax pmax
comp=Z,6µm,3.6s
BJI LR LR
comp=Z,117µm,22.4s
BJI LR LR
comp=Z,68µm,18.3s
BJI LR LR
comp=Z,139µm,26.3s
TIY Taiyuan 50.93 327 *e*P **P** **23 48 00.3 +2.0**
TIY sS **S** **23 55 21.5 +7.3**
TIY SS **SS** **23 58 46.3 -3.1**
TIY pmax pmax
comp=Z,48nm,0.9s
TIY pmax pmax
comp=Z,4µm,5.5s
TIY LR LR
comp=Z,42µm,16.2s
TIY LR LR
comp=Z,43µm,16.2s
TIY LR LR
comp=Z,112µm,23.1s
MCQ Macquarie Isla 52.09 170 P **P** **23 48 07.6 +1.0**
baz=52,SNR=7.5
MCQ Macquarie Isla 52.09 170 *e*P **P** **23 48 07.1 +0.5**
MCQ Macquarie Isla 52.09 170 *e*P **P** **23 48 07.1 +0.5**
comp=Z,7µm,1.0s
CD2 Chengdu 52.10 314 ⇑P **P** **23 48 06.3 -0.9**
CD2 pP pP 23 48 11.5 -1.9
CD2 PP **PP** **23 50 04.5 -1.1**
CD2 PcS **PcS** **23 53 16.0 -1.5**
CD2 S **S** **23 55 30.5 0.0**
CD2 sS sS 23 55 39.8 -1.0
CD2 pmax pmax
comp=Z,770nm,0.8s
CD2 pmax pmax
comp=Z,10µm,5.2s
CD2 LR LR
comp=Z,39µm,18.9s
CD2 LR LR
comp=Z,69µm,18.4s
CD2 LR LR

comp=Z,76µm,19.4s
HABR Khabarovsk 52.49 352 *d*P **P** **23 48 08.4 -1.3**
HABR *e**PP **pP** **23 48 13.1 -2.8**
HABR *e**SP **sP** **23 48 15.1 -3.2**
HABR *e* 23 49 18.2
HABR *e* 23 50 07.4
HABR *e*PPP PPP 23 51 10.9
HABR *e*S **S** **23 55 35.7 +0.6**
HABR *e**SS **sS** **23 55 43.9 -1.5**
HABR *e* 23 57 57.6
HABR *e*SS **SS** **23 59 15.5 +1.9**
HABR pmax pmax
comp=Z,440nm,1.7s
HABR pmax pmax
comp=Z,2µm,4.2s
HHC Hu-ho-hao-te 53.67 329 *e*P **P** **23 48 19.0 +0.3**
HHC S **S** **23 55 53.8 +2.1**
HHC sS sS 23 56 00.5 -1.5
HHC pmax pmax
comp=Z,50nm,0.9s
HHC pmax pmax
comp=Z,5µm,7.0s
HHC LR LR
comp=Z,60µm,23.3s
HHC LR LR
comp=Z,44µm,22.2s
HHC LR LR
comp=Z,96µm,21.4s
KLR Kul'dur 53.77 349 P **P** **23 48 17.5 -1.6**
comp=Z,39nm,1.2s,baz=158,slow=6.9,SNR=28
KLR PKPPKP **P'P'df** **00 18 39.7 +3.1**
comp=Z,0.6nm,0.5s,baz=161,slow=0.5,SNR=4.0
KLR PKP2bc 00 18 51.9
comp=Z,2.7nm,1.1s,baz=320,slow=2.1,SNR=6.9
PBA Port Blair 54.07 287 *e*P P 23 48 20.4 -1.5
PBA IAmb IAmb 23 48 34.4
comp=Z,24µm,6.2s
TYV Tymovskoe 54.20 358 *e*P **P** **23 48 23.8 +1.6**
TYV *e*S **S** **23 55 57.0 -1.3**
TYV pmax pmax
comp=Z,22nm,1.0s
TYV pmax pmax
comp=N,3µm,4.0s
TYV smax smax
comp=E,39µm,14.0s
DGPR DIGLIPUR 54.25 289 *e*P **P** **23 48 22.4 -0.8**
DGPR IAmb IAmb 23 48 30.7
comp=Z,419nm,1.5s
DGPR IAMs_20 IAMs_20 00 23 53.9
comp=Z,21µm,19.6s
SKR Severo-Kuril's 54.83 9*d i*P **P** **23 48 27.7 +0.9**
SKR *i* S **S** **23 56 09.1 +2.4**
SKR *i* SSS SSS 00 01 54.6
SKR pmax pmax
comp=Z,4µm,5.4s
SKR pmax pmax
comp=Z,527nm,1.4s
SKR pmax pmax
comp=Z,4µm,10.3s
LZH Lanzhou 55.02 319 *e*P **P** **23 48 28.0 -0.7**
LZH pP pP 23 48 32.3 -2.6
LZH sP sP 23 48 34.0 -3.3
LZH PP **PP** **23 50 28.8 -3.2**
LZH *e*S **S** **23 56 10.0 -0.2**
LZH sS sS 23 56 17.5 -3.0
LZH SS **SS** **23 59 54.0 -0.3**
LZH pmax pmax
comp=Z,630nm,1.2s
LZH pmax pmax
comp=Z,3µm,4.2s
LZH LR LR
comp=Z,51µm,15.6s
LZH LR LR
comp=Z,31µm,17.2s
LZH LR LR
comp=Z,117µm,17.9s
RAR Rarotonga 56.45 113 P **P** **23 48 40.3 +1.2**
comp=Z,9.2nm,0.5s,baz=40,slow=13,SNR=3.6
RAR Rarotonga 56.45 113 *e*P **P** **23 48 42.4 +3.4**
RAR pmax pmax
comp=Z,360nm,1.6s
RAR Rarotonga 56.45 113 *e*P **P** **23 48 39.5 +0.4**
comp=Z,365nm,1.6s
RAR LR LR
comp=Z,8µm,20.0s
HIA Hailar 56.94 341*ce*P **P** **23 48 40.5 -1.5**
HIA pmax pmax
comp=Z,49nm,1.2s
HIA MLR MLR
comp=Z,30µm,17.0s
HIA Hailar 56.94 341 *e*P **P** **23 48 42.5 +0.5**
comp=Z,116nm,1.0s
PEA0 Petropavlovsk- 57.43 9 *e*P **P** **23 48 44.9 -0.5**
PEA0B Petropavlovsk- 57.43 9 *e*P **P** **23 48 46.4 +1.1**
comp=Z,650nm,1.3s
PETK Petropavlovsk- 57.43 9 P **P** **23 48 44.9 -0.5**
comp=Z,25nm,0.9s,baz=169,slow=7.3,SNR=36
PETK PKP2bc 00 18 47.0
comp=Z,24nm,1.1s,baz=71,slow=5.5,SNR=14
PET Petropavlovsk 57.50 10*de*P **P** **23 48 45.4 -0.4**
PET *e* 23 50 56.4
PET *e*S **S** **23 56 39.3 -2.9**
PET *e*SS **SS** **00 00 28.6 -3.8**
PET pmax pmax
comp=Z,2µm,13.0s
PET pmax pmax
comp=Z,3µm,14.2s
PET pmax pmax
comp=Z,201nm,1.5s
PET Petropavlovsk 57.50 10 *e*P **P** **23 48 46.5 +0.7**
comp=Z,529nm,1.6s
PET LR LR
comp=Z,17µm,20.0s
SHL Shillong 58.98 303 *e*P **P** **23 48 57.0 +0.1**
SHL IAmb IAmb 23 49 02.0
comp=Z,140nm,1.1s
SHL *ex* x 23 57 10.0
GTA Gaotai 59.55 320 ⇑P **P** **23 49 00.0 -0.6**
GTA pP pP 23 49 06.0 -0.9
GTA sP sP 23 49 09.0 -0.3
GTA S **S** **23 57 08.5 -1.2**
GTA sS sS 23 57 18.3 -1.8
GTA SS **SS** **00 01 06.0 +0.6**
GTA pmax pmax
comp=Z,20nm,1.4s
GTA pmax pmax
comp=Z,5µm,8.7s
GTA LR LR
comp=Z,32µm,17.6s
GTA LR LR
comp=Z,25µm,16.6s
GTA LR LR
comp=Z,32µm,16.6s
HON Honolulu 61.03 63 *e*P **P** **23 49 10.4 -0.5**
HON Honolulu 61.03 63 *e*P **P** **23 49 11.6 +0.8**
KIP Kipapa 61.05 63 *e*P **P** **23 49 12.7 +1.7**
KIP pmax pmax
comp=Z,368nm,1.1s
KIP MLR MLR
comp=Z,23µm,20.0s
KIP Kipapa 61.05 63 *e*P **P** **23 49 12.7 +1.7**
comp=Z,368nm,1.1s
KIP LR LR
comp=Z,23µm,20.0s
OPA Opana 61.12 63 *e*P **P** **23 49 14.3 +2.8**
OPA pmax pmax
comp=Z,386nm,1.2s
OPA Opana 61.12 63 *e*P **P** **23 49 14.3 +2.8**
comp=Z,386nm,1.2s
LSA Lhasa 61.14 307 P **P** **23 49 11.3 -0.8**
LSA Lhasa 61.14 307 *e*P **P** **23 49 12.8 +0.7**
LSA pmax pmax
comp=Z,837nm,1.8s
LSA Lhasa 61.14 307 *e*P **P** **23 49 12.8 +0.7**
comp=Z,836nm,1.8s
SMY Shemya 61.19 20 *e*P **P** **23 49 12.2 +0.9**
SMY pmax pmax
comp=Z,954nm,1.4s
SMY Shemya 61.19 20 *e*P **P** **23 49 12.2 +0.9**
comp=Z,954nm,1.4s
SONM Songino Array 61.26 331 P **P** **23 49 11.2 -1.0**
comp=Z,9.3nm,0.9s,baz=151,slow=5.3,SNR=25
SONM LR LR 00 15 25.8
comp=Z,122µm,18.9s,baz=137,slow=36
SONM PKPPKP **P'P'df** **00 18 25.8 -0.5**
comp=Z,2.2nm,1.1s,baz=318,slow=2.0,SNR=7.6
SONM PKP2ab 00 18 44.2
comp=Z,76nm,1.3s,baz=281,slow=2.3,SNR=19
SONA1 Songino Array 61.27 331 *e*P **P** **23 49 11.0 -1.2**
CIT Chita 61.41 338 *e*P **P** **23 49 16.1 +3.1**
CIT *e* 23 57 37.7
CIT pmax pmax
comp=Z,653nm,3.6s
CLNS Chul'man 62.33 348 *e*P **P** **23 49 21.0 +2.0**
CLNS *e**PP **sP** **23 49 31.0 +3.2**
CLNS *e* 23 49 58.0
CLNS *e* 23 51 36.8
CLNS *e*S **S** **23 57 48.0 +3.7**
CLNS *e* 23 59 04.8
CLNS pmax pmax
comp=Z,79nm,1.0s
CLNS pmax pmax
comp=E,22nm,1.2s
CLNS pmax pmax
comp=N,38nm,1.2s
CLNS pmax pmax
comp=N,51nm,1.2s
CLNS pmax pmax
comp=Z,17nm,1.1s
CLNS pmax pmax
comp=E,22nm,1.5s
CLNS smax smax
comp=N,3µm,13.2s
CLNS smax smax
comp=E,8µm,14.7s
CLNS MLR MLR
comp=Z,8µm,15.0s
CLNS MLR MLR
comp=E,16µm,16.0s
CLNS MLR MLR
comp=N,15µm,17.0s
BWNR Bhubaneshwar 62.66 295 *e*P **P** **23 49 21.6 -0.2**
BWNR IAmb IAmb 23 49 26.4
comp=Z,634nm,2.1s
HPAH Hawaii Prepara 62.75 65 *e*P **P** **23 49 22.6 0.0**
comp=Z,161nm,0.9s
POHA Pohakuloa 62.83 66 *e*P **P** **23 49 25.7 +2.4**
comp=Z,361nm,1.2s
POHA LR LR
comp=Z,26µm,20.0s
MA2 Magadan 63.07 3 P **P** **23 49 23.8 -0.1**
comp=Z,29nm,0.8s,baz=174,slow=8.8,SNR=9.7
BOK Bokaro 63.55 299 *e*P **P** **23 49 27.4 -0.4**
BOK IAmb IAmb 23 49 33.2
comp=Z,87nm,0.9s
CHLP Challavanipeta 63.81 292 *e*P **P** **23 49 29.0 -0.5**
CHLP IAmb IAmb 23 49 38.7
comp=Z,396nm,1.1s
CHLP *e*S **S** **23 58 04.8 +0.6**
CHLP IVMs_BB IVMs_BB 00 11 19.9
comp=Z,8µm,29.5s
VIS Vishakhapatnam 64.31 291 *e*P **P** **23 49 32.2 -0.6**
VIS IAmb IAmb 23 49 38.0
comp=Z,115nm,0.8s
JIRN Jiri 64.48 303 *e*P **P** **23 49 35.2 +0.9**
comp=Z,5µm,1.3s
ZAK Zakamensk 64.50 332 *e*P **P** **23 49 32.2 -1.4**
ZAK pmax pmax
comp=Z,274nm,1.1s
PALK Pallekele 65.02 280 LR LR 00 21 43.2
comp=Z,10µm,18.1s,baz=117,slow=40
PALK Pallekele 65.02 280 *i* P **P** **23 49 40.7 +3.1**
SNR=9.0
PALK Pallekele 65.02 280 *e*P **P** **23 49 36.2 -1.4**
PALK pmax pmax
comp=Z,412nm,1.4s
PALK Pallekele 65.02 280 *e*P **P** **23 49 36.2 -1.4**
comp=Z,412nm,1.4s
TLY Talaya 65.22 333 PKPPKP **P'P'df** **00 18 20.1 +0.4**
comp=Z,1.9nm,0.2s,baz=224,slow=4.1,SNR=3.2
TLY Talaya 65.22 333*c i*P **P** **23 49 36.3 -1.9**
TLY *e*S **S** **23 58 22.1 +1.6**
TLY *e* 23 59 23.5
TLY pmax pmax
comp=Z,403nm,2.0s
TLY Talaya 65.22 333 *e*P **P** **23 49 38.6 +0.4**
comp=Z,334nm,1.4s
TLY P'P' 00 18 20.1
TLY LR LR
comp=Z,97µm,21.0s
KKN Kakani 65.28 303 *e*P **P** **23 49 39.4 +0.1**
comp=Z,428nm,0.8s
IRK Irkutsk 65.33 334 *e*P **P** **23 49 40.4 +1.5**
IRK pmax pmax
comp=Z,654nm,2.8s
DMN Daman 65.37 302 *e*P **P** **23 49 40.3 +0.3**
comp=Z,2µm,1.5s
PPT Papeete 65.56 108 LR LR 00 15 39.9
comp=Z,6µm,21.5s,baz=271,slow=34
PPT2 Papeete2 65.56 108 *e*P **P** **23 49 42.2 +1.1**
comp=Z,295nm,1.4s
PPT2 *e*S **S** **23 58 22.7 -3.2**
comp=Z,54µm,32.0s
PPT2 *e*LQ LQ 00 06 33.8
comp=Z,27µm,30.2s
PPT2 *e*LR LR 00 09 21.6
comp=Z,45µm,30.2s
PAE Paea 65.56 108 *e*P **P** **23 49 41.8 +0.8**
comp=Z,16nm,0.8s
TIAR Tiarei 65.78 108 *e*P **P** **23 49 43.3 +0.9**
comp=Z,122nm,1.2s
PVM Polavaram 65.80 291 *e*P **P** **23 49 41.6 -0.8**
PVM IAmb IAmb 23 49 52.0
comp=Z,223nm,1.0s
PVM *e*S **S** **23 58 28.2 -0.3**
PVM IVMs_BB IVMs_BB 00 11 54.4
comp=Z,8µm,45.1s
TVO Taravao 65.88 108 *e*P **P** **23 49 44.1 +0.9**
comp=Z,126nm,1.4s
GKN Gorkha 65.89 303 *e*P **P** **23 49 42.6 -0.6**
comp=Z,507nm,0.8s
BOD Bodaibo 66.01 342 *e*P **P** **23 49 42.5 -0.6**
BOD pmax pmax
comp=Z,185nm,1.6s
TBI Tubuai 66.21 114 *e*P **P** **23 49 45.5 +0.4**
comp=Z,623nm,1.2s
TBI *e*S **S** **23 58 30.1 -3.4**
comp=Z,33µm,34.8s
TBI *e*SS **SS** **00 02 46.9 -2.9**
comp=Z,16µm,30.5s
TBI *e*LQ LQ 00 06 49.8
comp=Z,58µm,35.5s
TBI *e*LR LR 00 09 31.5
comp=Z,48µm,41.8s
MDRS Chennai 66.32 286 *e*P **P** **23 49 45.2 -0.7**
MDRS IAMs_20 IAMs_20 00 27 59.3
comp=Z,18µm,15.1s
YAK Yakutsk 66.41 352 P **P** **23 49 45.6 +0.1**
comp=Z,36nm,0.4s,baz=355,slow=3.7,SNR=13
YAK Yakutsk 66.41 352 *e*P **P** **23 49 47.2 +1.7**
YAK *e**PP **sP** **23 49 54.8 +0.5**
YAK *e*S **S** **23 58 35.2 +0.8**
YAK *e**SS sS 23 58 55.5 +11
YAK pmax pmax
comp=Z,148nm,1.1s
YAK pmax pmax
comp=N,89nm,1.1s
YAK smax smax
comp=N,6µm,10.2s
YAK smax smax
comp=E,18µm,11.6s
MOY Mondy 66.44 332 *e*P **P** **23 49 45.6 -0.5**
MOY pmax pmax
comp=Z,756nm,2.4s
SEY Seymchan 66.51 4 P **P** **23 49 45.6 -0.6**
comp=Z,28nm,0.9s,baz=175,slow=5.7,SNR=45
SEY PKP2ab 00 18 28.3
comp=Z,4.7nm,1.1s,baz=174,slow=2.3,SNR=7.5
SEY Seymchan 66.51 4*d i*P **P** **23 49 47.4 +1.2**
KOLN Koldanda 66.69 302 *e*P **P** **23 49 47.8 -0.6**
comp=Z,454nm,0.9s
SKHT Srikalahasti 66.94 286 *e*P **P** **23 49 49.6 -0.3**
SKHT IAmb IAmb 23 49 60.0
comp=Z,302nm,1.1s
SKHT *e*S **S** **23 58 42.7 0.0**
SKHT IVMs_BB IVMs_BB 00 20 56.6
comp=Z,5µm,16.2s
MEH Mehetia 67.02 108 *e*P **P** **23 49 50.9 +0.5**
comp=Z,124nm,1.3s
ADKI Addanki 67.07 289 *e*P **P** **23 49 50.1 -0.6**
ADKI IAmb IAmb 23 50 03.7
comp=Z,436nm,1.3s
ADKI *e*S **S** **23 58 44.2 +0.1**
ADKI IVMs_BB IVMs_BB 00 23 40.4
comp=Z,7µm,21.5s
CASY Casey 67.12 194 *e*P **P** **23 49 49.4 -0.7**
CASY LR LR
comp=Z,10µm,21.0s
VAH Vaihoa 67.29 105 *e*P **P** **23 49 52.7 +0.6**
comp=Z,245nm,1.2s
PYUN Piuthan 67.31 302 *e*P **P** **23 49 50.8 -1.5**
comp=Z,1µm,1.3s
NJS Nagarjunasagar 67.83 289 *e*P **P** **23 49 56.1 +0.6**
NJS IAmb IAmb 23 50 08.2
comp=Z,292nm,1.2s
NJS *e*S **S** **23 58 51.4 -1.9**
NJS IVMs_BB IVMs_BB 00 12 29.3
comp=Z,6µm,42.6s
RCLA Racherla 67.96 288 *e*P **P** **23 49 56.6 +0.2**
RCLA IAmb IAmb 23 50 08.7
comp=Z,553nm,1.8s
RCLA *e*S **S** **23 58 52.9 -2.0**
RCLA IVMs_BB IVMs_BB 00 20 13.1
comp=Z,7µm,18.4s
SRLM Srisailam 68.14 289 *e*P **P** **23 49 56.7 -0.8**
SRLM IAmb IAmb 23 50 06.7
comp=Z,1µm,2.1s
SRLM *e*S **S** **23 58 56.9 -0.1**
SRLM IVMs_BB IVMs_BB 00 24 21.9
comp=Z,7µm,19.1s
RPR Rampur 68.29 292 *e*P **P** **23 49 56.9 -1.5**
RPR IAmb IAmb 23 50 06.4
comp=Z,513nm,1.4s
RPR *e*S **S** **23 58 58.6 -0.2**
RPR IVMs_BB IVMs_BB 00 13 21.4
comp=Z,6µm,43.6s
NIKH Nikolski High 68.32 28 *e*P **P** **23 49 58.2 +0.3**
HYB Hyderabad 68.70 290 *i* P **P** **23 50 02.0 +1.0**
HYB *e* 23 50 23.0
HYB *e*PP **PP** **23 52 36.0 +3.1**
HYB *e* 23 54 23.5
HYB *e*S **S** **23 59 04.0 +0.3**
HYB *e*SS **SS** **00 03 26.0 -2.8**
HYB *e*PKPPKP **P'P'df** **00 18 24.0 +7.1**
HYBB Hyderabad (bro 68.70 290 *e*P **P** **23 50 00.2 -0.9**
HYBB IAmb IAmb 23 50 10.2
comp=Z,789nm,2.0s
HYBB *e*S **S** **23 59 01.8 -2.0**
HYBB IVMs_BB IVMs_BB 00 12 54.7
comp=Z,6µm,37.8s
TRD Trivandrum 68.85 280 *e*P **P** **23 50 01.8 -0.1**
NGP Nagpur 69.00 294 *e*P **P** **23 50 03.4 +0.6**
NGP IAmb IAmb 23 50 06.9
comp=Z,754nm,2.2s
SRSP Sriramsagar 69.19 292 *e*P **P** **23 50 03.8 -0.2**
SRSP IAmb IAmb 23 50 08.6
comp=Z,463nm,1.4s
SRSP *e*S **S** **23 59 08.9 -0.5**
SRSP IVMs_BB IVMs_BB 00 13 48.6
comp=Z,6µm,36.4s
URV Uravakonda 69.49 287 *e*P **P** **23 50 06.3 +0.4**
URV IAmb IAmb 23 50 16.1
comp=Z,171nm,1.2s
URV *e*S **S** **23 59 12.1 -1.0**
URV IVMs_BB IVMs_BB 00 22 12.6
comp=Z,5µm,16.1s
WMQ Urumqi 69.60 319 P **P** **23 50 05.8 -0.3**
WMQ sP sP 23 50 15.8 +0.9
WMQ PP **PP** **23 52 42.0 +1.8**
WMQ S **S** **23 59 15.3 +1.8**
WMQ pmax pmax
comp=Z,230nm,1.8s
WMQ pmax pmax
comp=Z,6µm,4.7s
WMQ LR LR
comp=Z,27µm,19.7s
WMQ LR LR
comp=Z,19µm,19.7s
WMQ LR LR
comp=Z,34µm,28.0s
UNV Unalaska Valle 69.97 28 *e*P **P** **23 50 09.0 +1.0**
PTH Pithoragarh 70.05 303 *ex* P **P** **23 50 13.9 +4.5**
AKUT Akutan 70.48 28 *e*P **P** **23 50 12.4 +1.2**
KLRI Killari 70.65 290 *e*P **P** **23 50 12.9 -0.2**
KLRI IAmb IAmb 23 50 22.1
comp=Z,664nm,1.8s
KLRI *e*S **S** **23 59 24.4 -2.3**
KLRI IVMs_BB IVMs_BB 00 13 44.7
comp=Z,10µm,35.2s
BHPL Bhopal 70.92 296 *e*P **P** **23 50 14.0 -0.6**
BHPL IAmb IAmb 23 50 18.9
comp=Z,91nm,0.9s
DDI Dehra Dun 72.07 303 *e*P **P** **23 50 21.4 0.0**
DDI IAmb IAmb 23 50 26.5
comp=Z,382nm,1.4s
DDI IAMs_20 IAMs_20 00 30 36.2
comp=Z,11µm,18.2s
DGAR Diego Garcia 72.23 263 PFAKE 23 50 30.0 +7.4
DGAR LR LR
comp=Z,22µm,21.0s
NDI New Delhi 72.36 301 *ex* P 23 50 16.0 -7.1
NDI *e*S **S** **23 59 44.0 -2.0**
MIR Mirnyy 72.42 199 *e*P **P** **23 50 23.0 +0.3**
MIR *i* S **S** **23 59 48.0 +2.7**
MIR pmax pmax
comp=Z,3µm,13.0s
MIR smax smax
comp=N,6µm,10.0s
BILL Bilibino 72.94 8*d i*P **P** **23 50 26.9 +1.1**
BILL *e**PP **pP** **23 50 32.9 +0.7**
BILL *i* *SP **sP** **23 50 37.0 +2.4**
BILL *i* 23 50 44.1
BILL *e* 23 53 13.6
BILL *i* S **SKiKP** **23 59 55.5 -2.5**
BILL *e* 00 00 42.3
BILL pmax pmax
comp=Z,61nm,1.2s
BILL MLR MLR
comp=Z,14µm,19.0s
BILL Bilibino 72.94 8 *e*P **P** **23 50 26.7 +1.0**
comp=Z,190nm,1.2s
BILL LR LR
comp=Z,15µm,20.0s
SMLA Simla 73.02 304 *e*P **P** **23 50 26.0 -0.9**
SMLA IAmb IAmb 23 50 30.9
comp=Z,207nm,1.3s
SDNR Sundarnagar 73.27 304 *ex* P **P** **23 50 33.0 +4.5**
POO Poona 73.31 290 *e*P **P** **23 50 30.1 +1.1**
POO IAmb IAmb 23 50 34.1
comp=Z,416nm,1.4s
SDPT Sand Point 73.70 29 *e*P **P** **23 50 30.9 +0.4**
MK01 Makanchi Array 74.29 321 *e*P **P** **23 50 32.3 -1.9**
MK31 Makanchi Array 74.30 321 *i* P **P** **23 50 34.3 0.0**
MK31 pmax pmax
comp=Z,191nm,1.2s
MK31 Makanchi Array 74.30 321 *e*P **P** **23 50 33.5 -0.7**
MKAR Makanchi Array 74.30 321 P P **P** **23 50 32.9 -1.4**
comp=Z,35nm,0.9s,baz=103,slow=7.0,SNR=43
MKAR PKPPKP **P'P'df** **00 18 06.0 +0.9**
comp=Z,0.6nm,0.6s,baz=298,slow=2.6,SNR=5.4
MKAR LR LR 00 23 43.0
comp=Z,23µm,20.2s,baz=110,slow=36
MKAR Makanchi Array 74.30 321 *e*P **P** **23 50 33.5 -0.7**
MKAR P'P' 00 18 06.0
BOM Bombay 74.33 291 *ex* x 23 50 43.4
BOM *ex* x 23 50 47.1
comp=Z,1µm,2.6s
BOM *ex* x 23 50 49.8
BOM *e*S **S** **00 00 10.8 +2.2**
GAMB Gambell 74.45 18 *e*P **P** **23 50 37.1 +2.4**
VNDA Vanda 74.50 176 P **P** **23 50 35.5 +0.7**
comp=Z,14nm,0.8s,baz=319,slow=6.4,SNR=34
VNDA LR LR 00 20 13.1
comp=Z,30µm,21.9s,baz=349,slow=33
VNDA Vanda 74.50 176 *e*P **P** **23 50 34.9 +0.1**
MAKZ Makanchi 74.51 321 *e*P **P** **23 50 34.1 -1.3**
MAKZ Makanchi 74.51 321 *e*P **P** **23 50 34.1 -1.3**
THN Thein Dam 74.54 305 *e*P **P** **23 50 35.4 -0.5**
THN *ex* x 23 57 40.0
TAOE Nuku Hiva Isla 74.54 98 *e*S **S** **00 00 08.0 -3.4**
comp=Z,24µm,27.4s
TAOE *e*SS **SS** **00 04 54.2 -4.4**
comp=Z,7µm,29.5s
TAOE *e*LQ LQ 00 10 18.6
comp=Z,36µm,31.5s
TAOE *e*LR LR 00 13 34.8
comp=Z,35µm,34.0s

SHLS Shalkode 74.85 316 *i* P **P 23 50 33.8 -3.8**
comp=Z,156nm,1.4s
SHLS *e*S **S 00 00 08.9 -5.0**
SHLS *i* LRM MLR 00 25 35.2
comp=Z,2µm,14.6s
PDGK Podgornoye 74.89 317 P **P 23 50 37.6 -0.3**
PDGK pmax pmax
comp=Z,194nm,1.3s
SBA Scott Base 75.18 175 *e*P **P 23 50 39.9 +1.2**
SBA pmax pmax
comp=Z,319nm,1.7s
SBA MLR MLR
comp=Z,30µm,19.0s
SBA Scott Base 75.18 175 *e*P **P 23 50 39.9 +1.2**
comp=Z,319nm,1.7s
SBA LR LR
comp=Z,30µm,19.0s
CHGN Chignik 75.19 29 *e*P **P 23 50 39.0 -0.1**
KPKS Kokpek 75.49 316 *i* P **P 23 50 38.1 -3.2**
comp=Z,247nm,1.4s
KPKS *i* S **S 00 00 19.0 -2.0**
KPKS *i* LRM MLR 00 26 08.7
comp=Z,13µm,17.4s
SATY Saty 75.55 316 *e*P **P 23 50 39.1 -2.6**
comp=Z,228nm,1.5s
SATY *e*S **S 00 00 19.7 -2.0**
SATY *i* LRM MLR 00 26 13.6
comp=Z,6µm,15.1s
TIXI Tiksi 75.76 355 P **P 23 50 42.0 -0.1**
comp=Z,14nm,0.7s,baz=149,slow=16,SNR=2.9
TIXI Tiksi 75.76 355*c e*P **P 23 50 43.2 +1.1**
TIXI pmax pmax
comp=Z,106nm,3.3s
TIXI MLR MLR
comp=Z,43µm,20.0s
TIXI Tiksi 75.76 355 *e*P **P 23 50 42.3 +0.3**
TIXI LR LR
comp=Z,46µm,20.0s
ZALV Zalesovo Beam 75.84 328 P **P 23 50 41.6 -1.3**
comp=Z,14nm,0.8s,baz=112,slow=5.3,SNR=25
ZALV PKPPKP **P'P'df 00 17 57.1 -4.7**
comp=Z,1.2nm,0.8s,baz=318,slow=2.0,SNR=4.5
ZALV LR LR 00 22 32.0
comp=Z,110µm,21.9s,baz=124,slow=35
TDK Taldyqorghan 76.19 318 *e*P **P 23 50 43.0 -2.1**
comp=Z,119nm,0.7s
TDK *i* S **S 00 00 26.4 -2.0**
TDK *i* SS **SS 00 05 20.2 -2.1**
TDK *i* LRM MLR 00 26 49.3
comp=Z,5µm,18.5s
KSH Kashi 76.22 312 P **P 23 50 46.5 +0.9**
KSH *es*P sP 23 50 53.3 -1.1
KSH *e*PcP **PcP 23 50 59.3 +1.7**
KSH *e*PP **PP 23 53 38.8 +1.9**
KSH S **S 00 00 27.5 -1.7**
KSH ScS **SKKSac 00 00 57.5 +1.0**
KSH SS **SS 00 05 22.5 -0.7**
KSH pmax pmax
comp=Z,140nm,1.8s
KSH LR LR
comp=Z,27µm,17.8s
KSH LR LR
comp=Z,21µm,17.9s
KSH LR LR
comp=Z,52µm,22.5s
MDOK Medeo 76.52 316 *i* P **P 23 50 44.9 -2.3**
comp=Z,324nm,1.4s
MDOK *i* S **S 00 00 30.2 -2.3**
AAA Alma-Ata 76.63 316 *e*P **P 23 50 49.5 +1.8**
AAA *e*S **S 00 00 35.1 +1.6**
AAA pmax pmax
comp=Z,5µm,5.7s
AAA smax smax
comp=E,16µm,11.2s
AAA Alma-Ata 76.63 316 *e*P **P 23 50 45.5 -2.2**
AAA *e*S **S 00 00 32.0 -1.5**
AAA *i* LRM MLR 00 27 04.9
comp=E,13µm,17.5s
NVS Novosibirsk 77.07 328 *e*P **P 23 50 50.0 +0.2**
NVS pmax pmax
comp=E,278nm,1.6s
NVS pmax pmax
comp=Z,493nm,1.6s
NVS pmax pmax
comp=N,216nm,1.7s
KUU Kurty 77.24 316 *i* P **P 23 50 48.9 -2.2**
comp=N,201nm,1.4s
KUU *i* S **S 00 00 38.0 -1.9**
KUU *i* LRM MLR 00 27 37.5
comp=N,10µm,16.7s
PAF Port-aux-Franc 77.42 220 PFAKE 23 51 00.0 +8.0
PAF LR LR
comp=Z,96µm,20.0s
TKM2 Tokmak 2 77.47 315 P **P 23 50 52.1 -0.5**
TKM2 pmax pmax
comp=Z,69nm,1.1s
BMNS Besmoynak 77.47 315 *e*P **P 23 50 50.1 -2.5**
comp=Z,199nm,1.5s
BMNS *e*S **S 00 00 40.5 -2.3**
BMNS *i* LRM MLR 00 27 29.4
comp=Z,7µm,13.3s
BHJ Bhuj 77.94 295 *e*P **P 23 50 54.9 -0.6**
KURK Kurchatov 78.02 323*c e*P **P 23 50 53.4 -1.8**
KURK pmax pmax
comp=Z,495nm,1.7s
KURK MLR MLR
comp=Z,110µm,18.0s
KURK Kurchatov 78.02 323 *e*P **P 23 50 53.5 -1.7**
KURK P'P' 00 17 55.0
KURK LR LR
comp=Z,57µm,20.0s
KURBB Kurchatov Arra 78.04 323 PKPPKP **P'P'df 00 17 55.0 -3.1**
comp=Z,1.8nm,1.2s,baz=299,slow=2.8,SNR=5.5
OHAK Old Harbor 78.12 29 *e*P **P 23 50 56.7 +1.1**
FRU Bishkek 78.13 315 *e*P **P 23 50 56.0 -0.1**
AAK Ala-Archa 78.16 315 LR LR 00 25 27.0
comp=Z,39µm,21.4s,baz=90,slow=36
AAK Ala-Archa 78.16 315*c e*P **P 23 50 56.4 -0.1**
AAK pmax pmax
comp=Z,95nm,1.7s
AAK MLR MLR
comp=Z,95µm,20.0s
AAK Ala-Archa 78.16 315 P **P 23 50 57.2 +0.7**
SNR=76
AAK Ala-Archa 78.16 315 P **P 23 50 57.2 +0.7**
SNR=76
AAK Ala-Archa 78.16 315 *e*P **P 23 50 57.1 +0.7**
KDAK Kodiak Island 78.70 29 *i* P **P 23 51 01.0 +2.2**
KDAK Kodiak Island 78.70 29 *e*P **P 23 50 60.0 +1.1**
KDAK LR LR
comp=Z,10µm,20.0s
SVW2 Sparrevohn 78.86 25 *e*P **P 23 51 00.4 +0.7**
BTLS Baital 79.14 317 *i* P **P 23 50 59.6 -2.0**
comp=Z,55nm,1.5s
BTLS *i* S **S 00 00 58.7 -1.7**
BTLS *i* LRM MLR 00 28 21.8
comp=Z,6µm,17.9s
RKT Rikitea 79.49 113 *e*P **P 23 51 03.7 -0.3**
comp=Z,265nm,1.4s
RKT *e*S **S 00 00 59.9 -5.0**
comp=Z,22µm,34.0s
RKT Rikitea 79.49 113 *e*LQ LQ 00 12 25.8
comp=Z,27µm,38.8s
RKT *e*LR LR 00 15 36.9
comp=Z,22µm,42.2s
MNAS Manas 79.54 314 P **P 23 51 04.8 +0.8**
MNAS pmax pmax
comp=Z,288nm,1.3s
TT01 Tatalina 79.56 24 *e*P **P 23 51 03.4 -0.1**
TTA Tatalina 79.58 24 *e*P **P 23 51 04.1 +0.4**
TTA Tatalina 79.58 24 *e*P **P 23 51 04.1 +0.4**
RSO Redoubt South 79.80 26 *e*P **P 23 51 05.8 +0.7**
SPU Mount Spurr 80.42 26 *e*P **P 23 51 08.3 0.0**
KBL Kabul 80.44 306 *e*P **P 23 51 11.5 +2.4**
KBL Kabul 80.44 306 *e*P **P 23 51 11.5 +2.4**
SUA Susitna One 81.11 26 *e*P **P 23 51 12.0 0.0**
KK31 Karatay Array 81.11 314 *i* P **P 23 51 14.1 +1.8**
KK31 pmax pmax
comp=Z,176nm,1.3s
KKAR Karatay Array 81.11 314 *e*P **P 23 51 11.9 -0.4**
KKAR pmax pmax
comp=Z,263nm,1.4s
KKAR Karatay Array 81.11 314 *e*P **P 23 51 11.9 -0.4**
comp=Z,263nm,1.4s
SEW Seward 81.14 27 *e*P **P 23 51 13.4 +1.4**

IUG Iuzhnay 81.24 313 *e*P **P 23 51 10.7 -2.4**
comp=Z,99nm,1.5s
IUG *es*S **S 00 01 20.6 -2.2**
IUG *i* LRM MLR 00 29 58.2
comp=Z,10µm,18.0s
BRZS Berezniki 81.40 322 *e*P **P 23 51 11.3 -2.4**
BRZS *i* S **S 00 01 22.8 -1.1**
BRZS *i* LRM MLR 00 29 04.6
comp=Z,4µm,18.4s
RC01 Rabbit Creek A 81.40 27 *e*P **P 23 51 12.8 -0.6**
comp=Z,264nm,1.3s
PMR Palmer 81.87 26 *e*P **P 23 51 14.9 -0.9**
PMR Palmer 81.87 26 *e*P **P 23 51 14.9 -0.9**
TRF Thorofare Moun 82.13 24 *e*P **P 23 51 17.7 +0.3**
comp=Z,62nm,1.1s
NRIK Noril'sk 82.31 342 P **P 23 51 17.5 -0.5**
comp=Z,48nm,1.1s,baz=123,slow=5.2,SNR=26
NRIK LR LR 00 28 33.9
comp=Z,50µm,18.5s,baz=118,slow=36
SML Sawmill 82.31 26 *e*P **P 23 51 17.8 -0.4**
SML pmax pmax
comp=Z,39nm,1.0s
SML Sawmill 82.31 26 *e*P **P 23 51 17.8 -0.4**
comp=Z,40nm,1.0s
MCK McKinley 82.80 24 *e*P **P 23 51 20.6 -0.1**
MCK pmax pmax
comp=Z,385nm,1.3s
MCK McKinley 82.80 24 *e*P **P 23 51 20.6 -0.1**
comp=Z,385nm,1.3s
DIV Divide 83.21 27 *e*P **P 23 51 23.8 +0.9**
comp=Z,112nm,1.1s
BVA0 Borovoye Array 83.58 324 P **P 23 51 24.5 -0.5**
BVA0 pmax pmax
comp=Z,437nm,1.1s
BVAR Borovoye Array 83.58 324 LR LR 00 27 07.5
comp=Z,24µm,21.6s,baz=94,slow=35
BRVK Borovoye 83.65 324*c i* P **P 23 51 23.9 -1.4**
BRVK pmax pmax
comp=Z,307nm,1.0s
BRVK MLR MLR
comp=Z,48µm,19.0s
BRVK Borovoye 83.65 324 *e*P **P 23 51 25.5 +0.2**
BRVK LR LR
comp=Z,16µm,22.0s
COLA College 83.67 23 *e*P **P 23 51 25.4 +0.3**
COLA MLR MLR
comp=Z,26µm,22.0s
COLA College 83.67 23 *e*P **P 23 51 25.4 +0.3**
COLA LR LR
comp=Z,26µm,22.0s
BMRM Bremner River 83.69 28 *e*P **P 23 51 26.0 +0.6**
comp=Z,172nm,1.2s
COLD Coldfoot 83.73 21 *e*P **P 23 51 25.8 +0.3**
comp=Z,62nm,0.5s
MAW Mawson 83.75 202 P **P 23 51 24.6 -0.9**
comp=Z,20nm,0.8s,baz=101,slow=7.5,SNR=26
MAW LR LR 00 25 04.0
comp=Z,54µm,21.7s,baz=75,slow=33
MAW Mawson 83.75 202 P **P 23 51 24.8 -0.7**
baz=84,SNR=50
MAW Mawson 83.75 202 P **P 23 51 24.6 -0.9**
MAW pmax pmax
comp=Z,33nm,0.8s
MAW Mawson 83.75 202 *e*P **P 23 51 24.9 -0.7**
HDA Harding Lake 83.86 24 *e*P **P 23 51 25.6 -0.5**
PTCN Pitcairn Islan 83.94 115 PFAKE 23 51 40.0 +13
PTCN LR LR
comp=Z,8µm,20.0s
ILAR Eielson Array 84.02 24 P **P 23 51 25.5 -1.4**
comp=Z,9.4nm,0.8s,baz=250,slow=4.7,SNR=61
ILAR PKKPbc **PKKPbc 00 09 45.1 +0.5**
comp=Z,0.8nm,0.9s,baz=48,slow=1.3,SNR=3.8
ILAR PKPPKP **P'P'df 00 17 49.5 +3.0**
comp=Z,3.1nm,1.3s,baz=73,slow=1.1,SNR=6.1
ILAR LR LR 00 26 00.4
comp=Z,16µm,19.9s,baz=272,slow=34
DOT Dot Lake 84.79 25 *e*P **P 23 51 30.7 -0.3**
comp=Z,415nm,1.2s
MRIV Mauritius Mete 86.42 250 *e*P **P 23 51 39.4 -0.6**
QSPA South Pole Qui 86.44 180 *e*P **P 23 51 38.5 -0.7**
comp=Z,647nm,0.9s
DAWY Dawson 86.90 25 *e*P **P 23 51 41.2 -0.2**
comp=Z,185nm,1.2s
SKAG Skagway 87.78 30 *e*P **P 23 51 46.5 +0.9**
comp=Z,277nm,1.4s
WSAR Wadi Sarin 88.01 293 LR LR 00 35 39.1
comp=Z,7µm,18.5s,baz=120,slow=39
RER Riviere de l'E 88.02 249 *e*P **P 23 51 49.6 +1.8**
comp=Z,492nm,0.9s
RER LR LR
comp=Z,28µm,21.0s
BIDO Bidbid 88.49 294 P **P 23 51 54.0 +4.1**
SNR=19
WRAK Wrangell Islan 88.86 33 *e*P **P 23 51 52.3 +1.5**
comp=Z,185nm,1.4s
WRAK LR LR
comp=Z,21µm,21.0s
MSEY Mahe Island 89.21 265 *i* P **P 23 51 56.6 +3.1**
SNR=6.4
MSEY Mahe Island 89.21 265 PFAKE 23 52 00.0 +6.5
MSEY LR LR
comp=Z,23µm,19.0s
HOQ Hoqain 89.24 294 P **P 23 51 55.0 +1.6**
SNR=8.6
HOQ Hoqain 89.24 294 P **P 23 51 55.0 +1.6**
SNR=8.6
AB31 Akbulak array 89.39 319 *i* P **P 23 51 51.9 -1.6**
AB31 pmax pmax
comp=Z,45nm,0.8s
ABKAR Akbulak array 89.39 319 *e*P **P 23 51 51.7 -1.8**
comp=Z,44nm,0.8s
GEYT Alibeck 89.65 308 P **P 23 51 54.4 -0.7**
comp=Z,6.3nm,1.0s,baz=207,slow=1.7,SNR=23
GEYT PP **PP 23 55 32.6 +5.5**
comp=Z,36nm,1.2s,baz=131,slow=4.1,SNR=4.3
GEYT LR LR 00 33 53.2
comp=Z,35µm,20.9s,baz=115,slow=37
SVE Sverdlovsk 89.81 327 *e*P **P 23 51 55.9 +0.6**
SVE *e* 23 55 35.3
SVE *es*S **SKSac 00 02 25.0 +0.2**
SVE *e* 00 12 21.8
SVE pmax pmax
comp=Z,111nm,2.0s
SVE MLR MLR
comp=Z,34µm,19.0s
SVE MLR MLR
comp=E,29µm,19.0s
ARQ Araqi 89.95 293 P **P 23 51 59.6 +2.9**
SNR=12
ARQ Araqi 89.95 293 P **P 23 51 59.6 +2.9**
SNR=12
INK Inuvik 90.10 22 P **P 23 51 56.3 -0.1**
comp=E,6.4nm,0.9s,baz=257,slow=7.1,SNR=8.4
INK LR LR 00 28 36.1
comp=E,24µm,21.5s,baz=249,slow=33
INK Inuvik 90.10 22 P **P 23 51 56.3 -0.1**
comp=E,27nm,1.2s
BANOM Banah 90.32 296 *i* P **P 23 51 59.8 +1.4**
SNR=16
BANOM Banah 90.32 296 P **P 23 51 59.4 +1.0**
SNR=12
BANOM Banah 90.32 296 P **P 23 51 59.4 +1.0**
SNR=12
HATD Hatta, Dubai 90.40 295 *i* P **P 23 52 00.2 +1.4**
SNR=9.8
HATD Hatta, Dubai 90.40 295 P **P 23 52 01.6 +2.8**
SNR=10
HATD Hatta, Dubai 90.40 295 P **P 23 52 01.6 +2.8**
SNR=10
ASHO Ashiyiah 90.46 295 *i* P **P 23 52 01.6 +2.5**
SNR=7.2
ASHO Ashiyiah 90.46 295 P **P 23 52 00.4 +1.3**
SNR=13
ASHO Ashiyiah 90.46 295 P **P 23 52 00.4 +1.3**
SNR=13
AKTO Aktyubinsk 90.74 320 LR LR 00 34 25.1
comp=E,28µm,19.2s,baz=91,slow=37
NAZ Nazwa, Dubai 90.83 295 *i* P **P 23 52 02.2 +1.4**
SNR=9.3
NAZ Nazwa, Dubai 90.83 295 P **P 23 52 05.0 +4.2**
SNR=10.0
FAQ Al Faqa, Dubai 90.88 295 *i* P **P 23 52 03.8 +2.8**
SNR=11
FAQ Al Faqa, Dubai 90.88 295 P **P 23 52 03.4 +2.4**
SNR=14
FAQ Al Faqa, Dubai 90.88 295 P **P 23 52 03.4 +2.4**
SNR=14

ARU Arti 90.91 326 LR LR 00 34 13.1
comp=E,42µm,19.1s,baz=83,slow=37
ARU Arti 90.91 326*c i* P **P 23 52 00.8 +0.4**
ARU 23 55 38.3
ARU S **SKSac 00 02 32.2 +1.0**
ARU SP **SP 00 04 02.5 -1.2**
ARU pmax pmax
comp=Z,84nm,2.5s
ARU pmax pmax
comp=Z,530nm,10.5s
ARU MLR MLR
comp=Z,49µm,22.0s
ARU Arti 90.91 326 *e*P **P 23 52 00.8 +0.4**
comp=Z,81nm,1.3s
SYO Syowa Base 92.21 200*‖ e*P **P 23 52 05.0 -1.2**
SYO Syowa Base 92.21 200*‖ i*PcP **PcP 23 52 07.0 0.0**
NLWA Neilton Lookou 93.35 43 *e*P **P 23 52 13.2 +1.2**
comp=Z,130nm,1.3s
L02D Cave Junction, 93.40 48 P **P 23 52 08.9 -3.4**
baz=268
I03D Drain, OR 93.62 47 P **P 23 52 11.0 -2.3**
baz=269
G03D McMinnville, O 93.72 45 P **P 23 52 10.9 -2.8**
baz=269
HUMO Hull Mountain 93.89 48 *e*P **P 23 52 16.5 +1.9**
comp=Z,190nm,1.3s
F04D Rainier, OR 93.91 44 P **P 23 52 11.9 -2.7**
baz=269
M02C Callahan 93.94 49 P **P 23 52 12.4 -2.5**
baz=269
N02D Trinity Center 94.04 49 P **P 23 52 11.5 -3.9**
baz=269
A04D Lummi Island 94.16 42 P **P 23 52 13.7 -1.9**
baz=270
I04A Tendick Farm, 94.31 47 P **P 23 52 14.8 -1.7**
baz=269
J04D Umpqua Nationa 94.52 47 P **P 23 52 15.3 -2.4**
baz=270
B05A Bryant 94.56 42 P **P 23 52 12.7 -4.7**
baz=270
M04C Macdoel 94.70 49 P **P 23 52 14.3 -4.2**
baz=270
O03D Paynes Creek 94.72 50 P P 23 52 12.7 -5.8
baz=270
K04D Chiloquin, OR 94.78 48 P **P 23 52 15.5 -3.3**
baz=270
I05D Terrebonne, OR 95.08 46 P **P 23 52 16.7 -3.3**
baz=270
G05D Wamic, OR 95.10 45 P **P 23 52 16.5 -3.5**
baz=270
J05D Fort Rock, OR 95.16 47 P **P 23 52 17.6 -3.0**
baz=270
C06D Leavenworth 95.37 42 P **P 23 52 17.2 -4.0**
baz=271
CMB Columbia Colle 95.81 52 *e*P **P 23 52 24.6 +1.1**
CMB pmax pmax
comp=Z,129nm,1.5s
CMB Columbia Colle 95.81 52 *e*P **P 23 52 24.6 +1.1**
comp=Z,129nm,1.5s
SMMC Simmler 96.13 55 P **P 23 52 22.4 -2.6**
baz=270
ABPO Ambohimpanom 96.17 251 *e*P **P 23 52 23.9 -1.8**
ABPO pmax pmax
comp=Z,127nm,1.1s
ABPO MLR MLR
comp=Z,9µm,22.0s
ABPO Ambohimpanom 96.17 251 *e*P **P 23 52 23.9 -1.8**
comp=Z,128nm,1.1s
ABPO LR LR
comp=Z,9µm,22.0s
PKM Mcpherson Peak 96.28 55 P **P 23 52 22.3 -3.6**
baz=270
HAWA Hanford 96.33 44 *e*P **P 23 52 25.5 -0.1**
comp=Z,65nm,1.4s
HAWA LR LR
comp=Z,11µm,20.0s
SBC Santa Barbara 96.36 56 P **P 23 52 21.8 -4.2**
baz=270
SCZ2 Santa Cruz Isl 96.43 56 P **P 23 52 22.7 -3.7**
baz=270
SNCC San Nicolas Is 96.52 57 P **P 23 52 23.5 -3.3**
baz=270
RCTC Rector, Farmer 96.73 54 P **P 23 52 25.1 -2.5**
baz=271
VES Vestal, Richgr 96.87 54 P **P 23 52 26.2 -2.1**
baz=271
BLG Laguna Peak, P 96.90 56 P **P 23 52 24.8 -3.7**
baz=270
MLAC Mammoth, Mammo 97.04 53 P **P 23 52 26.8 -2.5**
baz=271
WVOR Wild Horse Val 97.08 48 PFAKE 23 52 40.0 +11
WVOR LR LR
comp=Z,10µm,20.0s
ARVC Arvin 97.08 55 P **P 23 52 26.4 -2.9**
baz=271
OSI Osito Audit: C 97.18 56 P **P 23 52 27.8 -2.0**
baz=271
SCI2 San Clemente I 97.34 57 P **P 23 52 28.9 -1.6**
baz=271
ISA Isabella, Lake 97.37 55 P **P 23 52 29.0 -1.7**
baz=271
CIS Catalina Islan 97.45 57 P **P 23 52 29.4 -1.6**
baz=271
DECC Green Verdugo 97.50 56 P **P 23 52 29.6 -1.6**
baz=271
TIN Tinemaha, Big 97.54 53 P **P 23 52 30.8 -0.7**
baz=271
FMP Fort Macarthur 97.55 57 P **P 23 52 29.1 -2.3**
baz=271
CWC Cottonwood Cre 97.67 54 P **P 23 52 30.0 -2.1**
baz=271
EDW2 Edwards Air Fo 97.77 55 P **P 23 52 29.4 -3.1**
baz=271
NEW Newport 97.88 42 P Pdif 23 52 32.7 0.0
comp=Z,0.8nm,0.5s,baz=287,slow=18,SNR=2.0
NEW Newport 97.88 42 P **P 23 52 30.8 -1.9**
baz=274
NEW Newport 97.88 42 P Pdif 23 52 32.7 0.0
NEW LR LR
comp=Z,13µm,20.0s
YKA Yellowknife Ar 97.92 27 P **P 23 52 31.8 -0.6**
comp=Z,1.5nm,0.9s,baz=280,slow=4.7,SNR=3.0
YKA PP **PP 23 56 31.5 +0.6**
comp=Z,2.9nm,0.9s,baz=274,slow=7.5,SNR=4.2
YKA PKKP **PKKPdf 00 09 13.4 +1.9**
comp=Z,5.8nm,0.9s,baz=99,slow=3.0,SNR=8.1
YKA LR LR 00 32 05.8
comp=Z,1µm,21.8s,baz=0.0,slow=33
BMO Blue Mountains 97.95 45 *e*P Pdif 23 52 34.2 +1.0
BMO pmax pmax
comp=Z,80nm,1.4s
BMO MLR MLR
comp=Z,16µm,21.0s
BMO Blue Mountains 97.95 45 *e*P Pdif 23 52 34.2 +1.0
comp=Z,80nm,1.4s
BMO LR LR
comp=Z,16µm,21.0s
LRMC Laurel Mtn Rad 98.02 55 P **P 23 52 31.9 -1.8**
baz=272
BFSC Mount Baldy Ra 98.06 56 P **P 23 52 31.8 -2.1**
baz=271
MPMC Manual Prospec 98.16 54 P **P 23 52 33.9 -0.5**
baz=272
GRAC Grapevine Rang 98.23 53 P **P 23 52 32.3 -2.2**
baz=272
MURC Murrieta 98.46 57 Pdiff **P 23 52 31.8 -3.8**
baz=272
109C Camp Elliot, M 98.56 57 Pdiff **P 23 52 34.0 -2.0**
baz=271
RRX Edison Barstow 98.59 55 Pdiff **P 23 52 33.7 -2.5**
baz=272
FURC Furnace Creek, 98.65 54 Pdiff P 23 52 29.5 -6.8
baz=272
BBRC Big Bear Solar 98.67 56 Pdiff P 23 52 29.6 -7.2
baz=272
GSC Goldstone, Bar 98.74 55 Pdiff P 23 52 30.8 -6.1
baz=272
PFO Pinyon Flats O 99.08 57 PFAKE 23 52 50.0 +12
PFO LR LR
comp=Z,15µm,22.0s
TPFO Pinon Flats 99.08 57 Pdiff **Pdif 23 52 35.3 -3.2**
baz=272
GROC Groznyy 99.08 313 *e*P **Pdif 23 52 38.2 +0.1**
GROC *e* 23 56 42.2
GROC pmax pmax
comp=Z,61nm,1.5s
TPNV Topopah Spring 99.12 53 Pdiff **Pdif 23 52 33.8 -4.8**
baz=273

MONP2	**Monument Peak**	**99.13**	**57**	Pdiff	**Pdif**		**23 52 32.8**	**-6.0**
	baz=272									
HEC	**Hector,Ludlow**	**99.14**	**55**	Pdiff	**Pdif**		**23 52 34.8**	**-3.9**
	baz=272									
SHOC	**Shoshone, Teco**	**99.15**	**54**	Pdiff	**Pdif**		**23 52 35.5**	**-3.1**
	baz=272									
IKP	**In-Ko-Pah, Jac**	**99.40**	**58**	Pdiff	**Pdif**		**23 52 36.7**	**-3.2**
	baz=272									
BELC	**Belle Mtn. Jos**	**99.45**	**56**	Pdiff	**Pdif**		**23 52 36.9**	**-3.3**
	baz=272									
TUQ	**Turquoise Moun**	**99.45**	**55**	Pdiff	**Pdif**		**23 52 37.6**	**-2.5**
	baz=272									
R11A	**Troy Canyon, C**	**99.58**	**52**	Pdiff	**Pdif**		**23 52 36.4**	**-4.3**
	baz=273									
SWSC	**Sam W. Stewart**	**99.65**	**57**	Pdiff	**Pdif**		**23 52 38.9**	**-2.0**
	baz=272									
GMRC	**Granite Mounta**	**99.69**	**55**	Pdiff	**Pdif**		**23 52 38.8**	**-2.4**
	baz=272									
NVL	**N'lazarevskaya**	**99.71**	**194**	*eP*	**Pdif**		**23 52 45.9**	**+5.6**
NVL				*e*			23 56 49.7			
BC3	**Big Chuckawall**	**99.91**	**57**	Pdiff	**Pdif**		**23 52 40.1**	**-2.1**
	baz=272									
TBLG	**Delisi**	**99.96**	**312**	P	**Pdif**		**23 52 45.2**	**+3.1**
TBLG	**Delisi**	**99.96**	**312**	P	**Pdif**		**23 52 45.2**	**+3.1**
GNI	**Garni**	**100.07**	**310**	*i* P	**Pdif**		**23 52 44.8**	**+2.0**
	SNR=11									
GNI	**Garni**	**100.07**	**310**	Pdiff	**Pdif**		**23 52 47.1**	**+4.3**
	SNR=12									
GNI	**Garni**	**100.07**	**310**	PFAKE			23 52 50.0	+7.2		
GNI				LR	LR					
	comp=Z,10µm,22.0s									
GUDG	**Gudauri**	**100.10**	**312**	P	**Pdif**		**23 52 46.6**	**+3.6**
HLID	**Hailey**	**100.11**	**47**	Pdiff	**Pdif**		**23 52 39.3**	**-3.6**
	baz=275									
MSO	**Missoula**	**100.14**	**43**	Pdiff	**Pdif**		**23 52 39.5**	**-3.4**
	baz=276									
HOPEN	**Hopen**	**100.15**	**348**	*eP*	**Pdif**		**23 52 43.0**	**+0.9**
HOPEN				IVMs_BB	IVMs_BB		00 39 38.3			
	comp=Z,8µm,20.8s									
IRM	**Iron Mountain**	**100.15**	**56**	Pdiff	**Pdif**		**23 52 38.2**	**-4.9**
	baz=273									
GLA	**Glamis**	**100.46**	**57**	Pdiff	**Pdif**		**23 52 39.0**	**-5.5**
	baz=273									
ZEI	**Tsey**	**100.50**	**313**	*eP*	**Pdif**		**23 52 44.9**	**+0.2**
ZEI				pmax	pmax					
	comp=Z,95nm,1.3s									
KLMR	**Klimovskoe**	**100.56**	**331**	*eP*	**Pdif**		**23 52 42.6**	**-1.6**
KLMR				pmax	pmax					
	comp=Z,79nm,1.2s									
Y12C	**Blythe**	**100.68**	**56**	Pdiff	**Pdif**		**23 52 42.0**	**-3.4**
	baz=273									
LVZ	**Lovozero**	**100.81**	**339⇓**	*eP*	**Pdif**		**23 52 43.9**	**-1.4**
LVZ				pmax	pmax					
	comp=Z,14nm,1.0s									
LVZ				MLR	MLR					
	comp=Z,24µm,19.0s									
LVZ	**Lovozero**	**100.81**	**339**	PFAKE			23 53 00.0	+15		
LVZ				LR	LR					
	comp=Z,26µm,20.0s									
EAK	**Akyaka**	**100.90**	**311**	*i* P	**PP**		**23 56 54.8**	**+0.3**
GOF	**Gofitskoye**	**100.90**	**315⇑**	*eP*	**Pdif**		**23 52 49.0**	**+2.9**
GOF				pmax	pmax					
	comp=Z,72nm,1.6s									
AKH	**Akhalkalaki**	**100.92**	**311⇓**	*i* P	**PP**		**23 56 55.0**	**+0.3**
AKH	**Akhalkalaki**	**100.92**	**311**	P	**Pdif**		**23 52 50.1**	**+3.6**
AKH	**Akhalkalaki**	**100.92**	**311**	P	**Pdif**		**23 52 50.1**	**+3.6**
DYDN	**Diyadin**	**100.93**	**309**	*i* P	**PP**		**23 56 53.7**	**-1.1**
PDMCI	**Parker Dam,Lak**	**100.97**	**56**	Pdiff	**Pdif**		**23 52 42.2**	**-4.5**
	baz=273									
VRH	**Novokhopyorsk**	**101.02**	**321**	*eP*	**Pdif**		**23 52 48.4**	**+1.9**
VRH				*e*SP	SP		00 05 47.6	-6.7		
VRH				pmax	pmax					
	comp=Z,9.0nm,0.4s									
VRH				pmax	pmax					
	comp=Z,20nm,0.6s									
KBS	**Kingsbay**	**101.03**	**352**	*eP*	**Pdif**		**23 52 44.4**	**-1.7**
KBS				IVMs_BB	IVMs_BB		00 47 50.8			
	comp=Z,6µm,17.4s									
KBS	**Kingsbay**	**101.03**	**352**	PFAKE			23 53 00.0	+14		
KBS				LR	LR					
	comp=Z,17µm,19.0s									
DIGO	**Kars**	**101.10**	**310**	*i* P	PP		23 56 48.0	-8.1		
KBZ	**Khabaz**	**101.14**	**314**	P	**Pdif**		**23 52 46.8**	**-0.4**
	comp=Z,1.2nm,0.7s,baz=107,slow=4.4,SNR=8.5									
TVAN	**Van**	**101.22**	**308**	*i* P	**PP**		**23 56 58.2**	**+1.1**
KVAR	**Kislovodsk Arr**	**101.26**	**314**	PP	PP		23 56 56.8	-0.3		
	comp=Z,62nm,1.3s,baz=201,slow=3.1,SNR=1.8									
KIV	**Kislovodsk**	**101.27**	**314***c*	*i* P	**Pdif**		**23 52 50.6**	**+2.7**
KIV				*i*			23 56 58.9			
KIV				*i* S	**SKSac**		**00 03 27.6**	**+1.1**
KIV				*i*			00 05 53.4			
KIV				*i* SS	**SS**		**00 11 29.4**	**+2.4**
KIV				*i* SSS	SSS		00 15 16.1			
KIV				pmax	pmax					
	comp=Z,19nm,1.6s									
KIV				MLR	MLR					
	comp=Z,19µm,23.0s									
KIV	**Kislovodsk**	**101.27**	**314**	PFAKE			23 53 00.0	+12		
KIV				LR	LR					
	comp=Z,16µm,22.0s									
APA	**Apatity**	**101.36**	**339⇑**	*i* P	**Pdif**		**23 52 54.2**	**+6.5**
APA				*i*			23 56 59.0			
APA				*i*			00 03 25.0			
APA				*i*			00 04 14.0			
APA				*i* PS	**PS**		**00 06 03.0**	**+2.7**
APA				*i* SS	SS		00 11 36.0	+9.3		
APA				pmax	pmax					
	comp=Z,18nm,0.9s									
APA				MLR	MLR					
	comp=Z,34µm,24.0s									
EPOS	**Posof**	**101.48**	**311**	*i* P	**PP**		**23 56 57.1**	**-1.8**
GEVA	**Gevas**	**101.51**	**308**	*i* P	**PP**		**23 56 57.1**	**-2.2**
DUG	**Dugway, Tooele**	**101.59**	**50**	Pdiff	**Pdif**		**23 52 44.2**	**-5.4**
	baz=275									
DUG	**Dugway, Tooele**	**101.59**	**50**	PFAKE			23 53 00.0	+10		
DUG				LR	LR					
	comp=Z,12µm,19.0s									
TUTA	**Tutak**	**101.61**	**309**	*i* P	**PP**		**23 56 54.8**	**-5.2**
HSPB	**Hornsund (broa**	**101.70**	**350**	*eP*	**Pdif**		**23 52 52.2**	**+3.2**
HSPB				*e*PP	**PP**		**23 56 58.6**	**-0.6**
HSPB				IVMs_BB	IVMs_BB		00 46 58.2			
	comp=Z,6µm,20.3s									
BOZ	**Bozeman (W)**	**101.87**	**44**	Pdiff	**Pdif**		**23 52 45.1**	**-5.6**
	baz=277									
BOZ	**Bozeman (W)**	**101.87**	**44**	PFAKE			23 53 00.0	+9.3		
BOZ				LR	LR					
	comp=Z,12µm,21.0s									
SIRN	**S¨¨rnak**	**102.09**	**307**	*i* P	**PP**		**23 56 55.9**	**-7.6**
SNAA	**Sanae**	**102.09**	**190**	P	**Pdif**		**23 52 55.7**	**+4.7**
ARTV	**Artvin**	**102.12**	**311**	*i* P	**PP**		**23 56 57.3**	**-6.5**
TATV	**Tatvan**	**102.12**	**308**	*i* P	**PP**		**23 56 59.3**	**-4.5**
EKAR	**Karacoban**	**102.20**	**309**	*i* P	PP		23 57 15.1	+11		
214A	**Organ Pipe Nat**	**102.22**	**58**	Pdiff	**Pdif**		**23 52 48.4**	**-3.9**
	baz=274									
HOMI	**Horasan**	**102.25**	**310**	*i* P	PP		23 56 55.9	-8.9		
DDEM	**Demirkent**	**102.28**	**311**	*i* P	**PP**		**23 56 58.2**	**-6.7**
DBOC	**Borcka**	**102.30**	**311**	*i* P	**PP**		**23 57 01.6**	**-3.3**
RPN	**Rapa Nui**	**102.31**	**119**	PFAKE			23 53 00.0	+7.2		
RPN				LR	LR					
	comp=Z,3µm,22.0s									
HWUT	**Hardware Ranch**	**102.39**	**48**	PFAKE			23 53 10.0	+17		
HWUT				LR	LR					
	comp=Z,18µm,21.0s									
BJO	**Bjornoya**	**102.45**	**347**	IVMs_BB	IVMs_BB		00 41 22.2			
	comp=Z,9µm,18.7s									
AHID	**Auburn Hatcher**	**102.60**	**47**	PFAKE			23 53 10.0	+16		
AHID				LR	LR					
	comp=Z,15µm,22.0s									
VSR	**Storozhevoye**	**102.61**	**322**	*eP*	**Pdif**		**23 52 55.7**	**+2.1**
VSR				*i*			23 57 06.5			
VSR				pmax	pmax					
	comp=Z,10.0nm,1.5s									
VSR				pmax	pmax					
	comp=Z,460nm,3.8s									
VSR				MLR	MLR					
	comp=Z,33µm,18.0s									
MOS	**Moscow**	**102.62**	**326**	*eP*	**Pdif**		**23 52 52.5**	**-1.0**
MOS				*e*			23 57 07.0			
MOS				*e*			00 03 36.7			
MOS				*e*			00 04 38.0			
MOS				*e*PS	**PS**		**00 06 08.7**	**-5.4**
MOS				*i* SS	SS		00 11 47.1	+2.4		
MOS				pmax	pmax					
	comp=Z,39nm,1.0s									
MOS				pmax	pmax					
	comp=Z,600nm,3.8s									
MOS				MLR	MLR					
	comp=Z,30µm,22.0s									
MOS				MLR	MLR					
	comp=E,20µm,21.0s									
MOS				MLR	MLR					
	comp=N,6µm,19.0s									
KEV	**Kevo**	**102.71**	**342**	PFAKE			23 53 00.0	+6.4		
KEV				LR	LR					
	comp=Z,34µm,22.0s									
H17A	**Grant Village**	**102.77**	**45**	Pdiff	**Pdif**		**23 52 49.7**	**-5.2**
	baz=278									
EGMT	**Eagleton**	**102.81**	**42**	Pdiff	**Pdif**		**23 52 50.0**	**-4.7**
	baz=279									
EGMT	**Eagleton**	**102.81**	**42**	PFAKE			23 53 10.0	+15		
EGMT				LR	LR					
	comp=Z,11µm,21.0s									
LKWY	**Lake**	**102.88**	**45**	PFAKE			23 53 10.0	+15		
LKWY				LR	LR					
	comp=Z,23µm,21.0s									
BNGL	**BINGOL**	**102.94**	**309**	*i* P	**PP**		**23 57 07.9**	**-2.1**
BTMN	**Batman**	**102.96**	**308**	*i* P	**PP**		**23 57 13.4**	**+3.4**
WUAZ	**Wupatki**	**103.15**	**54**	Pdiff	**Pdif**		**23 52 51.2**	**-5.4**
	baz=275									
WUAZ	**Wupatki**	**103.15**	**54**	PFAKE			23 53 10.0	+13		
WUAZ				LR	LR					
	comp=Z,11µm,21.0s									
ARCES	**ARCESS Array B**	**103.28**	**342**	Pdiff	**Pdif**		**23 52 54.5**	**-1.7**
	comp=Z,3.6nm,0.9s,baz=350,slow=6.2,SNR=8.7									
ARE0	**ARCESS Array S**	**103.28**	**342**	*eP*	**Pdif**		**23 52 56.5**	**+0.3**
ARE0				*e*PP	**PP**		**23 57 05.5**	**-5.7**
ARE0				*e*SKSac	**SKSac**		**00 03 36.4**	**+1.6**
ARE0				*e*SS	**SS**		**00 11 53.1**	**0.0**
ARE0				IVMs_BB	IVMs_BB		00 40 15.8			
	comp=Z,12µm,22.5s									
HAMF	**Hammerfest**	**103.31**	**343**	*eP*	**Pdif**		**23 52 57.6**	**+1.4**
HAMF				*e*PP	**PKiKP**		**23 57 13.7**	**-1.7**
HAMF				*e*SKSac	**SKSac**		**00 03 35.2**	**+0.4**
HAMF				*e*SS	**SS**		**00 11 54.1**	**+0.7**
HAMF				IVMs_BB	IVMs_BB		00 42 51.3			
	comp=Z,15µm,19.5s									
KOPT	**Kop Dagi**	**103.33**	**310**	*i* P	**PP**		**23 57 08.3**	**-4.6**
OBN	**Obninsk**	**103.35**	**326⇑**	*i* P	**Pdif**		**23 52 58.2**	**+1.5**
OBN				*i*			23 57 16.3			
OBN				*i* S	**SKSac**		**00 03 34.3**	**-1.2**
OBN				*i*			00 06 17.8			
OBN				*i* SS	**SS**		**00 11 56.5**	**+1.8**
OBN				pmax	pmax					
	comp=Z,34nm,2.1s									
OBN				MLR	MLR					
	comp=Z,24µm,18.0s									
OBN	**Obninsk**	**103.35**	**326**	PFAKE			23 53 10.0	+13		
OBN				LR	LR					
	comp=Z,24µm,20.0s									
MARD	**Mardin**	**103.40**	**307**	*i* P	PP		23 57 02.7	-11		
SOC	**Sochi**	**103.45**	**314**	*eP*	**Pdif**		**23 52 57.6**	**+0.1**
SOC				*e*			23 57 08.4			
SOC				pmax	pmax					
	comp=Z,28nm,1.1s									
RLMT	**Red Lodge**	**103.59**	**45**	Pdiff	**Pdif**		**23 52 54.0**	**-4.4**
	baz=279									
RLMT	**Red Lodge**	**103.59**	**45**	PFAKE			23 53 10.0	+12		
RLMT				LR	LR					
	comp=Z,13µm,22.0s									
BW06	**Boulder Array**	**103.73**	**47**	Pdiff	**Pdif**		**23 52 53.6**	**-5.5**
	baz=276									
BW06	**Boulder Array**	**103.73**	**47**	PFAKE			23 53 10.0	+11		
BW06				LR	LR					
	comp=Z,14µm,22.0s									
PDAR	**Pinedale Array**	**103.73**	**47**	Pdiff	**Pdif**		**23 53 00.5**	**+1.3**
	comp=Z,0.8nm,1.0s,baz=153,slow=0.7,SNR=4.6									
PDAR				PP	**PP**		**23 57 15.2**	**-0.6**
	comp=Z,0.9nm,1.0s,baz=224,slow=2.5,SNR=3.1									
PDAR				PKKP	**PKKPdf**		**00 08 57.5**	**-3.3**
	comp=Z,1.7nm,1.0s,baz=108,slow=2.9,SNR=4.6									
MACK	**Trabzon**	**103.77**	**311**	*i* P	**PP**		**23 57 11.7**	**-4.1**
DIYA	**Diyarbakir**	**103.86**	**308**	*i* P	**PP**		**23 57 11.7**	**-5.0**
VNA1	**Neumayer--Stat**	**103.86**	**189**	P	**Pdif**		**23 53 06.2**	**+7.5**
TUC	**Tucson**	**103.91**	**58**	Pdiff	**Pdif**		**23 52 57.4**	**-2.6**
	baz=275									
TUC	**Tucson**	**103.91**	**58**	PFAKE			23 53 10.0	+10		
TUC				LR	LR					
	comp=Z,19µm,22.0s									
EUZM	**Uzumlu**	**103.98**	**310**	*i* P	**PP**		**23 57 19.6**	**+2.1**
TNCL	**Tunceli-Merkez**	**104.17**	**309**	*i* P	**PP**		**23 57 15.1**	**-3.9**
KELT	**Kelkit**	**104.26**	**310**	*i* P	**PP**		**23 57 16.3**	**-3.5**
W18A	**Petrified Fore**	**104.52**	**55**	Pdiff	**Pdif**		**23 52 57.2**	**-5.5**
	baz=276									
REFA	**Refahiye_ERZ¨**	**104.73**	**310**	*i* P	**PP**		**23 57 23.0**	**-0.2**
ANN	**Anapa'**	**104.88**	**315**	*i* P	**Pdif**		**23 53 04.7**	**+0.9**
ANN				*e*			23 57 20.4			
ANN				*e*SS	SS		00 12 12.0	-4.5		
ANN				pmax	pmax					
	comp=Z,103nm,1.5s									
KEMA	**Kemaliye**	**104.96**	**310**	*i* P	PP		23 57 10.6	-14		
O20A	**White River Ci**	**105.08**	**49**	PKiKP	**PKiKP**		**23 57 14.8**	**-5.0**
	baz=278									
ORDU	**Ordu-Boztepe**	**105.19**	**311**	*i* P	**PP**		**23 57 21.9**	**-4.5**
TRO	**Tromso**	**105.23**	**343**	*eP*	**Pdif**		**23 53 06.2**	**+1.4**
TRO				*e*PP	**PKiKP**		**23 57 22.1**	**+3.2**
TRO				*e*SKSac	**SKSac**		**00 03 45.2**	**+1.6**
TRO				*e*SS	**SS**		**00 12 20.3**	**+0.7**
TRO				IVMs_BB	IVMs_BB		00 40 17.2			
	comp=Z,19µm,23.4s									
MVCO	**Mesa Verde**	**105.28**	**53**	PKiKP	**PKiKP**		**23 57 14.6**	**-5.6**
	baz=277									
MVCO	**Mesa Verde**	**105.28**	**53**	PFAKE			23 57 30.0			
MVCO				LR	LR					
	comp=Z,11µm,19.0s									
LAO	**LASA Array**	**105.41**	**43**	PKiKP	**PKiKP**		**23 57 15.6**	**-4.4**
	baz=282									
LAO	**LASA Array**	**105.41**	**43**	PFAKE			23 57 30.0			
LAO				LR	LR					
	comp=Z,15µm,19.0s									
CUKAN	**kangal_SIVAS**	**105.74**	**310**	*i* P	**PP**		**23 57 33.2**	**+2.5**
SCER	**sogukcermik**	**105.92**	**310**	*i* P	**PP**		**23 57 30.9**	**-1.0**
K22A	**Casper**	**105.96**	**47**	PKiKP	**PKiKP**		**23 57 15.3**	**-5.9**
	baz=280									
FFC	**Flin Flon**	**106.04**	**34**	PFAKE			23 57 30.0			
FFC				LR	LR					
	comp=Z,17µm,20.0s									
CUALT	**Altinyayla-SIV**	**106.29**	**310**	*i* P	**PP**		**23 57 38.3**	**+3.5**
TOKA	**Tokat**	**106.33**	**311**	*i* P	**PP**		**23 57 29.8**	**-5.1**
DGMT	**Dagmar**	**106.36**	**40**	PKiKP	**PKiKP**		**23 57 15.8**	**-5.9**
	baz=284									
DGMT	**Dagmar**	**106.36**	**40**	PFAKE			23 57 30.0			
DGMT				LR	LR					
	comp=Z,14µm,21.0s									
SAMS	**Samsun-Alacam**	**106.38**	**312**	*i* P	**PP**		**23 57 30.9**	**-4.2**
KUZU	**Kuzuini**	**106.41**	**307**	*i* P	PP		23 57 26.4	-9.2		
121A	**Cookes Peak, D**	**106.42**	**57**	PKiKP	**PKiKP**		**23 57 16.0**	**-6.4**
	baz=276									
S22A	**4UR Ranch, Cre**	**106.52**	**52**	PKiKP	**PKiKP**		**23 57 16.9**	**-5.7**
	baz=276									
FINES	**FINESS Array B**	**106.56**	**334**	Pdiff	**Pdif**		**23 53 12.3**	**+1.3**
	comp=Z,1.8nm,0.9s,baz=140,slow=22,SNR=4.3									
FINES				PKiKP	**PKiKP**		**23 57 20.7**	**-0.9**
	comp=Z,4.8nm,1.1s,baz=110,slow=2.5,SNR=2.7									
CUSAR	**Sarkisla-SIVAS**	**106.66**	**310**	*i* P	**PP**		**23 57 38.3**	**+0.8**
N23A	**Red Feather La**	**106.69**	**48**	PKiKP	**PKiKP**		**23 57 16.4**	**-6.4**
	baz=280									
HAVZ	**Havza**	**106.78**	**312**	*i* P	PP		23 57 25.3	-13		
ANDN	**Andirin**	**106.87**	**308**	*i* P	PP		23 57 22.4	-17		
Y22D	**IRIS PASSCAL I**	**106.95**	**56**	PKiKP	**PKiKP**		**23 57 19.5**	**-3.8**
	baz=278									
ISCO	**Idaho Springs**	**107.13**	**49**	PKiKP	**PKiKP**		**23 57 21.2**	**-2.5**
	baz=280									
ISCO	**Idaho Springs**	**107.13**	**49**	PFAKE			23 57 40.0			
ISCO				LR	LR					
	comp=Z,14µm,20.0s									
C25A	**Freed Ranch, W**	**107.16**	**41**	PKiKP	**PKiKP**		**23 57 20.1**	**-3.0**
	baz=284									
SIM	**Simferopol'**	**107.17**	**316**	*eP*	**Pdif**		**23 53 26.1**	**+12**
SIM				*i*			23 57 45.7			
SIM				*e*			00 03 53.0			
SIM				*i* PPS	PPS		00 07 56.0			
ANMO	**Albuquerque**	**107.22**	**55**	PKiKP	**PKiKP**		**23 57 20.3**	**-3.5**
	baz=278									
ANMO	**Albuquerque**	**107.22**	**55**	PFAKE			23 57 40.0			
ANMO				LR	LR					
	comp=Z,9µm,20.0s									
RSSD	**Black Hills**	**107.45**	**45**	PKiKP	**PKiKP**		**23 57 21.0**	**-3.0**
	baz=282									
COAL	**Corum-Alaca**	**107.47**	**311**	*i* P	**PP**		**23 57 43.8**	**+0.4**
CTAK	**Corum_Osmancik**	**107.54**	**311**	*i* P	**PP**		**23 57 45.0**	**+1.1**
YAHY	**KAYSERI_Yahyal**	**107.56**	**309**	*i* P	**PP**		**23 57 43.4**	**-0.7**
SDCO	**Great Sand Dun**	**107.56**	**52**	PKiKP	**PKiKP**		**23 57 20.6**	**-3.9**
	baz=280									
SDCO	**Great Sand Dun**	**107.56**	**52**	PFAKE			23 57 40.0			
SDCO				LR	LR					
	comp=Z,20µm,22.0s									
KMBO	**Kilima Mbogo**	**107.60**	**268**	Pdiff	**Pdif**		**23 53 14.8**	**-2.1**
	comp=Z,0.5nm,0.2s,baz=89,slow=4.5,SNR=2.2									
KMBO				PP	**PP**		**23 57 44.8**	**-0.5**
	comp=Z,0.4nm,0.3s,baz=49,slow=19,SNR=2.6									
KMBO	**Kilima Mbogo**	**107.60**	**268**	Pdif	**Pdif**		**23 53 14.8**	**-2.1**
KMBO				PP	**PP**		**23 57 44.8**	**-0.5**
KMBO				LR	LR					
	comp=Z,13µm,22.0s									
Q24A	**Divide**	**107.63**	**50**	PKiKP	**PKiKP**		**23 57 21.4**	**-3.2**
	baz=280									
H25A	**Fruitdale**	**107.65**	**44**	PKiKP	**PKiKP**		**23 57 20.0**	**-4.2**
	baz=283									
LOF	**Lofoten**	**107.69**	**343**	*eP*	PP		23 57 45.2	+1.4		
LOF				IVMs_BB	IVMs_BB		00 40 35.0			
	comp=Z,12µm,23.5s									
AVNS	**Nevsehir-Avano**	**107.83**	**310**	*i* P	**PP**		**23 57 47.4**	**+1.4**
CDAG	**Cicekdag**	**108.05**	**310**	*i* P	**PP**		**23 57 42.9**	**-4.7**
ILGA	**Ilgaz**	**108.27**	**312**	*i* P	**PP**		**23 57 43.4**	**-5.9**
MMAI	**Mount Meron Ar**	**108.29**	**304**	PKiKP	**PKiKP**		**23 57 26.4**	**+0.7**
	comp=Z,1.6nm,0.8s,baz=29,slow=3.3,SNR=2.0									
MICGM	**Minsk**	**108.33**	**327**	*eP*	**Pdif**		**23 53 22.0**	**+3.1**
MICGM				*e*PP	**PP**		**23 57 52.0**	**+3.1**
MICGM				PPM			23 57 56.0			
	comp=Z,2.7nm,6.0s									
MICGM				*e*PPP	PPP		00 00 20.0			
MICGM				*e*SKS	**SKSac**		**00 04 00.0**	**+2.1**
MICGM				*e*SKKS	**SKKSac**		**00 04 52.0**	**+0.1**
MICGM				*e*SKKKS			00 05 28.0			
MICGM				*e*PS	**PS**		**00 07 14.0**	**+0.5**
MICGM				*e*SS	**SS**		**00 13 02.0**	**-0.6**
MICGM				*e*SSS	SSS		00 17 04.0			
MICGM				*e*LQ	LQ		00 25 12.0			
MICGM				LQM			00 36 16.0			
	comp=E,47nm,24.0s									
MICGM				LQM			00 36 20.0			
	comp=E,18nm,22.0s									
MICGM				LQM			00 36 36.0			
	comp=N,20nm,20.0s									
MICGM				*e*LR	LR		00 41 00.0			
MICGM				LRM	MLR		00 45 40.0			
	comp=Z,58nm,18.0s									
MICGM				LRM	MLR		00 45 45.0			
	comp=Z,22nm,19.0s									
MICGM				LRM	MLR		00 46 40.0			
	comp=E,27nm,18.0s									
MICGM				LRM	MLR		00 46 50.0			
	comp=E,16nm,18.0s									
MNK	**Minsk**	**108.33**	**327**	*eP*	**Pdif**		**23 53 22.0**	**+3.1**
MNK				*e*			23 57 52.0			
MNK				*e*			00 04 00.0			
MNK				*e*PS	**PS**		**00 07 14.0**	**+0.5**
MNK				*e*SS	SS		00 13 02.0	-0.6		
MNK				*e*SSS	SSS		00 17 04.0			
MNK				pmax	pmax					
	comp=Z,3µm,6.0s									
MNK				MLR	MLR					
	comp=Z,59µm,18.0s									
MNK				MLR	MLR					
	comp=Z,22µm,19.0s									
T25A	**Trinidad**	**108.52**	**52**	PKiKP	**PKiKP**		**23 57 23.1**	**-3.2**
	baz=280									
MNTX	**Cornudas Mount**	**108.54**	**58**	PKiKP	**PKiKP**		**23 57 23.9**	**-2.3**
	baz=278									
MNTX	**Cornudas Mount**	**108.54**	**58**	PFAKE			23 57 40.0			
MNTX				LR	LR					
	comp=Z,12µm,22.0s									
BRTR	**Keskin Array B**	**108.59**	**311**	Pdiff	**Pdif**		**23 53 18.5**	**-2.1**
	comp=Z,0.3nm,0.8s,baz=334,slow=14,SNR=3.6									
BRTR				PKiKP	**PKiKP**		**23 57 27.3**	**+1.1**
	comp=Z,2.2nm,1.0s,baz=139,slow=8.8,SNR=5.2									
ELDT	**Eldivan**	**108.59**	**312**	*i* P	**PP**		**23 57 53.5**	**+1.9**
PMSA	**Palmer Station**	**108.61**	**167**	PFAKE			23 57 40.0			
PMSA				LR	LR					
	comp=Z,14µm,19.0s									
KERG	**Konya-Eregli**	**108.64**	**308**	*i* P	**PP**		**23 57 44.5**	**-7.5**
AKSY	**AKSARAY - Alti**	**108.70**	**310**	*i* P	**PP**

	comp=Z,4µm,19.3s								
B31A	**Greenbush Farm**	110.56	39	PKiKP	**PKiKP**	**23 57 28.2**	**-1.2**
	baz=289								
A31A	**Linda, St. Vin**	110.69	39	PKiKP	**PKiKP**	**23 57 30.9**	**+1.2**
	baz=290								
C31A	**Landman Farms,**	110.71	40	PKiKP	**PKiKP**	**23 57 29.9**	**+0.1**
	baz=289								
ESKT	**Eskisehir**	110.73 311		*i* P		**PKiKP**	**23 57 30.9**	**+0.7**
TLCR		110.74 317	⇑	*i*P		**PKiKP**	**23 57 36.6**	**+6.7**
TLCR		110.74 317	⇑	PKiKP		**PKiKP**	**23 57 36.6**	**+6.7**
BOLV	**Bolvadin**	110.84 310		*i* P		PP	23 57 55.0	-13
J30A	**Dallas**	110.84	45	PKiKP		**PKiKP**	**23 57 28.7**	**-1.5**
	baz=286								
KAND	**Kocaeli-Kandir**	110.85 313		*i* P		**PP**	**23 58 00.3**	**-7.4**
SUSD	**Miller**	110.90	44	PKiKP		**PKiKP**	**23 57 30.3**	**0.0**
	baz=286								
BORA	**Eskisehir**	110.95 311		*i* P		PP	23 57 58.0	-11
D31A	**Mcclaflin, Tow**	110.95	41	PKiKP		**PKiKP**	**23 57 26.2**	**-4.0**
	baz=288								
F31A	**Hecla**	110.97	42	PKiKP		**PKiKP**	**23 57 28.3**	**-2.0**
	baz=288								
SUMG	**Summit**	110.99	1	*e*		**PP**	**23 58 08.2**	**+0.2**
SUMG	**Summit**	110.99	1	*e*		**PP**	**23 58 08.2**	**+0.2**
E31A	**Nome**	111.00	41	PKiKP		**PKiKP**	**23 57 27.3**	**-3.0**
	baz=288								
ULM	**Lac du Bonnet**	111.03	37	PKiKP		**PKiKP**	**23 57 32.0**	**+1.7**
	comp=Z,1.5nm,0.5s,baz=121,slow=2.5,SNR=3.0								
AMTX	**Amarillo**	111.10	54	PKiKP		**PKiKP**	**23 57 28.3**	**-2.7**
	baz=281								
A32A	**Rocking H Ranc**	111.12	38	PKiKP		**PKiKP**	**23 57 27.2**	**-3.3**
	baz=290								
G31A	**Conde**	111.19	43	PKiKP		**PKiKP**	**23 57 28.7**	**-2.0**
	baz=287								
CFR	**Carcaliu**	111.20 317	⇑	*i*P		**PKiKP**	**23 57 29.9**	**-0.8**
CFR	**Carcaliu**	111.20 317	⇑	PKiKP		**PKiKP**	**23 57 29.9**	**-0.8**
H31A	**Wolsey**	111.22	43	PKiKP		**PKiKP**	**23 57 29.2**	**-1.7**
	baz=287								
TIRR	**Tirgusor**	111.22 317	⇑	*i*P		**PKiKP**	**23 57 38.1**	**+7.3**
TIRR	**Tirgusor**	111.22 317	⇑	PKiKP		**PKiKP**	**23 57 38.1**	**+7.3**
B32A	**Ashes, Strandq**	111.27	39	Pdiff		**Pdif**	**23 53 31.8**	**-0.4**
	baz=290								
ISP	**Isparta**	111.36 309		PFAKE			23 57 40.0		
ISP				LR		LR			
	comp=Z,12µm,21.0s								
J31A	**Geddes**	111.38	45	Pdiff		**Pdif**	**23 53 30.0**	**-2.8**
	baz=286								
TLB	**Topalu**	111.44 317	⇑	*i*P		**PKiKP**	**23 57 32.5**	**+1.3**
TLB	**Topalu**	111.44 317	⇑	PKiKP		**PKiKP**	**23 57 32.5**	**+1.3**
HARR	**Harsova**	111.49 317	⇑	*i*P		**PKiKP**	**23 57 36.4**	**+5.1**
HARR	**Harsova**	111.49 317	⇑	PKiKP		**PKiKP**	**23 57 36.4**	**+5.1**
E32A	**Braaten, Kindr**	111.52	41	Pdiff		**Pdif**	**23 53 34.9**	**+1.5**
	baz=289								
G32A	**Webster**	111.66	42	Pdiff		**Pdif**	**23 53 35.2**	**+1.1**
	baz=288								
AGMN	**Agassiz Nation**	111.73	39	PFAKE			23 57 40.0		
AGMN				LR		LR			
	comp=Z,18µm,21.0s								
TESR	**Tescani**	111.78 319	⇓	*i*P		**PKiKP**	**23 57 33.2**	**+1.4**
TESR	**Tescani**	111.78 319	⇓	*i*P		**PKKPbc**	**00 08 27.1**	**+0.6**
CBKS	**Cedar Bluff**	111.79	50	PFAKE			23 57 40.0		
CBKS				LR		LR			
	comp=Z,14µm,20.0s								
N31A	**Bailey Ranch,**	111.88	47	Pdiff		**Pdif**	**23 53 36.3**	**+1.1**
	baz=285								
VRI	**Vrincioaia**	111.93 318	⇑	*i*P		**PKKPbc**	**00 08 26.3**	**+0.3**
J32A	**Parkston**	111.98	44	Pdiff		**Pdif**	**23 53 35.8**	**+0.3**
	baz=287								
PLOR	**Plostina**	111.99 318	⇑	*i*P		**PKKPbc**	**00 08 26.3**	**+0.5**
ELBA	**Catalca**	112.13 313		*i* P		**PP**	**23 58 12.7**	**-4.1**
D33A	**AnnSam, Wauburn**	112.14	40	Pdiff		**Pdif**	**23 53 34.1**	**-2.0**
	baz=290								
E33A	**Westby DABS, E**	112.25	41	Pdiff		**Pdif**	**23 53 30.3**	**-6.3**
	baz=290								
L32A	**Elgin**	112.25	46	Pdiff		**Pdif**	**23 53 36.3**	**-0.4**
	baz=286								
ISR	**Istrita**	112.30 318	⇓	*i*P		**PKiKP**	**23 57 34.1**	**+1.2**
ISR	**Istrita**	112.30 318	⇓	PKiKP		**PKiKP**	**23 57 34.1**	**+1.2**
H33A	**Prehn Over Nor**	112.34	43	Pdiff		**Pdif**	**23 53 36.5**	**-0.6**
	baz=288								
N32A	**Stulken Farm,**	112.38	47	Pdiff		**Pdif**	**23 53 33.9**	**-3.4**
	baz=286								
G33A	**Ortonville**	112.39	42	Pdiff		**Pdif**	**23 53 35.2**	**-2.0**
	baz=289								
P32A	**Huiting Farm,**	112.45	48	Pdiff		**Pdif**	**23 53 37.4**	**-0.3**
	baz=285								
DEMI	**Demirci**	112.46 311		*i* P		**PP**	**23 58 19.5**	**+0.1**
DEMI	**Demirci**	112.46 311		P		**PP**	**23 58 19.5**	**+0.1**
O32A	**Brockman Farm,**	112.53	48	Pdiff		**Pdif**	**23 53 35.5**	**-2.5**
	baz=285								
Q32A	**Meitler Ranch,**	112.64	49	Pdiff		**Pdif**	**23 53 36.4**	**-2.1**
	baz=285								
S32A	**Newby Ranch, P**	112.67	51	Pdiff		**Pdif**	**23 53 31.9**	**-6.8**
	baz=284								
MANT	**Manisa**	112.71 310		*i* P		**PP**	**23 58 19.5**	**-1.9**
MANT	**Manisa**	112.71 310		P		**PP**	**23 58 19.5**	**-1.9**
ECSD	**EROS Data Cent**	112.72	44	*e*PKP		**PKiKP**	**23 57 34.6**	**+0.9**
ECSD				LR		LR			
	comp=Z,10µm,19.0s								
L33A	**Hoskins**	112.73	46	PKiKP		PKiKP	23 57 25.4	-8.4
	baz=287								
E34A	**Wadena**	112.79	41	PKiKP		PKiKP	23 57 25.5	-8.3
	baz=290								
K33A	**Hardington**	112.79	45	PKiKP		**PKiKP**	**23 57 28.8**	**-5.1**
	baz=287								
T32A	**Huddler Ranch,**	112.80	51	PKiKP		**PKiKP**	**23 57 27.6**	**-6.5**
	baz=284								
NB2	**NORSAR Subarra**	112.90 338		PKPdf		**PKiKP**	**23 57 39.4**	**+5.8**
	comp=Z,7.0nm,1.2s,baz=44,slow=1.9								
NB2	**NORSAR Subarra**	112.90 338		PKPdf		**PKiKP**	**23 57 39.4**	**+5.8**
	baz=44,slow=1.9								
NOA	**NORSAR Array B**	112.90 338		Pdiff		**Pdif**	**23 53 38.3**	**-0.9**
	comp=Z,0.2nm,0.7s,baz=60,slow=4.4,SNR=2.3								
NOA				PKKPab		**PKKPab**	**00 08 28.5**	**-0.8**
	comp=Z,2.2nm,0.7s,baz=54,slow=3.3,SNR=10								
G34A	**Benson**	112.91	42	PKiKP		**PKiKP**	**23 57 27.7**	**-6.3**
	baz=289								
U32A	**Winter Ranch,**	112.92	52	PKiKP		**PKiKP**	**23 57 31.1**	**-3.2**
	baz=283								
M33A	**Taylor Creek F**	112.95	46	PKiKP		**PKiKP**	**23 57 30.5**	**-3.8**
	baz=287								
NC602	**NORSAR Array S**	112.96 337		*e*P		**Pdif**	**23 53 39.3**	**-0.2**
NC602				IVMs_BB		IVMs_BB	00 49 34.7		
	comp=Z,18µm,17.9s								
F34A	**Alexandria**	112.97	41	PKiKP		**PKiKP**	**23 57 30.5**	**-3.7**
	baz=290								
H34A	**Spellman Lake,**	113.00	43	PKiKP		**PKiKP**	**23 57 30.5**	**-3.7**
	baz=289								
W32A	**Sentinel**	113.01	53	PKiKP		**PKiKP**	**23 57 33.3**	**-1.3**
	baz=283								
B35A	**Bob, Littlefor**	113.03	38	PKiKP		**PKiKP**	**23 57 31.2**	**-2.9**
	baz=292								
V32A	**Arapaho**	113.04	53	PKiKP		**PKiKP**	**23 57 32.0**	**-2.6**
	baz=283								
ARCR	**ARCALIA**	113.07 320	⇑	*i*P		**PP**	**23 58 29.2**	**+5.9**
TURN	**Turunc**	113.07 309		*i* P		**PP**	**23 58 16.1**	**-7.6**
O33A	**Hebron**	113.09	48	PKiKP		**PKiKP**	**23 57 36.0**	**+1.5**
	baz=286								
KWP	**Kalwaria Pacla**	113.12 323		*e*Pdiff		**Pdif**	**23 53 49.4**	**+8.9**
KWP				*e*PS		**PS**	**00 07 57.3**	**-2.2**
KWP				*e*SS		SS	00 14 44.0	+37
KWP				LMZ		LR	00 46 15.4	
	comp=Z,33µm,21.5s								
KWP	**Kalwaria Pacla**	113.12 323		*e*P		**Pdif**	**23 53 49.3**	**+8.9**
X32A	**Elmer**	113.12	54	PKiKP		**PKiKP**	**23 57 34.2**	**-0.6**
	baz=282								
C35A	**Jirik Farms, M**	113.12	39	PKiKP		**PKiKP**	**23 57 31.4**	**-3.0**
	baz=292								
I34A	**Hadley**	113.15	43	PKiKP		**PKiKP**	**23 57 34.1**	**-0.4**
	baz=289								
SART	**Tekirdag**	113.16 313		*i* P		**PP**	**23 58 24.0**	**-0.3**
P33A	**Williams Farm,**	113.17	48	PKiKP		**PKiKP**	**23 57 33.6**	**-1.2**
	baz=286								
Q33A	**Connelly Farm,**	113.19	49	PKiKP		**PKiKP**	**23 57 34.9**	**+0.1**
	baz=285								
ABTX	**Abilene, Hawle**	113.19	56	PKiKP		**PKiKP**	**23 57 29.7**	**-5.3**
	baz=281								
MOL	**Molde**	113.22 340		*e*PP		PP	23 58 24.7	+1.0
MOL				IVMs_BB		IVMs_BB	00 47 50.0	
	comp=Z,11µm,21.2s								
SZH	**Strazhica**	113.29 316		*i* P		PP	23 58 33.8	+8.8
D35A	**Remer**	113.30	40	PKiKP		**PKiKP**	**23 57 31.8**	**-3.0**
	baz=292								
BEL	**Belsk**	113.31 326		*e*Pdiff		**Pdif**	**23 53 45.5**	**+4.3**
BEL				*e*PP		**PP**	**23 58 26.1**	**+1.4**
BEL				*e*PS		**PS**	**00 07 56.6**	**-4.3**
BEL				*e*SS		SS	00 14 21.0	+12
BEL				LMZ		LR	00 44 45.3	
	comp=Z,35µm,22.3s								
BEL	**Belsk**	113.31 326		*e*P		**Pdif**	**23 53 45.5**	**+4.3**
BEL				*e*			23 58 26.2		
J34A	**George**	113.32	44	PKiKP		**PKiKP**	**23 57 31.8**	**-3.1**
	baz=288								
T33A	**Patterson Ranc**	113.35	51	PKiKP		**PKiKP**	**23 57 31.3**	**-3.8**
	baz=284								
BMR	**Baia Mare**	113.39 321	⇓	*i*P		**PKiKP**	**23 57 37.2**	**+2.3**
BMR	**Baia Mare**	113.39 321	⇓	PKiKP		**PKiKP**	**23 57 37.2**	**+2.3**
F35A	**Swanville**	113.40	41	PKiKP		**PKiKP**	**23 57 32.0**	**-3.0**
	baz=290								
K34A	**Le Mars**	113.41	45	PKiKP		**PKiKP**	**23 57 30.7**	**-4.4**
	baz=288								
S33A	**Kaszmaul Farm,**	113.41	50	PKiKP		**PKiKP**	**23 57 32.1**	**-3.2**
	baz=284								
M34A	**Aspy Farms, Fr**	113.42	46	PKiKP		**PKiKP**	**23 57 33.3**	**-1.8**
	baz=287								
L34A	**Svendsen Farm,**	113.43	45	PKiKP		**PKiKP**	**23 57 32.7**	**-2.4**
	baz=288								
JCT	**Junction City**	113.46	58	PKiKP		**PKiKP**	**23 57 30.9**	**-4.7**
	baz=280								
JCT	**Junction City**	113.46	58	*e*PKiKP		**PKiKP**	**23 57 36.9**	**+1.3**
JCT	**Junction City**	113.46	58	*e*PKP		**PKiKP**	**23 57 36.9**	**+1.3**
WMOK	**Wichita Mounta**	113.46	54	PKiKP		**PKiKP**	**23 57 31.5**	**-3.9**
	baz=283								
WMOK	**Wichita Mounta**	113.46	54	*e*PKiKP		**PKiKP**	**23 57 36.0**	**+0.6**
WMOK	**Wichita Mounta**	113.46	54	*e*PKP		**PKiKP**	**23 57 36.0**	**+0.6**
ARR	**Arges**	113.49 318	⇓	*i*P		**PKiKP**	**23 57 39.8**	**+4.6**
KESN	**Edirne-Kesan**	113.49 313		*i* P		PP	23 58 17.2	-10
HUMR	**Humele**	113.54 317	⇑	*i*P		**PKiKP**	**23 57 36.1**	**+0.9**
U33A	**Lingo Farm, Me**	113.61	52	PKiKP		**PKiKP**	**23 57 31.1**	**-4.5**
	baz=284								
832A	**Faith Ranch, C**	113.68	61	PKiKP		**PKiKP**	**23 57 29.3**	**-6.6**
	baz=279								
AKN	**Aaknes**	113.68 340		*e*PP		PP	23 58 28.3	+1.3
AKN				IVMs_BB		IVMs_BB	00 45 38.3	
	comp=Z,11µm,22.0s								
CJR	**Cluj-Napoca**	113.68 320	⇓	*i*P		PKiKP	23 57 45.6	+10
CJR	**Cluj-Napoca**	113.68 320	⇓	PKiKP		PKiKP	23 57 45.6	+10
O34A	**Beatrice**	113.71	47	PKiKP		**PKiKP**	**23 57 28.6**	**-7.1**
	baz=286								
UZH	**Uzhgorod**	113.77 322		*e*P		**Pdif**	**23 53 48.2**	**+4.9**
OSL	**Oslo**	113.78 337		*e*PP		PP	23 58 29.1	+1.3
OSL				IVMs_BB		IVMs_BB	00 49 41.2	
	comp=Z,8µm,17.8s								
Z33A	**Whitaker Ranch**	113.78	55	PKiKP		**PKiKP**	**23 57 32.8**	**-3.3**
	baz=282								
P34A	**Walnut Farm, R**	113.79	48	PKiKP		**PKiKP**	**23 57 32.8**	**-3.1**
	baz=286								
133A	**Hamilton Ranch**	113.80	56	PKiKP		**PKiKP**	**23 57 31.5**	**-4.6**
	baz=282								
R34A	**Isabella, Hill**	113.81	50	PKiKP		**PKiKP**	**23 57 31.5**	**-4.5**
	baz=285								
J35A	**Milford**	113.81	44	PKiKP		**PKiKP**	**23 57 32.1**	**-3.7**
	baz=289								
C36A	**Pine Crest Far**	113.82	39	PKiKP		**PKiKP**	**23 57 35.4**	**-0.3**
	baz=293								
Q34A	**Chapman**	113.88	49	PKiKP		**PKiKP**	**23 57 30.9**	**-5.1**
	baz=286								
AYVA	**Ayvalik**	113.91 312		*i* P		**PP**	**23 58 30.5**	**+1.0**
233A	**Rising Star**	113.93	57	PKiKP		**PKiKP**	**23 57 31.8**	**-4.6**
	baz=282								
BOSA	**Boshof**	113.95 237		Pdiff		**Pdif**	**23 53 45.1**	**+0.3**
	comp=Z,2.6nm,1.0s,baz=113,slow=4.3,SNR=2.5								
L35A	**Bielow Farm, R**	113.97	45	PKiKP		**PKiKP**	**23 57 28.5**	**-7.7**
	baz=288								
333A	**Richland Sprin**	113.99	57	PKiKP		**PKiKP**	**23 57 31.9**	**-4.6**
	baz=281								
K35A	**Storm Lake**	114.00	44	PKiKP		**PKiKP**	**23 57 31.1**	**-5.1**
	baz=289								
433A	**Art**	114.01	58	PKiKP		PKPdf	23 57 34.6	-2.0
	baz=281								
E36A	**McGregor**	114.02	40	PKiKP		PKPpre	23 57 31.8	
	baz=292								
LOT	**Lotru**	114.03 319	⇓	*i*P		**PKiKP**	**23 57 43.3**	**+7.0**
U34A	**Anderson Ranch**	114.06	52	PKiKP		PKPdf	23 57 34.6	-1.9
	baz=284								
M35A	**Neola**	114.06	46	PKiKP		PKPpre	23 57 31.3	
	baz=288								
S34A	**Willow Spring**	114.07	50	PKiKP		PKPdf	23 57 34.0	-2.5
	baz=285								
KSU1	**Kansas State U**	114.08	49	PKiKP		PKPdf	23 57 35.9	-0.5
	baz=286								
KSU1	**Kansas State U**	114.08	49	*e*PKP		PKPdf	23 57 37.4	+0.9
KSU1				LR		LR			
	comp=Z,17µm,21.0s								
F36A	**Milaca**	114.09	41	PKiKP		PKPpre	23 57 31.3	
	baz=291								
MBAR	**Mbarara**	114.14 268		PFAKE			23 57 50.0	+13
MBAR				LR		LR			
	comp=Z,491nm,22.0s								
KDZ	**Kurdzhali**	114.16 314		*i* P		PP	23 58 39.5	+8.2
W34A	**Bridge Creek,**	114.16	53	PKiKP		PKPpre	23 57 32.2	
	baz=284								
G36A	**St. Michael**	114.16	41	PKiKP		PKPdf	23 57 32.7	-3.7
	baz=291								
633A	**Saathoff Ranch**	114.17	59	PKiKP		PKPpre	23 57 32.3	
	baz=280								
833A	**Chaparral WMA,**	114.17	61	PKiKP		PKPdf	23 57 36.2	-0.7
	baz=280								
533A	**Kerrville**	114.18	59	PKiKP		PKPpre	23 57 32.9	
	baz=281								
T34A	**McClaskey Farm**	114.18	51	PKiKP		PKPpre	23 57 28.3	
	baz=285								
733A	**Divot King Ran**	114.20	60	PKiKP		PKPpre	23 57 31.7	
	baz=280								
V34A	**Guthrie**	114.22	52	PKiKP		PKPdf	23 57 34.9	-1.9
	baz=284								
BOZC	**Bozsada**	114.23 312		*i* P		PP	23 58 21.3	-10
C37A	**Embarrass**	114.23	38	PKiKP		PKPpre	23 57 32.2	
	baz=293								
URLA	**Izmir**	114.24 311		*i* P		**PP**	**23 58 25.1**	**-6.8**
X34A	**Smith Ranch, M**	114.26	54	PKiKP		PKPpre	23 57 33.0	
	baz=283								
O35A	**Humboldt**	114.26	47	PKiKP		PKPpre	23 57 33.0	
	baz=287								
H36A	**Jessenland, He**	114.28	42	PKiKP		PKPdf	23 57 34.3	-2.4
	baz=290								
N35A	**Tabor**	114.28	46	PKiKP		PKPdf	23 57 36.3	-0.5
	baz=288								
D37A	**Cotton**	114.31	39	PKiKP		PKPpre	23 57 33.0	
	baz=293								
933A	**Laredo**	114.39	61	PKiKP		PKPpre	23 57 32.0	
	baz=279								
P35A	**Duane Minner,**	114.40	48	PKiKP		PKPpre	23 57 31.9	
	baz=287								
CRAR	**CRAIOVA**	114.40 318	⇑	*i*P		PKPdf	23 57 49.2	+12
CRAR	**CRAIOVA**	114.40 318	⇑	PKiKP		PKPdf	23 57 49.2	+12
KONO	**Kongsberg**	114.40 337		*e*PP		PKPdf	23 58 33.6	+57
KONO				IVMs_BB		IVMs_BB	00 50 09.1	
	comp=Z,15µm,18.5s								
KONO	**Kongsberg**	114.40 337		PFAKE			23 57 50.0	+14
KONO				LR		LR			
	comp=Z,45µm,19.0s								
I36A	**Fitzsimmons Fa**	114.41	43	PKiKP		PKPpre	23 57 33.2	
	baz=290								
J36A	**Seneca 1, Swea**	114.42	44	PKiKP		PKPpre	23 57 30.6	
	baz=290								
SMTH	**Samothraki Isl**	114.43 313		P		PKPdf	23 57 50.6	+14
DEV	**Deva**	114.44 319	⇓	PKiKP		PKPdf	23 57 46.8	+10
Y34A	**Reagan Ranch,**	114.46	54	PKiKP		PKPpre	23 57 32.1	
	baz=283								
Z34A	**Collier Ranch,**	114.46	55	PKiKP		PKPpre	23 57 32.8	
	baz=283								
134A	**White-Moore Ra**	114.50	56	PKiKP		PKPpre	23 57 32.2	
	baz=282								
E37A	**Wrenshall**	114.55	40	PKiKP		**PKiKP**	**23 57 32.8**	**-4.3**
	baz=293								
GKP	**Gorka Klasztor**	114.55 329		*e*Pdiff		**Pdif**	**23 53 46.3**	**-0.3**
GKP				*e*PP		**PP**	**23 58 34.5**	**+1.0**
GKP				*e*PS		**PS**	**00 08 09.4**	**-2.9**
GKP				*e*SS		SS	00 14 35.0	+10
GKP				LMZ		LR	00 45 26.1	
	comp=Z,92µm,24.0s								
GKP	**Gorka Klasztor**	114.55 329		*e*P		**Pdif**	**23 53 46.3**	**-0.3**
GKP				*e*			23 58 34.5		
234A	**Clairette**	114.57	56	PKiKP		PKPdf	23 57 37.0	-0.7
	baz=282								
Q35A	**Mercer Eighty,**	114.57	49	PKiKP		PKPdf	23 57 34.9	-2.5
	baz=286								
EYMN	**Ely**	114.57	38	PKiKP		**PKiKP**	**23 57 32.8**	**-4.3**
	baz=294								
OJC	**Ojcow**	114.58 325		*e*Pdiff		**Pdif**	**23 53 52.9**	**+6.0**
OJC				*e*PS		**PS**	**00 08 09.1**	**-3.7**
OJC				*e*SS		SS	00 14 34.1	+8.0
OJC				LMZ		LR	00 42 54.6	
	comp=Z,19µm,27.5s								
OJC	**Ojcow**	114.58 325		*e*P		**Pdif**	**23 53 52.9**	**+6.0**
L36A	**Harm Buss Farm**	114.59	45	PKiKP		PKPdf	23 57 35.6	-1.8
	baz=289								
R35A	**Emporia Munici**	114.60	49	PKiKP		PKPdf	23 57 35.6	-1.8
	baz=286								
334A	**Lometa**	114.62	57	PKiKP		PKPdf	23 57 35.1	-2.7
	baz=282								
NIE	**Niedzica**	114.64 324		*e*Pdiff		**Pdif**	**23 53 48.8**	**+1.6**
NIE				*e*PP		**PP**	**23 58 33.2**	**-1.1**
NIE				*e*PS		**PS**	**00 08 12.0**	**-1.4**
NIE				*e*SS		SS	00 14 53.2	+26
NIE				LMZ		LR	00 48 45.2	
	comp=Z,20µm,20.5s								
NIE	**Niedzica**	114.64 324		*e*P		**Pdif**	**23 53 48.8**	**+1.6**
NIE				*e*			23 58 33.2		
534A	**Blanco**	114.67	59	PKiKP		PKPpre	23 57 30.6		
	baz=281								
S35A	**Otter Creek Ra**	114.68	50	PKiKP		PKPpre	23 57 33.2		
	baz=286								
434A	**Burnet**	114.69	58	PKiKP		PKPpre	23 57 33.9		
	baz=281								
GZR	**Gura Zlata**	114.70 319	⇑	*i*P		PKPdf	23 57 41.6	+4.1
GZR	**Gura Zlata**	114.70 319	⇓	*i*P		**PKKPdf**	**00 08 40.1**	**+0.1**
GZR	**Gura Zlata**	114.70 319	⇑	PKiKP		PKPdf	23 57 41.6	+4.1
U35A	**Pawnee**	114.70	51	PKiKP		PKPpre	23 57 32.0	
	baz=285								
M36A	**Felix, Anita**	114.70	46	PKiKP		**PKiKP**	**23 57 34.5**	**-3.1**
	baz=288								
LSZ	**Lusaka**	114.71 252		PKKPbc		PKKPbc	00 08 14.0	-2.0
	comp=Z,2.4nm,0.9s,baz=106,slow=5.9,SNR=3.9								
LSZ	**Lusaka**	114.71 252		*e*PKiKP		PKPdf	23 57 39.7	+1.3
LSZ							00 08 14.0		
LSZ				MLR		MLR			
	comp=Z,26µm,22.0s								
LSZ	**Lusaka**	114.71 252		*e*PKP		PKPdf	23 57 39.7	+1.3
LSZ				PKKPbc		**PKKPbc**	**00 08 14.0**	**-2.0**
LSZ				LR		LR			
	comp=Z,26µm,22.0s								
T35A	**Sooner Cattle**	114.73	51	PKiKP		PKPpre	23 57 33.0		
	baz=285								
FOO	**Floro**	114.75 340		*e*PP		**PP**	**23 58 34.7**	**+0.2**
FOO				IVMs_BB		IVMs_BB	00 45 43.4		
	comp=Z,12µm,22.1s								
BSD	**Bornholm Skovb**	114.76 331		*i* P		**PP**	**23 58 38.0**	**+3.1**
V35A	**Meyer Ranch, C**	114.77	52	PKiKP		PKPpre	23 57 34.0		
	baz=284								
MPEP	**Malo Peshtene**	114.78 317		*i* P		PP	23 58 43.8	+8.3
N36A	**Muff Farm, Cla**	114.79	46	PKiKP		**PKiKP**	**23 57 34.0**	**-3.7**
	baz=288								
SPMN	**Marine on St.**	114.79	41	PKiKP		**PKiKP**	**23 57 33.3**	**-4.3**
	baz=292								
C38A	**Sawbill Land.**	114.80	38	PKiKP		**PKiKP**	**23 57 34.6**	**-3.0**
	baz=294								
734A	**La Parita Cree**	114.81	60	PKiKP		PKPdf	23 57 35.5	-2.7
	baz=280								
I37A	**Lemond, Waseca**	114.83	43	PKiKP		**PKiKP**	**23 57 35.3**	**-2.4**
	baz=291								
LIA	**Limnos Island**	114.85 313		P		PKPdf	23 57 49.8	+12
LIA	**Limnos Island**	114.85 313		P		PKPdf	23 57 49.8	+12
W35A	**Tecumseh**	114.89	53	PKiKP		PKPdf	23 57 36.2	-1.9
	baz=284								
634A	**China Grove, S**	114.89	59	PKiKP		PKPdf	23 57 36.9	-1.3
	baz=281								
834A	**Tilden**	114.94	61	PKiKP		PKPpre	23 57 33.6		
	baz=280								
H37A	**Dierke Farm, C**	114.95	42	PKiKP		**PKiKP**	**23 57 33.7**	**-4.2**
	baz=291								
J37A	**Redenius Farm,**	114.97	43	PKiKP		**PKiKP**	**23 57 33.3**	**-4.7**
	baz=290								
P36A	**

KVTX	**Kingsville**	**115.61**	**61**	PFAKE			23 57 50.0	+10
KVTX				LR	LR			
	comp=Z,11µm,20.0s							
MDVR	**Moldovita**	**115.63**	**319**	⇓*i* P		**PKPdf**	**23 57 39.8**	**+0.5**
R37A	**Teagarden Farm**	**115.63**	**49**	PKiKP		**PKPdf**	**23 57 40.2**	**+0.8**
	baz=287							
035Z	**Hargill**	**115.64**	**62**	PKiKP		**PKPdf**	**23 57 37.1**	**-2.7**
	baz=279							
SANT	**Santorini**	**115.64**	**309**	PFAKE			23 57 50.0	+10
SANT				LR	LR			
	comp=Z,8µm,21.0s							
Y36A	**Durant**	**115.67**	**54**	PKiKP	PKPpre		23 57 33.4	
	baz=284							
SCIA	**State Center**	**115.68**	**45**	PFAKE			23 57 50.0	+11
SCIA				LR	LR			
	comp=Z,13µm,20.0s							
Z36A	**Blue Ridge**	**115.69**	**55**	PKiKP	PKPpre		23 57 35.1	
	baz=284							
J38A	**Wedel Dairy, R**	**115.70**	**43**	PKiKP	**PKiKP**		**23 57 35.5**	**-3.9**
	baz=291							
OKC	**Ostrava-Krasne**	**115.70**	**325**	*e*PDIFF	**Pdif**		**23 53 53.6**	**+1.7**
OKC				*e*PKP	**PKPdf**		**23 57 41.2**	**+2.0**
OKC				*ex*	x		23 57 48.9	
OKC				*e*PP	**PP**		**23 58 40.9**	**-0.8**
OKC				*e*PS	**PKKPab**		**00 08 19.1**	**+2.2**
OKC				*e*SS	SS		00 14 49.7	+8.9
OKC				AMS	AMS		00 53 20.0	
	comp=Z,19µm,16.9s							
OKC	**Ostrava-Krasne**	**115.70**	**325**	*e*P	**Pdif**		**23 53 53.6**	**+1.7**
OKC				*e*			23 57 41.2	
OKC				*e*			23 57 48.9	
OKC				*e*			23 58 40.9	
SFJD	**Kangerlussuaq**	**115.71**	**7**	*i* P	PKPdf		23 57 46.9	+8.2
SFJD	**Kangerlussuaq**	**115.71**	**7**	*e*PKIKP	PKPdf		23 57 46.9	+8.2
SFJD	**Kangerlussuaq**	**115.71**	**7**	PFAKE			23 57 50.0	+11
SFJD				LR	LR			
	comp=Z,12µm,22.0s							
HOMB	**Homborsund**	**115.73**	**336**	*e*P	**Pdif**		**23 53 52.7**	**+1.0**
HOMB				IVMs_BB	IVMs_BB		00 49 43.6	
	comp=Z,13µm,19.4s							
K38A	**Parkersburg**	**115.74**	**44**	PKiKP	**PKiKP**		**23 57 35.8**	**-3.7**
	baz=291							
KKB	**Krupnik**	**115.74**	**315**	*i* P	PP		23 58 50.5	+8.1
Q37A	**Longview Farm,**	**115.75**	**48**	PKiKP	**PKiKP**		**23 57 34.5**	**-5.1**
	baz=288							
BLS5	**Blasjo**	**115.76**	**338**	*e*PP	PP		23 58 43.4	+1.7
BLS5				IVMs_BB	IVMs_BB		00 49 15.9	
	comp=Z,17µm,19.8s							
336A	**Riesel**	**115.77**	**57**	PKiKP	PKPpre		23 57 32.1	
	baz=282							
BANR	**Banloc**	**115.78**	**319**	⇑*i* P		**PKPdf**	**23 57 40.8**	**+1.3**
L38A	**Oak Wood Farm,**	**115.78**	**44**	PKiKP	PKiKP		23 57 31.5	-8.1
	baz=290							
S37A	**Fort Scott**	**115.80**	**50**	PKiKP	PKPpre		23 57 33.6	
	baz=287							
136A	**Ennis**	**115.80**	**56**	PKiKP	PKPpre		23 57 31.6	
	baz=283							
NPS	**Neapolis**	**115.81**	**308**	P	**PKPdf**		**23 57 43.9**	**+4.0**
536A	**Bastrop**	**115.86**	**58**	PKiKP	**PKPdf**		**23 57 38.1**	**-2.0**
	baz=282							
M38A	**Pleasantville**	**115.86**	**45**	PKiKP	**PKiKP**		**23 57 34.7**	**-5.1**
	baz=290							
T37A	**Cheneyville 18**	**115.91**	**50**	PKiKP	**PKPdf**		**23 57 37.5**	**-2.5**
	baz=286							
LLD	**Lille Linde**	**115.92**	**332**	*i* P	PKPdf		23 57 52.6	+13
LAST	**Lasithi**	**115.94**	**308**	P	PKPdf		23 57 48.3	+8.0
436A	**Wall Ranch, Ga**	**115.94**	**57**	PKiKP	PKPpre		23 57 36.3	
	baz=282							
U37A	**Salina**	**115.95**	**51**	PKiKP	**PKPdf**		**23 57 36.9**	**-3.2**
	baz=286							
636A	**Smothers Creek**	**115.98**	**59**	PKiKP	**PKPdf**		**23 57 39.7**	**-0.7**
	baz=281							
N38A	**Joes South For**	**116.04**	**46**	PKiKP	**PKPdf**		**23 57 36.4**	**-3.8**
	baz=289							
W37B	**Quinton**	**116.04**	**52**	PKiKP	**PKPdf**		**23 57 37.1**	**-3.2**
	baz=285							
V37A	**Hulbert**	**116.07**	**52**	PKiKP	PKPpre		23 57 32.6	
	baz=286							
736A	**Circle Diamond**	**116.08**	**60**	PKiKP	PKPpre		23 57 33.7	
	baz=281							
MORC	**Moravsky Berou**	**116.08**	**325**	⇓*i* P		**PKPdf**	**23 57 41.5**	**+1.5**
MORC	**Moravsky Berou**	**116.08**	**325**	⇓PKiKP		**PKPdf**	**23 57 41.5**	**+1.5**
O38A	**Galt**	**116.08**	**47**	PKiKP		**PKPdf**	**23 57 37.1**	**-3.1**
	baz=289							
SNART	**Snartemo**	**116.20**	**337**	IVMs_BB	IVMs_BB		00 51 30.8	
	comp=Z,7µm,17.7s							
P38A	**Dawn**	**116.20**	**47**	PKiKP	PKPpre		23 57 36.7	
	baz=289							
SUR	**Sutherland**	**116.21**	**231**	PFAKE			23 57 50.0	+9.0
SUR				LR	LR			
	comp=Z,61µm,19.0s							
J39A	**Decorah**	**116.22**	**43**	PKiKP	PKPpre		23 57 35.4	
	baz=292							
X37A	**Clayton**	**116.23**	**53**	PKiKP	PKPpre		23 57 32.9	
	baz=285							
THE	**Thessaloniki**	**116.23**	**314**	P	PKPdf		23 57 48.5	+8.0
KSP	**Ksiaz**	**116.27**	**326**	*e*Pdiff	**Pdif**		**23 53 59.2**	**+4.9**
KSP				*e*PP	PP		23 58 56.5	+11
KSP				*e*PS	**PS**		**00 08 23.2**	**-5.0**
KSP				*e*SS	SS		00 14 56.7	+8.6
KSP				LMZ	LR		00 43 08.2	
	comp=Z,32µm,27.9s							
KSP	**Ksiaz**	**116.27**	**326**	*e*P	**Pdif**		**23 53 59.2**	**+4.9**
KSP				*e*			23 58 56.6	
VAY	**Valandovo**	**116.29**	**315**	P	**PKPdf**		**23 57 48.3**	**+7.7**
K39A	**Oelwein**	**116.32**	**44**	PKiKP	**PKPdf**		**23 57 40.2**	**-0.5**
	baz=291							
Q38A	**Cooks Store, C**	**116.34**	**48**	PKiKP	**PKPdf**		**23 57 38.9**	**-1.9**
	baz=288							
KMY	**Karmoy**	**116.35**	**338**	IVMs_BB	IVMs_BB		00 50 49.4	
	comp=Z,941nm,20.3s							
R38A	**Fenwick Farm,**	**116.37**	**49**	PKiKP	**PKPdf**		**23 57 38.3**	**-2.5**
	baz=288							
Z37A	**Pogue Cattle C**	**116.37**	**55**	PKiKP	**PKPdf**		**23 57 37.7**	**-3.3**
	baz=284							
IDI	**Anoyia**	**116.37**	**308**	PKP	**PKPdf**		**23 57 42.7**	**+1.6**
	comp=Z,5.1nm,0.8s,baz=96,slow=19,SNR=2.2							
IDI	**Anoyia**	**116.37**	**308**	P	**PKPdf**		**23 57 43.9**	**+2.8**
STAV	**Stavanger**	**116.38**	**338**	*e*PP	PP		23 58 46.6	+0.6
STAV				IVMs_BB	IVMs_BB		00 49 43.5	
	comp=Z,15µm,19.4s							
PTL	**Penteli**	**116.39**	**311**	P	**PKPdf**		**23 57 45.2**	**+4.2**
137A	**Heron Place, G**	**116.40**	**55**	PKiKP	PKPpre		23 57 34.9	
	baz=284							
T38A	**Diamond**	**116.41**	**50**	PKiKP	**PKPdf**		**23 57 38.4**	**-2.6**
	baz=287							
L39A	**Vinton**	**116.45**	**44**	PKiKP	PKPpre		23 57 37.1	
	baz=291							
437A	**Phantom Ranch,**	**116.48**	**57**	PKiKP	PKPpre		23 57 35.0	
	baz=283							
DPC	**Dobruska-Polom**	**116.49**	**326**	*e*PDIFF	**Pdif**		**23 53 55.3**	**-0.1**
DPC				*e*PKP	**PKiKP**		**23 57 42.3**	**+1.5**
DPC				*ex*	x		23 57 49.6	
DPC				*e*PP	**PP**		**23 58 41.3**	**-6.0**
DPC				*e*SDIF			00 06 35.2	
DPC				*e*PKKP	**PKKPab**		**00 08 13.8**	**+0.3**
DPC				*ex*	x		00 08 19.6	
DPC				*e*SS	**SS**		**00 14 57.0**	**+5.8**
DPC				AMS	AMS		00 43 00.0	
	comp=Z,30µm,26.6s							
DPC	**Dobruska-Polom**	**116.49**	**326**	*e*P	**Pdif**		**23 53 55.3**	**-0.1**
DPC				*e*			23 57 42.3	
DPC				*e*			23 57 49.6	
537A	**Green Hill Far**	**116.49**	**58**	PKiKP	PKPpre		23 57 35.4	
	baz=282							
237A	**Washetta, Mont**	**116.50**	**56**	PKiKP	PKPpre		23 57 34.5	
	baz=283							
U38A	**Gravette**	**116.51**	**51**	PKiKP	**PKPdf**		**23 57 38.6**	**-2.6**
	baz=286							
S38A	**Stockton**	**116.53**	**49**	PKiKP	PKPpre		23 57 37.3	
	baz=287							
N39A	**Derby Farms, D**	**116.53**	**46**	PKiKP	PKPpre		23 57 36.1	
	baz=290							
M39A	**Webster**	**116.56**	**45**	PKiKP	PKPpre		23 57 32.4	
	baz=291							
UPC	**Upice**	**116.59**	**326**	*e*PDIFF	**Pdif**		**23 53 58.5**	**+2.7**
UPC				*e*PKP	**PKiKP**		**23 57 41.9**	**+1.0**
UPC				*ep*PKP	pPKPdf		23 57 44.4	-3.3
UPC				*e*PP	**PP**		**23 58 41.5**	**-6.4**
UPC				*ex*	x		00 08 20.4	
UPC				*e*SS	SS		00 14 59.3	+7.0
UPC				AMS	AMS		00 43 00.0	
	comp=Z,32µm,25.7s							
UPC	**Upice**	**116.59**	**326**	*e*P	**Pdif**		**23 53 58.5**	**+2.7**
UPC				*e*			23 57 41.9	
UPC				*e*			23 57 44.4	
337A	**Centerville**	**116.59**	**57**	PKiKP	PKPpre		23 57 36.2	
	baz=283							
MUD	**Monsted U'grnd**	**116.61**	**334**	*i* P		**PKPdf**	**23 57 41.3**	**+0.6**
	comp=Z,24nm,1.2s							
MUD				*i*			23 58 50.9	
MUD	**Monsted U'grnd**	**116.61**	**334**	*e*PKIKP		**PKPdf**	**23 57 41.3**	**+0.6**
MUD				*i*			23 58 50.9	
MUD				pmax	pmax			
	comp=Z,24nm,1.2s							
637A	**Eagle Lake**	**116.61**	**59**	PKiKP	PKPpre		23 57 37.4	
	baz=282							
SMIA	**Simia**	**116.62**	**312**	P	**PKPdf**		**23 57 46.5**	**+5.1**
X38A	**Whitesboro**	**116.64**	**53**	PKiKP	PKPpre		23 57 37.6	
	baz=285							
737A	**Port Lavaca**	**116.65**	**60**	PKiKP	PKPpre		23 57 36.9	
	baz=281							
V38A	**Canehill**	**116.65**	**51**	PKiKP	PKPpre		23 57 35.8	
	baz=286							
O39A	**Kirksville**	**116.71**	**46**	PKiKP	PKPpre		23 57 36.4	
	baz=290							
VILL	**Villia**	**116.77**	**311**	P	**PKPdf**		**23 57 42.8**	**+1.1**
W38A	**Poteau**	**116.78**	**52**	PKiKP	**PKPdf**		**23 57 38.5**	**-3.2**
	baz=286							
Q39A	**Willow Grove F**	**116.79**	**48**	PKiKP	PKPpre		23 57 35.0	
	baz=289							
COWI	**Conover**	**116.81**	**39**	*e*PKPdf	**PKPdf**		**23 57 41.5**	**0.0**
COWI				LR	LR			
	comp=Z,17µm,22.0s							
P39B	**Salisbury**	**116.81**	**47**	PKiKP	PKPpre		23 57 34.5	
	baz=289							
K40A	**Colesburg**	**116.84**	**43**	PKiKP	**PKPdf**		**23 57 38.5**	**-3.1**
	baz=292							
VRAC	**Vranov**	**116.84**	**325**	PKP	**PKPdf**		**23 57 43.3**	**+1.8**
	comp=Z,1.7nm,0.6s,baz=101,slow=4.9,SNR=2.9							
VRAC	**Vranov**	**116.84**	**325**	⇓*i* P	**PKPdf**		**23 57 45.7**	**+4.2**
VRAC	**Vranov**	**116.84**	**325**	⇓PKIKP	**PKPdf**		**23 57 45.7**	**+4.2**
J40A	**Soldiers Grove**	**116.85**	**42**	PKiKP	PKPpre		23 57 36.6	
	baz=293							
SKO	**Skopje**	**116.85**	**316**	*e*PKP	**PKPdf**		**23 57 45.0**	**+3.3**
Z38A	**Mt. Pleasant**	**116.88**	**54**	PKiKP	**PKPdf**		**23 57 40.0**	**-2.0**
	baz=285							
Y38A	**Idabel**	**116.91**	**54**	PKiKP	PKPpre		23 57 37.4	
	baz=285							
138A	**Matatall Enter**	**116.94**	**55**	PKiKP	PKPpre		23 57 34.3	
	baz=284							
S39A	**Bolivar**	**116.96**	**49**	PKiKP	PKPpre		23 57 35.9	
	baz=288							
R39A	**Chumby, Stover**	**116.98**	**48**	PKiKP	**PKPdf**		**23 57 38.8**	**-3.2**
	baz=286							
L40A	**Anamosa**	**117.02**	**44**	PKiKP	PKPpre		23 57 34.9	
	baz=292							
DID	**Didima**	**117.02**	**311**	P	**PKPdf**		**23 57 41.7**	**-0.5**
DIVS	**Divibare**	**117.03**	**318**	P	**PKPdf**		**23 57 44.1**	**+2.0**
338A	**Crockett**	**117.06**	**57**	PKiKP	PKPpre		23 57 38.2	
	baz=283							
438A	**Sam Houston St**	**117.06**	**57**	PKiKP	PKPpre		23 57 36.1	
	baz=283							
238A	**Jacksonville**	**117.07**	**56**	PKiKP	PKPpre		23 57 35.6	
	baz=284							
T39A	**Clever**	**117.11**	**50**	PKiKP	**PKPdf**		**23 57 39.1**	**-3.2**
	baz=288							
538A	**Harpers Horsep**	**117.16**	**58**	PKiKP	**PKPdf**		**23 57 39.3**	**-3.3**
	baz=283							
KZN	**Kozani**	**117.20**	**314**	P	PKPdf		23 57 50.6	+8.1
U39A	**Green Forest**	**117.22**	**51**	PKiKP	PKPpre		23 57 34.8	
	baz=287							
AGG	**Agios Georgios**	**117.22**	**312**	P	**PKPdf**		**23 57 45.8**	**+3.3**
AGG	**Agios Georgios**	**117.22**	**312**	P	**PKPdf**		**23 57 45.8**	**+3.3**
O40A	**La Pelle**	**117.24**	**46**	PKiKP	PKPpre		23 57 34.8	
	baz=290							
X39A	**Fountain Ranch**	**117.25**	**53**	PKiKP	PKPpre		23 57 36.5	
	baz=286							
V39A	**Pettigrew**	**117.25**	**51**	PKiKP	PKPpre		23 57 37.0	
	baz=287							
THL	**Klokotos Trika**	**117.28**	**313**	P	**PKPdf**		**23 57 50.2**	**+7.6**
THL	**Klokotos Trika**	**117.28**	**313**	P	**PKPdf**		**23 57 50.2**	**+7.6**
P40A	**Paris**	**117.31**	**47**	PKiKP	**PKPdf**		**23 57 40.1**	**-2.5**
	baz=290							
738A	**Farr-Stevens R**	**117.32**	**59**	PKiKP	**PKPdf**		**23 57 40.9**	**-2.0**
	baz=282							
FNA	**Florina**	**117.32**	**315**	P	**PKPdf**		**23 57 45.2**	**+2.5**
W39A	**Magazine**	**117.33**	**52**	PKiKP	**PKPdf**		**23 57 39.2**	**-3.6**
	baz=286							
J41A	**Loganville**	**117.35**	**42**	PKiKP	PKPpre		23 57 36.5	
	baz=293							
JFWS	**Jewell Farm**	**117.37**	**43**	*e*PKIKP	**PKPdf**		**23 57 42.3**	**-0.4**
JFWS				*e*			23 57 47.4	
JFWS				MLR	MLR			
	comp=Z,14µm,20.0s							
JFWS	**Jewell Farm**	**117.37**	**43**	*e*PKPdf	**PKPdf**		**23 57 42.3**	**-0.4**
JFWS				*ep*PKPdf	**pPKPdf**		**23 57 47.4**	**-2.0**
JFWS				LR	LR			
	comp=Z,14µm,20.0s							
638A	**Rosharon**	**117.37**	**59**	PKiKP	**PKPdf**		**23 57 39.7**	**-3.3**
	baz=282							
PVCC	**Panska Ves**	**117.37**	**327**	*e*PDIFF	**Pdif**		**23 53 59.7**	**+0.4**
PVCC				*e*PKP	**PKiKP**		**23 57 45.8**	**+3.4**
PVCC				*ep*PKP	**pPKPdf**		**23 57 48.7**	**-0.5**
PVCC				*ex*	x		23 57 51.6	
PVCC				*e*PP	**PP**		**23 58 54.2**	**+0.9**
PVCC				*ex*	x		00 08 27.1	
PVCC				*e*SS	SS		00 15 08.2	+5.8
PVCC				AMS	AMS		00 50 30.0	
	comp=Z,38µm,19.5s							
PVCC	**Panska Ves**	**117.37**	**327**	*e*P	**Pdif**		**23 53 59.7**	**+0.4**
PVCC				*e*			23 58 54.2	
Y39A	**Lockesburg**	**117.42**	**53**	PKiKP	**PKPdf**		**23 57 39.7**	**-3.3**
	baz=286							
K41A	**Shullsburg**	**117.44**	**43**	PKiKP	**PKPdf**		**23 57 39.4**	**-3.5**
	baz=293							
Q40A	**Laux Farm, Aux**	**117.47**	**47**	PKiKP	**PKPdf**		**23 57 39.8**	**-3.2**
	baz=289							
TREC	**Trest**	**117.48**	**325**	*e*PDIFF	**Pdif**		**23 54 02.7**	**+2.9**
TREC				*e*PKP	**PKiKP**		**23 57 43.8**	**+1.1**
TREC				*ep*PKP	**pPKPdf**		**23 57 46.1**	**-3.4**
TREC				*ex*	x		23 57 50.8	
TREC				*e*PP	**PP**		**23 58 59.5**	**+5.3**
TREC				*ex*	x		00 08 26.3	
TREC				*e*SS	SS		00 15 06.3	+2.2
TREC				AMS	AMS		00 43 40.0	
	comp=Z,34µm,23.4s							
TREC	**Trest**	**117.48**	**325**	*e*P	**Pdif**		**23 54 02.7**	**+2.9**
TREC				*e*			23 57 43.8	
TREC				*e*			23 57 46.1	
TREC				*e*			23 57 50.8	
TREC				*e*			23 58 59.5	
VLI	**Veliai**	**117.49**	**310**	P	**PKPdf**		**23 57 40.5**	**-2.6**
NATX	**Nacogdoches**	**117.50**	**56**	PKiKP	PKPpre		23 57 38.0	
	baz=284							
L41A	**Preston**	**117.51**	**44**	PKiKP	PKPpre		23 57 37.9	
	baz=292							
BRG	**Berggiesshubel**	**117.53**	**327**	*e*P	**PKKPbc**		**00 08 03.6**	**-3.2**
	comp=Z,9.1nm,1.6s							
BRG				*e*			00 08 18.1	
	comp=Z,14nm,1.6s							
BRG				S	**SP**		**00 08 40.0**	**+3.8**
BRG				SS	SS		00 15 19.0	+15
BRG	**Berggiesshubel**	**117.53**	**327**	*e*PDIFF	**Pdif**		**23 54 08.5**	**+8.5**
	comp=Z,7.9nm,1.4s							
BRG				*e*			23 57 44.9	
	comp=Z,37nm,1.2s							
BRG				PP	**PP**		**23 58 58.0**	**+3.6**
BRG				SDIFF			00 06 48.0	
BRG				SS	SS		00 15 17.0	+13
BRG	**Berggiesshubel**	**117.53**	**327**	*e*P	**Pdif**		**23 54 08.5**	**+8.5**
BRG							23 58 58.0	
BRG				SS	SS		00 15 17.0	+13
BRG				pmax	pmax			
	comp=Z,37nm,1.2s							
Z39A	**Irene McRaven,**	**117.53**	**54**	PKiKP	PKPpre		23 57 36.5	
	baz=285							
R40A	**Maddies Statio**	**117.56**	**48**	PKiKP	**PKPdf**		**23 57 38.0**	**-5.2**
	baz=289							
GOPC	**GO Pecny, Ondr**	**117.57**	**326**	*e*PDIFF	**Pdif**		**23 54 02.7**	**+2.5**
GOPC				*e*PP	**PP**		**23 58 55.2**	**+0.5**
GOPC				*e*SKKS			00 05 59.7	
GOPC				*e*SDIF	**Sdif**		**00 06 41.1**	**-1.3**
GOPC				*e*PS	**PKKPdf**		**00 08 35.3**	**+0.7**
GOPC				*e*SS	**SS**		**00 15 09.4**	**+4.3**
GOPC				AMS	AMS		00 46 40.0	
	comp=Z,33µm,24.9s							
GOPC	**GO Pecny, Ondr**	**117.57**	**326**	*e*P	**Pdif**		**23 54 02.7**	**+2.5**
GOPC				*e*			23 58 55.2	
239A	**Gary**	**117.60**	**56**	PKiKP	**PKPdf**		**23 57 40.1**	**-3.3**
	baz=284							
S40A	**Lebanon**	**117.60**	**49**	PKiKP	PKPpre		23 57 38.1	
	baz=288							
OHR	**Ohrid**	**117.61**	**315**	*e*PKP	**PKPdf**		**23 57 46.2**	**+2.9**
KPRO	**Kipourio**	**117.62**	**314**	P	**PKPdf**		**23 57 48.3**	**+5.0**
SOP	**Sopron**	**117.64**	**323**	*e*PKPdf	**PKPdf**		**23 57 47.6**	**+4.6**
439A	**Center Grove,**	**117.64**	**57**	PKiKP	PKPpre		23 57 37.8	
	baz=283							
EVR	**Evrytania**	**117.64**	**313**	P	**PKPdf**		**23 57 47.8**	**+4.4**
EVR	**Evrytania**	**117.64**	**313**	P	**PKPdf**		**23 57 47.8**	**+4.4**
PRU	**Pruhonice**	**117.66**	**326**	*e*PDIFF	**Pdif**		**23 54 01.5**	**+0.9**
PRU				*e*PKP	**PKiKP**		**23 57 44.1**	**+1.1**
PRU				*ep*PKP	**pPKPdf**		**23 57 46.4**	**-3.3**
PRU				*e*PP	**PP**		**23 58 59.6**	**+4.2**
PRU				*e*SDIF			00 06 42.6	
PRU				*ex*	x		00 08 28.8	
PRU				*e*SS	**SS**		**00 15 01.0**	**-5.3**
PRU				AMS	AMS		00 47 30.0	
	comp=Z,29µm,22.1s							
PRU	**Pruhonice**	**117.66**	**326**	*e*P	**Pdif**		**23 54 01.5**	**+0.9**
PRU				*e*			23 57 44.1	
PRU				*e*			23 57 46.4	
PRU				*e*			23 58 59.6	
MIAR	**Mount Ida**	**117.67**	**53**	PKiKP	**PKPdf**		**23 57 40.9**	**-2.6**
	baz=286							
MIAR	**Mount Ida**	**117.67**	**53**	*e*PKIKP	**PKPdf**		**23 57 43.7**	**+0.2**
MIAR				MLR	MLR			
	comp=Z,17µm,22.0s							
MIAR	**Mount Ida**	**117.67**	**53**	*e*PKPdf	**PKPdf**		**23 57 43.6**	**+0.2**
MIAR				LR	LR			
	comp=Z,17µm,22.0s							
KLV	**Kalavryta, Ach**	**117.67**	**311**	P	PKPdf		23 57 51.5	+8.0
KLV	**Kalavryta, Ach**	**117.67**	**311**	P	PKPdf		23 57 51.5	+8.0
339A	**Huntington**	**117.69**	**56**	PKiKP	**PKPdf**		**23 57 41.5**	**-2.1**
	baz=284							
U40A	**Yellville**	**117.72**	**51**	PKiKP	**PKPdf**		**23 57 40.5**	**-3.1**
	baz=288							
VLX	**Vlachokerasia**	**117.72**	**311**	P	PKPpre		23 57 35.0	
T40A	**Mansfield**	**117.73**	**50**	PKiKP	**PKPdf**		**23 57 41.6**	**-1.9**
	baz=288							
LAKA	**Lakka**	**117.74**	**312**	P	**PKPdf**		**23 57 47.8**	**+4.2**
LAKA	**Lakka**	**117.74**	**312**	P	**PKPdf**		**23 57 47.8**	**+4.2**
CLL	**Collm**	**117.80**	**328**	*e*Pdif	**Pdif**		**23 54 00.0**	**-1.1**
CLL				*e*PKiKP	**PKiKP**		**23 57 44.0**	**+0.8**
CLL				*e*			23 57 49.0	
CLL				*i*			23 57 51.6	
	comp=Z,23nm,1.1s							
CLL				*e*			23 57 57.0	
	comp=Z,31nm,1.1s							
CLL				*e*			23 58 43.0	
CLL				*e*PP	**PP**		**23 58 54.0**	**-2.2**
CLL				*e*			23 59 07.0	
CLL				*e*PPP	PPP		00 01 18.0	
CLL				*e*SKKSac	SKKSac		00 06 00.0	+3.7
CLL				*e*Sdif	**Sdif**		**00 06 42.0**	**-2.2**
CLL				*e*PKKPbc	**PKKPbc**		**00 08 03.0**	**-2.9**
CLL				*e*			00 08 16.0	
CLL				*e*PKKPdf	**PKKPdf**		**00 08 35.0**	**+0.9**
CLL				*e*PS	**PS**		**00 08 43.0**	**+1.1**
CLL				*e*			00 10 30.0	
CLL				*e*SKKPdf	**SKKPdf**		**00 12 01.0**	**-7.5**
CLL				*e*SS	**SS**		**00 15 18.0**	**+10**
CLL				*e*SSS	SSS		00 19 18.0	
CLL				*e*			00 27 06.0	
CLL				Lm	MLR		00 48 00.0	
	comp=N,56µm,21.7s							
CLL				Lm	MLR		00 48 00.0	
	comp=E,44µm,21.1s							
CLL				Lm	MLR		00 48 00.0	
	comp=Z,95µm,21.6s							
CLL	**Collm**	**117.80**	**328**	*e*P	**Pdif**		**23 54 00.0**	**-1.1**
CLL				*e*			23 57 44.0	
CLL				*i*			23 57 51.6	
CLL				*e*			23 58 54.0	
CLL				MLR	MLR			
	comp=Z,95µm,21.6s							
539A	**Cross D Ranch,**	**117.83**	**58**	PKiKP	**PKPdf**		**23 57 41.3**	**-2.6**
	baz=283							
W40A	**Ferguson Farm,**	**117.89**	**52**	PKiKP	**PKPdf**		**23 57 43.3**	**-0.6**
	baz=287							
V40A	**Witts Springs**	**117.90**	**51**	PKiKP	**PKPdf**		**23 57 42.0**	**-2.0**
	baz=287							
CONA	**Conrad Observa**	**117.94**	**324**	*e*PKPdf	**PKPdf**		**23 57 42.7**	**-1.0**
	SNR=8.1							
O41A	**Passleys Farm,**	**117.96**	**46**	PKiKP	**PKPdf**		**23 57 41.9**	**-1.9**
	baz=291							
P41A	**Barry, Barry**	**117.98**	**46**	PKiKP	**PKPdf**		**23 57 41.5**	**-2.5**
	baz=291							
Y40A	**Okolona**	**118.05**	**53**	PKiKP	**PKPdf**		**23 57 41.1**	**-3.1**
	baz=286							
DSL	**Palaion Diasel**	**118.09**	**313**	P	**PKPdf**		**23 57 46.2**	**+2.0**
BORG	**Borgarnes**	**118.10**	**353**	PFAKE			23 58 00.0	+17
BORG				LR	LR			
	comp=Z,14µm,22.0s							
Z40A	**Long Farm, Mag**	**118.16**	**54**	PKiKP	**PKPdf**		**23 57 43.1**	**-1.3**
	baz=286

NKC eSP **SP** **00 08 43.8 -2.8**
NKC eSS **SS** **00 15 20.0 +0.6**
NKC AMS AMS 00 49 20.0
comp=Z,55µm,20.2s
NKC Novy Kostel 118.68 327 eP **Pdif** **23 54 07.4 +2.3**
NKC e 23 57 44.7
NKC e 23 59 03.8
GERES GERESS Array B 118.72 326 Pdiff **Pdif** **23 54 05.9 +0.4**
comp=Z,0.2nm,0.3s,baz=48,slow=4.4,SNR=2.0
GERES PKP **PKiKP** **23 57 45.2 0.0**
comp=Z,1.5nm,0.7s,baz=64,slow=1.1,SNR=12
GERES PKKPab **PKKPab** **00 08 07.2 +3.4**
comp=Z,1.0nm,0.7s,baz=191,slow=1.4,SNR=4.5
141A Papa Simpson, 118.73 55 PKiKP PKPpre 23 57 36.9
baz=286
VLS Valsamata 118.79 312 P PKPpre 23 57 39.7
341A Kurthwood 118.84 56 PKiKP PKPpre 23 57 39.2
baz=285
241A Mo Tay, Goldon 118.87 55 PKiKP PKPpre 23 57 39.6
baz=285
MOA Molln 118.91 324 *i* PKiKP **PKiKP** **23 57 45.8 +0.2**
comp=Z,6.7nm,1.0s
HDIL Hopedale 118.92 45 PKiKP PKPpre 23 57 40.1
baz=292
U42A Revenden 118.96 50 PKiKP PKPpre 23 57 40.7
baz=289
PERS Pernice 119.00 323 *i* PKPdf **PKPdf** **23 57 50.9 +5.1**
V42A Cord 119.01 51 PKiKP PKPpre 23 57 40.8
baz=288
SOKA Soboth 119.03 323 *i* pPKPdf **PKPdf** **23 57 47.2 +1.4**
comp=Z,7.2nm,1.1s
Q43A New Douglas 119.23 47 PKiKP **PKPdf** **23 57 43.8 -2.5**
baz=291
Y42A Garnett, Star 119.29 53 PKiKP **PKPdf** **23 57 43.0 -3.6**
baz=287
Z42A Norrel Spur, H 119.32 54 PKiKP **PKPdf** **23 57 44.1 -2.6**
baz=287
OBKA Obir 119.41 323 *i* sPKiKP **PKPdf** **23 57 50.8 +4.2**
comp=Z,6.6nm,1.1s
S43A Fulton Ridge, 119.43 48 PKiKP **PKPdf** **23 57 43.5 -3.3**
baz=290
BOJS Bojanci 119.46 322 *i* PKPdf **PKPdf** **23 57 51.0 +4.4**
242A Grayson 119.49 55 PKiKP **PKPdf** **23 57 43.7 -3.4**
baz=286
142A Monroe 119.53 54 PKiKP **PKPdf** **23 57 45.1 -2.0**
baz=286
342A Flagon Creek P 119.53 56 PKiKP **PKPdf** **23 57 44.3 -2.8**
baz=285
VISS Visnje 119.57 322 *e*PKPdf **PKPdf** **23 57 51.4 +4.5**
442A Mamou 119.61 57 PKiKP **PKPdf** **23 57 44.1 -3.2**
baz=285
LJU Ljubljana 119.65 322 *e*PKPdf **PKPdf** **23 57 50.1 +3.1**
Q44A Meyer Farm, Va 119.74 47 PKiKP **PKPdf** **23 57 43.8 -3.5**
baz=292
X43A Marvell 119.81 52 PKiKP PKPpre 23 57 43.0
baz=288
KBA Koelnbreinsper 119.84 324 *i* PKiKP **PKiKP** **23 57 48.1 +0.5**
comp=Z,5.4nm,0.9s
MYKA Terra Mystica 119.89 323 *i* sPKiKP **PKPdf** **23 57 52.7 +5.3**
comp=Z,12nm,0.8s
Z43A Armstrong Fami 119.91 53 PKiKP PKPpre 23 57 43.2
baz=287
143A Socs Landing, 119.92 54 PKiKP PKPpre 23 57 42.7
baz=287
R44A Waltonville 119.93 47 PKiKP **PKPdf** **23 57 44.5 -3.2**
baz=291
Y43A Makayla and Ka 119.95 53 PKiKP PKPpre 23 57 42.1
baz=288
JAVS Javornik 120.00 322 *e*PKPdf **PKPdf** **23 57 51.6 +3.9**
S44A Carbondale 120.00 48 PKiKP PKPpre 23 57 42.7
baz=291
243A Waterproof 120.09 55 PKiKP PKPpre 23 57 44.0
baz=286
343A Vidalia 120.14 56 PKiKP PKPpre 23 57 45.2
baz=286
443A Delano Plantat 120.14 56 PKiKP PKPpre 23 57 44.7
baz=285
V44A Blytheville 120.16 50 PKiKP PKPpre 23 57 43.3
baz=289
543A St. Martinvill 120.25 57 PKiKP PKPpre 23 57 44.7
baz=285
X44A Crenshaw 120.39 52 PKiKP PKPpre 23 57 44.0
baz=288
W44A Shelby Farms P 120.44 51 PKiKP PKPpre 23 57 43.6
baz=289
ABTA Abfaltersbach 120.50 324 *i* pPKiKP **PKPdf** **23 57 51.6 +2.9**
comp=Z,55nm,1.0s
Y44A Strider, Charl 120.50 52 PKiKP PKPpre 23 57 42.9
baz=288
S45A Carrier Mills 120.51 48 PKiKP PKPpre 23 57 43.1
baz=292
WTSB Winterswijk 120.53 331 *e*PKP **PKPdf** **23 57 51.9 +3.5**
SFIN Lafayette 120.54 44 PKiKP **PKPdf** **23 57 44.8 -4.0**
baz=294
Z44A Pea Ridge, Bel 120.54 53 PKiKP PKPpre 23 57 44.6
baz=288
244A Avery, Jackson 120.69 55 PKiKP PKPpre 23 57 45.2
baz=287
WATA Walderalm 120.73 325 *i* pPKiKP **PKPdf** **23 57 52.0 +2.8**
comp=Z,41nm,1.4s
144A Alexander Plac 120.74 54 PKiKP PKPpre 23 57 45.4
baz=287
VBMS Vicksburg 120.78 54 PKiKP PKPpre 23 57 45.6
baz=287
344A Westbrook Farm 120.82 55 PKiKP PKPpre 23 57 42.8
baz=286
544A White Castle 120.83 57 PKiKP PKPpre 23 57 42.3
baz=285
V45A Humboldt 120.90 50 PKiKP **PKPdf** **23 57 46.4 -3.3**
baz=290
W45A Hickory Valley 120.92 51 PKiKP PKPpre 23 57 42.9
baz=290
MOTA Moosalm 121.00 325 *i* sPKPdf **PKPdf** **23 57 53.0 +3.3**
comp=Z,36nm,0.8s
X45A UM Field Stati 121.00 52 PKiKP PKPpre 23 57 43.6
baz=289
Y45A Yeager Farm, C 121.06 52 PKiKP PKPpre 23 57 44.8
baz=289
Z45A Winona 121.10 53 PKiKP **PKPdf** **23 57 47.4 -2.7**
baz=288
RETA Reutte 121.11 325 *i* sPKPdf **PKPdf** **23 57 53.3 +3.4**
comp=Z,12nm,1.2s
145A Houston Renfro 121.14 54 PKiKP PKPpre 23 57 46.4
baz=288
TIP Timpagrande 121.21 314 P **PKPdf** **23 57 51.9 +1.6**
TIP Timpagrande 121.21 314 PFAKE 23 58 00.0 +10
TIP LR LR
comp=Z,30µm,22.0s
245A Little AP, Sta 121.34 54 PKiKP **PKPdf** **23 57 47.9 -2.7**
baz=287
445A Amite 121.35 56 PKiKP **PKPdf** **23 57 49.2 -1.4**
baz=286
FETA Feichten 121.39 325 *i* sPKPdf **PKPdf** **23 57 54.2 +3.7**
comp=Z,40nm,1.0s,SNR=8.1
545A Edgard 121.41 57 PKiKP **PKPdf** **23 57 48.7 -2.1**
baz=286
345A Thompson Farm, 121.44 55 PKiKP **PKPdf** **23 57 48.7 -2.1**
baz=287
CUC Castrocucco 121.54 316 PFAKE 23 58 00.0 +9.2
CUC LR LR
comp=Z,20µm,22.0s
Y46A Houston 121.60 52 Pdiff **PKPdf** **23 57 47.4 -3.7**
baz=289
EFI East Falkland 121.62 163 PFAKE 23 58 00.0 +9.4
EFI LR LR
comp=Z,14µm,22.0s
HGN Heimansgroeve 121.71 331 *e*PKP **PKPdf** **23 57 51.6 +0.9**
HGN *e*PP **PP** **23 59 29.3 +6.3**
HGN *e*SKSP 00 09 10.4
DAVA Damuels 121.72 326 *i* PKiKP **PKPdf** **23 57 50.8 -0.3**
comp=Z,36nm,0.8s
Z46A Louisville 121.75 53 PKiKP **PKPdf** **23 57 49.2 -2.1**
baz=289
MEM Membach 121.78 331 PKP **PKPdf** **23 57 55.1 +4.2**
146A Union 121.83 53 PKiKP PKPpre 23 57 45.7
baz=288
LANF Langenberg 121.87 328 PKP **PKPdf** **23 57 51.8 +0.6**
346A Big Creek Wild 121.88 55 PKiKP PKPpre 23 57 47.7
baz=287
246A Jackson Lee, B 121.97 54 PKiKP PKPpre 23 57 48.1
baz=288
WCI Wyandotte Cave 121.97 46 *e*PKIKP **PKPdf** **23 57 52.2 +0.5**
WCI *e* 23 57 57.5
WCI Wyandotte Cave 121.97 46 *e*PKPdf **PKPdf** **23 57 52.2 +0.5**
WCI *ep*PKPdf **pPKPdf** **23 57 57.5 -1.0**
BFO Black Forest 121.98 327 PFAKE 23 58 00.0 +8.6
BFO LR LR
comp=Z,48µm,21.0s
DAVOX Davos/Dischmat 122.01 325 PKP **PKPdf** **23 57 51.3 -0.4**
comp=Z,8.8nm,0.8s,baz=100,slow=1.9,SNR=12
AAM Ann Arbor 122.03 41 PFAKE 23 58 00.0 +8.4
AAM LR LR
comp=Z,15µm,20.0s
646A Port Sulphur 122.09 57 PKiKP PKPpre 23 57 43.6
baz=286
AQU L'Aquila 122.12 319 PFAKE 23 58 00.0 +8.1
AQU LR LR
comp=Z,40µm,20.0s
446A Poplarville 122.13 56 PKiKP PKPpre 23 57 45.2
baz=287
CEL Celeste 122.20 314 PFAKE 23 58 00.0 +7.8
CEL LR LR
comp=Z,27µm,22.0s
BCLA Clavier 122.24 331 PKP **PKPdf** **23 57 53.2 +1.4**
EKA Eskdalemuir Ar 122.30 339 PKKPbc PKKPbc 00 07 52.4 +3.1
comp=Z,0.4nm,0.5s,baz=25,slow=16,SNR=2.9
WLF Walferdange 122.30 330 PKP **PKPdf** **23 57 55.9 +3.9**
WLF Walferdange 122.30 330 PFAKE 23 58 00.0 +8.1
WLF LR LR
comp=Z,61µm,20.0s
ESK Eskdalemuir 122.33 339 PFAKE 23 58 00.0 +8.2
ESK LR LR
comp=Z,39µm,20.0s
247A Quitman 122.37 54 PKiKP PKPpre 23 57 47.3
baz=288
Y47A UCPARC, Winfie 122.38 52 PKiKP PKPpre 23 57 46.0
baz=290
HOPE Hope Point 122.39 179 PFAKE 23 58 00.0 +8.1
HOPE LR LR
comp=Z,25µm,22.0s
Z47A Carrollton 122.44 53 PKiKP PKPpre 23 57 46.4
baz=289
147A Livingston 122.45 53 PKiKP PKPpre 23 57 48.7
baz=289
TUE Stuetta 122.48 325 PFAKE 23 58 00.0 +7.3
TUE LR LR
comp=Z,39µm,20.0s
347A Saraland 122.63 55 PKiKP PKPpre 23 57 45.9
baz=288
ECH Echery 122.67 328 PKP **PKPdf** **23 57 54.4 +1.7**
SNF Seneffe 122.68 331 PKP **PKPdf** **23 57 56.0 +3.5**
447A Lucedale 122.72 55 PKiKP PKPpre 23 57 46.4
baz=287
SCHQ Schefferville 122.72 21 PKP **PKPdf** **23 57 52.8 +0.2**
comp=Z,3.1nm,0.6s,baz=50,slow=6.5,SNR=4.8
Z48A Northport 122.79 52 PKiKP PKPpre 23 57 48.4
baz=290
DOU Dourbes 122.80 331 PKP **PKPdf** **23 57 56.4 +3.6**
MOF Molkenrain 122.91 327 PKP **PKPdf** **23 57 53.1 -0.2**
248A Dixon Mills 123.06 54 PKiKP PKPpre 23 57 47.7
baz=289
VLC Villacollemand 123.13 322 PFAKE 23 58 10.0 +16
VLC LR LR
comp=Z,26µm,19.0s
348A Jackson 123.14 54 PKiKP PKPpre 23 57 49.8
baz=288
THEF They Montfort 123.29 328 PKP **PKPdf** **23 57 54.7 +0.8**
448A Bay Minette 123.33 55 PKiKP PKPpre 23 57 48.6
baz=288
LRAL Lakeview Retre 123.34 52 *e*PKPdf **PKPdf** **23 57 55.2 +0.8**
LRAL *ep*PKPdf **pPKPdf** **23 58 00.1 -1.1**
LOMF Lomont 123.38 327 PKP **PKPdf** **23 57 54.9 +0.7**
ACSO Alum Creek Sta 123.44 43 *e*PKPdf **PKPdf** **23 57 54.9 +0.4**
ACSO *ep*PKPdf **pPKPdf** **23 58 00.4 -0.8**
ACSO LR LR
comp=Z,14µm,21.0s
TSUM Tsumeb 123.56 244 *e*PKPdf **PKPdf** **23 57 55.9 +0.5**
TSUM *ep*PKPdf **pPKPdf** **23 58 00.8 -1.3**
TSUM LR LR
comp=Z,18µm,20.0s
VAE Valguarnera 123.58 313 PKP **PKPdf** **23 57 55.6 +0.8**
comp=Z,5.4nm,0.9s,baz=288,slow=9.6,SNR=2.2
BRAL Brewton 123.91 54 PFAKE 23 58 10.0 +14
BRAL LR LR
comp=Z,9µm,21.0s
OG01 Vacheresse 124.07 326 PKP **PKPdf** **23 57 59.1 +3.5**
WDD Wied Dalam 124.17 312 PFAKE 23 58 10.0 +14
WDD LR LR
comp=Z,12µm,21.0s
CLTB Caltabellotta 124.41 314 PFAKE 23 58 10.0 +14
CLTB LR LR
comp=Z,10µm,20.0s
PAYG Puerto Ayora 124.62 93 PFAKE 23 58 10.0 +13
PAYG LR LR
comp=Z,6µm,22.0s
TZTN Tazewell 124.65 47 *e*PKPdf **PKPdf** **23 57 58.1 +1.2**
TZTN *ep*PKPdf **pPKPdf** **23 58 03.2 -0.4**
BNI Bardonecchia 124.83 325 PFAKE 23 58 10.0 +13
BNI LR LR
comp=Z,72nm,22.0s
M54A Oil Creek Stat 125.01 40 PKiKP PKPpre 23 57 53.4
baz=301
GDM Grand'Maison 125.06 325 PKP **PKPdf** **23 57 58.1 +0.5**
N54A Moraine State 125.08 41 PKiKP PKPpre 23 57 51.3
baz=301
GRN Grenoble 125.25 326 PKP **PKPdf** **23 57 58.2 +0.4**
PLCA Paso Flores 125.30 147 PKP **PKPdf** **23 57 59.6 +1.5**
comp=Z,12nm,0.7s,baz=220,slow=6.1,SNR=12
SSB Saint Sauveur 125.90 326 PKP **PKPdf** **23 57 58.5 -0.5**
SSB Saint Sauveur 125.90 326 *e*PKIKP **PKPdf** **23 57 58.8 -0.3**
SSB MLR MLR
comp=Z,36µm,21.0s
SSB Saint Sauveur 125.90 326 *e*PKPdf **PKPdf** **23 57 58.8 -0.3**
SSB LR LR
comp=Z,36µm,21.0s
OG26 St.-Nazaire-De 125.90 325 PKP **PKPdf** **23 58 02.2 +3.1**
PLDF La Plantade 125.96 327 PKP **PKPdf** **23 58 00.3 +1.1**
GOGA Godfrey 125.97 51 *e*PKIKP **PKPdf** **23 57 59.4 0.0**
GOGA *e* 23 58 05.8
GOGA MLR MLR
comp=Z,9µm,21.0s
GOGA Godfrey 125.97 51 *e*PKPdf **PKPdf** **23 57 59.4 0.0**
GOGA *ep*PKPdf **pPKPdf** **23 58 05.8 -0.4**
GOGA LR LR
comp=Z,9µm,21.0s
AGO Saint Agoulin 126.17 328 PKP **PKPdf** **23 57 57.1 -2.4**
VSL Villasalto 126.18 318 PFAKE 23 58 10.0 +10
VSL LR LR
comp=Z,28µm,20.0s
LEPF PUYLOUBIER 126.29 324 PKP **PKPdf** **23 57 58.9 -0.9**
LONY Lake Ozonia 126.32 34 *e*PKPdf **PKPdf** **23 57 59.2 -0.6**
LONY *ep*PKPdf **pPKPdf** **23 58 06.0 -0.5**
LONY LR LR
comp=Z,19µm,22.0s
O56A Blue Knob Stat 126.36 41 PKiKP PKPpre 23 57 52.6
baz=302
PYM Petit Puy Mans 126.43 328 PKP **PKPdf** **23 58 03.8 +3.7**
TIGA Tifton 126.61 53 PKiKP PKPpre 23 57 53.2
baz=291
BLA Blacksburg 126.61 45 *e*PKIKP **PKPdf** **23 58 01.2 +0.6**
BLA *e* 23 58 05.5
BLA MLR MLR
comp=Z,15µm,21.0s
BLA Blacksburg 126.61 45 *e*PKPdf **PKPdf** **23 58 01.2 +0.6**
BLA *ep*PKPdf **pPKPdf** **23 58 05.5 -1.9**
BLA LR LR
comp=Z,15µm,21.0s
LMQ La Malbaie 126.63 29 *e*PKPdf **PKPdf** **23 57 59.3 -1.0**
LMQ *ep*PKPdf **pPKPdf** **23 58 05.8 -1.3**
LBL Lubilhac 126.64 327 PKP **PKPdf** **23 57 57.0 -3.5**
KMSC Kings Mountain 126.87 48 PKiKP PKPpre 23 57 54.2
baz=296
FRNF Fournols 126.91 327 PKP **PKPdf** **23 58 02.5 +1.5**
BINY Binghamton 126.94 38 *e*PKPdf **PKPdf** **23 58 01.7 +0.6**
BINY *ep*PKPdf **pPKPdf** **23 58 07.4 -0.4**
BINY LR LR
comp=Z,23µm,21.0s
N59A State Game Lan 127.80 39 PKiKP PKPpre 23 57 55.9
baz=305
KEST Kesra 128.01 314 PKP **PKPdf** **23 58 04.3 +0.9**
comp=Z,2.1nm,1.0s,baz=106,slow=18,SNR=1.8
KEST PKKP **PKKPdf** **00 08 13.2 -1.2**
comp=Z,1.7nm,0.7s,baz=66,slow=4.9,SNR=4.3
CBN Corbin Frederi 128.23 42 PFAKE 23 58 20.0 +16
CBN LR LR
comp=Z,16µm,20.0s
NHSC New Hope 128.61 50 PFAKE 23 58 20.0 +16
NHSC LR LR
comp=Z,14µm,21.0s
FILF Fillols 128.71 325 PKP **PKPdf** **23 58 07.9 +3.4**
PKME Peaks-Kenny Pk 128.74 31 PFAKE 23 58 20.0 +16
PKME LR LR
comp=Z,20µm,20.0s
CARF Carcanieres 128.87 325 PKP **PKPdf** **23 58 07.9 +3.0**
CMAH Djebel Manchou 128.95 316 P **PKPdf** **23 58 10.6 +5.4**
ABSA Djebel Ababsia 129.08 315 P **PKPdf** **23 58 11.6 +6.1**
VALF Valcebollere 129.12 325 PKP **PKPdf** **23 58 08.2 +2.8**
CAEH 'Ain El Ouahch 129.27 316 P **PKPdf** **23 58 11.8 +6.1**
CNNC Cliffs of the 129.34 46 PFAKE 23 58 20.0 +14
CNNC LR LR
comp=Z,13µm,21.0s
CKFL Kef-Lekhel 129.55 316 P **PKPdf** **23 58 12.3 +5.9**
CASM Ain Smara 129.78 316 P **PKPdf** **23 58 12.4 +5.7**
LABF Labassere 129.79 327 PKP **PKPdf** **23 58 12.3 +5.8**
RESF Ens 129.81 326 PKP **PKPdf** **23 58 12.9 +6.2**
VIEF Viey 129.93 327 PKP **PKPdf** **23 58 11.0 +4.1**
CTEI Djebel Teioual 129.94 316 P **PKPdf** **23 58 14.6 +7.5**
REYF Montagne du Re 130.03 327 PKP **PKPdf** **23 58 12.4 +5.4**
DFRA Djebel Bou Aff 130.06 316 P **PKPdf** **23 58 13.2 +5.9**
ATE Arette 130.19 327 PKP **PKPdf** **23 58 12.5 +5.2**
LARF Larrau 130.38 327 PKP **PKPdf** **23 58 07.9 +0.3**
TRQA Tornquist 131.68 151 PFAKE 23 58 20.0 +10
TRQA LR LR
comp=Z,14µm,21.0s
PBRG Braganca 134.23 330 *e*PKPdf **PKPdf** **23 58 20.3 +5.3**
PBRG Braganca 134.23 330 *e*PP PP 00 00 52.7 +7.2
PBRG Braganca 134.23 330 *e*SS SS 00 18 29.9 -3.7
ESDC Sonseca Array 134.31 326 PKhKP PKPpre 23 58 09.3
comp=Z,0.5nm,0.7s,baz=32,slow=3.9,SNR=4.8
ESDC PKP **PKiKP** **23 58 16.0 -0.6**
comp=Z,0.5nm,0.7s,baz=30,slow=3.3,SNR=3.1
TRIS Tristan da Cun 134.42 206 PFAKE 23 58 30.0 +15
TRIS LR LR
comp=Z,40µm,21.0s
PAB San Pablo 134.61 326 PFAKE 23 58 30.0 +14
PAB LR LR
comp=Z,24µm,20.0s
PGAV Gavieira, Arco 134.85 332 *e*PKPdf **PKPdf** **23 58 22.3 +6.1**
PGAV Gavieira, Arco 134.85 332 *e*PP PP 00 00 55.8 +6.4
PGAV Gavieira, Arco 134.85 332 *e*SS SS 00 18 45.0 +2.0
PGAV Gavieira, Arco 134.85 332 *e*LR LR 00 43 32.7
comp=Z,52µm,20.0s
MVO Moncorvo 134.85 330 *e*PKPdf **PKPdf** **23 58 22.7 +6.5**
MVO Moncorvo 134.85 330 *e*PP PP 00 00 54.0 +4.5
MVO Moncorvo 134.85 330 *e*SS SS 00 18 44.3 +3.1
MVO Moncorvo 134.85 330 *e*LR LR 00 44 05.3
comp=Z,49µm,20.0s
POLO Lamas de Olo 135.07 331 *e*PKPdf **PKPdf** **23 58 23.1 +6.5**
POLO Lamas de Olo 135.07 331 *e*PP PP 00 00 56.0 +5.2
POLO Lamas de Olo 135.07 331 *e*SS SS 00 18 44.6 +0.8
PVRL Vila Real 135.11 331 *e*PKPdf **PKPdf** **23 58 22.9 +6.3**
PVRL Vila Real 135.11 331 *e*PP PP 00 00 58.3 +7.3
PVIS Viseu 135.62 330 *e*PKPdf **PKPdf** **23 58 22.4 +4.8**
PVIS Viseu 135.62 330 *e*PP PP 00 01 01.9 +7.6
NNA Nana 135.68 111 PFAKE 23 58 30.0 +12
NNA LR LR
comp=Z,5µm,22.0s
MTE Manteigas 135.69 330 *e*PKPdf **PKPdf** **23 58 22.8 +5.0**
MTE Manteigas 135.69 330 *e*PP PP 00 01 02.6 +7.9
MTE Manteigas 135.69 330 *e*SS SS 00 18 51.9 +0.7
MTE Manteigas 135.69 330 *e*LR LR 00 44 44.7
comp=Z,41µm,20.0s
MTE Manteigas 135.69 330 PFAKE 23 58 30.0 +12
MTE LR LR
comp=Z,39µm,20.0s
MTDJ Mount Denham 135.92 67 PFAKE 23 58 30.0 +11
MTDJ LR LR
comp=Z,7µm,21.0s
PCBR Castelo Branco 136.07 329 *e*PKPdf PKPdf 23 58 27.9 +10
PCBR Castelo Branco 136.07 329 *e*PP PP 00 01 02.6 +5.5
TAM Tamanrasset 136.33 300 PFAKE 23 58 30.0 +10
TAM LR LR
comp=Z,12µm,19.0s
TUMC Tumaco 136.33 91 *e*P **PKPdf** **23 58 26.8 +7.2**
PMRV Marv??o 136.33 329 *e*PKPdf **PKPdf** **23 58 23.7 +4.8**
PMRV Marv??o 136.33 329 *e*PP PP 00 01 05.4 +6.6
PMRV Marv??o 136.33 329 *e*SS SS 00 19 08.3 +9.4
PMRV Marv??o 136.33 329 *e*LR LR 00 44 37.7
comp=Z,21µm,20.0s
PCAS Casmilo, Conde 136.43 330 *e*PKPdf **PKPdf** **23 58 24.0 +4.9**
PCAS Casmilo, Conde 136.43 330 *e*PP PP 00 01 04.8 +5.5
PCAS Casmilo, Conde 136.43 330 *e*SS SS 00 19 08.1 +8.3
OTAV Otavalo 136.49 93 *e*P **PKPdf** **23 58 27.4 +6.9**
OTAV Otavalo 136.49 93 *e*PKPdf **PKPdf** **23 58 21.0 +0.5**
OTAV LR LR
comp=Z,5µm,20.0s
PTOM Tomar 136.71 330 *e*PKPdf **PKPdf** **23 58 24.4 +4.8**
PTOM Tomar 136.71 330 *e*PP PP 00 01 03.8 +2.7
PESTR Estremoz 136.85 328 *e*PKPdf **PKPdf** **23 58 24.8 +4.9**
PESTR Estremoz 136.85 328 *e*PP PP 00 01 13.5 +11
PESTR Estremoz 136.85 328 *e*SS SS 00 19 16.3 +11
GRGC Isla de Gorgon 136.94 87 *e*P **PKPdf** **23 58 16.2 -4.6**
PBAR Barrancos 137.06 327 *e*PKPdf PKPdf 23 58 29.6 +9.3
PBAR Barrancos 137.06 327 *e*PP PP 00 01 12.0 +6.6
PBAR Barrancos 137.06 327 *e*SS SS 00 19 20.3 +13
CMBC Cumbal 137.17 92 *e*P **PKPdf** **23 58 23.1 +1.4**
EVO Evora 137.32 328 *e*PKPdf PKPdf 23 58 32.0 +11
EVO Evora 137.32 328 *e*PP PP 00 01 11.4 +6.5
PBEJ Beja 137.62 328 *e*PKPdf PKPdf 23 58 30.8 +9.5
PBEJ Beja 137.62 328 *e*PP PP 00 01 10.6 +3.8
PMAFR Mafra 137.65 330 *e*PKPdf PKPdf 23 58 30.4 +9.0
PMAFR Mafra 137.65 330 *e*PP PP 00 01 21.5 +15
PMAFR Mafra 137.65 330 *e*SS SS 00 19 28.7 +14
GTBY Guantanamo Bay 137.67 64 PFAKE 23 58 30.0 +8.1
GTBY LR LR
comp=Z,7µm,20.0s
LIS Lisbon 137.77 329 *e*P **PKPdf** **23 58 20.3 -1.2**
LIS AMS AMS 01 02 33.1
comp=Z,46µm,19.3s
LIS Lisbon 137.77 329 *e*PKIKP **PKPdf** **23 58 20.3 -1.2**
PMST Lisbon--Monsan 137.77 330 *e*PKPdf PKPdf 23 58 32.7 +11
PMST Lisbon--Monsan 137.77 330 *e*PP PP 00 01 21.5 +14
PNCL Nicolau / Gran 137.90 328 *e*PKPdf PKPdf 23 58 31.3 +9.5
PNCL Nicolau / Gran 137.90 328 *e*PP PP 00 01 16.8 +8.3
PNCL Nicolau / Gran 137.90 328 *e*SS SS 00 19 29.0 +11
MESJ Messejana 137.94 328 *e*PKPdf **PKPdf** **23 58 28.3 +6.4**
MESJ Messejana 137.94 328 *e*PP PP 00 01 15.4 +6.6
MESJ Messejana 137.94 328 *e*PKIKP **PKPdf** **23 58 20.8 -1.1**
LVC Limon Verde 137.94 130 PFAKE 23 58 30.0 +7.2
LVC LR LR
comp=Z,7µm,19.0s
PVAQ Vaqueiros 137.99 327 *e*PKPdf **PKPdf** **23 58 28.6 +6.6**
PVAQ Vaqueiros 137.99 327 *e*PP PP 00 01 11.0 +1.8
PVAQ Vaqueiros 137.99 327 *e*SS SS 00 19 26.9 +8.2
PVAQ Vaqueiros 137.99 327 *e*LR LR 00 46 12.8
comp=Z,23µm,20.0s
PCVE Castro Verde 138.00 327 *e*PKPdf PKPdf 23 58 31.7 +10
PCVE Castro Verde 138.00 327 *e*PP PP 00 01 17.0 +7.8
PCVE Castro Verde 138.00 327 *e*SS SS 00 19 26.8 +8.1
POPC Popayan, Colom 138.41 90 *e*P **PKPdf** **23 58 30.6 +6.9**
PTEO Sao Teotonio 138.43 328 *e*PKPdf PKPdf 23 58 32.5 +10
PTEO Sao Teotonio 138.43 328 *e*PP PP 00 01 18.2 +6.4
MORF Marmelete 138.57 328 *e*PKPdf PKPdf 23 58 32.9 +10
MORF Marmelete 138.57 328 *e*PP PP 00 01 19.6 +6.8
MORF Marmelete 138.57 328 *e*SS SS 00 19 14.2 -11
MORF Marmelete 138.57 328 *e*PKIKP **PKPdf** **23 58 22.1 -1.1**
PFVI Vila Bisbo 138.79 328 *e*PKPdf PKPdf 23 58 33.0 +10
PFVI Vila Bisbo 138.79 328 *e*PP PP 00 01 22.0 +7.9
PFVI Vila Bisbo 138.79 328 *e*SS SS 00 19 39.3 +11
MDT Midelt 139.26 319 PKhKP PKPpre 23 58 17.2
comp=Z,1.4nm,0.8s,baz=163,slow=5.8,SNR=2.0
MDT PKP **PKPdf** **23 58 24.8 +0.1**
comp=Z,3.2nm,1.0s,baz=306,slow=1.2,SNR=6.6
FLOC Florencia 139.38 92 *e*P **PKPdf** **23 58 21.9 -3.4**
HELC Santa Helena 139.57 85 *e*P **PKPdf** **23 58 22.9 -3.2**
TOLC Tolima 139.80 87 *e*P **PKPdf** **23 58 28.5 +2.1**
BBSR BB Station 140.03 41 PFAKE 23 58 40.0 +14
BBSR LR LR
comp=Z,9µm,20.0s
PRAC Prado 140.23 88 *e*P **PKPdf** **23 58 30.5 +3.7**
NORC Norcasia 140.24 86 *e*P **PKPdf** **23 58 24.8 -2.1**
GRTK Grand Turk 140.64 60 PFAKE 23 58 40.0 +13
GRTK LR LR
comp=Z,9µm,21.0s
ROSC El Rosal 140.80 87 PKhKP PKPpre 23 58 21.5
comp=Z,3.4nm,0.3s,baz=334,slow=4.3,SNR=3.7
ROSC PKP **PKPdf** **23 58 27.9 -0.3**
comp=Z,3.9nm,0.3s,baz=110,slow=12,SNR=6.0
BRRC Barranca, Sant 141.33 83 *e*P **PKPdf** **23 58 29.7 +1.0**
SDDR Presa de Saban 141.39 64 *e*PKPdf **PKPdf** **23 58 29.3 +0.6**
SDDR LR LR
comp=Z,10µm,21.0s
CHIC Chingaza 141.39 87 *e*P **PKPdf** **23 58 29.4 0.0**
VILC Villavicencio, 141.43 88 *e*P **PKPdf** **23 58 26.3 -2.8**

OCAC	Ocana	141.64	81	eP		PKPdf	23 58 29.2	-0.3	
LPAZ	La Paz	141.82	122	PKhKP		PKPpre	23 58 24.6		
	comp=Z,4.0nm,1.0s,baz=117,slow=0.4,SNR=9.7								
LPAZ				PKP		PKPdf	23 58 31.4	+1.1	
	comp=Z,15nm,0.7s,baz=286,slow=2.5,SNR=21								
BARC	Barichara	141.89	84	eP		PKPpre	23 58 21.7		
RUSC	La Rusia	142.01	85	eP		PKPpre	23 58 24.8		
CBRI	Barrientos, No	142.20	82	eP		PKPpre	23 58 23.7		
URIC	Uribia, Colomb	142.51	75	eP		PKPdf	23 58 32.5	+1.7	
CPUP	Villa Florida	143.31	145	PKP		PKPdf	23 58 32.9	+0.9	
	comp=Z,6.9nm,0.9s,baz=204,slow=3.5,SNR=7.2								
H07N1	FLORES T-PHASE	143.81	355	ePKP		PKPbc	23 58 31.2	+1.2	
PGRA	Graciosa	144.07	351	ePKP		PKPdf	23 58 31.9	-1.0	
H07S1	FLORES T-PHASE	144.13	355	ePKP		PKPbc	23 58 32.0	+1.0	
SDV	Santo Domingo	144.23	80	eP		PKPab	23 58 31.1	-0.8	
SDV	Santo Domingo	144.23	80	ePKPdf		PKPdf	23 58 33.2	-0.9	
SDV				LR		LR			
	comp=Z,19μm,21.0s								
ADH	Angra Heroismo	144.31	350	ePKP		PKPdf	23 58 32.5	-0.8	
ROSA	Rosais	144.42	351	ePKP		PKPbc	23 58 32.7	+0.8	
PMAN	Manadas	144.48	351	ePKP		PKPbc	23 58 32.7	+0.6	
PCED	Cedros	144.58	351	ePKP		PKPbc	23 58 32.4	0.0	
HOR	Horta	144.66	351	ePKP		PKPab	23 58 32.4	-0.1	
PCAN	Candelaria	144.71	351	ePKP		PKPdf	23 58 34.5	+0.4	
BART	Pico Bartolome	144.72	346	ePKP		PKPab	23 58 32.6	-0.3	
PSET	Sete Cidades	144.81	347	ePKP		PKPab	23 58 32.9	-0.2	
CMLA	Cha da Macela	144.82	347	ePKP		PKPdf	23 58 33.9	-0.4	
CMLA	Cha da Macela	144.82	347			PFAKE	23 58 50.0	+16	
CMLA				LR		LR			
	comp=Z,18μm,20.0s								
PDA	Ponta Delgada	144.87	347	ePKP		PKPab	23 58 32.6	-0.7	
SHEL	Horse Pasture	145.16	235			PFAKE	23 58 50.0	+15	
SHEL				LR		LR			
	comp=Z,9μm,22.0s								
PSMN	Pico do Norte,	145.44	346	ePKP		PKPbc	23 58 35.0	-0.2	
PSMA	Santa Maria	145.46	346	ePKP		PKPab	23 58 36.3	+0.8	
PMPS	Porto Santo	145.80	331	ePKPdf		PKPab	23 58 42.4	+5.5	
SJG	San Juan	146.26	62	ePKP2		PKPbc	23 58 37.8	-0.5	
SJG	San Juan	146.26	62	ePKPdf		PKPbc	23 58 37.8	-0.5	
SJG				LR		LR			
	comp=Z,12μm,22.0s								
PMAR	Madeira	146.35	332	ePKPdf		PKPab	23 58 44.8	+5.6	
PMOZ	Porto Moniz, M	146.40	332	ePKPdf		PKPab	23 58 44.2	+4.9	
PMOZ	Porto Moniz, M	146.40	332	eLR		LR	00 49 11.5		
	comp=Z,11μm,20.0s								
FUL	Funchal	146.40	332	ePKPdf		PKPab	23 58 44.2	+5.1	
SAML	Samuel	149.33	114	ePKPdf		PKPdf	23 58 43.2	+0.7	
SAML				LR		LR			
	comp=Z,16μm,21.0s								
KIC	Kosan Boka	149.69	277	ePKP1		PKPbc	23 58 48.5	+0.8	
	comp=Z,1μm,1.3s								
DBIC	Dimbokro	149.78	277	PKPbc		PKPbc	23 58 47.5	-0.4	
	comp=Z,77nm,1.1s,baz=78,slow=2.5,SNR=31								
TIC	Toumodi	149.95	277	ePKP1		PKPbc	23 58 47.6	-0.7	
LIC	Lamto	149.98	276	ePKP1		PKPbc	23 58 47.8	-0.6	
	comp=Z,1μm,1.2s								
ANWB	Willy Bob	150.25	60			PFAKE	23 59 00.0	+5.0	
ANWB				LR		LR			
	comp=Z,10μm,22.0s								
SPB	Sao Paulo	150.47	156	ePKPbc		PKPbc	23 58 49.5	+0.2	
SPB				ePKPab		PKPab	23 58 55.2	-0.4	
SPB				LR		LR			
	comp=Z,26μm,20.0s								
FDF	Fort de France	151.95	65	ePKIKP		PKPdf	23 58 46.9	+0.4	
FDF				e			23 58 53.4		
FDF				MLR		MLR			
	comp=Z,9μm,21.0s								
FDF	Fort de France	151.95	65	ePKPdf		PKPdf	23 58 46.9	+0.4	
FDF				ePKPbc		PKiKP	23 58 53.4	+0.1	
FDF				LR		LR			
	comp=Z,9μm,21.0s								
GRGR	Grenville	152.30	70			PFAKE	23 59 00.0	-3.7	
GRGR				LR		LR			
	comp=Z,12μm,21.0s								
BBGH	Gun Hill	153.94	67			PFAKE	23 59 00.0	+2.6	
BBGH				LR		LR			
	comp=Z,20μm,22.0s								
PTGA	Pitinga	154.73	99			PFAKE	23 59 00.0	+0.9	
PTGA				LR		LR			
	comp=Z,38μm,21.0s								
ASCN	Ascension	156.45	241			PFAKE	23 59 00.0	+7.2	
ASCN				LR		LR			
	comp=Z,15μm,19.0s								
SACV	Santiago Islan	163.99	316			PFAKE	23 59 10.0	+8.8	
SACV				LR		LR			
	comp=Z,6μm,21.0s								
RCBR	Riachuelo	170.68	175			PFAKE	23 59 20.0	+14	
RCBR				LR		LR			
	comp=Z,33μm,20.0s								

TIF ***31*** *23:45:21.6, 42.˚55N×43.˚46E, h13km±1km*
CSEM ***31*** *23:45:22.5±0.5, 42.˚49N×43.˚47E, h2km, ML1.9, Error ellipse: s-maj=10.2km s-min=7.1km az=157.0*
DDA ***31*** *23:45:23.1, 42.˚47N×43.˚23E, h2km, Md2.8*

ISC 31 23:45:22.3±1.2, 42.˚48N±0.˚03×43.˚47E±0.˚03, h0km±11km, n18, σ0842/35, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONI	**Oni**	**0.11**	**353**	P	**Pg**	**23 45 24.2**	**-0.2**
ONI				S	**Sg**	**23 45 25.8**	**+0.1**
ONI	**Oni**	**0.11**	**353**	P	**Pg**	**23 45 24.2**	**-0.2**
ONI				S	**Sg**	**23 45 25.9**	**+0.1**
GUDG	**Gudauri**	**0.74**	**91**	P	**Pg**	**23 45 36.7**	**+0.2**
GUDG				S	**Sb**	**23 45 48.5**	**-0.5**
GUDG	**Gudauri**	**0.74**	**91**	P	**Pg**	**23 45 36.7**	**+0.2**
GUDG				S	**Sb**	**23 45 48.5**	**-0.5**
AKH	**Akhalkalaki**	**1.07**	**179**	P	**Pg**	**23 45 42.9**	**+0.1**
AKH				S	**Sn**	**23 45 59.4**	**-1.0**
AKH	**Akhalkalaki**	**1.07**	**179**	P	**Pg**	**23 45 41.9**	**-0.9**
AKH				S	**Sb**	**23 45 57.8**	**-0.6**
EPOS	**Posof**	**1.12**	**210**	*i* P	**Pg**	**23 45 43.4**	**-0.4**
EPOS				*i* S	**Sg**	**23 45 58.3**	**-0.1**
EPOS	**Posof**	**1.12**	**210**	P	**Pg**	**23 45 43.4**	**-0.4**
EPOS				S	**Sg**	**23 45 58.3**	**-0.1**
TBLG	**Delisi**	**1.21**	**128**	P	**Pg**	**23 45 45.2**	**-0.2**
TBLG				S	**Sn**	**23 46 03.4**	**0.0**
TBLG	**Delisi**	**1.21**	**128**	P	**Pg**	**23 45 45.2**	**-0.2**
TBLG				S	**Sn**	**23 46 03.4**	**0.0**
BGD	**Bogdanovka**	**1.22**	**175**	P	**Pg**	**23 45 45.7**	**+0.1**
BGD				S	**Sb**	**23 46 03.3**	**+0.6**
BGD	**Bogdanovka**	**1.22**	**175**	P	**Pg**	**23 45 45.8**	**+0.1**
BGD				S	**Sb**	**23 46 03.3**	**+0.6**
ARTV	**Artvin**	**1.73**	**222**	*i* P	**Pn**	**23 45 54.1**	**+0.3**
ARTV				*i* S	**Sb**	**23 46 17.4**	**-0.1**
ARTV	**Artvin**	**1.73**	**222**	P	**Pn**	**23 45 54.1**	**+0.3**
ARTV				S	**Sb**	**23 46 17.4**	**-0.1**
DBOC	**Borcka**	**1.76**	**230**	*i* P	**Pn**	**23 45 53.6**	**-0.4**
DBOC				*i* S	**Sn**	**23 46 17.2**	**+0.1**
DBOC	**Borcka**	**1.76**	**230**	P	**Pn**	**23 45 53.6**	**-0.4**
DBOC				S	**Sn**	**23 46 17.2**	**+0.1**
DDEM	**Demirkent**	**2.05**	**220**	*i* P	**Pb**	**23 46 00.8**	**+0.5**
DDEM				*i* S	**Sb**	**23 46 27.1**	**+0.7**
DDEM	**Demirkent**	**2.05**	**220**	P	**Pb**	**23 46 00.8**	**+0.5**

BJI ***31*** *23:56:28.7, 0.˚77S×99.˚34E, h81km, mb5.2/42, mB5.1/5, Ms5.2/3*
MOS ***31*** *23:56:34.6±0.9, 0.˚10N×99.˚28E, h74km, mb5.4/22, Error ellipse: s-maj=11.1km s-min=6.0km az=109.2*
ISCJB ***31*** *23:56:35.6±0.6, 0.˚07N±0.˚04×99.˚24E±0.˚04, h84km±5km, mb4.8/85, Error ellipse: s-maj=7.3km s-min=4.6km az=43.6*
IDC ***31*** *23:56:36.0±1.4, 0.˚05N×99.˚30E, h74km±11km, mb4.5/35, mb1 4.6/38, mb1mx4.5/48, mbtmp4.8/38, Error ellipse: s-maj=12.9km s-min=8.9km az=53.0*
NEIC ***31*** *23:56:36.4±0.5, 0.˚03N×99.˚22E, h79km±4km, mb5.1/20, Error ellipse: s-maj=6.5km s-min=3.9km az=49.0*
NEIC Felt [V] at Airbangis, [IV] at Lubukbasung and [III] at Padang, Padangpanjang and Pariaman.

ISC 31 23:56:37.3±0.9, 0.˚02N±0.˚05×99.˚21E±0.˚05, h87km±7km, n256, σ1912/265, mb4.9/96, 15C-12D, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BKNI	**Bangkinang**	**1.85**	**80**	*e*Pn	**Pn**	**23 57 07.1**	**-0.4**
GSI	**Gunungsitoli**	**2.08**	**308**	*e*Pn	**Pn**	**23 57 07.7**	**-2.9**
PSI	**Prapat**	**2.78**	**354**	P	**Pn**	**23 57 17.2**	**-2.8**
	155nm,0.3s,baz=158,slow=9.6,SNR=267						
PSI				S	Sn	23 57 38.7	-14
	160nm,0.3s,baz=162,slow=15,SNR=17						
IPM	**Ipoh**	**4.79**	**22**	*e*Pn	**Pn**	**23 57 47.0**	**-0.2**
MYKOM	Kota Tinggi	4.96	69	⇓P	**Pn**	**23 57 50.0**	**+0.6**
MYKOM	Kota Tinggi	4.96	69	*e*Pn	**Pn**	**23 57 49.8**	**+0.3**
KULM	**Kulim**	**5.43**	**15**	*e*Pn	**Pn**	**23 57 55.3**	**-0.6**
LHMI	**Lhok Sumawe**	**5.65**	**336**	*e*Pn	**Pn**	**23 57 56.9**	**-2.0**
MNAI	**Manna**	**5.73**	**139**	*e*Pn	**Pn**	**23 57 59.9**	**-0.1**
TRTT	**Trang**	**7.78**	**3**	P	**Pn**	**23 58 26.3**	**-1.7**
	443nm,0.9s						
PKDT	**Phuket**	**7.87**	**354**	P	**Pn**	**23 58 29.7**	**+0.5**
	278nm,1.2s,1.2nm						
SURT	**Suratani**	**8.89**	**357**	P	**Pn**	**23 58 43.1**	**0.0**
	78nm,1.3s,0.4nm						
SURA	**Surathani**	**9.10**	**3**	P	**Pn**	**23 58 45.6**	**-0.3**
	703nm,0.9s						
KSM	**Kuching**	**11.19**	**83**	⇑P	**Pn**	**23 59 16.3**	**+1.9**
KSM	**Kuching**	**11.19**	**83**	Pn	**Pn**	**23 59 14.4**	**0.0**
CISI	**Cisompet, Garu**	**11.41**	**131**	*e*Pn	**Pn**	**23 59 15.6**	**-1.8**
	73nm,0.6s						
SBUM	**Sibu**	**13.23**	**79**	*e*Pn	**Pn**	**23 59 44.3**	**+2.5**
PBA	**Port Blair**	**13.23**	**331**	*e*P	Pn	23 59 39.6	-2.2
DGPR	**DIGLIPUR**	**14.48**	**335**	*e*P	**Pn**	**00 00 00.1**	**+1.9**
DGPR				IAmb	IAmb	00 03 06.8	
KKM	**Kota Kinabalu**	**18.00**	**70**	*e*P	**Pn**	**00 00 42.0**	**0.0**
	160nm,0.9s						
CM01	**Chiang Mai Arr**	**18.29**	**359**	*e*P	**P**	**00 00 44.1**	**-0.4**
CM01				*e*PcP	**PcP**	**00 05 14.2**	**+1.0**
CM31	**Chiang Mai Arr**	**18.33**	**359**	*e*P	**P**	**00 00 44.9**	**0.0**
CMAR	**Chiang Mai Arr**	**18.33**	**359**	P	**P**	**00 00 43.1**	**-1.8**
	1.7nm,0.3s,baz=190,slow=11,SNR=28						
CMAR				PcP	**PcP**	**00 05 14.4**	**+1.2**
	0.2nm,0.3s,baz=220,slow=2.8,SNR=10.0						
CHTO	**Chiang Mai**	**18.68**	**359**	*e*P	**P**	**00 00 48.0**	**-0.8**
CHTO				pmax	pmax		
	comp=Z,34nm,0.9s						
CHTO	**Chiang Mai**	**18.68**	**359**	*e*P	**P**	**00 00 48.0**	**-0.8**
	comp=Z,34nm,0.9s						
PALK	**Pallekele**	**19.82**	**292**	P	**P**	**00 01 02.0**	**+0.8**
	comp=Z,0.6nm,0.3s,baz=116,slow=9.2,SNR=7.6						
PALK				S	S	00 04 29.1	-11
	comp=Z,2.5nm,0.3s,baz=103,slow=0.1,SNR=7.8						
PALK	**Pallekele**	**19.82**	**292**	*e*P	**P**	**00 01 00.6**	**-0.7**
PALK				S	S	00 04 29.1	-11
PALK				pmax	pmax		
	comp=Z,88nm,1.2s						
PALK	**Pallekele**	**19.82**	**292**	*e*P	**P**	**00 01 00.6**	**-0.7**
	comp=Z,88nm,1.2s						
PALK				S	S	00 04 29.1	-11
MYLDM	Lahad Datu	19.93	75	*e*P	**Pn**	**00 01 05.3**	**+0.5**
	comp=Z,138nm,0.9s						
KAPI	**Kappang**	**21.11**	**104**	*e*P	**P**	**00 01 15.5**	**+0.3**
	comp=Z,49nm,1.0s						
MDRS	**Chennai**	**22.84**	**305**	*e*P	**P**	**00 01 34.6**	**+1.1**
MDRS				IAmb	IAmb	00 01 41.2	
	comp=Z,21nm,0.8s						
VIS	**Vishakhapatnam**	**23.54**	**319**	*e*P	**P**	**00 01 39.8**	**-0.2**
VIS				IAmb	IAmb	00 01 41.9	
	comp=Z,42nm,1.2s						
LUWI	**Luwuk**	**23.58**	**93**	*e*P	**P**	**00 01 42.2**	**+1.7**
	comp=Z,306nm,0.9s						
TRD	**Trivandrum**	**23.72**	**291**	*e*P	**P**	**00 01 41.7**	**-0.1**
TRD				IAmb	IAmb	00 01 43.4	
	comp=Z,72nm,1.6s						
BWNR	**Bhubaneshwar**	**24.05**	**328**	*e*P	**P**	**00 01 44.3**	**-0.2**
BWNR				IAmb	IAmb	00 01 49.8	
	comp=Z,43nm,0.8s						
KMI	**Kunming**	**25.19**	**8**	P	**P**	**00 01 57.3**	**+2.1**
KMI				pmax	pmax		
	comp=Z,41nm,0.8s						
LQP	**Lukban**	**26.16**	**57**	⇑*e*P	**P**	**00 02 04.4**	**+0.4**
SHL	**Shillong**	**26.37**	**345**	*e*P	**P**	**00 02 05.2**	**-0.5**
SHL				IAmb	IAmb	00 02 08.7	
	comp=Z,79nm,0.8s						
HYB	**Hyderabad**	**26.70**	**311**	*i* P	**P**	**00 02 11.0**	**+2.4**
BOK	**Bokaro**	**26.95**	**332**	*e*P	**P**	**00 02 11.7**	**+0.9**
BOK				IAmb	IAmb	00 02 17.7	
	comp=Z,77nm,0.4s						
GYA	**Guiyang**	**27.25**	**15**	⇑*i*P	**P**	**00 02 13.0**	**-0.6**
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
H08S2	**Diego Garcia H**	**27.71**	**253**	T	T	00 30 05.4	
	baz=75						
H08S3	**Diego Garcia H**	**27.71**	**253**	T	T	00 30 05.2	
	baz=75						
H08S1	**Diego Garcia H**	**27.72**	**253**	T	T	00 30 04.0	
	baz=75						
NGP	**Nagpur**	**28.80**	**318**	*e*P	**P**	**00 02 27.8**	**+0.4**
NGP				IAmb	IAmb	00 02 33.9	
	comp=Z,111nm,0.8s						
JBP	**Jabalpur**	**29.65**	**322**	⇓*e*P	**P**	**00 02 36.5**	**+1.8**
JBP				AMS	AMS	00 17 34.6	
	comp=Z,22μm,22.0s						
JIRN	**Jiri**	**30.20**	**337**	*e*P	**P**	**00 02 39.9**	**-0.1**
PKIN	**Phulchoki**	**30.45**	**335**	*e*P	**P**	**00 02 43.0**	**+0.9**
	comp=Z,48nm,0.7s						
GUN	**Gumba**	**30.55**	**336**	*e*P	**P**	**00 02 43.5**	**+0.4**
	comp=Z,91nm,0.6s						
DMN	**Daman**	**30.60**	**335**	*e*P	**P**	**00 02 43.5**	**0.0**
KKN	**Kakani**	**30.68**	**335**	*e*P	**P**	**00 02 44.4**	**+0.2**
	comp=Z,34nm,0.7s						
POO	**Poona**	**30.97**	**308**	*e*P	**P**	**00 02 45.1**	**-1.5**
POO				IAmb	IAmb	00 02 49.0	
	comp=Z,29nm,1.2s						
CD2	**Chengdu**	**31.03**	**8**	P	**P**	**00 02 47.5**	**+0.6**
CD2				pP	pP	00 03 06.5	-0.5
CD2				sP	sP	00 03 16.3	-0.8
CD2				S	**S**	**00 07 48.3**	**+2.5**
CD2				sS	sS	00 08 21.5	+1.1
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.0s						
GKN	**Gorkha**	**31.14**	**335**	*e*P	**P**	**00 02 48.3**	**+0.2**
	comp=Z,46nm,0.6s						
BHPL	**Bhopal**	**31.33**	**319**	*e*P	**P**	**00 02 50.0**	**+0.3**
BHPL				IAmb	IAmb	00 02 56.1	
	comp=Z,75nm,0.1s						
KOLN	**Koldanda**	**31.40**	**333**	*e*P	**P**	**00 02 51.0**	**+0.5**
	comp=Z,64nm,0.6s						
FITZ	**Fitzroy Crossi**	**31.61**	**126**	P	**P**	**00 02 49.9**	**-2.2**
	comp=Z,9.6nm,0.8s,baz=301,slow=4.6,SNR=12						
FITZ				S	**S**	**00 07 48.7**	**-6.3**
	comp=Z,6.9nm,1.1s,baz=230,slow=22,SNR=3.8						
PYUN	**Piuthan**	**31.96**	**332**	*e*P	**P**	**00 02 55.8**	**+0.4**
	comp=Z,26nm,0.3s						
TATO	**Taipei**	**32.87**	**39**	*e*P	**P**	**00 03 03.6**	**+0.6**
	comp=Z,38nm,0.6s						
MUN	**Mudaring**	**35.65**	**155**	P	**P**	**00 03 28.9**	**+1.8**
	baz=36						
LZH	**Lanzhou**	**36.15**	**6**	⇑P	**P**	**00 03 32.5**	**+1.0**
LZH				pmax	pmax		
	comp=Z,23nm,1.3s						
LZH				pmax	pmax		
	comp=Z,82nm,7.0s						
LZH				LR	LR		
	comp=Z,280nm,14.5s						
LZH				LR	LR		
	comp=Z,300nm,15.0s						
BHJ	**Bhuj**	**36.86**	**311**	*e*P	**P**	**00 03 36.3**	**-1.2**
BHJ				IAmb	IAmb	00 03 40.1	
	comp=Z,268nm,1.9s						
NJ2	**Nanjing**	**36.88**	**28**	*e*P	**P**	**00 03 37.5**	**0.0**
NJ2				pmax	pmax		
	comp=Z,19nm,0.7s						
NWAO	**Narrogin (SRO)**	**36.91**	**154**	P	**P**	**00 03 37.6**	**-0.1**
	comp=Z,20nm,0.9s,baz=49,slow=20,SNR=2.4						
SMLA	**Simla**	**37.35**	**328**	*e*P	**P**	**00 03 41.5**	**0.0**
KMBL	**Kambalda**	**37.89**	**148**	P	**P**	**00 03 48.0**	**+1.8**
	baz=38						
GTA	**Gaotai**	**39.21**	**1**	⇑P	**P**	**00 03 57.5**	**+0.3**
GTA				pP	pP	00 04 16.0	-1.8
GTA				sP	sP	00 04 24.8	-3.0
GTA				PcP	**PcP**	**00 06 05.3**	**+0.4**
GTA				pmax	pmax		
	comp=Z,64nm,1.0s						
WRA	**Warramunga Arr**	**39.70**	**122**	P	**P**	**00 04 00.4**	**-1.1**
	comp=Z,16nm,0.7s,baz=304,slow=8.9,SNR=109						
WRA				PcP	**PcP**	**00 06 06.9**	**+0.2**
	comp=Z,3.9nm,0.7s,baz=310,slow=2.2,SNR=5.8						
WRA				S	**S**	**00 09 52.6**	**-6.4**
	comp=Z,6.8nm,0.8s,baz=296,slow=16,SNR=13						
WRAB	**Tennant Creek**	**39.71**	**122**	*e*P	**P**	**00 04 00.7**	**-0.8**
WRAB				pmax	pmax		
	comp=Z,27nm,1.0s						
WRAB	**Tennant Creek**	**39.71**	**122**	*e*P	**P**	**00 04 00.7**	**-0.8**
	comp=Z,27nm,1.0s						
WB2	**Warramunga Arr**	**39.71**	**122**	*e*P	**P**	**00 04 00.6**	**-1.0**
AS31	**Alice Springs**	**41.08**	**127**	*e*P	**P**	**00 04 12.2**	**-0.6**
	comp=Z,7.4nm,1.0s						
ASAR	**Alice Springs**	**41.08**	**127**	P	**P**	**00 04 11.9**	**-0.9**
	comp=Z,14nm,0.8s,baz=297,slow=7.4,SNR=109						
ASAR				PcP	**PcP**	**00 06 11.8**	**+0.6**
	comp=Z,7.5nm,0.8s,baz=303,slow=3.3,SNR=13						
ASAR				ScP	**ScP**	**00 09 55.0**	**+1.7**
	comp=Z,2.2nm,0.8s,baz=306,slow=4.7,SNR=5.2						
ASAR				S	**S**	**00 10 14.8**	**-4.6**
	comp=Z,7.0nm,1.0s,baz=296,slow=16,SNR=15						
FORT	**Forrest**	**41.09**	**141**	*e*P	**P**	**00 04 13.2**	**+0.6**
	comp=Z,465nm,0.7s						
AS01	**Alice Springs**	**41.12**	**127**	*e*P	**P**	**00 04 11.1**	**-2.0**
DL2	**Dalian**	**43.83**	**25**	P	**P**	**00 04 34.8**	**0.0**
DL2				pmax	pmax		
	comp=Z,54nm,0.8s						
JNU	**Nakatsue**	**44.41**	**39**	*e*P	**P**	**00 04 39.3**	**-0.3**
	comp=Z,38nm,0.9s						
KSH	**Kashi**	**44.69**	**334**	P	**P**	**00 04 41.0**	**-0.8**
KSH				*es*P	sP	00 05 09.5	-3.2
KSH				S	**S**	**00 11 08.3**	**-3.8**
KSH				ScS	**ScS**	**00 14 29.0**	**-2.2**
KSH				pmax	pmax		
	comp=Z,18nm,0.8s						
WSAR	**Wadi Sarin**	**45.68**	**303**	P	**P**	**00 04 50.4**	**+0.6**
	comp=Z,3.1nm,0.6s,baz=176,slow=5.9,SNR=7.1						
KS15	**Wonju Array Si**	**45.69**	**32**	*e*P	**P**	**00 04 49.1**	**-0.5**
KSAR	**Wonju Array Be**	**45.69**	**32**	P	**P**	**00 04 49.2**	**-0.4**
KSAR						00 06 26.6	
KSAR	**Wonju Array Be**	**45.69**	**32**	P	**P**	**00 04 49.2**	**-0.4**
KSAR				PcP	**PcP**	**00 06 26.6**	**+0.3**
KSRS	**Korea Array**	**45.72**	**32**	P	**P**	**00 04 49.2**	**-0.7**
	comp=Z,30nm,0.8s,baz=222,slow=8.7,SNR=71						
KSRS				PcP	**PcP**	**00 06 26.6**	**+0.2**
	comp=Z,4.7nm,0.9s,baz=245,slow=3.2,SNR=4.9						
KS01	**Wonju Array Si**	**45.72**	**32**	*e*P	**P**	**00 04 48.8**	**-1.0**
PDGK	**Podgornoye**	**46.60**	**340**	*i* P	**P**	**00 04 57.3**	**+0.7**
PDGK				pmax	pmax		
	comp=Z,43nm,0.8s						
TKM2	**Tokmak 2**	**47.68**	**337**	*i* P	**P**	**00 05 05.6**	**+0.2**
TKM2				pmax	pmax		
	comp=Z,47nm,0.6s						
AAK	**Ala-Archa**	**47.90**	**335**	P	**P**	**00 05 08.0**	**+1.1**
	comp=Z,13nm,0.6s,baz=142,slow=6.1,SNR=20						
AAK	**Ala-Archa**	**47.90**	**335**	*e*P	**P**	**00 05 08.4**	**+1.4**
AAK				pmax	pmax		
	comp=Z,37nm,0.9s						
AAK	**Ala-Archa**	**47.90**	**335**	*e*P	**P**	**00 05 07.1**	**+0.1**
	comp=Z,21nm,0.9s						
SONM	**Songino Array**	**48.04**	**7**	P	**P**	**00 05 08.9**	**+1.0**
	comp=Z,109nm,0.7s,baz=189,slow=9.4,SNR=564						
SONM				PcP	**PcP**	**00 06 35.1**	**+0.6**
	comp=Z,7.2nm,0.6s,baz=187,slow=3.0,SNR=5.2						
SONM				ScP	**ScP**	**00 10 22.6**	**+1.2**
	comp=Z,1.8nm,0.9s,baz=188,slow=4.5,SNR=5.4						
SONA1	Songino Array	48.05	7	*e*P	**P**	**00 05 07.9**	**-0.2**
MNAS	**Manas**	**48.63**	**334**	*i* P	**P**	**00 05 13.2**	**+0.6**
MNAS				pmax	pmax		
	comp=Z,35nm,0.7s						
PMG	**Port Moresby**	**48.63**	**103**	*e*P	**P**	**00 05 12.7**	**-0.2**
PMG				pmax	pmax		
	comp=Z,187nm,1.0s						
MK01	**Makanchi Array**	**48.87**	**345**	*e*P	**P**	**00 05 14.3**	**+0.1**
MK31	**Makanchi Array**	**48.89**	**345**	*e*P	**P**	**00 05 14.7**	**+0.3**
MK31	**Makanchi Array**	**48.89**	**345**	*e*P	**P**	**00 05 14.7**	**+0.3**
MKAR	**Makanchi Array**	**48.89**	**345**	P	**P**	**00 05 14.7**	**+0.3**
	comp=Z,28nm,0.4s,baz=159,slow=8.5,SNR=418						
MAKZ	**Makanchi**	**48.99**	**344**	*e*P	**P**	**00 05 15.1**	**0.0**
MAKZ				pmax	pmax		
	comp=Z,28nm,0.8s						
MAKZ	**Makanchi**	**48.99**	**344**	*e*P	**P**	**00 05 15.1**	**0.0**
	comp=Z,28nm,0.8s						
CN2	**Changchun**	**49.48**	**25**	*e*P	**P**	**00 05 18.0**	**-0.9**
CN2				pmax	pmax		
	comp=Z,30nm,0.8s						
KK31	**Karatay Array**	**50.02**	**333**	*i* P	**P**	**00 05 22.3**	**-0.7**
KK31				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KKAR	**Karatay Array**	**50.02**	**333**	*e*P	**P**	**00 05 23.1**	**+0.1**
KKAR	**Karatay Array**	**50.02**	**333**	*e*P	**P**	**00 05 23.1**	**+0.1**
STKA	**Stephens Creek**	**51.08**	**133**	P	**P**	**00 05 31.1**	**0.0**
	comp=Z,12nm,0.8s,baz=316,slow=7.7,SNR=12						
STKA	**Stephens Creek**	**51.08**	**133**	*e*P	**P**	**00 05 31.6**	**+0.5**
STKA				pmax	pmax		
	comp=Z,25nm,1.9s						
STKA	**Stephens Cre

OBN	**Obninsk**	**74.68**	**328**	*i*	P	**P**	**00 08 06.9**	**-0.4**
OBN					pmax	pmax		
	comp=Z,42nm,1.3s							
OBN	**Obninsk**	**74.68**	**328**	*e*	P	**P**	**00 08 07.2**	**-0.1**
BOSA	**Boshof**	**75.94**	**241**		P	**P**	**00 08 15.8**	**+0.5**
	comp=Z,4.1nm,0.9s,baz=134,slow=6.3,SNR=6.2							
TIRR	**Tirgusor**	**76.37**	**316**	⇓ *i*	P	**P**	**00 08 17.2**	**0.0**
TLB	**Topalu**	**76.66**	**316**	⇑ *i*	P	**P**	**00 08 18.4**	**-0.4**
CFR	**Carcaliu**	**76.73**	**317**	⇑ *i*	P	**P**	**00 08 19.1**	**-0.1**
HARR	**Harsova**	**76.76**	**316**	⇑ *i*	P	**P**	**00 08 19.3**	**-0.1**
RPZ	**Rata Peaks**	**76.95**	**135**		P	**P**	**00 08 20.9**	**+0.4**
	comp=Z,7.1nm,0.8s,baz=28,slow=3.9,SNR=3.8							
SORM	**Soroca**	**77.30**	**320**	⇑ *i*	P	**P**	**00 08 22.2**	**-0.2**
AKASG	**Malin Array Be**	**77.42**	**322**		P	**P**	**00 08 22.0**	**-1.0**
	comp=Z,1.8nm,0.5s,baz=90,slow=4.9,SNR=15							
AKASG	**Malin Array Be**	**77.42**	**322**		P	**P**	**00 08 22.0**	**-1.0**
KIEV	**Kiev**	**77.43**	**322**	*e*	P	**P**	**00 08 22.2**	**-0.8**
KIEV					pmax	pmax		
	comp=Z,8.0nm,0.8s							
KIEV	**Kiev**	**77.43**	**322**	*e*	P	**P**	**00 08 22.2**	**-0.8**
SULR		**77.92**	**316**	⇓ *i*	P	**P**	**00 08 26.8**	**+0.9**
MLR	**Muntele Rosu**	**78.31**	**317**		P	**P**	**00 08 28.3**	**+0.1**
	comp=Z,4.2nm,0.9s,baz=84,slow=4.1,SNR=5.1							
MLR	**Muntele Rosu**	**78.31**	**317**	⇓ *i*	P	**P**	**00 08 28.9**	**+0.7**
MLR	**Muntele Rosu**	**78.31**	**317**	*e*	P	**P**	**00 08 28.0**	**-0.2**
MLR	**Muntele Rosu**	**78.31**	**317**	*e*	P	**P**	**00 08 28.0**	**-0.2**
ZIMR		**78.34**	**315**	⇓ *i*	P	**P**	**00 08 28.4**	**+0.2**
PRAR	**RASCA**	**78.52**	**318**	⇓ *i*	P	**P**	**00 08 29.7**	**+0.5**
DOPR	**Dopca**	**78.79**	**317**	⇑ *i*	P	**P**	**00 08 31.3**	**+0.6**
ARR	**Arges**	**79.19**	**316**	⇑ *i*	P	**P**	**00 08 32.8**	**-0.2**
MICGM	**Minsk**	**79.23**	**326**	*e*		**P**	**00 08 32.0**	**-0.9**
BURAR	**Bucovina Array**	**79.24**	**319**	⇓ *i*	P	**P**	**00 08 34.5**	**+1.3**
SYO	**Syowa Base**	**79.52**	**198**	⇑ *e*	P	P	00 08 46.2	+12
CJR	**Cluj-Napoca**	**80.15**	**317**	⇑ *i*	P	**P**	**00 08 39.3**	**+1.2**
LVZ	**Lovozero**	**80.63**	**340**	*e*	P	**P**	**00 08 39.8**	**-0.4**
LVZ					pmax	pmax		
	comp=Z,16nm,0.7s							
MDVR	**Moldovita**	**81.12**	**315**	⇓ *i*	P	**P**	**00 08 43.8**	**+0.4**
BZS	**Buzias**	**81.32**	**316**	⇑ *i*	P	**P**	**00 08 44.7**	**+0.4**
SIRR	**Siria**	**81.39**	**317**	⇓ *i*	P	**P**	**00 08 45.5**	**+0.8**
FINES	**FINESS Array B**	**81.97**	**332**		P	**P**	**00 08 47.5**	**+0.1**
	comp=Z,7.2nm,0.5s,baz=104,slow=5.4,SNR=52							
TSUM	**Tsumeb**	**82.10**	**251**		P	**P**	**00 08 50.4**	**+1.3**
	comp=Z,4.8nm,1.2s,baz=51,slow=16,SNR=3.6							
PDG	**Podgorica**	**82.57**	**313**	⇑ *i*	P	**P**	**00 08 50.5**	**-0.4**
PSZ	**Piszkesteto**	**82.83**	**318**	⇓ *i*	P	**P**	**00 08 52.0**	**-0.3**
PSZ	**Piszkesteto**	**82.83**	**318**	*e*	P	**P**	**00 08 51.7**	**-0.6**
PSZ	**Piszkesteto**	**82.83**	**318**	*e*	P	**P**	**00 08 51.7**	**-0.6**
KEV	**Kevo**	**83.88**	**341**	*e*	P	**P**	**00 08 57.0**	**-0.1**
KEV					pmax	pmax		
	comp=Z,10.0nm,1.1s							
KEV	**Kevo**	**83.88**	**341**	*e*	P	**P**	**00 08 57.0**	**-0.1**
	comp=Z,10nm,1.1s							
VNDA	**Vanda**	**84.28**	**169**		P	**P**	**00 08 59.7**	**+0.7**
	comp=Z,1.1nm,0.7s,baz=308,slow=5.0,SNR=4.2							
ARA0	**ARCESS Array S**	**84.32**	**340**	*e*	P	**P**	**00 08 59.8**	**+0.4**
ARCES	**ARCESS Array B**	**84.32**	**340**		P	**P**	**00 08 59.8**	**+0.4**
	comp=Z,6.9nm,0.4s,baz=105,slow=4.4,SNR=79							
MORC	**Moravsky Berou**	**84.60**	**320**	⇓ *i*	P	**P**	**00 09 02.1**	**+0.9**
CONA	**Conrad Observa**	**85.52**	**318**	*i*	P	**P**	**00 09 05.9**	**-0.1**
	comp=Z,3.8nm,1.0s							
ARSA	**Arzberg**	**85.70**	**317**	*i*	P	**P**	**00 09 07.4**	**+0.6**
	comp=Z,13nm,1.4s							
BOJS	**Bojanci**	**85.75**	**315**	*i*	P	**P**	**00 09 07.5**	**+0.5**
PERS	**Pernice**	**85.93**	**317**	*i*	P	**P**	**00 09 08.4**	**+0.5**
SOKA	**Soboth**	**85.99**	**317**	*i*	P	**P**	**00 09 09.1**	**+0.8**
	comp=Z,7.4nm,0.9s							
VISS	**Visnje**	**86.06**	**316**	*i*	P	**P**	**00 09 09.0**	**+0.5**
OBKA	**Obir**	**86.31**	**316**	*i*	P	**P**	**00 09 10.2**	**+0.3**
	comp=Z,6.2nm,1.3s							
MOA	**Molln**	**86.59**	**318**	*i*	P	**P**	**00 09 10.1**	**-1.0**
	comp=Z,5.1nm,1.1s							
JAVS	**Javornik**	**86.60**	**316**	*i*	P	**P**	**00 09 11.3**	**0.0**
AQU	**L'Aquila**	**86.89**	**312**	*e*	P	**P**	**00 09 13.6**	**+0.9**
AQU	**L'Aquila**	**86.89**	**312**	*e*	P	**P**	**00 09 13.6**	**+0.9**
MYKA	**Terra Mystica**	**86.94**	**317**	*i*	P	**P**	**00 09 13.1**	**+0.1**
	comp=Z,6.2nm,1.0s							
BRG	**Berggiesshubel**	**86.99**	**321**	*e*	P	**P**	**00 09 13.8**	**+0.8**
	comp=Z,7.8nm,1.2s							
GERES	**GERESS Array B**	**87.03**	**319**		P	**P**	**00 09 13.6**	**+0.3**
	comp=Z,4.9nm,1.0s,baz=88,slow=3.1,SNR=9.6							
KBA	**Koelnbreinsper**	**87.17**	**317**	*i*	P	**P**	**00 09 10.2**	**-4.0**
	comp=Z,2.3nm,0.7s							
CLL	**Collm**	**87.61**	**321**	*i*	P	**P**	**00 09 16.2**	**+0.3**
	comp=Z,11nm,1.2s							
ABTA	**Abfaltersbach**	**87.72**	**317**	*i*	P	**P**	**00 09 15.2**	**-1.5**
	comp=Z,8.5nm,1.7s							
WATA	**Walderalm**	**88.38**	**317**	*i*	P	**P**	**00 09 20.0**	**+0.1**
	comp=Z,3.8nm,0.7s							
MOTA	**Moosalm**	**88.70**	**317**	*i*	P	**P**	**00 09 20.3**	**-1.1**
	comp=Z,15nm,1.3s							
RETA	**Reutte**	**88.94**	**317**	*i*	P	**P**	**00 09 21.7**	**-0.7**
	comp=Z,6.1nm,0.9s							
FETA	**Feichten**	**88.95**	**317**	*i*	PcP	**P**	**00 09 23.2**	**+0.6**
	comp=Z,5.9nm,1.1s							
NB2	**NORSAR Subarra**	**89.01**	**331**		P	**P**	**00 09 22.3**	**-0.1**
	comp=Z,0.7nm,0.6s,baz=91,slow=4.6							
NOA	**NORSAR Array B**	**89.01**	**331**		P	**P**	**00 09 22.3**	**-0.1**
	comp=Z,5.4nm,1.1s,baz=94,slow=5.0,SNR=7.4							
FUORN	**Ofenpass-Fuorn**	**89.27**	**316**	*e*	P	**P**	**00 09 25.3**	**+1.1**
KBS	**Kingsbay**	**89.46**	**349**	*e*	P	**P**	**00 09 24.2**	**+0.1**
KBS	**Kingsbay**	**89.46**	**349**	*e*	P	**P**	**00 09 24.2**	**+0.1**
DAVOX	**Davos/Dischmat**	**89.53**	**317**		P	**P**	**00 09 26.2**	**+0.8**
	comp=Z,12nm,0.9s,baz=141,slow=4.6,SNR=17							
DAVA	**Damuels**	**89.54**	**317**	*i*	PcP	**P**	**00 09 26.0**	**+0.7**
	comp=Z,20nm,1.1s							
KONO	**Kongsberg**	**89.79**	**329**		P	**P**	**00 09 25.2**	**-0.8**
KONO					pmax	pmax		
	comp=Z,8.0nm,1.1s							
KONO	**Kongsberg**	**89.79**	**329**		P	**P**	**00 09 25.2**	**-0.8**
	comp=Z,8.0nm,1.1s							
KEST	**Kesra**	**89.88**	**306**		P	**P**	**00 09 28.2**	**+1.1**
	comp=Z,5.9nm,0.7s,baz=63,slow=1.2,SNR=9.2							
BFO	**Black Forest**	**90.58**	**318**	*i*	P	**P**	**00 09 31.0**	**+1.0**
SENIN	**Lac Senin/Sane**	**91.31**	**316**	*e*	P	**P**	**00 09 34.6**	**+0.9**
EKA	**Eskdalemuir Ar**	**97.02**	**326**		P	**P**	**00 09 58.7**	**-0.6**
	comp=Z,2.9nm,0.7s,baz=95,slow=5.1,SNR=8.0							
ILAR	**Eielson Array**	**99.99**	**23**		P	**Pdif**	**00 10 10.8**	**-1.6**
	comp=Z,0.6nm,0.8s,baz=287,slow=3.7,SNR=5.5							
FFC	**Flin Flon**	**122.73**	**14**	*i*	PKIKP	**PKPdf**	**00 15 24.1**	**+1.0**
SCHQ	**Schefferville**	**124.14**	**350**		PKP	**PKPdf**	**00 15 25.3**	**-0.5**
	comp=Z,6.8nm,0.8s,baz=30,slow=5.2,SNR=8.2							
MOD	**Modoc Plateau**	**125.15**	**36**	*e*	PKPdf	**PKPdf**	**00 15 28.9**	**+0.6**
EGMT	**Eagleton**	**125.95**	**24**	*e*	PKPdf	**PKPdf**	**00 15 30.2**	**+0.7**
MFID	**Camas Ranch**	**126.61**	**31**	*e*	PKPdf	**PKPdf**	**00 15 32.1**	**+1.1**
DLMT	**Dillon**	**126.79**	**28**	*e*	PKPdf	**PKPdf**	**00 15 32.7**	**+1.3**
ULM	**Lac du Bonnet**	**128.29**	**12**		PKP	**PKPdf**	**00 15 34.0**	**+0.2**
	comp=Z,9.8nm,0.8s,baz=336,slow=2.6,SNR=15							
TPAW	**Teton Pass**	**128.98**	**28**	*e*	PKPdf	**PKPdf**	**00 15 36.3**	**+0.6**
LOHW	**Long Hollow**	**129.05**	**28**	*e*	PKPdf	**PKPdf**	**00 15 36.2**	**+0.4**
PDAR	**Pinedale Array**	**130.19**	**28**		PKP	**PKPdf**	**00 15 36.6**	**-1.4**
	comp=Z,1.3nm,0.6s,baz=64,slow=3.4,SNR=11							
PDAR					SKPbc	**SKPbc**	**00 18 53.9**	**+0.4**
	comp=Z,1.8nm,0.8s,baz=358,slow=1.5,SNR=7.9							
JFWS	**Jewell Farm**	**136.43**	**10**	*e*	PKIKP	**PKPdf**	**00 15 49.1**	**-0.3**
JFWS	**Jewell Farm**	**136.43**	**10**	*e*	PKPdf	**PKPdf**	**00 15 49.1**	**-0.3**
ANMO	**Albuquerque**	**137.75**	**32**	*e*	PKIKP	**PKPdf**	**00 15 53.1**	**+0.7**
ANMO	**Albuquerque**	**137.75**	**32**	*e*	PKPdf	**PKPdf**	**00 15 53.1**	**+0.7**
PLCA	**Paso Flores**	**138.42**	**192**		PKP	**PKPdf**	**00 15 53.3**	**0.0**
	comp=Z,1.6nm,0.8s,baz=48,slow=18,SNR=2.8							
ACSO	**Alum Creek Sta**	**139.89**	**3**	*e*	PKPdf	**PKPdf**	**00 15 55.9**	**0.0**
V34A	**Guthrie**	**141.08**	**22**	*e*	PKPdf	**PKPdf**	**00 15 58.8**	**+0.7**
TZTN	**Tazewell**	**143.53**	**4**	*e*	PKPdf	PKPbc	00 15 59.7	-0.2
TXAR	**Lajitas Array**	**143.55**	**35**		PKP	PKPbc	00 16 01.1	+0.7
	comp=Z,3.9nm,0.8s,baz=260,slow=0.9,SNR=33							
TXAR					SKP		00 19 29.9	
	comp=Z,1.4nm,0.9s,baz=20,slow=4.0,SNR=3.7							
MIAR	**Mount Ida**	**143.59**	**18**	*e*	PKIKP	PKPbc	00 16 00.3	+0.1
MIAR	**Mount Ida**	**143.59**	**18**	*e*	PKPdf	PKPbc	00 16 00.3	+0.1
TKL	**Tuckaleechee C**	**144.40**	**4**		PKP	**PKPab**	**00 16 01.8**	**-0.5**
	comp=Z,14nm,0.6s,baz=136,slow=4.5,SNR=40							
JCT	**Junction City**	**144.69**	**29**	*e*	PKIKP	PKPbc	00 16 03.6	-0.1
JCT	**Junction City**	**144.69**	**29**	*e*	PKPdf	PKPbc	00 16 03.6	-0.1
OXF	**Oxford**	**144.72**	**12**	*e*	PKIKP	**PKPab**	**00 16 03.1**	**-0.4**
OXF	**Oxford**	**144.72**	**12**	*e*	PKPdf	**PKPab**	**00 16 03.1**	**-0.4**
KMSC	**Kings Mountain**	**145.02**	**1**	*e*	PKPbc	**PKPbc**	**00 16 03.9**	**-0.7**
CPUP	**Villa Florida**	**145.42**	**219**		PKPbc	**PKPab**	**00 16 06.4**	**+0.1**
	comp=Z,6.0nm,0.6s,baz=173,slow=1.9,SNR=17							
NATX	**Nacogdoches**	**145.78**	**21**	*e*	PKPdf	**PKPab**	**00 16 07.5**	**0.0**
LRAL	**Lakeview Retre**	**146.61**	**10**	*e*	PKPdf	**PKPdf**	**00 16 08.5**	**+0.6**
GOGA	**Godfrey**	**146.66**	**4**	*e*	PKP2	**PKPbc**	**00 16 09.1**	**-0.5**
GOGA	**Godfrey**	**146.66**	**4**	*e*	PKPdf	**PKPbc**	**00 16 09.1**	**-0.5**
BRAL	**Brewton**	**148.42**	**10**	*e*	PKPdf	**PKPdf**	**00 16 12.2**	**+1.3**
BRAL				*e*	PKPbc	**PKiKP**	**00 16 15.4**	**-0.6**
TIGA	**Tifton**	**148.60**	**5**	*e*	PKPdf	**PKPdf**	**00 16 12.3**	**+1.1**
TIGA				*e*	PKPbc	**PKPbc**	**00 16 15.4**	**+0.4**
LPAZ	**La Paz**	**159.57**	**217**		PKP	**PKPdf**	**00 16 28.2**	**+0.5**
	comp=Z,1.5nm,0.8s,baz=73,slow=1.4,SNR=6.6							

CSEM ***I*** *23:57:22.4±0.2,38.77N×23.80E,h15km,ML1.3,Error ellipse: s-maj=4.9km s-min=4.6km az=169.0*

ATH 31 23:57:22.7,38.77N×23.77E,h16km±7km,ML1.3/2,Error ellipse: s-maj=7.1km s-min=0.8km az=19.0,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EREA	**Eretria**	**0.37**	**160**	P	Pg	23 57 30.2	0.0
EREA				S	Sb	23 57 35.9	-0.5
EREA	**Eretria**	**0.37**	**160**	P	Pg	23 57 30.2	0.0
EREA				S	Sb	23 57 35.9	-0.5
EREA				AML	AML	23 57 36.6	
	comp=E,133μm,0.2s						
EREA				AML	AML	23 57 36.7	
	comp=N,111μm,0.2s						
AOS	**Alonnisos**	**0.41**	**11**	P	Pg	23 57 30.5	-0.5
AOS				S	Sg	23 57 36.8	+0.1
AOS	**Alonnisos**	**0.41**	**11**	P	Pg	23 57 30.5	-0.6
AOS				S	Sg	23 57 36.8	+0.1
SKIA	**Skiathos**	**0.47**	**329**	P	Pb	23 57 32.9	+0.3
SKIA				S	Sg	23 57 38.6	+0.2
SKIA	**Skiathos**	**0.47**	**329**	P	Pb	23 57 32.9	+0.3
SKIA				S	Sg	23 57 38.6	+0.2
ATAL	**Atalanti**	**0.59**	**263**	P	Pn	23 57 36.6	+0.1
ATAL	**Atalanti**	**0.59**	**263**	P	Pg	23 57 33.7	-0.7
ATAL				S	Sg	23 57 41.7	-0.6
ATAL	**Atalanti**	**0.59**	**263**	P	Pg	23 57 33.7	-0.7
ATAL				S	Sg	23 57 41.7	-0.6
SKY	**Skiros Island**	**0.62**	**79**	P	Pg	23 57 34.2	-0.6
SKY				S	Sb	23 57 44.2	+0.6
SKY	**Skiros Island**	**0.62**	**79**	P	Pg	23 57 34.2	-0.6
SKY				S	Sb	23 57 44.2	+0.6
SKY				AML	AML	23 57 46.5	
	comp=N,77μm,0.3s						
SKY				AML	AML	23 57 46.9	
	comp=E,63μm,0.2s						
LKR	**Lokris**	**0.62**	**259**	P	Pb	23 57 35.2	+0.1
LKR				S	Sb	23 57 43.9	+0.3
LKR	**Lokris**	**0.62**	**259**	P	Pb	23 57 35.2	+0.1
LKR				S	Sb	23 57 43.9	+0.3
VIL2	**Platees**	**0.68**	**216**	P	Pg	23 57 35.2	-0.8
VIL2				S	Sb	23 57 45.4	-0.1
VILL	**Villia**	**0.70**	**211**	P	Pg	23 57 35.2	-1.2
VILL				S	Sg	23 57 45.4	-0.3
PTL	**Penteli**	**0.72**	**174**	P	Pg	23 57 36.5	-0.2
PTL				S	Sb	23 57 46.4	-0.1
PTL	**Penteli**	**0.72**	**174**	P	Pg	23 57 36.5	-0.2
PTL				S	Sg	23 57 46.4	+0.1
PROD	**Prodromos**	**0.85**	**234**	P	Pg	23 57 39.5	+0.3
PROD				S	Sn	23 57 51.6	-0.7
PROD	**Prodromos**	**0.85**	**234**	P	Pg	23 57 39.5	+0.3
PROD				S	Sn	23 57 51.6	-0.6
KARY	**Karystos**	**0.90**	**144**	P	Pb	23 57 39.5	-0.4
KARY				S	Sg	23 57 52.5	+0.6
KARY	**Karystos**	**0.90**	**144**	P	Pb	23 57 39.5	-0.5
KARY				S	Sg	23 57 52.5	+0.6
VLY	**Voula,Athens**	**0.91**	**179**	P	Pb	23 57 40.0	-0.2
VLY	**Voula,Athens**	**0.91**	**179**	P	Pb	23 57 40.0	-0.1

ISC Computed Locations for July 2011

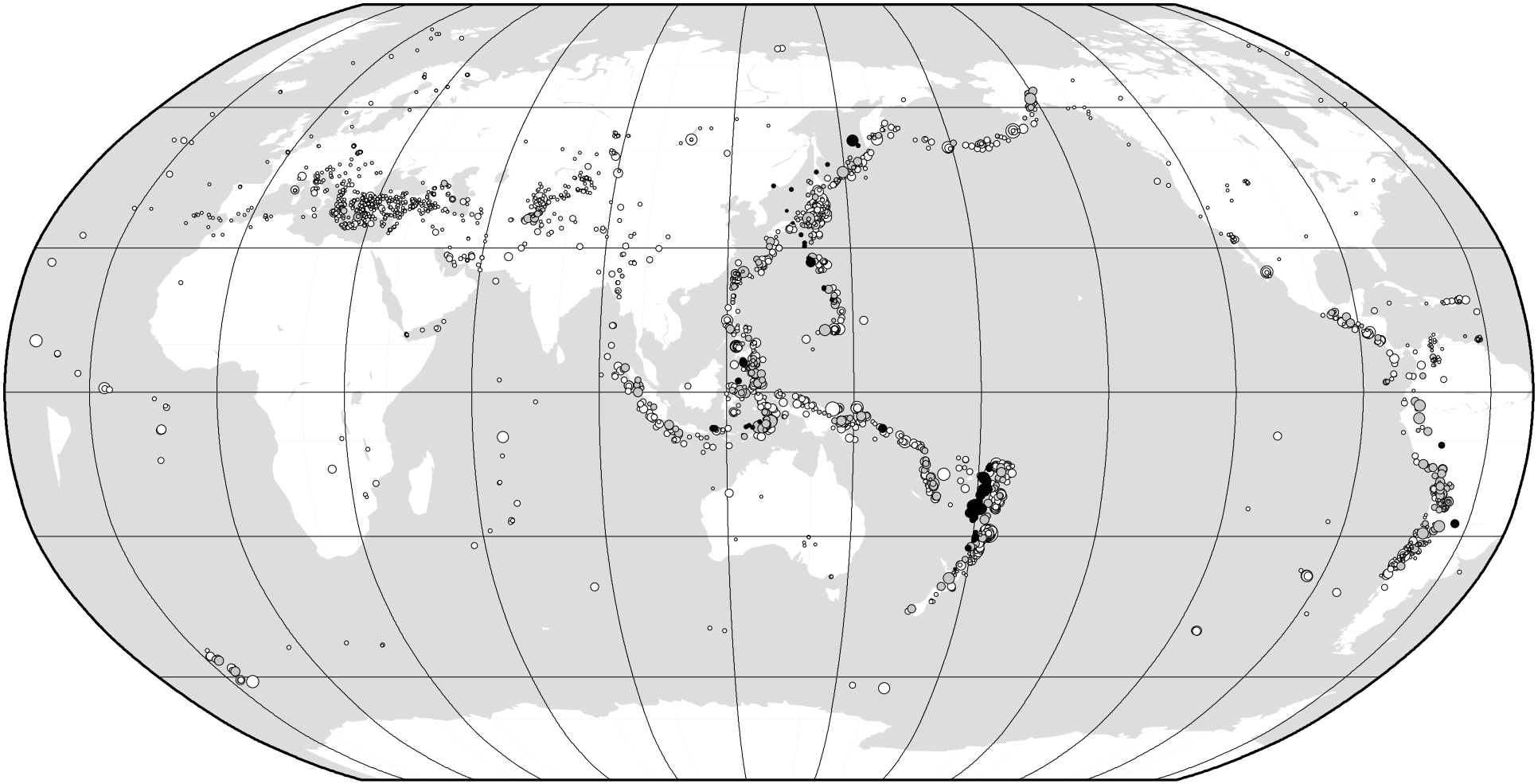

Depth (km)	0-70	70-300	>300
M=8	○	○	●
M=6.5	○	○	●
M=4	○	○	●

Robinson Projection, centred on 0˚N,130˚E

3929 Events